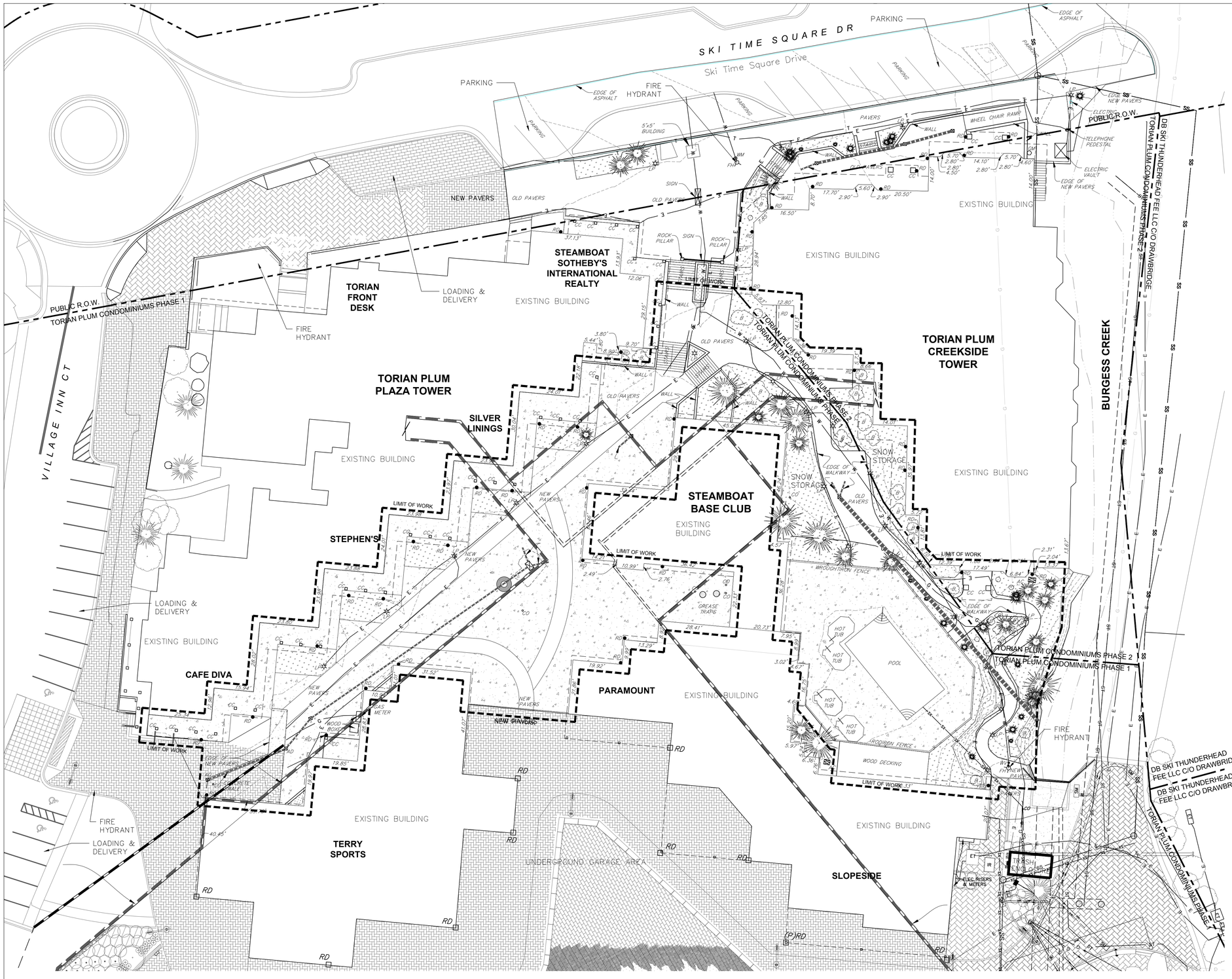

LEGEND

- EX. INTERMEDIATE CONTOUR — 5364
- EX. INDEX CONTOUR — 5365
- EX. SPOT ELEVATION — × 45.34
- EX. FIRE HYDRANT — FH
- EX. WATER VALVE — WV
- EX. GAS METER — GM
- EX. MANHOLE — MH
- OVERHANG COLUMN — CC
- EX. LIGHT POLE — LP
- EX. SANITARY CLEANOUT — CO
- EX. ROOF DRAIN — RD
- FINISH FLOOR — FF
- BUILDING OVERHANG
- EX. BURIED ELECTRIC LINE
- EX BURIED TELEPHONE LINE
- EX. GAS LINE
- EX. WATER LINE
- EX. DECIDUOUS TREE
- EX. CONIFEROUS TREE
- EX. DECIDUOUS BUSHES
- BUILDING HATCH
- CONCRETE HATCH
- LANDSCAPE AREA HATCH
- PARKING GARAGE
- STORM PIPE
- PROJECT BOUNDARY / LIMIT OF WORK
- LOT LINES / PROPERTY LINES

RCRBD
RECORD SET

PJ3253-1
Fire Prevention
In: 09/12/2018
Out: 09/19/2018

LOT / PARCEL #1
TORIAN PLUM CONDOMINIUMS PHASE 1 (276,230 SF)

LOT / PARCEL #2
TORIAN PLUM CONDOMINIUMS PHASE 2 (24,860 SF)

WENK ASSOCIATES
PLANNERS & LANDSCAPE ARCHITECTS
303.628.0003

JOSHUA J. CULWELL
985
10/25/2012
Original Date of Licensure
STATE OF COLORADO
LICENSED LANDSCAPE ARCHITECT

WATERPROOFING / RENOVATION - PHASE 2
TORIAN PLUM PARKING STRUCTURE
STEAMBOAT SPRINGS, CO

Date 10.22.18
Drawn By BP
Reviewed by JC
Job No. 16021.01

Revisions

Name	Date
DEV. PLAN #1	03/02/2018
BLDG DEPT #1	03/06/18

Issue:
100% Construction Documents

Sheet Title:
Existing Conditions Plan

Sheet Number
EC1.0

RCRBD
RECORD SET

YAMPA VALLEY ELECTRIC ASSN, INC.
Approved: Morgan Carey - YVEA 9/12/18

SWIMMING POOL AND SPA CONSTRUCTION DOCUMENTS

POOL SIGNS

SIGNAGE SHALL BE PROVIDED AND POSITIONED IN ACCORDANCE WITH THE AUTHORITY HAVING LOCAL JURISDICTION.

LOCATION AND SIZE. POST THE RULES IN A CONSPICUOUS PLACE NEAR THE ENTRANCE TO THE POOL AREA AND THE DRESSING ROOM. THE MINIMUM SIZE FOR THE SIGN IS 18 INCHES BY 24 INCHES WITH LETTERING THAT IS EASILY LEGIBLE AND AT LEAST 1/2 INCH HIGH.

CONTENT: AT ALL POOLS THE OPERATOR MUST POST AND ENFORCE A SIGN THAT INCLUDES THE FOLLOWING LANGUAGE.

- "WARNING NO LIFEGUARD ON DUTY" (IN LETTERS AT LEAST 4 INCHES HIGH)
- "CHILDREN UNDER THE AGE OF 14 SHOULD NOT USE POOL WITHOUT AN ADULT IN ATTENDANCE" (IN LETTERS AT LEAST 4 INCHES HIGH)
- "NO DIVING ALLOWED" (IN LETTERS AT LEAST 4 INCHES HIGH)
- "PROTECT OUR WATER - PLEASE DO NOT USE THE POOL IF YOU HAVE HAD DIARRHEA IN THE PAST TWO WEEKS, OR A DISEASE COMMUNICABLE BY WATER."
- "SHOWER YOUR CHILD AND YOURSELF. TAKE A CLEANSING SHOWER BEFORE ENTERING THE POOL OR AFTER USING THE TOILET."
- "SWIMMERS WHO ARE NOT TOILET TRAINED MUST WEAR A SWIM DIAPER."
- "IMMUNO-COMPROMISED INDIVIDUALS SHOULD USE CAUTION WHEN USING A PUBLIC POOL."
- "WATER AND ALCOHOL DON'T MIX. NO PERSON UNDER THE INFLUENCE OF ALCOHOL MAY USE THE POOL."
- "NO RUNNING OR ROUGH PLAY."
- "NO GLASS OR PLASTIC THAT WILL SHATTER."
- "NO FOOD OR DRINK IN THE POOL."
- "NO ANIMALS IN THE POOL AREA."

MAXIMUM OCCUPANT CAPACITY: (33) PERSONS IN POOL (IN LETTERS AT LEAST 4 INCHES HIGH)

DIAGRAMMATIC ILLUSTRATIONS OF ARTIFICIAL RESPIRATION PROCEDURES SHALL BE POSTED WHERE CLEARLY VISIBLE FROM THE NEARBY DECK.

SIGNS SHALL BE POSTED THAT CLEARLY MARK THE LOCATION OF THE PUMP EMERGENCY SHUT-OFF SWITCH. THE SWITCH SHALL BE CLEARLY LABELED.

NOTE: SAFETY ITEMS, REQUIRED SIGNS, HEALTH ISSUES, AND DRESSING ROOM REQUIREMENTS THAT ARE INDICATED ON THE DRAWINGS, OR IN THE SPECIFICATIONS ARE FOR GENERAL GUIDANCE ONLY. THE POOL CONTRACTOR AND OR THE OWNER/OPERATOR OF THE FACILITY SHALL BE RESPONSIBLE FOR FURNISHING AND MAINTAINING OF ALL ITEMS REQUIRED BY THE REGULATIONS FOR THE DESIGN, CONSTRUCTION, AND OPERATION OF PUBLIC SWIMMING POOLS.

KEEP CLOSED. A SIGN SHALL BE POSTED ON THE EXTERIOR SIDE OF GATES AND DOORS LEADING INTO THE POOL ENCLOSURE AREA STATING, "KEEP CLOSED."

SPA SIGNS

WARNING SIGN FOR A SPA POOL. A PRECAUTION SIGN WITH CLEARLY LEGIBLE LETTERS SHALL BE POSTED IN A PROMINENT PLACE NEAR THE ENTRANCE TO A SPA POOL WHICH SHALL CONTAIN THE FOLLOWING LANGUAGE:

"CAUTION"
1. ELDERLY PERSONS, PREGNANT WOMEN, INFANTS AND THOSE WITH HEALTH CONDITIONS REQUIRING MEDICAL CARE SHOULD CONSULT WITH A PHYSICIAN BEFORE ENTERING A SPA.

2. UNSUPERVISED USE BY CHILDREN UNDER THE AGE OF 14 IS PROHIBITED.

3. HOT WATER IMMERSION WHILE UNDER THE INFLUENCE OF ALCOHOL, NARCOTICS, DRUGS, OR MEDICINES MAY LEAD TO SERIOUS CONSEQUENCES AND IS NOT RECOMMENDED.

4. DO NOT USE ALONE.

5. LONG EXPOSURE MAY RESULT IN NAUSEA, DIZZINESS OR FAINTING.

MAXIMUM OCCUPANT CAPACITY: (2) PERSONS IN EACH SMALL SPA (IN LETTERS AT LEAST 4 INCHES HIGH),
(6) PERSONS IN LARGE SPA (IN LETTERS AT LEAST 4 INCHES HIGH)

EMERGENCY SHUT OFF. IN LETTERS AT LEAST ONE INCH (25 MM) HIGH A SIGN SHALL BE POSTED AT THE SPA EMERGENCY SHUT OFF SWITCH STATING, "EMERGENCY SHUT OFF SWITCH."

EMERGENCY # AND TELEPHONE

A SIGN MUST BE POSTED IN THE IMMEDIATE VICINITY OF THE POOL STATING THE ADDRESS OF THE FACILITY AND THE LOCATION OF THE NEAREST TELEPHONE WITH EMERGENCY TELEPHONE NUMBERS WHICH SHALL INCLUDE:

- EMERGENCY TELEPHONE NUMBER 911 (IN LETTERS AT LEAST 4 INCHES HIGH
- NAME AND PHONE NUMBERS OF THE NEAREST POLICE, FIRE, AND RESCUE UNIT
- NAME AND PHONE NUMBERS OF THE NEAREST AMBULANCE SERVICE
- NAME AND PHONE NUMBERS OF THE NEAREST HOSPITAL

WORK SCOPE

CONSTRUCTION OF 3 SPAS BY POOL CONTRACTOR TO INCLUDE BUT NOT LIMITED TO: EXCAVATION, HAUL OFF OF EXCAVATION SPOILS OFF SITE, FRAMING, TRENCHING, BACKFILL, PLUMBING, UNDERWATER LIGHTS, STEEL, BONDING, ELECTRICAL, SHOTCRETE, TILE, COPING, PLASTER, HAND RAILS, ANCHORS, DEPTH MARKERS, HANDICAP LIFT, CAULKING, POOL DECK DRAINS, POOL SIGNAGE, CLEANING AND EMERGENCY EQUIPMENT.

POOL/SPA EQUIPMENT TO INCLUDE BUT NOT LIMITED TO ITEMS LISTED ON SP203 AND SP301 UNLESS NOTED OTHERWISE.

POOL ELECTRICAL CONTRACTOR TO PROVIDE ALL ELECTRICAL AND CONNECTIONS FROM POOL PANEL TO POOL EQUIPMENT. POOL PANEL AND ALL BREAKERS BY GENERAL CONTRACTOR.

HVAC AND MECHANICAL AT POOL AREAS AND EQUIPMENT ROOM (INCLUDING BUT NOT LIMITED TO: DUCTWORK, COMBUSTION AIR, VENTILATION, GAS, FRESH WATER SUPPLY AND BACKFLOW PREVENTER) UNDER SEPARATE PERMIT AND SHALL BE PROVIDED, INSTALLED, AND CONNECTED BY GENERAL CONTRACTOR.

REFER TO GENERAL NOTES ON THIS SHEET FOR ADDITIONAL INFORMATION.

GENERAL NOTES

1. ALL NECESSARY SITE PREPARATION, ROUGH GRADING, POOL/SPA CORNER LOCATIONS AND BENCH MARK/ELEVATIONS ARE BY GENERAL CONTRACTOR.
2. HVAC AND MECHANICAL AT POOL AREAS AND EQUIPMENT ROOM (INCLUDING BUT NOT LIMITED TO: DUCTWORK, COMBUSTION AIR, VENTILATION, GAS, FRESH WATER SUPPLY AND BACKFLOW PREVENTER) UNDER SEPARATE PERMIT AND SHALL BE PROVIDED, INSTALLED, AND CONNECTED BY GENERAL CONTRACTOR.
3. POOL ELECTRICAL CONTRACTOR TO PROVIDE ALL ELECTRICAL AND CONNECTIONS FROM POOL PANEL TO POOL EQUIPMENT. POOL PANEL AND ALL POOL BREAKERS BY GENERAL CONTRACTOR.
4. ELECTRICAL INSPECTION SHALL APPROVE GROUNDING OF REINFORCING, BONDING AND CONDUIT PRIOR TO THE APPROVAL OF REINFORCING STEEL OR POURING OF CONCRETE OR SHOTCRETE.
5. LIGHT NICHES ARE INSTALLED BY POOL CONTRACTOR AT TIME OF POOL REBAR INSTALLATION. POOL ELECTRICAL CONTRACTOR SHALL RUN CONDUIT FROM THE LIGHT NICHES TO RESPECTIVE JUNCTION BOXES. ALL BONDING AND WIRING (INCL: LIGHTS, HANDRAILS, ANCHORS, HANDICAP LIFT ANCHOR, REINFORCING STEEL, ETC.) IS TO BE DONE BY THE POOL ELECTRICAL CONTRACTOR
6. REFER TO EP SHEETS IN THIS SET OF DRAWINGS FOR ALL ELECTRICAL AND NOTES.
7. DECK SHALL SLOPE 1/4" PER FT. AWAY FROM THE POOL TO DECK DRAINS TO SEWER BY GENERAL CONTRACTOR. NOTE: DECK DRAINS MUST NOT HAVE DIRECT CONNECTION TO SEWER. GENERAL CONTRACTOR TO PROVIDE CONNECTION, SUMP PUMP OR AIR GAP AND PLUMBING TO SEWER.
8. ALL SURFACE WATER SHALL DRAIN AWAY FROM POOL TO DECK DRAINS.
9. ALL POOL AREA DECK DRAINS BY POOL CONTRACTOR. GENERAL CONTRACTOR TO PROVIDE UNDERGROUND PLUMBING AND CONNECTIONS AT DECK DRAINS AND SEWER.
10. BACKWASH SUMP AND UNDERGROUND PLUMBING TO SEWER BY GENERAL CONTRACTOR.
11. A SUFFICIENT # OF HOSE BIBBS WITH HOSE VACUUM BREAKER BACKFLOW PREVENTERS FOR CLEANING THE DECK AREAS SHALL BE PROVIDED BY GENERAL CONTRACTOR. THESE HOSE BIBBS SHALL BE PLACED TO ALLOW THE PROPER CLEANING OF THE ENTIRE DECK WITH A MAXIMUM HOSE LENGTH OF FIFTY (50) FEET.
12. ALL CAULKING SURROUNDING POOL, COPING AND EXPANSION JOINTS BY POOL CONTRACTOR. PRODUCT: DECK-O-SEAL TWO-PART, POLYSULFIDE-BASED JOINT SEALANT IS A PREMIUM-GRADE, POURABLE, SELF-LEVELING SEALANT.
13. POOLS TO BE ENCLOSED BY WALL/FENCE WITH SELF CLOSING, SELF LATCHING GATES WITH LOCKABLE LATCHES BY GENERAL CONTRACTOR.
14. EMERGENCY SHUT-OFF SWITCH PROVIDED AND INSTALLED BY POOL CONTRACTOR. AN EMERGENCY SHUTDOWN STATION SHALL BE PROVIDED AT A PLACE THAT IS RELATIVELY CONVENIENT. THIS STATION SHALL DISABLE ALL SPA AND POOL CIRCULATION, MECHANICAL, CHEMICAL FEED AND ELECTRICAL DEVICES AND MUST BE READILY ACCESSIBLE TO THE USERS, NOT LESS THAN 5FT. AWAY, ADJACENT TO, AND WITHIN SITE OF THE SPA.
15. POOL CONTRACTOR TO PROVIDE AND INSTALL ONE 15 MINUTE TIMER AND CONNECT TO SPA JET PUMP. LOCATE WHERE BATHER MUST EXIT SPA TO RESET. SHALL BE LOCATED AT LEAST 5FT, MEASURED HORIZONTALLY, FROM THE INSIDE WALL OF THE SPA.
16. WALL MOUNTED TIMERS, CONTROLS, ACCESS PANELS ETC. SHALL BE LOCATED TO FALL WITHIN TILE WAINSCOT OR ABOVE IT, AVOIDING NEED TO "STEP" TILE AROUND ROUGH-IN CONDITIONS. COORDINATE WITH GENERAL CONTRACTOR.
17. DECK LIGHTING BY GENERAL CONTRACTOR.
18. ALL PLUMBING TO BE NSF APPROVED SCHEDULE 40 PVC UNLESS NOTED OTHERWISE
19. PIPING DIAGRAM IS PROVIDED TO IDENTIFY EQUIPMENT AND ACCESSORIES, TO INDICATE RELATIVE POSITIONS ON THE CIRCULATION LOOP, AND TO SHOW PIPE SIZES AND FLOW DIRECTION. THE FINAL CONFIGURATION MUST BE COORDINATED WITH SITE CONDITIONS.
20. ALL PIPING, FILTERS, HEATERS, PUMPS, ETC. ARE TO BE LABELED.
21. ALL ANTI-ENTRAPMENT DEVICES, DRAIN COVERS, SUCTION OUTLETS AND EQUALIZER COVERS SHALL COMPLY WITH THE ASME/ANSI A112.19.8 PERFORMANCE STANDARD, OR ANY SUCCESSOR STANDARD AND VIRGINIA GRAEME BAKER POOL AND SPA SAFETY ACT.
22. FLOW MEASUREMENT: A FLOW METER OR OTHER DEVICE WHICH GIVES A FLOW RATE IN GPM MUST BE PROVIDED. FLOW METER SHALL BE LOCATED ON A STRAIGHT RUN OF PIPE A MINIMUM OF 10 TIMES THE PIPE DIAMETER FROM ANY DISTURBANCES BEFORE THE METER AND 4 TIMES THE PIPE DIAMETER AFTER THE METER.
23. THE CHEMICAL FEED SYSTEM MUST BE DESIGNED TO PROVIDE 24 HR. SUPPLY OF DISINFECTANT.
24. BATHER LOAD DETERMINED AS FOLLOWS:
    POOL - 1 PER 20 SQ.FT.
    SPA AREA - 1 PER 10 SQ.FT.
25. PROVIDE AN INLINE THERMOMETER ON THE RETURN LINES.
    POOL WATER TEMPERATURE SHALL BE MAINTAINED BETWEEN 82°F AND 86°F MIN.
    MAXIMUM SPA WATER TEMPERATURE IS 104°F.
26. ALL PIPING MUST PASS A PRESSURE TEST AT 25 PSI FOR 30 MINUTES MINIMUM.
27. POOL AND SPA HEATER TO BE INSTALLED PER MANUFACTURERS OPERATING AND INSTALLATION INSTRUCTIONS AND IN ACCORDANCE WITH LOCAL BUILDING CODES. GENERAL CONTRACTOR SHALL PROVIDE COMBUSTION AIR AND VENTING PER MANUFACTURER RECOMMENDATIONS. GENERAL CONTRACTOR SHALL CONNECT GAS LINES TO HEATERS AND CONNECT PRESSURE RELIEF VALVES TO FLOOR DRAINS, AND INSTALL DUCTWORK, VENTILATION ETC. AS REQUIRED. PROVIDE AT LEAST THE MINIMUM SPACE REQUIRED AROUND THE HEATER PER MANUFACTURER'S SPECIFICATIONS.
28. ANY DEVIATION FROM THE PLANS WITHOUT PRIOR APPROVAL FROM THE ARCHITECT AND/OR ENGINEER SHALL BE CAUSE FOR REJECTION OF METHODS AND/OR MATERIALS. ANY COSTS INCURRED TO CORRECT SUCH DEVIATION TO THE SATISFACTION OF THE ARCHITECT AND/OR ENGINEER SHALL BE THE CONTRACTORS RESPONSIBILITY.
29. NO GROUND WATER SHALL BE ABOVE ANY PORTION OF THE POOL CONSTRUCTION.
30. WASTEWATER FROM PERIODIC DRAINING OF POOL OR SPA SHALL BE DISCHARGED INTO THE SANITARY SEWER.
31. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE. PLANS AND DETAILS ARE TO SCALE UNLESS NOTED. WHILE DRAWING SCALE IS BELIEVED TO BE RELIABLE, THE ACCURACY AND COMPLETENESS IS NOT GUARANTEED BY THE ENGINEER. CONSULT THE ARCHITECT OR ENGINEER OF RECORD FOR DIMENSION VERIFICATION. NOTIFY ARCHITECT OR ENGINEER OF ANY DISCREPANCIES IN DIMENSIONS BETWEEN THE ARCHITECTURAL AND STRUCTURAL DOCUMENTS BEFORE PROCEEDING WITH THE WORK.

SHEET INDEX

PROJECT PARTICIPANTS

POOL/SPA CONSULTANT
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2801 YOUNGFIELD STREET SUITE 260
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ELECTRICAL ENGINEER
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PROJECT DATA

PROJECT ADDRESS

1855 SKI TIME SQUARE DR
STEAMBOAT SPRINGS, CO 80487

PROJECT COORDINATION

THE POOL AND ALL RELATED EQUIPMENT SHALL BE REVIEWED BY GOVERNING JURISDICTION.

SUBMITTAL TO BUILDING AND HEALTH DEPT. BY POOL CONTRACTOR.

BUILDING CODES

COLORADO SWIMMING POOL AND MINERAL BATH REGULATIONS

VIRGINIA GRAEME BAKER ACT (VGB)

INTERNATIONAL BUILDING CODE 2015

INTERNATIONAL MECHANICAL CODE 2015

INTERNATIONAL PLUMBING CODE 2015

NATIONAL ELECTRIC CODE 2017

DRAWING SYMBOLS

SECTION — DET / SHT

WALL OR DETAIL SECTION — DET / SHT

DETAIL SECTION (NONDIRECTIONAL) — DET / SHT

ENLARGED DETAIL REFERENCE — DET / SHT

ELEVATION TARGET — FIRST FLOOR, EL. 100'-0"

NORTH ARROW — NORTH

CENTERLINE — ℄

DRAWING LABEL — 1 VIEW LABEL, SCALE

GRAPHIC SCALE — 0 5 10 20

REVISION CLOUD & NUMBER — 1

SPOT ELEVATION — +101'-0"

ALIGN NOTE — ALIGN

BREAK LINE

CPS
2801 Youngfield St. Ste. 260 Golden, CO 80401
Office: 303-420-7321 Fax: 303-420-7207

APSP The Association of Pool & Spa Professionals

Arwin Priest P.E., P.Eng.
242 Mountain Cloud Circle
Highlands Ranch, CO 80126

TORIAN PLUM
POOL AND SPAS
1855 SKI TIME SQUARE DR
STEAMBOAT SPRINGS, CO 80487

Seal

COLORADO LICENSED
ARWIN D. PRIEST
11502
PROFESSIONAL ENGINEER
4/4/18

Drawn By	Reviewed By	Review Date
AR		

No.	Revision/Issue	Date

Project No.

Drawing Title
TITLE SHEET & GENERAL NOTES

Date

Sheet No.
SP001

NOTES

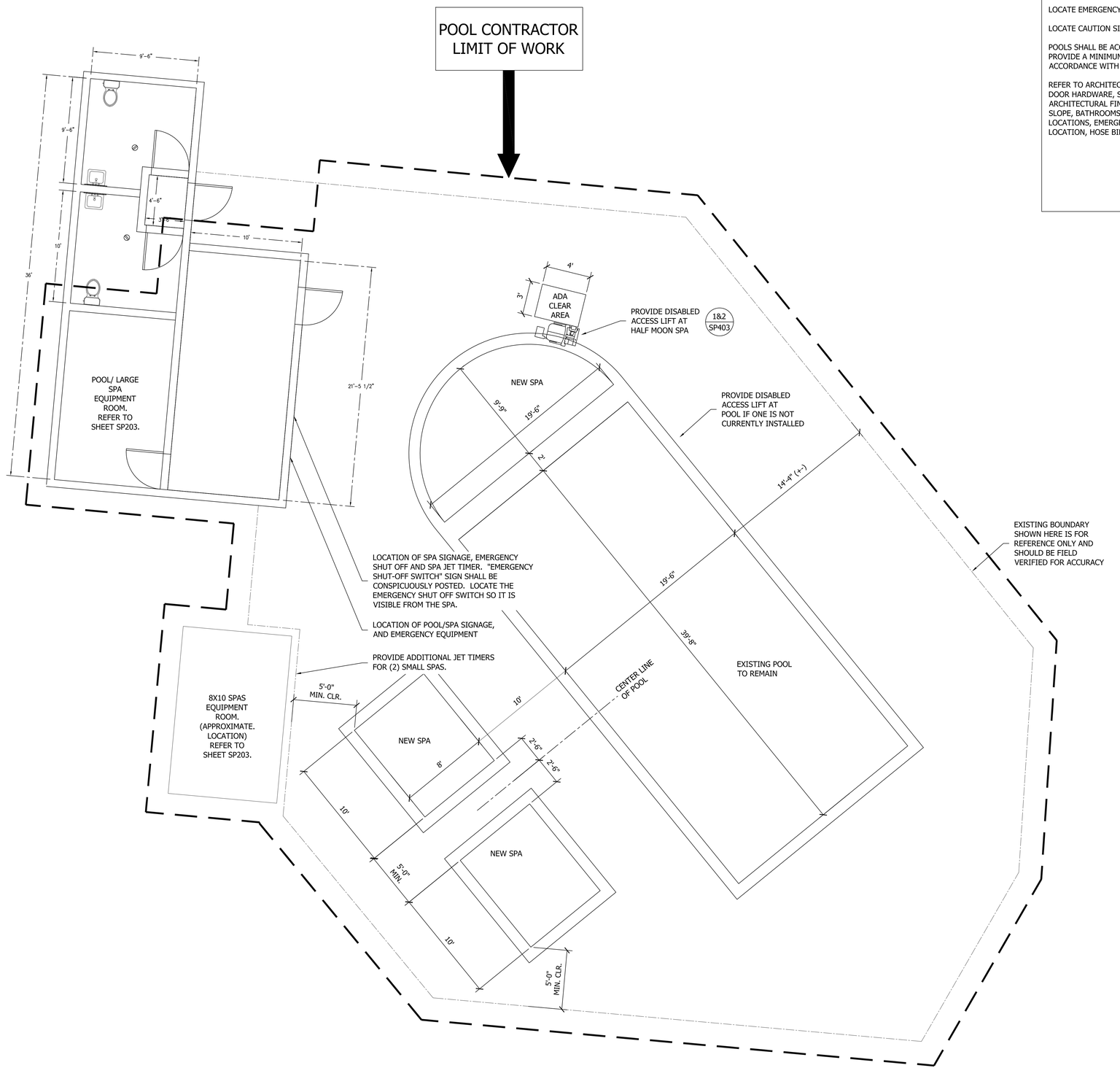
CONTRACTOR SHALL VERIFY ALL DIMENSIONS FOR LOCATION OF POOL WITH GENERAL CONTRACTOR AND/OR ARCHITECT.

LOCATE EMERGENCY SHUT OFF AND JET TIMER ADJACENT TO SPA.

LOCATE CAUTION SIGNS AT WALL ADJACENT TO POOL AND SPA.

POOLS SHALL BE ACCESSIBLE IN ACCORDANCE WITH ADA. PROVIDE A MINIMUM 36" X 48" CLEAR DECK SPACE AT POOL LIFTS IN ACCORDANCE WITH ADA.

REFER TO ARCHITECTURAL FOR POOL ENCLOSURE, FENCE, DOORS, DOOR HARDWARE, SELF CLOSING/SELF LATCHING HARDWARE, ARCHITECTURAL FINISHES, DECK FINISHES, DECK DRAINS, DECK SLOPE, BATHROOMS, SHOWERS, DRINKING FOUNTAIN, SIGN LOCATIONS, EMERGENCY EQUIPMENT LOCATION, EMERGENCY PHONE LOCATION, HOSE BIBBS, FURNITURE AND ACCESSORIES ETC.



POOL AND SPA LOCATION PLAN

1/4"=1'-0" NORTH

CPS
2801 Youngfield St, Ste. 260 Golden, CO 80401
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APSP
The Association of Pool & Spa Professionals

ASCENT
STRUCTURAL ENGINEERING
6707 WINCHESTER CIRCLE, SUITE 100
BOULDER, CO 80301
303.499.3022 fax 499.3032

RCRBD

RECORD SET

TORIAN PLUM
POOL AND SPAS
1855 SKI TIME SQUARE DR
STEAMBOAT SPRINGS, CO 80487

Seal

COLORADO REGISTERED PROFESSIONAL ENGINEER
JEFFREY WINKLER III
32999
08/28/2018

FOR STRUCTURE ONLY

Drawn By	Reviewed By	Review Date
AR		

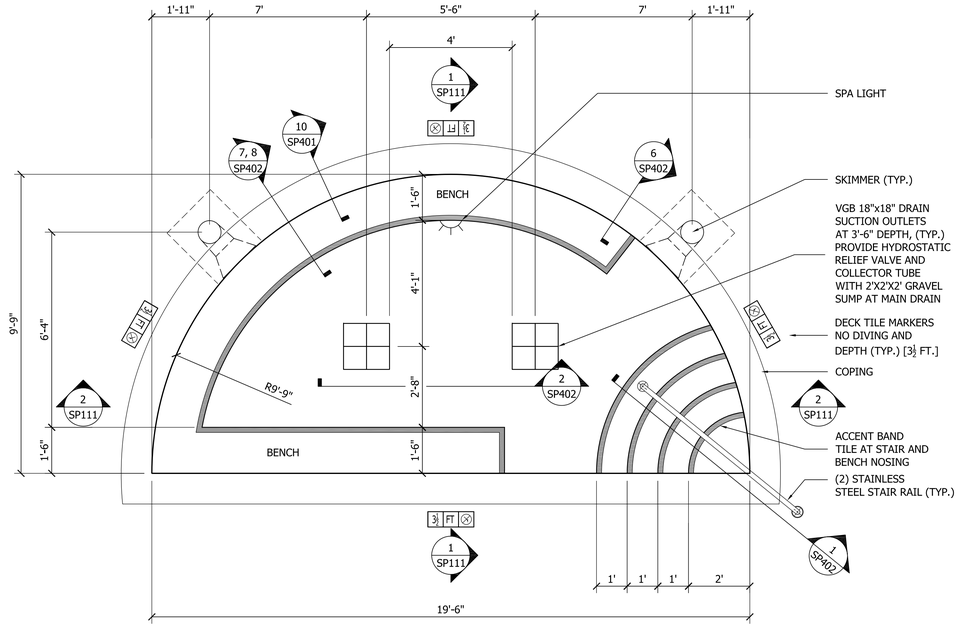
No.	Revision/Issue	Date

Project No.

Drawing Title
POOL & SPA LOCATION PLAN

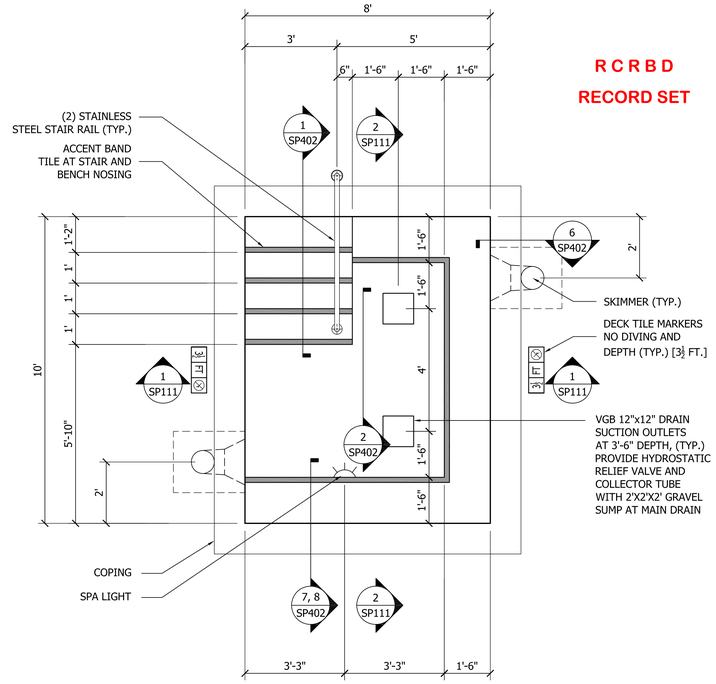
Date

Sheet No.
SP101



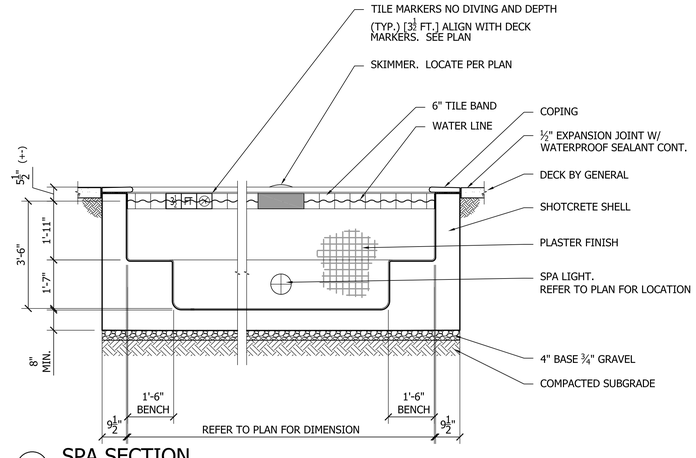
SPA PLAN HALF MOON

½"=1'-0"



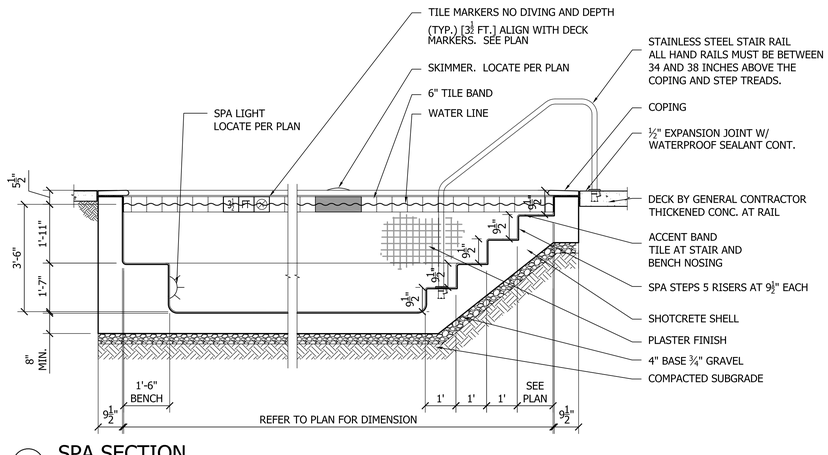
SPA PLAN 8X10

½"=1'-0"



1 SPA SECTION

½"=1'-0"



2 SPA SECTION

½"=1'-0"

RCRBD

RECORD SET

CPS
2801 Youngfield St, Ste. 260 Golden, CO 80401
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Seal

COLORADO REGISTERED PROFESSIONAL ENGINEER
JEFF T. WINKLER III
42999
08/28/2019

FOR STRUCTURE ONLY

Drawn By	Reviewed By	Review Date
AR		

No.	Revision/Issue	Date

Project No.

Drawing Title
LAP POOL & SPA PLANS & SECTIONS

Date

Sheet No.
SP111

TRENCHING AND BACKFILL

306.1 SUPPORT OF PIPING. BURIED PIPING SHALL BE SUPPORTED THROUGHOUT ITS ENTIRE LENGTH.

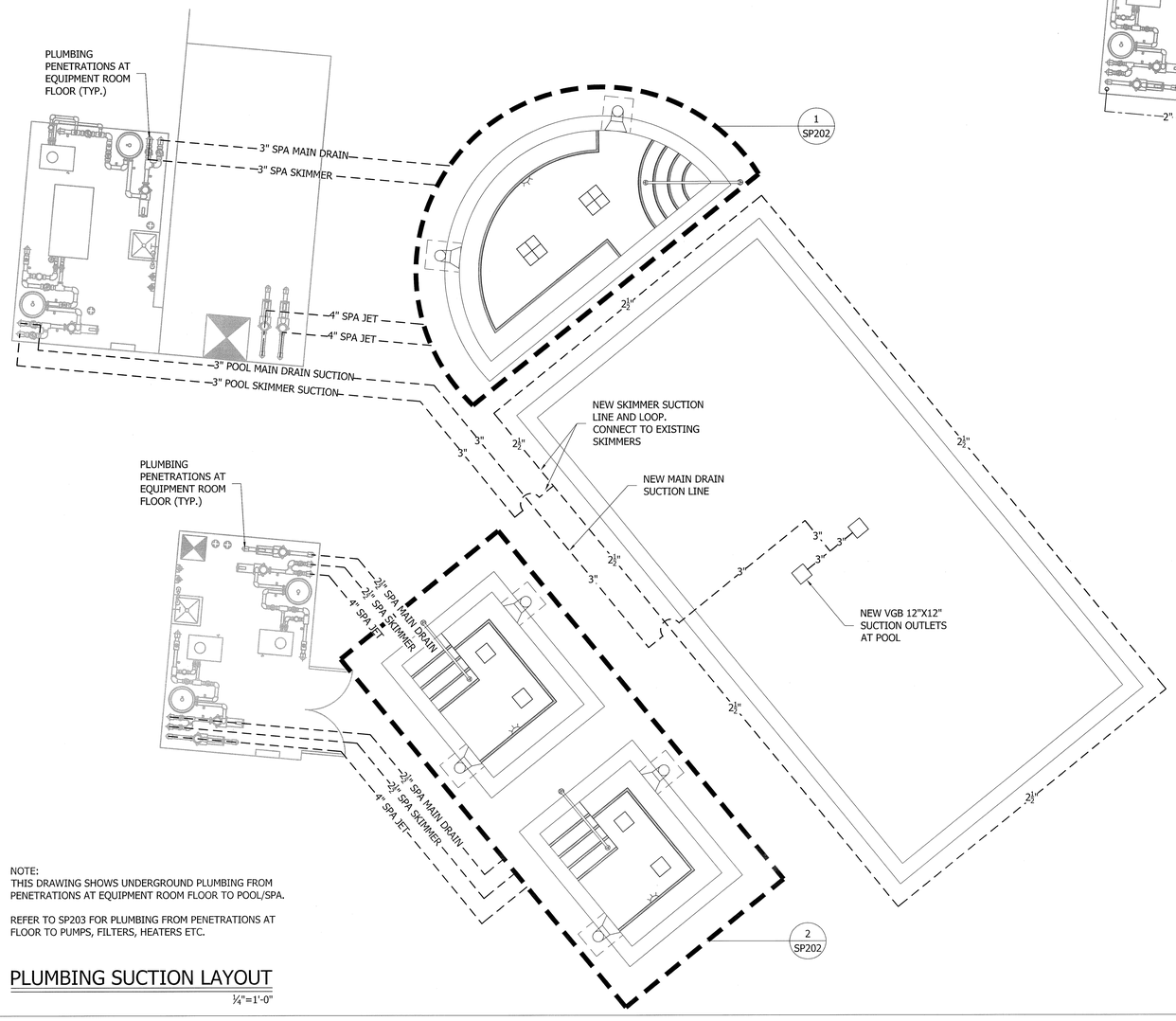
306.2 TRENCHING AND BEDDING. WHERE TRENCHES ARE EXCAVATED SUCH THAT THE BOTTOM OF THE TRENCH FORMS THE BED FOR THE PIPE, SOLID AND CONTINUOUS LOAD-BEARING SUPPORT SHALL BE PROVIDED BETWEENJOINTS. BELL HOLES, HUB HOLES AND COUPLING HOLES SHALL BE PROVIDED AT POINTS WHERE THE PIPE IS JOINED. SUCH PIPE SHALL NOT BE SUPPORTED ON BLOCKS TO GRADE. IN INSTANCES WHERE THE MATERIALS MANUFACTURER'S INSTALLATION INSTRUCTIONS ARE MORE RESTRICTIVE THAN THOSE PRESCRIBED BY THE CODE, THE MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE MORE RESTRICTIVE REQUIRE- MENT.

306.2.1 OVEREXCAVATION. WHERE TRENCHES ARE EXCAVATED BELOW THE INSTALLATION LEVEL OF THE PIPE SUCH THAT THE BOTTOM OF THE TRENCH DOES NOT FORM THE BED FOR THE PIPE, THE TRENCH SHALL BE BACKFILLED TO THE INSTALLATION LEVEL OF THE BOTTOM OF THE PIPE WITH SAND OR FINE GRAVEL PLACED IN LAYERS OF 6 INCHES (152 MM) MAXIMUM DEPTH AND SUCH BACKFILL SHALL BE COM- PACTED AFTER EACH PLACEMENT.

306.2.2 ROCK REMOVAL. WHERE ROCK IS ENCOUNTERED IN TRENCHING, THE ROCK SHALL BE REMOVED TO A MINIMUM OF 3 INCHES (76 MM) BELOW THE INSTALLATION LEVEL OF THE BOTTOM OF THE PIPE, AND THE TRENCH SHALL BE BACKFILLED TO THE INSTALLATION LEVEL OF THE BOTTOM OF THE PIPE WITH SAND TAMPED IN PLACE SO AS TO PROVIDE UNIFORM LOAD-BEARING SUPPORT FOR THE PIPE BETWEENJOINTS. THE PIPE, INCLUDING THEJOINTS, SHALL NOT REST ON ROCK AT ANY POINT.

306.2.3 SOFT LOAD-BEARING MATERIALS. IF SOFT MATERIALS OF POOR LOAD-BEARING QUALITY ARE FOUND AT THE BOTTOM OF THE TRENCH, STABILIZATION SHALL BE ACHIEVED BY OVEREXCAVATING A MINIMUM OF TWO PIPE DIAMETERS AND BACKFILLING TO THE INSTALLATION LEVEL OF THE BOTTOM OF THE PIPE WITH FINE GRAVEL, CRUSHED STONE OR A CONCRETE FOUNDATION. THE CONCRETE FOUN- DATION SHALL BE BEDDED WITH SAND TAMPED INTO PLACE SO AS TO PROVIDE UNIFORM LOAD-BEARING SUPPORT FOR THE PIPE BETWEEN JOINTS.

306.3 BACKFILLING. BACKFILL SHALL BE FREE FROM DISCARDED CON- STRUCTION MATERIAL AND DEBRIS. LOOSE EARTH FREE FROM ROCKS, BRO- KEN CONCRETE AND FROZEN CHUNKS SHALL BE PLACED IN THE TRENCH IN 6-INCH (152 MM) LAYERS AND TAMPED IN PLACE UNTIL THE CROWN OF THE PIPE IS COVERED BY 12 INCHES (305 MM) OF TAMPED EARTH. THE BACKFILL UNDER AND BESIDE THE PIPE SHALL BE COMPACTED FOR PIPE SUPPORT. BACKFILL SHALL BE BROUGHT UP EVENLY ON BOTH SIDES OF THE PIPE SO THAT THE PIPE REMAINS ALIGNED. IN INSTANCES WHERE THE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR MATERIALS ARE MORE RESTRICTIVE THAN THOSE PRESCRIBED BY THE CODE, THE MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE MORE RESTRICTIVE REQUIREMENT.

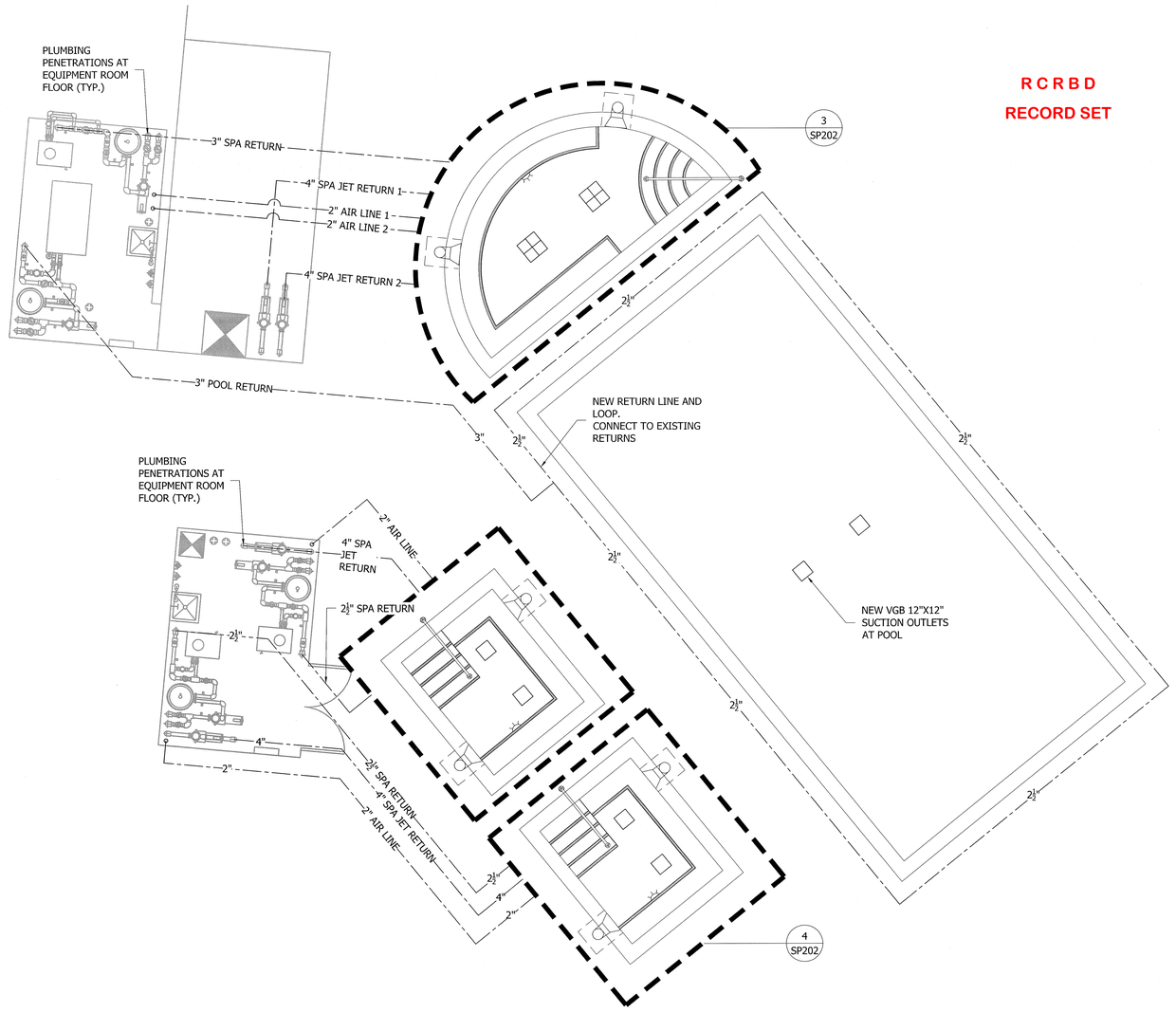


NOTE:
THIS DRAWING SHOWS UNDERGROUND PLUMBING FROM PENETRATIONS AT EQUIPMENT ROOM FLOOR TO POOL/SPA.

REFER TO SP203 FOR PLUMBING FROM PENETRATIONS AT FLOOR TO PUMPS, FILTERS, HEATERS ETC.

PLUMBING SUCTION LAYOUT

¼"=1'-0"



NOTE:
THIS DRAWING SHOWS UNDERGROUND PLUMBING FROM PENETRATIONS AT EQUIPMENT ROOM FLOOR TO POOL/SPA.

REFER TO SP203 FOR PLUMBING FROM PENETRATIONS AT FLOOR TO PUMPS, FILTERS, HEATERS ETC.

PLUMBING RETURN LAYOUT

¼"=1'-0"

PLUMBING NOTES

ALL PIPING MUST PASS A PRESSURE TEST AT 25 PSI FOR 30 MINUTES MINIMUM.

PIPING DIAGRAMS ARE PROVIDED TO IDENTIFY EQUIPMENT AND ACCESSORIES, TO INDICATE RELATIVE POSITIONS ON THE CIRCULATION LOOP, AND TO SHOW PIPE SIZES AND FLOW DIRECTION. THE FINAL CONFIGURATION MUST BE COORDINATED WITH SITE CONDITIONS.

ALL PLUMBING TO BE NSF APPROVED SCHEDULE 40 PVC UNLESS NOTED OTHERWISE.

ALL PIPING SHALL BE LOCATED CLEAR OF ALL FOOTINGS AND OBSTRUCTIONS.

ALL EXPOSED PIPING TO BE CLEARLY MARKED TO INDICATE FUNCTION AND DIRECTION. ALL VALVES MUST BE MARKED TO INDICATE USE. ALL PIPING SHALL BE LOCATED BEHIND EQUIPMENT AND FASTENED TO WALL.

ALL PIPING ON THE EXTERIOR OF THE POOL AND SPA SHALL BE BURIED A MIN. 24" BELOW GRADE

ALL PLUMBING SHALL CONFORM TO THE 2012 IPC.

PIPING CONVEYING CHEMICALS SHALL BE OF CORROSION RESISTANT TYPE.

RCRBD
RECORD SET

CPS
2801 Youngfield St. Ste. 260 Golden, CO 80401
Office: 303-420-7321 Fax: 303-420-7207

APSP
The Association of Pool & Spa Professionals

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Seal

COLORADO LICENSED ARWIN D. PRIEST 11502 9/21/18 PROFESSIONAL ENGINEER

Drawn By	Reviewed By	Review Date
AR		

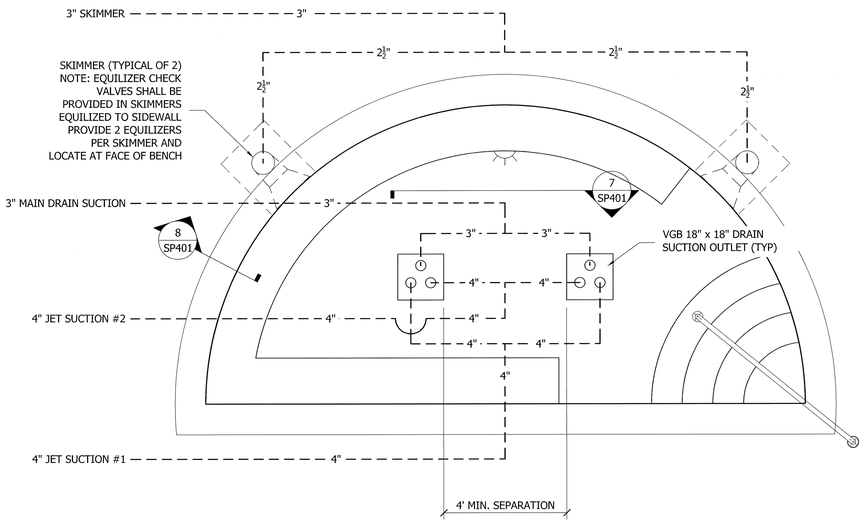
No.	Revision/Issue	Date

Project No.

Drawing Title
POOL & SPA SUCTION AND RETURN PLAN

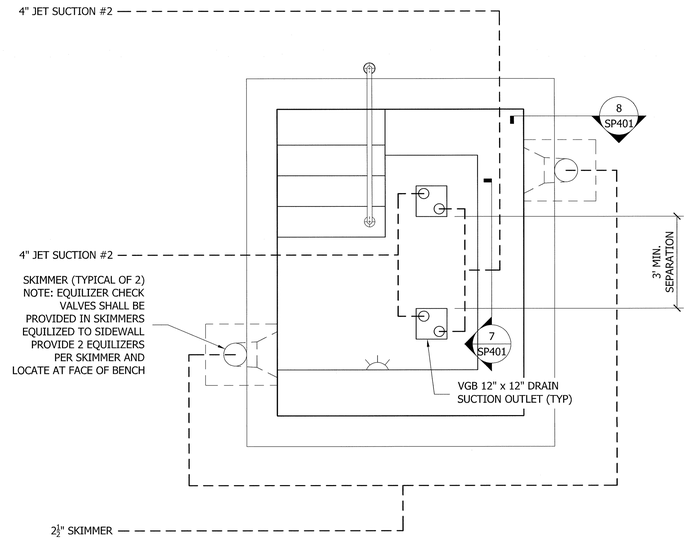
Date

Sheet No.
SP201



HALF MOON SPA SUCTION ENLARGEMENT PLAN

1 — ½"=1'-0"



8X10 SPA SUCTION ENLARGEMENT PLAN

2 — ½"=1'-0"

PLUMBING NOTES

ALL PIPING MUST PASS A PRESSURE TEST AT 25 PSI FOR 30 MINUTES MINIMUM.

PIPING DIAGRAMS ARE PROVIDED TO IDENTIFY EQUIPMENT AND ACCESSORIES, TO INDICATE RELATIVE POSITIONS ON THE CIRCULATION LOOP, AND TO SHOW PIPE SIZES AND FLOW DIRECTION. THE FINAL CONFIGURATION MUST BE COORDINATED WITH SITE CONDITIONS.

ALL PLUMBING TO BE NSF APPROVED SCHEDULE 40 PVC UNLESS NOTED OTHERWISE.

ALL PIPING SHALL BE LOCATED CLEAR OF ALL FOOTINGS AND OBSTRUCTIONS.

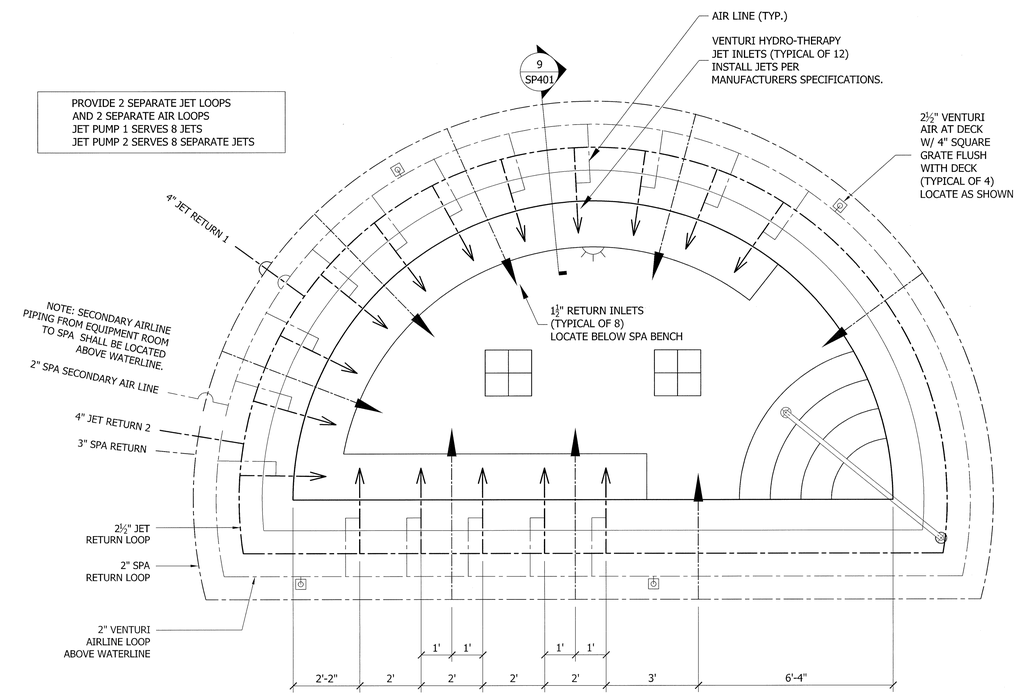
ALL EXPOSED PIPING TO BE CLEARLY MARKED TO INDICATE FUNCTION AND DIRECTION. ALL VALVES MUST BE MARKED TO INDICATE USE. ALL PIPING SHALL BE LOCATED BEHIND EQUIPMENT AND FASTENED TO WALL.

ALL PIPING ON THE EXTERIOR OF THE POOL AND SPA SHALL BE BURIED A MIN. 24" BELOW GRADE

ALL PLUMBING SHALL CONFORM TO THE 2015 IPC.

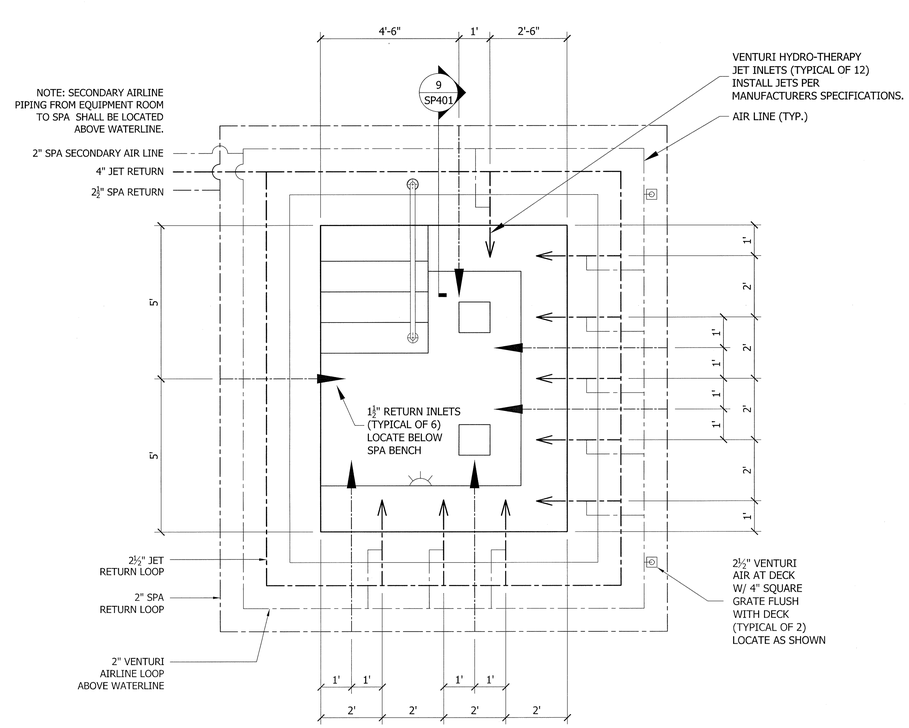
PIPING CONVEYING CHEMICALS SHALL BE OF CORROSION RESISTANT TYPE.

RCRBD
RESUBMITTAL SET



HALF MOON SPA RETURN ENLARGEMENT PLAN

3 — ½"=1'-0"



8X10 SPA RETURN ENLARGEMENT PLAN

4 — ½"=1'-0"

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Seal

COLORADO LICENSED ARWIN D. PRIEST 11602 PROFESSIONAL ENGINEER

Drawn By	Reviewed By	Review Date
AR		

No.	Revision/Issue	Date

Project No.

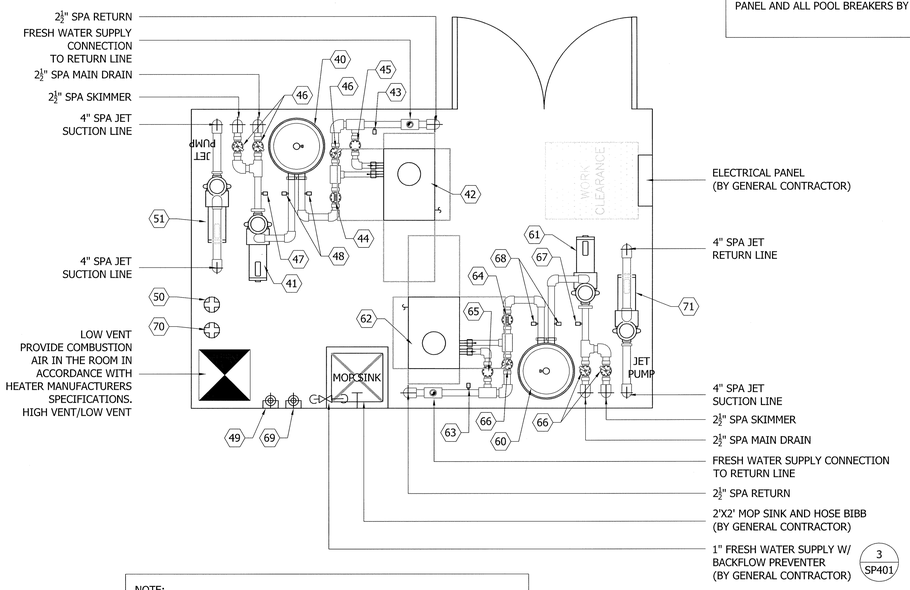
Drawing Title
POOL & SPA SUCTION AND RETURN ENLARGEMENT PLAN

Date

Sheet No.
SP202

HVAC AND MECHANICAL AT POOL AREAS AND EQUIPMENT ROOM (INCL: DUCTWORK, COMBUSTION AIR, VENTILATION, GAS, FRESH WATER SUPPLY AND BACKFLOW PREVENTER) UNDER SEPARATE PERMIT AND SHALL BE PROVIDED, INSTALLED, AND CONNECTED BY GENERAL CONTRACTOR.

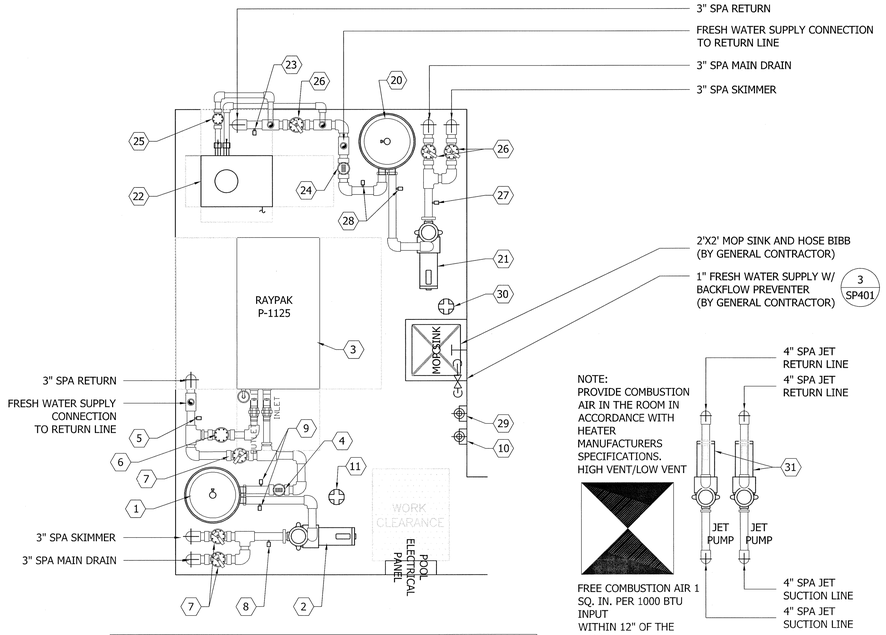
POOL ELECTRICAL CONTRACTOR TO PROVIDE ALL ELECTRICAL AND CONNECTIONS FROM POOL PANEL TO POOL EQUIPMENT. POOL PANEL AND ALL POOL BREAKERS BY GENERAL CONTRACTOR.



NOTE:
ALL 8X10 SPA SUCTION PIPING (FROM POOLS TO PUMP) IS 2½" DIAMETER.
ALL 8X10 SPA RETURN PIPING (FROM PUMP BACK TO POOLS) IS 2½" DIAMETER
ALL SPA JET SUCTION/RETURN PIPING IS 4" DIAMETER

SPA EQUIPMENT ROOM LAYOUT
(2) 8X10 SPAS

½"=1'-0"



NOTE:
ALL POOL AND SPA SUCTION PIPING (FROM POOLS TO PUMP) IS 3" DIAMETER.
ALL POOL AND SPA RETURN PIPING (FROM PUMP BACK TO POOLS) IS 3" DIAMETER
ALL SPA JET SUCTION/RETURN PIPING IS 4" DIAMETER

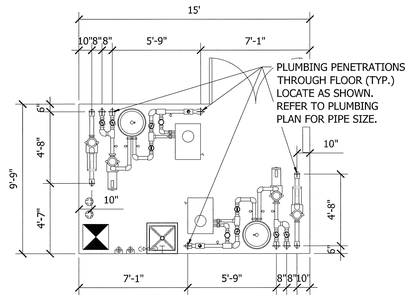
POOL/SPA EQUIPMENT ROOM LAYOUT
POOL AND HALF MOON SPA

½"=1'-0"

NOTE:
PROVIDE COMBUSTION AIR IN THE ROOM IN ACCORDANCE WITH HEATER MANUFACTURERS SPECIFICATIONS. HIGH VENT/LOW VENT

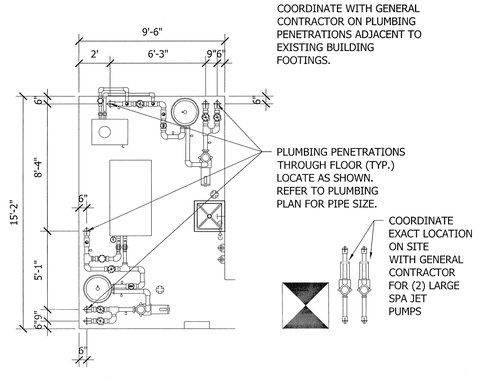
FREE COMBUSTION AIR 1 SQ. IN. PER 1000 BTU INPUT WITHIN 12" OF THE FLOOR.

FREE VENTILATION AIR 1 SQ. IN. PER 1000 BTU INPUT WITHIN 12" OF THE CEILING LEVEL.



PLUMBING PENETRATION PLAN
AT 8X10 SPAS
EQUIPMENT ROOM

¼"=1'-0"



PLUMBING PENETRATION PLAN
AT POOL AND LARGE SPA
EQUIPMENT ROOM

¼"=1'-0"

PLUMBING NOTES

ALL PIPING MUST PASS A PRESSURE TEST AT 25 PSI FOR 30 MINUTES MINIMUM.

PIPING DIAGRAMS ARE PROVIDED TO IDENTIFY EQUIPMENT AND ACCESSORIES, TO INDICATE RELATIVE POSITIONS ON THE CIRCULATION LOOP, AND TO SHOW PIPE SIZES AND FLOW DIRECTION. THE FINAL CONFIGURATION MUST BE COORDINATED WITH SITE CONDITIONS.

ALL PLUMBING TO BE NSF APPROVED SCHEDULE 40 PVC UNLESS NOTED OTHERWISE.

ALL PIPING SHALL BE LOCATED CLEAR OF ALL FOOTINGS AND OBSTRUCTIONS.

ALL EXPOSED PIPING TO BE CLEARLY MARKED TO INDICATE FUNCTION AND DIRECTION. ALL VALVES MUST BE MARKED TO INDICATE USE.

A VALVE, ELBOW OR TEE INSTALLED IN THE SUCTION LINE SHOULD BE NO CLOSER TO THE FRONT OF THE PUMP THAN 5 TIMES THE SUCTION LINE PIPE DIAMETER. (*I.E.* 4 IN. PIPE REQUIRES A 20 IN. STRAIGHT RUN IN FRONT OF THE SUCTION INLET OF THE PUMP.)

HAIR AND LINT STRAINERS ARE REQUIRED FOR PUMPS AND SHALL BE PROVIDED.

WHEN REQUIRED, POOL WILL DRAIN THROUGH SAME PLUMBING AS BACKWASH TO SUMP PIT. A MULTI PORT VALVE LOCATED AT THE FILTER IS MANUALLY OPERATED FOR EACH FUNCTION. PLUMBING IS INDIRECT AS IT ENTERS THE SUMP PIT.

ALL PIPING ON THE EXTERIOR OF THE POOL AND SPA SHALL BE BURIED A MIN. 24" BELOW GRADE

ALL PLUMBING SHALL CONFORM TO THE 2015 IPC.

PIPING AND TUBING SHALL BE IDENTIFIED IN ACCORDANCE WITH ASME A13.1 AND SHALL INDICATE THE MATERIAL CONVEYED.

PIPING CONVEYING CHEMICALS SHALL BE OF CORROSION RESISTANT TYPE.

REFER TO "M" MECHANICAL DRAWINGS FOR DUCTWORK, COMBUSTION AIR, VENTILATION AND GAS.

REFER TO "P" PLUMBING SHEETS FOR FRESH WATER SUPPLY AND BACKFLOW PREVENTER.

FITTINGS THAT CONNECT DIRECTLY TO THE HEATER MANIFOLD MUST BE MADE OF CPVC UNLESS OTHERWISE SPECIFIED BY MANUFACTURER. THESE FITTINGS ARE PROVIDED WITH THE HEATER.
REFER TO MANUFACTURES SPECIFICATIONS FOR INSTALLATION.

NOTES

HAZARD IDENTIFICATION SIGNS:
VISIBLE HAZARD IDENTIFICATION SIGNS AS SPECIFIED IN NFPA 704 FOR THE SPECIFIC MATERIAL CONTAINED SHALL BE PLACED ON STATIONARY CONTAINERS AND ABOVE GROUND TANKS AND AT ENTRANCES TO LOCATIONS WHERE HAZARDOUS MATERIALS ARE STORED, DISPENSED, USED OR HANDLED IN QUANTITIES REQUIRING A PERMIT AND AT SPECIFIC ENTRANCES AND LOCATIONS DESIGNATED BY THE FIRE CODE OFFICIAL IN ACCORDANCE WITH THE INTERNATIONAL FIRE CODE.

704 HAZARD ID
HEALTH HAZARD = 2
FLAMMABILITY HAZARD = 0
REACTIVITY RATING = 2

R C R B D
RECORD SET

THE STORAGE, USE AND HANDLING OF ALL HAZARDOUS MATERIALS SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL FIRE CODE.

NO ELECTRICAL EQUIPMENT OR DEVICES SHALL BE LOCATED IN THE CHEMICAL CABINET.

NOTES

CABINETS SHALL BE LISTED IN ACCORDANCE WITH UL 1275 AS SUITABLE FOR THE INTENDED STORAGE

WARNING MARKINGS:
CABINETS SHALL BE CLEARLY IDENTIFIED IN AN APPROVED MANNER WITH RED LETTERS ON A CONTRASTING BACKGROUND TO READ: HAZARDOUS - KEEP FIRE AWAY

THE CABINET INCLUDING THE DOOR SHALL BE STEEL 18 GAGE, DOUBLE WALLED W/ 1.5" AIRSPACE BETWEEN THE WALLS. JOINTS SHALL BE RIVETED OR WELDED AND TIGHT FITTING. DOORS SHALL BE WELL FITTED, SELF CLOSING AND EQUIPPED WITH A SELF LATCHING DEVICE.

THE BOTTOMS OF CABINETS FOR STORAGE OF LIQUIDS SHALL BE LIQUID TIGHT TO A HEIGHT OF 2"

MATERIALS THAT ARE INCOMPATIBLE SHALL NOT BE STORED IN THE SAME CABINET

FOR CHEMICALS STORED AND QUANTITIES REFER TO HMIS

POOL EQUIPMENT SCHEDULE (IN EQUIPMENT ROOM)

⬡	ITEM	MANUFACTURER	MODEL NO.	DESCRIPTION	NO. REQD
1	FILTER	PENTAIR	CCP-320	CARTRIDGE FILTER	1
2	CIRCULATION PUMP	PENTAIR	WFE-4	WHISPERFLO, 1 HP, 208-230V	1
3	HEATER	RAYPAK	P-1125	1124.7 MBTU, RAYTHERM PROF INDOOR INSTALLATION, NATURAL GAS	1
4	THERMOMETER	PENTAIR	SL1DW	INLINE THERMOMETER	1
5	FLOW METER	FLOW VIZ	FV-3	3" 90-220 GPM FLOW RANGE	1
6	CHECK VALVE	JANDY	7307	2½"-3" CHECK VALVE	1
7	2 PORT VALVE	JANDY	4718	2½"-3" 2 PORT VALVE	3
8	VACUUM GAUGE	SUPER PRO	SPG-06-1008	2" 30# ¼" BTM STEEL	1
9	PRESSURE GAUGE	WIKA	113.13 GLYCERINE FILLED	60 PSI INFLUENT & EFFLUENT	2
10	WATER LEVEL CONTROLLER	MILLENIUM	LEVELOR K1100	ELECTRONIC WATER LEVELER	1
11	CHLORINATOR	PENTAIR	300-29X	TRICHLOR EROSION FEEEDER	1
12	FIRE EXTINGUISHER	AMEREX	240	STORED PRESSURE WATER FIRE EXTINGUISHER - 2.5 GAL.	2

HALF MOON SPA EQUIPMENT ROOM SCHEDULE (IN EQUIPMENT ROOM)

⬡	ITEM	MANUFACTURER	MODEL NO.	DESCRIPTION	NO. REQD
20	FILTER	PENTAIR	CCP-420	CARTRIDGE FILTER	1
21	CIRCULATION PUMP	PENTAIR	WFE-8	WHISPERFLO, 2 HP, 208-230V	1
22	HEATER	RAYPAK	P-R266A-EN-C #52	266 BTU, HIGH ALTITUDE, NATURAL GAS	1
23	THERMOMETER	PENTAIR	SL1DW	INLINE THERMOMETER	1
24	FLOW METER	FLOW VIZ	FV-3	3" 90-220 GPM FLOW RANGE	1
25	CHECK VALVE	JANDY	7307	2½"-3" CHECK VALVE	1
26	2 PORT VALVE	JANDY	4718	2½"-3" 2 PORT VALVE	3
27	VACUUM GAUGE	SUPER PRO	SPG-06-1008	2" 30# ¼" BTM STEEL	1
28	PRESSURE GAUGE	WIKA	113.13 GLYCERINE FILLED	60 PSI INFLUENT & EFFLUENT AT SAME HEIGHT	2
29	WATER LEVEL CONTROLLER	MILLENIUM	LEVELOR K1100	ELECTRONIC WATER LEVELER	1
30	CHLORINATOR	PENTAIR	300-29X	TRICHLOR EROSION FEEEDER	1
31	HYDROTHERAPY JET PUMP	PENTAIR	WFE-12	WHISPERFLO, 3 HP, 208-230V	2

8X10 SPA #1 EQUIPMENT ROOM SCHEDULE (IN EQUIPMENT ROOM)

⬡	ITEM	MANUFACTURER	MODEL NO.	DESCRIPTION	NO. REQD
40	FILTER	PENTAIR	CCP-240	CARTRIDGE FILTER	1
41	CIRCULATION PUMP	PENTAIR	WFE-3	WHISPERFLO, 1 HP, 115/208-230V	1
42	HEATER	RAYPAK	P-R206A-EN-C #52	195.5 BTU, HIGH ALTITUDE, NATURAL GAS	1
43	THERMOMETER	PENTAIR	SL1DW	INLINE THERMOMETER	1
44	FLOW METER	FLOW VIZ	FV-C	2" X 2½" 10-110 GPM FLOW RANGE	1
45	CHECK VALVE	JANDY	7305	2"-2½" CHECK VALVE	1
46	2 PORT VALVE	JANDY	4718	2½"-3" 2 PORT VALVE	3
47	VACUUM GAUGE	SUPER PRO	SPG-06-1008	2" 30# ¼" BTM STEEL	1
48	PRESSURE GAUGE	WIKA	113.13 GLYCERINE FILLED	60 PSI INFLUENT & EFFLUENT AT SAME HEIGHT	2
49	WATER LEVEL CONTROLLER	MILLENIUM	LEVELOR K1100	ELECTRONIC WATER LEVELER	1
50	CHLORINATOR	PENTAIR	300-29X	TRICHLOR EROSION FEEEDER	1
51	HYDROTHERAPY JET PUMP	PENTAIR	WFE-12	WHISPERFLO, 3 HP, 208-230V	1

8X10 SPA #1 EQUIPMENT ROOM SCHEDULE (IN EQUIPMENT ROOM)

⬡	ITEM	MANUFACTURER	MODEL NO.	DESCRIPTION	NO. REQD
60	FILTER	PENTAIR	CCP-240	CARTRIDGE FILTER	1
61	CIRCULATION PUMP	PENTAIR	WFE-3	WHISPERFLO, 1 HP, 115/208-230V	1
62	HEATER	RAYPAK	P-R206A-EN-C #52	195.5 BTU, HIGH ALTITUDE, NATURAL GAS	1
63	THERMOMETER	PENTAIR	SL1DW	INLINE THERMOMETER	1
64	FLOW METER	FLOW VIZ	FV-C	2" X 2½" 10-110 GPM FLOW RANGE	1
65	CHECK VALVE	JANDY	7305	2"-2½" CHECK VALVE	1
66	2 PORT VALVE	JANDY	4718	2½"-3" 2 PORT VALVE	3
67	VACUUM GAUGE	SUPER PRO	SPG-06-1008	2" 30# ¼" BTM STEEL	1
68	PRESSURE GAUGE	WIKA	113.13 GLYCERINE FILLED	60 PSI INFLUENT & EFFLUENT AT SAME HEIGHT	2
69	WATER LEVEL CONTROLLER	MILLENIUM	LEVELOR K1100	ELECTRONIC WATER LEVELER	1
70	CHLORINATOR	PENTAIR	300-29X	TRICHLOR EROSION FEEEDER	1
71	HYDROTHERAPY JET PUMP	PENTAIR	WFE-12	WHISPERFLO, 3 HP, 208-230V	1

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Drawn By	Reviewed By	Review Date
AR		

No.	Revision/Issue	Date
1	BLDG. DEPT. REVISIONS	1-29-18

Project No.

Drawing Title
EQUIPMENT PLUMBING, EQUIPMENT LAYOUT PLAN & SCHEDULE

Date

Sheet No.
SP203

HALF MOON SPA DATA

LENGTH	19 FT. 6 IN. +-
WIDTH	19 FT. 9 IN. +-
DEPTH	3'-6"
PERIMETER	50 L.F.
AREA	150 SQ.FT.
VOLUME	3,180 GAL.
REQUIRED TURNOVER TIME	30 MIN.
REQUIRED TURNOVER RATE	106 GPM
FILTER AREA	420 SQ.FT.
MAX FILTER RATE	0.375 GPM/SQFT = 150 GPM
PUMP RATE	122 GPM @ 50 FT HEAD
TURNOVER TIME	26 MINUTES
TURNOVER RATE	122 GPM
HYDROTHERAPY JET PUMP	160 GPM AT 45 FT. HEAD

8X10 #1 SPA DATA

LENGTH	10 FT.
WIDTH	8 FT.
DEPTH	3'-6"
PERIMETER	36 L.F.
AREA	80 SQ.FT.
VOLUME	1,645 GAL.
REQUIRED TURNOVER TIME	30 MIN.
REQUIRED TURNOVER RATE	55 GPM
FILTER AREA	240 SQ.FT.
MAX FILTER RATE	0.375 GPM/SQFT = 90 GPM
PUMP RATE	68 GPM @ 50 FT HEAD
TURNOVER TIME	25 MINUTES
TURNOVER RATE	68 GPM
HYDROTHERAPY JET PUMP	160 GPM AT 45 FT. HEAD

8X10 #2 SPA DATA

LENGTH	10 FT.
WIDTH	8 FT.
DEPTH	3'-6"
PERIMETER	36 L.F.
AREA	80 SQ.FT.
VOLUME	1,645 GAL.
REQUIRED TURNOVER TIME	30 MIN.
REQUIRED TURNOVER RATE	55 GPM
FILTER AREA	240 SQ.FT.
MAX FILTER RATE	0.375 GPM/SQFT = 90 GPM
PUMP RATE	68 GPM @ 50 FT HEAD
TURNOVER TIME	25 MINUTES
TURNOVER RATE	68 GPM
HYDROTHERAPY JET PUMP	160 GPM AT 45 FT. HEAD

RCRBD

RECORD SET

HALF MOON SPA EQUIPMENT SCHEDULE (AT SPA)

ITEM	MANUFACTURER	MODEL NO.	DESCRIPTION	NO. REQD
SPA LIGHT	PENTAIR	INTELLIBRITE LED	100W EQUIVALENCY 12V S/S FACE RING, WHITE	1
SPA LIGHT NICHE	PENTAIR	79206600	SMALL PVC NICHE GUNITE	1
SKIMMER	PENTAIR	506370	2" SLIP, WHITE	2
EQUALIZER/SUCTION FITTING	AQUASTAR	A8R101	8" SUMPLESS, VGB SUCTION OUTLET 75 GPM @1.5 FPS, 16 SQ.IN., WHITE	4
MAIN DRAIN COVER, & FRAME	WATERWAY	640-477XV	18"X18" VGB SUCTION OUTLET FLOOR: 812GPM @ 1.5 FPS 174.4 SQ.IN., WHITE	2
RETURN INLET	PENTAIR	540049	INSIDER FITTING 1½" SLIP 1" ORIFICE	8
STAIR RAIL	SR SMITH	3HR-5-065	60" S/S 3-BEND 1.5"OD .065" WALL	1
RAIL ANCHOR	PERMA CAST	PS-4019-B	BRONZE SOCKET	2
ESCUTCHEON PLATE	SR SMITH	PE-0019-S	STAINLESS STEEL	2
DISABLED ACCESS LIFT	AQUA CREEK PRODUCTS	STANDARD RANGER F-411RPL-AT1 ANCHOR F-04CAJP	POOL LIFT W/ 24 VOLT BATTERY PROVIDE 1 ADDITIONAL BATTERY	1
HYDROTHERAPY JET INLETS	WATERWAY	212-3350	1½" GUNITE VENTURI TEE 10" W/ 5/16" ORIFICE	16
JET EYEBALL FITTING	HYDRO AIR	10-3420WHT	EYEBALL FITTING AND RETAINING RING	16
EMERGENCY SHUT OFF SYSTEM	PENTAIR	LX802	DISABLE ALL SPA AND POOL CIRCULATION, JET, MECHANICAL, CHEMICAL FEED AND ELECTRICAL DEVICES	1
TIMER FOR JET PUMP	INTERMATIC	FF15M	15 MIN. SPRING WOUND, WALL MOUNT	1

8X10 #1 SPA EQUIPMENT SCHEDULE (AT SPA)

ITEM	MANUFACTURER	MODEL NO.	DESCRIPTION	NO. REQD
SPA LIGHT	PENTAIR	INTELLIBRITE LED	100W EQUIVALENCY 12V S/S FACE RING, WHITE	1
SPA LIGHT NICHE	PENTAIR	79206600	SMALL PVC NICHE GUNITE	1
SKIMMER	PENTAIR	506370	2" SLIP, WHITE	2
EQUALIZER/SUCTION FITTING	AQUASTAR	A8R101	8" SUMPLESS, VGB SUCTION OUTLET 75 GPM @1.5 FPS, 16 SQ.IN., WHITE	4
MAIN DRAIN COVER, & FRAME	WATERWAY	640-472XV	12"X12" VGB SUCTION OUTLET FLOOR: 292GPM @ 1.5 FPS 62.4 SQ.IN., WHITE	2
RETURN INLET	PENTAIR	540049	INSIDER FITTING 1½" SLIP 1" ORIFICE	6
STAIR RAIL	SR SMITH	3HR-5-065	60" S/S 3-BEND 1.5"OD .065" WALL	1
RAIL ANCHOR	PERMA CAST	PS-4019-B	BRONZE SOCKET	2
ESCUTCHEON PLATE	SR SMITH	PE-0019-S	STAINLESS STEEL	2
HYDROTHERAPY JET INLETS	WATERWAY	212-3350	1½" GUNITE VENTURI TEE 10" W/ 5/16" ORIFICE	9
JET EYEBALL FITTING	HYDRO AIR	10-3420WHT	EYEBALL FITTING AND RETAINING RING	9
EMERGENCY SHUT OFF SYSTEM	PENTAIR	LX802	DISABLE ALL SPA AND POOL CIRCULATION, JET, MECHANICAL, CHEMICAL FEED AND ELECTRICAL DEVICES	1 UNIT FOR 2 SMALL SPAS
TIMER FOR JET PUMP	INTERMATIC	FF15M	15 MIN. SPRING WOUND, WALL MOUNT	1

8X10 #2 SPA EQUIPMENT SCHEDULE (AT SPA)

ITEM	MANUFACTURER	MODEL NO.	DESCRIPTION	NO. REQD
SPA LIGHT	PENTAIR	INTELLIBRITE LED	100W EQUIVALENCY 12V S/S FACE RING, WHITE	1
SPA LIGHT NICHE	PENTAIR	79206600	SMALL PVC NICHE GUNITE	1
SKIMMER	PENTAIR	506370	2" SLIP, WHITE	2
EQUALIZER/SUCTION FITTING	AQUASTAR	A8R101	8" SUMPLESS, VGB SUCTION OUTLET 75 GPM @1.5 FPS, 16 SQ.IN., WHITE	4
MAIN DRAIN COVER, & FRAME	WATERWAY	640-472XV	12"X12" VGB SUCTION OUTLET FLOOR: 292GPM @ 1.5 FPS 62.4 SQ.IN., WHITE	2
RETURN INLET	PENTAIR	540049	INSIDER FITTING 1½" SLIP 1" ORIFICE	6
STAIR RAIL	SR SMITH	3HR-5-065	60" S/S 3-BEND 1.5"OD .065" WALL	1
RAIL ANCHOR	PERMA CAST	PS-4019-B	BRONZE SOCKET	2
ESCUTCHEON PLATE	SR SMITH	PE-0019-S	STAINLESS STEEL	2
HYDROTHERAPY JET INLETS	WATERWAY	212-3350	1½" GUNITE VENTURI TEE 10" W/ 5/16" ORIFICE	9
JET EYEBALL FITTING	HYDRO AIR	10-3420WHT	EYEBALL FITTING AND RETAINING RING	9
TIMER FOR JET PUMP	INTERMATIC	FF15M	15 MIN. SPRING WOUND, WALL MOUNT	1

SPA FINISH SCHEDULE

ITEM	MANUFACTURER	MODEL NO.	DESCRIPTION	NO. REQD
COPING	-	-	PRECAST BULL NOSE, WHITE, NON-SKID	50 L.F.
PLASTER	SGM	DIAMOND BRITE	WHITE	-
WATERLINE TILE	NPT	DSF95N	CARIBBEAN BLUE, GLAZED 3"X3" MOSAIC TILE	25 S.F.
STEP ACCENT TILE	NPT	BLACK	BLACK, NON-SKID 2"X2"	10 S.F.
3½' DECK DEPTH MARKER	INLAYS	C621035	NON-SKID 6"X6" TILE	4
DECK NO DIVING MARKER	INLAYS	C621500	NON-SKID 6"X6" TILE	4
3½' WATERLINE DEPTH MARKER	INLAYS	C611035	SMOOTH 6"X6" TILE	4
WATERLINE NO DIVING MARKER	INLAYS	C611500	SMOOTH 6"X6" TILE	4
WATERLINE "FT" MARKER	INLAYS	C613500	SMOOTH 6"X6" TILE	4
GROUT	LATICRETE SPECTRA-LOCK	WHITE COLOR	EPOXY GROUT	-

8X10 #1 SPA FINISH SCHEDULE

ITEM	MANUFACTURER	MODEL NO.	DESCRIPTION	NO. REQD
COPING	-	-	PRECAST BULL NOSE, WHITE, NON-SKID	36 L.F.
PLASTER	SGM	DIAMOND BRITE	WHITE	-
WATERLINE TILE	NPT	DSF95N	CARIBBEAN BLUE, GLAZED 3"X3" MOSAIC TILE	18 S.F.
STEP ACCENT TILE	NPT	BLACK	BLACK, NON-SKID 2"X2"	8 S.F.
3½' DECK DEPTH MARKER	INLAYS	C621035	NON-SKID 6"X6" TILE	2
DECK NO DIVING MARKER	INLAYS	C621500	NON-SKID 6"X6" TILE	2
3½' WATERLINE DEPTH MARKER	INLAYS	C611035	SMOOTH 6"X6" TILE	2
WATERLINE NO DIVING MARKER	INLAYS	C611500	SMOOTH 6"X6" TILE	2
WATERLINE "FT" MARKER	INLAYS	C613500	SMOOTH 6"X6" TILE	2
GROUT	LATICRETE SPECTRA-LOCK	WHITE COLOR	EPOXY GROUT	-

8X10 #2 SPA FINISH SCHEDULE

ITEM	MANUFACTURER	MODEL NO.	DESCRIPTION	NO. REQD
COPING	-	-	PRECAST BULL NOSE, WHITE, NON-SKID	36 L.F.
PLASTER	SGM	DIAMOND BRITE	WHITE	-
WATERLINE TILE	NPT	DSF95N	CARIBBEAN BLUE, GLAZED 3"X3" MOSAIC TILE	18 S.F.
STEP ACCENT TILE	NPT	BLACK	BLACK, NON-SKID 2"X2"	8 S.F.
3½' DECK DEPTH MARKER	INLAYS	C621035	NON-SKID 6"X6" TILE	2
DECK NO DIVING MARKER	INLAYS	C621500	NON-SKID 6"X6" TILE	2
3½' WATERLINE DEPTH MARKER	INLAYS	C611035	SMOOTH 6"X6" TILE	2
WATERLINE NO DIVING MARKER	INLAYS	C611500	SMOOTH 6"X6" TILE	2
WATERLINE "FT" MARKER	INLAYS	C613500	SMOOTH 6"X6" TILE	2
GROUT	LATICRETE SPECTRA-LOCK	WHITE COLOR	EPOXY GROUT	-

EXISTING POOL DATA

LENGTH	19 FT. 6 IN. +-
WIDTH	39 FT. 8 IN. +-
DEPTH	3'-6" TO 4'-6" +-
PERIMETER	118.5 L.F.
AREA	773.5 SQ.FT.
VOLUME	23,144 GAL.
REQUIRED TURNOVER TIME	6 HRS.
REQUIRED TURNOVER RATE	64 GPM
FILTER AREA	320 SQ.FT.
MAX FILTER RATE	0.375 GPM/SQFT = 120 GPM
PUMP RATE	86 GPM @ 50 FT HEAD
TURNOVER TIME	4 HOUR 29 MINUTES
TURNOVER RATE	86 GPM

NEW POOL EQUIPMENT SCHEDULE (AT POOL) - ALL EXISTING EQUIPMENT TO REMAIN

ITEM	MANUFACTURER	MODEL NO.	DESCRIPTION	NO. REQD
MAIN DRAIN COVER, & FRAME	AQUASTAR	12MF101	12"X12" VGB SUCTION OUTLET FLOOR: 274GPM @ 1.2 FPS 71.2 SQ.IN., WHITE	2

MISC. EQUIPMENT SCHEDULE

ITEM	MANUFACTURER	MODEL NO.	DESCRIPTION	NO. REQD
LIFEBOUY RING	JIM BUOY	GW24	USCG APPROVED 24"	1
SAFETY LIFE HOOK	PENTAIR	R221026 #153	LIFE HOOK	1
HARDWARE PACKAGE	PENTAIR	R221030	HARDWARE FOR LIFE HOOK	1
POOL BRUSH	PENTAIR	R111316 #902	18" ALUMINUM BACK	1
LEAF SKIMMER	PENTAIR	R121026 #119	LEAF SKIMMER	1
TEST KIT	TAYLOR	K-2005	COMPLETE TEST KIT	1
VACUUM HEAD W/ 50' HOSE	PENTAIR	R201024 #188	HD VAC HEAD W/ GENERIC 50' HOSE	1
16' STRAIGHT POLE	PENTAIR	R191116 #820-16	16' STRAIGHT POLE	1
8'X16' TELESCOPIC POLE	PENTAIR	R191306 #806-16	8'X16' TELESCOPIC POLE	1
FIRST AID KIT	GENERIC	GENERIC	MEETS OSHA FIRST AID 29 CFR 1910.151	1

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Seal

COLORADO LICENSED
ARWIN D. PRIEST
11502
PROFESSIONAL ENGINEER

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No.	Revision/Issue	Date

Project No.

Drawing Title
DATA & EQUIPMENT SCHEDULE

Date

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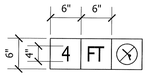
SP301

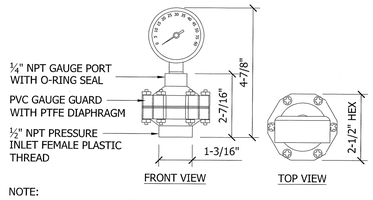
NOTE:
LETTERS AND NUMBERS SHALL BE BLACK IN COLOR ON A WHITE BACKGROUND IN ACCORDANCE.
THE UNIVERSAL NO DIVING SYMBOL SHALL CONSIST OF A RED CIRCLE WITH A RED SLASH THROUGH IT SUPERIMPOSED OVER THE IMAGE OF A DIVER.

IN ADDITION:
PROVIDE METRIC IF REQUIRED BY THE LOCAL JURISDICTION



4" HIGH BLACK NUMBERS ON FROSTPROOF SMOOTH TILE.
SPACED AT NO MORE THAN 25 FT. INTERVALS.

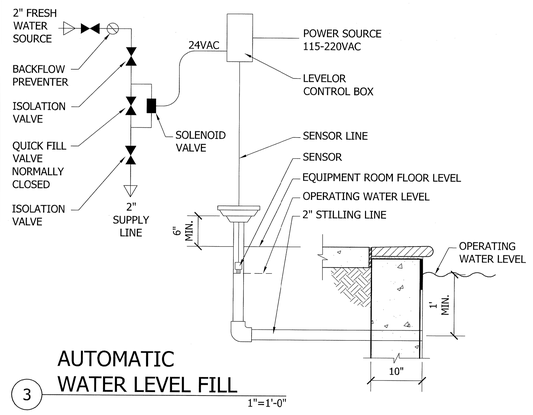
1 WATERLINE TILE MARKERS
1"=1'-0"



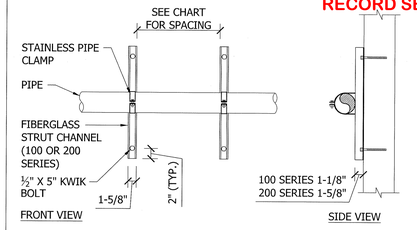
NOTE:
GAUGE AND GAUGE GUARD AVAILABLE PRE-ASSEMBLED AND PRE-FILLED BY SPEARS

2 PRESSURE GAUGE DETAIL
NTS

DIAGRAM PROVIDED TO IDENTIFY EQUIPMENT AND ACCESSORIES, TO INDICATE RELATIVE POSITIONS ON THE CIRCULATION LOOP, AND TO SHOW PIPE SIZES AND FLOW DIRECTION. REFER TO PLAN FOR LOCATION OF AUTO FILL SYSTEM AND STILLING LINE.



3 AUTOMATIC WATER LEVEL FILL
1"=1'-0"



FIXED PIPE CLAMPS by StrutTech		
PIPE SIZE	MAX. SPACING	MODEL NUMBER
≤ 1-1/2"	4'-0"	UFCPU150SS
2"	4'-0"	UFCPU200SS
2-1/2"	4'-0"	UFCPU250SS
3"	4'-0"	UFCPU300SS
4"	4'-0"	UFCPU400SS
6"	4'-0"	UFCPU600SS
8"	4'-0"	UFCPU800SS

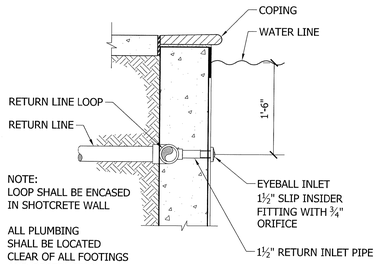
4 PVC PIPE WALL HANGER DETAIL
NTS

MANUFACTURER: BLUE WHITE

FLOW METER SHALL BE LOCATED ON A STRAIGHT RUN OF PIPE A MINIMUM OF 10 TIMES THE PIPE DIAMETER FROM ANY DISTURBANCES BEFORE THE METER AND 4 TIMES THE PIPE DIAMETER AFTER THE METER.

MODELS FOR SCH40 PVC PIPE		
PIPE SIZE	GPM FLOW RANGE	MODEL NUMBER
1"	5 to 35	F-30100P
1"	2 to 10	F-30100PR
1-1/4"	15 to 75	F-30125P
1-1/4"	5 to 35	F-30125PR
1-1/2"	20 to 100	F-30150P
1-1/2"	9 to 30	F-30150PR
2"	40 to 150	F-30200P
2"	15 to 70	F-30200PR
2-1/2"	60 to 240	F-30250P
3"	80 to 300	F-30300P
3"	40 to 140	F-30300PR
4"	125 to 500	F-30400P
6"	250 to 1050	F-30600P
8"	500 to 1900	F-30800P

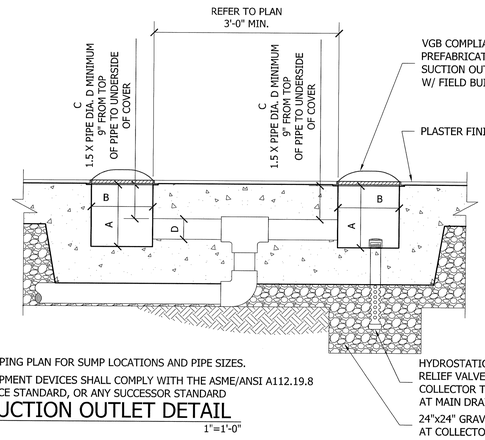
5 FLOW METER DETAIL
NTS



NOTE:
LOOP SHALL BE ENCASED IN SHOTCRETE WALL

ALL PLUMBING SHALL BE LOCATED CLEAR OF ALL FOOTINGS AND OBSTRUCTIONS

6 POOL RETURN INLET
1"=1'-0"



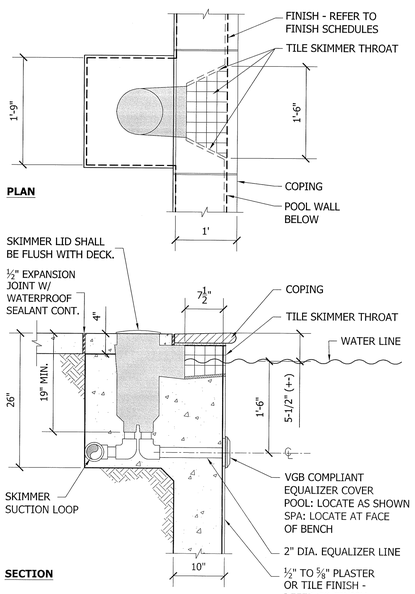
18"X18" SUCTION OUTLETS
A= 16"
B= 18"
C= 1.5 X PIPE DIA. MINIMUM
D= INSIDE PIPE DIAMETER

12"X12" SUCTION OUTLETS
A= 12"
B= 12"
C= 1.5 X PIPE DIA. MINIMUM
D= INSIDE PIPE DIAMETER

NOTE:
REFER TO PIPING PLAN FOR SUMP LOCATIONS AND PIPE SIZES.

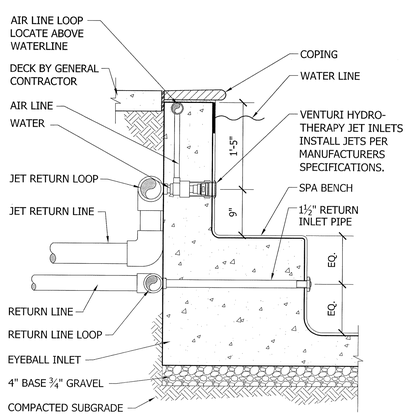
ANTI-ENTRAPMENT DEVICES SHALL COMPLY WITH THE ASME/ANSI A112.19.8 PERFORMANCE STANDARD, OR ANY SUCCESSOR STANDARD

7 SUCTION OUTLET DETAIL
1"=1'-0"



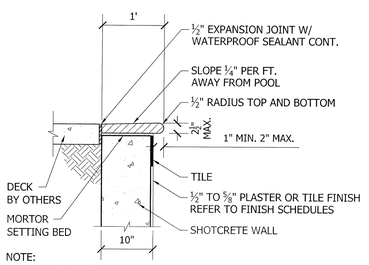
ANTI-ENTRAPMENT DEVICES SHALL COMPLY WITH THE ASME/ANSI A112.19.8 PERFORMANCE STANDARD, OR ANY SUCCESSOR STANDARD

8 SKIMMER DETAIL
1"=1'-0"



NOTE:
ALL PLUMBING SHALL BE LOCATED CLEAR OF ALL FOOTINGS AND OBSTRUCTIONS

9 SPA RETURN INLET & JET DETAIL
1"=1'-0"



NOTE:
COPING STONES TO HAVE A SLIP RESISTANT SURFACE FINISH. THE OVERHANG OF THE COPING MUST BE A MIN. OF 1" AND MUST NOT EXCEED 2".

10 PRECAST COPING
1"=1'-0"

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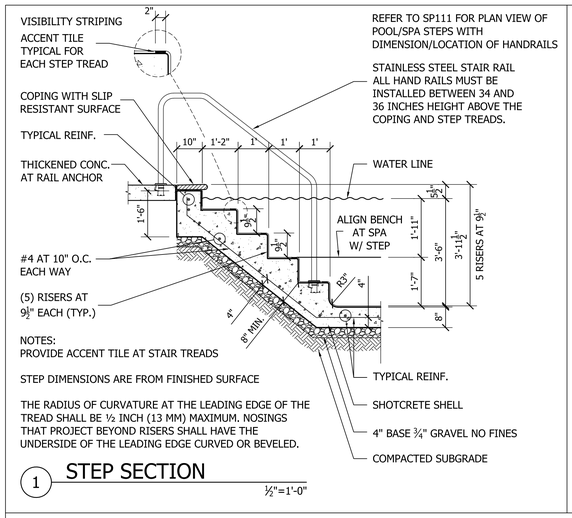
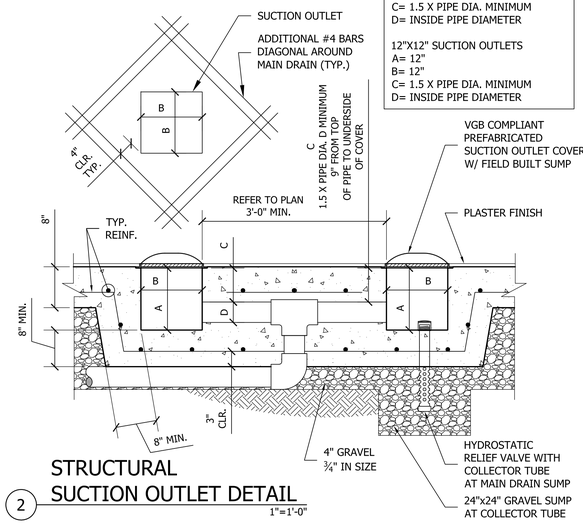


1 STEP SECTION
½"=1'-0"

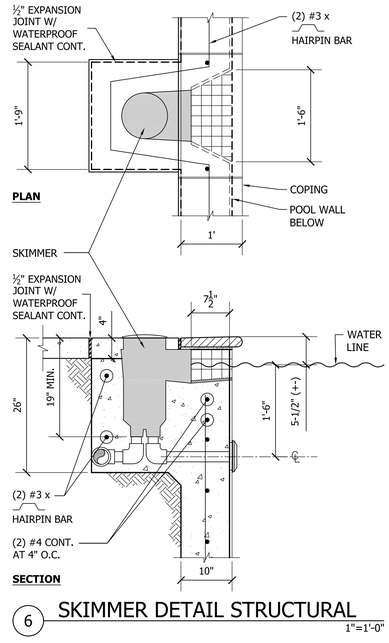
ANTI-ENTRAPMENT DEVICES SHALL COMPLY WITH THE ASME/ANSI A112.19.8 PERFORMANCE STANDARD, OR ANY SUCCESSOR STANDARD

18"X18" SUCTION OUTLETS
A= 16"
B= 18"
C= 1.5 X PIPE DIA. MINIMUM
D= INSIDE PIPE DIAMETER

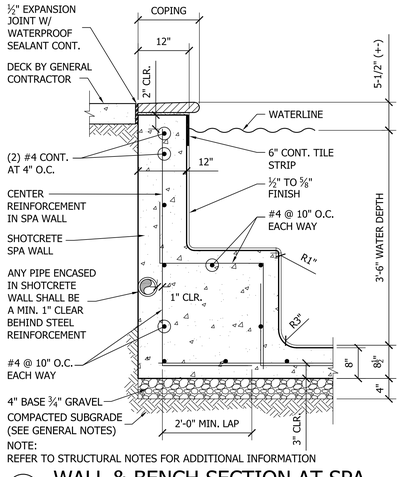
12"X12" SUCTION OUTLETS
A= 12"
B= 12"
C= 1.5 X PIPE DIA. MINIMUM
D= INSIDE PIPE DIAMETER



2 STRUCTURAL SUCTION OUTLET DETAIL
1"=1'-0"

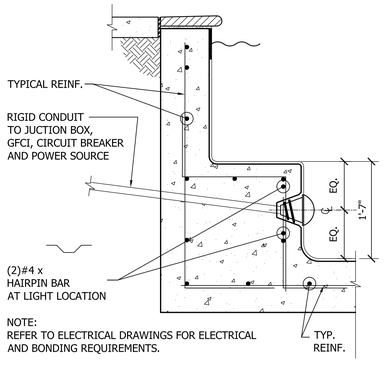


6 SKIMMER DETAIL STRUCTURAL
1"=1'-0"



NOTE:
REFER TO STRUCTURAL NOTES FOR ADDITIONAL INFORMATION

7 WALL & BENCH SECTION AT SPA
1"=1'-0"



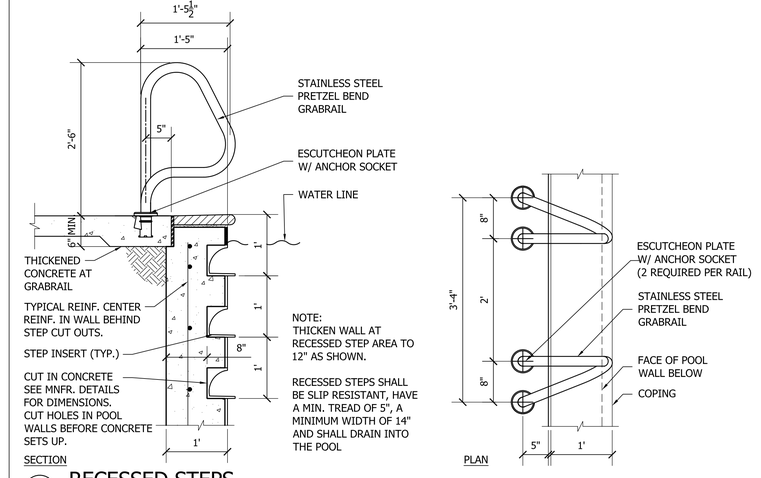
NOTE:
REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL AND BONDING REQUIREMENTS.

CONCRETE MUST BE CUT BACK AROUND LIGHT NICHE TO ALLOW FOR A COMPACTED PLASTER SEAL.

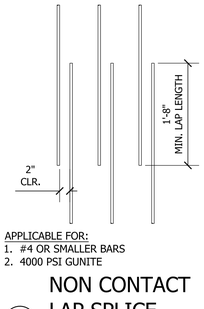
A LICENSED OR CERTIFIED ELECTRICIAN MUST INSTALL THE ELECTRICAL SYSTEM.

REFER TO MANUFACTURERS SPECIFICATIONS FOR INSTALLATION

8 SPA SECTION AT LIGHT
1"=1'-0"



9 RECESSED STEPS
1"=1'-0"



APPLICABLE FOR:
1. #4 OR SMALLER BARS
2. 4000 PSI GUNITE

10 NON CONTACT LAP SPLICE
1"=1'-0"

STRUCTURAL NOTES

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GOVERNING BUILDING CODE:
INTERNATIONAL BUILDING CODE 2015

NOTE:
VERIFY EXISTING BUILDING FOUNDATION LOCATIONS PRIOR TO EXCAVATION FOR POOL/SPA SHELL. PROVIDE VERTICAL DIMENSION FROM BOTTOM OF SHELL TO BOTTOM OF FOOTING AND PROVIDE HORIZONTAL DIMENSION FROM SHELL TO EDGE OF FOOTING. ADJACENT BUILDING FOOTINGS SHALL BE AT OR BELOW BOTTOM OF POOL SHELL OR DISTANCE OF POOL SHELL FROM BOTTOM OF FOOTING SHALL BE AT A DISTANCE SUCH THAT A 45 DEGREE LINE FROM BOTTOM OF FOOTING DOES NOT INTERSECT POOL SHELL.

GEOTECHNICAL RECOMMENDATIONS:
THE SOILS REPORT DOES NOT CONTAIN SPECIFIC CRITERIA FOR THE DESIGN OF THE POOL AND SPA SHELLS. THE OWNER SHALL VERIFY THAT THE SOIL CONDITIONS AT THE SITE ARE SUITABLE TO SUPPORT THESE SHELL STRUCTURES OR ASSUME THE RISK OF CONSTRUCTING THESE SHELL STRUCTURES AT THIS SITE.

ASSUMED DESIGN LATERAL SOIL PRESSURE (EQUIV. FLUID PRESSURE): 60 PSF/FT

BACKFILL POOL SHELL WITH CLEAN, IMPORTED, GRANULAR SOIL SUCH AS CLEAN SAND OR ROCK.

PROVIDE UNDER DRAIN SYSTEM BELOW POOL IF GROUND WATER IS PRESENT OR AS REQUIRED BY A GEOTECHNICAL ENGINEER.

GEOTECHNICAL ENGINEER TO VERIFY SOIL CONDITIONS INCLUDING COMPACTED SUBGRADE PRIOR TO PLACEMENT OF ROCK, STEEL OR CONCRETE.

REFER TO GEOTECHNICAL REPORT FOR ALL RECOMMENDATIONS.

CONCRETE AND REINFORCEMENT:
USE TYPE II CEMENT

SHOTCRETE SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THE LATEST EDITION OF ACI-301 & ACI 318-14. MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 4,500 PSI.

SHOTCRETE/ CONCRETE WILL NOT BE DIRECTLY EXPOSED TO POOL WATER. POOL/SPA WILL HAVE ½" PLASTER FINISH.

SHOTCRETE SHALL BE PLACED AGAINST FIRM, NATURAL, UNDISTURBED SOIL, COMPACTED ENGINEERED FILL, OR FORMS.

SHOTCRETE MAY BE SUBSTITUTED WITH 4,500 PSI GUNITE.

DEFORMED REINFORCEMENT: ASTM A615, GRADE 40

REINFORCEMENT SHALL BE FABRICATED AND PLACED AS PER THE LATEST EDITION OF THE ACI MANUAL OF STANDARD PRACTICE (ACI-315).

SPLICE LENGTH, DOWEL PROJECTION OR EMBEDMENT SHALL BE A MINIMUM OF 20" FOR #4 BARS AND SMALLER.

LAP SPLICES OF REINFORCING BARS SHALL UTILIZE THE NON-CONTACT LAP SPLICE METHOD WITH A MINIMUM CLEARANCE OF 2 INCHES BETWEEN BARS IN ACCORDANCE WITH IBC - 1910.4.3 SPLICES.

MAINTAIN CONTINUITY OF ALL HORIZONTAL REINFORCEMENT AT CORNERS, INTERSECTIONS AND AT STEPS.

MINIMUM CONCRETE COVERAGE FOR REINFORCING STEEL:
- 1½" - CONCRETE NOT EXPOSED TO WEATHER IN CONTACT WITH THE GROUND
- 2" - CONCRETE EXPOSED TO EARTH OR WEATHER
- 3" - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH

COLD WEATHER CONCRETING: WHEN TEMPERATURES DROP BELOW 40 DEGREES AT ANY TIME DURING CONCRETE PLACING AND CURING, THE PROVISIONS OF ACI 306R SHALL BE FOLLOWED TO PROTECT CONCRETE FROM FREEZING.

HOT WEATHER CONCRETING: PLACE AND CURE CONCRETE IN ACCORDANCE WITH ACI 305. COOL INGREDIENTS BEFORE MIXING TO MAINTAIN CONCRETE SLUMP AT TIME OF PLACEMENT BELOW 90 DEGREES F

GENERAL NOTES:
- THE POOL SHALL BE PLACED OVER A MIN. OF 4" FREE DRAINING GRADED GRAVEL ¾" IN SIZE - REFER TO SOIL REPORT.
- SPECIAL INSPECTION IS REQUIRED FOR SOILS AND HIGH STRENGTH PNEUMATICALLY PLACED CONCRETE. REFER TO SP001 FOR LIST OF ALL REQUIRED SPECIAL INSPECTIONS.
- POOL SHALL NOT BE EMPTY IF ADJACENT GROUND WATER LEVEL IS ABOVE POOL DRAIN.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE UNDERGROUND UTILITY LOCATIONS PRIOR TO ANY EXCAVATION.
- THE CONTRACTOR SHALL INFORM ARCHITECT AND ENGINEER CLEARLY IN WRITING AND PROVIDE DOCUMENTATION FOR THE REVIEW OF ANY SUBSTITUTIONS OR DEVIATIONS OF REQUIREMENTS OF THE CONTRACT DOCUMENTS.

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FOR STRUCTURE ONLY

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Date

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SPECIAL INSPECTIONS

VERIFICATION AND INSPECTION	CONTINUOUS OR PERIODIC
TABLE 1705.3 CONCRETE	
INSPECTION OF REINFORCING STEEL AND PLACEMENT	PERIODIC
VERIFYING USE OF REQUIRED DESIGN MIX	PERIODIC
AT TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	CONTINUOUS
INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	CONTINUOUS
TABLE 1705.6 INSPECTION OF SOILS	
VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIRED BEARING CAPACITY.	PERIODIC
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	PERIODIC
PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	PERIODIC
VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	PERIODIC
PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	PERIODIC

THE RANGER POOL LIFT

RCRBD

RECORD SET

INFO FOR POOL & SPA LIFTS

THE LIFT HAS A ROTO-MOLDED ONE-PIECE RIGID PLASTIC SEAT WITH BACK SUPPORT AND TWO FLIP-UP ARMRESTS.

THE SEAT HEIGHT ON THE LIFT IS BETWEEN 18 AND 18.25 INCHES ABOVE THE DECK AT THE REAR OF THE SEAT, AND NOT MORE THAN 19 INCHES AT THE FRONT OF THE SEAT.

THE SEAT ON THE LIFT HAS TWO ARMRESTS, BOTH OF WHICH WILL FLIP UP CLEAR OF THE SEAT TO HELP FACILITATE LATERAL TRANSFERS.

THE SEAT BACK ON THE LIFT IS AT LEAST 17 INCHES HIGH.

THE LIFT COMES WITH AN ADJUSTABLE SEAT BELT WITH VELCRO™-STYLE ATTACHMENTS AS STANDARD EQUIPMENT. THE CONTROLS ARE LOCATED AT SEAT HEIGHT AND ARE HELD BY AND MOVE WITH THE USER. THE CONTROLS HAVE BEEN TESTED BY THE MANUFACTURER AND REQUIRE 1 POUND (4.45 NEWTONS) OF FORCE TO ACTIVATE.

THE LIFT DOES OFFER UNASSISTED SELF-OPERATION FROM BOTH THE DECK AND THE IN-POOL POSITIONS BY PROVIDING A HANDHELD REMOTE CONTROL SYSTEM THAT CAN BE MOVED WITH THE PERSON USING THE LIFT OR CAN EASILY BE RETRIEVED BY AN INDIVIDUAL IN THE WATER OR ON THE DECK.

THE LIFT IS ANCHORED OR COUNTER BALANCED (IN THE CASE OF OUR PORTABLE UNITS) WITH ENOUGH COUNTER WEIGHT TO STEADY THE LIFT WHEN A PATRON IS ENTERING OR EXITING THE SEAT. THE ANCHOR SYSTEMS ARE DESIGNED AND CERTIFIED TO WITHSTAND SEISMIC ZONE 4 ACTIVITY WHEN INSTALLED ACCORDING TO THE INSTRUCTIONS. THE COUNTERWEIGHT SYSTEM IS INDEPENDENTLY CERTIFIED TO PREVENT OVERTURN WHEN LOADED TO THE MAXIMUM CAPACITY.

THE LIFT HAS BEEN LIVE LOAD TESTED TO AT LEAST 350 LBS WITH A MINIMUM 1.5 SAFETY FACTOR.

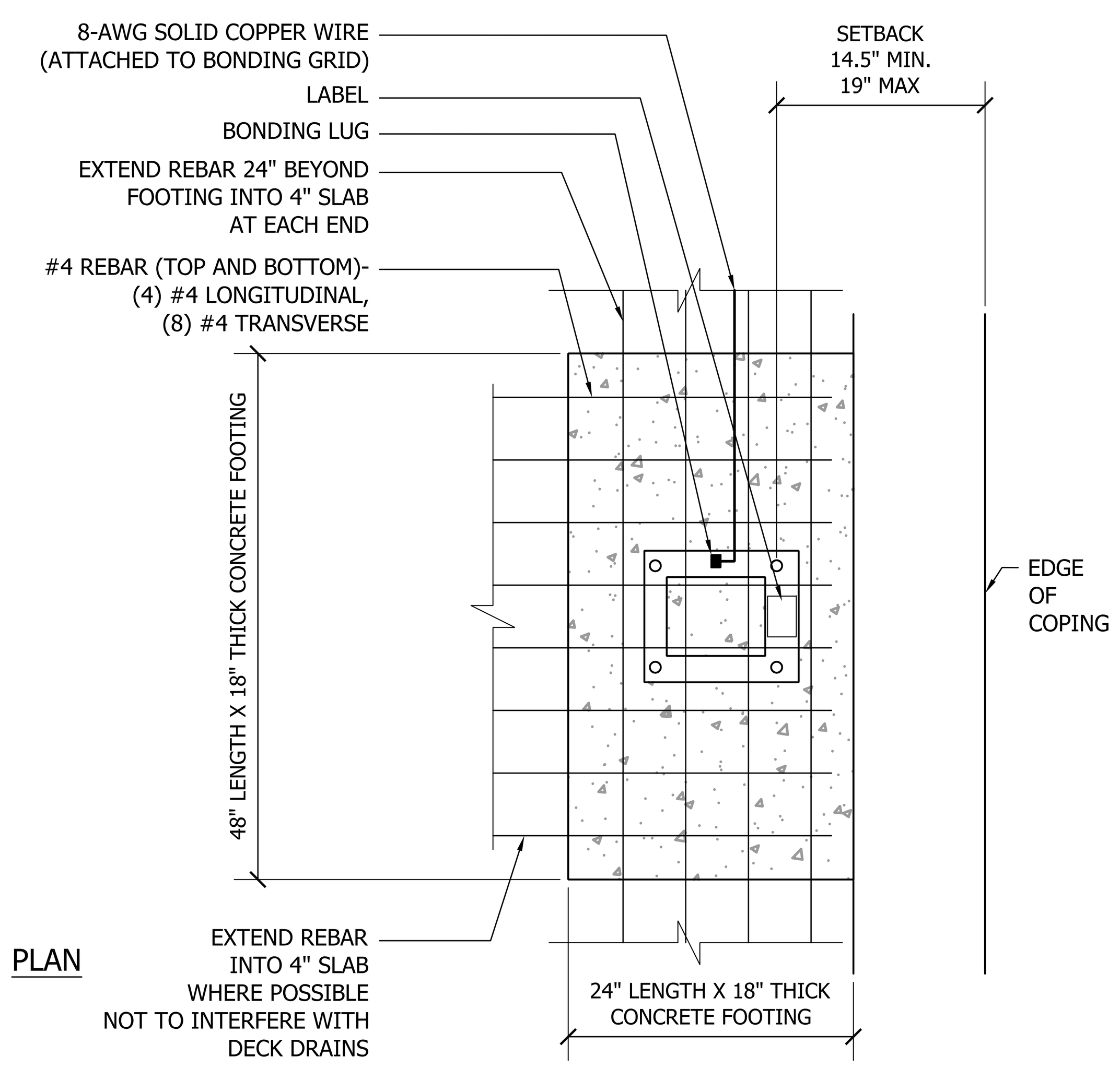
THE LIFT IS ADJUSTABLE SO THAT A PATRON CAN STOP THE LIFT AT ANY DEPTH POSITION. THE MANUAL ALSO STATES THAT THE LIFT BE POSITIONED TO ACCESS WATER NO DEEPER THAN 48 INCHES AND NO LESS THAN 36 INCHES DEEP. IDEAL DECK TO POOL FLOOR INSTALLATION HEIGHT IS 48 INCHES.

THE LIFT IS DESIGNED TO LOWER THE TOP OF THE SEAT BOTTOM AT LEAST 20 INCHES BELOW THE LEVEL OF THE DECK AT ITS FURTHEST EXTENSION.

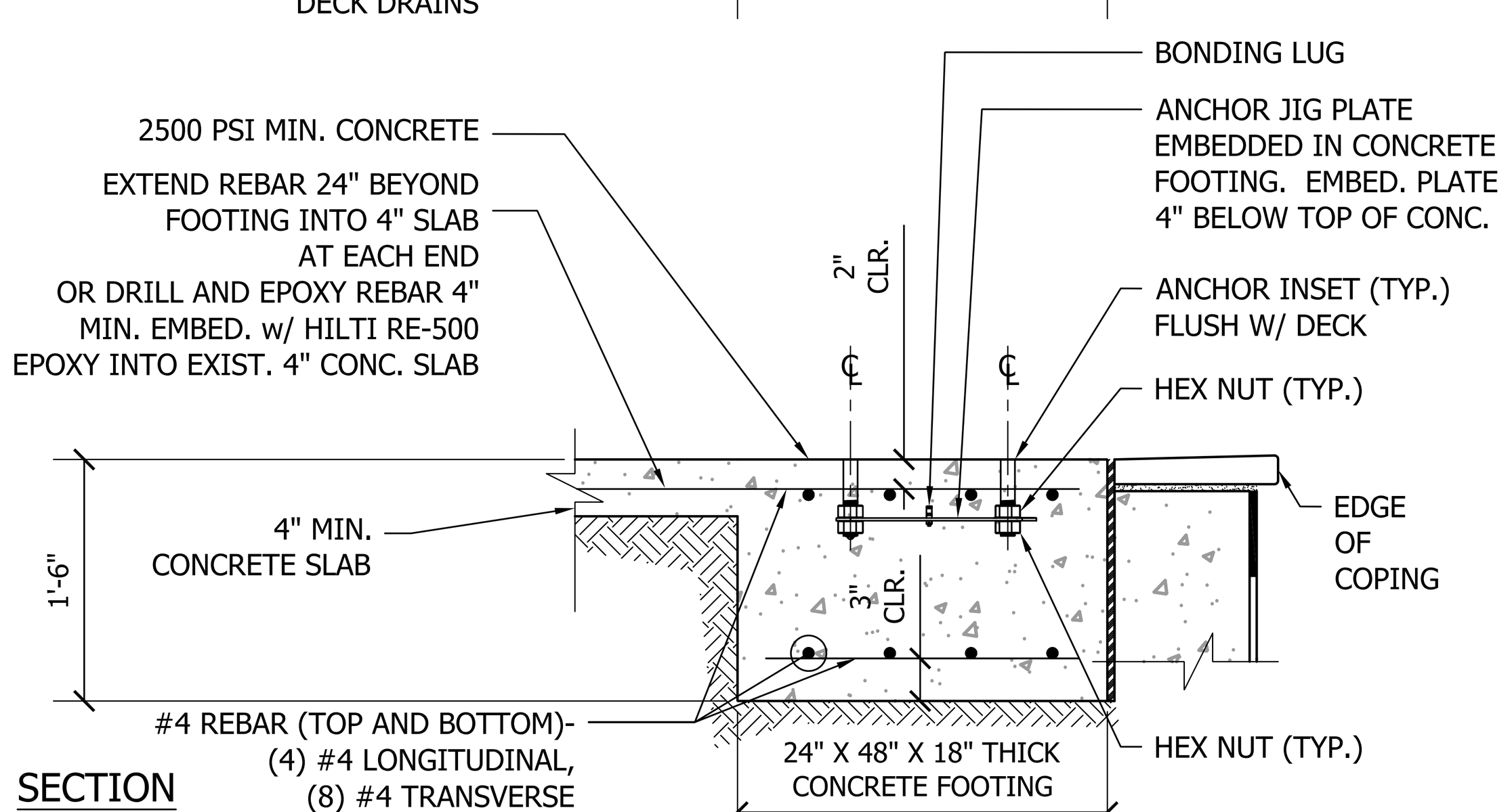
CONTROLS AND OPERATING MECHANISMS.
THE OPERATION CONTROLS ARE NOT ATTACHED TO THE LIFT AND ARE PLACED ON THE SIDE OF THE SEAT BACK ON THE APPROACH SIDE OF THE LIFT WELL WITHIN THE SIDE REACH AND FORWARD REACH REQUIREMENTS OUTLINED IN THE CA CODE. (SEE 1118.B.5 AND 1118.B.6 BELOW)

THE SEAT BELT IS FASTENED WITH VELCRO WITH A LARGE HAND LOOP ON ONE END AND IS EASILY REMOVED AND SECURED WITH ONE HAND. THE OPERATION
CONTROLS REQUIRE 1 POUND (4.45 N) OF FORCE TO ACTIVATE. OPERATION OF
EITHER DOES NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST.

ALL CONTROLS ON AQUA CREEK LIFTS ARE MOUNTED AND ACCESSIBLE.



PLAN



SECTION

2 ANCHOR INSTALLATION
1"=1'-0"

ANCHOR INSTALLATION PER MANUFACTURER:

1. REMOVE 1 NUT FROM EACH ANCHOR INSERT. PLACE THE ANCHOR INSERTS THROUGH THE LARGER HOLE OF THE ANCHOR JIG PLATE. THREAD THE REMOVED NUTS BACK ONTO THE THE ANCHOR INSERTS. THE ANCHOR PLATE SHOULD BE SANDWICHED BETWEEN THE TWO NUTS ON EACH INSERT.

2. INSTALL REBAR IN THE OPEN AREA OF THE DECK.

3. SET THE ANCHOR SYSTEM IN PLACE. MAKE SURE THE CENTER OF THE LARGE ANCHOR JIG PLATE HOLES ARE NOT SET BACK FURTHER THAN THE MAX DISTANCE AS SHOWN IN THIS DRAWING.

4. MAKE SURE THE TOP OF EACH ANCHOR BODY IS FLUSH WITH THE FINISHED DECK SURFACE. EACH ANCHOR BODY CAN BE ADJUSTED INDIVIDUALLY BY TURNING THE NUTS WITH A LARGE WRENCH.

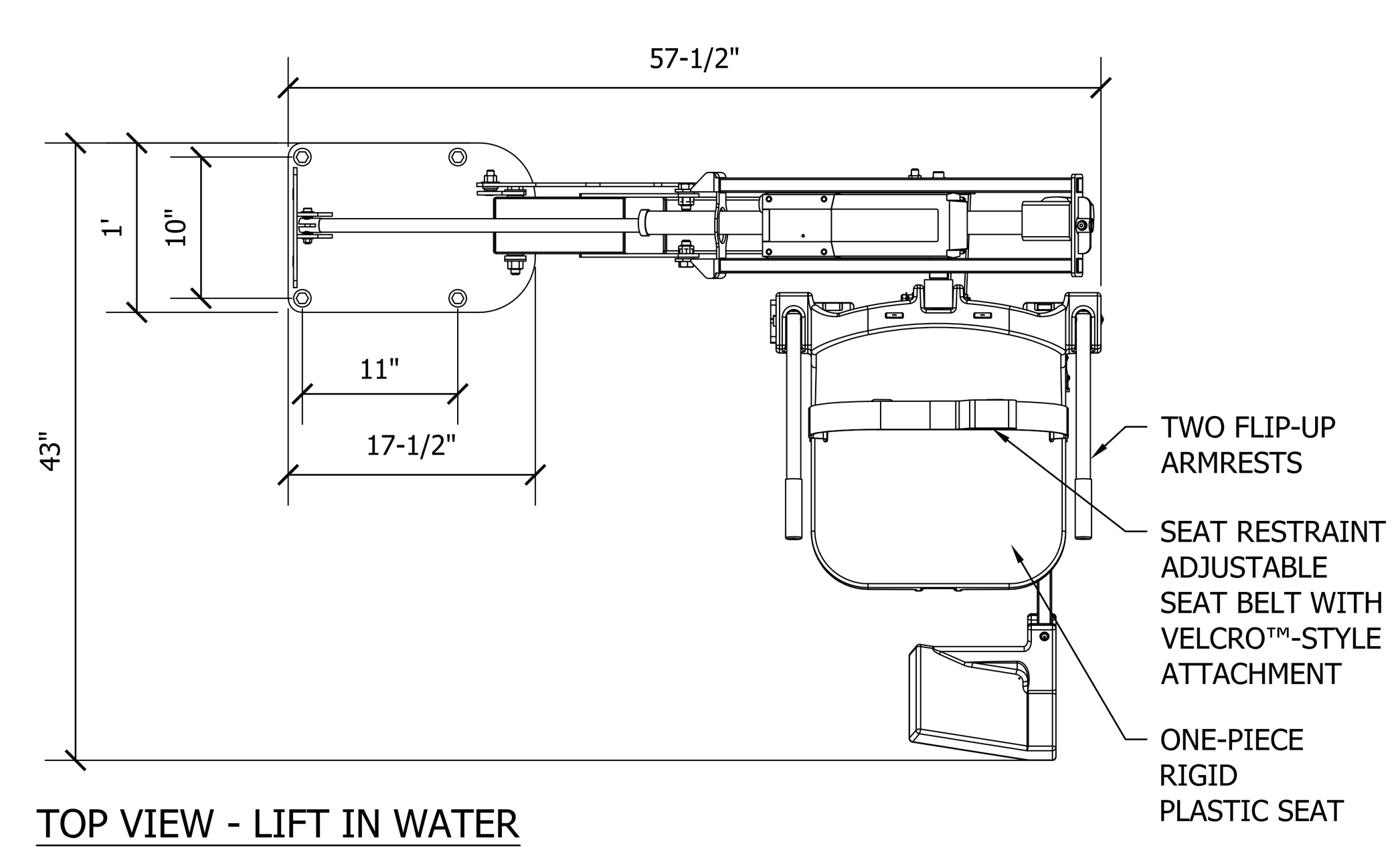
5. BOND THE ANCHORING SYSTEM BY USING THE BONDING LUG ON THE ANCHOR PLATE. BOND THE SYSTEM ACCORDING TO NEC 680.26. REFER TO SHEET EP1 AND EP2.

6. POUR THE CONCRETE AND FINISH THE POOL DECK SURFACE. COORDINATE WITH GENERAL CONTRACTOR.

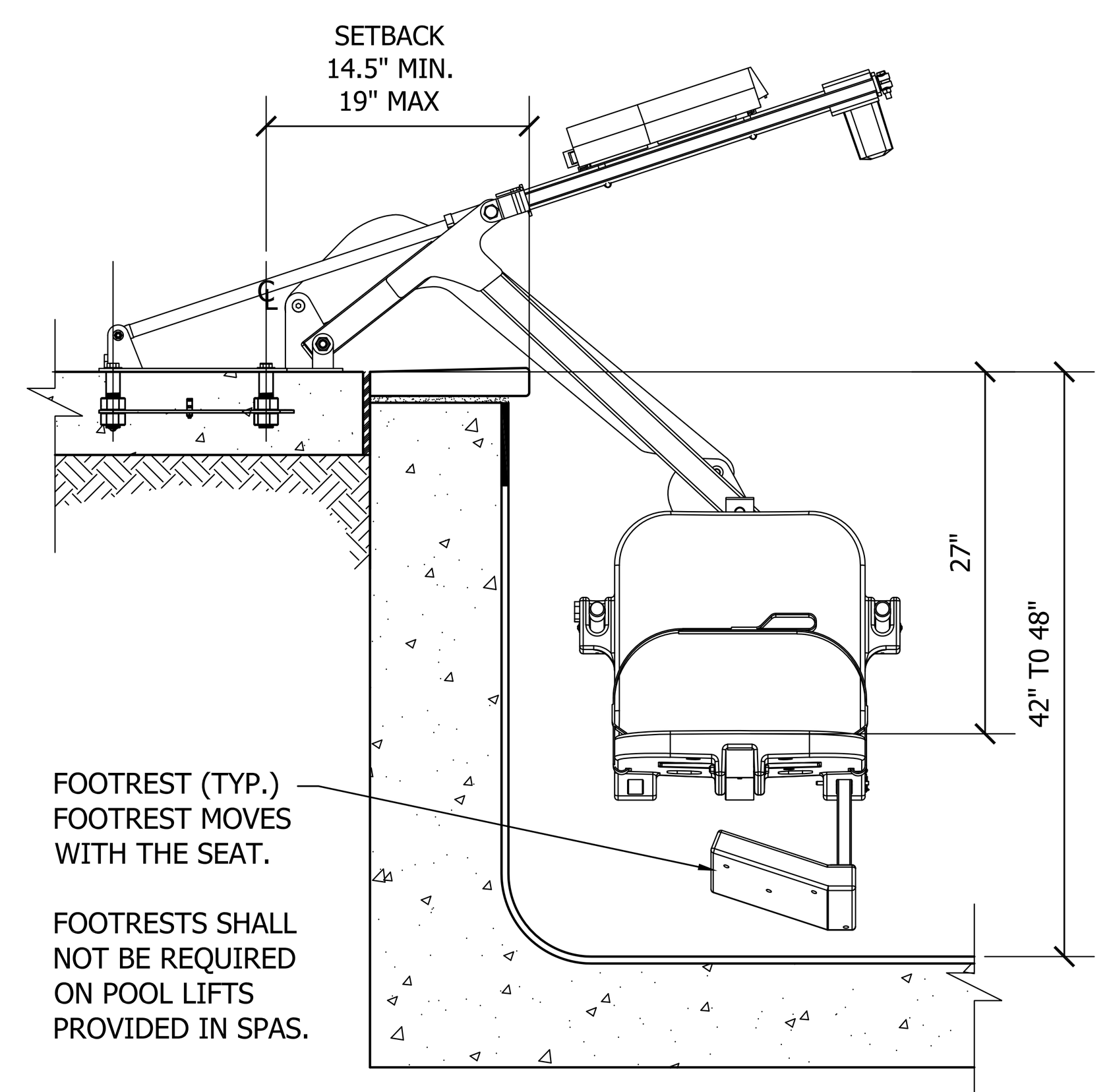
7. ONCE THE CONCRETE HAS CURED YOUR LIFT IS READY TO BE MOUNTED TO THE ANCHORING SYSTEM.

BATTERY SYSTEM

THE RANGER-ATTM 24V BATTERY SYSTEM COMES WITH A 24V SEALED RECHARGEABLE BATTERY,
WALL MOUNT CHARGING UNIT (WITH MOUNTING BRACKET), CONTROL BOX, AND A WATERPROOF HANDHELD CONTROLLER. THE CONTROL BOX IS MOUNTED TO THE RANGER-AT LIFT AND HAS A PLUG-IN SOCKET FOR BOTH THE ACTUATOR AND THE HANDHELD CONTROLLER. THE BATTERY MOUNTS DIRECTLY ABOVE THE CONTROL BOX WITH A QUICK-RELEASE CLIP.
TO OPERATE THE RANGER-ATTM LIFT, PLUG IN THE HANDHELD CONTROLLER TO THE CONTROL BOX AND PUSH THE CORRESPONDING BUTTON TO EITHER LOWER OR RAISE THE UNIT. THE LIFT SHOULD BE ABLE TO COMPLETE APPROXIMATELY 10-20 FULL CYCLES BEFORE THE LOW BATTERY INDICATOR TONE WILL SOUND. THE LOW BATTERY TONE INDICATES THAT THERE IS APPROXIMATELY 20% BATTERY LIFE REMAINING. AT THIS POINT, DO NOT ATTEMPT TO OPERATE THE LIFT, REMOVE THE BATTERY FROM THE UNIT AND RECHARGE ON THE WALL MOUNTED CHARGING UNIT.
TO RECHARGE THE BATTERY, SIMPLY GRIP THE TOP OF THE BATTERY AND DEPRESS THE CLIP ON THE BACK OF THE BATTERY. THIS WILL UNCLIP THE BATTERY FROM THE CONTROL BOX BRACKET AND THE BATTERY CAN THEN BE CLIPPED INTO THE WALL MOUNT CHARGER. WHEN THE CHARGER IS PLUGGED IN THE GREEN ON LIGHT WILL ILLUMINATE. WHEN THE BATTERY IS CORRECTLY MOUNTED TO THE CHARGER, THE ORANGE CHARGE LIGHT WILL ILLUMINATE. WHEN THE BATTERY IS FULLY CHARGED, THE CHARGE LIGHT WILL GO OFF AND THE BATTERY IS READY FOR USE.



TOP VIEW - LIFT IN WATER



FRONT VIEW - LIFT IN WATER

SPECIFICATIONS:

LIFTING CAPACITY: 350 lbs
STATIC LOAD CAPACITY: 525 lbs

MAX. DRAFT (DECK TO WATER): 9.0"
MAX. SETBACK (SEE PAGE 2): 19"

OVERALL HEIGHT (MAX): 37-1/2"
MAX. WIDTH (DEPLOYED): 43"
MAX. LENGTH (DEPLOYED): 57-1/2"
STOWED LENGTH (MAX): 23-1/2"
STOWED WIDTH (NO FOOTREST): 31-3/4"

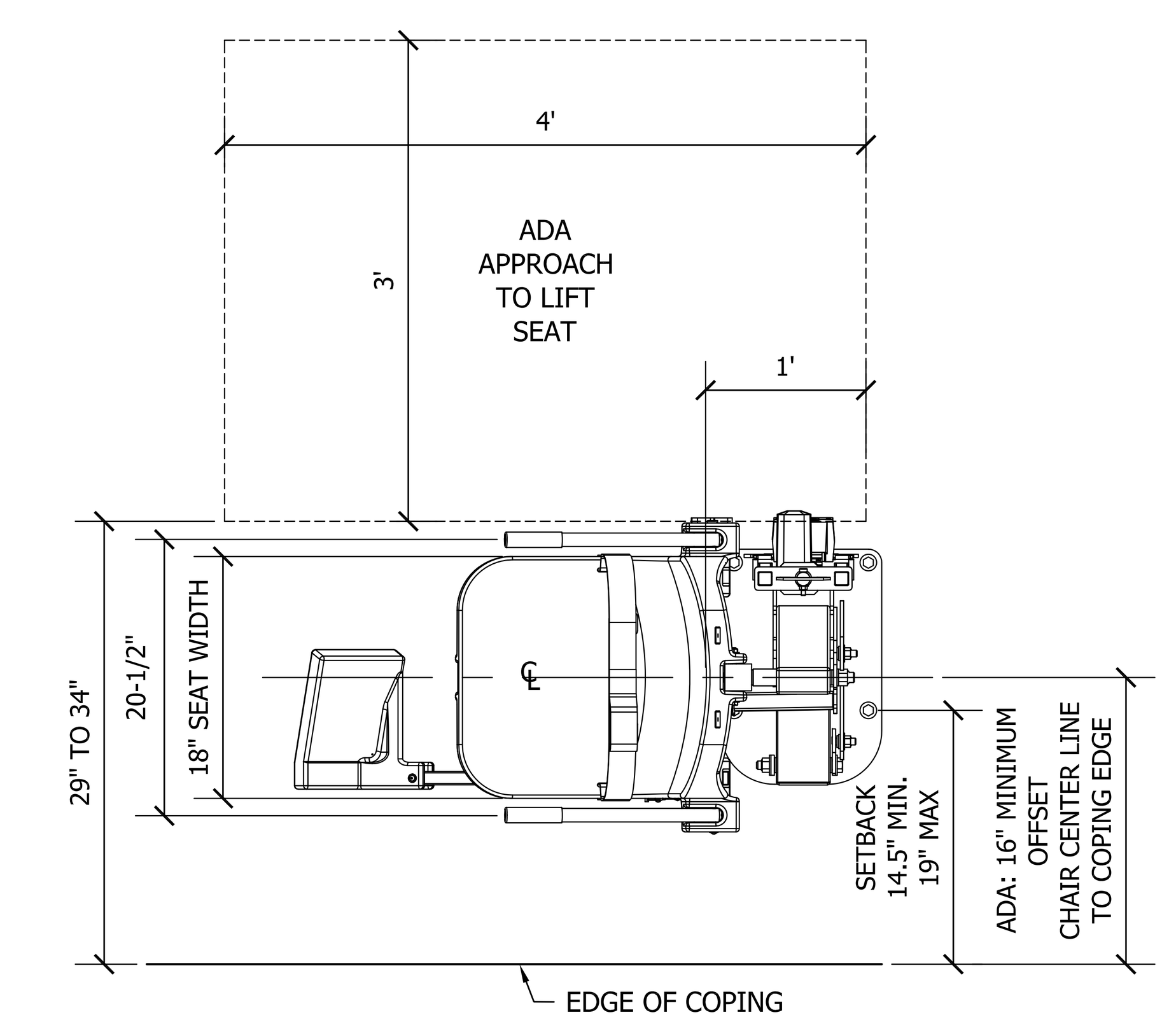
WEIGHT: 105lbs

MATERIALS:

LIFT FRAME: TYPE 304 STAINLESS STEEL
BASEPLATE: TYPE 304 STAINLESS STEEL
CHAIR & FOOTREST: LLDPE POLYETHYLENE
SAFETY BELT: HEAVY-DUTY POLYESTER STRAP, HOOK & LOOP FASTENER
POWDER COATING: OFF-WHITE POLYESTER [PN: 1PC-108-1912 BX50]

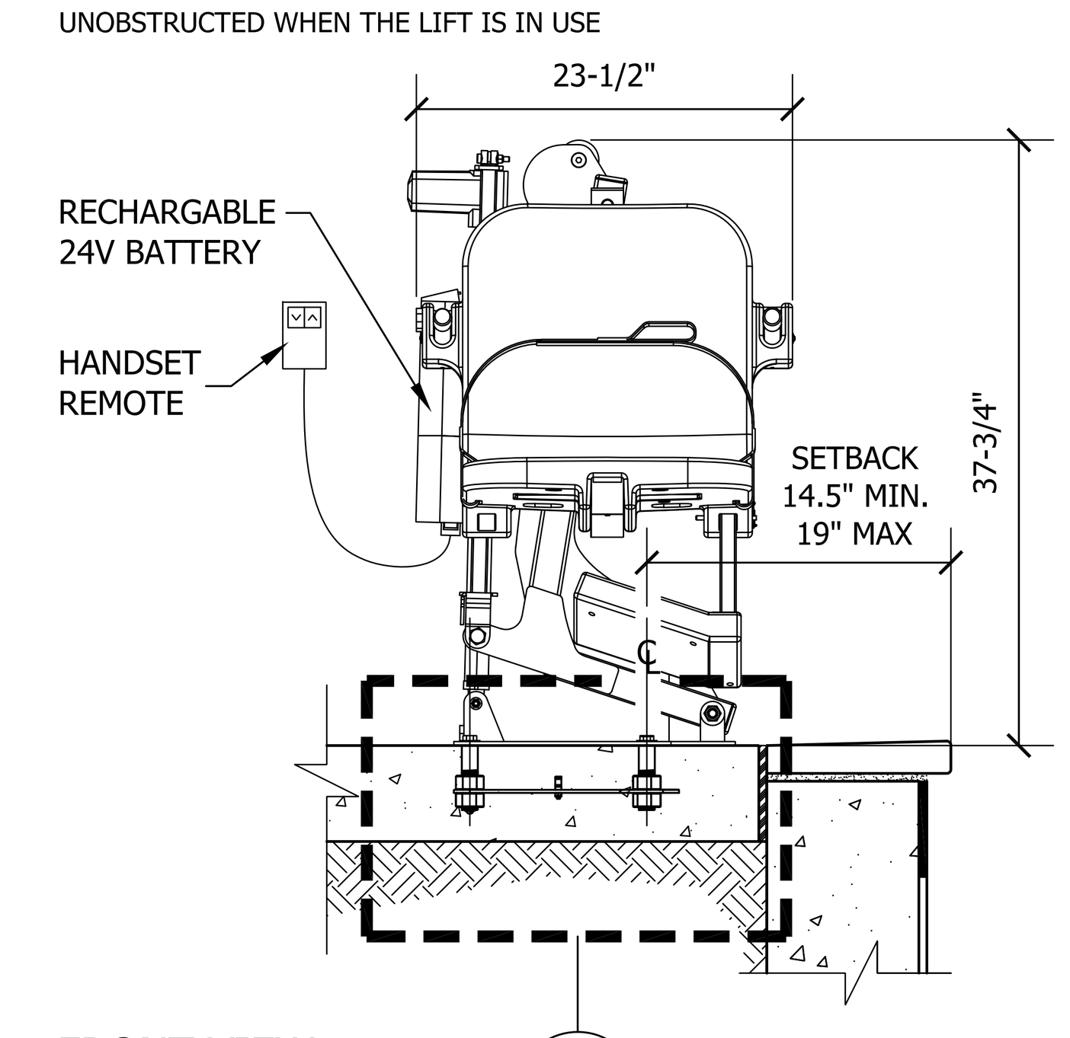
EQUIPMENT:

DUAL FLIP-UP ARMRESTS
24VDC BATTERY & CHARGER
FLIP-UP FOOTREST
WATERPROOF HANDSET-REMOTE
SAFETY BELT
4-PT ANCHOR KIT: (PN: F-04CAJP)
HEADREST ASSEMBLY: (PN: F-422PLH)
PULLOUT LEGREST: (PN: F-105LAR)
COVER, POLYESTER: (PN: F-422PPC)
OVERHEAD THERAPY BAR: (PN: F-414OHB)



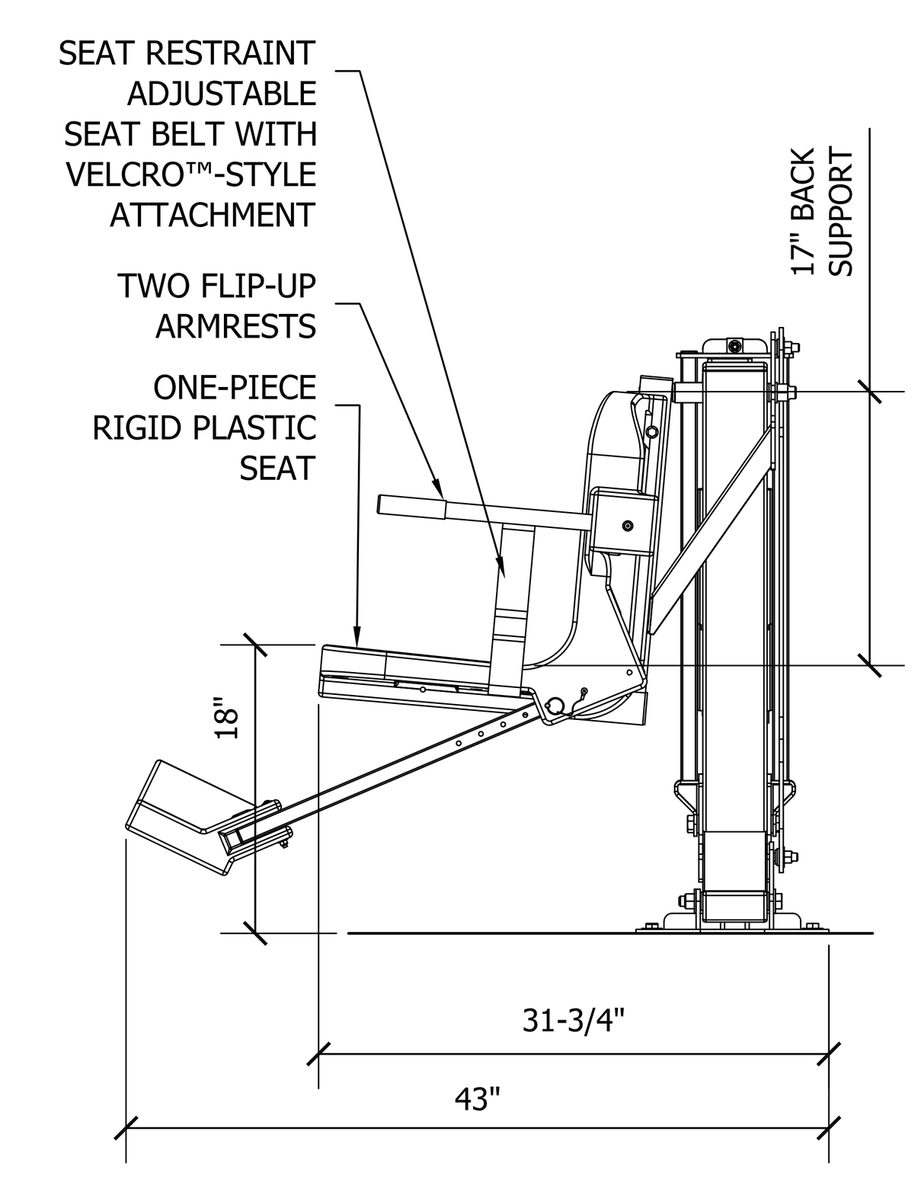
PLAN VIEW

THE CONTROLS ARE LOCATED AT SEAT HEIGHT AND ARE HELD BY AND MOVE WITH THE USER. THE CONTROLS HAVE BEEN TESTED BY THE MANUFACTURER AND REQUIRE 1 POUND (4.45 NEWTONS) OF FORCE TO ACTIVATE.
THE LIFT IS CAPABLE OF UNASSISTED OPERATION FROM BOTH THE DECK AND WATER LEVELS. CONTROLS AND OPERATING MECHANISMS SHALL BE UNOBSTRUCTED WHEN THE LIFT IS IN USE



FRONT VIEW

2
SP403



SIDE VIEW

1 RANGER-AT POOL LIFT
1"=1'-0"

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Ste. 260 Golden, CO 80401
Office: 303-420-7321 Fax: 303-420-7207

The Association of Pool & Spa Professionals

STRUCTURAL ENGINEERING
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TORIAN PLUM
POOL AND SPAS
1855 SKI TIME SQUARE DR
STEAMBOAT SPRINGS, CO 80487

Seal

FOR STRUCTURE ONLY

Drawn By	Reviewed By	Review Date
AR		

No.	Revision/Issue	Date

Project No.

Drawing Title
POOL & SPA DETAILS

Date

Sheet No.
SP403

ELECTRICAL SPECIFICATIONS

1. CODES:
   ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) 2014 EDITION, ALL STATE AND LOCAL BUILDING CODES, ALL ADOPTED ORDINANCES, AND ALL REQUIREMENTS OF THE UTILITY COMPANY.

2. RACEWAY:
   A. INDOOR:
      (1) EMT (ELECTRICAL METALLIC TUBING)
      (2) IMC (INTERMEDIATE METALLIC CONDUIT)

   B. OUTDOOR:
      (1) ABOVE GROUND: GRC (GALVANIZED RIGID CONDUIT)

   C. FLEXIBLE: LIQUIDTIGHT FLEXIBLE METAL CONDUIT SHALL BE USED IN ALL APPLICATIONS WHERE FLEXIBILITY IS REQUIRED. FLEXIBILITY METAL CONDUIT IS NOT ACCEPTABLE UNLESS IT IS A PART OF A PRE-WIRED ASSEMBLY. FLEXIBLE NONMETALLIC CONDUIT SHALL NOT BE USED.

   D. CONDUIT RUNS INSIDE BUILDING SHALL BE CONCEALED WHERE POSSIBLE. CONDUIT BELOW FLOOR SLAB SHALL BE INSTALLED WITHIN OR BELOW SLAB AND INSTALLED PRIOR TO POUR. RUNS TO BE AS STRAIGHT AS POSSIBLE FROM POINT OF OUTLET TO POINT OF OUTLET.

   E. FURNISH 1/2" CONDUIT FOR ALL TEMPERATURE SENSORS FROM SENSOR TO APPROPRIATE MECHANICAL EQUIPMENT. PROVIDE 4" SQUARE BOX AT 48" AFF.

   F. SUPPORTING DEVICES:
      (1) CHANNEL AND ANGLE SUPPORT SYSTEMS, HANGERS, ANCHORS, PRIOR BRACKETS, FABRICATED ITEMS, AND FASTENERS SHALL PROVIDE SECURE SUPPORT FROM THE BUILDING STRUCTURE FOR ELECTRICAL COMPONENTS. ALL SUPPORTS SHALL CONFORM TO SEISMIC ZONE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION. LIGHT FIXTURES SHALL BE SUPPORTED IN ACCORDANCE WITH NEC 410.

      (2) MATERIAL: ALL STEEL, PROTECTED FROM CORROSION WITH ZINC COATING (GALVANIZED) OR TREATMENT OF EQUIVALENT CORROSION-RESISTANT ALTERNATIVE FINISH.

   G. FIRESTOPPING: APPLY TO CABLE AND RACEWAY PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES. PERFORM FIRESTOPPING TO RE-ESTABLISH THE ORIGINAL FIRE-RESISTANCE RATING OF THE ASSEMBLY AT THE PENETRATION.

   H. INSTALL RACEWAYS LEVEL AND SQUARE AND AT PROPER ELEVATIONS. PROVIDE ADEQUATE HEADROOM. USE TEMPORARY CLOSURES TO PREVENT FOREIGN MATTER FROM ENTERING RACEWAY. KEEP RACEWAYS AT LEAST 6" AWAY FROM PARALLEL RUNS OF FLUES AND HOT WATER PIPES. INSTALL HORIZONTAL RACEWAY RUNS ABOVE WATER PIPING.

   I. MINIMUM CONDUIT SIZE: 3/4" BELOW GRADE, 1/2" ABOVE GRADE

3. WIRE (50 TO 600 VOLTS)
   ALL WIRE SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:

   A. INSULATING RATING:
      (1) VOLTAGE: 600 VOLTS
      (2) TEMPERATURE: 90°C (THHN OR THWN)

   B. STRANDED COPPER WITH ONE EXCEPTION:
   SOLID WIRE (SIZES #12 AND #10) MAY BE USED FOR OUTLETS AND LIGHTING.

   C. MINIMUM SIZE:
      (1) POWER WIRING - #12 AWG
      (2) CONTROL WIRING - #14 AWG

   D. WIRING INSTALLATION
      (1) ALL FEEDERS, BRANCH CIRCUITS AND VOLTAGE DROP REQUIREMENTS SHALL CONFORM TO NEC 210 AND 220.
      (2) ALL WIRING SHALL BE INSTALLED IN AN APPROVED RACEWAY SYSTEM IN ACCORDANCE WITH NEC AND LOCAL ORDINANCES.

4. ENCLOSURES:
   A. FOR STARTERS, DISCONNECTS AND PANELBOARDS:
      (1) INDOOR: NEMA 1
      (2) OUTDOOR: NEMA 3R

   B. CONTROL PANELS (FULL PIANO HINGED):
      (1) INDOOR: NEMA 1
      (2) OUTDOOR: NEMA 3R

   C. CONTROL STATIONS:
   (1) INDOOR AND OUTDOOR: NEMA 4 OILTIGHT

   D. REFER TO N.E.C. IN AREAS WHERE CERTAIN CONDITIONS MUST BE MET.

   E. MOUNTING HEIGHTS:
      (1) MOUNT TOP OF PANELS AND SWITCHES 66" AFF.
      (2) MOUNT TOP OF RECEPTACLE BOXES 15" AFF UON
      (3) OUTLET MOUNTING HEIGHTS FOR RECEPTACLES, SWITCHES, SYSTEM INITIATING DEVICES, AND INDICATING DEVICES SHALL COMPLY WITH REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA)

5. GROUNDING:
   A. ELECTRICAL SERVICE AND BUILDING GROUNDING SHALL BE INSTALLED PER THE NEC AS SHOWN IN THE CONTRACT DRAWINGS AND SPECIFICATIONS.

   B. ALL METALLIC STRUCTURES, METALLIC ENCLOSURES, AND ELECTRICAL EQUIPMENT SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED AND GROUND CONNECTIONS SHALL BE MADE TO THE BUILDING GROUND. SIZE GROUND WIRE PER NEC 250.

6. WIRING DEVICES AND COMPONENTS:
   A. STARTERS AND CONTACTORS: TO BE NEMA OR IEC RATED (NO GENERAL PURPOSE).

   B. ALL PANELS SHALL BE OF COPPER BUS CONSTRUCTION.

   C. ALL RECEPTACLES AND SWITCHES SHALL BE COMMERCIAL GRADE WITH 20A RATING.

   D. ALL RECEPTACLE AND SWITCH COVERS SHALL BE WHITE AND STANDARD COMMERCIAL GRADE.

   E. EQUIPMENT STARTERS AND RELATED CONTROL AND WIRING SHALL BE SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. OVERLOAD HEATERS SHALL BE INSTALLED IN ACCORDANCE WITH NAMEPLATE DATA ON EQUIPMENT. STARTERS SHALL BE INSTALLED AS DIRECTED BY THE POOL CONTRACTOR.

   F. ALL DISCONNECT SWITCHES SHALL BE HEAVY-DUTY WITH DUAL ELEMENT TIME DELAY FUSES AS NOTED ON THE ONE-LINE DIAGRAM. FUSE SIZE TO BE AS SHOWN OR AS REQUIRED TO MATCH LOAD CONDITIONS.

7. MISCELLANEOUS AND GENERAL
   A. THE ELECTRICAL DRAWINGS ARE NOT TO BE USED FOR ROOM DIMENSIONS AND EQUIPMENT PLACEMENT. REFERENCE THE APPROPRIATE ARCHITECTURAL, STRUCTURAL OR MECHANICAL PLANS, DRAWINGS OR SCHEMATIC. VERIFY ALL LOCATIONS WITH ENGINEER BEFORE INSTALLING CONDUIT, EQUIPMENT, ETC.

   B. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FAMILIARIZE HIMSELF WITH THE INSTALLATION AND TO ENSURE IT IS PROPER FOR ANY GIVEN SITUATION WHICH MAY VARY FROM THE DETAILS OR THE DRAWINGS. CONTRACTORS ARE ADVISED TO COMPLETELY SURVEY THE WORK AREA TO IDENTIFY ANY UPCOMING PROBLEMS.

   C. COORDINATE MOUNTING HEIGHT OF ALL EXTERIOR LIGHTING FIXTURES WITH ARCHITECTURAL ELEVATION DRAWINGS.

   D. ELECTRICAL CONTRACTOR SHALL ARRANGE FOR ALL INSPECTIONS WHEN THEY BECOME DUE, AND SHALL NOT COVER ANY WORK UNTIL APPROVED BY THE INSPECTION AUTHORITY.

   E. ANY AND ALL FEES ASSOCIATED WITH THE ELECTRICAL WORK INCLUDING CONSTRUCTION AND INSPECTIONS SHALL BE PAID FOR BY THE ELECTRICAL CONTRACTOR IN ORDER TO DELIVER AND COMPLETE THE FINISHED BUILDING, READY FOR OCCUPANCY AND 100% USAGE.

   F. ANY COSTS DUE TO THE LACK OF COOPERATION AMONG TRADES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

   G. REFER TO THE LATEST ARCHITECTURAL DRAWINGS FOR EXACT WALL LOCATIONS, DIMENSIONS, AND CONFIGURATIONS: DOOR SWINGS FOR SWITCH LOCATION, REFLECTED CEILING PLANS FOR LIGHT FIXTURE LOCATIONS.

   H. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ALL ELECTRICAL EQUIPMENT LOADS PRIOR TO ROUGH-IN AND SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES EXIST.

   I. ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY ALTERATIONS REQUIRED BY THE OWNER, ARCHITECT, OR FIELD CONDITIONS.

   J. ALL EQUIPMENT SHALL BE NEW AND SHALL HAVE APPROPRIATE UNDERWRITERS LABORATORIES (UL) LABEL AND SHALL CONFORM TO THE LATEST INDUSTRY STANDARDS.

   K. ELECTRICAL CONTRACTOR SHALL MAINTAIN ALL WORKING CLEARANCES FOR ALL ELECTRICAL EQUIPMENT PER N.E.C. REQUIREMENTS.

   L. AT THE COMPLETION OF WORK, THE ELECTRICAL CONTRACTOR SHALL PROVIDE COMPLETE, ACCURATE, TYPED PANELBOARD DIRECTORIES.

   M. ANY DEVIATION FROM PLANS WITHOUT PRIOR APPROVAL OF THE ARCHITECT/ENGINEER SHALL BE CAUSE FOR REJECTION OF MATERIALS AND/OR METHODS AND ANY COSTS INCURRED TO CORRECT SUCH DEVIATION TO THE SATISFACTION OF THE ARCHITECT/ENGINEER SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

   N. COST TO INSTALL TEMPORARY POWER AND LIGHTING PER OSHA STANDARDS AND TEMPORARY POWER TO CONSTRUCTION TRAILER SHALL BE INCLUDED IN ELECTRICAL CONTRACTOR'S BID.

   O. ALL DIMENSIONS ARE FROM FINISHED FLOOR OR FACE OF STUD TO CENTER OF DEVICE UNLESS OTHERWISE NOTED.

   P. REFER TO MECHANICAL DRAWINGS FOR LOCATION OF THERMOSTATS AND OTHER SPECIAL EQUIPMENT OR CONTROLS. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ALL CONDUITS, JUNCTION BOXES, WIRING, AND DISCONNECT SWITCHES AND THERMOSTAT JUNCTION BOXES.

GENERAL:
"CONDUCTORS NORMALLY USED TO CARRY CURRENT SHALL BE OF COPPER. FOR ALUMINUM AND COPPER-CLAD ALUMINUM #6AWG AND LARGER, SEE SECTION 310-15. EXCEPTION: ALUMINUM CONDUCTORS SMALLER THAN #6AWG MAY BE USED PROVIDED THE METHOD OF CONNECTION IS APPROVED IN ADVANCE BY THE BUILDING OFFICIAL AND THE INSTALLATION IS MADE UNDER CONTINUOUS SPECIAL INSPECTION.

INSTALLATION NOTES

1. EQUIPMENT SUPPLIED BY POOL CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR SHALL INCLUDE THE FOLLOWING:
   A. POOL CONTROL PANEL (MODEL #LX 820 COMPOOL)
   B. SPRING WOUND TIMER (SWT)
   C. EMERGENCY STOP PUSHBUTTON (ESS)
   D. POOL LIGHTS
   E. POOL WATER LEVEL SENSOR
   F. SPA WATER LEVEL SENSOR

2. ALL METAL PARTS IN SWIMMING POOL AND SPA AREAS AND EQUIPMENT ROOM SHALL BE GROUND BONDED WITH #8 SOLID BARE COPPER INCLUDING BUT NOT LIMITED TO ALL PUMPS, HEATERS, POOL AND SPA LIGHTS, LADDERS, HAND RAILS, AND REBAR PER REQUIREMENTS OF N.E.C. 680.6 AND 680.26.

3. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY LOCATION OF SWIMMING POOL AND SPA POOL LIGHT TOGGLE SWITCHES PER REQUIREMENTS OF N.E.C. 680.22 AND EMERGENCY OFF TOGGLE SWITCH PER 680.41.

4. ELECTRICAL CONTRACTORS WITH 120V COILS AND STARTERS WITH 120V COILS SHALL BE SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR.

5. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY LOCATION OF POOL AND SPA WATER LEVEL SENSORS WITH POOL CONTRACTOR. LOW VOLTAGE CONTROL WIRING SHALL BE PROVIDED BY THE POOL CONTRACTOR..

6. POOL AND SPA LIGHT FIXTURES SHALL BE INSTALLED PER REQUIREMENTS OF NEC 680.23 FOR UNDERWATER LIGHTING FIXTURES.

7. BONDING OF ALL POOL AND SPA EQUIPMENT AND CONSTRUCTION SHALL BE INSTALLED PER REQUIREMENTS OF N.E.C. 680.6 AND 680.26.

8. WHERE CONNECTING CONDUCTORS TO MOTOR TERMINALS, USE LIQUIDTITE CONDUIT (3' MAXIMUM) FROM THE RIGID CONDUIT TO THE MOTOR J-BOX.

9. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY LOCATION OF TIMER AND EMERGENCY STOP PUSHBUTTON PER REQUIREMENTS OF N.E.C. 680.41.

10. ELECTRICAL CONTRACTOR SHALL PERFORM ALL FINAL POWER AND CONTROL WIRING TERMINATIONS AT POOL CONTROL PANEL, CONTROL J-BOX, PCP STARTER, EMERGENCY STOP PUSHBUTTON, TIMER AND WATER LEVEL SENSORS AS REQUIRED FOR PROPER NORMAL AND EMERGENCY SHUTDOWN OPERATION OF ALL PUMPS.

LOCATION:

PANEL: EX "P2" VOLTAGE: 240 / 120 1Ø 3W CIRCUIT CODE: L - LIGHTING, K - KITCHEN, R - RECEPTACLES, H - ELECTRIC HEATING, LM - LARGEST MOTOR, O - MISCELLANEOUS, M - MOTOR
DATE: 9/4/18 4:23 PM BUS: 60AMPS MAINS: L.O. MOUNTING: SURFACE
JOB: FULLY RATED AIC: 10,000 NEMA: 1 ENCLOSURE

CKT	CODE	TRIP	POLE	LOAD DESIGNATION DESCRIPTION	(NOTE)	CONNECTED VA øA	øB	A/B	øA	øB	(NOTE)	LOAD DESIGNATION DESCRIPTION	TRIP	POLE	CKT
1	M	20	2	JET SPA #2 2hp	1	1600		•	1600			SPA CIRC PUMP #2 2hp	20	2	2
3	M	-	-	-	1		1600	•		1600	1	-	-	-	4
5	M	20	2	JET SPA #3 2hp	1	1600		•	1600			SPA CIRC PUMP #3 2hp	20	2	6
7	M	-	-	-	1		1600	•		1600	1	-	-	-	8
9	M	20	1	SPA HEATER #1		400		•	400			LEVEL SENSORS & CHLORINATORS & CONTROLS	20	1	10
11	M	20	1	SPA HEATER #2			400	•		200		SPA LIGHTS	20	1	12
13				NOT APPLICABLE				•	-			NOT APPLICABLE			14
15				NOT APPLICABLE				•		-		NOT APPLICABLE			16
17				NOT APPLICABLE				•	-			NOT APPLICABLE			18
19				NOT APPLICABLE				•		-		NOT APPLICABLE			20
21				NOT APPLICABLE		-		•	-			NOT APPLICABLE			22
23				NOT APPLICABLE			-	•		-		NOT APPLICABLE			24
25				NOT APPLICABLE		-		•	-			NOT APPLICABLE			26
27				NOT APPLICABLE			-	•		-		NOT APPLICABLE			28
29				NOT APPLICABLE		-		•	-			NOT APPLICABLE			30
31				NOT APPLICABLE			-	•		-		NOT APPLICABLE			32
33				NOT APPLICABLE		-		•	-			NOT APPLICABLE			34
35				NOT APPLICABLE			-	•		-		NOT APPLICABLE			36
37				NOT APPLICABLE		-		•	-			NOT APPLICABLE			38
39				NOT APPLICABLE			-	•		-		NOT APPLICABLE			40
41				NOT APPLICABLE		-		•	-			NOT APPLICABLE			42

PANEL NOTES: PHASE TOTALS: PH-A: 7200 PH-B: 7000 TOTAL CONNECTED VA: 14200

1) FURNISH WITH A LOCK ON AND "GFCI" RATED CIRCUIT BREAKER

PANEL CONNECTED KVA: 14.2
PANEL DEMAND KVA: 14.3
PANEL DEMAND AMPS: 59.4
Type:

PANEL EX "P2" LOAD CALCULATION

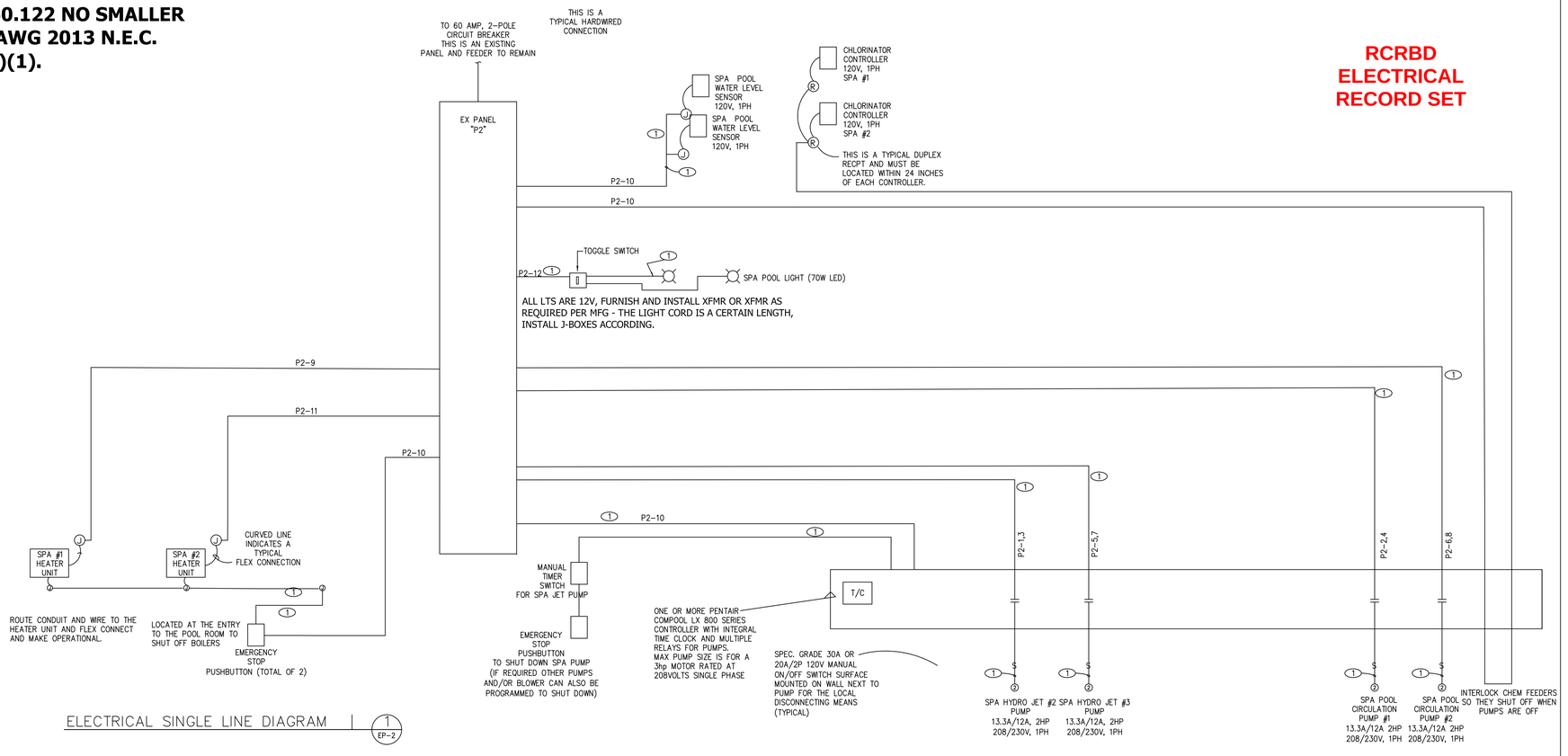
LIGHTING	200	VOLTAMPS x	1.25	=	250	VOLTAMPS
RECEPTACLES - 1ST 10KVA	0	VOLTAMPS x	1.00	=	0	VOLTAMPS
RECEPTACLES - BALANCE	0	VOLTAMPS x	0.50	=	0	VOLTAMPS
LARGEST MOTOR LOAD	0	VOLTAMPS x	1.25	=	0	VOLTAMPS
BALANCE OF MOTOR LOADS	14,000	VOLTAMPS x	1.00	=	14,000	VOLTAMPS
KITCHEN EQUIPMENT	0	VOLTAMPS x	0.65	=	0	VOLTAMPS
ELECTRIC HEATING EQUIPMENT	0	VOLTAMPS x	1.00	=	0	VOLTAMPS
MISC LOADS	0	VOLTAMPS x	1.00	=	0	VOLTAMPS
		TOTAL CALCULATED DEMAND LOAD		=	14,250	VOLTAMPS
					59.4	FULL LOAD AMPS

NOTES PER BLDG DEPT
1) UNDERGROUND WIRING LOCATION SHALL COMPLY WITH 2014 N.E.C. 680.10.
2) UNDERGROUND WIRING SHALL NOT BE PERMITTED UNDER THE POOL OR WITHIN THE AREA EXTENDING 5FT HORIZONTALLY FROM THE INSIDE WALL OF THE POOL UNLESS THIS WIRING IS NECESSARY TO SUPPLY POOL EQUIPMENT PERMITTED BY THIS ARTICLE. WHERE SPACE LIMITATIONS PREVENT WIRING FROM BEING ROUTED A DISTANCE OF 5FT OR MORE FROM THE POOL, SUCH WIRING SHALL BE PERMITTED WHERE INSTALLED IN RIGID METAL CONDUIT, INTERMEDIATE METAL CONDUIT, OR A NONMETALLIC RACEWAY SYSTEM. ALL METAL CONDUIT SHALL BE CORROSION RESISTANT AND SUITABLE FOR THE LOCATION. THE MINIMUM DEPTH SHALL BE GIVEN IN TABLE 680.10.

ALL MOTOR BRANCH CONDUITS SHALL HAVE AN INSULATED GROUNDING CONDUCTOR SIZED IN ACCORDANCE TO TABLE 250.122 NO SMALLER THAN 12AWG 2013 N.E.C. 680.20(A)(1).

NOTES PER BLDG DEPT
i) WIRING CONFORMS TO THE UNIFORM CODE AND ISSUED BY THE NEW YORK BOARD OF FIRE UNDERWRITERS OR EQUIVALENT CERTIFYING AGENCY.
ii) NO OVERHEAD ELECTRICAL WITHIN 20 FEET HORIZONTALLY OF THE POOL
iii) GROUND FAULT CIRCUIT INTERRUPTERS PROVIDED
iv) THERE SHALL BE AN ELECTRICAL INTERLOCK BETWEEN THE RE-CIRCULATION PUMP AND CHEMICAL FEEDERS
v) FUEL BURNING HEATING EQUIPMENT INSTALLED AND VENTED TO OUTDOORS IN ACCORDANCE WITH THE UNIFORM CODE

RCRBD ELECTRICAL RECORD SET



ELECTRICAL SINGLE LINE DIAGRAM | 1 / EP-2

SHEET INDEX

CONDUIT & WIRE SCHEDULE

CONDUIT RUN	CONDUIT QTY	CONDUIT SIZE	CONDUCTORS IN EA. CONDUIT QTY	CONDUCTORS IN EA. CONDUIT SIZE	CONDUCTORS IN EA. CONDUIT GROUND	COMMENTS
1	1	1/2"	2	#12 AWG	#12 AWG	-
2	1	1/2"	2	#10 AWG	#10 AWG	-

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COLORADO REGISTERED PROFESSIONAL ENGINEER
9-7-2018

Drawn By	Reviewed By	Review Date
AR		

No.	Revision/Issue	Date

Project No.

Drawing Title
ELECTRICAL SPECIFICATIONS AND POWER ONE LINE DIAGRAM FOR PANEL "P2"

Date

Sheet No.
EP-2 OF 3

ELECTRICAL SPECIFICATIONS

1. CODES:
ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) 2014 EDITION, ALL STATE AND LOCAL BUILDING CODES, ALL ADOPTED ORDINANCES, AND ALL REQUIREMENTS OF THE UTILITY COMPANY.

2. RACEWAY:
   A. INDOOR:
      (1) EMT (ELECTRICAL METALLIC TUBING)
      (2) IMC (INTERMEDIATE METALLIC CONDUIT)

   B. OUTDOOR:
      (1) ABOVE GROUND: GRC (GALVANIZED RIGID CONDUIT)

   C. FLEXIBLE: LIQUIDTIGHT FLEXIBLE METAL CONDUIT SHALL BE USED IN ALL APPLICATIONS WHERE FLEXIBILITY IS REQUIRED. FLEXIBILITY METAL CONDUIT IS NOT ACCEPTABLE UNLESS IT IS A PART OF A PRE-WIRED ASSEMBLY. FLEXIBLE NONMETALLIC CONDUIT SHALL NOT BE USED.

   D. CONDUIT RUNS INSIDE BUILDING SHALL BE CONCEALED WHERE POSSIBLE. CONDUIT BELOW FLOOR SLAB SHALL BE INSTALLED WITHIN OR BELOW SLAB AND INSTALLED PRIOR TO POUR. RUNS TO BE AS STRAIGHT AS POSSIBLE FROM POINT OF OUTLET TO POINT OF OUTLET.

   E. FURNISH 1/2" CONDUIT FOR ALL TEMPERATURE SENSORS FROM SENSOR TO APPROPRIATE MECHANICAL EQUIPMENT. PROVIDE 4" SQUARE BOX AT 48" AFF.

   F. SUPPORTING DEVICES:
      (1) CHANNEL AND ANGLE SUPPORT SYSTEMS, HANGERS, ANCHORS, PRIOR BRACKETS, FABRICATED ITEMS, AND FASTENERS SHALL PROVIDE SECURE SUPPORT FROM THE BUILDING STRUCTURE FOR ELECTRICAL COMPONENTS. ALL SUPPORTS SHALL CONFORM TO SEISMIC ZONE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION. LIGHT FIXTURES SHALL BE SUPPORTED IN ACCORDANCE WITH NEC 410.

      (2) MATERIAL: ALL STEEL, PROTECTED FROM CORROSION WITH ZINC COATING (GALVANIZED) OR TREATMENT OF EQUIVALENT CORROSION-RESISTANT ALTERNATIVE FINISH.

   G. FIRESTOPPING: APPLY TO CABLE AND RACEWAY PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES. PERFORM FIRESTOPPING TO RE-ESTABLISH THE ORIGINAL FIRE-RESISTANCE RATING OF THE ASSEMBLY AT THE PENETRATION.

   H. INSTALL RACEWAYS LEVEL AND SQUARE AND AT PROPER ELEVATIONS. PROVIDE ADEQUATE HEADROOM. USE TEMPORARY CLOSURES TO PREVENT FOREIGN MATTER FROM ENTERING RACEWAY. KEEP RACEWAYS AT LEAST 6" AWAY FROM PARALLEL RUNS OF FLUES AND HOT WATER PIPES. INSTALL HORIZONTAL RACEWAY RUNS ABOVE WATER PIPING.

   I. MINIMUM CONDUIT SIZE: 3/4" BELOW GRADE, 1/2" ABOVE GRADE

3. WIRE (50 TO 600 VOLTS)
ALL WIRE SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:

   A. INSULATING RATING:
      (1) VOLTAGE: 600 VOLTS
      (2) TEMPERATURE: 90^C (THHN OR THWN)

   B. STRANDED COPPER WITH ONE EXCEPTION:
   SOLID WIRE (SIZES #12 AND #10) MAY BE USED FOR OUTLETS AND LIGHTING.

   C. MINIMUM SIZE:
      (1) POWER WIRING – #12 AWG
      (2) CONTROL WIRING – #14 AWG

   D. WIRING INSTALLATION
      (1) ALL FEEDERS, BRANCH CIRCUITS AND VOLTAGE DROP REQUIREMENTS SHALL CONFORM TO NEC 210 AND 220.
      (2) ALL WIRING SHALL BE INSTALLED IN AN APPROVED RACEWAY SYSTEM IN ACCORDANCE WITH NEC AND LOCAL ORDINANCES.

4. ENCLOSURES:
   A. FOR STARTERS, DISCONNECTS AND PANELBOARDS:
      (1) INDOOR: NEMA 1
      (2) OUTDOOR: NEMA 3R

   B. CONTROL PANELS (FULL PIANO HINGED):
      (1) INDOOR: NEMA 1
      (2) OUTDOOR: NEMA 3R

   C. CONTROL STATIONS:
   (1) INDOOR AND OUTDOOR: NEMA 4 OILTIGHT

   D. REFER TO N.E.C. IN AREAS WHERE CERTAIN CONDITIONS MUST BE MET.

   E. MOUNTING HEIGHTS:
      (1) MOUNT TOP OF PANELS AND SWITCHES 66" AFF.
      (2) MOUNT TOP OF RECEPTACLE BOXES 15" AFF UON
      (3) OUTLET MOUNTING HEIGHTS FOR RECEPTACLES, SWITCHES, SYSTEM INITIATING DEVICES, AND INDICATING DEVICES SHALL COMPLY WITH REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA)

5. GROUNDING:
   A. ELECTRICAL SERVICE AND BUILDING GROUNDING SHALL BE INSTALLED PER THE NEC AS SHOWN IN THE CONTRACT DRAWINGS AND SPECIFICATIONS.

   B. ALL METALLIC STRUCTURES, METALLIC ENCLOSURES, AND ELECTRICAL EQUIPMENT SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED AND GROUND CONNECTIONS SHALL BE MADE TO THE BUILDING GROUND. SIZE GROUND WIRE PER NEC 250.

6. WIRING DEVICES AND COMPONENTS:
   A. STARTERS AND CONTACTORS: TO BE NEMA OR IEC RATED (NO GENERAL PURPOSE).

   B. ALL PANELS SHALL BE OF COPPER BUS CONSTRUCTION.

   C. ALL RECEPTACLES AND SWITCHES SHALL BE COMMERCIAL GRADE WITH 20A RATING.

   D. ALL RECEPTACLE AND SWITCH COVERS SHALL BE WHITE AND STANDARD COMMERCIAL GRADE.

   E. EQUIPMENT STARTERS AND RELATED CONTROL AND WIRING SHALL BE SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. OVERLOAD HEATERS SHALL BE INSTALLED IN ACCORDANCE WITH NAMEPLATE DATA ON EQUIPMENT. STARTERS SHALL BE INSTALLED AS DIRECTED BY THE POOL CONTRACTOR.

   F. ALL DISCONNECT SWITCHES SHALL BE HEAVY-DUTY WITH DUAL ELEMENT TIME DELAY FUSES AS NOTED ON THE ONE-LINE DIAGRAM. FUSE SIZE TO BE AS SHOWN OR AS REQUIRED TO MATCH LOAD CONDITIONS.

7. MISCELLANEOUS AND GENERAL
   A. THE ELECTRICAL DRAWINGS ARE NOT TO BE USED FOR ROOM DIMENSIONS AND EQUIPMENT PLACEMENT. REFERENCE THE APPROPRIATE ARCHITECTURAL, STRUCTURAL OR MECHANICAL PLANS, DRAWINGS OR SCHEMATIC. VERIFY ALL LOCATIONS WITH ENGINEER BEFORE INSTALLING CONDUIT, EQUIPMENT, ETC.

   B. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FAMILIARIZE HIMSELF WITH THE INSTALLATION AND TO ENSURE IT IS PROPER FOR ANY GIVEN SITUATION WHICH MAY VARY FROM THE DETAILS OR THE DRAWINGS. CONTRACTORS ARE ADVISED TO COMPLETELY SURVEY THE WORK AREA TO IDENTIFY ANY UPCOMING PROBLEMS.

   C. COORDINATE MOUNTING HEIGHT OF ALL EXTERIOR LIGHTING FIXTURES WITH ARCHITECTURAL ELEVATION DRAWINGS.

   D. ELECTRICAL CONTRACTOR SHALL ARRANGE FOR ALL INSPECTIONS WHEN THEY BECOME DUE, AND SHALL NOT COVER ANY WORK UNTIL APPROVED BY THE INSPECTION AUTHORITY.

   E. ANY AND ALL FEES ASSOCIATED WITH THE ELECTRICAL WORK INCLUDING CONSTRUCTION AND INSPECTIONS SHALL BE PAID FOR BY THE ELECTRICAL CONTRACTOR IN ORDER TO DELIVER AND COMPLETE THE FINISHED BUILDING, READY FOR OCCUPANCY AND 100% USAGE.

   F. ANY COSTS DUE TO THE LACK OF COOPERATION AMONG TRADES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

   G. REFER TO THE LATEST ARCHITECTURAL DRAWINGS FOR EXACT WALL LOCATIONS, DIMENSIONS, AND CONFIGURATIONS: DOOR SWINGS FOR SWITCH LOCATION, REFLECTED CEILING PLANS FOR LIGHT FIXTURE LOCATIONS.

   H. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ALL ELECTRICAL EQUIPMENT LOADS PRIOR TO ROUGH-IN AND SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES EXIST.

   I. ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY ALTERATIONS REQUIRED BY THE OWNER, ARCHITECT, OR FIELD CONDITIONS.

   J. ALL EQUIPMENT SHALL BE NEW AND SHALL HAVE APPROPRIATE UNDERWRITERS LABORATORIES (UL) LABEL AND SHALL CONFORM TO THE LATEST INDUSTRY STANDARDS.

   K. ELECTRICAL CONTRACTOR SHALL MAINTAIN ALL WORKING CLEARANCES FOR ALL ELECTRICAL EQUIPMENT PER N.E.C. REQUIREMENTS.

   L. AT THE COMPLETION OF WORK, THE ELECTRICAL CONTRACTOR SHALL PROVIDE COMPLETE, ACCURATE, TYPED PANELBOARD DIRECTORIES.

   M. ANY DEVIATION FROM PLANS WITHOUT PRIOR APPROVAL OF THE ARCHITECT/ENGINEER SHALL BE CAUSE FOR REJECTION OF MATERIALS AND/OR METHODS AND ANY COSTS INCURRED TO CORRECT SUCH DEVIATION TO THE SATISFACTION OF THE ARCHITECT/ENGINEER SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

   N. COST TO INSTALL TEMPORARY POWER AND LIGHTING PER OSHA STANDARDS AND TEMPORARY POWER TO CONSTRUCTION TRAILER SHALL BE INCLUDED IN ELECTRICAL CONTRACTOR'S BID.

   O. ALL DIMENSIONS ARE FROM FINISHED FLOOR OR FACE OF STUD TO CENTER OF DEVICE UNLESS OTHERWISE NOTED.

   P. REFER TO MECHANICAL DRAWINGS FOR LOCATION OF THERMOSTATS AND OTHER SPECIAL EQUIPMENT OR CONTROLS. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ALL CONDUITS, JUNCTION BOXES, WIRING, AND DISCONNECT SWITCHES AND THERMOSTAT JUNCTION BOXES.

GENERAL:
"CONDUCTORS NORMALLY USED TO CARRY CURRENT SHALL BE OF COPPER. FOR ALUMINUM AND COPPER-CLAD ALUMINUM #6AWG AND LARGER, SEE SECTION 310-15. EXCEPTION: ALUMINUM CONDUCTORS SMALLER THAN #6AWG MAY BE USED PROVIDED THE METHOD OF CONNECTION IS APPROVED IN ADVANCE BY THE BUILDING OFFICIAL AND THE INSTALLATION IS MADE UNDER CONTINUOUS SPECIAL INSPECTION.

ALL MOTOR BRANCH CONDUITS SHALL HAVE AN INSULATED GROUNDING CONDUCTOR SIZED IN ACCORDANCE TO TABLE 250.122 NO SMALLER THAN 12AWG 2013 N.E.C. 680.20(A)(1).

INSTALLATION NOTES

1. EQUIPMENT SUPPLIED BY POOL CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR SHALL INCLUDE THE FOLLOWING:
   A. POOL CONTROL PANEL (MODEL #LX 820 COMPOOL)
   B. SPRING WOUND TIMER (SWT)
   C. EMERGENCY STOP PUSHBUTTON (ESS)
   D. POOL LIGHTS
   E. POOL WATER LEVEL SENSOR
   F. SPA WATER LEVEL SENSOR
2. ALL METAL PARTS IN SWIMMING POOL AND SPA AREAS AND EQUIPMENT ROOM SHALL BE GROUND BONDED WITH #8 SOLID BARE COPPER INCLUDING BUT NOT LIMITED TO ALL PUMPS, HEATERS, POOL AND SPA LIGHTS, LADDERS, HAND RAILS, AND REBAR PER REQUIREMENTS OF N.E.C. 680.6 AND 680.26.
3. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY LOCATION OF SWIMMING POOL AND SPA POOL LIGHT TOGGLE SWITCHES PER REQUIREMENTS OF N.E.C. 680.22 AND EMERGENCY OFF TOGGLE SWITCH PER 680.41.
4. ELECTRICAL CONTRACTORS WITH 120V COILS AND STARTERS WITH 120V COILS SHALL BE SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR.
5. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY LOCATION OF POOL AND SPA WATER LEVEL SENSORS WITH POOL CONTRACTOR. LOW VOLTAGE CONTROL WIRING SHALL BE PROVIDED BY THE POOL CONTRACTOR..
6. POOL AND SPA LIGHT FIXTURES SHALL BE INSTALLED PER REQUIREMENTS OF NEC 680.23 FOR UNDERWATER LIGHTING FIXTURES.
7. BONDING OF ALL POOL AND SPA EQUIPMENT AND CONSTRUCTION SHALL BE INSTALLED PER REQUIREMENTS OF N.E.C. 680.6 AND 680.26.
8. WHERE CONNECTING CONDUCTORS TO MOTOR TERMINALS, USE LIQUIDTITE CONDUIT (3' MAXIMUM) FROM THE RIGID CONDUIT TO THE MOTOR J-BOX.
9. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY LOCATION OF TIMER AND EMERGENCY STOP PUSHBUTTON PER REQUIREMENTS OF N.E.C. 680.41.
10. ELECTRICAL CONTRACTOR SHALL PERFORM ALL FINAL POWER AND CONTROL WIRING TERMINATIONS AT POOL CONTROL PANEL, CONTROL J-BOX, PCP STARTER, EMERGENCY STOP PUSHBUTTON, TIMER AND WATER LEVEL SENSORS AS REQUIRED FOR PROPER NORMAL AND EMERGENCY SHUTDOWN OPERATION OF ALL PUMPS.

PANEL: EX "P1"

VOLTAGE: 240 / 120 1Ø 3W
BUS: 60AMPS [redacted]
DATE: 9/7/18 7:10 AM MAINS: L.O. MOUNTING: SURFACE
JOB: FULLY RATED AIC: 10,000 NEMA: 1 ENCLOSURE
LOCATION:
CIRCUIT CODE: L - LIGHTING; R - RECEPTACLES; LM - LARGEST MOTOR; M - MOTOR; K - KITCHEN; H - ELECTRIC HEATING; O - MISCELLANEOUS

CKT NO	CODE	TRIP	POLE	DESCRIPTION	(NOTE)	ØA	ØB	A	B	ØA	ØB	(NOTE)	DESCRIPTION	TRIP	POLE	CODE	CKT NO
1	M	20	1	IRRIGATION POWER		200		•		-			spare	30	-		2
3	H	20	1	SPA HEATER			400		•		-		--	-	2		4
5	H	20	1	POOL HEATER		400		•		200			LIGHTING	20	1	L	6
7	M	20	-	SPA CIRC PUMP 2hp 13.3A	1		1600		•		400		RECPTS BATHROOMS	20	1	R	8
9	M	-	2	--	1	1600		•		500			EXTERIOR LIGHTING	15	1	L	10
11	M	20	-	POOL CIRC PUMP 2hp 13.3A	1		1600		•		100		EXH FAN	15	1	M	12
13	M	-	2	--	1	1600		•		-			SPARE	15	1		14
15	M	15	1	CONTROLLER			200		•		-		SPRE	20	-		16
17	M	20	-	JET PUMP 2hp 13.3A	1	1600		•		-			--	-	2		18
19	M	-	2	--	1		1600		•		-		SPACE				20
21	M	20	-	SPARE		-		•		-			SPACE				22
23	M	-	2	--			-		•		-		SPACE				24
25				NOT APPLICABLE		-		•		-			NOT APPLICABLE				26
27				NOT APPLICABLE			-		•		-		NOT APPLICABLE				28
29				NOT APPLICABLE		-		•		-			NOT APPLICABLE				30
31				NOT APPLICABLE			-		•		-		NOT APPLICABLE				32
33				NOT APPLICABLE		-		•		-			NOT APPLICABLE				34
35				NOT APPLICABLE			-		•		-		NOT APPLICABLE				36
37				NOT APPLICABLE		-		•		-			NOT APPLICABLE				38
39				NOT APPLICABLE			-		•		-		NOT APPLICABLE				40
41				NOT APPLICABLE		-		•		-			NOT APPLICABLE				42

PHASE TOTALS: PH A: 6100 PH B: 5900

TOTAL CONNECTED VA	12000
PANEL CONNECTED KVA	12.0
PANEL DEMAND KVA	12.2
PANEL DEMAND AMPS	50.7

Type:

PANEL NOTES:
1) FURNISH WITH LOCK ON AND "GFCI" RATED CIRCUIT BREAKER

PANEL EX "P1" LOAD CALCULATION

LIGHTING	700	VOLTAMPS x	1.25	=	875	VOLTAMPS
RECEPTACLES - 1ST 10KVA	400	VOLTAMPS x	1.00	=	400	VOLTAMPS
RECEPTACLES - BALANCE	0	VOLTAMPS x	0.50	=	0	VOLTAMPS
LARGEST MOTOR LOAD	0	VOLTAMPS x	1.25	=	0	VOLTAMPS
BALANCE OF MOTOR LOADS	10,100	VOLTAMPS x	1.00	=	10,100	VOLTAMPS
KITCHEN EQUIPMENT	0	VOLTAMPS x	0.65	=	0	VOLTAMPS
ELECTRIC HEATING EQUIPMENT	800	VOLTAMPS x	1.00	=	800	VOLTAMPS
MISC LOADS	0	VOLTAMPS x	1.00	=	0	VOLTAMPS

TOTAL CALCULATED DEMAND LOAD = 12,175 VOLTAMPS
50.7 FULL LOAD AMPS

NOTES PER BLDG DEPT
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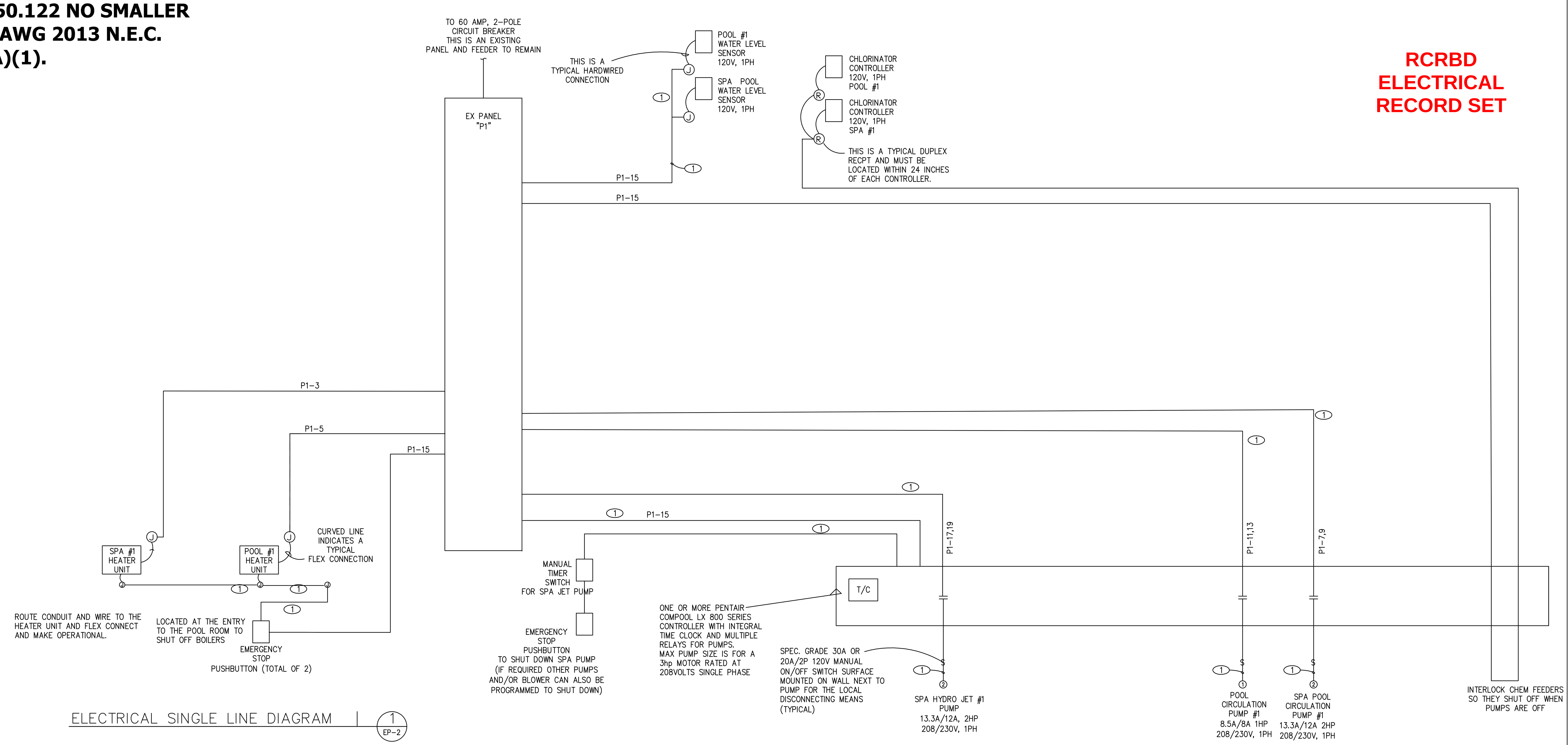
2) UNDERGROUND WIRING SHALL NOT BE PERMITTED UNDER THE POOL OR WITHIN THE AREA EXTENDING 5FT HORIZONTALLY FROM THE INSIDE WALL OF THE POOL UNLESS THIS WIRING IS NECESSARY TO SUPPLY POOL EQUIPMENT PERMITTED BY THIS ARTICLE. WHERE SPACE LIMITATIONS PREVENT WIRING FROM BEING ROUTED A DISTANCE OF 5FT OR MORE FROM THE POOL, SUCH WIRING SHALL BE PERMITTED WHERE INSTALLED IN RIGID METAL CONDUIT, INTERMEDIATE METAL CONDUIT, OR A NONMETALLIC RACEWAY SYSTEM. ALL METAL CONDUIT SHALL BE CORROSION RESISTANT AND SUITABLE FOR THE LOCATION. THE MINIMUM DEPTH SHALL BE GIVEN IN TABLE 680.10.

NOTES PER BLDG DEPT
i) WIRING CONFORMS TO THE UNIFORM CODE AND ISSUED BY THE NEW YORK BOARD OF FIRE UNDERWRITERS OR EQUIVALENT CERTIFYING AGENCY.
ii) NO OVERHEAD ELECTRICAL WITHIN 20 FEET HORIZONTALLY OF THE POOL
iii) GROUND FAULT CIRCUIT INTERRUPTERS PROVIDED
iv) THERE SHALL BE AN ELECTRICAL INTERLOCK BETWEEN THE RE-CIRCULATION PUMP AND CHEMICAL FEEDERS
v) FUEL BURNING HEATING EQUIPMENT INSTALLED AND VENTED TO OUTDOORS IN ACCORDANCE WITH THE UNIFORM CODE



ELECTRICAL SINGLE LINE DIAGRAM | 1 / EP-2

RCRBD ELECTRICAL RECORD SET

SHEET INDEX

SHEET NUMBER	SHEET DESCRIPTION
EP-1	POOL & SPA GENERAL NOTES & SPECIFICATIONS
EP-2	POOL & SPA ELECTRICAL BONDING PLAN

CONDUIT & WIRE SCHEDULE

CONDUIT RUN	CONDUIT QTY	CONDUIT SIZE	CONDUCTORS IN EA. CONDUIT QTY	SIZE	GROUND	COMMENTS
1	1	1/2"	2	#12 AWG	#12 AWG	–
2	1	1/2"	2	#10 AWG	#10 AWG	–

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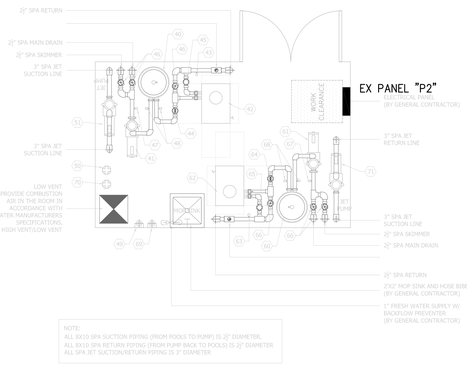
ELECTRICAL SPECIFICATIONS AND POWER ONE LINE DIAGRAM FOR PANEL "P1"

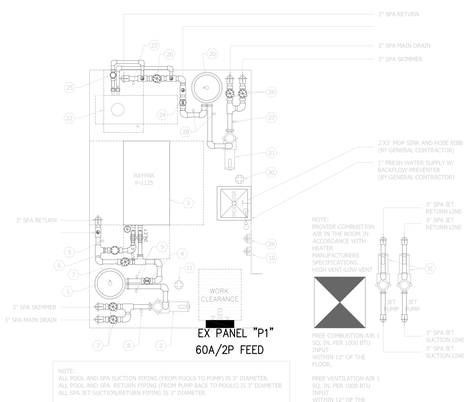
Date

Sheet No.
EP-1 OF 3



EX POOL EQUIPMENT ROOM #2 ELECTRICAL | 3B EP-2

SCALE: N.T.S.



EX POOL EQUIPMENT ROOM #1 ELECTRICAL | 3A EP-2

SCALE: N.T.S.

NOTES

1. ALL GROUNDING SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE SECTION 680.26.

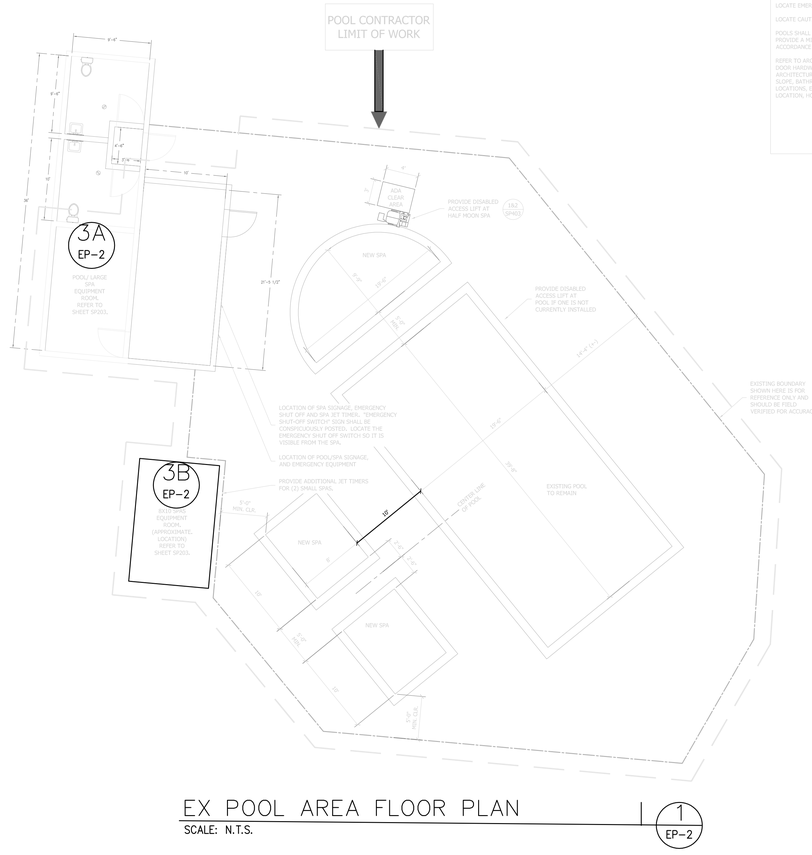
   ALL BOND WIRE CONNECTIONS TO REBAR SHALL BE EXOTHERMIC WELDING TYPE CONNECTIONS.

   PRESSURE CONNECTORS AND CLAMPS ARE ACCEPTABLE IN LIEU OF EXOTHERMIC WELDING IF ALL COMPONENTS ARE SO LISTED AND INSTALLED PER ALL OF THE MANUFACTURER'S INSTRUCTIONS.

2. #8 SOLID COPPER UNINSULATED BOND WIRE CONNECTED TO STAIRS, LADDER RAILS, LIGHT FIXTURE HOUSINGS AND POOL REINFORCING STEEL AS SHOWN ON OTHER DRAWINGS.. THE EQUIPOTENTIAL GROUNDING SYSTEM INSTALLATION SHALL COMPLY WITH NEC 680.26.

3. TO POOL PUMP HOUSING IN EQUIPMENT ROOM.

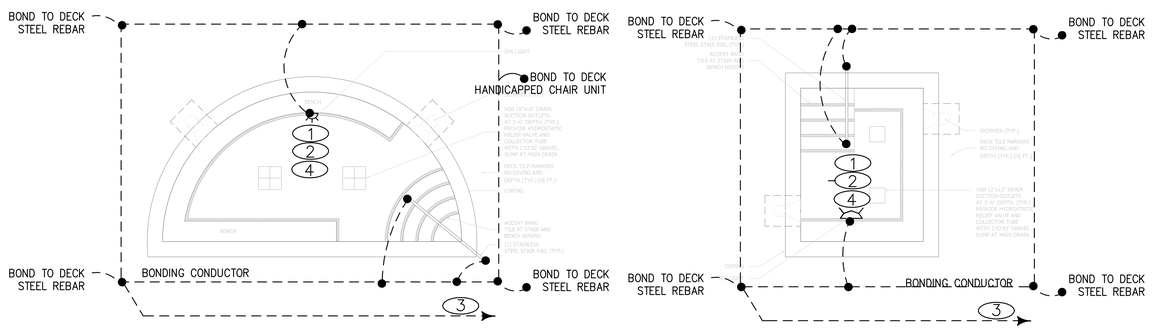
4. TYPICAL FOR POOL/SPA LIGHT FIXTURES. 2#12, #12G CABLE IN A 1" CONDUIT ROUTED TO PANEL "LP" VIA THE LIGHTING CONTROL SYSTEM AS SHOWN ON THE POOL DRAWINGS SINGLE LINE DIAGRAM. THIS INSTALLATION SHALL COMPLY WITH NEC 680.23(B)(2). THE CONDUIT AND WIRE SHALL BE ROUTED FROM THE LIGHT TO A J-BOX (PER NEC 680.24). CONDUIT SHALL BE METAL TYPE, IF NONMETALLIC CONDUIT IS USED A #8AWG BARE COPPER GROUND WILL BE INSTALLED IN LIEU OF THE #12 SPECIFIED ABOVE.



EX POOL AREA FLOOR PLAN | 1 EP-2

SCALE: N.T.S.

THE MAIN SWIMMING POOL IS EXISTING AND WILL REMAIN AS IS. THE PUMPS TO THE POOL ARE BEING REPLACED



SPA (3) BONDING AND GROUNDING AND LIGHTING PLAN | 2 EP-2

SCALE: 1/8" = 1'-0"

RCRBD ELECTRICAL RECORD SET

NOTES

CONTRACTOR SHALL VERIFY ALL DIMENSIONS FOR LOCATION OF POOL WITH GENERAL CONTRACTOR AND/OR ARCHITECT.

LOCATE EMERGENCY SHUT OFF AND JET TIMER ADJACENT TO SPA.

LOCATE CAUTION SIGNS AT WALL ADJACENT TO POOL AND SPA.

POOLS SHALL BE ACCESSIBLE IN ACCORDANCE WITH ADA. PROVIDE A MINIMUM 36" X 48" CLEAR DECK SPACE AT POOL LIFTS IN ACCORDANCE WITH ADA.

REFER TO ARCHITECTURAL FOR POOL ENCLOSURE, FENCE, DOORS, DOOR HARDWARE, SELF CLOSING/SELF LATCHING HARDWARE, ARCHITECTURAL FINISHES, DECK FINISHES, DECK DRAINS, DECK SLOPE, BATHROOMS, SHOWERS, DRINKING FOUNTAIN, SIGN LOCATIONS, EMERGENCY EQUIPMENT LOCATION, EMERGENCY PHONE LOCATION, HOSE BIBBS, FURNITURE AND ACCESSORIES ETC.

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Drawn By	Reviewed By	Review Date
AR		

No.	Revision/Issue	Date

Project No.

Drawing Title
SPA GROUNDING AND LIGHTING POWER PLANS

Date

Sheet No.
EP-3 OF 3

DUCKELS
CONSTRUCTION, INC

9/20/2018

RCRBD

RECORD SET

TO: Routt County Regional Building Department

From: Duckels Construction Inc.
Ken Fones 970-761-0800/ kenfones@gmail.com

Re: Torian Plum pool/hot tubs
1855 Ski time square
Steamboat Springs Co.
Permit TB-18-662 Response to plan review letter dated 09/18/2018

Please find the responses to the plan review comments as well as supporting documents. Duckels has submitted the required application to the county health department on the morning of 9/20/18. Once again thanks for your cooperation with this permit application!

1. Duckels understands the review process.
2. Page 7 of the submitted plans has all of the relevant calculations requested.
3. There is a back flow preventer currently in both of the mechanical rooms as well as a RP on the entire Torian Plum plaza facility being installed by the end of the year per conditions from Mount Warner Water district. (Photos of the existing back flow preventers enclosed as well as the letter from mount MWW and Western States fire protection proposal for the installation of the RP)
4. Find the enclosed literature from Spectrum Aquatics for the hot tub covers that will be provided.
5. Enclosed is a revised plan from MEP engineering Labeled M3.1 from the boiler room plans (permit #B-18-184 copy enclosed) that shows the calculations and size and location of the vent to be installed in red.

Duckels is aware of the additional requirements based on the State of Colorado Swimming Pool and Mineral Bath Regulations.

Ken Fones

3

Josh Miller

From: Frank Alfone <falfone@mwwater.com>
Sent: Thursday, July 26, 2018 12:52 PM
To: Josh Miller
Cc: Nate Johnson
Subject: Torian Plum Meter Room Items

RCRBD

RECORD SET

Josh,

Good afternoon. I hope you are settled in a bit and things are off to a good start at Torian!

As you probably know, several deficiencies have been identified regarding cross-connection control in both the Plaza and Creekside Buildings (in the mechanical rooms that house the main water service lines for both domestic potable water and fire prevention water) at Torian Plum. I just spoke to Jesse at Western States Fire Protection. And, previous to the conservation with Jesse today and before Resort Lodging Co. took over managing Torian, Nate (MWW Operations Manager) and I met on site with Alex Tipton and Ken Fones.

Jesse informed me that he submitted a proposal to Torian to remedy the deficiencies and was going to give you a call to discuss next steps.

All of these items on the proposal must be competed per Mt. Werner Water Rules and Reg's and Section 11.39(3) of The Colorado Department of Public Health and Environment Primary Drinking Water Regulations – see section below.

"The supplier must survey all non-single-family-residential connections to the public water system to determine if the connection is a cross connection unless the supplier controls that connection with the most protective backflow prevention assembly or backflow prevention method. The supplier must survey all connections within the supplier's waterworks to determine if the connection is a cross connection.
(i) If the supplier identifies a cross connection during a survey, the supplier must determine the type of backflow prevention assembly or backflow prevention method to control the cross connection.
(ii) If the supplier becomes aware of a single-family-residential connection to the public water system that is a cross connection, the supplier must determine the type of backflow prevention assembly or backflow prevention method to control the cross connection."

When you have a moment, please give me a call to discuss this matter and/or I would be happy to meet you on site to look at the issues.

I look forward to hearing back from you.

Regards,

Frank

Frank Alfone
General Manager
Mt. Werner Water and Sanitation District
3310 Clearwater Trail
PO Box 880339
Steamboat Springs, CO 80488-0339
falfone@mwwater.com
www.mwwater.com
(970) 879-2424

#3

RCRBD

RECORD SET

Western States Fire Protection Co.

1717 Heath Parkway
Fort Collins, CO 80524
Ph.: 970-472-5205 FAX: 970-416-8886

Protecting Lives and Property

gary.cantwell@wsfp.us

SERVICE PROPOSAL

PROPOSAL SUBMITTED TO:	Martin and Martin	PHONE:	720-544-5394	DATE:	June 15, 2018
STREET ADDRESS:		Cell NUMBER:	720-589-4667	DATE OF PLANS:	N/A
CITY, STATE, ZIP CODE:	Steamboat Springs, CO	JOB NAME:	Torium Plum Backflow Preventer Install	ARCHITECT:	N/A
TO THE ATTENTION OF:	Alex Tipton	JOB LOCATION:	Steamboat Springs	SALES PERSON:	Gary W. Cantwell

SCOPE OF WORK INCLUDED IN THIS PROPOSAL

Install one new backflow preventer on the fire main and one new backflow preventer on the domestic main.

ALL WORK TO BE DONE DURING NORMAL WORKING HOURS MONDAY THROUGH FRIDAY

INCLUSIONS: Labor, Permit and Materials

EXCLUSIONS: Off or overtime labor, Patching or Painting of existing or new surfaces. Alarms or Alarm Wiring. Bond.

FOURTEEN THOUSAND FIVE HUNDRED SIXTY AND NO/00 DOLLARS	$14,560

NOTE: THIS PROPOSAL MAY BE WITHDRAWN BY WESTERN STATES FIRE PROTECTION COMPANY IF NOT ACCEPTED WITHIN 15 DAYS OF THE PROPOSAL DATE.

PAYMENT IS TO BE MADE MONTHLY AS THE WORK PROGRESSES TO THE VALUE OF 100 PERCENT OF ALL WORK COMPLETE AND MATERIAL ON JOB SITE . THE ENTIRE AMOUNT OF CONTRACT TO BE PAID WITHIN 30 DAYS AFTER COMPLETION OF THE WORK.

LIMITATION OF WESTERN STATES FIRE PROTECTION COMPANY LIABILITY

CLIENT ACKNOWLEDGES THAT WESTERN STATES FIRE PROTECTION COMPANY IS NOT AN INSURER AND THAT THE PAYMENTS MADE TO WESTERN STATES FIRE PROTECTION COMPANY BY CLIENT ON THIS PROJECT ARE BASED UPON THE VALUE OF THE SYSTEM AND/OR SERVICES PROVIDED AND ARE UNRELATED TO THE VALUE OF CLIENT'S PROPERTY OR BUSINESS. IN RECOGNITION OF THE RELATIVE RISKS AND BENEFITS TO THE CLIENT AND TO WESTERN STATES FIRE PROTECTION COMPANY RESULTING FROM THE WORK TO BE PERFORMED BY WESTERN STATES FIRE PROTECTION COMPANY, THE RISKS HAVE BEEN ALLOCATED SUCH THAT THE CLIENT, AS WELL AS THE CLIENT'S ASSIGNS, AGENTS, AND REPRESENTATIVES, AGREE, TO THE FULLEST EXTENT PERMITTED BY LAW, TO LIMIT THE LIABILITY OF WESTERN STATES FIRE PROTECTION COMPANY, ITS' OFFICERS, DIRECTORS, EMPLOYEES AND WESTERN STATES FIRE PROTECTION COMPANY'S PARENT, SUBSIDIARIES, AFFILIATES, CONSULTANTS, SUBCONTRACTORS, VENDORS, TO A MAXIMUM OF $10,000 OR THE AMOUNT OF THE CONTRACT/PRICE OF WORK TO BE PERFORMED, WHICHEVER IS LESS, AND CLIENT DOES HEREBY RELEASE WESTERN STATES FIRE PROTECTION COMPANY FROM ANY CLAIMS IN EXCESS OF SAID LIMIT.

THIS LIMITATION OF LIABILITY SHALL APPLY TO ALL JUDGMENTS, CLAIMS, LIABILITY, COSTS, CLAIM EXPENSES, AND ALL OTHER DAMAGES OR LOSSES OF ANY NATURE SUSTAINED BY CLIENT, CONTRACTOR OR SUBCONTRACTORS, OR ANY OTHER PARTY CLAIMING BY OR THROUGH THEM.

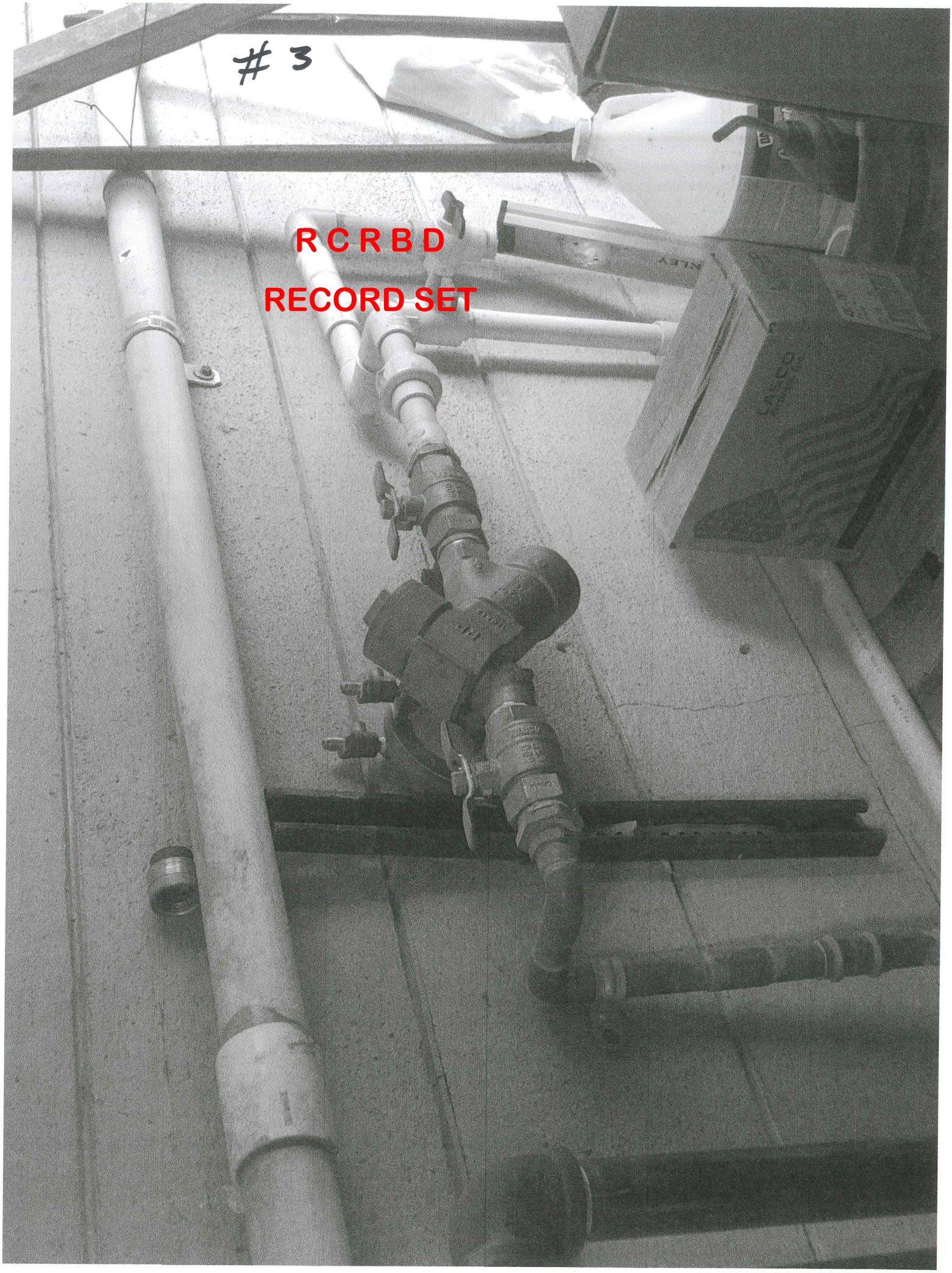
THIS LIMITATION OF LIABILITY SHALL BE ENFORCEABLE, 1.) REGARDLESS OF THE AMOUNT OF ANY ACTUAL DAMAGES SUSTAINED, IF ANY, AS A RESULT OF THIS WORK; AND, 2.) EVEN IF THE LOSS OR DAMAGE IN ISSUE IS CAUSED OR ALLEGED TO BE CAUSED BY THE NEGLIGENCE, BREACH OF WARRANTY, DEFECTIVE PRODUCTS, VIOLATIONS OF THE DECEPTIVE TRADE PRACTICES ACT, OR OTHER FAULT OF WESTERN STATES FIRE PROTECTION COMPANY OR WESTERN STATES FIRE PROTECTION COMPANY'S PARENT, SUBSIDIARIES, AFFILIATES, CONSULTANTS, SUBCONTRACTORS, VENDORS, OR THEIR RESPECTIVE EMPLOYEES, AGENTS OR REPRESENTATIVES. SHOULD CLIENT DESIRE A DIFFERENT LIMITATION OF LIABILITY, SUCH IS AVAILABLE AS AN ADDITIONAL SERVICE AT AN ADDITIONAL COST. IF PAYMENT FOR WORK PROVIDED IN THIS AGREEMENT IS NOT PAID WHEN DUE, CLIENT AGREES TO PAY ALL COSTS OF COLLECTION INCLUDING ATTORNEYS FEES AS WELL AS INTEREST COMPUTED AT THE HIGHEST RATE ALLOWABLE BY APPLICABLE STATE LAW.

ACCEPTANCE OF CONTRACT/PROPOSAL

THE ABOVE PRICES SPECIFICATIONS AND CONDITIONS ARE SATISFACTORY AND ARE HEREBY ACCEPTED. YOU ARE AUTHORIZED TO DO THE WORK AS SPECIFIED. PAYMENT WILL BE MADE AS OUTLINED ABOVE.

By_____ Date_____

General Contractor or Owner Representative


#3
R C R B D
RECORD SET

#3

R C R B D

RECORD SET

#4 Energy Saving Pool & Spa Blankets

RCRBD

RECORD SET

THE ENERGY SAVINGS FROM A THERMAL BLANKET CAN PAY FOR ITSELF IN 12 MONTHS

SPECTRUM Aquatics

A PLAYCORE Company

Pool & Spa Blanket Features

Thermal–King® Pool Covers

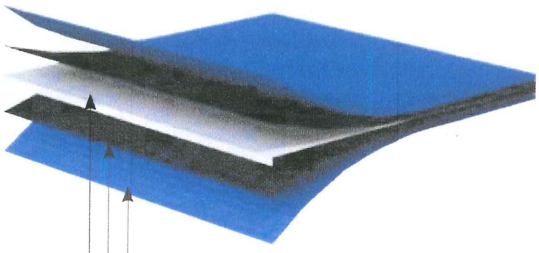
Quality, Performance, Strength, Longevity

- Superior strength edging – made with PVC coated tarpaulin
- Advanced performance – 100% stabilized polyester woven 20 x 20 count denier
- Longer life – coated and UV stabilized on both sides for maximum protection
- Extruded black vinyl
- Drain holes punched every 3 feet with weighted edge
- Edging does not chalk or flake
- Flow holes help covers hold in windy environments
- Easy to deploy and retrieve
- Blankets are reversible
- Available in standard and custom sizes
- 305 Stainless steel grommets for maximum corrosion resistance
- UV inhibited loop tie handles
- 5/16" heavy-duty sythentic fiber rope
- Panels come complete with heavy-duty loop ties for attaching the panels to a storage reel system

47129.....Pool Blanket
208200.....Loop Ties
50021.....18" Lead Strap

R C R B D

RECORD SET



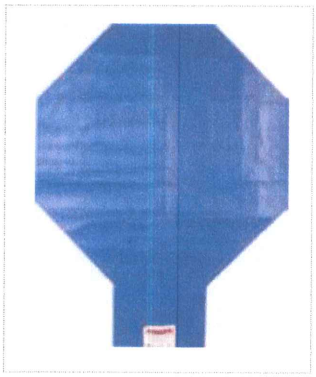
- 3.0 Mils LDPE, UV protected coating
- Woven 12 x 12 count per inch, UV high density polyethylene
- EVA enhanced insulating polyethylene foam, Volara 1/8"

Spa Covers

Quality, Performance, Strength, Longevity

Spa covers are identical in every way to the pool cover benefits listed above except for the edging, as spa covers come unedged. Using household scissors you can cut them to fit your spa's custom configuration.

500019.....Spa Sheet 10' x 10'
500020.....Spa Sheet 15' x 15'
47129S.....Custom Edged Spa Blanket



INDUSTRY LEADING 6-YEAR WARRANTY AVAILABLE

Pool & Spa Blanket Benefits

SWIMMING POOL COVERS REDUCE ENERGY CONSUMPTION AND MORE

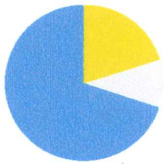
Pool Blanket Systems can offer significant energy savings and drastically reduce water and chemical consumption as well as cleaning time by keeping dirt and other debris out of the pool or spa. They often pay for themselves in less than one year when properly and consistently used.

- Reduces energy consumption by maintaining pool cleaning costs
- Reduces chemical consumption
- Reduces facility building maintenance and pool cleaning costs
- Reduces corrosion of indoor facilities, extending the life of equipment

"Covering a pool when it is not in use is the single most effective means of reducing pool heating costs. Savings of 50% - 70% are possible."
U.S. Department of Energy

HOW THEY WORK

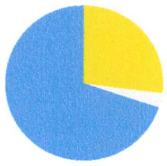
Swimming pools lose energy in a variety of ways, but evaporation is by far the largest source of energy loss. Replacing evaporated water requires tremendous amount of energy. It only takes 1 BTU (British thermal unit) to raise 1 pound of water 1 degree, but each pound of 80° F water that evaporates takes a whopping 1,048 BTU of heat out of the pool.



Outdoor Pool Energy Loss Characteristics

Radiation to Sky 20%
Losses to ground and other 10%
Evaporation 70%

The evaporation rate from an outdoor pool varies depending on the pool's temperature, air temperature and humidity, and the wind speed at the pool surface.



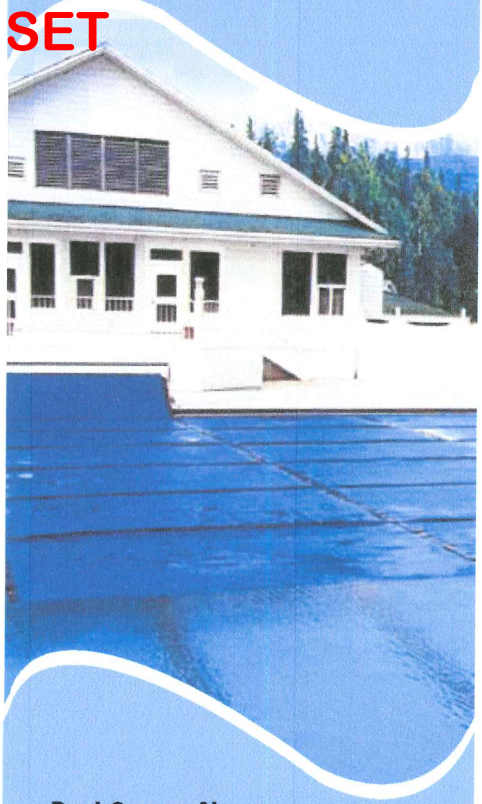
Indoor Pool Energy Loss Characteristics

Ventilation 27%
Other 3%
Evaporation 70%

Indoor pools aren't subjected to the environment, but they still lose a lot of energy from evaporation and even require room ventilation to control indoor humidity caused by the large amount of evaporation. The ventilated air also must be conditioned, which adds to the energy costs.

Pool covers minimize evaporation from both outdoor and indoor pools. Covers on indoor pools not only reduce evaporation but also the need to ventilate indoor air and replace it with unconditioned outdoor air. You can also shut off exhaust fans when an indoor pool is covered saving even more energy.

Information obtained from the U.S. Department of Energy – www.energysavers.gov



Pool Covers Also:

- Conserve water by reducing the amount of make-up water needed by 30%-50%
- Reduce the pool's chemical consumption by 35%-60%
- Reduce cleaning time by keeping dirt and other debris out of the pool

800.791.8056

Pool & Spa Cover Storage Systems

Bitterroot Series – Portable Blanket Storage Systems

Portable and strong, these systems ensure proper handling and storage of pool blankets. Made of electropolished 304L stainless steel and designed to support the weight of wet blankets.

Hands free, easy to use foot brakes. Superb holding power, an industry first.

- Easy to deploy and retrieve pool blankets
- Employs nickel-plated pillow block reel tube bearings
- Equipped with stainless steel crank assembly
- Utilizes 6" diameter, never-mar, polyethylene wheels
- Equipped with two-foot operated breaks
- Maximum blanket width of 20'
- Structurally designed to support wet blankets
- Made of electropolished 304L stainless steel
- Optional cover is available

R C R B D

RECORD SET

50120..... Bitterroot I, Single Tube Configuration
Storage capacity = 164 lf. Or 3,280 sq. ft. with a total weight capacity of 643 lbs.

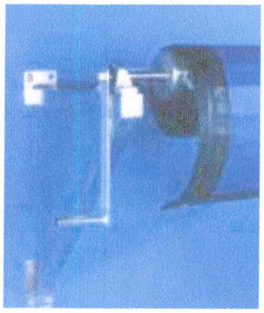
50150..... Bitterroot II, Double Tube Configuration
Storage capacity = 328 lf. Or 6,560 sq. ft with a total weight capacity of 1,102 lbs.

50180..... Bitterroot III, Triple Tube Configuration
Storage capacity = 492 lf. Or 9,840 sq. ft. with a total weight capacity of 1,562 lbs.

50190..... Single Winder Cover

50195..... Double/Triple Winder Cove

Blackfoot I – Wall Mount Blanket Storage Systems



Wall mounted storage system designed to conserve deck space and allow for ease of installation and retrieval of pool blankets. Accommodates up to 164 linear feet. Typically two panels will fit on the unit. Crank extensions are available for installations over 6' above deck.

50220..... Blackfoot I for blanket width up to 20'
50009..... Placement Crank Handle
Storage capacity – 164lf.

Blackfoot II – Radio Controlled Semi-Automatic Wall Mounted Blanket Storage Systems

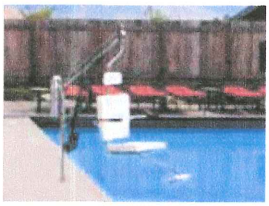
This wall mounted storage reel system offers smooth deployment and automatic retrieval of pool blankets through a simple hand held transmitter. Manufactured of stainless steel, the storage systems are structurally designed to support wet blankets. The electronics are contained in a water tight, NEMA 4 enclosure, ensuring dependable operation and long life. Generally one wall mount storage reel is needed for each section of blanket to be stored. Custom units are available to meet your specific needs.

50200 Blackfoot II for blanket width up to 20'
Storage capacity = 164 lf.

Note: Bubble type covers are not recommended for use with the Blackfoot II

See Spectrum® Aquatics full line of aquatics products at www.SpectrumAquatics.com

ADA Compliant Pool Lifts
Starting Blocks
Guard Chairs
Racing Lane Lines
Pool Slides



QuickFund Capital

Duckels Construction Inc
Business Line of Credit Pre Approval - $250,000
Approval Confirmation- YP1077632E
Call Now (866)404-1329

Dear Fred

Based on your company paydex score and industry, QuickFund Capital Partners has pre-qualified Duckels Construction Inc for a business line of credit up to $250,000.00 with rates starting at 4.9%.

Section 179 allows business owners in 2018 to write off up to $500,000 in equipment purchases and loan cost.

Traditional banks are still not lending to small business which is why it has been difficult for business owners such as yourself to receive loans from your local bank. Call us today and speak to one of our qualified and experienced finance consultants and let us help you secure the funding you need today in as little as 48 hrs!

Types of Business Loans Available:

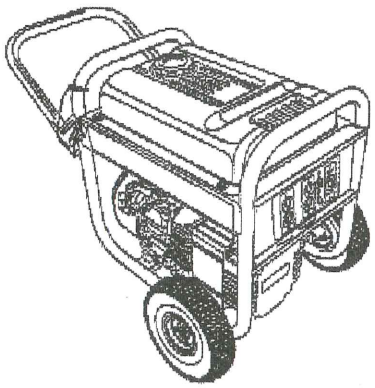
Bridge Loans
Equipment Purchases
Line of Credit
Franchisee Finance
Inventory Purchases
Term Loans
Inventory Purchases
Expansion Loans
Uncollateralized Loans
Collateralize Loans

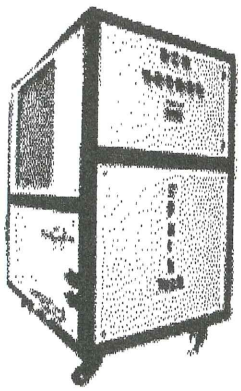
Sincerely,
Jessica Holstrom
QuickFund Capital
www.quickfund.org
866.404.1329

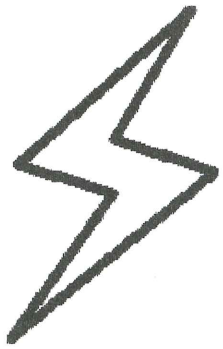
Breakers Direct

We are buyers and sellers of all types of electrical equipment and surplus. We pay top dollar for the following items:

- Circuit Breakers
- Transformers
- Motor Controls
- Switch Gears
- Starters
- Diesel Generators
- Electrical Equipment
- Electric Breakers
- Electric Panels
- Disconnects
- Industrial Water Chillers
- Empty Wire Spools
  - Wood or Plastic







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#5

B-18-184

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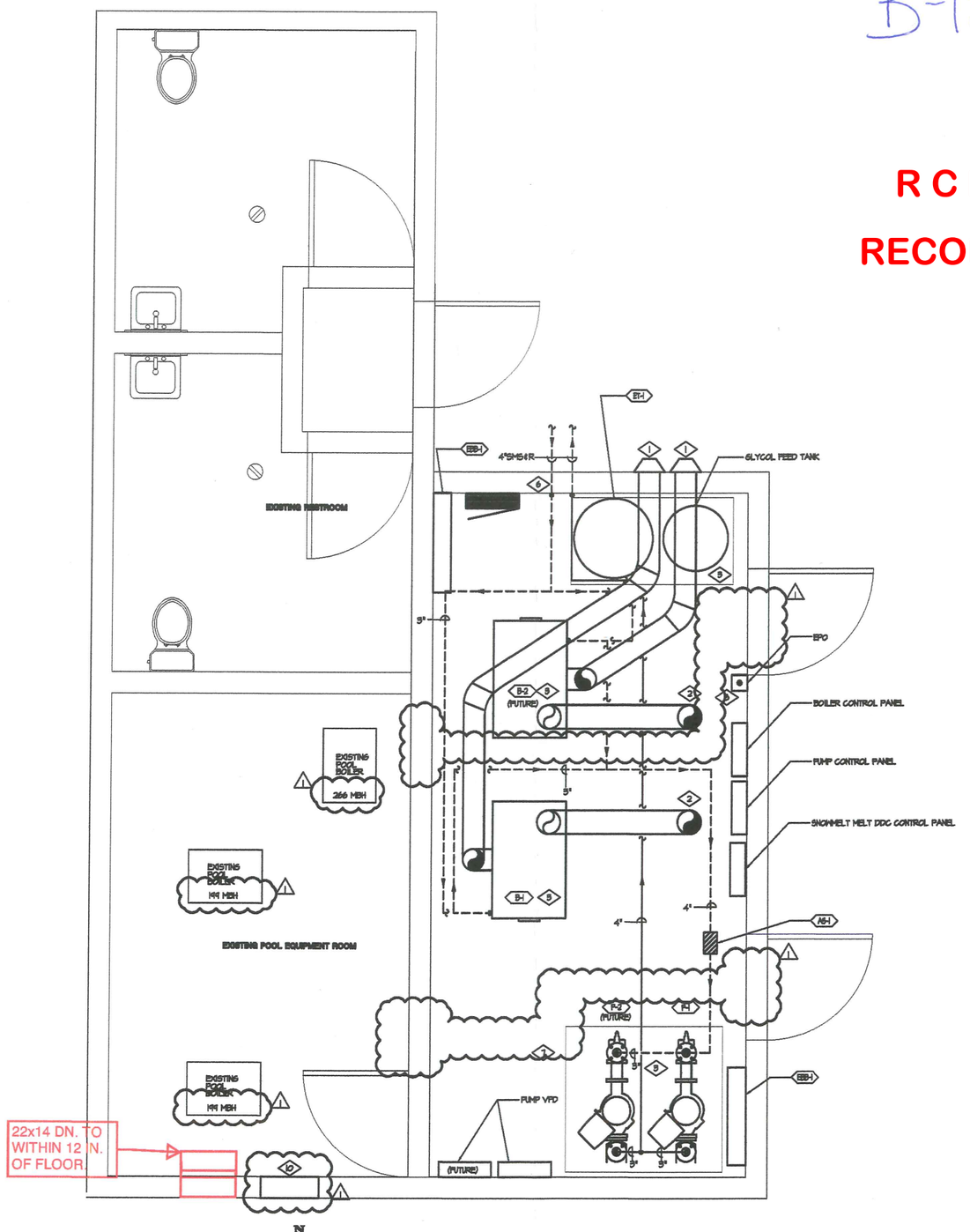

N

BOILER ROOM MECHANICAL PLAN

SCALE: 1/2" = 1'-0"

NOTE: REFERENCE ARCHITECTURAL BID PACKAGE FOR FINAL BOILER ROOM LAYOUT.

DRAWING NOTES

1. TERMINATE 6" COMBUSTION INTAKE PIPE THROUGH WALL WITH HOODED INTAKE CAP. CAP SHALL BE PROVIDED WITH BIRD SCREEN. TERMINATION SHALL BE 6 FT. ABOVE GRADE
2. TERMINATE 6" FLUE DUCTS WITH UL LISTED AND APPROVED VERTICAL VENT TERMINATION. VENT PIPE SHALL BE AL29-4C POLYPRO MATERIAL. INSTALL PER MANUFACTURERS INSTALLATION INSTRUCTIONS. TERMINATION SHALL BE LOCATED AT LEAST 6 FT. FROM ADJACENT VERTICAL WALL.
3. EQUIPMENT SHALL BE MOUNTED ON A 4IN THICK CONCRETE HOUSEKEEPING PAD.
4. CONDENSATE DRAINS FROM BOILER SHALL BE ROUTED TO AN ACID NEUTRALIZING TANK BEFORE ENTERING THE PUBLIC SANITARY SEWER SYSTEM. ALL MATERIALS FROM BOILER TO NEUTRALIZATION TANK SHALL BE ACID RESISTANT. INSTALLING CONTRACTOR SHALL COORDINATE THE FINAL LOCATION OF ACID NEUTRALIZATION TANK WITH EQUIPMENT LAYOUT.
5. PROVIDE EPO SWITCH FOR SHUTDOWN OF MAIN LINE POWER OF BOILER BURNERS. COORDINATE VOLTAGE AND SHUT DOWN REQUIREMENTS WITH BOILER MANUFACTURER.
6. 4" SMS & R PIPING DOWN BELOW GRADE.
7. REFER TO THE BOILER ROOM SCHEMATIC PIPING PLAN ON SHEET M0.3 FOR DETAILS ON BOILER ROOM PIPING IN THIS AREA.
8. PROVIDE EPO SWITCH FOR BOILER SHUT OFF COORDINATED WITH ELECTRICAL.
9. REMOVE AND PATCH EXISTING HIGH/LOW COMBUSTION AIR OPENINGS IN WALL.
10. PROVIDE A 22 X 14 COMBUSTION INTAKE GRILLE HIGH ON WALL. MOUNT WITHIN 12 IN. OF STRUCTURE.

EXISTING POOL BOILER ROOM COMBUSTION AIR CALCULATION PER 2015 IFGC SECTION 304.6.2 ONE PERMANENT OPENING METHOD.

TOTAL CONNECTED GAS LOAD = 484,900 BTUH

C.A. OPENING SIZE = ~~484300~~ / 3000 X 1 SQ. IN =

161.6 SQ. IN OPENING SIZE < INSTALLED 308 SQ. IN.

ASSOCIATES
PLANNERS & LANDSCAPE ARCHITECTS
000.000.0000

MEP PROJECT REVIEW
MEP ENGINEERING INC.
CLIENT CENTRIC CONSULTING

WATERPROOFING / RENOVATION - PHASE 2

TORIAN PLUM PARKING STRUCTURE

STEAMBOAT SPRINGS, CO

Date 10.22.17
Drawn By BAW
Reviewed by RBB
Job No. 17109

Revisions

Num	Note
1 BLDG PERMIT #1	02/2018
2 BLDG PERMIT #2	04/2018

Issue:
100% Construction Documents

Sheet Title:
BOILER ROOM MECHANICAL PLAN

Sheet Number
M3.1

#2