

Plan Reviews & Approvals Status  
B18-106067 ANTENNAE-TOWER-STRUCTURAL

**Owner:** BROWARD COUNTY, BOARD OF COUNTY COMMISSIONERS  
**Site Address:** 1200 SHERIDAN ST  
HOLLYWOOD, FL 33019

**Status Dates**

Applied: 07/30/2018  
Due Date: 07/31/2018  
Ready for Issue:  
Issued:  
Partial C/O Issued:  
TEMP C/O Issued:  
C/O Issued:  
C/C Issued:  
Cancelled:  
Closed:  
Expired:  
Last Reopened:

Plan Reviews & Approvals Status  
B18-106067 ANTENNAE-TOWER-STRUCTURAL

<u>Reviews</u>	<u>Approved</u>	<u>Date Entered</u>	<u>User Name</u>
BLDG-STRUCTURAL-PLAN REVIEW	NO	8/20/2018	DOMENICO I DE LISO
BLDG-STRUCTURAL-PLAN REVIEW	NO	8/20/2018	Domenico De Liso
BLDG-STRUCTURAL-PLAN REVIEW	NO	8/21/2018	DOMENICO I DE LISO
BLDG-STRUCTURAL-PLAN REVIEW	NO	8/21/2018	Domenico De Liso
ENGINEERING-PLAN REVIEW	NO	8/21/2018	CLARISSA IP
ENGINEERING-PLAN REVIEW	NO	8/21/2018	Clarissa Ip
LANDSCAPE REVIEW	NO	8/21/2018	GUILLERMO SALAZAR
UTILITIES-DRAINAGE-PLAN REVIEW	NO	10/8/2018	WILFORD ZEPHYR
ENGINEERING-LANDSCAPE REVIEW	NO	10/24/2018	GUILLERMO SALAZAR
BLDG-ELECTRICAL-PLAN REVIEW	YES	8/21/2018	ED WEIDLICH
BLDG-ELECTRICAL-PLAN REVIEW	YES	8/21/2018	Ed Weidlich
BLDG-ELECTRICAL-PLAN REVIEW	YES	8/21/2018	ED WEIDLICH
BLDG-ELECTRICAL-PLAN REVIEW	YES	8/21/2018	Ed Weidlich

<u>Approvals &amp; Certifications</u>	<u>Approved</u>	<u>Date</u>	<u>Performed By</u>
Broward County Notice of Commencement		7/30/2018	

<u>Inspection Description</u>	<u>Inspection Discipline</u>	<u>Result</u>	<u>Result Date</u>
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**Inspection Results:**

# Plan Reviews & Approvals Status

## B18-106067 ANTENNAE-TOWER-STRUCTURAL

### Application Comments

<u>Description</u>	<u>Comments</u>	<u>Date</u>	<u>Entered By</u>
ContractorOverride	USER OVERRIDE:The Following Have Expired For Contractor: LAMBERT BROS. INC State Certification, Liability Insurance, Workmans Compensation, COMMENT:	7/30/2018	FJOSEPH

ContractorOverride	USER OVERRIDE:The Following Have Expired For Contractor: LAMBERT BROS. INC State Certification, Liability Insurance, Workmans Compensation, COMMENT:	7/30/2018	FJOSEPH
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### PermitScreen Comments

<u>Description</u>	<u>Comments</u>	<u>Date</u>	<u>Entered By</u>
	Approved 8/21/18 submittal and created electrical sub permit Weezer electric Tom Jeffers EC-0001360 954 444 2561 Modular cell site with 400 amp generator. Prewired trailer. Connections to generator and FP&L only. 10000	8/21/2018	EWEIDLICH

### PlanReview Comments

<u>Description</u>	<u>Comments</u>	<u>Date</u>	<u>Entered By</u>
	You have received a C/A.  C/A--Conditional Approval, which means your electrical plan is o/k but you will still need an electrical contractor to submit a notarized permit application.  You will be able to obtain your master permit with this approval, and you can also obtain your sub-electric permit, when you pick up your master permit or later when needed as long as you have a fully executed permit application in the file from the electrical contractor and he is up to date with licenses and required insurances.	8/16/2018	EWEIDLICH

Conditional Approvals never hold up the issuance of a Master Permit.

Approved 7/30/18 submittal with CA for EC application. Modular cell site with 400 amp generator. Prewired trailer. Connections to generator and FP&L only.  8000 ug , ec r f	8/16/2018	EWEIDLICH
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8/20/2018	WZEPHYR
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# Plan Reviews & Approvals Status

## B18-106067 ANTENNAE-TOWER-STRUCTURAL

### PlanReview Comments

<u>Description</u>	<u>Comments</u>	<u>Date</u>	<u>Entered By</u>
	Survey show property in flood zone AH5, with Base Flood Elevation (BFE) of 5' NAVD88. Finished floor elevation of the proposed storage building has to be set at 6' NAVD. Revise plan accordingly.	8/21/2018	CDIAZ
	1. It is pending an approval from the Commission meeting	8/21/2018	EWEIDLICH
	Approved 8/21/18 submittal and created electrical sub permit Weezer electric Tom Jeffers EC-0001360 954 444 2561 Modular cell site with 400 amp generator. Prewired trailer. Connections to generator and FP&L only.		
BLDG-ELECTRICAL-PLAN REVIEW	This site is on west side of large lake on hollywood water tower site.	8/16/2018	EWEIDLICH
BLDG-ELECTRICAL-PLAN REVIEW	submit elect app	8/21/2018	FJOSEPH
BLDG-STRUCTURAL-PLAN REVIEW	1) Provide the Tower and tower Foundation design signed and sealed by an engineer 2) Provide a subsoil investigation report by a geotechnical engineer, clearly identifying the allowable in-place bearing capacity of the building pad for the proposed structure and verify the existing soil conditions - The certified in-place bearing capacity shall meet or exceed the design bearing capacity - FBC 1803 3) Provide a filled in Permit Application, including the contractor's license and the job value 4) Provide a Special Inspector Form signed by the owner and the contractor, and filled in, signed, dated and sealed by the special inspector for Building Structure of unusual size, height, design and critical structural connections. 5) Provide subpermit applications for: - Generator - Equipment storage shelter - Fence	8/20/2018	DDELISO
BLDG-STRUCTURAL-PLAN REVIEW	submit struct app	8/21/2018	FJOSEPH
BLDG-STRUCTURAL-PLAN REVIEW		8/21/2018	DDELISO

**Plan Reviews & Approvals Status**  
**B18-106067 ANTENNAE-TOWER-STRUCTURAL**

**PlanReview Comments**

<u>Description</u>	<u>Comments</u>	<u>Date</u>	<u>Entered By</u>
	Permit application is on file: 1) Provide the Tower and tower Foundation design signed and sealed by an engineer 2) Provide a subsoil investigation report by a geotechnical engineer, clearly identifying the allowable in-place bearing capacity of the building pad for the proposed structure and verify the existing soil conditions - The certified in-place bearing capacity shall meet or exceed the design bearing capacity - FBC 1803 3) Provide a Special Inspector Form signed by the owner and the contractor, and filled in, signed, dated and sealed by the special inspector for Building Structure of unusual size, height, design and critical structural connections. 4) Provide subpermit applications for: - Generator - Equipment storage shelter - Fence		
ENGINEERING-PLAN REVIEW	Provide signed and sealed engineer's estimate for civil engineering related work.	8/21/2018	CIP
ENGINEERING-PLAN REVIEW	1. Provide signed and sealed engineer's estimate for civil engineering related work.  2. Provide wetlands determination letter or environmental permit from Broward County.	4/8/2019	CIP
LANDSCAPE REVIEW		8/21/2018	GSALAZAR

# Plan Reviews & Approvals Status

## B18-106067 ANTENNAE-TOWER-STRUCTURAL

### PlanReview Comments

<u>Description</u>	<u>Comments</u>	<u>Date</u>	<u>Entered By</u>
	<p>In prior to move forward with Landscape plan review process applicant to submit a landscape plan and documents as follows:</p> <ol style="list-style-type: none"> <li>1. Provide information updated tree survey not older than 6 months for existing trees on site on a separate table include: location, species, estimated ht./spread, and /DBH diameter of trunks in inches.</li> <li>2. Provide a detailed tree disposition plan and landscape plan on separate sheets by a registered professional licensed Landscape Architect in the State of Florida that compliments the building architecture and uses, provides for shade, beautifies the site, accentuates site features, and serves as a buffer where appropriate. Provide tabular data chart on plan that identifies City of Hollywood landscape requirements and how they are being met for Perimeter landscape, Species diversity requirements, Interior landscape for at grade parking lots and vehicular use areas, open space, view triangle, planning and development board and historic preservation board and irrigation. Landscape plan should comply with all the requirements according to City of Hollywood Landscape manual, chapter 155.52, Article 9 LDR. Landscape plan set to include and clarify what is been provided as per city code requirements for landscape for project type. As per submitted clarity is required in terms of amount of inches of DBH for trees proposed to be removed and trees not meeting City of Hollywood minimum height or DBH requirements at planting.</li> <li>3. Provide irrigation plans for an automatic underground irrigation system for the project. Irrigation plans shall be prepared, signed and sealed by a registered professional licensed to do such design under State of Florida Statute 481.303(6)(c) or as otherwise prescribed under Florida Statutes.</li> <li>4. Additional comments may be forthcoming at Building permit submittal.</li> </ol> <p>According to Chapter 155.52 of the Code of Ordinances and the City of Hollywood Landscape Manual. Shade trees to be installed at a minimum size of 2" DBH/ 12' height. Existing trees meeting this criteria may be used as credit toward total requirement. Palm trees count toward tree requirements on a 3:1 basis, meaning 3 palms equal 1 broadleaf tree. The following palm species are the exception and count 1:1 as trees: Royal Palm, Phoenix sylvestris/Medjool/canariensis, Bismarkia, and Coconut. Minimum height requirements for all palms at planting is 8' of GW or CT.</p> <p>No tree removals without a tree removal sub- permit. Supplemental arborist report might be required as needed to approve any tree removal permit. Applicant to submit a complete Broward County Uniform Building Application and separate application for tree removal and planting sub-permit. Submit approved and signed total final landscape installation estimate from Landscape contractor/installer for two separate sub-permits in separate to comply with existing pending city code tree planting and removal</p> <p>Coordinate meeting with Guillermo Salazar Landscape plan reviewer for any further questions or clarifications at <a href="mailto:gsalazar@hollywoodfl.org">gsalazar@hollywoodfl.org</a></p>		

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**PlanReview Comments**

<u>Description</u>	<u>Comments</u>	<u>Date</u>	<u>Entered By</u>
	Review was mistakenly removed. Comment below needs to be addressed prior to Utilities approval.		
	Survey show property in flood zone AH5, with Base Flood Elevation (BFE) of 5' NAVD88. Finished floor elevation of the proposed storage building has to be set at 6' NAVD. Revise plan accordingly.		

**System Comments**

<u>Description</u>	<u>Comments</u>	<u>Date</u>	<u>Entered By</u>
		7/30/2018	
	Address Change from 4950 SW 40 CT	504231010242	
		8/16/2018	
	Permit Type Change from NEW-MODULAR MANUFACTURED		

Plan Reviews & Approvals Status  
B18-106067 ANTENNAE-TOWER-STRUCTURAL

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<u>Linked Permits</u>	<u>Status</u>
E18-102087	CREATED

**From:** Alejandro Gil [<mailto:alex@adluccemcorp.com>]

**Sent:** Friday, June 7, 2019 5:03 PM

**Subject:** RE: Building Permit 2018

Hello,

Thank you for the documentation. The CIRC document in particular was very entertaining reading. With respect to the drawings, many of the items I noticed were documented in the permitting feedback. Namely:

- The drawings have conflicting information. In some, the generator is located on a 3 to 6" pad on the ground sitting atop legs to get it above the calculated flood zone. Others have it on the same platform as the shelter. Not clear why the conflicting drawings.
- The two main things I noticed were that the tower still shows it being 300'.
- No foundation drawings
- Shows a 100kw generator rather than a 175kw generator in a subsequent set of drawings.

In terms of the CIRC analysis, here are my observations:

- Page 5
  - Given the size and height of the CIRC building, the area behind the building should experience shadowing regardless of whether or not it is being serviced by the CIRC building or the WLP tower. Gerald, please confirm if you agree.
  - I personally disagree with the need for modifications, but I cannot confirm whether there would be "significant modifications" until we close on the installation strategy. In my opinion, that would only be applicable if you were putting the batteries up on the top floor. If we put those on the lower floor, the load on the boiler room floor would be significantly less, and more accommodating.
  - The construction at the CIRC will not take longer than building a free standing tower. That is patently false given less work is required in the CIRC, and we can have separate teams doing the work on the boiler room, another team building the room for the batteries and generator and then the electrician.
  - Recovery – this comment was particularly amusing. Again, completely untrue. We could keep spare antennas in the building in order to get service back up right away, and to boot the building affords more protection to the equipment than the tower. Plus, the building is not in a flood zone, so the most likely scenario is the teams could be in the building the very next day. The same cannot be said about WLP. I've already shared my thoughts on the recovery at WLP.
- Page 6
  - Raised concrete floor is only one option. I'm sure Gerald can research other alternatives and find a comparably good solution. Especially if we are only putting the P25 BTS and power plant in the boiler room.
  - A helicopter is definitely not necessary, and we believe we can get around the need for a crane. So the crane is a last resort.
- Page 9 (Flood Mitigation)
  - Really enjoyed this one. Particularly amusing. Even if the boiler were to burst, it would not flood the room and submerge the equipment. Worst case, this is a wash along with WLP. Both sites have some element of risk, but the risk of flooding at WLP is without question higher than CIRC.
- Page 11
  - Clearly states that systemwide coverage is comparable to WLP which is what the BCC argued for. We just need to find a solution for propagating signal in the surrounding area under the building. Tall buildings behind CIRC should experience some element of shadowing regardless of which site is selected.
  - New construction increases the risks of shadowing regardless of what site is selected. This is a wash between both sites.

- Both sites would need to get FAA approval, but given the roof already has the really tall spires on them it is less likely to get rejected than a 306' (or 321') tower (depending on which drawing ends up being correct).
- Page 16
  - Bullet 1 doesn't even merit attention. The numbers are absurd.
  - Bullet 2 is purely an assumption. The lease agreement with CIRC needs to be finalized rather than anyone guessing.
  - Bullet 3 makes it clear they know nothing about towers. A tower does not cost \$5k to maintain. Here are all the items required to maintain a tower:
    - Monthly mowing, treatment for weeds and removal of debris. Common for all tower owners.
    - Pest control (especially so close to the water). Common for all tower owners.
    - Given the close proximity to the water, you need to plan on visiting that tower monthly and inspecting it for exposed metal and treatment with cold galve and paint. That means a minimum of a 2 man team climbing the tower and performing the inspection and maintenance. For a 2 man tiger team, I charge \$2500 to \$3000 per day for this kind of thing. This should be a day's worth of work every time they visit.
      - On a rooftop site, all costs should be incorporated into the lease. Not sure what additional costs there would be in the CIRC.
- Page 19
  - I disagree. If you are doing recovery on the CIRC, you can send two people to do the work, and they do not need to be tower climbers. All they need to do is grab their tools (and materials), hit the stairwell and walk up to the top story. Only thing on the building that would need attention are the microwave dishes up on the roof and the antennas on the parapet walls. Perhaps some of the coax runs. If we store spares in the building, they could immediately recover it. Especially given the equipment is protected inside the building.
    - Remember, during a recovery, it's about getting the network back up. It's not about making it pretty. The dressing in and repair can take place later. All that matters is getting the system back on the air.
  - Recovery on the WLP tower will require a 4 man team. Assuming the area is not under water, and is accessible with a truck, this would apply. Upon arrival, they need to get all their kit out of the truck and the trailer they will need in order to bring the MW dish and all the materials for installation. Then they have to do a safety precheck, check all harnesses and climbing apparatus, and the climbing ropes to insure nothing is damaged. JHA form and associated documentation needs to be completed, and all parties need to sign. That is a requirement of the industry. That usually takes an hour. Once the guys are rigged and ready to climb, 2 guys go up and 2 stay at the base. If the tower took damage, then they need to be careful as the climb in the event there is equipment in the path of the safety climb. You do not climb a 306 to 320' tower in 5 minutes. It takes time to climb while tying off as you go up the tower. Once they get to the top, they inspect everything to insure that it is safe, assess the damage, radio down what is required and then they rig the tower. Before any work can be done, any and all materials on the tower that are damaged and hanging must be removed to eliminate a safety issue. Then we set up and begin working. Just based on the above, it is safe to say that a rooftop site is faster.
    - Climbing towers is very dangerous. Safety protocols must (and will as far as my people are concerned) be adhered to and followed. Every year people die falling from towers. Circumventing safety is not an option. During a recovery after a storm, the entire environment is dangerous and that is when safety protocols are most critical.

- Last bullet, this is a matter of planning. My suggestion would be to do proper disaster recovery planning and keep the spares on the site. There is room to store materials in CIRC. If you leave anything on the WLP site, it has a probably of being caught up in the storm surge and possibly getting damaged. What can be stored inside the shelter will depend on space, but an 8' MW dish is definitely not going to fit in there; and, without transmission to connect the site to the network, you have no P25 network. Transmission is the backbone.
  - Regarding WLP, the following would apply:
    - Until the waters around the tower recede down low enough for a truck to reach it, and the area to and around the tower is cleared of debris, no work can commence on the tower. You cannot recover the site, if you cannot reach it.
    - Assuming they install all the way at the top of the tower, WLP will also require a crane or helicopter to recover the site, because you need 15 to 20' of head room clearance for a winch to be utilized. A crane is entirely unrealistic immediately after a storm, because a crane operator will not drive their crane into an area that is under water because the weight of the crane will cause it to sink. So only two possible outcomes are on the table:
      1. No recovery can be performed until the storm surge recedes, the area is cleared, dries and is suitable for a crane. Not an option given this is the P25 for first responders.
      2. Use a helicopter to raise the 8' microwave dish from aviat, the 6 25' antennas and the 6 runs of 1 5/8" coax.

That document has both factual and fictional elements. I cannot tell you whether it was intentional or simply they did not know; however, it was a factual misrepresentation of reality. Some of the disadvantages that they applied to CIRC are actually applicable to WLP and not CIRC.

Gerald,

Your thoughts?

Best regards,

Alex Gil

**AD LUCEM**

Mobile - 973.714.5649

Email – [alex@adlucemcorp.com](mailto:alex@adlucemcorp.com)

B18-106007

BROWARD COUNTY UNIFORM BUILDING PERMIT APPLICATION

Select One Trade:  Building  Electrical  Plumbing  Mechanical  Other

Application Number: \_\_\_\_\_ Application Date: \_\_\_\_\_

Job Address: 1200 SHERIDAN STREET	Unit:	City: Holly Wood
Tax Folio No.:	Flood Zn.:	BFE:
Building Use: Public Safety Communications	Construction Type:	Job Value: \$ 100,000
Occupancy Group:		
1 Present Use: vacant	Proposed Used: Public Safety Communications	
Description of Work: Construct 300' Self Supporting tower, foundations for 24'x32' shelter and 100 kW Diesel Generator		
<input checked="" type="checkbox"/> New <input type="checkbox"/> Addition <input type="checkbox"/> Repair <input type="checkbox"/> Alteration <input type="checkbox"/> Demolition <input type="checkbox"/> Revision <input type="checkbox"/> Other:		
Legal Description: Section 34, Township 49 South, Range 37 East <input type="checkbox"/> Attachment		
2 Property Owner: Broward County Phone: 954-205-9779 Email: jdezas@broward.org		
Owner's Address: 115 S. Andrews Avenue City: Fort Lauderdale State: FL Zip: 33301		
3 Contracting Co.: The W Group Phone: 772-421-3523 Email: TomFlynn@twgcontractors.com		
Company Address: 1409 SW Albatross Way City: Palm City State: FL Zip: 34990		
Qualifier's Name: Tom Flynn Owner-Builder: <input checked="" type="checkbox"/> License Number: CGC 1505177		
4 Architect/Engineer's Name: David Shiver Phone: 770-421-3400 Email: David.Shiver@woodplc.com		
Architect/Engineer's Address: 1075 Big Shanty Road NW City: Kennesaw State: GA Zip: 30144		
Bonding Company: n/a		
Bonding Company Address: City: State: Zip:		
Fee Simple Titleholder's name (if other than owner): n/a		
Fee Simple Titleholder's Address (If other than owner): City: State: Zip:		
Mortgage Lender's Name: n/a		
Mortgage Lender's Address: City: State: Zip:		

Application is hereby made to obtain a permit to do the work and installations as indicated. I certify that no work or installation has commenced prior to the issuance of a permit and that all work will be performed to meet the standards of all laws regulating construction in this jurisdiction. I understand that a separate permit must be secured for ELECTRICAL WORK, PLUMBING, SIGNS, WELLS, POOLS, FURNACES, BOILERS, HEATERS, TANKS, and AIR CONDITIONERS, etc.

OWNER'S AFFIDAVIT: I certify that all the foregoing information is accurate and that all work will be done in compliance with all applicable laws regulating construction and zoning.

WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE COMMENCING WORK OR RECORDING YOUR NOTICE OF COMMENCEMENT.

X [Signature] Signature of Property Owner or Agent

[Signature] Signature of Qualifier

STATE OF FLORIDA  
COUNTY OF BROWARD

STATE OF FLORIDA  
COUNTY OF BROWARD

Sworn to (or affirmed) and subscribed before me this 31st day of July, 2018 by \_\_\_\_\_

Sworn to (or affirmed) and subscribed before me this 3rd day of August, 2018 by \_\_\_\_\_

Notary Public State of Florida  
 Lisa T Bolden  
 My Commission FF 976892  
 Expires 03/30/2020  
 NOTARY'S SIGNATURE as to Owner or Agent's Signature  
 Notary Name Lisa T. Bolden  
 (Print, Type or Stamp Notary's Name)

Notary Public State of Florida  
 Lisa T Bolden  
 My Commission FF 976892  
 Expires 03/30/2020  
 NOTARY'S SIGNATURE as to Qualifier's Signature  
 Notary Name Lisa T. Bolden  
 (Print, Type or Stamp Notary's Name)

Personally Known \_\_\_\_\_ or Produced Identification   
Type of Identification Produced Driver's License

Personally Known \_\_\_\_\_ or Produced Identification   
Type of Identification Produced Driver's License

APPROVED BY: \_\_\_\_\_ Permit Officer Issue Date: \_\_\_\_\_ Code in Effect: \_\_\_\_\_

A jurisdiction may use a supplemental page requesting additional information and citing other conditions, please inquire. Note: If any development work as described in FS 380.04 Sec. 2 a-g is to be performed, a development permit must be obtained prior to the issuance of a building permit.

B18-101-267

### BROWARD COUNTY UNIFORM BUILDING PERMIT APPLICATION

Select One Trade:  Building  Electrical  Plumbing  Mechanical  Other \_\_\_\_\_

Application Number: \_\_\_\_\_ Application Date: \_\_\_\_\_

Job Address: 1200 SHERIDAN STREET	Unit:	City: Holly Wood
Tax Folio No.:	Flood Zn:	BFE:
Building Use: Public Safety Communications	Construction Type:	Job Value: \$ 10,000
1 Present Use: vacant	Proposed Used: Public Safety Communications	Occupancy Group:
Description of Work: Electrical connection to FP&L, back up generator and site grounding		
<input checked="" type="checkbox"/> New <input type="checkbox"/> Addition <input type="checkbox"/> Repair <input type="checkbox"/> Alteration <input type="checkbox"/> Demolition <input type="checkbox"/> Revision <input type="checkbox"/> Other:		
Legal Description: Section 34, Township 49 South, Range 37 East		<input type="checkbox"/> Attachment
2 Property Owner: Broward County		Phone: 954-205-9779 Email: jdezayas@broward.org
Owner's Address: 115 S. Andrews Avenue		City: Fort Lauderdale State: FL Zip: 33301
3 Contracting Co.: Weezer Electric		Phone: 954-444-2561 Email: weezerelectric@att.net
Company Address: 271 NW 16th St		City: Pompano Beach State: FL Zip: 33060
Qualifier's Name: Tom Jeffers		Owner-Builder: <input checked="" type="checkbox"/> License Number: EC-0001360
4 Architect/Engineer's Name: Jason D Page		Phone: 770-421-3400 Email: Jason.Page@woodplc.com
Architect/Engineer's Address: 1075 Big Shanty Road NW		City: Kennesaw State: GA Zip: 30144
Bonding Company: n/a		
4 Bonding Company Address:		
Fee Simple Titleholder's name (if other than owner): n/a		
Fee Simple Titleholder's Address (If other than owner):		
Mortgage Lender's Name: n/a		
Mortgage Lender's Address:		

Application is hereby made to obtain a permit to do the work and installations as indicated. I certify that no work or installation has commenced prior to the issuance of a permit and that all work will be performed to meet the standards of all laws regulating construction in this jurisdiction. I understand that a separate permit must be secured for ELECTRICAL WORK, PLUMBING, SIGNS, WELLS, POOLS, FURNACES, BOILERS, HEATERS, TANKS, and AIR CONDITIONERS, etc.

**OWNER'S AFFIDAVIT:** I certify that all the foregoing information is accurate and that all work will be done in compliance with all applicable laws regulating construction and zoning.

**WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE COMMENCING WORK OR RECORDING YOUR NOTICE OF COMMENCEMENT.**

X [Signature]  
Signature of Property Owner or Agent  
STATE OF FLORIDA  
COUNTY OF BROWARD

X [Signature]  
Signature of Qualifier  
STATE OF FLORIDA  
COUNTY OF BROWARD

Sworn to (or affirmed) and subscribed before me this 31st day of July, 2018 by

Sworn to (or affirmed) and subscribed before me this 2nd day of August, 2018

Notary Public State of Florida  
Lisa T Bolden  
My Commission FF 976892  
Expires 03/30/2020

Notary Public State of Florida  
Lisa T Bolden  
My Commission FF 976892  
Expires 03/30/2020

NOTARY'S SIGNATURE as to Owner or Agent's Signature  
Notary Name Lisa T. Bolden  
(Print, Type or Stamp Notary's Name)

NOTARY'S SIGNATURE as to Qualifier's Signature  
Notary Name Lisa T. Bolden  
(Print, Type or Stamp Notary's Name)

Personally Known \_\_\_\_\_ or Produced Identification ✓

Personally Known \_\_\_\_\_ or Produced Identification ✓

Type of Identification Produced Driver's License

Type of Identification Produced Driver's License

APPROVED BY: \_\_\_\_\_ Permit Officer Issue Date: \_\_\_\_\_ Code in Effect: \_\_\_\_\_

A jurisdiction may use a supplemental page requesting additional information and citing other conditions, please inquire.

Note: If any development work as described in FS 380.04 Sec. 2 a-g is to be performed, a development permit must be obtained prior to the issuance of a building permit.

## Letter of Transmittal

To: City of Hollywood P.O. Box 229045 Hollywood, FL, 33022-9045 Phone: (954)921-3335 • Fax (954)921-3037	Date <u>8/15/18</u> Permit Number: <u>218-106067</u> E-Mail Address: _____ Project/ Reference: <u>BROWARD Co.</u>
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**For Review By: (check all applicable spaces)**

Planning  
  Zoning  
  Engineering  
  Fire  
  Water/ Sewer  
  Drainage  
  Landscape  
  CRA

**Discipline:**
 Structural  
  Electrical  
  Plumbing  
  Mechanical  
  Reserve Capacity Changes

From: Mikael Isaac

Address: 1210 NW A STREET  
PLANTATION, FLA.

E-Mail Address: \_\_\_\_\_

Contact: Mikael Isaac

Phone: 305 796. 9695

Fax: ( ) \_\_\_\_\_

**PLANS SUBMITTED: (CHECK )**

<input type="checkbox"/> Architectural Sheet # _____	<input type="checkbox"/> Fire Sheet # _____
<input type="checkbox"/> Structural Sheet # _____	<input type="checkbox"/> Zoning Sheet # _____
<input type="checkbox"/> Electrical Sheet # _____	<input type="checkbox"/> Engineering Sheet # _____
<input type="checkbox"/> Mechanical Sheet # _____	<input type="checkbox"/> RCC Sheet # _____
<input type="checkbox"/> Plumbing Sheet # _____	<input type="checkbox"/> Drainage Sheet # _____
<input type="checkbox"/> Water Sheet # _____	<input type="checkbox"/> Sewer Sheet # _____
<input type="checkbox"/> CRA Sheet # _____	<input type="checkbox"/> Landscape Sheet # _____

**WE ARE SUBMITTING TO YOU (CHECK )**

Via  hand delivery  
 postal delivery  
 drop box  
 special delivery  
 fax copy

Email  
 initial (original) set of plans  
 corrected (non-permitted) plans  
 revised (permitted) plans  
 shop drawings:

<input type="checkbox"/> structural steel	<input type="checkbox"/> pile logs
<input type="checkbox"/> wood trusses	<input type="checkbox"/> condo/ H.O. approval
<input type="checkbox"/> glass/glazing	<input type="checkbox"/> turtle glass I.D.
<input type="checkbox"/> product approvals	<input type="checkbox"/> wind loads
<input type="checkbox"/> fire protection	<input type="checkbox"/> sub-permit
<input type="checkbox"/> other _____	<input type="checkbox"/> outside agencies

spot survey  
 final survey  
 energy (insulation) certification  
 special inspector letter / form  
 soil reports  
 inspection reports  
 energy calcs  
 site plans  
 other \_\_\_\_\_

**For Departmental Use Only:**

Received by: \_\_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_

Special Instructions

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**APPROVED?**

YES  NO  N/A  CA

**Reviews Menu**

**Add New**

**Remove**

**Cancel**

**Update**

**Approvals**

**Add Inspections**

**Add Sub Permits**

**Linked Permits**

**Comments**

**Plans**

**Print Screen**

**Exit**

**Assigned Reviews**

**Reviews For: B19-103057**

Review	Approve	Status Date	Reviewer	Discipline	Reviewer As
ZONING-PLAN REVIEW		05/08/2019		ZONING	
BLDG-ELECTRICAL-PLAN REVIEW	NO	05/29/2019	J STEWART	ELECTRIC	
BLDG-STRUCTURAL-PLAN REVIEW	NO	05/30/2019	DLAMBERT	STRUCTUR	
ENGINEERING-LANDSCAPE REVIEW	NO	05/30/2019	GSALAZAR	LANDSCAPE	
UTILITIES-DRAINAGE-PLAN REVIEW	NO	06/05/2019	WZEPHYR	UTILITIES	

**Master Permit Information**

**Review:** BLDG-ELECTRICAL-PLAN REVIEW **Turn Around:** 10 **Due Date:** 5/23/2019

**Building Type:** [Dropdown] **Bldg Category:** COMMERCIAL

**Square Feet:** 0  CC  CO **Number of Floors:** 1 **Number of Units:** 1

**Construction Type:** [Text] **Max Assembly Capacity:** [Text]

**Occupancy Class:** [Text] **Max Occupancy Load:** [Text]

**Review Type (for Aging):**  Initial  Correction  Revision

**Customer Valuation:** \$157,000.00

**Calculated Valuation:** \$0.00

**STRUCTUR Reviewer Valuation:** \$0.00  Override **Allowable Live Load:** [Text]

**C/O Additional Info:** [Text] **Automatic Fire Sprinkler:** [Dropdown] **FLA Building Code:** [Text]

New Comment Existing Comments

userId	Screen	EventDate	description
JSTEWART	PlanReview	05/29/2019	BLDG-ELECTRICAL-PLAN REVIEW
JSTEWART	PlanReview	05/29/2019	BLDG-ELECTRICAL-PLAN REVIEW
DLAMBERT	PlanReview	05/30/2019	BLDG-STRUCTURAL-PLAN REVIEW
GSALAZAR	PlanReview	05/30/2019	ENGINEERING-LANDSCAPE REVIEW
WZEPHYR	PlanReview	06/05/2019	UTILITIES-DRAINAGE-PLAN REVIEW

PLANS FOR BROWARD COUNTY-WEST LAKE PARK  
T1 THRU E6  
UTILITY COMPANY DOES NOT FURNISH WIRE OR METER  
ENCLOSURE, PROVIDE CONDUIT, WIRE SIZES & SPEC'S ON  
METER ENCLOSURE (E6)  
ALL NEW OR REPLACEMENT GENERATORS NEED TO GO TO BROWARD  
COUNTY ENVIRONMENTAL AND CONSUMER PROTECTION AGENCY FOR  
APPROVAL BEFORE CITY REVIEW  
SHELTER RISER DIAGRAM DOSE NOT MATCH PAGE E6 ONE LINE  
DIAGRAM  
MORE COMMENTS MAY BE FORTH COMING

Submit minimum criteria for electric review as per BCBRA amendments to Fla. Bldg. Code 107.3.5 B



New Comment Existing Comments

userId	Screen	EventDate	description
JSTEWART	PlanReview	05/29/2019	BLDG-ELECTRICAL-PLAN REVIEW
JSTEWART	PlanReview	05/29/2019	BLDG-ELECTRICAL-PLAN REVIEW
DLAMBERT	PlanReview	05/30/2019	BLDG-STRUCTURAL-PLAN REVIEW
GSALAZAR	PlanReview	05/30/2019	ENGINEERING-LANDSCAPE REVIEW
WZEPHYR	PlanReview	06/05/2019	UTILITIES-DRAINAGE-PLAN REVIEW

CREATED ELECTRICAL SUB & INSPECTIONS  
 FOR EMERGENCY RESPONDERS ANTENNA  
 AT WEST LAKE PARK (OFF SHERIDAN ST)  
 SHELTER, GENERATOR, TOWER  
 WEZZER ELECTRIC INC  
 EC0001360  
 954-444-2561  
 THOMAS P JEFFERS  
 \$62,826.00  
 APP IN FILE  
 5-29-18



New Comment Existing Comments

userId	Screen	EventDate	description
JSTEWART	PlanReview	05/29/2019	BLDG-ELECTRICAL-PLAN REVIEW
JSTEWART	PlanReview	05/29/2019	BLDG-ELECTRICAL-PLAN REVIEW
DLAMBERT	PlanReview	05/30/2019	BLDG-STRUCTURAL-PLAN REVIEW
GSALAZAR	PlanReview	05/30/2019	ENGINEERING-LANDSCAPE REVIEW
WZEPHYR	PlanReview	06/05/2019	UTILITIES-DRAINAGE-PLAN REVIEW

- 1) According to the city flood zone maps this building will be in a flood zone (AE) as noted on sheet C1 site layout. The plans from Thermobond sheet C1 special conditions indicate that the structure is not designed for installation in a flood hazard area
- 2) Sheet S1 why are there 2 floor layout and 2 wall and floor layouts
- 3) Is this building pre assembled or assembled on site
- 4) Provide a (signed and sealed) soil report per 1808.2 2017 FBC, the allowable bearing must meet or exceed the design bearing. Or provide a (sealed) statement of the allowable and the design bearing capacity. Foundations shall be designed so as the allowable soil bearing capacity is not exceeded
- 5) The silt screen .Fence and chain wall will be separate sub permits

New Comment Existing Comments

userId	Screen	EventDate	description
JSTEWART	PlanReview	05/29/2019	BLDG-ELECTRICAL-PLAN REVIEW
JSTEWART	PlanReview	05/29/2019	BLDG-ELECTRICAL-PLAN REVIEW
DLAMBERT	PlanReview	05/30/2019	BLDG-STRUCTURAL-PLAN REVIEW
GSALAZAR	PlanReview	05/30/2019	ENGINEERING-LANDSCAPE REVIEW
WZEPHYR	PlanReview	06/05/2019	UTILITIES-DRAINAGE-PLAN REVIEW

In prior to move forward with Landscape plan review process applicant to submit a landscape plan and documents as follows:

1. Provide information updated tree survey not older than 6 months for existing trees on site on a separate table include: location, species, estimated ht./spread, and /DBH diameter of trunks in inches.
2. Provide a detailed tree disposition plan and landscape plan on separate sheets by a registered professional licensed Landscape Architect in the State of Florida that compliments the building architecture and uses, provides for shade, beautifies the site, accentuates site features, and serves as a buffer where appropriate. Provide tabular data chart on plan that identifies City of Hollywood landscape requirements and how they are being met for Perimeter landscape. Species diversity requirements, Interior landscape for at grade parking lots and vehicular use areas, open space, view triangle, planning and development board and historic preservation board and irrigation. Landscape plan should comply with all the requirements according to City of Hollywood Landscape manual, chapter 155.52, Article 9



New Comment Existing Comments

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JSTEWART	PlanReview	05/29/2019	BLDG-ELECTRICAL-PLAN REVIEW
JSTEWART	PlanReview	05/29/2019	BLDG-ELECTRICAL-PLAN REVIEW
DLAMBERT	PlanReview	05/30/2019	BLDG-STRUCTURAL-PLAN REVIEW
GSALAZAR	PlanReview	05/30/2019	ENGINEERING-LANDSCAPE REVIEW
WZEPHYR	PlanReview	06/05/2019	UTILITIES-DRAINAGE-PLAN REVIEW

Address Structural review comment regarding construction of this building in a flood zone.

New Comment Existing Comments

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JSTEWART	PlanReview	05/29/2019	BLDG-ELECTRICAL-PLAN REVIEW
JSTEWART	PlanReview	05/29/2019	BLDG-ELECTRICAL-PLAN REVIEW
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WZEPHYR	PlanReview	06/05/2019	UTILITIES-DRAINAGE-PLAN REVIEW

project type. As per submitted clarity is required in terms of amount of inches of DBH for trees proposed to be removed and trees not meeting City of Hollywood minimum height or DBH requirements at planting.

3. Provide irrigation plans for an automatic underground irrigation system for the project. Irrigation plans shall be prepared, signed and sealed by a registered professional licensed to do such design under State of Florida Statute 481.303(6)(c) or as otherwise prescribed under Florida Statutes.

4. Additional comments may be forthcoming at Building permit submittal.

According to Chapter 155.52 of the Code of Ordinances and the City of Hollywood Landscape Manual. Shade trees to be installed at a minimum size of 2" DBH/ 12' height. Existing trees meeting this criteria may be used as credit toward total requirement. Palm trees count toward tree requirements on a 3:1 basis, meaning 3 palms equal 1 broadleaf tree. The following palm species are the exception and count 1:1 as trees: Royal Palm, Phoenix

New Comment Existing Comments

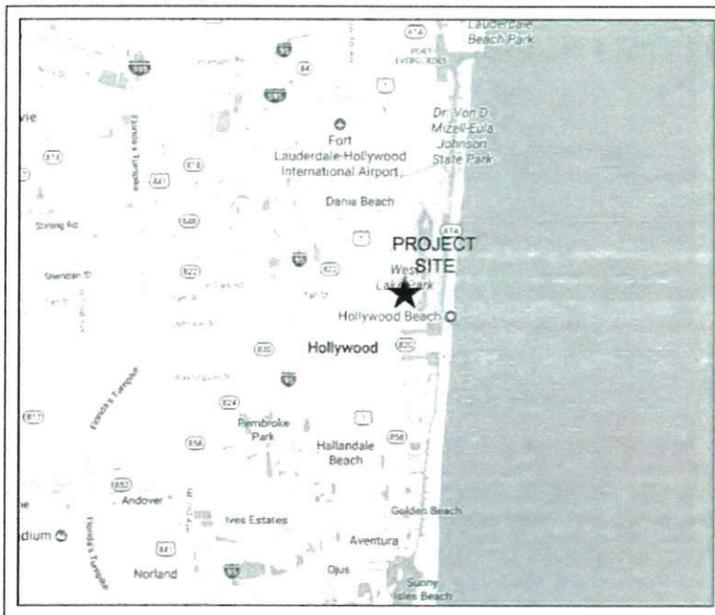
userId	Screen	EventDate	description
JSTEWART	PlanReview	05/29/2019	BLDG-ELECTRICAL-PLAN REVIEW
JSTEWART	PlanReview	05/29/2019	BLDG-ELECTRICAL-PLAN REVIEW
DLAMBERT	PlanReview	05/30/2019	BLDG-STRUCTURAL-PLAN REVIEW
GSALAZAR	PlanReview	05/30/2019	ENGINEERING-LANDSCAPE REVIEW
WZEPHYR	PlanReview	06/05/2019	UTILITIES-DRAINAGE-PLAN REVIEW

The following palm species are the exception and count 1:1 as trees: Royal Palm, Phoenix sylvestris/Medjool/canariensis, Bismarkia, and Coconut. Minimum height requirements for all palms at planting is 8' of GW or CT.

No tree removals without a tree removal sub-permit. Supplemental arborist report might be required as needed to approve any tree removal permit. Applicant to submit a complete Broward County Uniform Building Application and separate application for tree removal and planting sub-permit. Submit approved and signed total final landscape installation estimate from Landscape contractor/installer for two separate sub-permits in separate to comply with existing pending city code tree planting and removal

Coordinate meeting with Guillermo Salazar Landscape plan reviewer for any further questions or clarifications at [gsalazar@hollywoodff.org](mailto:gsalazar@hollywoodff.org)

1318-106067



SITE VICINITY MAP



# MOTOROLA SOLUTIONS

## BROWARD COUNTY - WEST LAKE PARK

1200 SHERIDAN STREET  
HOLLYWOOD, FL 33019

LAT: 26° 01' 45.02" N  
LONG: 80° 07' 55.43" W

**PROJECT CONTACTS:**  
**PROJECT MANAGER:**

**BUSTER LERNER**  
MOTOROLA SOLUTIONS, INC.  
(954) 790-8441

### PROPOSED 300' SELF SUPPORT TOWER SITE



LOCAL MAP

**USE:**

UNMANNED TELECOMMUNICATIONS RELAY EQUIPMENT IN A PROPOSED UNMANNED FACILITY.

**NOTES:**

CONTRACTOR SHALL NOTIFY OWNER FOR ACCESS TO SITE.

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

**INDEX OF DRAWINGS**

- T1 COVER SHEET
- T2 GENERAL NOTES
- T3 GENERAL NOTES
- SR1 SITE TOPOGRAPHICAL SURVEY
- C1 SITE LAYOUT PLAN
- C2 NOT USED
- C3 ICE BRIDGE DETAILS
- C4 EROSION CONTROL DETAILS
- C5 EROSION CONTROL PLAN
- C6 FENCE DETAILS
- E1 ELECTRICAL SITE PLAN
- E2 GROUNDING PLAN
- E3 GROUNDING DETAILS
- E4 GROUNDING DETAILS
- E5 GROUNDING DETAILS
- E6 ELECTRICAL SINGLE LINE DIAGRAM



**MOTOROLA**

8000 W. SUNRISE BLVD  
PLANTATION, FL 33322

PHONE: (954) 723-5000

BROWARD COUNTY -  
WEST LAKE PARK  
1200 SHERIDAN STREET  
HOLLYWOOD, FL 33019

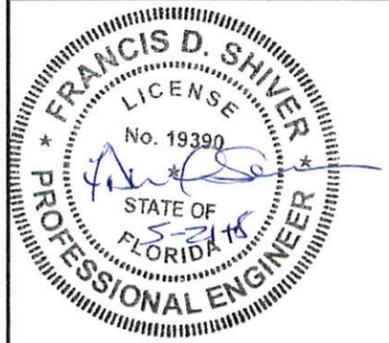
AMEC FOSTER WHEELER PROJECT NO: 6166-17-0575	
DRAWN: J.B. GILMER	CHECKED: F.D. SHIVER
APPROVED: F.D. SHIVER	DATE: 06/01/17



amec  
foster  
wheeler

AMEC FOSTER WHEELER  
ENVIRONMENT AND INFRASTRUCTURE, INC.  
1075 BIG SHANTY DRIVE, N.W., SUITE 100  
KENNESAW, GA 30144  
PHONE: (770) 421-3400 FAX: (770) 421-3486

NO.	DATE	REVISION
A	07/26/17	LEASE EXHIBIT
B	09/27/17	ISSUED FOR PRELIMINARY
C	01/04/18	LEASE EXHIBIT
D	05/21/18	ISSUED FOR PERMITTING



SHEET NO. & NAME

T1  
COVER SHEET

GENERAL REQUIREMENTS

1. GENERAL

1.1. SUMMARY OF WORK

A. THE WORK SHALL CONSIST OF, BUT NOT BE LIMITED TO, THE INSTALLATION OF SHELTER, GENERATOR, ANTENNAS AND LINES, GROUNDING, ELECTRICAL WORK, ETC., ASSOCIATED WITH THE MOTOROLA EQUIPMENT AS INDICATED ON DRAWINGS AND AS SPECIFIED HEREIN. CONTRACTOR SHALL SUPPLY ALL PERMANENT MATERIALS/EQUIPMENT REQUIRED AND ALL LABOR, EQUIPMENT, TOOLS, UTILITIES, MINOR HARDWARE/MATERIALS, TRANSPORTATION AND FACILITIES NECESSARY FOR PROPER EXECUTION AND COMPLETION OF SERVICES AND INSTALL WORK, WHETHER TEMPORARY OR PERMANENT. CONTRACTOR SHALL BE OBLIGATED TO PERFORM ALL THE WORK OUTLINED IN THESE DRAWINGS IN ACCORDANCE WITH THE CONTRACT AGREEMENT, FEDERAL REGULATIONS, STATE REQUIREMENTS, LOCAL CODES, COMMERCIAL/INDUSTRY STANDARDS, DETAILED SCOPE OF WORK AND THE DOCUMENTS IDENTIFIED BELOW. IN CASE OF A CONFLICT BETWEEN THE ABOVE LISTED DOCUMENTS REGARDING STANDARDS OF WORK, THE MORE STRINGENT CRITERIA SHALL APPLY. ANY ADDITIONAL COSTS OR DELAYS RESULTING FROM CORRECTION OF THE WORK TO COMPLY WITH THE ABOVE REQUIREMENT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

1.2. SITE VISIT

CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE ITSELF WITH THE SCOPE OF WORK REQUIRED PER THE DRAWINGS AND ALL LOCAL CONDITIONS AND LAWS AND REGULATIONS THAT MAY IN ANY MANNER AFFECT THE PRICE, PROGRESS AND PERFORMANCE OF WORK, INCLUDING ANY COSTS ASSOCIATED WITH IT. THE CONTRACTOR SHALL ALSO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND NOTIFY THE MOTOROLA REPRESENTATIVE OF ANY DISCREPANCIES OR INTERFERENCES WHICH AFFECT THE WORK OF THIS CONTRACT.

1.3. STANDARDS AND CODES

THE FOLLOWING DOCUMENTS (LATEST REVISION) SHALL BE CONSIDERED TO BE SPECIFICATION AND ARE INCORPORATED HEREIN BY REFERENCE. IN THE EVENT OF CONFLICT BETWEEN THE REQUIREMENTS OF THIS SPECIFICATION AND THE REQUIREMENTS OF THE REFERENCED DOCUMENTS, THE STRICTER SPECIFICATION SHALL GOVERN. WHERE PROVISIONS OF THE CODES AND STANDARDS ARE IN CONFLICT WITH THE BUILDING CODE IN FORCE FOR THIS PROJECT, THE BUILDING CODE SHALL GOVERN.

A. AMERICAN CONCRETE INSTITUTE:

- \* ACI 301 - "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS"
- \* ACI 305 "HOT WEATHER CONCRETING"
- \* ACI 306 "COLD WEATHER CONCRETING"
- \* ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"
- \* ACI 614 "RECOMMENDED PRACTICE FOR MEASURING, MIXING AND PLACING CONCRETE"
- \* ACI 311 "RECOMMENDED PRACTICE FOR CONCRETE INSPECTION"
- \* ACI 315 "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES"
- \* ACI 613 "RECOMMENDED PRACTICE FOR SELECTING PROPORTIONS FOR CONCRETE"

B. AMERICAN NATIONAL STANDARDS INSTITUTE:

- \* ANSI Z359 REQUIREMENTS FOR PERSONAL FALL ARREST SYSTEMS, SUBSYSTEMS AND COMPONENTS
- \* ANSI Z87.1 OCCUPATIONAL AND EDUCATIONAL EYE AND FACE PROTECTION
- \* ANSI Z89.1 PROTECTIVE HEADWEAR FOR INDUSTRIAL WORKERS - REQUIREMENTS
- \* ANSI/IEEE C95.1 SAFETY LEVELS WITH RESPECT TO HUMAN EXPOSURE TO RADIO FREQUENCY ENERGY
- \* ANSI/TIA/EIA STANDARD 222: STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.

C. AMERICAN INSTITUTE OF STEEL CONSTRUCTION

- \* AISC MANUAL OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION: LATEST EDITION

D. AMERICAN SOCIETY FOR TESTING AND MATERIALS:

- \* ASTM A615 - "SPECIFICATION FOR DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT"
- \* ASTM C94-80 - "SPECIFICATION FOR READY-MIX CONCRETE"
- \* ASTM C39-77 - "SPECIFICATION FOR TEST FOR COMPREHENSIVE STRENGTH OF CYLINDRICAL CONCRETE SPECIMEN"
- \* ASTM C33 - "SPECIFICATION FOR CONCRETE AGGREGATES"
- \* ASTM C150 - "SPECIFICATION FOR PORTLAND CEMENT"
- \* ASTM C172 - "SAMPLING FRESH CONCRETE"
- \* ASTM C143 - "SLUMP OF PORTLAND CEMENT CONCRETE"
- \* ASTM D698-01 - "TEST METHOD FOR LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING STANDARD EFFORT"
- \* ASTM D1556-64 - "DENSITY OF SOIL IN PLACE BY THE SAND-CONE METHOD"
- \* ASTM D1557 - "TEST FOR MOISTURE-UNIT WEIGHT RELATIONS OF SOILS AND SOIL-AGGREGATE MIXTURES USING 10-LB. HAMMER AND 18-IN. DROP" (PROCEDURE C)
- \* ASTM D2487 - "STANDARD CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES (UNIFIED SOIL CLASSIFICATION SYSTEM)"
- \* ASTM D2922 - "DENSITY OF SOIL AND SOIL AGGREGATE IN PLACE BY NUCLEAR METHODS SHALLOW DEPTH"
- \* ASTM D2940 - "STANDARD SPECIFICATION FOR GRADED AGGREGATE MATERIAL FOR BASES OR SUB-BASES FOR HIGHWAYS OR AIRPORTS"

E. AMERICAN WELDING SOCIETY:

- \* AWS D12.1 - "RECOMMENDED PRACTICES FOR WELDING REINFORCING STEEL, METAL INSERTS AND CONNECTIONS IN REINFORCED CONCRETE CONSTRUCTION"

F. CONCRETE REINFORCING STEEL INSTITUTE:

- \* "MANUAL OF STANDARD PRACTICE"

G. FEDERAL AVIATION ADMINISTRATION:

- \* DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULAR, AC 70/7460-1G: OBSTRUCTION MARKING AND LIGHTING.
- \* DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULAR, 150-5345-43, FAA/DOD SPECIFICATION L-856: HIGH INTENSITY OBSTRUCTION LIGHTING SYSTEMS.

H. FEDERAL COMMUNICATIONS COMMISSION:

- \* FEDERAL COMMUNICATIONS COMMISSION - RULES AND REGULATIONS PART 17: CONSTRUCTION, MARKING AND LIGHTING OF ANTENNA STRUCTURES.

I. STRUCTURAL STEEL PAINTING COUNCIL:

- \* SSPC-SP-1-63: SPECIFICATION FOR PAINTING STEEL STRUCTURES.

J. MOTOROLA R56 STANDARDS AND GUIDELINES FOR COMMUNICATIONS SITES (B VERSION 2005).

K. MOTOROLA'S CIVIL WORKS BID SPECIFICATIONS

L. NATIONAL FIRE PROTECTION ASSOCIATION:

- \* NFPA 1 - FIRE PREVENTION CODE
- \* NFPA 70 - NATIONAL ELECTRICAL CODE
- \* NFPA 101 - LIFE SAFETY CODE
- \* NFPA 111 - STANDARD ON STORED ELECTRICAL ENERGY, EMERGENCY AND STANDBY POWER SYSTEMS
- \* NFPA 780 - STANDARD FOR THE INSTALLATION OF LIGHTNING PROTECTION SYSTEMS

M. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION:

- \* OSHA 1926
- \* OSHA DIRECTIVES CPL 2-1.29 - INTERIM INSPECTION PROCEDURES DURING COMMUNICATION TOWER CONSTRUCTION ACTIVITIES.

N. LOCAL BUILDING CODES

- \* 2017 FLORIDA BUILDING CODE 6TH EDITION
- \* 2014 NEC
- \* FLORIDA ACCESSIBILITY CODE
- \* ASHRAE 90-1-2004

1.4. NOTICE TO PROCEED

WHEN THE SITE IS READY FOR INSTALLATION, MOTOROLA SHALL ISSUE A NOTICE TO PROCEED TO THE CONTRACTOR. UPON RECEIPT OF THE NOTICE OF PROCEED, THE CONTRACTOR SHALL SUBMIT TO MOTOROLA A SCHEDULE REFLECTING THE WORK PLAN. THE CONTRACTOR SHALL ADVISE THE MOTOROLA REPRESENTATIVE IMMEDIATELY OF ANY SCHEDULE CHANGES. THE CONTRACTOR SHALL ADJUST HIS WORK, AS REQUIRED, TO COORDINATE WITH THE MOTOROLA INSTALLATION TEAM IF THE SCHEDULES OVERLAP.

1.5. MOTOROLA REPRESENTATIVE

MOTOROLA SHALL DESIGNATE A REPRESENTATIVE. THIS PERSON IS THE ONLY CONTACT POINT AUTHORIZED TO MAKE ANY CHANGES TO THE CONTRACT PROVISIONS OR THE PLANS AND SPECIFICATIONS. ANY CHANGES MADE BY THE CONTRACTOR ARE AT THE CONTRACTOR'S RESPONSIBILITY AND RISK.

1.6. CONTRACTORS FIELD REPRESENTATIVE

CONTRACTOR SHALL ASSIGN A FIELD REPRESENTATIVE WHO IS FAMILIAR WITH THESE SPECIFICATIONS AND WILL REPRESENT THE CONTRACTOR AND HAVE THE AUTHORITY TO ACT FOR THE CONTRACTOR AND SUPERVISE ALL CONSTRUCTION ACTIVITIES. THE FIELD REPRESENTATIVE SHALL BE AVAILABLE WHEN CONSTRUCTION ACTIVITIES BEGIN. THE FIELD REPRESENTATIVE SHALL BE THE PRIMARY POINT OF CONTACT FOR MOTOROLA DURING THE CONSTRUCTION PHASE OF THE WORK.

1.7. PROJECT MEETINGS

THE CONTRACTOR SHALL CONDUCT THE INITIAL (PRE-CONSTRUCTION) MEETING (INCLUDING ALL SUB-CONTRACTORS) WITH THE MOTOROLA REPRESENTATIVE WITHIN TWO WEEKS AFTER AWARD OF THE CONTRACT. SUBSEQUENTLY, THE CONTRACTOR SHALL PROVIDE PROGRESS SCHEDULE UPDATES TO MOTOROLA ON A WEEKLY BASIS.

1.8. MATERIALS

CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS AS REQUIRED FOR COMPLETE SYSTEMS INCLUDING: ALL PARTS OBVIOUSLY OR REASONABLY INCIDENTAL TO A COMPLETE INSTALLATION, WHETHER SPECIFICALLY INDICATED OR NOT. ALL SYSTEMS SHALL BE COMPLETELY ASSEMBLED, TESTED, ADJUSTED AND DEMONSTRATED TO BE READY FOR OPERATION PRIOR TO MOTOROLA'S ACCEPTANCE.

MATERIALS AND WORKMANSHIP SHALL BE THE BEST OF THEIR RESPECTIVE KINDS (AS DEFINED BY INDUSTRY STANDARDS), FREE OF DEFECTS AND ALL MATERIALS SHALL BE NEW AND UNUSED IN ALL CASES, UNLESS OTHERWISE SPECIFIED. WHERE THE NAME OF A CONCERN OR MANUFACTURER IS MENTIONED ON DRAWINGS OR IN SPECIFICATIONS IN REFERENCE TO A REQUIRED SERVICE OR PRODUCT, AND NO QUALIFICATIONS OR SPECIFICATION OF SUCH IS INCLUDED, THEN THE MATERIAL SPECIFICATIONS, DETAILS OF MANUFACTURE, FINISH, ETC., SHALL BE IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICE, DIRECTION OR SPECIFICATIONS. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S / VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

1.9. VERIFICATION OF EXISTING CONDITIONS

BEFORE STARTING ANY OPERATION, THE CONTRACTOR SHALL EXAMINE EXISTING WORK, OR WORK PERFORMED BY OTHERS, TO WHICH ITS WORK IS TO ADJOIN OR BE APPLIED, AND SHALL REPORT TO MOTOROLA PROJECT MANAGER ANY CONDITIONS THAT WILL PREVENT SATISFACTORY ACCOMPLISHMENT OF HIS WORK. PRIOR TO COMMENCING ANY EXCAVATION OR GRADING, THE CONTRACTOR SHALL SATISFY HIMSELF AS TO THE ACCURACY OF ALL SURVEY DATA AS INDICATED IN THE PLANS AND SPECIFICATIONS AND/OR AS PROVIDED BY MOTOROLA. SHOULD THE CONTRACTOR DISCOVER ANY INACCURACIES, ERRORS, OR OMISSIONS IN THE SURVEY DATA, HE SHALL IMMEDIATELY NOTIFY THE MOTOROLA REPRESENTATIVE IN ORDER THAT PROPER ADJUSTMENTS CAN BE ANTICIPATED AND ORDERED. FAILURE TO NOTIFY THE MOTOROLA REPRESENTATIVE OF DEFICIENCIES, ERRORS OR FAULTS PRIOR TO COMMENCEMENT OF WORK SHALL CONSTITUTE ACCEPTANCE THEREOF AND WAIVER OF ANY CLAIMS OF UNSUITABILITY, ERRORS, OMISSIONS OR INACCURACIES.

THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR PRESERVING ALL ESTABLISHED SURVEY CONTROL POINTS. IF THE CONTRACTOR OR ANY OF HIS SUB-CONTRACTORS MOVE OR DESTROY ANY SURVEY CONTROL POINTS, THE COST INCURRED BY THE LAND OWNER OR MOTOROLA TO RE-ESTABLISH THEM WILL BE BORNE BY THE CONTRACTOR.



**MOTOROLA**

8000 W. SUNRISE BLVD  
PLANTATION, FL 33322

PHONE: (954) 723-5000

BROWARD COUNTY -  
WEST LAKE PARK  
1200 SHERIDAN STREET  
HOLLYWOOD, FL 33019

AMEC FOSTER WHEELER PROJECT NO: 6166-17-0575

DRAWN: J.B. GILMER CHECKED: F.D. SHIVER

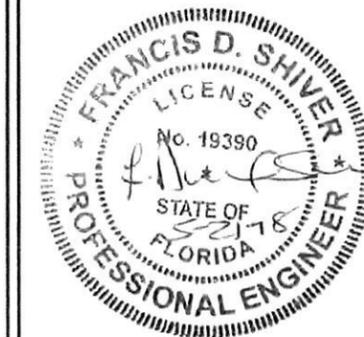
APPROVED: F.D. SHIVER DATE: 06/01/17



amec  
foster  
wheeler

AMEC FOSTER WHEELER  
ENVIRONMENT AND INFRASTRUCTURE INC  
1075 BIG SHANTY DRIVE, N.W. SUITE 100  
KENNESAW, GA 30144  
PHONE (770) 421-3400 FAX (770) 421-3488

NO.	DATE	REVISION
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B	09/27/17	ISSUED FOR PRELIMINARY
C	01/04/18	LEASE EXHIBIT
D	05/21/18	ISSUED FOR PERMITTING



SHEET NO. & NAME

T2  
GENERAL NOTES



P:\6374\2017\6166170536 - Motorola Broward Co\00 Civil 3D 2016\11.WEST\_LAKE\_PARK.dwg, 10/30/2017 5:36:59 PM, AutoCAD PDF (Smallest File).pc3, 1:1

P:\6374\2017\6166170536 - MOTOROLA BROWARD CO\00 CIVIL 3D 2016\11.WEST\_LAKE\_PARK.DWG

**Description Lease Area**

A PORTION OF THE NORTHEAST ONE-QUARTER (NE 1/4) OF THE SOUTHWEST ONE-QUARTER (SW 1/4) OF THE NORTHWEST ONE-QUARTER (NW 1/4) OF SECTION 11, TOWNSHIP 51 SOUTH, RANGE 42 EAST, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS

COMMENCING AT THE SOUTHWEST CORNER OF NORTHWEST ONE-QUARTER (NW 1/4) OF SAID SECTION 11; THENCE NORTH 88°06'10" EAST ALONG THE SOUTH LINE OF THE NORTHWEST ONE-QUARTER (NW 1/4) OF SAID SECTION 11, A DISTANCE OF 830.59 FEET; THENCE NORTH 01°13'56" EAST, A DISTANCE OF 971.19 FEET; THENCE NORTH 88°02'39" EAST, A DISTANCE OF 75.00 FEET TO THE POINT OF BEGINNING; THENCE NORTH 23°59'49" EAST, A DISTANCE OF 75.00 FEET; THENCE SOUTH 66°00'11" EAST, A DISTANCE OF 80.00 FEET; THENCE SOUTH 23°59'49" WEST, A DISTANCE OF 79.45 FEET; THENCE NORTH 47°40'07" WEST, A DISTANCE OF 55.88 FEET; THENCE SOUTH 88°02'39" WEST, A DISTANCE OF 29.98 FEET TO THE POINT OF BEGINNING.

SAID LANDS SITUATE, LYING AND BEING IN BROWARD COUNTY, FLORIDA, CONTAINING 5,593 SQUARE FEET OF 0.1264 ACRES MORE OR LESS.

Found  
1/2" Iron Rod & Cap  
Stamped: LB 6680

Commencing  
SW corner of NW 1/4  
Section 11

N88°06'10"E 830.59'  
South Line of the NW 1/4

S 88°00'05" W 30.53' (M)  
S88°02'39"E 29.98' (D)

Point of Beginning  
Found  
5/8" Iron Rod & Cap  
(Illegible)  
fence 0.3' S

Found  
5/8" Iron Rod & Cap  
Stamped: LB 6448

A portion of the Northeast one-quarter of the  
Southwest one-quarter of the Northwest one-quarter  
of Section 11, Township 51 South, Range 42 East

Proposed Equipment

Proposed Shelter

Trees and underbrush

Found  
5/8" Iron Rod & Cap  
(Illegible)  
fence 0.3' SW

Set Project Control  
90d Nail  
No ID  
N 617642.77  
E 941170.14  
Elevation 2.94

Set Project Control  
5/8" Iron Rod & Cap  
Stamped: AMECFW TRAVERSE  
N 617286.80  
E 941257.74  
Elevation 0.80

Found  
5/8" Iron Rod & Cap  
Stamped: LB 6448

Proposed Tower  
(center)  
N 617241.13  
E 941177.12  
Ground Elevation 2.5  
Latitude N 26° 01' 45.02"  
Longitude W 80° 07' 55.43"

**Legend**

(D)	=	Description
(M)	=	Measured
R XX E	=	Range XX East
+100.0'	=	Spot Elevation
T XX S	=	Township XX South
-4'-	=	Contour Line

**LOCATION MAP**



**SURVEYOR'S NOTES**

- This map of survey is not valid without the signature and the original raised seal of the signing Florida licensed surveyor and mapper.
- This map of survey identifies the boundary of the lease parcel, features within the survey limits shown hereon, as specified by the client.
- Bearings, coordinates and elevations shown hereon are relative to the Florida State Plane Coordinate System, East Zone (0901), North American Datum of 1983, 2011 adjustment and the North American Vertical Datum of 1988 (NAVD 88) based on Global Positioning System (GPS) measurements to National Geodetic Survey (NGS) Continuously Operating Reference Stations (CORS) network.
- Dimensions shown hereon contain horizontal ground distances and are based upon field measurements utilizing the United States Survey Foot, unless indicated otherwise.
- Lands shown hereon were not abstracted by this firm for matters of record, such as easements, right of way, ownership or other instruments of record.
- The field data acquisition phase of this survey was completed on July 19, 2017, as documented in AmecFW field book 1313, Pages 42-46.
- This survey does not address the identification or location of jurisdictional wetlands or sovereign lands that may or may not lie within or adjacent to the lands surveyed.
- According to Federal Emergency Management Agency Flood Insurance Rate Map Broward County Florida, Map Number 12011 C 0569 H, Effective date: August 18, 2014, the property described hereon is located in Zone AH (EL5) Special Flood Hazard area subject to inundation by the 1% annual chance flood (Base Flood Elevations determined).
- Certified to and for the exclusive use of MOTOROLA.



*Charles B. Gardiner*  
**CHARLES B. GARDINER**  
FLORIDA PROFESSIONAL SURVEYOR AND MAPPER  
LICENSE NO. LS 5046

Section 11, Township 51 South, Range 42 East, Broward County, Florida

NO.	DATE	REVISION
1	10/25/2017	Added Note # E, updated site address

**amec foster wheeler**  
AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE INC.  
75 East Amelia Street Suite 200  
Orlando FL 32801 USA  
Phone (407) 522-7570  
Fax (407) 522-7576  
Certificate of Authorization Number LB-0007937

**CLIENT:**  
**MOTOROLA SOLUTIONS**  
8000 WEST SUNRISE BLVD  
PLANTATION FLORIDA 33322  
PHONE (954) 723-5000

**BROWARD COUNTY - WEST LAKE PARK**  
1200 SHERIDAN STREET  
HOLLYWOOD, FL 33019

AMEC PROJECT NO: 6166170536  
DRAWN BY: M RAMOS  
CHECKED BY: C.B. GARDINER  
APPROVED BY: \_\_\_\_\_  
DATE: 01/18/2017

Map of  
Boundary and Topographic  
Survey



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AMEC FOSTER WHEELER PROJECT NO: 6166-17-0575  
DRAWN: J.B. GILMER | CHECKED: F.D. SHIVER  
APPROVED: F.D. SHIVER | DATE: 06/01/17



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foster  
wheeler

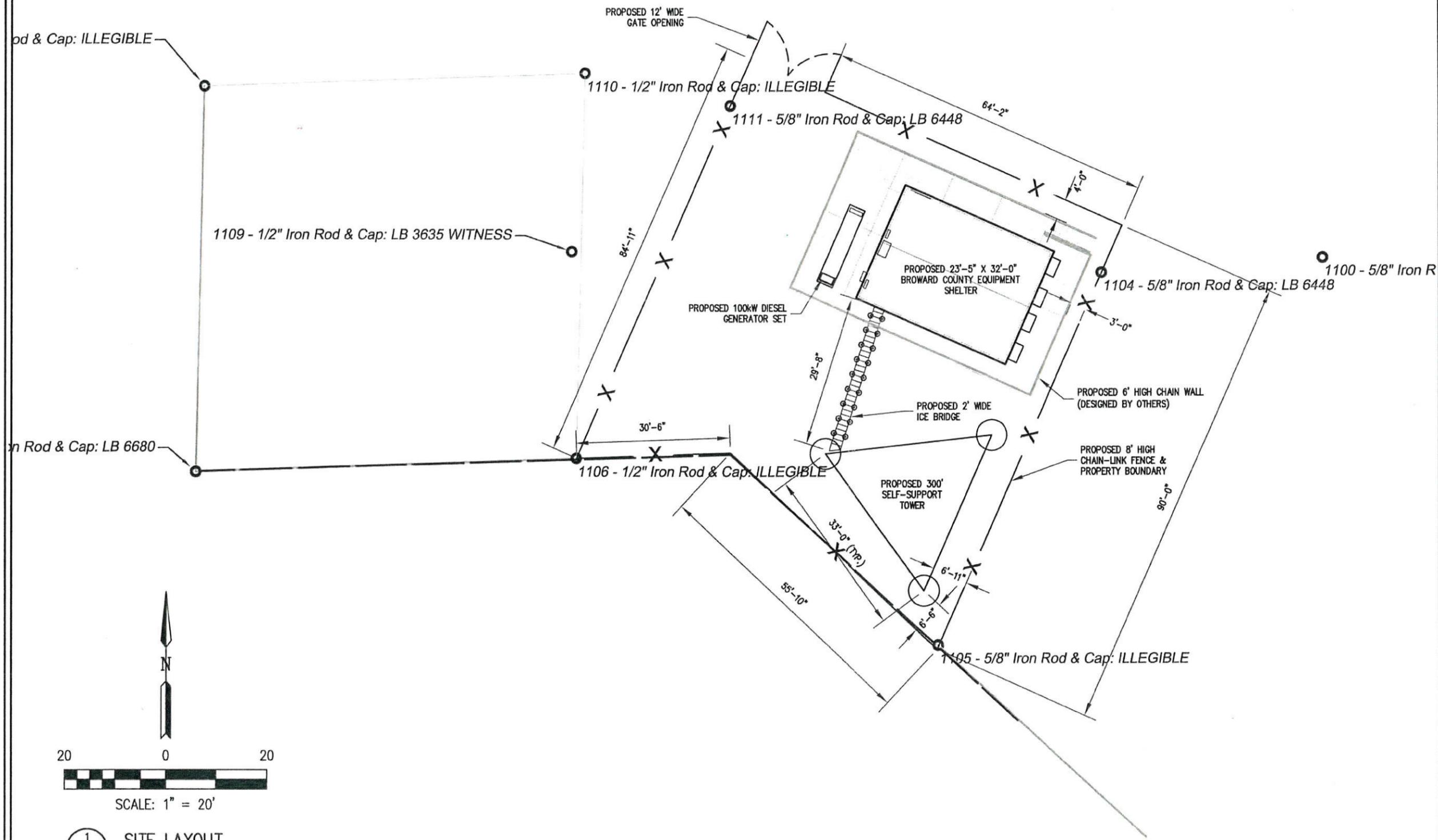
AMEC FOSTER WHEELER  
ENVIRONMENT AND INFRASTRUCTURE, INC.  
1075 BIG SHANTY DRIVE, N.W., SUITE 100  
KENNESAW, GA 30144  
PHONE (770) 421-3400 FAX (770) 421-3488

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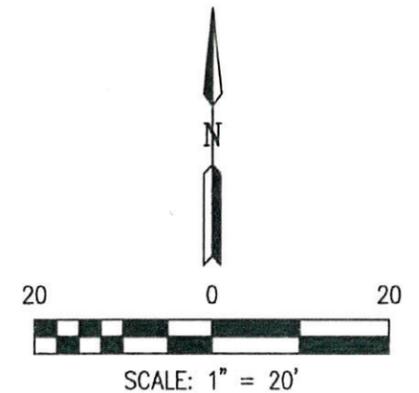
SHEET NO. & NAME

C1  
SITE LAYOUT



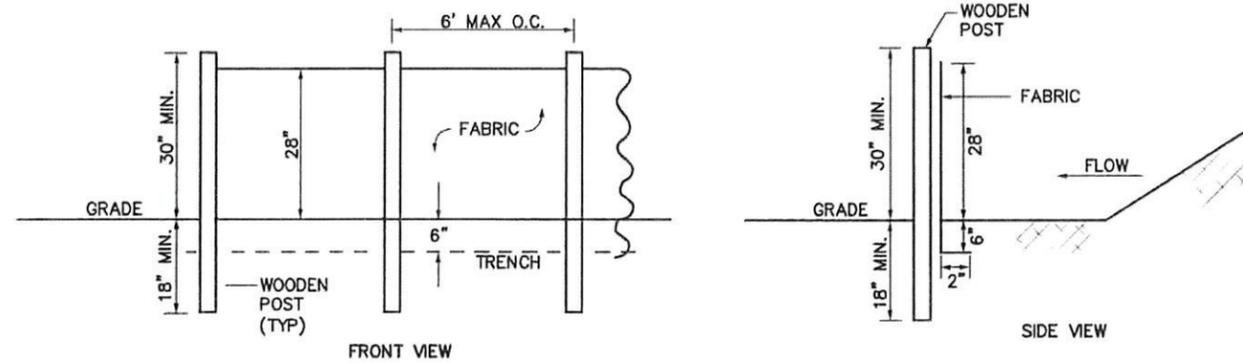
od & Cap: ILLEGIBLE

n Rod & Cap: LB 6680

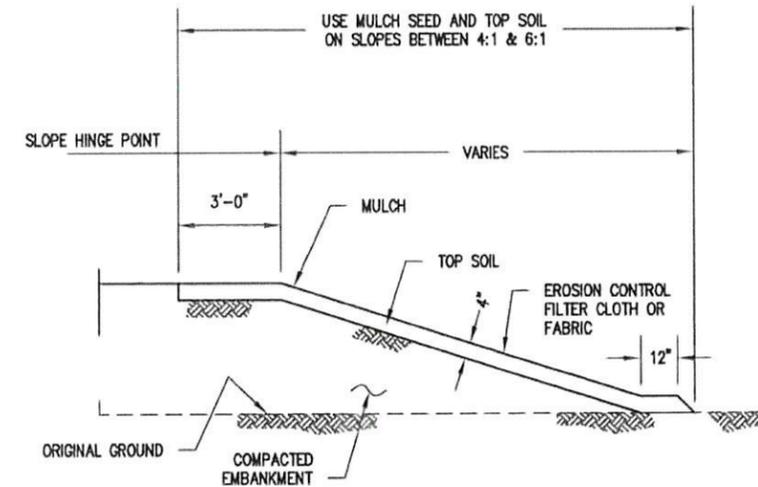


1 SITE LAYOUT  
C1 SCALE: 1" = 20'-0"





1 SILT FENCE DETAIL - Sd1 TYPE A  
SCALE: N.T.S.



2 SLOPE EROSION CONTROL (SEED)  
SCALE: N.T.S.

**SOIL EROSION CONTROL NOTES:**

1. ALL UNDERGROUND UTILITY STRUCTURES SHALL BE PROTECTED BY HAY BALE FILTERS, UNTIL GRAVEL/PAVEMENT HAS BEEN INSTALLED, OR UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED.
2. CONTRACTOR SHALL INSPECT THE SILTATION FENCES AND DIVERSION DITCHES PERIODICALLY AND MAINTAIN OR REPLACE AS NECESSARY, OR AS DIRECTED BY ENGINEER.
3. ALL OTHER SOIL EROSION CONTROL DEVICES AND MEASURES DEEMED NECESSARY BY THE ENGINEER SHALL BE IMPLEMENTED IMMEDIATELY UPON NOTIFICATION OF THE CONTRACTOR.
4. INSTALL STONE/GRAVEL CONSTRUCTION ENTRANCE TO THE SITE, WITH MINIMUM THICKNESS OF 6 INCHES PRIOR TO ANY WORK ON THE SITE. PERFORM PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, OR AS DIRECTED BY ENGINEER.
5. MUD SHALL BE CLEANED OFF OF THE STREET DAILY OR AS DIRECTED BY THE ENGINEER.
6. INSPECTION OF THE SITE SHALL BE AT LEAST ONCE A WEEK AND AFTER ANY SIGNIFICANT RAINFALL TO INSURE THE SOIL EROSION CONTROL MEASURES ARE WORKING PROPERLY.
7. IF ANY STOCKPILES ARE CONSTRUCTED, THEY SHALL HAVE AN 18-INCH DEEP TRENCH AROUND THE PERIMETER TO ACT AS A SEDIMENT TRAP, WITH SAID TRAP TO BE CLEANED PERIODICALLY AS REQUIRED.
8. STREETS ADJACENT TO THE SITE SHALL BE KEPT FREE OF DIRT, MUD AND DEBRIS.
9. MINIMIZE BARE EARTH SURFACES DURING CONSTRUCTION.
10. ALL DISTURBED AREAS SHALL BE SEEDED OR SODDED AS SOON AS IS PRACTICABLE.
11. WHENEVER DURING CONSTRUCTION OPERATIONS ANY LOOSE MATERIALS ARE DEPOSITED IN THE FLOW LINE OF GUTTERS, DRAINAGE STRUCTURES, OR DITCHES SUCH THAT THE NATURAL FLOW LINE OF WATER IS OBSTRUCTED, THIS LOOSE MATERIAL SHALL BE REMOVED.
12. ALL SEDIMENT WILL BE PREVENTED FROM ENTERING ANY EXISTING STORM DRAINAGE SYSTEMS BY THE USE OF SAND BAGS, INTERCEPTOR DIKES OR OTHER APPROVED FUNCTIONAL METHODS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING SEDIMENT RESULTING FROM THIS PROJECT FROM STORM SEWERS AND DRAINAGE STRUCTURES.



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DRAWN: J.B. GILMER CHECKED: F.D. SHIVER  
APPROVED: F.D. SHIVER DATE: 06/01/17



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foster  
wheeler

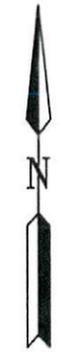
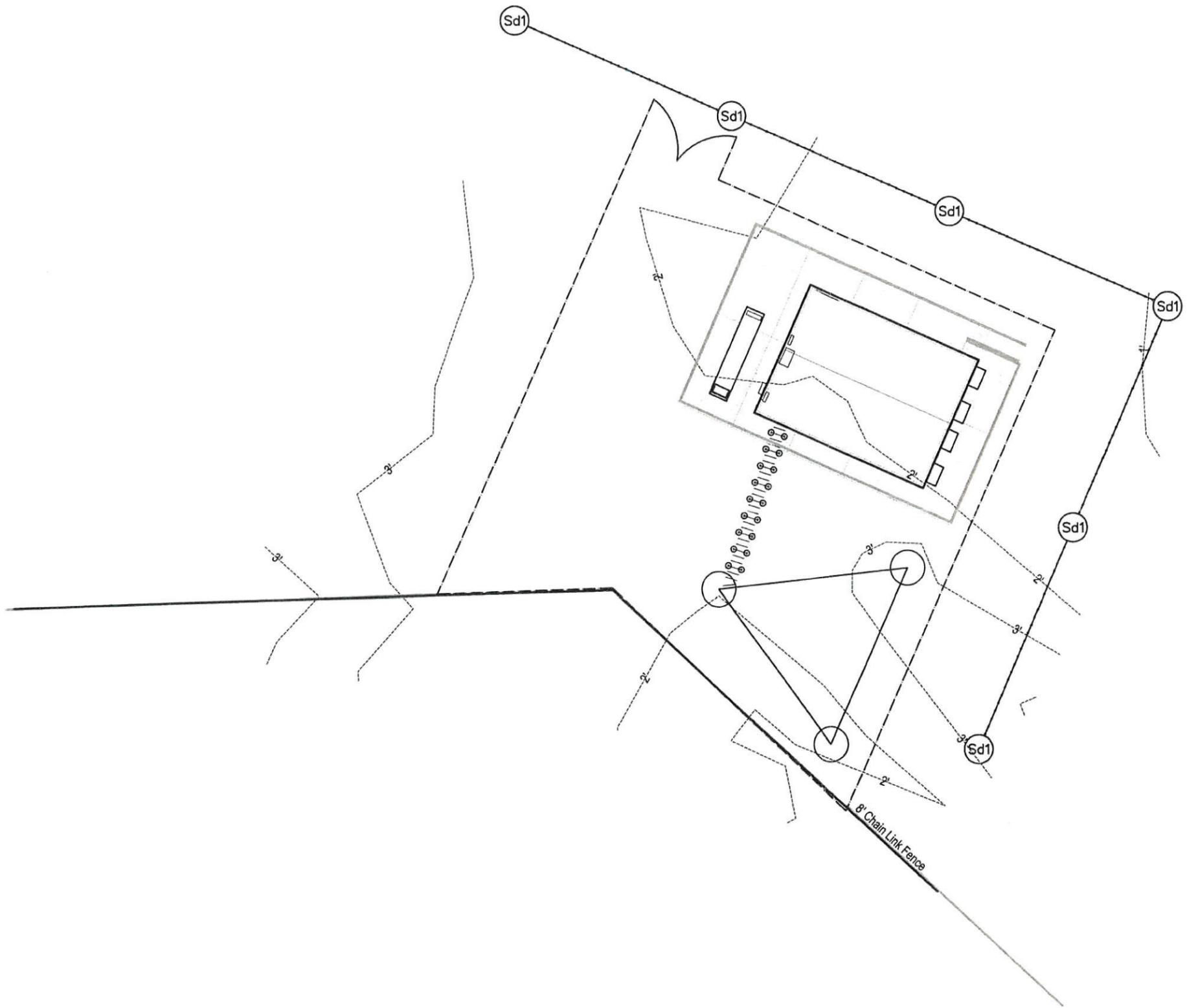
AMEC FOSTER WHEELER  
ENVIRONMENT AND INFRASTRUCTURE INC  
1075 BIG SHANTY DRIVE, N.W., SUITE 100  
KENNESAW, GA 30144  
PHONE (770) 421-3400 FAX (770) 421-3486

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SHEET NO. & NAME

C4  
EROSION CONTROL  
DETAILS



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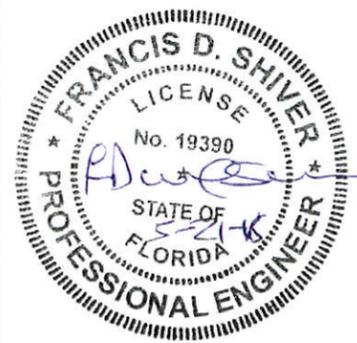
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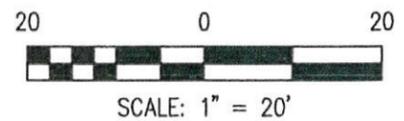
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SHEET NO. & NAME

C5  
EROSION CONTROL  
PLAN

1  
C5 EROSION CONTROL PLAN  
SCALE: 1" = 20'-0"



**Sd1** SEDIMENT BARRIER - TO PREVENT SEDIMENT CARRIED BY SHEET FLOW FROM LEAVING SITE AND ENTERING NATURAL DRAINAGE WAYS OR STORM DRAINAGE SYSTEMS. SEE DETAIL 1, SHEET C4.



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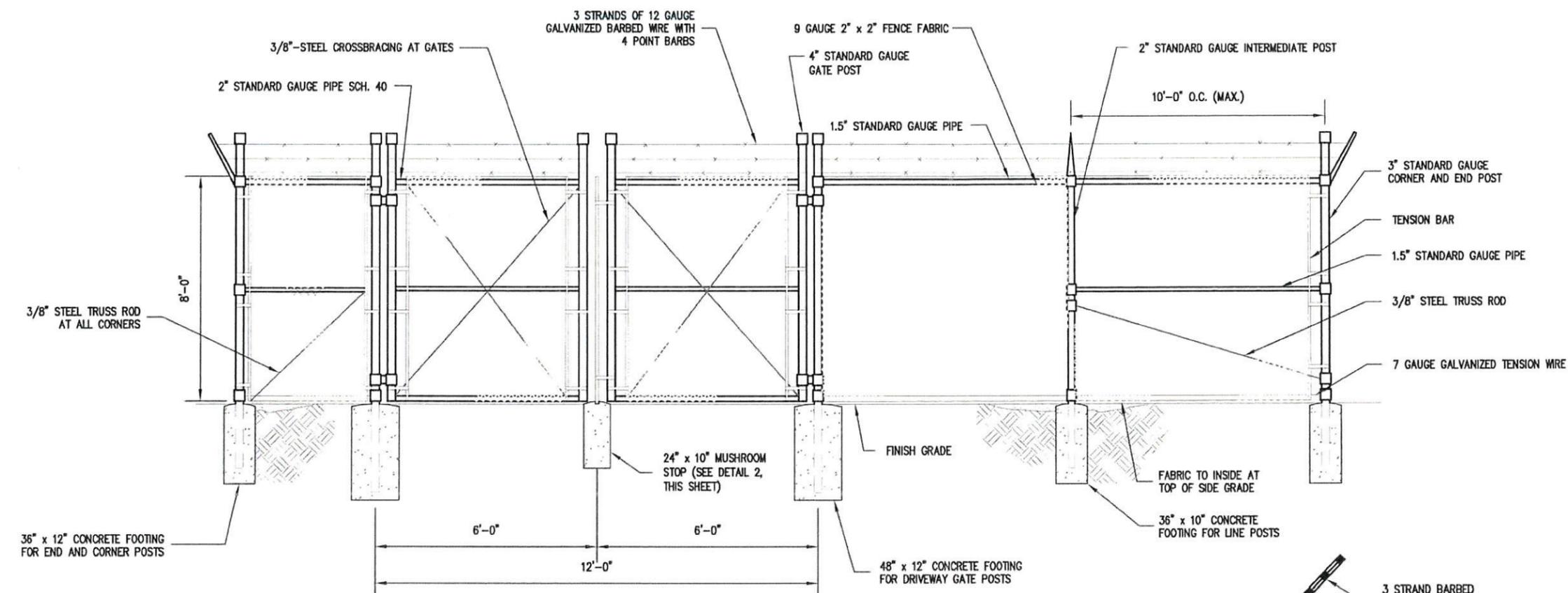
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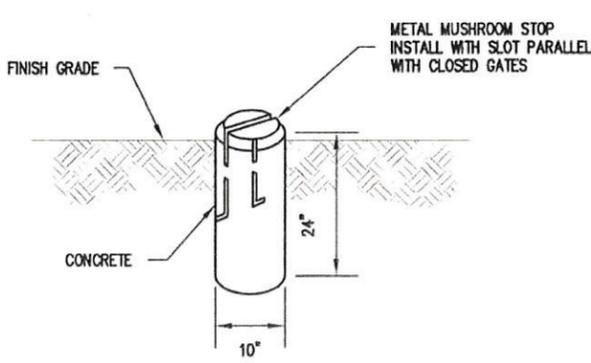


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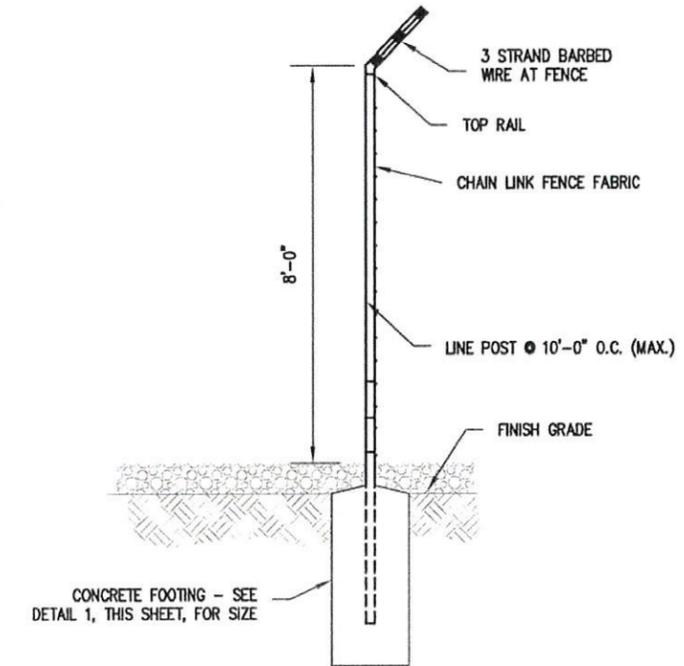
C6  
FENCE DETAILS



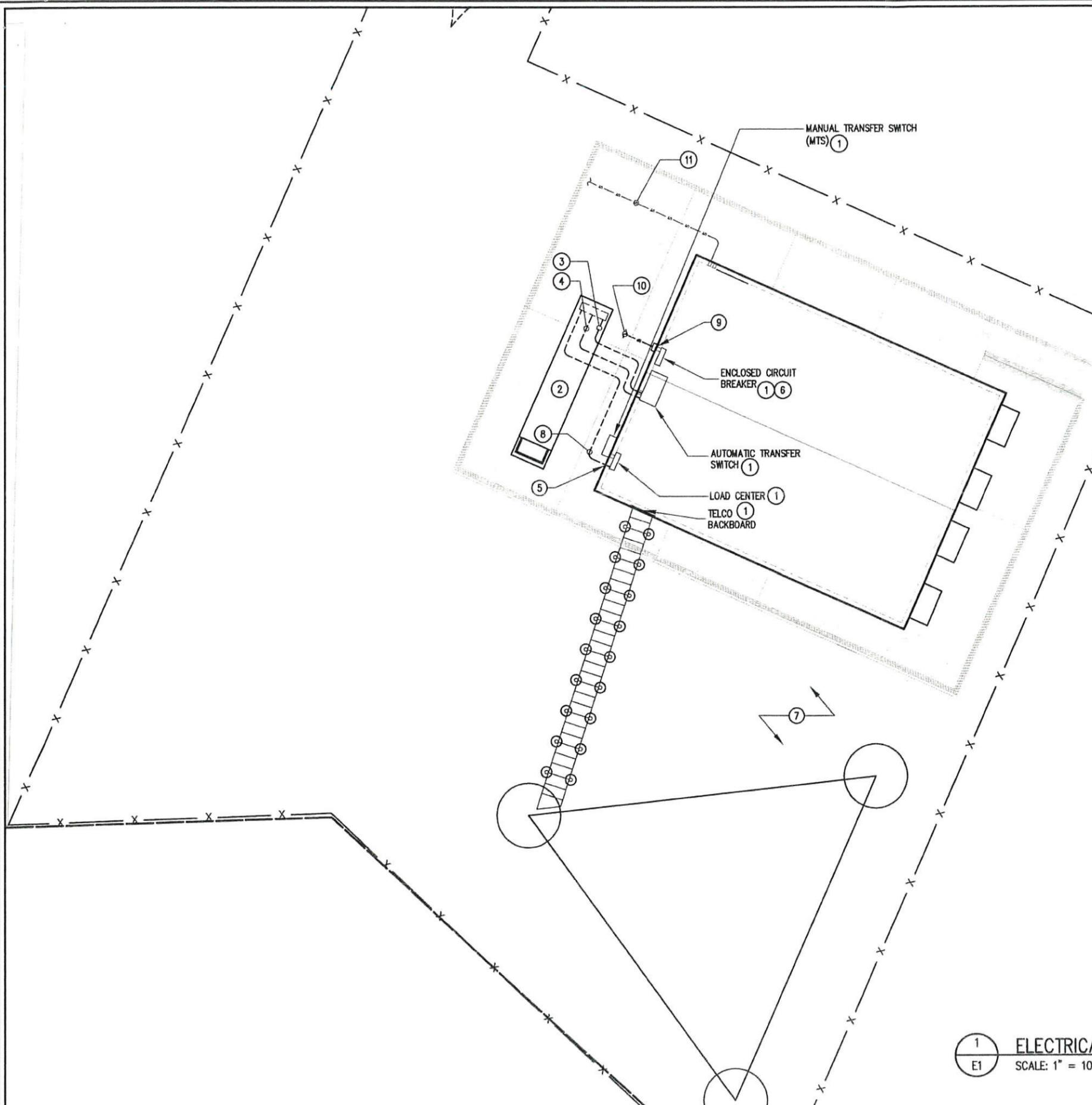
1 CHAIN LINK FENCE AND GATE ELEVATION  
SCALE: N.T.S.



2 MUSHROOM STOP  
SCALE: N.T.S.



3 FENCE/BARBED WIRE ARM DETAIL  
SCALE: N.T.S.



**FLAG NOTES THIS SHEET: (XX)**

1. ELECTRICAL/TELCO DISTRIBUTION EQUIPMENT PROVIDED WITH EQUIPMENT SHELTER.
2. CLIENT SPECIFIED AND PROVIDED GENERATOR AND SUB-BASE FUEL TANK. COORDINATE OVERCURRENT PROTECTION WITH MANUFACTURER. REFER TO SHEET E6 FOR ADDITIONAL INFORMATION.
3. PROVIDE AND EXTEND (1) 1" RGS CONDUIT FROM PROPOSED GENERATOR TO PROPOSED MOTOROLA EQUIPMENT SHELTER ATS FOR EXTENSION OF GENERATOR CONTROL/ALARM SIGNAL WIRING. COORDINATE THE QUANTITY/SIZE OF CONTROL WIRING WITH ACTUAL DEVICES FURNISHED WITH THE GENERATOR.
4. PROVIDE CONDUIT AND CONDUCTORS FOR GENERATOR SERVICE FROM PROPOSED GENERATOR TO AUTOMATIC TRANSFER SWITCH IN PROPOSED EQUIPMENT SHELTER VIA 4" EQUIPMENT SHELTER PENETRATION. FIELD VERIFY AND COORDINATE EXACT LOCATION OF SHELTER PENETRATION. REFER TO SHEET E6 FOR ADDITIONAL INFORMATION.
5. PROVIDE A 12" SQUARE WEATHERPROOF JUNCTION BOX, HOFFMAN #A-12126GSC (OR APPROVED EQUAL), MOUNTED ON THE EXTERIOR OF THE SHELTER OVER THE 2" CONDUIT PENETRATION (COORDINATE EXACT LOCATION WITH SHELTER) FOR ROUTING OF BATTERY CHARGER/WATER JACKET HEATER WIRING INTO THE PANELBOARD.
6. SERVICE ENTRANCE RATED ENCLOSED CIRCUIT BREAKER (FURNISHED WITH SHELTER). REFER TO SHEET E6 FOR ADDITIONAL INFORMATION.
7. ANY DEVIATIONS FROM THE WIRING/CONDUIT WORK SHOWN DUE TO A PARTICULAR MANUFACTURER'S REQUIREMENTS SHALL BE MADE AT NO COST TO MOTOROLA. COORDINATE WITH SHELTER MANUFACTURER PRIOR TO SEALING ALL UNUSED EQUIPMENT SHELTER PENETRATIONS.
8. PROVIDE AND EXTEND CONDUIT FROM PROPOSED GENERATOR TO PROPOSED EQUIPMENT SHELTER LOADCENTER VIA WEATHERPROOF JUNCTION BOX FOR EXTENSION OF WATER JACKET HEATER AND BATTERY CHARGER CIRCUIT WIRING. COORDINATE THE EXACT QUANTITY/SIZE OF CONDUCTORS WITH GENERATOR SUPPLIER. REFER TO SHEET E6 FOR ADDITIONAL INFORMATION.
9. PROPOSED UTILITY METER; ELECTRIC UTILITY METER PROVIDED BY UTILITY COMPANY. COORDINATE WITH UTILITY COMPANY. SEE SHEET E6.
10. CONTRACTOR TO PROVIDE AND EXTEND CONDUIT BELOW FINISHED GRADE BETWEEN PROPOSED UTILITY METER MOUNTED ON EXTERIOR OF PROPOSED EQUIPMENT SHELTER AND UTILITY DEMARCATION POINT. COORDINATE CONNECTION REQUIREMENTS WITH UTILITY COMPANY. FIELD VERIFY EXACT LOCATION OF PAD-MOUNTED TRANSFORMER. SEE DETAIL 2/E3.
11. PROVIDE (2) 3" EMPTY PVC CONDUITS WITH NYLON PULL STRING AND ENDCAP BELOW FINISHED GRADE BETWEEN PROPOSED TELCO BACKBOARD (FURNISHED WITH SHELTER) AND TELCO PULLBOX. COORDINATE CONNECTIONS REQUIREMENTS WITH LOCAL TELCO PROVIDER. SEE DETAIL 2/E3.



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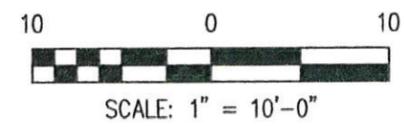
APPROVED  
AUG 16 2018  
CITY OF HOLLYWOOD FL.  
ELECTRICAL



SHEET NO. & NAME

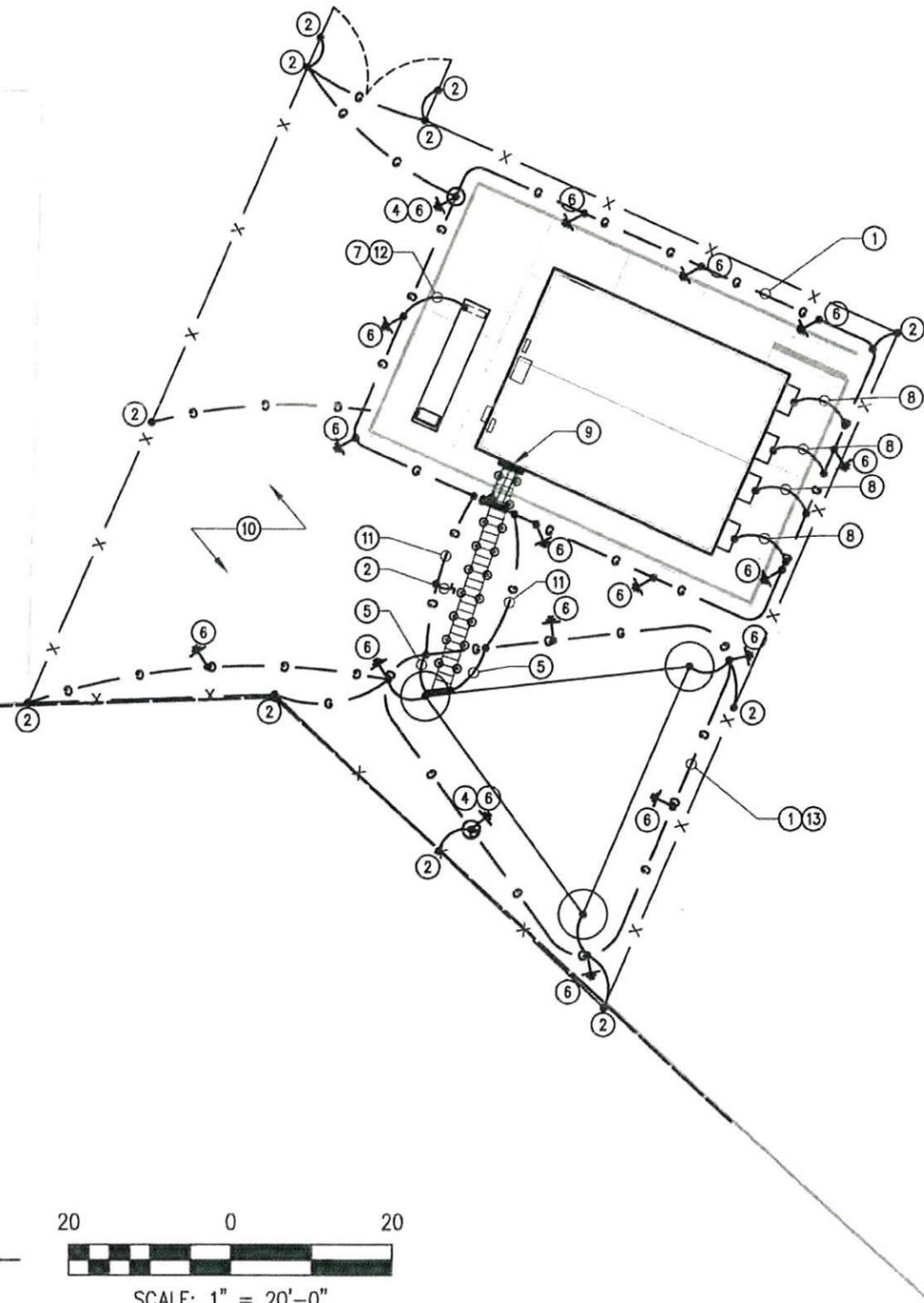
E1  
ELECTRICAL PLAN  
AND NOTES

1  
E1  
ELECTRICAL PLAN  
SCALE: 1" = 10'-0"



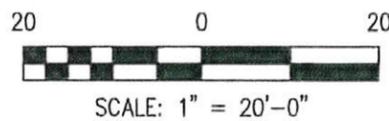
FLAG NOTES THIS SHEET: (XX)

1. PROVIDE A #2/0 AWG STRANDED, BARE, TINNED COPPER GROUND RING. ALL EXTERIOR GROUNDING CONDUCTORS SHALL BE BURIED A MINIMUM OF 30" BELOW GRADE (OR 6" BELOW FROST LINE, WHICHEVER IS GREATER). THE GROUND RING SHALL BE INSTALLED 3'-0" AWAY FROM FOUNDATIONS (MINIMUM UNLESS SHOWN OTHERWISE ON DRAWINGS). WHERE REQUIRED DUE TO SOIL CONDITIONS AND THE PRESENCE OF ROCK, THE ROUTING OF THE GROUND RING MAY BE ADJUSTED (WITH APPROVAL FROM THE MOTOROLA REPRESENTATIVE). ALL BONDS TO THE BURIED GROUND RING SHALL BE WITH EXOTHERMIC WELDS.
2. BOND FENCE AND WAVEGUIDE POSTS TO BURIED GROUND RING. EXOTHERMICALLY WELD A #2/0 AWG STRANDED, BARE, TINNED COPPER GROUND CONDUCTOR TO THE EXISTING FENCE POST AT 12" ABOVE GRADE AND BOND TO THE BURIED GROUND RING. PROVIDE CONDUCTOR LENGTH AS REQUIRED TO MAKE CONNECTION. BOND FENCE POST TO FENCE GATE AS SHOWN USING A WELDING CABLE GROUNDING STRAP (IF APPLICABLE). SEE DETAILS 1/E5 AND 2/E5.
3. NOT USED.
4. PROVIDE 6" DIAMETER PVC INSPECTION SLEEVE WITH WATERTIGHT REMOVABLE COVER IN LOCATION SHOWN. SEE GROUND ROD INSPECTION WELL DETAIL 1/E3, FOR TYPICAL GROUND RING INSPECTION SLEEVE. NOTE: INSPECTION SLEEVE CAN BE USED AS A TEST WELL FOR GROUND WATER LEVEL INSPECTION AND GROUND RESISTANCE TESTING.
5. INSTALL GROUNDING CONDUCTOR(S) FROM THE BURIED GROUND RING FOR CONNECTION TO THE GROUND BAR AT BOTTOM OF TOWER. VERIFY EXACT LOCATION OF GROUNDING BAR AND PROPER CONDUCTOR LENGTH. EXOTHERMICALLY WELD (2) #2/0 AWG STRANDED, BARE, TINNED COPPER GROUNDING CONDUCTOR (LENGTH AS REQUIRED) TO THE GROUND BAR. GROUNDING CONDUCTORS MUST BE HELD AWAY FROM TOWER BY USING STAND-OFFS OR ROUTING THE CONDUCTORS IN FLEXIBLE PVC CONDUIT. COORDINATE LOCATION WITH MOTOROLA CONSTRUCTION MANAGER. SEE GROUND BAR DETAIL 2/E4.
6. INSTALL 3/4" x 10'-0" LONG COPPERCLAD STEEL GROUND RODS. SPACING BETWEEN RODS NOT TO EXCEED 20'-0" (NON-LINEAR). TYPICAL FOR ALL GROUND RODS SHOWN, UNLESS NOTED OTHERWISE. IF ROCK IS ENCOUNTERED, GROUND ROD MAY BE INSTALLED WITH A MAXIMUM VARIATION OF 30" FROM VERTICAL AND CONTRACTOR SHALL BE PREPARED TO CORE DRILL TO INSTALL GROUND RODS AND BACKFILL WITH GROUND ENHANCEMENT MATERIAL.
7. BOND NEW GENERATOR FRAME GROUND CONDUCTOR TO EQUIPMENT SHELTER EXTERIOR GROUND RING. EXOTHERMICALLY WELD A #2/0 AWG STRANDED BARE TINNED COPPER TO GROUND RING AND ATTACH TO GENERATOR FRAME USING COMPRESSION LUG.
8. EXOTHERMICALLY WELD #2/0 AWG STRANDED, BARE, TINNED COPPER GROUND CONDUCTORS FOR A/C UNITS (PROVIDED WITH SHELTER) TO EQUIPMENT SHELTER GROUND RING.
9. BOND SHELTER GROUNDING SYSTEM (SEE DETAIL 4/E3 & 1/E4) TO SHELTER BURIED GROUND RING.
10. A FALL-OF-POTENTIAL TEST SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH MOTOROLA SPECIFICATION R56.
  - A.) PERFORM THREE TESTS AT EACH SITE.
  - B.) CONTRACTOR SHALL PROVIDE A WRITTEN REPORT ON FORMS PROVIDED WITHIN THE MOTOROLA SPECIFICATION R56 CONSISTING OF THE FOLLOWING: SITE NAME, ADDRESS AND IDENTIFICATION NUMBER, DESCRIPTION OF SITE SOIL AND MOISTURE CONDITION, DESCRIPTION OF WEATHER, MODEL NUMBER OF TESTING EQUIPMENT, DATE OF LAST CALIBRATION, SITE SKETCH SHOWING LOCATION OF TEST PROBES, AND ALL FIELD DATA COLLECTED (READINGS, RANGE, TEST, MILLIAMPS, ETC.).
  - C.) CONTRACTOR SHALL NOTIFY THE MOTOROLA REPRESENTATIVE IF THERE ARE ANY DIFFICULTIES PERFORMING SYSTEM RESISTANCE TESTS OR IF MEASUREMENTS ARE ABOVE 10 OHMS. THE NFRSA REPRESENTATIVE SHALL PROVIDE INSTRUCTION TO THE CONTRACTOR TO INSTALL ADDITIONAL GROUNDING MEASURES TO MEET THE 10 OHM REQUIREMENT.
11. BOND EQUIPMENT SHELTER GROUND RING TO PROPOSED TOWER GROUND RING WITH #2/0 AWG STRANDED BARE TINNED COPPER GROUND CONDUCTOR. TYPICAL FOR TWO LOCATIONS.
12. FUEL TANKS INSTALLED OUTSIDE OF THE BUILDING, WITHIN 6'-0" OF THE BUILDING, SHALL BE BONDED TO THE NEAREST PRACTICAL LOCATION ON THE GROUNDING ELECTRODE SYSTEM. FUEL TANKS INSTALLED MORE THAN 6'-0" AWAY FROM THE BUILDING, SHELTER, EQUIPMENT HOUSING, OR CABINET GROUNDING ELECTRODE SYSTEM SHALL BE BONDED TO THE SHELTER GROUND RING AND HAVE AN ADDITIONAL GROUND ROD INSTALLED NEAR THE GENERATOR AND BONDED TO THE GENERATOR FRAME.
13. PROPOSED TOWER GROUND RING. IF TOWER BASE WIDTH IS SUCH THAT THE SPACING BETWEEN GROUND RODS IS GREATER THAN 20'-0", THEN ADDITIONAL GROUND RODS SHALL BE USED TO REDUCE THE SPACING OF GROUND RODS TO 20'-0". A #2/0 AWG BARE STRANDED TINNED COPPER CONDUCTOR SHALL BE BROUGHT FROM EACH GROUND ROD (WHICH IS ADJACENT TO THE TOWER LEG) TO THE TOWER PLATE AND/OR LEG ITSELF AND ATTACHED VIA AN EXOTHERMIC PROCESS (CADWELD OR EQUIVALENT), UNLESS MANUFACTURER SPECIFICATIONS WILL NOT PERMIT. IN SUCH CASES, ALTERNATE PLANS SHALL BE RESEARCHED AND IMPLEMENTED.



ALL EXTERNAL CONNECTIONS EXOTHERMICALLY WELDED

1 GROUNDING PLAN  
E2 SCALE: 1" = 20'-0"



GROUNDING LEGEND	
•	EXOTHERMICALLY WELDED CONNECTION
⊙	INSPECTION SLEEVE/TEST WELL
⊕	GROUND ROD
BCW	BARE COPPER WIRE
AWG	AMERICAN WIRE GAUGE



**MOTOROLA**

8000 W. SUNRISE BLVD  
PLANTATION, FL 33322

PHONE: (954) 723-5000

BROWARD COUNTY -  
WEST LAKE PARK  
1200 SHERIDAN STREET  
HOLLYWOOD, FL 33019

AMEC FOSTER WHEELER PROJECT NO: 6166-17-0575	
DRAWN: J. GILMER	CHECKED: J.D. PAGE
APPROVED: J.D. PAGE	DATE: 06/01/17

AMEC FOSTER WHEELER  
ENVIRONMENT AND INFRASTRUCTURE, INC.  
1075 BIG SHANTY DRIVE, N.W., SUITE 100  
KENNESAW, GA 30144  
PHONE: (770) 421-3450 FAX: (770) 421-3458

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A	07/26/17	LEASE EXHIBIT
B	09/27/17	ISSUED FOR PRELIMINARY
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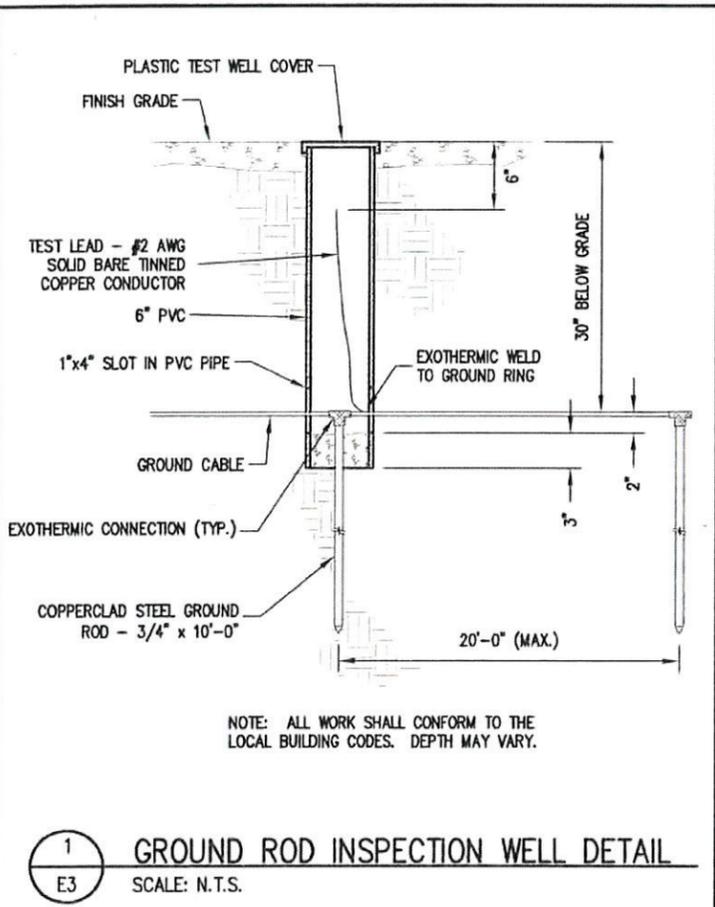
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E2

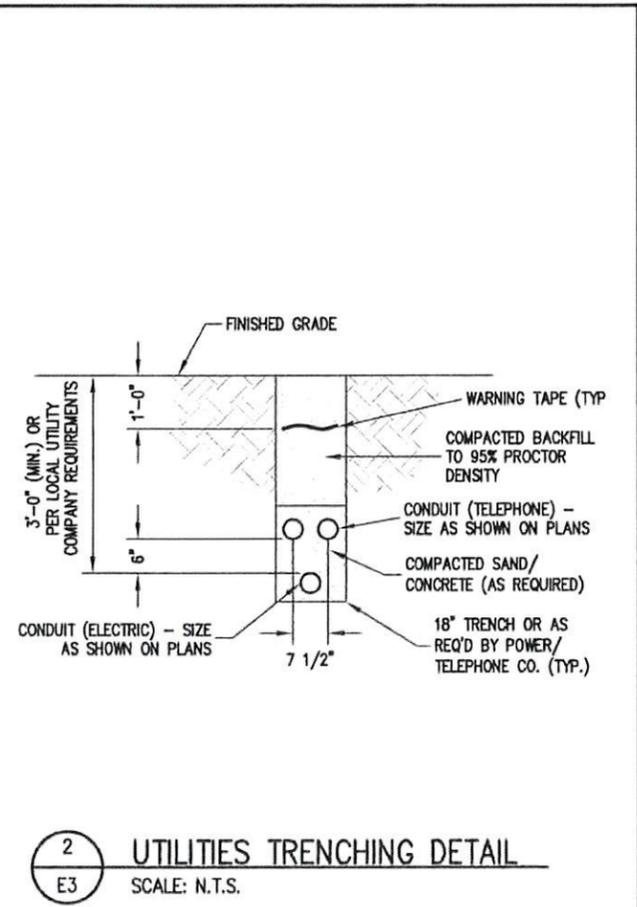
CITY OF HOLLYWOOD ELECTRICAL PLAN AND NOTES

AUG 16 2018

APPROVED

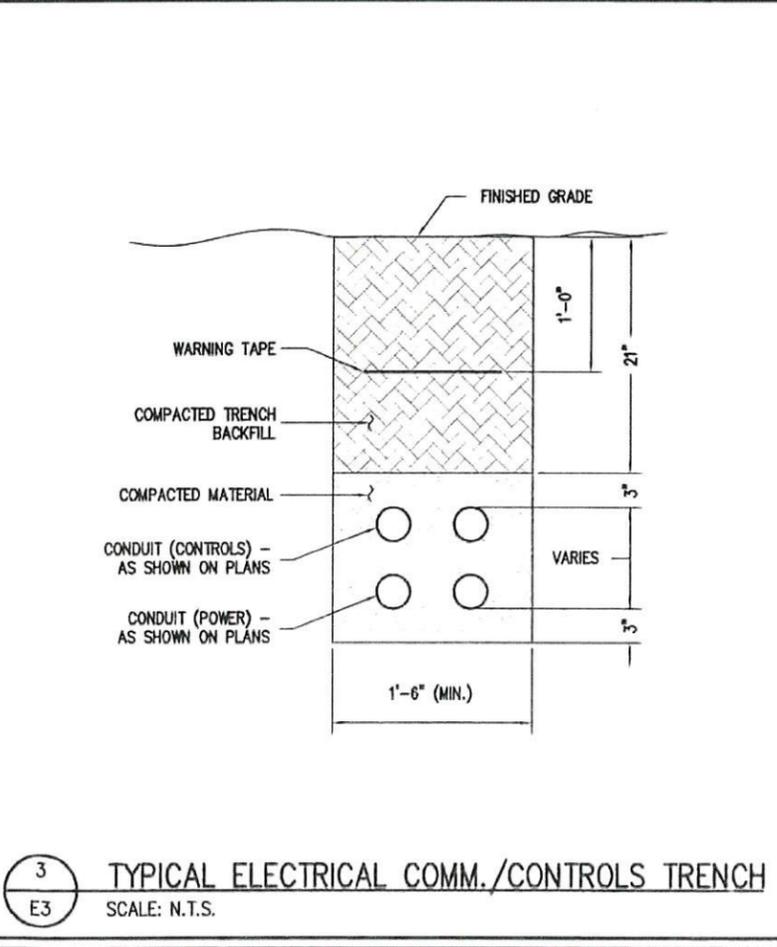


1 GROUND ROD INSPECTION WELL DETAIL  
E3 SCALE: N.T.S.

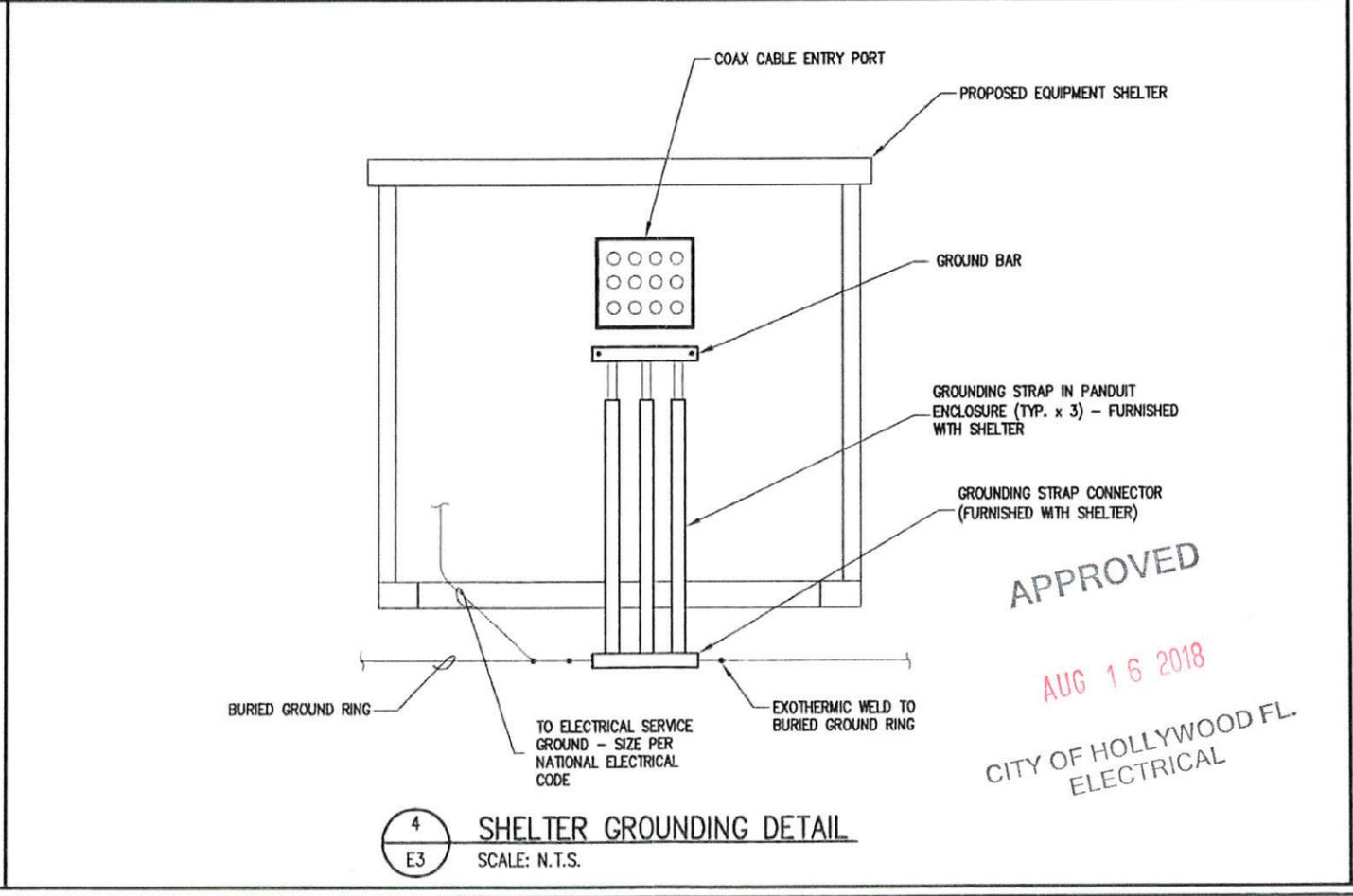


2 UTILITIES TRENCHING DETAIL  
E3 SCALE: N.T.S.

- GENERAL GROUNDING NOTES:**
- ALL GROUNDING CABLE IN CONCRETE OR THROUGH WALL SHALL BE IN 3/4" PVC CONDUIT. NO METALLIC CONDUIT SHALL BE USED FOR GROUNDING CONDUCTOR SLEEVES.
  - THE CONTRACTOR SHALL NOTIFY THE MOTOROLA SOLUTIONS REPRESENTATIVE WHEN THE GROUND RING IS INSTALLED SO THAT THE REPRESENTATIVE CAN INSPECT GROUND RING BEFORE IT IS CONCEALED.
  - ALL EXTERIOR GROUNDING CONDUCTORS INCLUDING GROUND RING SHALL BE #2/0 AWG STRANDED BARE TINNED COPPER. MAKE ALL GROUND CONNECTIONS AS SHORT AND DIRECT AS POSSIBLE. AVOID SHARP BENDS. THE RADIUS OF ANY BEND SHALL NOT BE LESS THAN 8" AND THE INCLUSIVE ANGLE OF ANY BEND SHALL NOT EXCEED 90°. GROUNDING CONDUCTORS SHALL BE ROUTED DOWNWARD TOWARD THE BURIED GROUND RING.
  - ALL BELOW GROUND EXTERNAL CONNECTIONS SHALL BE EXOTHERMICALLY WELDED. ALL EXOTHERMIC WELDS TO BURIED GROUND RING SHALL BE THE PARALLEL-TYPE, EXCEPT FOR THE GROUND RODS WHICH ARE TEE-TYPE EXOTHERMIC WELDS. REPAIR ALL GALVANIZED SURFACES THAT HAVE BEEN DAMAGED BY EXOTHERMIC WELDING. USE SPRAY GALVANIZED SUCH AS HOLLUB LECTROSOL #15-501.
  - WHERE MECHANICAL CONNECTORS (TWO-HOLE OR CLAMP) ARE USED, APPLY A LIBERAL PROTECTIVE COATING OF A CONDUCTIVE ANTI-OXIDE COMPOUND ON ALL CONNECTORS. PROVIDE LOCK WASHERS ON ALL MECHANICAL CONNECTORS. USE STAINLESS STEEL HARDWARE THROUGHOUT. THOROUGHLY REMOVE ALL PAINT AND CLEAN ALL DIRT FROM SURFACES REQUIRING GROUND CONNECTORS, REPAINT TO MATCH EXISTING AFTER CONNECTION IS MADE TO MAINTAIN CORROSION RESISTANCE. ALL GROUND CONNECTIONS SHALL BE APPROVED FOR THE TYPES OF METALS BEING ATTACHED TO.
  - THE CONTRACTOR SHALL COORDINATE AS REQUIRED TO HAVE A UTILITY COMPANY REPRESENTATIVE AT THE SITE TO DISCONNECT THE UTILITY NEUTRAL FROM GROUNDING SYSTEM DURING FINAL INSPECTION SO THAT REQUIRED TESTING ON THE GROUND SYSTEM CAN BE PERFORMED. THE CONTRACTOR SHALL PROVIDE NOTICE TO THE MOTOROLA SOLUTIONS REPRESENTATIVE (TWO) DAYS PRIOR TO FINAL TESTING. IF THE CONTRACTOR FAILS TO MAKE UTILITY COMPANY REPRESENTATIVE AVAILABLE DURING THE FINAL TESTING, THE CONTRACTOR SHALL PAY THE COST FOR AN INDEPENDENT GROUNDING CONSULTANT TO PERFORM THE GROUND RESISTANCE TEST. GROUNDING CONSULTANT SHALL BE SELECTED BY THE MOTOROLA SOLUTIONS REPRESENTATIVE. IF THE UTILITY COMPANY REPRESENTATIVE FAILS TO APPEAR DUE TO NO FAULT OF THE CONTRACTOR, NO PENALTY SHALL APPLY.
  - A RESISTANCE TO GROUND OF (10) OHMS OR LESS IS REQUIRED FOR ALL MOTOROLA SOLUTIONS SITES. THE CONTRACTOR SHOULD RETAIN HIS OWN TESTER AT HIS OWN EXPENSE. SCHEDULE FINAL FALL-OF-POTENTIAL TEST SUCH THAT THE MOTOROLA SOLUTIONS REPRESENTATIVE CAN BE PRESENT FOR FIELD VERIFICATION. REFER TO THE MOTOROLA SOLUTIONS MASTER SPECIFICATION FOR FALL-OF-POTENTIAL TESTING PROCEDURES. IF THE FINAL GROUNDING RESISTANCE MEASUREMENT EXCEEDS 10 (TEN) OHMS, THE CONTRACTOR SHALL NOTIFY THE MOTOROLA SOLUTIONS REPRESENTATIVE.
  - ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL.
  - THE GROUND WIRES SHALL BE RUN STRAIGHT FOR MINIMUM INDUCTANCE AND VOLTAGE DROP. SINCE CABLE BENDS INCREASE INDUCTANCE, THE MINIMUM REQUIRED BENDING RADIUS IS 8 INCHES WHEN BENDS ARE UNAVOIDABLE. ALL METAL WORK WITHIN 10 FEET OF THE GROUND RING SHALL BE DIRECTLY BONDED TO THIS GROUND SYSTEM, WITHOUT USING SERIES OR DAISY CHAIN CONNECTION ARRANGEMENTS.
  - PAINT, ENAMEL, LACQUER AND OTHER ELECTRICALLY NON-CONDUCTIVE COATINGS SHALL BE REMOVED FROM THREADS AND SURFACE AREAS WHERE CONNECTIONS ARE MADE TO ENSURE GOOD ELECTRICAL CONTINUITY.
  - CONNECTIONS BETWEEN DISSIMILAR METALS SHALL NOT BE MADE UNLESS THE CONDUCTORS ARE SEPARATED BY A SUITABLE MATERIAL THAT IS A PART OF THE ATTACHMENT DEVICE. ONLY ATTACHMENT DEVICES LISTED AND APPROVED FOR USE WITH THE SPECIFIC DISSIMILAR METALS MAY BE USED FOR THIS PURPOSE.
  - ALL BELOW GRADE GROUND SYSTEM CONDUCTORS SHALL BE A MINIMUM DEPTH OF 30" (OR 6" BELOW THE FROST LINE, WHICHEVER IS GREATER).



3 TYPICAL ELECTRICAL COMM./CONTROLS TRENCH  
E3 SCALE: N.T.S.



4 SHELTER GROUNDING DETAIL  
E3 SCALE: N.T.S.

**NOTE:**  
SYSTEM GROUND RESISTANCE SHALL NOT EXCEED 10 OHMS. A FALL-OF-POTENTIAL TEST SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH MOTOROLA SOLUTIONS SPECIFICATION R56. A.) PERFORM THREE TESTS AT EACH SITE.

B.) CONTRACTOR SHALL PROVIDE A WRITTEN REPORT ON FORMS PROVIDED WITHIN THE MOTOROLA SOLUTIONS SPECIFICATION R56 CONSISTING OF THE FOLLOWING:  
SITE NAME, ADDRESS AND IDENTIFICATION NUMBER, DESCRIPTION OF SITE SOIL AND MOISTURE CONDITION, DESCRIPTION OF WEATHER, MODELNUMBER OF TESTING EQUIPMENT, DATE OF LAST CALIBRATION, SITE SKETCH SHOWING LOCATION OF TEST PROBES, AND ALL FIELD DATA COLLECTED (READINGS, RANGE, TEST, MILLIAMPS, ETC.).

C.) CONTRACTOR SHALL NOTIFY THE MOTOROLA SOLUTIONS CONSTRUCTION MANAGER IF THERE ARE ANY DIFFICULTIES PERFORMING SYSTEM RESISTANCE TESTS OR IF MEASUREMENTS ARE ABOVE 10 OHMS. THE MOTOROLA SOLUTIONS CONSTRUCTION MANAGER SHALL PROVIDE INSTRUCTION TO THE CONTRACTOR TO INSTALL ADDITIONAL GROUNDING MEASURES TO MEET THE 10 OHM REQUIREMENT.

**MOTOROLA**

8000 W. SUNRISE BLVD  
PLANTATION, FL 33322

PHONE: (954) 723-5000

BROWARD COUNTY -  
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1200 SHERIDAN STREET  
HOLLYWOOD, FL 33019

AMEC FOSTER WHEELER PROJECT NO: 6166-17-0575	
DRAWN: J.B. GILMER	CHECKED: F.D. SHIVER
APPROVED: F.D. SHIVER	DATE: 06/01/17

AMEC FOSTER WHEELER  
ENVIRONMENT AND INFRASTRUCTURE, INC.  
1075 BIG SHANTY DRIVE N.W. SUITE 100  
KENNESAW, GA 30144  
PHONE: (770) 421-3400 FAX: (770) 421-3486

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B	09/27/17	ISSUED FOR PRELIMINARY
C	01/04/18	LEASE EXHIBIT
D	05/21/18	ISSUED FOR PERMITTING

SHEET NO. & NAME  
E3  
GROUNDING DETAILS

APPROVED  
AUG 16 2018  
CITY OF HOLLYWOOD FL.  
ELECTRICAL



**MOTOROLA**

8000 W. SUNRISE BLVD  
PLANTATION, FL 33322

PHONE: (954) 723-5000

BROWARD COUNTY -  
WEST HOLLYWOOD  
SW 49TH COURT  
FT LAUDERDALE, FL 33312

AMEC FOSTER WHEELER PROJECT NO: 6166-17-XXXX  
DRAWN: J. GILMER CHECKED: J.D. PAGE  
APPROVED: J.D. PAGE DATE: 06/01/17



amec  
foster  
wheeler

AMEC FOSTER WHEELER  
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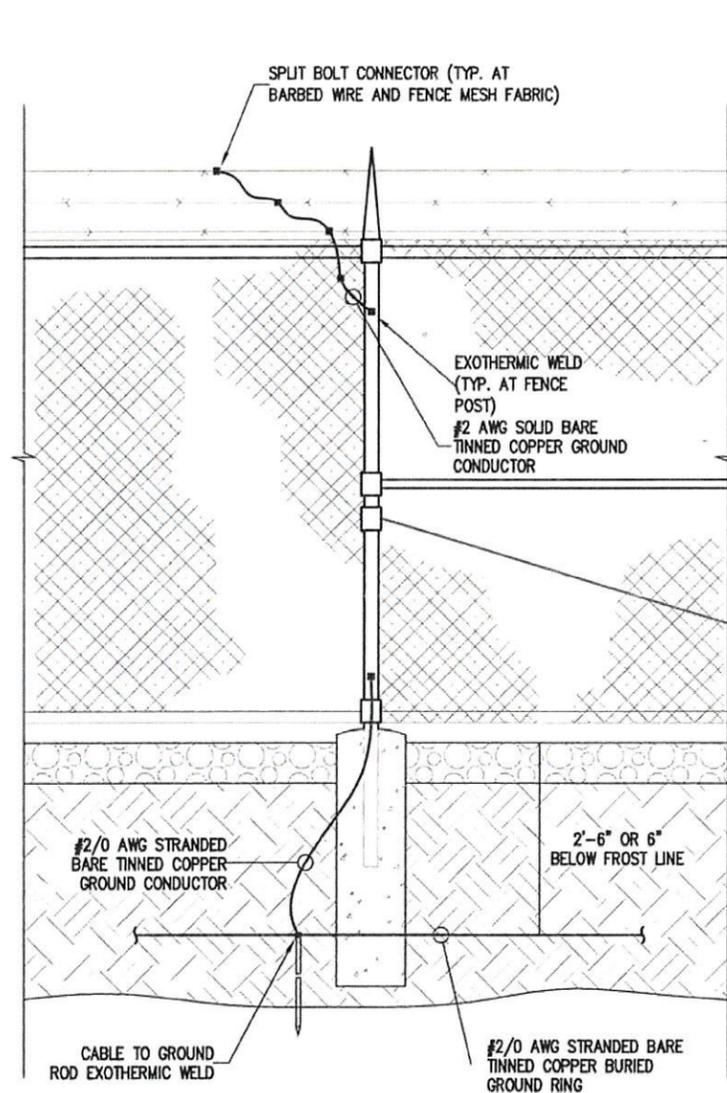
NO.	DATE	REVISION
A	07/17/17	LEASE EXHIBIT
B	09/28/17	ISSUED FOR PRELIMINARY
C	02/05/18	RE-ISSUED FOR PRELIMINARY
D	02/28/18	RE-ISSUED FOR PRELIMINARY
E	05/21/18	ISSUED FOR PERMITTING



5/21/18

SHEET NO. & NAME

E5  
GROUNDING DETAILS

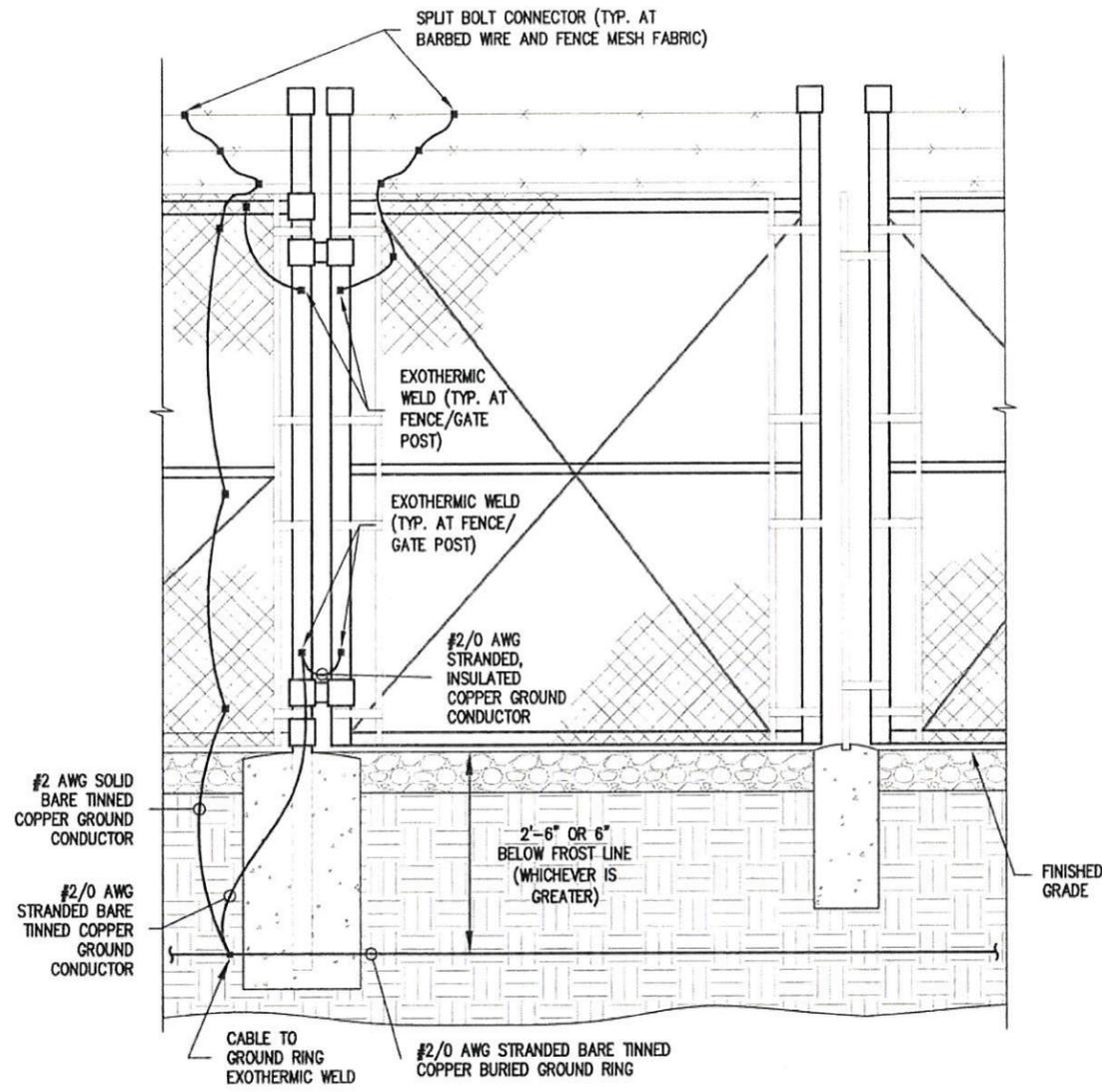


VERTICAL POST CONNECTED TO RING

**NOTES:**

1. EACH CORNER FENCE POST SHALL BE BONDED TO THE NEAREST LOCATION OF THE BUILDING GROUND RING USING #2/0 AWG OR LARGER BARE, TINNED COPPER CONDUCTORS. THE GROUNDING CONDUCTORS SHALL BE BURIED TO THE SAME DEPTH AS THE BUILDING GROUND RING.
2. THE FENCE FABRIC NEAR EACH CORNER BONDING POINT SHALL BE BONDED TO THE BUILDING GROUND RING. THE FENCE FABRIC SHALL BE MADE IN AT LEAST THREE POINT DOWN THE FENCE FABRIC.

1 FENCE GROUNDING DETAIL  
E5 SCALE: N.T.S.



VERTICAL FENCE/GATE POST BONDED TO GROUND RING

**NOTES:**

1. EACH CORNER FENCE POST SHALL BE BONDED TO THE NEAREST LOCATION OF THE BUILDING GROUND RING USING #2/0 AWG OR LARGER BARE, TINNED COPPER CONDUCTORS. THE GROUNDING CONDUCTORS SHALL BE BURIED TO THE SAME DEPTH AS THE BUILDING GROUND RING.
2. THE FENCE FABRIC NEAR EACH CORNER BONDING POINT SHALL BE BONDED TO THE BUILDING GROUND RING. THE FENCE FABRIC SHALL BE MADE IN AT LEAST THREE POINT DOWN THE FENCE FABRIC.
3. ALL GATE POSTS SHALL BE BONDED TO THE NEAREST LOCATION OF THE BUILDING GROUND RING USING #2 AWG OR LARGER BARE, TINNED COPPER CONDUCTORS.

2 GATE GROUNDING DETAIL  
E5 SCALE: N.T.S.

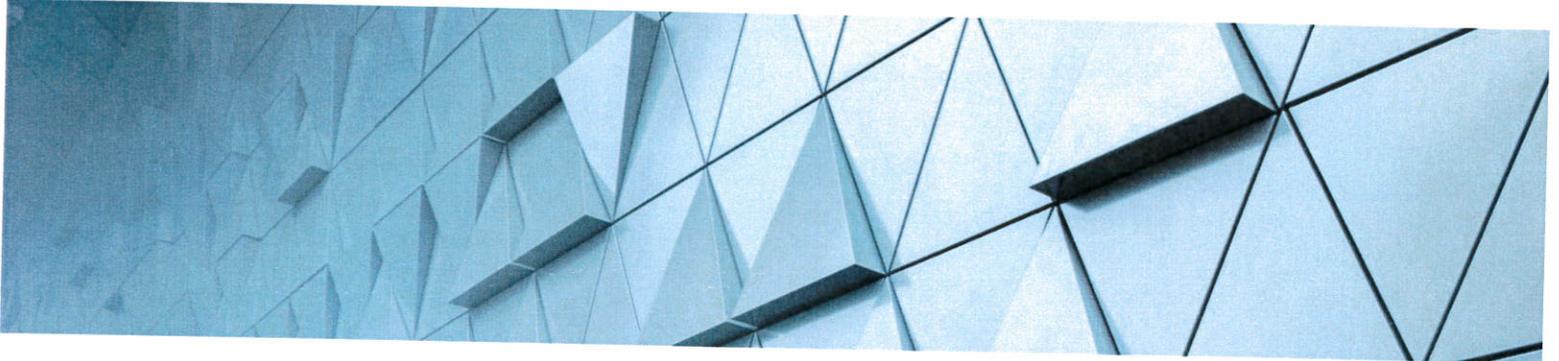
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Pompano  
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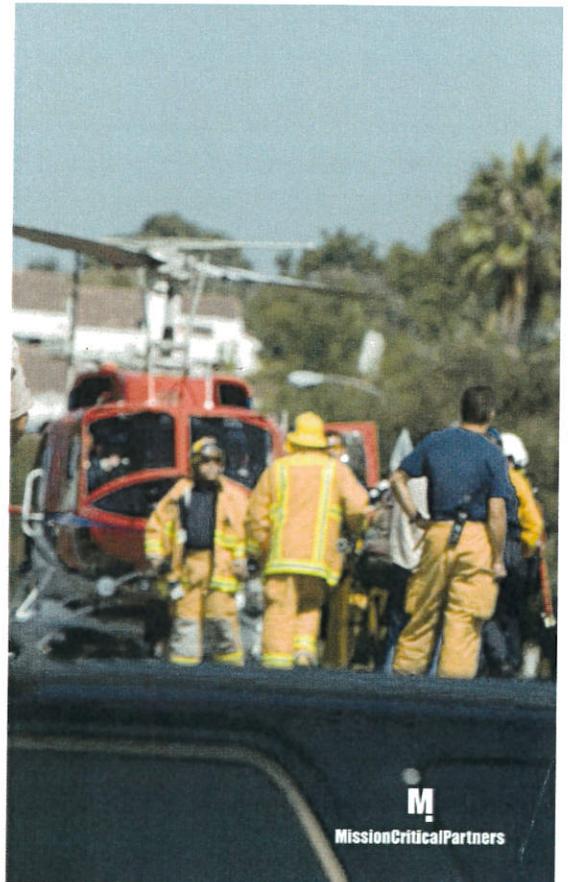
CIRC Feasibility Study Summary for BCBOCC

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APRIL 9, 2019

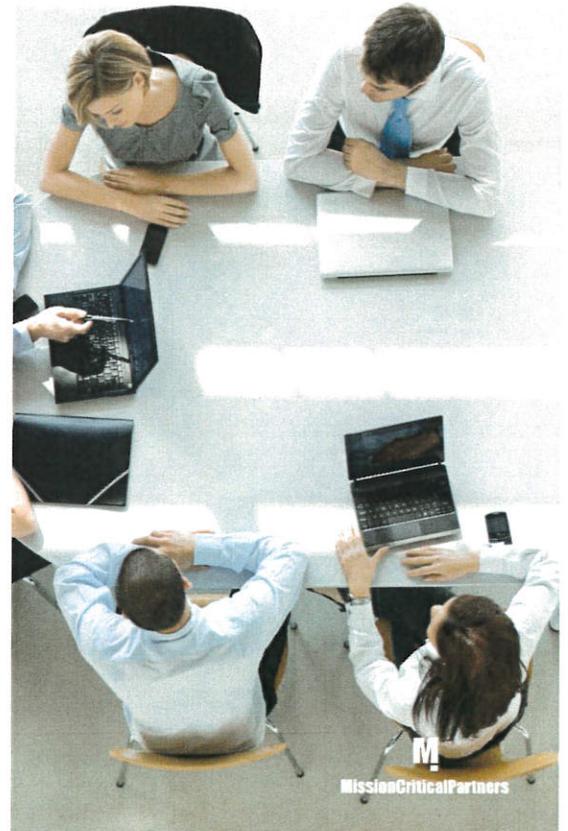
## Study Contributors

- Motorola Solutions Inc. (MSI) – Prime radio vendor
  - Jeff Erhardt: Project Manager
- KCI Technologies (KCI) – Motorola infrastructure design subcontractor
  - Eric Kohl: Senior Associate
- Mission Critical Partners, LLC (MCP) – County's technical consultant
  - Nick Falgiatore: Senior Technology Specialist



## Tasks Conducted

- Physical inspection
- Floor loading analysis
- Antenna mounting analysis
- X-ray of floors in riser closets
- Federal filings (FAA, NEPA, SHPO)
- Microwave path studies
- Design drawings



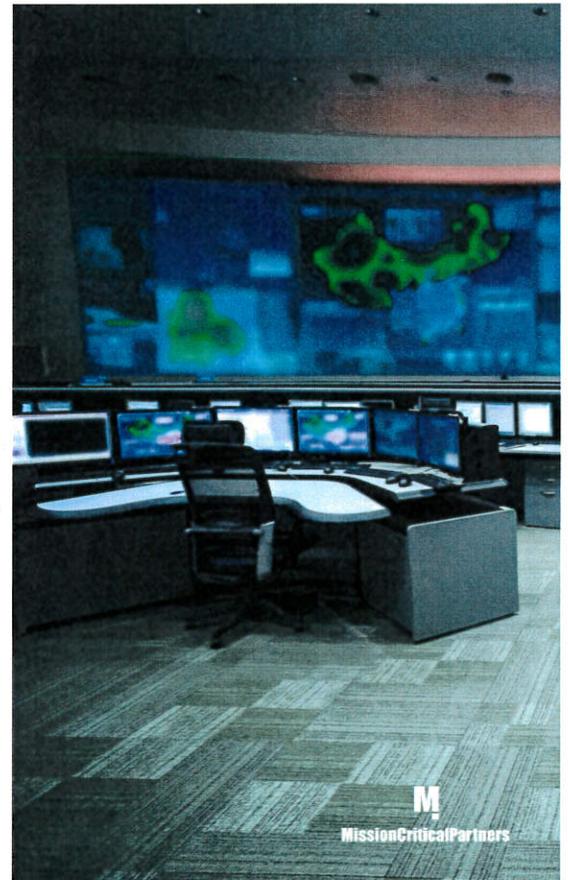
## Design Considerations

- Buildout of an equipment room inside the existing boiler room on the rooftop
- Mount of antennas along an inner parapet wall on the rooftop and at the corners of the building
- Installation of a generator and concrete enclosure on the fourth floor of the garage
- Route of power from the ground floor of the garage to the generator and to the rooftop



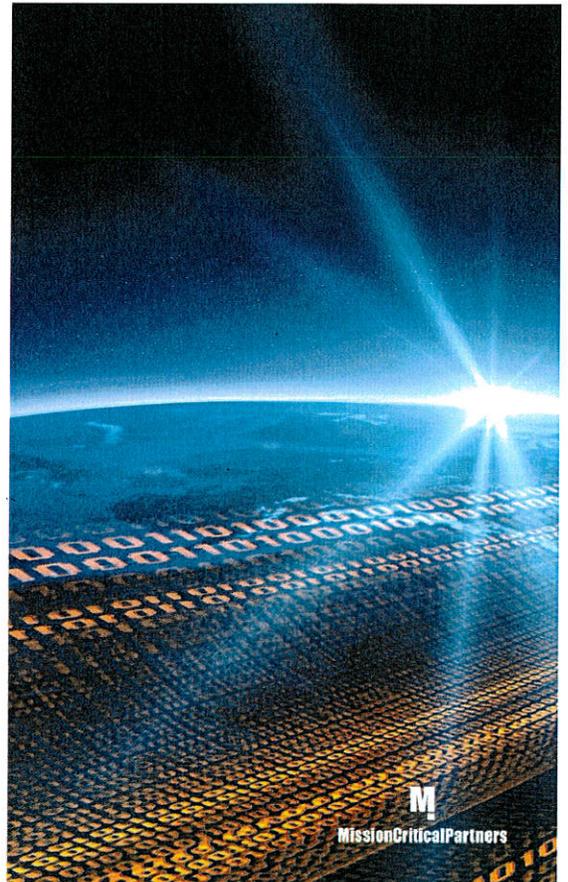
## Study Summary

- Construction at the CIRC will require significant building structural modifications
- Coverage will be reduced in the immediate vicinity due to shadowing from the building and may be further impacted by future construction
- Construction at the CIRC will be significantly more expensive in both capital and sustainment costs compared to a free-standing tower
- Construction at the CIRC will take longer than a free-standing tower, pushing project completion into Q3 2020 (Calendar Year)
- Restoration of service following equipment outages at the CIRC will take longer compared to a free-standing tower



## Design Challenges

- Ability to drain water underneath the location where the equipment room will be constructed
  - The floor will not support equipment room with associated equipment with raised concrete pad
- Routing of cables from the ground floor to the rooftop
  - Core drilling required through existing telecommunication closets
- Transportation of building materials and equipment to the rooftop
  - High-rise crane and/or helicopter required



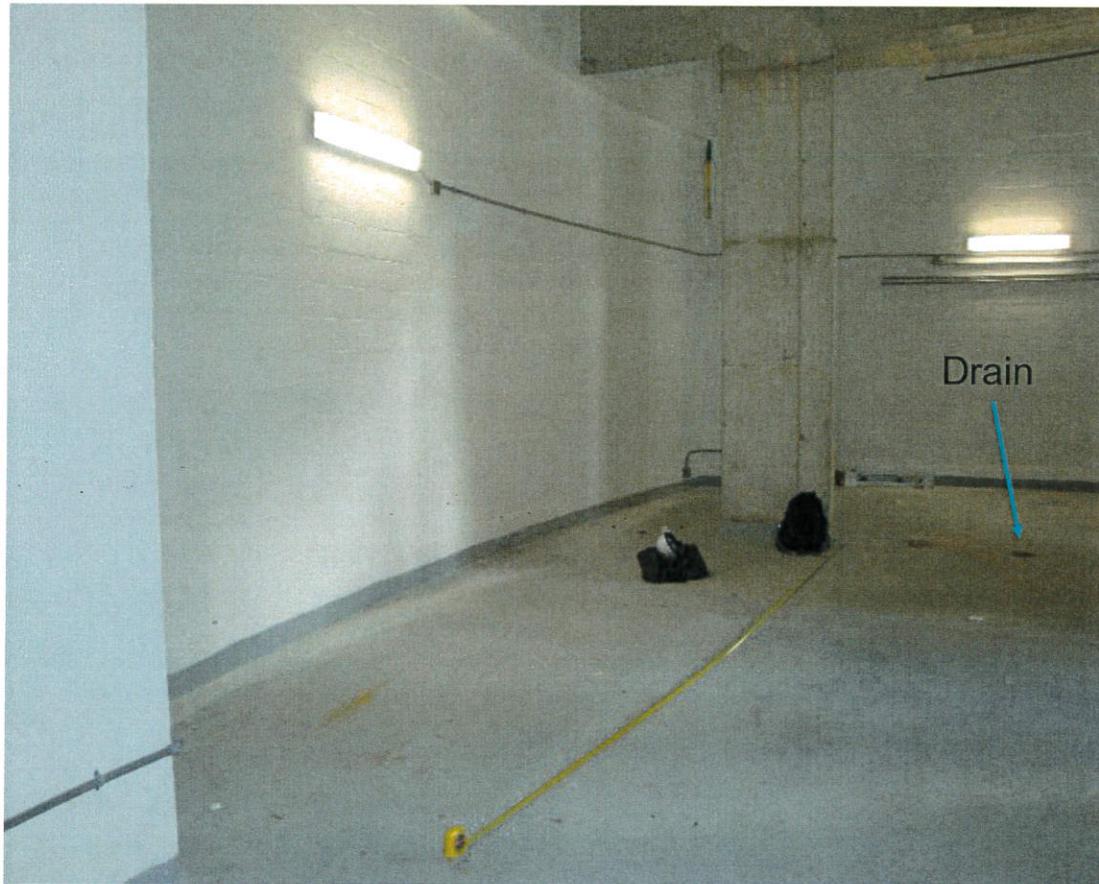




## Flood Mitigation

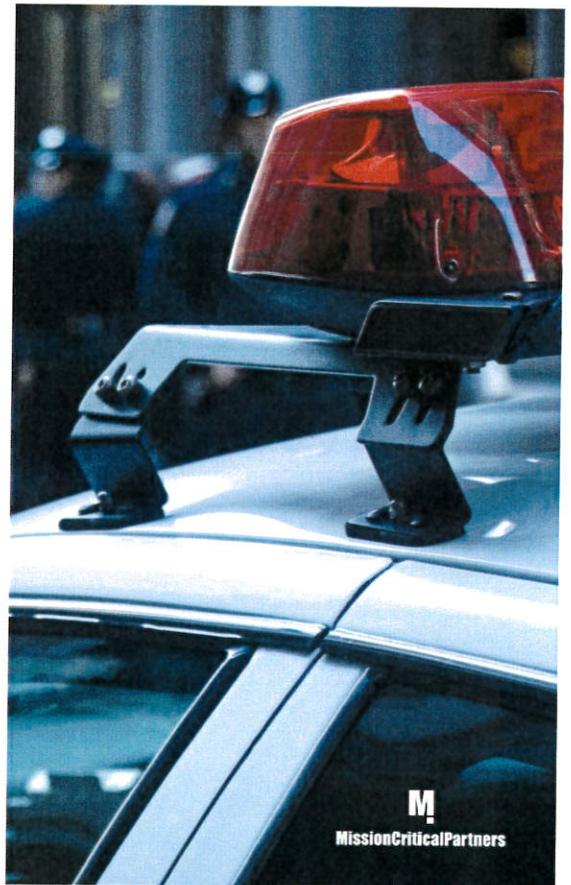
- The floor will not support raising the equipment room to allow sufficient drainage without building structural modifications
  - Drain located under proposed equipment location
  - Rust stains identified on the floor
  - Draining required for HVAC
- The location of the equipment room is not in an environmentally controlled area with the potential for flooding or water entry
  - Leak from the boilers
  - Water entry through vents
- Any options for raising the equipment room will require significant structural enhancements to the building, greatly increasing costs and schedule delays
  - Subject to approval by the building owner
- Construction without drainage solutions presents risks of equipment room being flooded

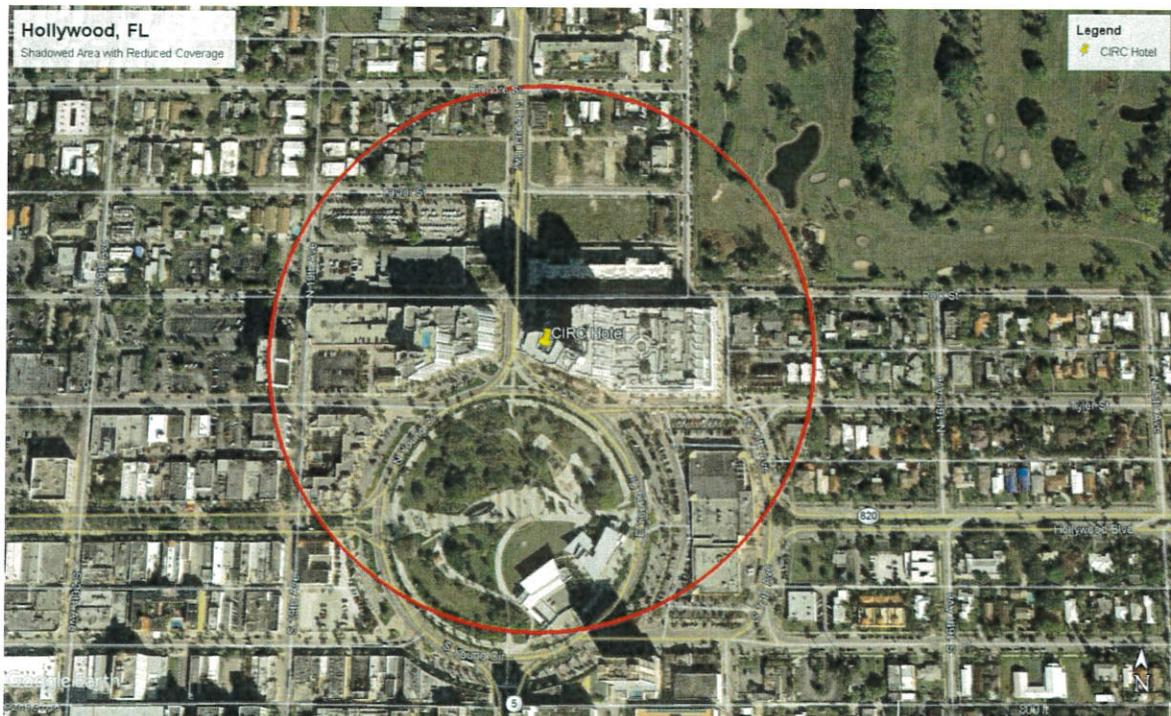


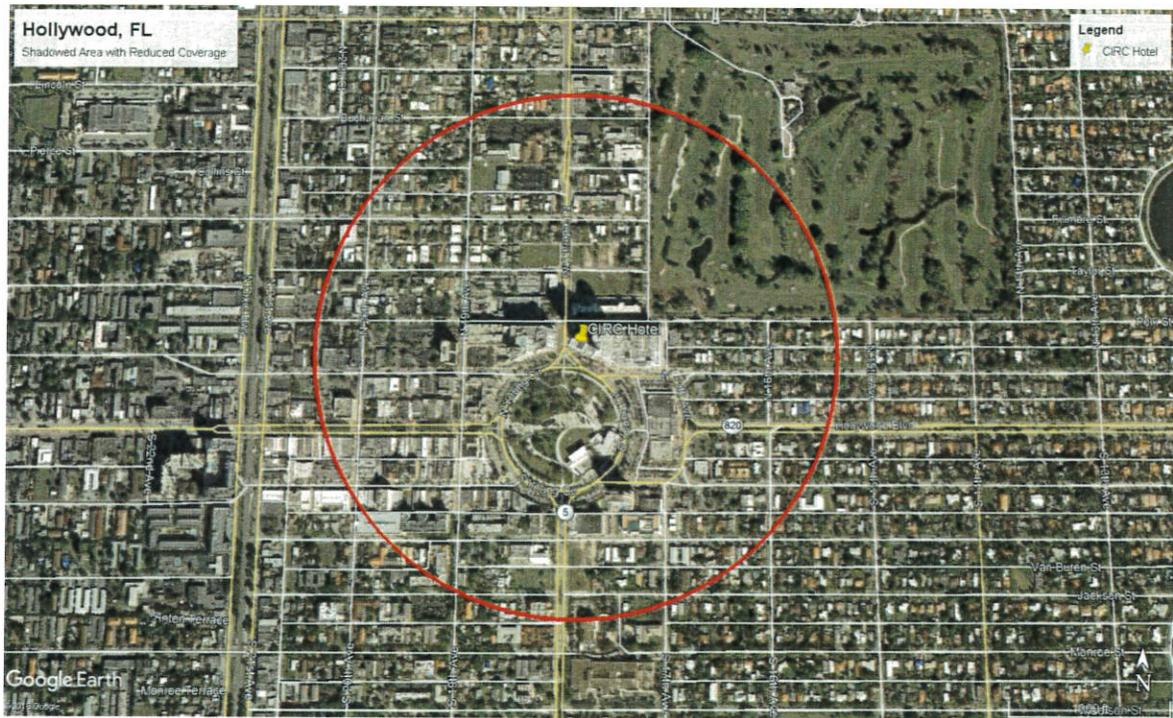


## Coverage Impacts

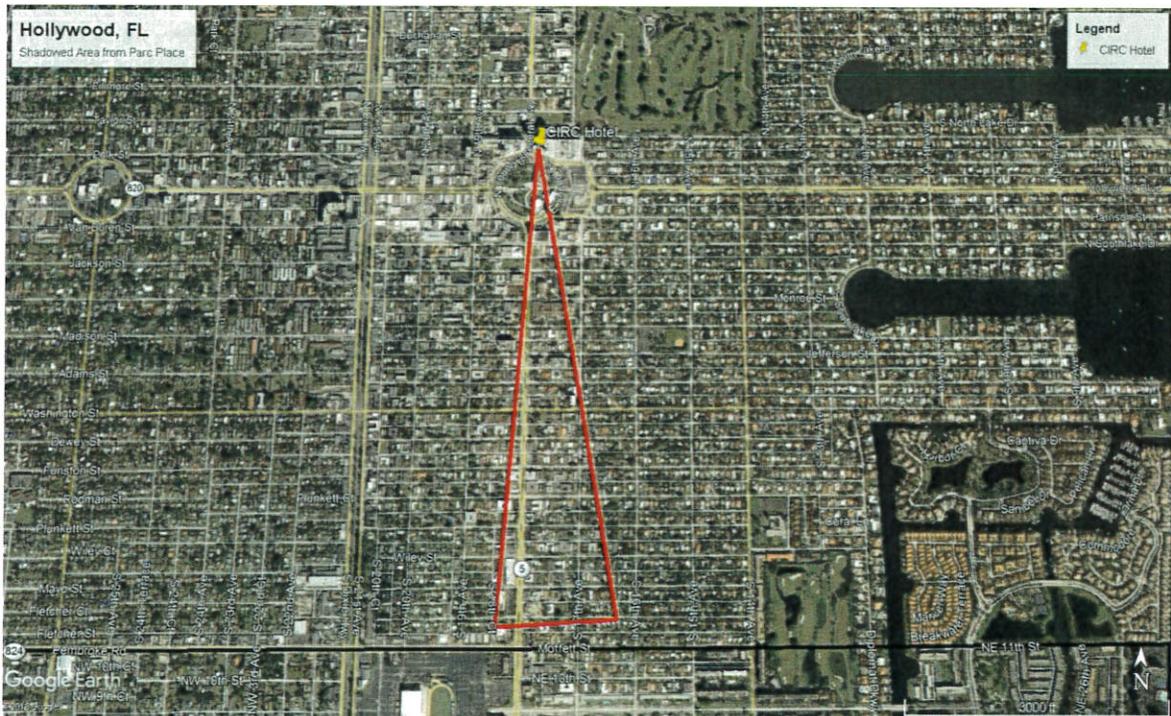
- Systemwide coverage initially evaluated to be comparable to a tower in West Lake Park
- Coverage in the immediate vicinity of the CIRC will be reduced due to shadowing from the building
- Shadowing may be worsened if the FAA does not approve antenna heights above the top of the building, requiring lower placement of antennas
- Construction of tall buildings in the immediate vicinity of the CIRC will impair coverage
- Computer modeling does not consider building shadowing or structural obstructions





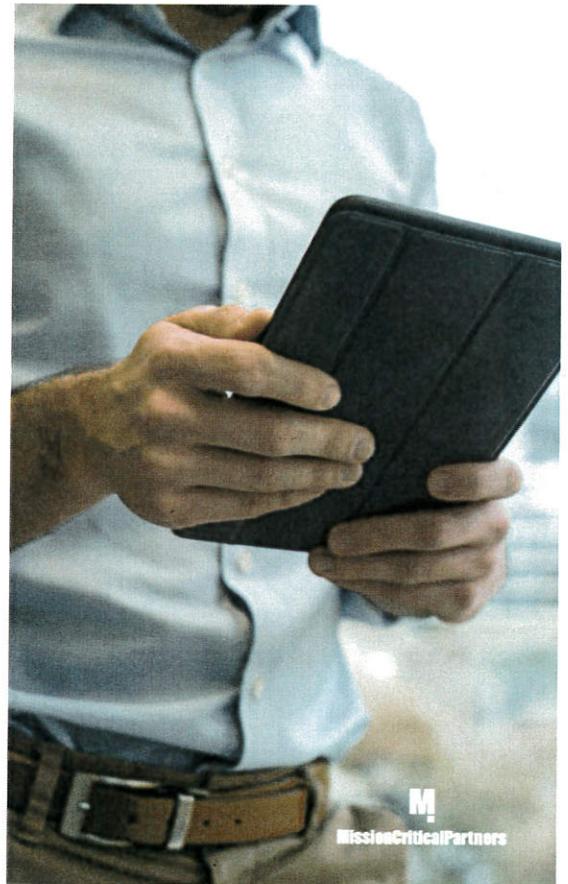






## Cost Analysis

- Construction costs at the CIRC estimated between \$2.1 million (installation via crane) and \$2.8 million (installation via helicopter)
  - Construction costs only
  - Does not include building structural enhancements
  - Does not include schedule delay costs
- Lease costs at the CIRC have not yet been negotiated, but are estimated to fall between \$5,200 per month and \$6,200 per month based on lease payments at existing condo locations
  - Costs estimated with a 3% CPI increase
- Cost of a free-standing tower is \$750,000, with \$5,000 in annual maintenance costs
  - Construction costs only
- Approximate lifespan of a radio tower is 50 years



## Cost of Ownership Comparison

Cumulative Cost of Ownership	CIRC (\$5,200 / month)	CIRC (\$6,200 / month)	Free-standing Tower
Capital Costs (initial installation)	\$2,450,000 (average)	\$2,450,000 (average)	\$750,000
Year 5	\$2,781,290	\$2,846,210	\$776,546
Year 10	\$3,165,346	\$3,305,526	\$807,319
Year 15	\$3,610,572	\$3,838,000	\$842,995
Year 20	\$4,126,711	\$4,455,282	\$884,352
Year 25	\$4,725,058	\$5,170,882	\$932,296
Year 30	\$5,418,706	\$6,000,458	\$987,877
Year 35	\$6,222,834	\$6,962,164	\$1,052,310
Year 40	\$7,155,039	\$8,077,045	\$1,127,006
Year 45	\$8,235,719	\$9,369,498	\$1,213,599
Year 50	\$9,488,525	\$10,867,805	\$1,313,984

## CIRC Implementation Schedule

Milestone	Completion Date
Feasibility Study with Proposed Design Delivered	March 29, 2019
Lease Executed	June 1, 2019
Construction Permits Received	August 1, 2019
Construction Begins	August 1, 2019
*Construction Complete	March 1, 2020
Radio Equipment Installation Complete	May 1, 2020
System Testing Complete	September 1, 2020
System Ready for Cutover	September 1, 2020

*2 months ?*

*June 1  
Dec 1*

\*Does not include building structural modifications

## Maintenance Impact

- It will take technicians longer to access radio equipment on the rooftop when compared to a free-standing tower
  - Key access, elevator, stairwell, long route on the rooftop
- In the event replacement equipment is needed, heavy equipment will need to be carried by hand
- Equipment that cannot be carried by hand or antenna replacements will require crane or helicopter

