AT&T

SITE NAME: WASTE MANAGEMENT OPEN #2
CITY: SCOTTSDALE
STATE: ARIZONA
COUNTY: MARICOPA

RFDS NAME:	Waste Management Hole 16	DATE:	7/12/2022	RF DESIGN ENG:	David Deets
ISSUE:	V1.0_2023	Approved? (Y/N):	Y	RF DESIGN PHONE:	614-535-6443
REVISION:	V1.0	RF MANAGER:	Casey O'Dell	RF DESIGN EMAIL:	dd656n@att.com

USID:	167131	FA LOCATION CODE:	0	LOCATION NAME:	Waste Management Hole 16
REGION:	WEST	MARKET CLUSTER:	Arizona/New Mexico	MARKET:	AZ/NM
ADDRESS:.	Hole 16 Skybox	CITY:	Scottsdale	STATE:	AZ
ZIP CODE:	85255	COUNTY:	Maricopa	MSA/RSA:	

PROJECT INFORMATION

ADDRESS
17020 N. HAYDEN ROAD
SCOTTSDALE AZ, 85255

LANDLORD
USA BUREAU OF RECLAMATION

LAND DESCRIPTION OF SUBJECT PARCEL
ZONING: O-S
APN: 215-46-001F

COORDINATES
LATITUDE: 33° 38' 14.9" N (NAD 83)
LONGITUDE: 111° 54' 57.8" W (NAD 83)
ELEVATION: 1530.0' A.M.S.L. (NAVD 88)

PROJECT DESCRIPTION
THIS PROJECT CONSISTS OF THE PLACEMENT OF A TEMPORARY TELECOMMUNICATIONS EQUIPMENT INSTALLATION.

DEVELOPMENT AND CONSTRUCTION OF THIS PROJECT WILL COMPLY WITH ALL APPLICABLE CODES AND ORDINANCES

THIS PROJECT DOES NOT INCLUDE WATER OR SEWER. EXISTING PARKING LOT IS NOT AFFECTED BY THIS PROJECT.

CONSULTING TEAM

ARCHITECT
YOUNG DESIGN CORP.
10245 E. VIA LINDA #211
SCOTTSDALE, AZ. 85258
CONTACT: JOHN SULTZBACH
PHONE: (480) 451-9609

PROJECT MANAGER
DAVID DEETS (AT&T MOBILITY)
1355 W. UNIVERSITY DRIVE
MESA, AZ. 85201
PHONE: (614) 535-6443

SITE ACQUISITION
BENJAMIN FELDMAN
BFM DEVELOPMENT, LLC
PHONE: (602) 819-4663

ZONING
BENJAMIN FELDMAN
BFM DEVELOPMENT, LLC
PHONE: (602) 819-4663

PROJECT OWNER
AT&T MOBILITY
1355 W. UNIVERSITY DRIVE
MESA, AZ. 85201

APPLICANT / CONTACT
BENJAMIN FELDMAN
BFM DEVELOPMENT, LLC
PHONE: (602) 819-4663

INDEX OF DRAWINGS

CLIENT

AT&T
1355 W. UNIVERSITY DRIVE
MESA, AZ 85201

PLANS PREPARED BY

young design corp
architecture / project management
10245 E. Via Linda, Scottsdale, AZ 85258
ph: 480 451 9609 fax: 480 451 9608
e mail: corp@ydcoffice.com

SEAL

NO.	DATE	DESCRIPTION
A	7/26/22	REVIEW

ARCHITECTS JOB NO.
YDC-6087

PROJECT INFORMATION

WASTE MANAGEMENT OPEN #2
17020 N. HAYDEN ROAD
SCOTTSDALE, AZ 85255

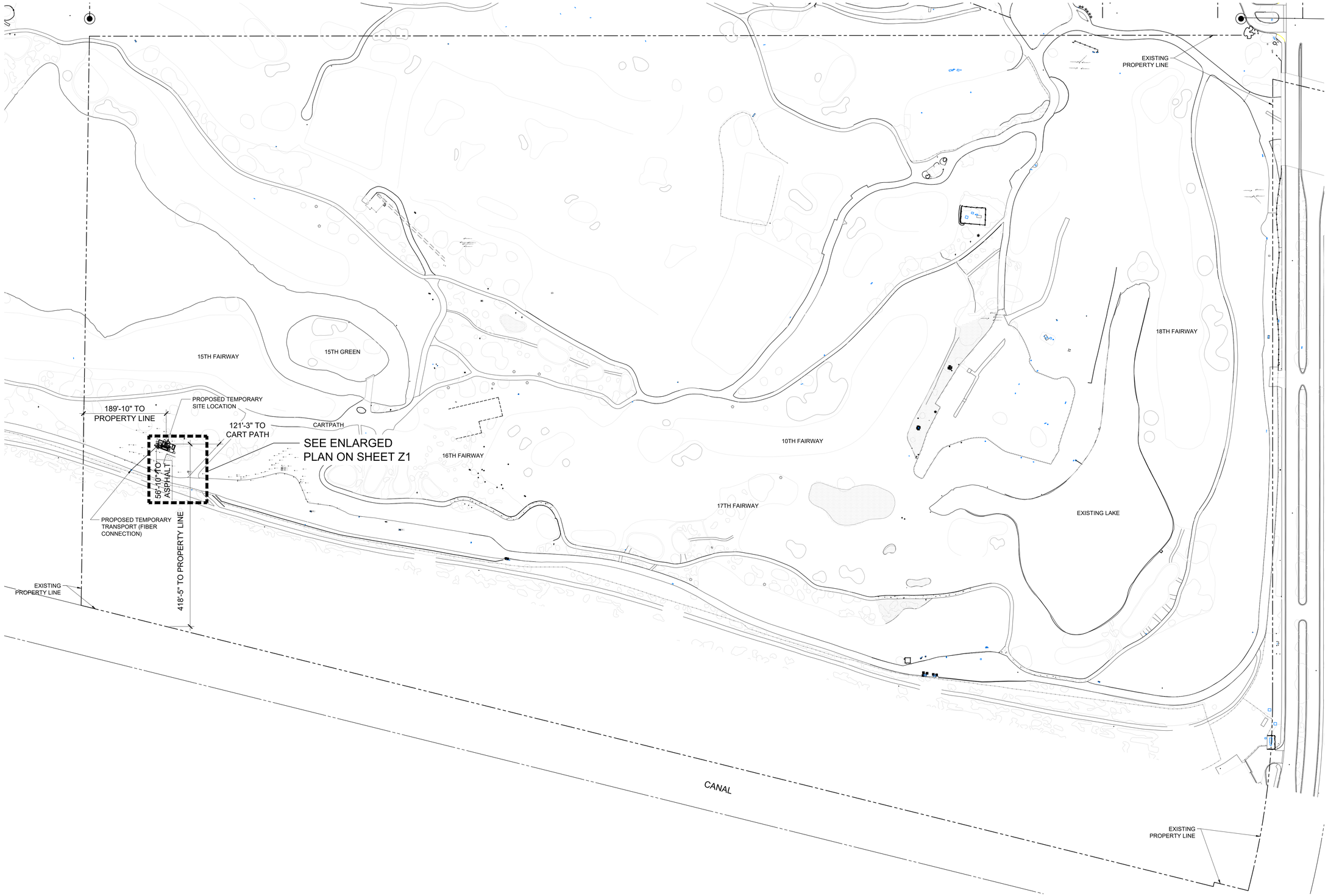
SHEET TITLE

PROJECT INFORMATION

JURISDICTION APPROVAL

SHEET NUMBER

T1



NORTH

1 / Z-0 SITE PLAN

0 50' 100' 200'

SCALE: 1" = 100'-0"

CLIENT

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PROJECT INFORMATION

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17020 N. HAYDEN ROAD
SCOTTSDALE, AZ 85255

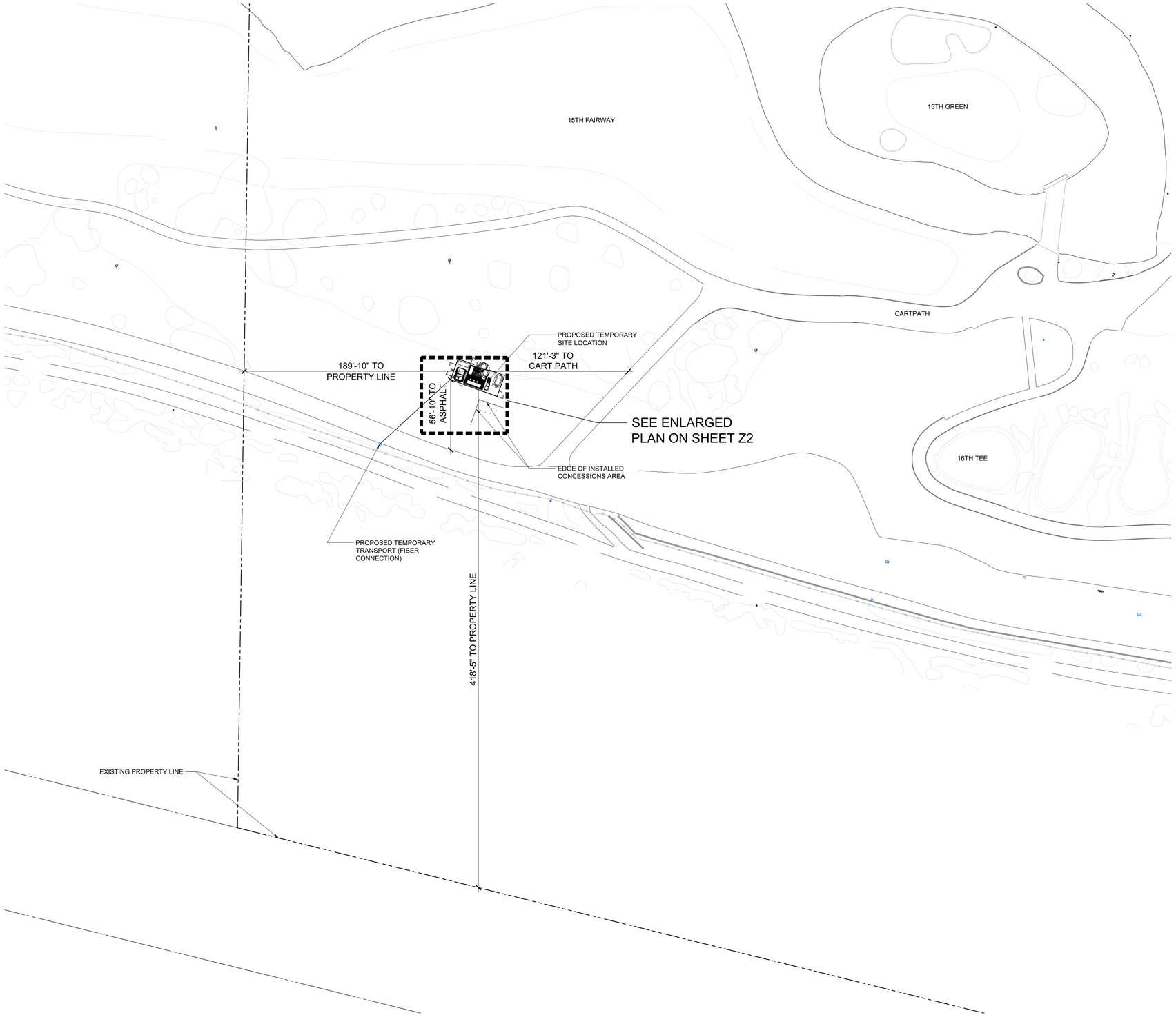
SHEET TITLE

SITE PLAN

JURISDICTION APPROVAL

SHEET NUMBER

Z-0



NORTH

1 / Z-1 SITE PLAN

0 20' 40' 80'

SCALE: 1" = 40'-0"

CLIENT

AT&T

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WASTE MANAGEMENT OPEN #2

17020 N. HAYDEN ROAD
SCOTTSDALE, AZ 85255

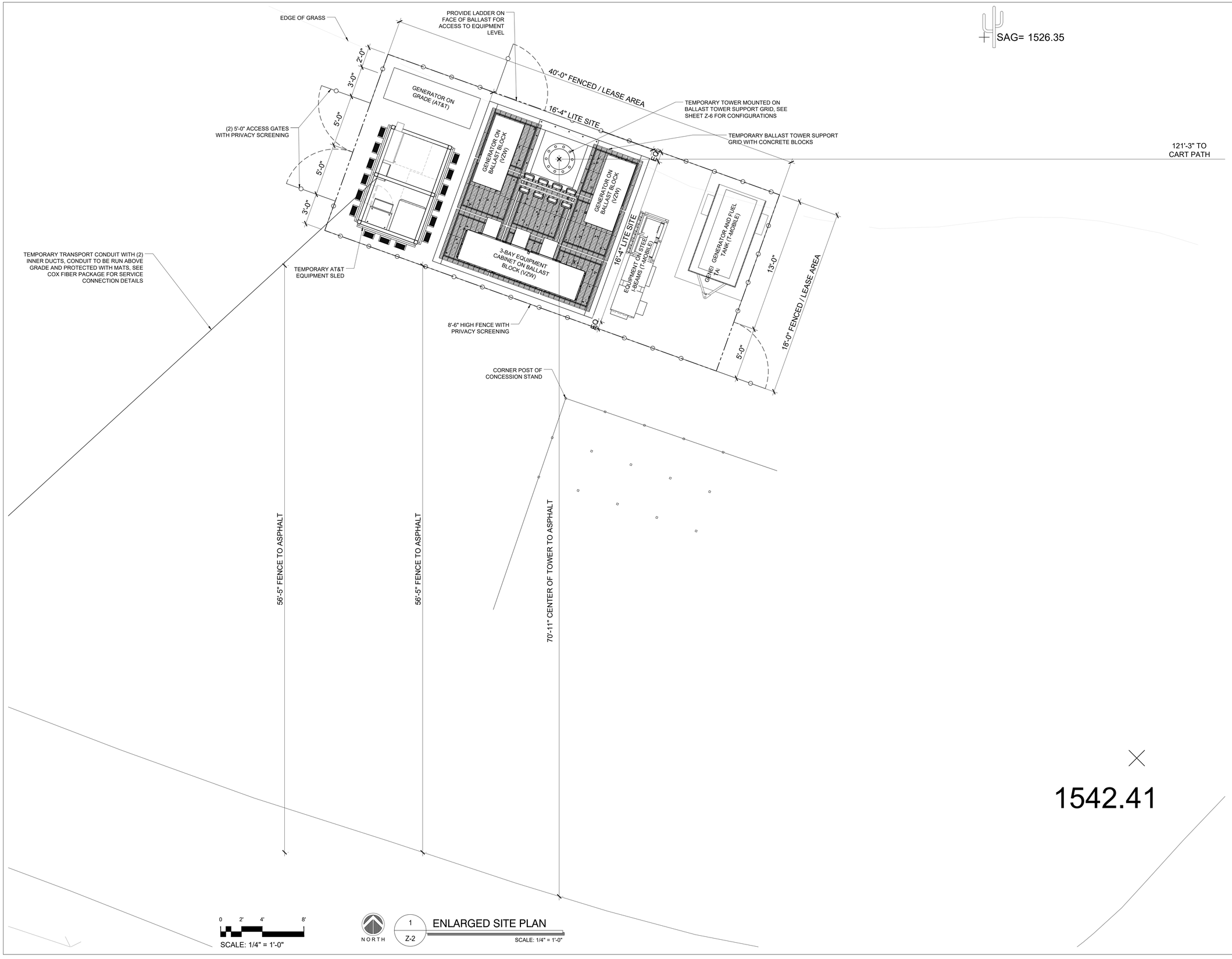
SHEET TITLE

PARTIAL SITE PLAN

JURISDICTION APPROVAL

SHEET NUMBER

Z-1



0 2' 4' 8'

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

NORTH

1 / Z-2 ENLARGED SITE PLAN

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

CLIENT

AT&T

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17020 N. HAYDEN ROAD
SCOTTSDALE, AZ 85255

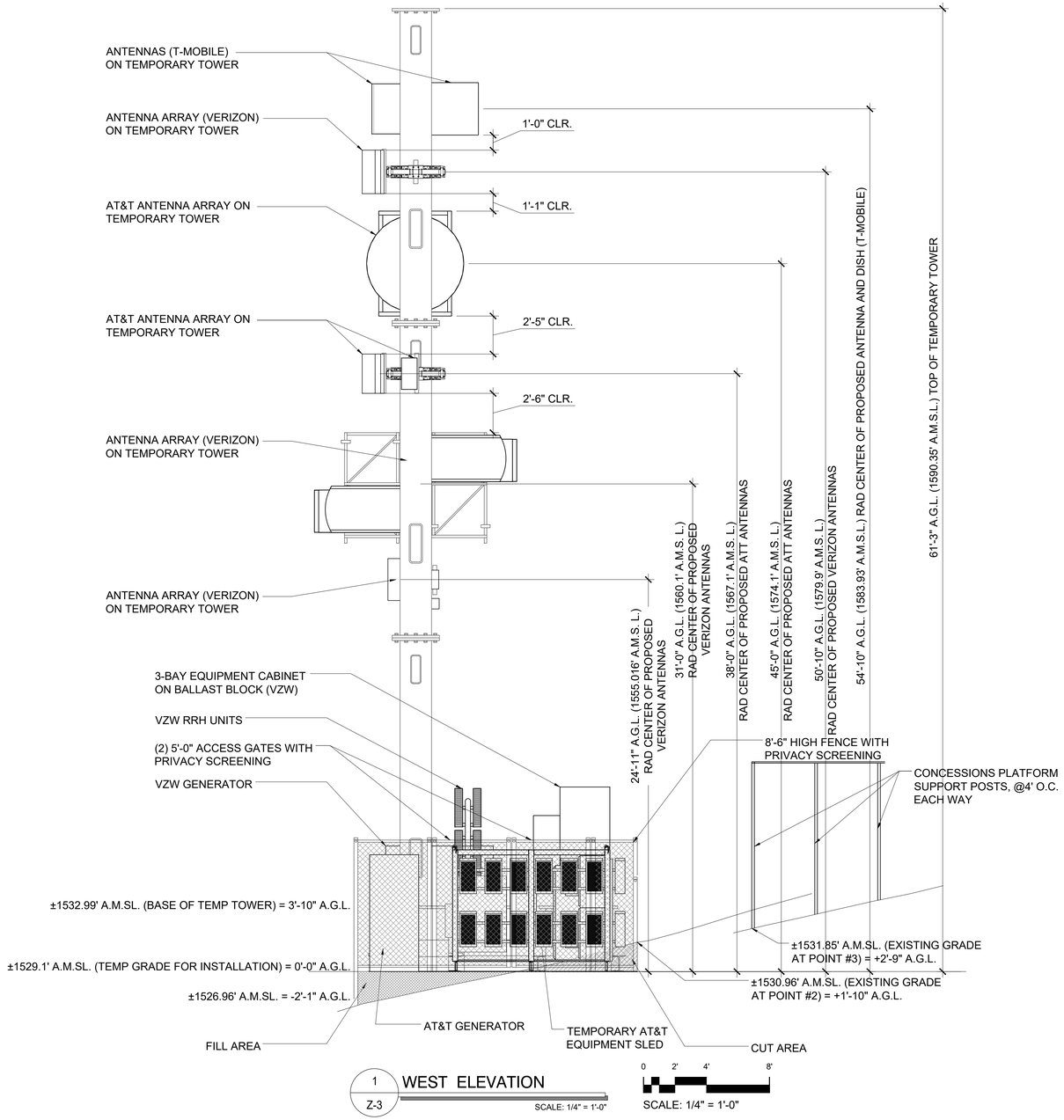
SHEET TITLE

ENLARGED PLAN

JURISDICTION APPROVAL

SHEET NUMBER

Z-2



1 / Z-3 WEST ELEVATION

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

0 2' 4' 8'

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

CLIENT

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SCOTTSDALE, AZ 85255

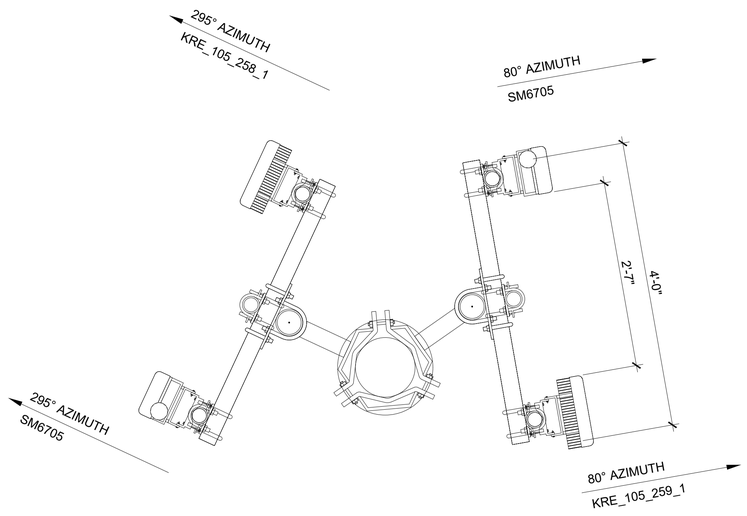
SHEET TITLE

ELEVATION

JURISDICTION APPROVAL

SHEET NUMBER

Z-3

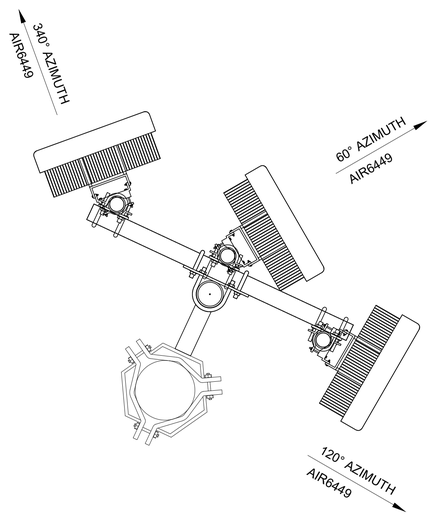


NORTH | 3 / Z-6 | VERIZON ANTENNA CONFIGURATION - 31'-0" LEVEL

SCALE: 1" = 1'-0"

24"x36" SCALE: 1" = 1'-0"
11"x17" SCALE: 1/2" = 1'-0"

1' 6" 0" 1'

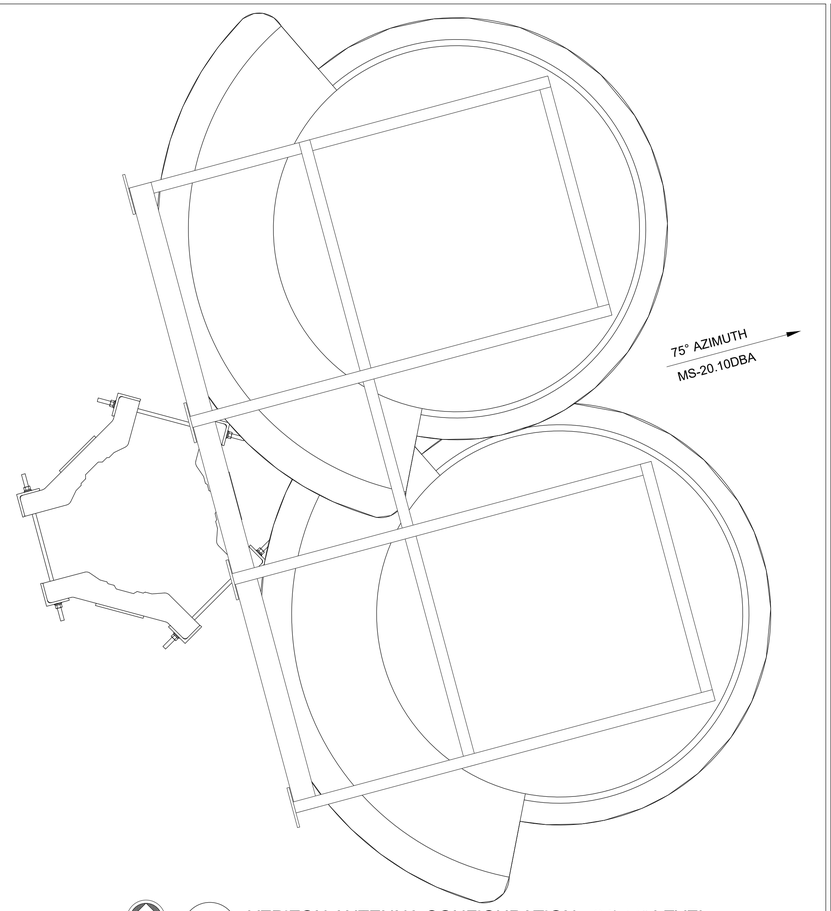


NORTH | 2 / Z-6 | VERIZON ANTENNA CONFIGURATION - 50'-10" LEVEL

SCALE: 1" = 1'-0"

24"x36" SCALE: 1" = 1'-0"
11"x17" SCALE: 1/2" = 1'-0"

1' 6" 0" 1'

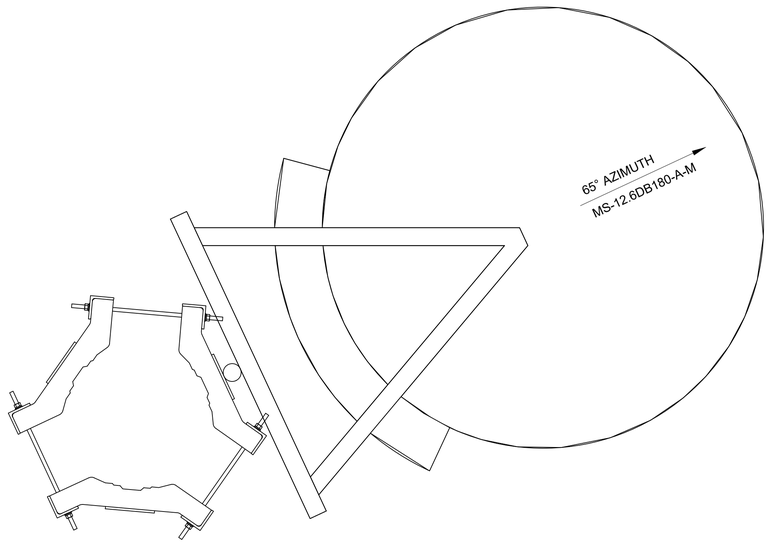


NORTH | 1 / Z-6 | VERIZON ANTENNA CONFIGURATION - 24'-11" LEVEL

SCALE: 1" = 1'-0"

24"x36" SCALE: 1" = 1'-0"
11"x17" SCALE: 1/2" = 1'-0"

1' 6" 0" 1'

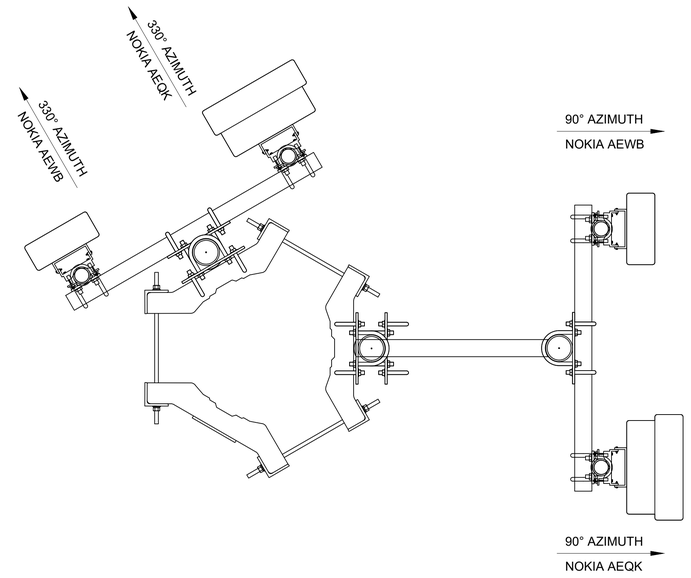


NORTH | 4 / Z-6 | AT&T ANTENNA CONFIGURATION - 45' LEVEL

SCALE: 1" = 1'-0"

24"x36" SCALE: 1" = 1'-0"
11"x17" SCALE: 1/2" = 1'-0"

1' 6" 0" 1'

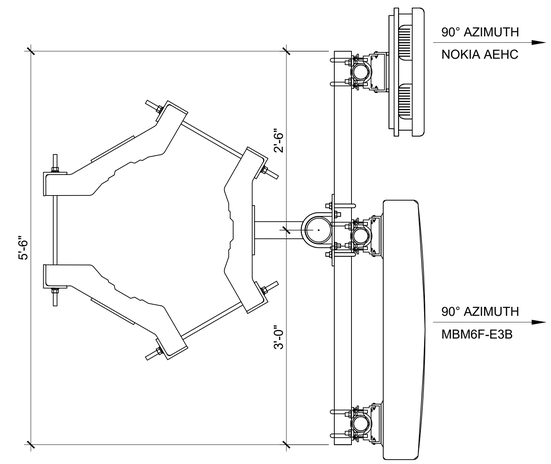


NORTH | 5 / Z-6 | AT&T ANTENNA CONFIGURATION - 38' LEVEL

SCALE: 1" = 1'-0"

24"x36" SCALE: 1" = 1'-0"
11"x17" SCALE: 1/2" = 1'-0"

1' 6" 0" 1'



NORTH | 6 / Z-6 | T-MOBILE ANTENNA CONFIGURATION - 54'-10" LEVEL

SCALE: 1" = 1'-0"

24"x36" SCALE: 1" = 1'-0"
11"x17" SCALE: 1/2" = 1'-0"

1' 6" 0" 1'

CLIENT

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WASTE MANAGEMENT OPEN #2

17020 N. HAYDEN ROAD
SCOTTSDALE, AZ 85255

SHEET TITLE

ANTENNA CONFIGURATION

JURISDICTION APPROVAL

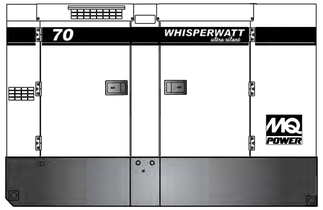
SHEET NUMBER

Z-4

DCA70USI
MQ POWER Series Generator

WhisperWatt™

Prime Rating — 56 kW (70 kVA)
Standby Rating — 62 kW (77 kVA)
Three-Phase, 60 Hertz, 0.8 PF



STANDARD FEATURES

- Heavy duty, 4-cycle, direct injection, diesel engine provides maximum reliability.
- Brushless alternator reduces service and maintenance requirements and meets temperature rise standards for Class H insulation systems.
- Open delta excitation design provides virtually unlimited excitation for maximum motor starting capability.
- Automatic voltage regulator (AVR) provides precise regulation.
- Electronic Governor Control — maintains frequency to within ±0.25% from no load to full load.
- Full load acceptance of standby nameplate rating in one step (NFPA 110, para 5-13.2.6).
- Sound attenuated, weather resistant, steel housing provides operation at 60 dB(A) at 23 feet. Fully lockable enclosure allows safe unattended operation.
- Internal fuel tank with direct reading of fuel gauge.
- Seven stage powder coat paint system provides durability and weather protection.
- Fuel/water separator removes condensation from fuel for extended engine life. Panel mounted alarm light included.
- Complete engine analog instrumentation includes DC ammeter, oil pressure gauge, water temp. gauge, fuel level gauge, tachometer/hour meter, preheat indicator, emergency shutdown monitors.
- Automatic start/stop control — automatically starts the generator set during a commercial power failure when used in conjunction with a transfer switch.
- Complete generator analog instrumentation includes voltage regulator control, ammeter phase selector switch, voltmeter phase selector switch, AC voltmeter, AC ammeter, frequency meter, panel light, and circuit breaker.
- Automatic safety shutdown system monitors the water temperature, engine oil pressure, overspeed and overcrank. Warning lights indicate abnormal conditions.
- Complete power panel. Fully covered; three-phase terminals and single phase receptacles allow fast and convenient hookup for most applications including temporary power boxes, tools and lighting equipment. The GFCI receptacles are NEMA 5-20, and the auxilliary outputs use CS6369 twist-lock receptacles.
- Simultaneous single and three phase power.
- Voltage selector switch offers the operator a wide range of voltages that are manually selectable. Fine tuning of the output voltage can be accomplished by adjusting the voltage regulator control knob to obtain the desired voltage.
- EPA emissions certified - Interim Tier 3 emissions compliant.

DCA70USI
MQ POWER Series Generator

MQ POWER DECIBEL LEVELS

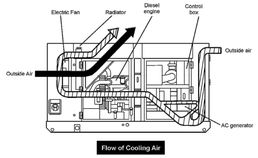
Our soundproof housing allows substantially lower operating noise levels than competitive designs. Ultra-Silent are at home on construction sites, in residential neighborhoods, and at hospitals — just about anywhere.

- 90 — Subway / truck traffic
- 80 — Average city traffic
- 70 — Inside car at 60 mph
- 60 — Air conditioner at 20 feet
- Ultra-Silent at 23 feet
- 50 — Normal conversation

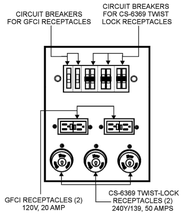
60.0 DECIBELS

ULTRA-SILENT FEATURES

- **Low Noise Muffler** — Large capacity low noise muffler minimizes exhaust sound.
- **Soundproof Casing** — The new design divides the cabinet into three sections, separating the engine, muffler and radiator for more efficient cooling and reduces noise from the engine and fans.
- **New Cooling System** — An advanced design uses two separate air intake systems to cool the generator. The engine fan draws air in to cool the engine and generator housing while a second electric fan directly cools the radiator. With less air being drawn into the generator through each fan, considerably less noise is produced through the top of the generator.
- **Environmental Design** — Constructed using an integrated environmental skid and fuel tank. This design fully contains fuel leakage and any liquid that might leak from the engine such as lube oil or radiator coolant. All potentially hazardous liquids are contained without contaminating the surrounding area.



GENERATOR OUTPUT PANEL



OPTIONAL CONTROL FEATURES

- **Emergency Stop Switch** — when manually activated shuts down generator in the event of an emergency.
- **Audible alarm** — alerts operator of abnormal conditions.

OPTIONAL GENERATOR FEATURES

- **Electronic Governor Control (Crystal Sync)** — maintains frequency to within ±0.25% from no load to full load.
- **Battery Charger** — provides fully automatic and self-adjusting charging to the generator's battery system.
- **Jacket Water Heater** — for easy starting in cold weather climates.
- **Special Batteries** — long life batteries provide extra engine cranking power.
- **Spring Isolaters** — provides extra vibration protection for standby applications.
- **Low Coolant Level Shutdown** — provides protection from critically low coolant levels. Includes control panel warning light.
- **Trailer Mounted Package** — meets National Highway Traffic Safety Administration (NHTSA) regulations. Trailer is equipped with electronic or surge brakes with tandem axle configuration.

OPTIONAL OUTPUT CONNECTIONS

- **Cam-Lok Connectors** — provides quick disconnect alternative to bolt-on connectors.
- **Pin and Sleeve Connectors** — provides industry standard connectors for all voltage requirements.
- **Output Cable** — available in any custom length and size configuration.

DCA70USI
MQ POWER Series Generator

SPECIFICATIONS

Generator Specifications		
Design	Revolving field, self-ventilated Drip-proof, single bearing	
Armature Connection	Star with Neutral	Zig Zag
Phase	3	Single
Standby Output	62 KW (77 KVA)	44 KW
Prime Output	56 KW (70 KVA)	40 KW
3Ø Voltage (L-L/L-N) Voltage Selector Switch at 3Ø 240/139	208Y/120, 220Y/127, 240Y/139	N/A
3Ø Voltage (L-L/L-N) Voltage Selector Switch at 3Ø 480/277	416Y/240, 440Y/254, 480Y/277	N/A
1Ø Voltage (L-L/L-N) (Voltage Selector Switch at 1Ø 240/120)	N/A	240/120
Power Factor	0.8	1.0
Voltage Regulation (No load to full load)	±0.5%	
Generator RPM	1800	
Frequency	60 Hz	
No. of Poles	4	
Excitation	Brushless with AVR	
Frequency	60 Hz	
Frequency Regulation: No Load to Full Load	Isochronous under varying loads from no load to 100% rated load	
Frequency Regulation: Steady State	±0.25% of mean value for constant loads from no load to full load.	
Insulation	Class H	
Sound Level dB(A) Full load at 23 feet	68	

Engine Specifications	
Make / Model	Isuzu / BJ-4JJ1X
Emissions	EPA Interim Tier 3 Certified
Starting System	Electric
Design	4-cycle, water cooled, direct injection, turbocharged
Displacement	183.0 in³ (2999 cc)
No. cylinders	4
Bore x Stroke (mm)	95.4 x 104.9
Gross Engine Power Output	97.9 bhp (50 kW)
BMEP	204 psi (1409 kPa)
Piston Speed	1237 ft./min. (6.29 m/s)
Compression Ratio	17.5:1
Engine Speed	1800 rpm
Overspeed Limit	2100 rpm
Oil Capacity	3.96 gallons (15 liters)
Battery	12V 72Ah x 1

Fuel System		
Recommended Fuel	ASTM-D975-No.1 & No.2-D	
Maximum Fuel Flow (per hour)	16 gallons (61 liters)	
Maximum Inlet Restriction (Hg)	5.9 in. (150 mm)	
Fuel Tank Capacity	103 gallons (390 liters)	
Fuel Consumption	**gph**	**lph**
At full load	4.1	15.4
At 3/4 load	3.1	11.9
At 1/2 load	2.1	8.1
At 1/4 load	1.3	4.8

Cooling System	
Fan Load	0.4 hp (0.3 kW)
Coolant Capacity (with radiator)	3.57 gallons (13.5 liters)
Coolant Flow Rate (per minute)	15.4 gallons (58.5 liters)
Heat Rejection to Coolant (per minute)	2260 Btu (2.38 MJ)
Heat Rejection to Room (per minute)	578 Btu (0.61 MJ)
Maximum Coolant Friction Head	6.1 psi (42 kPa)
Maximum Coolant Static Head	21 feet (6.4 meters)
Ambient Temperature Rating	104°F (40°C)

Air	
Combustion Air	138 cfm (3.9 m³/min)
Maximum Air Cleaner Restriction	25 in. H_2O (6.25 kPa)
Alternator Cooling Air	526 cfm (14.9 m³/min)
Radiator Cooling Air	2009 cfm (56.9 m³/min)

Exhaust System	
Gas Flow (full load)	332 cfm (9.4 m³/min)
Gas Temperature	932°F (500°C)
Maximum Back Pressure	53.2 in. H_2O (13.3 kPa)

Amperage	
Rated Voltage	**Maximum Amps**
1Ø 120 Volt	155.4 Amps (4 wire) 168A x 2 (Zigzag)
1Ø 240 Volt	77.8 Amps (4 wire) 168A (Zigzag)
3Ø 240 Volt	168 Amps
3Ø 480 Volt	84 Amps
Main Line Circuit Breaker Rating	175 Amps
Over Current Relay Trip Set Point 480V Mode Only	84 Amps

WARRANTY*

Isuzu Engine
12 months from date of purchase with unlimited hours or 24 months from date of purchase with 2000 hours (whichever comes first).
Generator
24 months from date of purchase or 2000 hours (whichever occurs first).
Trailer
12 months excluding normal wear items.
*Refer to the express written, one-year limited warranty sheet for additional information.

NOTICE

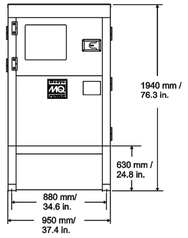
Generator is not intended for use in enclosed areas or where free flow of air is restricted.

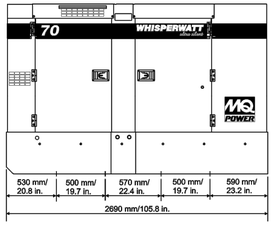
Backfeed to a utility system can cause electrocution, shock and/or property damage. **DO NOT** connect to any building's electrical system except through an approved device.

Specifications are subject to change without notice.

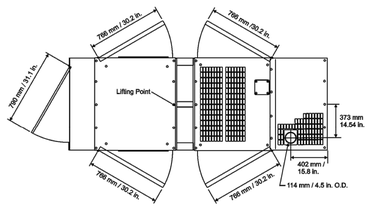
DCA70USI
MQ POWER Series Generator

DIMENSIONS





Weight	
Dry Weight	3,771 lbs. (1,710 kg)
Wet Weight	4,553 lbs. (2,065 kg)
Max. Lifting Point Capacity	14,050 lbs. (6,370 kg)



Generator can be placed on a MQ Power Model TRLR70XF Tandem Axle Trailer

Manufactured by Denyo Co.

Your Multiquip dealer is:

MULTIQUIP
POST OFFICE BOX 6254
CARSON, CA 90749
310-537-3700 • 800-883-2551
FAX: 310-604-3831
E-MAIL: sales@multiquip.com
WEBSITE: www.multiquip.com

CLIENT

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1355 W. UNIVERSITY DRIVE
MESA, AZ 85201

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PROJECT INFORMATION

WASTE MANAGEMENT OPEN #2
17020 N. HAYDEN ROAD
SCOTTSDALE, AZ 85255

SHEET TITLE

GENERATOR SPECIFICATIONS

JURISDICTION APPROVAL

SHEET NUMBER
Z-5

AEQK AirScale MAA 64T64R 192AE n77 200W

Technical datasheet

Product Specifications	
Standard	3GPP/FCC NR compliant, TDD
Band / Frequency range	3700~3980MHz
Supported RAT	5G
Max. supported modulation	256QAM
Number of TX/RX paths	64T / 64R
MIMO streams	16
Instantaneous bandwidth IBW	200MHz
Occupied bandwidth OBW	100MHz+100MHz for 32TRX + 32TRX split mode
Total average EIRP	77dBm
Max. output power per TRX	3.125 W / TRX (200 W total) - SW settable up to 13 dB down
Dimensions / Volume	750 x 450 x 240 mm (H x W x D)
Weight	45kg w/o bracket
Supply voltage / Connector type	DC -40.5 V... -57V / 2 pole connector
Power consumption	727 W (75% DL duty cycle, ETSI Average)
Optical ports	2xSFP28, 10/25GE eCPRI
Other interfaces / Connector type	LMI / HDMI, RF monitor port / SMA, Control AISG, External Alarms / MDR26, status LEDs
Operational temperature range	-40degC to +55C
Cooling	Natural convection cooling
Installation options / mechanical tilt	Pole, wall, with vertical adjustment of ±15° (thermally limited)
Ingress / Surge protection	IP65/Class II 20KA

AirScale High Power MAA benefits

- 5G Adaptive Antenna System for optimized capacity and coverage
- Digital beamforming for multi-user MIMO
- Connectivity with AirScale BBU (via eCPRI)
- Beamforming capable 64T64R with total 200W output power
- 32TRX + 32TRX split mode support

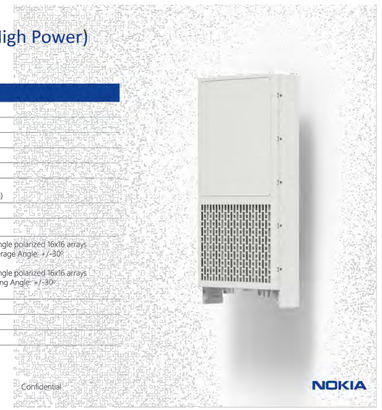
AEQK 475589A NOKIA

5G mmWave Micro Radio 39GHz (High Power)

AEWB Summary Specification

Specification[1]	Details
5G Band/Frequency	n260, 37000 – 40000 MHz
RF Output Power	Max EIRP 54 dBm 8T8R, Max EIRP 60 dBm 2T2R
RF Bandwidth	OBW: 800MHz; IBW: 1400MHz
Carriers	Up to eight 100MHz 5G NR carriers
Carrier Bandwidth	50, 100, 200, 400 MHz
Physical Size[1]	Dimensions: 600(h) x 305(w) x 120(D) mm Volume: 22L, Weight: 20Kg (with integrated antenna)
Synchronization	via Airscale BBU
Backhaul Port	2 x SFP28 (eCPRI)
Antenna	Configuration: Integrated 2Tx/2Rx, 2x256 AE w/ 2 single polarized 16x16 arrays Horizontal Coverage Angle: +/-45º Vertical Coverage Angle: +/-30º Horizontal BW: 5.3º , Vertical BW: 4º Configuration: Integrated 8Tx/8Rx, 2x256 AE w/ 2 single polarized 16x16 arrays Horizontal Steering Angle: +/- 45º Vertical Steering Angle: +/-30º Horizontal BW: 11.5º , Vertical BW: 9º
Operating Temp	-40ºC to +55ºC
Input Power	100 to 250 VAC, -40.5 to -57 VDC
Power Consumption	420W (Typ)

[1] Physical size and design is subject to change during development phase



1 / Z-6 ANTENNA DETAILS - 38'-0"

SCALE: N.T.S.

MATSING RF Lens Technologies

Preliminary Specification Sheet

MS-12.6DB180

Multi-Beam Dual Band Spherical Lens Antenna: 6 independent low frequency (698-960MHz) cross-polarized beams and 12 independent high-frequency (1710-2690MHz) cross-polarized beams, with 0-15° tilt for each 20° sector. Sector consists of 1 low-band beam and 2 hi-band beams.

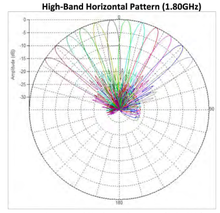
***Optional Packages:**

a) **MS-12.6DB160-RET**

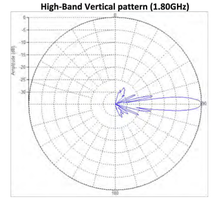
AISG 2.0 Remote Electrical Tilt

PATTERN RESULTS:

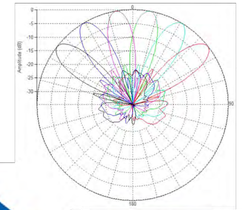
High-Band Horizontal Pattern (1.80GHz)



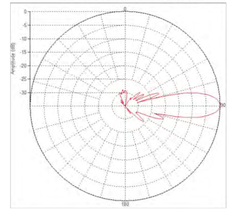
High-Band Vertical pattern (1.80GHz)



Low-Band Horizontal Pattern (0.85GHz)



Low-Band Vertical Pattern (0.85GHz)



EMAIL: Info@matsing.com **WEBSITE:** www.matsing.com **PHONE:** (949)356-2223

2 / Z-6 ANTENNA DETAIL - 45'-0"

SCALE: N.T.S.

CLIENT

AT&T

1355 W. UNIVERSITY DRIVE
MESA, AZ 85201

PLANS PREPARED BY

young design corp
architecture / project management
10245 E. Via Linda, Scottsdale, AZ 85258
ph: 480 451 9609 fax: 480 451 9608
e mail: corp@ydcoffice.com

SEAL

NO.	DATE	DESCRIPTION
A	7/26/22	REVIEW

ARCHITECTS JOB NO.

YDC-6087

PROJECT INFORMATION

WASTE MANAGEMENT OPEN #2

17020 N. HAYDEN ROAD
SCOTTSDALE, AZ 85255

SHEET TITLE

AT&T ANTENNA SPECIFICATIONS

JURISDICTION APPROVAL

SHEET NUMBER

Z-6

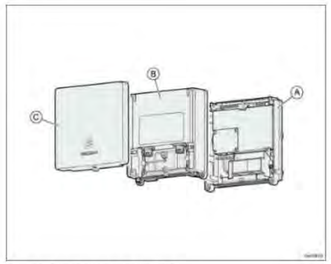


Figure 18 Radio Components, Single Radio

Table 14 Key to Radio Components, Single Radio

Position	Component
A	Support[1]
B	Radio Core
C	Antenna or Cover

(1) If has several variants. An example is shown in the illustration.

Dimensions

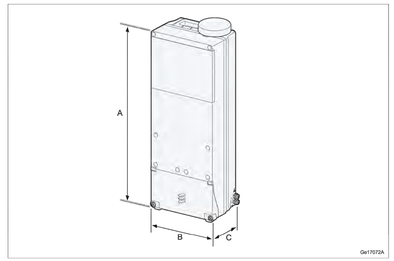


Figure 2 Streetmacro 6701 Dimensions

Table 2 Dimensions, Weight, and Color

Dimensions	
Height (A)	511 mm
Width (B)	200 mm
Depth (C)	125 mm
Weight	14 kg
Color	Gray Reference number: NCS S 1002-B

Streetmacro 6705

Spectrum	28GHz (n261/257) 39 GHz (n260) 24GHz (n258)
IBW	Full band
Total Carrier BW	800 MHz, continuous/non-continuous carriers
EIRP	59 dBm (CM1, 800MHz config), 62dBm (CM2, 400MHz)
EIS	-116/-113 dBm (CM1, 800MHz config)
Layers:	2 @ 800 MHz, 4 @ 400MHz
Modulation	64/64 (256) QAM UL/DL
Service Angular Range:	± 60° , ±15°
Total Antenna BW	1600 MHz
Throughput	~ 5 Gbps DL/ 1 Gbps UL
Synchronization	1588v2, GNSS
Power Consumption	<350 W typical, <500 W Max
Weight	~ 13 kg
Dimensions	366x150x200 mm wo protrusions 409x154x204 mm w protrusions (eg GNSS)
Operational conditions	-40 to +55 degrees
Cooling	Active
Power	AC, 100-250 V
IP Class	IP 65

1 Z-7 31'-0" ANTENNA DETAILS
SCALE: N.T.S.

MATSING®
LENS TECHNOLOGY ENABLED

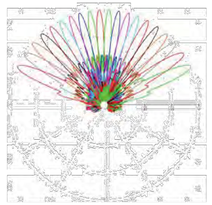
MS-20.10DBA180

Multi-Beam Dual Band Spherical Lens Antenna: 10 independent low frequency (698-960MHz) cross-polarized beams and 20 independent high-frequency (1695-2690MHz) cross-polarized beams.

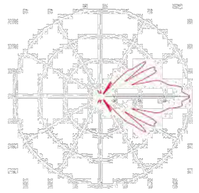
LENS TECHNOLOGY ENABLED

PATTERN RESULTS:

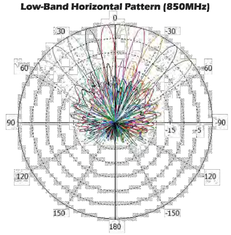
High-Band Horizontal Pattern (1950MHz)



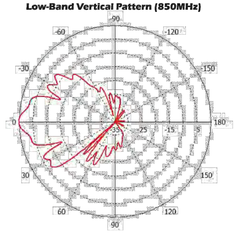
High-Band Vertical pattern (1950MHz)



Low-Band Horizontal Pattern (850MHz)



Low-Band Vertical Pattern (850MHz)



EMAIL: info@matsing.com WEBSITE: www.matsing.com PHONE: (949)585-5144

2 Z-7 24'-11" ANTENNA DETAIL
SCALE: N.T.S.

- This next generation hardware is expected to be available in commercial quantities in July 2020.

AFFECTED CONFIGURATIONS

Sites must be on an Anchor POR to use the AIR6449.

Site configurations that are designed with AIR6449 B41 will have a "**5A**" (5 for 2.5GHz + A for AIR6449) after the low-band indicator and/or before L19 indicator in the naming convention e.g., 67D92DB => 67D**5A**992DB, 92DB => **5A**992DB, etc.

PRODUCT DESCRIPTION

Frequency Range	LTE TDD B41: 2496 – 2690 MHz
Instantaneous BW	DL 194 MHz
Antenna Ports	64T64R
Technology	NR, LTE and NR+LTE MSMM
Antenna Elements	192
Output RF Power	300 W (=64 TRX x 4.6875W)
Data Ports	4 x 25Gb/s CPRI
5G NR Support	YES
DC Feed	-48V DC power connector
Cooling	Passive cooling (vs. active cooling on AIR32 DB)
Dimensions (H x W x D)	33.1" x 20.6" x 8.6" inches (=841 x 524 x 217 mm)
Weight	104 lbs (=47 kg)
Electrical downtilt	-3 to 11 degrees
Horizontal beamwidth	+/- 65 degrees
HW/SW Availability	July 2020
Material SAP #	34105 – AIR 6449 B41

WARRANTY: 1 Year

SPARES: 2% of install base. Additional units can be requested as per need.

Baseband Requirements

For a typical 3-sector site,

- LTE: one dedicated BB6630 per site
- NR: one dedicated BB6648 (see its NPI) per site

3 Z-7 50'-10" ANTENNA DETAIL
SCALE: N.T.S.

MATSING®
LENS TECHNOLOGY ENABLED

TECHNICAL SPECIFICATIONS PER BEAM		
Frequency	698-960 MHz	1695-2690 MHz
Gain	18dBi	26dBi
VSWR	<1.5:1	<1.5:1
Polarization	Dual Slant ±45°	Dual Slant ±45°
Horizontal Coverage	100°	100°
Horizontal Beamwidth (10dB level) Horizontal Beamwidth (3dB level)	10° 6°	5° 3°
Vertical Beamwidth (10dB level) Vertical Beamwidth (3dB level)	40° 25°	16° 9°
Beam Cross-over	10dB typical	10dB typical
Total Number of Beams	10	20
Tilt	0°	0°
First Sidelobe Level	<-15dB	<-15dB
Front to Back Ratio	>28dB	>28dB
Isolation Port to Port - Polarization	>28dB	>28dB
Isolation Port to Port - Beam	>28dB	>26dB
Power Rating	200W per port	200W per port
Intermodulation	<-153dBc	<-153dBc
Impedance	50 ohm	50 ohm
Connector Quantity and Type	20 X 4.3-10 female	40 X 4.3-10 female

MECHANICAL DATA	
Dimensions (H x W x D)	Two Truncated Lenses: Spherical Lens diameter: 180cm/70inch Antenna dimensions: 220 x 392 x 221 cm 87 x 154 x 87 inch
Antenna Weight	522kg 1150lbs
Radome Material	Fiber Glass
Mounting	4 position pipe mount Compatible pipe diameter: 6.1 – 11.4 cm 2.4 – 4.5 inch

ENVIRONMENTAL RATINGS	
Humidity	95% RH @ +30°C
Temperature	-40°C to +70°C
Wind load: Front Side Back	@ 160km/hr 5868N/1319lbf 4760N/1070lbf 6547N/1471lbf

SAMPLE CONNECTOR LAYOUT:

EMAIL: info@matsing.com WEBSITE: www.matsing.com PHONE: (949)585-5144

CLIENT

AT&T

1355 W. UNIVERSITY DRIVE
MESA, AZ 85201

PLANS PREPARED BY

young design corp

architecture / project management
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ph: 480 451 9609 fax: 480 451 9608
e mail: corp@ydcoffice.com

SEAL

NO.	DATE	DESCRIPTION
A	7/26/22	REVIEW

ARCHITECTS JOB NO.
YDC-6087

PROJECT INFORMATION

WASTE MANAGEMENT OPEN #2

17020 N. HAYDEN ROAD
SCOTTSDALE, AZ 85255

SHEET TITLE

VERIZON ANTENNA SPECIFICATIONS

JURISDICTION APPROVAL

SHEET NUMBER

Z-7

AEHC AirScale MAA 64T64R 192AE B41 320W

Preliminary technical data

Specification	Details
Standard	3GPP NR and LTE compliant, TDD, FCC compliant
Band / Frequency range	2496 - 2690 MHz 3GPP B41
Max. supported modulation	256 QAM
Number of TX/RX paths	64T / 64R
MIMO streams	16
Instantaneous bandwidth IBW	194 MHz
Occupied bandwidth OBW	190 MHz
Total average EIRP	79 dBm
Max. output power per TRX	5 W / TRX (320 W total)
Dimensions	970 mm (H) x 340 mm (W) x 205 mm (D)
Volume	94 l
Weight	47 kg (without mounting brackets)
Supply voltage / Connector type	DC -36 V ... -60 V / 2 pole connector
Power consumption	≤1280 W typical (75% DL duty cycle, 30% RF load) ≤1690 W max (75% DL duty cycle, 100% RF load)
Optical ports	4 x SFP28, 10/25GE eCPRI (Octia)
Other interfaces / Connector type	RF monitor port / SMA; Control AISG, External Alarms / MDR26, status LED
Operational temperature range	-40 °C ... +55 °C
Cooling	Natural convection cooling
Installation options	Pole / Wall, ± 15° vertical
Ingress / Surge protection	IP65, Class II 20 kA
Supported RAT	5G, TD-LTE

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AirScale High Power Wide Band MAA benefits

- 5G Adaptive Antenna System for optimized capacity and coverage
- Beamforming capable 64T64R with total 320W output power
- Full band operation for B41

AEHC 475124A NOKIA

1 / Z-8 ANTENNA DETAIL - 54'-10"

SCALE: N.T.S.

Product News

ANTENNAS

4x4 MIMO Multibeam (MBM) 6 Beam Product Series

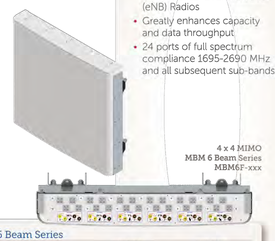
CCI is proud to announce a major innovation and product addition to our Multibeam Antenna portfolio of products. The industry's first Multibeam Panel Antenna, with full 4x4 MIMO capability. The CCI Multifunction Multibeam Antenna contains 6 independent LTE optimized beams with 4x4 MIMO capability or 12 independent LTE optimized beams with 2x2 MIMO capability or any other combination of 4x4 MIMO/2x2 MIMO deployment, providing unapparelled frequency and MIMO configuration capability.

The CCI Multifunction Multibeam Antenna, with 4x4 MIMO deployed on any of the available beams greatly enhances capacity and data throughput over conventional 2x2 MIMO deployments. Spectrum reuse through sectorization is also improved over conventional 2x2 MIMO multibeam deployments.

CCI's LTE optimized beam design provides fast roll-off between beams, minimizing interference between sectors thus increasing the carrier interference noise ratio (CINR) and lowering soft handover losses in LTE networks. This approach enhances data transfer rates within LTE network sectors and addresses "hot spots" in mobile wireless networks.

KEY FEATURES & BENEFITS 4x4 MIMO MBM SERIES

- First 4x4 MIMO Multibeam Antenna
- Capable of 4x4 and/or 2x2 MIMO configurations
- Supports up to six (6) 4T4R or twelve (12) 2T2R eNodeB (eNB) Radios
- Greatly enhances capacity and data throughput
- 24 ports of full spectrum compliance 1695-2690 MHz and all subsequent sub-bands



4x4 MIMO Multibeam Antenna–MBM 6 Beam Series

CCI Model / Part	Dimensions (L x W x D)	EDT / RET Configuration:	Low Band Ports	High Band Ports
MBM6F-E3B MBM6F-E3BA-K	40.0" x 42.5" x 7.1"	7° Fixed EDT	NA	24 Wide Band 1695-2690 MHz
MBM6F-P3B MBM6F-P3BA-K	40.0" x 42.5" x 7.1"	7° Fixed EDT	NA	24 Wide Band 1850-1995 MHz
MBM6F-U3B MBM6F-U3BA-K	40.0" x 42.5" x 7.1"	7° Fixed EDT	NA	24 Wide Band 1695-2400 MHz
MBM6F-W3B MBM6F-W3BA-K	40.0" x 42.5" x 7.1"	7° Fixed EDT	NA	24 Wide Band 1695-2180 MHz
MBM6F-V3B MBM6F-V3BA-K	37.4" x 31.3" x 6.4"	5° Fixed EDT	NA	24 Wide Band 2300-2690 MHz

CCI antennas are deployed worldwide and engineered using the latest design techniques that provide optimal performance and multiple technologies in a single antenna . . .reducing tower load, lease expense and deployment /installation expense while providing unique solutions that enhance performance and increase capacity to address the ever-changing demands on carrier network.

www.ccproducts.com EXTENDING WIRELESS PERFORMANCE

2 / Z-8 ANTENNA DETAIL - 54'-10"

SCALE: N.T.S.

CLIENT

AT&T

1355 W. UNIVERSITY DRIVE
MESA, AZ 85201

PLANS PREPARED BY

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ph: 480 451 9609 fax: 480 451 9608
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YDC-6087

PROJECT INFORMATION

WASTE MANAGEMENT OPEN #2

17020 N. HAYDEN ROAD
SCOTTSDALE, AZ 85255

SHEET TITLE

T-MOBILE ANTENNA SPECIFICATIONS

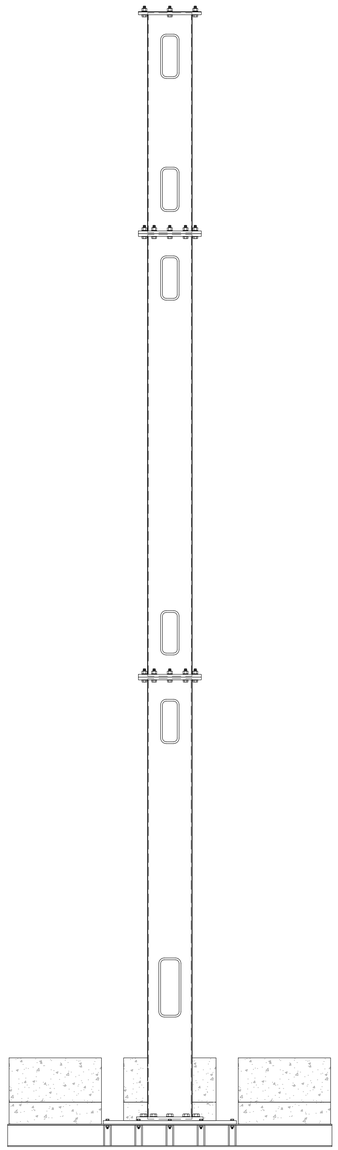
JURISDICTION APPROVAL

SHEET NUMBER

Z-8

MODULAR MONOPOLE & FOUNDATION

SHEET INDEX	
GSN	GENERAL NOTES
S1.0	POLE ASSEMBLY DETAILS
S2.0	FOUNDATION ASSEMBLY DETAILS



GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY DIMENSIONS, CONDITIONS, AND ELEVATIONS BEFORE STARTING WORK. SEE SPECIAL CONSTRUCTION NOTES THIS PAGE. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY IF ANY DISCREPANCIES ARE FOUND.
2. THE TYPICAL NOTES AND DETAILS SHALL APPLY IN ALL CASES UNLESS SPECIFICALLY DETAILED ELSEWHERE. WHERE NO DETAIL IS SHOWN, THE CONSTRUCTION SHALL BE AS SHOWN FOR OTHER SIMILAR WORK AND AS REQUIRED BY THE BUILDING CODE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH LOCAL CONSTRUCTION SAFETY ORDERS. APPROVAL OF SHOP DRAWINGS BY THE ARCHITECT OR STRUCTURAL ENGINEER SHALL NOT BE CONSTRUED AS ACCEPTING THIS RESPONSIBILITY.
4. ALL STRUCTURAL FRAMING MEMBERS SHALL BE ADEQUATELY SHORED AND BRACED DURING ERECTION AND UNTIL FULL LATERAL AND VERTICAL SUPPORT IS PROVIDED BY ADJOINING MEMBERS.

CONSTRUCTION NOTES:

1. IF EXISTING CONDITIONS ARE NOT AS INDICATED ON DRAWINGS, THE CONTRACTOR SHALL CONTACT THE STRUCTURAL ENGINEER (GLEN HUNT) AT ISE INCORPORATED, FOR IN FIELD ADJUSTMENT(S), PRIOR TO PROCEEDING WITH ANY CONSTRUCTION.
2. CONTRACTOR TO FIELD VERIFY AND/OR FIELD LOCATE ALL ITEMS LABELED AS FIELD VERIFY OR FIELD LOCATE.

STRUCTURAL STEEL:

1. ALL STRUCTURAL STEEL CODE CHECKS BASED ON THE AISC, 13TH EDITION PER THE ASCE 7 STANDARD
2. ALL STEEL WIDE FLANGES TO BE PER ASTM A572 GR. 50 (50 KSI), U.N.O.
3. ALL OTHER STRUCTURAL STEEL SHAPES & PLATES SHALL BE PER ASTM A36 (36 KSI), U.N.O.
4. ALL BOLTS FOR STEEL-TO-STEEL CONNECTIONS SHALL BE ASTM A325N, U.N.O.
5. ALL BOLTED CONNECTIONS SHALL BE TIGHTENED TO “SNUG TIGHT” CONDITION AS DEFINED BY AISC.
6. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY (AWS) D1.1
7. ALL STEEL SURFACES SHALL BE GALVANIZED IN ACCORDANCE WITH THE ASTM A123 AND ASTM A153 STANDARDS, U.N.O.

PROJECT INFORMATION

Date: January 04, 2019
ISE Job No. 14012 By: MG
Customer: CMI
Product: Modular Mono Pole
Site ID: Various
Location:

DESIGN CRITERION:

2012 IBC 115 MPH Ultimate Wind Speed-Reducible per 1609.1.1-Exception 5
EIA/TIA-222-G (2006) 90 MPH Design Wind Speed (3-Sec Gust)
EXP C, Topo Category I, Tower Class II

POLE SPECIFICATIONS

Section Shape	Round
PipeTaper	N/A
Pole Material	ASTM API-5LX-GR 42
Base Plate	ASTM A572 GR 50 (Fy= 50 KSI)
Base Plate Bolts	ASTM F1554-GR. 55
Wide Flange Steel	ASTM A572 GR 50 (Fy= 50 KSI)

Pole Section	Length (ft.)	Weight (kips)	Tkns. (in.)	Lap Splice (in.)	Diameter Top (in.)	Diameter Bot (in.)
Base	20.000	2.512	0.500	N/A	24.000	24.000
20'	20.000	1.894	0.375		24.000	24.000
10'	10.000	0.947	0.375		24.000	24.000
Pole Base Plate		0.325	2.000		36" Round w/ 24.125" ID	
Frame Plate		2.092	2.000		72" Square w/ 24.125" ID	

APPURTENANCES

Elev.	(Qty)	Description
80'	(2)	Matsing Appurtenance
70'	(2)	Matsing Appurtenance
60'	(2)	Matsing Appurtenance
50'	(2)	Matsing Appurtenance

DESIGN LOADS
(Unfactored Base Wind Reactions)

Moment	=	509.292	Ft-Kips
Shear	=	8.528	Kips
Axial	=	16.095	Kips

ISE Incorporated
Structural Engineers
PO Box 50039
Phoenix, AZ 85076
PHONE: 602-403-8614
www.ise-inc.biz

ISE JOB #: 14012

MODULAR MONOPOLE & FOUNDATION

POLE ASSEMBLY DETAILS

Registered Professional Engineer
52229
Glen L. Hunt III
Date Signed 12-18-2018
ARIZONA, U.S.A.
Expires 6/30/2020

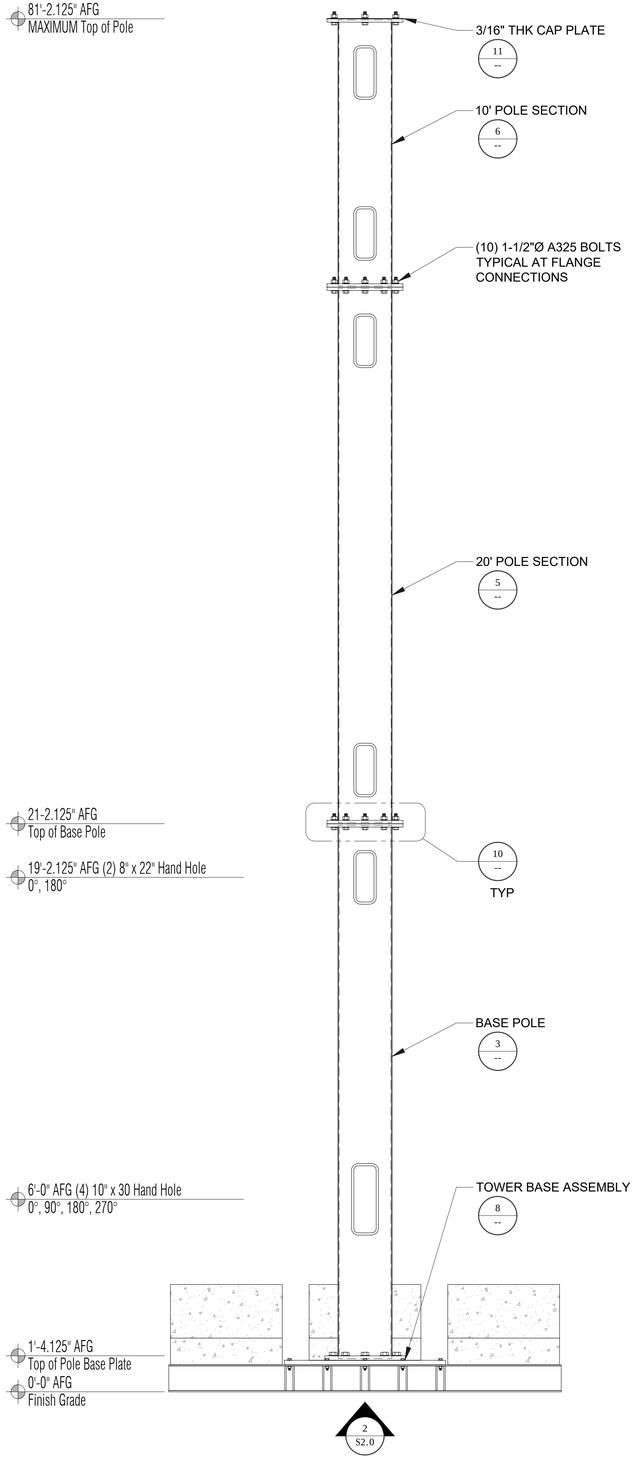
PROGRESS LOG

1	01/04/19	BASE PLATE CHANGES	KY
0	11/01/18	ISSUED TO CLIENT	MG

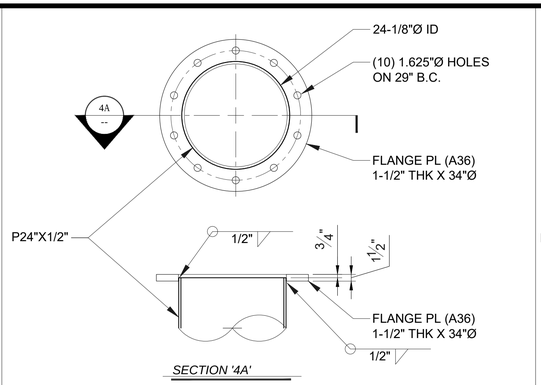
SHEET NUMBER: GSN
PROGRESS: 1

DRAWING DATE
January 04, 2019

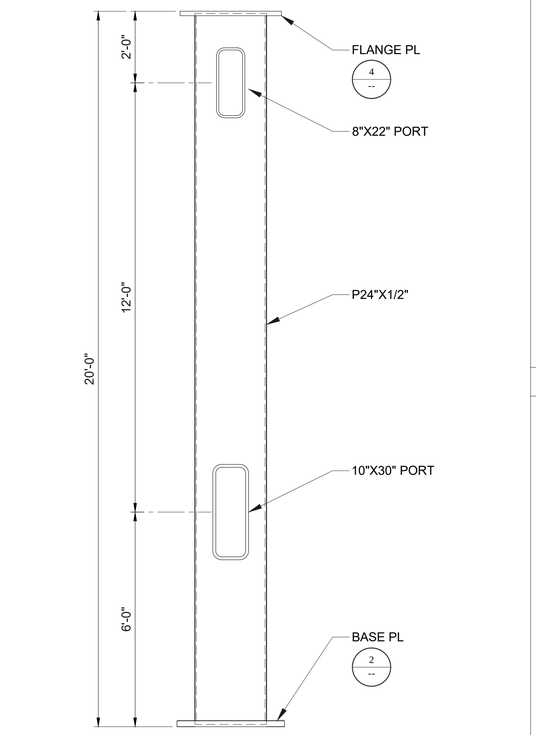
POLE IS A SECTIONAL ASSEMBLY.
MAXIMUM ASSEMBLY HEIGHT AFG = 81'2.125"
POLE NOT SHOWN TRUE MAXIMUM HEIGHT.
SCHEMATIC IN NATURE.



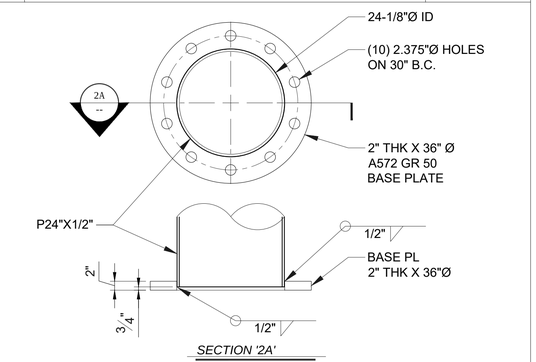
1 TYPICAL TOWER ELEVATION — SCALE: NTS



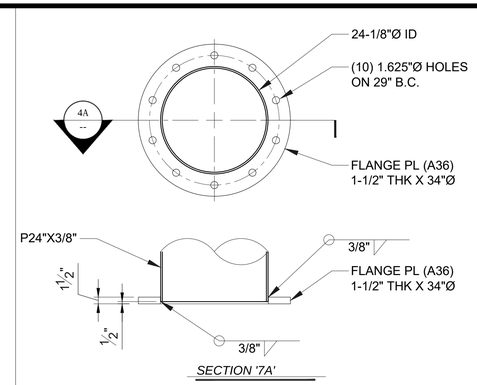
4 BASE POLE TOP FLANGE PLATE — SCALE: 3/4" = 1'-0"



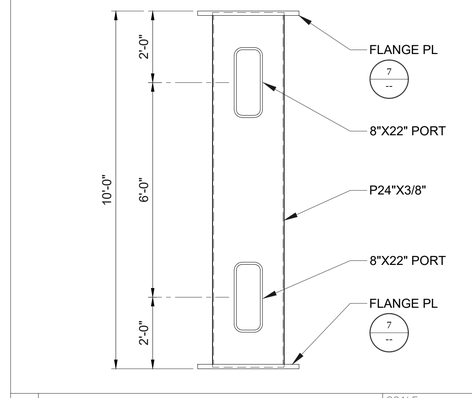
3 BASE POLE ELEVATION — SCALE: 1/2" = 1'-0"



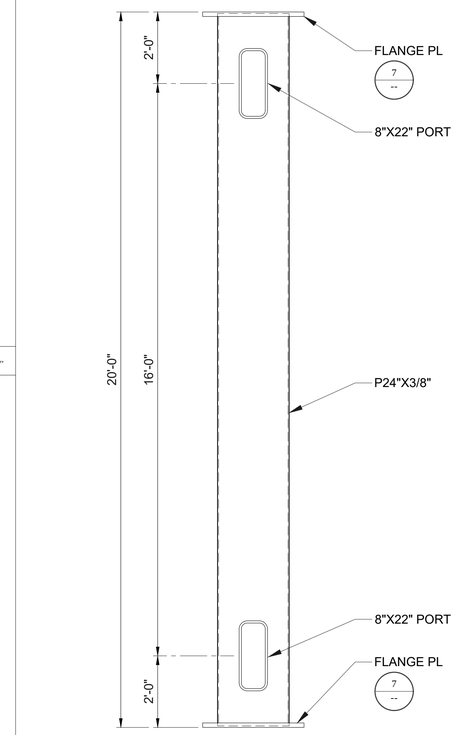
2 BASE POLE - BASE PLATE — SCALE: 3/4" = 1'-0"



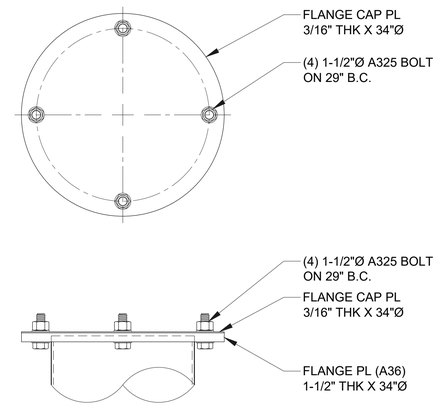
7 20' AND 10' POLE FLANGE PLATE — SCALE: 3/4" = 1'-0"



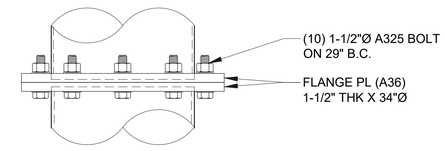
6 10' POLE SECTION ELEVATION — SCALE: 1/2" = 1'-0"



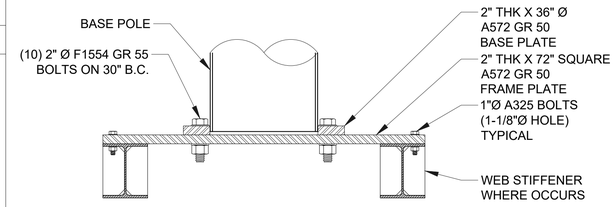
5 20' POLE SECTION ELEVATION — SCALE: 1/2" = 1'-0"



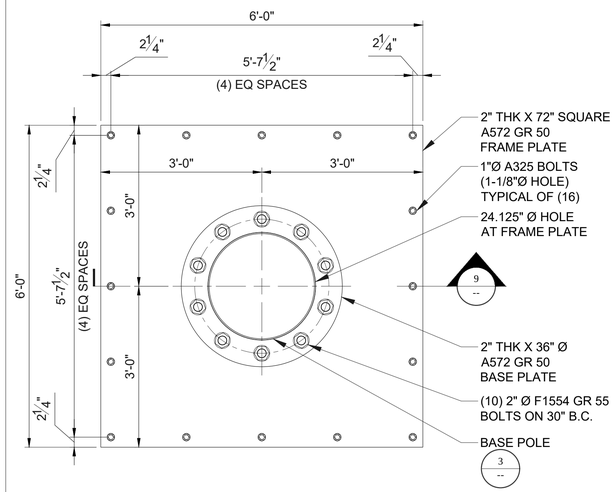
11 OPTIONAL TOP OF ASSEMBLED TOWER CAP PL — SCALE: 1" = 1'-0"



10 TYPICAL FLANGE TO FLANGE CONNECTION — SCALE: 1" = 1'-0"



9 SECTION AT TOWER BASE ASSEMBLY — SCALE: 1" = 1'-0"



8 TOWER BASE ASSEMBLY — SCALE: 1" = 1'-0"

CMI COMMUNICATIONS
MAINTENANCE AND INSTALLATION

ISE Incorporated
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Phoenix, AZ 85076
PHONE: 602-403-8614
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ISE JOB #: 14012

MODULAR MONOPOLE & FOUNDATION

POLE ASSEMBLY DETAILS

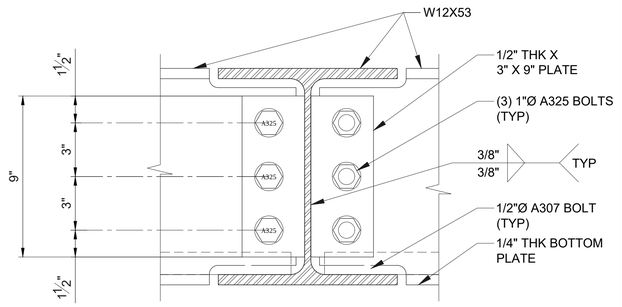
Registered Professional Engineer
CERTIFICATE NO.
52229
Glen L.
Hunt III
Date Signed
ARIZONA, U.S.A.
Expires 6/30/2019

PROGRESS LOG

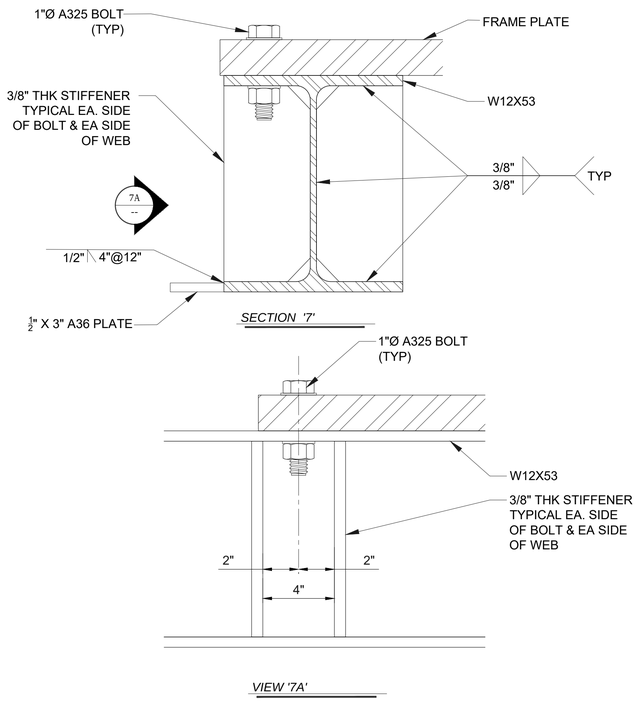
1	01/04/19	BASE PLATE CHANGES	KY
0	11/01/18	ISSUED TO CLIENT	MG

SHEET NUMBER: S1
PROGRESS: 1

DRAWING DATE
January 04, 2019



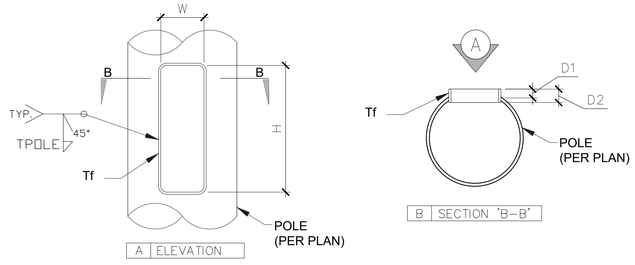
6 W12X53 TO W12X53 — SCALE: 3" = 1'-0"



7 WEB STIFFENER — SCALE: 3" = 1'-0"

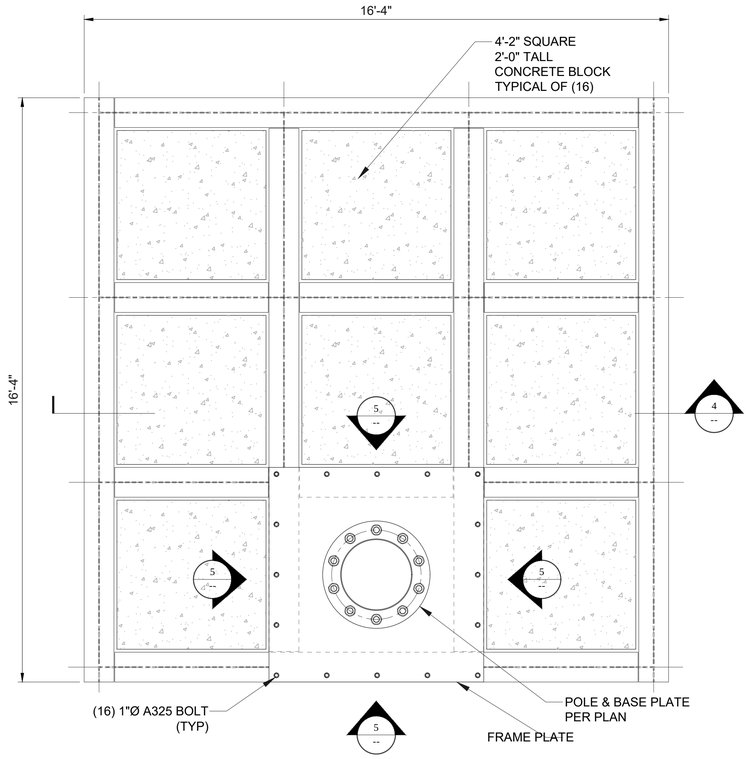
COAX HAND/ACCESS HOLE SCHEDULE

ELEV (AFG)	QTY	W (IN)	H (IN)	AZIMUTH	D1 (IN)	D2 (IN)	Tf (IN)
PER PLAN	2	8	22	0°, 120°, 240°	1 1/2	3	3/4
PER PLAN	4	10	30	0°, 120°, 240°, 270°	1 1/2	3 1/2	1

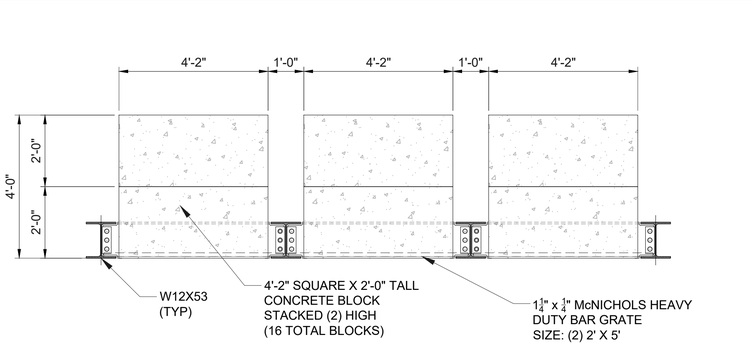


Tf = THICKNESS OF FLANGE

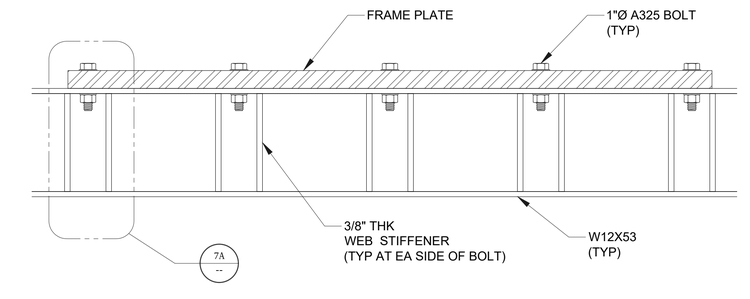
8 HAND HOLE / PORT DETAIL — SCALE: NTS



3 ASSEMBLED FOUNDATION PLAN — SCALE: 1/2" = 1'-0"



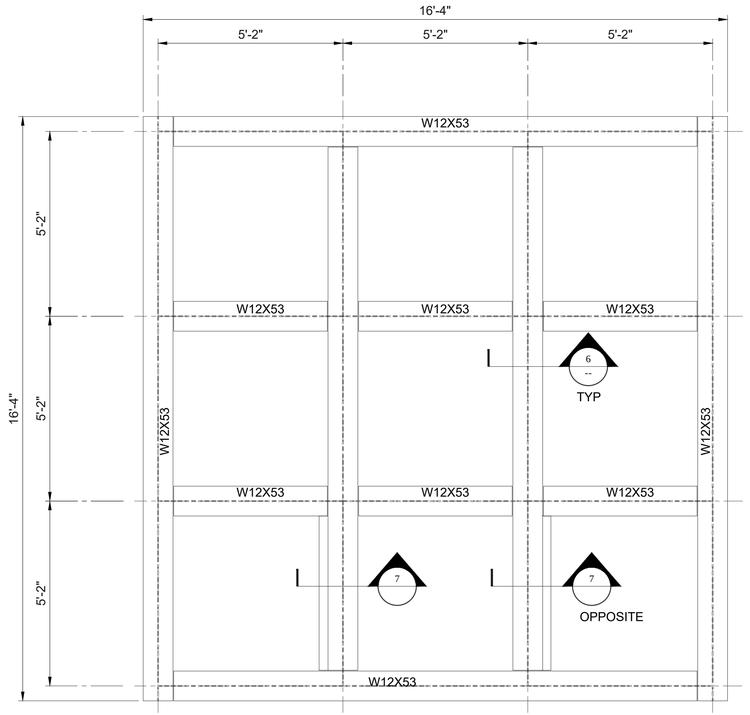
4 ASSEMBLED FOUNDATION SECTION — SCALE: 1/2" = 1'-0"



STIFFENERS UNDER BOLTS AT POLE BASE PLATE ONLY

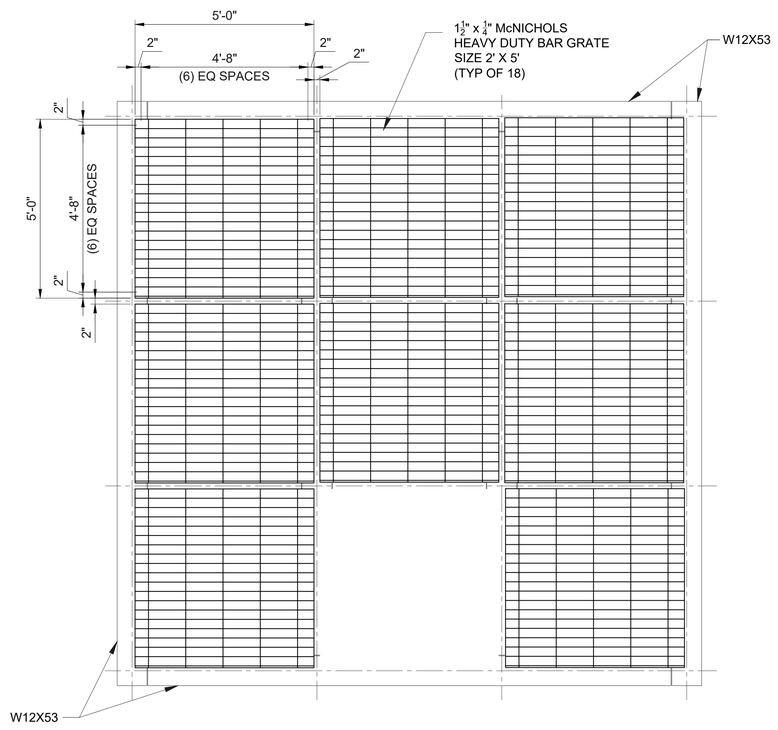
CONCRETE BLOCKS NOT SHOWN FOR CLARITY

5 STIFFEN PLATES IN PLACE



ALL WIDE FLANGE BEAMS
W12X53

1 FOUNDATION FRAMING PLAN — SCALE: 1/2" = 1'-0"



2 BOTTOM OF FRAME PLATE ASSEMBLY — SCALE: 1" = 1'-0"

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ISE JOB #: 14012

MODULAR MONOPOLE & FOUNDATION

FOUNDATION ASSEMBLY DETAILS

Registered Professional Engineer — CERTIFICATE NO. 52229 — Glen L. Hunt III — Date 13, 2019 — Designee6 — ARIZONA, U.S.A. — Expires 6/30/2020

PROGRESS LOG

1	01/04/19	BASE PLATE CHANGES	KY
0	11/01/18	ISSUED TO CLIENT	MG

SHEET NUMBER: S2.0

PROGRESS: 1

DRAWING DATE: January 04, 2019