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PUBLIC SERVICE  
COMMISSION

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

**APPLICATION OF CUMBERLAND CELLULAR  
PARTNERSHIP FOR ISSUANCE OF A CERTIFICATE  
OF PUBLIC CONVENIENCE AND NECESSITY TO  
CONSTRUCT A CELL SITE (CEDAR FLATS) IN RURAL  
SERVICE AREA #5 (MONROE) OF THE COMMONWEALTH  
OF KENTUCKY**

**CASE NO. 2008-00028**

**APPLICATION FOR A CERTIFICATE  
OF PUBLIC CONVENIENCE AND NECESSITY (CEDAR FLATS)**

Cumberland Cellular Partnership ("Cumberland Cellular"), through counsel, pursuant to KRS 278.020 and 278.040, hereby submits this application for a certificate of public convenience and necessity to construct a cell site to be known as the Cedar Flats cell site in and for rural service area ("RSA") #5 of the Commonwealth of Kentucky, namely the counties of Barren, Monroe, Metcalfe, Adair, Cumberland, Russell, Clinton, Wayne, McCreary and Hart, Kentucky.

1. As required by 807 KAR 5:001 Sections 8(1) and (3), and 807 KAR 5:063, Cumberland Cellular states that it is a Kentucky limited liability partnership whose full name and post office address are: Cumberland Cellular Partnership, 2902 Ring Road, Elizabethtown, Kentucky, 42701.
2. Pursuant to 807 KAR § 1 (1)(b), a copy of the applicant's applications to the Federal Aviation Administration and Kentucky Airport Zoning Commission are Exhibit "A". Written authorizations from these agencies will be supplied to the Commission upon their approval.
3. Pursuant to 807 KAR 5:063 §1(1)(d), applicant is submitting as Exhibit "B" a geotechnical investigation report, signed and sealed by a professional engineer registered in Kentucky, that includes boring logs, foundation design recommendations, and a finding as to the susceptibility of the area surrounding the proposed site to flood hazard.
4. Pursuant to 807 KAR 5:063 §1(1)(e), clear directions from the county seat to the proposed site, including highway numbers and street names, if applicable, with the telephone number of the person who prepared the directions are Exhibit "C".

5. Pursuant to 807 KAR 5:063 §1(1)(f), a copy of the lease for the property on which the tower is proposed to be located, is Exhibit “D”.

6. Pursuant to 807 KAR §1(1)(g), experienced personnel will manage and operate the Cedar Flats cell site. The President of Bluegrass Cellular Inc., Mr. Ron Smith, is ultimately responsible for all construction and operations of the cellular system of Cumberland Cellular, of which system the Cedar Flats cell site will be a part. Bluegrass Cellular Inc. provides management services to Cumberland Cellular under a management contract, just as it does with three (3) other wireless carriers in the Commonwealth. And, Bluegrass Cellular Inc. has been providing these management services to these other wireless carriers for well over a decade. This extensive management experience with Bluegrass Cellular demonstrates that Bluegrass Cellular Inc.'s management and technical ability to supervise the operations of a wireless carrier.

7. Pursuant to 807 KAR §1(1)(g), Eastpointe Engineering Group, LLC is responsible for the design specifications of the proposed tower (identified in Exhibit “B”).

8. Pursuant to 807 KAR 5:063 §1(1)(h), a site development plan or survey, signed and sealed by a professional engineer registered in Kentucky, that shows the proposed location of the tower and all easements and existing structures within 500 feet of the proposed site on the property on which the tower will be located, and all easements and existing structures within 200 feet of the access drive, including the intersection with the public street system, is Exhibit “B”.

9. Pursuant to 807 KAR 5:063 §1(1)(i), a vertical profile sketch of the tower, signed and sealed by a professional engineer registered in Kentucky, indicating the height of the tower and the placement of all antennas is Exhibit “B”.

10. Pursuant to 807 KAR 5:063 §1(1)(j), the tower and foundation design plans and a description of the standard according to which the tower was designed, signed and sealed by a professional engineer registered in Kentucky, is Exhibit “B”.

11. Pursuant to 807 KAR 5:063 § 1 (1)(k), a map, drawn to a scale no less than one (1) inch equals 200 feet, that identifies every structure and every owner of real estate within 500 feet of the proposed tower, is Exhibit “E”.

12. Pursuant to 807 KAR 5:063 § 1 (1)(l), applicant’s legal counsel hereby affirms that every person who owns property within 500 feet of the proposed tower has been: (i) notified by certified mail, return receipt requested, of the proposed construction; (ii) given the commission docket number under which the application will be processed; and (iii) informed of his or her right to request intervention.

13. Pursuant to KRS 278.665(2), applicant’s legal counsel hereby affirms that every person who, according to the records of the property valuation administrator, owns property contiguous to the property where the proposed cellular antenna tower will be located has been: (i) notified by certified mail, return receipt requested, of the proposed construction; (ii) given the commission docket number under which the application will be processed; and (iii) informed of his or her right to request intervention.

14. Pursuant to 807 KAR 5:063 §1(1)(m), a list of the property owners who received the notice together with copies of the certified letters sent to listed property owners, is Exhibit “F”.

15. Pursuant to 807 KAR 5:063 § 1 (1)(n), applicant’s legal counsel hereby affirms that the Office of the Monroe County Judge Executive has been: (i) notified by certified mail, return receipt requested, of the proposed construction; (ii) given the commission docket number under which the application will be processed; and (iii) informed of its right to request intervention.

16. Pursuant to 807 KAR 5:063 §1(1)(o), a copy of the notice sent to the Monroe County Judge Executive is Exhibit “G”.

17. Pursuant to 807 KAR 5:063 § 1 (1)(p), applicant’s legal counsel hereby affirms that (i) two written notices meeting subsection two (2) of this section have been posted, one in a visible location on the proposed site and one on the nearest public road; and (ii) the notices shall remain posted for at least two weeks after the application has been filed.

18. Pursuant to 807 KAR 5:063 § 1 (2)(a), applicant's legal counsel affirms that:

(a) A written notice, of durable material at least two (2) feet by four (4) feet in size, stating that "***Cumberland Cellular Partnership proposes to construct a telecommunications tower on this site,***" including the addresses and telephone numbers of the applicant and the Kentucky Public Service Commission, has been posted and shall remain in a visible location on the proposed site until final disposition of the application; and

(b) A written notice, of durable material at least two (2) feet by four (4) feet in size, stating that "***Cumberland Cellular Partnership proposes to construct a telecommunications tower near this site,***" including the addresses and telephone numbers of the applicant and the Kentucky Public Service Commission, has been posted on the public road nearest the site.

A copy of each sign is attached as Exhibit "H"

19. Pursuant to 807 KAR 5:063 § 1 (1)(q), a statement that notice of the location of the proposed construction has been published in a newspaper of general circulation in the county in which the construction is proposed is Exhibit "I".

20. Pursuant to 807 KAR 5:063 § 1(1)(r), the cell site, which has been selected, is in a relatively undeveloped area in Tompkinsville, Kentucky.

21. Pursuant to 807 KAR 5:063 § 1(1)(s), Cumberland Cellular has considered the likely effects of the installation on nearby land uses and values and has concluded that there is no more suitable location reasonably available from which adequate service to the area can be provided, and that there is no reasonably available opportunity to co-locate. Cumberland Cellular has attempted to co-locate on towers designed to host multiple wireless service providers' facilities or existing structures, such as a telecommunications tower, or another suitable structure capable of supporting the utility's facilities.

22. Pursuant to 807 KAR 5:063 § 1(1)(t), attached as Exhibit "J" is a map of the area in which the tower is proposed to be located, that is drawn to scale and that clearly depicts the search area in which a site should, pursuant to radio frequency requirements, be located.

23. Pursuant to KRS 100.987(2)(a), a grid map, that is drawn to scale, that shows the location of all existing cellular antenna towers and that indicates the general position of proposed construction sites for new cellular antenna towers is Exhibit "K".

24. No reasonably available telecommunications tower, or other suitable structure capable of supporting the cellular facilities of Cumberland Cellular and which would provide adequate service to the area exists.

25. Correspondence and communication with regard to this application should be addressed to:

John E. Selent  
Holly C. Wallace  
**DINSMORE & SHOHL LLP**  
1400 PNC Plaza  
500 West Jefferson Street  
Louisville, KY 40202  
(502) 540-2300  
*john.selent@dinslaw.com*  
*holly.wallace@dinslaw.com*

WHEREFORE, Cumberland Cellular Partnership requests the Commission to enter an order:

1. Granting a certificate of public convenience and necessity to construct the Cedar Flats cell site; and
2. Granting all other relief as appropriate.

Respectfully submitted,



---

John E. Selent  
Holly C. Wallace  
**DINSMORE & SHOHL LLP**  
1400 PNC Plaza  
500 West Jefferson Street  
Louisville, KY 40202  
(502) 540-2300  
*john.selent@dinslaw.com*  
*holly.wallace@dinslaw.com*



LUKAS, NACE,  
GUTIERREZ & SACHS

CHARTERED

1650 TYSONS BOULEVARD, SUITE 1500  
MCLEAN, VIRGINIA 22102  
703 584 8678 • 703 584 8696 FAX

WWW.FCCLAW.COM

RUSSELL D. LUKAS  
DAVID L. NACE  
THOMAS GUTIERREZ\*  
ELIZABETH R. SACHS\*  
GEORGE L. LYON, JR.  
PAMELA L. GIST  
DAVID A. LAFURIA  
TODD SLAMOWITZ\*  
B. LYNN F. RATNAVALE\*  
STEVEN M. CHERNOFF\*  
KATHERINE PATSAS\*

CONSULTING ENGINEERS  
ALI KUZEHKANANI  
LEILA REZANAVAZ  
OF COUNSEL  
LEONARD S. KOLSKY\*  
JOHN CIMKO\*  
J. K. HAGE III\*  
JOHN J. MCAVOY\*  
HON. GERALD S. MCGOWAN\*  
TAMARA DAVIS-BROWN\*

\*NOT ADMITTED IN VA

February 6, 2008

Telephone

(703) 584-8668

Via Federal Express

Mr. John Houlihan  
Kentucky Airport Zoning Commission  
90 Airport Road  
Building 400  
Frankfort, Kentucky 40601

Dear Mr. Houlihan:

Enclosed please find two completed TC 56-50 forms, Application for Permit to Construct or Alter a Structure, for a new tower (Cedar Flats) near Tompkinsville, Kentucky. The Structure, including top-mounted antennas will have an overall height of 255 feet Above Ground Level.

Enclosed Form TC 56-50 and the attached exhibit include all the pertinent information for this existing tower structure. Also enclosed are copies of the completed FAA Form 7460-1 for the proposed site, a non-reduced 7-1/2' U.S. Geological Survey map indicating the exact location of the site, and a 2-C survey.

Please do not hesitate to contact the undersigned if there are questions regarding this matter.

Sincerely,

  
Leila Rezanavaz  
Consulting Engineer

Enclosures

CC: Doug Updegraff

Kentucky Transportation Cabinet, Kentucky Airport Zoning Commission, 125 Holmes Street, Frankfort KY 40622

Kentucky Aeronautical Study Number

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

1. APPLICANT - Name, Address, Telephone, Fax, etc.

Scott McCloud  
Bluegrass Cellular  
2902 Ring Road  
Elizabethtown, KY 42702  
Tel: 270-769-0339  
Fax: 270-737-0580

2. Representative of Applicant - Name, Address, Telephone, Fax

Leila Rezanavaz  
Lukas, Nace, Gutierrez & Sachs, Chartered  
1650 Tysons Blvd., Suite 1500  
McLean, VA 22102  
T: 703-584-8668

3. Application for:  New Construction  Alteration  Existing

4. Duration:  Permanent  Temporary (Months \_\_\_\_\_ Days \_\_\_\_\_)

5. Work Schedule: Start 3/20/08 End 3/25/08

6. Type:  Antenna Tower  Crane  Building  Power Line  
 Landfill  Water Tank  Other \_\_\_\_\_

7. Marking/Painting and/or Lighting Preferred:

Red Lights and Paint  Dual - Red & Medium Intensity White  
 White - Medium Intensity  Dual - Red & High Intensity White  
 White - High Intensity  Other \_\_\_\_\_

8. FAA Aeronautical Study Number 2008-ASO-701-OE

9. Latitude: 36 ° 45 ' 8 " N

10. Longitude: 85 ° 46 ' 41 " W

11. Datum:  NAD 83  NAD 27  Other \_\_\_\_\_

12. Nearest Kentucky City Tompkinsville County Monroe

13. Nearest Kentucky public use or Military airport:

Tompkinsville - Monroe Co. Airport

14. Distance from #13 to Structure: 7.2 miles

15. Direction from #13 to Structure: WNW

16. Site Elevation (AMSL): 1008 Feet

17. Total Structure Height (AGL): 255 Feet

18. Overall Height (#16 + #17) (AMSL): 1263 Feet

19. Previous FAA and/or Kentucky Aeronautical Study Number(s):

N/A

20. Description of Location: (Attach a USGS 7.5 minute Quadrangle Map or an Airport Layout Drawing with the precise site marked and any certified survey)

Site is located at:  
5612 Old Glasgow Road  
Tompkinsville, KY 42167

21. Description of Proposal:

Structure: Proposed self support tower with top-mounted antennas for overall height of 255' AGL

ERP: 250 watts

Frequencies: Cellular Band B

22. Has a "NOTICE OF CONSTRUCTION OR ALTERATION" (FAA Form 7460-1)

No

been filed with the Federal Aviation Administration?

Yes, When 2/5/08

CERTIFICATION: I hereby certify that all the above statements made by me are true, complete and correct to the best of my knowledge and belief.

Leila Rezanavaz / Consulting Engineer

*Leila Rezanavaz*

2/6/08

Printed Name

Signature

Date

PENALTIES: Persons failing to comply with Kentucky Revised Statutes (KRS 183.861 through 183.990) and Kentucky Administrative Regulations (602 KAR 050: Series) are liable for fines and/or imprisonment as set forth in KRS 183.990(3). Non-compliance with Federal Aviation Administration Regulations may result in further penalties.

Commission Action:

Chairman, KAZC

Administrator, KAZC

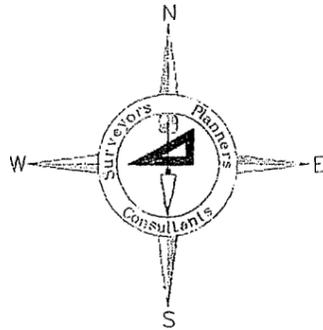
Approved

Disapproved

Date \_\_\_\_\_

# Landmark Surveying Co., Inc.

Darren L. Helms, R.L.S., PRESIDENT  
Dennis N. Helms, R.L.S., VICE PRESIDENT



15 N.E. 3rd Street  
Washington, Indiana 47501  
Phone: 812-257-0950  
Fax: 812-257-0953  
E-mail: landmark@dmrtc.net

## 2C Certification

December 28, 2007

Designation: Cedar Flats  
Site ID No.: Not Available  
Tower Type: Proposed Self-Support Tower  
Location: 5612 Old Glasgow Road, Tompkinsville, KY 42167

I certify that the latitude, longitude, ground elevation and height of the proposed self-support tower are as follows:

Latitude:	36 degrees 45 minutes 08.19 seconds North	(NAD 1983)
Longitude:	85 degrees 46 minutes 41.09 seconds West	(NAD 1983)
Ground Elevation:	1,008.0 feet or 307.24 meters	(NAVD 1988)
Proposed Structure Height:	240 feet or 73.2 meters	(above ground level)
Proposed Overall Structure Height:	not available	(above ground level)

The accuracy of the latitude and longitude of the proposed self-support tower is  $\pm 50$  feet or  $\pm 15$  meters. The ground elevation and structure height are accurate to within  $\pm 20$  feet or  $\pm 6$  meters.

The information shown above is based upon field observations made on December 13, 2007 using the National Geodetic Survey monument "PETERS RM 2" and the Kentucky State Plane Coordinate System, South Zone, NAD 1983 (2007). The field observations were completed using Sokkia GPS receivers and a Topcon GPT-8005A robotic total station. Geodetic computations were completed using Sokkia's Locus software and Autodesk Land Desktop Companion 2008 software.

Landmark Surveying Co., Inc.

  
Darren L. Helms, Kentucky Professional Land Surveyor No. 3386



**Notice of Proposed Construction or Alteration (7460-1)**

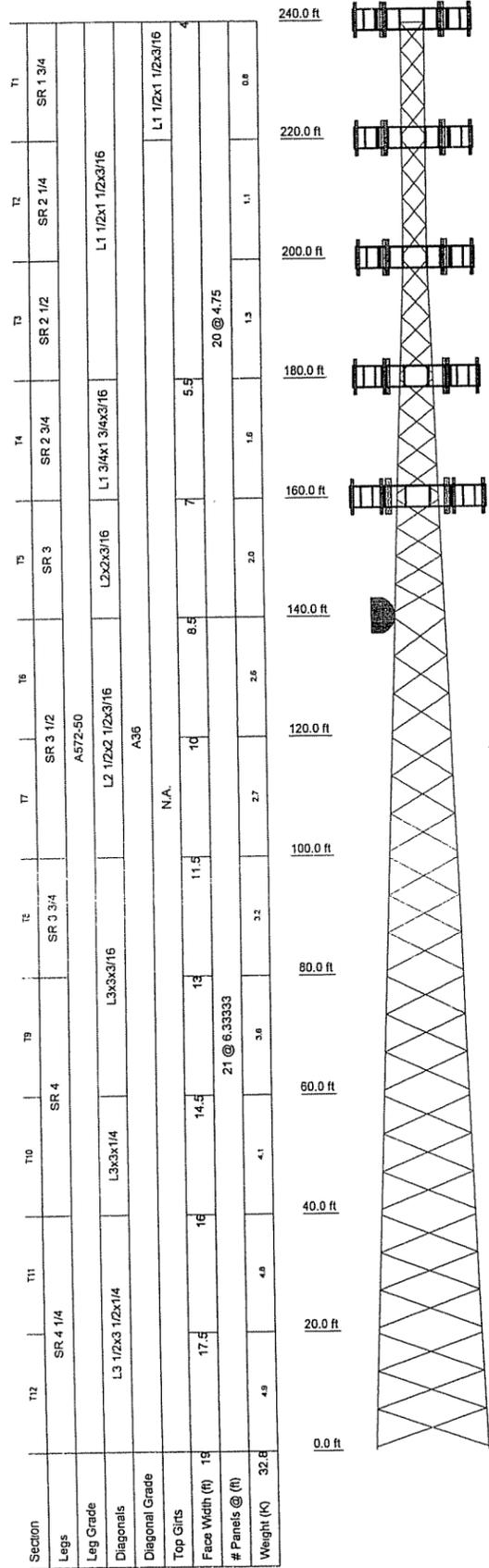
Project Name: BLUEG-000087513-08 Sponsor: Bluegrass Cellular, Inc.

**Details for Case : Cedar Flats**

Show Project Summary

<b>Case Status</b>		<b>Structure Summary</b>	
ASN: 2008-ASO-701-OE	Date Accepted: 02/05/2008	Structure Type: Antenna Tower	
Status: Accepted	Date Determined:	Structure Name: Cedar Flats	
	Letters: None	FCC Number:	
<b>Construction / Alteration Information</b>		<b>Common Frequency Bands</b>	
Notice Of: Construction	Duration: Permanent	Low Freq	High Freq
<i>if Temporary</i> : Months: Days:	Work Schedule - Start: 03/20/2008	824	849
Work Schedule - End: 03/25/2008	State Filing: Filed with State	851	866
		869	894
		Freq Unit	ERP
		MHz	500
		MHz	500
		MHz	500
		ERP Unit	W
		ERP Unit	W
		ERP Unit	W
<b>Structure Details</b>		<b>Specific Frequencies</b>	
Latitude: 36° 45' 8.19" N	Longitude: 85° 46' 41.09" W		
Horizontal Datum: NAD83	Site Elevation (SE): 1008 (nearest foot)		
Structure Height (AGL): 255 (nearest foot)	Marking/Lighting: Dual-red and medium intensity		
Other :			
Nearest City: Tompkinsville	Nearest State: Kentucky		
Description of Location: Site is located at: 5612 Old Glasgow Road Tompkinsville, KY 42167	Description of Proposal: Proposed self-support tower with top-mounted antennas for overall height of 255'.		





**DESIGNED APPURTENANCE LOADING**

TYPE	ELEVATION	TYPE	ELEVATION
(2) D100-0042-0041 (Initial)	240	T frame sector Mount (Future Carrier 2)	200
(2) D100-0042-0041 (Initial)	240	(2) RWB 80014/120 (Future)	180
(2) D100-0042-0041 (Initial)	240	(2) RWB 80014/120 (Future)	180
Lightning Rod 1"x10'	240	(2) RWB 80014/120 (Future)	180
Flash Beacon Lighting (Initial)	240	T frame sector Mount (Future Carrier 3)	180
T frame sector Mount (Initial)	240	T frame sector Mount (Future Carrier 3)	180
T frame sector Mount (Initial)	240	T frame sector Mount (Future Carrier 3)	180
(2) RWB 80014/120 (Future)	220	T frame sector Mount (Future Carrier 3)	180
(2) RWB 80014/120 (Future)	220	(2) RWB 80014/120 (Future)	160
(2) RWB 80014/120 (Future)	220	(2) RWB 80014/120 (Future)	160
T frame sector Mount (Future Carrier 1)	220	(2) RWB 80014/120 (Future)	160
T frame sector Mount (Future Carrier 1)	220	(2) RWB 80014/120 (Future)	160
T frame sector Mount (Future Carrier 1)	220	T frame sector Mount (Future Carrier 4)	160
(2) RWB 80014/120 (Future)	200	T frame sector Mount (Future Carrier 4)	160
(2) RWB 80014/120 (Future)	200	T frame sector Mount (Future Carrier 4)	160
(2) RWB 80014/120 (Future)	200	HP6-122	140
T frame sector Mount (Future Carrier 2)	200		
T frame sector Mount (Future Carrier 2)	200		

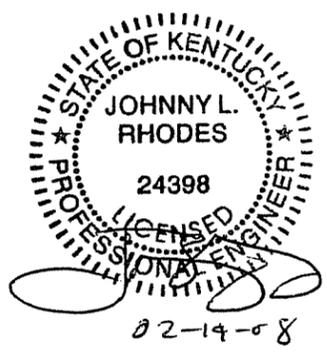
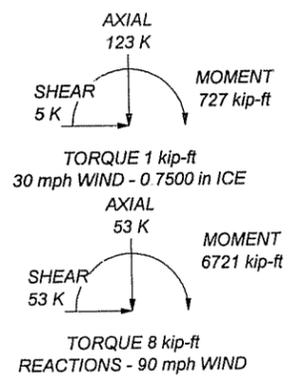
**MATERIAL STRENGTH**

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

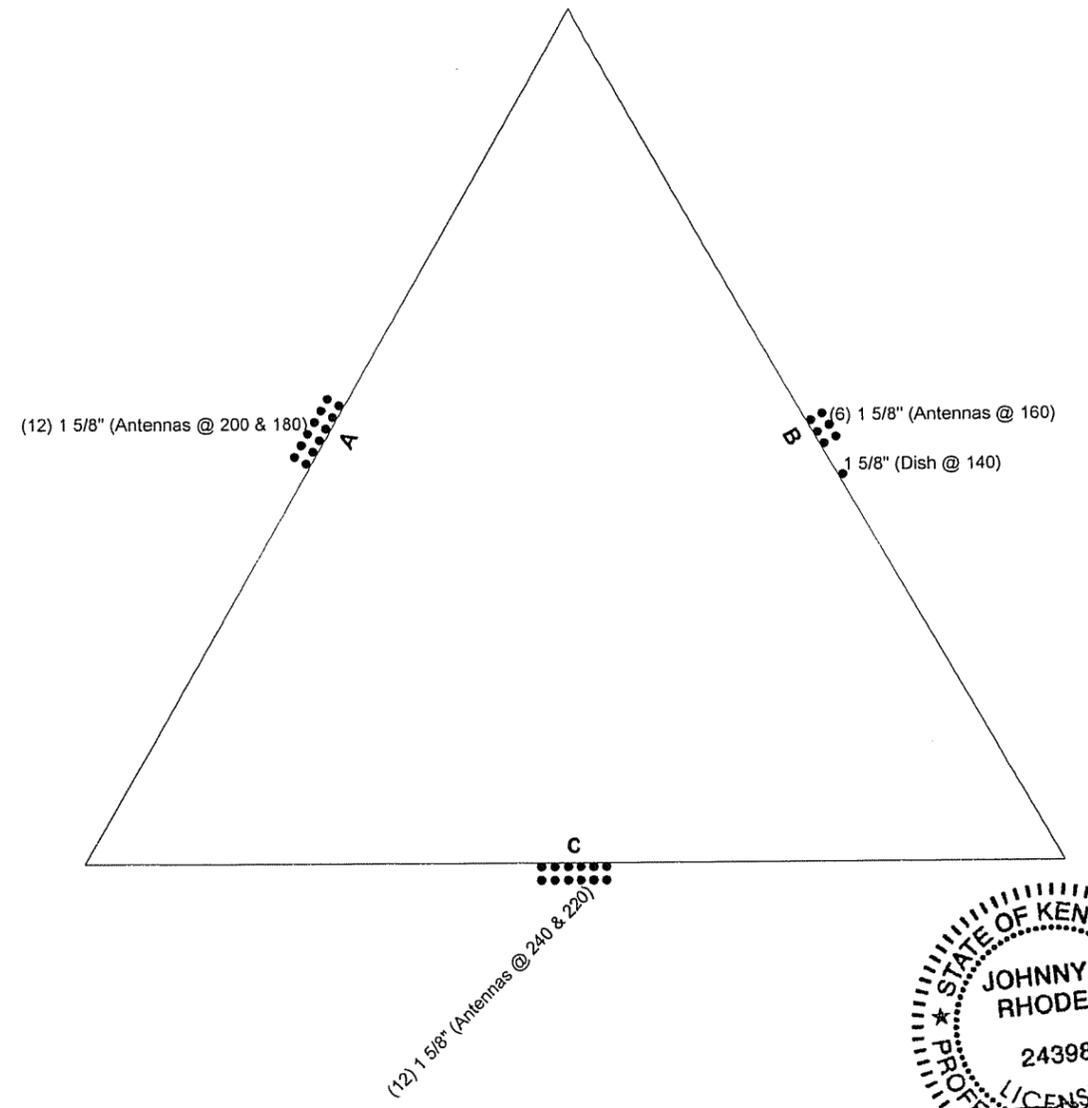
**TOWER DESIGN NOTES**

1. Tower is located in Monroe County, Kentucky.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 90 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 30 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower designed as Structure Class II.
7. In no case shall more than (6) lines be exposed to wind. Feedlines may be stacked in up to (2) rows on the inside and outside face of the tower.
8. Final Design 02/08/08. JLR

MAX. CORNER REACTIONS AT BASE:  
 DOWN: 426 K  
 UPLIFT: -377 K  
 SHEAR: 31 K



<b>Eastpointe Engineering Group, LLC</b> 4020 Tull Ave Muskogee, OK 74403 Phone: 918.683.2169 FAX: 918.682.7618	<b>Job: EII Job #2784--Cedar Flats</b>
	<b>Project: 240' SST/Monroe County, KY</b>
	Client: Bluegrass Cellular Drawn by: Johnny L. Rhodes, P.E. App'd:
	Code: TIA-222-G Date: 02/14/08 Scale: NTS
	Path:

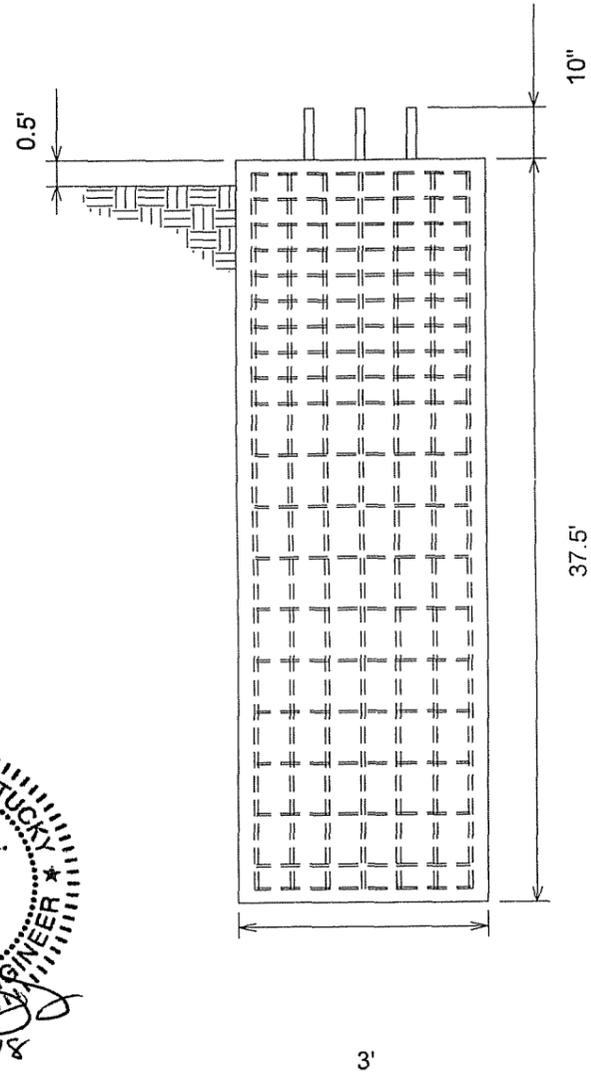


STATE OF KENTUCKY  
 JOHNNY L. RHODES  
 24398  
 LICENSED PROFESSIONAL ENGINEER  
 02-14-08

<b>Eastpointe Engineering Group, LLC</b> 4020 Tull Ave Muskogee, OK 74403 Phone: 918.683.2169 FAX: 918.682.7618	<b>Job: EII Job #2784--Cedar Flats</b>		
	Project: 240' SST/Monroe County, KY		
	Client: Bluegrass Cellular	Drawn by: Johnny L. Rhodes, P.E.	App'd:
	Code: TIA-222-G	Date: 02/14/08	Scale: NTS
	Path:	Dwg No E-7	

# CAISSON DESIGN

Vertical Bars	(14) #9 bars, 37' long
Ties	#5 bars @ 6" c/c for the first 6.5' then 12" c/c thereafter



## General Notes

1. Concrete shall be placed in accordance with ACI318-02, latest revision.
2. Concrete shall have a minimum 28 day compressive strength of 4000 PSI.
3. Rebar to conform to ASTM A615 grade 60.
4. Rebar used for ties may be A615 grade 40.
5. All rebar to have a minimum of 3" clear cover.
6. All exposed concrete corners to have 3/4" chamfer.
7. Bottom and side surfaces to rest on undisturbed soil.
8. Contractor shall be responsible to review and follow all recommendations of the geotechnical report.

## Supplemental Notes

Soil values obtained from Terracon soils report #57077391 Dated 02/08/08.  
Use (6) 1 1/4" F1554 Grade 105 Anchor Bolts w/ min 60" embedment.

**EASTPOINTE ENGINEERING GROUP, LLC**  
4020 Tull Ave. Muskogee, OK 74403--Phone 918.683.2169--Fax:918.682.7618

Client:	Bluegrass Cellular	
Site:	Cedar Flats	
Job:	2784	Drawn by: JLR
Scale:	NTS	Date: 02/14/08

**GEOTECHNICAL ENGINEERING REPORT**  
**CEDAR FLATS TELECOMMUNICATION TOWER**  
**5588 OLD GLASGOW ROAD**  
**TOMPKINSVILLE, KENTUCKY**

**TERRACON PROJECT NO. 57077391**  
**February 8, 2008**

*Prepared For:*

**BLUEGRASS CELLULAR PARTNERSHIP**  
**Elizabethtown, Kentucky**

*Prepared by:*

**Terracon**  
**Louisville, Kentucky**

**Terracon**

February 8, 2008

Bluegrass Cellular Partnership  
2902 Ring Road  
Elizabethtown, Kentucky 42702

Attention: Mr. Doug Updegraff

**Re: Geotechnical Engineering Report  
Cedar Flats Telecommunication Tower  
5588 Old Glasgow Road  
Tompkinsville, Kentucky  
Terracon Project No. 57077391**

**Terracon**  
Consulting Engineers & Scientists

4545 Bishop Lane, Suite 101  
Louisville, Kentucky 40218  
Phone 502.456.1256  
Fax 502.456.1278  
www.terracon.com

Dear Mr. Updegraff:

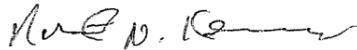
The results of our subsurface exploration are attached. The purpose of this exploration was to obtain information on subsurface conditions at the proposed project site and, based on this information, to provide recommendations regarding the design and construction of the foundations for the proposed tower.

Terracon's geotechnical design parameters and recommendations within this report apply to the existing planned tower height and would apply to adjustments in the tower height, up to a 20% increase or decrease in height, as long as the type of tower does not change. If changes in the height of the tower dictate a change in tower type (ie - monopole to a self-support, self-support to a guyed tower), Terracon should be contacted to evaluate our recommendations with respect to these changes.

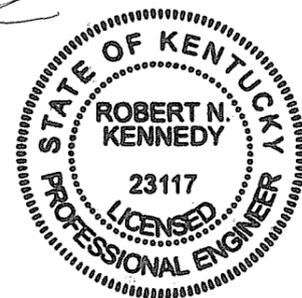
We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service to you in any way, please feel free to contact us.

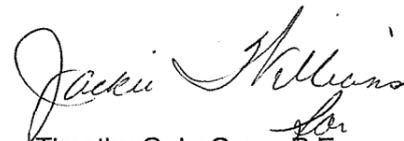
Sincerely,  
**Terracon**

  
Timothy M. Hitchcock, EIT  
Staff Engineer

  
Robert N. Kennedy, P.E.  
Kentucky No.: 23117

Copies: (4) Addressee



  
Timothy G. LaGrow, P.E.  
Regional Manager

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**GEOTECHNICAL ENGINEERING REPORT**

**CEDAR FLATS TELECOMMUNICATION TOWER  
5588 OLD GLASGOW ROAD  
TOMPKINSVILLE, KENTUCKY  
TERRACON PROJECT NO. 57077391  
February 8, 2008**

**1.0 INTRODUCTION**

The purpose of this report is to describe the subsurface conditions encountered in the boring, analyze and evaluate the test data, and provide recommendations regarding the design and construction of the foundations and earthwork for the proposed tower. One boring extending to a depth of about 44 feet below the existing ground surface was drilled at the site. An individual boring log and a boring location plan are included with this report.

**2.0 PROJECT DESCRIPTION**

Terracon understands the proposed project will consist of the construction of a 240-foot self supporting lattice tower. Exact tower loads are not available, but based on our past experience are anticipated to be as follows:

Vertical Load:	600 kips
Horizontal Shear:	80 kips
Uplift:	500 kips

A small, lightly loaded equipment building will also be constructed. Wall and floor loads for this building are not anticipated to exceed 1 kip per linear foot and 100 pounds per square foot, respectively. The subject site consists of an approximate 100- by 100-foot parcel of land located at 5588 Old Glasgow Road (KY 63) in Tompkinsville, Kentucky. The site is located in a grass covered field behind the Mud Lick Volunteer Fire Department. Based on the provided drawings, the site has about 2 feet of elevational relief and the center of tower is at EL 995. We have assumed minimal cuts and/or fills will be required to reach the planned site grades.

**3.0 EXPLORATION PROCEDURES**

**3.1 Field Exploration**

The subsurface exploration consisted of drilling and sampling one boring at the site to a depth of about 44 feet below existing grade. The boring was advanced at the center of the tower, staked by the project surveyor. The ground surface elevation at the boring location was obtained from drawings and information provided by the client. The location and elevation of the boring should be considered accurate only to the degree implied by the means and methods used to define them.

The boring was drilled with a truck-mounted rotary drill rig using hollow stem augers to advance the borehole. Representative soil samples were obtained by the split-barrel sampling procedure in general accordance with the appropriate standard. In the split-barrel sampling procedure, the number of blows required to advance a standard 2-inch O.D. split-barrel sampler the last 12 inches of the typical total 18-inch penetration by means of a 140-pound hammer with a free fall of 30 inches, is the standard penetration resistance (SPT) value (N-Value). This value is used to estimate the in-situ relative density of cohesionless soils and the consistency of cohesive soils. The sampling depths, penetration distance, and SPT N-Values are shown on the boring log. The samples were sealed and delivered to the laboratory for testing and classification.

Auger refusal was encountered at a depth of about 34 feet below the existing ground surface. The boring was extended into the refusal materials using a diamond bit attached to the outer barrel of a double core barrel. The inner barrel collected the cored material as the outer barrel was rotated at high speeds to cut the rock. The barrel was retrieved to the surface upon completion of each drill run. Once the core samples were retrieved, they were placed in a box and logged. The rock was later classified by an engineer and the "percent recovery" and rock quality designation (RQD) were determined.

The "percent recovery" is the ratio of the sample length retrieved to the drilled length, expressed as a percent. An indication of the actual in-situ rock quality is provided by calculating the sample's RQD. The RQD is the percentage of the length of broken cores retrieved which have core segments at least 4 inches in length compared to each drilled length. The RQD is related to rock soundness and quality as illustrated below:

**Table 1 – Rock Quality Designation (RQD)**

Relation of RQD and In-situ Rock Quality	
RQD (%)	Rock Quality
90 - 100	Excellent
75 - 90	Good
50 - 75	Fair
25 - 50	Poor
0 - 25	Very Poor

A field log of the boring was prepared by a subcontract driller. This log included visual classifications of the materials encountered during drilling as well as the driller's interpretation of the subsurface conditions between samples. The final boring log included with this report represents an interpretation of the driller's field log and a visual classification of the soil samples made by the Geotechnical Engineer.

### 3.2 Laboratory Testing

The samples were classified in the laboratory based on visual observation, texture and plasticity. The descriptions of the soils indicated on the boring log are in accordance with the enclosed General Notes and the Unified Soil Classification System. Estimated group symbols according to the Unified Soil Classification System are given on the boring log. A brief description of this classification system is attached to this report.

The laboratory testing program consisted of performing water content tests and an Atterberg Limits test on representative soil samples. Information from these tests was used in conjunction with field penetration test data to evaluate soil strength in-situ, volume change potential, and soil classification. Results of these tests are provided on the boring log.

Classification and descriptions of rock core samples are in accordance with the enclosed General Notes, and are based on visual and tactile observations. Petrographic analysis of thin sections may indicate other rock types. Percent recovery and rock quality designation (RQD) were calculated for these samples and are noted at their depths of occurrence on the boring log.

## 4.0 EXPLORATORY FINDINGS

### 4.1 Subsurface Conditions

Conditions encountered at the boring location are indicated on the boring log. Stratification boundaries on the boring log represent the approximate location of changes in soil types and the transition between materials may be gradual. Water levels shown on the boring log represent the conditions only at the time of our exploration. Based on the results of the boring, subsurface conditions on the project site can be generalized as follows.

Underlying approximately 3 inches of topsoil the boring encountered lean clay (CL) to a depth of about 18½ feet below existing grade. The lean clay exhibited a stiff to hard consistency based on SPT N-values ranging from 15 to 31 blows per foot (bpf). These N-values were likely elevated by sandstone fragments suspended in the soil matrix. Below the lean clay the boring encountered fat clay (CH) to a depth of about 28½ feet below existing grade. The fat clay exhibited a stiff consistency based on SPT N-values ranging from 9 to 14 bpf. Underlying the fat clay the boring encountered clayey sand (SP) to a depth of about 33½ feet below existing grade. The clayey sand exhibited a medium dense relative density based on a SPT N-value of 12 bpf. Below the sand the boring encountered limestone rock fragments and lean clay to the auger refusal depth of about 34 feet below existing grade.

Below a depth of about 34 feet, rock coring techniques were used to advance the borehole. The recovered core samples consisted of very slightly to slightly weathered, hard, closely

jointed, dark to medium gray limestone. The bedrock at the site appears to be relatively continuous based a core recovery of 86 percent. The quality of the rock is rated at good based on a RQD value of 78 percent. Considering the height of the tower and the quality of the bedrock, coring operations were terminated at a depth of about 44 feet below grade.

#### **4.2 Site Geology**

A review of the Geologic Quadrangle Map, Freedom Quadrangle, Kentucky (dated 1964), published by the United States Geological Survey (USGS) indicates that the site is underlain by the Saint Louis Limestone, which consists of limestone and siltstone. Limestone is medium-gray to brownish-gray, medium- to coarse-grained, medium bedded, and consists of angular to subangular bioclastic material mostly less than 1 mm across. Siltstone is calcareous and dolomitic, light-yellowish-gray to medium-gray, and occurs as beds or lenses 6 inches to 30 feet thick throughout the unit. The Saint Louis Limestone is typically greater than or equal to 140 feet thick and is underlain by the Salem and Warsaw Limestones.

It should be noted that the site is underlain by a limestone formation that is susceptible to dissolution along joints and bedding planes in the rock mass. This results in voids and solution channels within the rock strata and a highly irregular bedrock surface. The weathering of the bedrock and subsequent collapse or erosion of the overburden into these openings results in what is referred to as a karst topography. Any construction in karst topography is accompanied by some degree of risk for future internal soil erosion and ground subsidence that could affect the stability of the proposed structures. Our review of the available topographic and geologic mapping noted sinkholes within a 1 mile radius of the property. However, the boring drilled at the site did not disclose any obvious signs of impending overburden collapse.

#### **4.3 Groundwater Conditions**

No groundwater was encountered during the auger drilling portion of the borehole. Water was used to advance the borehole during rock coring operations. The introduction of water into the borehole precluded obtaining accurate groundwater level readings at the time of drilling operations. Long term observation of the groundwater level in monitoring wells, sealed from the influence of surface water, would be required to obtain accurate groundwater levels on the site.

It should be recognized that fluctuations of the groundwater table may occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the boring was performed. Therefore, groundwater levels during construction or at other times in the life of the structure may be higher or lower than the levels indicated on the boring log. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

**5.0 ENGINEERING RECOMMENDATIONS**

Based on the encountered subsurface conditions, the tower can be constructed on drilled piers or a mat foundation. The lightly loaded equipment building can be supported on shallow spread footings. Shallow foundation and drilled pier recommendations are presented in the following paragraphs.

**5.1 Tower Foundation**

**Drilled Pier Alternative:** Based on the results of the boring, the following tower foundation design parameters have been developed:

**Table 2 - Drilled Pier Foundation Design Parameters**

Depth * (feet)	Description **	Allowable Skin Friction (psf)	Allowable End Bearing Pressure (psf)	Allowable Passive Pressure (psf)	Internal Angle of Friction (Degree)	Cohesion (psf)	Lateral Subgrade Modulus (pci)	Strain, &sub50 (in/in)
0 - 3	Topsoil and Lean Clay	Ignore	Ignore	Ignore	-	-	Ignore	Ignore
3 - 28½	Lean to Fat Clay	425	Ignore	1,500	0	1,500	125	0.007
28½ - 34	Sand and Rock Fragments	500	Ignore	5,000	34	0	90	0.001
34 - 44	Limestone	5,000***	20,000	10,000***	0	100,000***	3,000	0.00001

\* Pier inspection is recommended to adjust pier length if variable soil/rock conditions are encountered.

\*\* A total unit weight of 120 and 150 pcf can be estimated for the clay and limestone, respectively.

\*\*\* The pier should be embedded a minimum of 3 feet into limestone to mobilize these higher rock strength parameters. Furthermore, it is assumed the rock socket will be extended using coring techniques rather than blasting/shooting.

The above indicated cohesion, friction angle, lateral subgrade modulus and strain values have no factors of safety, and the allowable skin friction and the passive resistances have factors of safety of 2. The cohesion, internal friction angle, lateral subgrade modulus and strain values given in the above table are based on the boring, published correlation values and Terracon's past experience with similar soil/rock types. These values should, therefore, be considered approximate. To mobilize the higher rock strength parameters, the pier should be socketed at least 3 feet into bedrock. Furthermore, it is assumed that the rock socket is developed using coring rather than blasting techniques. The allowable end bearing pressure provided in the table has an approximate factor of safety of at least 3. Total settlement of drilled piers designed using the above parameters and bearing on or within bedrock is not anticipated to exceed ½ inch.

The upper 3 feet of lean clay should be ignored due to the potential affects of frost action and construction disturbance. To avoid a reduction in lateral and uplift resistance caused by variable subsurface conditions and or bedrock depths, the drawings should instruct the

contractor to notify the engineer if subsurface conditions significantly different than encountered in the boring are disclosed during drilled pier installation. Under these circumstances, it may be necessary to adjust the overall length of the pier. To facilitate these adjustments and assure that the pier is embedded in suitable materials, it is recommended that a Terracon representative observe the drilled pier excavation.

If a bedrock socket is required, it is recommended that a minimum pier length and minimum rock socket length be stated on the design drawings. Bedrock was encountered in the boring below a depth of about 34 feet, but could vary between tower legs or if the tower is moved from the location of the boring. If the tower center is moved from the planned location, Terracon should be notified to review the recommendations and determine whether an additional boring is required. To facilitate pier length adjustments that may be necessary because of variable rock conditions, it is recommended that a Terracon representative observe the drilled pier excavation.

A drilled pier foundation should be designed with a minimum shaft diameter of 30 inches to facilitate clean out and possible dewatering of the pier excavation. Temporary casing may be required during the pier excavation in order to control possible groundwater seepage and support the sides of the excavation in weak soil zones. Care should be taken so that the sides and bottom of the excavations are not disturbed during construction. The bottom of the shaft should be free of loose soil or debris prior to reinforcing steel and concrete placement.

A concrete slump of at least 6 inches is recommended to facilitate temporary casing removal. It should be possible to remove the casing from a pier excavation during concrete placement provided that the concrete inside the casing is maintained at a sufficient level to resist any earth and hydrostatic pressures outside the casing during the entire casing removal procedure.

**Mat Foundation Alternative:** The mat foundation can be designed using the following natural soil/engineered fill parameters. These parameters are based on the findings of the boring, a review of published correlation values and Terracons experience with similar soil conditions. These design parameters also assume that the base of the mat foundation will rest on natural soils or well-graded crushed stone that is compacted and tested on a full time basis.

**Table 3 - Mat Foundation Design Parameters**

Depth (feet)	Description	Allowable Contact Bearing Pressure (psf)	Allowable Passive Pressure (psf)	Coefficient of Friction, Tan $\delta$	Vertical Modulus of Subgrade Reaction (pci)
0 - 3	Topsoil and Lean Clays	Ignore	Ignore	-	
$\geq 3$	Lean Clay or Crushed Stone Fill	3,000	Ignore	0.35	125

To assure that soft soils are not left under the mat foundation, it is recommended that a geotechnical engineer observe the foundation subgrade prior to concrete placement. Provided the above recommendations are followed, total mat foundation settlements are not anticipated to exceed about 1 inch. Differential settlement should not exceed 50 percent of the total settlement.

**5.2 Equipment Building Foundations**

The proposed equipment shed may be supported on shallow footings bearing on stiff natural soils. The equipment building foundations should be dimensioned using a net allowable soil bearing pressure of 2,500 pounds per square foot (psf). In using net allowable soil pressures for footing dimensioning, the weight of the footings and backfill over the footings need not be considered. Furthermore, the footings should be at least 12 inches wide and a minimum of 2 feet square.

The geotechnical engineer or a qualified representative should observe the foundation excavations to verify that the bearing materials are suitable for support of the proposed loads. If, at the time of such observation, any soft soils are encountered at the design foundation elevation, the excavations should be extended downward so that the footings rest on stiff soils. If it is inconvenient to lower the footings, the proposed footing elevations may be re-established by backfilling after the undesirable material has been removed.

The recommended soil bearing value should be considered an upper limit, and any value less than that listed above would be acceptable for the foundation system. Using the value given, total settlement would be about 1 inch or less with differential settlements being less than 75 percent of total settlement. Footings should be placed at a depth of 2 feet, or greater, below finished exterior grade for protection against frost damage.

**5.3 Parking and Drive Areas**

The drive that accesses the site will be surfaced with crushed stone. Parking and drive areas that are surfaced with crushed stone should have a minimum thickness of 6 inches and be properly placed and compacted as outlined herein. The crushed stone should meet Kentucky Transportation Cabinet specifications and applicable local codes.

A paved section consisting only of crushed graded aggregate base course should be considered a high maintenance section. Regular care and maintenance is considered essential to the longevity and use of the section. Site grades should be maintained in such a manner as to allow for adequate surface runoff. Any potholes, depressions or excessive rutting that may develop should be repaired as soon as possible to reduce the possibility of degrading the soil subgrade.

#### **5.4 Site Preparation**

Site preparation should begin with the removal of any topsoil, loose, soft or otherwise unsuitable materials from the construction area. The geotechnical engineer should evaluate the actual stripping depth, along with any soft soils that require undercutting at the time of construction.

Any fill and backfill placed on the site should consist of approved materials that are free of organic matter and debris. Suitable fill materials should consist of well graded crushed stone below the tower foundation and well graded crushed stone or low plasticity cohesive soil elsewhere. Low-plasticity cohesive soil should have a liquid limit of less than 45 percent and a plasticity index of less than 25 percent. The on site lean clay soils are considered suitable for re-use as fill. The on site fat clay soils are not considered suitable for re-use as fill due to their high plasticity. It is recommended that during construction these soils should be further tested and evaluated prior to use as fill. Fill should not contain frozen material and it should not be placed on a frozen subgrade.

The fill should be placed and compacted in lifts of 9 inches or less in loose thickness. Fill placed below structures or used to provide lateral resistance should be compacted to at least 98 percent of the material's maximum standard Proctor dry density (ASTM D-698). Fill should be placed, compacted, and maintained at moisture contents within minus 1 to plus 3 percent of the optimum value determined by the standard Proctor test.

The geotechnical engineer should be retained to monitor fill placement on the project and to perform field density tests as each lift of fill is placed in order to evaluate compliance with the design requirements. Standard Proctor and Atterberg limits tests should be performed on the representative samples of fill materials before their use on the site.

#### **5.5 Resistivity Analysis**

Resistivity of the subsurface soils was measured at the site using a Nilsson Model 400 soil resistivity meter. The Wenner Vertical Profiling Method was used. With this array, potential electrodes are centered on a traverse line between the current electrodes and an equal "A" spacing between electrodes is maintained. Resistivity measurements were taken along 2 traverses located along the perimeter of the staked tower compound. Individual resistivity

values at 5, 10, 15, 20, 30 and 40 foot spacings are presented on the soil resistivity test sheet in the Appendix.

## 6.0 GENERAL COMMENTS

Terracon should be retained to review the final design plans and specifications so comments can be made regarding interpretation and implementation of our geotechnical recommendations in the design and specifications. Terracon also should be retained to provide testing and observation during excavation, grading, foundation and construction phases of the project.

The analysis and recommendations presented in this report are based upon the data obtained from the boring performed at the indicated location and from other information discussed in this report. This report does not reflect variations that may occur across the site, or due to the modifying effects of weather. The nature and extent of such variations may not become evident until during or after construction. If variations appear, we should be immediately notified so that further evaluation and supplemental recommendations can be provided.

The scope of services for this project does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either express or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. In the event that changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing.

## APPENDIX

TO  
GLASGOW

MUD LICK

CLYDE SHORT ROAD

HOUSES AND  
SHEDS

BUILDINGS

B-1

MUD LICK VOLUNTEER  
FIRE DEPARTMENT

ACCESS  
ROAD

KY 63

TO  
TOMPKINSVILLE

KY 870

MUD LICK SCHOOL ROAD

**LEGEND**

-  APPROXIMATE BORING LOCATION
-  FIRE HYDRANT



NOT TO SCALE

THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Mgr:	TMH	Project No:	57077391	 <b>Terracon</b> Consulting Engineers and Scientists 4545 Bishop Lane, Suite 101    Louisville, KY 40218 (502) 456-1256    (502) 456-1278	<b>SITE DIAGRAM</b> GEOTECHNICAL ENGINEERING REPORT CEDAR FLATS 5588 OLD GLASGOW ROAD TOMPKINSVILLE, KY	FIG. No.
Drawn By:	TLY	Scale:	AS SHOWN		<b>1</b>	
Checked By:	TMH/MRF	File No.:	GEO57077391-1			
Approved By:	EH	Date:	FEBRUARY 2008			

LOG OF BORING NO. B-1

CLIENT Bluegrass Cellular Partnership

SITE 5588 Old Glasgow Road  
Tompkinsville, Kentucky

PROJECT Cedar Flats Telecommunication Tower

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	SAMPLES				TESTS			ATTERBERG LIMITS
			USCS SYMBOL	NUMBER	TYPE	RECOVERY, in.	SPT - N BLOWS / ft.	WATER CONTENT, %	DRY UNIT WT pcf	
0.2	Approx. Surface Elev.: 995 ft									
	<b>TOPSOIL</b>	995								
	<b>LEAN CLAY</b> with sandstone fragments, brown & reddish brown, stiff to hard with trace finger roots to 3.5 feet	5	CL	1	SS	9	15	17		LL = 44 PL = 26 PI = 18
			CL	2	SS	10	23	16		
			CL	3	SS	14	31	17		
			CL	4	SS	12	21	20		
		10								
		15	CL	5	SS	8	18	18		
		18.5								
	<b>FAT CLAY</b> , yellowish brown mottled, stiff	20	CH	6	SS	10	14	31		
		25	CH	7	SS	18	9	31		
		28.5								
	<b>CLAYEY SAND</b> , pale brown with black mottling, medium dense	30	SP	8	SS	18	12	27		
		33.5								
	<b>LIMESTONE ROCK FRAGMENTS</b> with lean clay, brown	34	SP	9	SS	5	50/3			
	Auger Refusal at 34 feet, Began Coring <b>LIMESTONE</b> , very slightly to slightly weathered, closely jointed, dark to medium gray, hard	34		10	DB	86%	RQD 78%			
		44								
	Boring Terminated at 44 feet	951								

BOREHOLE 99 57077391 LOGS.GPJ TERRACON.GDT 2/11/08

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft	
WL	▽
WL	▽
WL	Dry Upon Completion



BORING STARTED	12-26-07
BORING COMPLETED	12-26-07
RIG	B-61
FOREMAN	RG
APPROVED	TMH
JOB #	57077391



Project: Cedar Flats  
Project No.: 57077391  
Perfomed By: JGC  
Checked By: TMH

## Soil Resistivity

### At-Grade Measurements (equal rod spacing)

Location	Depth of Interest (feet)	Electrode Spacing from Center (feet)		Resistance (ohms)		Resistivity (ohm-cm)
		Inner	Outer	Dial Reading	Range Switch	
A- A'	5	2.5	7.5	2.2	10.0	21065
	10	5	15	10.2	1.0	19533
	15	7.5	22.5	7.1	1.0	20395
	20	10	30	5.1	1.0	19533
	30	15	45	3.4	1.0	19533
	40	20	60	2.6	1.0	19916
B-B'	5	2.5	7.5	2.4	10.0	22980
	10	5	15	10.4	1.0	19916
	15	7.5	22.5	6.9	1.0	19820
	20	10	30	4.8	1.0	18384
	30	15	45	3.1	1.0	17810
	40	20	60	2.2	1.0	16852

Resisitivity (ohm-cm) =  $2 \cdot \pi \cdot a \cdot R \cdot 30.48$   
R = resistivity (dial reading\*range switch)  
a = electrode spacing

Equipent Usage: Nilsson Soil Resistance Meter - Model 400

Additional Notes: \_\_\_\_\_

## GENERAL NOTES

### DRILLING & SAMPLING SYMBOLS:

SS: Split Spoon - 1-3/8" I.D., 2" O.D., unless otherwise noted	HS: Hollow Stem Auger
ST: Thin-Walled Tube - 2" O.D., unless otherwise noted	PA: Power Auger
RS: Ring Sampler - 2.42" I.D., 3" O.D., unless otherwise noted	HA: Hand Auger
DB: Diamond Bit Coring - 4", N, B	RB: Rock Bit
BS: Bulk Sample or Auger Sample	WB: Wash Boring or Mud Rotary

The number of blows required to advance a standard 2-inch O.D. split-spoon sampler (SS) the last 12 inches of the total 18-inch penetration with a 140-pound hammer falling 30 inches is considered the "Standard Penetration" or "N-value".

### WATER LEVEL MEASUREMENT SYMBOLS:

WL: Water Level	WS: While Sampling	N/E: Not Encountered
WCI: Wet Cave in	WD: While Drilling	
DCI: Dry Cave in	BCR: Before Casing Removal	
AB: After Boring	ACR: After Casing Removal	

Water levels indicated on the boring logs are the levels measured in the borings at the times indicated. Groundwater levels at other times and other locations across the site could vary. In pervious soils, the indicated levels may reflect the location of groundwater. In low permeability soils, the accurate determination of groundwater levels may not be possible with only short-term observations.

**DESCRIPTIVE SOIL CLASSIFICATION:** Soil classification is based on the Unified Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

#### CONSISTENCY OF FINE-GRAINED SOILS

<u>Unconfined Compressive Strength, Qu, psf</u>	<u>Standard Penetration or N-value (SS) Blows/Ft.</u>	<u>Consistency</u>
< 500	<2	Very Soft
500 - 1,000	2-4	Soft
1,001 - 2,000	5-7	Medium Stiff
2,001 - 4,000	8-15	Stiff
4,001 - 8,000	16-30	Very Stiff
8,000+	30+	Hard

#### RELATIVE DENSITY OF COARSE-GRAINED SOILS

<u>Standard Penetration or N-value (SS) Blows/Ft.</u>	<u>Relative Density</u>
0 - 3	Very Loose
4 - 9	Loose
10 - 29	Medium Dense
30 - 49	Dense
50+	Very Dense

#### RELATIVE PROPORTIONS OF SAND AND GRAVEL

<u>Descriptive Term(s) of other constituents</u>	<u>Percent of Dry Weight</u>
Trace	< 15
With	15 - 29
Modifier	> 30

#### GRAIN SIZE TERMINOLOGY

<u>Major Component of Sample</u>	<u>Particle Size</u>
Boulders	Over 12 in. (300mm)
Cobbles	12 in. to 3 in. (300mm to 75 mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt or Clay	Passing #200 Sieve (0.075mm)

#### RELATIVE PROPORTIONS OF FINES

<u>Descriptive Term(s) of other constituents</u>	<u>Percent of Dry Weight</u>
Trace	< 5
With	5 - 12
Modifiers	> 12

#### PLASTICITY DESCRIPTION

<u>Term</u>	<u>Plasticity Index</u>
Non-plastic	0
Low	1-10
Medium	11-30
High	30+

**GENERAL NOTES**  
Description of Rock Properties

**WEATHERING**

Fresh	Rock fresh, crystals bright, few joints may show slight staining. Rock rings under hammer if crystalline.
Very slight	Rock generally fresh, joints stained, some joints may show thin clay coatings, crystals in broken face show bright. Rock rings under hammer if crystalline.
Slight	Rock generally fresh, joints stained, and discoloration extends into rock up to 1 in. Joints may contain clay. In granitoid rocks some occasional feldspar crystals are dull and discolored. Crystalline rocks ring under hammer.
Moderate	Significant portions of rock show discoloration and weathering effects. In granitoid rocks, most feldspars are dull and discolored; some show clayey. Rock has dull sound under hammer and shows significant loss of strength as compared with fresh rock.
Moderately severe	All rock except quartz discolored or stained. In granitoid rocks, all feldspars dull and discolored and majority show kaolinization. Rock shows severe loss of strength and can be excavated with geologist's pick.
Severe	All rock except quartz discolored or stained. Rock "fabric" clear and evident, but reduced in strength to strong soil. In granitoid rocks, all feldspars kaolinized to some extent. Some fragments of strong rock usually left.
Very severe	All rock except quartz discolored or stained. Rock "fabric" discernible, but mass effectively reduced to "soil" with only fragments of strong rock remaining.
Complete	Rock reduced to "soil". Rock "fabric" not discernible or discernible only in small, scattered locations. Quartz may be present as dikes or stringers.

**HARDNESS (for engineering description of rock – not to be confused with Moh's scale for minerals)**

Very hard	Cannot be scratched with knife or sharp pick. Breaking of hand specimens requires several hard blows of geologist's pick.
Hard	Can be scratched with knife or pick only with difficulty. Hard blow of hammer required to detach hand specimen.
Moderately hard	Can be scratched with knife or pick. Gouges or grooves to ¼ in. deep can be excavated by hard blow of point of a geologist's pick. Hand specimens can be detached by moderate blow.
Medium	Can be grooved or gouged 1/16 in. deep by firm pressure on knife or pick point. Can be excavated in small chips to pieces about 1-in. maximum size by hard blows of the point of a geologist's pick.
Soft	Can be gouged or grooved readily with knife or pick point. Can be excavated in chips to pieces several inches in size by moderate blows of a pick point. Small thin pieces can be broken by finger pressure.
Very soft	Can be carved with knife. Can be excavated readily with point of pick. Pieces 1-in. or more in thickness can be broken with finger pressure. Can be scratched readily by fingernail.

**Joint, Bedding and Foliation Spacing in Rock<sup>a</sup>**

Spacing		Joints		Bedding/Foliation	
Less than 2 in.		Very close		Very thin	
2 in. – 1 ft.		Close		Thin	
1 ft. – 3 ft.		Moderately close		Medium	
3 ft. – 10 ft.		Wide		Thick	
More than 10 ft.		Very wide		Very thick	
Rock Quality Designator (RQD) <sup>b</sup>			Joint Openness Descriptors		
RQD, as a percentage	Diagnostic description		Openness		Descriptor
Exceeding 90	Excellent		No Visible Separation		Tight
90 – 75	Good		Less than 1/32 in.		Slightly Open
75 – 50	Fair		1/32 to 1/8 in.		Moderately Open
50 – 25	Poor		1/8 to 3/8 in.		Open
Less than 25	Very poor		3/8 in. to 0.1 ft.		Moderately Wide
			Greater than 0.1 ft.		Wide

a. Spacing refers to the distance normal to the planes, of the described feature, which are parallel to each other or nearly so.  
 b. RQD (given as a percentage) = length of core in pieces 4 in. and longer/length of run.

References: American Society of Civil Engineers. Manuals and Reports on Engineering Practice - No. 56. Subsurface Investigation for Design and Construction of Foundations of Buildings. New York: American Society of Civil Engineers, 1976.  
 U.S. Department of the Interior, Bureau of Reclamation, Engineering Geology Field Manual.

# UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests<sup>A</sup>

Soil Classification

			Soil Classification		
			Group Symbol	Group Name <sup>B</sup>	
Coarse Grained Soils More than 50% retained on No. 200 sieve	Gravels More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines <sup>C</sup>	$Cu \geq 4$ and $1 \leq Cc \leq 3^E$	GW	Well-graded gravel <sup>F</sup>
		Gravels with Fines More than 12% fines <sup>C</sup>	Fines classify as ML or MH	GP	Poorly graded gravel <sup>F</sup>
			Fines classify as CL or CH	GM	Silty gravel <sup>F,G,H</sup>
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines <sup>D</sup>	$Cu \geq 6$ and $1 \leq Cc \leq 3^E$	GC	Clayey gravel <sup>F,G,H</sup>
		Sands with Fines More than 12% fines <sup>D</sup>	Fines classify as ML or MH	SW	Well-graded sand <sup>F</sup>
			Fines Classify as CL or CH	SP	Poorly graded sand <sup>F</sup>
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silt and Clays Liquid limit less than 50	inorganic	$PI > 7$ and plots on or above "A" line <sup>J</sup>	SM	Silty sand <sup>G,H,I</sup>
		organic	Liquid limit - oven dried < 0.75	SC	Clayey sand <sup>G,H,I</sup>
			Liquid limit - not dried	CL	Lean clay <sup>K,L,M</sup>
		Silt and Clays Liquid limit 50 or more	inorganic	$PI < 4$ or plots below "A" line <sup>J</sup>	ML
	organic		Liquid limit - oven dried < 0.75	CH	Fat clay <sup>K,L,M</sup>
			Liquid limit - not dried	MH	Elastic Silt <sup>K,L,M</sup>
	organic		Liquid limit - oven dried < 0.75	OH	Organic clay <sup>K,L,M,P</sup>
		Liquid limit - not dried	OL	Organic silt <sup>K,L,M,Q</sup>	
Highly organic soils	Primarily organic matter, dark in color, and organic odor		PT	Peat	

<sup>A</sup>Based on the material passing the 3-in. (75-mm) sieve

<sup>B</sup>If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

<sup>C</sup>Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

<sup>D</sup>Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

$$^E Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{50})^2}{D_{10} \times D_{60}}$$

<sup>F</sup>If soil contains  $\geq 15\%$  sand, add "with sand" to group name.

<sup>G</sup>If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

<sup>H</sup>If fines are organic, add "with organic fines" to group name.

<sup>I</sup>If soil contains  $\geq 15\%$  gravel, add "with gravel" to group name.

<sup>J</sup>If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

<sup>K</sup>If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

<sup>L</sup>If soil contains  $\geq 30\%$  plus No. 200 predominantly sand, add "sandy" to group name.

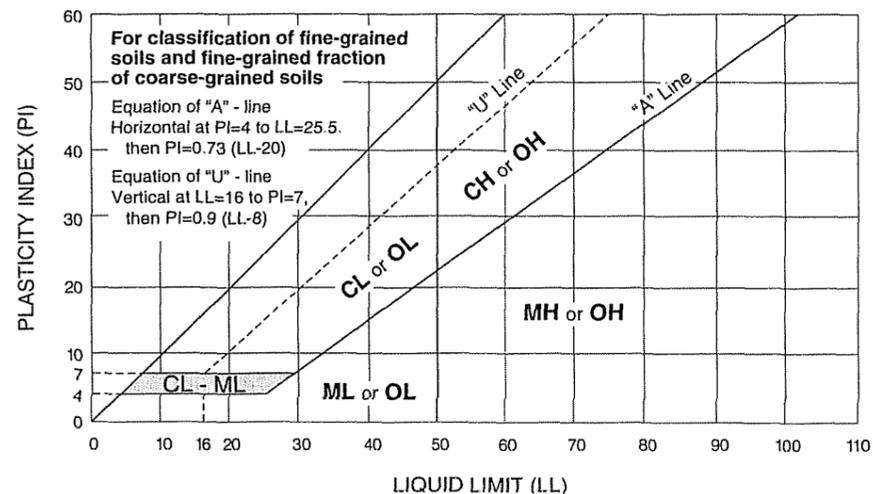
<sup>M</sup>If soil contains  $\geq 30\%$  plus No. 200, predominantly gravel, add "gravelly" to group name.

<sup>N</sup> $PI \geq 4$  and plots on or above "A" line.

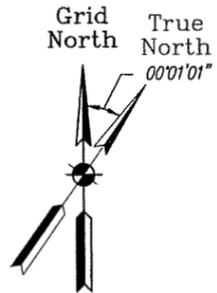
<sup>O</sup> $PI < 4$  or plots below "A" line.

<sup>P</sup> $PI$  plots on or above "A" line.

<sup>Q</sup> $PI$  plots below "A" line.



**Site: Cedar Flats**  
**Lease Boundary and Topographic Survey**  
**Monroe County, Kentucky**



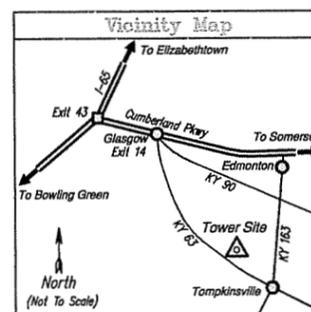
**Basis of Bearings**  
 The bearing system of this survey is based upon G.P.S. observations made on December 13, 2007 using the National Geodetic Survey monument "PETERS RM 2" and the Kentucky State Plane Coordinate System, South Zone, NAD 1983 (2007). This system is grid north.

**Tower Location Information**  
 Designation: Cedar Flats  
 Site ID#: None  
 Horizontal Datum: NAD 1983 (2007)  
 Latitude: 36°45'08.19" North  
 Longitude: 85°46'41.09" West  
 Vertical Datum: NAVD 1988  
 Ground Elevation: 1,008.0 feet (307.24 meters)  
 State Plane Coordinates  
 Northing: 1,792,948.89 feet (546,491.915 meters)  
 Easting: 1,632,189.78 feet (497,492.440 meters)

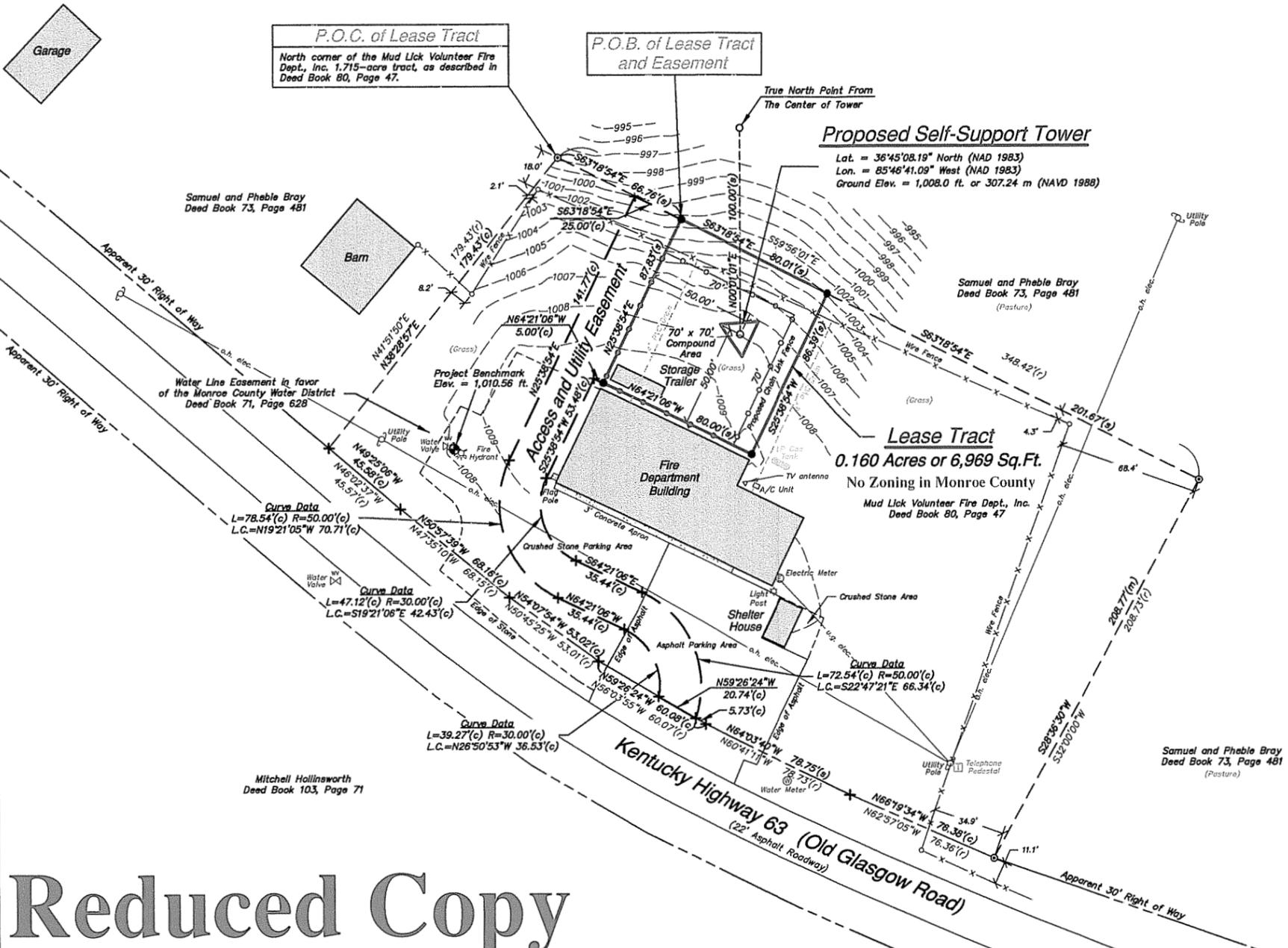
**Owner Information**  
 Owner: Mud Lick Volunteer Fire Department, Inc.  
 Address: 5588 Old Glasgow Road  
 Tompkinsville, Kentucky 42167  
 Contact Person: Richard P. Collins (Patrick)  
 Phone: (270) 427-3456 Cell: (270) 427-7777  
 PVA Map No. 38-15.01

**Project Bench Mark**  
 Northing: 1,792,894 feet (546,475 meters)  
 Easting: 1,632,051 feet (497,450 meters)  
 Elevation: 1,010.56 feet (308.019 meters)  
 Description: A chiseled "x" on the northeast flange bolt of a fire hydrant, 2.2 feet above grade. The benchmark is approximately 150 feet southwest of the center of the tower.

**Flood Plain Statement**  
 According to the FEMA web site, this is an unmapped area. No flood information is available for the unincorporated areas of Monroe County, Kentucky. However, a visual inspection of the site would indicate that the subject site does not lie within a flood prone area.



**Directions to Site**  
 From Elizabethtown, Kentucky: travel south on I-65 for about 50 miles to Exit 43 and the Cumberland Parkway; travel east on the Cumberland Parkway for about 14 miles to Exit 14 and Kentucky Highway 90 near Glasgow; travel southeasterly on Kentucky Highway 90, toward Burkesville, for about 15.6 miles to Kentucky Highway 163; turn right and travel south on Kentucky Highway 163 for 12.9 miles to Kentucky Highway 63 in Tompkinsville; turn right onto Kentucky Highway 63 and travel northwesterly, toward Glasgow, for 6.6 miles to the Mud Lick Volunteer Fire Department on the right or north side of the highway about 0.15 miles before reaching Kentucky Highway 870; the proposed tower site lies behind or on the north side of the fire department.



**Lease Boundary and Easement Description**

A tract of land that is located about 200 feet northerly of Kentucky Highway 63 (Old Glasgow Road) and about 0.15 miles southeasterly of the intersection of said highway with Kentucky Highway 870 in the Mud Lick Community of Monroe County, Kentucky; said tract being described as follows:

COMMENCING AT a 1/2-inch rebar found buried 3 inches with a survey cap inscribed "J.R. Leftwich KLS 3013" at the north corner of the Mud Lick Volunteer Fire Dept., Inc. 1.715-acre tract, as described in Deed Book 80, page 47 in the office of the County Clerk of Monroe County, Kentucky; thence along the northeastern boundary of said 1.715-acre tract, South 63 degrees 18 minutes 54 seconds East 66.76 feet to a 5/8-inch rebar set flush with a survey cap inscribed "D.L. Helms PS 3386" (referred to as a rebar in the remainder of this description) at the POINT OF BEGINNING of this description; thence, continue along said northeastern boundary, South 63 degrees 18 minutes 54 seconds East 80.01 feet to a rebar set flush; thence South 25 degrees 38 minutes 54 seconds West 86.39 feet to a rebar set flush; thence North 64 degrees 21 minutes 06 seconds West 80.00 feet to a rebar set flush; thence North 25 degrees 38 minutes 54 seconds East 87.83 feet to the point of beginning and containing 0.160 acres (6,969 square feet), more or less.

TOGETHER WITH an access and utility easement from the above-described 0.160-acre lease tract to Kentucky Highway 63 (Old Glasgow Road); said easement being described as follows: BEGINNING AT a 5/8-inch rebar set flush with a survey cap inscribed "D.L. Helms PS 3386" at the north corner of the above-described 0.160-acre lease tract; said north corner being on the northeastern boundary of the Mud Lick Volunteer Fire Dept., Inc. 1.715-acre tract, as described in Deed Book 80, page 47 in the office of the County Clerk of Monroe County, Kentucky; thence South 25 degrees 38 minutes 54 seconds West 87.83 feet to a 5/8-inch rebar set flush with said Helms survey cap at the west corner of the above-described 0.160-acre lease tract; thence North 64 degrees 21 minutes 06 seconds West 5.00 feet; thence South 25 degrees 38 minutes 54 seconds West 53.48 feet; thence Southeasterly 47.12 feet along an arc to the left and having a radius of 30.00 feet and subtended by a long chord having a bearing of South 19 degrees 21 minutes 06 seconds East and a length of 42.43 feet; thence South 64 degrees 21 minutes 06 seconds East 35.44 feet; thence Southeasterly 72.54 feet along an arc to the right and having a radius of 50.00 feet and subtended by a long chord having a bearing of South 22 degrees 47 minutes 21 seconds East and a length of 66.34 feet to the northeastern boundary of Kentucky Highway 63 (30 feet from the centerline); thence, along said northeastern boundary, North 59 degrees 26 minutes 24 seconds West 20.74 feet; thence Northwesterly 39.27 feet along an arc to the left and having a radius of 30.00 feet and subtended by a long chord having a bearing of North 26 degrees 50 minutes 53 seconds West and a length of 36.53 feet; thence North 64 degrees 21 minutes 06 seconds West 35.44 feet; thence Northwesterly 78.54 feet along an arc to the right and having a radius of 50.00 feet and subtended by a long chord having a bearing of North 19 degrees 21 minutes 05 seconds West and a length of 70.71 feet; thence North 25 degrees 38 minutes 54 seconds East 141.77 feet to the northeastern boundary of the aforesaid 1.715-acre tract; thence South 63 degrees 18 minutes 54 seconds East 25.00 feet to the point of beginning.

The bearing system of these descriptions is based upon the Kentucky State Plane Coordinate System, South Zone, NAD 1983 (2007), as determined by G.P.S. observations made on December 13, 2007 using the National Geodetic Survey monument "PETERS RM 2". These descriptions are based upon a survey completed by Landmark Surveying Co., Inc. and certified by Darren L. Helms, P.L.S. 3386, on December 28, 2007. This survey is hereby referenced and made a part of these descriptions.

SOURCE OF TITLE: Being a portion of and lying entirely within the land described in deed to the Mud Lick Volunteer Fire Dept., Inc. on October 2, 1995 in Deed Book 80, page 47 in the office of the County Clerk of Monroe County, Kentucky.

**Surveyor's Notes**

- This survey is subject to a statement of facts which may be disclosed by an Abstract of Title or a Title Commitment Policy. This documentation was not provided by the client.
- No search of public records has been performed by this firm to determine any defects and/or ambiguities in the title of the parent tract.
- The utilities shown on this plot may or may not represent all of the utilities located on the subject site. The presence of the existing utilities shown was determined by a visual inspection of the property surface. No utility locate was called in prior to this survey. It shall be the responsibility of the contractor to locate any utilities present prior to construction.
- The topographic information contained on this plot was as requested by the client and may or may not represent all of the topographic features located on the subject property.
- According to Wilbur Graves, County Judge Executive of Monroe County, no local planning unit exists which has geographical jurisdiction of the subject tower site. The County Judge Executive's Office may be contacted at 270-487-5505 for confirmation.

**Legend**

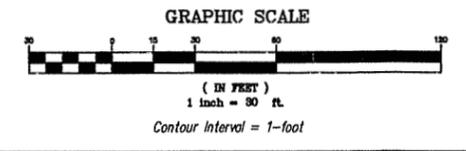
- 5/8" Rebar Set Flush With A Survey Cap Inscribed "D.L. Helms PLS 3386"
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- + Calculated Position - No Monument Found or Set
- Subject Boundaries
- - - Easement Boundaries
- Measured
- (m) Right of Way
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- (s) Set

**Surveyor's Certification**

I hereby certify that this plat has been compiled from a survey actually made upon the ground under my direct supervision on December 13, 2007 by the method of random traverse with sideshots. The unadjusted precision ratio of the traverse was 1:17,000 and it was not adjusted. This survey is a Class B survey and the accuracy and precision of this survey meets all the specifications of this class.

*Darren L. Helms*  
 Darren L. Helms, P.L.S. 3386

DEC. 28, 2007  
 Date



**Reduced Copy**

Landmark Surveying Co., Inc.  
 15 N.E. 3rd Street  
 Washington, Indiana 47201  
 (812) 257-0850  
 Email: landms@msurvey.com  
 Project No. 07-12-018

Lease Boundary Survey  
 5612 Old Glasgow Road  
 Tompkinsville, Kentucky 42167

Bluegrass Cellular  
 2902 Ring Road  
 Elizabethtown, Kentucky 42701

REVISIONS	DATE

DATE: 12-28-07  
 DRAWN BY: A. Whittier  
 CHECKED BY: D.L. Helms

SHEET NO. 1  
 OF 1 SHEETS  
 FILE NO. cedar flats.dwg

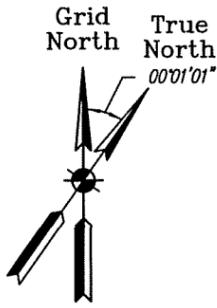




# Site: Cedar Flats

## Lease Boundary and Topographic Survey

### Monroe County, Kentucky



#### Basis of Bearings

The bearing system of this survey is based upon G.P.S. observations made on December 13, 2007 using the National Geodetic Survey monument "PETERS RM 2" and the Kentucky State Plane Coordinate System, South Zone, NAD 1983 (2007). This system is grid north.

#### Tower Location Information

Designation: Cedar Flats  
 Site ID#: None  
 Horizontal Datum: NAD 1983 (2007)  
 Latitude: 36°45'08.19" North  
 Longitude: 85°46'41.09" West  
 Vertical Datum: NAVD 1988  
 Ground Elevation: 1,008.0 feet (307.24 meters)  
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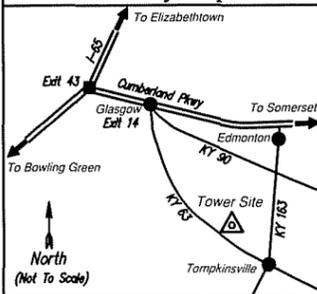
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Northing: 1,792,894 feet (546,475 meters)  
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 Elevation: 1,010.56 feet (308.019 meters)  
 Description: A chiseled "x" on the northeast flange bolt of a fire hydrant, 2.2 feet above grade. The benchmark is approximately 150 feet southwest of the center of the tower.

#### Flood Plain Statement

According to the FEMA web site, this is an unmapped area. No flood information is available for the unincorporated areas of Monroe County, Kentucky. However, a visual inspection of the site would indicate that the subject site does not lie within a flood prone area.

#### Vicinity Map

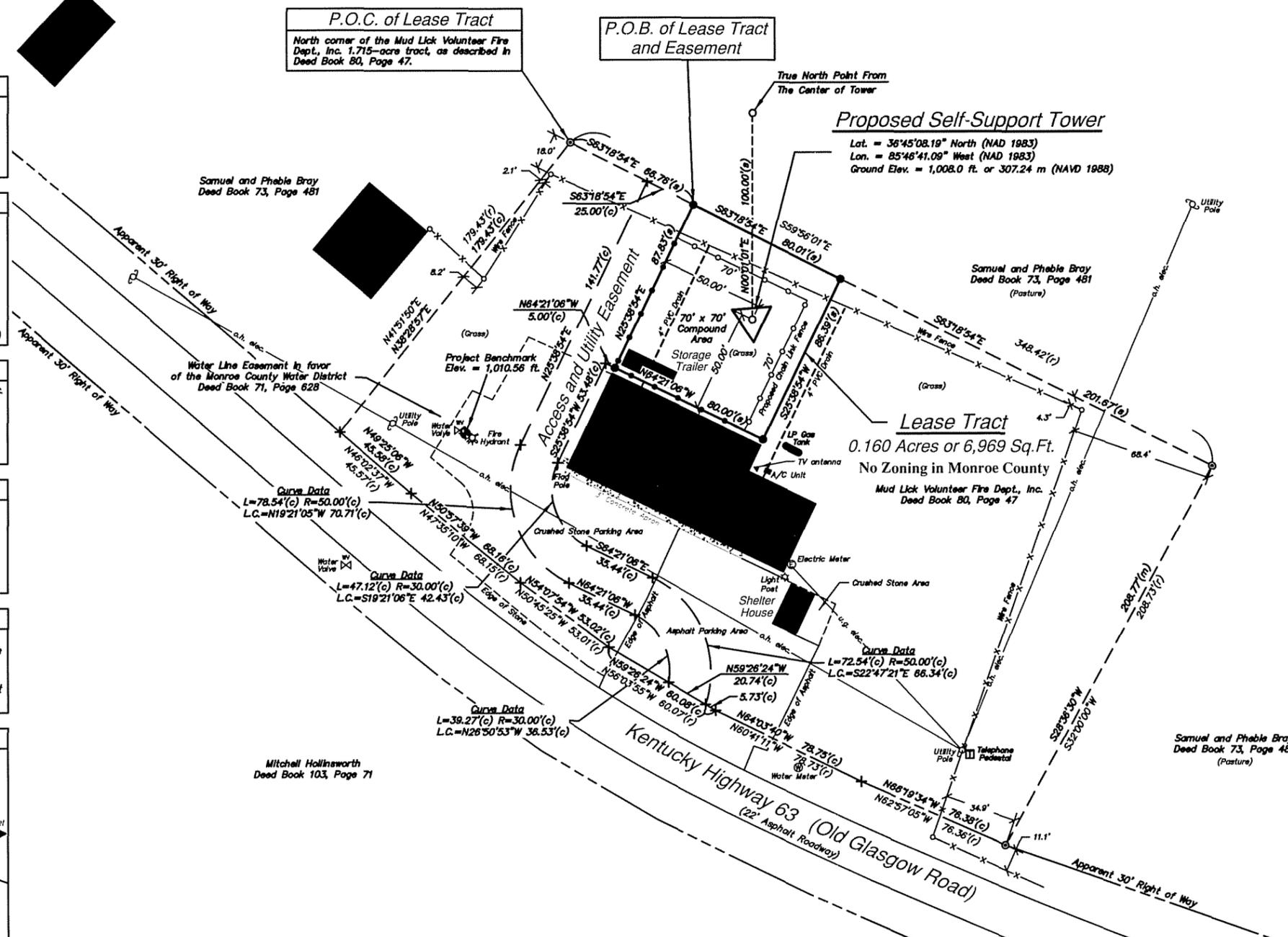


#### Directions to Site

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**P.O.C. of Lease Tract**  
 North corner of the Mud Lick Volunteer Fire Dept., Inc. 1.715-acre tract, as described in Deed Book 80, Page 47.

**P.O.B. of Lease Tract and Easement**



#### Proposed Self-Support Tower

Lat. = 36°45'08.19" North (NAD 1983)  
 Lon. = 85°46'41.09" West (NAD 1983)  
 Ground Elev. = 1,008.0 ft. or 307.24 m (NAVD 1988)

#### Lease Boundary and Easement Description

A tract of land that is located about 200 feet northerly of Kentucky Highway 63 (Old Glasgow Road) and about 0.15 miles southeasterly of the intersection of said highway with Kentucky Highway 870 in the Mud Lick Community of Monroe County, Kentucky; said tract being described as follows:

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SOURCE OF TITLE: Being a portion of and lying entirely within the land described in deed to the Mud Lick Volunteer Fire Dept., Inc. on October 2, 1985 in Deed Book 80, page 47 in the office of the County Clerk of Monroe County, Kentucky.

#### Surveyor's Notes

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- According to Wilbur Graves, County Judge Executive of Monroe County, no local planning unit exists which has geographical jurisdiction of the subject tower site. The County Judge Executive's Office may be contacted at 270-487-5505 for confirmation.

#### Legend

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- ⊙ 1/2" Rebar Found Flush To Buried 8" With A Survey Cap Inscribed "J.R. Leftwich KLS 3013"
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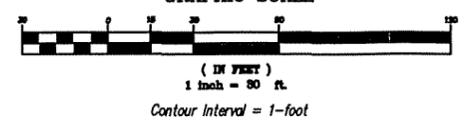
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I hereby certify that this plat has been compiled from a survey actually made upon the ground under my direct supervision on December 13, 2007 by the method of random traverse with sideshots. The unadjusted precision ratio of the traverse was 1:17,000 and it was not adjusted. This survey is a Class B survey and the accuracy and precision of this survey meets all the specifications of this class.

Darren L. Helms, P.L.S. 3386

Date

#### GRAPHIC SCALE



Landmark Surveying Co., Inc.  
 15 N.E. 3rd Street  
 Washington, Indiana 47501  
 (812) 257-0850  
 Email: landmark@landmarkinc.com  
 Project No. 07-12-018



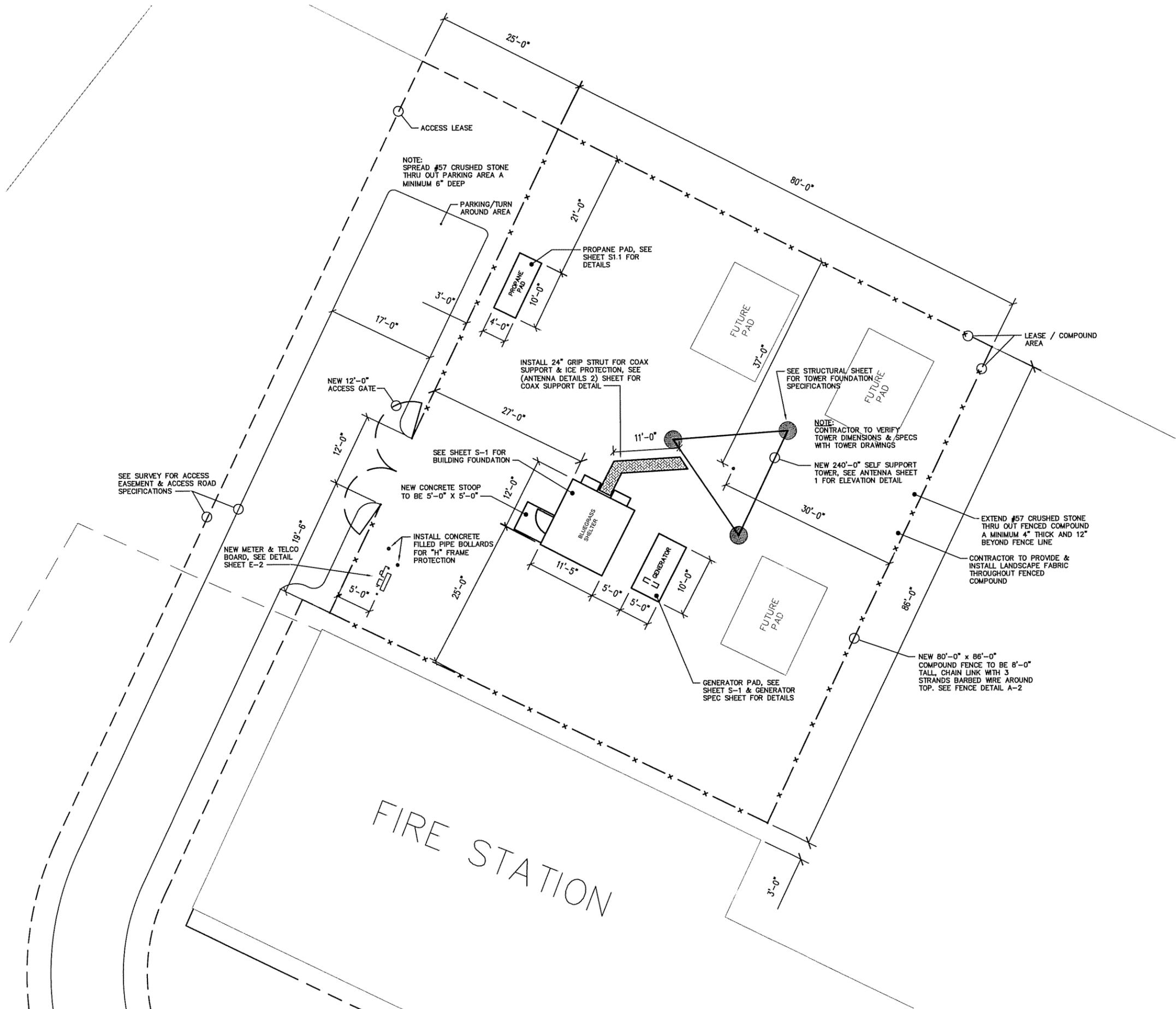
Lease Boundary Survey  
 5612 Old Glasgow Road  
 Tompkinsville, Kentucky 42167

Bluegrass Cellular  
 2902 Ring Road  
 Elizabethtown, Kentucky 42701

REVISIONS	DATE

DATE: 12-28-07  
 DRAWN BY: A. Whicker  
 CHECKED BY: D.L. Helms

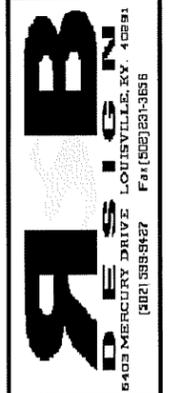
SHEET NO. 1 OF 1 SHEETS  
 FILE NO. cedar flats.dwg



**GENERAL NOTES:**

- 1) EQUIPMENT PICK-UP AND DELIVERY TO SITE FROM BLUEGRASS CELLULAR STAGING FACILITY TO BE THE CONTRACTORS RESPONSIBILITY, INCLUDING CRANE SET, AND ALL COST INCURRED.
- 2) FOR, BUILDING AND ALL CONCRETE PAD DETAILS REFER TO STRUCTURALS AND SHEET S1.1
- 3) ALL CONCRETE TO HAVE SPECIFIED COATED SEALANT PER STRUCTURAL RECOMMENDATIONS.
- 4) ANY DAMAGE DUE TO CONSTRUCTION, TO BE REPAIRED OR REPLACED TO ORIGINAL CONDITION. (SUBJECT TO BLUEGRASS CELLULAR'S APPROVAL).
- 5) ANY DAMAGE OF NATURAL SURROUNDINGS , INCLUDING BUT NOT LIMITED TO, GRASS, TREES, LANDSCAPING, ETC.. TO BE REPAIRED OR REPLACED TO ORIGINAL CONDITION AT BLUEGRASS CELLULAR'S APPROVAL.
- 6) ROADWAYS TO BE GRADED SMOOTH AND EVEN, REMOVING ALL POTHOLES. ROADS TO HAVE PROPER DRAINAGE AND RUNOFF PER BLUEGRASS CELLULAR'S APPROVAL.
- 7) ANY RELOCATION OF EXISTING UTILITIES TO BE DONE IN ACCORDANCE WITH LOCAL CODES AND RECOMMENDATIONS, CONSULTING ALL UTILITY COMPANIES INVOLVED FOR APPROVAL AND SPECIFICATIONS REQUIRED.
- 8) FOR GRADING DETAILS, SEE GENERAL NOTESHEET
- 9) CONTRACTOR TO FIELD VERIFY ALL TOWER DIMENSIONS WITH TOWER MANUFACTURER PRIOR TO JOB BIDDING OR START OF ANY CONSTRUCTION
- 10) CONTRACTOR RESPONSIBLE FOR APPLYING FOR SERVICE TO SITE AND PAYING ANY FEES REQUIRED FOR PERMITS, HOOKUP, ETC..

**SITE PLAN**  
SCALE: 1/8" = 1'-0"

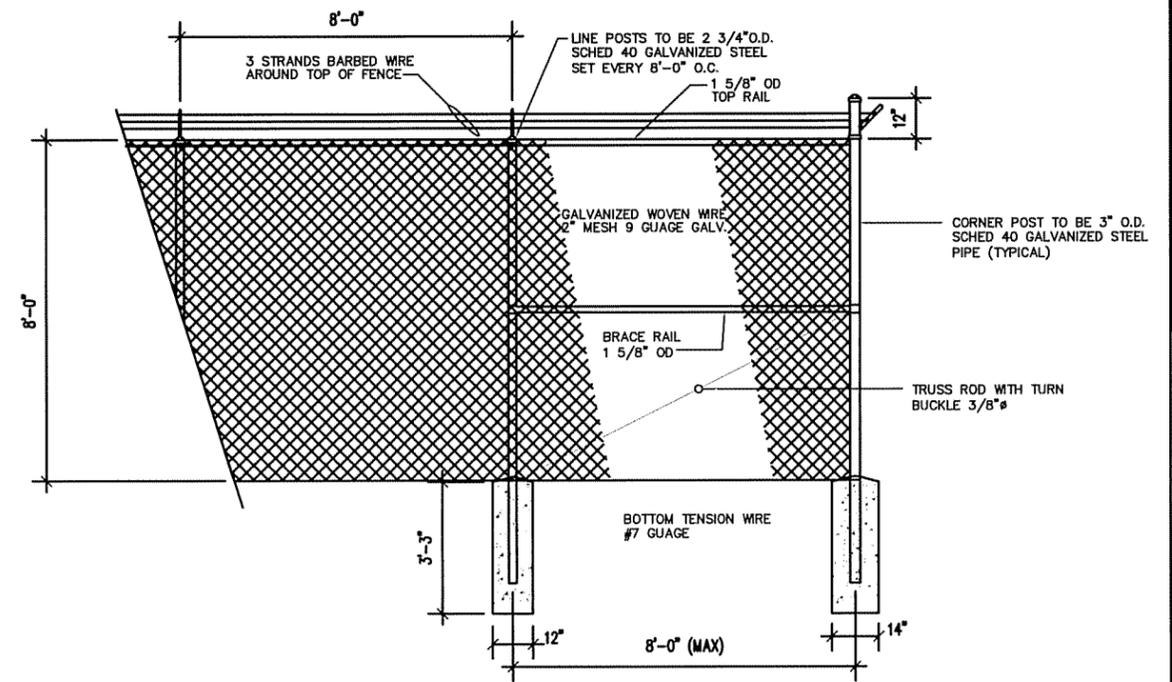
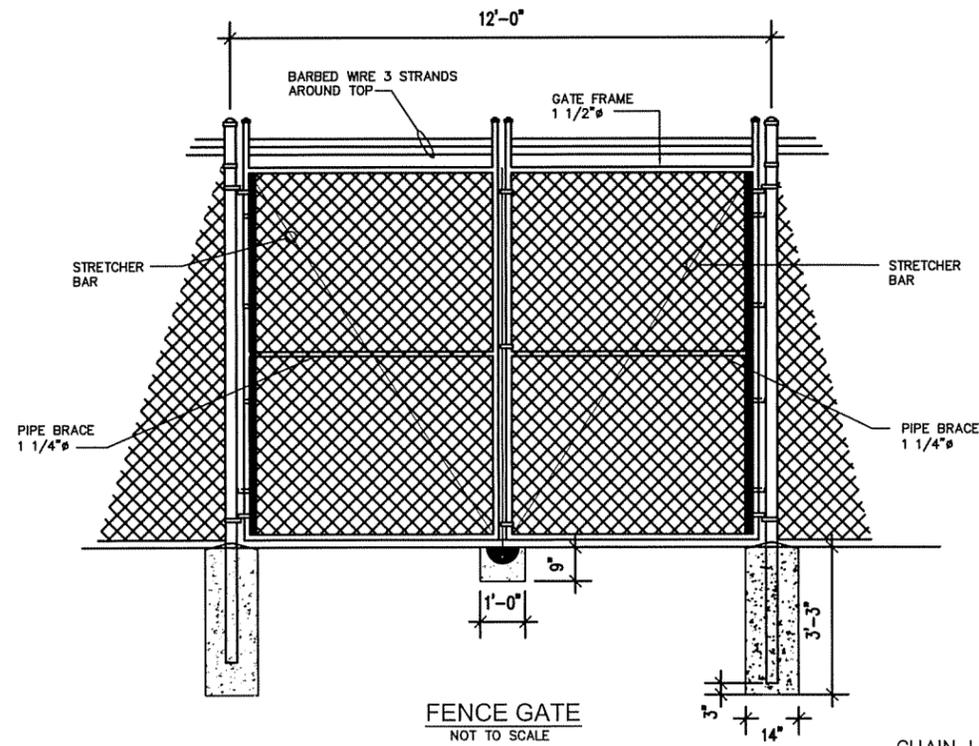


NO.	DATE	REVISION

**BLUEGRASS CELLULAR, INC.**  
**STANDARD CELLULAR SITE**  
**CEDAR FLATS**  
5612 OLD GLASGOW RD. TOMPKINSVILLE, KY. 42167

DRAWN BY: R. BECKER  
ISSUE DATE: 1-15-08  
SCALE: LISTED

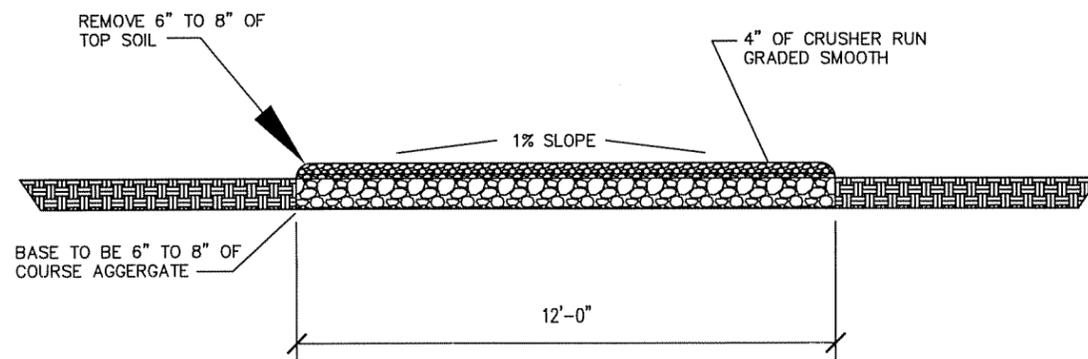
SHEET NUMBER  
A-1



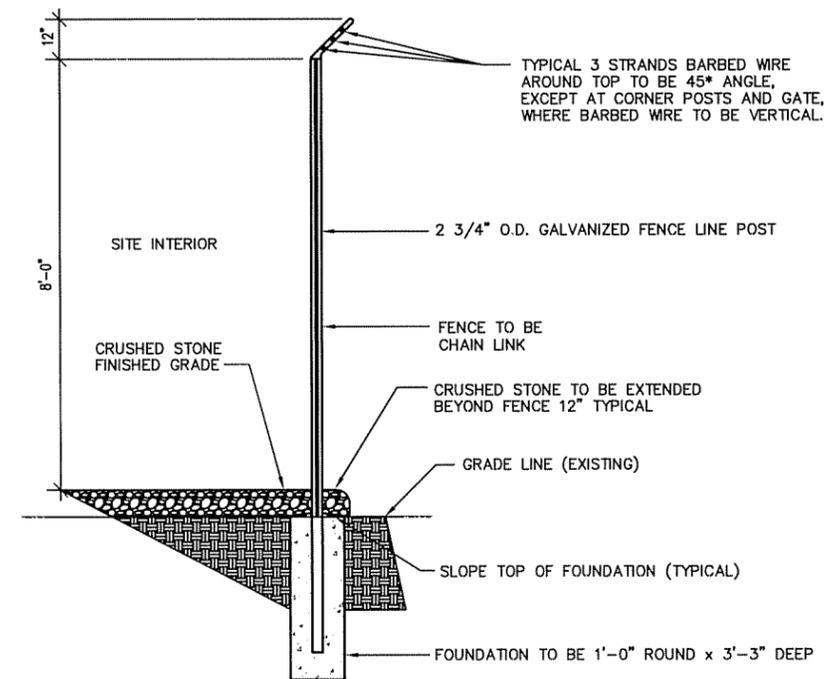
FENCE DETAIL END POLES  
NOT TO SCALE

**CHAIN LINK FENCING NOTES:**

- 1 **FABRIC:** THE FABRIC SHALL BE COMPOSED OF INDIVIDUAL HOT DIP GALVANIZED WIRE PICKETS HELICALLY WOUND AND INTERWOVEN FROM NO.9 W & M GAUGE COPPER BEARING STEEL WIRE TO FORM A CONTINUOUS CHAIN LINK FABRIC HAVING A 2" MESH. TOP EDGES SHALL HAVE A TWISTED AND BARBED
- 2 **POSTS:** SHALL BE 2 3/4" O.D. SS 40 PIPE HOT GALVANIZED. THESE POSTS SHALL BE SPACED APPROXIMATELY 8'-0" ON CENTERS AND SET FULL 3'-3" IN BELL - SHAPED CONCRETE FOOTING, CROWNED AT TOP TO SHED WATER.
- 3 **TOP RAIL:** SHALL BE 1 5/8" O.C. STANDARD PIPE HOT GALVANIZED AND SHALL BE FURNISHED IN RANDOM LENGTHS AVERAGING NOT LESS THAN 20'.
- 4 **FABRIC TIES:** FOR ATTACHING FABRIC TO LINE POST, TOP RAIL OR TOP WIRE, SHALL BE ALUMINUM STRIP OF WIRE OF APPROVED GAUGE AND DESIGN. USED ON TOP OF RAIL EVERY 24" AND ONE POST EVERY 12'.
- 5 **EXTENSION ARMS:** CAST STEEL GALVANIZED TO ACCOMODATE 3 STRANDS OF BARB WIRE, SINGLE ARM SLOPED TO 45°, AND VERTICAL ON TOP OF SWING GATES.
- 6 **BARBED WIRE (STEEL):** ASTM A121 GALVANIZED STEEL, 12 GAUGE THICK WIRE, 3 STRANDS 4 POINTS AT 3" O.C.
- 7 **SWING GATE POSTS:** SHALL BE 3" O.C. STANDARD HOT GALVANIZED, WEIGHING 5.79 LBS. PER FOOT.
- 8 **GATES: (a) SWING GATES:** 2" O.C. STANDARD PIPE WITH INTERNAL BRACING OF 1 5/8" O.D. STANDARD PIPE; WELDED AT ALL JOINTS TO PROVIDE RIGID WATERTIGHT CONSTRUCTION. FABRIC SAME AS FENCE.
- 9 **FENCE TO BE 100% ERECTED WITHIN TEN(10) DAYS OF COMPLETION OF CONSTRUCTION, IF TIME FRAME CANNOT BE MET, PLEASE NOTIFY PROJECT SUPERVISOR.**



ROAD DETAIL  
NOT TO SCALE



FENCE DETAIL LINE POLES  
NOT TO SCALE



NO.	DATE	REVISION

BLUEGRASS CELLULAR, INC.  
STANDARD CELLULAR SITE  
**CEDAR FLATS**  
5612 OLD GLASGOW RD. TOMPKINSVILLE, KY. 42167

DRAWN BY: R. BECKER  
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SHEET NUMBER  
**A-2**

ALL LINES AND ANTENNAS TO BE PROPERLY MOUNTED TO TOWER OR STRUCTURE PER BLUEGRASS CELLULAR SPECIFICATIONS.

ALL GROUND BARS TO BE INSTALLED AND CAD WELDED TO GROUND FIELD (WHERE REQUIRED)

ALL LINES TO BE GROUNDED AT THE TOP AND BASE OF STRUCTURE OR TOWER.

ALL LINES TO BE GROUNDED AT ENTRANCE OF SHELTER BEFORE WAVE GUIDE PORTS. (EXTERIOR OF BUILDING)

LINES ARE TO BE SECURED TO ICE BRIDGE

WAVE-GUIDE BOOTS ARE TO BE INSTALLED ON ALL LINES (BOTH INSIDE AND OUTSIDE)

ALL COAX CONNECTIONS ARE TO BE WEATHER PROOFED.

INVENTORY OF ALL MATERIAL IS TO BE DONE PRIOR TO INSTALLATION BY CONTRACTOR. (LIST WILL BE PROVIDED)

ALL TRASH AND REFUGE IS TO BE PROPERLY DISPOSED OF.

CONTRACTOR TO EXTEND HARDLINES INTO BUILDING 12" & INSTALL POLYPHASERS, PER INSTRUCTION OF PROJECT SUPERVISOR.

CONTRACTORS TO SUPPLY POLYPHASERS OR LIKE UNITS TO BE INSTALLED AND GROUNDED TO GROUND BAR INSIDE BUILDING AT WAVE GUIDE ENTRANCE. GO TO SUPPLY GROUND CABLE & LUGS.

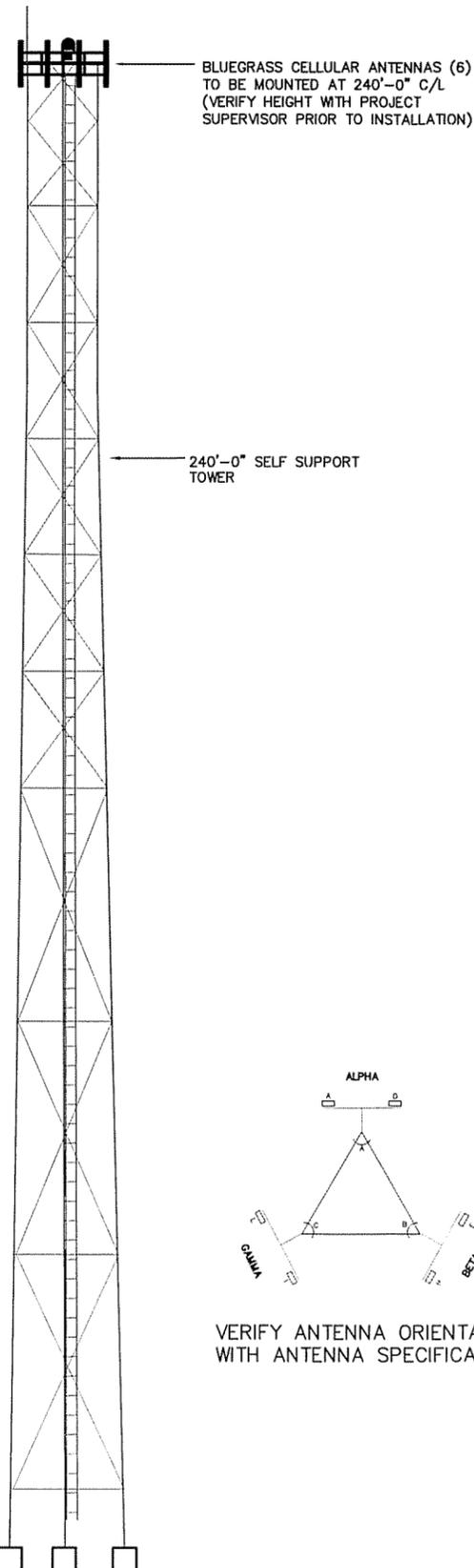
GENERAL CONTRACTOR TO MOUNT ANTENNA MOUNTS AT TOP OF STRUCTURE OR TOWER BY BLUEGRASS CELLULAR SPECIFICATIONS.

ICE BRIDGE TO BE SUPPLIED AND INSTALLED BY GENERAL CONTRACTOR. (Additional Ice Bridge if needed)

TRAPEZE KIT TO BE SUPPLIED AND INSTALLED BY GENERAL CONTRACTOR.

CONTRACTOR TO INSTALL GPS BRACKET

## BLUEGRASS CELLULAR GENERAL NOTES & ANTENNA SPECS



SELF SUPPORT TOWER ELEVATION (TYPICAL)

### TOWER HEIGHT & TYPE

240'-0" SELF SUPPORT TOWER

### ANTENNA SPECS

	TYPE	SIZE L x W x D	NUMBER	AZIMUTH	MOUNTING HEIGHT
ANTENNA (PRIMARY)	AP13-880-8500 ADT-XP	L=78.6 W=10.3 D=4.6	6	0*, 120*, 240*	240'-0" C/L <small>VERIFY WITH CONSTRUCTION SUPERVISOR</small>
ANTENNA (SECONDARY)					

### ANTENNA MOUNTING HARDWARE SPECS

	TYPE	SIZE	NUMBER
MOUNT (PRIMARY)	TRI-SECTOR MOUNT		3
MOUNT (SECONDARY)			

### ANTENNA TRANSMISSION LINES SPECS

	TYPE	SIZE	NUMBER
TRANSMISSION LINE (PRIMARY)	ANDREW	1-5/8"	6
TRANSMISSION LINE (SECONDARY)			

### DISH SPECS

	MICROWAVE/DONOR	SIZE	NUMBER	AZIMUTH	MOUNTING HEIGHT
DISH #1					
DISH #2					

### DISH MOUNT SPECS

	TYPE	SIZE	NUMBER
MOUNT #1			
MOUNT #2			

### DISH TRANSMISSION LINES

	TYPE	SIZE	NUMBER
TRANSMISSION LINE #1			
TRANSMISSION LINE #2			

### ANTENNA SYNOPSIS

\* ANTENNAS TO HAVE A 1\*E  
\* ANTENNA FREQUENCY 880.00 - 890.00

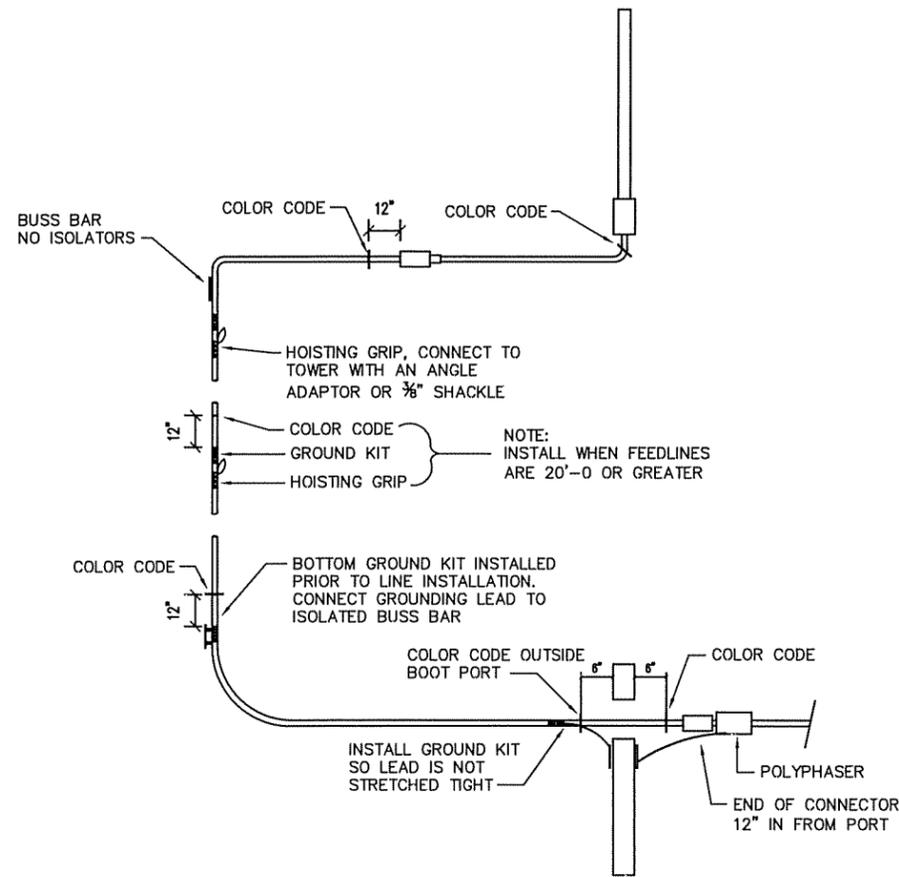


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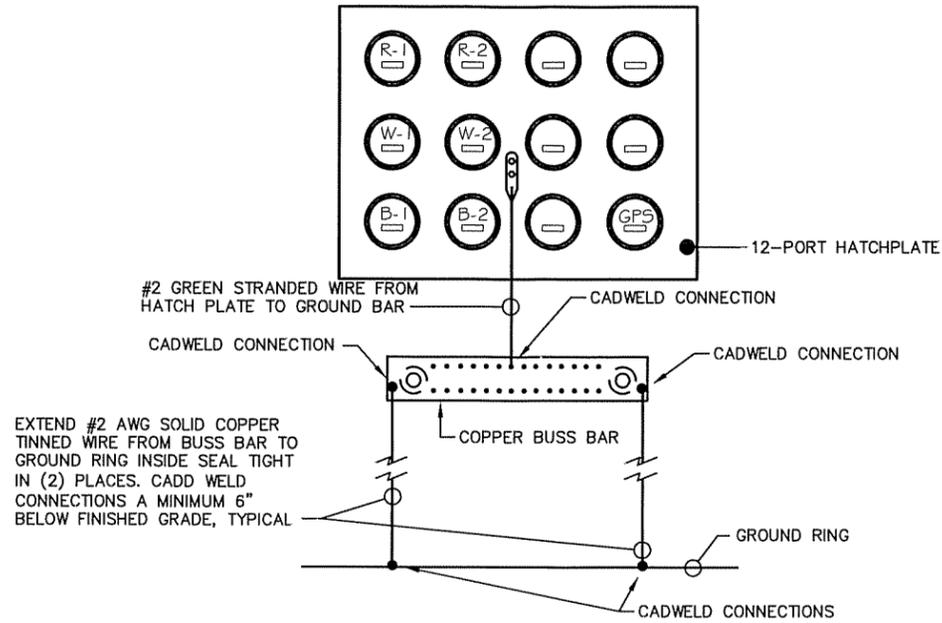
BLUEGRASS CELLULAR, INC.  
STANDARD CELLULAR SITE  
**CEDAR FLATS**  
5612 OLD GLASGOW RD. TOMPKINSVILLE, KY. 42167

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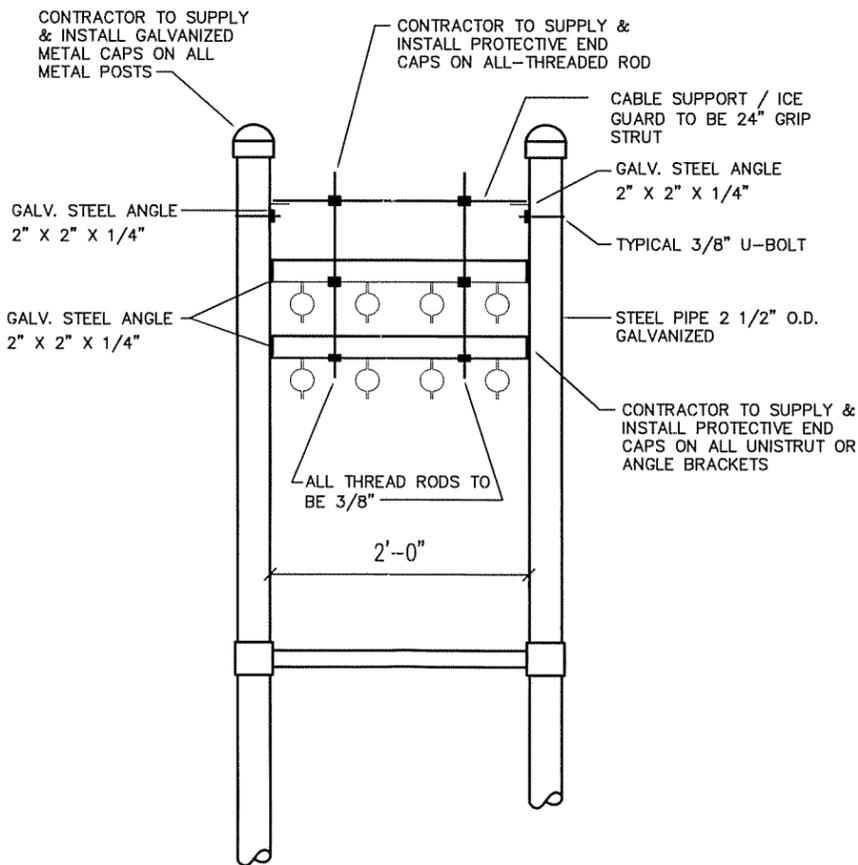
SHEET NUMBER  
**ANTENNA DETAILS**  
1



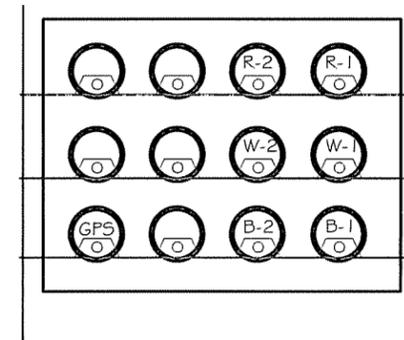
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NO SCALE



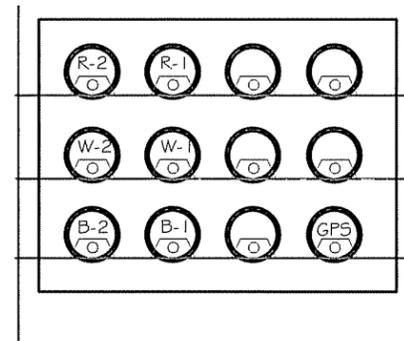
**BOOT PORT GROUNDING DETAIL**  
NO SCALE



**ICE BRIDGE / COAX SUPPORT DETAIL**  
NO SCALE



**COAX ENTRY DETAIL POWER SIDE**  
**(VIEW FROM INSIDE SHELTER)**  
NO SCALE



**COAX ENTRY DETAIL A/C SIDE**  
**(VIEW FROM INSIDE SHELTER)**  
NO SCALE



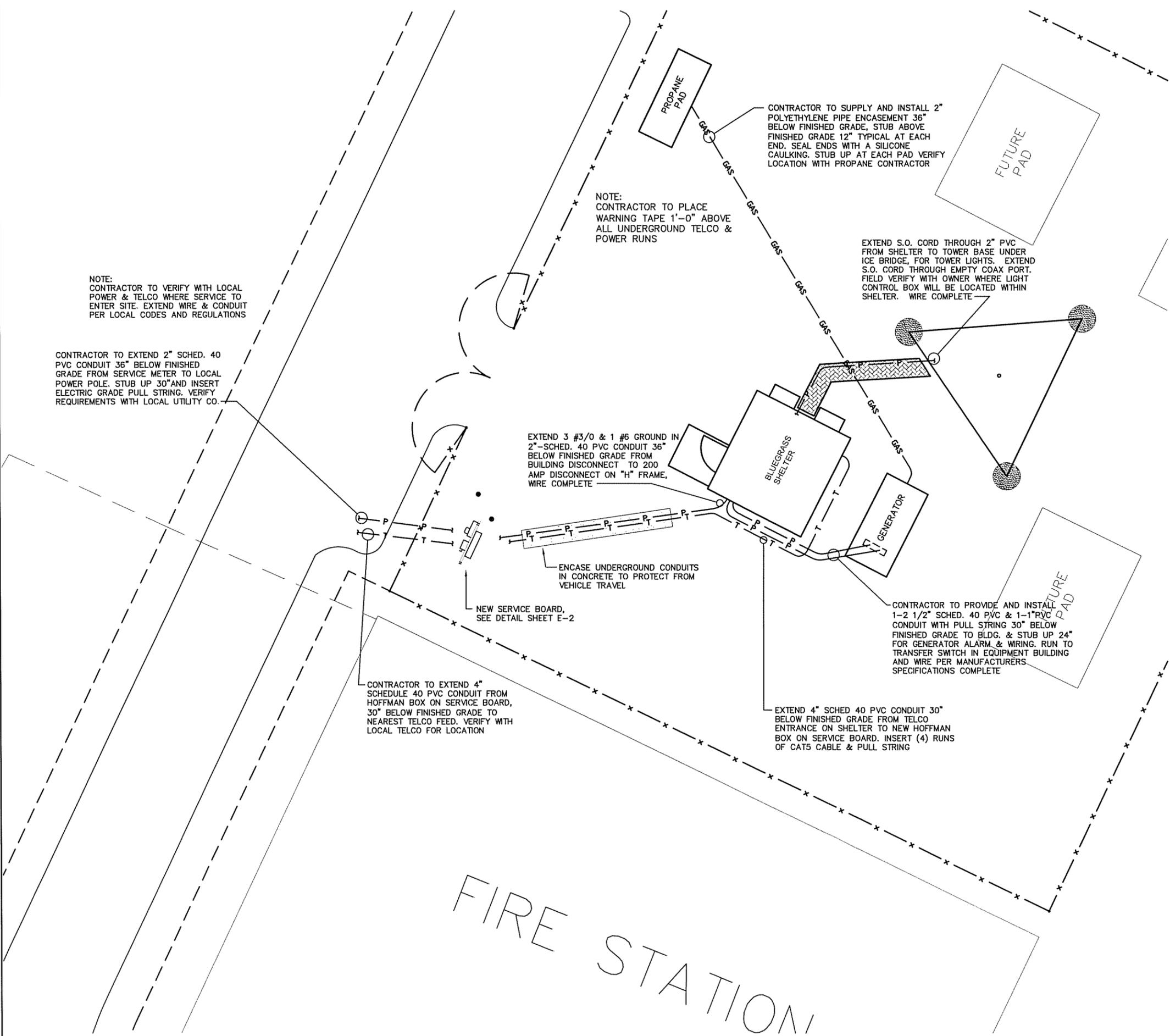
BLUEGRASS CELLULAR, INC.  
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SHEET NUMBER  
ANTENNA DETAILS  
2



NOTE:  
CONTRACTOR TO VERIFY WITH LOCAL POWER & TELCO WHERE SERVICE TO ENTER SITE. EXTEND WIRE & CONDUIT PER LOCAL CODES AND REGULATIONS

CONTRACTOR TO EXTEND 2" SCHED. 40 PVC CONDUIT 36" BELOW FINISHED GRADE FROM SERVICE METER TO LOCAL POWER POLE. STUB UP 30" AND INSERT ELECTRIC GRADE PULL STRING. VERIFY REQUIREMENTS WITH LOCAL UTILITY CO.

NOTE:  
CONTRACTOR TO PLACE WARNING TAPE 1'-0" ABOVE ALL UNDERGROUND TELCO & POWER RUNS

CONTRACTOR TO SUPPLY AND INSTALL 2" POLYETHYLENE PIPE ENCASUREMENT 36" BELOW FINISHED GRADE, STUB ABOVE FINISHED GRADE 12" TYPICAL AT EACH END. SEAL ENDS WITH A SILICONE CAULKING. STUB UP AT EACH PAD VERIFY LOCATION WITH PROPANE CONTRACTOR

EXTEND S.O. CORD THROUGH 2" PVC FROM SHELTER TO TOWER BASE UNDER ICE BRIDGE, FOR TOWER LIGHTS. EXTEND S.O. CORD THROUGH EMPTY COAX PORT. FIELD VERIFY WITH OWNER WHERE LIGHT CONTROL BOX WILL BE LOCATED WITHIN SHELTER. WIRE COMPLETE

EXTEND 3 #3/0 & 1 #6 GROUND IN 2"-SCHED. 40 PVC CONDUIT 36" BELOW FINISHED GRADE FROM BUILDING DISCONNECT TO 200 AMP DISCONNECT ON "H" FRAME. WIRE COMPLETE

ENCASE UNDERGROUND CONDUITS IN CONCRETE TO PROTECT FROM VEHICLE TRAVEL

NEW SERVICE BOARD, SEE DETAIL SHEET E-2

CONTRACTOR TO EXTEND 4" SCHEDULE 40 PVC CONDUIT FROM HOFFMAN BOX ON SERVICE BOARD, 30" BELOW FINISHED GRADE TO NEAREST TELCO FEED. VERIFY WITH LOCAL TELCO FOR LOCATION

CONTRACTOR TO PROVIDE AND INSTALL 1-2 1/2" SCHED. 40 PVC & 1-1" PVC CONDUIT WITH PULL STRING 30" BELOW FINISHED GRADE TO BLDG. & STUB UP 24" FOR GENERATOR ALARM & WIRING. RUN TO TRANSFER SWITCH IN EQUIPMENT BUILDING AND WIRE PER MANUFACTURERS SPECIFICATIONS COMPLETE

EXTEND 4" SCHED 40 PVC CONDUIT 30" BELOW FINISHED GRADE FROM TELCO ENTRANCE ON SHELTER TO NEW HOFFMAN BOX ON SERVICE BOARD. INSERT (4) RUNS OF CAT5 CABLE & PULL STRING

**GENERAL ELECTRICAL NOTES:**

- 1) CONTRACTOR RESPONSIBLE FOR MAKING ALL ARRANGEMENTS WITH THE LOCAL UTILITIES FOR SERVICE AND FEE PAYMENTS REQUIRED TO OBTAIN SERVICE.
- 2) CONTRACTOR RESPONSIBLE FOR MAKING ALL ARRANGEMENTS WITH THE LOCAL TELEPHONE COMPANY FOR SERVICE AND FEE PAYMENTS REQUIRED TO OBTAIN SERVICE.
- 3) GROUND RING TO BE CONTAINED WITH IN THE COMPOUNDS FENCED AREA.
- 4) FENCE TO BE GROUNDED FROM GROUND RING TO ALL CORNER POST & GATES. SPACE FENCE GROUNDING APPROXIMATELY 20'-0" O/C. (CAD WELD ALL CONNECTIONS)
- 5) ALL GROUND RING CONNECTIONS TO BE AS CLOSE AS POSSIBLE, SHARP BENDS WILL NOT BE PERMITTED AS WELL AS "T" CONNECTIONS. ALL CONNECTIONS TO HAVE A SWEEPING RADIUS OF 8" MINIMUM. GROUNDING CONFIGURATION TO BE IN PARALLEL.
- 6) CONTACT POINTS FOR GROUNDING TO BE CLEANED OF ANY RUST, PAINT, DIRT, ETC. TO CREATE A GOOD BOND FOR CONDUCTOR. AREA THAT HAS BEEN CLEANED TO BE RESEALED TO PREVENT RUSTING.
- 7) PROPERLY GROUND ANY EXPOSED METAL THAT MAY EXIST ON EXTERIOR OF EQUIPMENT SHELTER OR CABINET.
- 8) WHERE GROUND CONDUCTORS REQUIRE MECHANICAL BONDING, STAINLESS STEEL CONNECTORS ARE REQUIRED AT EACH CONNECTING POINT USING LOCK WASHERS.
- 9) CONTRACTOR RESPONSIBLE FOR SEEING THAT UTILITY PERSONNEL MAKE FINAL CONNECTIONS, MAKING SURE THE TOWER ALARM IS CONNECTED AND WORKING. A TELEPHONE NUMBER FOR THE ALARM MUST BE SUPPLIED.
- 10) CONTRACTOR RESPONSIBLE FOR MEG TESTING THE SITE AND SUPPLYING OWNER WITH FINAL READINGS IN OWNERS SPECIFICATIONS.

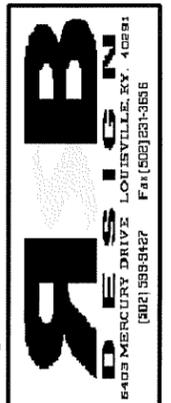
NOTE:  
CONTRACTOR TO PROVIDE WARNING TAPE IN TRENCHES FOR ALL POWER AND TELCO RUNS UNDER GROUND. TAPE TO BE INSTALLED 1'-0" ABOVE CONDUIT RUNS.

**SYMBOLS LEGEND**

	POWER
	GAS
	TELEPHONE
	FENCE
	SWITCH (DISCONNECT)
	METER PACK

**SITE PLAN- ELECTRICAL**

SCALE: 3/32" = 1'-0"

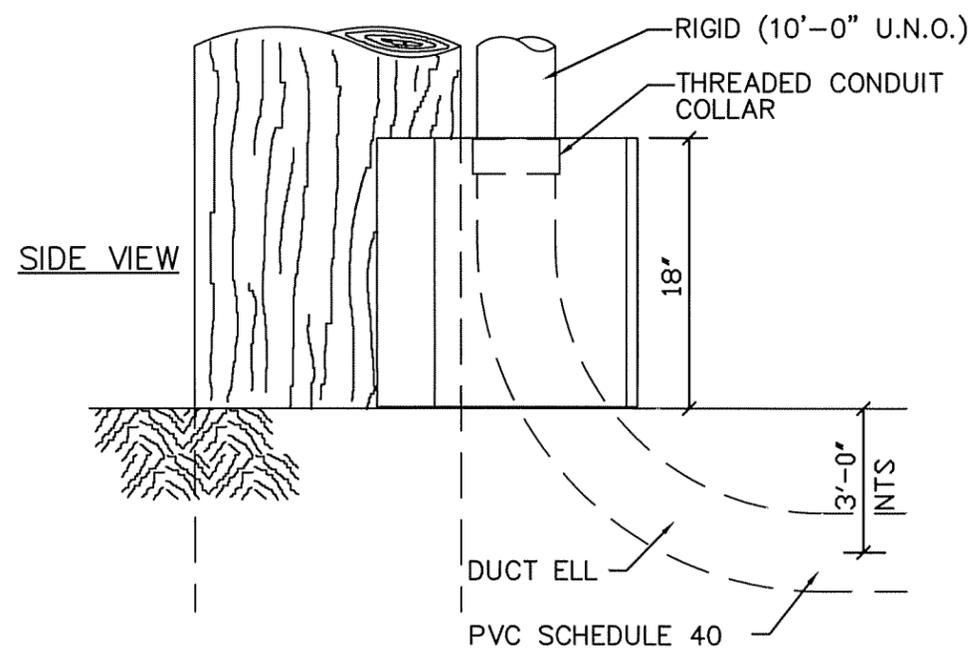
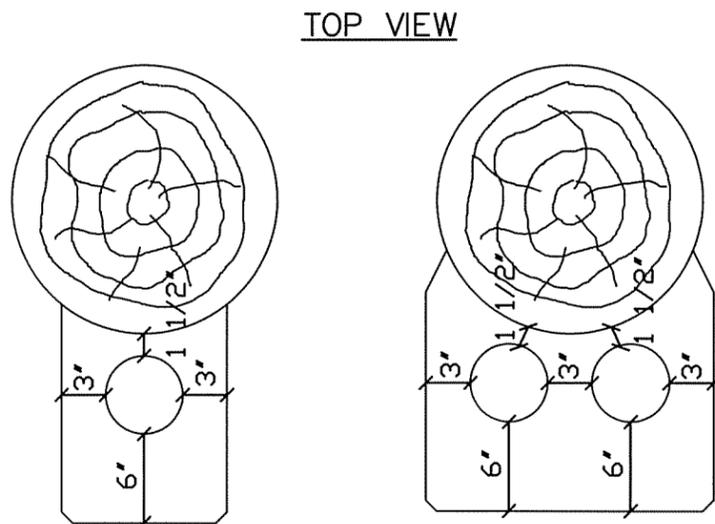


NO.	DATE	REVISION

**BLUEGRASS CELLULAR, INC.**  
**STANDARD CELLULAR SITE**  
**CEDAR FLATS**  
 5612 OLD GLASGOW RD. TOMPKINSVILLE, KY. 42167

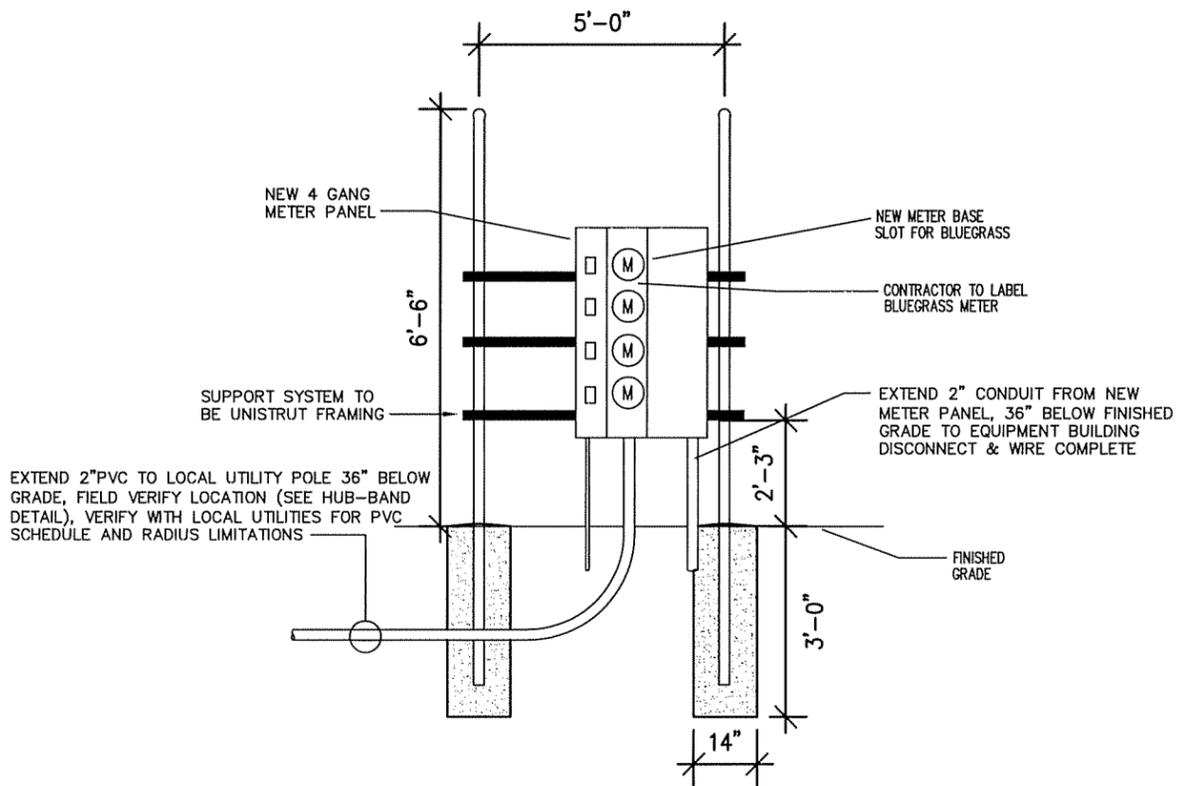
DRAWN BY: R. BECKER  
 ISSUE DATE: 1-15-08  
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SHEET NUMBER  
**E-1**



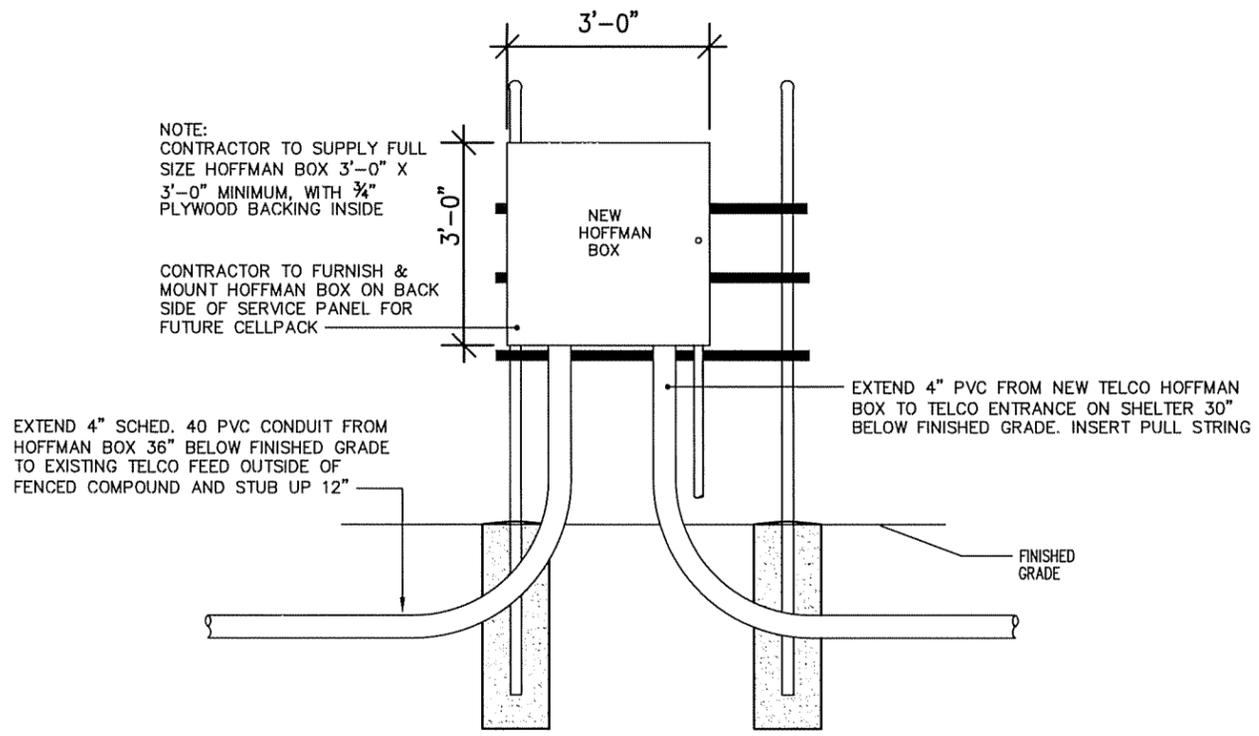
**HUB-BAND DETAIL**

NO SCALE



**SERVICE BOARD DETAIL**

NO SCALE



**BACKBOARD DETAIL**

NO SCALE

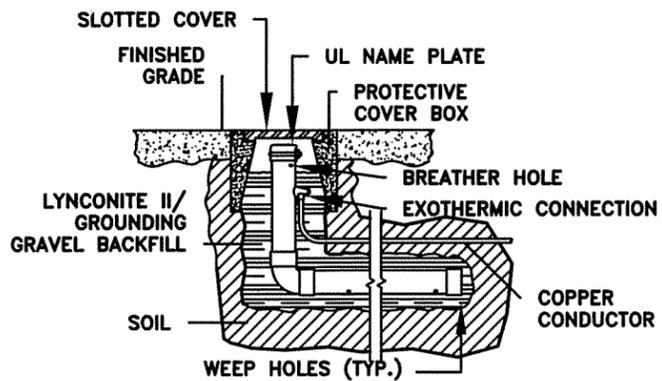


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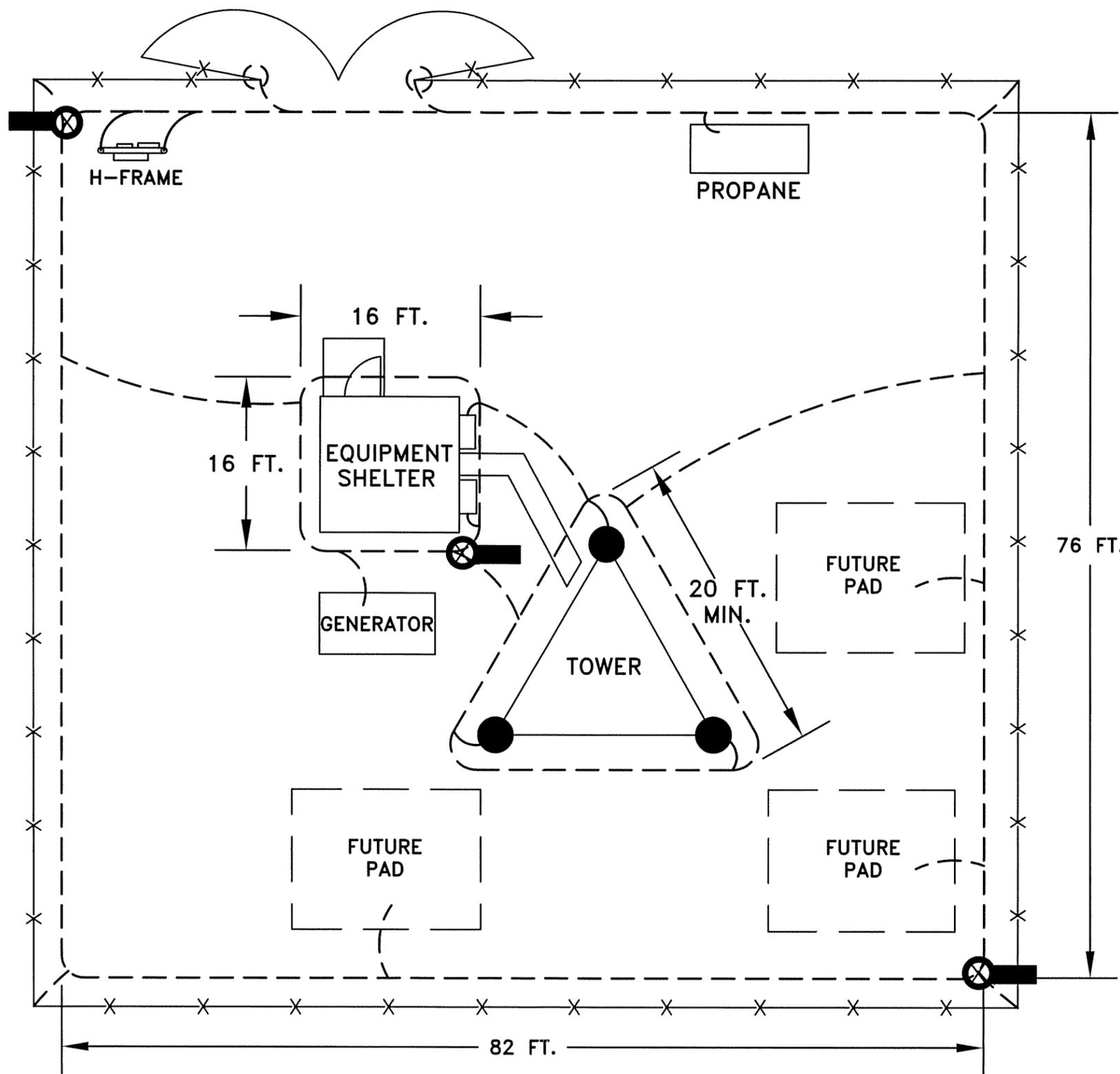
DRAWN BY: R. BECKER  
 ISSUE DATE: 1-15-08  
 SCALE: LISTED

SHEET NUMBER  
 E-2



L-SHAPE MODEL  
LYNCOLE XIT GROUNDING  
(800) 962-2610

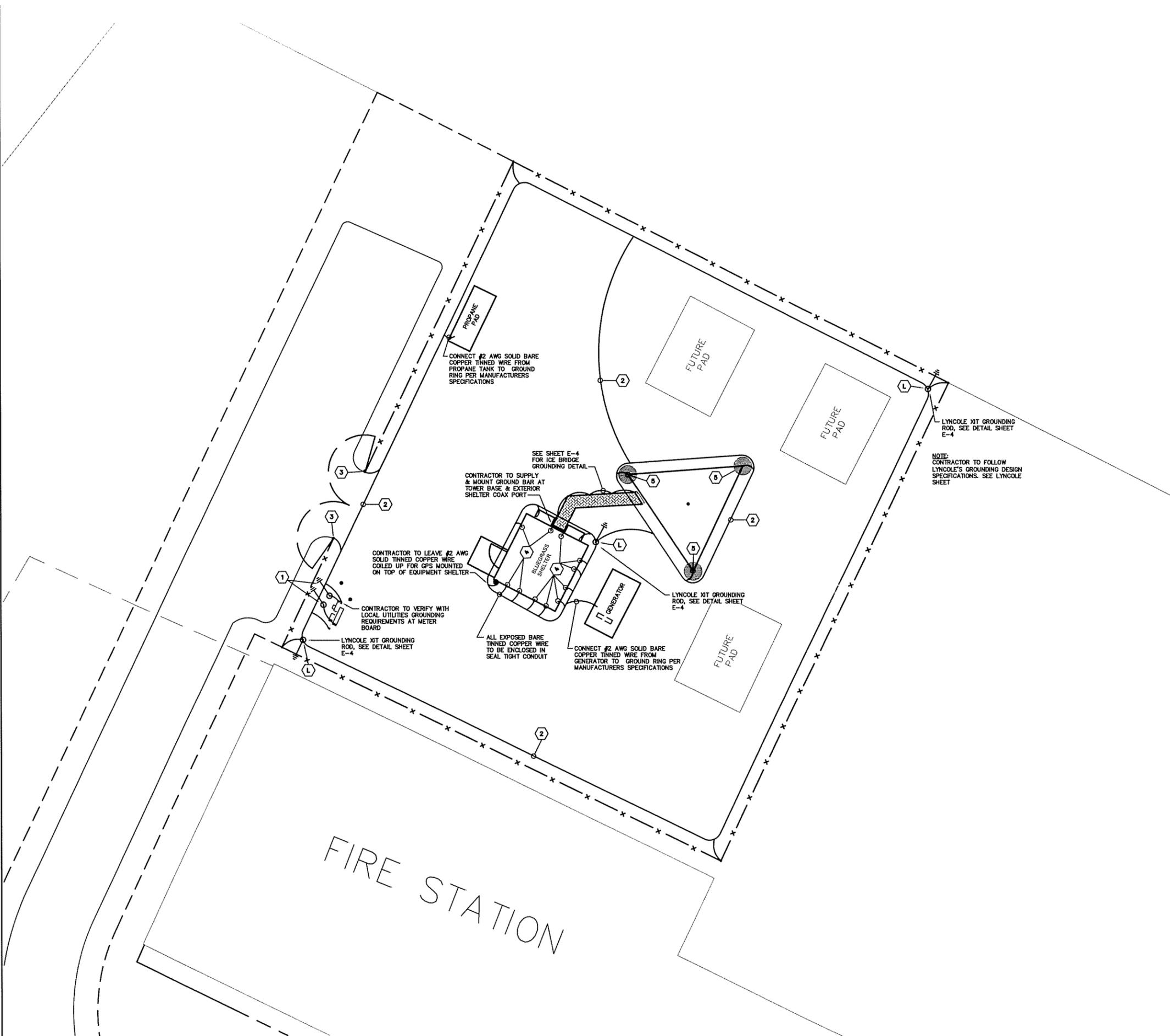
**DETAIL**



**NOTES:**

- X — CHAIN LINK FENCE
- - - - - BARE #2 AWG TINNED SOLID COPPER CONDUCTOR BURIED 30 IN. BELOW GRADE OR 6 IN. BELOW FROST LINE ALL BENDS IN GROUND CONDUCTORS TO BE MADE WITH 12 IN. RADIUS OR LARGER
- ⊗ K2L-10CS (SEE DETAIL)

		CLIENT / END USER	
		RSB DESIGN / BLUEGRASS	
DRAWING PROJECT NAME		1 CEDAR FLATS	
TITLE			
GROUNDING OPTION - REVISED			
LOCATION: CITY, STATE		CALCULATED RESISTANCE	
TOMPKINSVILLE, KY		< 5 OHMS	
DRAWN BY	APPROVED BY	DATE	
JH		1/22/08	
SOIL DATA PROVIDED BY		REFERENCE NUMBER	SCALE
TERRACON		N/A	NONE
		LTS NUMBER	080018



- GENERAL ELECTRICAL NOTES:**
- 1) CONTRACTOR RESPONSIBLE FOR MAKING ALL ARRANGEMENTS WITH THE LOCAL UTILITIES FOR SERVICE AND FEE PAYMENTS REQUIRED TO OBTAIN SERVICE.
  - 2) CONTRACTOR RESPONSIBLE FOR MAKING ALL ARRANGEMENTS WITH THE LOCAL TELEPHONE COMPANY FOR SERVICE AND FEE PAYMENTS REQUIRED TO OBTAIN SERVICE.
  - 3) GROUND RING TO BE CONTAINED WITH IN THE COMPOUNDS FENCED AREA.
  - 4) FENCE TO BE GROUNDED FROM GROUND RING TO ALL CORNER POST & GATES. SPACE FENCE GROUNDING APPROXIMATELY 20'-0" O/C. (CAD WELD ALL CONNECTIONS)
  - 5) ALL GROUND RING CONNECTIONS TO BE AS CLOSE AS POSSIBLE, SHARP BENDS WILL NOT BE PERMITTED AS WELL AS "T" CONNECTIONS. ALL CONNECTIONS TO HAVE A SWEEPING RADIUS OF 8" MINIMUM. GROUNDING CONFIGURATION TO BE IN PARALLEL.
  - 6) CONTACT POINTS FOR GROUNDING TO BE CLEANED OF ANY RUST, PAINT, DIRT, ETC. TO CREATE A GOOD BOND FOR CONDUCTOR. AREA THAT HAS BEEN CLEANED TO BE RESEALED TO PREVENT RUSTING.
  - 7) PROPERLY GROUND ANY EXPOSED METAL THAT MAY EXIST ON EXTERIOR OF EQUIPMENT SHELTER OR CABINET.
  - 8) WHERE GROUND CONDUCTORS REQUIRE MECHANICAL BONDING, STAINLESS STEEL CONNECTORS ARE REQUIRED AT EACH CONNECTING POINT USING LOCK WASHERS.
  - 9) CONTRACTOR RESPONSIBLE FOR SEEING THAT UTILITY PERSONNEL MAKE FINAL CONNECTIONS, MAKING SURE THE TOWER ALARM IS CONNECTED AND WORKING. A TELEPHONE NUMBER FOR THE ALARM MUST BE SUPPLIED.
  - 10) CONTRACTOR RESPONSIBLE FOR MEG TESTING THE SITE AND SUPPLYING OWNER WITH FINAL READINGS IN OWNERS SPECIFICATIONS.

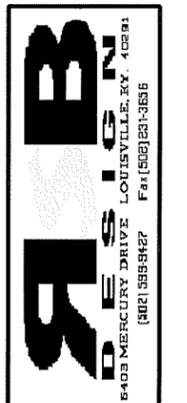
**NOTE:**  
CONTRACTOR TO PROVIDE WARNING TAPE IN TRENCHES FOR ALL POWER AND TELCO RUNS UNDER GROUND. TAPE TO BE INSTALLED AT 9" BELOW GRADE.

**NOTE:**  
CONTRACTOR TO FOLLOW LYNCOLE'S GROUNDING SPECIFICATIONS WHEN USING THEIR XIT GROUNDING RODS. SEE DETAIL SHEET E-4.

- KEYNOTES:**
- L LYNCOLE XIT GROUNDING ROD TO BE INSTALLED WHERE SHOWN AND TO MANUFACTURERS SPECIFICATIONS. (SEE LYNCOLE SPECIFICATIONS)
  - 1 GROUNDING RODS 10'-0" LONG x 3/4" COPPER BONDED GROUND RODS
  - 2 INSTALL AND PROVIDE SOLID BARE TINNED COPPER WIRE #2 AWG, GROUND RING BELOW GRADE 30". USE #2 AWG SOLID BARE TINNED COPPER GROUND "TAP" CONNECTING CONDUCTORS. (CONNECTIONS FOR ALL TAP CONDUCTORS TO BE PARALLEL AND "CAD WELD" CONNECTIONS)
  - 3 FLEXIBLE GROUNDING STRAP TO BE USED TO PROVIDE A COMMON BOND BETWEEN GATE AND CHAIN LINK FENCE, #2 AWG SOLID COPPER BARE TINNED CONDUCTOR FROM GROUND RING TO FENCE USING CAD WELD CONNECTIONS. GROUND TAP TO BE PROVIDED ON EACH 4 SIDES TO GROUND RING AS DESCRIBED ABOVE.
  - 4 BONDED GROUND TO BE PROVIDED TO GROUND RING FOR EACH OF THE FOLLOWING: BUILDING STEEL, HATCH PLATE, EMERGENCY RECEPTACLE, WAVE GUIDE STRUCTURE, FRAME WORK, BUILDING DISCONNECT.
  - 5 FOR TOWER FRAME GROUNDING, REMOVE GALVANIZED COATING COMPLETELY AT SPOT TO "CAD WELD" TO AND CLEAN. #2 AWG SOLID BARE TINNED COPPER CONDUCTOR TO BE CAD WELDED APPROXIMATELY 1'-0" ABOVE FOUNDATION OR AT FLANGE IF PROVIDED BY TOWER MANUFACTURER. EXTEND CONDUCTOR TO GROUND RING. RIGHT ANGLES NOT ACCEPTED ALL BENDS TO BE SWEEPING.

## SITE PLAN-GROUNDING

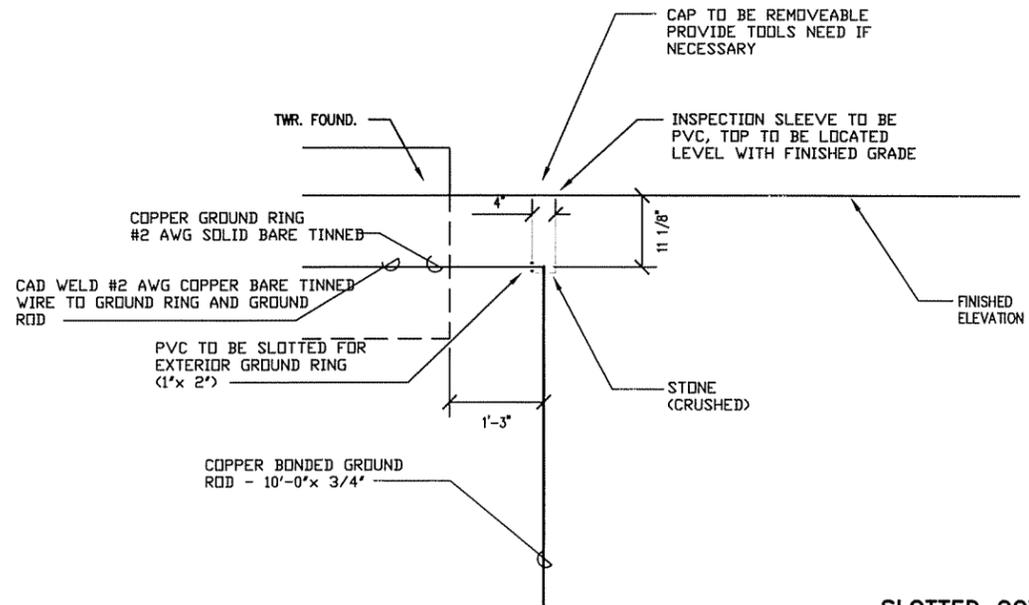
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NO.	DATE	REVISION

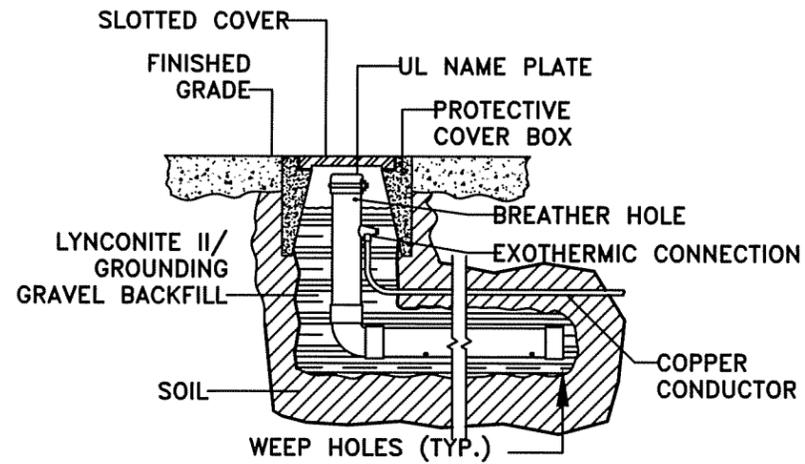
**BLUEGRASS CELLULAR, INC.**  
**STANDARD CELLULAR SITE**  
**CEDAR FLATS**  
 5612 OLD GLASGOW RD. TOMPKINSVILLE, KY. 42167

DRAWN BY: <b>R. BECKER</b>	ISSUE DATE: 1-15-08	SCALE: LISTED
SHEET NUMBER <b>E-3</b>		



### GROUND ROD DETAIL

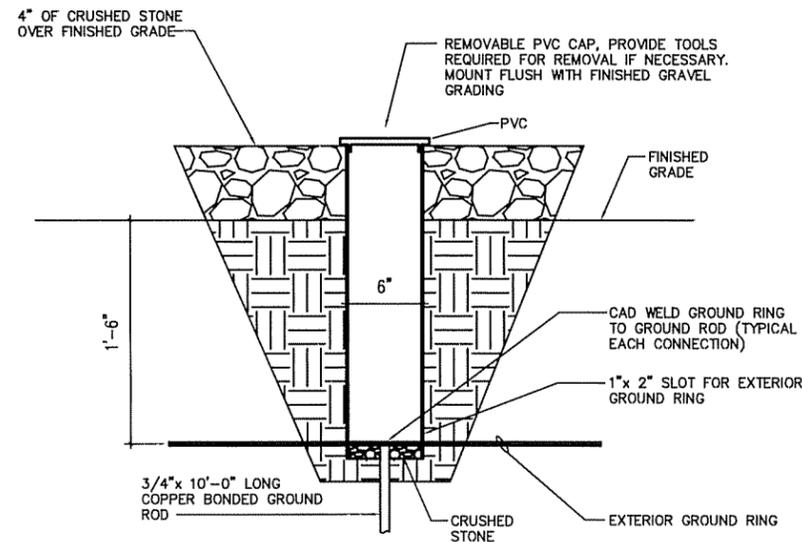
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L-SHAPE MODEL  
LYNCOLE XIT GROUNDING  
(800) 962-2610

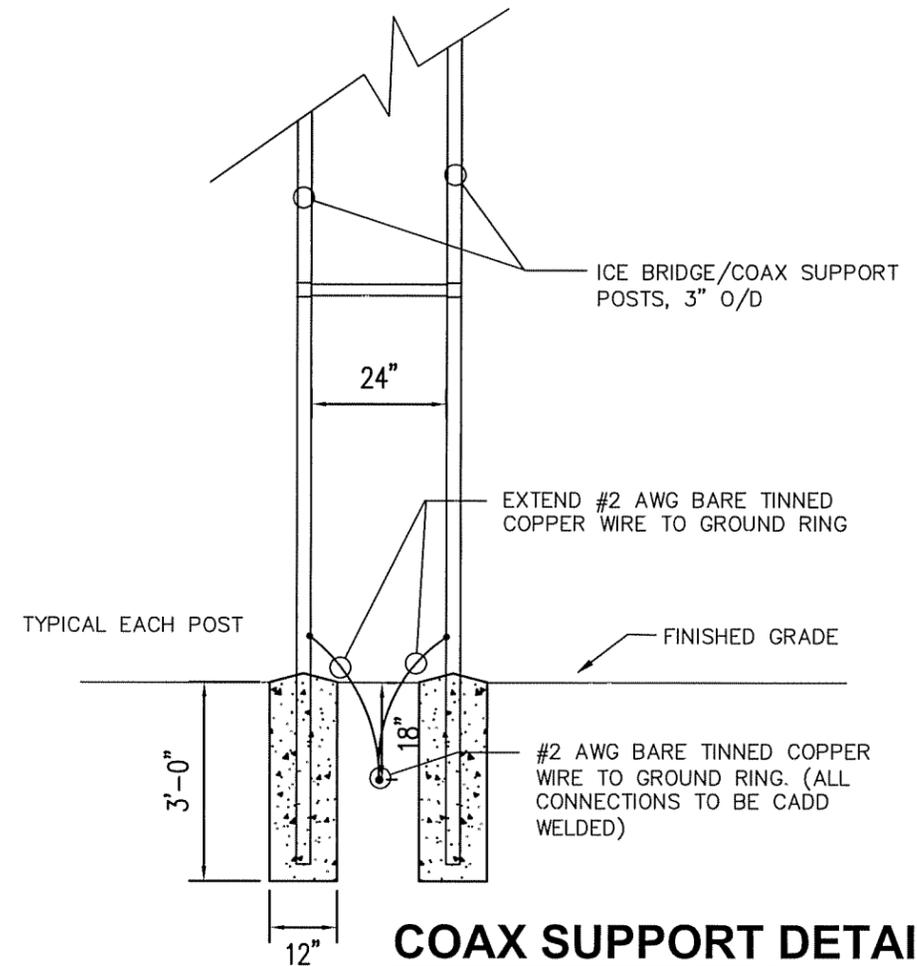
### LYNCOLE XIT ROD DETAIL

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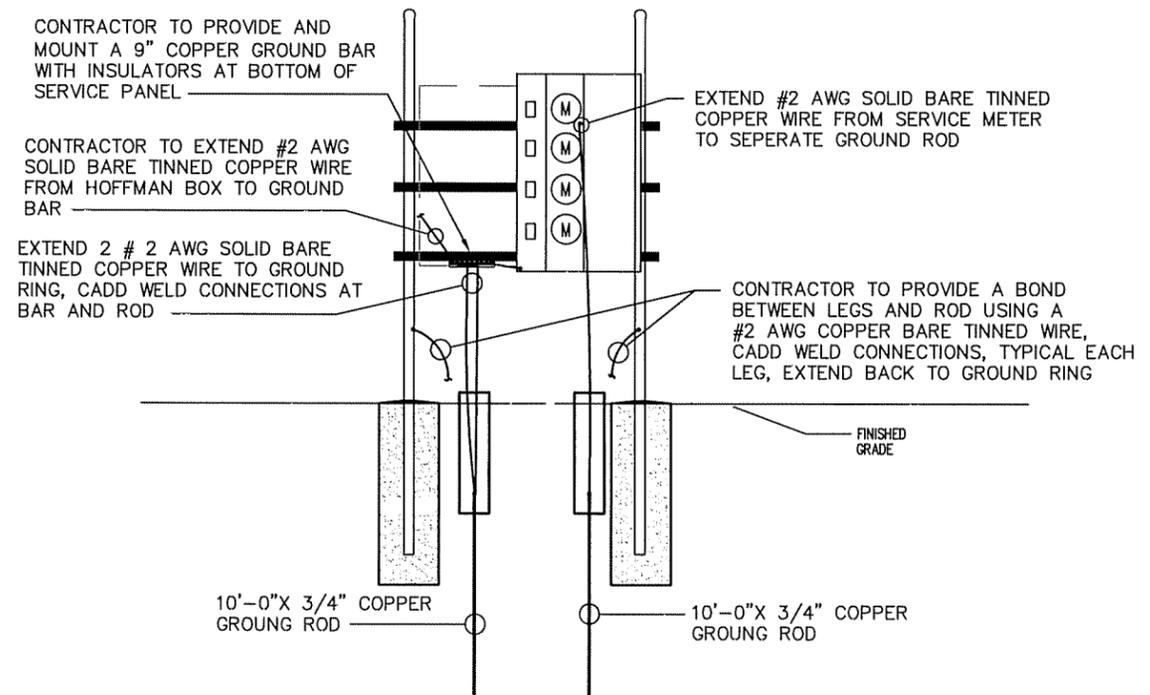
### GROUND SLEEVE DETAIL

NO SCALE



### COAX SUPPORT DETAIL

NO SCALE



### SERVICE BOARD DETAIL

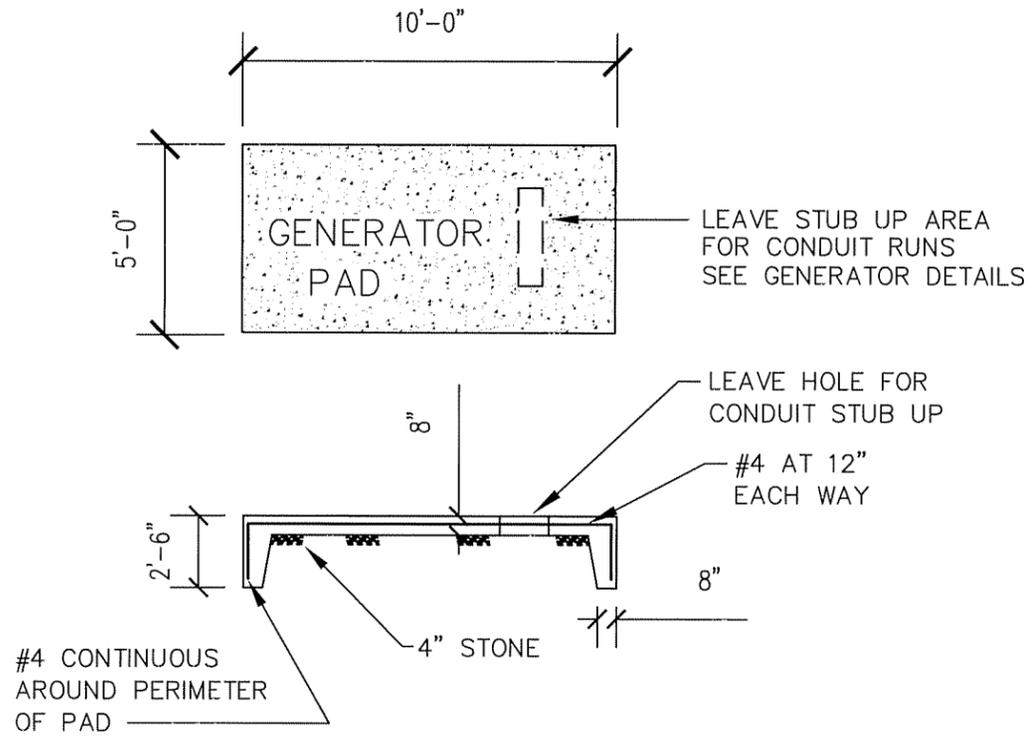
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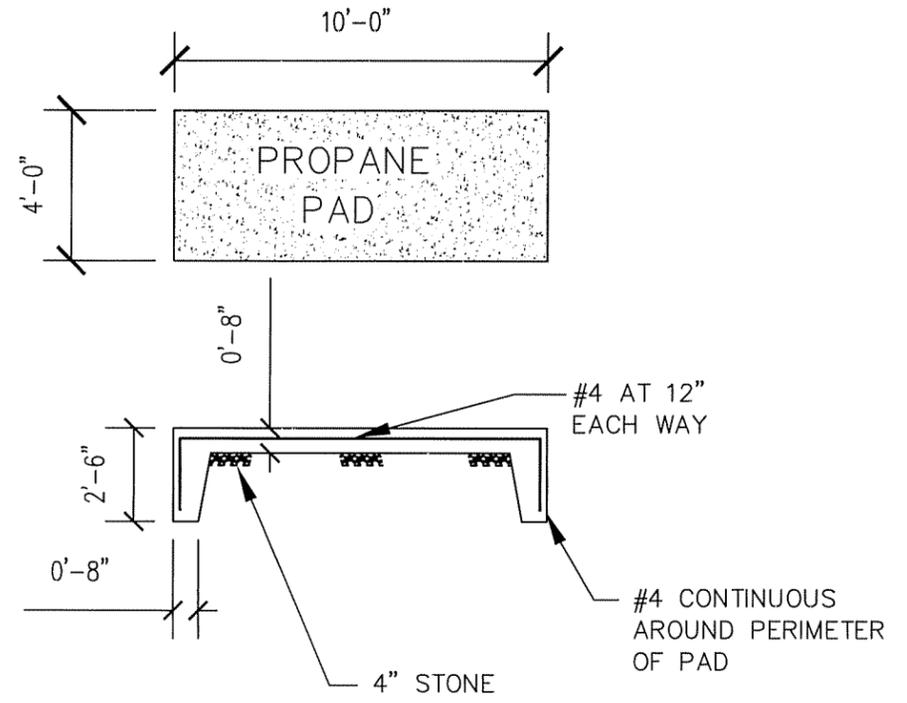
NO.	DATE	REVISION

BLUEGRASS CELLULAR, INC.  
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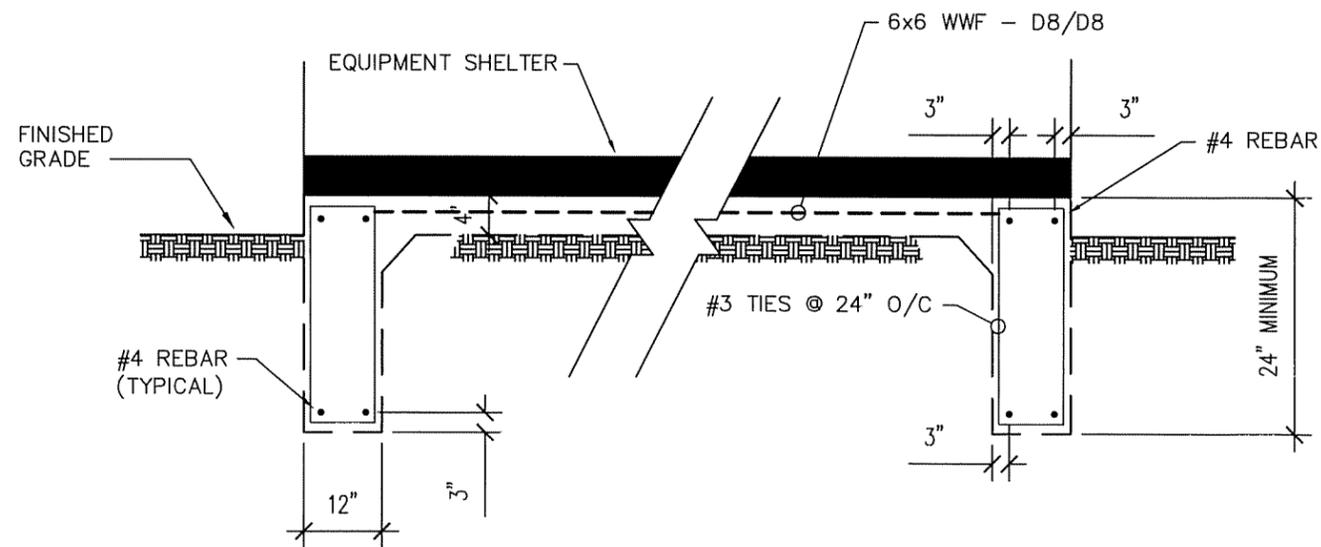
DRAWN BY: R. BECKER	ISSUE DATE: 1-15-08	SCALE: LISTED
SHEET NUMBER E-4		



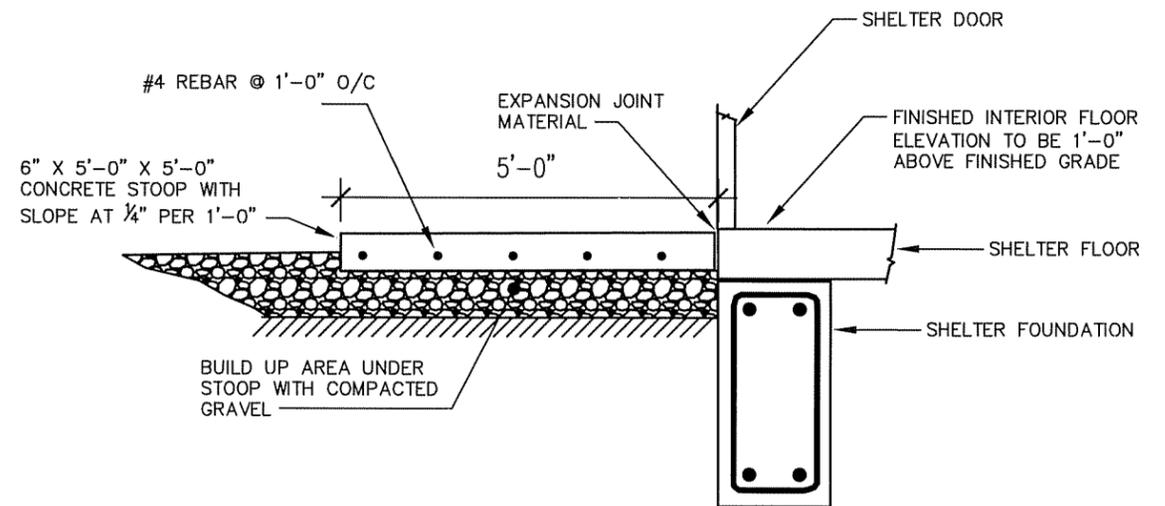
**FOUNDATION DETAIL**  
NO SCALE



**FOUNDATION DETAIL**  
NO SCALE



**SHELTER FOUNDATION PLAN**  
NO SCALE



**CONCRETE STOOP DETAIL**  
NO SCALE



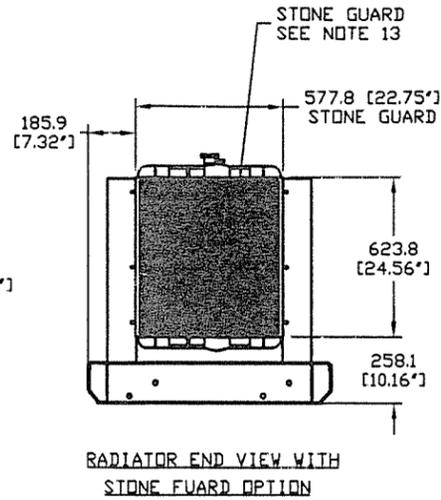
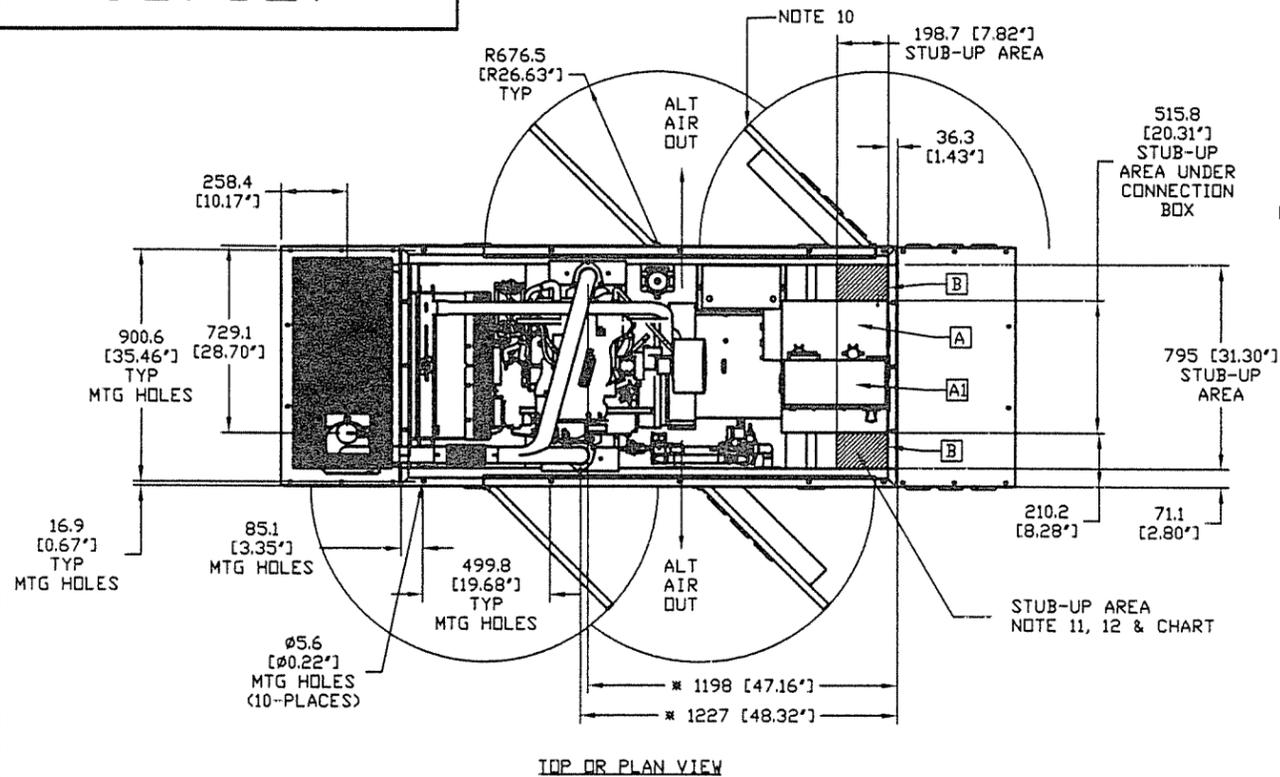
NO.	DATE	REVISION

BLUEGRASS CELLULAR, INC.  
STANDARD CELLULAR SITE  
**CEDAR FLATS**  
5612 OLD GLASGOW RD. TOMPKINSVILLE, KY. 42167

DRAWN BY: R. BECKER	ISSUE DATE: 1-15-08	SCALE: LISTED
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SHEET NUMBER  
S-1

OG7627



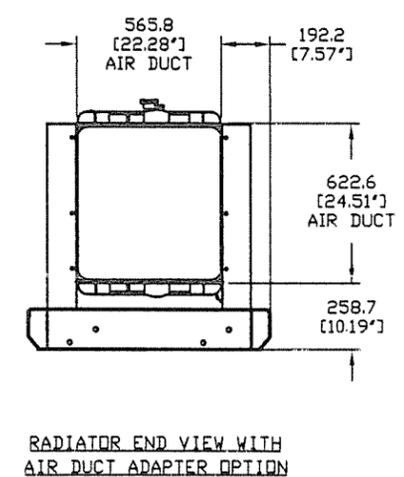
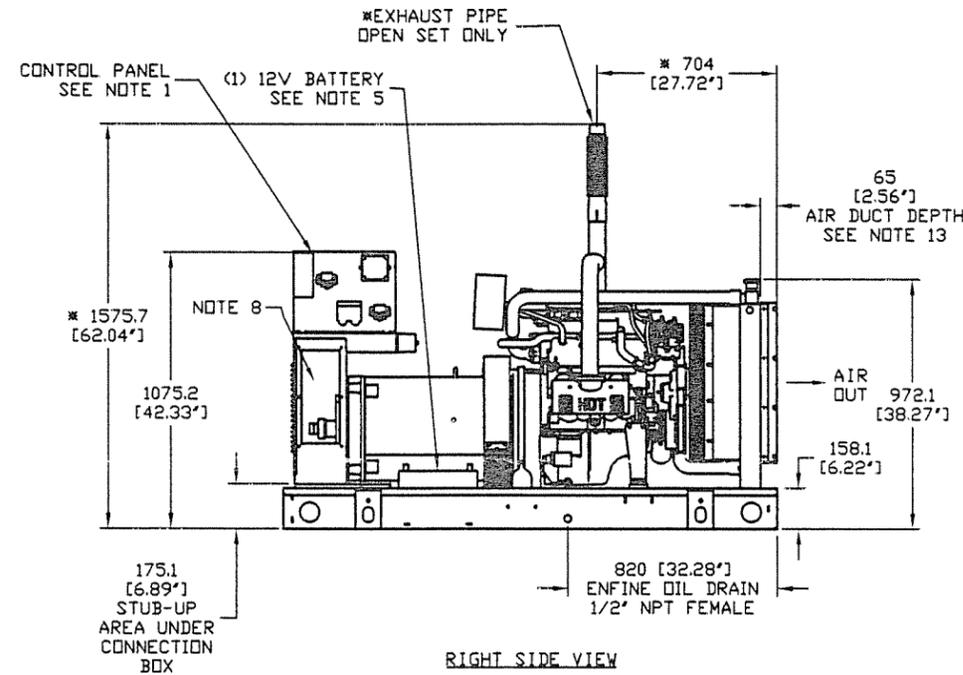
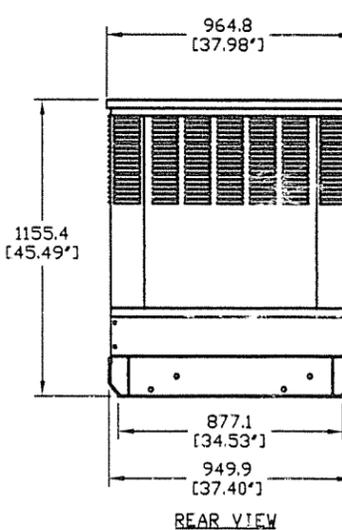
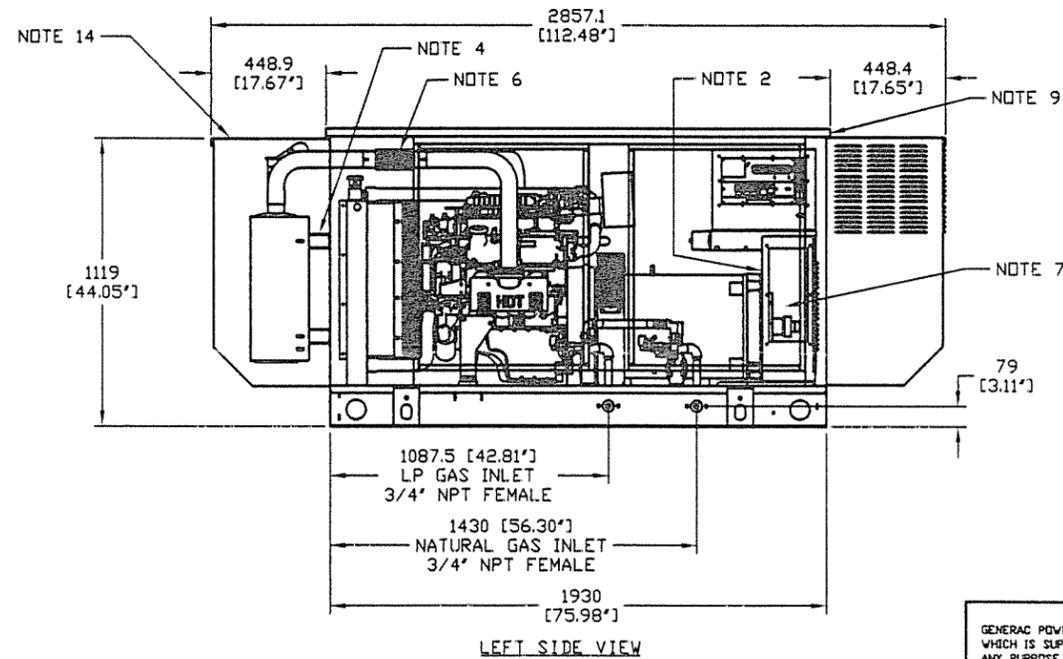
RECOMMENDED FUEL/ELECTRICAL STUB-UPS (SEE TOP VIEW)

DESCRIPTION	INSIDE BASE
AC LOAD LEAD CONDUIT (RIGHT) (LEFT)	A A'
ADDITIONAL STUB UP AREA FOR 120VAC GFCI OUTLET, (STANDARD BLOCK HEATER, BATTERY CHARGER, AND OTHER 120 VAC OPTIONS).	B

NOTE:  
FUEL SYSTEM SET UP WITH OUTSIDE STUB-UPS (SEE RIGHT SIDE VIEW).

WEIGHT DATA  
UNIT: ??? kg [??? lbs.]  
STEEL ENCLOSURE: ??? kg [??? lbs.]  
UNITS: mm [INCHES]

- ENGINE SERVICE CONNECTIONS
- INLET L/P GAS = 3/4" NPT COUPLING  
INLET NATURAL GAS = 3/4" NPT COUPLING  
OIL DRAIN = 1/2" NPT COUPLING  
EXHAUST OUTLET - EXHAUST MANIFOLDS AS SHOWN ON OPEN SET, 3" OD MUFFLER OUTLET WITH ENCLOSURE
- NOTES:
- CONTROL PANEL MAY BE ROTATED 180° IN EITHER DIRECTION.
  - STANDARD 20A GFCI DUPLEX OUTLET - 120VAC REQUIRED.
  - CONNECTION POINTS FOR CONTROL WIRES PROVIDED IN AC CONNECTION PANEL.
  - EXHAUST MUFFLER SUPPORT BRACKETS SUPPLIED WITH OPTIONAL ENCLOSURE.
  - 12 VOLT NEGATIVE GROUND SYSTEM.
  - 2.5" I. D. FLEX EXHAUST, STANDARD WITH ENCLOSURE UNITS, OPTIONAL WITHOUT.
  - MAIN LINE CIRCUIT BREAKER (MLCB) AND AC LOAD LEAD CONNECTION.
  - REMOVABLE BLANK PANEL FOR OPTIONAL 2nd MAIN LINE CIRCUIT BREAKER.
  - OPTIONAL ENCLOSURE.
  - DOORS MUST BE ABLE TO OPEN 90 DEG. TO BE REMOVED.
  - STUB-UPS:  
STANDARD BASE TANK REQUIRES ALL STUB-UPS TO BE OUTSIDE OR IN THE REAR TANK STUB-UP AREA.
  - A OR A' IS THE STUB UP AREA UNDER THE MLCB, DEPENDING ON CIRCUIT BREAKER LOCATION. AREA B IS STUB UP AVAILABLE FOR UNITS WITH A BASE TANK.
  - STONE GUARD AND AIR DUCT ADAPTER STANDARD WITH OPEN SET ONLY.
  - SEE DRAWING OC3850 FOR DUCT REMOVAL. REMOVAL OF FRONT DUCT WILL PROVIDE ACCESS TO MUFFLER FOR SERVICING.  
\*NOTE: DIMENSIONS TO THE CENTER OF EXHAUST FLANGE SHOULD BE USED AS A REFERENCE WHEN EXHAUST SYSTEM IS NOT ORDERED. APPLIES TO OPEN SET ONLY.



GENERAC POWER SYSTEMS OWNS THE COPYRIGHT OF THIS DRAWING WHICH IS SUPPLIED IN CONFIDENCE AND MUST NOT BE USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS SUPPLIED WITHOUT THE EXPRESS WRITTEN CONSENT OF GENERAC POWER SYSTEMS.  
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INSTALLATION DRAWING

SG 35, 40, 45 KW (UPSIZED 100 KW)

4.2L DIRECT DRIVE

ACOUSTIC ENCLOSURE

ISSUE DATE: 11/13/07

GENERAC POWER SYSTEMS  
Waukesha  
P.O. BOX 8  
WAUKESHA, WIS. 53187

FILE NAME: OG7627-A.DWG SIZE: B

SCALE: NTS FIRST USE: 4.2L G3

DWG NO.: 0G7627 REV: A

**GENERAL NOTES:**

- 1) THE CONTRACTOR IS RESPONSIBLE FOR EQUIPMENT PICK UP DELIVERY TO SITE, ERECTION OF TOWER, AND CRANE SET, ALL COSTS INCURRED.
- 2) THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE PRIOR TO BIDDING AND REVIEWING EXISTING STRUCTURES OR UTILITIES THAT MIGHT BE LOCATED ON OR AROUND THE COMPOUND THAT COULD INTERFERE.
- 3) THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING LOCAL AUTHORITIES NECESSARY FOR INSPECTIONS IF REQUIRED, PLEASE PROVIDE AMPLE NOTICE.
- 4) THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING PERSONS RESPONSIBLE FOR ANY MATERIALS TESTING, PLEASE PROVIDE AMPLE NOTICE.
- 5) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH FINAL TEST RESULTS ON ALL MATERIALS TESTING. IF ANY PROBLEMS ARE FOUND PRIOR TO FINAL RESULTS PLEASE NOTIFY A&E OR OWNER IMMEDIATELY.
- 6) THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO ADJOINING PROPERTY, AND REPAIRING OR REPLACING WHAT IS NECESSARY TO OWNERS APPROVAL.
- 7) THE CONTRACTOR IS TO VERIFY DIMENSIONS ON SITE PRIOR TO CONSTRUCTION STARTING, ANY PROBLEMS OR CHANGE FOUND CONTACT A&E OR OWNER TO VERIFY.
- 8) THE CONTRACTOR IS RESPONSIBLE FOR ANY TEMPORARY LIGHTING ON THE TOWER AND CONTACTING PROPER AUTHORITIES IF ANY LIGHTING PROBLEMS OCCUR, ALL FINAL LIGHTING TO BE MOUNTED ON TOWER DURING CONSTRUCTION, NOTIFY OWNER WHEN TOWER HAS REACHED FINAL HEIGHT.
- 9) THE CONTRACTOR IS RESPONSIBLE FOR ALL ON SITE WORK MEANS AND METHODS.
- 10) CONTRACTOR, ANY CONTRACTOR EMPLOYEES OR REPRESENTATIVES, OR SUB-CONTRACTOR, ANY SUB-CONTRACTOR EMPLOYEES OR REPRESENTATIVES, WILL CONFORM TO ALL LAWS AND REGULATIONS APPLICABLE TO THE WORK BEING PERFORMED, INCLUDING BUT NOT LIMITED TO, ALL OCCUPATIONAL SAFETY AND HEALTH ACT ("OSHA") STATUTES AND REGULATIONS AS WELL AS ALL OTHER FEDERAL, STATE AND/OR LOCAL LAWS OR REGULATIONS APPLICABLE TO THE WORK BEING PERFORMED BY CONTRACTOR.
- 11) THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SITE DRAINAGE, AND PROVIDING SILT AND EROSION CONTROL NECESSARY TO MAINTAIN ANY RUN OFF.
- 12) THE CONTRACTOR IS RESPONSIBLE FOR ALL SEED AND STRAW WORK NECESSARY TO REPAIR DAMAGED AREAS.
- 13) CONTRACTOR TO GRADE SMOOTH OR REPAIR ANY POT HOLES OR DITCHING ON PROPERTY OR ROAD THAT HAS OCCURRED DURING CONSTRUCTION AT CONTRACTORS EXPENSE.
- 14) CONTRACTOR'S RESPONSIBILITIES REGARDING BUILD OUT ON FIBREBOND EQUIPMENT SHELTERS TO INCLUDE:
  - \* INSTALLING THE DOOR CANOPY
  - \* INSTALLING EXTERIOR LIGHT ON WALL DETERMINED BY PROJECT SUPERVISOR AND PHOTOCCELL REQUIREMENTS
  - \* INSTALLING INTRUDER ALARMS
  - \* CHECK OPERATIONS OF DOOR AND DOOR HARDWARE
  - \* ADJUST WEATHERSTRIPPING ON DOORS AS NEEDED
  - \* INSPECT ROOF FOR DAMAGE AND POSSIBLE LEAKS
  - \* INSPECT INTERIOR FINISH FOR IMPERFECTIONS AND REPAIR AS NEEDED
  - \* CHECK OPERATION OF LIGHTS AND ELECTRICAL OUTLETS
  - \* CHECK OPERATION OF INTAKE AND EXHAUST LOUVERS AND ADJUST AS NEEDED
  - \* CHECK OPERATION OF ENVIRONMENTAL CONTROLS AND HVAC UNITS
  - \* INSTALL AND PAINT SHELTER TIE-DOWNS TO MATCH
- 15) INSTALL CONCRETE PADS FOR BUILDING, PROPANE TANK, GENERATOR PAD.
- 16) INSTALL ELECTRIC AND GROUND FIELD FOR COMPOUND.

- 17) GC WILL BE RESPONSIBLE FOR ALL CRANE OPERATIONS IN ORDER TO SET FIBREBOND BUILDING. COORDINATE BUILDING DELIVERY DATE THROUGH BLUEGRASS CELLULAR.
- 18) GC WILL BE RESPONSIBLE FOR OFF LOADING AND STACKING OF TOWER WHEN APPLICABLE.
- 19) GC WILL BE RESPONSIBLE FOR MOUNTING ALL LINES AND ANTENNAS.
- 20) GC WILL BE RESPONSIBLE FOR SUPPLYING AND INSTALLING ICE BRIDGE.
- 21) GC WILL BE RESPONSIBLE FOR SCHEDULING PROPANE TANK DELIVERY AND HOOK-UP.
- 22) GC WILL BE RESPONSIBLE FOR COORDINATING THE CLEANING OF THE INSIDE OF THE BUILDING WITH THE PROJECT SUPERVISOR AFTER THE SITE HAS BEEN TURNED OVER TO THE OPERATIONS DEPARTMENT AND ALL TURN-UP PROCEDURES HAVE BEEN COMPLETED. THIS WILL INCLUDE SUPPLYING A 30 GALLON TRASHCAN, 30 GALLON TRASH BAGS, BROOM, DUST PAN AND DOORMAT FOR BUILDING.
- 23) GC TO VERIFY ALL BLUEGRASS CELLULAR EQUIPMENT DIMENSIONS & SPECIFICATIONS WITH MANUFACTURER'S DRAWINGS, (FIBREBOND, GENERAC, EASTPOINTE ETC.) PRIOR TO CONSTRUCTION. ADDRESS ANY ISSUES WITH PROJECT SUPERVISOR BEFORE WORK BEGINS.
- 24) ALL WAREHOUSE MATERIAL (LINES, ANTENNAS, MOUNTING HARDWARE, GENERATOR, TOWER FOUNDATION KIT, ETC.) WILL NEED TO BE PICKED UP BY GC.
- 25) GC WILL BE RESPONSIBLE FOR SCHEDULING GENERATOR START-UP WITH CONTACT SCOTT ANDERSON (EVAPAR) 502-267-6315
- 26) T1 CONDUIT WILL NEED TO BE PLACED FROM POLE TO BUILDING. (IF A MICROWAVE DISH IS USED, THE T1 CONDUIT WILL STILL BE INSTALLED FOR FUTURE USE.)
- 27) GC WILL BE RESPONSIBLE FOR INSTALLATION OF ALL FENCING.
- 28) ALL TRASH AND DEBRIS TO BE REMOVED BY GC
- 29) GC WILL BE RESPONSIBLE FOR APPLYING FOR ELECTRICAL SERVICE AND PAYING NECESSARY FEES REQUIRED.
- 30) GC WILL BE RESPONSIBLE FOR SUPPLYING & INSTALLING PROTECTIVE END CAPS ON ANY EXPOSED THREADED ROD OR UNISTRUT USED ON SITE. VERIFY TYPE WITH PROJECT SUPERVISOR PRIOR TO INSTALLATION.
- 31) GC WILL BE RESPONSIBLE FOR HAVING A CERTIFIED ELECTRICIAN HOOK UP THE BATTERIES (IMMEDIATELY) AFTER POWER HAS BEEN TURNED UP AT THE SITE, PREVENTING THE DELAY OF ANY WORK FOR OPERATIONS. THE GENERAL CONTRACTOR MUST NOTIFY THE PROJECT SUPERVISOR IMMEDIATELY AT THIS TIME SO HE CAN COORDINATE A CELL TECH TO BE ONSITE WHEN THIS OCCURS.
- 32) GC WILL BE RESPONSIBLE FOR RUNNING (CAT5) FROM THE GENERATOR ALARM PANEL MOUNTED ON THE SIDE OF THE TRANSFER SWITCH (BY THE CONTRACTOR), THROUGH THE TRANSFER SWITCH AND UP TO THE EXISTING CONDUIT BESIDE THE A/C POWER FAIL RELAY. THE (CAT5) WILL BE PULLED THROUGH EXISTING CONDUIT AROUND THE SHELTER AND EXTENDED TO THE ALARM BLOCK. THERE SHOULD BE A MINIMUM 3'-0" OF (CAT5) LEFT HANGING ON EACH END FOR THE CELL TECH TO HOOK UP THE GENERATOR ALARMS.
- 33) GC MUST SUBMIT A COPY OF THE BUILDING PERMIT AND CONSTRUCTION SCHEDULE TO THE PROJECT SUPERVISOR PRIOR TO RECEIVING (NTP) TO BEGIN CONSTRUCTION (NO EXCEPTIONS).

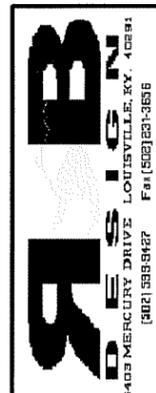
**GRADING & EXCAVATING NOTES:**

- 1) ANY DAMAGE TO EXISTING UTILITIES, STRUCTURES, ROADS AND PARKING AREAS TO BE REPAIRED OR REPLACED TO OWNERS SATISFACTION.
- 2) PREPARATION FOR FILL: REMOVAL OF ALL DEBRIS, WET AND UNSATISFACTORY SOIL MATERIALS, TOPSOIL, VEGETATION, AND HARMFUL MATERIALS FROM SURFACE OF GROUND PRIOR TO PLOWING, STRIPPING, PLACING FILLS OR BREAKING UP OF SLOPED SURFACES GREATER THAN 1 VERTICAL TO 4 HORIZONTAL SO MATERIAL FOR FILL WILL BOND TO EXISTING SURFACE. WHEN AREA TO RECEIVE FILL HAS A DENSITY LESS THAN REQUIRED, BREAK UP GROUND SURFACE TO DEPTH REQUIRED, AERATE, MOISTURE - CONDITION, OR PULVERIZE SOIL AND RECOMPACT TO REQUIRED DENSITY.
- 3) BACK FILLING:
  - EXCAVATED AREA SHALL BE CLEARED FROM STONES OR CLODS OVER 2 1/2" MAXIMUM DIAMETER
  - SHALL BE PLACED IN LAYERS OF 6" AND COMPACTED TO A 95% STANDARD PROCTOR, USE A 90% PROCTOR IN GRASSED / LANDSCAPED AREAS WHERE REQUIRED.
  - SHALL BE APPROVED MATERIALS CONSISTING OF SANDY CLAY, GRAVEL AND SAND, SOFT SHALE, EARTH OR LOAM. CONSULT WITH OWNER PRIOR TO FILL BEING ADDED.
- 4) ALL MATERIAL FOR FILL TO BE APPROVED BY OWNER AND ALL COMPACTING TEST TO BE COMPLETED TO SPEC'S ALL COMPACTING RESULTS TO BE TURNED OVER TO OWNER.
- 5) AFTER COMPLETION OF BELOW GRADE EXCAVATING, AREA TO BE CLEANED AND CLEARED OF ANY UNSUITABLE MATERIALS, SUCH AS TRASH, DEBRIS, VEGETATION AND SO FORTH.
- 6) ANY EXCAVATING IN WHICH CONCRETE IS TO BE PLACED SHALL BE SUBSTANTIALLY HORIZONTAL ON UNDISTURBED AND UNFROZEN SOIL AND BE FREE OF ANY LOOSE MATERIAL AND EXCESS GROUND WATER.
- 7) IF SOUND SOIL IS NOT REACHED AT DESIGNATED EXCAVATION DEPTH, THE POOR SOIL IS TO BE EXCAVATED TO ITS FULL DEPTH AND EITHER REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL OR THE EXCAVATION TO BE FILLED WITH THE SAME QUALITY CONCRETE SPECIFIED FOR THE FOUNDATION. PLEASE NOTIFY THE PROJECT SUPERVISOR AND THEY WILL HAVE A 3RD PARTY ENGINEERING FIRM CONTACT YOU WITH RECOMMENDATIONS.
- 8) MECHANICALLY COMPACTED GRANULAR MATERIAL OR CONCRETE OF THE SAME QUALITY SPECIFIED FOR THE FOUNDATIONS TO BE USED IF EXCAVATION EXCEEDED THE OVERALL REQUIRED DEPTH. FOR STABILIZATION OF THE BOTTOM OF THE EXCAVATION, CRUSHED STONE MAY BE USED. STONE, IF USED, SHALL NOT BE USED AS COMPILING CONCRETE THICKNESS. PLEASE NOTIFY THE PROJECT SUPERVISOR AND THEY WILL HAVE A 3RD PARTY ENGINEERING FIRM CONTACT YOU WITH RECOMMENDATIONS.
- 9) EXCAVATION TO COMPOUND TO INCLUDE WEED CONTROL MAT.
- 10) SITE TO HAVE PROPER DRAINAGE & EROSION CONTROL (CROWNED FORMATION)
- 11) GC WILL BE RESPONSIBLE FOR REPAIR OF ALL AREAS DISTURBED DURING CONSTRUCTION. (EXCAVATING ISSUES)

**"BEFORE YOU DIG"**  
 THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE UTILITY PROTECTION CENTER, PHONE 1-800-752-6007, WHICH WAS ESTABLISHED TO PROVIDE ACCURATE LOCATIONS OF UNDERGROUND UTILITIES. THE CONTRACTOR SHALL NOTIFY THE UTILITY PROTECTION CENTER 48 HOURS IN ADVANCE OF ANY CONSTRUCTION ON THIS PROJECT. ALL NEW SERVICE AND GROUNDING TRENCHES PROVIDE A WARNING TAPE @ 12 INCHES BELOW GRADE.

**SYMBOLS LEGEND**

- KEYNOTE
- INSPEC. SLEEVE / GRND ROD
- INSPECTION SLEEVE
- CAD WELD CONNECTION
- TRANSFORMER
- LIGHTNING SUPPRESSOR
- SWITCH (DISCONNECT)
- METER PACK
- POWER
- GAS LINE
- WATER LINE
- SANITARY SEWER
- TELEPHONE
- STORM SEWER DRAIN
- FENCE



NO.	DATE	REVISION

**BLUEGRASS CELLULAR, INC.**  
**STANDARD CELLULAR SITE**  
**CEDAR FLATS**  
 5612 OLD GLASGOW RD. TOMPKINSVILLE, KY. 42167

DRAWN BY: R. BECKER  
 ISSUE DATE: 1-15-08  
 SCALE: LISTED

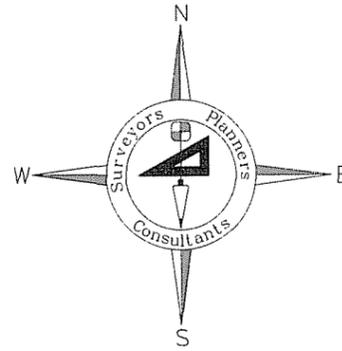
SHEET NUMBER  
**General Notes**

c

# Landmark Surveying Co., Inc.

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Darren L. Helms, R.L.S., PRESIDENT  
Dennis N. Helms, R.L.S., VICE PRESIDENT



15 N.E. 3rd Street  
Washington, Indiana 47501  
Phone: 812-257-0950  
Fax: 812-257-0953  
E-mail: landmark@dmrtc.net

## Directions to the Site From the County Seat of Monroe County, Kentucky

**Cedar Flats Site**  
**Monroe County, Kentucky**

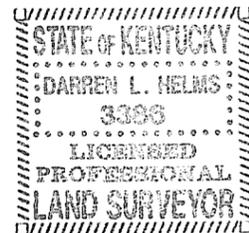
From the intersection of Kentucky Highways 63 and 163 in downtown Tompkinsville, Kentucky: travel northwesterly on Kentucky Highway 63, toward Glasgow, for 6.6 miles to the Mud Lick Volunteer Fire Department on the right or north side of the highway about 0.15 miles before reaching Kentucky Highway 870; the proposed tower site lies behind or on the north side the fire department. The address of the site is 5612 Old Glasgow Road, Tompkinsville, Kentucky 42167.

*Darren L. Helms*

Darren L. Helms, Kentucky Professional Land Surveyor No. 3386

*DEC. 28, 2007*

Date





**OPTION TO LEASE AND LEASE AGREEMENT**

**I.**

**OPTION TO LEASE REAL PROPERTY**

**THIS OPTION TO LEASE REAL PROPERTY** (the "Option Agreement") is made and entered into this 10 day of November, 2007, by and between Mud Lick Volunteer Fire Department whose address is 5588 Old Glasgow Road, Tompkinsville, KY 42167 (the "Optionor (s)") and Cumberland Cellular Partnership, d/b/a Bluegrass Cellular, a Kentucky general partnership with principal office and place of business at 2902 Ring Road, Elizabethtown, KY 42701 (the "Optionee").

**WITNESSETH:**

**WHEREAS**, the Optionor(s) is the owner of certain real property located in Monroe County, **Kentucky** as more particularly described on Exhibit A attached hereto and incorporated herein by reference (the "Property"); and

**WHEREAS**, the Optionor(s) wishes to grant to the Optionee, and the Optionee wishes to obtain from the Optionor(s), an option to lease the Property upon the terms and conditions set forth herein;

**NOW, THEREFORE**, in consideration of the foregoing premises and for other good and valuable consideration, the mutuality, receipt and sufficiency of which are hereby acknowledged, the parties hereto do agree as follows.

Site: Cedar Flats

1. In consideration of **One Thousand Eight Hundred Dollars and Zero Cents (\$1,800.00)** paid by the Optionee to the Optionor(s) (the "Option Consideration"), the receipt of which is hereby acknowledged by the Optionor(s), the Optionor(s) hereby grants to the Optionee an exclusive and irrevocable option to lease the Property (the "Option"), upon the terms and conditions hereinafter set forth, upon the exercise of the Option at any time before 4:00 p.m. prevailing time on *May 16, 2009* (the "Option Period") as set forth in Paragraph 5 thereof.
2. The parties hereto anticipate that the Property comprises approximately a **One Hundred Foot by One Hundred Foot** area, and that a right of way will be given by the Optionor(s) for the purposes of ingress and egress throughout the term of the lease. The Optionee shall obtain an accurate survey of the Property by a registered land surveyor licensed in the Commonwealth of Kentucky at the sole expense of the Optionee. A copy of the survey shall be provided to the Optionor(s). The description of the Property shall include the number of acres determined by the surveyor. The Optionee shall obtain said survey within a reasonable time following the date of the Option Agreement.
3. During the term of the Option, the Optionee may enter onto the Property at its own risk to obtain soil samples and to bore soil for the purposes of determining the suitability of the Property for a communications tower.
4. Upon the Optionee's proper exercise of the Option in accordance with Paragraph 5 hereof, the Optionor(s) shall be deemed to have immediately executed, acknowledged and delivered to the Optionee the Lease Agreement contained in Section II hereof. The description of the Property shall be that determined by the registered land surveyor in accordance with Paragraph 2 hereof.

Site: Cedar Flats

5. If the Optionee elects to exercise the Option in accordance with the terms hereof, notice of such election shall be deemed sufficient if personally delivered or sent by registered or certified mail, return receipt requested, to the address of the Optionor(s) set forth in Paragraph 14 hereof.
6. The Optionor(s) agrees not to sell, lease or offer for sale or lease the Property during the term of this Option or any renewal or extension of the Option.
7. In the event the Optionee fails to exercise the Option as set forth herein (unless such failure is due to the discovery of a defect in the Property or other matter unsatisfactory to the Optionee), the Optionor(s) shall have the right to retain the Option Consideration.
8. The Optionee may assign this Option with written consent of the Optionor(s), which consent shall not be unreasonably withheld, and upon any assignment such assignee shall have all the rights, remedies and obligations as if it were the original Optionee hereunder. From and after any such assignment, the term "Optionee" shall refer to such assignee.
9. Each party hereto shall bear any and all of its own expenses in connection with the negotiation, execution or settlement of this Option.
10. Risk of loss with respect to the Property during the term of this Option and during the term of the lease shall be upon the Optionor(s). If, during the term of the Option, any portion of the Property shall be acquired by public authority under the right or threat of eminent domain, the Optionee may, at its sole option, either (i) exercise the

Site: Cedar Flats

Option, and in such event, all sums received from the public authority by the Optionor(s) by reason of the taking of a portion of the Property shall reduce the rent due under the lease, or (ii) terminate this Option and thereupon the Optionor(s) shall be obligated to return to the Optionee the full amount of the Option Consideration previously paid to the Optionor(s) in "good and collected funds."

11. The parties hereto represent to each other that neither has engaged any broker to represent their interests in connection with the transactions contemplated hereby, and each agrees to indemnify the other against any and all claims made by any brokers engaged or purported to be engaged by the other for brokerage commissions or fees in connection with the transactions contemplated hereby.
12. The Optionor(s) represents, warrants and covenants to the Optionee that the Optionor(s) has not caused or permitted, and shall not cause or permit, and to the best of Optionor(s)' knowledge no other person has caused or permitted any hazardous material (as defined by any applicable federal, state or local law, rule or regulation) to be brought upon, placed, held, located or disposed of at the Property. In the event any such contamination occurs for which the Optionee becomes legally liable, the Optionor(s) shall indemnify the Optionee against all claims, damages, judgments, penalties and costs and expenses, including reasonable attorneys' fees, which Optionee may incur.
13. This Option Agreement and the rights and obligations of the parties hereto shall be construed in accordance with the laws of the Commonwealth of Kentucky.
14. For the purposes of giving notice as permitted or required herein, the address of the Optionor(s) shall be: **5588 Old Glasgow Road, Tompkinsville, KY 42167**; the

Site: Cedar Flats

Optionee's address shall be: **2902 Ring Road, Elizabethtown, KY 42701**. Any inquiry by the Optionor to the Optionee regarding the terms and conditions of the Option Agreement or Lease Agreement, or otherwise related to the Option Agreement or Lease Agreement, shall be made in writing and submitted to the attention of the Optionee's Lease Administrator at the above address.

15. The Optionee shall have the right, in its sole discretion, to record this Option in the Office of the Clerk of the County Court of Monroe County, **Kentucky**.

## II.

### LEASE AGREEMENT

16. In the event the Optionee elects to exercise the Option to lease the Property, the terms of the Lease Agreement ("Lease Agreement" or "Lease") shall become immediately effective upon such exercise and shall be as follows.
  1. The term of the Lease shall commence on the date that the Optionor(s) receives proper notice that the Optionee has exercised the Option, pursuant to Paragraph 5 therein. The initial term shall expire **five (5) year(s)** from the commencement date of the Lease Agreement and shall include **six (6) additional five (5)-year terms** per the Lease Agreement. Optionee may, by providing written notice at least sixty (60) days prior to the expiration of the original or any renewal Lease term, elect to unilaterally terminate this Lease at the end of any original or renewal Lease term. Such notice must be personally delivered or sent via registered or certified mail, return receipt requested, to the address of the Optioner(s) set forth in Paragraph 14 hereof.

Site: Cedar Flats

The Lease amount shall be adjusted at the end of each term by an increase of 12%.

2. The Optionee shall pay to the Optionor(s) rent for the Property in the sum of Four Thousand Eight Hundred Dollars and Zero Cents (\$4,800.00) yearly, to be paid in advance. All rent payments shall be personally delivered or mailed to the Optionor(s) at the address set forth in Paragraph 14 hereof. Any check payment of the rent due under the Lease shall be payable to the order of Optionor(s).
3. The Optionee shall be entitled to use and occupy the Property for the purpose of erecting, maintaining and operating a communications tower and communications facilities thereon and for all such other uses as Optionee may, in its sole discretion, deem necessary in connection therewith.
4. The Optionor(s) shall be responsible for the payment of all real estate taxes which shall be assessed against the Property during the term of the lease. The Optionee shall pay all charges for heat, water, gas, electricity, sewer use charges and any other utility used or consumed on the Property. The Optionee shall, at its own cost and expense, maintain and keep in full force and effect during the term of the lease public liability insurance with coverage in the amount of at least one million dollars (\$1,000,000.00) per person for bodily injury, disease, or death and shall maintain property insurance on any property the Optionee located on the Property.
5. The Optionee may assign the lease. The Optionee may sublet all or part of the space on the tower or ground space. In the event Optionee subleases all or

Site: Cedar Flats

a portion of the Property, Optionor shall be entitled to Twenty Five Percent (25%) of the rental amount actually received by Optionee.

6. The Optionor(s) covenants that upon the Optionee's payment of the rent agreed upon herein, as well as Optionee's observing and performing all of the covenants and conditions contained in the Lease, the Optionee may peacefully and quietly enjoy the Property subject to the terms and conditions set forth in the Lease.
7. The Optionee agrees to maintain an access road in a passable manner for the term of the lease.
8. Licensee's Payment of Taxes, Fees and Assessments. Optionee shall pay directly to the applicable federal, state or local governmental unit or agency ("Governmental Entity") or to Optionor if Optionor is invoiced by such Governmental Entity, all taxes, fees, assessments or other charges assessed by any Governmental Entity directly against Optionee's Equipment and/or Optionee's use of the Facility. Optionee shall also pay to Optionor Optionee's Pro Rata Share of all taxes, fees, assessments or charges including, but not limited to, personal property taxes attributable to Optionee's equipment and antenna(s), municipal franchise fees, use fees, municipal application fees, installation fees and increases thereof. "Pro Rata Share" shall mean the fraction of decimal equivalent of dividing one (1) by the total number of then existing users occupying a tower on the last day of the applicable calendar year.

Site: Cedar Flats

17. This Option and Lease Agreement contains the entire agreement between the parties hereto and no modification or amendment shall be binding upon any party unless made in writing and signed by each of the parties hereto.
18. Upon the termination or other end of this Lease Agreement, Optionee shall have the right to remove any and all of its property (real or personal) from the Property regardless of whether or not such property may be considered a fixture thereto.
19. Upon abandonment of the property, Optionee shall have thirty (30) days to dismantle and remove the cellular antenna tower and any/all equipment located on Optionor's property.

[Remainder of Page Intentionally Left Blank]

**EXECUTION OF AGREEMENT(S)**

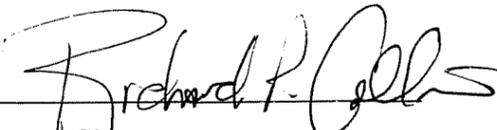
IN WITNESS WHEREOF, the parties hereto have set their hands and affixed their respective seals.

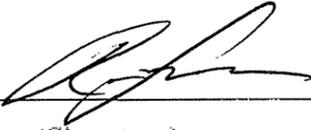
Mud Lick Volunteer Fire Department

Cumberland Cellular Partnership,  
d/b/a Bluegrass Cellular, a Kentucky general partnership

("Optionor(s)")

("Optionee")

  
(Signature)

  
(Signature)

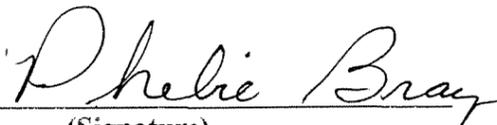
By: Richard P. Collins  
Authorized Representative

By: Ron Smith  
Authorized Representative

Date: 11-16-2007

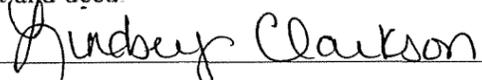
Date: 11-20-07

**ACKNOWLEDGED AND AGREED TO BY:**

  
(Signature)

Phemie Bray  
Possessor of Possibility of Reverter

Date: 11-16-2007

STATE OF <u>Kentucky</u>
COUNTY OF <u>Monroe</u>
The foregoing instrument was acknowledged before me this <u>16<sup>th</sup></u> day of <u>Nov</u> , 200 <u>7</u> , by <u>Richard P. Collins</u> to be his/her free act and deed.
<p> LINDSEY CLARKSON NOTARY PUBLIC STATE AT LARGE KENTUCKY MY COMMISSION EXPIRES: <u>5-26-09</u></p> <p>NOTARY PUBLIC STATE AT LARGE My commission expires: <u>5-26-09</u></p>

Site: Cedar Flats

STATE OF Kentucky  
COUNTY OF Monroe

The foregoing instrument was acknowledged before me this 16<sup>th</sup> day of Nov,  
2007, by Phebie Bray to be his/her free act and deed.

LINDSEY CLARKSON  
NOTARY PUBLIC  
STATE AT LARGE  
KENTUCKY  
MY COMMISSION EXPIRES: 5-26-09

Lindsey Clarkson  
NOTARY PUBLIC STATE AT LARGE  
My commission expires: 5-26-09

STATE OF KENTUCKY  
COUNTY OF HARDIN

This instrument was acknowledged before me this 20 day of November,  
2007 by Ron Smith of Cumberland Cellular Partnership, d/b/a Bluegrass Cellular on behalf of the  
general partnership

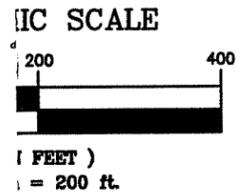
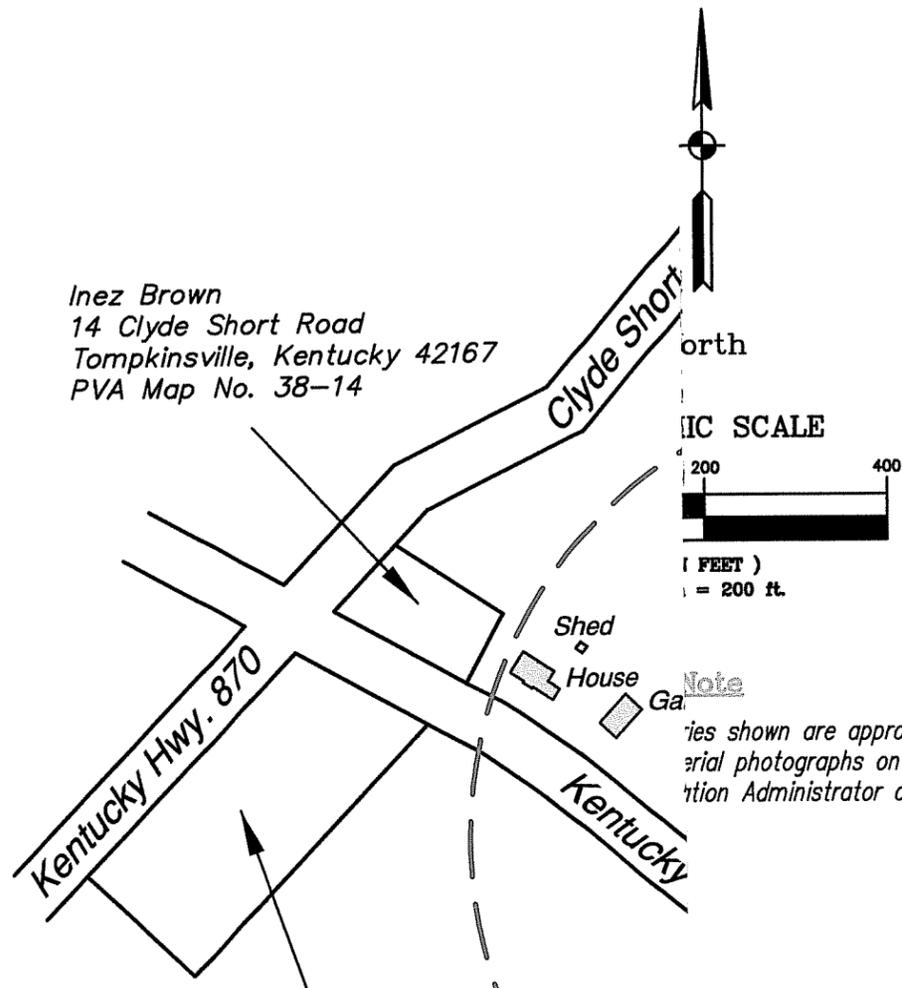
Jul L Vick  
NOTARY PUBLIC STATE AT LARGE  
My commission expires: 1-21-09

This instrument prepared by:

  
\_\_\_\_\_  
John F. Selen  
DINSMORE & SHOHL LLP  
1400 PNC Plaza / 500 West Jefferson Street  
Louisville, KY 40202  
(502) 540-2300



Inez Brown  
 14 Clyde Short Road  
 Tompkinsville, Kentucky 42167  
 PVA Map No. 38-14



Note  
 Lines shown are approximate, and  
 aerial photographs on file in the  
 Division Administrator of Monroe

Mitchell Hollinsworth  
 7504 Old Glasgow Road  
 Mount Hermon, Kentucky 42157  
 PVA Map No. 38-34

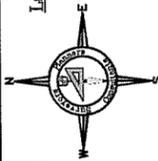
Certification  
 Information shown is correct to  
 and it is in accordance with the  
 of the Property Valuation  
 County, Kentucky on December 13,

Mud  
 5588  
 Tomp  
 PVA *elms*  
 36

Mitchell Hollinsworth  
 7504 Old Glasgow Road  
 Mount Hermon, Kentucky 4  
 PVA Map No. 38-39

STATE OF KENTUCKY  
 DARRIN L. HELMS  
 2336  
 LICENSED  
 PROFESSIONAL  
 LAND SURVEYOR

Landmark Surveying Co., Inc.  
 15 N.E. 3rd Street  
 Washington, Indiana 47501  
 (812) 257-0950  
 Email: landmark@landmark.net  
 Project No. 07-12-0189



500-Foot Radius Map  
 5612 Old Glasgow Road  
 Tompkinsville, Kentucky 42167

Bluegrass Cellular  
 2902 Ring Road  
 Elizabethtown, Kentucky 42701

REVISIONS	DATE

DATE: 12-28-07  
 DRAWN BY: A. Winkler  
 CHECKED BY: D.L. Helms

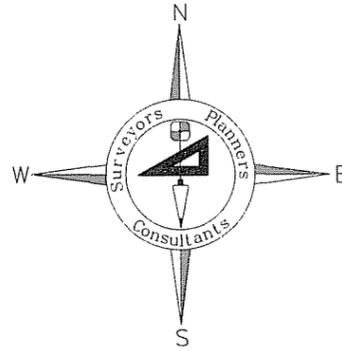
SHEET NO.  
 1  
 OF 1 SHEETS  
 FILE NO.  
 cedar flats-radius.dwg



# Landmark Surveying Co., Inc.

---

Darren L. Helms, R.L.S., PRESIDENT  
Dennis N. Helms, R.L.S., VICE PRESIDENT



15 N.E. 3rd Street  
Washington, Indiana 47501  
Phone: 812-257-0950  
Fax: 812-257-0953  
E-mail: landmark@dmrtc.net

## Landowner and Adjacent Landowner List

Bluegrass Cellular  
Cedar Flats Site  
Monroe County, Kentucky

Mitchell Hollinsworth  
7504 Old Glasgow Road  
Mount Hermon, KY 42157

Mud Lick Volunteer Fire Department  
5588 Old Glasgow Road  
Tompkinsville, KY 42167

Tommy D. Graves  
1831 Lyons Chapel Road  
Tompkinsville, KY 42167

Inez Brown  
14 Clyde Short Road  
Tompkinsville, KY 42167

Samuel Bray  
5682 Old Glasgow Road  
Tompkinsville, KY 42167

Darren L. Helms  
Darren L. Helms, Kentucky Professional Land Surveyor No. 3386

DEC. 28, 2007  
Date



February 4, 2008

Mitchell Hollinsworth  
7504 Old Glasgow Road  
Mount Hermon, KY 42157

## Public Notice

Cumberland Cellular Partnership ("Cumberland Cellular") is a Kentucky general partnership that markets its services as Bluegrass Cellular. Bluegrass Cellular has been serving Central Kentucky with wireless communications services for over 15 years.

Cumberland Cellular is applying to the Public Service Commission of the Commonwealth of Kentucky (the "Commission") for a Certificate of Public Convenience and Necessity to construct and a new cell facility to provide cellular telephone service. This facility will include a 240 foot tower to be located at 5612 Old Glasgow Road, Tompkinsville, Kentucky, 42167. A map showing the location is attached.

**The Commission invites your comments regarding this proposed construction. Also, the Commission wants you to be aware of your right to intervene in this matter. Your comments and request for intervention should be addressed to:**

**Executive Director's Office  
Public Service Commission of Kentucky  
P.O. Box 615  
Frankfort, Kentucky, 40602.**

**Please refer to case number 2008-00028 in your correspondence.**

Bluegrass Cellular welcomes the opportunity to serve and provide wireless service in your community! (For more information, please check us out online at [www.myblueworks.com](http://www.myblueworks.com))

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"><li>■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li><li>■ Print your name and address on the reverse so that we can return the card to you.</li><li>■ Attach this card to the back of the mailpiece, or on the front if space permits.</li></ul>	A. Signature <input checked="" type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee <i>Mitchell Hollinsworth</i>
1. Article Addressed to:  Mitchell Hollinsworth 7504 Old Glasgow Road Mount Hermon, KY 42157	B. Received by (Printed Name) <i>Mitchell Hollinsworth</i> C. Date of Delivery <i>2-11-08</i>
	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No
	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.
	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes

2. Article  
(Transit)  
PS For

February 4, 2008

Tommy D. Graves  
1831 Lyons Chapel Road  
Tompkinsville, KY 42167

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1. Article Addressed to:  Tommy D. Graves 1831 Lyons Chapel Road Tompkinsville, KY 42167	B. Received by ( <i>Printed Name</i> ) <i>Loretta Ross</i> C. Date of Delivery <i>2-7-08</i>
2. Article Number ( <i>Transfer from service label</i> ) 7007 2560 0000 5882 1070	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No
	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.
	4. Restricted Delivery? ( <i>Extra Fee</i> ) <input type="checkbox"/> Yes

February 4, 2008

Samuel Bray  
5682 Old Glasgow Road  
Tompkinsville, KY 42167

## Public Notice

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Frankfort, Kentucky, 40602.**

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1. Article Addressed to: Samuel Bray 5682 Old Glasgow Road Tompkinsville, KY 42167	B. Received by (Printed Name) <i>Samuel Bray</i> C. Date of Delivery <i>2-7-08</i>
	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No
	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.
	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes
2. Article Number (Transfer from service label) <u>7007 2560 0000 5882 1063</u>	

February 4, 2008

Mud Lick Volunteer Fire Department  
5588 Old Glasgow Road  
Tompkinsville, KY 42167

## Public Notice

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Public Service Commission of Kentucky  
P.O. Box 615  
Frankfort, Kentucky, 40602.**

**Please refer to case number 2008-00028 in your correspondence.**

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	B. Received by (Printed Name) <i>Betty Collins</i>
	C. Date of Delivery <i>2-7-08</i>
1. Article Addressed to:  Mud Lick Volunteer Fire Department 5588 Old Glasgow Road Tompkinsville, KY 42167	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No
	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.
	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes
2. Article Number (Transfer from service label)	7007 2560 0000 5882 1056

February 4, 2008

Inez Brown  
14 Clyde Short Road  
Tompkinsville, KY 42167

## Public Notice

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Cumberland Cellular is applying to the Public Service Commission of the Commonwealth of Kentucky (the "Commission") for a Certificate of Public Convenience and Necessity to construct and a new cell facility to provide cellular telephone service. This facility will include a 240 foot tower to be located at 5612 Old Glasgow Road, Tompkinsville, Kentucky, 42167. A map showing the location is attached.

**The Commission invites your comments regarding this proposed construction. Also, the Commission wants you to be aware of your right to intervene in this matter. Your comments and request for intervention should be addressed to:**

**Executive Director's Office  
Public Service Commission of Kentucky  
P.O. Box 615  
Frankfort, Kentucky, 40602.**

**Please refer to case number 2008-00028 in your correspondence.**

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1. Article Addressed to:  Inez Brown 14 Clyde Short Road Tompkinsville, KY 42167	B. Received by (Printed Name) <i>Inez Brown</i> C. Date of Delivery <i>2-2-08</i>
	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No
	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.
	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes
2. Article Number (Transfer from service label)	7007 2560 0000 5882 1049



**Dinsmore & Shohl**  
ATTORNEYS

Kerry W. Ingle  
502-540-2354  
kerry.ingle@dinslaw.com

February 4, 2008

**Via Certified Mail**

Monroe County Judge Executive  
200 N. Main St. Suite C  
P.O. Box 305  
Tompkinsville, KY 42167-0305

RE: Public Notice - Tompkinsville Cell Site  
Public Service Commission of Kentucky - Case No. 2008-00028

Cumberland Cellular Partnership ("Cumberland Cellular") is a Kentucky general partnership that markets its services as Bluegrass Cellular. Cumberland Cellular is applying to the Public Service Commission of Kentucky (the Commission) for a Certificate of Public Convenience and Necessity to propose construction and operation for a new facility to provide cellular radio telecommunications service in rural service area (RSA) #5 in Cumberland County. The facility will include a 240 ft. tower and an equipment shelter to be located at 5612 Old Glasgow Road, Tompkinsville, Kentucky, 42167. A map showing the location of the proposed new facility is enclosed.

The Commission invites your comments regarding the proposed construction. You also have the right to intervene in this matter.

Your comments and request for intervention should be addressed to Executive Director's  
Frankfort, Kentucky

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"><li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li><li>Print your name and address on the reverse so that we can return the card to you.</li><li>Attach this card to the back of the mailpiece, or on the front if space permits.</li></ul>	A. Signature <i>Sheila Sheffield</i> <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee
1. Article Addressed to: Monroe County Judge Executive 200 N. Main St. Suite C P.O. Box 305 Tompkinsville, KY 42167-0305	B. Received by (Printed Name) <i>Sheila Sheffield</i> C. Date of Delivery <i>2-7-08</i>
	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input checked="" type="checkbox"/> No
	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.
	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes
2. Article Number (Transfer from service label) <b>7007 2560 0000 5882 1032</b>	

*l*  
*KW*



# **PUBLIC NOTICE**

Cumberland Cellular Partnership  
proposes to  
construct a cellular  
communications

# **TOWER**

near this site. If you have any  
questions please contact:

Assistant Director  
Permitting  
P.O. Box 1000  
2000 King Street  
Annapolis, MD 21403  
Telephone: 410-326-7000  
Fax: 410-326-7000  
E-mail: [permitting@pssc.state.md.us](mailto:permitting@pssc.state.md.us)

Please refer to P.S.C.

**Case #2008-00028**

in your correspondence.

**PUBLIC NOTICE**

Commercial Cellular Partnership  
proposed by  
AT&T and Verizon  
wireless services

**TOWER**

will be built on the site of the  
existing tower located at  
10000 N. 10th St., Suite 1000

Phoenix, AZ 85020  
Please call 1-800-4-A-T&T  
for more information

Please refer to P-3-E

**Case #2008-00028**

at your correspondence



March 18, 2008

To Whom It May Concern:

This is to certify that the public notice from Cumberland Cellular Partnership for proposed cell towers was published in the February 7-14, 2008 issues of *Tompkinsville News*.

Sincerely,



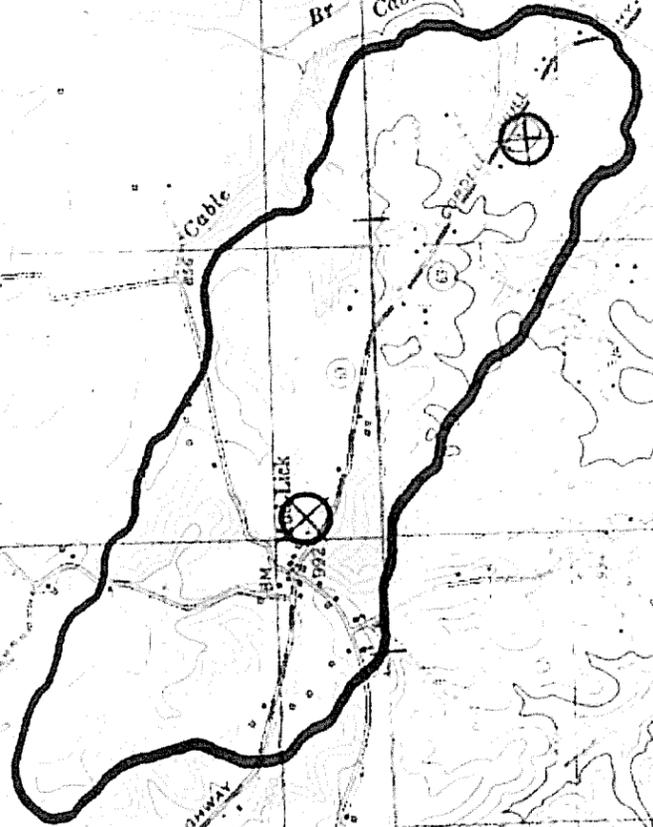
Ronda Jordan-Elam  
Editor  
*Tompkinsville News*



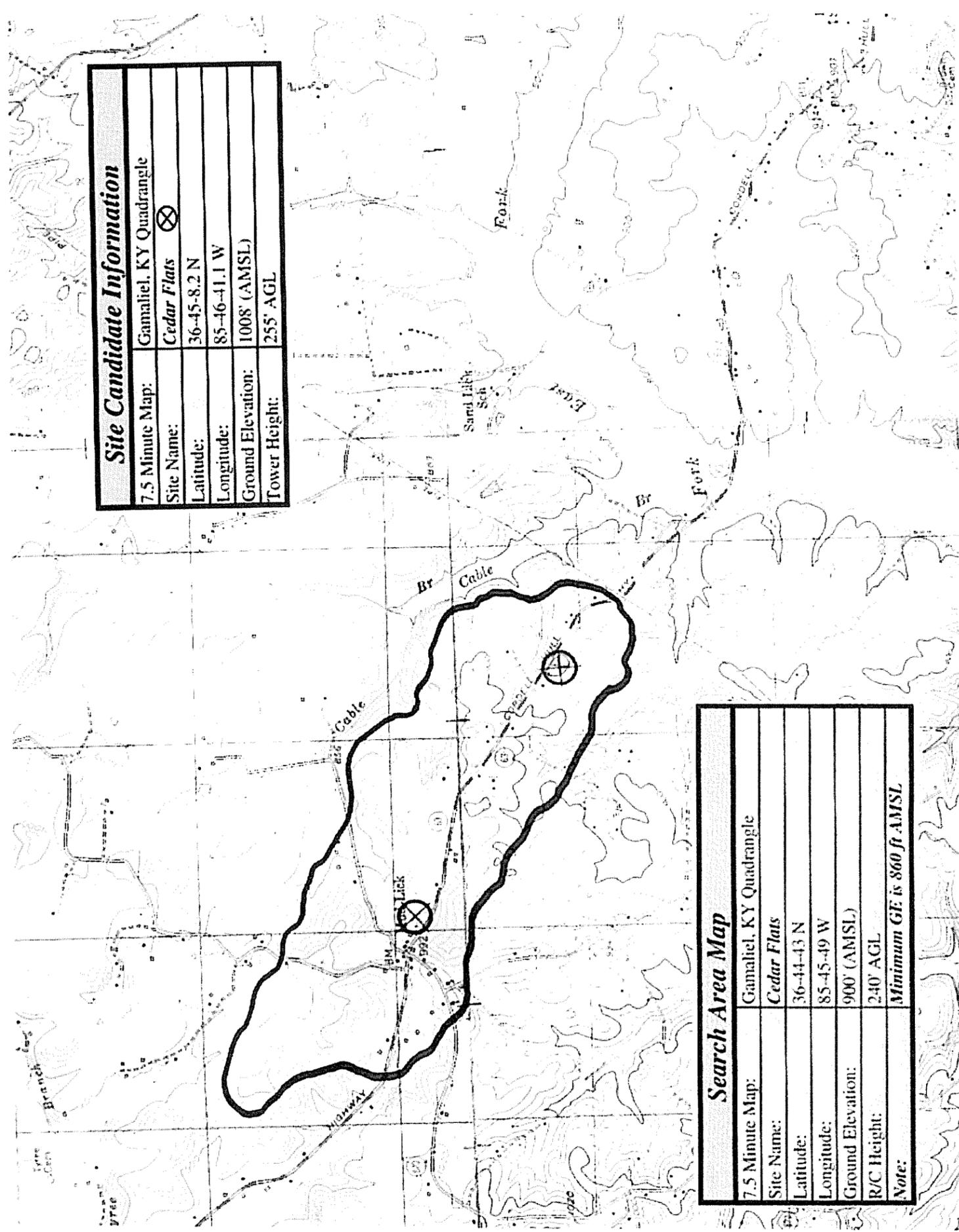
My comm. expires 11/19/2011



<b>Site Candidate Information</b>	
7.5 Minute Map:	Gamaliel, KY Quadrangle
Site Name:	<b>Cedar Flats</b> ⊗
Latitude:	36-45-8.2 N
Longitude:	85-46-41.1 W
Ground Elevation:	1008' (AMSL)
Tower Height:	255' AGL

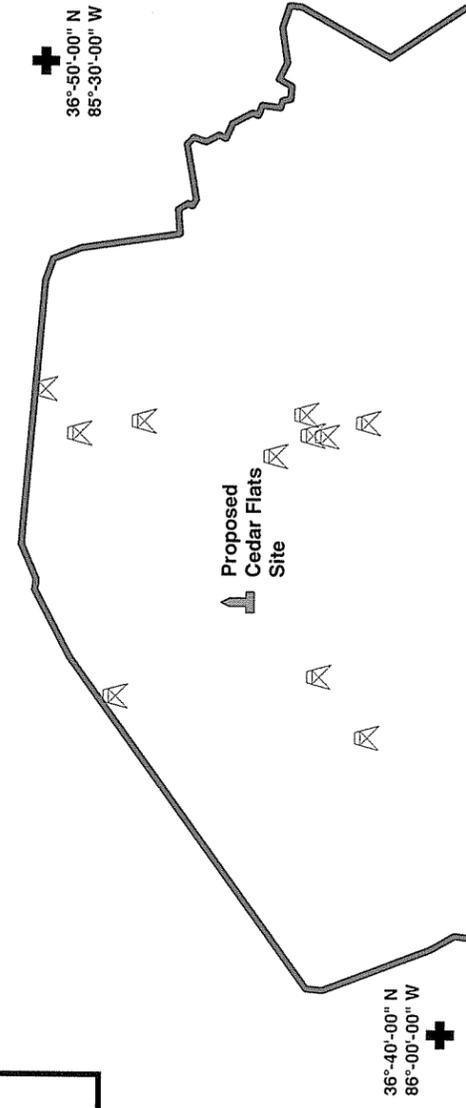


<b>Search Area Map</b>	
7.5 Minute Map:	Gamaliel, KY Quadrangle
Site Name:	<b>Cedar Flats</b>
Latitude:	36-44-43 N
Longitude:	85-45-49 W
Ground Elevation:	900' (AMSL)
R/C Height:	240' AGL
<b>Note:</b>	<b>Minimum GE is 860 ft AMSL</b>





 Monroe County Boundary  
 Wireless Tower Locations Registered with the FCC  
 Proposed Tower Location  
 Tick Marks  
 Prepared By: LINGS Engineering 3/13/2008



**Information on Towers Registered with the FCC  
in Monroe County and 1/2 Mile Area Outside of the County Boundary**

FCC Tower Reg. No.	North Latitude	West Longitude	City, State	Tower Owner
1041300	36 49 56.2	85 40 7.8	Tompkinsville, KY	TEXAS EASTERN COMMUNICATIONS, INC.
1042225	36 44 13	85 42 10	Tompkinsville, KY	Global Tower LLC
1043026	36 43 27	85 40 53	Tompkinsville, KY	WHITTIMORE ENTERPRISES INC DBA = WTKY AM FM
1043447	36 43 6	85 48 58	Flippen, KY	Estate of J. David Fridley
1044822	36 43 17	85 41 31	Tompkinsville, KY	KENTUCKY COMMONWEALTH OF DBA = KENTUCKY EMERGENCY WARNING SYSTEM KEWS
1055079	36 49 5	85 41 30	Glasgow, KY	Somerset Educational Broadcasting Foundation
1065560	36 41 54	85 41 7	Tompkinsville, KY	CUMBERLAND CELLULAR PARTNERSHIP DBA = BLUEGRASS CELLULAR
1215547	36 48 9.1	85 49 35.8	Mt. Hermon, KY	Cumberland Cellular Partnership
1217901	36 41 53	85 50 50	McMinnville, KY	State of Tennessee Department of Transportation Aeronautics
1225703	36 42 55.2	85 41 32.9	Tompkinsville, KY	Mediacom Southeast LLC
1258492	36 47 29	85 41 6.2	Tompkinsville, KY	Cumberland Cellular Partnership