FIGURES

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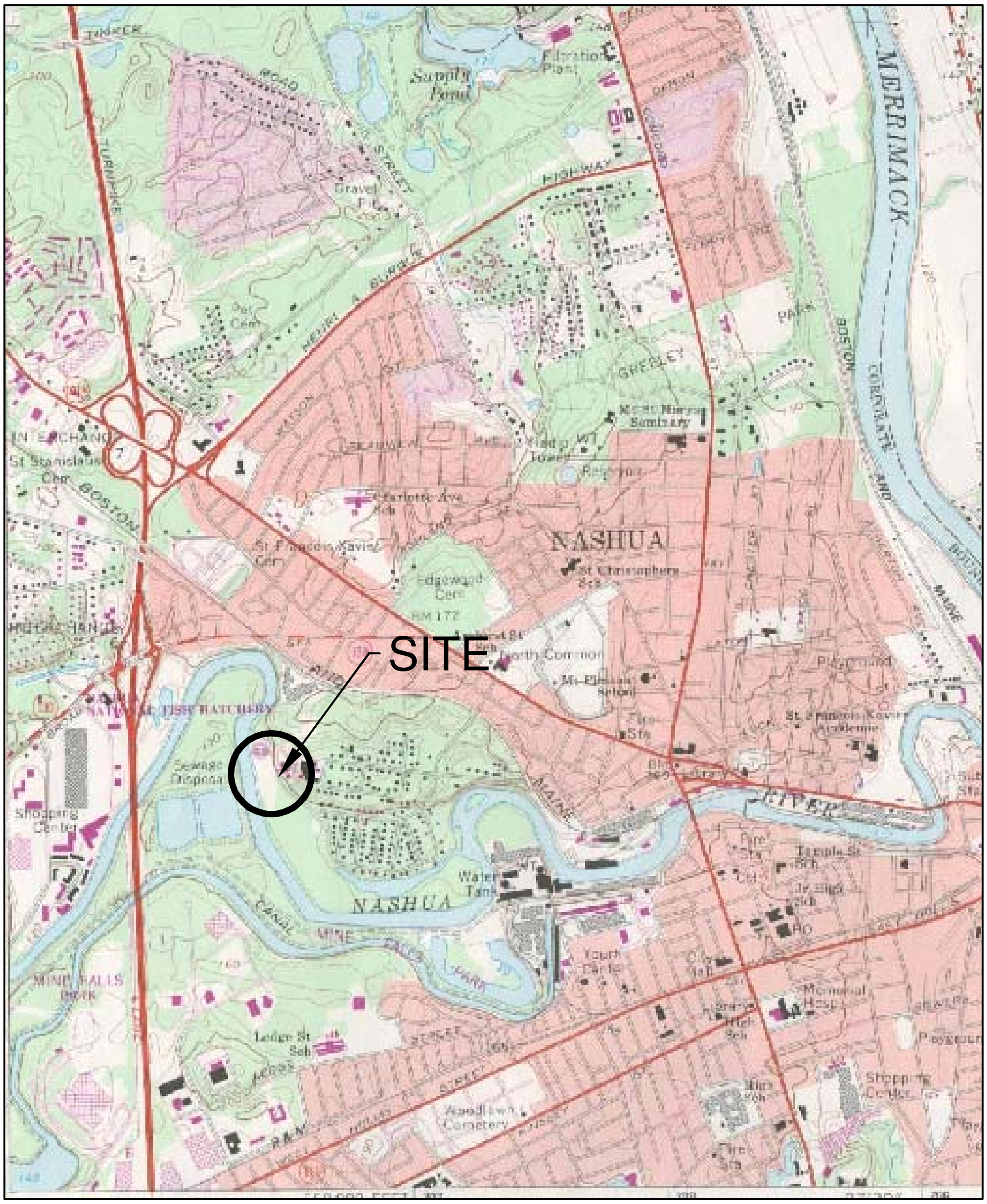
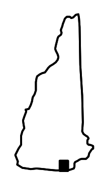


0 1/2 1 MILE

1000 0 2000 4000 6000 8000 10,000 FEET



QUADRANGLE LOCATION

NOTE: Base Map from U.S.G.S. Nashua North Quadrangle, New Hampshire, 7.5 Minute Series, 1968, Photorevised 1985

SITE LOCATION				FIGURE 1–1
MOHAWK TANNERY SITE				TETRA TECH NUS, INC.
NASHUA, NEW HAMPSHIRE				
DRAWN BY:	R.G. DEWSNAP	REV.:	0	55 Jonspin Road Wilmington, MA 01887
CHECKED BY:	S. VETERE	DATE:	APRIL, 2002	(978)658–7899
SCALE:	AS SHOWN	ACAD NAME:	\DWG\4111\1010\FIGURE_1–1.DWG	

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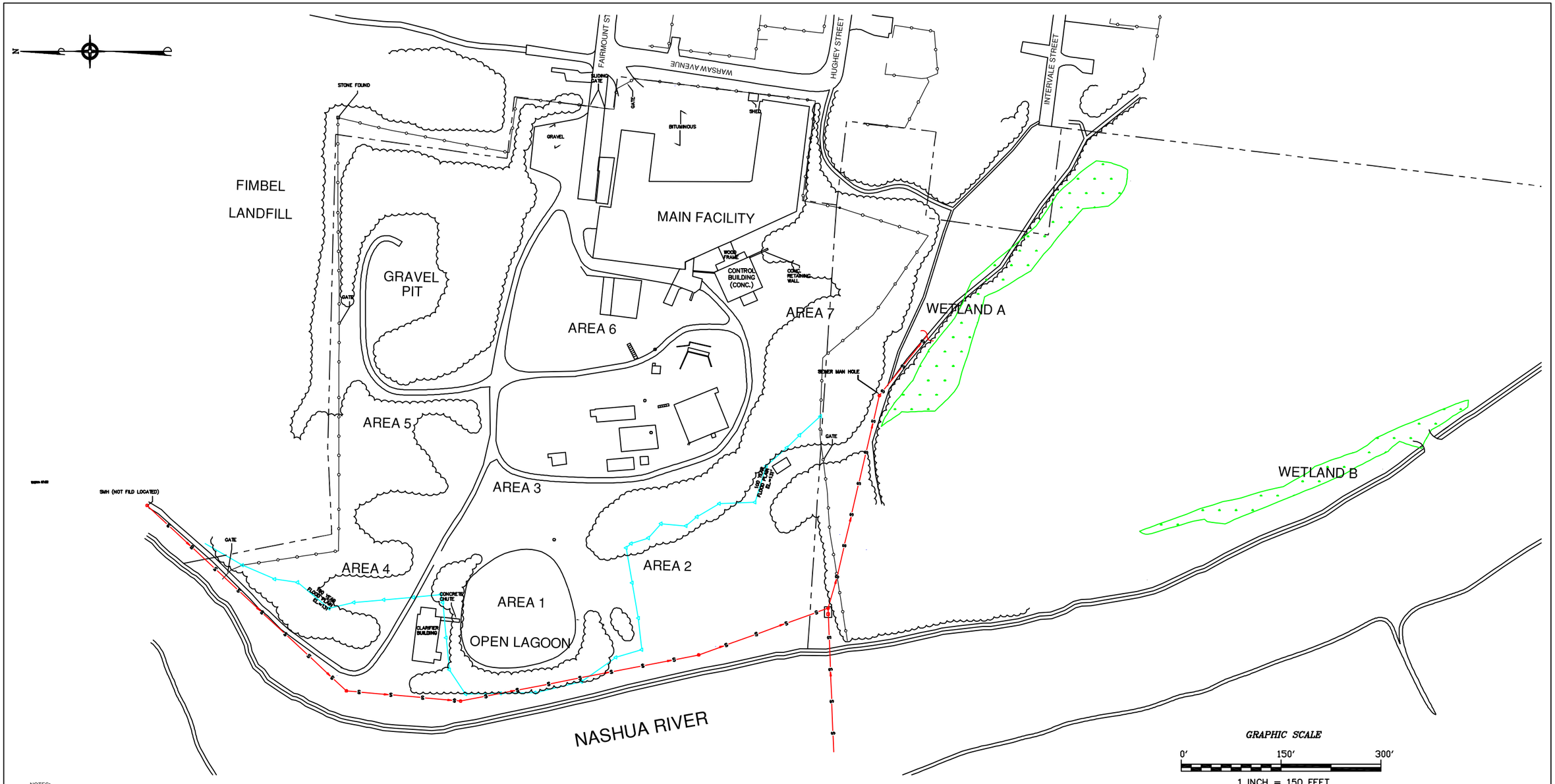

NOTES:

1. BASE PLAN ELEVATION CONTOURS COMPILED FROM "TOPOGRAPHIC MAP OF CITY OF NASHUA, HILLSBOROUGH COUNTY NEW HAMPSHIRE", DIGITAL PHOTOGRAMMETRY BY CHAS. H. SELLS, INC., CHARLTON, MA, AERIAL PHOTOGRAPHY APRIL 13, 1998. SITE FEATURES AND SELECTED TEST PIT AND BORING LOCATIONS COMPILED FROM A PLAN BY OEST ASSOCIATES, INC., LABELED: "MOHAWK TANNERY, FAIRMONT STREET – NASHUA, NEW HAMPSHIRE, EXISTING CONDITIONS PLAN", NOVEMBER 20, 2001. SELECTED TEST PIT AND BORING LOCATIONS BASED ON GLOBAL POSITIONING SYSTEM (GPS) SURVEY BY TTNUS, SEPTEMBER, 2001.

2. COORDINATE / BEARINGS ARE BASED ON NEW HAMPSHIRE GRID COORDINATE SYSTEM (NAD 83). GRID NORTH, ELEVATIONS SHOWN ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88), MEAN SEA LEVEL.

3. BASE FLOOD ELEVATION IS BASED ON FLOOD INSURANCE RATE MAP PANEL NUMBER 5 OF 10, COMMUNITY PANEL NUMBER 330097–0005B WITH AN EFFECTIVE DATE OF JUNE 15, 1979. BASE FLOOD ELEVATION DETERMINED TO BE 131.0 FEET (NAVD 88).

4. UTILITIES SHOWN ON PLAN ARE LOCATED APPROXIMATELY. LOCATIONS SHOWN ARE BASED ON PHYSICAL LOCATIONS AND / OR MAPS FROM THE CITY OF NASHUA.

5. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.

6. PLAN NOT TO BE USED FOR DESIGN.

Legend

- S — SEWER LINE & MANHOLE
- 100 YEAR FLOODPLAIN BOUNDARY
- FENCE
- APPROXIMATE PROPERTY LINE
- WETLAND BOUNDARY

SITE PLAN			FIGURE 1–2
MOHAWK TANNERY SITE			
NASHUA, NEW HAMPSHIRE			TETRA TECH NUS, INC.
DRAWN BY:	D.W. MACDOUGALL	REV.: 0	55 Jonspin Road Wilmington, MA 01887 (978)658–7899
CHECKED BY:	D. BAXTER	DATE: JULY 15, 2002	
SCALE:	1" = 150'	FILE NO.: \DWG\4111\1020\FIGURE_1–2.DWG	

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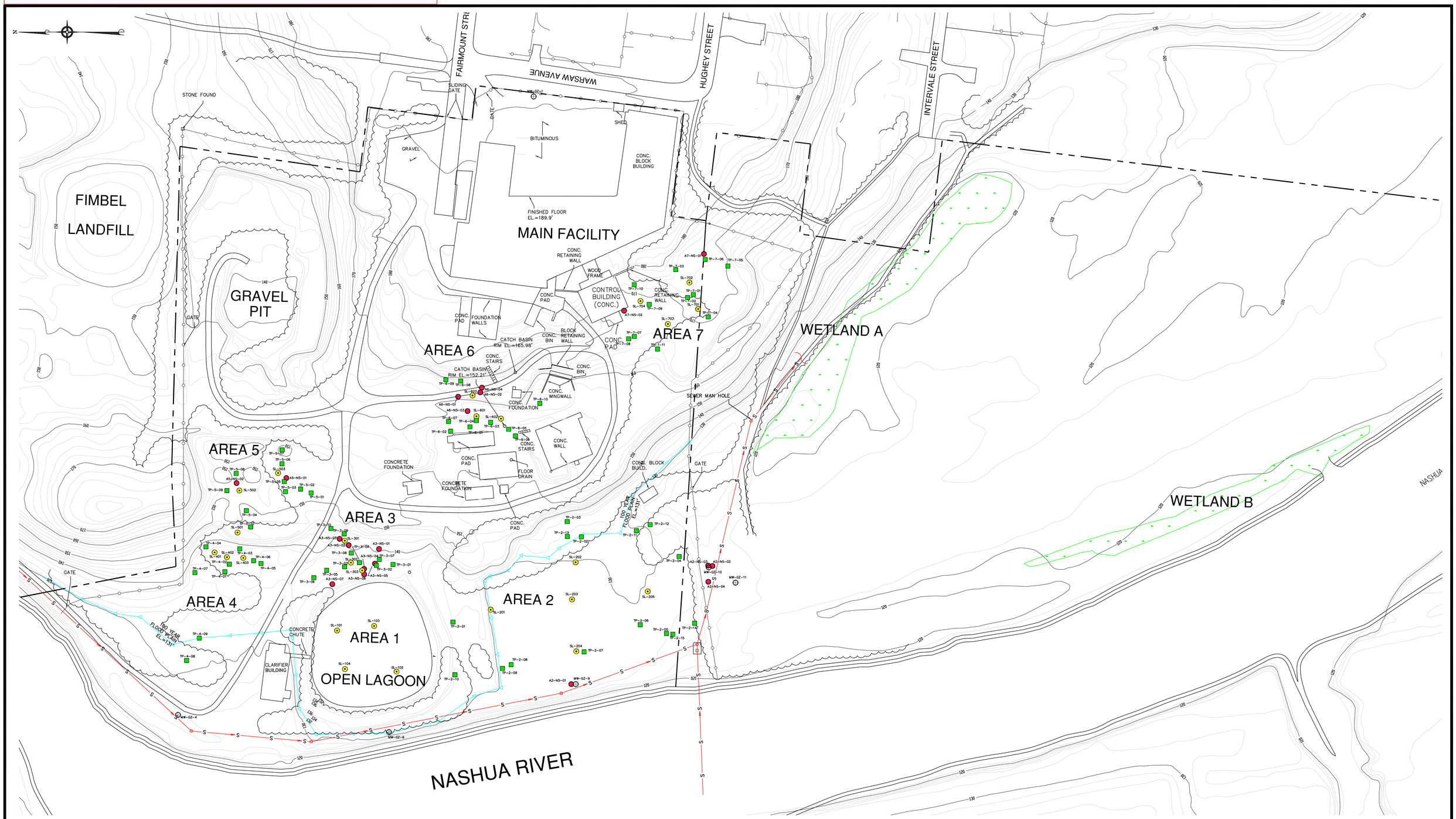

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2. COORDINATE / BEARINGS ARE BASED ON NEW HAMPSHIRE GRID COORDINATE SYSTEM (NAD 83). GRID NORTH, ELEVATIONS SHOWN ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88), MEAN SEA LEVEL.

3. BASE FLOOD ELEVATION IS BASED ON FLOOD INSURANCE RATE MAP PANEL NUMBER 5 OF 10, COMMUNITY PANEL NUMBER 330097–0005B WITH AN EFFECTIVE DATE OF JUNE 15, 1979. BASE FLOOD ELEVATION DETERMINED TO BE 131.0 FEET (NAVD 88).

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5. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.

6. PLAN NOT TO BE USED FOR DESIGN.

Legend

B3wet

- S — SEWER LINE & MANHOLE
- 100 YEAR FLOODPLAIN BOUNDARY
- FENCE
- WETLAND BOUNDARY
- APPROXIMATE PROPERTY LINE
- MW-GZ-1 — MONITORING WELL LOCATION WITH IDENTIFIER
- A3-NS-07 — DPT OBSERVATION BORING LOCATION (NO SAMPLE COLLECTED) IDENTIFIER INDICATES AREA NUMBER, NO SAMPLE, BORING NUMBER
- SL-201 — SLUDGE / SOIL SAMPLING LOCATION (DPT BORING OR MANUAL BORING) IDENTIFIER INDICATES SAMPLE LOCATION – DISPOSAL AREA, BORING NUMBER
- TP-2-10 — TEST PIT LOCATION, IDENTIFIER INDICATES TEST PIT – AREA NUMBER – PIT NUMBER

GRAPHIC SCALE

60′ 0′ 60′ 120′

1 INCH = 60 FEET

DRAWN BY: D.W. MACDOUGALL	TITLE: SITE PLAN AND SAMPLING LOCATIONS MOHAWK TANNERY SITE NASHUA, NEW HAMPSHIRE		TETRA TECH NUS, INC.
PREPARED BY: K. O'NEILL			55 JONSPIN ROAD
CHECKED BY: D. BAXTER			WILMINGTON, MASSACHUSETTS 01887
	SOURCE: TOPOGRAPHIC CITY PLANS PROVIDED BY CITY OF NASHUA, HILLSBOROUGH COUNTY, NEW HAMPSHIRE		(978)658–7899
	SCALE: 1" = 60′	DATE: JULY 15, 2002	PROJ. NO: 4111–1020
PROJECT MANAGER: D. BAXTER			
PROGRAM MANAGER: G. GARDNER	FIGURE NO. 1–3	ACFILE NAME: \DWG\4111\1020\FIGURE_1–3.DWG	REV: 0

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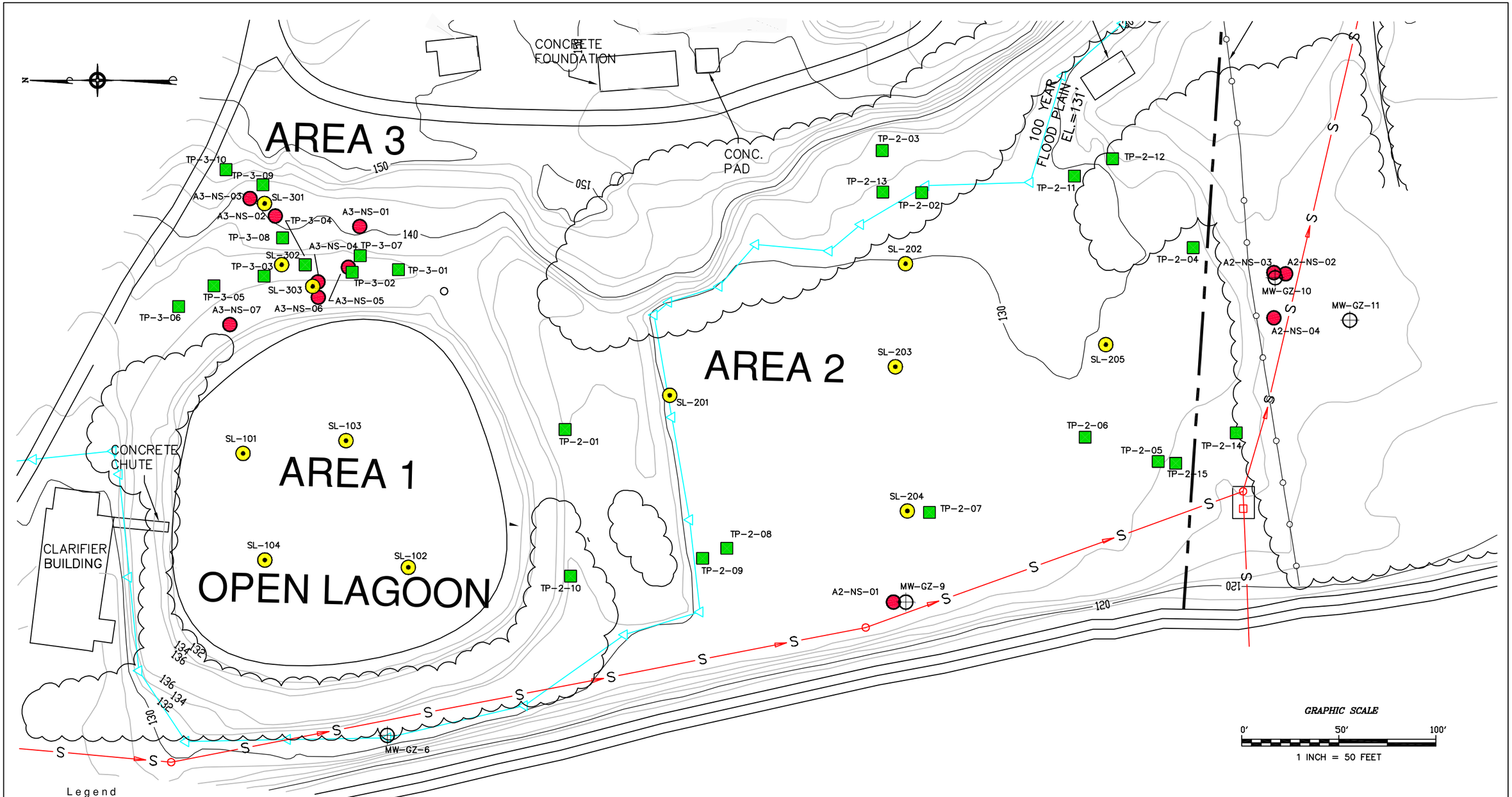

Legend

- S — SEWER LINE & MANHOLE
- 100 YEAR FLOODPLAIN BOUNDARY
- FENCE
- WETLAND BOUNDARY
- APPROXIMATE PROPERTY LINE
- MW-GZ-1 — MONITORING WELL LOCATION WITH IDENTIFIER
- A3-NS-07 — DPT OBSERVATION BORING LOCATION (NO SAMPLE COLLECTED) IDENTIFIER INDICATES AREA NUMBER, NO SAMPLE, BORING NUMBER
- SL-201 — SLUDGE / SOIL SAMPLING LOCATION (DPT BORING OR MANUAL BORING) IDENTIFIER INDICATES SAMPLE LOCATION – DISPOSAL AREA, BORING NUMBER
- TP-2-10 — TEST PIT LOCATION, IDENTIFIER INDICATES TEST PIT – AREA NUMBER – PIT NUMBER

SOIL BORINGS & TEST PIT LOCATIONS – AREAS 1, 2, & 3			FIGURE 1–4
MOHAWK TANNERY SITE			TETRA TECH NUS, INC.
NASHUA, NEW HAMPSHIRE			55 Jonspin Road Wilmington, MA 01887 (978)658–7899
DRAWN BY:	D.W. MACDOUGALL	REV.:	0
CHECKED BY:	D. BAXTER	DATE:	JULY 15, 2002
SCALE:	1" = 50'	FILE NO.:	\DWG\4111\1020\FIGURE_1–4.DWG

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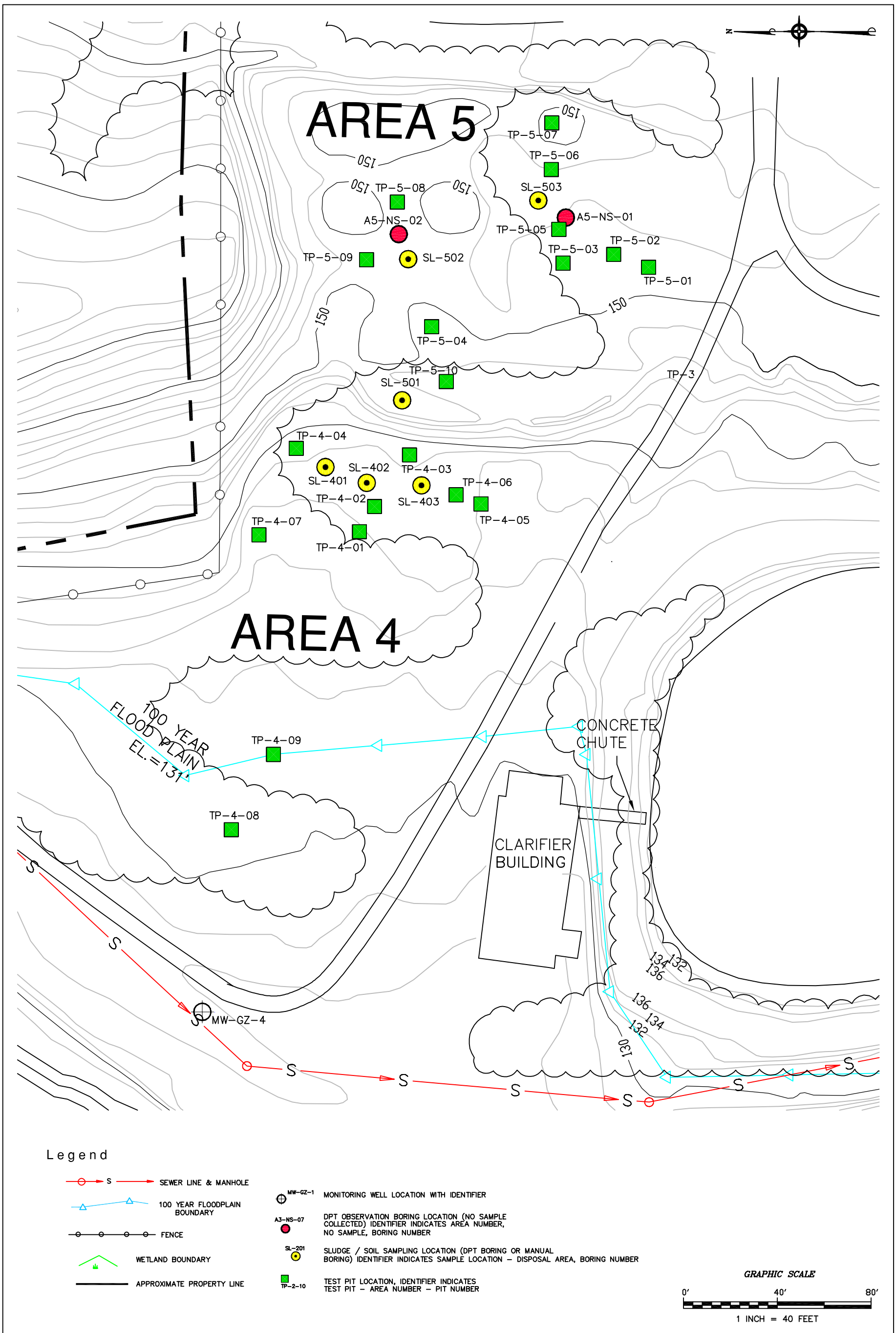

SOIL BORING & TEST PIT LOCATIONS – AREAS 4 & 5	FIGURE 1–5
MOHAWK TANNERY SITE	TETRA TECH NUS, INC.
NASUA, NEW HAMPSHIRE	55 Jonspin Road Wilmington, MA 01887 (978)658–7899
DRAWN BY: D.W. MACDOUGALL / REV.: 0	
CHECKED BY: D. BAXTER / DATE: JULY 15, 2002	
SCALE: 1" = 40' / FILE NO.: \DWG\4111\1020\FIGURE_1–5.DWG	

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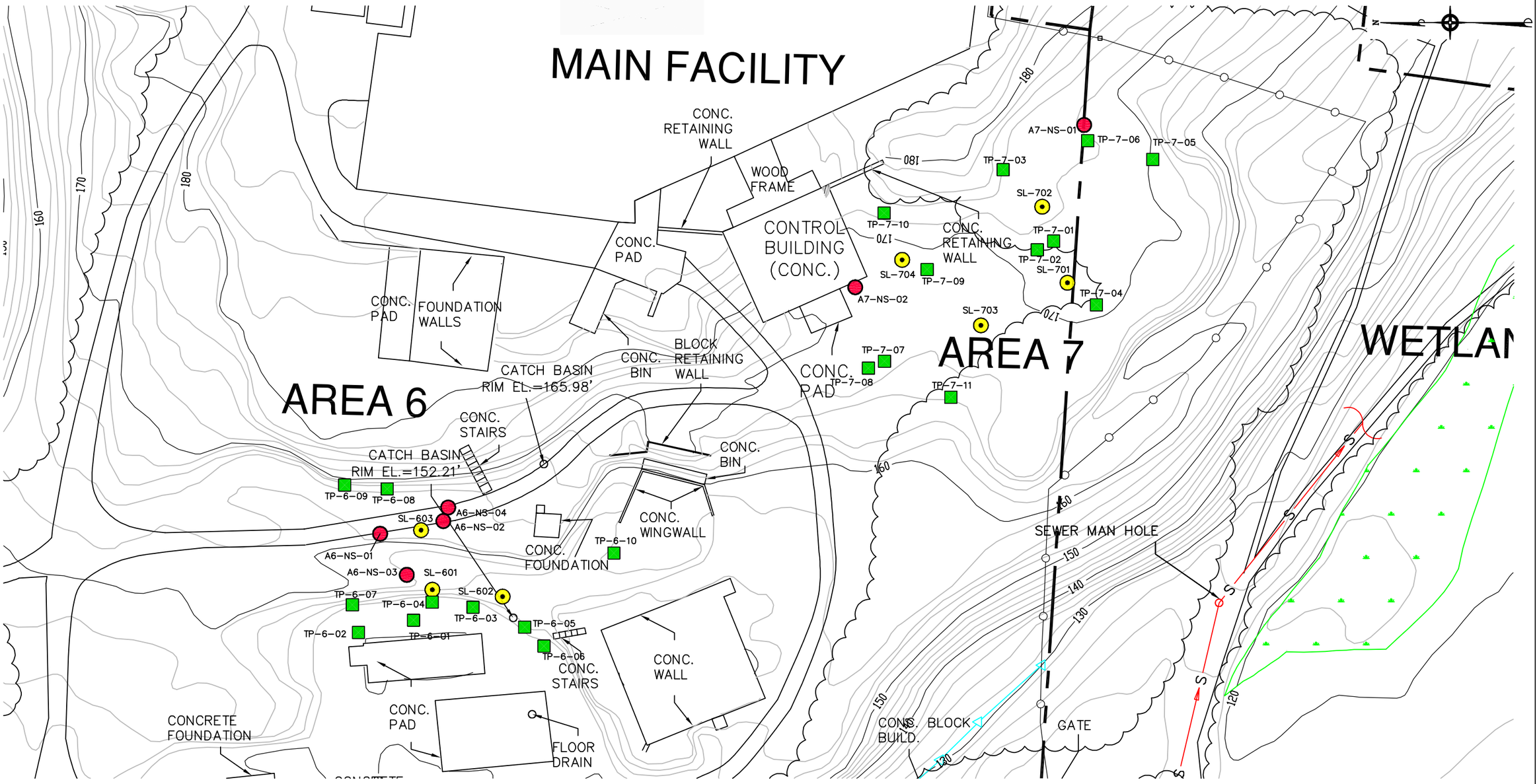

Legend

- S — SEWER LINE & MANHOLE
- 100 YEAR FLOODPLAIN BOUNDARY
- FENCE
- WETLAND BOUNDARY
- APPROXIMATE PROPERTY LINE
- MW-02-1 — MONITORING WELL LOCATION WITH IDENTIFIER
- A3-NS-07 — DPT OBSERVATION BORING LOCATION (NO SAMPLE COLLECTED) IDENTIFIER INDICATES AREA NUMBER, NO SAMPLE, BORING NUMBER
- SL-201 — SLUDGE / SOIL SAMPLING LOCATION (DPT BORING OR MANUAL BORING) IDENTIFIER INDICATES SAMPLE LOCATION – DISPOSAL AREA, BORING NUMBER
- TP-2-10 — TEST PIT LOCATION, IDENTIFIER INDICATES TEST PIT – AREA NUMBER – PIT NUMBER

GRAPHIC SCALE

0′ 50′ 100′

1 INCH = 50 FEET

SOIL BORINGS & TEST PIT LOCATIONS – AREAS 6 & 7			FIGURE 1–6
MOHAWK TANNERY SITE			
NASHUA, NEW HAMPSHIRE			
DRAWN BY:	D.W. MACDOUGALL	REV.:	0
CHECKED BY:	D. BAXTER	DATE:	JULY 15, 2002
SCALE:	1" = 50'	FILE NO.:	\DWG\4111\1020\FIGURE_1-6.DWG

TETRA TECH NUS, INC.
55 Jonspin Road Wilmington, MA 01887
(978)658-7899

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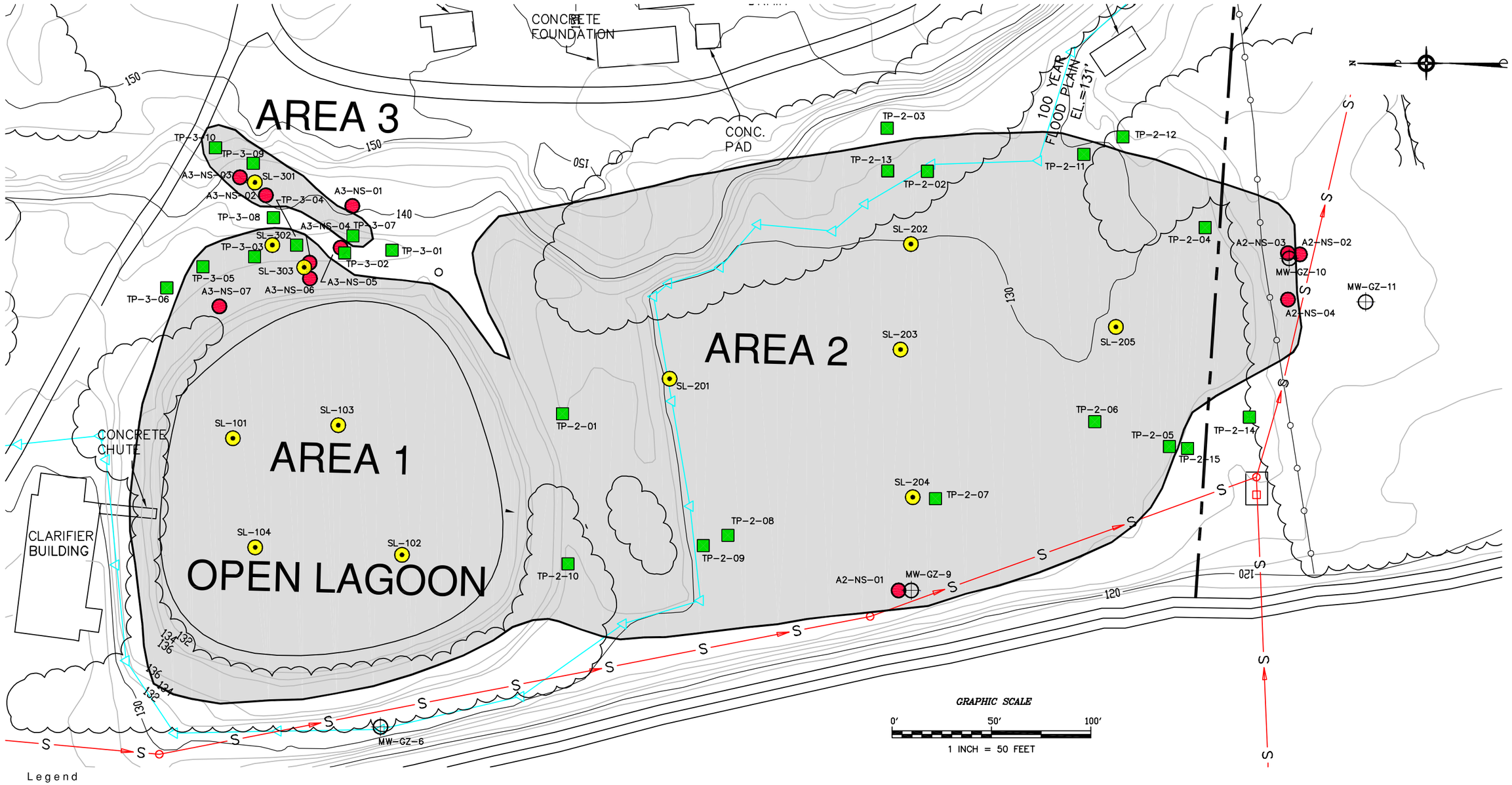

ESTIMATED LIMITS OF SLUDGE / WASTE – AREAS 1, 2, & 3			FIGURE 2–1
MOHAWK TANNERY SITE			TETRA TECH NUS, INC.
NASHUA, NEW HAMPSHIRE			55 Jonspin Road Wilmington, MA 01887 (978)658–7899
DRAWN BY:	D.W. MACDOUGALL	REV.:	0
CHECKED BY:	D. BAXTER	DATE:	JULY 15, 2002
SCALE:	1" = 50'	FILE NO.:	\DWG\4111\1020\FIGURE_2-1.DWG

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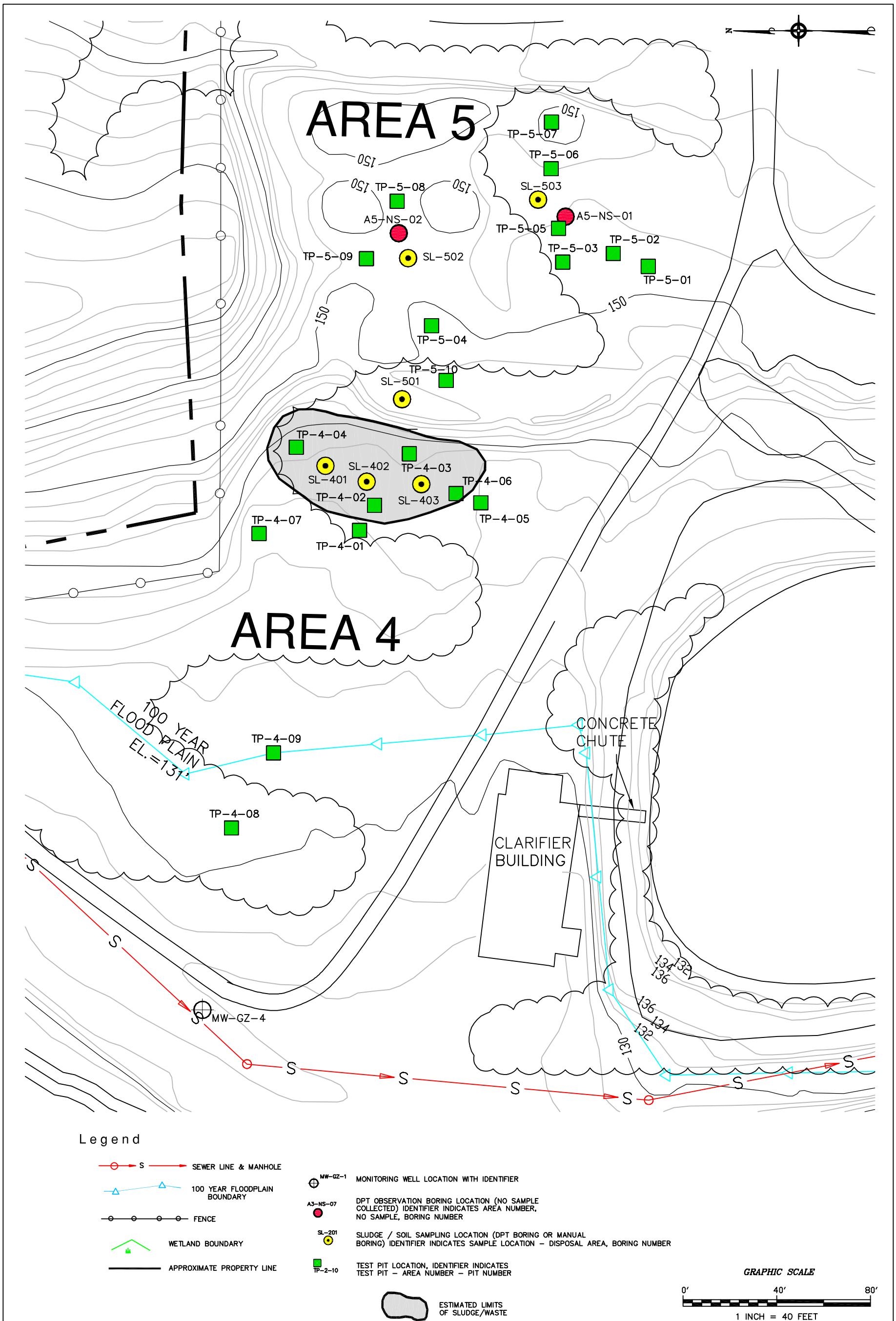

ESTIMATED LIMITS OF SLUDGE / WASTE – AREAS 4 & 5	FIGURE 2–2
MOHAWK TANNERY SITE	TETRA TECH NUS, INC.
NASHUA, NEW HAMPSHIRE	55 Jonspin Road Wilmington, MA 01887 (978)658–7899
DRAWN BY: D.W. MACDOUGALL / REV.: 0	
CHECKED BY: D. BAXTER / DATE: JULY 15, 2002	
SCALE: 1" = 40' / FILE NO.: \DWG\4111\1020\FIGURE_2–2.DWG	

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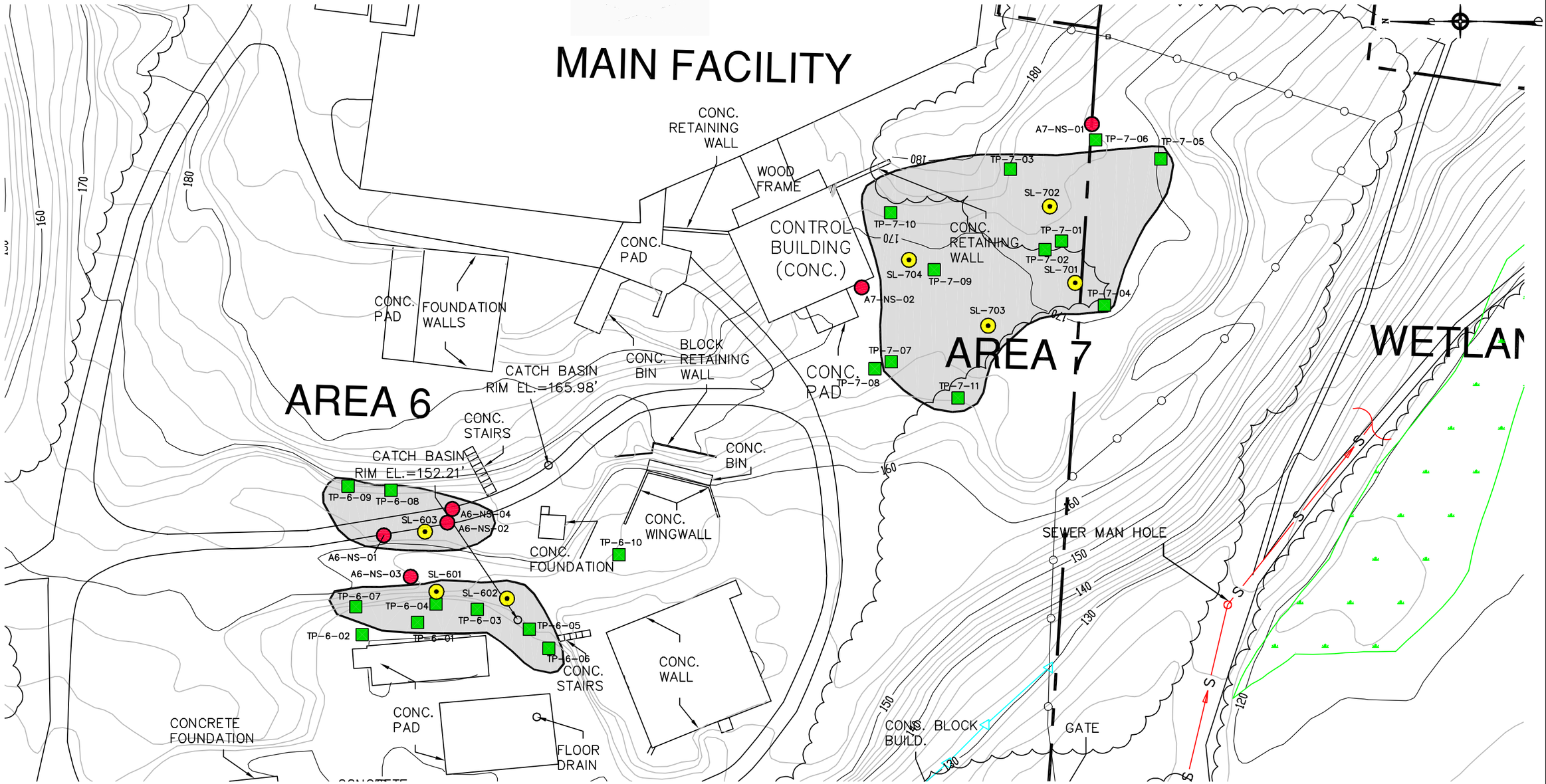

Legend

- SEWER LINE & MANHOLE
- 100 YEAR FLOODPLAIN BOUNDARY
- FENCE
- WETLAND BOUNDARY
- APPROXIMATE PROPERTY LINE
- MW-02-1 MONITORING WELL LOCATION WITH IDENTIFIER
- A3-NS-07 DPT OBSERVATION BORING LOCATION (NO SAMPLE COLLECTED) IDENTIFIER INDICATES AREA NUMBER, NO SAMPLE, BORING NUMBER
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- TP-2-10 TEST PIT LOCATION, IDENTIFIER INDICATES TEST PIT – AREA NUMBER – PIT NUMBER
- ESTIMATED LIMITS OF SLUDGE/WASTE

GRAPHIC SCALE

0' 50' 100'

1 INCH = 50 FEET

ESTIMATED LIMITS OF SLUDGE / WASTE – AREAS 6 & 7			FIGURE 2–3
MOHAWK TANNERY SITE			TETRA TECH NUS, INC.
NASHUA, NEW HAMPSHIRE			
DRAWN BY:	D.W. MACDOUGALL	REV.: 0	
CHECKED BY:	D. BAXTER	DATE: JULY 15, 2002	
SCALE:	1" = 50'	FILE NO.: \DWG\4111\1020\FIGURE_2-3.DWG	

55 Jonspin Road Wilmington, MA 01887
(978)658-7899

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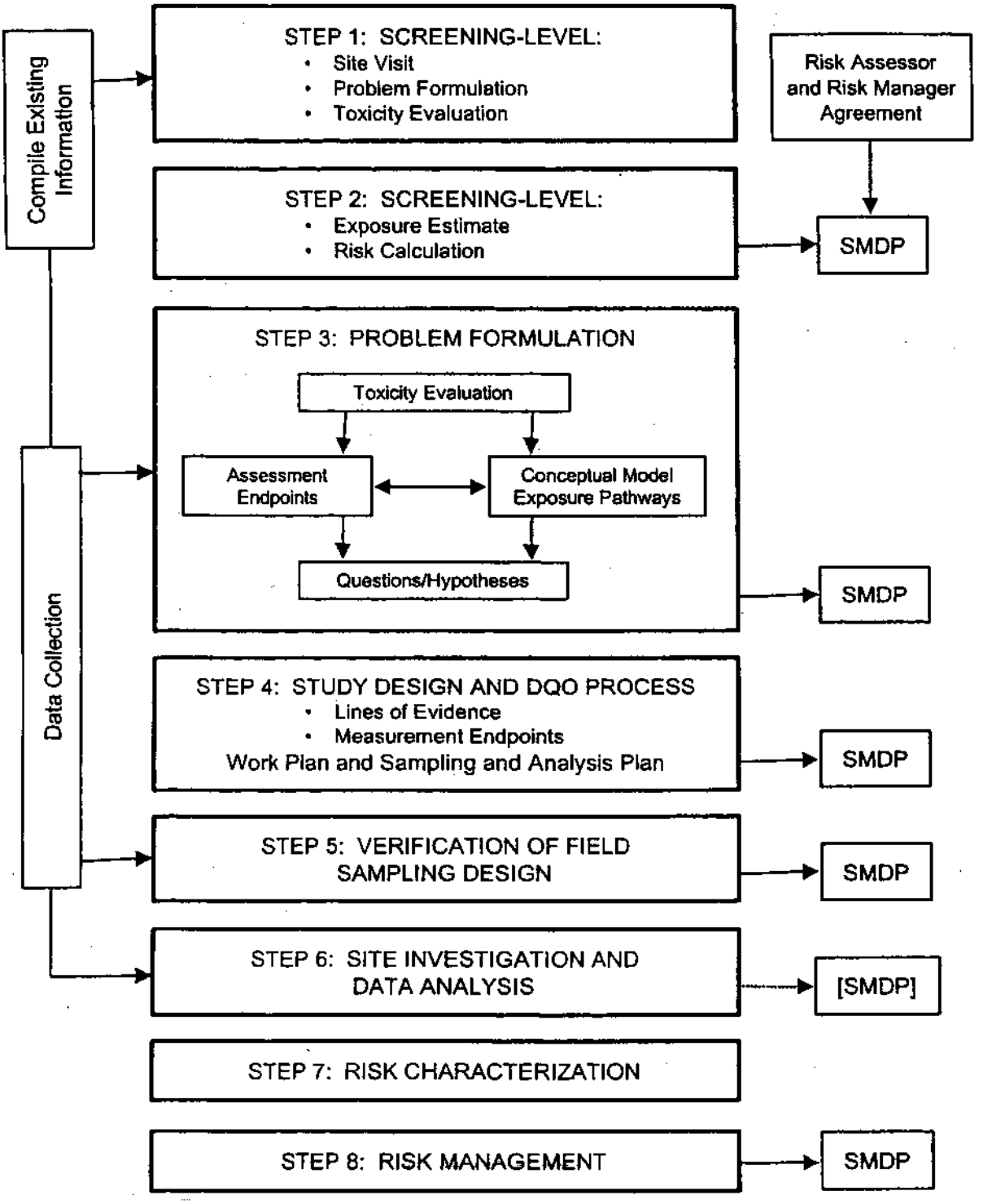
FIGURE 2-4
EIGHT STEP ECOLOGICAL RISK ASSESSMENT PROCESS FOR SUPERFUND ENGINEERING EVALUATION/COST ANALYSIS
MOHAWK TANNERY SITE
NASHUA, NEW HAMPSHIRE



Source: USEPA, 1997a

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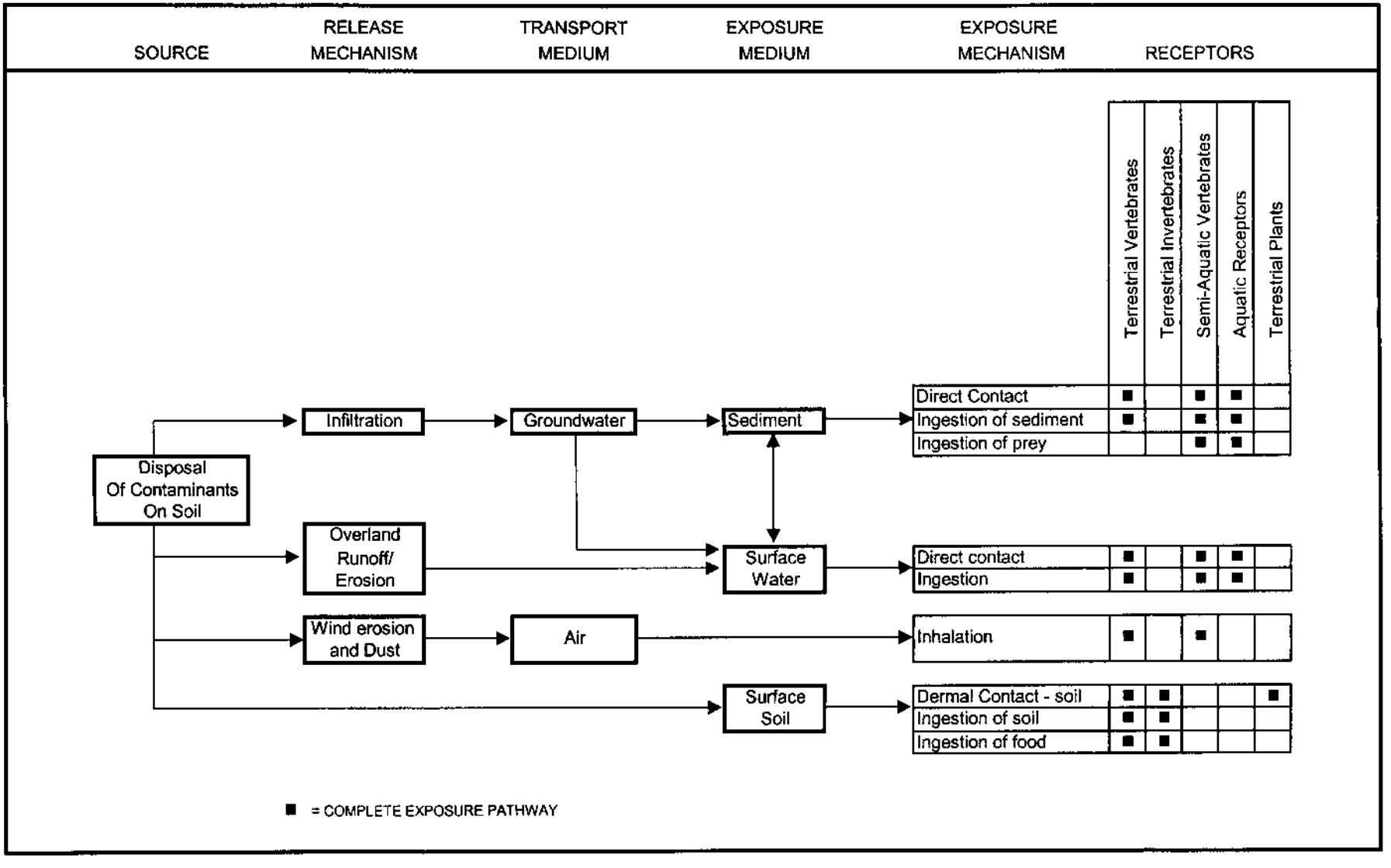
FIGURE 2-5
ECOLOGICAL CONCEPTUAL SITE MODEL
ENGINEERING EVALUATION/COST ANALYSIS
MOHAWK TANNERY SITE
NASHUA, NEW HAMPSHIRE



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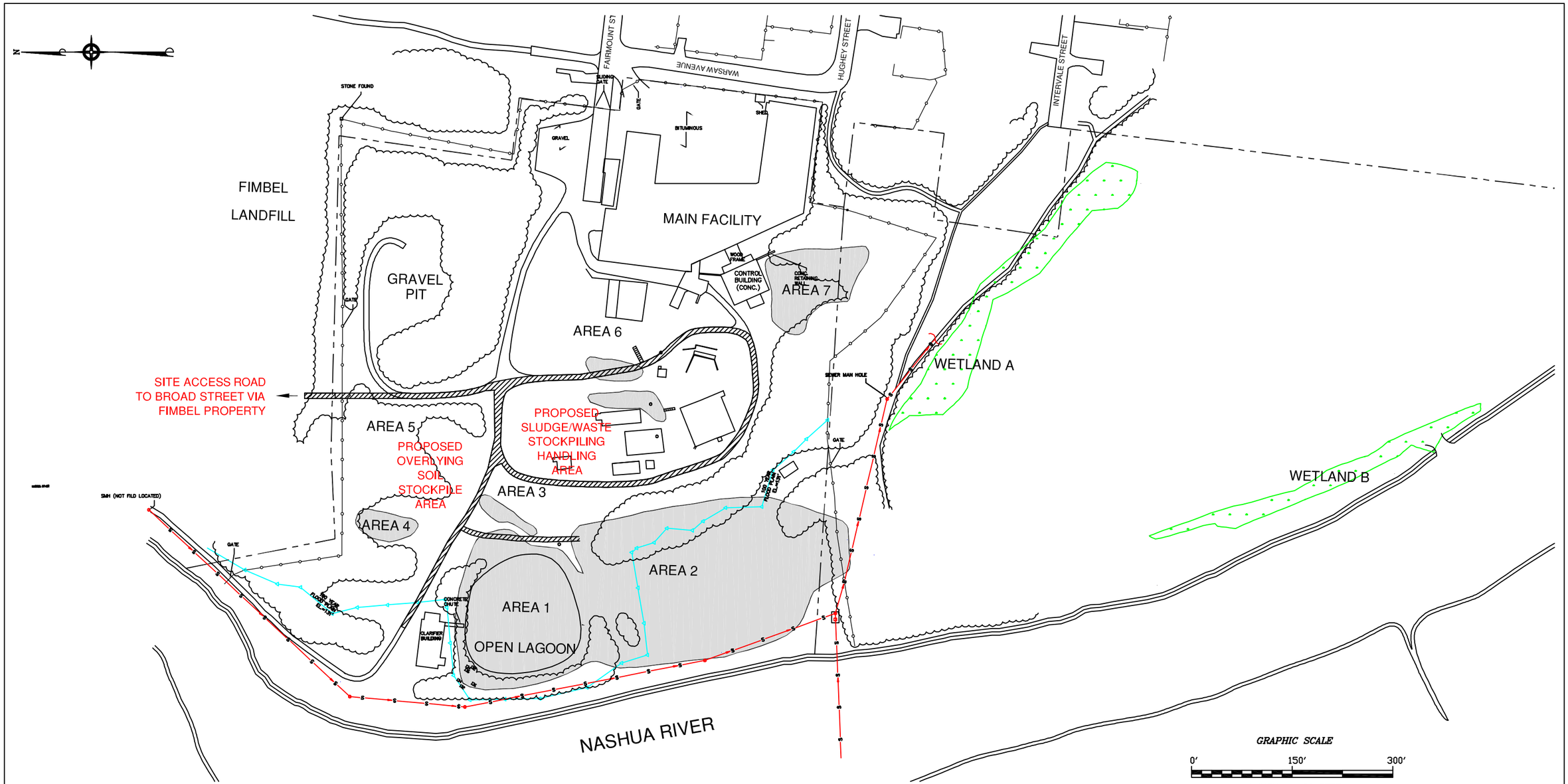

NOTES:

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2. COORDINATE / BEARINGS ARE BASED ON NEW HAMPSHIRE GRID COORDINATE SYSTEM (NAD 83). GRID NORTH, ELEVATIONS SHOWN ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88), MEAN SEA LEVEL.

3. BASE FLOOD ELEVATION IS BASED ON FLOOD INSURANCE RATE MAP PANEL NUMBER 5 OF 10, COMMUNITY PANEL NUMBER 330097–0005B WITH AN EFFECTIVE DATE OF JUNE 15, 1979. BASE FLOOD ELEVATION DETERMINED TO BE 131.0 FEET (NAVD 88).

4. UTILITIES SHOWN ON PLAN ARE LOCATED APPROXIMATELY. LOCATIONS SHOWN ARE BASED ON PHYSICAL LOCATIONS AND / OR MAPS FROM THE CITY OF NASHUA.

5. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.

6. PLAN NOT TO BE USED FOR DESIGN.

Legend

- SEWER LINE & MANHOLE
- 100 YEAR FLOODPLAIN BOUNDARY
- FENCE
- APPROXIMATE PROPERTY LINE
- WETLAND BOUNDARY
- ESTIMATED LIMITS OF SLUDGE/WASTE
- HAUL ROADS TO BE IMPROVED

CONCEPTUAL SITE IMPLEMENTATION LAYOUT – ALTERNATIVES 1 & 3			FIGURE 4–1
MOHAWK TANNERY SITE			TETRA TECH NUS, INC.
NASHUA, NEW HAMPSHIRE			55 Jonspin Road Wilmington, MA 01887 (978)658–7899
DRAWN BY:	D.W. MACDOUGALL	REV.:	0
CHECKED BY:	S. VETERE	DATE:	APRIL, 2002
SCALE:	1" = 150'	FILE NO.:	\DWG\4111\1010\FIGURE_4–1.DWG

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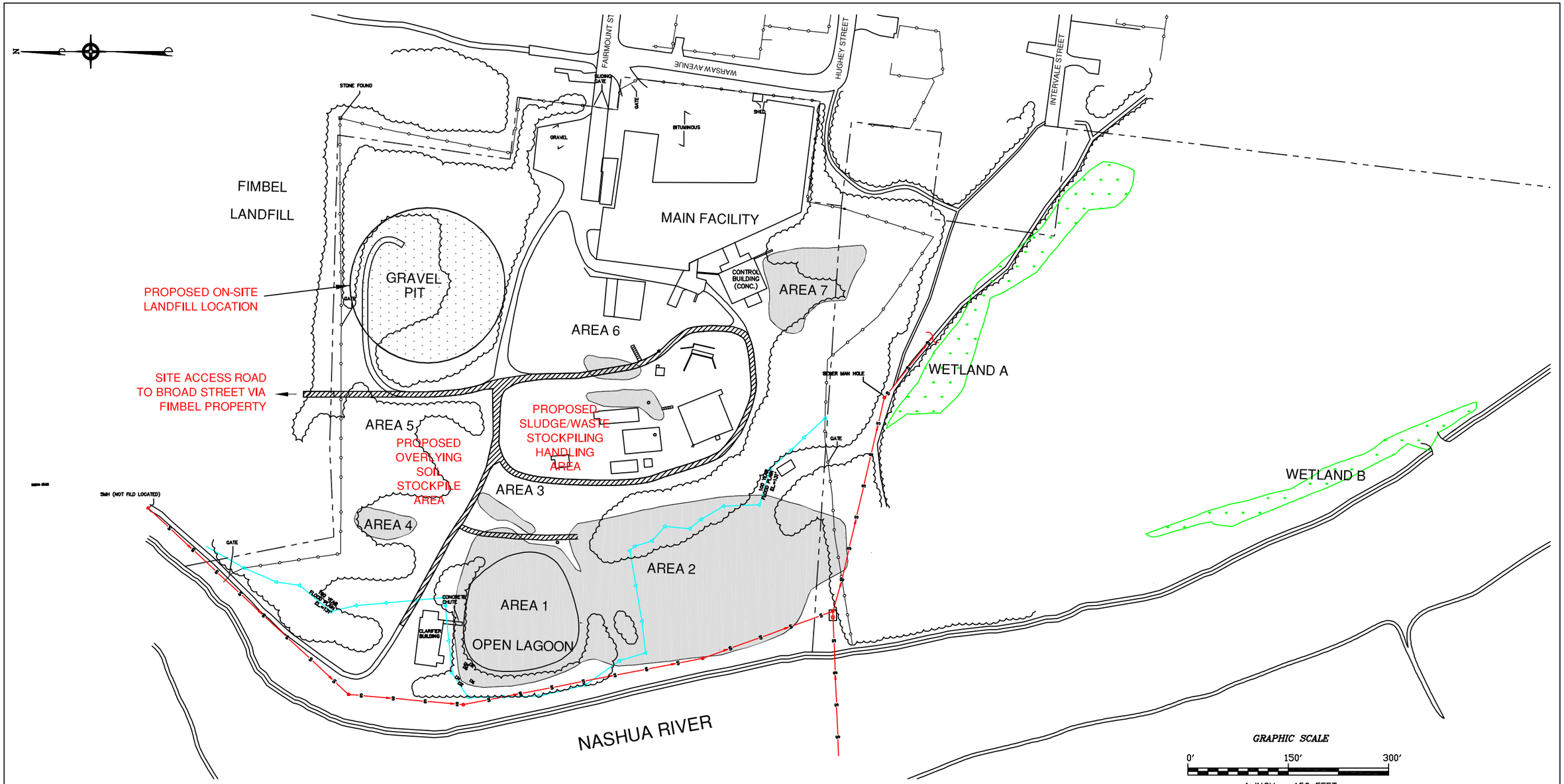

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2. COORDINATE / BEARINGS ARE BASED ON NEW HAMPSHIRE GRID COORDINATE SYSTEM (NAD 83). GRID NORTH, ELEVATIONS SHOWN ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88), MEAN SEA LEVEL.

3. BASE FLOOD ELEVATION IS BASED ON FLOOD INSURANCE RATE MAP PANEL NUMBER 5 OF 10, COMMUNITY PANEL NUMBER 330097–0005B WITH AN EFFECTIVE DATE OF JUNE 15, 1979. BASE FLOOD ELEVATION DETERMINED TO BE 131.0 FEET (NAVD 88).

4. UTILITIES SHOWN ON PLAN ARE LOCATED APPROXIMATELY. LOCATIONS SHOWN ARE BASED ON PHYSICAL LOCATIONS AND / OR MAPS FROM THE CITY OF NASHUA.

5. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.

6. PLAN NOT TO BE USED FOR DESIGN.

Legend

- S — SEWER LINE & MANHOLE
- 100 YEAR FLOODPLAIN BOUNDARY
- FENCE
- APPROXIMATE PROPERTY LINE
- WETLAND BOUNDARY
- ESTIMATED LIMITS OF SLUDGE/WASTE
- HAUL ROADS TO BE IMPROVED

CONCEPTUAL SITE IMPLEMENTATION LAYOUT – ALTERNATIVE 2			FIGURE 4–2
MOHAWK TANNERY SITE			TETRA TECH NUS, INC.
NASHUA, NEW HAMPSHIRE			55 Jonspin Road Wilmington, MA 01887 (978)658–7899
DRAWN BY:	D.W. MACDOUGALL	REV.:	0
CHECKED BY:	D. BAXTER	DATE:	JULY 15, 2002
SCALE:	1" = 150'	FILE NO.:	\DWG\4111\1020\FIGURE_4–2.DWG

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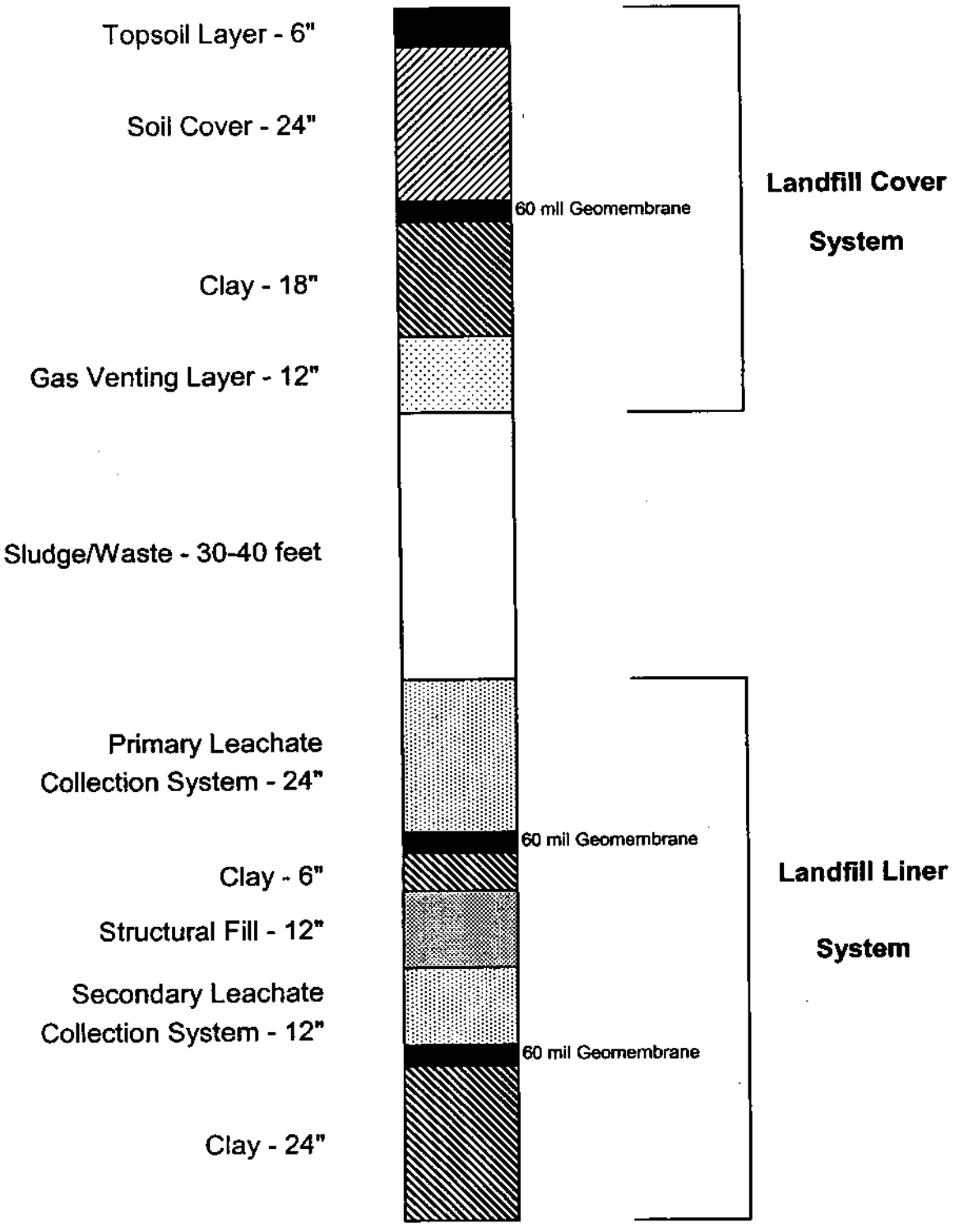
FIGURE 4-3
ALTERNATIVE 2 - CONCEPTUAL DESIGN OF LANDFILL LINER AND COVER SYSTEMS
ENGINEERING EVALUATION/COST ANALYSIS
MOHAWK TANNERY SITE
NASHUA, NEW HAMPSHIRE



* Landfill Conceptual Design based on regulations outlined in 40 CFR 258

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FIGURE 5-1
ANTICIPATED PROJECT TIMELINES
ENGINEERING EVALUATION/COST ANALYSIS
MOHAWK TANNERY SITE
NASHUA, NEW HAMPSHIRE

Alternative 1 - Excavation and Off-Site Disposal

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Task	Design and Specifications				Subcontract		Mob[1]	Excavation,Transportation,and Disposal										SR[2]
Notes							Estimated Duration of Site Work = 11 months											

Alternative 2 - Excavation and Consolidation into On-Site Landfill

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Task	Design and Specifications/Landfill Compliance								Subcontract		Mob	Site Prep/Lndfill Construct				Excavate/Consolidate into Landfill										Site Restore	
Notes											Estimated Duration of Site Work = 16 months																

Alternative 3 - Excavation, Off-Site Treatment and Disposal

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Task	Design and Specifications				Subcontract		Mob[1]	Excavation,Transportation,and Disposal										SR[2]
Notes							Estimated Duration of Site Work = 11 months											

[1]"Mob" includes mobilization and site preparation
[2]SR = Site Restoration