

ISSUED FOR:

REVISION:

▲

▲

▲

▲

PROJECT INFORMATION

OWNER: CAREFREE CHURCH
 8025 EAST CAREFREE HIGHWAY
 PHOENIX, ARIZONA
 PHONE: 480 488 6565

PROJECT DESCRIPTION:
 THE ADDITION OF A BAPTISTRY POOL
 AND EQUIPMENT AREA

ZONING: RES-35
 GROSS SITE AREA: 829,543 SF
 NET SITE AREA: 762,288 SF

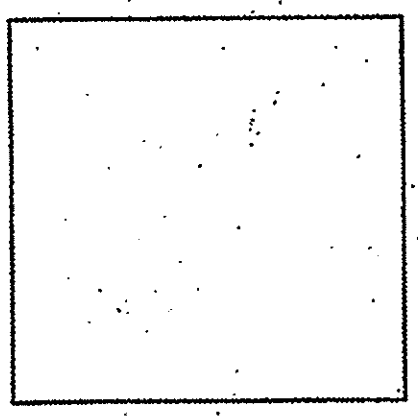
PROJECT NO: 2014-2

DRAWN BY: [Signature]

CHECKED BY:

ISSUE DATE:

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**CAREFREE CHURCH
 BAPTISTRY**

5025 EAST CAREFREE HIGHWAY
 PHOENIX, ARIZONA

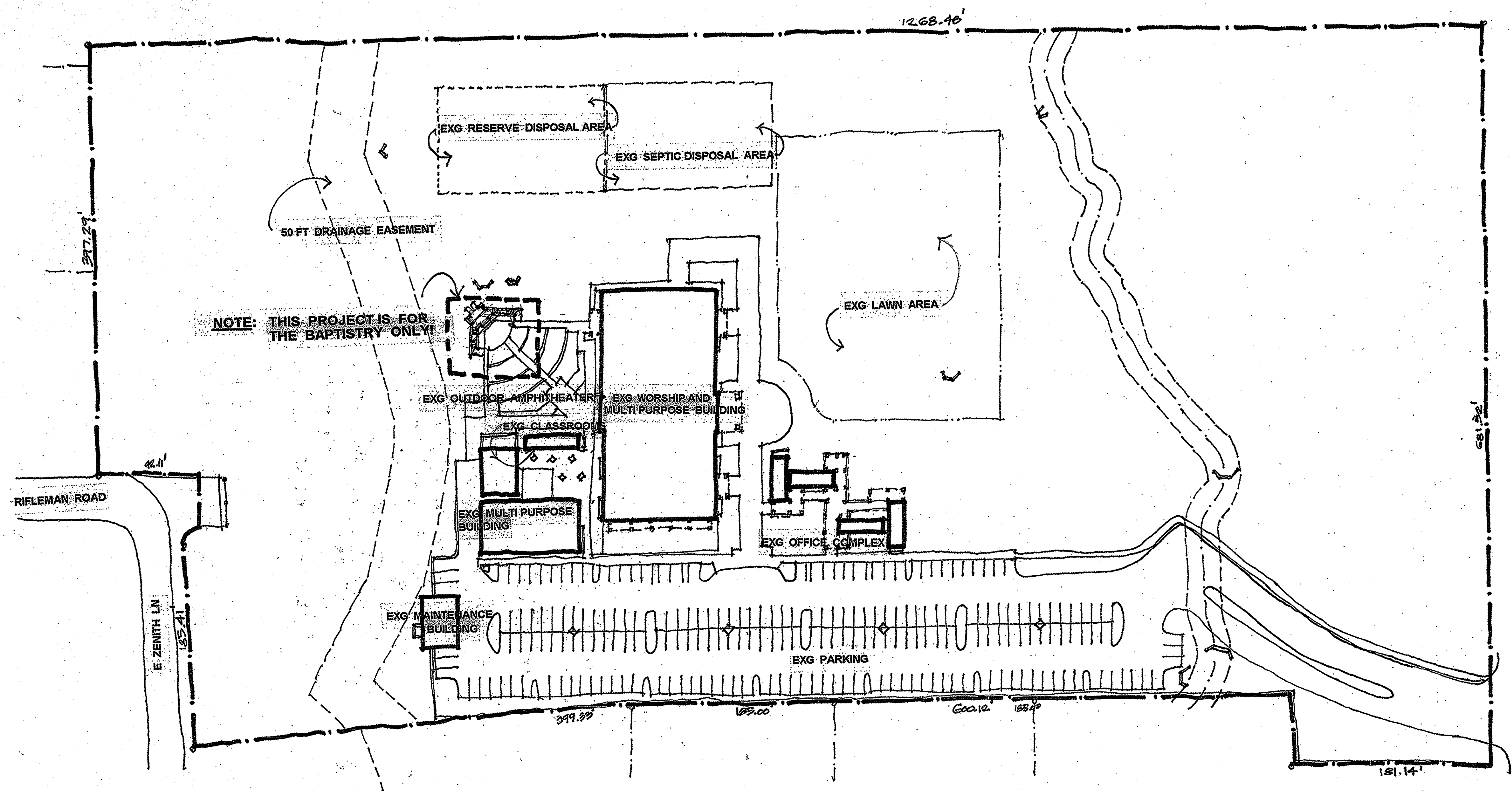


ASPEN, COLORADO
 81611
 (970) 925-5968
 FAX (970) 925-5993
 P.O. BOX 2302
 CAREFREE, ARIZONA
 85377
 7202 E. CAVE CREEK RD.
 UNIT 1A
 (480) 488-9858
 FAX (480) 636-1325
 WEB SITE
 www.augustreno.com
 EMAIL ADDRESS
 augtc@augustreno.com

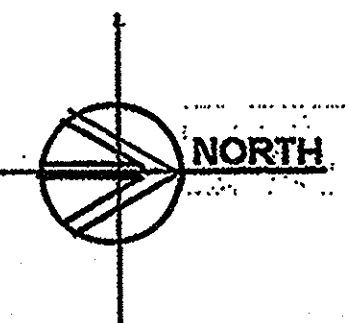
SHEET TITLE:

SHEET NO:

S P 1



NOTE: THIS PROJECT IS FOR THE BAPTISTRY ONLY!



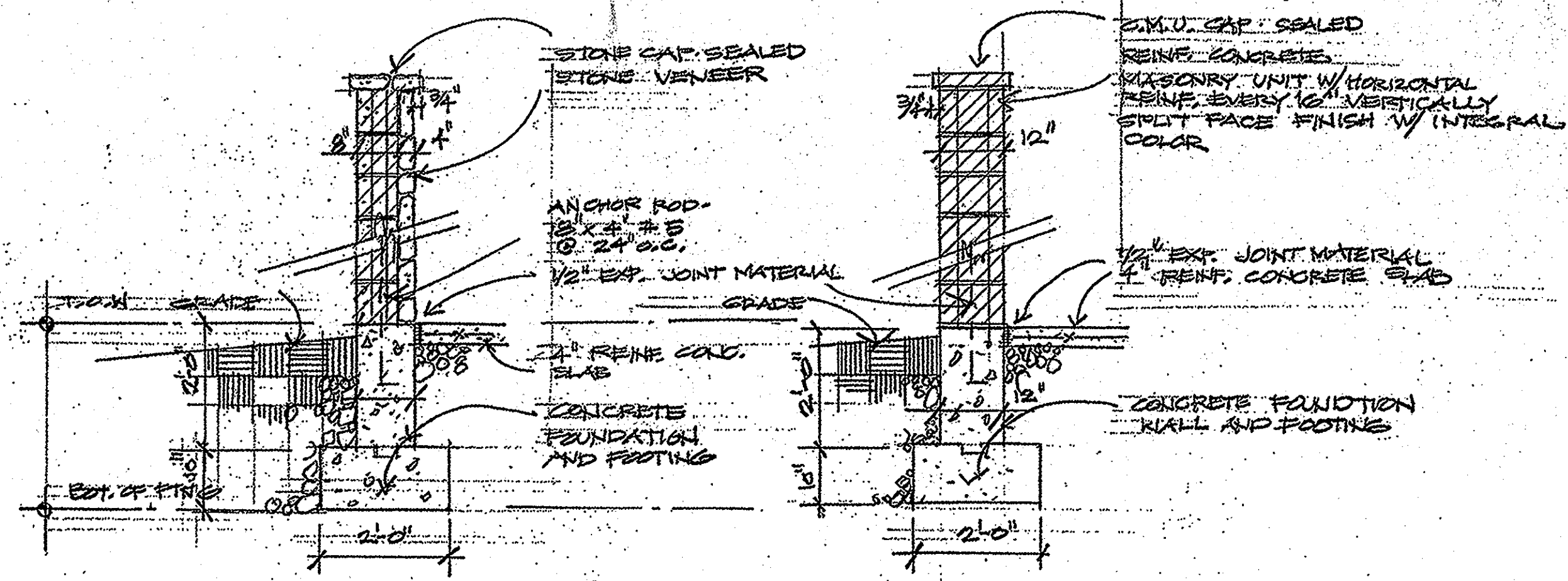
SITE PLAN

SCALE: 1"=50'

CAREFREE HIGHWAY

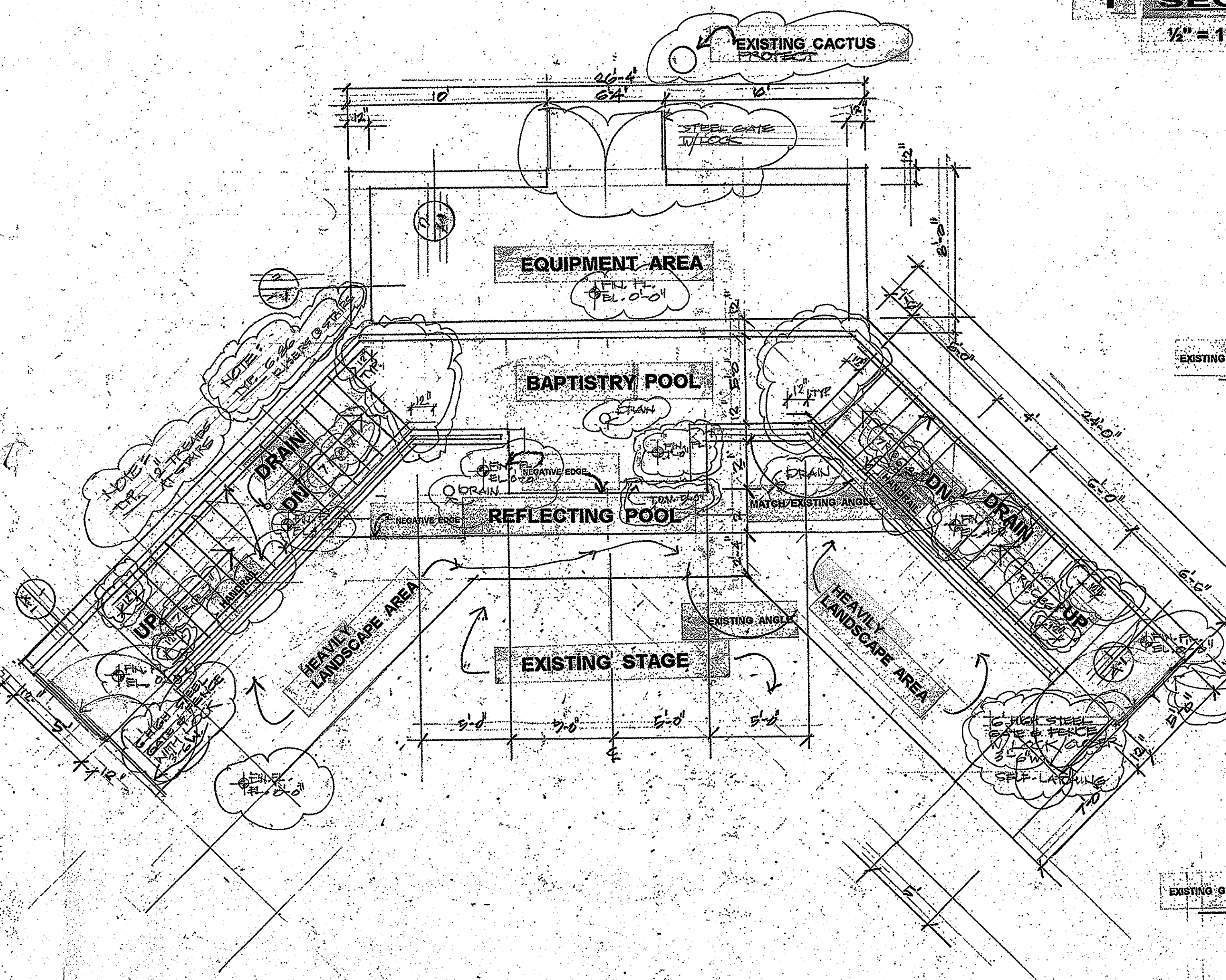
RIFLEMAN ROAD

E ZENITH LN

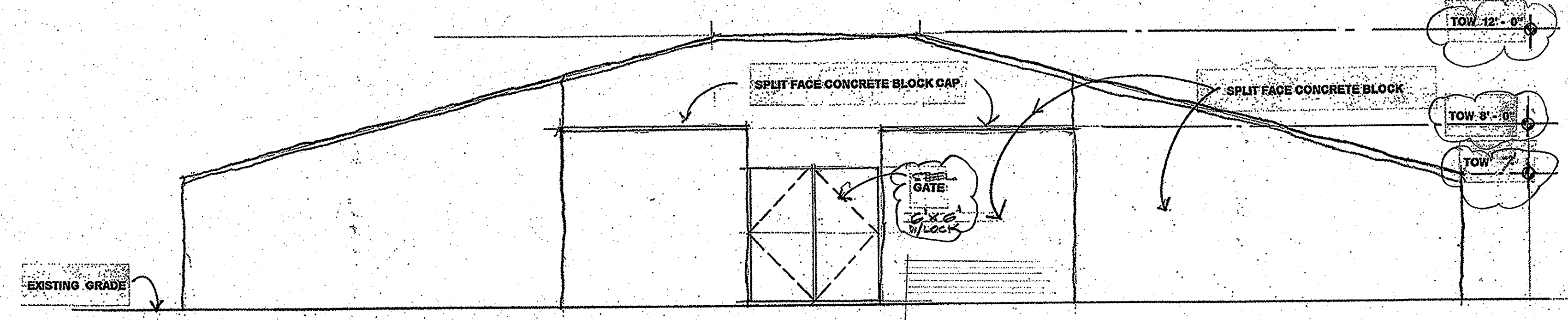


1 SECTION 1/2" = 1' - 0"

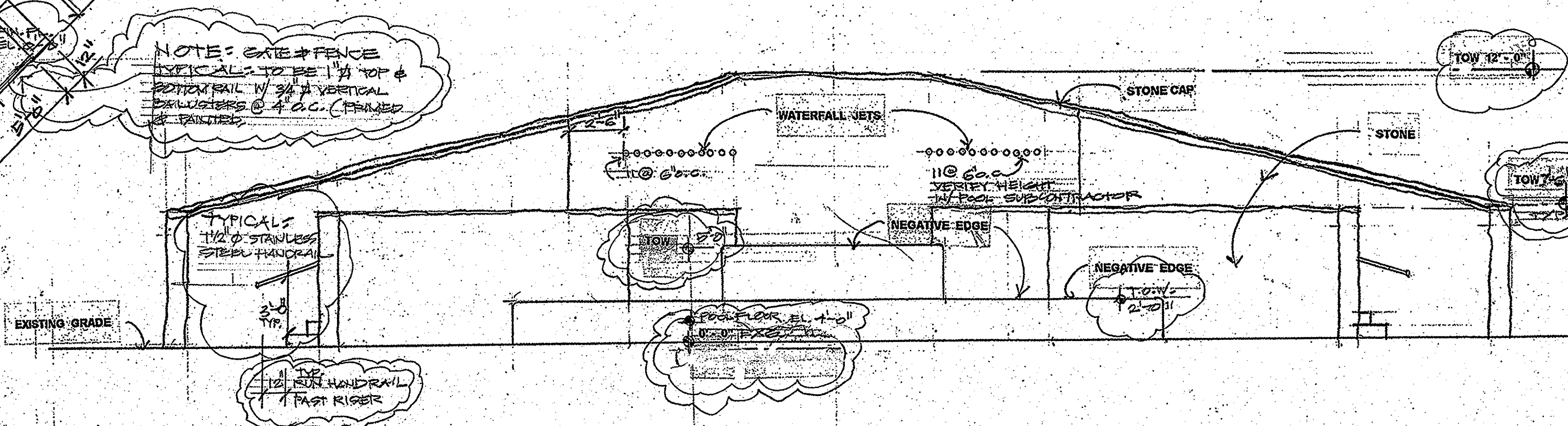
2 SECTION 1/2" = 1' - 0"



1 PLAN 1/4" = 1' - 0"



3 REAR ELEVATION 1/4" = 1' - 0"



2 ELEVATION 1/4" = 1' - 0"

ISSUED FOR:

CLIENT APPROVAL: X

REVISION: Δ 11-15-16 Δ 1-9-17 Δ Δ Δ

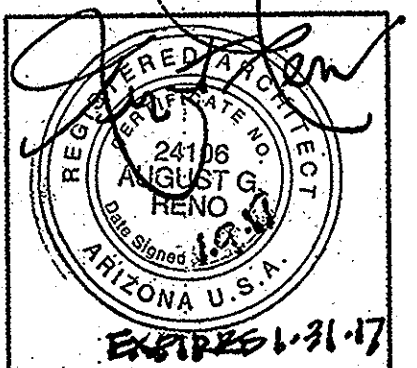
PROJECT NO: 2014-2

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CHECKED BY:

ISSUE DATE:

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CAREFREE CHURCH BAPTISTRY

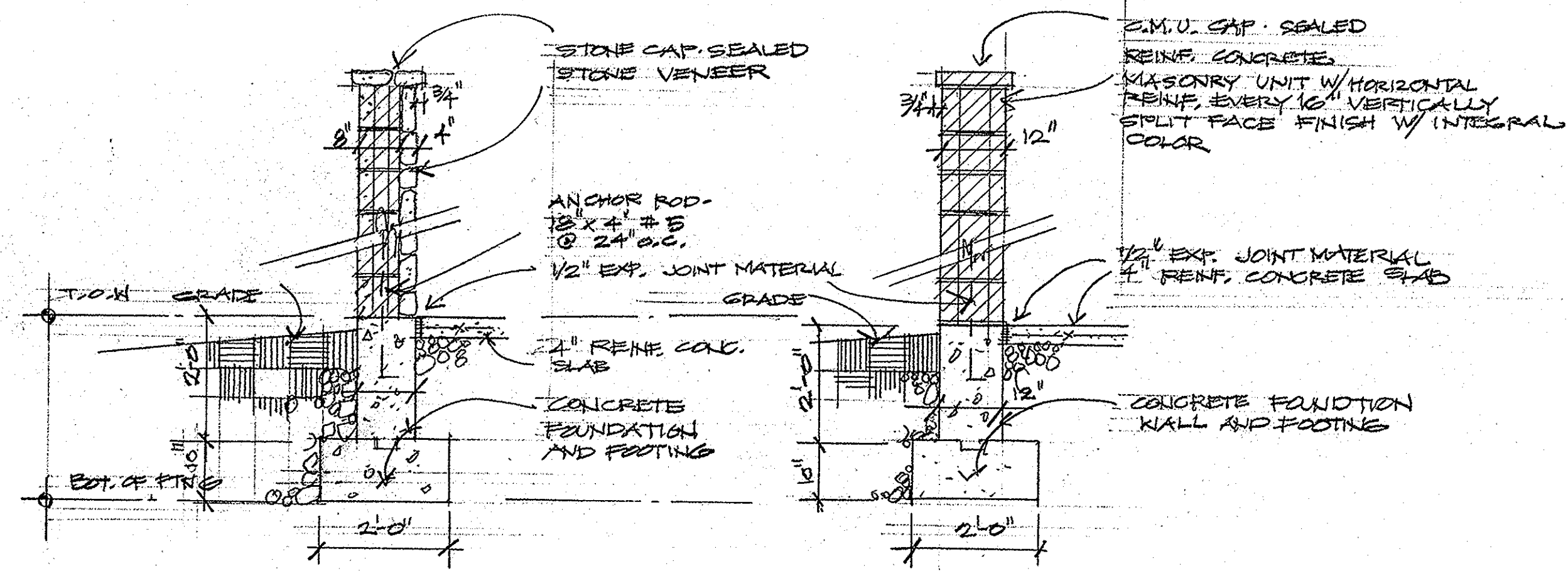
5025 EAST CAREFREE HIGHWAY

PHOENIX, ARIZONA

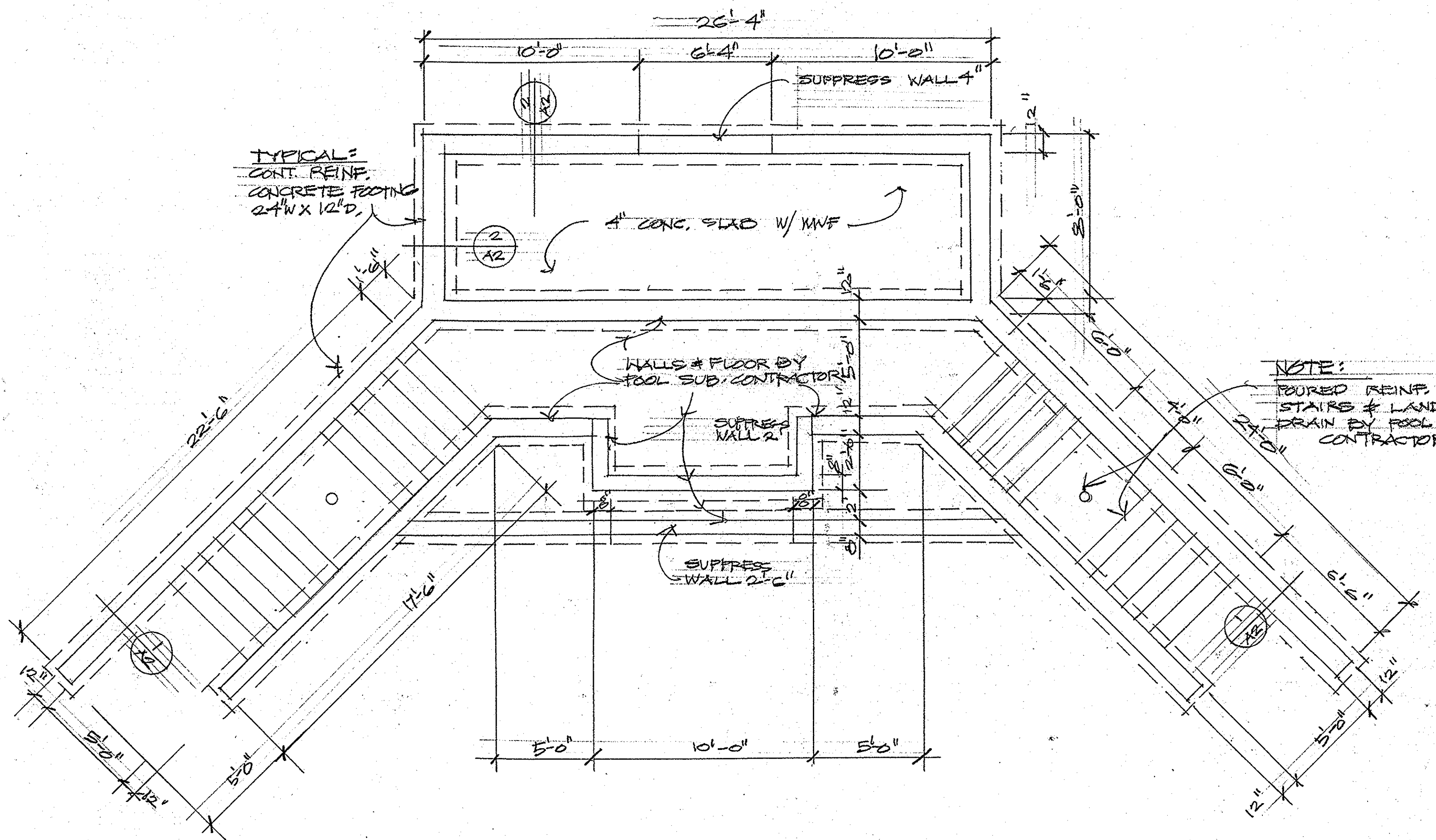


ARCHITECTURAL

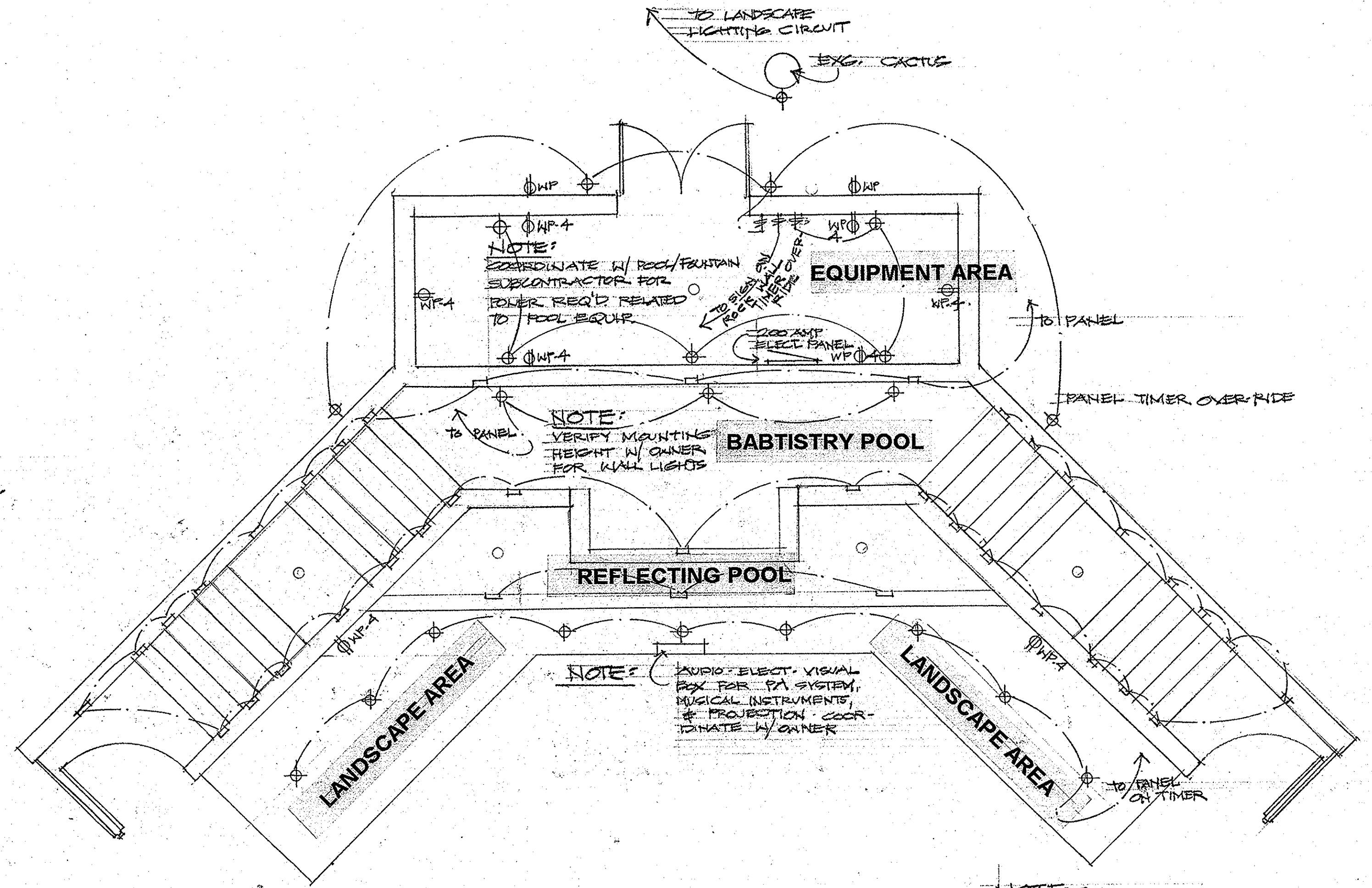
SHEET NO: A 1



1 SECTION 1/2" = 1'-0"
2 SECTION 1/2" = 1'-0"



3 FOUNDATION PLAN
 1/4" = 1'-0"



4 ELECTRICAL/LIGHTING PLAN
 1/4" = 1'-0"

ISSUED FOR:
 REVISION:
 PROJECT NO: 2014-2
 DRAWN BY: XGR
 CHECKED BY:
 ISSUE DATE:
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CAREFREE CHURCH
 BAPTISTRY
 5025 EAST CAREFREE HIGHWAY
 PHOENIX, ARIZONA

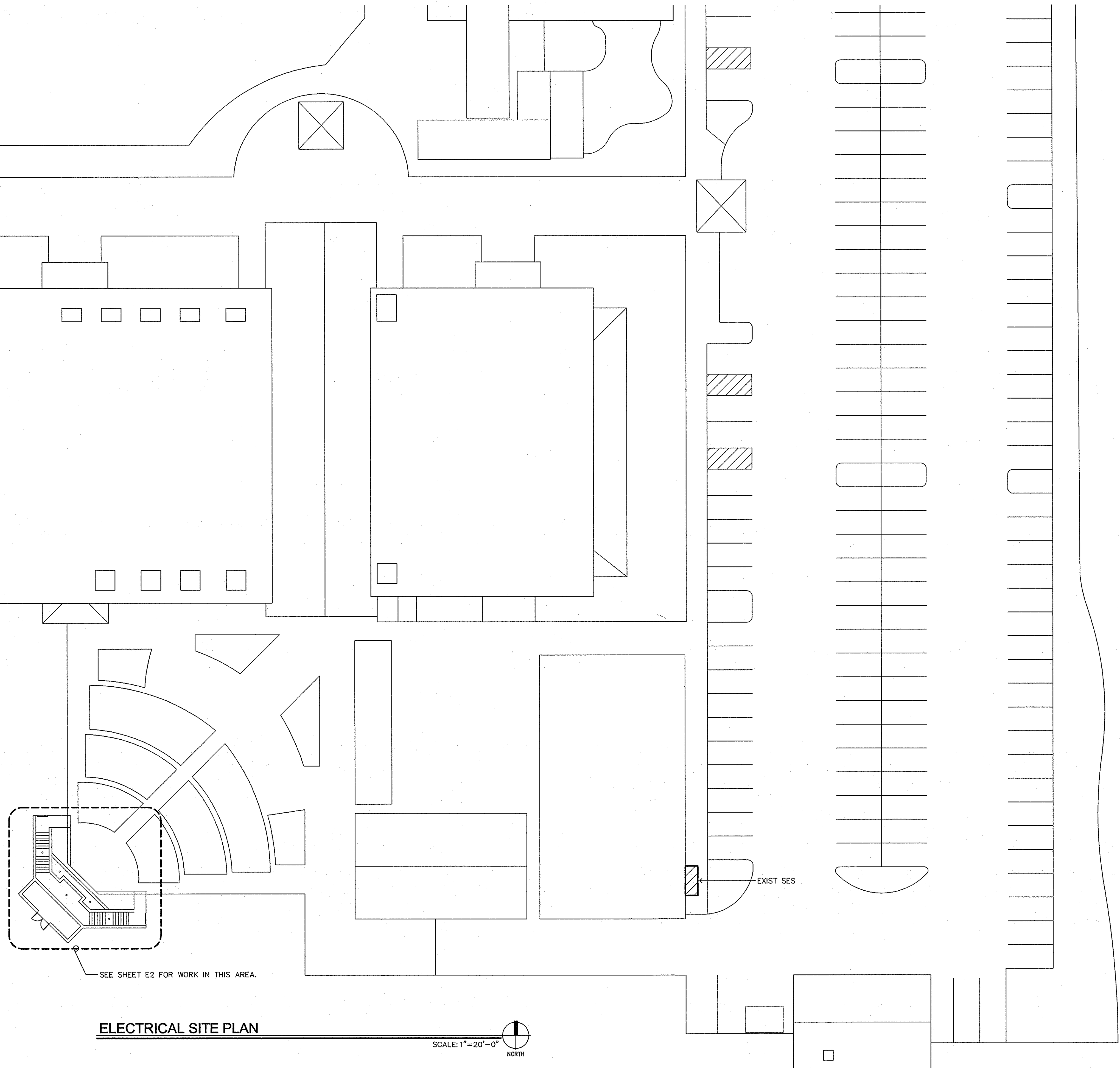


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 WEB SITE
 www.augustreno.com
 EMAIL ADDRESS
 augie@augustreno.com

SHEET TITLE:
 SHEET NO:
 A 2

SITE PLAN GENERAL NOTES:

1. ELECTRICAL CONTRACTOR SHALL CONTACT POWER CO. REGARDING EXACT LOCATION OF ALL PRIMARY SERVICE EQUIPMENT, TRENCH LOCATIONS, TRANSFORMER LOCATION, METER LOCATION, ETC.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE NECESSARY SECONDARY CONDUITS, POWER TRENCHING, BACKFILL, CONCRETE PADS FOR TRANSFORMERS AND SERVICE EQUIPMENT AND CONDUIT STUBS INTO TRENCH AS REQUIRED BY POWER CO. AND TO THEIR SPECIFICATIONS.
3. ELECTRICAL CONTRACTOR SHALL CONTACT TELEPHONE COMPANY REGARDING EXACT LOCATION OF ALL PRIMARY SERVICE EQUIPMENT, TRENCH LOCATIONS, ETC.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY TELEPHONE TRENCHING, BACKFILL, AND CONDUIT STUBS INTO TRENCH AS REQUIRED BY TELEPHONE COMPANY AND TO THEIR SPECIFICATIONS.
5. ALL WIRING SHALL BE COPPER UNLESS NOTED OTHERWISE. INSULATION SHALL BE TYPE 'XHHW' OR 'THHN/THWN'.
6. ALL WIRING FOR OUTSIDE LIGHTING SHALL BE A MINIMUM OF #10 COPPER WITH TYPE 'THWN' INSULATION. FOR UNDERGROUND CIRCUITS RUN IN P.V.C., PROVIDE A #10 COPPER BOND IN ADDITION TO CIRCUIT CONDUCTORS.
7. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND COMPLIANCE WITH THE UTILITY COMPANY'S REQUIREMENTS. WITH-IN TWO WEEKS AFTER AWARD OF CONTRACT, SUBMIT (2) COMPLETE SETS OF PLANS, INCLUDING PLOT OF SURVEY, TO UTILITY COMPANY FOR COORDINATION.
8. ROUTING OF INCOMING POWER AND TELEPHONE SERVICE SHOWN ARE FOR ESTIMATING PURPOSES ONLY. ACTUAL ROUTING, CONDUIT, TRENCH, AND PAD REQUIREMENTS SHALL BE AS SPECIFIED BY THE UTILITY COMPANY. CONFIRM ALL REQUIREMENTS WITH UTILITIES PRIOR TO INSTALLATION.



ELECTRICAL SITE PLAN

SCALE: 1"=20'-0"
NORTH

 mw engineering, llc Electrical Consulting Engineering Group	CAREFREE CHURCH BAPTISTRY 5025 E CAREFREE HWY, PHOENIX, AZ	DRAWN BY: RM	CHECKED BY: DW	DATE: 10/20/2016	SCALE: AS NOTED	JOB NO. 18088
						
E1						

REVISIONS:

1						
2						
3						
4						
5						

SOLID STATE AREA LIGHTING
RAZAR WALLMOUNT-LED
SPECIFICATIONS

OPTICAL HOUSING
Heavy cast low copper aluminum (A356 alloy; <0.2% copper) assembly with integral cooling fins. The Optical Panel mounting surface is milled flat (surface variance <±.003") to facilitate thermal transfer of heat to housing and cooling fins. The Optical Housing bolts to the Electrical Housing forming a unified assembly. The minimum wall thickness is .188".

ELECTRICAL HOUSING
Heavy cast low copper aluminum (A356 alloy; <0.2% copper) assembly. Minimum wall thickness is .188". Fixture Mounting Plate affixes to mounting surface over a recessed J-box. Electrical Housing anchors on the top edge of the Mounting Plate and stainless steel recessed socket head screws tighten the Electrical Housing to the Mounting Plate from the bottom.

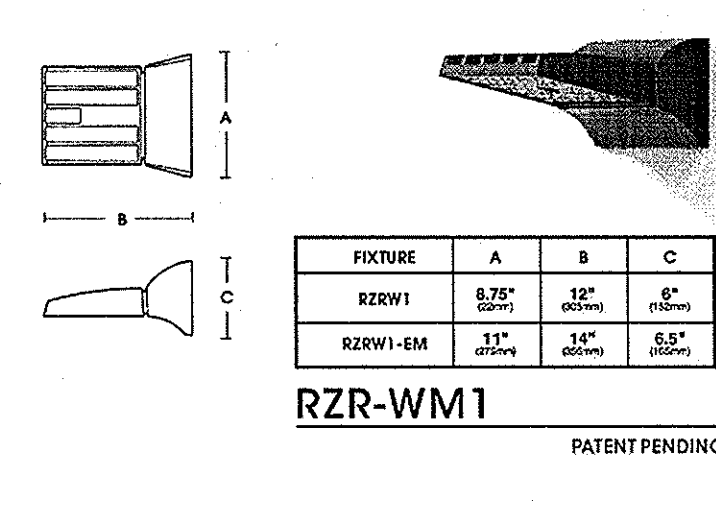
PLED® OPTICAL MODULES
Emitters (LED's) are arrayed on a metal core PCB panel with each emitter located on a copper thermal transfer pad and enclosed by an LED refractor. The asymmetric distributions have a microreflector inside the refractor which re-directs the house side emitter output towards the street side and functions as a house side shielding element. Refractors are injection molded H.T. acrylic. Each LED refractor is sealed to the PCB over an emitter and all refractors are retained by an aluminum frame. Any one Panel, or group of Panels in a luminaire, have the same optical pattern. LED refractors produce Type II, III, and Type IV site/area distributions as well as other specialty asymmetric distributions. Panels are field replaceable and field rotatable in 90° increments.

LED DRIVER(S)
Constant current electronic with a power factor of >.90 and a minimum operating temperature of -30°C/-22°F. Driver(s) is/are UL and cUL recognized and mounted to a driver assembly plate that has slotted holes to facilitate ease of assembly removal for fixture installation. Quick disconnects for incoming power and optical assembly power are provided. Drivers accept an input of 120-277V, 50/60Hz and utilize 0-10V dimming. 347V-480V, 50,60Hz also available on some models. Surge protector supplied for field installation at the most conveniently serviceable location.

LED EMITTERS
High output LED's are utilized with drive currents ranging from 250mA to 1050mA. 70CRI Minimum. LED's are available in standard Neutral White (4000K), or optional Cool White (5000K) or Warm White (3000K). Consult Factory for other LED options.

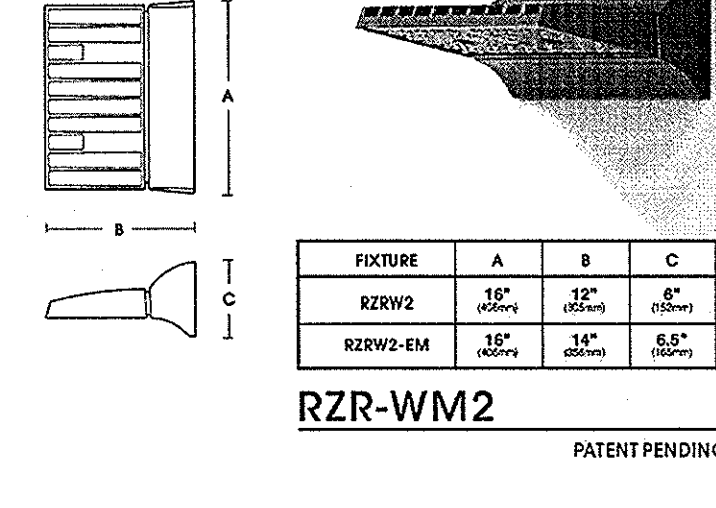
FINISH
Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.

PROJECT NAME: _____
PROJECT TYPE: **A**



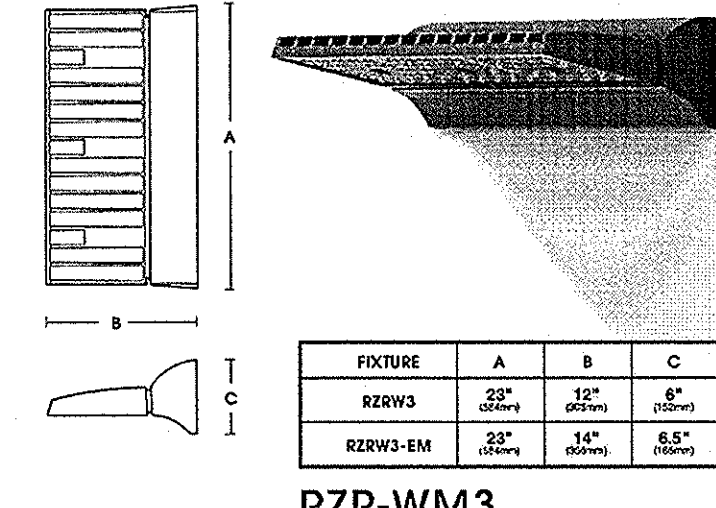
FIXTURE	A	B	C
RZRW1	8.75"	12"	6"
RZRW1-EM	11"	14"	6.5"

RZR-WM1 PATENT PENDING



FIXTURE	A	B	C
RZRW2	12"	12"	6"
RZRW2-EM	15"	14"	6.5"

RZR-WM2 PATENT PENDING



FIXTURE	A	B	C
RZRW3	22"	18"	6"
RZRW3-EM	22"	18"	6.5"

RZR-WM3 PATENT PENDING

U.S. Architectural Lighting

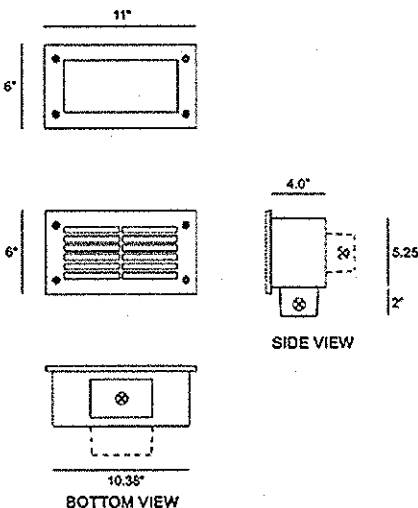
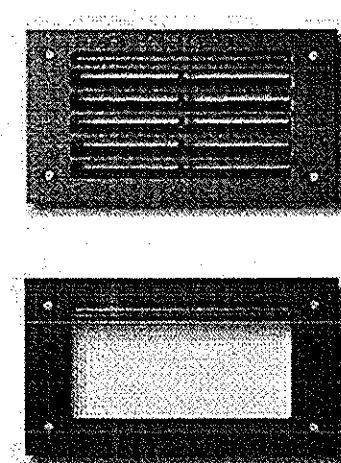
482 West Avenue, Suite 100, Phoenix, AZ 85009
Phone: 602.998.1100 Fax: 602.998.1101
www.usalighting.com

U.S. ARCHITECTURAL LIGHTING

2015336

REBELLE
ARCHITECTURAL LIGHTING

TYPE B



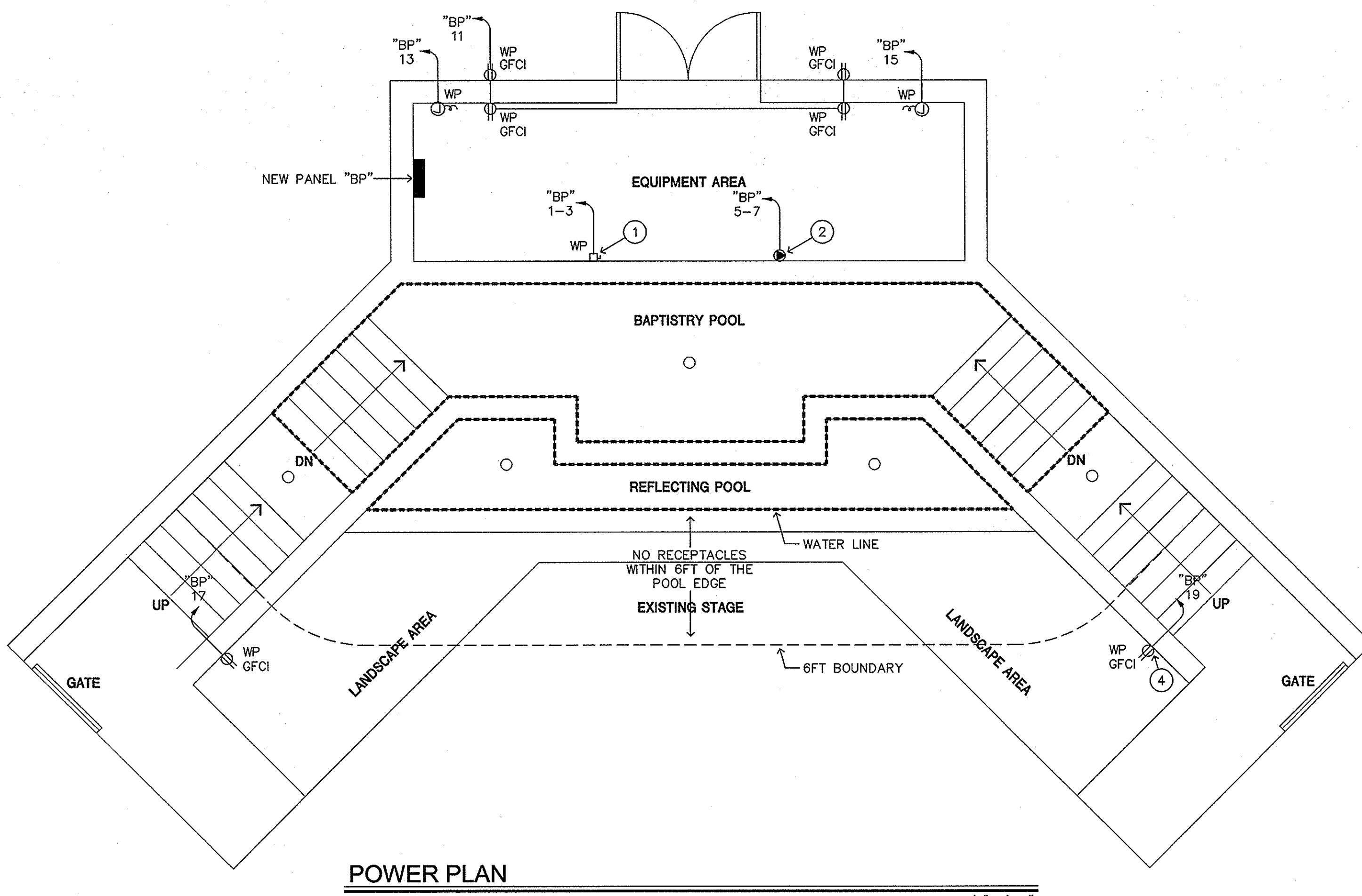
Sightlines 1645LED Midi Step/Path Low Level Area Light

MODEL	LED	COLOR TEMPERATURE	VOLT	FACEPLATE	OPTIONS	COLOR
1645	15L 40 x 0.28 watts	40° 4000K	120V	LV* lowered	FS fuse kit	WT white texture
7L	20 x 0.30 watts	30 3000K	208	PR open	DIM dimming driver (0-10V)	BT black texture
			240			SM silver metallic
			277			AN aluminum natural
						BZ bronze
						GM gunmetal
						WS white satin
						BM black matte
						RAL specify no.

*Standard configuration unless otherwise specified *Source lumens
SAMPLE CATALOG NUMBER: 1645 - 15L - 40 - 120 - LV - WT
Using this catalog number would order 1 model 1645 low level area light with 40 x 0.28 watt LEDs with a color temperature of 4000K wired to 120 volts and a lowered faceplate painted with white texture polyester powder coat.

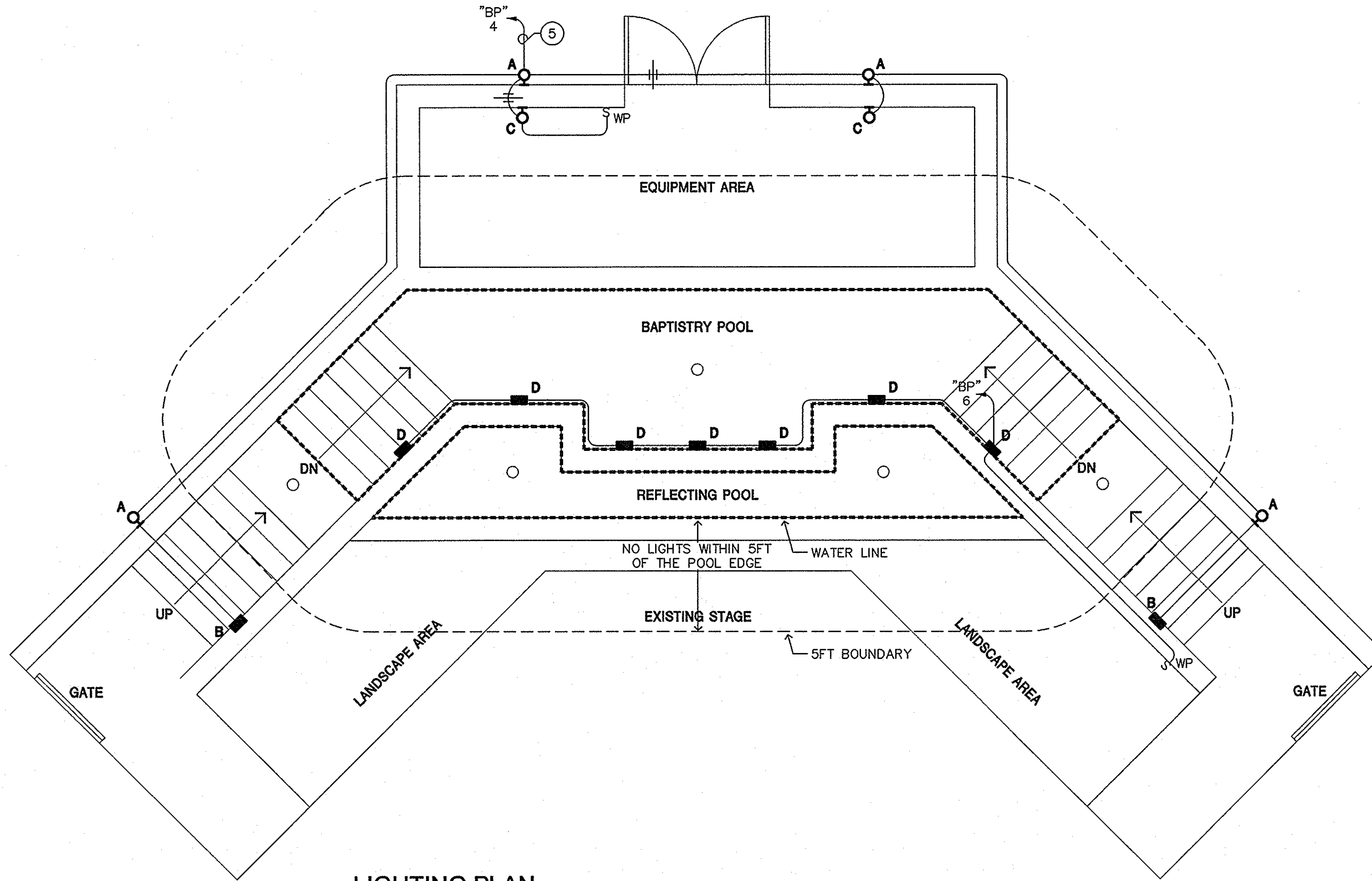
CONSTRUCTION	MOUNTING	OPTICAL	PROTECTION
Materials Faceplate: Cast aluminum. Housing: .064" aluminum protected with high gloss white polyester powder coat. Reflector: High gloss white, formed aluminum. Lens: Prismatic polycarbonate. Junction box: Gasketed, die cast aluminum, bottom mounted (field adjustable to rear mount) suitable for through branch circuit conductors, suitable for 50°C. (3) - 1/2 NPT plugs, neoprene rubber gaskets.	The Sightlines 1645LED series is designed for concrete post installations and hollow wall construction. Units are non-IC rated so the insulation, if any, must be kept 3" away from the housing and the housing should have 1/2" clearance all around except at the mounting points/surface. See installation instructions on the Rebelle website for further details. Conduits must be sealed against water entry into the fixture housing as outlined in the National Electric Code.	The Sightlines 1645LED are designed to be mounted within 1' to 2' of the ground or floor level. The faceplate is provided in a lowered style to eliminate glare and provide illumination on paths, stairs and stairs. An open face with a prismatic glass lens is available for areas that require higher intensity levels. LED output is maximized with a reflector system. The reflector system is sealed against the ingress of water and other contaminants.	The Sightlines 1645LED series is listed for use in wet locations within four feet of the ground to CSA and UL standards. Conduit must be sealed to exclude water from entering the housing.

LED driver: constant current, 450mA (15L) or 500mA (7L). LED boards > 82 CRV.
www.rebellelighting.com
© 2016 REBELLE All rights reserved. R16 Specifications subject to change without notice.



POWER PLAN

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



LIGHTING PLAN

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

GENERAL NOTES:

ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH 2011 (OR LATEST ADOPTED) NATIONAL ELECTRICAL CODES AND ALL APPLICABLE LOCAL CODES, ORDINANCES AND MAG AMENDMENTS TO N.E.C.

ALL WIRING SHALL BE COPPER UNLESS OTHERWISE NOTED. INSULATION SHALL BE TYPE XHHW OR THHN/THWN.

ALL PENETRATIONS OF FIRE RESISTIVE FLOORS OR SHAFT WALLS SHALL BE PROTECTED BY MATERIALS AND INSTALLATION DETAILS THAT CONFORM TO UNDERWRITERS LABORATORY LISTINGS FOR THROUGH PENETRATIONS FIRESTOP SYSTEMS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWING DETAILS WHICH SHOW COMPLETE CONFORMANCE TO THE U.L. LISTING TO THE INSPECTORS. THE DRAWINGS SHALL BE SPECIFIC FOR EACH PENETRATION WITH ALL VARIABLES DEFINED.

CONTRACTOR IS TO VERIFY CONDITION OF EXISTING INSTALLATIONS BY FIELD INSPECTION. CONTRACTOR IS TO PROVIDE NEW WIRE, CONDUIT, AND BOXES AS REQUIRED WITH NO ADDITIONAL COST.

COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATIONS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN WITH NO ADDITIONAL COST.

ALL GENERAL USE RECEPTACLES MOUNTED WITHIN 6' OF A BASIN OR SINK SHALL BE G.F.C.I. PROTECTED.

PROVIDE BOND WIRE IN ALL RACEWAYS, SIZED PER N.E.C. ART. #250.

CONTRACTOR IS TO VERIFY EXACT LOCATIONS, MOUNTING HEIGHTS AND ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT PROVIDED BY OTHERS PRIOR TO ROUGH-IN.

CONTRACTOR IS TO PROVIDE DISCONNECT SWITCHES, TRANSFORMERS AS REQUIRED, AND FINAL CONNECTIONS TO EQUIPMENT PER OWNER.

PROVIDE AND INSTALL ADDITIONAL EXIT SIGNS, EMERGENCY LIGHTS AND NIGHT LIGHTS IF REQUIRED BY GOVERNING INSPECTOR.

WHEN ELECTRICAL CONTRACTOR REMOVES AN ITEM CAUSING CIRCUITRY TO OTHER ITEMS TO BE INTERRUPTED, ELECTRICAL CONTRACTOR SHALL PROVIDE NEW CONDUIT, WIRE, BOXES, ETC. AND SHALL RECONNECT ALL ITEMS SO THEY WILL NOT BE INTERRUPTED.

WHEN AN ITEM IS SHOWN TO BE RELOCATED, ELECTRICAL CONTRACTOR SHALL EXTEND WIRING AND CONDUIT TO THE APPROPRIATE NEW LOCATION AND PROVIDE ALL NECESSARY JUNCTION BOXES, SPLICES, COVER PLATES, ETC.

CONTRACTOR SHALL RELOCATE ALL ELECTRICAL EQUIPMENT IN AREAS BEING REMOVED, REMODELED, REPLACED OR CONSTRUCTED IF EQUIPMENT INTERFERES WITH OPERATION OF CONSTRUCTION, OCCUPANCY OR INTENDED USE OF SPACE.

CONTRACTOR SHALL COORDINATE ALL EQUIPMENT RELOCATION WITH OWNER'S REPRESENTATIVE. ALL ELECTRICAL CONNECTIONS REQUIRING AN OUTAGE SHALL BE COORDINATED WITH THE OWNER. CONTRACTOR SHALL PROVIDE NECESSARY TEMPORARY FEEDERS AND ANY ADDITIONAL ELECTRICAL EQUIPMENT REQUIRED TO MAINTAIN CONTINUOUS OPERATION OF EMERGENCY AND/OR FIRE ALARM SYSTEMS.

CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING ELECTRICAL EQUIPMENT ON WALLS BEING REMOVED.

ELECTRICAL CONTRACTOR SHALL PROPERLY SUPPORT ALL EXISTING AND NEW CONDUIT PER NEC ART. 300-11.

KEYED NOTES:

- ① 3.5 HP PUMP. VERIFY LOCATION. PROVIDE 2#8 CU, #10 CU GND, 3/4" C.
- ② 1.5 HP PUMP. VERIFY LOCATION.
- ③ LOW VOLTAGE TRANSFORMER.
- ④ AUDIO SYSTEM. VERIFY REQ'S AND LOCATION.
- ⑤ CIRCUIT THROUGH TIMSWTCH.

BONDIING NOTE:

CONTRACTOR TO PROVIDE EQUIPOTENTIAL BONDING AS DESCRIBED IN 2011 NEC 680.26

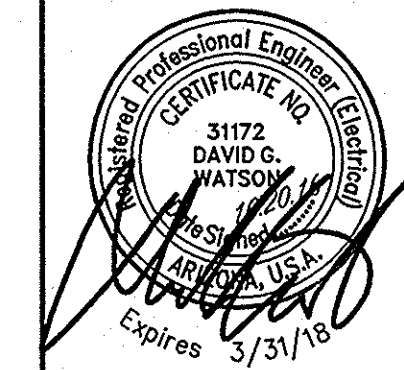
REVISIONS:

David Watson, PE
dave@mwgroup.com
480.731.5500 / 480.731.5533
2001 W. Alameda Drive, Suite 102 Tempe, AZ 85282

mw engineering, inc
Electrical Consulting Engineering Group

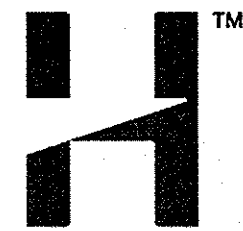
CAREFREE CHURCH BAPTISTRY
5025 E CAREFREE HWY,
PHOENIX, AZ

DRAWN BY: RM	CHECKED BY: DW	DATE: 10/20/2016	SCALE: AS NOTED
JOB NO. 10188		AS NOTED	

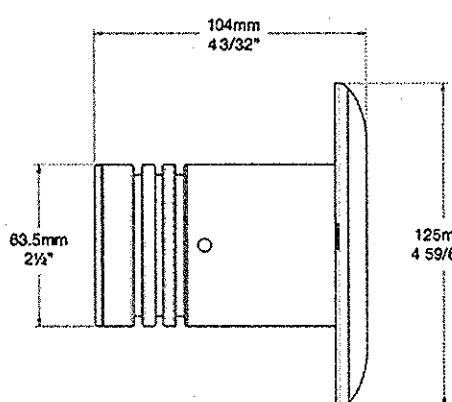


E2

**Pool Lite
HIGH POWER**
Cat. No. POOL/HP

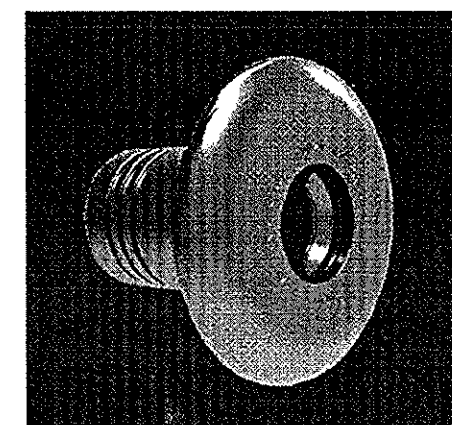


**TYPE D
PURE LED
Pure Performance**

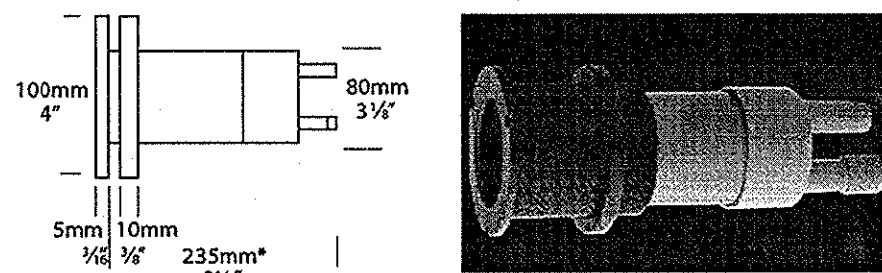


The Pool Lite HIGH POWER is electro polished for extra corrosion protection and is held in the PVC canister by two 'O' rings. There are no mounting screws in the flange to spoil the aesthetics of this luminaire. Up to 600mm (2 ft) of cable can be coiled up inside the mounting canister enabling the luminaire to be removed for lamp changing above the water line. Supplied with 6 metres (18 ft) of submersible cable. Longer cable available on request. The Pool Lite PVC Canister can be ordered separately on request.

The Hunza HIGH POWER system uses Cree MT-G 2 chips for maximum performance and long life. Power supply is an external remote driver. The HIGH POWER system incorporates Hunza's Plug-and-Play system for easy replacement of the LED engine. Four beam angles, and a choice of 2700K, 3000K or 4000K colour temperatures are available.



Pool Lite PVC Canister



Ordering Information

Luminaire	Driver mA	Beam Angle	Colour Temp	Accessories	Material/Finish
POOL/HP	S - Series SR - Series Remote Driver	15 - 15° TIR Lens 25 - 25° TIR Lens 38 - 38° TIR Lens 60 - 60° TIR Lens	2 - 2700K 3 - 3000K 4 - 4000K 39 - 3000K (90+ CRI)	HCL - Hex Cell Louvre STEPP - Frosted Lens CJK150 - Cable Joint Kit PLCAN - Pool Lite Canister	SS - 316 Stainless Steel

Ordering Example: POOL/HP S 15 3 HCL SS

HUNZA PURE outdoor lighting
 HUNZA FACTORY: 30 Felton Mathew Ave, Saint Johns, Auckland 1072, New Zealand
 Tel: 64-9-528 9471, Fax: 64-9-528 3561, hunza@hunza.co.nz, www.hunza.co.nz
 INTERNATIONAL CONTACTS: www.hunza.co.nz/contacts.php
 Specifications may change without notice. Manufactured in New Zealand. © 2015 Hunza Outdoor Lighting Ltd.

**COMcheck Software Version 4.0.2.7
Exterior Lighting Compliance Certificate**

Project Information
 Energy Code: 2012 IECC
 Project Title: New Construction
 Project Type: 2 (Neighborhood business district)
 Exterior Lighting Zone: Owner/Agent: Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
Plaza area	3000 ft ²	0.14	Yes	420
		Total Tradable Watts (a) =		420
		Total Allowed Watts =		420
		Total Allowed Supplemental Watts (b) =		600

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Watt. (C X D)	E
Plaza area (3000 ft ²): Tradable Wattage				
LED 1: A: Other:	1	4	28	112
LED 2: B: Other:	1	2	6	12
LED 3: C: Other:	1	2	11	22
Total Tradable Proposed Watts =				146

Exterior Lighting PASSES: Design 86% better than code

Exterior Lighting Compliance Statement
 Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2012 IECC requirements in COMcheck Version 4.0.2.7 to comply with the mandatory requirements listed in the Inspection Checklist.

DAVID WATSON, P.E. Signature Date: 10/25/2016

Project Title: HUNZA_2016-Job16188-Carefree Church Baptistry/VECC.ckk Report date: 10/25/16
 Data filename: Page 1 of 5

SHORT CIRCUIT CALCULATIONS

FAULT DESIG.	PANEL	LOAD AMPS	LENGTH (FT.)	SOURCE SHORT CKT AMPS	"I" OR "3" PHASE?	# OF CDTRS/ PHASE	"CU" OR "AL"	CDR SIZE (avg/kcmil)	METAL CONDUIT? "Y" OR "N"	"C" VALUE	V	f	m	SOURCE lsc (amps)	MOTOR CONTRIB.	TOTAL lsc (amps)
F1	PANEL "BP"	60	250	53,011	3	1	CU	#4	N	3826	208	28.8442	0.0335	1,776	0	1,776

LIGHT FIXTURE SCHEDULE

MARK	DESCRIPTION	MFR.	CATALOG #	VOLT.	LAMPS #	LAMP TYPE	REMARKS
A	LED WALL MOUNT	US ARCH	RZR-WM1-PLDIII-20LED-350MA-WW-120	120	-	LEDS W/ FIXTURE	23W
B	LED STEP LIGHT	REBELLE	1645-7L-40-120-PR	120	-	LEDS W/ FIXTURE	6W
C	LED JELLY JAR	HUBBELL	VGWL-1	120-277	-	LEDS W/ FIXTURE	11W (SWITCH LOCALLY)
D	UNDERWATER LED	HUNZA	POOL/HP-REM-60-4-SS	120	-	LEDS W/ FIXTURE	-

PANEL LEGEND:

- INDICATES EXISTING CIRCUIT BREAKER & LOAD.
- INDICATES NEW CIRCUIT BREAKER & LOAD.
- ◐ INDICATES CIRCUIT BREAKER WITH "LOCK-OFF" DEVICE.
- ◑ INDICATES EXISTING CIRCUIT BREAKER W/CHANGED LOAD.
- △ INDICATES OFCI CIRCUIT BREAKER
- ▲ MISCELLANEOUS.
- * INDICATES CONTINUOUS LOAD TAKEN @ 125% PER N.E.C.

LOAD CALCULATION:

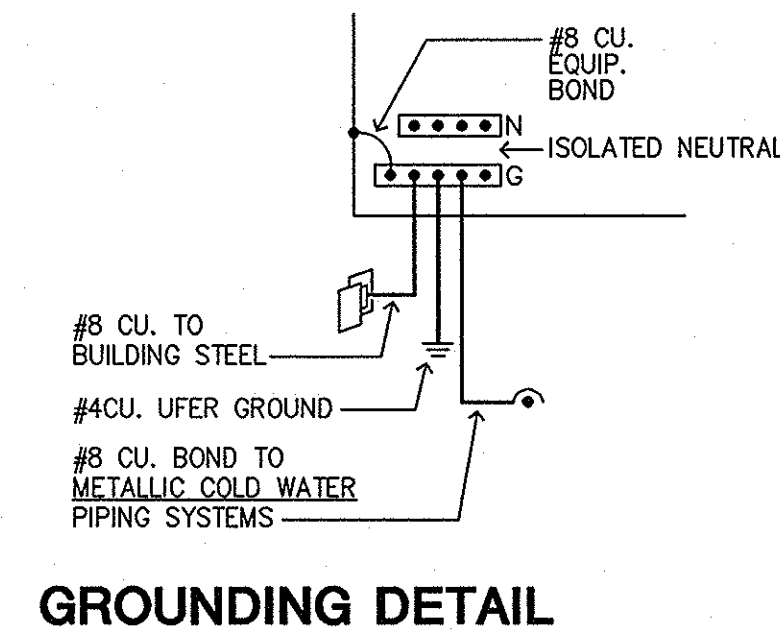
EXISTING LOADS:
 EXISTING HIGH DEMAND = 86.4KW
 $86,400 \times 125\% \div 208\sqrt{3} = 375 \text{ AMPS}$

NEW LOADS:
 NEW PANEL "BP" = 38 AMPS

TOTAL LOAD ON S.E.S. = 413 AMPS

NEW FULLY RATED PANEL

PANEL	BP	60 AMP	120/208V., 3ø, 4W	MAIN 60/3 MCB	NEMA 3R	SURF MTG
LOCATION	SEE PLAN	TYPE	P.O.	BREAKER RATING 10,000 AIC		
USE/AREA SERVED	CB No.	A	LOAD	B	C	No CB USE/AREA SERVED
3.5 HP PUMP	40	1	28.32	2	201	SPARE
1.5 HP PUMP	20	5	28.32	4	201	LTG - AREA
REC - AUDIO SYSTEM	20	8	600	8	201	LTG - U.W.
REC - EQUIPMENT AREA	20	11	720	12	201	SPARE
LOW VOLT XFMR HTR	20	13	600	14	201	SPACE
LOW VOLT XFMR LTG	20	15	600	16	201	SPACE
REC - LANDSCAPE	20	17	180	18	201	SPACE
SPACE	20	19	-	20	201	SPACE
SPACE	20	21	-	22	201	SPACE
SPACE	20	23	-	24	201	SPACE
TOTAL (CONNECTED)			4559	4132	2527	
25 % CONTINUOUS			-	-	-	
TOTAL (CODE)			4559	4132	2827	4559 VA / 120V. = 38.0 A

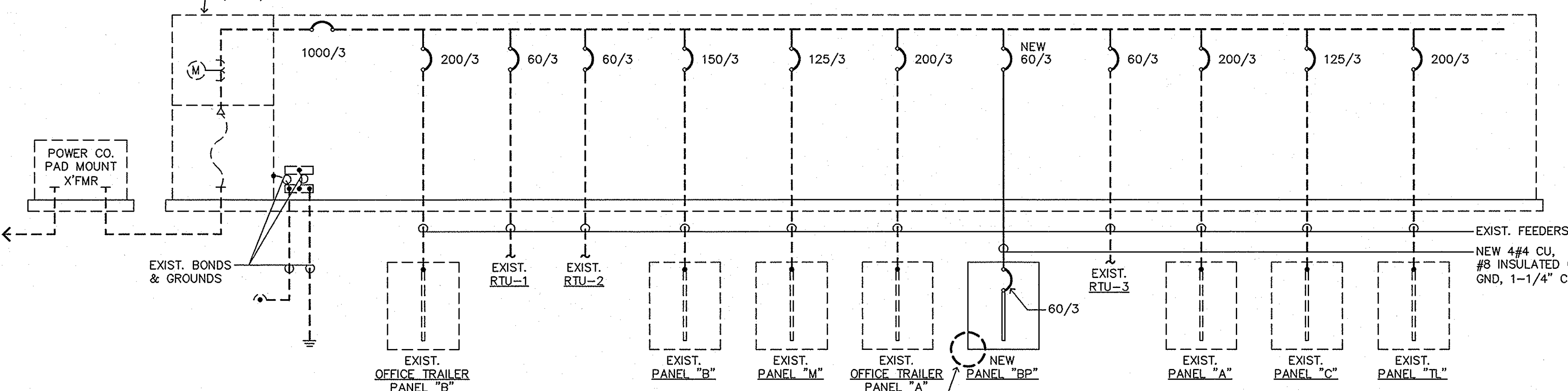


GROUNDING DETAIL

N.T.S.

MAXIMUM AVAILABLE FAULT CURRENT = 53,011 A.I.C.

EXIST. 1000 AMP, 120/208V., 3ø, 4W, NEMA 3R SERVICE ENTRANCE SECTION (S.E.S.) BRACED FOR 65,000 A.I.C.



EXIST. ONE-LINE DIAGRAM

NOTES: 1. ALL EQUIPMENT & INSTALLATIONS ARE EXISTING UNLESS NOTED AS 'NEW'.
 2. ELECTRICAL CONTRACTOR SHALL FIELD-VERIFY ALL EXISTING CONDITIONS PRIOR TO ANY WORK.
 3. ALL CONDUCTOR SIZES BASED ON TYPE "XHHW-2" & "THHN/THWN-2" COPPER.

N.T.S.

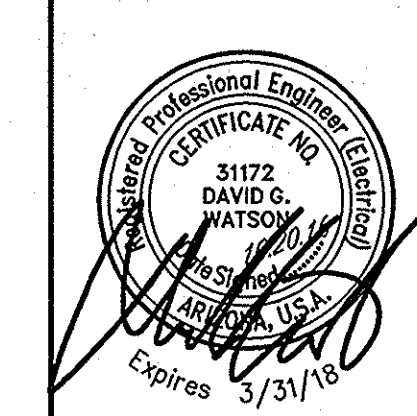
REVISIONS:

1	DATE	DESCRIPTION
2		
3		
4		

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 2001 W. Alameda Drive, Suite 102, Tempe, AZ 85282
mw engineering, inc
 Electrical Consulting Engineering Group

CAREFREE CHURCH BAPTISTRY
 5025 E CAREFREE HWY,
 PHOENIX, AZ

DRAWN BY: RM
 CHECKED BY: DW
 DATE: 10/20/2016
 SCALE: AS NOTED
 JOB NO.: 16188



E3

ELECTRICAL SYMBOLS (NOTE: ALL SYMBOLS MAY NOT APPLY TO THIS PROJECT)

- FLUORESCENT FIXTURE
- FLUORESCENT FIXTURE WITH EMERGENCY BATTERY PACK, 1100 LUMENS
NL = NIGHT LIGHT - UNSWITCHED
EM = LINE SENSITIVE OPERATES ONLY ON POWER OUTAGE - SWITCHED
- CEILING MOUNTED LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- FLUORESCENT FIXTURE
- EXIT SIGN - SEE LIGHT FIXTURE SCHEDULE
- SURFACE-MOUNT EMERGENCY LIGHTING BATTERY PACK-SINGLE OR DOUBLE HEAD- SEE LIGHT FIXTURE SCHEDULE
- RECESSED EMERGENCY LIGHTING BATTERY PACK-SINGLE OR DOUBLE HEAD- SEE LIGHT FIXTURE SCHEDULE
- JUNCTION BOX IN ACCESSIBLE LOCATION ABOVE REMOVABLE CEILING W/ FLEXIBLE CONDUIT CONNECTION TO LIGHT FIXTURE
- FLEXIBLE CONDUIT CONNECTION TO EQUIPMENT
- JUNCTION BOX IN ACCESSIBLE LOCATION
- DUPLEX CONVENIENCE RECEPTACLE AT +15" A.F.F. TO BOTTOM OR AS NOTED
- FOUR-PLEX CONVENIENCE RECEPTACLE AT +15" A.F.F. TO BOTTOM OR AS NOTED
- ISOLATED GROUND RECEPTACLE AT + 15" A.F.F. TO BOTTOM OR AS NOTED
- RECEPTACLE (TYPE AS SHOWN) AT + 42" A.F.F.
- SPECIAL USE RECEPTACLE. VERIFY NEMA NUMBER AND MOUNTING HEIGHT WITH EQUIPMENT
- TOGGLE SWITCH - SINGLE POLE, 3-WAY, 4-WAY AT +42" OR AS NOTED ON PLANS.
- SINGLE-POLE, ILLUMINATED HANDEL OR PILOT LIGHT TOGGLE SWITCH AT +42" OR AS NOTED ON PLANS
- MOTOR RATED SWITCH WITH THERMAL PROTECTION
- MOTOR SPEED CONTROL SWITCH. FURNISHED BY ELECTRICAL CONTRACTOR.
- PHOTOCCELL - TORQ #2100 - MOUNT ON ROOF AND AIM NORTH
- TIMESWITCH: TORQ 'W' SERIES OR EQUAL
- CIRCUIT IN CONDUIT, CONCEALED. HASH MARKS INDICATE QUANTITY OF CONDUCTORS. NO HASH MARKS INDICATE TWO CONDUCTORS. PLUS GROUND(S). (NOTE: WIRE AND OR CONDUIT SIZE SHOWN AT HOMERUN IS THE MINIMUM SIZE FOR THE ENTIRE CIRCUIT. #12 A.W.G. CU, 1/2" C. MINIMUM). LONG STROKE(S) INDICATE NEUTRAL CONDUCTOR(S), SHORT STROKES INDICATE PHASE OR SWITCHED CONDUCTORS AND LONG STROKES WITH DOT INDICATE GREEN INSULATED GROUNDING CONDUCTOR(S) TYPICAL. EACH ISOLATED GROUND CIRCUIT SHALL HAVE A SEPARATE NEUTRAL AND GROUND WIRE. BOND WIRES ARE NOT SHOWN ON DRAWINGS. BOND WIRES SHALL BE INSULATED CU. SIZED IN ACCORDANCE WITH N.E.C. #250.
- CIRCUIT IN CONDUIT CONCEALED IN FLOOR
- CIRCUIT IN CONDUIT CONCEALED IN WALLS OR ABOVE CEILING
- HOMERUN TO PANELBOARD OR AS NOTED
- PANELBOARD, MOUNT TOP OF PANEL AT + 6"-8", STUB (2) 3/4" E.C. INTO ACCESSIBLE CEILING SPACE ON FLUSH MOUNTED PANELS.
- MOTOR: SIZE AND RATING AS SHOWN. EF INDICATES 55-WATT, 120V. EXHAUST FAN
- A.C. MAGNETIC STARTER BY ELECTRICAL CONTRACTOR. HORSEPOWER, VOLTAGE AND PHASE RATED, NUMBER OF POLES REQUIRED. FURNISH WITH (1) N.O. AUXILIARY CONTACT (120 V. CONTROL) SINGLE SPEED NON-REVERSING UNLESS OTHERWISE SHOWN ON PLAN
- DISCONNECT SWITCH - HORSEPOWER RATED, FUSED, NEMA 3R WHERE OUTSIDE. N.F. INDICATES NON-FUSED. (FUSE PER EQUIPMENT MANUFACTURERS' SPECIFICATIONS.)
- STRIP HEATER AND CONTROL
- MOTOR CONTROLLER - FURNISHED WITH EQUIPMENT
- TELEPHONE OUTLET AT +15" TO BOTTOM OR AS NOTED WITH 3/4"C. UP INTO ACCESSIBLE CEILING SPACE UNLESS SHOWN OTHERWISE
- PAY PHONE OUTLET AT + 42" A.F.F. OR AS NOTED WITH 3/4"C. TO T.M.B.
- DATA OUTLET AT + 15" A.F.F. TO BOTTOM OR AS NOTED. STUB 3/4"C. INTO ACCESSIBLE CEILING SPACE
- DATA/TELEPHONE OUTLET AT + 15" A.F.F. TO BOTTOM OR AS NOTED. STUB 3/4"C. INTO ACCESSIBLE CEILING SPACE
- APPROVED TEMPERATURE SEAL-OFF AND EXPANSION JOINTS AS REQ'D BY N.E.C. ART. #300-7
- FLUSH FLOOR FOURPLEX OUTLET AND DATA/TELEPHONE OUTLET COMBO WITH BRASS DEVICE PLATE
- FLUSH FLOOR DATA RECEPTACLE WITH BRASS COVER PLATE AND 3/4"C. STUBBED TO ABOVE ACCESSIBLE CEILING LOCATION
- FLUSH FLOOR TELEPHONE RECEPTACLE WITH BRASS COVER PLATE AND 3/4"C. STUBBED TO ABOVE ACCESSIBLE CEILING LOCATION
- FLUSH FLOOR DUPLEX OUTLET WITH BRASS DEVICE PLATE
- FLUSH FLOOR FOURPLEX OUTLET WITH BRASS DEVICE PLATE
- ISOLATED GROUND RECEPTACLE "HUBBELL" # 1G5263 20A, 125V, FLUSH FLOOR WITH BRASS DEVICE PLATE
- TELEVISION OUTLET AT + 15" TO BOTTOM OR AS NOTED. STUB 3/4"C INTO ACCESSIBLE CEILING SPACE
- DIMMER SWITCH AT + 42" A.F.F. "LUTRON" NP SERIES. SIZE DIMMER FOR LOAD. TRACK LIGHTING SHALL HAVE "LUTRON" NP2000 DIMMER
- A.D.A.-APPROVED FIRE ALARM STROBE
- A.D.A.-APPROVED FIRE ALARM HORN/STROBE
- A.D.A.-APPROVED FIRE ALARM PULL STATION
- A.D.A.-APPROVED SMOKE DETECTOR MOUNTED IN CEILING OR AS INDICATED
- OCCUPANCY SENSOR (OVAL TECHNOLOGY) 1000 WATT CEILING MOUNTED AS MANUFACTURED BY WATT STOPPER (NO SUBSTITUTIONS)
- WEATHER PROOF
- ELECTRIC DRINKING FOUNTAIN
- SERVICE ENTRANCE SECTION
- TELEPHONE MOUNTING BOARD: 4' X 8' X 3/4" PLYWOOD WITH #6 CU. BOND WIRE TO GROUNDING ELECTRODE SYSTEM
- TELEPHONE TERMINAL CABINET: 36" W. X 36" H X 6" D 16 GA. WEATHERPROOF HINGED LOCKABLE COVER, 5/8" PLYWOOD BACKBOARD. PROVIDE A #6 CU BOND TO GROUNDING ELECTRODE SYSTEM

ELECTRICAL SYSTEM SPECIFICATIONS - DIVISION 16000

1. GENERAL CONDITIONS

The General Provisions of the Contract, including the Conditions of the Contract (General, Supplementary and other Conditions) and Division 1 - General Requirements as appropriate, apply to the work specified in this Section.
2. SCOPE OF WORK

The work included under this section consists of furnishing all materials, equipment, and labor and the performing of all functions, except as otherwise specified herein or shown on the drawings to be performed by others, for the installation and placing into operation of a complete electrical system as specified and shown on the drawings.
3. GENERAL DESCRIPTION
 - 3.1 The work in general shall consist of, but is not necessarily limited to the following.
 - 3.1.1 Furnishing and installing all fixtures with lamps as indicated on the drawings and as specified herein unless noted.
 - 3.1.2 Furnishing and installing all electrical work, panels, service, conduit, wiring, etc., for all outlets and equipment.
 - 3.1.3 Furnishing and installing all telephone outlets, conduits with pull strings and telephone mounting boards including conduit from telephone mounting board to the building entrance as indicated on the plan.
 - 3.1.4 Furnishing and installing a complete Fire Alarm system as indicated on plans.
 - 3.1.5 Include \$ _____ hundred dollars) allowance for power and telephone company utility service charges. Difference between actual cost and allowance to be credited or billed to the Owner.
 - 3.1.6 Furnishing and installing all motor starters and control components, not specifically specified to be furnished in accordance with other sections of the specifications.
 - 3.1.7 Furnishing and installing all power and wiring except that which is pre-wired in factory assembled equipment.
 - 3.1.8 Installing all LINE VOLTAGE mechanical control wiring and associated controls which are furnished by the Mechanical Contractor (low voltage control wiring and controls shall be furnished and installed by the Mechanical Contractor).
 - 3.1.9 Pointing work as described under other sections of these specifications. Clean and prepare all surfaces ready for painting.
 - 3.1.10 Provide temporary construction power as outlined below. This service shall be maintained throughout the entire job as the work progresses. Provide outlets at convenient points and in sufficient numbers so that no extension cord over 50 feet in length is required to reach any work point. Maintain general lighting in corridors, stairs, basement and other areas not receiving sufficient daylight required for safety. Remove temporary work as rapidly as required for or allowed by installation of permanent work.
 - 3.1.11 Certain items of work by other trades will be necessary for the completion of work under this division. Cooperate with other trades and arrange for these items to be performed in orderly course.
 - 3.1.12 This Contractor shall review the mechanical control requirements as specified and shown on the drawings and shall furnish and install all necessary conduit, wiring, boxes, protective devices, switches, etc., for the completion and proper operation of the system.
 - 3.1.13 Review all drawings and all specifications for each section of work. Unless specifically noted otherwise, herein or elsewhere, furnish and install items of any electrical nature required for completion of work for other trades, whether or not same is shown or noted in this or other sections.
4. REGULATIONS AND CODES

The Contractor must comply with all state, municipal and federal safety laws, construction codes, ordinances and regulations relating to building and public health and safety. In addition, comply with rules and regulations of the State Fire Protection Code. Fire protection material must bear the Fire Underwriters Laboratories label.
5. GENERAL REQUIREMENTS
 - 5.1 The Contractor shall examine the premises and satisfy himself of existing conditions under which he will be obligated to operate in performing his part of the work or that will in any manner affect the work under the contract. The Contractor shall cooperate with other trades so that the installations of all equipment may be properly coordinated.
 - 5.2 All equipment furnished shall fit the space available, with connection, etc., in the required locations and with adequate space for operating and servicing. The drawings are generally diagrammatic and indicate the manner and method of the installation, while the specifications and fixture list denote the type and quality of material and workmanship to be used. Where a conflict exists between the drawings and the specifications, the Contractor shall promptly notify the Architect/Engineer whose decision shall be final. No allowance will be made subsequently in this connection in behalf of the Contractor after award of the contract.
6. EQUIPMENT AND MATERIAL
 - 6.1 All materials furnished under this contract shall be new (except as noted), free from defects of any character, shall conform with the standards of the Underwriters Laboratories, Inc. (U.L.) (or other nationally recognized Laboratory), in every case where such a standard has been established and shall be so labeled. It is the intention of these specifications to indicate a standard of quality for all materials incorporated in this work, and where materials are not specified herein and are required to complete the electrical installation, these materials shall be of first quality for use intended. Manufacturers of similar quality products will be considered unless the specifications or drawings indicate otherwise.
- 6.2 Materials shall be suitable for intended use and location. Unless otherwise shown use NEMA-1 for interior areas and NEMA-3R for exterior areas.
- 6.3 The Architect/Engineer decision as to equal in grade and quality shall rule and be final for all electrical materials incorporated in this work. Where two or more similar type items are furnished, all shall be of the same manufacturer (e.g., all disconnect switches shall be of the same manufacturer) unless otherwise noted herein or shown on the drawings. All material and installation methods used shall be in accordance with the latest and approved electrical and mechanical engineering practices.
7. SERVICE ENTRANCE EQUIPMENT
 - 7.1 Service entrance equipment shall be in accordance with the requirements of the municipal governing body and serving utility. Shop drawings shall be submitted to the serving utility for written approval before ordering equipment.
 - 7.2 Label equipment and each individual overcurrent device per Section 16000.22.
 - 7.3 Approved manufacturers are: Sun Valley, Square D, Cutler-Hammer, Siemens/ITE, General Electric
8. PANELBOARDS
 - 8.1 Each panel shall be provided with door lock and two keys, all keyed alike. Each panel shall be provided with typewritten sheet installed on door identifying the use of each branch circuit. Panels shall have bussing as indicated on the drawings.
 - 8.2 Label equipment per Section 16000.22
 - 8.3 Approved manufacturers are: Square D, Cutler-Hammer, Siemens/ITE, General Electric
9. STARTERS
 - 9.1 All motor starters shall be furnished under this section of the specifications unless an integral part of equipment or noted as furnished with equipment specified under other sections of these specifications.
 - 9.2 Separately mounted motor starters shall be across-the-line combination magnetic with 120V coils, fused disconnect contactors, additional auxiliary contact for interlocking of controls. Provide pushbutton or selector switch in cover. Switchboard mounted starters shall be magnetic with 120V coils and additional auxiliary contacts as required for interlocking of controls. Starters shall have an integral control circuit transformer or separate 120V control with control circuit disconnect switch in cover.
 - 9.3 Manual starters shall be horsepower, voltage and phase rated with overload protection and green "on" pilot light. Surface mounted unless noted otherwise.
 - 9.4 All starters shall have overload protection in all phase lines. Furnish and install the proper size overload heater elements determined from full load nameplate readings on motors and compensation for ambient temperature in all starters whether they be furnished under this Section or other Sections.
 - 9.5 Label per Section 16000.22
 - 9.6 Approved manufacturers are: Square D
10. TRANSFORMERS
 - 10.1 Transformers shall be dry type, with voltage ratings as indicated on plans. Transformers shall be rated for full load operation at a maximum 150 degree centigrade rise above a 40 degree centigrade ambient or as otherwise noted on drawings. Provide at least (4) 2 1/2 percent taps, two above normal and two below normal and have a sound rating not to exceed NEMA standards. Special "K" factor ratings as noted.
 - 10.2 Submit complete transformer data with shop drawings for approval. The data shall include efficiencies, core and copper losses, impedance, regulation and sound level.
 - 10.3 Installation of transformers shall be on vibration isolators and all wiring connections with flexible conduit.
 - 10.4 Label per Section 16000.22
 - 10.5 Approved manufacturers are: ACME, Square D, Jefferson, Cutler-Hammer, Westinghouse, General Electric, or same manufacturer as distribution equipment.
11. CONDUIT
 - 11.1 Metallic conduits shall be hot dipped galvanized equal to LTV Steel.
 - 11.2 Electric metallic tubing (EMT) is permitted for exposed work above 6'-0" A.F.F. or concealed work only. EMT is NOT permitted in the following: (1) in or under concrete, (2) in earth, (3) in grouted walls, (4) exterior of building, (5) with dissimilar metals, (6) where it will be subject to severe physical damage (either during or after installation), (7) in any hazardous (classified location) except as permitted by 502.10, 503.10 and 504.20, (8) without an equipment grounding conductor. Size and provide equipment grounding conductor per Article 250 and increase conduit size if required.
 - 11.3 Rigid PVC conduit is permitted only underground or as noted on drawings. Provide rigid steel elbows and risers (NO MINIMUM SIZE). Size and provide equipment grounding conductor per Article 250 and increase conduit size if required.
- 11.4 Rigid galvanized or sherardized steel shall be used for all exposed conduit below 6'-0" A.F.F. or as noted on drawings. Where used in or under concrete or in earth, shall be code approved PVC coated or half lap wrapped with Polyken #900 tape or equal.
- 11.5 Install exposed raceways parallel and perpendicular to nearby surfaces or structural members and follow the surface contours as much as practical.
- 11.6 Run exposed, parallel, or banked raceways together. Make bends in parallel or banked runs from the same center line so that the bends are parallel. Factory elbows may be used in banked runs only where they can be installed parallel. This requires that there be a change in the plane of the run such as from wall to ceiling and that the raceways be of the same size. In other cases provide field bends for parallel raceways.
12. WIRE
 - 12.1 Soft drawn annealed copper (unless otherwise noted on plans) having conductivity of not less than 98% of that of pure copper, uniform in cross section, free from flaws, scales, and other imperfections. All wire larger than #10 shall be stranded.
 - 12.2 Insulation: Type THHN/THWN, or XHHW for all branch circuit and feeder wiring.
 - 12.3 Sizes: No wire smaller than #12 unless otherwise noted on drawings.
 - 12.4 Feeder conductors #2 awg and larger may be copper or AA-8000 series aluminum alloy. Aluminum conductors shall be equal or larger ampacity to copper. Conduit fill shall not exceed 40% factor as described in 2005 NEC, annex C, table C1 (copper) or C1A (aluminum).
13. MISCELLANEOUS MATERIALS:
 - 13.1 Safety switches: Heavy duty, fused rejection type, minimum 200,000 A.I.C. rated. "NF" indicates not fused.
 - 13.1.1 Label per Section 16000.22
 - 13.1.2 Approved manufacturers are: Square D, Cutler-Hammer, Westinghouse, General Electric or same manufacturers as distribution equipment.
 - 13.2 Fuses: "Bussmann" or "Gould Shawmut" mfg. No substitutions unless by prior written approval from Engineer, or as noted on drawings.
 - 13.3 Conduit strap: Heavy gauge steel snap-on type.
 - 13.4 Electrical metallic tubing fittings: Equal to T&B compression type. Connectors shall have insulated bushings.
 - 13.5 Rigid conduit locknuts and bushings: Equal to T&B.
 - 13.6 Flexible conduit and fittings: Equal to California Conduit and Cable Company, Inc.
 - 13.7 Liquid tight conduit and fittings for all exterior and equipment connections.
 - 13.8 Outlet boxes, plaster rings, pull, and junction boxes, etc: Equal to RACO. Zinc coated or Cadmium plated sheet steel for indoor locations, cast aluminum for outdoor locations.
 - 13.8.1 For all light fixtures: Octagon or 4" square boxes.
 - 13.8.2 For switches and receptacles: 4" or 4-11/16" square boxes.
 - 13.8.3 Junction and pull boxes: 4" square minimum size. Provide with screwfastened covers located in accessible locations.
 - 13.9 Condulets: Equal to Crouse-Hinds.
 - 13.10 Wire and Cable: Equal to General Cable and/or Simplex.
 - 13.11 Devices: "Hubbell", "Leviton", or approved equal. Receptacles: Duplex-20 amp #5362, isolated ground - 20 amp #1G-5362, GFCI- 20 amp #GF-5362. Switches: 20 amp #1221 single pole, 1222 double pole, 1223 three way, 1224 four way. Colors to be specified by Architect/Owner/Tenant.
 - 13.12 Device plates: "Hubbell", "Leviton", or equal. Ivory nylon in interior areas or as noted on drawings. Zinc die cast flip lid mounted horizontally for exterior or weatherproof locations.
 - 13.13 Lighting fixtures: Equal to as shown on fixture schedule or described on drawings, complete with lamps in original cartons and all canopies, stems, hangers and accessories including all structural members required for proper mounting. All fluorescent fixture ballasts shall be energy saving type. Submit shop drawings to Architect/Engineer for approval by the same. Must be C.E.C. approved in Calif.
 - 13.14 Lamps: G.E. or equal and shall be for the maximum rated wattage of fixture unless otherwise shown on drawings.
14. SLEEVES, INSERTS, OPENINGS
 - 14.1 Contractor shall layout and install his work in advance of pouring concrete floors or walls. Provide all sleeves and/or openings through floors or walls required for electrical conduits or ducts.

(SOME SECTIONS MAY NOT APPLY)

15. EXCAVATION/CUTTING/FITTING/REPAIRING/FINISHING
 - 15.1 The Contractor shall include in his bid all excavation, compaction, fill, backfill, cutting, fitting, repairing and finishing of all work necessary for the installation of all equipment under this specification but no cutting of the work of other Contractors shall be done without the consent of the General Contractor.
 - 15.2 Earthwork shall be done in accordance with latest industry standards.
16. CLEANUP OF PREMISES

Contractor shall at all times keep the premises clear of waste materials and debris caused by his employees and operation. Equipment not required in the work shall be removed prior to the termination of the contract.
17. TESTS AND INSPECTIONS
 - 17.1 Contractor shall test wiring and devices as sections are completed and shall correct all defects immediately at his own expense, including any damage to walls, ceilings, floor or other portions of the building which may result from replacing defective equipment.
 - 17.2 Furnish all meters, cable, connections and apparatus necessary for making tests.
 - 17.3 Test system for shorts and grounds. Faulty wiring shall be removed and replaced. Any device, apparatus or fixture installed showing substandard performance shall be removed and replaced as directed by the Architect/Engineer.
 - 17.4 Megger all systems neutrals to insure the neutral is not grounded within the system.
 - 17.5 All equipment rated at 1,000 amps or more, or 480 volts shall be tested for insulation breakdown prior to its being energized. Such equipment shall withstand for a period of one minute without breakdown, the application of a 60HZ alternating potential of 1,000V plus twice the rated voltage of the device.
 - 17.6 After the electrical wiring system installation is completed and at such time as the Architect/Engineer or his authorized representative may direct, the Contractor shall conduct an operating test for approval. Equipment shall be demonstrated to operate in accordance with requirements of specifications. Test shall be performed in presence of Architect/Engineer or his representative.
18. SHOP DRAWINGS
 - 18.1 All data shall be submitted at one time, bound and indexed in an orderly manner. Prior to starting the work, submit to the Architect/Engineer for approval, six (6) sets of shop drawings of service (S.E.S.), panels, distribution sections, light fixtures, motor control centers, fire alarm system, dimmers, sound system, emergency generator, devices, transformers, labels as required by 16000.22, and all other equipment to be fabricated.
 - 18.2 Procure shop drawings, wiring diagrams, etc., from other trades involved where such drawings may facilitate and expedite the work. Air conditioning and mechanical equipment shall be wired complete as per manufacturer's wiring diagrams furnished by the air conditioning and mechanical contractors.
19. DRAWINGS OF RECORD (AS-BUILT)

As-built drawings shall be submitted in accordance with and if required by Division 1 - General Requirements.
20. GUARANTEE

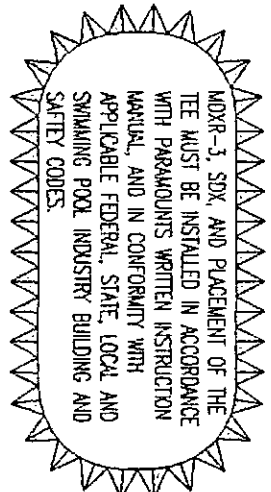
The Contractor shall guarantee all material and equipment to be free from defect of material and workmanship and shall replace or repair without cost to the owner all defective material and workmanship for a period of one year after final acceptance.
21. INSTRUCTIONS
 - 21.1 Contractor shall instruct the Owner in the proper operating and maintenance of the equipment.
 - 21.2 Contractor shall provide two (2) sets of operating and maintenance manuals for each piece of equipment provided by this discipline, only when such manuals are available from the manufacturer.
 - 21.2.1 All manuals to be bound in a 3-ring binder and tabulated in an orderly manner.
22. LABELING
 - 22.1 Labels shall be engraved, black on white melamine plastic laminate, 1/16" minimum thickness for signs up to 20 square inches or 1/8" inches long; 1/8" thick for larger sizes. Engraved legend shall be in white letters on black face with minimum 3/16" high letters. Labels shall be punched and fastened to equipment with aluminum rivets or self tapping stainless steel screws or number 10/32 stainless steel machine screws with nuts, flat and lock washers.
 - 22.2 Label equipment with name, amperage, voltage, phase, and wires (i.e. Panel "A", 400A, 120/208V, 30,4W). Submit list of all labels with wording for review as per 16000.18.
 - 22.3 Equipment to be labeled shall include service (S.E.S.) and all overcurrent devices, distribution sections and all overcurrent devices, motor control centers (M.C.C.) and all overcurrent devices, fusible panelboards and all overcurrent devices, panels, starters and transformers. Label other equipment as noted on plans.

REVISIONS:										
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CAREFREE CHURCH BAPTISTRY										
5025 E CAREFREE HWY, PHOENIX, AZ										
DRAWN BY: DM	CHECKED BY: DW	DATE: 10/20/2016	SCALE: AS NOTED	JOB NO. 16188						
E4										

DRAWING: 16-03287 CUSTOMER: CAREFREE CHURCH DATE IN: 6-8-2016
 COMPANY: MONEYS WORTH POOLS ADDRESS: - DATE OUT: 6-9-2016
 CITY: PHX CITY: - SHEET: 1
 STATE: AZ STATE: - FINISH: PEBBLE-SHEEN
 CONTACT: BILL ZIP: - FAX: PDF

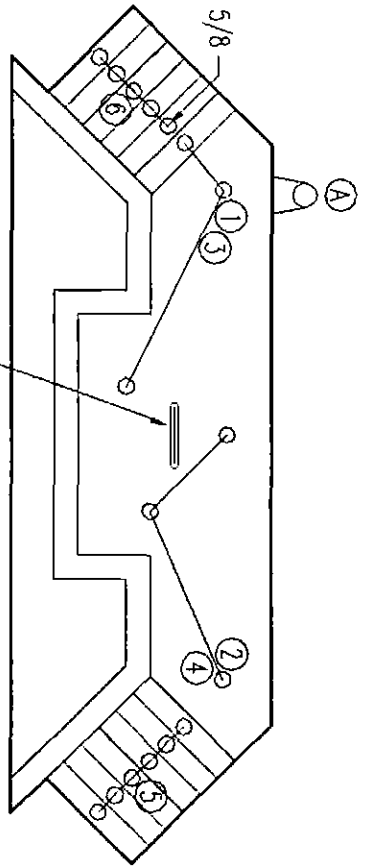
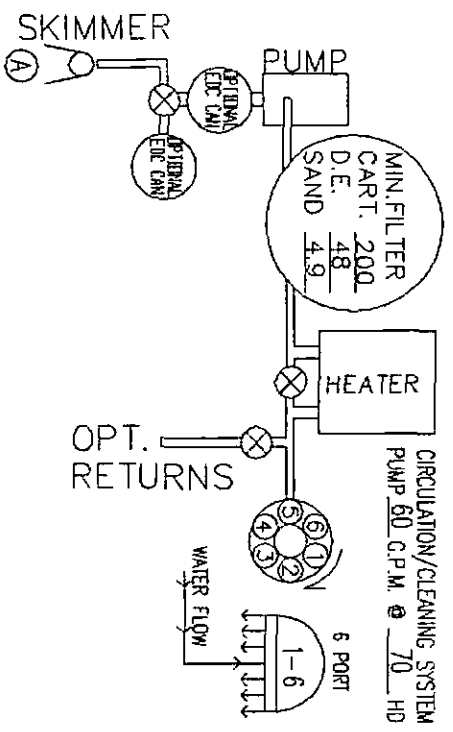
- ROTATING NOZZLE
- 6-PORT VALVE
- 9-PORT VALVE
- 12-PORT VALVE
- 2-PORT 4-GEAR
- 3-PORT VALVE
- MDX-R3
- BUZZSTOP
- CANISTER
- EDC
- CANISTER W/W/FUSE
- VENTURI SKIM
- DOWNJET
- SWINGJET
- ULTRA UV
- JETPACK
- INFUSE DECKMOUNT
- CLEAR O3
- AIRPORT
- SDX 2-PACK
- PARALEVEL
- PARASCOP
- MINI BUBBLER
- TWIRLYBYRD
- AIRBAR

17	1/2"	ET
1	5/8"	ET
0	3/8"	ET
0	1/4"	ET
0	1	
0	2	
0	3	
0	4	
0	5	
0	6	
0	1	
0	4	

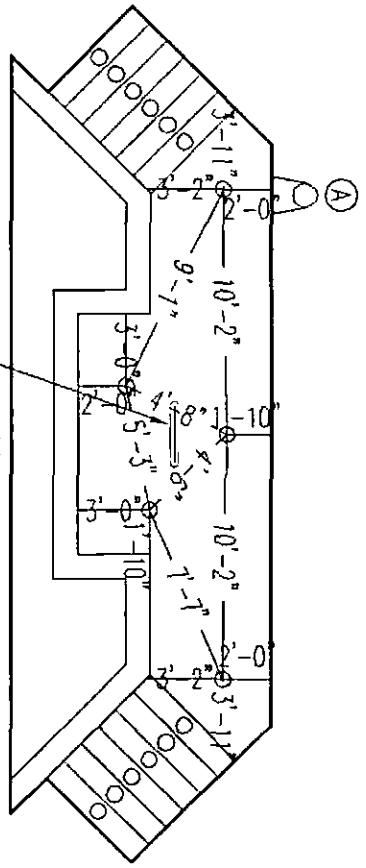


PLUMBING DIAGRAM IS FOR ILLUSTRATION PURPOSES ONLY

The 99% Cleaning Guarantee will only qualify to AREAS of the pool and / or spa equipped with an MDXR3 and cleaning nozzles on the floor, steps, benches, sundecks, catch basins or any other design features of the pool or spa, and must be built to the specifications of this layout".



DRAIN(S) MUST CONFORM WITH APPLICABLE FEDERAL, STATE & LOCAL SWIMMING POOL INDUSTRY BUILDING AND SAFETY CODES.



DRAIN(S) MUST CONFORM WITH APPLICABLE FEDERAL, STATE & LOCAL SWIMMING POOL INDUSTRY BUILDING AND SAFETY CODES.

DRAWN BY: CMIDDAUGH
 APPROVED BY: [Signature]
 Order
 Paramount
 480.893.7607
 800.621.5886
 Paramount.com

THIS DRAWING IS FOR THE PURPOSE OF IN-FLOOR LAYOUT ONLY

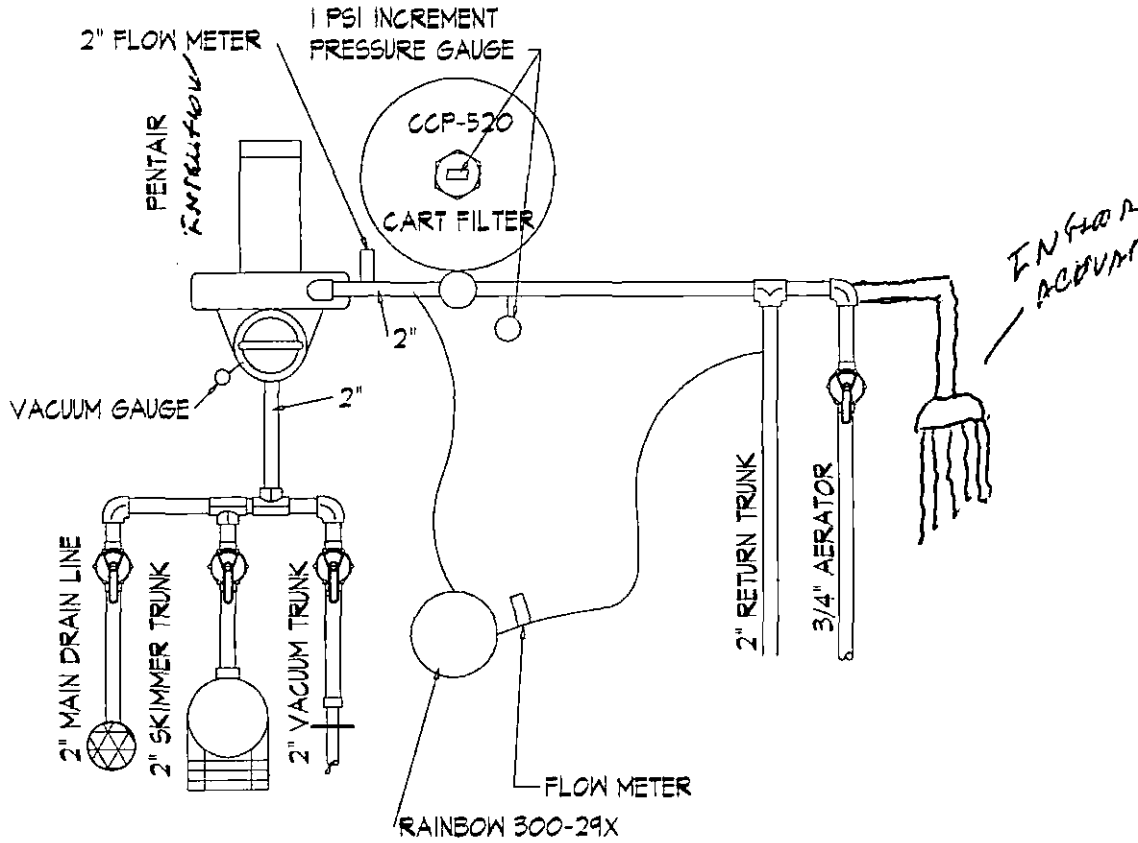
NOTE:
 LOCATION OF CANISTER, SKIMMER AND SECOND POINT OF SUCTION IS OPTIONAL
 ALL PERIMETER DIMENSIONS ARE FROM FINISHED WALL 1' RADII'S SHALLOW END AND 2' DEEP END.

*Only one Skimmer to be used on a single pump system.
 *Risers are 2" SCHD 40 PIPE
 *No 1-1/2" multiport backwash valves
 †Check valve is required on all raised features using the Pw3 System.

THIS DRAWING NEEDS TO BE PRINTED TO SCALE
 IN ORDER TO EQUAL 1/4" = 1'-0"
 PLEASE MEASURE W/EGHTH INCH SCALE FOR ACCURACY.

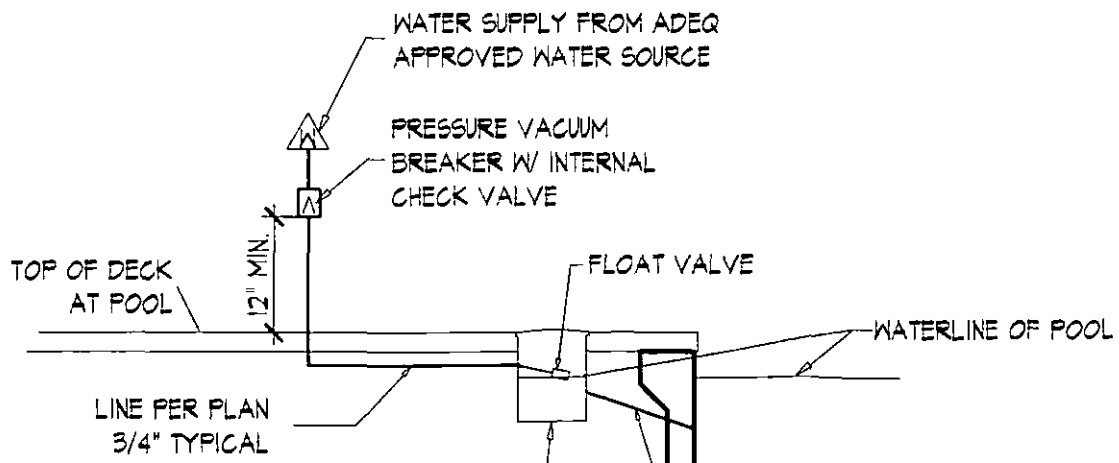
517M 1601853

LPRM 1601853



POOL EQUIP. SCHEM.

NTS



CAREFREE CHURCH BAPTISTRY

LPRM-1601853

1/23/17

3RD SUBMITTAL

4 LAST

PROPANE BY OTHERS

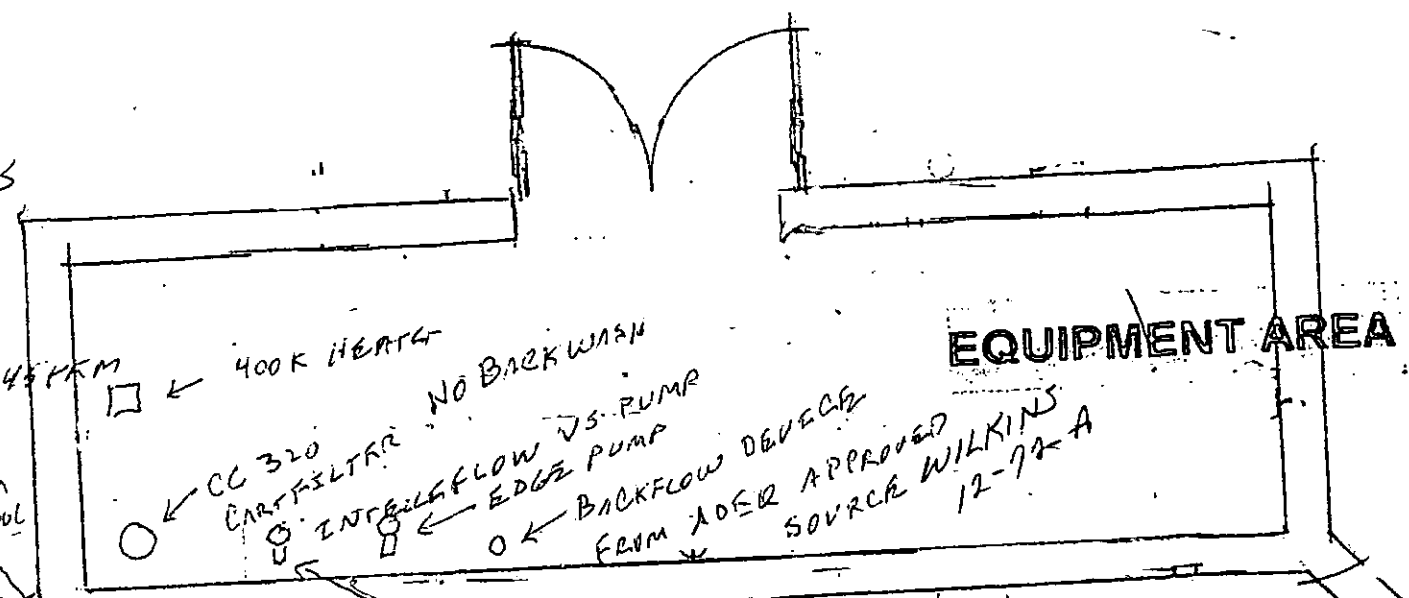
PLUMBING DETAILS

2" SUCTION

PARAMOUNT ENFLOOR SYSTEM

1 1/2" RETURNS

1 1/2" PRESSURE BREAKER SUPPLIED FROM ADEER APPROVED SOURCE



EQUIPMENT AREA

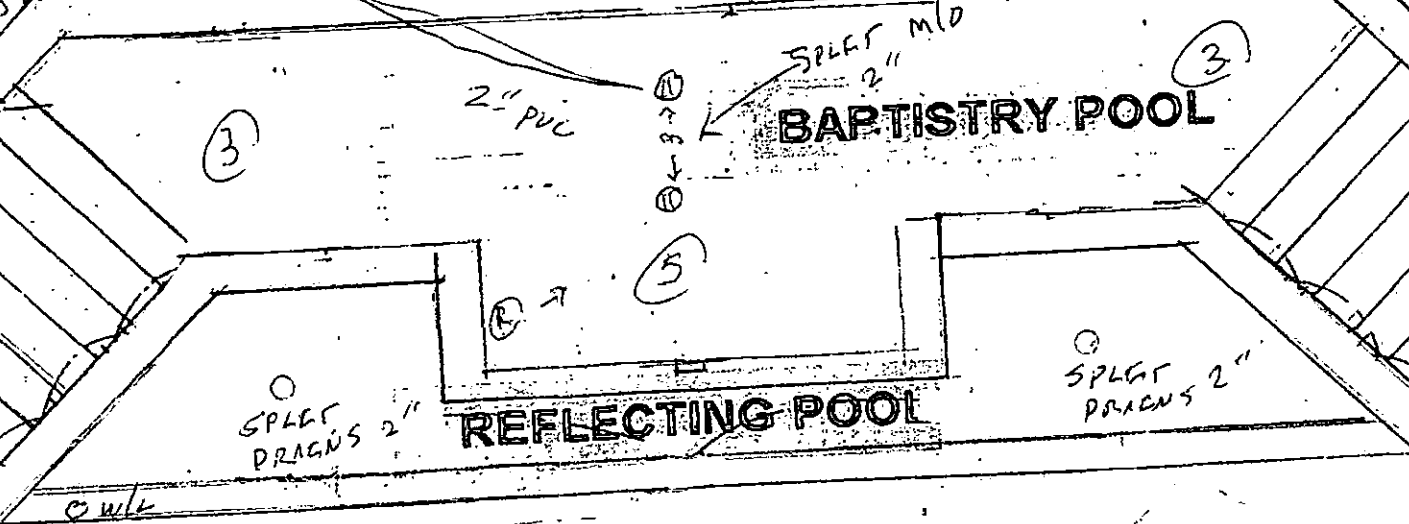
PANEL TIMER OVERRIDE

CITY OF PHOENIX
Planning and Development Department

By: LWAL
LARRY WALSH

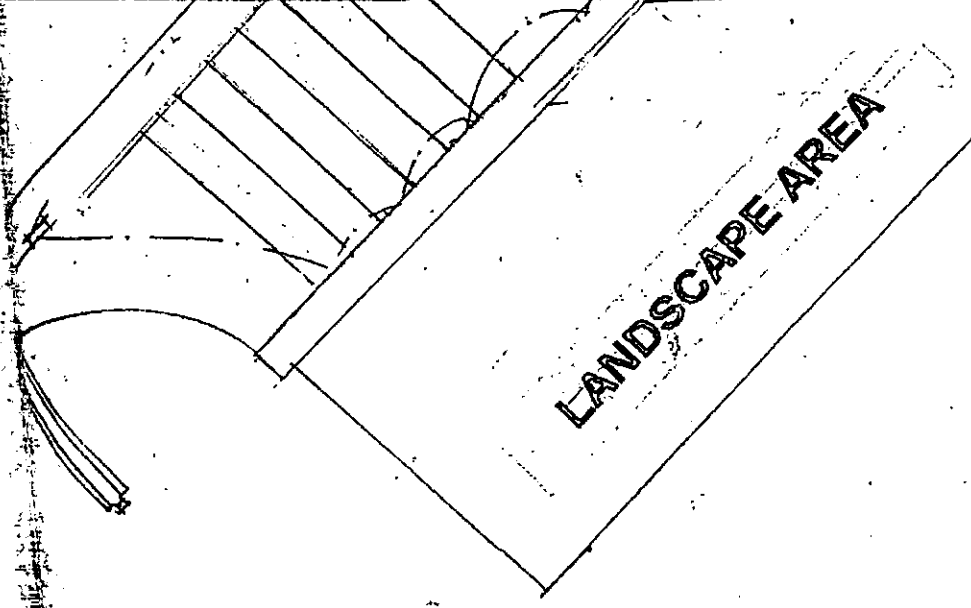
JAN 30 2017

This set of plans has been reviewed for PLUMBING MECHANICAL requirements prior to issuance of Building Permit. It shall be kept at the construction site. Such review shall not prevent the Building Official from requiring correction of errors in the plans where such errors are subsequently found to be in violation of any applicable code.

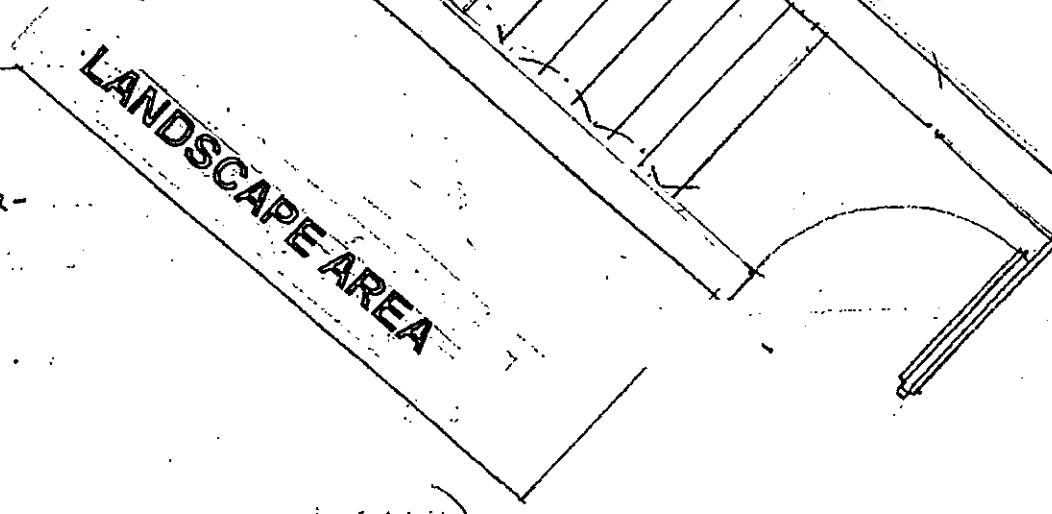


BAPTISTRY POOL

REFLECTING POOL



LANDSCAPE AREA



LANDSCAPE AREA

NOTE:

AUDIO-ELECT-VISUAL BOX FOR PA SYSTEM, MUSICAL INSTRUMENTS, & PROJECTION COORDINATE W/OWNER

POOL EQUIP

INTELLIFLOW MAIN PUMP VS
EDGE PUMP 1HP

CC320 CARTRIDGE FILTER (NO BACKWASH NECESSARY)
400K MASTER TANK HEATER PROPANE

→ PROPANE BY OTHERS ←