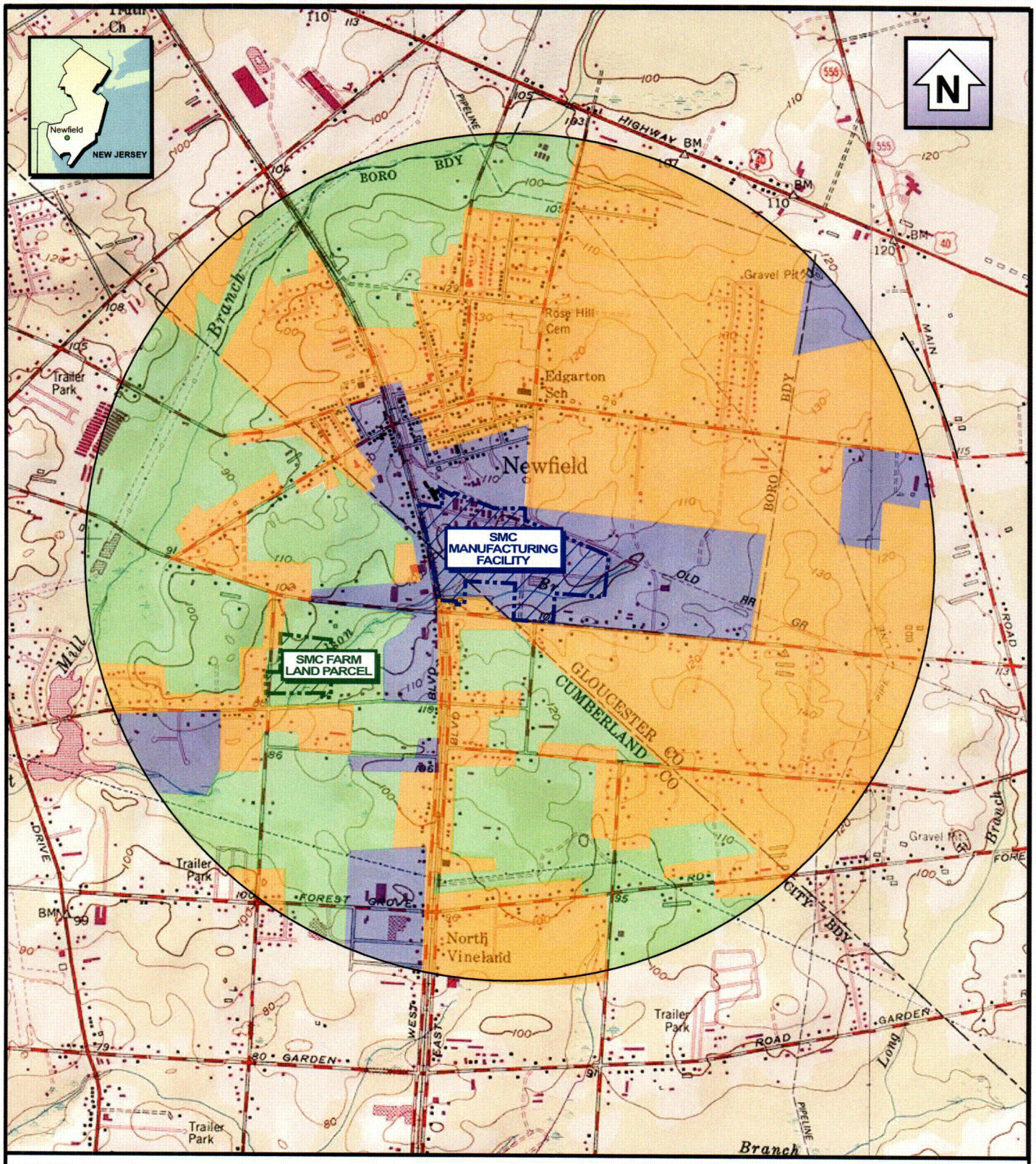

KEY

- Residential
- Business, including commercial & industrial
- Cultivation & woodlands

0 2000
SCALE FEET

0 1
SCALE MILE

1:24000

26770 smc.fh10

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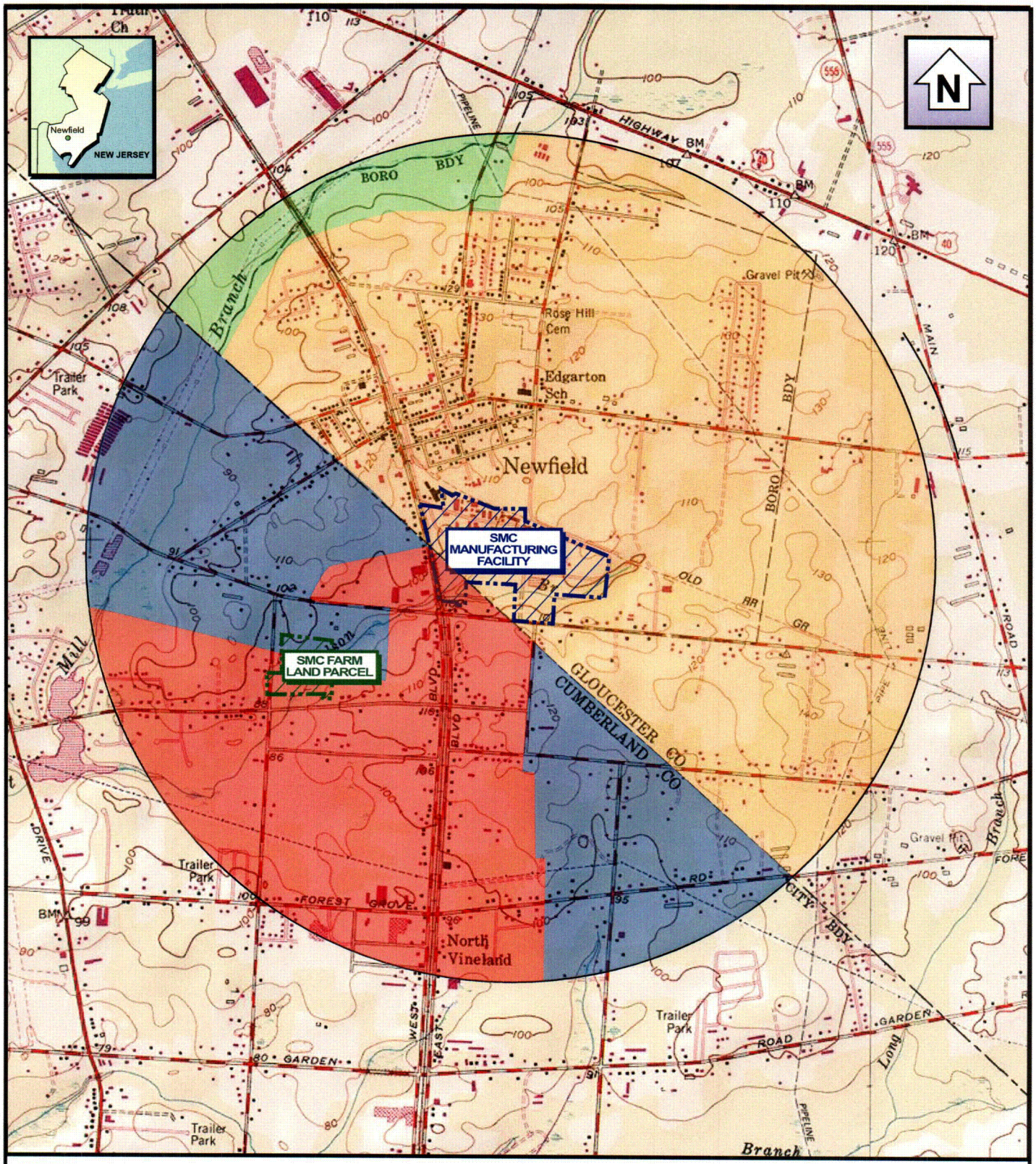
NEWFIELD, NEW JERSEY

FIGURE 3-1
LAND USE WITHIN 1 MILE OF SMC

Date: 04/05 | **Project No.** 26770-0100-00000

c 09



KEY

- Rural/Environmental Sensitive Planning Area
- Suburban Planning Area
- Environmental Sensitive Planning Area
- Rural Planning Area

0 2000 SCALE FEET

0 1 SCALE MILE 1:24000

SOURCES: Policy Maps of the New Jersey State Development and Redevelopment Plan for Cumberland and Cloucester Counties (8/15/2003 and 7/30/2003, respectively).

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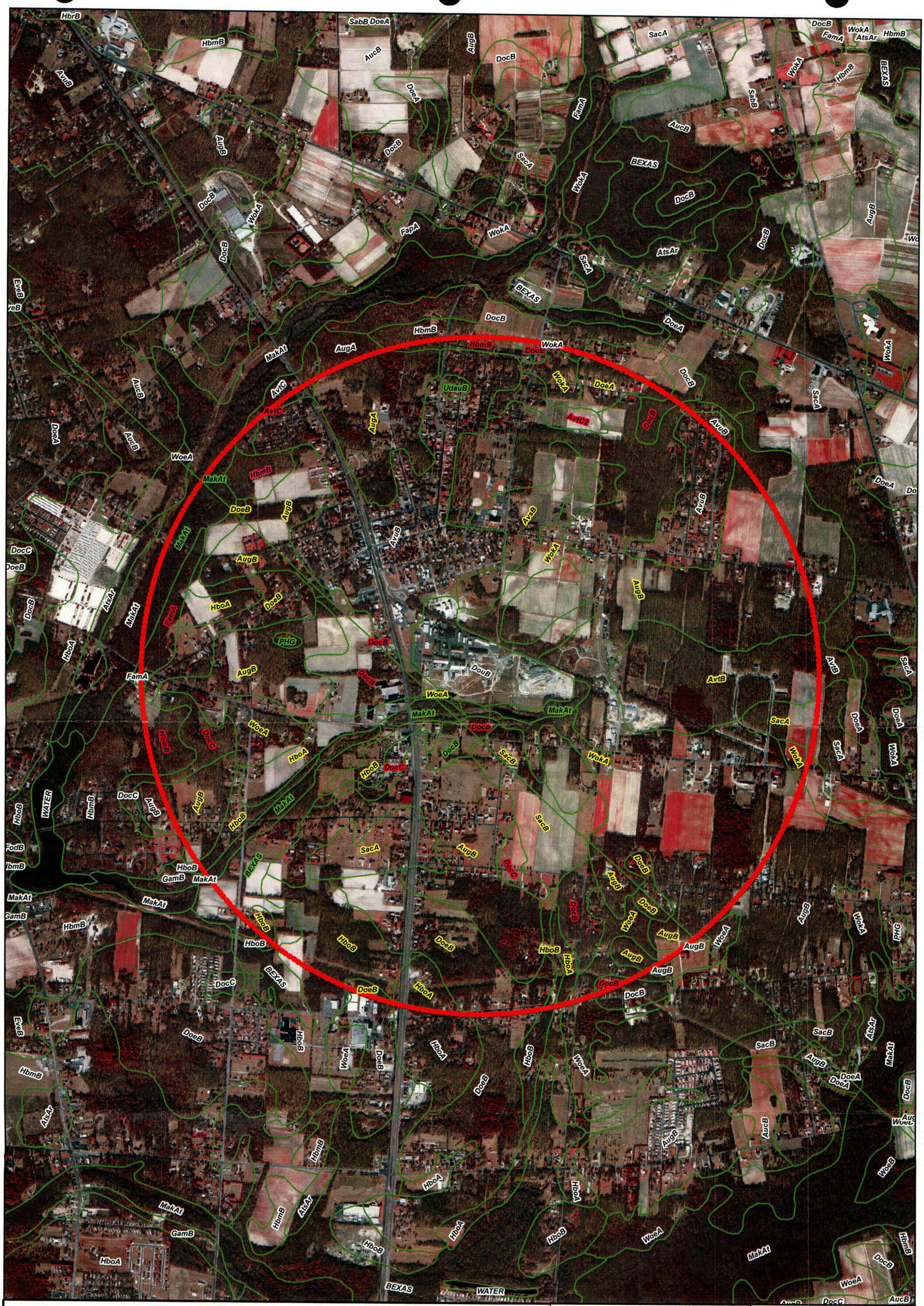
NEWFIELD, NEW JERSEY

FIGURE 3-2
STATE PLANNING AREAS WITHIN 1 MILE OF SMC

Date: 04/05 | **Project No.** 26770-0100-00000

26770 smc.fh10

C10



New Jersey 2002 High Resolution
February-April, 2002.
The ortho-rectification process achieved
a +/-4.0 ft. horizontal accuracy at a
95% confidence level
Publication_Date: 20030731

See Appendix A for definition of specific soil types

0 0.125 0.25 0.5 Miles

Prime Farmland

Farmland of Statewide Importance

Farmland of Unique Importance

1- MILE RADIUS

SHIELDALLOY METALLURGICAL CORPORATION
NEWFIELD, NEW JERSEY

Soil Classification
Prime and other Important Farmlands
Within 1 Mile of SMC

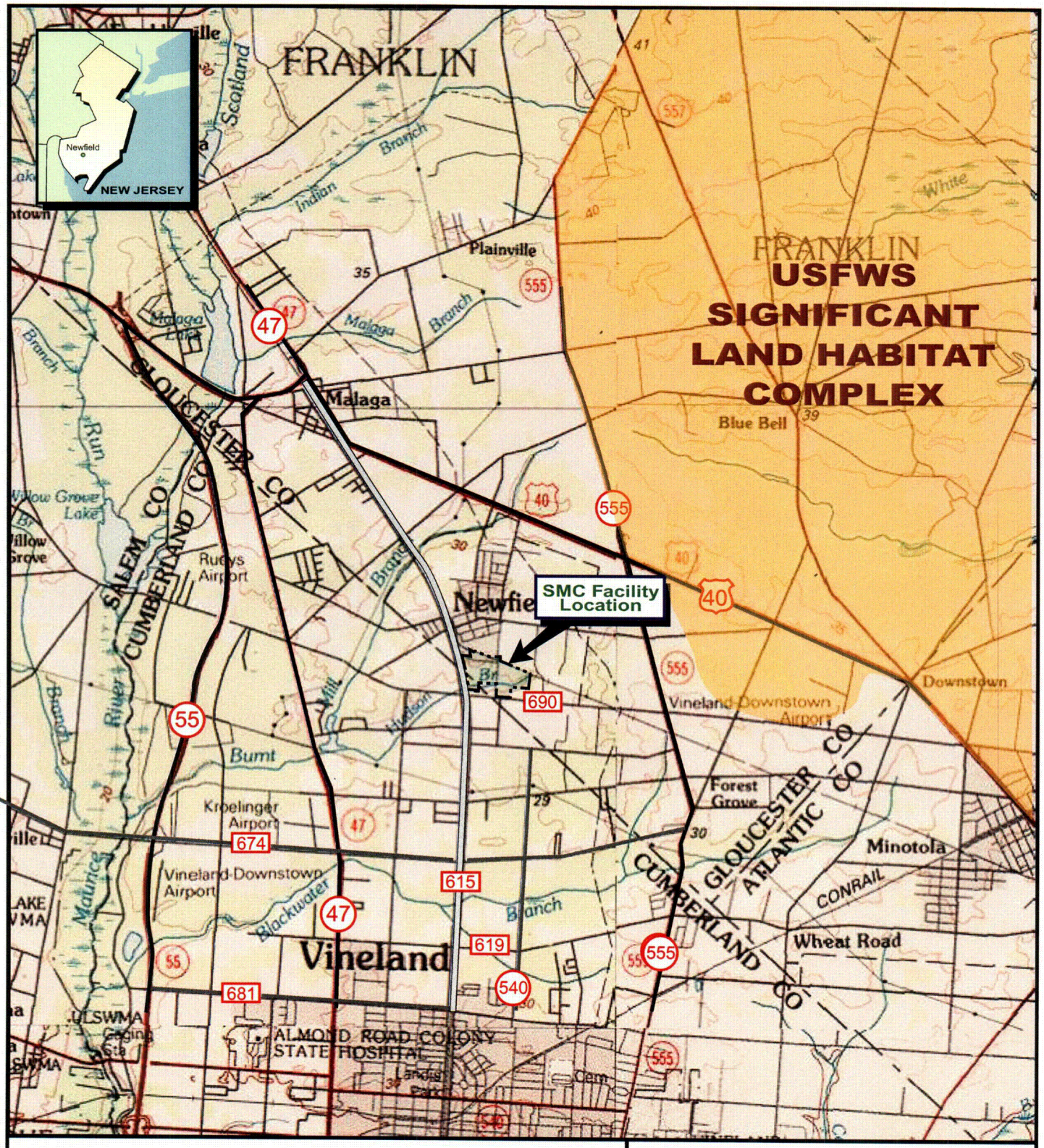
FIGURE 3-3

TRC
Boott Mills South
Foot of John Street
Lowell, MA 01852
(978)970-5600

PROJ.26770-0100

R:\Projects\GIS_2005\37149-sheildalloy\SMCsoils_Figure-3-3-RE.mxd

C11



KEY

- 40 U.S. Highways
- 47 State Highways
- 615 County Roads

0 4000 SCALE FT

0 2 SCALE MILE

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SOURCE: USFWS, Significant Habitats and Habitat Complexes of the New York Bight Watershed, New jersey Pinelands, Complex #2 Maps.

26770 smc.fh10

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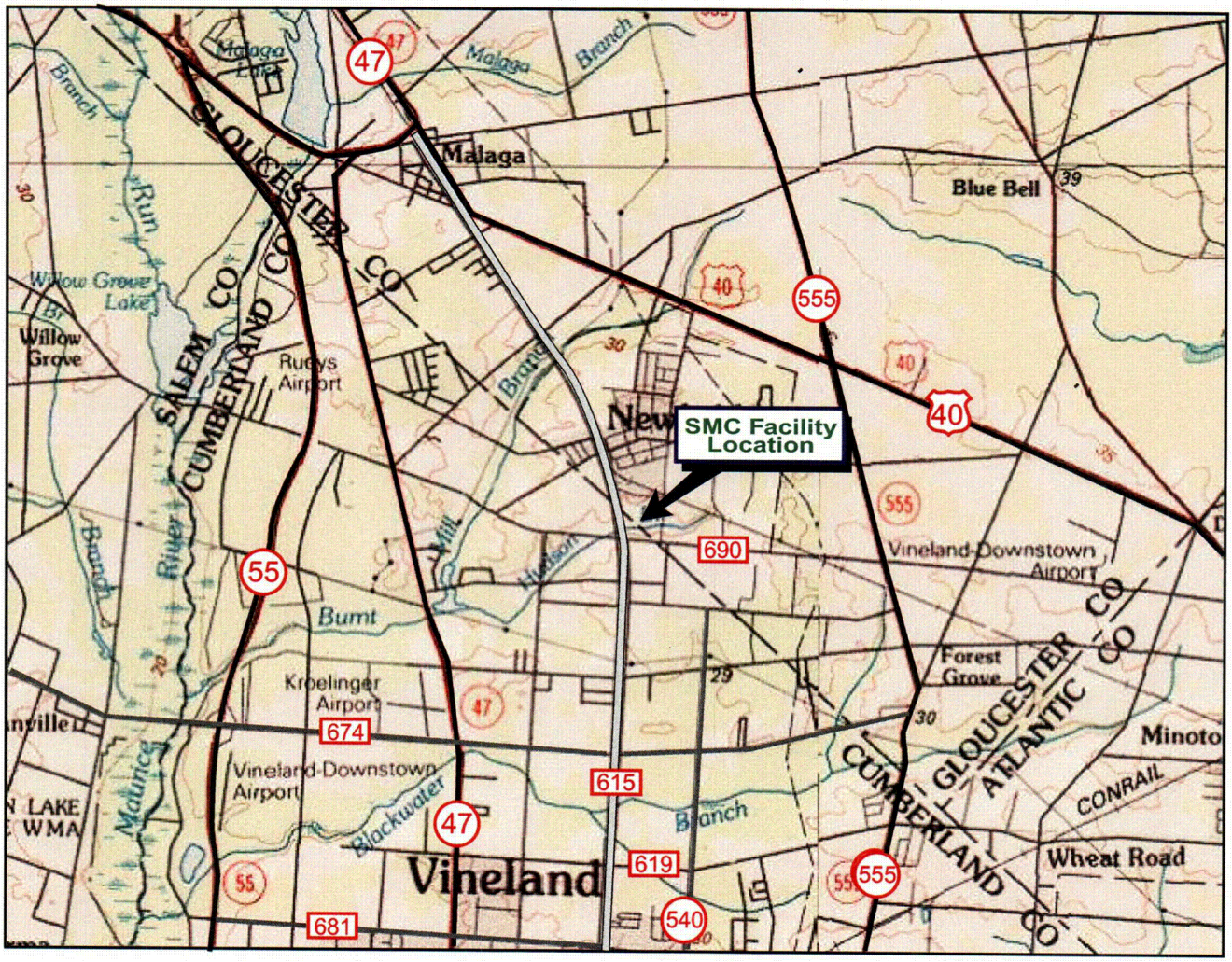
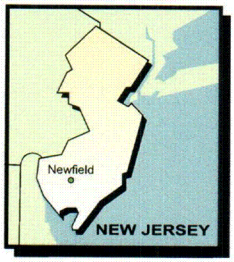
SHIELDALLOY METALLURGICAL CORPORATION
NEWFIELD, NEW JERSEY

FIGURE 3-4
PROXIMITY OF PINELANDS HABITAT TO SMC FACILITY

Date: 04/05 | **Project No.** 26770-0100-00000

C12





0 4000
SCALE FT

0 2
SCALE MILE

N

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7.5' USGS TOPOGRAPHIC MAP

KEY

40 U.S. Highways

47 State Highways

615 County Roads

26770 smc.fh10

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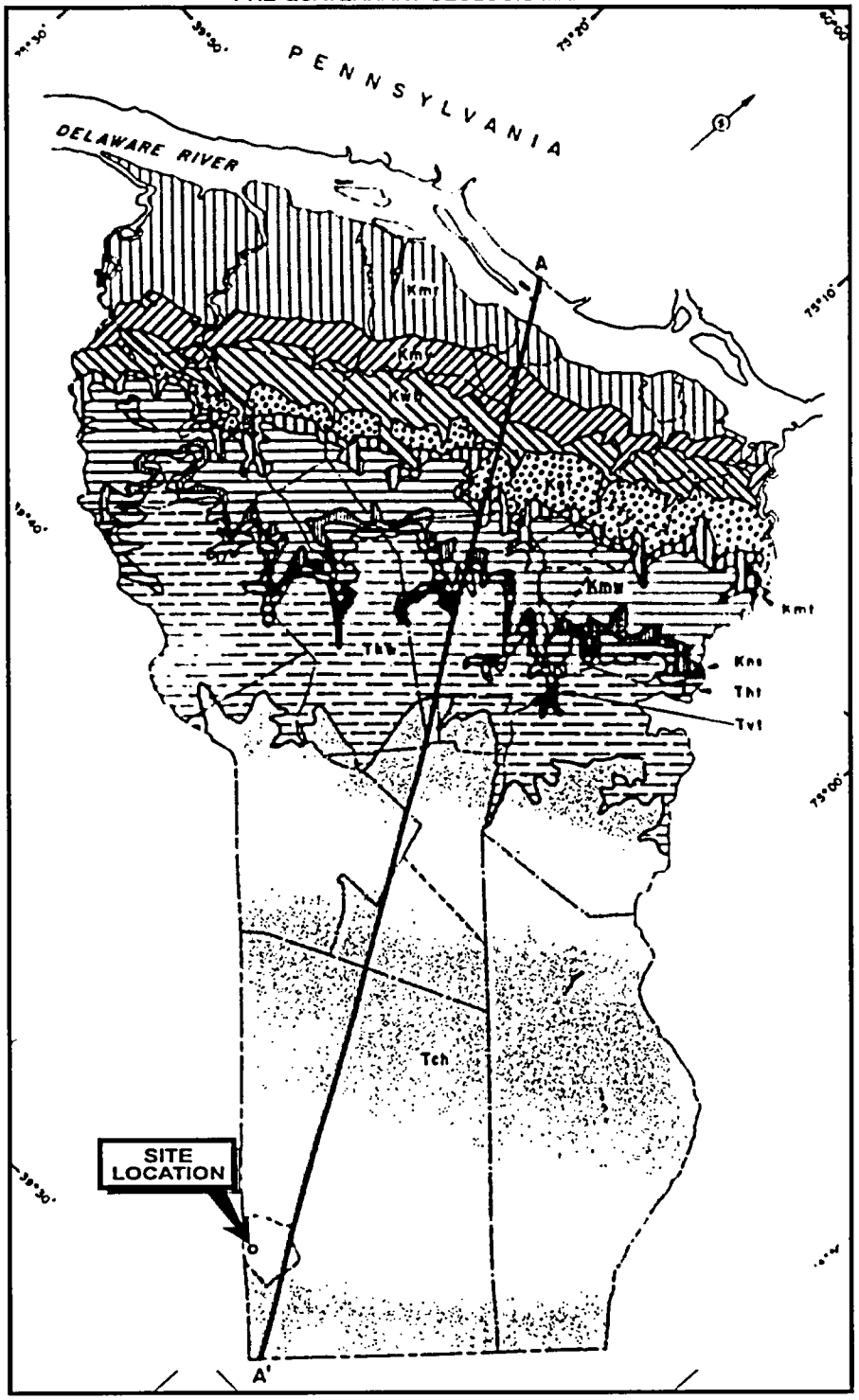
SHIELDALLOY METALLURGICAL CORPORATION
NEWFIELD, NEW JERSEY

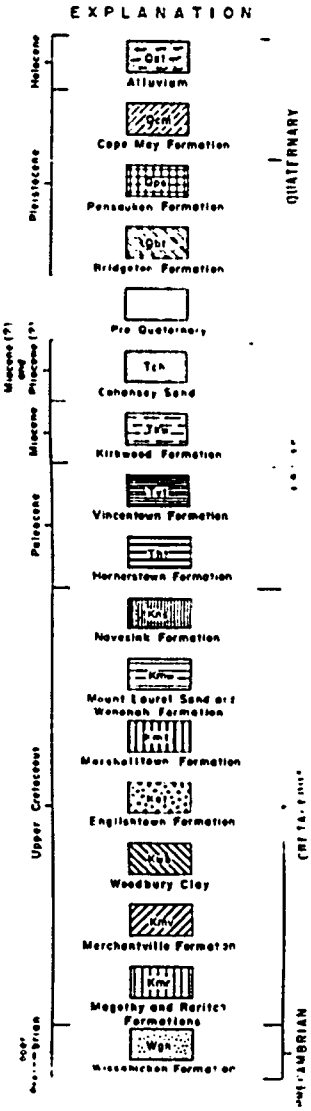
FIGURE 3-5
MAIN TRANSPORTATION ROUTES IN THE VICINITY OF SMC FACILITY

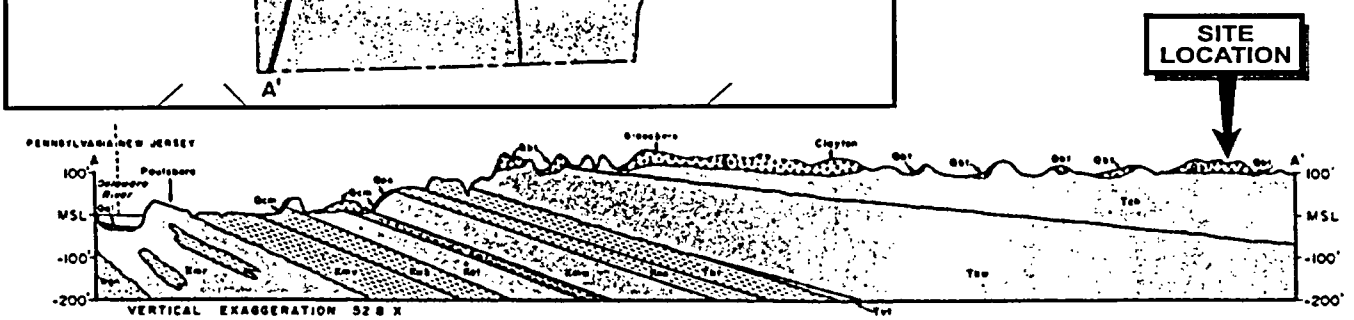
Date: 04/05 | **Project No.** 26770-0100-00000

C13

PRE-QUATERNARY GEOLOGIC MAP







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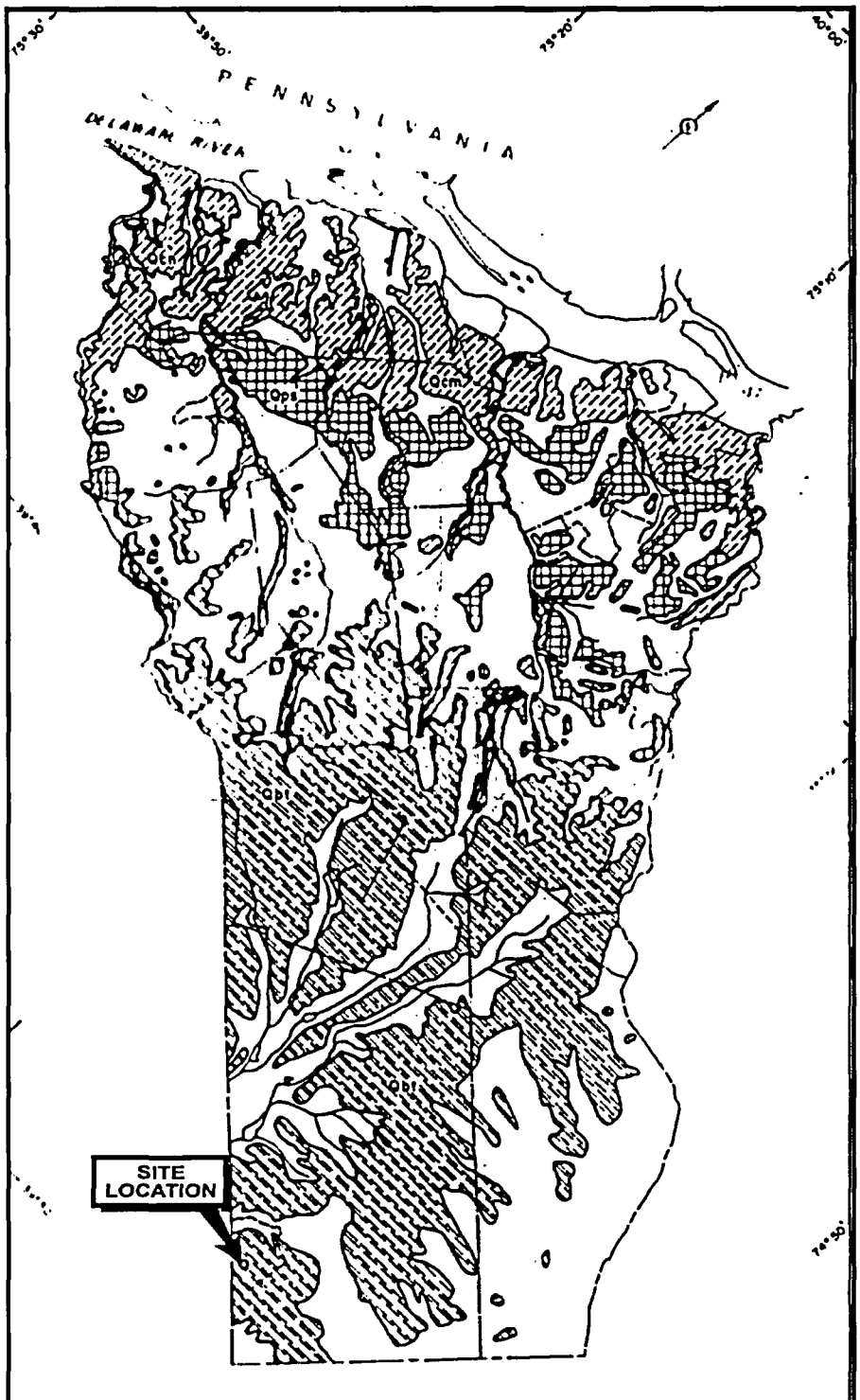
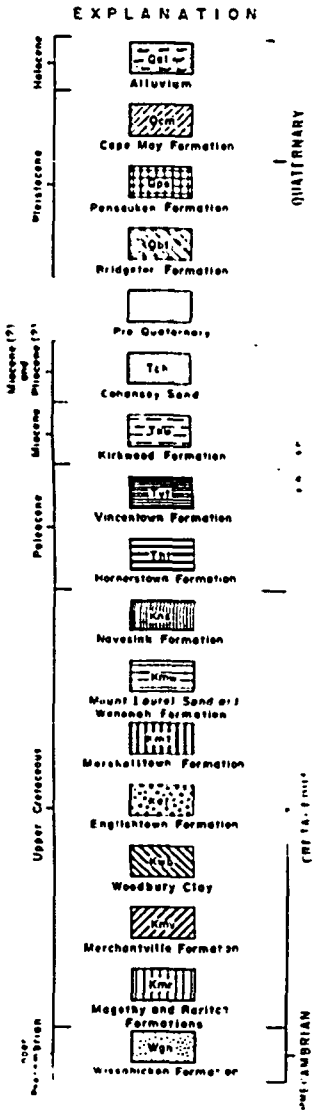
SHIELDALLOY METALLURGICAL CORP.
NEWFIELD, NEW JERSEY

FIGURE 3-6
GEOLOGIC CROSS SECTION
GLOUCESTER COUNTY

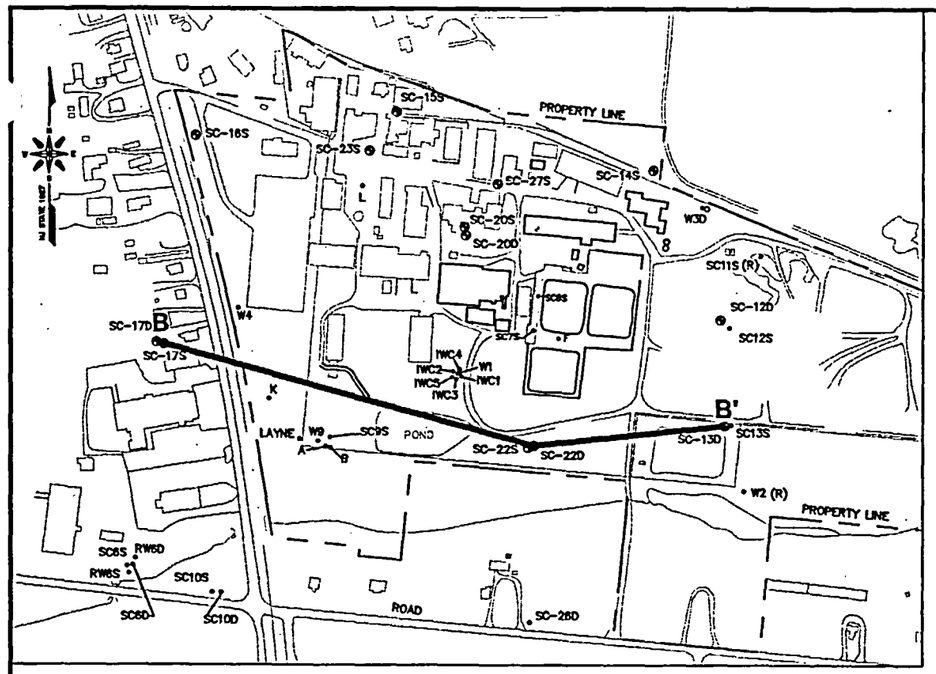
Date: 03/05 | Project No. 26770-0100-00000



GENERALIZED SURFICIAL GEOLOGIC MAP

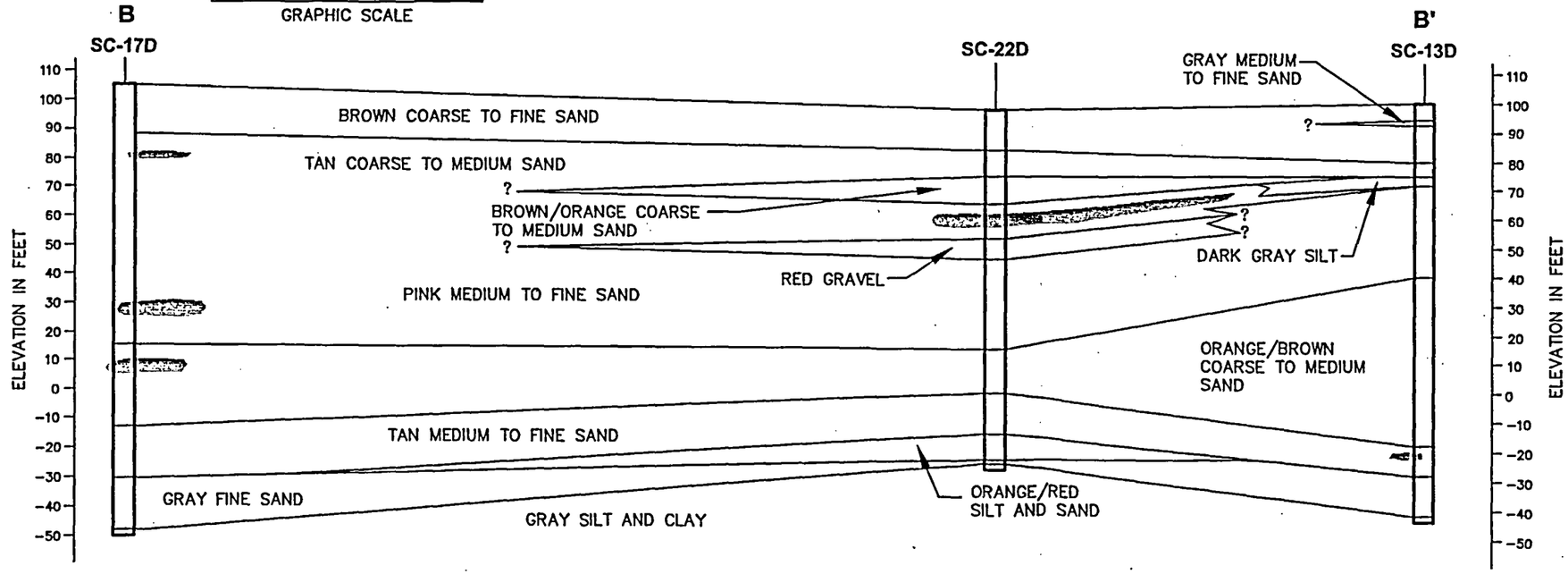


TRC Customer-Focused Solutions	5 Waterside Crossing Windsor, CT 06095 (860) 298-9692
SHIELDALLOY METALLURGICAL CORP. NEWFIELD, NEW JERSEY	
FIGURE 3-7 **SURFICIAL GEOLOGY MAP** **GLOUCESTER COUNTY**	
Date: 03/05	Project No. 26770-0100-00000



0 500' 1000'

GRAPHIC SCALE



LEGEND

SILT AND CLAY STRINGER

0' 200' 400'

Scale Horizontal Feet

J:\Cad\26770\0100\
Figure 3-8.dwg Layout:FIG 3-8 October 20, 2005-9:54AM KHOLLENBECK

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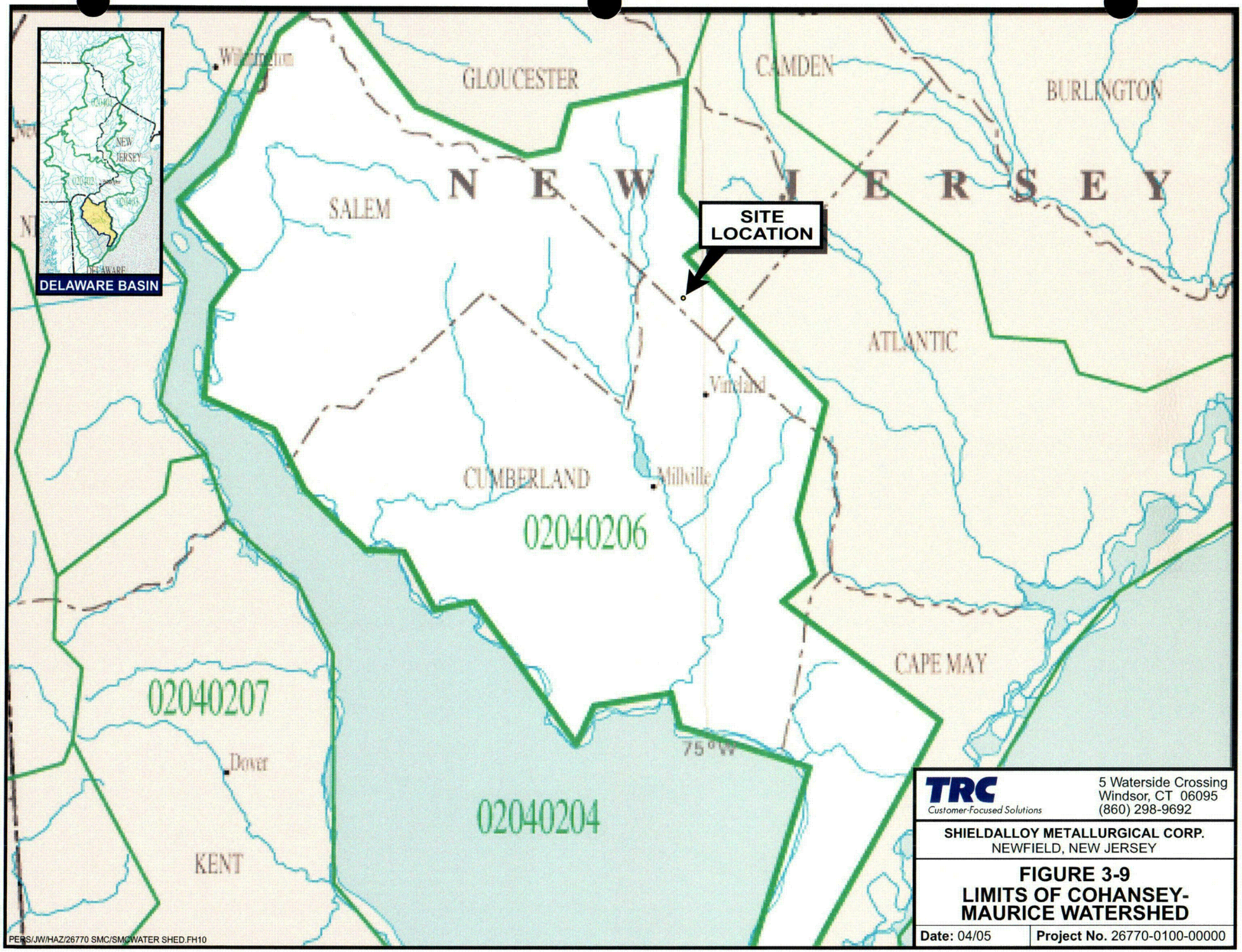
NEWFIELD, NEW JERSEY

FIGURE 3-8
SITE GEOLOGIC CROSS-SECTION

Date: 04/05 | Project No. 26770-0100-00000


DELAWARE BASIN
NEW JERSEY
DELAWARE
GLOUCESTER
CAMDEN
BURLINGTON
N E W J E R S E Y
SALEM
SITE LOCATION
ATLANTIC
Vineland
CUMBERLAND
Millville
02040206
CAPE MAY
02040207
Dover
75°W
02040204
KENT
TRC
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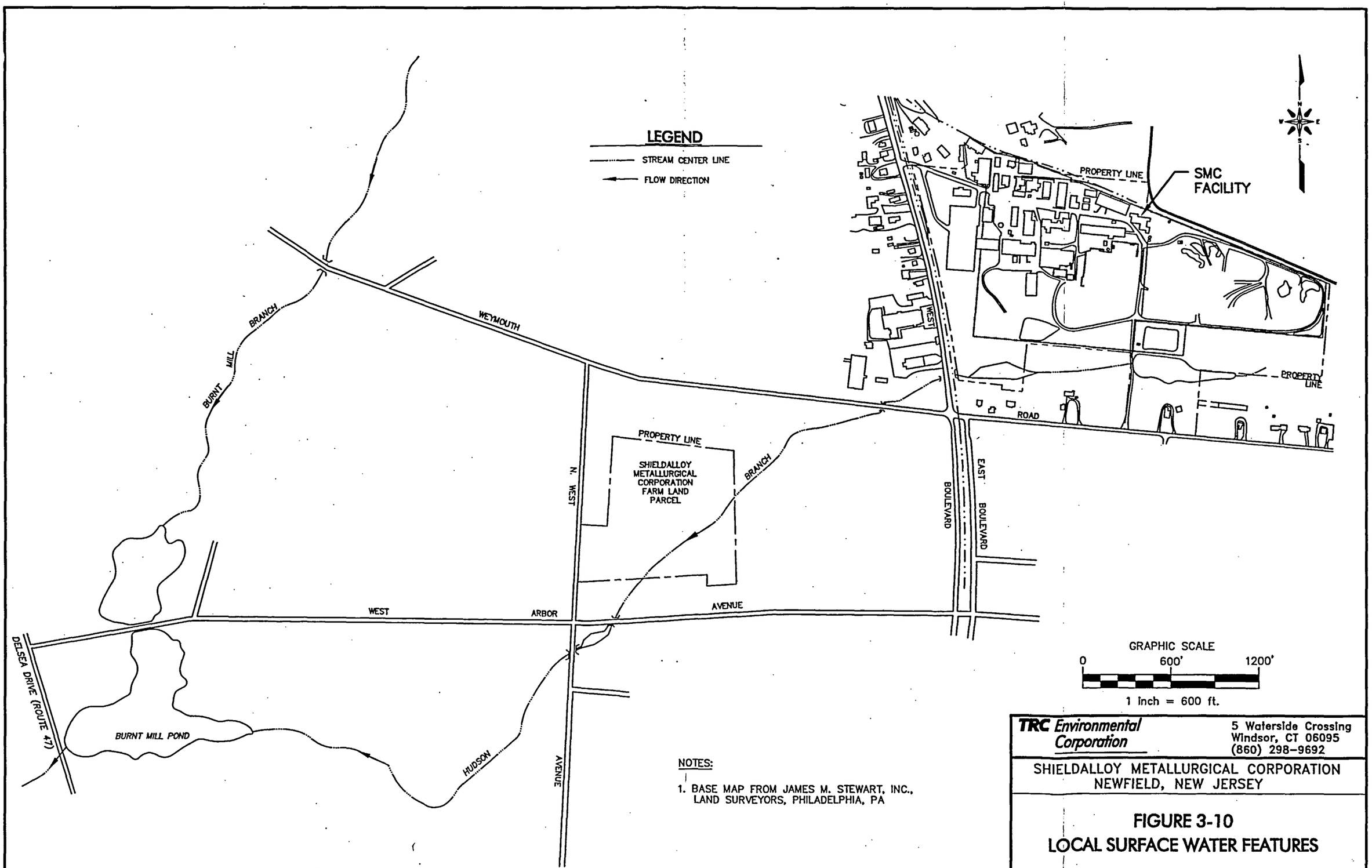
(860) 298-9692
SHIELDALLOY METALLURGICAL CORP.
NEWFIELD, NEW JERSEY
FIGURE 3-9
LIMITS OF COHANSEY-MAURICE WATERSHED
Date: 04/05
Project No. 26770-0100-00000
PERS/JW/HAZ/26770 SMC/SMCWATER SHED.FH10

C14



NOTES:

1. BASE MAP FROM JAMES M. STEWART, INC., LAND SURVEYORS, PHILADELPHIA, PA

J:\Cad\26770\0100\
Figure 3-10.dwg Layout:Model October 20, 2005-9:50AM KHOLLENBECK

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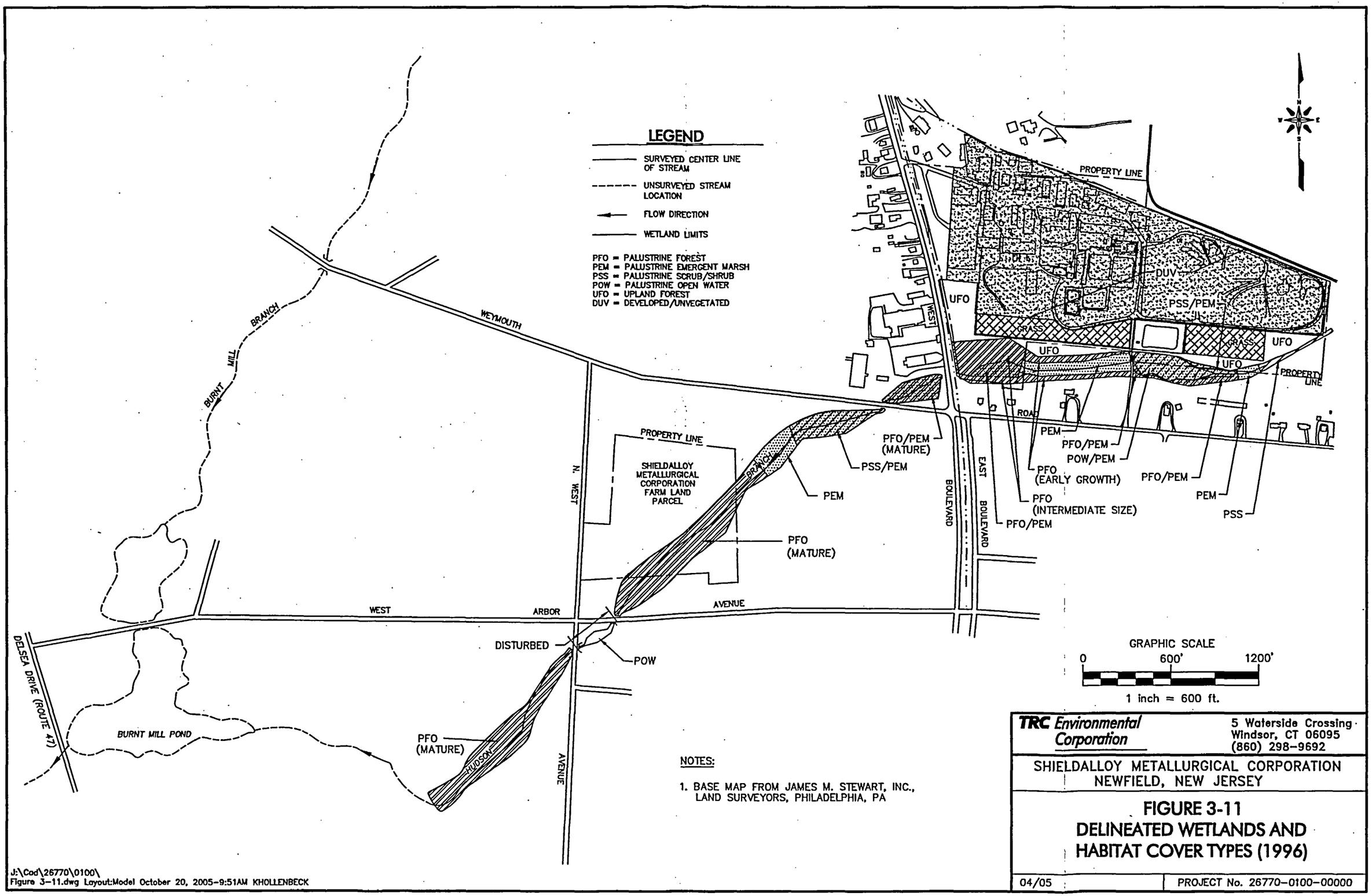
SHIELDALLOY METALLURGICAL CORPORATION
NEWFIELD, NEW JERSEY

FIGURE 3-10
LOCAL SURFACE WATER FEATURES

04/05

PROJECT No. 26770-0100-00000


LEGEND
SURVEYED CENTER LINE OF STREAM
UNSURVEYED STREAM LOCATION
FLOW DIRECTION
WETLAND LIMITS
PFO = PALUSTRINE FOREST
PEM = PALUSTRINE EMERGENT MARSH
PSS = PALUSTRINE SCRUB/SHRUB
POW = PALUSTRINE OPEN WATER
UFO = UPLAND FOREST
DUV = DEVELOPED/UNVEGETATED
PROPERTY LINE
DUV
PSS/PEM
UFO
GRASS
UFO
GRASS
UFO
UFO
PROPERTY LINE
ROAD
PEM
PFO/PEM
POW/PEM
PFO (EARLY GROWTH)
PFO/PEM
PEM
PFO (INTERMEDIATE SIZE)
PSS
PFO/PEM
PFO/PEM (MATURE)
PSS/PEM
PEM
PFO (MATURE)
POW
PROPERTY LINE
SHIELDALLOY METALLURGICAL CORPORATION FARM LAND PARCEL
BRANCH
WEYMOUTH
BURNT MILL BRANCH
WEST
N. WEST
EAST
BOULEVARD
BOULEVARD
WEST ARBOR AVENUE
DISTURBED
DELSEA DRIVE (ROUTE 47)
BURNT MILL POND
PFO (MATURE)
HUDSON
AVENUE
GRAPHIC SCALE
0
600'
1200'
1 inch = 600 ft.
NOTES:
1. BASE MAP FROM JAMES M. STEWART, INC., LAND SURVEYORS, PHILADELPHIA, PA
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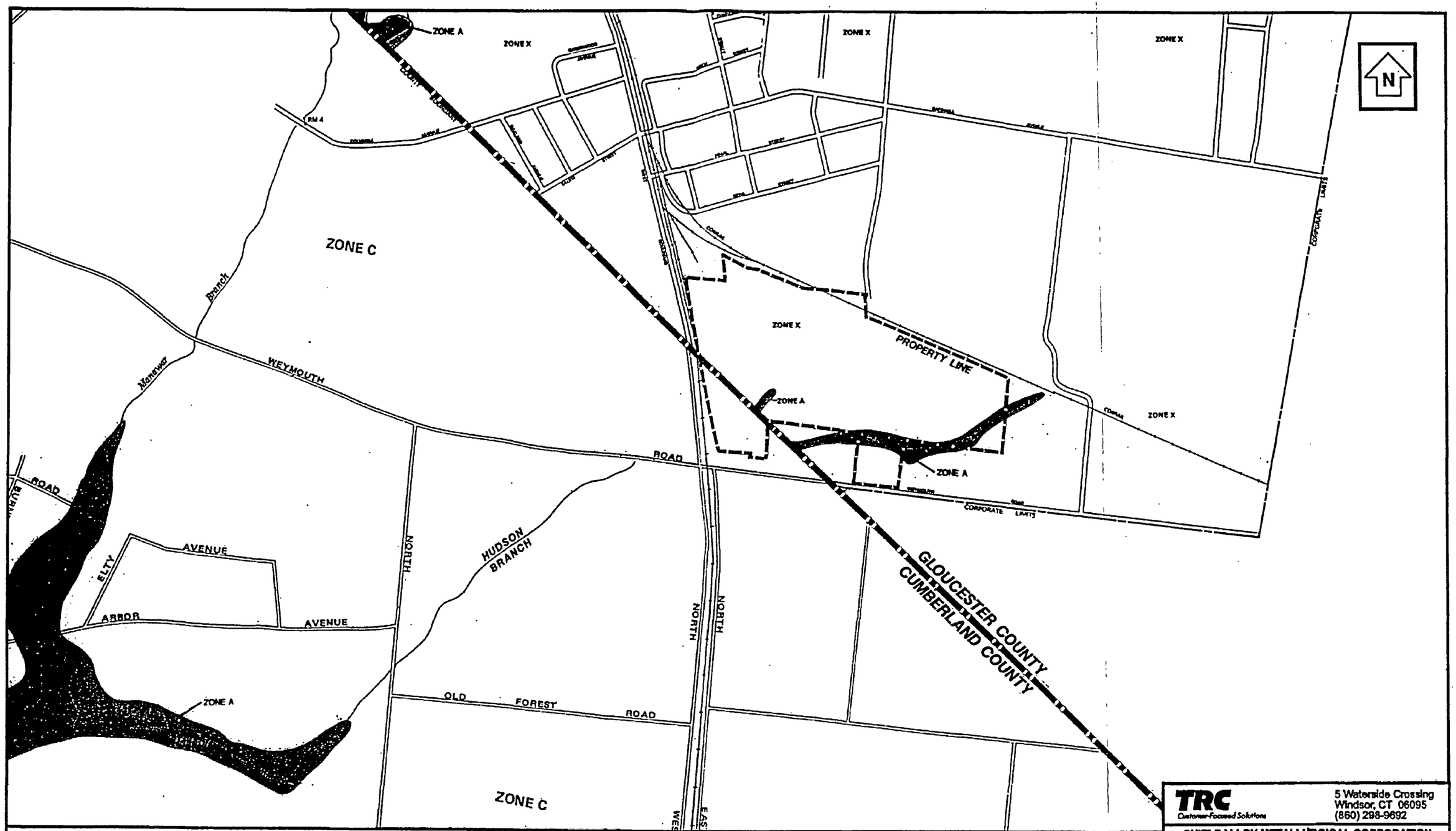
NEWFIELD, NEW JERSEY
FIGURE 3-11
DELINEATED WETLANDS AND HABITAT COVER TYPES (1996)
04/05
PROJECT No. 26770-0100-00000
J:\Cad\26770\0100\
Figure 3-11.dwg Layout:Model October 20, 2005-9:51AM KHOLLENBECK



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD
Zone A - No Base Flood Elevations Determined

OTHER AREAS
Zone X - Areas Determined to be Outside 500-year Flood Plain
Zone C - Areas of Minimal Flooding

0 800
SCALE FEET

FROM:

FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD INSURANCE RATE MAP & STREET INDEX, BOROUGH OF NEWFIELD, NJ, GLOUCESTER COUNTY, 340549 0001 B, 6/17/91 AND CITY OF VINELAND, NEW JERSEY CUMBERLAND COUNTY, 340176 0005 B 7/5/82

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FIGURE 3-12
DELINEATED FLOOD HAZARD AREAS NEAR SMC FACILITY

Date: 04/05 | Project No. 26770-0100-00000

NEW JERSEY WATER WITHDRAWALS, USES, TRANSFERS & DISCHARGES - Watershed Management Area Summary

V 2.5

WMA: *Maurice, Salem, and Cohansey*

17

Click on the box to the left and use the pull down menu to select a WMA.

Subject to Revision — See the 'User's Guide' worksheet for more information.

Subject to revision.

Table 12. Freshwater Withdrawals, Imports & Exports in WMA 17 (millions of gallons)

Withdrawals (Q)	Year 1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Average
surface water	14,930	23,621	30,836	24,864	27,509	27,527	20,316	27,217	21,133	17,594	23,555
ground water	21,601	22,563	20,524	23,024	25,629	26,828	23,631	27,238	26,653	26,427	24,412
total Q	36,531	46,184	51,359	47,887	53,138	54,356	43,947	54,455	47,787	44,021	47,966
imports	433	457	434	448	373	404	355	374	385	367	403
exports	16	167	177	495	983	1,130	1,105	1,322	1,444	1,296	814
net	418	290	257	(47)	(609)	(726)	(750)	(947)	(1,059)	(929)	(410)

Table 13. Freshwater imports to WMA 17 in 1999

Source WMA	MG received	% of all water withdrawn in source WMA in 1999	% of all potable water used in WMA 17 in 1999
15	303	1.2%	2.5%
16	0	0.0%	0.0%
18	64	0.1%	0.5%
sum:	367		3.0%

Table 14. Freshwater Exports from WMA 17 in 1999

Destination WMA	MG sent	% of all water withdrawn in WMA 17 in 1999	% of all potable water used in destination WMA in 1999
15	136	0.3%	0.9%
18	1,161	2.6%	3.8%
sum:	1,296	2.9%	

Table 15. Use of Fresh Water in WMA 17 (millions of gallons) (includes imports, excludes exports)

Use Group	Year 1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Average
agricultural	3,912	6,021	4,538	6,583	5,844	6,769	4,511	6,992	7,814	6,668	5,965
commercial	26	55	57	83	44	41	45	17	16	14	40
industrial	8,217	9,154	7,944	8,752	10,040	9,657	9,631	8,420	7,978	7,304	8,710
irrigation	97	87	103	166	139	116	74	120	122	112	113
mining	13,895	19,433	27,742	20,388	24,380	25,098	18,161	25,780	18,856	17,029	21,076
potable supply	10,833	11,752	11,231	11,872	12,081	11,951	10,832	12,424	12,065	12,089	11,713
power generation	0	0	0	0	0	0	0	0	0	0	0
total volume	36,979	46,502	51,615	47,843	52,529	53,630	43,254	53,753	46,851	43,216	47,617
consumed volume	7,370	10,145	9,616	10,836	10,754	11,614	8,537	11,801	11,660	10,326	10,266
consumed percent	20%	22%	19%	23%	20%	22%	20%	22%	25%	24%	22%

Table 16. Sewage Transfers & Reclaimed-Water Discharges in WMA 17 (millions of gallons)

Sewage/Reclaimed Water	Year 1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Average
imported to WMA	0	0	0	0	0	0	0	0	0	0	0
exported from WMA	1,117	1,202	1,400	988	1,510	1,389	1,590	1,671	1,552	1,527	1,395
generated in WMA	3,996	4,563	4,753	4,472	5,122	4,566	5,315	5,048	4,924	5,019	4,778
discharged in WMA	2,879	3,361	3,353	3,484	3,612	3,177	3,725	3,376	3,372	3,491	3,383

Table 17. Destination of Reclaimed-Water Discharges in WMA 17 (millions of gallons)

Destination	Year 1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Average
fresh water	1,341	1,508	1,561	1,697	1,730	1,587	1,817	1,669	1,692	1,802	1,640
brackish water	1,538	1,853	1,792	1,787	1,882	1,590	1,909	1,708	1,680	1,689	1,743
salt water	0	0	0	0	0	0	0	0	0	0	0

Table 18. Nonconsumptive Water Returns to WMA 17 (millions of gallons)

Water Use	Year 1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Average
potable purveyors	7,200	7,983	7,520	8,020	8,181	8,026	7,056	8,425	8,051	8,057	7,852
domestic wells	2,370	2,385	2,412	2,439	2,469	2,496	2,518	2,539	2,563	2,587	2,478
ind + comm + mining	19,639	25,378	31,603	25,873	30,526	30,807	24,685	30,277	23,784	21,567	26,414
ag + irrig	401	611	464	675	598	688	459	711	794	678	608
power generation	0	0	0	0	0	0	0	0	0	0	0
sum:	29,609	36,357	41,999	37,008	41,774	42,017	34,717	41,952	35,191	32,890	37,351

notes:
- Volumes include an estimate of domestic-well withdrawals and their consumptive use.
- Consumed refers to water evaporated in the watershed, it does not include exports.
- This does not account for water released from onstream reservoirs for downstream intakes.
- No accounting for intakes or use of salt-water.
- The allocated volume is based on users with allocation permits.
- Sewage and reclaimed-water transfers and discharges based on sewer service areas and NJPDES discharge volumes.
- Withdrawals for offstream reservoirs in WMAs 03, 08, and 12 are problematic and complicate Figure 1.
- See the 'User's Guide' worksheet for more information.
- Subject to revision.

Figure 12. Freshwater Withdrawals, Use, Imports & Exports

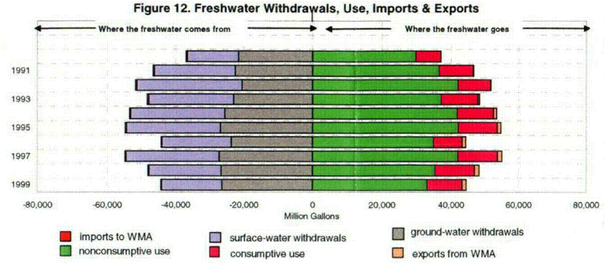


Figure 13. 1999 Freshwater Import & Export Details

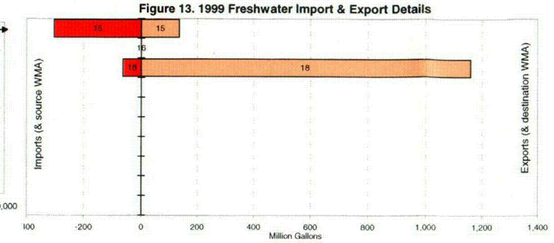


Table 19. Water Allocations in WMA 17 by Water Source

Water Source	Million Gallons/Year
surface water	24,082
ground water	105,998
total	130,080

Figure 14. Use of Fresh Water in WMA

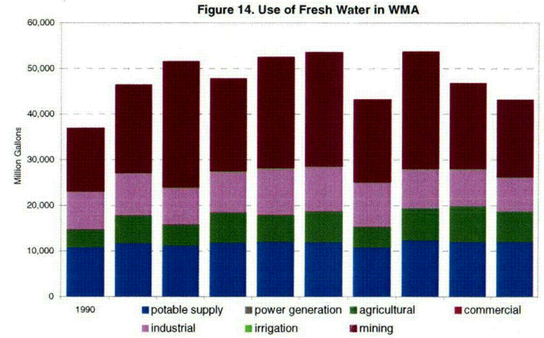


Figure 15. Monthly Consumptive & Nonconsumptive Water Use in WMA

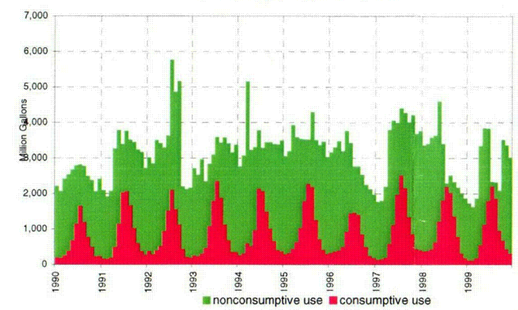


Table 20. Water Allocations in WMA 17 by Water Use Group

Use Group	Million Gallons/Year
agricultural	50,541
commercial	298
industrial	14,941
irrigation	663
mining	50,159
potable supply	13,479
power generation	0
sum	130,080

Table 21. Descriptive Statistics for WMA 17

--- Area:	1,233.3	sq mi.
--- Population:		
year	population	change
1940	123,835	--
1950	150,151	21.3%
1960	184,557	22.9%
1970	206,443	11.9%
1980	233,065	12.9%
1990	245,154	5.2%
2000	255,187	4.1%
--- Withdrawals per square mile (average):		
surface	19.1	mg/sq mi
ground	19.8	mg/sq mi
--- Land Use:		
type	Year 1986	1995
ag.	28.1%	27.1%
barren	0.9%	0.9%
forest	26.1%	25.7%
water	5.2%	5.5%
urban	10.9%	12.3%
wetlands	28.9%	28.5%
--- % of WMA in:		
	Pinelands:	5.8%
	Highlands:	0.0%

Figure 16. Sewage Generation, Transfers and Reclaimed-Water Discharges

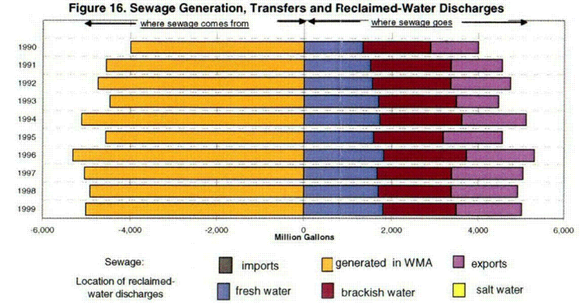


Figure 17. 1999 Sewage Import & Export Details

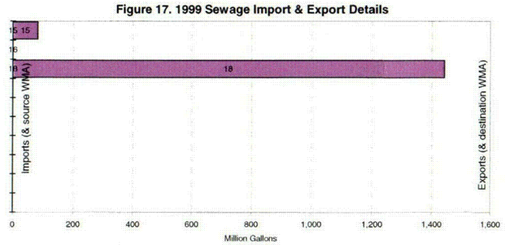
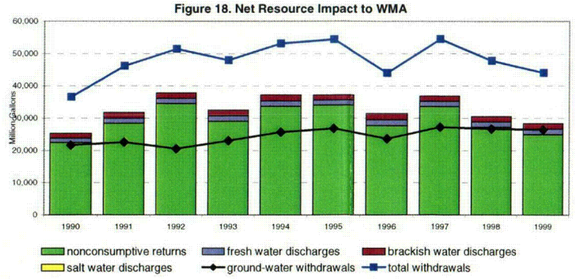


Figure 18. Net Resource Impact to WMA



See the 'Metadata' worksheet for more information.

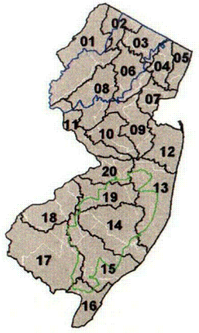


Figure 11. Watershed Management Areas & Counties in New Jersey

WMA boundaries and numbers in black.
County boundaries in white.
Pinelands outer border in green.
Highlands outer border in blue.

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FIGURE 3-13

WATER USE SUMMARY MAURICE, SALEM & COHANSEY WATERSHED MANAGEMENT AREA

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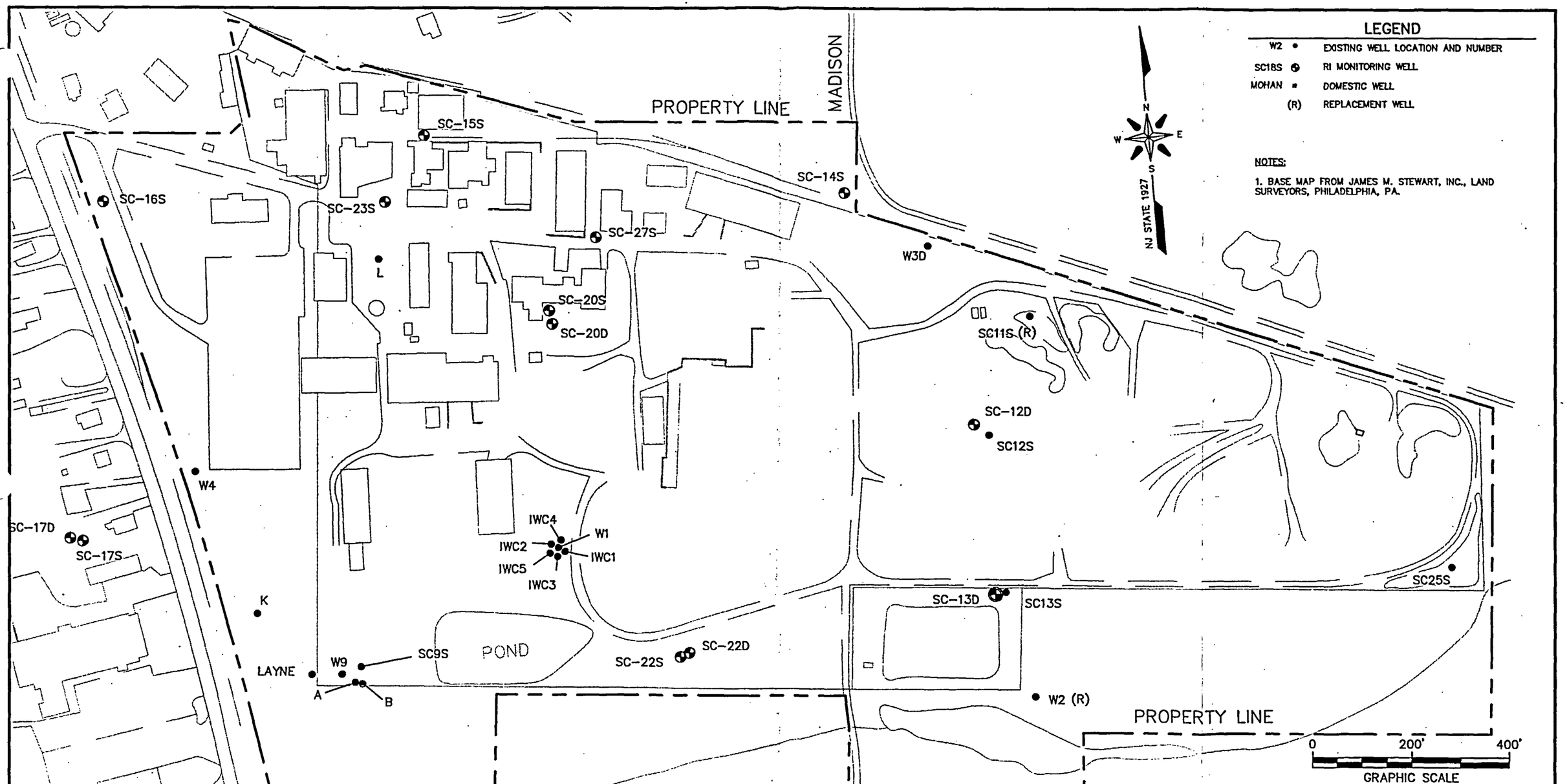

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FIGURE 3-14
MONITORING WELL LOCATION PLAN

Date: 02/05 | Project No. 26770-0100-00000

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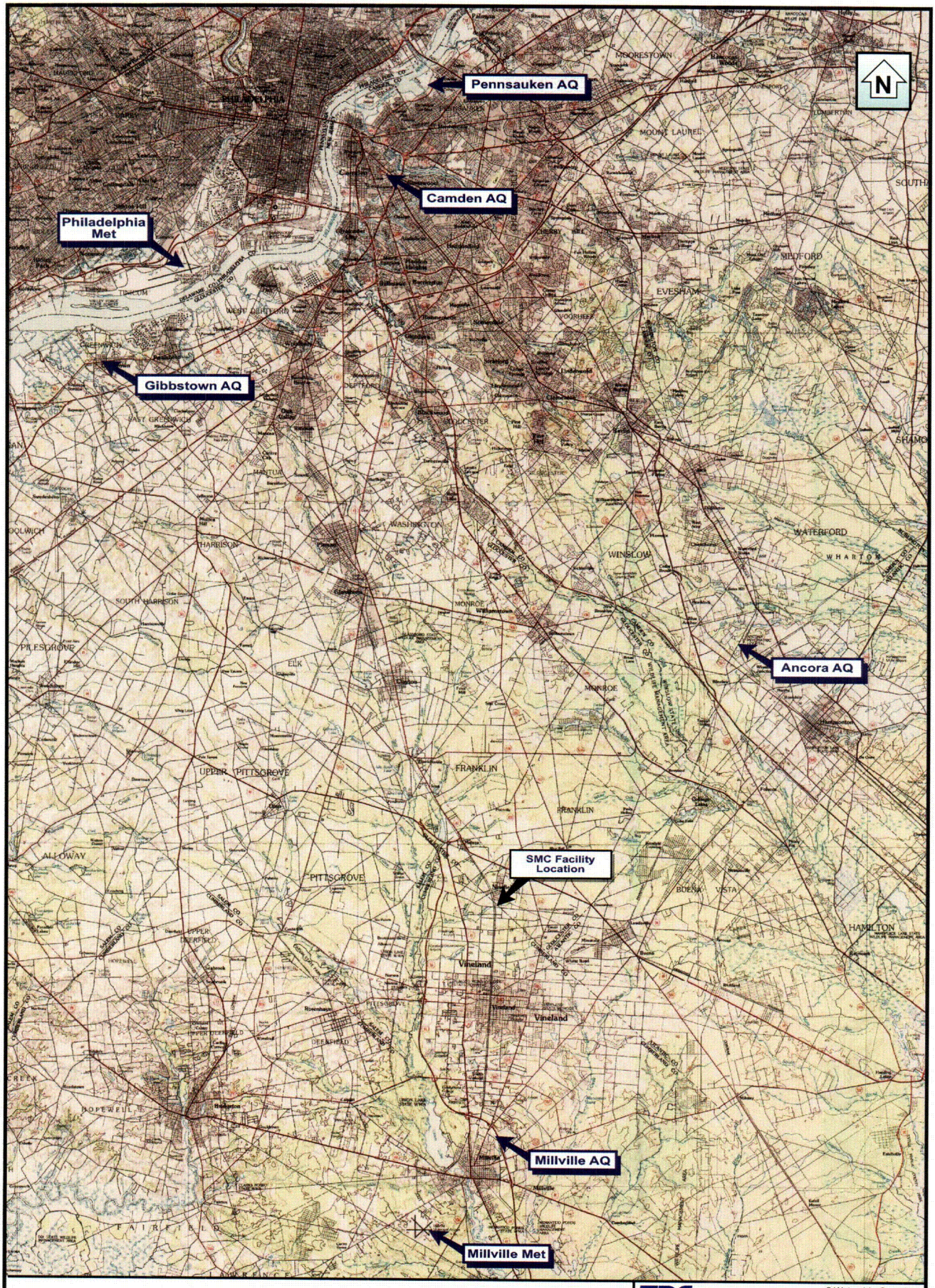
Figure 3-14.dwg Layout:Figure 3-14 October 20, 2005-9:52AM KHOLLENBECK

J:\Cad\26770\0100\Figure 3-14.dwg, Figure 3-14, 10/20/2005 9:52:13 AM


Pennsauken AQ
Camden AQ
Philadelphia Met
Gibbstown AQ
Ancora AQ
SMC Facility Location
Millville AQ
Millville Met
N
PHILADELPHIA
MOORESTOWN
MOUNT LAUREL
LUMBERTON
MIDDLE RIVER
CAMDEN
CHERRY HILL
MIDDLE RIVER
EVESHAM
MIDDLE RIVER
WOODRIDGE
WEST DEPTFORD
GREENWICH
EAST GREENWICH
DEPTFORD
GLOUCESTER
MANTUA
WASHINGTON
HARRISON
SOUTH HARRISON
PILESGROVE
ELK
MONROE
WINSLOW
WATERFORD
WHARTON
FRANKLIN
UPPER PITTSGROVE
ALLOWAY
PITTSGROVE
UPPER DEERFIELD
HOPEWELL
Vineland
Rosenhayn
DEERFIELD
BOPEWELL
FAIRFIELD
BUENA VISTA
HAMILTON
Millville
0 8000
SCALE FT
0 4
SCALE MILES
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7.5' USGS TOPOGRAPHIC MAP
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FIGURE 3-15
METEOROLOGICAL (MET) AND AIR QUALITY (AQ) MONITORING SITE LOCATIONS
Date: 04/05
Project No. 26770-0000-00000

C16

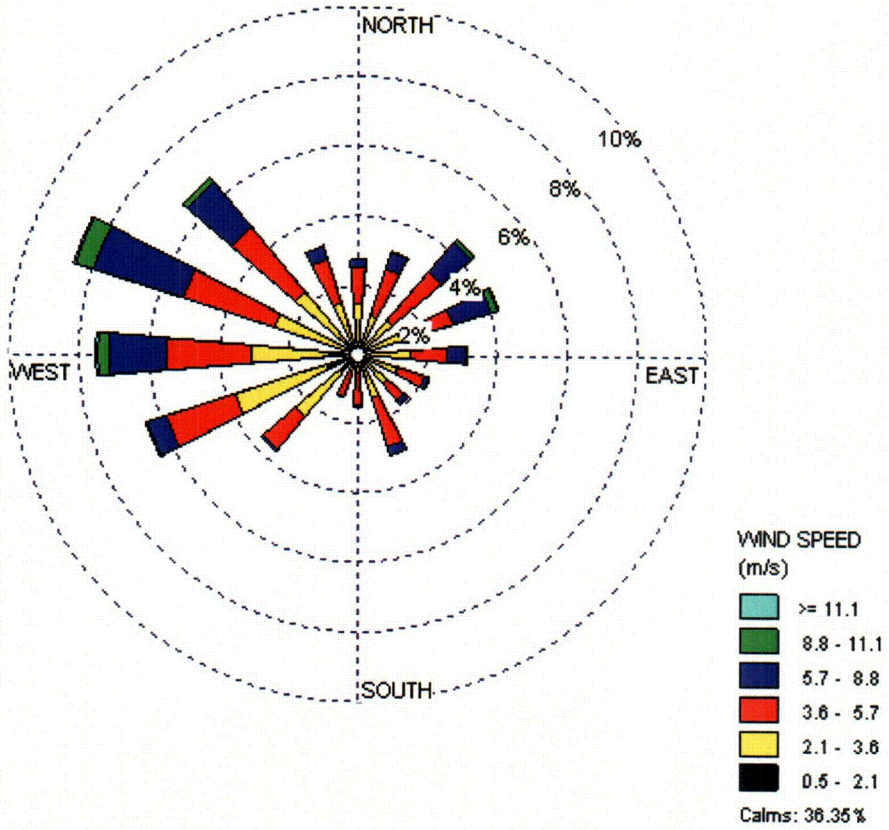

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FIGURE 3-16
ANNUAL WINDROSE FOR MILLVILLE MUNICIPAL AIRPORT

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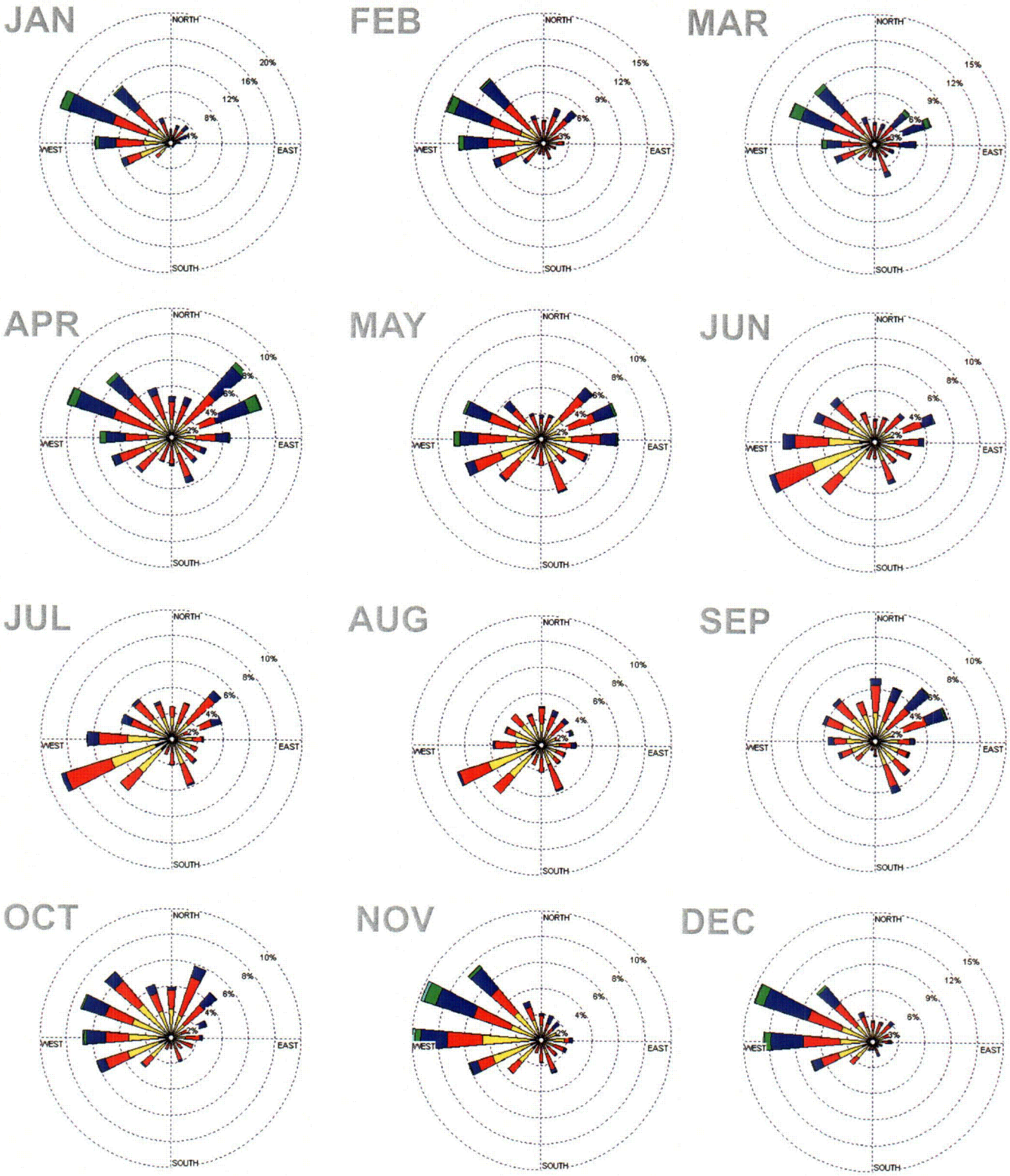
C17



WIND SPEED (m/s)

>= 11.1	5.7 - 8.8	2.1 - 3.6
8.8 - 11.1	3.6 - 5.7	0.5 - 2.1

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FIGURE 3-17
MONTHLY WINDROSES FOR MILLVILLE MUNICIPAL AIRPORT

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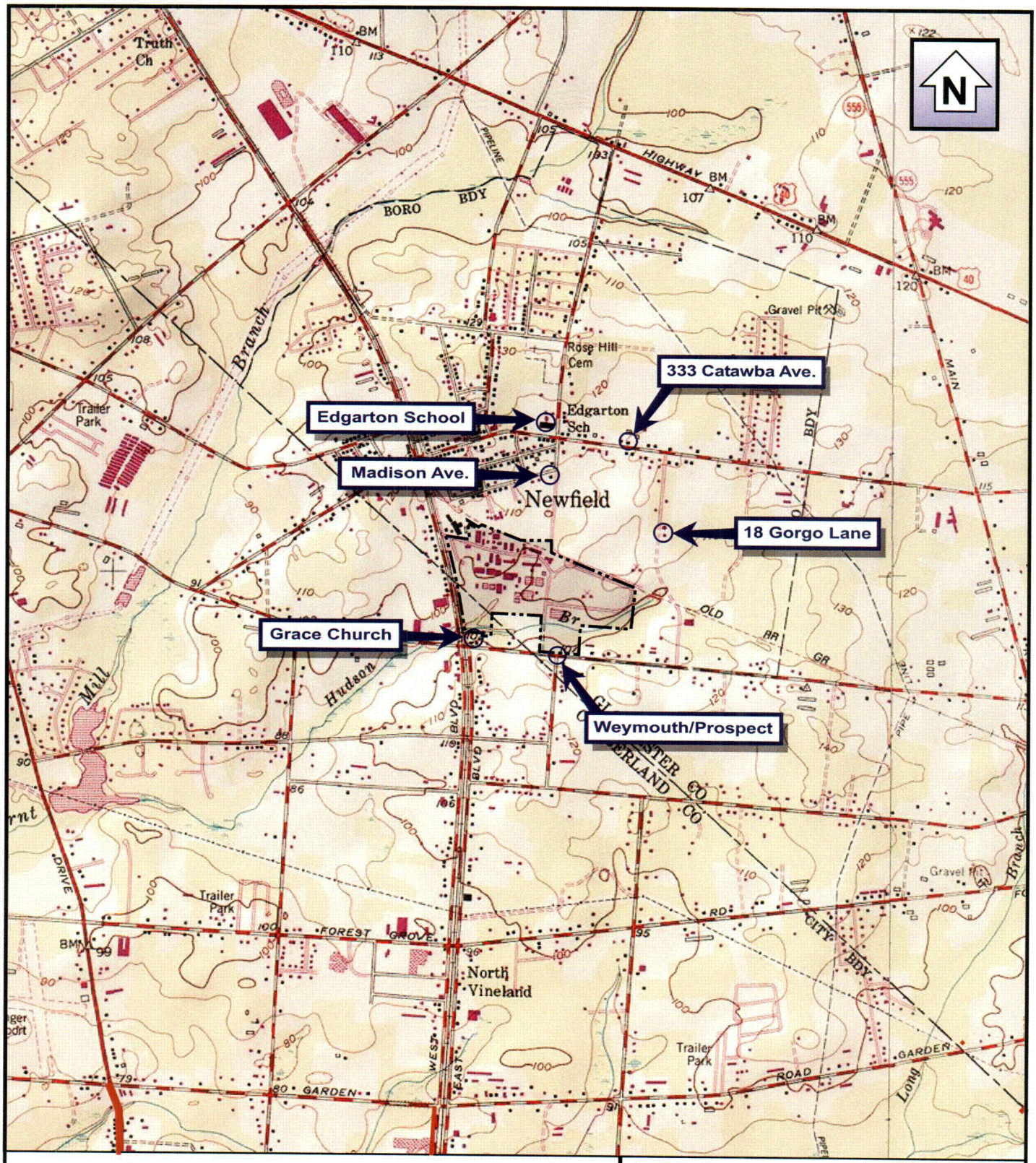
C18



0 2000
SCALE FEET

0 1
SCALE MILE
1:24000

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FIGURE 3-18
NOISE MONITORING LOCATIONS

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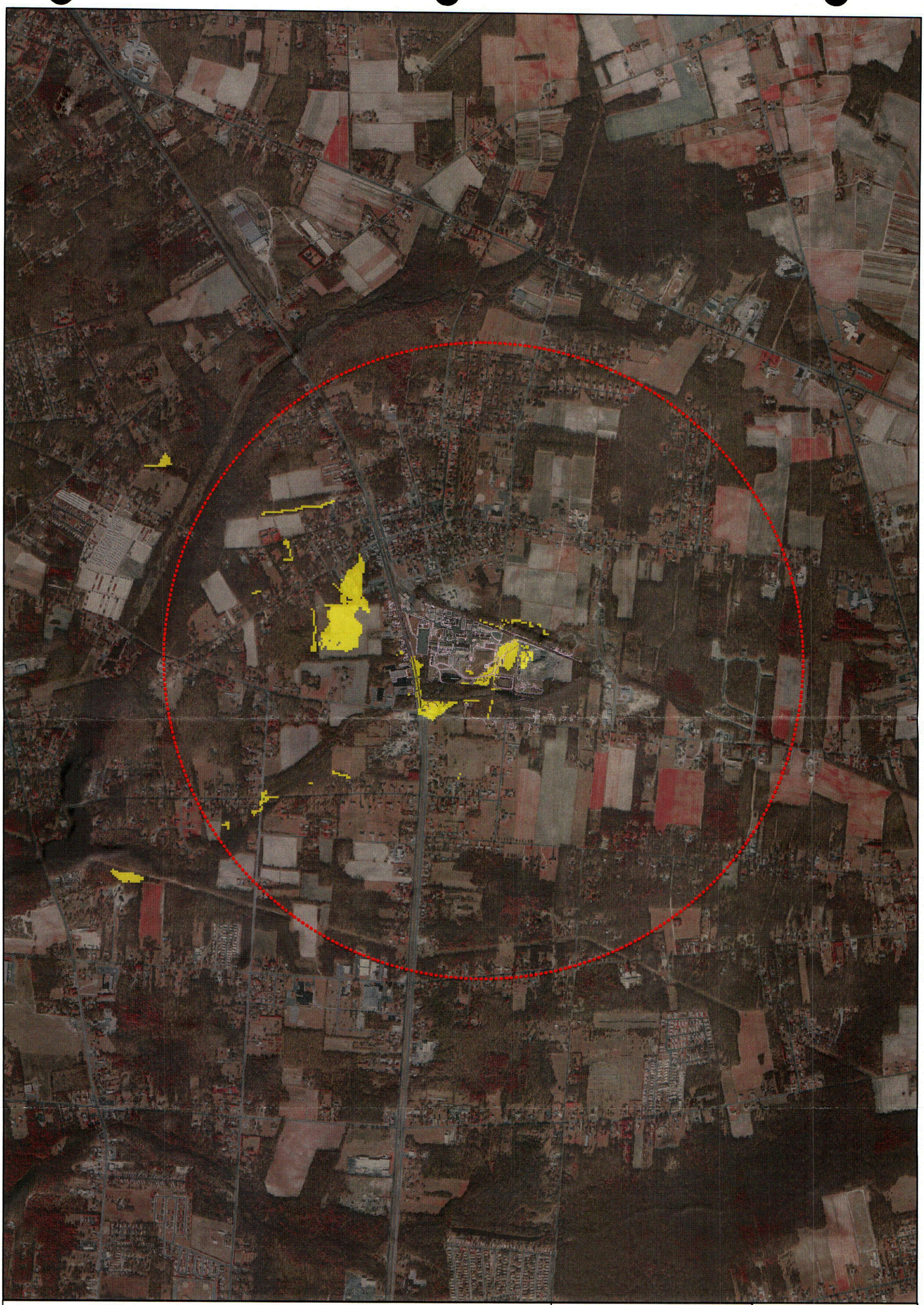
HAZ/26770 SMC/26770 SMC NML.fh9

C19



New Jersey 2002 High Resolution
February-April, 2002.
The ortho-rectification process achieved
a +/-4.0 ft. horizontal accuracy at a
95% confidence level
Publication_Date: 20030731

0 0.125 0.25 0.5 Miles

Existing viewshed of current site elevation obtained from site aerial survey .
maximum elevation of existing pile 129.1 feet

1- MILE RADIUS

Abstract:

Visibility Analysis was produced using a bare earth Digital Elevation Model (DEM) with New Jersey Land Cover Data Set added to compensate for areas with vegetation. Site specific survey information for the proposed and existing footprints was utilized to adjust for elevation differences in this vicinity.

DEM Information: (10- by 10-m data spacing, elevations in decimeters) Elevation_resolution_ is 1 decimeter (0.1 meter). Elevation accuracy is 24,000 contour data, i.e. plus/minus half the contour interval.

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PROJECTED STORAGE YARD VIEWSHED
EXISTING CONDITIONS

FIGURE 3-19

TRC
Boott Mills South
Foot of John Street
Lowell, MA 01852
(978)970-5600

PROJ.26770-0100

C20

New Jersey 2002 High Resolution
February-April, 2002.
The ortho-rectification process achieved
a +/-4.0 ft. horizontal accuracy at a
95% confidence level
Publication_Date: 20030731

0 0.125 0.25 0.5 Miles

VIEWPOINT LOCATION

1 - MILE RADIUS

Abstract:

Visibility Analysis was produced using a bare earth Digital Elevation Model (DEM) with New Jersey Land Cover Data Set added to compensate for areas with vegetation. Site specific survey information for the proposed and existing footprints was utilized to adjust for elevation differences in this vicinity.

DEM Information: (10- by 10-m data spacing, elevations in decimeters) Elevation_resolution_ is 1 decimeter (0.1 meter). Elevation accuracy is 24,000 contour data, i.e. plus/minus half the contour interval.

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VIEWPOINT LOCATIONS

FIGURE 3-20

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Foot of John Street
Lowell, MA 01852
(978)970-5600

PROJ.26770-0100

C21

Photo 1. View of northern portion of storage yard taken just west of the storage yard.

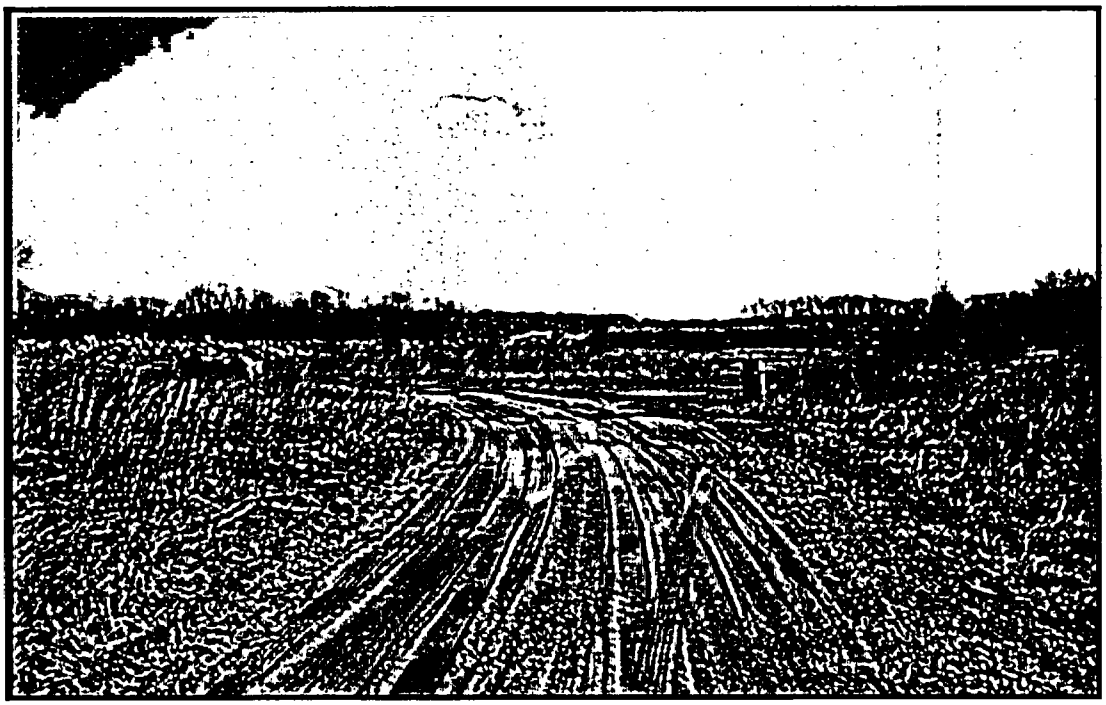

Photo 2. View of southern portion of storage yard taken from the unpaved SMC access road.

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FIGURE 3-21

POINTS OF STORAGE YARD VISIBILITY-VIEWPOINTS 1 AND 2

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Photo 3. View toward storage yard, taken near the SMC pond

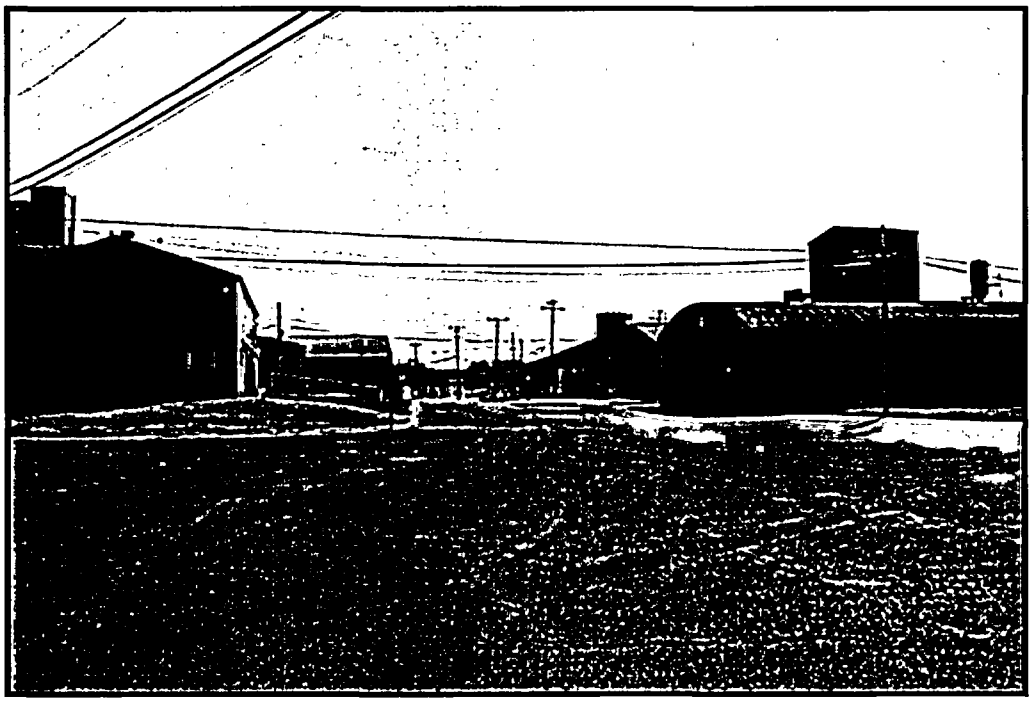

Photo 4. View toward storage yard, from near the SMC administration building.

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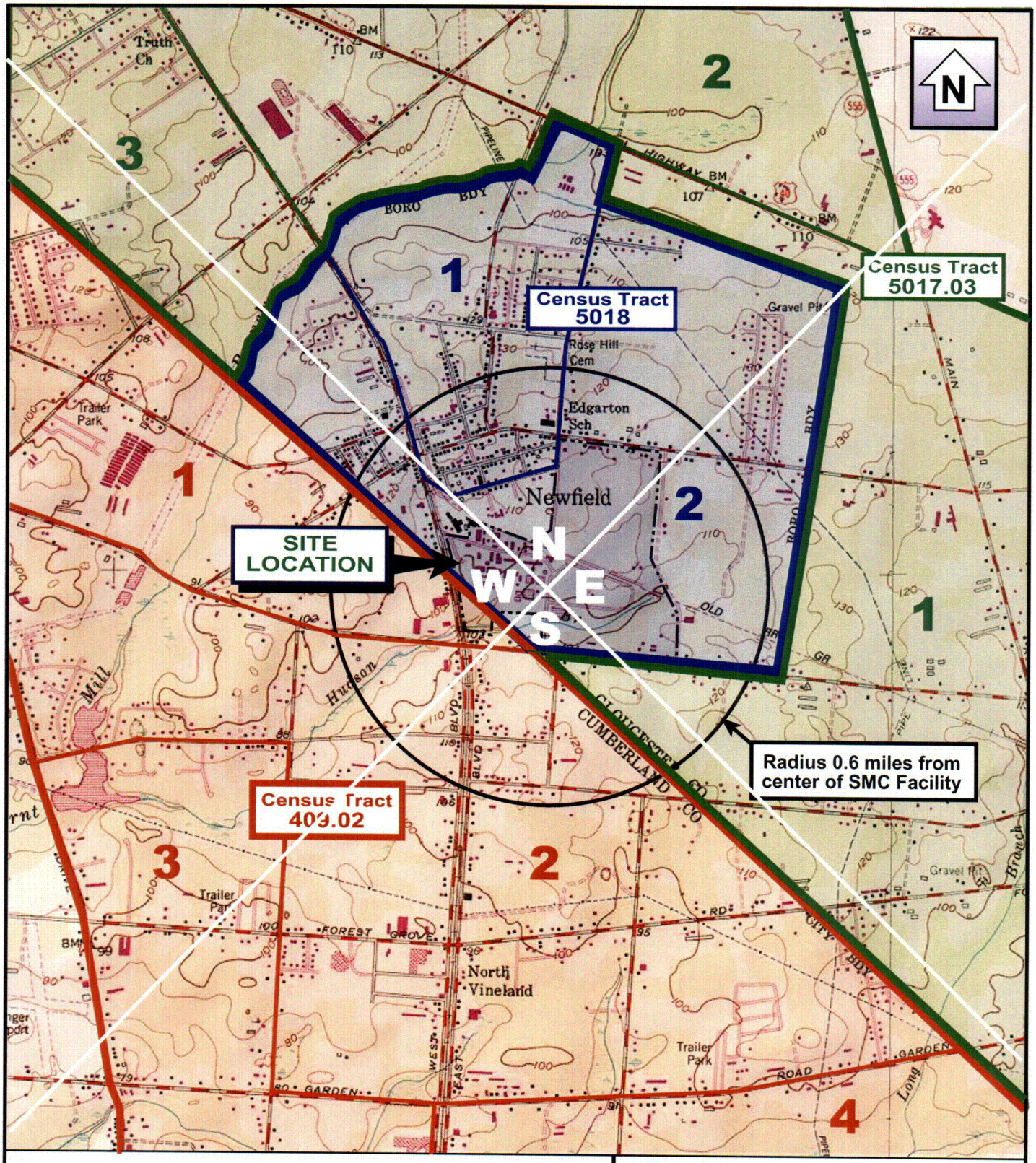
FIGURE 3-22 **POINTS OF STORAGE YARD VISIBILITY-VIEWPOINTS 4 AND 5**	
Date: 03/05	**Project No.** 26770-0100-00000

pers/jw/haz/26770 smc/photos fh10



0 2000
SCALE FEET

0 1
SCALE MILE
1:24000

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2 Block Group Number

Defines Census Tract Boundary

N Northern Quadrant

S Southern Quadrant

W Western Quadrant

E Eastern Quadrant

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FIGURE 3-23
2000 CENSUS TRACT AND BLOCK GROUP LOCATIONS WITH POPULATION DISTRIBUTION QUADRANTS

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HAZ/26770 SMC CENSUS.fh9

C22

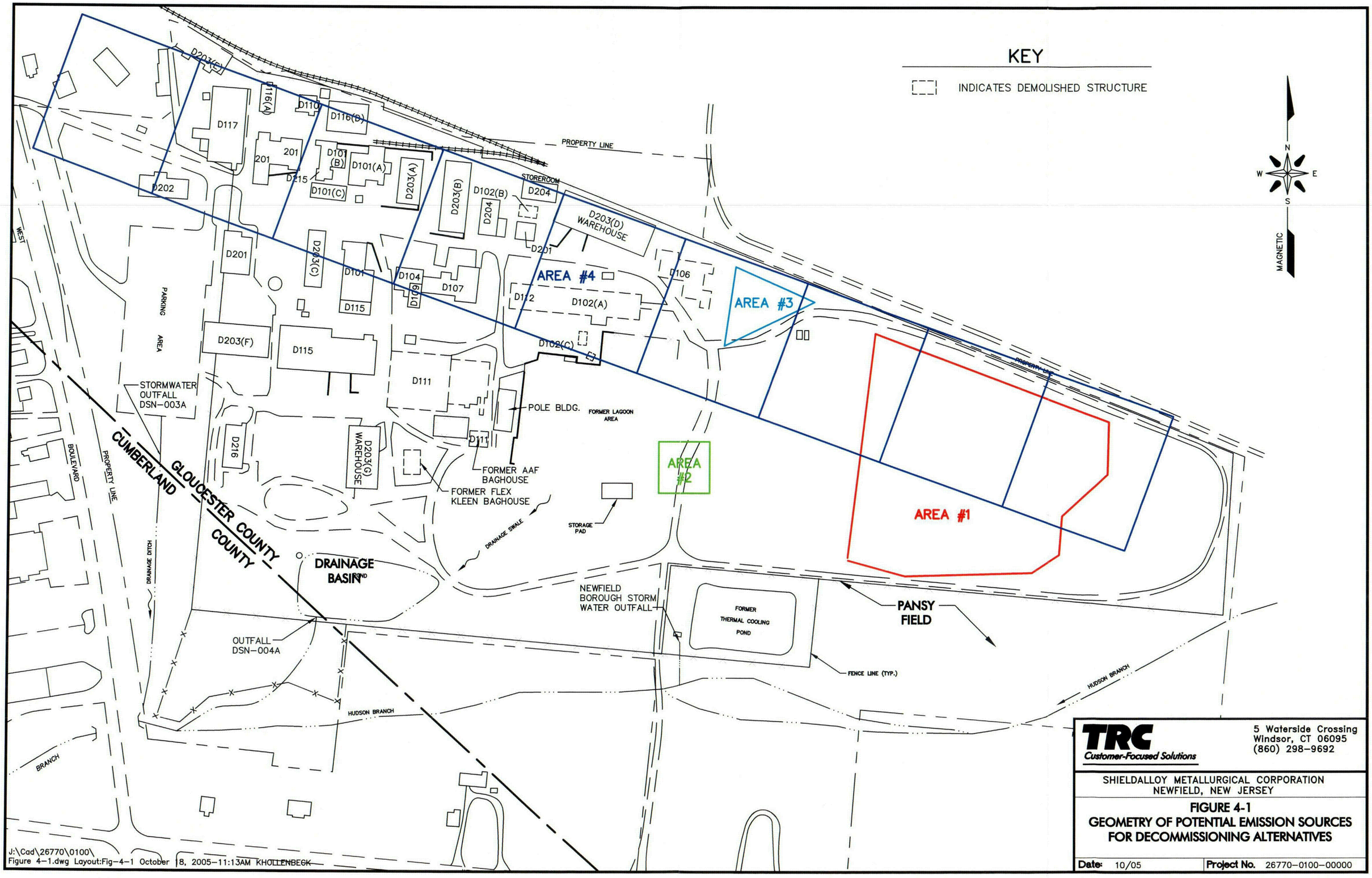

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FIGURE 4-1
GEOMETRY OF POTENTIAL EMISSION SOURCES FOR DECOMMISSIONING ALTERNATIVES

Date: 10/05 | Project No. 26770-0100-00000

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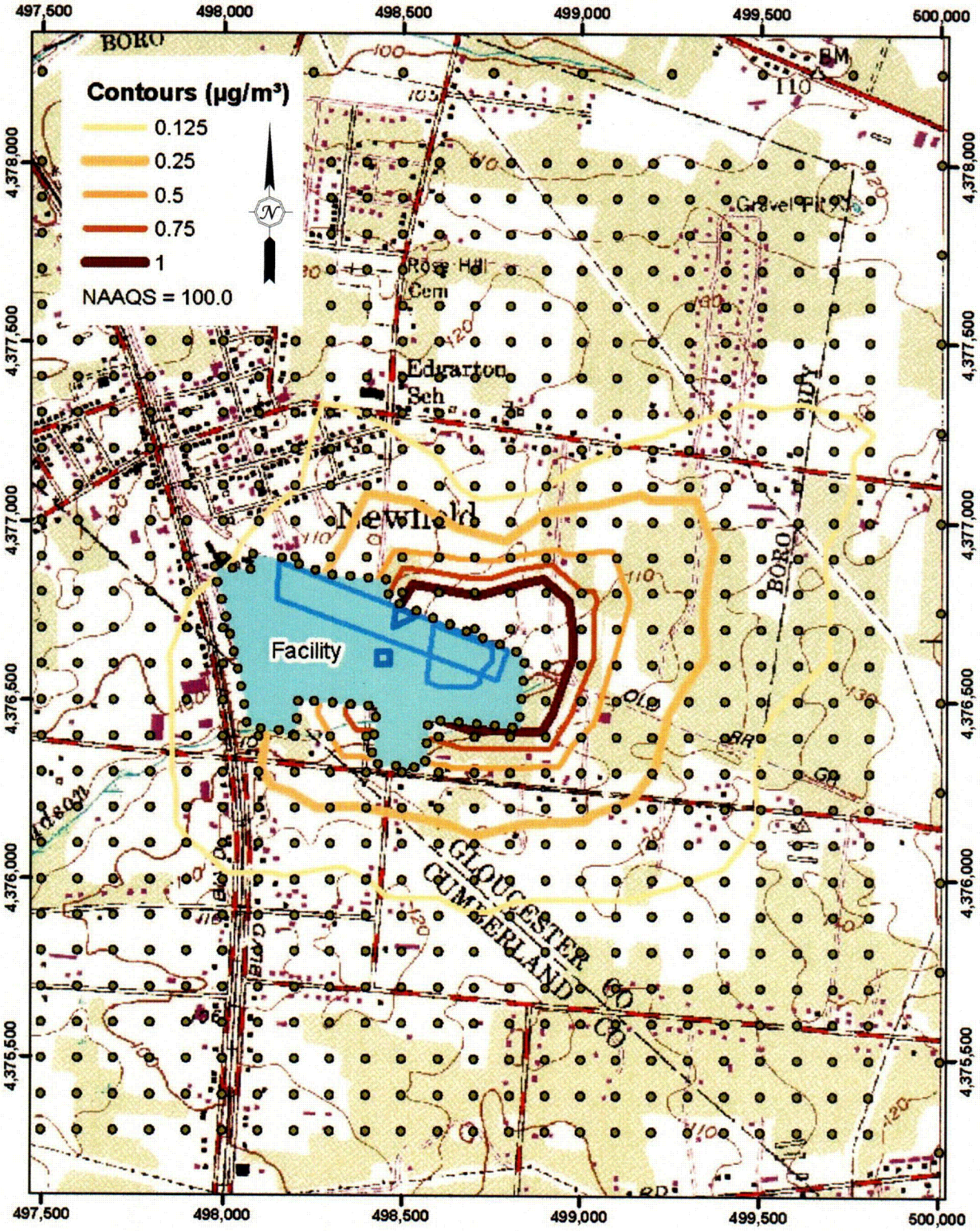
C23



0 345 690
SCALE METERS
NAD_1927_UTM_ZONE_18N

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FIGURE 4-2

ISOPLETH MAP OF PREDICTED MAXIMUM ANNUAL NO_2 CONCENTRATIONS - LTC ALTERNATIVE

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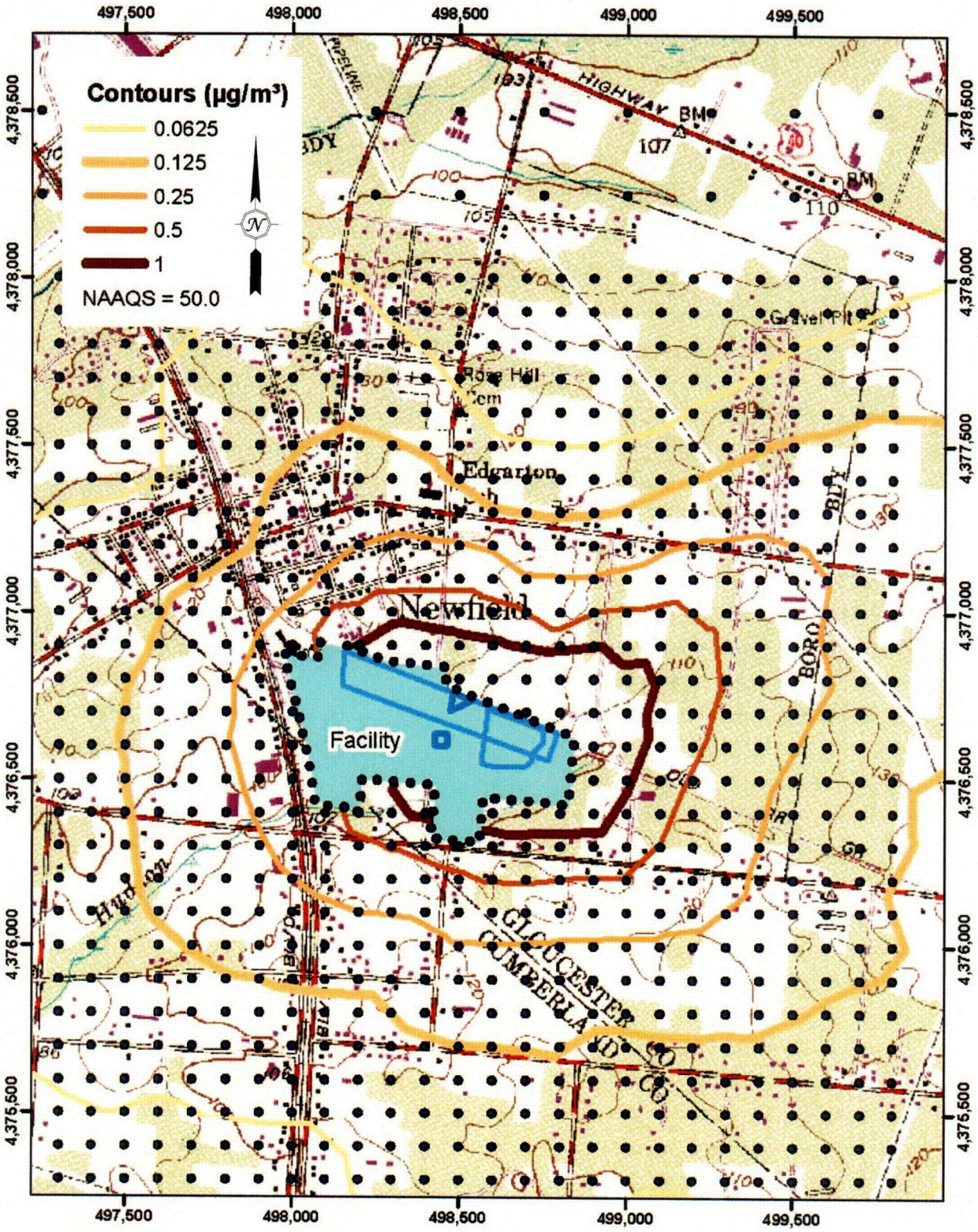
pers/jw/haz/26770 smc/ER Doc.fh10

C24



0 365 730
SCALE METERS
NAD_1927_UTM_ZONE_18N

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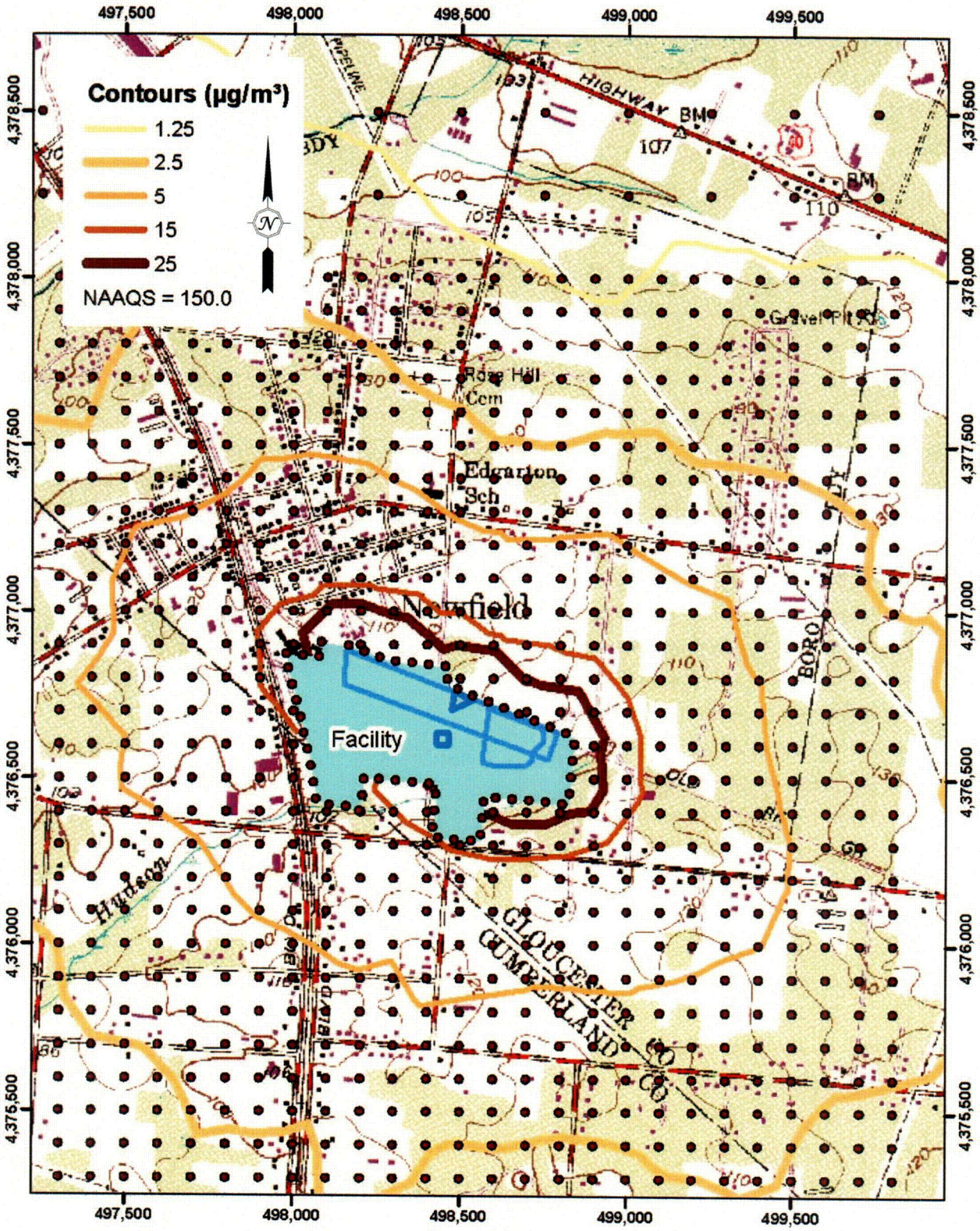
FIGURE 4-3

ISOPLETH MAP OF PREDICTED AVERAGE ANNUAL PM_{10} CONCENTRATIONS - LTC ALTERNATIVE

Date: 09/05 | **Project No.** 26770-0000-00000

pers/jw/haz/26770 smc/ER Doc.fh10

C25



0 362.5 725
SCALE METERS
NAD_1927_UTM_ZONE_18N

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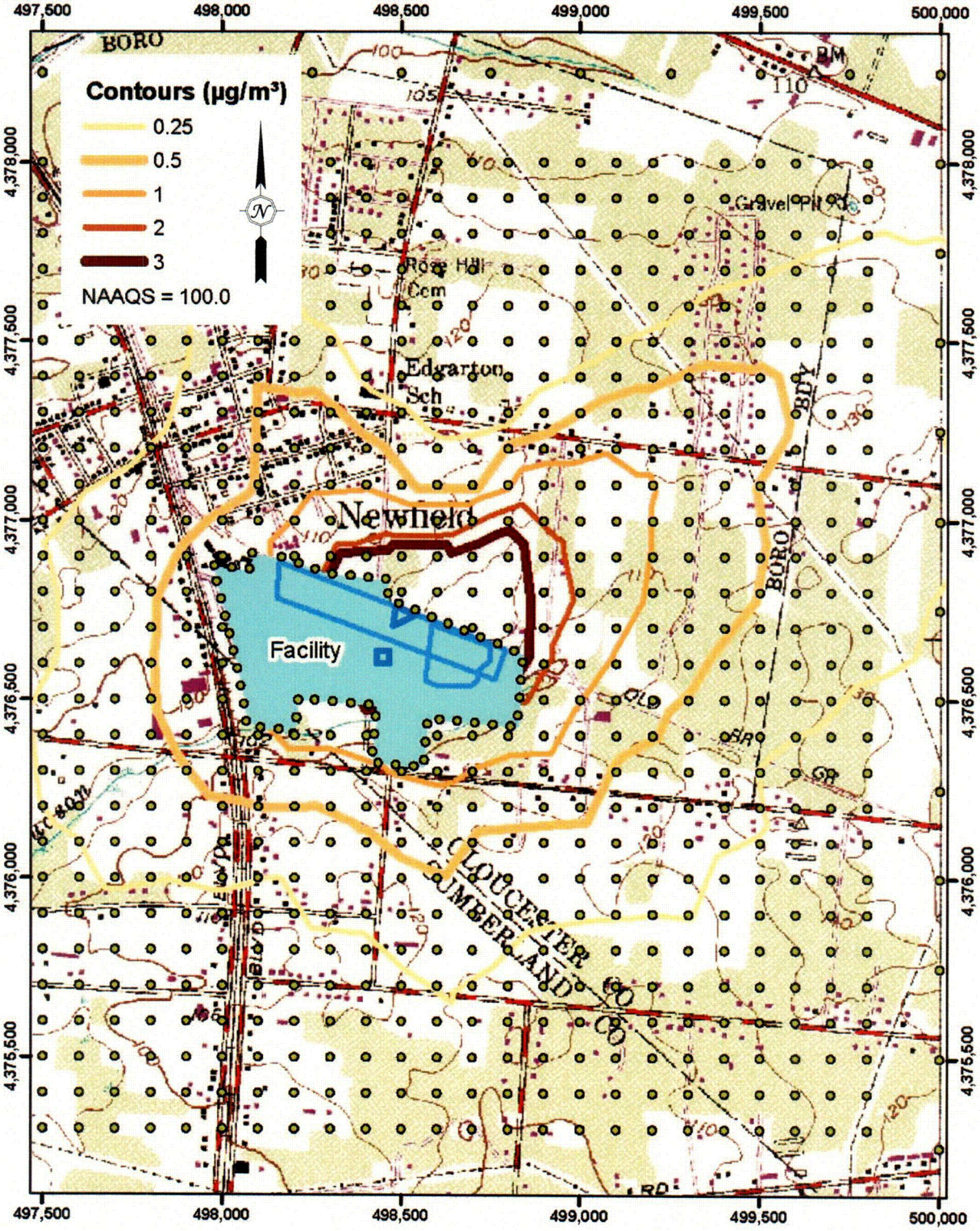
FIGURE 4-4

ISOPLETH MAP OF PREDICTED 6TH-HIGH 24-HOUR AVERAGE PM_{10} CONCENTRATIONS - LTC ALTERNATIVE

Date: 09/05 | **Project No.** 26770-0000-00000

pers/jw/haz/26770 smc/ER Doc.fh10

C26



0 350 700
SCALE METERS
NAD_1927_UTM_ZONE_18N

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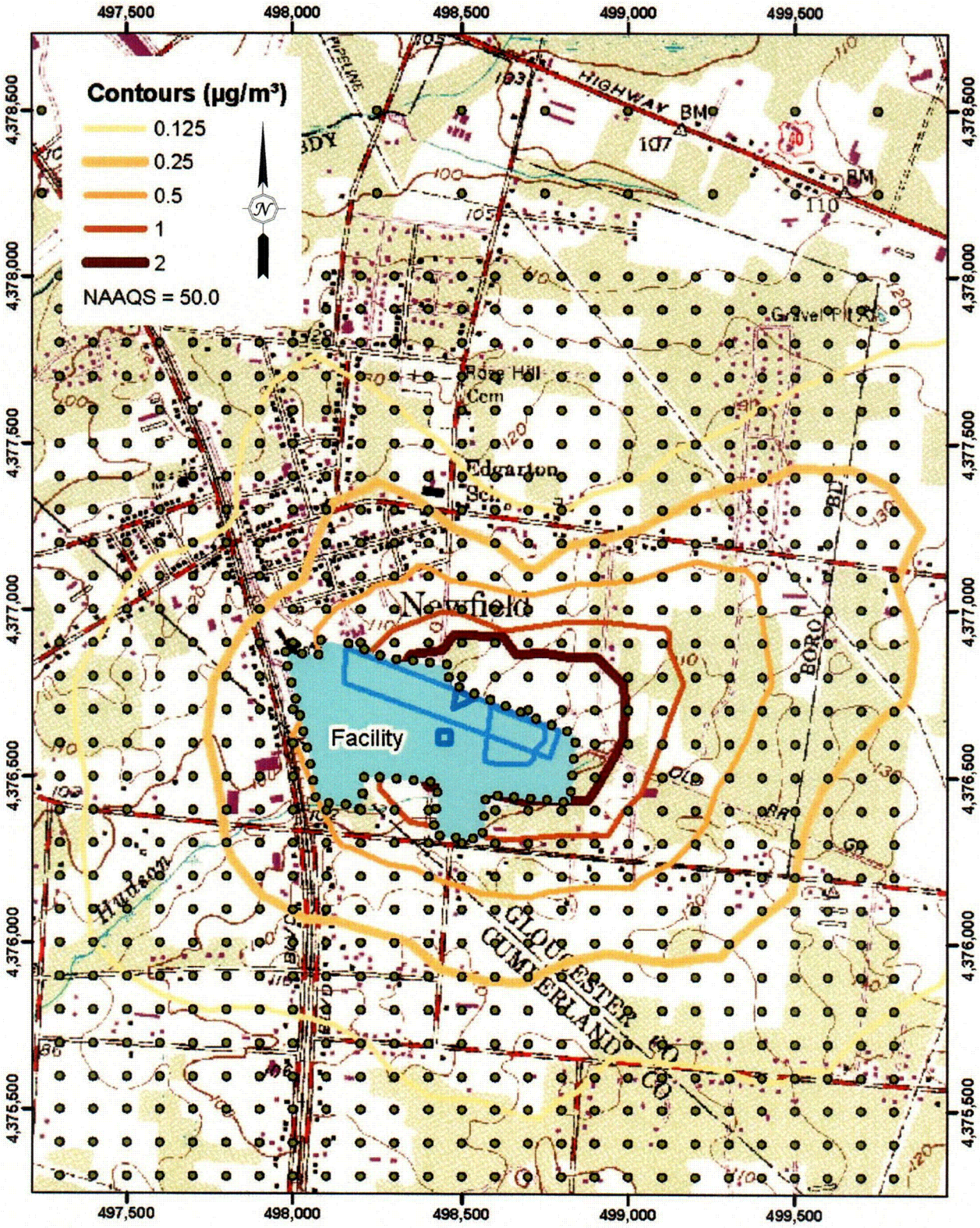
FIGURE 4-5

ISOPLETH MAP OF PREDICTED MAXIMUM ANNUAL NO_2 CONCENTRATIONS - LT ALTERNATIVE

Date: 09/05 | **Project No.** 26770-0000-00000

pers/jw/haz/26770 smc/ER Doc.fh10

C27



0 362.5 725
SCALE METERS
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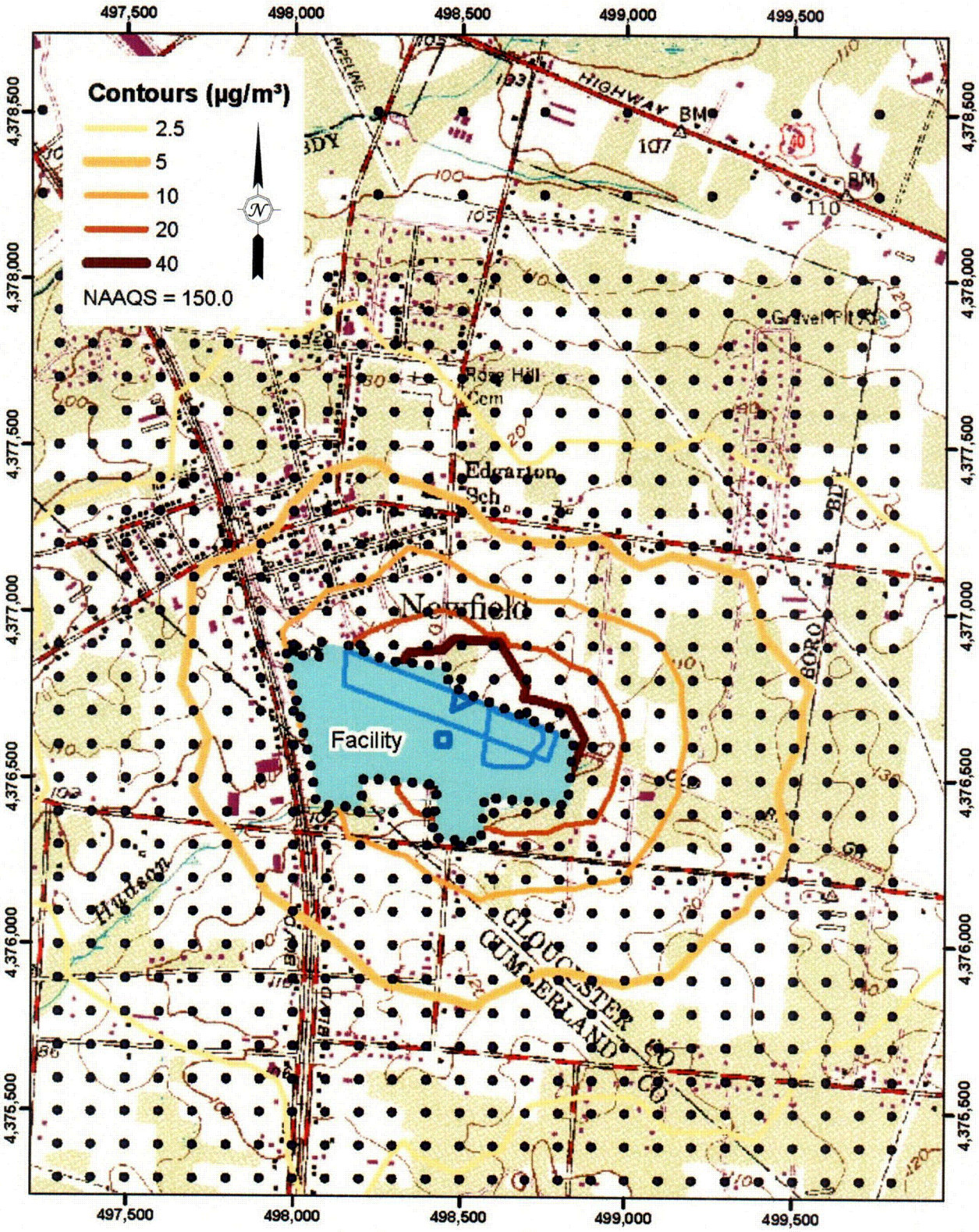
FIGURE 4-6

ISOPLETH MAP OF PREDICTED AVERAGE ANNUAL PM_{10} CONCENTRATIONS - LT ALTERNATIVE

Date: 09/05 | **Project No.** 26770-0000-00000

pers/jw/haz/26770 smc/ER Doc.fh10

C28



0 360 720
SCALE METERS
NAD_1927_UTM_ZONE_18N

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FIGURE 4-7

ISOPLETH MAP OF PREDICTED 6TH-HIGH 24-HOUR AVERAGE PM_{10} CONCENTRATIONS - LT ALTERNATIVE

Date: 09/05 **Project No.** 26770-0000-00000

pers/jw/haz/26770 smc/ER Doc.fh10

C29