

SURVEY CONTROL DATA

1. HORIZONTAL CONTROL MONUMENTS
NORTHEAST QUARTER (NE/4) OF SECTION 9
2. BASIS OF BEARING:
GRID NORTH AS ESTABLISHED BY OKLAHOMA STATE
PLANE SYSTEM, NAD83(2011)
3. VERTICAL CONTROLS (BM):
NAVD 88
4. SECTION NUMERICAL DESCRIPTION (S-T-R):
SECTION 9, T-17-N, R-14-E

BEFORE YOU DIG! CALL OKIE 1-800-522-6543

UTILITIES LOCATION SHOWN ON PLAN AND PROFILE WERE OBTAINED FROM INFORMATION PROVIDED BY UTILITY SYSTEM OWNER IN CONJUNCTION WITH EXISTING PHYSICAL FEATURES VISIBLE AT THE TIME OF THE TOPOGRAPHIC SURVEY. LOCATIONS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

UTILITY CONTACTS

CITY OF BROKEN ARROW, OKLAHOMA,
E&C UTILITY COORDINATOR, GARY MCCOLPIN
485 N. POPLAR AVE.
BROKEN ARROW, OKLAHOMA 74012
(539) 357-1612

CITY OF BROKEN ARROW, OKLAHOMA
WATER & SEWER, TIMOTHY ROBINS, P.E.
485 N. POPLAR AVE.
BROKEN ARROW, OKLAHOMA 74012
(918) 259-7000 EXT. 3000

CITY OF BROKEN ARROW, OKLAHOMA
STREETS/STORMWATER, TIM WILSON
485 N. POPLAR AVE.
BROKEN ARROW, OKLAHOMA 74012
(918) 259-7000 EXT. 5200

OKLAHOMA NATURAL GAS (GOV'T RELOCATIONS)
ATTN: JAMES CANTRELL
5848 EAST 15TH STREET
TULSA, OKLAHOMA 74112
(918) 640-5300 (CELL)
JAMES.CANTRELL@ONEGAS.COM

COX COMMUNICATIONS
ATTN: LAND USE & COMPLIANCE
11811 E. 51ST STREET
TULSA, OK 74146
(405) 406-9894 (WORK),(833) 850-0590
TULROW@COX.NET

OKLAHOMA NATURAL GAS (EXISTING CONST.)
ATTN: ZACHARY WILMOTT
5848 EAST 15TH STREET
TULSA, OKLAHOMA 74112
(918) 230-2612 (CELL)
ZACHARY.WILMOTT@ONEGAS.COM

KINETIC FIBER
ATTN: RANDY MCCORKLE
11200 S. 225TH E. AVE.
BROKEN ARROW, OKLAHOMA 74012
(918) 515-1903 (WORK)
(918) 261-2918 (CELL)

AEP / PSO
ATTN: JOSEPH CHEBAIBAI
5223 S GARNETT ROAD
TULSA, OK 74149
(918) 232-4571 (CELL)
(918) 250-6249 (WORK)

METRONET COMMUNICATIONS
ATTN: EMILY KIEFFNER
1117 E. LOUISVILLE ST.
BROKEN ARROW, OKLAHOMA 74012
(812) 639-4426 (CELL)

AT&T
ATTN: ALFORD NICHOLS
509 S. DETROIT AVE.
TULSA, OK 74120
(539) 444-1069 (OFFICE)
(918) 607-7028 (CELL)

CONVENTIONAL SYMBOLS

-----	SECTION LINES
_____	PROPOSED ROAD
R/W	RIGHT-OF-WAY LINES - NEW
PRES. R/W	RIGHT-OF-WAY LINES - EXISTING
-X-	FENCES
-OE-	OVERHEAD ELECTRIC LINES
-OT-	OVERHEAD TELEPHONE LINES
-SS-	SANITARY SEWERS
-G-	GAS LINES
-W-	WATER LINES
-UT-	UNDERGROUND TELEPHONE LINES
-CTV-	CABLE TELEVISION LINES
-STM-	STORM SEWER
-UCT-	UNDERGROUND CABLE TELEVISION LINES
-UE-	UNDERGROUND ELECTRIC

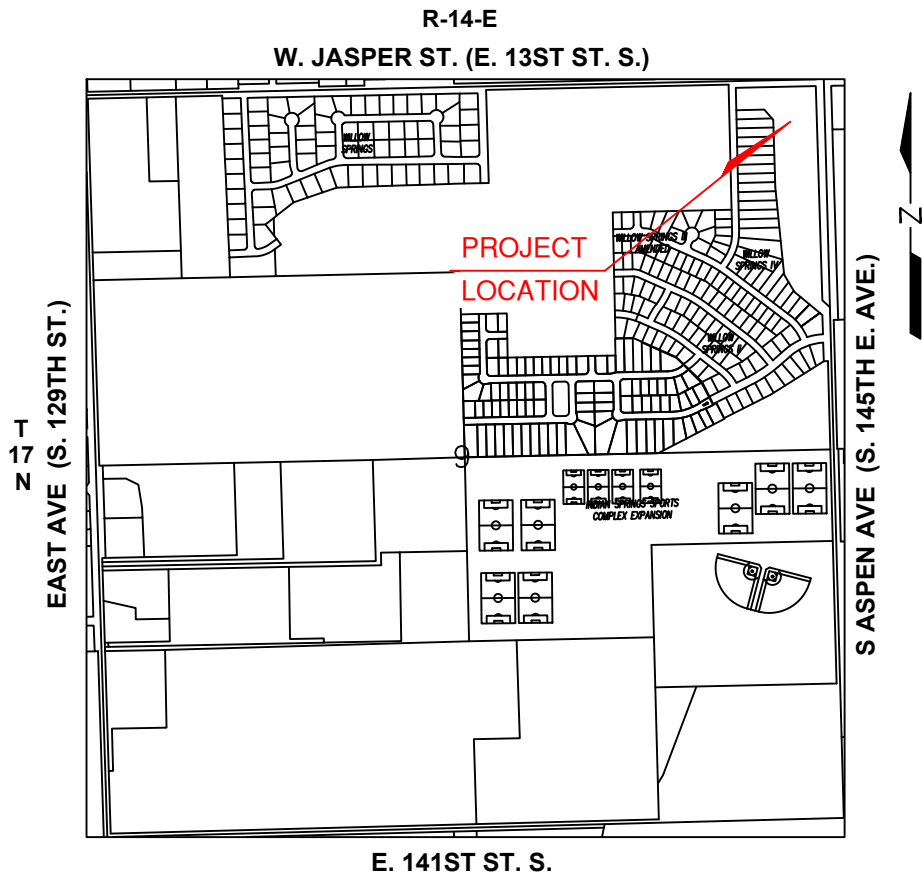


BROKEN ARROW

Where Opportunity lives

INDIAN SPRINGS
35.973294°, -95.815489°

PROJECT NUMBER 191713



PROJECT LOCATION SECTION 9, T-17-N, R-14-E, TULSA COUNTY

ENGINEERING & CONSTRUCTION DEPARTMENT
485 NORTH POPLAR AVENUE
BROKEN ARROW, OK. 74012

CITY OF BROKEN ARROW STANDARD CONSTRUCTION SPECIFICATIONS, FEBRUARY 20, 2024,
SHALL GOVERN ALL CONSTRUCTION AS SUPPLEMENTED BY OKLAHOMA STANDARD
SPECIFICATION FOR HIGHWAY CONSTRUCTION, APPROVED BY THE DEPARTMENT OF
TRANSPORTATION 2019.

INDEX OF SHEETS

DESCRIPTION	SHEET
TITLE SHEET	1
GENERAL NOTES & TOWER LOADING	2-3
SITE PLAN & SURVEYS	4-8
GROUNDING PLAN & DETAILS	9-11
STRUCTURE DETAILS	12
H-FRAME & FENCE DETAILS	13
HAND HOLE INSTALLATION	14
ACCESS ROAD DETAILS	15
RF NOTES	16

BROKEN ARROW COUNCIL

MAYOR	DEBRA WIMPEE
VICE-MAYOR	JOHNNIE PARKS
WARD-2	LISA FORD
WARD-4	JUSTIN GREEN
WARD-3	DAVID PICKEL

BEST MANAGEMENT PRACTICES MANUAL:

REFER TO [HTTPS://WWW.BROKENARROWOK.GOV/GOVERNMENT/
PUBLIC-WORKS/ENGINEERING-CONSTRUCTION/CONSTRUCTION ACTIVITY
BEST MANAGEMENT PRACTICES GUIDANCE MANUAL 2023](https://www.brokenarrowok.gov/government/public-works/engineering-construction/construction-activity-best-management-practices-guidance-manual-2023)

APPROVED

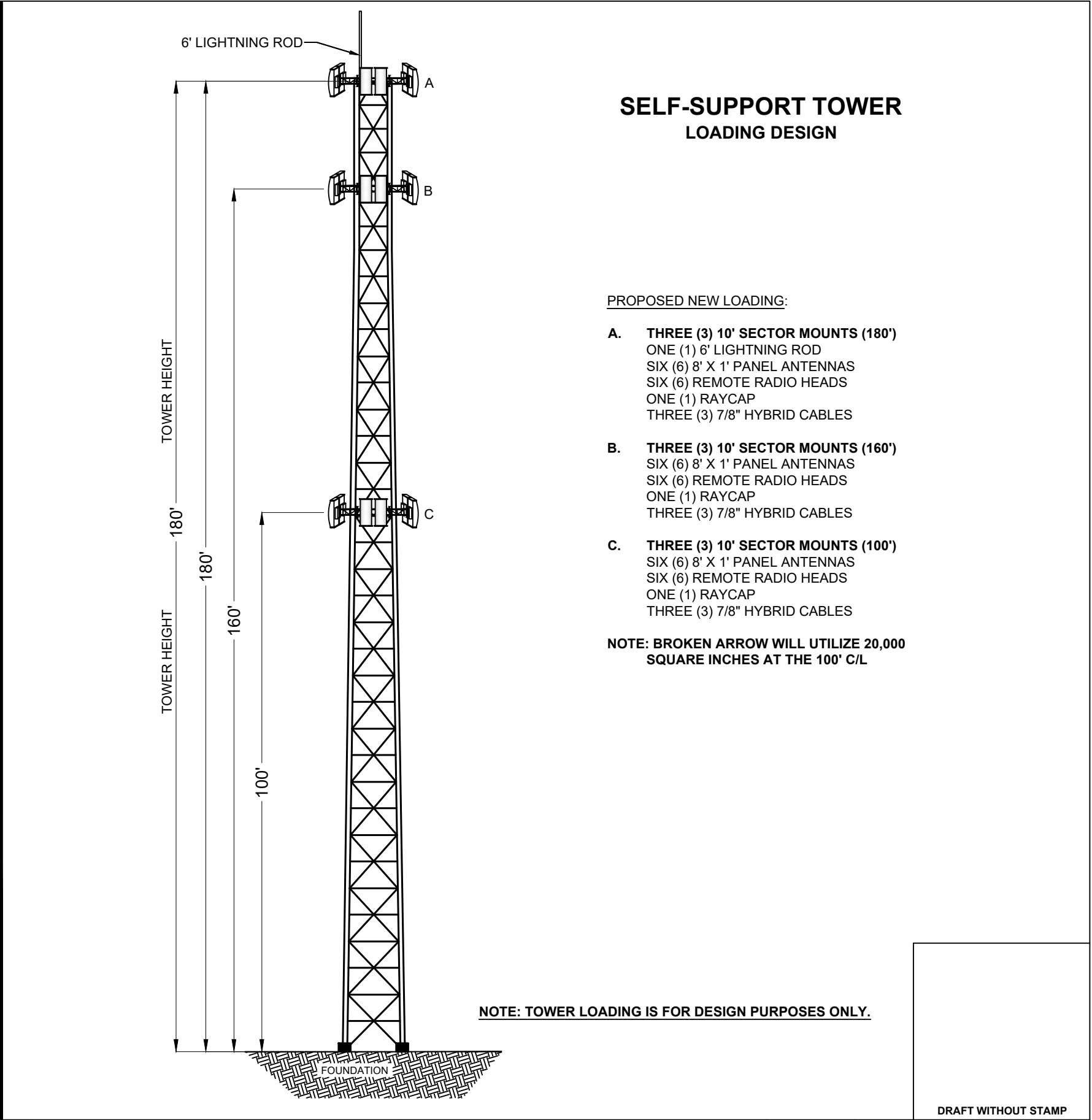
DATE _____
MICHAEL L. SPURGEON
CITY MANAGER/ GENERAL MANAGER

RECOMMENDED FOR APPROVAL

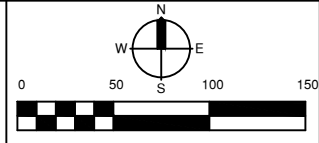
DATE _____
CHARLIE BRIGHT P.E.
DIRECTOR OF ENGINEERING & CONSTRUCTION

DATE _____
TIM WILSON
DIRECTOR OF STREETS & STORMWATER

LYNN R. MERRILL P.E.
ENGINEER OF RECORD

[illegible]

CITY OF
BROKEN ARROW
Where opportunity lives



PROFILE SCALE:	DESIGN	DATE	DRAFTED	DATE
HORIZ. -	JA	03/26	NW	03/26
VERT. -	REVIEWED	DATE	APPROVED	DATE
	LM	03/26	LM	03/26
DRAWING NAME:	SHEET	3	PROJECT NO.	
N2	OF	16	250527	

SITE PLAN
(OVERVIEW)

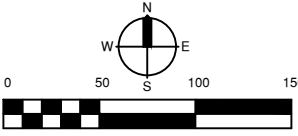


- NOTES:**
- LEASE AREA DIMENSIONS: 50'X50'
 - TOWER (180' SELF-SUPPORT TOWER)
 - ONE (1) SIX FOOT H-FRAME WITH 200 AMP SERVICE CENTER AND METER CAN
 - ONE (1) 48" X 30" X 24" TIER 22 HAND HOLE
 - DRIVEWAY DESIGN AND PAVEMENT: CONSTRUCT CONCRETE DRIVEWAY/ACCESS ROAD WITH PORTLAND CEMENT CONCRETE (CLASS BA1, MIN. 6" THICK) OR ASPHALTIC CONCRETE (MIN. 7.5" THICK) PER ENGINEERING DESIGN CRITERIA SEC. 6.7 AND ZONING ORDINANCE SEC. 22. MAX. GRADE: 10% WITHOUT DIRECTOR OF ENGINEERING APPROVAL.
 - DRIVEWAY LOCATION AND SPACING: INGRESS WIDTH ≤25' EXCL. CURB RETURNS PER ZONING ORDINANCE SEC. 107. MIN. DISTANCE FROM ARTERIAL/COLLECTOR INTERSECTION CENTERLINE: 150' FOR NON-RESIDENTIAL PER ENGINEERING DESIGN CRITERIA SEC. 6.3.4-6.3.5. NO INTERFERENCE WITH SIGHT TRIANGLES OR SIDEWALKS.
 - CURB CUT AND APPROACH: DESIGN CURB CUT TO HANDLE 100-YEAR STORM RUNOFF WITHOUT LEAVING ROADWAY PER ENGINEERING DESIGN CRITERIA SEC. 10.6.6. CONNECT SMOOTHLY TO EXISTING CURBS, PROFILE IN PLANS. IF ON A STATE HIGHWAY, COMPLY WITH ODOT REGULATIONS.
 - ADA-ACCESSIBLE SIDEWALK REPLACEMENT: COMPLY WITH ADA/PROWAG PER ENGINEERING DESIGN CRITERIA SEC. 6.2.8/6.7. MIN. WIDTH: 5' ON ARTERIAL/COMMERCIAL STREETS (18" FROM CURB FACE OR 2' FROM BACK FOR STRIPS). CONSTRUCT BEFORE FINAL INSPECTION; CONNECT ENTRANCES TO PUBLIC SIDEWALKS/TRANSIT. NO OBSTRUCTIONS >30" IN SIGHT TRIANGLES PER ZONING ORDINANCE SEC. 83.
 - 4' X 8' X 6" CONCRETE EQUIPMENT PAD AND 10' ICE BRIDGE (SEE SHEETS 11, 12)

UNDERGROUND FACILITIES NOT
SHOWN, MUST CALL LOCATOR
SERVICE BEFORE DIGGING

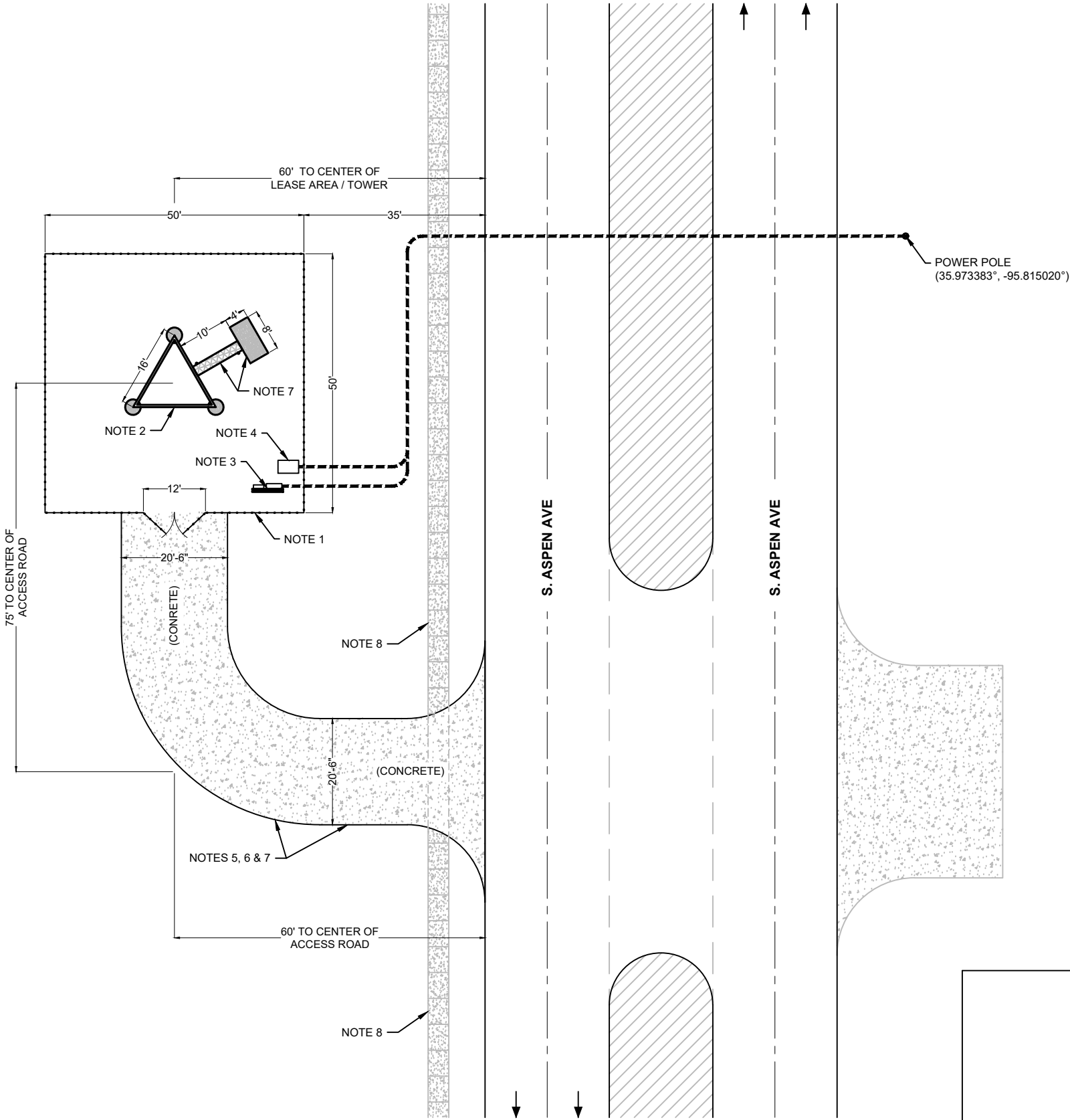


DATE	REVISIONS



INDIAN SPRINGS
35.973294°, -95.815489°

SITE PLAN (OVERVIEW)



DRAFT WITHOUT STAMP

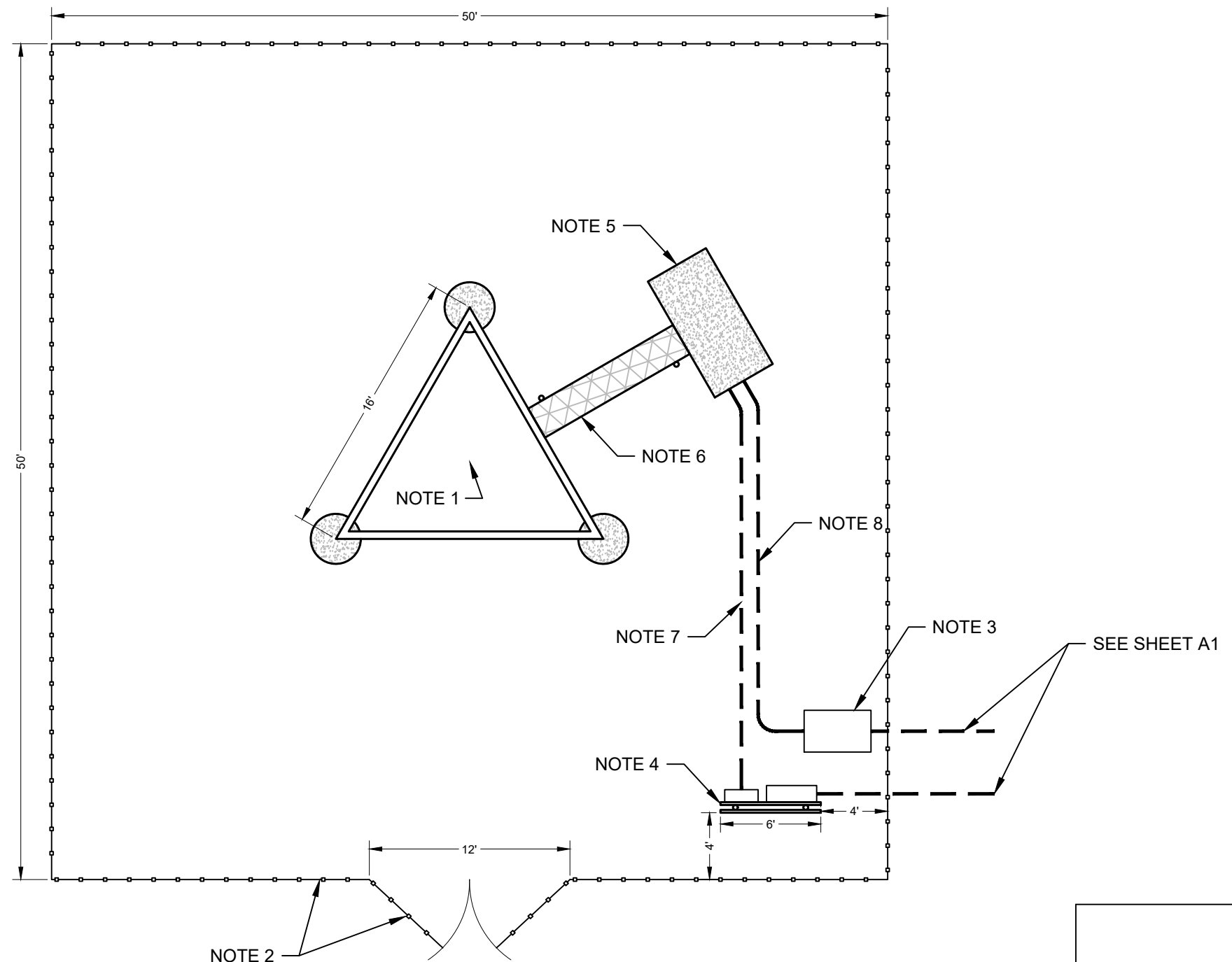
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HORZ. _____	JA	03/26	NW	03/26
VERT. _____	REVIEWED	DATE	APPROVED	DATE
	LM	03/26	LM	03/26
DRAWING NAME:	SHEET _____	PROJECT NO.		
A1	OF _____	250527		

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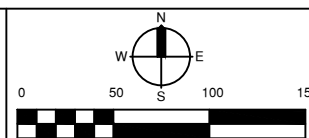
1. TOWER CENTER:
LAT : 35.973294°
LONG : -95.815489°
2. 50'X50' FENCED COMPOUND WITH TWO (2) 6' GATES
3. FIBER HAND HOLE
4. 6' POWER/TELCO H-FRAME (200-AMP SERVICE PANEL)
5. 4'X8'X6" CONCRETE EQUIPMENT PAD
6. 12" X 10' GALVANIZED ICE BRIDGE
7. ONE (1) 2" SCHEDULE 40 PVC POWER CONDUIT
 - CONTRACTOR SHALL STUB UP CONDUIT 12" ABOVE GRADE AT THE CONCRETE PAD
8. ONE (1) 3" SCHEDULE 40 PVC TELCO CONDUIT
 - CONTRACTOR SHALL STUB UP CONDUIT 12" ABOVE GRADE AT THE CONCRETE PAD



**Know what's below.
Call before you dig.**



DATE	REVISIONS



INDIAN SPRINGS
35.973294°, -95.815489°

SITE PLAN (DETAIL)

PROFILE SCALE: HORZ. _____ VERT. _____	DESIGN	DATE	DRAFTED	DATE
	JA	03/26	NW	03/26
	REVIEWED	DATE	APPROVED	DATE
	LM	03/26	LM	03/26
DRAWING NAME: A2	SHEET _____ OF _____	PROJECT NO. 250527		

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PARCEL NO. 1
PROJECT NO. 250527

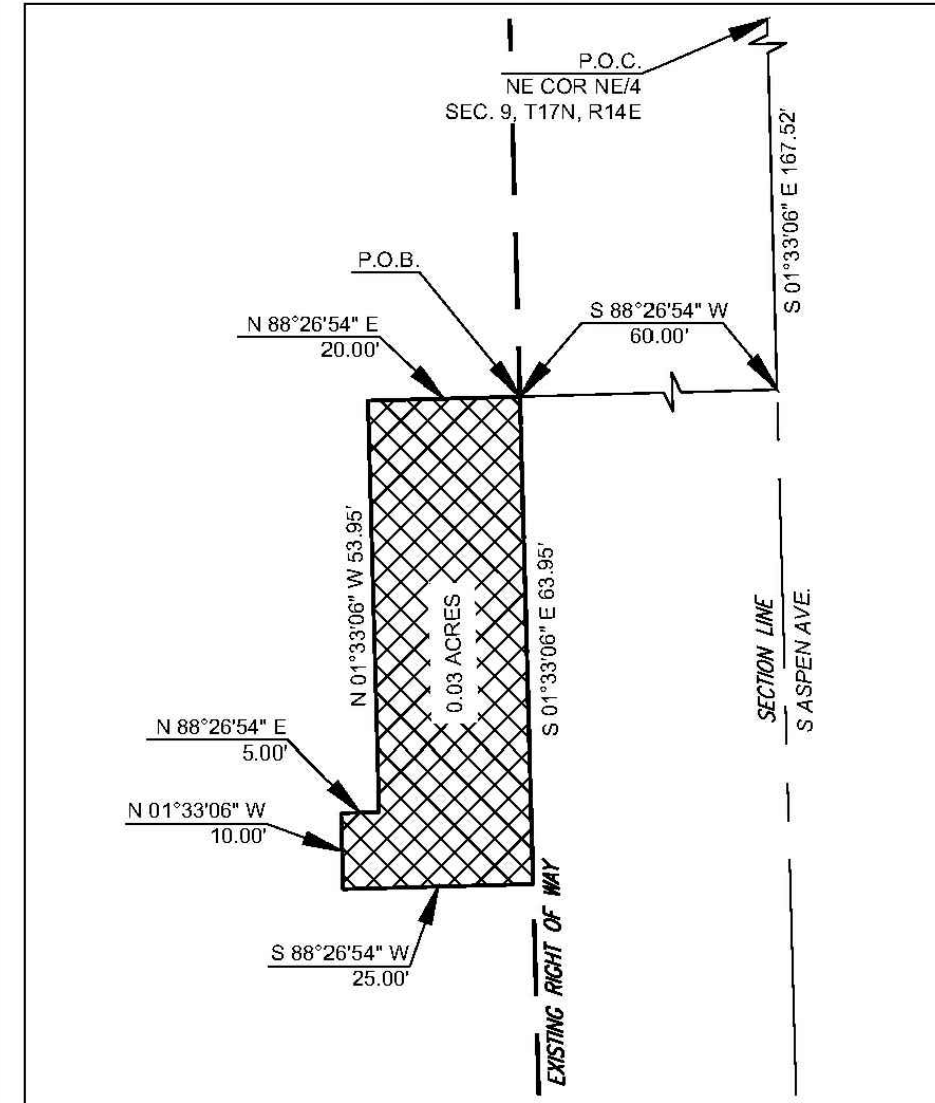
Underground Electrical Easement

Commencing at the Northeast corner of said Northeast quarter (NE/4);
Thence S 01°33'06" E on the East line of said Northeast quarter (NE/4) a distance of 167.52 feet;
Thence S 88°26'54" W a distance of 60.00 feet to a point on the West Existing Right of Way line of South Aspen Avenue, said point being the Point of Beginning;
Thence S 01°33'06" E on said West Existing Right of Way line a distance of 63.95 feet;
Thence S 88°26'54" W a distance of 25.00 feet;
Thence N 01°33'06" W a distance of 10.00 feet;
Thence N 88°26'54" E a distance of 5.00 feet;
Thence N 01°33'06" W a distance of 53.95 feet;
Thence N 88°26'54" E a distance of 20.00 feet to the Point of Beginning.

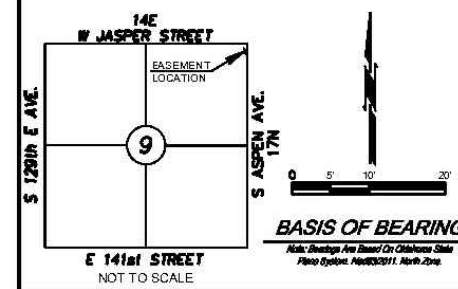
Basis of Bearing:
Grid North as established by Oklahoma State Plane System,
NAD 83 (2011), North zone

 CBC 4555 W. MEMORIAL ROAD OKLAHOMA CITY, OK 73142 (405) 753.4200 CA #32 EXP. 06-30-26	DATE: <u>11/01/2025</u>
	C&C PROJECT # <u>C-200527</u>
	RADIO TOWER TOPO SURVEY
	PARCEL No. 1
	UNDERGROUND ELECTRICAL EASEMENT EXHIBIT "A"
PROJECT NO. <u>250527</u>	

PARCEL NO. 1
PROJECT NO. 250527

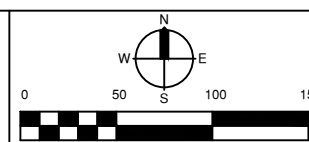


I, Michael D. Cain, Registered Professional Land Surveyor, on behalf of CEC Corporation, hereby state that the attached drawing represents the easement description, as shown hereon.



 4555 W. MEMORIAL ROAD OKLAHOMA CITY, OK 73142 (405) 753.4200 CA #32 EXP. 06-30-26	DATE: <u>11/09/2025</u> CEC PROJECT # <u>28527</u> RADD TOWER TOPO SURVEY PARCEL No <u>1</u>
	UNDERGROUND ELECTRICAL EASEMENT EXHIBIT "A"
	PROJECT NO. <u>285527</u>
	SHEET NO. <u>1</u>

DATE	REVISIONS



INDIAN SPRINGS
35.973294°, -95.815489°

SURVEY (EASEMENT)

PROFILE SCALE: HORZ. _____ VERT. _____	DESIGN	DATE	DRAFTED	DATE
	JA	03/26	NW	03/26
	REVIEWED	DATE	APPROVED	DATE
	LM	03/26	LM	03/26
DRAWING NAME: A3-1	SHEET _____ OF _____	PROJECT NO. 250527		

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DATE	REVISIONS

EXHIBIT "A"

PAGE 1 OF 2

PARCEL NO. 2

PROJECT NO. 250527

250527

Parcel No. 2

LEGAL DESCRIPTION

A tract of land lying in part of the Northeast quarter (NE/4) of Section Nine (9), Township Seventeen (17) North, Range Fourteen (14) East, Indian Meridian, Tulsa County, Oklahoma. Said tract being more particularly described as follows:

Commencing at the Northeast corner of said Northeast quarter (NE/4);
Thence S 01°33'06" E on the East line of said Northeast quarter (NE/4) a distance of 171.47 feet;
Thence S 88°26'54" W a distance of 80.00 feet to the Point of Beginning;
Thence S 01°33'06" E a distance of 50.00 feet;
Thence S 88°26'54" W a distance of 50.00 feet;
Thence N 01°33'06" W a distance of 50.00 feet;
Thence N 88°26'54" E a distance of 50.00 feet to the Point of Beginning.

Containing 0.06 Acre (2500.00 Sq. Ft.), more or less.

Basis of Bearing:

Grid North as established by Oklahoma State Plane System, NAD 83 (2011), North zone

This Description was prepared by:

Michael D. Cain, PLS #2052

CEC Corporation, CA #32

11-05-2025



4555 W. MEMORIAL ROAD
OKLAHOMA CITY, OK 73142
(405) 753.4200
CA #32 EXP. 06-30-26

DATE: 11/08/2025

CEC PROJECT # 250527

RADIO TOWER TOPO SURVEY

PARCEL No. 2

LEASE SURVEY

EXHIBIT "A"

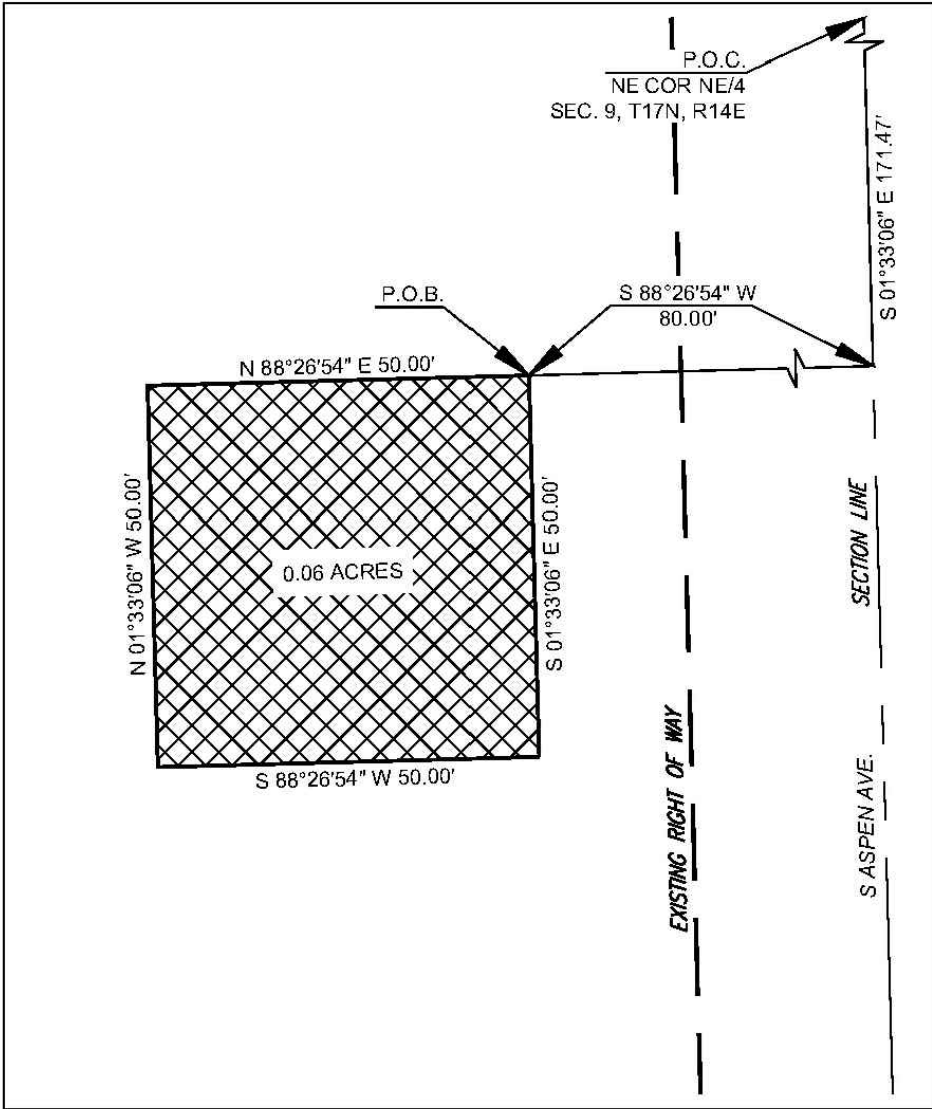
PROJECT NO. 250527

EXHIBIT "A"

PAGE 2 OF 2

PARCEL NO. 2

PROJECT NO. 250527



SURVEYOR'S CERTIFICATE

I, Michael D. Cain, Registered Professional Land Surveyor, on behalf of CEC Corporation, hereby state that the attached drawing represents the legal description, as shown hereon.



Michael D. Cain, PLS No. 2052
CEC Corporation
4555 W. Memorial Rd.
Oklahoma City, OK 73142

DATE: 11/08/2025

CEC PROJECT # 250527

RADIO TOWER TOPO SURVEY

PARCEL No. 2

LEASE SURVEY

EXHIBIT "A"

PROJECT NO. 250527

14E

W JASPER STREET

BASEMENT LOCATION

9

S ASPEN AVE. 17N

E 141st STREET

NOT TO SCALE

05'10'20'

BASIS OF BEARING

Note: Bearings Are Based On Oklahoma State Plane System, NAD83(2011), North Zone

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EXHIBIT "A"
PAGE 1 OF 2

PARCEL NO. 3
PROJECT NO. 250527

250527
Parcel No. 3

Roadway Access Easement

A Roadway Access Easement located in part of the Northeast quarter (NE/4) of Section Nine (9), Township Seventeen (17) North, Range Fourteen (14) East, Indian Meridian, Tulsa County, Oklahoma. Said Easement being more particularly described as follows:

Commencing at the Northeast corner of said Northeast quarter (NE/4);
Thence S 01°33'06" E on the East line of said Northeast quarter (NE/4) a distance of 256.47 feet;
Thence S 88°26'54" W a distance of 60.00 feet to a point on the West Existing Right of Way line of South Aspen Avenue, said point being the Point of Beginning;
Thence S 01°33'06" E on said West Existing Right of Way line a distance of 30.00 feet;
Thence S 88°26'54" W a distance of 36.42 feet;
Thence N 56°45'08" W a distance of 16.94 feet;
Thence N 36°21'03" W a distance of 16.94 feet;
Thence N 01°33'06" W a distance of 41.42 feet;
Thence N 88°26'54" E a distance of 30.00 feet;
Thence S 01°33'06" E a distance of 24.75 feet;
Thence S 46°33'06" E a distance of 14.49 feet;
Thence N 88°26'54" E a distance of 19.75 feet to the Point of Beginning.

Containing 0.06 Acre (2674.56 Sq. Ft.), more or less.

Basis of Bearing:

Grid North as established by Oklahoma State Plane System,
NAD 83 (2011), North zone

This Description was prepared by:

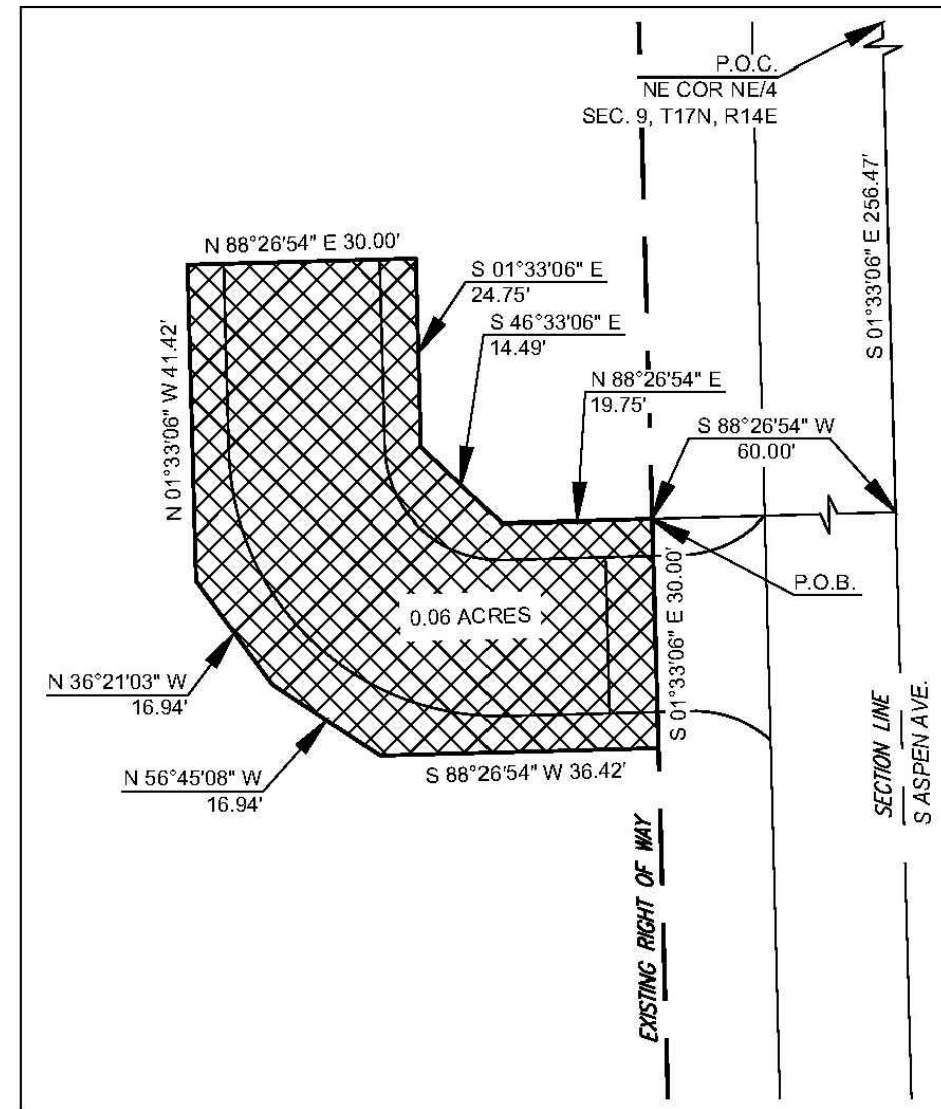
Michael D. Cain, PLS #2052
CEC Corporation, CA #32
11-05-2025



DATE: 11/05/2025
CEC PROJECT #: 250527
RADIO TOWER TOPO SURVEY
PARCEL No. 3
ROADWAY ACCESS
EASEMENT
EXHIBIT "A"
PROJECT NO. 250527

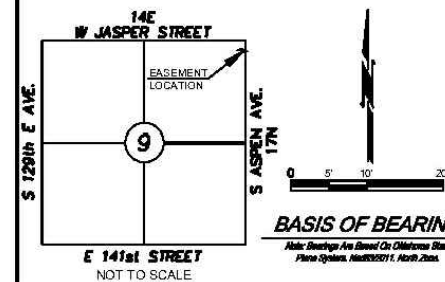
EXHIBIT "A"
PAGE 2 OF 2

PARCEL NO. 3
PROJECT NO. 250527



SURVEYOR'S CERTIFICATE

I, Michael D. Cain, Registered Professional Land Surveyor, on behalf of CEC Corporation, hereby state that the attached drawing represents the easement description, as shown hereon.

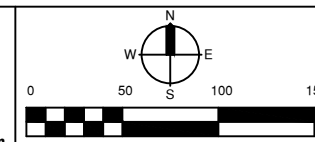


Michael D. Cain, PLS No. 2052
CEC Corporation
4555 W. Memorial Rd.
Oklahoma City, OK 73142



DATE: 11/05/2025
CEC PROJECT #: 250527
RADIO TOWER TOPO SURVEY
PARCEL No. 3
ROADWAY ACCESS
EASEMENT
EXHIBIT "A"
PROJECT NO. 250527

DATE	REVISIONS



INDIAN SPRINGS
35.973294°, -95.815489°

SITE SURVEY (EASEMENT)

PROFILE SCALE:	DESIGN	DATE	DRAFTED	DATE
HORZ. _____	JA	03/26	NW	03/26
VERT. _____	REVIEWED	DATE	APPROVED	DATE
DRAWING NAME:	LM	03/26	LM	03/26
A3-3	SHEET 8 OF 16	PROJECT NO. 250527		

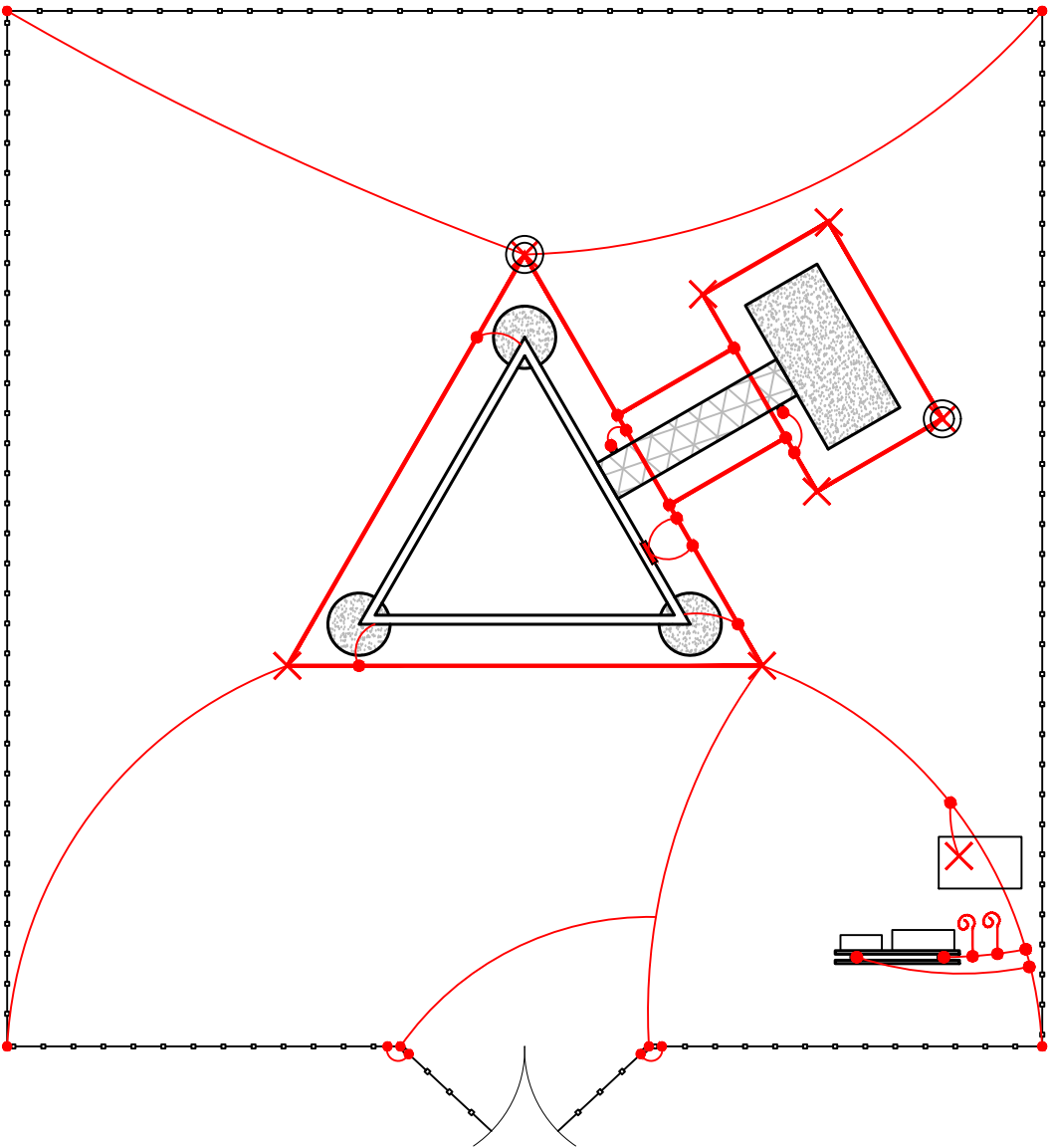
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GROUNDING PLAN

- GROUND RING AND LEADS
- EXOTHERMIC WELD
- 10' XIT CHEMICAL GROUND ROD
- GROUND BAR
- MECHANICAL CLAMP
- INSPECTION HANDHOLE
- GROUND PIG TAILS 6' ABOVE GRADE

NOTES:

1. USE #2 AWG BARE SOLID TINNED COPPER WIRE FOR GROUND RING AND ALL ATTACHMENTS. MINIMUM BEND RADIUS SHALL NOT BE EXCEEDED
2. ALL LEGS OF TOWER, ICE BRIDGE, AND H-FRAME REQUIRE GROUNDING USING EXOTHERMIC WELDS.
3. ALL EQUIPMENT REQUIRES GROUNDING PER MANUFACTURER SPECIFICATIONS
3. GROUND TOWER GROUND BAR AT THE BOTTOM OF THE TOWER
4. BOND FENCE POSTS WITHIN 6' OF TOWER OR H-FRAME TO TOWER GROUND SYSTEM
5. PLACE INSPECTION HANDHOLE ON ONE TOWER AND ONE EQUIPMENT PAD GROUND RODS



UNDERGROUND FACILITIES NOT SHOWN, MUST CALL LOCATOR SERVICE BEFORE DIGGING



DATE	REVISIONS



CITY OF

BROKEN ARROW

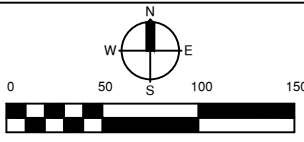
Where opportunity lives



COMMUNICATIONS ENGINEERS

525 CENTRAL PARK DRIVE SUITE 300

OKLAHOMA CITY, OK 73105 | (405)842-2405 | www.mrleng.com



050100150

INDIAN SPRINGS

35.973294°, -95.815489°

GROUNDING PLAN

PROFILE SCALE: HORZ. _____ VERT. _____ DRAWING NAME: B1	DESIGN	DATE	DRAFTED	DATE
	JA	03/26	NW	03/26
	REVIEWED	DATE	APPROVED	DATE
	LM	03/26	LM	03/26
SHEET 9 OF 16		PROJECT NO. 250527		

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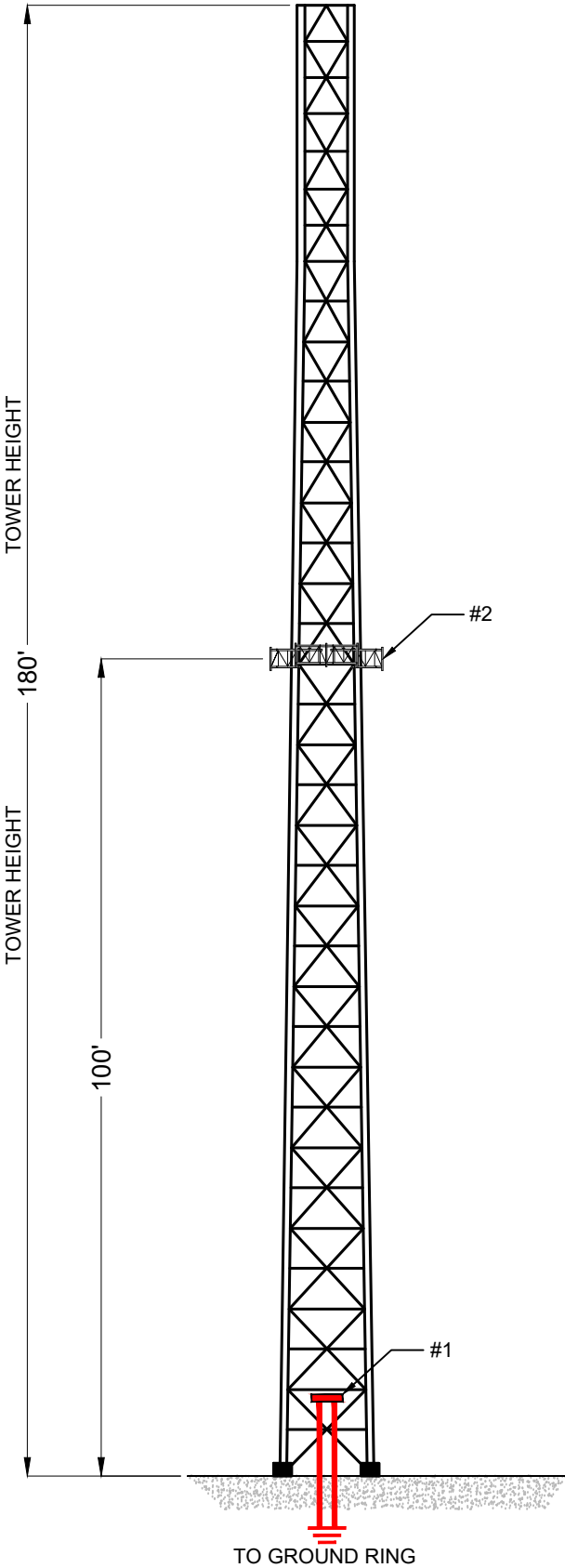
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GROUNDING REQUIREMENTS

EXAMPLE SELF-SUPPORT
TOWER
GROUNDING DETAIL

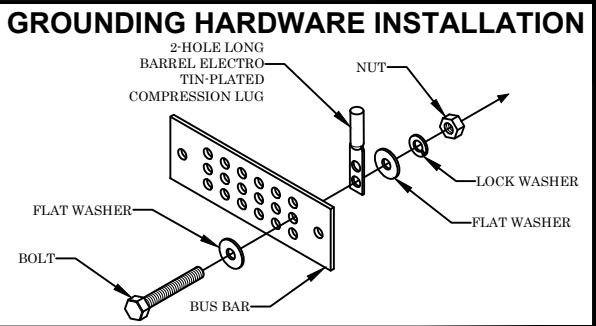
1. DUAL LUG GROUND BAR 4" x 12" x 1/4"
2. CITY OF BROKEN ARROW FUTURE 20,000 SQUARE INCHES AT THE 100' C/L

NOTE: DRAWING DOES NOT DEPICT ACTUAL INSTALLATION

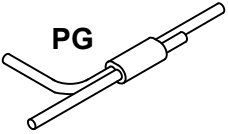


When Applicable:

1. The Contractor shall install the grounding system and lightning protection devices and shall verify (as designed and installed) and document compliance with the NEC (as adopted by the AHJ), the site-specific (UL, LPI, or NFPA) lightning protection code, and general compliance with Telcordia and ITA Grounding Standards.
2. All conductors shall be run in horizontal and vertical directions only, and as straight as possible to minimize the number of bends and curves. The minimum allowable bend is 12 inches.
3. All ground electrode systems (including telecommunication, radio, lightning protection, and AC power GES's) shall be bonded together, at or below grade, by two or more copper bonding conductors in accordance with the NEC.
4. The Contractor shall measure the ground resistance prior to backfilling the ground ring trenches and provide test results to the Owner to verify compliance with the grounding resistance measurement specifications. If poor soil resistivity or unusual site restrictions exist, chemically enhanced ground rods may be required per written approval of the Owner. The maximum resistance between any point on the ground system and a non-trivial reference ground shall be five (5) ohms or less. The "fall of potential" method with a Megger Earth Tester is recommended for this test.
5. Metal raceway shall not be used as the NEC required equipment ground conductor. Stranded copper conductors with green insulation, size in accordance with the NEC, shall be furnished and installed with the power circuits to equipment.
6. Each cabinet frame shall be directly connected to the ground ring with #2 AWG solid copper. All ground leads to be connected using UL listed two-hole, long barrel, electro tin plated compression lugs or exothermic welds.
7. Exothermic welds shall be used for all grounding connections below grade. Ice bridge bonding conductors shall be mechanically bonded to the bridge and bolted to the platform ground bar.
8. Approved antioxidant coatings (i.e., conductive gel or paste) shall be used on all compression and bolted ground connections.
9. Aluminum conductor or copper clad steel conductor shall not be used for grounding connections.
10. Miscellaneous electrical and non-electrical metal boxes, frames and supports shall be bonded to the ground ring, in accordance with the NEC.
11. Where applicable, metal conduit and tray shall be grounded and made electrically continuous with listed bonding fittings or by bonding across the discontinuity with #6 AWG copper wire and UL approved grounding type conduit clamps.
12. Ground conductors used in the facility ground and lightning protection systems shall not be routed through metallic objects that form a ring around the conductor, such as metallic conduits, metal support clips or sleeves (thereby causing "girdling" effects) through walls or floors. When it is required to be housed in conduit to meet code requirements or local conditions, non-metallic material such as PVC plastic conduit shall be used. Where use of metal conduit is unavoidable (e.g., non-metallic conduit prohibited by local code) the ground conductor shall be bonded to each end of the metal conduit.
13. Ground bars shall be polished using Brasso or other suitable copper polish to remove corrosion and discoloration prior to connecting lugs to the bar. Coat the bar lightly with Non-Oxidizing Compound or equal. Remove excess No-Ox after installation.
14. All ground connections shall employ 2-hole long barrel, electro tin-plated compression lugs.



ALL BELOW GRADE
CONNECTIONS TO GROUND
RING SHALL BE
EXOTHERMIC WELD
PG TYPE CONNECTIONS



DRAFT WITHOUT STAMP

DATE	REVISIONS



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BROKEN ARROW

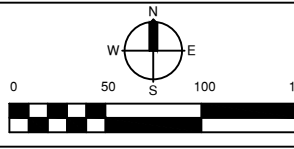
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525 CENTRAL PARK DRIVE SUITE 300

OKLAHOMA CITY, OK 73105 | (405)842-2405 | www.mrleng.com



0 50 100 150

INDIAN SPRINGS

35.973294°, -95.815489°

GROUNDING DETAILS I

PROFILE SCALE:

HORZ. _____

VERT. _____

DRAWING NAME: B2

DESIGN

DATE

DRAFTED

DATE

REVIEWED

DATE

APPROVED

DATE

LM

03/26

LM

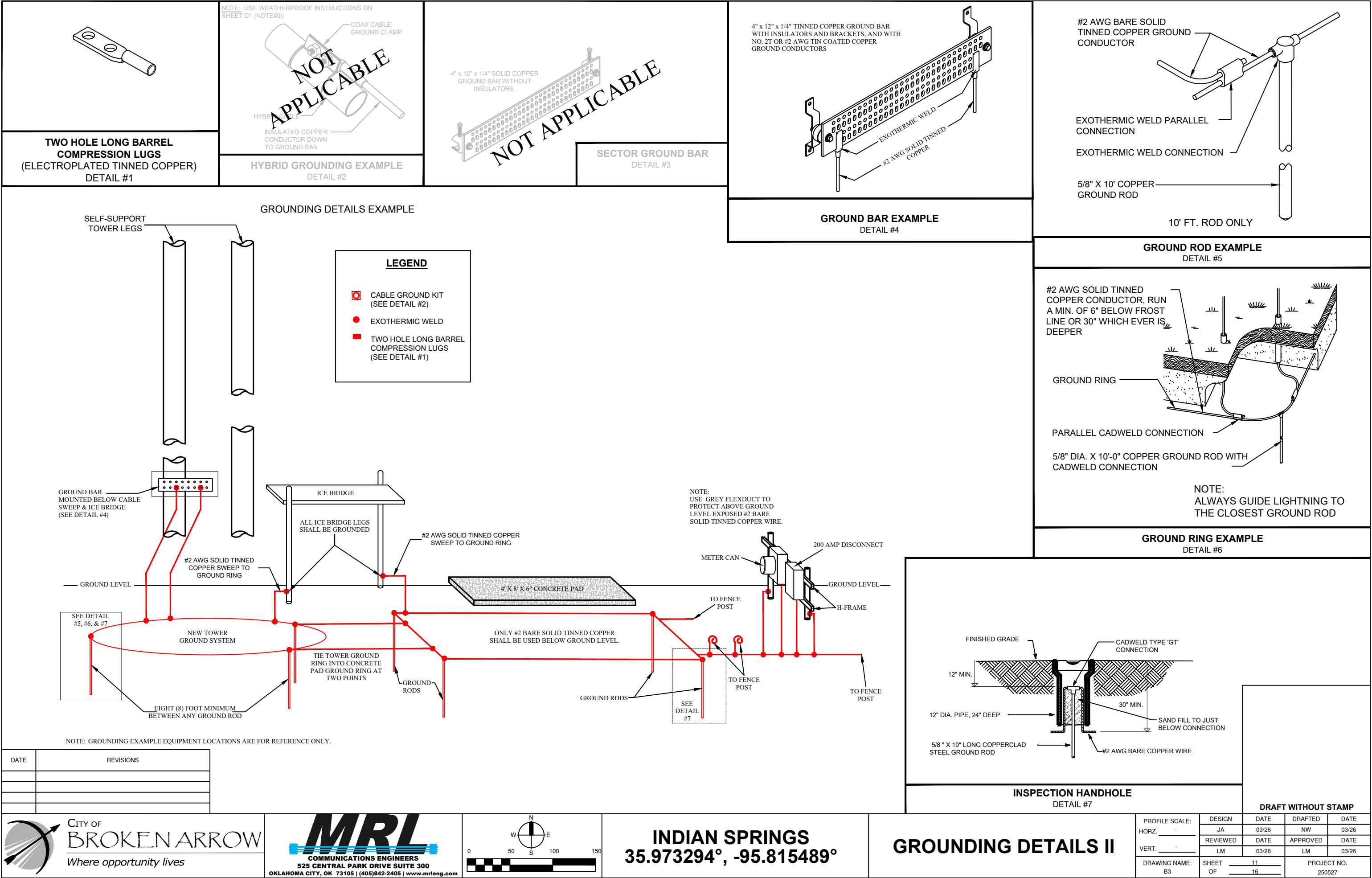
03/26

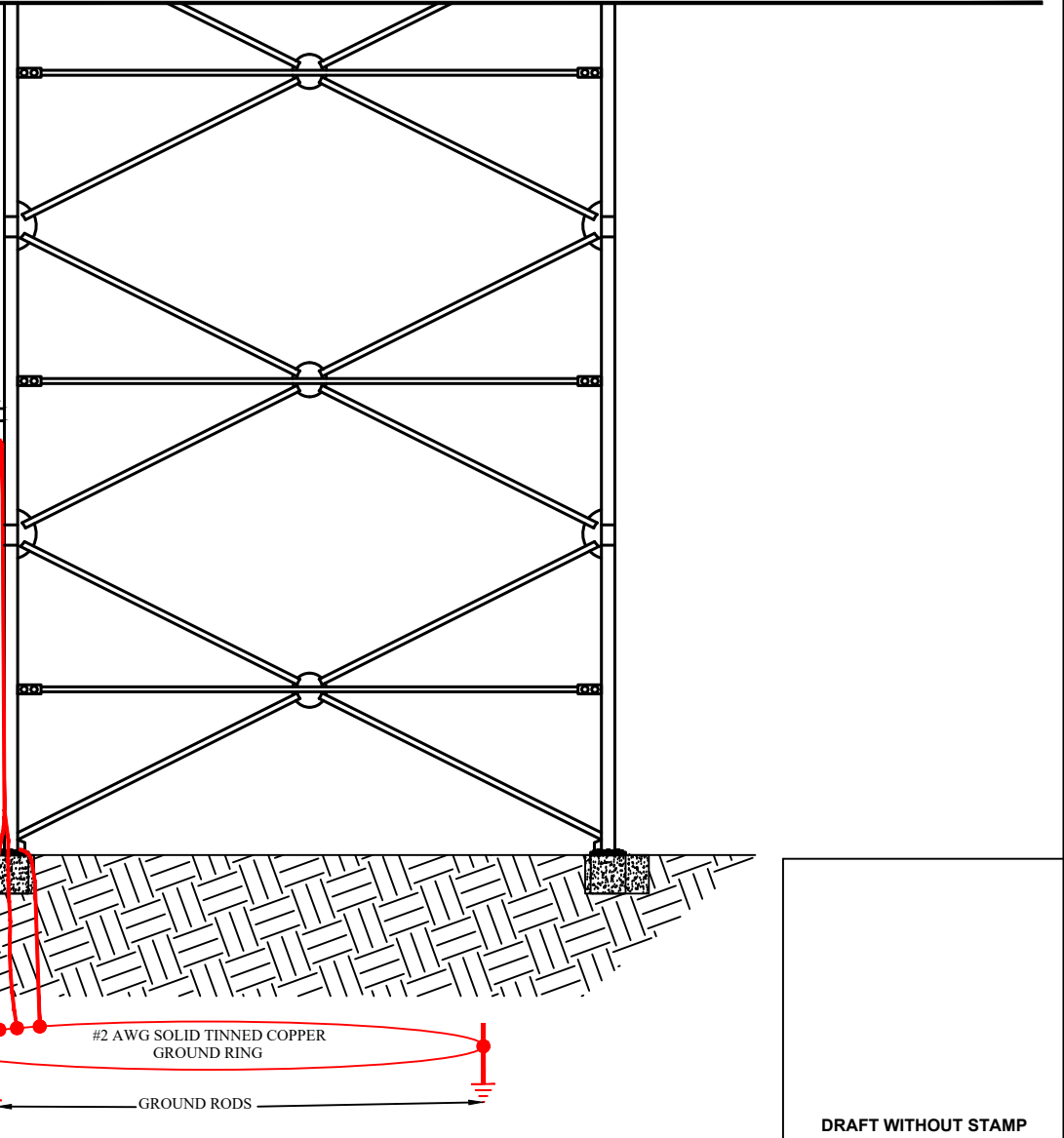
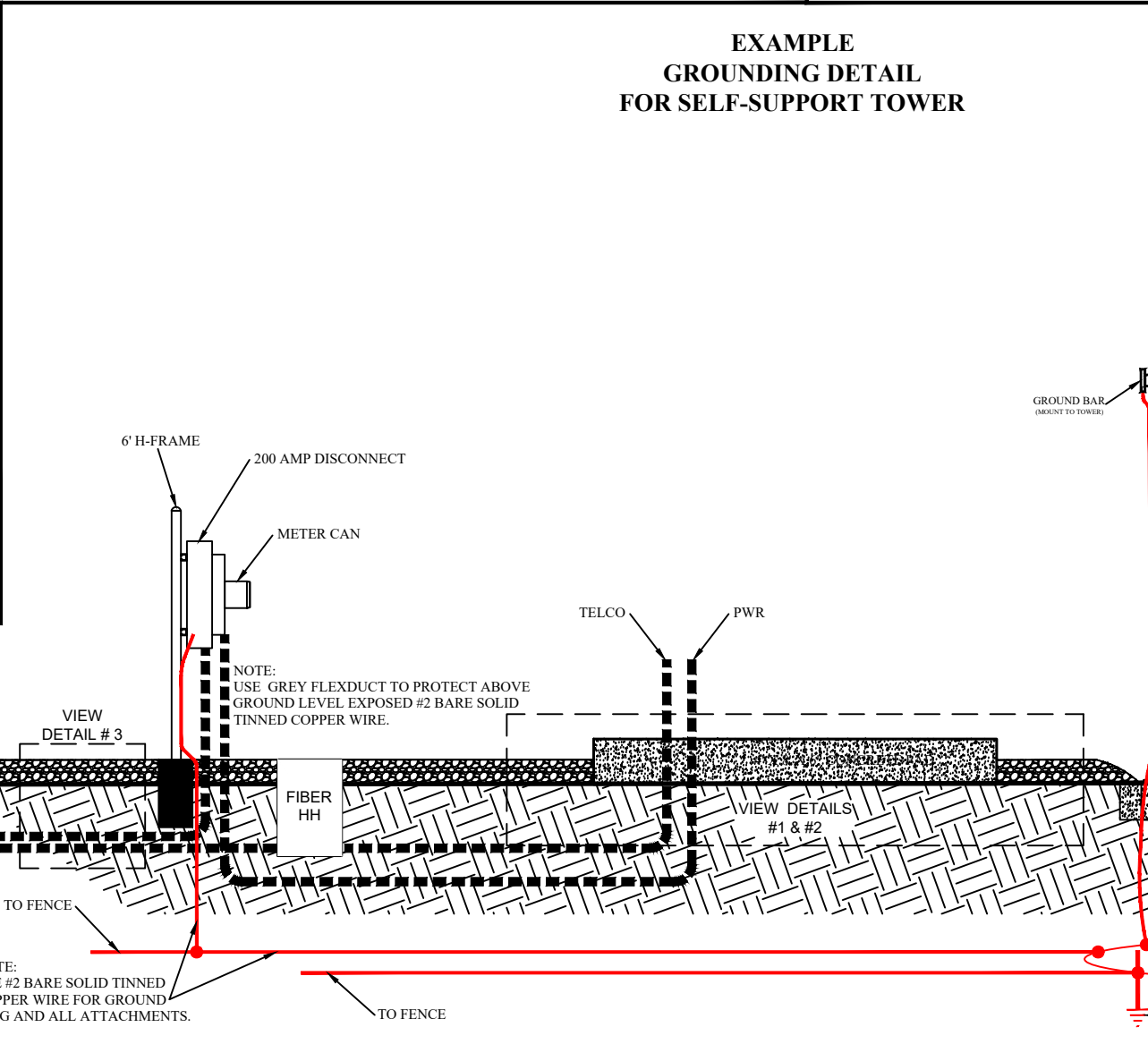
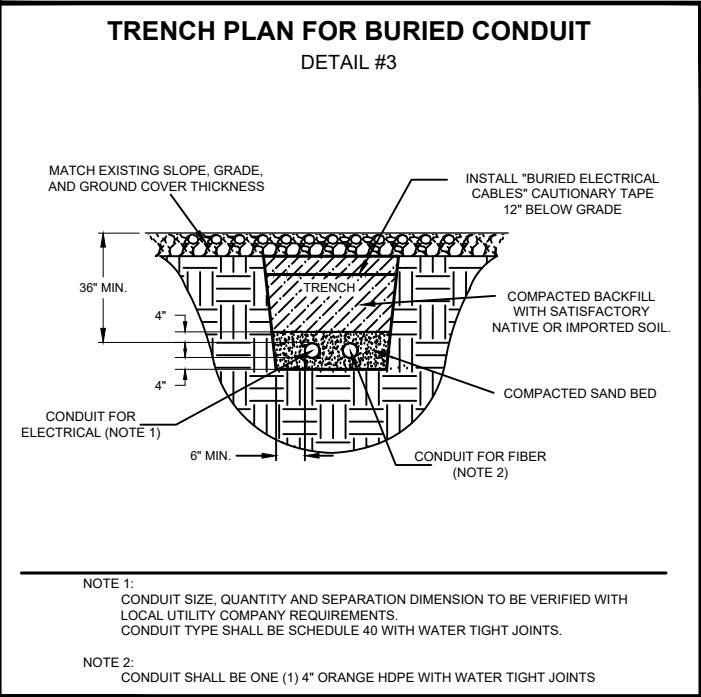
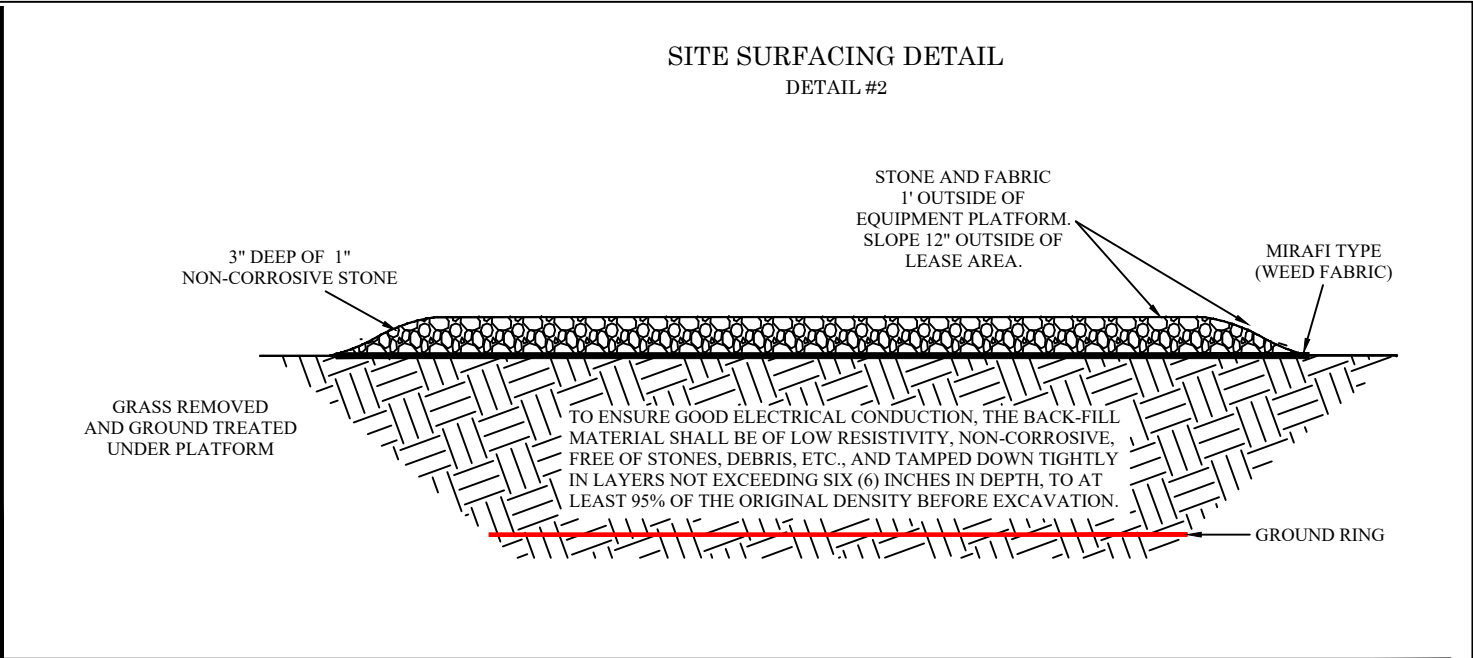
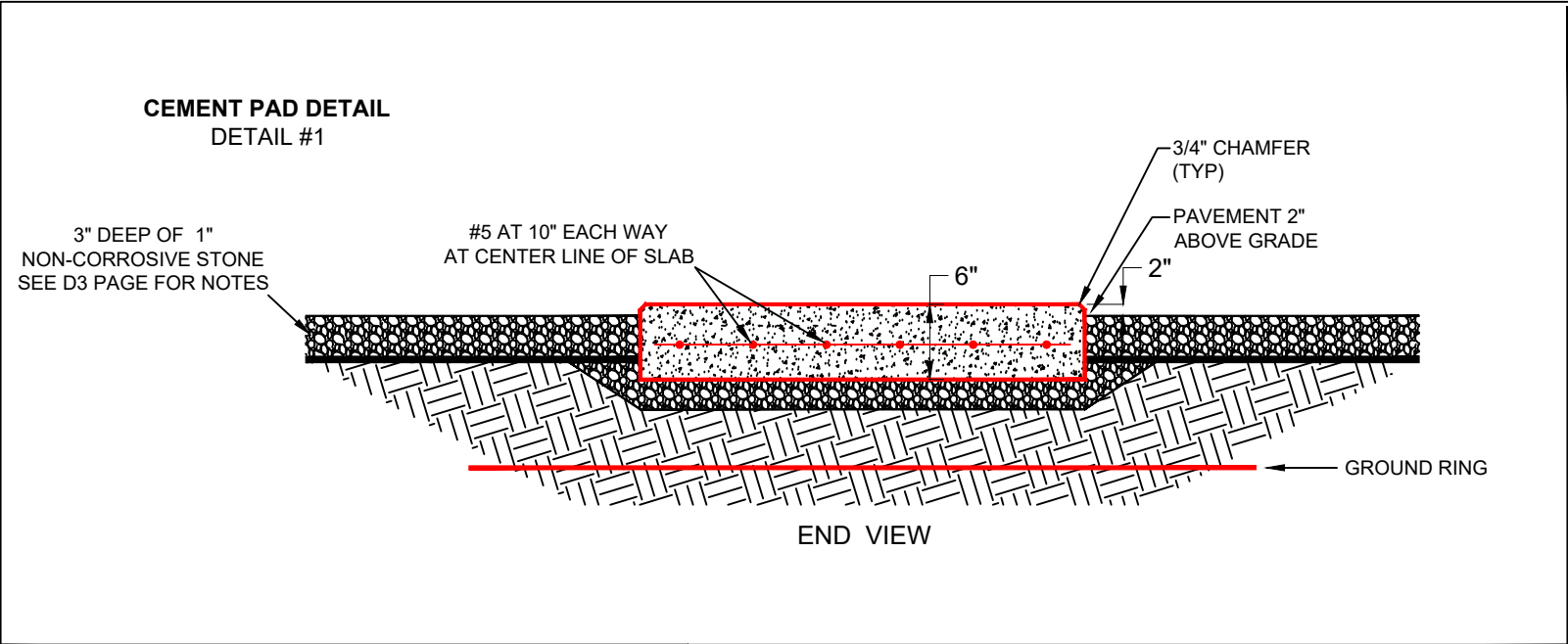
SHEET 10

OF 16

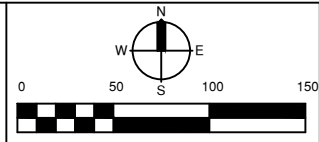
PROJECT NO. 250527

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DATE	REVISIONS

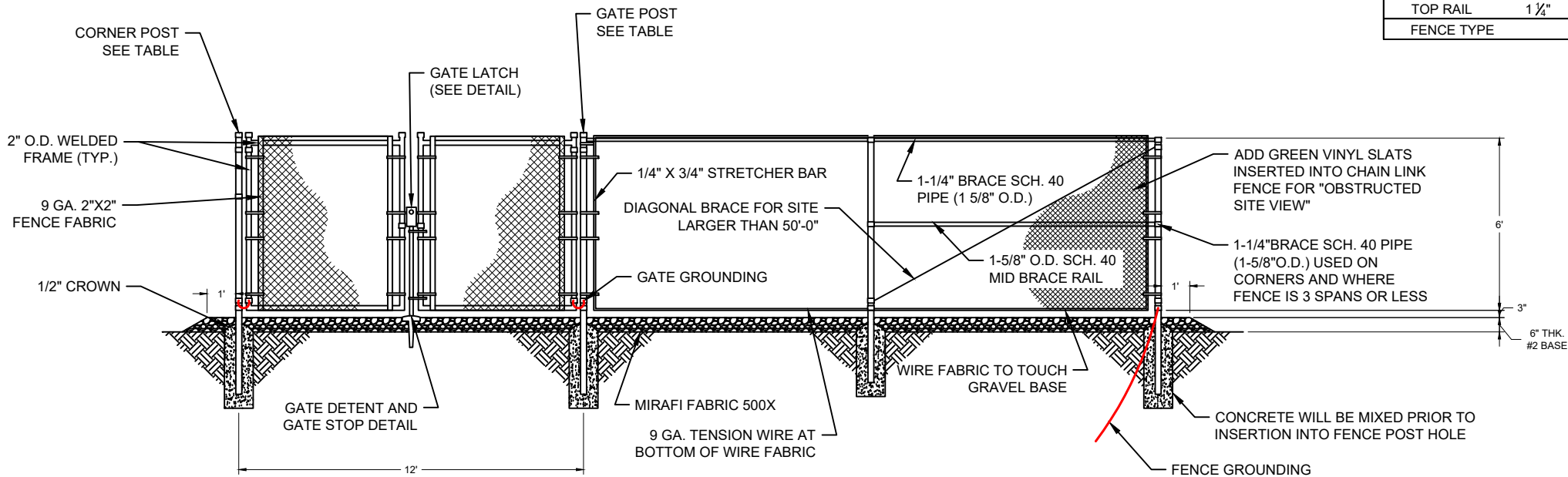


INDIAN SPRINGS
35.973294°, -95.815489°

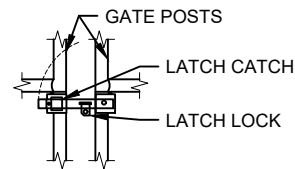
STRUCTURE DETAILS

PROFILE SCALE:	DESIGN	DATE	DRAFTED	DATE
HORZ. _____	JA	03/26	NW	03/26
VERT. _____	REVIEWED	DATE	APPROVED	DATE
DRAWING NAME: C1	LM	03/26	LM	03/26
SHEET OF 12 16	PROJECT NO. 250527			

EXAMPLE FENCE & GATE DETAIL

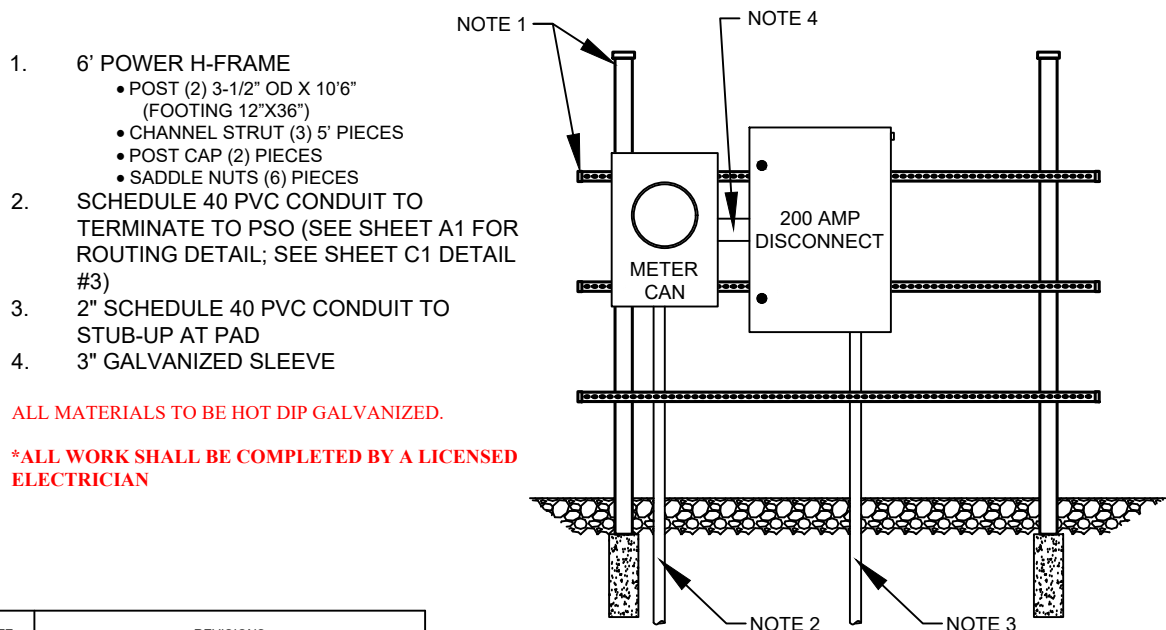


6' HIGH GATE / FENCE		FOOTINGS	NOTES:
LINE POST	2"	12" x 36"	1. ALL MATERIALS TO BE HOT DIP GALVANIZED
CORNER POST	3"	12" x 36"	
GATE POST	4"	12" x 36"	
TOP RAIL	1 ¼"	N/A	
FENCE TYPE		11 GAUGE	



EXAMPLE GATE LATCH DETAIL

H-FRAME AND POWER SERVICE & DISCONNECT
120/240 200 AMP

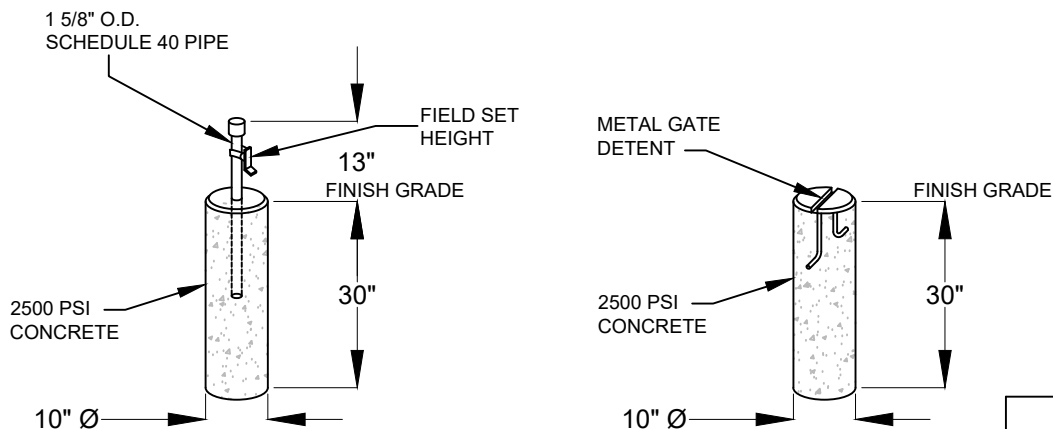


ALL MATERIALS TO BE HOT DIP GALVANIZED.

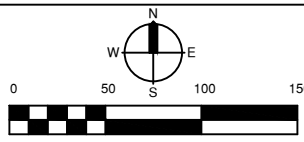
*ALL WORK SHALL BE COMPLETED BY A LICENSED ELECTRICIAN

* CONDUCTORS WILL BE INSTALLED BY OTHERS

EXAMPLE GATE DETENT AND STOP/KEEPER DETAIL



DATE	REVISIONS

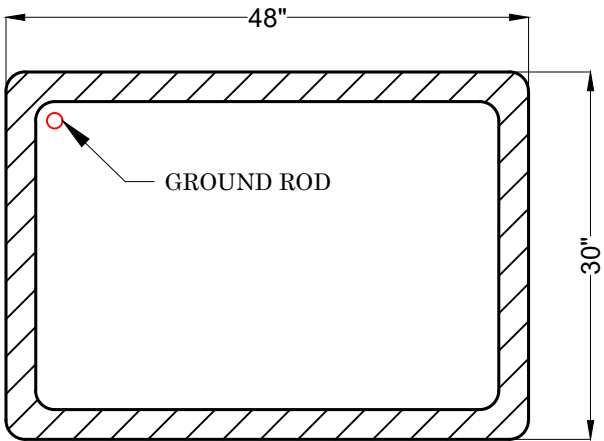


INDIAN SPRINGS
35.973294°, -95.815489°

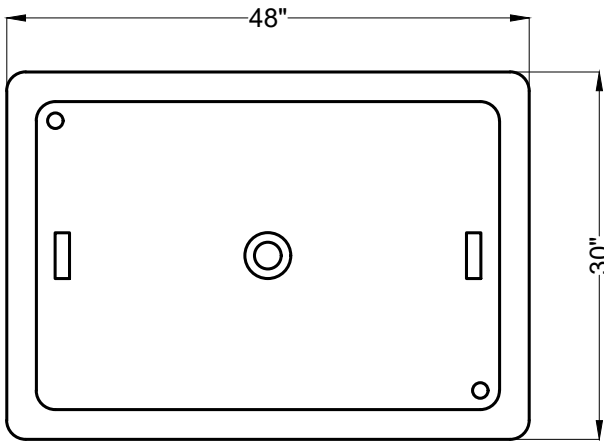
H-FRAME & FENCE

PROFILE SCALE:		DESIGN	DATE	DRAFTED	DATE
HORZ.		JA	03/26	NW	03/26
VERT.		REVIEWED	DATE	APPROVED	DATE
LM		03/26	LM	03/26	
DRAWING NAME:		SHEET 13 OF 16	PROJECT NO. 250527		

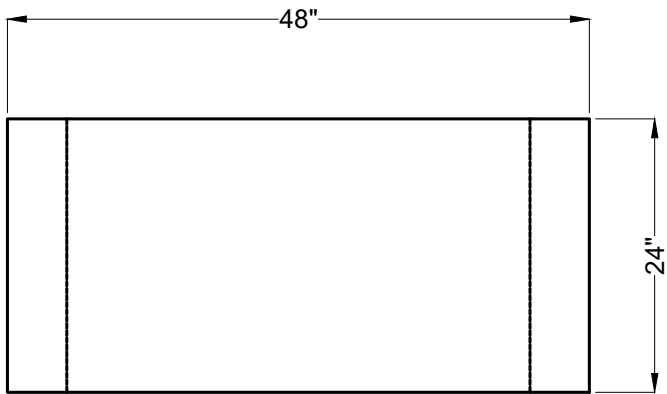
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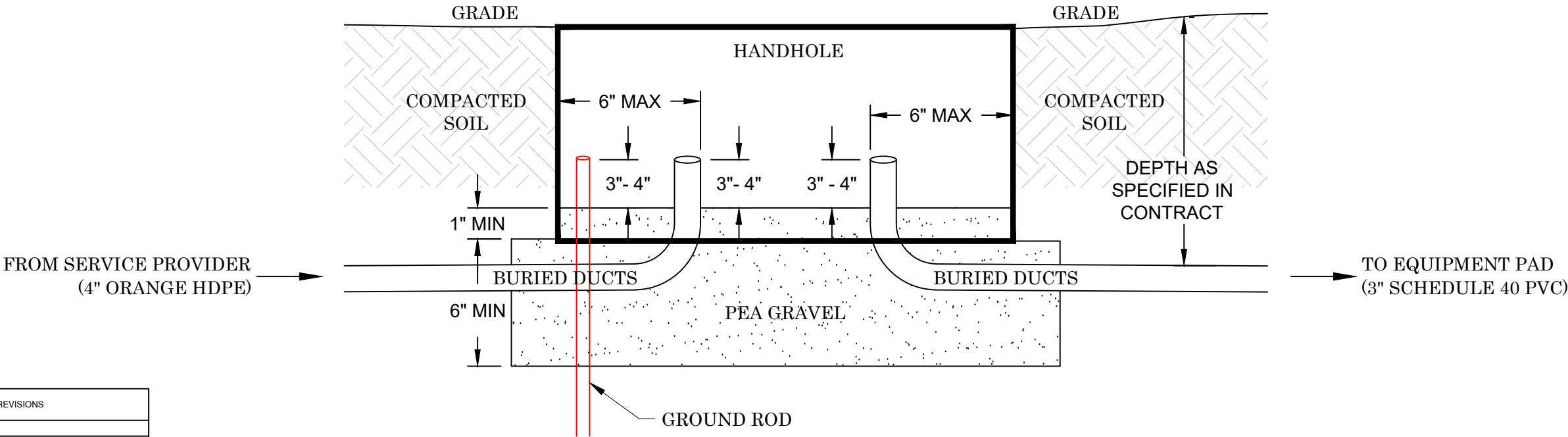
HAND HOLE
TOP VIEW
(NO LID)



HAND HOLE
TOP VIEW
(WITH LID)



HAND HOLE
SIDE VIEW



DATE	REVISIONS



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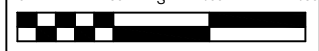
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050100150



INDIAN SPRINGS

35.973294°, -95.815489°

HH INSTALLATION

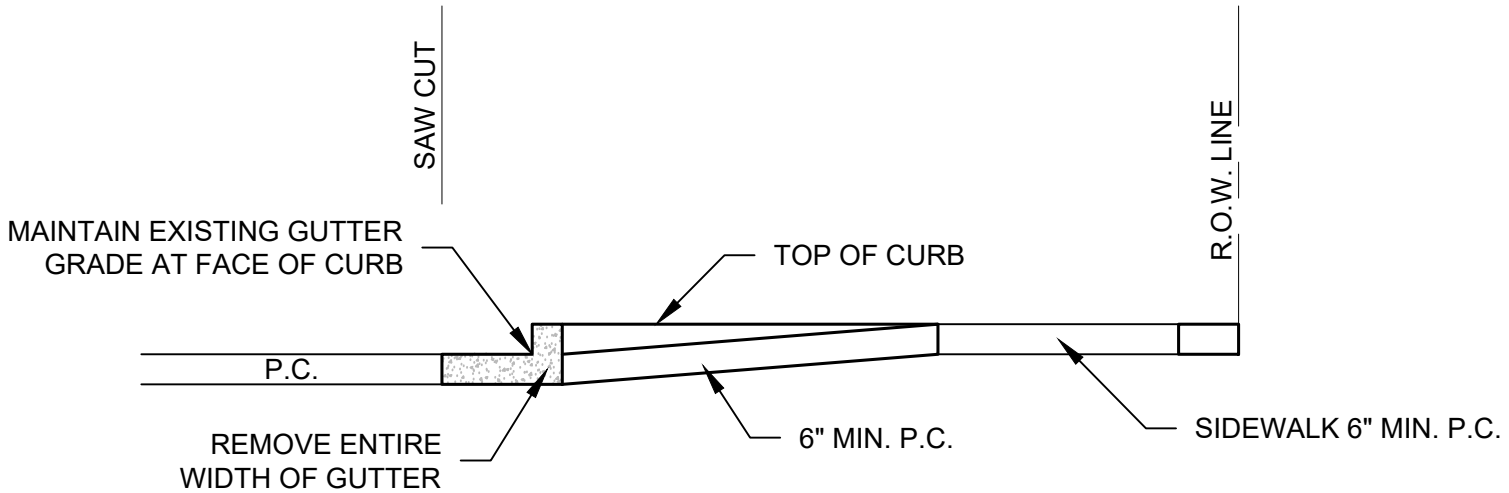
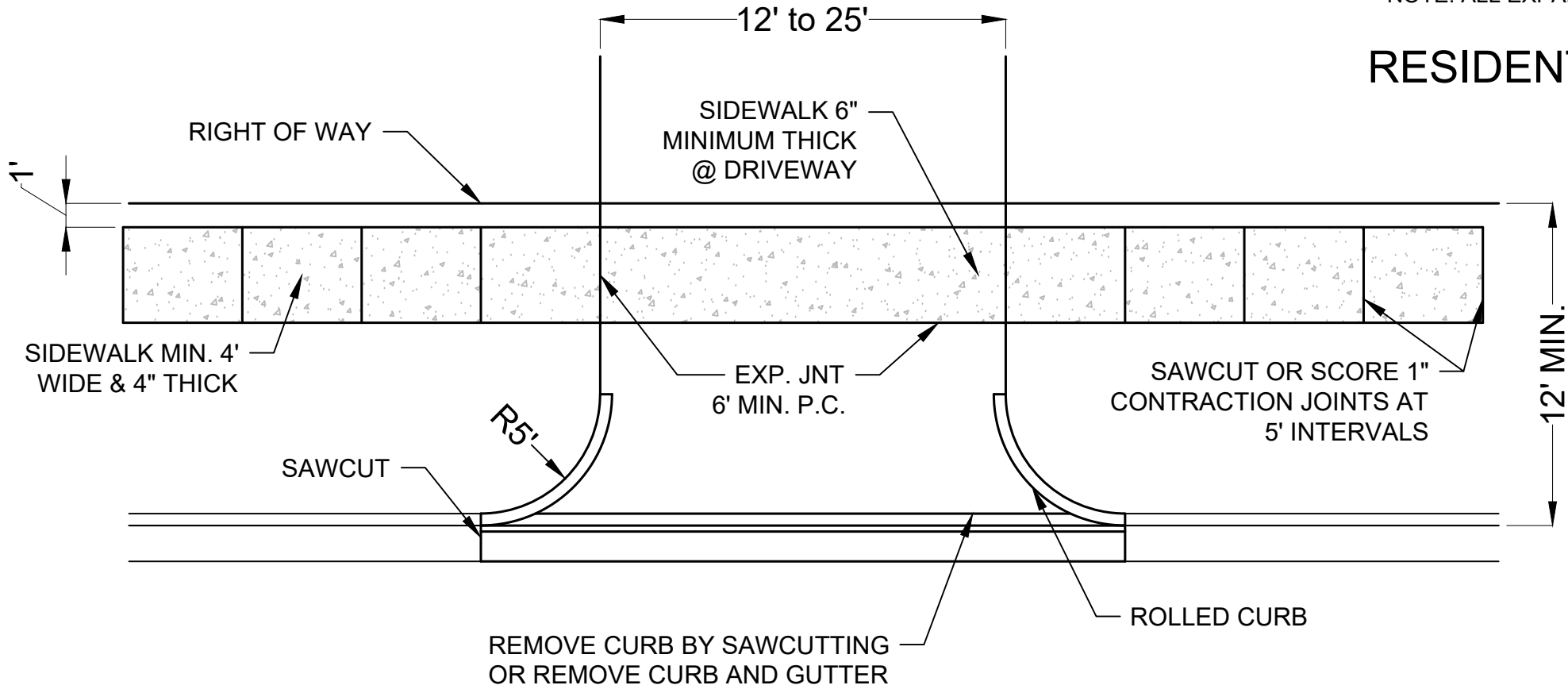
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HORZ. _____		JA	03/26	NW	03/26
VERT. _____		REVIEWED	DATE	APPROVED	DATE
		LM	03/26	LM	03/26
DRAWING NAME: C3		SHEET 14 OF 16	PROJECT NO. 250527		

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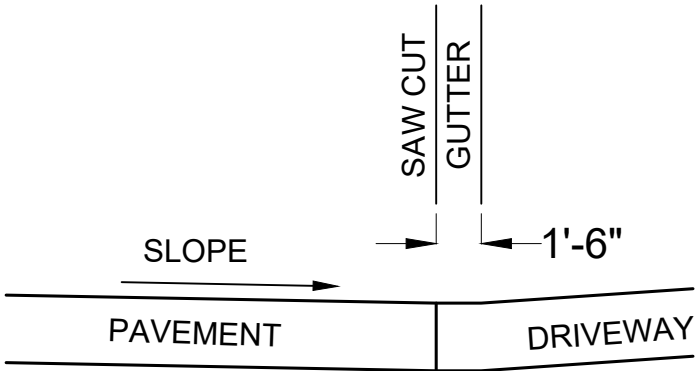
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NOTE: ALL EXPANSION JOINTS SHALL BE APPROVED FIBER MATERIAL

RESIDENTIAL CONCRETE DRIVEWAY



CONCRETE STREET DRIVEWAY SECTION



SECTION AT GUTTER

DATE	REVISIONS

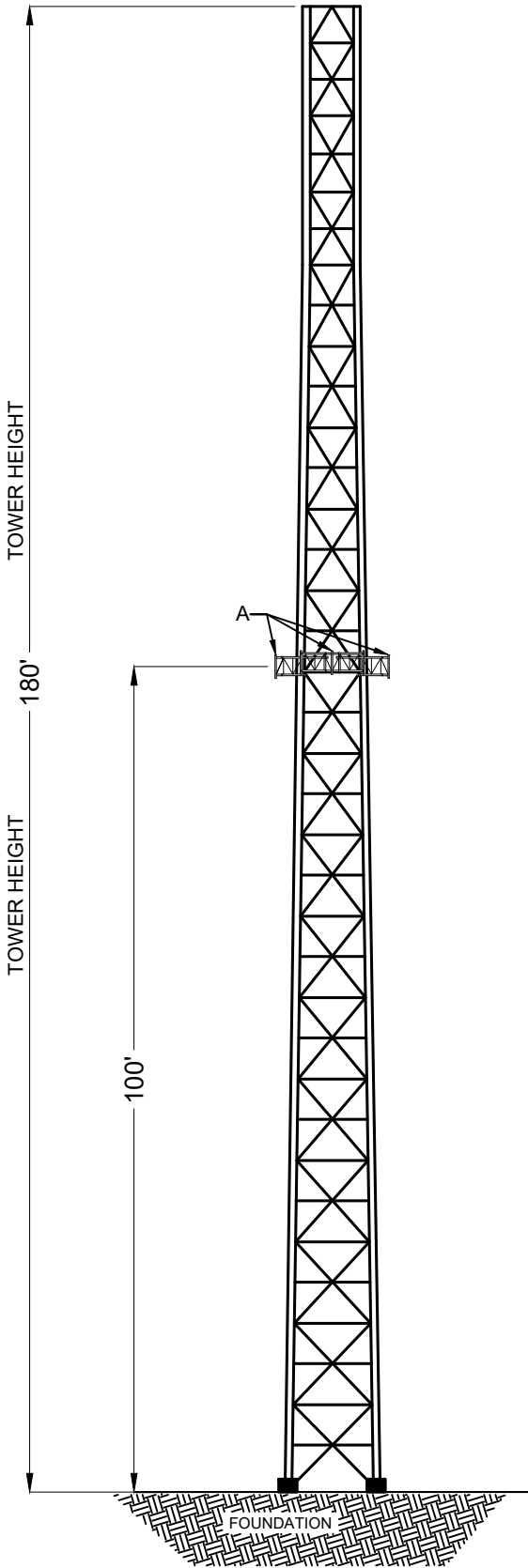
SELF-SUPPORT TOWER
CENTERLINES & AZIMUTHS

APPROXIMATE ANTENNA LOCATION
(AZIMUTH FROM TRUE NORTH)

- A. THREE (3) 10' SECTOR MOUNTS
C/L: 100'
AZIMUTHS : 0°, 120°, 240°

RF DESIGNS COMPLETED BY OTHERS.

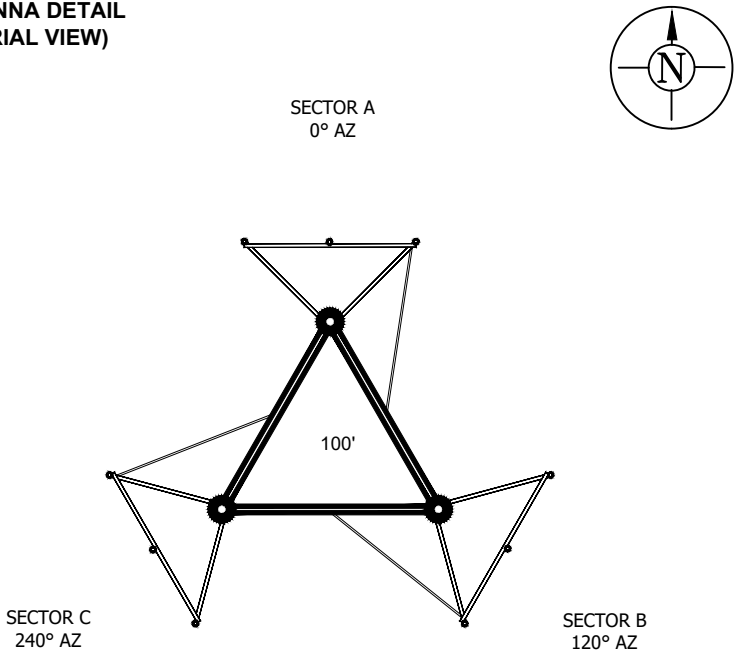
NOTE: BROKEN ARROW WILL UTILIZE 20,000 SQUARE INCHES
AT THE 100' C/L



RF NOTES

- Actual cable lengths coax, etc. shall be determined and verified for each per site by the Owner.
- RF cable and raceway shall comply with the requirements of the National Electrical Code (NEC, NFPA 70), Chapter 8.
- All specified material for each location (e.g., outdoors, indoors-occupied, indoors-unoccupied, plenums, riser shafts, etc.) shall be approved, listed, or labeled as required by the NEC.
- RF cable shall be supported at minimum of every three (3) feet except inside monopoles or lattice towers where cable and connector manufacturers support recommendations shall be lowered. Only manufacturer recommended cable support accessories shall be used.
- The outdoor cable support system shall be provided with a cable tray or T-Brackets as required to support and protect antenna cable runs.
- Drip loops shall be required on all outside cables. Cables shall be sloped away from the building or outdoor cabinets to prevent water from entering through the coaxial cable port.
- In outdoor applications, weather proofing shall be required and the following procedure must be used:
Weatherproof all connections as follows:
1st Layer - Wrap with tape shiny side in, sticky side out
2nd Layer - Wrap with butyl rubber tape
3rd Layer - Wrap with tape shiny side out 3 passes over connector
- Antennas shall be painted, when required, by the tenant in accordance with antenna manufacturers' surface preparation and painting requirements.
- Cable shields and tower conduits shall be grounded about one foot before they turn toward the facility.
- Approved grounding kits, including grounding straps, shall be used to ground the coaxial cable shields. The ground connectors for the kits shall be bonded directly to ground bar using exothermic, double bolted system or approved clamp connections.
- All radio signal cable shall be labeled or color coded.

ANTENNA DETAIL
(AERIAL VIEW)



DRAFT WITHOUT STAMP

DATE	REVISIONS



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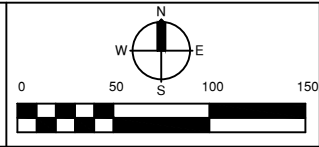
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0 50 100 150

INDIAN SPRINGS

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RF NOTES

PROFILE SCALE:	DESIGN	DATE	DRAFTED	DATE
HORZ. _____	JA	03/26	NW	03/26
VERT. _____	REVIEWED	DATE	APPROVED	DATE
	LM	03/26	LM	03/26
DRAWING NAME: D1	SHEET 16 OF 16	PROJECT NO. 250527		

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