

## STAFF REPORT FOR PLANNING COMMISSION MEETING OF SEPTEMBER 30, 2020

FILE NO: LU-2020-0024

AGENDA ITEM: E.5

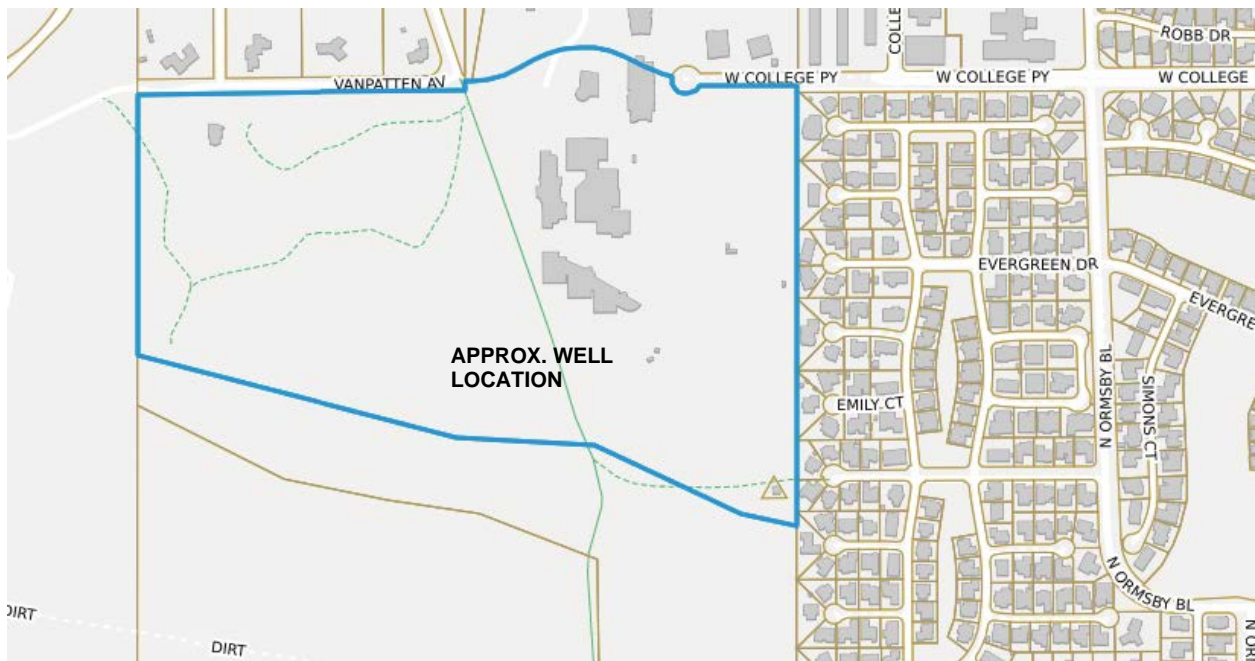
STAFF AUTHOR: Hope Sullivan, Planning Manager

**AGENDA TITLE:** For Possible Action: Discussion and possible action regarding a request for a Special Use Permit to modify a municipal well site by adding an emergency backup generator on property zoned Public Regional (PR), located at 2201 W College Parkway, APN 007-521-01.

**STAFF SUMMARY:** Carson City Public Works is proposing to install an emergency backup generator at the City's well site. The proposed improvements include installing a new generator and fuel tank on a concrete pad. The generator would be approximately 9-feet, 4-inches tall by 6-feet, 9-inches wide by 14-feet, 10-inches long. The generator will be housed inside a white, sound attenuating enclosure. The proposed generator will provide emergency backup power to the well. The Planning Commission is authorized to approve a Special Use Permit.

**RECOMMENDED MOTION:** I move to approve LU-2020-0024, based on the ability to make the required findings and subject to the conditions of approval contained in the staff report.

### VICINITY MAP:



### RECOMMENDED CONDITIONS OF APPROVAL:

1. All development shall be substantially in accordance with the approved site plan.
2. All on and off-site improvements shall conform to City standards and requirements.
3. The use for which this permit is approved shall commence within twelve (12) months of the date of final approval. A single, one (1) year extension of time must be requested in writing to the Planning and Community Development Department thirty (30) days prior to

the one (1) year expiration date. Should this permit not be initiated within one (1) year and no extension granted, the permit shall become null and void.

4. The applicant must sign and return the Notice of Decision for conditions of approval within ten (10) days of receipt of notification. If the Notice of Decision is not signed and returned within ten (10) days, then the item may be rescheduled for the next Planning Commission meeting for further consideration.
5. The applicant shall submit exterior light fixture details for any proposed fixtures with the building permit application. Lights must be shielded with a 90-degree full cutoff so that light is projected downward and not horizontally or upward. Light sources or refractors shall not extend below the bottom of the shield.
6. Scheduled testing of the generator shall be scheduled for mid-afternoon on a weekday so as to blend with ambient noise.

**LEGAL REQUIREMENTS:** Carson City Municipal Code 18.04.185 Public Regional (PR) Conditional Uses

**MASTER PLAN DESIGNATION:** Public / Quasi-Public

**PRESENT ZONING:** Public Regional

**KEY ISSUES:** Will the use be compatible with the surrounding neighborhood and be in keeping with the standards of the Carson City Municipal Code?

**SURROUNDING ZONING AND LAND USE INFORMATION:**

NORTH: Public Regional / Fire Station

SOUTH: Public Regional / Flood Control

EAST: Single Family 12 Planned Unit Development / Single Family Residential

WEST: Conservation Reserve / Land owned by the State of Nevada

**ENVIRONMENTAL INFORMATION:**

FLOOD ZONE: Zone X

EARTHQUAKE FAULT: Beyond 500 feet

SLOPE/DRAINAGE: Flat

**SITE DEVELOPMENT INFORMATION:**

LOT SIZE: 84.87 acres

EXISTING LAND USE: college

**PREVIOUS REVIEWS:**

SUP-05-089 – Baseball field and support facilities (Phase 2)

SUP-05-035 – Baseball Stadium

SUP-04-169 – Well

AB-01/02-1 – ROW Abandonment (North property line of 2201 W College Pkwy)

M-01/02-1 – Master Plan review of college

U-00/01-33 – Library and Student Center

U-00/01-4 – Additional facilities for Astronomy and Science programs

**DISCUSSION:**

Per CCMC 18.04.185, a municipal well facility is a conditional use in the Public Regional zoning

district and may only be established with a Special Use Permit. The municipal well use is established. The applicant is now seeking to add an emergency generator to the site. The generator will be 14-feet, 10-inches long by 6-feet, 9-inches wide by 9-feet, 4-inches tall. The addition of the generator requires a modification to the special use permit. The Planning Commission is authorized to approve a modification to a special use permit.

Of note, on August 17, 2017, the Board of Supervisors voted 5 – 0 to submit a grant application to the Nevada Division of Emergency Management for emergency generators and booster pumps as part of the hazard mitigation grant program. The scope of the grant application, as approved by the Board Supervisors, was for the purchase and installation of four emergency generators in order to provide backup power to critical well facilities and one lift station. The locations where the generators are proposed are:

1881 Winnie Lane  
4675 East Fifth Street  
603 Marsh Road  
2201 West College Parkway

The Planning Commission approved the special use permit for the generator on Winnie Lane at its July 2020 meeting. In addition to the subject request, the requests for the generators on East Fifth Street and Marsh Road are on the Commission's September 2020 agenda for consideration.

The facilities where the generators are proposed were determined based on an analysis of the potential damages for loss of water service. A power outage at the subject well 55 would impact water service to 39,121 people as well as businesses.

The well site is located in the eastern portion of Western Nevada College, to the east of the driveway. The well site is screened from residences to the east by a solid fence.

#### **PUBLIC COMMENTS:**

Public notices were mailed to 180 property owners within 900 feet of the subject site on September 11, 2020. As of the writing of this report, staff has not received any written comments. Any comments that are received after this report is completed will be submitted to the Planning Commission prior to or at the meeting on September 30, 2020 depending on the date of submission of the comments to the Planning Division.

#### **OTHER CITY DEPARTMENTS OR OUTSIDE AGENCY COMMENTS:**

Plans were routed to commenting agencies, and the following comments were received. Comments have been incorporated into the conditions of approval, as appropriate.

#### **Engineering Division**

The Engineering Division has reviewed the application within our areas of purview relative to adopted standards and practices and to the provisions of CCMC 18.02.080, Conditional Uses. The Engineering Division offers the following discussion:

C.C.M.C. 18.02.080 (5a) - Master Plan

The request is not in conflict with any Engineering Master Plans.

C.C.M.C. 18.02.080 (5b) – Use, Peaceful Enjoyment, Economic Value, Compatibility

Development Engineering has no comment on this finding.

C.C.M.C. 18.02.080 (5c) - Traffic/Pedestrians

The use has no impact on vehicle or pedestrian traffic.

C.C.M.C. 18.02.080 (5d) - Public Services

The use improves the reliability of the City's water system.

C.C.M.C. 18.02.080 (5e) – Title 18 Standards

Development Engineering has no comment on this finding.

C.C.M.C. 18.02.080 (5f) – Public health, Safety, Convenience, and Welfare

The project meets engineering standards for health and safety.

C.C.M.C. 18.02.080 (5g) – Material Damage or Prejudice to Other Property

Development Engineering has no comment on this finding.

C.C.M.C. 18.02.080 (5h) – Adequate Information

The plans and reports provided were adequate for this analysis.

## **Fire Department**

Project must comply with the International Fire Code and northern Nevada fire code amendments as adopted by Carson City.

**FINDINGS:** Staff's recommendation is based upon the findings as required by CCMC Section 18.02.062 (Special Use Permits) enumerated below and substantiated in the public record for the project.

### **1. Will be consistent with the master plan elements.**

The Water System Master Plan is an integrated planning document that describes existing regulation and legal commitments, water rights, supply sources, storage and distribution infrastructure and characterization of water use. The generator will allow for the distribution of water consistent with the Master Plan during power outages.

### **2. Will not be detrimental to the use, peaceful enjoyment, economic value, or development of surrounding properties or the general neighborhood; and will cause no objectionable noise, vibrations, fumes, odors, dust, glare or physical activity.**

The well site is located near the eastern edge of the college campus. The site is currently screened from a residence to the east by a 6-foot solid wooden fence. As part of the operations, the generator will be tested weekly for approximately 30 minutes. At 23 feet away from the source, the decibel level will be 71 decibels. This is essentially the sound of a normal conversation. The back fence of the residential property to the east is 27.6 feet from the proposed generator site. The additional distance and the solid fence will provide for some noise mitigation. But, to prevent the noise from being objectionable, staff recommends a condition of approval that testing be scheduled for a weekday mid-afternoon. This would coincide with a time when ambient noise may be greater than in the morning or evening, thus causing any noise from testing to blend in with the background noise.



**3. Will have little or no detrimental effect on vehicular or pedestrian traffic.**

The addition of a generator to the site will not create a detrimental effect on vehicular or pedestrian traffic. There will be no change to traffic patterns.

**4. Will not overburden existing public services and facilities, including schools, police and fire protection, water, sanitary sewer, public roads, storm drainage, and other public improvements.**

The addition of an emergency generator will not overburden, or even create a demand on public services or facilities. It will allow for more reliable water delivery during times of power outages.

**5. Meets the definition and specific standards set forth elsewhere in this title for such particular use and meets the purpose statement of that district.**

The subject property is zoned for Public Regional (PR). The purpose of the PR zoning district is for Federal, state and city facilities and uses whose main purpose is to sustain wide regional need. A municipal well facility is a conditional use in the PR zoning district. In the PR zoning district, setbacks and heights are determined as part of the special use permit. As conditioned, staff find that the proposed use meets the purpose statement and definition and standards of the district.

**6. The use will not be detrimental to the public health, safety, convenience and welfare.**

The emergency generator will not be detrimental to public health, safety, convenience and welfare. Rather, the proposed generator will promote public health and safety by ensuring the availability of water during electricity outages.

**7. Will not result in material damage or prejudice to other property in the vicinity.**

The proposed emergency generator, subject to the conditions of approval, will not result in material damage or prejudice to other property in the vicinity. As noted, staff was concerned with noise impacts. But with a condition limiting scheduled testing to mid-afternoon on a weekday, staff finds there will not be material damage.

Attachments:  
LU-2020-0024 application



# CARSON CITY NEVADA

## Consolidated Municipality and State Capital

### PUBLIC WORKS

July 15th, 2020

Carson City Planning Commission  
108 E. Proctor Street  
Carson City, Nevada 89701

RE: Special Use Permit Project Description – Carson City Municipal Well 55

Carson City Public Works is proposing to install a diesel generator at the City's Municipal Well 55 site. The improvements would include installing a new generator and fuel tank on a concrete pad in the location indicated on the site map. The generator would be approximately 9'-4" tall, 6'-9" wide, and 14'-10" long. The generator will be housed inside a white, level 2, sound attenuating enclosure. The proposed generator will provide emergency backup power to Well 55.

Carson City has received a grant through the Nevada Department of Emergency Management (NDEM) which funds the installation of emergency generators at four critical well facilities in the City. Well 55 was identified as one of the critical facilities and has the potential to impact 39,000 people in the event of a power outage. Installation of the portable generator will provide resiliency against outages and better service to the residents of Carson City.

If you have any questions, please feel free to call or email me.

Sincerely,

Darren Anderson, P.E.  
Project Manager  
Carson City Public Works  
danderson@carson.org

**Carson City Planning Division**  
 108 E. Proctor Street • Carson City NV 89701  
 Phone: (775) 887-2180 • E-mail: [planning@carson.org](mailto:planning@carson.org)

FOR OFFICE USE ONLY:

CCMC 18.02.080

**SPECIAL USE PERMIT**

**FILE #** LU-2020-0024

**FEE\*:** \$2,450.00 MAJOR  
 \$2,200.00 MINOR (Residential zoning districts)

+ noticing fee

\*Due after application is deemed complete by staff

APPLICANT PHONE #  
 Carson City Public Works 283-7584

MAILING ADDRESS, CITY, STATE, ZIP  
 3505 Butti Way, Carson City, NV, 89701

EMAIL ADDRESS  
 danderson@carson.org

PROPERTY OWNER PHONE #  
 Carson City 887-2000

MAILING ADDRESS, CITY, STATE, ZIP  
 201 N. Carson St., Carson City, NV, 89701

EMAIL ADDRESS  
 danderson@carson.org 283-7584

APPLICANT AGENT/REPRESENTATIVE PHONE #  
 Darren Anderson 283-7584

MAILING ADDRESS, CITY STATE, ZIP  
 3505 Butti Way, Carson City, NV, 89701

EMAIL ADDRESS  
 danderson@carson.org

SUBMITTAL PACKET – 4 Complete Packets (1 Unbound Original and 3 Copies) including:

- Application Form
- Detailed Written Project Description
- Site Plan
- Building Elevation Drawings and Floor Plans
- Special Use Permit Findings
- Master Plan Policy Checklist
- Applicant's Acknowledgment Statement
- Documentation of Taxes Paid-to-Date
- Project Impact Reports (Engineering)

CD or USB DRIVE with complete application in PDF

Application Received and Reviewed By: \_\_\_\_\_

Submittal Deadline: Planning Commission application submittal schedule.

Note: Submittals must be of sufficient clarity and detail for all departments to adequately review the request. Additional information may be required.

Project's Assessor Parcel Number(s):

00752101

Street Address

2201 West College Parkway

Project's Master Plan Designation

Public Regional

Project's Current Zoning

PR

Nearest Major Cross Street(s)

College Drive

Please provide a brief description of your proposed project and/or proposed use below. Provide additional pages to describe your request in more detail. Carson City Public Works is proposing to place an emergency backup generator at the City's Well 55 site. The City received a FEMA grant to place emergency generators at 4 critical well sites including Well 55.

PROPERTY OWNER'S AFFIDAVIT

I, Daniel Stucky, being duly deposed, do hereby affirm that I am the record owner of the subject property, and that I have knowledge of, and I agree to, the filing of this application.

Signature 

Address 3505 Butti Way

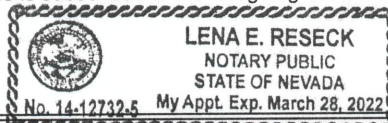
Date 7/21/2020

Use additional page(s) if necessary for additional owners.

STATE OF NEVADA )  
 COUNTY )

On July 21, 2020, Dan Stucky, personally appeared before me, a notary public, personally known (or proved) to me to be the person whose name is subscribed to the foregoing document and who acknowledged to me that he/she executed the foregoing document.

Lena E. Reseck  
 Notary Public



NOTE: If your project is located within the Historic District or airport area, it may need to be scheduled before the Historic Resources Commission or the Airport Authority in addition to being scheduled for review by the Planning Commission. Planning staff can help you make this determination.

**STATEMENT OF FINDINGS**  
**APPLICATION FOR SPECIAL USE PERMIT**  
**WELL 55 EMERGENCY GENERATOR PROJECT**

**Question 1: Will be consistent with the objectives of the Master Plan elements.**

Installation of the emergency backup generator at Well 55 will be in accordance with Carson City's Master Plan. The generator will help the City to continue to operate the site as it is currently operated. The generator will match the facility and equipment located at the site.

The generator will be constructed of long lasting, rust resistant materials and be housed in a neutral colored, level 2, sound attenuating enclosure.

Completion of the project will allow the City to continue to provide a satisfactory level of service to those connected to the City's water system and help to maintain good quality of life for residents. Installation of the emergency backup generator will help sustainability of our community by adding reliability to the City's water system.

**Question 2: Will not be detrimental to the use, peaceful enjoyment, economic value, or development of surrounding properties or the general neighborhood; and is compatible with and preserves the character and integrity of adjacent development and neighborhood or includes improvements or modifications either on-site or within the public right-of-way to mitigate development related to adverse impacts such as noise vibrations, fumes, odors, dust, glare or physical activity.**

Well 55 is one of Carson City's better producing wells, producing approximately 1,000 gpm. Additionally, Well 55 is located such that water from Well 55 can be moved anywhere in the City.

The site is generally surrounded by large publicly owned parcels (Western Nevada Community College) with single family 12,000 sq ft homes located to the east. The installation of the emergency backup generator will not be detrimental to the use, peaceful enjoyment, economic value, or development of surrounding properties due to the use of the site not changing and the new generator matching the existing facility and equipment.

**Adjacent properties:**

Public Regional (PR) and Conservation Reserve (CR) to the west

Public Regional (PR) to the south and north

Single Family 12,000 (SF12P) to the east

**Question 3: Will have little or no detrimental effect on vehicular traffic or pedestrian traffic.**

The project will have no effect on vehicular or pedestrian traffic.

**Question 4: Will not overburden existing public services and facilities, including schools, police and fire protection, water, sanitary sewer, public roads, storm drainage and other public improvements.**

The project will help improve the public water system and service. Installation of an emergency generator at Well 55 will provide increased reliability of the water system.

**Question 5: Meets the definition and specific standards set forth elsewhere in Carson City Municipal Code, Title 18 for such particular use and meets the purpose statement of that district.**

A municipal well is a conditional use for parcels Located in PR district. The proposed improvements will help the City to continue to use the site as a municipal well facility as has been previously approved.

**Question 6: Will not be detrimental to the public health, safety, convenience and welfare.**

This project will help to improve public health, safety, convenience and welfare by providing improved reliability of water from the Well 55 site.

**Question 7: Will not result in material damage or prejudice to other property in the vicinity, as a result of proposed mitigation measures.**

The use of the land will not vary from how it has been previously used. The site will continue to be used as a municipal well facility with the proposed improvements. The well will operate during power outages if the well is in operation at the time of the outage and on a scheduled maintenance startup frequency of once a week for 30 minutes. The maintenance startup will be scheduled during daytime weekday hours to minimize disturbance to neighbors.

**ACKNOWLEDGMENT OF APPLICANT**

I certify that the forgoing statements are true and correct to the best of my knowledge and belief. I agree to fully comply with all conditions as established by the Planning Commission. I am aware that this permit becomes null and void if the use is not initiated within one-year of the date of the Planning Commission's approval; and I understand that this permit may be revoked for violation of any of the conditions of approval. I further understand that approval of this application does not exempt me from all City code requirements.

*Darren Anderson*

Darren Anderson

7/27/2020

Applicant's Signature

Print Name

Date



# Master Plan Policy Checklist

## Special Use Permits & Major Project Reviews & Administrative Permits

### PURPOSE

The purpose of a development checklist is to provide a list of questions that address whether a development proposal is in conformance with the goals and objectives of the 2006 Carson City Master Plan that are related to non-residential and multi-family residential development. This checklist is designed for developers, staff, and decision-makers and is intended to be used as a guide only.

Development Name: \_\_\_\_\_

Reviewed By: \_\_\_\_\_

Date of Review: \_\_\_\_\_

### DEVELOPMENT CHECKLIST

The following five themes are those themes that appear in the Carson City Master Plan and which reflect the community's vision at a broad policy level. Each theme looks at how a proposed development can help achieve the goals of the Carson City Master Plan. A check mark indicates that the proposed development meets the applicable Master Plan policy. The Policy Number is indicated at the end of each policy statement summary. Refer to the Comprehensive Master Plan for complete policy language.

#### CHAPTER 3: A BALANCED LAND USE PATTERN



The Carson City Master Plan seeks to establish a balance of land uses within the community by providing employment opportunities, a diverse choice of housing, recreational opportunities, and retail services.

##### Is or does the proposed development:

- Meet the provisions of the Growth Management Ordinance (1.1d, Municipal Code 18.12)?
- Use sustainable building materials and construction techniques to promote water and energy conservation (1.1e, f)?
- Located in a priority infill development area (1.2a)?
- Provide pathway connections and easements consistent with the adopted Unified Pathways Master Plan and maintain access to adjacent public lands (1.4a)?

- Protect existing site features, as appropriate, including mature trees or other character-defining features (1.4c)?
- At adjacent county boundaries or adjacent to public lands, coordinated with the applicable agency with regards to compatibility, access and amenities (1.5a, b)?
- In identified Mixed-Use areas, promote mixed-use development patterns as appropriate for the surrounding context consistent with the land use descriptions of the applicable Mixed-Use designation, and meet the intent of the Mixed-Use Evaluation Criteria (2.1b, 2.2b, 2.3b, Land Use Districts, Appendix C)?
- Meet adopted standards (e.g. setbacks) for transitions between non-residential and residential zoning districts (2.1 d)?
- Protect environmentally sensitive areas through proper setbacks, dedication, or other mechanisms (3.1b)?
- Sited outside the primary floodplain and away from geologic hazard areas or follows the required setbacks or other mitigation measures (3.3d, e)?
- Provide for levels of services (i.e. water, sewer, road improvements, sidewalks, etc.) consistent with the Land Use designation and adequate for the proposed development (Land Use table descriptions)?
- If located within an identified Specific Plan Area (SPA), meet the applicable policies of that SPA (Land Use Map, Chapter 8)?

#### CHAPTER 4: EQUITABLE DISTRIBUTION OF RECREATIONAL OPPORTUNITIES



The Carson City Master Plan seeks to continue providing a diverse range of park and recreational opportunities to include facilities and programming for all ages and varying interests to serve both existing and future neighborhoods.

##### Is or does the proposed development:

- Provide park facilities commensurate with the demand created and consistent with the City's adopted standards (4.1b)?
- Consistent with the Open Space Master Plan and Carson River Master Plan (4.3a)?

#### CHAPTER 5: ECONOMIC VITALITY



The Carson City Master Plan seeks to maintain its strong diversified economic base by promoting principles which focus on retaining and enhancing the strong employment base, include a broader range of retail services in targeted areas, and include the roles of technology, tourism, recreational amenities, and other economic strengths vital to a successful community.

##### Is or does the proposed development:



- Encourage a citywide housing mix consistent with the labor force and non-labor force populations (5.1j)
- Encourage the development of regional retail centers (5.2a)
- Encourage reuse or redevelopment of underused retail spaces (5.2b)?
- Support heritage tourism activities, particularly those associated with historic resources, cultural institutions and the State Capitol (5.4a)?
- Promote revitalization of the Downtown core (5.6a)?
- Incorporate additional housing in and around Downtown, including lofts, condominiums, duplexes, live-work units (5.6c)?

## CHAPTER 6: LIVABLE NEIGHBORHOODS AND ACTIVITY CENTERS



The Carson City Master Plan seeks to promote safe, attractive and diverse neighborhoods, compact mixed-use activity centers, and a vibrant, pedestrian-friendly Downtown.

### Is or does the proposed development:

- Use durable, long-lasting building materials (6.1a)?
- Promote variety and visual interest through the incorporation of varied building styles and colors, garage orientation and other features (6.1b)?
- Provide variety and visual interest through the incorporation of well-articulated building facades, clearly identified entrances and pedestrian connections, landscaping and other features consistent with the Development Standards (6.1c)?
- Provide appropriate height, density and setback transitions and connectivity to surrounding development to ensure compatibility with surrounding development for infill projects or adjacent to existing rural neighborhoods (6.2a, 9.3b 9.4a)?
- If located in an identified Mixed-Use Activity Center area, contain the appropriate mix, size and density of land uses consistent with the Mixed-Use district policies (7.1a, b)?
- If located Downtown:
  - Integrate an appropriate mix and density of uses (8.1a, e)?
  - Include buildings at the appropriate scale for the applicable Downtown Character Area (8.1b)?
  - Incorporate appropriate public spaces, plazas and other amenities (8.1d)?
- Incorporate a mix of housing models and densities appropriate for the project location and size (9.1a)?

## CHAPTER 7: A CONNECTED CITY

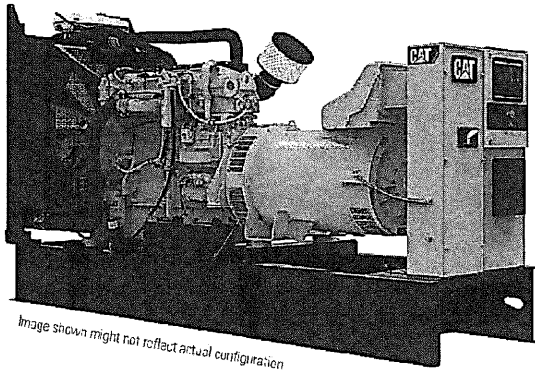


The Carson City Master Plan seeks promote a sense of community by linking its many neighborhoods, employment areas, activity centers, parks, recreational

amenities and schools with an extensive system of interconnected roadways, multi-use pathways, bicycle facilities, and sidewalks.

**Is or does the proposed development:**

- Promote transit-supportive development patterns (e.g. mixed-use, pedestrian-oriented, higher density) along major travel corridors to facilitate future transit (11.2b)?
- Maintain and enhance roadway connections and networks consistent with the Transportation Master Plan (11.2c)?
- Provide appropriate pathways through the development and to surrounding lands, including parks and public lands, consistent with the Unified Pathways Master Plan (12.1a, c)?



*Image shown might not reflect actual configuration*

## 200 ekW- 300 ekW

60 Hz

Standby	Prime
200ekW	180ekW
250ekW	225ekW
300ekW	275ekW

### BENEFITS & FEATURES

#### CAT® GENERATOR SET PACKAGE

Cat generator set packages have been fully prototype tested and certified torsional vibration analysis reports are available. The packages are designed to meet the NFPA 110 requirement for loading, conform to the ISO 8528-5 steady state and full transient response requirements.

#### CAT DIESEL ENGINES

The four-cycle Cat diesel engine combines consistent performance with excellent fuel economy and transient response that meets or exceeds ISO 8528-5. The engines feature a reliable, rugged, and durable design that has been field proven in thousands of applications worldwide in emergency standby installations.

#### COOLING SYSTEM

The cooling system has been designed and tested to ensure proper generator set cooling, and includes the radiator, fan, belts, and all guarding installed as standard. Contact your Cat dealer for specific ambient and altitude capabilities.

#### GENERATORS

The generators used on Cat packages have been designed and tested to work with the Cat engine. The generators are built with robust Class H insulation and provide industry-leading motor starting capability and altitude capabilities.

#### EMCP CONTROL PANELS

The EMCP controller features the reliability and durability you have to come to expect from your Cat equipment. The EMCP 4 is a scalable control platform designed to ensure reliable generator set operation, providing extensive information about power output and engine operation. EMCP 4 systems can be further customized to meet your needs through programming and expansion modules.

### SPECIFICATIONS

#### ENGINE SPECIFICATIONS

Engine Model	Cat® C9 ACERT In-line 6, 4-cycle diesel
Bore x Stroke	112mm x 149mm (4.4in x 5.9in)
Displacement	8.8 L (538 in³)
Compression Ratio	16.1:1
Aspiration	Turbocharged Air-to-Air Aftercooled
Fuel Injection System	MEUI
Governor	Electronic ADEM™ A4
Emission Certifications	EPA Tier 3 - EPA Stationary Emergency

#### GENERATOR SET SPECIFICATIONS

Alternator Design	Brushless Single Bearing, 4 Pole
Stator	2/3 Pitch
No. of Leads	12
Available Voltage Options	600V/480V/240V/208V
Frequency	60Hz
Alternator Voltage	24V
Alternator Insulation & IP	Class H; IP23
Standard Temperature Rise	150 Deg C
Available Excitation Options	Self-Excited, AR
Voltage Regulation, Steady State +/-	≤0.5%

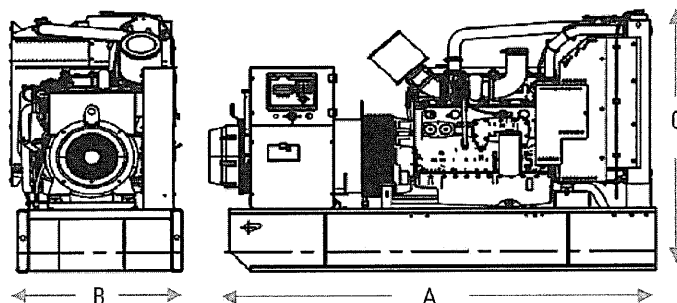
## STANDARD EQUIPMENT

Air inlet system	Aftercooler core, Turbocharger.
Control panels	EMCP4.2 control panel.
Cooling system	Coolant drain line with valve; terminated on edge of base.
	Fan and belt guards.
	Coolant Level Sensor
	Thermostats and housing, full open temperature 92 deg C (198 deg F).
Exhaust system	Coolant level sight gauge. Jacket water pump, gear driven, centrifugal.
	Exhaust manifold; dry.
Fuel system	Primary fuel filter w/integral water separator & secondary filter.
	Fuel cooler.
	Fuel priming pump.
	Flexible fuel lines.
Generators and generator attachments	Engine fuel transfer pump.
	Brushless, self-excited 2/3 pitch, random wound.
	IP23 Protection.
	Insulation Class H and temperature rise
Governing system	Power center, IP22 bottom cable entry
	Segregated low voltage wiring panel
Lube system	Cat Electronic Governor (ADEM A4).
	Oil cooler.
	Lubricating oil.
Starting/charging system	Oil filter and dipstick.
	Oil drain lines with valve; piped to edge of base.
General	- Fumes disposal; piped to front of radiator.
	24-volt electric starting motor.
General	24V, 45 amp charging alternator.
	Paint, Caterpillar Yellow.
General	Vibration damper.

## OPTIONAL EQUIPMENT

Air inlet system	STD AIR CLEANER
	Single Element Air Cleaner
Control panels	Dual Element Air Cleaner
	EMCP 4.4
Circuit Breakers	Local & Remote Annunciator
	Discrete I/O Module
Enclosures	Power terminal strips- 800A & 600A
	3-Pole 100% Rated- Single (Manual & Motorised)
	3-Pole 100% Rated- Dual (Manual)
	3-Pole 100% Rated- Third (Manual)
Cooling system	External Paralleling
	Weather Protective
	Sound Attenuated
Exhaust system	Aluminium Enclosures
	Stone guards.
Fuel storage	Industrial grade (10 dBA)
	Residential and Critical grade (25 dBA)
Generators and generator attachments	Industrial grade (10 dBA)
	Sub Tank & Integral tank Bases
Mounting system	Space heater control
	Permanent magnet generator
Starting/charging system	Captive linear vibration isolators
	Battery Chargers
General	Jacket Water Heater
	Tool Set.

## WEIGHTS & DIMENSIONS



Genset Package		Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Open Generator Set Weight (Dry) <sup>1</sup> kg (lb)	Maximum Weight (Dry) <sup>2</sup> kg (lb)
Standby	Prime					
<b>200 ekW</b>	<b>180 ekW</b>	3091 (122)	1622 (64)	2066 (82)	2157 (4755)	2692 (5935)
<b>250 ekW</b>	<b>225 ekW</b>	3091 (122)	1622 (64)	2066 (82)	2248 (4956)	2692 (5935)
<b>300 ekW</b>	<b>275 ekW</b>	3091 (122)	1622 (64)	2066 (82)	2313 (5100)	2908 (6411)

<sup>1</sup>Estimated weight includes standard generator, narrow skid base and heaviest mechanically operated standard single circuit breaker.

<sup>2</sup>Estimated weight includes oversize generator, wide skid base and heaviest circuit breaker configuration.

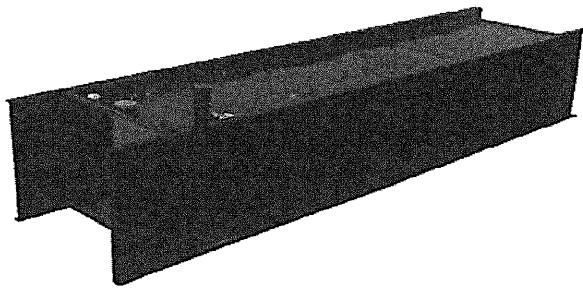


Image shown might not reflect actual configuration

## WEATHER PROTECTIVE & SOUND ATTENUATED FUEL TANKS

### FEATURES

---

- UL Listed for United States (UL 142) and Canada (CAN/ULC S601)
- Facilitate compliance with NFPA 30 code, NFPA 37 and 110 standards and CSA C282 code.
- Dual wall
- Lockable fuel fill cap, 4" (101.6mm) NPT
- Low fuel level warning standard, customer configurable warning or shutdown Primary tank leak detection switch in containment basin.
- Tank design provides capacity for thermal expansion of fuel
- Fuel supply dip tube is positioned so as not to pick up fuel sediment
- Fuel return and supply dip tube is separated by an internal baffle to prevent immediate re-supply of heated return fuel
- Pressure washed with an iron phosphate solution
- Interior tank surfaces coated with a solvent-based thin-film rust preventative
- Heavy gauge steel gussets with internal lifting rings
- Primary and secondary tanks are leak tested at 20.7 kPa (3 psi) minimum
- Compatible with open packages and enclosures
- Gloss black polyester alkyd enamel exterior paint
- Welded steel containment basin (minimum of 110% of primary tank capacity)
- Direct reading fuel gauge with variable electrical output
- Emergency vents on primary and secondary tanks are sized in accordance with NFPA 30

### Sub Base

- The sub-base fuel tank mounts below the generator set wide base

### Integral Base

- Integral diesel fuel tank is incorporated into the generator set base frame.
- Robust base design includes linear vibration isolators between tank base and engine generator.

### Options

- Audio/visual fuel level alarm panel
- 5gal (18.9 L) spill containment
- 5gal (18.9 L) spill containment with fuel fill drop tube with in 6" (152mm) from bottom of tank.
- 5gal (18.9 L) spill containment with overflow prevention valve and fuel fill drop tube with in 6" (152mm) from bottom of tank
- ULC Listed 7.5gal (28.4 L) spill containment with vent extensions, vent whistle, and drop tube facilitating compliance with CSA B139-09.
- ULC Listed 7.5gal (28.4 L) spill containment with overflow prevention valve, vent extensions, vent whistle and drop tube facilitating compliance with CSA B139-09

## Integral & Sub-Base Fuel Tank Base Capacities with Fuel Tank Dimensions & Weights

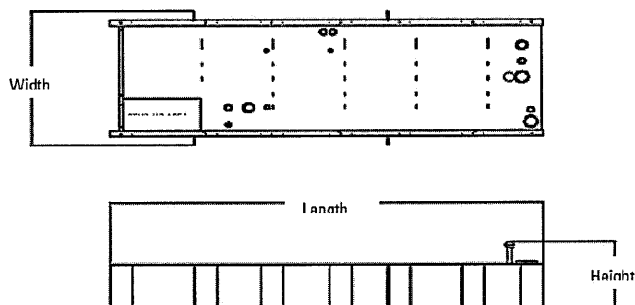
Integral – Width (W) 2014 mm (79.3 in); Sub-base – Width (W) 2056 mm (81.0 in)

Open Set, Weather Protective Enclosure & Sound Attenuated

C9 Tank Design	Feature Code	Total Capacity		Useable Capacity		Tank Only						Overall Package Height with Tank					
		Litre	Gallon	Litre	Gallon	Dry Weight		Height 'H'		Length 'L'		Open		Weather Protective		Sound Attenuated	
						kg	lb	m	in	mm	in	mm	in	mm	in	mm	in
Integral	FTDW010	784	207	770	203	891	1964	635	25.0	3810	150.0	2360	90.0	2438	96.0	2492	98.1
Sub-Base	FTDW008	2476	654	2435	643	1468	3236	635	25.0	3810	150.0	2699	106.3	2777	109.4	2831	111.5
Sub-Base	FTDW009	3941	1041	3876	1024	1832	4039	635	25.0	5550	219.0	2699	106.3	2777	109.4	2831	111.5
Sub-Base	FTDW012	4285	1132	4221	1115	1542	3399	686	27.0	5550	219.0	5550	219.0	2750	108.3	2828	111.4

## Estimated Run Times (hours) at 100% Load

C9 Tank Design	Feature Code	Standby Ratings (ekW)			Prime Ratings (ekW)		
		300	250	200	275	225	180
Integral	FTDW010	9	11	13	10	11	14
Sub-Base	FTDW008	28	33	42	30	35	46
Sub-Base	FTDW009	45	53	67	48	56	73
Sub-Base	FTDW012	48	57	72	52	60	79



**Notes:**

The heights listed above do not include lumber used during manufacturing and shipping.

Tanks with full electrical stub-up area include removable end channel. Tanks with RH/LH stub-up include stub-up area directly below the circuit breaker or power terminal strips. Dimensions include weather-protective enclosure exhaust system.

Dual wall sub-base tanks are UL Listed and constructed in accordance with UL Standard for Safety UL 142, Steel Aboveground Tanks for Flammable and Combustible Liquids and Canada CAN/ULC S601, Standard for Shop Fabricated Steel Aboveground Horizontal Tanks for Flammable and Combustible Liquids.

**Fuel tanks and applicable options facilitate compliance with the following United States NFPA Code and Standards:**

NFPA 30: Flammable and Combustible Liquids Code

NFPA 37: Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines  
NFPA 110: Standard for Emergency and Standby Power Systems

**Fuel tanks and applicable options facilitate compliance with the following Canadian Standard and Code:**

CSA C282 – Emergency Electrical Power Supply for Buildings

CSA B139-09 – Installation Code for Oil-Burning Equipment

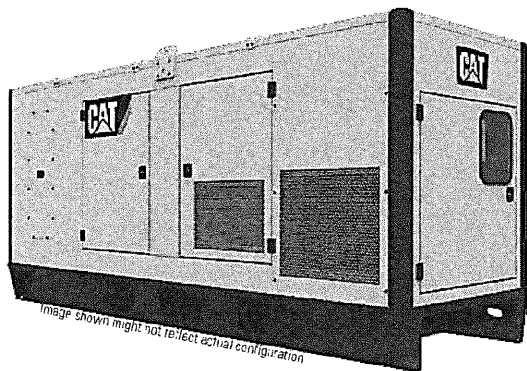
**The following sub-base fuel tanks meet Chicago code for containment and labelling:**

FTDW008

FTDW009

FTDW012





## SOUND ATTENUATED & HIGH AMBIENT ENCLOSURES

60 Hz

These Sound Attenuated & High Ambient, factory installed enclosures incorporate internally mounted super critical level silencers and residential level silencers respectively, designed for safety and aesthetic value on integral fuel tank base or optional dual wall integral fuel tank base for total fluid containment. These enclosures are of extremely rugged construction to withstand exposure to the elements and provide weather protection.

### FEATURES

#### Robust/Highly Corrosion Resistant Construction

- Factory-installed on skid base
- Environmentally friendly, polyester powder baked paint
- Zinc plated or stainless steel fasteners.
- Internally mounted-critical exhaust silencing system (sound attenuated only)
- Externally front-mounted enclosed exhaust silencing system (weather protective only)
- Designed and tested to comply with UL 2200 listed generator set package.
- Compression door latches providing solid door seal

#### Excellent Access

- Large cable entry area for installation ease.
- Accommodates side-mounted single or multiple breakers
- Two doors on both sides
- Vertically hinged allow 180° opening rotation and retention with door stays.
- Lube oil and coolant drains routed to the exterior of the enclosure base.

#### Transportability

- These enclosures are of extremely rugged construction to withstand outdoor exposure and rough handling common on many construction sites.
- Security and Safety
- Lockable access doors which give full access to control panel and breaker.
- Cooling fan and battery charging alternator fully guarded
- Fuel fill, oil fill, and battery can only be reached via lockable access.
- Externally mounted emergency stop button
- Designed for spreader bar lifting to ensure safety
- Stub-up area is rodent proof.

#### Options

- Caterpillar yellow\* or white paint
- Weather protective enclosure constructed with 14-gauge steel
- Sound attenuated Level 1 constructed with 14-gauge steel
- Sound attenuated Level 2 constructed with 14-gauge steel
- Sound attenuated enclosure constructed with 12-gauge aluminum (5052 grade)
- UL Listed 203 gallon integral fuel tank
- UL Listed 660 or 1002 gallon sub base fuel tanks
- Seismic certification per applicable building codes:
  - IBC 2000, IBC 2003, IBC 2006,
  - IBC 2009, IBC 2012, CBC 2007, CBC 2010
- IBC certification for 150 mph wind loading
- Anchoring details are site specific and are dependent on many factors such as generator set size, weight and concrete strength.
- IBC certification requires that the anchoring system used is reviewed and approved by a professional engineer.
- Control panel viewing window\*\*
- Cold weather bundle. Available with SA Level 2 and Aluminum SA enclosures only.

\*\*Not available with aluminum enclosures

\*\*Steel sound attenuated only

## Enclosure Package Operating Characteristics

ENCLOSURE TYPE	STANDBY ekW	PRIME ekW	COOLING AIR FLOW RATE		AMBIENT CAPABILITY*				(DBA) @ 7M (23 FT) AT 100% LOAD
			m³/min	cfm	Standby		Prime		
					°C	°F	°C	°F	
SOUND ATTENUATED LEVEL 2	300	275	351	12395	46	115	50	122	71
	250	225	351	12395	53	127	56	133	71
	200	180	351	12395	59	138	60	140	71
SOUND ATTENUATED LEVEL 1	300	275	351	12395	46	115	50	122	75
	250	225	351	12395	53	127	56	133	74
	200	180	351	12395	59	138	60	140	73
WEATHER PROTECTIVE	300	275	516	18222	49	120	52	126	82
	250	225	516	18222	55	131	59	138	82
	200	180	516	18222	60	140	60	140	82
ALUMINUM SOUND ATTENUATED	300	275	351	12395	46	115	46	115	72
	250	225	351	12395	53	127	56	133	72
	200	180	351	12395	59	138	60	140	72

\*Cooling system performance at sea level. Consult your Caterpillar dealer for site specific ambient and altitude capabilities.

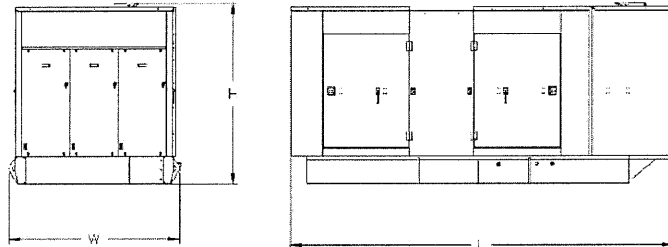
The sound pressure level data shown in the tables above is quoted as free field and is for guidance only. Actual levels produced may vary according to site conditions.

## Component Weights to Calculate Package Weight

Narrow Skid		Wide Skid		Steel Enclosure						Aluminum Enclosure	
				Weather Protective		Sound Attenuated Level 1		Sound Attenuated Level 2		Sound Attenuated	
kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb
219	483	468	1032	660	1455	1062	2341	1062	2341	629	1387

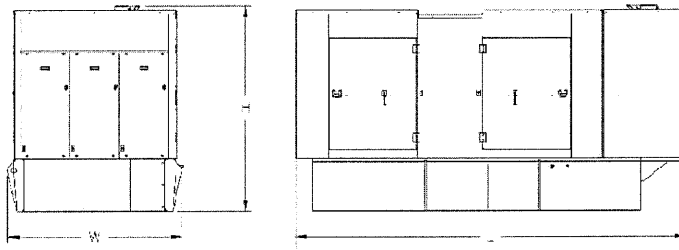
## Enclosure Weights and Dimensions

### A. Enclosure on Skid Base



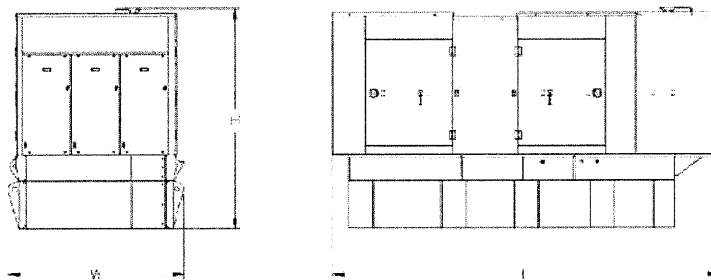
Enclosure Type	Length "L"		Width "W"		Height "H"	
	mm	in	mm	in	mm	in
Sound Attenuated	4515	177.8	2037	80.2	2196	86.5
Weather Protective	4035	158.9	2037	80.2	2142	84.3

### C. Enclosure on UL Listed 203 Gallon Integral Fuel Tank Base



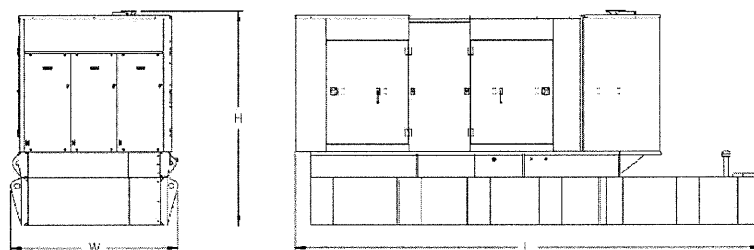
Enclosure Type	Length "L"		Width "W"		Height "H"	
	mm	in	mm	in	mm	in
Sound Attenuated	4515	177.8	2014	79.3	2492	98.1
Weather Protective	4035	158.9	2014	79.3	2438	96.0

### B. Enclosure on UL Listed 660 Gallon Sub Base Fuel Tank Base



Enclosure Type	Length "L"		Width "W"		Height "H"	
	mm	in	mm	in	mm	in
Sound Attenuated	4515	177.8	2056	80.9	2831	111.5
Weather Protective	4035	158.9	2056	80.9	2777	109.3

### D. Enclosure on UL Listed 1002 Gallon Sub Base Fuel Tank Base



Enclosure Type	Length "L"		Width "W"		Height "H"	
	mm	in	mm	in	mm	in
Sound Attenuated	5739	225.9	2056	80.9	2831	111.5
Weather Protective	5739	225.9	2056	80.9	2777	109.3

## EMCP 4 CONTROL KEY FEATURES

### EMCP 4 control features

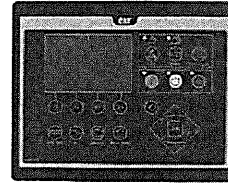
- Run / Auto / Stop Control
- Speed and Voltage Adjust
- Engine Cycle Crank
- 24-volt DC operation
- Environmental sealed front face
- Text alarm/event descriptions

### Digital indication for:

- RPM
- DC volts
- Operating hours
- Oil pressure (psi, kPa or bar)
- Coolant temperature
- Volts (L-L & L-N), frequency (Hz)
- Amps (per phase & average)
- kW, kVA, kVAR, kW-hr, %kW, PF (4.2 only)

### Warning/shutdown with common LED indication of:

- Low oil pressure
- High coolant temperature
- Overspeed
- Emergency Stop
- Failure to start (overcrank)
- Low coolant temperature
- Low coolant level



### Programmable protective relaying functions:

- Generator phase sequence
- Over/Under voltage (27/59)
- Over/Under Frequency (81 o/u)
- Reverse Power (kW) (32) (4.2 only)
- Reverse reactive power (kVAR) (32RV)
- Overcurrent (50/51)

### Communications:

- 4 digital inputs & 4 relay outputs (4.1)
- 6 digital inputs & 8 relay outputs (4.2)
- 12 digital inputs & 8 relay outputs (4.4)
- Customer data link (Modbus RTU) (4.2 only)
- Accessory module data link (4.2 only)
- Serial annunciator module data link (4.2 only)
- Emergency stop pushbutton

### Compatible with the following:

- Digital I/O module
- Local Annunciator
- Remote CAN annunciator
- Remote serial annunciator

## FINANCING

Caterpillar offers an array of financial products to help you succeed through financial service excellence. Options include loans, finance lease, operating lease, working capital, and revolving line of credit. Contact your local Cat dealer for availability in your region.

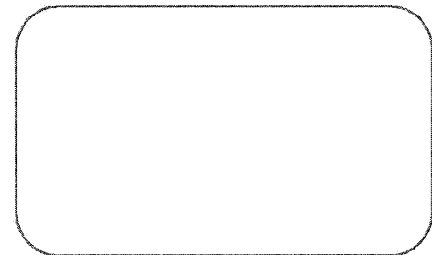
## WORLDWIDE PRODUCT SUPPORT

Cat dealers provide extensive post-sale support including maintenance and repair agreements. Cat dealers have over 1,800 dealer branch stores operating in 200 countries. The Caterpillar® SOS<sup>SM</sup> program effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products.

## BUILT FOR IT.™

[www.Cat.com/electricpower](http://www.Cat.com/electricpower)

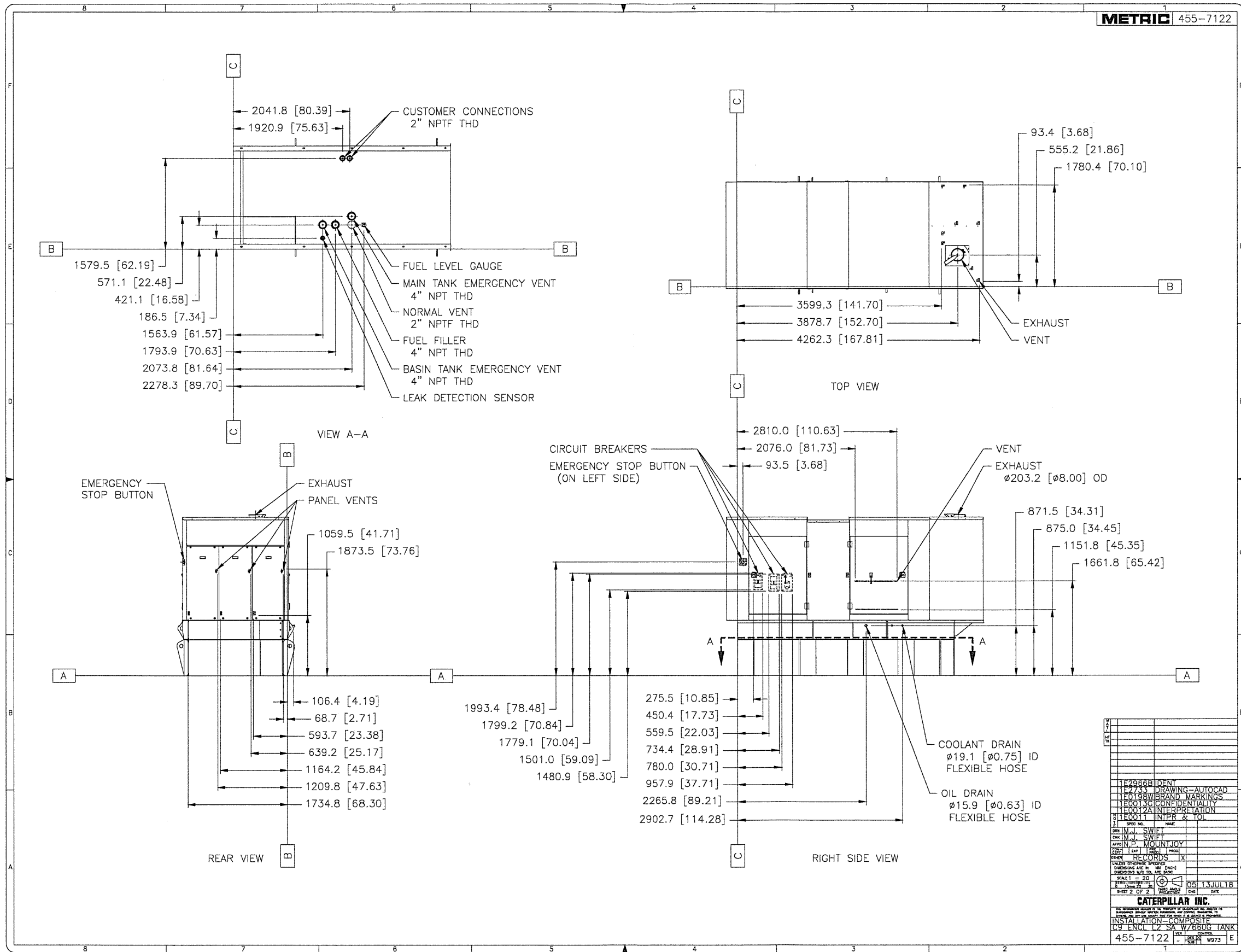
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 1E0138 BRAND MARKINGS  
 1E00136 CONFIDENTIALITY  
 1E00124 INTERPRETATION  
 81E0011 INTERP & TOL  
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 CHK IM J SWIFT  
 APPN P MOUNTJOY  
 DES IM J SWIFT  
 DRW IM J SWIFT  
 ENG IM J SWIFT  
 MAN IM J SWIFT  
 PROJ IM J SWIFT  
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 SHEET 2 OF 2  
 DATE 05 13 JUL 18  
**CATERPILLAR INC.**  
 INSTALLATION-COMPOSITE  
 C9 ENCL 12 SA W/680G TANK  
 455-7122



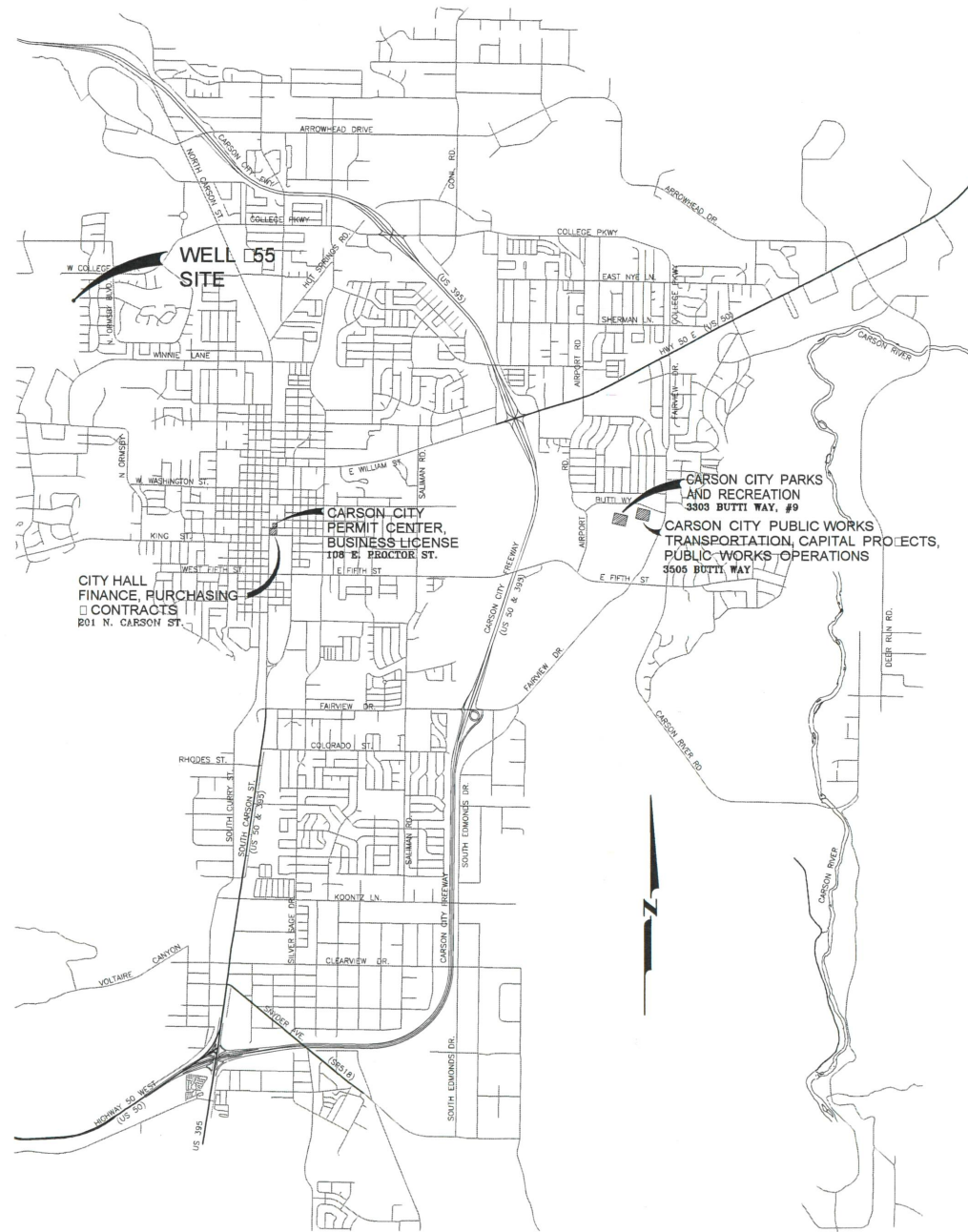
# CARSON CITY PRODUCTION WELLS PERMANENT EMERGENCY GENERATORS WELL #55 PROJECT PROJECT P350518078

**BOARD OF SUPERVISORS**

Robert Crowell	Mayor
Stacey Giomi	Supervisor
Brad Bonkowski	Supervisor
Lori Bagwell	Supervisor
John Barrette	Supervisor
Aubrey Rowlett	City Clerk

**DESIGNED FOR:**

CARSON CITY PUBLIC WORKS DEPARTMENT  
OPERATIONS DIVISION  
3505 BUTTI WAY  
CARSON CITY, NV 89701  
887-2355



VICINITY MAP  
N.T.S.

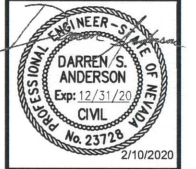
**SHEET INDEX**

- C1 TITLE SHEET
- C2 WELL #55 SITE PLAN
- C3 GENERAL NOTES AND DETAILS
- S-1.1 STRUCTURAL SLAB PLAN
- E1 ELECTRICAL LEGEND  
AND DRAWING SCHEDULE
- E2 SHEET SPECIFICATIONS
- E3 ELECTRICAL ONELINE DIAGRAMS
- E4 DETAILS



DESIGNED BY: DA  
DRAWN BY: JF  
CHECKED BY: DA  
DWG NO.: 2020JAN07  
SCALE (HORIZ): N/A  
SCALE (VERT): N/A  
PLOT DATE: 2020JAN07

**CARSON CITY  
PUBLIC WORKS DEPARTMENT**  
3505 BUTTI WAY CARSON CITY, NEVADA 89701  
PH: 887-2355 FAX: 887-2112



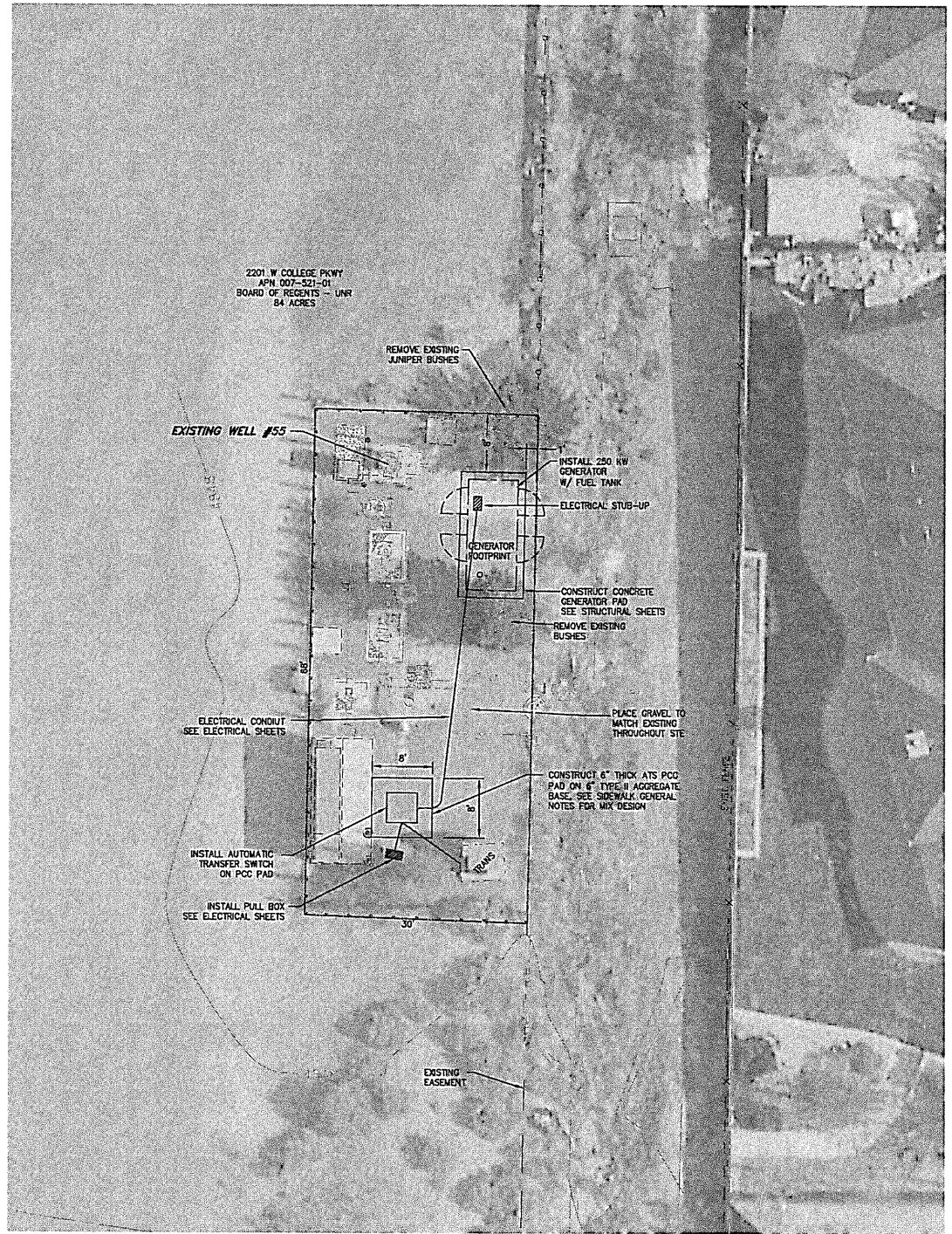
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**CARSON CITY PRODUCTION WELLS  
PERMANENT EMERGENCY GENERATORS  
WELL #55 PROJECT  
PROJECT No. P350518078  
TITLE SHEET**

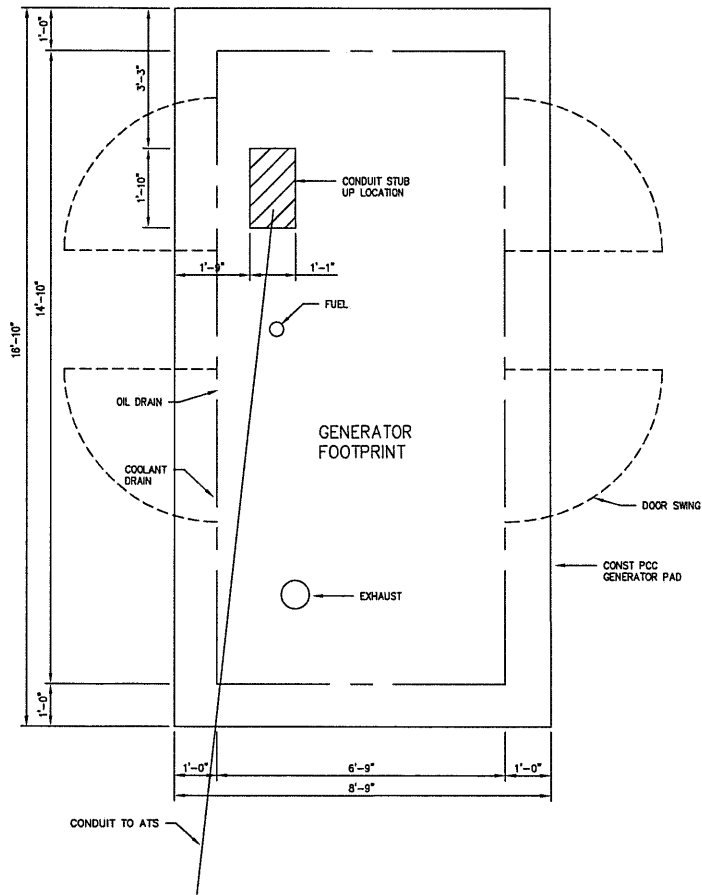
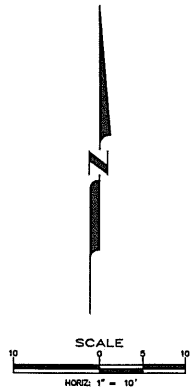
SHEET  
**C1**  
OF  
**08**

BID SET PLANS





**WELL #55 SITE PLAN**  
SCALE: 1"=10'



**WELL #55 SLAB DETAIL**

SCALE: 1/2"=1'

**REFERENCE CODES**

- 2009 ICC/ANSI A117.1
- 2017 National Electrical Code
- 2018 International Building Code
- 2018 International Energy Conservation Code
- 2018 International Fire Code
- 2018 International Fuel Gas Code
- 2018 Northern Nevada International Fire Code Amendments
- 2018 Northern Nevada Amendments

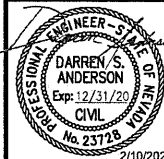


**CARSON CITY PRODUCTION WELLS  
PERMANENT EMERGENCY GENERATORS PROJECT  
PROJECT No. P350518078**

**WELL #55 SITE PLAN**

SHEET  
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REV.	DATE	DESCRIPTION	BY	APP'D



**CARSON CITY  
PUBLIC WORKS DEPARTMENT**

3505 BUTTE WAY CARSON CITY, NEVADA 89701  
PH: 887-2355 FAX: 887-2112

DESIGNED BY: DA  
DRAWN BY: JF  
CHECKED BY: DA  
DWG NO.: WELLS-SITE.dwg  
SCALE (HORIZ): AS SHOWN  
SCALE (VERT): N/A  
PLOT DATE: 2020JAN07

BID SET PLANS

- ALL WORK SHALL CONFORM TO THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (SSPWC) AND THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION" (SDPWC) AS ADOPTED BY CARSON CITY. THE CONTRACTOR SHALL OBTAIN A PERMIT FOR PUBLIC WORKS CONSTRUCTION FROM THE CARSON CITY PERMIT CENTER PRIOR TO THE START OF CONSTRUCTION.
- ALL TRAFFIC CONTROL AND BARRICADE WITHIN THE CARSON CITY RIGHT-OF-WAY SHALL CONFORM TO SECTION 100.33, 332.04 AND 332.05 OF THE STANDARD SPECIFICATIONS, PART 6 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND THE I-17 CENTER, TEMPORARY TRAFFIC CONTROL GUIDELINES LATEST EDITION. A TRAFFIC CONTROL PLAN MUST BE SUBMITTED AND APPROVED BY THE CARSON CITY ENGINEERING DIVISION PRIOR TO ANY STREET CLOSURES.
- THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT "CALL BEFORE YOU DIG" (811) OR 1-800-227-2600 AT LEAST TWO (2) WORKING DAYS PRIOR TO START OF CONSTRUCTION AND COMPLY WITH THE REQUIREMENTS OF NRS AND NAC 455 THROUGHOUT THE COURSE OF THE WORK. SEWER SERVICE LATERALS ARE NOT OWNED OR MARKED BY CARSON CITY.
- THE CONTRACTOR SHALL CALL THE CARSON CITY ENGINEERING DIVISION (867-2300) TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL CALL ONE (1) WORKING DAY PRIOR TO REQUIRED INSPECTIONS AND TESTING. THE REQUIRED INSPECTIONS AND TESTING ARE LISTED ON THE INSPECTION RECORD ISSUED WITH EACH PERMIT. THE CONTRACTOR MUST HAVE THE PERMIT NUMBER AND THE DESCRIPTION LISTED ON THE INSPECTION RECORD TO SCHEDULE REQUIRED INSPECTIONS AND TESTING. FOR CITY CONTRACTED PROJECTS, THE CONTRACTOR SHALL SCHEDULE INSPECTIONS PER THE CONTRACT DOCUMENTS.
- FINAL INSPECTIONS WILL BE PERFORMED BY CARSON CITY ENGINEERING DIVISION ACCORDING TO THE CARSON CITY INSPECTIONS AND TESTING PROCEDURES. NOTE: THESE PROCEDURES REQUIRE SUBMITTAL OF RECORD DRAWING PRINTS BY THE CONTRACTOR AND 10 WORKING DAYS TO PREPARE A FINAL PUNCH LIST. ALL CONDITIONS OF OCCUPANCY BY THE CARSON CITY ENGINEERING DIVISION.
- MODIFICATIONS TO THE APPROVED PLANS REQUIRES REVIEW AND APPROVAL BY THE CARSON CITY ENGINEERING DIVISION. WORK PERFORMED WITHOUT WRITTEN APPROVAL BY CARSON CITY ENGINEERING WILL REQUIRE REMOVAL AT THE CONTRACTORS EXPENSE.
- THE APPROVED PLAN, PERMIT AND INSPECTION RECORD MUST BE ON THE JOB SITE AT ALL TIMES.
- PLAN APPROVAL FOR SEWER AND WATER CONSTRUCTION SHALL EXPIRE ONE YEAR FROM DATE OF APPROVAL UNLESS CONSTRUCTION HAS BEEN INITIATED. (CCMC 12.06.180F, 12.01.140D)
- THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR ACQUIRING A STORMWATER DISCHARGE PERMIT FROM THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP) INCLUDING DEVELOPING, SUBMITTING AND IMPLEMENTING A STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THE CONTRACTOR SHALL DEVELOP, PLACE AND MAINTAIN STORM WATER PROTECTION DEVICES IN COMPLIANCE WITH THE NEVADA CONTRACTORS FIELD GUIDE FOR CONSTRUCTION SITE BEST MANAGEMENT PRACTICES (JUNE 2013).
- THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR LOCATING EXISTING UTILITIES. IT SHALL BE THE CONTRACTORS' RESPONSIBILITY TO VERIFY THESE LOCATIONS AT THE PROPOSED SITES OF CONNECTIONS AND IN AREAS OF POSSIBLE CONFLICT WITH NEW UTILITY INSTALLATION. PRIOR TO BEGINNING CONSTRUCTION, POT-HOLING IS REQUIRED. SHOULD THE CONTRACTOR FIND ANY DISCREPANCIES BETWEEN THE CONDITIONS EXISTING IN THE FIELD AND THE INFORMATION SHOWN ON THE CONSTRUCTION DRAWINGS, HE SHALL NOTIFY THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.
- THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF PROPER SHORING OF TRENCHES IN ACCORDANCE WITH OCCUPATIONAL SAFETY LAWS. THE DUTIES OF THE ENGINEER DO NOT INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTORS SAFETY IN, ON, OR NEAR THE CONSTRUCTION SITE.
- SHOULD IT APPEAR THAT THE WORK TO BE DONE, OR ANY MATTER RELATIVE THERETO, IS NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THE CONSTRUCTION PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR SUCH FURTHER EXPLANATIONS AS MAY BE NECESSARY.

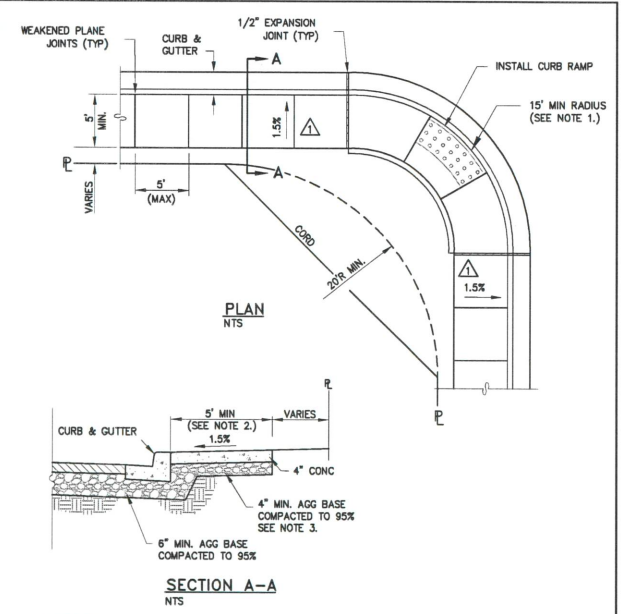
NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
1	NOTE 10,11,12	9/17		CARSON CITY
APPROVED BY:				DATE: SEP 2017

**GENERAL NOTES**

- NO CONCRETE SHALL BE PLACED UNTIL FORMS AND SUBGRADE ARE INSPECTED AND APPROVED BY CARSON CITY PUBLIC WORKS.
- PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: SYNTHETIC FIBER-REINFORCEMENT (AT A MINIMUM OF 1 POUND PER CUBIC YARD), 4000 PSI MIN COMPRESSIVE STRENGTH @ 28 DAYS, MIN 6 SACKS OF CEMENT PER CUBIC YARDS WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- ALL CONCRETE EDGING AND JOINTING SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. DETAIL C-5.1.1 AND CONFORM TO SEC. 312 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC).
- IF OBSTRUCTIONS SUCH AS INLETS, UTILITY POLES, FIRE HYDRANTS, ETC. ARE ENCOUNTERED, THE LOCATION AND DIMENSIONS MAY BE ADJUSTED UPON APPROVAL BY CARSON CITY PUBLIC WORKS. A MINIMUM SURFACE OF 4 FEET X 4 FEET CLEAR IS REQUIRED WHEN DIRECTION OF TRAVEL MAY CHANGE AND A MINIMUM SURFACE OF 4 FEET CLEAR IS REQUIRED WHERE DIRECTION OF TRAVEL IS NOT EXPECTED TO CHANGE, UNLESS OTHERWISE APPROVED BY THE CARSON CITY ENGINEER OR PUBLIC WORKS DIRECTOR.
- ALL CONCRETE SHALL BE REMOVED TO A NEAT SAWCUT LINE AT THE NEAREST CONTROL JOINT.
- ALL AGGREGATE BASE SHALL BE TYPE 2, CLASS B AND SHALL CONFORM TO SEC.200.01 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC).
- NEW CONCRETE SHALL HAVE A HEAVY BROOM FINISH PERPENDICULAR TO SIDEWALK.
- AC PAVEMENT EDGE SHALL BE FLUSH TO 1/4 INCH ABOVE THE LIP OF GUTTER.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
1	NOTE 2,3,4,5,8	9/17		CARSON CITY
APPROVED BY:				DATE: SEP 2017

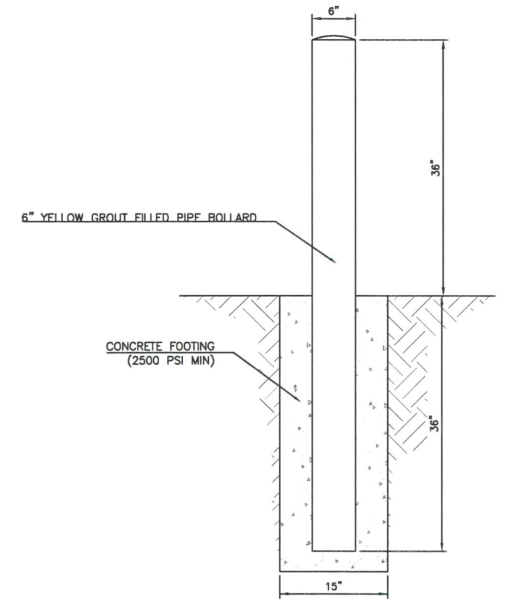
**SIDEWALK AND DRIVEWAY GENERAL NOTES**



- NOTES:**
- MINIMUM CURB RETURN RADIUS SHALL BE 15 FEET UNLESS OTHERWISE APPROVED BY THE CARSON CITY ENGINEER OR PUBLIC WORKS DIRECTOR.
  - SOME STREETS MAY REQUIRE WIDER SIDEWALKS.
  - SIDEWALK ADJACENT TO TYPE 2 OR ROLLED CURB AND GUTTER SHALL BE CONSTRUCTED 5 INCHES THICK OF CONCRETE ON 6 INCHES OF AGGREGATE BASE COMPACTED TO 95%
  - SIDEWALK SHALL BE POURED NON-MONOLITHICALLY FROM CURB AND GUTTER.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
1	NOTE 3 & 4	9/17		CARSON CITY
APPROVED BY:				DATE: SEP 2017

**TYPE "A" SIDEWALK**

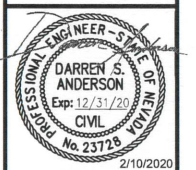


**PIPE BOLLARD DETAIL**

SCALE: 1" = 1'

DESIGNED BY: DA  
 DRAWN BY: JF  
 CHECKED BY: DA  
 DTG NO.: 2020JAN07  
 SCALE (HORIZ): 1/4"  
 SCALE (VERT): 1/4"  
 PLOT DATE: 2020JAN07

**CARSON CITY  
 PUBLIC WORKS DEPARTMENT**  
 3505 BUTTI WAY CARSON CITY, NEVADA 89701  
 PH: 887-2355 FAX: 887-2112



REV.	DATE	DESCRIPTION	BY	APP'D

**CARSON CITY PRODUCTION WELLS  
 PERMANENT EMERGENCY GENERATORS  
 WELL #55 PROJECT  
 PROJECT No. P350518078  
 GENERAL NOTES AND DETAILS**

SHEET  
**C3**  
 OF  
 8

BID SET PLANS



# CCPW Well Generators

Various Locations  
Carson City, Nevada



CIVIL • STRUCTURAL

## STANDARD SPECIFICATIONS

- CONCRETE**
- All concrete shall have:
    - an ultimate compressive strength ( $f'_c$ ) of 3,000 psi at 28 days (UNO).
    - a maximum slump of 5" at point of placement.
    - a W/C ratio of 0.55 or less for all slabs, walls, and columns, and 0.60 or less for all foundations.
    - a normal dry-weight density (UNO).
  - Special Inspection is NOT required as the foundations have been designed with  $f'_c = 2,500$  psi in accordance with the Governing Building Code, section 1705.3, exceptions 1, 2.1, and 2.3, unless explicitly specified herein, on the structural plans, or by the Building Department. As a minimum, special inspection is always required on:
    - structural slabs, flat plates
    - walls, columns, beams
    - piles, caissons
    - welding of reinforcement, installation of mechanical bar splice devices, epoxy application

When required or specified, special inspection services shall conform to the Governing Building Code, Chapter 17 and shall be provided by an ICC certified inspector or Building Department approved engineer. The Building Department reserves the right to waive or require the special inspection requirements (Section 1704.1 and 1704.4). Nothing in these plans waives the Building Department's right to require special inspection at any point and on any material.
  - Testing of materials used in concrete construction must be performed as noted on structural plans or at the request of the Building Department to determine if materials are quality specified. Tests of materials and of concrete shall be made by an approved agency and at the expense of the contractor; such tests shall be made in accordance with the standards listed in the Governing Building Code, Table 1704.4. When testing of concrete is required, four (4) test cylinders shall be taken from each 150 yards, or fraction thereof, poured in any one day. One (1) cylinder shall be tested at seven (7) days; two (2) at 28 days; one (1) shall be held in reserve. If Contractor elects to have additional tests performed for "early-break" results, additional test cylinders must be taken. At no time shall the Contractor instruct the testing agency to perform tests on a schedule different than above without the prior authorization of the Engineer. Contractor is responsible for complying with applicable testing requirements of the Building Department. Copies of all test reports shall be provided to Engineer and Building Department for review in a timely manner.
  - The Contractor shall remove and replace any concrete which fails to attain specified 28 day compressive strength if so directed by the Engineer. Any defects in the hardened concrete shall be repaired to the satisfaction of the Engineer and/or Architect or the hardened concrete shall be replaced at the Contractor's expense.
  - All concrete work shall conform with the Governing Building Code, Chapter 19.
  - All cement shall be Portland Cement Type I or II and shall conform to ASTM C 150.
  - All aggregates shall conform to ASTM C33. Maximum aggregate sizes:
    - Footings: 1-1/2"
    - All other work: 3/4"
  - Where not specifically detailed, the minimum concrete cover on reinforcing steel shall be:
    - Permanently exposed to earth or weather
      - Cast against earth: 3"
      - Cast against forms: 2"
    - Not exposed to earth or weather
      - Slabs, walls, joists: 3/4"
      - Beams, girders, columns: 1-1/2"
  - The minimum lap splice length for all reinforcing steel shall be as noted in the typical details on sheet S-1.1. All lap splices to be staggered.
  - All reinforcing steel, anchor bolts, dowels, inserts, and any other hardware to be cast in concrete shall be well secured prior to foundation inspection. Refer to architectural and structural plans for embedded items.
  - Locations of all construction joints, other than specified on the structural plans, shall be approved by the Architect and Engineer prior to forming. Construction joints shall be thoroughly air and water cleaned and heavily roughened so as to expose coarse aggregates. All surfaces to receive fresh concrete shall be maintained continuously wet at least three (3) hours in advance of concrete placement. Unless specifically detailed or otherwise noted, construction and control joints shall be provided in all concrete slabs-on-grade. Joints shall be located such that the area does not exceed 400 sq. feet.
  - The Architect, Engineer and appropriate inspectors shall be notified in a timely manner for a reinforcement inspection prior to the placement of any concrete.
  - The Contractor shall obtain approval from the Architect and the Engineer prior to placing sleeves, pipes, ducts, chases, coring and opening on or through structural concrete beams, walls, floors, and roof slabs unless specifically detailed or noted on the plans. All pipes or conduits passing through concrete members shall be sleeved with standard steel pipe sections.
  - The Contractor is responsible for design, installation, maintenance and removal of all formwork. Forms shall be properly constructed, sufficiently tight to prevent leakage, sufficiently strong, and braced to maintain their shape and alignment until no longer needed for concrete support. Joints in formwork shall be tightly fitted and blocked, and shall provide a finished concrete surface that is true and free from blemishes. Forms for exposed concrete shall be pre-approved by the Architect to ensure conformance with design intent.
  - Remove form work in accordance with the following schedule:
    - Forms at slab edge: 1 day
    - Side forms at footings: 2 days
    - All other vertical surfaces: 7 days
    - Beams, columns, girders: 15 days
    - Elevated slabs: 28 days

Engineer reserves the right to modify removal schedule above based on field observations, concrete conditions, and/or concrete test results.
  - All concrete (except slabs-on-grade 6" or less) shall be mechanically vibrated as it is placed. Vibrator to be operated by experienced personnel. The vibrator shall be used to consolidate the concrete. The vibrator shall not be used to convey concrete, nor shall it be placed on reinforcing and/or forms.
  - Concrete shall be maintained in a moist condition for a min. of five (5) days after placement.
  - Concrete shall not be permitted to free fall more than six (6) feet. For heights greater than six (6) feet, use tremie, pump or other method consistent with applicable standards.
  - When specified ultimate compressive strength is greater than 2500 psi, Contractor shall submit mix designs to Architect and Engineer for approval seven (7) days prior to placement. Mix designs shall be prepared by an approved testing laboratory. Sufficient data must be provided for all admixtures.
  - Refer to Architectural plans for locations of all dimensions, slab depressions, slopes, drains, curbs, and control joints.
- REINFORCEMENT**
- Reinforcing steel shall be to deformed, clean, free of rust, grease or any other material likely to impair concrete bond.
  - All bars shall conform to ASTM A615, Grade 60 minimum (UNO on structural plans). All weld wire fabric (WWF) shall conform to ASTM A185.
  - Reinforcing steel that is to be welded shall conform to ASTM A706. All welding of reinforcement shall be subject to special inspection.
  - Contractor shall take necessary steps (standard ties, anchorage devices, etc.) to secure all reinforcing steel in their true position and prevent displacement during concrete placement.
  - Fabrication, placement and installation of reinforcing steel shall conform to:
    - Concrete Reinforcing Steel Institute (CRSI) Manual of Standard Practice (b) the Governing Building Code, Section 1907.
  - Shop drawings for fabrication of reinforcing steel shall be approved by the Contractor and submitted to the Architect and Engineer for review and approval prior to fabrication. Shop drawings are not required for slabs-on-grade or foundations unless specifically noted on the structural plans.
  - Heating of reinforcing steel to aid in bending and shaping of bars is not permitted. All bends in reinforcing steel are to be made cold. All bend radii shall conform to CRSI Manual of Standard Practice.
  - Refer to Concrete and Masonry notes for specific minimum splice length and splice staggering requirements. Lap welded wire fabric (WWF) reinforcement two (2) modules minimum (UNO). All splices are to be staggered.
- FOUNDATIONS**
- Refer to Structural Design Parameters section on sheet S-1.1 for all soil design values used in calculations.
  - Soils values per Table 1806.2 of the latest edition of the Governing Building Code.
  - Unexpected Soil Conditions. Allowable values and subsequent foundation designs are based on soil conditions which are shown by test borings. Actual soil conditions which deviate appreciably from that shown in the test borings shall be reported to the Engineer immediately.
  - All compaction, fill, backfilling and site preparation shall be performed in accordance with project soils report or the Governing Building Code Chapter 18 & Appendix J. All such work shall be performed under the supervision of the building official.
  - Excavate to required depths and dimensions (as indicated in the drawings), cut square and smooth with firm level bottoms. Care shall be taken not to over-excavate foundation at lower elevation and prevent disturbance of soils around high elevation.
  - Foundations shall be poured in neat excavations.
  - Excavate all foundations to required depths into compacted fill or natural soil (as per plans and details) and as verified by the building official and/or soils engineer.
  - All foundations shall be inspected and approved by the appropriate building official and/or a representative of the soils engineer prior to forming and placement of reinforcing or concrete.
  - Foundations shall not be poured until all required reinforcing steel, framing hardware, sleeves, inserts, conduits, pipes, etc. and formwork is properly placed and inspected by the appropriate building official/inspector(s).
  - It is the responsibility of the contractor in charge of framing to properly position all holdown bolts, anchor bolts, column bases, and all other cast-in-place hardware. Refer to typical details. All hardware to be secured prior to foundation inspections.
  - The sides and bottoms of dry excavations must be moistened just prior to placing concrete. Conversely, de-water footings as required to remove standing water and to maintain optimum working conditions.
  - The Contractor shall be solely responsible for all excavation procedures including lagging, shoring, and the protection of adjacent property, structures, streets, and utilities in accordance with all federal, state and local safety ordinances. The Contractor shall provide for the design and installation of all cribbing, bracing and shoring required.
- STATEMENT OF SPECIAL INSPECTIONS, 2018 IBC**
- This Statement of Special Inspection is submitted in fulfillment of the requirements of the Governing Building Code, section 1704 and 1705.
  - Special Inspections and Testings will be performed in accordance with the approved plans and specifications, this statement and the Governing Building Code, Section 1704, 1705, 1707, and 1708.
  - The schedule of Special Inspections summarizes the Special Inspections and tests required. Special Inspectors will refer to the approved plans and specifications for detailed special inspection requirements. Any additional tests and inspections required by the approved plans and specifications will also be performed.
  - Interim reports will be submitted to the Building Official and the Registered Design Professional in Responsible Charge in accordance with the Governing Building Code Section 1704.2.4.
  - A Final Report of Special Inspections documenting required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Use and Occupancy (Section 1704.2.4). The Final Report will document:
    - Required special inspections.
    - Correction of discrepancies noted in inspections.
  - The Owner recognizes his or her obligation to ensure that the construction complies with the approved permit documents and to implement this program of special inspections. In partial fulfillment of these obligations, the Owner will retain and directly pay for the Special Inspections as required in the Governing Building Code, Section 1704.2.
  - 1704.4 Contractor responsibility. Each contractor responsible for the construction of a main wind- or seismic-force-resisting system, designated seismic system or a wind- or seismic-resisting component listed in the Statement of special inspections shall submit a written statement of responsibility to the building official and the owner prior to the commencement of work on the system or component. The contractor's statement of responsibility shall contain acknowledgement of awareness of the special requirements contained in the statement of special inspection.
- Verification & Inspection**
- | 1705.3 - Concrete  | C | P | Notes |
|--|---|---|-------|
| 4. Inspect anchors post-installed in hardened concrete   | X |   |       |
| a. Adhesive anchors <sup>1</sup> installed in horizontally or upwardly inclined orientations to resist sustained tension | X |   |       |
| b. Mechanical anchors <sup>2</sup> and adhesive anchors <sup>1</sup> not defined in 4 a                                  |   | X |       |
- FOOTNOTES:**
- Prior to epoxy placement, it must be verified that the hole is clean, dry, and free of loose debris.
  - Periodic inspection shall take place such that the installation of a minimum of two (2) anchors per each shear wall are observed.

## ABBREVIATIONS

- |        |                      |        |                         |
|--------|----------------------|--------|-------------------------|
| AB     | Anchor Bolt          | Mas.   | Masonry                 |
| A&B    | Above and Below      | Max.   | Maximum                 |
| Abv.   | Above                | MB     | Machine Bolt            |
| Adn.   | Addition (al)        | Mfr.   | Manufacturer(s)         |
| Adj.   | Adjacent, Adjustable | Mfn.   | Minimum, Minute         |
| Ait.   | Alternate (ive)      | Mod.   | Modif(y), (ication)     |
| Appd.  | Approved             | Mtl.   | Metal                   |
| Arch.  | Architect(ural)      | (N)    | New                     |
| Avg.   | Average              | N/A    | Not Applicable          |
| Bdry.  | Boundary             | Nat.   | Natural                 |
| Bldg.  | Building             | NTS    | Not to Scale            |
| Bm.    | Beam                 | o/     | Over                    |
| B-O    | Bottom of            | oc     | On Center               |
| BO     | By Others            | OD     | Outside Diameter        |
| Bot.   | Bottom               | Opg.   | Opening                 |
| Brg.   | Bearing              | Opp.   | Opposite                |
| Btwn.  | Between              | Opt.   | Optional                |
| BW     | Both Ways            | Para.  | Parallel                |
| Cant.  | Cantilever(ed)       | PCF    | Lbs per Cubic Ft.       |
| CFP    | Cast in Place        | Pen.   | Penetrate, (tion)       |
| CJ     | Ceiling Joist        | Perf.  | Perforated              |
| CJP    | Complete Joint       | Perim. | Perimeter               |
| Cont.  | Continuous (ous)     | R      | Radius                  |
| ctr.   | Center               | Rec'd  | Recommendation(s)       |
| D      | Diameter             | Rect.  | Rectangular             |
| Dbl.   | Double               | Ref.   | Reference               |
| Defl.  | Deflection           | Reinf. | Reinforce(d), (ment),   |
| Dep.   | Depress(ed)          | Req'd  | Require(d), (ment),     |
| Dia.   | Diameter             | Reqs.  | Requirements            |
| Diaph. | Diaphragm            | Ret.   | Retain(ing)             |
| Dif.   | Different            | Sched. | Schedule                |
| Dim.   | Dimension            | Sgl.   | Single                  |
| Dist.  | Distance             | Shg.   | Sheathing               |
| Dwg.   | Drawing              | Sim.   | Similar                 |
| (E)    | Existing             | SP     | Str. Insulated Panel    |
| EA     | Each                 | SM     | Sheet Metal             |
| EF     | Each Face            | SMS    | Sheet Metal Screw       |
| EFP    | Equivalent Fluid     | SOG    | Slab on Grade           |
| EQ     | Equal, Equivalent    | Spec   | Specified(ed), (ations) |
| EW     | Each Way             | Std.   | Standard                |
| Exp.   | Expand, Expansion    | Sym.   | Symmet(ry), (rical)     |
| Ext.   | Exterior             | T&B    | Top and Bottom          |
| Fdn.   | Foundation           | Temp.  | Temporary               |
| FOC    | Face of Concrete     | Thk.   | Thick(ness)             |
| Frmg.  | Framing              | Thru   | Through                 |
| FT     | Foot, Feet           | TOC    | Top of Concrete         |
| Ftg.   | Footings             | TOG    | Top of Grade            |
| GC     | General Contractor   | TOM    | Top of Masonry          |
| HL     | Height               | TOS    | Top of Steel            |
| In.    | Inches               | TOW    | Top of Wall             |
| Insp.  | Inspection           | TRU    | To Remain               |
| K      | Kips (1,000 pounds)  | Unch.  | Unchanged               |
| Lb(s). | Pound(s)             | w/     | With                    |
| Loc.   | Location             | w/n    | Within                  |
|        |                      | w/o    | Without                 |

## PROJECT INFORMATION

**CLIENT:**  
Carson City Public Works Department  
3505 Butt Way  
Carson City, NV 89701

**DESIGNER:**  
Carson City Public Works Department  
3505 Butt Way  
Carson City, NV 89701  
(775) 887-2355

Engineer of Record:

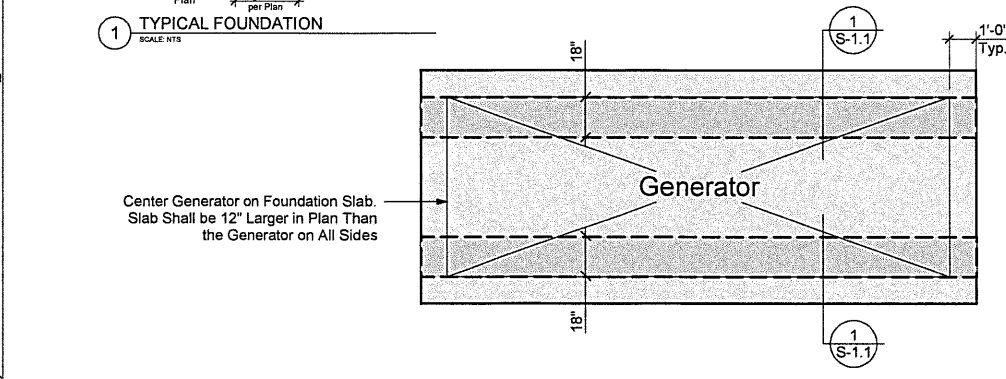
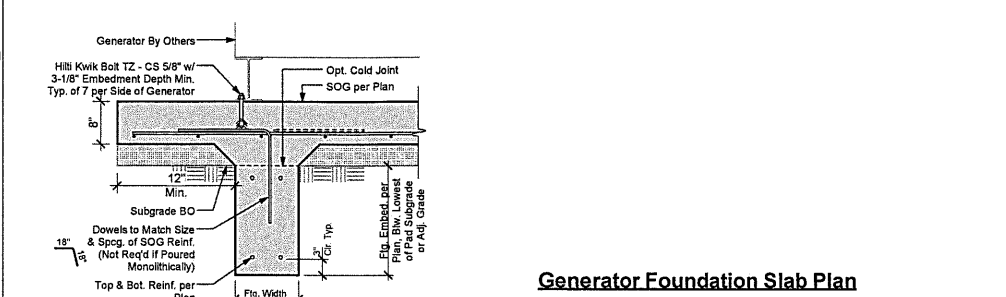
## DESIGN PARAMETERS

GENERAL PARAMETERS	
Building Code	2018 IBC *
SOILS VALUES (Table 1806.2)	
Bearing Pressure	1500 psf
Lateral Passive EFP	130 psf
At-Rest EFP	60 psf
Active EFP	40 psf
WIND DESIGN BASIS	
Ultimate Wind Speed, $V_{ult}$	130 mph
Nominal Wind Speed, $V_{ASD}$	101 mph
Risk Category	II
Exposure	C
Importance Factor, $I_w$	1.00
SEISMIC DESIGN BASIS	
Seismic Design Category	E
Site Class	D
Seismic Factors	
$S_B / S_1$	2.406 / 0.903
$S_{D1} / S_{D2}$	1.604 / 0.903
Risk Category	II
Importance Factor, $I_e$	1.00
Design Base Shear	$V = 0.8084W$
Analysis Procedure:	ASCE 7-10, 13.3

\* The 2018 International Building Code (IBC), is the governing code in the State of Nevada.

## SHEET INDEX

SHEET INDEX	DESCRIPTION
S-1.1	Structural Specifications, Plans, and Details



**GENERAL FOUNDATION NOTES**

Foundations per Governing Building Code, Table 1806.2. At the request of the client (or client's agent), Ashley & Vance Engineering has designed the foundations in conformance with Table 1806.2. If the building official determines that expansive soils are present, or other geologic issues of concern, then they may require that special provisions be made to the foundation design to safeguard against damage due to the expansiveness or due to other geologic issues. If this becomes the situation, all foundation construction must be halted and the client, at their own expense, shall: (a) obtain a soils report prepared by a Soils Engineer licensed in the state of the project; (b) commission Ashley & Vance Engineering to revise the foundation plans and details, and framing plans if necessary, to reflect the recommendations of the soils report; (c) submit the revised plans to the Building Department for approval.

Foundation per Details: 18" Wide x 24" Embedment w/ (2) #4 Top & Bot. (UNO)

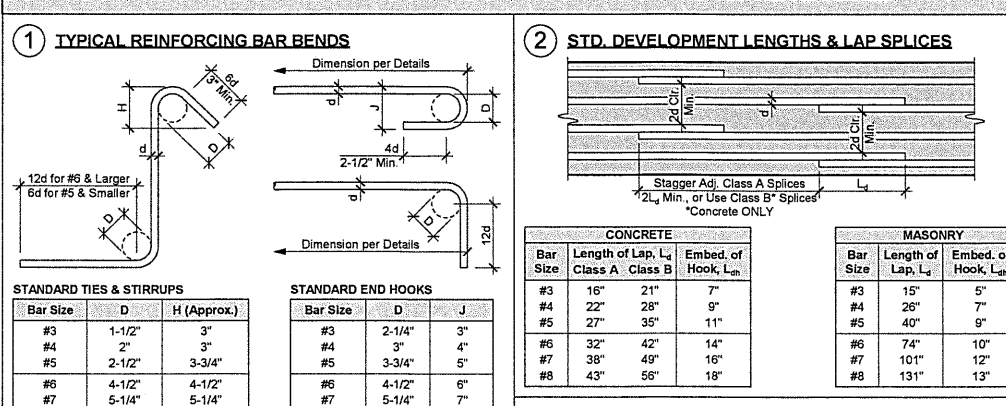
#4 Slab-on-Grade w/ #4 @ 12" oc, per Details

See General Notes & Specifications for additional requirements and material specifications.

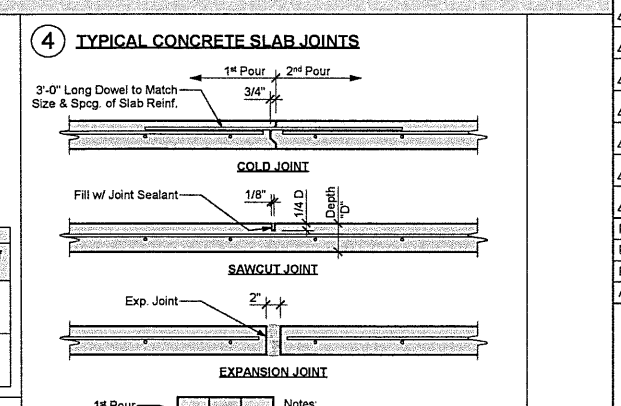
All dimensions per Architectural plans

Contractor to VERIFY all dimensions of Architectural plans PRIOR to commencement of construction.

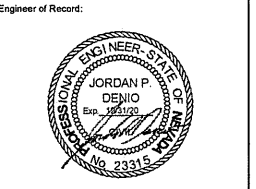
## STANDARD DETAILS



## STANDARD DETAILS



The use of these plans and specifications shall be restricted to the original site for which they were prepared and publication thereof is expressly limited to such use. Reproduction or publication by any method, in whole or in part, is prohibited. Title to these plans and specifications remain with Ashley & Vance Engineering, Inc. without prejudice. Visual contact with these plans and specifications shall constitute prima facie evidence of the acceptance of these restrictions.



**CCPW Well Generators**

Various Locations  
Carson City, Nevada

Prof. Engr.: M. Schisano Phone Ext.: 182  
Prof. Mng'r.: J. Denio Phone Ext.:  
Date: 13 Mar. 2019 Scale: NTS  
A&V Job No.: 15092

**STRUCTURAL SPECIFICATIONS, PLANS, AND DETAILS**

# S-1.1

Notes:  
1. Pour Slab in Alt. Bays, 12'-0" Sq. Max.  
2. Slab May be Poured Monolithically if Sawcut @ 12'-0" Max. Ea. Way  
3. Exp. Joints per Plan.

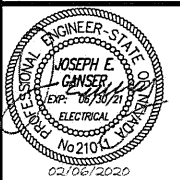
DRAWING SCHEDULE	
SHEET	DESCRIPTION
E1	ELECTRICAL LEGEND & DRAWING SCHEDULE
E2	SHEET SPECIFICATIONS
E3	ELECTRICAL ONELINE DIAGRAMS
E4	ELECTRICAL SITE PLAN
TOTAL SHEETS IN ISSUE: 4	

100% FINAL DESIGN  
06 FEBRUARY 2020

### ELECTRICAL LEGEND

<ul style="list-style-type: none"> <li>■ PANELBOARD: SURFACE MOUNTED</li> <li>■ PANELBOARD: FLUSH MOUNTED</li> <li>■ SWITCHBOARD OR DISTRIBUTION PANEL</li> <li>⊠ TRANSFORMER</li> <li>⊠ FULLBOX / VAULT</li> <li>⊠ MOTOR STARTER</li> <li>⊠ COMBINATION MOTOR STARTER</li> <li>⊠ COMBINATION MOTOR STARTER PROVIDED BY OTHERS</li> <li>⊠ DISCONNECT SWITCH - FUSIBLE (FUSED PER EQUIP. NAMEPLATE)</li> <li>⊠ DISCONNECT SWITCH - NON-FUSIBLE</li> <li>⊠ DISCONNECT SWITCH PROVIDED BY OTHERS</li> <li>⊠ VARIABLE FREQUENCY DRIVE</li> <li>⊠ VARIABLE FREQUENCY DRIVE PROVIDED BY OTHERS</li> <li>⊠ ENCLOSED CIRCUIT BREAKER</li> <li>⊠ GROUND ROD</li> <li>⊠ SHUNT TRIP STATION OR EMERGENCY PUSHBUTTON</li> <li>⊠ REMOTE METER</li> </ul>	<ul style="list-style-type: none"> <li>⊠ SINGLE RECEPTACLE: 20A, 125V, NEMA 5-20, +18" AFF (UNO)</li> <li>⊠ DUPLEX RECEPTACLE: 20A, 125V, NEMA 5-20, +18" AFF (UNO)</li> <li>⊠ DUPLEX RECEPTACLE: HALF SWITCHED</li> <li>⊠ DUPLEX RECEPTACLE: FLOOR MOUNTED</li> <li>⊠ QUAD RECEPTACLE: 20A, 125V, NEMA 5-20, +18" AFF (UNO)</li> <li>⊠ QUAD RECEPTACLE: FLOOR MOUNTED</li> <li>⊠ ISOLATED GROUND TYPE RECEPTACLE (ORANGE TRIANGLE) - 20A, 125V, NEMA 5-20IS, +18" AFF (UNO)</li> <li>⊠ DUPLEX RECEPTACLE 6FI TYPE - 20A, 125V, NEMA 5-20 6FI +18" AFF (UNO)</li> <li>⊠ DUPLEX RECEPTACLE: ABOVE COUNTER (VERIFY HEIGHT)</li> <li>⊠ SPECIAL PURPOSE RECEPT.: SEE DWGS FOR NEMA CONFIG.</li> <li>⊠ DUPLEX RECEPTACLE: CEILING MOUNTED</li> <li>⊠ MULTI-OUTLET ASSEMBLY: SPACING PER DWGS</li> </ul>	<ul style="list-style-type: none"> <li>⊠ GROUND FAULT INTERRUPTER DEVICE</li> <li>⊠ METERING DEVICE</li> <li>⊠ REMOTE METER</li> <li>⊠ SHUNT TRIP DEVICE</li> <li>⊠ TRANSFORMER</li> <li>⊠ CURRENT TRANSFORMER</li> <li>⊠ GENERATOR</li> <li>⊠ MOTOR - # INDICATES HP</li> <li>⊠ INTERRUPTER SWITCH</li> <li>⊠ GROUND FAULT RELAY W/ CT OR SENSOR</li> <li>⊠ FUSE</li> <li>⊠ CIRCUIT BREAKER</li> <li>⊠ DRAWOUT CIRCUIT BREAKER</li> <li>⊠ TRANSFER SWITCH (A=AUTOMATIC, M=MANUAL) # FOR POLES 2, 3 OR 4</li> <li>⊠ SURGE PROTECTION DEVICE</li> </ul>	<ul style="list-style-type: none"> <li>A AMPS</li> <li>ADA AMERICANS WITH DISABILITIES ACT</li> <li>AFC ABOVE FINISHED CEILING</li> <li>AFCI ARC-FAULT CIRCUIT INTERRUPTER</li> <li>AFF ABOVE FINISHED FLOOR</li> <li>AFG ABOVE FINISHED GRADE</li> <li>AHJ AUTHORITY HAVING JURISDICTION</li> <li>AIC AMP INTERRUPTING CAPACITY</li> <li>AL ALUMINUM</li> <li>ATS AUTOMATIC TRANSFER SWITCH</li> <li>AWG AMERICAN WIRE GAUGE</li> <li>BC BARE COPPER</li> <li>BKR BREAKER</li> <li>C CONDUIT/RACEWAY</li> <li>CEC CALIFORNIA ENERGY COMMISSION</li> <li>CKT CIRCUIT</li> <li>CLS CEILING</li> <li>CONDUIT RACEWAY ONLY</li> <li>CT CURRENT TRANSFORMER</li> <li>CU COPPER</li> <li>DB DISTRIBUTION BOARD</li> <li>DDC DIRECT DIGITAL CONTROLLER</li> <li>DPDT DOUBLE-POLE, DOUBLE-THROW</li> <li>DPST DOUBLE-POLE, SINGLE-THROW</li> <li>DWG DRAWING</li> <li>(E) EXISTING TO REMAIN</li> <li>ELEC ELECTRICAL</li> <li>EM EMERGENCY</li> <li>EMT ELECTRICAL METALLIC TUBING</li> <li>(F) FUTURE</li> <li>FLA FULL LOAD AMPS</li> <li>FMC FLEXIBLE METAL CONDUIT (STEEL)</li> <li>FFEN FUSE PER EQUIP. NAMEPLATE</li> <li>GFI GROUND FAULT INTERRUPT</li> <li>GFR GROUND FAULT RELAY</li> <li>GND GROUND</li> <li>HID HIGH INTENSITY DISCHARGE</li> <li>HOA HAND-OFF-AUTO SWITCH</li> <li>HP HORSEPOWER</li> <li>HKP HOUSEKEEPING</li> <li>IMC INTERMEDIATE METAL CONDUIT</li> <li>J-BOX JUNCTION BOX</li> <li>K Kcmil (300K = 300 kcmil)</li> <li>KVA KILOVOLT AMPS</li> <li>KN KILOWATT</li> <li>LTS LIGHTING</li> <li>IG ISOLATED GROUND</li> <li>MCB MAIN CIRCUIT BREAKER</li> <li>MCM THOUSAND CIRCULAR MILS</li> <li>MFG MANUFACTURER</li> <li>MLO MAIN LUGS ONLY</li> <li>MS MOTOR STARTER</li> <li>MSB MAIN SWITCHBOARD</li> <li>MNTS MANUAL TRANSFER SWITCH</li> <li>NC NORMALLY CLOSED</li> <li>NEC NATIONAL ELECTRICAL CODE</li> <li>NEMA NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION</li> <li>NOT IN CONTRACT</li> <li>NL NIGHTLIGHT</li> <li>NO NOT TO SCALE</li> <li>NTS NOT TO SCALE</li> <li>NVE NV ENERGY</li> <li>P POLE</li> <li>PH/Ø PHASE</li> <li>PV PHOTOVOLTAIC</li> <li>PNL PANEL</li> <li>PTC PT USA TEST CONDITIONS</li> <li>FWR FWER</li> <li>(R) RELOCATED</li> <li>RAC RIGID ALUMINUM CONDUIT</li> <li>RFC RIGID FIBERGLASS CONDUIT</li> <li>RSC RIGID STEEL CONDUIT</li> <li>SE SERVICE ENTRANCE</li> <li>SPD SURGE PROTECTION DEVICE</li> <li>SPST SINGLE-POLE, DOUBLE-THROW</li> <li>SPST SINGLE-POLE, SINGLE-THROW</li> <li>STC STANDARD TEST CONDITIONS</li> <li>SW SWITCH</li> <li>TE TELECOM</li> <li>TTB TELEPHONE TERMINATION BOARD</li> <li>TTYP TYPICAL</li> <li>UL UNDERWRITER'S LABORATORY</li> <li>UNO UNLESS NOTED OTHERWISE</li> <li>UNSH UNSWITCHED</li> <li>UPS UNINTERRUPTED POWER SUPPLY</li> <li>V VOLTS</li> <li>VA VOLT AMPS</li> <li>VFD VARIABLE FREQUENCY DRIVE</li> <li>W WATTS</li> <li>WP WEATHER PROOF</li> <li>(X) EXISTING TO BE REMOVED</li> <li>XFMR OR XF TRANSFORMER</li> </ul>	
<ul style="list-style-type: none"> <li>S SINGLE POLE SWITCH 48" AFF (UNO)</li> <li>S<sub>3</sub> THREE WAY SWITCH 48" AFF (UNO)</li> <li>S<sub>4</sub> FOUR WAY SWITCH 48" AFF (UNO)</li> <li>S<sub>x</sub> KEY OPERATED SWITCH 48" AFF (UNO)</li> <li>S<sub>L</sub> SWITCH WITH LIGHTED HANDLE</li> <li>S<sub>M</sub> MANUAL MOTOR STARTER</li> <li>S<sub>P</sub> SWITCH WITH PILOT LIGHT 48" AFF (UNO)</li> <li>S<sub>T</sub> TIME WALL SWITCH 48" AFF (UNO)</li> <li>D DIMMER OPERATED SWITCH 48" AFF (UNO)</li> <li>⊠ OCCUPANCY SENSOR - WALL MOUNTED 48" AFF (UNO)</li> <li>⊠ = 360° OCCUPANCY SENSOR - CEILING MOUNTED. ARROWS INDICATE COVERAGE, DIRECTION &amp; PATTERN. PROVIDE WITH POWER PACK PER MFG REQUIREMENTS.</li> <li>⊠ = 180°</li> <li>⊠ = 90°</li> <li>⊠ CONTROL STATION</li> <li>⊠ CONTACTOR OR RELAY</li> <li>⊠ PHOTOELECTRIC CELL (ON ROOF FACING NORTH UNO)</li> <li>⊠ TIMECLOCK</li> </ul>	<ul style="list-style-type: none"> <li>⊠ DATA / VOICE OUTLET: 18" AFF (UNO) - 1 VOICE, 1 DATA JACK, 2 BLANKS</li> <li>⊠ DATA / VOICE OUTLET: FLOOR MOUNTED</li> <li>⊠ DATA / VOICE OUTLET: ABOVE COUNTER (VERIFY HEIGHT)</li> <li>⊠ MULTI-OUTLET ASSEMBLY: SPACING PER DWGS</li> <li>⊠ TELEPHONE OUTLET: 18" AFF (UNO)</li> <li>⊠ DATA OUTLET: 18" AFF (UNO)</li> <li>⊠ SPEAKER</li> <li>⊠ TELEVISION OUTLET: 18" AFF (UNO)</li> <li>⊠ TELEPHONE TERMINAL BOARD (TTB)</li> <li>⊠ VOLUME CONTROL</li> <li>⊠ GROUNDING BAR</li> </ul>	<ul style="list-style-type: none"> <li>⊠ NORMALLY OPEN (NO) CONTACT</li> <li>⊠ NORMALLY CLOSED (NC) CONTACT</li> <li>⊠ COIL - VOLTAGE PER CONTROL DIAGRAMS</li> <li>⊠ PILOT LIGHT (LED) PUSH-TO-TEST. LETTER INDICATES COLOR (R=RED, G=GREEN, A=AMBER, Y=YELLOW)</li> <li>⊠ PILOT LIGHT (LED) NON PUSH-TO-TEST</li> <li>⊠ THERMAL OVERLOAD</li> <li>⊠ MAGNETIC OVERLOAD</li> <li>⊠ FUSH BUTTON NORMALLY OPEN (NO)</li> <li>⊠ FUSH BUTTON NORMALLY CLOSED (NC)</li> <li>⊠ HAND-OFF-AUTO (HOA) SELECTOR SWITCH</li> <li>⊠ LIMIT SWITCH NORMALLY OPEN (NO)</li> <li>⊠ LIMIT SWITCH NORMALLY CLOSED (NC)</li> <li>⊠ FUSH BUTTON ILLUMINATED (LED)</li> </ul>	<ul style="list-style-type: none"> <li>⊠ LIGHTING FIXTURE - LOWERCASE LETTER DENOTES SWITCHING (g = CENTER LAMP, b = OUTER LAMPS)</li> <li>⊠ MALL MOUNTED FIXTURE</li> <li>⊠ RECESSED DOWNLIGHT</li> <li>⊠ SURFACE LUMINAIRE</li> <li>⊠ POLE MOUNTED LIGHT (# OF HEADS INDICATED ON DRAWING)</li> <li>⊠ FLUORESCENT STRIP FIXTURE</li> <li>⊠ BOLLARD</li> <li>⊠ RECESSED DOWNLIGHT (MALL WASH)</li> <li>⊠ TRACK LIGHTING</li> <li>⊠ EMERGENCY LIGHTING UNIT</li> <li>⊠ EXIT SIGN FIXTURE - SHADED AREA DENOTES LIGHTED FACE - ARROWS DENOTE DIRECTION</li> <li>⊠ EMERGENCY FIXTURE</li> </ul>	
<ul style="list-style-type: none"> <li>— CONDUIT/RACEWAY IN WALL OR ABOVE CEILING</li> <li>- - - CONDUIT/RACEWAY BELOW GRADE OR BELOW FLOOR</li> <li>○ CONDUIT/RACEWAY UP</li> <li>● CONDUIT/RACEWAY DOWN</li> <li>— BREAK OR RUN CONTINUES</li> <li>— OH — OVERHEAD SERVICE</li> <li>— P — PRIMARY</li> <li>— S — SECONDARY</li> <li>— C — COMMUNICATIONS OR SIGNAL</li> <li>— T — TELEPHONE</li> <li>— TV — TELEVISION</li> <li>— • — LOW VOLTAGE AND/OR CONTROL WIRING</li> <li>- * - * - EMERGENCY CIRCUIT</li> <li>— CONDUIT/RACEWAY STUB OUT: MARK AND CAP (SITE)</li> <li>— CONDUIT/RACEWAY SLEEVE</li> </ul>	<ul style="list-style-type: none"> <li>⊠ THERMOSTAT (PROVIDED BY MECH. CONTRACTOR UNO)</li> <li>⊠ JUNCTION BOX (SIZE AS REQUIRED UNO)</li> <li>⊠ SHEET NOTE DESIGNATION</li> <li>⊠ FIXTURE DESIGNATION: FI=TYPE (SEE FIXTURE SCH)</li> <li>⊠ REVISION DELTA: NUMBER REPRESENTS REVISION</li> <li>⊠ FEEDER DESIGNATION</li> <li>⊠ EQUIPMENT CONNECTION</li> </ul>	<ul style="list-style-type: none"> <li>⊠ ISOLATED GROUNDING CONDUCTOR NEUTRAL CONDUCTOR PHASE CONDUCTOR(S)</li> <li>⊠ BRANCH CIRCUIT (WHEN TIC MARKS ARE NOT SHOWN) = (1) PHASE, (1) NEUTRAL AND (1) GROUNDING CONDUCTOR</li> <li>⊠ HOMERUN TO PANELBOARD OR DEVICE</li> <li>⊠ HOMERUN CIRCUIT DESIGNATION</li> <li>⊠ GROUNDING CONDUCTOR NEUTRAL CONDUCTOR (N=1, 2N=2 NEUTRALS, 3N=3 NEUTRALS) PHASE CONDUCTOR(S) PANELBOARD DESIGNATION</li> <li>⊠ HOMERUN CIRCUIT DESIGNATION (3 PHASE CIRCUIT SHOWN)</li> <li>⊠ GROUNDING CONDUCTOR PHASE CONDUCTOR(S) PANELBOARD DESIGNATION</li> </ul>	<ul style="list-style-type: none"> <li>20 SINGLE POLE CIRCUIT BREAKER</li> <li>20/2 TWO POLE CIRCUIT BREAKER</li> <li>20/3 THREE POLE CIRCUIT BREAKER</li> <li>20A ARC FAULT CIRCUIT BREAKER</li> <li>20C CONTROLLABLE CIRCUIT BREAKER</li> <li>20G 6FI CIRCUIT BREAKER</li> </ul>	<ul style="list-style-type: none"> <li>L = LIGHTING</li> <li>R = RECEPTACLES</li> <li>E = EQUIPMENT</li> <li>M = MOTOR</li> <li>M1 = LARGEST MOTOR</li> <li>K = KITCHEN EQUIP</li> <li>H = ELECTRIC HEAT</li> </ul>

NOTE: THIS IS A MASTER SYMBOL LIST. IT MAY BE THAT NOT ALL SYMBOLS SHOWN ARE USED WITHIN THIS SET OF PLANS. HEIGHTS GIVEN ARE TO CENTER LINE OF DEVICE. © 2008-2018 PK ELECTRICAL, INC.

DESIGNED BY: DGR/DISA DRAWN BY: BDDGR CHECKED BY: DSA DWG NO.: 1802-ET-1802-01 SCALE (HORIZ): N/A SCALE (VERT): N/A PLOT DATE: 2/6/20	<b>CARSON CITY DEPARTMENT</b> <b>PUBLIC WORKS DEPARTMENT</b> 3505 BUTTE WAY CARSON CITY, NEVADA 89701 PH: 887-2355 FAX: 887-2112		DESCRIPTION DATE REV.	BY APP'D DATE REV.
CARSON CITY PRODUCTION WELLS #55 PERMANENT EMERGENCY GENERATORS PROJECT PROJECT NO. 9.1811 <b>ELECTRICAL LEGEND &amp; DRAWING SCHEDULE</b>				
SHEET <b>E1</b> OF <b>1</b> *				



**PK Electrical, Inc.**  
Engineering • Design • Consulting

611 Sierra Rose Dr., Ste. B | Reno, Nevada 89511 | 775.836.8010  
5105 OTC Parkway Suite 420 | Greenwood Village, Colorado 80111 | 720.481.3290  
pk@pk-electrical.com © 2008-2011 PK Electrical, Inc. 19032

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SECTION 260000 ELECTRICAL SPECIFICATIONS

ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION		
1.1	<p><b>PART 1 - GENERAL SUMMARY</b></p> <ul style="list-style-type: none"> <li>THE WORK UNDER THIS DIVISION SHALL CONSIST OF ALL LABOR, MATERIALS, EQUIPMENT, SERVICES AND RELATED ACCESSORIES, ETC. NECESSARY AND REQUIRED TO COMPLETE ALL WORK AS SHOWN OR INFERRED ON THE DRAWINGS AND IN THE SPECIFICATIONS (CONTRACT DOCUMENTS).</li> <li>PROVIDE FIXED ELECTRICAL EQUIPMENT, EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.</li> <li>PROVIDE EQUIPMENT AND/OR WIRING NORMALLY FURNISHED OR REQUIRED FOR COMPLETE ELECTRICAL SYSTEMS BUT NOT SPECIFICALLY SPECIFIED ON THE DRAWINGS AND/OR IN SPECIFICATIONS, AS THOUGH SPECIFIED BY BOTH.</li> <li>ALL EQUIPMENT AND WIRING SHALL BE NEW, EXCEPT WHERE SPECIFICALLY SHOWN OR SPECIFIED OTHERWISE.</li> </ul>	1.7	<p><b>COPYRIGHT</b></p> <p>THESE PLANS, SPECIFICATIONS, AND ALL RELATED ADDENDA AND DOCUMENTS CONSTITUTE COPYRIGHT MATERIALS OF PK ELECTRICAL. ALL RIGHTS CONFERRED BY THE COPYRIGHT AND SIMILAR LAWS ARE RESERVED TO PK ELECTRICAL. THESE MATERIALS SHALL REMAIN THE SOLE PROPERTY OF PK ELECTRICAL.</p>	3.1	<p><b>PART 3 - EXECUTION</b></p> <p><b>VISIT TO SITE</b></p> <p>EXACT ROUTING OF ALL CONDUITS LARGER THAN ONE INCH. EXACT LOCATION OF ALL SERVICE GROUNDS/ BONDING CONNECTIONS. CONTRACTORS NAME, ADDRESS, AND TELEPHONE NUMBER.</p> <p>RECORD NOTATIONS SHALL BE CLEARLY DRAWN AT A DRAFTING APPEARANCE EQUAL TO THE ORIGINAL DRAWINGS. CONTRACTOR SHALL ALSO PROVIDE ALL OPERATING AND MAINTENANCE MANUALS PRIOR TO FINAL PAYMENT.</p>	3.13	<p><b>TESTING</b></p> <p>PRIOR TO PLACING IN SERVICES, ALL ELECTRICAL SYSTEMS SHALL BE TESTED FOR OPEN, GROUNDS, AND PHASE ROTATION. THE MAIN SERVICE GROUND AND ALL LOCAL TRANSFORMER MADE GROUNDS SHALL BE MEGGER-TESTED. PROVIDE GPI TESTING FOR SERVICE SWITCHBOARD.</p>
1.2	<p><b>RELATED WORK SPECIFIED ELSEWHERE</b></p> <p>COORDINATION: THE CIVIL, ARCHITECTURAL, MECHANICAL, KITCHEN AND INTERIOR DRAWINGS CONTAIN DETAIL DESCRIPTIONS, CIRCUITING AND CONNECTION REQUIREMENTS WHICH ARE PART OF DIVISION 16 RESPONSIBILITIES. ELECTRICAL CONTRACTOR SHOULD NOT SUBMIT BIDS ON THIS PROJECT BEFORE REVIEWING ALL PROJECT DRAWINGS, SPECIFICATIONS AND ADDENDA.</p>	1.8	<p><b>SUBMITTALS</b></p> <p>BEFORE ORDERING ANY EQUIPMENT, CONTRACTOR SHALL SUBMIT SIX COPIES OF FACTORY SHOP DRAWINGS FOR ALL LIGHTING FIXTURES, LIGHTING CONTROLS, SWITCHGEAR, PANELS, CIRCUIT BREAKERS, MOTOR CONTROLLERS, DISCONNECTS WIRING DEVICES, PLATES, RACEWAYS AND FITTINGS, ETC. PROPOSED FOR THIS PROJECT.</p>	3.2	<p><b>WORKMANSHIP</b></p> <ul style="list-style-type: none"> <li>ALL WORK PERFORMED SHALL BE FIRST CLASS WORK IN EVERY ASPECT. THE WORK SHALL BE PERFORMED BY MECHANICS SKILLED IN THEIR RESPECTIVE TRADES, WHO SHALL AT ALL TIMES BE UNDER THE SUPERVISION OF COMPETENT PERSONS. ALL WORK SHALL BE INSTALLED TO COMPLY WITH NECA'S "STANDARD OF INSTALLATION."</li> <li>IN ADDITION TO THE MATERIALS SPECIFIED ELSEWHERE, FURNISH AND INSTALL ALL OTHER MISCELLANEOUS ITEMS NECESSARY FOR THE COMPLETION OF THE WORK TO THE EXTENT THAT ALL SYSTEMS ARE COMPLETE AND OPERATIVE.</li> <li>ALL WORK UNDER THIS SECTION SHALL BE PERFORMED IN COOPERATION WITH THE WORK PERFORMED UNDER ALL OTHER SECTIONS OF THE SPECIFICATIONS FOR THE PROJECT IN ORDER TO AVOID INTERFERENCE WITH OTHER WORK AND TO SECURE THE PROPER INSTALLATION OF ALL WORK. REFER THE DRAWINGS AND SPECIFICATIONS COVERING THE WORK TO BE PERFORMED UNDER ALL SECTIONS, SO THAT THE RELATION AND EXTENT OF THE WORK OF THIS SECTION WITH RESPECT TO THE WORK OF ALL OTHER SECTIONS IS UNDERSTOOD. GIVE RIGHT OF WAY TO RACEWAYS AND PIPING SYSTEMS INSTALLED AT A REQUIRED SLOPE.</li> <li>CONDUIT SYSTEMS MUST BE COMPLETE PRIOR TO INSTALLATION OF WIRING.</li> </ul>	3.14	<ul style="list-style-type: none"> <li>PREPARE STUDY PRIOR TO ORDERING DISTRIBUTION EQUIPMENT TO VERIFY EQUIPMENT RATINGS REQUIRED.</li> <li>PERFORM STUDY WITH AID OF COMPUTER SOFTWARE PROGRAM (LATEST VERSION OF EASYPOWER SUITE REQUIRED). PROVIDE OWNER WITH EASYPOWER MODEL.</li> <li>PROVIDE A HARD COPY SINGLE LINE IN A TUBE WITH A CD COPY OF THE EASYPOWER MODEL THAT SHALL BE MAGNETICALLY ATTACHED TO THE SIDE OF THE HSP.</li> <li>STUDY SHALL ENCOMPASS ALL PORTIONS OF ELECTRICAL DISTRIBUTION SYSTEM FROM NORMAL POWER SOURCE AND/OR STANDBY SOURCES UP TO AND INCLUDING BREAKERS IN SERVICE ENTRANCE SWITCHBOARD, MAIN BREAKER IN SUB-DISTRIBUTION PANELS, MAIN BREAKER IN EACH PANELBOARD.</li> <li>CALCULATE SHORT CIRCUIT INTERRUPTING AND, WHEN APPLICABLE, MOMENTARY DUTIES FOR ASSUMED 3-PHASE BOLTED FAULT SHORT CIRCUIT CURRENT AND PHASE TO GROUND FAULT SHORT CIRCUIT CURRENT AT EACH OF THE FOLLOWING: <ul style="list-style-type: none"> <li>UTILITY SUPPLY BUS.</li> <li>AUTOMATIC TRANSFER SWITCH.</li> <li>ENGINE GENERATOR.</li> <li>LOW-VOLTAGE SWITCHGEAR.</li> <li>SWITCHBOARDS.</li> <li>MOTOR CONTROL CENTERS.</li> <li>DISTRIBUTION PANELBOARDS.</li> <li>BRANCH CIRCUIT PANELBOARDS.</li> </ul> </li> <li>EACH OTHER SIGNIFICANT EQUIPMENT LOCATION THROUGHOUT SYSTEM.</li> </ul>
1.3	<p><b>ADOPTED CODES</b></p> <ul style="list-style-type: none"> <li>INTERNATIONAL BUILDING CODE (IBC) PUBLISHED BY THE INTERNATIONAL CODE COUNCIL (ICC).</li> <li>NATIONAL ELECTRICAL CODE (NEC) PUBLISHED BY THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).</li> <li>INTERNATIONAL FIRE CODE (IFC) PUBLISHED BY THE INTERNATIONAL CODE COUNCIL.</li> <li>NATIONAL FIRE CODES (NFC) PUBLISHED BY THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) AS REFERENCED IN THE 2006 INTERNATIONAL FIRE CODE.</li> <li>INTERNATIONAL ENERGY CONSERVATION CODE (IECC) PUBLISHED BY THE INTERNATIONAL CODE COUNCIL. ASHRAE / IESNA STANDARD 90.1-2004 IS INCORPORATED BY REFERENCE.</li> <li>ALL APPLICABLE PROVISIONS OF THE NEVADA REVISED STATUTES (NRS) AND THE NEVADA ADMINISTRATIVE CODE (NAC), INCLUDING THOSE LISTED BELOW.</li> <li>THE MOST CURRENT REGULATIONS OF THE STATE FIRE MARSHAL, NEVADA DEPARTMENT OF PUBLIC SAFETY, CARSON CITY, NEVADA (NAC CHAPTER 471, STATE FIRE MARSHAL).</li> <li>THE MOST CURRENT EDITION OF THE AMERICANS WITH DISABILITIES ACT (ADA) PUBLISHED BY THE UNITED STATES DEPARTMENT OF JUSTICE INCLUDING THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG).</li> </ul>	1.9	<p><b>SUBSTITUTIONS</b></p> <p>PROPOSED SUBSTITUTIONS SHALL BE EQUAL OR SUPERIOR TO SPECIFIED ITEMS IN ALL RESPECTS. DISCRETION OF EQUALITY RESTS SOLELY WITH ENGINEER. SUBSTITUTIONS MUST BE SUBMITTED A MINIMUM OF 10 WORKING DAYS PRIOR TO BID FOR CONSIDERATION. PROPOSED SUBSTITUTIONS PROVIDED LATER WILL NOT BE REVIEWED OR ALLOWED. BID SUBSTITUTED MATERIAL WILL ONLY BE ALLOWED IF ACCEPTED IN WRITING BY ENGINEER.</p>	3.3	<p><b>CHANGE ORDERS</b></p> <ul style="list-style-type: none"> <li>ADDITIONAL WORK MAY BE REQUIRED ON THE PROJECT WHICH IS OUTSIDE THE SCOPE OF THE CONTRACT. SUCH ADDITIONAL WORK WILL BE DESCRIBED IN SUPPLEMENTAL INSTRUCTIONS AND/OR CLARIFICATIONS, TO BE ESTIMATED AND PRICED BY THE CONTRACTOR, AND ACCEPTED BY THE OWNER, PRIOR TO COMMENCING WORK. PROPOSALS SHALL INCLUDE A LIST OF QUANTITIES OF ALL MATERIAL BEING USED WITH UNIT COSTS BROKEN DOWN INTO MATERIAL AND LABOR COSTS PER UNIT. CONTRACTOR SHALL PROVIDE ACTUAL EQUIPMENT QUOTES WHEN REQUESTED BY ENGINEER.</li> <li>MATERIAL COSTS AND LABOR UNITS SHALL NOT EXCEED THE LATEST EDITION OF RS MEANS ELECTRICAL COST DATA.</li> </ul>	3.15	<p><b>FLASH HAZARD ANALYSIS STUDIES</b></p> <p>COMPLETE ARC FLASH HAZARD ANALYSIS STUDY TO MEET REQUIREMENTS OF NFPA 70E, AT&amp;T PRACTICE REO-50-01-24-ATP-01 AND AT&amp;T PRACTICE REO-50-01-30-ATP-01.</p> <ul style="list-style-type: none"> <li>PERFORM STUDY WITH AID OF COMPUTER SOFTWARE PROGRAM (LATEST VERSION OF EASYPOWER SUITE REQUIRED). PROVIDE OWNER WITH EASYPOWER MODEL.</li> <li>SHALL INCLUDE DETERMINING THE SHORT-CIRCUIT CURRENT AVAILABLE AT THE DESIGNATED POINT OF CONTACT AND INCLUDE PERFORMING THE FOLLOWING TO PROVIDE ADEQUATE PROTECTION: <ul style="list-style-type: none"> <li>CALCULATE THE ARC-FLASH PROTECTION BOUNDARY.</li> <li>CALCULATE THE INCIDENT ENERGY.</li> <li>CONFIRM THE REQUIRED LABELING.</li> <li>CONFIRM THE REQUIRED PERSONAL PROTECTIVE EQUIPMENT WITH ARC RATINGS TO PROVIDE ADEQUATE PROTECTION FOR PERSONNEL WORKING ON OR NEAR-ENERGIZED CONDUCTORS OR COMPONENTS.</li> <li>PROVIDE UPDATED LABELS THROUGHOUT ENTIRE SYSTEM AS REQUIRED.</li> </ul> </li> </ul>
1.4	<p><b>DEFINITIONS</b></p> <p>FURNISH, INSTALL, CONNECT AND TEST UNTIL COMPLETE.</p> <p>HIRE: FURNISH ALL NECESSARY WIRING, CONNECT AND TEST UNTIL COMPLETE.</p> <p>INSTALL: FURNISH, SET IN PLACE, WIRE AND TEST UNTIL COMPLETE.</p> <p>WORK: MATERIALS COMPLETELY INSTALLED, CONNECTED, AND TESTED UNTIL COMPLETE.</p> <p>EQUAL: ACCEPTABLE EQUAL AS DETERMINED BY THE ENGINEER.</p>	1.10	<p><b>EXAMINATION OF SITE AND EXISTING CONDITIONS</b></p> <p>BEFORE SUBMITTING A PROPOSAL, CONTRACTOR SHALL EXAMINE THE SITE AND FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS AND LIMITATIONS. NO EXTRAS WILL BE ALLOWED BECAUSE OF THE CONTRACTOR'S MISUNDERSTANDING OF THE AMOUNT OF WORK INVOLVED OR HIS LACK OF KNOWLEDGE OF ANY SITE CONDITIONS WHICH MAY AFFECT HIS WORK. ANY APPARENT VARIANCE OF THE DRAWINGS OR SPECIFICATIONS FROM THE EXISTING CONDITIONS AT THE SITE SHALL BE CALLED TO ATTENTION OF THE ENGINEER BEFORE SUBMITTING A PROPOSAL.</p>	3.4	<p><b>GUARANTEE</b></p> <p>FURNISH THE OWNER A WRITTEN GUARANTEE, STATING THAT IF THE WORKMANSHIP AND/OR MATERIAL EXECUTED UNDER THIS DIVISION IS PROVEN DEFECTIVE WITHIN (1) YEAR AFTER THE FINAL ACCEPTANCE BY THE OWNER, SUCH DEFECTS AND OTHER WORK DAMAGED WILL BE REPAIRED AND/OR RE-TESTED, SUBJECT WITH OPERATION AND MAINTENANCE MANUALS.</p>	3.16	<p><b>IDENTIFICATION</b></p> <ul style="list-style-type: none"> <li>IDENTIFICATION OF EQUIPMENT AND/OR SYSTEMS WHERE REQUESTED BY OWNER/ENGINEER. FURNISH AFFIDAVIT SIGNED BY OWNER'S REPRESENTATIVE INDICATING THAT DEMONSTRATION OF OPERATION HAS BEEN PERFORMED.</li> <li>CAREFULLY COORDINATE WORK WITH OTHER CONTRACTORS AND SUBCONTRACTORS. REFER TO CONFLICTS BETWEEN TRADES TO ENGINEER. PROVIDE NECESSARY INFORMATION TO OTHER TRADES FOR SUCH COORDINATION. SUCH INFORMATION SHALL INCLUDE SHOP DRAWINGS, PRODUCT DATA AND ALL OTHER REQUIRED DATA. PROVIDE A SYSTEM ERECTION/COORDINATION DRAWING SHOWING ELECTRICAL HVAC, PLUMBING AND ARCHITECTURAL FOR INSTALLATION IN CONGESTED AREAS, WHEN REQUESTED.</li> <li>WHENEVER SUCH INFORMATION IS NOT PROVIDED IN A TIMELY MANNER OR WHENEVER SUCH INFORMATION IS INCORRECT, THIS CONTRACTOR SHALL BEAR ALL COSTS FOR PROVIDING OR CORRECTING AFFECTED WORK OF RELATED TRADES WITH NO CHANGE TO THE CONTRACT PRICE OR CONSTRUCTION SCHEDULE.</li> <li>WORK TO BE INSTALLED AS PROGRESS OF PROJECT WILL ALLOW SCHEDULE OF WORK DETERMINED BY GENERAL CONTRACTOR, OWNER, AND/OR ARCHITECT/ENGINEER.</li> </ul>
1.5	<p><b>REQUIREMENTS OF REGULATORY AGENCIES</b></p> <ul style="list-style-type: none"> <li>OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED FOR THE WORK. COMPLY WITH ALL ORDINANCES PERTAINING TO WORK DESCRIBED HEREIN. PAY ALL EXPENSES ARISING FROM THE REQUIREMENT OF THESE CERTIFICATES AND INCLUDE IN THE BASE CONTRACT PRICE.</li> <li>INSTALL WORK UNDER THIS DIVISION PER DRAWINGS, SPECIFICATIONS, LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), LOCAL AMENDMENTS AND INTERPRETATIONS, LOCAL ADOPTED BUILDING CODES, AND ANY SPECIAL CODES HAVING JURISDICTION OVER SPECIFIED PORTIONS OF WORK WITHIN COMPLETE INSTALLATION. IN EVENT OF CONFLICT, INSTALL WORK PER MOST STRINGENT CODE REQUIREMENTS DETERMINED BY ENGINEER. THIS DOES NOT RELIEVE THE CONTRACTOR FROM FURNISHING AND INSTALLING WORK SHOWN OR SPECIFIED WHICH MAY EXCEED THE REQUIREMENTS OF SUCH ORDINANCES, LAWS, REGULATIONS AND CODES.</li> <li>ALL MATERIALS, PRODUCTS, DEVICES, FIXTURES, FORMS OR TYPES OF CONSTRUCTION INCLUDED IN THIS PROJECT SHALL MEET OR EXCEED THE PUBLISHED REQUIREMENTS OF NATIONAL ELECTRICAL CODE (NEC), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) AND NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA). ALL EQUIPMENT SHALL BEAR THE UNDERWRITER'S LABORATORIES (UL) LABEL OR EQUIVALENT FROM APPROVED INDEPENDENT TESTING LABORATORY.</li> <li>ARRANGE, PAY FEES FOR AND COMPLETE WORK TO PASS REQUIRED TESTS BY AGENCIES HAVING AUTHORITY OVER WORK. DELIVER TO ENGINEER COPIES OF THE CERTIFICATES OF INSPECTION AND APPROVAL, ISSUED BY AUTHORITIES AND PROVIDE ORIGINAL COPY OF EACH CERTIFICATE TO OWNER.</li> <li>WHEN REQUIRED BY LAW OR REGULATIONS, THE GOVERNMENTAL AGENCY HAVING JURISDICTION FOR INSPECTIONS SHALL BE GIVEN REASONABLE NOTICE AND OPPORTUNITY TO INSPECT THE WORK. ANY WORK THAT IS ENCLOSED OR COVERED UP BEFORE SUCH INSPECTION AND TEST SHALL BE UNCOVERED AT THE CONTRACTOR'S EXPENSE, AFTER IT HAS BEEN INSPECTED, THE CONTRACTOR SHALL RESTORE THE WORK TO ITS ORIGINAL CONDITION AT HIS OWN EXPENSE.</li> </ul>	1.11	<p><b>EXISTING SWITCHGEAR</b></p> <p>REUSE EXISTING SWITCHGEAR AND PANELS IN PLACE WHERE SO INDICATED. MODIFY AS REQUIRED TO ACCOMMODATE NEW WORK. PROVIDE NEW CIRCUIT BREAKERS AND/OR FUSES AS REQUIRED. MATCH AIC RATINGS. REARRANGE EXISTING CIRCUITS WITHIN PANELS TO AGREE WITH NEW PANEL SCHEDULES. TRACE AND IDENTIFY ALL EXISTING CIRCUITS ON NEW RECORD PANEL SCHEDULES.</p>	3.5	<p><b>COOPERATION</b></p> <ul style="list-style-type: none"> <li>ALL GUARANTEES AND WARRANTIES SHALL BE REFERENCED TO THIS PROJECT.</li> <li>IN EVENT THAT SYSTEMS ARE PLACED IN OPERATION IN SEVERAL PHASES AT THE OWNER'S REQUEST, GUARANTEE WILL BEGIN ON DATE EACH SYSTEM OR ITEM OF EQUIPMENT IS ACCEPTED FOR SERVICE BY THE OWNER. PROVIDE O&amp;M MANUALS FOR ALL EQUIPMENT WHEN EQUIPMENT IS ACCEPTED FOR SERVICE BY THE OWNER.</li> <li>ALL GUARANTEES AND WARRANTIES SHALL BE REFERENCED TO THIS PROJECT.</li> <li>INSTALLATION FOR THE DURATION OF THE GUARANTEE PERIOD.</li> <li>OBSERVATIONS OF WORK AND DEMONSTRATION OF OPERATION (ACCEPTANCE): <ul style="list-style-type: none"> <li>AT ALL OBSERVATIONS OF WORK, OPEN PANEL COVERS, JUNCTION BOX COVERS, PULL BOX COVERS, DEVICE COVERS, AND OTHER EQUIPMENT WITH REMOVABLE PLATES FOR OBSERVATION AS REQUESTED BY AHJ OR ENGINEER. PROVIDE SUFFICIENT PERSONNEL TO EXPEDITE COVER REMOVAL AND REPLACEMENT.</li> <li>CONTRACTOR TO DEMONSTRATE OPERATION OF NEW EQUIPMENT AND/OR SYSTEMS TO SATISFACTION OF OWNER/ENGINEER. CONTRACTOR TO HAVE MANUFACTURER AVAILABLE FOR DEMONSTRATION OF EQUIPMENT AND/OR SYSTEMS WHERE REQUESTED BY OWNER/ENGINEER.</li> </ul> </li> </ul>	3.17	<p><b>ONSITE OPERATION</b></p> <p>CONDUCT WORK TO MINIMIZE DISRUPTION OF OWNER'S ONSITE OPERATIONS. PROVIDE BARRICADES, NOISE ABATEMENT AND DUST CONTAINMENT MEASURES TO ENSURE THE SAFETY AND COMFORT OF PATRONS, STAFF, AND WORKERS. INTERRUPTIONS OF EXISTING POWER, COMMUNICATIONS OR FIRE ALARM SYSTEMS SHALL BE PERFORMED ONLY AT SUCH TIMES AS DIRECTED BY GENERAL CONTRACTOR / OWNER. OUTAGES SHALL BE MOMENTARY IN NATURE. EACH SUCH OUTAGE (OR OPERATION WHICH MAY POSE RISK OF AN ACCIDENTAL OUTAGE) SHALL BE SCHEDULED 48 HOURS IN ADVANCE.</p>
1.6	<p><b>DRAWINGS AND SPECIFICATIONS</b></p> <p>DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY. WORK CALLED FOR BY ONE IS BINDING AS IF CALLED FOR BY BOTH. ANY DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION DURING THE BIDDING PERIOD. NO ALLOWANCE SHALL SUBSEQUENTLY BE MADE TO THE CONTRACTOR BY REASON OF HIS FAILURE TO HAVE BROUGHT SAID DISCREPANCIES TO THE ATTENTION OF THE CONSULTANT DURING THE BIDDING PERIOD OR BY REASON OF ANY ERROR ON THE CONTRACTOR'S PART.</p> <p>DRAWINGS ARE SCHEMATIC AND DIAGRAMMATIC IN NATURE. DRAWINGS SHOW GENERAL RUN OF CIRCUITS AND APPROXIMATE LOCATION OF EQUIPMENT. THE CONTRACTOR SHALL REVIEW DRAWINGS OF ALL TRADES TO ASSURE COORDINATION PRIOR TO PLACEMENT OF WORK. RIGHT IS RESERVED TO CHANGE LOCATION OF EQUIPMENT AND DEVICES, AND ROUTING OF CONDUITS WITHIN 10 FEET, WITHOUT EXTRA COST TO OWNER (PRIOR TO ROUGH-IN).</p> <p>USE DIMENSIONS IN FIGURES, SHOP DRAWINGS, ETC. AND ACTUAL SITE MEASUREMENTS IN PREFERENCE TO SCALED DIMENSIONS. DO NOT SCALE DRAWINGS FOR EXACT SIZES OR LOCATIONS - USE DIMENSIONED DETAILS OR ACTUAL FIELD CONDITIONS. VERIFY ITEM MOUNTING HEIGHTS AS REQUIRED BY PROJECT CONDITIONS PRIOR TO ROUGH-IN.</p> <p>THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER ALL OTHER DRAWINGS IN MATTERS OF DIMENSIONS, DISCREPANCIES BETWEEN DIFFERENT DRAWINGS OR BETWEEN DRAWINGS AND SPECIFICATIONS, OR REGULATIONS AND CODES GOVERNING THE INSTALLATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING FOR DETERMINATION.</p> <p>LAYOUT EQUIPMENT AS SHOWN ON DRAWINGS AS CLOSE AS POSSIBLE. VERIFY ACCESS REQUIREMENTS FOR EQUIPMENT ACTUALLY FURNISHED AND ADJUST LAYOUT TO COMPLY WITH NEC 110. RIGHT IS RESERVED TO CHANGE LAYOUT WITHIN 10 FEET WITHOUT ADDITIONAL COST (PRIOR TO ROUGH-IN).</p> <p>THE CONTRACTOR IS RESPONSIBLE TO FIELD MEASURE AND CONFIRM THE MOUNTING HEIGHTS AND LOCATION OF ELECTRICAL EQUIPMENT WITH RESPECT TO COUNTERS, DOORWAYS, AND OTHER ARCHITECTURAL, MECHANICAL OR STRUCTURAL WORK. DO NOT SCALE DISTANCES OFF THE ELECTRICAL DRAWINGS. USE ACTUAL BUILDING DIMENSIONS.</p> <p>EXECUTION OF CONTRACT IS EVIDENCE THAT CONTRACTOR HAS EXAMINED ALL EXISTING CONDITIONS, DRAWINGS AND SPECIFICATIONS RELATED TO WORK, AND IS INFORMED AS TO EXTENT AND CHARACTER OF WORK. LATER CLAIMS FOR LABOR AND MATERIALS REQUIRED DUE TO DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN HAD EXAMINATION BEEN MADE, WILL NOT BE RECOGNIZED.</p> <p>ALL WORK CALLED FOR IN THIS SECTION OF THE PLANS AND SPECIFICATIONS SHALL BE PERFORMED UNDER THIS SECTION, REGARDLESS OF WHETHER SUCH WORK MAY ALSO HAVE BEEN CALLED FOR IN OTHER SECTION(S). DISCREPANCIES IN OR CONFLICTS AMONG THE VARIOUS PARTS OF THE CONTRACT DRAWINGS SHALL NOT RELIEVE CONTRACTOR OF HIS OBLIGATION TO PERFORM.</p> <p>NO ATTEMPT HAS BEEN MADE TO ESTABLISH THE REQUIRED SECTIONS OR SPLITS OF EQUIPMENT RELATIVE TO THE SIZE OF ACCESS INTO THE SPACE BUILDING, ETC. CONTRACTOR SHALL ESTABLISH ALL SAID SPLITS, SECTIONS, ETC. NECESSARY TO INSTALL EQUIPMENT COMPLETE WITHOUT UNDUE DISASSEMBLY OF EQUIPMENT OR DEMOLITION OF BUILDING PARTS AT SITE OF WORK.</p> <p>CHARGES FOR EXTRA WORK ARE NOT ALLOWED UNLESS WORK IS AUTHORIZED BY WRITTEN ORDER FROM THE OWNER'S REPRESENTATIVE APPROVING CHARGES FOR WORK.</p> <p>CHECK ALL DOOR SWINGS SO LIGHTING CONTROL DEVICES ARE NOT LOCATED BEHIND DOORS. RELOCATE DEVICES AS REQUIRED WITH THE CONSULTANT'S REVIEW.</p>	1.12	<p><b>EXISTING PANELBOARDS</b></p> <p>RING OUT CIRCUITS IN EXISTING PANELS, WHERE ADDITIONAL CIRCUITS ARE NEEDED REUSE CIRCUITS AVAILABLE FOR REUSE. INSTALL NEW BREAKERS AS INDICATED ON DRAWINGS. MATCH AIC RATINGS.</p> <p>TAQ UNUSED CIRCUITS AS SPARE.</p> <p>WHERE EXISTING CIRCUITS ARE INDICATED TO BE REUSED, USE SENSING MEASURING DEVICES TO VERIFY THAT CIRCUITS FEEDING PROJECT AREA ARE NOT IN USE OR OVERLOADED.</p> <p>REMOVE EXISTING WIRE NO LONGER IN USE FROM PANEL TO EQUIPMENT.</p> <p>PROVIDE NEW UPDATED TYPED DIRECTORIES.</p>	3.6	<p><b>DELIVERY, STORAGE AND HANDLING</b></p> <ul style="list-style-type: none"> <li>DELIVER EQUIPMENT AND MATERIALS TO JOB SITE IN ORIGINAL, UNOPENED, LABELED CONTAINER. PRODUCTS SHALL BE PROPERLY IDENTIFIED WITH NAMES, MODEL NUMBERS, TYPES, GRADES, COMPLIANCE LABELS AND OTHER INFORMATION NEEDED FOR IDENTIFICATION. STORE TO PREVENT DAMAGE AND INJURY. STORE MATERIALS TO PREVENT CORROSION. STORE FINISHED MATERIALS AND EQUIPMENT TO PREVENT STAINING AND DISCOLORING. STORE MATERIALS AFFECTED BY CONDENSATION IN WARM DRY AREAS. PROVIDE HEATERS. CONTRACTOR SHALL VERIFY THE AVAILABILITY OF ON SITE STORAGE SPACE. IF NO ON SITE STORAGE SPACE IS AVAILABLE THEN THE CONTRACTOR SHALL COVER THE COST FOR OFF SITE STORAGE. MATERIALS MUST BE STORED AT THE PROJECT SITE THAT BECOMES SOILED WITH CONSTRUCTION DIRT, CONCRETE, OR MOISTURE SHALL BE REMOVED FROM THE SITE AND REPLACED WITH NEW. DO NOT INSTALL SOILED MATERIAL.</li> <li>INSTALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. CONFLICTS BETWEEN CONTRACT DOCUMENTS AND THESE RECOMMENDATIONS SHALL BE REFERRED TO ENGINEER FOR REMEDY.</li> <li>ELECTRICAL OR ELECTRONIC EQUIPMENT THAT HAS BEEN DAMAGED, EXPOSED TO WEATHER OR IS, IN THE OPINION OF THE ENGINEER OR ARCHITECT, OTHERWISE UNSUITABLE BECAUSE OF IMPROPER FABRICATION STORAGE OR INSTALLATION SHALL BE REMOVED AND REPLACED BY THIS CONTRACTOR AT HIS EXPENSE.</li> </ul>	3.18	<p><b>FLEXIBLE CONNECTIONS</b></p> <p>PROVIDE FLEXIBLE ELECTRICAL CONDUIT AND CONDUCTORS HAVING A SLACK, 90-DEGREE BEND OR LOOP IN ANY PLANE BETWEEN CONNECTIONS AT ALL VIBRATION ISOLATED EQUIPMENT AND THE FIRST ATTACHMENT TO BUILDING STRUCTURE OR CABINETS, PANELS OR BOXES MOUNTED THEREON.</p>
		1.13	<p><b>WIRING</b></p> <p>WIRE SHALL BE COPPER UNLESS OTHERWISE INDICATED. MINIMUM WIRE SIZE SHALL BE #12 AWG. WHERE ALUMINUM IS ALLOWED, WIRE SHALL BE TERMINATED IN AN INSULATED CUAL RATED COMPRESSION TERMINAL FITTING (MAC-ADAPT OR EQUAL). INSULATION SHALL BE THIN, THIN OR THIN.</p> <p>UNLESS OTHERWISE REQUIRED BY LOCAL ORDINANCES, GROUND WIRES SHALL BE GREEN. NEUTRAL WIRES SHALL BE WHITE (120V) OR GREY (277V) AND PHASE WIRES SHALL BE BLACK (PHASE A), RED (PHASE B), AND BLUE (PHASE C) FOR A 120/208 VOLT SYSTEM AND BROWN (PHASE A), ORANGE (PHASE B), AND YELLOW (PHASE C) FOR A 277/480 VOLT SYSTEM.</p>	3.7	<p><b>COORDINATION OF UTILITY SERVICES</b></p> <p>DRAWINGS INDICATE PROPOSED SERVICE LAYOUTS. THE CONTRACTOR SHALL PROVIDE ALL CONCRETE STRUCTURES, FULLBOXES, VAULTS, TRENCHING, RACEWAYS, PROTECTIVE BOLLARDS, ETC., AS REQUIRED PER NV ENERGY STANDARDS (ELECTRICAL UTILITY), AT&amp;T (TELEPHONE COMPANY) AND CHARTER (CATV UTILITY) STANDARDS.</p> <p>CONTRACTOR IS RESPONSIBLE FOR SUBMITTING PROJECT DRAWINGS, APPLICATION AND EQUIPMENT SHOP DRAWINGS TO THE UTILITY. UTILITY FEES TO BE PAID BY PROJECT OWNER.</p>	3.19	<p><b>REMOVABLE EQUIPMENT</b></p> <p>PROVIDE FLEXIBLE ELECTRICAL CONDUIT AND CONDUCTORS HAVING A SLACK, 90-DEGREE BEND OR LOOP IN ANY PLANE BETWEEN CONNECTIONS AT ALL VIBRATION ISOLATED EQUIPMENT AND THE FIRST ATTACHMENT TO BUILDING STRUCTURE OR CABINETS, PANELS OR BOXES MOUNTED THEREON.</p>
		1.14	<p><b>FUSES</b></p> <p>FUSES SHALL BE SIZED PER ACTUAL NAMEPLATE OF EQUIPMENT SERVED. FUSES SHALL BE DUAL-ELEMENT, CURRENT-LIMITING, AND SHALL BE INTERCHANGEABLE BETWEEN FRAME SIZES WITH STANDARD FACTORY FUSE REDUCERS. FUSES SHALL BE AS FOLLOWS UNLESS OTHERWISE INDICATED:</p> <ul style="list-style-type: none"> <li>CIRCUITS 601 TO 6000 AMPERES SHALL BE PROTECTED BY CURRENT LIMITING BUSMANN LOW-PEAK TIME-DELAY FUSES KRP-C - UL CLASS L.</li> <li>CIRCUITS 0 TO 600 AMPERES SHALL BE PROTECTED BY CURRENT LIMITING BUSMANN LOW-PEAK DUAL-ELEMENT FUSES LFR-K (600 VOLTS) - UL CLASS RK1.</li> <li>ALL DUAL-ELEMENT FUSES SHALL HAVE SEPARATE OVERLOAD AND SHORT-CIRCUIT ELEMENTS.</li> <li>PROVIDE SPARE FUSE CABINET AFTER THE COMPLETION OF THE PROJECT WITH ONE SET OF SPARE FUSES FOR EVERY SIZE USED.</li> </ul>	3.8	<p><b>HOUSEKEEPING PADS</b></p> <p>FURNISH 2500 # CONCRETE PADS, 4" HIGH (INTERIOR LOCATIONS) OR 6" HIGH (EXTERIOR LOCATIONS) UNLESS OTHERWISE NOTED, FOR ALL FREESTANDING EQUIPMENT, I.E. SWITCHBOARDS, PANELS, CONTROL PANELS, MOTOR CONTROL CENTERS, TRANSFORMERS, ETC. PADS SHALL HAVE 1" X 45" CHAMFERED EDGES, AND SHALL EXTEND 2" TO 4" BEYOND EQUIPMENT MOUNTINGS.</p>	3.20	<p><b>SEISMIC PROTECTION</b></p> <p>THIS PROJECT IS SUBJECT TO THE SEISMIC BRACING REQUIREMENT OF THE INTERNATIONAL BUILDING CODE, 2012 EDITION. THE FOLLOWING CRITERIA ARE APPLICABLE TO THIS PROJECT: SEISMIC USE GROUP: II; SEISMIC CLASS CATEGORY: D; SEISMIC DESIGN CATEGORY: D. IT IS RECOMMENDED THAT THE CONTRACTOR ENLIST THE SERVICES OF A QUALIFIED SEISMIC BRACING VENDOR/SUPPLIER. PROVIDE BRACING FOR IDENTIFIED EQUIPMENT AND SYSTEM. ELECTRICAL EQUIPMENT: ELECTRICAL EQUIPMENT SHALL INCLUDE THE FOLLOWING ITEMS TO THE EXTENT REQUIRED ON THE DRAWINGS OR IN OTHER SECTIONS OF THESE SPECIFICATIONS TO BE SEISMICALLY PROTECTED: <ul style="list-style-type: none"> <li>LIGHT FIXTURES, TRANSFORMERS, SWITCHBOARDS, PANELBOARDS.</li> <li>ELECTRICAL SYSTEMS: THE FOLLOWING ELECTRICAL SYSTEMS SHALL BE SEISMICALLY PROTECTED IN ACCORDANCE WITH THIS SPECIFICATION: <ul style="list-style-type: none"> <li>LIGHTING AND FIRE ALARM.</li> <li>CONDUITS REQUIRING NO SPECIAL SEISMIC RESTRAINTS: SEISMIC RESTRAINTS MAY BE OMITTED FROM ELECTRICAL CONDUIT LESS THAN 2-1/2 INCHES TRADE SIZE. ALL OTHER INTERIOR CONDUIT SHALL BE SEISMICALLY PROTECTED AS SPECIFIED.</li> </ul> </li> </ul> </p>
		1.15	<p><b>WIRING DEVICES</b></p> <p>WIRING DEVICES SHALL BE AS FOLLOWS:</p> <ul style="list-style-type: none"> <li>RECEPTACLES - 120V, 20A, NEMA 5-20R, SPECIFICATION GRADE, SIDE AND BACK WIRED WITH CLAMP TYPE TERMINALS, NYLON, WHITE, 2 POLE, 3 WIRE GROUNDING.</li> <li>SWITCHES - 120V/277V, 20A WHITE, HEAVY DUTY, SILENT TYPE SPECIFICATIONS GRADE.</li> <li>DEVICE PLATE SHALL BE NYLON, WHITE COLOR WITH MATCHING SCREWS.</li> <li>RECEPTACLES IN NET LOCATIONS SHALL BE INSTALLED WITH A HINGED OUTLET COVER/ENCLOSURE CLEARLY MARKED SUITABLE FOR NET LOCATIONS WHILE IN USE AND UL LISTED EQUAL TO TAY MAC SPECIFICATIONS GRADE.</li> </ul>	3.9	<p><b>CLEANING AND PAINTING</b></p> <p>CLEAN EQUIPMENT FURNISHED IN THIS DIVISION AFTER COMPLETION OF WORK. CLEAN WIPE THE INTERIOR OF ALL CONDUIT, FULLBOXES, JUNCTION BOXES, OUTLET BOXES, AND PANELBOARD BACKBOXES SOILED WITH DIRT AND DEBRIS PRIOR TO INSTALLATION OF WIRING.</p> <p>TOUCH-UP OR RE-PAINT DAMAGED PAINTED FINISHES AS DETERMINED BY THE ENGINEER.</p>		

DESIGNED BY: DGR/ISA  
DRAWN BY: BDD/DR  
CHECKED BY: DSA  
DWG NO.: 19027 E2 Specs.dwg  
SCALE (HORIZ): N/A  
SCALE (VERT): N/A  
PLOT DATE: 2/6/20

CARSON CITY PUBLIC WORKS DEPARTMENT

3505 BUTTE WAY CARSON CITY, NEVADA 89701  
PH: 887-2355 FAX: 887-2112

REV.	DATE	DESCRIPTION	BY	APP'D

CARSON CITY PRODUCTION WELLS #55 PERMANENT EMERGENCY GENERATORS PROJECT PROJECT NO. 9.1811.

SHEET SPECIFICATIONS

SHEET E2 OF \*

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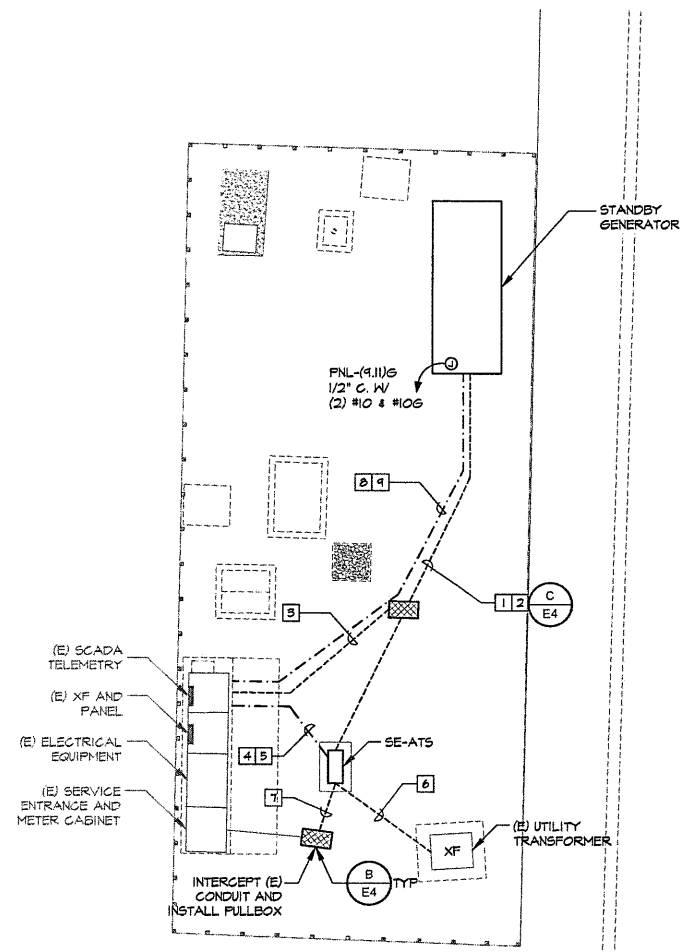
681 Sierra Rose Dr., Ste. 8 | Reno, Nevada 89511 | 775.826.5010  
5105 OTC Parkway Suite 420 | Greenwood Village, Colorado 80111 | 720.481.3200  
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1-800-227-2600

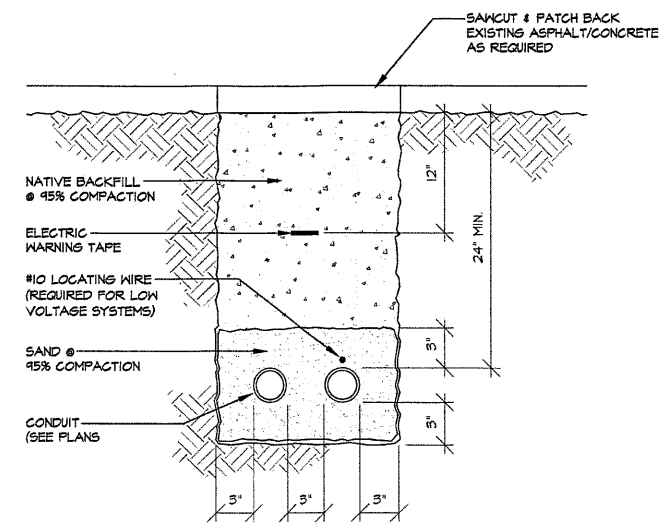




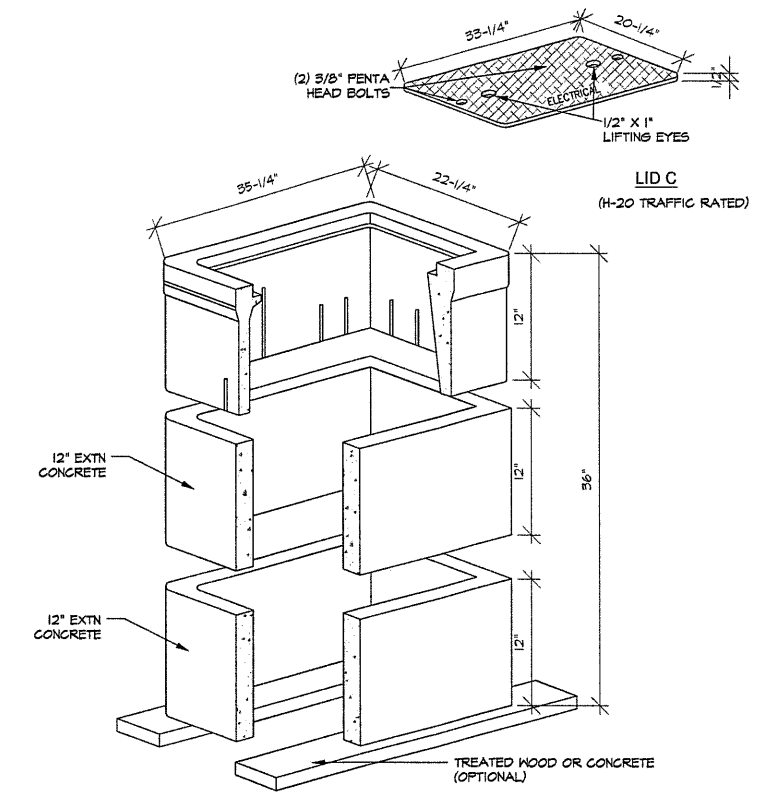
6-Feb-20		PANEL: (E)		LOCATION: WELL #55							
TYPE/DESCRIPTION	LOAD	BKR	CIR	A	B	C	CIR	BKR	LOAD	DESCRIPTION	TYPE
E WELL DISCHARGE ACT	120	20	1	920			2	40/3	800	ASR ACTUATOR	E
E PTW OPERATOR	120	20	3		920		4	X	800	X	E
H CHLORINATOR HEATER	120	20	5			920	6	X	800	X	E
E FLOW METER	120	20	7	720			8	20	600	CHLORINATOR	E
E (1) GENERATOR PANEL	2500	30/2	9		2780		10	20	280	CHLORINATOR LIGHT/REP	L
E X	2500	X	11			3250	12	20	750	TELEM RECEIPTAL	R
E SPARE			20	13	0		14		20	SPARE	
E SPARE			20	15	0		16		20	SPARE	
E SPARE			20	17	0		18		20	SPARE	
E SPARE			20	19	0		20		20	SPARE	
E SPARE			20	21	0		22		20	SPARE	
E SPARE			20	23	0		24		20	SPARE	
				1640	3700	4170					
COPPER BUS SIZE:	100	GROUND:		STANDARD		NOTES:					
VOLTAGE:	208	MOUNTING:		SURFACE		BOLD INDICATES NEW OR					
PHASE:	3	ENCLOSURE:		NEMA 1		MODIFIED LOADS					
WIRE:	4	# OF 1-POLE CIRCUITS		24		[1] PROVIDE NEW BREAKER					
LUGS:	MLO	CONNECTED KVA:		9.5		MATCH TYPE AND AIC RATING					
BREAKER AIC RATING:	10K	CONNECTED AMPS:		26.4							
NEUTRAL:	100%	NET KVA:		8.8							
FEEDER OCPD SIZE:	100	NET AMPS:		24.3							



**A**  
E4  
ELECTRICAL SITE PLAN  
SCALE: 1/8" = 1'-0"



**C**  
E4  
TYPICAL 2 CONDUIT TRENCH DETAIL  
SCALE: NONE



**B**  
E4  
N-36 CONCRETE BOX  
SCALE: NONE

**GENERAL NOTES**

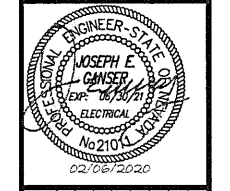
- (X) AND/OR DASHED LINES INDICATE EXISTING EQUIPMENT TO BE REMOVED, (E) AND/OR HALF TONE LINES INDICATE EXISTING EQUIPMENT, (N) AND/OR SOLID LINES INDICATE NEW EQUIPMENT, UNLESS NOTED OTHERWISE.
- REPAIR AND REPLACE ALL LANDSCAPING AND SITEWORK DISTURBED BY EXCAVATION INCLUDING BUT NOT LIMITED TO IRRIGATION LINES, LAWNS, PLANTING, ETC.
- PAINT EXPOSED BUILDING MOUNTED CONDUITS TO MATCH EXISTING FINISH.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALL 1-800-227-2600 FOR LOCATES PRIOR TO DIGGING. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL NON-UTILITY UNDERGROUND ITEMS.
- THE CONTRACTOR SHALL REMOVE FROM THE JOB SITE ALL ABANDONED MATERIALS LEFT OVER FROM DEMOLITION. ITEMS MAY INCLUDE, BUT ARE NOT LIMITED TO, CONDUIT, FASTENERS AND BOXES.

**RACEWAY LEGEND**

NO	CONDUIT SIZE	LOCATION (TO FROM)
1	(2) 3" C. W (4) 350K & #16	ATS TO GENERATOR
2	2" C. W (2) #14	ATS TO GENERATOR
3	(2) 2" C.	ATS/GENERATOR TO TELEMETRY
4	2" C. W (2) #14	ATS TO TELEMETRY
5	2" C. W CAT-6	ATS TO TELEMETRY
6	(1) 4" C.	(E) UTILITY TO ATS
7	4" C. W (4) 500K & #36	(E) SE TO ATS
8	2" C. W (2) #14	GENERATOR TO TELEMETRY
9	2" C. W CAT-6	GENERATOR TO TELEMETRY

DESIGNED BY: DGR/DISA  
 DRAWN BY: EBJ/DGR  
 CHECKED BY: DSA  
 DWG NO.: 10032 EA Electrical Site.dwg  
 SCALE (HORIZ): N/A  
 SCALE (VERT): N/A  
 PLOT DATE: 2/6/20

CARSON CITY  
 PUBLIC WORKS DEPARTMENT  
 3505 BUTTI WAY CARSON CITY, NEVADA 89701  
 PH: 887-2355 FAX: 887-2112



REV.	DATE	DESCRIPTION	BY	APP'D

CARSON CITY PRODUCTION WELLS #55  
 PERMANENT EMERGENCY GENERATORS PROJECT  
 PROJECT NO. 9.1.811  
 ELECTRICAL SITE PLAN

SHEET  
**E4**  
 OF  
 \*

**PK Electrical, Inc.**  
 Engineering · Design · Consulting  
 681 Sierra Rose Dr. Ste. B | Reno, Nevada 89511 | 775.826.9010  
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Call before you Dig  
 Avoid cutting underground utility lines. It's costly.  
**Call 811**  
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 1-800-227-2600