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Unicorn Management Consultants, LLC

May 1, 2025
Refer to OP-4767

Ms. Megan Kuczka
New York State Department of Environmental Conservation, Region 9
700 Delaware Avenue
Buffalo, New York 14209

Subject: Operation and Maintenance Work Plan
Union Road Site, Erie County, Cheektowaga, NY
Inactive Hazardous Waste Disposal Site No. 915128

Dear Ms. Kuczka:

On behalf of American Premier Underwriters, Inc. (APU), Unicorn Management Consultants, LLC (UMC) hereby submits this Operation and Maintenance Work Plan for the subject site.

If you have any questions regarding this work plan, please call me at 203-205-9000, ext. 13.

Sincerely,

Unicorn Management Consultants, LLC

Michael J. O'Connor, LEP, P.G.
Manager of Environmental Projects
Union Road Remediation Project

Attachments

cc: M. Cioffi
L. Lackner (w/o attachment)
M. Hill, Esq.

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OPERATION AND MAINTANENCE WORK PLAN

UNION ROAD SITE
TOWN OF CHEEKTOWAGA
ERIE COUNTY, NEW YORK
(SITE REGISTRY NO. 9-15-128)

Prepared for:

AMERICAN PREMIER UNDERWRITERS, INC.
One East Fourth Street
Cincinnati, Ohio 45202

Prepared by:

UNICORN MANAGEMENT CONSULTANTS, LLC
52 Federal Road, Suite 2C
Danbury, CT 06810

May 1, 2025

DOCUMENT AUTHORIZATION FORM

OPERATION AND MAINTANENCE WORK PLAN

UNION ROAD SITE
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52 Federal Road, Suite 2C
Danbury, CT 06810

May 1, 2025

AUTHORIZATION:

Michael J. O'Connor, LEP, PG. Environmental Project Geologist	5/1/2025 Date

Unicorn Management Consultants, LLC

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Unicorn Management Consultants, LLC

1. INTRODUCTION

Unicorn Management Consultants, LLC (UMC), prepared this Operation and Maintenance (O&M) Work Plan on behalf of American Premier Underwriters, Inc. (APU), for the Union Road Site located in Cheektowaga, Erie County, New York (Site). The Site is identified as New York State Department of Environmental Conservation (NYSDEC) Site Registry Number 9-15-128. **Figure 1** is a locus plan depicting the Site property boundaries and the boundaries/usage of vicinity properties. **Figure 2** depicts the Site features along with the monitoring well network.

2. PURPOSE

The purpose of this O&M Work Plan is to address maintenance concerns identified by UMC and the NYSDEC. Some of these maintenance concerns were identified in the NYSDEC Periodic Review Report (PRR) Response Letter sent to UMC by the NYSDEC on March 4, 2025. Other concerns were identified during the 2024 Site Walk conducted by UMC on June 4, 2024 and the 1Q25 Discharge Sampling Event on February 26, 2025. All Site-related maintenance in this work plan was drafted in accordance with the DER-10, as well as the Site Health and Safety Plan (HASP) as per the Site's Operation and Maintenance Plan. The specific Site-related maintenance items are listed and described in the following sections.

3. WORK PLAN TASKS

The tasks proposed to be completed during O&M activities are listed as follows:

- Task 1: Sump Pit Evaluation, Maintenance and Operation.
- Task 2: Well Network Evaluation and Maintenance.
- Task 3: Fence Repair.
- Task 4: Fill Gopher Holes and Repair Gabion Baskets.

4. WORK PLAN STRATEGY

The following sections detail the scope of work proposed in this Work Plan, broken down into the four Work Plan Tasks introduced in the previous section.

4.1 Task 1: Sump Pit Evaluation, Maintenance and Operation

Between November 2024 and March 2025, UMC observed a below-average pumping flow rate and received repeated pump stop alarm notifications due to the water level in the sump getting too high, triggering an alarm that causes the system to turn off. UMC mobilized to the Site in March 2025 to conduct the 1Q25 Discharge Sampling Event. Upon sampling, UMC observed that debris (leaves, sticks, sediment, etc.) was accumulating on the bottom of the sump pit with suspected impact to the flowmeter and both sump pumps. It is unknown at this time how the debris entered the sump pit causing the flowmeter and sump pumps to be clogged with debris, and ultimately lowering the pump rate slower than the rate of water entering the sump pit that discharges to the Buffalo Sewer Authority (BSA) via permit. The flowmeter and sump pumps were inspected by UMC and Danforth (plumbing, electrical, mechanical, etc. services) on March 25 – 28, 2025, to confirm the flowmeter and pumps were filled with sediment and debris. To remain in compliance with the BSA's Discharge Permit, UMC proposes the following maintenance items to address the aforementioned issues with the sump pit.

- Vacuum extract the sediment from the sump pit.

  - This task will be performed during the May 5-16, 2025, proposed maintenance work.
  - UMC proposes to monitor debris accumulation rates and the potential need to take measures to minimize debris entering the sump by monitoring the sump pit debris accumulation quarterly, for at least on year, during the Buffalo Sewer Authority Permit required sampling events with the results of the evaluation and future recommendations presented in the next PRR. If necessary, the vacuum extraction of the debris will be conducted as part of the annual inspection activities, or on a more or less frequent basis (depending on evaluation), going forward.
- Replace the flowmeter with less or no internal mechanical parts. Please note that the specific make and model is currently being evaluated and a Work Plan addendum will be submitted to the NYSDEC for approval prior to ordering and installation.
- Replace the two sump pumps with modern equipment to improve pump rates. Please note that the specific make and model is currently being evaluated and a Work Plan addendum will be submitted to the NYSDEC for approval prior to ordering and installation.

Overall, UMC expects Task 1 to be completed by the end of June 2025.

4.2 Task 2: Well Network Evaluation and Maintenance

UMC's annual inspection and report for 2024 identified some monitoring wells with broken or heaved well pads, what was assumed to be an obstruction within MW-10D, and sedimentation within select wells (variance between well installation depth to bottom and current depth to bottom measurements). In addition, the NYSDEC's PRR Response Letter dated March 4, 2025, requests that the well network be evaluated and repaired. Therefore, the following well network repair and maintenance activities are proposed:

- Replace heaving pads and risers;
- Redevelop monitoring wells in the network due to sedimentation and vacuum sump pit;
- Reinstall the MW-10 cluster due to fouling/precipitate build up on well screens (confirmed by down-hole camera footage collected in March and April 2025); and,
- Survey the monitoring well network after well repair and maintenance activities are completed.

All well repairs, maintenance, and reinstallations will be performed by a NYSDEC licensed driller, Nothnagle Drilling, Inc. (Nothnagle), of Scottsville, New York, in accordance with NYSDEC CP-43. Nothnagle will create decommissioning logs and well construction logs, as necessary, for submission to the NYSDEC. Concrete pads and risers will be replaced at all monitoring well locations by breaking apart the existing concrete pads and removing the risers, then disposing of them as general construction and demolition waste for offsite disposal via Miller Environmental Group, Inc. (Miller) as detailed in Section 6 below. A new riser will then be placed over the well casing and will be cemented-in with the new concrete pad.

All wells in the monitoring well network will be redeveloped by the drilling contractor by using a battery-powered submersible pump set within the screened interval of the monitoring well. The pump and tubing will be surged up and down within the screened interval as water is pumped from

the well and collected in 55-gallon drums or similar. Wells with limited water production will be pumped dry and allowed to recharge before resuming development. Development will continue until at least three well volumes of water has been removed from the well and turbidity is below 50 NTU. All development tools will be decontaminated between locations and well intervals. Additionally, a thick sludge was observed at some wells within the landfill area (such as MW-20); these wells will not be developed due to the risk of damaging equipment. The development water will be stored onsite for offsite disposal by Miller as detailed in Section 6 below.

UMC personnel observed precipitate build-up on the bottom of two of the three wells in the MW-10 cluster while conducting downhole imagery with a camera in each of the MW-10 monitoring wells. UMC concluded that the entire MW-10 cluster must be reinstalled due to fouling/precipitate build up on well screens. This involves the abandonment of the three wells within the MW-10 cluster. Nothnagle, a New York State licensed drilling contractor, will abandon the wells by tremie grouting a concrete slurry into the well to seal the well to prevent an undesirable exchange of water from one aquifer to another. All steel monitoring well stick ups will be cut below grade and removed according to the method described above. After the steel stickup is removed and the PVC cut off below ground surface, a concrete slab will be placed on top of the abandoned well to within 6" of the ground surface. The surrounding surface material will then be used to cover the remaining depression in the ground surface and/or restored with topsoil and seed. The reinstalled MW-10 well cluster will be identified with an "R" designation after the well ID (ex., MW-10SR) and will be constructed as close as possible to the original MW-10 cluster location. The reinstalled MW-10R cluster will be constructed the same as the original MW-10 cluster. Appendix A provides the historical APU well network boring logs and well construction details and Appendix B presents draft construction logs for the MW-10 cluster replacement wells (MW-10R cluster) consistent with the original MW-10 cluster construction logs. Once the MW-10R cluster is installed the final well construction logs will be provided to the NYSDEC. The reinstalled wells will be developed in accordance with the procedure described above.

The monitoring well network will also be surveyed following the repair, redevelopment, and reinstallation of all necessary monitoring wells. The wells will be surveyed for coordinates (NAD 83 [2011] and New York West [3103] State Plane), top of PVC casing elevation and ground surface elevation (NAVD 88 [GEOID18] Feet). Survey work will be conducted by a New York State-licensed surveyor. The results of the survey work will be submitted to the NYSDEC and inputted into NYSDEC EQuIS.

The work proposed in Task 2 is tentatively scheduled to be conducted May 5-16, 2025.

4.3 Task 3: Fence Repair

UMC has identified the perimeter fence around the landfill area as a maintenance item to be addressed in this Work Plan. UMC will oversee a subcontractor to repair or replace parts of the fence that are broken, rusted, torn, etc. The fence repair activities are anticipated to be conducted between May 5-16, 2025.

4.4 Task 4: Fill Gopher Holes and Repair Gabion Baskets

During historical Site activities, UMC has consistently observed "gopher holes" throughout the restored roundhouse area of the Site. UMC intends on filling these holes with soil provided by a clean source. Prior to the import of soil to the Site, UMC will sample the soil to confirm it is free of Site-related contaminants. Additionally, UMC will submit an import request form to the NYSDEC prior to bringing any material on Site.

UMC also observed that a gabion basket on Site has been damaged and/or is low on rock material. UMC will repair this gabion basket or replace it, if necessary. The gabion basket will be filled with rocks imported from an off-Site source. UMC will submit an import request form prior to bringing new rock material on Site.

UMC anticipates the import of material and repair work to commence by third quarter 2025.

5. COMMUNITY AIR MONITORING PLAN

During the implementation of this work plan, and before well repair, maintenance, redevelopment, or reinstallation is initiated, UMC will establish, calibrate, and activate two Community Air Monitoring Plan (CAMP) stations at locations determined by the prevailing wind direction at the Site. These CAMP stations will be deployed at upwind and downwind locations relative to the landfill cap. Each CAMP station contains a Photo Ionization Detector to measure airborne VOC concentrations, as well as a Dust Meter to measure airborne particulate concentrations.

6. WASTE DISPOSAL

UMC notes that waste generated during the proposed O&M activities will include a minimal amount of soil spoils generated during redrilling of monitoring wells, sediment from the vacuum extraction of the sump pit, and waste water generated during decontamination procedures, well installation, and well development activities. The liquid wastes will be evaluated for disposal via the existing Buffalo Sewer Authority permit or for offsite disposal under manifest via Miller.

Soil and sediment spoils generated during the redrilling of wells and vacuum extraction of the sump pit will be transferred by the drilling contractor (Nothnagle) into 55-gallon drums as monitoring well repair work progresses. Waste water generated during decontamination activities and well development will be transferred by the drilling contractor into 55-gallon drums or similar. The soil and waste water drums will be stored in a secondary containment area for later off-Site disposal by a certified waste handler (Miller). All remaining waste (such as steel risers, concrete pads, etc.) will be disposed of as general construction and demolition waste. General waste will be stored in a roll-off dumpster on Site and will be disposed off-Site, by Miller, following O&M activities.

7. WORK PLAN IMPLEMENTATION SCHEDULE AND COST ESTIMATE

UMC anticipates to conduct the work proposed in this Work Plan throughout 2025, with Tasks 2 and 3 occurring between May 5-16, 2025, and pending NYSDEC's approval. The cost to complete Tasks 1 through 4 of this Work Plan is estimated to be around $150,000.

Unicorn Management Consultants, LLC

8. ACRONYMS AND ABBREVIATIONS

APU	American Premier Underwriters, Inc.
BSA	Buffalo Sewer Association
CAMP	Community Air Monitoring Plan
HASP	Health and Safety Plan
MEG	Miller Environmental Group
NYSDEC	New York State Department of Environmental Conservation
O&M	Operation and Maintenance
PRR	Periodic Review Report
SITE	Union Road Site
UMC	Unicorn Management Consultants, LLC

Figures

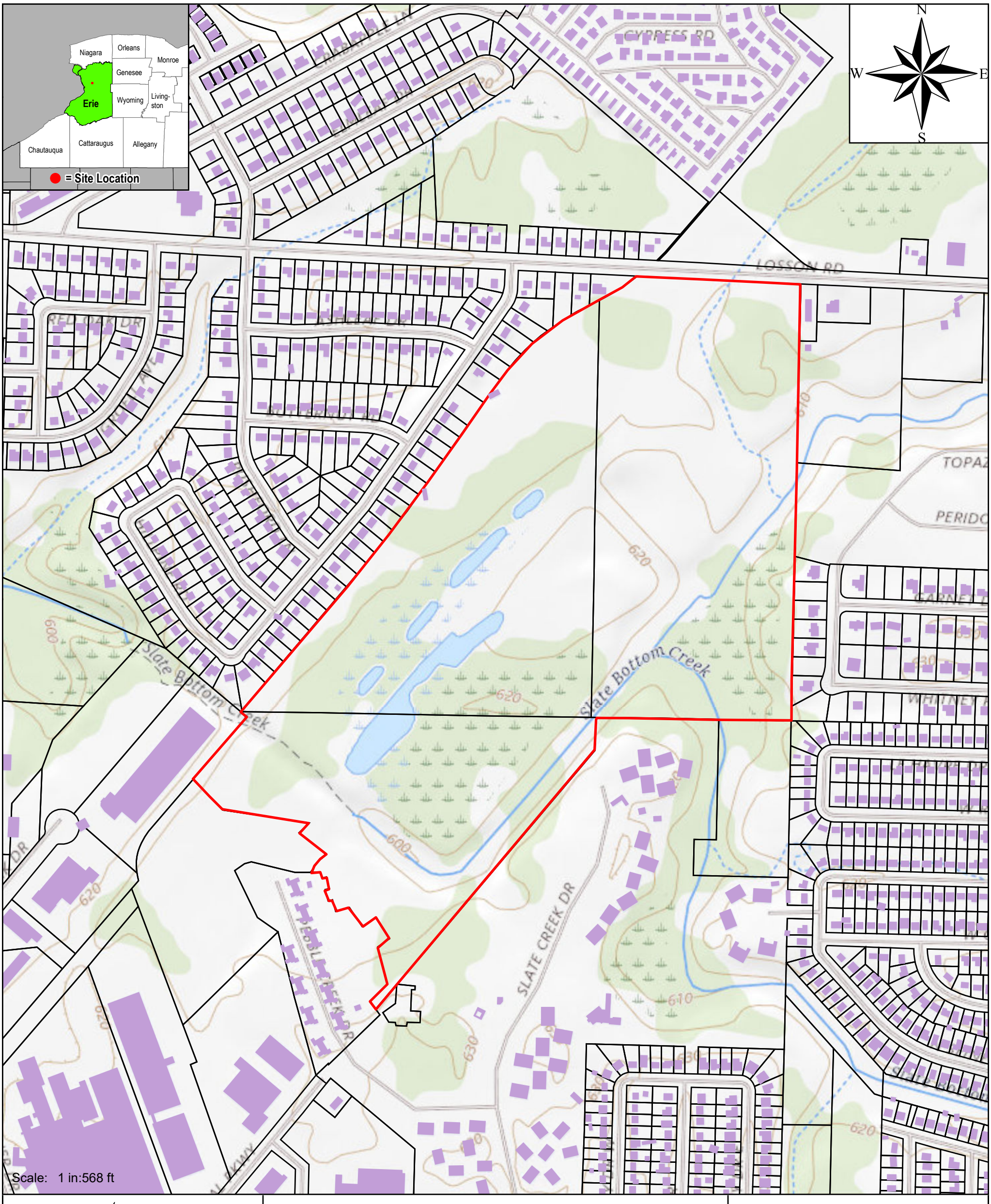

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Figure 1

Site Locus Map

Union Road
Town of Cheektowaga, NY

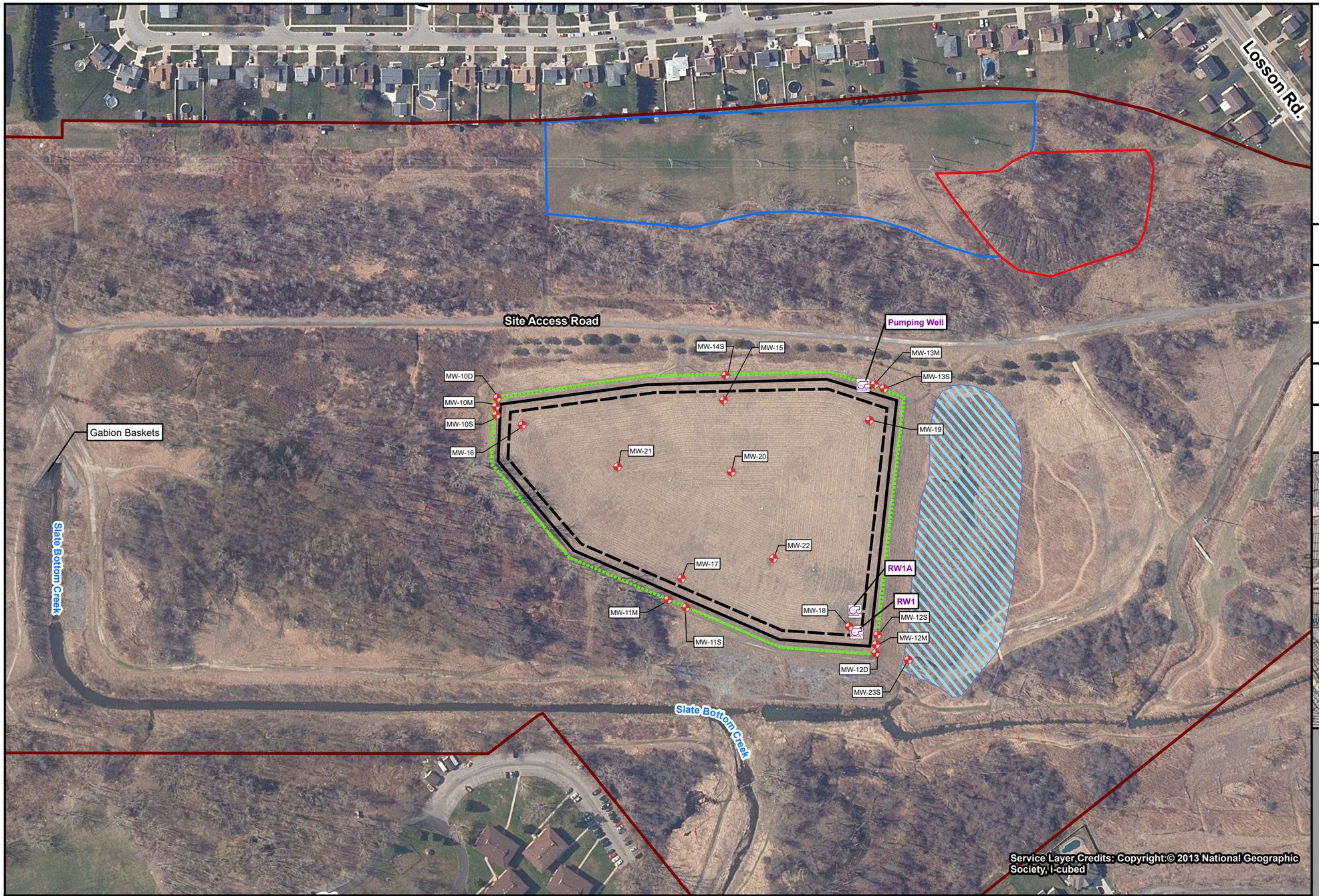
0 500 1,000 2,000 Feet

Legend

- Building
- Site Boundary (Parcels)
- Parcels

Project Name:	Union Road Cheektowaga, NY
Project #: 2007	Author: NRH
Created: 8/25/23	Revised:
File:	Fig1_SiteLocus

Service Layer Credits: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed April, 2023.



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06810

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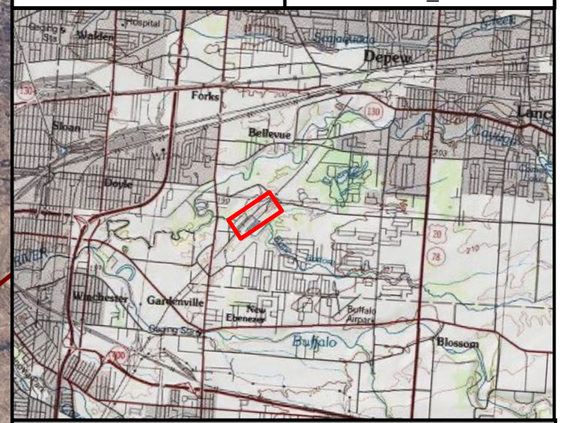
Project Name: Union Road

Figure 2

Author: NRH	**Checked By:** RM
Project #: 2011	**Created:** 3/15/24 **Revised:** 4/9/25
Scale: 1 in = 289 ft	**File:** Site_Area



Legend

- Monitoring Well Location
- Pumping Well Location
- Fenced Perimeter
- Edge of Cap
- Slurry Wall
- Site Boundary (Parcels)
- Former Roundhouse Area
- Restored Roundhouse Area
- Approximate Wetlands Area

Note:
Monitoring wells, slurry wall, edge of cap, fenced perimeter, and wetlands area are georeferenced from Figure 2-1 of historical APU/UMC Groundwater Monitoring Reports.

Union Road Site
Town of Cheektowaga, New York

Site Feature Map

0 200 400 800 Feet

Appendix A
Monitoring Well Boring Logs and Well Construction Information

TEST BORING LOG

BORING NO. 10-5

PROJECT NO. NAME Union Road - 2035-200 | LOCATION Buffalo NY

DRILLING CONTRACTOR/DRILLER MANM

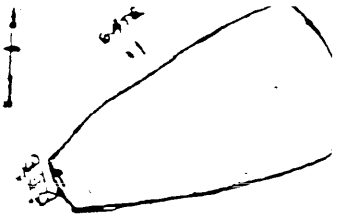
GEOLOGIST. OFFICE JOHN J ZACHER JR

DRILLING EQUIPMENT. METHOD HSA | SIZE TYPE OF BIT 6" HSA | SAMPLING METHOD SPLIT SPOON | START. FINISH

WELL INSTALLED? YES ☒ NO ☐ | CASING MAT./DIA. STAINLESS STEEL / 2" | SCREEN: TYPE SLOT MAT. STAINLESS LENGTH 10' DIA. 2" SLOT SIZE 0.02

ELEVATION OF: GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE (FT. ABOVE M.S.L.)

REMARKS: Hole to 21', Samples to 20'



DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC
				SAMPLING STARTS AT 4' B.G.			
5	4 4 6	21"	6 6 8 10	BRICK TO TANISH GREY CLAY W LITTLE ANGULAR ROCKS TO 1/2"	STIFF, DAMP		
	6 8 4	21"	6 45 20 8	0-3" BRICK TO TAN-GREY CLAY SOME ROCKS TO 3/4" 3-15" CINDERS W/SOME ROCKS. - DAMP 15-21" BROWN/TAN CLAY SOME SAND, LITTLE SILT TRACE ROCKS	STIFF DAMP SATURATED LITTLE H2O		
10	4 10	24"	8 5 4 10	TAN/LT BROWN CLAY	STIFF, LITTLE H2O		
	10 12	12"	2 3 4 3	TAN/LT BROWN CLAY	MED STIFF SOME H2O		
	12 14	16"	2 3 3 4	TAN/LT BROWN CLAY - TRACE SILTS	MED STIFF SOME H2O		
15	14 16	20"	2 2 3 4	GREY TO LT BROWN CLAY - LITTLE ROUNDED ROCKS	MED STIFF SOME H2O		
	16 18	18"	2 3 4 5	TAN TO LT BROWN CLAY	MED STIFF SOME H2O		
	18 20	20"	2 3 3 3	GREYISH BROWN CLAY TRACE ORGANICS.	MED STIFF SOME H2O		
				END of Boring 21' BGS - ~~20~~ 20'			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

TEST BORING LOG

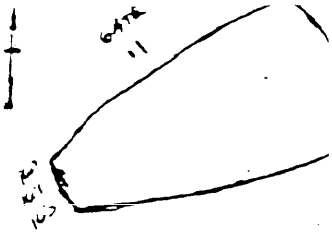
BORING NO. 10-M	
PROJECT NO. NAME Union Road - 2035-200	LOCATION Buffalo NY
DRILLING CONTRACTOR/DRILLER Manm	
GEOLOGIST. OFFICE John J Zacher JR	
DRILLING EQUIPMENT. METHOD HSA	SIZE TYPE OF BIT 6" HSA / SAMPLING METHOD Split Spoon / START. FINISH D: 1/3/97
WELL INSTALLED? YES ☒ NO ☐	CASING MAT./DIA. Stainless Steel / 2" / SCREEN: TYPE Slot MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE 0.02
ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE
REMARKS:	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING: DESCRIPTION	REMARKS	WELL CONSTR.	GRAPHIC LITHOLOGY
				SAMPLING STARTS 4' BG.			
5	4	22"	6	BLK TO TAN/GREY CLAY W/LITTLE ROCKS TO 4"	STIFF, DAMP		
	6		6	0-7" BLACK TO TAN/GREY CLAY SOME ROCKS	STIFF DAMP		
	6		5	7-14" CINDERS	DRY		
	5	22"	8	14-22" BROWN TAN CLAY LITTLE ROCKS	MED STIFF, LITTLE H2O		
	3		12				
	3	24"	7	TAN/LT BROWN CLAY	STIFF, LITTLE H2O		
10	10		8				
	20	15"	13	TAN/LT BROWN CLAY	MED STIFF SOME H2O		
	12		5				
	12	15"	3	TAN/LT BROWN CLAY	MED STIFF SOME H2O		
	14		5				
15	14	20"	3	TAN/LT BROWN CLAY, LITTLE GREY LITTLE ROUND ROCKS	MED STIFF SOME H2O		
	16		4				
	16	19"	3	TAN TO LT BROWN CLAY	MED STIFF SOME H2O		
	18		3				
	15	20"	3	GREYISH BROWN CLAY, SOME ORGANICS	MED STIFF SOME H2O		
	20		4				

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

TEST BORING LOG



BORING NO. 10M

PROJECT NO. NAME Woodlawn - 2035-200 | LOCATION BUFFALO NY

DRILLING CONTRACTOR/DRILLER MAHM

GEOLOGIST. OFFICE JOHN J ZACHER JR

DRILLING EQUIPMENT. METHOD	SIZE TYPE OF BIT	SAMPLING METHOD	START. FINISH
HSA	6" HSA	SPLIT SPOON	1/13/97

WELL INSTALLED?	CASING MAT./DIA.	SCREEN:				
YES ☒ NO ☐	STAINLESS STEEL/2"	TYPE SLOT	MAT. STAINLESS	LENGTH 10'	DIA. 2"	SLOT SIZE 0.02

ELEVATION OF: GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN ON SURFACE DATE (FT. ABOVE M.S.L.)

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC
20			1	DARK GREY w/ SOME ORGANICS LITTLE	MED STIFF		
21		21	3		SOME H2O		
22			2				
22			4	GREY & SOME BROWN CLAYS	MED STIFF		
23		21	5		LITTLE H2O		
24			4				
24			2	GREY CLAY	SOFT,		
25		20	3		WET		
26			3				
26			1	TOP 14" GREY CLAY	SOFT WET		
27		21	2				
28			2	BOT 7" GREY/LT BROWN CLAY, SOME ROCK FRAGS, LITTLE SAND	WET, NON COHESIVE		
28			10				
29			12	LT BROWN SILTS W/SOME SAND 0-6"	WET, LOOSE		
30		17"	4	LT BROWN TAN CLAY, SOME ROCKS 6-17" 1/2-1"	SOFT-WET		
30			4				
30			2				

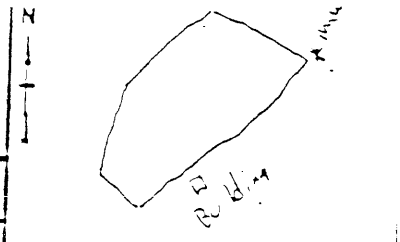
BOB @ 31' Bgl

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

(203) 796-5279

TEST BORING LOG



BORING NO. MW-10D

PROJECT NO.. NAME: Union Road | LOCATION: Buffalo NY

DRILLING CONTRACTOR/ DRILLER: Maxim (Dick Miller, Ron Brown)

GEOLOGIST. OFFICE: James Dann

DRILLING EQUIPMENT. METHOD	SIZE TYPE OF BIT	SAMPLING METHOD	START. FINISH DATE
Air Rotary / HSA	8¼" HSA / 7⅞"	Split Spoon	12/6 - 12/7/96

WELL INSTALLED?	CASING MAT./ DIA.	SCREEN: TYPE	MAT.	LENGTH	DIA.	SLOT SIZE
YES ☒ NO ☐	Stainless / 2"	Slot	Stainless	10'	2"	.020

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE | DATE

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
				Sampling started @ 4' BG.			
5		21"	5 6 9 10	~~Blk to tan/Grey clay w/ Trace angular~~ Fragmented Rock upto 1" in size	~~Stiff,~~ Damp		
		22"	7 30 18 11	Top 8" Blk, tan/grey Clay w/ Trace angular Fragmented Rock next 6" Blk Cinder like material w/ ~~same~~ w/ angular Fragmented Rock, 1" in size Bottom 6" Brown/Tan Sand/Silty Clay w/ 10%-20% Rx Frag. 2"	Stiff, Damp Dry Not Cohesive, little H_2O		
10		24"	7 8 10 9	Tan to Lt Brown clay, No Rocks	m. stiffness w/ some H_2O		
		16"	2 2 3 3	Tan to lt Brown clay w/o Rocks	m. Stiffness w/ some H_2O		
15		15"	1 3 3 5	tan to lt Brown Clay w/o Rocks Possibly Some Silts	m. stiffness w/ some H_2O		
		20"	2 2 3 4	Grey to lt Brown Mottled clay w/ trace rounded Rocks, ¼ - ⅛" diameter.	m. stiffness w/ Some H_2O		
		18"	1 3 4 6	Tan to lt Brown Clay w/o Rxs	m. stiffness w/ Some H_2O		
		21"	2 2 3 4	Grayish/Brown/Blk clay w/ 10-20% organics	m. stiffness w/ some H_2O		

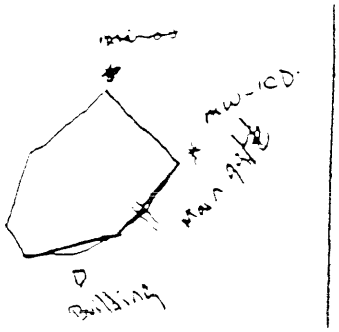
Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

DANBURY, CT 06810
(203) 796-5279

C 01 /

TEST BORING LOG



BORING NO. MW- 10D

PROJECT NO.. NAME: Union Road 2035-200

LOCATION: Buffalo NY

DRILLING CONTRACTOR/ DRILLER: Maxim (Dick Miller, Ron Brown)

GEOLOGIST, OFFICE: James Doan

DRILLING EQUIPMENT. METHOD	SIZE TYPE OF BIT	SAMPLING METHOD	START. FINISH DATE
HSA / Air Rotary	HSA 8 1/4" / 7 7/8"	Split SPOON	

WELL INSTALLED?	CASING MAT.. DIA.	SCREEN: TYPE	MAT.	LENGTH	DIA.	SLOT SIZE
YES ☒ NO ☐	Stainless Steel / 2"	SLOT	Stainless	10'	2"	.020

ELEVATION OF: GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE | DATE
(FT. ABOVE M.S.L.)

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
20-22'		21"	1 3 5 8	Greyish/Blk/Dk Grey Clays w/ Traces organics	m. stiffness w/ Some H_2O		
22-24'		20"	3 5 8 9	Grey + Brown Clays	m. stiffness w/ Trace H_2O		
24-26'		0"	2 2 3 2	The inside of the spoon was v. wet, No Basket.			
26-28'		22"	1 1 3 17	Top 16" Grey clays mid 4" Grey clays, w/ trace organics Bottom 2" Grey/H Brown/ Clays w/ some Frag. Rks, Sands	soft wet soft wet Not cohesive wet		
28-30'		17"	3 3 3 3	lt Brown/Tan clays w/ silts 20% Rock Frags. 1/4" - 2"	Sof wet		
28-30'		18"	6 2 2 2	Top 3" Sands w/ lt Brown/Tan silts + clays Bottom 15" lt Brown / Tan Clays w/ silts, 20% Rock Fragments 1/4" - 2" in size	Not Cohesive wet Soft Wet		
32-34'		4"	2 3"/50	lt Brown/Tan clays w/ silts, 20% Rx's Frags 1/4" - 2" in size	Soft Wet		
				Bed Rock.			
				@ 38' BG Bottom of Protectiv casing	Bottem of The Protective Casing		

Proportions Used. Trace = 0-10%. Little = 10-20%. Some = 20-35%. And = 35-50%

CS = Continuous Soil Core

DANBURY, CT 06810
(203) 796-5279

TEST BORING LOG

BORING NO. MW-10D

PROJECT NO.. NAME: 2035-200 Union Road

LOCATION: Buffalo NY

DRILLING CONTRACTOR/ DRILLER: Maxim

GEOLOGIST, OFFICE: James Doan

DRILLING EQUIPMENT. METHOD: HSA

SIZE. TYPE OF BIT:

SAMPLING METHOD: Split SPOON

START. FINISH DATE:

WELL INSTALLED? YES ☑ NO ☐

CASING MAT.. DIA.: Stainless Steel 2"

SCREEN: TYPE SLOT MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE .020

ELEVATION OF: GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE
(FT. ABOVE M.S.L.)

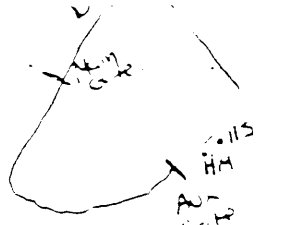
REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
5				@ 45 the water bearing zone The hole has collapsed The Rock isn't very consolidated	B.O.B 45.5' BG		
10							
15							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Samples: ST = Shelby Tube, CSC = Continuous Soil Core

TEST BORING LOG



BORING NO. MW-115	
PROJECT NO. NAME Niagara 2035-200	LOCATION Buffalo NY
DRILLING CONTRACTOR/DRILLER MAXIM	
GEOLOGIST. OFFICE JOHN J ZAHER JR	
DRILLING EQUIPMENT. METHOD HSA	SIZE TYPE OF BIT 6" HSA / SAMPLING METHOD SPLIT SPOON / START. FINISH DAT 1/2/97
WELL INSTALLED? YES ☒ NO ☐	CASING MAT./DIA. STAINLESS STEEL 2" / SCREEN: TYPE SLOT MAT. STAINLESS LENGTH 10' DIA. 2" SLOT SIZE 0.020
ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE
REMARKS:	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LOG
				SAMPLING STARTED AT 4' B.G.			
	4'		10	BROWN/DRK BROWN SILTS & CLAYS	STIFF/		
5		15"	9	TRACE RX FRAGMENTS < 1/8"	DRY - LITTLE TO H2O		Conc
	6'		10				
	6'		4	BROWN/DRK BROWN SILTS AND CLAYS	STIFF		
		15"	9	NO RXS	LITTLE TO H2O		
	8'		12	FILL			
	8'		11	BROWN/DRK BROWN CLAYS	STIFF		
		10"	12	TRACE RX FRAGS	LITTLE TO H2O		Bent
	10'		12	FILL			
10	10'		4	TOP 9" DRK BROWN CLAYS W/SOME ORGANICS	STIFF - LITTLE H2O		
		13"	6	BOTTOM 4" - GREY SILTS/CLAYS AND ORGANICS	~~SOFT~~ STIFF - LITTLE H2O MED		
	12'		8				Sand
	12'		8	GREY CLAYS LITTLE ORGANICS	MEDIUM STIFFNESS SOME H2O		
		20"	9				
	14'		10				
	14'		13	TOP 6" - GREY CLAYS, LITTLE ORGANICS	MED STIFFNESS WISOME H2O		Bent
			9				
15		15"	11				
	16'		15	BOTTOM 12" - REDDISH BROWN CLAY NO RXS ORGANICS	STILL - LITTLE TO NO H2O		
	16'		19	REDDISH BROWN CLAYS W/GREY LAYERS	STIFF - LITTLE		
		21"	20	GREY LAYERS MAY BE EVIDENCE OF VARVED CLAYS	TO NO H2O		
	18'		22				
	18'		5	REDDISH BROWN CLAYS W/GREY LAYERS	M. STIFFNESS		
		12"	5	GREY LAYERS MAY BE EVIDENCE OF VARVED CLAYS	DAMP		
	20'		21				
			4				

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

TEST BORING LOG

BORING NO.	
MW-11S	

PROJECT NO., NAME	LOCATION
Union Road - 2035-200	Buffalo NY

DRILLING CONTRACTOR/DRILLER: Maxim

GEOLOGIST, OFFICE: John J Zacher Jr

DRILLING EQUIPMENT, METHOD	SIZE/TYPE OF BIT	SAMPLING METHOD	START, FINISH DATE
HSA	6" HSA	Split Spoon	1/2/97

WELL INSTALLED?	CASING MAT./DIA.	SCREEN: TYPE	MAT.	LENGTH	DIA.	SLOT SIZE
YES ☒ NO ☐	SS / 2"	Slot	Stainless	10'	2"	0.020

ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE	TOP OF WELL CASING	TOP & BOTTOM SCREEN	GW SURFACE	DATE

REMARKS:

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY LOG
20	20	24"	3, 5, 6, 5	Brown / Drk Brown Clays, no Rxs	Stiff; Little - No H_2O		
22	22 – 22	23"	2, 4, 5, 4	Brown w/some Grey Clays	Stiff; Trace H_2O		
	24			BoBe 24' Bgl			

Depth scale: 5, 10, 15

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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TEST BORING LOG

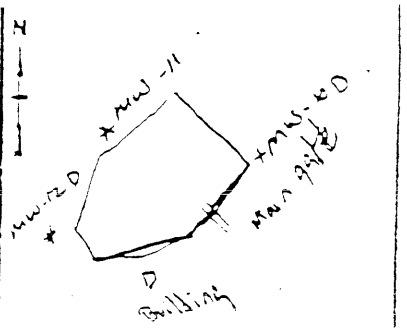
BORING NO. MW-11M

PROJECT NO.. NAME Union Road 2035-200

LOCATION Buffalo NY

DRILLING CONTRACTOR/ DRILLER Maxim

GEOLOGIST, OFFICE James Dean



DRILLING EQUIPMENT. METHOD	SIZE. TYPE OF BIT	SAMPLING METHOD	START. FINISH. DATE
HSA		Split Spoon	12/18 - 12/19/96

WELL INSTALLED? YES ☑ NO ☐ | CASING MAT./ DIA. Stainless Steel / 2" | SCREEN: TYPE SLOT MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE .020

ELEVATION OF: GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE
(FT. ABOVE M.S.L.)

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
				Sampling started @ 4' BG			
4'			10				
5 6'		14"	8 10 10	Brown/DRK Brown silts + clays w/ Trace amounts of Rx Fragments. less than ½"	Stiff little to No H_2O		
6'			8	Brown/Drk Brown silts + clays, w/o Rxs	Stiff little to No H_2O		
8'		13"	12 12 14	Most likely Fill			
8'				Drk Brown clays w/ Trace amounts of Rx frags.	Stiff little to No H_2O		
		4"		most liky Fill			
10 10'				Top 8" Drk Brown clays w/ some Organics	Stiff little to No H_2O		
10'		10"	3 4 5	Bottom 2" Grey silts + clays w/ some Organics	~~little to No H_2O~~ soft w/ some H_2O		
12'			9	Top 4" discarded looked as if they fell into hole			
12'		18"	5 18		m. Stiffness Some H_2O		
14'			15	Bottom 14" Grey clays w/ Some organics + Trace ashes or soot.			
14'			7		Stiff		
15		19"	11 11	Reddish Brown clays w/ No Rxs or organics	little to No H_2O		
16'			20				
16'			19		Stiff		
		24"	25 18	Reddish Brown clays w/ Grey layers evidence of The grey layers may be varbed clays.	little to No H_2O		
18'			20		m. Stiffness		
18'			6 3	Reddish Brown clays w/ Grey layers			
			4	The Grey layers may be evedence of Varbed clays	Damn		
20			5				

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

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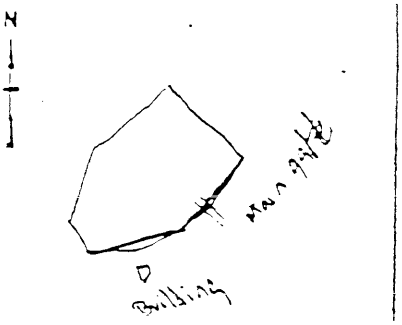
TEST BORING LOG



BORING NO. MW-11M

PROJECT NO.. NAME: Union Road 2035-200 | LOCATION: Buffalo NY

DRILLING CONTRACTOR/ DRILLER: Maxim

GEOLOGIST OFFICE: James Dean

DRILLING EQUIPMENT. METHOD: HSA | SIZE. TYPE OF BIT | SAMPLING METHOD: Split Spoon | START. FINISH DATE

WELL INSTALLED? YES ☑ NO ☐ | CASING MAT./ DIA.: Stainless Steel/ 2" | SCREEN: TYPE SLOT MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE .020 | DATE

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE

REMARKS:

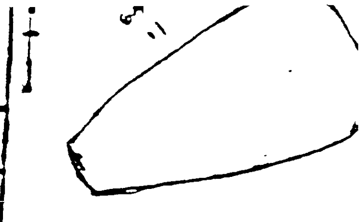
DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
20'			6	- Reddish brown varbed clays w/ Red, Grey, and dark Brown layers.	Soft Wet		
22'		24"	3 3 3				
22'					Soft		
24'		12"	3 2 4	Reddish/ Brown clays	Wet		
24			1 1 3	Reddish Brown (Fleshy Color) clays ¼" - ½" Rx frags. w/ Rounded edges.	Soft Wet		
26'		18"					
26'			3 4 5	Reddish Brown (Fleshy Color) clays ¼" - 2" Rx frags w/ rounded edges.	Soft Wet		
28'		18					
28'			2 2 2	Reddish Brown (Fleshy Color) clays + 40%-50% Rock fragments w/ some rounded edges	Soft Wet		
30'		13"					
30'			5 6 7	- Mostly Rocks 70% w/ Some Reddish Brown (Fleshy color) clays	Soft Wet		
32'		4"					
32'			3 3 3	- Reddish Brown (Flesh color) clays + silts - Some Sands 20-30% rock mostly smoothed pebbles ¼" - 1"	Soft Wet		
34'		14"					
34'			1 8 15	Reddish Brown/ Grey silts + clays 10% Rocks + Sands	The sample Ranged from Soft → hard Wet		
36'		13"	22		Soft → Hard		
36			24	Reddish Brown/ Grey silts, clays, Sands + Rocks.	Wet		
35		5"	54/2"				
				Bed Rock @ 39' BG			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

SS = Split Spoon Type, CSC = Continuous Soil Core

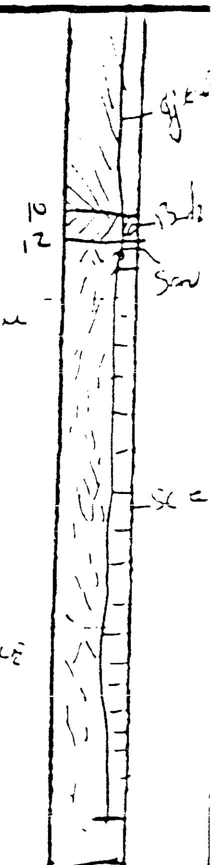
TEST BORING LOG

BORING NO.	17-S
PROJECT NO., NAME	Union Road - 2035-200
LOCATION	Buffalo NY
DRILLING CONTRACTOR/DRILLER	Mahm
GEOLOGIST, OFFICE	John J Zacher Jr
DRILLING EQUIPMENT, METHOD	HSA
SIZE, TYPE OF BIT	6" HSA
SAMPLING METHOD	Split Spoon
START, FINISH DATE	1-2-97
WELL INSTALLED?	YES ☒ NO ☐
CASING MAT./DIA.	Stainless Steel / 2"
SCREEN: TYPE	Slot
MAT.	Stainless
LENGTH	10'
DIA.	2"
SLOT SIZE	0.020
ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE
REMARKS:	



LOG OF TEST BORING

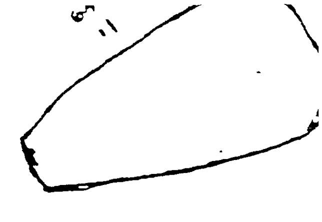
DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/.5 FT	DESCRIPTION	REMARKS
				Sampling start at 15' BG	
15	15'–17	21"	6 8 7 9	Brown clays - Fill	Stiff - little to no H_2O
	17–19	24"	7 4 4 5	Brown clays Fill	Stiff - trace H_2O
20	19–21	23	6 6 7 8	Brown to dark brown clays	Stiff little H_2O
	21–23	24"	4 5 5 5	Brown to tan clay w/little grey	Stiff some to little H_2O
25	23–25	24"	5 6 5 4	Brown - grey clay 0-12 12-24	Stiff / Moist
				BOB 25'	



Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

TEST BORING LOG



BORING NO.	12-M
PROJECT NO., NAME	UnionRoad - 2035-200
LOCATION	Buffalo NY
DRILLING CONTRACTOR/DRILLER	Mahm
GEOLOGIST, OFFICE	John J Zacher Jr
DRILLING EQUIPMENT, METHOD	HSA
SIZE, TYPE OF BIT	6" ~~4~~ 8" HSA
SAMPLING METHOD	Split Spoon
START, FINISH DA[TE]	12/31/96
WELL INSTALLED?	YES ☒ NO ☐
CASING MAT./DIA.	Stainless Steel / 2"
SCREEN: TYPE	Slot
MAT.	Stainless
LENGTH	10'
DIA.	2"
SLOT SIZE	0.020

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE

REMARKS: No Samples 0-20' Fill Material, cuttings Brown Dry Sample 40-42 - no recovery Refusal 42.5'

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/.5 FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LOG
20–22		22"	9 5 [illegible] [illegible]	Brown/Drk Brown Clays	Stiff - little [illegible] H_2O		
22–24		24"	4 4 4 4	Brown to Tan Clay some grey	Stiff some to trace H_2O		
24–26		24"	2 1 1 1	Grey to Red Brown Clay, trace rocks	Soft, moist		
26–28		19"	4 7 7 8	Red Brown Clay	Stiff, little H_2O		
28–30		18	2 4 2 7	Lt Brown/Tan Clay, trace silts, little rocks (1/8")	Soft, damp		
30–32		16	2 2 3 4	Lt Brown/Tan Clay - little grey, little rocks (1/8-1/4)	Stiff damp		
32–34		18	3 8 12 10	Top 12" - Lt Brown/Tan Clay - some greys, little rocks Bot 6" - Grey clay and sand, no cohesive strength	Soft damp, some H_2O wet		
34–36		24"	1 2 2 1	Grey clay and sand	No strength, wet		
36–38		20"	1 1 1 1	Grey clay and sand 0-15" 15-20" - Grey clay ~~[illegible]~~ and rocks 1/4-1/2"	No strength wet wet		
38–40		6"	7 50/3"	Mostly rock - w/some grey/tan clay	wet, stiff		

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

Weather Bed Rock
BOB - 42.5

44 SHELTER ROCK ROAD
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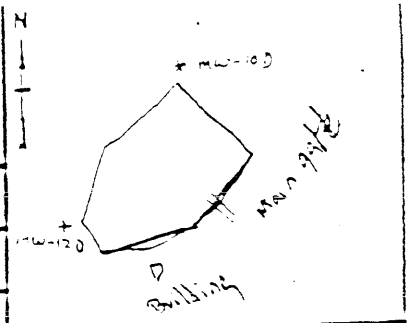
TEST BORING LOG



BORING NO. MW-120

LOCATION Buffalo NY

PROJECT NO.. NAME Union Road 2035-200

DRILLING CONTRACTOR/ DRILLER Maxim (Ron Brown, Dick Miller)

GEOLOGIST, OFFICE James Dean

START, FINISH DATE 12/12-12/16/96

DRILLING EQUIPMENT, METHOD HSA / Air Rotary

SIZE, TYPE OF BIT 8¼" HSA / 7⅞" Air / 5⅞" SAMPLING METHOD Split Spoon

WELL INSTALLED? YES ☑ NO ☐

CASING MAT., DIA. Stainless Steel / 2"

SCREEN: TYPE SLOT MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE .020

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
				No samples taken until 20' BG. The material is all Fill untill then.			
				Grout Seal			
5							
10							
15							

...-10%, Little = 10-20%, Some = 20-35%, And = 35-50%
...SC = Continuous Soil Core

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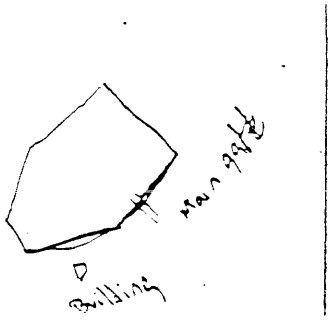
TEST BORING LOG



BORING NO. MW-125

PROJECT NO.. NAME Union Road 2035-200

LOCATION Buffalo NY

DRILLING CONTRACTOR/ DRILLER Maxim

GEOLOGIST. OFFICE James Doar

DRILLING EQUIPMENT. METHOD HSA

SIZE TYPE OF BIT

SAMPLING METHOD Split SPOON

START. FINISH DATE

WELL INSTALLED? YES ☑ NO ☐ | CASING MAT.. DIA. Stainless Steel 2" | SCREEN: TYPE SLOT MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE .020

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
20'			3	Brown to Drk Brown Clays, No Rxs	Stiff little to No H_2O		
		24"	5				
22'			6				
			8				
22'			3	Brown/Tan/w/ some Greys	Stiff w/ trace H_2O		
		24"	5				
			4				
24'			4		Soft Damp		
5			1	Greyish/ Red Brown Clays, Trace Rx Fragments Y8" - Y4"			
24'		24"	1				
26'			1				
26'			4	Top 6" Red Brown Clay, No Rxs	Stiff		
		17"	6		Soft w/		
			14	Bottom 11" lt Brown/Tan (Fleshy color) Clays, Trace silts & some Rx Fragments	Some H_2O		
28'			20		Soft		
28'			1	lt Brown/Tan (Fleshy color) clays, Trace silts &	Some H_2O		
		15"	4	Some rock fragments. Y8" - Y4"			
			2		Soft		
30'			3	lt Brown/Tan (Flesh Color) clays, Trace silts &	Some H_2O		
10 D'			1	some Rock fragments			
		14"	3		Soft, Damp		
32'			4	Top 12" lt Brown/Tan, w/ some Grey clays some Rx fragments.			
32'			1		No Cohesive Strength Wet to Damp		
		24"	8	lst 16 Brown/Tan (Flesh Color) clays & silts			
34'			16	Bottom 8" Grey 50% Sands No Rxs			
			50				
				Sample skipped the augers into hard unconsolidated Rocks.			
15							
					Soft		
				lt Brown/Tan/Grey Clays w/ silts & Angular Rock Fragments 40-50% Y8" - 1"			
37'		5/6"	5"		Wet		
39'							

Abbreviations Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

CSC = Continuous Soil Core

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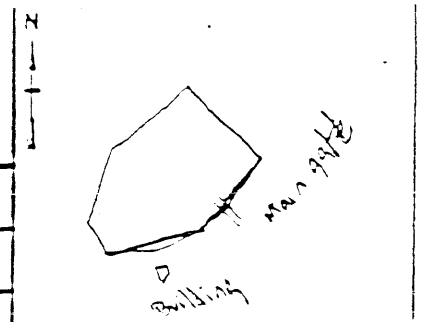
SOT 5

TEST BORING LOG



BORING NO. MW-12D

PROJECT NO.. NAME Union Road 2035-200

LOCATION Buffalo NY

DRILLING CONTRACTOR/ DRILLER Maxim

GEOLOGIST, OFFICE James Doan

DRILLING EQUIPMENT. METHOD HSA

SIZE. TYPE OF BIT

SAMPLING METHOD Split Spoon

START. FINISH DATE

WELL INSTALLED? YES ☒ NO ☐

CASING MAT.. DIA. Stainless Steel 2"

SCREEN: TYPE SLOT MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE .020

ELEVATION OF: GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE
FT. ABOVE M.S.L.)

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOG
40-42'	2'	50/2"		Mostly Rx ¼"-2" in size w/ a matrix of lt Brown/Tan/Grey Clays + silts -Bed Rock @ -41' BG	Wet Stiff		
					Cement Seal		
5				Bottom of Protective casing @ 46' BG	Bentonite seal		
				Stainless Steal Riser			
10				Stainless steal Screen			
15				Sand			
				Bottom of hole 61.5' BG			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

61.5'

TEST BORING LOG

BORING NO. MW-135	
PROJECT NO. NAME UNION ROAD 2035-200	LOCATION BUFFALO NY
DRILLING CONTRACTOR/DRILLER MAKIM	
GEOLOGIST. OFFICE JOHN J ZACHER JR	
DRILLING EQUIPMENT. METHOD HSA	SIZE TYPE OF BIT 6" HSA / SAMPLING METHOD SPLIT SPOON / START. FINISH DATE 12/20/96
WELL INSTALLED? YES ☒ NO ☐ / CASING MAT./DIA. STAINLESS STEEL / 2"	SCREEN: TYPE SLOT MAT. STAINLESS LENGTH 10' DIA. 2" SLOT SIZE 0.020
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE	TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE
REMARKS: BORING TO 21', LAST 1' NOT SPLIT SPOONED WELL ~~RISER~~ RISER AT 20.5' B.G.	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY LOG
				SAMPLING STARTED AT 4' B.G.			
4			15	DARK BROWN CLAYS	STIFF		
			10	NO ROCKS	LITTLE NO H2O		
5		14"	15	SOME CINDERS			
6'			12				
6			12	DARK BROWN CLAYS	STIFF		
		12	10	SOME CINDERS	TRACE H2O		
8'			10				
8'			12	5' → DARK BROWN CLAYS, LITTLE CINDERS	STIFF, LITTLE H2O		
		10"	11				
10'			13	BOTS" - BLACK SANDS/CINDERS NOT NATIVE	DRY		
10			8	TOP 3" - BLACK SAND CINDERS	DRY		
		11'	5				
			10	BOTTOM 3" - WOOD SOME CREOSOTE ODOR			
12			7				
12			8	BLACK SAND / CINDERS	WET		
		10"	3				
14			6				
14			7	BLACK SAND / CINDERS	WET		
15		12"	7	SOME BRICK AND WOOD			
16			6				
16			5	BLACK SAND CINDERS W/SOME RED CLAY	DAMP		
		7"	4				
18			4		WET		
18			3	TOP 6" BLACK CINDERS	MED STIFF		
		21"	5	6"-15" RED CLAY, NO ROCKS	SOME H2O		
20			9				

BOB 21'

Proportions Used: Trace = 0-10%. Little = 10-20%. Some = 20-35%. And = 35-50%

Sampling Abbreviations: SS = Split Spoon. ST = Shelby Tube. CSC = Continuous Soil Core

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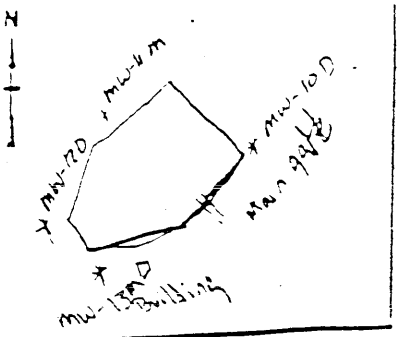
TEST BORING LOG



BORING NO. MW- 13 M

PROJECT NO.. NAME Union Road 2025-200

LOCATION Buffalo NY

DRILLING CONTRACTOR/ DRILLER Maxim

GEOLOGIST, OFFICE James Doan

DRILLING EQUIPMENT. METHOD HSA

SIZE. TYPE OF BIT

SAMPLING METHOD Split SPOON

START. FINISH DATE 12/9/96

WELL INSTALLED? YES ☒ NO ☐

CASING MAT./DIA. Stainless Steel / 2"

SCREEN: TYPE SLOT MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE .020

ELEVATION OF: GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE
(FT. ABOVE M.S.L.)

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESIST-ANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
5	5'	12"	18 12 8 17	-Drk Brown clays w/o RKS	Stiff little to No H2O		
	7'						
10	10'	8"	15 14 11 5	Blk sands + cashes or cinders - Not a native material	No Cohesive strength DRY		
	12'						
	12'	11"	7 9 4 5	Top 9" Blk sand + ashes or cinder some organics Bottom 2" Wood, Hobby from a RR tie-	No Cohesive strength DRY		
	14'				Damp		
15	14'	5"	50/5"	Top 2" Blk ash w/ some ~~as~~ organics Next 1" Brick (Red Bottom 2" Wood			
	16'						
	16'	3"	50/3"	Wood Next Sample will be 19'-21'			
	18'						
	19'	3"	50/3"	Wood			

Proportions Used: Trace = 0-10%. Little = 10-20%. Some = 20-35%. And = 35-50%

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2 of 2

TEST BORING LOG

BORING NO. MW-13M

PROJECT NO.. NAME Union Road 2035-200

LOCATION Buffalo NY

DRILLING CONTRACTOR/ DRILLER Maxim

GEOLOGIST, OFFICE James Doan

DRILLING EQUIPMENT. METHOD HSA

SIZE. TYPE OF BIT

SAMPLING METHOD Split SPOON

START. FINISH DATE

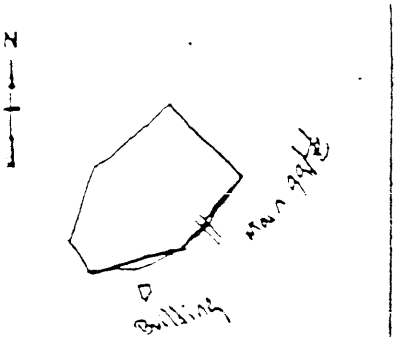
WELL INSTALLED? YES ☑ NO ☐

CASING MAT./ DIA. Stainless Steel / 2"

SCREEN: TYPE SLOT MAT. Stainless LENGTH 10' DIA. 2" SLOT SIZE .020

ELEVATION OF: GROUND SURFACE TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE
(FT. ABOVE M.S.L.)

REMARKS:



DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS
	24'		7	Top 5" Wood	stiff → soft
5		24"	5	Bottom 19" Greyish red clays, No Rocks	little to No H_2O
	26'		5	~~Reddish Grey clays w/ some rocks~~	
10	30'		1	Top 2" Wood – Maybe from a plug in Bottom of auger	Soft Wet.
		12"	1	Bottom 10" Reddish / Grey Clays w/ some Rx Frag Pebbles	
	32'		1		
	32	0"	2	There wasn't a basket in the spoon.	
			5		
	34'		8		
			6		
15	34'	0"	50/0"	Bed Rock	Bottom of Borring
	36'				

WELL CONST. | GRAPHIC LITHOLOGY LOG

Little = 10-20%, Some = 20-35%, And = 35-50%

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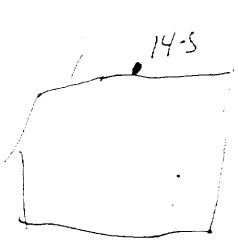
TEST BORING LOG



BORING NO. 14-S

PROJECT NO.. NAME UNION ROAD | LOCATION Buffalo NY

DRILLING CONTRACTOR/ DRILLER Maxim Technologies

GEOLOGIST, OFFICE Mark Cambra NES Danbury, CT

DRILLING EQUIPMENT, METHOD	SIZE, TYPE OF BIT	SAMPLING METHOD	START, FINISH DATE
HSA	6" HSA	AF	8/19/97

WELL INSTALLED? YES ☑ NO ☐	CASING MAT./DIA.	SCREEN: TYPE	MAT.	LENGTH	DIA.	SLOT SIZE
	Steel 4"	Slotted	Stainless Steel	10	2"	020

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE DATE 8/19/97

REMARKS: Replaced Previous 14-S well.

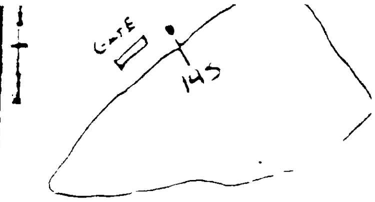
DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOG
				Topsoil			
				Fill - Reddish brown Sandy Clay		grout	
						3.8 Bentonite	
5						5.3	
						6.8	
				Reddish Brown Clay	SAND		
10							
15						16.8	
				End of Boring		17.3	

See 14-S Previous

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

TEST BORING LOG



BORING NO. 14-S	
PROJECT NO., NAME: UNION ROAD 2035-200	LOCATION: BUFFALO NY
DRILLING CONTRACTOR/DRILLER: MAXIM	
GEOLOGIST, OFFICE: JOHN J ZACHER JR	

DRILLING EQUIPMENT, METHOD	SIZE, TYPE OF BIT	SAMPLING METHOD	START, FINISH DATE
HSA	6" HSA	SPLIT SPOON	12-30-96

WELL INSTALLED?	CASING MAT./DIA.	SCREEN: TYPE	MAT.	LENGTH	DIA.	SLOT SIZE
YES ☒ NO ☐	STAINLESS STEEL/2"	SLOT	STAINLESS	10	2"	0.020

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE | DATE

REMARKS:

LOG OF TEST BORING

SAMPLING STARTS AT 4' B.G.

A Bando 8/19/97

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS
4'–6'		20"	7, 14, 17, 12	TOP 1" - WOOD 1-11" - BROWN CLAY W/LITTLE GRAVEL 11-17" CINDERS 17-20 BROWN CLAY W/SOME ORGANIC	STIFF, DRY DRY STIFF, DRY
6'–8'		19"	19, 19, 17, 23	0-7" - FILL - CINDERS, STONES, BRICK 7-19" - BROWN CLAY W GREY VARBING	STIFF, TRACE H2O
8'–10'		22"	5, 7, 8, 10	0-7" BROWN CLAY W/ LITTLE ROCKS (1/4") 7-22" RED/BROWN CLAY	STIFF, LITTLE NO H2O STIFF, LITTLE NO H2O
10'–12'		22"	16, 12, 13, 14	RED/BROWN CLAY, TRACE ORGANICS (ROOTS)	STIFF - LITTLE/NO H2O
12'–14'		24"	5, 7, 8, 10	RED/BROWN CLAY - SOME GREY VARBING	STIFF LITTLE NO H2O LAST 4" SOME H2O
14'–16'		24"	3, 3, 5, 5	RED/BROWN CLAY SOME GREY VARBING	STIFF/LITTLE H2O
16'–18'		24"	12, 13, 13, 13	RED/BROWN CLAY W/SOME GREY	STIFF - LITTLE H2O
18'–20'		24"	0, 3, 3, 2	0-4" MIX BROWN/GREY CLAY 4-24" GREY SANDY CLAY (40-50%)	MED STIFF SOME H2O SOFT, WET

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

TEST BORING LOG

BORING NO. 145

PROJECT NO., NAME | LOCATION

DRILLING CONTRACTOR/DRILLER

GEOLOGIST, OFFICE

DRILLING EQUIPMENT, METHOD | SIZE, TYPE OF BIT | SAMPLING METHOD | START, FINISH DA

WELL INSTALLED? YES ☐ NO ☐ | CASING MAT./DIA. | SCREEN: TYPE MAT. LENGTH DIA. SLOT SIZE

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE | DATE

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LOG
20			6 9	GREY CLAY	SOFT, WET		
22		18"	3 7				
22			weight of	GREY CLAY	VERY SOFT, WET		
24		15"	ROD				
24			0	GREY CLAY	SOFT, WET		
25		18"	0 3				
26			2				
26			2	GREY CLAY	SOFT		
28		24"	3 3		SATURATED)		
28			3	G-S GREY CLAY	SATURATED, SOFT		
29			0				
30		24"	0 1 4	5-20' GREY CLAY, SOME ROCKS BOB	VERY WET SOFT		

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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TEST BORING LOG

BORING NO. mw-15

PROJECT NO., NAME: UNION ROAD

LOCATION: ON LANDFILL CAP

DRILLING CONTRACTOR/DRILLER: MAXIM-EMPIRE · P. JENCE

GEOLOGIST, OFFICE: HANLON / SZWAJA DANBURY

DRILLING EQUIPMENT, METHOD: 833 BSA HSA

SIZE, TYPE OF BIT: 6.25" H.S.A

SAMPLING METHOD: SS

START, FINISH DATE: 2/20/06

WELL INSTALLED? YES ☒ NO ☐ **CASING MAT., DIA.:** SS 2" **SCREEN: TYPE** **MAT.** SS **LENGTH** 10' **DIA.** 2" **SLOT SIZE** 0.010

ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE	TOP OF WELL CASING	TOP & BOTTOM SCREEN	GW SURFACE	DATE
	618.8	620.0'	610'-600'	NA	2/20/06

REMARKS: ELEVATION AND DEPTHS RELATIVE TO PRECAP SURFACE

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOG
0–2		2'	26/12	Brown graded clay silt & gravel. FILL, organic. TAN/BROWN, Hard/Firm. Moist (frozen) + little 1/4" gravel.			
2–4		1'	13/24	TAN/BROWN CLAY, FIRM. NO COARSE MATERIAL. Fissuring.			
4–6		1.5'	27/12	COARSE FILL MAT'L COARSE. BLACK SAND & GRAVEL w/ TRACE FINES. TAN. 1" SUBANGULAR ROCK FRAG. TAN FIRM SILTY CLAY. NO COARSE MAT'L	Grout →		
6–8		1.5'	11/24	GREY/Green CLAY, NO COARSE MATERIAL, SOFT. TRACE SILT	Fine sand →		
8–10		1.8	9/24	SAME BUT BLACK. SILTY CLAY. TRACE ORANGE. SAME BUT GREEN/GREY. SILTY CLAY.	Coarse sand →		
10–12		2'	5/18	Green/Grey SILT. Some CLAY. soft.			
12–14		1.5'	6/36	SAME			
14–16		1.5'	4/18	SAME			
16–18		2'	4	SAME			
				EOB 19.0'			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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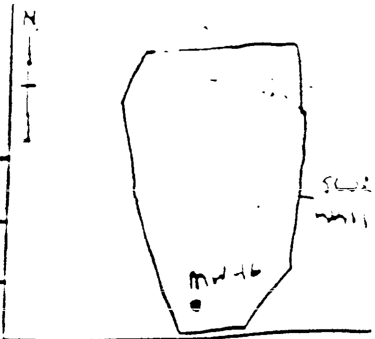
TEST BORING LOG



BORING NO. MW-16			
PROJECT NO., NAME: UNITED ROAD	LOCATION: CAP INTERIOR		
DRILLING CONTRACTOR/DRILLER: MAXIM/EMPIRE BENCE			
GEOLOGIST/OFFICE: HANLON/SZWAJA Danbury			
DRILLING EQUIPMENT, METHOD: CME 850 HSA	SIZE, TYPE OF BIT: 6 1/4"	SAMPLING METHOD: SS	START, FINISH DATE: 2/21/96
WELL INSTALLED? YES ☑ NO ☐	CASING MAT./DIA.: 2" SS	SCREEN: TYPE 0.20 MAT. SS LENGTH 10 DIA. 2"	SLOT SIZE 0.20
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE: ~~618.8~~ 618.9	TOP OF WELL CASING: 620.0	TOP & BOTTOM SCREEN: ~~18.8~~ 610.0 - 600.0	GW SURFACE: NA DATE 2/21/96
REMARKS: ALL ELEVATIONS AND DEPTHS RELATIVE TO PRE-CAP GRADE			

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS
0–2'		2.0'	35	Hard Brown Clay, 10% Gravel	Frozen
2'–4'		1.5'	20	Upper 12" Same; Bottom 6" CINDERS	DRY
4'–6'		1.0'	8/ft	SAME	DRY
6'–8'		9"	12/ft	TAN SAND, SILT, SUBANGULAR ROCK FRAGS WELL GRADED; 1" of BLACK CINDER FILL	
8'–10'		2'	5/ft	TAN CLAYS, NO COARSE MATERIAL; SOFT TAN/BROWN CLAY, NO COARSE MATERIAL. SLIGHT Fe STAINING	
10'–12'		1.5'	5/ft	SAME but GRAY/GREEN; SAME + TRACE ORGANICS.	
12'–14'		1.5'	5/ft	SAME	
14'–16'		1.5'	4/ft	SAME + SOME (20%) ROCK FRAGS TO 1/4", ANGULAR, IN BOTTOM 6"	
16'–18'		1.5'	12/ft	SAME.	MOIST
18'				EOB 19.0'	

Well construction remarks: GROUT → (approx. 4'); Fine Sand → (approx. 6'); Coarse Sand → (approx. 18')

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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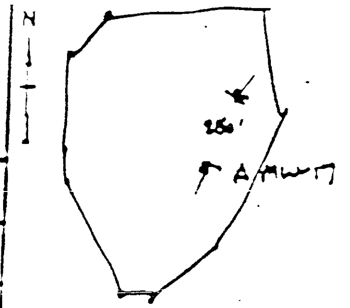
TEST BORING LOG



BORING NO. MW-17	
PROJECT NO., NAME: Univ. Road	LOCATION: Landfill Cap
DRILLING CONTRACTOR/DRILLER: Maxim-Empire / P. Bence	
GEOLOGIST, OFFICE: M. Sewara / Danbury	

DRILLING EQUIPMENT, METHOD	SIZE, TYPE OF BIT	SAMPLING METHOD	START, FINISH DATE
	6.25" HSA	2" SS	2/22/96

WELL INSTALLED?	CASING MAT./DIA.	SCREEN: TYPE	MAT.	LENGTH	DIA.	SLOT SIZE
YES ☒ NO ☐	2" SS		SS	10'	2	20

ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE	TOP OF WELL CASING	TOP & BOTTOM SCREEN	GW SURFACE	DATE

REMARKS:

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS
0–2'		1.25'	20/ft	Tan/brown clay. Frozen. No coarse material	Frozen
2'–4'		.25'	42/ft	Black/dark red silty sand. Gravel present. Fe²⁺ staining.	Wet
4'–5'		1.0'	11/ft	Tan/brown clay. Soft. No coarse material. Fe²⁺ staining	Dry
5'–6.5'				Brown/black clay. Trace organics. Fe²⁺ staining. Rock frags.	
6.5'–8'		1.25'	24/ft	Black clay. 30% organics (wood). Trace coarse material (cinder, gravel). Odor	
8'–10		1.5'	11/ft	Soft brown clay. Fe²⁺ staining. No coarse mat'l. Trace black cinder fill mat'l.	
10–12'		0.5	11/ft	Same	
12'–14'		0	7/ft	No recovery	Wet
14'–16		0	8/ft	No recovery	
16–18		0.8'	11/ft	Same. No fill mat'l. Trace organics & angular gravel.	
18–20		1.5	14/ft	(18.5) Grey/green clay w/ black staining. Trace organics (wood). No coarse mat'l. Fe²⁺ staining (slight)	

WELL CONST. — GRAPHIC LITHO LOG

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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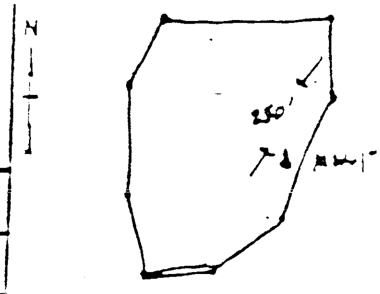
TEST BORING LOG



BORING NO. MW-17

PROJECT NO., NAME [illegible] Road

LOCATION Landfill cap

DRILLING CONTRACTOR/DRILLER Maxim-Empire D. Benge

GEOLOGIST, OFFICE M. Iz[illegible] Danbury

DRILLING EQUIPMENT, METHOD B53 HSA

SIZE/TYPE OF BIT 6.25" HSA

SAMPLING METHOD 2" SS

START, FINISH DATE 2/22/96

WELL INSTALLED? YES ☑ NO ☐

CASING MAT./DIA. 2" SS

SCREEN: TYPE MAT. SS LENGTH 10' DIA. 2" SLOT SIZE 20

ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE	TOP OF WELL CASING	TOP & BOTTOM SCREEN	GW SURFACE	DATE
	619.1	620'	605'-595'	~605'	2/22

REMARKS: Elevation & depths relative to pre-cap tops.

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
20–22'		2'	14/ft.	(SAME) Grey/black [illegible] w/ [illegible] staining. Trace organics. No [illegible] mat'l. Sulfide staining	WRT ↓		
22–24'		1.5'	15/ft	23.0' Black silt & sand. Trace organic mat'l.			
24'				E.O.B. 24.0'			
25							
10							
15							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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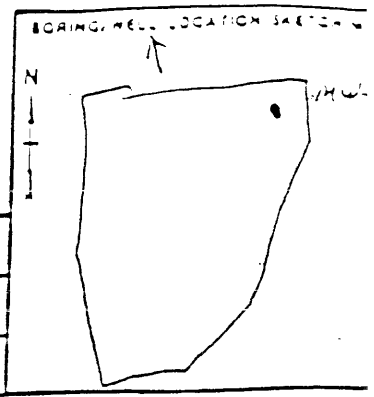

TEST BORING LOG

BORING NO. MW-3	
PROJECT NO.. NAME UNION ROAD	LOCATION CAP INTERIOR
DRILLING CONTRACTOR/ DRILLER MAINE EMPIRE PHIL BENGE	
GEOLOGIST/ OFFICE Hanlon/Schmidt, DANBURY	
DRILLING EQUIPMENT. METHOD CME 750	SIZE TYPE OF BIT 6¼" HSA / SAMPLING METHOD SS / START. FINISH DAT 2/19/96
WELL INSTALLED? YES ☒ NO ☐	CASING MAT./DIA. SS 2" / SCREEN: TYPE MAT. SS LENGTH 10' DIA. 2" SLOT SIZE 0.20
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE 619.1	TOP OF WELL CASING 620.0 / TOP & BOTTOM SCREEN 605.0 - 595.0 / GW SURFACE NA / DATE 2/19/96
REMARKS: ELEVATIONS AND DEPTHS RELATIVE TO PRE-CAP SURFACE	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
		2'	32/FT	Tan clay, Hard, No coarse, Dry	(Topsoil)		
		1'	10/FT	Tan clay, Firm ~~SFT~~, No coarse, Dry			
5		1'	12/FT	Tan/brown Clay, Firm, No Coarse, Dry	grout		
		2'	15/FT	Brown clay, ~~SFT~~ Firm, No Coarse, Dry Festering			
		1'	12/FT	Same			
10		1.5'	24/FT	Same w/ trace organics + SH bottom 6"			
		1.5'	27/FT	Same w/ trace rock frags (angular, fine)	Fine Sand		
15		1.5'	20/FT	Same (5% clast to 10%)			
		2'	34/FT	Same	Coarse Sand		
		1.5	4/FT	Same but SAT + MOIST			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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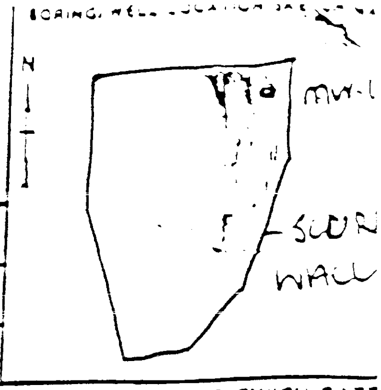

TEST BORING LOG

BORING NO. MW-18			
PROJECT NO., NAME: UNION ROAD		LOCATION: INSIDE CAP AREA	
DRILLING CONTRACTOR/DRILLER: MARTIN/EMPIRE P. BENKE			
GEOLOGIST, OFFICE: HANLEY/SEWATI DANOZZI			
DRILLING EQUIPMENT, METHOD: CME 850 HSA	SIZE, TYPE OF BIT: 6 1/4 HSA	SAMPLING METHOD: SS	START, FINISH DATE: 2/19/96
WELL INSTALLED? YES X NO ☐	CASING MAT./DIA.: SS 2"	SCREEN: TYPE — MAT. SS LENGTH 10' DIA. 2"	SLOT SIZE 0.02

ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE	TOP OF WELL CASING	TOP & BOTTOM SCREEN	GW SURFACE	DATE
	619.1	620.0	605.0 - 595.0	NA	2/19/96

REMARKS: ELEVATIONS AND DEPTHS RELATIVE TO PRE-CAP SURFACE

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
20	1	1'	9/ft	Same, Trace Black Shale Chips	Coarse Sand →		
	2	2'	3/ft	Brown Sandy Clay, 20% organic Very Soft Trace Rock Frags Bottom 6" Very Soft Wet Brown Clay trace Rock fragments angular largest ~1"			
5 (25)							
				EOB 24.5'			
10							
15							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%
Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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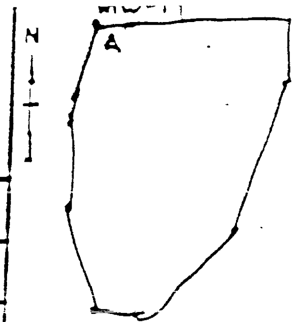
TEST BORING LOG



BORING NO.	MW-19
PROJECT NO., NAME	Union Road
LOCATION	Landfill Cap
DRILLING CONTRACTOR/DRILLER	Mann-Lamar, P. Bence
GEOLOGIST, OFFICE	[illegible], Danbury
DRILLING EQUIPMENT, METHOD	B55 HSA
SIZE, TYPE OF BIT	6.25" HSA
SAMPLING METHOD	2" S.S
START, FINISH DATE	2/22/96
WELL INSTALLED?	YES ☒ NO ☐
CASING MAT./DIA.	2" SS
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	MAT. SS; LENGTH 10'; DIA. 2"; SLOT SIZE 20
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE	618.5'
TOP OF WELL CASING	617.5'
TOP & BOTTOM SCREEN	605' - 595'
GW SURFACE	unk.
DATE	2/22/96
REMARKS:	Elevation & depth relative to pre-cap surface

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS
		1.25	15/ft	Well-graded sand, silt & gravel. Tan/brown. Frozen/hard	Frozen
2'		1.0'	12/ft	2' Firm brown/tan clay. Fe+ & black staining. No coarse mat'l.	0.0%.
4'		1.5	15/ft	Same	
6'		1.5'	26/ft	7.0' Same with trace 1/4" gravel (rounded), v. hard	0.0%.
8'		0.5'	62/ft	8.0 Tan, dry, hard, clay & silt. Fe+ staining. Trace gravel [illegible]. Single black organic mat'l & staining	Fine sand
10		1.75'	24/ft	11 Black, firm, dry clay. Trace organics. [illegible] 12' [illegible] mat'l. [illegible]	
12'		1.0'	14/ft	Black, wet, silt & sand. Some gravel. [illegible] Petrol. odor. Trace organics	Wet; Coarse sand
14		1.0'	10/ft	Same. Slight sheen present. Brick backfill frags. Present.	
16		1.0'	6/ft	16' Soft, wet, gray/gray clay, black mottling from organics. Trace organic mat'l. Fe+ staining. No coarse mat'l.	
18'		1.25'	11/ft	18.5 Same a/a tan/brown clay, gray streaks, no coarse mat'l. Fe+ staining. Firm.	E.O.B @ 20'

WELL CONST. | GRAPHIC LITHO LOG

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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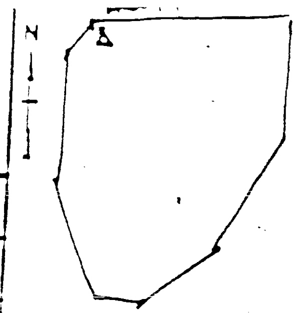
TEST BORING LOG



BORING NO.	MW-19
PROJECT NO., NAME	Union Road
LOCATION	Landfill Cap
DRILLING CONTRACTOR/DRILLER	Maxim-Empire, P. Bence
GEOLOGIST, OFFICE	S. Waya, Danbury

DRILLING EQUIPMENT, METHOD	SIZE/TYPE OF BIT	SAMPLING METHOD	START, FINISH DATE
B58 HSA	6.25" HSA	2" SS	2/23/96

WELL INSTALLED?	CASING MAT./DIA.	SCREEN: TYPE	MAT.	LENGTH	DIA.	SLOT SIZE
YES ☒ NO ☐	2" SS		SS	10'	2"	20

ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE	TOP OF WELL CASING	TOP & BOTTOM SCREEN	GW SURFACE	DATE
	618.5'	617.5	605'-595'	n/a	2/23/96

REMARKS: Elevations & depths relative to pre-cap elev.

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
				← 20' E.O.B →			
5							
10							
15							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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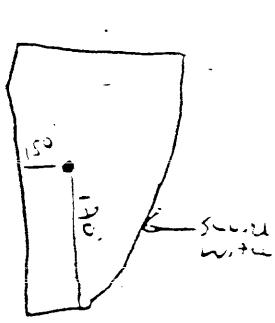
TEST BORING LOG



BORING NO. MW-20			
PROJECT NO., NAME UNION RD	LOCATION INTERIM CAP		
DRILLING CONTRACTOR/DRILLER MAXIM/EMPIRE BENCE/BOITNOTT			
GEOLOGIST, OFFICE HANSON/SUWATA DANBURY			
DRILLING EQUIPMENT, METHOD CME 850 HSA	SIZE, TYPE OF BIT 6¼"	SAMPLING METHOD SS	START, FINISH DATE 2/2/96
WELL INSTALLED? YES ☒ NO ☐	CASING MAT./DIA. SS 7"	SCREEN: TYPE MAT. SS LENGTH 10' DIA. 7"	SLOT SIZE 0.20
ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE 614.6	TOP OF WELL CASING 617.0	TOP & BOTTOM SCREEN 607.0 – 597.0
GW SURFACE NA	DATE 2/11/96		

REMARKS: ELEVATION AND DEPTHS RELATIVE TO PRE-CAP SURFACE

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
		1.5	8	Brown Clay; NO coarse, frozen, BOTTOM 4" Black w/15% organics	FROZEN		
		1.0	26	FIRM Brown Clay trace organics and silt	moist		
5		1.5	19	Same BOTTOM 12" Black fine granular material w/charcoal odor, 10% organics 10% "FOAM BOARD"	moist		
		2'	14	Black Firm Clay 10% organics TRACE 1/2" Rock Frags	moist		
10		1.5	24	BOTTOM 4" Firm tan Clay, NO coarse			
		5"	16	First 6" Same w/organics 1st Gray Sandy Clay Next 6" Red Sand w/Black Cinders Some Clay Next 6" WHITE Cindery ash w/30% wood	moist		
		0.5'	6	Soft tan Clay, NO coarse	wet		
				Fine sand/silt red w/Black Stringy 10% organics			
15		2	8	Fine Black Fine Sand Trace red fine sand	~~DRY~~ moist		
		1.5	3	Same Trace organics	WET		
		1.0	3	Brown Clay + SAND w/Black Stringy, Strong Petroleum ODOR, Sheening, 20% rock frags upto 0.5"	WET		

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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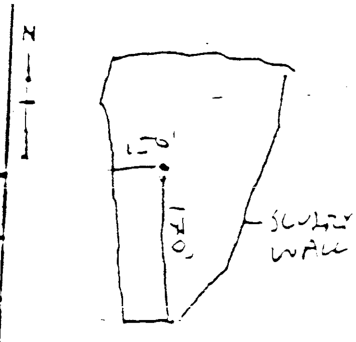
TEST BORING LOG



BORING NO. MW-20			
PROJECT NO., NAME: UNION ROAD		LOCATION: INTERIOR OF CAP	
DRILLING CONTRACTOR/DRILLER: MAXIM / EMILE BERGE			
GEOLOGIST, OFFICE: HANLON/SWAIN DANBURY			
DRILLING EQUIPMENT, METHOD: CME 850 HSA	SIZE, TYPE OF BIT: 6¼"	SAMPLING METHOD: SS	START, FINISH DATE: 2/21/96
WELL INSTALLED? YES ☒ NO ☐	CASING MAT./DIA.: SS 2"	SCREEN: TYPE, MAT. SS, LENGTH 10', DIA. 2", SLOT SIZE 0.20	
ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE: ~~627.6~~ 624.6	TOP OF WELL CASING: 627.0	TOP & BOTTOM SCREEN: 607.0 - 597.0
GW SURFACE: NA	DATE: 2/21/96		

REMARKS: ELEVATIONS AND DEPTHS RELATIVE TO PRE-CAP GRADE

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHOLOGY
20		0	3	~~[illegible]~~ ? NO RECOVERY			
		2.0	8	Same w/rks up to 1.5" grades into finer material w/30% organics			
				Bottom 3" Black Clay, NO coarse, trace organics			
25			7	Soft ~~Gray~~ Green Clay, trace 1/8" rock frags. No odor, NO petroleum			
			6	Same no rock frags	coarse sand		
				EOB 29.0'			
30							
15							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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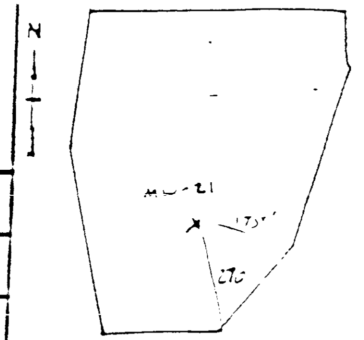
TEST BORING LOG



BORING NO.	
MW-21	
PROJECT NO., NAME: Union Road	LOCATION: Landfill cap
DRILLING CONTRACTOR/DRILLER: Maxim-Empire	
GEOLOGIST, OFFICE: Szwaka / Hanley Danbury	

DRILLING EQUIPMENT, METHOD	SIZE, TYPE OF BIT	SAMPLING METHOD	START, FINISH DATE
B53 HSA	6.25" HSA	2" SS	2/22/96

WELL INSTALLED?	CASING MAT./DIA.	SCREEN: TYPE	MAT.	LENGTH	DIA.	SLOT SIZE
YES ☒ NO ☐	2" SS		S.S.	10'	2"	20

ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE	TOP OF WELL CASING	TOP & BOTTOM SCREEN	GW SURFACE	DATE
	623.9	625'	595'-605'	[illegible]	2/22/96

REMARKS: All elevations & depths relative to pre-cap grade

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/6"	DESCRIPTION	REMARKS
		2'	41/6"	Brown frozen clay. Black coke and cinder coarse fill material, trace organics. Frozen/very hard.	Frozen
2'					Air hammer on SS blown. Use manual 140# hammer.
		1.25'	UNK	Same	
4'		1.25'	9/6"		
5				Same w/ grey/black clay. Fe+ staining. 10-15% organics. Black coke cinders present.	024
6		1'	50/6"	→ Light tan, dry, sand & gravel. No fines. Angular [illegible]. → Black & dark red cinder fill material. Dry. Trace fines, rock frags. 1", angular. → Medium silt & sand. Poorly graded. Dry.	
8'		1'	7/6"	Same w/ ang. gravel (1/4") rock & harder frags, rounded. Black silt & fine sand. Trace organics. Dry.	
10		1.25'	9/6"	Poorly graded red sand. No coarse material. Dry. Fe+ stained	
12		0'	15/6"		
14'		1'	5/6"	Same	
15					
16'		0.5'	9/6"	Red silt & sand, with gravel & rock mat'l.	Moist
18'			4/6"	Same	

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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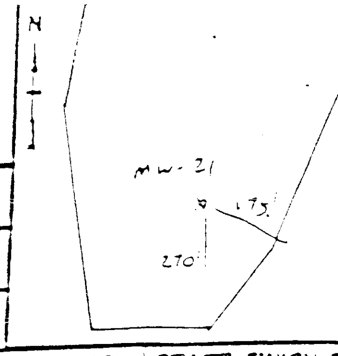

TEST BORING LOG

BORING NO.	MW-21
PROJECT NO., NAME	Union Road
LOCATION	Landfill Cap
DRILLING CONTRACTOR/DRILLER	Maxim Empire ; D. Rence
GEOLOGIST, OFFICE	M. Szuaka ; Danbury
DRILLING EQUIPMENT, METHOD	55 HSA
SIZE, TYPE OF BIT	6.25" H.S.A.
SAMPLING METHOD	2" SS
START, FINISH DA[TE]	2/22/9-
WELL INSTALLED?	YES ☒ NO ☐
CASING MAT./DIA.	2" SS
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	MAT. S.S. LENGTH 10' DIA. 2" SLOT SIZE 20
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE	623.9
TOP OF WELL CASING	625'
TOP & BOTTOM SCREEN	607' - 597'
GW SURFACE	UNK
DATE	2/22/9-
REMARKS:	All Elevations & Depths relative to In-cap grade

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
		0.25'	40/ft	Some 2" Rock Boulders SS refusing			
22		1.0	19/ft	Black silt & sand, Angular Rock frags. Slight petrol. odor.			
24				Grey clay no waste material			
25		1.5	11/ft				
26				EOB @ 26'			
30							
35							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%
Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

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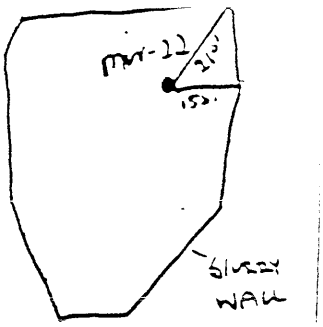
TEST BORING LOG



BORING NO. MW-22	
PROJECT NO., NAME: UNION ROAD	LOCATION: ENGINE LANDFILL CAP
DRILLING CONTRACTOR/DRILLER: MAXIM ENGINE — D. BENÉ	
GEOLOGIST, OFFICE: HANLON/SZUWALA, DANBURY	
DRILLING EQUIPMENT, METHOD: CME 55B, HSA	SIZE, TYPE OF BIT: 6.25" HSA — SAMPLING METHOD: SS — START, FINISH DATE: 2/20/96
WELL INSTALLED? YES ☒ NO ☐ — CASING MAT./DIA.: 2" SS	SCREEN: TYPE 10 SLOT MAT. SS — LENGTH 10' DIA. 2" SLOT SIZE 10
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE: 623.4 — TOP OF WELL CASING: 626.40 — TOP & BOTTOM SCREEN: 606.0' - 596.0' — GW SURFACE: NA — DATE: 2/20/96	
REMARKS: ~2' ABOVE CURRENT SURFACE — PRE-CAP SURFACE	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS
2		2'	13/46	TAN CLAY, WET. FIRM. BOTTOM 6" POSS. ORGANIC, BLACK STAIN, 20% ORGANIC & COARSE MAT'L	
		1'	5/16	SAME. NOT AS COARSE	
4'					
5		1.5'	12/16	SAME RED FINE/MED. SAND. NO FINES MOSTLY GRAVEL	
6'				SAME	
		1'	10/46	CINDER FILL MATERIAL, SOME BLACK MATERIAL, ROCK FRAGS TO 1/2",	
8'		1'	5/16	SAME W/ 1/2" ROCK WALL-LIKE MAT'L	
10		1'	4/12	SAME	
12		1'	5/16	SOME WOOD WASTE & FE STAINING	
14					
15		1'	2/16	SAME	FINE SAND
16		1'	2/16	SAME	
18		1'	6/16	SOME BRICK FRAGS,	COARSE SAND

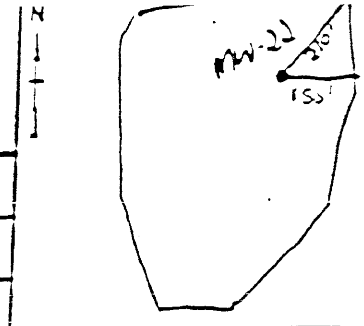
WELL CONST. | GRAPHIC LITHOLOG

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

[redacted] (203) 796-5279

TEST BORING LOG



BORING NO.	MW-22
PROJECT NO., NAME	Union Road
LOCATION	Inside Cap
DRILLING CONTRACTOR/DRILLER	Maxim-Empire P. Dence
GEOLOGIST, OFFICE	Hanlon / Szwarga Danbury
DRILLING EQUIPMENT, METHOD	CME 855
SIZE, TYPE OF BIT	6.25" HSA
SAMPLING METHOD	SS
START, FINISH DATE	2/20/96
WELL INSTALLED?	YES ☒ NO ☐
CASING MAT./DIA.	2" SS
SCREEN: TYPE	MAT. SS, LENGTH 10', DIA. 2", SLOT SIZE 10
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE	623.4
TOP OF WELL CASING	626.40
TOP & BOTTOM SCREEN	606' 596'
GW SURFACE	NA
DATE	2/20/96
REMARKS:	PRE-CAP SURFACE

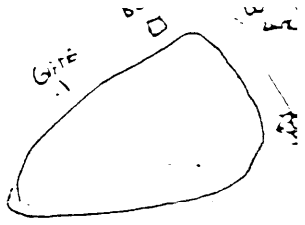
LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
20–22		6"	15/ft	Angular gravelly mat'l. Asphalt, brick & stone. Trace cond. 2" Angular rock.			
22–24		6"	15/ft	Same			
24–26		1'	11/ft	Grey clay, firm, trace clinkers, no coarse mat'l.	Coarse sand		
26–28		2'	9/ft	Same EOB 28.0'			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

TEST BORING LOG



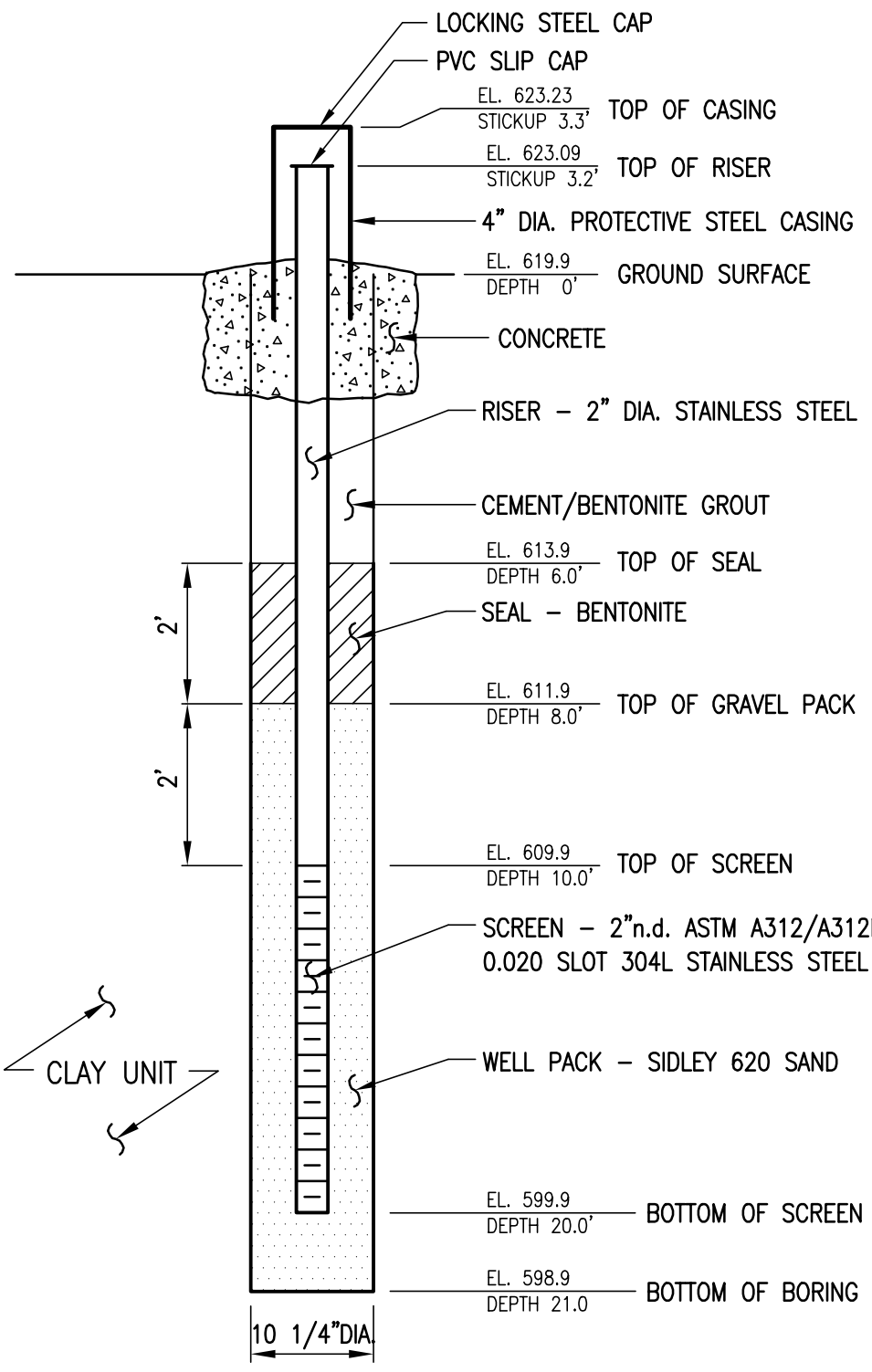
BORING NO. 23S	
PROJECT NO., NAME UNION ROAD 2035-200	LOCATION BUFFALO NY
DRILLING CONTRACTOR/DRILLER MAXIM	
GEOLOGIST, OFFICE JOHN J ZACHER JR	
DRILLING EQUIPMENT, METHOD HSA	SIZE, TYPE OF BIT 10" HSA / SAMPLING METHOD SPLIT SPOON / START, FINISH DA 1-6-97
WELL INSTALLED? YES ☒ NO ☐ / CASING MAT./DIA. STAINLESS STEEL 2"	SCREEN: TYPE SLOT MAT. STAINLESS LENGTH 10' DIA. 2" SLOT SIZE 0.02
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE	TOP OF WELL CASING TOP & BOTTOM SCREEN GW SURFACE DATE
REMARKS:	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (IN)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC
				SAMPLING STARTS 2' BG.			
2							
	2'	-	4	0-4 TOPSOIL/SAND			
		15"	3	4-15 RED/BROWN CLAY	STIFF - DRY		
	4'		9	15-18 RED/BROWN CLAY, SOME ORG.	STIFF TRACE H2O		
	4		4	0-15 RED/BROWN CLAY	STIFF, TRACE H2O		
5		21"	6	15-21 SOME MOISTURE			
	6		6				
	6		8	0-10 RED/BROWN CLAY	MEDSTIFF DAMP		
		24"	6	10-14 RED/BROWN - GREY CLAY	MEDSTIFF DAMP.		
	8		4	14-24 GREY CLAY	MEDSTIFF, DAMP.		
	8		2	GREY CLAY, LITTLE SAND, LITTLE RKS	SOFT, WET		
		12"	2				
10	10		2				
	10		6	GREY CLAY, LITTLE SAND, LITTLE RKS	SOFT WET		
		17"	5				
	12		4				
	12		2	GREY CLAY, LITTLE SAND, LITTLE RKS	SOFT WET		
		8"	3				
	14		4				
	14		4	GREY CLAY, LITTLE SAND LITTLE RKS	SOFT, WET		
15		10"	3				
	16		3	BOB 16			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

MW–10S

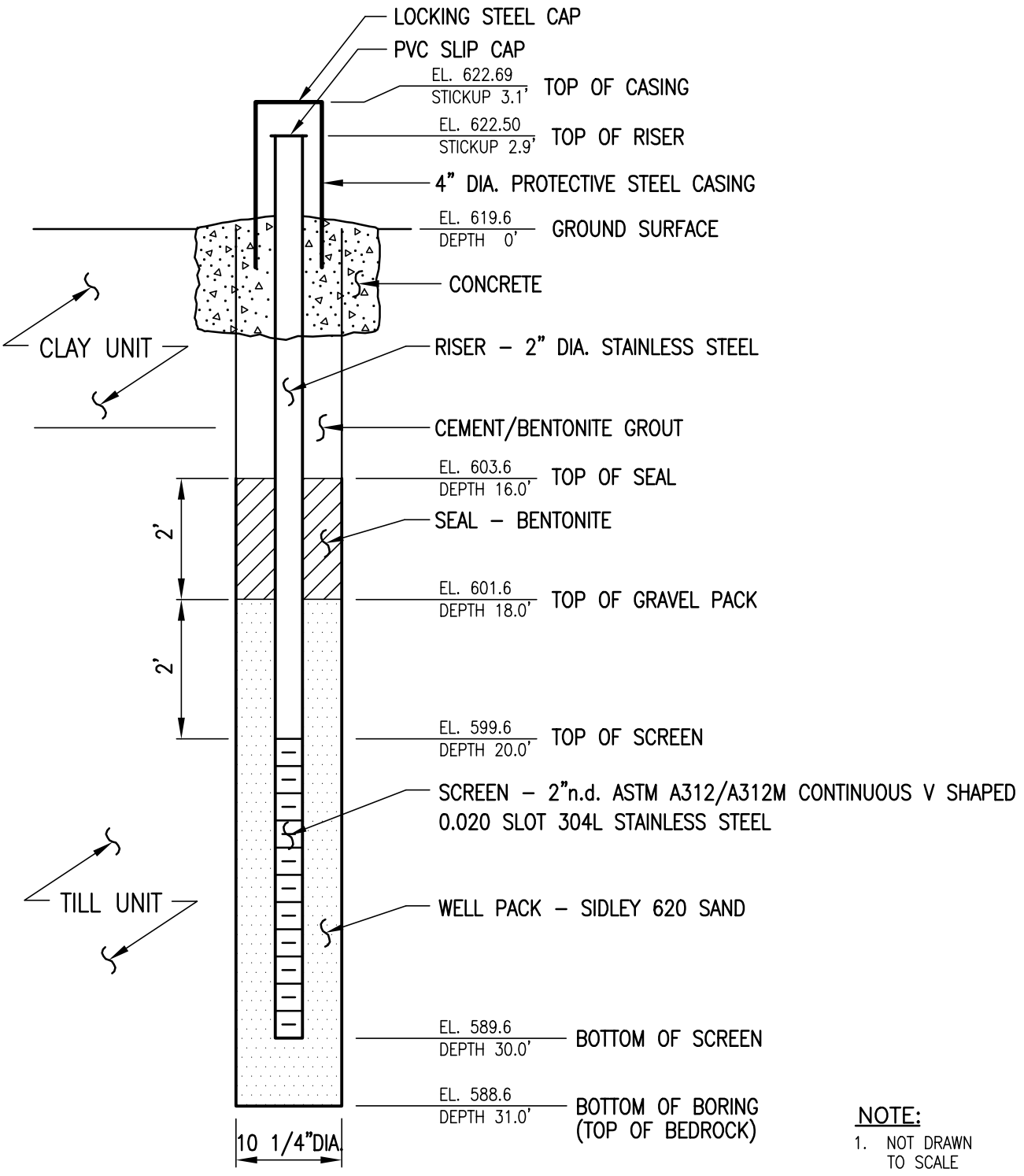


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	SHALLOW GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–10S

MW–10M

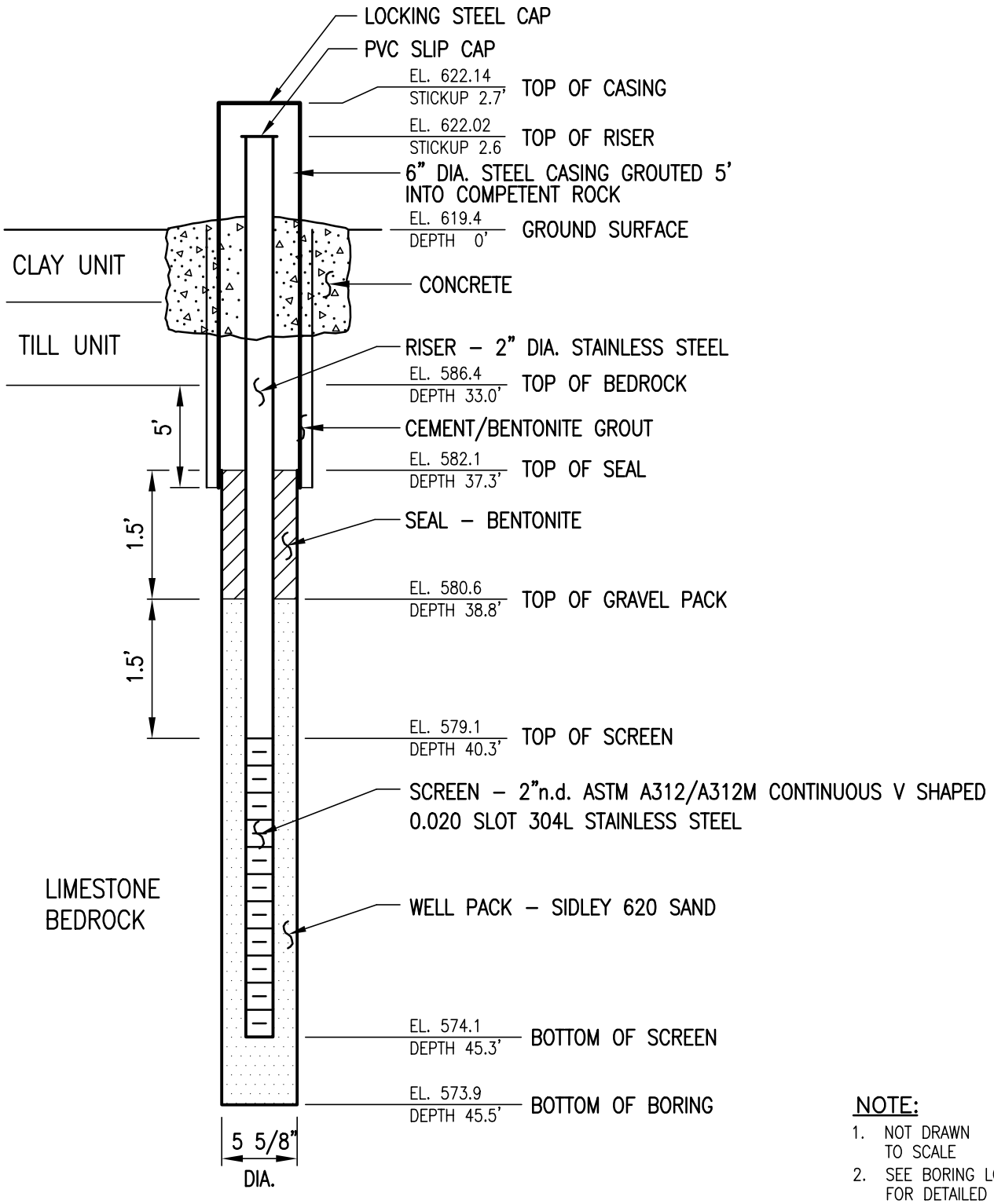


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	MEDIUM GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–10M

MW–10D

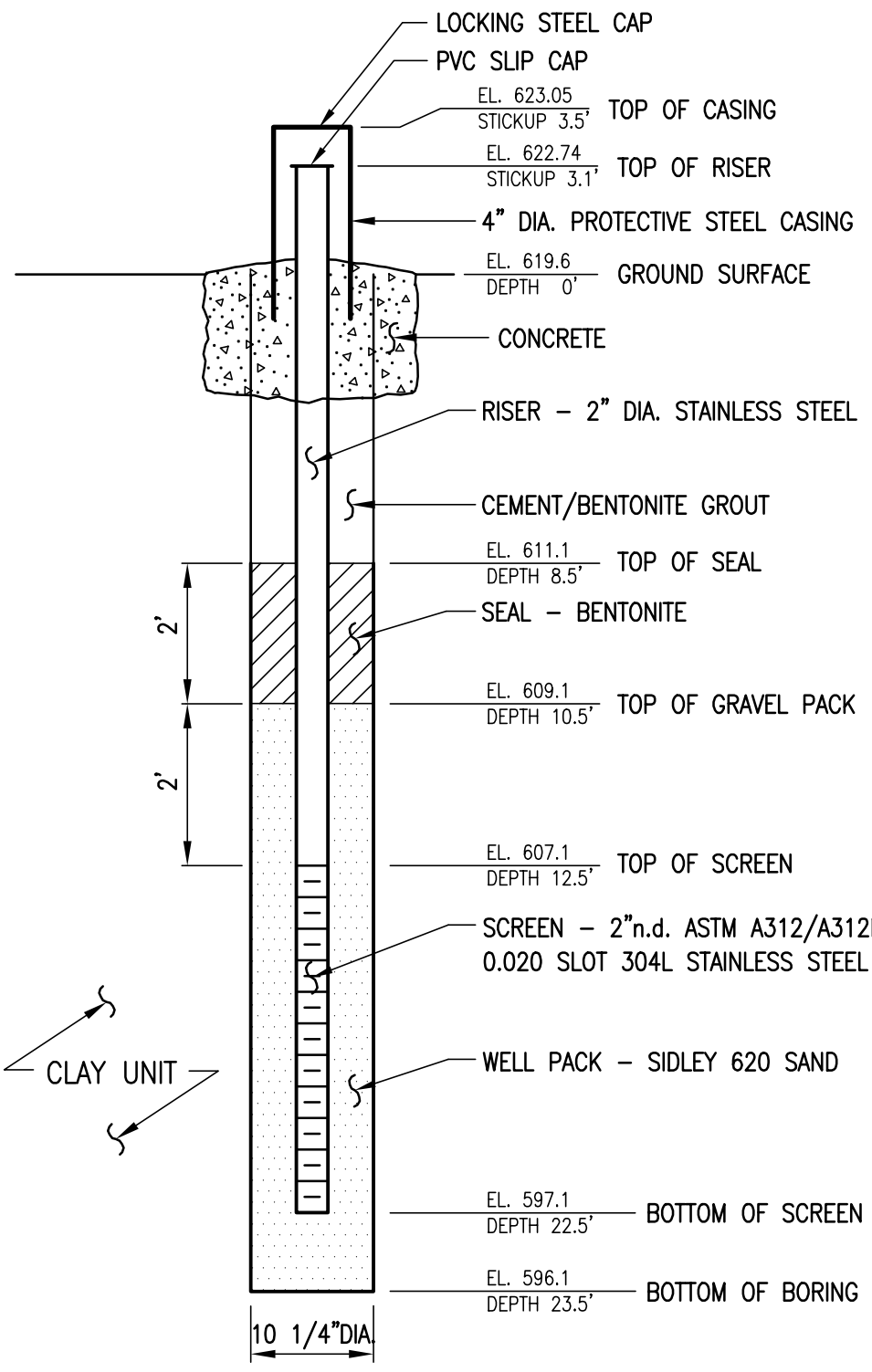


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
		DRAWING	BEDROCK GROUNDWATER MONITORING WELL DETAIL		SCALE: NTS DATE: 1/15/02
					BY: AD CK:
					FIGURE # MW–10D

MW–11S

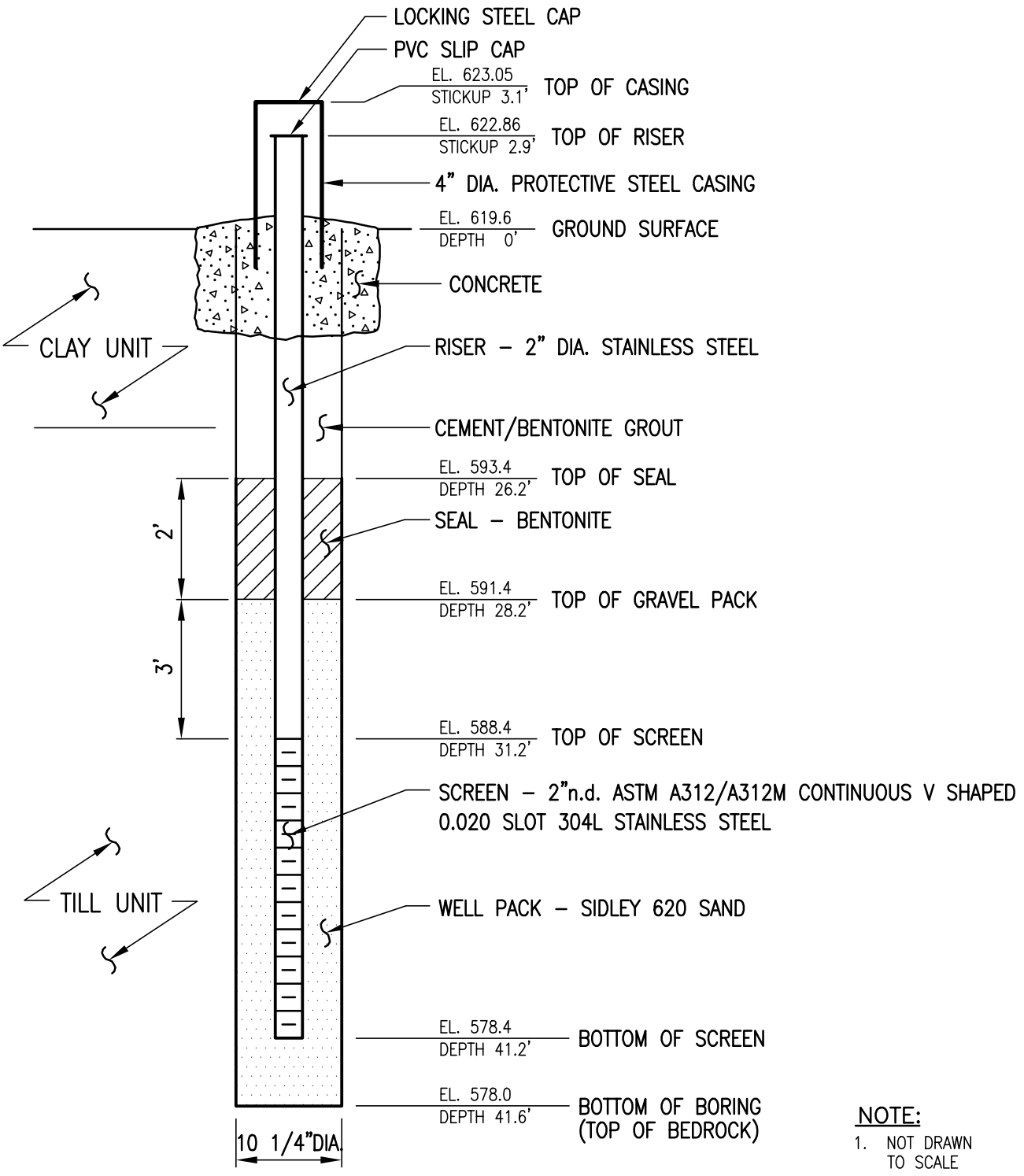


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	SHALLOW GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–11S

MW–11M

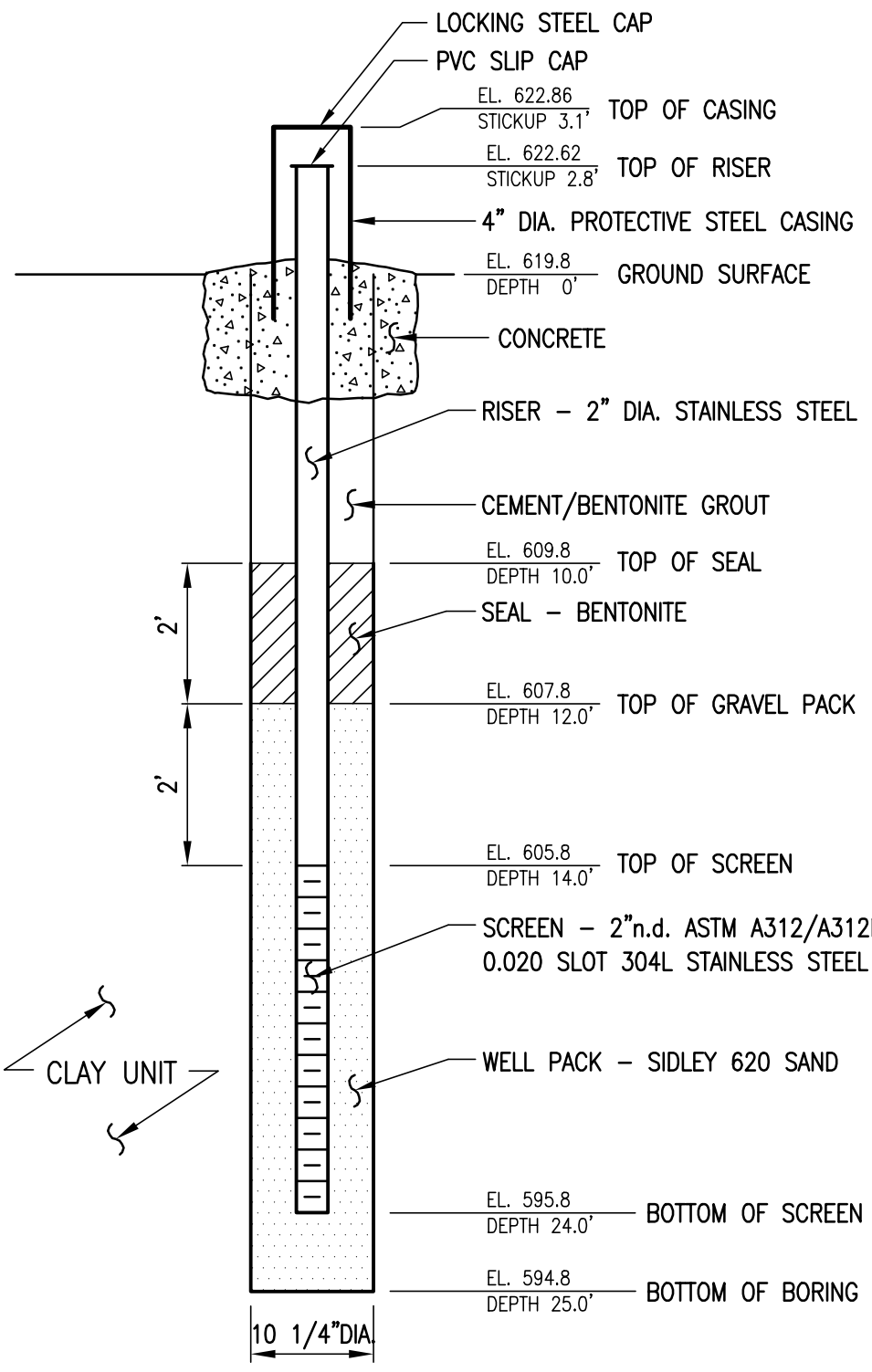


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	MEDIUM GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–11M

MW–12S

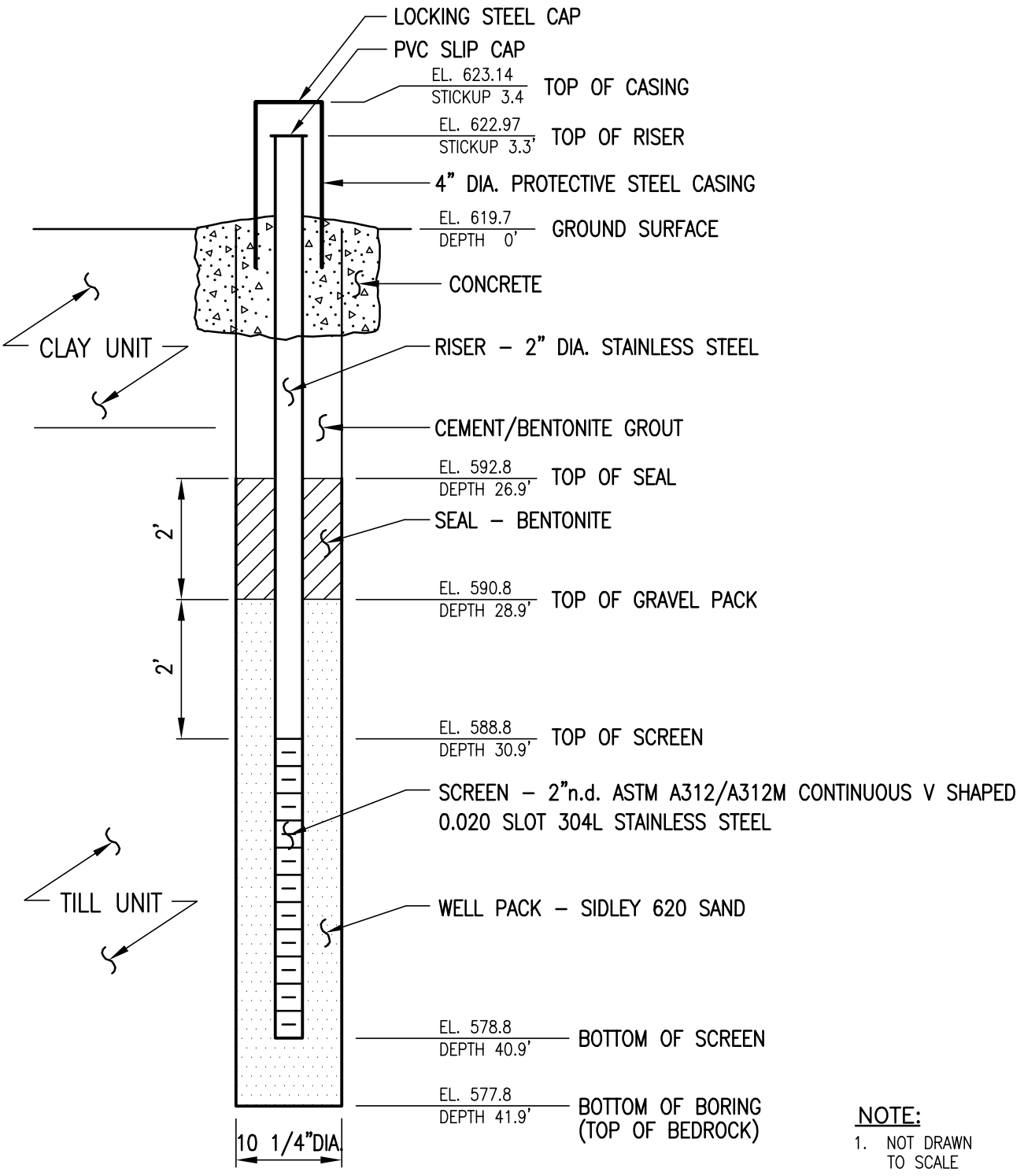


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	SHALLOW GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–12S

MW–12M

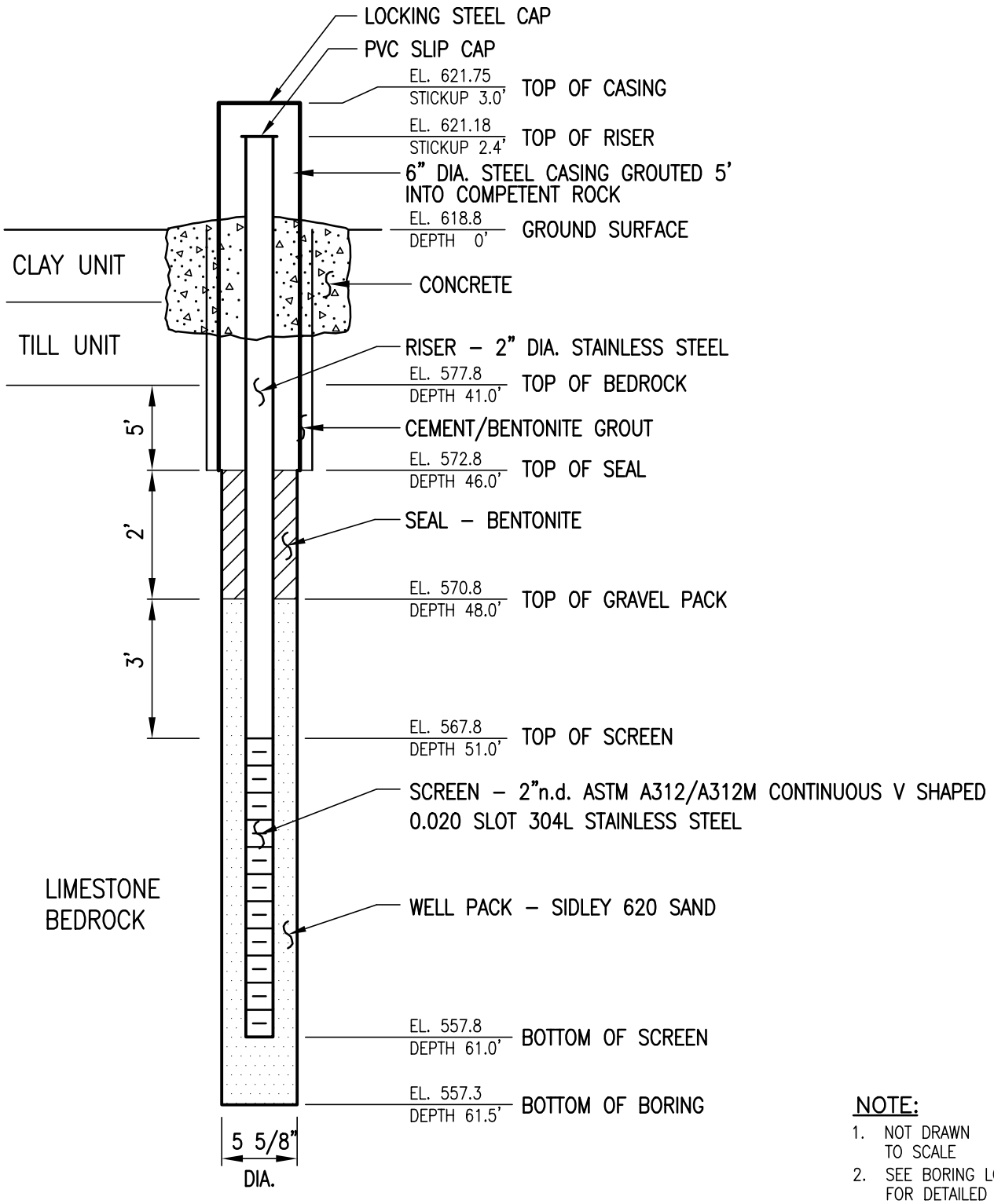


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	MEDIUM GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–12M

MW–12D

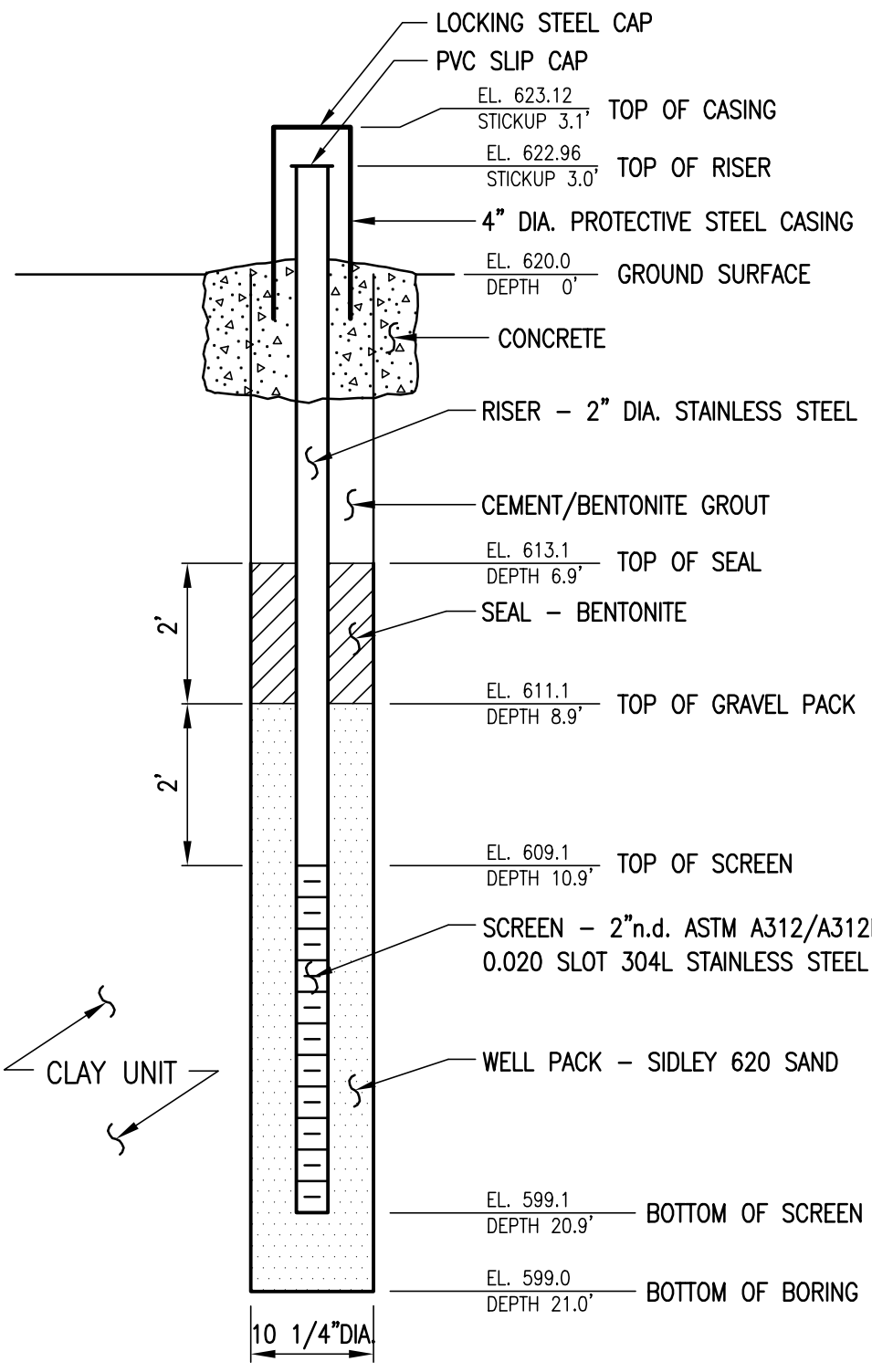


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	BEDROCK GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–12D

MW–13S

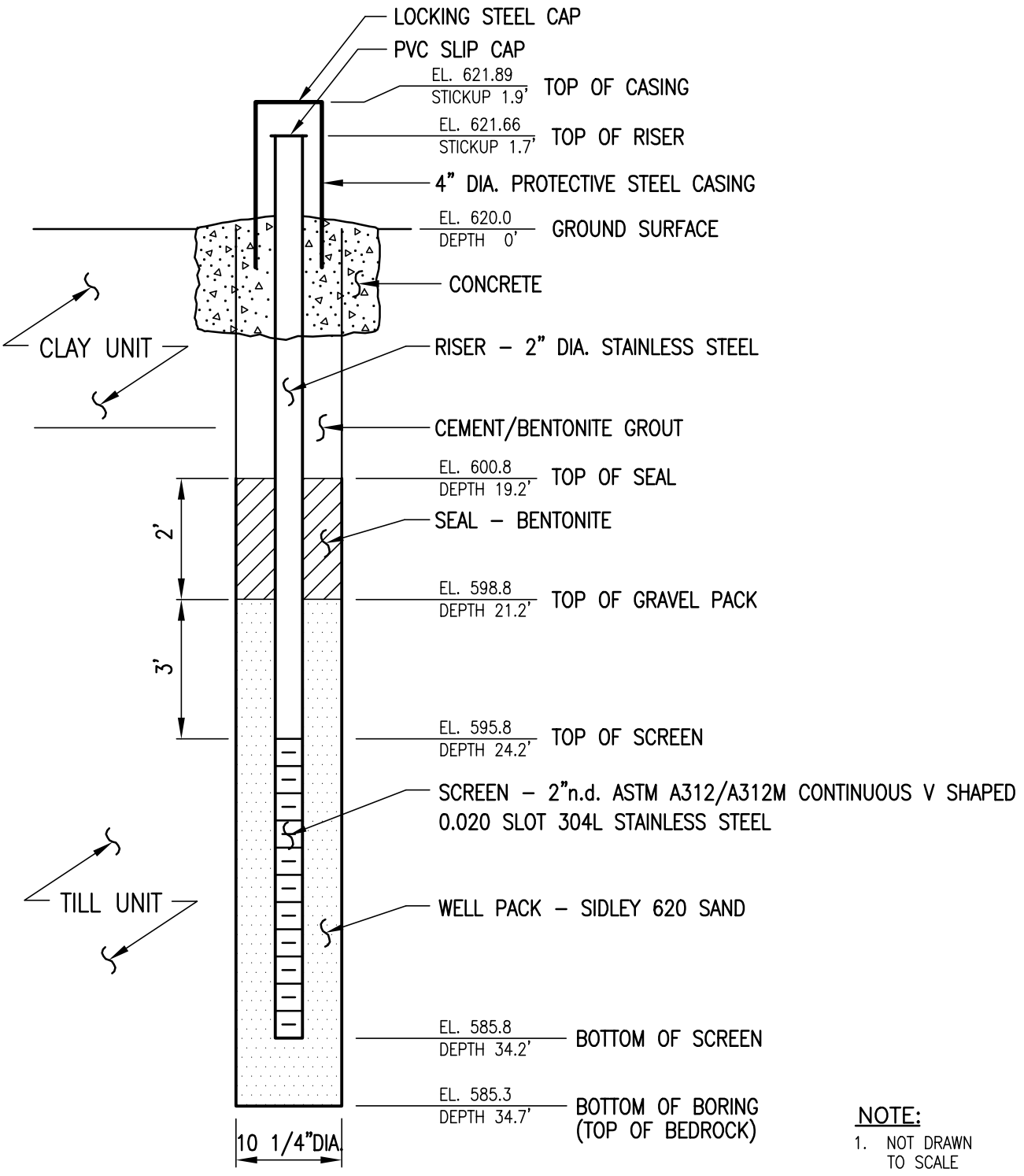


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	SHALLOW GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–13S

MW–13M

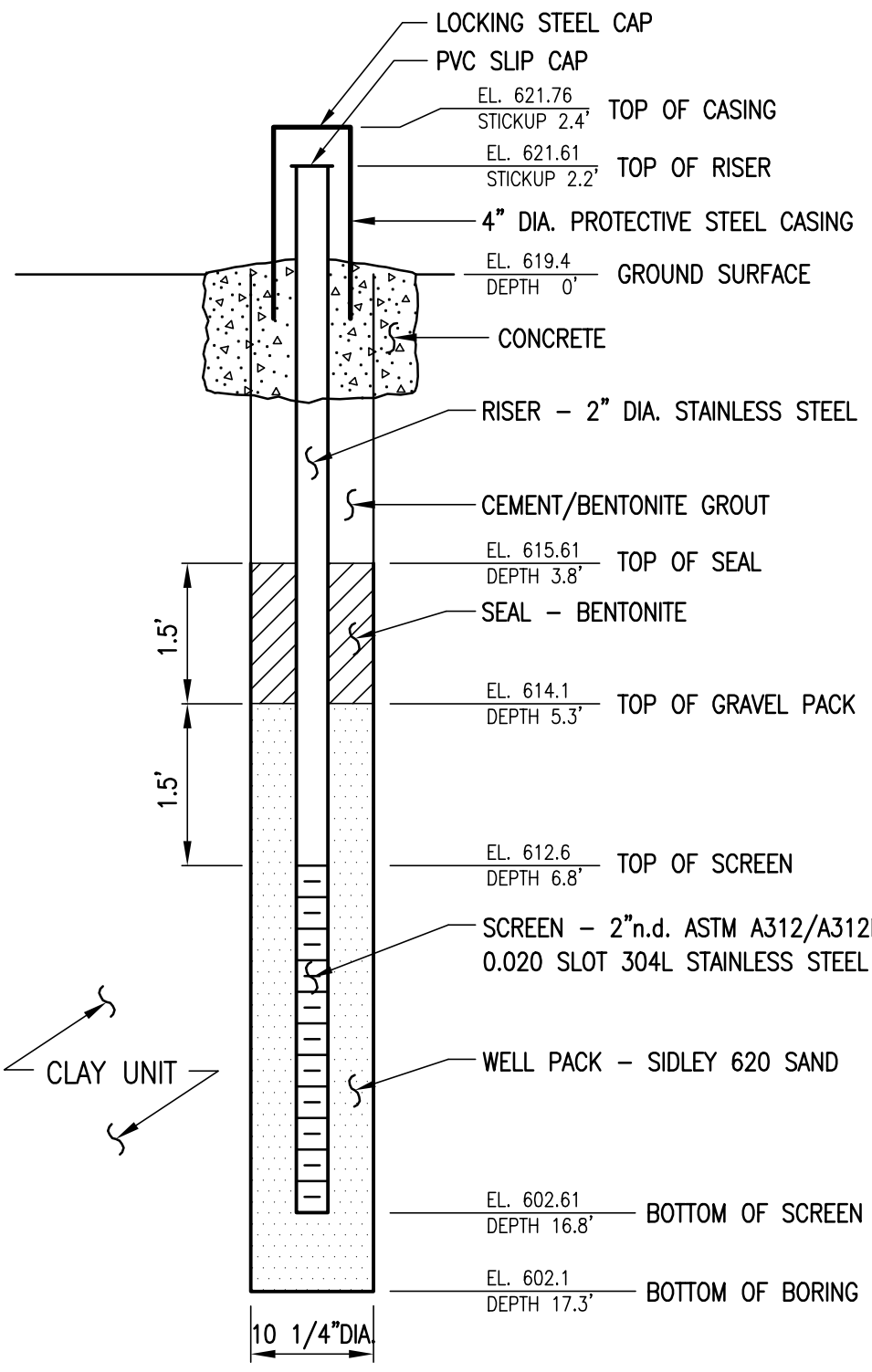


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	MEDIUM GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–13M

MW–14S

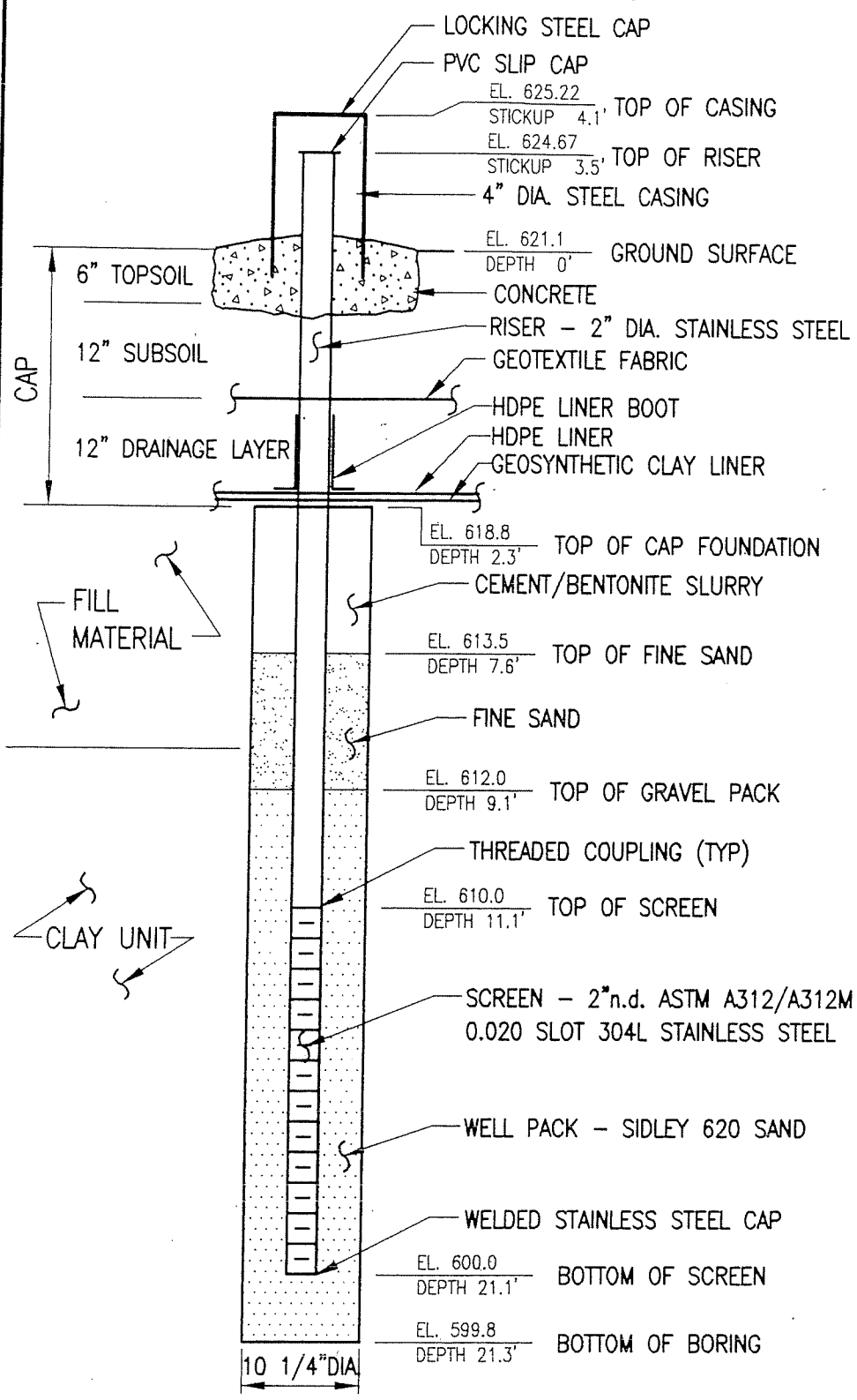


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	SHALLOW GROUNDWATER MONITORING WELL DETAIL		BY: AD / CK:
					FIGURE # MW–14S

MW-15

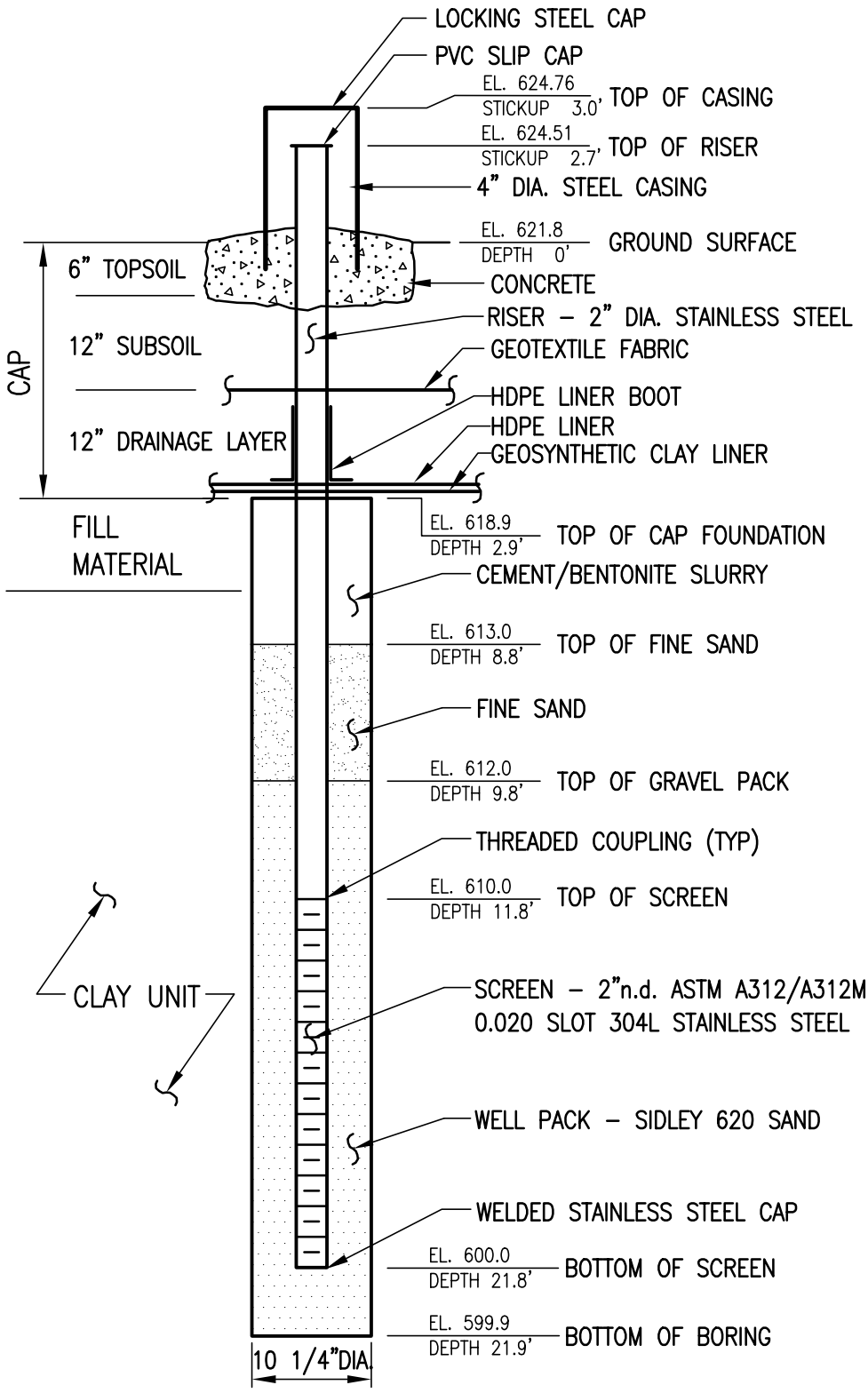


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

DOCUMENT CONTROL NO.	PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	INTEGRATED ENVIRONMENTAL SERVICES A DIVISION OF NES, INC.	PROJECT # 2045-200 FILENAME: 20352004 SCALE: NTS DATE: 9/18/95 BY: AD CK:
REVISION NO.	DRAWING	GROUNDWATER OBSERVATION WELL DETAIL		FIGURE # MW-15

MW–16

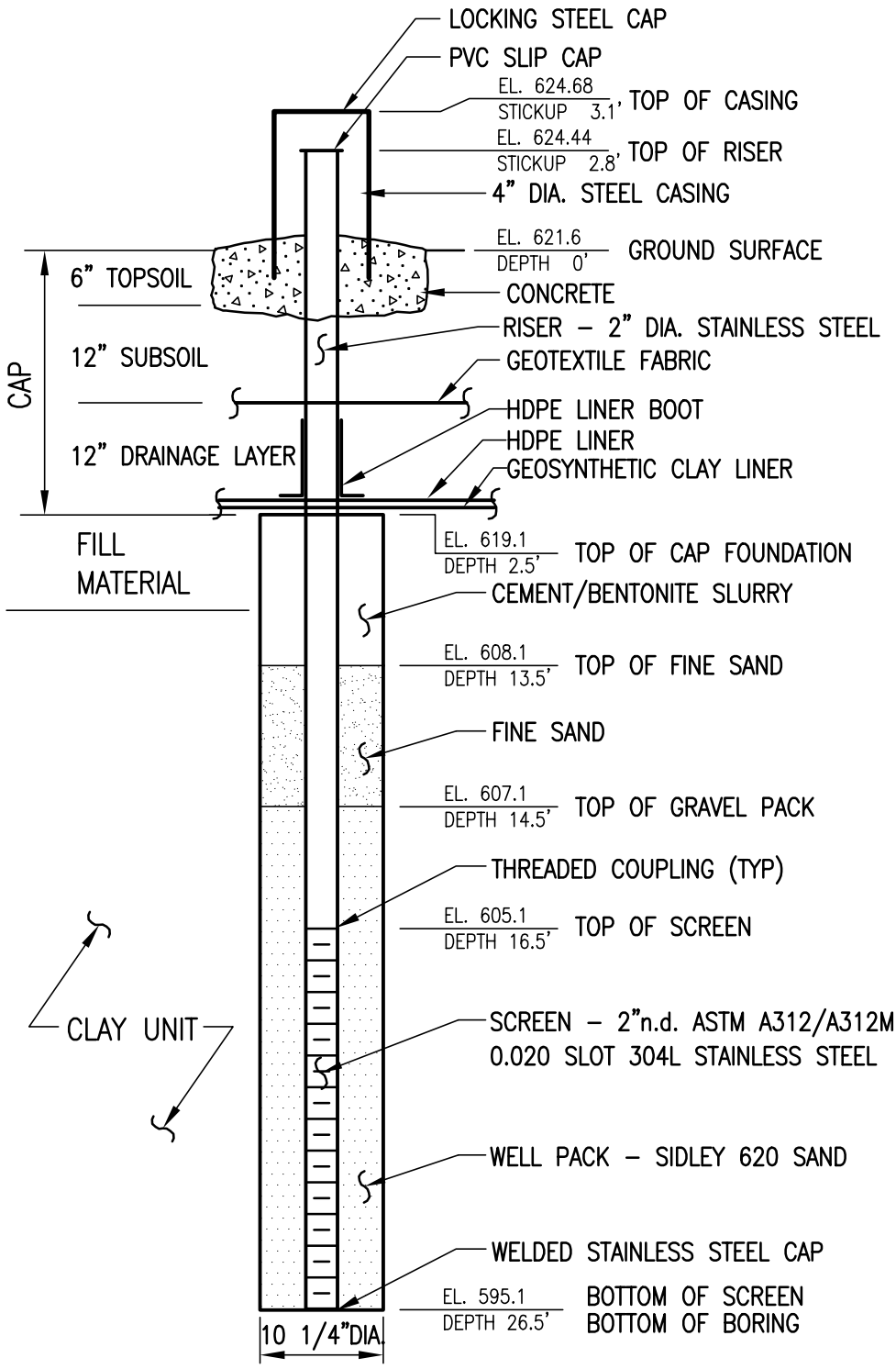


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	GROUNDWATER OBSERVATION WELL DETAIL		BY: AD / CK:
					FIGURE # MW–16

MW–17

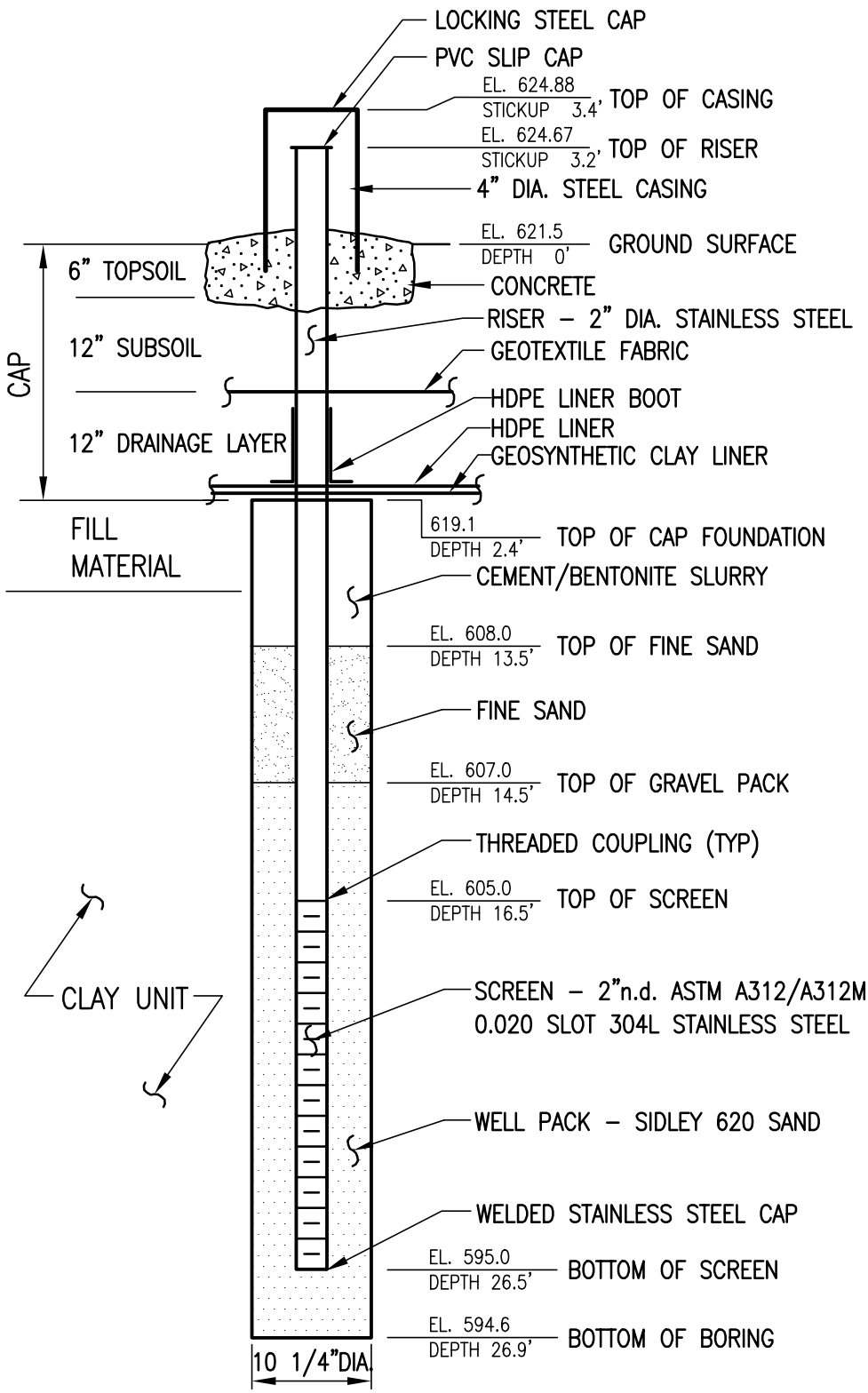


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200 FILENAME: 2035200A SCALE: NTS DATE: 1/15/02 BY: AD CK:
NO.	DATE	DRAWING	GROUNDWATER OBSERVATION WELL DETAIL		FIGURE # MW–17

MW–18

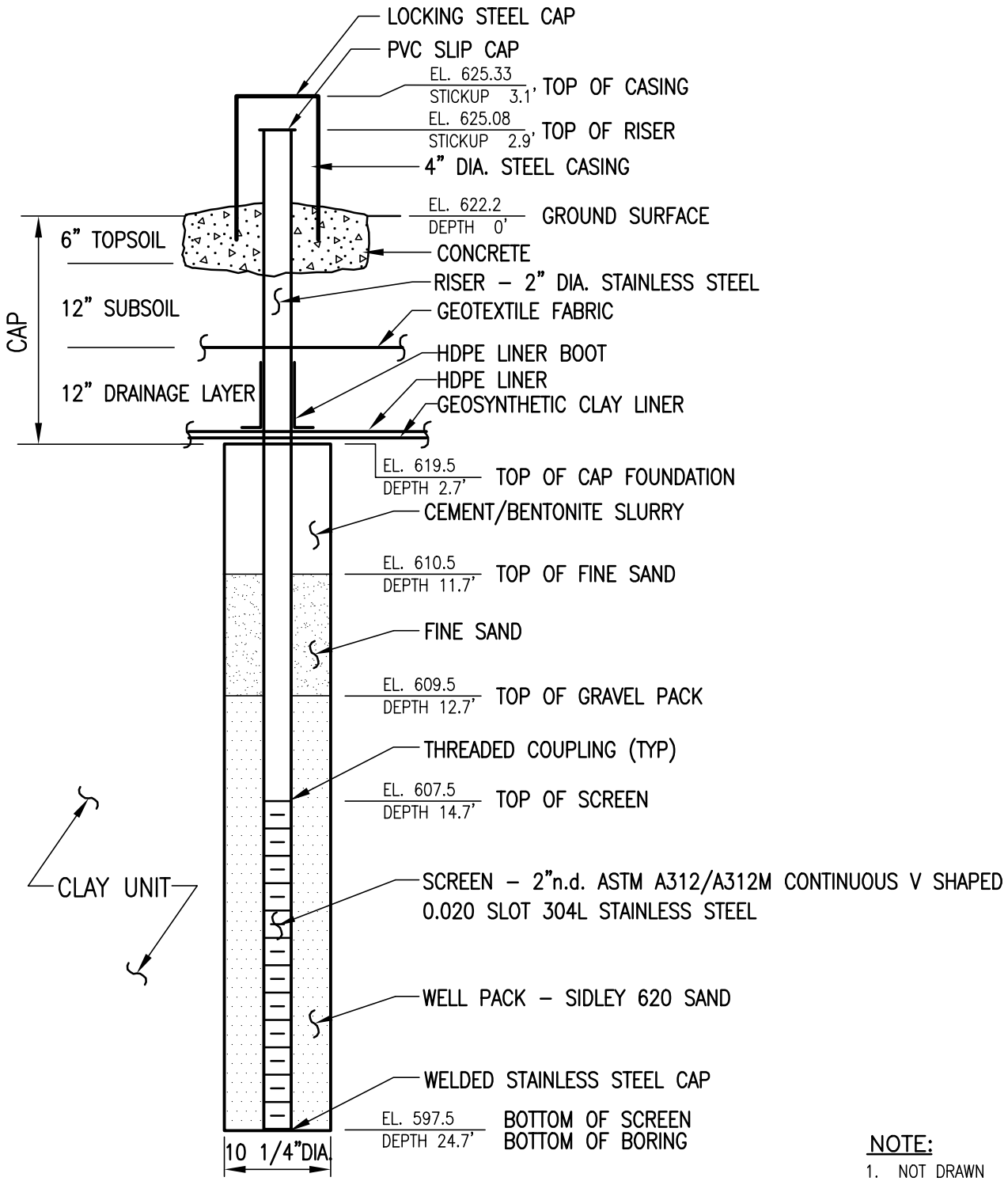


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	GROUNDWATER OBSERVATION WELL DETAIL		BY: AD / CK:
					FIGURE # MW–18

MW–19

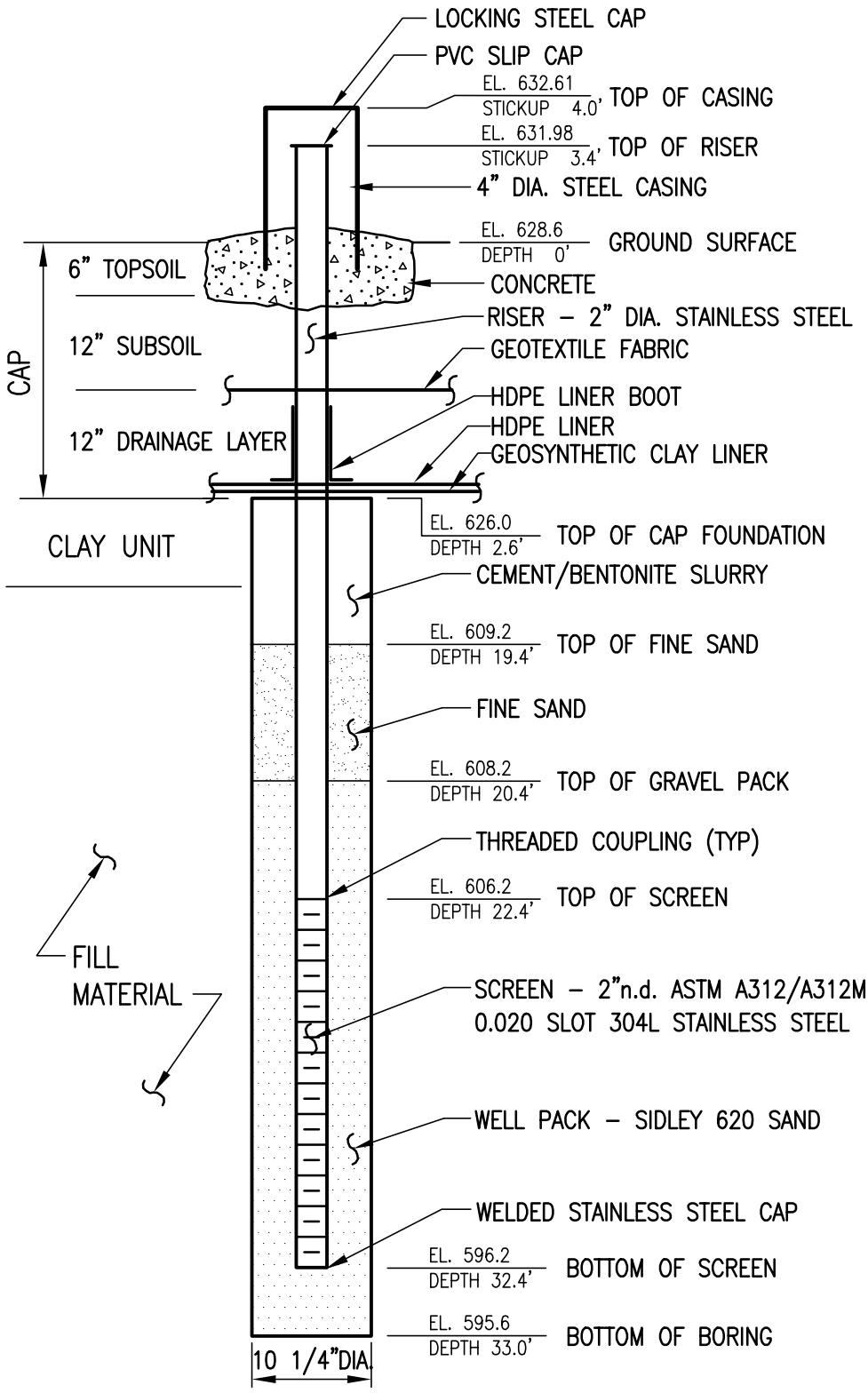


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	GROUNDWATER OBSERVATION WELL DETAIL		BY: AD / CK:
					FIGURE # MW–19

MW–20



NOTE:

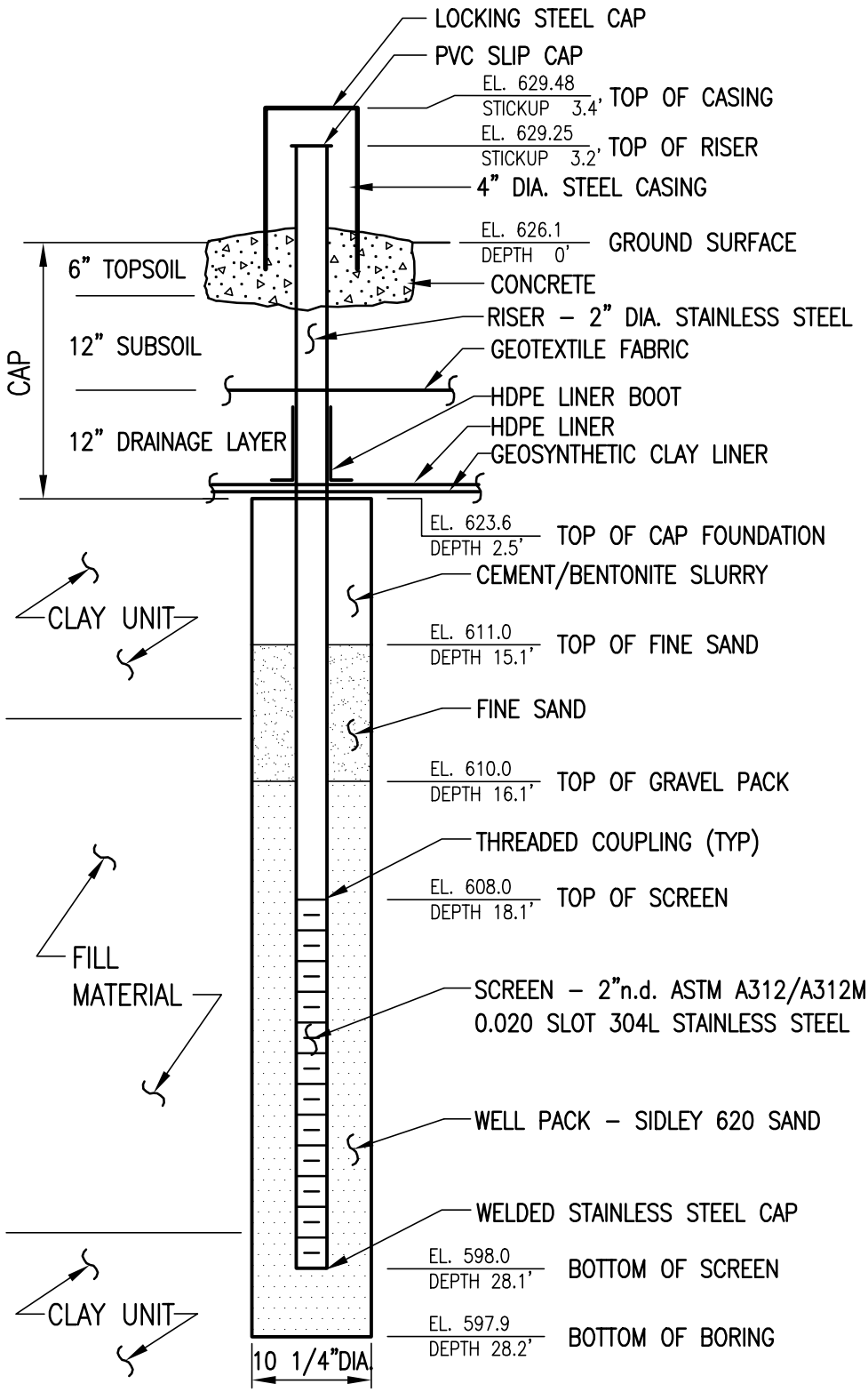
1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.				
NO.	DATE	PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	
		DRAWING	GROUNDWATER OBSERVATION WELL DETAIL	

Unicorn Management Consultants, LLC
52 FEDERAL ROAD
DANBURY, CT
(203) 205-9000

PROJECT #	2011–200
FILENAME:	2035200A
SCALE: NTS	DATE: 1/15/02
BY: AD	CK:
FIGURE #	MW–20

MW–21

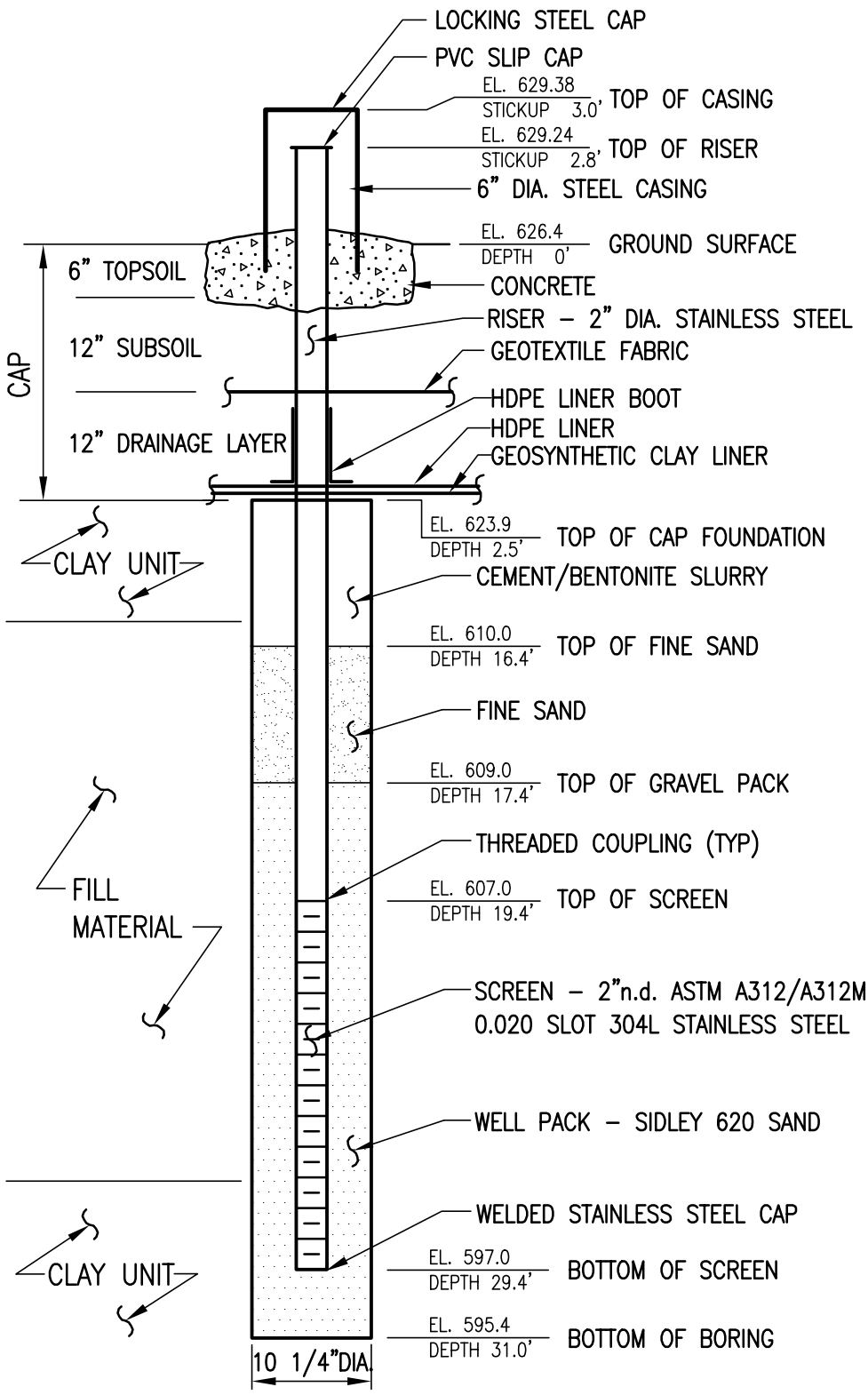


NOTE:

1. NOT DRAWN TO SCALE
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200 FILENAME: 2035200A SCALE: NTS DATE: 1/15/02 BY: AD CK:
NO.	DATE	DRAWING	GROUNDWATER OBSERVATION WELL DETAIL		FIGURE # MW–21

MW–22



NOTE:

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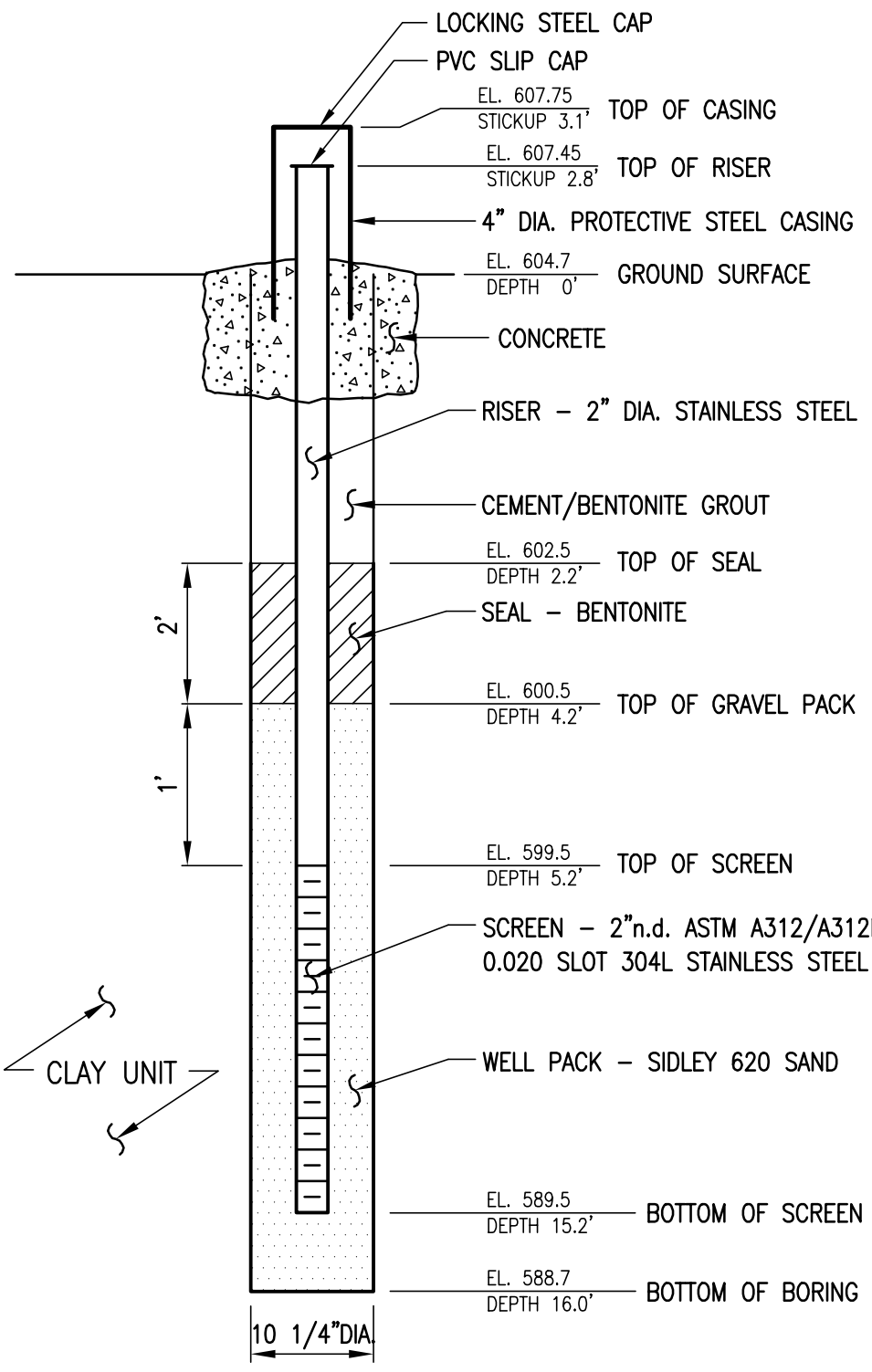
2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200
NO.	DATE				FILENAME: 2035200A
					SCALE: NTS / DATE: 1/15/02
		DRAWING	GROUNDWATER OBSERVATION WELL DETAIL		BY: AD / CK:
					FIGURE # MW–22

MW–23S



NOTE:

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2. SEE BORING LOG FOR DETAILED SOIL DESCRIPTION.

REVISION NO.		PROJECT	UNION ROAD CHEEKTOWAGA, NEW YORK	Unicorn Management Consultants, LLC 52 FEDERAL ROAD DANBURY, CT (203) 205-9000	PROJECT # 2011–200 FILENAME: 2035200A SCALE: NTS DATE: 1/15/02 BY: AD CK:
NO.	DATE	DRAWING	SHALLOW GROUNDWATER MONITORING WELL DETAIL		FIGURE # MW–23S

Appendix B
Draft Construction Logs for Replacement Wells
(MW-10R Cluster)

PROJECT: Union Road Well Replacement DRAFT

BORING LOCATION: MW-10 R Cluster

COMPLETION DATE: May 2025

DRILLING CONTRACTOR:

DRILLING METHOD: NA

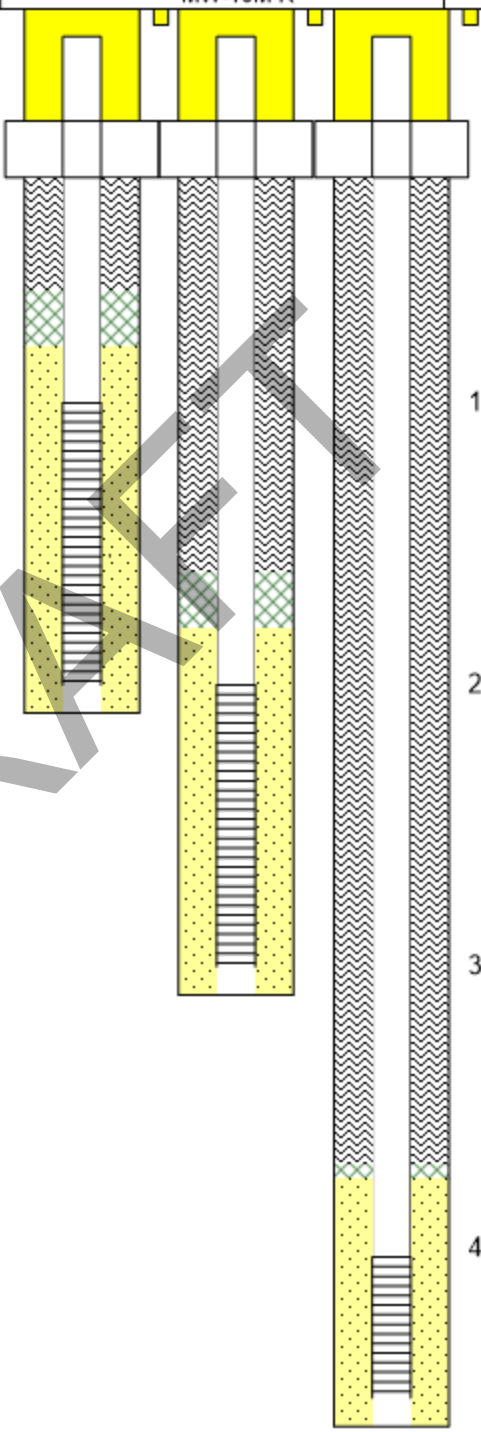
Unicorn Management Consultants, LLC
52 Federal Road, Suite 2C
Danbury, CT 06810

Union Road Site, Cheektowaga, NY
Inactive Hazardous Waste Disposal Site
No. 915128

ELEVATION (feet)	Advanced/ Recovery	DESCRIPTION: color, PRIMARY CONSTITUENT, secondary constituent, moisture, other notes
0		
		black to gray CLAY, little rocks
		black to gray CLAY, some rocks
		CINDERS, some rocks
		brown to tan CLAY, some sand, little silt, trace rocks
		tan to brown CLAY
10		tan to brown CLAY
		tan to brown CLAY, trace silt
		gray to brown CLAY, little rocks
		tan to brown CLAY
		gray to brown CLAY, trace organics
20		dark gray CLAY, little organics
		gray to brown CLAY
		gray CLAY
		gray CLAY
		gray to brown CLAY, some rocks, little sand
		light brown SILT, some sand
30		tan to brown CLAY, some rocks
		light brown to tan CLAY, some silt, little rocks
		SAND, some silt and clay
		brown to tan CLAY and SILT, little rocks
		brown to tan CLAY and SILT, little rocks
40		unconsolidated bedrock
		Incompetent bedrock (may collapse)
50		

Well Construction

MW-10S R MW-10M R MW-10D R



Well Construction
- Riser
- Screen
- Well Sand
- Bentonite Chips
- Bentonite Slurry
- Stickup
- Concrete

PRELIMINARY DRAFT WELL CONSTRUCTION LOG LITHOLOGY INFO IS ESTIMATED BASED ON PREVIOUS BORINGS FOR MW-10 CLUSTER