



195 35th Street
Marion, Iowa 52302
www.cityofmarion.org

Council Memo

DATE: February 3, 2017

TO: Mayor, City Council Members

CC: Lon Pluckhahn, City Manager

FROM: Ryan Miller, Public Services Director

RE: Council Agenda Items- Work Session

Exhibit(s):

B.1 Discussion regarding lease and pole attachment agreement with Verizon Wireless.

Public Service has continued to work with Verizon Wireless on a communications project that involves the co-location of cellular antennas on city owned street lights.

In the last two years, Verizon has co-located cellular equipment on city owned light poles in an effort to facilitate a controlled build-out of small cell infrastructure.

Currently, most cellular companies utilize macro towers (large towers) to propagate cellular signals. As cellular use increases, the towers become saturated and cellular bandwidth is compromised along with signal coverage.

Cellular companies have identified new technologies that will allow for the integration of wireless nodes that will relieve current cellular infrastructure.

Formulating a partnership with the cellular companies in this stage of the project will allow for both the City and the cellular companies to utilize and share resources that will provide significant long term benefits.

Verizon has provided documents for the proposed locations of the infrastructure.



CED INDIAN CREEK SC7

SITE PHOTO

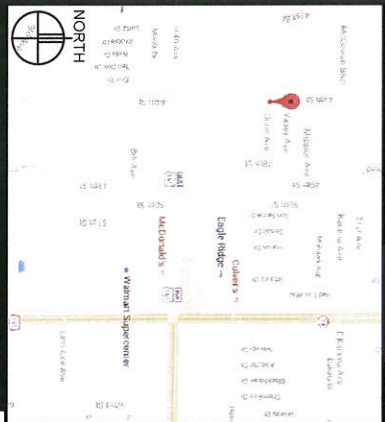


PROJECT DESCRIPTION	SUPPLIED BY
WORK ITEM	
INSTALL (1) ANTENNA	VZW
INSTALL (1) ERICSSON RRUS2 B96A W/P/SU	VZW
INSTALL (1) ERICSSON BRUS 813	VZW
INSTALL CABLING	GC
INSTALL (1) DISCONNECT BOX	GC
INSTALL (1) HAND HOLE	FIBER PROVIDER
INSTALL PROPOSED POLE	CITY OF MARION

GENERAL NOTES

- In the event that Special Inspections are not performed in compliance with the contract terms, bid specifications and/or specified term, the General Contractor will be liable for all damages, construction performance, failures, and corrective actions related to the same.
- The following general notes shall apply to drawings and given unless otherwise noted or specified.
- The work delineated in these drawings and described in the specifications shall conform to codes, standards and regulations that have jurisdiction in the state of IA, and the city of MARION.
- Requirements and regulations pertaining to R.F. safety codes and practices must be incorporated in the work even though they may not be listed individually and separately in other the drawings or the specifications.
- Complete field conditions with architectural and engineering drawings. Any discrepancies shall be directed to the Architect for clarification prior to fabrication and without the permission of the architect. No fabrication or installation by approval by the Architect. No fabrication or installation by approval by the architect without the permission of the architect.
- Do not scale drawings! 11" x 17" drawings to scale. 24" x 36" drawings scale multiply by 2.
- Unless otherwise shown or noted, typical details shall be used where applicable.
- Details shall be considered typical at similar conditions.
- Safety measures. The contractor shall be solely and completely responsible for the conditions of the job site, including safety of the persons and property, and for independent engineering reviews of these conditions. The Architect's or Engineer's job site review is not intended to include review of the adequacy and the contractor's safety measures.
- Within these plans and specifications, "Owner" implies VERIZON WIRELESS.
- The terms, "contractor" and "g.c." refer to the owner's general contractor and the general contractor's sub-contractors. It is the general contractor's responsibility to determine the division of work among sub-contractors.
- The general contractor is responsible in obtaining necessary public and private underground utility locate services prior to start of excavating / construction.

VICINITY MAP



LOCATION SCAN



PROJECT INFORMATION

SITE NAME: CED INDIAN CREEK SC7
 PROJECT NUMBER: 20161423967
 SITE ADDRESS: 4400 DUNN AVE, MARION, IA 52302
 COUNTY: LINN
 LATITUDE: N42° 02' 23.54" (NAD83)
 LONGITUDE: W91° 35' 46.53" (NAD83)
 GROUND ELEVATION: 815.17 AMSL (NAVD83)
 ANTENNA TIP HEIGHT: 839.0' AMSL - 23' 9" AGL
 ANTENNA CENTRELINE HEIGHT: 838.0' AMSL - 22' 9" AGL
 STRUCTURE HEIGHT: 840.0' AMSL - 25' 0" AGL

SHEET INDEX

SHEET	SHEET DESCRIPTION
T-1	PROJECT INFORMATION, MAPS, DIRECTIONS, & SHEET INDEX
T-2	AERIAL PHOTO & NODE LOCATIONS
A-1	SITE / UTILITY PLAN & PHOTOS
A-2	ANTENNA PLAN, KEY, SPECS, & POLE ELEVATION
A-3	ANTENNA MOUNT DETAILS, RRU DETAILS, & RRU MOUNT DETAILS
A-4	LANE CLOSURE DETAILS
A-5	SPECIFICATIONS & RF STICKERS
G-1	GROUNDING PLAN, ELEVATION, & DETAILS
U-1	UTILITY & FIBER DETAILS
S	SURVEY

ISSUE SUMMARY

REV.	DESCRIPTION	SHEET OR DETAIL
A	ISSUED FOR REVIEW 11-16-16	ALL
B	ISSUED FOR LESSOR SIGNOFF 01-03-17	ALL

CONTACTS

LESSOR:
 CITY OF MARION
 MARION, IA 52302
 PUBLIC SERVICES DIRECTOR
 RYAN MILLER (319) 877-4587

LESSEE:
 VERIZON WIRELESS
 1400 UNIVERSITY ROAD
 BLOOMINGTON, MN 55438
 MIKE COGAR (612) 720-0030

ARCHITECT:
 DESIGN 1 OF EDEN PRAIRIE, LLC
 9873 VALLEY VIEW ROAD
 EDEN PRAIRIE, MN 55344
 (952) 903-9299

VERIZON WIRELESS DEPARTMENTAL APPROVALS

JOB TITLE	NAME	DATE
RF ENGINEER	MICHAEL KERRIN	11-28-16
CONSTRUCTION ENGINEER	NATE BURKERT	11-28-16

LESSOR APPROVAL

SIGNATURE	PRINTED NAME	DATE

LESSOR / LICENSEE: PLEASE CHECK THE APPROPRIATE BOX BELOW
 NO CHANGES CHANGES NEEDED, SEE COMMENTS ON PLANS

NOT FOR CONSTRUCTION



9873 VALLEY VIEW RD.
 EDEN PRAIRIE, MN 55344
 (952) 903-0299
 WWW.DESIGN1P.COM



1905 51ST LANE ROAD
 BLOOMINGTON, MN 55449

PROJECT: 20161423967
 LOC. CODE: 418917
 CED INDIAN CREEK SC7

4400 DUNN AVE
 MARION, IA 52302

SHEET CONTENTS:
 CONTACTS
 ISSUE SUMMARY
 SHEET INDEX
 LESSOR APPROVALS
 PROJECT INFORMATION
 VICINITY MAP
 GENERAL NOTES

DATE	BY	NR
11-18-16		
CHECKED BY:	TAB	
REV. A	11-18-16	
REV. B	01-03-17	

T-1



1 AERIAL PHOTO - NODE LOCATIONS
SCALE: N.T.S.



NOT FOR
CONSTRUCTION



9973 VALLEY VIEW RD.
SUITE 200
5507 401-5000
WWW.DESIGNHP.COM



7808 RUSH LAKE ROAD
BLOOMINGTON, MN 55438

PROJECT
20161423957
LOC. CODE: 418917

INDIAN CREEK
SC7

4400 DUNN AVE
MARION, IA 52302

SHEET CONTENTS:
AERIAL PHOTO
NODE LOCATIONS

DRAWN BY:	NPR
DATE:	11-18-16
CHECKED BY:	TAB
REV. A:	11-18-16
REV. B:	01-03-16

PROPOSED ANTENNA KEY				PROPOSED EQUIPMENT KEY			
MODE	AZIMUTH POSITION	FUNCTION	QTY	MANUFACTURER	MODEL	ANTENNA HEIGHT	ELEC. TIP CENTER HEIGHT
SC7	180/360	1.1	1	AAA	COMBOWAVE-D1	700-248	700-248
		1.2	1		3RD PORT	700-248	700-248
		1.3	1		4TH PORT	700-248	700-248
		1.4	1		5TH PORT	700-248	700-248
		1.5	1		6TH PORT	700-248	700-248
		1.6	1		7TH PORT	700-248	700-248
		1.7	1		8TH PORT	700-248	700-248
		1.8	1		9TH PORT	700-248	700-248
		1.9	1		10TH PORT	700-248	700-248

3 ANTENNA KEY
SCALE: N/A

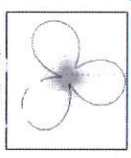
2 EQUIPMENT KEY
SCALE: N/A

- NOTE:
- 10'-0" OF CLEARANCE IS REQUIRED FOR VZW / EQUIPMENT ABOVE AND BELOW ALL PRIMARY ELECTRIFICATION.
 - 40" OF CLEARANCE IS REQUIRED FOR VZW / EQUIPMENT ABOVE AND BELOW ALL SECONDARY ELECTRIFICATION.
 - 12" OF CLEARANCE IS REQUIRED FOR VZW / EQUIPMENT BELOW ALL TELECOMMUNICATION LINES.
 - 12" OF CLEARANCE IS THE REQUIRED MINIMUM FOR VZW / EQUIPMENT ABOVE ALL TELECOMMUNICATION LINES. 24" IS PREFERRED.
 - ALL PROPOSED ATTACHMENTS TO BE ATTACHED TO POLE EXTERIOR BY USE OF HEAVY DUTY STAINLESS STEEL SWAGING STRAPS, PRE-TOP-PIPE CLAMPS, OR SWAGE INDUSTRIES RAIL MOUNTING KIT (PART#C10123109).
 - ALL EQUIPMENT AND POLE ATTACHMENTS TO BE PAINTED TO MATCH PROPOSED POLE. SEMI-GLOSS BLACK VALUANT SPEC: F-6724 (O.C. TO VERIFY POLE COLOR ON SITE).

Product Specifications
CX060M1236-01 & -02
 n/wav™ Xpol OMNI Antenna | Hex Port | 2 ft | 360°

Hex Port 2ft 360° Antenna with MET/RET Controlled HB
 (2) 698-894 MHz & (4) 1695-2180 MHz

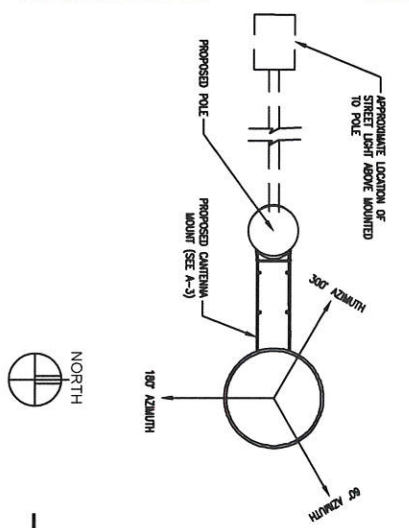
- X-pol small cell OCTO port antenna
- Suitable for pole or building mount
- 2x2 MIMO Low Band and 4x4 MIMO High Band
- Internal beam combining
- Dependent MET/RET control for HB ports
- Suitable for LTE/LTAS/CDMA/GSM technology
- Cost-effective solution for neutral host locations



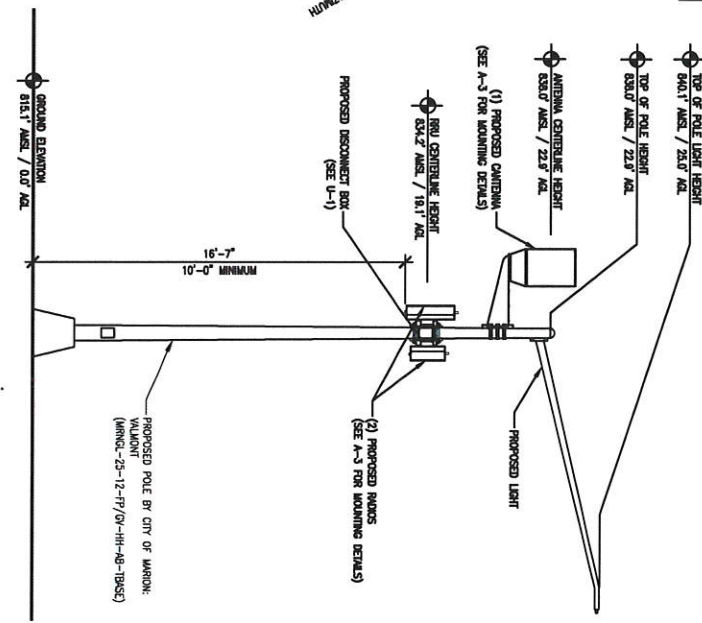
Electrical Specification (Minimum Values)		Poles 1&2		Poles 3,4,5 & 6	
Frequency Bands, MHz	698-738	698-738	1695-1880	1695-1880	1695-1880
Polarization	±45°	±45°	±45°	±45°	±45°
Average gain over all tx, dB	6.1	6.8	9.4	9.7	9.5
Maximum gain, dB	30P	30P	30P	30P	30P
Vertical beamwidth, °	45°	45°	45°	45°	45°
Horizontal beamwidth, °	360°	360°	360°	360°	360°
Electrical connection	7/16" SMA	7/16" SMA	7/16" SMA	7/16" SMA	7/16" SMA
Minimum return loss, dB	24	24	24	24	24
Maximum return loss, dB	14.0	14.0	14.0	14.0	14.0
Maximum VSWR return loss, dB	14.0	14.0	14.0	14.0	14.0
Maximum power dissipation, P1dB, 2, 3000 carrier, dBm	250	250	250	250	250
Maximum 1000 carrier, P1dB, 2, 3000 carrier, dBm	250	250	250	250	250

4 ANTENNA SPEC SHEET
SCALE: N/A

5 ANTENNA PLAN
SCALE: 1/2" = 1'-0"



1 NORTH POLE ELEVATION
SCALE: 3/16" = 1'-0"



6 NORTH POLE ELEVATION
SCALE: 3/16" = 1'-0"

DESIGN NOT FOR CONSTRUCTION

6023 VALLEY VIEW RD.
 GREENSBORO, NC 27409
 WWW.DESIGNGROUP.COM

verizon
 10801 BASH LAKE ROAD
 BLOOMINGTON, IN 47403

PROJECT
 20161423957
 LOC. CODE: 418917

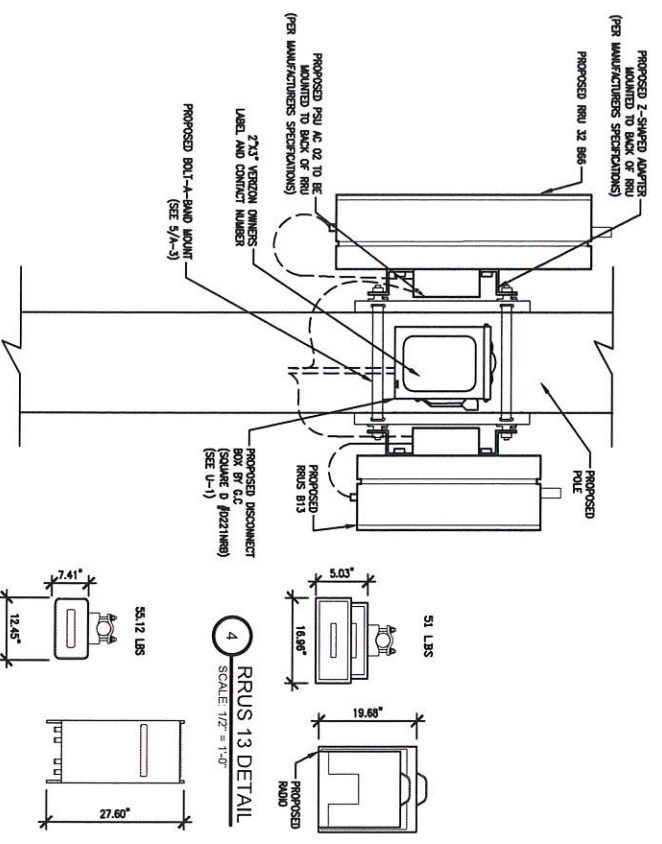
CD
 INDIAN CREEK
 SC7

4400 DUNN AVE
 MARION, IA 52302

SHEET CONTENTS:
 ANTENNA & EQUIPMENT KEY
 LIGHT POLE ELEVATION
 ANTENNA PLAN

DRAWN BY: NFR
 DATE: 11-18-16
 CHECKED BY: TWS
 REV. A: 11-18-16
 REV. B: 07-23-16

A-2



Part #	Part Name	Quantity	Unit	Notes
RSH-210722-2	SRB-10722-2	2	EA	
RSH-210722-3	SRB-10722-3	2	EA	
RSH-201764-3	SRB-201764-3	2	EA	
RSH-201764-4	SRB-201764-4	2	EA	
RSH-201922-2	SRB-201922-2	2	EA	
RSH-201922-3	SRB-201922-3	2	EA	
RSH-201922-4	SRB-201922-4	2	EA	
RSH-201922-5	SRB-201922-5	2	EA	
RSH-201922-6	SRB-201922-6	2	EA	
RSH-201922-7	SRB-201922-7	2	EA	
RSH-201922-8	SRB-201922-8	2	EA	
RSH-201922-9	SRB-201922-9	2	EA	
RSH-201922-10	SRB-201922-10	2	EA	
RSH-201922-11	SRB-201922-11	2	EA	
RSH-201922-12	SRB-201922-12	2	EA	
RSH-201922-13	SRB-201922-13	2	EA	
RSH-201922-14	SRB-201922-14	2	EA	
RSH-201922-15	SRB-201922-15	2	EA	
RSH-201922-16	SRB-201922-16	2	EA	
RSH-201922-17	SRB-201922-17	2	EA	
RSH-201922-18	SRB-201922-18	2	EA	
RSH-201922-19	SRB-201922-19	2	EA	
RSH-201922-20	SRB-201922-20	2	EA	
RSH-201922-21	SRB-201922-21	2	EA	
RSH-201922-22	SRB-201922-22	2	EA	
RSH-201922-23	SRB-201922-23	2	EA	
RSH-201922-24	SRB-201922-24	2	EA	
RSH-201922-25	SRB-201922-25	2	EA	
RSH-201922-26	SRB-201922-26	2	EA	
RSH-201922-27	SRB-201922-27	2	EA	
RSH-201922-28	SRB-201922-28	2	EA	
RSH-201922-29	SRB-201922-29	2	EA	
RSH-201922-30	SRB-201922-30	2	EA	
RSH-201922-31	SRB-201922-31	2	EA	
RSH-201922-32	SRB-201922-32	2	EA	
RSH-201922-33	SRB-201922-33	2	EA	
RSH-201922-34	SRB-201922-34	2	EA	
RSH-201922-35	SRB-201922-35	2	EA	
RSH-201922-36	SRB-201922-36	2	EA	
RSH-201922-37	SRB-201922-37	2	EA	
RSH-201922-38	SRB-201922-38	2	EA	
RSH-201922-39	SRB-201922-39	2	EA	
RSH-201922-40	SRB-201922-40	2	EA	
RSH-201922-41	SRB-201922-41	2	EA	
RSH-201922-42	SRB-201922-42	2	EA	
RSH-201922-43	SRB-201922-43	2	EA	
RSH-201922-44	SRB-201922-44	2	EA	
RSH-201922-45	SRB-201922-45	2	EA	
RSH-201922-46	SRB-201922-46	2	EA	
RSH-201922-47	SRB-201922-47	2	EA	
RSH-201922-48	SRB-201922-48	2	EA	
RSH-201922-49	SRB-201922-49	2	EA	
RSH-201922-50	SRB-201922-50	2	EA	

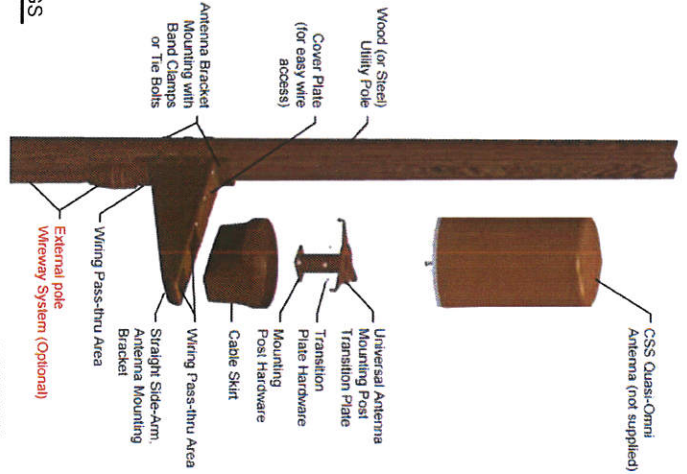
3 RRU MOUNT DETAIL
SCALE: 1" = 1'-0"



5 RRUS 32 DETAIL
SCALE: 1/2" = 1'-0"



6 TUFF-SEAL MULTIPLE HOLE BUSHINGS
SCALE: 1/2" = 1'-0"



2 BOLT-A-BAND MOUNT DETAILS
SCALE: 1/2" = 1'-0"



1 CANTENNA MOUNT DETAILS
SCALE: 1/2" = 1'-0"



NOT FOR CONSTRUCTION

DESIGN

9171 WALLEY VIEW RD.
INDIAN CREEK, IA 52304
WWW.DESIGNER.COM

verizon
1600 BUSINESS ROAD
INDIAN CREEK, IA 52304

PROJECT
20161423957
LOC. CODE: 418817

CED
INDIAN CREEK
SC7

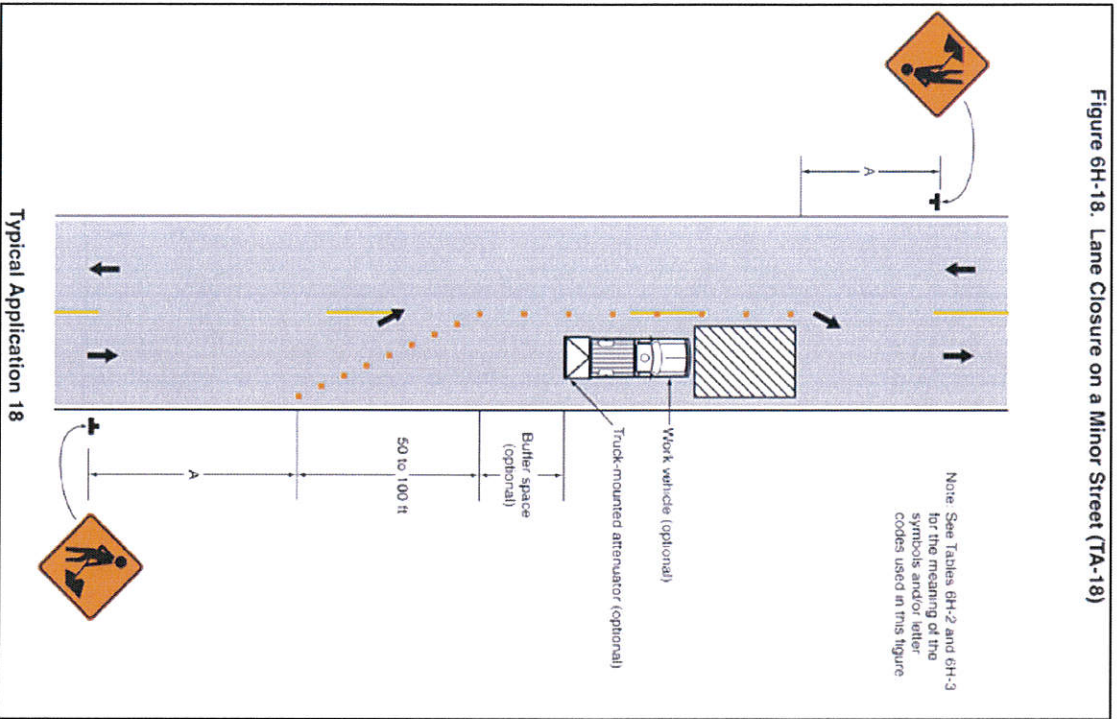
4400 DUNN AVE
MARION, IA 52302

SHEET CONTENTS:
CANTENNA MOUNT DETAILS
RRU MOUNT DETAILS
BOLT-A-BAND MOUNT DETAILS

DRAWN BY:	NPR
DATE:	11-18-16
CHECKED BY:	TAB
REV. A:	11-18-16
REV. B:	01-03-16

A-3

Figure 6H-18. Lane Closure on a Minor Street (TA-18)



Notes for Figure 6H-18—Typical Application 18
Lane Closure on a Minor Street

- Standard:**
- This TTC shall be used only for low-speed facilities having low traffic volumes.
- Option:**
- Where the work space is short, where road users can see the roadway beyond, and where volume is low, warning flags may be self-regulating.
- Standard:**
- Where vehicular traffic cannot effectively self-regulate, one or two flaggers shall be used as illustrated in Figure 6H-10.
- Option:**
- Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
 - A truck-mounted attenuator may be used on the work vehicle and the shadow vehicle.

Table 6H-2. Meaning of Symbols on Typical Application Diagrams

Symbol	Description
	Arrow board
	Advance warning sign or board (shown facing down)
	Changeable message sign or support table
	Channelizing device
	Cant curbs
	Detector of temporary traffic control
	Direction of traffic
	Flagger
	Flag head and flag symbol
	Longitudinal channelizing device
	Luminaire
	Barrier and posts that restrict the movement of a flag vehicle
	Shadow vehicle
	Sign (180° facing left)
	Attenuator
	Temporary barrier
	Temporary barrier with warning light
	Traffic or pedestrian signal
	Truck-mounted attenuator
	TMA 3 barricade
	Warning light
	Work space
	Work vehicle

Table 6H-3. Meaning of Letter Codes on Typical Application Diagrams

Road Type	A	B	C
Urban (low speed)	100 feet	100 feet	100 feet
Urban (high speed)	100 feet	500 feet	200 feet
Rural (low speed)	500 feet	500 feet	500 feet
Rural (high speed)	500 feet	500 feet	500 feet
Expressway / Freeway	1,000 feet	1,200 feet	1,500 feet

1 LANE CLOSURE DETAILS
SCALE: N.T.S.

NOT FOR CONSTRUCTION



9972 VALLEY VIEW RD.
SUITE 200
DES MOINES, IA 50319
(515) 281-2000
WWW.DESIGNER.COM



1400 BIRCH LAKE ROAD
DES MOINES, IA 50319

PROJECT
20161423957
LOC. CODE: 418917

CED
INDIAN CREEK
SC7

4400 DUNN AVE
MARION, IA 52302

SHEET CONTENTS:
LANE CLOSURE DETAILS

DRAWN BY:	NPR
DATE:	11-18-16
CHECKED BY:	TAB
REV. A:	11-18-16
REV. B:	01-03-16

A-4

GENERAL CONDITIONS

00 0001 PERMITS
Construction Permit shall be secured by, or in the name of, Wilson Wireless, to be held in the name of the Owner. Other permits shall be acquired by the Contractor.
00 0002 SURVEY FEES
Survey shall be furnished by the Architect. Layout Staking shall be coordinated with the Surveyor. Per Request for Quote # (TQD).
01 0010 INSURANCE & BONDS
Contractor is to furnish insurance certificates for themselves and subcontractors. Contract shall provide any required bonding. Contractor agrees to verify the project for (1) one year after completion.

01 0400 SUPERVISION & COORDINATION
Contractor shall provide supervision throughout the Project, coordinating the work of all subcontractors, and delivery & installation of Owner-furnished items. Contractor's supervision shall include the following: field observation, including locating. Contractor shall comply with municipal, county, state and/or federal codes, including OSHA.
01 0800 TESTING
Contractor shall be responsible for providing agencies with sufficient notice to arrange for Test Samples (i.e., Concrete (Overlays), and for Special Inspections.
01 2000 MEASURES
Contractor shall maintain accurate records of, and attend, meetings with the Owner and/or Architect and provide a record of all Pre-Construction Meetings or all parties involved, prior to the start of construction.
01 3100 TEMPORARY UTILITIES
Contractor shall provide for the job with a clean and orderly facility, providing temporary sanitary facilities, and waste disposal.
01 3300 EQUIPMENT RENTAL
Contractor shall furnish equipment necessary to expedite work.
01 5900 FIELD OFFICES & SHEDS
Contractor shall provide security (fence chain or trailer models) for tools and materials that remain overnight on site.

01 7000 CLEAN UP & CLOSE OUT
Contractor shall clean up the Site to the satisfaction of Owner. Contractor shall complete the items listed on the Owner's Punch List, and shall sign and return the List to the Owner. Contractor shall maintain a list of drawings during the job, on which changes shall be noted in red ink. A full set of revised drawings (As-Built) one to be given to the Architect at job completion and submit construction work complete memo to Construction Engineer.
01 8000 TRACKS & WELFARE
Contractor shall provide transportation for their own personnel.
01 8300 TRAVEL, TIME & PER DIEM
Contractor shall provide room and board for their own personnel, and reasonable time for traveling to & from job site.
01 9200 TAXES
Contractor shall pay sales and/or use tax on materials and taxable services.
SIGNAGE
02 1000 SITE PREPARATION
N/A
02 1100 ROAD IMPROVEMENT & CONSTRUCTION
N/A
02 2000 FURNISHING & EXCAVATION
N/A
02 3000 PAINTING & SURFACING
Contractor shall provide surface damaged during the construction process must be returned to pre construction condition of better. Conditions will owner and established.
02 7800 POWER TO SITE
Contractor shall coordinate the electrical service to the RDU's with the Utility Provider.
02 7900 TIELO TO SITE
Contractor shall provide 2" schedule 40 PVC conduit, (schedule 80 PVC under roads and driveway) with large enough elbows and pull string for TIELO service as noted in Part 1 of the RFP. TIELO shall be installed in accordance with the TIELO. Trenches shall be set in 02 7900.
02 8000 SITE IMPROVEMENTS
N/A
02 8001 FENCING
N/A

02 8000 RECEPTION SYSTEMS

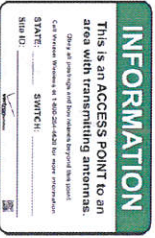
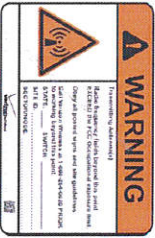
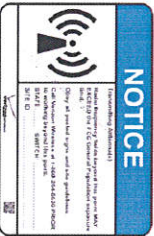
02 8000 LANDSCAPING
Contractor to restore turf areas damaged by construction to preconstruction condition or better.
Contractor shall protect existing landscape elements that are not in the Scope of Work and shall provide adequate watering and maintenance during construction. If conflicts arise regarding the location of root protection, the line, etc., the Architect shall be contacted prior to performing work that may cause damage. Damage resulting from removal of this Article shall be compensated by the responsible Party and a cost to be determined by the Property Owner, Architect, and Contractor. The Contractor shall provide a written statement, and set. Working shall be as described in 02 8000.
CONCRETE
03 1000 CONCRETE FORM WORK
Concrete forms shall be dimension lumber, modular, or steel.
MASONRY
N/A
METALS
05 0000 METALS
Contractor will furnish and install structural and fabricated steel items not specifically furnished by Owner, and fabricate Owner-furnished items. Structural steel items shall be furnished by Owner, and shall conform to the American Institute of Steel Construction (AISC) specifications. Field welding shall be performed by AWS Certified Welders, and inspected as prescribed by the Structural Engineer. Steel shall be ASTM A992 OR A36, and 3/4" field bolts shall be A325. Temporary erecting bolts, clip bolts, and nutting shall be furnished by Contractor. Fabrications shall be performed in accordance with the American Institute of Steel Construction (AISC) specifications. All steel shall be hot dipped galvanized per ASTM A153. Thickness grade 55. Fabricated iron and steel hardware shall be hot dipped galvanized per ASTM A153. Riprap of damaged or recorded galvanized surfaces shall be per ASTM A153.

05 0000 METALS
Contractor will furnish and install structural and fabricated steel items not specifically furnished by Owner, and fabricate Owner-furnished items. Structural steel items shall be furnished by Owner, and shall conform to the American Institute of Steel Construction (AISC) specifications. Field welding shall be performed by AWS Certified Welders, and inspected as prescribed by the Structural Engineer. Steel shall be ASTM A992 OR A36, and 3/4" field bolts shall be A325. Temporary erecting bolts, clip bolts, and nutting shall be furnished by Contractor. Fabrications shall be performed in accordance with the American Institute of Steel Construction (AISC) specifications. All steel shall be hot dipped galvanized per ASTM A153. Thickness grade 55. Fabricated iron and steel hardware shall be hot dipped galvanized per ASTM A153. Riprap of damaged or recorded galvanized surfaces shall be per ASTM A153.
WOOD & PLASTICS
N/A
THEATRE & MONUMENT
N/A
DOORS AND HARDWARE
N/A
FINISHES
08 0000 PAINTING
Contractor shall provide materials and labor for all painting indicated in the architectural documents and shall touch-up construction related scuffs & scratches with appropriate paint.
Contractor to field verify finish coat colors/tones and select appropriate matches corresponding to the colors of the elements described below. Contractor to obtain color and Architect approval of all finishes prior to application of paint.
• Contractor to paint antennas, RDU's, and related equipment to match job color.
SPECIAL CONSTRUCTION
13 1200 CABLE BRIDGE, CANOPY
N/A
13 1400 ANTENNA INSTALL
Contractor shall install Owner's antennas and feed lines during erecting. Contractor shall test and certify feed lines per current VZW standards.
13 3403 TRANSPORT AND SET ANTENNAS / EQUIPMENT
Contractor shall provide crane(s) and/or truck for transporting, setting antennas and related equipment on site per.
13 3613 ANTENNA MOUNTS
Contractor to install antenna mounts per manufacturer specifications.
MECHANICAL
15 4000 PLUMBING
N/A
15 5000 HVAC
N/A

ELECTRICAL

16 5000 LIGHTING AND ELECTRICAL
N/A
16 6000 GROUNDING
Contractor shall maintain themselves familiar with and follow the current GROUNDING STANDARDS of VZWON WIRELESS. Contractor shall perform work as shown on drawings and specifications and shall include, but NOT BE LIMITED TO, THE FOLLOWING STANDARDS can to be determined by the Contractor to the Owner.
SCOPE OF WORK:
CONTRACTOR SHALL PROVIDE MATERIALS, LABOR, TOOLS, TRANSPORTATION, SUPERVISION, AND TO FULLY EXECUTE WORK. WORK REQUIREMENTS ARE REMAINED ON THE DRAWINGS AND SPECIFICATIONS AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
SITE PREPARATION
INSTALL ANTENNAS/RDU'S
POWER/FIBER TO RDU'S
SITE GROUNDING

CONTRACTOR SHALL PROVIDE MATERIALS, LABOR, TOOLS, TRANSPORTATION, SUPERVISION, AND TO FULLY EXECUTE WORK. WORK REQUIREMENTS ARE REMAINED ON THE DRAWINGS AND SPECIFICATIONS AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
SITE PREPARATION
INSTALL ANTENNAS/RDU'S
POWER/FIBER TO RDU'S
SITE GROUNDING



1 SCALE: N/A
REF STICKERS

NOT FOR CONSTRUCTION



8753 VALLEY VIEW RD
INDIAN CREEK, IA 52244
(563) 923-4299
WWW.DESIGNER.COM



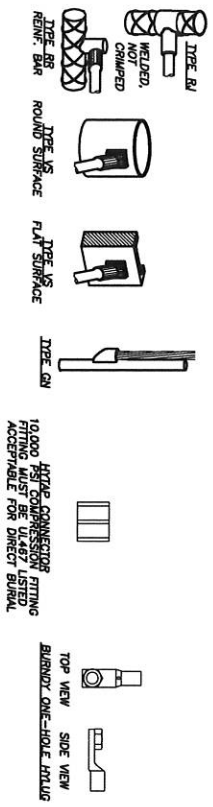
1400 BISHOP LAKE ROAD
ELKHART, IN 46530

PROJECT
20161423957
LOC CODE: 418817

CED
INDIAN CREEK
SC7

4400 DUNN AVE
MARION, IA 52302
SHEET CONTENTS:
SPECIFICATIONS
RF STICKERS

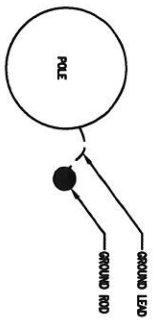
DRAMA BY: NRR
DATE: 11-18-16
CHECKED BY: TAB
REV. A: 11-18-16
REV. B: 01-03-16
A-5



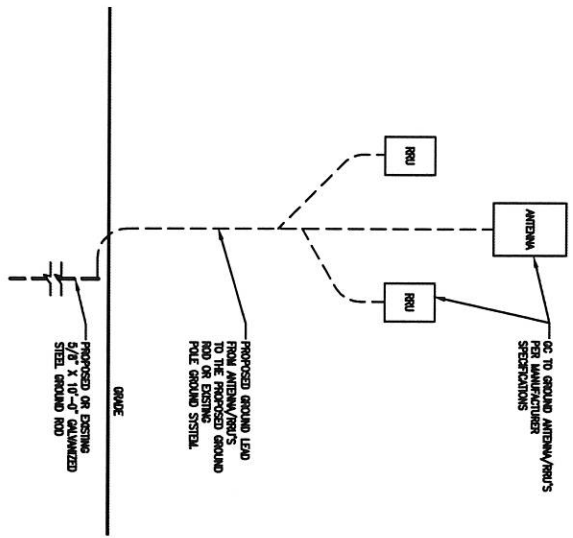
3 CADWELD DETAILS
SCALE: 1/2" = 1'-0"

- GENERAL GROUNDING NOTES:**
1. AN EXTERNAL BARED GROUND LEAD (LEAD 1) SHALL BE ESTABLISHED NEAR THE POLE.
 2. ALL SURFACE CONNECTIONS SHALL BE BY ELECTRIC WELD, BRAZED WELD, OR GAS-TIGHT UL47-LISTED COMPRESSION FITTING PRE-FILLED WITH ANTI-OXIDANT COMPOUND. SURFACE CONNECTIONS SHALL NOT BE "COLD GALVANIZED COINDED."
 3. LEAD 1 SHALL BE #2 SOLID BARE TH-350 (SPT) COPPER WIRE BARED AT GROUND ROD. LEAD 1 BENDS SHALL BE MINIMUM 24" ROUNDS. "HIP" LEAD BENDS MAY BE OF 12" ROUNDS.
 4. ALL VERTICAL JUNCTIONS TO BE WELDED WITHIN TWO FEET (2'-0") OF PROPOSED GROUND ROD.
 5. GROUND RODS SHALL BE GALVANIZED STEEL, 5/8". RODS SHALL BE KEPT MIN. 24" FROM FOUNDATIONS. GROUND ROD IS REQUIRED TO BE INSTALLED AT FULL SPECIFIED LENGTH. TOP OF GROUND ROD SHALL BE BARED 24" BELOW GRADE.
 6. ABOVE-GRADE CONNECTIONS SHALL BE BY LUGS W/ ONE-HOLE TONGUES WITH MINORORS UNLESS NOTED OTHERWISE. JOINED TO SOLID LEADS BY 1000PSI COMPRESSION SURFACES THAT ARE GALVANIZED OR COINDED SHALL HAVE CONTACTS REMOVED PRIOR TO CRIMPING. LUG TONGUES SHALL BE COINDED WITH ANTI-OXIDANT COMPOUND, AND CROSS COMPOUND WROD CLEAN AFTER BOLLING.

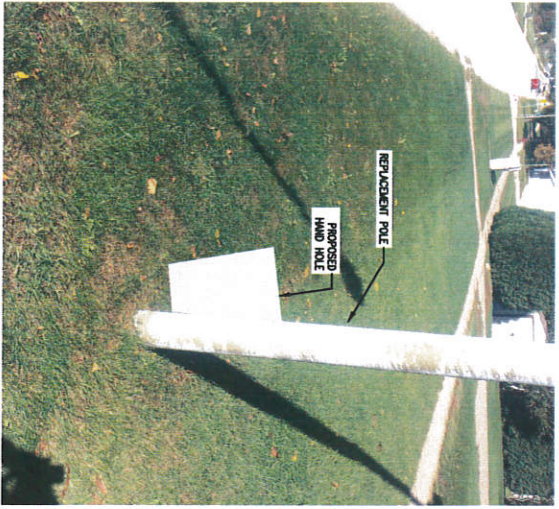
2 GROUNDING PLAN
SCALE: N.T.S.



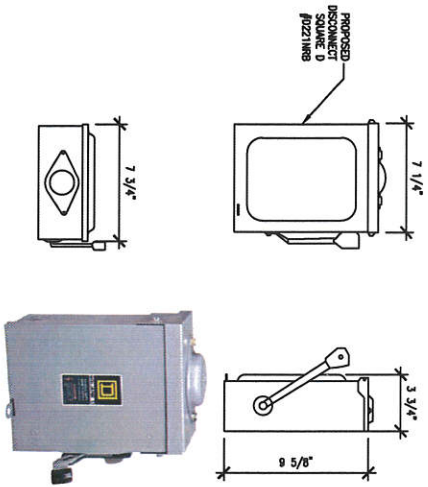
1 GROUNDING ONE-LINE DIAGRAM
SCALE: N/A



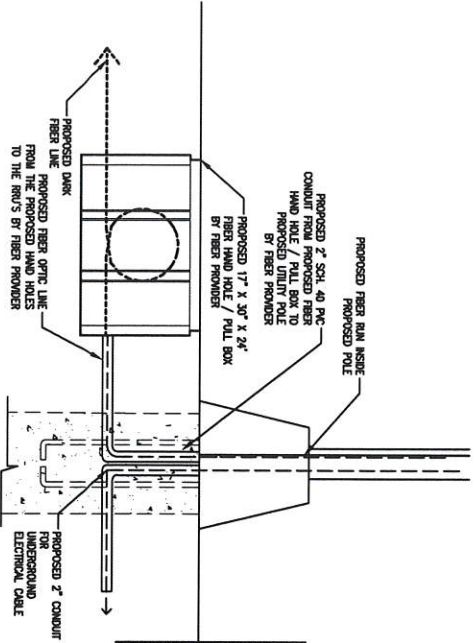
NOT FOR CONSTRUCTION	
9271 WALTER AVENUE EMMENGAUERS, MN 55344 (952) 405-6299 WWW.DESIGN1.COM	
PROJECT	20161423957
LOC. CODE	419917
verizon 10901 BISHOP LAKE ROAD BLOOMINGTON, MN 55438	
CEID	INDIAN CREEK
SC7	
4400 DUNN AVE MARICON, IA 52302	
SHEET CONTENTS: GROUNDING ONE-LINE GROUNDING NOTES	
DRAWN BY:	NPR
DATE:	11-18-16
CHECKED BY:	TAB
REV. A:	11-18-16
REV. B:	01-20-16
G-1	



3 PHOTO - FIBER HAND HOLE AT POLE BASE
SCALE: 1/16" = 1'-0"



4 CIRCUIT-LOCK DISCONNECT SWITCH
SCALE: 1 1/2" = 1'-0"



2 FIBER HAND HOLE DETAIL AT POLE BASE
SCALE: 1/2" = 1'-0"

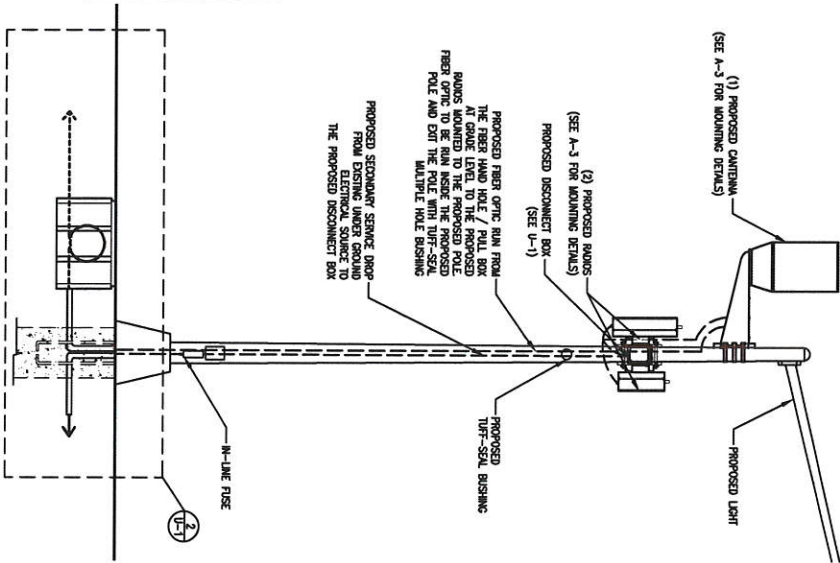


5 ELECTRICAL ONE-LINE DIAGRAM
SCALE: N/A

NOTE: ALL REQUIRED PERMITS, LICENSES, INSURANCES AND APPROVALS SHALL BE SECURED IN ADVANCE FOR OBTAINMENT AND BE THE RESPONSIBILITY OF THE 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 DEVICES AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUFACTURER'S SPECIFICATIONS OR THE FOLLOWING ADOPTED:
N.E.C. - NATIONAL ELECTRIC CODE
N.A.S.P. - NATIONAL ARCHITECTURAL SPOKESMAN'S INSTITUTE
N.E.T.S. - NATIONAL ELECTRICAL TRADES SOCIETY
N.E.T.A. - NATIONAL ELECTRICAL TRADES ASSOCIATION
I.L.U. - ILLINOIS LIGHTING UNION
N.F.P.A. - NATIONAL FIRE PROTECTION ASSOCIATION



Call Before You Dig!
1-800-292-8989
Modification service for locating underground



1 UTILITY ROUTING PLAN
SCALE: 1/4" = 1'-0"

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9773 VALLEY VIEW RD.
DESO PARKWAY, MN 55344
WWW.DESIGN-1.COM



14007 BUSH LAKE ROAD
BLOOMINGTON, MN 55420

PROJECT
20161423957

LOC CODE: 418817

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INDIAN CREEK
SC7

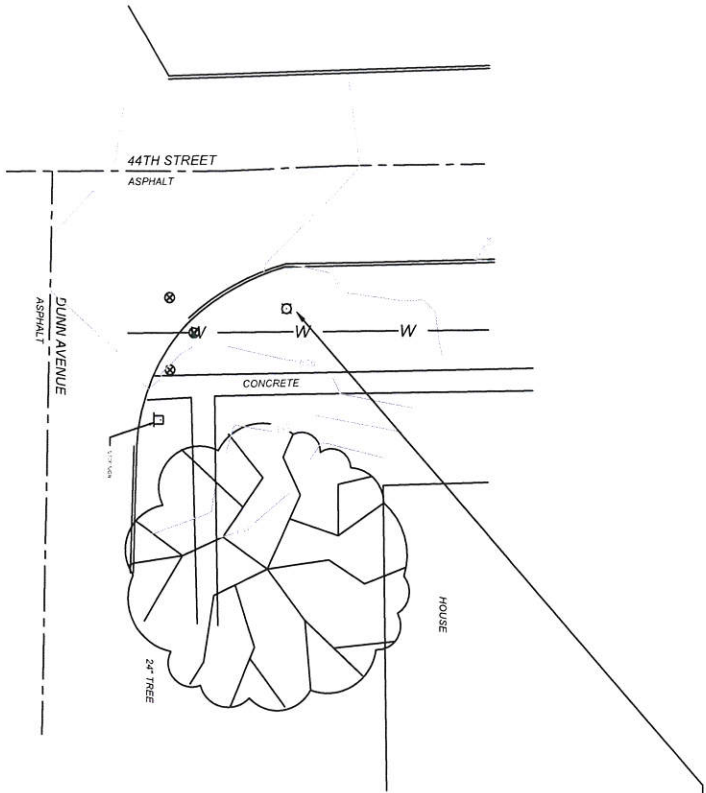
4400 DUINN AVE
MARION, IA 52302

SHEET CONTENTS:
UTILITY ROUTE
FIBER HAND HOLE DETAIL
PHOTO
DISCONNECT DETAIL

DRAWN BY:	NRB
DATE:	11-18-16
CHECKED BY:	TAB
REV A:	11-18-16
REV B:	01-20-16

U-1

INDIAN CREEK SCT7 TOWER SITE



NODE LOCATION:
 EXISTING COMPOSITE POLE
 GROUND ELEVATION
 BOTTOM OF LIGHT
 TOP OF LIGHT
 LATITUDE=
 LONGITUDE=#

5" DIAMETER
 815.1 NAVD88
 833.6 NAVD88
 835.7 NAVD88
 N42° 02' 23.54"
 W91° 33' 46.53"



LEGEND

- ◆ FIRE HYDRANT
- ⊕ VALVE OR BLOWOFF
- ⊙ GAS VALVE
- UTILITY POLE
- GUY WIRE
- TRAFFIC SIGN
- MANHOLE
- TEL TELEPHONE TERMINAL
- CATV CABLE TV TERMINAL
- OVERHEAD ELECTRICAL
- UNDERGROUND ELECTRICAL
- OVERHEAD TELEPHONE
- UNDERGROUND TELEPHONE
- GAS LINE
- DECIDUOUS TREE
- CONIFEROUS TREE
- UTILITY EASEMENT

SURVEYOR NOTE:
 1. UTILITIES ARE PER OBSERVED EVIDENCE ONLY.

Title:
INDIAN CREEK TOWER SITE
SCT7



Drawn: **DJB** Book: **354**
 Date: **10/10/16** Scale: **1"=20'**
 Project No:
363616-80



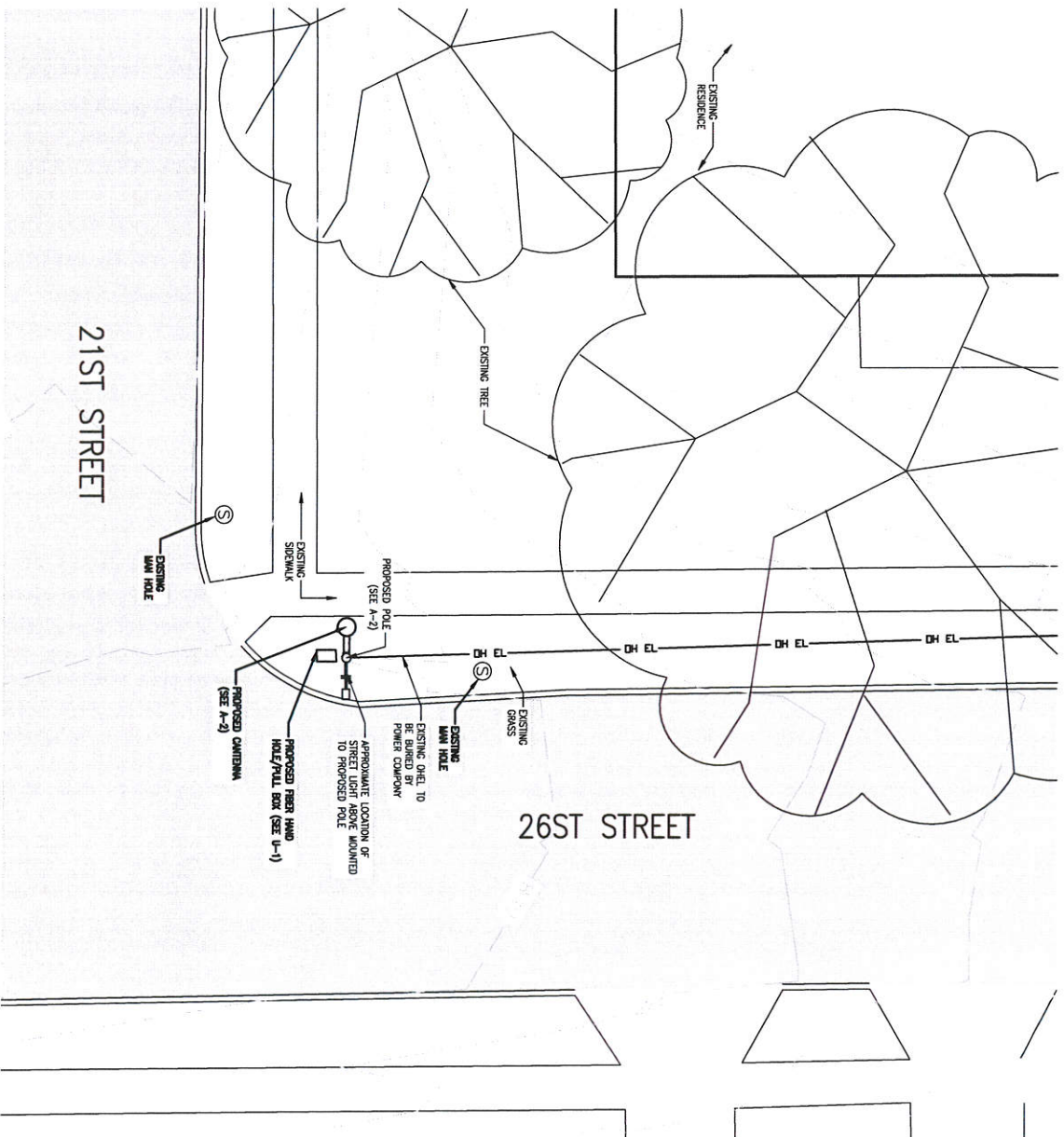
4 PHOTO - SITE OVERVIEW
SCALE LOOKING WEST



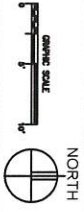
3 PHOTO - SITE OVERVIEW
SCALE LOOKING NORTH



2 PHOTO - SITE OVERVIEW
SCALE LOOKING SOUTH



1 SITE PLAN
SCALE 1"=10'-0"



NOT FOR CONSTRUCTION

DESIGN
9873 VALLEY VIEW RD.
EBERH PARKWAY, WISCONSIN
(920) 903-9299
WWW.DESIGN1EP.COM

Verizon
10801 BISH LANE ROAD
BLOOMINGTON, MN 55438

PROJECT
20161423951
LOC. CODE: 418807
CED
INDIAN CREEK
SC1

2130 26TH ST
MARION, IA 52302
SHEET CONTENTS:
SITE PLAN
PHOTOS

DRAWN BY	NHR
DATE	11-18-16
CHECKED BY	TKB
REV. A	11-18-16
REV. B	01-23-17
A-1	



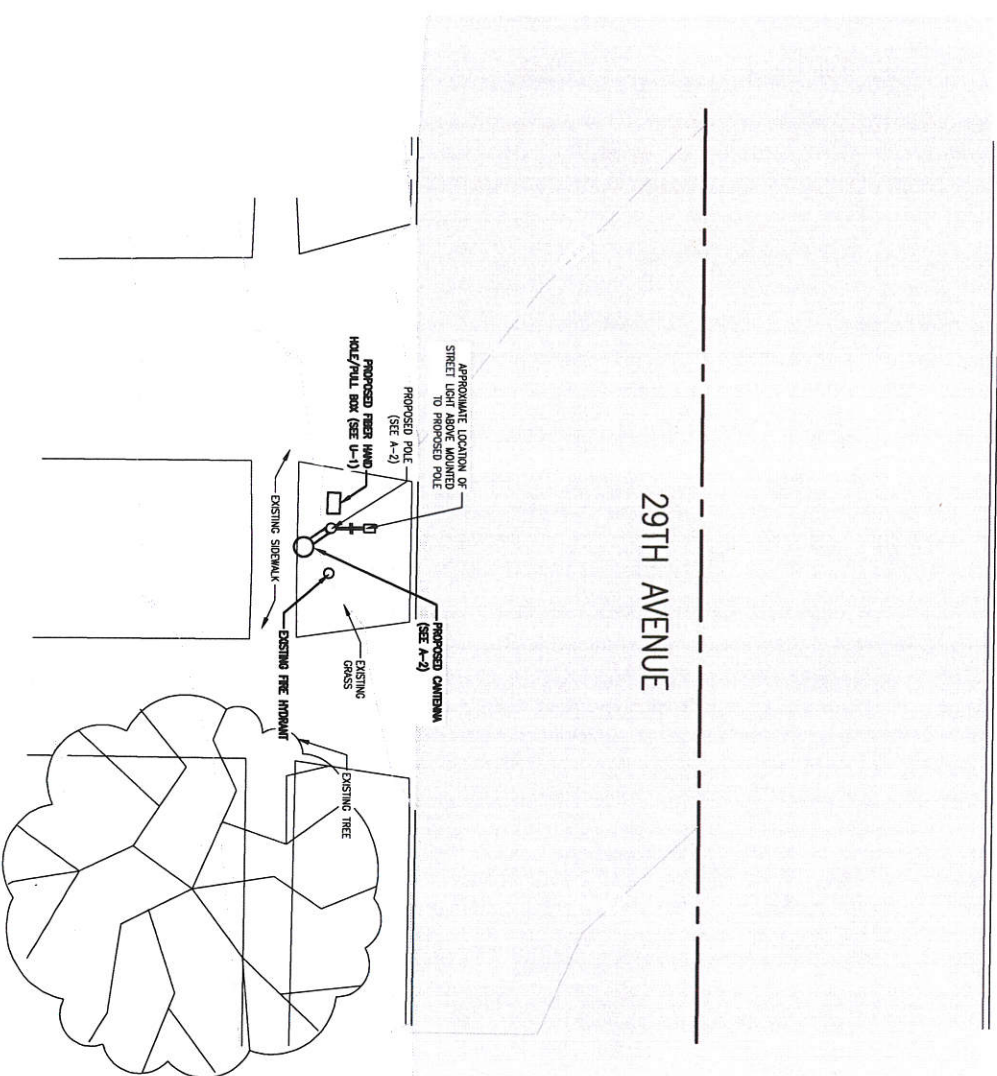
4 PHOTO - SITE OVERVIEW
SCALE: LOOKING SOUTH



3 PHOTO - SITE OVERVIEW
SCALE: LOOKING EAST



2 PHOTO - SITE OVERVIEW
SCALE: LOOKING NORTH WEST



1 SITE PLAN
SCALE: 1"=10'-0"



See 21

NOT FOR CONSTRUCTION

DESIGN 1
9973 VALLEY VIEW RD.
EBERHARDT, MN 55344
(620) 900-9299
WWW.DESIGN1GROUP.COM

verizon
10801 BISHULAKE ROAD
BLOOMINGTON, MN 55438

PROJECT
20161423952
LOC. CODE 418911

CED
INDIAN CREEK
SC2

25893 29TH AVE
MARION, IA 52302
SHEET CONTENTS:
SITE PLAN
PHOTOS

DRAWN BY:	MPR
DATE:	11-18-16
CHECKED BY:	TKS
REV. A:	11-18-16
REV. B:	01-25-17

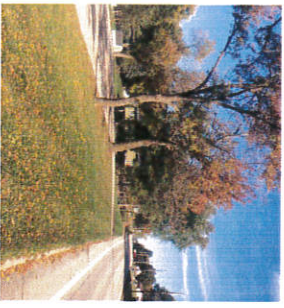
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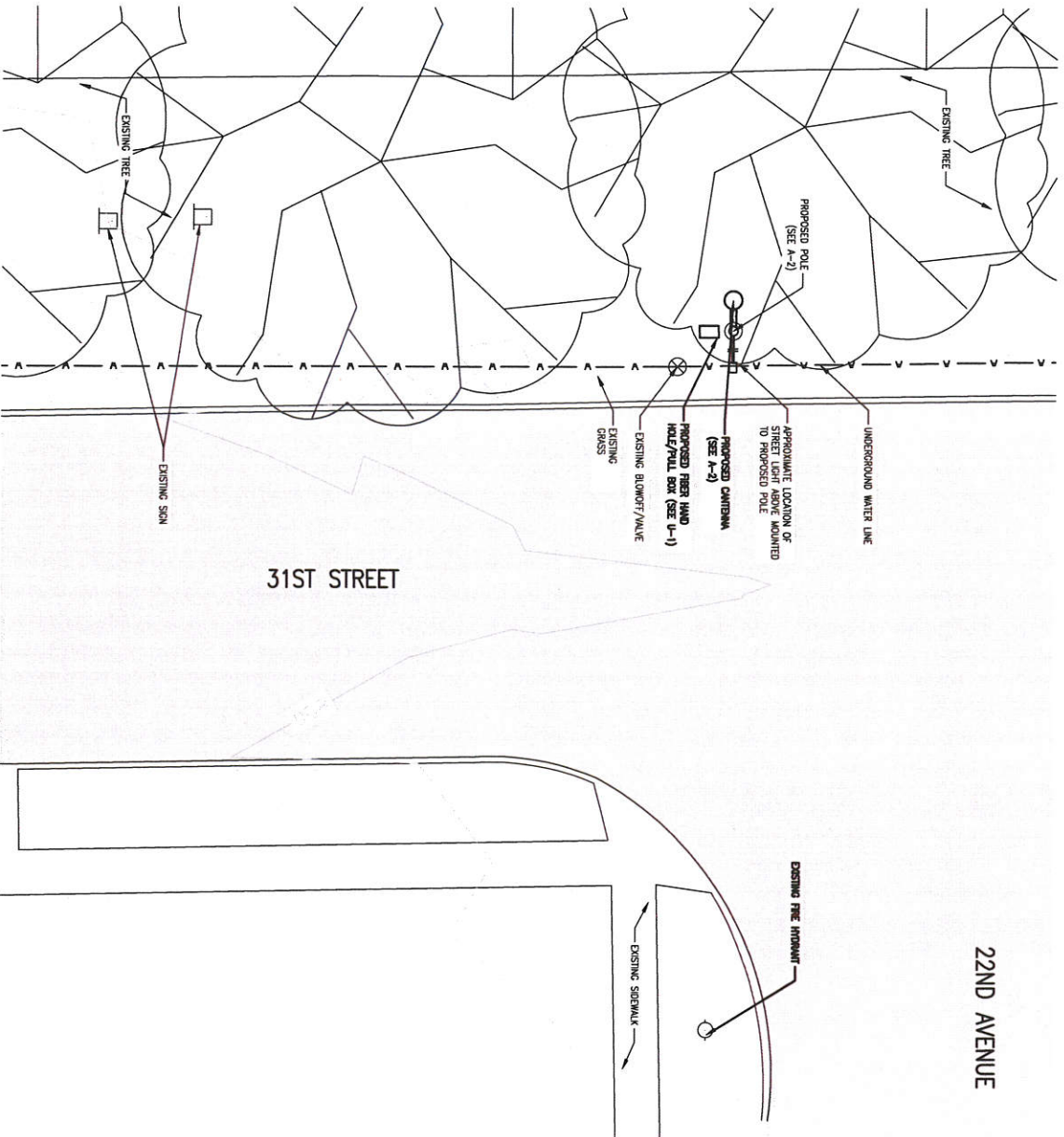
4 PHOTO - SITE OVERVIEW
SCALE LOOKING EAST



3 PHOTO - SITE OVERVIEW
SCALE LOOKING SOUTH



2 PHOTO - SITE OVERVIEW
SCALE LOOKING NORTH



1 SITE PLAN
SCALE 1"=10'-0"



NOT FOR CONSTRUCTION	
DESIGN 1 873 VALLEY VIEW RD. ELKHART, IN 46517 (862) 903-0289 FAX 862-903-0444 WWW.DESIGN1EP.COM	
verizon 1985 SHILOH LAKE ROAD BLOOMINGTON, IN 47408	
PROJECT 20161490226 LOC. CODE: 429666	CED INDIAN CREEK SC3
2200 31ST ST MARION, IA 52302	
SHEET CONTENTS: SITE PLAN PHOTOS	
DRAWN BY: NFR DATE: 12-16-16 CHECKED BY: TAB REV. A: 12-16-16 REV. B: 01-03-17	A-1



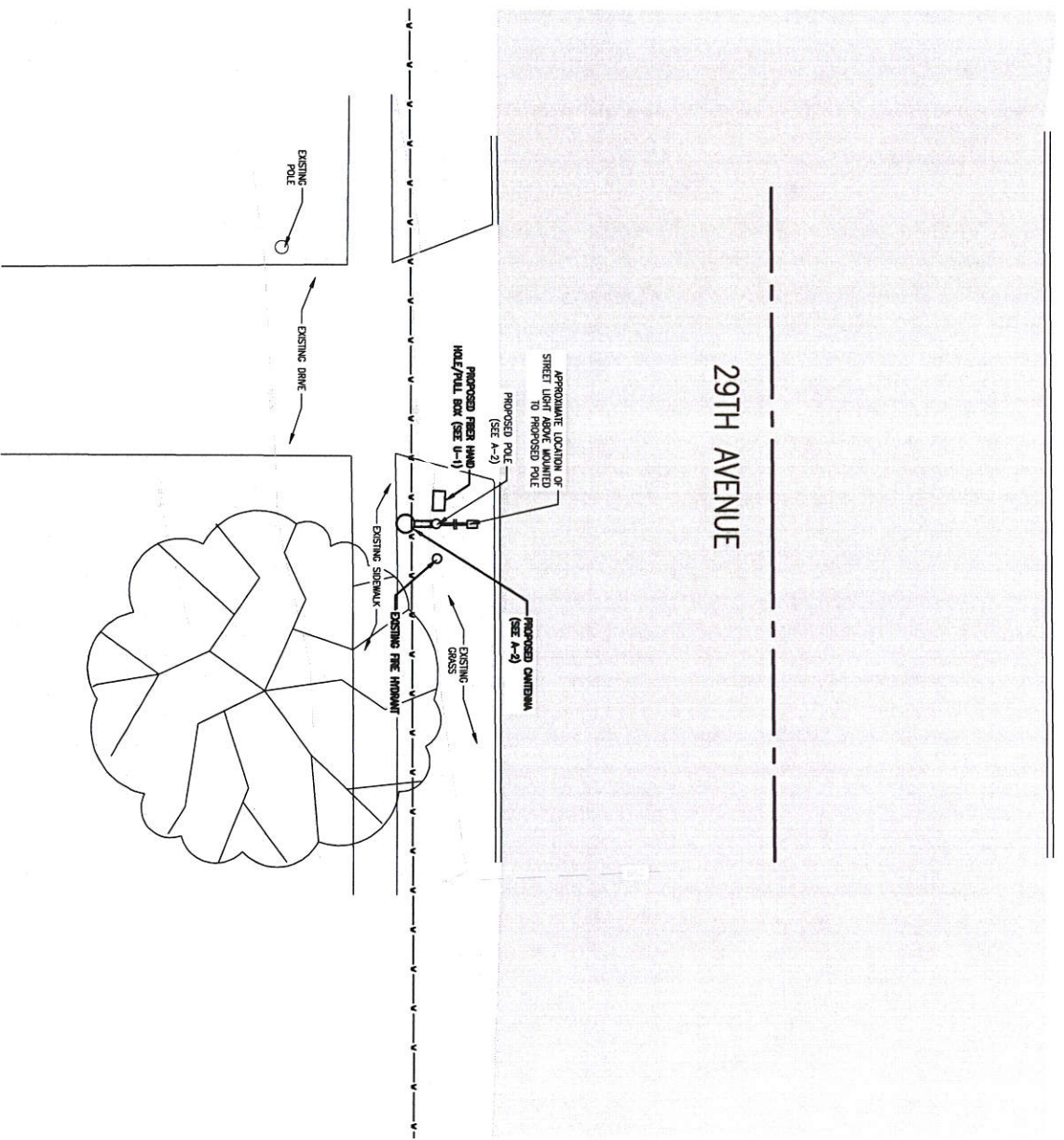
4 PHOTO - SITE OVERVIEW
SCALE LOOKING SOUTH



3 PHOTO - SITE OVERVIEW
SCALE LOOKING EAST



2 PHOTO - SITE OVERVIEW
SCALE LOOKING WEST



1 SITE PLAN
SCALE: 1"=10'-0"

GRAPHIC SCALE

NORTH

NOT FOR CONSTRUCTION

DESIGN

5073 VALLEY VIEW RD.
BIRMINGHAM, AL 35244
(205) 900-9729
WWW.KLEINFELDER.COM

verizon

1901 BISHOP LANE ROAD
BIRMINGHAM, AL 35243

PROJECT
20161423954
LOC. CODE: 419913

CED
INDIAN CREEK
SC4

3649 29TH AVE
MARION, IA 52302

SHEET CONTENTS:
SITE PLAN
PHOTOS

DRAWN BY:	NJR
DATE:	11-16-16
CHECKED BY:	TAB
REV. A:	11-16-16
REV. B:	01-23-17

A-1



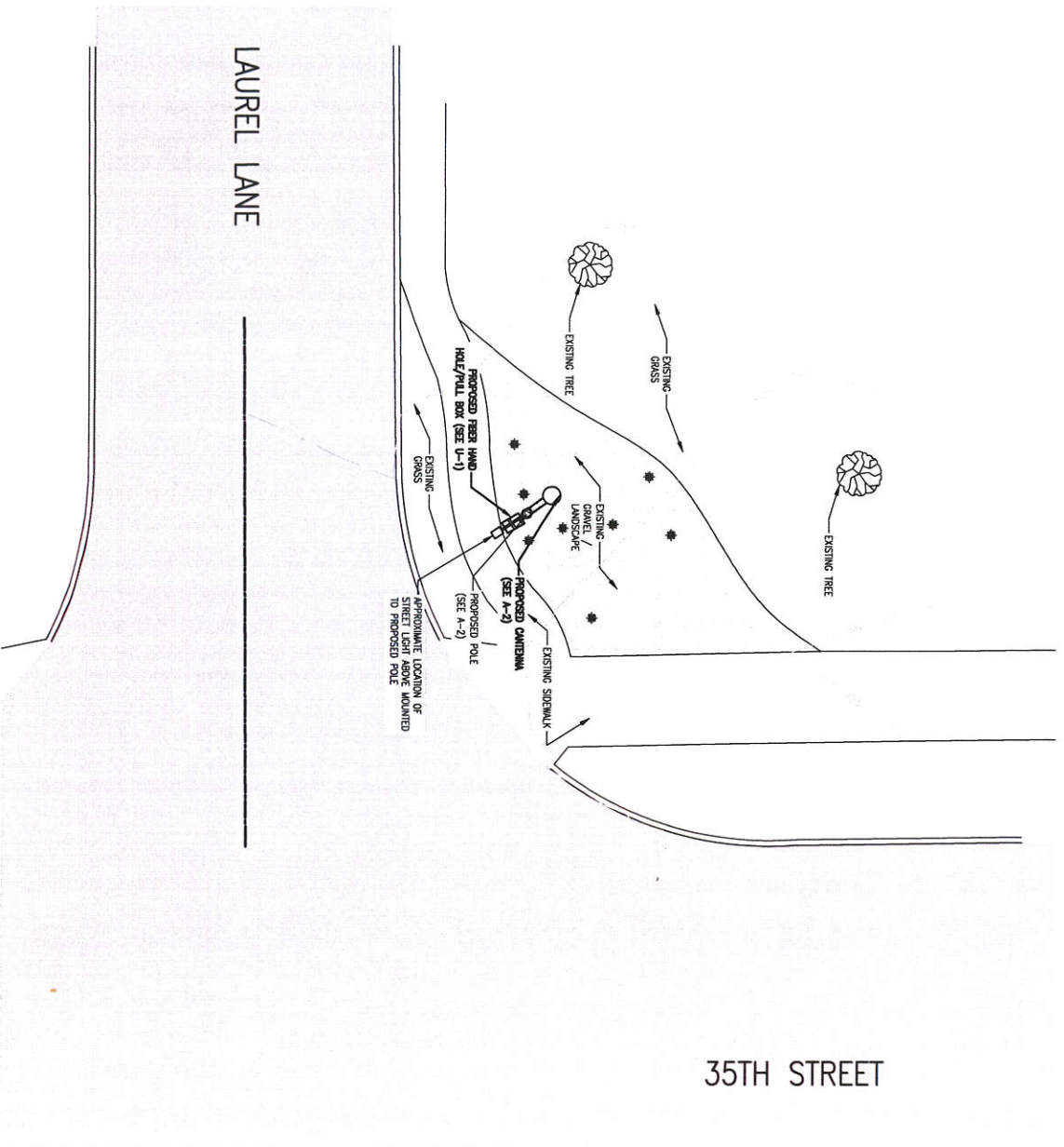
4 PHOTO - SITE OVERVIEW
SCALE LOOKING SOUTH



3 PHOTO - SITE OVERVIEW
SCALE LOOKING NORTH WEST



2 PHOTO - SITE OVERVIEW
SCALE LOOKING NORTH



35TH STREET

1 SITE PLAN
SCALE 1"=10'-0"



NOT FOR
CONSTRUCTION



PROJECT
20161423965
LOC. CODE: 418915

CED
INDIAN CREEK
SC5

SHEET CONTENTS:
SITE PLAN
PHOTOS

DRAWN BY	NJR
DATE	11-18-16
CHECKED BY	TAB
REV. A	11-18-16
REV. B	07-27-17
A-1	



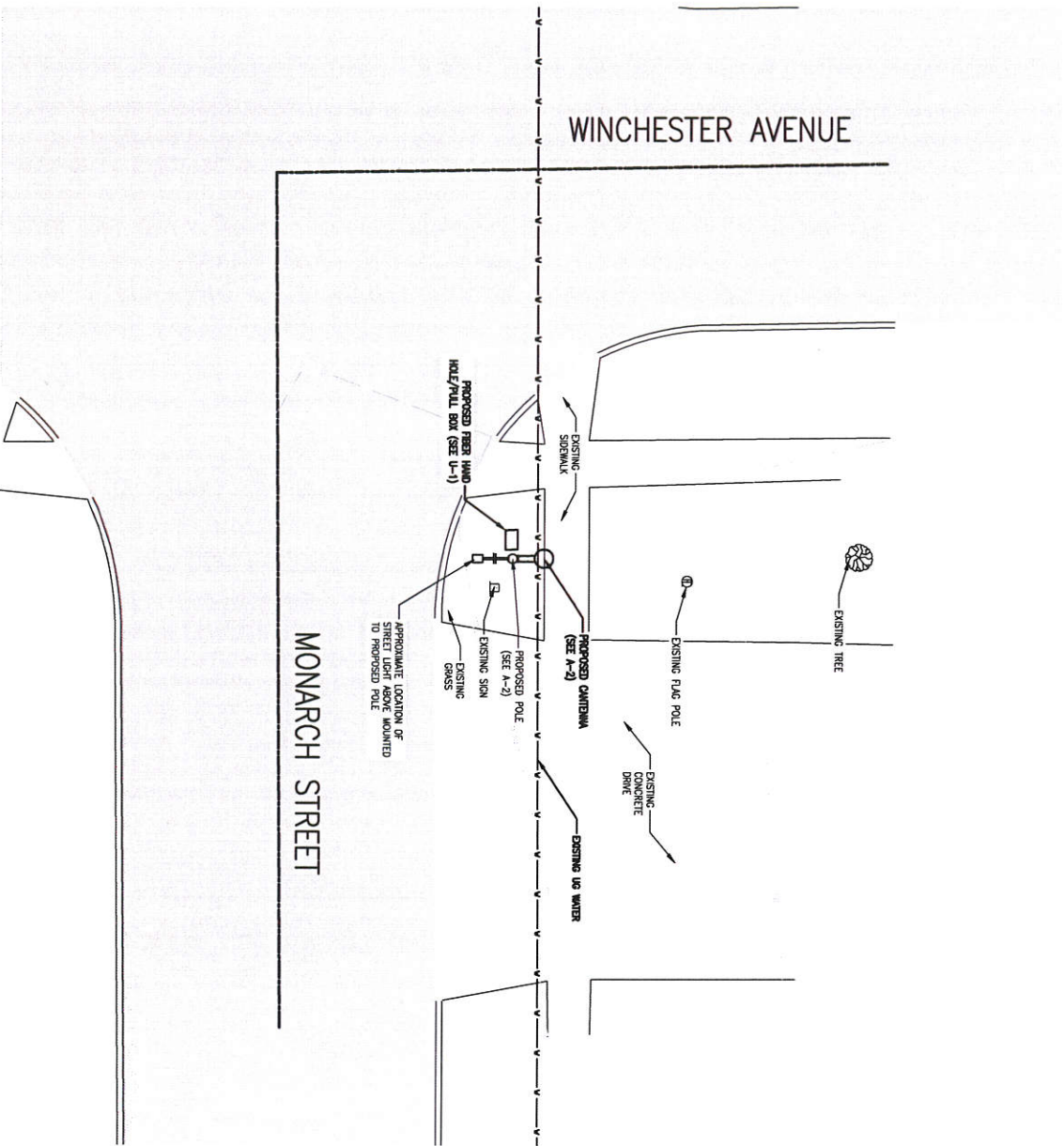
4 PHOTO - SITE OVERVIEW
SCALE: LOOKING SOUTH



3 PHOTO - SITE OVERVIEW
SCALE: LOOKING NORTH WEST



2 PHOTO - SITE OVERVIEW
SCALE: LOOKING EAST



1 SITE PLAN
SCALE: 1"=10'-0"



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DESIGN 1
9873 WALTON AVENUE
EGG HARBOR, NJ 08024
(856) 900-9289
WWW.DESIGN1REP.COM

verizon
1001 SASHAWE ROAD
BLOOMINGTON, IN 47404

PROJECT
20161423956
LOC. CODE: 418916

CED
INDIAN CREEK
SC6

3910 MONARCH ST
MARION, IA 52302
SHEET CONTENTS:
SITE PLAN
PHOTOS

DRAWN BY	NJR
DATE	11-8-16
CHECKED BY	TAJ
REV. A	11-8-16
REV. B	01-23-17

A-1



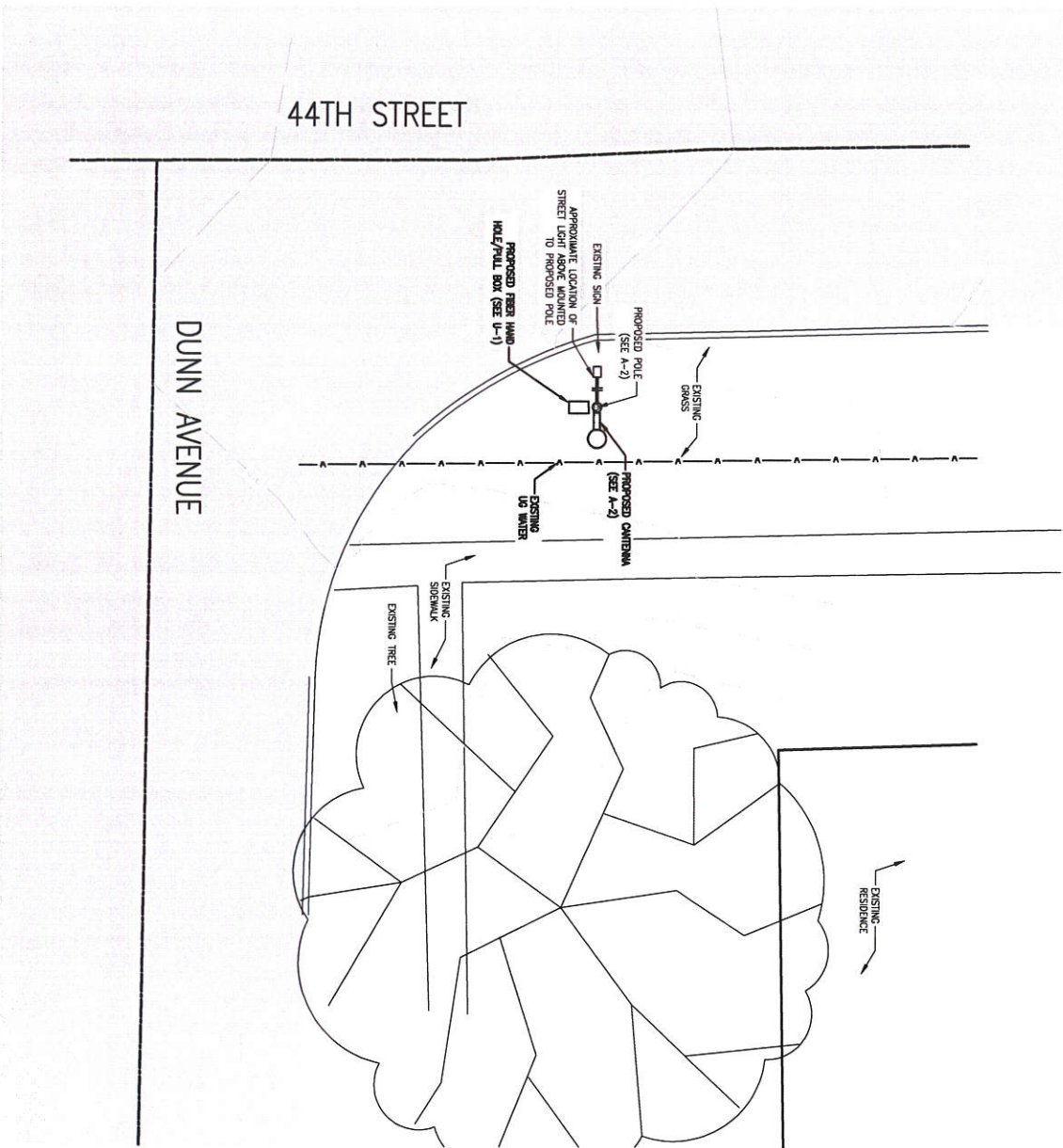
4 PHOTO - SITE OVERVIEW
SCALE: LOOKING NORTH



3 PHOTO - SITE OVERVIEW
SCALE: LOOKING SOUTH EAST



2 PHOTO - SITE OVERVIEW
SCALE: LOOKING EAST



1 SITE PLAN
SCALE: 1"=10'-0"



NOT FOR
CONSTRUCTION

DESIGN 1

9273 WATSON AVENUE
EGBEN PARKWAY, WISCONSIN 53034
(262) 900-9729
WWW.DESIGN1INC.COM

verizon
1001 ELSHILK ROAD
BLOOMINGTON, WI 54810

PROJECT
20161423957
LOC. CODE: 419917

CED
INDIAN CREEK
SC7

4400 DUNN AVE
MARION, IA 52302

SHEET CONTENTS:
SITE PLAN
PHOTOS

DRAWN BY	NPR
DATE	11-18-16
CHECKED BY	TAB
REV. A	11-18-16
REV. B	01-25-17

A-1



195 35th Street
Marion, Iowa 52302
www.cityofmarion.org

Council Memo

DATE: February 3, 2017

TO: Mayor, City Council Members

CC: Lon Pluckhahn, City Manager

FROM: Ryan Miller, Public Services Director

RE: Council Agenda Items- Work Session

Exhibit(s):

B.2 Discussion regarding Eco Industrial Park

For the February 3, 2017 City Council work session, information will be presented to the City Council regarding the proposed finance strategies for the Eco Industrial Park and related equipment.

The Public Services Department has been facilitating plans for improvements that include the construction of new facilities that will allow for vehicle maintenance and equipment storage. The proposed infrastructure is designed around energy models that will allow for the improvements to be completed at a long term cost savings to the city. As proposed, the project facilitates the transition of equipment and vehicles to an alternative fuel platform that will allow for long term energy savings.



PUBLIC SERVICES ALTERNATIVE FUELS PROJECT COMPRESSED NATURAL GAS CHASSIS PROFILE HEAVY DUTY

Road Use	Chassis	YEAR PURCHASED	LIFE CYCLE	CHASSIS SPEC	ENG SPEC	2017-2018	2018-2019	2019-2020
111 Road Use	2001 Intl 2 1/2 Dump #56	92500	Sep-00	12	CLASS 7	8.9L CNG	195,000.00	
111 Road Use	2002 Sterling 2 1/2T Dump #53	72000	Dec-01	12	CLASS 7	8.9L CNG	195,000.00	
111 Road Use	2003 Sterling L7500 Dump #57	76100	Dec-02	12	CLASS 7	8.9L CNG	195,000.00	
111 Road Use	2004 Sterling L7500 Dump #58			12	CLASS 7	8.9L CNG	195,000.00	
111 Road Use	2005 Sterling 2 1/2 t. Dump #52	88000	1/1/2005	12	CLASS 7	8.9L CNG	195,000.00	
111 Road Use	2006 Sterling 2 1/2 ton #51	97,000	Dec-05	12	CLASS 7	8.9L CNG	195,000.00	
111 Road Use	2007 International tandem #50	120,230	Dec-06	12	CLASS 7	8.9L CNG	195,000.00	
111 Road Use	2009 Intl 7400 Tandem Dump #55	116,340	Oct-08	12	CLASS 7	8.9L CNG	195,000.00	
111 Road Use	2009 Intl 7400 Tandem Dump #59	120000	Oct-09	12	CLASS 7	8.9L CNG	195,000.00	
111 Road Use	2011 Intl 7400 Tandem Dump #60		Feb-12	12	CLASS 7	8.9L CNG	195,000.00	
111 Road Use	1996 Ford LN8000 tandem #54	63,056	Jun-05	12	CLASS 7	8.9L CNG	195,000.00	
						TOTAL	2,145,000.00	
						TRADE IN VALUE	\$600,000.00	
						AQUISITION TOTAL	1,545,000.00	

PUBLIC SERVICES ALTERNATIVE FUELS PROJECT COMPRESSED NATURAL GAS CHASSIS PROFILE ANCILLARY

Road Use	Chassis	YEAR PURCHASED	LIFE CYCLE	CHASSIS SPEC	ENG SPEC	2017-2018	2018-2019	2019-2020
111 Road Use	Tymco 600 Sweeper #32	162,880.00	2012	12	CLASS 6	8.9L CNG	265,000.00	
111 Road Use	Tymco 600 Sweeper #33	162,880.00	2012	12	CLASS 6	8.9L CNG	265,000.00	
111 Road Use	1990 Ford E350 Van #8 (Painter)	65855	1990	12	CLASS 6	8.9L CNG	225,000.00	
111 Road Use	2005 Ford F-350 boom truck #7	75,000	Feb-06	12	CLASS 6/7	8.9L CNG	150,000.00	
						TOTAL	905,000.00	
						TRADE IN VALUE	210,000.00	
						AQUISITION TOTAL	695,000.00	

PUBLIC SERVICES ALTERNATIVE FUELS PROJECT COMPRESSED NATURAL GAS CHASSIS PROFILE MEDIUM DUTY

Road Use	Chassis	YEAR PURCHASED	LIFE CYCLE	CHASSIS SPEC	ENG SPEC	2017-2018	2018-2019	2019-2020
111 Road Use	2007 Ford F-250 w/ plow/lift #40	34,135	Aug-06	12	CLASS 6/7	8.9L CNG	175,000.00	
111 Road Use	2009 F350 1 Ton Dump Truck #41	39,433	Oct-08	12	CLASS 6/7	8.9L CNG	175,000.00	
111 Road Use	2006 Ford F-350 1 ton w/plow #49	33,372	Dec-05	12	CLASS 6/7	8.9L CNG	175,000.00	
111 Road Use	1998 Dodge 4x4 w plow #39	20338	Jul-98	12	CLASS 6/7	8.9L CNG	175,000.00	
111 Road Use	2003 Ford F-350 w/ utility box #42	30400	12/2/2002	12	CLASS 6/7	8.9L CNG	175,000.00	
111 Road Use	2004 Ford F350 w util box #45	32,895	9/1/2003	12	CLASS 6/7	8.9L CNG	175,000.00	
111 Road Use	2005 Chev 1 t Dump w/ plpow #46	33000	10/1/2004	12	CLASS 6/7	8.9L CNG	175,000.00	
						TOTAL	1,225,000.00	
						TRADE IN VALUE	120,000.00	
						AQUISITION TOTAL	1,105,000.00	
						TOTAL ROAD USE AQCUISITION	3,345,000.00	
						BUYDOWN -ROAD USE REPLACEMENT	1,000,000.00	
							2,345,000.00	

271,716 ANNUAL LEASE CERTIFICATE PAYMENT (10 YEARS AT 3%)



PUBLIC SERVICES ALTERNATIVE FUELS PROJECT		COMPRESSED NATURAL GAS CHASSIS PROFILE				HEAVY DUTY		
SOLID WASTE						2017-2018	2018-2019	2019-2020
Division	Chassis	YEAR PURCHASED	LIFE CYCLE	CHASSIS SPEC	ENG SPEC			
675 Solid Waste	2004 Freightliner #75	106,000	Dec-03	12	CLASS 7	8.9L CNG	325,000.00	
675 Solid Waste	2005 International #73	113,700	Dec-04	12	CLASS 7	8.9L CNG	300,000.00	
675 Solid Waste	2012 International #78	136,000	Apr-12	12	CLASS 7	8.9L CNG	300,000.00	
675 Solid Waste	2006 Freightliner M-2 split #76	126,200	Dec-06	12	CLASS 7	8.9L CNG	300,000.00	
675 Solid Waste	2006 Freightliner M-2 #77	120,300	Jan-06	12	CLASS 7	8.9L CNG	300,000.00	
675 Solid Waste	2007 International 7400 yard #74	128,000	Jul-07	12	CLASS 7	8.9L CNG	300,000.00	
675 Solid Waste	2009 International/LaBrie #72	139,900	Sep-08	12	CLASS 7	8.9L CNG	300,000.00	
675 Solid Waste	2012 International #79	225,890.00	12-Apr	12	CLASS 7	8.9L CNG	300,000.00	
								(300,000.00)
675 Solid Waste	2003 Sterling L7500 Hook Trck #70	54,000	Jan-03	12	CLASS 7	8.9L CNG	150,000.00	
						TOTAL	2,575,000.00	
						TRADE IN VALUE	400,000.00	
						AQCQUISITION TOTAL	2,175,000.00	
PUBLIC SERVICES ALTERNATIVE FUELS PROJECT		COMPRESSED NATURAL GAS CHASSIS PROFILE				HEAVY DUTY		
SOLID WASTE						2017-2018	2018-2019	2019-2020
Division	Chassis	YEAR PURCHASED	LIFE CYCLE	CHASSIS SPEC	ENG SPEC			
675 Solid Waste	2006 Freightliner Rear Loader #71	84,870	Sep-06	12	CLASS 6/7	8.9L CNG	175,000.00	
675 Solid Waste	2006 Ford F-350 w/ lift gate #13	27,000		12	CLASS 6/7	8.9L CNG	100,000.00	
						TOTAL	275,000.00	
						TRADE IN VALUE	30,000.00	
						AQCQUISITION TOTAL	245,000.00	
						TOTAL SOLID WASTE AQCQUISITION	2,420,000.00	
						BUYDOWN -SOLID WASTE REPLACEMENT	250,000	
						TOTAL	2,170,000.00	
						248,544.00	ANNUAL LEASE CERTIFICATE PAYMENT (3% @ 10 YEARS)	

PRELIMINARY DRAFT



PUBLIC SERVICES ALTERNATIVE FUELS PROJECT		COMPRESSED NATURAL GAS CHASSIS PROFILE				HEAVY DUTY		
SOLID WASTE						2017-2018	2018-2019	2019-2020
Division	Chassis	YEAR PURCHASED	LIFE CYCLE	CHASSIS SPEC	ENG SPEC			
610 Sanitary Sewer	2002 Dodge 3500 #47	29,000	12/1/2001	12	CLASS 6/7	8.9L CNG	175,000.00	
610 Sanitary Sewer	2006 Chevy 1 ton w/plow #48	32,000	Nov-05	12	CLASS 6/7	8.9L CNG	175,000.00	
610 Sanitary Sewer	1996 Ford D 350 #16 TV Van	75,900	1996	12	CLASS 6/7	8.9L CNG	150,000.00	
610 Sanitary Sewer	2009 Ford F350 w/ service box #43	34,100	Oct-08	12	CLASS 6/7	8.9L CNG	175,000.00	
610 Sanitary Sewer	2010 Vac Con Sewer Jet #12	135,753	Dec-01	10	CLASS 7	8.9L CNG	1.00	350,000
610 Sanitary Sewer	1996 Ford LN8000 tandem #54	63,056	Jun-05	12	CLASS 7	8.9L CNG	195,000.00	
						870,001.00	AQUISITION TOTAL	
						100,800.00	ANNUAL LEASE CERTIFICATE PAYMENT (3% @ 10 YEARS)	