State of Utah

GARY R. HERBERT
Governor

GREGORY S. BELL
Lt. Governor

Department of Administrative Services
KIMBERLY K. HOOD
Executive Director

Division of Facilities Construction and Management
DAVID G. BUXTON
Director

ADDENDUM NO. 1

Date:	March 30, 2011
To:	Shortlisted Contractors
From:	Bob Anderson - Project Manager
Reference:	New Maintenance Facility – Great Salt Lake State Marina Division of Parks and Recreation – Magna, Utah DFCM Project No. 10029510
Subject:	**Addendum No. 1**

Pages	Addendum Cover Sheet	1	page
	Architect's Addendum No. 1	18	pages
	Total	19	pages

Note: This Addendum shall be included as part of the Contract Documents. Items in this Addendum apply to all drawings and specification sections whether referenced or not involving the portion of the work added, deleted, modified, or otherwise addressed in the Addendum. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to Disqualification.

While we contend that SB220 should only be potentially applicable to a contract issued after the effective date of said bill, this is to clarify that for purposes of this contract, regardless of the execution or effective dates of this contract, the status of Utah Law and remedies available to the State of Utah and DFCM, as it relates to any matter referred to or affected by said SB220, shall be the Utah law in effect at the time of the issuance of this Addendum.

1.1 **SCHEDULE CHANGES:** There are no Project Schedule changes.

1.2 **GENERAL ITEMS:** See attached Architect's Addendum No. 1 dated March 30, 2011.

MHTN
ARCHITECTS

Addendum No. 1

Issued: 3/30/11

Addendum No. One
for the
Great Salt Lake Marina Storage Building
Bid Package No 1
DFCM Project No. 10029510
MHTN Project No. 2010546

All Contractors submitting proposals on the above captioned project shall be governed by the following addendum, changes and explanations to the bidding documents dated 12-8, 2010 and shall submit their bids in accordance therewith:

Changes to the Project Manual:

A1.01 **Section 072100 Exterior Insulation and Finish System (EIFS)** Part Two Products add under Section 2.1 Manufacturers D Senergy Div. of Harris Specialty Chemicals, Inc.

A1.02 **Section 075400 Mechanically Attached Thermoplastic Membrane Roofing** add the following to Section 2 Products 2.1 Manufacturers GAF EverGuard PVC 80.

A1.03 **Section 031119 Insulated Concrete** Add the following manufacturers to approved list of manufacturers in Part 2 Products Manufacturers 2.1
TF Forming Systems 3030C Holmgren Way Green Bay WI 54304
LOGIX Insulated Concrete Forms : Johnson City Tennessee
Reward Wall Systems, Inc. 9931 South 136th St. Omaha, Neb. 68138

A1.04 **Section 092900 Gypsum Board.** Clarification Water Resistant Gypsum Board should be used behind all tile walls as follows:

Glass-Mat, Water-Resistant Backing Board:

1. Complying with ASTM C 1178/C 1178M.

   a. Product: Subject to compliance with requirements, provide "DensShield Tile Guard" by G-P Gypsum.

2. Core: **5/8 inch (15.9 mm), Type X.**

There is **no** cementitious backer board required.

A1.05 **Section 093000 Tiling.** Clarification Water Resistant Gypsum Board should be used behind all tile walls as follows per **above change to Section 092900. Change Section Part 3 Execution Installation 3.1 A 1. and A 2. to F111-09** (this is thick set tile for floor slabs in the toilet rooms and the office)

A1.06 **Section 096516 Resilient Sheet Flooring.** This section is not used changed floor in office to 12' x12' tile. See changes to the finish schedule.

A1.07 **Section 321216 Asphalt Paving;** There is a reference to Section "Structure Demolition" clarification there is no Structure Demolition section in the project. There is a reference to see Division 1 for unit prices clarification we are not asking for unit prices for asphalt paving.

E1.08 **Section 260500**

1.5-F: The electrical contractor is responsible for provide an portable generator for temporary construction power until the new transformer and the permanent power is installed for the new maintenance building.

CHANGES TO THE DRAWINGS:

General to Structural and Architectural Drawings.

S1.01 **Sheet S1.01** Clarification sheet shows depressed slabs this is correct see below for changes to the finish schedule to provide thick set tile.

S1.02 **Sheet S1.01 and S1.11** Clarification these show different wall layout in the toilet room area this should be adjusted to match architectural drawings that were revised to include second restroom.

C1.01 **Sheet CS101 Site Plan**

1. Per discussions at the pre-bid conference Contractors are asked to include 6 foot high security fence along the West side of the construction area and down to the drainage pond that surrounds the area. No fence is deemed required at the north east and south side of the area.

2. The handicapped parking stall should have post mounted sign as per the detail on **Sheet CD101.**

C1.02 **Sheet CU101 Utility Plan.**

1. It has been asked for approximate elevation of existing sewer line that we will be connecting to. Our estimate is that this line is at 4108.00 plus or minus. (As this was a pressurized line there was no plan and profile of the line.)

AR1.01 **Engineered structural fill and project requirements.** To clarify all bidders should bid removing existing soil to 2'-0" below the bottom of footing and re-compacting existing material on site to required density. (Testing of sub-grade will be performed after excavation.

AR1.02 **Existing Paving material on Site.** The existing material is Rotomilled asphalt that is approximately 3 to 4" deep and can be removed and used as fill on the areas to be filled. All existing material on site may be used as fill on the site.

AR1.03 **Sheet A1.01**

1. There is a note on the on the side of the building that reads "CMU Fence" Delete note there is no CMU Fence in the project.

AR1.04 **Sheet A1.01 through A1.04**

1. There is a discrepancy between Civil drawing North and Architectural drawing North. The civil drawings are correct the north arrow on the architectural drawings should point a 180 degrees in the opposite direction.

AR1.05 Sheet A1.02

1. Reference Note 1 refers to 15" ICF it was determined that structural 13" ICF as noted on the structural are adequate to provide strength required all ICF walls are 13" as per structural.

AR1.06 Sheet A1.04 Roof Plan

1. The roof of the compressor enclosure is not shown it is shown on Sheet S1.11 and should be included in the project roofing material is shown on Section B A3.01.

AR1.07 Sheets A2.01 and A2.02 Exterior Elevations.

1. Clarification Reveal line Vee shaped 1/2" deep 1 inch wide.
2. Sign Accessible on building wall is to identify accessible entry not parking.

AR1.08 Sheet A6.04 Finish Schedule

1. See Detail of service sink for tile requirements at service sink in storage room.
2. The office will have thick set floor tile 12" by 12" per Section 093000 as revised above the setting method is F111-09.
3. In the toilet rooms there will be tile wainscot on walls with epoxy painted gypsum panels above. Per elevations on Sheet A4.02 Detail 2.
4. Clarification on FRP in the mezzanine FRP panels to 3'-6" (top of low wall and on the high wall. As shown on Section A on Sheet #.02 FRP panels extend to 9"0" above floor on the gypsum board wall between the shop and the office, toilet and storage rooms. (This wall only other walls have concrete wainscot.)
5. Clarification Shower is per Plumbing plans pre manufactured unit on Sheet PE001 under schedule 15440 SH-1. (This will eliminate the need for some of the toilet room accessories listed in Section 102800 fold down seats.)
6. Signage to be bid as shown on interior elevation 1 on Sheet A4.02 signage types shown on A5.06 exact verbiage to be selected at time of submittal.

DRAWINGS

ES101 / EP601

1. See attached sketches ES-101-R1-1, ES-101-R1-2 & ES-101-R1-3, EP-601-R1-1 & EP-601-R1-2 for new transformer and enclosed circuit breaker "CB" location.
   a. Contractor will replace existing medium voltage transformer with a new 150 KVA transformer.
   b. Provide a 125/3 amp 480 volt disconnect adjacent to transformer for feeder running to maintenance building.
   c. Transformer pad is for bidding purposes only. Coordinate size and opening with transformer see specification section 261200.
   d. SCC rating for transformer and enclosed circuit breaker "CB" should be 22,000 AIC or greater.
   e. Change the number for the feeder between "CB" at the new transformer, and MCB at the maintenance building to #30 from the conductor and conduit schedule (matches one-line)

EE601

1. Added panel schedule for panel "H1". See attached sketch EE601-R1-1 (H1 will be the main distribution panel (MDP). See one-line diagram.

EE602

1. Change the feeder call out between the transformer/CB location and MCB/maintenance building to #30 from the conductor and conduit schedule in the addendum.
2. Panel H1 is the MDP. Clarified this in the addendum.

EL601

The following are additional approved manufactures for lighting:

DF-47
Prescolite LF8CFH132EB 8CFH1DL TRG

OC-32
Hubbell Outdoor & Industrial TRP 42 F8 WT SCBA

TX-1
Daybrite VR226 U DE NP

ATTACHMENTS:

Attendance log from Pre-bid – 2 pages

261200

See attached specification 261200 for Medium-voltage transformers

Drawings:

EE-601-R1-1
EP-601-R1-1
EP-601-RI-2
ES-101-R1-1
ES-101-R1-2
ES-101-R1-3

End of Addendum No. 1

The Project Team Leader has reviewed this document and found it in compliance with internal standards

_____ _____

Team Leader Date

STATE OF UTAH – DEPARTMENT OF ADMINISTRATIVE SERVICES
Division of Facilities Construction and Management

DFCM

This sheet will be SCANNED and posted on the DFCM Web site – PLEASE PRINT LEGIBLY.

Meeting Attendance Log

Project Name: New Maintenance Facility, Great Salt Lake Marina
Division of Parks and Recreation

DFCM Representative: Bob Anderson

Location: Great Salt Lake Marina

Project Number: 10029510

Date: 3/24/11 **Time:** 10:00 AM

Company Name	Contact Name	Address	Telephone (Include Area Code)	Fax # (Include Area Code)	Email Address
DFCM	BOB ANDERSON	Street: 4110 SOB City: SLC, UT. State: 84114	801-652-6754	801-538-3267	BOBANDERSON@UTAH.GOV
GARFF CONST.	DENNIS DOMAN	Street: 2820 W 500 S City: SLC State: UTAH	801 973-4248	801-972-1928	DENNIS@GARFFCONSTRUCTION.COM
Bailey Const.	Tracy Bailey	Street: 910 S Hwy 89-91 City: Logan State: utah	435-753-3660	435 753-3060	tracy.b@baileycon.net
CRC Const.	Mark Baumann	Street: 701 S. 700 W. City: Midvale, State: UT 84047	801-568-3545	801-568-5104	mark@crcconstruction.com
New Star General Contractors	Ron Fors	2610 West 2590 South Salt Lake City Utah 84117	(801) 972-6227	(801) 972-6002	ron@newstargc.com
MHTN ARCHITECTS	BRUCE BARNES	Street: 420 E STEMPLE City: SLC UT 8411 State:	801-326-3206	801 595-6717	bruce.barnes@mhtn.com

DFCM Form 031506

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Date: 3/24/11 **Time:** 10:00 AM

Company Name	Contact Name	Address	Telephone (Include Area Code)	Fax # (Include Area Code)	Email Address
Wadman Corporation	Matt Brower	Street: 2920 S 925 W City: Ogden, State: UT	(801) 621-4185	(801) 621-7232	mbrower@wadman.com
State Parks	Jamie Harsh	Street: 1084 No Redwood City: SLC State: 84116	801-946-6859	801-533-5229	jamieharsh@utah.gov
Great Basin Eng	Mark Babbitt	Street: 574650 1475E City: Ogden State: Utah 84403	801-394-4515	801-392-7544	markb@greatbasin engineering.com
BHB ENGINEERS	CHRIS HOFHEINS	Street: 2766 SO. MAIN City: SLC State: UT	801. 355.5656	801. 355.5950	chris.hofheins@bhbengineers.com.
Spectrum Engineers	Peter Jonnsen	Street: City: State:	801 401 8422		Pei@spectrum-engineers.com
		Street: City: State:			

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SECTION 261200 - MEDIUM-VOLTAGE TRANSFORMERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following types of transformers with medium-voltage primaries:
   1. Pad-mounted, liquid-filled transformers.

1.3 DEFINITIONS

A. NETA ATS: Acceptance Testing Specification.

1.4 ACTION SUBMITTALS

A. Product Data: Include rated nameplate data, capacities, weights, dimensions, minimum clearances, installed devices and features, location of each field connection, and performance for each type and size of transformer indicated.

B. Shop Drawings: Diagram power wiring.

1.5 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Floor plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:
   1. Underground primary and secondary conduit stub-up location.
   2. Dimensioned concrete base, outline of transformer, and required clearances.
   3. Ground rod and grounding cable locations.

B. Manufacturer Seismic Qualification Certification: Submit certification that transformer assembly and components will withstand seismic forces defined in Section 260548 "Vibration and Seismic Controls for Electrical Systems." Include the following:
   1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
      a. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."
   2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
   3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

C. Qualification Data: For testing agency.

D. Source quality-control test reports.

E. Field quality-control test reports.

F. Follow-up service reports.

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1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For transformer and accessories to include in emergency, operation, and maintenance manuals.

1.7 QUALITY ASSURANCE

A. Product Options: Drawings indicate size, profiles, and dimensional requirements of transformers and are based on the specific system indicated. Refer to Section 016000 "Product Requirements."

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with IEEE C2.

D. Comply with ANSI C57.12.10, ANSI C57.12.28, IEEE C57.12.70, and IEEE C57.12.80.

E. Comply with NFPA 70.

1.8 PROJECT CONDITIONS

A. Service Conditions: IEEE C37.121, usual service conditions except for the following:
1. Exposure to significant solar radiation.
2. Altitudes above 5,000 feet
3. Exposure to hot and humid climate or to excessive moisture, including steam, salt spray, and dripping water.
4. Exposure to excessively high or low temperatures.
5. Unusual space limitations.

1.9 COORDINATION

A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified with concrete.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Acme Electric Corporation; Power Distribution Products Division.
2. Cooper Industries; Cooper Power Systems Division.
3. Cutler-Hammer.
4. Federal Pacific Transformer Company; Division of Electro-Mechanical Corp.
5. GE Electrical Distribution & Control.
6. Hammond Manufacturing; Transformer Group.
7. Kuhlman Electric Corporation.
8. Pauwels Transformers.
9. Pioneer Transformers.
10. Siemens Energy & Automation, Inc.

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11. Square D; Schneider Electric.
12. Uptegraff, R. E. Mfg. Co.
13. Virginia Transformer Corp.

2.2 PAD-MOUNTED, LIQUID-FILLED TRANSFORMERS

A. Description: ANSI C57.12.13,IEEE C57.12.00, pad-mounted, 2-winding transformers. Stainless-steel tank base and cabinet.

B. Insulating Liquid: Less flammable, edible-seed-oil based, and UL listed as complying with NFPA 70 requirements for fire point of not less than 300 deg C when tested according to ASTM D 92. Liquid shall be biodegradable and nontoxic.

C. Insulation Temperature Rise: 65 deg C when operated at rated kVA output in a 40 deg C ambient temperature. Transformer shall be rated to operate at rated kilovolt ampere in an average ambient temperature of 30 deg C over 24 hours with a maximum ambient temperature of 40 deg C without loss of service life expectancy.

D. Basic Impulse Level: 60 kV.

E. Full-Capacity Voltage Taps: Four 2.5 percent taps, 2 above and 2 below rated high voltage; with externally operable tap changer for de-energized use and with position indicator and padlock hasp.

F. High-Voltage Switch: 200 A, make-and-latch rating of 10-kA RMS, symmetrical, arranged for radial feed with 3-phase, 2-position, gang-operated, load-break switch that is oil immersed in transformer tank with hook-stick operating handle in primary compartment.

G. Primary Fuses: 150-kV fuse assembly with fuses complying with IEEE C37.47.
   1. Current-limiting type in dry-fuse holder wells, mechanically interlocked with liquid-immersed switch in transformer tank to prevent disconnect under load.
   2. Internal liquid-immersed cartridge fuses.
   3. Bay-O-Net liquid-immersed fuses that are externally replaceable without opening transformer tank.
   4. Bay-O-Net liquid-immersed fuses in series with liquid-immersed current-limiting fuses. Delete paragraph below if dead-front arrangement is selected. Select and specify arrester rating to suit primary system parameters. See Editing Instruction No. 7 in the Evaluations for discussion on applying surge arresters.

H. Surge Arresters: Distribution class, one for each primary phase; complying with IEEE C62.11 and NEMA LA 1; support from tank wall within high-voltage compartment. Transformers shall have three arresters for radial-feed circuits.

I. High-Voltage Terminations and Equipment: Live front with externally clamped porcelain bushings and cable connectors suitable for terminating primary cable.

J. High-Voltage Terminations and Equipment: Dead front with universal-type bushing wells for dead-front bushing-well inserts, complying with IEEE 386 and including the following:
   1. Bushing-Well Inserts: One for each high-voltage bushing well.
   2. Surge Arresters: Dead-front, elbow-type, metal-oxide-varistor units.
   3. Parking Stands: One for each high-voltage bushing well.
   4. Portable Insulated Bushings: Arranged for parking insulated, high-voltage, load-break cable terminators; one for each primary feeder conductor terminating at transformer.

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K. Accessories:
1. Drain Valve: 1 inch (25 mm), with sampling device.
2. Dial-type thermometer.
3. Liquid-level gage.
4. Pressure-vacuum gage.
5. Pressure Relief Device: Self-sealing with an indicator.
6. Mounting provisions for low-voltage current transformers.
7. Mounting provisions for low-voltage potential transformers.
8. Busway terminal connection at low-voltage compartment.
9. Alarm contacts for gages and thermometer listed above.

2.3 IDENTIFICATION DEVICES

A. Nameplates: Engraved, laminated-plastic or metal nameplate for each transformer, mounted with corrosion-resistant screws. Nameplates and label products are specified in Section 260553 "Identification for Electrical Systems."

2.4 SOURCE QUALITY CONTROL

A. Factory Tests: Perform design and routine tests according to standards specified for components. Conduct transformer tests according to ANSI C57.12.50 IEEE C57.12.90.

B. Factory Tests: Perform the following factory-certified tests on each transformer:
1. Resistance measurements of all windings on rated-voltage connection and on tap extreme connections.
2. Ratios on rated-voltage connection and on tap extreme connections.
3. Polarity and phase relation on rated-voltage connection.
4. No-load loss at rated voltage on rated-voltage connection.
5. Excitation current at rated voltage on rated-voltage connection.
6. Impedance and load loss at rated current on rated-voltage connection and on tap extreme connections.
7. Applied potential.
8. Induced potential.
9. Temperature Test: If transformer is supplied with auxiliary cooling equipment to provide more than one rating, test at lowest kilovolt-ampere Class OA or Class AA rating and highest kilovolt-ampere Class OA/FA or Class AA/FA rating.
   a. Temperature test is not required if record of temperature test on an essentially duplicate unit is available.
10. Owner will witness all required factory tests. Notify Architect at least 14 days before date of tests and indicate their approximate duration.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions for compliance with requirements for medium-voltage transformers.

B. Examine roughing-in of conduits and grounding systems to verify the following:
1. Wiring entries comply with layout requirements.
2. Entries are within conduit-entry tolerances specified by manufacturer and no feeders will have to cross section barriers to reach load or line lugs.

C. Examine concrete bases for suitable mounting conditions where transformers will be installed.

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D. Verify that ground connections are in place and that requirements in Section 260526 "Grounding and Bonding for Electrical Systems" have been met. Maximum ground resistance shall be 5 ohms at location of transformer.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install transformers on concrete bases.
   1. Anchor transformers to concrete bases according to manufacturer's written instructions, seismic codes at Project, and requirements in Section 260529 "Hangers and Supports for Electrical Systems."
   2. Construct concrete bases of dimensions indicated, but not less than 4 inches (100 mm) larger in both directions than supported unit and 4 inches (100 mm) high.
   3. Use 3000-psi (20.7-MPa), 28-day compressive-strength concrete and reinforcement as specified in Section 033000 "Cast-in-Place Concrete."
   4. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

B. Maintain minimum clearances and workspace at equipment according to manufacturer's written instructions and NFPA 70.

3.3 IDENTIFICATION

A. Identify field-installed wiring and components and provide warning signs as specified in Section 260553 "Identification for Electrical Systems."

3.4 CONNECTIONS

A. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."

B. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

3.5 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust field-assembled components and equipment installation, including connections. Report results in writing.

B. Perform the following field tests and inspections and prepare test reports:
   1. After installing transformers but before primary is energized, verify that grounding system at substation is tested at specified value or less.
   2. After installing transformers and after electrical circuitry has been energized, test for compliance with requirements.
   3. Perform visual and mechanical inspection and electrical test stated in NETA ATS. Certify compliance with test parameters.
   4. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. Remove and replace malfunctioning units and retest as specified above.

D. Test Reports: Prepare written reports to record the following:

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1. Test procedures used.
2. Test results that comply with requirements.
3. Test results that do not comply with requirements and corrective actions taken to achieve compliance with requirements.

3.6 FOLLOW-UP SERVICE

A. Voltage Monitoring and Adjusting: If requested by Owner, perform the following voltage monitoring after Substantial Completion but not more than six months after Final Acceptance:
   1. During a period of normal load cycles as evaluated by Owner, perform seven days of three-phase voltage recording at secondary terminals of each transformer. Use voltmeters with calibration traceable to National Institute of Science and Technology standards and with a chart speed of not less than 1 inch (25 mm) per hour. Voltage unbalance greater than 1 percent between phases, or deviation of any phase voltage from nominal value by more than plus or minus 5 percent during test period, is unacceptable.
   2. Corrective Actions: If test results are unacceptable, perform the following corrective actions, as appropriate:
      a. Adjust transformer taps.
      b. Prepare written request for voltage adjustment by electric utility.
   3. Retests: After corrective actions have been performed, repeat monitoring until satisfactory results are obtained.
   4. Report: Prepare written report covering monitoring and corrective actions performed.

END OF SECTION 261200

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1

PANEL "H1"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE & TYPE:	LOCATION:	CABINET:	NOTES:
277/480 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	125/3 MAIN LUGS ONLY		SURFACE	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR

CKT	OCP		LOAD (kVA)			DESCRIPTION	LCL	PHASE LOAD			LCL	DESCRIPTION	LOAD (kVA)			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR		kVA	A	B	C	kVA		LTG	CO	PWR	AMP	POLE	NO
1	20	3			2.2	AIR COMP	2.2	23.9			21.7	L1 TRANSFORMER	0.0	6.2	15.5	100	3	2
3	–	–			2.2	–	2.2		20.4		18.2	–	0.0	4.0	14.2	–	–	4
5	–	–			2.2	–	2.2			10.9	8.8	–	0.5	4.4	3.8	–	–	6
7	20	1	0.7			EXTERIOR LIGHTS	0.9	2.7			2.5	S. BAY LIGHTS	2.0			20	1	8
9	20	1	1.4			OFC AND MZ LIGHTS	1.8		3.9		3.1	N. BAY LIGHTS	2.5			20	1	10
11	20	1				SPARE	0.0			0.0	0.0	SPARE				20	1	12
13	20	1				SPARE	0.0	0.0			0.0	SPARE				20	1	14
15	20	1				SPARE	0.0		0.0		0.0	SPARE				20	1	16
17	20	1				SPARE	0.0			0.0	0.0	SPARE				20	1	18
19	20	1				SPARE	0.0	0.0			0.0	SPARE				20	1	20
21	20	1				SPARE	0.0		0.0		0.0	SPARE				20	1	22
23	20	1				SPARE	0.0			0.0	0.0	SPARE				20	1	24
25	20	1				SPARE	0.0	0.0			0.0	SPARE				20	1	26
27	20	1				SPARE	0.0		0.0		0.0	SPARE				20	1	28
29	20	1				SPARE	0.0			0.0	0.0	SPARE				20	1	30
31	20	1				SPARE	0.0	0.0			0.0	SPARE				20	1	32
33	20	1				SPARE	0.0		0.0		0.0	SPARE				20	1	34
35	20	1				SPARE	0.0			0.0	0.0	SPARE				20	1	36
37	20	1				SPARE	0.0	0.0			0.0	TVSS				50	3	38
39	20	1				SPARE	0.0		0.0		0.0	–				–	–	40
41	20	1				SPARE	0.0			0.0	0.0	–				–	–	42

TOTALS:

CONNECTED kVA PER PHASE	27	24	11	CONNECTED TOTAL kVA	62
CONNECTED AMPS PER PHASE	96	88	39	CONNECTED AVERAGE AMPS PER PHASE	74

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING 7kVA @125% =	9 kVA	ALL OTHER LOADS @100% =	40 kVA	DIVERSIFIED TOTAL kVA =	61
RECEPTACLES 10kVA @100% =	10 kVA	25% OF LARGEST MOTOR =	0 kVA	AVERAGE AMPS PER PHASE =	74
REMAINDER 5kVA @ 50% =	2 kVA				

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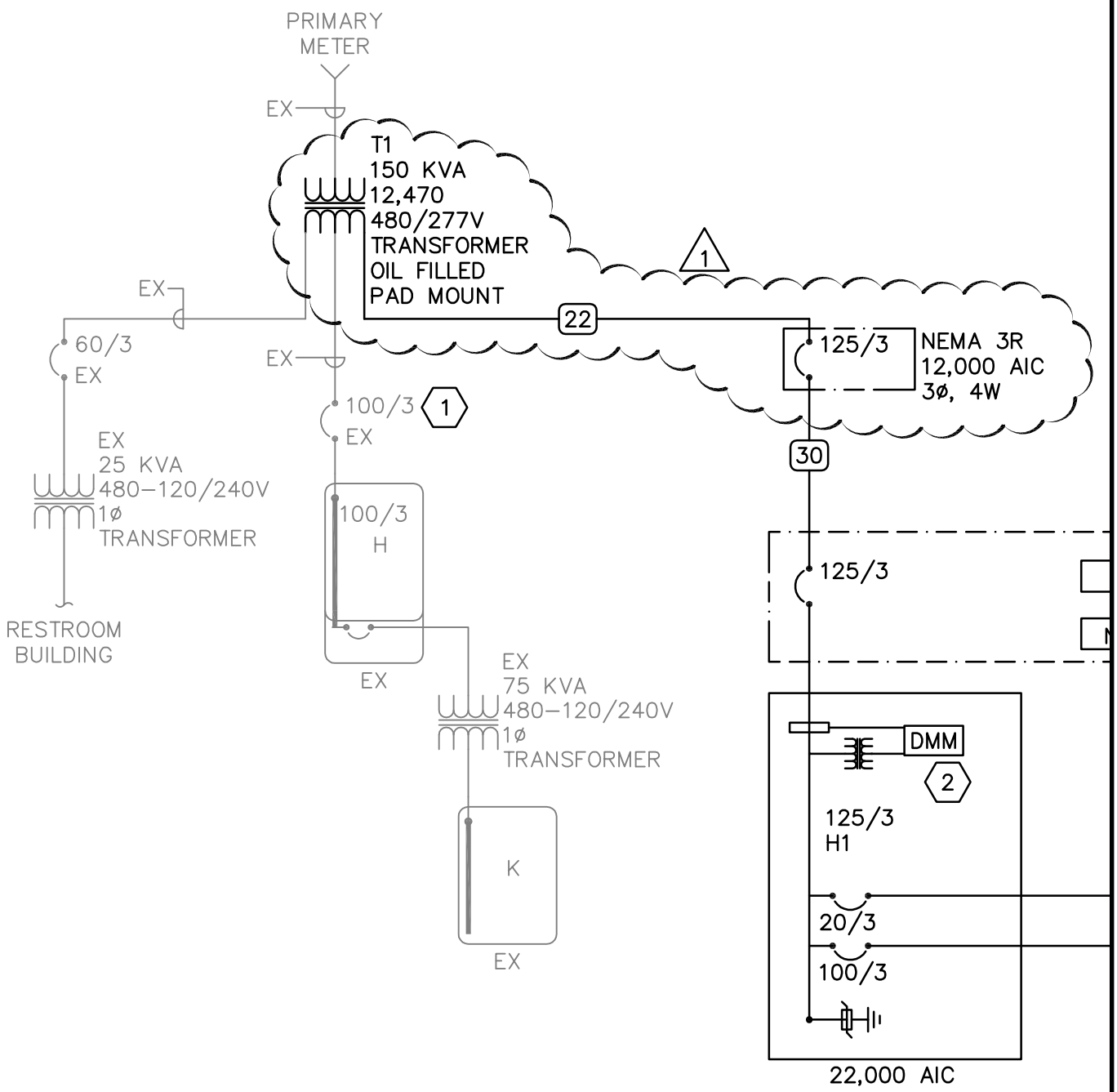
PROJ NO:	20100339
DRAWN BY:	STS
CHECKED BY:	PEJ

PROJECT
GREAT SALT LAKE
MARINA MAINTENANCE BUILDING

SHEET TITLE
ELECTRICAL SCHEDULES

SCALE
NTS

EE-601-R1-1



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PROJECT
GREAT SALT LAKE
MARINA MAINTENANCE BUILDING

SHEET TITLE
ONE LINE DIAGRAM

SCALE
NTS

EP-601-R1-1

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SHEET KEYNOTES

1. PROVIDE A NEW 150 KVA, 12,470–480/277 VOLT TRANSFORMER. PROVIDE LUGS ON THE SWCONDARY SIDE WHICH WILL ALLOW THE CONNECTION OF THREE SERVICES (MAXIMUM SIZE PER SERVICE FEEDER IS 4/0 CU). REPLACE THE EXISTING 75 KVA TRANSFORMER. SCHEDULE OUTAGE WITH OWNER TWO WEEKS IN ADVANCE. 1
2. SEE PANEL SCHEDULES FOR BREAKER REQUIREMENTS.
3. INSTALL 125/3 AMP CIRCUIT BREAKER ADJACENT TO TRANSFORMER. 1

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PROJECT
GREAT SALT LAKE
MARINA MAINTENANCE BUILDING

SHEET TITLE
ONE LINE DIAGRAM

SCALE
NTS

EP-601-R1-2

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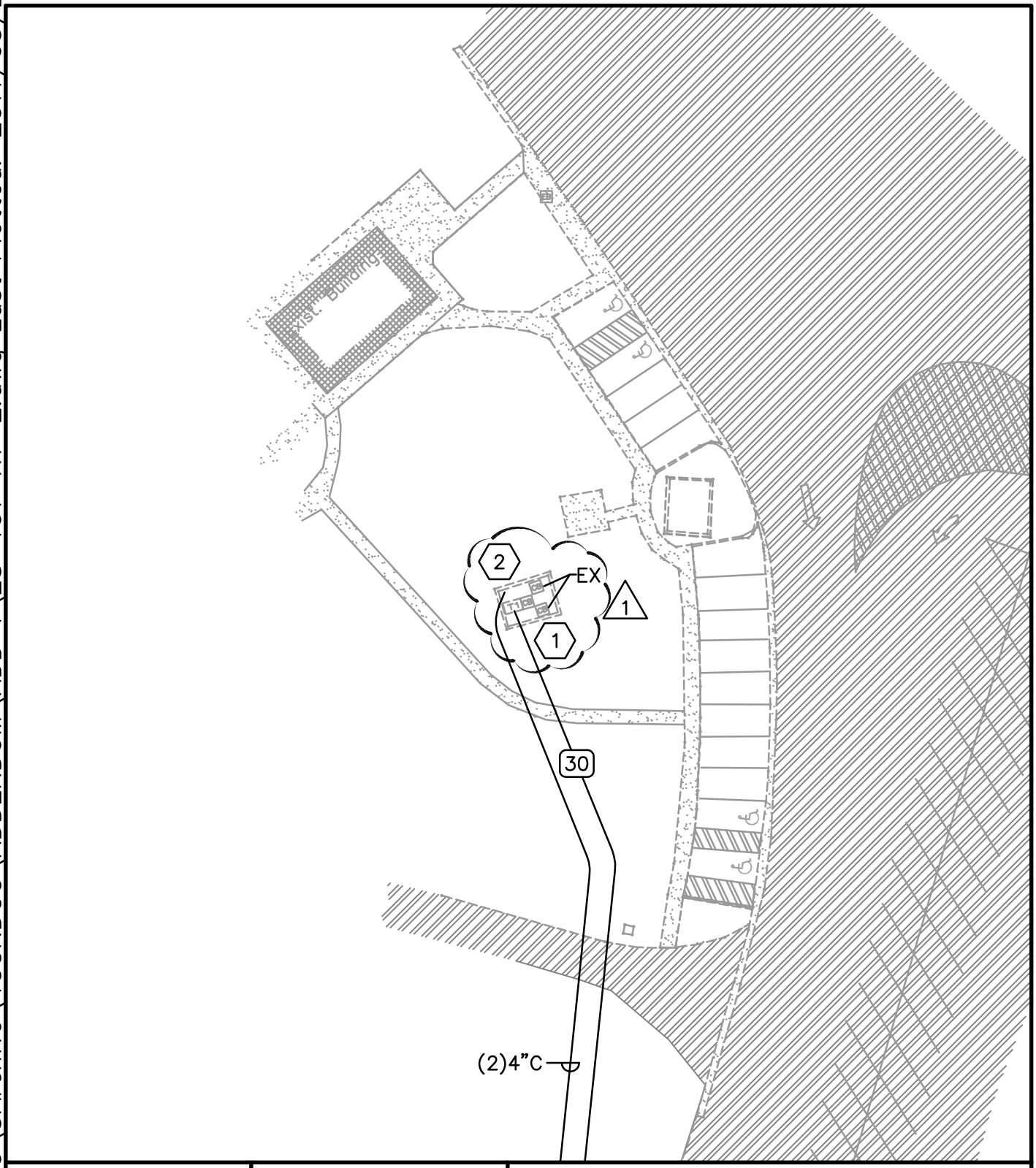

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PROJECT
GREAT SALT LAKE
MARINA MAINTENANCE BUILDING

SHEET TITLE
ELECTRICAL SITE PLAN

SCALE
1" = 40'-0"

ES-101-R1-1

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SHEET KEYNOTES

1. REPLACE EXISTING TRANSFORMER WITH A 150 KVA, 12,470–480/277 VOLT TRANSFORMER. RECONNECT THE TWO EXISTING 100/3 AMP BREAKERS TO SECONDARY SIDE OF TRANSFORMER. PROVIDE AN ADDITIONAL 150/3 AMP BREAKER FOR THE SECONDARY PROTECTION FOR THE FEEDER TO THE NEW MAINTENANCE BUILDING IN TRANSFORMER ENCLOSURE. ALL NEW ELECTRICAL GEAR IN ENCLOSURE MUST BE NEMA 3R. REPAIR ANY DAMAGE TO RAILROAD TIES SURROUNDING TRANSFORMER DUE TO CONSTRUCTION. 1
2. RUN TWO 4" CONDUITS FROM PHONE PEDESTAL TO PHONE BOARD. COORDINATE WITH QWEST COMMUNICATIONS.

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PROJECT
GREAT SALT LAKE
MARINA MAINTENANCE BUILDING

SHEET TITLE
ELECTRICAL SITE PLAN

SCALE
1" = 40'–0"

ES-101-R1-2

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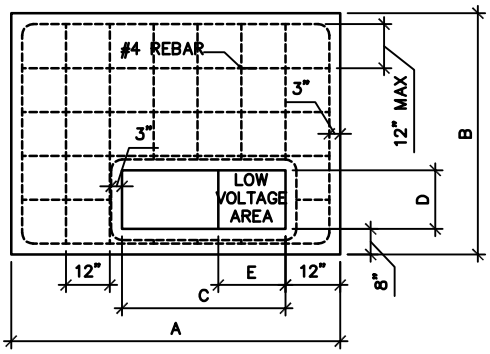

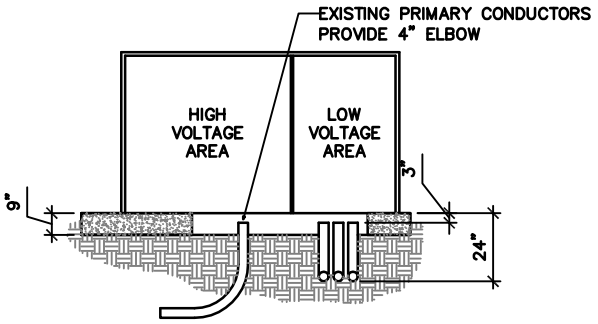

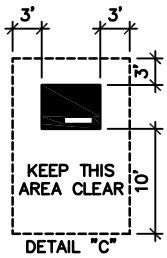

TRANSFORMER PAD DIMENSION CHART					
TRANSFORMER RATING	DIMENSIONS				
	A	B	C	D	E
75–500 KVA	96"	78"	48"	15"	20"

CONTRACTOR GENERAL NOTES:

1. SITE PREPARATION. ALL SOIL BENEATH THE PAD SITE MUST BE COMPACTED AND LEVEL PRIOR TO SETTING OR POURING THE PAD TO PREVENT SETTLING.

2. CONCRETE. STEEL REINFORCEMENT SHALL BE #4 BARS, PLACED ACCORDING TO THE DRAWING. THE PAD MUST BE POURED AT LEAST SEVEN FULL DAYS PRIOR TO SETTING THE TRANSFORMER. THE FINISHED SURFACE MUST BE COMPLETELY FLAT AND LEVEL. SEE STANDARD 73 036 FOR CONCRETE SPECIFICATIONS.

3. PREFABRICATION. THE PAD MAY EITHER BE CONSTRUCTED ON THE SITE OR PREFABRICATED ACCORDING TO SPECIFICATIONS.

4. CONDUIT WINDOW LAYOUT. LOW VOLTAGE CONDUITS SHALL BE FORMED AS TIGHTLY AS POSSIBLE AGAINST THE RIGHT SIDE OF THE OPENING AND SHALL IN NO CASE EXTEND FURTHER THAN 20" FROM THE RIGHT SIDE OF THE CONDUIT WINDOW ON THE SMALL PAD OR 30" ON THE LARGE PAD. NO MORE THAN 8 CONDUITS WILL BE USED ON THE LOW VOLTAGE SIDE (NOT INCLUDING THE METERING CONDUIT). DO NOT PUT ANY CONCRETE IN OR UNDER THE CONDUIT WINDOW. USE SOIL TO SEPARATE CONDUITS. BELL ENDS ARE REQUIRED FOR ALL METAL CONDUIT, BUT NOT FOR PLASTIC CONDUIT.

5. CLEARANCES. THE FRONT OF THE PAD SHOULD ALWAYS FACE AWAY FROM ADJACENT STRUCTURES AND BE FREE OF OBSTRUCTIONS. AT LEAST 3 FEET MUST SEPARATE THE EDGES OF THE PAD FROM ANY ADJACENT STRUCTURE. THE EDGES OF THE PAD MUST BE AT LEAST 10 FEET FROM ANY COMBUSTIBLE STRUCTURE. IF AN ADJACENT STRUCTURE HAS ANY OVERHANG OR EAVE WITHIN 27 VERTICAL FEET OF THE TOP OF THE PAD, CLEARANCES MUST BE MEASURED FROM THE OUTSIDE OF THE OVERHANG. THE PAD MUST NOT BE PLACED IN AN AREA 10 FEET IN LINE WITH OR 3 FEET TO EITHER SIDE OF ANY WINDOW IN AN ADJACENT STRUCTURE (SEE DETAIL "A"). CLEARANCE FOR A DOOR MUST BE 20 FEET IN LINE WITH IT AND 10 FEET ON THE SIDES (SEE DETAIL "B"). PADS MUST NOT BE PLACED WITHIN 15 FEET OF ANY VALVE OR WITHIN 20 FEET OF ANY PLUMBING OR STORAGE FACILITY CONTAINING FLAMMABLE MATERIAL. NO WALLS, FENCES, OR ANY OTHER OBSTRUCTIONS WILL BE PLACED WITHIN 3 FEET OF THE SIDES OR BACK OF THE PAD, OR WITHIN 10 FEET OF THE FRONT OF THE PAD (SEE DETAIL "C"). THE AREA IN FRONT OF THE PAD MUST HAVE 10 FEET OF CLEAR, LEVEL WORKING AREA FOR MAINTENANCE OF THE TRANSFORMER. THE PAD MAY NOT BE PLACED IN LINE WITH AN AIR INTAKE WITHIN 32 VERTICAL FEET OF THE SURFACE PAD. ALSO VERTICALLY, IT MUST NOT BE PLACED WITHIN 12 FEET OF A DOOR OR WINDOW.

6. COORDINATE EXACT OPENING REQUIREMENTS WITH TRANSFORMER TO BE INSTALLED.

7. IF THE TRANSFORMER WILL NOT COVER THE CABLE OPENINGS ON THESE STANDARD PADS, SEAL THE SIDES OF THE CABLE OPENING TO FIT THE TRANSFORMER USING SAKRETE OR COMPARABLE.

2 TRANSFORMER PAD DETAIL

NTS

1

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ES-101-R1-3