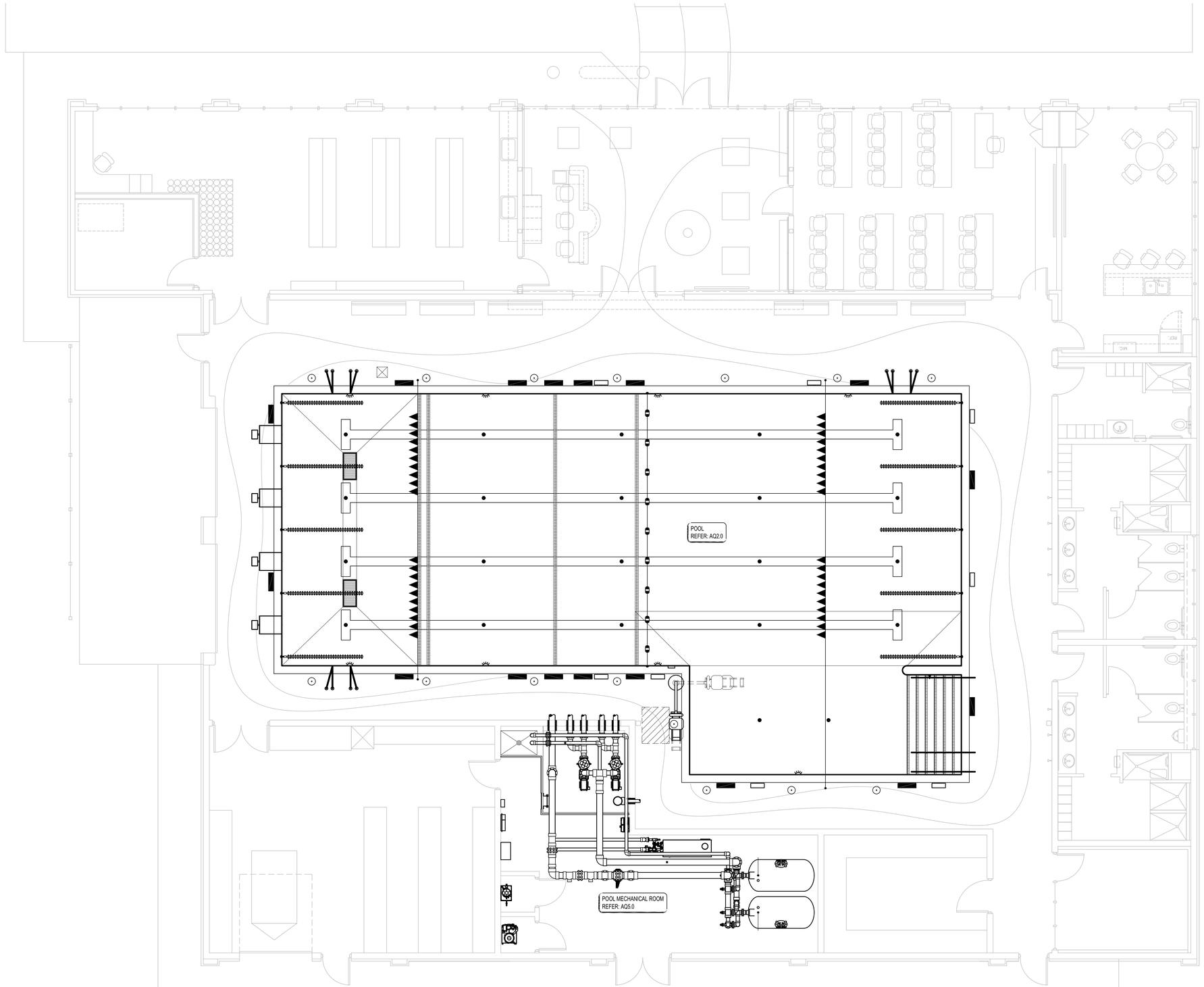

1 AQ0.0 POOL REFERENCE PLAN

3/16" = 1'-0"

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Metropolitan Area Building
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DATE: 04/07/22 BY: Debra Shauers

DESIGN DATA

	UNITS	POOL
LENGTH	FT.	75
WIDTH	FT.	VARIES
WATER SURFACE AREA	SQ. FT.	2,604
PERIMETER	FT.	234
VOLUME	GALLON	169,534
RECIRCULATION SYSTEM		
POOL TURNOVER RATE	HOUR	2.97
RECIRCULATION RATE	GPM	950
SURGE CAPACITY	GALLON	0
SEWER CAPACITY	GPM	REFER TO CIVIL
BATHER LOAD	PERSON	104
MAXIMUM FACILITY BATHER LOAD	PERSON	104

GENERAL POOL NOTES

1. ⌖ DENOTES WATER DEPTH FROM WATER LEVEL.
2. POOL FINISH SHALL BE A PROPRIETARY AGGREGATE PLASTER WITH A 6" CERAMIC TILE BAND, PRECAST COPING, AND TILE DECK MARKINGS.
3. TYPICAL POOL DIMENSIONS SHOWN ARE FROM INSIDE FINISHED POOL WALL.
4. REFER TO POOL STRUCTURAL DRAWINGS FOR ALL DIMENSIONS RELATING TO THE THICKNESS OF THE POOL SHELL.
5. THE JUNCTION BETWEEN THE SWIMMING POOL WALL AND THE FLOOR SHALL BE COVED WITH A MAXIMUM 6" RADIUS.
6. DEPTH MARKERS AND WARNING SIGNS ARE SHOWN IN APPROXIMATE LOCATIONS. DEPTH MARKERS AND WARNING SIGNS SHALL NOT EXCEED 25'-0" APART FROM EACH OTHER, AND SHALL BE PLACED AT EVEN FOOT INTERVALS PER LOCAL CODE.
7. ALL PROPRIETARY NAMES MENTIONED ARE TO DESIGNATE PERFORMANCE STANDARDS. EQUIVALENT PRODUCTS SHALL BE SUBMITTED FOR APPROVAL.
8. SLIP RESISTANT DECK FINISH REQUIRED. REFER TO ARCHITECT.
9. REFER TO PLUMBING FOR DECK DRAINS AND HOSE BIBBS.
10. ALL SURFACE WATER SHALL DRAIN AWAY FROM THE POOL.
11. REFER TO ELECTRICAL FOR GFI OUTLETS IN NATATORIUM.
12. ELECTRICAL INSPECTOR SHALL APPROVE INSTALLATION OF BONDING GRID FOR POOL REINFORCING AND ALL POOL EMBEDS PRIOR TO PLACEMENT OF CONCRETE.
13. NO GROUND WATER SHALL BE ALLOWED TO RISE ABOVE ANY PORTION OF THE POOL BOTTOM DURING CONSTRUCTION.
14. ALL POOL REINFORCING STEEL, METAL FITTINGS, EQUIPMENT WITHIN 5'-0" OF POOL EDGE AND ANY METAL PARTS OF POOL EQUIPMENT IN CONTACT WITH POOL RECIRCULATION SYSTEM SHALL BE BONDED PER NEC 680. REFER: 3/AQ5.3
15. IT IS RECOMMENDED THAT ZONE EVALUATIONS ACCORDING TO THE AMERICAN RED CROSS OR A SIMILAR APPLICABLE LIFEGUARD AGENCY ARE CONDUCTED PRIOR TO OPERATING THE FACILITY AND REGULARLY ACCORDING TO AGENCY GUIDELINES. ZONE EVALUATIONS ARE NECESSARY TO CONFIRM APPROPRIATE LIFEGUARD PLACEMENT AND ZONE COVERAGE.
25. CONTRACTOR TO PROVIDE CHEMICAL QUANTITIES PER CONTRACTOR SUPPLIED POOL CHEMICAL SCHEDULE AFTER INITIAL WATER BALANCE IS REACHED PRIOR TO OWNER TURNOVER.

DRAWING INDEX

SHEET	DESCRIPTION
AQ0.0	POOL REFERENCE PLAN
AQ1.0	POOL STRUCTURAL PLAN
AQ1.1	POOL STRUCTURAL DETAILS
AQ1.2	POOL STRUCTURAL DETAILS
AQ1.3	POOL STRUCTURAL SECTIONS
AQ1.4	POOL STRUCTURAL SECTIONS
AQ2.0	POOL PLAN
AQ2.1	POOL SECTIONS
AQ2.2	POOL DETAILS
AQ3.0	POOL LOCATION POINT PLAN
AQ4.0	POOL PIPING PLANS
AQ5.0	POOL MECHANICAL ROOM PLAN & SECTIONS
AQ5.1	POOL MECHANICAL DETAILS
AQ5.2	POOL MECHANICAL DETAILS
AQ5.3	POOL MECHANICAL DETAILS
AQ6.0	POOL SYSTEMS SCHEMATIC

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ROBERT THOMAS SEVAND
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21085
KANSAS
PROFESSIONAL ENGINEER

REVISION:
DATE: 02–07–2022
JOB: 21–3155
SHEET: AQ0.0

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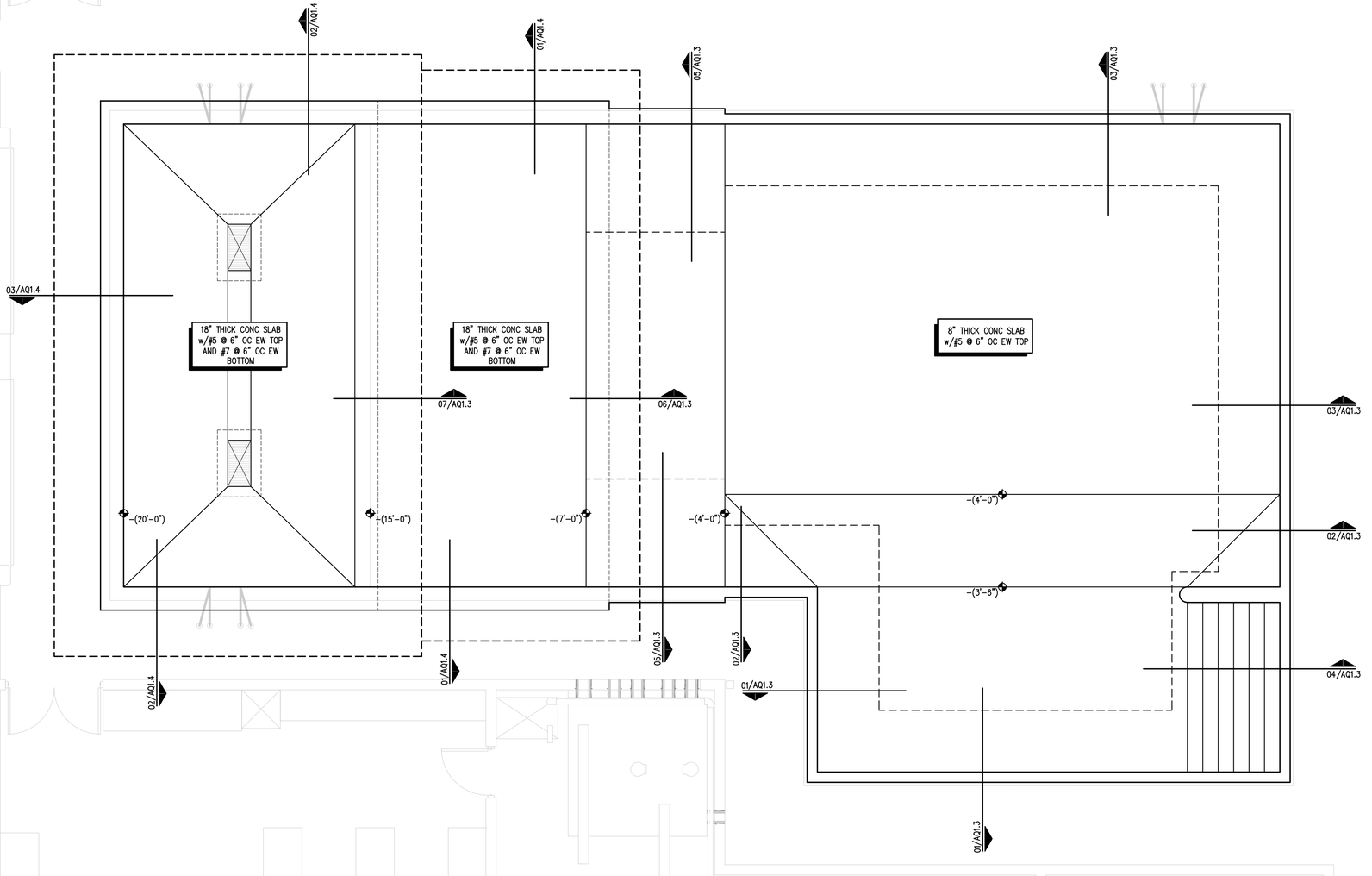

POOL STRUCTURAL PLAN

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

0" 6" 1' 2' 4' 8'

PLAN NORTH

PLAN NOTES:

1. WATER ELEVATION OF POOLS = +(0'-0"). SEE CIVIL DRAWINGS FOR CORRELATION TO ACTUAL SITE ELEVATION.
2. PROVIDE COMPACTED, FREE DRAINING FILL UNDER ALL POOL BOTTOM SLABS. SEE NOTE PF1 ON SHEET AQ1.1.
3. PROVIDE ELECTRICAL GROUNDING FOR ALL REINFORCING AND EMBEDDED ITEMS, SEE ELECTRICAL DRAWINGS.
4. SEE SWIMMING POOL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN.
5. WALLS ARE TYPICALLY SHOWN ON PLAN AT FOUNDATION LEVEL. SEE DETAILS & COORDINATE WITH SWIMMING POOL DRAWINGS FOR ALL WALL DETAIL ABOVE BASE SLAB.
6. ELEVATIONS ARE GIVEN RELATIVE TO POOL WATER SURFACE, UNO. COORDINATE WITH SWIMMING POOL DRAWINGS.
7. ALL ELEVATIONS ARE TO POOL FINISH.

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ABBREVIATIONS LIST

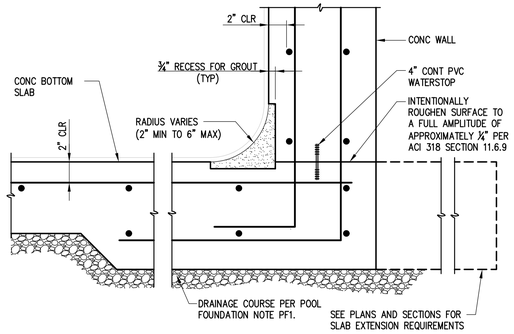
AR	ANCHOR RODS	MAT'L	MATERIAL
ACI	AMERICAN CONCRETE INSTITUTE	MAX	MAXIMUM
ADD'L	ADDITIONAL	MBM	METAL BUILDING MFR
ADH	ADHESIVE	MCJ	MASONRY CONTROL JT
ADJ	ADJACENT	MECH	MECHANICAL
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL	MEZZ	MEZZANINE
		MFR	MANUFACTURER
AFF	ABOVE FINISHED FLOOR	MIN	MINIMUM
AGGR	AGGREGATE	MISC	MISCELLANEOUS
AHU	AIR HANDLING UNIT	MO	MASONRY OPENING
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	MOM	MOMENT
		MSW	MASONRY SHEAR WALL
AISI	AMERICAN IRON AND STEEL INSTITUTE	MSL	MEAN SEA LEVEL
		MTL	METAL
ALUM	ALUMINUM	MW	MASONRY WALL
ALT	ALTERNATE	NIC	NOT IN CONTRACT
APA	AMERICAN PLYWOOD ASSOCIATION	NO	NUMBER
APPROX	APPROXIMATE	NS	NEAR SIDE
ARCH	ARCHITECT	NTS	NOT TO SCALE
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS	O/O	OUT TO OUT
		OA	OVERALL
AWS	AMERICAN WELDING SOCIETY	OC	ON CENTER
L	ANGLE	OD	OUTSIDE DIAMETER
BB	BOND BEAM	OF	OUTSIDE FACE
B/B	BACK TO BACK	OH	OVER HEAD
BC	BOTTOM CHORD	OPNG	OPENING
BD	BOARD	OPP	OPPOSITE
BLDG	BUILDING	OPP HD	OPPOSITE HAND
BLK	BLOCK	OSB	ORIENTED STRAND BOARD
BM	BEAM	OSL	OUTSTANDING LEG
BOTT	BOTTOM	OVS	OVERSIZE HOLE
BP	BEARING PLATE	PAF	POWDER ACTUATED FASTENER
BRDG	BRIDGING	PC	PRECAST
BRG	BEARING	PL	PLATE
BRK	BRICK	PLF	POUNDS PER LINEAR FOOT
BS	BOTH SIDES	PLYWD	PLYWOOD
BSMT	BASEMENT	PNL	PANEL
BTWN	BETWEEN	PROJ	PROJECTION
BUC	BUILT UP COLUMN	PSF	POUNDS PER SQUARE FOOT
c	CAMBER	PSI	POUNDS PER SQUARE INCH
C/C	CENTER TO CENTER	PSL	PARALLEL STRAND LUMBER
CANT	CANTILEVER	PT	PRESSURE TREATED
CFS	COLD FORMED STEEL	PTN	PARTITION
CJ	CONTROL AND OR CONSTRUCTION JOINT	PVMT	PAVEMENT
		QTY	QUANTITY
CL	CENTERLINE	R	RADIUS
CLR	CLEAR	RD	ROOF DRAIN
CMU	CONCRETE MASONRY UNIT	REF	REFERENCE
COL	COLUMN	REINF	REINFORCE(D)(ING)(MENT)
COORD	COORDINATE	REQ'D	REQUIRED
COMP	COMPACTED	REV	REVISION/REVISED
CONC	CONCRETE	RO	ROUGH OPENING
CONN	CONNECTION	RRD	ROOF RELIEF DRAIN
CONST	CONSTRUCTION	RTN	RETURN
CONT	CONTINUOUS	RTU	ROOF TOP UNIT
CTR	CENTER	RW	RETAINING WALL
CTRD	CENTERED	SCHED	SCHEDULE
DIA	DIAMETER	SECT	SECTION
DIAG	DIAGONAL	SHT	SHEET
DIM	DIMENSION	SIM	SIMILAR
DL	DEAD LOAD	SJ	SAWCUT JOINT
DLT	DEEP LEG TRACK	SJI	STEEL JOIST INSTITUTE
DO	DITTO	SL	SLOPED
DN	DOWN	SLRS	SEISMIC LOAD RESISTING SYSTEM
DTL	DETAIL		
DWG	DRAWING	SPA	SPACE(S)
DWL	DOWEL	SPECS	SPECIFICATIONS
EA	EACH	SQ	SQUARE
EE	EACH END	SS	STAINLESS STEEL
EF	EACH FACE	SSL	SHORT SLOTTED HOLES
ENG	ENGINEER	STD	STANDARD
ELEV	ELEVATION	STIFF	STIFFENERS
ELECT	ELECTRICAL	STL	STEEL
EOD	EDGE OF DECK	STRUCT	STRUCTURAL
EOS	EDGE OF SLAB	SW	SHEAR WALL
EQ	EQUAL	SYMM	SYMMETRICAL
EQUIV	EQUIVALENT	T&B	TOP AND BOTTOM
ES	EACH SIDE	T&G	TONGUE AND GROOVE
EW	EACH WAY	TB	TIE BEAM
EX	EXISTING	TC	TOP CHORD
EXP	EXPANSION	TEMP	TEMPERATURE
EXT	EXTERIOR	TF	TRENCH FOOTING
F/	FACE OF	THK	THICK
FD	FLOOR DRAIN	THKS	THICKENED SLAB
FDN	FOUNDATION	THR'D	THREADED
FIN	FINISH	TL	TOTAL LOAD
FLR	FLOOR	TOP'G	TOPPING
FLG	FLANGE	TRANS	TRANSVERSE
FS	FAR SIDE	TYP	TYPICAL
FTG	FOOTING	UNO	UNLESS NOTED OTHERWISE
GA	GAUGE	VERT	VERTICAL
GALV	GALVANIZED	VIF	VERIFY IN FIELD
GB	GRADE BEAM	w/	WITH
GC	GENERAL CONTRACTOR	WD	WOOD
GL	GLULAM	WO	WINDOW OPENING
GR	GRADE	WP	WORKING POINT
HC	HOLLOW CORE	WT	WEIGHT
HD	HOLD DOWN	WWF	WELDED WIRE FABRIC
HGT	HEIGHT		
HORIZ	HORIZONTAL		
HP	HIGH POINT		
HS	HEADED STUD		
HSS	HOLLOW STRUCTURAL SECTION		
ID	INSIDE DIAMETER		
IF	INSIDE FACE		
INFO	INFORMATION		
INT	INTERIOR		
INV	INVERT		
JST	JOIST		
JT	JOINT		
K	KIP		
KO	KNOCK OUT		
LB	POUND		
LDG	LEDGE		
LG	LONG		
LL	LIVE LOAD		
LLH	LONG LEG HORIZONTAL		
LLV	LONG LEG VERTICAL		
LNTL	LINTEL		
LSL	LONG SLOTTED HOLES		
LONG	LONGITUDINAL		
LP	LOW POINT		
LVL	LAMINATED VENEER LUMBER		
MAS	MASONRY		

ELEVATION TOP AND BOTTOM OF LIST

T/	ELEVATION, TOP OF
B/	ELEVATION, BOTTOM OF
T/BB	TOP OF BOND BEAM
T/BM	TOP OF BEAM
T/CONC	TOP OF CONCRETE
T/F	TOP OF FOOTING
T/LDG	TOP OF LEDGE
T/MAS	TOP OF MASONRY
T/P	TOP OF PIER
T/SLAB	TOP OF SLAB
T/STL	TOP OF STEEL
T/W	TOP OF WALL
T/GB	TOP OF GRADE BEAM
T/CAIS	TOP OF CAISSON
B/PL	BOTTOM OF PLATE
B/F	BOTTOM OF FOOTING

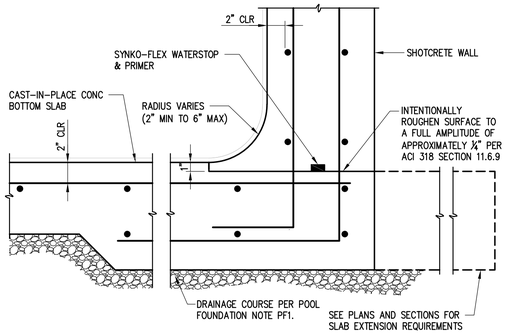
SYMBOLS

ø	DIAMETER
°	DEGREE
⌖	ELEVATION
±	PLUS OR MINUS



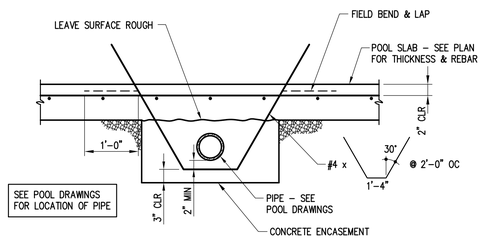
TYP CAST-IN-PLACE WALL BASE

SCALE: 1½" = 1'–0" POOL–004 04 AQ1.1



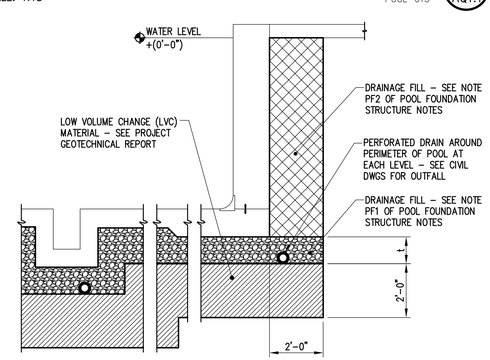
TYP SHOTCRETE WALL BASE

SCALE: 1½" = 1'–0" POOL–006 05 AQ1.1



TYP PIPE ENCASEMENT DETAIL

SCALE: NTS POOL–015 06 AQ1.1



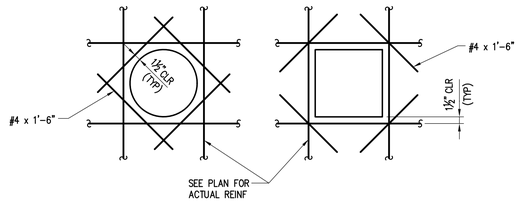
TYP POOL FILL

SCALE: NTS POOL–025_POOL FILL 07 AQ1.1

BAR DEVELOPMENT & SPLICE LENGTHS

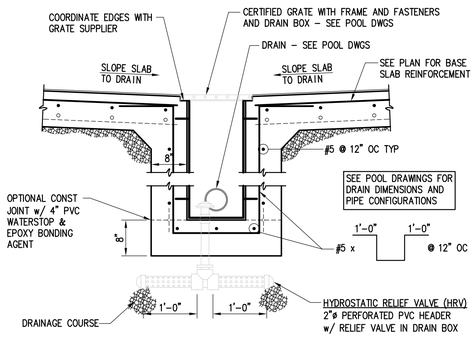
BAR	TENSION DEVELOPMENT		SPLICES	
	TOP BAR *	OTHER	TOP BAR *	OTHER
#3	19"	15"	25"	19"
#4	25"	19"	33"	25"
#5	31"	24"	41"	31"
#6	37"	29"	49"	37"
#7	54"	42"	71"	54"
#8	62"	48"	81"	62"
#9	70"	54"	91"	70"
#10	79"	61"	102"	79"
#11	87"	67"	114"	87"

* USE TOP BAR LENGTHS WHEN BARS ARE PLACED SUCH THAT THERE IS MORE THAN 1'–0" OF CONCRETE BELOW BAR



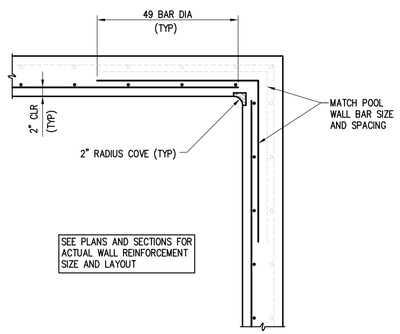
TYP REINFORCING AT EMBEDDED ITEMS

SCALE: NTS POOL–001 01 AQ1.1



TYPICAL DRAIN BOX DETAIL

SCALE: ¾" = 1'–0" POOL–002 02 AQ1.1



TYPICAL POOL WALL CORNER DETAIL

SCALE: ¾" = 1'–0" POOL–003 03 AQ1.1

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DATE: 04/07/22 BY: Debra Shauers

SWIMMING POOL STRUCTURE NOTES

PG1. Building Codes:
Model: International Building Code 2015
Concrete: American Concrete Institute ACI 318-14
American Concrete Institute ACI 350-06

PG2. The construction documents indicate design of a completed reinforced concrete structure. The structural details have been prepared based on cast-in-place concrete methods. If alternate means and methods of concrete placement are employed that may alter the completed project, the contractor must submit proposed revisions and signed/sealed calculations to the Architect/Engineer for approval prior to fabrication or construction.

PG3. The pool structure has been designed to withstand all anticipated loadings under both full and empty conditions in accordance with the criteria of ACI 350 for a non-jointed structure.

PG4. During construction the pool structure should not be completely filled with water with no backfill present. If the pool is to be filled with water with no backfill, all walls greater than 6'-0" in height must be laterally braced at maximum intervals of 2'-0" on center. Lateral bracing shall be placed within 2'-0" of the top of the wall.

PG5. The pool shell has not been designed to withstand any surcharge loading from adjacent structures. Inform engineer immediately if adjacent structures are close to the pool structure.

HYRDOSTATIC RELIEF VALVES

HV1. HRV = Hydrostatic Relief Valve.

HV2. The hydrostatic relief valves are part of the pool shell design, and are intended to balance buoyant forces caused by groundwater that is higher than the pool bottom when the pool is empty. The hydrostatic relief valves must remain open and in operation whenever the pool is empty. If the hydrostatic relief valves are not operational, significant deflection of and damage to the pool shell structure is possible. Contractor is responsible for control of groundwater levels during construction. Refer to the project geotechnical report for additional information.

POOL SHELL AND RELATED ELEMENTS REINFORCED CONCRETE AND SHOTCRETE NOTES

PC1. Pool base slab shall be cast-in-place concrete. Pool walls shall be either cast-in-place concrete or shotcrete (wet-mix or dry-mix).

PC2. All concrete and shotcrete shall be 4500 psi minimum 28 day compressive strength with 6% air entrainment. Limit water to cementitious material ratio (w/c) to 0.42.

PC3. All reinforcing steel shall be detailed, supplied and placed in accordance with these construction documents and with ACI 318, ACI 315R, and CRSI Manual of Standard Practice.

PC4. All reinforcing steel shall be shop fabricated to conform to ASTM A615, Grade 60.

PC5. All pool concrete shall be wet-cured using hoses and polyethylene covering.

PC6. Reinforcing clearance: 2" Pool walls, surge tank walls
2" Pool bottom slabs, surge tank slabs
3" All surfaces cast or shot against earth

PC7. When placing shotcrete against existing soil, overlay soil in contact with shotcrete with minimum 10 mil thick plastic sheeting prior to shooting.

PC8. Formwork may be required for shotcrete based on base of wall configurations and wall backfill requirements. Coordinate requirements with pool structural sections and project geotechnical report.

PC9. Fully encase all underslab piping in concrete unless noted otherwise.

CONSTRUCTION LOAD NOTES

CL1. All pool structural elements have not been designed for any construction loading, including, but not limited to scaffolding, shoring, lifts, etc. It is the responsibility of the contractor to verify the pool structural elements are capable of withstanding construction loads without damage to the pool structural elements, or, performance of the in-service pool.

WATER-TIGHTNESS TESTING

WT1. Water-tightness testing per American Concrete Institute is required. See specifications.

POOL FOUNDATION STRUCTURE

PF1. All Slabs shall be placed on compacted, free-draining, frost-free drainage course underlain with 24-inches of Low Volume Change (LVC) material:

Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve. All fill shall be compacted to a minimum dry density of 95% of the Modified Proctor maximum dry density (ASTM-D1557), placed in 6" to 8" lifts. Place Mirafi 140N or equivalent between drainage fill and subgrade. See project geotechnical report for further recommendations.

Drainage Course Thickness (t): 12"

PF2. All pool walls shall be backfilled with compacted, free-draining, frost-free drainage fill:

Drainage Fill: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve. All fill shall be compacted to a minimum dry density of 95% of the Modified Proctor maximum dry density (ASTM-D1557), placed in 6" to 8" lifts. Place Mirafi 140N or equivalent between drainage fill and subgrade. See project geotechnical report for further recommendations.

PF3. See project geotechnical for soil and groundwater conditions. Soil parameters listed below have been used for design of the pool structure. During construction, report any discrepancies in soil conditions to the Engineer of Record immediately.

Geotechincal report by:	GSI Engineering, dated September 27, 2021.
Support Type:	Soil-supported
Density:	125 pcf
Equivalent Fluid Pressure:	55 psf/ft depth
Passive Pressure:	375 psf/ft depth
Groundwater:	None
Differential Settlement:	1/2"
Total Settlement:	1"
Allowable Bearing Pressure:	2000 psf

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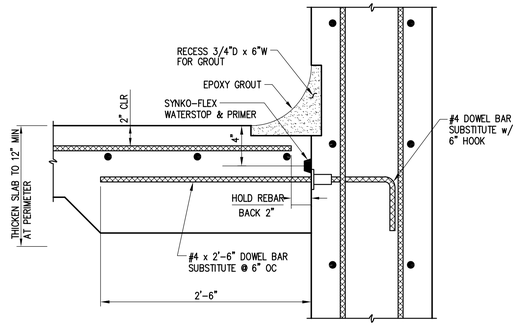
DATE: 04/07/22 BY: Debra Shauers

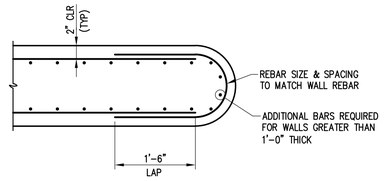


TYPICAL SLAB/WALL JOINT

SCALE: NTS

POOL-010

03 AQ1.2

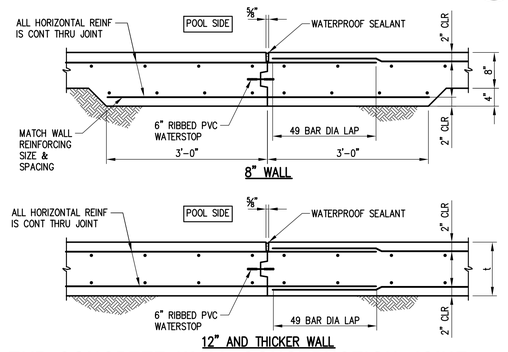


TYP WALL TERMINATION DETAIL

SCALE: ¾" = 1'-0"

POOL-014

04 AQ1.2

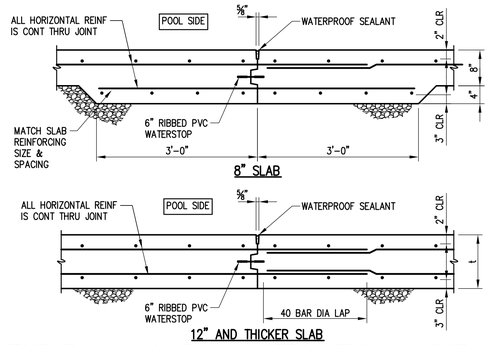


TYP CONCRETE WALL CONSTRUCTION JOINT

SCALE: ¾" = 1'-0"

POOL-016

05 AQ1.2



TYP POOL SLAB CONSTRUCTION JOINT

SCALE: NTS

POOL-017

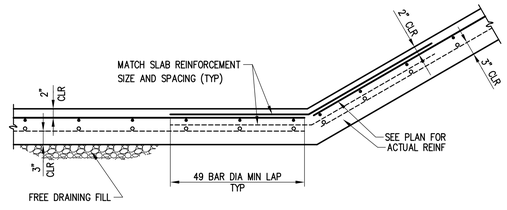
06 AQ1.2

TYPICAL BOTTOM SLAB TRANSITION DETAIL

SCALE: ¾" = 1'-0"

POOL-008

01 AQ1.2

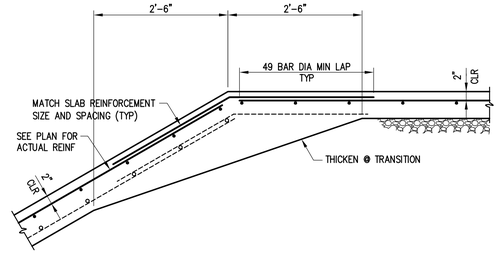


TYP BOTTOM SLAB TRANSITION DETAIL

SCALE: ¾" = 1'-0"

POOL-009

02 AQ1.2



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NEW RETAIL & SCUBA TRAINING FACILITY, E. 21st ST. N.
WICHITA, KANSAS

C. RODNEY McCOMAS
LICENSED
19322
STATE OF KANSAS
ENGINEER

REVISION:
DATE: 2-7-2022
JOB: 21-3155
SHEET: AQ1.2

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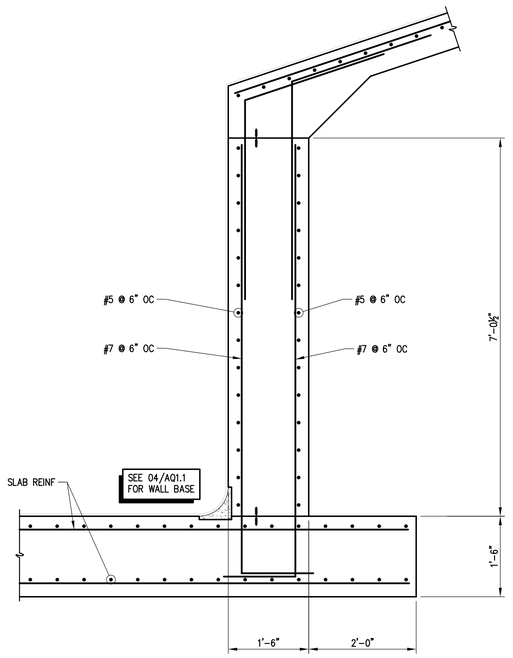
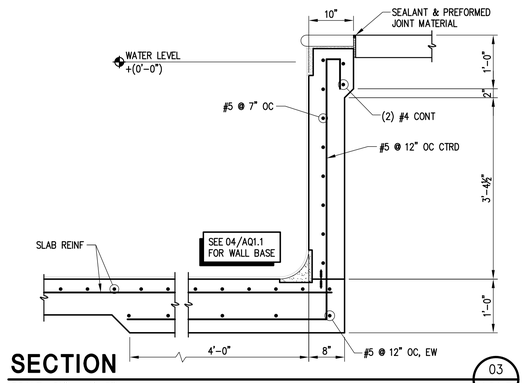


SECTION

SCALE: ¾" = 1'-0"

DET006_7020.0130

06 AQ1.3



SECTION

SCALE: ¾" = 1'-0"

DET001_7020.0130

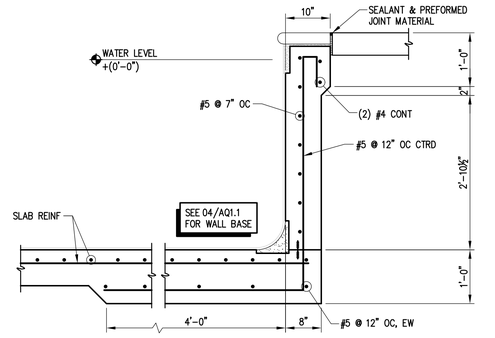
03 AQ1.3

SECTION

SCALE: ¾" = 1'-0"

DET002_7020.0130

04 AQ1.3



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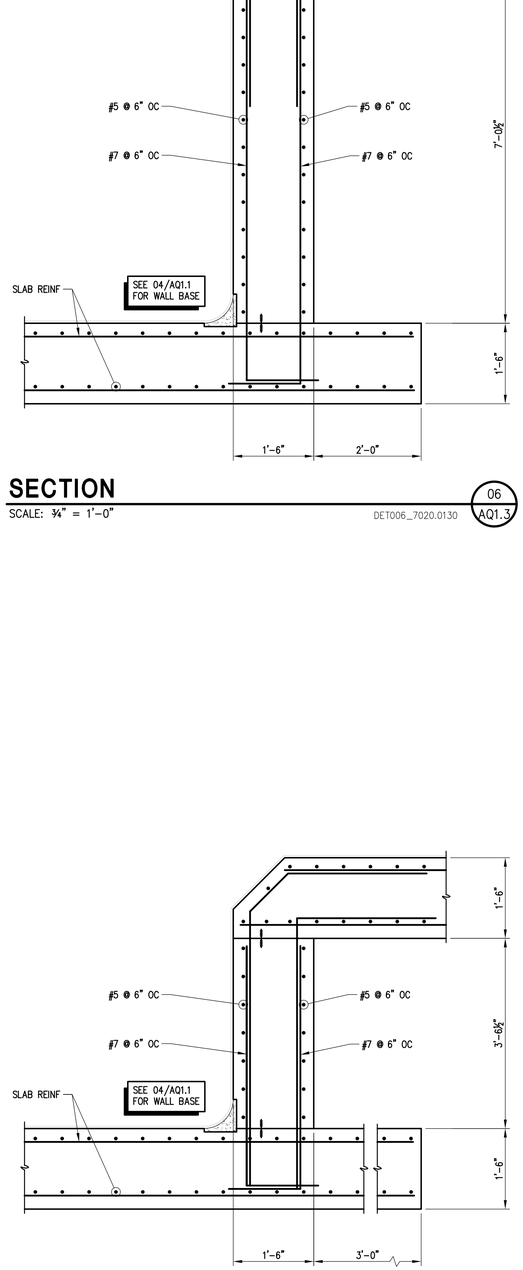

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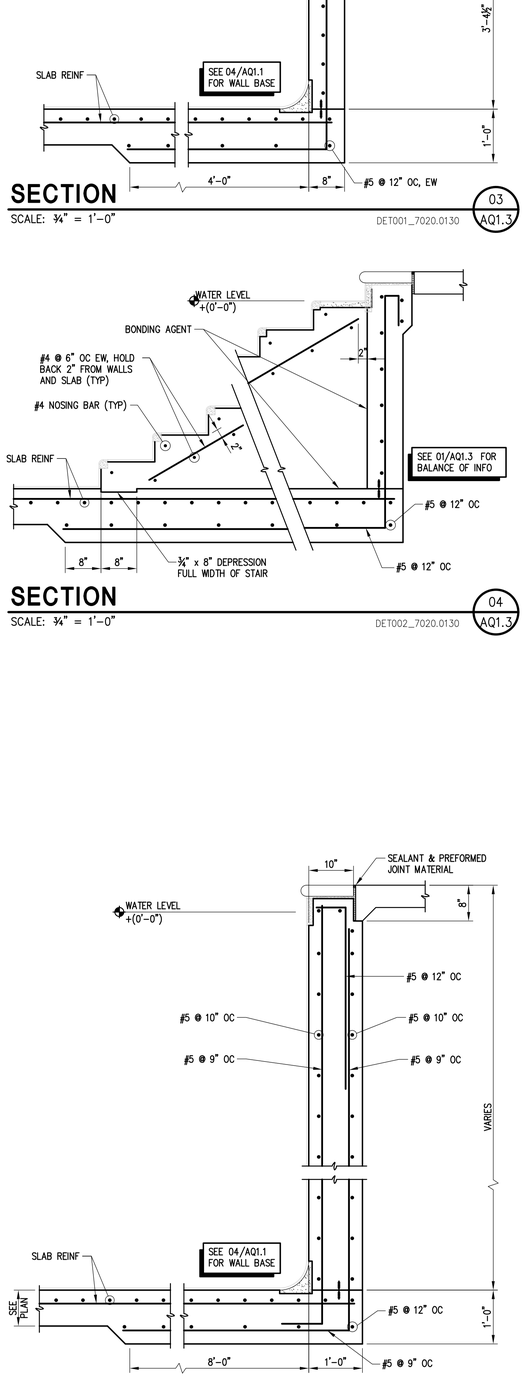
DET007_7020.0130

07 AQ1.3



SECTION

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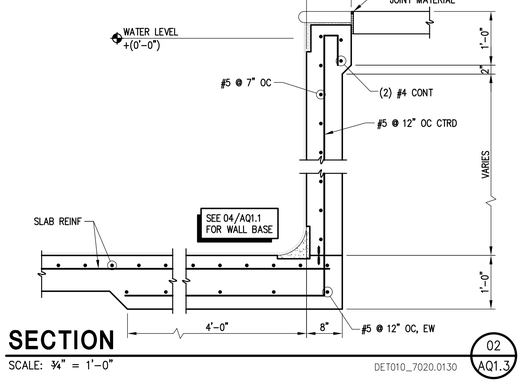
05 AQ1.3



SECTION

SCALE: ¾" = 1'-0"

DET010_7020.0130

02 AQ1.3

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WICHITA, KANSAS

C. RODNEY McCOMAS LICENSED 19322 KANSAS REGISTERED ARCHITECT

REVISION:	
DATE:	2-7-2022
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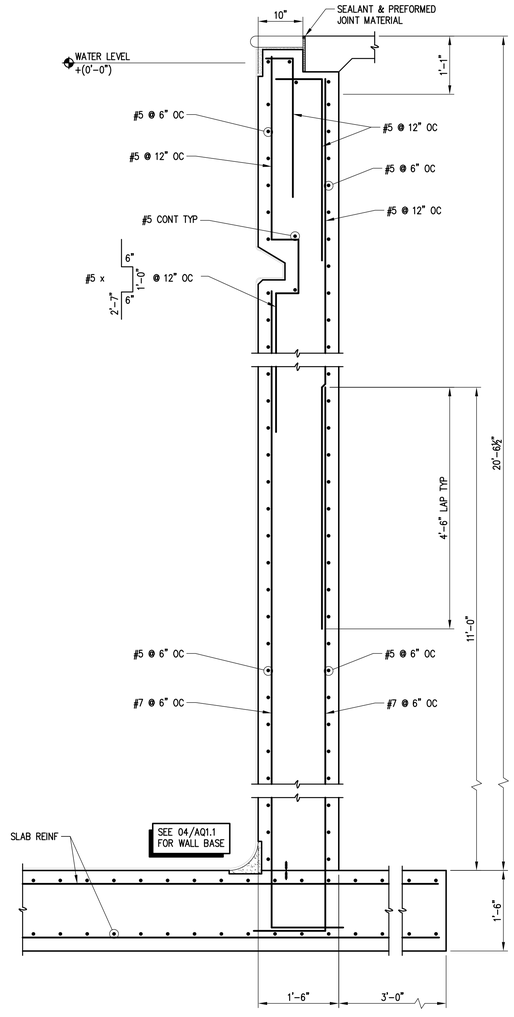
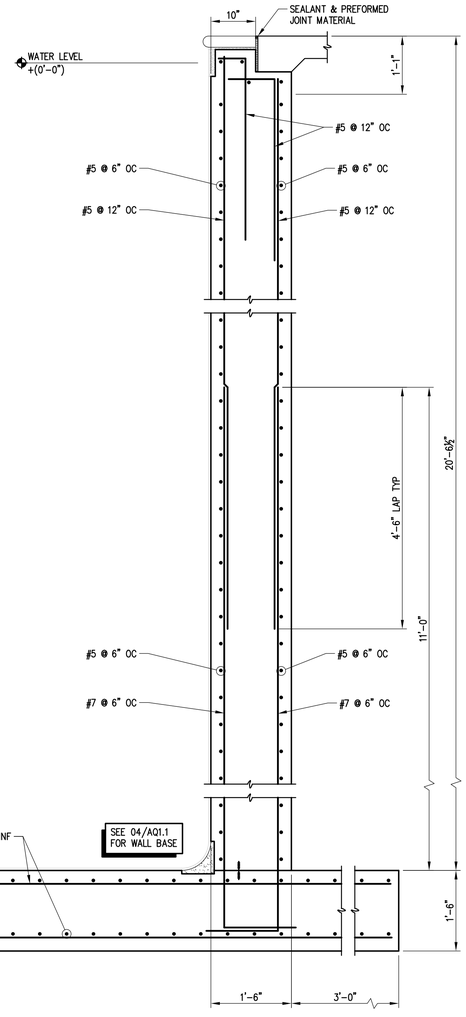


SECTION

SCALE: ¾" = 1'-0"

DET008_7020.0130

03 AQ1.4

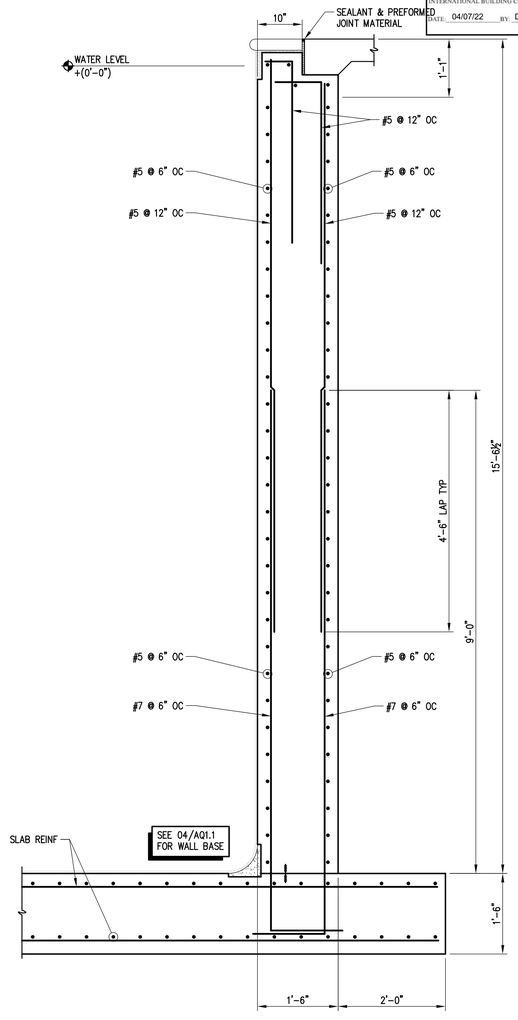


SECTION

SCALE: ¾" = 1'-0"

DET005_7020.0130

02 AQ1.4



SECTION

SCALE: ¾" = 1'-0"

DET004_7020.0130

01 AQ1.4

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WICHITA, KANSAS

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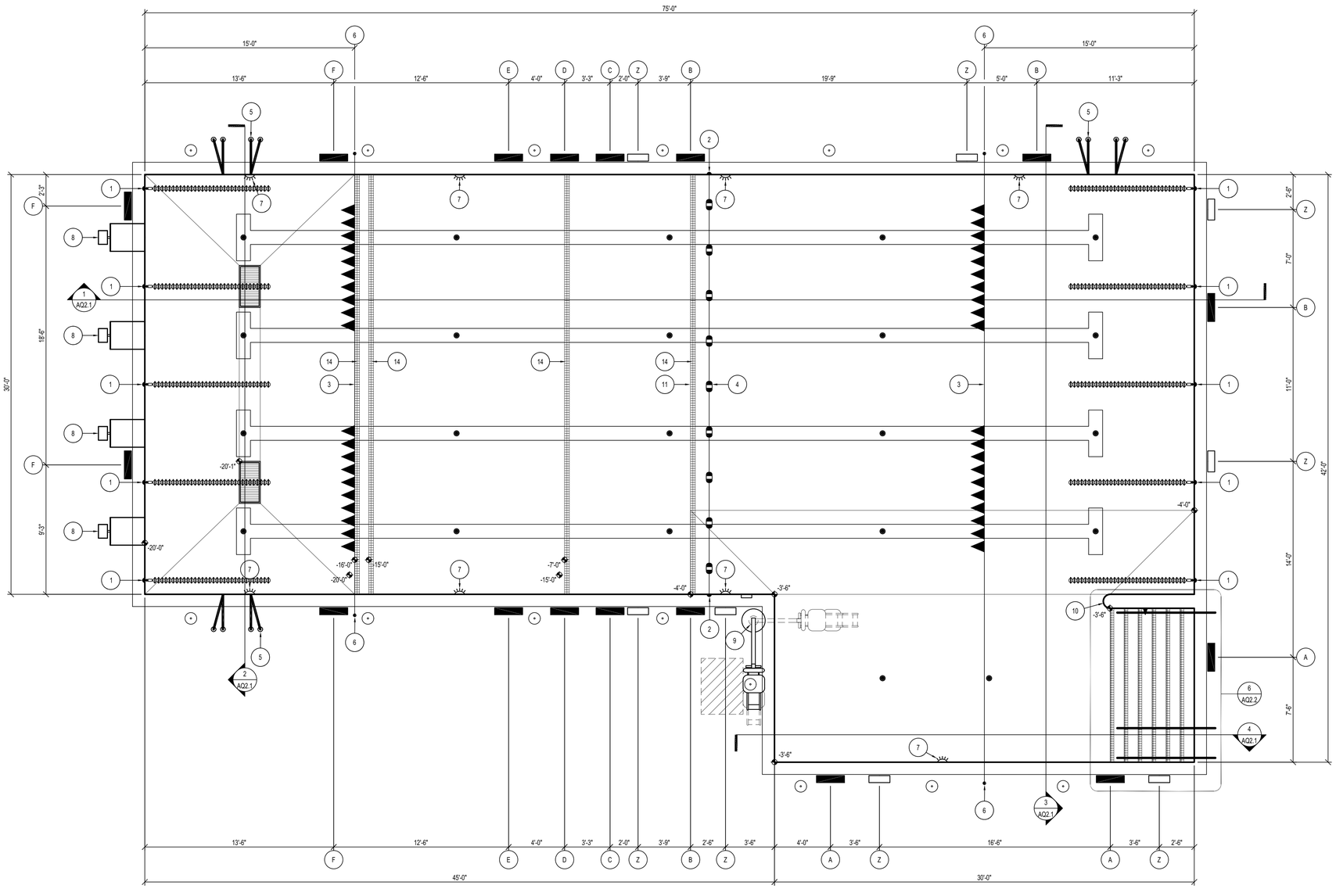

1 AQ2.0 POOL PLAN

1/4" = 1'-0"

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DEPTH & WARNING SIGNAGE SCHEDULE

ID	SIGNAGE
A	3 FT 6 IN
B	4 FT 0 IN
C	6 FT 0 IN
D	7 FT 0 IN
E	15 FT 0 IN
F	20 FT 0 IN
Z	NO DIVING

REFER: 8/AQ2.2

POOL EQUIPMENT SCHEDULE

ID	ITEM
1	LANE ROPE CUP ANCHOR REFER: 1/AQ2.2
2	SAFETY ROPE CUP ANCHOR REFER: 1/AQ2.2
3	BACKSTROKE PENNANT
4	SAFETY ROPE
5	GRAB RAILS AND RECESSED STEPS REFER: 11/AQ2.2
6	STANCHION POST AND ANCHOR REFER: 12/AQ2.2
7	UNDERWATER LIGHT REFER: 14/AQ2.2
8	DECK MOUNTED STARTING PLATFORM AND ANCHOR REFER: 10/AQ2.2
9	POOL LIFT & ANCHOR REFER: 9/AQ2.2
10	WING WALL REFER: 3/AQ2.2
11	4" CONTRASTING TILE BAND COLOR BY ARCHITECT
12	WALL TARGET REFER: 5/AQ2.2
13	POOL COVE REFER: 2/AQ2.2
14	CONTRASTING NOSING REFER: 4/AQ2.2
15	TOE LEDGE REFER: 15/AQ2.2

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DARREN THOMAS BEARD
LICENSED
21085
KANSAS
PROFESSIONAL ENGINEER

REVISION:

DATE: 02-07-2022

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SHEET: AQ2.0

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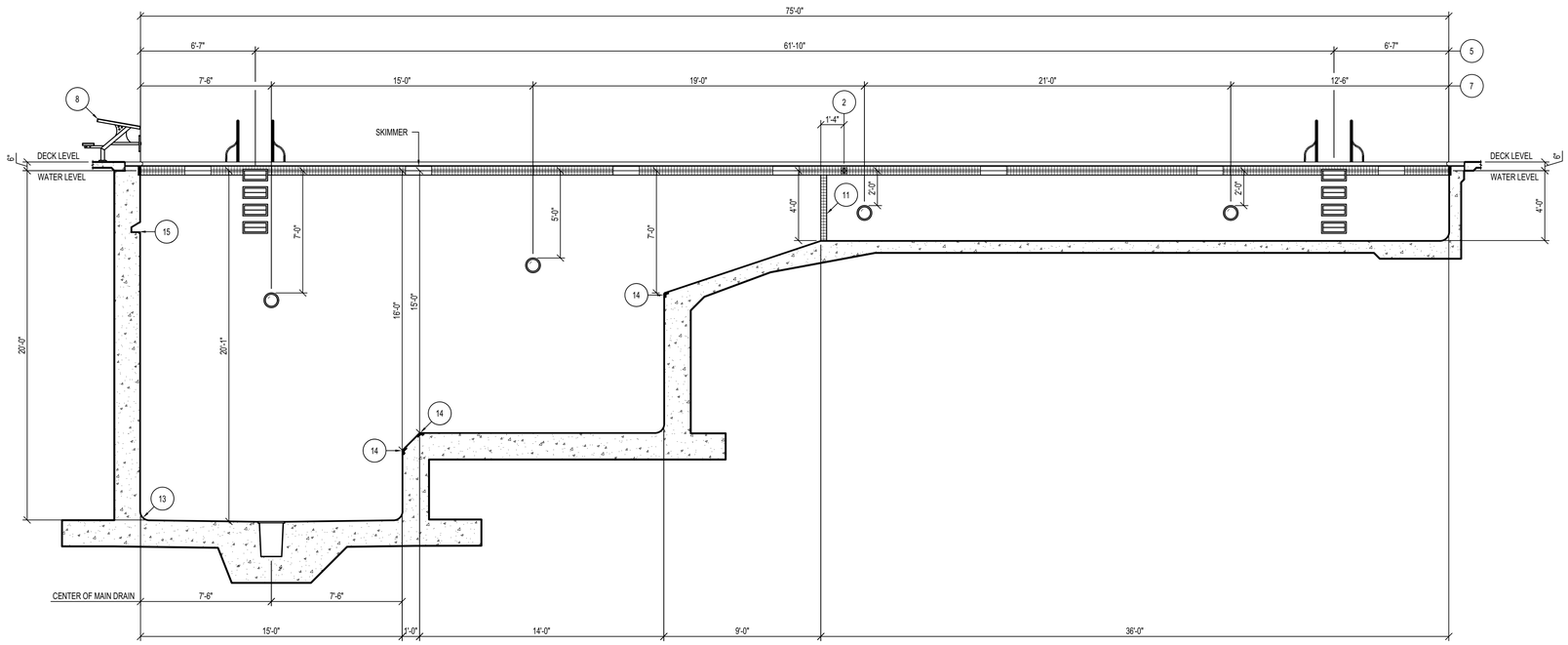
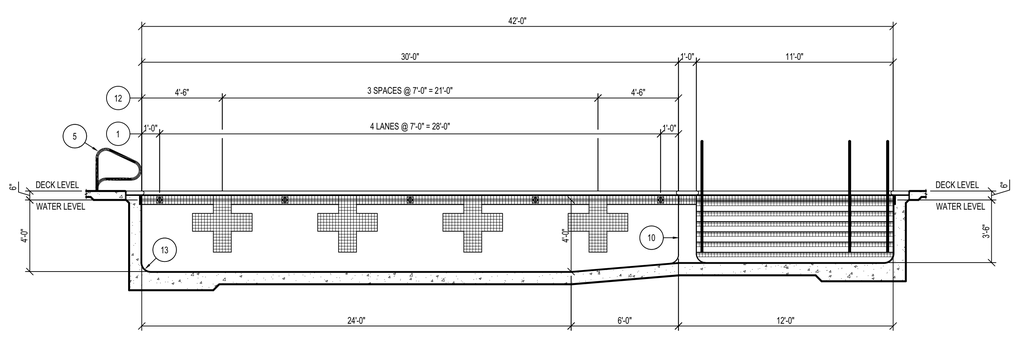
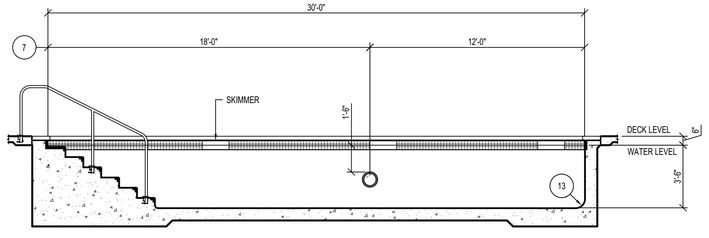


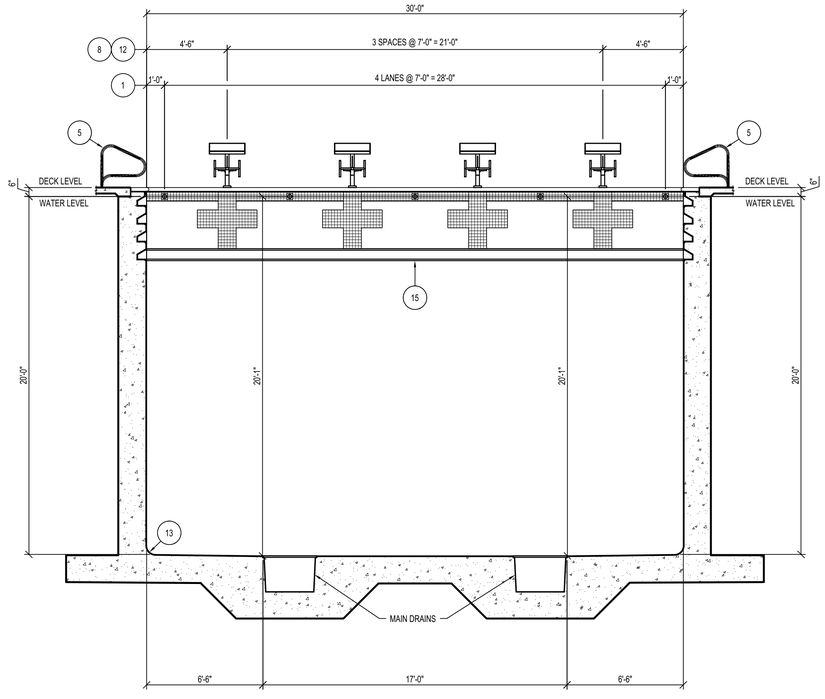
1 AQ2.1 POOL SECTION
1/4" = 1'-0"



3 AQ2.1 POOL SECTION
1/4" = 1'-0"



4 AQ2.1 POOL SECTION
1/4" = 1'-0"



2 AQ2.1 POOL SECTION
1/4" = 1'-0"

POOL EQUIPMENT SCHEDULE

ID	ITEM
1	LANE ROPE CUP ANCHOR REFER: 1/AQ2.2
2	SAFETY ROPE CUP ANCHOR REFER: 1/AQ2.2
3	BACKSTROKE PENNANT
4	SAFETY ROPE
5	GRAB RAILS AND RECESSED STEPS REFER: 11/AQ2.2
8	STANCHION POST AND ANCHOR REFER: 12/AQ2.2
7	UNDERWATER LIGHT REFER: 14/AQ2.2
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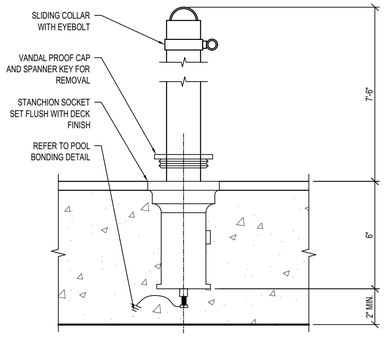
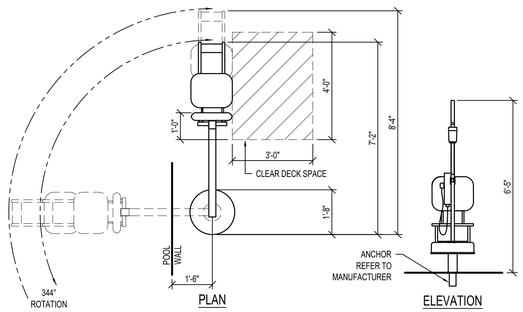


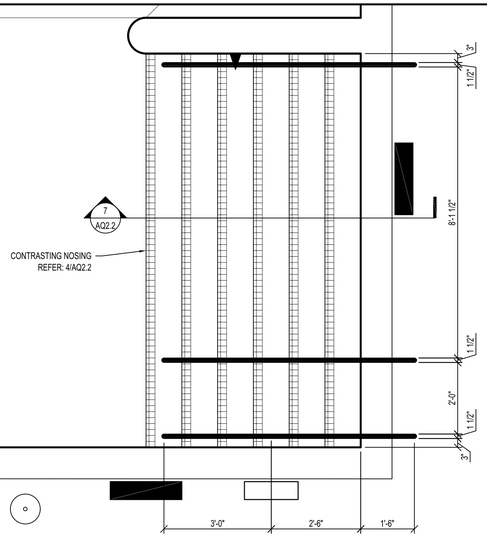
12 AQ2.2 STANCHION POST AND ANCHOR

3" = 1'-0"



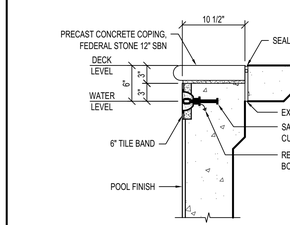
9 AQ2.2 POOL LIFT

3/8" = 1'-0"



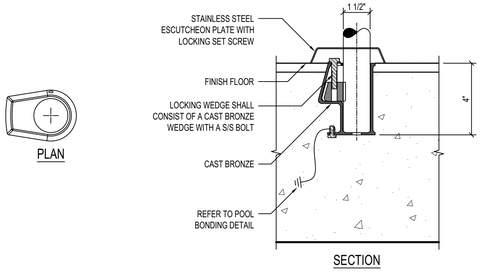
6 AQ2.2 ENLARGED STAIR PLAN

1/2" = 1'-0"



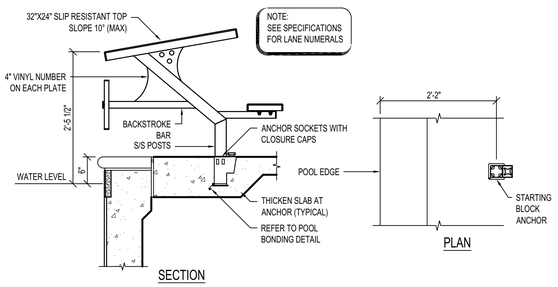
1 AQ2.2 POOL WALL SECTION

1" = 1'-0"



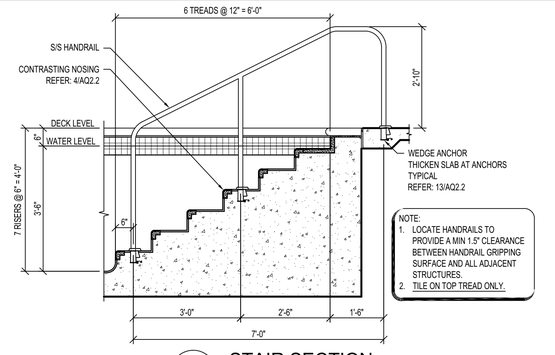
13 AQ2.2 WEDGE ANCHOR

3" = 1'-0"



10 AQ2.2 STARTING BLOCK

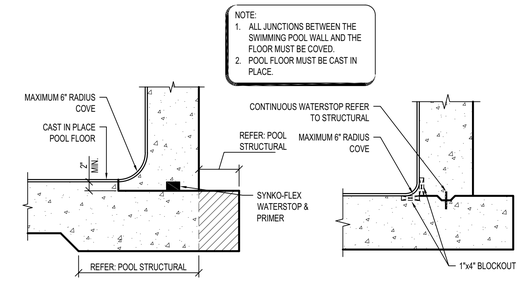
3/4" = 1'-0"



NOTE:
1. LOCATE HANDRAILS TO PROVIDE A MIN 1.5" CLEARANCE BETWEEN HANDRAIL GRIPPING SURFACE AND ALL ADJACENT STRUCTURES.
2. TILE ON TOP TREAD ONLY.

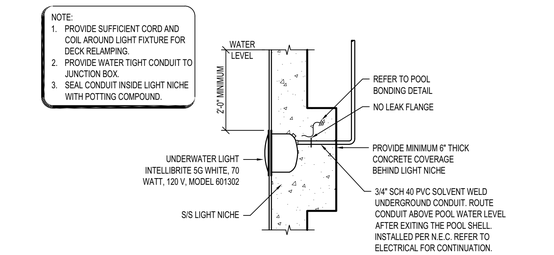
7 AQ2.2 STAIR SECTION

1/2" = 1'-0"



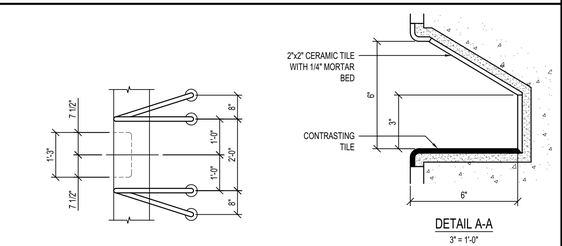
2 AQ2.2 POOL COVE

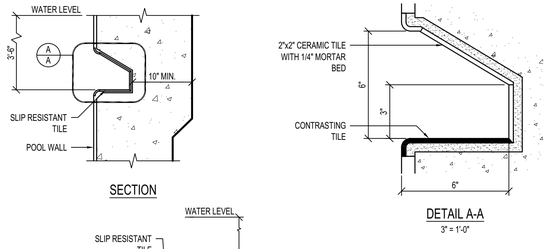
3/4" = 1'-0"



14 AQ2.2 UNDERWATER LIGHT

3/4" = 1'-0"

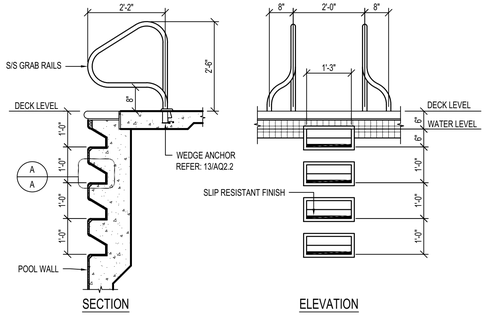




NOTE:
REFER TO SECTIONS ON AQ2.1 TO DETERMINE LENGTH AND LOCATION OF TOE LEDGE.

15 AQ2.2 TOE LEDGE

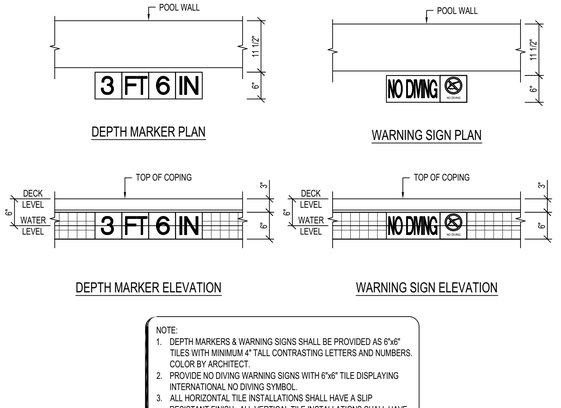
1" = 1'-0"



NOTE:
POSITION THE WEDGE PORTION OF EACH ANCHOR 180 DEGREES FROM THE WEDGE PORTION OF THE ADJACENT ANCHOR.

11 AQ2.2 GRAB RAILS & RECESSED STEPS

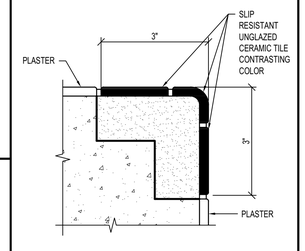
1/2" = 1'-0"



NOTE:
1. DEPTH MARKERS & WARNING SIGNS SHALL BE PROVIDED AS 6"x6" TILES WITH MINIMUM 4" TALL CONTRASTING LETTERS AND NUMBERS. COLOR BY ARCHITECT.
2. PROVIDE NO DIVING WARNING SIGNS WITH 6"x6" TILE DISPLAYING INTERNATIONAL NO DIVING SYMBOL.
3. ALL HORIZONTAL TILE INSTALLATIONS SHALL HAVE A SLIP RESISTANT FINISH. ALL VERTICAL TILE INSTALLATIONS SHALL HAVE A SMOOTH GLAZED FINISH.
4. LOCATE ALL DEPTH MARKER AND WARNING SIGN TILES SUCH THAT THEY DO NOT CONFLICT WITH PAVING JOINTS.

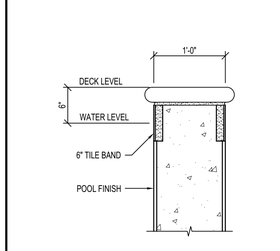
8 AQ2.2 DEPTH MARKERS & WARNING SIGNS

3/4" = 1'-0"



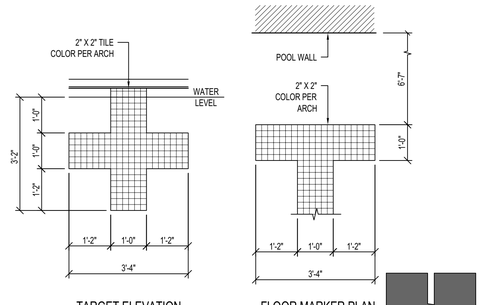
4 AQ2.2 CONTRASTING NOSING

6" = 1'-0"



3 AQ2.2 WING WALL SECTION

1" = 1'-0"



5 AQ2.2 WALL TARGETS & FLOOR MARKERS

1/2" = 1'-0"

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DATE: 04/07/22 BY: Debra Shauers

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PROFESSIONAL ENGINEER

REVISION:

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JOB: 21-3155

SHEET: AQ2.2

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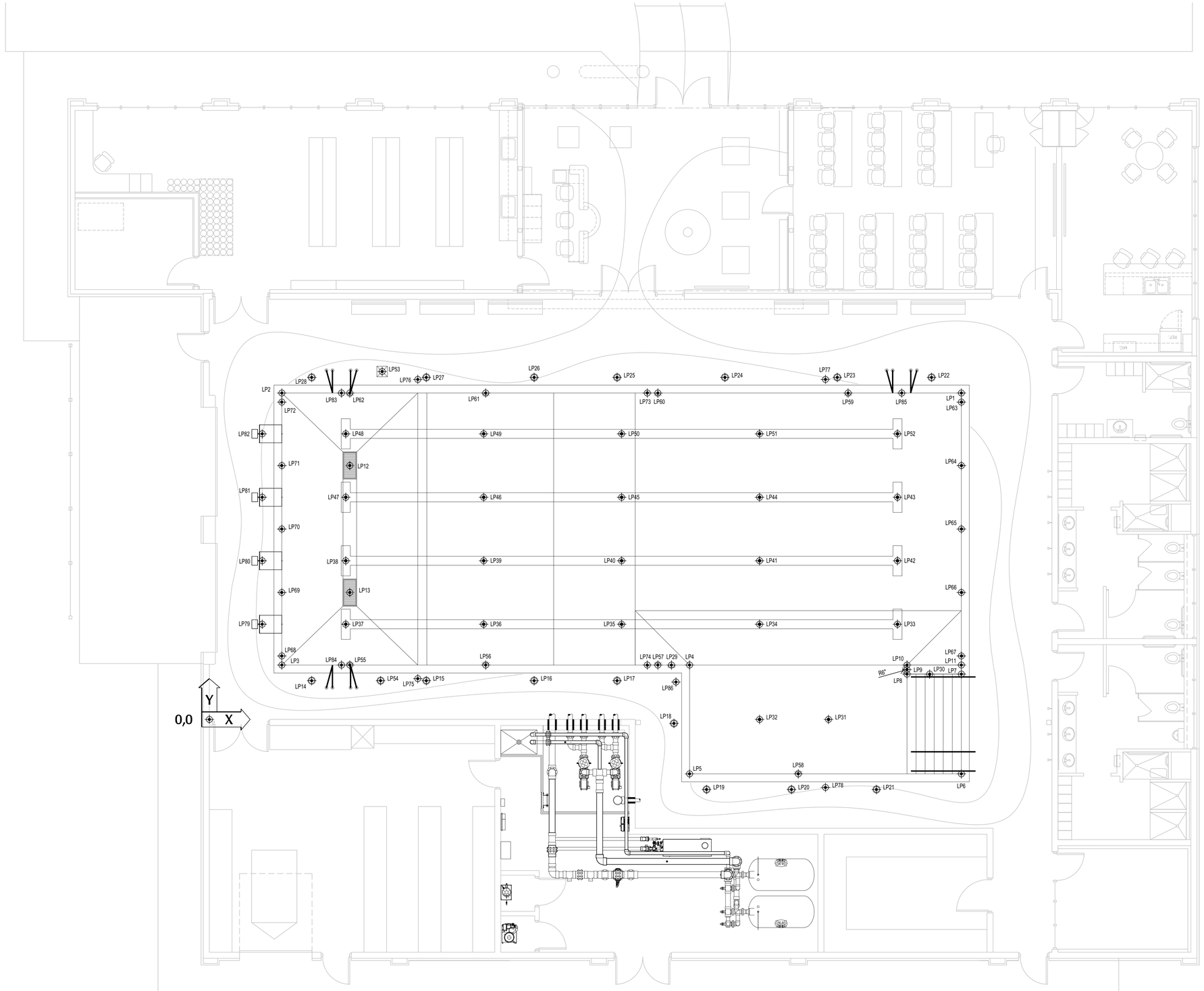

1 AQ3.0 POOL LOCATION POINT PLAN

3/16" = 1'-0"

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LOCATION POINT SCHEDULE

LP#	X	Y	DESCRIPTION
1	83'-0"	36'-0"	CONSTRUCTION POINT
2	8'-0"	36'-0"	CONSTRUCTION POINT
3	8'-0"	6'-0"	CONSTRUCTION POINT
4	53'-0"	6'-0"	CONSTRUCTION POINT
5	53'-0"	-6'-0"	CONSTRUCTION POINT
6	83'-0"	-6'-0"	CONSTRUCTION POINT
7	83'-0"	5'-0"	CONSTRUCTION POINT
8	77'-0"	5'-0"	ARC END POINT
9	77'-0"	5'-6"	ARC CENTER POINT
10	77'-0"	6'-0"	ARC END POINT
11	83'-0"	6'-0"	CONSTRUCTION POINT
12	15'-6"	28'-0"	CENTER OF MAIN DRAIN
13	15'-6"	14'-0"	CENTER OF MAIN DRAIN
14	11'-3 1/2"	4'-3 1/4"	CENTER OF SKIMMER LID
15	23'-11 1/4"	4'-3 1/4"	CENTER OF SKIMMER LID
16	35'-10 1/4"	4'-3 1/4"	CENTER OF SKIMMER LID
17	48'-0"	4'-3 1/4"	CENTER OF SKIMMER LID
18	51'-3 1/4"	-5 1/4"	CENTER OF SKIMMER LID
19	54'-10 1/2"	-7'-8 3/4"	CENTER OF SKIMMER LID
20	64'-3"	-7'-8 3/4"	CENTER OF SKIMMER LID
21	73'-7 1/2"	-7'-8 3/4"	CENTER OF SKIMMER LID
22	79'-8 1/2"	37'-8 3/4"	CENTER OF SKIMMER LID
23	69'-3 3/4"	37'-8 3/4"	CENTER OF SKIMMER LID
24	56'-10 3/4"	37'-8 3/4"	CENTER OF SKIMMER LID
25	45'-0"	37'-8 3/4"	CENTER OF SKIMMER LID
26	35'-10 1/4"	37'-8 3/4"	CENTER OF SKIMMER LID
27	23'-11 1/4"	37'-8 3/4"	CENTER OF SKIMMER LID
28	11'-3 1/2"	37'-8 3/4"	CENTER OF SKIMMER LID
29	51'-0"	6'-0"	FILL LINE
30	79'-6"	5'-0"	WALL INLET
31	68'-4"	0"	FLOOR INLET
32	60'-8 3/4"	0"	FLOOR INLET
33	75'-11 1/2"	10'-6"	FLOOR INLET
34	60'-8 3/4"	10'-6"	FLOOR INLET
35	45'-6"	10'-6"	FLOOR INLET
36	30'-3 1/4"	10'-6"	FLOOR INLET
37	15'-0 3/4"	10'-6"	FLOOR INLET
38	15'-0 3/4"	17'-6"	FLOOR INLET
39	30'-3 1/4"	17'-6"	FLOOR INLET
40	45'-6"	17'-6"	FLOOR INLET
41	60'-8 3/4"	17'-6"	FLOOR INLET
42	75'-11 1/2"	17'-6"	FLOOR INLET
43	75'-11 1/2"	24'-6"	FLOOR INLET
44	60'-8 3/4"	24'-6"	FLOOR INLET
45	45'-6"	24'-6"	FLOOR INLET
46	30'-3 1/4"	24'-6"	FLOOR INLET
47	15'-0 3/4"	24'-6"	FLOOR INLET
48	15'-0 3/4"	31'-6"	FLOOR INLET
49	30'-3 1/4"	31'-6"	FLOOR INLET
50	45'-6"	31'-6"	FLOOR INLET
51	60'-8 3/4"	31'-6"	FLOOR INLET
52	75'-11 1/2"	31'-6"	FLOOR INLET
53	19'-0 3/4"	38'-4 1/2"	SIGHT SUMP
54	18'-10 3/4"	4'-3 1/4"	WATER LEVEL CONTROLLER
55	15'-6"	6'-0"	UNDERWATER LIGHT
56	30'-6"	6'-0"	UNDERWATER LIGHT
57	49'-6"	6'-0"	UNDERWATER LIGHT
58	65'-0"	-6'-0"	UNDERWATER LIGHT
59	70'-6"	36'-0"	UNDERWATER LIGHT
60	49'-6"	36'-0"	UNDERWATER LIGHT
61	30'-6"	36'-0"	UNDERWATER LIGHT
62	15'-6"	36'-0"	UNDERWATER LIGHT
63	83'-0"	35'-0"	LANE ROPE CUP ANCHOR
64	83'-0"	28'-0"	LANE ROPE CUP ANCHOR
65	83'-0"	21'-0"	LANE ROPE CUP ANCHOR
66	83'-0"	14'-0"	LANE ROPE CUP ANCHOR
67	83'-0"	7'-0"	LANE ROPE CUP ANCHOR
68	8'-0"	7'-0"	LANE ROPE CUP ANCHOR
69	8'-0"	14'-0"	LANE ROPE CUP ANCHOR
70	8'-0"	21'-0"	LANE ROPE CUP ANCHOR
71	8'-0"	28'-0"	LANE ROPE CUP ANCHOR
72	8'-0"	35'-0"	LANE ROPE CUP ANCHOR
73	48'-4"	36'-0"	SAFETY ROPE CUP ANCHOR
74	48'-4"	6'-0"	SAFETY ROPE CUP ANCHOR
75	23'-0"	4'-6"	STANCHION POST ANCHOR
76	23'-0"	37'-6"	STANCHION POST ANCHOR
77	68'-0"	37'-6"	STANCHION POST ANCHOR
78	68'-0"	-7'-6"	STANCHION POST ANCHOR
79	5'-10"	10'-6"	STARTING BLOCK ANCHOR
80	5'-10"	17'-6"	STARTING BLOCK ANCHOR
81	5'-10"	24'-6"	STARTING BLOCK ANCHOR
82	5'-10"	31'-6"	STARTING BLOCK ANCHOR
83	14'-7"	36'-0"	GRAB RAIL
84	14'-7"	6'-0"	GRAB RAIL
85	76'-5"	36'-0"	GRAB RAIL
86	51'-6"	4'-1 1/2"	POOL LIFT ANCHOR

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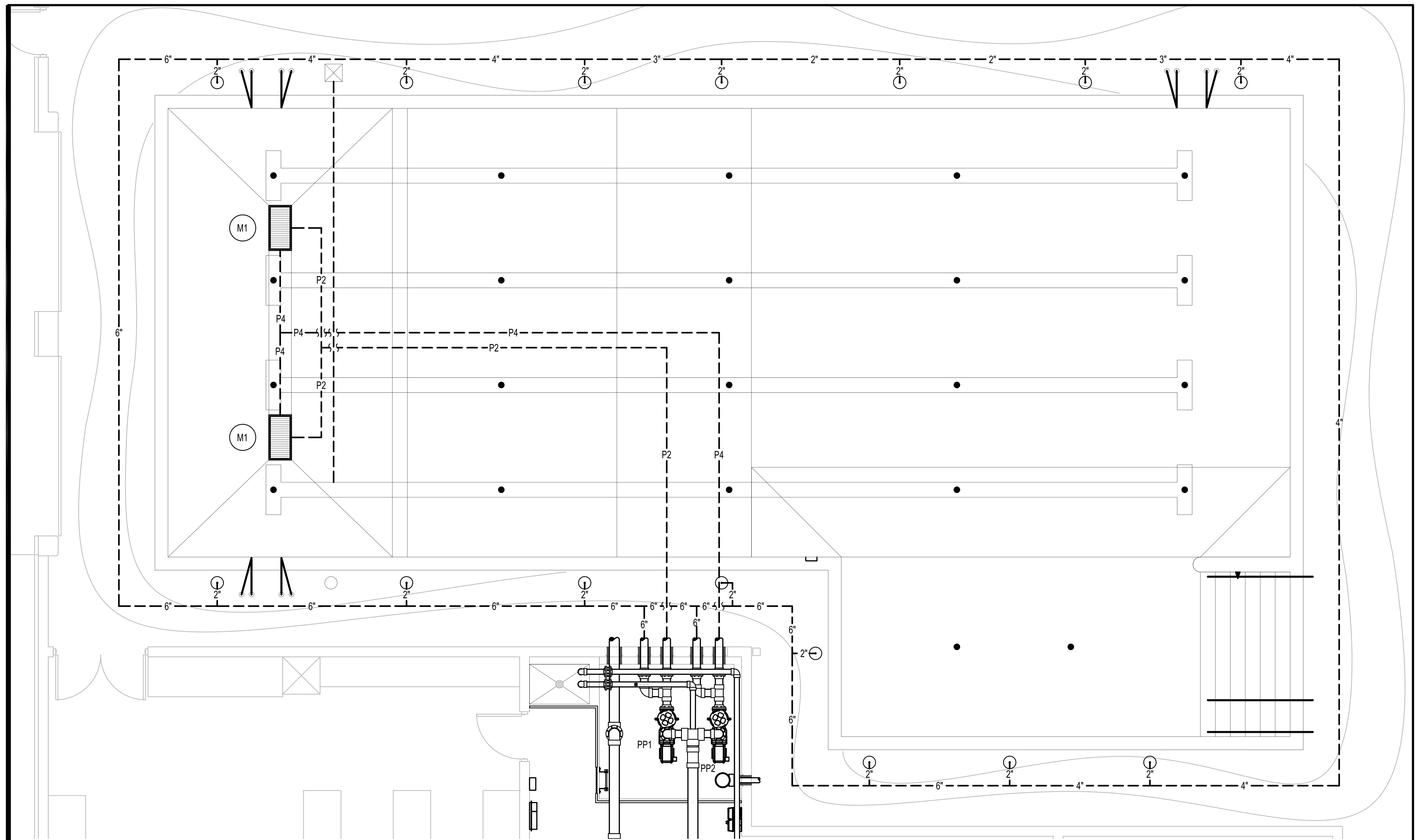
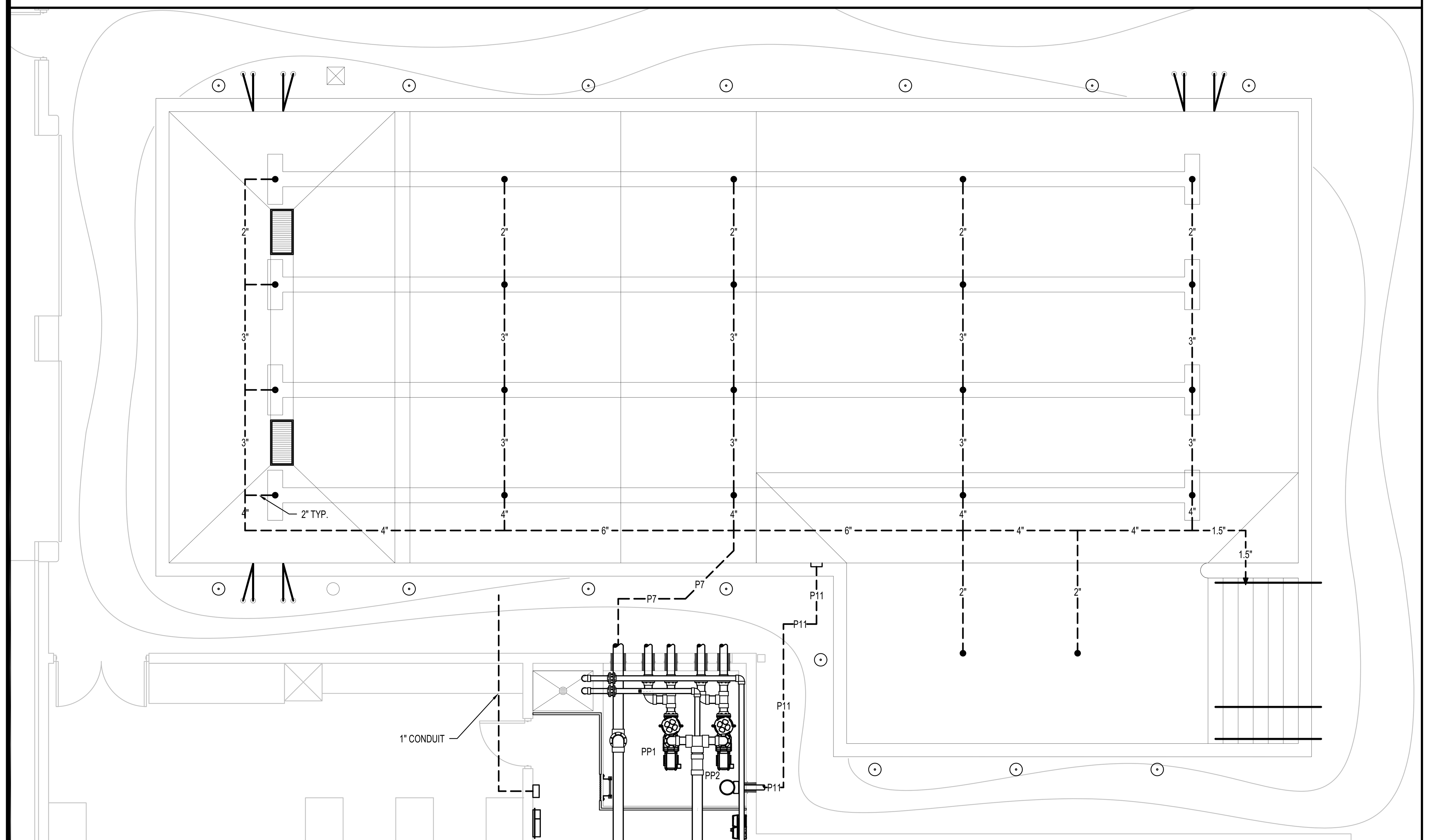


1
AQ4.0
POOL SUCTION PIPING PLAN
1/4" = 1'-0"



2
AQ4.0
POOL RETURN PIPING PLAN
1/4" = 1'-0"

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PIPE SCHEDULE

ID	DESCRIPTION
P1	6" FROM SKIMMERS TO PP1
P2	6" FROM M1 TO PP1
P3	6" FROM SKIMMERS TO PP2
P4	6" FROM M1 TO PP2
P5	8" FROM PP1 & PP2 TO FILTERS
P6	4" FROM P5 TO BACKWASH CATCH BASIN
P7	8" FROM FILTERS TO INLETS
P8	4" FROM FILTERS TO BACKWASH CATCH BASIN
P9	4" FROM P7 TO POOL HEATER
P10	4" FROM POOL HEATER TO P7
P11	6" FROM FILL FUNNEL TO POOL WALL

PIPING LEGEND

LEGEND	QTY.	ITEM	MAKE	MODEL
▲	1	WALL INLET REFER: 11/AQ5.2	HAYWARD	SP1421E & SP1022S
◉	22	FLOOR INLET REFER: 12/AQ5.2	STA-RITE	8417-000 (WHITE), 8417-0200 (BLACK)
⊠	1	SIGHT SUMP REFER: 13/AQ5.2	QUAZITE	PC1212CA00 W. PC1212BA12 (QUAZITE)
▭	2	MAIN DRAIN REFER: 14/AQ5.2	REFER TO MAIN DRAIN SCHEDULE	
⊙	15	SKIMMER REFER: 9/AQ5.1	STA-RITE	U-3 #08650-1403 (WHITE), U-3 #08650-3403 (GREY), U-3 #08650-2403 (TAN)
		SKIMMER EQUALIZER	AQUASTAR	#4RND101
○	1	WATER LEVEL CONTROLLER REFER: 15/AQ5.2	AQUATICONTROL TECHNOLOGY	ELC-810-XX-DW-000
— — — — —	N/A	BELOW GRADE PIPING	CHEMTROL	SCH 40 PVC, SCH 80 PVC

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DATE: 04/07/22 BY: Debra Shauers

GENERAL PIPING NOTES

1. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERATIONAL PIPING SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
2. PIPE SIZES INDICATED ARE NOMINAL, I.P.S.
3. UNLESS OTHERWISE NOTED, ALL OVERHEAD PIPING SHALL BE TIGHT TO UNDERSIDE OF STRUCTURE OR SLAB.
4. ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (MEMORY STOPS).
5. ALL VALVES SHALL BE INSTALLED SO THAT THE VALVE REMAINS IN SERVICE WHEN THE EQUIPMENT OR PIPING ON THE EQUIPMENT SIDE OF THE VALVE IS REMOVED.
6. PROVIDE CHAIN WHEEL OPERATORS FOR ALL VALVES IN EQUIPMENT ROOMS MOUNTED GREATER THAN 7'-0" ABOVE FINISHED FLOOR; CHAIN SHALL EXTEND TO 7'-0" ABOVE FINISHED FLOOR LEVEL.
7. ALL VALVE HARDWARE MUST BE 316L STAINLESS STEEL AND MEET ANSI HARDWARE INSTALLATION GUIDELINES. REFER: 6/AQ5.3
8. INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.
9. ALL PIPING WORK SHALL BE COORDINATED WITH ALL TRADES AND SITE CONDITIONS. OFFSETS, EXPANSION LOOPS, OR TRANSITIONS IN PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
10. ALL PIPING INDICATED SHALL BE CONSIDERED DIAGRAMMATIC.
11. ALL SWIMMING POOL PIPING ROUTED BELOW THE POOL SHELL SHALL BE CONCRETE ENCASED SCHEDULE 40 PVC. REFER: 5/AQ5.3
12. ALL UNDERGROUND OR EXPOSED SWIMMING POOL PIPING SHALL BE SCHEDULE 80 PVC, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL REFER TO PLANS AND SPECIFICATIONS FOR ANY SPECIFIC REQUIREMENTS REGARDING PLACEMENT AND BACKFILLING OF BELOW GRADE POOL PIPE.
13. ALL DIMENSIONS INDICATED FROM THE FINISH WALL SURFACE AND DO NOT ACCOUNT FOR ANY VARIATIONS IN EITHER GRADE OR SLOPE DISTANCES.
14. THE CHEMICAL SENSOR LINE SHALL BE A 3/4" TO 1" DIAMETER, SCHEDULE 80 PVC PIPE EXTENDED FROM THE WET CELL SENSOR TO ITS RESPECTIVE FILL FUNNEL AND THE BACKWASH CATCH BASIN OR PUMP SUCTION.
15. ALL FLOOR INLETS SHALL BE ADJUSTED TO ACHIEVE AN EVEN FLOW DISTRIBUTION THROUGHOUT SYSTEMS.
16. ALL PIPE TEES SHALL BE SIZED FOR LARGEST PIPE CONNECTION.

MAIN DRAIN SCHEDULE

ID	DESCRIPTION	SIZE	QTY	DESIGN FLOW (GPM)	DESIGN VELOCITY (FPS)	MFG ALLOWABLE FLOW @ COVER (GPM)	MAX SYSTEM FLOW (GPM)	MODEL	MANUFACTURER
M1	MAIN DRAINS	18X36	2	950	0.44	1605	950	MLD-FG-1836	NEPTUNE BENSON

NOTE:
1. MAIN DRAIN GRATING MUST BE MANUFACTURED BY NEPTUNE BENSON/LAWSON, OR APPROVED EQUAL.
2. MAXIMUM FACE VELOCITY MUST NOT EXCEED 1.5 FEET PER SECOND.
3. OPEN AREA IS BASED ON MANUFACTURER'S DATA.
4. THE INSTALLED LIFE OF THE MAIN DRAIN COVER MUST BE 10 YEARS.
5. ALL MAIN DRAINS MUST BE INSTALLED IN THE POOL FLOOR. WALL SUMPS WILL NOT BE PERMITTED.
6. FASTEN MAIN DRAIN COVER TO EMBEDDED PVC FRAME/POOL FLOOR WITH S/S TAMPER PROOF FASTENERS AT A SPACING NO GREATER THAN 24" O.C. REFER TO FRAME AND GRATE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
7. PROVIDE WATER BONDING FITTING IN MAIN DRAIN SUMP AT DEEPEST SECTION OF THE POOL. BASIS OF DESIGN: PERMA-CAST SWIMMING POOL PRODUCTS MODEL PB-SK-20.
8. PROVIDE HYDROSTATIC RELIEF VALVE IN EACH MAIN DRAIN. BASIS OF DESIGN: HAYWARD MODEL SP1056 & SP1055.

PUMP SCHEDULE

ID	DESCRIPTION	MANUFACTURER	MODEL	SIZE	GPM	TDH	HP	NPSHR	HAIR/LINT	
									MAKE	SIZE
PP1	POOL RECIRCULATION PUMP 1 REFER: 1/AQ5.1	PENTAIR	EQK1000	6 X 4	475	60	10	ATM	INTEGRAL	6 X 6
PP2	POOL RECIRCULATION PUMP 2 REFER: 1/AQ5.1	PENTAIR	EQK1000	6 X 4	475	60	10	ATM	INTEGRAL	6 X 6

NOTE:
1. THE MANUFACTURER INDICATED IS BASIS OF DESIGN.
2. POOL PUMPS AND STRAINERS MUST BE INSTALLED ON HOUSEKEEPING PADS.
3. PROVIDE INFLUENT AND EFFLUENT GAUGES FOR EACH PUMP. PRESSURE GAUGES HAVE A RANGE OF 0-60 PSI. COMPOUND GAUGES HAVE A RANGE OF 0-30 HG / 0-60 PSI.
4. PROVIDE WITH 460 VOLT, 3 PHASE, 60HZ, 3450 RPM MOTOR.
5. PROVIDE WITH CHECK VALVE.
6. PROVIDE VARIABLE FREQUENCY DRIVE.
7. PROVIDE EMERGENCY STOP.

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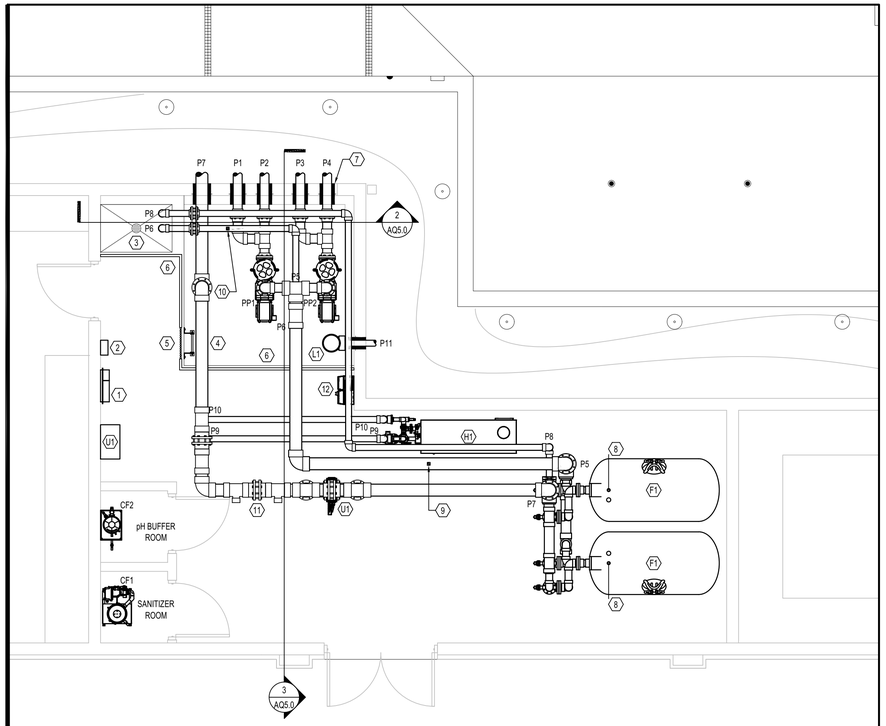
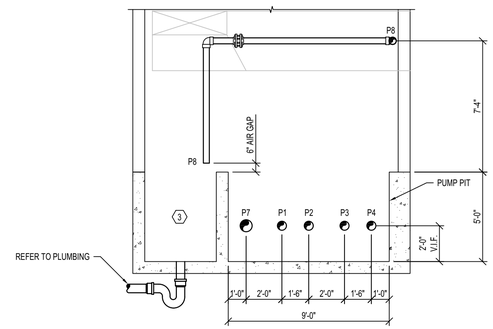


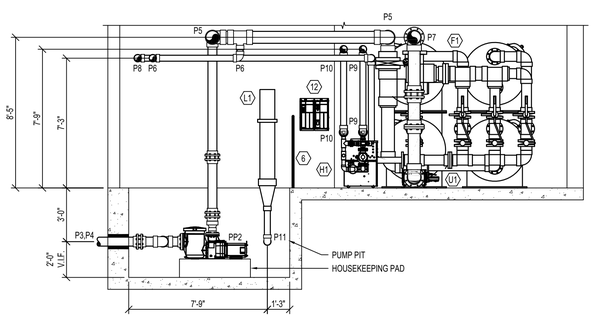
1 AQ5.0 POOL MECHANICAL ROOM PLAN

1/4" = 1'-0"



2 AQ5.0 POOL MECHANICAL ROOM SECTION

1/4" = 1'-0"



3 AQ5.0 POOL MECHANICAL ROOM SECTION

1/4" = 1'-0"

UV TREATMENT SYSTEMS SCHEDULE

ID	MODEL NUMBER	US EPA 3-LOG AND CALCULATED 40MJ/CM2 (GPM)	CALCULATED 60 MJ/CM2 (GPM)	LAMPS	POWER (KW)	VOLTAGE (V) WITH BREAKER SIZE (50 OR 60 HZ)
U1	WF-215-8-N	1,100	1,012	2 @ 1.5KW	3.0	208 V (1Φ)-30A 220 V (1Φ)-30A 230 V (1Φ)-30A 240 V (1Φ)-30A

NOTE:
1. THE BASIS OF DESIGN MANUFACTURER IS EVOQUA TECHNOLOGIES LTD. ALTERNATE MANUFACTURER: PROMINENT, AQUIONICS OR APPROVED EQUAL.
2. INTERLOCK UV SYSTEM WITH CHEMICAL CONTROLLER OR RECIRCULATION PUMP.
3. REFER: 5/AQ5.1

CHEMICAL FEED SCHEDULE

ID	DESCRIPTION	MANUFACTURER	MODEL	TUBE #	HP	FLOW
CF1	CHLORINATION BOOSTER PUMP REFER: 4/AQ5.1	ACCUTAB	1030	N/A	1	67 LBS/DAY
CF2	ACID FEED PUMP REFER: 3/AQ5.1	ACID-RITE	450	N/A	1	12 LBS/HR

NOTE:
1. THE MANUFACTURER INDICATED IS BASIS OF DESIGN.
2. PROVIDE WITH 120 VOLT, SINGLE PHASE, POWER SUPPLY.
3. INTERLOCK WITH POOL RECIRCULATION PUMP.

FILL SCHEDULE

ID	FRESH WATER SUPPLY GPM (MIN.)	FILL FUNNEL SIZE	REDUCER SIZE	SPLASH COLLAR SIZE	FILL LINE SIZE TO POOL	DESIGN FILL TIME (HOURS)
L1	118	10"	10" X 4"	8"	4"	24

NOTE:
REFER: 7/AQ5.1

CONTRACTOR SUPPLIED POOL CHEMICALS

DESCRIPTION	AMOUNT
CALCIUM HYPOCHLORITE	200 LBS
MURIATIC ACID	15 GAL PER POOL
SODIUM BICARBONATE	200 LBS
CALCIUM CARBONATE	100 LBS

PIPE SCHEDULE

ID	DESCRIPTION
P1	6" FROM SKIMMERS TO PP1
P2	6" FROM M1 TO PP1
P3	6" FROM SKIMMERS TO PP2
P4	6" FROM M1 TO PP2
P5	8" FROM PP1 & PP2 TO FILTERS
P6	4" FROM P5 TO BACKWASH CATCH BASIN
P7	8" FROM FILTERS TO INLETS
P8	4" FROM FILTERS TO BACKWASH CATCH BASIN
P9	4" FROM P7 TO POOL HEATER
P10	4" FROM POOL HEATER TO P7
P11	6" FROM FILL FUNNEL TO POOL WALL

GENERAL POOL MECHANICAL ROOM NOTES

1. EQUIPMENT ROOM FLOOR AND PUMP PIT FLOOR MUST SLOPE 1/4" TO 1/2" PER FOOT TO FLOOR DRAINS OR SUMP PIT. REFER TO PLUMBING.
2. PROVIDE HOSE BIBBS FOR HOUSE CLEANING PURPOSES. REFER BUILDING MECHANICAL DRAWINGS.
3. THE INSIDE SURFACES OF THE BACKWASH CATCH BASIN MUST BE WATERPROOFED. REFER TO SPECIFICATION.
4. VENTILATION OF POOL MECHANICAL ROOM AND CHEMICAL STORAGE AREAS PER LOCAL, STATE AND INTERNATIONAL MECHANICAL CODE MINIMUM REQUIREMENTS. REFER TO MECHANICAL.
5. THE FOLLOWING INFORMATION MUST BE LAMINATED AND POSTED IN THE POOL MECHANICAL ROOM: BACKWASH PROCEDURE, POOL FILLING AND DRAINING, VALVE REFERENCE CHART, POOL MECHANICAL ROOM PLAN, POOL PIPING SCHEMATICS AND POOL SYSTEMS SCHEMATICS.
6. REFER TO MECHANICAL FOR HVAC SYSTEMS DESIGN.
7. REFER TO ARCHITECTURAL DRAWINGS FOR LADDER RUNGS, SAFETY CHAIN, & REMOVABLE RAILING AT PUMP PIT.

PIPING

1. MINIMUM 7'-0" CLEARANCE BENEATH ALL OVERHEAD PIPING.
2. PROVIDE AND SUPPORT OVERHEAD AND VERTICAL PIPING PER SPECIFICATION REQUIREMENTS.
3. LABEL AND IDENTIFY ALL PIPING IN COMPLIANCE WITH THE SPECIFICATIONS.
4. ALL FLOW METERS MUST BE SIZED TO MATCH THE PIPE ON WHICH IT IS INSTALLED. PROVIDE PRESSURE GAUGES ON INFLUENT AND EFFLUENT SIDE OF EACH FILTRATION SYSTEM AND A FULL LINE SIZE FLOW METER ON FILTER RETURN.
5. HYDROSTATICALLY TEST ALL PIPING AT 50 PSI FOR TWO HOURS AND MAINTAIN A PRESSURE OF 20 PSI IN ALL PIPING THROUGHOUT CONSTRUCTION. SECURE ALL FIXTURES PER SPECIFICATION REQUIREMENTS BEFORE HYDROSTATIC TEST.
6. REFER TO DETAILS 4 - 9 ON DRAWING AQ5.2 FOR INSTALLATION OF PIPE SUPPORTS.
7. ALL PIPING ROUTED THROUGH THE CHEMICAL ROOM WALLS INTO THE MAIN MECHANICAL ROOM SHOULD BE PROPERLY SEALED AND FIREPROOFED PER THE FIRE RATING OF THE ROOM. REFER TO ARCHITECT.

CHEMICAL TREATMENT

1. CHEMICAL FEED REQUIREMENTS - REFER TO THE POOL SYSTEMS SCHEMATIC(S) ON AQ6.0.
2. INTERLOCK POOL RECIRCULATION PUMP(S) WITH ITS CORRESPONDING WATER CHEMISTRY CONTROLLER, CHEMICAL FEED PUMP(S), AND HEATER(S).
3. PROVIDE SIGNAGE ON CHEMICAL ROOM DOORS IN COMPLIANCE WITH THE STATE FIRE CODE. REFER: 8/AQ5.1
4. SECURE CHEMICAL METERING PUMP FEED LINES TO WALL AND/OR OVERHEAD WITH CLIPS OR DEVICES THAT DO NOT CRIMP, DISTORT OR ALLOW HIGH AND LOW AREAS IN TUBING RUNS. PROVIDE CHECK VALVE AND SHUT-OFF VALVE BEFORE LINES ENTER POOL RETURN PIPING.
5. WATER CHEMISTRY CONTROLLERS MUST CONTROL THE SANITIZING SYSTEM AND PH CONTROL SYSTEM AND SHUT THEM DOWN UPON LOSS OF SAMPLE STREAM FLOW.
6. SAMPLE FEED PIPING TO/FROM THE RECIRCULATION SYSTEM TO THE WATER CHEMISTRY CONTROLLER MUST BE PIPED PER THE SYSTEMS SCHEMATIC. BYPASS PIPING MUST BE SADDLED OR TEED. NO TAPPING OR DRILLING INTO THE PIPING WILL BE ALLOWED.
7. VERIFY REMOTE ACCESS CAPABILITY TO ALL CHEMICAL CONTROLLERS. REFER TO ELECTRICAL.
8. INSTALL SANITIZER INJECTION POINT DOWNSTREAM OF PH BUFFER INJECTION POINT ON FILTERED WATER RETURN PIPE. CHEMICAL INJECTION POINTS MUST BE LOCATED DOWNSTREAM OF ALL OTHER EQUIPMENT/SYSTEMS IN THE POOL MECHANICAL ROOM AT A MAXIMUM HEIGHT OF 7'-0" ABOVE FINISHED FLOOR. REFER: 6/AQ5.1

ELECTRICAL

1. GFCI'S PROVIDED AT OUTLETS. REFER TO ELECTRICAL.
2. POOL EQUIPMENT ROOM AND CHEMICAL STORAGE AREAS MUST BE PROVIDED WITH ARTIFICIAL LIGHTING SUFFICIENT TO ILLUMINATE ALL EQUIPMENT AND SUPPLIES. REFER TO ELECTRICAL.
3. CONDUIT MUST BE ROUTED OVERHEAD OR BELOW GRADE.

Wichita-Sedgwick County Metropolitan Area Building and Construction Department

REVIEWED FOR CODE COMPLIANCE

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DATE: 04/07/22 BY: Debra Shauers

EQUIPMENT SCHEDULE

ID	ITEM
1	CHEMICAL CONTROLLER REFER: 2/AQ5.1
2	WATER LEVEL CONTROLLER REFER: 15/AQ5.2
3	2'-8"x4'-0"x5'-0" DEEP BACKWASH CATCH BASIN
4	LADDER RUNGS
5	SAFETY CHAIN
6	REMOVABLE RAILING
7	LINK SEAL REFER: 3/AQ5.2
8	HARD PIPE TO DRAIN
9	FLOW METER SENSOR REFER: 2/AQ5.2
10	IMPACT FLOW METER REFER: 1/AQ5.2
11	HVAC HEATER TEES REFER: 10/AQ5.2
12	VARIABLE FREQUENCY DRIVE

FILTER SCHEDULE

ID	MANUFACTURER	FILTER MODEL	QTY.	FILTRATION TYPE	MAXIMUM FILTRATION RATE (GPM/SQ. FT)	REQUIRED FILTRATION AREA (SQ. FT.)	DESIGN FILTRATION RATE (GPM/SQ.FT.)	DESIGN FILTRATION AREA (SQ. FT.)	FILTER BACKWASH RATE (GPM/SQ. FT.)	BACKWASH FLOW RATE PER FILTER (GPM)
F1	NEPTUNE - BENSON	42 - 60	4	HRS	12.5	76	11.64	81.6	15	306

NOTE:
1. BACKWASH METHOD MUST BE MANUAL.
2. ALL FILTER SUPPORTS MUST BE SEISMICALLY RATED FOR THE SEISMIC ZONE IN WHICH IT IS INSTALLED IN ACCORDANCE WITH LOCAL AND/OR STATE REQUIREMENTS.
3. FILTER MANUFACTURER MUST CERTIFY FILTER MEDIA.
4. VALVES MUST BE PROVIDED TO BACKWASH EACH FILTER VESSEL INDEPENDENTLY.
5. THE BACKWASH PIPING MUST TERMINATE NO CLOSER THAN 6" ABOVE THE FLOOD RIM OF THE BACKWASH CATCH BASIN OR TWICE THE PIPE DIAMETER, WHICHEVER IS GREATER.
6. FILTER TANK ASSEMBLIES MUST BEAR THE NATIONAL SANITATION FOUNDATION SEAL OF APPROVAL FOR A MAXIMUM FLOW RATE 20 GPM PER SQUARE FOOT OF FILTER MEDIA.
7. THE BACKWASH THROTTLING VALVE(S) HANDLE MUST BE REMOVED AND TURNED OVER TO THE OWNER ONCE THE BACKWASH FLOW RATE(S) HAVE BEEN TESTED, ADJUSTED AND BALANCED.
8. PROVIDE 1" DIAMETER, SCHEDULE 80 PIPE FROM THE AUTOMATIC AIR VENT ON EACH OF THE FILTER VESSEL TO THE NEAREST FLOOR DRAIN OR BACKWASH CATCH BASIN. THE VENT PIPE MUST BE SLOPED TO THE DRAIN.
9. VESSEL MUST BE BACKWASHED AT NO LESS THAN 15.0 GPM/SF.

HEATER SCHEDULE

ID	MAKE	MODEL	BOILER EFF (%)	INPUT (MBH)	AIR INLET SIZE (INCHES)	PIPE SIZE (IN/OUT)	VENT SIZE (INCH)	ELECTRICAL DATA (2 REQUIRED CONNECTIONS PER HEATER)			
								V	PH	HZ	AMP
H1	LOCHINVAR	CPN752	85	750	8	2	8	120 120	1 1	60 60	5.8 5.8

NOTE:
1. THE BASIS OF DESIGN MANUFACTURER IS LOCHINVAR. ALTERNATE MANUFACTURER: RAYPACK OR APPROVED EQUAL.
2. HEATERS MUST BE INSTALLED ON HOUSEKEEPING PADS.
3. REFER: 2/AQ5.3

PUMP SCHEDULE

ID	DESCRIPTION	MANUFACTURER	MODEL	SIZE	GPM	TDH	HP	NPSHR	HAIR/LINT	
									MAKE	SIZE
PP1	POOL RECIRCULATION PUMP 1 REFER: 1/AQ5.1	PENTAIR	EQK1000	6 X 4	475	60	10	ATM	INTEGRAL	6 X 6
PP2	POOL RECIRCULATION PUMP 2 REFER: 1/AQ5.1	PENTAIR	EQK1000	6 X 4	475	60	10	ATM	INTEGRAL	6 X 6

NOTE:
1. THE MANUFACTURER INDICATED IS BASIS OF DESIGN.
2. POOL PUMPS AND STRAINERS MUST BE INSTALLED ON HOUSEKEEPING PADS.
3. PROVIDE INFLUENT AND EFFLUENT GAUGES FOR EACH PUMP. PRESSURE GAUGES HAVE A RANGE OF 0-60 PSI. COMPOUND GAUGES HAVE A RANGE OF 0-30 HG / 0-60 PSI.
4. PROVIDE WITH 460 VOLT, 3 PHASE, 60HZ, 3450 RPM MOTOR.
5. PROVIDE WITH CHECK VALVE.
6. PROVIDE VARIABLE FREQUENCY DRIVE.
7. PROVIDE EMERGENCY STOP.

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REVISION:

DATE: 02–07–2022

JOB: 21–3155

SHEET: AQ5.0

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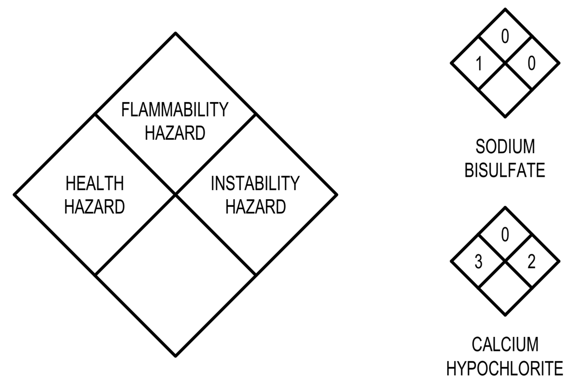
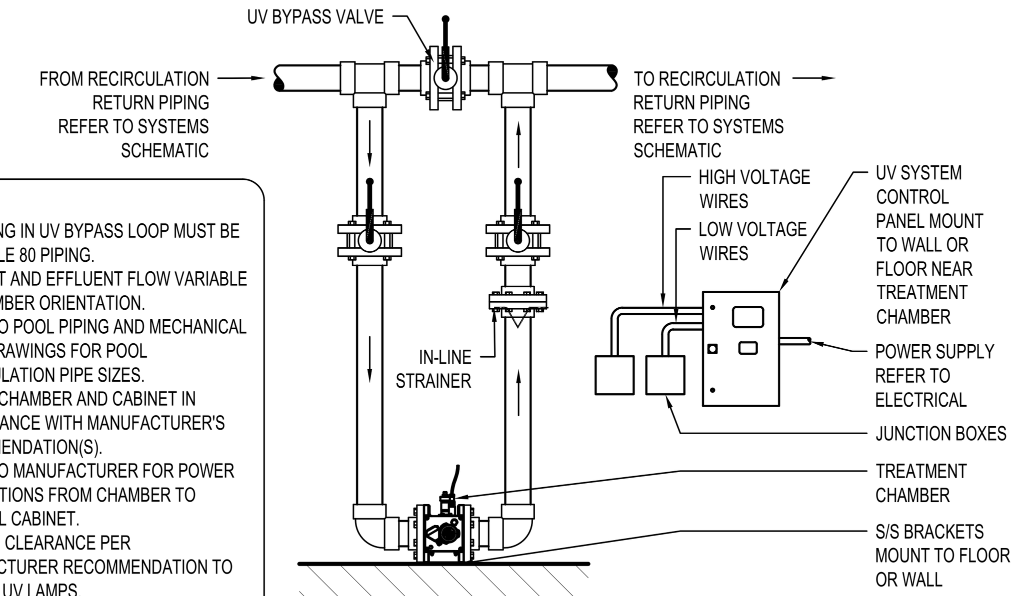


RATING EXPLANATION GUIDE

RATING	HEALTH HAZARD	FLAMMABILITY HAZARD	INSTABILITY HAZARD
4	CAN BE LETHAL	BELOW 73 DEGREES F	MAY EXPLODE AT NORMAL TEMPERATURES & PRESSURES
3	CAN CAUSE SERIOUS OR PERMANENT INJURY	ABOVE 73 DEGREES, BELOW 100 DEGREES F	MAY EXPLODE AT HIGH TEMPERATURE OR SHOCK
2	CAN CAUSE TEMPORARY INCAPACITATION OR RESIDUAL INJURY	ABOVE 100 DEGREES F, BELOW 200 DEGREES F	VIOLENT CHEMICAL CHANGE AT HIGH TEMPERATURES OR PRESSURES
1	CAN CAUSE SIGNIFICANT IRRITATION	ABOVE 200 DEGREES F	NORMALLY STABLE. HIGH TEMPERATURES MAKE UNSTABLE
0	NO HAZARD	WILL NOT BURN	STABLE

CONFIRM SIGNAGE WITH LOCAL FIRE MARSHAL AND/OR BUILDING CODES PRIOR TO INSTALLATION.

8 / AQ5.1 **HAZARD SIGNAGE**
NTS

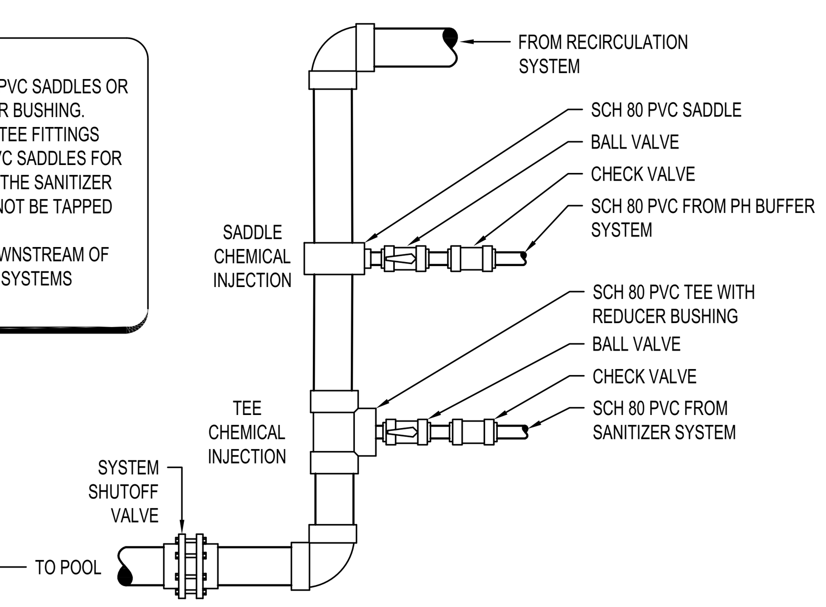


NOTE:
1. ALL PIPING IN UV BYPASS LOOP MUST BE SCHEDULE 80 PIPING.
2. INFLUENT AND EFFLUENT FLOW VARIABLE ON CHAMBER ORIENTATION.
3. REFER TO POOL PIPING AND MECHANICAL ROOM DRAWINGS FOR POOL RECIRCULATION PIPE SIZES.
4. INSTALL CHAMBER AND CABINET IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION(S).
5. REFER TO MANUFACTURER FOR POWER CONNECTIONS FROM CHAMBER TO CONTROL CABINET.
6. PROVIDE CLEARANCE PER MANUFACTURER RECOMMENDATION TO REMOVE UV LAMPS.
7. REFER TO DETAIL 10/AQ5.2 FOR UV BYPASS CONNECTION.

5 / AQ5.1 **UV TREATMENT SYSTEM**
1/2" = 1'-0"

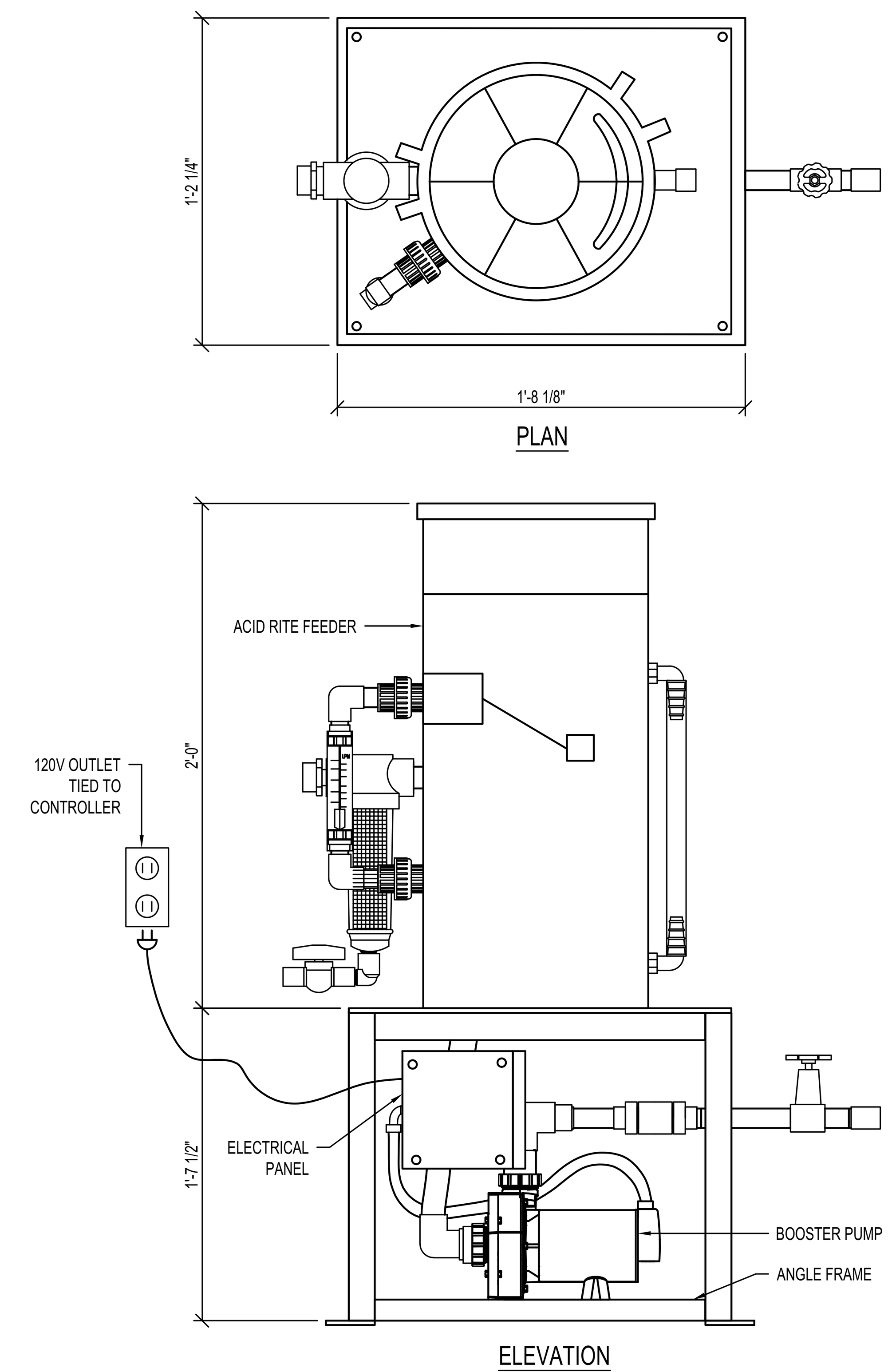
NOTE:
1. CHEMICAL INJECTIONS MUST BE SCH 80 PVC SADDLES OR SCH 80 PVC TEE FITTINGS WITH REDUCER BUSHING.
2. POOL CONTRACTOR CAN ELECT TO USE TEE FITTINGS WITH REDUCER BUSHINGS OR SCH 80 PVC SADDLES FOR BOTH THE PH CHEMICAL INJECTION AND THE SANITIZER INJECTION. CHEMICAL INJECTION MUST NOT BE TAPPED INTO RECIRCULATION PIPING.
3. INSTALL SANITIZER INJECTION POINT DOWNSTREAM OF PH BUFFER INJECTION POINT. REFER TO SYSTEMS SCHEMATIC.

DO NOT DRILL AND TAP POOL PIPING

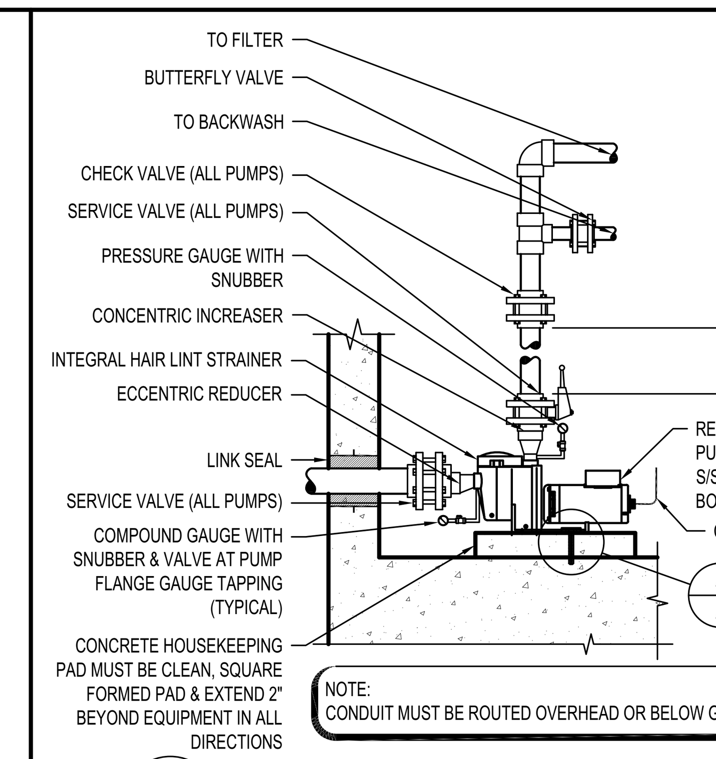


CHEMICAL INJECTION INSTALLATION OPTIONS

6 / AQ5.1 **CHEMICAL INJECTION**
1/2" = 1'-0"

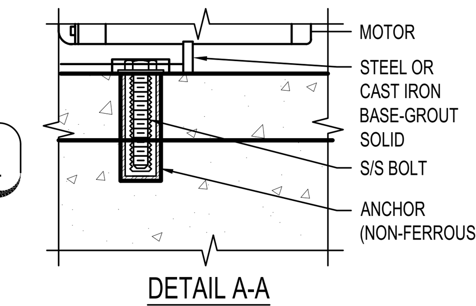


3 / AQ5.1 **ACID SYSTEM**
1" = 1'-0"

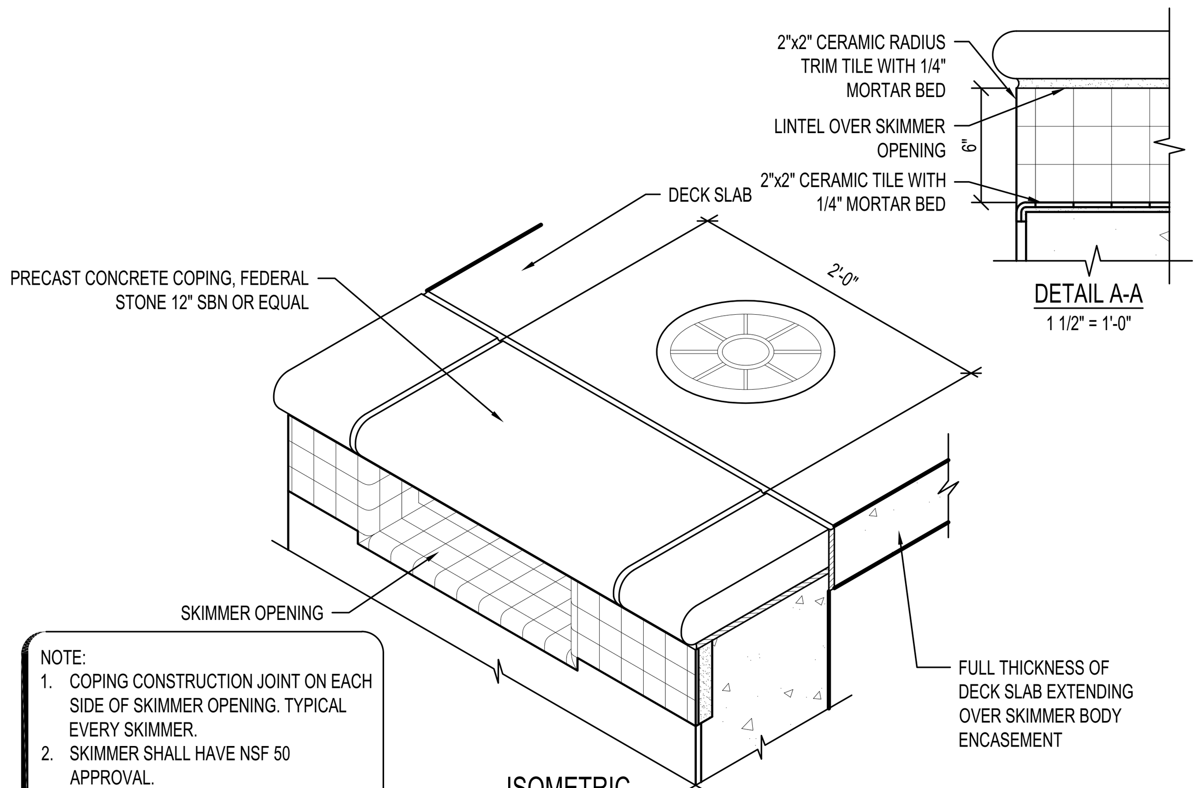


NOTE:
CONDUIT MUST BE ROUTED OVERHEAD OR BELOW GRADE.

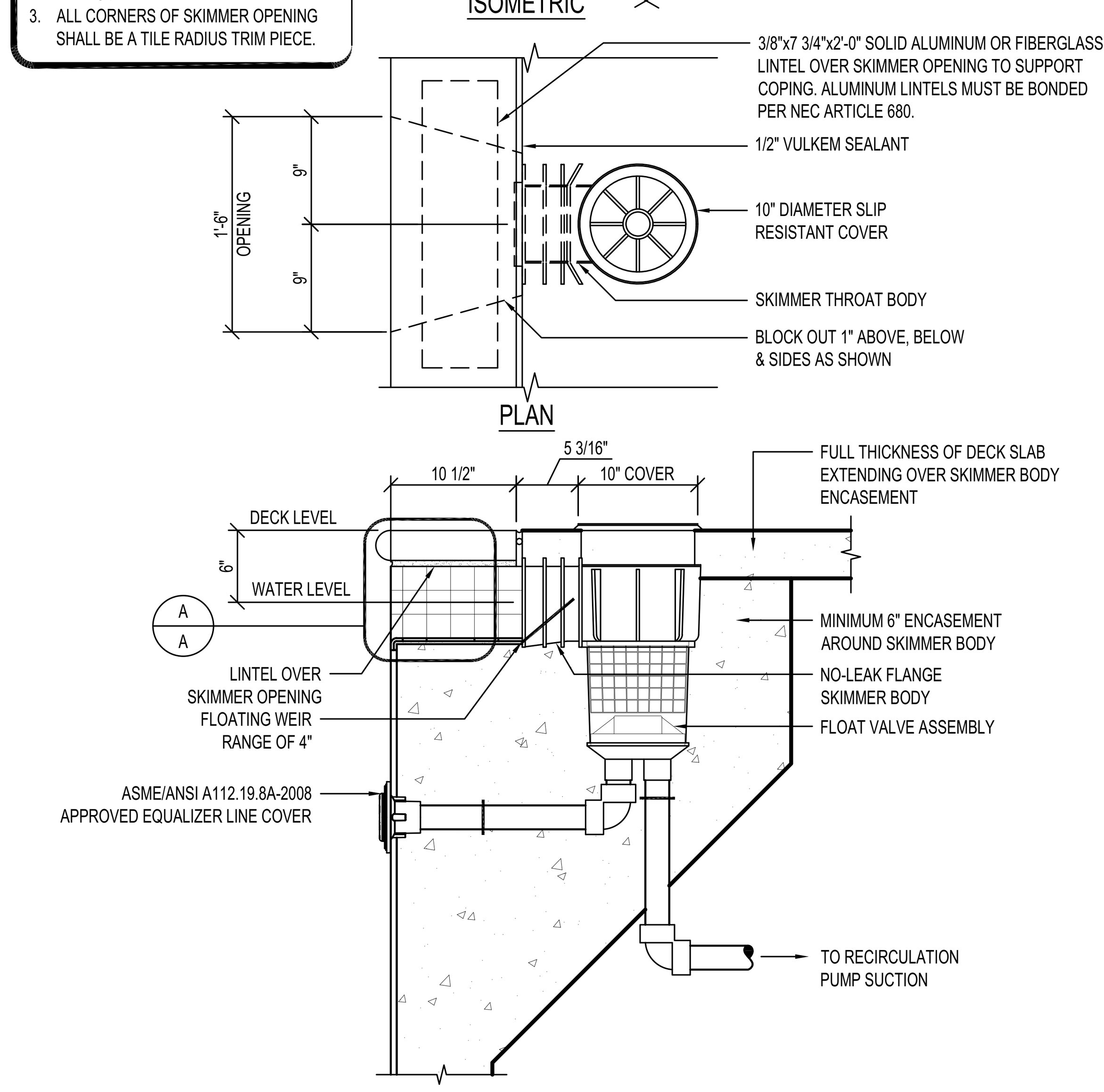
1 / AQ5.1 **TYPICAL PUMP DETAIL**
1/2" = 1'-0"



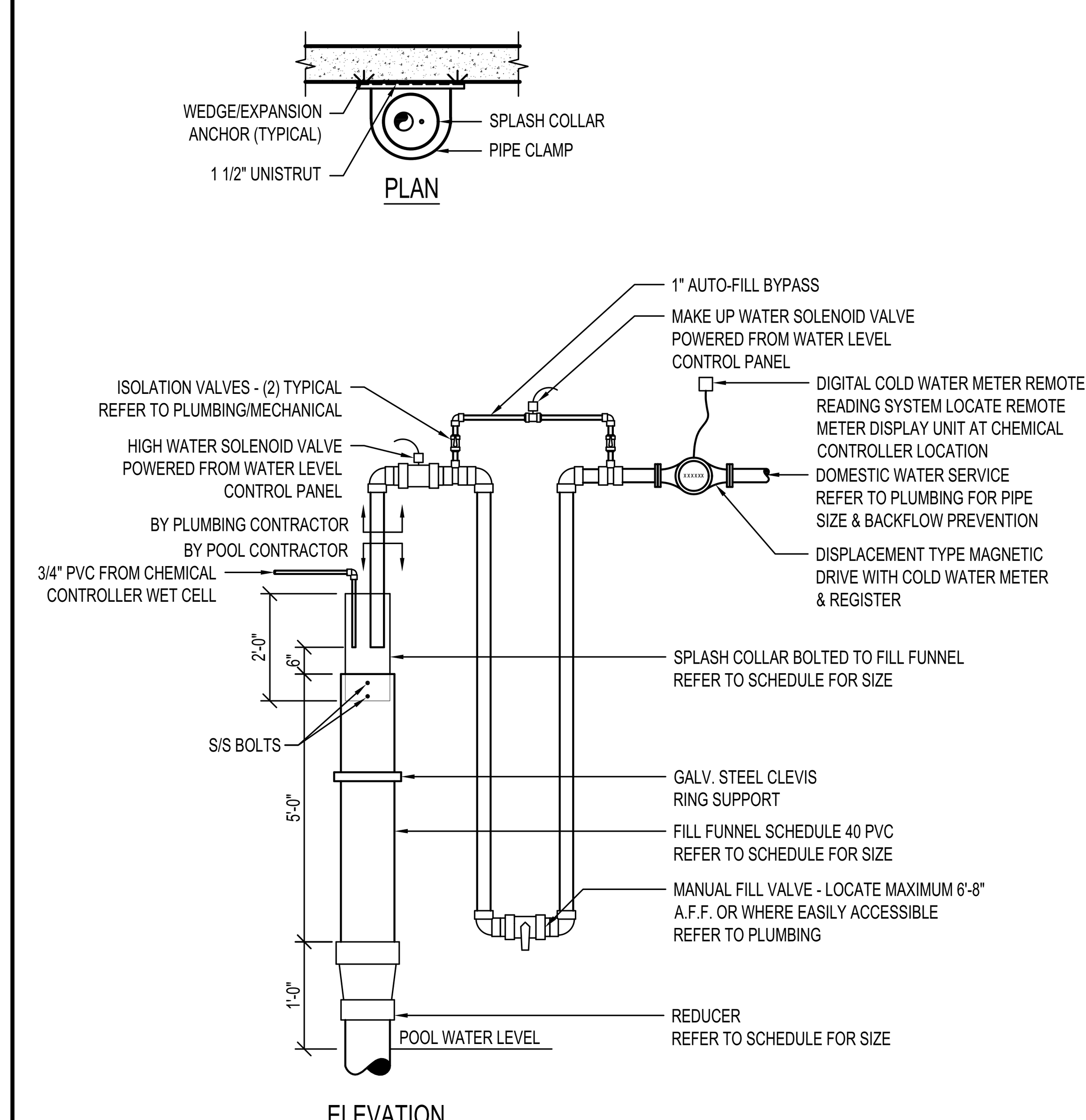
DETAIL A-A
1 1/2" = 1'-0"



NOTE:
1. COPING CONSTRUCTION JOINT ON EACH SIDE OF SKIMMER OPENING. TYPICAL EVERY SKIMMER.
2. SKIMMER SHALL HAVE NSF 50 APPROVAL.
3. ALL CORNERS OF SKIMMER OPENING SHALL BE A TILE RADIUS TRIM PIECE.

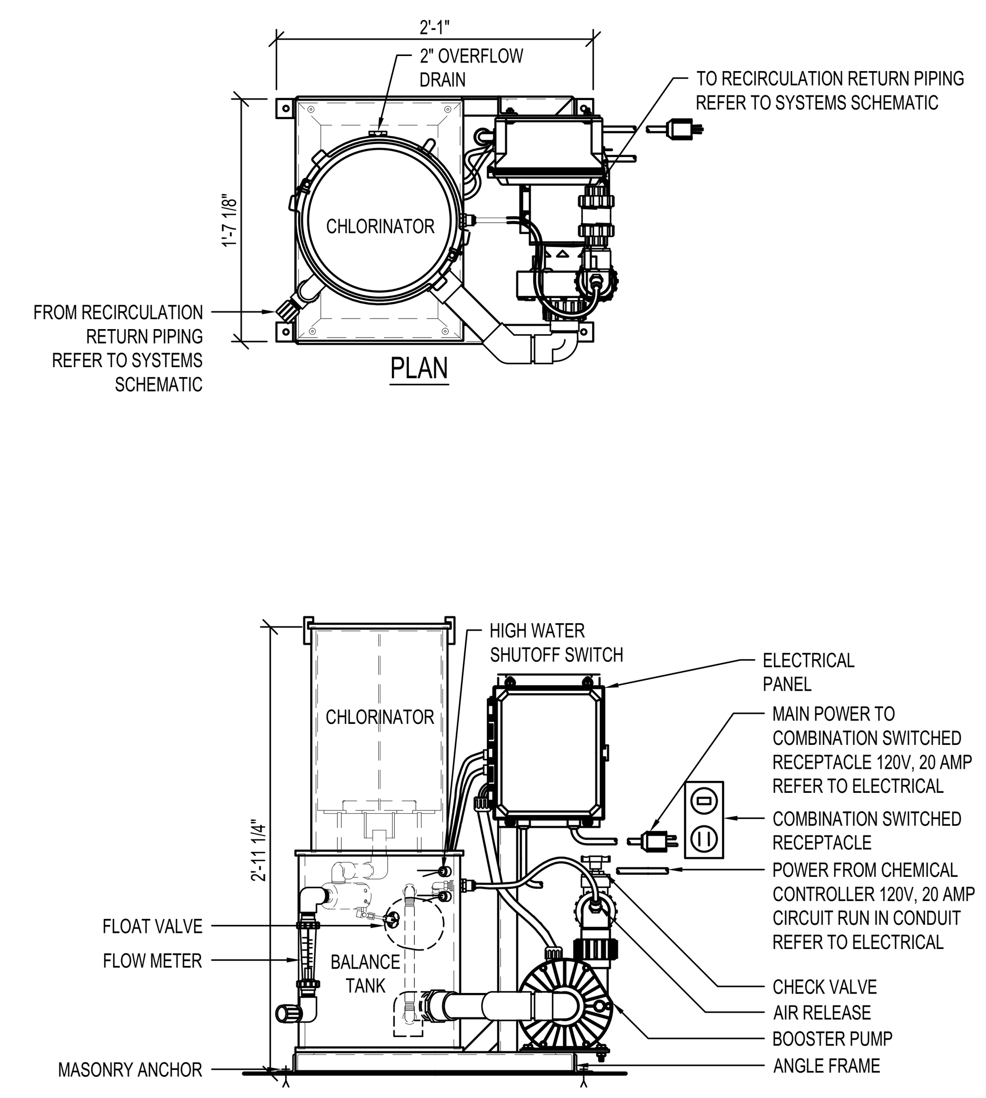


9 / AQ5.1 **SKIMMER DETAIL**
1" = 1'-0"

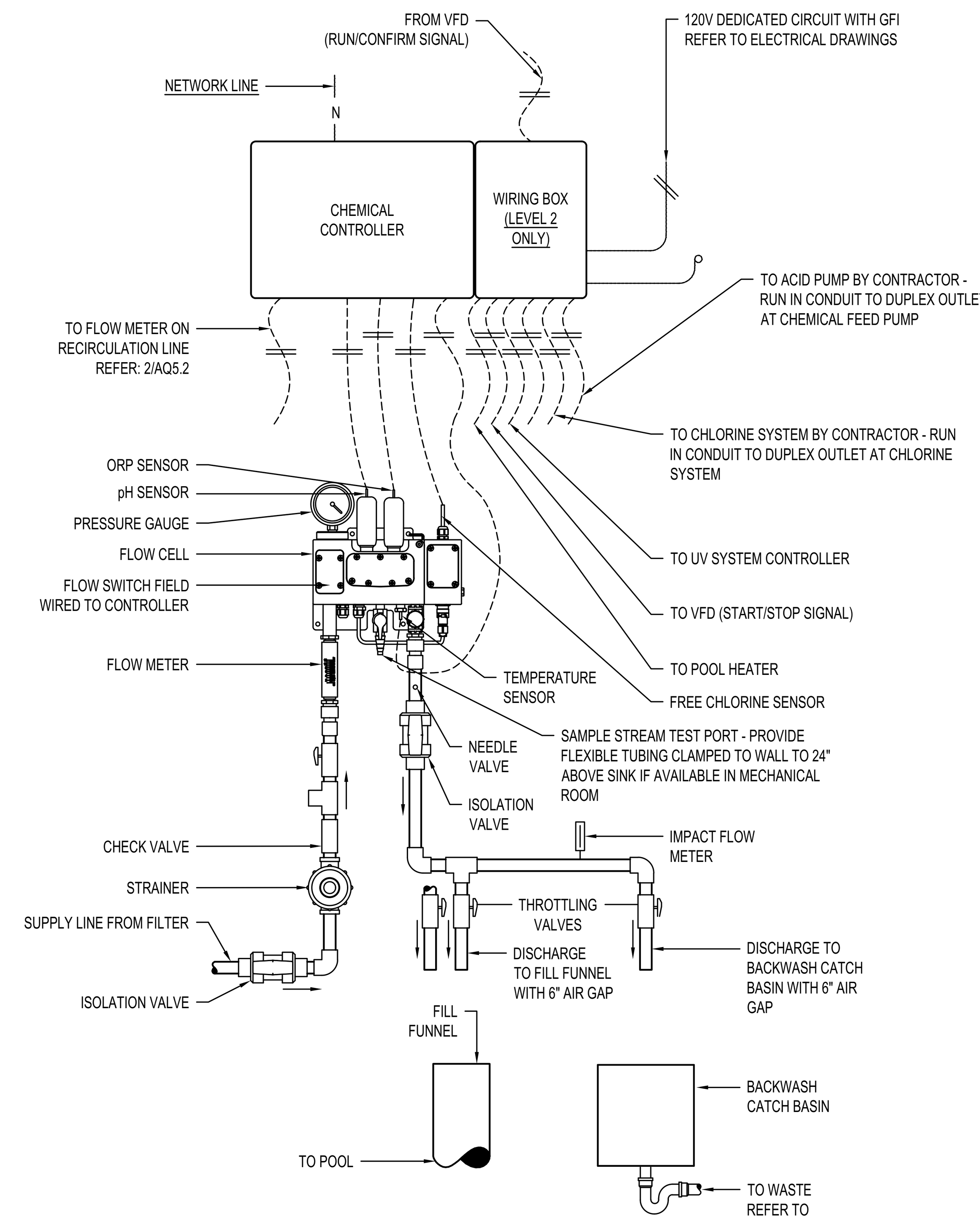


NOTE:
PLUMBING CONTRACTOR MUST PROVIDE DOMESTIC WATER SERVICE PIPING TO AIR GAP, WATER METER, AND BACKFLOW PREVENTER (IF REQUIRED). PLUMBING CONTRACTOR MUST INSTALL SOLENOID VALVES FURNISHED BY THE POOL CONTRACTOR. POOL CONTRACTOR TO PROVIDE FILL FUNNEL AND PIPING TO POOL WALL. REFER: 7/AQ5.3

7 / AQ5.1 **FILL FUNNEL**
3/8" = 1'-0"



4 / AQ5.1 **CHLORINATION SYSTEM**
1" = 1'-0"



NOTES:
1. INTERLOCK WITH RECIRCULATION PUMP OCCURS INSIDE THE WIRING BOX ON BECS CONTROLLERS. CONTRACTOR TO PROVIDE FIELD WIRE INTERLOCK EXTERNAL TO THE CONTROLLER IF A BECS CONTROLLER IS NOT USED.
2. DRAWING IS FOR REFERENCE ONLY. REFER TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. PIPE RUN FROM RECIRCULATION PIPE TO SAMPLE CELL TO BE 50 FEET OR LESS.
4. SAMPLE FEED PIPING TO/FROM THE RECIRCULATION SYSTEM TO THE WATER CHEMISTRY CONTROLLER MUST BE SADDLED OR TEED. NO TAPPING OR DRILLING INTO THE PIPING WILL BE ALLOWED.

2 / AQ5.1 **CHEMICAL CONTROLLER**
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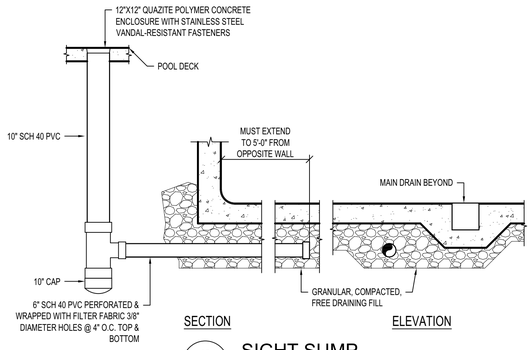
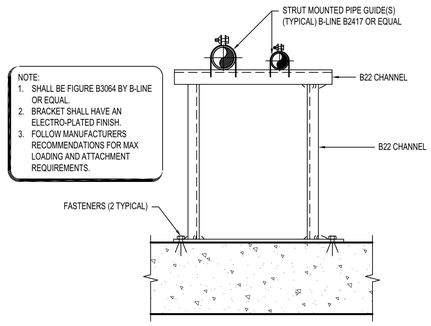


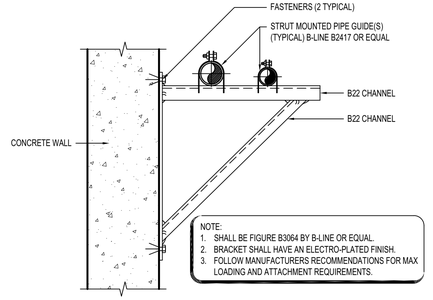
13 AQ5.2 SIGHT SUMP

3/8" = 1'-0"



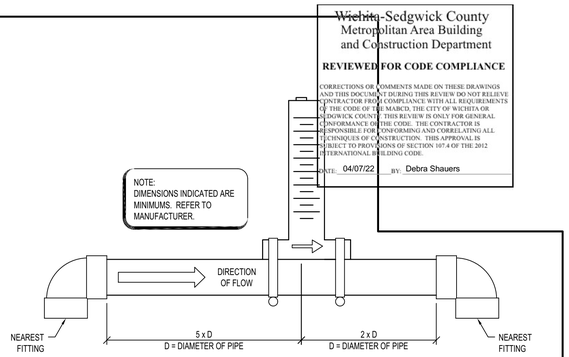
9 AQ5.2 FLOOR MOUNTED ADJUSTABLE STRUT BRACKET

3" = 1'-0"



5 AQ5.2 ADJUSTABLE STRUT BRACKET

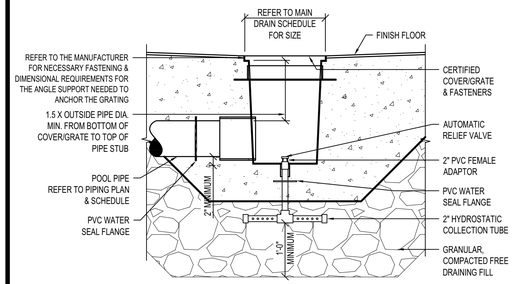
3" = 1'-0"



1 AQ5.2 IMPACT FLOW METER

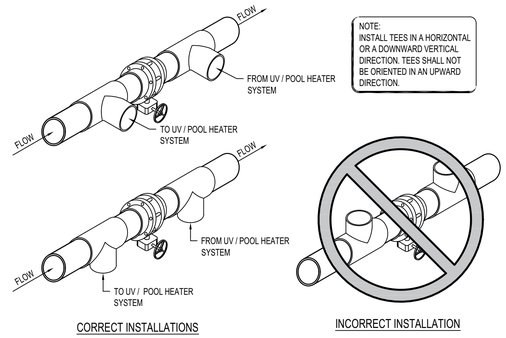
3/4" = 1'-0"

NOTE:
1. ALL MAIN DRAINS MUST BE CONSTRUCTED TO COMPLY WITH THE VIRGINIA GRAEME BAKER ACT AND ASME ANSI/APSP-16-2017.
2. MAIN DRAINS MAY USE MULTIPLE VGB COMPLIANT GRATES SECURELY FASTENED PER MANUFACTURER RECOMMENDATIONS.



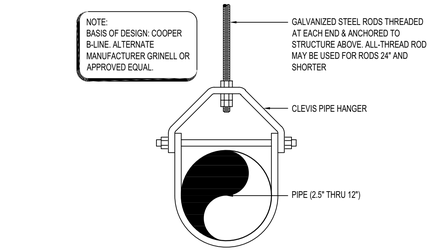
14 AQ5.2 MAIN DRAIN

3/4" = 1'-0"



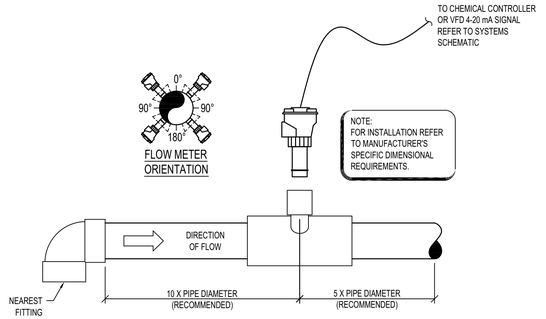
10 AQ5.2 PIPING BYPASS

1/2" = 1'-0"



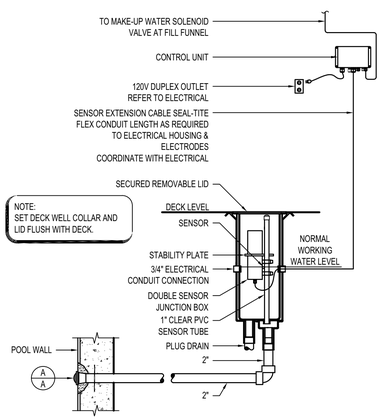
6 AQ5.2 CLEVIS PIPE HANGER

1 1/2" = 1'-0"



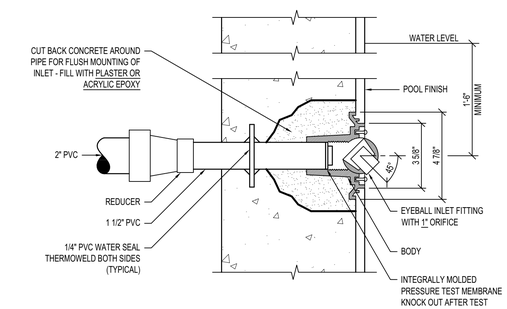
2 AQ5.2 FLOW METER SENSOR

3/4" = 1'-0"



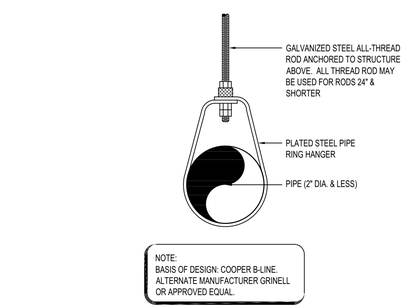
15 AQ5.2 WATER LEVEL CONTROLLER

3/4" = 1'-0"



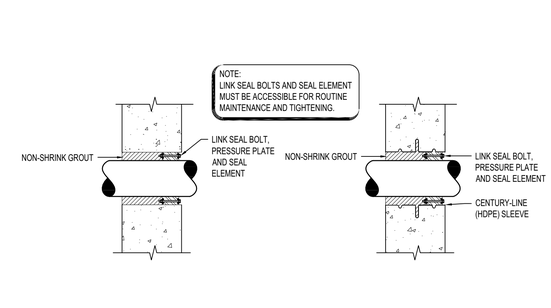
11 AQ5.2 WALL INLET

3" = 1'-0"



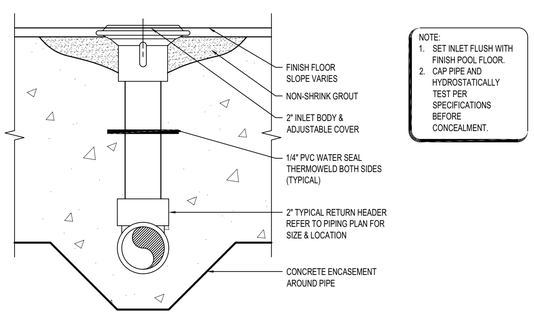
7 AQ5.2 SWIVEL RING PIPE HANGER

1 1/2" = 1'-0"



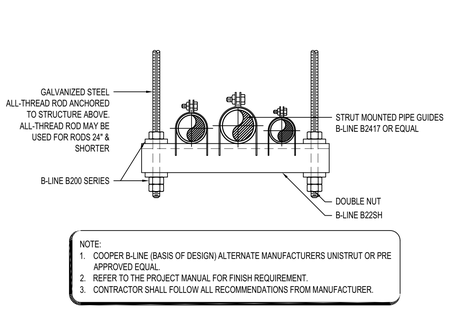
3 AQ5.2 LINK SEAL

3/4" = 1'-0"



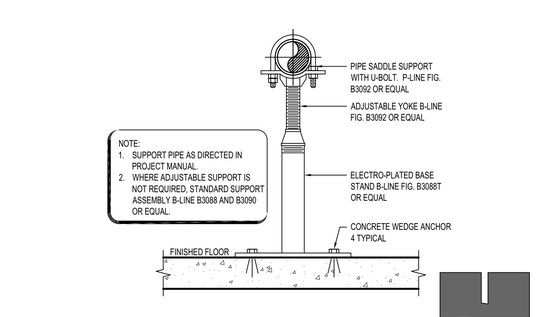
12 AQ5.2 FLOOR INLET

3" = 1'-0"



8 AQ5.2 TRAPEZE HANGER

3" = 1'-0"



4 AQ5.2 FLOOR MOUNTED PIPE SUPPORT

3" = 1'-0"

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REVISION:

DATE: 02-07-2022
JOB: 21-3155
SHEET:

AQ5.2

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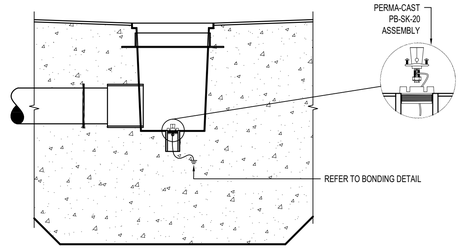
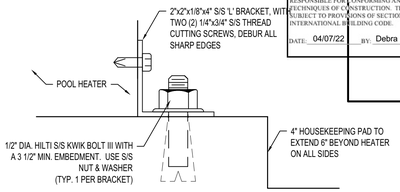


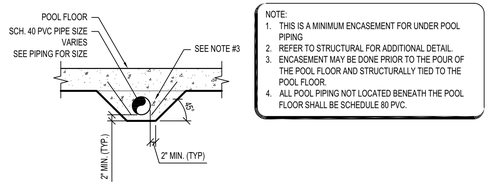
4 AQ5.3 MAIN DRAIN BONDING DETAIL

3/4" = 1'-0"



1 AQ5.3 HEATER TO FLOOR ANCHOR

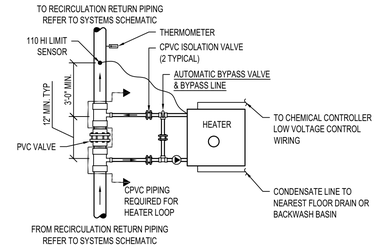
6" = 1'-0"



NOTE:
1. THIS IS A MINIMUM ENCASEMENT FOR UNDER POOL PIPING
2. REFER TO STRUCTURAL FOR ADDITIONAL DETAIL.
3. ENCASEMENT MAY BE DONE PRIOR TO THE POUR OF THE POOL FLOOR AND STRUCTURALLY TIED TO THE POOL FLOOR.
4. ALL POOL PIPING NOT LOCATED BENEATH THE POOL FLOOR SHALL BE SCHEDULE 80 PVC.

5 AQ5.3 CONCRETE ENCASED PIPE

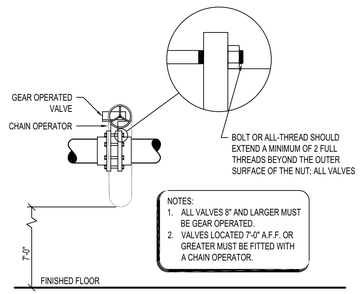
1/2" = 1'-0"



NOTE:
1. HEATER BRANCH LINES MUST BE EQUAL LENGTH AND HAVE EQUAL FITTINGS.
2. PROVIDE ALL NECESSARY SUPPORTS AND CONNECTIONS DEEMED NECESSARY FOR COMPLETE INSTALLATION OF HEATER AND PIPING.
3. VERIFY ALL DIMENSIONS AND LOCATIONS ON SITE PRIOR TO INSTALLATION.
4. POOL HEATER MUST BE WITHIN 15'-0" OF POOL RECIRCULATION LINE.
5. HI LIMIT SENSOR TO BE INSTALLED A MINIMUM OF 3'-0" DOWNSTREAM FROM HEATER CONNECTION.
6. INSTALL PER MANUFACTURER RECOMMENDATIONS.
7. INSTALL FLOW METER IN STRAIGHT PIPE WITH TEN PIPE DIAMETERS PRIOR AND FIVE PIPE DIAMETERS AFTER FLOW METER.
8. HEATER AIR INTAKE, VENTING, AND GAS LINE MUST BE BY MECHANICAL. ELECTRICAL CONNECTIONS MUST BE BY ELECTRICAL. REFER TO HEATER SCHEDULE FOR MINIMUM REQUIREMENTS.
9. REFER TO DETAIL 10/AQ5.2 FOR HEATER BYPASS CONNECTION.

2 AQ5.3 HEATER PIPING

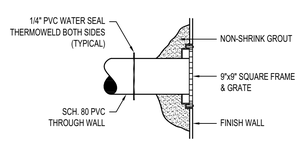
NTS



NOTES:
1. ALL VALVES 8" AND LARGER MUST BE GEAR OPERATED.
2. VALVES LOCATED 7'-0" A.F.F. OR GREATER MUST BE FITTED WITH A CHAIN OPERATOR.

6 AQ5.3 VALVE

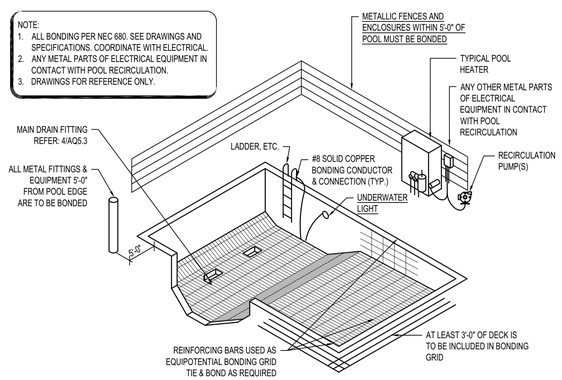
1/2" = 1'-0"



7 AQ5.3 FILL LINE

1" = 1'-0"

NOTE:
1. ALL BONDING PER NEC 680. SEE DRAWINGS AND SPECIFICATIONS. COORDINATE WITH ELECTRICAL.
2. ANY METAL PARTS OF ELECTRICAL EQUIPMENT IN CONTACT WITH POOL RECIRCULATION.
3. DRAWINGS FOR REFERENCE ONLY.



3 AQ5.3 TYPICAL POOL BONDING DETAIL

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DATE: 04/07/22 BY: Debra Shauers

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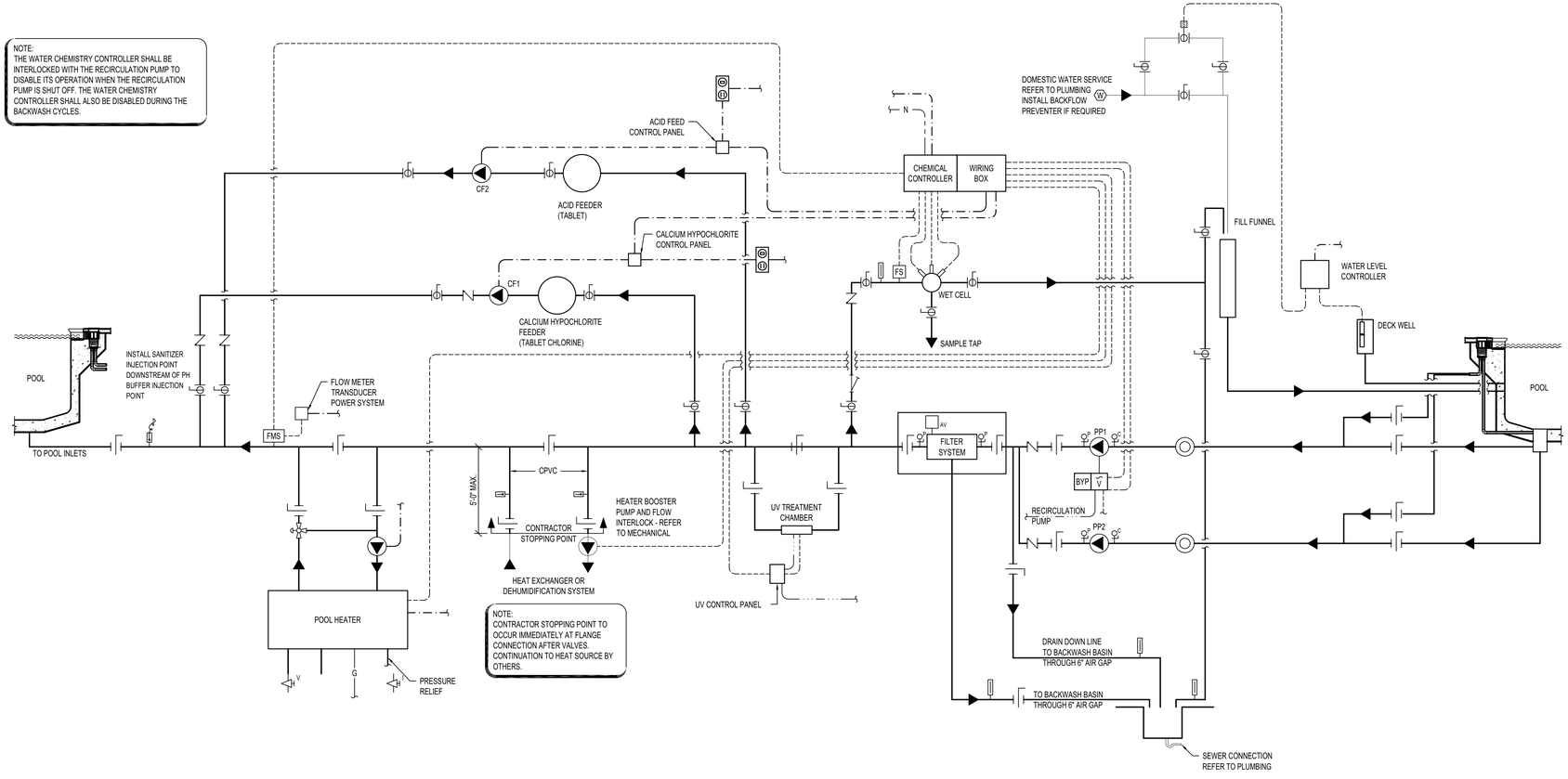
NOTE:
THE WATER CHEMISTRY CONTROLLER SHALL BE INTERLOCKED WITH THE RECIRCULATION PUMP TO DISABLE ITS OPERATION WHEN THE RECIRCULATION PUMP IS SHUT OFF. THE WATER CHEMISTRY CONTROLLER SHALL ALSO BE DISABLED DURING THE BACKWASH CYCLES.



1 AQ6.0 POOL SYSTEMS SCHEMATIC
1/4" = 1'-0"

SCHEMATIC LEGEND

LEGEND	ITEM
	FLOW DIRECTION
	BUTTERFLY VALVE
	BALL VALVE
	MODULATING FLOAT VALVE
	SOLENOID VALVE
	CHECK VALVE
	THREE WAY VALVE
	PUMP
	HAIR AND LINT STRAINER
	"Y" STRAINER
FMS	FLOW METER SENSOR
FS	FLOW SWITCH
	IMPACT FLOW METER
	VENTURI FLOW METER
W	WATER METER
AV	AUTOMATIC AIR VENT
V	AIR VENT
I	AIR INLET
P	PRESSURE GAUGE AND COCK
C	COMPOUND GAUGE AND COCK
	DIGITAL TEMP SENSOR
	THERMOMETER
A	PNEUMATIC ACTUATOR
	FLOW CONTROL VALVE
	COMBINATION SWITCH/RECEPTACLE
APSO	AUTOMATIC PUMP SHUT-OFF DEVICE
V	VARIABLE FREQUENCY DRIVE
R	REMOTE START/STOP
E	EMERGENCY STOP
BYP	VARIABLE FREQUENCY DRIVE BYPASS
CMS	CONTACT MOTOR SELECTOR
	15 MINUTE TIMER SWITCH
	LOW VOLTAGE CONTROL
	WATER LINE
	1 PHASE POWER
	3 PHASE POWER
	VENT LINE
	CO_2 LINE
N	NETWORK LINE BY ELECTRICAL
G	GAS LINE

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