

APPENDIX A

HAGER-RICHTER GEOPHYSICAL UTILITY CLEARANCE REPORTS

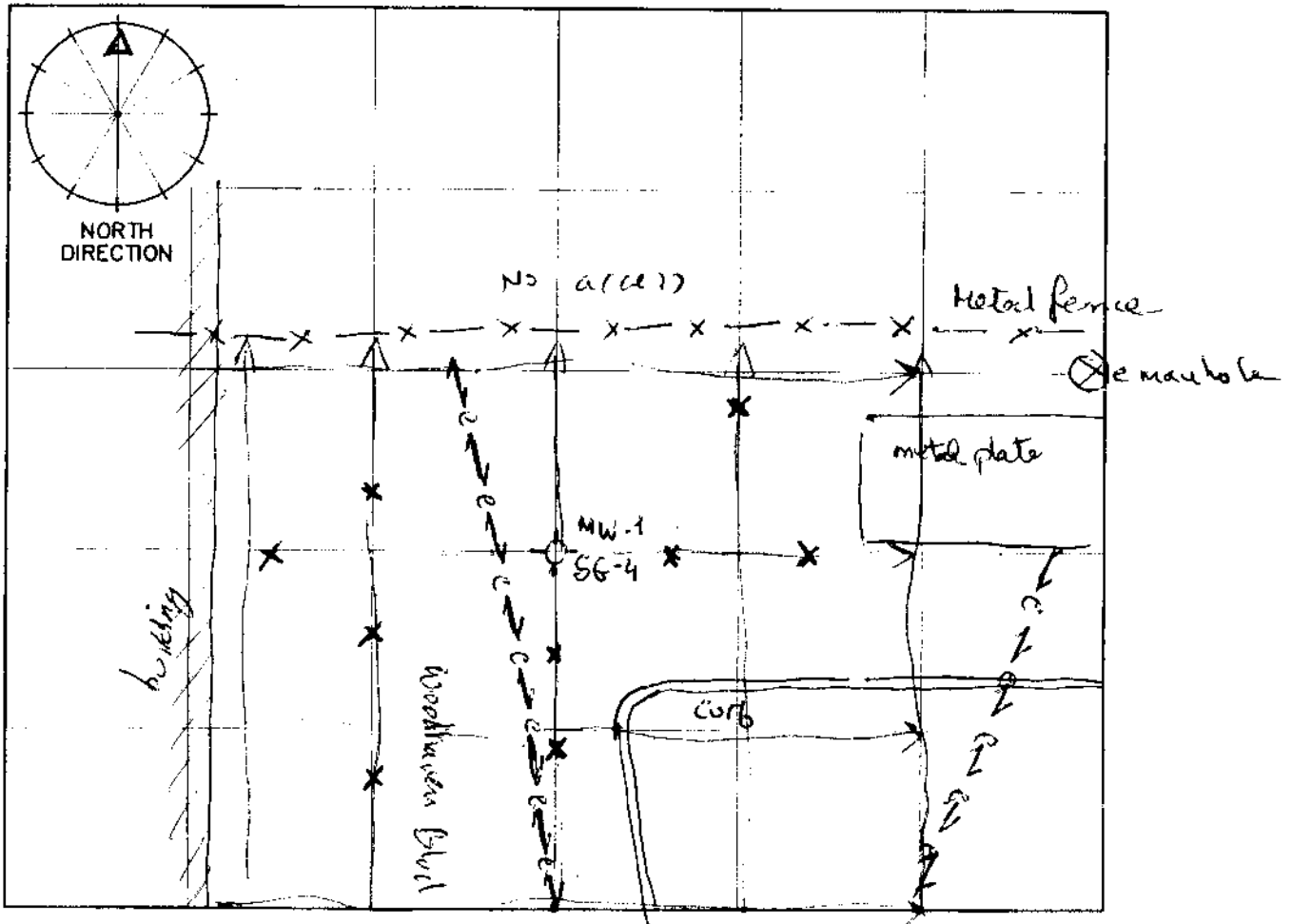
2010 DATA/ LOGS

DATE: 08/10/2010

HR PROJECT # 09JCC63

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT Woodhaven Blvd, Queens, NY



LOCATION ID

MW-1 / SG-4

SCALE

1" = 5'

SITE NAME Woodhaven Blvd

CLIENT CO. HDR

CLIENT REP. Scott Englert

H-R REP. JCC + AH

WEATHER Sunny 95F

UTILITY PLANS REC. YES NO

NOTES:

METHODS GPR + PUL

LEGEND

→ GPR LINE

↔ E ↔ electric utility

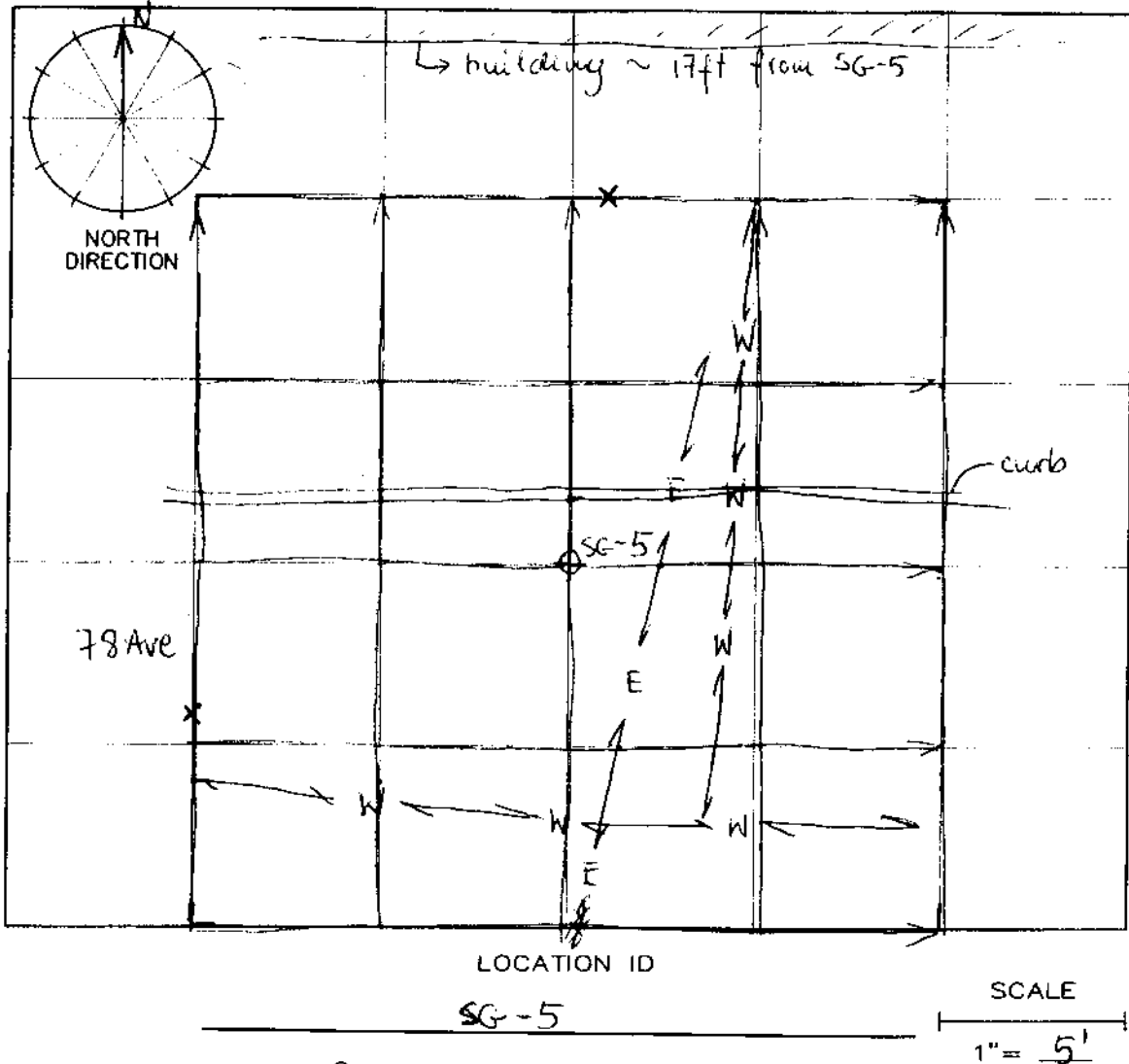
x unidentified buried object

DATE: 08/10/2010

HR PROJECT # 09JCC63

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT Woodhaven Blvd, Queens, NY



SITE NAME Woodhaven Blvd

CLIENT CO. HDR

CLIENT REP. Scott Englett

H-R REP. JCC + AH

WEATHER Sunny 95F

UTILITY PLANS REC. YES NO

NOTES:

METHODS GPR + PUL

LEGEND

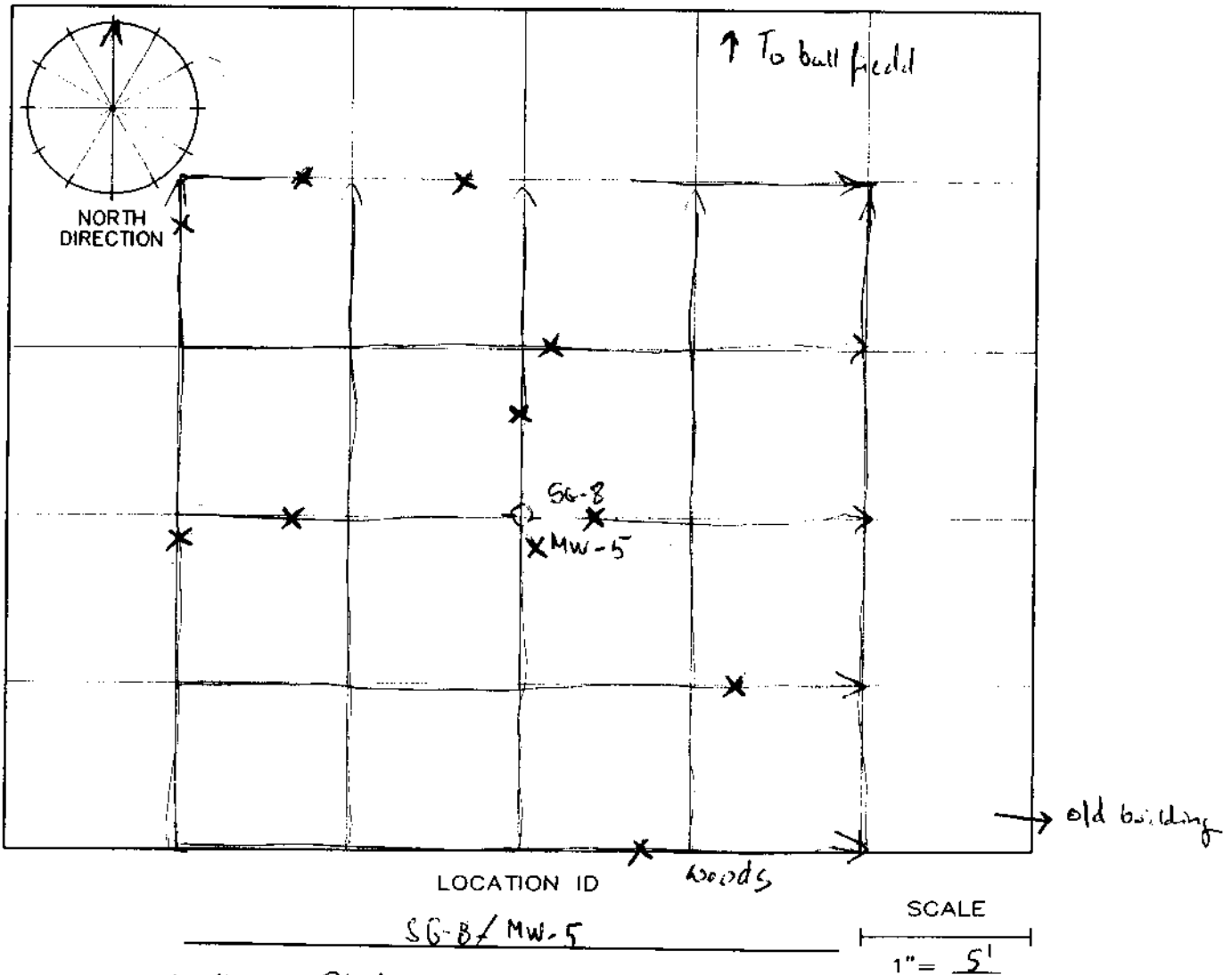
- ⊕ proposed boring location
- GPR traverse
- ↔ E ↔ possible electric utility
- ↔ W ↔ possible water utility
- X unidentified buried object

DATE: 08/10/2010

HR PROJECT # 09JCC63

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT Woodhaven Blvd, Queens, NY



SITE NAME Woodhaven Blvd

CLIENT CO. HDR

CLIENT REP. Scott Englert

H-R REP. JCC + AH

WEATHER Sunny 95F

UTILITY PLANS REC. YES NO

NOTES:

METHODS GPR + PUL

LEGEND

→ GPR Traverse

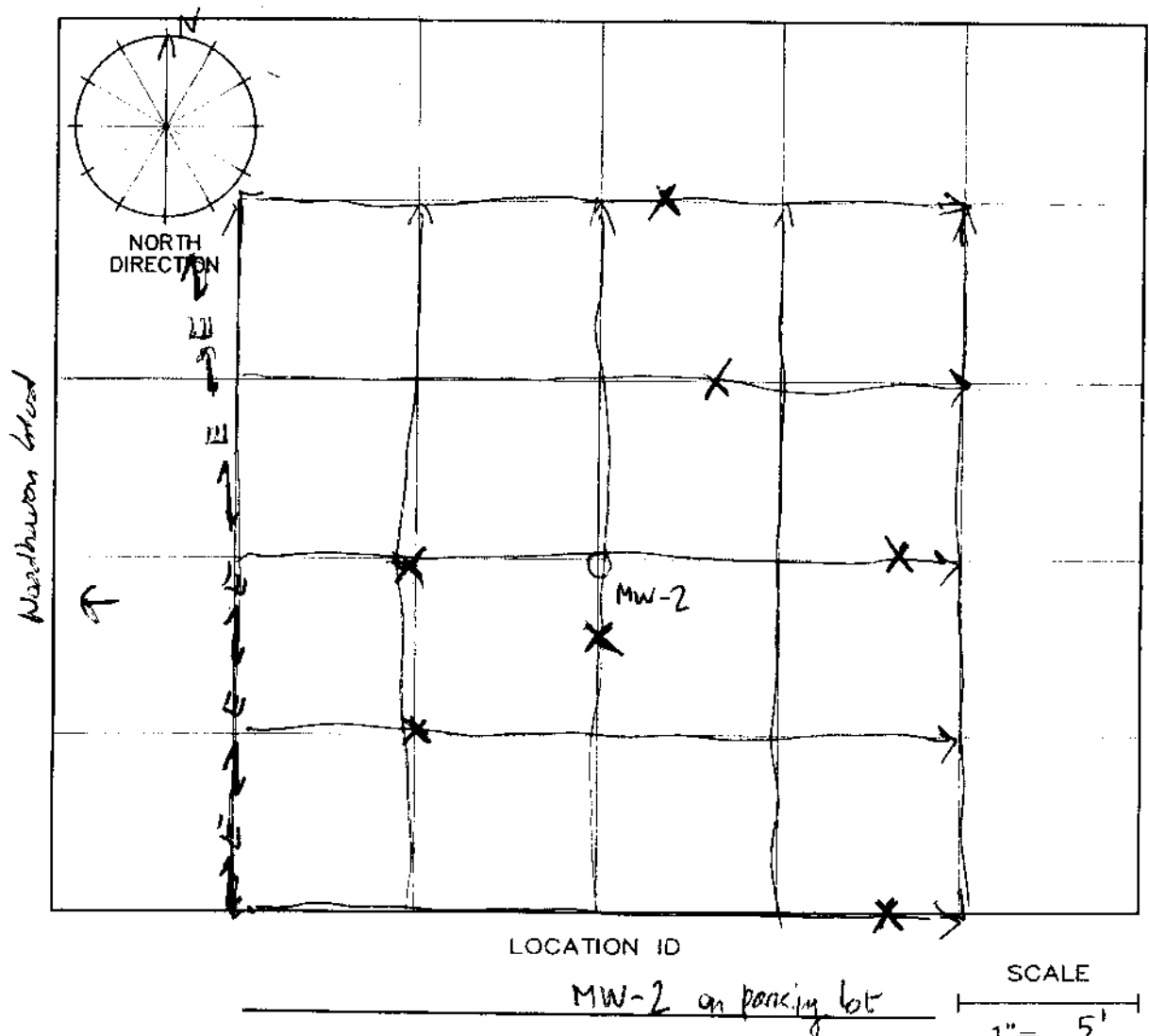
X Unidentified buried object

DATE: 08/10/2010

HR PROJECT # 09JCC63

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT Woodhaven Blvd, Queens, NY



SITE NAME Woodhaven Blvd

CLIENT CO. HDR

CLIENT REP. Scott Englebert

H-R REP. JCC + AH

WEATHER Sunny 95F

UTILITY PLANS REC. YES NO

NOTES:

METHODS GPR + PUL

LEGEND

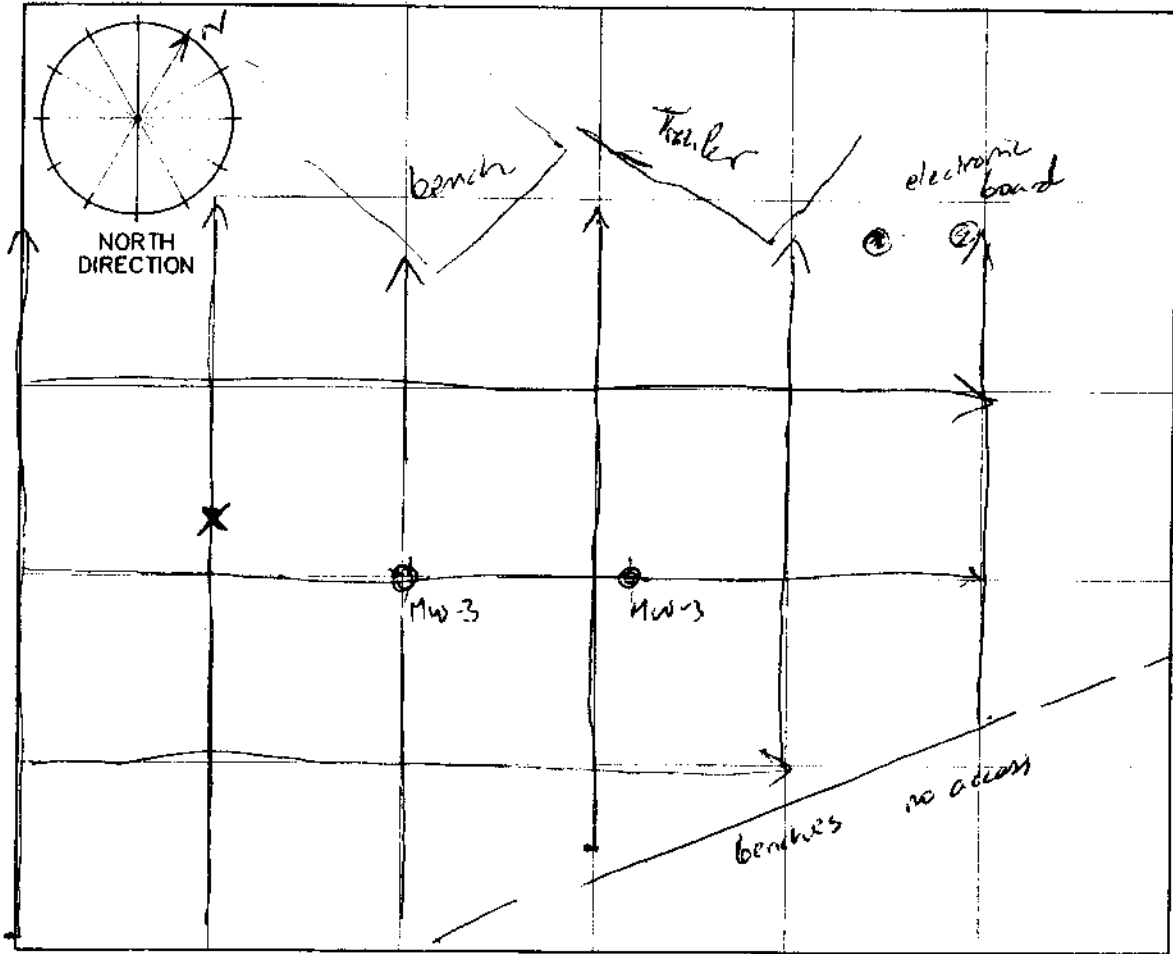
- GPR traverse
- x unidentified buried object
- E → Possible electric utility

DATE: 08/10/2010

HR PROJECT # 09JCC 63

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT Woodhaven Blvd, Queens, NY



LOCATION ID

Mw-3 (Tap bench 6 ft apart)

SCALE

1" = 5'

SITE NAME Woodhaven Blvd

CLIENT CO.: HDR

CLIENT REP. Scott Engler

H-R REP. JCC + AH

WEATHER Sunny 95F

UTILITY PLANS REC. YES NO

NOTES:

METHODS GPR + PUL

LEGEND

→ GPR trace

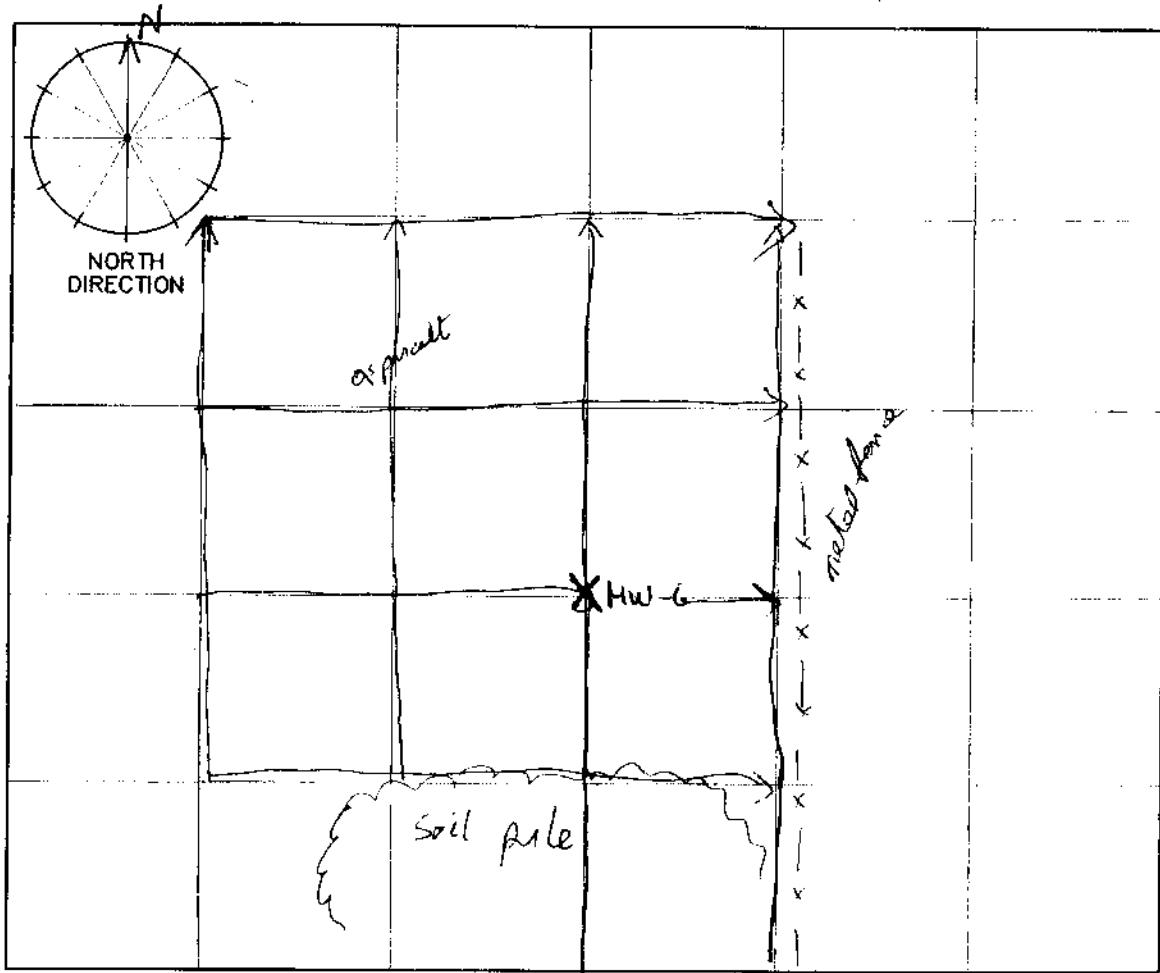
x unidentified buried object

DATE: 08/10/2010

HR PROJECT # 09 JCC 63

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT Woodhaven Blvd, Queens, NY



LOCATION ID

MW-6

SCALE

1" = 5'

SITE NAME Woodhaven Blvd

CLIENT CO HDR

CLIENT REP. Scott Engler

H-R REP. JCC + AH

WEATHER Sunny 95F

UTILITY PLANS REC. YES NO

NOTES:

METHODS GPR + PUL

LEGEND

→ GPR trace

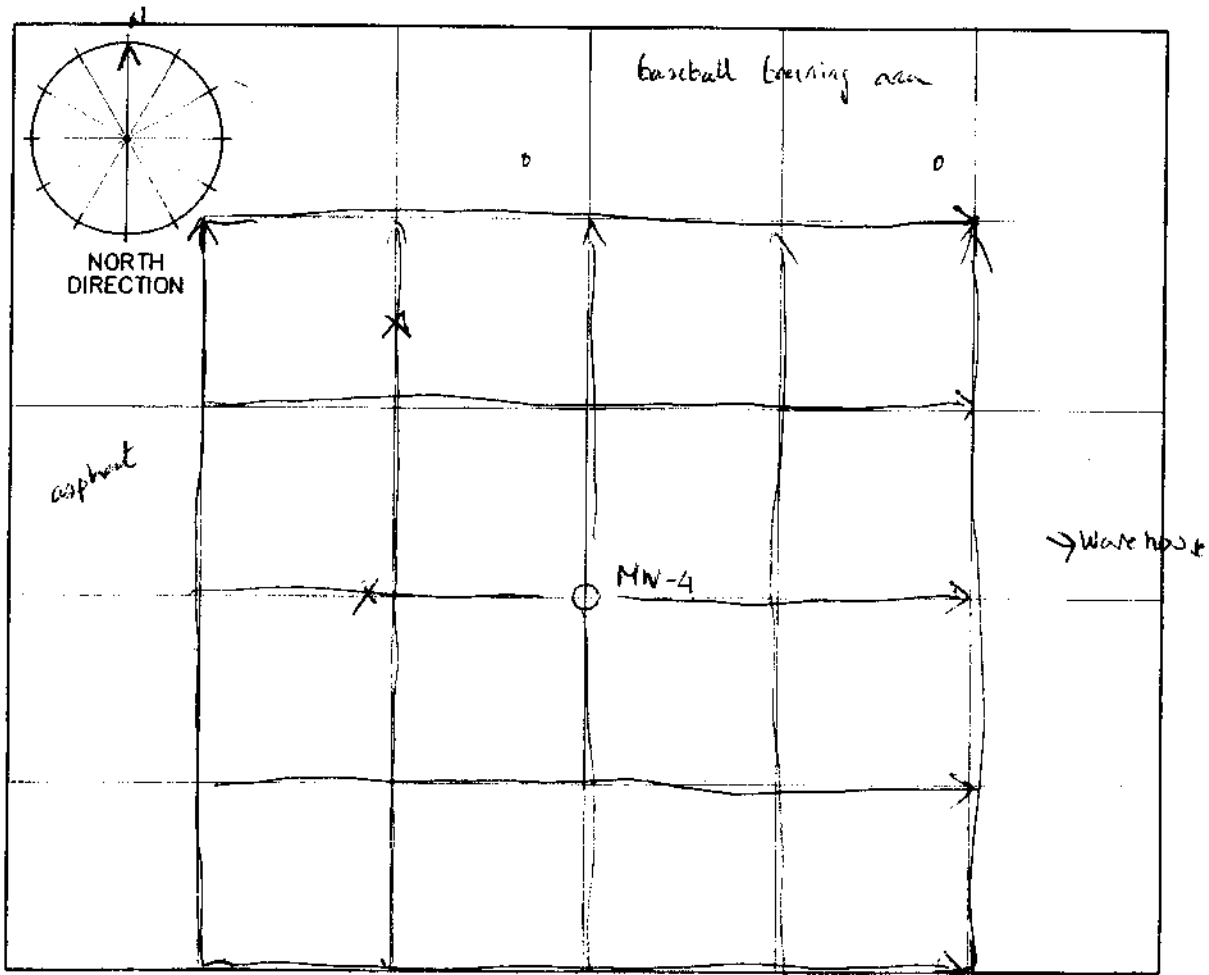
x unidentified buried object

DATE: 08/10/2010

HR PROJECT # 09/CC63

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT Woodhaven Blvd, Queens, NY



LOCATION ID

SCALE

1" = 5'

SITE NAME Woodhaven Blvd

CLIENT CO. HDR

CLIENT REP. Scott Englert

H-R REP. JCC + AH

WEATHER Sunny 95F

UTILITY PLANS REC. YES NO

NOTES:

METHODS GPR + PUL

LEGEND

→ GPR Line

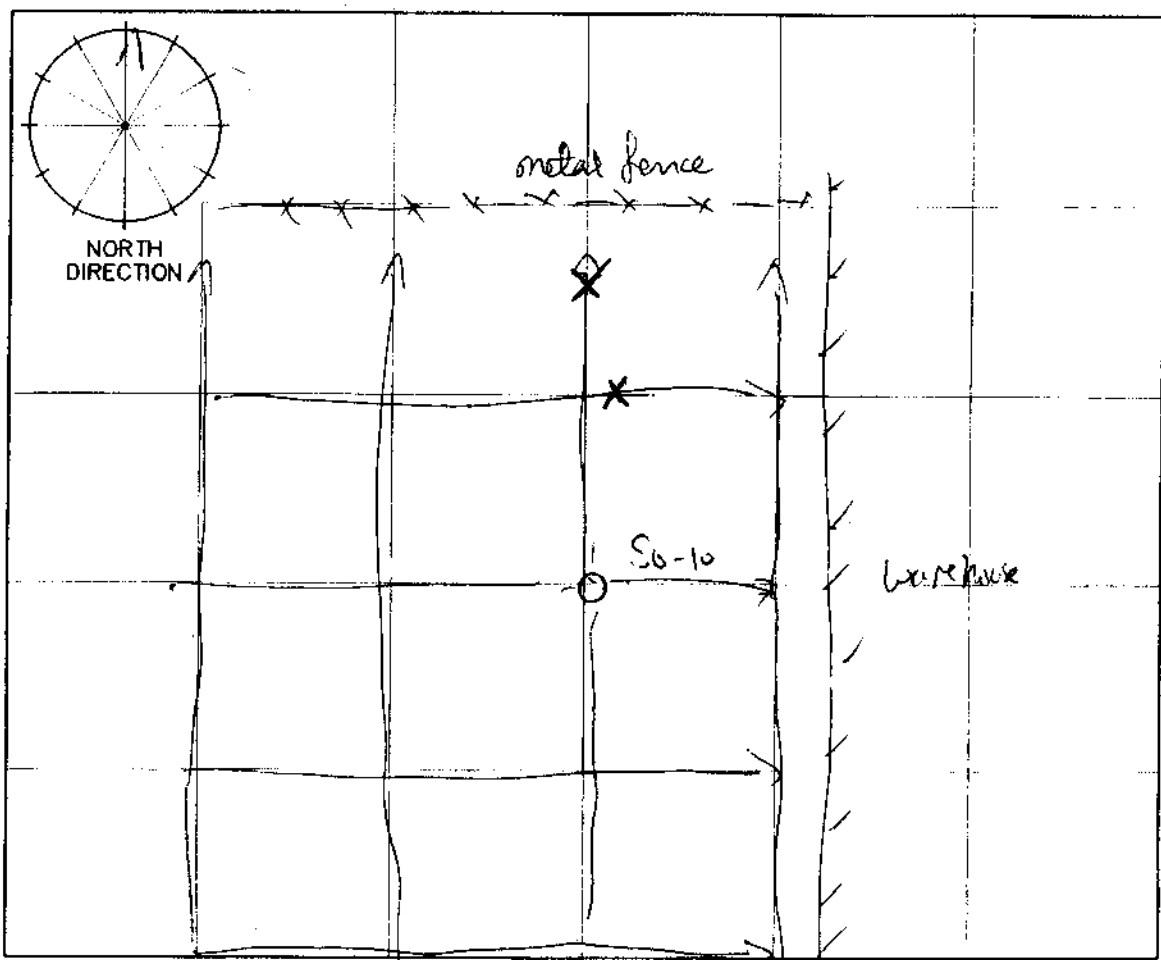
X unidentified buried object

DATE: 08/10/2010

HR PROJECT # 09JCC63

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT Woodhaven Blvd, Queens, NY



LOCATION ID
SC-10

SCALE
1" = 5'

SITE NAME Woodhaven Blvd

CLIENT CO. HDR

CLIENT REP. Scott Engler

H-R REP. JCC + AH

WEATHER Sunny 95F

UTILITY PLANS REC. YES NO

NOTES:

METHODS GPR + PUL

LEGEND

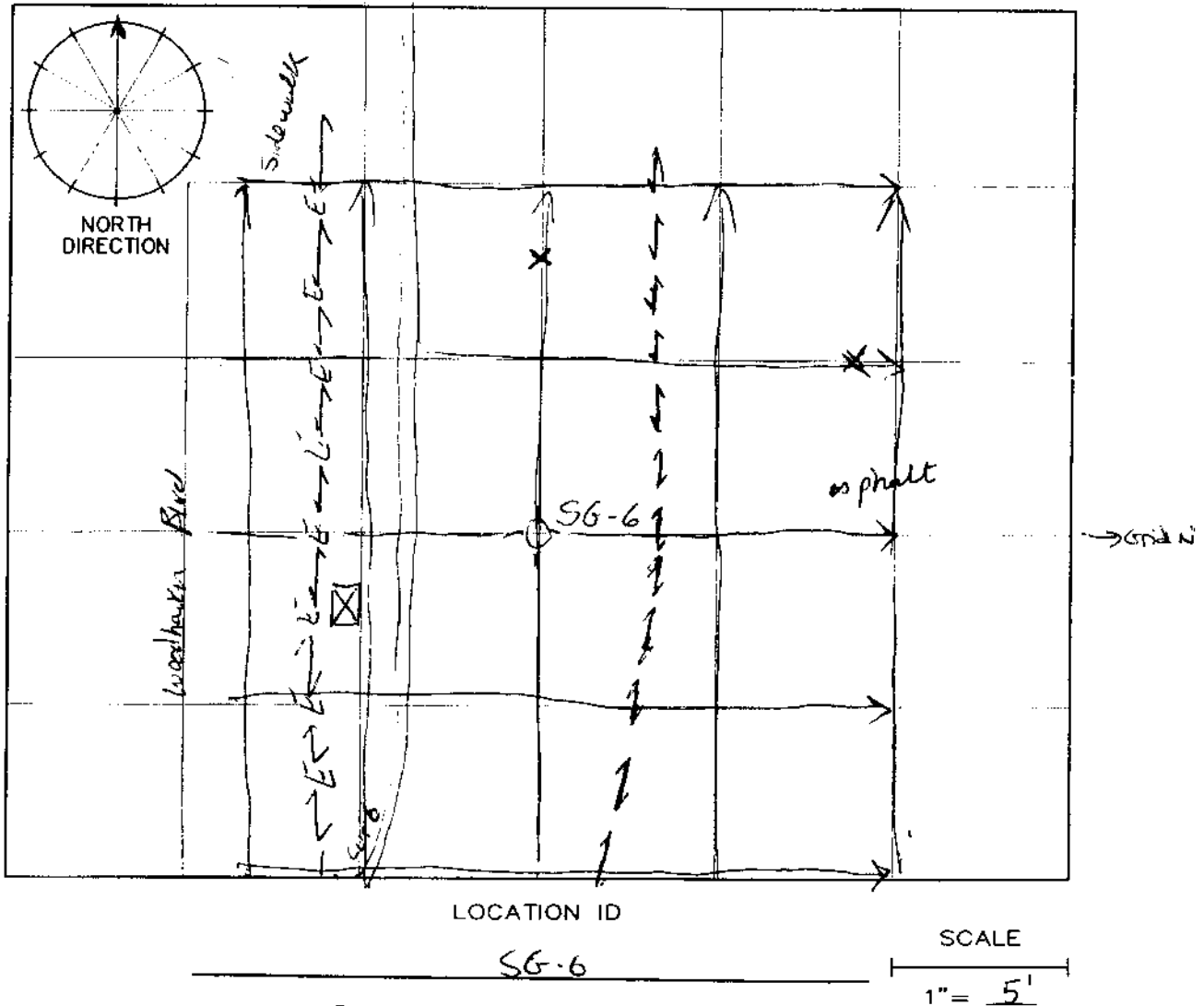
→ GPR line
X unidentified buried object

DATE: 9/10/2010

HR PROJECT # 09 JCC 63

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT Woodhaven^{Blvd}, Queens, NY



SITE NAME Woodhaven Blvd

CLIENT CO. HDR

CLIENT REP. Scott Englert

H-R REP. JCC + AH

WEATHER Sunny 95F

UTILITY PLANS REC. YES NO

NOTES:

METHODS GPR + PUL

LEGEND

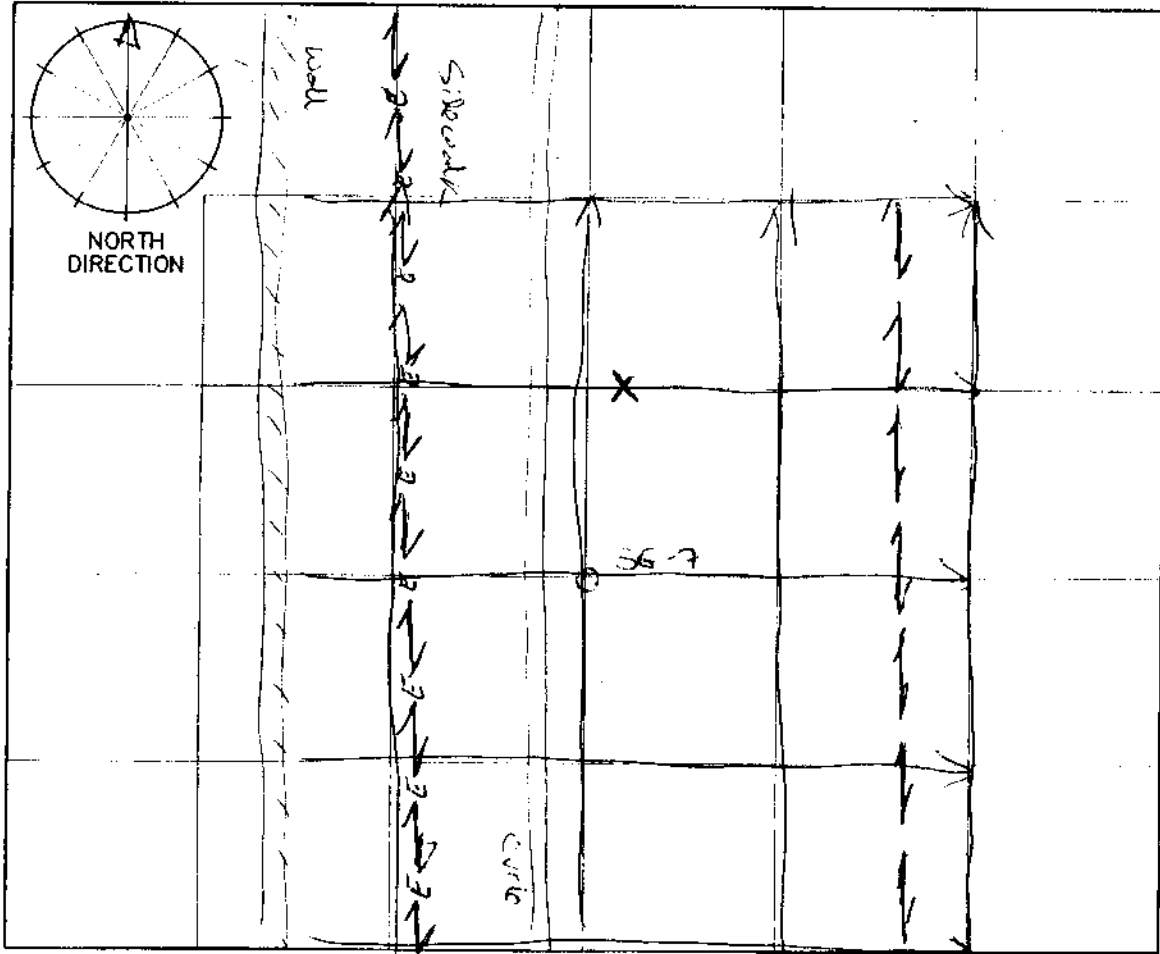
- GPR line
- ↔ Possible utility
- ⊠ Light pole
- ↔E↔ Electric utility (marked by others)
- ⊕ proposed boring location (confirmed by H-R)

DATE: 8/10/2010

HR PROJECT # 09 JCC63

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT Woolharen Blvd Queens NY



LOCATION ID

SG-7

SCALE

1" = 5'

SITE NAME Woolharen Blvd

CLIENT CO. HPR

CLIENT REP. Scott Engert

H-R REP. JCC + AH

WEATHER Sunny 95F

UTILITY PLANS REC. YES NO

NOTES:

METHODS GPR + PUL

LEGEND

→ GPR line

↔ electric utility

↔ Possible utility

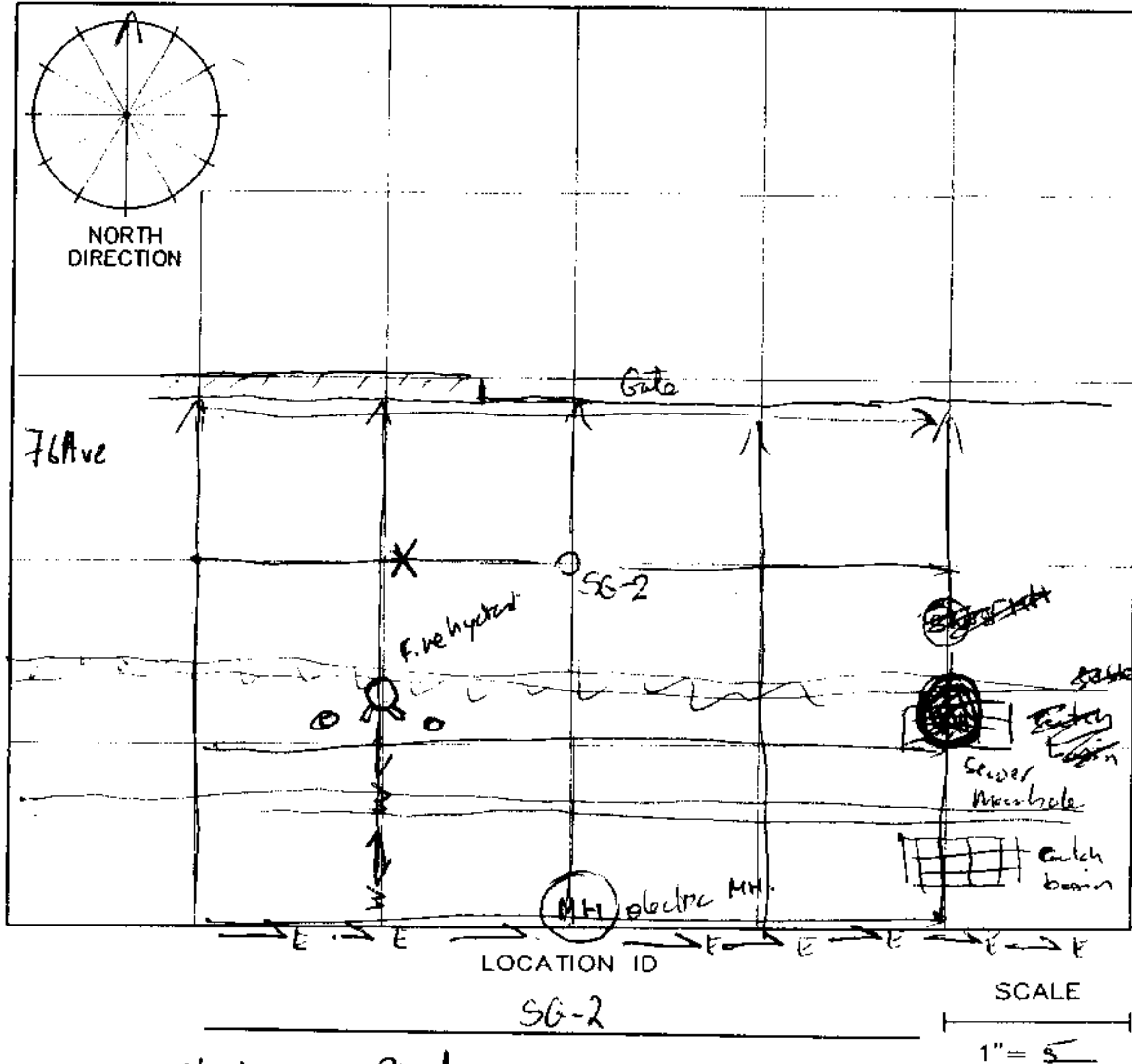
X unidentified buried object

DATE: 8/10/2010

HR PROJECT # 09 JCC 63

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT Woodhaven Blvd, Queens NY



SITE NAME Woodhaven Blvd

CLIENT CO. HDR

CLIENT REP. Scott Expert

H-R REP. JCC A+I

WEATHER Sunny 95F

UTILITY PLANS REC. YES NO

NOTES:

METHODS GPR-PUL

LEGEND

→ GPR Line

→ E → Electric utility

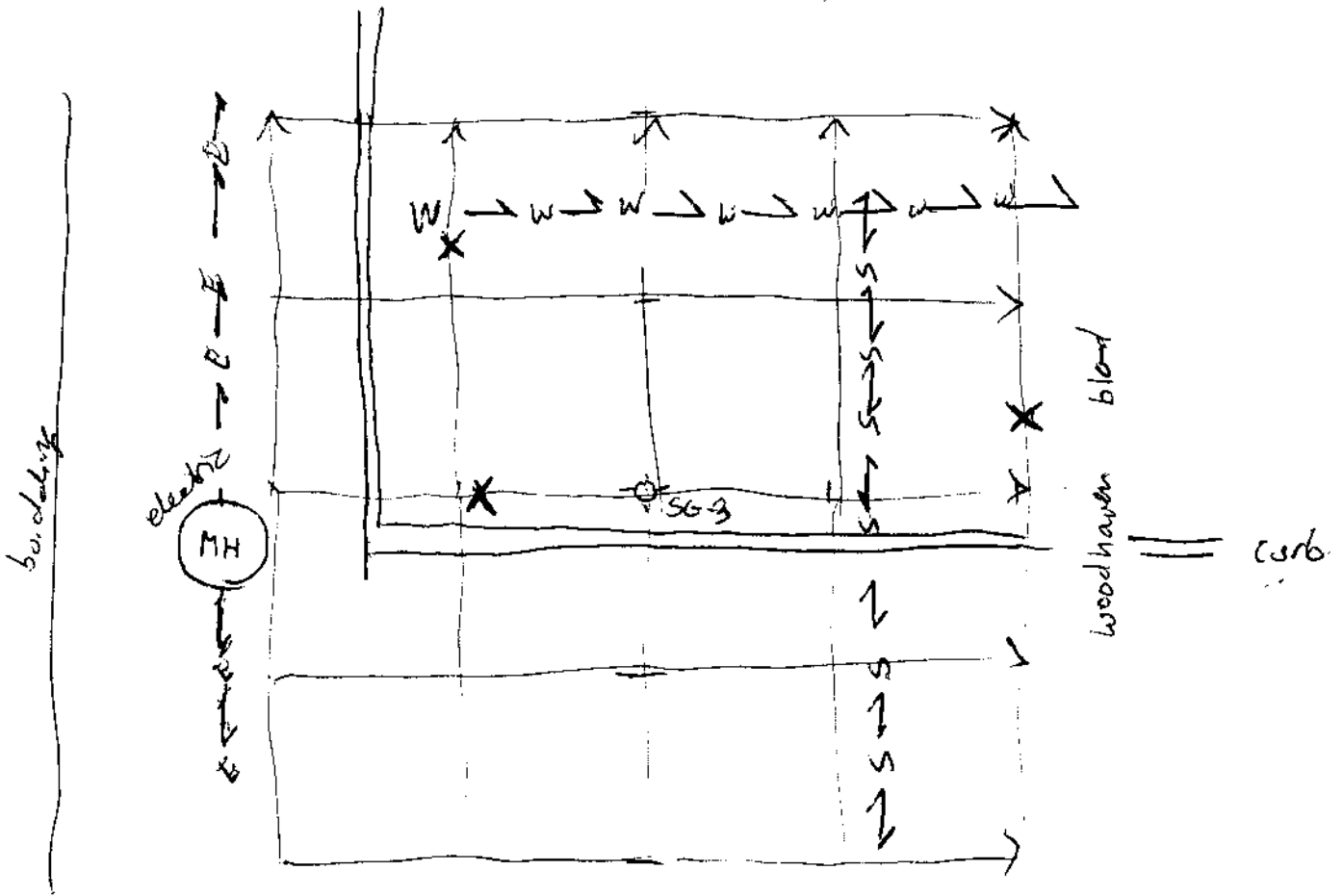
→ W → Water utility

X unidentified buried object

08-10-2010

HR Project * 093063

HR Project Woodhaven Blvd, Queens NY



location ID: GG-3

Scale 1" = 5ft

Site name: Woodhaven Blvd
 Client Co: HDR
 Client Rep: Scott Enders
 HR-Rep: JCC + AM
 Weather: Sunny 95F

Methods GPR + PUL

Legend

- GPR line
- W → W → Water utility
- E → E Electric utility (marked by other confirmed by H.R.)
- S → S - Sewer line (approximate location, not seen with GPR, PUL) based on direction observed in manhole

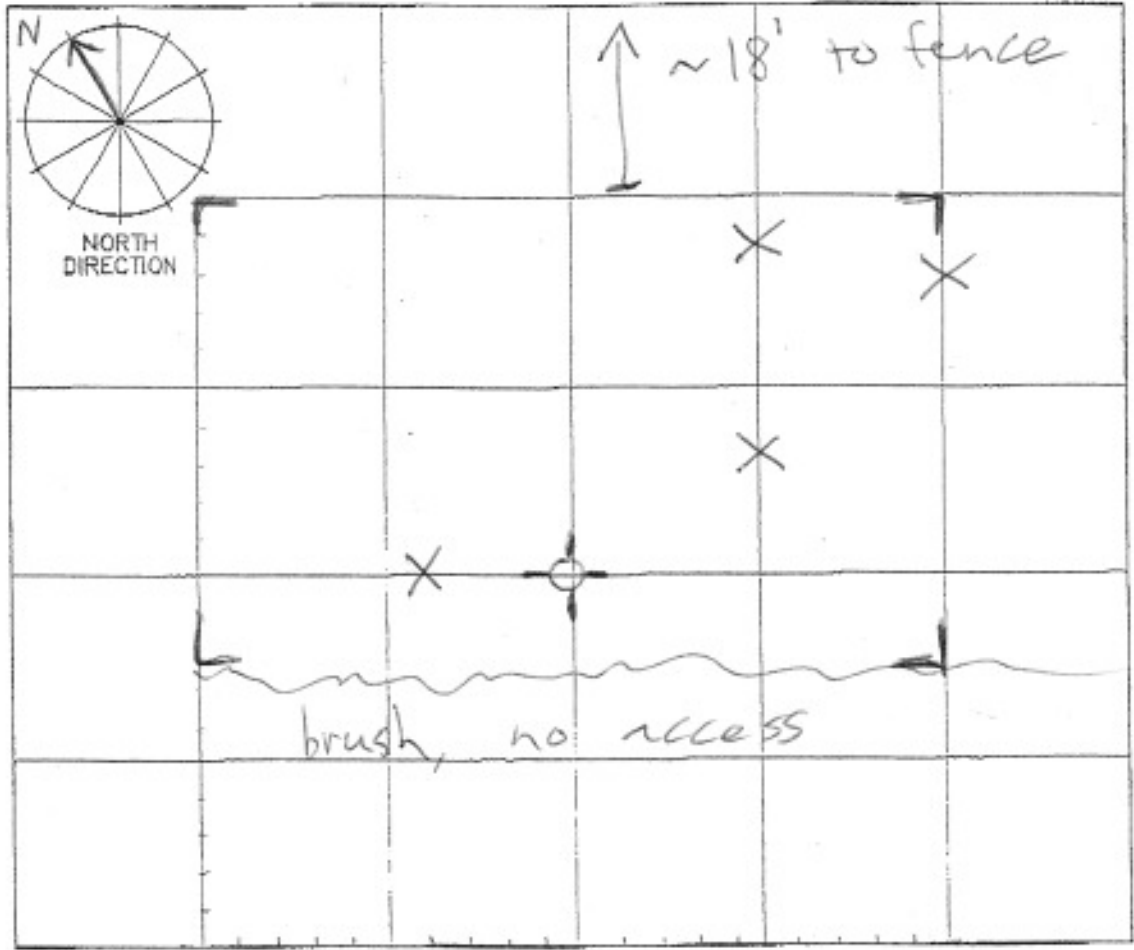
2011 DATA/ LOGS

DATE: 9/29/2011

HR PROJECT # 11JCC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

MW5D

SCALE

1" = 5'

SITE NAME Woodhaven Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM + MA

WEATHER cloudy

LEGEND

- ⊕ proposed boring location
- X unidentified buried object
- ↔ possible utility

UTILITY PLANS REC. YES NO

NOTES:

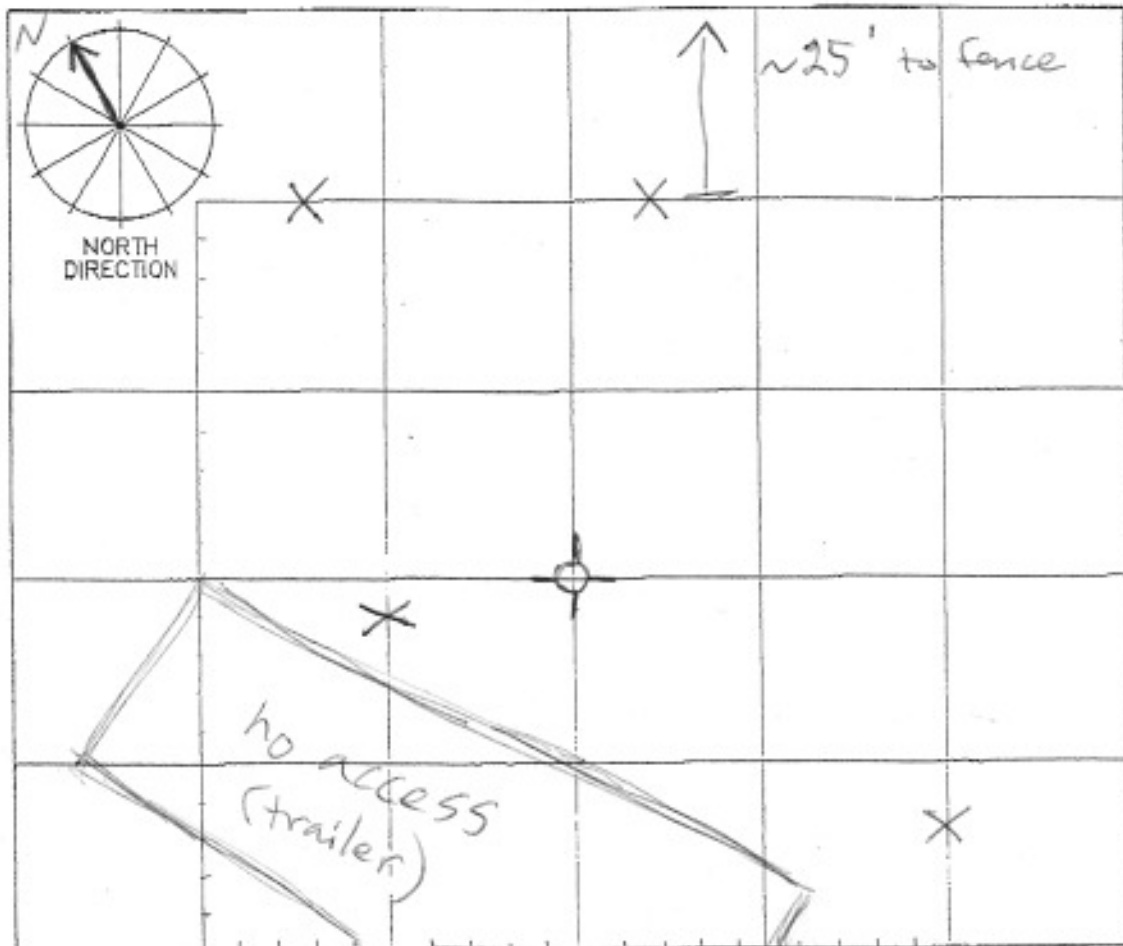
- GPR signal penetration is approximately 2-3 feet below ground surface

DATE: 9/29/2011

HR PROJECT # 11JCC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Quincy, NY



LOCATION ID

MW 5 S

SCALE

1" = 5'

SITE NAME Woodhaven Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM + MA

WEATHER cloudy

LEGEND

- ⊕ proposed boring location
- X unidentified buried object
- ↔ possible utility

UTILITY PLANS REC. YES NO

NOTES:

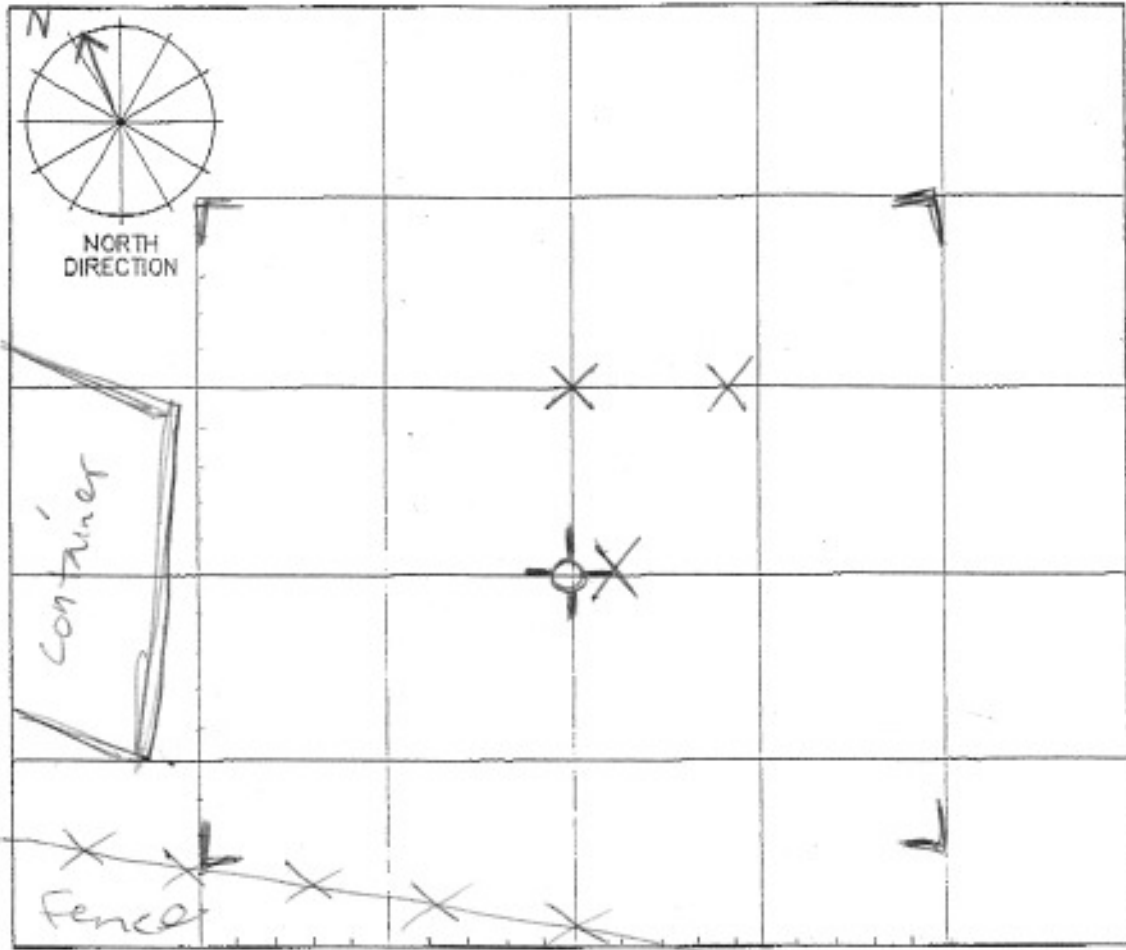
- GPR signal penetration is approximately 2.5-3.5 feet below ground surface

DATE: 2/29/2011

HR PROJECT # 11JCC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID
MW 65

SCALE
1" = 5'

SITE NAME Woodhaven Blvd.

CLIENT CO. NDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM + MA

WEATHER cloudy

UTILITY PLANS REC. YES NO

LEGEND
 ⊕ proposed boring location
 X unidentified buried object
 ↗ ↘ possible utility

NOTES:

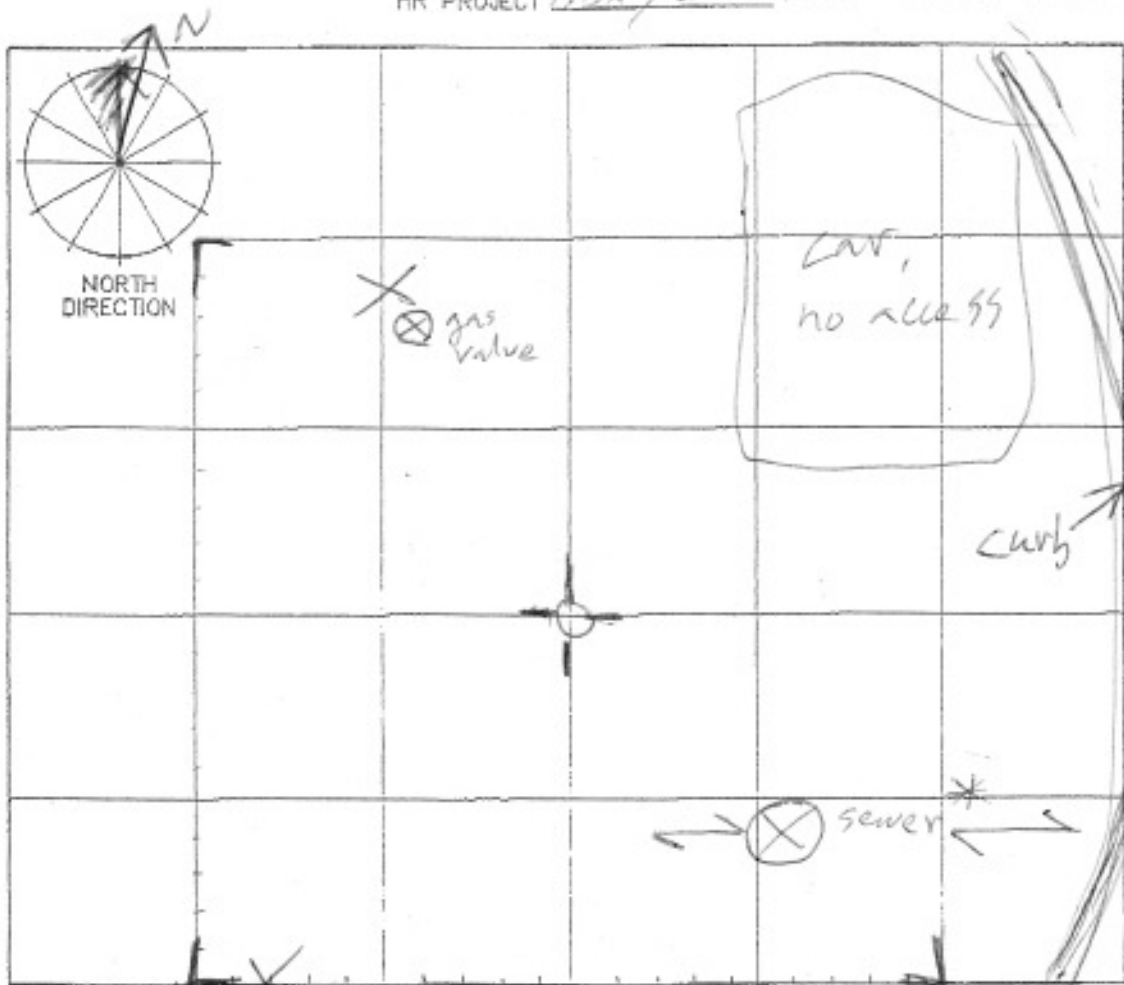
- GPR signal penetration is approximately 2-3 feet below ground surface

DATE: 7/30/2014

HR PROJECT # 1130046

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

MW 7D

SCALE

1" = 5'

SITE NAME Woodhull Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM + MA

WEATHER cloudy

LEGEND

⊕ proposed boring location

X unidentified buried object

↔ possible utility

NOTES:

- GPR signal penetration is approximately 2-2.5 feet below ground surface

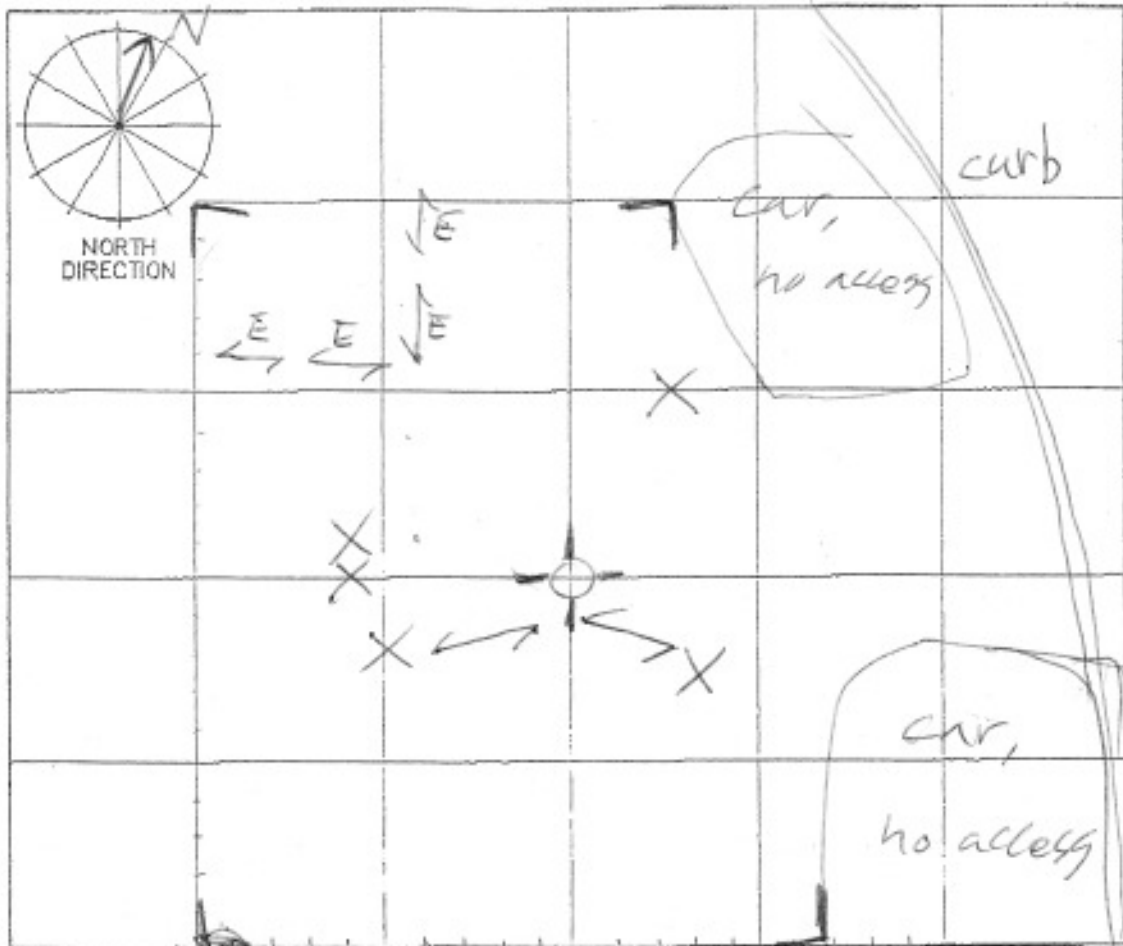
* sewer line based on visual inspection

DATE: 7/30/2011

HR PROJECT # 11JCC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

MW 75

SCALE

1" = 5'

SITE NAME Woodhull Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM + MA

WEATHER cloudy

LEGEND

⊕ proposed boring location

X unidentified buried object

↔ possible utility

UTILITY PLANS REC. YES NO

NOTES:

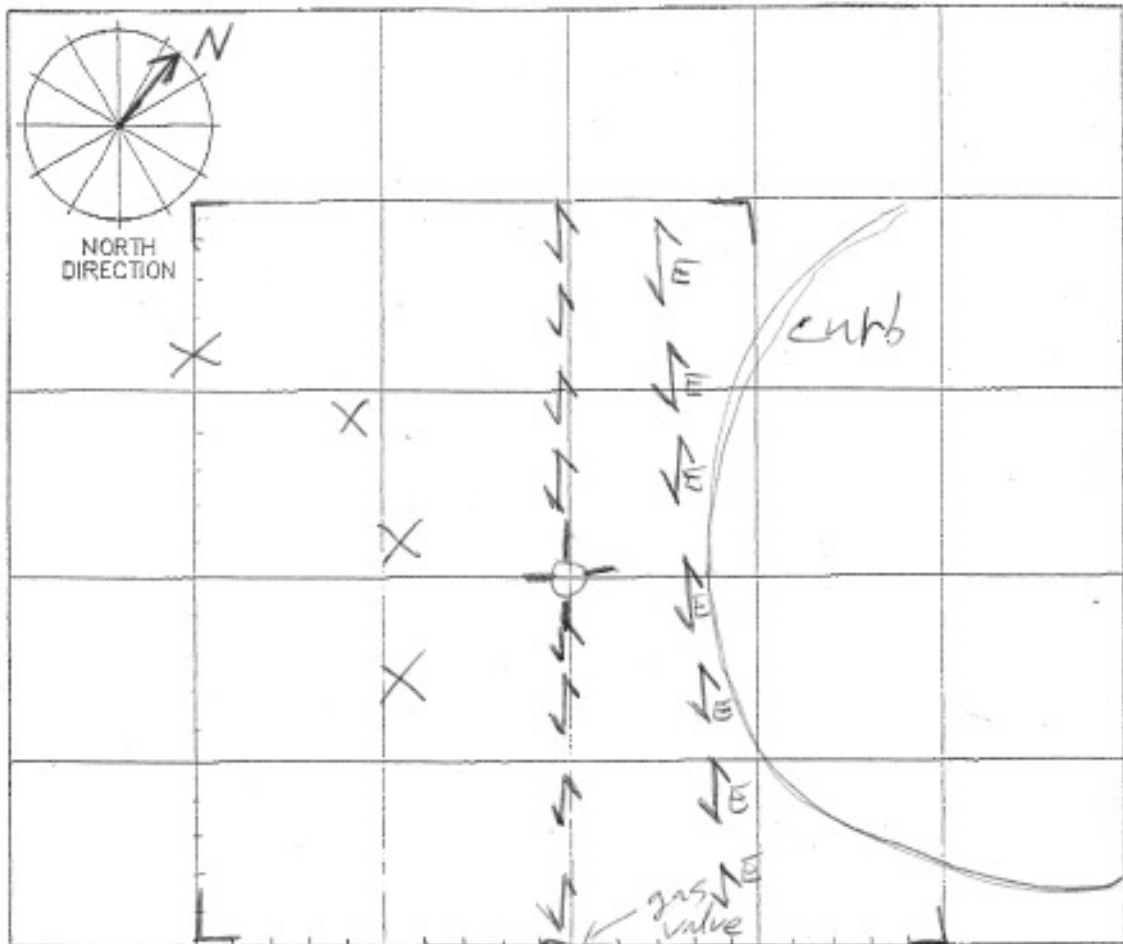
- GPR signal penetration is approximately 2-2.5 feet below ground surface

DATE: 9/30/2011

HR PROJECT # 11JCC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Bussers, NY



LOCATION ID

MW 71

SCALE

1" = 5'

SITE NAME Woodhaven Blvd.

CLIENT CO. HDR

CLIENT REP. Ed Brandt

H-R REP. AM + MA

WEATHER cloudy

UTILITY PLANS REC. YES NO

METHODS GPR

PUL

LEGEND

- proposed boring location
- unidentified buried object
- possible utility

NOTES:

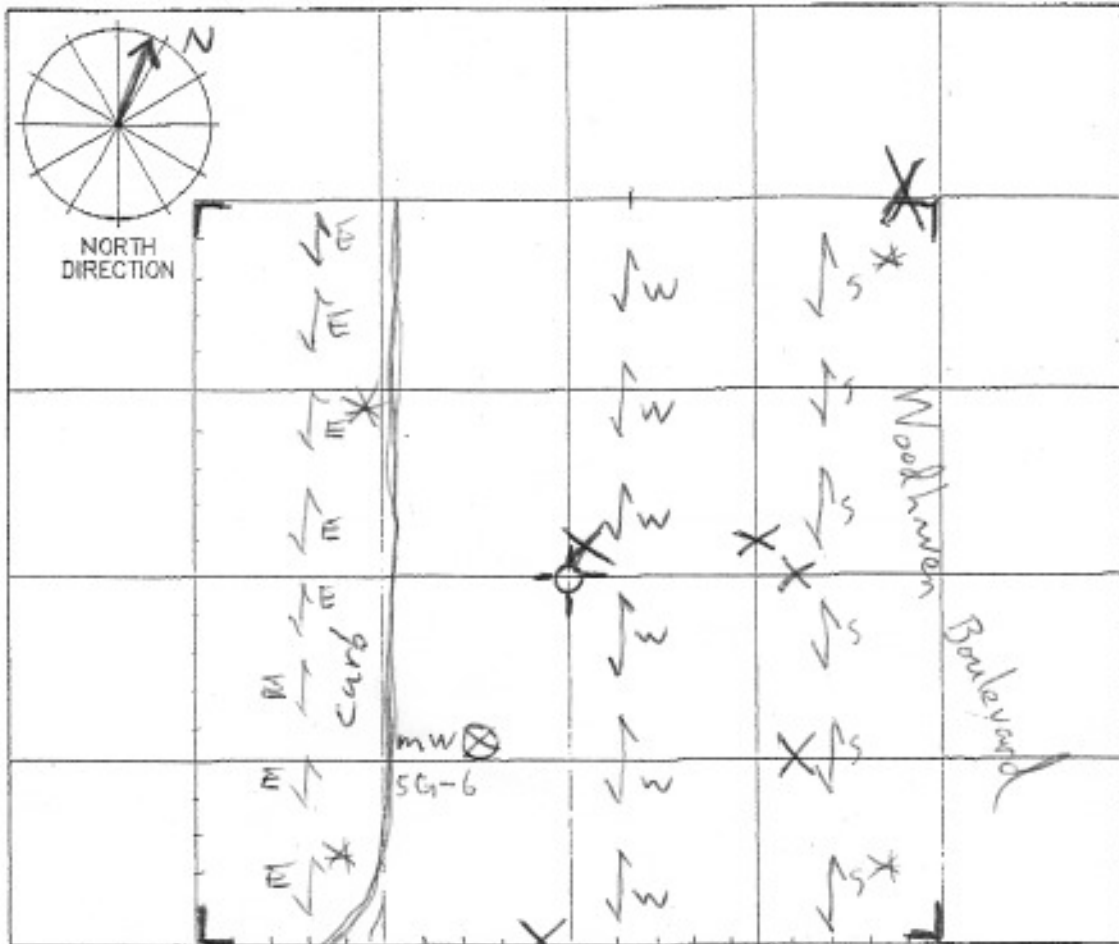
- GPR signal penetration is approximately 2-2.5 feet below ground surface

DATE: 9/29/2011

HR PROJECT # 11JCC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



79th Ave

LOCATION ID

MW 8S

SCALE

1" = 5'

SITE NAME Woodhewer Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM + MA

WEATHER cloudy

UTILITY PLANS REC. YES NO

LEGEND

- \oplus proposed boring location
- \times unidentified buried object
- \rightarrow possible utility

NOTES:

- GPR signal penetration is approximately 2 feet below ground surface

* sewer line based only on manhole alignment

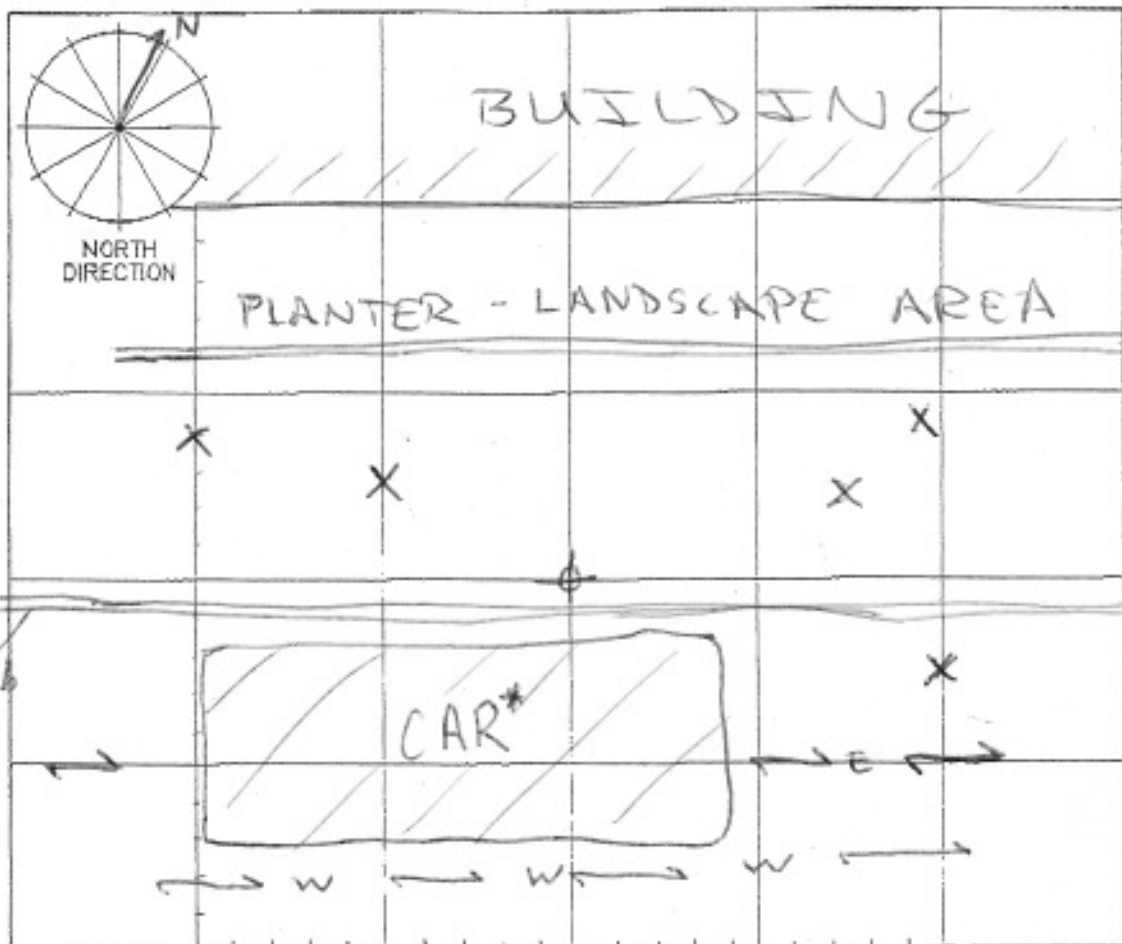
* electric line marked by others

DATE: 9-30-11

HR PROJECT # 1170046

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

3614

SCALE

1" = 5'

SITE NAME Woodhull Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM+MA

WEATHER Sunny

UTILITY PLANS REC. YES NO

NOTES:

- GPR signal penetration is approximately 2-3 feet below ground surface

* Survey lines were run at the location of the car after it moved.

LEGEND

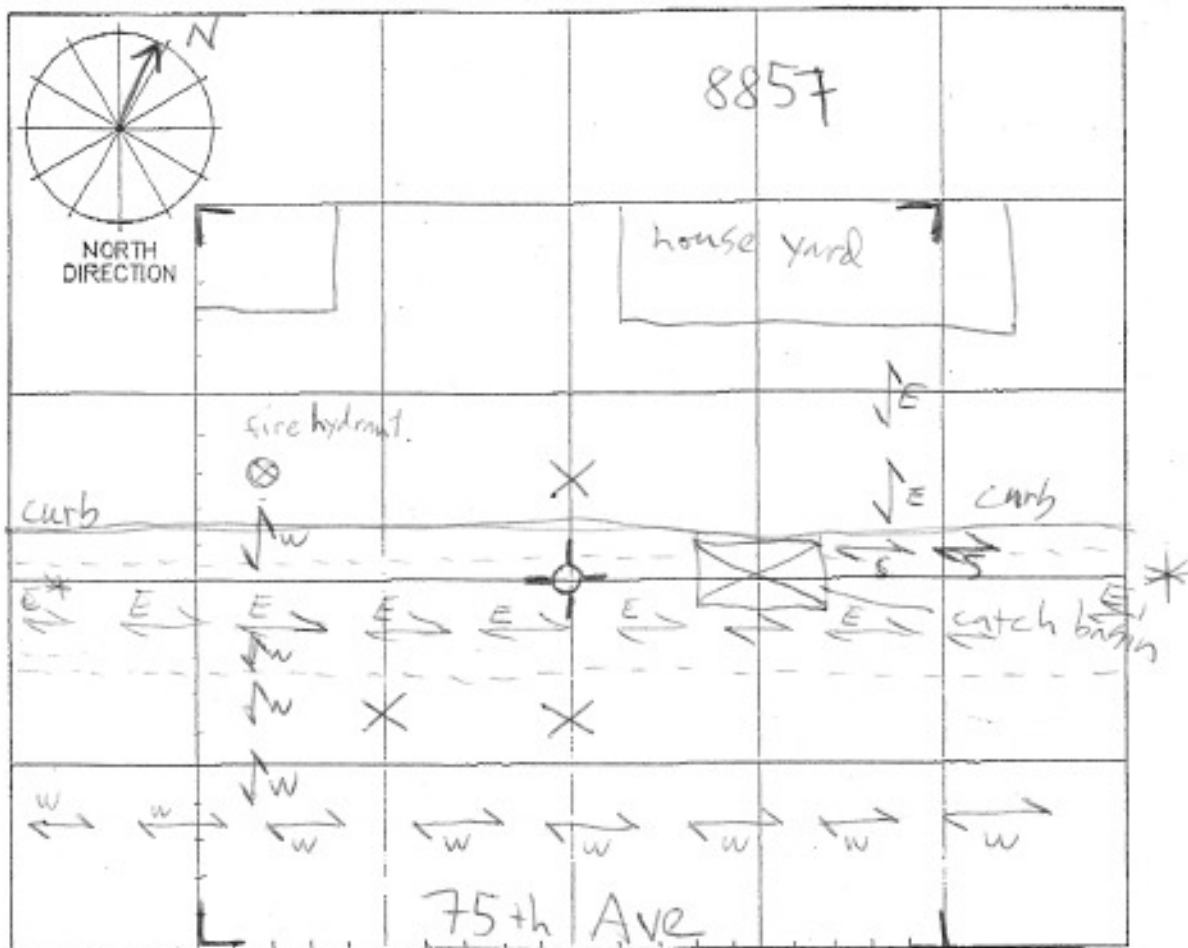
- ⊕ proposed boring location
- X unidentified buried object
- E → possible utility (electric)
- W → possible utility (water)

DATE: 9/30/2011

HR PROJECT # 117CC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

SG15

SCALE

1" = 5'

SITE NAME Woodhewer Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM + MA

WEATHER Sunny

UTILITY PLANS REC. YES (NO)

LEGEND

- ⊕ proposed boring location
- X unidentified buried object
- ↔ possible utility

NOTES:

- GPR signal penetration is approximately 2-3 feet below ground surface

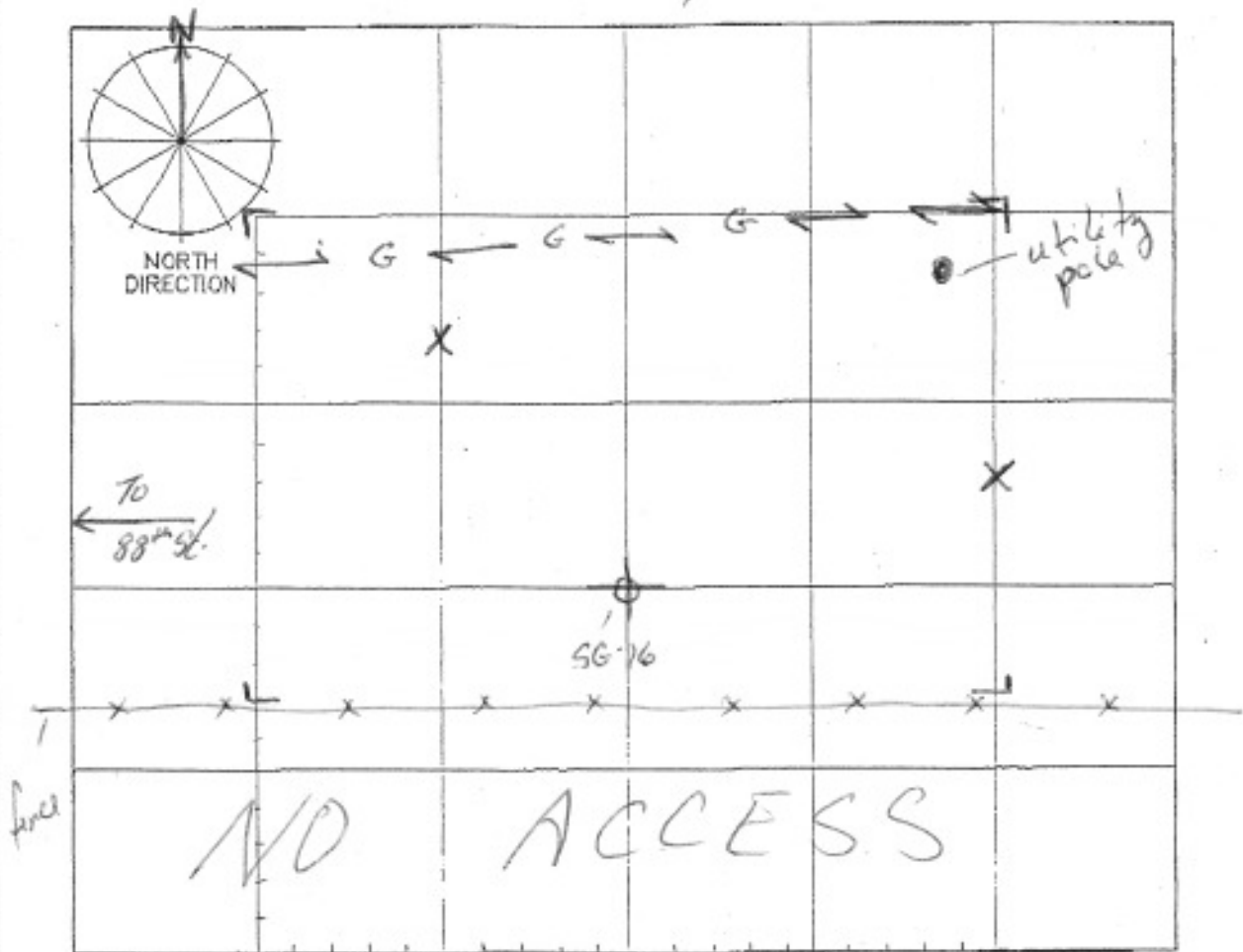
* utility channel 4' wide, marked by others

DATE: 9-30-11

HR PROJECT # 1170046

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

SG-16

SCALE

1" = 5'

SITE NAME Woodhewn Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM+MA

WEATHER Sunny

LEGEND

- ⊕ proposed boring location
- X unidentified buried object
- ↔ possible utility (Gas)

UTILITY PLANS REC. YES

NOTES:

* GPR signal penetration is approximately 2-2.5 feet below ground surface

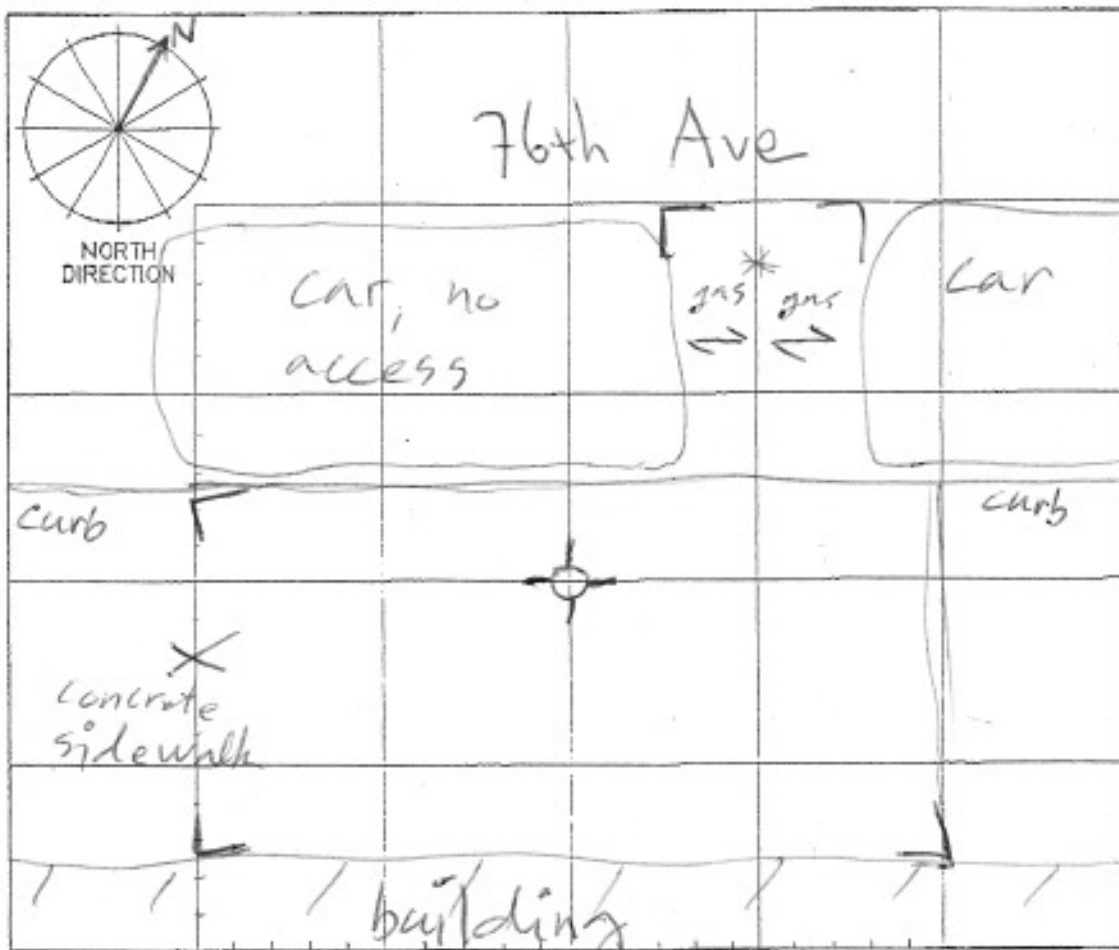
* area of interest is mostly grass/soil at surface & some asphalt (in street)

DATE: 9-30-11

HR PROJECT # 11JCC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

3G-17

SCALE

1" = 5'

SITE NAME Woodhaven Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM+MA

WEATHER Sunny

LEGEND

⊕ proposed boring location

UTILITY PLANS REC. YES

X unidentified buried object

↔ ↔ possible utility

NOTES:

- GPR signal penetration is approximately 1.5-2 feet below ground surface

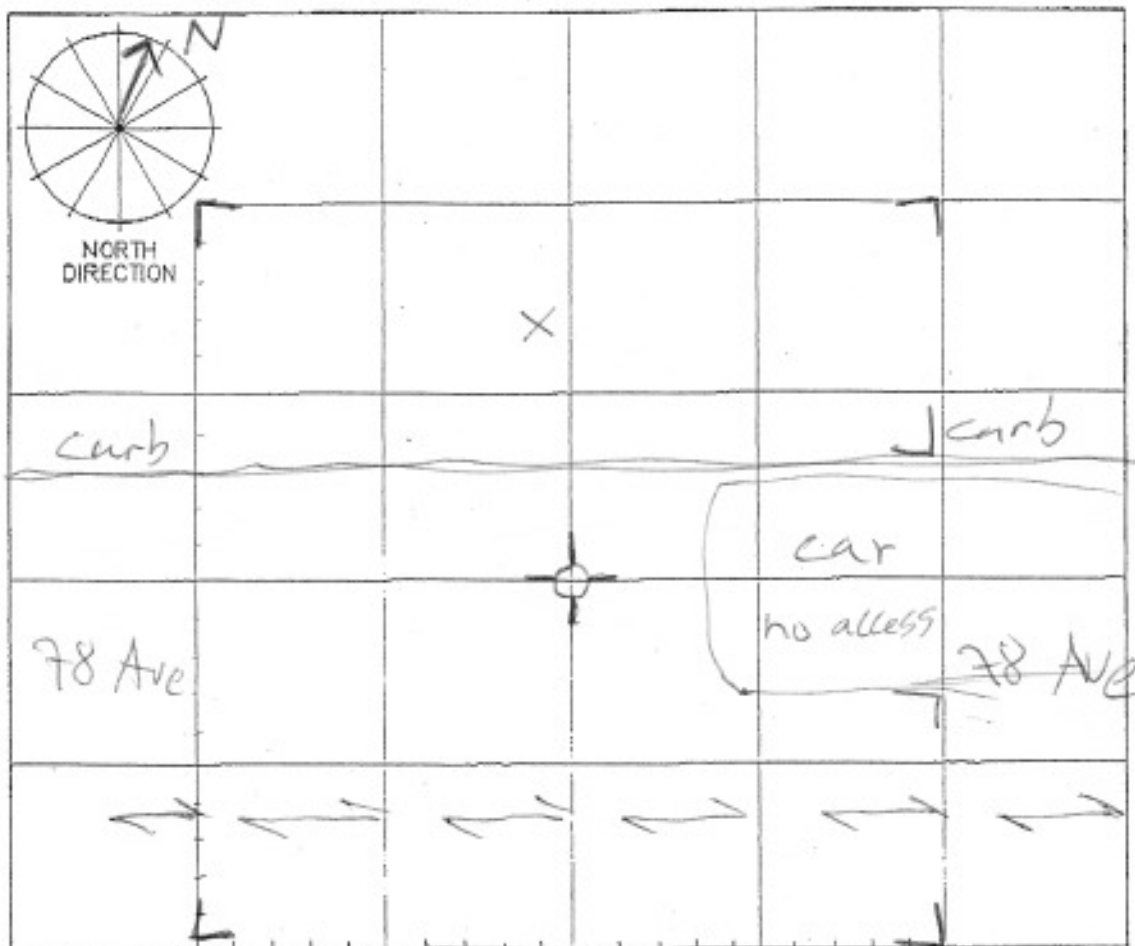
* gas line marked by others

DATE: 9/29/2011

HR PROJECT # 11JCC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

SG18

SCALE

1" = 5'

SITE NAME Woodhaven Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM + MA

WEATHER cloudy

LEGEND

- \oplus proposed boring location
- \times unidentified buried object
- \rightarrow possible utility

UTILITY PLANS REC. YES NO

NOTES:

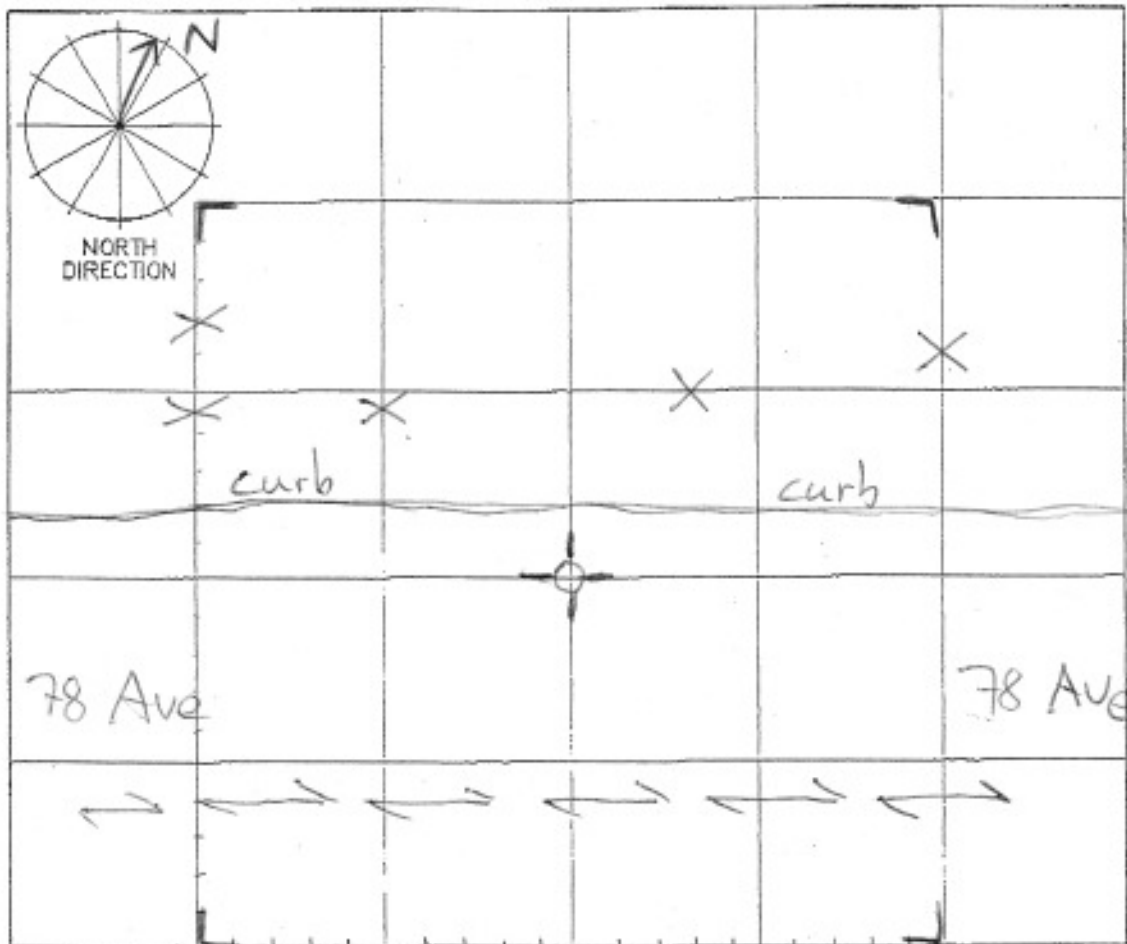
- GPR signal penetration is approximately 2 feet below ground surface

DATE: 9/29/2011

HR PROJECT # 11JCC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

SG 19

SCALE

1" = 5'

SITE NAME Woodhewer Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM + MA

WEATHER cloudy

LEGEND

- \oplus proposed boring location
- \times unidentified buried object
- \rightarrow possible utility

UTILITY PLANS REC. YES NO

NOTES:

- GPR signal penetration is approximately 2 feet below ground surface

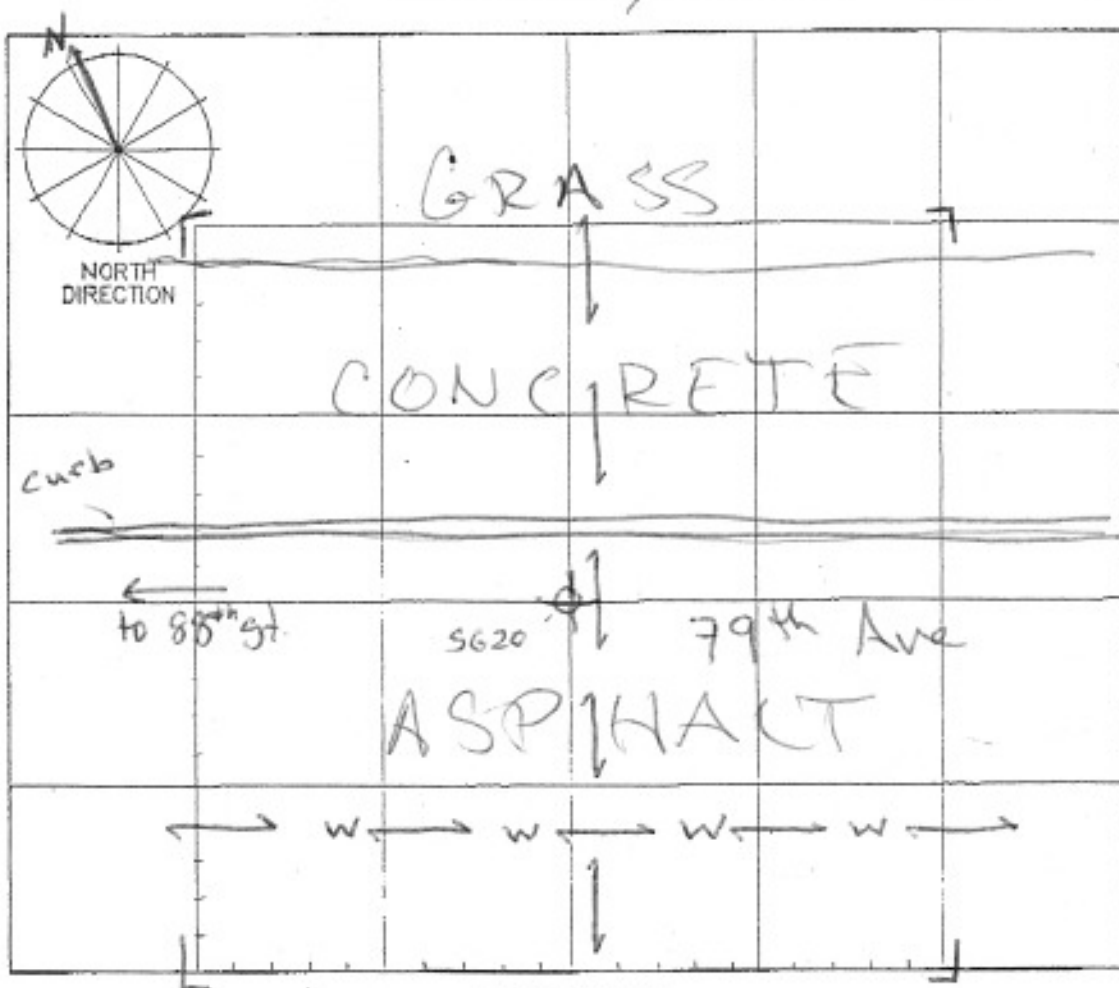
In front of 8823 78 Ave

DATE: 9-29-11

HR PROJECT # 11JCC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

56-20

SCALE

1" = 5'

SITE NAME Woodhaven Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM + MA

WEATHER cloudy/light rain

LEGEND

⊕ proposed boring location

UTILITY PLANS REC. YES NO

x unidentified buried object

↔ possible utility

↔ water utility

NOTES:

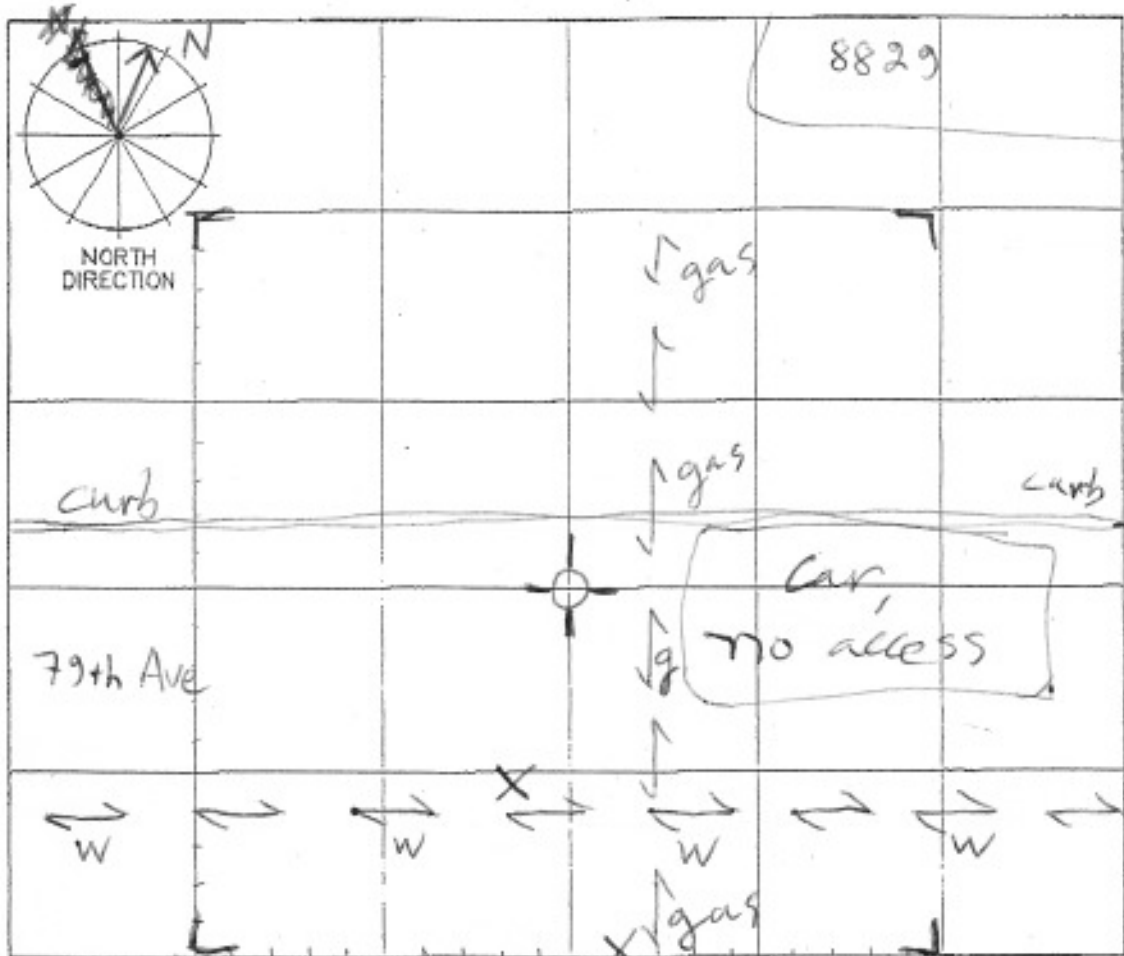
- GPR signal penetration is approximately 2-3.5 feet below ground surface

DATE: 9-29-11

HR PROJECT # 11JCC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

SG-21

SCALE

1" = 5'

SITE NAME Woodhewn Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM+MA

WEATHER cloudy / drizzle

LEGEND

- ⊕ proposed boring location
- X unidentified buried object
- ↔ possible utility

UTILITY PLANS REC. YES NO

NOTES:

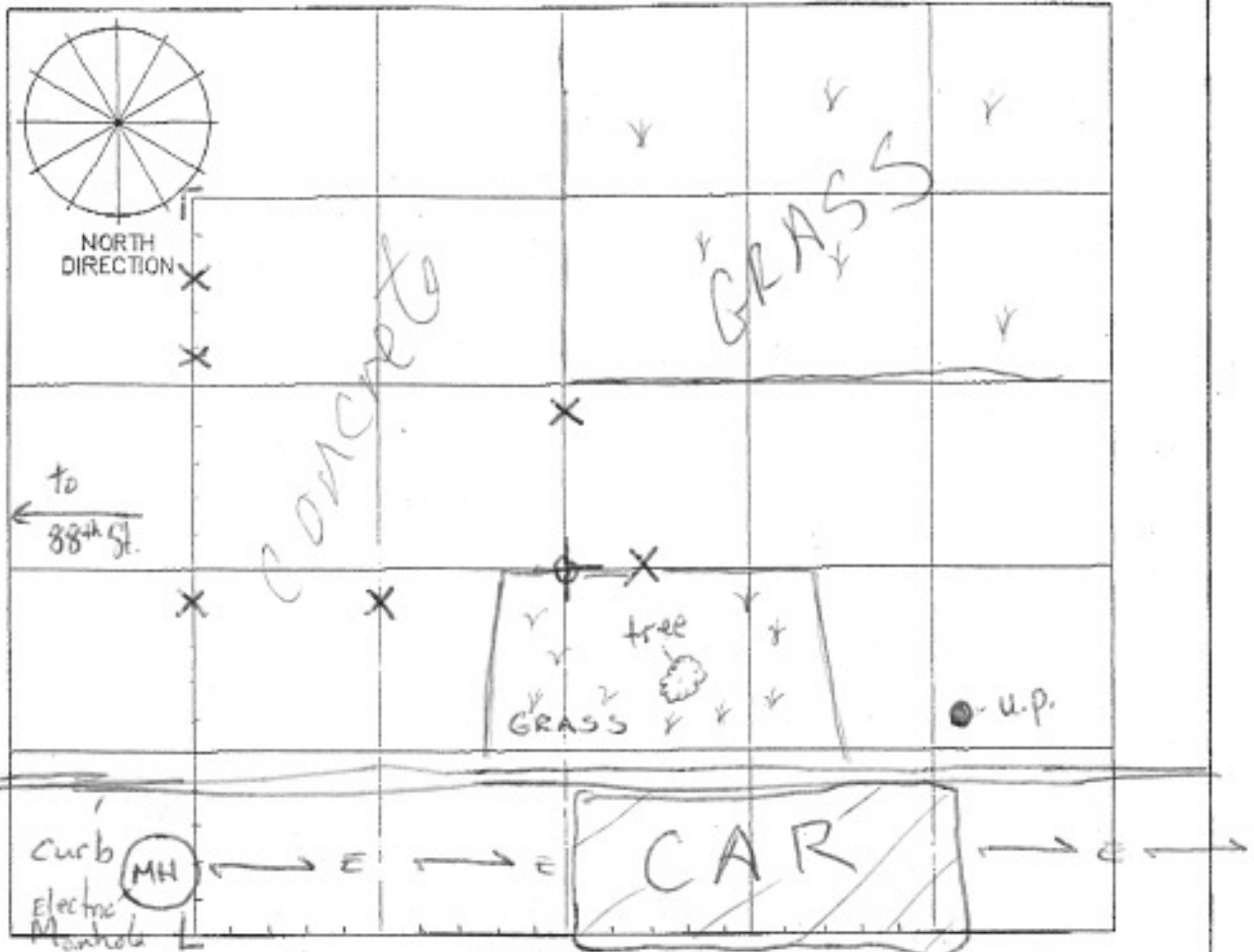
- GPR signal penetration is approximately 2-2.5 feet below ground surface

DATE: 9-30-11

HR PROJECT # 1170046

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

SG-22

SCALE

1" = 5'

SITE NAME Woodhewer Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM + MA

WEATHER Sunny

LEGEND

- ⊕ proposed boring location
- x unidentified buried object
- → possible utility

UTILITY PLANS REC. YES NO

NOTES:

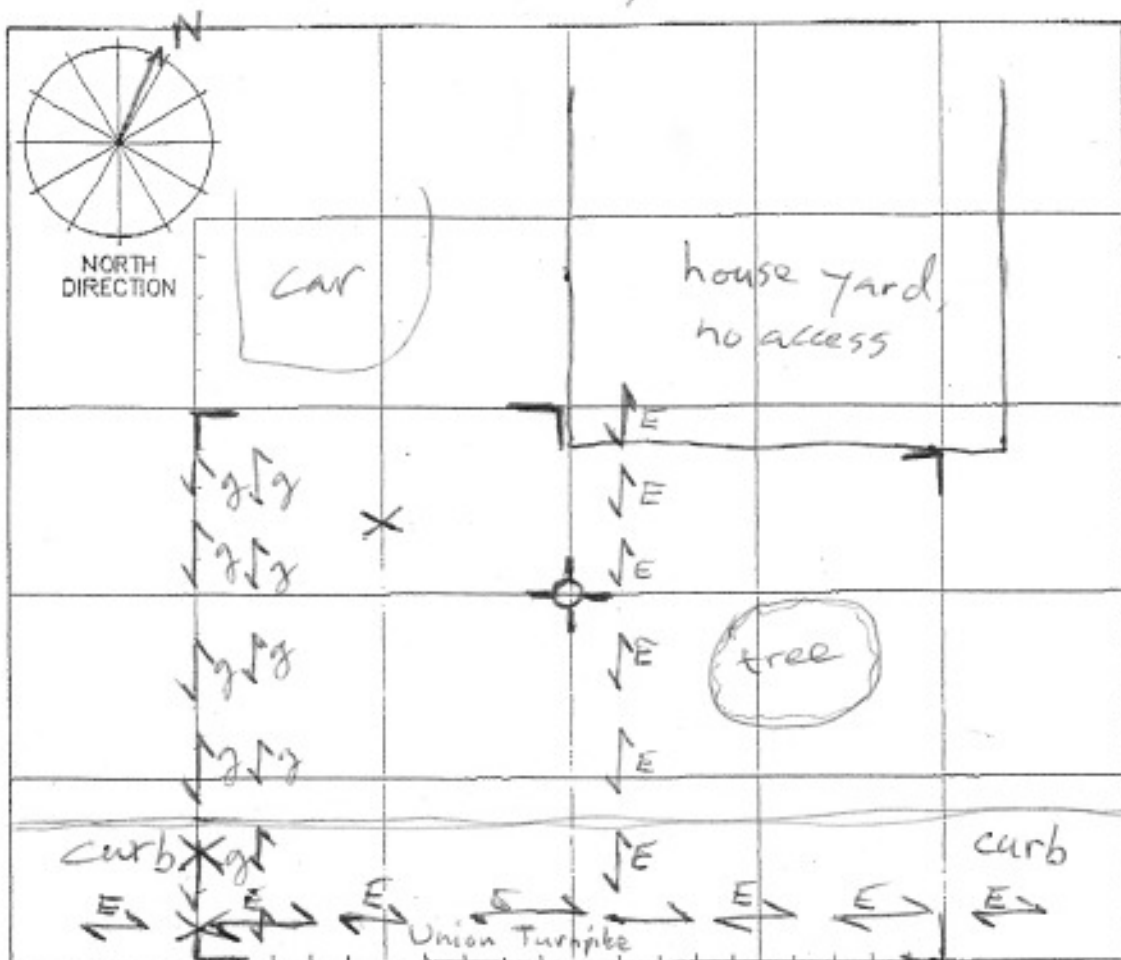
- GPR signal penetration is approximately 2-3.5 feet below ground surface

DATE: 9-30-11

HR PROJECT # 117CC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

SG-23

SCALE

1" = 5'

SITE NAME Woodhewer Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM + MA

WEATHER Sunny

LEGEND

- ⊕ proposed boring location
- x unidentified buried object
- ↔ possible utility

UTILITY PLANS REC. YES NO

NOTES:

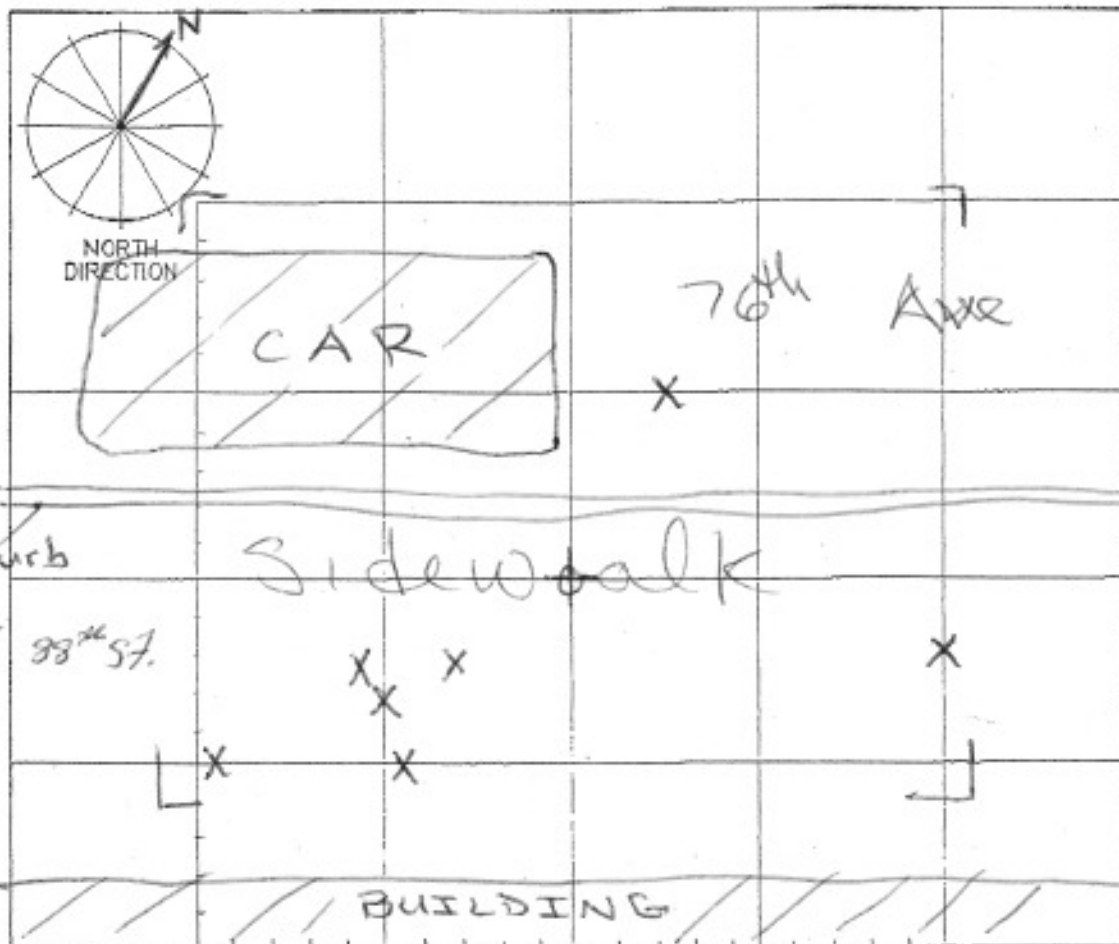
- GPR signal penetration is approximately 2-3 feet below ground surface

DATE: 9-30-11

HR PROJECT # 11JCC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

5624

SCALE

1" = 5'

SITE NAME Woodhaven Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM + MA

WEATHER _____

UTILITY PLANS REC. YES NO

NOTES:

- GPR signal penetration is approximately 1.5-2.5 feet below ground surface

LEGEND

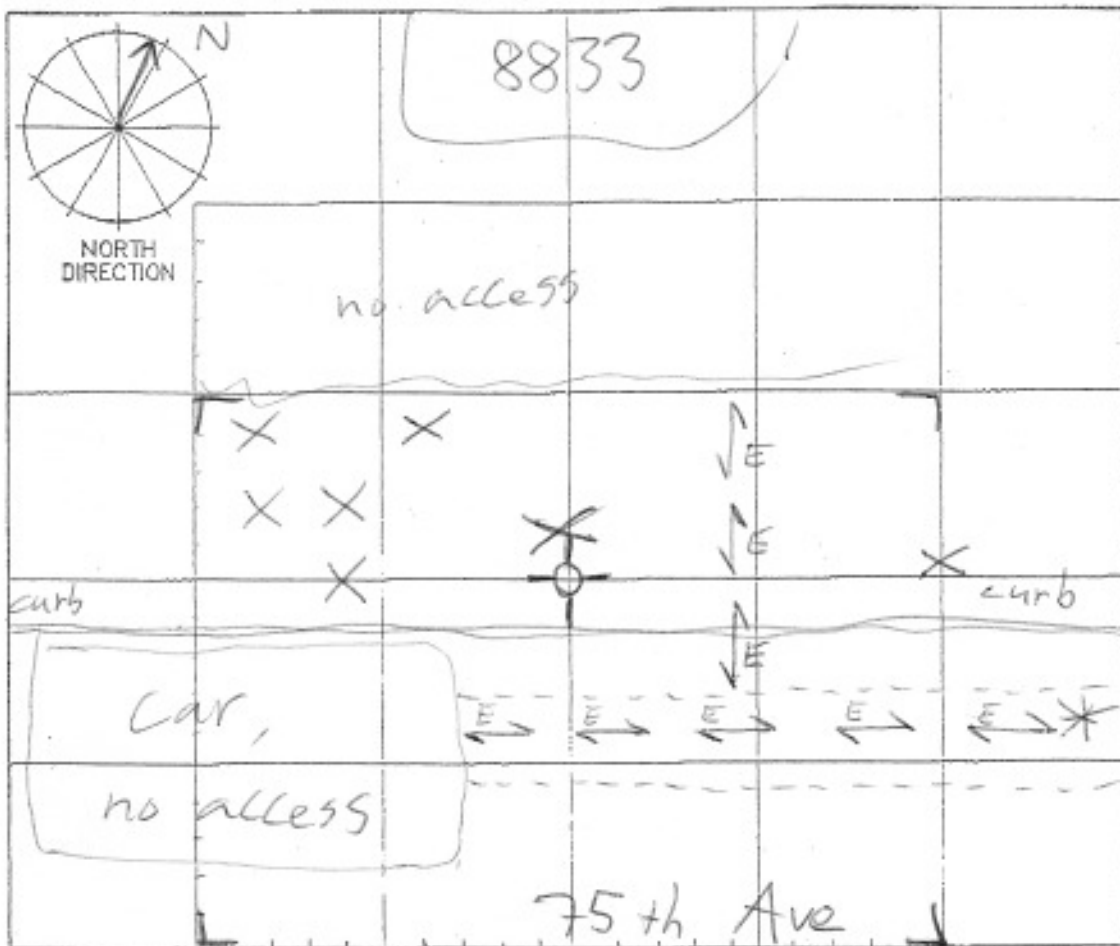
- ⊕ proposed boring location
- X unidentified buried object
- ↔ possible utility

DATE: 9/30/2011

HR PROJECT # 1170046

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

SG 25

SCALE

1" = 5'

SITE NAME Woodhull Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM+MA

WEATHER Sunny

UTILITY PLANS REC. YES NO

LEGEND

- proposed boring location
- unidentified buried object
- possible utility

NOTES:

- GPR signal penetration is approximately 2-3 feet below ground surface

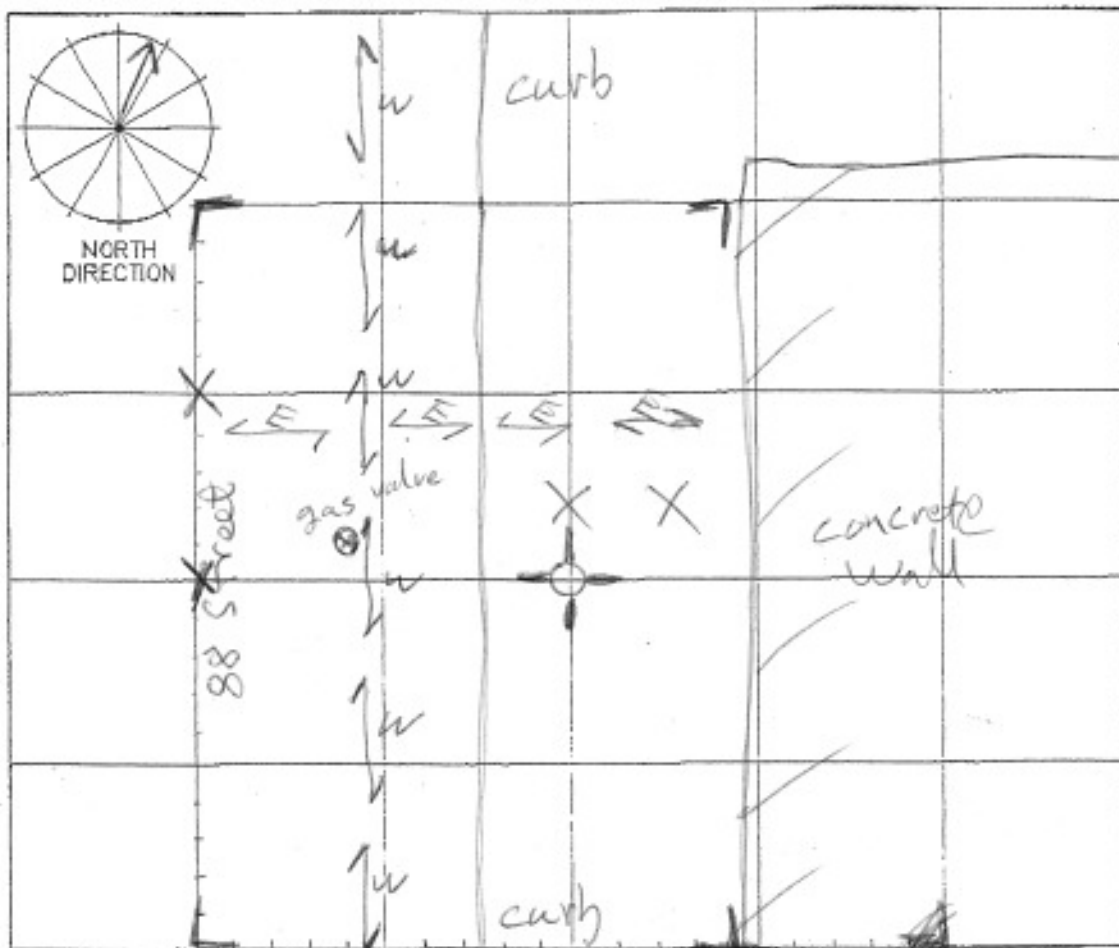
* utility channel (4' wide) marked by others

DATE: 2/29/2011

HR PROJECT # 11JCC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID
SG26

SCALE
1" = 5'

SITE NAME Woodhaven Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM+MA

WEATHER cloudy

UTILITY PLANS REC. YES NO

LEGEND

- proposed boring location
- unidentified buried object
- possible utility

NOTES:

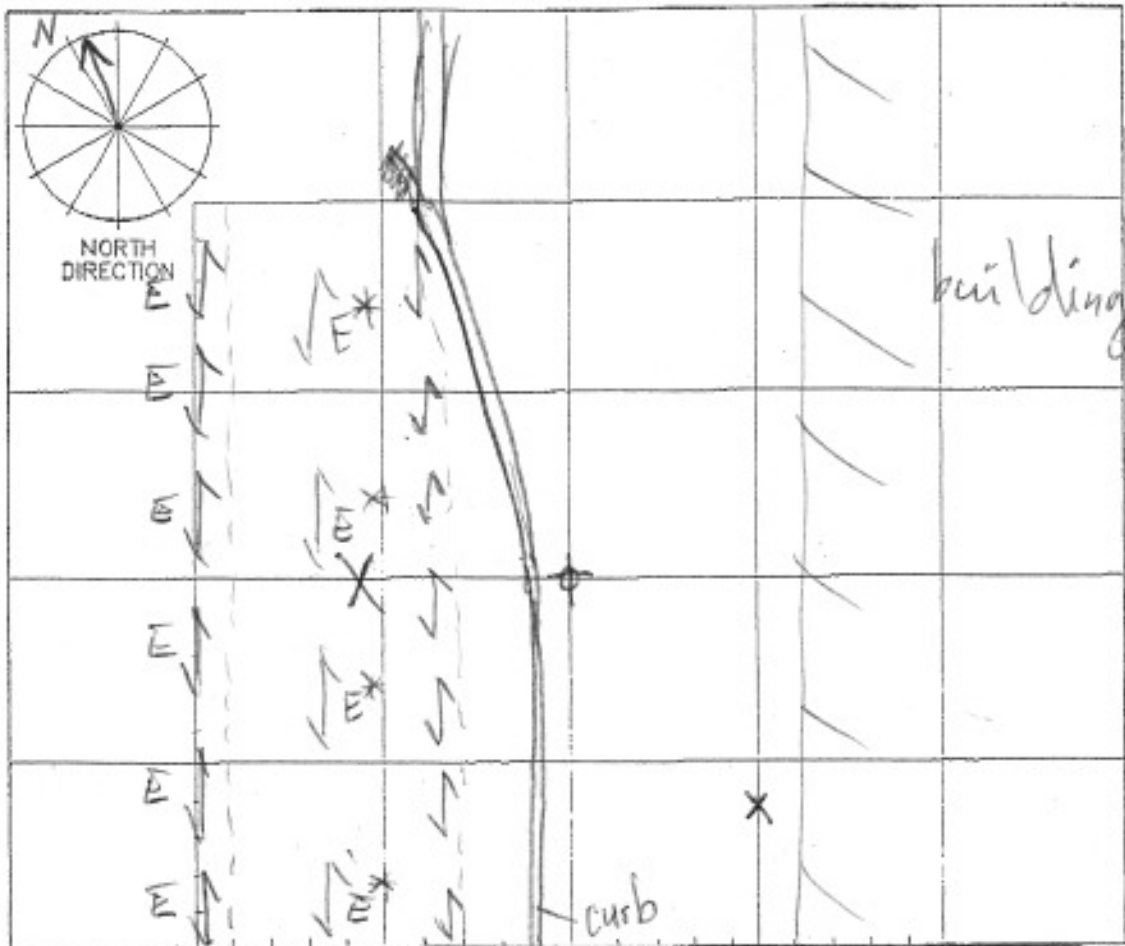
- GPR signal penetration is approximately 2-3 feet below ground surface

DATE: 9/30/2011

HR PROJECT # 1170046

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

5627

SCALE

1" = 5'

SITE NAME Woodhaven Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM + MA

WEATHER cloudy

UTILITY PLANS REC. YES NO

LEGEND

- ⊕ proposed boring location
- X unidentified buried object
- ↔ possible utility

NOTES:

- GPR signal penetration is approximately 2-3 feet below ground surface

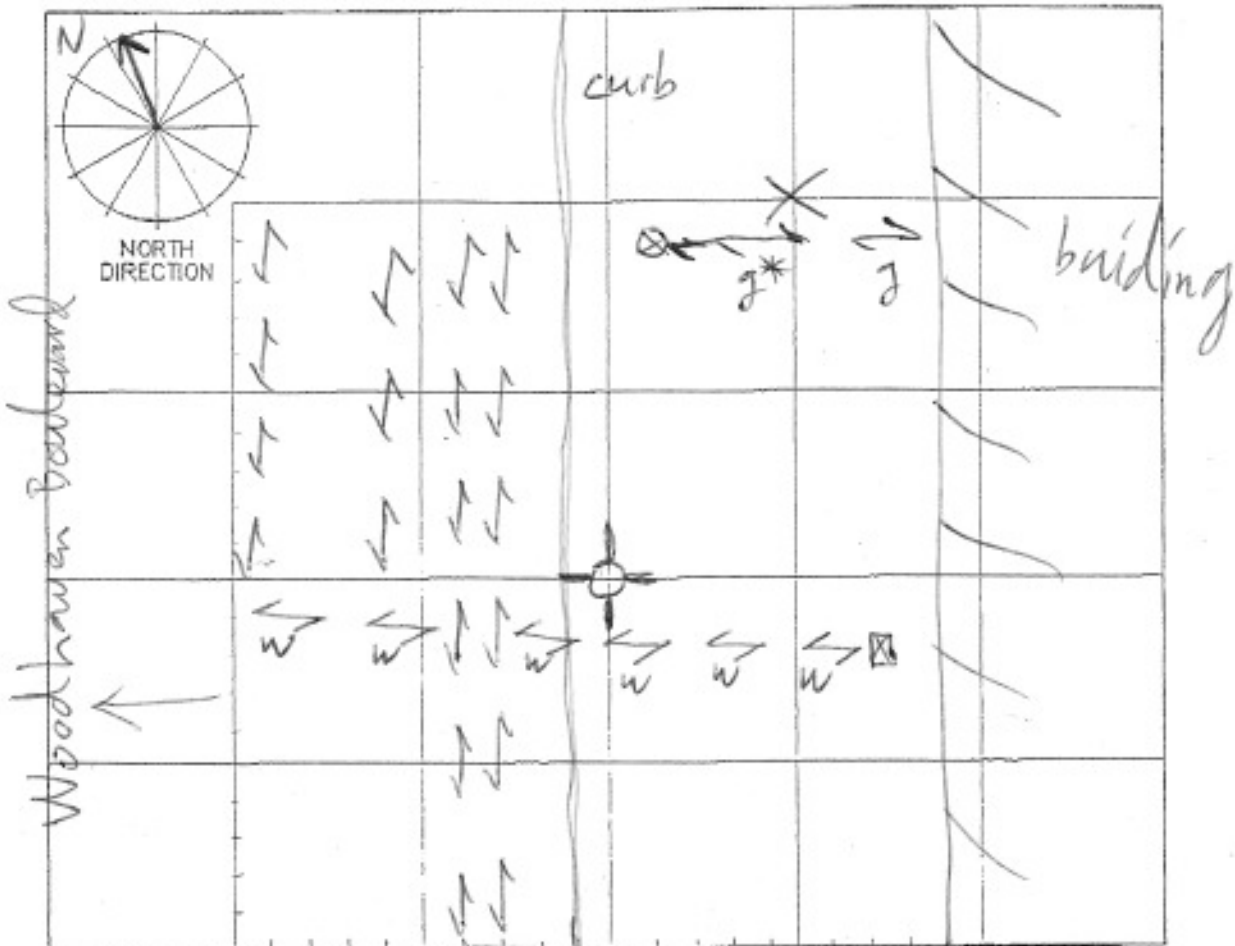
*electric marked by others: within a channel of 5' diameter

DATE: 9/30/2011

HR PROJECT # 11JCC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID
SG 28

SCALE

1" = 5'

SITE NAME Woodhaven Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM + MA

WEATHER cloudy

LEGEND

- \oplus proposed boring location
- \times unidentified buried object
- \rightarrow possible utility

UTILITY PLANS REC. YES NO

NOTES:

- GPR signal penetration is approximately 2.5-3.5 feet below ground surface

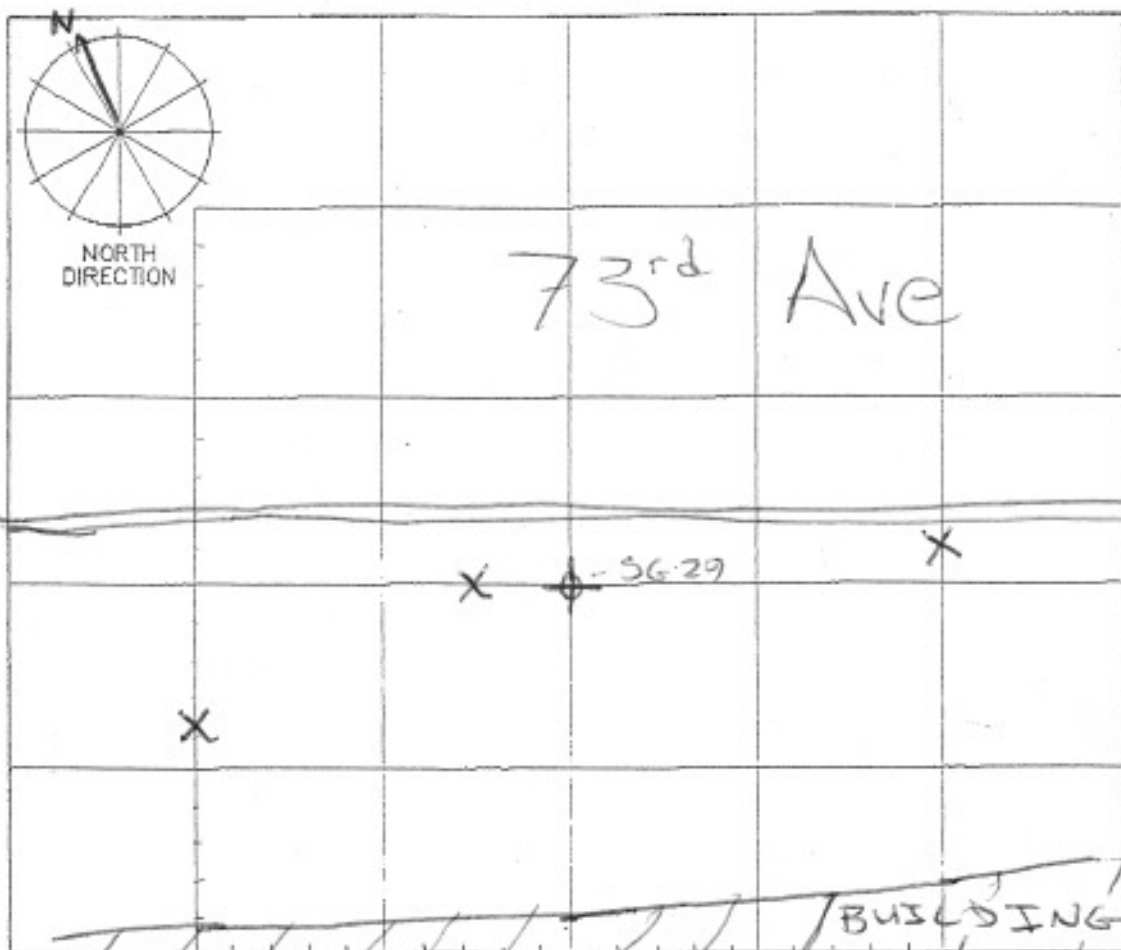
* gas marked by others

DATE: 9-30-11

HR PROJECT # 1170046

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID
SG29

SCALE
1" = 5'

SITE NAME Woodhull Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM+MA

WEATHER Sunny

LEGEND

- ⊕ proposed boring location
- X unidentified buried object
- ↪ ↪ possible utility

NOTES:

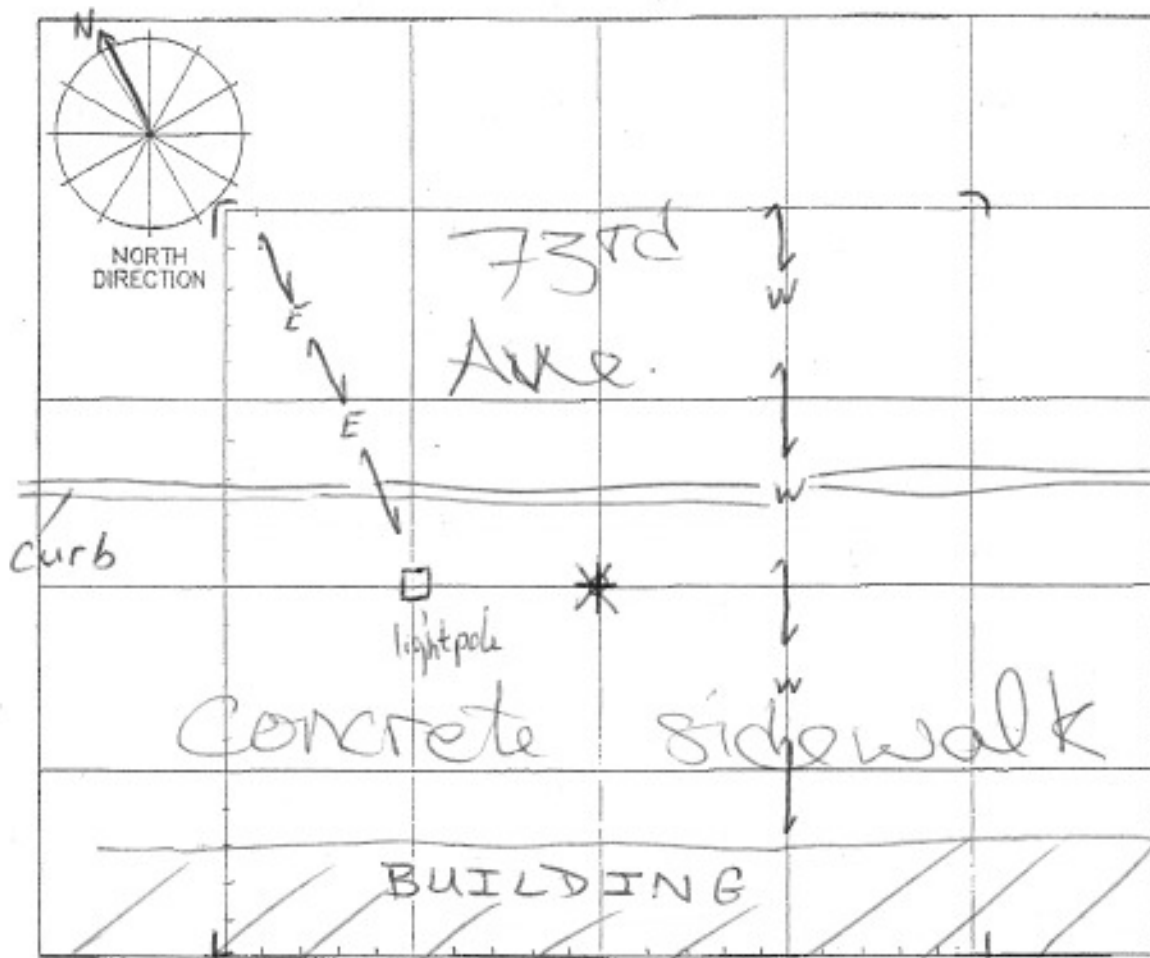
- GPR signal penetration is approximately 2-2.5 feet below ground surface

DATE: 9-30-11

HR PROJECT # 11JCC46

HAGER-RICHTER
GEOSCIENCE, INC.

HR PROJECT HDR/Queens, NY



LOCATION ID

SG-30

SCALE

1" = 5'

SITE NAME Woodhaven Blvd.

CLIENT CO. HDR

METHODS GPR

CLIENT REP. Ed Brandt

PUL

H-R REP. AM+MA

WEATHER Sunny

UTILITY PLANS REC. YES NO

NOTES:

- GPR signal penetration is approximately 2-2.5 feet below ground surface

LEGEND

- \oplus proposed boring location
- X unidentified buried object
- \rightarrow W possible utility (water)
- \rightarrow E possible utility (electric)