An Important Landowner Consideration for Gas Leasing a Small Single Tract In Pennsylvania.

March 1, 2017
Royalty Check LLC

The smaller acreage Pennsylvania landowner may believe that due to the location of their property they have substantial bargaining power with drilling operators in obtaining an individual lease to extract natural gas from their mineral property. For the most part, in practice, this bargaining power is quite limited. This misconception can result in essentially losing the natural gas beneath the property and its value. This will be shown by examples. These are the facts.

(An obvious way to increase the lease bargaining power of the smaller landowner is by combining the smaller tracts into thousands of acres covered by the terms of a single lease. But, this is a subject with its nuances to be covered elsewhere.)

The Pennsylvania property boundaries do not lend themselves for simple horizontal drilling for natural gas. The surface property boundaries tend to follow the surface features of hills and streams. Over the years, original land tracts have been subdivided into smaller tracts. For the most part, the mineral property boundaries have inherited this complex mosaic. This is true even if the surface rights at some point in time have been severed from the mineral property. Severing often occurred after initial timbering of the land was completed and the surface sold for other purposes. This can result in larger but still irregular mineral property tracts that were not further subdivided as the surface property continued to be developed.

If the mineral property was not severed from the surface, the mineral property tracts became smaller. Many larger farms were divided among children. With time, the surface land near suburban areas has become more valuable as smaller acreages with residences than as operating smaller farms. The closer the surface property is located to an urban area, the tracts tend to get smaller and smaller. As a result, properties of less than 100 acres with irregular boundaries have become the majority of a complex patchwork of mineral property ownership in the prime drilling areas in Pennsylvania.

The laterals for horizontal drilling of a single well are now typically 6,000 feet long with some exceeding 10,000 feet. A single well pad likely needs to have at least four wells to be economical. Some well pads have over ten wells. This means in the vicinity of a single well pad with only four wells at least 550 acres needs to be available. Further this acreage must be perfectly aligned with the natural fissures in the gas bearing shale. In practice, leasing parts of properties totaling 1000 acres may be required to obtain the 550 acres and to support a single well pad with straight horizontal laterals. This assumes a typical 1000-foot spacing between laterals. Nice straight horizontal laterals are the preference for the driller. This preference can provide a small landowner with perhaps 10

to 20 acres a feeling of some bargaining power when negotiating the terms of a lease to drill under their property. After all, their property may be in the direct path for drilling and is the only tract in the way of simple horizontal drilling.

As will be shown in practice, the bargaining power of the smaller acreage is really limited. It is easy to simply drill around the property. With the current laws in Pennsylvania, some or all the gas can still be extracted from beneath property by hydro-fracking without payment as long as the horizontal lateral bore does not go directly under the property. The following are actual well plats showing the ability to drill around property boundaries and stay within quite irregular tracks. These well bores are typically over a mile beneath the surface. Independent verification of the drill path or deviation from the planned drill path is not readily available. These examples are obtained from the well permits as filed with the Pennsylvania DEP. The examples were found by examining well plats for other reasons. There are seventeen examples. They are all from recent well permits filed from 2013 to 2015. These examples are by no means exhaustive and are not meant to highlight any one area of the state or operator. A straight horizontal bore maybe the driller's preference, but is certainly not mandatory. The examples are intended to clearly demonstrate a single tract or boundary can be drilled around if necessary.

The examples clearly show the technical ability to steer the horizontal lateral into curves and "S" shapes. Well bores go very close to unleased tracts where undoubtedly gas will be extracted, perhaps without royalty payment to the mineral owner. Small tracts are drilled around.

The following is a summary listing of the examples by page number. Some examples show the well bores clearly steering around small properties. Others examples show the well bore very close to the tract boundaries of perhaps unleased properties. Some examples show how the operator must deal with irregular tracts by placing bends in the horizontal section. One example shows "threading the needle" past several small properties.

Hopefully, this will prevent an over confident landowner or their representative from completely losing the value of their mineral property.

Page Number	Well Bore to Property Feature to note
Page 4	Well Bore Past Small Property
Page 5	Well Bore Past Small Property
Page 6	Well Bore Past Small Property
Page 7	Bent Well Bore Small Property
Page 8	Well Bore Close to Tract Boundary
Page 9	Well Bore Close to Tract Boundary
Page 10	Well Bore Close to Tract Boundary
Page 11	Well Bore Close to Tract Boundary
Page 12	Well Bore Close to Tract Boundary
Page 13	Well Bore Bend In Irregular Tract
Page 14	Well Bore Bend In Irregular Tract
Page 15	Well Bore with “S” Bend
Page 16	Well Bore “Threading the Needle” past several small tracts
Page 17	Well Bore bent In Irregular Tract
Page 18	3D bend in vertical section before landing point
Page 19	3D bend in vertical section before landing point
Page 20	Bottom Hole to Tract Boundary

125-27319-00-00

WELL LOCATION PLAT

Page 3 Plan View of Deviated Well Bore

If well has a lateral other than vertical show the bottom hole location on the plat drawing as ⊗ and include the Coordinates in the provided section at the bottom of the drawing area. The top hole and bottom hole locations are to be connected by a bolded line this is to depict the proposed courses of the actual wellbore to be drilled.

Applicant / Well Operator Name	DEP ID#	Well (Farm) Name	Well #
RICE DRILLING B LLC	268470	POLLOCK	3H

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
SCOTT R. PILSTON
LAND SURVEYOR
No.046652-E

MJP

Surface Hole Location
Latitude North: (NAD 83) 40° 08' 51.41"
Longitude West: (NAD 83) 80° 06' 48.48"

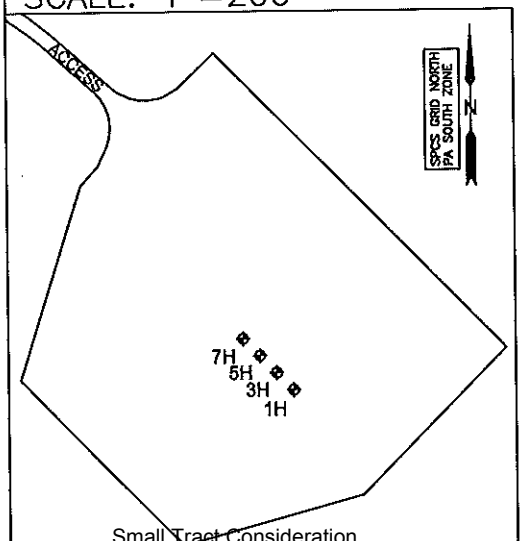
Projected Landing Point
Latitude North: (NAD 83) 40° 08' 47.06"
Longitude West: (NAD 83) 80° 06' 59.22"

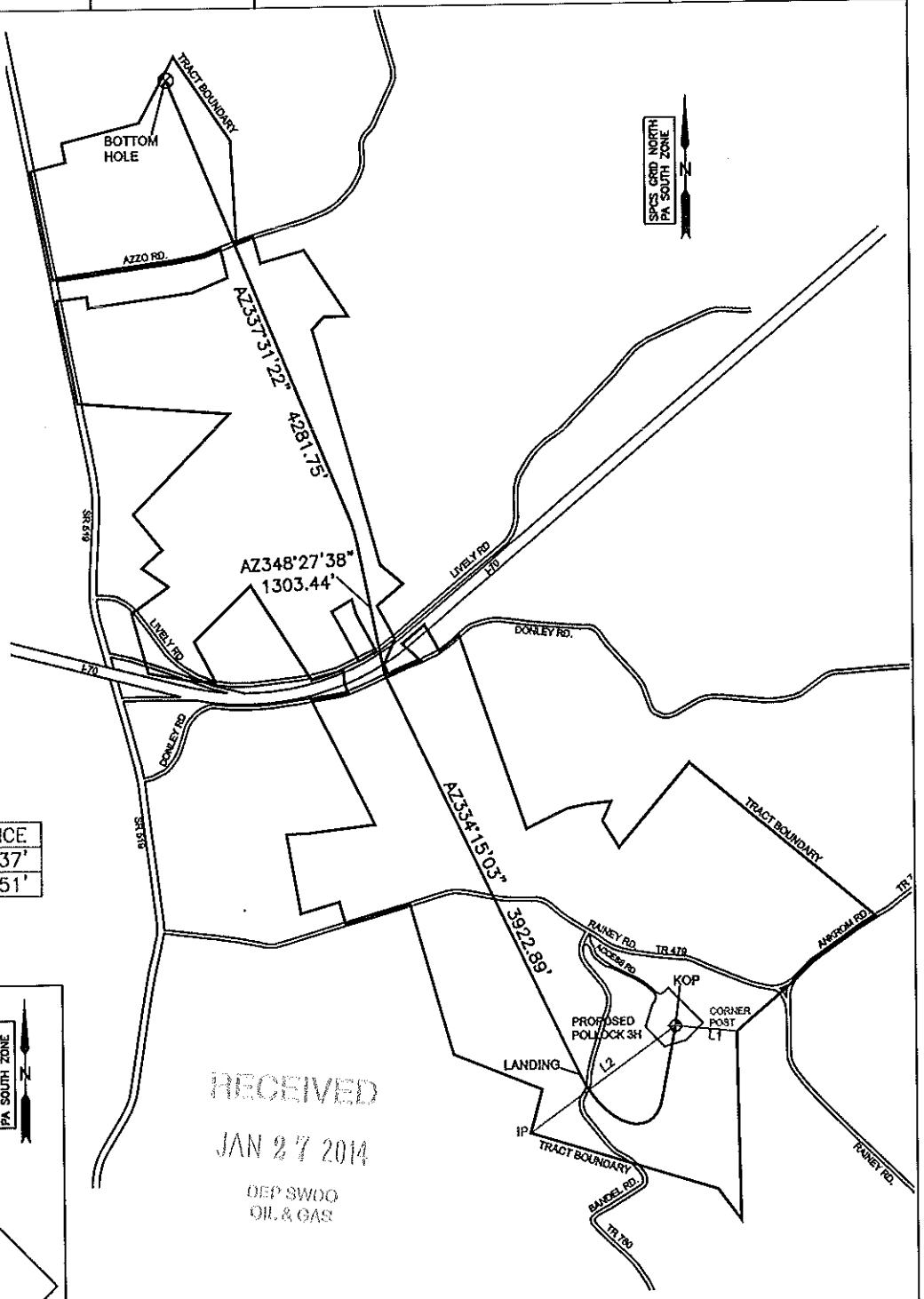
Projected Bottom Hole
Latitude North: (NAD 83) 40° 10' 12.71"
Longitude West: (NAD 83) 80° 07' 48.63"

NOTE: KOP LATITUDE AND LONGITUDE IS THE SAME AS PROPOSED SURFACE HOLE LOCATION

LINE	BEARING	DISTANCE
L1	S 84°09'31" E	544.37'
L2	S 54°20'53" W	1587.51'

PAD DETAIL
SCALE: 1"=200'





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JAN 27 2014
DEP SWDO
OIL & GAS

TRACT ACREAGE: 468±
SCALE: 1"=1500'

0 1500' 3000' 4500'

Small Tract Consideration

F:\2013\RCE\13-248 POLLOCK\13-248 POLLOCK UNIT

125-27603-00-00

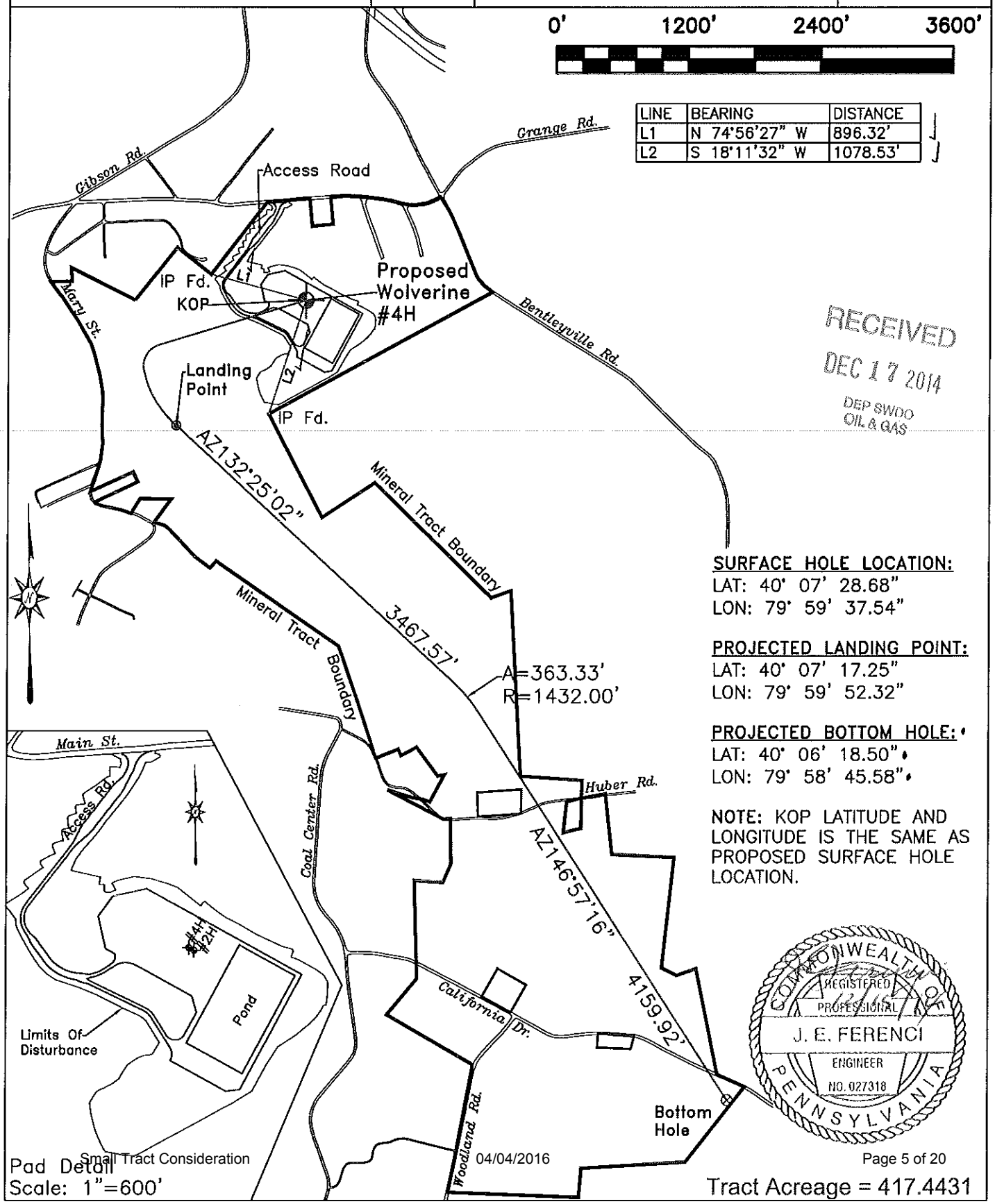
8000-PM-OOGM0002 Rev. 04/2012

WELL LOCATION PLAT

Page 3 Plan View of Deviated Well Bore

If well has a lateral other than vertical show the bottom hole location on the plat drawing as ⊗ and include the Coordinates in the provided section at the bottom of the drawing area. The top hole and bottom hole locations are to be connected by a bolded line this is to depict the proposed courses of the actual wellbore to be drilled.

Applicant / Well Operator Name	DEP ID#	Well (Farm) Name	Well #
Rice Drilling B LLC.	268470	Wolverine	4H



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DEC 17 2014
DEP SWDO
OIL & GAS

SURFACE HOLE LOCATION:
LAT: 40° 07' 28.68"
LON: 79° 59' 37.54"

PROJECTED LANDING POINT:
LAT: 40° 07' 17.25"
LON: 79° 59' 52.32"

PROJECTED BOTTOM HOLE:
LAT: 40° 06' 18.50"
LON: 79° 58' 45.58"

NOTE: KOP LATITUDE AND LONGITUDE IS THE SAME AS PROPOSED SURFACE HOLE LOCATION.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
J. E. FERENCI
ENGINEER
NO. 027318

Pad Detail
Scale: 1"=600'

Small Tract Consideration

04/04/2016

Tract Acreage = 417.4431

125-27602-00-00

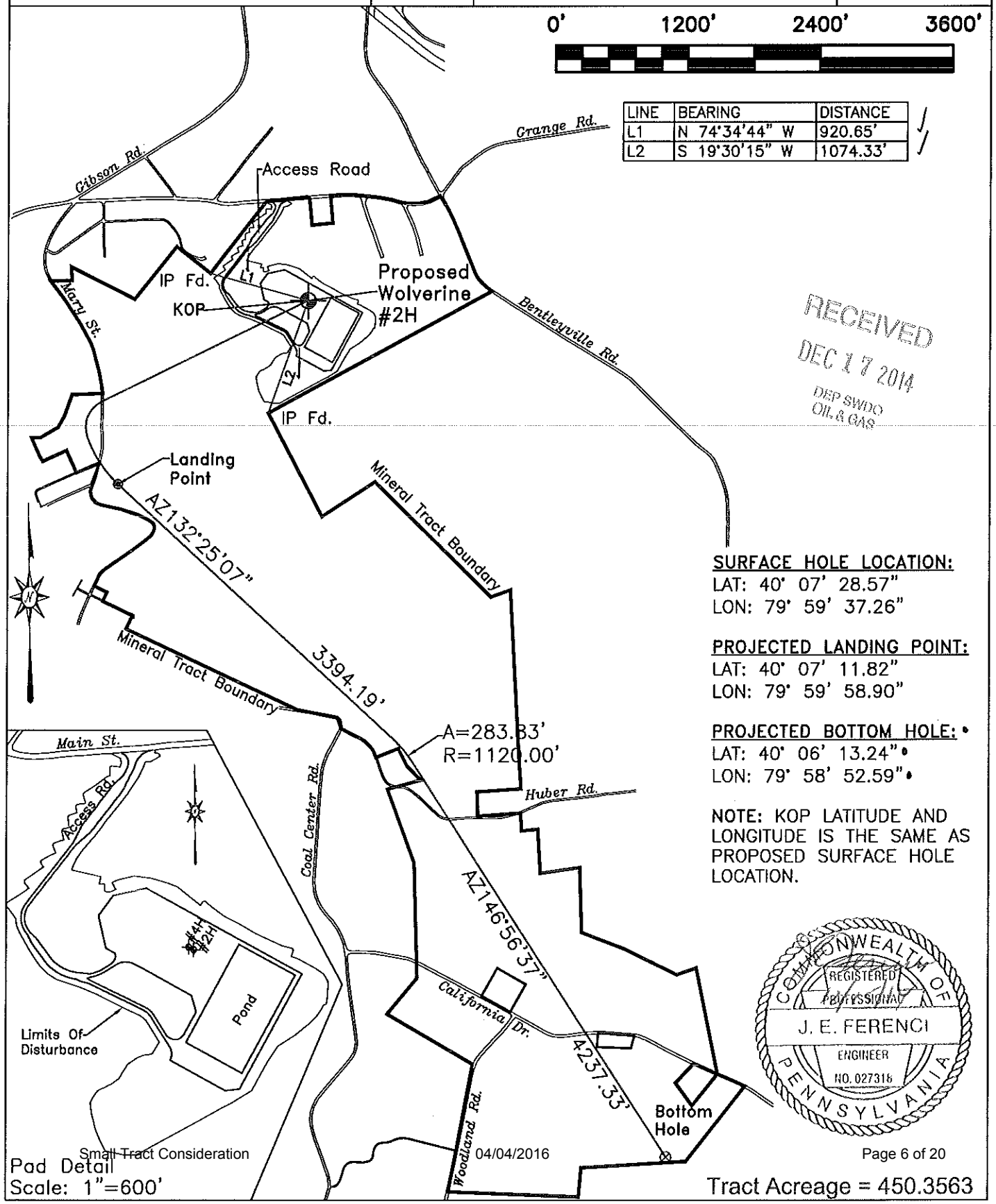
8000-PM-OOGM0002 Rev. 04/2012

WELL LOCATION PLAT

Page 3 Plan View of Deviated Well Bore

If well has a lateral other than vertical show the bottom hole location on the plat drawing as ⊗ and include the Coordinates in the provided section at the bottom of the drawing area. The top hole and bottom hole locations are to be connected by a bolded line this is to depict the proposed courses of the actual wellbore to be drilled.

Applicant / Well Operator Name	DEP ID#	Well (Farm) Name	Well #
Rice Drilling B LLC.	268470	Wolverine	2H



Small Tract Consideration

Pad Detail
Scale: 1"=600'

Tract Acreage = 450.3563

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DRILL DEEPER

WELL LOCATION PLAT

Page 3 Plan View of Deviated Well Bore

If well has a lateral other than vertical show the bottom hole location on the plat drawing as ⊗ and include the Coordinates in the provided section at the bottom of the drawing area. The top hole and bottom hole locations are to be connected by a bolded line this is to depict the proposed courses of the actual wellbore to be drilled.

Applicant / Well Operator Name	DEP ID#	Well (Farm) Name	Well #
RICE DRILLING B LLC ✓	268470 ✓	BATMAN ✓	3H ✓

Surface Hole Location
Latitude North: (NAD 83) 40° 05' 46.99"
Longitude West: (NAD 83) 80° 03' 25.91"
Kick Off Point
Latitude North: (NAD 83) 40° 05' 47.01"
Longitude West: (NAD 83) 80° 03' 25.73"
Projected Landing Point
Latitude North: (NAD 83) 40° 05' 42.34"
Longitude West: (NAD 83) 80° 03' 39.82"
Projected Bottom Hole
Latitude North: (NAD 83) 40° 04' 36.51"
Longitude West: (NAD 83) 80° 03' 05.24"

L1 ✓	N 54°52'03" W	894.46'
L2 ✓	S 68°45'14" W	2628.29'

TRACT ACREAGE: 484 ±

SCALE: 1"=1200'

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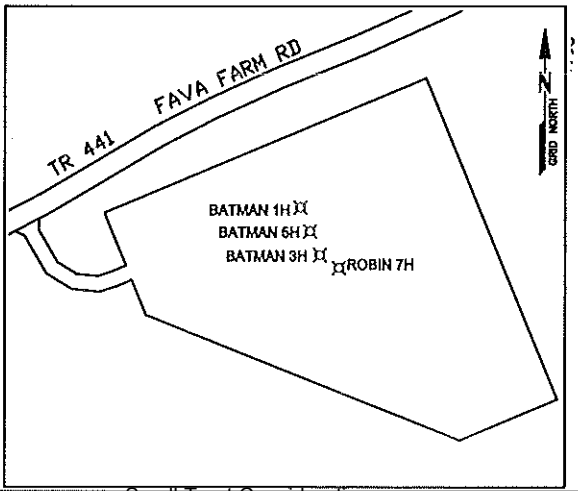
REGISTERED PROFESSIONAL
SCOTT R. PILSTON
LAND SURVEYOR
No.046652-E
SAT

PAD DETAIL
SCALE: 1"=300'



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DEP BWDO
OIL & GAS

F:\2012\RICE\GOTHAM CITY Unit\gotham unit rev 08-13-2013.dwg

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WELL LOCATION PLAT

Page 3 Plan View of Deviated Well Bore

If well has a lateral other than vertical show the bottom hole location on the plat drawing as ⊗ and include the Coordinates in the provided section at the bottom of the drawing area. The top hole and bottom hole locations are to be connected by a bolded line this is to depict the proposed courses of the actual wellbore to be drilled.

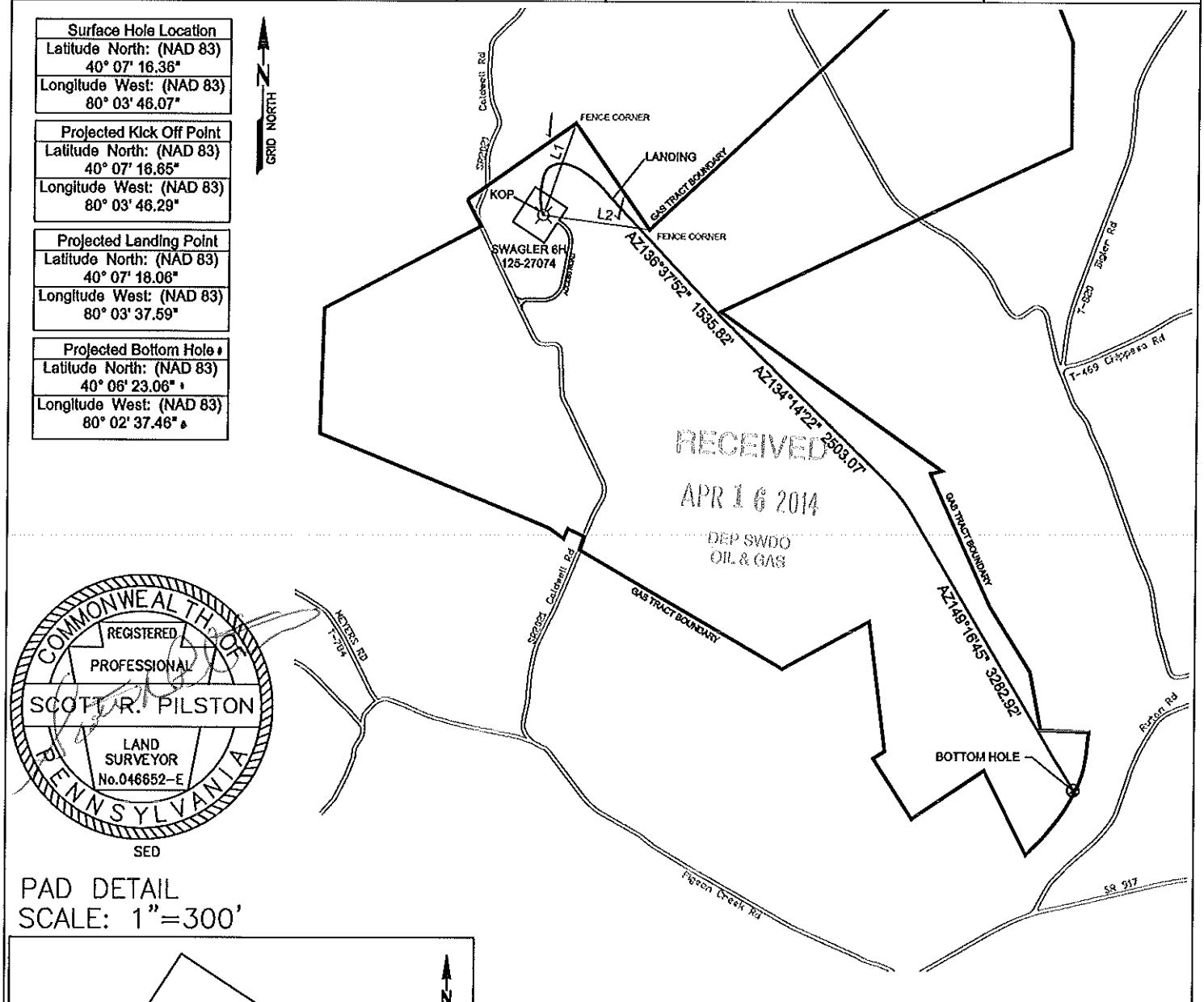
Applicant / Well Operator Name	DEP ID#	Well (Farm) Name	Well #
RICE DRILLING B LLC	268470	SWAGLER	6H

Surface Hole Location
Latitude North: (NAD 83) 40° 07' 16.36"
Longitude West: (NAD 83) 80° 03' 46.07"

Projected Kick Off Point
Latitude North: (NAD 83) 40° 07' 16.65"
Longitude West: (NAD 83) 80° 03' 46.29"

Projected Landing Point
Latitude North: (NAD 83) 40° 07' 18.06"
Longitude West: (NAD 83) 80° 03' 37.59"

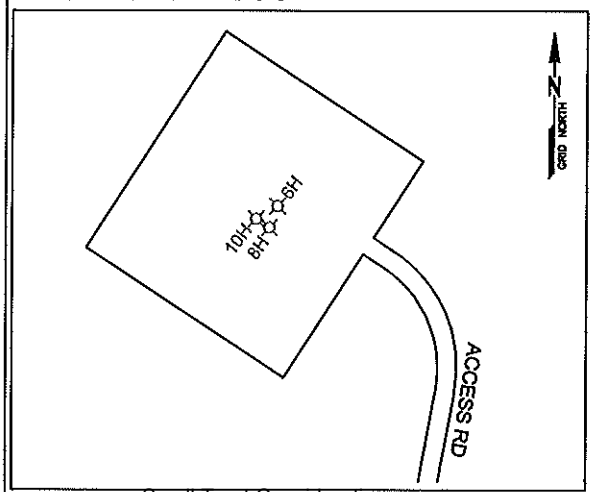
Projected Bottom Hole
Latitude North: (NAD 83) 40° 06' 23.06"
Longitude West: (NAD 83) 80° 02' 37.46"



COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
SCOTT R. PILSTON
LAND SURVEYOR
No.046652-E

SED

PAD DETAIL
SCALE: 1"=300'



LINE	BEARING	DISTANCE
L1	N 19°24'12" E	938.70'
L2	S 82°18'34" E	1042.62'

TRACT ACREAGE: 622 ±
SCALE: 1"=1500'

0 1500' 3000' 4500'

F:\2011\RICE\Burkland Prospect\Swagler\11-0287 Swagler Unit Map\Swagler Unit 2014-03-09.dwg

125-27463-00-01

WELL LOCATION PLAT

Page 3 Plan View of Deviated Well Bore

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Applicant / Well Operator Name	DEP ID#	Well (Farm) Name	Well #
RICE DRILLING B LLC	268470	CAPTAIN JACK SPARROW	3H

Surface Hole Location
Latitude North: (NAD 83) 40° 03' 47.16"
Longitude West: (NAD 83) 79° 59' 20.25"

Projected Landing Point
Latitude North: (NAD 83) 40° 03' 48.99"
Longitude West: (NAD 83) 79° 59' 22.70"

Projected Bottom Hole
Latitude North: (NAD 83) 40° 04' 41.56"
Longitude West: (NAD 83) 80° 00' 08.17"

NOTE:
KOP LATITUDE AND LONGITUDE
IS THE SAME AS PROPOSED
SURFACE HOLE LOCATION

LINE	BEARING	DISTANCE
L1	N 70°46'10" E	2295.12'
L2	S 56°23'20" W	410.82'

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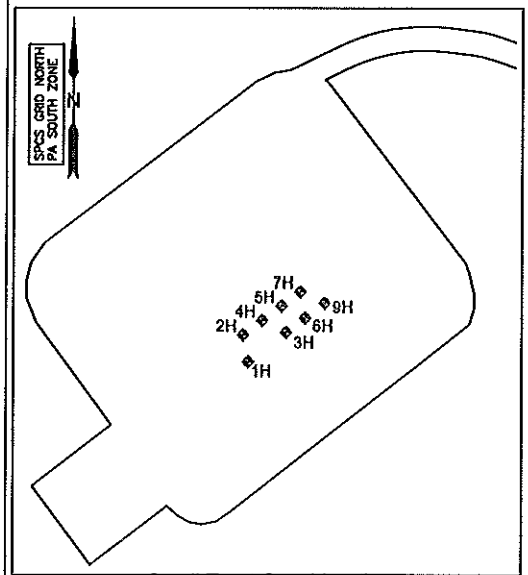
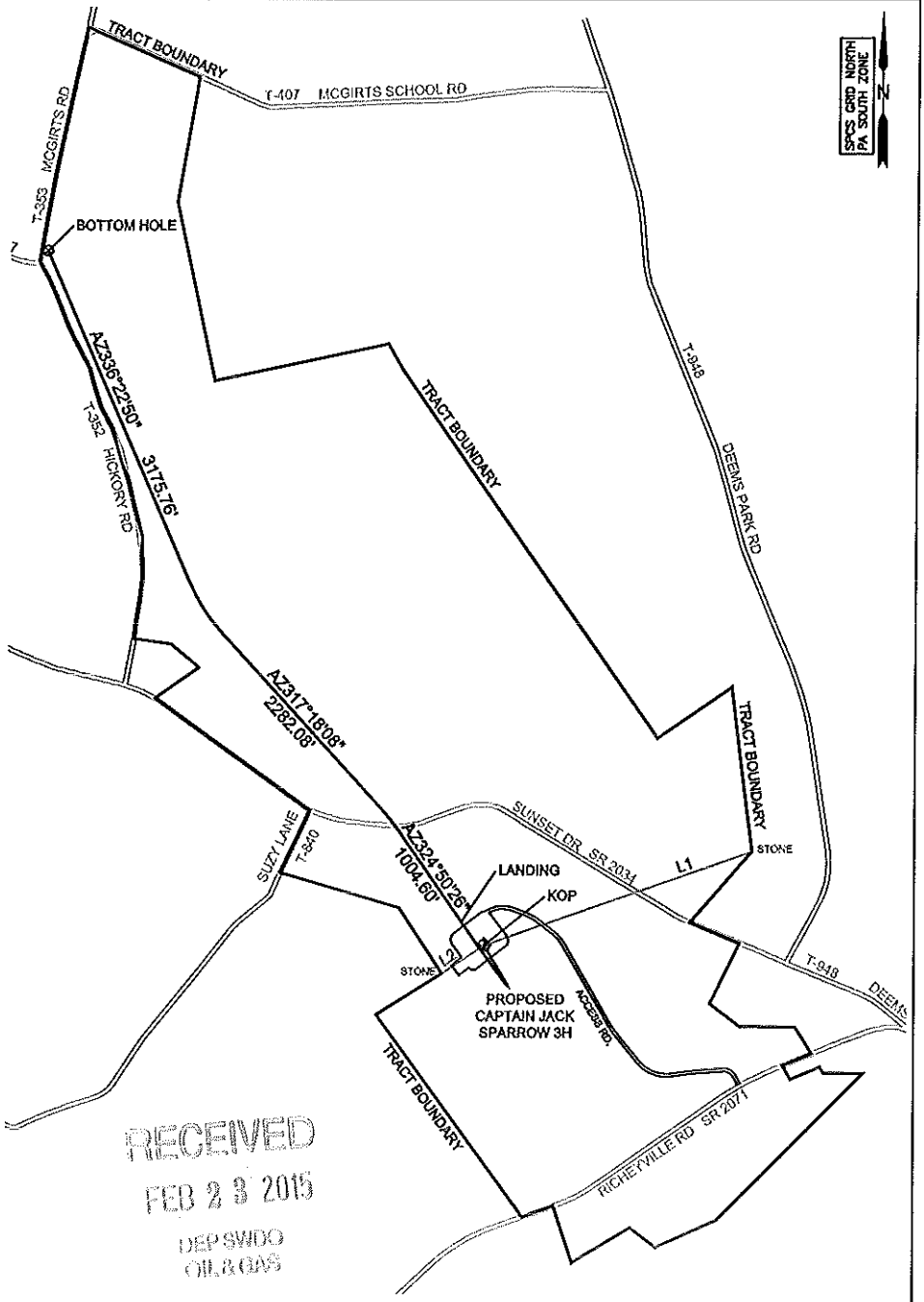
REGISTERED PROFESSIONAL
SCOTT R. PILSTON
LAND SURVEYOR
No.046652-E

SAT

PAD DETAIL
SCALE: 1"=200'





RECEIVED
FEB 23 2015
DEP SWRO
OIL & GAS

TRACT ACREAGE: 556 ±
SCALE: 1"=1500'
0 1500' 3000' 4500'

F:\2014\RICE\14-98 Captain Jack Sparro\14-98 CAPTAIN JACK SPARROW 2015-01-28.dwg

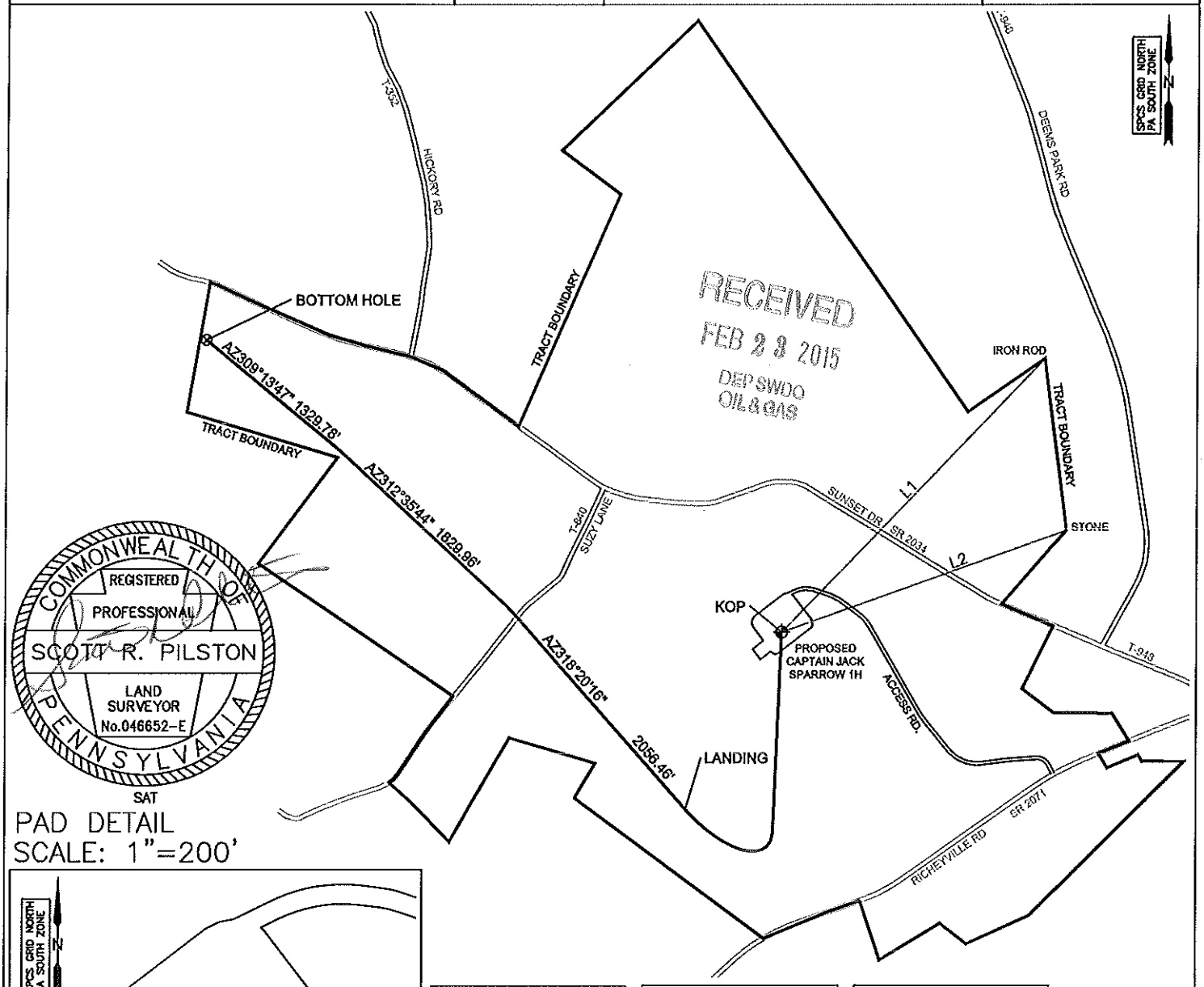
125-27462-00-01

WELL LOCATION PLAT

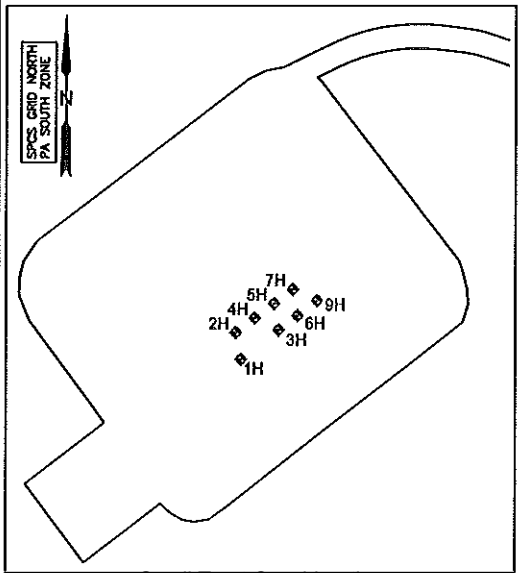
Page 3 Plan View of Deviated Well Bore

If well has a lateral other than vertical show the bottom hole location on the plat drawing as ⊗ and include the Coordinates in the provided section at the bottom of the drawing area. The top hole and bottom hole locations are to be connected by a bolded line this is to depict the proposed courses of the actual wellbore to be drilled.

Applicant / Well Operator Name	DEP ID#	Well (Farm) Name	Well #
RICE DRILLING B LLC	268470	CAPTAIN JACK SPARROW	1H



PAD DETAIL
SCALE: 1"=200'



Surface Hole Location	Projected Landing Point	Projected Bottom Hole
Latitude North: (NAD 83) 40° 03' 46.85"	Latitude North: (NAD 83) 40° 03' 33.20"	Latitude North: (NAD 83) 40° 04' 07.98"
Longitude West: (NAD 83) 79° 59' 20.75"	Longitude West: (NAD 83) 79° 59' 29.86"	Longitude West: (NAD 83) 80° 00' 19.19"

NOTE:
KOP LATITUDE AND LONGITUDE IS THE SAME AS PROPOSED SURFACE HOLE LOCATION

LINE	BEARING	DISTANCE
L1	N 43°59'38" E	2935.23'
L2	N 70°23'15" E	2342.61'

TRACT ACREAGE: 615 ±
SCALE: 1"=1200'

0 1200' 2400' 3600'

F:\2014\RICE\14-98 Captain Jack Sparro\14-98 CAPTAIN JACK SPARROW 2015-01-26.dwg

125-27466-00-01

WELL LOCATION PLAT

Page 3 Plan View of Deviated Well Bore

If well has a lateral other than vertical show the bottom hole location on the plat drawing as ⊗ and include the Coordinates in the provided section at the bottom of the drawing area. The top hole and bottom hole locations are to be connected by a bolded line this is to depict the proposed courses of the actual wellbore to be drilled.

Applicant / Well Operator Name	DEP ID#	Well (Farm) Name	Well #
RICE DRILLING B LLC	268470	CAPTAIN JACK SPARROW	9H

Surface Hole Location
Latitude North: (NAD 83) 40° 03' 47.47"
Longitude West: (NAD 83) 79° 59' 19.74"

Projected Landing Point
Latitude North: (NAD 83) 40° 03' 55.37"
Longitude West: (NAD 83) 79° 58' 55.22"

Projected Bottom Hole
Latitude North: (NAD 83) 40° 04' 53.02"
Longitude West: (NAD 83) 79° 59' 44.00"

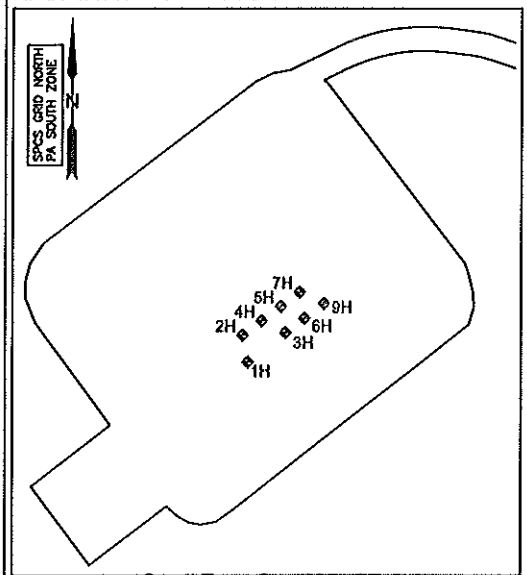
NOTE:
KOP LATITUDE AND LONGITUDE
IS THE SAME AS PROPOSED
SURFACE HOLE LOCATION

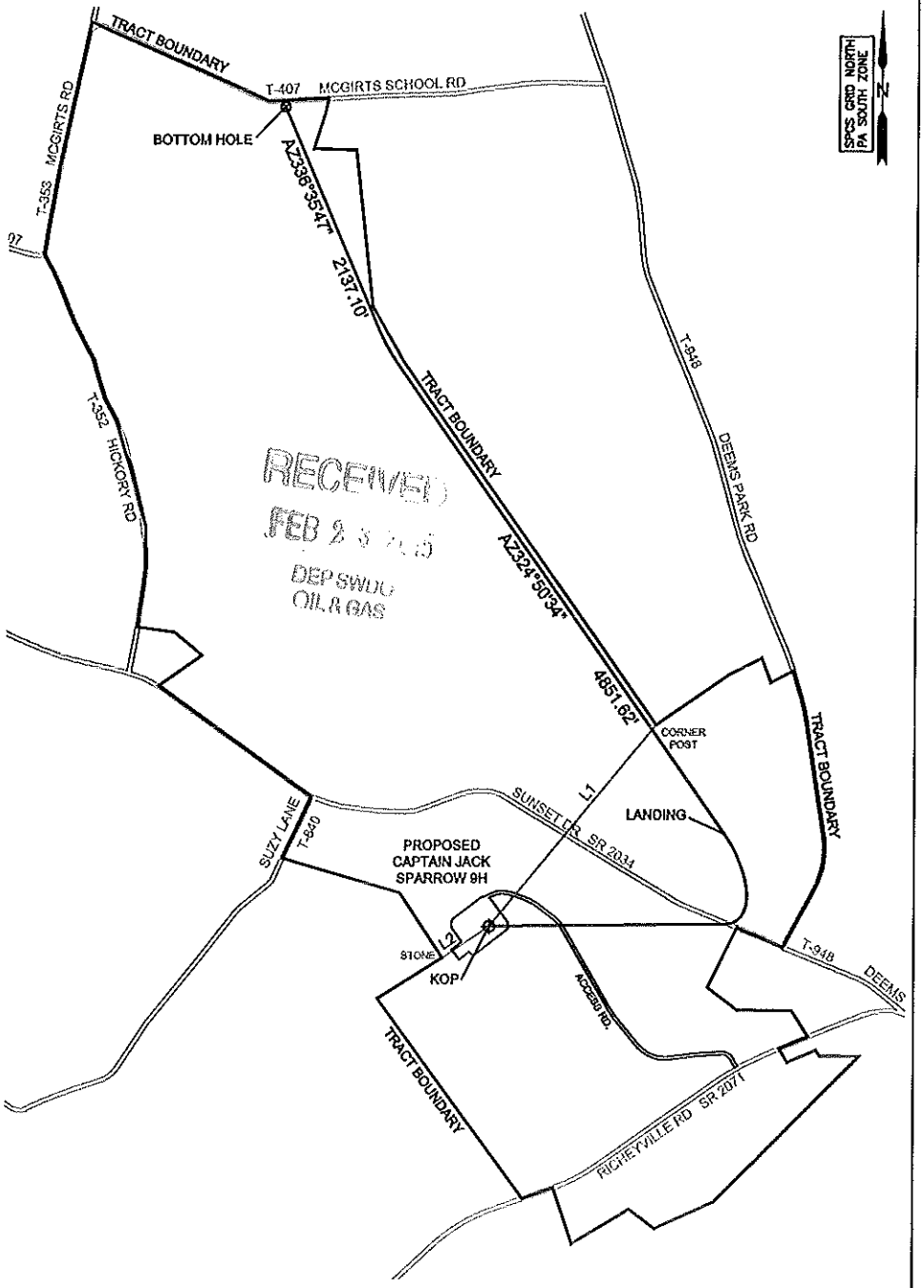
LINE	BEARING	DISTANCE
L1	N 39°39'25" E	2131.29'
L2	S 56°01'44" W	461.31'

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
SCOTT R. PILSTON
LAND SURVEYOR
No.046652-E

SAT

PAD DETAIL
SCALE: 1"=200'





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DEP SWRO
OIL & GAS

TRACT ACREAGE: 654 ±
SCALE: 1"=1500'
0 1500' 3000' 4500'

F:\2014\RICE\14-98 Captain Jack Sparro\14-98 CAPTAIN JACK SPARROW 2015-01-26.dwg

125-27531-00-01

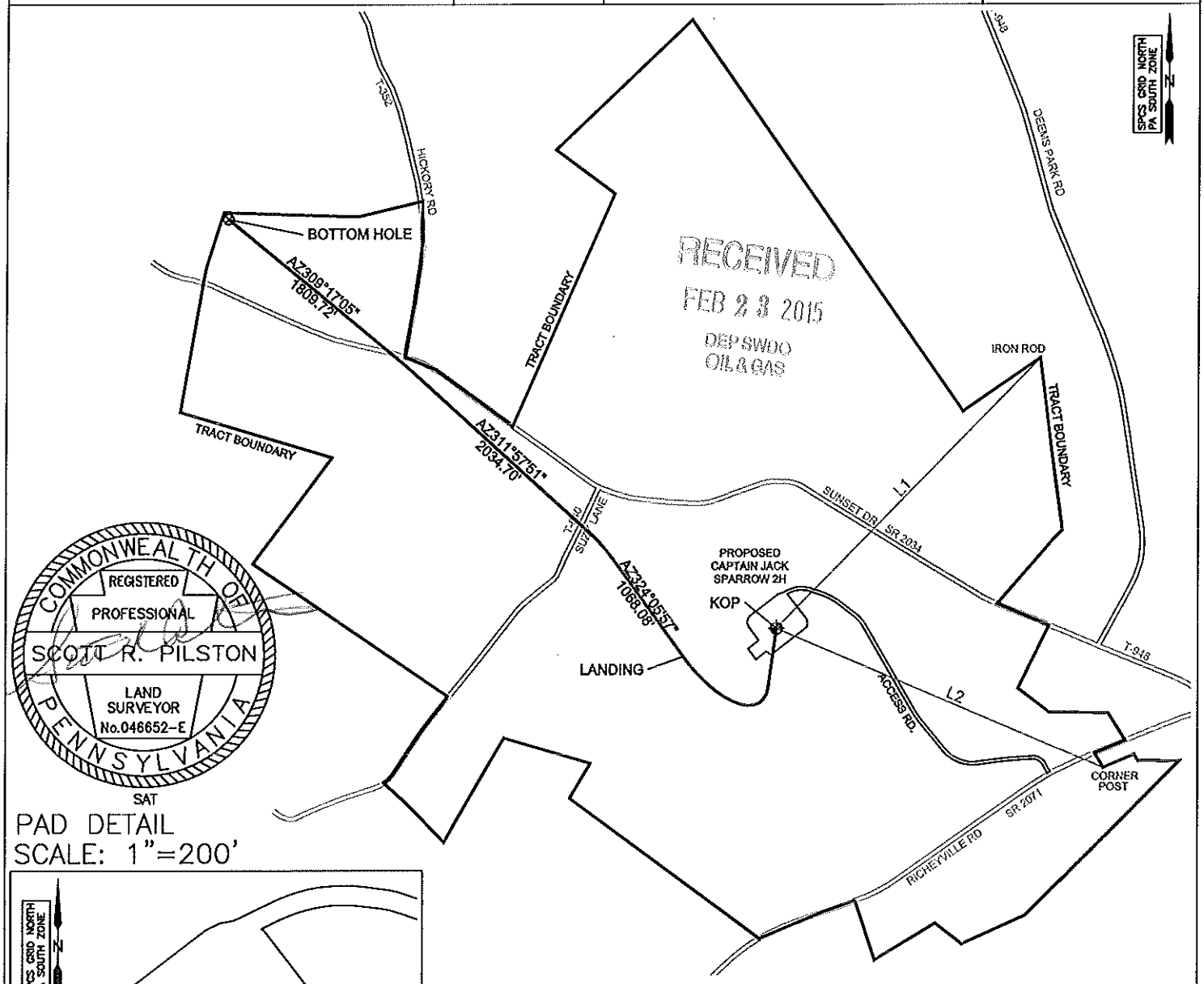
8000-PM-OOGM0002 4/2012

WELL LOCATION PLAT

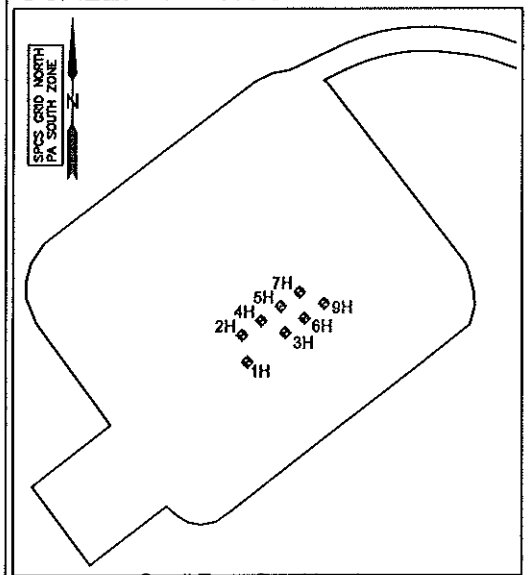
Page 3 Plan View of Deviated Well Bore

If well has a lateral other than vertical show the bottom hole location on the plat drawing as ⊗ and include the Coordinates in the provided section at the bottom of the drawing area. The top hole and bottom hole locations are to be connected by a bolded line this is to depict the proposed courses of the actual wellbore to be drilled.

Applicant / Well Operator Name	DEP ID#	Well (Farm) Name	Well #
RICE DRILLING B LLC	268470	CAPTAIN JACK SPARROW	2H



PAD DETAIL
SCALE: 1"=200'



Surface Hole Location	Projected Landing Point	Projected Bottom Hole
Latitude North: (NAD 83) 40° 03' 47.12"	Latitude North: (NAD 83) 40° 03' 44.79"	Latitude North: (NAD 83) 40° 04' 17.21"
Longitude West: (NAD 83) 79° 59' 20.83"	Longitude West: (NAD 83) 79° 59' 30.05"	Longitude West: (NAD 83) 80° 00' 16.67"

NOTE:
KOP LATITUDE AND LONGITUDE IS THE SAME AS PROPOSED SURFACE HOLE LOCATION

LINE	BEARING	DISTANCE
L1	N 44°27'05" E	2919.14'
L2	S 67°02'10" E	2751.05'

TRACT ACREAGE: 647 ±
SCALE: 1"=1200'

0 1200' 2400' 3600'

125-27640-00-00

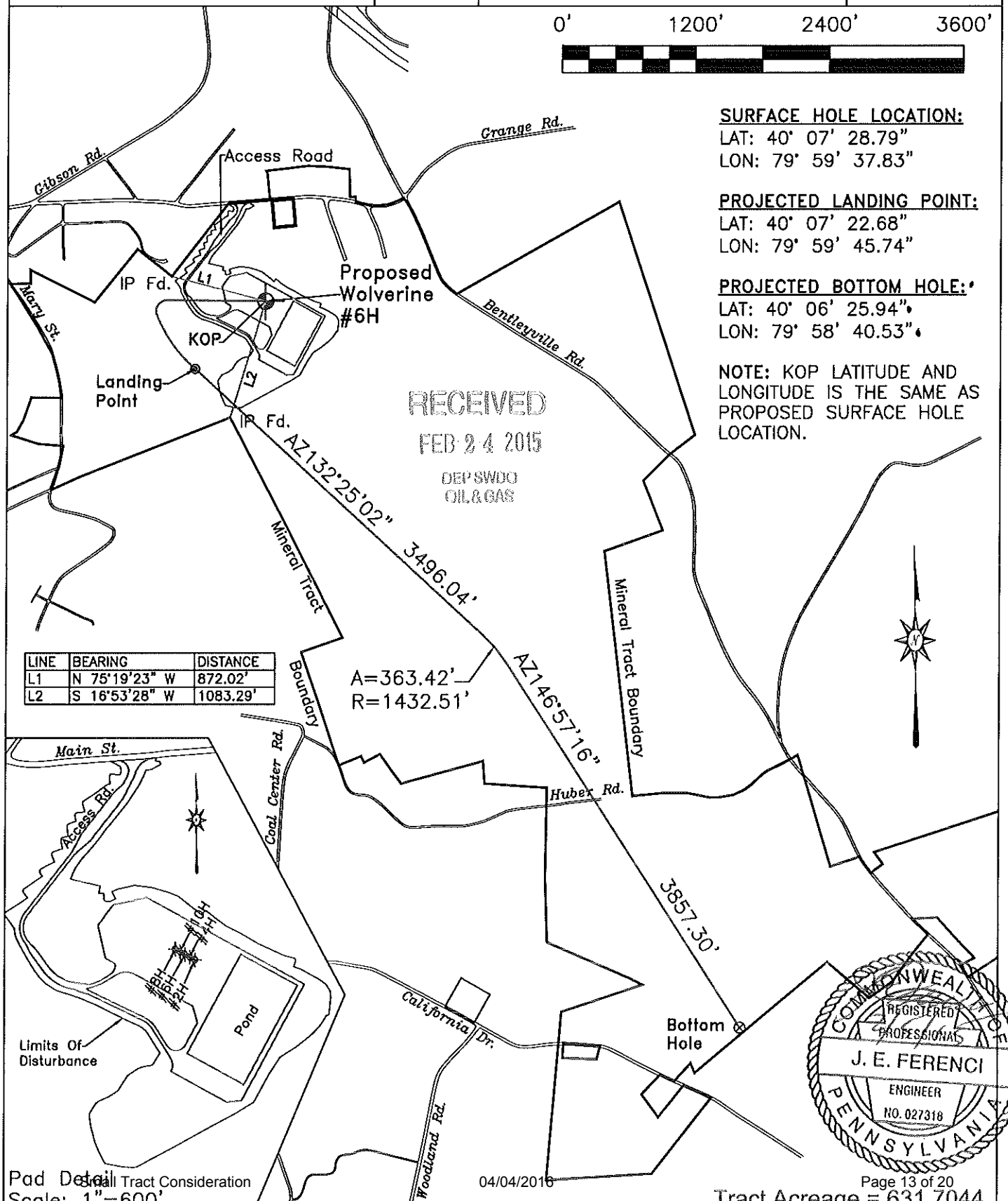
8000-PM-OOGM0002 Rev. 04/2012

WELL LOCATION PLAT

Page 3 Plan View of Deviated Well Bore

If well has a lateral other than vertical show the bottom hole location on the plat drawing as ⊗ and include the Coordinates in the provided section at the bottom of the drawing area. The top hole and bottom hole locations are to be connected by a bolded line this is to depict the proposed courses of the actual wellbore to be drilled.

Applicant / Well Operator Name	DEP ID#	Well (Farm) Name	Well #
Rice Drilling B LLC.	268470	Wolverine	6H



RECEIVED
FEB 24 2015
DEP SWDO
OIL & GAS

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
J. E. FERENCI
ENGINEER
NO. 027318

Pad Detail
Scale: 1"=600'

Small Tract Consideration

04/04/2016

Tract Acreage = 631.7044

125-27642-00-01

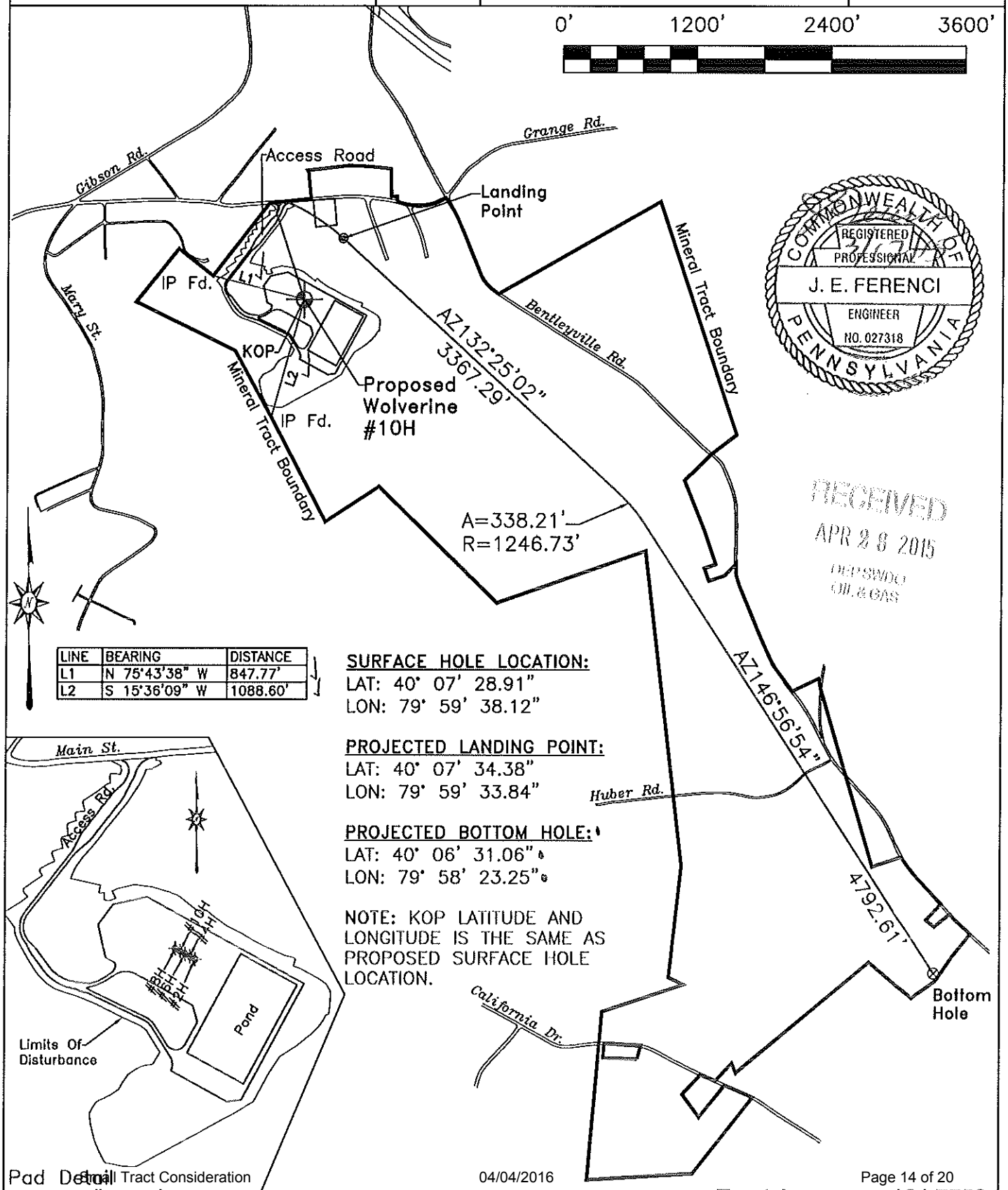
8000-PM-OOGM0002 Rev. 04/2012

WELL LOCATION PLAT

Page 3 Plan View of Deviated Well Bore

If well has a lateral other than vertical show the bottom hole location on the plat drawing as ⊗ and include the Coordinates in the provided section at the bottom of the drawing area. The top hole and bottom hole locations are to be connected by a bolded line this is to depict the proposed courses of the actual wellbore to be drilled.

Applicant / Well Operator Name	DEP ID#	Well (Farm) Name	Well #
Rice Drilling B LLC.	268470	Wolverine	10H



LINE	BEARING	DISTANCE
L1	N 75°43'38" W	847.77'
L2	S 15°36'09" W	1088.60'

SURFACE HOLE LOCATION:
LAT: 40° 07' 28.91"
LON: 79° 59' 38.12"

PROJECTED LANDING POINT:
LAT: 40° 07' 34.38"
LON: 79° 59' 33.84"

PROJECTED BOTTOM HOLE:
LAT: 40° 06' 31.06"
LON: 79° 58' 23.25"

NOTE: KOP LATITUDE AND LONGITUDE IS THE SAME AS PROPOSED SURFACE HOLE LOCATION.

Pad Detail Scale: 1"=600'

Small Tract Consideration

Tract Acreage = 464.7758

125-27076-00-01

WELL LOCATION PLAT

Page 3 Plan View of Deviated Well Bore

If well has a lateral other than vertical show the bottom hole location on the plat drawing as ⊗ and include the Coordinates in the provided section at the bottom of the drawing area. The top hole and bottom hole locations are to be connected by a bolded line this is to depict the proposed courses of the actual wellbore to be drilled.

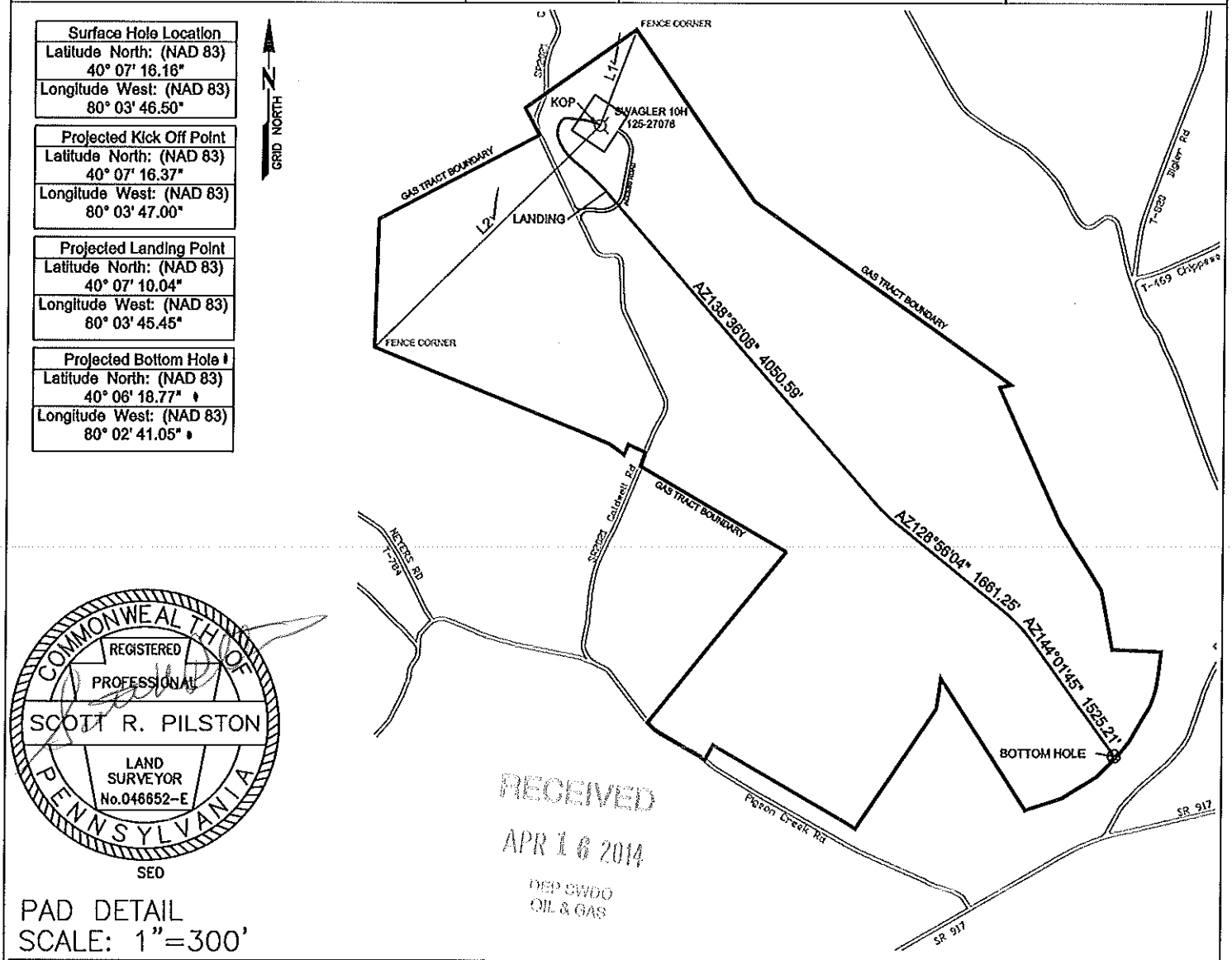
Applicant / Well Operator Name	DEP ID#	Well (Farm) Name	Well #
RICE DRILLING B LLC	268470	SWAGLER	10H

Surface Hole Location
Latitude North: (NAD 83) 40° 07' 16.16"
Longitude West: (NAD 83) 80° 03' 46.50"

Projected Kick Off Point
Latitude North: (NAD 83) 40° 07' 16.37"
Longitude West: (NAD 83) 80° 03' 47.00"

Projected Landing Point
Latitude North: (NAD 83) 40° 07' 10.04"
Longitude West: (NAD 83) 80° 03' 45.45"

Projected Bottom Hole
Latitude North: (NAD 83) 40° 06' 18.77"
Longitude West: (NAD 83) 80° 02' 41.05"



COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
SCOTT R. PILSTON
LAND SURVEYOR
No.046652-E
SEO

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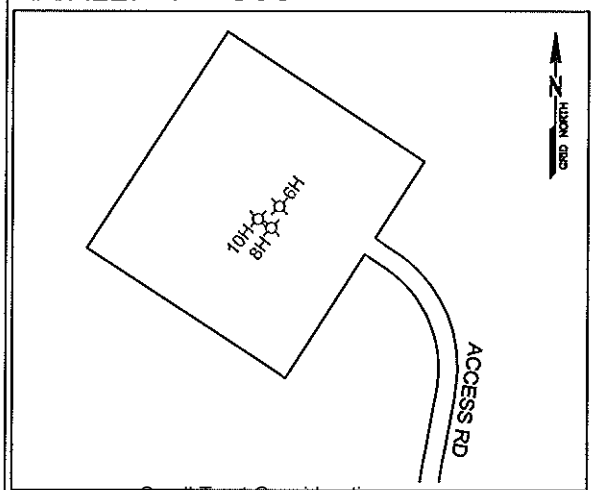
APR 16 2014
DEP SWDO
OIL & GAS

PAD DETAIL
SCALE: 1"=300'



LINE	BEARING	DISTANCE
L1	N 20°53'43" E	968.94'
L2	S 45°24'38" W	2978.66'

TRACT ACREAGE: 569 ±
SCALE: 1"=1500'

0 1500' 3000' 4500'

F:\2011\RICE\Burkland Prospect\Swagler\11-0287 Swagler Unit Map\Swagler Unit 2014-03-09.dwg

125-27569-00-01

WELL LOCATION PLAT

Page 3 Plan View of Deviated Well Bore

If well has a lateral other than vertical show the bottom hole location on the plat drawing as ⊗ and include the Coordinates in the provided section at the bottom of the drawing area. The top hole and bottom hole locations are to be connected by a bolded line this is to depict the proposed courses of the actual wellbore to be drilled.

Applicant / Well Operator Name	DEP ID#	Well (Farm) Name	Well #
Rice Drilling B LLC.	268470	Waterboy	4H

0' 1500' 3000' 4500'

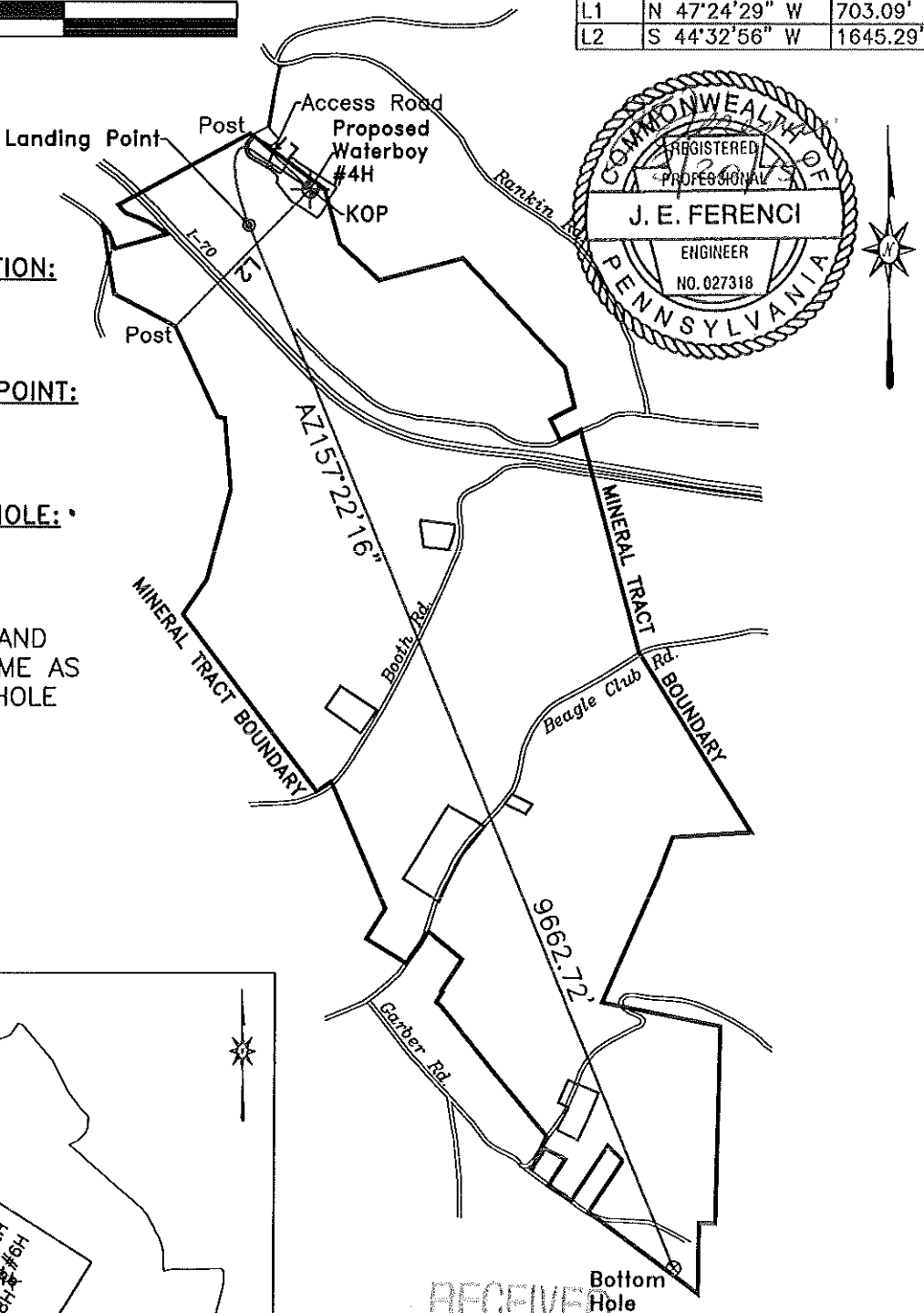
LINE	BEARING	DISTANCE
L1	N 47°24'29" W	703.09'
L2	S 44°32'56" W	1645.29'

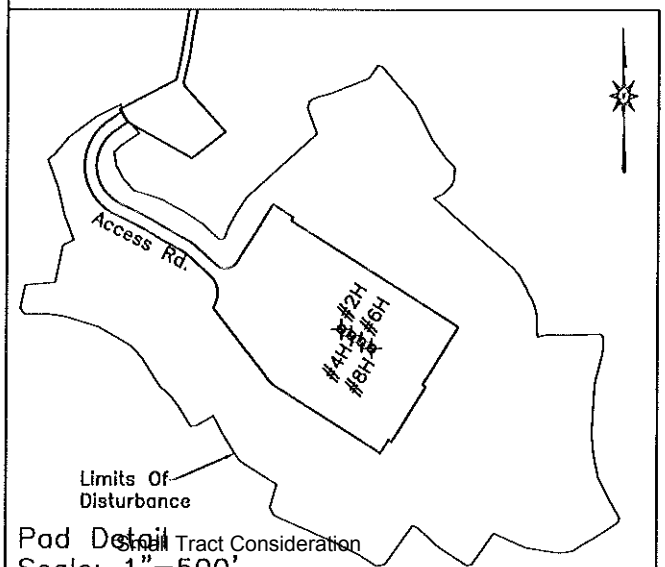
SURFACE HOLE LOCATION:
LAT: 40° 09' 50.98"
LON: 80° 09' 30.90"

PROJECTED LANDING POINT:
LAT: 40° 09' 47.81"
LON: 80° 09' 37.53"

PROJECTED BOTTOM HOLE:
LAT: 40° 08' 20.70"
LON: 80° 08' 46.54"

NOTE: KOP LATITUDE AND LONGITUDE IS THE SAME AS PROPOSED SURFACE HOLE LOCATION.





Pad Detail
Scale: 1"=500'

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APR 1 0 2015
DEP SWDO
OIL & GAS

Tract Acreage = 542.8816

125-27641-00-01

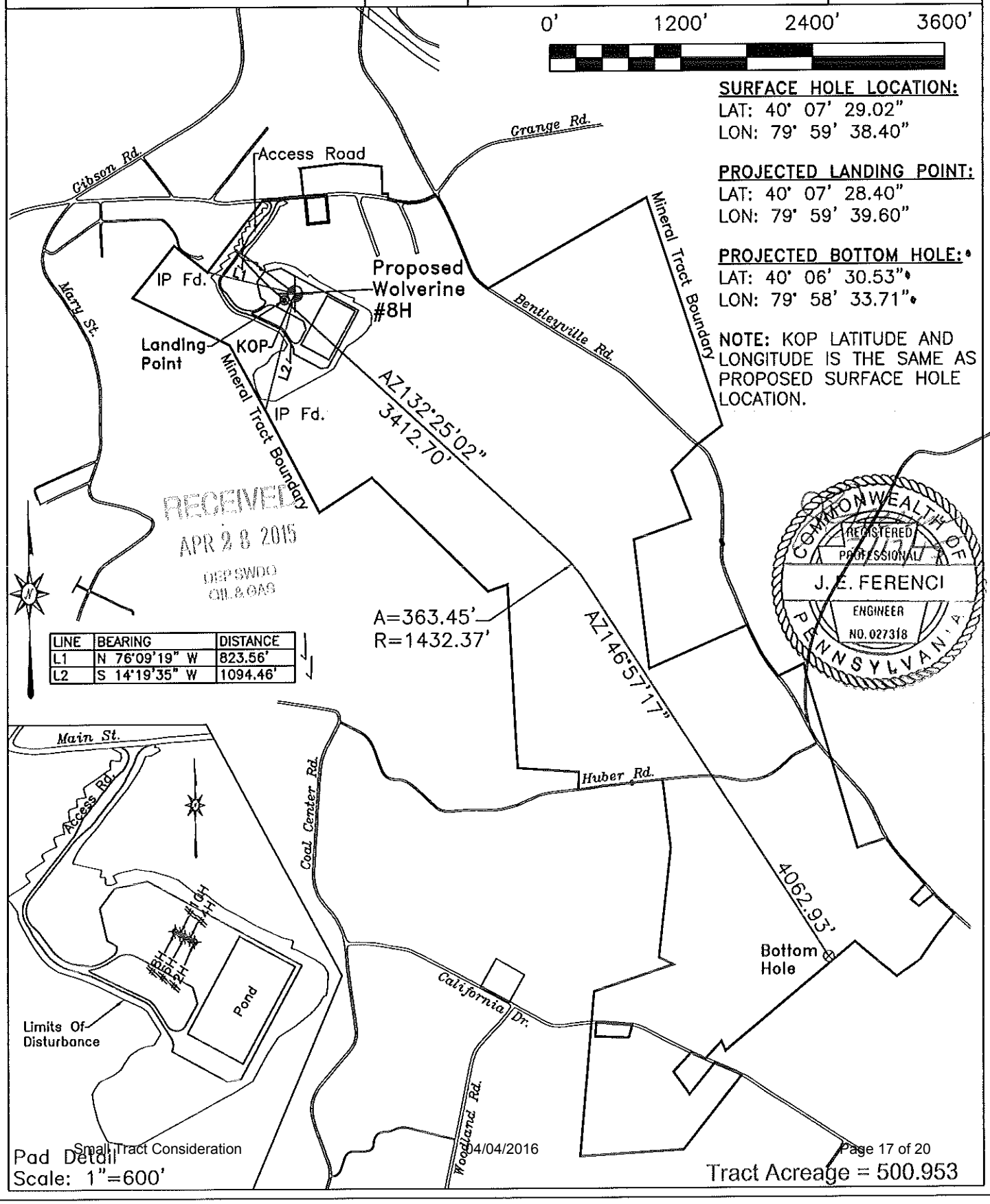
8000-PM-OOGM0002 Rev. 04/2012

WELL LOCATION PLAT

Page 3 Plan View of Deviated Well Bore

If well has a lateral other than vertical show the bottom hole location on the plat drawing as ⊗ and include the Coordinates in the provided section at the bottom of the drawing area. The top hole and bottom hole locations are to be connected by a bolded line this is to depict the proposed courses of the actual wellbore to be drilled.

Applicant / Well Operator Name	DEP ID#	Well (Farm) Name	Well #
Rice Drilling B LLC.	268470	Wolverine	8H



LINE	BEARING	DISTANCE
L1	N 76°09'19" W	823.56'
L2	S 14°19'35" W	1094.46'

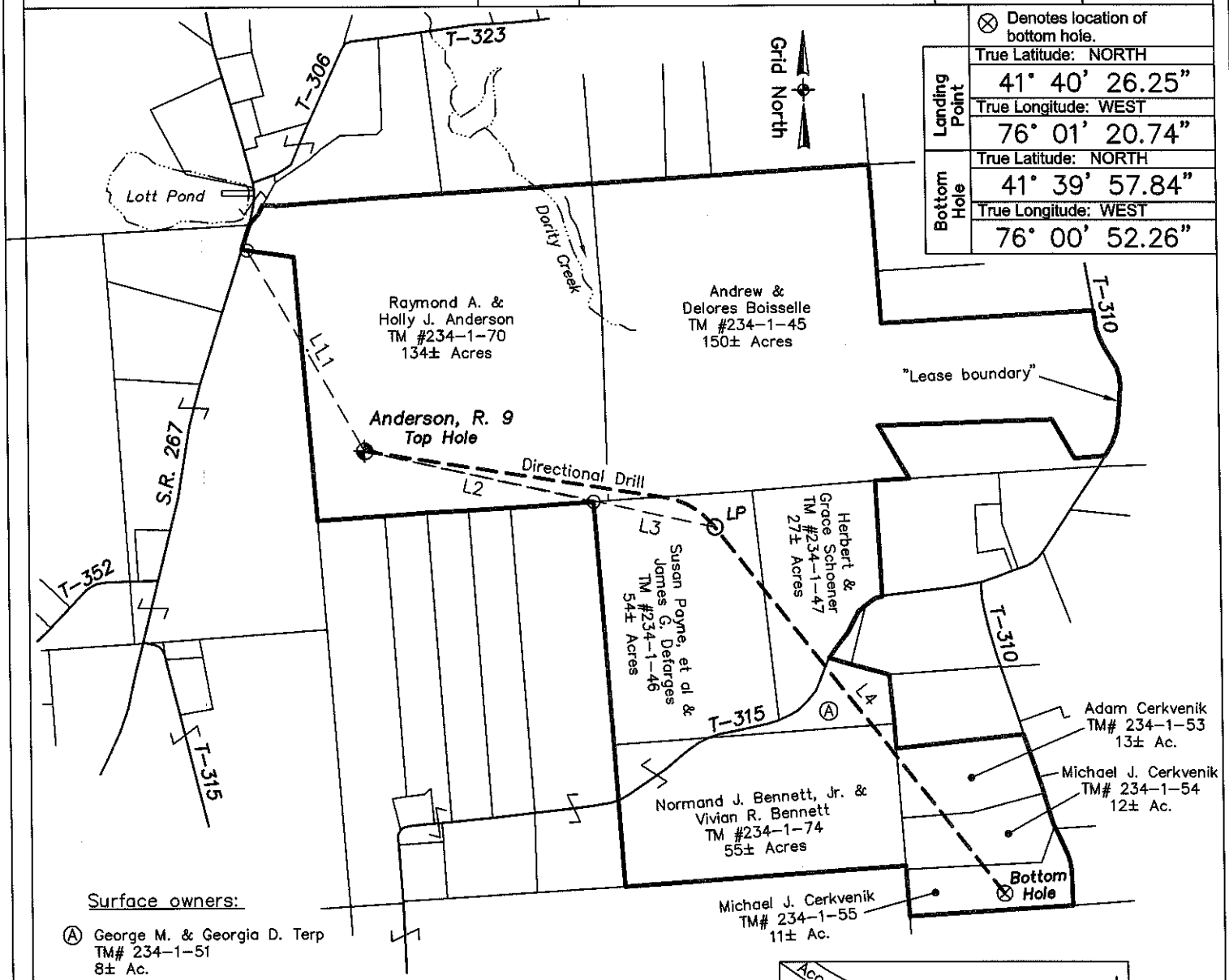
Date: October 18, 2013

115 21640

WELL LOCATION PLAT

Page 3 Plan View of Deviated Well Bore

Applicant / Well Operator Name:	DEP ID #:	Well (Farm) Name:	Well #:	Serial #
Cabot Oil & Gas Corp.	43513	Anderson, R.	9	



Surface owners:

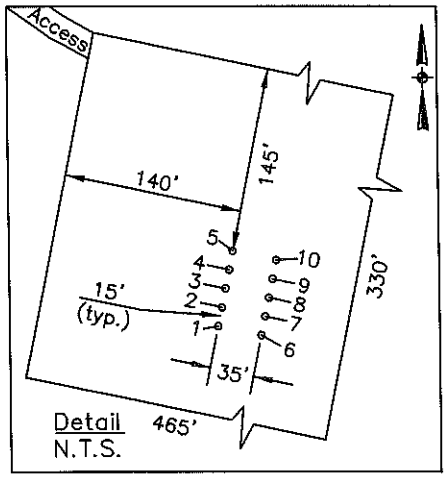
Ⓐ George M. & Georgia D. Terp
TM# 234-1-51
8± Ac.

Location Ties

LINE	BEARING	DISTANCE
L1	S 30°06' E	1797'
L2	N 77°23' W	1818'

Directional Drill Ties

LINE	BEARING	DISTANCE
L3	S 77°36'33" E	2777'
L4	S 38°04'48" E	3597'



Acreage is taken from the Susquehanna County Assessment Office and are not verified by survey.

Acreage is not intended for lease or unit definition.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
SCOTT S. WILLIAMS
LAND SURVEYOR
SU-050816-E

Scott S. Williams 10/18/13

Note: This map is for well location purposes only and does not represent a complete survey. Corners and lines important to the location of the well were located by actual survey; other lines are from deeds or tax maps.

0' 1200' 2400' 3600'

Date: November 1, 2013

115 21641

WELL LOCATION PLAT

Page 3 Plan View of Deviated Well Bore

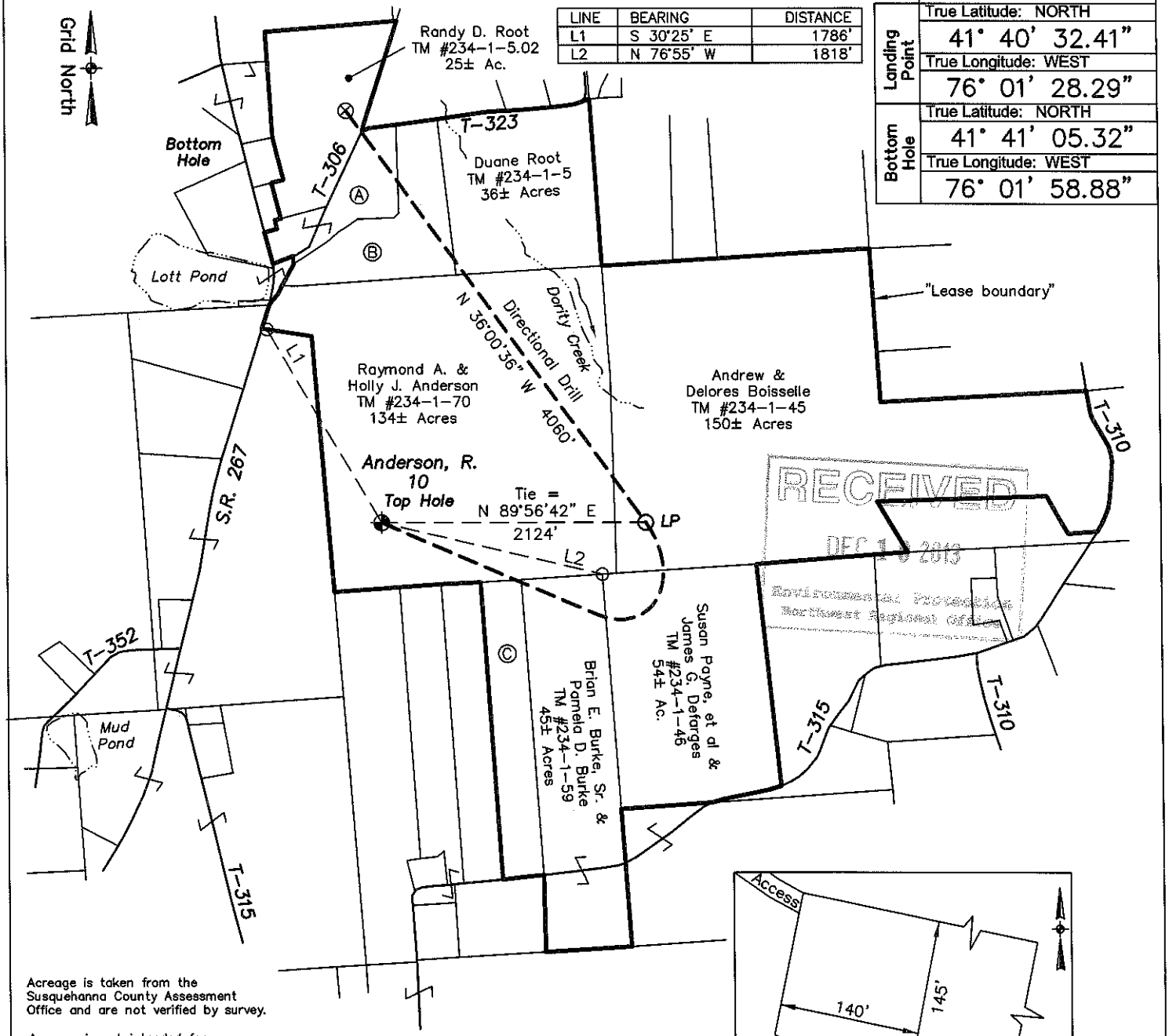
Applicant / Well Operator Name:	DEP ID #:	Well (Farm) Name:	Well #:	Serial #
Cabot Oil & Gas Corp.	43513	Anderson, R.	10	

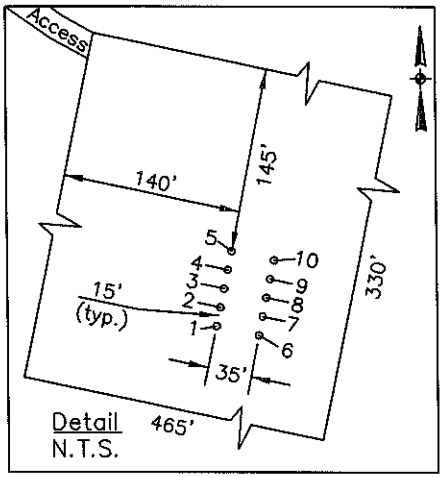
Location Ties

LINE	BEARING	DISTANCE
L1	S 30°25' E	1786'
L2	N 76°55' W	1818'

⊗ Denotes location of bottom hole.

Landing Point	True Latitude: NORTH
	41° 40' 32.41"
	True Longitude: WEST
	76° 01' 28.29"
Bottom Hole	True Latitude: NORTH
	41° 41' 05.32"
	True Longitude: WEST
	76° 01' 58.88"





Acreage is taken from the Susquehanna County Assessment Office and are not verified by survey.

Acreage is not intended for lease or unit definition.

Surface owners:

John Joseph Gazzillo, III & Michelle L. Gazzillo
Ⓐ TM #234-1-75 10± Ac.
Ⓑ TM #234-1-5.03 20± Ac.

Ⓒ Steven S. Wintergrass
TM# 234-1-61
18± Ac.

Note: This map is for well location purposes only and does not represent a complete survey. Corners and lines important to the location of the well were located by actual survey; other lines are from deeds or tax maps.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
SCOTT S. WILLIAMS
LAND SURVEYOR
SU-050816-E

11/1/13

0' 1200' 2400' 3600'

125-24936-00-02
DRILL DEEPER

WELL LOCATION PLAT

Page 3 Plan View of Deviated Well Bore

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Applicant / Well Operator Name	DEP ID#	Well (Form) Name	Well #
RICE DRILLING B LLC ✓	268470 ✓	BATMAN ✓	1H ✓

Surface Hole Location
Latitude North: (NAD 83) 40° 05' 47.71"
Longitude West: (NAD 83) 80° 03' 26.32"

Kick Off Point
Latitude North: (NAD 83) 40° 05' 48.05"
Longitude West: (NAD 83) 80° 03' 26.15"

Projected Landing Point
Latitude North: (NAD 83) 40° 05' 45.60"
Longitude West: (NAD 83) 80° 03' 31.84"

Projected Bottom Hole
Latitude North: (NAD 83) 40° 04' 47.96"
Longitude West: (NAD 83) 80° 02' 57.73"

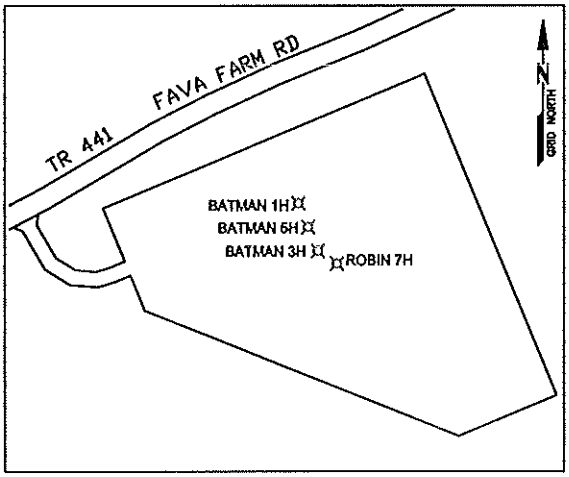
L1 ✓	N 57°49'51" W	827.98'
L2 ✓	S 67°00'35" W	2627.73'

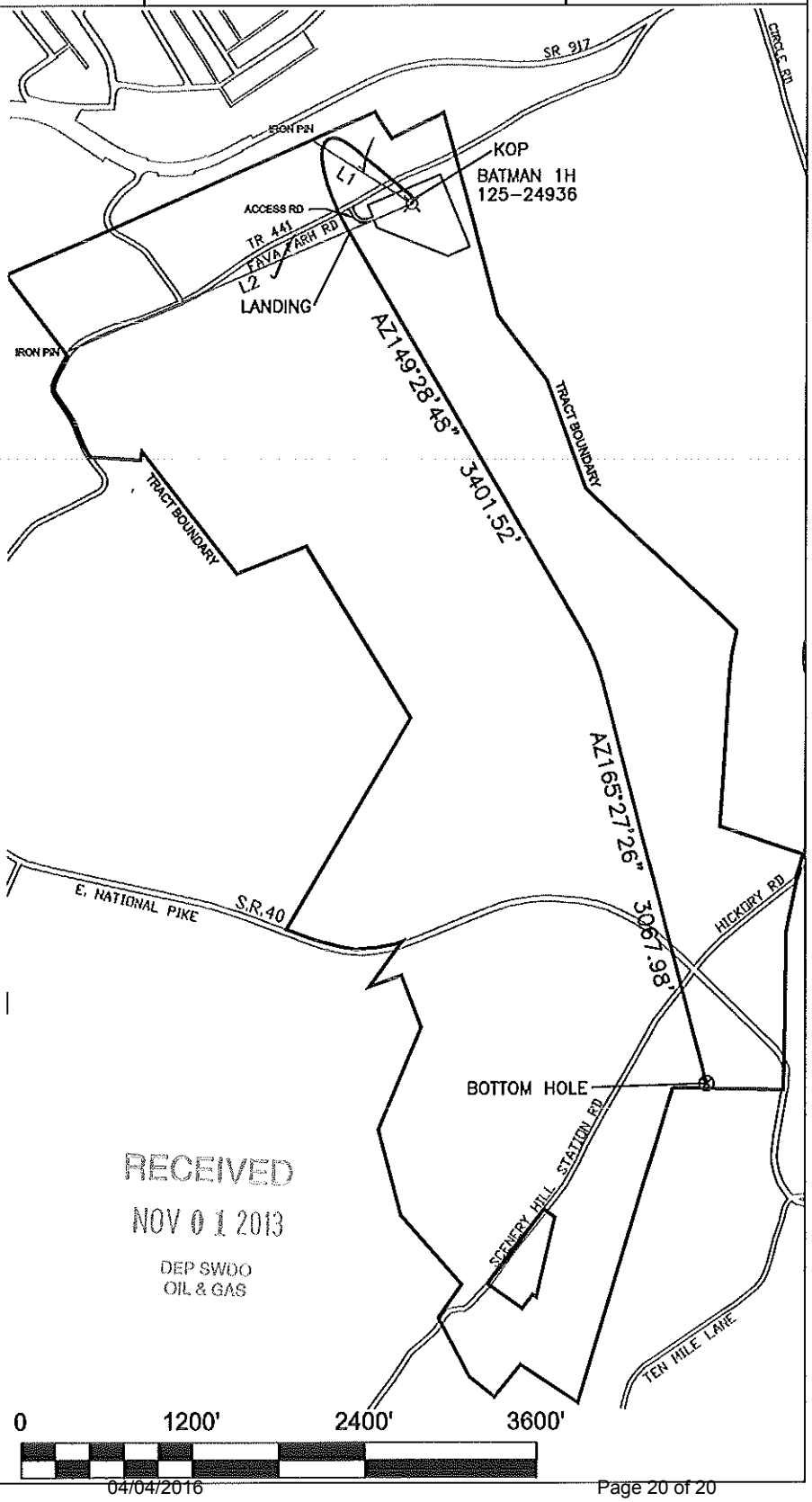
TRACT ACREAGE: 484 ±

SCALE: 1"=1200'

SAT

PAD DETAIL
SCALE: 1"=300'





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DEP SWOO
OIL & GAS

F:\2012\RICE\GOTHAM CITY UNIT\gotham unit rev 08-13-2013.dwg