

CORRES. CONTROL
OUTGOING LTR NO.

93 RF 7137

EG&G ROCKY FLATS

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June 9, 1993

93-RF-7137

Richard J. Schassburger
Acting Director
Environmental Restoration Division
DOE, RFO

Attn: J. Pepe

OPERABLE UNIT NO. 5 (OU 5), MONITORING WELL LOCATIONS - IHSS 115 - ORIGINAL
LANDFILL - WSB-282-93

This letter is being written to present the proposed monitoring well locations for six wells to be completed downgradient of the Original Landfill (IHSS 115). This letter only addresses the locations of the monitoring wells downgradient of the Landfill as discussed in the OU 5 Phase I RCRA Facilities Investigation/Remedial Investigation (RFI/RI) Work Plan, Table 7-1, Activity 13. The groundwater sampling locations to be completed as part of the soil gas anomaly investigations (Phase I RFI/RI Work Plan, Table 7-1, Activity 12) has been addressed in a previously written letter.

The locations of the monitoring wells were originally intended to be specified in a Technical Memorandum (TM), TM 8, as prescribed in the Phase I RFI/RI Work Plan for OU 5 (OU 5 Work Plan). However, upon further review of the intent and scope of the OU 5 Work Plan by the Department of Energy (DOE), the Environmental Protection Agency (EPA) and the Colorado Department of Health (CDH), it was mutually agreed to present these proposed well locations in a less formal format; hence this letter.

Currently available information from the Interagency Agreement (IAG), the OU 5 Work Plan, and information gathered as a result of field efforts associated with the OU 5 RFI/RI, were used in locating the proposed monitoring wells. This information includes gamma radiation surveys, geophysical surveys, soil core logs from the soil boring program, existing groundwater monitoring wells, soil organic vapor surveys, well points, and the preliminary survey data from the cone penetrometer tests. TM 6, Addendum to Final Phase I RFI/RI Work Plan, Cone Penetrometer Testing and Groundwater Sampling Plan -- IHSS 115 (TM 6) presents a discussion of the background of IHSS 115 and the findings of the preliminary field efforts listed above.

PROPOSED MONITORING WELL LOCATIONS DOWNGRADIENT OF IHSS 115

The OU 5 Phase I RFI/RI Work Plan (Table 7-1, Activity 13) shows four alluvial groundwater monitoring wells located downgradient of the Original Landfill with three of the wells installed between the Original Landfill and the South Interceptor Ditch (SID), and

| DIST. | LTR | ENC |
|--------------------|-----|-----|
| BENEDETTI, R.L. | X | |
| BENJAMIN, A. | | |
| BERMAN, H.S. | | |
| BRANCH, D.B. | | |
| CARNIVAL, G.J. | | |
| DAVIS, J.G. | | |
| FERRERA, D.W. | | |
| HANNI, B.J. | | |
| HARMAN, L. K. | | |
| HEALY, T.J. | | |
| HEDAHL, T. | | |
| HILBIG, J.G. | | |
| IDEKER, F.H. | | |
| KIRBY, W.A. | | |
| KUESTER, A.W. | | |
| LEE, E.M. | | |
| MANN, H.P. | X | |
| MARX, G.E. | | |
| MCDONALD, M.M. | | |
| McKENNA, F.G. | | |
| MONTROSE, J.K. | | |
| MORGAN, R.V. | | |
| POTTER, G.L. | | |
| PIZZUTO, V.M. | | |
| RILEY, J.H. | | |
| SANDLIN, N.B. | | |
| SHEPLER, R.I. | | |
| STEWART, D.L. | | |
| SULLIVAN, M.T. | | |
| SWANSON, E.R. | | |
| WILKINSON, R.B. | X | |
| WILLIAMS, S. (ORC) | | |
| WILSON, J. M. | | |
| ZANE, J. O. | | |
| MST | EC | X |
| Bushy | WS | X |
| Smith | RC | X |

| | | |
|----------------|---|---|
| OU 5 File | X | X |
| CORRES CONTROL | X | X |
| TRAFFIC | | |
| Admin. Rec. | X | X |

CLASSIFICATION:

| | |
|--------------|--|
| UCNI | |
| UNCLASSIFIED | |
| CONFIDENTIAL | |
| SECRET | |

AUTHORIZED CLASSIFIER
SIGNATURE

DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE

IN REPLY TO RFP CC NO.

N/A

ACTION ITEM STATUS

OPEN CLOSED

PARTIAL

LTR APPROVALS:

WSB: M.E.C.H.
ORIG & TYPIST INITIALS

ECM: [Signature]

RF-464L9 (Rev. 9/92)

ADMIN RECORD

A-OU05-000185

| |
|----------------------------------|
| REVIEWED FOR CLASSIFICATION/UCNI |
| BY G. T. Ostdiek [Signature] |
| DATE 7-1-93 |

one well installed between the SID and Woman Creek (Figure 1). At the time the OU 5 Work Plan was being written, the original boundary of the Landfill had been characterized principally from reviews of historic aerial photographs and from the operational history of the site. The eastern and southern boundaries of this IHSS, as characterized by these reviews, have since been extended based on EPA and CDH investigations (TM 6). The southern boundary was extended because waste was identified in areas south of the SID. The eastern boundary was extended because a surface disturbance area east of the Landfill once served as a pipe and scrap metal storage yard and possibly a soil disposal area concurrent with, and following operations at, the Landfill. Radiological and geophysical (electromagnetic and magnetometer) surveys conducted as part of the Phase I RFI/RI investigation have yielded additional information that indicates the old Landfill boundary and disturbed area extend to the east, south, and west of these limits.

The intent of the OU 5 Work Plan was to monitor the groundwater downgradient of the original Landfill. In order to keep the intent of the OU 5 Work Plan intact, the proposed locations of two of these four monitoring wells have been adjusted and two additional monitoring wells are proposed to be added to the groundwater monitoring program. Figure 1 identifies the original OU 5 Work Plan proposed locations as A, B, C, and D (Phase I RFI/RI Work Plan, Figure 7-1). The revised proposed well locations are identified as 1 through 6. The following provides a rationale for these revised locations on a well-by-well basis.

Well 1 (formerly Well A)

Well location A has been moved approximately 200 feet to the south and renamed well location 1. This locates the well downgradient of any suspected waste. The preliminary CPT survey data (from site 06893) indicates a low area in the top of bedrock and the presence of groundwater in this area (Figure 3).

Well 2

This new well is proposed in order to locate a well at the southern edge of the fill material and downgradient of any suspected waste.

Well 3 (formerly Well B)

This proposed well location has been renamed well location 3; no other adjustment has been made. Groundwater was present in borehole #50993 but was not sampled at the time of drilling. This proposed well location is located in what appears to be a channel incised in bedrock (Figure 4).

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Well 4 (formerly Well C)

This proposed well location has been renamed well location 4; no other adjustment has been made.

Well 5 (formerly Well D)

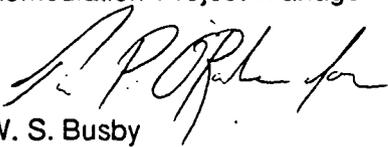
Well location D has been moved approximately 150 feet to the south and renamed well location 5. This places the well south of the SID and downgradient of the Landfill. This also places the well in an area that overlies a bedrock low (Figure 3), where groundwater is present in the alluvium as indicated by the CPT survey at location 05993, and in a probable channel incised in bedrock (Figure 4).

Well 6

This new well location is proposed in order to have a well downgradient of the eastern end of the Landfill. The well is proposed to be located at CPT location 05593 because the CPT survey indicated an underlying bedrock low (Figures 3 and 4). A visual review of the ground surface in this area reveals two seeps to the north of the location that is probably evidence of groundwater.

Wells placed at locations 1, 2, and 4 would also provide an additional line of geologic control points from which to develop cross sections for future modeling. Locations 5 and 6 could be characterized with well points; however, monitoring wells would provide additional data with regard to lithology, ongoing water samples, aquifer testing capability, and more precise location of top of bedrock.

If you have any questions regarding this transmittal, please contact E. C. Mast of Remediation Project Management at extension 8589.

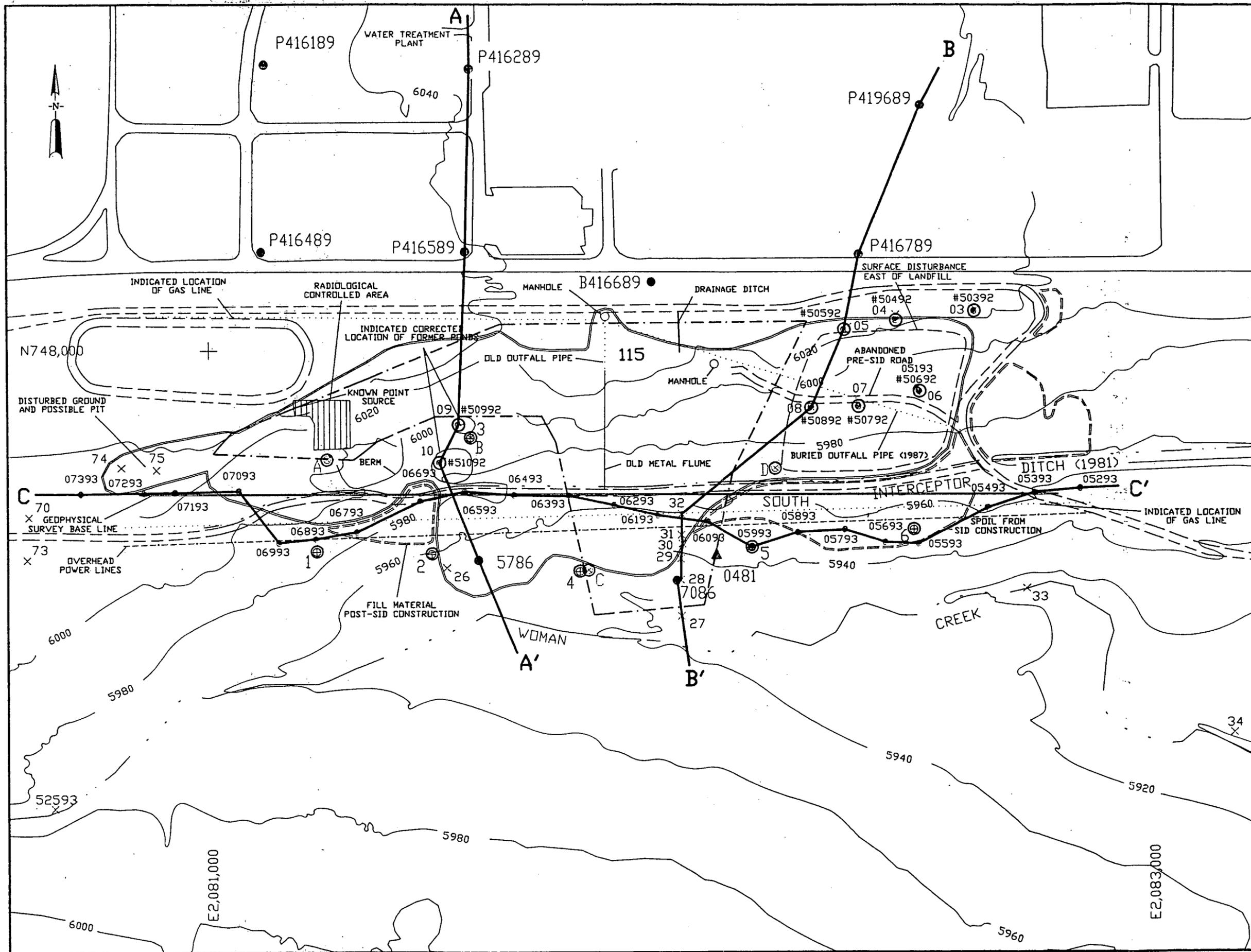

W. S. Busby
Acting Director
ERM/Remediation Project Management

ECM:dmf

Orig. and 1 cc - R. J. Schassburger

Enclosures:
As Stated

cc:
F. R. Lockhart - DOE, RFO



MAP LEGEND

- STREAMS DITCHES DRAINAGE FEATURES
- PAVED ROADS
- DIRT ROADS
- ORIGINAL LANDFILL AND SURFACE DISTURBANCE PRE - SID
- LANDFILL AND DISTURBANCE POST - SID
- EPA/CDH LANDFILL BOUNDARY (incl. IAG BOUNDARY OF IHSS 115)
- OUS WORKPLAN PROPOSED WELL LOCATIONS
- REVISED PROPOSED WELL LOCATIONS
- SOIL GAS ANOMALY BOREHOLES
- 7086 EXISTING ALLUVIAL GROUNDWATER MONITORING WELL
- 0481 PRE - 1986 MONITORING WELL
- #50792 SOIL CORES AND BORINGS (INSTALLED DECEMBER 1992 LOCATIONS APPROXIMATE)
- CONE PENETROMETER TESTING (CPT) LOCATIONS
- 27 WELLPOINT
- A-A' CROSS SECTION

0 100 200
SCALE: 1" = 200'

PROPOSED MONITORING WELL LOCATION MAP

IHSS 115 ORIGINAL LANDFILL MONITORING WELL INSTALLATION PLAN

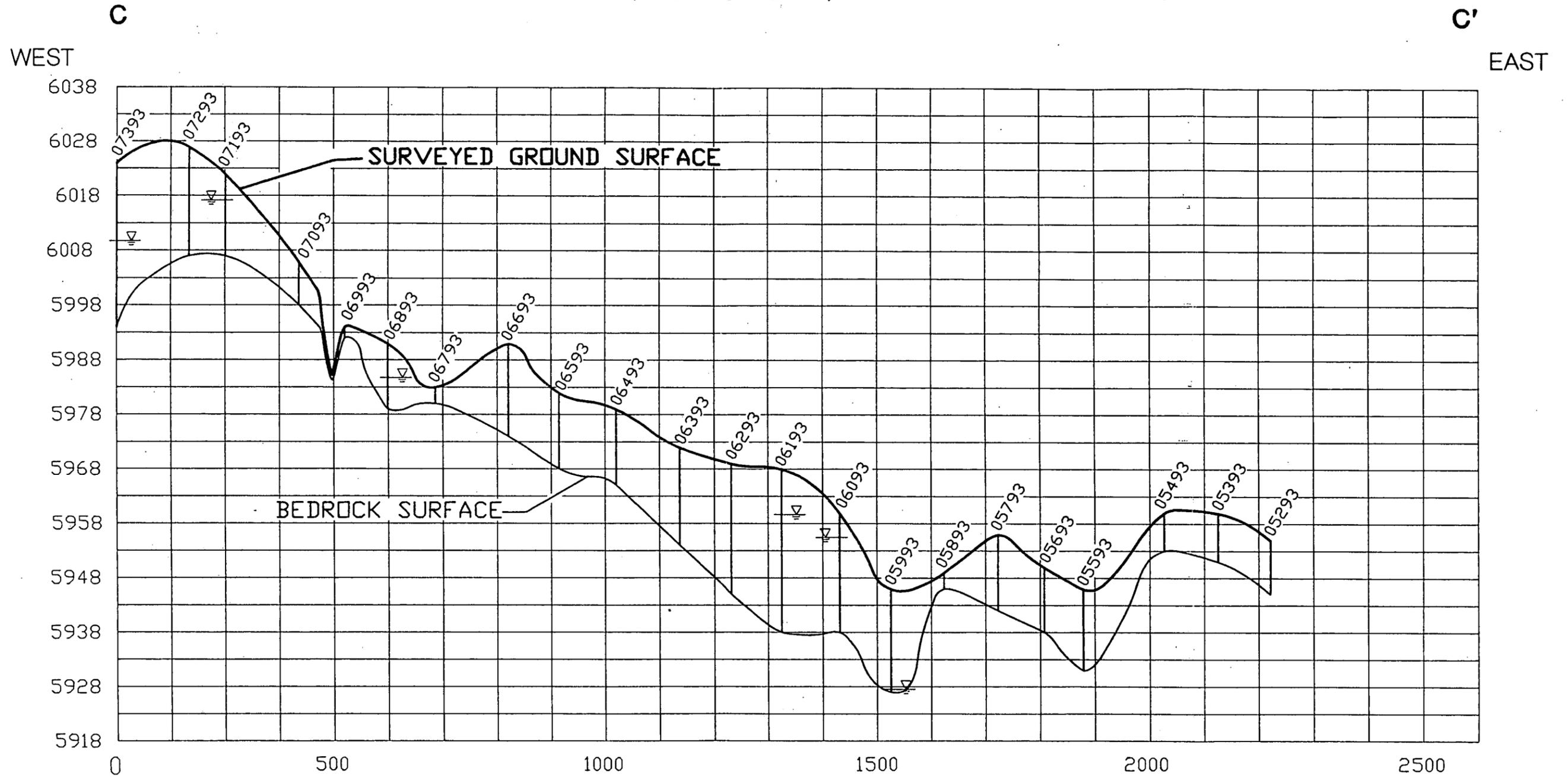
OUS PHASE I RPI/RI IMPLEMENTATION

| | | |
|--|---------------|----------|
| | 9208.15.01.18 | FIGURE 1 |
| | JUNE 9, 1993 | |

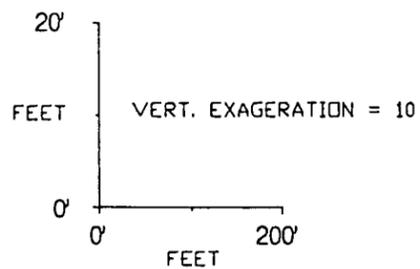
DSTM8-1.DWG

CROSS SECTION C - C'

(LOOKING NORTH)



05TM8-3.DWG



WATER LEVEL
 INTERPRETED
 FROM PRELIMINARY
 CPT SURVEY DATA

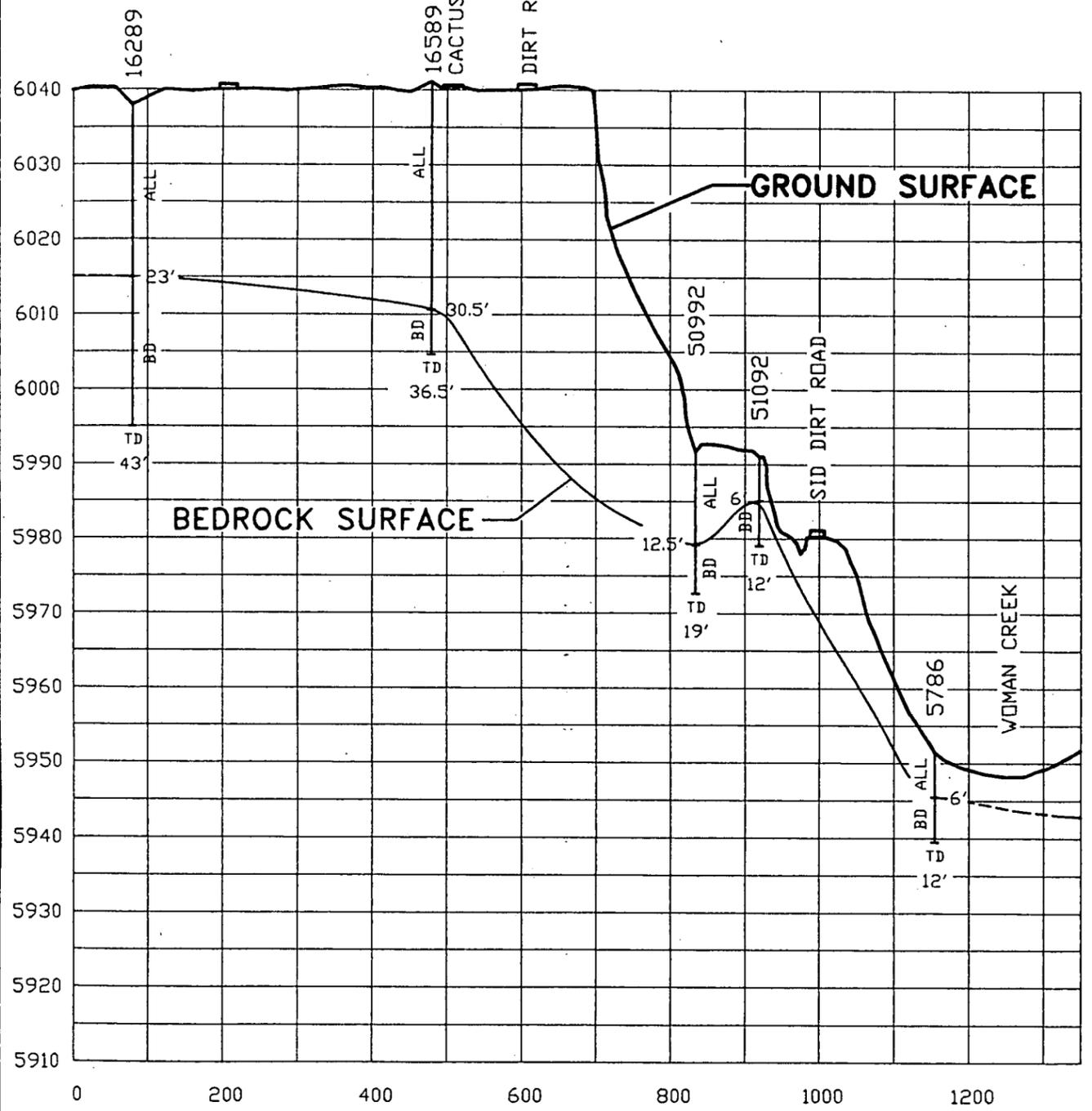
06593

 CPT SURVEY
 LOCATION

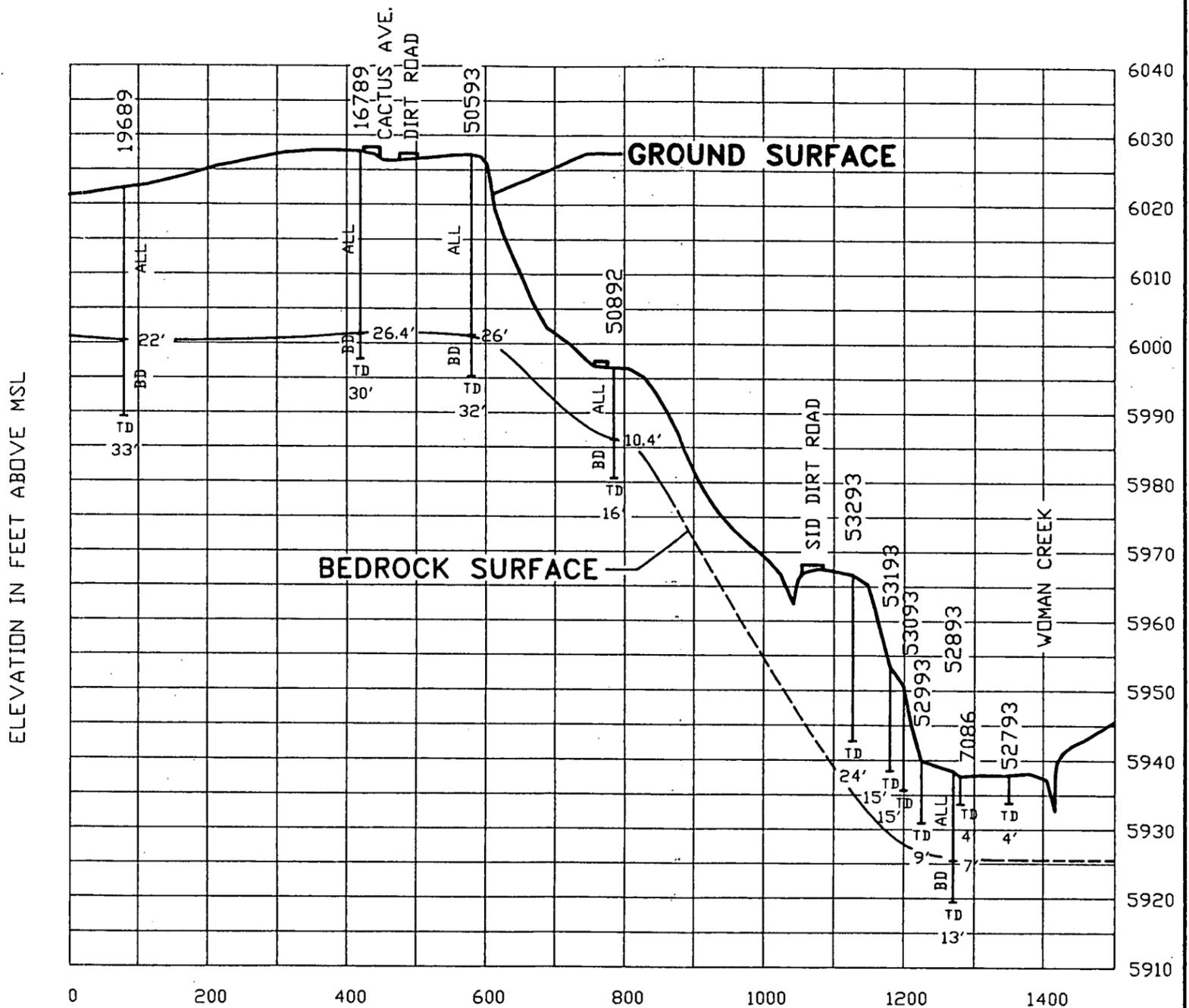
NOTE: GEOLOGIC DATA
 INTERPRETED FROM PRELIMINARY
 CPT SURVEY DATA

| | | |
|--|-------------------------------|----------|
| CONE PENETROMETER TESTING (CPT) SURVEY CROSS SECTION INTERPRETATION (PRELIMINARY DATA) | | |
| IRSS 115 ORIGINAL LANDFILL MONITORING WELL INSTALLATION PLAN | | |
| OUS PHASE I RFI/RI IMPLEMENTATION | | |
| | 0208.15.01.18 JUNE 9, 1993 | FIGURE 3 |

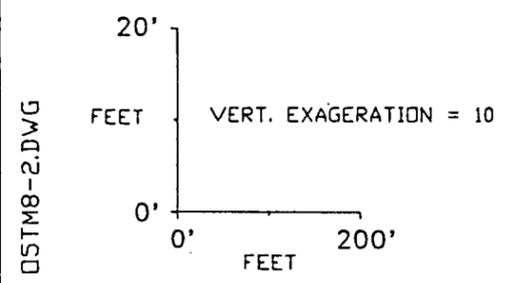
N - S CROSS SECTION A - A'
(LOOKING EAST)



N - S CROSS SECTION B - B'
(LOOKING EAST)

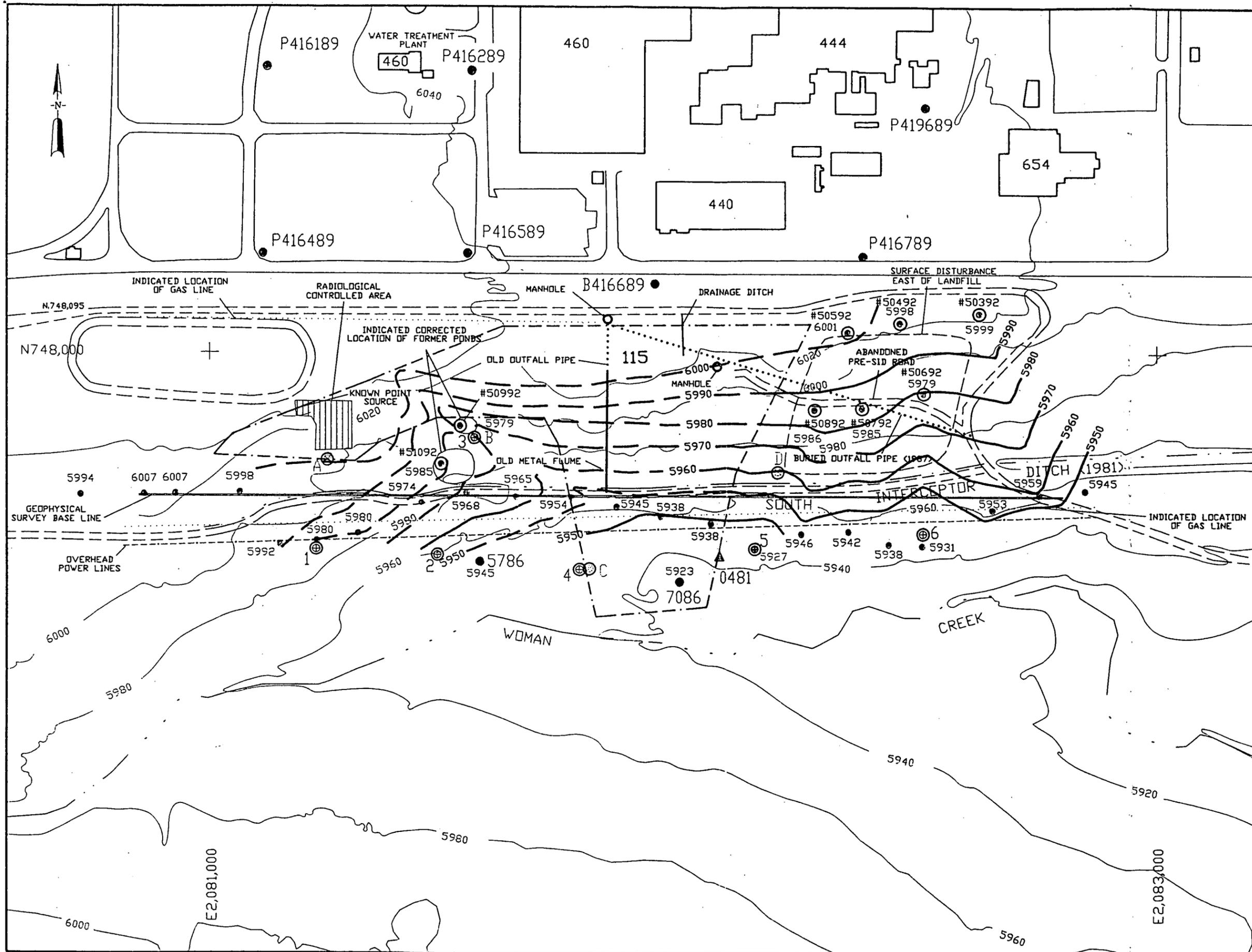


ELEVATION IN FEET ABOVE MSL



| | | |
|---|-------------------------------|----------|
| CROSS-SECTIONS A-A' AND B-B' | | |
| IHSS 115 ORIGINAL LANDFILL MONITORING WELL INSTALLATION PLAN | | |
| 006 PHASE I RFI/RI IMPLEMENTATION | | |
| | 9208.15.01.18 JUNE 9, 1993 | FIGURE 2 |

05TMB-2.DWG



MAP LEGEND

- STREAMS, DITCHES, DRAINAGE FEATURES
- PAVED ROADS
- DIRT ROADS
- EPA/CDH LANDFILL BOUNDARY (Incl. IAG BOUNDARY OF IHSS 115)
- OUS WORKPLAN PROPOSED WELL LOCATIONS
- REVISED PROPOSED WELL LOCATIONS
- EXISTING ALLUVIAL GROUNDWATER MONITORING WELL
- PRE - 1986 MONITORING WELL
- SOIL CORES AND BORINGS (INSTALLED DECEMBER, 1992 LOCATIONS APPROXIMATE)
- CONE PENETROMETER TESTING (CPT) LOCATIONS
- BEDROCK ELEVATION
- BEDROCK CONTOUR LINES
- GROUND SURFACE CONTOUR LINES

0 100 200
SCALE: 1" = 200'

BEDROCK TOPOGRAPHY MAP

IHSS 115 ORIGINAL LANDFILL MONITORING WELL INSTALLATION PLAN

OUS PHASE I RFI/RI IMPLEMENTATION

9208.15.01.18
JUNE 9, 1993

FIGURE 4

DSTM8-4.DWG