NOTICE OF A REGULAR MEETING OF THE PLANNING COMMISSION
OF THE TOWN OF CLARKDALE
TUESDAY, JULY 19, 2022 AT 4:30 PM

In Person: Clark Memorial Clubhouse, 19 N. Ninth St., Clarkdale AZ
OR
Join Zoom Meeting
https://zoom.us/j/9554994085
Meeting ID:955 499 4085

AMENDED AGENDA

T-Mobile Construction Plans added to 5a

PURSUANT TO A.R.S. §38-431.02, NOTICE IS HEREBY GIVEN that the Planning Commission will hold a Regular Meeting open to the public on Tuesday, July 19, 2022, at 4:30 PM at 19 N. Ninth Street, Clarkdale, Arizona, Clark Memorial Clubhouse, Men's Lounge. A quorum of Town Council members may be present at this meeting; however, they will not deliberate or take action on any items. All members of the public are welcome to attend.

ALL ITEMS ON THIS AGENDA ARE SCHEDULED FOR DISCUSSION AND POSSIBLE ACTION, UNLESS OTHERWISE NOTED.

1. **CALL TO ORDER**

2. **ROLL CALL**

3. **PUBLIC COMMENT**
   The Planning Commission invites the public to provide comments at this time. Members of the Commission may not discuss items that are not specifically identified on the agenda. Therefore, pursuant to A.R.S. §38-431.01 (G), action taken as a result of public comment will be limited to directing staff to study the matter, responding to any criticism, or scheduling the matter for further consideration and decision at a later date. Persons interested in making comments on a specific agenda item are asked to complete a brief form and submit it to the Commission Liaison during the meeting. Each Speaker is asked to limit their comments to five minutes.

4. **MINUTES**
   A. **Draft minutes from meeting held on March 15, 2022.**
      Consider and act upon the draft minutes from the meeting held on March 15, 2022.

5. PUBLIC HEARINGS

A. PUBLIC HEARING - SBA Communications Conditional Use Permit

Conditional Use Permit application for SBA Communications for co-location of a wireless T-Mobile antenna on an existing monopole located at 555 Miller Road, Clarkdale, AZ. (APN 400-06-003A) Applicant: Anais Palmer, SBA Communications.

6. ACTION ITEMS

A. SBA Communications Conditional Use Permit - Application no. 093514

Discussion and possible action to approve Application No. 093514, a Conditional Use Permit for co-location of wireless T-Mobile antenna on an existing monopole located at 555 Miller Road, Clarkdale, AZ. (APN 400-06-003A) Applicant: Anais Palmer - SBA Communications.

7. FUTURE AGENDA ITEMS

The Planning Commission may propose items to be placed on a future agenda. This item is for discussion only.

8. ADJOURNMENT

Persons with a disability may request reasonable accommodations by contacting the Town Hall at 639-2400 (TTY: 1-800-367-8939) at least 72 hours in advance of the meeting.

DRAFT

MINUTES OF A REGULAR MEETING
OF THE PLANNING COMMISSION OF THE TOWN OF CLARKDALE
Tuesday, March 15, 2022, at 4:30 p.m.

1. **CALL TO ORDER:** Chair de Blanc called the meeting to order at 4:30 p.m.

2. **ROLL CALL:**

Board Member	Present/Absent
Chair de Blanc	Present via Zoom
Commissioner Johnson	Present
Commissioner Andres	Present
Commissioner Kramer	Absent
Commissioner Jones	Present

Attending Staff
Community Development Director Ruth Mayday via Zoom
Senior Planner Tom Blanchard
Community Development Technician Guss Espolt

3. **PUBLIC COMMENT:** The public is invited to provide comments at this time. Action taken as a result of public comment will be limited to directing staff to study the matter or scheduling the matter for further consideration and decision on a later agenda, as required by the Arizona Open Meeting Law. Each speaker is asked to limit comments to **FIVE MINUTES**. **HEARD**

4. **MINUTES**

a. Consideration of the Regular Meeting Minutes of Jan. 18, 2022
Motion: Jones, Second: J Andres. 4 ayes, 0 nays; approved with revisions.

Board Member	Ayes/Nays
Chair de Blanc	Aye
Commissioner Johnson	Aye
Commissioner Andres	Aye
Commissioner Kramer	Absent
Commissioner Jones	Aye

5. **REPORTS:**

A. Board Member Reports: NONE

B. Staff Member Reports: NONE

6. PUBLIC HEARINGS:

A. Application No. 093376: Public Hearing: Preliminary Plat approval, The Plateau at Clarkdale: Pursuant to Chapter 12, Subdivision Regulations, Article 12-4-030 Preliminary Plat, conduct Public Hearing to take comment on the proposed preliminary condominium plat.

Director Ruth Mayday: Presented a PowerPoint on the project overview of The Plateau at Clarkdale as follows:

Process:

Preliminary Condominium Plat - Planning Commission approves and forwards to Council with recommendations for approval

Final Condominium Plat - Town Council Approval

Plat vs Condominium Plat:

Plat - Legal document that fixes the horizontal location of lots to subdivide land (Mountain Gate)

Condominium Plat - Legal document that fixes the vertical and horizontal boundaries of units and common elements

Housing and Parking:

- 52 Single Family units in 13 buildings/10.4 Dwelling Units per acre
- 13 - 1 Bed /1 Bath 864 sf 1 car garage
- 13 - 2 Bed /2 Bath 1174 sf 2 car garage
- 13 - 2 Bed /2 Bath 1253 sf 2 car garage
- 13 - 3 Bed /2 Bath 1476 sf 2 car garage
- Parking: 96 stalls required
  - 91 Garage stalls (CC&R's require use)
  - 22 Shared spaces
  - 113 Total stalls

Traffic /Trip Generation during Peak Hours: 19 trips AM / 17 trips PM

Zoning and Land Use:

Zoning:

- Commercial (C) Principal Permitted Uses: Residential uses including single family and multi-family residential
- Overlay Plan: Arts and Entertainment District
- Focus Area Plan: Central Business District

General Plan:

- Central Business District: Mix of retail, office, and residential uses
- Protect and enhance uses historically found in downtowns
- Pedestrian friendly, entrepreneurial in nature, contribute to the historic sense of the area

Project Graphics: Colored Building Elevations, Perspectives

Preliminary Condominium Plat: A general plan view of project features and layout for buildings, streets, parking, landscaping, utilities, and fire protection. The historical stairs will be repaired to original historic character and incorporated into the project. We did send this to Civil Tech in Prescott for their review.

Condominium Schematics - **Condominium Unit Boundaries and Finished Floor Elevations**:

1. Condominium Unit Boundaries show horizontal measurements of units
2. Finished Floor Elevations show vertical measurements

Typical Building Cross-Section shows vertical measurements interior height of 9 feet, for both first and second floor measured from finished floor to finished ceiling. Detailed Common Area measurements will be provided on the Final Condominium Plat.

- Housing units shown to be inside the Unit Boundaries
- Common Areas will be identified by track
- Street and sidewalk will be dimensioned

Staff Recommendation:

Staff recommends approval of the Preliminary Condominium Plat and to forward it to Town Council with a recommendation for approval, based on the following findings of fact and subject to the following stipulations:

1) The preliminary plat conforms with the requirements set forth in Chapter 12, Subdivision Regulations, Subsections 12-3-110 Condominium Development - Air Rights Planning and 12-4-030 Preliminary Plat, and A.R.S. Title 33 Property, Chapter 9 Condominiums.
2) The underlying use is in conformance with the Commercial (C) zoning district and development standards, as well as the standards set forth for the Arts and Entertainment District and Downtown Focus Area Plan.
3) The proposed use conforms with the Central Business District Land Use Designation of the 2022 General Plan.

Stipulations of approval:

1) Verify that there are no encroachments or easements on the site.
2) Include all vertical and horizontal boundaries with the dimensions for each structure and each unit.
3) Include dimensions for exterior walls and additional detail with building cross-section (e.g., 9' from finished floor to ceiling/bottom truss).
4) Identify units reserved for future subdivision, leasehold, or withdrawal as necessary.
5) Identify the location and dimensions of all limited common elements.
6) Designation of all commonly owned property, including that within buildings.
7) 2 ½ foot reduction of rear setback due to unusual topography of the parcel.
8) Include survey control data on cover sheet.
9) Include dimensions on common areas such as streets, driveways, and common parking areas.

Commission Questions:

Jones: Where does the private interior space begin and end?

Beckman: The interior airspace is measured vertically from floor to ceiling and horizontally drywall to drywall and everything outside of that is the common space.

Jones: Ruth, could we get verification on whether there will be 13 three-bedroom units?

Mayday: Yes, there will be 13 three-bedroom units on the 1476 sf units.

Jones: A three-bedroom unit may potentially have three cars, these 13 three-bedroom units may take away 13 of the 22 designated may be down to nine shared stall spaces.

Beckman: CC&R's require two parking stalls per unit, the 22 shared spaces are for guests only.
Jones: Will the CC&R's limit the ability of short-term rentals?
Beckman: My understanding is there will be no short-term rentals.
Andres: I have two questions; 1. Will this development be responsive to the community's need for affordable housing? 2. Will you allow short-term rentals?
Lash: The intent of this project is to create the right size unit to get to the affordability. What we're doing at Mountain Gate averages $500,000. We are trying to create the right sized unit to bring the cost down to around $300,000, with small lots and units, but there is also the inflation of materials and labor that we can't control.
Andres: My concern is some of the units have steep topography, especially in the back yards of unit five.
Beckman: We will be grading the site down six feet and spreading out the building footprint, which is not shown on this site plan but is shown on the grading plan. The retaining wall height varies from 2-12 feet, with an average wall height of six feet. The tallest retaining wall is behind unit five and will be 12 feet at its highest point, tapering down to zero feet on the ends of the walls. There will be separate walls, not one continuous wall.
Chair deBlanc: Ruth, do you have anything to say regarding short-term rentals?
Director Ruth Mayday: The developer stated they have zero interest in having short term rentals and will provide that in the CC&R's and subsequent buyers could not do short-term rentals per CC&R's.
Chair de Blanc: People want to live here and work here and find a place to live. The people that live there are walking distance to downtown business; which is great. My concern is parking. New condo owners should read the CC&R's regarding the 2 parking spaces per unit and not able to use the guest parking, will be taking up parking spaces in the downtown.

Chair de Blanc: Public Comment Open
Jeanie Baird: Will the existing wall and stairwell be painted or keep its original concrete color?
Mayday: The wall will not be painted, it will stay unpainted concrete, to retain its historic character; the stairs will be fixed.

Chair de Blanc: Public Comment Closed

Motion, Andres: **Approve the Preliminary Plat for The Plateau at Clarkdale, with the stipulation that CC&R's state 90-day min rental**. **Second,** Johnson 4 Ayes, 0 Nays. Motion approved as written

Board Member	Ayes/Nays
Chair de Blanc	Aye
Commissioner Johnson	Aye
Commissioner Andres	Aye
Commissioner Kramer	Absent
Commissioner Jones	Aye

7. NON-PUBLIC HEARING ACTION ITEMS

A. Election of Officers
Motion: Andres: I elect Johnson for Vice Chair. **Second:** Jones 4 Ayes, 0 Nays.

Motion approved

Board Member	Ayes/Nays
Chair de Blanc	Aye
Commissioner Johnson	Aye
Commissioner Andres	Aye
Commissioner Kramer	Absent
Commissioner Jones	Aye

Motion: Andres: I elect de Blanc for Chair. **Second:** Jones 4 Ayes, 0 Nays. Motion approved

Board Member	Ayes/Nays
Chair de Blanc	Aye
Commissioner Johnson	Aye
Commissioner Andres	Aye
Commissioner Kramer	Absent
Commissioner Jones	Aye

8. DISCUSSION ITEMS:

Jones: If the Chair cannot be in the room, the Vice Chair needs to be in the room during the meeting. Ruth, is there a procedural ruling on this, or can we just do this as our own business?

Director Ruth Mayday: I don't think that's unrealistic.

9. FUTURE AGENDA ITEMS: None

Chair deBlanc: Ruth, are there any future agenda items?

Director Ruth Mayday: Not at this time. We will bring the sign code back, but we have couple other things coming before that, so it will be on the back burner.

10. ADJOURNMENT:

Motion: Jones, **Second**: Andres, 4 ayes, 0 nays

The meeting adjourned at 5:19 p.m.

Board Member	Aye/Nays
Chair de Blanc	Aye
Commissioner Johnson	Aye
Commissioner Andres	Aye
Commissioner Kramer	Absent
Commissioner Jones	Aye

_____ _____

Ida de Blanc - Chair Ruth Mayday, Community Dev. Director

Staff Report

Item Number: 5.A.

Agenda Item: **PUBLIC HEARING - SBA Communications Conditional Use Permit**
Conditional Use Permit application for SBA Communications for co-location of a wireless T-Mobile antenna on an existing monopole located at 555 Miller Road, Clarkdale, AZ. (APN 400-06-003A) Applicant: Anais Palmer, SBA Communications.

Staff Contact: Tom Blanchard, Senior Planner

Meeting Date: July 19, 2022

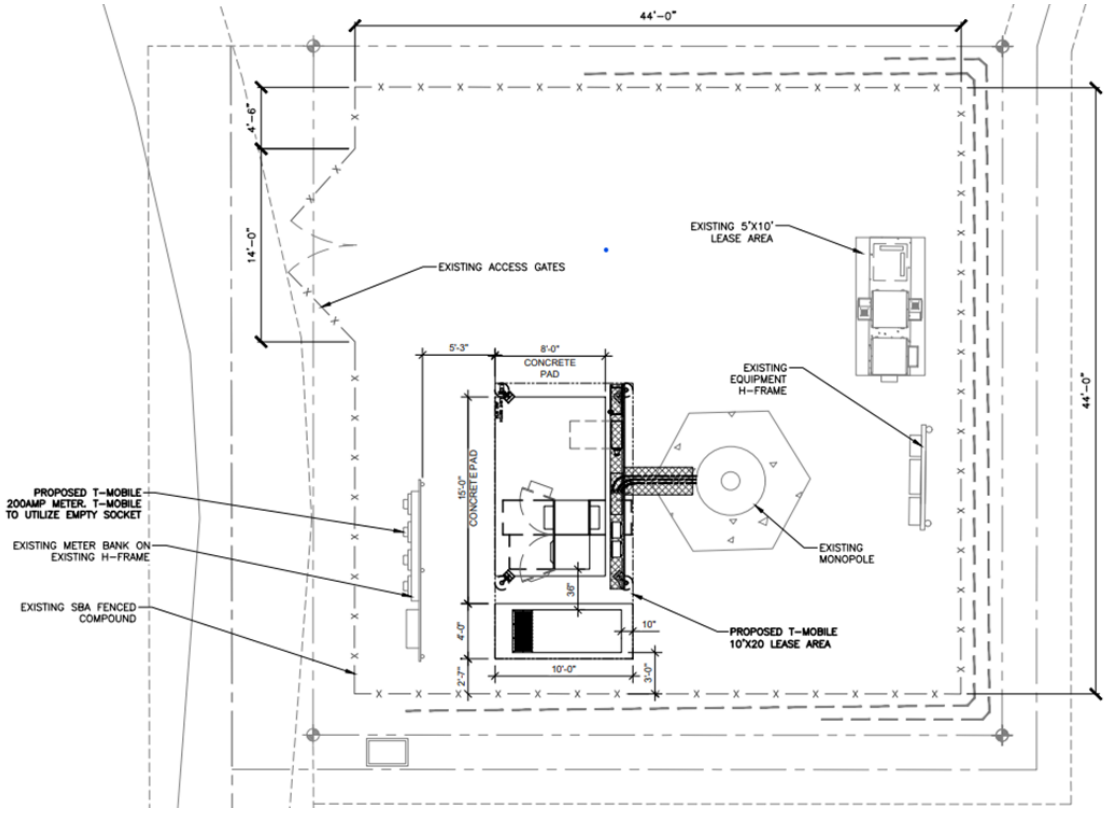
Background:

Zoning: The subject property is zoned "Industrial" (I) which allows wireless communication towers with a Conditional Use Permit, which is also required for any substantial change to an existing wireless communication tower.

In 2015, the Planning Commission approved a Conditional Use Permit for SBA Communications to install the existing 195-foot tall monopole for Verizon Wireless on the property owned by the Town of Clarkdale, at 555 Miller Road, Clarkdale, AZ. (APN 400-06-003A).

SBA Communications, on behalf of T-Mobile, proposes to install T-Mobile antennas on the existing 195-foot tall monopole. The new antennas will be located 35-feet below the top of the existing monopole, so the height will not be increased. Proposed equipment installations will include: concrete equipment pad, 50 kw generator, six (6) T-Mobile antennas, six (6) new radioheads,

battery cabinet and cables, enclosed in a 44-feet by 44-feet fenced area.



Clarkdale Zoning Code: Section 4-180.B Wireless Communication Tower

A Conditional Use Permit shall be required for any substantial change to an existing Wireless Communication Tower; "a substantial change means any change or cumulative changes over time: (1) changing the physical dimensions (height or width) of the Wireless Communication Tower or its supporting structures by more than 10%."

Public Notification: All property owners of record within 300' of the subject property were notified of the proposal and public hearing via first-class mail on July 1, 2022. A notice was posted on the property on or about that same date and a notice was published in the Verde Independent on July 3, 2022. A neighborhood meeting, via Zoom, was conducted by the applicant on July 8, 2022 from 10 - 10:30 a.m. and there were no public participants and no comments received at the writing of this report on July 12, 2022. Any comments received will be available at the meeting.

Budget Impact: No budget impact.

Recommendation: Public hearing only.

BUILDING CODES AND STANDARDS

ALL CONSTRUCTION SHALL COMPLY WITH THE LATEST EDITION OF THE (AS ADOPTED BY LOCAL JURISDICTION):

- 2018 INTERNATIONAL BUILDING CODE (IBC)
- 2017 NATIONAL ELECTRICAL CODE (NEC)
- NFPA 110, STANDARD FOR EMERGENCY AND STANDBY POWER SYSTEMS

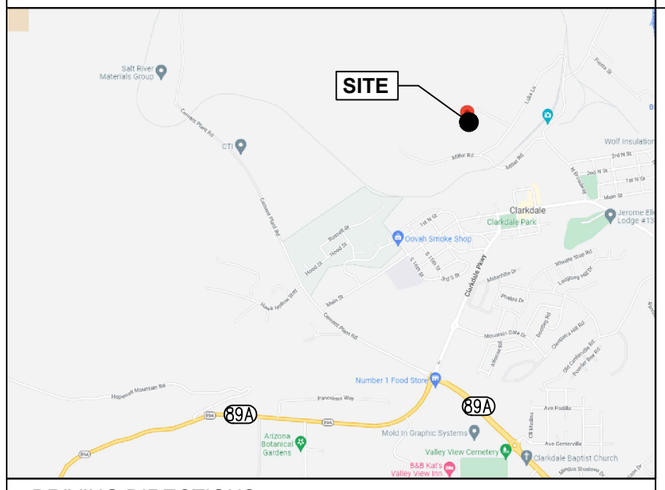
GENERAL NOTES

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS AT THE PROJECT SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

THIS SEAL CERTIFIES ONLY THE CIVIL ENGINEERING DESIGN AND RELATED DETAILS SHOWN ON THESE PLANS. THIS SEAL DOES NOT CERTIFY ANY ARCHITECTURAL, ELECTRICAL, MECHANICAL, STRUCTURAL DESIGN AND RELATED DETAILS INCLUDED IN THESE PLANS.

FOR SITES WHERE A CRANE IS NECESSARY, THE CONTRACTOR SHALL CONFIRM AN UNOBSTRUCTED ROUTE FOR THE CRANE FROM A PUBLIC ROAD TO THE TOWER SITE PRIOR TO CONSTRUCTION. NO AERIAL OBSTRUCTIONS UNDER FIFTEEN FEET ABOVE GRADE, INCLUDING AERIAL UTILITY LINES, ARE ALLOWED ALONG SAID CRANE ROUTE.

VICINITY MAP



DRIVING DIRECTIONS

DIRECTIONS FROM 1330 WEST SOUTHERN AVE, TEMPE, AZ 85282:

TAKE THE RAMP ON THE RIGHT FOR I–10 WEST / US–60 WEST AND HEAD TOWARD PHOENIX. AT EXIT 150A, BEAR RIGHT ONTO I–17 N / US–60 W TOWARD FLAGSTAFF / I–10 WEST TRUCK ROUTE / I–17 NORTH / US–60 WEST. AT EXIT 287, HEAD RIGHT ON THE RAMP FOR AZ–89A / AZ–260 TOWARD CAMP VERDE / PAYSON. TURN RIGHT ONTO AZ–260 / W STATE ROUTE 260 TOWARD CAMP VERDE / PAYSON. PASS THROUGH 8 ROUNDABOUTS, STAYING ON AZ–260. TURN LEFT ONTO AZ–89A / S MAIN ST. KEEP STRAIGHT TO GET ONTO S MAIN ST. ROAD NAME CHANGES TO N MAIN ST. KEEP STRAIGHT TO GET ONTO S BROADWAY ST. KEEP STRAIGHT TO GET ONTO MAIN ST. TURN RIGHT ONTO N BROADWAY. KEEP LEFT TO GET ONTO MILL RD. TURN LEFT ON LUKE LN. TURN LEFT ON TO DIRT ACCESS ROAD. STRAIGHT TO SITE. 34.77567300, –112.06188000

T-Mobile

ANCHOR_1 2022
T-MOBILE SITE NUMBER

PH68207A

T-MOBILE SITE NAME

PH68207A

SBA SITE NUMBER

AZ17727-B

195' MONOPOLE

SITE ADDRESS
555 MILLER ROAD
CLARKDALE, AZ 86324

PROJECT SUMMARY

SITE TYPE:	ANCHOR_1
RFDS VERSION:	1
RFDS APPROVED DATE:	3/7/2022 9:34:44 AM
T–MOBILE SITE NUMBER:	PH68207A
T–MOBILE SITE NAME:	PH68207A
SBA SITE NUMBER:	AZ17727–B
SBA SITE NAME:	CLARKDALE
SITE ADDRESS:	555 MILLER ROAD CLARKDALE, AZ 86324
COUNTY:	YAVAPAI COUNTY
SITE LATITUDE: SITE LONGITUDE:	34.77567300 –112.06188000
JURISDICTION:	YAVAPAI COUNTY
APN:	400–06–003A
ZONING:	I
POWER COMPANY:	APS
TELEPHONE COMPANY:	T.B.D.
PROPERTY OWNER:	TOWN OF CLARKDALE CONTACT: BETH ESCOBAR PHONE: (928) 639–2500
TOWER OWNER/MANAGER:	SBA PROPERTIES 8051 CONGRESS AVE. BOCA RATON, FL 33487
CUSTOMER/APPLICANT:	T–MOBILE 1330 WEST SOUTHERN AVE, STE A–102 TEMPE, AZ 85282
ENGINEER:	SMW ENGINEERING 158 BUSINESS CENTER DRIVE BIRMINGHAM, AL 35244 CONTACT: CAIN SOMMERVILLE, PE PHONE: 469–409–1138

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

APPROVALS

DEPARTMENT	NAME/SIGNATURE	DATE
OPERATIONS		
RF ENGINEER		
ZONING ADMINISTRATOR		
SITE ACQUISITION		
CONSTRUCTION MANAGER		
PROPERTY OWNER		
POWER APPROVAL		
TELCO APPROVAL		

SHEET INDEX

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GN–3	GENERAL NOTES
GN–4	GENERAL NOTES
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C–1.1	EQUIPMENT LAYOUT
C–2	ANTENNA PLAN/ TOWER ELEVATION
C–3	SECTOR MOUNT DETAILS
C–4	EQUIPMENT SPECIFICATION
C–5	EQUIPMENT SPECIFICATION
C–6	CONSTRUCTION DETAILS
C–7	EQUIPMENT DETAILS
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E–3	CONDUIT PLAN
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G–1	SITE GROUNDING PLAN

SCOPE OF WORK

1. PROPOSED (1) 10'X20' CONCRETE PAD EQUIPMENT PAD LEASE AREA
2. PROPOSED (1) 200AMP PPC MOUNTED ON H–FRAME
3. PROPOSED (1) AUTOMATIC TRANSFER SWITCH
4. PROPOSED (1) SD050 SSM 50KW GENERATOR
5. PROPOSED (4) TECH LIGHTS
6. PROPOSED (1) NEWAVE MTF3–248–138 MOUINT AND FSK–96–X01 STIFFENER KIT
7. PROPOSED (6) T–MOBILE ANTENNAS
8. PROPOSED (6) T–MOBILE RRU'S
9. PROPOSED (1) PURCELL HPL3 600A LARGE SSC
10. PROPOSED (1) PURCELL BATTERY CABINET
11. PROPOSED (2) 2.0 JUNCTION BOX GROUND MOUNTED
12. PROPOSED (2) 2.0 HCS HYBRID CABLE INTEGRATED BREAKOUT UNIT ON TOWER
13. PROPOSED (1) EXCESS FIBER BOX
14. PROPOSED (1) GPS UNIT
15. PROPOSED (1) 200A METER IN EXISTING METER BANK
16. PROPOSED CABLE BRIDGE ±26LF

T-Mobile
1330 WEST SOUTHERN AVE. STE A–102
TEMPE, AZ 85282

PLANS PREPARED BY:
SBA
8051 CONGRESS AVE.
BOCA RATON, FL 33487

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

Registered Professional Engineer (Civil)
CERTIFICATE NO.
71982
JUDSON C. SOMMERVILLE
DATE SIGNED 4/28/22
ARIZONA U.S.A.

Expiration Date 09/30/2023

SITE INFORMATION:
PH68207A
PH68207A
555 MILLER ROAD
CLARKDALE, AZ 86324

#	DATE	DESCRIPTION:
0	04/28/22	ISSUED FOR CONSTRUCTION

SBA SITE NUMBER:	SBA SITE NAME:
AZ17727-B	CLARKDALE

SHEET NAME:
TITLE SHEET

SMW #:	22–10256
DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS

SHEET NUMBER:
T-1

DIVISION 1 – GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 INTENT

A. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS ACCOMPANYING THEM DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR CONSTRUCTION.

B. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY. HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED IN BOTH.

C. THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.

D. THE PURPOSE OF THE SPECIFICATIONS IS TO INTERPRET THE INTENT OF THE DRAWINGS AND TO DESIGNATE THE METHOD OF THE PROCEDURE, TYPE AND QUALITY OF MATERIALS REQUIRED TO COMPLETE THE WORK.

E. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED AS PART OF THE WORK. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE MADE OR PERMITTED BY THE OWNER WITHOUT ISSUING A CHANGE ORDER.

1.2 CONFLICTS

A. THE CONTRACTORS SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK.NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS, ANY SUCH DISCREPANCY IN DIMENSIONS WHICH MAY BE SUBMITTED TO THE OWNER FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.

B. THE BIDDER IF AWARDED THE CONTRACT WILL NOT BE ALLOWED ANY EXTRA COMPENSATION BY REASON OF ANY MATTER OR THING CONCERNING WHICH SUCH BIDDER MIGHT HAVE FULLY INFORMED THEMSELVES PRIOR TO THE BIDDING.

C. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTERED OR OF ANY OTHER RELEVANT MATTER CONCERNING THE WORK TO BE PERFORMED IN THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS OF THE CONTRACT DOCUMENTS GOVERNING THE WORK.

1.3 CONTRACTS AND WARRANTIES

A. CONTRACTOR IS RESPONSIBLE FOR APPLICATION AND PAYMENT OF CONTRACTOR LICENSES AND BONDS.

B. SEE MASTER CONTRACTION SERVICES AGREEMENT FOR ADD'L DETAILS.

1.4 STORAGE

ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION AND IN A MANNER THAT DOES NOT NECESSARILY
OBSTRUCT THE FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER.

1.5 CLEAN UP

A. THE CONTRACTORS SHALL AT ALL TIMES KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY THEIR EMPLOYEES AT WORK AND AT RUBBISH FROM AND ABOUT THE BUILDING AREA, INCLUDING ALL THEIR TOOLS, SCAFFOLDING AND SURPLUS MATERIALS AND SHALL LEAVE THEIR WORK CLEAN AND READY FOR USE.

B. EXTERIOR: VISUALLY INSPECT EXTERIORS SURFACES AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER.

1. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.

2. IF NECESSARY TO ACHIEVE A UNIFORM DEGREE OF CLEANLINESS, HOSE DOWN THE EXTERIOR OF THE STRUCTURE.

A. INTERIOR: VISUALLY INSPECT INTERIOR SURFACE AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER FROM WALLS/FLOOR/CEILING.

1. REMOVE ALL TRACES OF SPLASHED MATERIAL FROM ADJACENT SURFACES.

2. REMOVE PAINT DROPPINGS, SPOTS, STAINS AND DIRT FROM FINISHED SURFACES.

1.6 CHANGE ORDER PROCEDURE

A. CHANGE ORDERS MAY BE INITIATED BY THE OWNER AND/OR THE CONTRACTOR INVOLVED. THE CONTRACTOR, UPON VERBAL REQUEST FROM THE OWNER SHALL PREPARE A WRITTEN PROPOSAL DESCRIBING THE CHANGE IN WORK OR MATERIALS AND ANY CHANGES IN THE CONTACT AMOUNT AND PRESENT TO THE OWNER WITHIN 24 HRS FOR APPROVAL. SUBMIT REQUESTS FOR SUBSTITUTIONS IN THE FORM AND IN ACCORDANCE WITH PROCEDURES REQUIRED FOR CHANGE ORDER PROPOSALS, ANY CHANGES IN SCOPE OF WORK OR MATERIALS WHICH ARE PERFORMED BY THE CONTRACTOR WITHOUT A WRITTEN CHANGE ORDER AS DESCRIBED AND APPROVED BY THE OWNER SHALL PLACE FULL RESPONSIBILITY OF THESE ACTIONS ON THE CONTRACTOR.

1.7 RELATED DOCUMENTS AND COORDINATION

A. GENERAL CARPENTRY, ELECTRICAL AND ANTENNA DRAWINGS ARE INTERRELATED. IN PERFORMANCE OF THE WORK, THE CONTRACTOR MUST REFER TO ALL DRAWINGS. ALL COORDINATION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

1.8 SHOP DRAWINGS

A. CONTRACTORS SHALL SUBMIT SHOP DRAWINGS AS REQUIRED AND LISTED IN THESE SPECIFICATIONS TO THE OWNER FOR APPROVAL.

B. ALL SHOP DRAWINGS SHALL BE REVIEWED, CHECKED AND CORRECTED BY CONTRACTOR PRIOR TO SUBMITTAL TO THE OWNER.

1.9 PRODUCTS AND SUBSTITUTIONS

A. SUBMIT 3 COPIES OF EACH REQUEST FOR SUBSTITUTION. IN EACH REQUEST IDENTIFY THE PRODUCT OR FABRICATION OR INSTALLATION METHOD TO BE REPLACED BY THE SUBSTITUTION. INCLUDE RELATED SPECIFICATIONS SECTION AND DRAWING NUMBERS AND COMPLETE DOCUMENTATION SHOWING COMPLIANCE WITH THE REQUIREMENTS FOR SUBSTITUTION.

B. SUBMIT ALL NECESSARY PRODUCT DATA AND CUT SHEETS WHICH PROPERLY INDICATE AND DESCRIBE THE ITEMS, PRODUCTS AND MATERIALS BEING INSTALLED. THE CONTRACTOR SHALL, IF DEEMED NECESSARY BY THE OWNER SUBMIT ACTUAL SAMPLES TO THE OWNER FOR APPROVAL IN LIEU OF CUT SHEETS.

1.10 QUALITY ASSURANCE

A. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS, THESE SHALL INCLUDE BUT NOT BE LIMITED TO THE LATEST VERSION OF THE FOLLOWING:

ANSI/EE – 222 – F
INTERNATIONAL BUILDING CODE (IBC) 2006
BUILDING OFFICIALS AND CODE ADMINISTRATORS (BOCA) 1996
NATIONAL ELECTRICAL CODE (NEC) WITH LOCAL AMENDMENTS 1999
UNDERWRITER LABORATORIES APPROVED ELECTRICAL PRODUCTS
AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATIONS (AISC)
LIFE SAFETY CODE NFPA – 101–1990

1.11 ADMINISTRATION

A. BEFORE THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR WILL ASSIGN A PROJECT MANAGER WHO WILL ACT AS A SINGLE POINT OF CONTACT FOR ALL PERSONNEL INVOLVED IN THIS PROJECT. THIS PROJECT MANAGER WILL DEVELOP A MASTER SCHEDULE FOR THE PROJECT WHICH WILL BE SUBMITTED TO THE OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK.

B. SUBMIT A BAR TYPE PROGRESS CHART NOT MORE THAN 3 DAYS AFTER THE DATE ESTABLISHED FOR COMMENCEMENT OF THE WORK ON THE SCHEDULE, INDICATING A TIME BAR FOR EACH MAJOR CATEGORY OR UNIT OF WORK TO BE PERFORMED AT SITE, PROPERLY SEQUENCED AND COORDINATED WITH OTHER ELEMENTS OF WORK AND SHOWING COMPLETION OF THE WORK SUFFICIENTLY IN ADVANCE OF THE DATE ESTABLISHED FOR SUBSTANTIAL COMPLETION OF THE WORK.

C. PRIOR TO COMMENCING CONSTRUCTION, THE OWNER SHALL SCHEDULE AN ON–SITE MEETING WITH ALL MAJOR PARTIES, THIS WOULD INCLUDE (THOUGH NOT LIMITED TO) THE OWNER, PROJECT MANAGER, CONTRACTOR, LAND OWNER REPRESENTATIVE, LOCAL TELEPHONE COMPANY, TOWER ERECTION FOREMAN (IF SUBCONTRACTED).

D. CONTRACTOR SHALL BE EQUIPPED WITH SOME MEANS OF CONSTANT COMMUNICATIONS, SUCH AS A MOBILE PHONE OR A BEEPER. THIS EQUIPMENT WILL NOT BE SUPPLIED BY THE OWNER, NOR WILL WIRELESS SERVICE BE ARRANGED.

E. DURING CONSTRUCTION, CONTRACTOR MUST ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES. CONTRACTOR WILL COMPLY WITH ALL OSHA SAFETY REQUIREMENTS IN THEIR AGREEMENT.

F. PROVIDE WRITTEN DAILY UPDATES ON SITE PROGRESS TO THE OWNER.

G. COMPLETE INVENTORY OF CONSTRUCTION MATERIALS AND EQUIPMENT IS REQUIRED PRIOR TO START OF CONSTRUCTION.

H. NOTIFY THE OWNER/PROJECT MANAGER IN WRITING NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, TOWER ERECTIONS, AND EQUIPMENT CABINET PLACEMENTS.

I. GENERAL CONTRACTORS SHALL PROVIDE WITHIN 48 HOURS OF CONSTRUCTION, BEFORE & AFTER PHOTOS OF CONSTRUCTION FROM ALL SIDES IN AND OUT OF COMPOUND.
PLACEMENTS.

J. GENERAL CONTRACTOR TO PROVIDE COPIES OF ALL INSPECTION RELEASES FROM THE GOVERNING MUNICIPALITIES WITHIN 48 HOURS AFTER CONSTRUCTION.
PLACEMENTS.

1.12 INSURANCE AND BONDS

A. CONTRACTORS SHALL AT THEIR OWN EXPENSE CARRY AND MAINTAIN FOR THE DURATION OF THE PROJECT ALL INSURANCE AS REQUIRED AND LISTED AND SHALL NOT COMMENCE WITH THEIR WORK UNTIL THEY HAVE PRESENTED AN ORIGINAL CERTIFICATE OF INSURANCE STATING ALL COVERAGES TO THE OWNER, REFER TO THE MASTER AGREEMENT FOR REQUIRED INSURANCE LIMITS.

B. THE OWNER SHALL BE NAMED AS AN ADDITIONAL INSURED ON ALL POLICIES.

C. CONTRACTOR MUST PROVIDE PROOF OF INSURANCE.

DIVISION 2 – SITE WORK AND DRAINAGE

02000 EARTHWORK, EXCAVATION AND GRADING

PART 1 GENERAL

1.1 WORK INCLUDED: REFER TO THE SURVEY AND SITE PLAN FOR WORK INCLUDED.

1.2 RELATED WORK

A. CONSTRUCTION FOR EQUIPMENT FOUNDATION
B. INSTALLATION OF ANTENNA SUPPORT SYSTEM
C. ERECTION OF FENCE

1.3 DESCRIPTIONS

A. 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.

1.4 QUALITY ASSURANCE

A. VEGETATION LANDSCAPING, IF INCLUDED WITHIN THE CONTRACT, WILL BE PLACED AND MAINTAINED AS RECOMMENDED BY NURSERY INDUSTRY STANDARDS.

1.5 SEQUENCING

A. CONFIRM SURVEY STAKES AND SET ELEVATION STAKES PRIOR TO ANY CONSTRUCTION.

B. GRUB THE COMPLETE ROAD AND SITE AREA PRIOR TO FOUNDATION CONSTRUCTION OR PLACEMENT OF BACKFILL OR SUB–BASE MATERIAL.

NOTE:
THESE NOTES ARE OF A GENERAL NATURE AND ARE NOT SITE–SPECIFIC. SOME NOTES MAY NOT APPLY TO THIS SITE. CROSS–REFERENCE NOTES WITH OTHER SHEETS AND T–MOBILE SCOPE OF WORK TO VERIFY WORK TO BE COMPLETED.

T-Mobile
1330 WEST SOUTHERN AVE. STE A–102
TEMPE, AZ 85282

PLANS PREPARED BY:
SBA
8051 CONGRESS AVE.
BOCA RATON, FL 33487

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

Registered Professional Engineer (Civil)
CERTIFICATE NO.
71982
JUDSON C.
SOMMERVILLE
DATE SIGNED 4/28/22
ARIZONA U.S.A.

Expiration Date 09/30/2023

SITE INFORMATION:
PH68207A
PH68207A
555 MILLER ROAD
CLARKDALE, AZ 86324

#	DATE	DESCRIPTION:
0	04/28/22	ISSUED FOR CONSTRUCTION

SBA SITE NUMBER:	SBA SITE NAME:
AZ17727-B	CLARKDALE

SHEET NAME:
GENERAL NOTES

SMW #:	SHEET NUMBER:
22–10256	GN-1

DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS

C. CONSTRUCT TEMPORARY CONSTRUCTION ZONE ALONG ACCESS DRIVE, IN ACCORDANCE WITH ALL LOCAL, STATE & FEDERAL RULES.

D. THE SITE AREA WILL BE BROUGHT TO SUB-BASE COURSE ELEVATION AND THE ACCESS ROAD TO BASE COURSE ELEVATION PRIOR TO FORMING FOUNDATIONS.

E. IF REQUIRED, GRADE, SEED, FERTILIZER AND MULCH DISTURBED AREAS IMMEDIATELY AFTER BRINGING THE SITE AND ACCESS ROAD TO BASE COURSE ELEVATION. WATER TO ENSURE GROWTH.

F. REMOVE GRAVEL FROM TEMPORARY CONSTRUCTION ZONE.

1.6 SUBMITTALS

A. BEFORE CONSTRUCTION

1. IF LANDSCAPING IS APPLICABLE TO THE SCOPE OF THE CONTRACT REFER TO THE LANDSCAPING PLAN INCLUDED HEREIN. IF A LANDSCAPE ALLOWANCE WAS INCLUDED IN THE CONTRACT, PROVIDE AN ITEMIZED LISTING OF PLANT MATERIALS WITH COSTS UNDER NURSERYMAN'S LETTERHEAD, GENERAL CONTRACTOR SHALL REFER TO SITE PLAN FOR LANDSCAPING REQUIREMENTS.

2. SUBMIT FOR APPROVAL THE SPECIFICATIONS OF THE NEW SURFACE COURSE MATERIAL.

B. AFTER CONSTRUCTION

1. MANUFACTURER'S DESCRIPTION OF PRODUCT ON GRASS SEED AND FERTILIZER, IF REQUIRED.

2. LANDSCAPING WARRANTY STATEMENT, IF REQUIRED.

1.7 WARRANTY

A. IN ADDITION TO THE WARRANTY ON ALL CONSTRUCTION COVERED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL REPAIR ALL DAMAGE OF SURROUNDING PROPERTY CAUSED BY CONSTRUCTION.

B. DISTURBED AREAS WILL REFLECT GROWTH OF NEW GRASS COVER PRIOR TO FINAL INSPECTION.

C. LANDSCAPING, IF INCLUDED WITHIN THE SCOPE OF THE CONTRACT, WILL BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL INSPECTION.

PART 2 PRODUCTS

2.1 MATERIALS

A. ROAD AND SITE MATERIALS: FILL MATERIAL – ACCEPTABLE SELECT FILL SHALL BE IN ACCORDANCE WITH LOCAL DEPARTMENT OF HIGHWAY AND PUBLIC TRANSPORTATION STANDARD SPECIFICATION.

B. SOIL STABILIZER FABRIC SHALL BE MIRFJ – 500X.

C. NON-STRUCTURAL SITE CONCRETE SHALL BE 3000 PSI BREAKING STRENGTH AT 28 DAYS. COMPLY WITH GENERAL PROVISIONS OF DIVISION 3 CONCRETE SPECIFICATIONS.

2.2 EQUIPMENT

A. COMPACTING SHALL BE ACCOMPLISHED BY MECHANICAL MEANS, LARGER AREAS SHALL BE COMPACTED BY SHEEPS FOOT, VIBRATORY OR RUBBER TIED ROLLERS WEIGHING AT EAST FIVE TONS. WATER TREATMENT MAY BE REQUIRED TO OBTAIN COMPACTION. SMALLER AREAS SHALL BE COMPACTED BY POWER-DRIVER, HAND HELD TAMPERS.

PART 3 EXCAVATION

3.1 INSPECTIONS: LOCAL BUILDING INSPECTION SHALL BE NOTIFIED NO LESS THAN 48 HRS, IN ADVANCE OF CONCRETE POURS.

3.2 PREPARATION

A. CLEAR TREES, BRUSH AND DEBRIS FROM SITE AREA AND ACCESS ROAD RIGHT OF WAY AS REQUIRED.

B. PRIOR TO OTHER EXCAVATION AND CONSTRUCTION EFFORTS GRUB ORGANIC MATERIAL TO A MINIMUM OF SIX INCHES BELOW ORIGINAL GROUND LEVEL.

C. UNLESS OTHERWISE INSTRUCTED BY THE OWNER, REMOVE TREES, BRUSH AND DEBRIS FROM THE PROPERTY TO AN AUTHORIZED LANDFILL.

D. PRIOR TO PLACEMENT OF FILL OR BASE MATERIALS, REMOVE SOFT SPOTS AND COMPACT TO 85% STANDARD PROCTOR.

E. WHERE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, LINE THE GRUBBED AREAS WITH STABILIZER MAT PRIOR TO PLACEMENT OF FILL OR BASE MATERIAL.

PART 3 EXCAVATION (CONTINUED)

3.3 INSTALLATION

A. THE SITE AND TURNAROUND AREAS SHALL BE AT THE SUB-BASE COURSE ELEVATION PRIOR TO FORMING FOUNDATIONS. GRADE OR FILL THE SITE AND ACCESS ROAD AS REQUIRED WITH THE SOIL, RESULTING FROM EXCAVATING THE FOUNDATIONS (PROVIDE EVEN DISTRIBUTION). THE ELEVATIONS ARE TO BE CALCULATED FROM THE RESULTING GRADE.

B. CLEAR EXCESS SPOILS, IF ANY, FROM JOB SITE AND DO NOT SPREAD BEYOND THE LIMITS OF THE OWNERS LEASE PROPERTY UNLESS AUTHORIZED BY PROJECT MANAGER, IN WRITING.

C. THE ACCESS ROAD SHALL BE BROUGHT TO BASE COURSE ELEVATION PRIOR TO FOUNDATION CONSTRUCTION.

D. AVOID CREATING DEPRESSIONS WHERE WATER MAY POND.

E. THE CONTRACT INCLUDED ALL NECESSARY GRADING, BANKING, DITCHING AND UNLESS OTHERWISE INDICATED, COVERING TWO INCHES OF SURFACE COURSE. ALL ROADS OR ROUTES UTILIZED FOR ACCESS TO THE SITE, COMMENCING AT THE POINT OF INTERSECTION WITH THE NEAREST PUBLIC THOROUGHFARE, ARE INCLUDED IN SCOPE UNLESS OTHERWISE NOTED.

F. WHEN IMPROVING AN EXISTING ACCESS ROAD, GRADE THE EXISTING ROAD TO REMOVE ANY ORGANIC MATTER AND SMOOTH THE SURFACE BEFORE PLACING FILL OR STONE.

G. PLACE FILL OR STONE IN SIX INCH MAXIMUM LIFTS AND COMPACT BEFORE PLACING NEXT LIFT.

H. THE FINISH GRADE, INCLUDING TOP SURFACE COURSE, SHALL BE EXTENDED A MINIMUM OF ONE FOOT BEYOND THE SITE FENCE AND SHALL COVER THE AREA AS INDICATED.

I. RIPRAP SHALL BE APPLIED TO THE SIDE SLOPES OF ALL FENCED SITE AREAS, PARKING AREAS AND TO ALL OTHER SLOPES GREATER THAN 2:1.

J. RIPRAP SHALL BE APPLIED TO THE SIDES OF DITCHES OR DRAINAGE SWALES AS INDICATED ON PLANS.

K. RIPRAP ENTIRE DITCH FOR SIX FEET IN ALL DIRECTIONS AT CULVERT OPENINGS.

L. SEED, FERTILIZER AND STRAW COVER SHALL BE APPLIED TO ALL OTHER DISTURBED AREAS AND DITCHES, DRAINAGE, SWALES, NOT OTHERWISE RIPRAPPED.

M. UNDER NO CIRCUMSTANCES WILL DITCHES, SWALES OR CULVERTS BE PLACED SO THEY DIRECT WATER TOWARDS OR PERMIT STANDING WATER IMMEDIATELY ADJACENT TO SITE. IF OWNER DESIGNS OR ELEVATIONS CONFLICT WITH THIS GUIDANCE ADVISE THE OWNER IMMEDIATELY, IN WRITING.

N. IF DITCH LAYS WITH SLOPES GREATER THAN TEN PERCENT, MOUND DIVERSIONARY HEADWALLS AS WELL, AS THE DITCH FOR SIX FEET ABOVE THE CULVERT ENTRANCE.

O. SEED AND FERTILIZER SHALL BE APPLIED TO SURFACE CONDITIONS WHICH WILL ENCOURAGE ROOTING. RAKE AREAS TO BE SEEDED TO EVEN THE SURFACE AND LOOSEN THE SOIL.

P. SOW SEED IN TWO DIRECTIONS IN TWICE THE QUANTITY RECOMMENDED BY THE SEED PRODUCER.

Q. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE GROWTH OF SEEDED AND LANDSCAPED AREAS BY WATERING UP TO THE POINT OF RELEASE FROM THE CONTRACT. CONTINUE TO REWORK BARE AREAS UNTIL COMPLETE COVERAGE IS OBTAINED.

3.4 FIELD QUALITY CONTROL

A. COMPACTION SHALL BE 95% MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-1557 FOR SITE WORK AND 95% UNDER SLAB AREAS. AREAS OF SETTLEMENT WILL BE EXCAVATED AND REFILLED AT CONTRACTOR'S EXPENSE.

3.5 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 MET WILL BE AN ACCEPTABLE ALTERNATE.

B. ALL TREES PLACED IN CONJUNCTION WITH A LANDSCAPE CONTRACT WILL BE WRAPPED, TIED WITH HOSE PROTECTED WIRE AND SECURED TO 2 INCH X 2 INCH X 4 FOOT STEEL ANGLE EXTENDING TWO FEET INTO THE GROUND ON FOUR SIDES OF THE TREE.

C. ALL EXPOSED AREAS SHALL BE PROTECTED AGAINST WASHOUTS AND SOIL EROSION.

DIVISION 13 – SPECIAL CONSTRUCTION

13100 TOWER & ANTENNA INSTALLATION

PART 1 – GENERAL

1.1 WORK INCLUDED

A. IF REQUIRED, ERECT FURNISHED TOWER.

B. GROUND TOWER TEMPORARILY DURING ERECTION. GROUNDING SHALL INCLUDE BASE(S) AND ANCHORS.

C. IF REQUIRED, INSTALL THREE (3) SIDE ARMS, CONSISTING OF THREE (3) 6'-0" AS INDICATED ON DRAWINGS – CONFIRM WITH OWNER REPRESENTATIVE.

D. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND OWNER SPECIFICATIONS.

E. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.

F. INSTALL FURNISHED GALVANIZED STEEL WAVEGUIDE LADDER.

G. INSTALL WAVEGUIDE BRIDGE AS INDICATED ON DRAWINGS.

H. SUPPLY AND INSTALL ONE INSULATED GROUND BAR AT EQUIPMENT CABINET.

I. EACH INSTALL GROUNDING STRAP KITS WITH LONG BARREL COMPRESSION LUGS (SIM. TO ANDREW-223700TBD OR APPROVED EQUAL) AT TOWER BASE BEFORE ENTERING THE EQUIPMENT. GROUNDING STRAPS TO BE CONNECTED TO INSULATED GROUND BAR.

J. ASSIST OWNER TECHNICIANS IN PERFORMING SWEEP TEST OF INSTALLED COAX.

K. CONC. PIERS FOR FOUNDATIONS SHALL BE DRILLED AND POURED ON THE SAME DAY.

2.2 RELATED WORK

2.3 REQUIREMENTS OF REGULATOR AGENCIES

A. FURNISH U.L. LISTED EQUIPMENT WHERE SUCH LABEL IS AVAILABLE, INSTALL IN CONFORMANCE WITH U.L. STANDARDS WHERE APPLICABLE.

B. INSTALL ANTENNA, ANTENNA CABLES, GROUNDING SYSTEM IN ACCORDANCE WITH DRAWINGS AND SPECIFICATION IN EFFECT AT PROJECT LOCATION AND RECOMMENDATIONS OF STATE AND LOCAL BUILDING CODES, SPECIAL CODES HAVING JURISDICTION OVER SPECIFIC PORTIONS OF WORK. THIS INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

1. EIA – ELECTRONIC INDUSTRIES ASSOCIATION 222F. STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. FAA – FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULAR AC 70/7460-IH, OBSTRUCTION MARKING AND LIGHTING.
3. FCC – FEDERAL COMMUNICATIONS COMMISSION RULES AND REGULATIONS FORM 715, OBSTRUCTION MARKING AND LIGHTING SPECIFICATIONS FOR ANTENNA STRUCTURES AND FORM 715A, HIGH INTENSITY OBSTRUCTION LIGHTING SPECIFICATIONS FOR ANTENNA STRUCTURES.
4. AISC – AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.
5. NEC – NATIONAL ELECTRICAL CODE – ON TOWER LIGHTING KITS.
6. UL – UNDERWRITER'S LABORATORIES APPROVED ELECTRICAL PRODUCTS.
7. IN ALL CASES, PART 77 OR THE FAA RULES AND PARTS 17 AND 22 OF THE FCC RULES ARE APPLICABLE AND IN THE EVENT OF CONFLICT, SUPERSEDE ANY OTHER STANDARDS OR SPECIFICATIONS.
8. 1990 LIFE SAFETY CODE NFPA – 101
9. SBC. SOUTHERN BLD. CODE AS ADOPTED. COUNCIL OF GOVERNMENTS STANDARD CONSTRUCTION SPECIFICATIONS.

NOTE:
THESE NOTES ARE OF A GENERAL NATURE AND ARE NOT SITE-SPECIFIC. SOME NOTES MAY NOT APPLY TO THIS SITE. CROSS-REFERENCE NOTES WITH OTHER SHEETS AND T-MOBILE SCOPE OF WORK TO VERIFY WORK TO BE COMPLETED.

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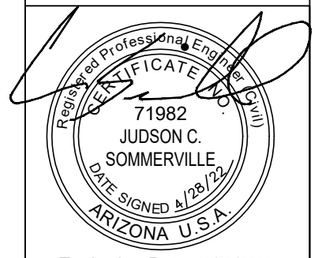
TEMPE, AZ 85282

PLANS PREPARED BY:
SBA
8051 CONGRESS AVE.
BOCA RATON, FL 33487

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW



Expiration Date 09/30/2023

SITE INFORMATION:
PH68207A
PH68207A
555 MILLER ROAD
CLARKDALE, AZ 86324

#	DATE	DESCRIPTION:
0	04/28/22	ISSUED FOR CONSTRUCTION

SBA SITE NUMBER:	SBA SITE NAME:
AZ17727-B	CLARKDALE

SHEET NAME:
GENERAL NOTES

SMW #:	SHEET NUMBER:
22-10256	GN-2

DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS

DIVISION 16 – GENERAL ELECTRICAL

GENERAL ELECTRICAL PROVISION

1. SUBMITTAL OF BID INDICATES THAT CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
2. CONTRACTOR SHALL PERFORM ALL VERIFICATION OBSERVATIONS TEST AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ENGINEER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
3. HEIGHTS SHALL BE VERIFIED WITH OWNER PRIOR TO INSTALLATION.
4. THESE PLANS ARE DIAGRAMMATIC ONLY: FOLLOW AS CLOSELY AS POSSIBLE.
5. ELECTRICAL SERVICE WILL BE 120/240, SINGLE PHASE, 3 WIRE, 200 AMP UNLESS NOTED OTHERWISE.
6. EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANELBOARD, PULL BOX, J–BOX, SWITCH BOX, ETC., IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ACT (O.S.H.A.).
7. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN, AND/OR AS OTHERWISE REQUIRED.
8. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT 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 SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF THE DIVISION OF INDUSTRIAL SAFETY AND ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU.
9. ALL CONDUIT INSTALLED SHALL BE SURFACE MOUNTED OR BURIED UNLESS OTHERWISE NOTED.
10. CONTRACTOR SHALL CARRY OUT THEIR WORK IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY AND LOCAL CODES AND O.S.H.A.
11. CONTRACTORS SHALL SECURE ALL NECESSARY BUILDING PERMITS AND PAY ALL REQUIRED FEES.
12. COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE BY OWNER. ANY WORK, MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
13. ALL EMPTY CONDUITS SHALL HAVE A PULL WIRE OR ROPE INSTALLED.
14. CONTRACTOR SHALL PROVIDE PROJECT MANAGER, WITH ONE SET OF COMPLETE ELECTRICAL "AS BUILT" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS AND CIRCUITS.
15. ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC., SHALL BE TURNED OVER TO THE OWNER AT JOB COMPLETION.
16. USE T–TAP CONNECTIONS ON ALL MULTI–CIRCUITS WITH COMMON NEUTRAL CONDUCTORS FOR LIGHTING FIXTURES.
17. ALL CONDUCTORS SHALL BE COPPER UNLESS NOTED OTHERWISE.
18. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.
19. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
20. PATCH, REPAIR, AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
21. PENETRATIONS IN FIRE RATED WALLS SHALL BE FIRESTOPPED IN ACCORDANCE WITH ALL APPLICABLE BUILDING CODES.
22. WIRE AND CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWINGS.
23. GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER UNLESS OTHERWISE NOTED.
24. METER SOCKET AMPERES, VOLTAGE, NUMBER OR PHASES SHALL BE AS NOTED ON THE DRAWINGS, MANUFACTURED BY "SQUARE D COMPANY" OR APPROVED EQUAL.
25. ALL MATERIALS SHALL BE U.L. LISTED.
26. CONDUIT

A. RIGID STEEL CONDUIT (INSTALLED IN OR UNDER CONCRETE SLABS IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS, OR EXPOSED ON BUILDING EXTERIOR) SHALL BE UL LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR. RIGID STEEL CONDUIT IN CONTACT WITH EARTH SHALL BE ½ LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3

B. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL, FITTINGS SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.

C. FLEXIBLE METAL CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE, SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT SHALL HAVE FULL SIZE EQUIPMENT GROUND WIRE.

D. CONDUIT RUNS SHALL BE SURFACE MOUNTED ON CEILINGS OR WALLS UNLESS INDICATED OTHERWISE. CONDUIT INDICATED SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH THE OWNER PRIOR TO INSTALLING. NO HORIZONTAL CONDUITS SHALL BE BELOW 7'–6" A.F.F. NO BX OR ROMEX CABLE WILL BE PERMITTED.

E. UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH OF 30" BELOW GRADE

F. ABOVEGROUND CONDUIT SHALL BE PVC SCHEDULE 80 (UNLESS NOTED OTHERWISE).

27. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
28. COORDINATE THE ELECTRICAL SERVICE WITH THE UTILITY COMPANY, AND PROVIDE DAILY UPDATES TO PM UNTIL FINAL ELECTRICAL SERVICE IS EFFECTED.
29. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUND TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK SITE IN A COMPLETE AND UNDAMAGED CONDITION.
30. CONTRACTOR SHALL 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 CONTRACTOR.

GROUNDING STANDARDS

1.0 DEFINITIONS

AGB ANTENNA GROUND BAR
AWG AMERICAN WIRE GAUGE
CAD WELDING AN EXOTHERMIC WELDING PROCESS WHICH CREATES POSITIVE CONTACT OF GROUNDING CONDUCTORS
EMT ELECTRICAL METAL TUBING (LIGHT GAUGE METAL CONDUIT)
MGB MASTER GROUND BAR
PVC POLYVINYLCHLORIDE CONDUIT
RFI RADIO FREQUENCY INTERFERENCE
THW LETTER TYPE DESIGNATION FOR CONDUCTOR INSULATION THAT IS A MOISTURE AND HEAT RESISTANT THERMOPLASTIC WITH A MAXIMUM OPERATING TEMPERATURE OF 75 DEGREES CELSIUS OR 167 DEGREES FAHRENHEIT.
T/I TENANT IMPROVEMENT

2.0 BACKGROUND

2.1 AREAS OF CONCERN: WHEN DESIGNING A GROUNDING SYSTEM FOR A MOBILE RADIO FACILITY THERE ARE FOUR INTERRELATED AREAS OF CONCERN. THE BASIC OBJECTIVE FOR EACH IS:

A. LIGHTNING PROTECTION – TO MAINTAIN ALL EQUIPMENT AT THE SAME POTENTIAL DURING A LIGHTNING IMPULSE.

B. RFI FOR NOISE INDUCTION CONTROL – TO ESTABLISH THE LOWEST POSSIBLE IMPEDANCE AMONG ALL EQUIPMENT.

C. ELECTROSTATIC CONTROL – TO REDUCE ELECTROSTATIC DISCHARGE PROBLEMS.

D. PERSONNEL SAFETY – TO MAINTAIN A MINIMUM VOLTAGE DIFFERENCE BETWEEN ANY TWO METALLIC OBJECTS WHICH PERSONNEL MIGHT CONTACT SIMULTANEOUSLY.

2.2 A/C GROUNDING:

IN THIS GROUNDING SYSTEM THE A/C SERVICE GROUND SHALL BE KEPT ISOLATED FROM THE EQUIPMENT FRAME WORK AND LIGHTNING PROTECTION GROUND SYSTEMS EXCEPT FOR ONE SPECIFIC POINT.

THIS POINT IS THE MAIN GROUNDING POINT OF THE SYSTEM. THIS WOULD TYPICALLY BE CONNECTING THE A/C SERVICE GROUND AT THE COMMERCIAL POWER RISER POLE DISCONNECT/METER BASE TO THE EXTERNAL GROUND RING. ALL GROUNDING CONNECTIONS INSIDE OF CABINETS SHALL BE SCRAPED TO BARE METAL AND COATED WITH NOALOX.

2.3 LIGHTNING CONSIDERATIONS:

LIGHTNING DAMAGE OCCURS FROM EITHER INDUCTION OR FROM AN ACTUAL DIRECT STRIKE TO THE BUILDING, USUALLY TAKEN THROUGH THE TOWER AND/OR ANTENNAS. STRIKES TO OTHER NEARBY OBJECTS INDUCE HIGH ENERGY INTO POWER OR TELEPHONE CABLES ENTERING THE BUILDING. THIS TYPE OF EFFECT HISTORICALLY CAUSES MOST OF THE DAMAGE TO THE BUILDING AND ITS CONTENTS.

3.0 STATION GROUNDING SYSTEM

3.1 MATERIALS

A. #2 AWG, BARE SOLID TINNED COPPER WIRE, FOR ALL EXTERIOR CONDUCTORS AND TOWER GROUND BAR CONDUCTORS OR AS OTHERWISE SPECIFIED. GROUNDS TO THE LNAS SHALL BE NO. 8 STRANDED GREEN INSULATED JUMPERS. THE GROUND WIRE TO THE MGB SHALL IS GREEN INSULATED STRANDED #2 TINNED WIRE BURNDY CONNECTED TO THE BUS BAR AND CONNECTED TO THE GROUND RING ON A GROUND ROD.

B. #2 AWG, INSULATED STRANDED COPPER CABLE IS ACCEPTABLE FOR INTERIOR GROUND BAR CONDUCTORS ON TENANT IMPROVEMENT SITES.

C. 3/4" X 10'–0" GROUND RODS OF SOLID COPPER, STAINLESS STEEL OR COPPER CLAD HIGH STRENGTH STEEL.

D. ABOVE GRADE CONNECTIONS SHALL BE BURNDY HYGROUND COMPRESSION. BELOW GRADE CONNECTIONS SHALL BE CADWELD OR OTHER APPROVED EXOTHERMIC WELDING SYSTEM FOR BONDING AS SPECIFIED.

E. XIT OR ADVANCED GROUNDING ELECTRODE (AGE). ALL CHEMICAL GROUND RODS SHALL BE UL APPROVED.

F. SOLID COPPER PLATES OF MINIMUM 3'X3'X1/4" SIZE AS SPECIFIED.

G. NOALOX OR APPROVED EQUAL CONDUCTIVE MEDIUM MATERIAL SHALL BE USED IN ALL MECHANICAL CONNECTIONS.

H. #6 AWG STRANDED INSULATED (GREEN) FOR ALL INTERNAL EQUIPMENT GROUNDING.

I. MECHANICAL FASTENERS (E.G, DOUBLE LUGS, SPLIT–BOLT PARALLEL CONNECTORS) SHALL BE BRONZE, BRASS, COPPER OR STAINLESS STEEL AND HAVE NOALOX BETWEEN CONDUCTOR AND CONNECTIONS.

J. BOLTS, NUTS AND SCREWS USED TO FASTEN MECHANICAL CONNECTORS SHALL BE STAINLESS STEEL, WITH STAR TYPE STAINLESS STEEL LOCK WASHERS.

K. ALL LUG TUBE FASTENERS SHALL PROVIDE TWO HOLES TO ALLOW A DOUBLE BOLT CONNECTION.

3.2 MASTER GROUND BAR (MGB):

THE PURPOSE OF THE MASTER GROUND BAR IS TO GROUND THE BTS AND ANY OTHER METALLIC OBJECTS AROUND THE BTS.

IF AN MGB IS NOT PROVIDED WITH THE BTS, THE MGB SHALL BE AS FOLLOWS:
THE MGB IS A COPPER BAR MEASURING 4"W X 24"L X 1/4" LOCATED AS CLOSE TO THE BTS AS POSSIBLE. THE MGB SHALL HAVE A MINIMUM NUMBER OF 28 EACH 3/8" HOLES. GROUND BAR SHALL BE SUPPORTED BY MOUNTING BRACKETS WITH INSULATOR STANDOFFS. (2) #2 TINNED COPPER CONDUIT SHALL BE MECHANICALLY ATTACHED (2 HOLE COMPRESSION LUG 3/8" HOLES, 1" CENTER TO CENTER SPACING) TO THE MGB AND DOWN LEADS THEN TAKEN THROUGH CONDUIT TO THE GROUND RING. THIS CONDUCTOR SHALL BE KEPT SEPARATE AND ISOLATED UNTIL TERMINATING AT THE MAIN GROUNDING POINT, (I.E. EXTERIOR GROUND RING OR BUILDING STEEL).

3.3 ANTENNA GROUND BAR (AGB)

THE PURPOSE OF THE ANTENNA GROUND BAR IS PRIMARILY FOR LIGHTNING PROTECTION. COAXIAL CABLE IS USUALLY THE ONLY ITEM GROUNDED TO THIS BAR. HOWEVER IT IS ACCEPTABLE TO BOND EXTERIOR CABLE TRAY, WAVE GUIDE PORTS AND CANTILEVERED WAVE GUIDE BRIDGES TO THE AGB.

THE AGB IS A COPPER BAR MEASURING 4"W X 24"L X 1/4" ON WHICH THE COAXIAL CABLES FROM THE ANTENNAS ARE PRIMARILY GROUNDED. THERE SHALL BE TWO AGBS, ONE LOCATED AT THE TOP OF THE TOWER AT THE START OF THE VERTICAL RUN OF COAX, THE OTHER AT THE BOTTOM OF THE VERTICAL RUN OF COAX BEFORE IT MAKES ITS BEND. (IF THE TOWER IS OVER 200 FEET THERE SHALL BE A THIRD AGB LOCATED AT THE MIDDLE OF THE TOWER). THE AGB SHALL HAVE A MINIMUM OF 28 EACH 3/8" HOLES. GROUND BARS SHALL BE SUPPORTED BY MOUNTING BRACKETS. USE #2 AWG SOLID TINNED WIRE WITH 2–HOLE SHORT BARREL

NOTE:
THESE NOTES ARE OF A GENERAL NATURE AND ARE NOT SITE–SPECIFIC. SOME NOTES MAY NOT APPLY TO THIS SITE. CROSS–REFERENCE NOTES WITH OTHER SHEETS AND T–MOBILE SCOPE OF WORK TO VERIFY WORK TO BE COMPLETED.

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TEMPE, AZ 85282

PLANS PREPARED BY:
SBA
8051 CONGRESS AVE.
BOCA RATON, FL 33487

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

Registered Professional Engineer (Civil)
CERTIFICATE NO.
71982
JUDSON C.
SOMMERVILLE
DATE SIGNED 4/28/22
ARIZONA U.S.A.
Expiration Date 09/30/2023

SITE INFORMATION:
PH68207A
PH68207A
555 MILLER ROAD
CLARKDALE, AZ 86324

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0	04/28/22	ISSUED FOR CONSTRUCTION

SBA SITE NUMBER: AZ17727-B
SBA SITE NAME: CLARKDALE

SHEET NAME:
GENERAL NOTES

SMW #: 22–10256
SHEET NUMBER: GN-3

DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS

COMPRESSION LUGS 3/8" HOLES, 1" CENTER TO CENTER SPACING). THIS CONDUCTOR SHALL BE KEPT SEPARATE AND ISOLATED UNTIL TERMINATING AT THE MAIN GROUNDING POINT (I.E., EXTERIOR GROUND RING, OR BUILDING STEEL.)

3.4 SURGE ARRESTOR GROUND BAR (SAGB)
THE PURPOSE OF THE SURGE ARRESTOR GROUND BAR IS FOR LIGHTNING PROTECTION.

THE SURGE ARRESTOR GROUND BAR IS A COPPER BAR. IT IS LOCATED ON THE WAVEGUIDE BRIDGE SUPPORT CLOSEST TO THE EQUIPMENT. ONE FACE OF THE BAR SHALL HAVE A MINIMUM OF (28) 3/8" Ø HOLES. HOLES SHALL BE IN PAIRS THAT ARE 1" CENTER TO CENTER. THE OTHER FACE SHALL HAVE 3/8" Ø HOLES AS REQUIRED TO ATTACH AND GROUND COAXIAL SURGE ARRESTORS. THE GROUND BAR SHALL BE SUPPORTED BY MOUNTING BRACKETS WITH INSULATOR STANDOFFS.

3.5 GROUND ROD AND GROUND RING PLACEMENT:

THE OUTSIDE GROUND RING SHALL BE PLACED AROUND THE BTS AT A DISTANCE OF TWO (2) FEET FROM THE BTS AT A DEPTH OF 2'-6" OR 6" BELOW THE FROST LINE, WHICHEVER IS DEEPER. RODS SHALL BE DRIVEN TO A DEPTH SUCH THAT THE TOP OF THE RODS IS AT THE LEVEL OF THE GROUND RING CONDUCTOR. THE RODS SHALL BE PLACED MINIMALLY ALONG THE RING AT THE FOLLOWING LOCATIONS:

A. BELOW THE AREA OF THE INTERNAL MASTER GROUND BAR (MGB) FOR CONNECTION TO THE MGB.

B. BELOW THE UTILITY RACK FOR CONNECTION TO THE MAIN BUILDING COMMERCIAL POWER DISCONNECT.

C. BELOW THE CORNERS OF THE BTS.

D. AS REQUIRED TO ACHIEVE A MAXIMUM SPACING OF EIGHT (8) FEET BETWEEN GROUND RODS ALONG THE RING PERIMETER.

E. AS REQUIRED ALONG THE RING PERIMETER TO ACHIEVE 5 OHMS OR LESS RESISTANCE WHEN TESTED.

F. TWO RODS LOCATED ON OPPOSITE SIDES AT EACH TOWER LEG OR GUY.

G. ONE ROD LOCATED BENEATH EACH END OF THE WAVE GUIDE BRIDGE OR CABLE TRAY.

H. WHERE APPLICABLE, ONE ROD LOCATED ADJACENT TO THE STANDBY GENERATOR, AND ONE ROD LOCATED ADJACENT TO THE FUEL TANK IF THE GENERATOR AND TANK ARE SEPARATED BY MORE THAN EIGHT (8) FEET.

I. ONE ROD LOCATED AT THE BASE OF THE TOWER FOR THE AGB.

3.6 TOWER GROUNDING:

ALL GUYS SHALL HAVE TWO GROUND RODS (MINIMUM). ALL OTHER TOWERS SHALL HAVE TWO GROUND RODS PLACED AT THE BASE OF EACH TOWER LEG. EACH GUY OR TOWER LEG SHALL BE BONDED TO THE SYSTEM VIA TWO #2 BARE TINNED SOLID COPPER CONDUCTORS, BURNDY CONNECT THE CONDUCTORS TO ONLY STRUCTURAL BASE PLATES OR LUGS OR EARS AS MAY BE PROVIDED. NO BURNDY CONNECTIONS SHALL BE MADE TO THE VERTICAL WALLS OF THE STRUCTURE. NEVER GROUND TO HOLLOW LEG MEMBERS.

3.7 ANTENNA GROUNDING:

EACH ANTENNA COAXIAL CABLE SHALL TYPICALLY BE GROUNDED AT THREE POINTS USING A HARD-SHELL COAXIAL CABLE KIT FROM THE MANUFACTURER OF THE ANTENNA CABLE. A TYPICAL INSTALLATION SHALL BE AS FOLLOWS:

A. THE FIRST GROUND CONNECTION SHALL OCCUR AS CLOSE TO THE ANTENNA AS POSSIBLE, BELOW THE FIRST POINT THE COAX CABLE BEGINS TO RUN VERTICAL DOWN THE TOWER. THIS GROUND SHALL TERMINATE DIRECT TO THE TOP AGB. ON A T/I, GROUND TO THE AGB AT THE ANTENNA MOUNTS.

B. THE SECOND GROUND SHALL BE MADE AT THE BOTTOM OF THE VERTICAL RUN OF THE COAXIAL CABLE AS IT TURNS OUT AWAY FROM THE TOWER TOWARDS THE BTS. THIS GROUND SHALL BE TERMINATED AT THE AGB. THE AGB SHALL HAVE TWO (2) LEADS OF #2 AWG BARE TINNED SOLID COPPER WIRE, AND SHALL TERMINATE AT THE TOWER GROUND RING. THESE SHALL BE INCASED IN PVC PIPE.

C. THE THIRD GROUND SHALL BE ON THE SURGE ARRESTOR GROUND BAR AT THE WAVEGUIDE BRIDGE IN ALL CASES, THE GROUND KITS WILL BE ATTACHED TO THE CABLE ON STRAIGHT RUNS (NOT WITHIN BENDS) AND BE WEATHER PROOFED PER THE MANUFACTURES SPECIFICATIONS. THE SURGE ARRESTORS SHALL BE GROUNDED TO THE GROUND BAR. THE SAGB SHALL HAVE TWO (2) LEADS OF #2 AWG BARE TINNED SOLID COPPER WIRE, AND SHALL TERMINATE AT THE TOWER GROUND RING. THESE SHALL BE INCASED IN PVC PIPE.

3.8 PERIMETER FENCE GROUNDING:

A. CORNER AND END POSTS
ALL FENCE CORNER AND END POSTS (MINIMUM OF TWO) SHALL HAVE ONE #2 SOLID TINNED COPPER GROUND WIRE. THESE POSTS SHALL BE CONNECTED TO THE GROUND RING WITH A #2 SOLID TINNED COPPER GROUND WIRE AND INTERMEDIATE GROUND RODS IF THE DISTANCE FROM THE POST TO THE GROUND RING EXCEEDS 8 FEET. IN NO CASE SHALL ANY PORTION OF THE SAME FENCE REMAIN DISCONNECTED FROM THE GROUND RING.

B. GATE POSTS
GATE POSTS SHALL BE GROUNDED TO EACH OTHER TO ENSURE THE ENTIRE FENCE HAS ELECTRICAL CONTINUITY. CONNECTIONS SHALL BE DRILLED AND TAPPED WITH BURNDY TYPE KC22 TO THE POST WITH A #2 AWG BARE SOLID TINNED COPPER WIRE.

C. GATES
GATES SHALL BE BONDED TO GATE POSTS WITH A 18" BRAIDED STRAP TYPE BD18G92. THE CONNECTIONS SHALL BE BURNDY 2 HOLE LUGS (3/8" HOLES, 1" CENTER TO CENTER) BOLTED THROUGH EACH POST.

3.9 GENERAL FUEL TANK GROUNDING:

THE GENERATOR FUEL TANK, IF REQUIRED, SHALL BE CONNECTED IN AT LEAST ONE PLACE TO THE MAIN EXTERIOR GROUND RING. #2 AWG BARE SOLID TINNED COPPER WIRE SHALL BE BURNDY CONNECTED TO ONE SUPPORT LEG OF THE FUEL TANK AND CAD WELD TO THE NEAREST EXTERIOR GROUND RING GROUND ROD.

3.10 EQUIPMENT ROOM GROUNDING:

THE MASTER GROUND BAR (MGB) SERVES AS THE COLLECTION POINT FOR THE BTS AS WELL AS ALL INTERIOR NON-ELECTRICAL GROUNDED METAL MATERIALS; HVAC GRILLS, DOOR FRAMES/DOORS, TELCO BOARD, UNISTRUTS, CABLE TRAYS, ALARM JUNCTION BOX, ETC., SHALL BE GROUNDED WITH #6 AWG STRANDED (GREEN) GROUND WIRES WITH INDIVIDUAL RUNS BACK TO THE MGB. (THE CABLE TRAY, DOOR/FRAME AND UNISTRUT MAY BE JUMPERED TOGETHER AND HAVE A SINGLE GROUND WIRE CONNECTION TO THE MGB.)

3.11 WALL PENETRATION SLEEVES:
INSTALL PER CONSTRUCTION DRAWINGS.

3.12 A/C COMMERCIAL POWER GROUNDING CONNECTIONS:

AT THE ON-SITE RISER POLE LOCATION OR UNDERGROUND SERVICE ENTRANCE LOCATION, THE A/C SERVICE SHALL BE MECHANICALLY BONDED TO THE A/C SERVICE ENTRANCE GROUND AS SPECIFIED BY THE NATIONAL ELECTRIC CODE, ARTICLE 250, AND/OR APPROPRIATE LOCAL CODES. A SEPARATE GROUND ROD SHALL BE PROVIDED AT THIS POINT, AND SHALL BE CONNECTED TO THE EXTERIOR GROUNDING RING. A SEPARATE A/C SERVICE GROUND AND NEUTRAL SHALL THEN BE ROUTED TO AND CONNECTED TO THE MAIN DISCONNECT INSIDE THE BUILDING (WHERE APPLICABLE) OR AS REQUIRED BY LOCAL AUTHORITY.

3.13 GENERATOR RECEPTACLE GROUNDING:

THE GENERATOR RECEPTACLE (HUBBLE PLUG) SHALL BE GROUNDED TO THE EQUIPMENT GROUND RING.

3.14 COAX BRIDGE/CABLE TRAY GROUNDING:

BOND THE COAX BRIDGE OR CABLE TRAY TO THE AGB WITH #6 STRANDED INSULATED GREEN WIRE. THESE CONNECTIONS SHALL BE DOUBLE LUG BOLTED/SCREWED MECHANICAL CONNECTIONS WITH STAR LOCK WASHERS AND NOALOX. ALL BRIDGE SPLICES SHALL HAVE JUMPERS OF #6 STRANDED INSULATED GREEN WIRE.

3.15 CAD WELD & BURNDY CONNECTION:

CAD WELDS (EXOTHERMIC WELDS) ARE BURNDY CONNECTIONS SHALL BOND ALL UNDERGROUND AND DAMP LOCATION CONNECTIONS, SHELTER SKID GROUNDS, TOWER OR GUY GROUNDS, FENCING CORNER AND GATE POSTS, ANTENNA GROUND BARS, (AGB) SURGE ARRESTER GROUND BAR, AND THE MASTER GROUND BAR (MGB). MECHANICAL CONNECTIONS SHALL BE TYPICALLY USED TO BOND ALL INTERIOR EQUIPMENT, COAX ICE BRIDGES AND COAXIAL CABLE GROUND KITS. ALL LUG TYPE MECHANICAL CONNECTORS TO THE MGB OR AG SHALL BE TWO HOLE TYPE CONNECTED WITH STAINLESS STEEL BOLTS AND NUTS WITH STAINLESS STEEL LOCK WASHERS AND NOALOX ON EITHER SIDE OF THE BUS BAR.

3.16 CHEMICAL GROUND RODS:

CHEMICAL GROUND RODS SHALL NOT BE INSTALLED ON GROUND RING INSTALLATIONS WITH NORMAL SOIL. CHEMICAL GROUND RODS SHALL BE INSTALLED ONLY FOR SPECIAL DESIGN APPLICATIONS THAT REQUIRE SINGLE POINT GROUNDING DUE TO SPECIFIC SITE CONDITIONS.

3.17 TENANT IMPROVEMENT SITE GROUNDING:

FOR ROOF TOP ANTENNA INSTALLATIONS ADDITIONAL ANTENNA GROUND BARS MAY HAVE TO BE INSTALLED AT EACH ANTENNA MOUNT LOCATION. ALL ANTENNA MOUNTS SHALL BE GROUNDED WITH A #2 AWG CONDUCTOR CONNECTED TO THE NEAREST BUILDING STEEL OR THE AGB INSTALLED AT THE MOUNT. ALL BUS BARS, BOTH MGB AND AGB(S), SHALL BE INDEPENDENTLY TIED TO THE NEAREST BUILDING STEEL OR DESIGNATED GROUNDING SYSTEM. NO GROUND WIRE IS TO CONNECT THE BUS BARS TOGETHER. AGB(S) MAY BE HOME RUN BACK TO THE MGB WHERE NO BUILDING STEEL IS AVAILABLE.

3.18 LIMITS OF BEND RADIUS:

IT IS IMPORTANT THAT THE GROUNDING CONDUCTOR CONNECTING THE INSIDE AND OUTSIDE GROUND SYSTEMS BE AS STRAIGHT AS POSSIBLE, WITH NO TURN OR BEND SHORTER THAN ONE FOOT RADIUS WITH A THREE FOOT RADIUS PREFERRED. NO RIGHT ANGLE OR SHARP BENDS SHALL BE ALLOWED.

3.19 BONDING PREPARATION & FINISH:

ALL SURFACES REQUIRE PREPARATION PRIOR TO BONDING OF EITHER CAD WELD OR BURNDY FASTENERS. GALVANIZED SURFACES SHALL BE GROUND OR SANDED TO THE POINT OF EXPOSING THE STEEL SURFACE BELOW, PRIOR TO BONDING THE GROUND CONDUCTOR. FOR OTHER SURFACES INCLUDING COPPER BUS BARS ALL PAINT, RUST TARNISH AND GREASE SHALL BE REMOVED PRIOR TO BONDING THE GROUND CONDUCTOR.
CAD WELD TYPE BONDS SHALL BE FINISHED WITH THE APPLICATION OF COLD GALVANIZATION AND WHEN APPLICABLE, FINISH PAINTED WITH AN APPROPRIATE COLOR AS REQUIRED.
MECHANICAL TYPE BONDS ON BUS BARS SHALL BE FINISHED WITH THE APPLICATION OF NOALOX OR OTHER APPROVED CONDUCTIVE MEDIUM MATERIAL BETWEEN CONNECTOR AND BUS BAR.
MECHANICAL TYPE BONDS ON ALL OTHER SURFACES SHALL BE FINISHED WITH THE APPLICATION OF COLD GALVANIZATION AND OR THE APPROPRIATE PAINT TO MATCH AS REQUIRED.

3.20 TESTING:

THE OUTSIDE GROUND RING SHALL BE TESTED AFTER INSTALLATION BUT PRIOR TO BACKFILLING THE GROUND RING TRENCH. THE GROUND FIELD RESISTANCE SHALL MEASURE 5 OHMS OR LESS TO GROUND. ANY DIFFICULTY IN ACHIEVING THIS LEVEL OR RESISTANCE MUST BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER. THE RESISTANCE TO GROUND SHALL BE MEASURED USING THE FALL OF POTENTIAL METHOD. TESTING SHALL BE PERFORMED BY AN OWNER PROVIDED INDEPENDENT TESTING LABORATORY FROM WHICH A WRITTEN REPORT SHALL BE PRODUCED FOR REVIEW BY THE PROJECT MANAGER.

3.21 SPECIAL CONDITIONS:

WHEN SOIL CONDITIONS EXIST (I.E., NON-COMPACTABLE ROCK, GRAVEL, SHALE, ETC.) THAT PREVENTS THE INSTALLATION OF THE STANDARD GROUNDING SYSTEM AND PROCEDURES, THEN VERBAL PROCEDURES SHALL BE REQUESTED BY THE PM.

3.21.1 EXTERNAL GROUND RING

THE EXTERNAL GROUND RING SHALL EXTEND TO THE MAXIMUM ALLOWABLE DEPTH IN 95% COMPACTABLE SOIL.

3.21.2 GROUND RODS (REPLACEMENT)

WHEN GROUND RODS CANNOT BE DRIVEN INTO THE SOIL VERTICALLY TO A DEPTH DESCRIBED IN PARAGRAPH 3.5, AND REMAIN IN 95% COMPACTABLE SOIL, THEN THE FOLLOWING METHODS OF SUBSTITUTION MAY BE USED. THESE ARE SUGGESTED METHODS ONLY, AND EACH CASE SHOULD BE REVIEWED BY THE T-MOBILE PROJECT MANAGER. THE PURPOSE IS TO ACHIEVE THE LOWEST IMPEDANCE TO GROUND, IN ANY CASE, EQUAL TO OR LESS THAN 5 OHMS.

3.21.2.1 ROCK WITH SOME OR NO SOIL COVER

FOR SITES WHICH HAVE SOIL CONDITIONS WHICH CONSIST OF SOLID OR SEMI SOLID ROCK BELOW ABOUT THREE FEET OF COMPACTABLE SOIL, A COMBINATION OF METHODS MAY BE USED:

A. A COMBINATION OF SHORT GROUND RODS MAY BE USED WITH 3' SQUARE ¼" COPPER PLATES. A MINIMUM OF TWO PLATES SHOULD BE USED AND SHOULD REPLACE GROUND RODS ON AN EQUIVALENCY OF TWO GROUND ROD LENGTHS PER COPPER PLATE. THE COPPER PLATE SHOULD BE PLACED IN A MINIMUM 3" BENTONITE BASE AND COVERED WITH 3" OF BENTONITE FILL PRIOR TO BACKFILL.

B. AN ACTIVE TYPE CHEMICAL ROD SYSTEM MAY BE USED. THIS IS AN ENGINEERING JUDGMENT AND SHOULD BE USED ONLY WHERE NECESSARY, DUE TO EXPENSE. IN ALL CASES, THE STANDARD PRACTICES OUTLINED IN THIS DOCUMENT SHOULD BE FOLLOWED TO THE EXTENT THAT IS APPLICABLE, AND SHOULD BE MODIFIED AS TO THE QUANTITY OF GROUND RODS AND CONDUCTOR SIZE ONLY AS RECOMMENDED BY THE MANUFACTURER OR THE GROUND ROD SYSTEM.

NOTE:
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SOMMERVILLE
DATE SIGNED 4/28/22
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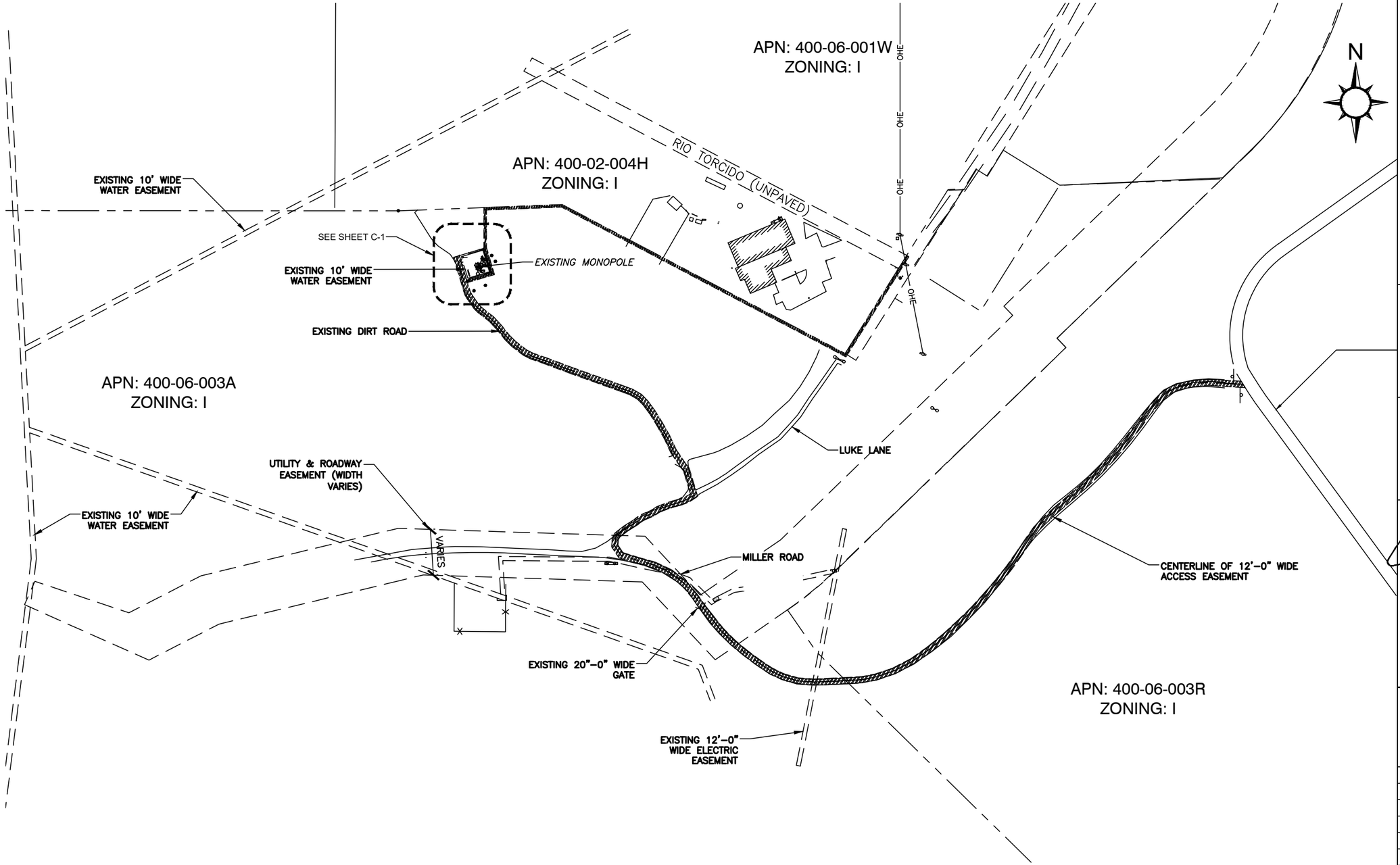
AZ17727-B	CLARKDALE

SHEET NAME:
GENERAL NOTES

SMW #:	SHEET NUMBER:
22-10256	GN-4
DESIGNER: KMM	
CHECKED BY: MSA	
ENGINEER: JDS	



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FLOOD NOTE:
THE PROPERTY APPEARS TO LIE IN FLOOD ZONE "X" OF THE FLOOD INSURANCE RATE MAP COMMUNITY PANEL NUMBER 04025C1393H, WHICH BEARS AN EFFECTIVE DATE OF 10/16/2015, AND IS NOT IN A SPECIAL FLOOD ZONE. ZONE "X" IS DEFINED AS: ANY AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE OF FLOOD HAZARD.

1 PARCEL PLAN

200' 0' 100' 200'

FOR 24"x36" DRAWINGS
GRAPHIC SCALE: 1" = 100'
FOR 11"x17" DRAWINGS
GRAPHIC SCALE: 1" = 200'

1. DRAWINGS ARE BASED OFF OF EXISTING DOCUMENTS. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND EXISTING EQUIPMENT LOCATION PRIOR TO CONSTRUCTION.
2. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY THE EXACT LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH NEW IMPROVEMENTS.

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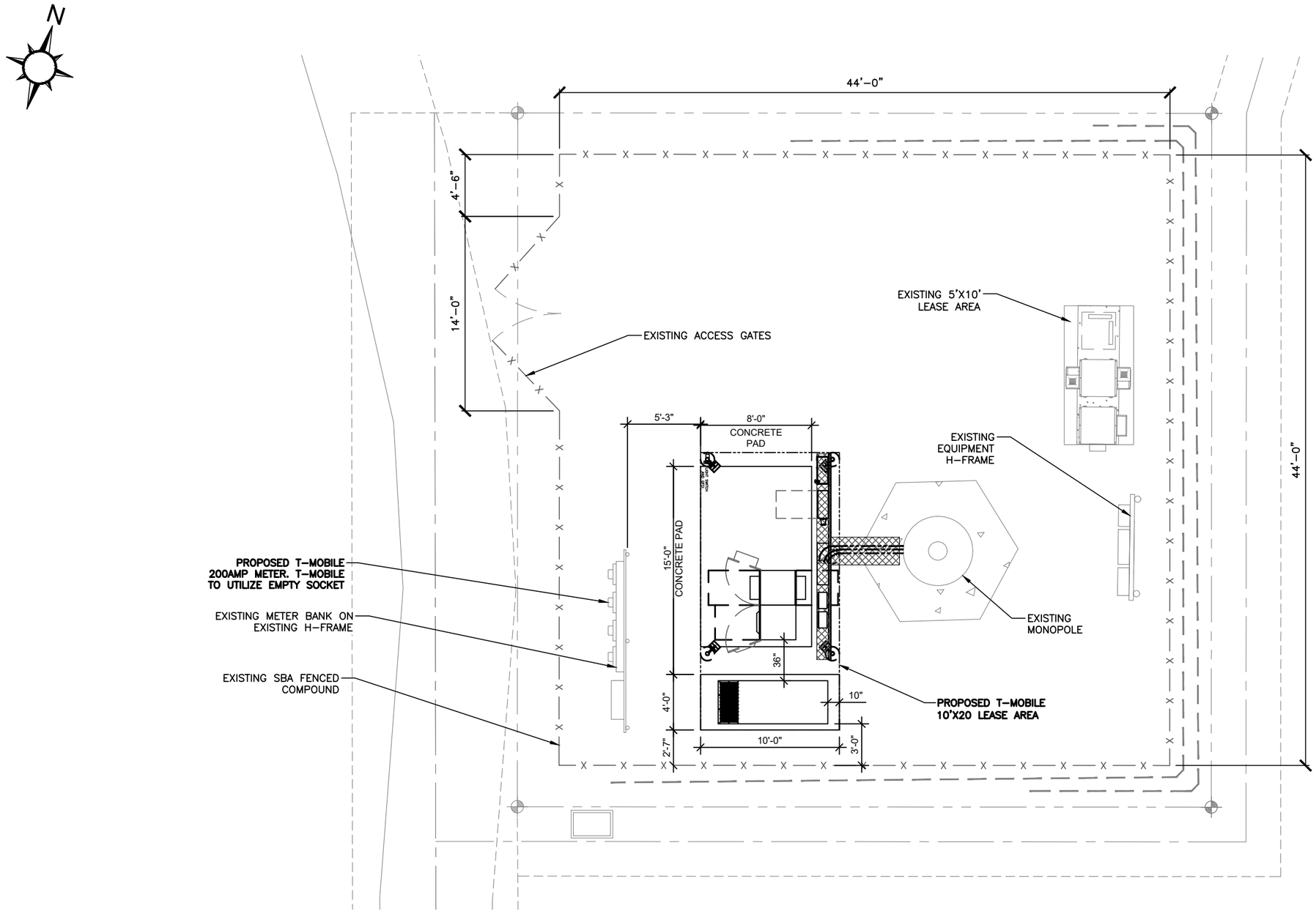
SHEET NAME:
PARCEL PLAN

SMW #: 22-10256

DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS

SHEET NUMBER:
C-0



1 SITE PLAN

8' 0' 4' 8'

FOR 24"x36" DRAWINGS
GRAPHIC SCALE: 1/4" = 1'-0"
FOR 11"x17" DRAWINGS
GRAPHIC SCALE: 1/8" = 1'-0"

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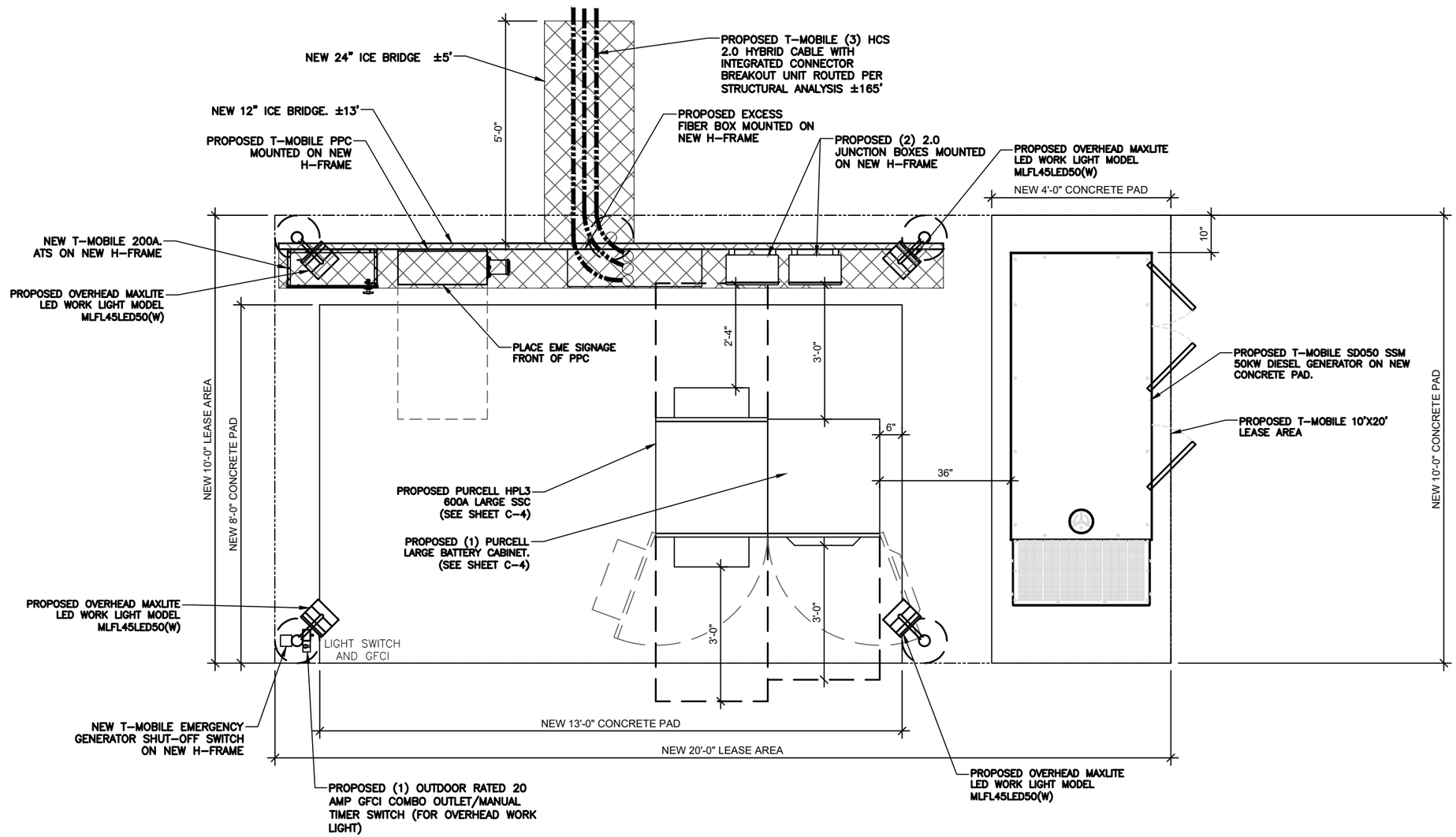
SHEET NAME:

SITE PLAN

SMW #:	SHEET NUMBER:
22-10256	C-1

DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS



1 EQUIPMENT LAYOUT

4' 0' 2' 4'

FOR 24"x36" DRAWINGS
GRAPHIC SCALE: 3/8" = 1'-0"
FOR 11"x17" DRAWINGS
GRAPHIC SCALE: 3/16" = 1'-0"

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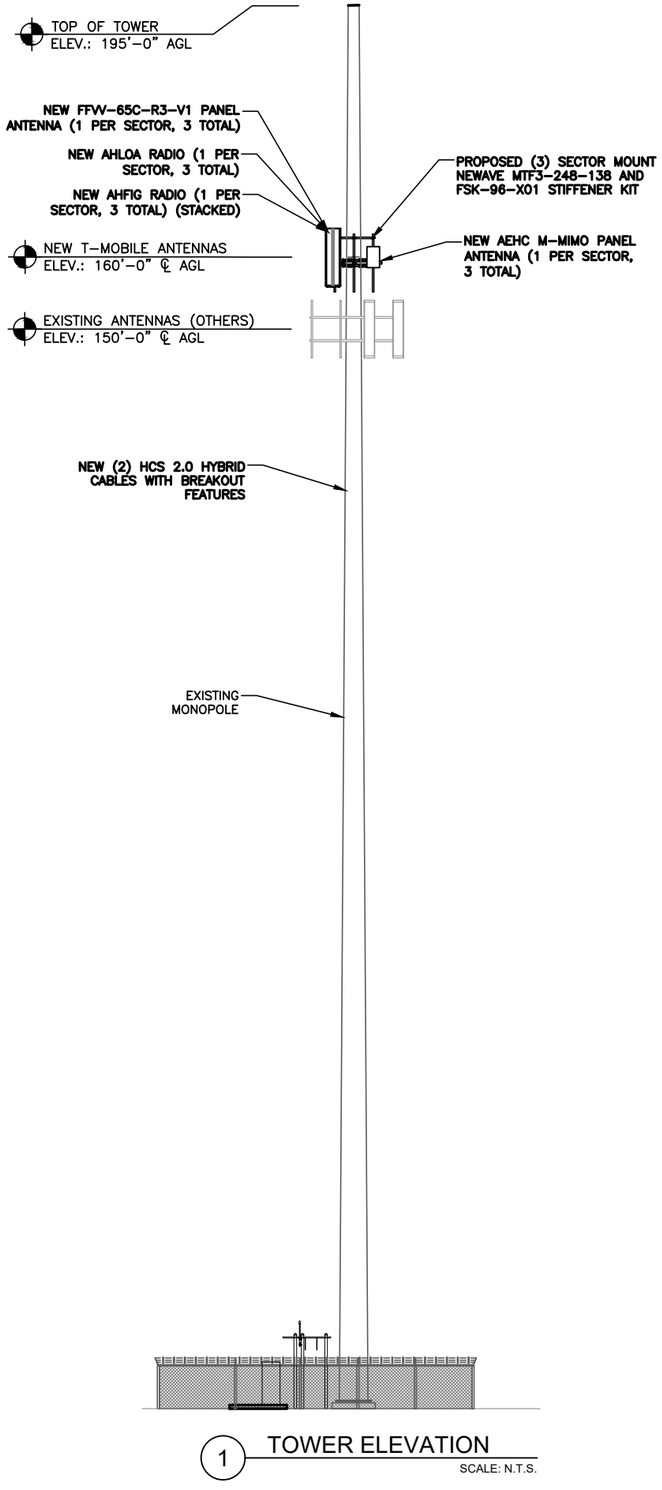
AZ17727-B	CLARKDALE

SHEET NAME:
EQUIPMENT LAYOUT

SMW #:	SHEET NUMBER:
22-10256	C-1.1

DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS



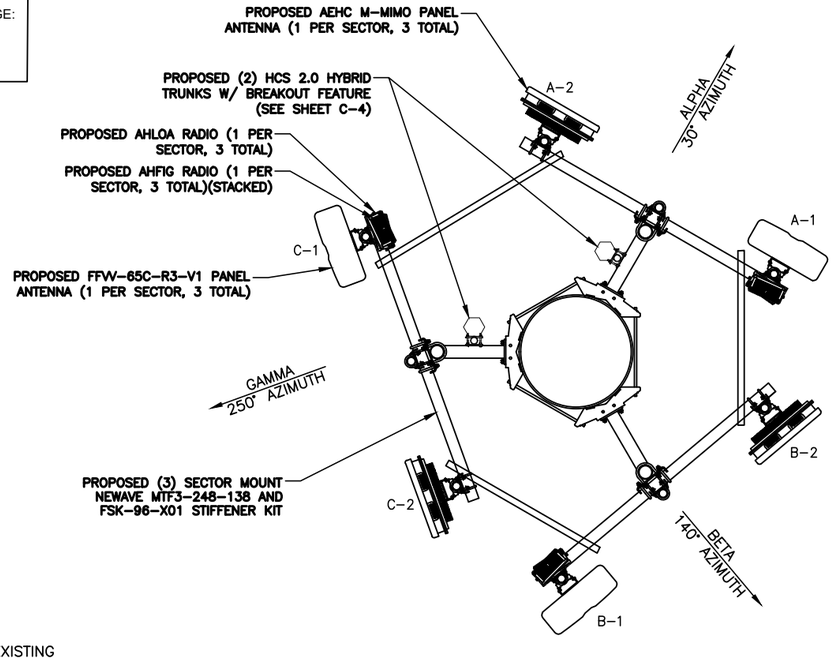
1 TOWER ELEVATION

SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE									
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY		CABLE
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS	
ALPHA	160'-0"	30°	A1	FFW-65C-R3-V1 (OCTO)(P)	L600/N600/L2100/L1900 N2100/N1900/U1900	NEW	AHLOA	NEW	(1) HCS 2.0 JUMPER 10AWG 2PR(P)
						NEW	AHFIG	NEW	(1) HCS 2.0 JUMPER 2X6AWG 2PR(P)
			A2	AEHC (MASSIVE MIMO) (P)	L2500/N2500	NEW	–	–	(1) HCS 2.0 JUMPER 2X6AWG 4PR(P)
BETA	160'-0"	140°	B1	FFW-65C-R3-V1 (OCTO)(P)	L600/N600/L2100/L1900 N2100/N1900/U1900	NEW	AHLOA	NEW	(1) HCS 2.0 JUMPER 10AWG 2PR(P)
						NEW	AHFIG	NEW	(1) HCS 2.0 JUMPER 2X6AWG 2PR(P)
			B2	AEHC (MASSIVE MIMO) (P)	L2500/N2500	NEW	–	–	(1) HCS 2.0 JUMPER 2X6AWG 4PR(P)
GAMMA	160'-0"	250°	C1	FFW-65C-R3-V1 (OCTO)(P)	L600/N600/L2100/L1900 N2100/N1900/U1900	NEW	AHLOA	NEW	(1) HCS 2.0 JUMPER 10AWG 2PR(P)
						NEW	AHFIG	NEW	(1) HCS 2.0 JUMPER 2X6AWG 2PR(P)
			C2	AEHC (MASSIVE MIMO) (P)	L2500/N2500	NEW	–	–	(1) HCS 2.0 JUMPER 2X6AWG 4PR(P)
									(2) HCS 2.0 TRUNK (P) 200'

PER MOUNT ANALYSIS COMPLETED BY TES, DATED 03/31/22, THE NEW MOUNT CAN ADEQUATELY SUPPORT THE NEW LOADING

TES STRUCTURAL ANALYSIS
DATED 04/04/2022
TOWER MAX STRUCTURAL USAGE:
35.0% [PASS]
MAX FOUNDATION USAGE:
35.0% [PASS]



2 ANTENNA ORIENTATION PLAN

4' 0' 2' 4'

FOR 24"x36" DRAWINGS
GRAPHIC SCALE: 1/2" = 1'-0"
FOR 11"x17" DRAWINGS
GRAPHIC SCALE: 1/4" = 1'-0"

NOTES:
1. SMW HAS NOT PERFORMED A STRUCTURAL ANALYSIS OF THE EXISTING TOWER OR EXISTING ANTENNA MOUNT. REFER TO STRUCTURAL ANALYSIS OR STRUCTURAL LETTER BY OTHERS FOR ADDITIONAL INFORMATION.
2. IF THE TOWER STRUCTURAL ANALYSIS SHOWS THE NEED FOR TOWER REINFORCEMENT REFER TO TOWER REINFORCEMENT DESIGN PRIOR TO THE INSTALLATION OF ANY NEW EQUIPMENT.
3. REFER TO TOWER STRUCTURAL ANALYSIS FOR NEW CABLE ROUTING AND ATTACHMENT DETAILS.
4. TOWER ELEVATION SHOWN IS NOT DRAWN TO SCALE AND IS INTENDED ONLY FOR REFERENCE PURPOSES. REFER TO ORIGINAL TOWER DESIGN FOR ADDITIONAL INFORMATION.

N

T-Mobile
1330 WEST SOUTHERN AVE. STE A-102
TEMPE, AZ 85282

PLANS PREPARED BY:
SBA
8051 CONGRESS AVE.
BOCA RATON, FL 33487

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

Registered Professional Engineer (Civil)
CERTIFICATE NO.
71982
JUDSON C.
SOMMERVILLE
DATE SIGNED 4/28/22
ARIZONA U.S.A.

Expiration Date 09/30/2023

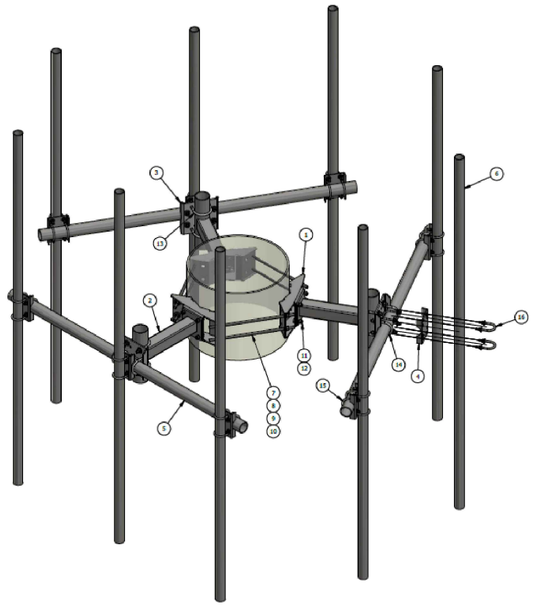
SITE INFORMATION:
PH68207A
PH68207A
555 MILLER ROAD
CLARKDALE, AZ 86324

#	DATE	DESCRIPTION:
0	04/28/22	ISSUED FOR CONSTRUCTION

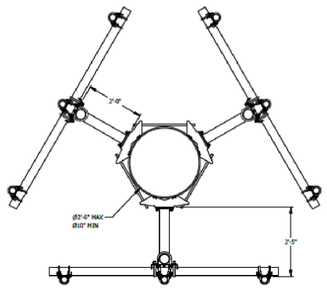
SBA SITE NUMBER:	SBA SITE NAME:
AZ17727-B	CLARKDALE

SHEET NAME:
NEW ELEVATION AND ANTENNA PLAN

SMW #:	SHEET NUMBER:
22-10256	C-2
DESIGNER: KMM	
CHECKED BY: MSA	
ENGINEER: JDS	



ITEM	PART #	DESCRIPTION	QTY	UNIT WT
1	M1030-3.01	UNIVERSAL 15' TO 30' O.D RING MOUNT WELDMENT	3	32.06
2	M3015-24.01	SINGLE SUPPORT ARM 24" STAND OFF WELDMENT	3	39.28
3	AM1015-XP.01	CELLULAR FACE MOUNT FOR 3-1/2" TO 4-1/2" CROSS OVER	3	15.61
4	CXCP1	2-3/8" TO 3-1/2" CROSS OVER BENT CHANNEL	9	4.66
5	P35-96	3" STD PIPE (HDG) @ 8' LONG	3	60.67
6	P279-126	GALV. 2-1/2" STANDARD PIPE @ 10'-6" LONG	9	68.89
7	27-5580-005	3/4" x 26" B7 HDG ALL-THREAD	6	3.26
8	27-5481-005	3/4" A36 HDG FLAT WASHER	12	0.09
9	27-5490-005	3/4" HDG LOCK WASHER	12	0.05
10	27-5501-005	3/4" HDG HEX NUT	12	0.14
11	27-5440-005	GALV. 5/8" x 2-1/4" A325 BOLT ASSEMBLY	12	0.31
12	27-5370-005	5/8" A36 HDG FLAT WASHER	12	0.08
13	27-4230-005	GALV. 5/8" x 4-5/8" x 6-1/2" U-BOLT ASSEMBLY	6	1.80
14	27-4200-005	GALV. 5/8" x 3-5/8" x 6" U-BOLT ASSEMBLY	6	1.66
15	27-4090-005	GALV. 1/2" x 3 5/8" x 5" U-BOLT ASSEMBLY	18	0.91
16	27-4080-005	GALV. 1/2" x 3" x 5" GR-5 U-BOLT ASSEMBLY	18	0.89



TOP VIEW

QTY:
CHK:

STANDARD TOLERANCES:
(UNLESS OTHERWISE NOTED)
FRACTIONS ±1/16"
1 DECIMAL ±.1"
2 DECIMAL ±.03"
3 DECIMAL ±.005"
ANGLES ±.5°

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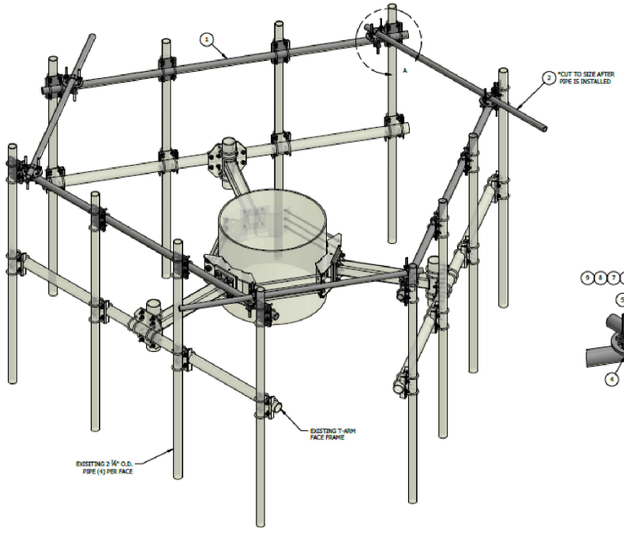
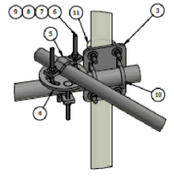
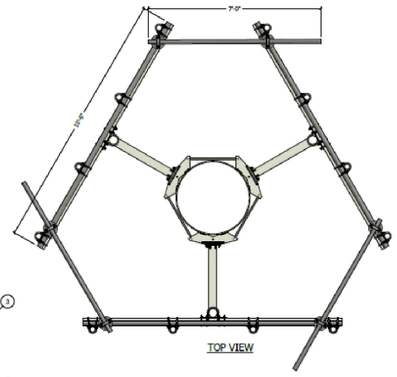
NEWAVE
TOWER COMPONENTS. 503-792-3739
10910 PORTLAND RD. BROOKS, OR 97305

MATERIAL: AS SHOWN
GRADE: AS SHOWN
FINISH: HDG
DRAWN BY: KY
CHECKED BY: -
DATE: 6/20/2018
PART WT (BARE): 1115.5 LB
TITLE: 3-SECTOR MONOPOLE T-ARM FRAME 24" STAND-OFF, 2-7/8" O.D PIPE
SERIES: MONOPOLE MOUNTING
DRAWING NO.: MTF3-248-138





DETAIL - A



TOP VIEW

ITEM	PART #	QTY	DESCRIPTION	LENGTH	FINISH	UNIT WT
1	P23-126	3	GALV. 2" STD PIPE @ 10'-6" LONG		HDG	38.40
2	P178-84	3	GALV. 1-1/2" STD PIPE, CUT @ 7' LONG			19.04
3	CXP1	12	3/8" PLATE		HDG	0.00
4	CX138.01	6	3/8" ROUND X-OVER PLT, 1-1/2" TO 3-1/2" O.D PIPE		HDG	3.09
5	AMCS-3.01	12	HALF CLAMP FOR 1-1/2" TO 3-1/2" O.D ROUND			1.23
6	27-5321-005	24	GALV. 1/2" X 6" GR.5 CARRIAGE BOLT			0.37
7	27-5200-005	21	1/2" A36 HDG FLAT WASHER			0.04
8	27-5210-005	21	1/2" HDG LOCK WASHER			0.01
9	27-5222-005	21	1/2" HDG HEX NUT			0.04
10	27-6060-005	24	GALV. 1/2" x 2-1/2" x 4" GR-5 U-BOLT ASSEMBLY			0.76
11	27-6080-005	24	GALV. 1/2" x 3" x 5" GR-5 U-BOLT ASSEMBLY			0.20

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STANDARD TOLERANCES:
(UNLESS OTHERWISE NOTED)
FRACTIONS ±1/16"
DECIMALS ±0.01"
ANGLES ±0.5°

NEWAVE
TOWER COMPONENTS. 503-792-3739
10910 PORTLAND RD. BROOKS, OR 97305

TOTAL WT: 239.55 LB
QTY:
FINISH: HDG
JOB #:

TITLE: FACE FRAME STIFFENER KIT, 2-3/8" O.D PIPE FACE 1-7/8" O.D STIFFARM PIPE @ 10'-6" LONG
SERIES: MONOPOLE MOUNTING
SHEET: 1 OF 1
DRAWN BY: SJ
DATE: 2/20/2019
CHKD BY: CJW
DRAWING NO.: FSK-126-X22

T-Mobile
1330 WEST SOUTHERN AVE. STE A-102
TEMPE, AZ 85282

PLANS PREPARED BY:
SBA
8051 CONGRESS AVE.
BOCA RATON, FL 33487

SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW

Registered Professional Engineer (Civil)
CERTIFICATE NO.
71982
JUDSON C.
SOMMERVILLE
DATE SIGNED 4/28/22
ARIZONA U.S.A.

Expiration Date 09/30/2023

SITE INFORMATION:
PH68207A
PH68207A
555 MILLER ROAD
CLARKDALE, AZ 86324

#	DATE	DESCRIPTION:
0	04/28/22	ISSUED FOR CONSTRUCTION

SBA SITE NUMBER: AZ17727-B
SBA SITE NAME: CLARKDALE

SHEET NAME:
SECTOR MOUNT DETAIL

SMW #: 22-10256
SHEET NUMBER: C-3

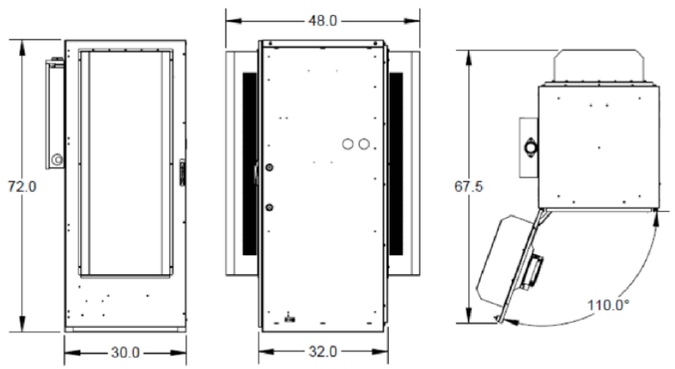
DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS

Purcell HPL3 600A Large Site Support Cabinet

600A DC Power System
- 23" - 5RU Alpha CXPS-E3
- 625A, (10) -48V rectifier positions
- Includes (3) CXRF-HP 3kW-62.5A rectifiers
  >96.5% efficiency
- Integrated CXC-HP controller for smart site management, monitoring and alarming
  External ADIO peripherals for smart site componant connectivity
- (26) load distribution CB positions w LVD
  Plug in, bullet style CB (100A max)
- (20) ancillary load distribution CB positions w LVD
  Plug in, spade style mini CB (25A max)
- UL/CSA/IEC 60950-1

Standards
- Designed to standard GR-487, issue 5, wind driven rain, hydrogen out gassing, MERV 16 salt fog corrosion resistance, zone 4 seismic loading, safety, thermal, intrusion, impact and pull testing
- UL508A Type 3 Enclosed Control Panel

T-Mobile SAP	Purcell PN	Description
TBD	2000005385	Purcell HPL3 600A Large SSC



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1 PURCELL HPL3 POWER CABINET
NOT TO SCALE

Purcell HPL3 Large Battery Cabinet

(4) -48V 190Ahr Battery Strings

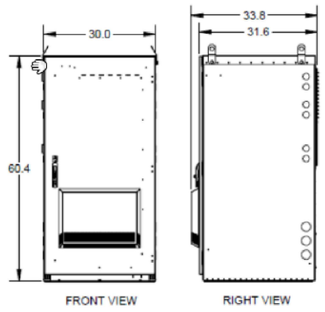
The Battery Cabinet is designed to house four -48V strings of 190Ahr batteries as part of the HPL3 Site Support Lineup

Cabinet Features
- Polyester powder coated aluminum, GR-487 process control, off white, texture
- Weight: 350 lbs.
- Four battery shelves / four batteries per shelf
- Front door pad lockable with three point latching system
- Left and Right lineup interconnections or remote mounting

Thermal Management
- Direct Air Cooling (DAC) with two fans
- Ambient operating temperature -40°C to +50°C
- Optional battery heater mats – one mat per shelf

T-Mobile SAP	Purcell PN	Description
33966	2000005434	Battery Cabinet (4 string)

Standards
- UL 508A standards
- Designed to standard GR-487, issue 5, hydrogen out gassing, external paint, zone 4 seismic loading, safety, thermal, intrusion and impact



Purcell SYSTEMS an EnerSys company
16125 East Euclid Avenue ■ Spokane, Washington 99216
509.755.0341 ■ www.purcellsystems.com

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2 PURCELL BATTERY CABINET
NOT TO SCALE

T-Mobile
1330 WEST SOUTHERN AVE. STE A-102
TEMPE, AZ 85282

PLANS PREPARED BY:
SBA
8051 CONGRESS AVE.
BOCA RATON, FL 33487

SMW ENGINEERING GROUP, INC.
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SITE INFORMATION:
PH68207A
PH68207A
555 MILLER ROAD
CLARKDALE, AZ 86324

#	DATE	DESCRIPTION:
0	04/28/22	ISSUED FOR CONSTRUCTION

SBA SITE NUMBER: AZ17727-B
SBA SITE NAME: CLARKDALE

SHEET NAME:
EQUIPMENT SPECIFICATIONS

SMW #: 22-10256
SHEET NUMBER: C-4

DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS

HCS 2.0 BOTTOM JUNCTION BOX

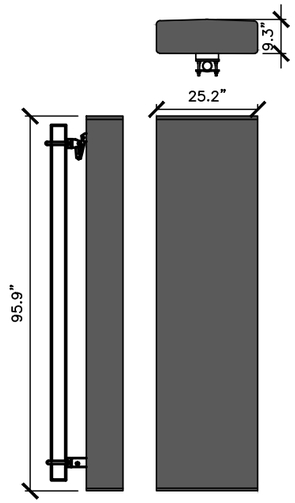
Characteristics	Raycap
Dimensions	14"x16"x8"
Weight	21.9 lb
OVP, IEC 61643-1	Class I SPD (3)
UL Rating	1449, 4th Ed.
OVP Monitoring	Dry contact
Fiber Patch Panel	24 LC pairs
Environmental Rating	IP66
Operating Temperature	-40 °C to +80 °C

COMMSCOPE BREAKOUT FEATURE

Characteristics	CommScope
Dimensions, in.	6.7x16.9x4.7
Weight	0.970 lb/ft
Port Interface	Senko U
Hybrid Ports	12
Conductor Termination	None
Single Mode Fibers	48
Fiber Termination	LC pair

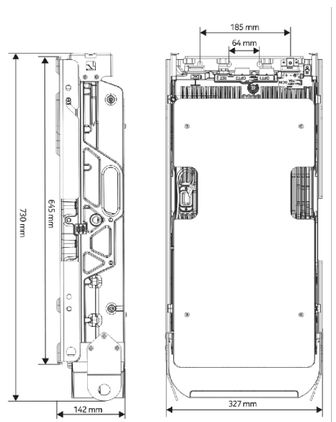
1 HCS 2.0 JUNCTION BOX & BREAKOUT DETAIL
NOT TO SCALE

ANTENNA SPECIFICATIONS	
MODEL #	FFVV-65C-R3-V1
MANUF.	COMMSCOPE
HEIGHT	95.9"
WIDTH	25.2"
DEPTH	9.3"
WEIGHT	124.6 LB



4 COMMSCOPE FFVV-65C-R3-V1
NOT TO SCALE

REMOTE RADIO UNIT SPECIFICATIONS	
MODEL #	AHFIG
MANUF.	NOKIA
HEIGHT	28.7"
WIDTH	12.8"
DEPTH	5.59"
WEIGHT	77.16 LBS

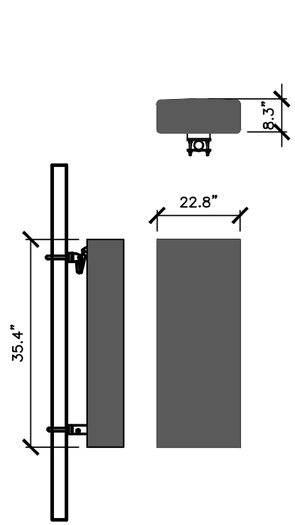


2 NOKIA AHFIG
NOT TO SCALE

REMOTE RADIO UNIT SPECIFICATIONS	
MODEL #	AHLOA
MANUF.	NOKIA
HEIGHT	22"
WIDTH	12.1"
DEPTH	7.4"
WEIGHT	51 LBS

3 NOKIA AHLOA
NOT TO SCALE

ANTENNA SPECIFICATIONS	
MODEL #	AEHC
MANUF.	NOKIA
HEIGHT	35.4"
WIDTH	22.8"
DEPTH	8.3"
WEIGHT	99.2 LB



5 AEHC(ACTIVE ANTENNA-MASSIVE MIMO)
NOT TO SCALE

T-Mobile
1330 WEST SOUTHERN AVE. STE A-102
TEMPE, AZ 85282

PLANS PREPARED BY:
SBA
8051 CONGRESS AVE.
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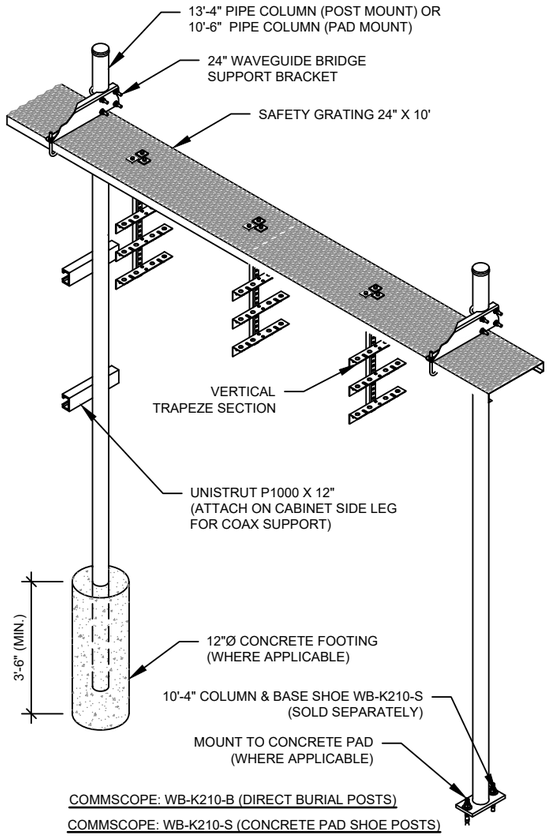
SHEET NAME:
EQUIPMENT SPECIFICATIONS

SMW #: 22-10256
SHEET NUMBER: C-5

DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS



COMMSCOPE: WB-K210-B (DIRECT BURIAL POSTS)

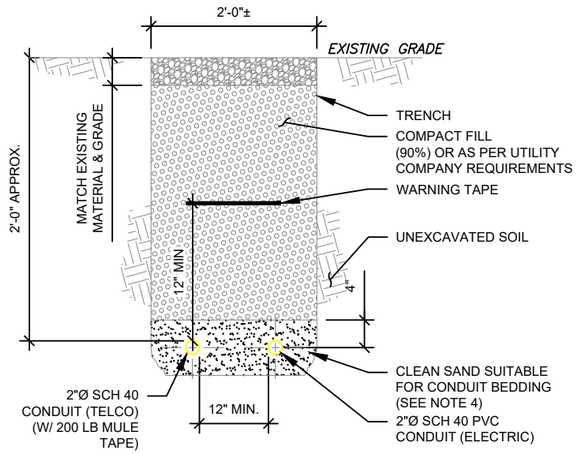
COMMSCOPE: WB-K210-S (CONCRETE PAD SHOE POSTS)

CONSTRUCTION NOTE:

1. INSTALL ICE BRIDGE TO ALLOW 7 FEET CLEARANCE ABOVE GRADE TO LOWEST APPURTENANCE.
2. INSTALL PER MANUFACTURES SPECIFICATION.

1 WAVEGUIDE BRIDGE KIT

SCALE: NOT TO SCALE

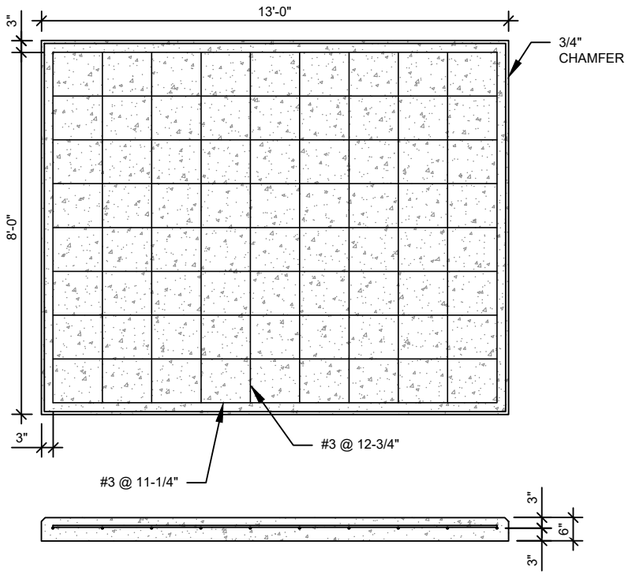


TRENCH NOTES:

1. IF FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL, EXCAVATED MATERIAL MAY BE USED FOR BACKFILL.
2. IF NOT, PROVIDE CLEAN, COMPACTIBLE MATERIAL. COMPACT IN 8" LIFTS. REMOVE ANY LARGE ROCKS PRIOR TO BACKFILLING. CONTRACTOR TO VERIFY LOCATION OF EXISTING U/G UTILITIES PRIOR TO DIGGING.
3. IF CURRENT AS-BUILT DRAWINGS ARE NOT AVAILABLE CONTRACTOR SHALL HAND DIG U/G TRENCHING.
4. CONCRETE ENCASE CONDUIT WHEN TRENCHING UNDER SITE ACCESS ROAD.

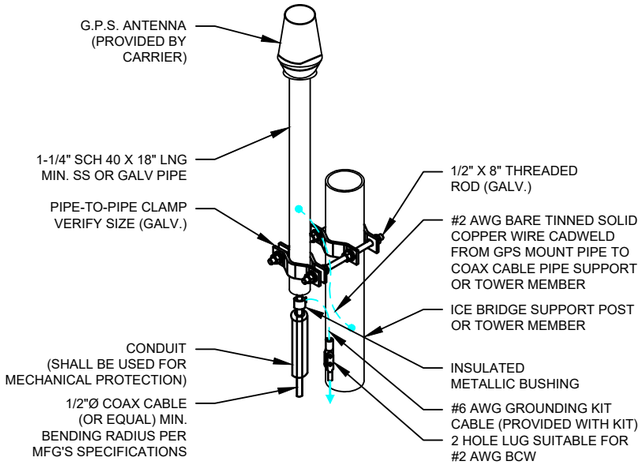
2 TELCO AND POWER CONDUIT JOINT TRENCH

SCALE: N.T.S.



4 REINFORCED EQUIPMENT PAD LAYOUT

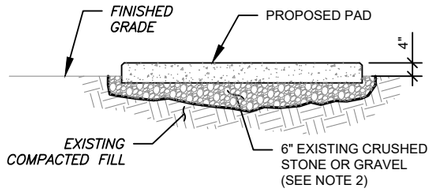
SCALE: NOT TO SCALE



NOTE:
1. GPS SHALL BE PLACED WITH CLEAR SIGHT LINE TO THE SOUTHERN SKY.
2. CONTRACTOR TO SUPPLY COAX FOR GPS UNIT.

3 GPS ANTENNA ATTACHMENT DETAIL

SCALE: NOT TO SCALE



PAD NOTES:

1. SUBGRADE AND FILL SHALL CONSIST OF CLEAN SOIL. DELETRIOUS MATERIAL AND ORGANICS SHALL BE REMOVED.
2. MECHANICALLY COMPACT FOOTPRINT OF PAD PLUS 2' PERIMETER.
3. USE GALVANIZED HILTI EXPANSION ANCHORS OR, APPROVED EQUAL, FOR EQUIPMENT ANCHORAGE.
4. FOR SIZE AND LOCATION OF ANCHORS AND OTHER REQUIREMENT, SEE EQUIPMENT VENDOR DRAWINGS.

5 GRAVEL PREPARATION

SCALE: NOT TO SCALE

T-Mobile

1330 WEST SOUTHERN AVE. STE A-102
TEMPE, AZ 85282

PLANS PREPARED BY:

SBA

8051 CONGRESS AVE.
BOCA RATON, FL 33487

SMW ENGINEERING GROUP, INC.

TOGETHER PLANNING A BETTER TOMORROW

Registered Professional Engineer (Civil)
CERTIFICATE NO.
71982
JUDSON C.
SOMMERVILLE
DATE SIGNED 4/28/22
ARIZONA U.S.A.

Expiration Date 09/30/2023

SITE INFORMATION:
PH68207A
PH68207A
555 MILLER ROAD
CLARKDALE, AZ 86324

#	DATE	DESCRIPTION:
0	04/28/22	ISSUED FOR CONSTRUCTION

SBA SITE NUMBER:	SBA SITE NAME:
AZ17727-B	CLARKDALE

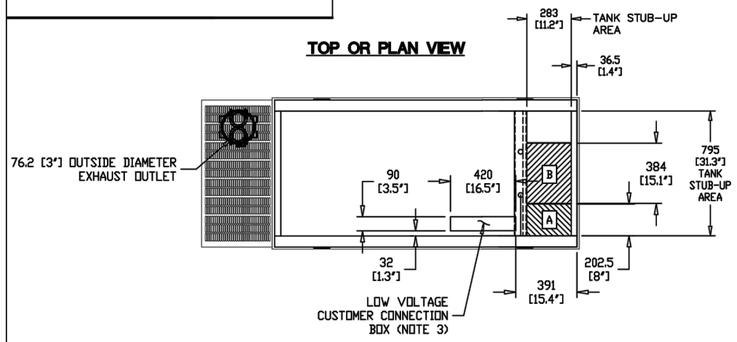
SHEET NAME:
CONSTRUCTION DETAILS

SMW #:	SHEET NUMBER:
22-10256	C-6

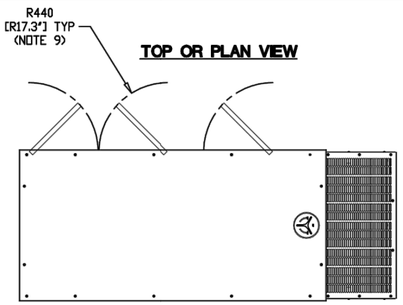
DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS

0J2534

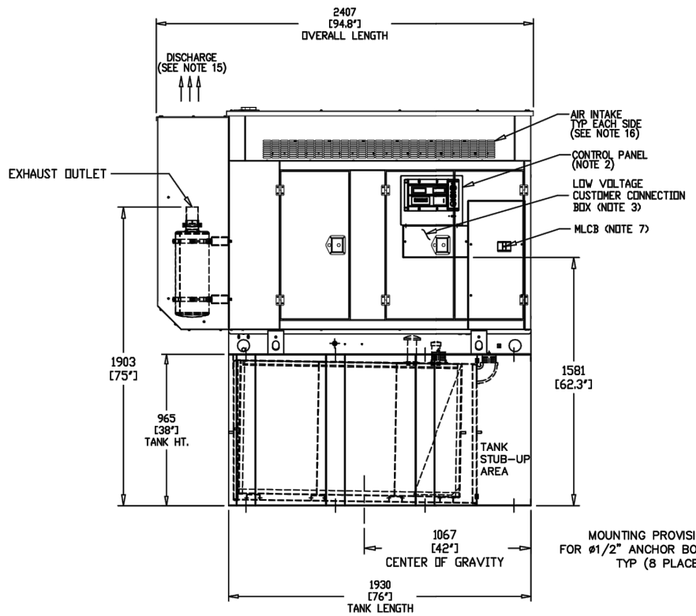
TOP OR PLAN VIEW



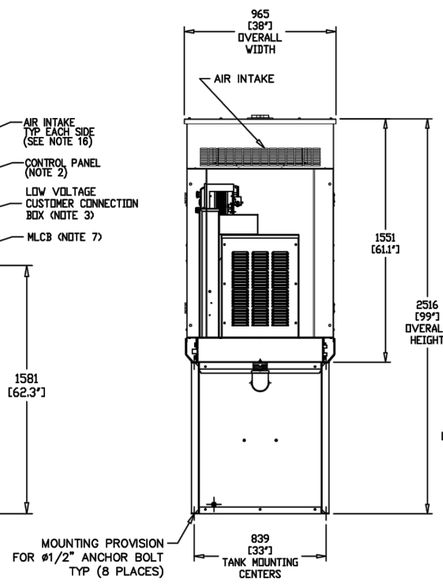
TOP OR PLAN VIEW



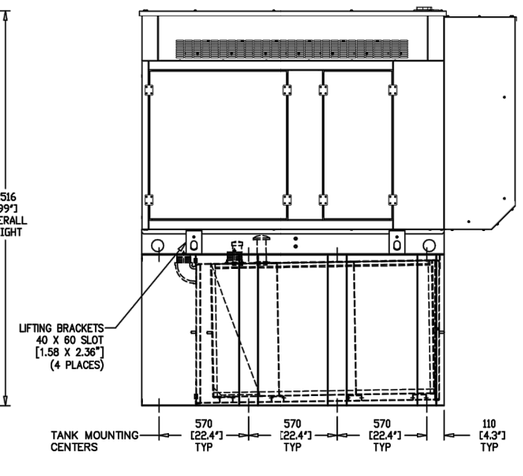
RECOMMENDED ELECTRICAL STUB-UPS (SEE TOP VIEW)	
DESCRIPTION	INSIDE BASE
AC LOAD LEAD CONDUIT GLAND AREA	A
1) LOW VOLTAGE CUSTOMER CONNECTION BOX FOR 120VAC GFCI OUTLET, (STANDARD BLOCK HEATER, BATTERY CHARGER AND OTHER 120 VAC OPTIONS). 2) TRANSFER SWITCH/ COMMUNICATION CONDUITS. COMMUNICATIONS AND 2-WIRE START MUST NOT BE RUN IN CONDUIT WITH AC WIRING.	B SEE NOTE 3



LEFT SIDE VIEW



REAR VIEW



RIGHT SIDE VIEW

NOTES:

1. THE LEFT SIDE OF THE GENERATOR IS SERVICE ACCESSIBLE.
2. 10 AMP BATTERY CHARGER ENCLOSED WITHIN CONTROL PANEL.
3. CONNECTION POINTS FOR CONTROL WIRES. BOTTOM OF LOW VOLTAGE CUSTOMER CONNECTION BOX HAS KNOCKOUTS FOR 1/2" AND 3/4" CONDUIT FITTINGS.
4. GENERATOR MUST BE GROUNDED.
5. 12 VOLT NEGATIVE GROUND SYSTEM.
6. OPTIONAL REMOTE EMERGENCY STOP SHIPPED LOOSE WITH GENERATOR.
7. MAIN LINE CIRCUIT BREAKER (MLCB), AC LOAD LEAD CONNECTION AND AUXILIARY 120/240V CONNECTION.
8. LEVEL 2A SOUND ATTENUATED ENCLOSURE STANDARD WITH GENERATOR.
9. DOORS MUST BE ABLE TO OPEN 90 DEG. TO BE REMOVED. DOORS ARE LOCATED ON THE LEFT SIDE OF THE GENERATOR ONLY.
10. STUB-UPS: BASE TANK REQUIRES ALL STUB-UPS TO BE IN THE REAR TANK STUB-UP AREA.
11. 'A' IS THE STUB UP AREA FOR THE MLCB AND NEUTRAL CONNECTION.
12. SEE DRAWING 0C3850 FOR DUCT REMOVAL. REMOVAL OF FRONT DUCT WILL PROVIDE ACCESS TO MUFFLER.
13. 120VAC ENGINE BLOCK HEATER.
14. 210 GALLON USEABLE CAPACITY BASETANK STANDARD WITH GENERATOR.
15. MUST ALLOW FREE FLOW OF DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
16. MUST ALLOW FREE FLOW OF INTAKE AIR. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
17. IT IS THE RESPONSIBILITY OF THE INSTALLATION TECHNICIAN TO ENSURE THAT THE GENERATOR INSTALLATION COMPLIES WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS.

WEIGHT DATA (INCLUDES WOODEN SHIPPING SKID)

ENCLOSED GENERATOR WITH EMPTY FUEL TANK – 1700kg (3750 lbs)

UNITS: mm [INCHES]

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INSTALLATION DRAWING

INSTALLATION D4.5L G17 50KW

ENCLOSED LEVEL 2A

SD050 SSM

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

FILE NAME: 0J2534.DWG | SIZE: B
SCALE: NTS | FIRST USE: 0060720
DWG NO.: 0J2534 | REV: B

T-Mobile
1330 WEST SOUTHERN AVE. STE A-102
TEMPE, AZ 85282

PLANS PREPARED BY:

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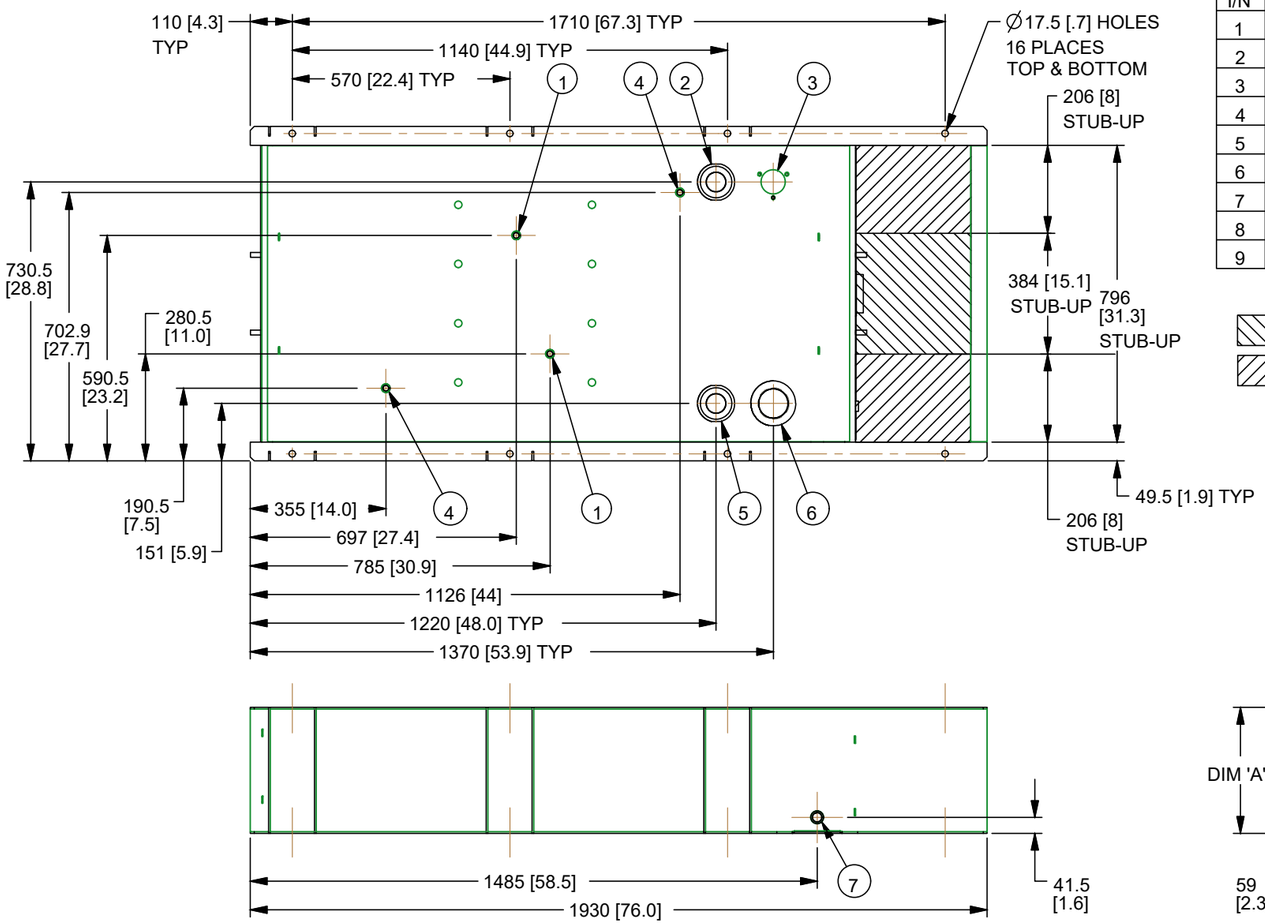
SBA SITE NUMBER: AZ17727-B | SBA SITE NAME: CLARKDALE

SHEET NAME: EQUIPMENT DETAILS

SMW #: 22-10256 | SHEET NUMBER: C-7

DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS

SH 1/1 REV B WINDCHILL VERSION B.1



I/N	TANK FITTING	PROVIDING FUNCTION
1	3/8" NPT COUPLING	FUEL SUPPLY
2	2" NPT WELD FLANGE	FUEL FILL
3		FUEL LEVEL
4	3/8" NPT COUPLING	FUEL RETURN
5	2" NPT WELD FLANGE	VENT
6	3" NPT WELD FLANGE	EMERGENCY VENT
7	3/4" NPT COUPLING	DRAIN
8	1/2" NPT HALF COUPLING	LEAK DETECTOR
9	3" NPT WELD FLANGE	OUTER EMERGENCY VENT

LOW VOLTAGE STUB-UP

HIGH VOLTAGE STUB-UP

CAPACITY: LITER [GALLONS]
WEIGHT: KILOGRAMS [POUNDS]
LENGTH: MM [INCH]

(B) UL #142 / ULC-S601 LISTED

TANK P/N	10000016804	10000016806	10000016816
DIM 'A'	330 [13]	635 [25]	940 [37]
TOTAL CAPACITY	227 [60]	524 [138]	820 [217]
USABLE CAPACITY	204 [54]	501 [132]	799 [211]
DRY WEIGHT	218 [480]	322 [710]	417 [919]

DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

INSTALLATION DRAWING

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ELECTRONICALLY APPROVED
INSIDE WINDCHILL

GENERAC

TITLE
INSTALL A-GROUP BASETANKS

ISSUE DATE:

SIZE	CAGE NO	DWG NO		REV
B	N/A	10000031326		B
SCALE 0.080	WT-KG	0.000	SHEET 1 of 1	

T-Mobile
1330 WEST SOUTHERN AVE. STE A-102
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SBA SITE NUMBER: AZ17727-B
SBA SITE NAME: CLARKDALE

SHEET NAME:
GENERATOR
STUB-UP DETAIL

SMW #: 22-10256

DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS

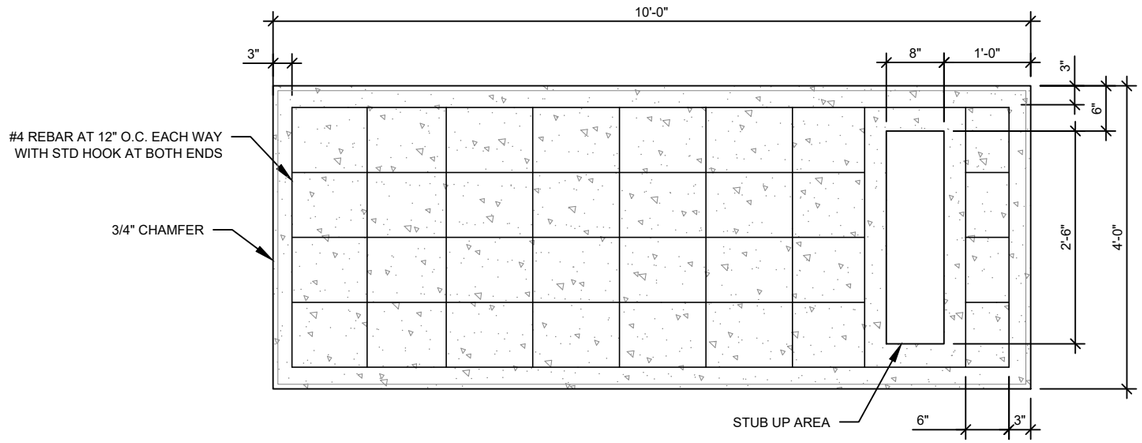
SHEET NUMBER: C-7.1

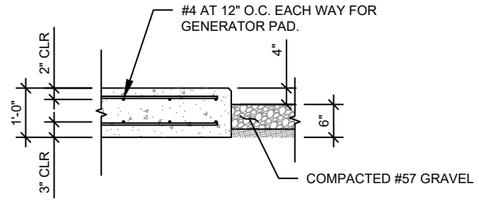
CONTRACTOR NOTES:

1. ALL CONCRETE FOR SLAB FOUNDATION SHALL BE 3000 P.S.I. (MIN.)
2. IF BUILDER SET DATE WILL BE WITHIN 24 HRS OF SLAB POUR THEN SITE CONTRACTOR SHALL USE 5000 P.S.I. CONCRETE (MIN.) TO OBTAIN MIN. 1800 P.S.I. CONCRETE WITHIN THE ALLOTED 48 HOURS. (NO EXCEPTIONS)
3. ELECTRICAL CONTRACTOR SHALL COORDINATE STUB-UP LOCATIONS WITH NEW EQUIPMENT. (FIELD VERIFY AT STAGING YARD.)
4. CONTRACTOR SHALL ANCHOR EQUIPMENT PER MANUFACTURES RECOMMENDATIONS.
5. ALL FOUNDATIONS SHALL BE POURED WITHIN A $\frac{1}{4}$" OF LEVEL IN ALL DIRECTIONS AND SMOOTH FINISHED.

FOUNDATION NOTES:

1. COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 3000-PSI AT 28-DAY CURE, AND SHALL MEET SPECIFICATION FOR READY-MIXED CONCRETE (ASTM C94-96). CONCRETE SHALL BE PLACED AND CURED AS PER ACI-318-95 " BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".'
2. CONCRETE SLUMP SHALL RANGE BETWEEN 4 INCHES TO 8 INCHES.
3. ALL CONCRETE WORK SHALL CONFORM TO ACI 318 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
4. THE SURFACE. OVER WHICH THE CONCRETE WILL BE POURED, SHALL BE CLEAN OF LOOSE MATERIAL AND LEVELED PRIOR TO CONCRETE PLACEMENT.
5. CONCRETE SHALL BE PLACED IN A MANNER THAT WILL PREVENT SEGREGATION OF CONCRETE MATERIALS AND OTHER OCCURRENCES THAT MAY DECREASE THE STRENGTH OR DURABILITY OF THE FOUNDATION.
6. MECHANICALLY VIBRATE CONCRETE, PARTICULARLY WHEN POURED IN DIFFERENT LIFTS, TO ENSURE CONSOLIDATION AND TO AVOID JOINTS.
7. ALL REINFORCING STEEL BARS SHALL BE DOMESTIC, NEW BILLET STEEL, ASTM A-615, GRADE 60. REINFORCING SHALL BE DETAILED AND FABRICATED IN ACCORDANCE WITH ACI 315-LATEST EDITION - "MANUAL OF STANDARD FOR DETAILING REINFORCED CONCRETE".
8. ALL LOAD BEARING FOOTING SHALL BEAR ON TOP OF COMPACTED SOIL.
9. WELDING OF REINFORCING BARS AND DOWEL BARS IS PROHIBITED UNLESS OTHERWISE APPROVED BY ENGINEER.
10. PRIOR TO THE EXCAVATION, CHECK AREA FOR LOCATION OF UNDERGROUND PIPES, CABLES, ETC.
11. FOUNDATION LAYOUT TO BE VERIFIED WITH SHELTER MANUFACTURE PRIOR TO INSTALLATION.
12. SOIL PARAMETER AS PER GEOMETRICAL REPORT.





PAD NOTES:

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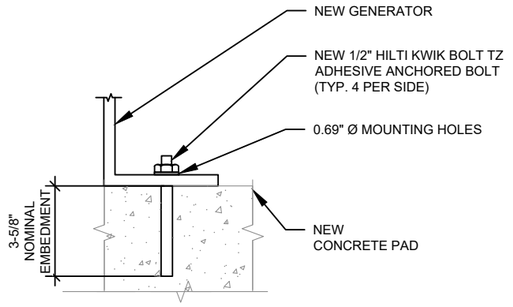
4. FOR SIZE AND LOCATION OF ANCHORS AND OTHER REQUIREMENT, SEE EQUIPMENT VENDOR DRAWINGS.

2 CONCRETE PAD FOR GENERATOR

SCALE: NOT TO SCALE

NOTE:

CONTRACTOR TO VERIFY 3" MIN. FROM EDGE OF CONCRETE TO NEW MOUNTING BOLT.

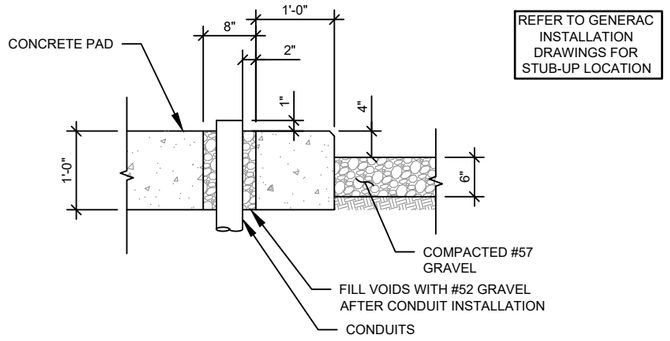


NOTE:

INSTALL HILTI KWIK BOLT TZ ANCHORS STRICTLY PER INSTALLATION INSTRUCTIONS INCLUDED WITH PRODUCT OR FOUND ONLINE AT WWW.US.HILTI.COM. PROPER INSTALLATION IS CRITICAL FOR FULL PERFORMANCE.

1 GENERATOR ATTACHMENT DETAIL

SCALE: NOT TO SCALE



3 GENERATOR CONDUIT STUB UP DETAIL

SCALE: NOT TO SCALE

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TEMPE, AZ 85282

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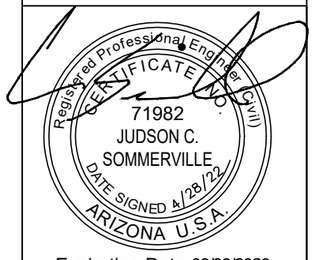

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CONSTRUCTION DETAILS

SMW #: 22-10256

DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS

SHEET NUMBER: C-8

ELECTRICAL SPECIFICATIONS

1 SUBMITTAL OF BID INDICATES CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.

2 CONTRACTOR SHALL PERFORM ALL VERIFICATION OBSERVATION TESTS, AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ARCHITECT LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.

3 HEIGHTS SHALL BE VERIFIED WITH OWNER PRIOR TO INSTALLATION.

4 THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE.

5 EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANELBOARD, PULLBOX, J-BOX, SWITCH BOX, ETC., IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ACT (O.S.H.A.)

6 CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.

7 ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT 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 AND APPROVED BY UNDERWRITER'S LABORATORY AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF THE DIVISION OF INDUSTRIAL SAFETY AND ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA & NBFU.

8 CONTRACTOR SHALL CARRY OUT HIS WORK IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY AND LOCAL CODES AND O.S.H.A.

9 CONTRACTOR SHALL SECURE ALL NECESSARY BUILDING PERMITS

10 COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE BY OWNER. ANY WORK, MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.

11 ALL CONDUIT ONLY (C.O.) SHALL HAVE A PULL WIRE OR ROPE.

12 PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, AND CIRCUITS.

13 ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE TURNED OVER TO OWNER AT JOB COMPLETION.

14 USE T-TAP CONNECTIONS ON ALL MULTI-CIRCUITS WITH COMMON NEUTRAL CONDUCTOR FOR LIGHTING FIXTURE.

15 ALL CONDUCTORS SHALL BE COPPER.

16 ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.

17 THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES AND DRAWINGS.

18 PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.

19 IN DRILLING HOLES INTO CONCRETE WHETHER FOR FASTENING OR ANCHORING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RUNS, PIPE RUNS, ETC., IT MUST BE CLEARLY UNDERSTOOD THAT TENDONS AND/OR REINFORCING STEEL WILL NOT BE DRILLED INTO, CUT OR DAMAGED UNDER ANY CIRCUMSTANCES.

20 LOCATION OF TENDONS AND/OR REINFORCING STEEL ARE NOT DEFINITELY KNOWN AND THEREFORE MUST BE SEARCHED FOR BY APPROPRIATE METHODS AND EQUIPMENT VIA X-RAY OR OTHER DEVICES THAT CAN ACCURATELY LOCATE THE REINFORCING AND/OR STEEL TENDONS.

21 PENETRATIONS IN FIRE RATED WALLS SHALL BE FIRE STOPPED IN ACCORDANCE WITH SECTION NO. 4305 AND NO. 4304 OF THE U.B.C.

22 RECEPTACLES SHALL BE 20 AMPERE, 125 VOLT A.C., WHITE AS REQUIRED BY THE ARCHITECT OR APPROVED EQUAL.

23 WALL SWITCHES SHALL BE SINGLE-POLE, HUBBELL #1201 OR EQUIVALENT, WHITE AS REQUIRED BY THE ARCHITECT.

24 PLASTIC PLATES FOR ALL SWITCHES, RECEPTACLES, TELEPHONE AND BLANKED OUTLETS, SHALL HAVE ENGRAVED LETTERING WHERE INDICATED ON THE DRAWINGS. WEATHERPROOF RECEPTACLES SHALL HAVE RACO #800, 1/2" RAISED WORK COVERS.

25 WIRE AND CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM, NO BX OR ROMEX CABLE IS PERMITTED UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWINGS.

26 GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2.

27 GROUND RODS SHALL BE COPPER CLAD STEEL, 5/8" ROUND AND 10' LONG. COPPERWELD OR APPROVED EQUAL.

28 METER SOCKET AMPERES, VOLTAGE, NUMBER OF PHASES SHALL BE AS NOTED ON THE DRAWINGS. MANUFACTURED BY SQUARE D COMPANY OR APPROVED EQUAL.

29 ALL MATERIALS SHALL BE U.L. LISTED.

30 CONDUIT:
- a. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR RIGIDCONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
- b. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL, FITTINGS SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS. EMT SHALL ALWAYS GET A GROUND CONDUCTOR AS REDUNDANT GROUNDING.
- c. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE, SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL HAVE FULL SIZE GROUND WIRE.
- d. ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH OF 24" BELOW GRADE.

31 ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.

32 UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.

33 CONTRACTOR TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS TO BE PAID BY CONTRACTOR.

GENERAL ELECTRICAL NOTES

1. CONDUIT LAYOUTS SHOWN ON THE PLANS ARE DIAGRAMMATIC. NOT INDICATING THE EXACT ROUTING REQUIRED. THE CONTRACTOR SHALL ROUTE CONDUITS AS REQUIRED BY THE CONDITIONS OF INSTALLATION.
2. ALL EQUIPMENT PROVIDED BY THE ELECTRICAL CONTRACTOR SHALL BE LISTED AND LABELED BY A NATIONALLY-RECOGNIZED TESTING AGENCY, ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION, FOR THE CONDITIONS OF INSTALLATION.
3. DEVICE LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. EXACT DEVICE LOCATIONS SHALL BE AS INDICATED ON THE ARCHITECTURAL PLANS OR AS DIMENSIONED. IF NOT SHOWN ON THE ARCHITECTURAL PLANS OR DIMENSIONED ON THE ELECTRICAL PLANS, VERIFY EXACT LOCATION WITH THE ARCHITECT PRIOR TO ROUGH-IN.
4. ALL WIRE COUNTS ARE TYPICALLY NOT SHOWN BETWEEN LIGHT FIXTURES OR RECEPTACLES. PROVIDE ALL REQUIRED EVEN WHERE NOT SHOWN.
5. WHERE SIZE IS NOT SHOWN ON THE DRAWINGS, CIRCUITS SHALL CONSIST OF #12 PHASE AND GROUNDED (NEUTRAL CONDUCTORS) AND A #12 CU GROUND IN 3/4" CONDUIT. MC CABLE SHALL BE ACCEPTABLE IN WALLS. ALL BRANCH CIRCUIT HOME-RUNS SHALL BE IN CONDUIT.
6. UNLESS SPECIFICALLY NOTED OTHERWISE, THE ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL UTILIZATION EQUIPMENT SHOWN ON THE DRAWINGS. VERIFY THE TYPE OF FINAL CONNECTION AND PROVIDE APPROPRIATE WIRING METHOD.
7. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL, PLUMBING AND GENERAL CONTRACTORS, PRIOR TO ORDERING OR INSTALLATION OF ANY EQUIPMENT, MECHANICAL AND PLUMBING EQUIPMENT REQUIREMENTS ARE PROVIDED IN THE ELECTRICAL DESIGN. THE CONTRACTOR WILL NOT BE COMPENSATED FOR COSTS ASSOCIATED WITH CHANGING THE ELECTRICAL SYSTEMS TO MATCH UTILIZATION EQUIPMENT, EVEN IF THE ELECTRICAL WORK IS INSTALLED PER THE ELECTRICAL DRAWINGS.
8. INSULATION & WIRE TYPES SHALL BE AS FOLLOWED: PANEL FEEDERS - XHHW COPPER, WIRING ABOVE GRADE - THHN COPPER, WIRING BELOW GRADE - THWN COPPER, UNLESS NOTED OTHERWISE.
9. SOME CONDUCTOR SIZES ARE BASED ON THE USE OF 75 DEGREE C CONDUCTOR RATINGS. THE CONTRACTOR SHALL VERIFY, PRIOR TO INSTALLATION OF CONDUCTORS OR CONDUIT FEEDING ANY EQUIPMENT, THAT ALL ELECTRICAL EQUIPMENT IS RATED FOR USE WITH 75 DEGREE C WIRING. IF ANY EQUIPMENT IS RATED FOR USE WITH LESS THAN 75 DEGREE C CONDUCTORS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR EVALUATION/CORRECTION.
10. UNLESS SPECIFICALLY NOTED OTHERWISE, SYSTEMS PROVIDED OR INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL BE COMPLETE AND FULLY-FUNCTIONING AFTER INSTALLATION. COMPONENTS NOT SHOWN, BUT REQUIRED FOR THE PROPER OPERATION OF THE EQUIPMENT OR SYSTEM, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE PROJECT.
11. THE CONTRACTOR SHALL PERFORM ALL ACCEPTANCE TESTS REQUIRED OR RECOMMENDED BY EQUIPMENT MANUFACTURERS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER SEVEN (7) DAYS PRIOR TO TESTING AND SHALL ALLOW OBSERVATION OF THE TESTING BY THE ENGINEER.
12. ALL RECEPTACLES INSTALLED WITHIN 6 FEET OF A SINK SHALL BE GFI PROTECTED.
13. UNLESS OTHERWISE NOTED, ALL EQUIPMENT DISCONNECTS SHALL BE NEMA TYPE 3R, FUSIBLE, 30A, 3 POLE. FUSE PER EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS.
14. ALL PENETRATIONS IN WALLS SHALL BE SEALED WITH FLEXIBLE ACOUSTIC CAULKING. CAULKING SHALL BE APPLIED AROUND OUTLET BOXES TO PROVIDE A COMPLETE SEAL BETWEEN THE BOX AND THE WALL.
15. PRIOR TO TRENCHING IN ANY AREA, THE CONTRACTOR SHALL CONTACT ELECTRICAL, COMMUNICATIONS/DATA, CABLE TV, GAS, AND WATER UTILITY PROVIDERS (BLUE STAKE) AND HAVE ALL UTILITIES IN THE AREA IDENTIFIED. IN ADDITION, THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A SUBCONTRACTOR SPECIALIZING IN THE LOCATION OF UNDERGROUND STRUCTURES TO IDENTIFY ANY OBSTACLES IN THE PATH OF TRENCHING (PRIOR TO COMMENCING WORK). DAMAGE TO ANY UNDERGROUND STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.
16. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH LOCAL AND STATE CODES INCLUDING THE NEC
17. OVER CURRENT DEVICES SHALL BE LOCATED WHERE THEY WILL NOT BE EXPOSED TO PHYSICAL DAMAGE.
18. HOMERUNS SHALL NOT BE GANGED TOGETHER UNLESS SHOWN GANGED.
19. CONTRACTOR SHALL CONTACT ENGINEER IN WRITING (RFI) PRIOR TO PROCEEDING WITH ANY WORK NOT CLEARLY SHOWN ON THESE CONTRACT DOCUMENTS. ENGINEER WILL NOT ACCEPT ANY RESPONSIBILITY FOR WORK HE HAS NOT EXPLICITLY AUTHORIZED.
20. PROVIDE IDENTIFICATION AT THE DISTRIBUTION PANEL FOR BRANCH CIRCUITS THAT FEED EMERGENCY LIGHTING UNIT EQUIPMENT.
21. ELECTRICAL EQUIPMENT THAT IS LIKELY TO REQUIRE MAINTENANCE WHILE ENERGIZED SHALL BE PROPERLY MARKED TO WARN PERSONNEL OF ARC FLASH HAZARD.
22. PROVIDE A #18 OR LARGER COPPER TRACER WIRE SECURELY ATTACHED TO THE NON-METALLIC CABLE, PIPE OR CONDUIT AT 8'-0" ON CENTER. IT SHALL HAVE A 12" OF TRACER WIRE ACCESSIBLE ABOVE GRADE AT ANY ABOVE GRADE TERMINATION PER ARIZONA STATE STATUTE.
23. UTILITY COORDINATION
- a. THE CONTRACTOR SHALL SUBMIT A COMPLETE SET OF DRAWINGS TO ELECTRICAL AND TELCO UTILITIES AS REQUIRED FOR DESIGN.
- b. THE CONTRACTOR SHALL NOT TRENCH OR INSTALL CONDUITS (ON THE UTILITY OR LOAD SIDE) TO THE SES OR TO THE UTILITY TRANSFORMER (PRIMARY OR SECONDARY), OR TO THE UTILITY CONNECTION POINT BEFORE RECEIVING A FINAL DESIGN FROM THE UTILITY.
- c. THE CONTRACTOR SHALL NOT INSTALL EQUIPMENT PADS FOR THE SES OR ANY UTILITY EQUIPMENT (TRANSFORMERS, SWITCHING CABINETS, ETC) PRIOR TO RECEIPT OF FINAL PLANS FROM THE UTILITY.
- d. THE CONTRACTOR SHALL NOT BE COMPENSATED FOR ADDITIONAL WORK REQUIRED TO MEET THE REQUIREMENTS OF THE UTILITY WHICH IS THE RESULT OF PROCEEDING PRIOR TO RECEIPT OF A FINAL UTILITY DESIGN.

24. SERIES RATING NOTES:

A. WHERE A CIRCUIT BREAKER IS USED ON A CIRCUIT HAVING AN AVAILABLE FAULT CURRENT HIGHER THAN THE MARKED INTERRUPTING RATING BY BEING CONNECTED ON THE LOAD SIDE OF AN ACCEPTABLE OVERCURRENT PROTECTIVE DEVICE HAVING A HIGHER RATING, THE CIRCUIT BREAKER SHALL MEET THE REQUIREMENTS SPECIFIED IN (1) AND (2).

(1). TESTED COMBINATIONS. THE COMBINATION OF LINE-SIDE OVERCURRENT DEVICE AND LOAD-SIDE CIRCUIT BREAKER(S) IS TESTED AND MARKED ON THE END USE EQUIPMENT, SUCH AS SWITCHBOARDS AND PANELBOARDS.

(2). MOTOR CONTRIBUTION. SERIES RATINGS SHALL NOT BE USED WHERE
- a. MOTORS ARE CONNECTED ON THE LOAD SIDE OF THE HIGHER-RATED OVERCURRENT DEVICE AND ON THE LINE SIDE OF THE LOWER-RATED OVERCURRENT DEVICE, AND
- b. THE SUM OF THE MOTOR FULL-LOAD CURRENTS EXCEEDS 1 PERCENT OF THE INTERRUPTING RATING OF THE LOWER-RATED CIRCUIT BREAKER.

B. WHERE CIRCUIT BREAKERS OR FUSES ARE APPLIED IN COMPLIANCE WITH THE SERIES COMBINATION RATINGS MARKED ON THE EQUIPMENT BY THE MANUFACTURER, THE EQUIPMENT ENCLOSURE(S) SHALL BE LEGIBLY MARKED IN THE FIELD TO INDICATE THE EQUIPMENT HAS BEEN APPLIED WITH A SERIES COMBINATION RATING. THE MARKING SHALL BE READILY VISIBLE AND STATE THE FOLLOWING:
CAUTION - SERIES COMBINATION SYSTEM RATED ____ AMPERES.
IDENTIFIED REPLACEMENT COMPONENTS REQUIRED

C. TESTED COMBINATIONS. THE COMBINATION OF THE LINE-SIDE OVERCURRENT DEVICE AND LOAD SIDE CIRCUIT BREAKER(S) IS TESTED AND MARKED ON THE END USE EQUIPMENT, SUCH AS SWITCHBOARDS AND PANELBOARDS.

SYMBOL LIST
(NOT ALL MAY BE USED)

ELECTRICAL SYMBOLS

- FLUORESCENT STRIP FIXTURE, LENGTH PER PLAN.
- SURFACE WALL-MOUNTED LIGHT FIXTURE.
- SOLID "J-BOX" ON ANY FIXTURE INDICATES A FIXTURE WITH AN INTEGRAL EMERGENCY POWER SUPPLY, PER THE SPECIFICATIONS.
- POLE-MOUNTED LIGHT FIXTURE.
- SINGLE POLE TOGGLE SWITCH
- PC PHOTOCELL , MOUNTED ON ROOF UNLESS NOTED OTHERWISE.
- DUPLEX CONVENIENCE RECEPTACLE
- GFCI "CROSS SLASH" ON ANY RECEPTACLE INDICATES INTEGRAL GROUND FAULT PROTECTION.
- DOUBLE DUPLEX (FOURPLEX) CONVENIENCE RECEPTACLE
- J C F JUNCTION BOX. 'C' INDICATES CEILING MOUNTED. 'F' INDICATES FLOOR MOUNTED (SUBSCRIPTS ARE TYPICAL FOR ALL DEVICES)
- VOICE OUTLET
- DATA OUTLET
- COMBINATION TELEPHONE AND DATA OUTLET IN THE SAME BOX
- HP HORSEPOWER RATED MANUAL MOTOR SWITCH
- FUSIBLE DISCONNECT SWITCH FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UNLESS, NOTED OTHERWISE. SIZE AND FUSES AS PER RECOMMENDATIONS OF EQUIPMENT'S MANUFACTURER OR AS NOTED. 30A, 3P, 250V, NEMA 3R UNLESS NOTED OTHERWISE. (N. INDICATES NON-FUSED).
- ELECTRICAL MOTOR. SEE DRAWINGS FOR SIZE.
- DISTRIBUTION PANELBOARD, MOTOR CONTROL CENTER OR SERVICE ENTRANCE SECTION. SEE DRAWINGS FOR EXACT TYPE.
- T DISTRIBUTION TRANSFORMER
- SURFACE MOUNTED PANEL BOARD.
- FLUSH MOUNTED PANEL BOARD.
- TMB TELEPHONE MOUNTING BOARD.
- TEST WELL/GROUND ROD
- GROUND ROD - 5/8" x 10' COPPER CLAD
- CADWELD CONNECTION
- MECHANICAL CONNECTION
- GROUNDING WIRE
- GROUND BAR
- SURGE SUPPRESSOR GROUND BAR
- M METER AND MAIN BREAKER
- MANUAL XFR SWITCH AND GEN. RECPT.
- GPS ANTENNA
- ELECTRICAL POWER
- T-1 LINE

WIRE AND CONDUIT

- FLEXIBLE CONDUIT
- CONDUIT CONCEALED IN WALLS OR ABOVE CEILING W/ 2 #12, #12 GND, 3/4" C., UNLESS NOTED OTHERWISE.
- CONDUIT ROUTED UNDER FLOOR OR BELOW GRADE W/ 2 #12, #12 GRD., 3/4" C., UNLESS NOTED OTHERWISE.
- CONDUIT TURNING UP.
- CONDUIT TURNING DOWN.

1-LINE DIAGRAM

- CIRCUIT BREAKER, FIXED MOUNTED.
- CIRCUIT BREAKER, DRAWOUT MOUNTING.
- FUSIBLE SWITCH. SIZE AS INDICATED ON DRAWINGS.
- TRANSFORMER. SEE ONE-LINE FOR TYPE AND SPECIFICATION.
- CURRENT TRANSFORMER
- M METERING DEVICE
- PANELBOARD, MAIN LUG ONLY
- PANELBOARD, MAIN CIRCUIT BREAKER
- TRANSFER SWITCH - MANUAL OR AUTOMATIC
- INDICATES A FEED-THROUGH LUG CONNECTION
- UNINTERRUPTIBLE POWER SUPPLY
- G GENERATOR WITH INTEGRAL PROTECTION
- WEATHERHEAD

SHEET INDEX

E-1	SPECS/GENERAL NOTES/LEGENDS/SHEET INDEX
E-2	ONE-LINE / PANEL SCHEDULE

ABBREVIATIONS

C.O.	= CONDUIT ONLY
PVC.	= SCHEDULE 40 PLASTIC CONDUIT
GRC.	= GALVANIZED RIGID CONDUIT
MTD.	= MOUNTED
W.P.	= WEATHERPROOF
U.O.N.	= UNLESS OTHERWISE NOTED
G. OR GRD.	= GROUND
N. OR NEUT.	= NEUTRAL
A. OR AMP.	= AMPERE
KW.	= KILOWATTS
W.	= WATTS
~	= PHASE
DIA	= DIAMETER
H.P. OR HP	= HORSEPOWER
XFMR	= TRANSFORMER
C.B.	= CIRCUIT BREAKER
CKT.	= CIRCUIT
SW.	= SWITCH
MTS	= MANUAL TRANSFORMER SWITCH
F.A.	= FIRE ALARM
RECPT.	= RECEPTACLE
E.C.	= ELECTRIC CONTRACTOR
G.C.	= GENERAL CONTRACTOR
1P, 2P, & 3P	= SINGLE POLE, TWO POLE, & THREE POLE
EGB	= EQUIPMENT GROUND BUS
MGB	= MAIN GROUND BUS
AFC	= AVAILABLE FAULT CURRENT
AWG	= AMERICAN WIRE GAUGE
BTCW	= BARE TINNED COPPER WIRE
GPS	= GLOBAL POSITIONING SYSTEM
PPC	= POWER PROTECTION CABINET
TYP.	= TYPICAL
RGS	= RIGID GALVANIZED STEEL
EMT	= ELECTRICAL METALLIC TUBING
DWG	= DRAWING
BTS	= BASE TRANSMISSION SYSTEM
GEN	= GENERATOR
BSCW	= BARE STRANDED COPPER WIRE
ISCW	= INSULATED STRANDED COPPER WIRE

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TEMPE, AZ 85282

PLANS PREPARED BY:

SBA

8051 CONGRESS AVE.
BOCA RATON, FL 33487

SMW ENGINEERING GROUP, INC.

TOGETHER PLANNING A BETTER TOMORROW

Registered Professional Engineer (Electrical)
CERTIFICATE NO.
44749
TIM ALEXANDER
28 APR 2022
Date Signed
ARIZONA, U.S.A.

EXPIRES: 30 JUN 2024

SITE INFORMATION:
PH68207A
PH68207A
555 MILLER ROAD
CLARKDALE, AZ 86324

#	DATE	DESCRIPTION:
0	04/28/22	ISSUED FOR CONSTRUCTION

SBA SITE NUMBER: AZ17727-B

SBA SITE NAME: CLARKDALE

SHEET NAME:
ELECTRICAL NOTES

SMW #: 22-10256

DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS

SHEET NUMBER:
E-1

NOTES:

1) #6 COPPER WIRE AND GREATER SHALL BE (COPPER) THWN WIRE OR (COPPER) XHHW.
2) PRIOR TO RUNNING CONDUIT ROUTE – CONTRACTOR SHALL CONTACT THE T–MOBILE PROJECT MANAGER AND VERIFY THE EQUIPMENT CABINET LAYOUT CONFIGURATION AND ROUTE CONDUITS ACCORDINGLY.
3) PRE–CONSTRUCTION MEETING AND ELECTRICAL EASEMENT REQUIRED.
4) CONTRACTOR SHALL TAG EACH CIRCUIT CONDUCTOR AT EACH J–BOX, OUTLET, SWITCH, ETC. WITH THE CIRCUITS IDENTIFICATION.

DIAGRAM CIRCUIT SCHEDULE

NO.	FROM	TO	WIRES	GROUND	CONDUIT SIZE	FUNCTION
1	NORMAL POWER SOURCE	AUTOMATIC TRANSFER SWITCH	(3) 3/0	(1) #4	2"	NORMAL POWER FEEDER TO PANEL AND ATS
2	GENERATOR	AUTOMATIC TRANSFER SWITCH	(3) 3/0	(1) #4	2"	STANDBY POWER FEEDER TO ATS
3	AUTOMATIC TRANSFER SWITCH	AC PANEL	(3) 3/0	(1) #4	2"	UTILITY OR STANDBY POWER TO AC PANEL
4	PANEL	GENERATOR	(4) #12	(1) #12	1"	HEATER AND BATTERY CHARGER
5	PANEL	AUTOMATIC TRANSFER SWITCH	(2) #12	(1) #12	1"	ATS CONTROLLER
6	ATS	GENERATOR	(2) #14	N/A	1"	NO VOLTAGE ON THESE JUST A CONTACT
7	GENERATOR	TELCO BOARD	(2) #14	N/A	1"	NO VOLTAGE ON THESE JUST A CONTACT
8	AUTOMATIC TRANSFER SWITCH	TELCO BOARD	(2) #14	N/A	1"	NO VOLTAGE ON THESE JUST A CONTACT

1 CABLE & CONDUIT SCHEDULE

PH68207A / NEW 200A AC PANEL, PROPOSED BREAKER SCHEDULE

	LOAD DESCRIPTION	VOLT-AMPS	LOADS CONTINUOUS	LOADS NONCONTINUOUS	BREAKER	LOAD PER PHASE "A"	LOAD PER PHASE "B"	BREAKER	LOADS NONCONTINUOUS	LOADS CONTINUOUS	VOLT-AMPS	LOAD DESCRIPTION	
1	HPL3 CABINET	12000	C		200	12001		60		C	1	SURGE PROTECTION	2
3		12000	C				12001			C	1		4
5						180		20	NC		180	GFCI	6
7							300	20		C	300	LIGHT	8
9	BLANK					0						BLANK	10
11	BLANK						0					BLANK	12
13	BLANK					0						BLANK	14
15	BLANK						0					BLANK	16
17	BLANK					0						BLANK	18
19	BLANK						0					BLANK	20
21	BLANK					0						BLANK	22
23	BLANK						0					BLANK	24
25	BLANK					0						BLANK	26
27	BLANK						0					BLANK	28
29	BLANK					0						BLANK	30
31	BLANK						0					BLANK	32
33	BLANK					0						BLANK	34
35	BLANK						0					BLANK	36
37	BLANK					0						BLANK	38
39	BLANK						250	20	NC		250	BATTERY CHARGER	40
41	BLANK					1000		20	NC		1000	BLOCK HEATER	42
	CONNECTED PHASE TOTALS, VA:					13181	12551						

CONNECTED LOAD PER PHASE, AMPS:	110	105
CONNECTED LOAD PER PHASE, KVA:	13.181	12.551
TOTAL CONNECTED LOAD, KVA:	25.732	
NONCONTINUOUS LOAD PER PHASE, KVA:	1.180	0.250
TOTAL NONCONTINUOUS LOAD, KVA:	1.430	
CONTINUOUS LOAD PER PHASE, KVA:	15.001	15.376
TOTAL CONTINUOUS LOAD, KVA:	30.378	
DEMAND LOAD (CONT + NONCONT) PER PHASE, KVA:	16.181	15.626
TOTAL DEMAND LOAD (CONTINUOUS + NONCONTINUOUS), KVA:	31.808	
TOTAL DEMAND LOAD (CONT + NONCONT), AMPS:	135	130
PANEL CAPACITY, KVA:	48.000	
SPARE PANEL CAPACITY, KVA:	16.193	

AC PANEL DATA	
SYSTEM VOLTAGE:	240
MAIN BREAKER:	200
BUSS RATING:	200
MAIN LUG ONLY:	N/A
KAIC RATING:	42/10 KAIC SEREIS-RATED
NOTES:	

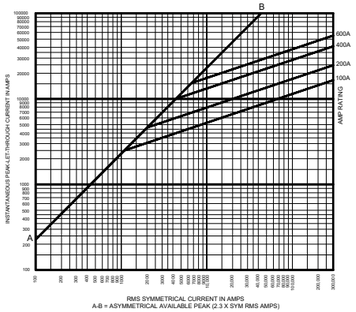
1) THIS IS A NEW 120/240V, 200A, 1ø NEMA 3R AC POWER PANEL.
2) FURNISH PANEL DIRECTORY.

2 NEW 200A AC PANEL, PROPOSED BREAKER SCHEDULE

Low-Peak™ LPJ Class J 600Vac/300Vdc, 70-600A, dual element, time-delay fuses

Technical Data 1007
Effective August 2018

Current-limitation curves:



Current-limiting effects:

Prospective S.C.C..	Let-through current (apparent RMS symmetrical vs. fuse rating) 100A	200A	400A	600A
1000	1000	1000	1000	1000
3000	2000	2000	3000	3000
5000	2000	3000	5000	5000
10,000	2000	4000	6000	8000
15,000	3000	4000	7000	9000
20,000	3000	4000	7000	10,000
25,000	3000	5000	8000	10,000
30,000	3000	5000	8000	11,000
35,000	4000	5000	9000	12,000
40,000	4000	6000	9000	12,000
50,000	4000	6000	10,000	13,000
60,000	4000	6000	11,000	14,000
80,000	5000	7000	12,000	15,000
100,000	5000	8000	12,000	17,000
150,000	6000	9000	14,000	19,000
200,000	6000	9000	16,000	21,000
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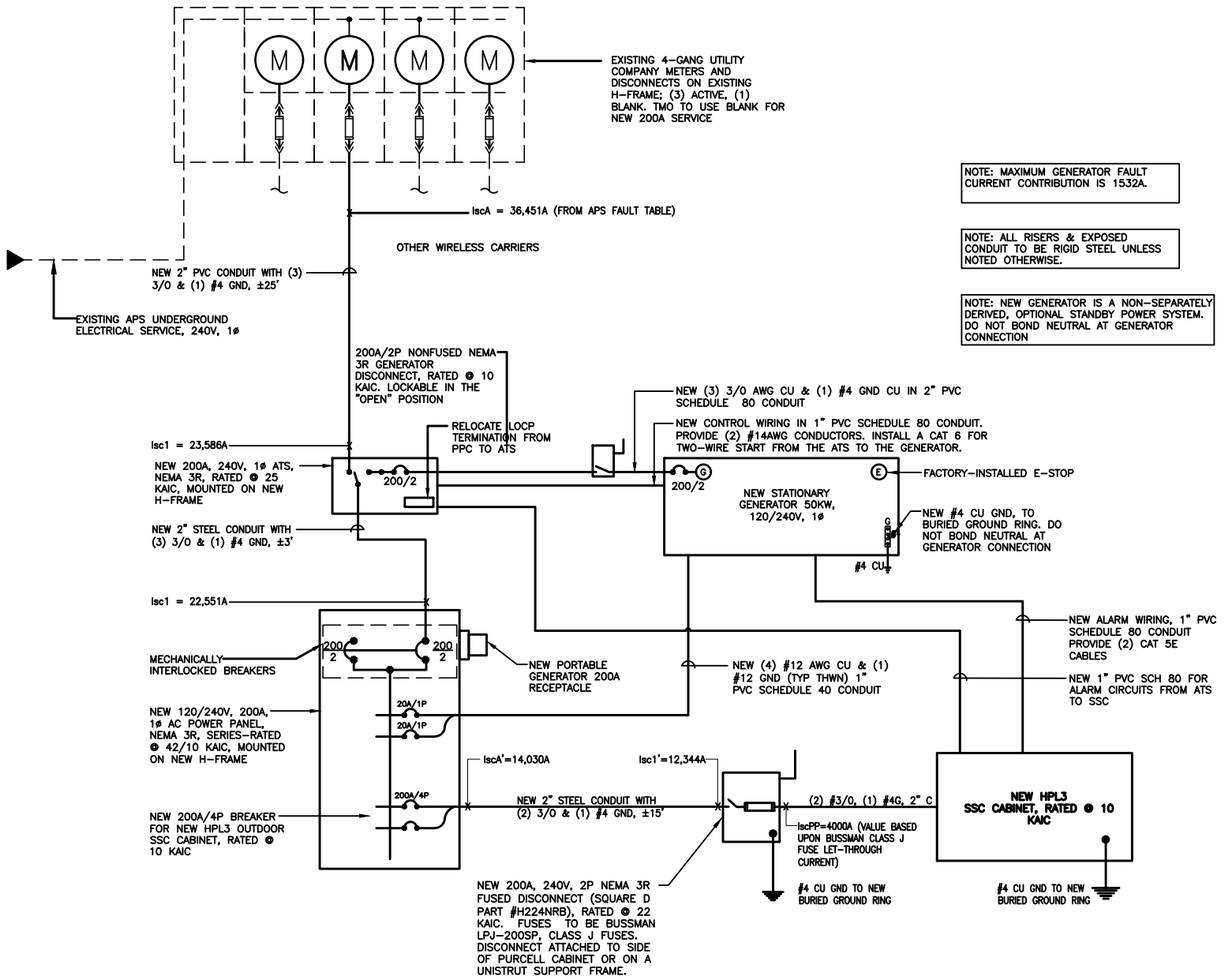
300,000	7000	11,000	18,000	24,000



3 SINGLE-LINE DIAGRAM

NOTE: MAXIMUM GENERATOR FAULT CURRENT CONTRIBUTION IS 1532A.

NOTE: ALL RISERS & EXPOSED CONDUIT TO BE RIGID STEEL UNLESS NOTED OTHERWISE.

NOTE: NEW GENERATOR IS A NON–SEPARATELY DERIVED, OPTIONAL STANDBY POWER SYSTEM. DO NOT BOND NEUTRAL AT GENERATOR CONNECTION

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Registered Professional Engineer (Electrical)
CERTIFICATE NO. 44749
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Date Signed 28 APR 2022
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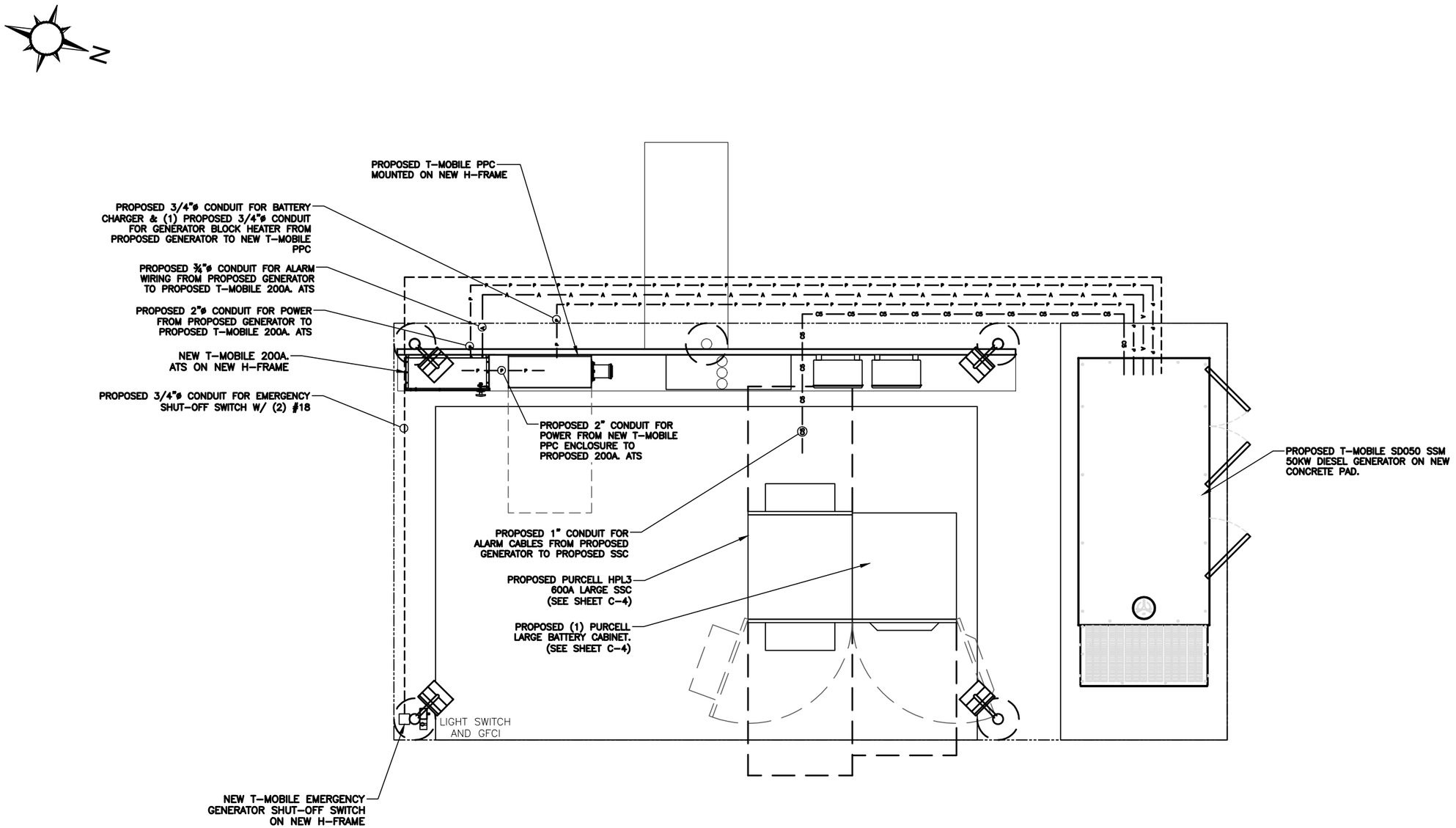
SBA SITE NAME: CLARKDALE

SHEET NAME:
ONE-LINE / PANEL SCHEDULE

SMW #: 22–10256
SHEET NUMBER: E-2

DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS



1 CONDUIT PLAN

2' 0' 1' 2'

FOR 24"x36" DRAWINGS
GRAPHIC SCALE: 3/4" = 1'-0"
FOR 11"x17" DRAWINGS
GRAPHIC SCALE: 3/8" = 1'-0"

ALL CONDUIT TO BE DIRECT BURY. ANY ABOVE GROUND CONDUIT NEEDS TO BE RIGID METAL - ALL CONDUIT TO BE STUBBED THROUGH NEW SLAB INTO BOTTOM OF GENERATOR

THE CONDUIT ROUTING IS DIAGRAMMATICALLY SHOWN ON THE PLANS AND ARE ONLY APPROXIMATIONS. THE EXACT LOCATION AND ROUTING SHALL BE FIELD VERIFIED. PROPER JUDGEMENT MUST BE EXERCISED IN EXECUTING THE WORK SO AS TO SECURE THE BEST POSSIBLE INSTALLATION IN THE AVAILABLE SPACE LIMITATIONS OR INTERFERENCE OF STRUCTURE CONDITIONS ENCOUNTERED.

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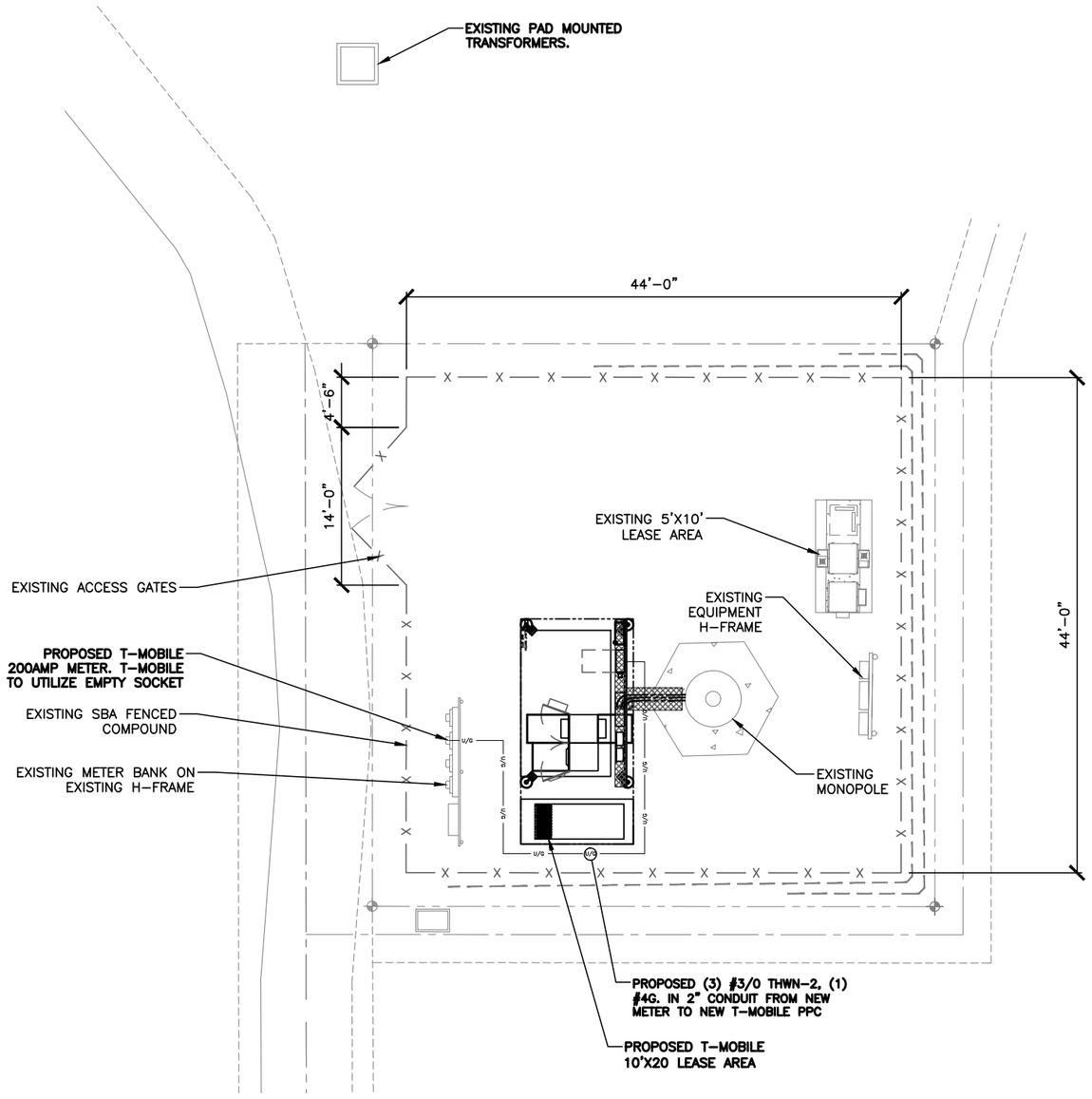
AZ17727-B	CLARKDALE

SHEET NAME:
CONDUIT PLAN

SMW #: 22-10256

DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS

SHEET NUMBER:
E-3



ELECTRICAL NOTES:

1. THIS DIAGRAM REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.
3. PROPOSED WORK BASED ON INSTALLATION CONFIGURATION PROVIDED BY T-MOBILE. CONTRACTOR TO VERIFY PROPOSED T-MOBILE PANEL WILL HAVE SUFFICIENT SPACE FOR PROPOSED BREAKER.
4. POWER COORDINATION PROVIDED BY COAL CREEK CONSULTING. CONTACT INFORMATION: STEVE MOOREHEAD 602-326-0002

1 UTILITY ROUTING PLAN

4' 0' 2' 4'

FOR 24"x36" DRAWINGS
GRAPHIC SCALE: 1/2" = 1'-0"
FOR 11"x17" DRAWINGS
GRAPHIC SCALE: 1/4" = 1'-0"

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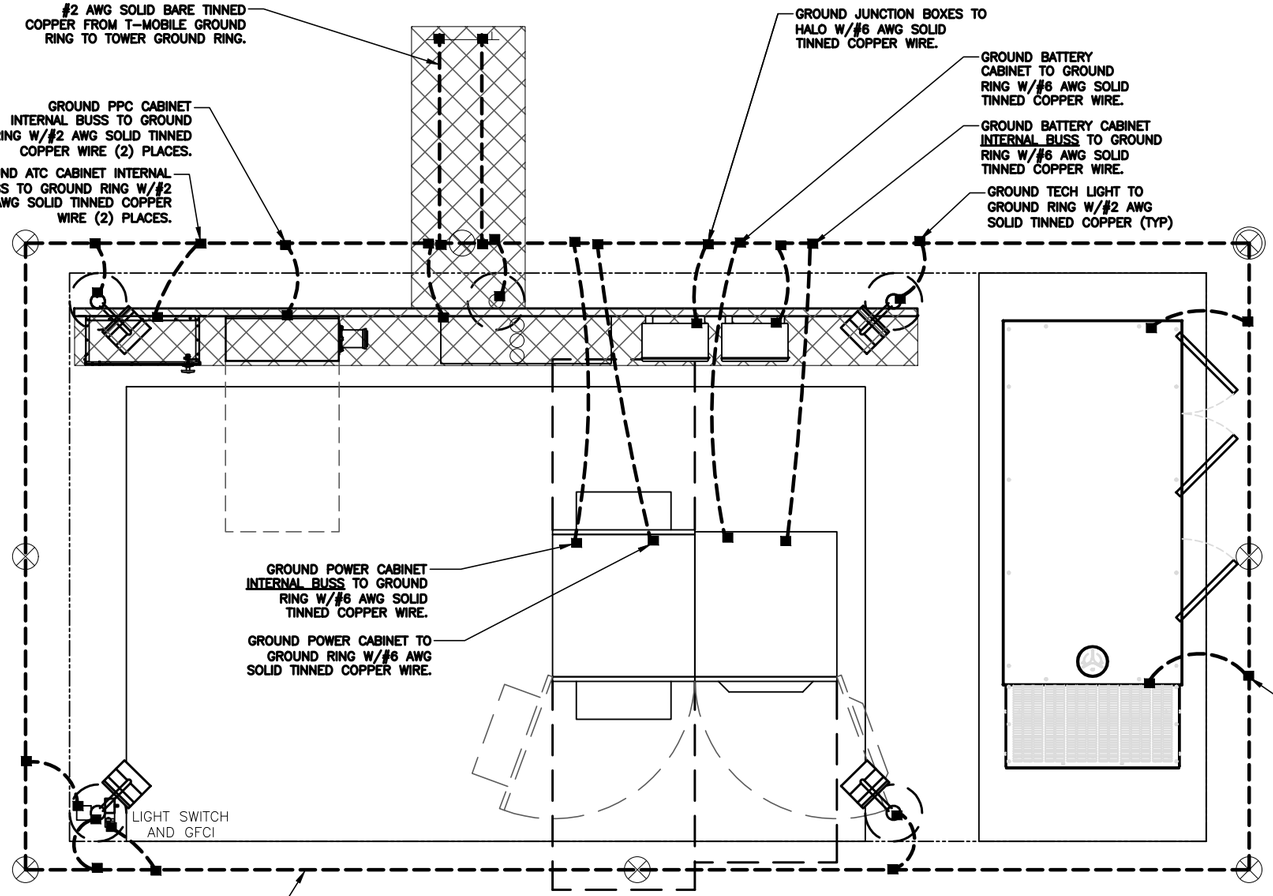
AZ17727-B	CLARKDALE

SHEET NAME:

UTILITY ROUTING PLAN

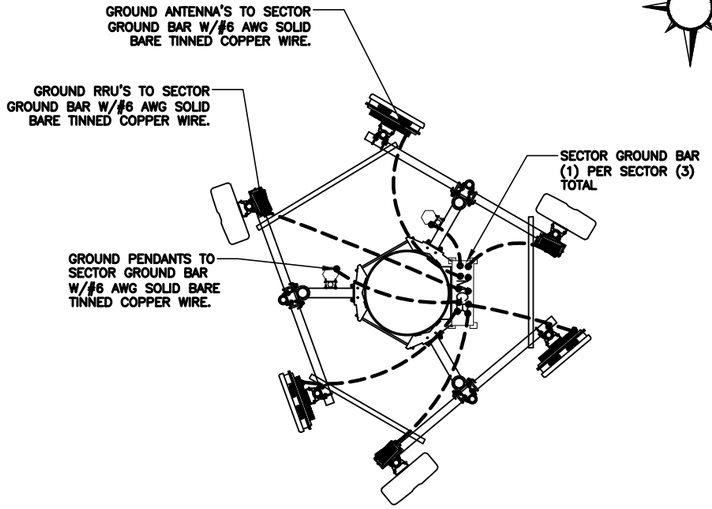
SMW #:	SHEET NUMBER:
22-10256	E-4

DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS



1 SITE GROUNDING PLAN

NOT TO SCALE



GROUNDING PLAN LEGEND:

EXISTING GROUND WIRE	COPPER GROUND ROD
GROUND WIRE	
EXOTHERMIC WELD	TEST WELL
MECHANICAL WELD	

GROUNDING NOTES:

1. ALL EQUIPMENT ENCLOSURES, DEVICES AND CONDUITS SHALL BE GROUNDED TO CONFORM WITH THE LATEST REQUIREMENTS OF THE NEC BY THE INSTALLATION OF A SEPARATE, GREEN, INSULATED GROUND CONDUCTOR FOR ALL FEEDER AND BRANCH CIRCUITS. GROUND CONDUCTORS SHALL BE OF THE SIZE INDICATED ON THE DRAWINGS. GROUND CONDUCTORS SHALL BE CONTINUOUS IN LENGTH AND SHALL BE BONDED TO EACH ENCLOSURE THEY PASS THROUGH. CONDUIT SHALL NOT BE USED AS A GROUNDING CONDUCTOR.

2. GROUNDING CONDUCTORS SHALL:
   - A. BE #2 AWG SOLID BARE TINNED COPPER (SBTC) FOR ALL GROUNDING SYSTEM WIRE UNLESS OTHERWISE NOTED, OR OTHERWISE REQUIRED BY CODE.
   - B. BE MINIMUM 12" BEND RADIUS. KEEP NUMBER OF BENDS TO A MINIMUM.
   - C. AVOID LONG BONDING CONNECTION RUNS. MAKE DIRECT AS POSSIBLE.
   - D. NOT HAVE ANY U-SHAPED RUNS.
   - E. BE IN NON-METALLIC CONDUIT ONLY, IF IN CONDUIT.
   - F. BE PLACED THROUGH NON-METALLIC SLEEVES IN FLOORS, WALLS, CEILINGS, ETC.
   - G. PROTECTED IN NON-METALLIC CONDUIT WHERE EXPOSED ABOVE GRADE.

2. INSTALL ALL GROUNDING RINGS AND RADIALS WITH CONDUCTIVE CEMENT, SANKOSHA AS DISTRIBUTED BY ELECTRIC MOTION COMPANY, INC., WINSTED, CT 06098, OR AS SPECIFICALLY INDICATED. INSTALL PER MANUFACTURER'S SPECIFICATIONS.

3. GROUND RINGS SHALL BE:
   - A. MINIMUM 30" BELOW GRADE, OR BELOW FROST LINE WHICHEVER IS DEEPER.
   - B. MINIMUM 2' FROM FOUNDATIONS, FOOTINGS, OTHER GROUNDING SYSTEMS AND ALL CONDUCTIVE OBJECTS.
   - C. WITH MINIMUM 12" BEND RADII.
   - D. WITH ALL CONNECTIONS IN CONTACT WITH EARTH, BONDED BY EXOTHERMIC WELDING.
   - E. BONDED TO A SINGLE POINT GROUND (SPG) WITH A SINGLE WIRE AS INDICATED ON DRAWINGS.

4. GROUND RODS SHALL BE:
   - A. MINIMUM 5/8" DIAMETER.
   - B. MINIMUM 10' LONG.
   - C. COPPER-CLAD GALVANIZED STEEL OR STAINLESS STEEL.
   - D. PLACED IN UNDISTURBED SOIL AND BELOW THE FROST LINE.
   - E. INSTALLED WITH MINIMUM SEPARATION DISTANCE OF TWICE THE DEPTH OF THE ROD(S), OR AS INDICATED ON DRAWINGS.
   - F. MINIMUM TWO (2) RODS ON THE TOWER RING OR ONE (1) PER LEG WHICHEVER IS LARGER, MINIMUM FOUR (4) RODS ON EVERY EQUIPMENT BUILDING RING WITH ONE AT EACH CORNER OR AS INDICATED, MINIMUM ONE (1) ROD FOR POWER SERVICE GROUNDING ELECTRODE, AND MINIMUM ONE (1) ROD AT END OF EACH RADIAL.

5. CONDUCTIVE OBJECTS, SUCH AS FENCES, SHALL BE BONDED TO THE GROUNDING SYSTEM IF WITHIN 20' OF THE TOWER GROUNDING SYSTEM, OR 5' OF ANY OTHER GROUNDED COMPONENT.

T-Mobile

1330 WEST SOUTHERN AVE. STE A-102
TEMPE, AZ 85282

PLANS PREPARED BY:

SBA

8051 CONGRESS AVE.
BOCA RATON, FL 33487

SMW ENGINEERING GROUP, INC.

TOGETHER PLANNING A BETTER TOMORROW

Registered Professional Engineer (Civil)
CERTIFICATE NO.
71982
JUDSON C.
SOMMERVILLE
DATE SIGNED 4/28/22
ARIZONA U.S.A.

Expiration Date 09/30/2023

SITE INFORMATION:

PH68207A

PH68207A

555 MILLER ROAD
CLARKDALE, AZ 86324

#	DATE	DESCRIPTION:
0	04/28/22	ISSUED FOR CONSTRUCTION

SBA SITE NUMBER:	SBA SITE NAME:
AZ17727-B	CLARKDALE

SHEET NAME:

SITE GROUNDING PLAN

SMW #:	SHEET NUMBER:
22-10256	G-1

DESIGNER:	KMM
CHECKED BY:	MSA
ENGINEER:	JDS

Staff Report

Item Number: 6.A.

Agenda Item: **SBA Communications Conditional Use Permit - Application no. 093514**
Discussion and possible action to approve Application No. 093514, a Conditional Use Permit for co-location of wireless T-Mobile antenna on an existing monopole located at 555 Miller Road, Clarkdale, AZ. (APN 400-06-003A) Applicant: Anais Palmer - SBA Communications.

Staff Contact: Tom Blanchard, Senior Planner

Meeting Date: July 19, 2022

Background: In 2015, the Planning Commission approved a Conditional Use Permit for SBA Communications to install the existing 195-foot tall monopole for Verizon Wireless on the property owned by the Town of Clarkdale, at 555 Miller Road, Clarkdale, AZ. (APN 400-06-003A).

SBA Communications, on behalf of T-Mobile, proposes to install T-Mobile antennas on the existing 195-foot tall monopole. The new antennas will be located 35-feet below the top of the existing monopole, so the height will not be increased. Proposed equipment installations will include: concrete equipment pad, 50 kw generator, six (6) T-Mobile antennas, six (6) new radioheads, battery cabinet and cables, enclosed in a 44-feet by 44-feet fenced area.

Action: Now that the Planning Commission has conducted the requisite Public Hearing, the Commission may take action to approve the item, approve the item with stipulations, deny the approval of the item, or refer it back to staff and the applicant for further work.

Budget Impact: No budget impact.

Recommendation: Staff finds this application meets all requirements as set forth in the Town of Clarkdale Zoning Code Chapter 5 Conditional Use Permit and recommends approval of DRB-093514 Conditional Use Permit for T-Mobile Cell Tower Equipment Upgrades to existing 195’ Monopole cell tower without condition as written.