PLANNING COMMISSION REPORT
Regular Agenda – Public Hearing Item

PC Staff Report
9/26/2016

ITEM NO. 5 CONDITIONAL USE PERMIT FOR VERIZON WIRELESS; 1287 E 1200 RD (SLD)

CUP-16-00312: Consider a Conditional Use Permit for a new 199' Verizon Wireless communications tower located north of the Westar Substation at 1287 E 1200 Rd. Submitted by PAMCORP LLC for Verizon Wireless LLC on behalf of The Kansas District of the Wesleyan Church Inc, property owner of record.

STAFF RECOMMENDATION: Staff recommends approval of the Conditional Use Permit for a communication tower located at 1287 E 1200 Road and forwarding it to the County Commission with a recommendation of approval based on the findings of fact in the body of the staff report.

Reason for Request:
Verizon Wireless proposes to construct and operate a 190 foot tall self-supporting monopole type communications tower which will be used to provide enhanced wireless voice and data services to its local subscribers. The facility will be unmanned and will be designed to accommodate at least two additional sets of antennas for use by other carriers.

Staff comments: A CUP was previously approved by both the Planning Commission and the County Commission. The approval expired after one year when a building permit was not obtained. The County approval is valid for only 12 months. A corresponding Special Use Permit (within the city limits) is valid for a period of 24 months. The overall tower structure is 190'. Additional height is added by the placement of a 9' lightning rod on top of the tower structure. Typically towers less than 200' are not required to be lit by FAA standards.

ATTACHMENTS
1. Site plan

KEY POINTS
- Application is for a new 190' monopole tower with a 9' lightning rod.
- Ground equipment includes an equipment shelter building and generator to be located within the shelter building.
- Property is encumbered by regulatory floodplain.
- Property is located in the Lawrence Urban Growth Area.
- This application includes a 100' by 100' development area. Initially only a portion of the site will be developed with a tower and equipment. The future pad sites will require expansion of the enclosure.

ASSOCIATED CASES/OTHER ACTION REQUIRED
- CUP-14-00298 approved by the Planning Commission on 11/17/2014. Approved by the County Commission on 2/10/15. Application expired on 2/10/2016.
- Board of County Commissioners' approval of the Conditional Use.
- Submission and approval of a local floodplain development permit to Douglas County.
- Submission and approval of a local building permit to Douglas County.
- Obtain a Conditional Use Permit from Douglas County.
- Obtain a driveway permit from the City of Lawrence.

PUBLIC COMMENT

- No communication has been recived.

Site Summary:	
Subject Property:	14.55 acres
Proposed Buildings:	100' x 100' lease area 11' x 25' Pad site for equipment shelter building H frame for equipment 190' monopole with 9' lightning rod Generator located within shelter building Additional pad sites for future carriers

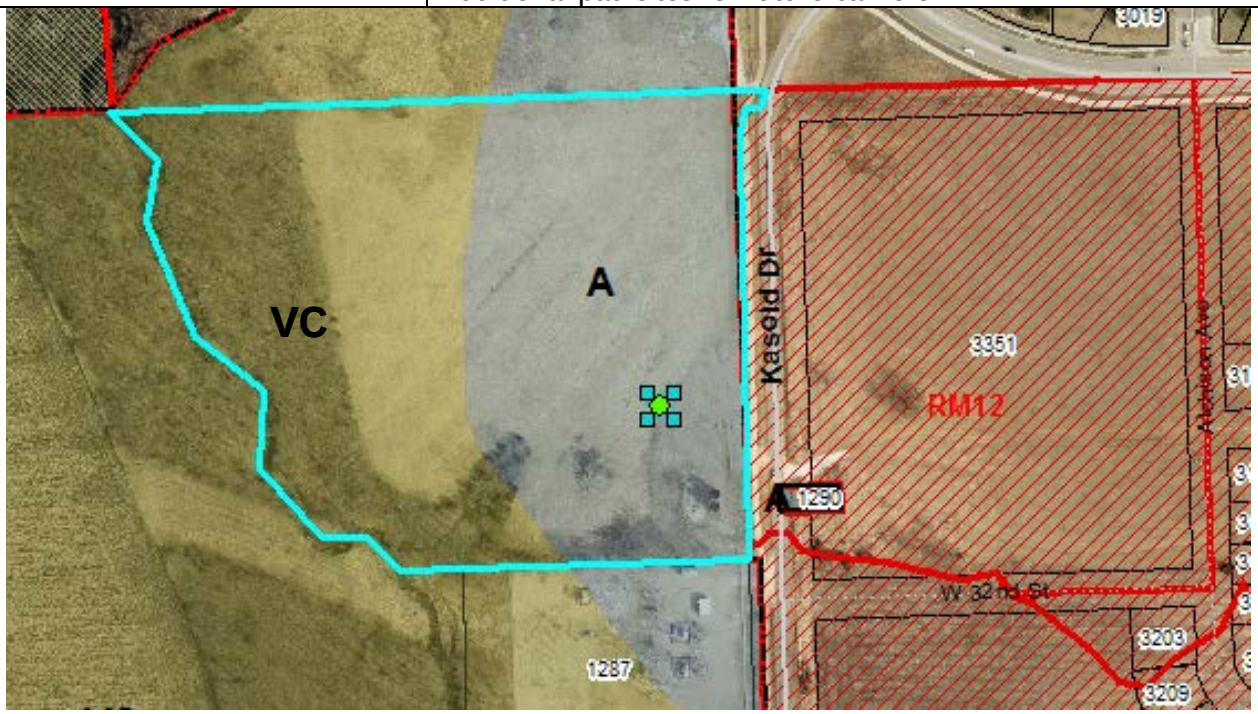


Figure 1: Existing Zoning

GENERAL INFORMATION	
Current Zoning and Land Use:	A (Agricultural) and VC (Valley Channel) Districts. Existing agricultural field.
Surrounding Zoning and Land Use:	A (Agricultural) and VC (Valley Channel) Districts to the North; existing agricultural field. A (Agricultural) and VC (Valley Channel) Districts to the South; KPL substation. VC (Valley Channel) District to the west. Yankee Tank Creek, riparian area and agricultural field. *A (Agricultural) and* RM12 (Multi-Dwelling Residential) District to the east. Rural Water District #5 pump station and future Religious Institution and Duplex Residential uses.

I. ZONING AND USES OF PROPERTY NEARBY

This property includes county zoning to the north, south and west and urban (City of Lawrence) zoning to the east. The property to the east was annexed in 2009 and has been rezoned multiple times to accommodate future development of the site. The immediate property to the east is undeveloped at this time but has been platted for development.

Two properties located in proximity to the subject property are used for utility purposes.

- 1290 E 1200 Road, zoned A (Agricultural) District; RWD #5 (to the east).
- 1287 E 1200 Road, zoned A (Agricultural) and VC (Valley Channel) Districts; Westar substation (to the south).

Staff Finding – The predominate zoning and land use on the west side of E 1200 Road (Kasold Drive) is agricultural. The predominate zoning and land use on the east side of E 1200 Road (Kasold Drive) is currently undeveloped but zoned for future Religious Institution and Duplex Residential uses.

II. CHARACTER OF THE AREA

This property is located on the southwest fringe of the Lawrence city limits. The property is located between W. 31st Street (extended) and the South Lawrence Trafficway (SLT)/K-10. This area has an agricultural character with limited development potential because of extensive floodplain in the area.

The land area east of Kasold Drive is developing with urban residential uses.

The subject property is bounded on the west side by the Yankee Tank Creek. The Westar substation and large overhead transmission lines run parallel to the South Lawrence Trafficway. The Lawrence multi-use path is located along the west side of Kasold Drive and connects W. 31st Street to the path along the north side of K-10 Highway.

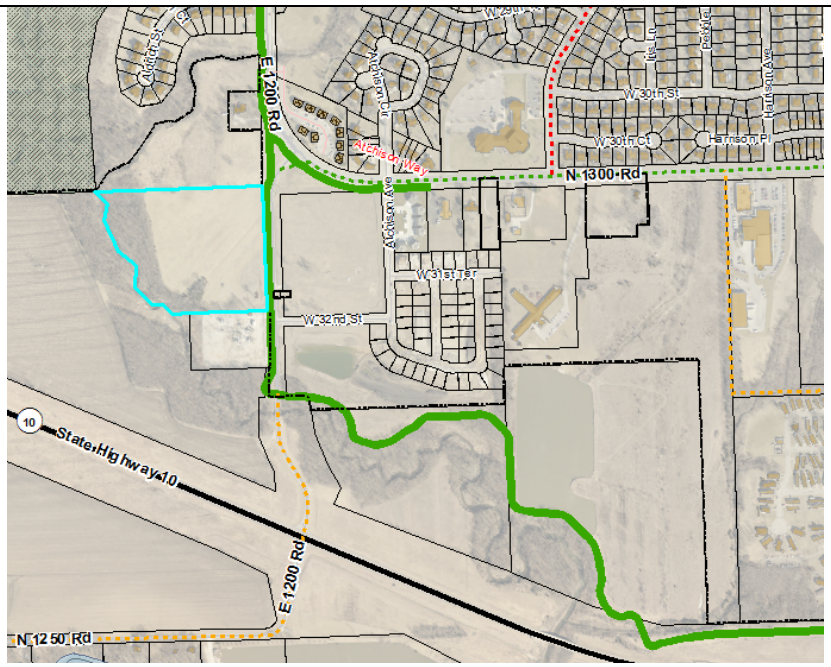


Figure 2: Multi-Use Path

The right of way for Kasold Drive/E 1200 Road has been fully annexed into the site along the length of the property and an additional 180' south of W. 32nd Street. The street/road extends south to an intersection with K-10 Highway. KDOT is proceeding with designs to make the intersection a right-in/right-out access to the highway. No other changes are proposed in the immediate area that impact or affect the character of the area.

Staff Finding – This property is located in a unique area of Lawrence between the existing city limits and the South Lawrence Traffiway/K-10. The property is bounded by Yankee Tank Creek and includes limited development options because of existing floodplain. Area to the east is developing with residential uses.

III. SUITABILITY OF SUBJECT PROPERTY FOR THE USES TO WHICH IT HAS BEEN RESTRICTED

Applicant's response: *"Yes"*

This property is currently restricted to uses allowed in the A (Agricultural) and VC (Valley Channel) Districts. These two districts are generally associated with agricultural activities such as farms, truck gardens, nurseries, grazing and similar activities. The A portion of the property allows both residential and non-residential uses. The VC portion of the property is more restrictive regarding land use. The proposed tower will be located on the A zoned portion of the subject property.

The proposed request does not change the base zoning district or alter the allowed uses. Section 12-319.4.31(d) specifically identifies commercial, industrial or agricultural zoning districts as suitable for communication towers.

Staff Finding – The portion of the subject property zoned A (Agricultural) District is a suitable district for the proposed use. The base zoning district is not altered by this request. A communication tower is an allowed use in the A (Agricultural) District subject to a Conditional Use Permit.

IV. LENGTH OF TIME SUBJECT PROPERTY HAS REMAINED VACANT AS ZONED

The property is currently vacant with the exception of two silos located in the southeast corner of the site. The zoning has remained unchanged since 1966. Previously the applicant sought and obtained approval for construction of a communication tower. The approval expired resulting in the applicant seeking new approval for the same project.

Staff Finding – The property is essentially vacant with the exception of two silos as described above. The zoning has remained unchanged since 1966. The previously approved CUP expired.

V. EXTENT TO WHICH REMOVAL OF RESTRICTIONS WILL DETRIMENTALLY AFFECT NEARBY PROPERTY

Applicant's Response: *"No"*

Section 12-319-1.01 of the County Zoning Regulations recognize that "*….certain uses may be desirable when located in the community, but that these uses may be incompatible with other uses permitted in a district…when found to be in the interest of the public health, safety, morals and general welfare of the community may be permitted, except as otherwise specified in any district from which they are prohibited."*

Communication towers are specifically recommended to be located in commercial, industrial or agricultural zoning districts. The location of the tower is situated so that it has a visual connection to other existing utility uses in the immediate area and to have the least adverse impact on the regulatory floodplain.

Staff Finding – Development potential in the area is limited by the presence of extensive regulatory floodplain. At this time the area to the north and east is undeveloped. Any future development will occur with knowledge of this improvement, if approved.

VI. RELATIVE GAIN TO THE PUBLIC HEALTH, SAFETY AND WELFARE BY THE DESTRUCTION OF THE VALUE OF THE PETITIONER'S PROPERTY AS COMPARED TO THE HARDSHIP IMPOSED UPON THE INDIVIDUAL LANDOWNERS

Approval of the request expands the structural network of towers and structures that are capable of supporting communication equipment. The proposed request facilitates cellular communications and wireless data use within the community. The proposed equipment does not conflict with existing emergency communication equipment.

The majority of the property will remain viable for existing land uses and uses permitted within the A (agricultural) and VC (Valley Channel) Districts.

Staff Finding – The benefit to the public is improved cellular communication and wireless data capacity within the Verizon network. Additionally, the structure provides an opportunity for other carriers to co-locate in the future. If denied, the property can continue to be used for current land uses and those uses allowed per the existing zoning of the property.

VII. CONFORMANCE WITH THE COMPREHENSIVE PLAN

The subject property is located within an the Lawrence Urban Growth Area and is immediately adjacent to the City Limits.

Chapter 10; Community Facilities of *Horizon 2020* addresses public utilities. Key strategies (Page 10-10) primarily address municipal unities such as water and wastewater planning. One strategy states:

- *The visual appearance of utility improvements will be addressed to ensure compatibility with existing and planned land use areas.*

The plan specifically addressed electric and telephone services and encourages this infrastructure to be placed underground in conjunction with new development where feasible. Communication towers support the wireless industry and accommodate the reduction of hardwire infrastructure. However, it should not be interpreted that wireless communication will replace hardwire needs in the community.

The plan recognizes that "telephone and electric utilities have a strong visual presence in the unincorporated Douglas County Landscape." Large transmission lines and easements should be coordinated throughout the community to minimize visual and environmental impacts.

The Comprehensive Plan does not explicitly address communication towers.

Staff Finding – The comprehensive plan does not provide any specific land use recommendations regarding communication towers. A Conditional Use Permit can be used to allow specific non-residential uses subject to approval of a site plan. This tool allows proportional development in harmony with the surrounding area. The proposed request is consistent with the Comprehensive Plan.

STAFF REVIEW

In addition to typical site plan design standards, communication towers must address specific requirements of section 12-319-4.31 of the County Zoning Regulations. As discussed above, the proposed use is located in an appropriate zoning district.

New communication towers require design that shall accommodate at least three two-way antennas for every 150' of tower height or co-location space. The proposed tower includes three co-location spaces in addition to the Verizon equipment space for a total of up to four carriers on this tower. Although, changes in federal law may negate this design criterion. Additional review of the existing County communication tower regulations is needed to align the regulations with the current laws.

Setback
The setback of the communication tower is required, per section 20-319-4.31(d), to be at least equal to the height of the tower to the nearest property line measured from the center of the tower. The east property line is the nearest property line to the proposed improvements. The tower setback may be reduced when documentation from a registered engineer is submitted certifying the "fall zone" of the tower in the event of a failure. Evaluation of the required structural documentation will continue to be reviewed with the submission of a building permit to the County Zoning and Codes Office. The proposed setback is shown to be 118' from the east property line to the center of the tower.

The tower and ground equipment will be located in a 100' by 100' enclosure area located approximately 90' from the east property line. The initial enclosure area will be 50' by 50' to accommodate expansion of the base station as additionally carriers co-locate on the tower.

The proposed equipment shelter is located approximately 100' from the east property line. The site plan shows pad sites within the enclosure to accommodate future carriers located on the north and west sides of the tower. The initial 50' by 50' fenced enclosure would need to be expanded to accommodate future co-location applications.

Lighting
Lighting is not proposed with this application for the communication tower. The tower will need to meet any applicable FAA requirements. Generally, towers less than 200' are not required to be lit. ground equipment will have lighting on front and rear sides of the building. Lighting must be shielded and directed down.

Access, Circulation, and Off Street Parking
Access to this site is from E 1200 Road/Kasold Drive. This segment of E 1200 Road is completely within the city limits. The applicant will be required to seek a driveway permit for access to the tower site from the City of Lawrence. The drive will provide maintenance access to the tower enclosure. This use does not require off-street parking. The design of the site provides adequate vehicular access and turnaround for maintenance activity on the site. The site plan shows a city standard driveway apron to the site.

Landscaping/Buffering
This site will not be irrigated and will not be staffed. The survival of vegetation used for screening is usually unsuccessful especially in a rural application. Per previous discussions with the applicant street trees were recommended for this site. The site plan shows five street trees planted along the west side of the multi-use path.

Other
Prior to construction of the tower the applicant will be required to obtain a Conditional Use Permit, issued by the County Zoning and Codes office as well as applicable building and floodplain development permits.

Recent changes to federal laws allow some future modifications to approved and existing communication towers, base stations, co-location equipment and other features. The full scope of these changes has not been assessed by staff. Changes can include expanding the tower by up to an additional 20' and increasing the base station (enclosure area) by up to 10%.

Conclusion

The proposed application meets the required documentation requirements of the County Zoning Regulations. Staff recommends minor changes to the site plan to faciliate the project compatibility with some City design standards since this site is located on the boundary of the existing city limits.

verizonwireless

APPLICANT

VERIZON WIRELESS
MANAGER–NETWORK REAL ESTATE
PHONE: (913) 244–2800

SITE ACQUISITION

KGI
PHONE: (417) 848–7584

SURVEYOR

HUSKER SURVEYING
PHONE: (402) 423–5202

ARCHITECTURAL AND ENGINEERING FIRM

MAGTECH MIDWEST, INC.
PHONE: (260) 436–2668

POLICE DEPARTMENT

LAWRENCE POLICE DEPARTMENT
4820 BOB BILLINGS PKWY,
LAWRENCE, KS 66049
PHONE: (785) 830–7400

FIRE DEPARTMENT

LAWRENCE FIRE STATION NO. 4
2121 WAKARUSA DR,
LAWRENCE, KS 66047
PHONE: (785) 832–7640

PROPERTY OWNER

KANSAS DISTRICT OF THE
WESLEYAN CHURCH
TOPEKA, KS 66604

KANSAS ONE–CALL SYSTEM

811 OR 1–800–DIG SAFE

ONE CALL KANSAS

CONSULTANT TEAM

VICINITY MAP — MAPS PROVIDED BY DeLORME STREET ATLAS USA

THE PROJECT INCLUDES:

INSTALLATION OF PANEL ANTENNA, ASSOCIATED COAX AND OTHER EQUIPMENT ON NEW MONOPOLE TOWER.

INSTALLATION OF A 25'–5–1/2"x11'–6" UNMANNED EQUIPMENT SHELTER WITH GENERATOR ON A CONCRETE FOUNDATION.

NEW ELECTRIC AND TELEPHONE SERVICE TO SITE AND EQUIPMENT SHELTER. NO WATER SUPPLY OR SEWAGE TO/FROM THE SITE.

SITE LAT/LON ELEV.

LATITUDE – 38° 55' 36.52"
LONGITUDE – 95° 16' 46.96"
GRD ELEV. – ±832' AMSL

SITE LAT/LON ELEV.

OVERALL STRUCTURE HT: 199'
STRUCTURE HT: 190'
ANTENNA CL: 190'

PROJECT DESCRIPTION

LOCATION MAP — AERIAL MAP PROVIDED BY GOOGLE

LAWC KASOLD

1293 E 1200 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

LOCATION No.: 273490
PROJECT No.: 20130934157

PROPOSED MONOPOLE TOWER WITH COMMUNICATIONS EQUIPMENT

SIGNATURE	PRINTED NAME	DATE
LESSOR / LICENSOR: PLEASE CHECK THE APPROPRIATE BOX BELOW		
☐ NO CHANGES ☐ CHANGES NEEDED. SEE COMMENTS ON PLANS		
LESSOR / LICENSOR APPROVAL		

RF ENGINEER: _____ –
OPERATIONS MANAGER: _____ –
CONSTRUCTION ENGINEER: _____ –
CONSTRUCTION MANAGER: _____ –
REAL ESTATE MANAGER: _____ –

APPROVED BY SIGNATURE DATE

DRAWING INDEX

verizon wireless

MAGTECH MIDWEST INC.
AN AFFILIATE OF FORTUNE WIRELESS INC.
1715 MADNAVOX WAY, FORT WAYNE, INDIANA 46804
(260) 436–2668 • (260) 436–2402 FAX

CERTIFICATION
GREGORY J. SUHR
LICENSED
18922
KANSAS
PROFESSIONAL ENGINEER

RELEASE DATE	
05–05–14	CONSTRUCTION DWGS – REV A
07–27–14	CONSTRUCTION DWGS – REV B
08–11–14	CONSTRUCTION DWGS – REV C
01–30–15	CONSTRUCTION DWGS – REV D
02–25–15	CONSTRUCTION DWGS – REV O

DRAWN BY: JLM
CHECKED BY: DJH

SITE NAME:

LAWC KASOLD CELL SITE

SITE ADDRESS:

1293 E 1200 ROAD LAWRENCE, KS 66047

SHEET TITLE:

PROJECT INFORMATION LOCATION MAPS, AND DRAWING INDEX

A&E PROJECT NO.:

001-1504

SHEET NO.:

T-1

PARENT PARCEL DESCRIPTION:

A TRACT OF LAND LOCATED IN THE NORTHEAST QUARTER OF SECTION 15, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE 6TH P.M., IN DOUGLAS COUNTY, KANSAS, NOW DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHEAST CORNER OF SAID QUARTER SECTION; THENCE SOUTH 01°47'07" EAST ALONG THE EAST LINE OF SAID QUARTER SECTION, 731.00 FEET; THENCE SOUTH 88°06'41" WEST PARALLEL WITH THE NORTH LINE OF SAID QUARTER SECTION, 596.59 FEET TO THE CENTERLINE OF A CREEK; THENCE ALONG SAID CREEK CENTERLINE FOR THE FOLLOWING COURSES: NORTH 45°41'54" WEST, 76.01 FEET; SOUTH 88°06'39" WEST, 69.21 FEET; NORTH 41°35'07" WEST, 147.26 FEET; NORTH 02°32'56" EAST, 121.88 FEET; NORTH 52°01'21" WEST, 133.21 FEET; THENCE NORTH 23°43'42" WEST, 195.83 FEET; NORTH 10°35'57" EAST, 101.55 FEET; NORTH 45°49'20" WEST, 104.16 FEET TO A POINT ON THE NORTH LINE OF SAID QUARTER SECTION; THENCE LEAVING SAID CREEK CENTERLINE, NORTH 88°06'41" EAST ALONG SAID NORTH LINE, 1029.78 FEET TO THE POINT OF BEGINNING, SUBJECT TO ALL RIGHTS-OF-WAY AND EASEMENTS OF RECORD, AND

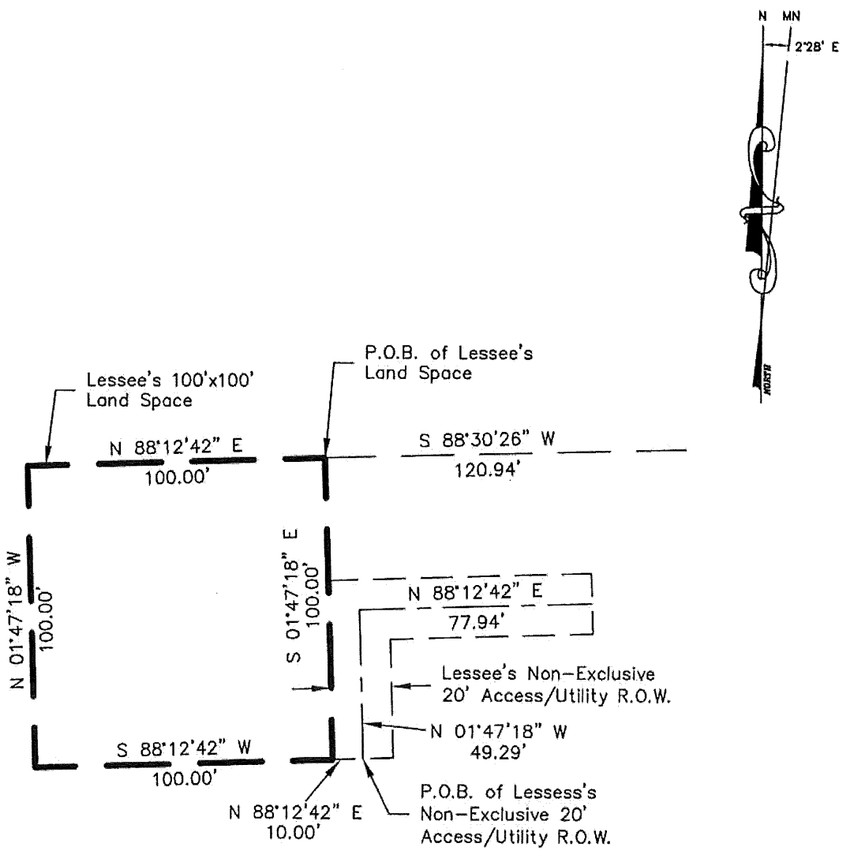
THE WEST HALF OF THE NORTHWEST QUARTER OF SECTION 14, ALL IN TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE 6TH P.M.IN DOUGLAS COUN1Y, KANSAS, LESS TRACTS DESCRIBED AS FOLLOWS:

A. BEGINNING AT A POINT 1111.3 FEET EAST OF THE NORTHWEST CORNER OF THE NORTHWEST QUARTER OF SECTION 14, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE 6TH P.M.; THENCE SOUTH PARALLEL WITH WEST LINE OF SAID QUARTER SECTION 417.4 FEET; THENCE EAST TO THE EAST LINE OF THE WEST HALF OF THE NORTHWEST QUARTER OF SAID SECTION; THENCE NORTH ON THE EAST LINE OF SAID WEST HALF TO THE NORTH LINE OF SAID QUARTER SECTION; THENCE WEST TO THE POINT OF BEGINNING.

B. BEGINNING AT A POINT 902.6 FEET EAST OF THE NORTHWEST CORNER OF THE NORTHWEST QUARTER OF SECTION 14, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE 6TH P.M., THENCE SOUTH PARALLEL WITH THE WEST LINE OF SAID QUARTER SECTION 417.4 FEET EAST 208.7 FEET; THENCE NORTH PARALLEL WITH THE WEST LINE OF SAID QUARTER SECTION, 417.4 FEET TO THE WEST LINE OF SAID QUARTER SECTION; THENCE WEST 208.7 FEET TO THE POINT OF BEGINNING.

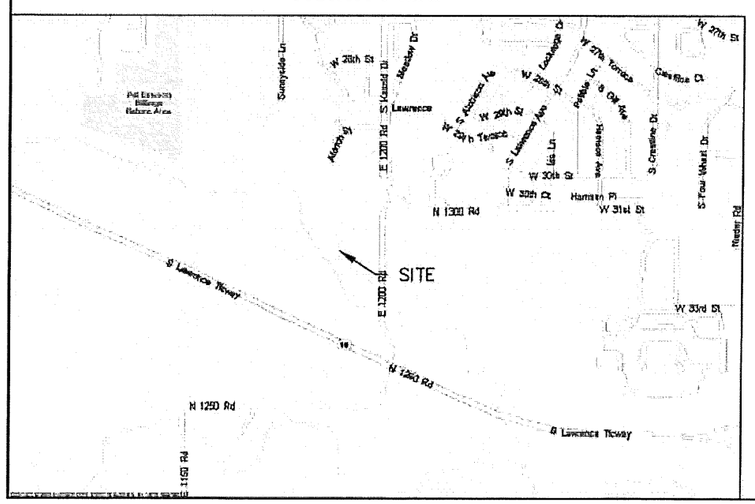
C. A TRACT OF LAND IN THE NORTHWEST QUARTER OF SECTION 14, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE 6TH P.M., IN THE CITY OF LAWRENCE, IN DOUGLAS COUNTY, KANSAS, DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF SAID NORTHWEST QUARTER; THENCE SOUTH 01°44'39" EAST 620.00 FEET, COINCIDENT WITH THE WEST LINE OF SAID QUARTER SECTION TO THE POINT OF BEGINNING; THENCE NORTH 88°15'21" EAST 97.00 FEET; THENCE SOUTH 01°44'39" EAST 40.00 FEET; THENCE SOUTH 88°15'21" WEST 97.00 FEET; THENCE NORTH 01°44'39" WEST 40.00 FEET TO THE POINT OF BEGINNING.

D. A TRACT OF LAND IN THE WEST HALF OF THE NORTHWEST QUARTER OF SECTION 14, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE 6TH P.M., DESCRIBED AS FOLLOWS: BEGINNING AT THE SOUTHWEST CORNER OF SAID QUARTER SECTION; FIRST COURSE, THENCE ON AN ASSUMED BEARING OF NORTH 01°47'16" WEST 1408.94 FEET ALONG THE WEST LINE OF SAID QUARTER SECTION; SECOND COURSE, THENCE NORTH 88°12'44" EAST 175.00 FEET; THIRD COURSE, THENCE SOUTH 11°06'59" EAST, 216.27 FEET; FOURTH COURSE, THENCE SOUTH 21°22'55" EAST, 201.00 FEET; FIFTH COURSE, THENCE SOUTH 29°21'25" EAST, 152.14 FEET; SIXTH COURSE, THENCE SOUTH 20°14'54" WEST 103.62 FEET; SEVENTH COURSE, THENCE SOUTH 68°50'09" EAST 1104.50 FEET TO A POINT ON THE EAST LINE, 341.03 FEET NORTH OF THE SOUTHEAST CORNER OF THE WEST HALF OF THE SAID QUARTER SECTION; EIGHTH COURSE, THENCE SOUTH 01°49'33" EAST ALONG SAID EAST LINE TO THE SOUTHEAST CORNER OF THE WEST HALF OF SAID QUARTER SECTION; NINTH COURSE, THENCE SOUTH 88°03'37" WEST, 1326.29 FEET ALONG THE SOUTH LINE OF SAID QUARTER SECTION TO THE POINT OF BEGINNING; FOR CONTROLLED ACCESS HIGHWAY, INCLUDING ANY AND ALL ABUTTER'S RIGHT OF ACCESS TO SAID HIGHWAY APPURTENANT TO SAID PROPERTY, EXCEPT AND RESERVING THE RIGHT OF ACCESS TO THE HIGHWAY OVER AND ACROSS THE FOLLOWING DESCRIBED COURSES: ALL OF THE 'SECOND', 'THIRD', 'FOURTH', 'FIFTH' AND 'SIXTH' COURSES.



LAND SPACE & R.O.W. DETAIL
Scale: 1"=50'

VICINITY MAP



SURVEYORS NOTES

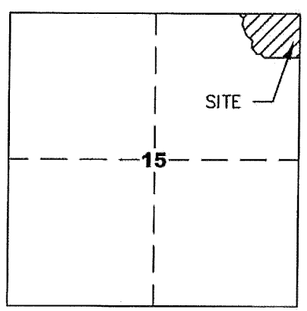
1.) Generally located in Kansas State Plane Coordinate System, North Zone (NAD-83).

2.) Not a survey of the parent parcel shown, but to be used only for the purposes shown hereon.

3.) The Utility locations shown hereon were determined by observed above ground evidence only. The surveyor was provided with above ground markings to determine any subsurface locations, and makes no guarantee that the underground utilities in the area, either in service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated. This surveyor has not physically located the underground utilities.

Zoning Information:
OS-Open Space District

Flood Information:
Property falls within a Zones "AE" (Areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. BFEs are shown within these zones.) & "X" (Minimal risk areas outside the 1-percent and .2-percent-annual-chance floodplains. No BFEs or base flood depths are shown within these zones.) as determined by FEMA Flood Rate Map No. 20045C0167D, effective 8/05/10.



T. 13 S, R. 19 E
PARENT PARCEL DETAIL

Surveyor's Certificate

I, Jayme M. Malone, a Professional Registered Land Surveyor under the laws of the State of Kansas, certify the above survey was executed by me, on the date shown. Distances shown are measured in feet and decimals of a foot.

Signed this 28th day of August, 2014

Jayme M. Malone
LS MO #2736

Prepared for:

Prepared for:

MAGTECH MIDWEST INC.
AN AFFILIATE OF FORTUNE WIRELESS INC.
1715 MAGNAVOX WAY, FORT WAYNE, INDIANA 46804
(260) 436-3800 • (260) 436-3402 FAX

Surveyed By: HS4152

HUSKER SURVEYING
4535 Normal Blvd. Ste #101
Lincoln, Ne 68506
(402)423-5202
(402)423-5211
www.huskersurveying.com

CHECKED BY:		JMM	
APPROVED BY:		JMM	
#	DATE	DESCRIPTION	INT.
1	1/29/14	80% Prelim	TH
2	2/12/14	Land Space & R.O.W.	TH
3	2/26/14	Add Title	MG
4	3/03/14	Comments	MG
5	6/18/14	Moved Land Space	MG

JAYME M. MALONE LICENSED LS-1113 8-28-14 KANSAS LAND SURVEYOR
DATE SIGNED:

SITE NAME:
LAWC KASOLD

SITE NUMBER:

SITE ADDRESS:
1293 E 1200 RD
Lawerence, KS 66047

SHEET NAME:
LAND SPACE & R.O.W. EXHIBIT

SHEET NUMBER:
LSE-1

LESSEE'S LAND SPACE DESCRIPTION:

That part of the Northeast Quarter of Section 15, Township 13 South, Range 19 East of the 6th P.M., Douglas County, Kansas and being more particularly described as follows:

Referring to the Northeast corner of said Section 15, a #4 rebar in monument box found; thence southerly, on an assumed bearing, South 01°47'18" East, on the East line of the Northeast Quarter of said Section 15, 422.15 feet; thence westerly South 88°30'26" West, 120.94 feet, to the Point of Beginning for the described Land Space; thence following the perimeter of the described Land Space on the following bearings and distances of the described Land Space: South 01°47'18" East, 100.00 feet; thence South 88°12'42" West, 100.00 feet; thence North 01°47'18" West, 100.00 feet; thence North 88°12'42" East, 100.00 feet, to the Point of Beginning for the described Land Space.

Containing a total calculated area of 10,000 square feet or 0.229 acres, more or less.

LESSEE'S NON-EXCLUSIVE ACCESS/UTILITY RIGHT OF WAY DESCRIPTION:

A Non-Exclusive Access/Utitlity Right of Way, 20 feet in width, located in that part of the Northeast Quarter of Section 15, Township 13 South, Range 19 East of the 6th P.M., Douglas County, Kansas and the centerline being more particularly described as follows:

Referring to the Northeast corner of said Section 15, a #4 rebar in monument box found; thence southerly, on an assumed bearing, South 01°47'18" East, on the East line of the Northeast Quarter of said Section 15, 422.15 feet; thence westerly South 88°30'26" West, 120.94 feet, to the Northeast corner of the described Land Space; thence following the perimeter of the described Land Space on the following bearings and distances of the described Land Space: South 01°47'18" East, 100.00 feet; thence easterly North 88°12'42" East, 10.00 feet, to the Point of Beginning for the centerline of the described Right of Way; thence northerly North 01°47'18" West, 49.29 feet; thence easterly North 88°12'42" East, 77.94 feet, to a point of intersection on the westerly right-of-way line of E 1200 Road, also being the Point of Termination for the centerline of the described Right of Way.

Containing a total calculated area of 2,545 square feet or 0.058 acres, more or less.

INFORMATIONAL REPORT:

Based on Commitment for Title Insurance with an effective date of January 24, 2014 provided by First American Title Insurance Company, Commitment No. NCS-651243-KCTY, the following are of survey matters:

9. A Grant of Right of Way in favor of The Kansas Power and Light Company, recorded April 12, 1967 in Book 249, Page 562. Does not affect Land Space and Right of Way.

10. An Easement in favor of the City of Lawrence, Kansas, recorded March 8, 1985 in Book 379, Page 182. Does not affect Land Space and Right of Way.

11. An Easement for Right of Way For Highway Purposes in favor of Douglas County, Kansas, recorded June 4, 1990 in Book 445, Page 289. Does not affect Land Space and Right of Way.

12. An Easement for Right of Way For Pedestrian/Bicycle Path Purposes in favor of Douglas County, Kansas, recorded April 11, 1996 in Book 551, Page 1741. Affects Right of Way, and is shown hereon.

13. A Right-Of-Way Easement in favor of Douglas County, RWD No.5, recorded May 11, 2000 in Book 674, Page 1466. Said Easement was partially assigned to the City of Lawrence, Kansas by instrument recorded December 14, 2001 in Book 748, Page 422. Does not affect Land Space and Right of Way.

14. An Easement for Ingress and Egress in favor of Rural Water District No. 5, Douglas County, Kansas, recorded May 22, 2000 in Book 675, Page 1351. Does not affect Land Space and Right of Way.

15. A Right-Of-Way Easement in favor of Douglas County, RWD No. 5, recorded June 6, 2001 in Book 716, Page 167. Said Easement was partially assigned to the City of Lawrence, Kansas by instrument recorded December 14, 2001 in Book 748, Page 422. Does not affect Land Space and Right of Way.

16. An Ordinance of the City of Lawrence, Kansas, annexing property into the city, recorded May 7, 2003 in Book 853, Page 35. Does not affect Land Space and Right of Way.

17. An Ordinance of the City of Lawrence, Kansas, annexing property into the city, recorded December 17, 2009 in Book 1057, Page 482. Does not affect Land Space and Right of Way.

18. An Annexation Agreement between the Kansas District of the Wesleyan Church,Inc. and the City of Lawrence, Kansas, recorded February 8, 2010 in Book 1058, Page 5202. Does not affect Land Space and Right of Way.

19. A Temporary Construction Easement in favor of the City of Lawrence, Kansas, recorded April 22, 2010 in Book 1060, Page 5358. Does not affect Land Space and Right of Way.

20. A Dedication of Right-Of-Way in favor of the City of Lawrence, Kansas, recorded April 22, 2010 in Book 1060, Page 5364. Does not affect Land Space and Right of Way.

Prepared for:

Prepared for:

MAGTECH
MIDWEST INC.
AN AFFILIATE OF FORTUNE WIRELESS INC.
1715 MAGNAVOX WAY, FORT WAYNE, INDIANA 46804
(260) 436-2888 • (260) 436-2402 FAX

Surveyed By: HS4152

HUSKER SURVEYING
4535 Normal Blvd. Ste #101
Lincoln, Ne 68506
(402)423-5202
(402)423-5211
www.huskersurveying.com

CHECKED BY:	JMM		
APPROVED BY:	JMM		
#	DATE	DESCRIPTION	INT.
1	1/29/14	80% Prelim	TH
2	2/12/14	Land Space & R.O.W.	TH
3	2/26/14	Add Title	MG
4	3/03/14	Comments	MG
5	6/18/14	Moved Land Space	MG

JAYME M. MALONE
LICENSED
LS-1113
8-25-14
KANSAS
LAND SURVEYOR
DATE SIGNED

SITE NAME:
LAWC KASOLD

SITE NUMBER:

SITE ADDRESS:
1293 E 1200 RD
Lawerence, KS 66047

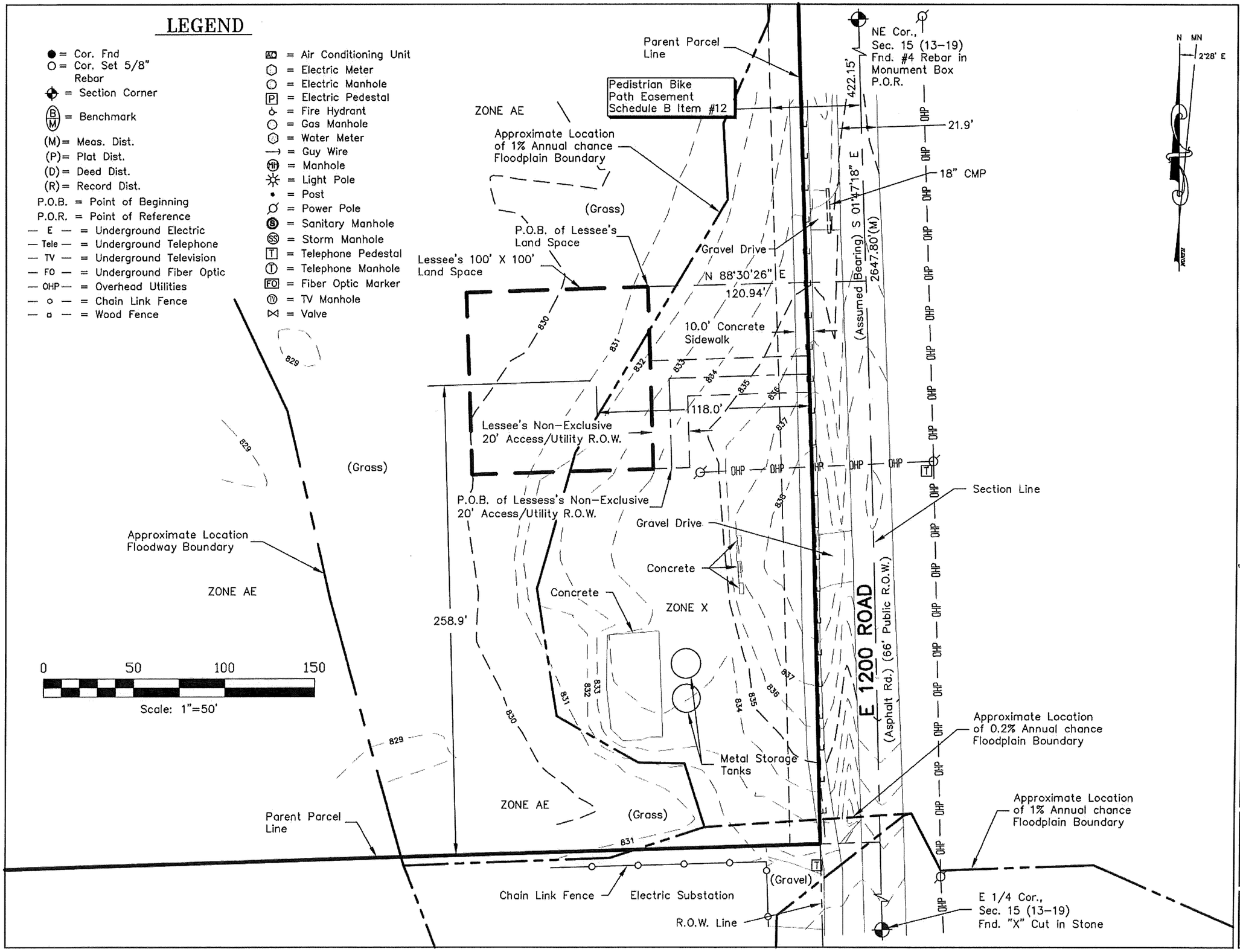
SHEET NAME:
LAND SPACE &
R.O.W. EXHIBIT

SHEET NUMBER:
LSE-2

LEGEND

- ● = Cor. Fnd
- O = Cor. Set 5/8" Rebar
- ⊕ = Section Corner
- (BM) = Benchmark
- (M) = Meas. Dist.
- (P) = Plat Dist.
- (D) = Deed Dist.
- (R) = Record Dist.
- P.O.B. = Point of Beginning
- P.O.R. = Point of Reference
- — E — = Underground Electric
- — Tele — = Underground Telephone
- — TV — = Underground Television
- — FO — = Underground Fiber Optic
- — OHP — = Overhead Utilities
- — o — = Chain Link Fence
- — ▫ — = Wood Fence

- AC = Air Conditioning Unit
- = Electric Meter
- = Electric Manhole
- P = Electric Pedestal
- = Fire Hydrant
- = Gas Manhole
- = Water Meter
- = Guy Wire
- MH = Manhole
- = Light Pole
- = Post
- = Power Pole
- S = Sanitary Manhole
- SS = Storm Manhole
- T = Telephone Pedestal
- Ⓣ = Telephone Manhole
- FO = Fiber Optic Marker
- TV = TV Manhole
- = Valve



Prepared for:

Prepared for:

MAGTECH MIDWEST INC.
AN AFFILIATE OF FORTUNE WIRELESS INC.
1715 MAGNAVOX WAY, FORT WAYNE, INDIANA 46804
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JAYME M. MALONE
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LS-1113
8-28-14
KANSAS
LAND SURVEYOR
DATE SIGNED

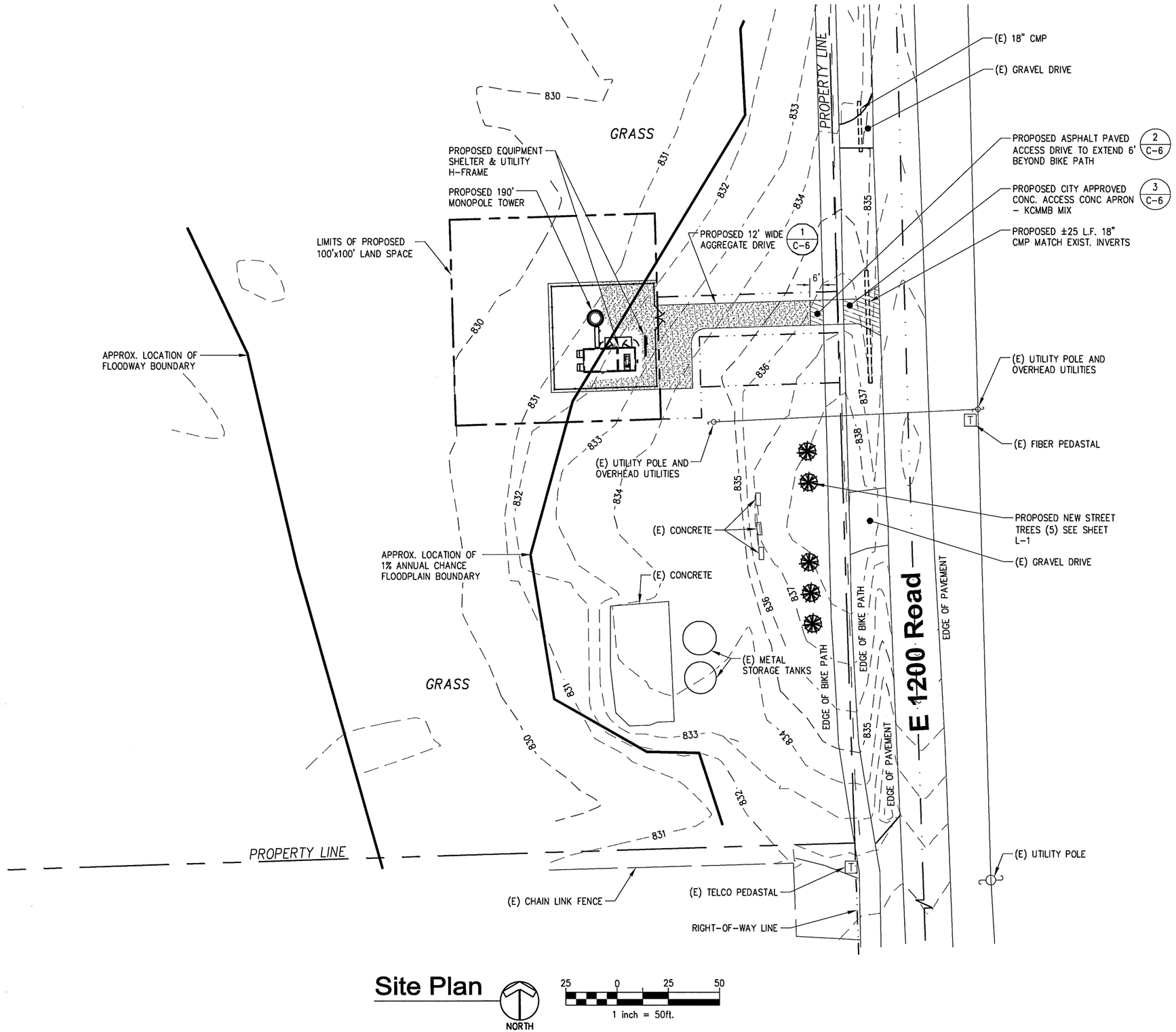
SITE NAME:
LAWC KASOLD

SITE NUMBER:

SITE ADDRESS:
1293 E 1200 RD
Lawerence, KS 66047

SHEET NAME:
LAND SPACE & R.O.W. EXHIBIT

SHEET NUMBER:
LSE-3



Site Plan

verizon wireless

MAGTECH MIDWEST INC.
AN AFFILIATE OF FORTUNE WIRELESS INC.
1715 MAGNAVOX WAY, FORT WAYNE, INDIANA 46804
(260) 435-2558 • (260) 435-2402 FAX

CERTIFICATION:
GREGORY J. SUHR LICENSED 18922 KANSAS PROFESSIONAL ENGINEER

RELEASE	
DATE	
05-05-14	CONSTRUCTION DWGS - REV A
07-27-14	CONSTRUCTION DWGS - REV B
08-11-14	CONSTRUCTION DWGS - REV C
01-30-15	CONSTRUCTION DWGS - REV D
02-25-15	CONSTRUCTION DWGS - REV 0

DRAWN BY: JLM
CHECKED BY: DJH

SITE NAME:

LAWC KASOLD CELL SITE

SITE ADDRESS:

1293 E 1200 ROAD LAWRENCE, KS 66047

SHEET TITLE:

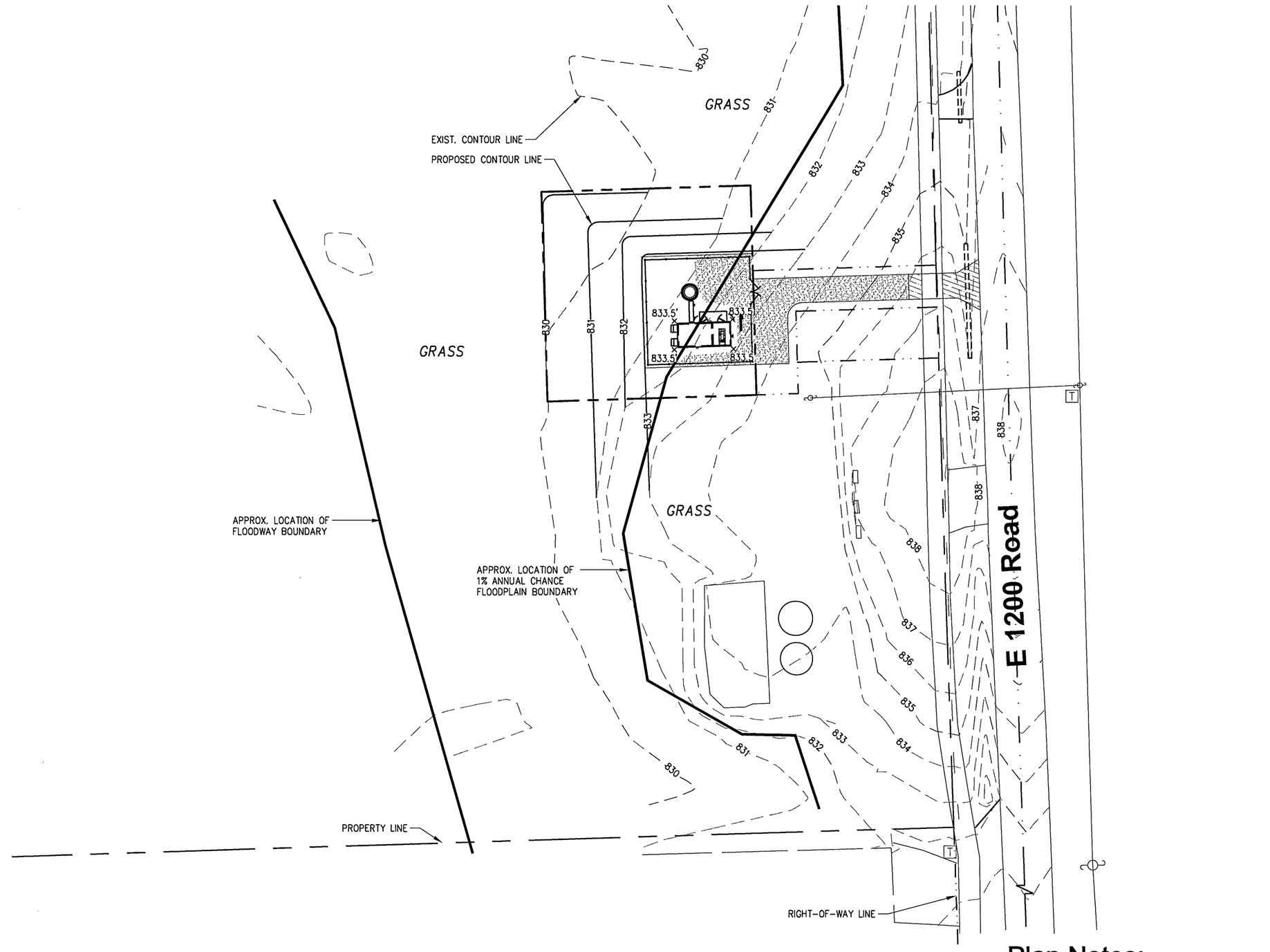
OVERALL SITE PLAN

A&E PROJECT NO.:

001-1504

SHEET NO.:

C-0



Grading Plan

NORTH

25 0 25 50

1 inch = 50ft.

Plan Notes:

BASE FLOOD ELEVTION (B.F.E.) = 831.7'
PER THE CITY OF LAWRENCE

+XXX.X SPOT ELEVATION – SUBGRADE (FINISH GRADE OF SITE = 0.67' ABOVE SUBGRADE)

— — — EXISTING CONTOUR

——— NEW CONTOUR

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MAGTECH
MIDWEST INC.
AN AFFILIATE OF FORTUNE WIRELESS INC.
1715 MAGNAVOX WAY, FORT WAYNE, INDIANA 46804
(260) 436-2668 • (260) 436-2402 FAX

CERTIFICATION:
GREGORY J. SUHR
LICENSED
18922
KANSAS
PROFESSIONAL ENGINEER

RELEASE	
DATE	
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07-27-14	CONSTRUCTION DWGS – REV B
08-11-14	CONSTRUCTION DWGS – REV C
01-30-15	CONSTRUCTION DWGS – REV D
02-25-15	CONSTRUCTION DWGS – REV 0

DRAWN BY: JLM
CHECKED BY: DJH

SITE NAME:

LAWC KASOLD CELL SITE

SITE ADDRESS:

**1293 E 1200 ROAD
LAWRENCE, KS 66047**

SHEET TITLE:

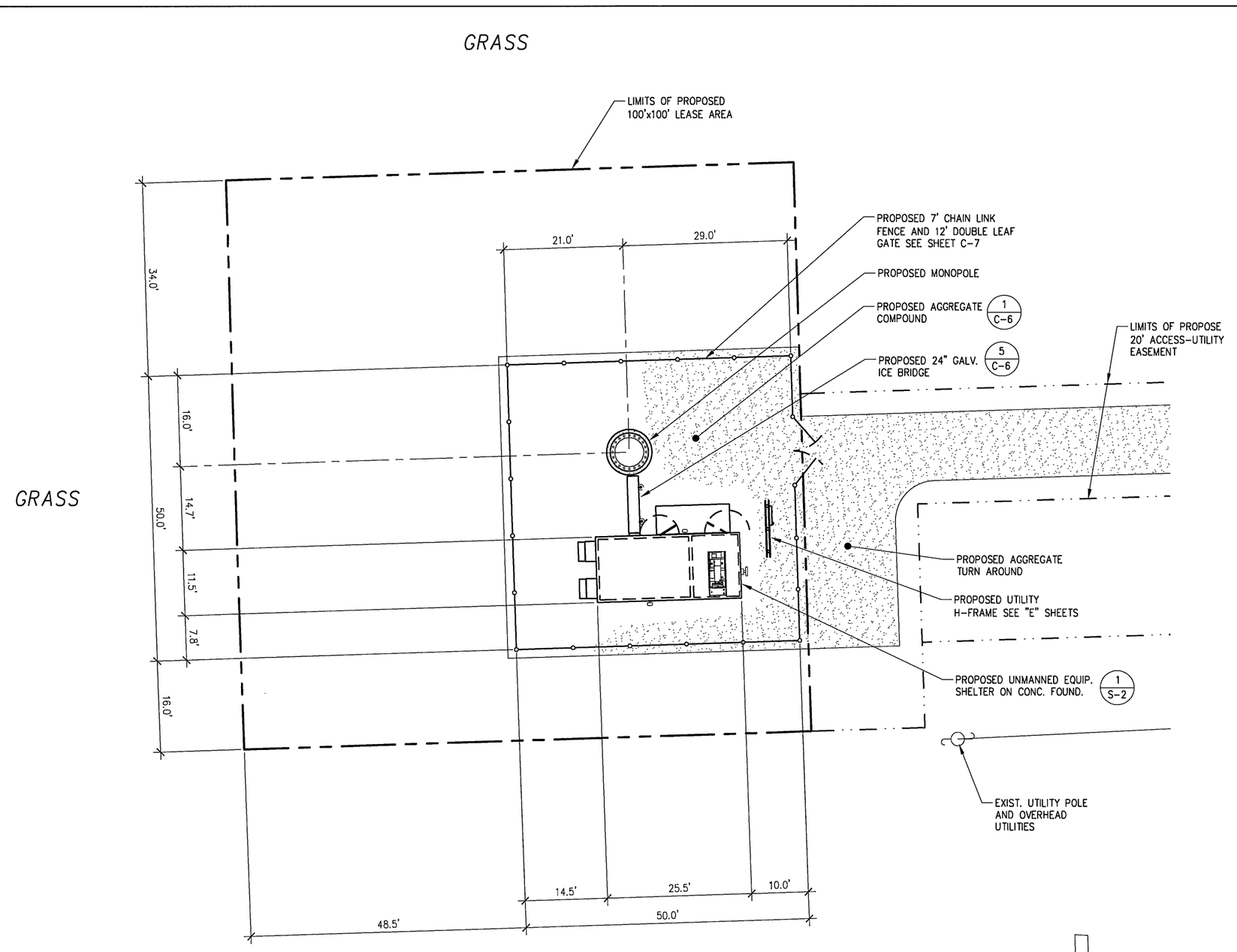
SITE GRADING PLAN

A&E PROJECT NO.:

001-1504

SHEET NO.:

C-1



Enlarged Site Plan

NORTH

10 0 10 20

1 inch = 20ft.

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MAGTECH MIDWEST INC.
AN AFFILIATE OF FORTUNE WIRELESS INC.
1715 MAGNAVOX WAY, FORT WAYNE, INDIANA 46804
(260) 436-2668 • (260) 436-2402 FAX

CERTIFICATION:
GREGORY J. SUHR LICENSED 18022 KANSAS PROFESSIONAL ENGINEER

RELEASE	
DATE	
05-05-14	CONSTRUCTION DWGS - REV A
07-27-14	CONSTRUCTION DWGS - REV B
08-11-14	CONSTRUCTION DWGS - REV C
01-30-15	CONSTRUCTION DWGS - REV D
02-25-15	CONSTRUCTION DWGS - REV O

DRAWN BY: JLM
CHECKED BY: DJH

SITE NAME:

LAWC KASOLD CELL SITE

SITE ADDRESS:

1293 E 1200 ROAD LAWRENCE, KS 66047

SHEET TITLE:

ENLARGED SITE PLAN

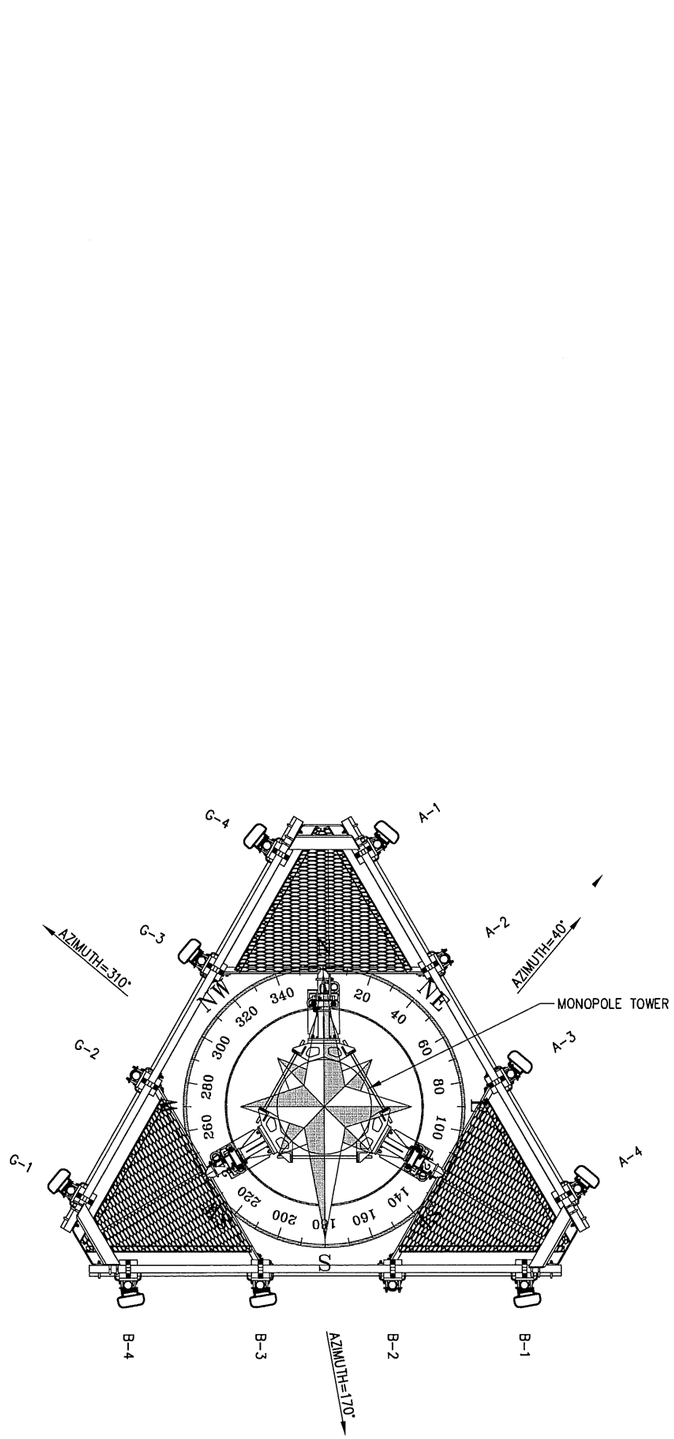
A&E PROJECT NO.:

001-1504

SHEET NO.:

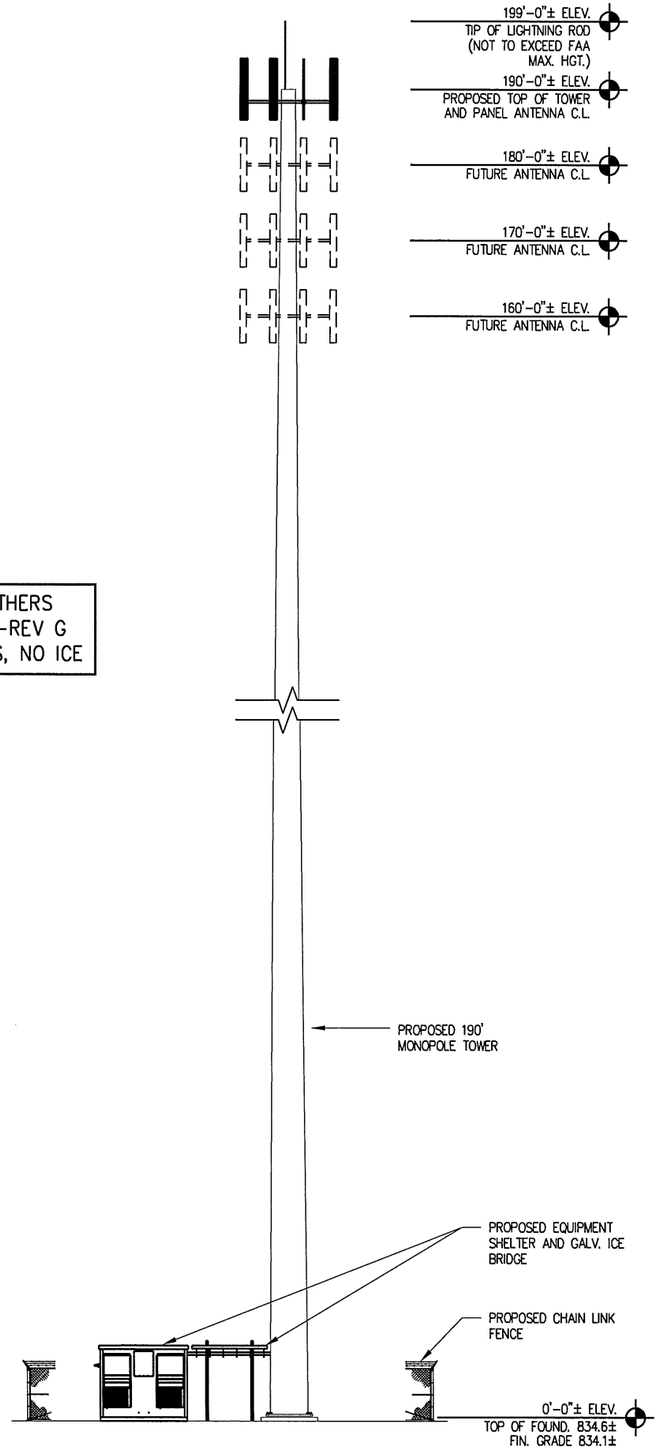
C-2

MONOPOLE TO BE DESIGNED BY OTHERS
ACCORDING TO ANSI/EIA/TIA-222-REV G
STANDARDS: 90 MPH BASIC WINDS, NO ICE



2 Antenna Azimuths

SCALE: 1/4" = 1'-0"



1 Tower Elevation

SCALE: 1" = 20'-0"

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MAGTECH
MIDWEST INC.
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1715 MAGNAVOX WAY, FORT WAYNE, INDIANA 46804
(260) 436-2668 • (260) 436-2402 FAX

CERTIFICATION:
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LICENSED
18922
KANSAS
PROFESSIONAL ENGINEER

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08-11-14	CONSTRUCTION DWGS - REV C
01-30-15	CONSTRUCTION DWGS - REV D
02-25-15	CONSTRUCTION DWGS - REV 0

DRAWN BY: JLM
CHECKED BY: DJH

SITE NAME:

LAWC KASOLD CELL SITE

SITE ADDRESS:

**1293 E 1200 ROAD
LAWRENCE, KS 66047**

SHEET TITLE:

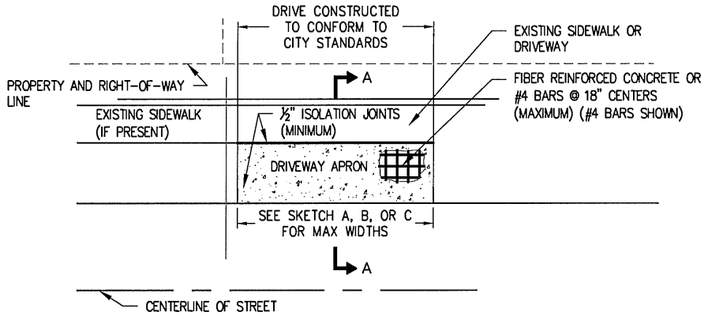
TOWER ELEVATION, ANTENNA INFORMATION NOTES AND DETAILS

A&E PROJECT NO.:

001-1504

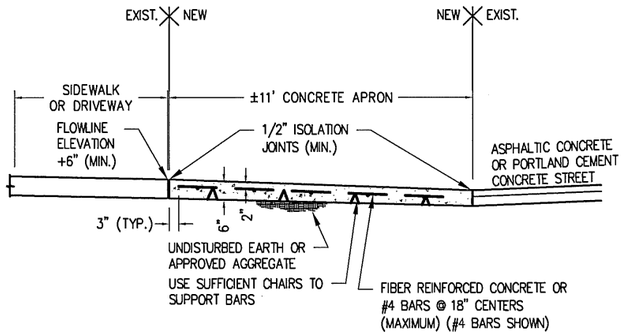
SHEET NO.:

C-3



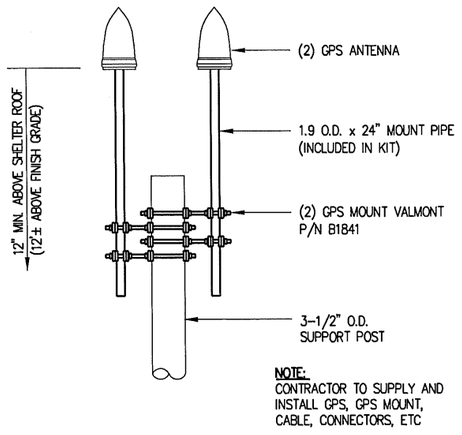
3 Driveway Apron

SCALE: 1" = 20'-0"



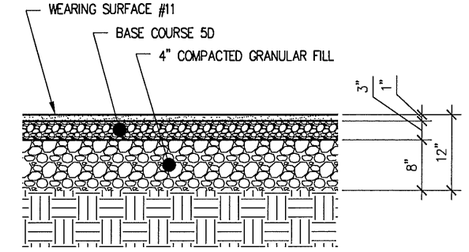
4 Apron Section A-A

SCALE: 1/4" = 1'-0"



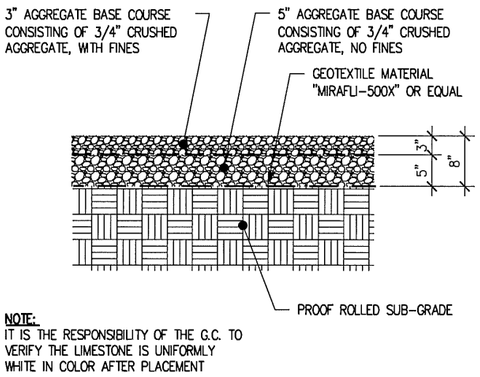
7 GPS Mount Detail

SCALE: 3/4" = 1'-0"



2 Asphalt Drive

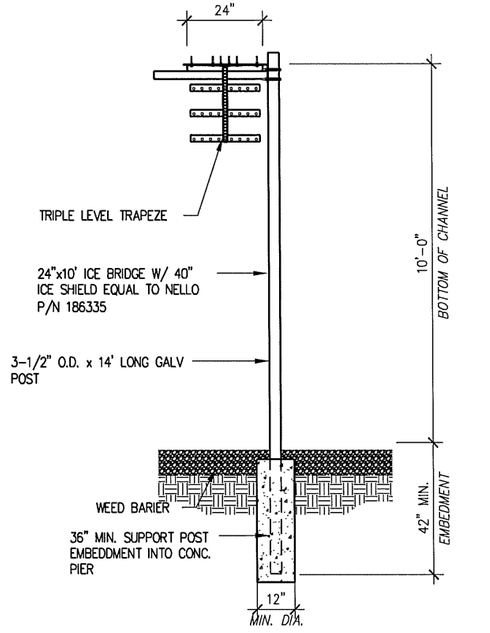
SCALE: 1/2" = 1'-0"



NOTE:
IT IS THE RESPONSIBILITY OF THE G.C. TO VERIFY THE LIMESTONE IS UNIFORMLY WHITE IN COLOR AFTER PLACEMENT

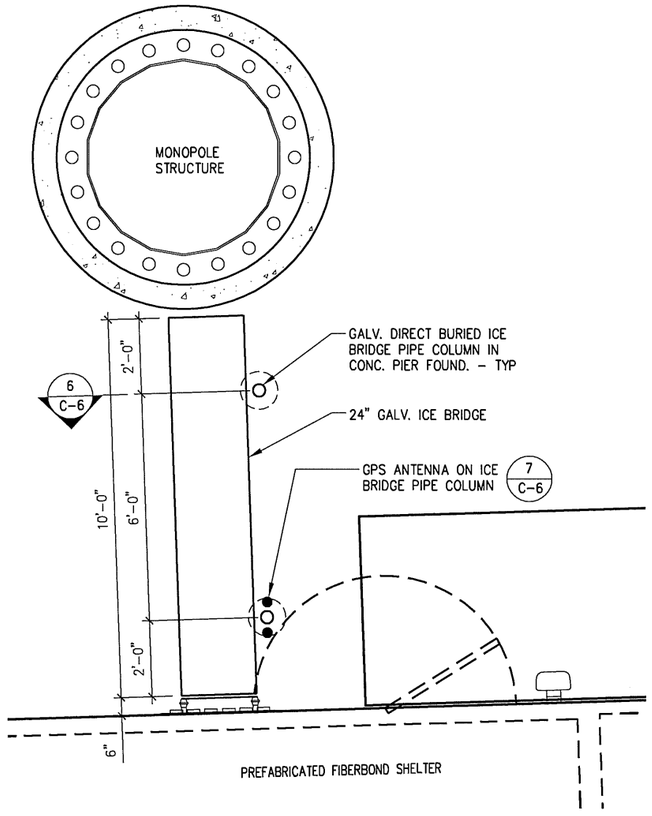
1 Aggregate Base

SCALE: 1/2" = 1'-0"



6 Ice Bridge Section

SCALE: 1/4" = 1'-0"



5 Ice Bridge Plan

SCALE: 1/4" = 1'-0"

verizon wireless

MAGTECH MIDWEST INC.
AN AFFILIATE OF FORTUNE WIRELESS INC.
1715 MAGNAVOX WAY, FORT WAYNE, INDIANA 46804
(260) 436-2668 • (260) 436-2402 FAX

CERTIFICATION:
GREGORY J. SUHR
LICENSED
4/18/22
KANSAS
PROFESSIONAL ENGINEER

RELEASE	
DATE	
05-05-14	CONSTRUCTION DWGS - REV A
07-27-14	CONSTRUCTION DWGS - REV B
08-11-14	CONSTRUCTION DWGS - REV C
01-30-15	CONSTRUCTION DWGS - REV D
02-25-15	CONSTRUCTION DWGS - REV 0

DRAWN BY: JLM
CHECKED BY: DJH

SITE NAME:

LAWC KASOLD CELL SITE

SITE ADDRESS:

1293 E 1200 ROAD LAWRENCE, KS 66047

SHEET TITLE:

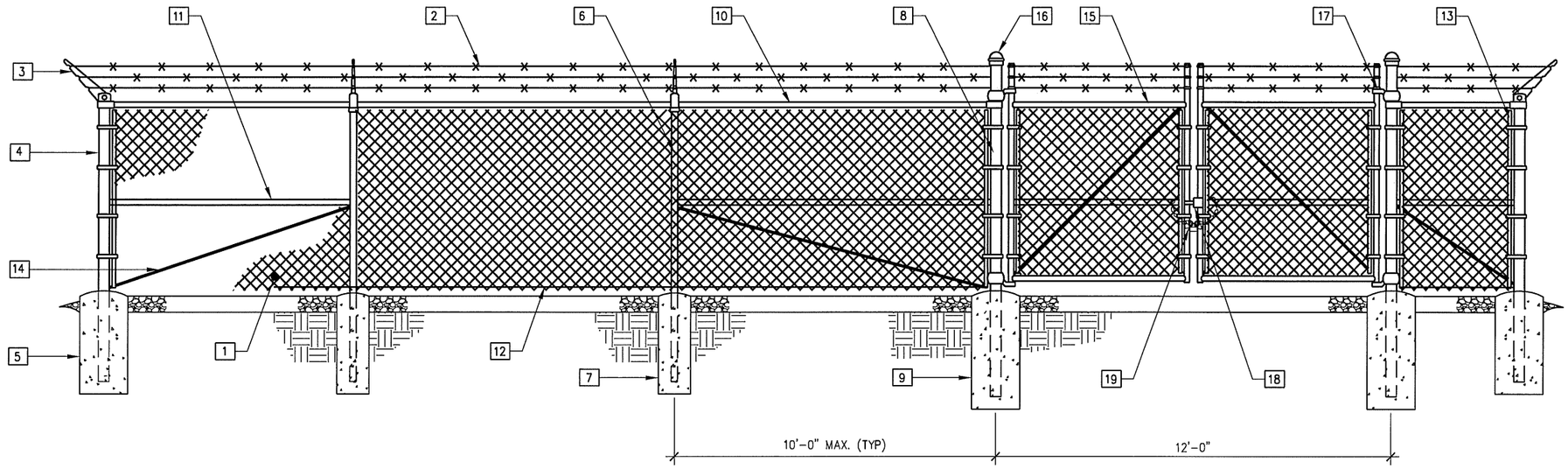
CIVIL DETAILS

A&E PROJECT NO.:

001-1504

SHEET NO.:

C-6



1 Typical Fence Elevation

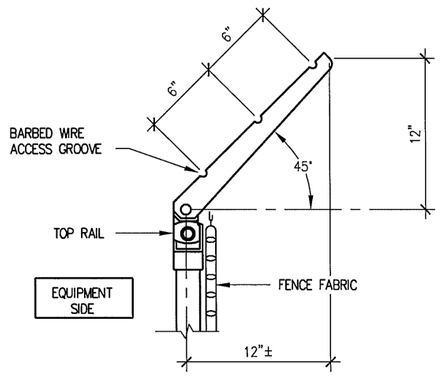
SCALE: 1/4" = 1'-0"

Keynote Legend

1. FABRIC: 9 GAUGE, 2" MESH, ASTM A392 (SEE FENCE SECTION FOR HEIGHT).
2. BARBED WIRE: 12 GAUGE WIRE, 4 POINT (3 RUNS), FINISH TO MATCH FABRIC, ASTM A121.
3. EXTENSION ARMS: STAMPED STEEL WITH MALLEABLE IRON BASE, FINISH TO MATCH FENCE FRAMEWORK, ASTM F626.
4. END AND CORNER POSTS: 3"ø PIPE SCH. 40 (GALV.) ASTM F1083
5. CONCRETE FOUNDATION: 36"x12"ø (3000 PSI)
6. LINE POSTS: 2"ø PIPE SCH. 40 (GALV.) ASTM F1083
7. CONCRETE FOUNDATION: 36"x10"ø (3000 PSI)
8. GATE POSTS: 4"ø PIPE SCH. 40 (GALV.) ASTM F1083
9. CONCRETE FOUNDATION: 48"x12"ø (3000 PSI)
10. TOP RAIL & BRACE RAIL: 1-1/2"ø PIPE SCH. 40 (GALV.) ASTM F1083
11. MIDDLE RAILS: 1-1/2"ø PIPE SCH. 40 (GALV.) ASTM F1083
12. BOTTOM TENSION WIRE: 0.177"ø METALLIC-COATED STEEL (GALV.), MARCELLED, ASTM A824
13. TENSION BARS: 3/16"x3/4", FULL HEIGHT OF FABRIC, FINISH TO MATCH FENCE FRAMEWORK.
14. TENSION ROD: 3/8"ø WITH ADJ. TIGHTNER, FINISH TO MATCH FENCE FRAMEWORK.
15. GATE FRAME: 2"ø SCH. 40 (GALV.) ASTM F1083
16. POST CAPS: PER POST DIAMETER.
17. GATE HINGES: NON-LIFT-OFF TYPE, OFFSET TO PERMIT 180 DEGREE SWING.
18. DOUBLE GATE LATCH: COMMERCIAL STRONG ARM EQUAL TO: DAC INDUSTRIES 615-C ELEVENTH STREET, GRAND RAPIDS, MI 49504
19. LOCK CHAIN: 3/8" SIZE, 36" LONG HOT DIP GALVANIZED ZINC COATED. W/ MARINE-GRADE PROGRAMMABLE FOUR DIGIT PADLOCK (SESAME BRAND OR APPROVED EQUAL)

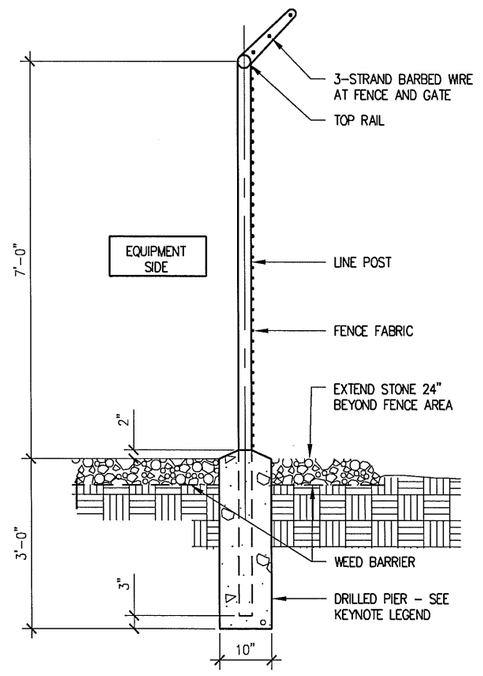
NOTES:

1. REFER TO PROJECT SPECIFICATIONS FOR INFORMATION NOT SHOWN IN THE DRAWING.
2. FENCE FABRIC SHALL COMFORN TO CHAIN LINK FENCE MANUFACTURERS INSTITUTE (CLFMI) PRODUCT MANUAL.
3. INSTALL FENCE IN COMPLIANCE WITH ASTM F 567.
4. INSTALL SWING GATES IN COMPLIANCE WITH ASTM F 900.
5. DO NOT BEGIN INSTALLATION AND ERECTION BEFORE FINAL GRADING IS COMPLETED, UNLESS OTHERWISE PERMITTED. INSTALL FENCING ON BOUNDARY LINES INSIDE OF PROPERTY LINE ESTABLISHED BY SURVEY.
6. DRILL OR HAND-EXCAVATE (USING POST - HOLE DIGGER) HOLES FOR POSTS TO DIAMETERS AND SPACINGS INDICATED, IN FIRM, UNDISTURBED OR COMPACTED SOIL. IF NOT INDICATED ON DRAWINGS, EXCAVATE HOLES FOR EACH POST TO MINIMUM DIAMETER RECOMMENDED BY FENCE MANUFACTURER, BUT NOT LESS THAN (4) TIMES LARGEST GROSS-SECTION OF POST.
7. REMOVE POST HOLE SPOILS FROM SITE. DO NOT SET SPOILS ON AGGREGATE WITHOUT ADEQUATE PROTECTION.
8. PROTECT PORTION OF POSTS ABOVE GROUND FROM CONCRETE SPLATTER. PLACE CONCRETE AROUND POSTS AND VIBRATE OR TAMP FOR CONSOLIDATION. CHECK EACH POST FOR VERTICAL AND TOP ALIGNMENT AND HOLD IN POSITION DURING PLACEMENT AND FINISHING OPERATIONS, UNLESS OTHERWISE SHOWN, EXTEND CONCRETE FOOTING 1 INCH ABOVE GRADE AND TROWEL TO A CROWN TO SHED WATER.
9. INSTALL BARBED WIRE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
10. APPLY FABRIC TO OUTSIDE OF FRAMEWORK.



3 Barbed Wire Detail

SCALE: 1" = 1'-0"



2 Typical Fence Section

SCALE: 3/8" = 1'-0"

verizon wireless

MAGTECH
MIDWEST INC.
AN AFFILIATE OF FORTUNE WIRELESS INC.
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LICENSED
4/18/22
KANSAS
PROFESSIONAL ENGINEER

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08-11-14	CONSTRUCTION DWGS - REV C
01-30-15	CONSTRUCTION DWGS - REV D
02-25-15	CONSTRUCTION DWGS - REV 0

DRAWN BY: JLM
CHECKED BY: DJH

SITE NAME:

LAWC KASOLD CELL SITE

SITE ADDRESS:

**1293 E 1200 ROAD
LAWRENCE, KS 66047**

SHEET TITLE:

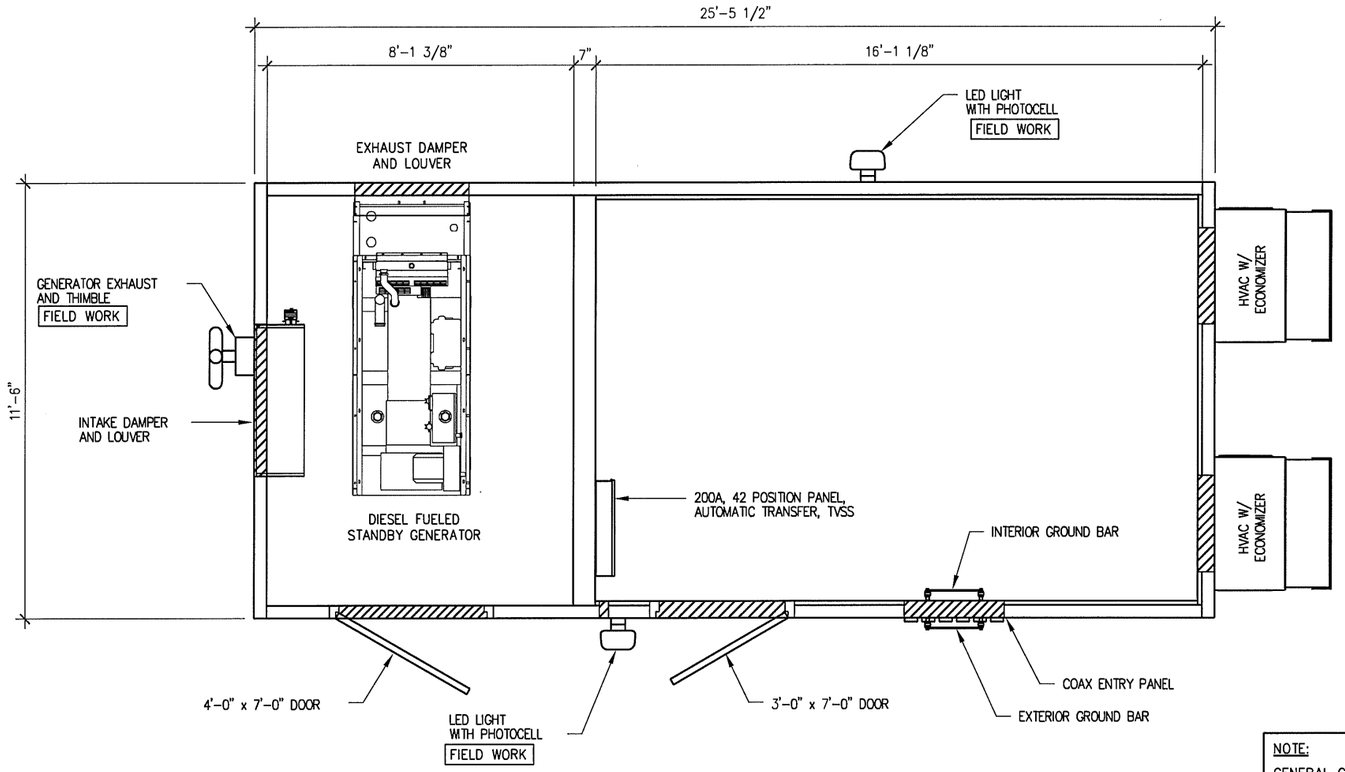
FENCE DETAILS

A&E PROJECT NO.:

001-1504

SHEET NO.:

C-7

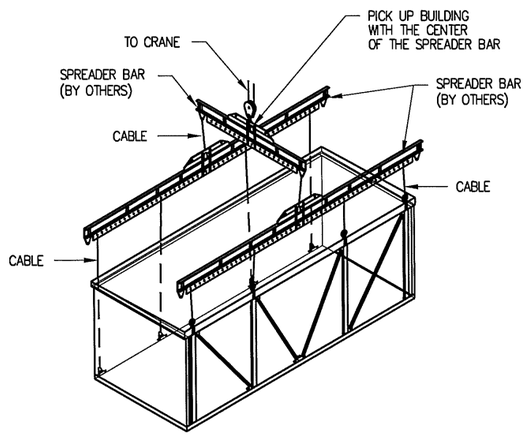


1 Equipment Enclosure Floor Plan

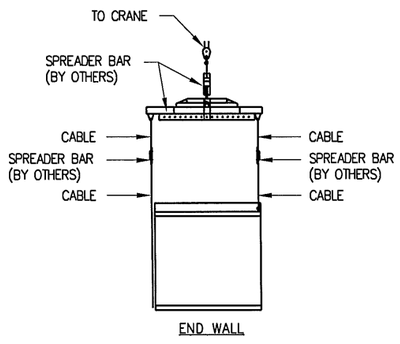
SCALE: 1/4" = 1'-0"

NOTE:

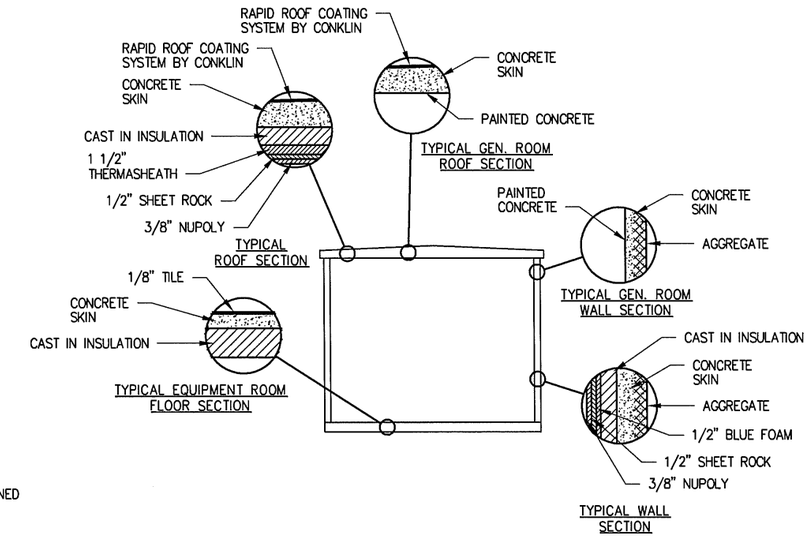
GENERAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL EXTERIOR ATTACHMENTS FOR GENERATOR (MUFFLER, VENT, ETC.), DOOR CANOPIES, AND SECURITY LIGHTS



ALL BUILDINGS MUST BE LIFTED FROM ALL LIFTING POINTS (DOUBLE WIDE)



ALL BUILDINGS MUST BE LIFTED FROM ALL LIFTING POINTS



Traverse Section

Equipment Shelter Set Up Procedure

1. INSPECT BUILDING UPON DELIVERY FOR DAMAGE DURING TRANSPORTATION.
2. REMOVE LIFTING BRACKETS FROM SHELTER.
3. ATTACH TIE DOWN BRACKETS TO SHELTER AND FOUNDATION USING ANCHOR BOLTS.
4. INSTALL AND CAULK ALL ACCESSORIES (EXTERIOR LIGHTS, CANOPIES, GENERATOR EXHAUST AND VENT PIPES ETC.)
5. INSPECT ROOF AND ROOF EDGES FOR DAMAGE CAUSED BY OFFLOAD AND REPAIR IF NEEDED.
6. INSTALL BACKER ROD AND CAULK EXTERIOR WALLS AND ROOF.
7. INSTALL FLASHING ON ALL INTERIOR MOD. LINES.
8. MAKE ALL CONDUIT AND CABLE TRAY CROSSOVERS.
9. CLEAN INTERIOR AND COMPLETE ANY TOUCH UP PAINTING AS NEEDED.
10. CHECK DOOR ALARM FOR PROPER OPERATION.
11. CHECK LIGHTING AND AIR CONDITIONING FOR PROPER OPERATION.
12. INSPECT COMPLETE BUILDING COSMETICS.

Offload Notes

1. BUILDING SHALL BE OFFLOADED LEVEL.
2. ALL CABLES, SHACKLING, SPREADER BARS, ETC. SHALL BE DESIGNED AND SUPPLIED BY OTHERS.
3. ALL LIFTING POINTS SHALL BE USED.
4. 1 1/8" MAXIMUM DIAMETER FOR SHACKLES.
5. REMOVE BRACKET AFTER PLACEMENT OF SHELTER AND INSTALL ANCHOR TIE-DOWN PLATES (SHIPPED LOOSE INSIDE SHELTER) AT EACH LOCATION.
6. OFFLOAD BUILDING WITH CABLES IN VERTICAL POSITION. ANGLED POSITION CABLES ARE NOT ACCEPTABLE.

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MAGTECH MIDWEST INC.
AN AFFILIATE OF FORTUNE WIRELESS INC.
1715 MAGNAVOX WAY, FORT WAYNE, INDIANA 46804
(260) 436-2568 • (260) 436-2402 FAX

CERTIFICATION:

FOR REFERENCE ONLY

RELEASE	
DATE	
05-05-14	CONSTRUCTION DWGS - REV A
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08-11-14	CONSTRUCTION DWGS - REV C
01-30-15	CONSTRUCTION DWGS - REV D
02-25-15	CONSTRUCTION DWGS - REV 0

DRAWN BY: JLM
CHECKED BY: DJH

SITE NAME:

LAWC KASOLD CELL SITE

SITE ADDRESS:

1293 E 1200 ROAD LAWRENCE, KS 66047

SHEET TITLE:

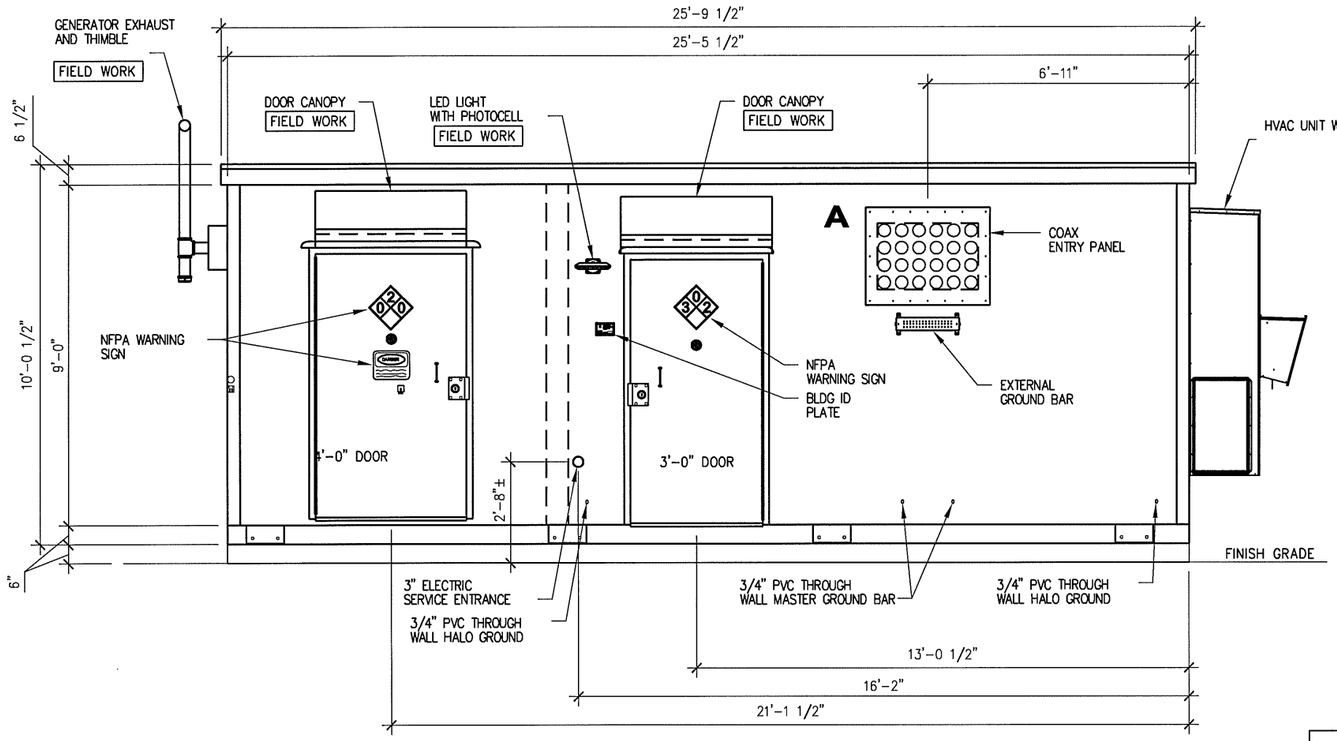
EQUIPMENT SHELTER PLAN

A&E PROJECT NO.:

001-1504

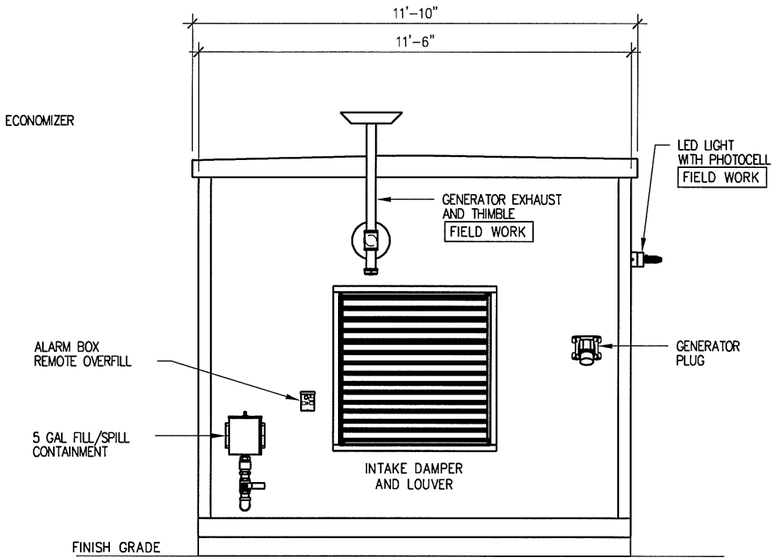
SHEET NO.:

C-8



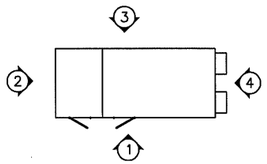
1 Front Wall Elevation

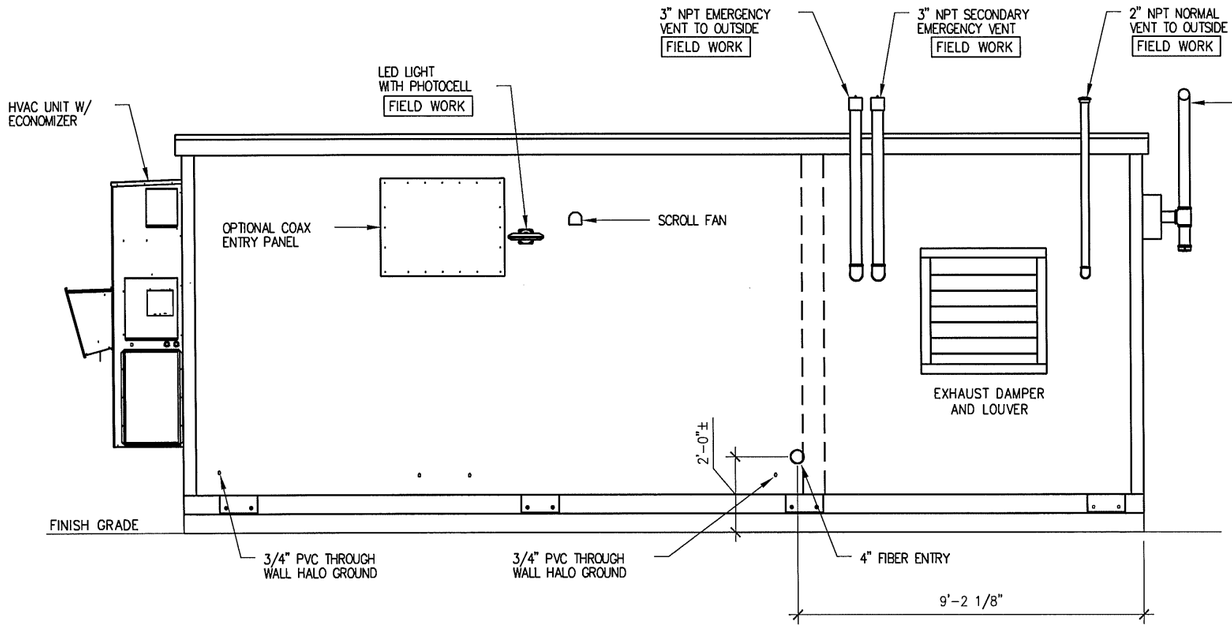
SCALE: 1/4" = 1'-0"



2 End Wall Elevation

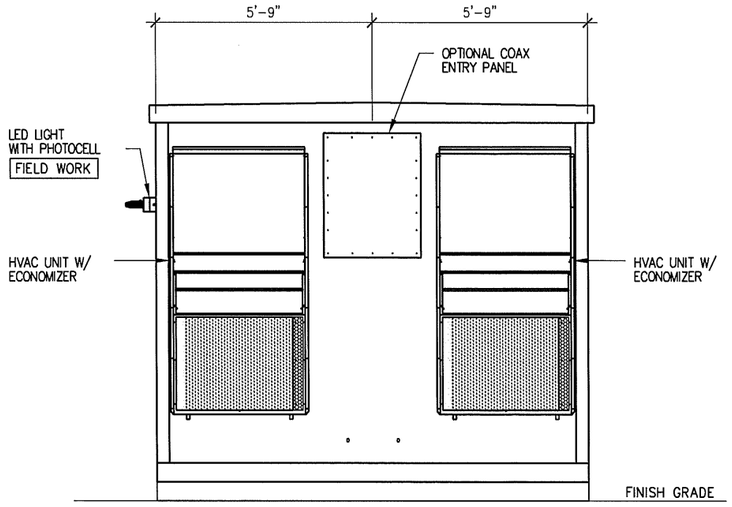
SCALE: 1/4" = 1'-0"





3 Rear Wall Elevation

SCALE: 1/4" = 1'-0"



4 End Wall Elevation

SCALE: 1/4" = 1'-0"

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02-25-15	CONSTRUCTION DWGS - REV 0

DRAWN BY: JLM
CHECKED BY: DJH

SITE NAME:

LAWC KASOLD CELL SITE

SITE ADDRESS:

1293 E 1200 ROAD LAWRENCE, KS 66047

SHEET TITLE:

EQUIPMENT SHELTER ELEVATIONS

A&E PROJECT NO.:

001-1504

SHEET NO.:

C-9

Landscape Notes

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LANDSCAPE PLAN.
2. ALL NECESSARY PERMITS AND APPROVALS FROM AGENCIES GOVERNING THIS WORK SHALL BE SECURED BY THE GENERAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.
3. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL ROADS, WALKS, AND ADJACENT PROPERTIES CLEAR OF ANY DEBRIS, DIRT, AND CONSTRUCTION EQUIPMENT DURING CONSTRUCTION.
4. THE GENERAL CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LINE LOCATIONS PRIOR TO BEGINNING ANY WORK. ANY DEVIATIONS FROM THE DESIGN LOCATIONS SHALL BE REPORTED TO THE ARCHITECT/ENGINEER.
5. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND SCHEDULING ALL LANDSCAPE RELATED WORK WITH OTHER CONTRACTORS AND TRADES.
6. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE ARCHITECT/ENGINEER IF ANY DISCREPANCIES IN THE CONSTRUCTION DOCUMENTS ARE FOUND.
7. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR GRADING TO WITHIN 1" OF THE FINAL GRADE IN ALL LAWN AREAS. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE FINAL GRADING IN ALL LAWN AREAS. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR INSURING POSITIVE DRAINAGE IN ALL PLANTING BEDS.
8. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SEEDING ALL LAWN AREAS INDICATED ON THE LANDSCAPE PLAN WITH THE FOLLOWING SEED MIX AND APPLICATION RATE:

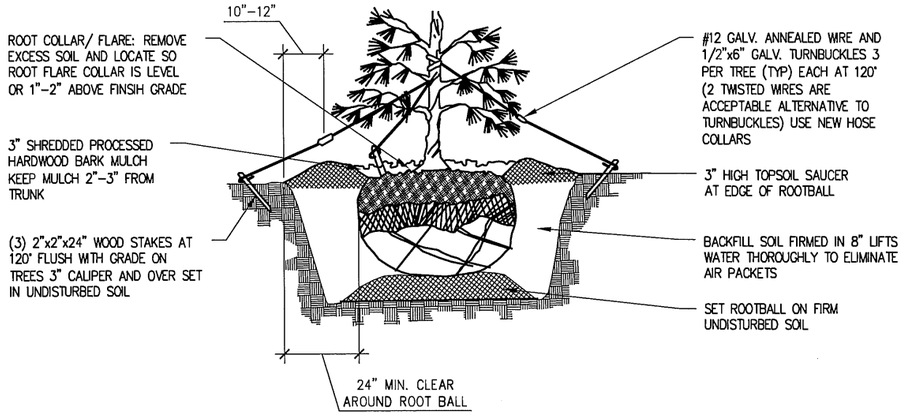
   SEED MIX: 60% BLUEGRASS
   20% PERENNIAL RYE
   20% TALL FESCUE

   APPLICATION RATE: 5 LBS. PER 1,000 SQ. FT.
9. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A PLANTING SOIL BACK FILLMIX IN ALL TREE, EVERGREEN, AND SHRUB PIT BEDS ACCORDING TO THE PLANTING DETAILS. THE GENERAL CONTRACTOR SHALL ALSO PROVIDE 12" OF PLANTING SOIL BACK FILLIN THE PLANTING BEDS. THE PLANTING SOIL BACK FILLMIX SHALL CONSIST OF THE FOLLOWING:

   60% APPROVED TOPSOIL
   20% COARSE SAND
   10% SPHAGNUM PEAT MOSS
   10% PROCESSED SHREDDED HARDWOOD MULCH
10. HERBICIDE (TREFLAIN OR EQUIVALENT) SHALL BE APPLIED TO ALL PLANT BEDS PRIOR TO PLANTING FOR NOXIOUS WEEDS.
11. ALL PLANTING BEDS SHALL HAVE A MINIMUM OF 3" PROCESSED SHREDDED HARDWOOD MULCH AND A NATURAL SPADE EDGE.
12. ALL TREES SHALL BE INSTALLED PER LANDSCAPE PLANTING DETAILS.
13. DIMENSIONS FOR HEIGHTS, SPREAD, AND CALIPER OF TREES ON THE PLANS ARE GENERAL GUIDES FOR THE MINIMUM DESIRED SIZE OF EACH PLANT. EACH PLANT SHALL HAVE A UNIFORM AND CONSISTENT SHAPE AS IT PERTAINS TO THE SPECIFICATIONS AND PARTICULAR SPECIES, ANY PLANT MATERIAL WHICH FAILS TO CONFORM TO THE SPECIFICATIONS IS SUBJECT TO RELECTION BY THE ARCHITECT/ENGINEER.
14. THE QUANTITIES INDICATED ON THE PLANS ARE PROVIDED FOR THE BENEFIT OF THE GENERAL CONTRACTOR ONLY. IN THE EVENT OF A DISCREPANCY, THE QUANTITIES ON THE PLANS WILL TAKE PRECEDENCE OVER THOSE LISTED IN THE PLAN NOTES. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL QUANTITIES, CALCULATIONS AND THE LIABILITY PERTAINING TO THOSE QUANTITIES AND ANY RELATED CONTRACT DOCUMENTS AND/OR PRICE QUOTATIONS.
15. ALL TREES PLANTED IN LAWN AREAS SHALL BE PLANTED IN A BED OF PROCESSED SHREDDED HARDWOOD MULCH 3" IN DEPTH AND 10" TO 12" BEYOND SPREAD OF THE TREE.
16. ALL LANDSCAPE PLANTS SHALL BE WARRANTED BY VERIZON WIRLESS AND REPLACED AS REQUIRED BY VERIZON WIRLESS FOR A PERIOD OF ONE (1) YEAR AFTER PLANTING. THEREAFTER THE ONE (1) YEAR PERIOD, IT SHALL BE THE PROPERTY OWNERS RESPONSIBILTY TO REPLACE ANY DEAD PLANTINGS.

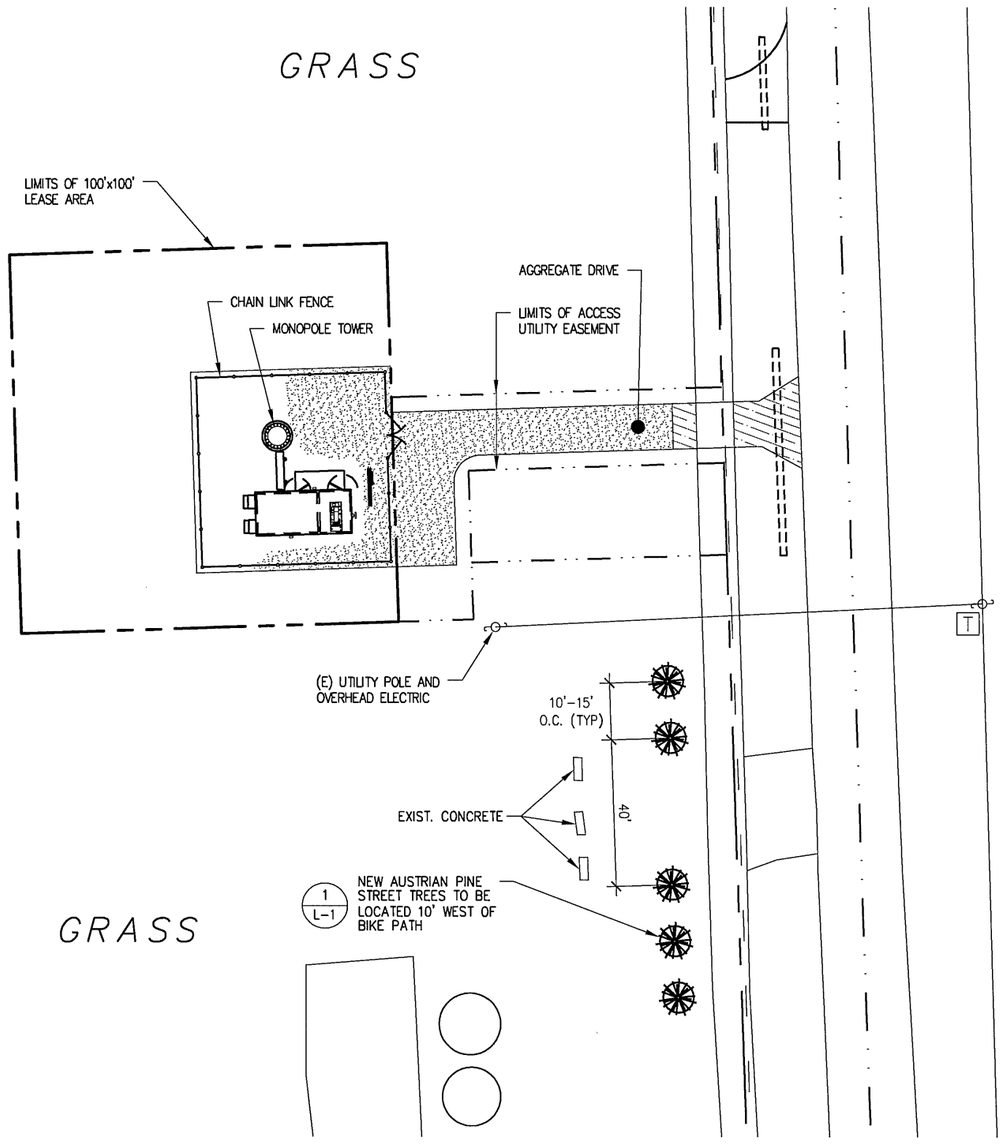
GENERAL NOTES

1. TREES/SHRUBS OVER 5' IN HEIGHT SHALL BE GUYED.
   CREPE PAPER TREE WRAP TO FIRST BRANCHING
2. (DECIDUOUS TREES).
3. REMOVE TOP 1/3 OF BURLAP ON ROOT BALL.
4. PROVIDE PLASTIC OR METAL FLAGS ON GUY WIRES IN OR NEAR SIDEWALKS.



1 Tree Planting Detail

NO SCALE



Landscape Plan

NORTH

20 0 20 40

1 inch = 40ft.

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CERTIFICATION:
GREGORY J. SUHR LICENSED 18922 PROFESSIONAL ENGINEER KANSAS

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DRAWN BY: JLM
CHECKED BY: DJH

SITE NAME:

LAWC KASOLD CELL SITE

SITE ADDRESS:

1293 E 1200 ROAD LAWRENCE, KS 66047

SHEET TITLE:

LANDSCAPE PLAN

A&E PROJECT NO.:

001-1504

SHEET NO.:

L-1

GENERAL NOTES

1. ALL REFERENCED STANDARDS REFERRED TO BE ENFORCED AT THE TIME THESE PLANS AND SPECIFICATIONS ARE ISSUED FOR BID.
2. WORK NOT INDICATED ON A PART OF THE DRAWINGS BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES SHALL BE REPEATED AND INCLUDED IN THE PROJECT.
3. IN THE CASE OF CONFLICTS BETWEEN THE NOTES, DETAILS AND SPECIFICATIONS, THE MOST RIGID REQUIREMENTS SHALL GOVERN.
4. THE CONTRACTOR SHALL NOT MAKE DEVIATIONS FROM THE DESIGN DRAWINGS WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
5. THE CONTRACTOR SHALL TAKE ALL THE NECESSARY PRECAUTIONS/MEASURES TO PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITY LINES FROM DAMAGES. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY DAMAGES THAT MAY OCCUR DURING CONSTRUCTION.
6. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS REQUIRED BY HIM TO PERFORM HIS WORK BEFORE STARTING CONSTRUCTION.
7. REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS AND DIMENSIONS OF CHASES, INSERTS, OPENINGS, SLEEVES, DRIPS, REVEALS, FINISHES, DEPRESSIONS, DOORS, EXPANSION JOINT MATERIAL AND OTHER PROJECT REQUIREMENTS NOT SHOWN ON STRUCTURAL DRAWINGS.
8. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTIONS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, CIVIL AND ALL OTHER CONTRACT DRAWINGS RELATED TO OTHER TRADES. THE CONTRACTOR IS RESPONSIBLE TO CHECK AND COORDINATE DIMENSIONS, CLEARANCES, ETC., WITH THE WORK OF OTHER TRADES.
9. JOB SAFETY, CONSTRUCTION PROCEDURES AND CONSTRUCTION MEANS AND METHODS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
10. COMPLETE SHOP DRAWINGS FOR CONSTRUCTION OF ALL APPLICABLE SPECIALTY ITEMS INCLUDING BUT NOT LIMITED TO CURTAINWALL GLAZING SYSTEMS AND LIGHTGAUGE STEEL FRAMING SHALL BE SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF KANSAS AND SHALL BE AVAILABLE AT THE JOB SITE DURING THE TIMES OF INSPECTION.
11. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.

FOUNDATION

1. THE ALLOWABLE BEARING PRESSURE USED IN DESIGN OF SHALLOW FOUNDATION IS ASSUMED TO BE 1,500 PSF.
2. CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SUBSURFACE AND EXISTING CONDITIONS BEFORE COMMENCING WORK.
3. ALL CONCRETE SHALL BE CONTROLLED CONCRETE AND ALL CONCRETING PRACTICES SHALL CONFORM WITH ACI-318-05, "AMERICAN CONCRETE INSTITUTE, BUILDING CODE FOR REINFORCED CONCRETE." CONCRETE DETAILS SHALL BE IN ACCORDANCE WITH ACI-135, "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" UNLESS OTHERWISE NOTED ON THE DRAWINGS. CONCRETE TESTS FOR THE PRELIMINARY DESIGN MIX PREPARED BY AN APPROVED LABORATORY MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. THE CONTRACTOR SHALL PLACE NO CONCRETE WITHOUT THE APPROVED DESIGN MIX.
4. A RIGID TEMPLATE SHALL BE USED TO INSTALL ALL ANCHOR BOLTS.
5. UNLESS OTHERWISE NOTED ON PLAN, ALL CONCRETE SHALL BE NORMAL WEIGHT WITH 28 DAYS COMPRESSIVE STRENGTH AS FOLLOWS:

A. FOOTINGS	3000 PSI
B. CONCRETE SLAB ON GRADE	3000 PSI

6. ALL REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60 (fy=60,000 PSI) ALL REINFORCING TO BE WELDED SHALL CONFORM TO ASTM A-706. THE REINFORCING BARS SUPPLIER SHALL PROVIDE THE ENGINEER WITH AN AFFIDAVIT OF THE PRODUCER OF STEEL CERTIFYING THAT THE STEEL MEETS THE REQUIREMENTS OF THE ASTM.
7. ALL REINFORCEMENT SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, THE CONTRACTOR SHALL PROVIDE ADDITIONAL BARS OR STIRRUPS NECESSARY TO SUPPORT ALL BARS AS REQUIRED TO COMPLETE HIS WORK.
8. UNLESS OTHERWISE NOTED ON STRUCTURAL DRAWINGS, PROVIDE MINIMUM CONCRETE COVER FOR REINFORCING BARS AS FOLLOWS:

CAST AGAINST EARTH	3"
EXPOSED TO EARTH OR WEATHER	
#5 AND SMALLER	1½"
#6 AND LARGER	2"
NOT EXPOSED TO EARTH OR WEATHER	
SLAB AND WALL	
#11 AND SMALLER	¾"

9. GROUT SHALL BE NON-METALLIC NO SHRINK WITH A MINIMUM STRENGTH OF 5,000 PSI AT 28 DAYS.

STRUCTURAL STEEL

1. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATIONS. STRUCTURAL FABRICATOR SHALL BE AISC CERTIFIED.
2. STRUCTURAL STEEL SHALL BE AS SPECIFIED BELOW, UNLESS OTHERWISE NOTED:

   A. CHANNELS, ANGLES AND PLATES : ASTM A36 WITH MIN. YIELD STRENGTH OF 36 KSI OR ASTM A572 GRADE 50 WITH MIN. YIELD STRENGTH OF 50 KSI.

3. THE FRAME SHALL BE CARRIED UP TRUE AND PLUMB AND TEMPORARY BRACING SHALL BE INTRODUCED WHEREVER NECESSARY TO ACCOUNT FOR ALL LOADS TO WHICH THE STRUCTURE MAY BE SUBJECTED, INCLUDING EQUIPMENT AND OPERATION OF SAME. SUCH BRACING SHALL BE THE RESPONSIBILITY OF THE STEEL CONTRACTOR AND SHALL BE LEFT IN PLACE AS LONG AS REQUIRED FOR SAFETY.
4. ALL BOLTS SHALL CONFORM TO THE FOLLOWING ASTM. DESIGNATION, LATEST EDITION: HIGH STRENGTH BOLTS A325-N, U.O.N.
5. ALL BOLTS SHALL BE ¾" DIAMETER MINIMUM UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
6. ALL SHOP OR FIELD CONNECTIONS SHALL BE HIGH STRENGTH BOLTED OR WELDED. BOLTED CONNECTIONS SHALL BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH RCSC-2000 (SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS). ALL STRUCTURAL WELDED JOINTS SHALL CONFORM TO THE PROVISIONS OF AWS D1.1, STRUCTURAL WELDING CODE BY AMERICAN WELDING SOCIETY.
7. PROVISIONS SHALL BE MADE FOR CONNECTIONS OF OTHER TRADES INCLUDING CUTTING AND PUNCHING OF STRUCTURAL MEMBERS, WHERE REQUIRED BY THE DRAWING OR FOR WHICH INFORMATION IS FURNISHED PRIOR TO FABRICATION.
8. OVERSIZED OR SLOTTED HOLES SHALL NOT BE USED FOR ANY CONNECTIONS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR APPROVED IN WRITING BY THE ENGINEER.
9. THE USE OF A CUTTING TORCH IN THE FIELD WILL NOT BE PERMITTED.
10. WELDING ELECTRODES SHALL BE CONFORM TO E70XX ELECTRODES, AND SHALL HAVE COMPATIBLE CHARY-V-NOTCH WHEN WELDING TO THE BASE METAL WITH CHARY-V-NOTCH REQUIREMENT.
11. PROOF OF WELDER CERTIFICATION SHALL BE AVAILABLE AT THE JOB SITE DURING TIMES OF INSPECTION.
12. ALL STRUCTURAL STEEL NOT RECEIVING SPRAY-ON FIREPROOFING SHALL BE PRIME PAINTED. STRUCTURAL STEEL SHALL RECEIVE ONE COAT OF PAINT, ZINC OR BITUMINOUS COATING OR EQUIVALENT METAL PROTECTION BEFORE ERECTION AS SPECIFIED. PARTS OF STRUCTURAL STEEL LEFT UNPAINTED BECAUSE OF WELDING, OR BOLTING SHALL RECEIVE A FIELD APPLICATION OF METAL PROTECTION.
13. STRUCTURAL STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE.
14. DESIGN OF SPECIAL CONNECTIONS BETWEEN STEEL FRAMING COMPONENTS BY OTHER THAN THE PROJECT STRUCTURAL ENGINEER-OF-RECORD SHALL BE PERFORMED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF KANSAS INCLUDING BUT NOT LIMITED TO BRACE END CONNECTIONS, MOMENT-RESISTING CONNCETIONS, MODIFIED BEAM SEAT CONNECTIONS, AND MEMBER SPLICE CONNECTIONS.
15. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
16. ALL BOLTS, ANCHORS, AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
17. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.

DESIGN STANDARD

1. ASCE 7-05 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
2. MANUAL OF STEEL CONSTRUCTION AISC LRFD 3rd EDITION
3. MANUAL OF STEEL CONSTRUCTION AISC ASD 9th EDITION
4. MANUAL OF CONCRETE PRACTICE ACI 318-05

DESIGN LOADS

TOTAL SHELTER WEIGHT = 76,000 LBS
WIND LOAD = 12.8 PSF (V = 90 MPH)

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LICENSED
18922
KANSAS
PROFESSIONAL ENGINEER

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CHECKED BY: DJH

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LAWC KASOLD CELL SITE

SITE ADDRESS:

1293 E 1200 ROAD LAWRENCE, KS 66047

SHEET TITLE:

STRUCTURAL NOTES

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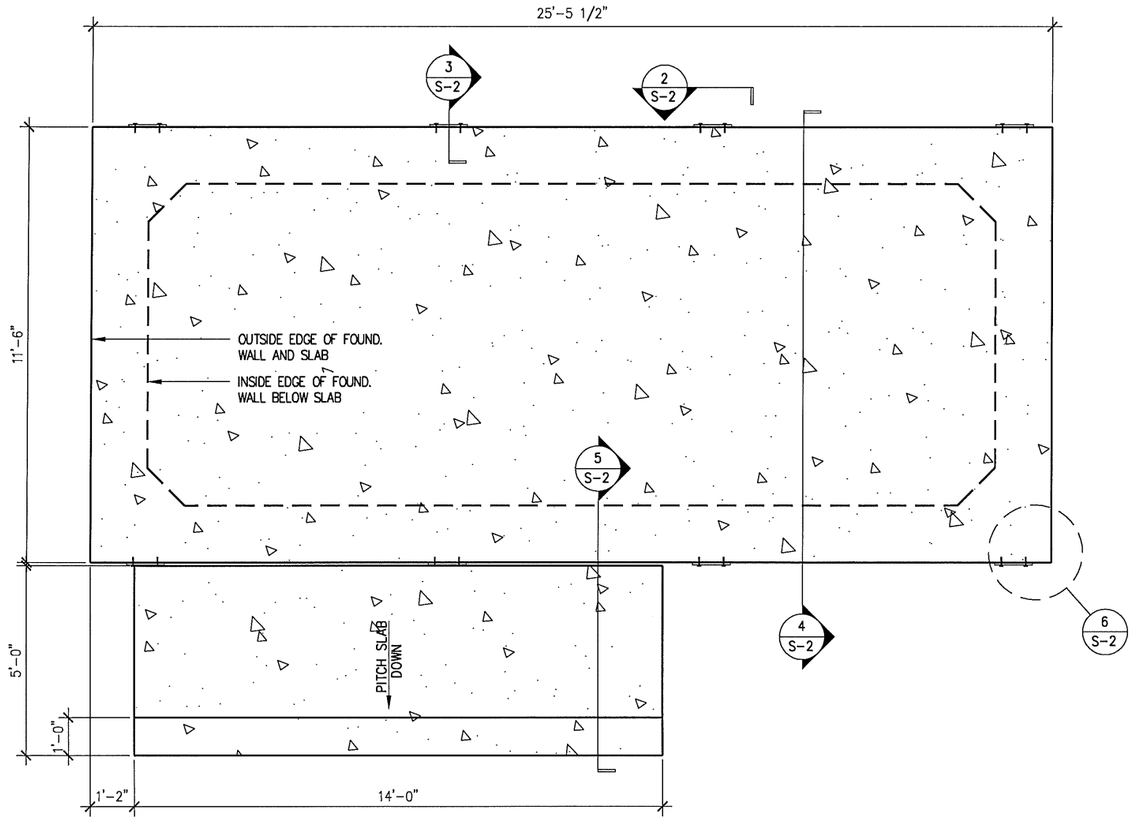
001-1504

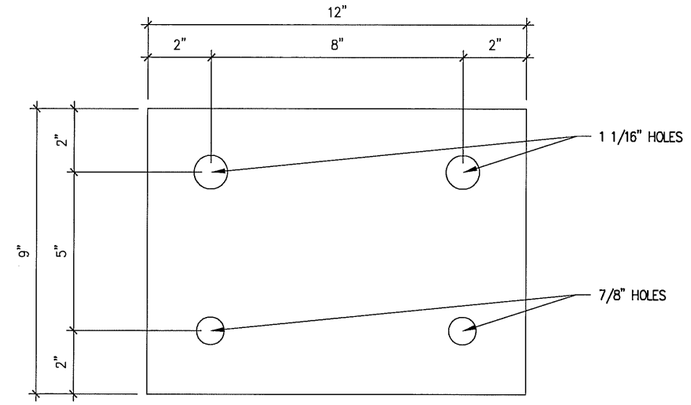
SHEET NO.:

S-1



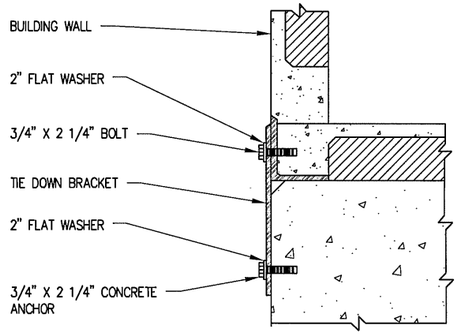
1 Shelter Foundation

SCALE: 1/4" = 1'-0"



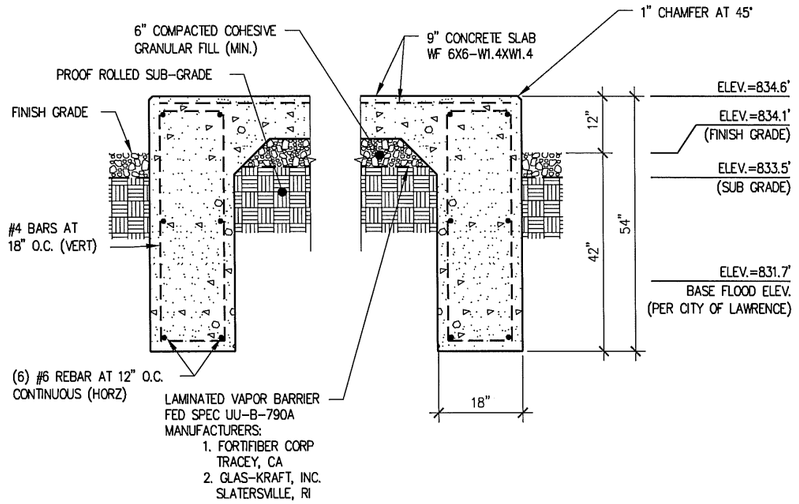
2 Tie Down Detail

SCALE: N.T.S.



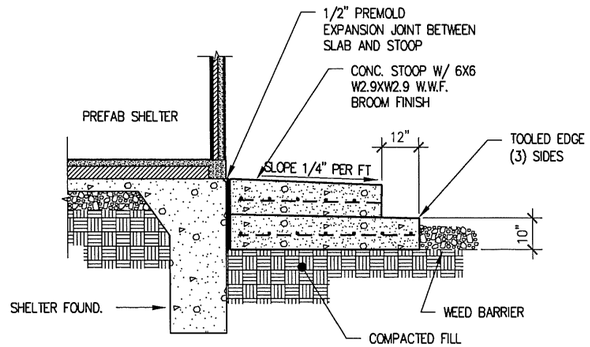
3 Tie Down Section

SCALE: 3/4" = 1'-0"



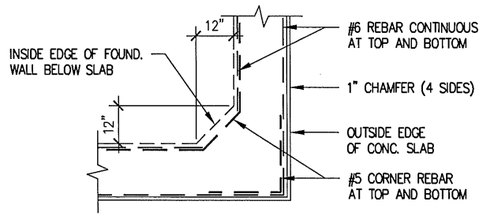
4 Foundation Section

SCALE: 1/4" = 1'-0"



5 Concrete Stoop

SCALE: 1/4" = 1'-0"



6 Corner Reinforcing

SCALE: 1/4" = 1'-0"

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02-25-15	CONSTRUCTION DWGS - REV O

DRAWN BY: JLM
CHECKED BY: DJH

SITE NAME:

LAWC KASOLD CELL SITE

SITE ADDRESS:

1293 E 1200 ROAD LAWRENCE, KS 66047

SHEET TITLE:

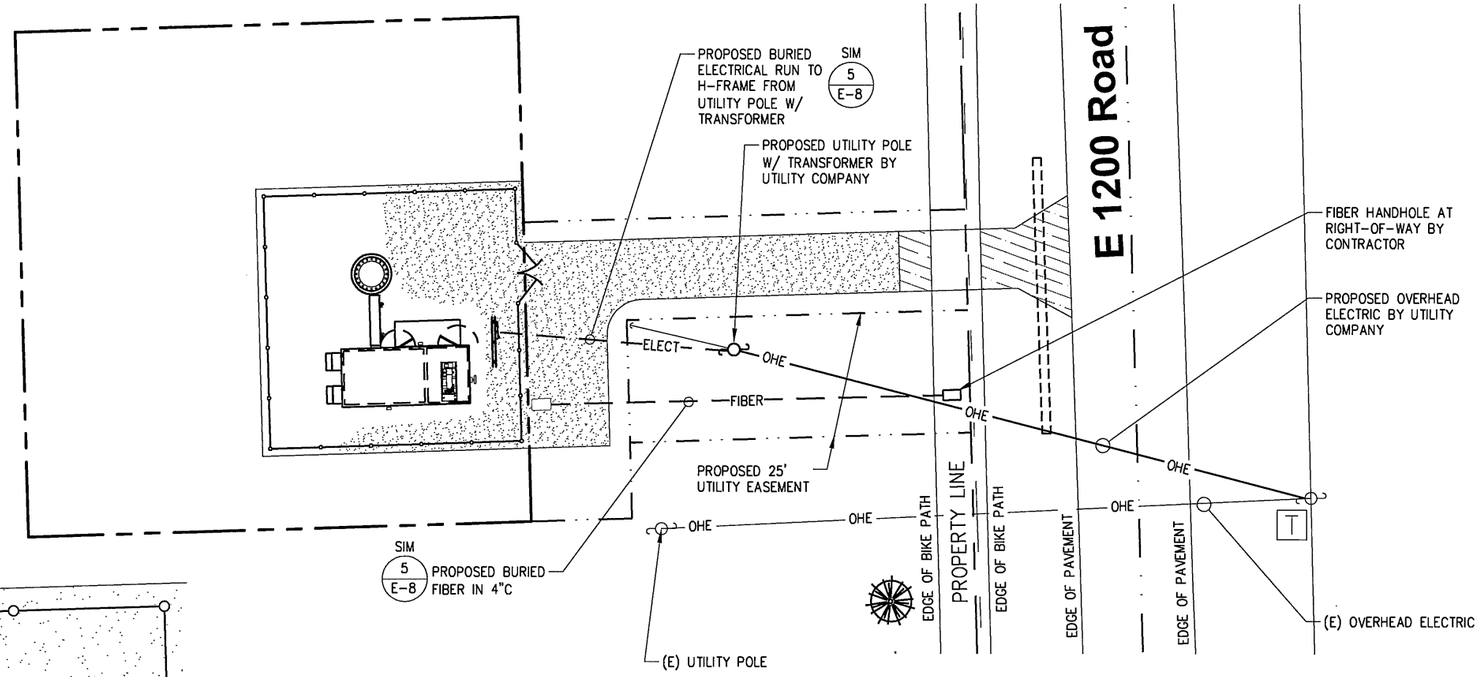
SLAB PLAN AND SECTIOI

A&E PROJECT NO.:

001-1504

SHEET NO.:

S-2

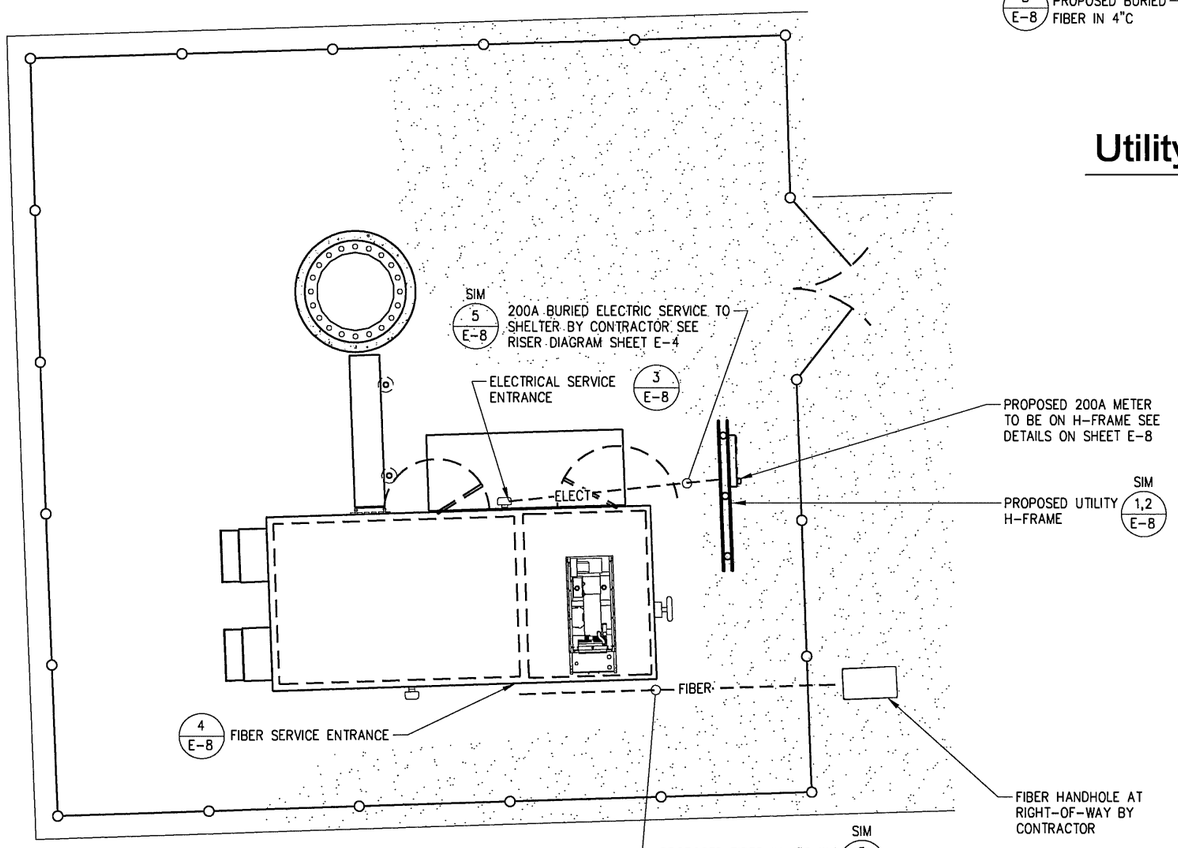


Utility Site Plan

NORTH

15 0 15 30

1 inch = 30ft.



Enlarged Utility Plan

NORTH

10 0 5 10

1 inch = 10ft.

GENERAL NOTES:

1. STUB CONDUIT 6" FROM NEW POLE
2. 4 GANG METER BASE BY VERIZON
3. 2-3" SCH 40 CONDUIT 30" DEEP TO METER BY VERIZON
4. CONDUCTOR TO METER BY POWER CO.

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KANSAS
18922

RELEASE DATE	
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08-11-14	CONSTRUCTION DWGS – REV C
01-30-15	CONSTRUCTION DWGS – REV D
02-25-15	CONSTRUCTION DWGS – REV 0

DRAWN BY: JLM
CHECKED BY: DJH

SITE NAME:

LAWC KASOLD CELL SITE

SITE ADDRESS:

1293 E 1200 ROAD LAWRENCE, KS 66047

SHEET TITLE:

UTILITY SITE PLAN

A&E PROJECT NO.:

001-1504

SHEET NO.:

E-0

Alternator Specifications

Specifications	Alternator
Manufacturer	Kohler
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Rare-Earth Permanent-Magnet
Leads: quantity, type	12, Reconnectable 4, 110-120/220-240
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
Material	Class H
Temperature rise	130°C, Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Voltage regulation, no-load to full-load	Controller Dependent
One-step load acceptance	100% of Rating
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
480 V 4P7BX (12 lead)	180
480 V 4P8X (12 lead)	261
480 V 4P10X (12 lead)	275
240 V 4Q8X (4 lead)	121
240 V 4Q10X (4 lead)	144

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- Self-ventilated and dripproof construction.
- Vacuum-impregnated windings with fungus-resistant epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.
- Fast-Response™ II brushless alternator with brushless exciter for excellent load response.

Application Data

Engine

Engine Specifications	
Manufacturer	John Deere
Engine model	4024HF285B
Engine type	4-Cycle, Turbocharged
Cylinder arrangement	4 Inline
Displacement, L (cu. in.)	2.4 (149)
Bore and stroke, mm (in.)	86 x 105 (3.39 x 4.13)
Compression ratio	18.2:1
Piston speed, m/min. (ft./min.)	375 (1230)
Main bearings: quantity, type	5, Replaceable Insert
Rated rpm	1800
Max. power at rated rpm, kWm (BHP)	60 (80)
Cylinder head material	Cast Iron
Crankshaft material	Ductile Iron
Valve material:	
Intake	Chromium-Silicon Steel
Exhaust	Stainless Steel
Governor: type, make/model	JDEC Electronic, Level 18, EUP
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±0.25%
Frequency	Fixed
Air cleaner type, all models	Dry

Exhaust

Exhaust System	
Exhaust manifold type	Dry
Exhaust flow at rated kW, m^3/min. (cfm)	12.0 (423)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	574 (1066)
Maximum allowable back pressure, kPa (in. Hg)	7.5 (2.2)
Exhaust outlet size at engine hookup, mm (in.)	63.5 (2.5)

Engine Electrical

Engine Electrical System	
Battery charging alternator:	
Ground (negative/positive)	Negative
Volts (DC)	12
Ampere rating	70
Starter motor rated voltage (DC)	12
Battery, recommended cold cranking amps (CCA):	
Quantity, CCA rating	One, 640
Battery voltage (DC)	12

Fuel

Fuel System	
Fuel supply line, min. ID, mm (in.)	11.0 (0.44)
Fuel return line, min. ID, mm (in.)	6.0 (0.25)
Max. lift, engine-driven fuel pump, m (ft.)	3.0 (10.0)
Max. fuel flow, Lph (gph)	82 (21.7)
Fuel prime pump	Manual
Fuel filter	
Secondary	5 Microns @ 98% Efficiency
Water Separator	Yes
Recommended fuel	#2 Diesel

Lubrication

Lubricating System	
Type	Full Pressure
Oil pan capacity, L (qt.)	7.3 (7.7)
Oil pan capacity with filter, L (qt.)	8.2 (8.7)
Oil filter: quantity, type	1, Cartridge
Oil cooler	Water-Cooled

G5-359 (50REOZJD) 3/12b

Application Data

Cooling

Radiator System	
Ambient temperature, °C (°F)*	50 (122)
Engine jacket water capacity, L (gal.)	2.6 (0.7)
Radiator system capacity, including engine, L (gal.)	10.6 (2.8)
Engine jacket water flow, Lpm (gpm)	98 (26)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	35.7 (2030)
Heat rejected to air charge cooler at rated kW, dry exhaust, kW (Btu/min.)	10.9 (621)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	597 (23.5)
Fan, kWm (HP)	1.2 (1.6)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.125 (0.5)

* Enclosure reduces ambient temperature capability by 5°C (9°F).

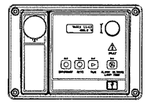
Operation Requirements

Air Requirements	
Radiator-cooled cooling air, m^3/min. (scfm)‡	96 (3400)
Combustion air, m^3/min. (cfm)	4.3 (152)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	14.0 (747)
Alternator, kW (Btu/min.)	7.6 (435)

‡ Air density = 1.20 kg/m^3 (0.075 lbm/ft^3)

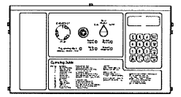
Fuel Consumption	
Diesel, Lph (gph) at % load	**Standby Rating**
100%	16.2 (4.3)
75%	12.1 (3.2)
50%	8.5 (2.2)
25%	5.0 (1.3)
Diesel, Lph (gph) at % load	**Prime Rating**
100%	13.7 (3.6)
75%	10.8 (2.9)
50%	7.6 (2.0)
25%	4.5 (1.2)

Controllers



Decision-Maker® 3000 Controller
Provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility.
- Digital display and menu control provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication thru a PC via network or serial configuration
- Controller supports Modbus® protocol
- Integrated hybrid voltage regulator with ±0.5% regulation
- Built-in alternator thermal overload protection
- NFPA 110 Level 1 capability

Refer to G6-100 for additional controller features and accessories.



Decision-Maker® 550 Controller
Provides advanced control, system monitoring, and system diagnostics with remote monitoring capabilities.
- Digital display and keypad provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication thru a PC via network or modem configuration
- Controller supports Modbus® protocol
- Integrated voltage regulator with ±0.25% regulation
- Built-in alternator thermal overload protection
- NFPA 110 Level 1 capability

Refer to G6-46 for additional controller features and accessories.

1 **Generator Data**
SCALE: N.T.S

verizon wireless

MAGTECH MIDWEST INC.
AN AFFILIATE OF FORTUNE WIRELESS INC.
1715 MACHAVOX WAY, FORT WAYNE, INDIANA 46804
(260) 436-2658 • (260) 436-2402 FAX

CERTIFICATION:

FOR REFERENCE ONLY

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DRAWN BY: JLM
CHECKED BY: DJH

SITE NAME:

LAWC KASOLD CELL SITE

SITE ADDRESS:

1293 E 1200 ROAD LAWRENCE, KS 66047

SHEET TITLE:

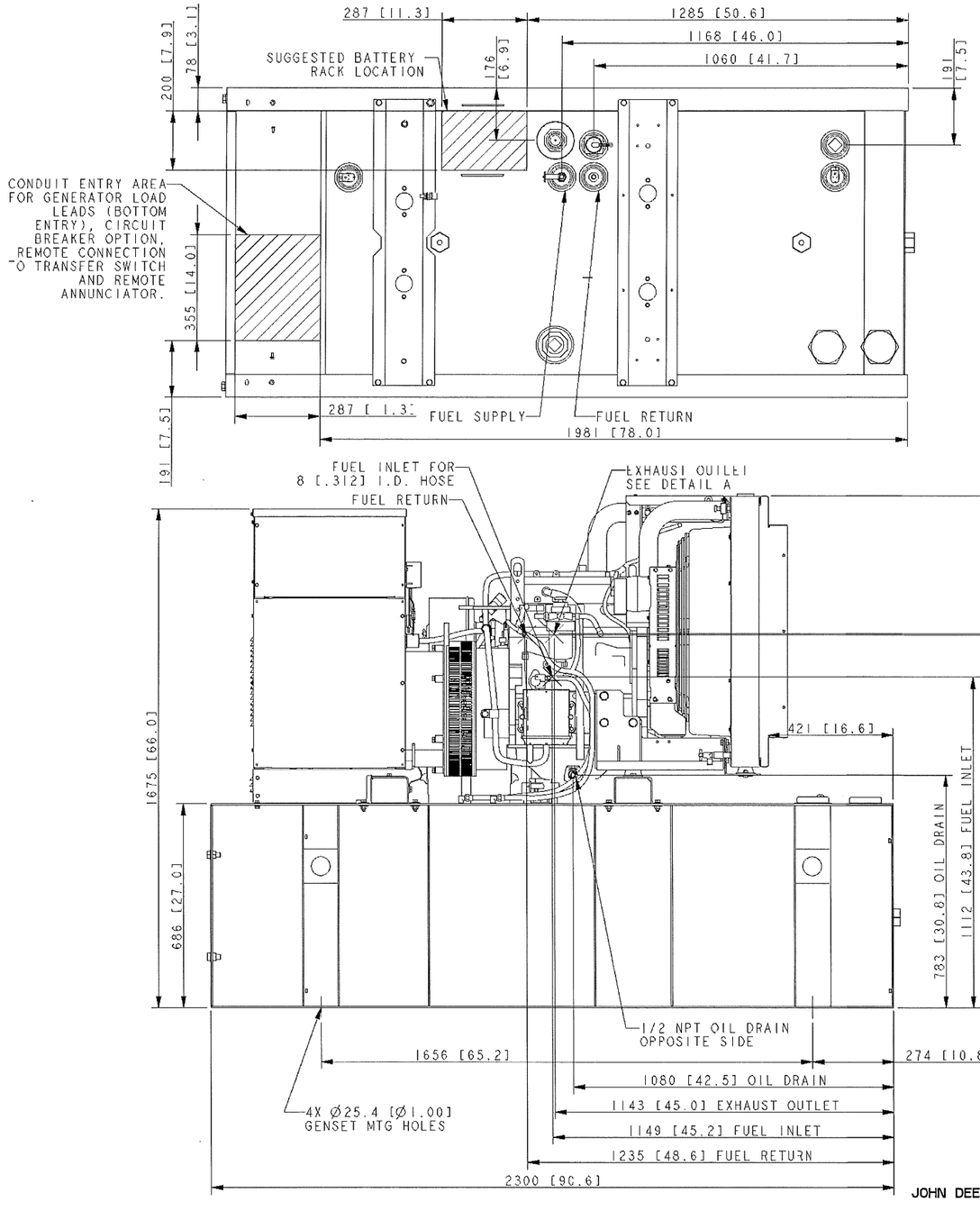
GENERATOR DATA

A&E PROJECT NO.:

001-1504

SHEET NO.:

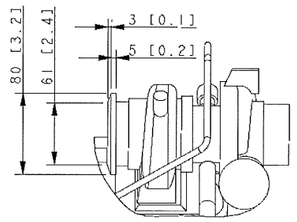
E-1



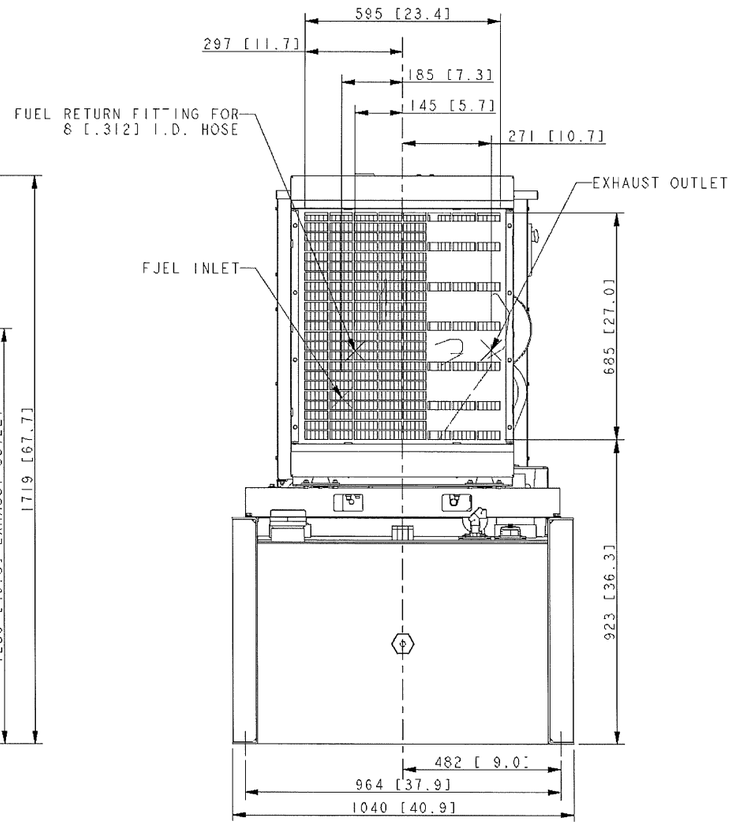
50 MODEL, 60HZ,
4P8X, 4Q8X, 4Q10
JOHN DEERE TIER III VERIZON
210 GAL. TANK

1 Generator Details

SCALE: N.T.S.



DETAIL A
ENGINE EXHAUST & OUTLET
SCALE 0.40



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MIDWEST INC.
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1715 MADNAVOX WAY, FORT WAYNE, INDIANA 46804
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1293 E 1200 ROAD
LAWRENCE, KS 66047

SHEET TITLE:

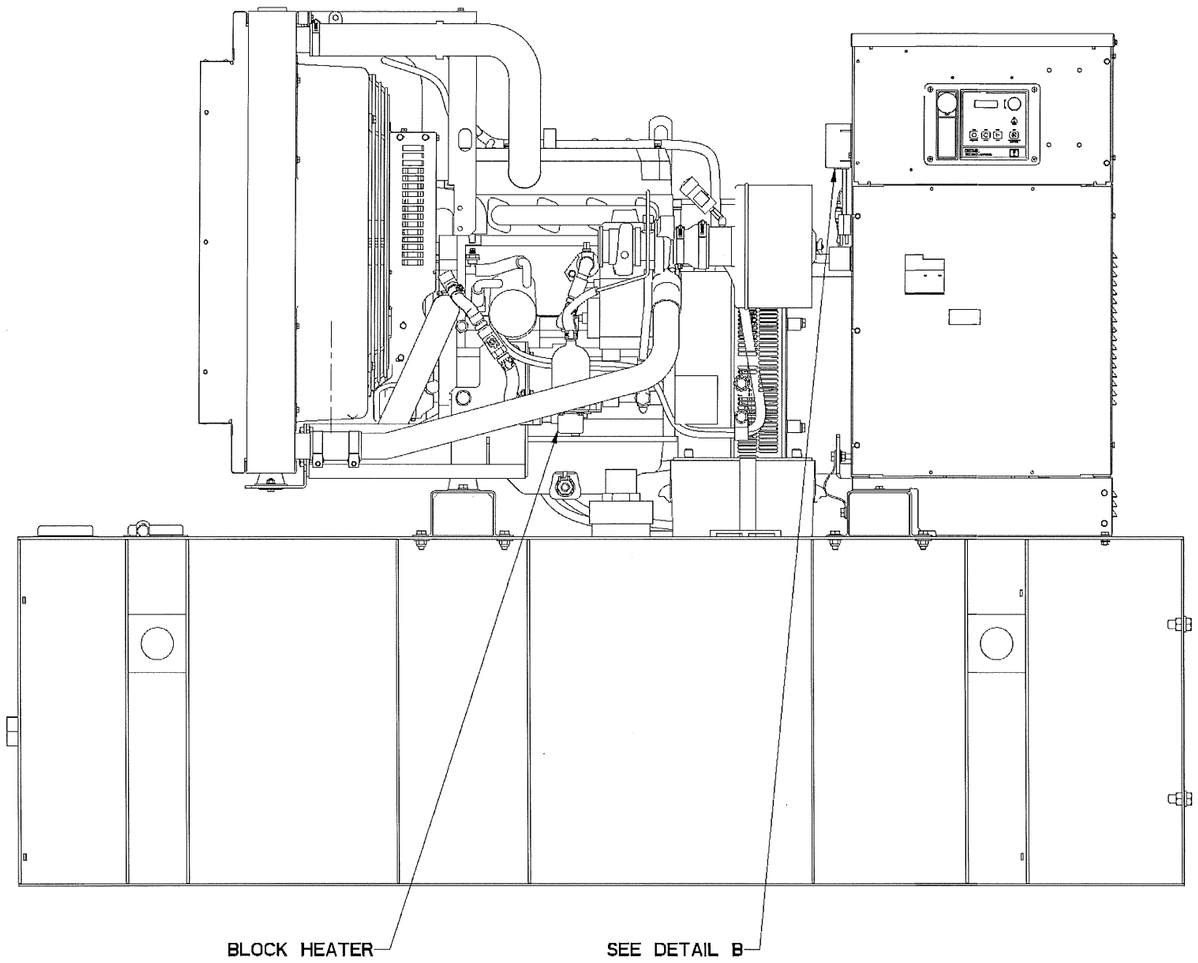
GENERATOR DETAILS

A&E PROJECT NO.:

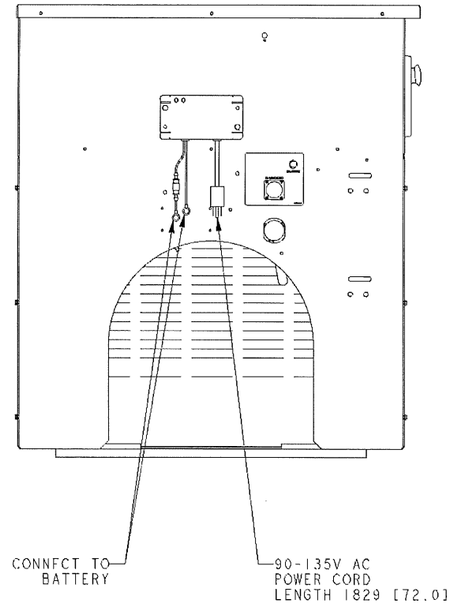
001-1504

SHEET NO.:

E-2



BLOCK HEATER
120 AND 240 VOLT



DETAIL B
BATTERY CHARGER

50 MODEL, 60HZ,
4P8X, 4Q8X, 4Q10
JOHN DEERE TIER III VERIZON
210 GAL. TANK

1 Generator Details

SCALE: N.T.S.

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MIDWEST INC.
AN AFFILIATE OF FORTUNE WIRELESS INC.
1715 MADNAVOX WAY, FORT WAYNE, INDIANA 46804
(260) 436-2668 • (260) 436-2402 FAX

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SITE ADDRESS:

**1293 E 1200 ROAD
LAWRENCE, KS 66047**

SHEET TITLE:

GENERATOR DETAILS

A&E PROJECT NO.:

001-1504

SHEET NO.:

E-3

General Notes

WORK INCLUDES

THESE NOTES AND ACCOMPANYING DRAWINGS COMPLEMENT THE PROVISIONS AND INSTALLATIONS BY THE ELECTRICAL CONTRACTOR, OF ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO INSTALL THE ELECTRICAL WORK COMPLETE IN CONNECTION WITH THIS LESSEE SITE AND SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

1. THE PROVISIONS, INSTALLATION, AND CONNECTION OF A GROUNDING ELECTRODE SYSTEM COMPLETE WITH A BUILDING AND SECONDARY GROUNDING, CELLULAR TELEPHONE COMMUNICATIONS TOWER AND CONNECTIONS TO THE INCOMING ELECTRICAL DISTRIBUTION EQUIPMENT.
2. THE PROVISION AND INSTALLATION OF AN OVERHEAD ELECTRICAL SERVICE OR UNDERGROUND ELECTRICAL SERVICE AND ALL ASSOCIATED WIRE AND CONDUIT AS REQUIRED AND/OR INDICATED ON PLANS.
3. THE PROVISION, INSTALLATION OF CONDUIT AND CONNECTIONS FOR LOCAL TELEPHONE SERVICE.
4. THE FURNISHING AND INSTALLATION OF THE ELECTRICAL SERVICE ENTRANCE CONDUCTORS, CONDUITS, METER SOCKET, AND CONNECTIONS TO THE SERVICE EQUIPMENT WITHIN THE ENCLOSURE.
5. TWO INCH (2") AND THREE INCH (3") DIAMETER PVC CONDUITS SCHEDULE 40.
6. ALL PVC CONDUITS SHOULD BE LEFT WITH NYLON PULL CORD FOR FUTURE USE.
7. EXCAVATION, TRENCHING, AND BACKFILLING FOR CONDUIT(S), CABLE(S), AND EXTERNAL GROUNDING SYSTEM.

CODES, PERMITS, AND FEES

1. ALL REQUIRED PERMITS, LICENSES, INSPECTIONS AND APPROVALS SHALL BE SECURED AND ALL FEES FOR SAME PAID BY CONTRACTOR.
2. THE INSTALLATION SHALL COMPLY WITH ALL APPLICABLE CODES: STATE, LOCAL AND NATIONAL, AND THE DESIGN, PERFORMANCE CHARACTERISTICS AND METHODS OF CONSTRUCTION OF ALL ITEMS AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST ISSUE OF THE VARIOUS APPLICABLE STANDARD SPECIFICATIONS OF THE FOLLOWING AUTHORITIES:

N.E.C.	NATIONAL ELECTRIC CODE
A.N.S.I.	AMERICAN NATIONAL STANDARDS INSTITUTE
I.E.E.E.	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
A.S.T.M.	AMERICAN SOCIETY FOR TESTING MATERIALS
N.E.M.A.	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
U.L.	UNDERWRITERS LABORATORIES, INC.
N.F.P.A.	NATIONAL FIRE PROTECTION ASSOCIATION

GROUNDING ELECTRODE SYSTEM

1. CONNECTIONS
   ALL GROUNDING CONNECTIONS SHALL BE MADE BY THE "CADWELD" PROCESS CONNECTIONS SHALL INCLUDE ALL CABLE TO CABLE, SPLICES, ETC. ALL CABLE TO GROUND RODS, GROUND RODS SPLICES AND LIGHTNING PROTECTION SYSTEM AS INDICATED. GROUND FOUNDATION ONLY AS INDICATED BY PM. ALL MATERIALS USED (MOLDS, WELDING, METAL, TOOLS, ETC.) SHALL BE BY "CADWELD" PROCESS AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND PROCEDURES. GROUND CONDUCTOR SHALL HAVE A MINIMUM 24" BENDING RADIUS.
2. ALL CADWELD CONNECTIONS ON GALVANIZED SURFACES SHALL BE CLEANED THOROUGHLY AND COLORED TO MATCH SURFACE WITH (2) TWO COATS OF SHERWIN-WILLIAMS GALVITE (WHITE) PAINT B50W3 (OR EQUAL) OR SHERWIN-WILLIAMS SILVERBRITE (ALUMINUM) B59S11 (OR EQUAL).
3. ALL ELECTRICAL & MECHANICAL GROUND CONNECTIONS SHALL HAVE ANTI-OXIDANT COMPOUND APPLIED TO CONNECTION
4. FENCE/GATE:
   GROUND FENCE POSTS WITHIN 6 FEET OF ENCLOSURE AND 25 FEET OF TOWER AS INDICATED ON DRAWINGS. GROUND EACH GATE POST AND CORNER POST. GROUND CONNECTIONS TO FENCE POSTS SHALL BE MADE BY THE "CADWELD" PROCESS AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES. ALL OTHER CONNECTIONS FOR THE GROUND GRID SYSTEM SHALL BE MADE BY THE "CADWELD" PROCESS, AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES.
5. UTILITY COMPANY COORDINATION:
   ELECTRICAL CONTRACTOR SHALL CONFIRM THAT ALL WORK IS IN ACCORDANCE WITH THE RULES OF THE LOCAL UTILITY COMPANY BEFORE SUBMITTING THE BID, THE CONTRACTOR SHALL CHECK WITH THE UTILITY COMPANIES SUPPLYING SERVICE TO THIS PROJECT AND SHALL DETERMINE FROM THEM ALL EQUIPMENT AND CHARGES WHICH THEY WILL REQUIRE AND SHALL INCLUDE THE COST IN THE BID.
6. GROUND TEST:
   GROUND TESTS SHALL BE PERFORMED AS REQUIRED BY LESSEE STANDARD PROCEDURES. GROUND GRID RESISTANCE SHALL NOT EXCEED 5 OHMS. CONTRACTOR SHALL SUBMIT THE GROUND RESISTANCE TEST REPORT AS FOLLOWS:
   1. ONE (1) COPY TO OWNER REPRESENTATIVE
   2. ONE (1) COPY TO ENGINEER
   3. ONE (1) COPY TO KEEP INSIDE EQUIPMENT ENCLOSURE

RACEWAYS AND WIRING

1. WIRING OF EVERY KIND MUST BE INSTALLED IN CONDUIT, UNLESS NOTED OTHERWISE, OR AS APPROVED BY THE ENGINEER.
2. UNLESS OTHERWISE SPECIFIED, ALL WIRING SHALL BE COPPER (CU) TYPE THWN, SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
3. RACEWAYS SHALL BE GALVANIZED STEEL, SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, UNLESS OTHERWISE NOTED. ALL RACEWAYS SHALL BE APPROVED FOR THE INSTALLATION.
4. PULL OR JUNCTION BOXES SHALL BE PROVIDED AS REQUIRED TO FACILITATE INSTALLATION OF RACEWAYS AND WIRING. PROVIDE JUNCTION AND PULLBOXES FOR CONDUIT RUNS WITH MORE THAN (360) DEGREES OF BENDS.
5. PROVIDE A COMPLETE RACEWAY AND WIRING INSTALLATION, PERMANENTLY AND EFFECTIVELY GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE AND LOCAL CODES.
6. ELECTRICAL PANEL BOARD SHALL BE FURNISHED AND INSTALLED BY OTHERS. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION.
7. ALL STEEL CONDUIT SHALL BE BONDED AT BOTH ENDS WITH GROUNDING BUSHING.

IT IS RECOMMENDED THAT THE ELECTRICAL CONTRACTOR VISIT THE JOB SITE TO REVIEW THE SCOPE OF WORK AND VERIFY ALL EXISTING CONDITIONS PRIOR TO BID SUBMITTAL. ANY DISCREPANCIES OR CONFLICTS SHALL BE REPORTED TO LESSEE BEFORE PROCEEDING WITH THE WORK.

ALL ELECTRICAL WORK SHALL CONFIRM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, LESSEE ELECTRIC STANDARDS AND LOCAL JURISDICTION CODES.

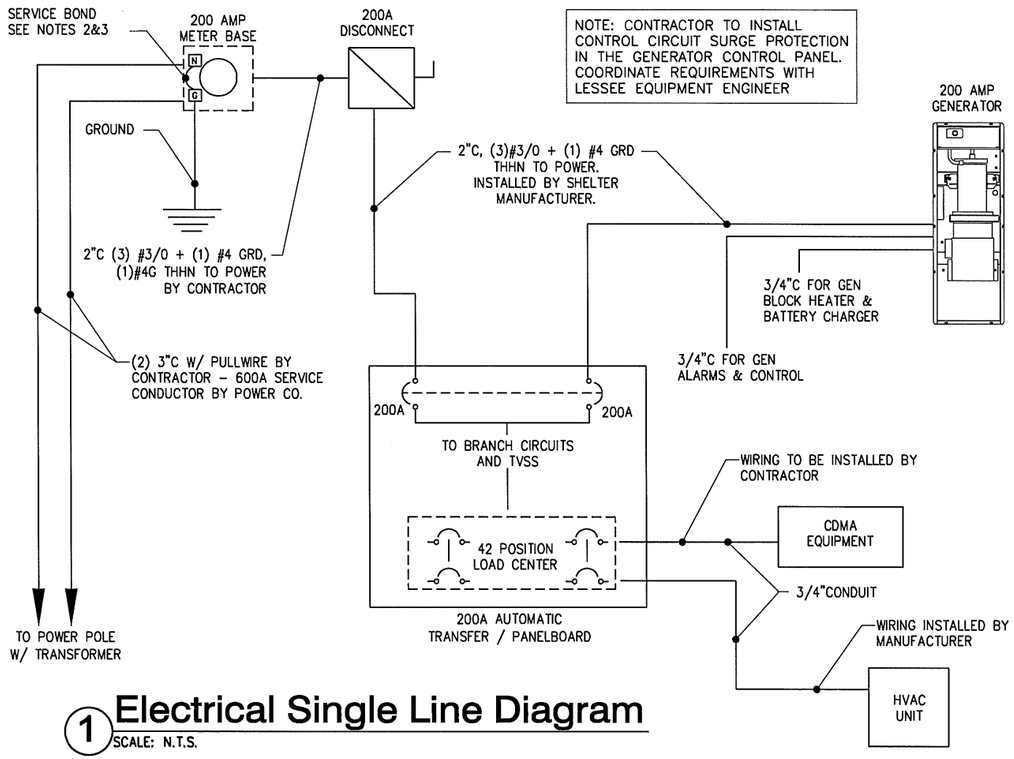
GENERAL NOTES:

SEE DETAILS AND SCHEDULES ON DRAWINGS AND SPECIFICATIONS FOR MEANING OF ABBREVIATIONS AND ADDITIONAL REQUIREMENTS AND INFORMATION. CHECK ARCHITECTURAL, STRUCTURAL AND OTHER MECHANICAL AND ELECTRICAL DRAWINGS FOR SCALE, SPACE LIMITATIONS, COORDINATION, AND ADDITIONAL INFORMATION, ETC. REPORT ANY DISCREPANCIES, CONFLICTS, ETC. TO ENGINEER BEFORE SUBMITTING BID. ALL EQUIPMENT FURNISHED BY OTHERS (FBO) SHALL BE PROVIDED WITH PROPER MOTOR STARTERS, DISCONNECTS, CONTROLS, ETC. BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE. THE ELECTRICAL CONTRACTOR SHALL INSTALL AND COMPLETELY WIRE ALL ASSOCIATED EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S WIRE DIAGRAMS AND AS REQUIRED FOR A COMPLETE OPERATING INSTALLATION. ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF (FBO) EQUIPMENT PRIOR TO ROUGH-IN OF CONDUIT AND WIRING TO AVOID CONFLICTS.

COORDINATION WITH UTILITY COMPANY

THE ELECTRICAL CONTRACTOR SHALL COORDINATE COMPLETE ELECTRICAL SERVICE WITH LOCAL UTILITY COMPANY FOR A COMPLETE OPERATIONS SYSTEM, INCLUDING TRANSFORMER CONNECTIONS, CONCRETE TRANSFORMER PADS, IF REQUIRED, METER SOCKETS, PRIMARY CABLE RACEWAY REQUIREMENTS, SECONDARY SERVICE, ETC. PRIOR TO SUBMITTING BID TO INCLUDE ALL LABOR AND MATERIALS.
THE ELECTRICAL CONTRACTOR SHALL INCLUDE IN THE BID ANY OPTIONAL OR EXCESS FACILITY CHARGES ASSOCIATED WITH PROVIDING ELECTRICAL SERVICE FROM LOCAL UTILITY COMPANY. VERIFY BEFORE BIDDING TO INCLUDE ALL COSTS.
THE ELECTRICAL CONTRACTOR SHALL VERIFY THE AVAILABLE FAULT CURRENT WITH THE LOCAL UTILITY COMPANY PRIOR TO SUBMITTING BID. ADJUST A.I.C. RATINGS OF ALL OVERCURRENT PROTECTION DEVICES IN DISTRIBUTION EQUIPMENT AS REQUIRED TO COORDINATE WITH AVAILABLE FAULT CURRENT FROM LOCAL UTILITY COMPANY. ALL GROUNDING RODS PROVIDED BY THE POWER OR TELEPHONE UTILITY COMPANIES MUST BE TIED INTO THE MAIN EXTERNAL GROUND RING.

PRIOR TO ELECTRICAL INSPECTION, IF REQUIRED, CONTRACTOR SHALL COORDINATE TRANSFER SWITCH MODIFICATION WITH LESSEE CONSTRUCTION ENGINEER AND SWITCH VENDOR.



1 **Electrical Single Line Diagram**
SCALE: N.T.S.

GENERAL NOTES:

1. ALL CIRCUIT BREAKERS ARE 10,000 A.I.C. TYPICALLY. A.I.C. RATING MAY CHANGE AS ELECTRICAL SUPPLY DEMANDS CHANGE.
2. SERVICE BOND IS TO BE MADE BY DEVICES (STRAPS, SCREWS, ETC.) SUPPLIED BY EQUIPMENT MANUFACTURER. IF NO SUCH DEVICE IS SUPPLIED, BOND IS TO BE MADE WITH A MINIMUM OF #1/0 AWG FOR 400 AMP SERVICE, #2 AWG FOR 300 AMP SERVICE, #4 AWG GREEN FOR 200 SERVICE, AND #8 AWG GREEN FOR 100 AMP SERVICE.
3. WHEN SERVICE OVERCURRENT DISCONNECT IS FIELD INSTALLED, A TEMPORARY SERVICE BOND WILL BE INSTALLED FOR SAFETY PURPOSE.
4. CONDUCTOR OVERCURRENT PROTECTION DEVICES ARE SELECTED IN ACCORDANCE WITH 2002 NEC (ARTICLE 240-3).
5. CONDUCTOR SIZING IS SELECTED FROM 2002 NEC (ARTICLE 220-10b).
6. #4 AWG GREEN FROM MASTER GROUND BAR TIES TO GROUND IN PANEL BOARD.

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1715 MAGNAVOX WAY, FORT WAYNE, INDIANA 46804
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CERTIFICATION:
GREGORY J. SUHR
LICENSED
18922
KANSAS
PROFESSIONAL ENGINEER

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LAWRENCE, KS 66047**

SHEET TITLE:

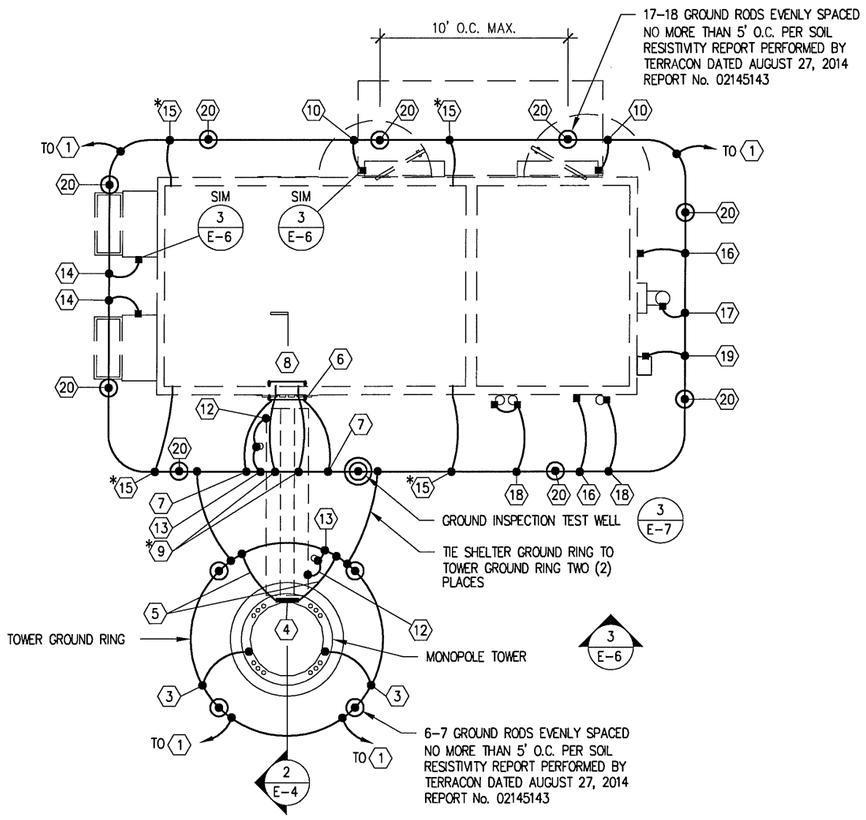
ELECTRICAL RISER DIAGRAM

A&E PROJECT NO.:

001-1504

SHEET NO.:

E-4



*SHELTER PENETRATION: SEAL BOTH SIDES OF PENETRATION WEATHER TIGHT

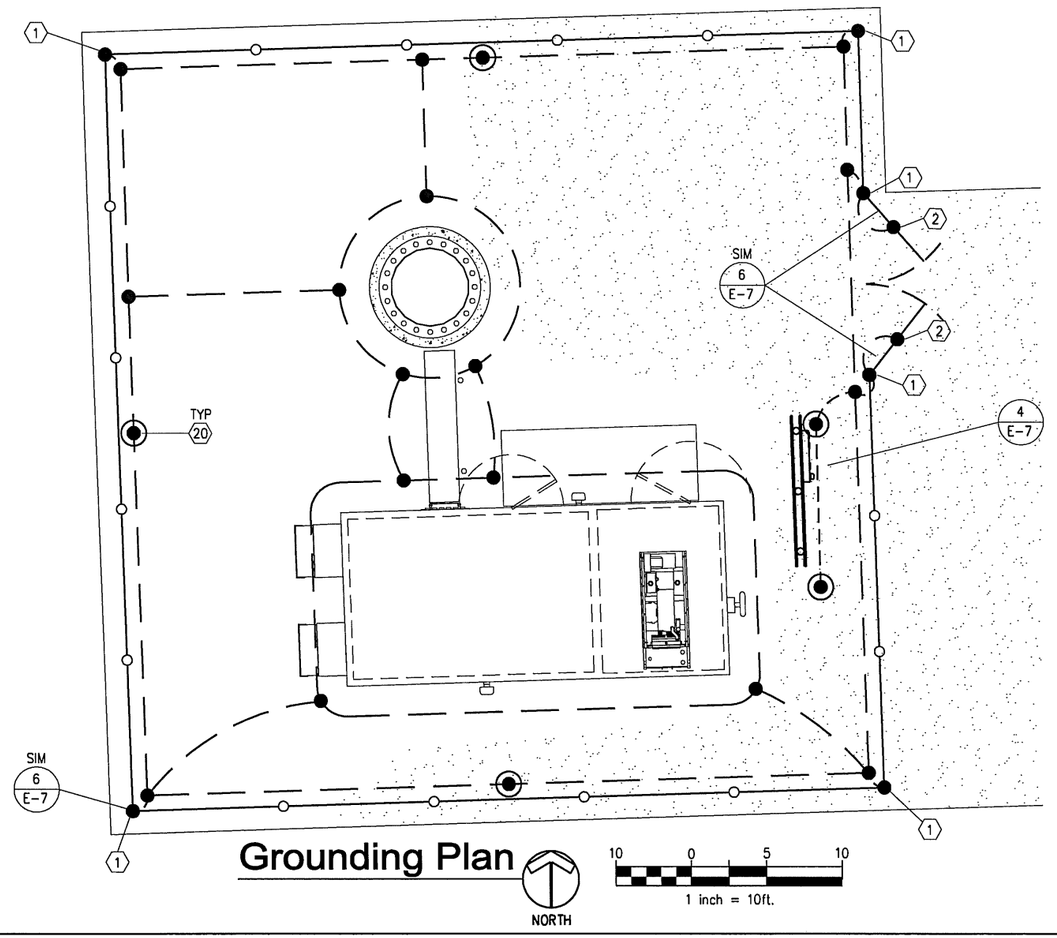
1 Shelter and Tower Grounding Schematic

SCALE: 1/8" = 1'-0"

Legend

1. FENCE GROUND: E.C. TO FURNISH AND INSTALL #2 AWG BARE SOLID TINND COPPER GROUND WIRE AT FENCE POST. GROUND WIRE TO BE ROUTED ALONG FENCE POST AND CADWELDED FOUR (4) PLACES, TOP RAIL, TOP AND BOTTOM OF CORNER POST, AND GROUND RING.
2. GATE GROUND: SIMILAR TO FENCE GROUND (FG), E.C. SHALL ALSO FURNISH AND INSTALL #2 BRAIDED GATE JUMPER WIRE BETWEEN THE GATE FRAME AND THE GATE POST. CONNECTIONS AT GATE FRAME AND GATE POST TO BE CADWELD.
3. TOWER GROUND: E.C. TO FURNISH AND INSTALL TWO (2) #2 AWG BARE SOLID TINND COPPER GROUND WIRES FROM BASE OF TOWER OR TOWER LEGS TO TOWER GROUND RING. ALL CONNECTIONS TO BE CADWELD.
4. TOWER GROUND BAR: E.C. TO FURNISH AND INSTALL TWO (2) 20"x4"x1/4" TINND COPPER GROUND BARS ON THE TOWER. ONE TO BE LOCATED AT ANTENNA MOUNT ELEVATION (ATTACHED TO TOWER STEEL), THE OTHER AT THE BASE OF THE TOWER ADJACENT TO THE ICE BRIDGE (ISOLATED FROM TOWER STEEL).
5. TOWER COAX GROUND: E.C. TO FURNISH AND INSTALL TWO (2) #2 AWG BARE SOLID TINND COPPER GROUND WIRES FROM TOWER GROUND BAR (TGB) TO GROUND RING. ALL CONNECTIONS TO BE CADWELD.
6. EXTERIOR GROUND BAR: SHELTER MANUFACTURER FURNISHED AND INSTALLED 24"x4"x1/4" TINND COPPER GROUND BAR ON EXTERIOR SIDEWALL OF SHELTER BELOW COAX BUILDING ENTRY.
7. EXTERIOR GROUND BAR GROUND: E.C. TO FURNISH AND INSTALL TWO (2) #2 AWG BARE SOLID TINND COPPER GROUND WIRES FROM THE EXTERIOR GROUND BAR (EGB) TO GROUND RING. ALL CONNECTIONS TO BE CADWELD.
8. MASTER GROUND BAR: SHELTER MANUFACTURER FURNISHED AND INSTALLED 24"x4"x1/4" TINND COPPER GROUND BAR ON INTERIOR SIDEWALL OF SHELTER BELOW COAX BUILDING ENTRY.
9. MASTER GROUND BAR GROUND: E.C. TO EXTEND TWO (2) SHELTER MANUFACTURER FURNISHED AND INSTALLED #2 AWG BARE SOLID TINND COPPER GROUND WIRES FROM THE MASTER GROUND BAR (MGB) THRU PROVIDED 3/4" PVC OPENINGS TO GROUND RING. ALL CONNECTIONS TO BE CADWELD, PVC SEAL OPENING WEATHER TIGHT.
10. DOOR CANOPY GROUND: E.C. TO FURNISH AND INSTALL ONE (1) #2 AWG BARE SOLID TINND COPPER GROUND WIRE FROM DOOR CANOPY TO SHELTER GROUND RING. CONNECTION AT DOOR CANOPY TO BE MECHANICAL, CONNECTION AT GROUND RING TO BE CADWELD.
11. COAX ENTRY GROUND: E.C. TO FURNISH AND INSTALL TWO (2) #2 AWG BARE SOLID TINND COPPER GROUND JUMPER WIRE FROM COAX ENTRY PANEL TO EXTERNAL GROUND BAR (EGB). ALL CONNECTIONS TO BE CADWELD.
12. ICE BRIDGE CHANNEL GROUND: E.C. TO FURNISH AND INSTALL ONE (1) #2 AWG BARE SOLID TINND COPPER GROUND JUMPER WIRE FROM ICE BRIDGE CHANNEL TO ICE BRIDGE SUPPORT POST. ALL CONNECTIONS TO BE CADWELD.
13. ICE BRIDGE SUPPORT GROUND: E.C. TO FURNISH AND INSTALL ONE (1) #2 AWG BARE SOLID TINND COPPER GROUND WIRE FROM ICE BRIDGE SUPPORT POST TO GROUND RING. ALL CONNECTIONS TO BE CADWELD.
14. AIR CONDITIONER GROUND: E.C. TO FURNISH AND INSTALL ONE (1) #2 AWG BARE SOLID TINND COPPER GROUND WIRE FROM AIR CONDITIONER CABINET TO GROUND RING. CONNECTION AT AIR CONDITIONER CABINET TO BE MECHANICAL, CONNECTION AT GROUND RING TO BE CADWELD (TYPICAL OF 2).
15. HALO GROUND: E.C. TO EXTEND FOUR (4) SHELTER MANUFACTURER FURNISHED AND INSTALLED #2 AWG BARE SOLID TINND COPPER GROUND WIRES THRU PROVIDED 3/4" PVC OPENINGS TO GROUND RING. ALL CONNECTIONS TO BE CADWELD, PVC SEAL OPENING WEATHER TIGHT.
16. GENERATOR LOUVER GROUND: E.C. TO FURNISH AND INSTALL ONE (1) #2 AWG BARE SOLID TINND COPPER GROUND WIRE FROM GENERATOR LOUVER FRAME TO GROUND RING. CONNECTION AT LOUVER FRAME TO BE MECHANICAL, CONNECTION AT GROUND RING TO BE CADWELD (TYPICAL OF 2).
17. GENERATOR EXHAUST GROUND: E.C. TO FURNISH AND INSTALL ONE (1) #2 AWG BARE SOLID TINND COPPER GROUND WIRE FROM GENERATOR EXHAUST PIPE TO GROUND RING. SECURE GROUND WIRE TO EXHAUST PIPE WITH PIPE CLAMP (VERIFY PIPE SIZE) CONNECTION AT GROUND RING TO BE CADWELD.
18. DIESEL FUEL VENT GROUND: E.C. TO FURNISH AND INSTALL THREE (3) #2 AWG BARE SOLID TINND COPPER GROUND WIRE FROM DIESEL FUEL PIPES TO GROUND RING. SECURE GROUND WIRE TO VENT PIPE WITH PIPE CLAMP (VERIFY PIPE SIZE) CONNECTION AT GROUND RING TO BE CADWELD.
19. EXTERNAL FUEL FILL GROUND: E.C. TO FURNISH AND INSTALL TWO (2) #2 AWG BARE SOLID TINND COPPER GROUND WIRES FROM EXTERNAL FUEL FILL BOX TO GROUND RING. ONE GROUND WIRE TO BE MECHANICALLY CONNECTED TO FUEL FILL BOX, ONE GROUND WIRE TO BE MECHANICALLY CONNECTED TO FUEL FILL PIPE. CONNECTION TO GROUND RING TO BE CADWELD.
20. 5/8" DIA. x 10' LONG TINND COPPER CLAD STEEL GROUND ROD DRIVEN VERTICAL TOP OF ROD 30" MIN. BELOW GRADE. SPACING OF GROUND RODS 10' MAX. ALL CONNECTIONS TO BE CADWELD.

NOTE: ALL GROUND LEADS AT TOWER, ICE BRIDGE SUPPORT POSTS, FENCE POSTS, ETC. TO BE ROUTED IN 1/2" NON-METALLIC PVC FLEX CONDUIT. GROUND LEADS AT SHELTER FROM EXTERNAL GROUND BARS, COAX ENTRY, LOUVERS, PIPES, ETC. TO BE ROUTED IN 1/2" NON-METALLIC PVC RIGID CONDUIT SECURED TO SHELTER WALL WITH AT LEAST ONE (1) NON-METALLIC CONDUIT CLAMP 36" MAX. SPACING. CONDUIT TO BE 4" MAX. FROM APPLIANCE CONNECTION AND EXTEND 18" MIN. BELOW GRADE.



Grounding Plan

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MAGTECH MIDWEST INC.
AN AFFILIATE OF FORTUNE WIRELESS INC.
1715 MADNAVOX WAY, FORT WAYNE, INDIANA 46804
(260) 436-2668 • (260) 436-2402 FAX

CERTIFICATION: GREGORY J. SUHR LICENSED 18922 KANSAS PROFESSIONAL ENGINEER

RELEASE	
DATE	
05-05-14	CONSTRUCTION DWGS – REV A
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08-11-14	CONSTRUCTION DWGS – REV C
01-30-15	CONSTRUCTION DWGS – REV D
02-25-15	CONSTRUCTION DWGS – REV 0

DRAWN BY: JLM
CHECKED BY: DJH

SITE NAME:

LAWC KASOLD CELL SITE

SITE ADDRESS:

1293 E 1200 ROAD LAWRENCE, KS 66047

SHEET TITLE:

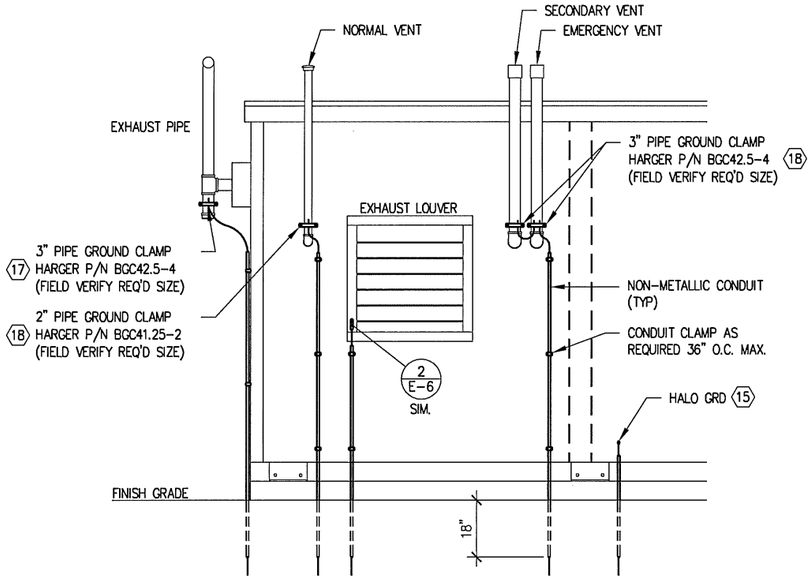
GROUNDING PLAN AND NOTES

A&E PROJECT NO.:

001-1504

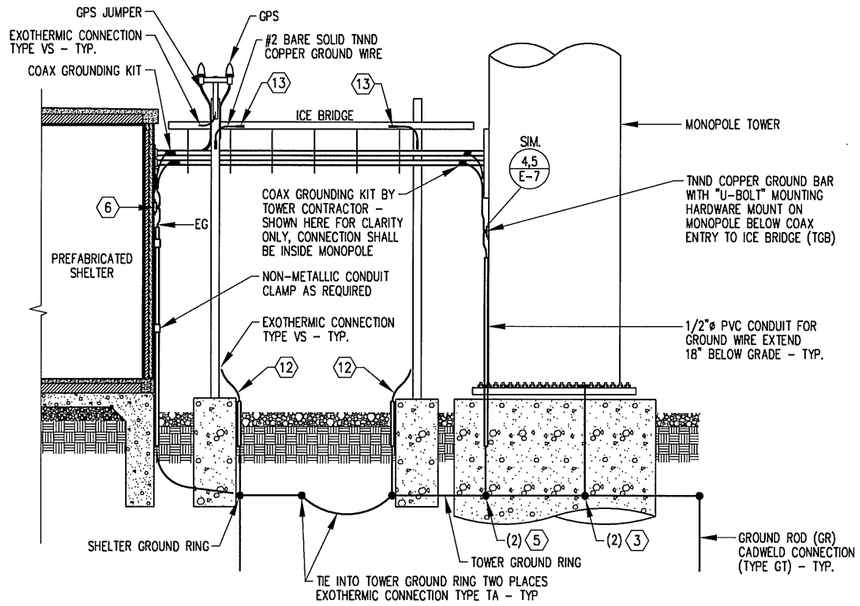
SHEET NO.:

E-5



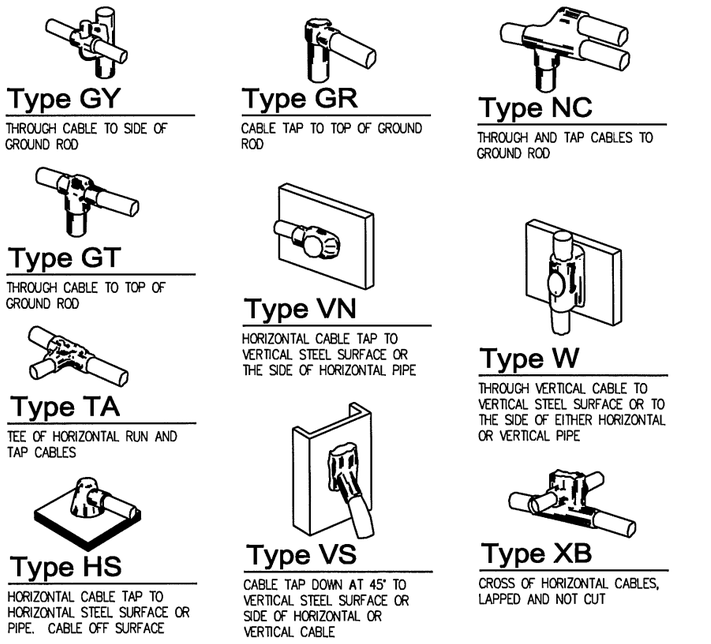
3 Shelter Ground Elevation

SCALE: 1/4" = 1'-0"



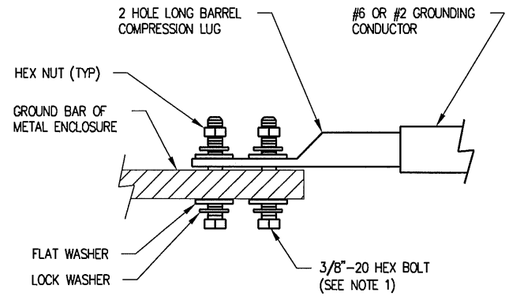
1 Ice Bridge Grounding Schematic

SCALE: 1/4" = 1'-0"



4 Exothermic (Cadweld) Details

NO SCALE



INSTALLATION NOTES:

1. SELECT BOLT LENGTH TO PROVIDE A MINIMUM OF TWO EXPOSED THREADS.
2. BURNISH MOUNTING SURFACE TO REMOVE PAINT IN THE AREA OF THE LUG.
3. APPLY ANTI-OXIDANT COMPOUND TO MATING SURFACE OF LUG AND WIPE CLEAN EXCESS COMPOUND.

2 Mechanical Ground Connection

NO SCALE

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DRAWN BY: JLM
CHECKED BY: DJH

SITE NAME:

LAWC KASOLD CELL SITE

SITE ADDRESS:

1293 E 1200 ROAD LAWRENCE, KS 66047

SHEET TITLE:

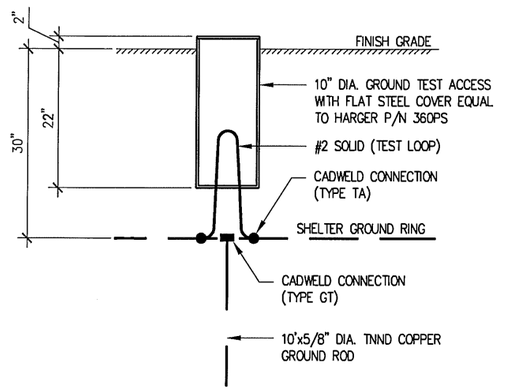
GROUNDING DETAILS

A&E PROJECT NO.:

001-1504

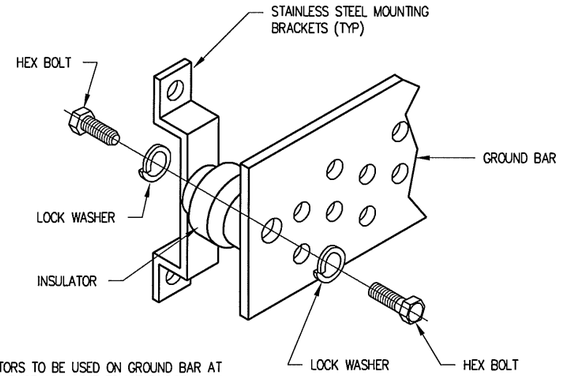
SHEET NO.:

E-6



3 Grounding Inspection Test Well

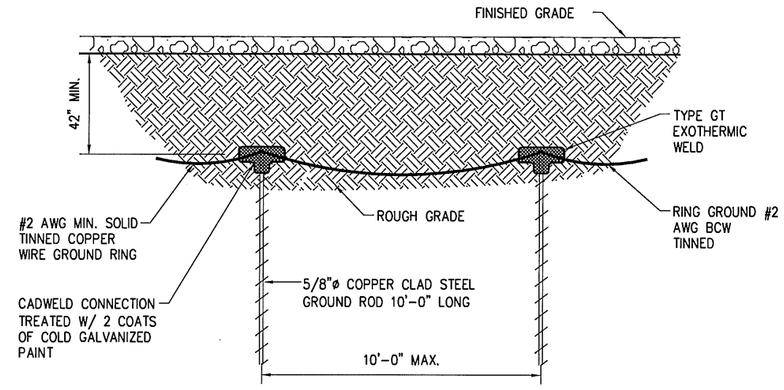
SCALE: 1/2" = 1'-0"



NOTE:
ISOLATORS TO BE USED ON GROUND BAR AT TOWER BASE ADJACENT TO ICE BRIDGE ONLY. GROUND BAR AT ANTENNA ELEVATION TO BE ATTACHED DIRECTLY TO TOWER STEEL.

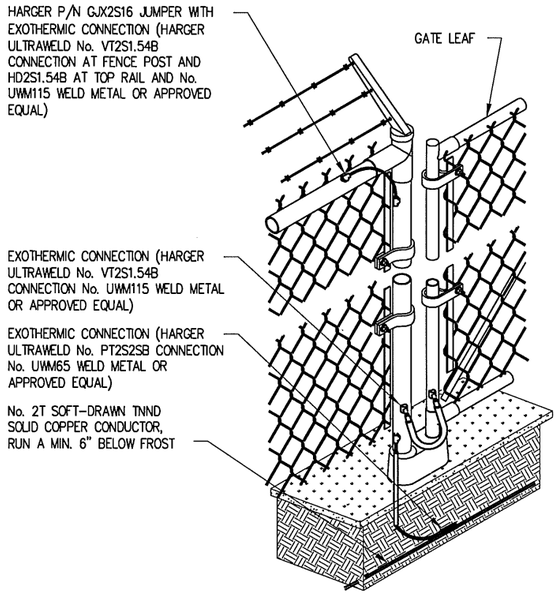
2 Ground Bar Installation

SCALE: 3" = 1'-0"



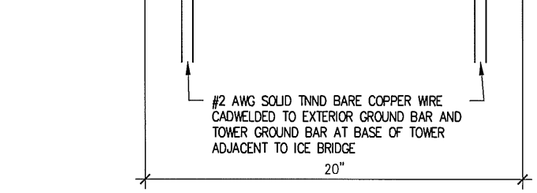
1 Grounding Rod Detail

SCALE: 1/4" = 1'-0"



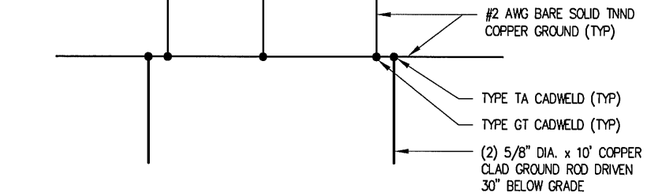
6 Fence and Gate Grounding

NO SCALE



5 Tower Ground Bar (TGB)

SCALE: 1 1/2" = 1'-0"



4 H-Frame Grounding Detail

SCALE: 3/16" = 1'-0"

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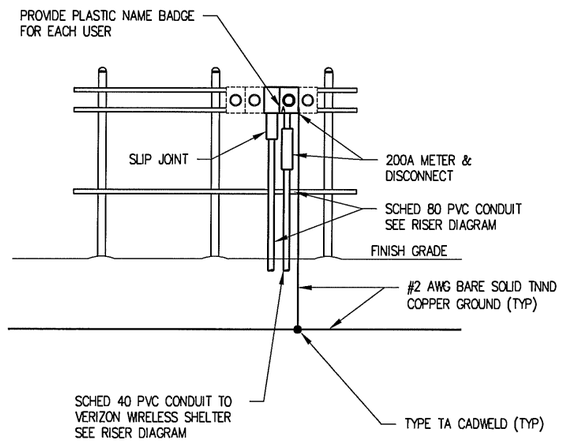
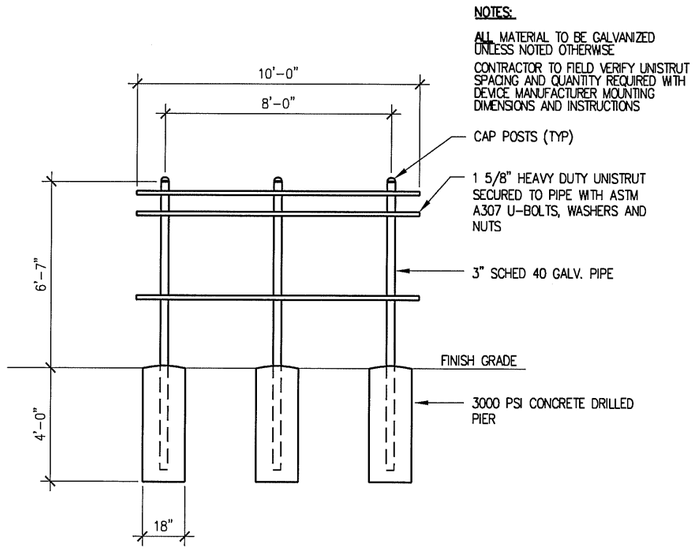
SHEET NO.:

E-7



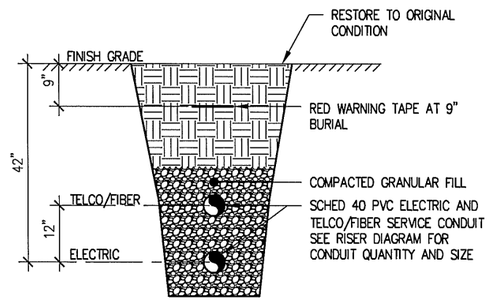
2 Utility H-Frame - Electrical

SCALE: 3/16" = 1'-0"



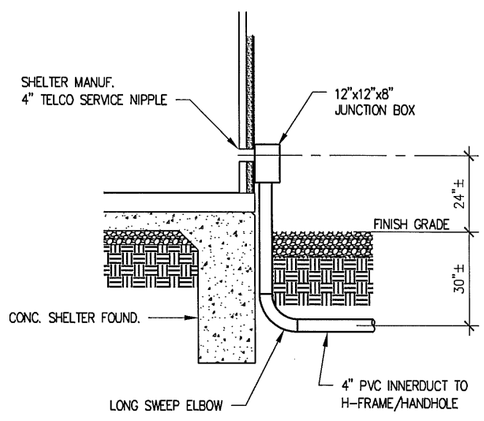
1 Utility H-Frame Unistrut

SCALE: 3/16" = 1'-0"



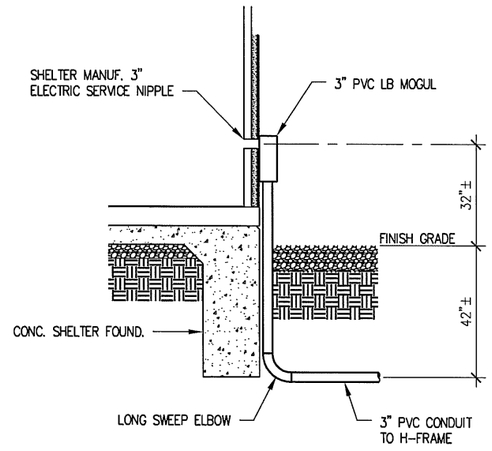
5 Buried Utility

SCALE: 3/8" = 1'-0"



4 Fiber Service Entrance

SCALE: 1/4" = 1'-0"



3 Electric Service Entrance

SCALE: 1/4" = 1'-0"

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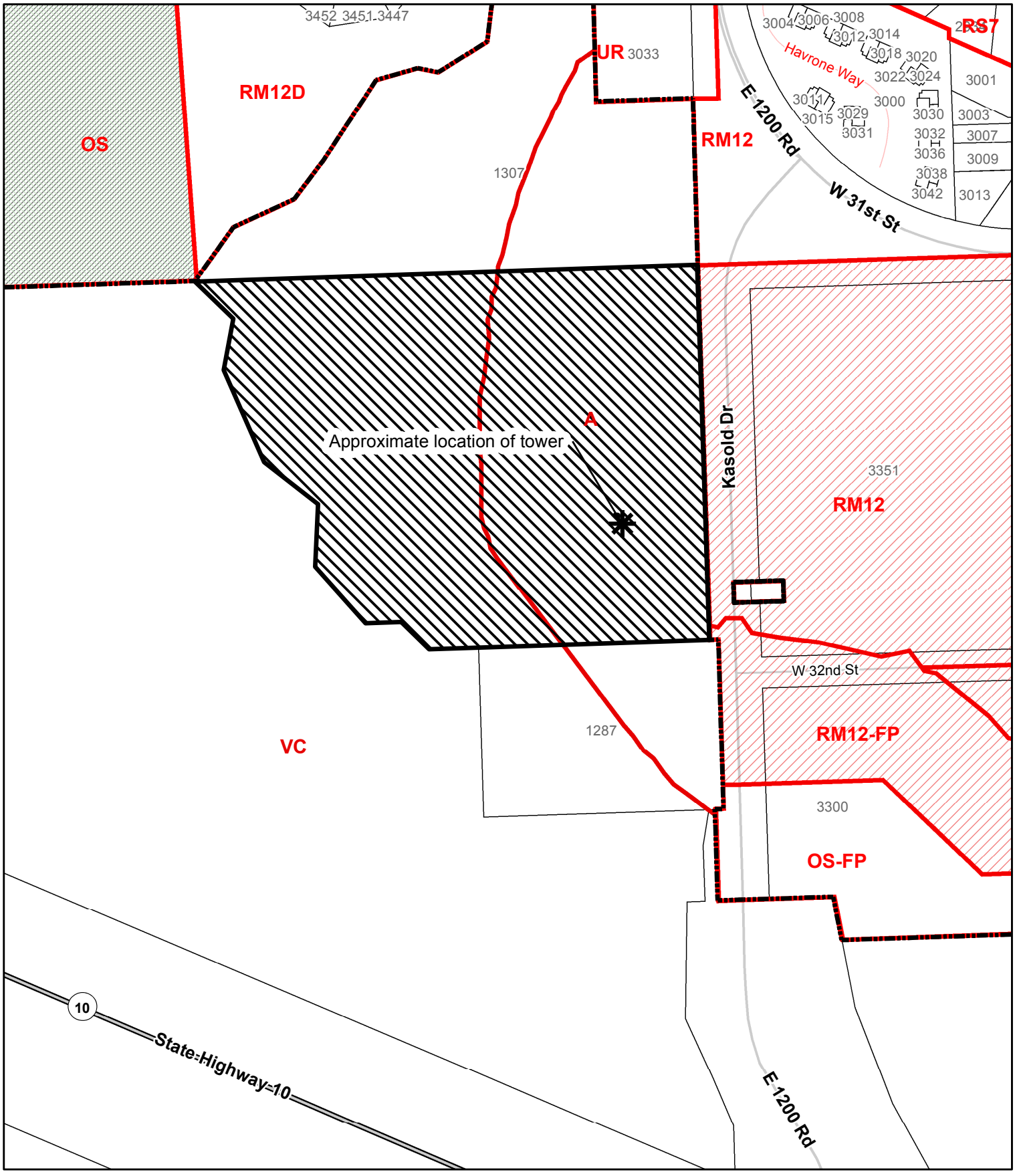
RAISER DIAGRAM ANE H-FRAME DETAILS

A&E PROJECT NO.:

001-1504

SHEET NO.:

E-8



CUP-16-00312: Conditional Use Permit for a New 190' Communication Tower for Verizon Wireless Located North of Westar Substation at 1287 E 1200 Road

Lawrence-Douglas County Planning Office
September 2016

Subject Properties