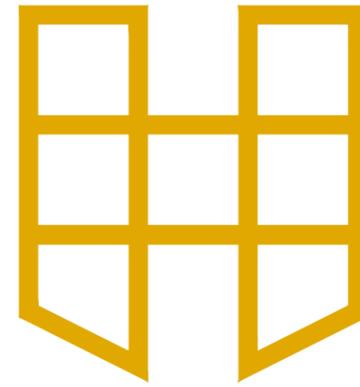


CLAMSHELL

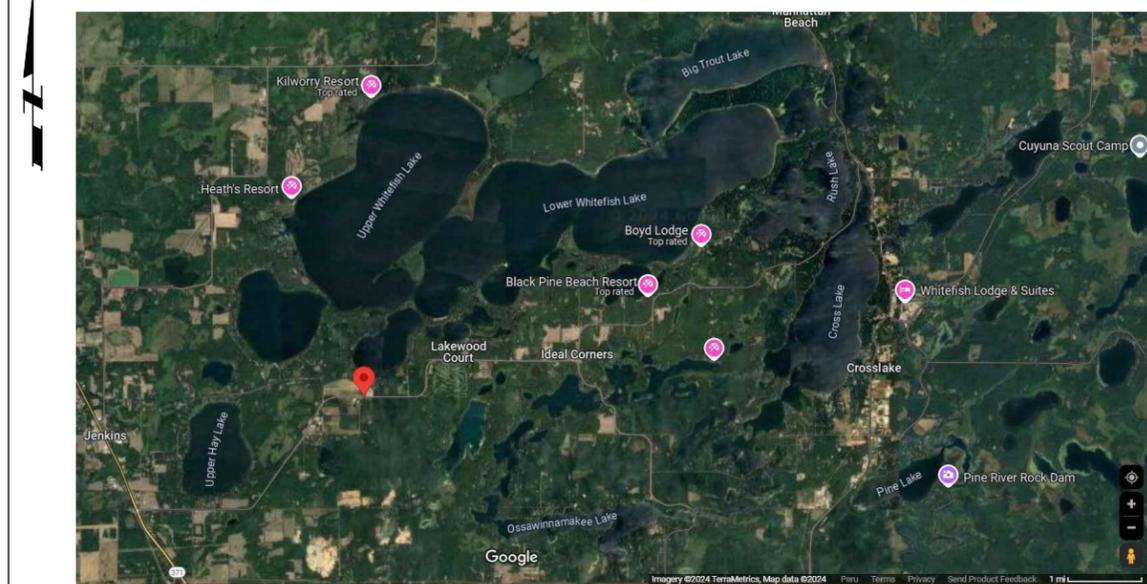
SITE: 1804

195' MONOPOLE TOWER

FOR MULTIPLE WIRELESS CARRIERS



VICINITY MAP



CONSULTING ENGINEER



B+T GROUP
1717 S BOULDER AVE. SUITE 300
TULSA, OK 74119
918-587-4630

PROJECT DATA

SITE NUMBER	1804
SITE NAME	CLAMSHELL
SITE ADDRESS	TBD CR16 PEQUOT LAKES, MN 56472
COUNTY	CROW WING
ZONING CLASS	
POWER COMPANY	CROW WING POWER
CONTACT NAME	
TELEPHONE	800-648-9401
TELCO COMPANY	TDS TELCOM
CONTACT NAME	
TELEPHONE	866-571-6662
PROPERTY OWNER	CRAIG SCHAUFFERT
TELEPHONE	651-983-6177
HEMPHILL CONTACT	MATT KLINE
TELEPHONE	918-884-7756
SURVEY CONTACT	WIDSETH
TELEPHONE	320-762-8149

2C COORDINATES

LAT: 46° 39' 13.62" LONG: -94° 15' 37.07"
(DEC. DEG.: 46.653783, -94.260297)
SURVEY AND 2C PROVIDED BY WIDSETH
AND INCLUDED IN THIS SET OF DRAWINGS FOR REFERENCE ONLY.



HEMPHILL®

1305 NORTH LOUISVILLE AVE
TULSA, OK 74115
(918) 834-2200



DRAFTING SERVICES
9 E 4TH ST. SUITE C-4
TULSA, OK 74103
918-215-7575

PROJECT NO:	1804
PROJECT NAME:	CLAMSHELL
911 ADDRESS:	TBD
DRAWN BY:	LSV
CHECKED BY:	RGH/MK/SLT

ISSUED FOR:

APPROVAL

REV	DATE	DESCRIPTION
0	10/17/24	FOR APPROVAL

CHAD TUTTLE
PROFESSIONAL ENGINEER - MINNESOTA
REGISTRATION NO.: 16136PE

SCALE

N.T.S.

TITLE SHEET

SHEET NUMBER: REVISION:

TS

0

DIRECTIONS

FROM MINNEAPOLIS, MINNESOTA. DRIVE WEST ON I-94 W. TAKE EXIT 193 FOR MN-25 TOWARD BUFFALO/MONTICELLO, IN 0.3MI. USE THE RIGHT 2 LANES TO TURN RIGHT ONTO MN-25 N, IN 0.9MI. USE THE LEFT 2 LANES TO TURN LEFT ONTO PARK BLVD SE, IN 3.0MI. CONTINUE ONTO 165TH AVE SE, IN 0.9MI. TURN LEFT ONTO US-10W, IN 21.4MI. KEEP LEFT TO STAY ON US-10 W, IN 33.1MI. KEEP RIGHT TO CONTINUE ON MN-371 N/GREAT RIVER RD, IN 31.2MI. CONTINUE STRAIGHT TO STAY ON MN-371 N, 13.5MI. KEEP RIGHT TO CONTINUE ON MN-371, IN 3.3MI. TURN RIGHT ONTO CO RD 112, IN 1.1MI. TURN RIGHT ONTO CO RD 16, IN 3.1MI. SITE AND ACCESS WILL BE ON THE LEFT.

PROJECT NOTES

HEMPHILL TOWER SITE DEVELOPMENT SPECIFICATIONS SUPPLEMENT THE CONSTRUCTION DRAWINGS. FACILITY IS NOT STAFFED AND NORMALLY NOT OCCUPIED.

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR THE SAME

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE CODE ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THE FOLLOWING CODES:

- 2018 INTERNATIONAL BUILDING CODE
- 2017 NATIONAL ELECTRIC CODE
- 2018 INTERNATIONAL FIRE CODE

ENGINEER OF RECORD

CHAD TUTTLE
PROFESSIONAL ENGINEER - MINNESOTA
REGISTRATION NO.: 16136PE

ONE CALL SYSTEM



Know what's below.
Call before you dig.

BEFORE YOU DIG, CALL MINNESOTA LINE LOCATION FOR LOCATION OF UNDERGROUND UTILITIES. CALL 811

DRAWING INDEX

SHEET	SHEET TITLE	REV.
TS	TITLE SHEET	0
C1-1	SITE SURVEY	0
C1-2	SITE SURVEY	0
C1-3	OVERALL SITE PLAN	0
C2-1	COMPOUND LAYOUT	0
C3-1	TOWER ELEVATION	0
C3-3	GROUND EQUIPMENT DETAILS	0
C3-6	TRENCHING DETAILS	0
C4-1	ROADWAY AND COMPOUND DETAILS	0
C5-1	GRADING PLAN	0
C6-1	COMPOUND FENCE DETAILS	0
E1-1	ELECTRIC, LIGHTING, AND TELCO PLAN	0
E2-1	ELECTRICAL DETAILS	0
E3-1	GROUNDING PLAN	0
E4-1	GROUNDING DETAILS	0
G1-1	GENERAL NOTES	0
G1-2	GENERAL NOTES	0

SITE SURVEY

PARENT PARCEL DESCRIPTION: (per Old Republic National Title Insurance Company Commitment No. 01-24055591-01T, dated September 17, 2024)

SITUATED IN THE COUNTY OF CROW WING, STATE OF MINNESOTA:

THE EAST 230 FEET OF THE WEST 430 FEET OF THE SOUTH 206 FEET OF GOVERNMENT LOT 3, SECTION 29, TOWNSHIP 137, RANGE 28, CROW WING COUNTY, MINNESOTA.

TAX ID: 68290618

BEING A PORTION OF THE SAME PROPERTY CONVEYED TO CRAIG F. SCHAUFFERT AND DEBRA J. SCHAUFFERT, AS TRUSTEES OF THE CRAIG F. SCHAUFFERT AND DEBRA J. SCHAUFFERT FAMILY TRUST, GRANTEE, FROM CRAIG SCHAUFFERT A/K/A CRAIG F. SCHAUFFERT AND DEBRA SCHAUFFERT, A/K/A DEBRA J. SCHAUFFERT, HUSBAND AND WIFE, GRANTOR, BY QUIT CLAIM DEED RECORDED 01/12/2017, AS DOCUMENT NO. A-883929, OF THE CROW WING COUNTY RECORDS.

SCHEDULE "B" EXCEPTIONS: (per Old Republic National Title Insurance Company Commitment No. 01-24055591-01T, dated September 17, 2024)

- 1-6.) Not related to the survey.
- 7.) HIGHWAY EASEMENT IN FAVOR OF THE COUNTY OF CROW WING, STATE OF MINNESOTA, RECORDED 02/11/1987, AS DOCUMENT NO. 372253, OF THE CROW WING COUNTY RECORDS.
This document describes the north right of way line of County State Aid Highway No. 16. Said easement is as shown the survey.
- 8.) HIGHWAY EASEMENT IN FAVOR OF THE COUNTY OF CROW WING, STATE OF MINNESOTA, RECORDED 02/25/1987, AS DOCUMENT NO. 373066, OF THE CROW WING COUNTY RECORDS.
This document describes the north right of way line of County State Aid Highway No. 16. Said easement is as shown the survey.

LEASE AREA DESCRIPTION:

That part of Government Lot 3 of Section 29, Township 137 North, Range 28 West of the Fifth Principal Meridian, Crow Wing County, Minnesota, described as follows:

Commencing at the southwest corner of said Government Lot 3; thence North 89 degrees 23 minutes 39 seconds East along the south line of said Government Lot 3, a distance of 234.10 feet; thence North 0 degrees 40 minutes 22 seconds West, a distance of 85.15 feet to the Point of Beginning of the lease area to be described; thence continue North 0 degrees 40 minutes 22 seconds West, a distance of 80.00 feet; thence North 89 degrees 19 minutes 38 seconds East, a distance of 80.00 feet; thence South 0 degrees 40 minutes 22 seconds East, a distance of 80.00 feet; thence South 89 degrees 19 minutes 38 seconds West, a distance of 80.00 feet to the Point of Beginning.

Said lease area contains 6,400 Sq. Ft. or 0.15 Acres.

ACCESS AND UTILITY EASEMENT DESCRIPTION:

A 24.00 foot wide easement for ingress, egress and utility purposes over, under and across Government Lot 3 of Section 29, Township 137 North, Range 28 West of the Fifth Principal Meridian, Crow Wing County, Minnesota, the centerline of said easement is described as follows:

Commencing at the southwest corner of said Government Lot 3; thence North 89 degrees 23 minutes 39 seconds East along the south line of said Government Lot 3, a distance of 234.10 feet; thence North 0 degrees 40 minutes 22 seconds West, a distance of 165.15 feet; thence South 89 degrees 19 minutes 38 Seconds West, a distance of 12.00 feet to the Point of Beginning of the centerline to be described; thence South 0 degrees 40 minutes 22 seconds East, a distance of 115.18 feet to the north right of way line of County State Aid Highway Number 16 and said centerline there terminating.

The sidelines of said easement shall be shortened or lengthened to terminate at said North right of way line of County State Aid Highway Number 16.



WIDSETH
ARCHITECTS ■ ENGINEERS ■ SCIENTISTS ■ SURVEYORS

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PROPERTY OWNER:
SCHAUFFERT, CRAIG F

PARCEL NO:
68290618

ZONED:
COMMERCIAL DISTRICT 2

DEED REFERENCED:
**QUIT CLAIM DEED
DOC. NO. A-883929**

SITE NAME:
CLAMSHELL

SITE NUMBER:
1804

SITE ADDRESS:
**XXXX CSAH 16, Pequot Lakes,
Crow Wing County, MN 56472**

I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: *Bryan T. Balcome*
BRYAN T. BALCOME, L.S.
DATE: 10/11/24 LICENSE # 42594

FULL SCALE ON 22"x34"
HALF SCALE ON 11"x17"
2024-11589

No.	Date	REVISIONS	By	CHK	APP'D

FIELD WORK: 9/19/24 CHECKED BY: BTB DRAWN BY: BAM

SHEET 1 OF 2 SHEETS



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(918) 834-2200

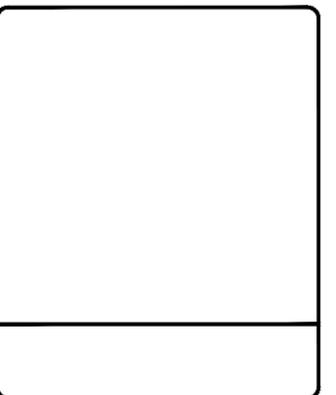
SURVEY PROVIDED BY:

WIDSETH
610 FILMORE STREET
ALEXANDRIA, MN 56308
320-762-8149

PROJECT NO:	1804
PROJECT NAME:	CLAMSHELL
911 ADDRESS:	TBD
DRAWN BY:	LSV
CHECKED BY:	RGH/MK/SLT

ISSUED FOR:
APPROVAL

REV	DATE	DESCRIPTION
0	10/17/24	FOR APPROVAL



SCALE

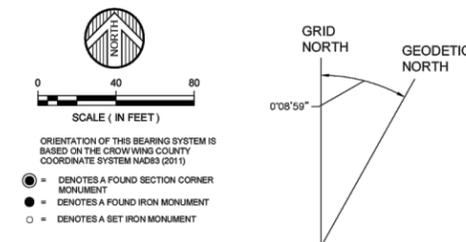
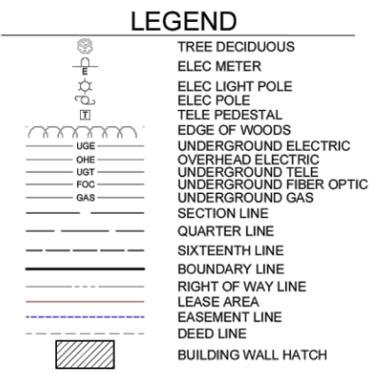
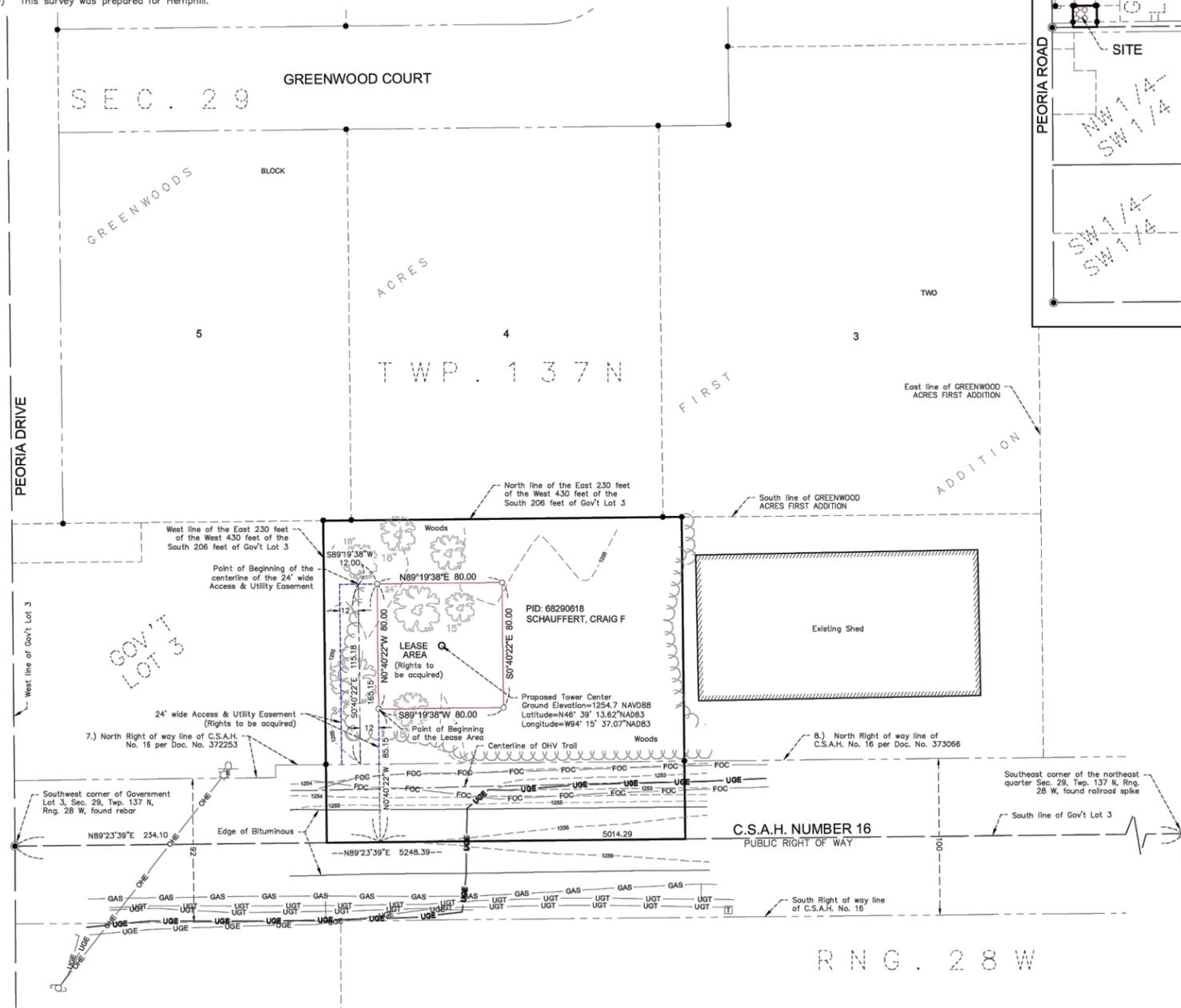
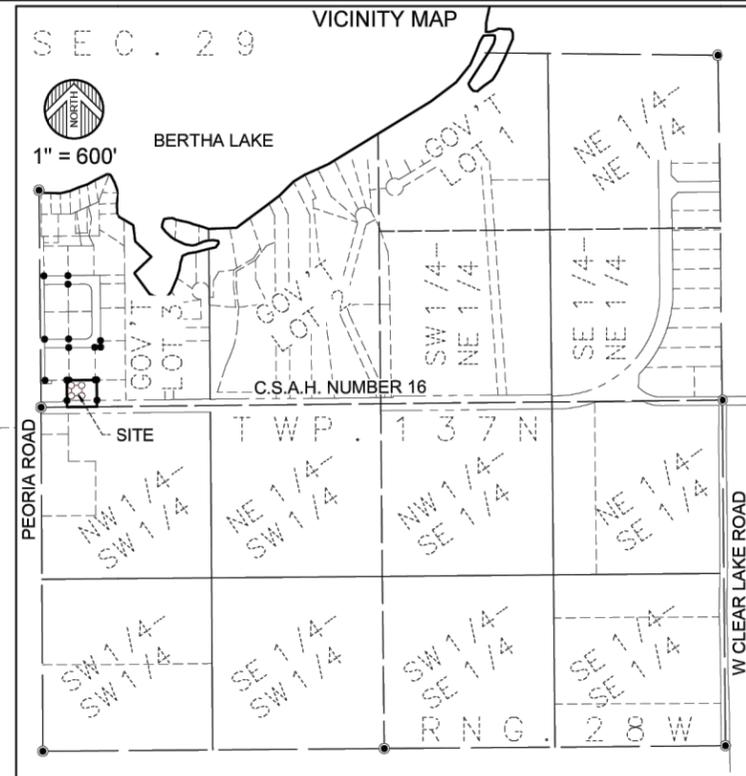
SITE SURVEY

SHEET NUMBER: **C1-1** REVISION: **0**

SURVEYOR NOTES:

- 1.) Utilities are per observed evidence, provided maps and from markings per GOPHER STATE ONE CALL Ticket No. 242560481, dated September 12, 2024.
- 2.) This is not a boundary survey of the parent parcel. This survey represents the Lease Area only.
- 3.) The presence and location of wetlands has not been determined on the property. Wetlands should only be determined by an actual field delineation performed by a qualified wetland specialist.
- 4.) The tower site lies within Zone "X" (areas of minimal flood hazard) as depicted by Crow Wing County FEMA Flood Rate Insurance Map No. 27035C.
- 5.) The Lease Area is contiguous along its common boundaries to the Access and Utility Easement, which in turn is contiguous along its common boundaries to the right of way of County State Aid Highway No. 16, and there are no gaps, gores, spaces or overlaps between or among any of said Lease Parcel, Easement and Public Right of Way.
- 6.) The Lease Area together with all Access and Utility Easements are within the area described in the Property Description contained herein.
- 7.) During the time of the survey there were no visible encroachments to the Lease Area.
- 8.) This survey was prepared by Widseth, 610 Fillmore St., Alexandria, MN 56308, Phone Number: 320-762-8149
- 9.) This survey was prepared for Hemphill.

SITE SURVEY



SHEET 2 OF 2 SHEETS



WIDSETH
ARCHITECTS • ENGINEERS • SCIENTISTS • SURVEYORS

PROPERTY OWNER:
SCHAUFFERT, CRAIG F

PARCEL NO:
68290618

ZONED:
COMMERCIAL DISTRICT 2

DEED REFERENCED:
**QUIT CLAIM DEED
DOC. NO. A-883929**

SITE NAME:
CLAMSHELL

SITE NUMBER:
1804

SITE ADDRESS:
**XXXX CSAH 16, Pequot Lakes,
Crow Wing County, MN 56472**

I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: *Bryan T. Balcome*
BRYAN T. BALCOME, L.S.
DATE: 10/11/24 LICENSE # 42594

FULL SCALE ON 22"x34"
HALF SCALE ON 11"x17"
2024-11589

No.	Date	REVISIONS	By	CHK	APP'D

HEMPHILL
1305 NORTH LOUISVILLE AVE
TULSA, OK 74115
(918) 834-2200

SURVEY PROVIDED BY:

WIDSETH
610 FILMORE STREET
ALEXANDRIA, MN 56308
320-762-8149

PROJECT NO:	1804
PROJECT NAME:	CLAMSHELL
911 ADDRESS:	TBD
DRAWN BY:	LSV
CHECKED BY:	RGH/MK/SLT

ISSUED FOR:
APPROVAL

REV	DATE	DESCRIPTION
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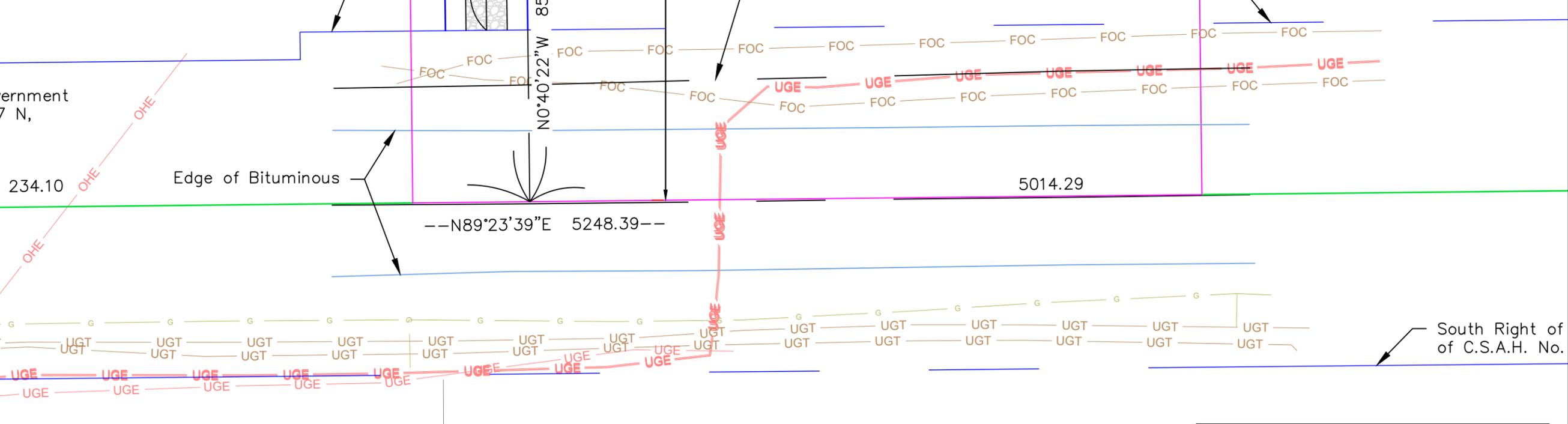
SCALE
N.T.S.

SITE SURVEY

SHEET NUMBER: **C1-2** REVISION: **0**

LEGEND	
	TREE DECIDUOUS
	ELEC METER
	ELEC LIGHT POLE
	ELEC POLE
	TELE PEDESTAL
	EDGE OF WOODS
	UNDERGROUND ELECTRIC
	OVERHEAD ELECTRIC
	UNDERGROUND TELE
	UNDERGROUND FIBER OPTIC
	UNDERGROUND GAS
	SECTION LINE
	QUARTER LINE
	SIXTEENTH LINE
	PROPERTY BOUNDARY
	RIGHT OF WAY LINE
	LEASE AREA
	EASEMENT LINE
	DEED LINE
	BUILDING WALL HATCH

PROPOSED 12' WIDE SITE ACCESS ROAD (GRAVELED)
 24' wide Access & Utility Easement (Rights to be acquired)
 7.) North Right of way line of C.S.A.H. No. 16 per Doc. No. 372253



PROPOSED 12'-0" DOUBLE SWING GATE
 TOWER COMPOUND (GRAVELED)
 PROPOSED 6'-0" CHAIN LINK FENCE WITH 1'-0" BARBED WIRE 60'x60'
 TOWER SITE LEASE AREA 80'x80'
 Proposed Tower Center
 Ground Elevation=1254.7 NAVD88
 Latitude=N46° 39' 13.62"NAD83
 Longitude=W94° 15' 37.07"NAD83
 8.) North Right of way line of C.S.A.H. No. 16 per Doc. No. 373066
 South Right of of C.S.A.H. No.

NOTES:
 1. REFER TO SHEETS C1-1 AND C1-2 FOR SURVEY AND ADJACENT LOT DETAILS

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 TULSA, OK 74115
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B+T GRP
 B+T GROUP
 1717 S BOULDER AVE. SUITE
 300 TULSA, OK 74119
 918-587-4630

PROJECT NO:	1804
PROJECT NAME:	CLAMSHELL
911 ADDRESS:	TBD
DRAWN BY:	LSV
CHECKED BY:	RGH/MK/SLT

ISSUED FOR:
 APPROVAL

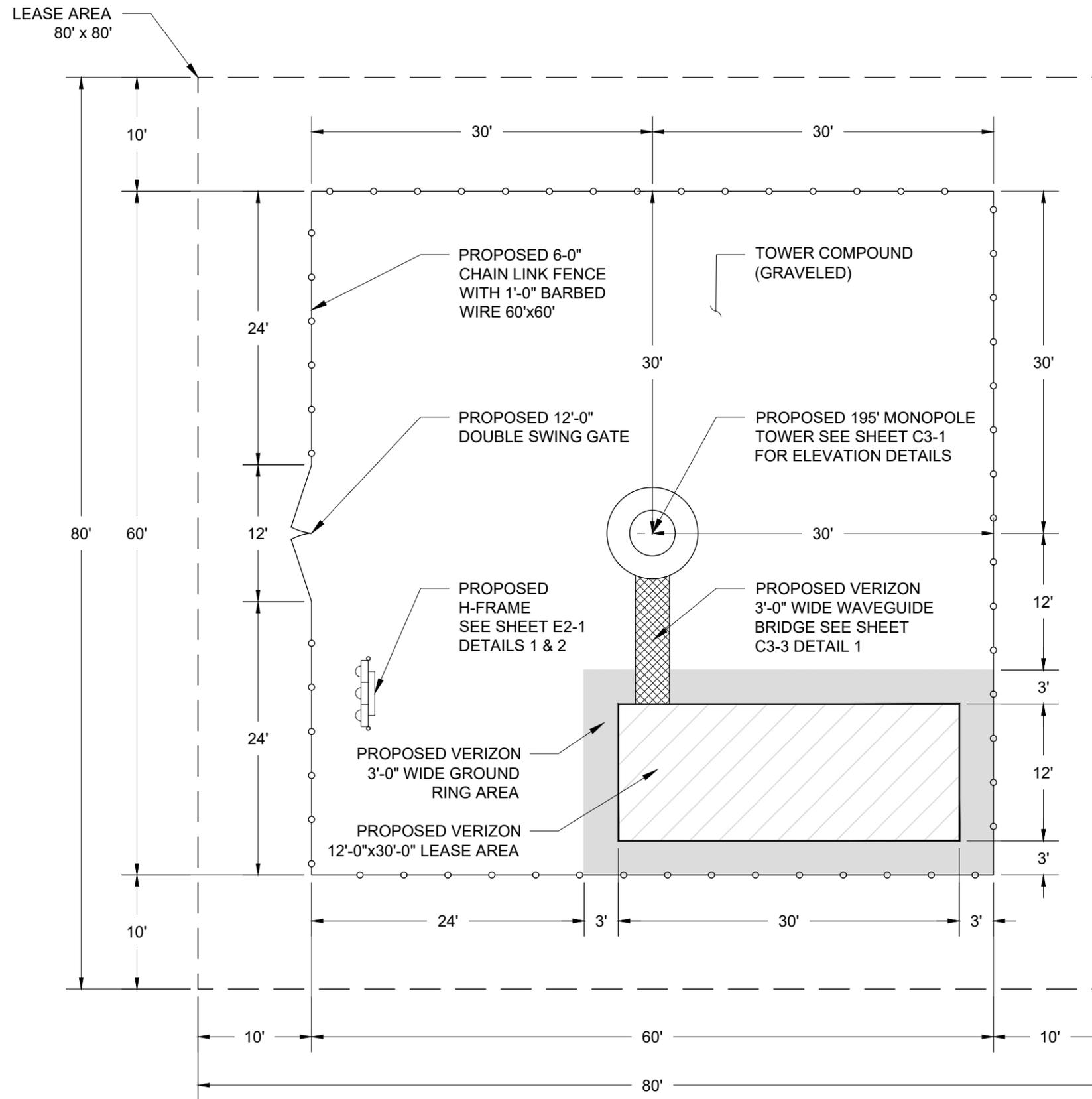
REV	DATE	DESCRIPTION
0	10/17/24	FOR APPROVAL

CHAD TUTTLE
 PROFESSIONAL ENGINEER - MINNESOTA
 REGISTRATION NO.: 16136PE

SCALE
 1/32" = 1'-0"

OVERALL SITE PLAN

SHEET NUMBER:	REVISION:
C1-3	0



NOTES:

1. ALL COMPONENTS SHOWN ARE NEW CONSTRUCTION
2. PLACEMENT OF VERIZON LEASE AREA, AND HEMPHILL H-FRAME, WITHIN THE COMPOUND IS APPROXIMATE AND MAY VARY DEPENDING ON SITE CONDITIONS AT TIME OF CONSTRUCTION
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF APPROPRIATE EROSION CONTROL MEASURES, INCLUDING SILT FENCES, ON THE DOWN SLOPE SIDES OF ALL SOIL DISTURBING ACTIVITIES. SEE SHEET C4-1 DETAIL 3
4. (SELF SUPPORT TOWERS ONLY): TOWER TO BE CONSTRUCTED WITH ONE FACE PARALLEL TO COMPOUND FENCE / LEASE AREA



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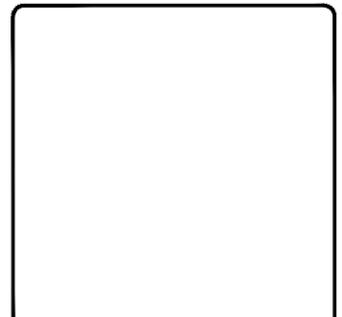


B+T GROUP
 1717 S BOULDER AVE. SUITE
 300 TULSA, OK 74119
 918-587-4630

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CHAD TUTTLE
 PROFESSIONAL ENGINEER - MINNESOTA
 REGISTRATION NO.: 16136PE

SCALE
 3/32" = 1'-0"

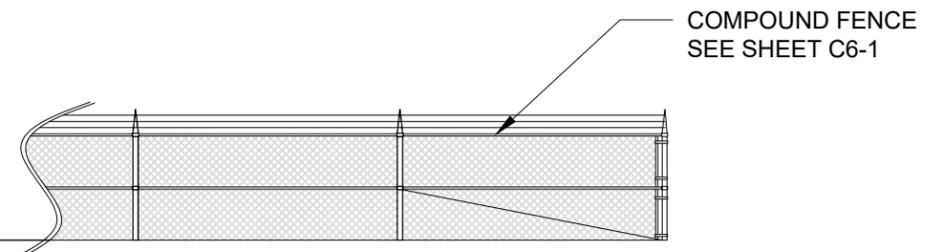
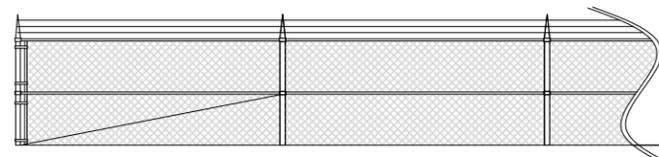
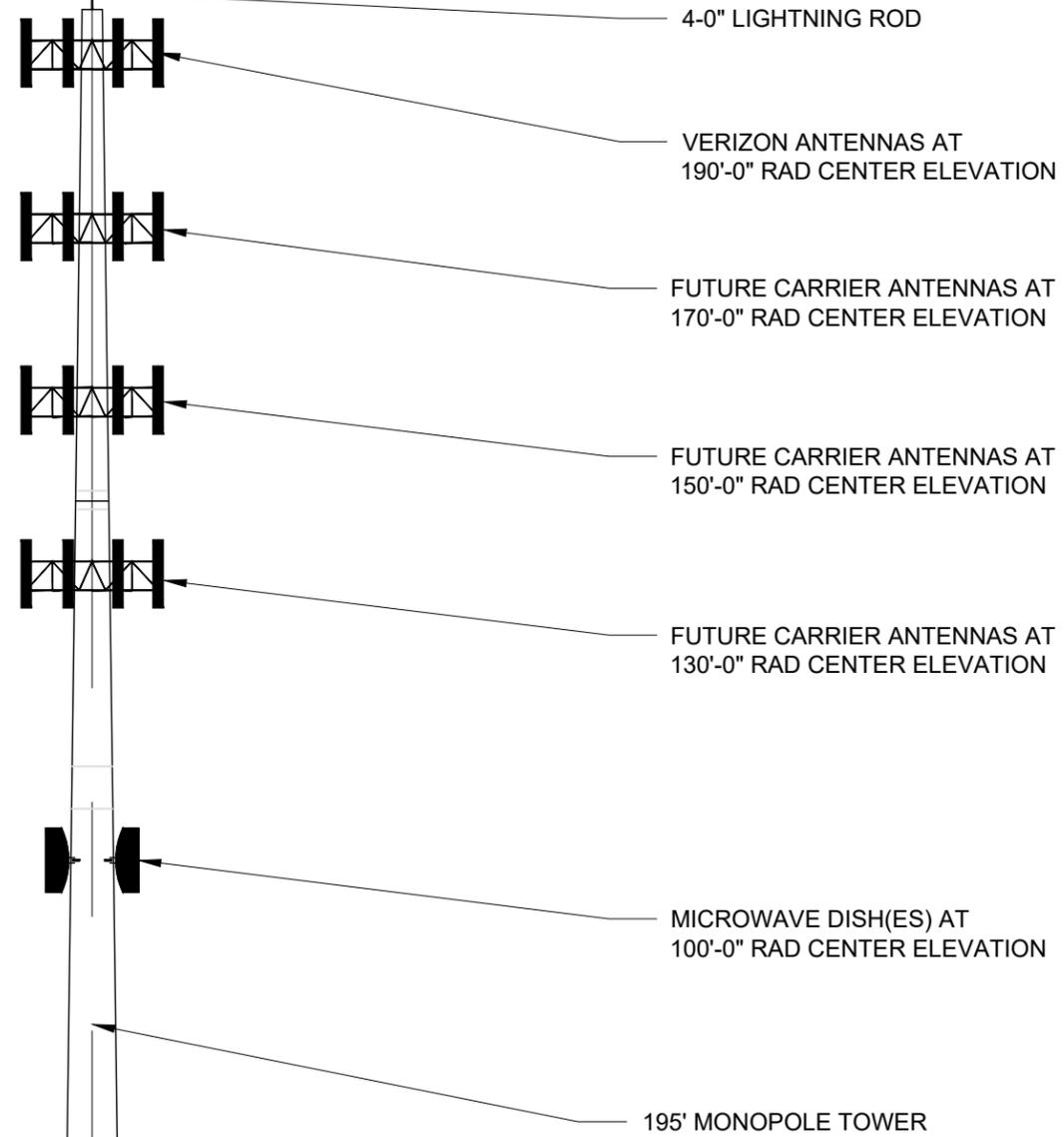
COMPOUND LAYOUT

SHEET NUMBER:	REVISION:
C2-1	0

THESE DRAWINGS ARE NOT INTENDED TO REFLECT THE STRUCTURAL INTEGRITY OF THE TOWER. THE PROPOSED ANTENNAS AND TRANSMISSION LINES SHOWN ARE REPRESENTATIVE IN NATURE AND DO NOT REFLECT THE ACTUAL CONFIGURATIONS REQUIRED. THE CONTRACTOR SHALL REFER TO THE STRUCTURAL ANALYSIS OF THIS TOWER SITE FOR THE APPROVED LOCATION AND CONFIGURATION OF ALL ANTENNAS AND TRANSMISSION LINES. ALL ANTENNAS MUST BE MOUNTED AND THE TRANSMISSION LINES CONFIGURED IN STRICT ACCORDANCE WITH THE STRUCTURAL ANALYSIS.

199'-0" TOTAL HEIGHT WITH APPURTENANCES

195'-0" TOP OF TOWER




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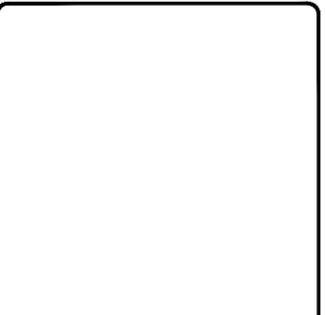


B+T GRP
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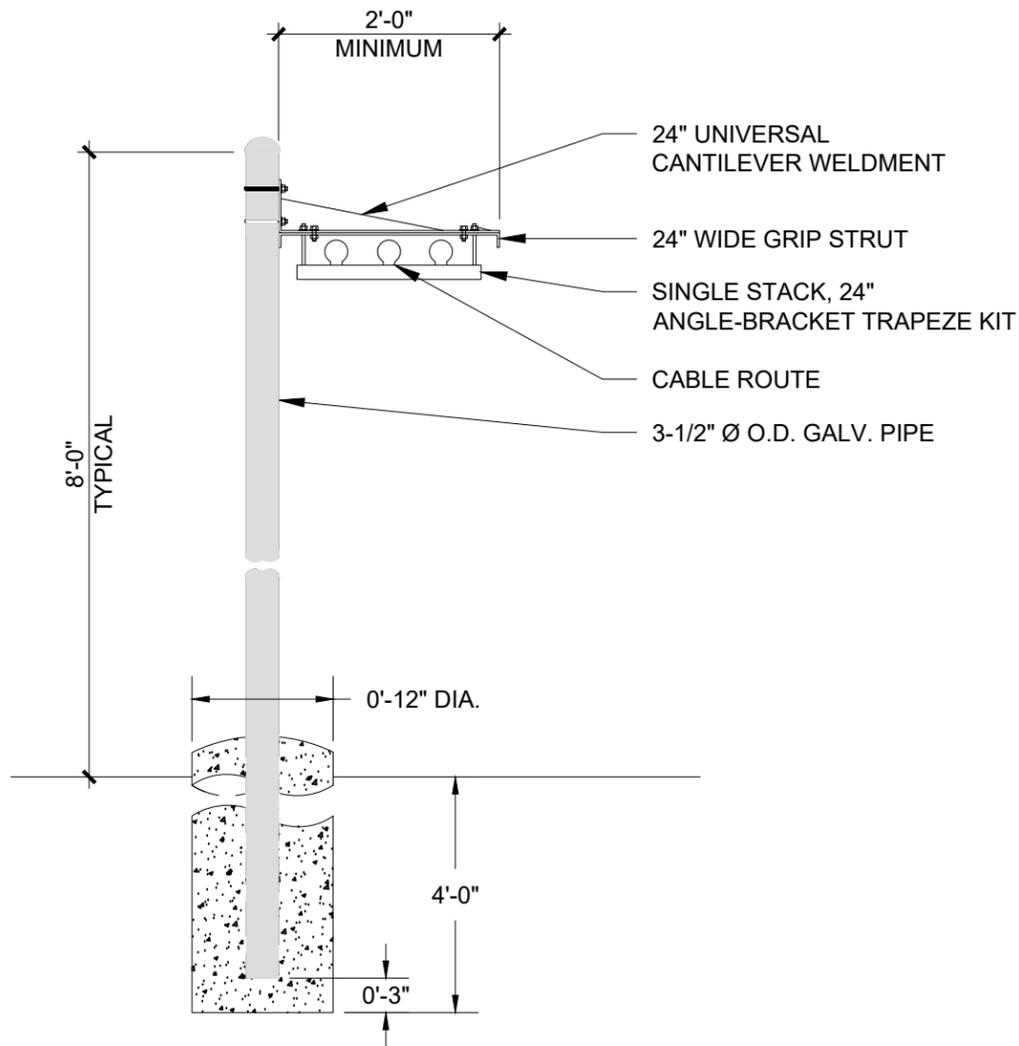
CHAD TUTTLE
 PROFESSIONAL ENGINEER - MINNESOTA
 REGISTRATION NO.: 16136PE

SCALE
 N.T.S.

TOWER ELEVATION

SHEET NUMBER:	REVISION:
C3-1	0

POSTS TO BE SPACED MINIMUM 4'-0" O.C. AND MAXIMUM 10'-0" O.C.



WAVEGUIDE BRIDGE DETAIL

SCALE: N.T.S.

1
C3-3



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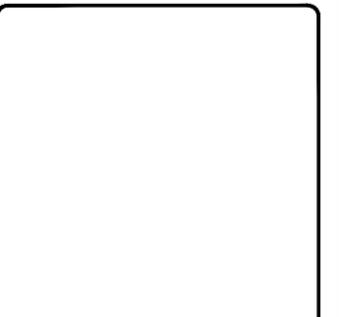


B+T GROUP
1717 S BOULDER AVE. SUITE
300 TULSA, OK 74119
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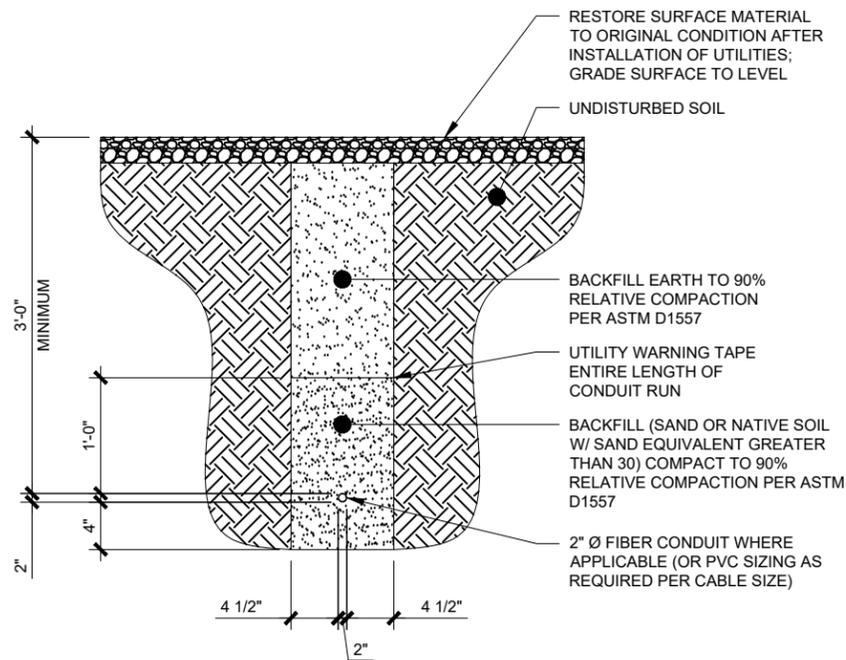


CHAD TUTTLE
PROFESSIONAL ENGINEER - MINNESOTA
REGISTRATION NO.: 16136PE

SCALE
N.T.S.

**GROUND
EQUIPMENT DETAILS**

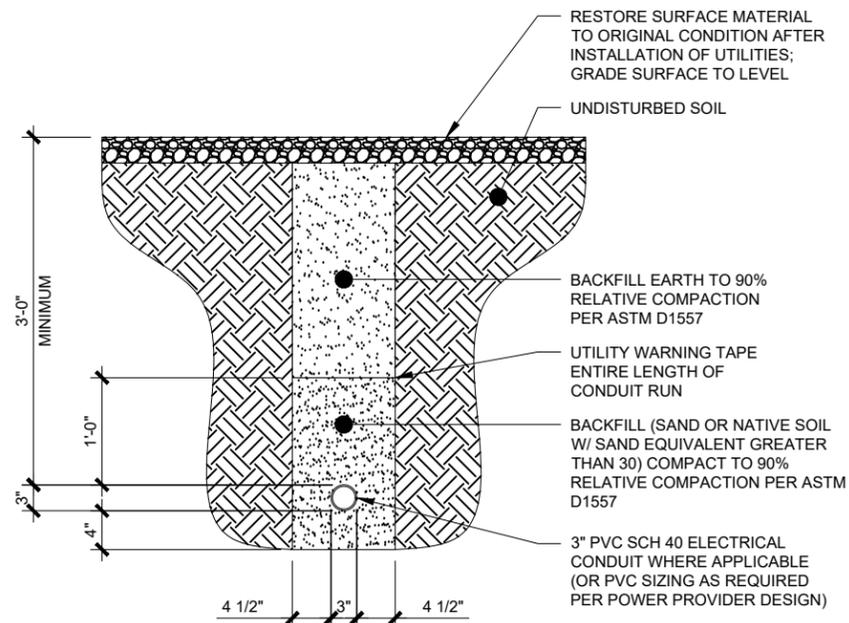
SHEET NUMBER:	REVISION:
C3-3	0



FIBER TRENCH DETAIL

SCALE: N.T.S.

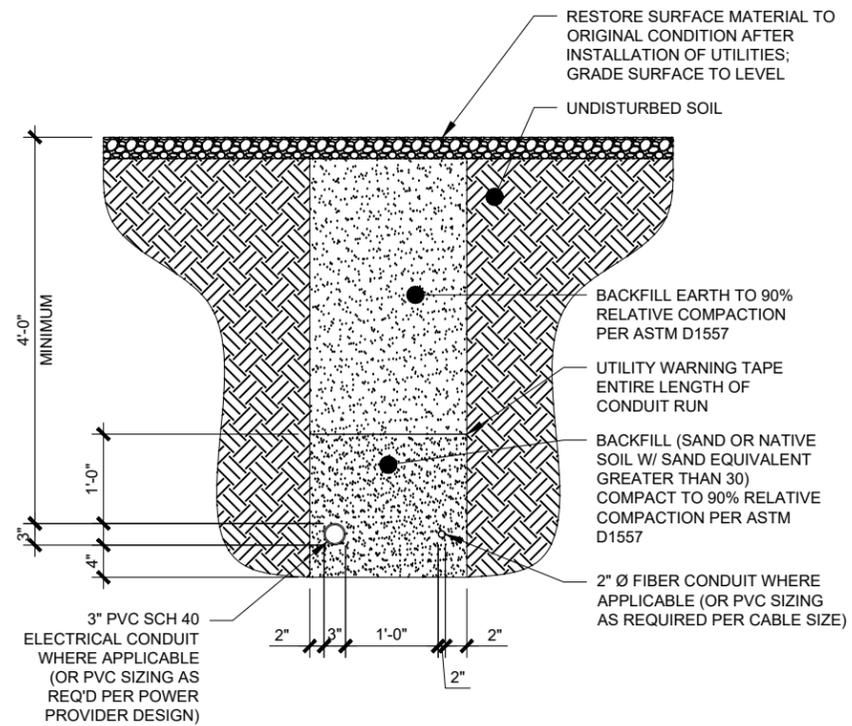
1
C3-6



ELECTRICAL TRENCH DETAIL

SCALE: N.T.S.

2
C3-6



DUAL TRENCH DETAIL

SCALE: N.T.S.

3
C3-6



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(918) 834-2200



B+T GROUP
1717 S BOULDER AVE. SUITE
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PROJECT NO: 1804
PROJECT NAME: CLAMSHELL
911 ADDRESS: TBD
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CHECKED BY: RGH/MK/SLT

ISSUED FOR:

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REV	DATE	DESCRIPTION
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CHAD TUTTLE
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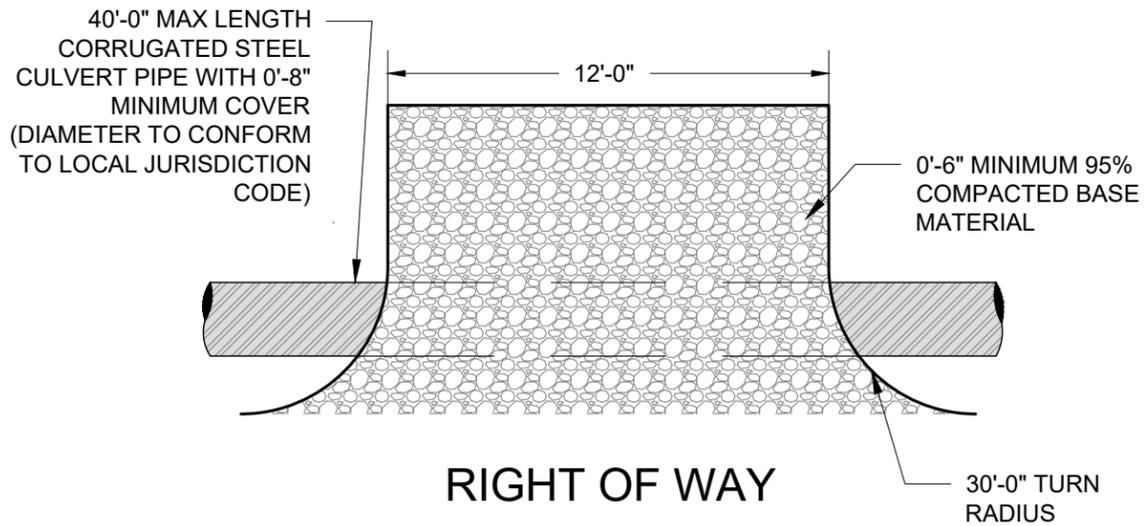
N.T.S.

TRENCHING
DETAILS

SHEET NUMBER: REVISION:

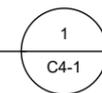
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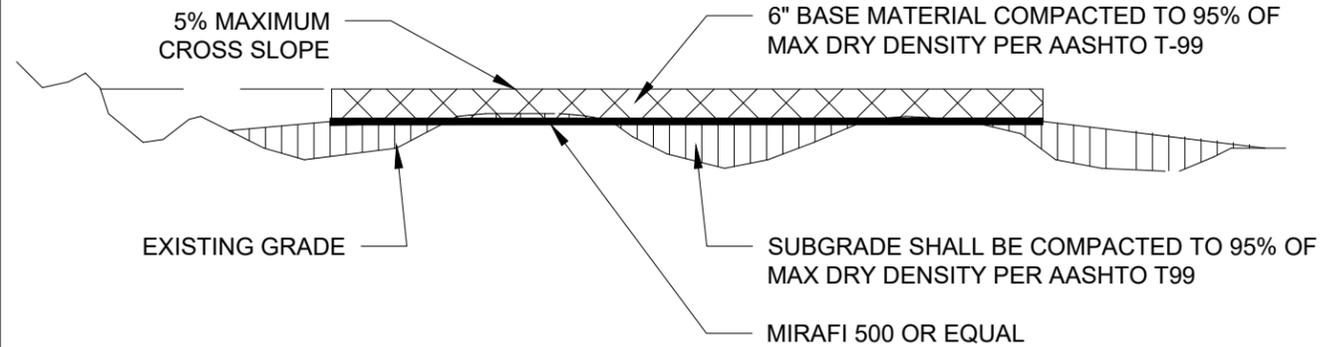


ENTRANCE DETAIL

SCALE: N.T.S.

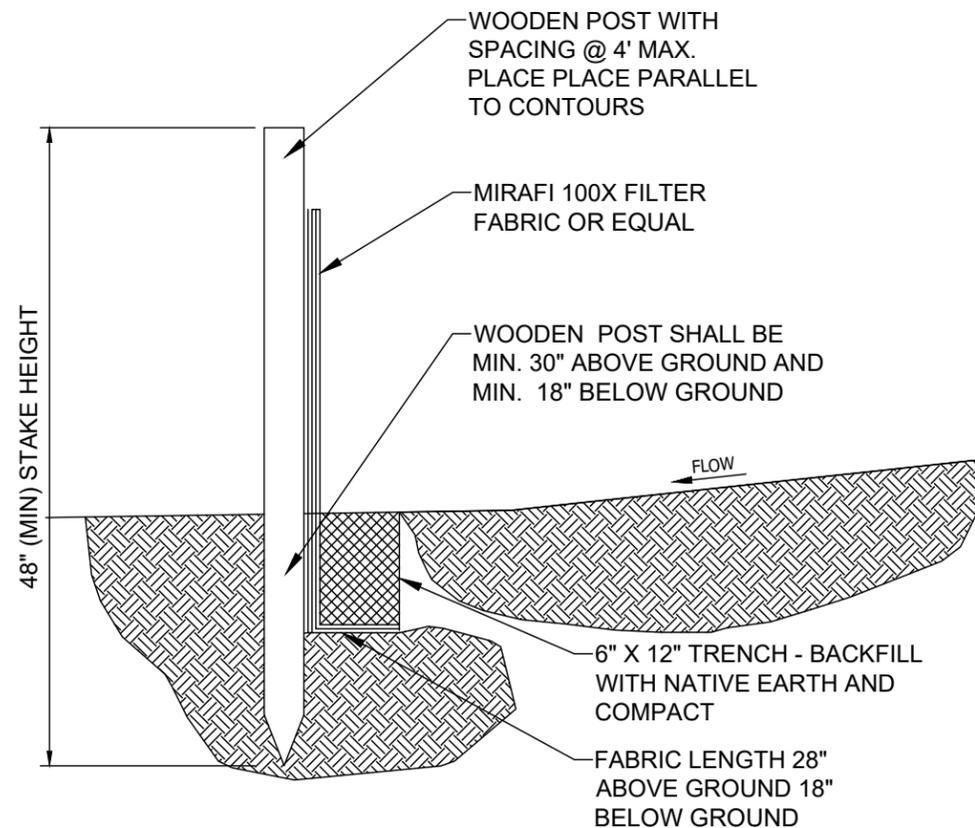
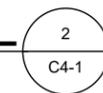


NOTE: IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL NECESSARY PERMITS TO ENSURE THAT THE ENTRANCE MEETS ALL GOVERNING SPECIFICATIONS.



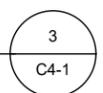
COMPOUND DETAIL

SCALE: N.T.S.

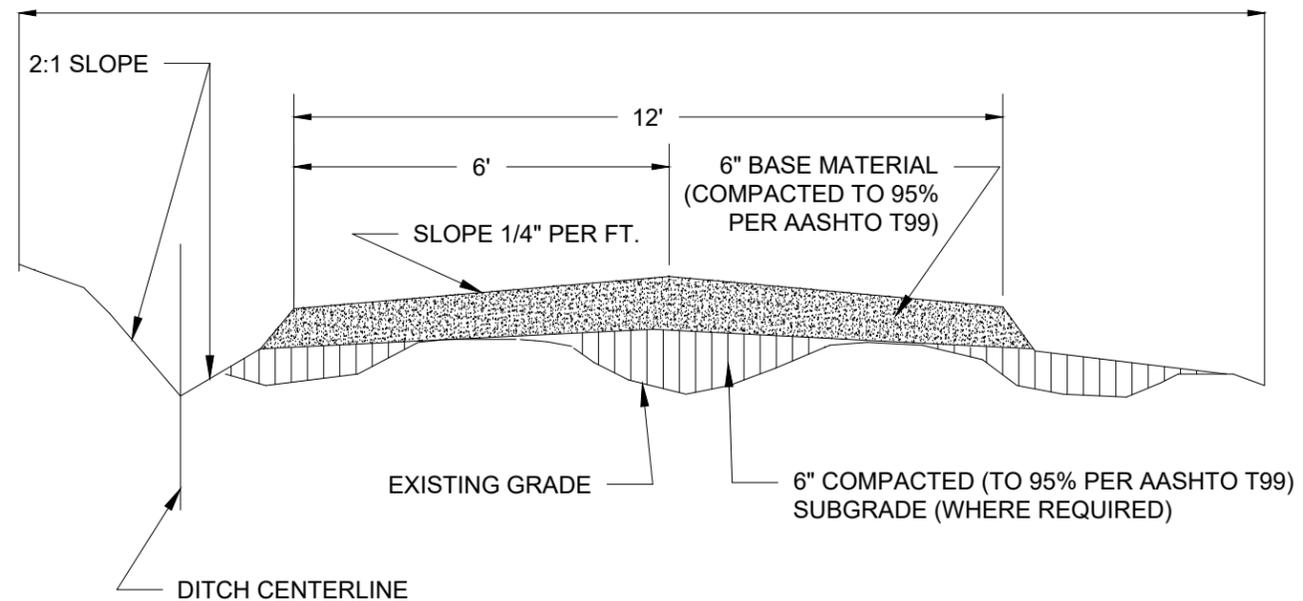


SILT FENCE DETAIL

SCALE: N.T.S.

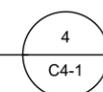


ROADWAY EASEMENT



ROADWAY DETAIL

SCALE: N.T.S.



CONSTRUCTION SEQUENCE

- 1- INSTALLATION OF SILT FENCE - PRIOR TO ANY EARTH MOVING OPERATIONS, AS REQUIRED.
- 2- INSTALLATION OF STABILIZED CONSTRUCTION ENTRANCE.
- 3- STRIPPING AND STOCK PILING OF TOPSOIL AND ROUGH GRADING. TEMPORARY STABILIZATION WITHIN 15 DAYS.
- 4- CONSTRUCTION OF UNDERGROUND IMPROVEMENTS.



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300 TULSA, OK 74119
918-587-4630

PROJECT NO:	1804
PROJECT NAME:	CLAMSHELL
911 ADDRESS:	TBD
DRAWN BY:	LSV
CHECKED BY:	RGH/MK/SLT

ISSUED FOR:

APPROVAL

REV	DATE	DESCRIPTION
0	10/17/24	FOR APPROVAL

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ROADWAY AND
COMPOUND DETAILS

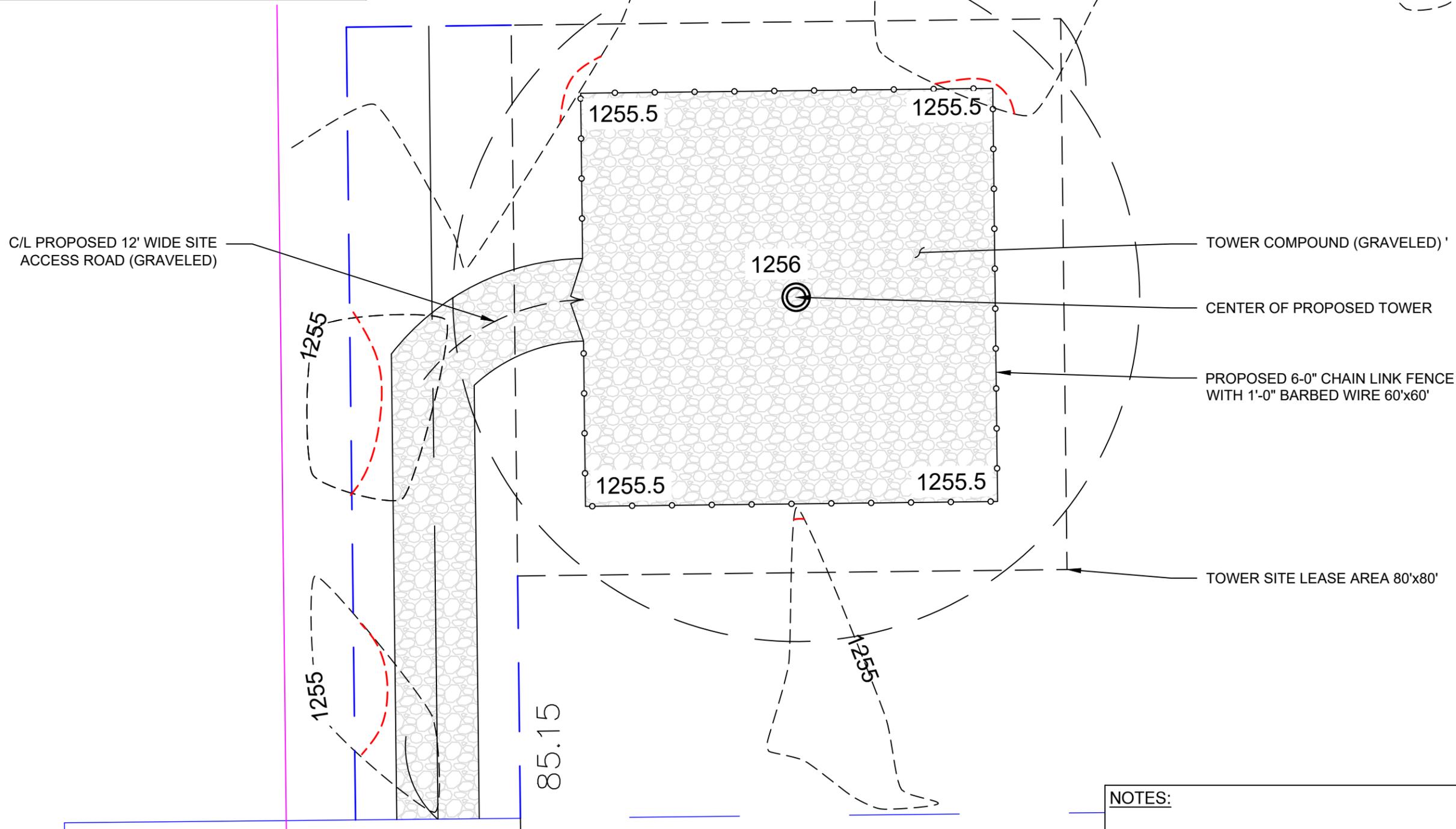
SHEET NUMBER: REVISION:

C4-1

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LEGEND

- PRE-GRADING TOPO CONTOURS
- - - POST-GRADING CHANGES TO TOPO
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- PROPERTY BOUNDARY
- RIGHT OF WAY LINE
- LEASE AREA
- EASEMENT LINE
- DEED LINE



NOTES:

1. REFER TO SHEETS C1-1 AND C1-2 FOR SURVEY AND ADJACENT LOT DETAILS
2. REFER TO SHEET C4-1 FOR GRAVEL DETAILS



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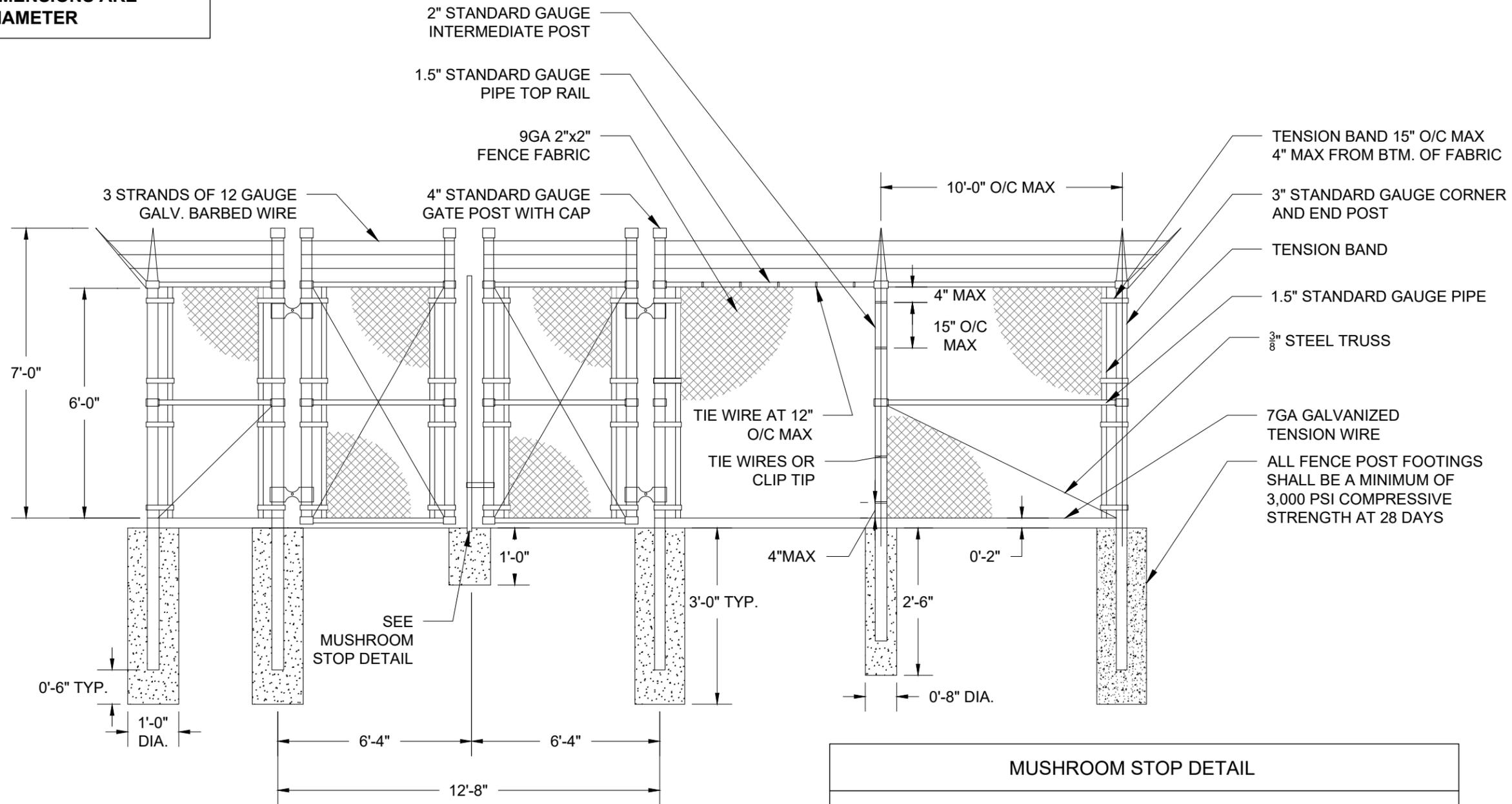
SCALE
N.T.S.

GRADING PLAN

SHEET NUMBER:	REVISION:
C5-1	0

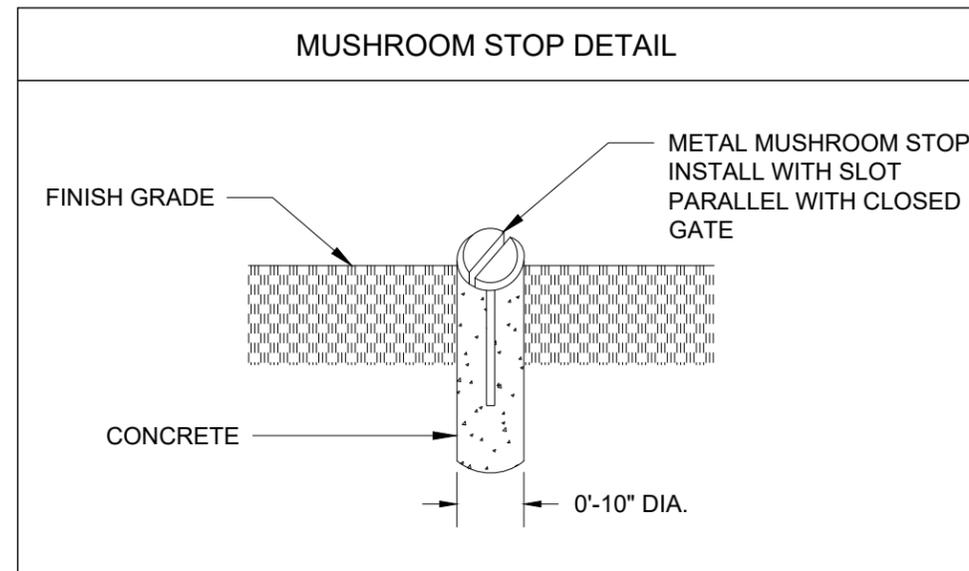
NOTES:

1. REFER TO SHEETS G1-1 AND G1-2 FOR ADDITIONAL INFORMATION
2. ALL PIPE DIMENSIONS ARE INTERIOR DIAMETER



ELEVATION VIEW
SCALE: N.T.S.

1
C6-1




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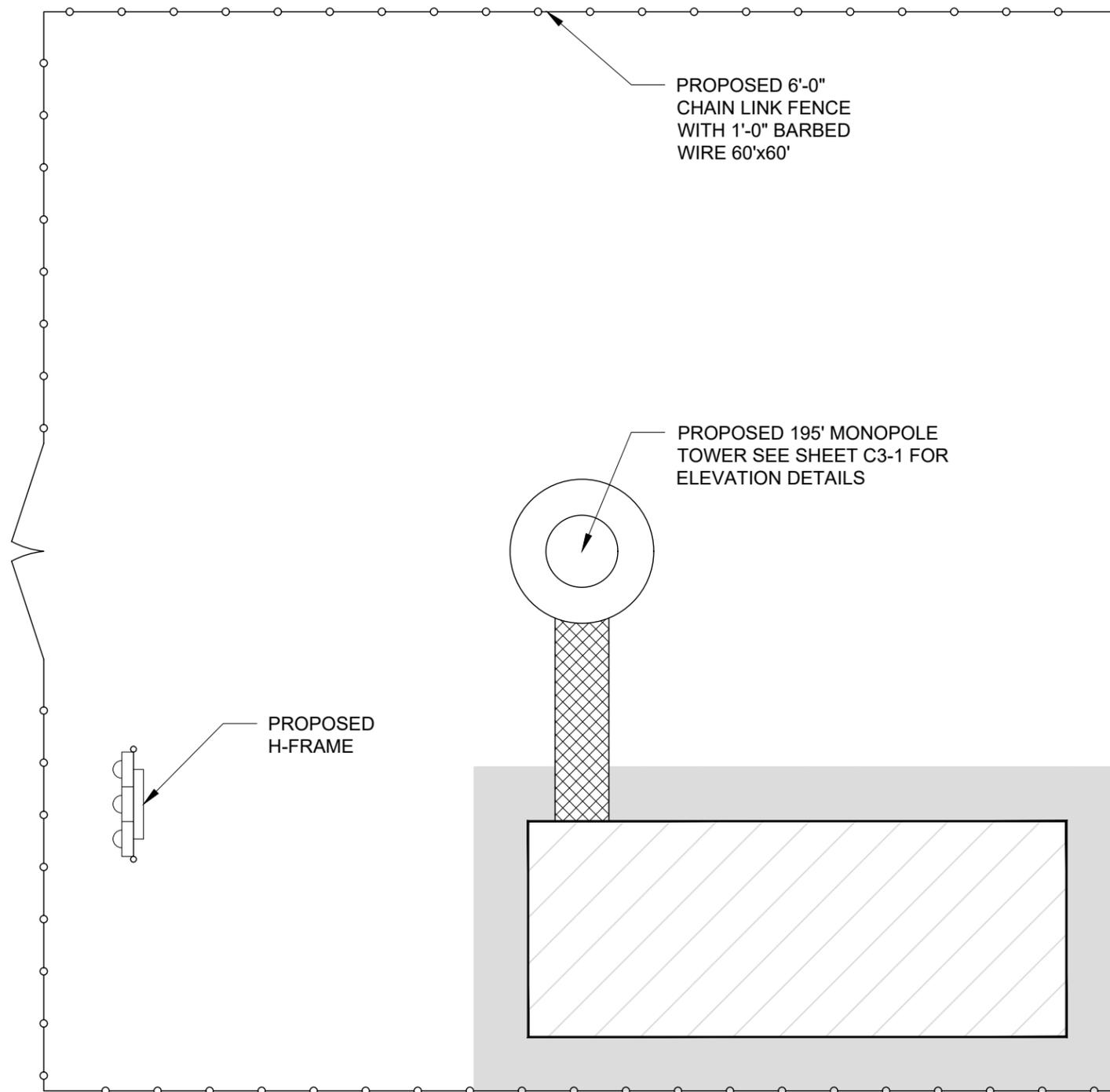
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SCALE
N.T.S.

**COMPOUND
FENCE DETAILS**

SHEET NUMBER:	REVISION:
C6-1	0



NOTES:

1. FOR ADDITIONAL INFORMATION
REFERENCE C2-1

2. COMPLETION OF ELECTRICAL SERVICE
SHALL BE PERFORMED BY LICENSED
ELECTRICAL CONTRACTOR



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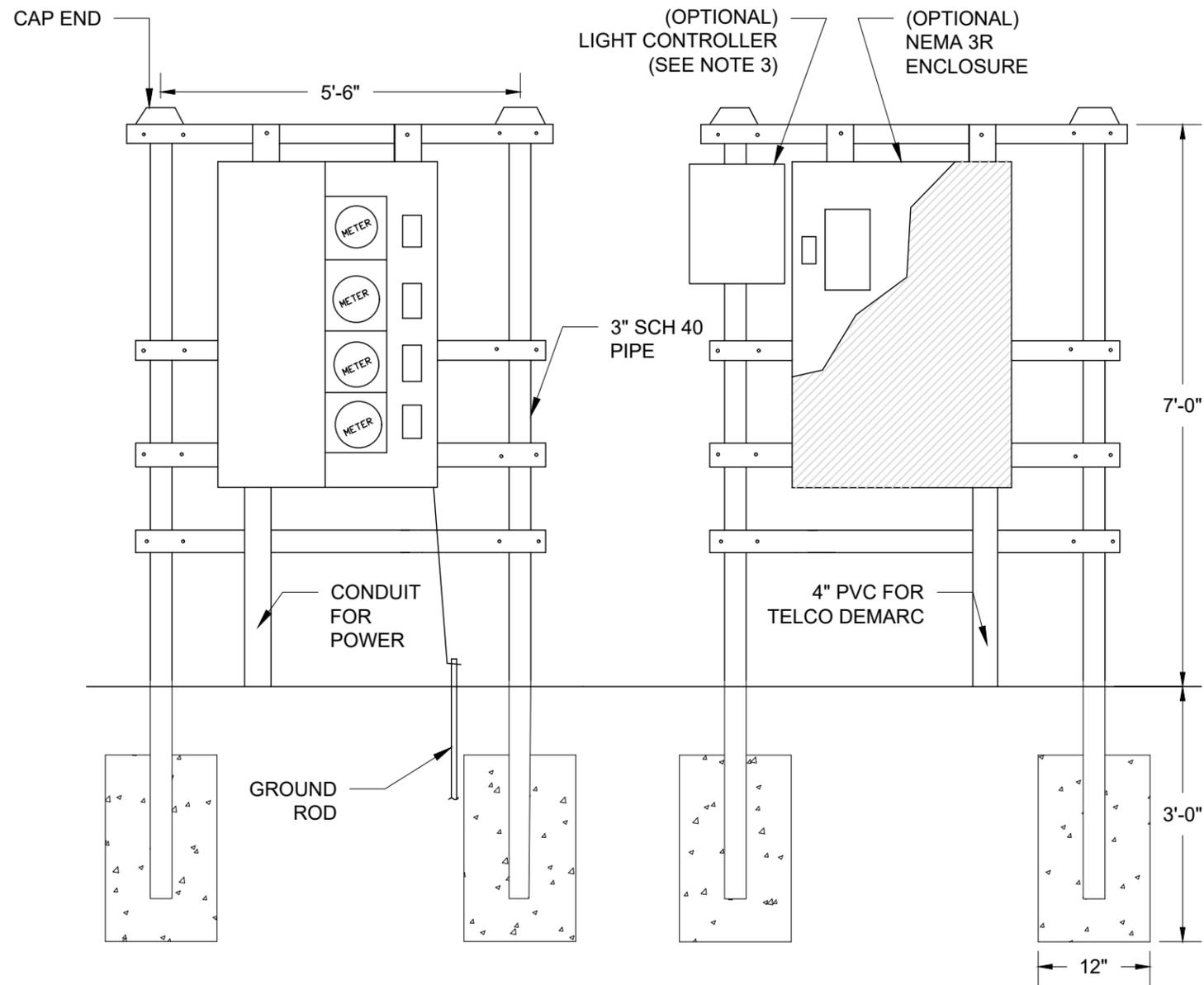
SCALE
1/8" = 1'-0"

**ELECTRIC, LIGHTING
AND TELCO PLAN**

SHEET NUMBER:	REVISION:
E1-1	0

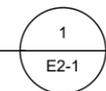
NOTES:

- 1 CONTRACTOR SHALL PROVIDE AND INSTALL MODULAR METERING MAIN, 120/240V, 400A, NEMA 3R WITH FOUR METER SOCKETS. METER CENTER SHALL BE FURNISHED WITH 200A METER AND 200A CIRCUIT BREAKER. CIRCUIT BREAKERS SHALL BE COVERED WITH LEXAN METER COVER.
- 2 SHOULD CLIENT REQUEST A TELCO DEMARCATION BOX, CONTRACTOR SHALL PROVIDE AND INSTALL TELCO DEMARCATION BOX TO INCLUDE 48" X 48" X 12" NEMA 3R ENCLOSURE WITH BACKPLATE AND GFI RECEPTACLE (120V, 5A).
- 3 TOWER LIGHTING SHALL BE REQUIRED ON ALL TOWERS EXCEEDING 200' IN HEIGHT OR AS OTHERWISE REQUIRED BY FAA.
- 4 DIMENSIONS SHOWN ARE APPROXIMATE AND MAY BE ALTERED IN THE FIELD TO BETTER SUIT ACTUAL CONDITIONS OR EQUIPMENT RECEIVED.
- 5 ALL CONDUIT SHALL BE SCH. 40 PVC UNDERGROUND.
- 6 ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN GOOD WORKING CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND BY THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING ENTITIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS AS ESTABLISHED BY ANSI, NEMA, NSFU, AND "UL" LISTED.
- 7 ALL CONDUIT SHALL HAVE A PULL STRING.
- 8 THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY IBC, NEC, AND APPLICABLE CODES.
- 9 UNDERGROUND AND/OR OVERHEAD LINES SHALL BE OF THE SIZE AND MATERIAL NECESSARY TO MEET THE LOCAL CODE REQUIREMENTS.
- 10 ALL FRAME MEMBERS TO BE 1-5/8" X 1-5/8" P1000 UNISTRUT (EXCEPT FOR LEGS). CONNECT TO LEGS WITH U BOLTS



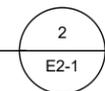
FRONT VIEW

SCALE: N.T.S.



REAR VIEW

SCALE: N.T.S.



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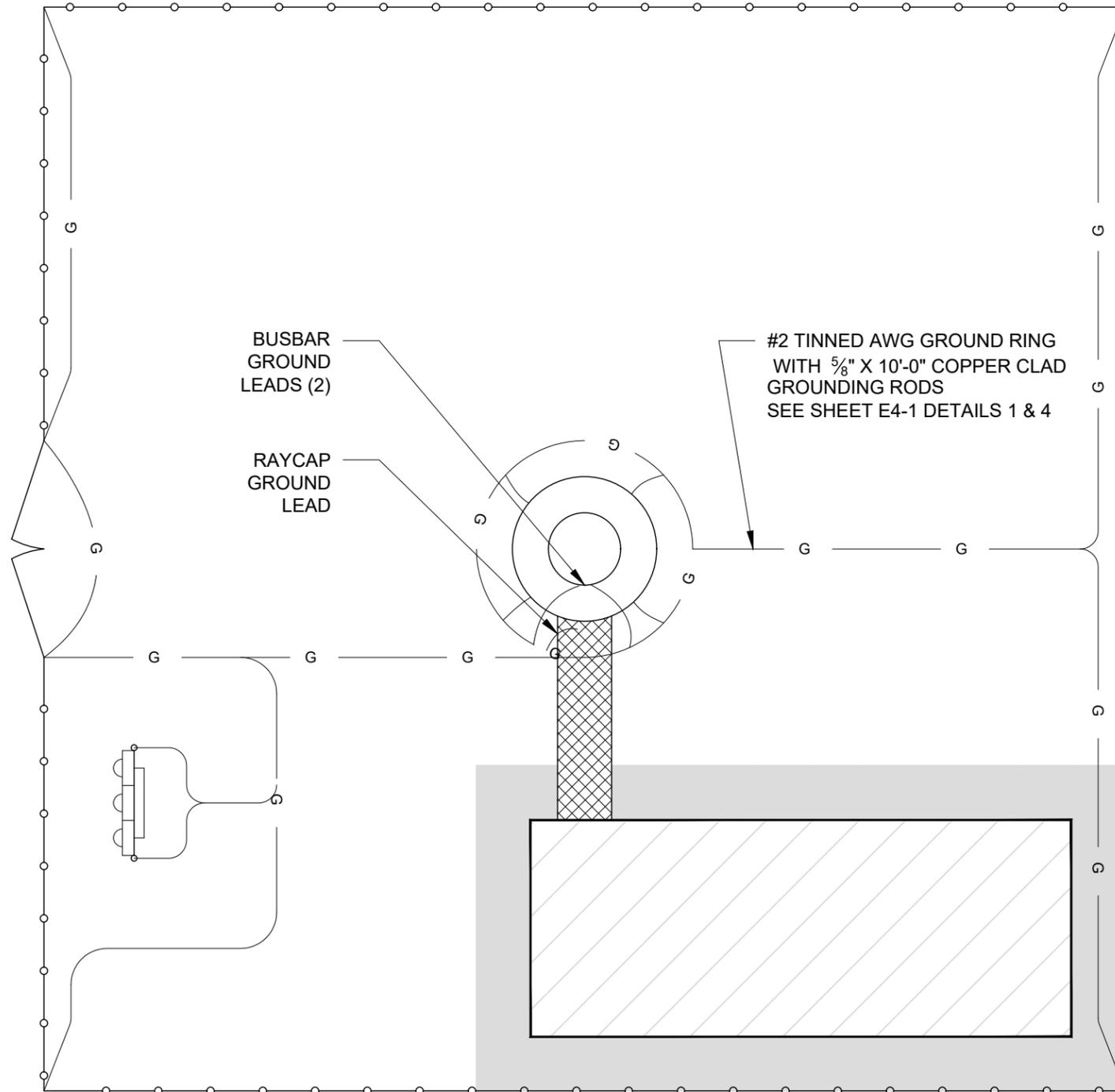
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SCALE
N.T.S.

**ELECTRICAL
DETAILS**

SHEET NUMBER:	REVISION:
E2-1	0



NOTES:

1. INFORMATION SHOWN IS FOR INFORMATION PURPOSES ONLY. DESIGN AND FINAL CONFIGURATION OF GROUNDING SYSTEM MAY VARY DEPENDING ON SITE CONDITIONS AT THE TIME OF CONSTRUCTION.

2. GROUND RODS SHOULD BE NO CLOSER THAN 2FT TO TOWER FOUNDATION

3. TOWER GROUND RODS SHALL BE PLACED 20FT APART AT MINIMUM FOR TOWER GROUND RING, AND 8FT APART AT MINIMUM FOR ALL OTHER GROUND LEADS

4. REFERENCE SHEET C2-1 FOR ADDITIONAL INFORMATION

THIS PLAN IS PROPOSED CONSTRUCTION FOR THE SUBJECT SITE.



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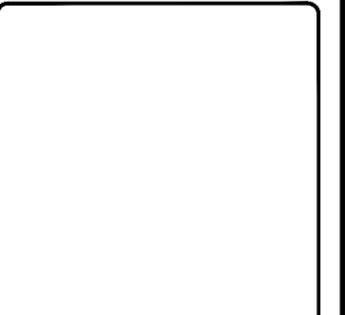


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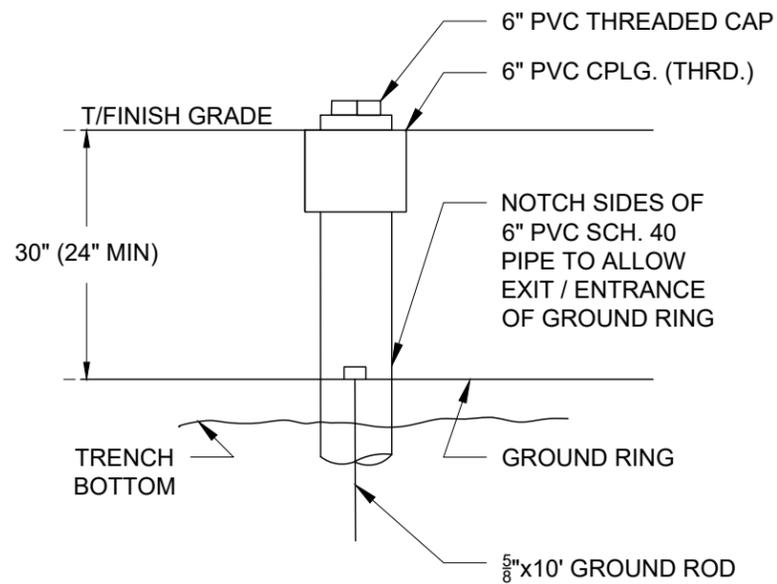


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SCALE
1/8" = 1'-0"

GROUNDING PLAN

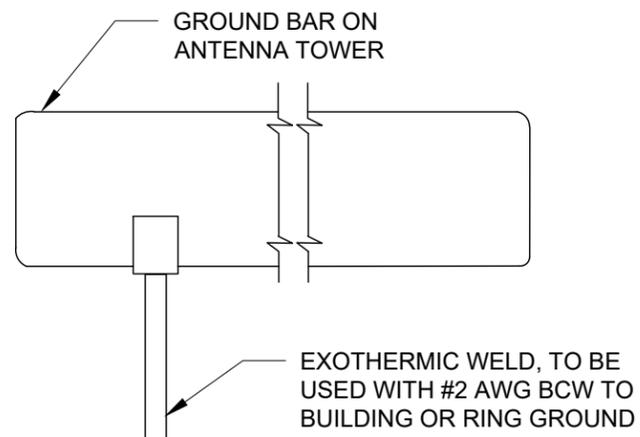
SHEET NUMBER:	REVISION:
E3-1	0



GROUNDING WELL

SCALE: N.T.S.

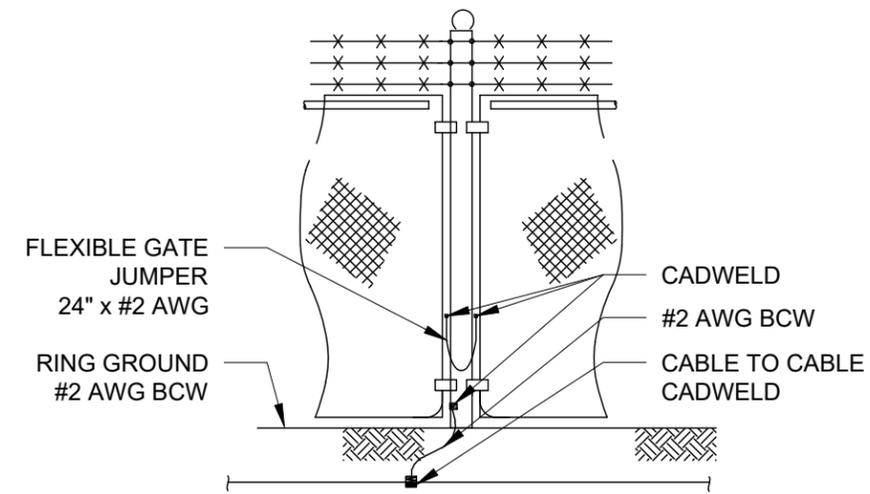
1
E4-1



INSTALLATION OF GROUND WIRE TO GROUND BAR

SCALE: N.T.S.

2
E4-1

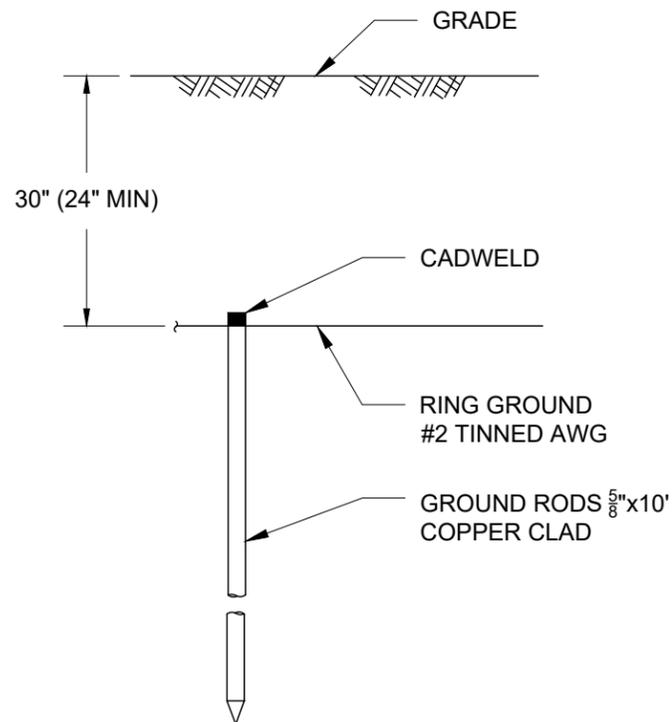


1. THE #2 AWG, BCW, FROM THE RING GROUND SHALL BE CADWELDED TO THE POST, ABOVE GRADE
2. VERTICAL POST SHALL BE BONDED TO THE RING AT EACH CORNER AND AT EACH GATE POST. AS A MINIMUM, ONE VERTICAL POST SHALL BE BONDED TO THE GROUND RING IN EVERY 100 FEET
3. INSTALLATION OF FLEXIBLE GATE JUMPERS IS REQUIRED FOR ALL COMPOUND ACCESS GATES

FENCE GROUNDING

SCALE: N.T.S.

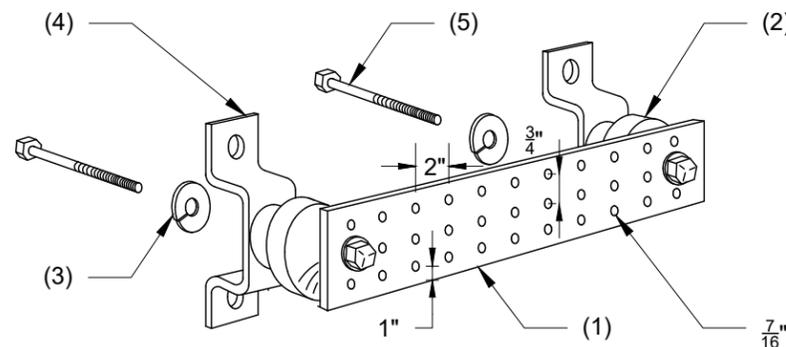
3
E4-1



ROD AND RING GROUNDING

SCALE: N.T.S.

4
E4-1



LEGEND

- (1) COPPER GROUND BAR, 1/4"x4"x20". HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION
- (2) INSULATORS
- (3) 5/8" LOCKWASHERS
- (4) WALL MOUNTING BRACKET
- (5) 5/8-11x1" H.H.C.S. BOLTS

GROUND BAR DETAIL

SCALE: N.T.S.

5
E4-1



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GROUNDING DETAILS

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CONSTRUCTION

GENERAL

General construction, electrical, tower and foundation drawings are interrelated. In performance of the work each contractor must refer to all drawings. Coordination is the responsibility of the general contractor.

SITE WORK

PART 1 - GENERAL

1. Work included: See Site Plan

2. Access road, turnaround areas and sites are constructed to provide a well-drained, easily maintained, even surface for material and equipment deliveries and maintenance personnel access.

3. SEQUENCING

- Confirm survey stakes and set elevation stakes prior to any construction.
- Grub the complete road (if applicable) and site area prior to foundation construction or placement of backfill or subbase materials.
- Construct temporary construction zone along access drive.
- Bring the site area to subbase course elevation and bring the access road to base course elevation prior to forming foundation.
- Soil stabilizer shall be Mirafi - 500X or equal.
- Grade, seed, fertilize and mulch disturbed areas immediately after bringing site and access road to base course elevation.
- Remove gravel from temporary construction zone to an authorized area or as directed by the owner's representative.

4. SUBMITTALS

- Before construction:
 - If landscaping is applicable to contract, submit two copies of the landscape plan under nursery letterhead. If a landscape allowance was included in the contract, provide an itemized listing of proposed costs on nursery letterhead (refer to plans for landscaping requirements).

5. WARRANTY

- In addition to the warranty on all construction covered in the contract documents, the contractor shall repair all damage and restore area as close to original condition as possible at site and surroundings.
- Disturbed area will reflect growth of new grass cover prior to final inspection.

PART 2 - PRODUCTS

1. MATERIALS

- Road and site materials shall conform to DOT specifications fill material - acceptable select fill shall be in accordance with State Department of Highway and Transportation standard specifications and approved by the owner's representative.
- Soil stabilizer shall be Mirafi - 500X or equal.

PART 3 - EXECUTION

1. INSPECTIONS

Local building inspectors shall be notified no less than 24 hours in advance of concrete pours, unless otherwise specified by jurisdiction.

2. PREPARATION

- Clear trees, brush and debris from site area and access road right-of-way.
- Prior to other excavation and construction, grub organic material to a minimum of six (6) inches below grade.
- Prior to placement of fill or base materials, roll the soil.
- Where unstable soil conditions are encountered, line the areas with stabilizer mat prior to placement of fill or base material.

3. INSTALLATION

- The site and turnaround areas shall be at the subbase course elevation prior to forming foundation. Grade or fill the site and access road as required in order that upon distribution of spoils resulting from foundation excavations, the resulting grade will correspond with said subbase course, elevations are to be calculated from finished grades or slopes indicated.
- Clear excess spoils, if any, from job site and do not spread beyond the limits of project area unless authorized by the owner's representative and agreed to by landowner.
- Bring the access road to base course elevations prior to use to permit construction and observation during construction of the site.
- Avoid creating depressions where water may pond.
- The contract shall include grading, banking and ditching, unless otherwise indicated.
- When improving an existing access road, grade the existing road to remove any organic matter and smooth the surface before placing fill or stone.
- Place fill or stone in six inch maximum lifts and compact before placing next lift.
- The top surface course shall extend a minimum of six inches beyond the site fence and shall cover the area as indicated.
- Apply riprap gravel to the slopes of all fenced areas and parking areas and all other slopes greater than 2:1.
- Apply seed, fertilizer and straw cover to all other disturbed areas, ditches, drainage and swales not otherwise ripped.
- Apply seed and fertilizer to surface conditions which will encourage rooting. Rake areas to be seeded to even the surface and loosen the soil.
- Sow seed in two directions to twice the quantity recommended by the seed producer.

4. PROTECTION

A. Protect seeded areas from erosion by spreading straw to a uniform loose depth of 1 - 2 inches, stake and tie down as required. Use of erosion control mesh or mulch net will be an acceptable alternate.

B. Protect all exposed areas against washouts and soil erosion, place straw bales at the inlet approaches to all new or existing culverts. Where the site or road areas have been elevated immediately adjacent to the rail line, stake erosion control fabric full length in the swale to prevent contamination of the rail ballast.

5. The required structural fill operation to the grades indicated for PCS equipment shelters shall be performed as follows:

- The structural fill material shall be placed in lifts not exceeding six inches in loose thickness.
- Each layer of structural fill material placed shall be compacted to a minimum of 95° of maximum density obtainable by ASTM compaction test designation D-337-66T for cohesive fill or 75% relative as determined by ASTM D-2049-64T for cohesionless fill, whichever is greater.
- The final grade of structural fill for all footings shall be capable of supporting the design soil bearing pressure load of 3,000 lbs. per square foot minimum.

FENCING AND GATE(S)

PART 1 - GENERAL

1. Work included: See plan for location of fence and gate(s).

2. QUALITY ASSURANCE

All steel materials utilized in conjunction with this specification will be galvanized or stainless steel. Weight of zinc coating of the fabric shall not be less than 12 ounces per square foot of material covered. Posts shall be hot-dipped galvanized.

3. SEQUENCING

If the site has been brought up to surface course elevation prior to the fence construction, fence post excavation spoils must be controlled to preclude contamination of said surface course.

4. SUBMITTALS

- Manufacturer's descriptive literature.
- Certificate or statement of compliance with the specifications.

PART 2 - PRODUCTS

1. FENCE MATERIAL

- All fabric wire, rails, hardware and other steel materials shall be hot-dipped galvanized.
- Fabric shall be six-foot height two-inch chain link mesh of No. 9 gauge wire. The fabric shall have a knuckled finish for the top selvages. Fabric shall conform to the specifications of ASTM A-392 Class 1.
- Barbed wire shall be double-strand, 12-1/2 gauge twisted wire strand with 14-gauge, 4-point round barbs spaced on five-inch centers, conforming to ASTM A121 Design # 12-4-5-14R Type 2.
- All posts shall be mechanical service pipe and shall be Type 1 ASTM F1083, High Strength (50 Ksi) Schedule 40 pipe, ASTM F1043 Group 1A, and of the following diameter (I.D. per fence industry standards).

Line	2 inches
Corner	3 inches
Gate	4 inches
- Gate posts shall be extended 12 inches, including dome cap, to provide for attachment of barbed wire.
- All top and brace rails shall be 1-1/2" diameter mechanical service pipe. Frames shall have welded corners.
- Gate frame and braces shall be 1-5/8" diameter Schedule 40 mechanical service pipe. Frames shall have welded corners.
- Gate frame shall have a full height vertical brace and a full width horizontal brace, secured in place by use of gate brace clamps.
- Gate hinges shall be Merchants Metal Model 6-4386-hinge adapter with Model 6-409, 188 degree attachment.
- The guide (latch assembly) shall be heavy industrial gate latch. Master Halco #17221.
- Latches and stops shall be provided for all gates.
- All stops shall have keepers capable of holding the gate leaf in the open position.
- A No. 7 gauge zinc coated tension wire shall be used at the bottom of the fabric terminated with bank clips at corner and gateposts, conforming to ASTM A824 Type II.
- A six-inch by 1/2-inch diameter eyebolt to hold tension wire shall be placed at the line posts.
- Stretcher bars shall be 3/16-inch by 3/4-inch or have equivalent cross-sectional area, and conform to ASTM F626, having a minimum zinc coating of 1.2oz/sq-ft.
- All corner gate and panels shall have a 3/8-inch truss rod with turnbuckles.
- All posts except gateposts shall have a combination cap and barbed wire supporting arm. Gateposts shall have a dome cap.
- Other hardware includes but may not be limited to the clips, band clips and tension band clips.
- Barbed wire gate guards shall be fitted with dome caps.
- Barbed wire support arms shall be cast iron with set bolt and lock wire in the arm.
- All caps shall be cast steel.
- Where the use of concertina has been specified, 24-inch diameter coil barbed tape, stainless steel, cyclone fence model gap to Type III shall be furnished. It shall be supported above the top rail by use of six wire barbed wire arms positioned atop each line/corner post.



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SCALE

N.T.S.

GENERAL NOTES

SHEET NUMBER: REVISION:

G1-1

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PART 3 - EXECUTION

1. INSPECTION

To confirm proper depth and diameter of post hole excavations, all post holes will be excavated as per construction documents.

2. INSTALLATION

- A. Foundations shall have a minimum six-inch concrete cover under post.
- B. All fence posts shall be vertically plumb plus/minus one-quarter inch.
- C. At corner posts, gateposts and sides of gate frame, fabric shall be attached with stretcher and tension band-clips at fifteen inch intervals.
- D. At line posts, fabric shall be attached with band-clips at fifteen inch intervals.
- E. Fabric shall be attached to brace rails, tension wire and truss rods with tie clips at two foot intervals.
- F. A maximum gap of two inches will be permitted between the chain link fabric and the final grade.
- G. Gate shall be installed so locks are accessible from both sides.
- H. Gate hinge bolts shall have their threads peened or welded to prevent unauthorized removal.
- I. Concrete to be a minimum of 3,000 psi.

3. PROTECTION

Upon completion of erection, inspect fence material and paint field cuts or galvanizing breaks with zinc-based paint, color to match the galvanized metal.

Applicable Standards:

- ASTM-A120 Specification for pipe, steel black and hot-dipped, zinc coated (galvanized) welded and seamless.
- ASTM-A123 Zinc (hot-dipped galvanized) coated steel chain link fence fabric.
- ASTM-A153 Specification for zinc coating (hot-dip) on iron and steel hardware.
- ASTM-A392 Specification for zinc-coated steel chain link fence fabric.
- ASTM-A431 Specification for aluminum-coated steel chain link fence fabric.
- ASTM-A525 Standard specification for steel sheet zinc coated (galvanized) by the hot-dipped process.
- ASTM-A535 Specification for aluminum coated steel barbed wire.
- ASTM-A570 Specification for hot-rolled carbon steel sheet and strip, structural quality.
- Federal Specification RR-F-191 Fencing Wire and Post Metal (and Gates, Chain Link Fence Fabric and Accessories)

ELECTRICAL

- 1. Contractor shall review the contract documents prior to the ordering of the electrical equipment and starting the actual construction. Contractor shall issue a written notice of all findings to the architect listing any discrepancies or conflicting information.
- 2. Verify exact locations and mounting heights of electrical equipment with owner prior to installation.
- 3. All materials and equipment shall be new and in good working condition when installed and shall be of the best grade and of the same manufacturer throughout for each class or group of equipment. Materials shall be listed "J" where applicable. Materials shall meet with approval of all governing bodies having jurisdiction. Materials shall be manufactured in accordance with applicable standards established by ANSI, NEMA, NSFU and "UL" listed.
- 4. All conduit shall have a pull string.
- 5. Provide Project Manager with one set of complete electrical "As Installed" drawings at the completion of the job showing actual dimensions, routing and circuits.
- 6. The entire electrical installation shall be grounded as required by IBC, NEC and all applicable codes.
- 7. Patch, repair and paint any area that has been damaged in the course of the electrical work.
- 8. Wire and cable conductors shall be copper 600 amp, type THHN or THWN with a minimum size of #2 AWG color-coded. All rectifier drops shall be stranded to accept crimp connectors.
- 9. All chemical ground rods shall be "UL" approved.
- 10. Meter socket amperes, voltage, number of phases shall be as noted on the drawings, manufactured by Milbank or approved equal and shall be utility company approved.
- 11. **CONDUIT**
 - A. Electrical metallic tubing shall have UL label; fitting shall be gland ring compression type.
 - B. Flexible metallic conduit shall have UL listed label and may be used where permitted by code. Fittings shall be "Jake" or "Squeeze" type. All flexible conduits shall have full length ground wire.
 - C. All underground conduit shall be PVC Schedule 40 with UV protection (unless noted otherwise) at a minimum depth of 24" below grade.
- 12. Contractor to coordinate with utility company for connection of temporary and permanent power to the site. The temporary power and all hookup costs are to be paid by the contractor.

13. All electrical equipment shall be labeled with permanent engraved plastic labels with white on blue background lettering (minimum letter height shall be 1/4"). Nameplates shall be fastened with stainless steel screws, not adhesive.

14. GROUNDING ELECTRODE SYSTEM

A. PREPARATION

- i. Surface Preparation:
 - All connections shall be made to bare metal. All painted surfaces shall be field inspected and modified to ensure proper contact. No washers are allowed between the items being grounded. All connections are to have a non-oxidizing agent applied prior to installation.
- ii. Ground Bar Preparation:
 - All copper ground bars shall be cleaned, polished and a non-oxidizing agent applied. No fingerprints or discolored copper will be permitted.
- iii. All grounding conductors shall run through seal tight wherever conductors run through walls, floors or ceilings. If conductors must run through EMT, both ends of conduit shall be grounded. Seal both ends of conduit with silicone caulk.

B. GROUND BARS

- i. All ground bars shall be 1/4" thick copper and of size indicated on drawings.

C. EXTERNAL CONNECTIONS

- i. All grounding connections shall be made by the exothermic weld process. Connections shall include all cable, splices, tee's, x's, etc. All cable to ground rods, ground rod splices and lightning protection systems are to be as indicated. All materials used (molds, welding metal, tools, etc.) shall be cadweld and installed per manufacturer's recommended procedures.

D. GROUND RODS

- i. All ground rods shall be 5/8" diameter by 10'-0" long "copperweld" or approved equal of the number and locations indicated. Ground rods shall be driven full length vertically in undisturbed earth.

E. GROUND CONDUCTORS

- i. All ground conductors shall be standard tinned, solid bare copper, annealed and size indicated on drawings.

F. GROUND RING

- i. The external ground ring encircling the tower (if applicable) and future carrier shall be minimum size of No. 2 AWG solid tinned, bare copper conductor in direct contact with the earth at a depth specified on plan sheets and details. Conductor bends shall have a minimum bending radius of eight inches.
- ii. All external ground rings are to be joined together and all connections must be cadwelded. No lugs or clamps will be accepted.

G. FENCE / GATE

- i. Ground each gatepost, corner post and gate as indicated on drawing. Ground connections to fence posts and all other connections for the ground grid system shall be made by exothermic weld process and installed per manufacturer's recommendations and procedures and sprayed and cold-galvanized paint.



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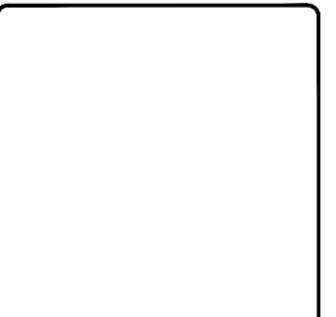


B+T GROUP
1717 S BOULDER AVE. SUITE
300 TULSA, OK 74119
918-587-4630

PROJECT NO:	1804
PROJECT NAME:	CLAMSHELL
911 ADDRESS:	TBD
DRAWN BY:	LSV
CHECKED BY:	RGH/MK/SLT

ISSUED FOR:
APPROVAL

REV	DATE	DESCRIPTION
0	10/17/24	FOR APPROVAL



CHAD TUTTLE
PROFESSIONAL ENGINEER - MINNESOTA
REGISTRATION NO.: 16136PE

SCALE
N.T.S.

GENERAL NOTES

SHEET NUMBER:	REVISION:
G1-2	0