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C-NAVY-3-98-1130W

Project Number 0288

March 12, 1998

Mr. Brian Helland  
Remedial Project Manager  
Northern Division  
Naval Facilities Engineering Command  
10 Industrial Highway, Mail Stop #82  
Lester, Pennsylvania 19113

Reference: Contract No. N62472-90-D-1298, Navy (CLEAN), Contract Task Order No. 143,  
Tank Farms 4 and 5, NETC, Newport, Rhode Island

Subject: Transmittal of Tank Farm 4 Groundwater Monitoring Well Inventory

Dear Mr. Helland:

Enclosed for submittal is the Tank Farm 4 Groundwater Monitoring Well Inventory. This report presents the results of a monitoring well inventory conducted by Brown & Root Environmental at Tank Farm 4 at the Naval Education and Training Center (NETC) - Newport, Rhode Island. The inventory was performed on February 19 and 20, 1998 in accordance with a Technical Direction memorandum dated December 15, 1997. The inventory was conducted to determine the condition of monitoring wells known to be located within the Tank Farm 4 site boundary following the completion of tank demolition activities by the RAC contractor.

If you have any comments or questions on this transmittal, please contact me.

Very truly yours,

  
James R. Forreli, P.E.  
Project Manager

JRF/rt

Enclosures

c: R. Roberge, NETC-Newport, Code 40E (w/enc. - 2)  
J. Trepanowski/G. Glenn, B&R Environmental (w/enc.)  
File 0288-3.2 w/o enc./0288-8.0 (w/enc.)

Brown & Root Environmental



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**GROUNDWATER MONITORING WELL INVENTORY  
TANK FARM 4  
NETC - NEWPORT, RHODE ISLAND  
CTO 143  
MARCH 1998**

## **1.0 INTRODUCTION**

This report presents the results of a monitoring well inventory conducted by Brown & Root Environmental (B&R Environmental) at Tank Farm 4, located at Naval Education and Training Center (NETC) - Newport, Rhode Island. This work was performed under CTO143 in accordance with a Technical Direction memorandum dated December 15, 1997. The inventory was conducted to determine the condition of monitoring wells known to be located within the Tank Farm 4 site boundary following the completion of tank demolition activities by the Response Action Contract (RAC) contractor. Background information, well inventory activities, observations, and conclusions/recommendations are presented below.

## **2.0 BACKGROUND**

Tank Farm 4 was constructed during World War Two to store virgin fuel oil (No. 6 bunker oil) to supply war ships until the 1970s. Tank Farm 4 occupies 90 acres and contained 12 underground storage tanks (USTs) numbered 37 through 48. Each tank was constructed of reinforced concrete and had a capacity of approximately 2.52 million gallons. Some tanks were reportedly used for No. 2 fuel oil storage in the mid-1970s.

The tanks were demolished by the Navy's RAC contractor, Foster Wheeler Environmental Corporation, from late 1997 through early 1998 as part of UST closure activities conducted by the Navy under Rhode Island regulations. Demolition activities consist of removing ballast water, imploding the tank top, and backfilling with earth. Demolition activities involving disturbing and regrading soils located in areas surrounding the tanks resulted in damaging and destroying several wells.

Based on available information, a total of 40 monitoring wells existed at Tank Farm 4 before the demolition activity began. The wells were installed as follows: 1) two monitoring wells during the Confirmation Study (CS) conducted between 1982 and 1986; 2) eight wells installed by TRC in

1990 during the Phase I Remedial Investigation (RI) conducted under the Installation Restoration Program; and 3) thirty wells installed by B&R Environmental between 1994 and 1995 during the Preliminary Closure Assessment (PCA) and Site Investigation (SI). The CS and RI investigations focused on the reported disposal of tank bottoms at the site and the wells installed under those programs are not associated with a specific tank. PCA and SI wells were installed to evaluate the impact of past site activities on groundwater in the immediate vicinity of the 12 USTs.

### **3.0 WELL INVENTORY ACTIVITIES**

The field phase of the Tank Farm 4 well inventory was conducted on February 19-20, 1998, prior to final grading of the site. Before conducting the field phase, available data (installation logs and location data) were compiled (see Appendix A; Boring/well construction logs for the CS wells could not be located). During the field phase, each monitoring well's condition was determined by field inspection in accordance with the basic guidelines provided in B&R Environmental SOP GH-1.2 - Evaluation of Existing Wells and Water Level Measurement. The purpose of this procedure is to determine a well's serviceability, and includes observing and noting each well's general physical condition, measuring the well depth and water level with a Solinst oil/water interface probe, and checking for obstructions. In addition, each well was checked for the presence of floating product, also using the Solinst oil/water interface probe. Observations for each well were recorded on a separate "Well Inspection and Groundwater Level Measurement Sheet" (see Appendix B).

All field activities were conducted in accordance with health and safety procedures established in the Site-Specific Health and Safety Plan (HASP), which is included in the CTO 143 Tank Farms 4 and 5 Final Work Plan. The work was performed in respiratory protection level D. No sampling was performed during these activities and no investigation derived waste (IDW) other than personal protective equipment (PPE) was generated. No subcontractors were used to perform these activities.

## **4.0 INVENTORY OBSERVATIONS**

The Tank Farm 4 well inventory observations are presented in Table 1.0. Overall, sixteen wells were located and found serviceable with repairs. The other twenty-four wells have been destroyed. A discussion by program follows:

PCA/SI Wells - Of thirty PCA/SI wells, only seven are serviceable with repair. Only three of the other twenty-three wells were located. One was heavily damaged and not serviceable; the other two were destroyed. The balance of twenty wells are presumed to have been destroyed.

RI Wells - All eight RI wells were located and found to be potentially serviceable with repair.

CS Wells - One of the two CS wells was found to be potentially serviceable.

All sixteen potentially serviceable wells are unsecured. Many are missing caps or covers and are exposed to the environment. Where possible, the wells were secured using temporary cable ties.

## **5.0 CONCLUSIONS/RECOMMENDATION**

### Conclusions

The well inventory revealed that twenty-three of the thirty PCA/SI wells were destroyed, while only one of the ten RI and CS wells were destroyed by tank demolition activities. The PCA/SI wells were installed to monitor groundwater in the vicinity of specific tanks and were placed in close proximity to the tank's exterior wall, and thus were more likely impacted by the tank demolition activities. Although most of the RI and CS wells are serviceable, these wells were not installed to investigate specific USTs or used in recent UST investigations. Therefore, this conclusions and recommendations section focuses on the PCA/SI wells.

All of the potentially serviceable PCA/SI wells are not secure and may contain foreign material that may have fallen or been dropped into the wells. In addition, silt has settled in some of the wells,

reducing the amount of useable screen area and possibly increasing the turbidity of any future samples.

All of the potentially serviceable PCA/SI wells require some repair or maintenance to correct various problems observed, including damaged protective casings, separated and cracked surface seals, and surface seal, covered by fill.

The 24 destroyed monitoring wells are subject to RIDEM well abandonment procedures, Rules and Regulations for Groundwater Quality, Section 13.0.

Based on data presented in the Tank Farm 4 PCA and SI reports, additional monitoring and/or investigation is proposed at Tanks 38, 42, 45, and 48. The proposed installation of the Tank 38 monitoring well, required under the Corrective Action Plan, has not been affected by the demolition activities. In the CTO142 Work Plan Addendum 4 for the Tank Farm 4 Supplemental Site Investigation (SSI) (B&R Environmental 1996), groundwater sampling is planned at six monitoring wells listed below:

<u>Tank 42</u>	<u>Tank 45</u>	<u>Tank 48</u>
MW-123	MW-122	MW-119
	MW-330	MW-424
		MW-425

Three of these wells (MW-123, MW-122, and MW-119) could not be located and are presumed destroyed during tank closure activities. Replacement wells must be installed for these wells to collect the required groundwater samples. In addition, the other three wells should be repaired before they are sampled to ensure the wells are serviceable.

Additional investigation may be required at the remaining eight USTs based on a comparison of previously collected data against RIDEM GA groundwater standards.

## Recommendations

All remaining wells that will be used for future sampling should be re-developed to remove any foreign material that may have fallen or been dropped into the wells. This redevelopment will also be used to remove any silt that has settled inside the wells, reducing the amount of useable screen area and possibly increasing the turbidity of any future samples.

All potentially serviceable wells should receive new keyed-alike locks and appropriate repairs in order to secure the wells properly. All of the potentially serviceable wells that will be used for future sampling should have the surficial seal replaced as needed.

To complete the Tank Farm 4 Supplemental Site Investigation three wells, replacing destroyed wells (Tank 42: MW-123; Tank 45: MW-122; and Tank 48: MW-119), should be installed. The Tank Farm 4 SSI calls for subsurface soil sampling at five soil boring and monitoring well locations (Tank 42: MW-123; Tank 45: MW-122, MW-330, and SB-225; and Tank 48: MW-119). As soil borings are advanced to collect the required soil samples, three should be completed as replacement monitoring wells. In addition, the other wells at Tank 48 (MW-330, MW-424, and MW-425) should be repaired and redeveloped before samples are collected.

A complete survey should be conducted once the new wells have been constructed. This survey should include the remaining existing wells to ensure that accurate elevation data is available for use in interpreting of water level data.

The 24 destroyed monitoring wells should be abandoned in accordance with RIDEM well abandonment procedures, Rules and Regulations for Groundwater Quality, Section 13.0. To fulfill this requirement, the location of the wells will have to be established using optical survey methods and a test pit excavated at the location of the monitoring well. Once the well casing is found, it will have to be sealed with a bentonite slurry in accordance with RIDEM regulations. After the well casing is sealed, the PVC shall be cut a minimum of 4 feet below existing grade and the test pit backfilled.

**TABLE 1**  
**GROUNDWATER MONITORING WELL INVENTORY OBSERVATIONS**  
**TANK FARM 4**  
**CTO 143**  
**NETC NEWPORT, RHODE ISLAND**  
**FEBRUARY 19-20, 1998**

	PCA/SI Well (Tank No.)	Well	Type	Observed Depth bgs (ft.)	Original Depth bgs (ft.)	Free Product Observ. (ft.)	Well Condition	Comments
1.	37	MW-124	OB	na	40.74	na	destroyed	No evidence of well location found; presumed destroyed.
2.	38	MW-125	OB	na	40.67	na	destroyed	No evidence of well location found; presumed destroyed.
3.		MW-416	OB	na	39.86	na	destroyed	No evidence of well location found; presumed destroyed.
4.		MW-417	OB	na	41.80	na	destroyed	Protective casing and top 7-8 feet of the PVC well found on surface. No remaining evidence of the well location found.
5.		MW-418	OB	na	44.57	na	destroyed	No evidence of well location found; presumed destroyed.
6.	39	MW-115	OB	na	41.87	na	destroyed	No evidence of well location found; presumed destroyed.
7.	40	MW-114	OB	na	41.50	na	destroyed	No evidence of the well location found; presumed destroyed.
8.	41	MW-116	OB	na	39.66	na	destroyed	No evidence of the well location found; presumed destroyed.
9.	42	MW-123	OB	na	39.95	na	destroyed	No evidence of the well location found; presumed destroyed.
10.		MW-407	OB	na	40.38	na	destroyed	No evidence of the well location found; presumed destroyed.

TABLE 1  
GROUNDWATER MONITORING WELL INVENTORY OBSERVATIONS  
TANK FARM 4  
NETC NEWPORT, RHODE ISLAND  
FEBRUARY 19-20, 1998  
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	PCA/SI Well (Tank No.)	Well	Type	Observed Depth bgs (ft.)	Original Depth bgs (ft.)	Free Product Observ. (ft.)	Well Condition	Comments
11.	42	MW-411	OB	na	40.25	na	destroyed	No evidence of the well location found; presumed destroyed.
12.		MW-413	OB	na	38.12	na	destroyed	No evidence of the well location found; presumed destroyed.
13.	43	MW-120	OB	na	39.57	na	destroyed	Top broken off; PVC riser located and marked. Well destroyed; can be located for abandonment.
14.	44	MW-117	OB	na	39.55	na	destroyed	No evidence of the well location found; presumed destroyed.
15.	45	MW-122	OB	na	40.41	na	destroyed	No evidence of the well location found; presumed destroyed.
16.		MW-330	OB	38.00	39.88	trace	located; serviceable, needs minor repairs ✓	Not secure; protective casing cap broken. Surface seal covered by fill. No LNAPL indicated by probe but trace oil observed on probe
17.		MW-331	OB	37.51	39.15	<0.01	located but not serviceable without repair X	Protective casing bent and cap missing. Surface seal covered by fill. Well bottom soft.
18.		MW-332	OB	38.73	39.46	not observed	located; serviceable, needs minor repair X	Not secure. Surface seal covered by fill. Hard bottom.
19.	46	MW-121	OB	na	39.30	na	destroyed	Surf. seal & bailer rope found.
20.	47	MW-118	OB	na	39.37	na	destroyed	No evidence of the well location found; presumed destroyed.
21.	48	MW-119	OB	na	40.15	na	destroyed	No evidence of the well location found; presumed destroyed.

TABLE 1  
GROUNDWATER MONITORING WELL INVENTORY OBSERVATIONS  
TANK FARM 4  
NETC NEWPORT, RHODE ISLAND  
FEBRUARY 19-20, 1998  
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	PCA/SI Well (Tank No.)	Well	Type	Observed Depth bgs (ft.)	Original Depth bgs (ft.)	Free Product Observ. (ft.)	Well Condition	Comments
22.	48	MW-401	OB	na	38.86	na	destroyed	No evidence of the well location found; presumed destroyed.
23.		MW-404	OB	blocked	42.65	na	XX located; not serviceable	Severely damaged, obstructed.
24.		MW-408	OB	na	43.79	na	destroyed	No evidence of the well location found; presumed destroyed.
25.		MW-409	OB	22.02	24.56	not observed	X located but not serviceable without repair	Not secure; protective casing damaged. Well cap missing; rock found inside well. Well bottom soft.
26.		MW-412	OB	na	21.72	na	destroyed	
27.		MW-421	OB	16.12	17.88	not observed	X located but not serviceable without repair	Not secure; protective casing damaged. Surface seal covered by fill.
28.		MW-422	OB	na	26.00	na	destroyed	
29.		MW-424	BR	38.90	43.22	0.08-0.10	✓ located but not serviceable without repair	Not secure. Protective casing and cap missing. Surface seal covered by fill. Observed depth indicates well screen offset.
30.		MW-425	BR	41.13	43.41	not observed	✓ located; serviceable needs minor repair	Not secure. Protective casing cover missing. Well cap missing. Surface seal covered by fill.
31.		RI Wells	MW-1S	OB	12.26	14.0	not observed	located; serviceable X needs minor repair

TABLE 1  
GROUNDWATER MONITORING WELL INVENTORY OBSERVATIONS  
TANK FARM 4  
NETC NEWPORT, RHODE ISLAND  
FEBRUARY 19-20, 1998  
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	PCA/SI Well (Tank No.)	Well	Type	Observed Depth bgs (ft.)	Original Depth bgs (ft.)	Free Product Observ. (ft.)	Well Condition	Comments
32.	RI Wells	MW-1D	BR	47.61	54.0	not observed	located; serviceable needs minor repair X	Lock cut to gain access. Surface seal cracked and separated from protective casing.
33.		MW-2	BR	28.39	30.7	not observed	located; serviceable	Lock cut to gain access. Surface buried under silt. Surface seal slightly separated from protective casing. Located in drainage area.
34.		MW-3S	OB	26.94	27	not observed	located; serviceable, needs minor repair X	Lock cut to gain access. Surface seal cracked and separated from protective casing.
35.		MW-3D	BR	53.92	54	not observed	located; serviceable, needs minor repair X	Lock cut to gain access. Surface seal cracked and separated from protective casing.
36.		MW-4	OB	14.89	15	not observed	located; serviceable, X with repair	Not secure. Frost-heave damage to surface seal.
37.		MW-5S	BR	25.45	26	possible sheen	located; serviceable, needs minor repair X	Lock cut to gain access. Surface seal cracked and separated from protective casing. Intermittent LNAPL signal <0.01'.
38.		MW-5D	BR	41.38	42	not observed	located; serviceable, needs minor repair X	Lock cut to gain access. Surface seal cracked and separated from protective casing.

**TABLE 1**  
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**TANK FARM 4**  
**NETC NEWPORT, RHODE ISLAND**  
**FEBRUARY 19-20, 1998**  
**PAGE 5 OF 5**

	PCA/SI Well (Tank No.)	Well	Type	Observed Depth bgs (ft.)	Original Depth bgs (ft.)	Free Product Observ. (ft.)	Well Condition	Comments
39.	CS Wells	MW-10	na	26.64	na	not observed	located; serviceable, needs minor repair X	Lock cut to gain access. Surface seal slightly frost heaved. Located in drainage area.
40.		MW-11	na	na	na	na	destroyed	No evidence of the well location found; presumed destroyed.

Notes:

bgs - below ground surface

OB - overburden

BR - bedrock

na - indicates data not available or not applicable

## **APPENDIX A**

APPENDIX G-4

WELL BORING LOGS  
SITE 12 - TANK FARM FOUR

BORING NO.:	MW-1S	CONTRACTOR:	CDS	DATE STARTED:	5/14/90
PROJECT NO.:	6760-NB1	DRILLERS:	DUCHNOWSKI/FAIRCLOUGH	DATE COMPLETED:	5/14/90
PROJECT:	U.S. NAVY-NETC	TRC INSPECTOR:	SMITH	WATER TABLE EL. :	45.27 (7/19/90)
LOCATION:	NEWPORT, RI	DRILLING METHOD:	4 1/4" HOLLOW STEM AUGERS	LOCATION:	N 175.771
SITE:	12-TANK FARM FOUR	GROUND ELEVATION:	50.72		E 556.578
BORING DEPTH:	12.5 FT	CASING ELEVATION:	53.53		

DEPTH (FT)	BLOWS	OVA (PPM)	SOIL DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
0 - 2	3 4 6 16	0	FINE SAND AND SILT, BROWN (8") WEATHERED SHALE, GRAY, MOIST (12")	<p>The diagram shows a vertical cross-section of the well. On the left is a lithology column with depth markers at 0.0, 14.0, and 12.5. On the right is a well construction diagram with depth markers at 0.0, 1.0, 1.5, 2.5, and 12.5. The well construction includes a locking cover, cement/bentonite grout, a bentonite seal between 1.0 and 1.5 feet, the top of sand at 1.5 feet, the top of screen at 2.5 feet, a 2-inch PVC screen with 10 slots from 2.5 to 12.5 feet, a sand pack (No. 2) below the screen, and the bottom of the well at 12.5 feet.</p>	
2 - 4	10 12 7 8	2	WEATHERED SHALE, GRAY (4") WEATHERED SHALE, FINE SAND AND SILT, BROWN, MOIST (8")		
4 - 6	7 7 16 12	7	FINE SAND, SOME SILT, LITTLE SHALE FRAGMENTS, BROWN/RED, WET (18")		
6 - 8	20 20 27 24	11	FINE SAND AND SILT, GRAY, WET (12")		
8 - 10	22 24 30 22	12	FINE SAND AND SILT, GRAY (8") GRAVEL AND ROCK FRAGMENTS, WET (6")		
10 - 12	6 6 9 6	14	F - M SAND, SOME COARSE SAND, GRAY, WET (14")		
12 - 14	12 12 12 14	12	M - C SAND, BROWN (4") WEATHERED SHALE, SOME SILT, LITTLE FINE SAND, BROWN (12")		

END OF BORING - 14 FT

SAMPLE TF4-M01-1 COLLECTED FROM 2-4 FEET  
 SAMPLE TF4-M01-2 COLLECTED AS A DUPLICATE OF TF4-M01-1



DEPTH (FT)	CORE TIMES (MIN.)	OVA (PPM)	SOIL DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
43	3				
	5				
	4		GREEN-BLACK CARBONIFEROUS SHALE. SOME SMALL QUARTZ VEINS, SOME		
	3		IRON-OXIDE STAINING ALONG FRACTURES.		
	6				
48	5				
	4				
	3				
	4				
	6				
				54.0	54.0

2" PVC SCREEN  
10 SLOT

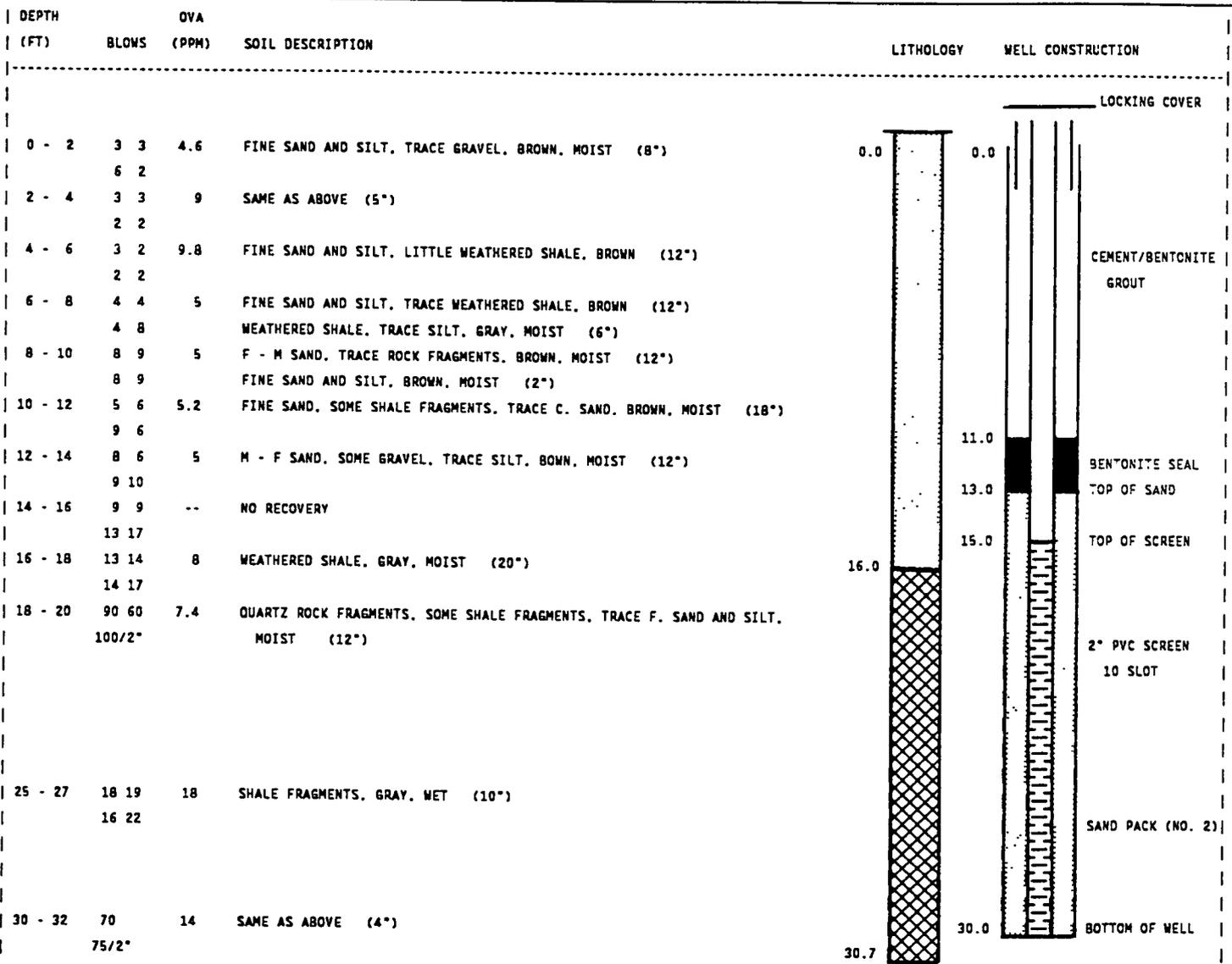
#2 SAND PACK

Nx ROCK CORE

BOTTOM OF WELL

END OF BORING - 54.0 FT

BORING NO.:	MW-2	CONTRACTOR:	COS	DATE STARTED:	5/14/90
PROJECT NO.:	6760-N81	DRILLERS:	DUCHNOWSKI/FAIRCLOUGH	DATE COMPLETED:	5/14/90
PROJECT:	U.S. NAVY-NETC	TRC INSPECTOR:	SMITH	WATER TABLE EL.:	20.01 (7/19/90)
LOCATION:	NEWPORT, RI	DRILLING METHOD:	4 1/4" HOLLOW STEM AUGERS	LOCATION:	N 175.126
SITE:	12-TANK FARM FOUR	GROUND ELEVATION:	38.32		E 556.159
BORING DEPTH:	30.7 FT	CASING ELEVATION:	41.68		



END OF BORING - 30.7 FT

SAMPLE TF4-M02-1 COLLECTED FROM 14-16 FEET

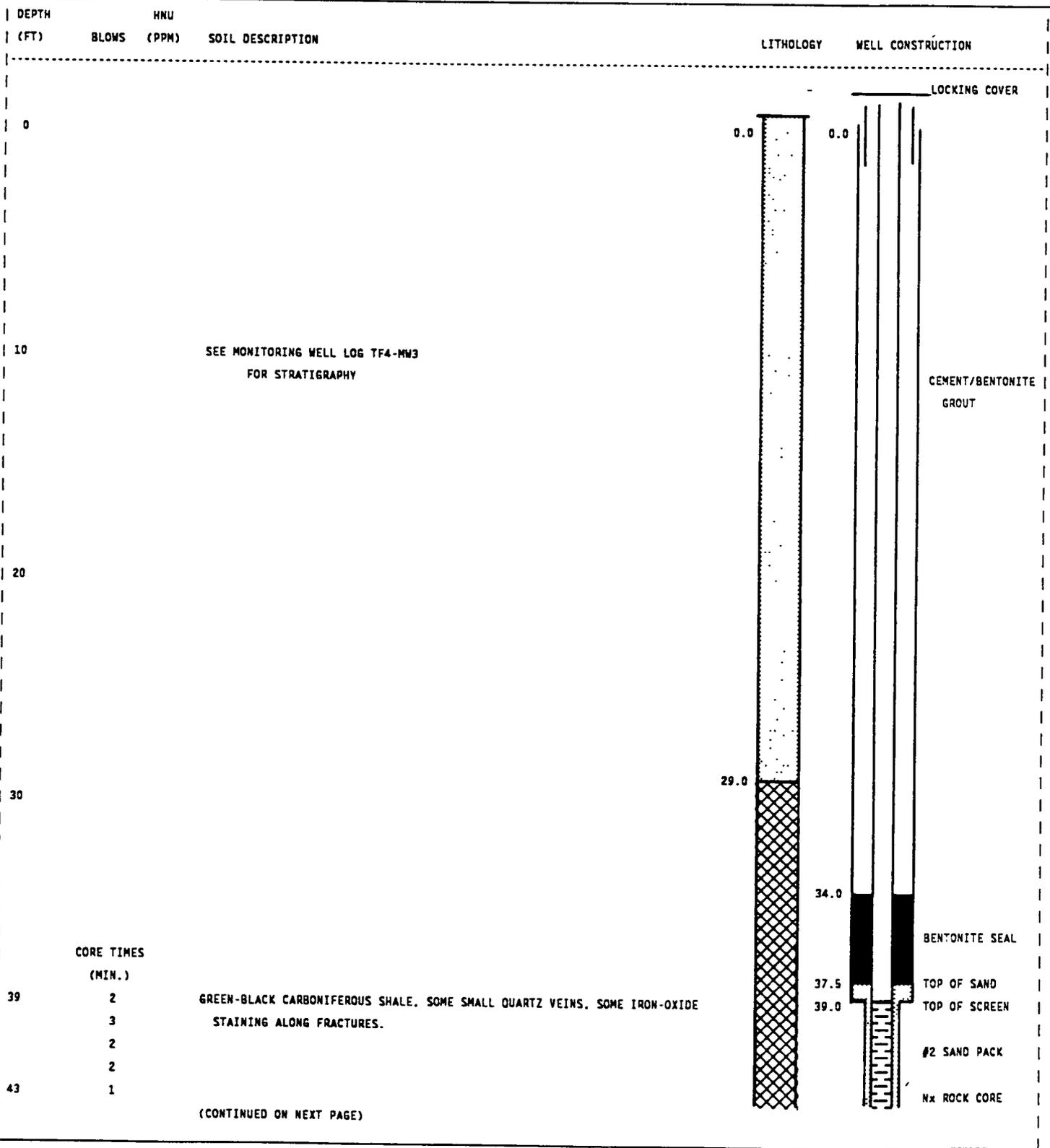
BORING NO.:	MW-3	CONTRACTOR:	CDS	DATE STARTED:	5/15/90
PROJECT NO.:	6760-NB1	DRILLERS:	DUCHNOWSKI/FAIRCLOUGH	DATE COMPLETED:	5/15/90
PROJECT:	U.S. NAVY-NETC	TRC INSPECTOR:	SMITH	WATER TABLE EL.:	50.62 (7/19/90)
LOCATION:	NEWPORT, RI	DRILLING METHOD:	4 1/4" HOLLOW STEM AUGERS	LOCATION:	N 175.406
SITE:	12-TANK FARM FOUR	GROUND ELEVATION:	47.16		E 556.159
BORING DEPTH:	27 FT	CASING ELEVATION:	50.30		

DEPTH (FT)	BLOWS	OVA (PPM)	SOIL DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
0 - 2	2 10 11 12	3	FINE SAND, SOME SILT, BROWN (8") SHALE FRAGMENTS, GRAY (8")	0.0	LOCKING COVER
2 - 4	8 8 7 13	5	SHALE FRAGMENTS, SOME SAND, LITTLE SILT, BROWN/GRAY (14")		
4 - 6	12 10 18 20	3	SAME AS ABOVE (16")		CEMENT/BENTONITE GROUT
6 - 8	10 12 14 12	3	SAME AS ABOVE (6") FINE SAND, SOME SILT, BROWN (18")		
8 - 10	8 8 8 10	4	FINE SAND, SOME SILT, BROWN, MOIST (20")	8.0	BENTONITE SEAL
10 - 12	6 10 12 18	3	FINE SAND, LITTLE SILT, BROWN, WET (20")	10.0	TOP OF SAND
12 - 14	25 24 23 18	3	FINE SAND, SOME SILT AND SHALE FRAGMENTS, BROWN, MOIST (16")	12.0	TOP OF SCREEN
14 - 16	8 9 10 11	5	SAME AS ABOVE, DRY (18")		
16 - 18	15 13 12 12	4	M - F SAND, SOME SHALE FRAGMENTS, LITTLE SILT, BROWN, MOIST (18")		2" PVC SCREEN 10 SLOT
18 - 20	5 7 8 13	5	SAME AS ABOVE (6") FINE SAND AND SILT, SOME SHALE FRAGMENTS, BROWN, MOIST (12")		
25 - 27	6 7 62 75	5	SILT, SOME FINE SAND AND SHALE FRAGMENTS, BROWN, WET (16")	27.0	SAND PACK (NO. 2) BOTTOM OF WELL

END OF BORING - 27.0 FT

SAMPLE TF4-M03-1 COLLECTED FROM 16-18 FEET

BORING NO.:	MW-30	CONTRACTOR:	CDS	DATE STARTED:	6/06/90
PROJECT NO.:	6760-M81	DRILLERS:	DUCHNOWSKI/FAIRCLOUGH	DATE COMPLETED:	6/06/90
PROJECT:	U.S. NAVY-NETC	TRC INSPECTOR:	SMITH	WATER TABLE EL. :	49.18 (7/19/90)
LOCATION:	NEWPORT, RI	DRILLING METHOD:	4-1/4" HSA; Mx ROCK CORING	LOCATION:	N 175.407
SITE:	12-TANK FARM FOUR	GROUND ELEVATION:	73.59	E	557.003
BORING DEPTH:	54 FT	CASING ELEVATION:	76.61		



DEPTH (FT)	CORE TIMES (MIN.)	OVA (PPM)	SOIL DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
44	2				
	3				
	4		GREEN-BLACK CARBONIFEROUS SHALE, SOME SMALL QUARTZ VEINS, SOME		
47	2		IRON-OXIDE STAINING ALONG FRACTURES.		
	5				
	5				
	2				
	3				
52	5				
	5				
				54.0	BOTTOM OF WELL

END OF BORING - 54.0 FT

BORING NO.:	MW-4	CONTRACTOR:	COS	DATE STARTED:	5/15/90
PROJECT NO.:	6760-NB1	DRILLERS:	DUCHNOWSKI/FAIRCLOUGH	DATE COMPLETED:	5/15/90
PROJECT:	U.S. NAVY-NETC	TRC INSPECTOR:	SMITH	WATER TABLE EL. :	20.83 (7/19/90)
LOCATION:	NEWPORT, RI	DRILLING METHOD:	4 1/4" HOLLOW STEM AUGERS	LOCATION:	N 175.149
SITE:	12-TANK FARM FOUR	GROUND ELEVATION:	34.15		E 555.224
BORING DEPTH:	15 FT	CASING ELEVATION:	37.51		

DEPTH (FT)	BLOWS	OVA (PPM)	SOIL DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
0 - 2	2 2 3 5	2.5	FINE SAND, LITTLE SILT, BROWN, MOIST (20")		LOCKING COVER CEMENT/BENTONITE GRCUT
2 - 4	15 16 14 12	2	FINE SAND, SOME SHALE FRAGMENTS, LITTLE SILT, BROWN/GRAY (18") FINE SAND, SOME SILT, BROWN, MOIST (24")		BENTONITE SEAL TOP OF SAND
4 - 6	13 24 40 46	3	FINE SAND, TRACE SILT, BROWN, WET (12") FINE SAND, SOME GRAVEL, LITTLE SILT, BROWN, WET (24")		TOP OF SCREEN
6 - 8	68 24 22 20	2	FINE SAND, SOME GRAVEL, TRACE SILT, BROWN, WET (16")		2" PVC SCREEN 10 SLOT
8 - 10	16 18 17 10	2	FINE SAND, SOME SILT, LITTLE GRAVEL, BROWN, WET (12")		
10 - 12	2 3 4 10	2	FINE SAND AND SILT, BROWN, WET (20")		SAND PACK (NO. 2)
12 - 14	10 15 16 27	3	FINE SAND AND SILT, LITTLE GRAVEL, BROWN, WET (14")		
14 - 16	15	--	ROCK FRAGMENTS, TRACE SILT, WET (22")		BOTTOM OF WELL

END OF BORING ~ 16 FT

SAMPLE TF4-M04-1 COLLECTED FROM 2-4 FEET

BORING NO.: MW-5                      CONTRACTOR: CDS                      DATE STARTED: 5/09/90  
 PROJECT NO.: 6760-NB1                DRILLERS: DUCHNOWSKI/FAIRCLOUGH    DATE COMPLETED: 5/09/90  
 PROJECT: U.S. NAVY-NETC            TRC INSPECTOR: SMITH                WATER TABLE EL.: 94.66 (7/19/90)  
 LOCATION: NEWPORT, RI                DRILLING METHOD: 4 1/4" HOLLOW STEM AUGERS    LOCATION: N 175.316  
 SITE: 12-TANK FARM FOUR             GROUND ELEVATION: 115.21            E 557.712  
 BORING DEPTH: 26 FT                 CASING ELEVATION: 118.50

DEPTH (FT)	BLOWS	OVA (PPM)	SOIL DESCRIPTION	LITHOLOGY	WELL CONSTRUCTION
0 - 2	2 6 7 22	1.2	SILT AND FINE SAND, TRACE COARSE SAND, BROWN/BLACK, MOIST (16")	0.0	LOCKING COVER
2 - 4	22 24 26 22	1.4	F - M SAND, LITTLE SILT, LITTLE GRAVEL, BROWN, MOIST (12")		
4 - 6	25 24 20 24	1.7	SILT, SOME FINE SAND, LITTLE GRAVEL, GRAY, MOIST (18")		CEMENT/BENTONITE GROUT
6 - 8	25 18 20 27	1.7	SAME AS ABOVE (18")		
8 - 10	25 34 44 50	24	SAME AS ABOVE, VERY MOIST (8")		
10 - 12	25 26 30 40	--	NO RECOVERY		
12 - 14	20 40 60 60	1.4	WEATHERED SHALE, LITTLE ANGULAR ROCK, GRAY, DRY (18")	12.0	BENTONITE SEAL
14 - 16	7 15 18 22	1.3	SAME AS ABOVE (12")	13.0	TOP OF SAND
16 - 18	75 60 44 25	1.1	SAME AS ABOVE (22")	16.0	TOP OF SCREEN
18 - 20	18 100/4"	1.1	SAME AS ABOVE (8")		2" PVC SCREEN 10 SLOT
					SAND PACK (NO. 2)
25 - 27	13 100/4"	3.3	SAME AS ABOVE, SATURATED (8")	26.0	BOTTOM OF WELL

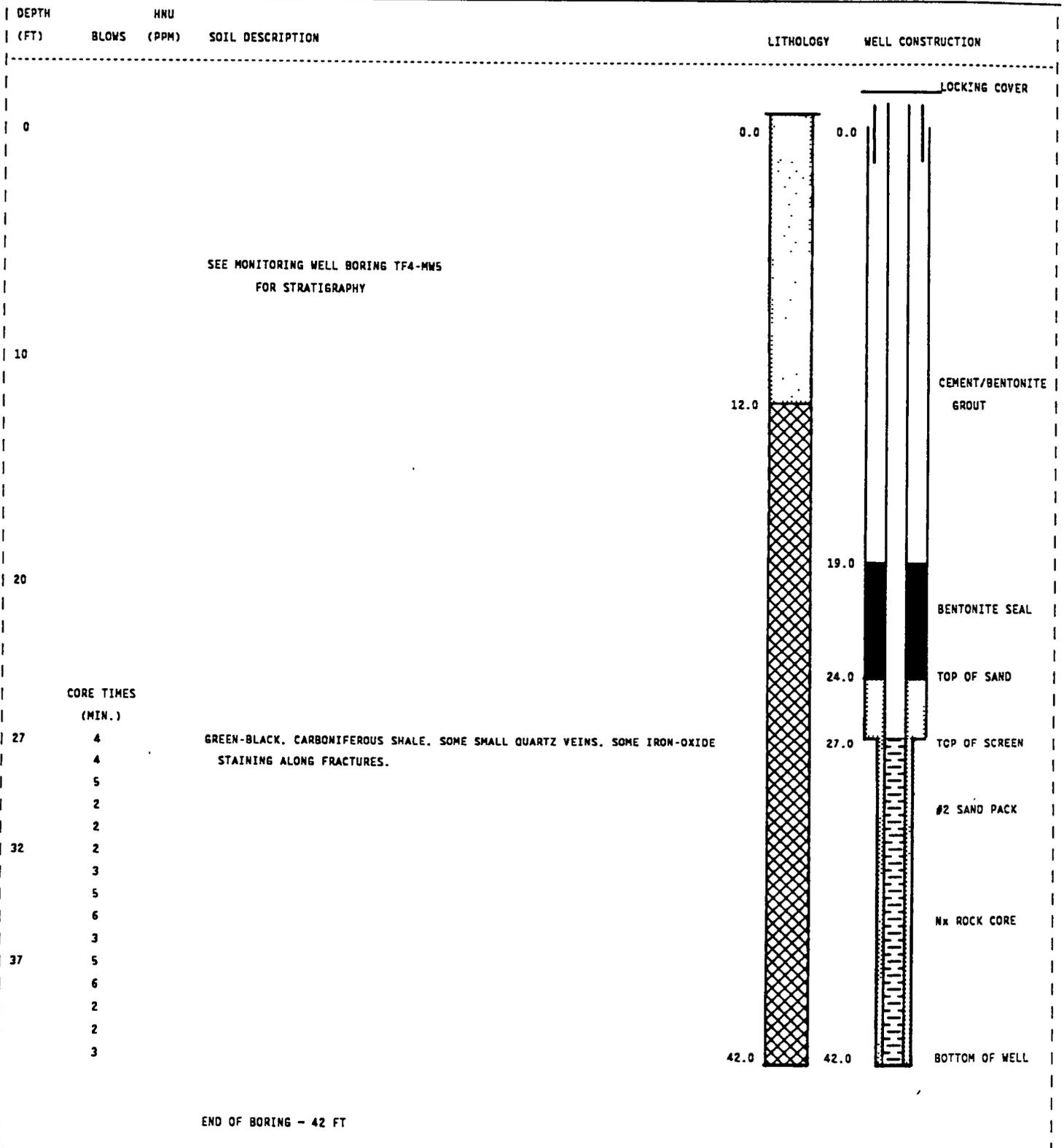
END OF BORING - 26 FEET

SAMPLE TF4-M05-1 COLLECTED FROM 16-18 FEET

BORING NO.: MW-5D  
 PROJECT NO.: 6760-NB1  
 PROJECT: U.S. NAVY-NETC  
 LOCATION: NEWPORT, RI  
 SITE: 12-TANK FARM FOUR  
 BORING DEPTH: 42 FT

CONTRACTOR: COS  
 DRILLERS: DUCHNOWSKI/FAIRCLOUGH  
 TRC INSPECTOR: SMITH  
 DRILLING METHOD: 4-1/4" HSA; N<sub>x</sub> CORING  
 GROUND ELEVATION: 115.13  
 CASING ELEVATION: 118.27

DATE STARTED: 5/31/90  
 DATE COMPLETED: 6/05/90  
 WATER TABLE EL.: 86.67 (7/19/90)  
 LOCATION: N 175.321  
 E 557.711



**100 SERIES WELL CONSTRUCTION LOGS**

TANK 40 WELL NO. MW-114 BORING NO. TF4-B-40  
 OVERBURDEN WELL CONSTRUCTION LOG HALLIBURTON NUS ENVIRONMENTAL CORPORATION

PROJECT: CTO 143 PAGE: 1 OF 1  
 PROJECT LOCATION: NEIC Newport TF4+S  
 CLIENT: NAV FAC ENGI 10M  
 CONTRACTOR: EDI DRILLER: J. St George Sila Muncha  
 LOGGED BY: K. Jankut DATE: 11/7/94 + 11/9/94 BORING NO.: TF4-MW114  
 CHECKED BY: DATE: PROJECT NO.: 0288 CTO 143

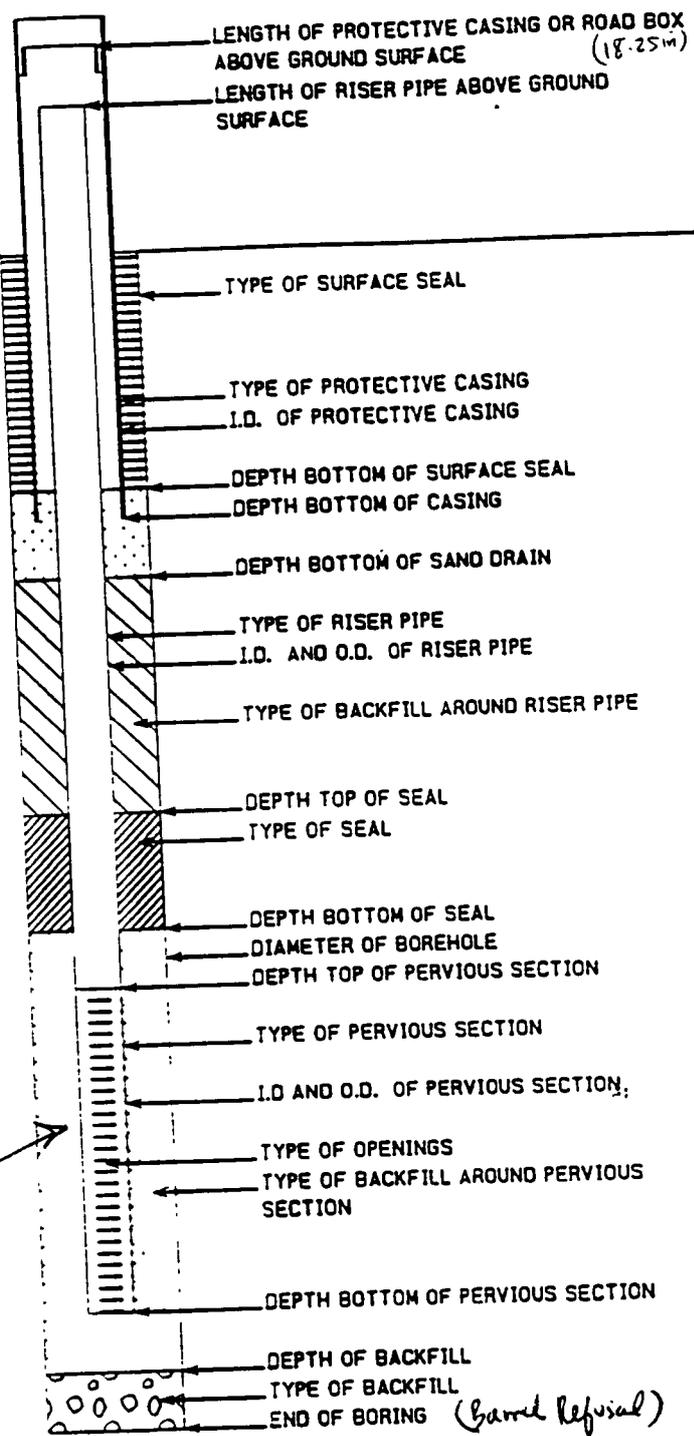
ELEVATION TOP OF PROTECTIVE CASING 53.62  
MLL  
 ELEVATION TOP OF RISER PIPE 53.31  
MLL

(22 in)  
 1.9 FT  
 ~ 1.5 FT

GROUND ELEVATION 51.8  
MLL

(ES)

General soil conditions (not to scale)



LENGTH OF PROTECTIVE CASING OR ROAD BOX ABOVE GROUND SURFACE (18.25 in)  
 LENGTH OF RISER PIPE ABOVE GROUND SURFACE

TYPE OF SURFACE SEAL

Quilcrete Concrete Mix

TYPE OF PROTECTIVE CASING  
 I.D. OF PROTECTIVE CASING

Steel  
 6 in

DEPTH BOTTOM OF SURFACE SEAL  
 DEPTH BOTTOM OF CASING

2.5 FT  
 3.1

DEPTH BOTTOM OF SAND DRAIN

4 FT

TYPE OF RISER PIPE  
 I.D. AND O.D. OF RISER PIPE

Schedule 40 PVC  
 4" / 4 1/4"

TYPE OF BACKFILL AROUND RISER PIPE

Bent. Grout + Sand

DEPTH TOP OF SEAL  
 TYPE OF SEAL

31 FT  
 Bent. chips

DEPTH BOTTOM OF SEAL  
 DIAMETER OF BOREHOLE  
 DEPTH TOP OF PERVIOUS SECTION

33 FT  
 10 1/4 in  
 35 FT

TYPE OF PERVIOUS SECTION  
 I.D AND O.D. OF PERVIOUS SECTION,

Sched. 40 PVC  
 4" / 4 1/4"

TYPE OF OPENINGS  
 TYPE OF BACKFILL AROUND PERVIOUS SECTION

0.010 slots  
 #1 Sand

Centralizer and screen

DEPTH BOTTOM OF PERVIOUS SECTION

40 FT

DEPTH OF BACKFILL  
 TYPE OF BACKFILL

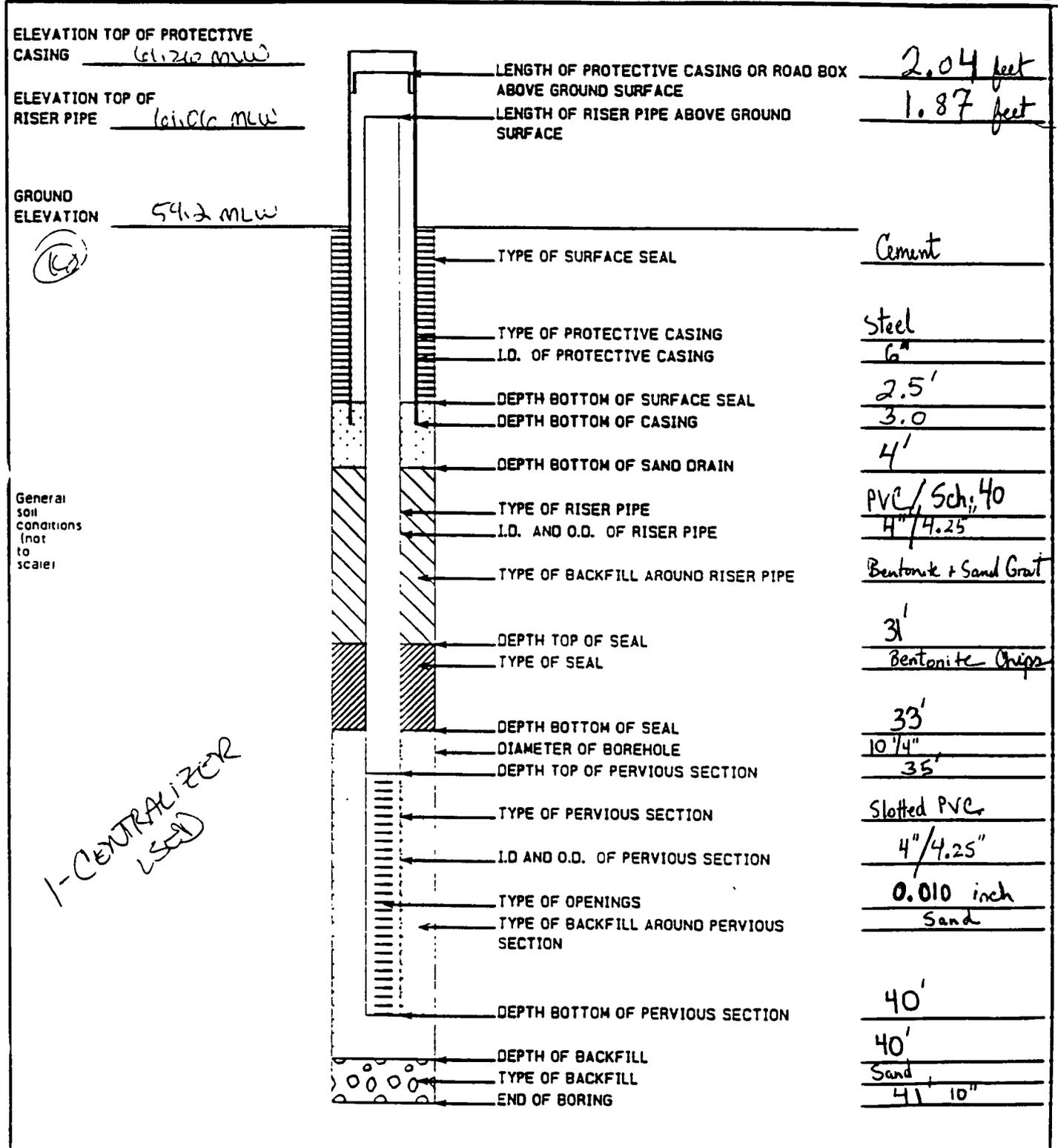
40 FT  
 Sand

END OF BORING (Gravel Refusal)

41.8 FT

K1 (TANK 39 WELL NO. MW-115 BORING NO. TF4-B-39)  
 OVERBURDEN WELL CONSTRUCTION LOG HALLIBURTON NUS ENVIRONMENTAL CORPORATION

PROJECT: TF4 & 5 - CTO143	PAGE: 1 OF 1
PROJECT LOCATION: NETC - Newport, RI	
CLIENT: NAVFAC ENG COM	WELL BORING NO.: MW-115 / TF4-B-39
CONTRACTOR: EDI	DRILLER: EDI - AJ Caron
LOGGED BY: B. Claver	BORING LOCATION: NETC - Newport
CHECKED BY:	DATE: 11-08-97
	PROJECT NO.: 0288

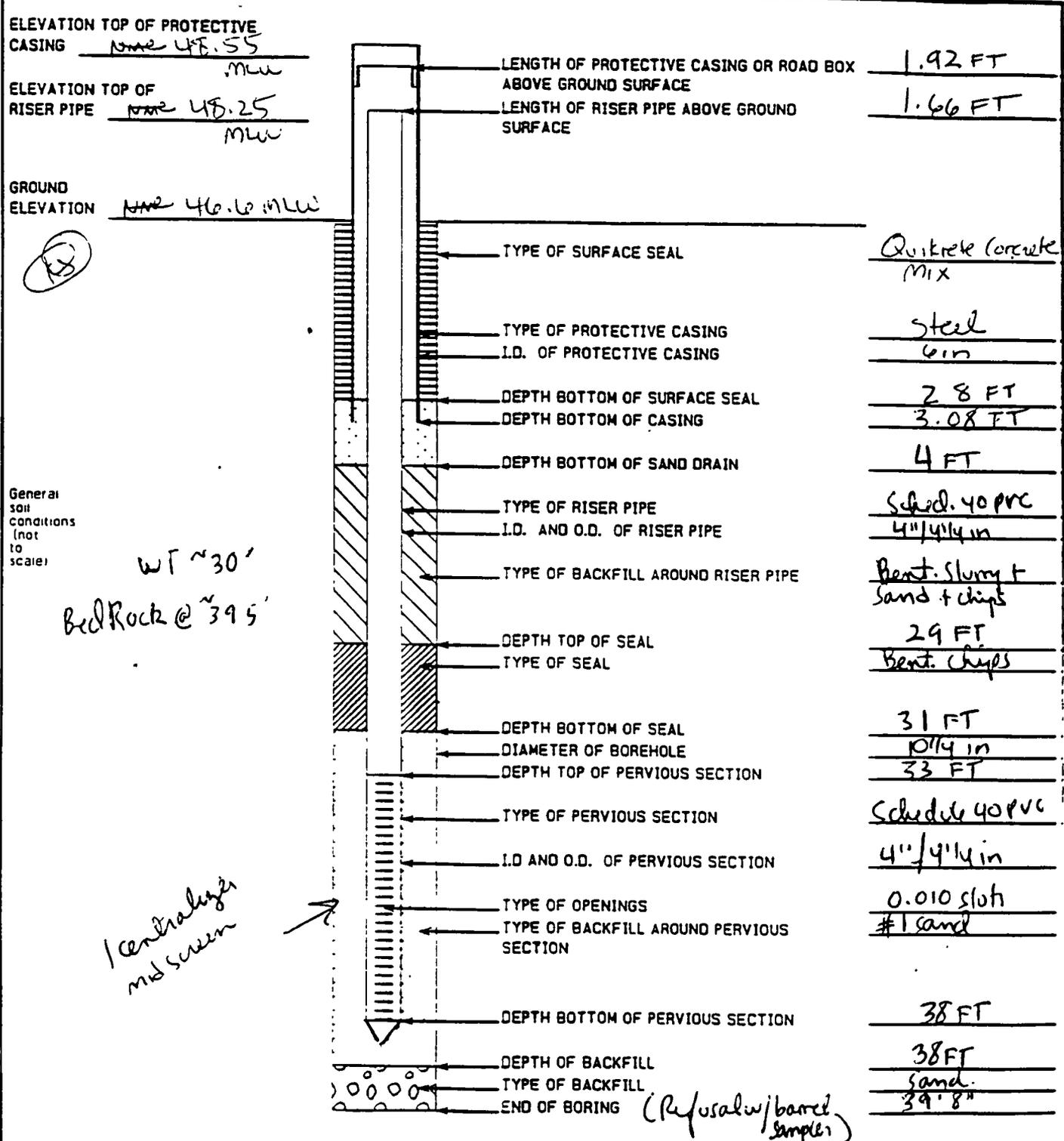


(TANK 41 WELL NO. MW-116 BORING NO TF4-B-41)

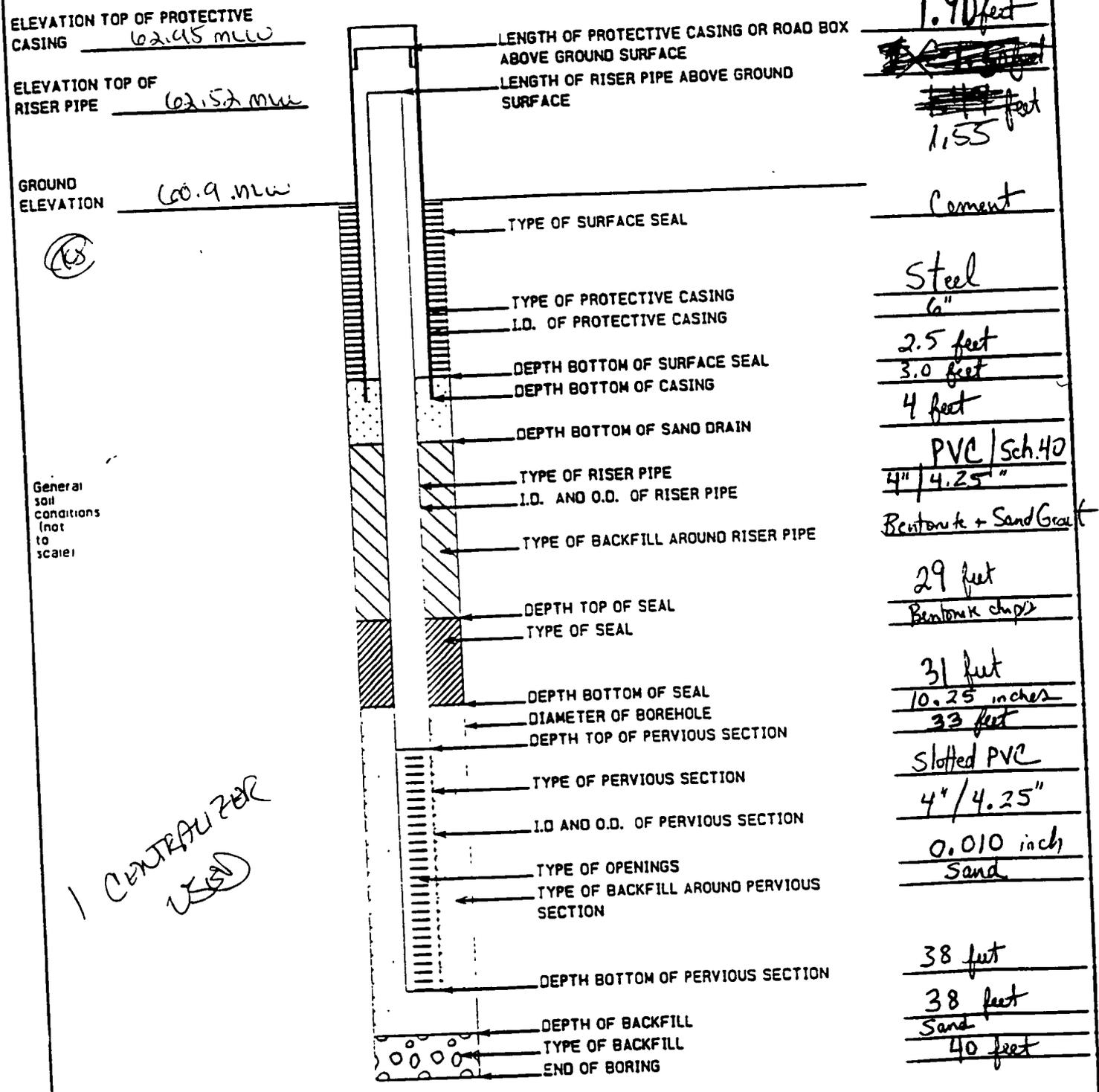
OVERBURDEN WELL CONSTRUCTION LOG

HALLIBURTON NUS ENVIRONMENTAL CORPORATION

PROJECT: TC 143 PAGE: 1 OF 1  
 PROJECT LOCATION: NETC - Newport  
 CLIENT: NAV FAC ENG 10M (S) well TF4-116 / TF4-B-41  
 BORING NO.: MW 116 / TF4-B-41  
 CONTRACTOR: EDI DRILLER: S. LAMARCHE BORING LOCATION: Tank 41  
 LOGGED BY: Salkut DATE: 11/9/94 PROJECT NO.: 0288  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_



PROJECT: TF485 - 170143 PAGE: 1 OF 1  
 PROJECT LOCATION: NETC - Newport RI  
 CLIENT: NAVFACENCOM  
 CONTRACTOR: EDI DRILLER: AJ Caron  
 LOGGED BY: B. Chavez DATE: 11/09/94 BORING NO.: MW-117 / TF4-B-44  
 CHECKED BY: DATE: PROJECT NO.: 0285

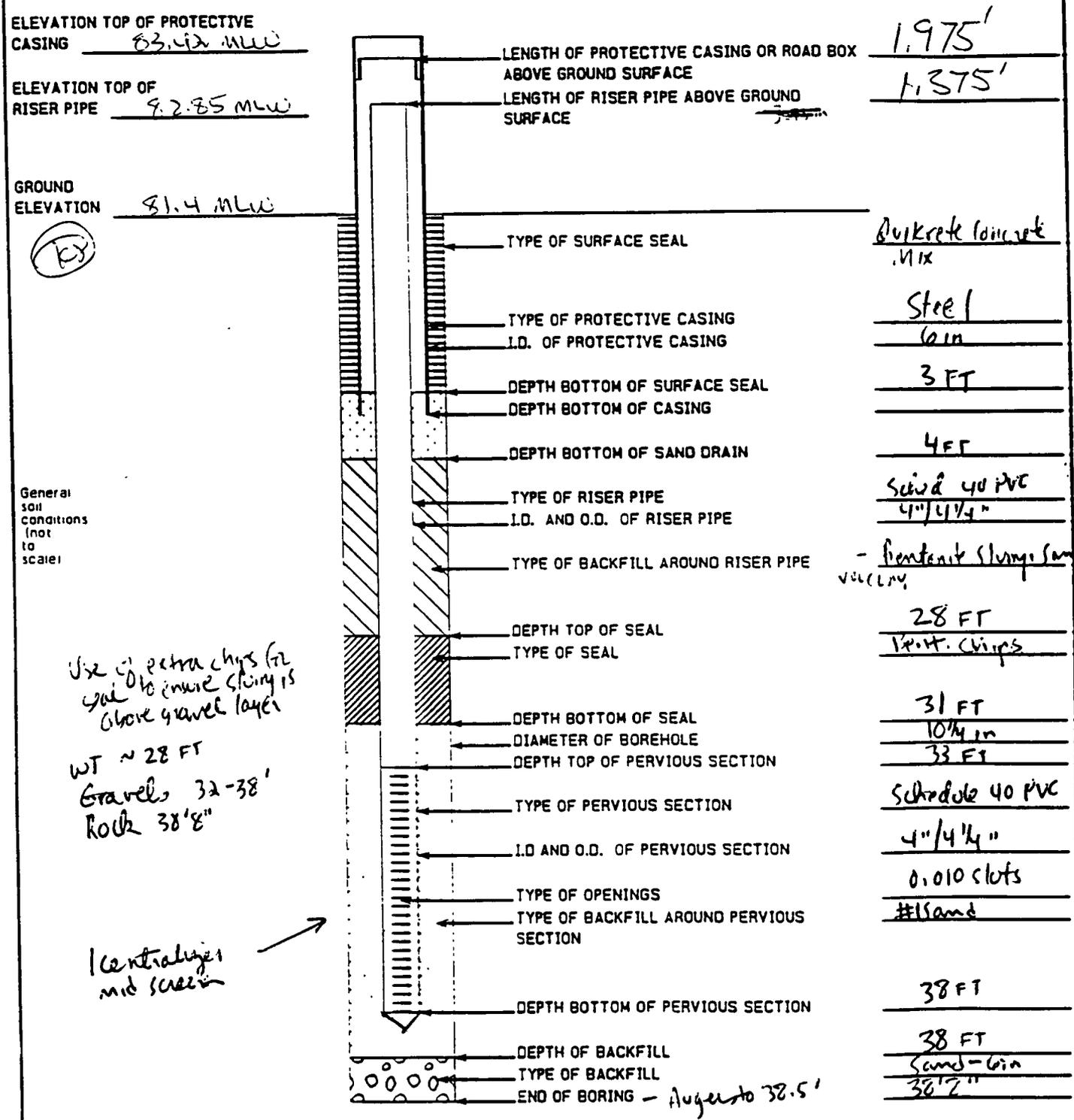


General soil conditions (not to scale)

1 CENTRALIZER USED

(15) (TANK 47 WELL NO. MW-118 BORING NO. TF4-B-47)  
 OVERBURDEN WELL CONSTRUCTION LOG HALLIBURTON NUS ENVIRONMENTAL CORPORATION

PROJECT: CTD 143 PAGE: 1 OF 1  
 PROJECT LOCATION: DETC Newport  
 CLIENT: NAVFAC ENG-10M (15) WELL NO. TF4-MW118 / -TF4-B-47  
 CONTRACTOR: EDI DRILLER: S. La Marche BORING LOCATION: Tank 47 Farm 4  
 LOGGED BY: K Jaikot DATE: 11/10/94 PROJECT NO.: 0288  
 CHECKED BY: DATE:



General soil conditions (not to scale)

Use of extra chips for seal to insure string is above gravel layer

WT ~ 28 FT  
 Gravel 32-38'  
 Rock 38'8"

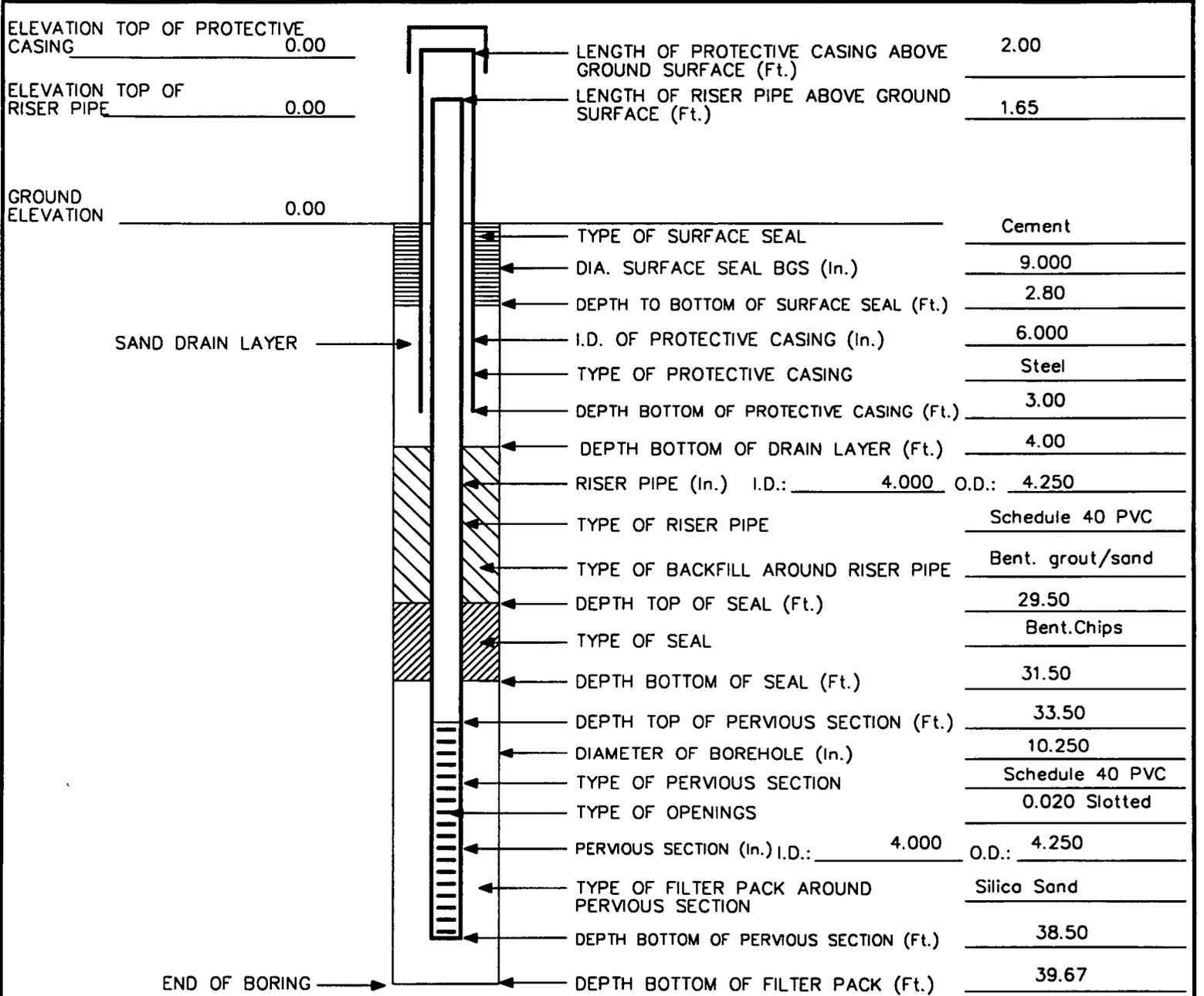
1 centralizer and screen

END OF BORING - August 38.5'

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: <u>PCA</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>TF4-MW119</u>
CLIENT: <u>NAVFAC</u>	BORING NO: <u>TF4-B-48</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>S. LaMarche</u>
LOGGED BY: <u>K.Jalkut</u>	DATE: <u>11/11/1994</u>
CHECKED BY: <u>M SNA</u>	DATE: <u>4-30-96</u>
BORING LOCATION: <u>Tank 48</u>	
<u>Tank Farm 4</u>	
PAGE: 1 OF 1	

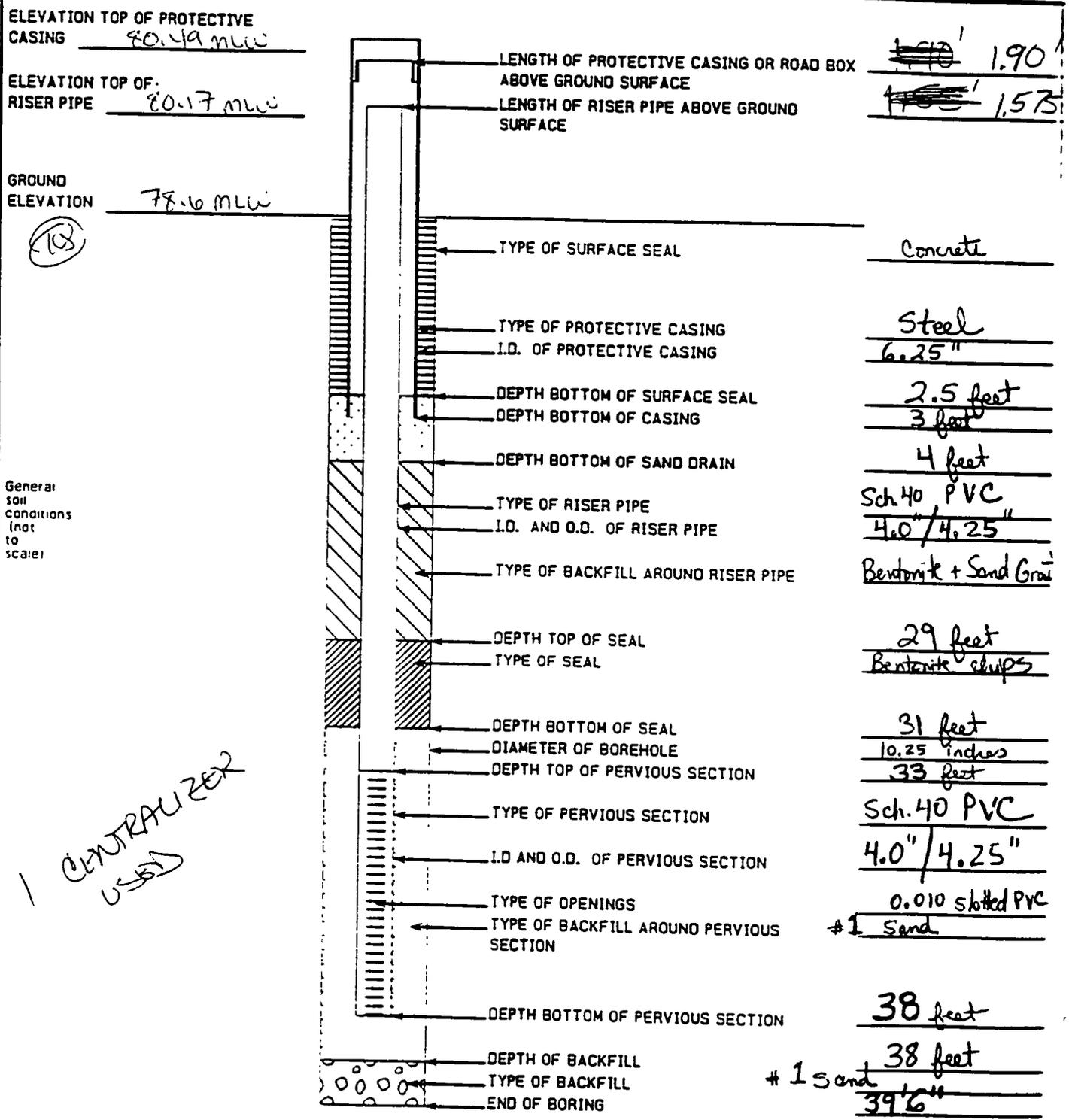


GENERAL NOTE:

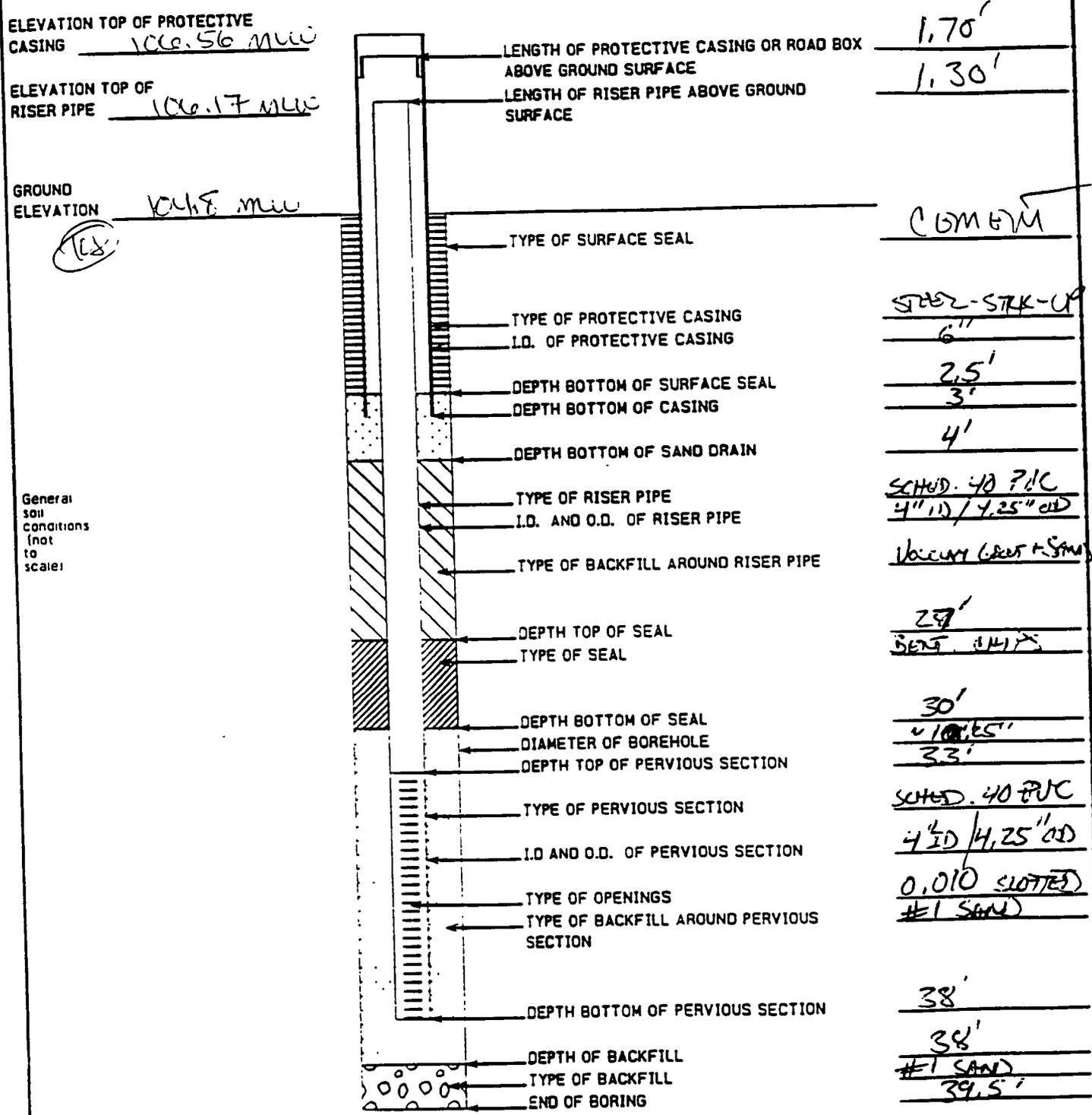
1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

(13) (TANK 43 WELL NO. MW-120 BORING NO. TF4-B-43)  
 OVERBURDEN WELL CONSTRUCTION LOG HALLIBURTON NUS ENVIRONMENTAL CORPORATION

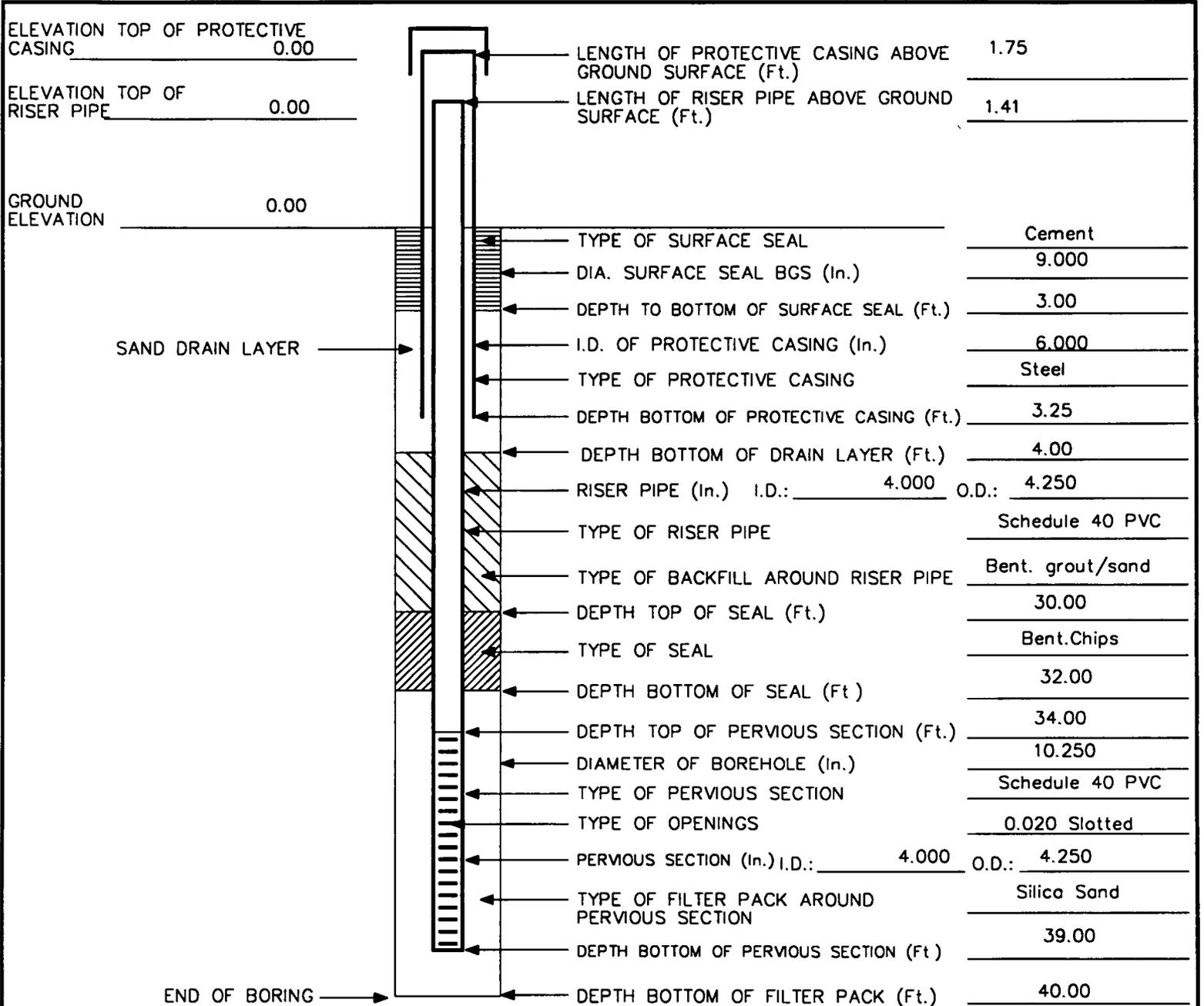
PROJECT: TF4 & 5 - CTD 143 PAGE: 1 OF 1  
 PROJECT LOCATION: NETC - Newport RI 120 <sup>RXC</sup> 11-11-94  
 CLIENT: NAVFAC ENG COM BORING NO.: MW-119 / TF4-B43  
 CONTRACTOR: EDI DRILLER: A.J. Carson BORING LOCATION: NETC Newport  
 LOGGED BY: B. Cleaver DATE: 11-10-94 PROJECT NO.: 0288  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_



PROJECT: CTD-143-UST-RT PAGE: 1 OF 1  
 PROJECT LOCATION: NITC INDUSTRIAL WASTE TANK TANK 46  
 CLIENT: US NAVY WELL BORING NO.: MW-121  
 CONTRACTOR: ENVIRONMENTAL DRILLING INC DRILLER: JOHN P. BROWN BORING LOCATION: UST 46 (TF4-B-46)  
 LOGGED BY: TRACY DOLAN DATE: 11-14-94 PROJECT NO.: 0288  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_



PROJECT NAME: <u>PCA</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>TF4-MW122</u>
CLIENT: <u>NAVFAC</u>	BORING NO: <u>TF4-B-45</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>S. LaMarche</u>
LOGGED BY: <u>K.Jalkut</u>	DATE: <u>11/15/1994</u>
CHECKED BY: <u>mjs</u>	DATE: <u>4-30-96</u>
BORING LOCATION: <u>Tank 45</u> <u>Tank Farm 4</u>	
PAGE: 1 OF 1	



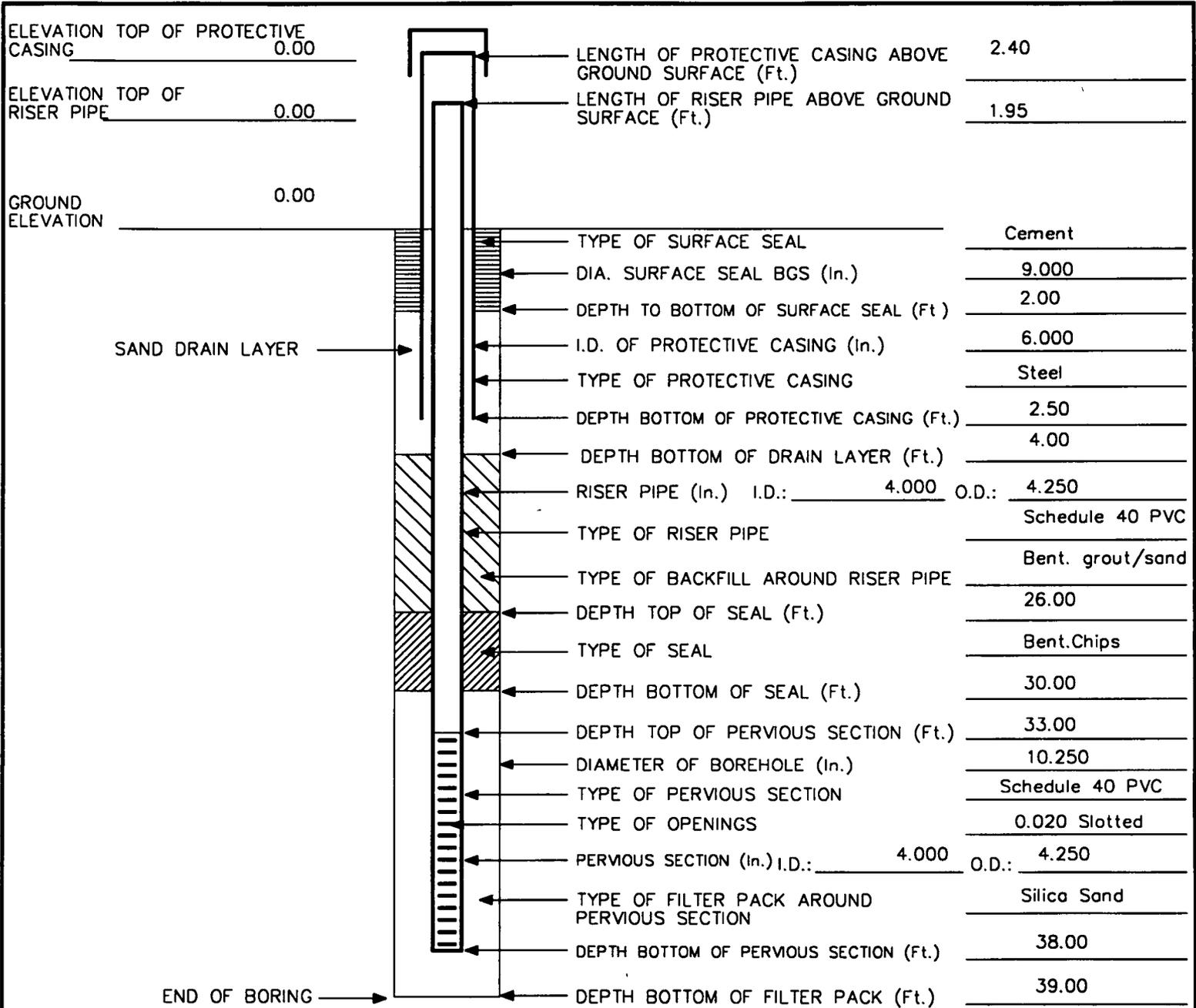
GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: <u>PCA</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>TF4-MW123</u>
CLIENT: <u>NAVFAC</u>	BORING NO: <u>TF4-B-42</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>Ajay Caron</u>
LOGGED BY: <u>T. Dorgan</u>	DATE: <u>11/16/1994</u>
CHECKED BY: <u>msd</u>	DATE: <u>1-30-96</u>
BORING LOCATION: <u>Tank 42</u> <u>Tank Farm 4</u>	

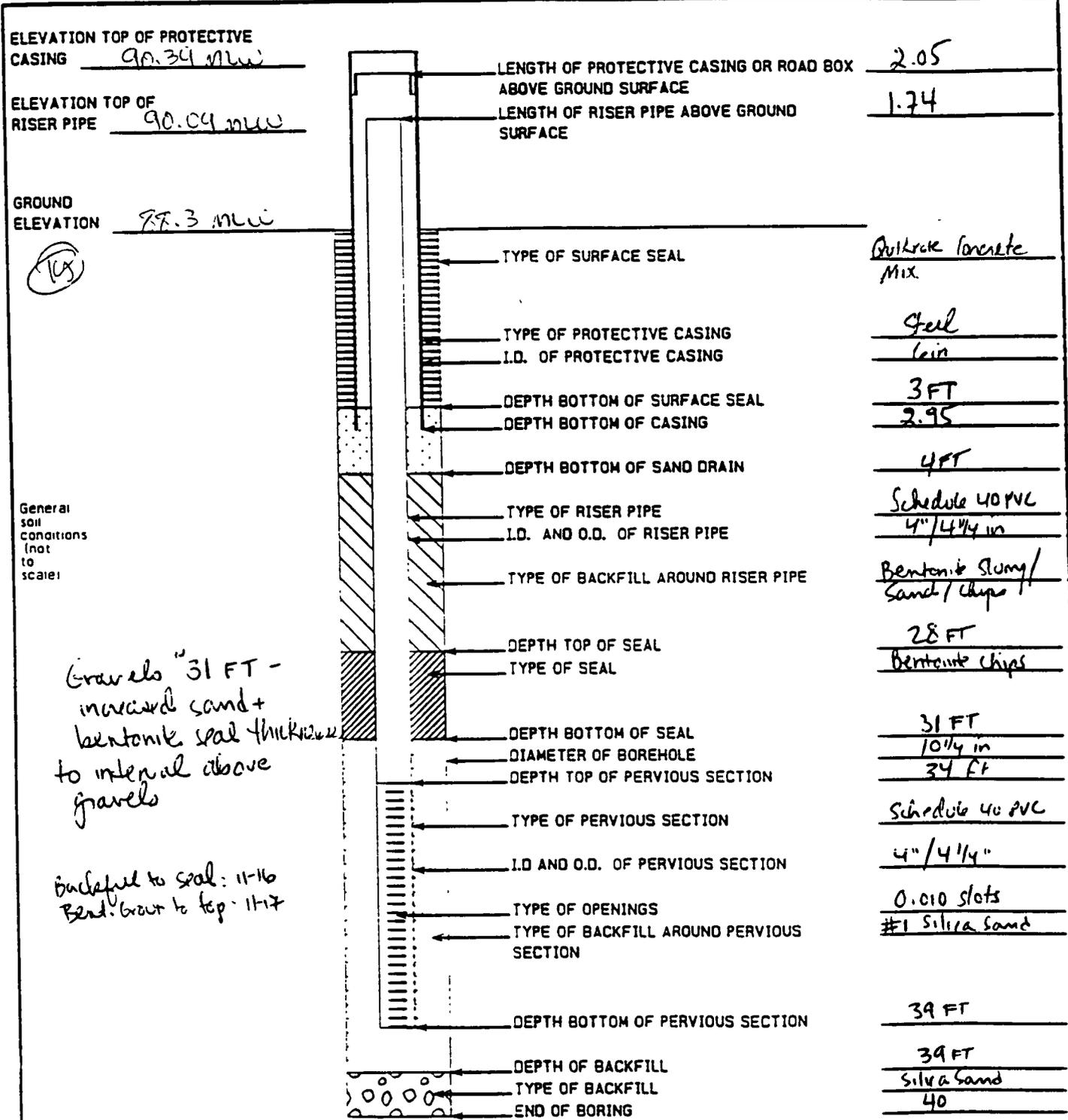


GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

F (TANK 37) WELL NO. MW-124 BORING NO. TF4-B-37  
 OVERBURDEN WELL CONSTRUCTION LOG HALLIBURTON NUS ENVIRONMENTAL CORPORATION

PROJECT: CTO 143 Tank Farms 4+5 PAGE: 1 OF 1  
 PROJECT LOCATION: NETA - Newport  
 CLIENT: NAVFA ENGIOM WELL TF4- BORING NO.: MW 124  
 CONTRACTOR: EDI DRILLER: S. Lamarche BORING LOCATION: Tank 37 (TF4-B-37)  
 LOGGED BY: K. Jalbut DATE: 11-16-94 11-17-94 PROJECT NO.: 0288  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

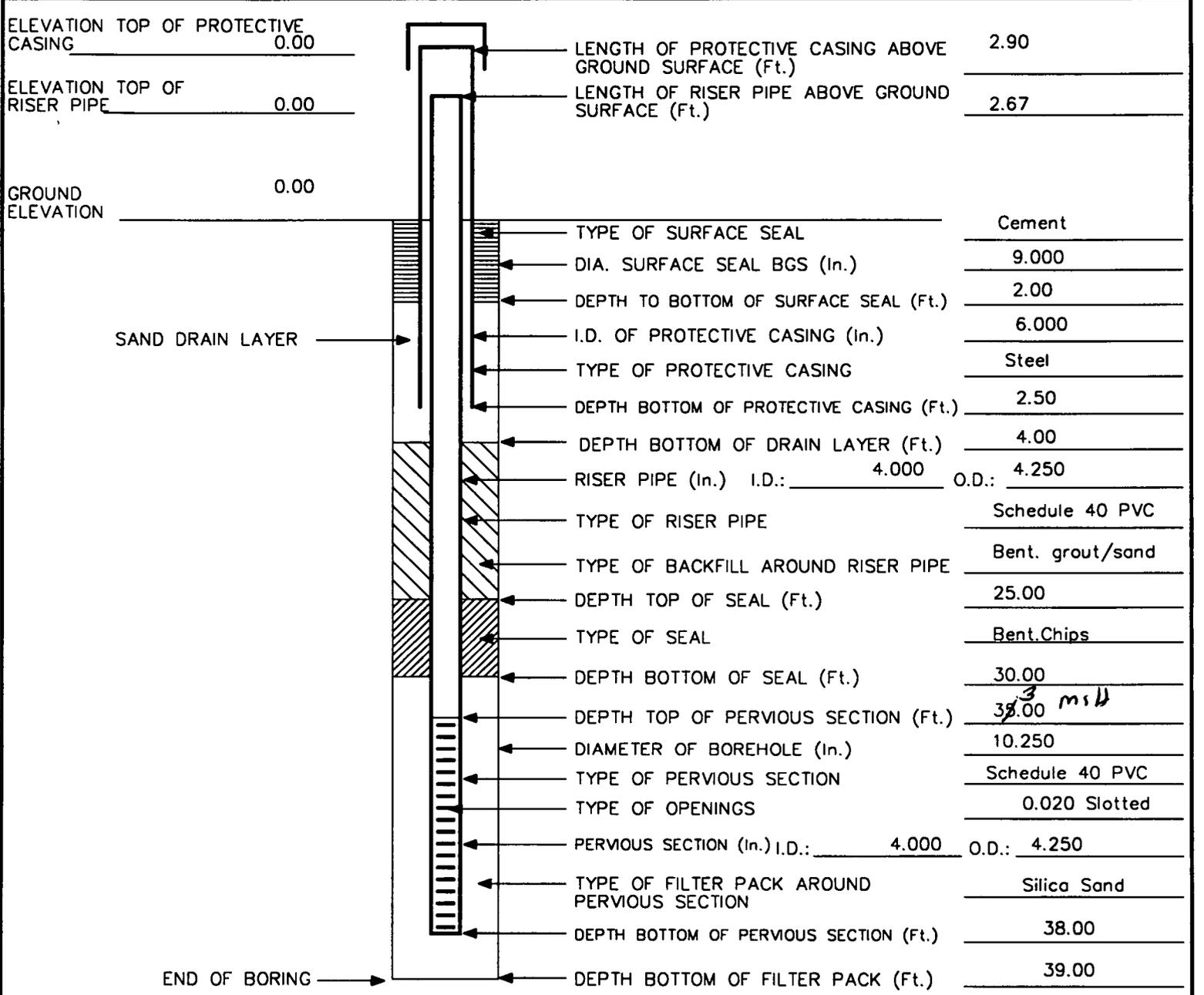


Note: Borehole refusal to 39'10". Auger advanced to 40'

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: <u>PCA</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>TF4-MW125</u>
CLIENT: <u>NAVFAC</u>	BORING NO: <u>TF4-B-38</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>Ajay Caron</u>
LOGGED BY: <u>T. Dorgan</u>	DATE: <u>11/17/1994</u>
CHECKED BY: <u>M S D</u>	DATE: <u>4-30-96</u>
	BORING LOCATION: <u>Tank 38</u>
	<u>Tank Farm 4</u>



GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

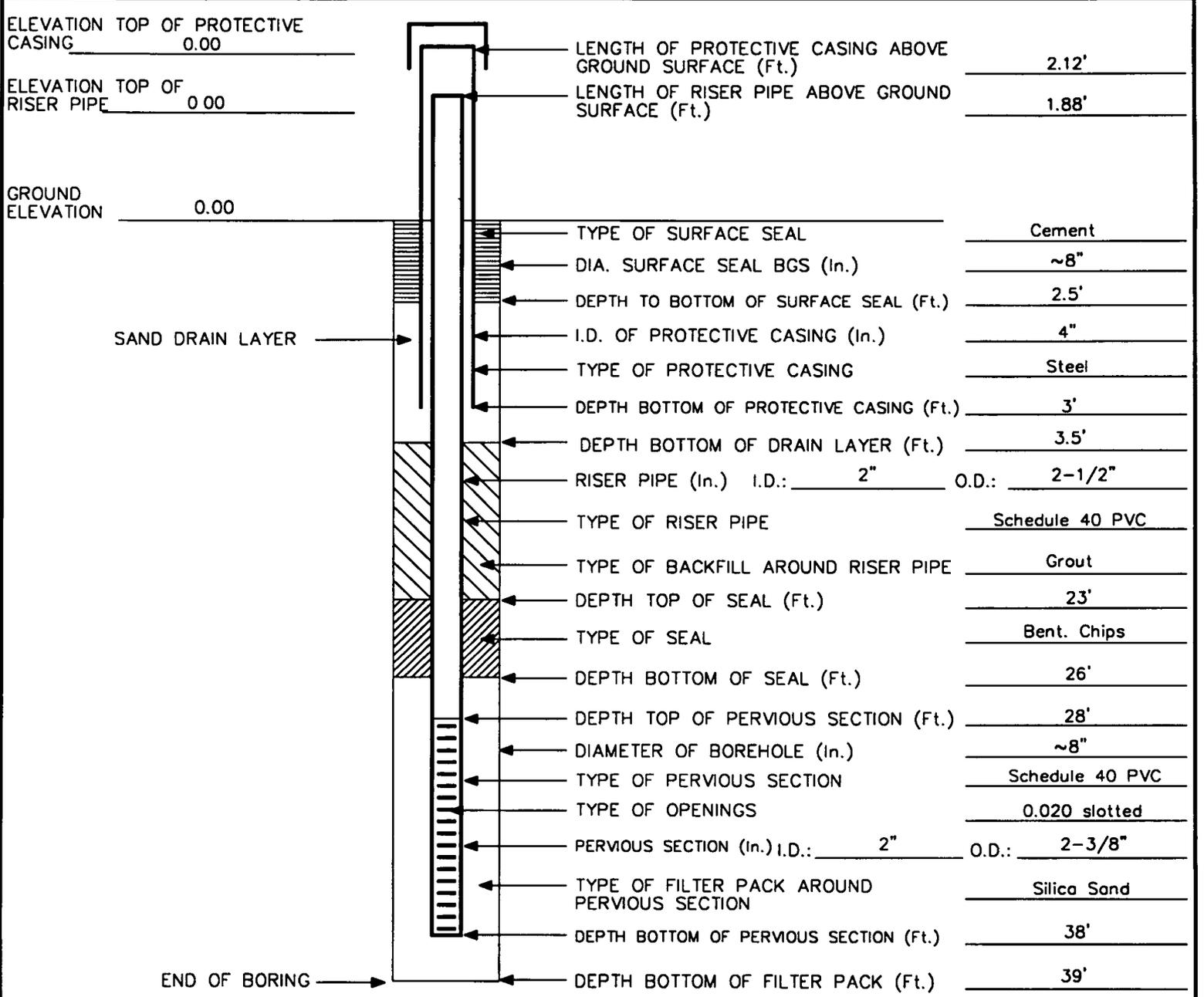
300 SERIES WELL CONSTRUCTION LOGS

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: CTO 143 - SI TF4	PROJECT NO: 0288
PROJECT LOCATION: NETC, Newport, RI	WELL NO: MW-330
CLIENT: U.S. NAVY	BORING NO: B-330
CONTRACTOR: ENV. DRILLING, INC. DRILLER: S. LAMARCHE	BORING LOCATION: TANK 45
LOGGED BY: J. HOLDEN DATE: 10/3/95	
CHECKED BY: DATE:	

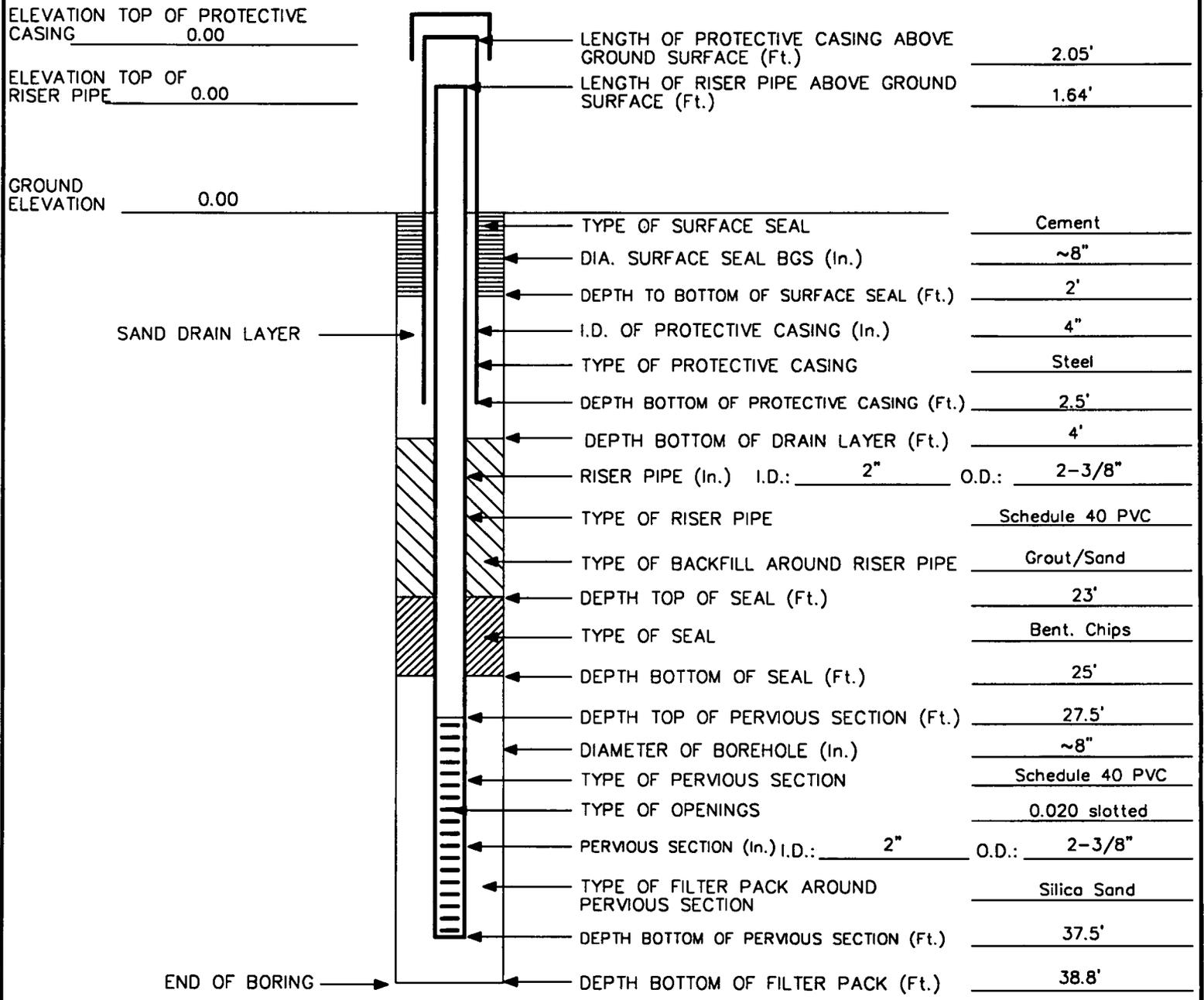
PAGE: 1 OF 1



GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

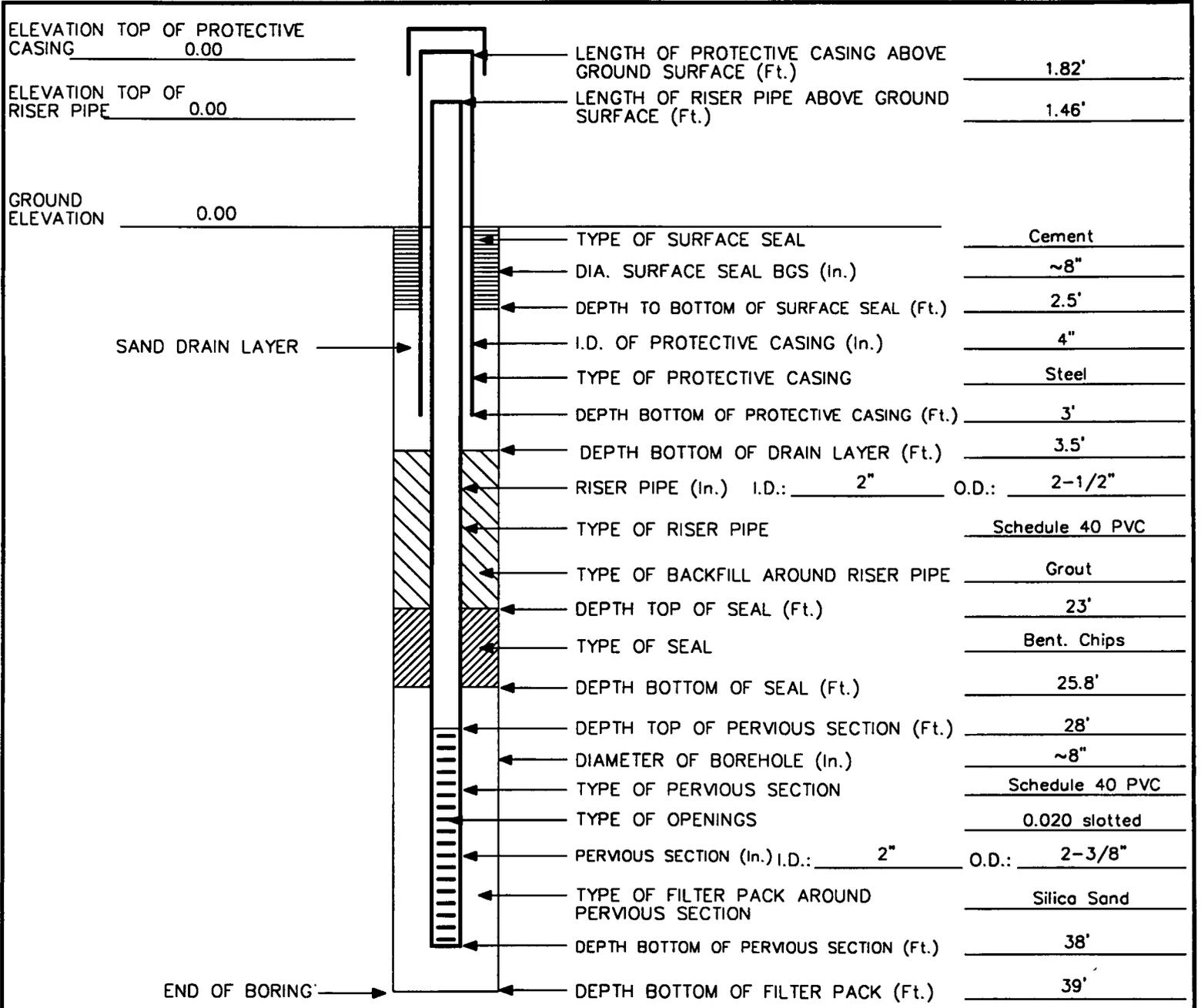
PROJECT NAME: CTO 143 - SI TF4	PROJECT NO: 0288
PROJECT LOCATION: NETC, NEWPORT, RI	WELL NO: MW-331
CLIENT: U.S. NAVY	BORING NO: B-331
CONTRACTOR: ENV. DRILLING, INC. DRILLER: AJAY CARON	BORING LOCATION: TANK 45
LOGGED BY: TRACY DORGEN DATE: 10/3/95	
CHECKED BY: DATE:	



GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

PROJECT NAME: CTO 143 - SI TF4	PROJECT NO: 0288
PROJECT LOCATION: NETC, NEWPORT, RI	WELL NO: MW-332
CLIENT: U.S. NAVY	BORING NO: B-332
CONTRACTOR: ENV. DRILLING, INC. DRILLER: S. LAMARCHE	BORING LOCATION: TANK 45
LOGGED BY: J. HOLDEN DATE: 10/4/95	
CHECKED BY: DATE:	



GENERAL NOTE:

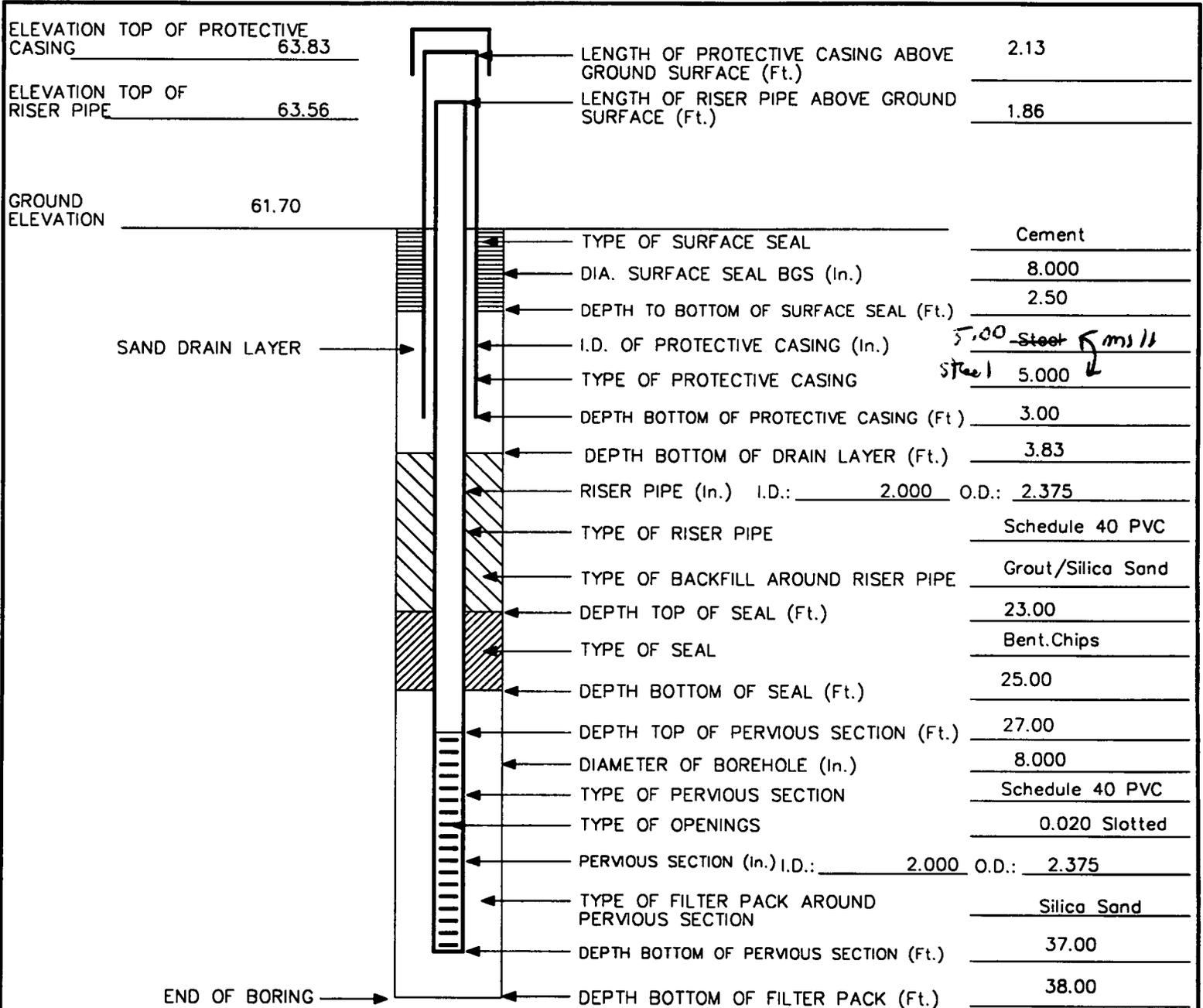
1. Entry of 0.00 for Ground Elevation, Elev Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

400 SERIES WELL CONSTRUCTION LOGS

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: <u>SI Tank Farm 4</u>		PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>		WELL NO: <u>MW-401</u>
CLIENT: <u>Nav Fac</u>		BORING NO: <u>SB-401</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>J. St. George</u>	BORING LOCATION: <u>Tank 48</u>
LOGGED BY: <u>J. Holden</u>	DATE: <u>11/28/1995</u>	<u>downgradient</u>
CHECKED BY: <u>MJD</u>	DATE: <u>1-29-96</u>	



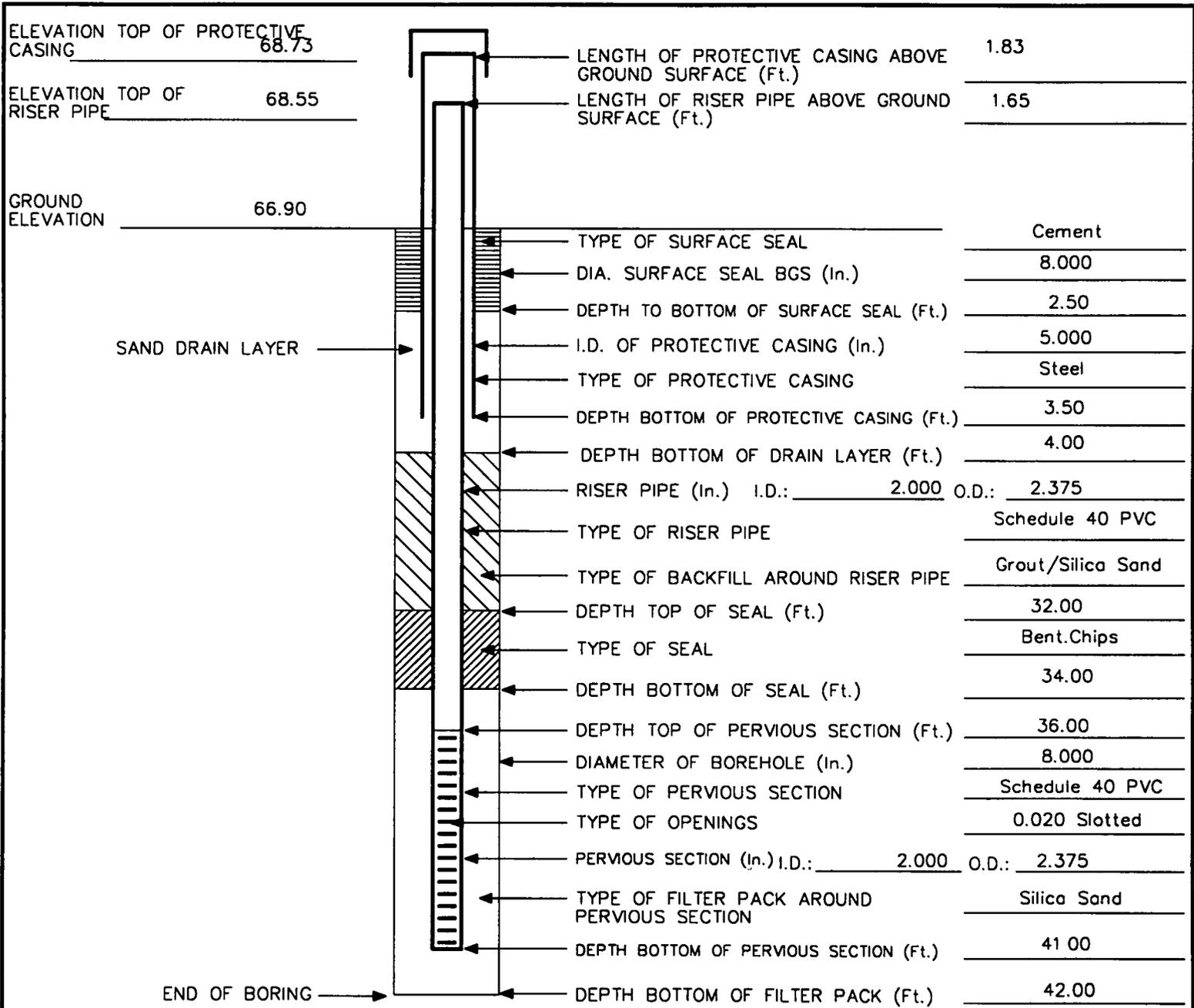
GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: <u>SI Tank Farm 4</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>MW-404</u>
CLIENT: <u>Nav Fac</u>	BORING NO: <u>SB-404</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>J. St. George</u>
LOGGED BY: <u>J. Holden</u>	DATE: <u>11/29/1995</u>
CHECKED BY: <u>M J</u>	DATE: <u>1-29-96</u>
BORING LOCATION: <u>Tank 48, cross gradient</u> <u>filter pack compromised</u>	
PAGE: 1 OF 1	



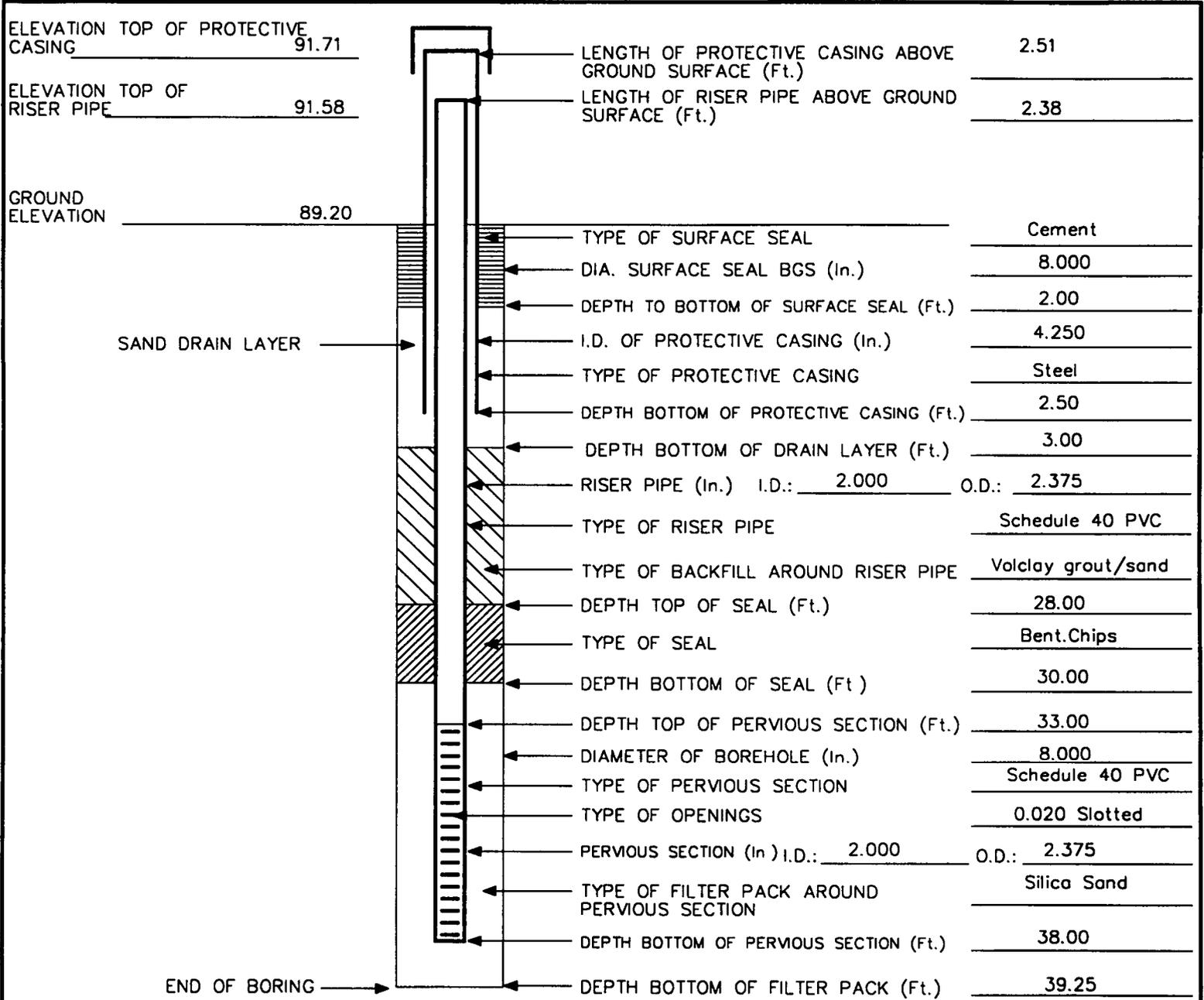
GENERAL NOTE:

1 Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: SI Tank Farm 4	PROJECT NO: 0288
PROJECT LOCATION: NETA-Newport	WELL NO: MW-407
CLIENT: Nav Fac	BORING NO: SB-407
CONTRACTOR: EDI	DRILLER: Ajay Caron
LOGGED BY: T. Dorgan	DATE: 11/30/1995
CHECKED BY: <i>Mina</i>	DATE: 4-29-96
BORING LOCATION: Tank 42, downgradient	
PAGE: 1 OF 1	



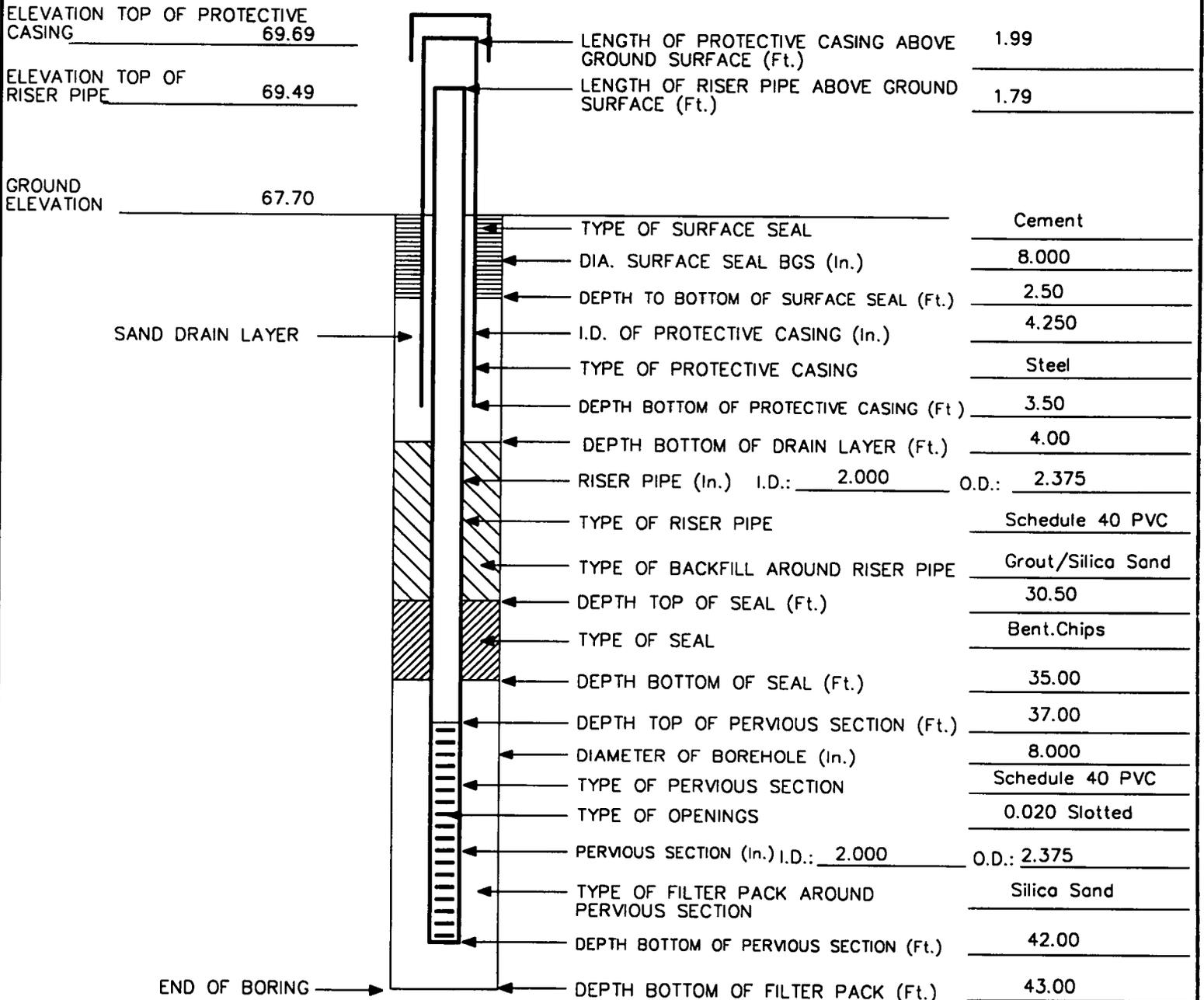
GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: <u>SI Tank Farm 4</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>MW-408</u>
CLIENT: <u>Nav Fac</u>	BORING NO: <u>SB-408</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>J. St. George</u>
LOGGED BY: <u>J. Holden</u>	DATE: <u>11/30/1995</u>
CHECKED BY: <u>m, n</u>	DATE: <u>1-29-96</u>
BORING LOCATION: <u>Tank 48, upgradient</u>	
PAGE: 1 OF 1	



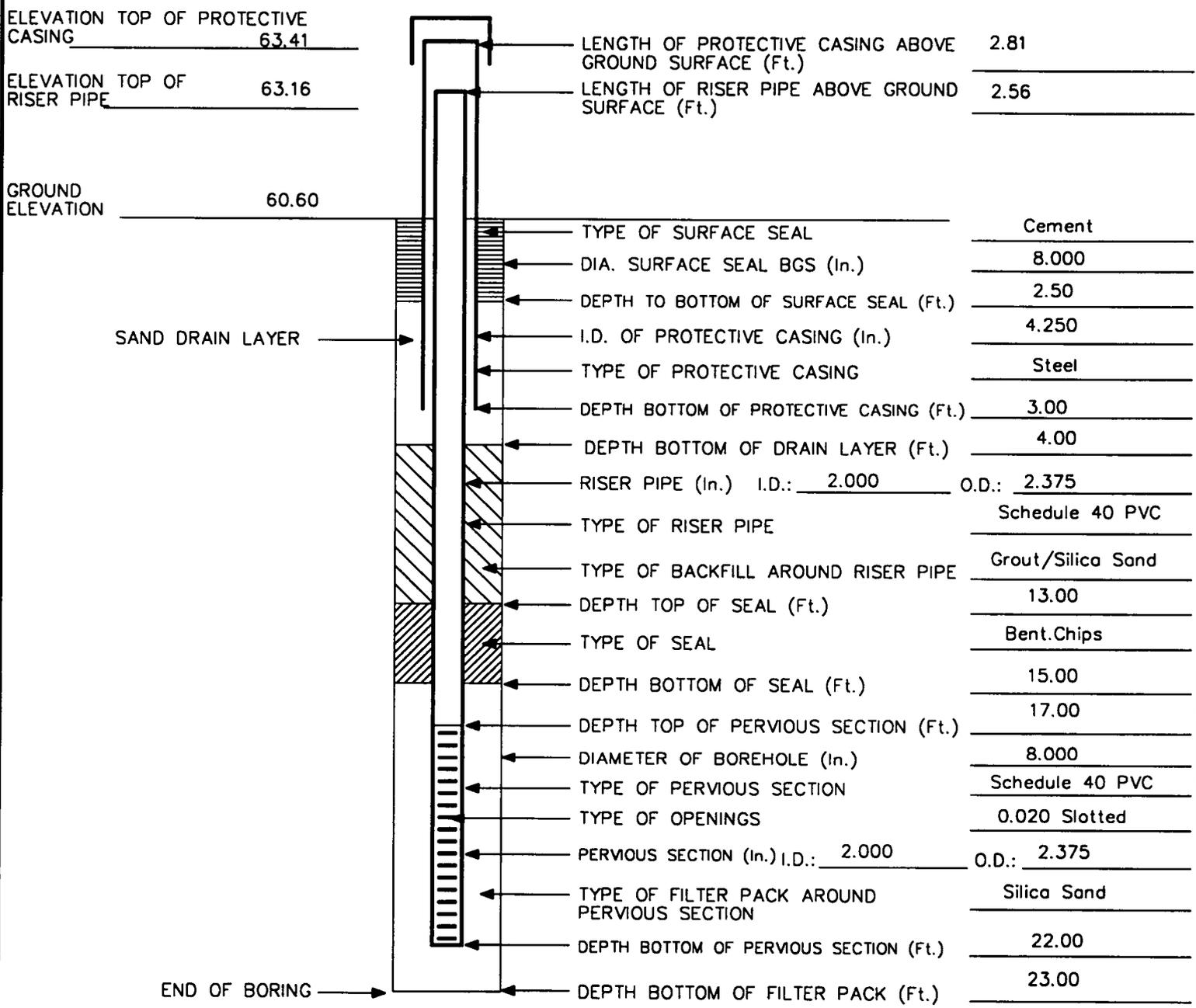
GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: <u>SI Tank Farm 4</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>MW-409</u>
CLIENT: <u>Nav Fac</u>	BORING NO: <u>SB-409</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>J. St. George</u>
LOGGED BY: <u>J. Holden</u>	DATE: <u>12/01/1995</u>
CHECKED BY: <u>msn</u>	DATE: <u>4-29-96</u>
BORING LOCATION: <u>Tank 48, downgradient</u>	



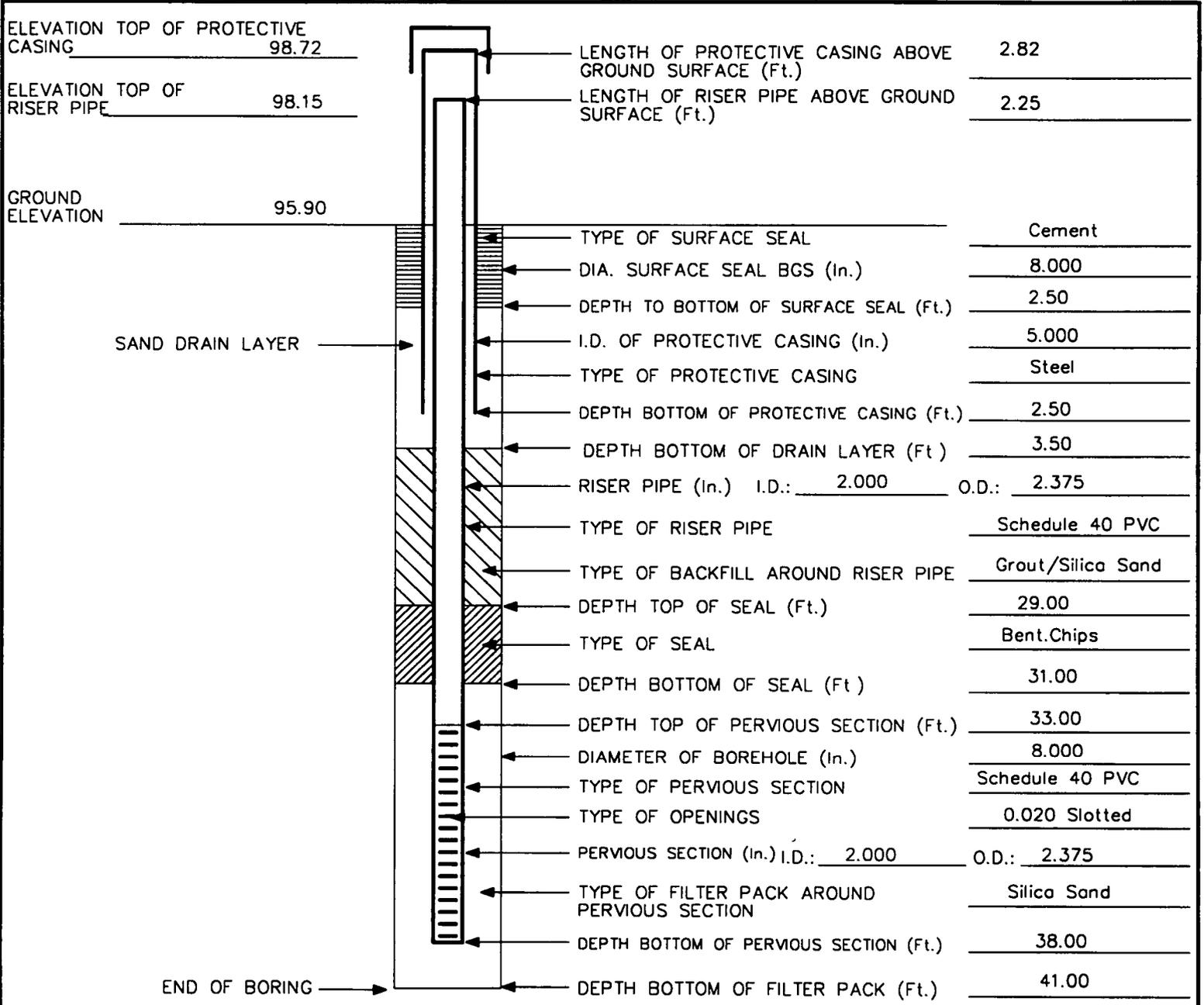
GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: <u>SI Tank Farm 4</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>MW-411</u>
CLIENT: <u>Nav Fac</u>	BORING NO: <u>SB-411</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>Ajay Caron</u>
LOGGED BY: <u>T. Dorgan</u>	DATE: <u>12/04/1995</u>
CHECKED BY: <u>Mjll</u>	DATE: <u>4-29-96</u>
BORING LOCATION: <u>Tank 42 upgradient</u>	
PAGE: 1 OF 1	



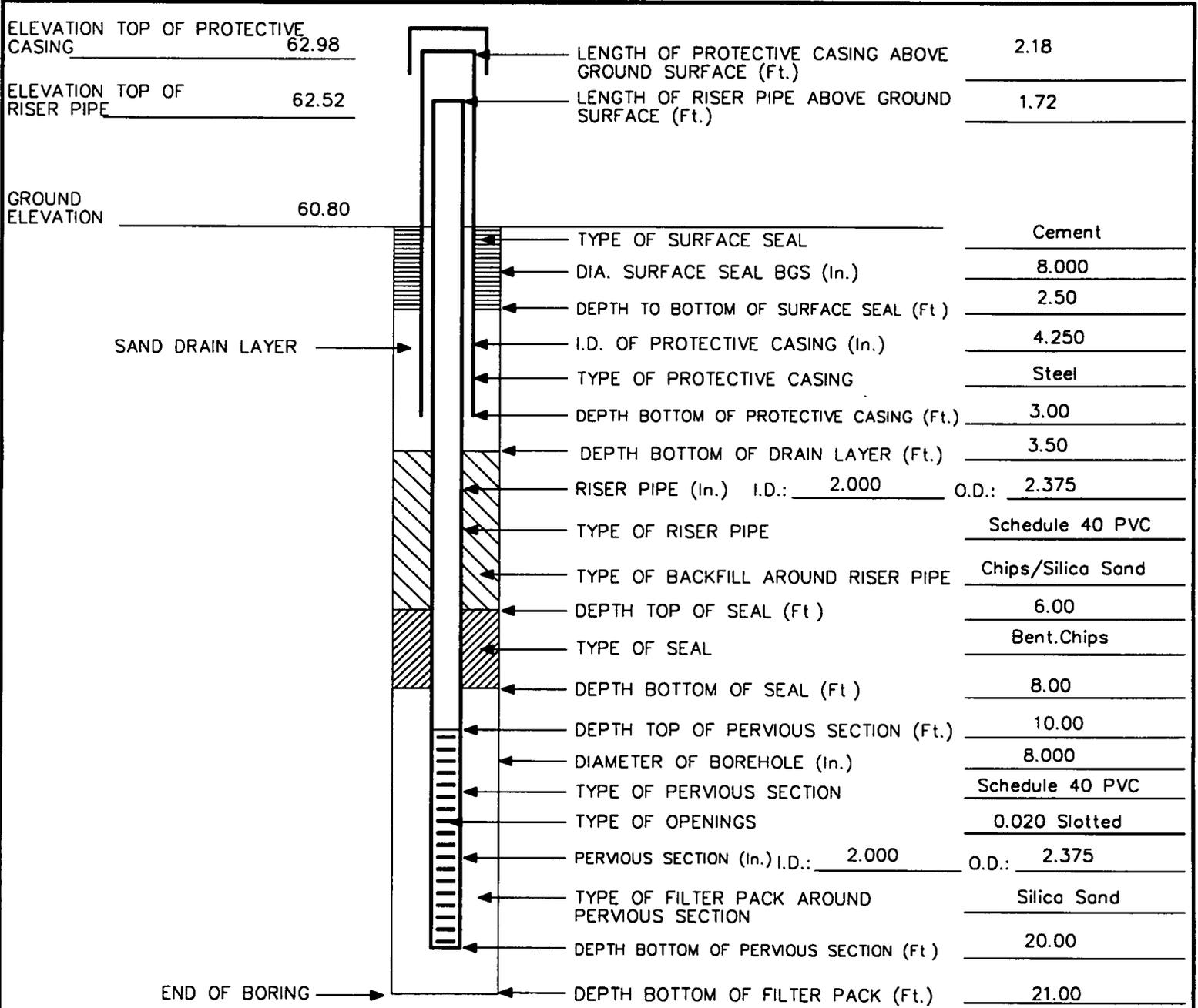
GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: <u>SI Tank Farm 4</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>MW-412</u>
CLIENT: <u>Nav Fac</u>	BORING NO: <u>SB-412</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>S. Lamarche</u>
LOGGED BY: <u>J. Holden</u>	DATE: <u>12/04/1995</u>
CHECKED BY: <u>MSD</u>	DATE: <u>1-29-96</u>
BORING LOCATION: <u>Tank 48, downgradient</u> <u>15' from tank edge</u>	
PAGE: 1 OF 1	



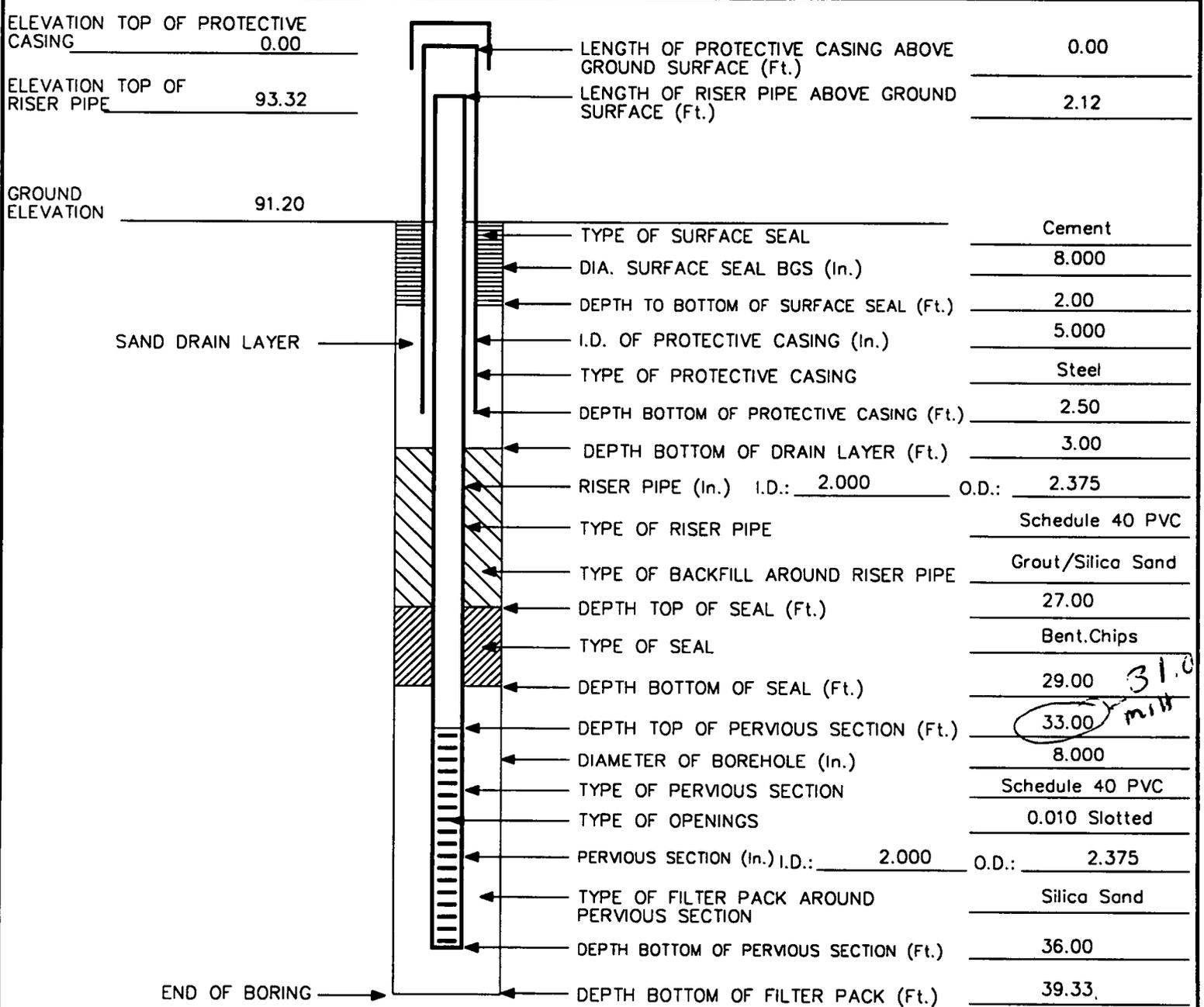
GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing indicates that Surveyed Ground Elevation Not Available.

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: <u>SI Tank Farm 4</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>MW413</u>
CLIENT: <u>Nav Fac</u>	BORING NO: <u>SB413</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>Ajay Caron</u>
LOGGED BY: <u>T. Dorgan</u>	DATE: <u>12/05/1995</u>
CHECKED BY: <u>M J N</u>	DATE: <u>4-29-96</u>
BORING LOCATION: <u>Tank 42</u>	
<u>crossgradient</u>	
PAGE: 1 OF 1	



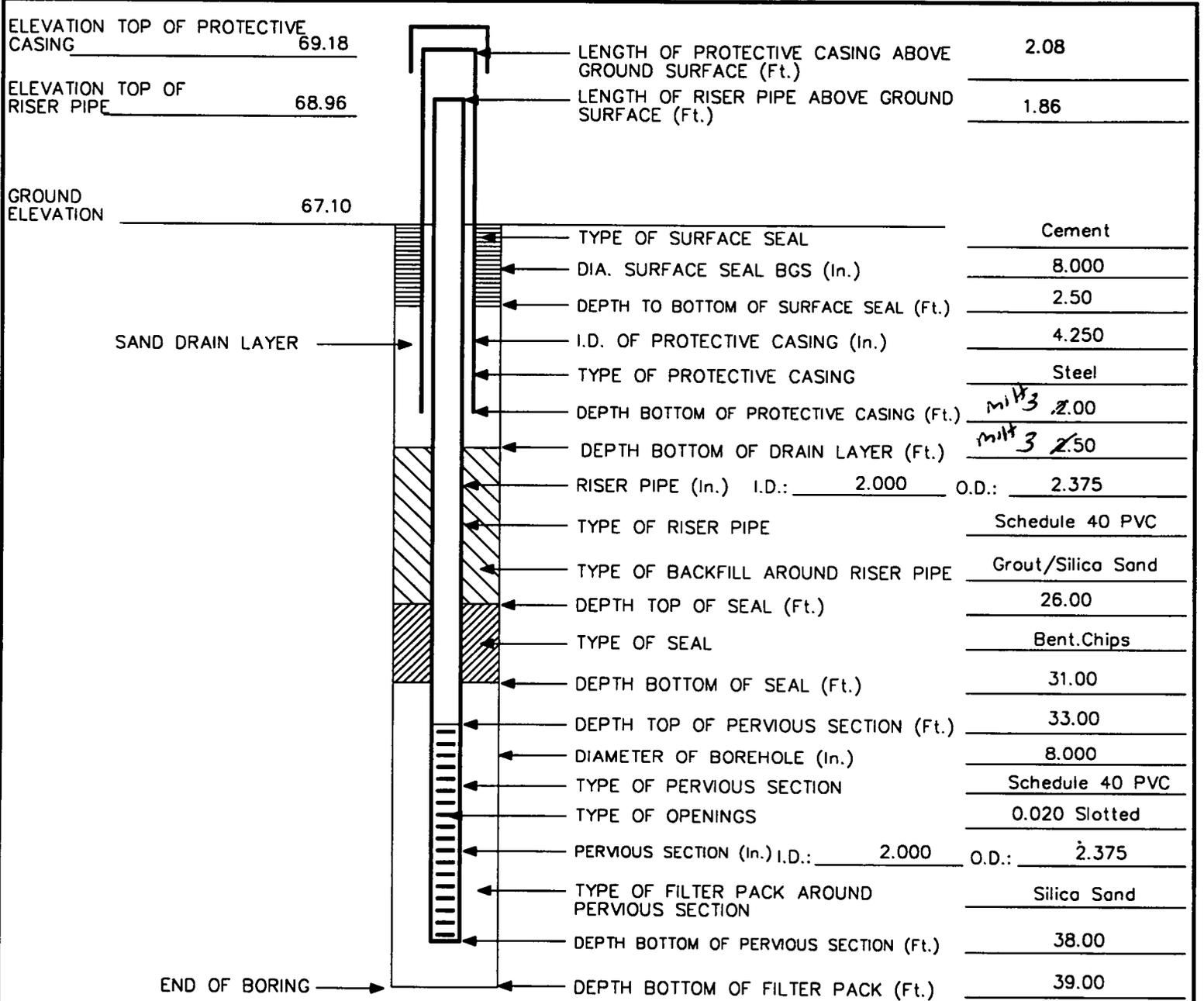
GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: <u>SI Tank Farm 4</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>MW416</u>
CLIENT: <u>Nav Fac</u>	BORING NO: <u>SB416</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>S. Lamarche</u>
LOGGED BY: <u>J. Holden</u>	DATE: <u>12/06/1995</u>
CHECKED BY: <u>MSA</u>	DATE: <u>1-29-96</u>
BORING LOCATION: <u>Tank 38, downgradient</u>	
PAGE: 1 OF 1	



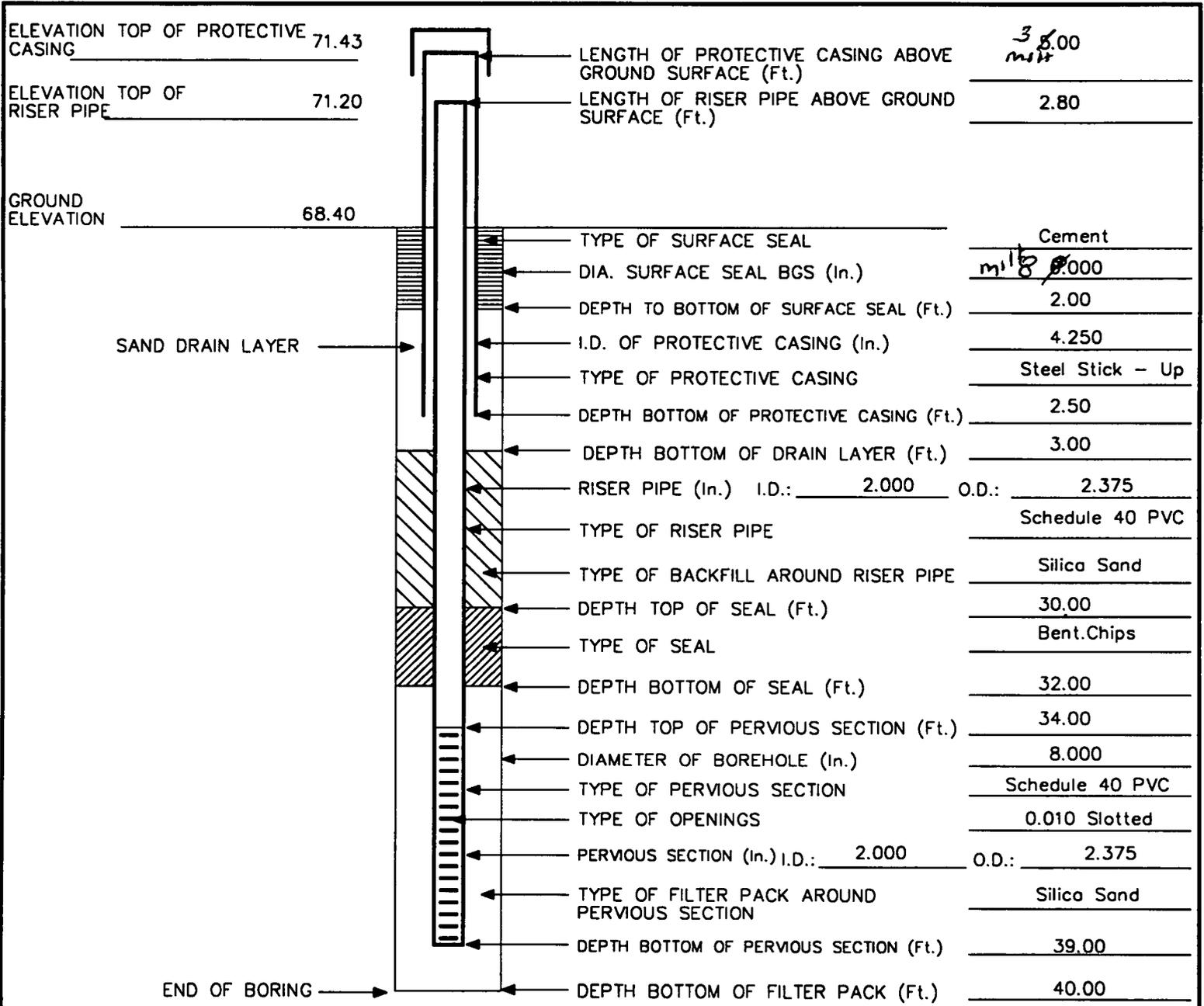
GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing indicates that Surveyed Ground Elevation Not Available.

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: <u>SI Tank Farm 4</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>MW417</u>
CLIENT: <u>Nav Fac</u>	BORING NO: <u>SB417</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>A. Caron</u>
LOGGED BY: <u>Tracy Dorgan</u>	DATE: <u>12/06/1995</u>
CHECKED BY: <u>MJH</u>	DATE: <u>7-29-96</u>
BORING LOCATION: <u>Tank 38 - North Side</u>	
PAGE: 1 OF 1	



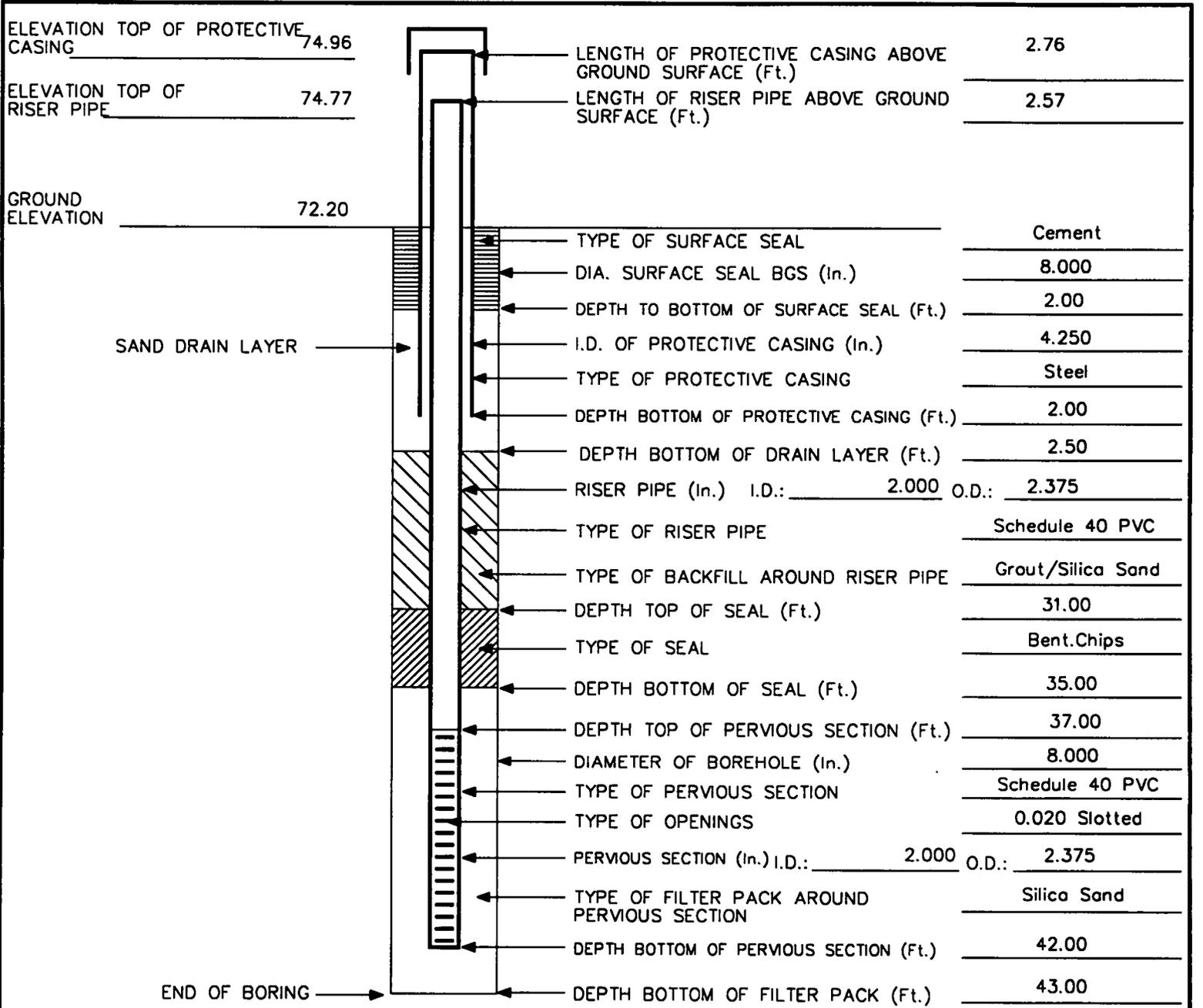
GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: <u>SI Tank Farm 4</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>MW418</u>
CLIENT: <u>Nav Fac</u>	BORING NO: <u>SB418</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>A. Caron</u>
LOGGED BY: <u>J. Holden</u>	DATE: <u>12/07/1995</u>
CHECKED BY: <u>MSL</u>	DATE: <u>4-29-96</u>
BORING LOCATION: <u>Tank 38, downgradient</u>	
PAGE: 1 OF 1	



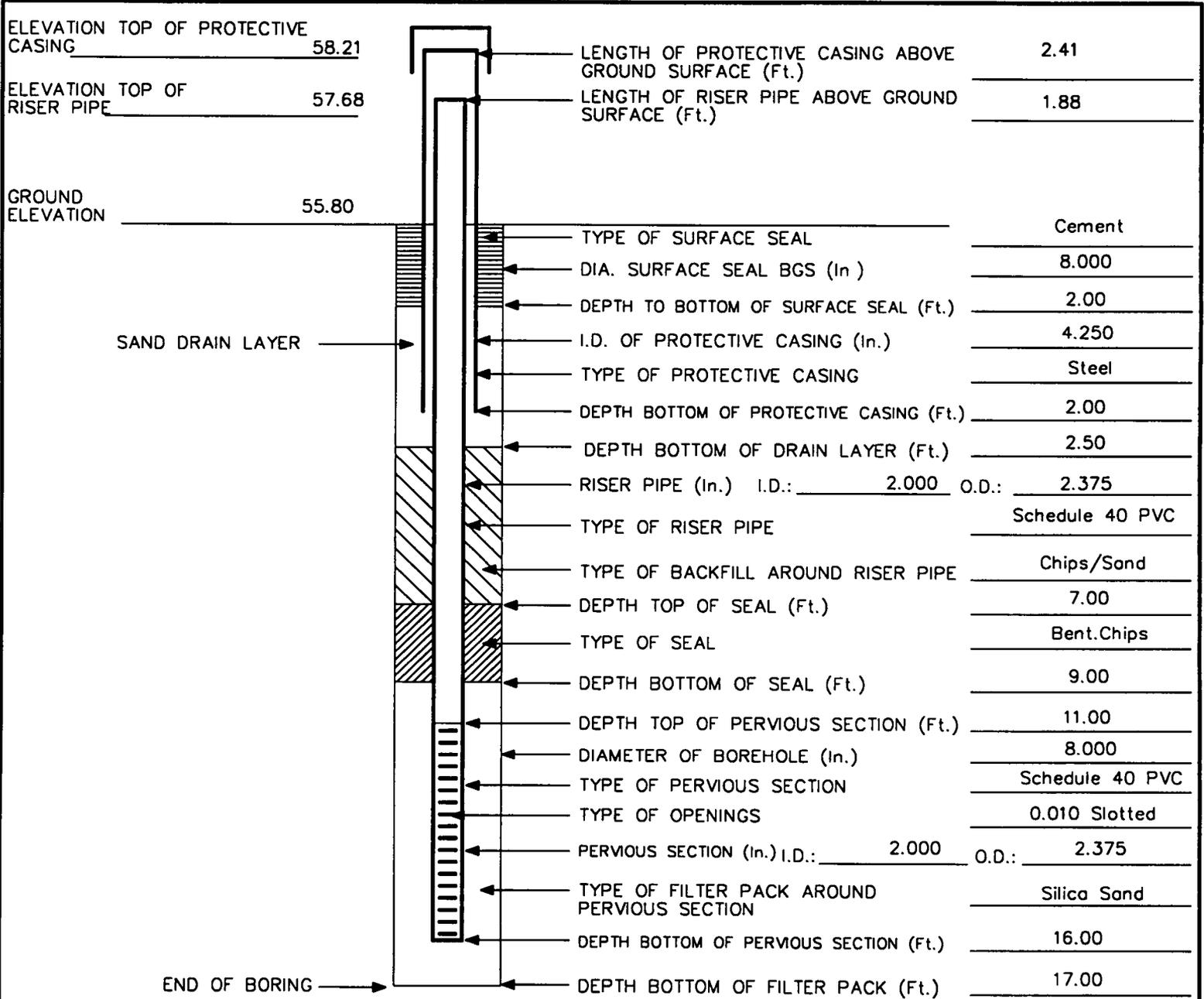
GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: <u>SI Tank Farm 4</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>MW421</u>
CLIENT: <u>Nav Fac</u>	BORING NO: <u>SB421</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>Ajay Caron</u>
LOGGED BY: <u>J. Holden</u>	DATE: <u>12/08/1995</u>
CHECKED BY: <u>M, J</u>	DATE: _____
BORING LOCATION: <u>Tank 48, downgradient</u>	
PAGE: 1 OF 1	



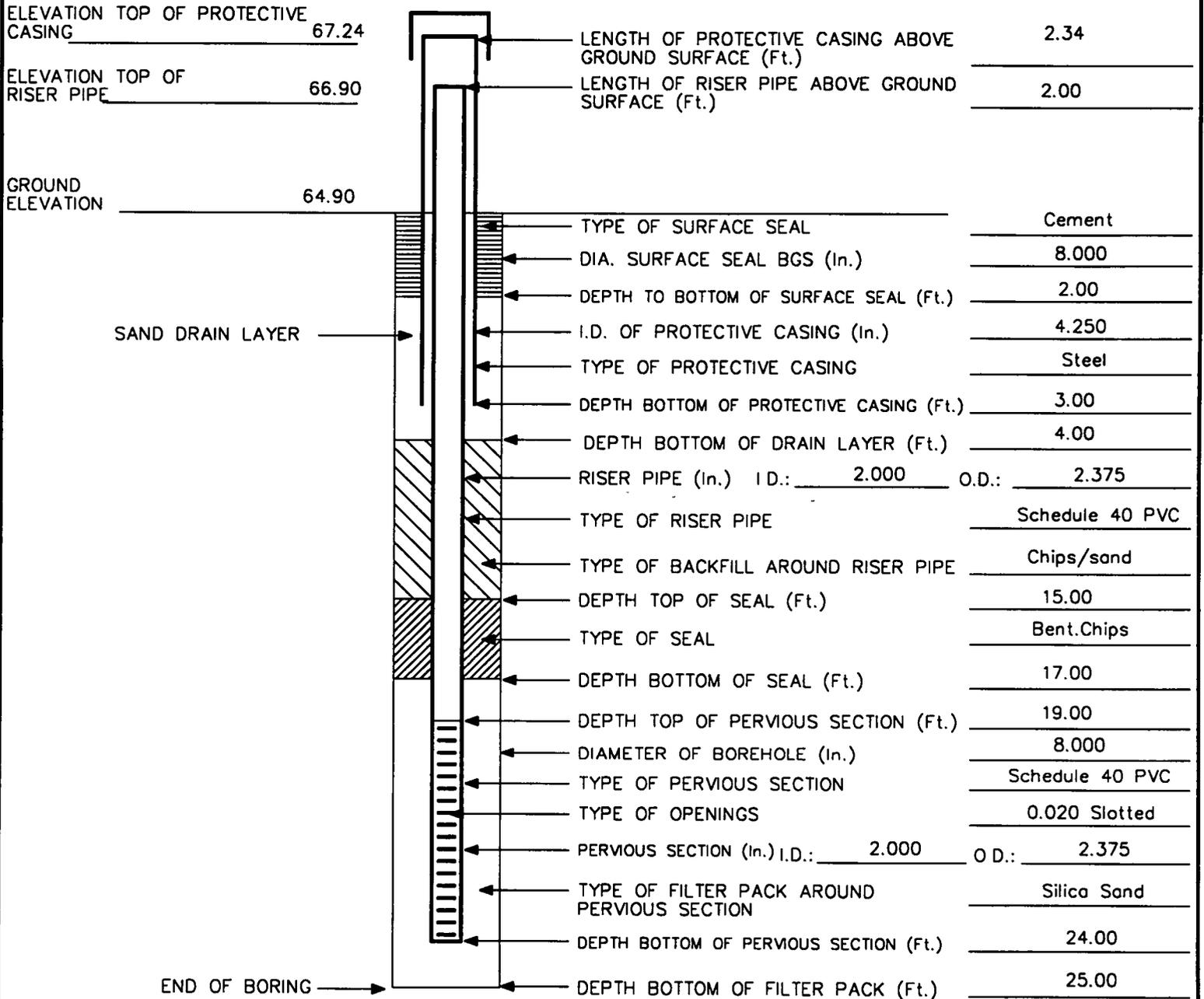
GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

OVERBURDEN MONITORING WELL CONSTRUCTION LOG

BROWN & ROOT ENVIRONMENTAL

PROJECT NAME: <u>SI Tank Farm 4</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>MW422</u>
CLIENT: <u>Nav Fac</u>	BORING NO: <u>SB422</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>Ajay Caron</u>
LOGGED BY: <u>J. Holden</u>	DATE: <u>12/11/1995</u>
CHECKED BY: <u>msd</u>	DATE: <u>4-29-96</u>
BORING LOCATION: <u>Tank 48, ramp</u>	
PAGE: 1 OF 1	



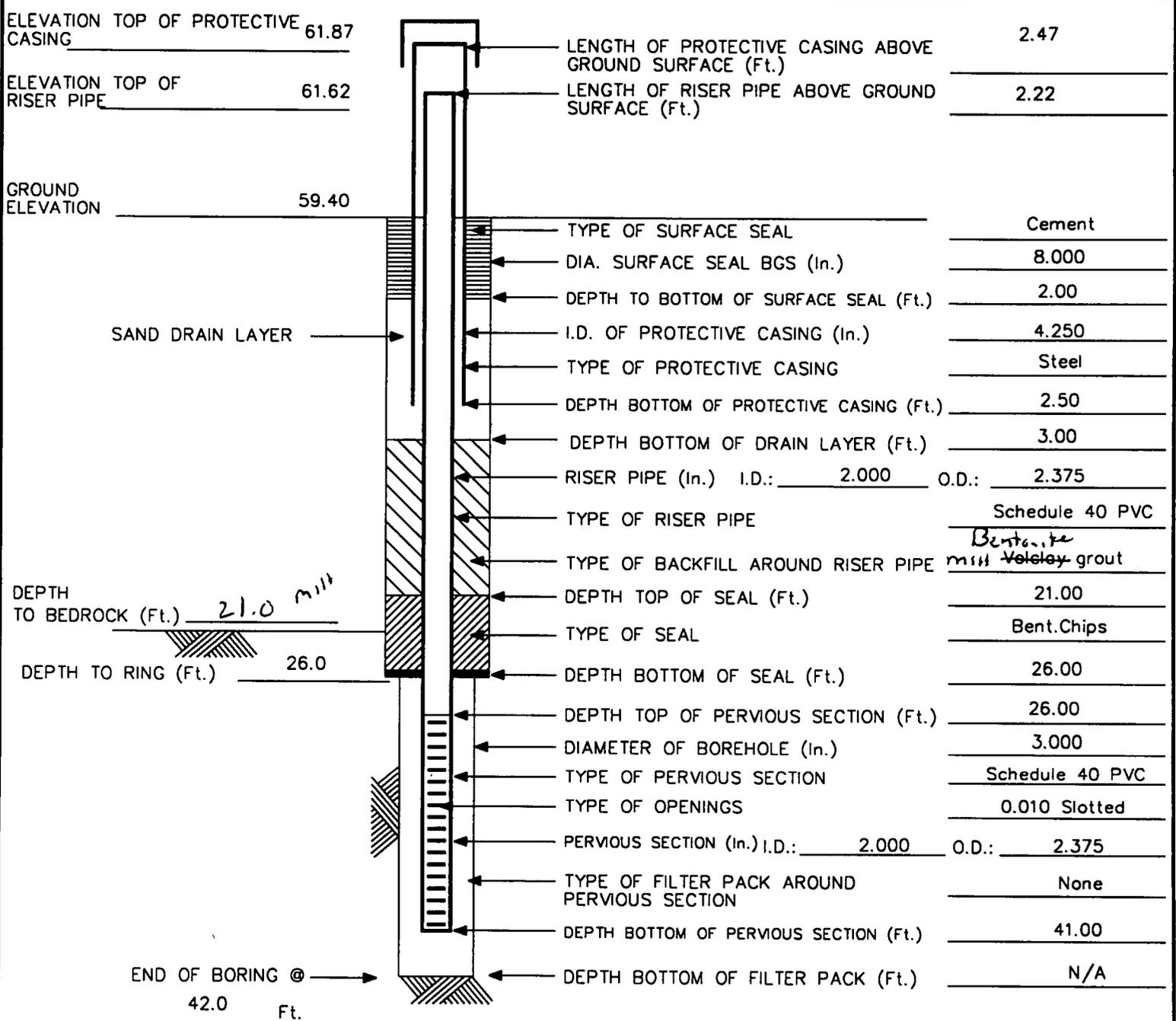
GENERAL NOTE:

1. Entry of 0.00 for Ground Elevation, Elev Top of Riser Pipe & Elev Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

**BEDROCK MONITORING WELL CONSTRUCTION LOG**

**BROWN & ROOT ENVIRONMENTAL**

PROJECT NAME: <u>SI Tank Farm 4</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>MW424</u>
CLIENT: <u>Nav Fac</u>	BORING NO: <u>SB424</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>Ajay Caron</u>
LOGGED BY: <u>T. Dorgan</u>	DATE: <u>12/14/1995</u>
CHECKED BY: <u>msg</u>	DATE: <u>1-27-96</u>
BORING LOCATION: <u>Tank 48, downgradient</u> <u>Bedrock well</u>	
PAGE: 1 OF 1	

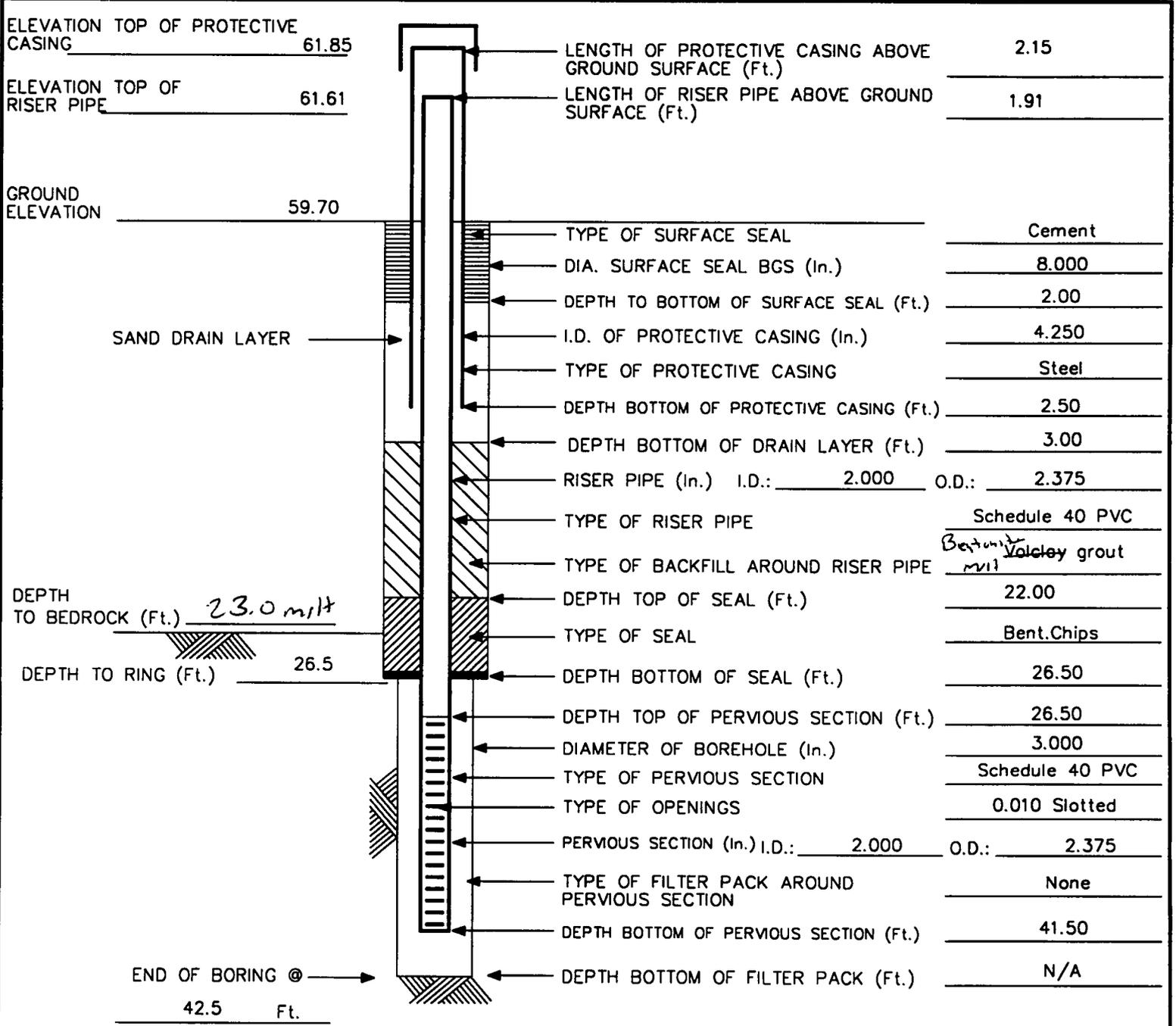


**GENERAL NOTE:**  
 1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

**BEDROCK MONITORING WELL CONSTRUCTION LOG**

**BROWN & ROOT ENVIRONMENTAL**

PROJECT NAME: <u>SI Tank Farm 4</u>	PROJECT NO: <u>0288</u>
PROJECT LOCATION: <u>NETC-Newport</u>	WELL NO: <u>MW425</u>
CLIENT: <u>Nav Fac</u>	BORING NO: <u>SB425</u>
CONTRACTOR: <u>EDI</u>	DRILLER: <u>Ajay Caron</u>
LOGGED BY: <u>T. Dorgan</u>	DATE: <u>12/15/1995</u>
CHECKED BY: <u>M SM</u>	DATE: <u>1-29-96</u>
BORING LOCATION: <u>Tank 48, downgradient</u> <u>Bedrock well</u>	
PAGE: 1 OF 1	



**GENERAL NOTE:**

1. Entry of 0.00 for Ground Elevation, Elev. Top of Riser Pipe & Elev. Top of Protective Casing Indicates that Surveyed Ground Elevation Not Available.

## **APPENDIX B**



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 124 Tank 37

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-19-98 / 1405

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jaikut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT well has been destroyed.



WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL?            YES            NO

LOCKED REPLACED?            YES            NO

OBSTRUCTIONS?            YES            NO

WELL RELABELED?            YES            NO

SLUG TEST CONDUCTED?            YES            NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Missing well - destroyed. Represented the 4-inch well installed during the PCA



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 417 (Tank 38)

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-19-98 / 1420

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jaikut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

Well has been destroyed.

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL? YES NO

LOCKED REPLACED? YES NO

OBSTRUCTIONS? YES NO

WELL RELABELED? YES NO

SLUG TEST CONDUCTED? YES NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Carcass of MW417 located in woods on north side of tank. MW417 was destroyed and discarded in woods. PVC snapped approximately 8 feet from top. Pre-casing bent in-half (approximately 5 ft length). Cap and rope still present in top end of well casing.



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 125 Tank 38

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-19-98 / 1430

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jaikut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed.

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL?            YES            NO

LOCKED REPLACED?            YES            NO

OBSTRUCTIONS?            YES            NO

WELL RELABELED?            YES            NO

SLUG TEST CONDUCTED?            YES            NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Missing well. Destroyed. (4 inch PCA well)



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 416 Tank 38

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-19-98/1432

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jaikut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed.

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL?            YES            NO

LOCKED REPLACED?            YES            NO

OBSTRUCTIONS?            YES            NO

WELL RELABELED?            YES            NO

SLUG TEST CONDUCTED?            YES            NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Missing well - destroyed.



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW-418 Tank 38

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-19-98 / 1435

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jalkut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed.

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL?            YES            NO

LOCKED REPLACED?            YES            NO

OBSTRUCTIONS?            YES            NO

WELL RELABELED?            YES            NO

SLUG TEST CONDUCTED?            YES            NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Missing well- destroyed



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 115 Tank 39

PROJECT NAME: TF 4 MW Inventory

DATE/TIME: 2-19-98 / 1540

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jalkut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed.

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL? YES NO

LOCKED REPLACED? YES NO

OBSTRUCTIONS? YES NO

WELL RELABELED? YES NO

SLUG TEST CONDUCTED? YES NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Missing well - destroyed. Represented the 4-inch well installed during the PCA.



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW114 Tank 40

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-19-98 / 1550

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

k. Jalkut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed.

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL?            YES            NO

LOCKED REPLACED?            YES            NO

OBSTRUCTIONS?            YES            NO

WELL RELABELED?            YES            NO

SLUG TEST CONDUCTED?            YES            NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Missing well - destroyed. Represented the 4-inch well installed during the PCA.



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW-116 Tank 41

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-19-98 / 1600

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jalkut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL? YES NO

LOCKED REPLACED? YES NO

OBSTRUCTIONS? YES NO

WELL RELABELED? YES NO

SLUG TEST CONDUCTED? YES NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Missing well - destroyed. Represented the 4-inch well installed during the PCA.



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW-123 Tank 42

PROJECT NAME: TFY MW Inventory

DATE/TIME: 2-19-98 / 1155

PROJECT MANAGER: J. Forrelli

INSPECTED BY: J. Dorgan

K. Jalikut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed.

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL? YES NO

LOCKED REPLACED? YES NO

OBSTRUCTIONS? YES NO

WELL RELABELED? YES NO

SLUG TEST CONDUCTED? YES NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Missing well-destroyed. Represented the 4-inch well installed during the PCA.



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW-407 Tank 42

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-19-98 / 1157

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jalkut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed.

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL? YES NO

LOCKED REPLACED? YES NO

OBSTRUCTIONS? YES NO

WELL RELABELED? YES NO

SLUG TEST CONDUCTED? YES NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Missing well - destroyed. Re # 2-19-98



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 411 Tank 42

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-19-98 / 1158

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jaikut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed.

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL?            YES            NO

LOCKED REPLACED?            YES            NO

OBSTRUCTIONS?            YES            NO

WELL RELABELED?            YES            NO

SLUG TEST CONDUCTED?            YES            NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Missing well - destroyed.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 413 Tank 42

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-19-98 / 1200

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jalikut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed.

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL? YES NO

LOCKED REPLACED? YES NO

OBSTRUCTIONS? YES NO

WELL RELABELED? YES NO

SLUG TEST CONDUCTED? YES NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Missing well - destroyed.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 120 Tank 43

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98/1250

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jalikut

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL?            YES            NO

LOCKED REPLACED?            YES            NO

OBSTRUCTIONS?            YES            NO

WELL RELABELED?            YES            NO

SLUG TEST CONDUCTED?            YES            NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Remnants of 4-inch PCA well found in borehole  
Well has been destroyed



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW-117 Tank 44

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-19-98 / 1620

PROJECT MANAGER: J Forrelli

INSPECTED BY: T. Dorgan

K. Jalikut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL? YES NO

LOCKED REPLACED? YES NO

OBSTRUCTIONS? YES NO

WELL RELABELED? YES NO

SLUG TEST CONDUCTED? YES NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Missing well - destroyed. Represented the 4-inch well installed during the PCA.



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 330 Tank 45

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2/19/98 / 1015

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan  
K. Jalkut

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

WELL DEPTH (FEET FROM TOP OF PVC) 39.88

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) 20.04

WELL STICK-UP 1.88 ft

CASING STICK-UP (FEET) current to 2/19/98 2.08 ft (fill around well)

WELL DIAMETER (INCHES) 2 inches

WELL CONSTRUCTION (PVC, STEEL, ETC.) PVC

LOCKED UPON ARRIVAL? YES  NO

LOCKED REPLACED? YES  NO

OBSTRUCTIONS? YES  NO

WELL RELABELED? YES  NO

SLUG TEST CONDUCTED? YES  NO  (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Prot casing cap broken; no lock; cement surface seal buried under fill; no NWAFL signal w/ interface probe, semi-soft (silty) bottom; trace oil on probe upon recovery;  
Refer to previous well inventory notes



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW122 Tank 45

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-19-98 / 1025

PROJECT MANAGER: J. Forreli

INSPECTED BY: T. Dorgan

K. Jaikut

VENT WELL

MONITORING INSTRUMENT READING: \_\_\_\_\_

LEL/O2 READING: \_\_\_\_\_

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

Well has been destroyed.

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL? YES NO

LOCKED REPLACED? YES NO

OBSTRUCTIONS? YES NO

WELL RELABELED? YES NO

SLUG TEST CONDUCTED? YES NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Well missing. MW122 was the 4 inch monitoring well installed during the Preliminary Closure Assessment Destroyed



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 332 Tank 45  
DATE/TIME: 2/19/98 / 1036  
INSPECTED BY: T. Dorgan  
K. Jalikut

PROJECT NAME: TF4 Well Inventory  
PROJECT MANAGER: J. Ferrelli

VENT WELL

MONITORING INSTRUMENT READING: Not Taken  
LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

WELL DEPTH (FEET FROM TOP OF PVC) 40.19  
WATER LEVEL DEPTH (FEET FROM TOP OF PVC) 21.07  
WELL STICK-UP 1.20  
CASING STICK-UP (FEET) 1.55  
WELL DIAMETER (INCHES) 2 inches  
WELL CONSTRUCTION (PVC, STEEL, ETC.) PVC

LOCKED UPON ARRIVAL? YES  NO   
LOCKED REPLACED? YES  NO   
OBSTRUCTIONS? YES  NO   
WELL RELABELED? YES  NO   
SLUG TEST CONDUCTED? YES  NO  (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: No NAPL signal w/ interface probe, hard bottom  
Pro casing cover present but no PVC cover on well: cement surface  
Seal buried under fill; surrounding area very soft



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 331 Tank 45

PROJECT NAME: TF4 Well Inventory

DATE/TIME: 2/19/98 / 1048

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jalkut

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

WELL DEPTH (FEET FROM TOP OF PVC) 39.15

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) 21.88

WELL STICK-UP 1.12

CASING STICK-UP (FEET) current to 2/19/98 1.54 (fill mound around well)

WELL DIAMETER (INCHES) 2 inches

WELL CONSTRUCTION (PVC, STEEL, ETC.) PVC

LOCKED UPON ARRIVAL? YES  NO

LOCKED REPLACED? YES  NO

OBSTRUCTIONS? YES  NO

WELL RELABELED? YES  NO

SLUG TEST CONDUCTED? YES  NO  (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Positive NAPL signal @ 21.88 ft from top PVC; NAPL signal less than 0.01 ft in thickness however, no visual presence of oil on probe upon recovery; soft bottom; cement surface seal buried under mound of fill around well; pro casing bent pressing against PVC. Can move entire pro casing easily; no pro-casing cup



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 121 Tank 46

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98 / 1232

PROJECT MANAGER: J. Forreli

INSPECTED BY: T. Dorgan

K. Jalkut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed.

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL? YES NO

LOCKED REPLACED? YES NO

OBSTRUCTIONS? YES NO

WELL RELABELED? YES NO

SLUG TEST CONDUCTED? YES NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Well destroyed. Found remnant piece of cement surface seal and rope. Cement seal had mold of 4 inch well. Rope buried beneath seal



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 118 Tank 47

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98 / 1245

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan  
K. Jalikut

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT well has been destroyed

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL?            YES            NO

LOCKED REPLACED?            YES            NO

OBSTRUCTIONS?            YES            NO

WELL RELABELED?            YES            NO

SLUG TEST CONDUCTED?            YES            NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Well missing - destroyed. Represented 4-inch well installed during the PCA.



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 404 Tank 48

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98 / 1315

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jaikut

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

Well Damaged

WELL DEPTH (FEET FROM TOP OF PVC) No reading - obstruction

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) No reading - obstruction

WELL STICK-UP Damaged - no measurements

CASING STICK-UP (FEET) Damaged - no measurements

WELL DIAMETER (INCHES) 2 inches

WELL CONSTRUCTION (PVC, STEEL, ETC.) PVC

LOCKED UPON ARRIVAL? YES  NO

LOCKED REPLACED? YES  NO

OBSTRUCTIONS? YES  NO

WELL RELABELED? YES  NO  KJ / 2/20/98

SLUG TEST CONDUCTED? YES  NO  (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Prot. casing, significantly damaged - bent, impacted, crushed (etc.) PVC cracked inside. Obstruction (dirt) at 2.4 feet from top PVC. Due to damage, did not place cable - tie on well to secure - grouting hole on side of prot. casing.



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW-422 (Tank 48)

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98 / 1318

PROJECT MANAGER: J. Forrell

INSPECTED BY: T. Dorgan

K Jaikut

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

Well has been destroyed.

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL?            YES            NO

LOCKED REPLACED?            YES            NO

OBSTRUCTIONS?            YES            NO

WELL RELABELED?            YES            NO

SLUG TEST CONDUCTED?            YES            NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Well missing - destroyed



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW-119 (Tank 48)

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98 / 1321

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jaikut

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed.

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL?                      YES                      NO

LOCKED REPLACED?                      YES                      NO

OBSTRUCTIONS?                      YES                      NO

WELL RELABELED?                      YES                      NO

SLUG TEST CONDUCTED?                      YES                      NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Well missing - destroyed. Represented a 4-inch well installed during the PCA.



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 409 Tank 48

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98 / 1330

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jalkut

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

WELL DEPTH (FEET FROM TOP OF PVC) 24.58

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) 10.52

WELL STICK-UP 2.13

CASING STICK-UP (FEET) 2.42 - soil mound around well

WELL DIAMETER (INCHES) 2 inches

WELL CONSTRUCTION (PVC, STEEL, ETC.) PVC

LOCKED UPON ARRIVAL? YES  NO

LOCKED REPLACED? YES  NO

OBSTRUCTIONS? YES NO

WELL RELABELED? YES NO

SLUG TEST CONDUCTED? YES  (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: No locking prot casing cover cracked metal rim around prot casing; prot casing damaged, soft-bottom; no NAPL signal with interface probe but city, edge on bailer removed from well; cement surface seal buried beneath fill, PVC cap full of soil, rock inside well



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW425 Tank 48

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98 / 1335

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan  
K. Jalikut

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

WELL DEPTH (FEET FROM TOP OF PVC) 43.04

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) 9.40

WELL STICK-UP 1.84

CASING STICK-UP (FEET) 2.11 (soil mound around well)

WELL DIAMETER (INCHES) 2 inches

WELL CONSTRUCTION (PVC, STEEL, ETC.) 2" <sup>15 2-20-98</sup> PVC

LOCKED UPON ARRIVAL? YES  NO

LOCKED REPLACED? YES  NO

OBSTRUCTIONS? YES  NO

WELL RELABELED?  YES NO

SLUG TEST CONDUCTED? YES  NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: No prot. casing cap, no PVC cap inside, cement surface seal buried beneath fill; no NAPL signal w/ interface probe, firm-bottom well wide-open to environment



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW412 (Tank 48)

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98 / 1340

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan  
K. Jalkot

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed.

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL? YES NO

LOCKED REPLACED? YES NO

OBSTRUCTIONS? YES NO

WELL RELABELED? YES NO

SLUG TEST CONDUCTED? YES NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Missing well-destroyed



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 424 Tank 48

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98 / 1345

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jalikut

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

WELL DEPTH (FEET FROM TOP OF PVC) 31.12

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) 9.12

WELL STICK-UP 2.38

CASING STICK-UP (FEET) 2.40

WELL DIAMETER (INCHES) 2 inches

WELL CONSTRUCTION (PVC, STEEL, ETC.) PVC

LOCKED UPON ARRIVAL? YES  NO

LOCKED REPLACED? YES  NO

OBSTRUCTIONS? YES  NO

WELL RELABELED?  YES NO

SLUG TEST CONDUCTED? YES  NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Cement surface seal buried beneath fill, NAPL signal @ 9.12 ; visible oil stain on measuring tape upon removal, NAPL thickness = 0.08 ft (approx.)  
From bottom



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW-401 (Tank 48)

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98 / 1350

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jalkut

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL?            YES            NO

LOCKED REPLACED?            YES            NO

OBSTRUCTIONS?            YES            NO

WELL RELABELED?            YES            NO

SLUG TEST CONDUCTED?            YES            NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Well missing - destroyed

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 421 Tank 48

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98 / 1355

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan  
K. Jalikut

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

WELL DEPTH (FEET FROM TOP OF PVC) 18.00

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) 6.12

WELL STICK-UP 2.09

CASING STICK-UP (FEET) 2.61

WELL DIAMETER (INCHES) 2 inches

WELL CONSTRUCTION (PVC, STEEL, ETC.) PVC

LOCKED UPON ARRIVAL? YES  NO

LOCKED REPLACED? YES  NO

OBSTRUCTIONS? YES  NO

WELL RELABELED?  YES NO

SLUG TEST CONDUCTED? YES  NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Prot casing cap damaged; metal ring on top of prot casing destroyed and off prot casing, cement surface seal buried beneath fill. firm-bottom: no NAP signal w/ interface probe, trace silt on bottom of probe upon removal



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW-408 (Tank 48)

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98 / 1400

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jalkot

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT Well has been destroyed.

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_

WELL STICK-UP \_\_\_\_\_

CASING STICK-UP (FEET) \_\_\_\_\_

WELL DIAMETER (INCHES) \_\_\_\_\_

WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL? YES NO

LOCKED REPLACED? YES NO

OBSTRUCTIONS? YES NO

WELL RELABELED? YES NO

SLUG TEST CONDUCTED? YES NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Well missing - destroyed

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW-15 (TRC well)

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98 / 1550

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jalkut

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

WELL DEPTH (FEET FROM TOP OF PVC) 15.07

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) 4.67

WELL STICK-UP 2.31

CASING STICK-UP (FEET) 2.70

WELL DIAMETER (INCHES) 2 inches

WELL CONSTRUCTION (PVC, STEEL, ETC.) PVC

LOCKED UPON ARRIVAL?  YES  NO

LOCKED REPLACED? YES  NO

OBSTRUCTIONS? YES  NO

WELL RELABELED? YES  NO

SLUG TEST CONDUCTED? YES  NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Cut lock off for inspection; secured well w/ cable-tie; no NAPL signal w/ interface probe; soft-bottom; cement surface seal cracked and separated from protective casing (5 in ID)



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW-1D (TRC well)

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98 / 1556

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Balkut

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

WELL DEPTH (FEET FROM TOP OF PVC) 50.36

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) 9.41

WELL STICK-UP 2.64

CASING STICK-UP (FEET) 2.69

WELL DIAMETER (INCHES) 2 inches

WELL CONSTRUCTION (PVC, STEEL, ETC.) PVC

LOCKED UPON ARRIVAL?  YES  NO

LOCKED REPLACED? YES  NO

OBSTRUCTIONS? YES  NO

WELL RELABELED? YES  NO

SLUG TEST CONDUCTED? YES  NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Cut lock off for inspection; secured well w/cable-tie; cement surface seal cracked & separated from prot. casing; soft bottom, no NAPL signal w/interface probe. 6 in ID prot. casing, used



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW-2 (TRC well)

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98/1150

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jaikut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

WELL DEPTH (FEET FROM TOP OF PVC) 31.75

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) 15.72

WELL STICK-UP 2.33

CASING STICK-UP (FEET) 2.80

WELL DIAMETER (INCHES) 2 inches

WELL CONSTRUCTION (PVC, STEEL, ETC.) PVC

LOCKED UPON ARRIVAL?  YES  NO

LOCKED REPLACED? YES   NO

OBSTRUCTIONS? YES   NO

WELL RELABELED? YES   NO

SLUG TEST CONDUCTED? YES   NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Cut well lock off for inspection; secured well w/ cable-tie; compression cap present; soft-bottom; no NAPL detected with interface probe. cement surface seal banded under mud from overland flow; well located in a wetland/surface drainage area, heavily overgrown with brush, cement surface seal slightly separated from prot. casing



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW-3S (TRC well)

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-19-98 / 1445

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jaikut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

WELL DEPTH (FEET FROM TOP OF PVC) 30.08

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) 17.90

WELL STICK-UP 2.72

CASING STICK-UP (FEET) 3.02

WELL DIAMETER (INCHES) 2 inches

WELL CONSTRUCTION (PVC, STEEL, ETC.) PVC

LOCKED UPON ARRIVAL?  YES  NO

LOCKED REPLACED? YES  YES  NO

OBSTRUCTIONS? YES  YES  NO

WELL RELABELED? YES  YES  NO

SLUG TEST CONDUCTED? YES  NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Well cluster equidistant between tanks 39, 42, 43  
Cut lock off for inspection; secured well w/cable-tie. Cement surface seal  
cracked and separated from prot casing; compression cap present but top of PVC  
riser broken from bottom; no NAPL signal w/intertale probe, trace suit  
on probe upon recovery



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW-3D (TRC well)

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-19-98 / 1450

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jaikut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

WELL DEPTH (FEET FROM TOP OF PVC) 56.94\*

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) 21.01\*

WELL STICK-UP 2.69

CASING STICK-UP (FEET) 2.98

WELL DIAMETER (INCHES) 2 inches

WELL CONSTRUCTION (PVC, STEEL, ETC.) 2-19-98  
Zinc PVC

LOCKED UPON ARRIVAL?  YES  NO

LOCKED REPLACED? YES  NO

OBSTRUCTIONS? YES  NO

WELL RELABELED? YES  NO

SLUG TEST CONDUCTED? YES  NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Well cluster equidistant between Tank Nos. 39,42,43  
Cut lock off for inspection; secured well w/ cable-tie, cement surface seal  
cracked and separated from prot. casing; no NAPL signal w/ interface probe,  
soft-bottom; compression cap present

\* 2 measuring pts observed cut PVC, black mark: B+RE measurements from cut PVC



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW-4 (TRC well)

PROJECT NAME: TF4 MW Inventory

DATE/TIME: 2-20-98 / 1630

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jalkut

VENT WELL

MONITORING INSTRUMENT READING: Not taken

LEL/O2 READING: Not taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

WELL DEPTH (FEET FROM TOP OF PVC) 18.25

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) 12.50

WELL STICK-UP 2.56

CASING STICK-UP (FEET) 3.27 (Frost-heaving noted = ~0.6 ft) Grade to top steel = 3.84

WELL DIAMETER (INCHES) 2 inches

WELL CONSTRUCTION (PVC, STEEL, ETC.) PVC

LOCKED UPON ARRIVAL? YES  NO

LOCKED REPLACED? YES  NO

OBSTRUCTIONS? YES NO

WELL RELABELED? YES  NO

SLUG TEST CONDUCTED? YES  (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: PVC compression cap in-place; frost-heaving evident - cement surface seal approx. 6 to 8 inches above grade, firm-bottom, no NAPL signal w/ interface meter



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW 55 Tank 45 (Upgradient) PROJECT NAME: TF4 MW Inventory  
 DATE/TIME: 2-19-98 / 1115 PROJECT MANAGER: J. Forrelli  
 INSPECTED BY: T. Dorgan  
K. Jalkut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken  
 LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

WELL DEPTH (FEET FROM TOP OF PVC) 28.74  
 WATER LEVEL DEPTH (FEET FROM TOP OF PVC) 20.20  
 WELL STICK-UP 2.89  
 CASING STICK-UP (FEET) 3.12  
 WELL DIAMETER (INCHES) 2 inches  
 WELL CONSTRUCTION (PVC, STEEL, ETC.) PVC

LOCKED UPON ARRIVAL?  YES  NO  
 LOCKED REPLACED? YES  NO  
 OBSTRUCTIONS? YES  NO  
 WELL RELABELED? YES  NO  
 SLUG TEST CONDUCTED? YES  NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Cut lockoff for inspection; possible sheen-intermittent tone (solid) w/ interface probe; soft-bottom; secured well w/ cable-tie, cement surface seal cracked and separated from pro-casing, compression cap present



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW5D Tank 45  
DATE/TIME: 2-19-98 / 1105  
INSPECTED BY: T. Dorgan  
K. Jalikut

PROJECT NAME: IF4 Well Inventory  
PROJECT MANAGER: J. Forrelli

VENT WELL

MONITORING INSTRUMENT READING: Not Taken  
LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

WELL DEPTH (FEET FROM TOP OF PVC)	<u>KS 2/19/98</u> <u>~43 44.52</u>
WATER LEVEL DEPTH (FEET FROM TOP OF PVC)	<u>26.65</u>
WELL STICK-UP	<u>2.80</u>
CASING STICK-UP (FEET)	<u>3.11</u>
WELL DIAMETER (INCHES)	<u>2 inches</u>
WELL CONSTRUCTION (PVC, STEEL, ETC.)	<u>PVC</u>

LOCKED UPON ARRIVAL?	<input checked="" type="radio"/> YES	<input type="radio"/> NO
LOCKED REPLACED?	<input type="radio"/> YES	<input checked="" type="radio"/> NO
OBSTRUCTIONS?	<input type="radio"/> YES	<input checked="" type="radio"/> NO
WELL RELABELED?	<input type="radio"/> YES	<input checked="" type="radio"/> NO
SLUG TEST CONDUCTED?	<input type="radio"/> YES	<input checked="" type="radio"/> NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Cut lock off for inspection; soft bottom; cement surface seal cracked + separated from pro-casing; secured well w/ cable-tie, compression cap present



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: MW-10 (CS well)

PROJECT NAME: TFY MW Inventory

DATE/TIME: 2-20-98 / 0925

PROJECT MANAGER: J. Forrelli

INSPECTED BY: T. Dorgan

K. Jalkut

VENT WELL

MONITORING INSTRUMENT READING: Not Taken

LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

WELL DEPTH (FEET FROM TOP OF PVC) 26.64 feet

WATER LEVEL DEPTH (FEET FROM TOP OF PVC) 4.39 feet

WELL STICK-UP 1.20

CASING STICK-UP (FEET) 1.47

WELL DIAMETER (INCHES) 2 inches

WELL CONSTRUCTION (PVC, STEEL, ETC.) PVC

LOCKED UPON ARRIVAL?  YES  NO

LOCKED REPLACED? YES  NO

OBSTRUCTIONS? YES  NO

WELL RELABELED?  YES  NO

SLUG TEST CONDUCTED? YES  NO (If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Well installed during the Confirmation Study. Located near entrance to tank farm. Cut lock off for inspection; secured well w/ cable-tie; 3-in diameter prot. casing observed, surface seal (cement) slightly heaved from ground surface (not cracked), firm-bottom; no NAPL signal w/ interface probe; no PVC cover



**Brown & Root Environmental**

**WELL INSPECTION AND GROUNDWATER LEVEL MEASUREMENT SHEET**

WELL NUMBER: <sup>KG 2-20-98</sup> MW-1011 (CS well)  
 DATE/TIME: 2-20-98 /  
 INSPECTED BY: T. Dorgan  
K. Jalkut

PROJECT NAME: TF4 MW Inventory  
 PROJECT MANAGER: J. Forrelli

VENT WELL

MONITORING INSTRUMENT READING: Not Taken  
 LEL/O2 READING: Not Taken

WELL INSPECTION/GROUNDWATER LEVEL MEASUREMENT

Unable to Locate Well

WELL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_  
 WATER LEVEL DEPTH (FEET FROM TOP OF PVC) \_\_\_\_\_  
 WELL STICK-UP \_\_\_\_\_  
 CASING STICK-UP (FEET) \_\_\_\_\_  
 WELL DIAMETER (INCHES) \_\_\_\_\_  
 WELL CONSTRUCTION (PVC, STEEL, ETC.) \_\_\_\_\_

LOCKED UPON ARRIVAL?      YES      NO  
 LOCKED REPLACED?      YES      NO  
 OBSTRUCTIONS?      YES      NO  
 WELL RELABELED?      YES      NO  
 SLUG TEST CONDUCTED?      YES      NO

(If YES, refer to "Hydraulic Conductivity Testing Data Sheet")

GENERAL CONDITION/COMMENTS: Well installed during the Confirmation Study.  
Unable to locate well. Measured off corner of pavement in 3  
directions in attempt to locate well. Area has been cleared.  
Approx. well location may have been in cleared area. Checked  
woods north of location also.