N91192.AR.001417
NIROP FRIDLEY, MN
5090.3a

LETTER FROM MINNESOTA POLLUTION CONTROL AGENCY REGARDING FEDERAL FACILITY AGREEMENT DETERMINATION NIROP FRIDLEY MN
9/16/1994
MINNESOTA POLLUTION CONTROL AGENCY

145

# Minnesota Pollution Control Agency

Ground Water & Solid Waste Division
Site Response Section

Site Name

Category

Subcategory

Initials

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

September 16, 1994

Mr. David Cabiness, Code 1862
Commanding Officer
Southern Division
Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, South Carolina 29419-9010

RE: Naval Industrial Reserve Ordnance Plant Site

Dear Mr. Cabiness:

The Minnesota Pollution Control Agency (MPCA) staff has reviewed the RMT, Inc. (RMT) letter dated August 23, 1994, responding to the MPCA staff comments on the Alternatives Array Document submitted on behalf of the U.S. Navy (Navy) for the Naval Industrial Reserve Ordnance Plant (NIROP) Site. RMT's letter was submitted pursuant to the Federal Facility Agreement, dated March 27, 1991, between the MPCA, the U.S. Environmental Protection Agency (EPA), and the Navy.

June 25

Despite RMT's Response 15 on page 6 of the letter and despite interim discussions between RMT staff and John Betcher and David Douglas of my staff, the MPCA staff stands by its position as stated in Item 15 of the MPCA staff letter dated ~~July 29~~, 1993, (copy attached) that investigation of Conductivity Anomalies 2, 4, 9, 11, 12, 14, and possibly 15 for buried barrels of hazardous waste as found at Anomaly 13 shall be conducted by visual verification trenches prior to completion of the Feasibility Study (FS) for Operable Unit 2 (OU2). The MPCA staff believes that this approach is reasonable and necessary for the investigation and cleanup of OU2. Any overlooked buried barrels will eventually lead to additional soil and ground water contamination if the barrels leak. Overlooked leaking barrels not only lengthen the cleanup but add to the cost of cleanup. The MPCA staff approach is also consistent with recent MPCA staff responses to RMT's concerns about proceeding with the presumptive remedy concept for soil clean-up remedies for OU2 especially with regard to the distribution of soil contamination in the OU2 soil. The MPCA staff believes that field activities related to this investigation could be completed in a relatively short period, possibly in a week or less.

The investigation of these anomalies is clearly a Remedial Investigation activity that needs to be completed in order to select a remedial cleanup for OU2. Any selected soil remedy should also remedy any soil contamination remaining from any needed barrel removal resulting from this investigation. Incidentally, the MPCA staff has never agreed to make this investigation optional as implied in RMT Response 15.

Based on past barrel clean-up actions of the Navy, the MPCA staff believes that the Navy would remove any barrels found by this investigation by conducting a Superfund Removal Action; however, if releases to the soil have occurred in these anomalies as it occurred at Anomaly 13, it is doubtful that the Removal Action would address all soil contamination remaining from these releases.

Remedial technologies being evaluated in the FS need to address any remaining soil contamination from releases from barrels and other disposal activities at Anomaly 13 and any other releases found by further anomaly investigation. Conducting cleanup of soil contamination during the Remedial Design phase for OU2 as suggested by RMT will likely result in additional unnecessary costs to the Navy and in unnecessary delays in the cleanup of OU2.

If you have any questions regarding this letter, please contact David Douglas of my staff at (612) 296-7818.

Sincerely,

Richard J. Sandberg

Richard J. Sandberg, Manager
Site Response Section
Ground Water and Solid Waste Division

RS:ch

Enclosure

cc: Sidney Allison, Navy, Southern Division
Linda Hicken, RMT, Inc.
Thomas Bloom, United States Environmental Protection Agency, Region V

# Minnesota Pollution Control Agency

Ground Water & Solid Waste Division
Site Response Section

Site Name

Category

Subcategory

Initials

June 25, 1993

Commanding Officer
Mr. Christopher Bartku, Code 1862
Southern Division
Naval Facilities Engineering Command
North Charleston, South Carolina 29419-9010

Dear Mr. Bartku:

RE: Completion of Review and Comments on the Document titled, "Remedial Investigation Report For The Soils Operable Unit At The Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota, May 1993, Volume I"

Minnesota Pollution Control Agency (MPCA) staff has completed a review of the document titled, "Remedial Investigation Report For The Soils Operable Unit At The Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota, May 1993, Volume I" (RI Report). MPCA staff modifications and comments on the RI Report are enclosed and need to be addressed. According to the schedule, a draft Final RI Report will be submitted to the MPCA and U.S. Environmental Protection Agency (EPA) which addresses both MPCA and EPA modifications and comments by August 8, 1993.

Please note that no comments were submitted regarding the Baseline Risk Assessment. MPCA staff comments on the Baseline Risk Assessment were forwarded to the EPA for their consideration.

If you have any questions regarding this letter, please contact Steven Giddings, of my staff, at (612) 296-7775 or John Betcher, of my staff, at (612) 296-7821.

Sincerely,

Gary Pulford

Gary A. Pulford, Manager
Site Response Section
Ground Water and Solid Waste Division

GAP:cj

Enclosure

cc: Linda Hicken, RMT, Inc.
Eugene Liu, U.S. Army Corporation
Douglas Hildre, FMC
Thomas Bloom, U.S. EPA, Region V
Terry Roundtree, U.S. EPA, Region V

Minnesota Pollution Control Agency

Modifications and Comments on the Remedial Investigation Report for the Soils Operable Unit at the Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota - May 1993

MODIFICATIONS

1. Page 1-11, Hazardous Materials Storage Building Addition. The report is in error concerning the statement that "No TCE was reported in soil sampled from the excavation." Soil containing trichloroethylene (TCE) at hazardous levels was excavated from the site and sent to a hazardous waste incinerator. Some mixed cutting oil and low level TCE soil was also excavated from this area and remains stockpiled at the site. The report should be corrected to reflect the TCE observed in the removal action excavation.

2. Pages 3-4 to 3-10, 3.1.3 Correlation Between Field and Laboratory Results. The experiment to estimate the amount of volatile organic compounds (VOCs) lost to volatilization from bottles does not represent the same conditions as field procedures for actual samples. Empty bottles were used for the experiment that contained no soil. It would be expected that there would be less volatilization if the bottle were filled with soil because much of the volatile compound would be retained in the soil voids and would not simply be in an empty bottle. The study may tend to overestimate the loss from the bottles. Also, there is no way to duplicate in the experiment the handling and storage of the field samples. As an example, the field samples were stored and shipped in coolers at low temperatures which may have reduced the amount of loss from the bottles. It is difficult to determine how to evaluate the potential loss from the bottles but the testing would seem to indicate that the laboratory results may be somewhat low.

The statement on page 3-9 concerning the relative sensitivity of the field versus laboratory data is not correct. The laboratory method should be more sensitive than the field GC unit. There are, as stated on page 3-4 many factors which effect the headspace concentrations for VOCs in the field and the potential for loss from the bottles is also possible. These factors may be more important in the difference in the results than is the sensitivity of the laboratory instruments as is the potential loss of VOCs due to bottles.

Assuming that significant loss of sample occurred from the bottles used, there should be a discussion in this section which evaluates the effects of the loss of VOCs in laboratory samples on the list of site compounds evaluated in the risk assessment. Based on the laboratory samples did some compounds drop off the list of chemicals of concern due to loss during shipment and handling before being analyzed? Also, during risk evaluation, did the loss of VOCs in the samples result in an underestimation of the potential risk of some compounds? Was an attempt made to reconstruct or adjust what the levels might have been in the original samples before VOC loss during shipment, handling and storage before analysis? Discussion of these issues shall be included in the final report.

3. Page 4-11, Sub-Area A3. Excavations at several of the anomalies in this area indicate fill and debris as well as moderately high to high VOC levels. These include anomaly #12 and #14. In the trench for #14 the fill was to a depth of 11 feet and strong oily odors were observed. In light of the similarity of the situation where fill, debris and barrels where found at anomaly #13 additional visual verification trenches should been carried out to verify the presence or absence of barrels in these areas. If review of the Phase I data indicates a similar situation at #15 this area should also be trenched for visual verification of potential barrels.

4. Page 4-17, Sub-Area A4. Excavations at a number of the anomalies in this area indicate fill, debris and VOCs similar to the situation at anomaly #13 where the barrel removal was carried out. Anomaly #2 contains fill with debris and also had a solvent like odor and high VOC levels. Anomalies #4, #9, #10 and #11 also contain fill. For anomalies #2, #4, #9 and #11 visual verification trenches should be performed to verify the possibility of barrels. For trenches #10 and #11 the work plan indicated that 20 foot by 20 foot trenches would be performed to cover these areas in response to the MPCA's November 20, 1991, modification letter to the Phase II Soils Work Plan. This large of an area was not trenched and adequate coverage of these areas was not obtained.

5. Page 4-29, Area D. A more detailed discussion of the remedy for the Resource, Conservation and Recovery Act (RCRA) Area C should be included in this section. A remedy has been selected and designed and a cleanup strategy set for this area. This information should be included in this section as the RCRA action is so integrally related to any Comprehensive Environmental Response, Compensation and Liability Act remediation that occurs in this area. The rational for the outline of the limits of the RCRA closure shown on Figure 4-8 should also be included in the discussion.

6. Page 4-30, Area D, Summary of Observed Chemical Impacts. The summary of Area D chemical impacts does not include an iso-concentration map of the VOC contamination in this area as was done for the other areas in the study. This should be included in Figure 4-8 as well as should the rational for the outline of the limits of the RCRA closure.

7. Page 8-1. The text indicates that an Initial Screening of Possible Alternative Response Actions should be included in the draft RI Reports. Why was such a screening not included in this draft Remedial Investigation (RI) Report? A Initial Screening of Possible Alternative Response Actions and a completed Section 8 shall be included in the next draft RI Report.

COMMENTS

1. List of Acronyms/Abbreviations. TOC-Total Organic Content should be included.

2. Page 1-2, Paragraph 4. The name of the park directly west of NIROP is "Anoka County Riverfront Regional Park" and not "Anoka County Islands of Peace Mississippi Riverfront Park" as indicated. This change should be made throughout the RI.

3. Page 1-3, Paragraph 4. Drescbach (not Dreschach) Formation is an old term seldom used. It should be replaced by Ironton/Galesville Sandstones.

4. Page 1-5, Paragraph 2. Reference should be made to Figure 3-1 for clarity.

5. Page 1-6, Paragraph 5. Second sentence should read, "...presented in the feasibility study was the alternative selected in the ROD."

6. Page 1-7, Paragraph 3. The mention of conductivity anomalies here as well as on Page 1-5 cause the reader to suspect that two separate surveys took place. This should be clarified to avoid confusion.

7. Pages 1-7 to 1-11. A figure showing the conductivity anomaly locations at the site is needed for quick reference.

8. Page 1-10, Paragraph 2. On page 1-2 mention is made to an air photo review in 1992. The text indicates two reviews and both are listed as occurring in 1991. Please clarify.

9. Page 1-11, Paragraph 4. CLP should be initially spelled out prior to abbreviation.

10. Pages 3-4 to 3-10, 3.1.3 Correlation Between Field and Laboratory Results. Before a sampling plan for release sampling for the soils remedy, lab testing should be carried out to determine that the bottles used for containing soil samples for release sampling do not have a VOC loss problem such as the one experienced in the Soils RI sampling.

11. Page 4-2, Paragraph 1. Laboratory data qualifiers should be included up front in this Section for easier reference.

12. Page 4-3, Paragraph 1. Since pesticides were common in samples from the NIROP and pesticide application at NIROP likely, spraying and drift from the NIROP may account for the pesticide shows in the park.

13. Page 4-3, Paragraph 2. Which metal was found in 1 of 20 samples? in all samples?

14. Page 4-3, Paragraph 3. What might explain the high concentrations of Ba and Mn in the two data points excluded from the UCL calculation.

15. Figure 4-1. Anomaly #13 should be indicated as having been excavated in this and other figures.

16. Page 4-15, Paragraph 1. What about TCE?

17. Page 4-23, Paragraph 1. Vertical migration of metals is more likely minimal as opposed to "not occurring".

18. Page 9-4, Paragraph 2. Pesticides identified in the park may be the result of drift from spraying at the NIROP.

19. Page 9-5, Paragraph 2. SVOC is assumed to be asphalt related, not is asphalt related.

20. Pages 9-17 and 9-18. Although the MPCA is not supplying detailed comments on the Ecological Risk Assessment (EPA will be the lead in reviewing and supplying comments as agreed) the statement that there is little favorable habitat for terrestrial biota and access is restricted by an 8 foot chain link fence is incorrect. The site is ideal for field mice, gophers, and a wide variety of insects. Because of this, there is not a lack of food sources for specific birds. During the soil RI work at the site a Kestrel was seen on various occasions at the site. Also hawks and other birds may commonly hunt at the site.

TABLE 4-2

SUMMARY OF CONDUCTIVITY ANOMALIES

| Magnetic Anomaly Number | Probability as Waste Site | Excavated by USACE | Comments* |
|---|---|---|---|
| 1 | Potential | No | First of four areas with "no reading[b];" no borings advanced in area; no soil gas survey performed nearby. |
| 2 | Potential | No | Second of four areas with "no reading[b];" borings NB21 to NE and NB11 to SW; TCE in NB21 (10 µg/kg) at water table; TCE in NB11 (7 µg/kg) at water table. |
| 3 | High | Yes | PCE NB06 (110 µg/kg); PCE NB01, NB04, and NB05 from 9 to 25 µg/kg - TCE NB05 at 380 µg/kg; NB04 at 230 µg/kg; NB01 at 220 µg/kg - removed 41 drums. |
| 4 | Potential | No | Third of four areas with "no reading[b];" no borings advanced in area; no soil gas survey performed nearby. |
| 5 | High | Yes | No borings done near 5; bottom sample during excavation showed TCE at 50 - 280 µg/kg. |
| 6 | Medium | Yes | NB06 showed VOCs - may be due to pit 3, not pit 6. |
| 7 | Medium | Yes | No borings near 7; excavation sample near bottom had 1,300 µg/kg TCE. |
| 8 | Potential | No | Varying levels of conductivity attributed to rubble, etc. No borings or soil gas survey in vicinity. |
| 9 | Potential | No | Varying levels of conductivity attributed to rubble, etc. NB01 had TCE at 45 µg/kg; NB01 had TCE at 220 µg/kg. |
| 10 | Medium | Yes | NB13 had several VOC hits; samples 1 foot below bottom during excavation had TCE 50-280 µg/kg. |
| 11 | Not Rated | No | Found on conductivity contour map; no boundaries drawn; is <u>not</u> one of four areas where "no reading" was recorded. NE of 5. |
| 12 | Potential | No | NB16 had some VOCs. |
| 13 | Potential | No | Highest VOCs of soil investigations; metal fragments in cuttings. |
| 14 | Potential | No | Fourth of four areas with "no readings[b]." |
| 15 | Low | Yes | Covered by soil gas survey; no apparent problem. |
| 16 | Not Rated | No | Found on conductivity contour map; no boundaries drawn; is <u>not</u> one of four areas where "no reading" was recorded. |

TABLE 4-2 (CONTINUED)

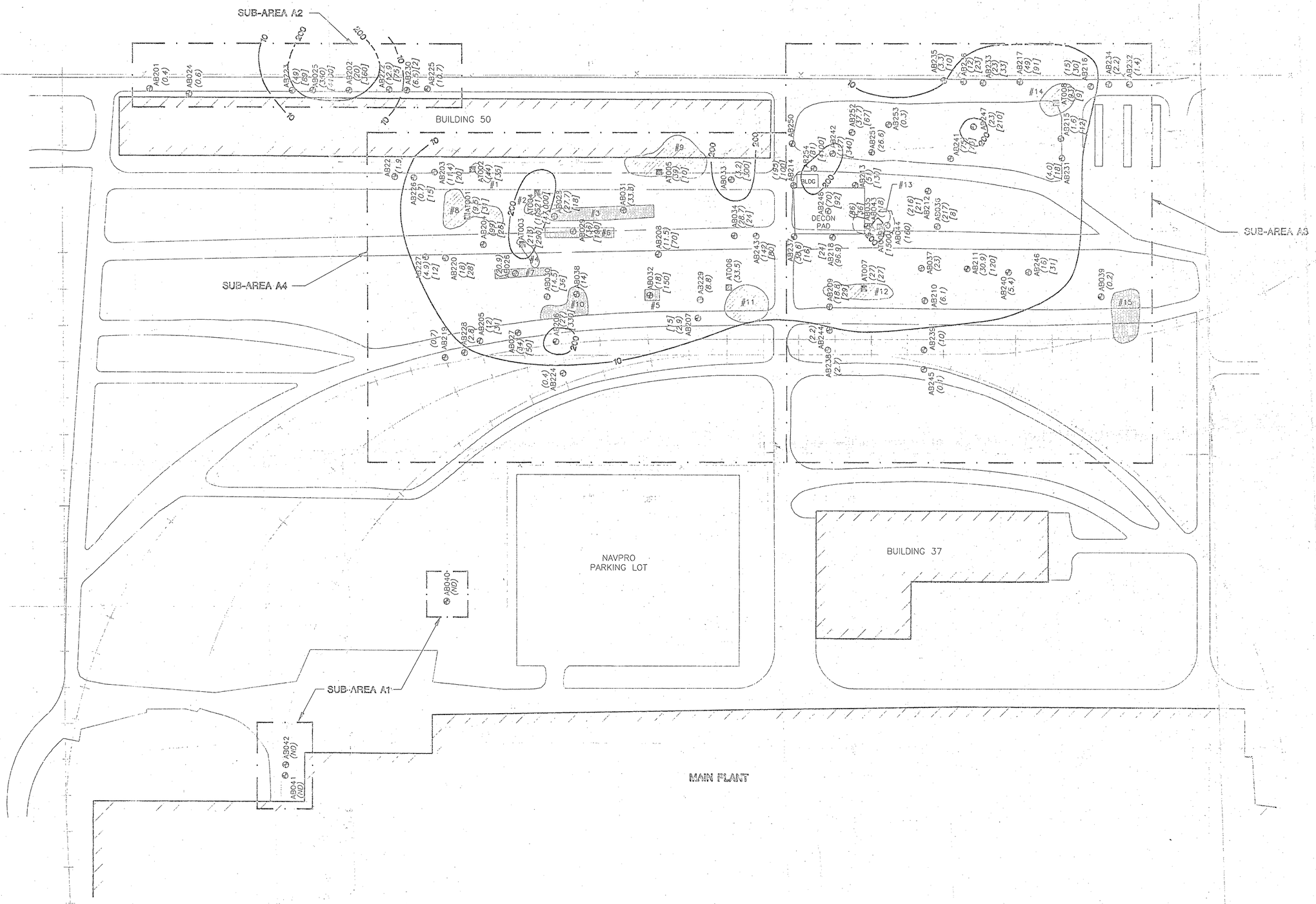
SUMMARY OF CONDUCTIVITY ANOMALIES

| Magnetic Anomaly Number | Probability as Waste Site | Excavated by USACE | Comments[a] |
|---|---|---|---|
| 17 | Low | Yes | Found on conductivity contour map; no boundaries drawn; is not one of four areas where no reading was recorded. |
| 18 | High | Yes | Found on conductivity contour map; no boundaries drawn; is not one of four areas where no reading was recorded. |
| 19 | Low | Yes | Found on conductivity contour map; no boundaries drawn; is not one of four areas where no reading was recorded. |
| 20 | Potential | No | Found on conductivity contour map; no boundaries drawn; is not one of four areas where no reading was recorded. |

**Notes:**

[a] Comments refer to results of previous investigations described in Subsection 4.3.

[b] Four areas found to have "no reading," as reported by the USACE, correlated well with buried asphalt or concrete.




LEGEND

- BUILDING
- PAVED ROAD
- RAILROAD
- FENCELINE
- 2-PC — MONITORING WELL LOCATION & NUMBER
- AT25 — TEST PIT COMPLETED DURING THE RI INVESTIGATION-1992
- AB03 — BORING COMPLETED DURING THE RI INVESTIGATION-1992
- EXCAVATED CONDUCTIVITY ANOMALIES (SEE NOTE 3 BELOW)
- UNEXCAVATED CONDUCTIVITY ANOMALIES
- (1.4) — TOTAL VOC'S - PORTABLE GC (uL/L)
- [35] — TCE CONCENTRATION - LABORATORY (ug/KG)
- 10 — TCE CONTOUR (ug/KG) (DASHED WHERE INFERRED)

NOTES

1. BASE MAP SOURCE: U.S. ARMY CORPS OF ENGINEERS, DRAWING CODE XF 215-30-01, PREPARED BY DYNAMIC INTERNATIONAL INC., ROCKVILLE, MD, AUGUST 1983.
2. SEE FIGURE 3-1 FOR AREA A LOCATION.
3. LOCATIONS OF ALL 20 ANOMALIES ARE INCLUDED IN APPENDIX C.
4. DASHED LINE AROUND AT009 REPRESENTS APPROXIMATE TOTAL EXTENT OF THE REMOVAL ACTION AREA.

N

0 50 100
SCALE 1"=50'

| NO. | BY | DATE | REVISION | APPR. |
|---|---|---|---|---|
| 3. | | | | |
| 2. | | | | |
| 1. | | | | |

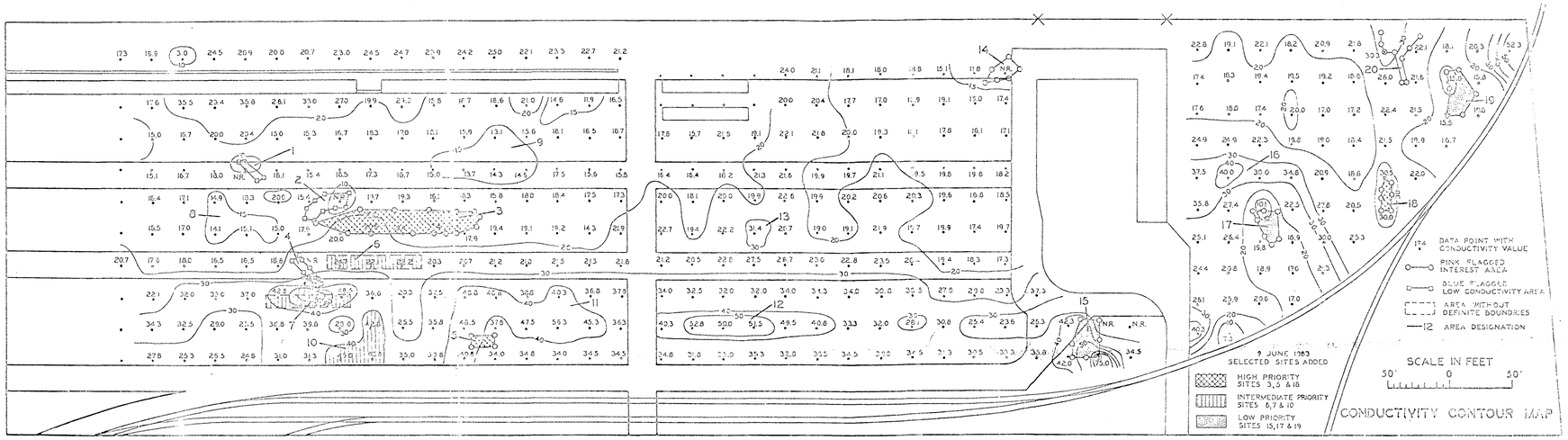
PROJECT: WORKING COPY

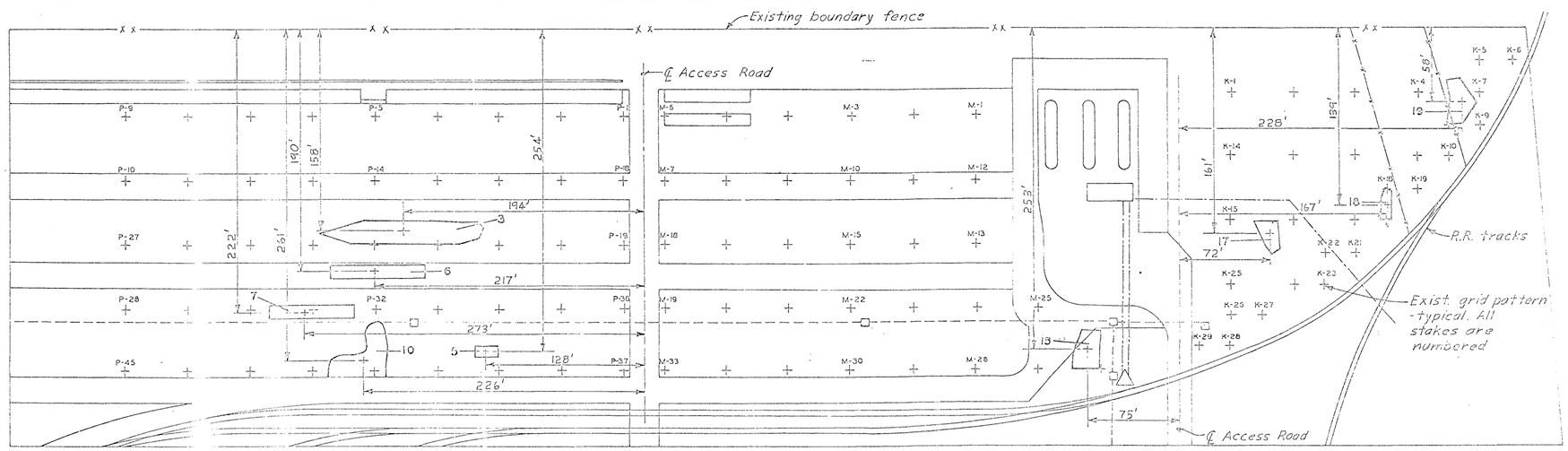
NAVY

SHEET TITLE: AREA A - EXTENT OF TCE CONTAMINATION - SHALLOW (0'-6') SOILS - LABORATORY RESULTS

| | | |
|---|---|---|
| DRAWN BY: BLC | SCALE: 1"=50' | CONT. NO. 2313.20 |
| CHECKED BY: | | TASK NO. 2313.20 |
| APPROVED BY: | DATE PRINTED: MAY 1 6 1995 | FILE NO. 2313207 |
| DATE: MARCH 1993 | | SHEET NO. 3-4 |

DYNAMIC INC.
7101 Hanover Drive
P.O. Box 8321
Rockville, MD 20701-0123
Phone: 301-831-8444




SITE LOCATIONS

SCALE: 1 INCH = 50 FEET

50' 0 50'

NOTES:

1. A grid pattern has been laid out on site with survey stakes every 50'-0". Some stakes may be missing.
2. The areas [illegible] flags are those [illegible] for [illegible].
3. The dimensions shown on this drawing [illegible] for site [illegible] the actual grid pattern stakes [illegible].
4. Con[illegible] survey [illegible] for [illegible].

Sym. Xd. | Date | Revision | Author

Rev. No. | Date | Description | Appr.

JACKLIN CHEMICAL CORP. DIV. OF CPC INTERNATIONAL

Date Surv.: P.E.D.

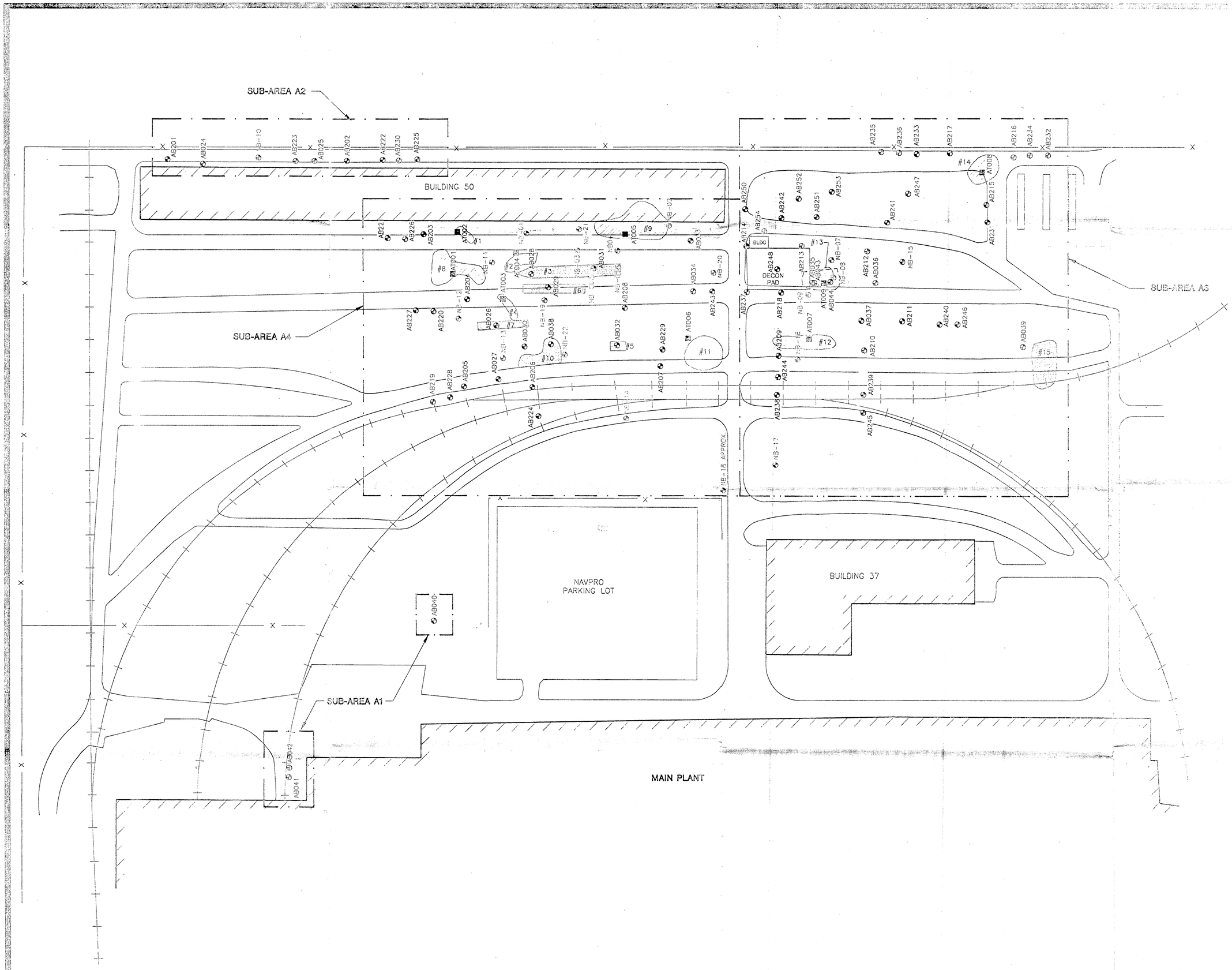
Drawn by: R.J.S.

Checked by: P.E.D.

Approved by: S.L.C.

Submitted by:

SITE LOCATIONS
AND
CONDUCTIVITY CONTOUR MAP




LEGEND

| | |
|---|---|
| | BUILDING |
| | PAVED ROAD |
| | RAILROAD |
| | FENCELINE |
| 4-2-R3 | MONITORING WELL LOCATION & NUMBER |
| AT001 | TEST PIT COMPLETED DURING THE RI INVESTIGATION-1992 |
| AB001 | BORING COMPLETED DURING THE RI INVESTIGATION-1992 |
| #2 | EXCAVATED CONDUCTIVITY ANOMALIES (SEE NOTE 3 BELOW) |
| #3 | UNEXCAVATED CONDUCTIVITY ANOMALIES |
| (1.4) | TOTAL VOC'S - PORTABLE GC (uL/L) |
| [36] | TCE CONCENTRATION - LABORATORY (ug/KG) |
| 10 | TOTAL VOC CONTOUR - FIELD GC (DASHED WHERE INFERRED) |

NOTES

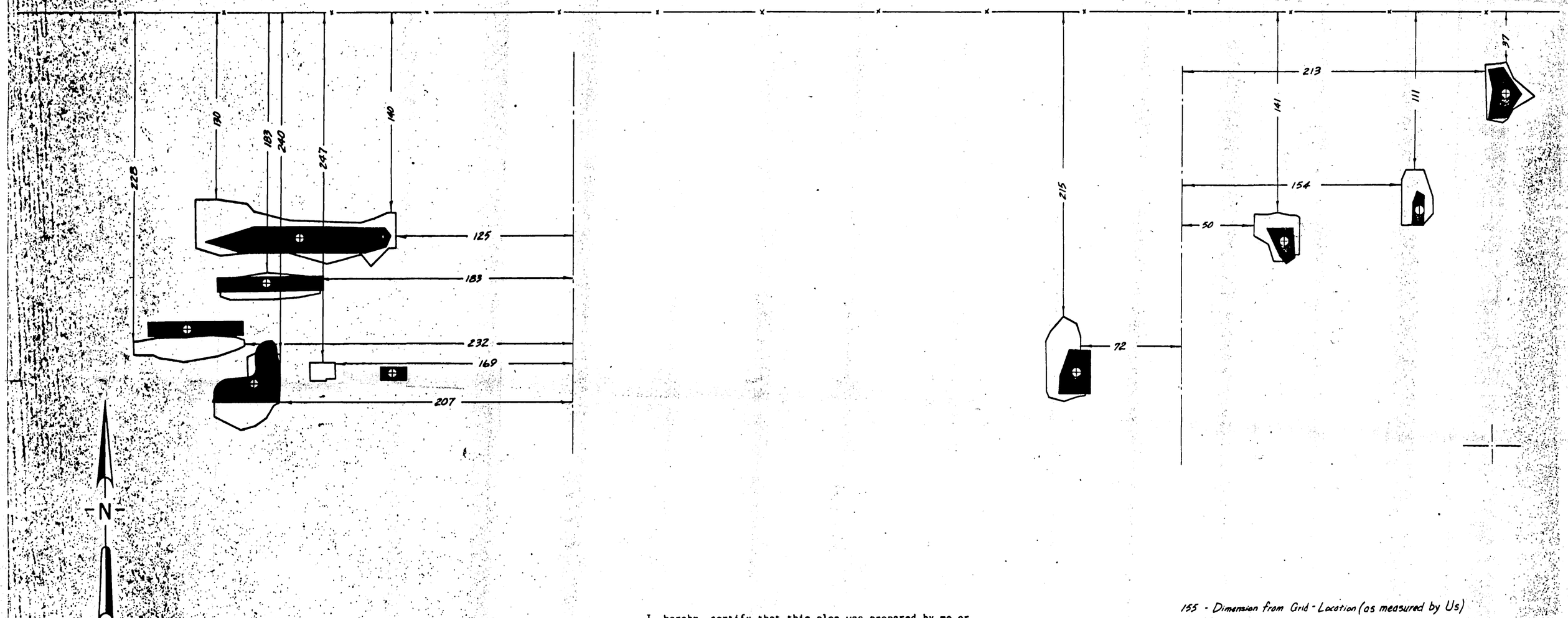
1. BASE MAP SOURCE: U.S. ARMY CORPS OF ENGINEERS, DRAWING CODE XF 215-30-01, PREPARED BY DYNAMIC INTERNATIONAL INC., ROCKVILLE, MD, AUGUST 1983.
2. SEE FIGURE 3-1 FOR AREA A LOCATION.
3. LOCATIONS OF ALL 20 ANOMALIES ARE INCLUDED IN APPENDIX C.
4. DASHED LINE AROUND AT003 REPRESENTS APPROXIMATE TOTAL EXTENT OF THE REMOVAL AREA.

0 50 100
SCALE 1"=100'

| | | |
|---|---|---|
| 3. | | |
| 2. | | |
| NO. | REVISION | |
| PROJECT | | |
| SHEET TITLE | AREA A BORING AND TEST PIT LOCATION MAP | |
| DRAWN BY | SCALE | PROJ. NO. |
| CHECKED BY | | DRWG. NO. |
| APPROVED | DATE | FILE NO. |
| DATE | MAY 25 1993 | SHEET FIGURE |

AAA Heartland Inc.
P.O. Box 6923
Madison, WI 53705-6923
Phone: 608-[illegible]

# *Excavation Areas as dug*
# NIROP SITE, Fridley, Minn.




I hereby certify that this plan was prepared by me or under my direct supervision, is correct to the best of my knowledge and belief, and that I am a duly registered land Surveyor under the laws of the State of Minnesota.

John O. Oliver

John O. Oliver, Land Surveyor
Minnesota Registration No. 8194

Date: February 23, 1984

155 - Dimension from Grid - Location (as measured by Us)

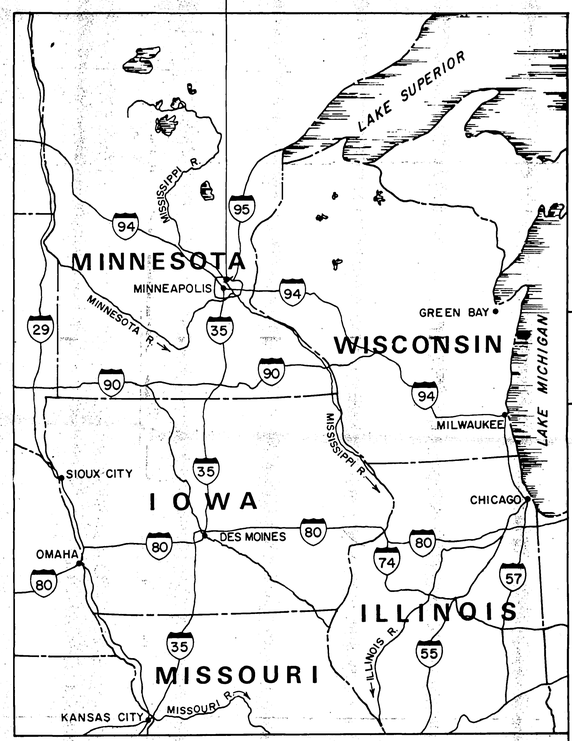
- Pit Location per map furnished.

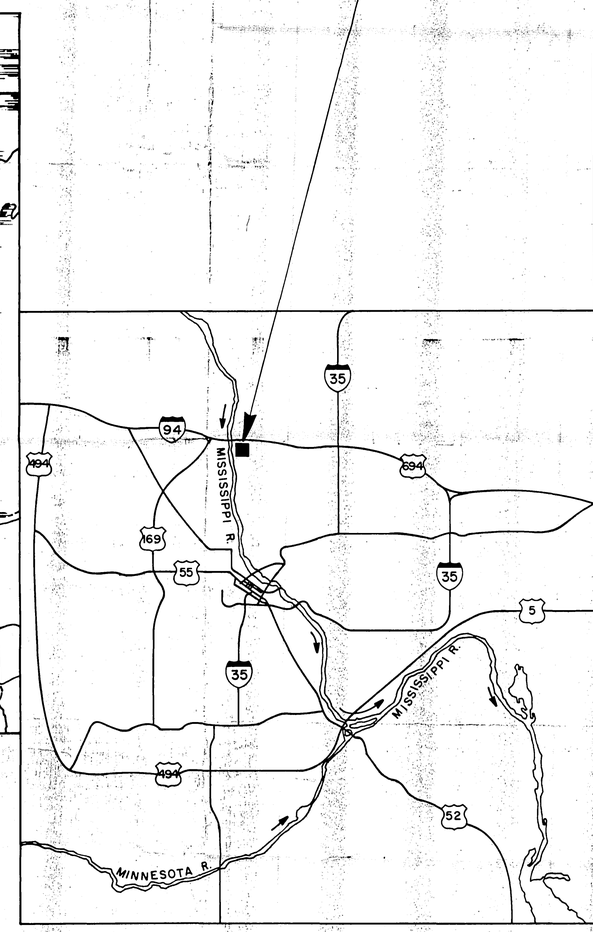
- Pit Location as Excavated

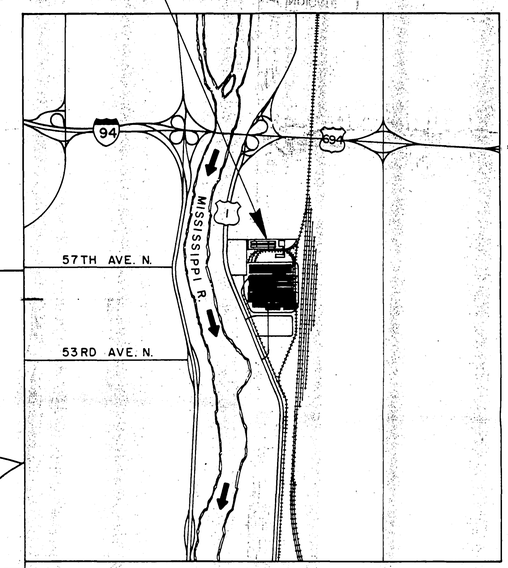
JOHN OLIVER & ASSOCIATES LAND SURVEYORS

# NIROP FRIDLEY, MINN.

# SITE CLEAN UP




N

INDEX

| DRAWING NO. | SH. NO. | DESCRIPTION |
|---|---|---|
| XF 215-30-01 | 1 | SITE LOCATION PLAN TRUCK ROUTE & INDEX |
| XF 215-30-01 | 2 | EXIST. SITE TOPOGRAPHY & UNDERGROUND UTILITIES |
| XF 215-30-01 | 3 | FACILITY LOCATION & WORK AREA |
| XF 215-30-01 | 4 | WASTE SITE LOCATION PLAN |
| XF 215-30-01 | 5 | MISCELLANEOUS DETAILS |
| XF 215-30-01 | 6 | CONDUCTIVITY CONTOUR MAP SITE LOCATIONS |

From 1120 file
Ref. Dwg. folder

SIGNATURES AFFIXED BELOW INDICATE OFFICIAL RECOMMENDATION AND APPROVAL OF ALL DRAWINGS IN THIS SET AS INDEXED ON THIS SHEET

APPROVAL RECOMMENDED: C. Brunken
CHIEF, DESIGN BRANCH

APPROVAL RECOMMENDED: D. H. Asleson
CHIEF, MILITARY BRANCH

APPROVED: J R Kell
CHIEF, ENGINEERING DIVISION

APPROVED: William R. Andrews, Jr.
COL. CORPS OF ENGINEERS, DISTRICT ENGINEER

Revisions

| Symbol | Descriptions | D |
|---|---|---|
| | | |

DYNAMAC INTERNATIONAL INC.
11140 ROCKVILLE PIKE
ROCKVILLE MARYLAND

U.S. ARMY ENGINEER
CORPS OF ENGIN
OMAHA, NEBRA

Designed by: W. D. E.

Drawn by: W. S. B.

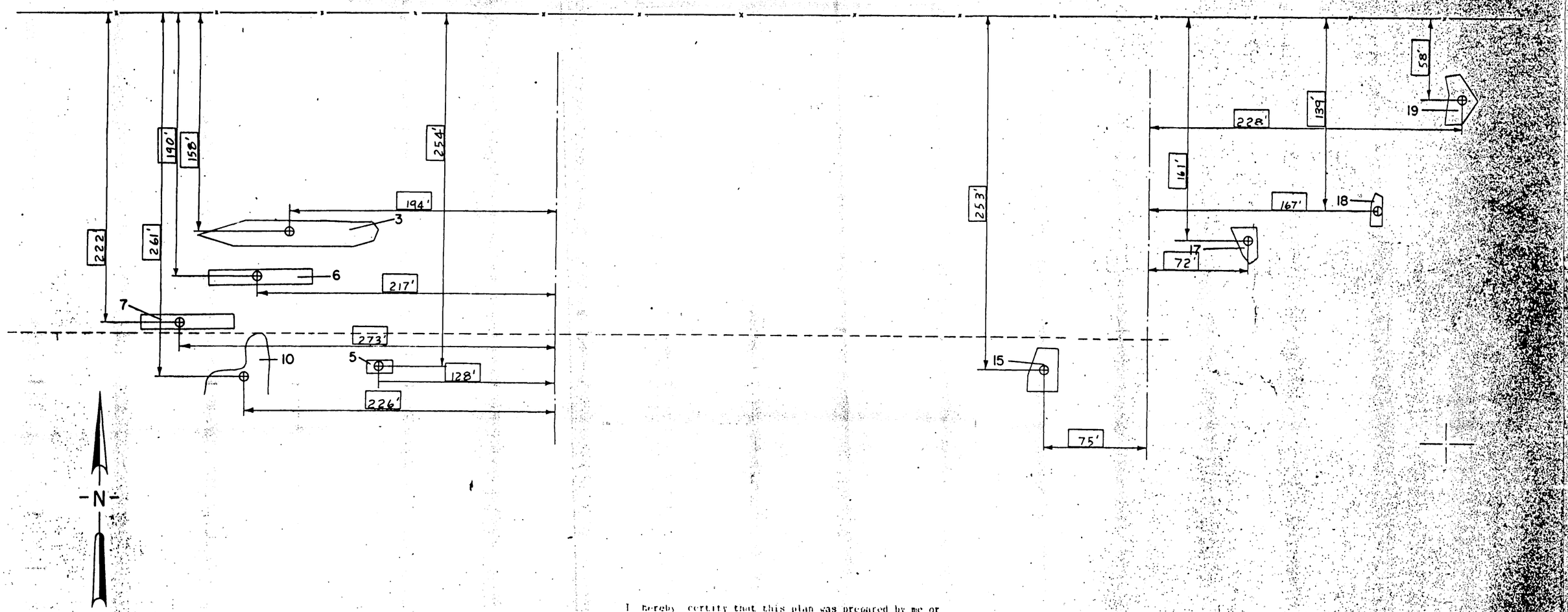
Checked by: D. R. T.

US Army Corps of Engineers

NIROP

SITE CLEAN-UP
SITE LOCATION PL
TRUCK ROUTE & IN

# *Excavation Areas per Sheet 6*
# NIROP SITE, Fridley, Minn.




Scale 1 in. = 50 ft.

I hereby certify that this plan was prepared by me or under my direct supervision, is correct to the best of my knowledge and belief, and that I am a duly registered land Surveyor under the laws of the State of Minnesota.

John O. Oliver

John O. Oliver, Land Surveyor
Minnesota Registration No. 8194

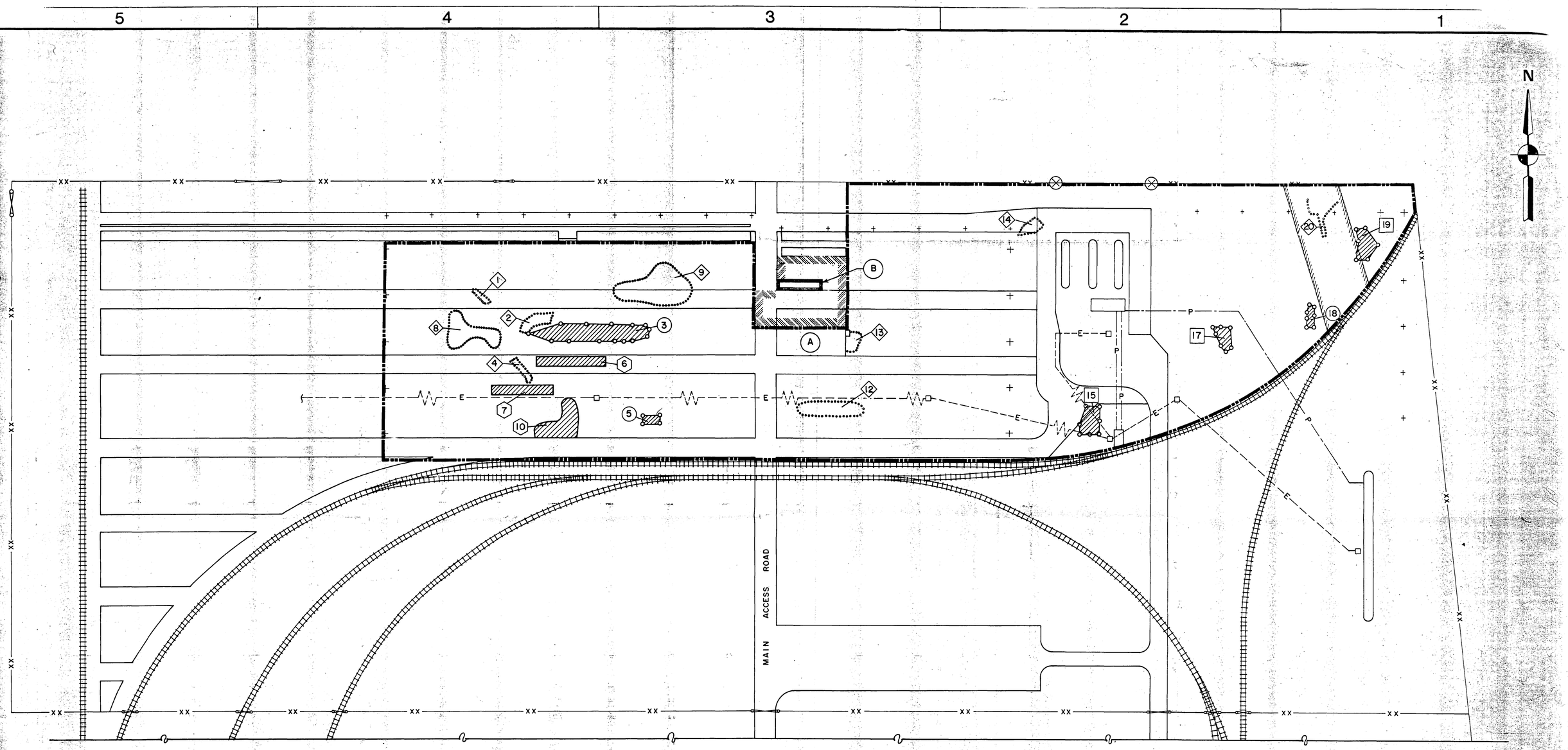
Date: February 23, 1984

167' - *Denotes dimension per map furnished*

JOHN OLIVER & ASSOC. INC.

LAND SURVEYORS

Elk River, Minn.




P L A N

SCALE: 1" = 50'-0"

NOTE:

1. WASTE SITES LOCATION & LABELLING BASED ON CONDUCTIVITY SURVEY.

## LEGEND

- HIGH PROBABILITY WASTE SITE
- MEDIUM PROBABILTY WASTE SITE
- LOW PROBABILITY WASTE SITE
- POTENIAL WASTE SITE
- WASTE SITES INCLUDED IN THIS CONTRACT
- WASTE SITES (POTENTIAL) NOT IN THIS CONTRACT
- GRID START
- GRID INTERSECTION
- (A) STAGING PAD WITH EQUIPMENT DECONTAMINATION AREA

Revisions

| Symbol | Descriptions | Date | Appro |
|---|---|---|---|
| | | | |

DYNAMAC INTERNATIONAL INC.
11140 ROCKVILLE PIKE
ROCKVILLE MARYLAND

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
OMAHA, NEBRASKA

Designed by: E. K. D.

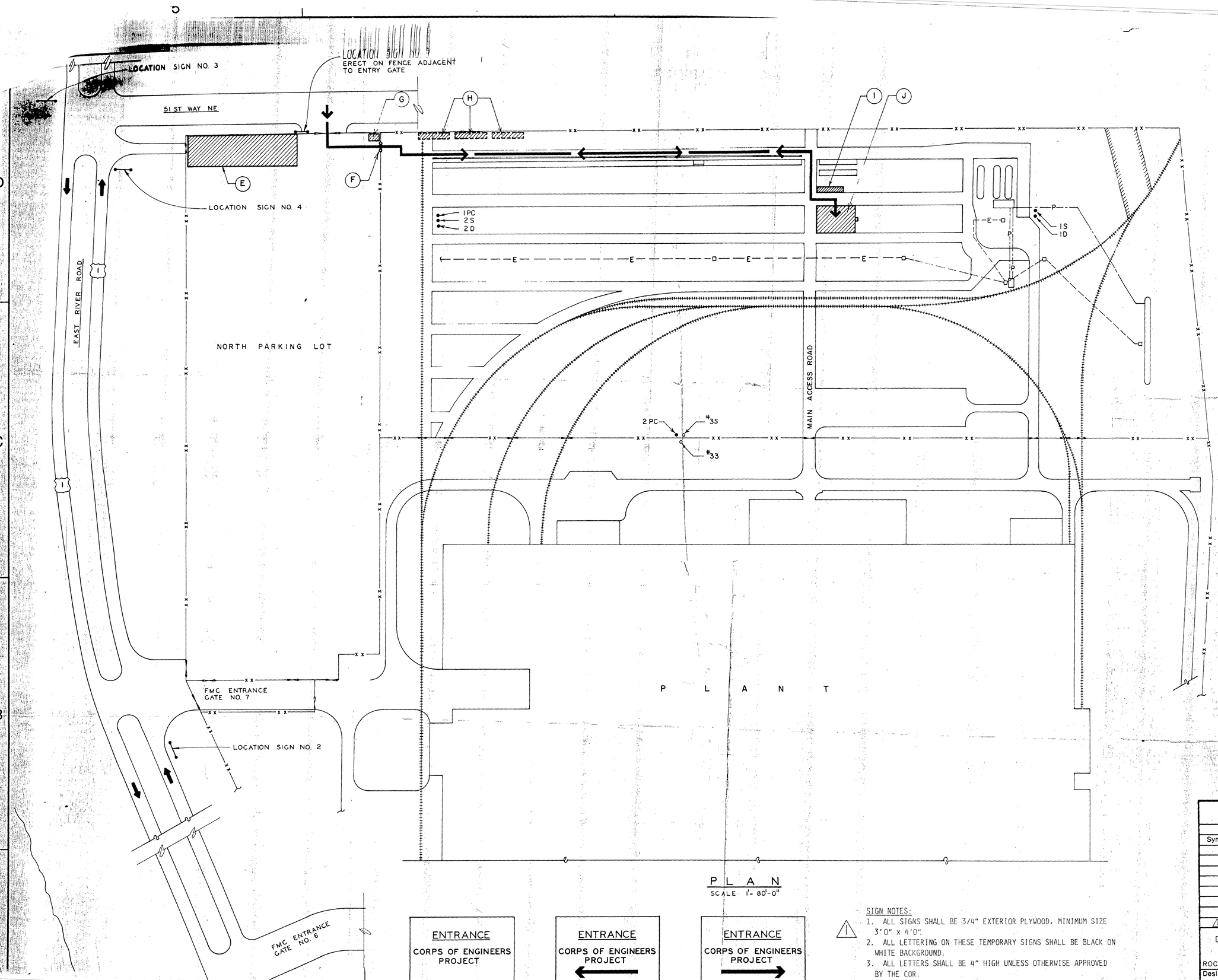
NIROP

FRIDLEY, M

US Army Corps of Engineers

Drawn by:

SITE CLEAN-UP




P L A N
SCALE 1" = 80'-0"

## LEGEND

- (E) CONTRACTOR'S PARKING FACILITY
- (F) NEW GATE
- (G) PRIMARY LOCATION DESIRED FOR GOVERNMENT OFFICE AND SECURITY
- (H) CONTRACTOR OFFICE AND ALTERNAT FOR GOVT. OFFICE AND SECURITY P
- (I) DECONTAMINATION TRAILER
- (J) STAGING PAD AND EQUIPMENT DECONTAMINATION AREA
- → CONTRACTOR'S ACCESS
- • APPROXIMATE LOCATION OF MONITORING WELLS
- ○ EXISTING FMC WELLS

## NOTES:

A. FINAL GRADE TO ORIGINAL GROUND CONTOURS.
B. S - SHALLOW ALLUVIAL MONITORING WELL
C. D - DEEP ALLUVIAL MONITORING WELL
D. PC - PRAIRIE DU CHIEN MONITORING WELL

From 1120 file
Ref. Dwg's folder

**ENTRANCE**
CORPS OF ENGINEERS PROJECT
(CONTRACTORS NAME)

**ENTRANCE**
CORPS OF ENGINEERS PROJECT
← (CONTRACTORS NAME)

**ENTRANCE**
CORPS OF ENGINEERS PROJECT
→ (CONTRACTORS NAME)

SIGN NOTES:
1. ALL SIGNS SHALL BE 3/4" EXTERIOR PLYWOOD, MINIMUM SIZE 3'0" x 4'0".
2. ALL LETTERING ON THESE TEMPORARY SIGNS SHALL BE BLACK ON WHITE BACKGROUND.
3. ALL LETTERS SHALL BE 4" HIGH UNLESS OTHERWISE APPROVED BY THE COR.
4. FOR SIGN LOCATIONS 1,2,3, AND 4 THESE SIGNS SHALL BE ERECTED ON 4"x4" WOOD POST AND SHALL BE MAINTAINED FOR THE

Revisions

| Symbol | Descriptions | D |
|---|---|---|
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| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| 1 | REVISED IN ACCORDANCE WITH AM. NO. 0002 | 6 |

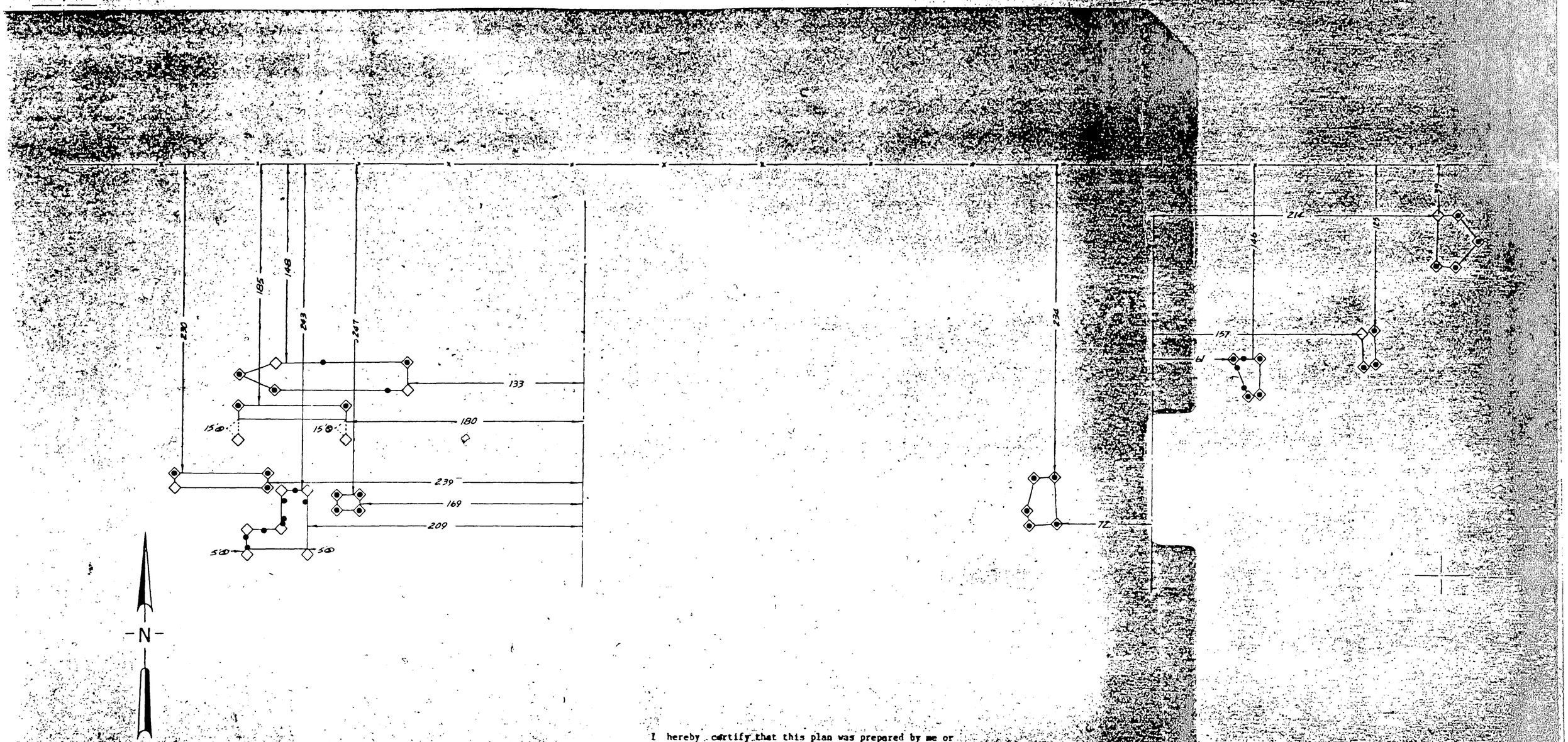
DYNAMAC INTERNATIONAL, INC.
11140 ROCKVILLE PIKE
ROCKVILLE MARYLAND

U.S. ARMY ENGINEE
CORPS OF ENGI
OMAHA, NEBR

Designed by: E. K. D.
Drawn by:
NIROP
US Army Corps of Engineers

SITE CLEAN-UP

# *Excavation Areas as found staked*
# NIROP SITE, Fridley, Minn.




I hereby certify that this plan was prepared by me or under my direct supervision, is correct to the best of my knowledge and belief, and that I am a duly registered land Surveyor under the laws of the State of Minnesota.

John O. Oliver

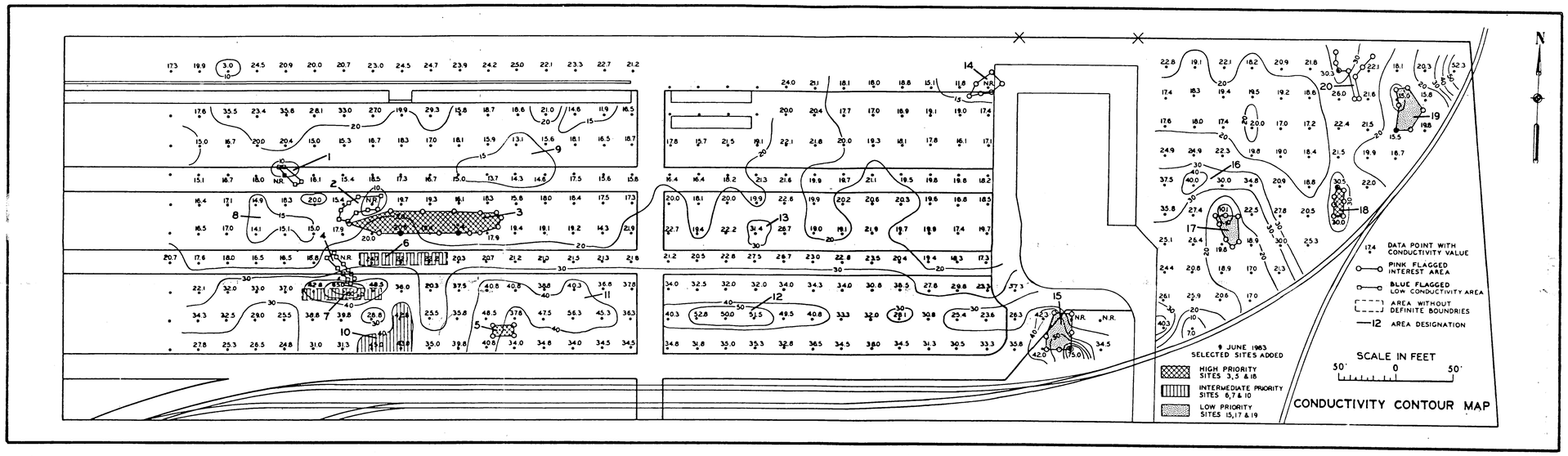
John O. Oliver, Land Surveyor
Minnesota Registration No. 8194

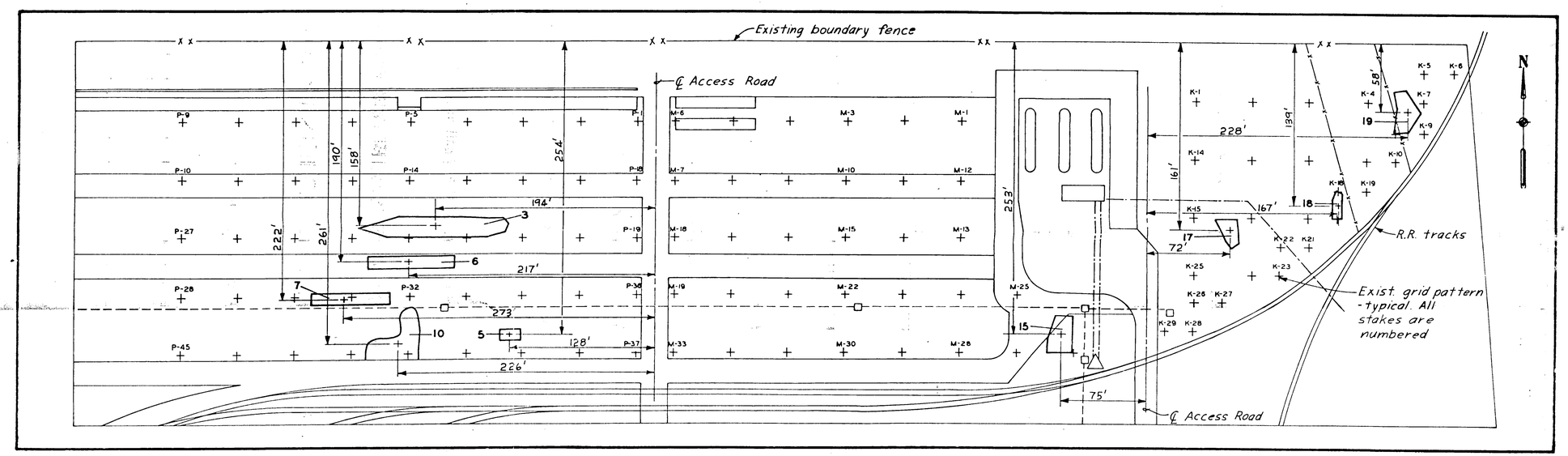
Date: February 23, 1984

• Denotes found wood lath - pink flagged
⊗ Denotes 2X2 wood stake - Set by Us

JOHN OLIVER & ASSOC. INC.
LAND SURVEYORS
Elk River, Minn.

Sheet 2 of 3




SITE LOCATIONS

SCALE: 1 INCH = 50 FEET

50' 0 50'

NOTES:

1. A grid pattern has been laid out on site with survey stakes every 50'-0". Some stakes may be missing.
2. The areas marked with pink flags are those sites marked for excavation.
3. The dimensions shown on this drawing are approximate. The contractor shall utilize the exist. grid pattern stakes in locating each site.
4. Conductivity contour map added for information only.

$$ — THINK VALUE ENGINEERING — $$

Revisions

| Symbol | Descriptions | Date | Approved |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| 1 | Am. #0001 New drawing added | 8-10-83 | DEH |

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
OMAHA, NEBRASKA

Designed by: P.E.D.

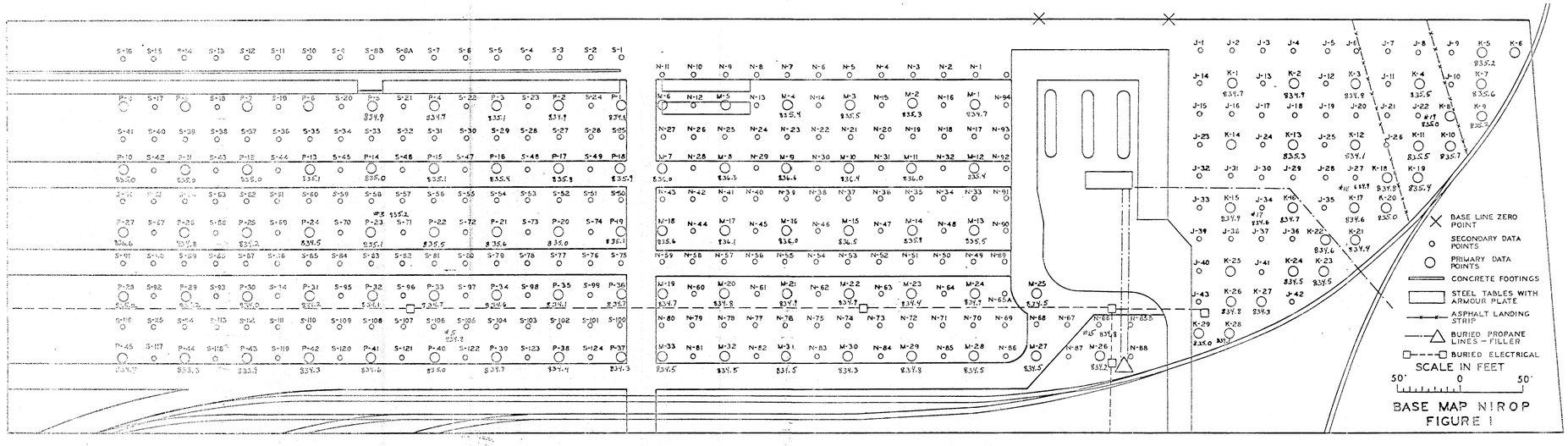
Drawn by: R.J.S.

Checked by:

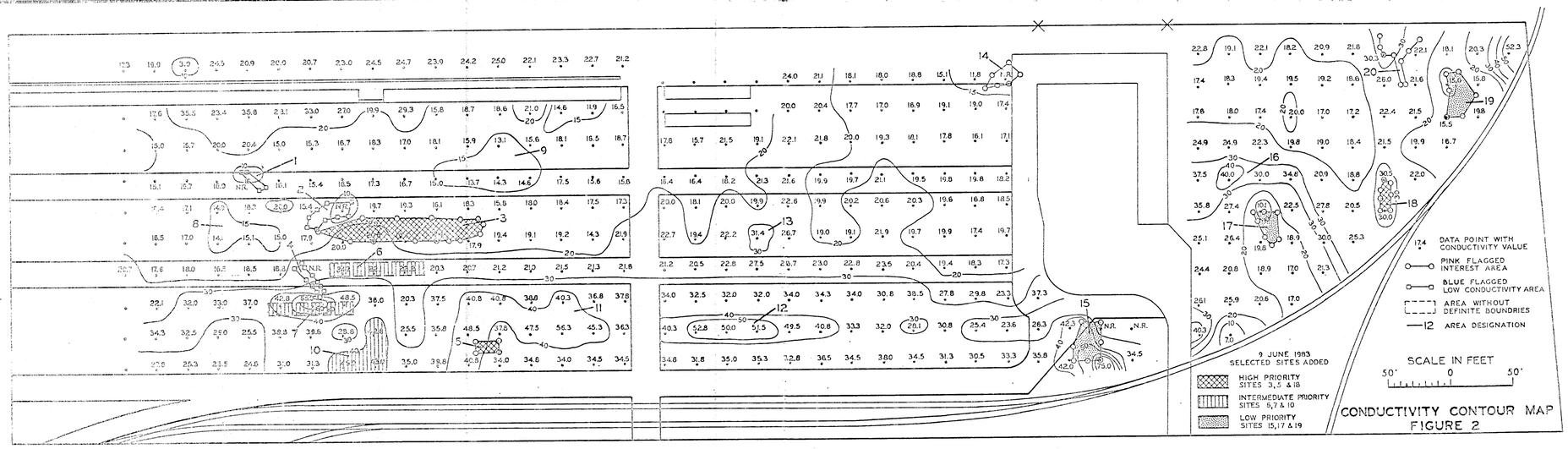
NIROP FRIDLEY, MINN.

SITE CLEAN-UP

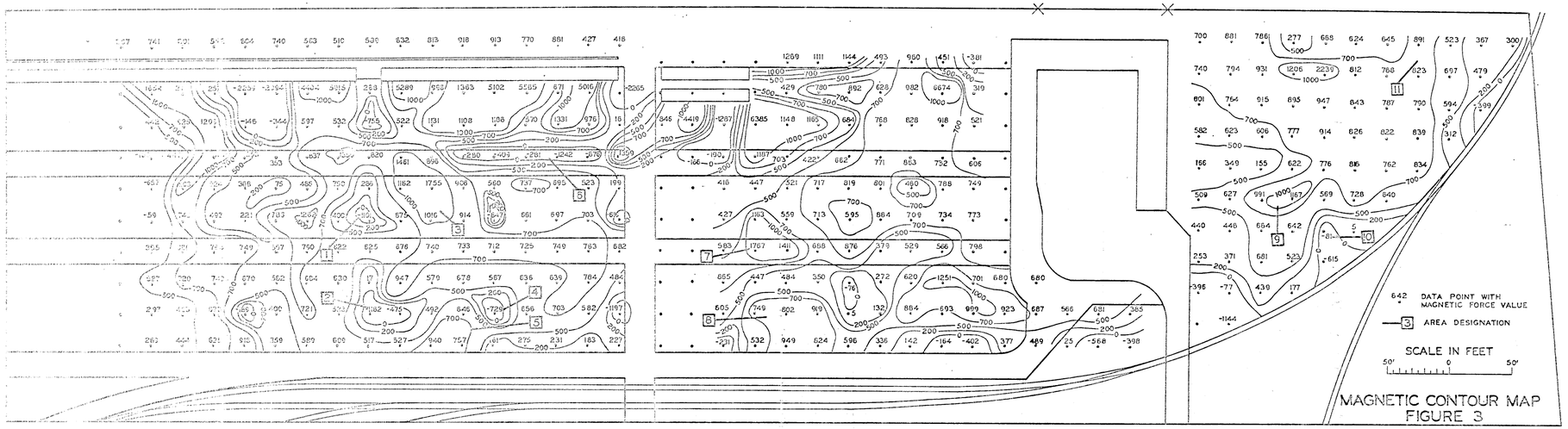
CONDUCTIVITY CONTOUR MAP
SITE LOCATIONS



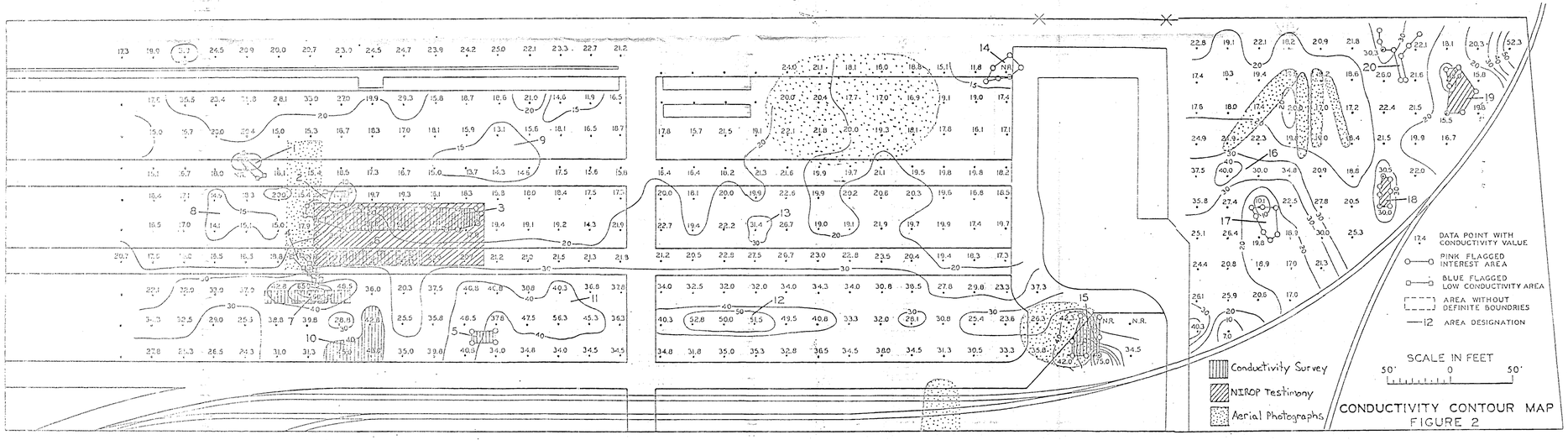

BASE MAP NIROP
FIGURE 1




CONDUCTIVITY CONTOUR MAP
FIGURE 2




MAGNETIC CONTOUR MAP
FIGURE 3




CONDUCTIVITY CONTOUR MAP
FIGURE 2