GENERAL STRUCTURAL NOTES:

1. MAINTAIN REQUIRED FLOOR / WALL CONCRETE THICKNESS AROUND DRAINS, LIGHT NICHES, AND OTHER EMBEDS.
2. ALL CONCRETE WORK SHALL COMPLY WITH ACI 318-19 AND ACI 301-16. IN ADDITION ALL SHOTCRETE WORK SHALL COMPLY WITH ACI 506R-16.
3. POOL SHELLS SHALL BE INSTALLED WITH SHOTCRETE OR CAST-IN-PLACE CONCRETE. REFER TO SPECIFICATIONS FOR CONCRETE MIX AND COMPRESSIVE STRENGTH REQUIREMENTS.

CAST-IN-PLACE STRUCTURAL FOR POOLS	4,000 PSI	0.45 MAX WC RATIO; WATER REDUCING AGENT IS REQUIRED
SHOTCRETE FOR POOLS, WET PROCESS	4,000 PSI	

4. NO WATER SHALL BE ADDED TO THE CONCRETE AT THE JOBSITE UNLESS SPECIFICALLY CALLED FOR BY THE BATCH PLANT OR THE ENGINEER OF RECORD. THE CONTRACTOR SHALL COORDINATE WITH THE CONCRETE SUPPLIER TO ENSURE THE CONCRETE MIX IS PUMPABLE AND WORKABLE WITHOUT THE ADDITION OF WATER AT THE PROJECT SITE. REFER TO THE SPECIFICATIONS FOR ALLOWABLE ADMIXTURES. CONTRACTOR SHALL SUBMIT MIX DESIGNS TO THE ENGINEER OF RECORD FOR REVIEW.
5. WATERSTOPS ARE REQUIRED AT JOINTS IN CAST IN PLACE AQUATIC STRUCTURES. SUBMIT WATERSTOP PRODUCTS AND LAYOUT PLAN TO ENGINEER OF RECORD BEFORE BEGINNING CONSTRUCTION.
6. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO TO ASTM A-615 GRADE 60. BARS SHALL BE SUPPORTED ON PERMANENT STEEL OR NYLON BAR SUPPORTS. BRICK OR CONCRETE MASONRY SUPPORTS DO NOT MEET THIS SPECIFICATION! BAR SUPPORTS SHALL ADEQUATELY SUPPORT THE WEIGHT OF THE REINFORCING STEEL AND THE WORKERS. INSTALL IN ACCORDANCE WITH CRSI RB4.1.
7. DETAILING, FABRICATION, AND PLACEMENT OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH THE ACI DETAILING MANUAL, LATEST EDITION.
8. LAP SPLICES - PROVIDE THE FOLLOWING BAR LAP LENGTHS WHERE LAPS ARE CALLED FOR IN THE PLANS UNLESS NOTED OTHERWISE:

BAR SIZE	#3	#4	#5	#6	#7
4,000 PSI CONCRETE	15"	20"	24"	30"	42"

9. HOOKED REINFORCING STEEL - STANDARD HOOKS PER ACI 318-19 ARE SHOWN UNLESS NOTED OTHERWISE. DEVELOPMENTAL LENGTH FOR HOOKED BARS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:

BAR SIZE	#3	#4	#5	#6	#7
4,000 PSI CONCRETE	6"	6"	8"	10"	14"

10. CLEAR COVER - PROVIDE THE FOLLOWING CONCRETE COVER OVER REINFORCING BARS UNLESS NOTED OTHERWISE:

EXPOSURE	BAR SIZE	CLEAR COVER
EARTH	#3 - #7	3"
WEATHER OR POOL WATER	#3 - #5	1.5"
	#6 - #7	2"

11. FORM OILS OR CURING COMPOUNDS ARE NOT ALLOWABLE ON SURFACES THAT WILL RECEIVE PLASTER, PAINT, OR TILE FINISHES. WATER BASED CURING COMPOUNDS MAY BE USED PROVIDED THE SURFACE IS TREATED WELL AND SAND OR WATER BLASTED PRIOR TO THE APPLICATION OF PAINT, OR TILE.
12. MAXIMUM TEMPERATURE IN CONCRETE AFTER PLACEMENT SHALL NOT EXCEED 160°F. MAXIMUM TEMPERATURE DIFFERENCE BETWEEN CENTER AND SURFACE OF PLACEMENT SHALL NOT EXCEED 35°F. CONTRACTOR SHALL SUBMIT A THERMAL CONTROL PLAN IN ACCORDANCE WITH ACI 301 FOR CONCRETE PLACEMENTS WITH DIMENSIONS GREATER THAN OR EQUAL TO 36" IN THREE DIFFERENT DIRECTIONS.

WATER QUALITY NOTES:

REQUIREMENTS OF THE STATE HEALTH DEPARTMENT(S) (STATE AND LOCAL) IN WHICH THE PROJECT IS LOCATED SHALL BE FOLLOWED AT ALL TIMES.

POOL CONTRACTOR SHALL MAKE ARRANGEMENTS FOR CLEAN, POTABLE WATER AND FILL POOL (WATER SERVICES AND HYDRANTS FURNISHED BY OTHERS) IMMEDIATELY UPON PLASTERING THE POOL. DO NOT BEGIN POOL PLASTERING UNTIL POTABLE WATER IS AVAILABLE AT THE POOL FOR FILLING!

WATER FURNISHED BY OTHERS SHALL CONTAIN LESS THAN 0.3PPM COPPER AND IRON. IF THE PERMANENT WATER SOURCE DOES NOT MEET THIS QUALITY OF WATER THE POOL CONTRACTOR SHALL SUPPLY METAL SEQUESTERING AGENTS FOR 14 DAYS AFTER FILLING THE POOL. THE OWNER SHALL FURNISH AND MAINTAIN SEQUESTERING AGENTS FROM THE 15TH DAY ON.

THE POOL SHALL BE BRUSHED TWICE DAILY TO REMOVE LAITANCE FOR AT LEAST TWO WEEKS FOLLOWING PLASTERING AND FILLING. THE POOL FILTER SHALL BE BACK-WASHED REGULARLY DURING THIS TIME TO RESTORE CLARITY TO THE WATER.

THE POOL SHALL BE LEFT BALANCED AS FOLLOWS:

pH	BETWEEN 7.2 AND 7.8
Cl	1-3 ppm FAC
ALKALINITY	80-120 ppm
LSI	-0.5 < LSI < 0.5 (RECOMMEND WWW. POOLCALCULATOR.COM FOR SIMPLE CALCULATIONS.)
CLARITY	CLEAR; NO DISCERNABLE TURBIDITY.

POOL ENCLOSURE NOTES:

1. BY CODE THE POOL ENCLOSURE MUST BE A MINIMUM OF 6'-0" TALL (MEASURED FROM WALKING SURFACE DIRECTLY BENEATH LOCATION BEING MEASURED.)
2. A LATCH MUST BE INSTALLED SO THAT IT IS AT LEAST 60 INCHES ABOVE THE GROUND, EXCEPT THAT IT MAY BE INSTALLED LOWER IF:
   A. THE LATCH IS INSTALLED ON THE POOL YARD SIDE OF THE GATE ONLY AND IS AT LEAST THREE INCHES BELOW THE TOP OF THE GATE
   B. THE GATE OR ENCLOSURE HAS NO OPENING GREATER THAN ONE-HALF INCH IN ANY DIRECTION WITHIN 18 INCHES FROM THE LATCH, INCLUDING THE SPACE BETWEEN THE GATE AND THE GATE POST TO WHICH THE GATE LATCHES.
3. A GATE LATCH MAY BE LOCATED 42 INCHES OR HIGHER ABOVE THE GROUND IF THE GATE CANNOT BE OPENED EXCEPT BY KEY, CARD, OR COMBINATION ON BOTH SIDES OF THE GATE.
4. GATES OR DOORS ON POOL ENCLOSURES MUST BE FURNISHED WITH SELF CLOSING SELF LATCHING HARDWARE. GATES AND DOORS SHALL OPEN AWAY FROM THE POOL BODY.
5. POOL ENCLOSURES MUST BE CONSTRUCTED SO THAT THERE ARE NO OPENINGS IN THE ENCLOSURE LARGE ENOUGH TO PASS A 4 INCH DIAMETER SPHERE.
6. REFER TO PLANS AND SPECIFICATIONS BY RIALTO STUDIOS

PLASTER NOTES:

1. INSTALL PLASTER THICKNESS AS SHOWN ON THE PLANS. PLASTER SHALL NOT BE INSTALLED WITH A THICKNESS LESS THAN 3/8" OR GREATER THAN 3/4".
2. THE FEATURE SHALL BE FILLED AS SOON AS THE PLASTER SETS UP TO WHERE A HAND IMPRINT DOES NOT SHOW ON THE SURFACE OF THE NEW PLASTER.
3. CARE SHALL BE TAKEN NOT TO OVER-TROWEL THE FINISH OR TROWEL PAST FINAL SET.
4. DO NOT PLASTER IF THE TEMPERATURE IS BELOW 50°F OR ABOVE 90°F
5. DO NOT PLASTER WHEN WINDY CONDITIONS PREVAIL OR WHEN PAINTING OR LANDSCAPING IS BEING PERFORMED NEARBY.
6. IN SALT CHLORINE POOLS, DO NOT ADD SALT FOR 28 DAYS POST FILL TO ALLOW THE POOL PLASTER TO CURE.
7. PLASTER SHALL BE EXPOSED AGGREGATE PLASTER.
8. COLOR TO BE SELECTED BY OWNER AND HAVE A MUNSELL COLOR VALUE GREATER THAN 6.5.

NOTE: THE POOL SHALL HAVE AVAILABLE TO BATHERS A WATER SOURCE OF POTABLE QUALITY, A TELEPHONE WITHIN 200 FT OF THE POOL, A HOSE BIB TO WASH DOWN THE DECK, A 12' LONG SHEPHERD'S CROOK (NON-CONDUCTIVE AND NON-TELESCOPING), A USCG RING BUOY WITH 20' OF 3/8" DIA ROPE.

UTILITY NOTES:

CONTACT THE APPROPRIATE AUTHORITIES WITH RESPECT TO LOCATION OF EXISTING UTILITIES AT LEAST 48 HOURS PRIOR TO WORK IN THE AREA.

ONE CALL: 811

NOTE: IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

CHEMICAL STORAGE

PROVIDE SIGN ON CHEMICAL ENCLOSURE GATE STATING "DANGER: POOL CHEMICALS"

FOR EACH POOL CHEMICAL PROVIDE A NFPA 704 MARKING SYSTEM IDENTIFICATION PLACARD ON GATE OF POOL EQUIPMENT ENCLOSURE.

SHOTCRETE SPECIFICATION FOR POOLS:

1. SHOTCRETE MIX AND INSTALLATION SHALL CONFORM TO ACI 506R-16 STANDARDS FOR SHOTCRETE CONSTRUCTION, WET PROCESS.
2. PRECONSTRUCTION TESTING - THE SHOTCRETE SUB-CONTRACTOR SHALL SHOOT REINFORCED TEST PANELS THAT SIMULATE ACTUAL PROJECT CONDITIONS AND MODEL THE SIZE AND COMPLEXITY OF REINFORCEMENT SPECIFIED FOR THE PROJECT. ORIENTATION OF PANELS SHALL MATCH ORIENTATION OF SHOTCRETE WORK ON THE PROJECT. ONCE HARDENED, TEST PANELS SHALL BE CORED TO EVALUATE THE QUALITY OF REINFORCEMENT ENCASEMENT.
3. TESTING DURING CONSTRUCTION - THE SHOTCRETE SUB-CONTRACTOR SHALL SHOOT TEST PANELS IN ACCORDANCE WITH ACI 506.2-13.
4. SHOTCRETE NOZZLEMAN SHALL BE AN ACI CERTIFIED NOZZLEMAN.
5. LAP SPLICES SHALL BE NON-CONTACT SPLICES UNLESS NOTED OTHERWISE. WHERE ADDITION OF TRIM BARS REQUIRES CONTACT LAP SPLICES, SPLICES SHALL BE ORIENTED WITH THE PLANE OF THE SPLICED BARS PERPENDICULAR TO THE SURFACE OF THE SHOTCRETE.
6. CLEAR DISTANCE BETWEEN PARALLEL REINFORCEMENT (INCLUDING LAP SPLICES) SHALL BE AT LEAST 6 BAR DIAMETERS UNLESS NOTED OTHERWISE. THE TRANSVERSE CENTER-TO-CENTER SPACING OF LAP SPLICED BARS SHALL NOT EXCEED THE LESSER OF ONE-FIFTH OF THE REQUIRED LAP SPLICE LENGTH AND 6".
7. MINIMUM 1 X 6 NOMINAL BACK FORMS SHALL BE SET AND BRACED AGAINST THE EARTH TO FORM THE BACK OF THE BOND BEAM. IN EXPOSED WALLS WHERE BACKFILL WILL NOT COVER WALLS, THE CONCRETE SHALL BE FORMED FULL DEPTH WITH SUBSTANTIAL PLYWOOD FORMS (NOT PEGBOARD OR MASONITE) AND SECURED AGAINST MOVEMENT UNDER THE PRESSURE OF SHOTCRETE. THE SAME APPLIES TO DAM WALLS OR PENINSULAS. FORM ONE SIDE AND BUILD OUT.
8. TAUT WIRE SUCH AS PIANO WIRE SHALL BE STRUNG ALONG THE TOP FRONT EDGE OF THE BOND BEAM AT PROPER ALIGNMENT AND GRADE TO SERVE AS A GUIDE WHEN SHOOTING WALLS. ADEQUATE WIRE OR STAKES SHALL BE SET IN POOL FLOORS TO ENSURE ADEQUATE FLOOR THICKNESS DURING SHOOTING.
9. APPLY SHOTCRETE CONTINUOUSLY, BUILDING UP THE CONCRETE LAYER UPON LAYER WITH THE NOZZLE PERPENDICULAR TO THE SURFACE BEING SHOT AT ALL TIMES. DO NOT SWEEP THE GUN.
10. DO NOT INCORPORATE REBOUND INTO THE POOL. REMOVE REBOUND AND CARVED CONCRETE TRIMMINGS FROM THE POOL IMMEDIATELY. HAND PACKING OR TAMPING LOOSE CONCRETE IS NOT ACCEPTABLE. DO NOT USE TRIMMINGS TO BUILD STEPS OR BENCHES.
11. WALLS SHALL BE PLUMB FROM THE GUIDE WIRE DOWN TO THE FLOOR.
12. RADIUS ALL WALL TO FLOOR TRANSITIONS AS FOLLOWS UNLESS NOTED OTHERWISE:

	RADIUS
STEP COVES	2"
STEP NOSINGS	1"
WALLS 10" TO 3'-0" IN HEIGHT	2" AT 10" HEIGHT TO 6" AT 3'-0" HEIGHT WITH SMOOTH TRANSITIONS
WALLS 3'-0" TO 5'-0" IN HEIGHT	6"
WALLS GREATER THAN 5'-0" IN HEIGHT	REFER TO SECTIONS

13. THE FACE OF CURVED STAIR RISERS SHALL BE SMOOTH WITHOUT DISTORTION OR SEGMENTS. THE NOSINGS SHALL BE UNIFORM. THE RISERS SHALL BE PLUMB AND OF EVEN HEIGHT.
14. SHOOT THE TOP OF BEAMS TO THE ELEVATIONS SHOWN ALLOWING FOR THICKNESSES OF COPING AND OTHER FINISHES. EXCESSIVE DEEP GROUT BEDDING WILL NOT BE ALLOWED TO MAKE UP FOR DEFICIENT SHOTCRETE ON THE BOND BEAM.

GENERAL NOTES:

1. ALL METAL COMPONENTS OF POOL TO BE BONDED PER 2020 NEC ARTICLE 680.
2. STRUCTURAL DETAILS ARE MEASURED TO FINISHED CONCRETE; WATER DEPTH AND OVERALL POOL DIMENSIONS ARE MEASURED TO FINISHED PLASTER OR TILE FINISH.
3. THE INTENT OF THE PROJECT IS TO PROVIDE A WATER TIGHT VESSEL(S).
4. SLOPE FLOORS AS SHOWN ON PLANS, BUT POOL FLOOR SLOPES SHALL NOT EXCEED 1:12 (8.33%)
5. POOL DECKS SHALL SLOPE TO EFFECTIVELY DRAIN TO PERIMETER AREAS OR DECK DRAINS. SLOPES SHALL NOT EXCEED (2.00%) IN ANY DIRECTION NOR BE LESS THAT (0.5%). DECK SHALL BE INSTALLED BY OTHERS
6. 'EJ' DENOTES SELF-LEVELING URETHANE EXPANSION JOINT. DECK INSTALLER SHALL INSTALL EXP. JOINT MATERIALS.
7. LANDSCAPING AND IRRIGATION INSTALLATION SHALL BE PERFORMED BY OTHERS.
8. ALL CORNERS PROTRUDING INTO POOLS SHALL HAVE A RADIUS OF 2" OR LARGER.
9. ALL WORK SHALL BE DONE IN CONFORMANCE WITH 2024 ISPSC AND INTERNATIONAL BUILDING CODE (2024) AS REVISED AND ADOPTED BY THE CITY OF SAN ANTONIO, TX.
10. PRIOR TO BEGINNING CONSTRUCTION OF THE POOLS, THE CONTRACTOR MUST OBTAIN A PERMIT FOR CONSTRUCTION.
11. THE PLANS, SPECIFICATIONS, PROPOSAL, SPECIAL PROVISIONS, ADDENDA AND ALL SUPPLEMENTARY DOCUMENTS ARE INTENDED TO DESCRIBE A COMPLETE WORK AND ARE ESSENTIAL PARTS OF THE PROJECT. A REQUIREMENT OCCURRING IN ANY OF THEM IS BINDING. IN CASE OF DISCREPANCIES,
    11.1. WRITTEN DIMENSIONS SHALL GOVERN OVER SCALED DIMENSIONS
    11.2. PLANS SHALL GOVERN OVER SPECIFICATIONS
    11.3. SPECIAL PROVISIONS SHALL GOVERN OVER BOTH GENERAL OR TECHNICAL SPECIFICATIONS AND PLANS

    THE CONTRACTOR SHALL NOT TAKE ADVANTAGE OF ANY APPARENT ERROR OR OMISSION IN THE PLANS AND SPECIFICATIONS, AND THE ENGINEER SHALL BE PERMITTED TO MAKE SUCH CORRECTIONS OR INTERPRETATIONS AS MAY BE DEEMED NECESSARY FOR THE FULFILLMENT OF THE INTENT OF THE PLANS AND SPECIFICATIONS. IN THE EVENT THE CONTRACTOR DISCOVERS AN APPARENT ERROR OR DISCREPANCY, HE SHALL IMMEDIATELY CALL THIS TO THE ATTENTION OF THE ENGINEER.
12. GENERAL NOTES ON THIS SHEET DO NOT DEFINE ALL WORK REQUIRED IN THE PROJECT. CONTRACTORS SHALL REFER TO ALL PLANS AND SPECIFICATIONS FOR FULL DEFINITION OF WORK FOR THE PROJECT.
13. POOL DIMENSIONAL TOLERANCE FOR WATER DEPTH AND STAIR RISERS IS TO BE +/- 1/4".
14. TESTING FOR WORK & MATERIALS ON THE PROJECT WILL BE PERFORMED BY THE OWNER. IF THE MATERIAL BEING TESTED FAILS IN ANY WAY THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURTHER TESTING AND ANY ADDITIONAL WORK TO MEET THE DESIGN REQUIREMENTS.
15. WATER PROOF, WATERTIGHT, IMPERVIOUS, AND/OR IMPERMEABLE AS SPECIFIED FOR THIS PROJECT ARE ALL DEFINED AS A COMPLETED AND FILLED WATER VESSEL WITH A MEASURABLE LOSS OF LESS THAN 25GPD PER 1,000 SQUARE FEET OF WATER SURFACE AREA, EXCLUSIVE OF EVAPORATION.

    WATER LOSSES FROM ALL SOURCES SHALL BE MEASURED BY THE POOL CONTRACTOR USING A METHOD APPROVED BY THE ENGINEER. THE POOL CONTRACTOR SHALL RECORD AND SEND RESULTS OF THE LOSS TESTING TO THE ENGINEER. IF TESTING INDICATES EXCESSIVE LOSSES THEN THE POOL CONTRACTOR SHALL SUBMIT TO THE ENGINEER A REMEDIATION PLAN FOR APPROVAL AND, ONCE APPROVED, PROCEED TO REMEDIATE WATER LOSSES.

EMERGENCY TELEPHONE

A SIGN MUST BE POSTED IN THE IMMEDIATE VICINITY OF EACH POOL STATING THE LOCATION OF THE EMERGENCY TELEPHONE.

LOCATION IS DEFINED AS NORTHWEST ENTRANCE OF CLUBHOUSE/FITNESS CENTER

Sheet List Table

POOL DATA

POOL CLASS: B

WATER SURFACE AREA:	2,799 S.F.
PERIMETER:	258'-4"
VOLUME:	79,639 GAL.
AVG. DEPTH:	2.92 FT.
REQUIRED TURNOVER:	4.38 HOURS
ACTUAL TURNOVER:	0.89 HOURS
CIRCULATION RATE:	500 GPM @ 60' T.D.H.
CIRCULATION PUMP Hp:	15 Hp
TOTAL CIRC. MAIN DRAIN FLOW	500 GPM
CIRC. MAIN DRAIN CAPACITY	2,480 GPM (EA.)
FILTER SURFACE AREA:	1,200 S.F.
MAX. FILTER CAPACITY:	1,800 GPM
MAXIMUM BATHER LOAD:	186 PERSONS
LATITUDE	29° 21' 58.73" N
LONGITUDE	98° 28' 44.09" W

ADD. ALT. POOL DATA

POOL CLASS: B, D-4

WATER SURFACE AREA:	5,551 S.F.
PERIMETER:	264'-3"
VOLUME:	130,164 GAL.
AVG. DEPTH:	3.13 FT.
REQUIRED TURNOVER:	2.95 HOURS
ACTUAL TURNOVER:	1.89 HOURS
CIRCULATION RATE:	1,150 GPM @ 60' T.D.H.
CIRCULATION PUMP Hp:	25 Hp
TOTAL CIRC. MAIN DRAIN FLOW	1,150 GPM
CIRC. MAIN DRAIN CAPACITY	2,480 GPM (EA.)
FILTER SURFACE AREA:	1,200 S.F.
MAX. FILTER CAPACITY:	1,800 GPM
MAXIMUM BATHER LOAD:	370 PERSONS
FEATURE PUMP RATE:	900 GPM @ 40' T.D.H. (THREE)
FEATURE PUMP Hp:	15 Hp (EA.) (THREE)
TOTAL FEATURE MAIN DRAIN FLOW	900 GPM (EA.) (THREE)
FEATURE MAIN DRAIN CAPACITY	2,480 GPM (EA.) (THREE)
LATITUDE	29° 21' 58.73" N
LONGITUDE	98° 28' 44.09" W

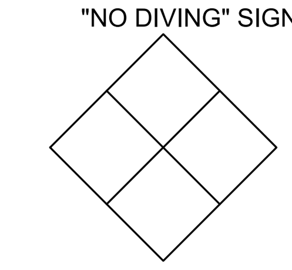
NO DIVING

"NO DIVING" SIGN

PRECISE LOCATION OF THE POOL (ADDRESS, DIRECTIONS, OR GPS LOCATION, OR BUILDING NUMBER)

PROPERTY LOCATION SIGN MUST BE ON OR WITH PHONE.

DO NOT START THE SYSTEM AFTER MAINTENANCE WITHOUT FIRST PROPERLY REASSEMBLING THE FILTER AND SEPARATION TANK AND OPENING ALL AIR RELEASE VALVES.



NFPA DIAMOND ONE REQUIRED FOR EA. POOL CHEMICAL

CAUTION! CHEMICAL STORAGE AREA

CHEMICAL SIGN

TOTAL POOL CAPACITY XXX PERSONS

POOL CAPACITY SIGN

PETS IN THE POOL ARE PROHIBITED

PETS PROHIBITED SIGN

GLASS ITEMS NOT ALLOWED IN THE POOL YARD

GLASS ITEMS SIGN

CHANGING DIAPERS WITHIN 6 FEET OF THE POOL IS PROHIBITED

DIAPER CHANGING SIGN

DO NOT SWIM IF YOU HAVE BEEN ILL WITH DIARRHEA WITHIN THE PAST 2 WEEKS

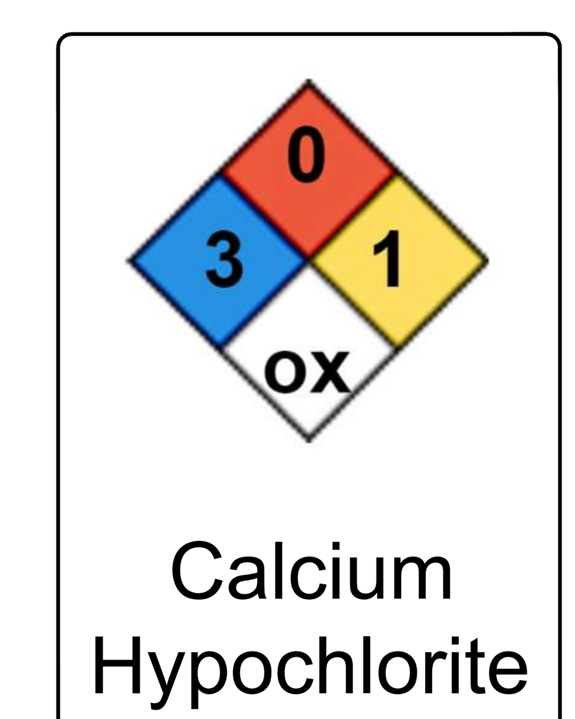
ILLNESS SIGN

PERSONS UNDER THE AGE OF 14 MUST NOT BE IN THE POOL WITHOUT ADULT SUPERVISION

ADULT SUPERVISION SIGN

EXTENDED BREATH HOLDING ACTIVITIES ARE DANGEROUS AND PROHIBITED

EXTENDED BREATH HOLDING ACTIVITIES SIGN



IN CASE OF EMERGENCY DIAL 911

"DIAL 911" SIGN

WARNING NO LIFEGUARD ON DUTY

"NO LIFEGUARD ON DUTY" POOL SIGN

RIALTO STUDIO

Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

BRANNON ENGINEERING & CONSULTING
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STATE OF TEXAS
TRAVIS A. BOZICK
104560
LICENSED PROFESSIONAL ENGINEER
10/23/2025

District 3 Aquatics Facility
San Antonio, TX

ISSUE DATE	10/23/2025
REVISION	
PROJECT NUMBER	23010
DRAWN BY	RDT/TAB
CHECKED BY	RDT/TAB
SCALE	

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

SP0.1

SP0.1 GENERAL NOTES.dwg

ABBREVIATIONS:

+ 0'-0"	WATER DEPTH
AC	ALTERNATING CURRENT
ACI	AMERICAN CONCRETE INSTITUTE
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE; ALTERNATING
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APSP	ASSOCIATION OF POOL AND SPA PROFESSIONALS
ARCH	ARCHITECT; ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BV	BALL VALVE
BFV	BUTTERFLY VALVE
BW	BACKWASH
C	CONDUIT
C-C	CENTER-TO-CENTER
CFM	CUBIC FEET PER MINUTE
CIP	CAST-IN-PLACE
CLR	CLEAR (AS IN CLEAR DISTANCE)
CONT	CONTINUOUS
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
CV	CHECK VALVE
DC	DIRECT CURRENT
DIA	DIAMETER
EA	EACH
EW	EACH WAY
FD	FLOOR DRAIN
FR	FILTERED RETURN
FT	FEET
G	GROUND
GAL	GALLONS
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
GTR	GUTTER
HB	HOSE BIB
IN	INCHES
INV EL	INVERT ELEVATION
ISPSC	INTERNATIONAL SWIMMING POOL AND SPA CODE
LAP	LAP SPLICE LENGTH
LB	POUND
LSI	LANGELIER SATURATION INDEX
MAX	MAXIMUM
MD	MAIN DRAIN
MIN	MINIMUM
MM	MILLIMETERS
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NIC	NOT IN CONTRACT (INFORMATION ONLY)
NLT	NOT LESS THAN
NSF	NATIONAL SANITATION FOUNDATION
NTE	NOT TO EXCEED
OC	ON CENTERS
OCEW	ON CENTERS EACH WAY
OD	OUTSIDE DIAMETER
OH	OVERHEAD
PPM	PARTS PER MILLION
PSI	POUNDS PER SQUARE INCH
REF	REFER TO; REFERENCE
RPM	REVOLUTIONS PER MINUTE
SF	SQUARE FOOT
SK	SKIMMER DRAIN
SS	STAINLESS STEEL
SV	SOLENOID VALVE
TCNA	TILE COUNCIL OF NORTH AMERICA
TDH	TOTAL DYNAMIC HEAD
TYP	TYPICAL
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
USCG	UNITED STATES COAST GUARD
V	VOLTS
VGB	VIRGINIA GRAEME BAKER ACT
VOL	VOLUME
W, kW	WATTS, KILOWATTS
WC	WATER COLUMN OR WATER CONTENT
WP	WEATHERPROOF
WS EL	WATER SURFACE ELEVATION

PLUMBING NOTES:

1. INSTALL $\frac{3}{4}$" PVC "WINTERIZING" BALL VALVES ON POOL PLUMBING SO ALL PLUMBING CAN BE DRAINED DURING THE OFF-SEASON OR FOR MAINTENANCE.
2. AVOID INSTALLING ANY LINE WITH AN AIR ENTRAPPING HIGH POINT. WHEN UNAVOIDABLE, INSTALL AN APCO AUTOMATIC AIR RELEASE VALVE ON A CLAMP-ON SADDLE AT THE HIGH POINT OF ANY LOOPING PUMP DISCHARGE LINES.
3. BURIED POOL PLUMBING (CONCEALED, NOT EXPOSED) TO CONFORM TO ASTM D-1785 TYPE 1, GRADE 1, SCHEDULE 40 PVC (MINIMUM). PROVIDE PIPE SYSTEM THAT IS WATERTIGHT TO A PRESSURE OF 40 PSI. PRESSURE TEST AND HOLD DURING THE WORK WITH WATER. **DO NOT PRESSURE TEST WITH AIR.** ASTM D-2665 DWV PIPE DOES NOT MEET THIS SPECIFICATION UNLESS THE PIPE IS DUAL MARKED WITH D-1785 AS WELL.
4. EXPOSED POOL PIPING IN MECHANICAL ROOMS, GARAGES, PLENUMS, AND SIMILAR LOCATIONS SHALL CONFORM TO ASTM D-1785 TYPE 1, GRADE 1, SCHEDULE 80.
5. ALL PIPE FOR THIS PROJECT SHALL BE OF NEW MANUFACTURE AND NOT WEATHERED OR DAMAGED IN ANY WAY WHEN DELIVERED TO THE PROJECT.
6. REFER TO MEP DRAWINGS FOR POTABLE WATER LINES, GAS AND BACKWASH DRAIN LINES TO BE EXTENDED TO EACH POOL EQUIPMENT ROOM.
7. ALL PLUMBING PENETRATIONS THROUGH CONCRETE POOL STRUCTURES OR BASINS INTENDED TO HOLD WATER SHALL HAVE NO-LEAK FLANGES. CORED PENETRATIONS THROUGH PIT OR BASEMENT WALLS SHALL BE FILLED WITH LINK-SEAL GASKETS AND WATER TIGHT.
8. PIPE LAYOUT SHOWN IS REPRESENTATIVE OF THE INTENDED GENERAL PIPE ROUTING, WITH ALLOWANCE FOR MINOR REALIGNMENTS AS REQUIRED BY FIELD CONDITIONS. PIPE SHALL BE INSTALLED WITH THE LEAST AMOUNT OF FITTINGS POSSIBLE. CONTRACTOR SHALL REQUEST ANY CHANGE TO THE LAYOUT AND PROVIDE REDLINE DOCUMENTATION TO THE ENGINEER.
9. ALL INDIVIDUAL FILTERED RETURN INLET BRANCH LINES TO BE 2" UNLESS NOTED OTHERWISE.
10. ALL INDIVIDUAL SKIMMER BRANCH LINES TO BE 2" UNLESS NOTED OTHERWISE.
11. ALL POOL MAIN DRAIN SUMPS, FRAMES, AND GRATES MUST COMPLY WITH VIRGINIA GRAEME BAKER ACT. (SWIMMING POOL SAFETY ACT OF 2007). SUCTION DEVICES SHALL COMPLY WITH ANSI/APSP-16 VGB STANDARD.
12. BURIED POOL PLUMBING BENEATH DECKS AND LANDSCAPE SHALL HAVE 24" OF COVER MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE.
13. POOL PLUMBING LOCATED BENEATH THE POOL FLOOR SHALL BE CONCRETE ENCASED AND INTEGRAL WITH THE POOL FLOOR. PLUMBING BENEATH POOL FLOOR SHALL NOT ENCROACH IN THE NORMAL THICKNESS OF THE FLOOR.
14. NO POOL PIPING SHALL BE RUN WITHIN AND PARALLEL TO POOL WALLS EXCEPT FOR SHORT BRANCHES OFF OF MANIFOLDS LOCATED OUTSIDE THE POOL SHELL.
15. POOL FITTINGS SHALL BE INSTALLED WITH THE WALL OR RETURN FITTING FLUSH WITH THE FINISHED POOL WALL. THE SCOOP NORMALLY LEFT BY SHOTCRETERS AROUND FITTING PIPE SHALL NOT BE BACKFILLED WITH PLASTER BUT RATHER WITH NON-SHRINK GROUT. POOL RETURN FITTINGS SHALL FIT TIGHTLY AGAINST PLASTER WITH NO DISCERNIBLE PLASTER "BUMP". NEITHER SHALL THE EYEBALL NOR OTHER FITTING INSERT PROJECT FROM THE FINISHED POOL SURFACE SUCH THAT A GAP OF $\frac{1}{16}$" OR GREATER IS VISIBLE BEHIND THE FITTING. THE ENGINEER MAY REJECT ANY FITTING THAT PROJECTS FROM OR IS RECESSED INTO THE PLANE OF THE POOL WALL OR FLOOR.
16. POOL PLASTER SHALL NOT BE USED TO MAKE UP FOR POOR INSTALLATION TECHNIQUE. THE PLASTER AROUND A FITTING, LIGHT NICHE, ANCHOR, WALL STEP, OR OTHER EMBEDDED ITEM SHALL BE TESTED WITH A 36" STRAIGHT EDGE CENTERED ON THE FITTING. ANY DEVIATION BETWEEN THE STRAIGHT EDGE AND PLASTER ON EITHER SIDE OF $\frac{3}{32}$ INCH OR MORE IS UNACCEPTABLE. THE ENGINEER IN HIS SOLE OPINION MAY REJECT INSTALLATIONS NOT MEETING THE ABOVE REQUIREMENTS.

BIDDING NOTES:

(1) DO NOT PRESUME SUBSTITUTION OF ANY MATERIALS OR EQUIPMENT IN THIS POOL AND SPA PROJECT. SUBSTITUTIONS ARE MADE ONLY WITH PERMISSION OF THE ENGINEER IN WRITING. **SUBSTITUTIONS WILL NOT BE CONSIDERED PRIOR TO BIDDING.**

(2) THE BIDDER AND POOL CONTRACTOR SHALL REFER TO ALL SHEETS IN THE POOL DRAWINGS AND ALL WRITTEN SPECIFICATIONS IN THE PROJECT MANUAL. ANY CALL-OUT FOR MATERIALS OR EQUIPMENT IN ANY ONE OF THEM IS DEEMED A REQUIREMENT WHETHER OR NOT THAT CALL-OUT IS FOUND IN OTHER VIEWS, SCHEMATICS, OR SPECIFICATIONS.

(3) ANY ITEM REQUIRED BY THE LOCAL OR STATE HEALTH CODE SHALL BE PROVIDED AS PART OF THIS PROJECT WHETHER OR NOT IT IS SPECIFICALLY CALLED OUT ON THE PLANS OR SPECIFICATIONS.

(4) COORDINATE WORK WITH OTHER TRADES.

(5) THESE PLANS CONTAIN WORK THAT REQUIRE THE SERVICES AND SKILLS OF OTHER TRADES OTHER THAN THE POOL SUBCONTRACTOR. ALL TRADES ARE ADVISED TO REVIEW THE POOL DOCUMENTS TO AVOID GAPS AND OVERLAPS IN PRICING.

(6) ADD ALTNERATE BID ITEM-THE ADD ALTERANTE BID ITEM IS TO EXPAND THE POOL WITH A LAZY RIVER AMENITY ZONE. THE BIDDER AND POOL CONTRACTOR SHALL REFER TO ALL SHEETS IN THE POOL DRAWINGS REGARDING THE ADD ALTERNATE BID ITEM AND ALL WRITTEN SPECIFICATIONS IN THE PROJECT MANUAL REGARDING THE ADD ALTERNATE BID ITEM. ANY CALL-OUT FOR MATERIALS OR EQUIPMENT IN ANY ONE OF THEM IS DEEMED A REQUIREMENT WHETHER OR NOT THAT CALL-OUT IS FOUND IN OTHER VIEWS, SCHEMATICS, OR SPECIFICATIONS PERTAINING TO THE ADD ALTERNATE BID ITEM.

(7) MAIN DRAIN PAIR AND UNDERGROUND PIPING FOR FUTURE SLIDE IS IN THE BASE BID AND ADD ALTERNATE.

EQUIPMENT ROOM NOTES:

1. INSTALL FLOW METER ON ALL FILTER CIRCULATION PUMP DISCHARGE LINES. FLOW METERS ARE ORDERED BY TYPE OF PIPE (SCHEDULE AND DIAMETER). INSTALL WITH SADDLE AND CLAMP FURNISHED BY THE MANUFACTURER.
2. INSTALL COMBINATION VACUUM/PRESSURE GAUGE AT EACH PUMP INTAKE AND A PRESSURE GAUGE AS CLOSE TO THE PUMP DISCHARGE AS POSSIBLE FOR ALL PUMPS.
   2.1 PRESSURE GAGE: WEKSLER 60 MM LIQUID FILLED S.S. BOTTOM MOUNT WITH SNUBBER AND S.S. PET COCK. 0-60 PSI
   2.2 COMBINATION GAGE: WEKSLER 60 MM LIQUID FILLED S.S. BOTTOM MOUNT WITH SNUBBER AND S.S. PET COCK. 0-60PSI/0-30 IN. Hg
3. LARGE HORIZONTAL FILTERS MUST BE FURNISHED WITH MANUFACTURER'S GAGE PANEL AND CONNECTED AS REQUIRED BY MANUFACTURER. SMALL CARTRIDGE AND VERTICAL SAND FILTERS LESS THAN 42 INCHES DIAMETER SHALL HAVE TOP MOUNT MANUAL AIR BLEED WITH LIQUID FILLED PRESSURE GAGE PER ITEM 2 ABOVE.
4. PLUMBING 3-INCH AND LARGER NOMINAL DIAMETER SHALL BE SUPPORTED OFF THE FLOOR WITH UNISTRUT GALVANIZED PIPE STANDS AND CHANNEL STRUT PIPE STRAPS TO A MAXIMUM HEIGHT OF 6'-0" CLEAR ABOVE FLOOR. HIGHER PLUMBING SHALL BE SUPPORTED FROM THE CEILING WITH CLEVIS STYLE HANGERS. PIPE SHALL BE BRACED IN TWO PLANES AND SHALL NOT SWAY UNDER HAND PRESSURE APPLIED IN ANY DIRECTION. PIPE SUPPORT SPACING SHALL NOT EXCEED 60 INCHES FOR 8 INCH AND LARGER DIAMETER, 48 INCHES FOR 4- AND 6-INCH PIPE, NOR 36-INCHES FOR SMALLER PIPE.
5. SMALLER PIPE (2-1/2-INCH AND SMALLER) SHALL BE SUPPORTED WITH CLIC-X OR HANGERLOK SERRATED NYLON CLIPS MOUNTED ON THE WALL OR CEILING DIRECTLY OR (WHEN TWO OR MORE PIPE ARE INSTALLED PARALLEL) ON GALVANIZED UNISTRUT STAND-OFF BRACKETS WITH CHANNEL STRUT PIPE STRAPS. PIPE SUPPORT SPACING SHALL NOT EXCEED 36-INCHES FOR SMALLER PIPE.
6. ALL PUMP STRAINERS TO BE PROVIDED WITH SPARE STRAINER BASKET.
7. PROVIDE CONCRETE HOUSEKEEPING PAD BENEATH ALL PUMPS. (NOT SHOWN FOR CLARITY). HOUSEKEEPING PAD SHALL BE A MINIMUM OF 4" HIGH BUT MAY VARY IN HEIGHT TO ALIGN THE PUMP INTAKE TO PLUMBING SHOWN ON THE DRAWINGS.
8. ALL PIPING IN THE MECHANICAL ROOM SHALL HAVE FLOW DIRECTIONAL ARROW TAPE INDICATING THE DIRECTION OF FLOW FOR FUTURE STAFF. IN ADDITION TO DIRECTION, LABELING MUST BE INSTALLED INDICATING PIPE FUNCTION.
9. MOTORS FOR CIRCULATION AND FEATURE PUMPS SHALL BE PREMIUM EFFICIENT MOTOR DESIGN AS DEFINED BY NEMA PREMIUM PROGRAM.
10. VALVES 2-1/2" AND SMALLER: TRU UNION BALL VALVES. GLUED IN SOCKET VALVES ARE UNACCEPTABLE.
11. VALVES 3" AND LARGER: WAFER STYLE PVC FLANGE BUTTER FLY VALVE WITH STAINLESS SHAFT AND LOCKING HANDLE. VALVES 8-INCH AND LARGER SHALL HAVE WHEEL ACTUATOR IN LIEU OF HANDLES. ASAHI, NEPTUNE OR EQUAL.
12. ALL BFV AND FLANGE BOLT FASTENERS SHALL BE STAINLESS STEEL.
13. CHAIN OPERATORS ARE REQUIRED FOR VALVES INSTALLED 90" A.F.F.

WALL TILE IN SWIMMING POOL BODY NOTES:

1. ENVIRONMENTAL CLASSIFICATION FOR TILE AT A POOL INSTALLATION IS CLASS 3 OR 5 COMMERCIAL PER TCNA INSTALLATION PRACTICE HANDBOOK 2014.
2. SHOTCRETE FINISH SHALL BE PREPARED, LEVELED, AND CURED PER MANUFACTURER'S SPECIFICATIONS BEFORE MORTAR BEDS AND TILE SHALL BE INSTALLED.
3. ALL LOCATIONS OF TILE APPLICATION SHALL BE TREATED WITH LATTICRETE HYDROBAN OR EQUAL WATERPROOFING. PRODUCT TO ADHERE TO ANSI A108.13 AND ANSI A108.17.
4. THIN BED TILE INSTALLATION (TCNA P601-17) IS PERMISSIBLE FOR ALL POOLS EXCEPT COMPETITION LAP POOLS. USE LATTICRETE 254 PLATINUM POLYMER FORTIFIED THIN-SET MORTAR.
5. TILE BOND COAT COVERAGE SHALL BE A MINIMUM 95% CONTACT WITH TILE AND SUBSTRATE.
6. CERAMIC TILE SHALL BE ANSI A137 AND RECOMMENDED IN WRITING FOR THE USE IN POOLS AND OTHER WATER FEATURES.
7. GLASS TILE SHALL BE ANSI A137.2 AND RECOMMENDED IN WRITING FOR THE USE IN POOLS AND OTHER WATER FEATURES.
8. REFER TO DETAILS FOR TILE MATERIAL DEFINITION. IF NOT INDICATED ON DETAILING - CERAMIC TILE SHALL BE ASSUMED DALTILE INDUSTRIAL PARK LINE OR EQUAL.
9. CEMENTITIOUS GROUT SHALL BE ANSI A118.6 OR BETTER OR ISO CG1 OR BETTER. LATTICRETE PERMACOLOR GROUT OR EQUAL.
10. EPOXY GROUT SHALL BE ANSI A118.3 OR ISO RG COMPLIANT AND EQUAL TO OR GREATER THAN LATTICRETE SPECTRALOCK PRO GROUT.
11. FLEXIBLE SEALANT FOR MOVEMENT JOINTS AND BELOW THE COPING SHALL BE ASTM C920 AND SUITABLE FOR POOL APPLICATIONS. SPACE JOINTS ON 10' CENTERS, AT POOL SHELL JOINTS, BELOW THE COPING, AT ALL CHANGES OF PLANE, AND AT RESTRAINING ABUTMENTS.
12. FOR COMPETITION LAP POOLS AND WHERE PERMITTED BY THE ENGINEER OF RECORD THICK BED MORTAR INSTALLATIONS SHALL BE PERMISSIBLE. INSTALLATION PRACTICE SHALL CONFORM TO TCNA P601-17
13. CEMENTITIOUS BOND COAT SHALL COMPLY WITH ANSI A118.15 OR BETTER OR ISO C2S1 OR BETTER.
14. TILE JOINTS SHALL BE EVEN HORIZONTAL JOINTS IN THE WALL. TILE SHALL PARALLEL THE WATER SURFACE OF THE POOL. HORIZONTAL JOINTS SHALL NOT DEVIATE FROM HORIZONTAL BY MORE THAN +/- 1/8".
15. WALL TILE JOINTS AROUND CORNERS SHALL ALIGN WITH NO OFFSET.
16. TILE SHALL BE INSTALLED PLANAR WITH NO DEVIATION FROM A 10' STRAIGHT-EDGE EXCEEDING +/- 1/8" ON STRAIGHT SECTIONS OF WALL.
17. TILE SHALL BE INSTALLED WITH NO PROTRUDING SHARP CORNERS OR EDGES.

SLIP RESISTANT TILE IN SWIMMING POOL BODY NOTES:

1. SLIP RESISTANT TILE SHALL BE REQUIRED IF THE TILE IS INSTALLED IN THE POOL FLOOR, A STEP, A TANNING LEDGE, FLOOR MARKER, A WALL TARGET, OR A BENCH.
2. SLIP RESISTANT CERAMIC TILE SHALL BE DEFINED UNDER THE DYNAMIC COEFFICIENT OF FRICTION (DCOF) ACUTEST. THE TILE MANUFACTURER SHALL INSURE THAT THE PRODUCT HAS BEEN INSTALLED WITH THE PROPOSED GROUTING PATTERN TO ACHIEVE A **WET DCOF ACUTEST** VALUE OF GREATER THAN 0.42.

COORDINATION:

DESCRIPTION	DESIGN	FURNISH & INSTALL
ARCHITECTURAL		
CHEMICAL CLOSET	ARCHITECT	CONTRACTOR
POOL MECHANICAL ENCLOSURE	ARCHITECT	CONTRACTOR
POOL ENCLOSURE AND GATES	LANDSCAPE ARCHITECT	CONTRACTOR
SIGNAGE MATERIALS/FINISHES	ARCHITECT	CONTRACTOR
DECK SHOWER	ARCHITECT	CONTRACTOR
MECHANICAL, ELECTRICAL, PLUMBING		
POTABLE WATER SUPPLY, RPZ	MEP/SITE CIVIL	UTILITY CONTRACTOR
BACKWASH SEWER SERVICE	MEP/SITE CIVIL	UTILITY CONTRACTOR
GROUNDING, BONDING OF THE POOL	BRANNON CORPORATION	ELECTRICAL CONTRACTOR
POOL ELECTRICAL SUBPANEL	MEP	ELECTRICAL CONTRACTOR
PUMP STARTER/DISCONNECTS	MEP	ELECTRICAL CONTRACTOR
AQUATICS		
PIPING AND HYDRAULICS	BRANNON CORPORATION	POOL CONTRACTOR
STRUCTURAL POOL SHELL	BRANNON CORPORATION	POOL CONTRACTOR
POOL MECHANICAL EQUIPMENT	BRANNON CORPORATION	POOL CONTRACTOR
POOL EQUIPMENT	BRANNON CORPORATION	POOL CONTRACTOR

THE POOL SHALL BE CLOSED AT NIGHT OR DURING PERIODS OF LOW NATURAL ILLUMINATION.

SOILS NOTES:

A GEOTECHNICAL REPORT (23-0573) PROVIDED BY GESSNER ENGINEERS SHOWS A NATIVE SITE POTENTIAL VERTICAL RISE (PVR) OF 1" TO 2 $\frac{1}{2}$" FOR STRUCTURES ABOVE A DEPTH OF 10 FEET BELOW EXISTING GRADE. THIS RANGE OF PVR IS UNACCEPTABLE FOR A POOL FEATURE.

IT IS UNDERSTOOD THAT THE SITE SUBGRADE WILL BE REMEDIATED TO REDUCE THE SITE PVR TO LESS THAN 1". GESSNER ENGINEERS PROPOSES A SLAB ON VOID SYSTEM BUT THIS WAS NOT ACCEPTED BY THE CITY OF SAN ANTONIO DUE TO COST.

THE GESSNER REPORT INDICATES OVER-EXCAVATION OF 4 FEET AND INSTALLATION OF A SELECT FILL MATERIAL TO REDUCE THE SITE PVR. THE POOL DESIGN AND CONSTRUCTION IS INTENDED TO BE INSTALLED ON A SELECT FILL SUBGRADE PREPARED BY THE GENERAL CONTRACTOR AND TESTED BY GESSNER TO ASSURE THE REPORT RECOMMENDATIONS ARE PROVIDED.

A SKIMMERED POOL WITH A 1" PVR SUBGRADE WILL CONTINUE TO SKIM PER TEXAS HEALTH DEPARTMENT SANITATION GUIDELINES, BUT MAY AESTHETICALLY BE UNACCEPTABLE.

PIERS AND GRADE BEAM CONSTRUCTION WOULD BE REQUIRED TO LIMIT THE PVR OF THE POOL STRUCTURE. BRANNON HAS NOT BEEN DIRECTED TO PERFORM PIER AND BEAM DESIGN RECOMMENDATIONS.

EXCESS TOPSOIL SHALL BE STOCKPILED ON SITE AT THE OWNER'S DISCRETION WITH SILT FENCE INSTALLED ON THE DOWN HILL SIDE OF THE STOCK PILE.

1 VICINITY MAP
SCALE: NTS

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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DBA BRANNON CORP
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BRANNON ENGINEERING & CONSULTING
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STATE OF TEXAS
TRAVIS A. BOZICK
104560
LICENSED
PROFESSIONAL ENGINEER
10/23/2025

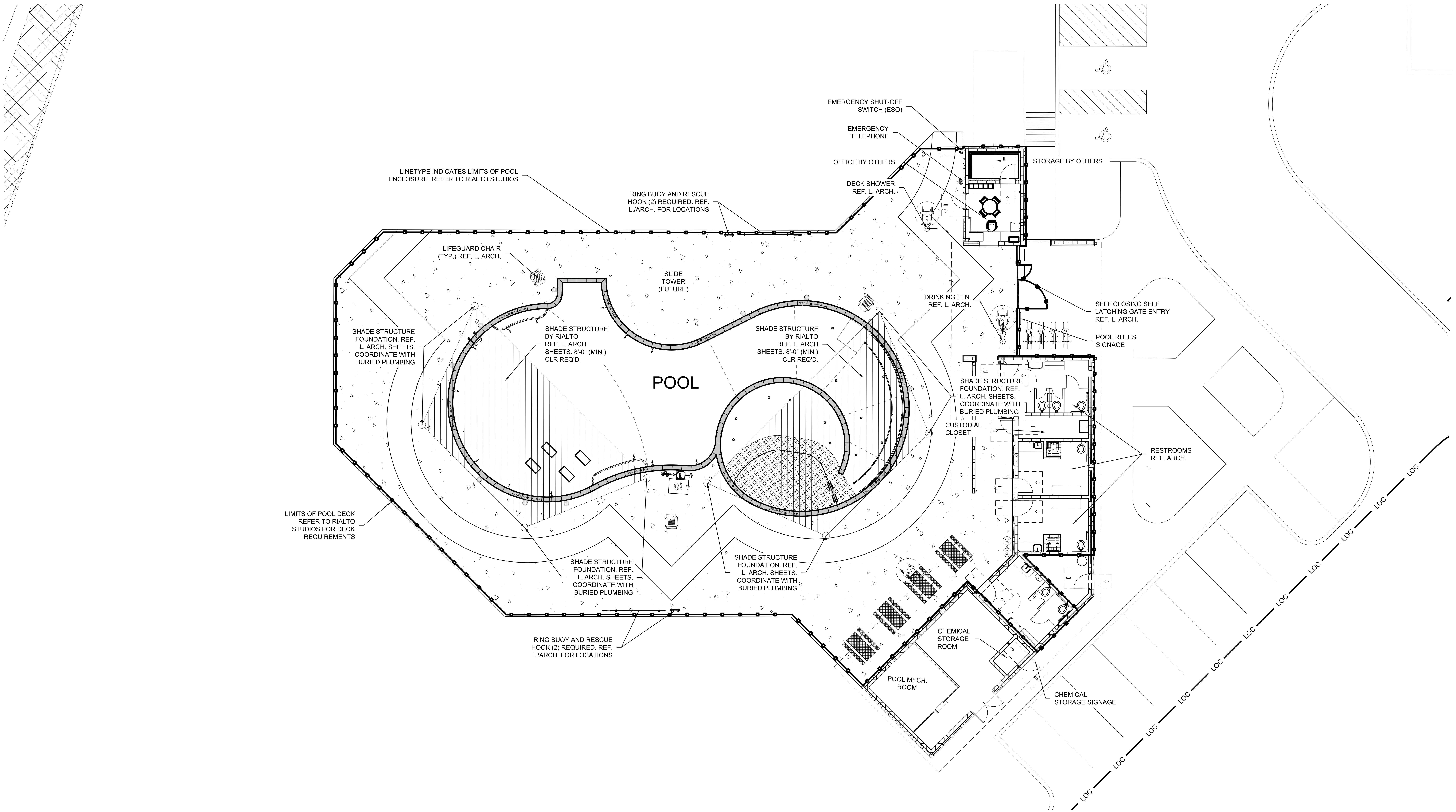
District 3 Aquatics Facility
San Antonio, TX

ISSUE DATE	10/23/2025
REVISION	
PROJECT NUMBER	23010
DRAWN BY	RDT/TAB
CHECKED BY	RDT/TAB
SCALE	

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
SP0.2

SP0.1 GENERAL NOTES.dwg



1 OVERALL SITE PLAN

SCALE: 1" = 10'

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Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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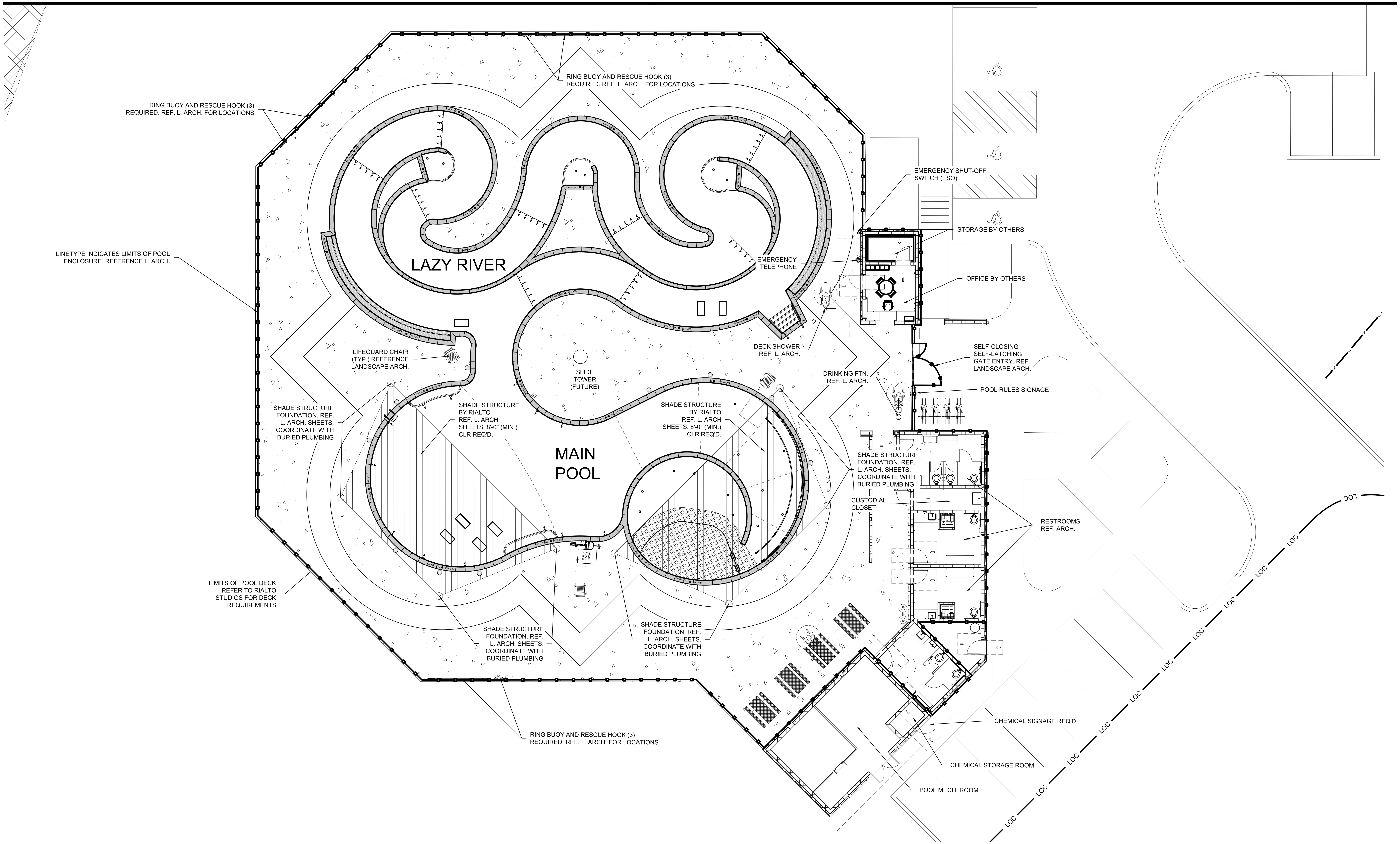
SHEET TITLE

OVERALL SITE LAYOUT

SHEET NUMBER

SP1.0

SP1.0 OVERALL SITE LAYOUT.dwg



1 OVERALL SITE LAYOUT-ADD ALT 1

SCALE: 1" = 10'-0"

LAYOUT CONTROL DEFINED BY RIALTO STUDIOS, DIMENSIONS SHOWN HERE FOR CONVENIENCE. POOL CONTRACTOR TO VERIFY DIMENSIONS WITH RIALTO STUDIOS.

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Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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STATE OF TEXAS
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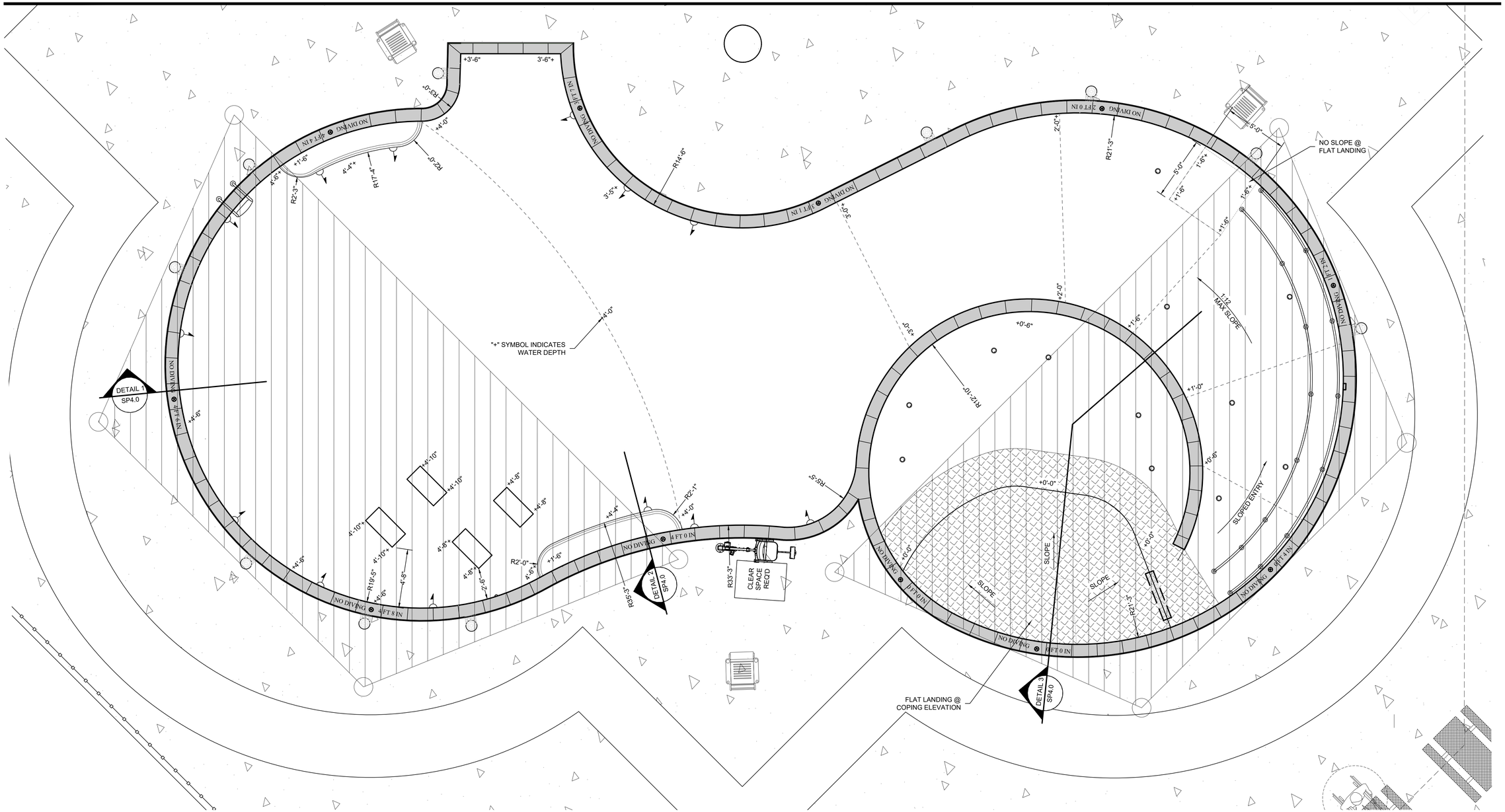
SHEET TITLE
OVERALL SITE LAYOUT ADD ALT 1

SHEET NUMBER
SP1.1

SP1.1 OVERALL SITE LAYOUT ADD ALT.dwg



1 POOL DIMENSION PLAN

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

LAYOUT CONTROL DEFINED BY RIALTO STUDIOS, DIMENSIONS SHOWN HERE FOR CONVENIENCE. POOL CONTRACTOR TO VERIFY DIMENSIONS WITH RIALTO STUDIOS.

REF. SP1.5 FOR EQUIPMENT KEY

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Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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STATE OF TEXAS
TRAVIS A. BOZICK
104560
LICENSED
PROFESSIONAL ENGINEER
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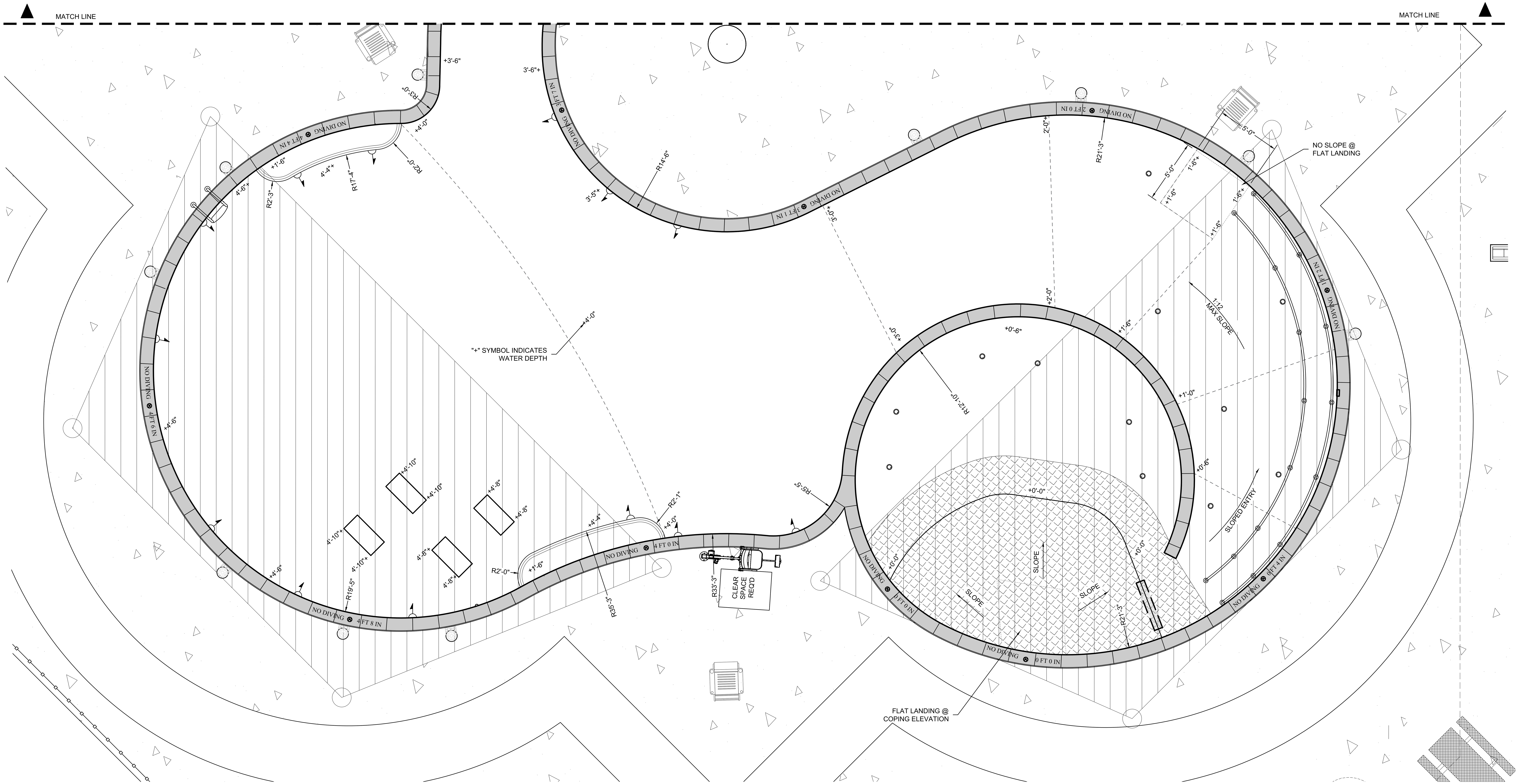
SHEET TITLE

POOL DIMENSIONS

SHEET NUMBER

SP1.2

SP1.2 POOL DIMENSIONS.dwg



LAYOUT CONTROL DEFINED BY RIALTO STUDIOS, DIMENSIONS SHOWN HERE FOR CONVENIENCE. POOL CONTRACTOR TO VERIFY DIMENSIONS WITH RIALTO STUDIOS.

REF. SP1.6 FOR EQUIPMENT KEY

1 POOL DIMENSIONS-ADD ALT 1

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

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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STATE OF TEXAS
TRAVIS A. BOZICK
104560
LICENSED
PROFESSIONAL ENGINEER
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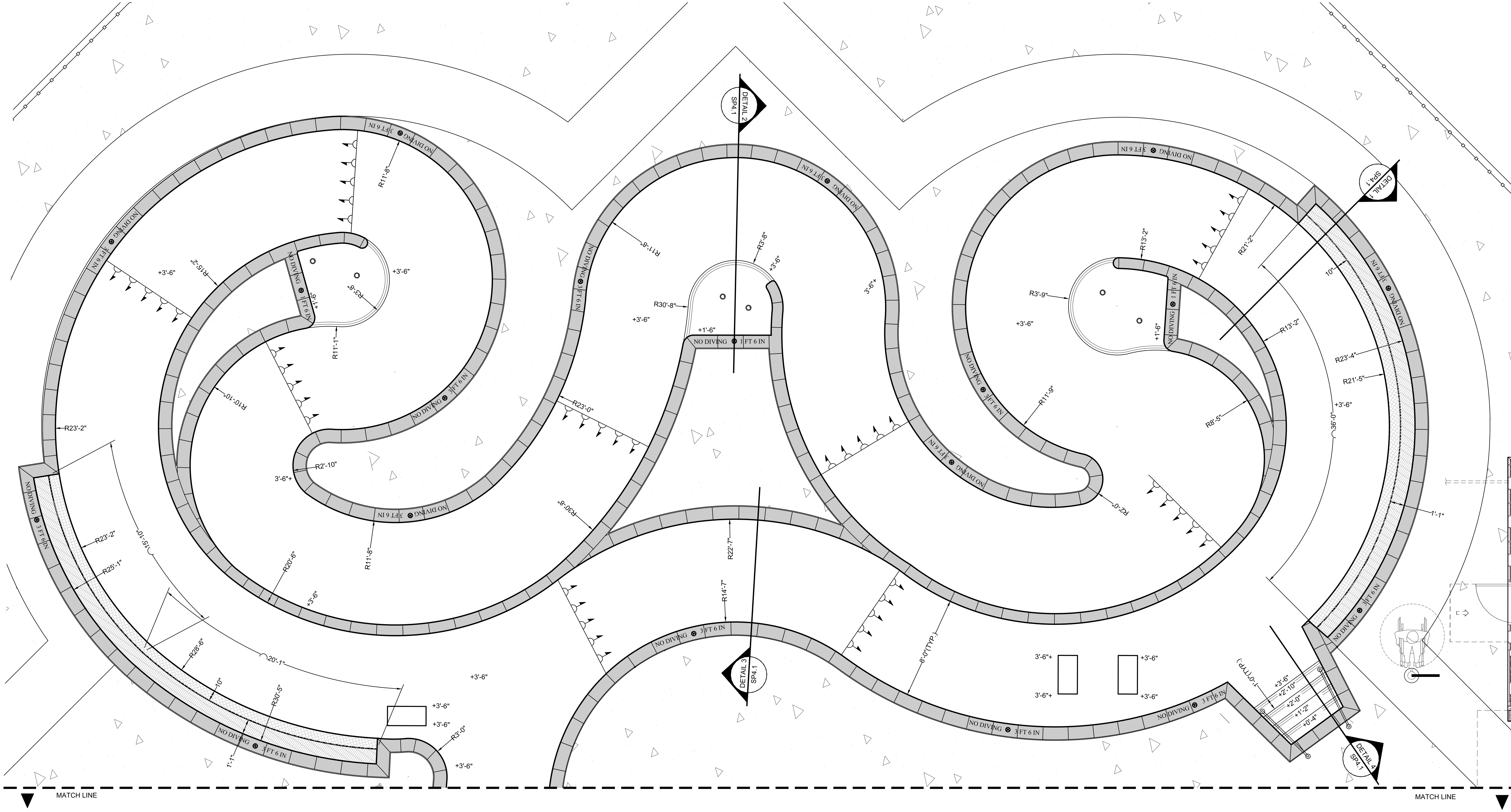
SHEET TITLE

POOL DIMENSIONS ADD ALT 1

SHEET NUMBER

SP1.3

SP1.3 POOL DIMENSIONS ADD ALT.dwg



LAYOUT CONTROL DEFINED BY RIALTO STUDIOS, DIMENSIONS SHOWN HERE FOR CONVENIENCE. POOL CONTRACTOR TO VERIFY DIMENSIONS WITH RIALTO STUDIOS.

REF. SP1.7 FOR EQUIPMENT KEY

1 POOL DIMENSIONS-ADD ALT 1

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

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Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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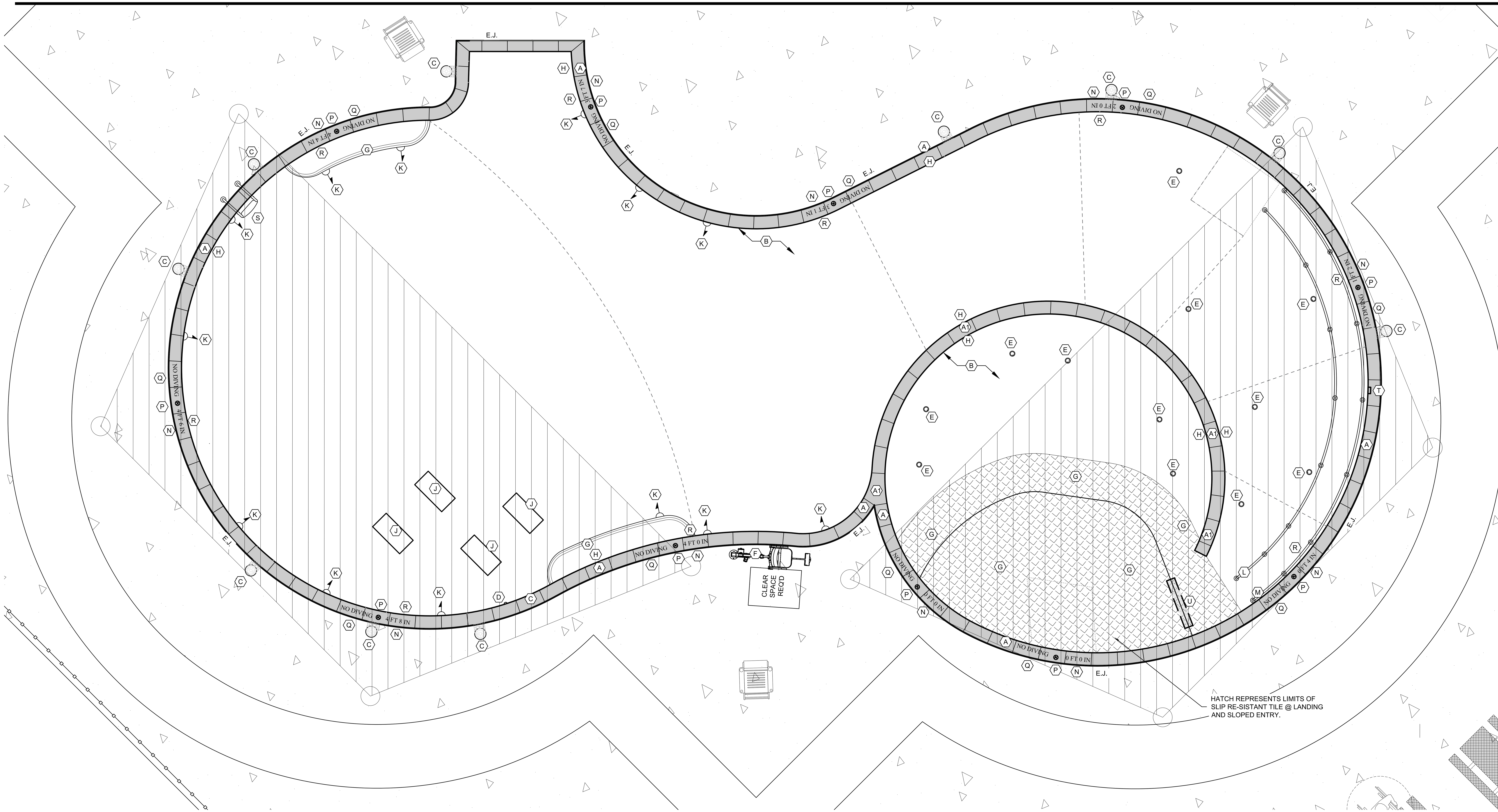
SHEET TITLE

POOL DIMENSIONS ADD ALT 1

SHEET NUMBER

SP1.4

SP1.3 POOL DIMENSIONS ADD ALT.dwg



EQUIPMENT SCHEDULE

KEY	MANUFACTURER	DEVICE	MODEL NUMBER	DESCRIPTION
A	---	COPING	---	12" WIDTH X 2.5" THICK COMMERCIAL PRE-CAST COPING WITH BULLNOSE. COLOR TBD BY LANDSCAPE ARCHITECT
A1	---	COPING	---	12" WIDTH X 2.5" THICK COMMERCIAL PRE-CAST COPING WITH DOUBLE BULLNOSE. COLOR TBD BY LANDSCAPE ARCHITECT
B	---	EXPOSED AGG. PLASTER	---	EXPOSED AGGREGATE PLASTER. COLOR TBD BY L. ARCH. INSTALLED THICKNESS SHALL BE A MINIMUM OF ⅜"
C	PENTAIR / STA-RITE	SKIMMER	U-3 SKIMMER	CONTRACTOR TO FURNISH AND INSTALL SKIMMER WITH LID AND FRAME. 2" NPT WITH 1-1/2" NPT REDUCERS WITH BASKET. SEE DETAIL 2 SP5.1.
D	JANDY	ELECTRONIC AUTOFILL	LEVELOR K2000	ELECTRONIC AUTOFILL WITH LEVEL SENSING PROBE. WIRE TO CONTROLLER IN POOL MECHANICAL ROOM. CONTROLLER TO ACTIAVVTE SOLENOID VALVE. 1" POT. WATER LINE TO TAP INTO SUCTION SIDE OF CIRCULATION SYSTEM IN MECHANICAL ROOM. STATIC SENSING LINE IN POOL, SENSING PROBE TO BE LOCATED IN MECH. ROOM. REF. SP3.0 FOR SENSING PROBE LOCATION. REF. SP2.0 FOR STATIC SENSING LINE PLUMBING ROUTING.
E	PENTAIR	FLOOR INLET	08417-000	FLOOR INLET FITTING WITH 2" SLIP, 1-1/2" SLIP BUSHING, WHITE. SEE DTL 1 SP5.1
F	AQUA CREEK	ADA LIFT CHAIR	MIGHTY 400	CONTRACTOR TO FURNISH AND INSTALL ADA LIFT CHAIR WITH 375 LBS WEIGHT CAPACITY, STAINLESS STEEL CONSTRUCTION WITH ANCHOR. BATTERY POWERED OPERATION. REFER TO DETAIL 5 SP5.0.
G	NOBLE TILE SUPPLY	DELINEATION TILE BAND	---	2" WIDE TILE DELINEATION BAND WITH SLIP RESISTANT SURFACE. INSTALL AT NOSE OF STEPS AND BENCH LEDGES, BASKETBALL KEY, AND BEACHED ENTRY. COLOR TO BE SELECTED BY OWNER AND CONTRAST WITH POOL FLOOR.
H	NOBLE TILE SUPPLY	WATERLINE TILE	---	6" WIDE BAND OF FROSTPROOF WATERLINE TILE. TILE SIZE AND COLOR TBD BY L. ARCH.
J	DALDORADO	POOL MAIN DRAIN	DALMAX-SG-183628	CONTRACTOR TO FURNISH AND INSTALL 18"X36"X28" MAIN DRAIN SUMPS AND COVERS. 2008 VGB COMPLIANT. RATED FOR 2,480 GPM (FLOOR). SEE DTL 1 SP5.0
K	PENTAIR	WALL INLETS	08429-0000	½" ORIFICE IN ADJ. EYEBALL FITTING 08434-000. FURNISH WITH 1 ½" STANDARD 1088 WALL FITTING. REFER TO DETAIL 1 SP5.1.
L	SR SMITH OR EQUAL	ADA HAND RAIL	CUSTOM	33'-0" LONG 19'-3" RADIUS SLOPED ENTRY ADA POOL HANDRAIL SPACED 2'-0" (CLEAR) APART. FURNISH AND INSTALL WITH 316 S.S.,BRASS ANCHOR AND STAINLESS STEEL ESCUTCHEONS. VERTICAL POSTS SHALL BE EQUALLY SPACED. MAX. DISTANCE 6'-0" POST TO POST. BOTTOM RAIL REQ'D. SUBMITTAL REQ'D PRIOR TO PURCHASE. REF. DTL 1 SP5.2
M	SR SMITH OR EQUAL	ADA HAND RAIL	CUSTOM	36'-9" LONG 21'-5" RADIUS SLOPED ENTRY ADA POOL HANDRAIL SPACED 2'-0" (CLEAR) APART. FURNISH AND INSTALL WITH 316 S.S., BRASS ANCHOR, AND STAINLESS STEEL ESCUTCHEONS. VERTICAL POSTS SHALL BE EQUALLY SPACED. MAX. DISTANCE 6'-0" POST TO POST. SUBMITTAL REQ'D PRIOR TO PURCHASE. REF. DTL 2 SP5.2
N	---	DEPTH MARKER	CUSTOM	POOL CONTRACTOR TO FURNISH AND INSTALL WATERCUT OR SANDBLASTED COPING WITH NUMERICAL DEFINITION OF WATER DEPTH PER THE FORMAT FOLLOWING: "3 FT 6 IN" FOR WATER DEPTH AT THE LOCATION SHOWN. CONTRASTING TEXT ON SLIP RESISTANT TILE. ENGRAVING DEPTH 3/8" - SEE DETAIL 2 ON SP5.0
P	---	NO DIVING SYMBOL	CUSTOM	POOL CONTRACTOR TO FURNISH AND INSTALL WATERCUT OR SANDBLASTED COPING WITH INTERNATIONAL "NO DIVING" SYMBOL. CONTRASTING TEXT ON SLIP RESISTANT TILE. ENGRAVING DEPTH 3/8" - SEE DETAIL 2 ON SP5.0
Q	---	NO DIVING	CUSTOM	POOL CONTRACTOR TO FURNISH AND INSTALL WATERCUT OR SANDBLASTED COPING WITH "NO DIVING" TEXT. CONTRASTING TEXT ON SLIP RESISTANT TILE. ENGRAVING DEPTH 3/8" - SEE DETAIL 2 ON SP5.0
R	NOBLE TILE SUPPLY	WATER LINE/DEPTH MARKER	---	NUMERICAL DEFINITION OF WATER DEPTH PER THE FORMAT FOLLOWING: "3 FT 6 IN" FOR WATER DEPTH AT TILE LOCATION. CONTRASTING TEXT ON SMOOTH TILE SET FLUSH WITH WATERLINE TILE. FROST PROOF TILE REQUIRED. SEE DTL 2 ON SP5.0
S	SR SMITH	POOL LADDER	---	POOL CONTRACTOR TO FURNISH AND INSTALL 1.90" OD X 0.145" WALL THICKNESS (316L) STAINLESS STEEL. 3 STEP LADDER. FURNISH AND INSTALL WITH BRONZE WEDGE ANCHORS AND STAINLESS STEEL ESCUTCHEON COVERS. LADDERS TREADS SHALL BE SLIP RESISTANT. REFER TO DETAIL 4 SP5.0.
T	PENTAIR	OVERFLOW FITTING	542039	6"X2.5" GUTTER DRAIN AND GRATE COVER FOR OVERFLOW LINE. SEE DTL 5 ON SP5.1.
U	DALDORADO	OUTLET GRATE	GOG-FG/GO	CONTRACTOR TO FURNISH INSTALL 48"X8" OUTLET GRATE AND FRAME. 40% OPEN AREA WITH MIN. 1" GRATING SUPPORT ALL AROUND.

1 POOL EQUIPMENT PLAN

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

RIALTO STUDIO

Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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STATE OF TEXAS
TRAVIS A. BOZICK
104560
LICENSED PROFESSIONAL ENGINEER
10/23/2025

District 3 Aquatics Facility

San Antonio, TX

ISSUE DATE	10/23/2025
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PROJECT NUMBER	23010
DRAWN BY	RDT/TAB
CHECKED BY	RDT/TAB
SCALE	

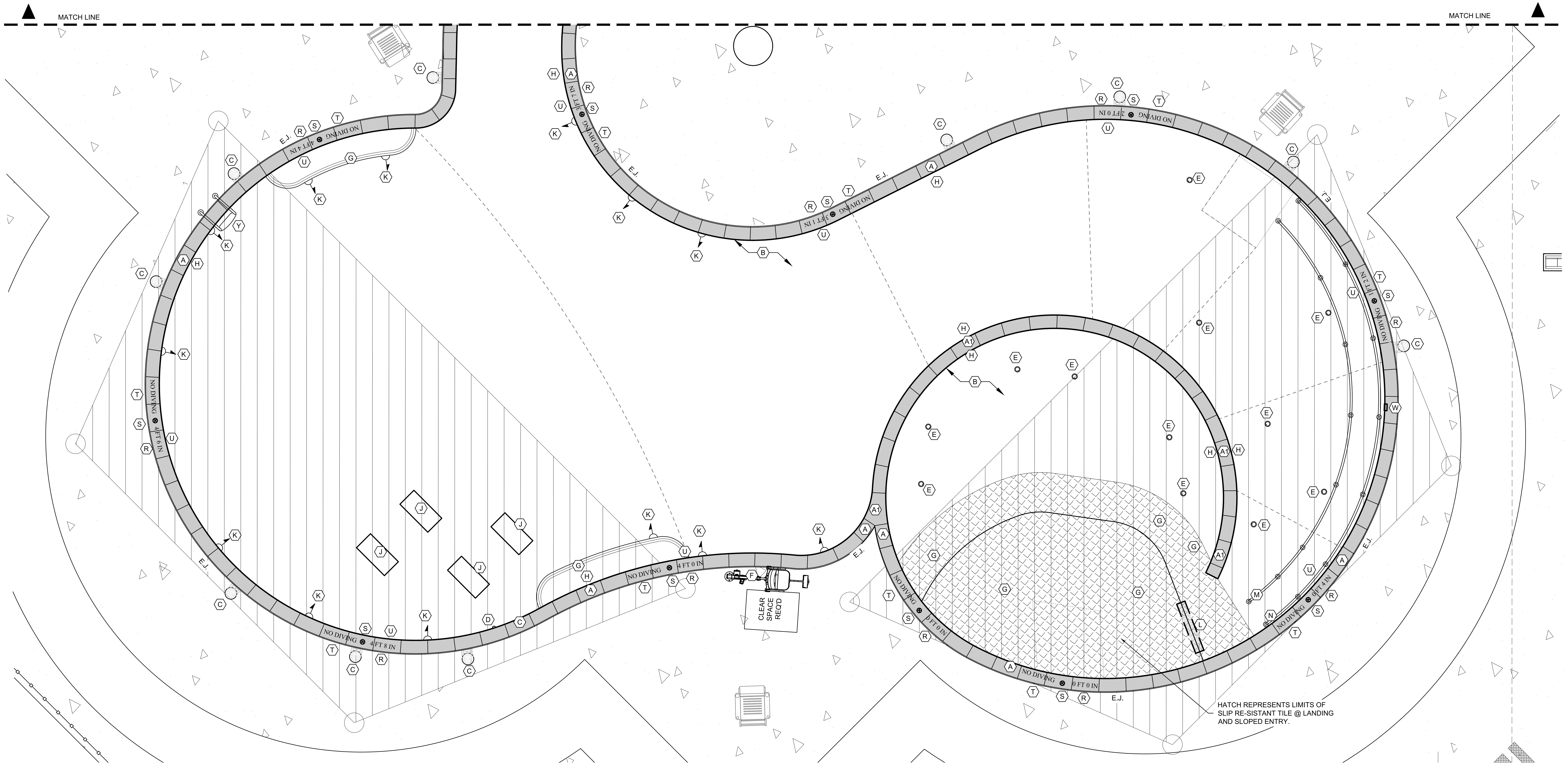
SHEET TITLE

POOL EQUIPMENT

SP1.5 POOL EQUIPMENT.dwg

SHEET NUMBER

SP1.5



EQUIPMENT SCHEDULE

KEY	MANUFACTURER	DEVICE	MODEL NUMBER	DESCRIPTION
A	---	COPING	---	12" WIDTH X 2.5" THICK COMMERCIAL PRE-CAST COPING WITH BULLNOSE. COLOR TBD BY LANDSCAPE ARCHITECT
A1	---	COPING	---	12" WIDTH X 2.5" THICK COMMERCIAL PRE-CAST COPING WITH DOUBLE BULLNOSE. COLOR TBD BY LANDSCAPE ARCHITECT
B	---	EXPOSED AGG. PLASTER	---	EXPOSED AGGREGATE PLASTER. COLOR TBD BY L. ARCH. INSTALLED THICKNESS SHALL BE A MINIMUM OF 3/8"
C	PENTAIR / STA-RITE	SKIMMER	U-3 SKIMMER	CONTRACTOR TO FURNISH AND INSTALL SKIMMER WITH LID AND FRAME. 2" NPT WITH 1-1/2" NPT REDUCERS WITH BASKET. SEE DETAIL 2 SP5.1.
D	JANDY	ELECTRONIC AUTOFILL	LEVELOR K2000	ELECTRONIC AUTOFILL WITH LEVEL SENSING PROBE. WIRE TO CONTROLLER IN POOL MECHANICAL ROOM. CONTROLLER TO ACTIAVVTE SOLENOID VALVE. 1" POT. WATER LINE TO TAP INTO SUCTION SIDE OF CIRCULATION SYSTEM IN MECHANICAL ROOM. STATIC SENSING LINE IN POOL, SENSING PROBE TO BE LOCATED IN MECH. ROOM. REF. SP3.0 FOR SENSING PROBE LOCATION. REF. SP2.0 FOR STATIC SENSING LINE PLUMBING ROUTING.
E	PENTAIR	FLOOR INLET	08417-000	FLOOR INLET FITTING WITH 2" SLIP, 1-1/2" SLIP BUSHING, WHITE. SEE DTL 1 SP5.1
F	AQUA CREEK	ADA LIFT CHAIR	MIGHTY 400	CONTRACTOR TO FURNISH AND INSTALL ADA LIFT CHAIR WITH 375 LBS WEIGHT CAPACITY, STAINLESS STEEL CONSTRUCTION WITH ANCHOR. BATTERY POWERED OPERATION. REFER TO DETAIL 5 SP5.0.
G	NOBLE TILE SUPPLY	DELINEATION TILE BAND	---	2" WIDE TILE DELINEATION BAND WITH SLIP RESISTANT SURFACE. INSTALL AT NOSE OF STEPS AND BENCH LEDGES, BASKETBALL KEY, AND BEACHED ENTRY. COLOR TO BE SELECTED BY OWNER AND CONTRAST WITH POOL FLOOR.
H	NOBLE TILE SUPPLY	WATERLINE TILE	---	6" WIDE BAND OF FROSTPROOF WATERLINE TILE. TILE SIZE AND COLOR TBD BY L. ARCH.
J	DALDORADO	POOL MAIN DRAIN	DALMAX-SG-183628	CONTRACTOR TO FURNISH AND INSTALL 18"X36"X28" MAIN DRAIN SUMPS AND COVERS. 2008 VGB COMPLIANT. RATED FOR 2,480 GPM (FLOOR). SEE DTL 1 SP5.0
K	PENTAIR	WALL INLETS	08429-0000	½" ORIFICE IN ADJ. EYEBALL FITTING 08434-000. FURNISH WITH 1 ½" STANDARD 1088 WALL FITTING. REFER TO DETAIL 1 SP5.1.
L	DALDORADO	OUTLET GRATE	GOG-FG/GO	CONTRACTOR TO FURNISH INSTALL 48"X8" OUTLET GRATE AND FRAME. 40% OPEN AREA WITH MIN. 1" GRATING SUPPORT ALL AROUND.
M	SR SMITH OR EQUAL	ADA HAND RAIL	CUSTOM	33'-0" LONG 19'-3" RADIUS SLOPED ENTRY ADA POOL HANDRAIL SPACED 2'-0" (CLEAR) APART. FURNISH AND INSTALL WITH 316 S.S.,BRASS ANCHOR AND STAINLESS STEEL ESCUTCHEONS. VERTICAL POSTS SHALL BE EQUALLY SPACED. MAX. DISTANCE 6'-0" POST TO POST. BOTTOM RAIL REQ'D. SUBMITTAL REQ'D PRIOR TO PURCHASE. REF. DTL 1 SP5.2
N	SR SMITH OR EQUAL	ADA HANDRAIL	CUSTOM	36'-9" LONG 21'-5" RADIUS SLOPED ENTRY ADA POOL HANDRAIL SPACED 2'-0" (CLEAR) APART. FURNISH AND INSTALL WITH 316 S.S., BRASS ANCHOR, AND STAINLESS STEEL ESCUTCHEONS. VERTICAL POSTS SHALL BE EQUALLY SPACED. MAX. DISTANCE 6'-0" POST TO POST. SUBMITTAL REQ'D PRIOR TO PURCHASE. REF. DTL 2 SP5.2
P	SR SMITH OR EQUAL	HAND RAIL	CUSTOM	CUSTOM LENGTH 3-BEND HANDRAILS. FURNISH AND INSTALL WITH 316 S.S, BRASS ANCHOR AND STAINLESS STEEL ESCUTCHEONS. REF. DTL 4 SP4.1
Q	---	RIVER JETS	---	FURNISH AND INSTALL 6" SCH. 80 PVC RIVER SUPPLY HEADER WITH FIVE (5) 2" SCH. 80 PVC RIVER JETS. TAPER CONCRETE RIVER FLOOR ON ALL SIDES OF RIVER JET. REF. DTL 6 ON SP5.1
R	---	DEPTH MARKER	CUSTOM	POOL CONTRACTOR TO FURNISH AND INSTALL WATERCUT OR SANDBLASTED COPING WITH NUMERICAL DEFINITION OF WATER DEPTH PER THE FORMAT FOLLOWING: "3 FT 6 IN" FOR WATER DEPTH AT THE LOCATION SHOWN. CONTRASTING TEXT ON SLIP RESISTANT TILE. ENGRAVING DEPTH 3/8" - SEE DETAIL 2 ON SP5.0
S	---	NO DIVING SYMBOL	CUSTOM	POOL CONTRACTOR TO FURNISH AND INSTALL WATERCUT OR SANDBLASTED COPING WITH INTERNATIONAL "NO DIVING" SYMBOL. CONTRASTING TEXT ON SLIP RESISTANT TILE. ENGRAVING DEPTH 3/8" - SEE DETAIL 2 ON SP5.0
T	---	NO DIVING	CUSTOM	POOL CONTRACTOR TO FURNISH AND INSTALL WATERCUT OR SANDBLASTED COPING WITH "NO DIVING" TEXT. CONTRASTING TEXT ON SLIP RESISTANT TILE. ENGRAVING DEPTH 3/8" - SEE DETAIL 2 ON SP5.0
U	NOBLE TILE SUPPLY	WATER LINE/DEPTH MARKER	---	NUMERICAL DEFINITION OF WATER DEPTH PER THE FORMAT FOLLOWING: "3 FT 6 IN" FOR WATER DEPTH AT TILE LOCATION. CONTRASTING TEXT ON SMOOTH TILE SET FLUSH WITH WATERLINE TILE. FROST PROOF TILE REQUIRED. SEE DTL 2 ON SP5.0
V	JONITE	GRATE	CLASSIC SERIES	POOL CONTRACTOR TO FURNISH AND INSTALL JONITE GRATING. CLASSIC SERIES 11.0" X 12.2" DRAIN WIDTH. INSTALL ON CUTOM RADII OVER 11" TROUGH. REFER TO SECTION 1 ON SP4.1
W	PENTAIR	OVERFLOW FITTING	542039	6"X2.5" GUTTER DRAIN AND GRATE COVER FOR OVERFLOW LINE. SEE DTL 5 ON SP5.1.
X	--	CIRCULATION JETS	--	FURNISH AND INSTALL 6" SCH. 80 PVC RIVER SUPPLY HEADER WITH FIVE (5) 2" SCH. 80 PVC RIVER JETS. TAPER CONCRETE FLOOR ON ALL SIDES OF CIRCULATION JET. REF. DTL 6 ON SP5.1 **NOTE: CIRCULATION JETS SHALL BE SUPPLIED BY FILTERED RETURN LOOP. CIRCULATION JETS SHALL NOT BE SUPPLIED BY RETURNS FROM MOTIVATION PUMPS.**
Y	SR SMITH	POOL LADDER	---	POOL CONTRACTOR TO FURNISH AND INSTALL 1.90" OD X 0.145" WALL THICKNESS (316L) STAINLESS STEEL. 3 STEP LADDER. FURNISH AND INSTALL WITH BRONZE WEDGE ANCHORS AND STAINLESS STEEL ESCUTCHEON COVERS. LADDERS TREADS SHALL BE SLIP RESISTANT. REFER TO DETAIL 4 SP5.0.

1 POOL EQUIPMENT-ADD ALT 1

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

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San Antonio, TX

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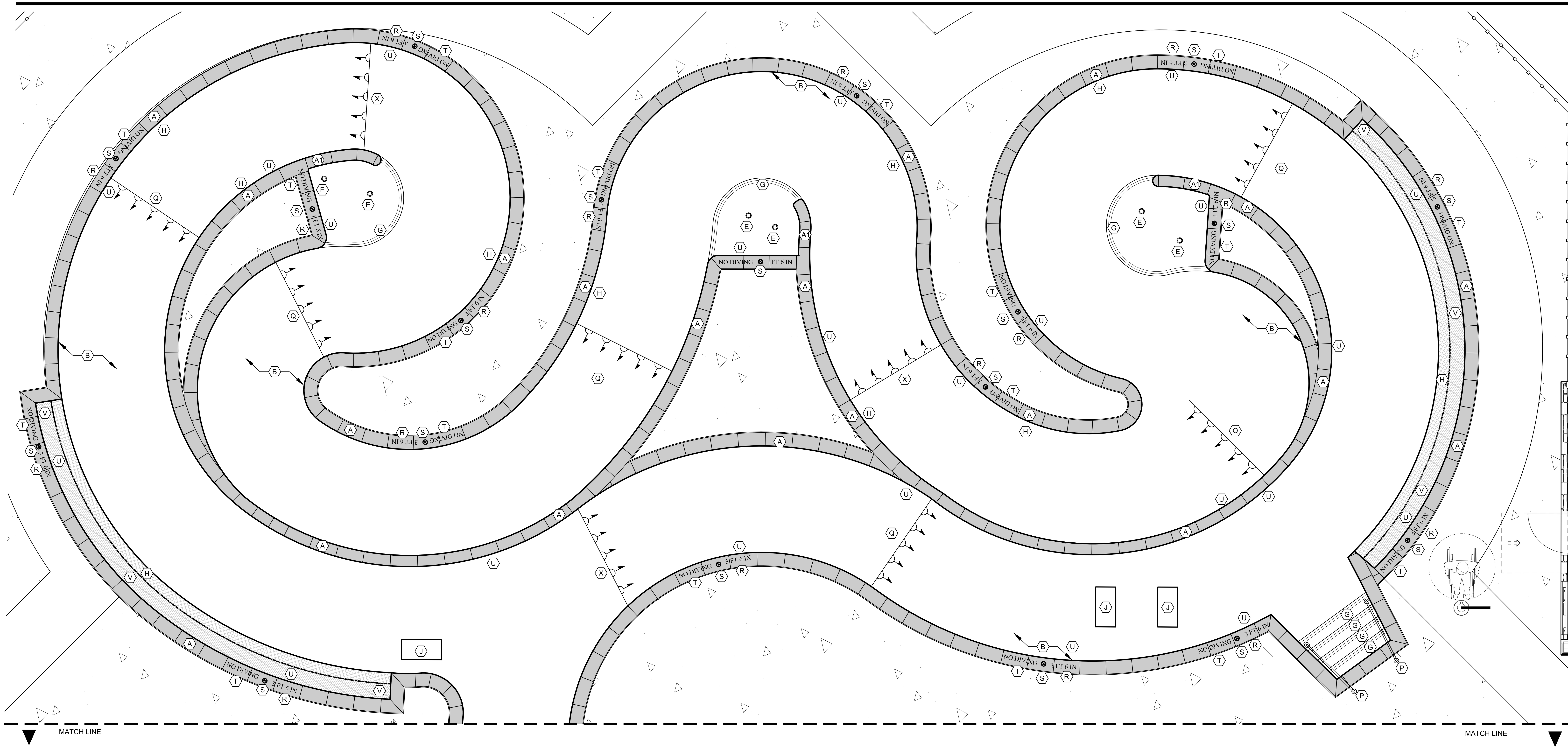
SHEET TITLE

POOL EQUIPMENT ADD ALT 1

SHEET NUMBER

SP1.6

SP1.6 POOL EQUIPMENT ADD ALT.dwg



EQUIPMENT SCHEDULE

KEY	MANUFACTURER	DEVICE	MODEL NUMBER	DESCRIPTION
A	---	COPING	---	12" WIDTH X 2.5" THICK COMMERCIAL PRE-CAST COPING WITH BULLNOSE. COLOR TBD BY LANDSCAPE ARCHITECT
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B	---	EXPOSED AGG. PLASTER	---	EXPOSED AGGREGATE PLASTER. COLOR TBD BY L. ARCH. INSTALLED THICKNESS SHALL BE A MINIMUM OF 3/8"
C	PENTAIR / STA-RITE	SKIMMER	U-3 SKIMMER	CONTRACTOR TO FURNISH AND INSTALL SKIMMER WITH LID AND FRAME. 2" NPT WITH 1-1/2" NPT REDUCERS WITH BASKET. SEE DETAIL 2 SP5.1.
D	JANDY	ELECTRONIC AUTOFILL	LEVELOR K2000	ELECTRONIC AUTOFILL WITH LEVEL SENSING PROBE. WIRE TO CONTROLLER IN POOL MECHANICAL ROOM. CONTROLLER TO ACTIAVVTE SOLENOID VALVE. 1" POT. WATER LINE TO TAP INTO SUCTION SIDE OF CIRCULATION SYSTEM IN MECHANICAL ROOM. STATIC SENSING LINE IN POOL, SENSING PROBE TO BE LOCATED IN MECH. ROOM. REF. SP3.0 FOR SENSING PROBE LOCATION. REF. SP2.0 FOR STATIC SENSING LINE PLUMBING ROUTING.
E	PENTAIR	FLOOR INLET	08417-000	FLOOR INLET FITTING WITH 2" SLIP, 1-1/2" SLIP BUSHING, WHITE. SEE DTL 1 SP5.1
F	AQUA CREEK	ADA LIFT CHAIR	MIGHTY 400	CONTRACTOR TO FURNISH AND INSTALL ADA LIFT CHAIR WITH 375 LBS WEIGHT CAPACITY, STAINLESS STEEL CONSTRUCTION WITH ANCHOR. BATTERY POWERED OPERATION. REFER TO DETAIL 5 SP5.0.
G	NOBLE TILE SUPPLY	DELINEATION TILE BAND	---	2" WIDE TILE DELINEATION BAND WITH SLIP RESISTANT SURFACE. INSTALL AT NOSE OF STEPS AND BENCH LEDGES, BASKETBALL KEY, AND BEACHED ENTRY. COLOR TO BE SELECTED BY OWNER AND CONTRAST WITH POOL FLOOR.
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K	PENTAIR	WALL INLETS	08429-0000	1/2" ORIFICE IN ADJ. EYEBALL FITTING 08434-000. FURNISH WITH 1 1/2" STANDARD 1088 WALL FITTING. REFER TO DETAIL 1 SP5.1.
L	DALDORADO	OUTLET GRATE	GOG-FG/GO	CONTRACTOR TO FURNISH INSTALL 48"X8" OUTLET GRATE AND FRAME. 40% OPEN AREA WITH MIN. 1" GRATING SUPPORT ALL AROUND.
M	SR SMITH OR EQUAL	ADA HAND RAIL	CUSTOM	33'-0" LONG 19'-3" RADIUS SLOPED ENTRY ADA POOL HANDRAIL SPACED 2'-0" (CLEAR) APART. FURNISH AND INSTALL WITH 316 S.S.,BRASS ANCHOR AND STAINLESS STEEL ESCUTCHEONS. VERTICAL POSTS SHALL BE EQUALLY SPACED. MAX. DISTANCE 6'-0" POST TO POST. BOTTOM RAIL REQ'D. SUBMITTAL REQ'D PRIOR TO PURCHASE. REF. DTL 1 SP5.2
N	SR SMITH OR EQUAL	ADA HAND RAIL	CUSTOM	36'-9" LONG 21'-5" RADIUS SLOPED ENTRY ADA POOL HANDRAIL SPACED 2'-0" (CLEAR) APART. FURNISH AND INSTALL WITH 316 S.S., BRASS ANCHOR, AND STAINLESS STEEL ESCUTCHEONS. VERTICAL POSTS SHALL BE EQUALLY SPACED. MAX. DISTANCE 6'-0" POST TO POST. SUBMITTAL REQ'D PRIOR TO PURCHASE. REF. DTL 2 SP5.2
P	SR SMITH OR EQUAL	HAND RAIL	CUSTOM	CUSTOM LENGTH 3-BEND HANDRAILS. FURNISH AND INSTALL WITH 316 S.S, BRASS ANCHOR AND STAINLESS STEEL ESCUTCHEONS. REF. DTL 4 SP4.1
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S	---	NO DIVING SYMBOL	CUSTOM	POOL CONTRACTOR TO FURNISH AND INSTALL WATERCUT OR SANDBLASTED COPING WITH INTERNATIONAL "NO DIVING" SYMBOL. CONTRASTING TEXT ON SLIP RESISTANT TILE. ENGRAVING DEPTH 3/8" - SEE DETAIL 2 ON SP5.0
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U	NOBLE TILE SUPPLY	WATER LINE/DEPTH MARKER	---	NUMERICAL DEFINITION OF WATER DEPTH PER THE FORMAT FOLLOWING: "3 FT 6 IN" FOR WATER DEPTH AT TILE LOCATION. CONTRASTING TEXT ON SMOOTH TILE SET FLUSH WITH WATERLINE TILE. FROST PROOF TILE REQUIRED. SEE DTL 2 ON SP5.0
V	JONITE	GRATE	CLASSIC SERIES	POOL CONTRACTOR TO FURNISH AND INSTALL JONITE GRATING. CLASSIC SERIES 11.0" X 12.2" DRAIN WIDTH. INSTALL ON CUTOM RADII OVER 11" TROUGH. REFER TO SECTION 1 ON SP4.1
W	PENTAIR	OVERFLOW FITTING	542039	6"X2.5" GUTTER DRAIN AND GRATE COVER FOR OVERFLOW LINE. SEE DTL 5 ON SP5.1.
X	--	CIRCULATION JETS	--	FURNISH AND INSTALL 6" SCH. 80 PVC RIVER SUPPLY HEADER WITH FIVE (5) 2" SCH. 80 PVC RIVER JETS. TAPER CONCRETE FLOOR ON ALL SIDES OF CIRCULATION JET. REF. DTL 6 ON SP5.1 **NOTE: CIRCULATION JETS SHALL BE SUPPLIED BY FILTERED RETURN LOOP. CIRCULATION JETS SHALL NOT BE SUPPLIED BY RETURNS FROM MOTIVATION PUMPS.**
Y	SR SMITH	POOL LADDER	---	POOL CONTRACTOR TO FURNISH AND INSTALL 1.90" OD X 0.145" WALL THICKNESS (316L) STAINLESS STEEL. 3 STEP LADDER. FURNISH AND INSTALL WITH BRONZE WEDGE ANCHORS AND STAINLESS STEEL ESCUTCHEON COVERS. LADDERS TREADS SHALL BE SLIP RESISTANT. REFER TO DETAIL 4 SP5.0.

1 POOL EQUIPMENT-ADD ALT 1

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

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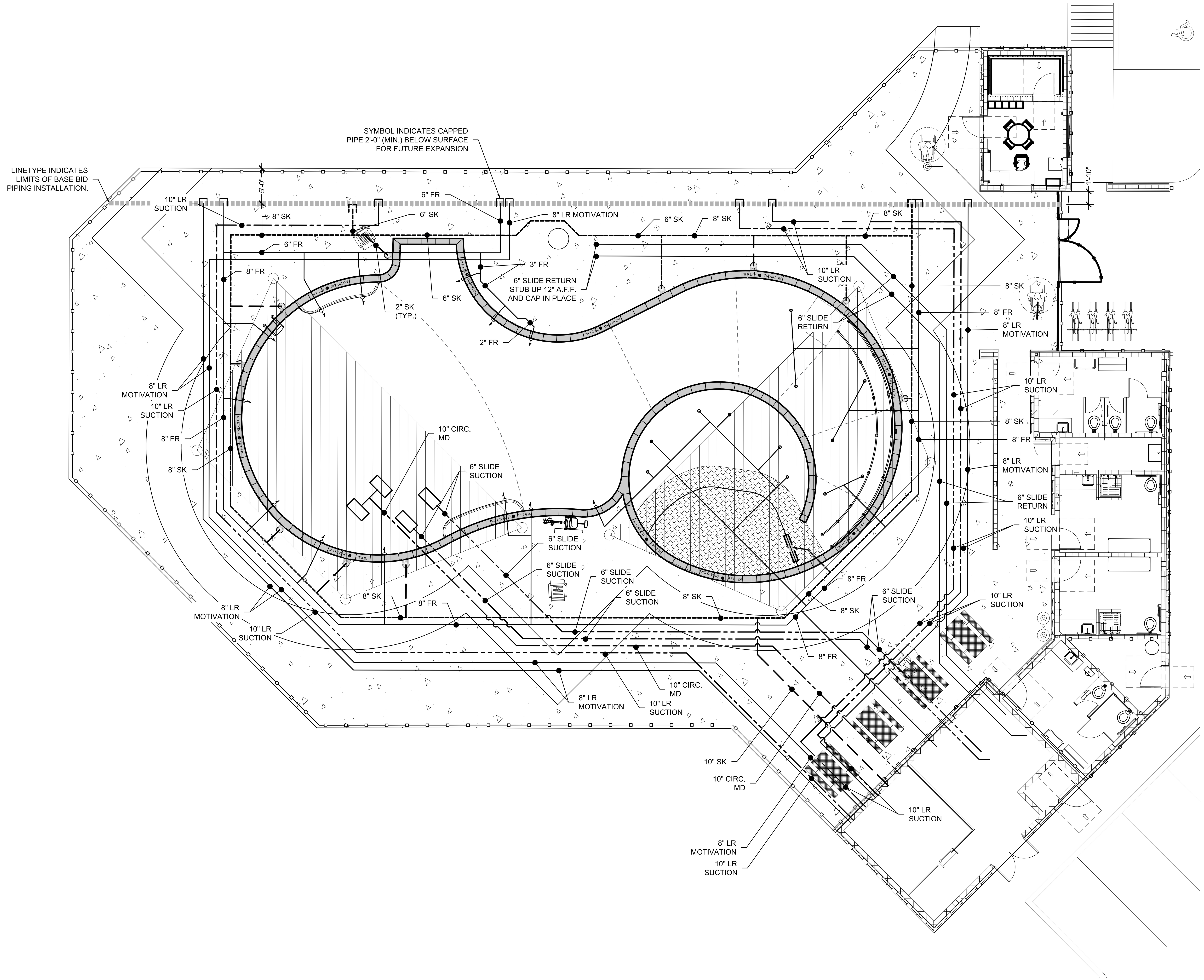
SHEET TITLE
POOL EQUIPMENT ADD ALT 1

SP1.6 POOL EQUIPMENT ADD ALT.dwg

SHEET NUMBER
SP1.7



1 POOL PLUMBING PLAN

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

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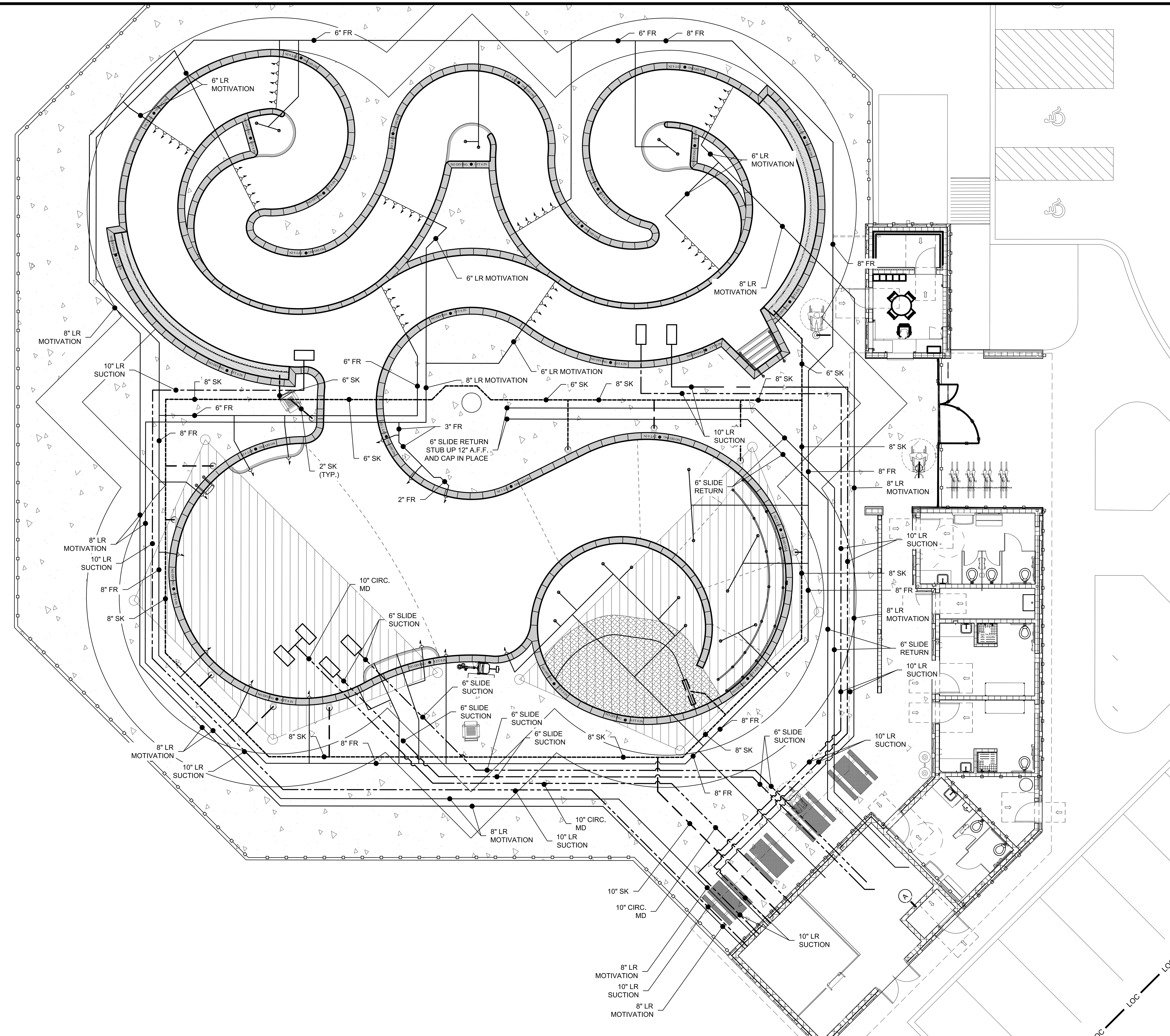
SHEET TITLE

POOL PLUMBING

SP2.0 POOL PLUMBING.dwg

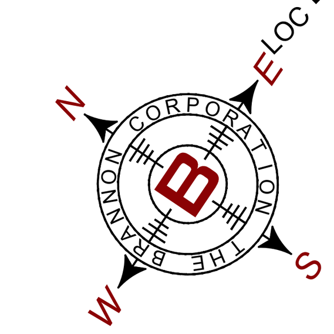
SHEET NUMBER

SP2.0



1 POOL PLUMBING PLAN-ADD ALT 1

SCALE: 1" = 10'



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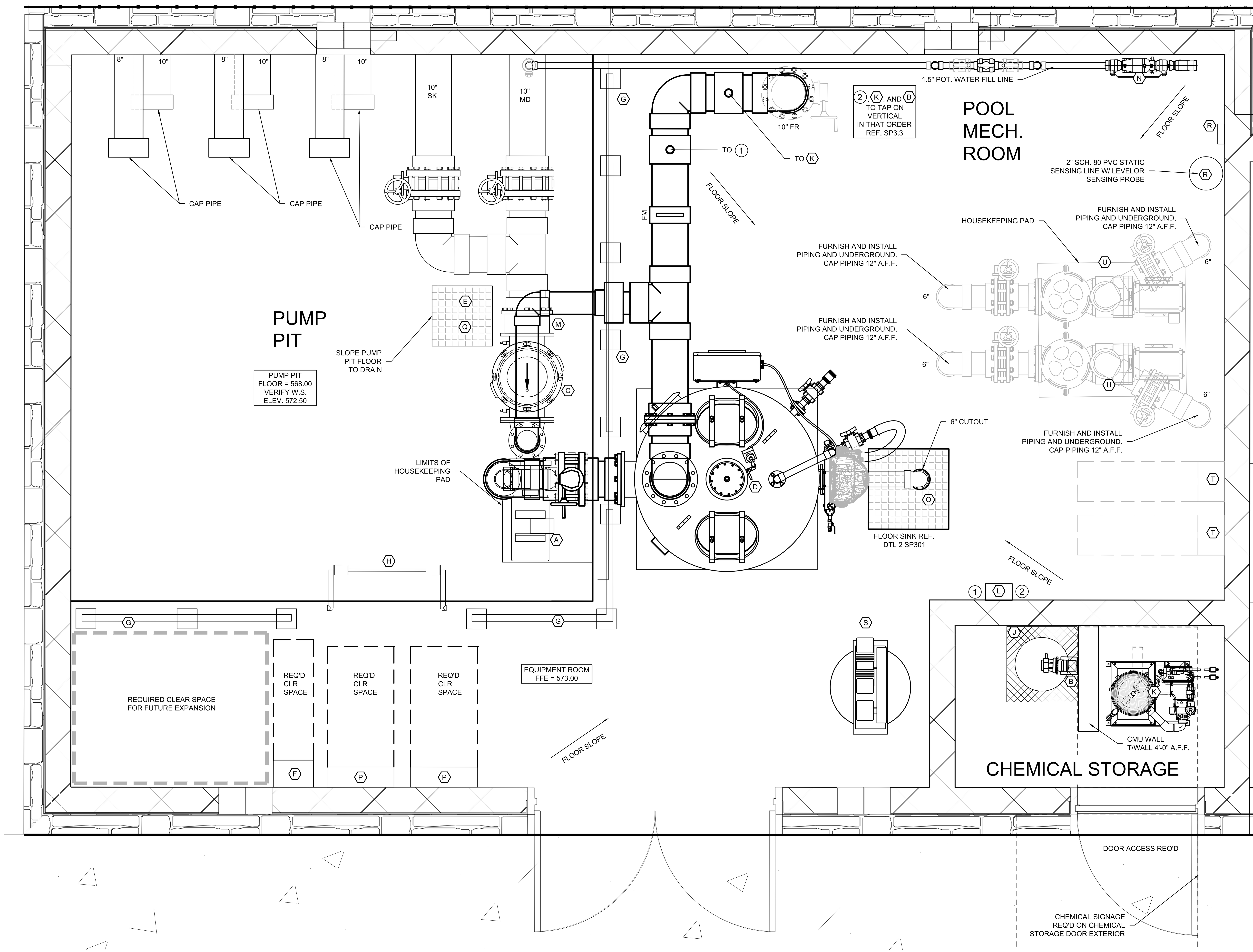
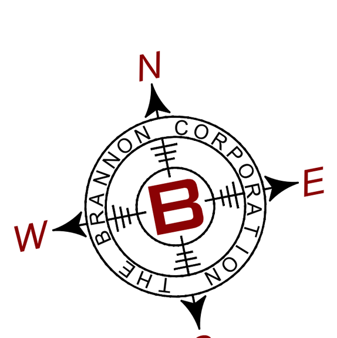
SHEET TITLE
POOL PLUMBING ADD ALT 1

SHEET NUMBER
SP2.1

SP2.1 POOL PLUMBING ADD ALT 1.dwg





1 POOL MECHANICAL ROOM

SCALE: 3/8" = 1'-0"

EQUIPMENT SCHEDULE

KEY	MFG	DEVICE	MODEL NUMBER	DESCRIPTION
A	PENTAIR	CIRCULATION PUMP MAIN POOL	3804 4X5X9.5	POOL CONTRACTOR TO FURNISH AND INSTALL 15 HP PUMP RATED FOR 500 GPM AT 60 FEET OF TOTAL DYNAMIC HEAD 1,800 RPM 25 HP 75.56% EFFICIENT WITH 7.00" CUSTOM TRIMMED IMPELLER. FURNISH AND INSTALL WITH VFD.
B	STENNER PUMP	ACID TANK	STS SERIES	CONTRACTOR TO FURNISH AND INSTALL MURIATIC ACID STORAGE AND DELIVERY SYSTEM. SYSTEM TO BE ACTUATED BY CHEMICAL CONTROLLER AND DELIVER ACID TO FILTERED RETURN PIPING. UV RESISTANT GRAY REQUIRED.
C	AQUIFY	FRP STRAINER	10X10	SWIMMING POOL STRAINER HOUSING, FIBERGLASS REINFORCED PLASTIC CONSTRUCTION, PRESSURE TESTED TO 50 PSI. FEATURES INCLUDE : ISOPHTHALIC FIBERGLASS RESIN, QUICK OPENING LATCHES, SEE THRU LID, 316 STAINLESS STEEL V-WIRE BASKET WITH 3/16 SQUARE HOLES AND 62% OPEN AREA. FURNISH WITH SPARE STRAINER BASKET.
D	AQUIFY	FRP REGEN FILTER	PMF-54-120 0-FRP	FURNISH AND INSTALL FILTER WITH 125PSI COMPRESSOR AIR SUPPLY. FURNISH AND INSTALL WITH 4" DRAIN LINE AND BUTTERFLY VALVE TO DRAIN TANK TO WASTE FLOOR SINK (300GPM). OPERATING WEIGHT 6,621#. NSF RATED FOR FLOW NOT TO EXCEED 1,800 GPM. (DESIGN CIRCULATION 1,150GPM). AQUIFY 10" X 5" X 6" (TEE-100506-SS4) REDUCING TEE REQ'D FOR PRECOAT LINE.
E	CUSTOM	AREA SUMP WITH SUB. PUMP	---	12"X12"X18" DEEP SUMP WITH STRONGWELL FIBERGLASS GRATING. FURNISH WITH 1/6HP SUBMERSIBLE PUMP THAT IS FLOAT ACTUATED AND FLOWS TO SANITARY SEWER COLLECTION SYSTEM. GRAVITY DRAIN ACCEPTABLE IF SERVICE IS BELOW PUMP PIT FLOW LINE ELEVATION
F	SQUARE D	VFD		PROJECT ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL VARIABLE FREQUENCY DRIVE WITH STARTER/DISCONNECT IN NEMA 4X ENCLOSURE FOR 15Hp POOL PUMP.
G	STRONGWELL	FIBERGLASS HANDRAIL SYSTEM	SAFRAIL	SQUARE FIBERGLASS POSTS AND RAILS WITH KICKPLATE SYSTEM. SURFACE MOUNT TO DECK WITH FRP BASE PLATE AND S.S. HARDWARE.
H	UPNOVR, INC.	SHIPS LADDER	IL-105	FIBERGLASS SHIPS LADDER 24¼" WIDTH. VERIFY HEIGHT WITH PUMP PIT DEPTH.
J	EAGLE MFG	SPILL PLATFORM	1632	TWO DRUM MODULAR SPILL PLATFORM. CAPACITY 30 GALLONS.
K	PPG	ACCUTAB - CHLORINE SANITIZER	3070	POOL CONTRACTOR TO FURNISH & INSTALL CALCIUM HYPOCHLORITE DELIVERY SYSTEM. POOL CONTRACTOR SHALL INSTALL WITH CHECK VALVE, SOLENOID, ELECTRICAL RELAY, AND 1HP BOOSTER PUMP. SOLENOID TO BE ACTUATED BY POOL CHEMICAL CONTROLLER IN ROOM
L	CHEMTROL	CHEMICAL MONITOR AND CONTROLLER	PC3000	PH, ORP, MONITOR AND CHEMICAL CONTROLLER WITH FLOW ACTUATED SAFETY CONTROL SWITCH. DEVICE TO ACTUATE PPG AND PERISTALTIC PUMP. K & B WITH SAMPLING LINE TUBING INSTALL TUBING IN UNGLUED SCH. 80 PVC CONDUIT.
M	LANUS	WAFER CHECK VALVE	API 594 - 10" CLASS 150	STAINLESS STEEL BODY, BODY SEAT,AND DISC. DISC SEAT SHALL BE EPDM MATERIAL. FURNISH VALVE WITH MATING FLANGES AND S.S. BOLTS. STYLE A OR B
N	WATTS	1.5" RPZ	909M1QT	BACKFLOW PROTECTION DEVICE. MEP TO EXTEND 1.5" WATER SERVICE TO POOL CIRCULATION SYSTEM IN FRONT OF THE PUMP AS SHOWN. INSTALL BALL VALVE ON SUPPLY LINE.
P	--	ELECTRICAL PANEL	--	BY BUILDING ELECTRICIAN
Q	STRONGWELL	DURAGRATE	---	FURNISH AND INSTALL 2" X 2" SQUARE MESH DURAGRATE. PROVIDE 6" CUTOUT FOR REGENERATIVE FILTER BLOWDOWN FLOOR SINK. SEE DTL 2 ON SP3.2
R	JANDY	ELECTRONIC AUTOFILL CONTROLLER	LEVELOR K2000	ELECTRONIC AUTOMATED WATER LEVEL CONTROLLER WITH PROXIMITY SENSORS AND SOLENOID VALVE FOR FILLING. 2" STATIC LINE FOR SENSING. 1.5" FILL LINE TO POOL CIRCULATION SYSTEM IN FRONT OF THE PUMP AS SHOWN.
S	INGERSOLL RAND	AIR COMPRESSOR	2475N5-P	FURNISH AND INSTALL ELECTRIC DRIVEN TWO STAGE AIR COMPRESSOR.80 GALLON 5HP 48X40X76
T	(FUTURE) SQUARE D	(FUTURE VFD) **NOT IN CONTRACT**	---	**FOR MECHANICAL AND ELECTRICAL SIZING ONLY. NOT IN CONTRACT** VARIABLE FREQUENCY DRIVE WITH STARTER/DISCONNECT IN NEMA 4X ENCLOSURE FOR 15Hp PUMP.
U	(FUTURE) PENTAIR	(FUTURE SLIDE PUMP) **NOT IN CONTRACT**	EQK-1500	**FOR MECHANICAL AND ELECTRICAL SIZING ONLY. NOT IN CONTRACT** 15 HP SELF PRIMING PUMP WITH STRAINER BASKET. 3-PHASE 208-230/460V, 40.0-36.0/17.8A, 6"X4" PORTS. 665 GPM @60' TDH. FUTURE VFD WITH FOR 15HP PUMP.

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Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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TRAVIS A. BOZICK
104560
LICENSED PROFESSIONAL ENGINEER
10/23/2025

District 3 Aquatics Facility
San Antonio, TX

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SCALE	

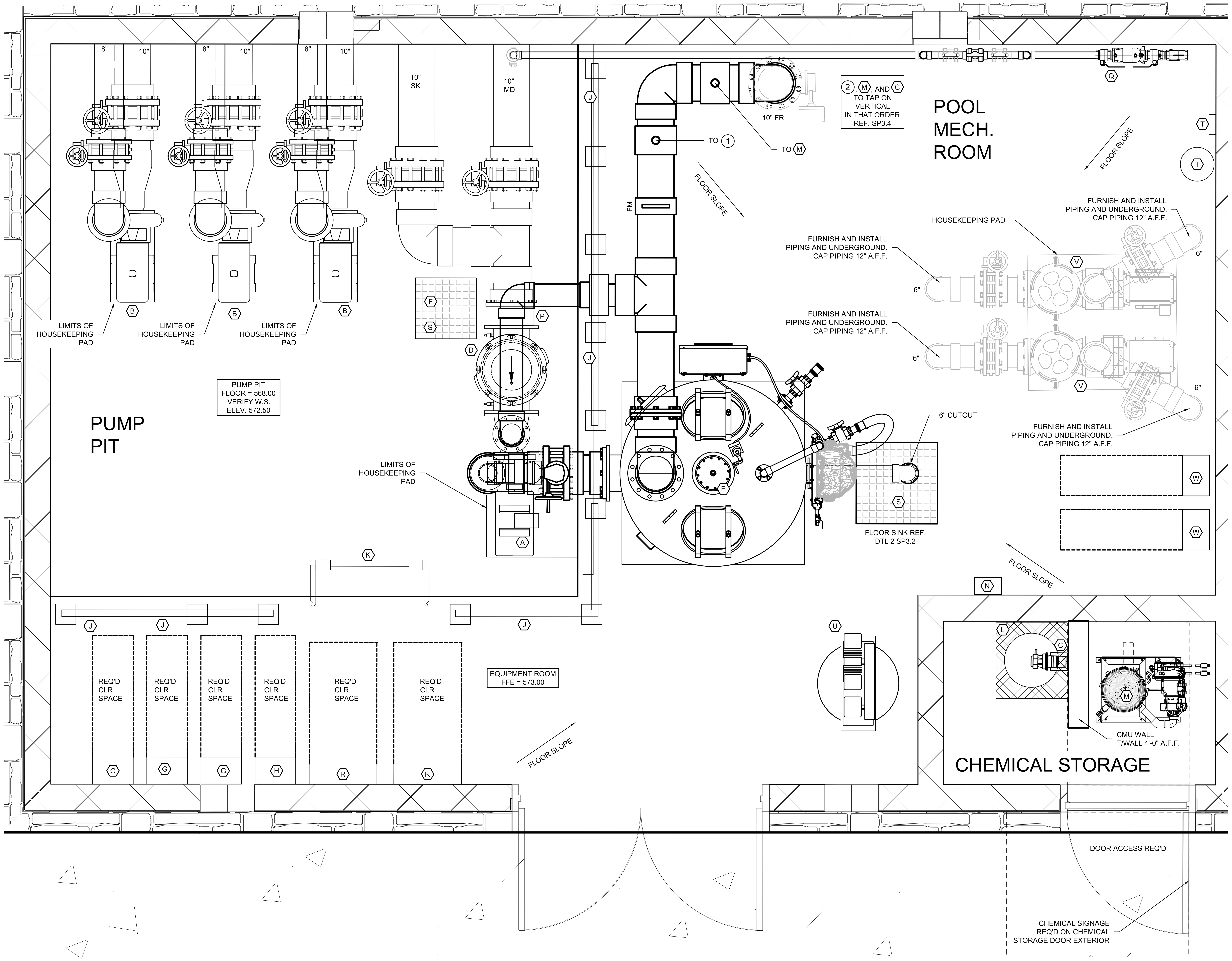
SHEET TITLE

POOL MECHANICAL LAYOUT

SHEET NUMBER

SP3.0

SP3.0 POOL MECHANICAL LAYOUT.dwg



1 POOL MECHANICAL LAYOUT-ADD ALT 1

SCALE: ¼" = 1'-0"

EQUIPMENT SCHEDULE

KEY	MFG	DEVICE	MODEL NUMBER	DESCRIPTION
A	PENTAIR	CIRCULATION PUMP MAIN POOL	3801 5X6X9.5A	POOL CONTRACTOR TO FURNISH AND INSTALL PUMP RATED FOR 1,150GPM AT 60 FEET OF TOTAL DYNAMIC HEAD 1,800 RPM 25 HP 82.94% EFFICIENT WITH 8.69" CUSTOM TRIMMED IMPELLER. FURNISH AND INSTALL WITH VFD.
B	PENTAIR	LR MOTIVATION PUMP	3801 5X6X9.5A	POOL CONTRACTOR TO FURNISH AND INSTALL PUMP RATED FOR 900GPM AT 40 FEET OF TOTAL DYNAMIC HEAD 1,800 RPM 15 HP 77.16% EFFICIENT WITH 7" CUSTOM TRIMMED IMPELLER.
C	STENNER PUMP	ACID TANK	STS SERIES	CONTRACTOR TO FURNISH AND INSTALL MURIATIC ACID STORAGE AND DELIVERY SYSTEM. SYSTEM TO BE ACTUATED BY CHEMICAL CONTROLLER AND DELIVER ACID TO FILTERED RETURN PIPING. UV RESISTANT GRAY REQUIRED.
D	AQUIFY	FRP STRAINER	10X10	SWIMMING POOL STRAINER HOUSING, FIBERGLASS REINFORCED PLASTIC CONSTRUCTION, PRESSURE TESTED TO 50 PSI. FEATURES INCLUDE : ISOPHTHALIC FIBERGLASS RESIN, QUICK OPENING LATCHES, SEE THRU LID, 316 STAINLESS STEEL V-WIRE BASKET WITH 3/16 SQUARE HOLES AND 62% OPEN AREA. FURNISH WITH SPARE STRAINER BASKET.
E	AQUIFY	FRP REGEN FILTER	PMF-54-1200-FRP	FURNISH AND INSTALL FILTER WITH 125PSI COMPRESSOR AIR SUPPLY. FURNISH AND INSTALL WITH 4" DRAIN LINE AND BUTTERFLY VALVE TO DRAIN TANK TO WASTE FLOOR SINK (300GPM). OPERATING WEIGHT 6,621#. NSF RATED FOR FLOW NOT TO EXCEED 1,800 GPM. (DESIGN CIRCULATION 1,150GPM). AQUIFY 10" X 6" X 6" (TEE-100606-SS4) REDUCING TEE REQ'D FOR PRECOAT LINE. SEE DTL 2 SP3.1.
F	CUSTOM	AREA SUMP WITH SUB. PUMP	---	12"X12"X18" DEEP SUMP WITH FIBERGLASS GRATING. FURNISH WITH ⅙HP SUBMERSIBLE PUMP THAT IS FLOAT ACTUATED AND FLOWS TO SANITARY SEWER COLLECTION SYSTEM. GRAVITY DRAIN ACCEPTABLE IF SERVICE IS BELOW PUMP PIT FLOW LINE ELEVATION
G	SQUARE D	VFD	MOTIVATION VFD	PROJECT ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL VARIABLE FREQUENCY DRIVE WITH STARTER/DISCONNECT IN NEMA 4X ENCLOSURE FOR 15Hp PUMP.
H	SQUARE D	VFD	CIRCULATION PUMP VFD	PROJECT ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL VARIABLE FREQUENCY DRIVE WITH STARTER/DISCONNECT IN NEMA 4X ENCLOSURE FOR 25Hp POOL PUMP.
J	STRONGWELL	FIBERGLASS HANDRAIL SYSTEM	SAFRAIL	SQUARE FIBERGLASS POSTS AND RAILS WITH KICKPLATE SYSTEM. SURFACE MOUNT TO DECK WITH FRP BASE PLATE AND S.S. HARDWARE.
K	UPNOVR, INC.	SHIPS LADDER	IL-105	FIBERGLASS SHIPS LADDER 24¼" WIDTH. VERIFY HEIGHT WITH PUMP PIT DEPTH.
L	EAGLE MFG	SPILL PLATFORM	1632	TWO DRUM MODULAR SPILL PLATFORM. CAPACITY 30 GALLONS.
M	PPG	ACCUTAB - CHLORINE SANITIZER	3070	POOL CONTRACTOR TO FURNISH & INSTALL CALCIUM HYPOCHLORITE DELIVERY SYSTEM. POOL CONTRACTOR SHALL INSTALL WITH CHECK VALVE, SOLENOID, ELECTRICAL RELAY, AND 1HP BOOSTER PUMP. SOLENOID TO BE ACTUATED BY POOL CHEMICAL CONTROLLER IN ROOM
N	CHEMTROL	CHEMICAL MONITOR AND CONTROLLER	PC3000	PH, ORP, MONITOR AND CHEMICAL CONTROLLER WITH FLOW ACTUATED SAFETY CONTROL SWITCH. DEVICE TO ACTUATE PPG AND PERISTALTIC PUMP. M & C WITH SAMPLING LINE TUBING INSTALL TUBING IN UNGLUED SCH. 80 PVC CONDUIT.
P	LANUS	WAFER CHECK VALVE	API 594 - 10" CLASS 150	STAINLESS STEEL BODY, BODY SEAT,AND DISC. DISC SEAT SHALL BE EPDM MATERIAL. FURNISH VALVE WITH MATING FLANGES AND S.S. BOLTS. STYLE A OR B
Q	WATTS	1.5" RPZ	909M1QT	BACKFLOW PROTECTION DEVICE. MEP TO EXTEND 1.5" WATER SERVICE TO POOL CIRCULATION SYSTEM IN FRONT OF THE PUMP AS SHOWN. INSTALL BALL VALVE ON SUPPLY LINE.
R	--	ELECTRICAL PANEL	--	BY BUILDING ELECTRICIAN
S	STRONGWELL	DURAGRATE	---	FURNISH AND INSTALL 2" X 2" SQUARE MESH DURAGRATE. PROVIDE 6" CUTOUT FOR REGENERATIVE FILTER BLOWDOWN FLOOR SINK. SEE DTL 2 ON SP3.2
T	JANDY	ELECTRONIC AUTOFILL CONTROLLER	LEVELOR K2000	ELECTRONIC AUTOMATED WATER LEVEL CONTROLLER WITH PROXIMITY SENSORS AND SOLENOID VALVE FOR FILLING. 2" STATIC LINE FOR SENSING. 1.5" FILL LINE TO POOL CIRCULATION SYSTEM IN FRONT OF THE PUMP AS SHOWN.
U	INGERSOLL RAND	AIR COMPRESSOR	2475N5-P	FURNISH AND INSTALL ELECTRIC DRIVEN TWO STAGE AIR COMPRESSOR.80 GALLON 5HP 48X40X76
V	(FUTURE) PENTAIR	(FUTURE SLIDE PUMP) **NOT IN CONTRACT**	EQK-1500	**FOR MECHANICAL AND ELECTRICAL SIZING ONLY. NOT IN CONTRACT** 15 HP SELF PRIMING PUMP WITH STRAINER BASKET. 3-PHASE 208-230/460V, 40.0-36.0/17.8A, 6"X4" PORTS. 665 GPM @60' TDH. FUTURE VFD WITH FOR 15HP PUMP.
W	SQUARE D	VFD **NOT IN CONTRACT**	VARIES	**FOR MECHANICAL AND ELECTRICAL SIZING ONLY. NOT IN CONTRACT** VARIABLE FREQUENCY DRIVE WITH STARTER/DISCONNECT IN NEMA 4X ENCLOSURE FOR 15Hp PUMP.

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Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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STATE OF TEXAS
TRAVIS A. BOZICK
104600
LICENSED PROFESSIONAL ENGINEER
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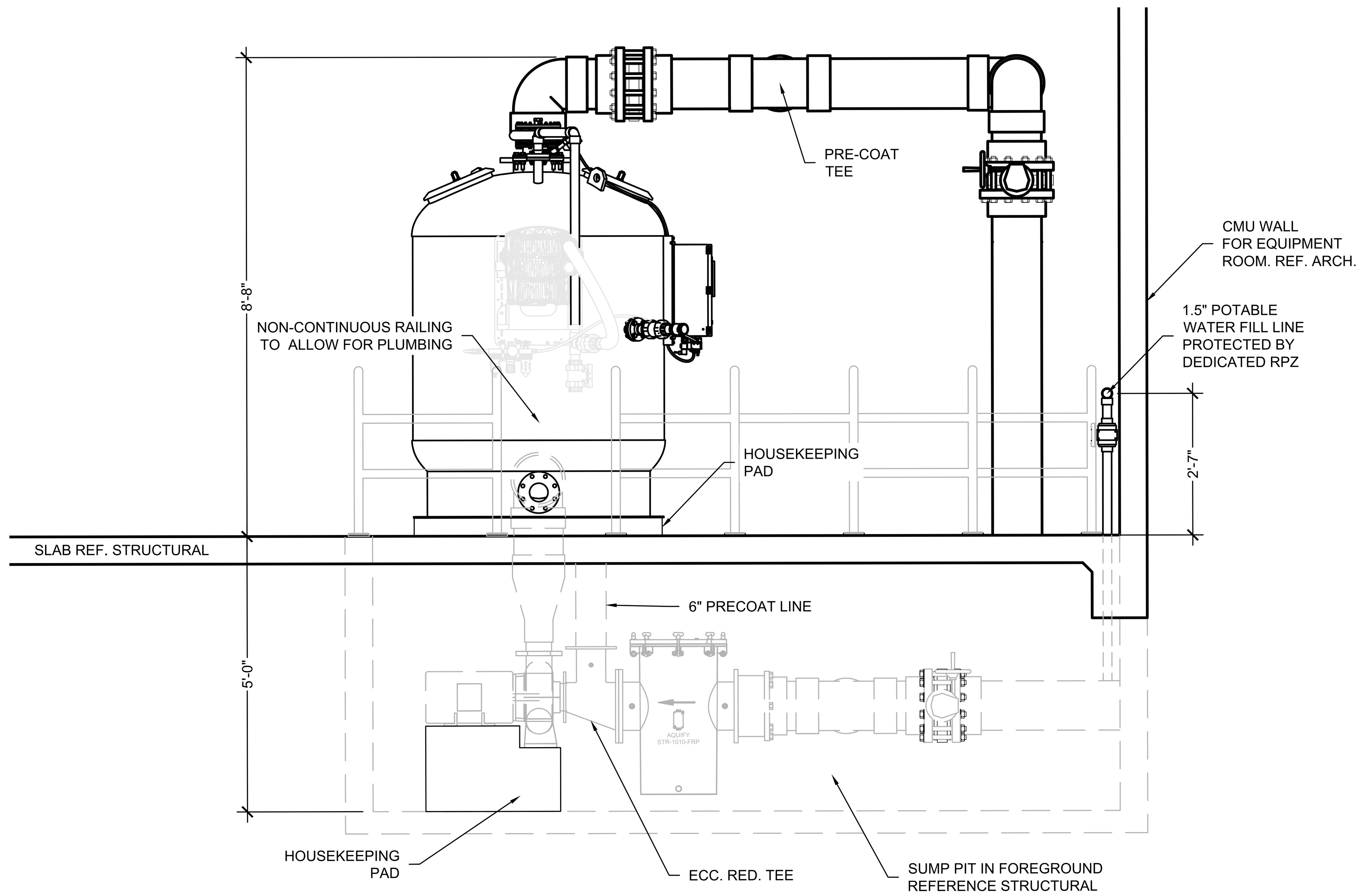
SHEET TITLE
POOL MECHANICAL LAYOUT ADD ALT 1

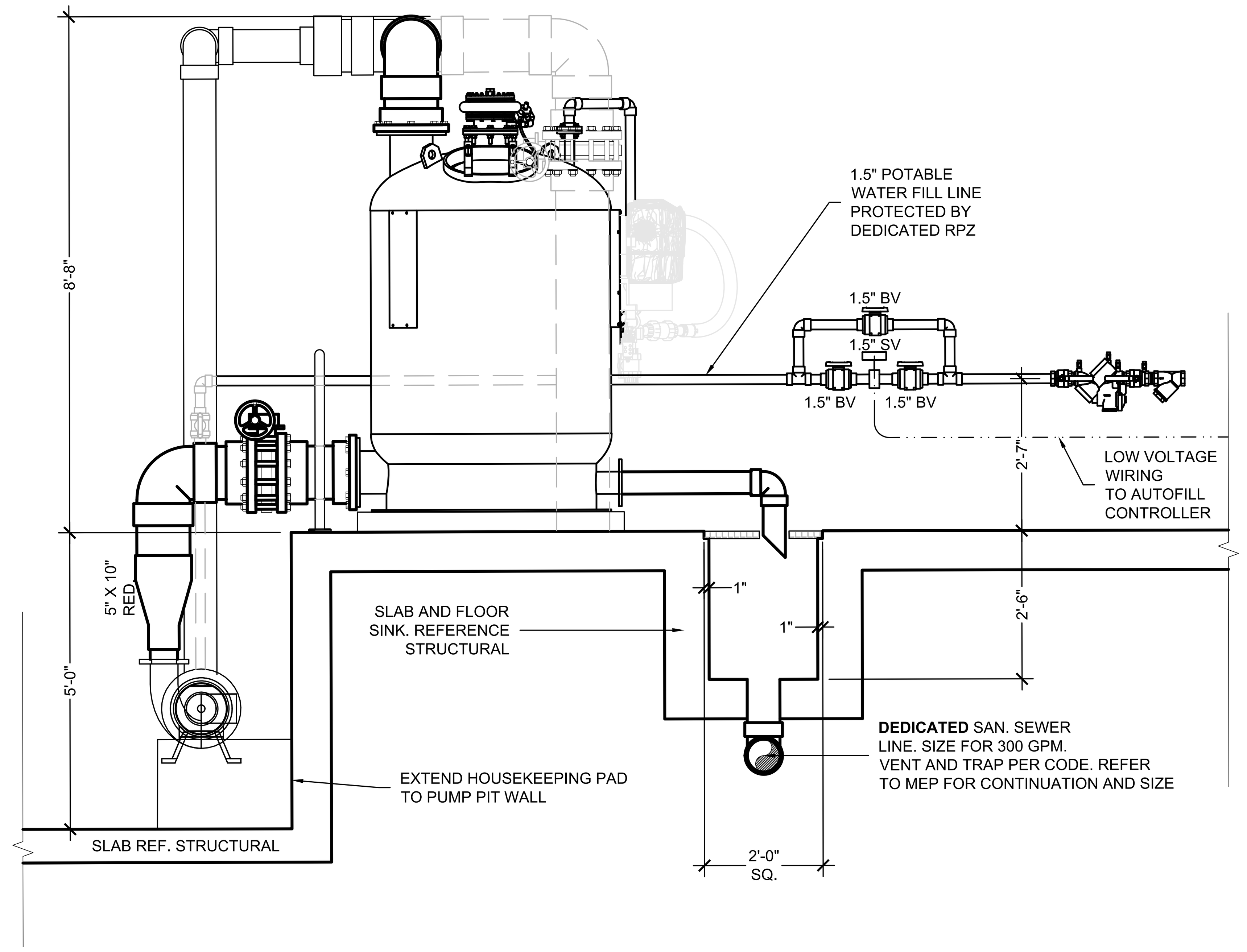
SHEET NUMBER
SP3.1

SP3.1 POOL MECHANICAL LAYOUT ADD ALT.dwg



1 POOL MECHANICAL ROOM SECTION

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



2 POOL MECHANICAL ROOM SECTION

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

0 1' 2' 4'

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104560
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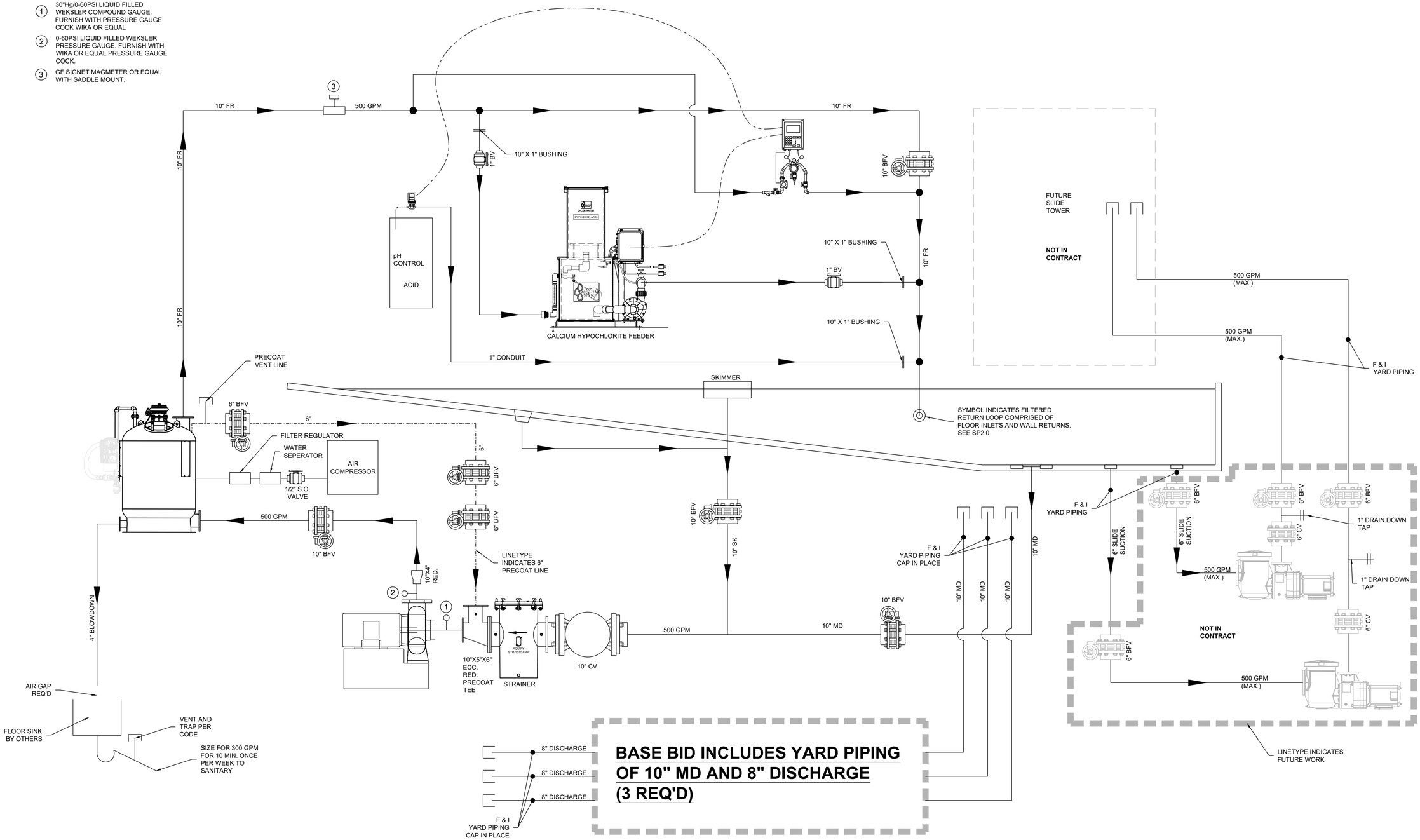
SHEET TITLE
POOL MECHANICAL ROOM SECTIONS

SHEET NUMBER
SP3.2

SP3.2 POOL MECHANICAL ROOM SECTIONS.dwg

1. 30"Hg/0-60PSI LIQUID FILLED WEKSLER COMPOUND GAUGE. FURNISH WITH PRESSURE GAUGE COCK WIKA OR EQUAL
2. 0-60PSI LIQUID FILLED WEKSLER PRESSURE GAUGE. FURNISH WITH WIKA OR EQUAL PRESSURE GAUGE COCK.
3. GF SIGNET MAGMETER OR EQUAL WITH SADDLE MOUNT.



1 POOL MECHANICAL SCHEMATIC

SCALE: NOT TO SCALE

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104560
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SHEET TITLE

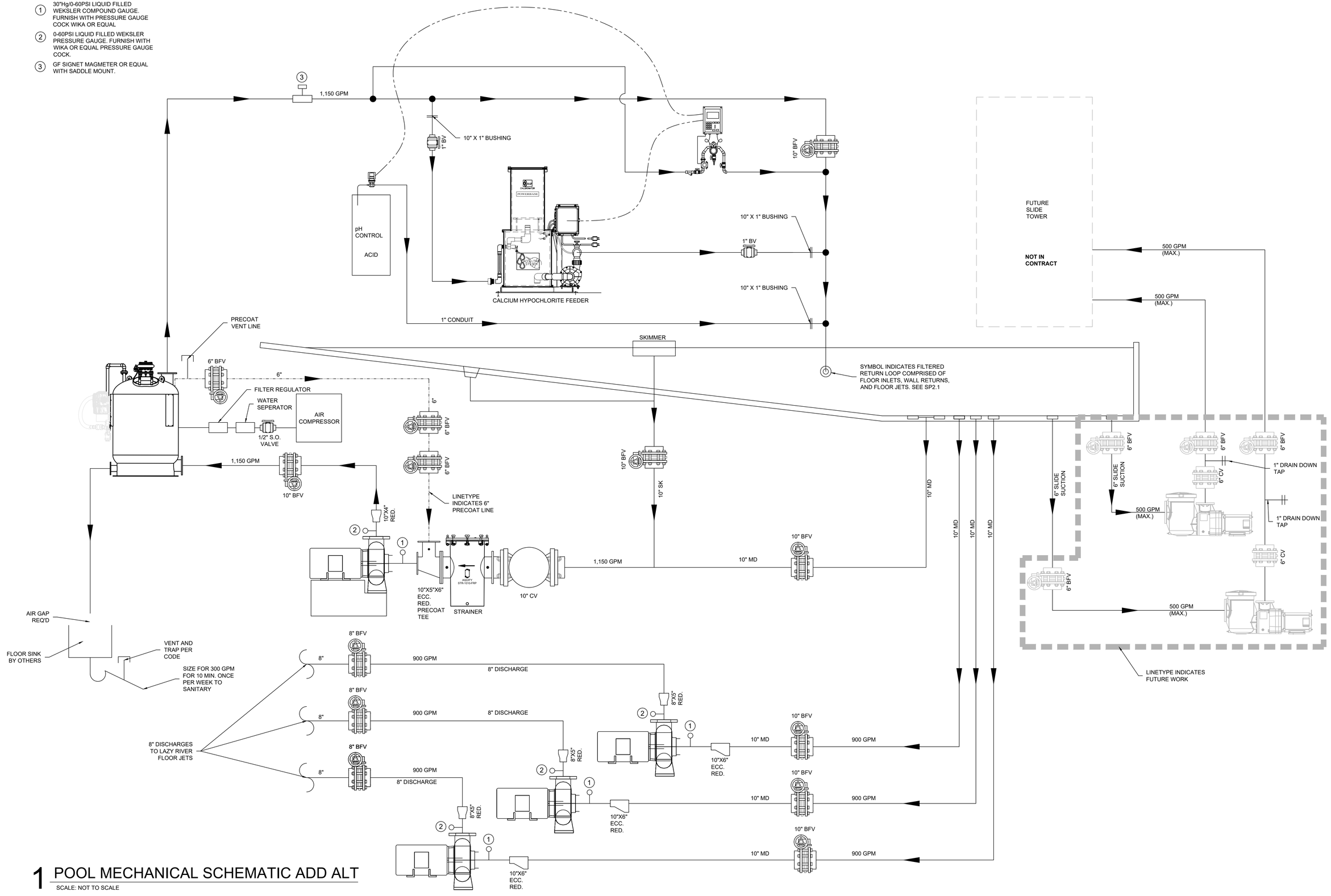
POOL MECHANICAL SCHEMATIC

SHEET NUMBER

SP3.3

SP3.3 POOL MECHANICAL SCHEMATIC.dwg

1. 30"Hg/0-60PSI LIQUID FILLED WEKSLER COMPOUND GAUGE. FURNISH WITH PRESSURE GAUGE COCK WIKA OR EQUAL
2. 0-60PSI LIQUID FILLED WEKSLER PRESSURE GAUGE. FURNISH WITH WIKA OR EQUAL PRESSURE GAUGE COCK.
3. GF SIGNET MAGMETER OR EQUAL WITH SADDLE MOUNT.



1 POOL MECHANICAL SCHEMATIC ADD ALT

SCALE: NOT TO SCALE

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2425 Broadway
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104560
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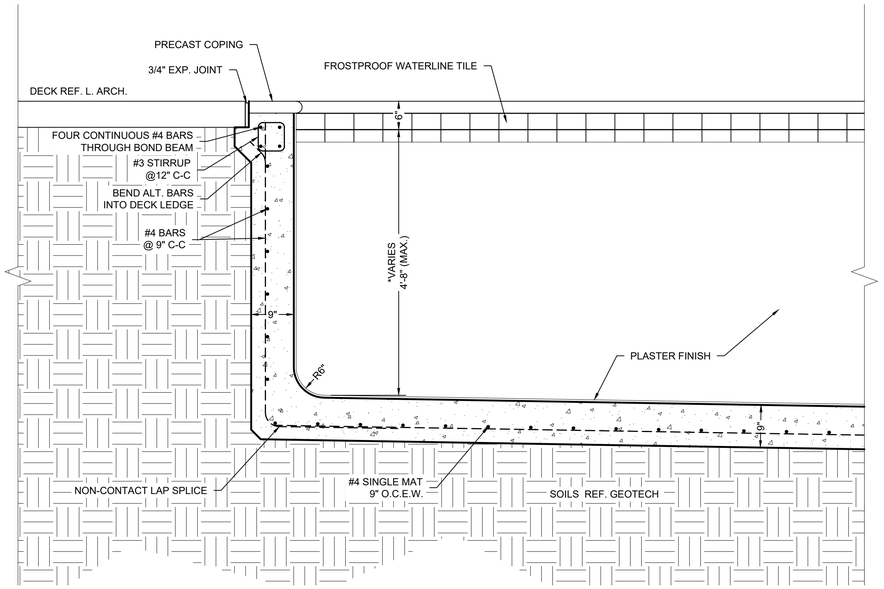
SHEET TITLE

POOL MECHANICAL SCHEMATIC ADD ALT 1

SHEET NUMBER

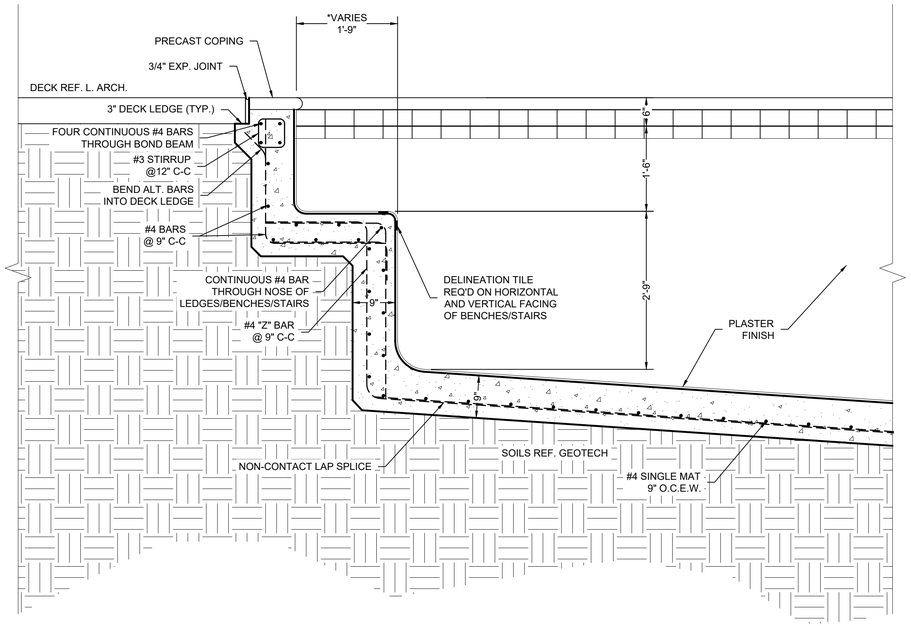
SP3.4

SP3.4 POOL MECHANICAL SCHEMATIC ADD ALT.dwg



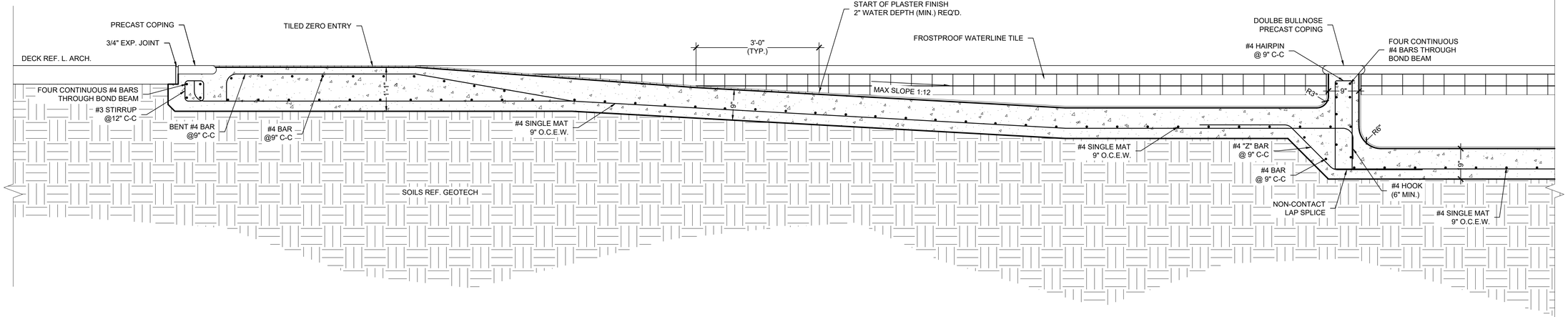
1 TYP. WALL SECTION

SCALE: 3/4" = 1'-0"



2 POOL BENCH SECTION

SCALE: 3/4" = 1'-0"



3 ZERO ENTRY SECTION

SCALE: 3/4" = 1'-0"

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104560
LICENSED PROFESSIONAL ENGINEER
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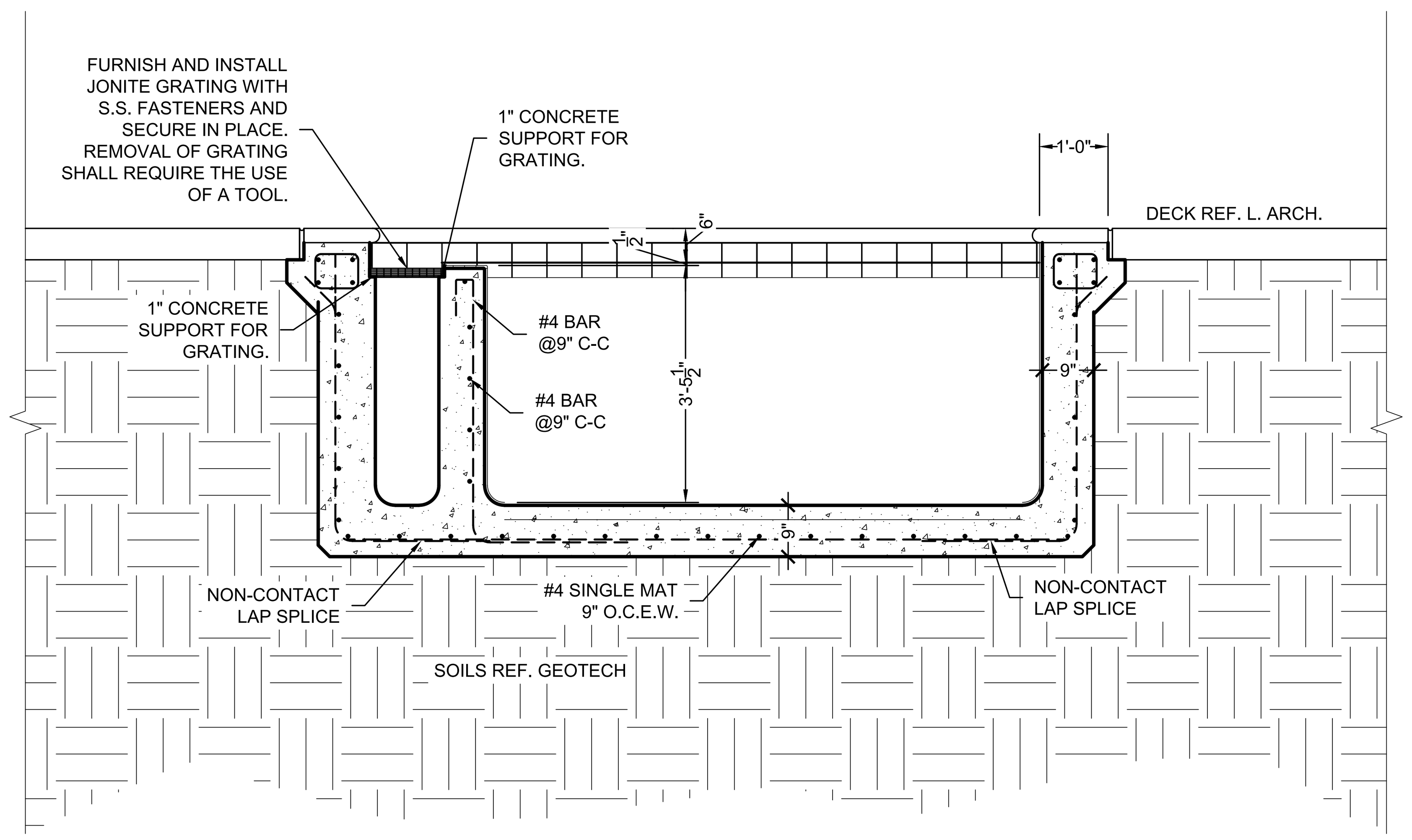
SHEET TITLE

POOL SECTIONS

SHEET NUMBER

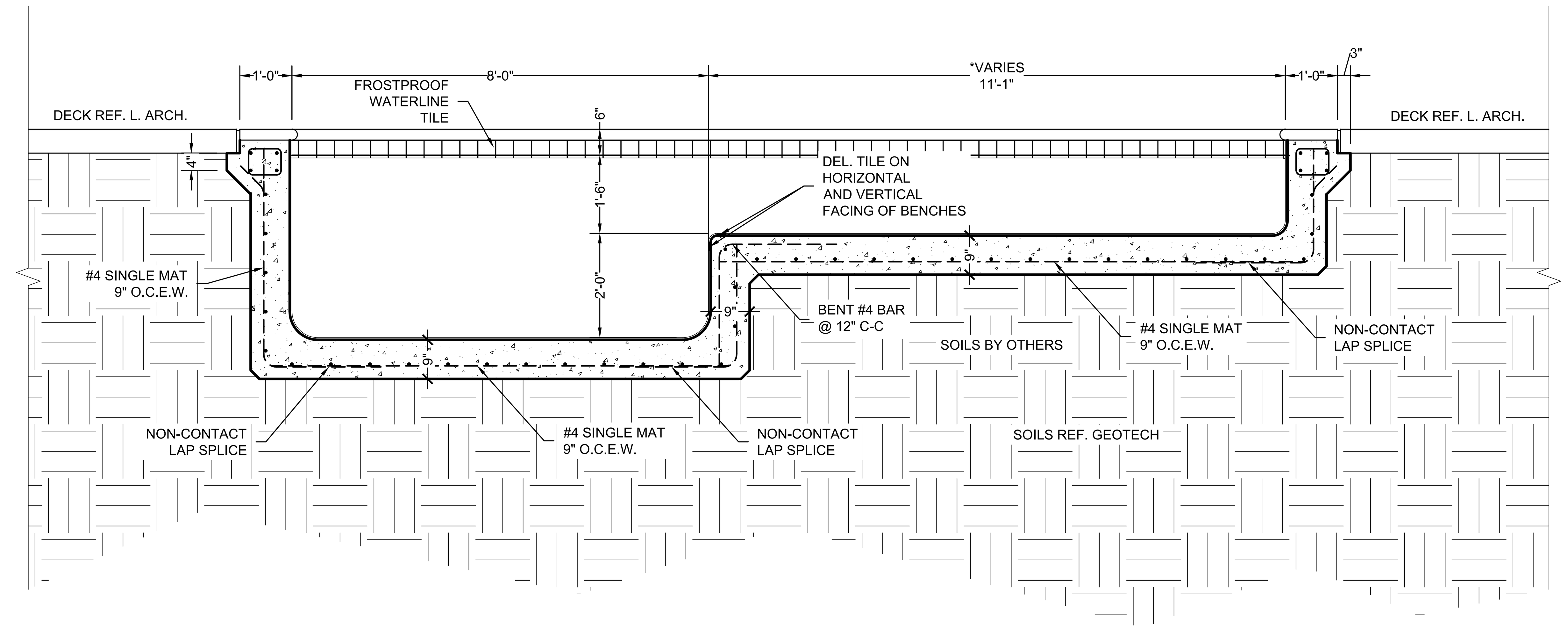
SP4.0

SP4.0 POOL SECTIONS.dwg



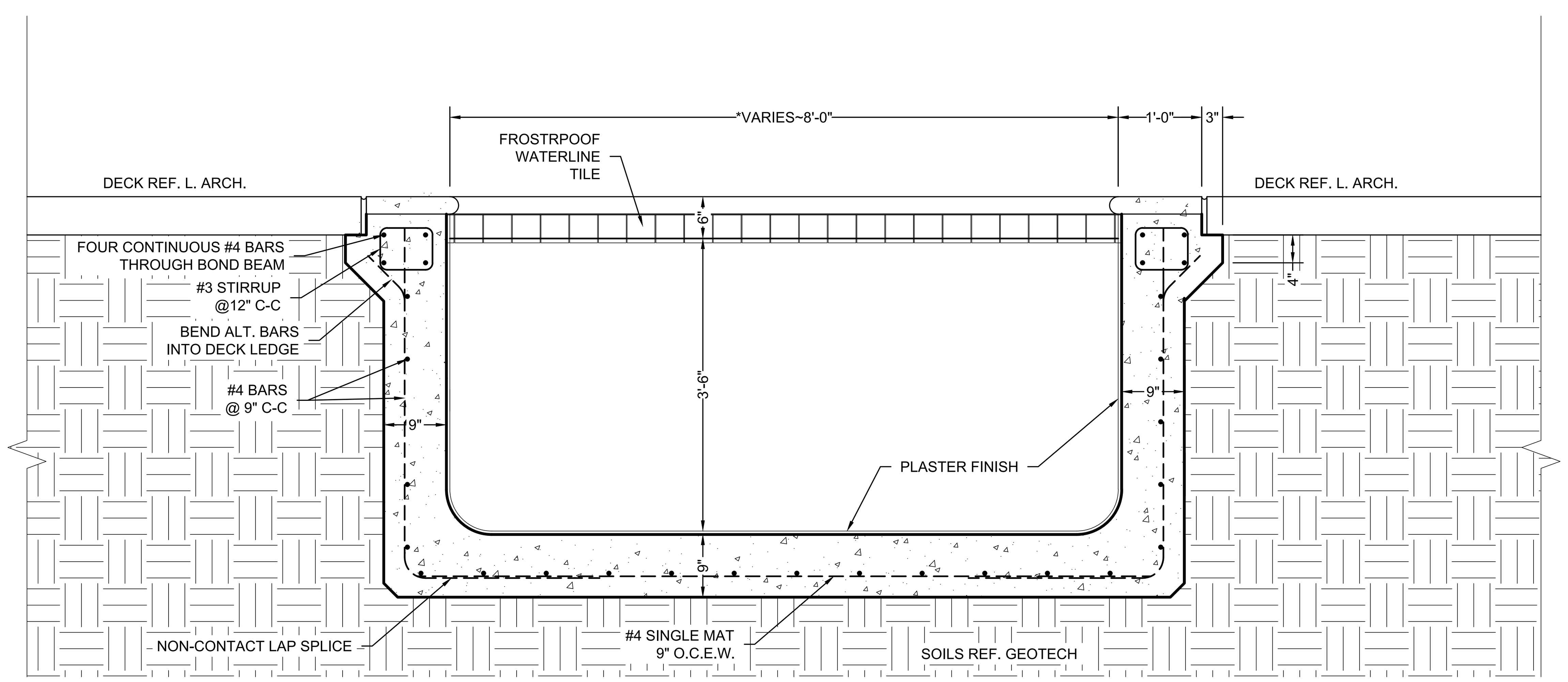
1 CURRENT RIVER SECTION @ GUTTER

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



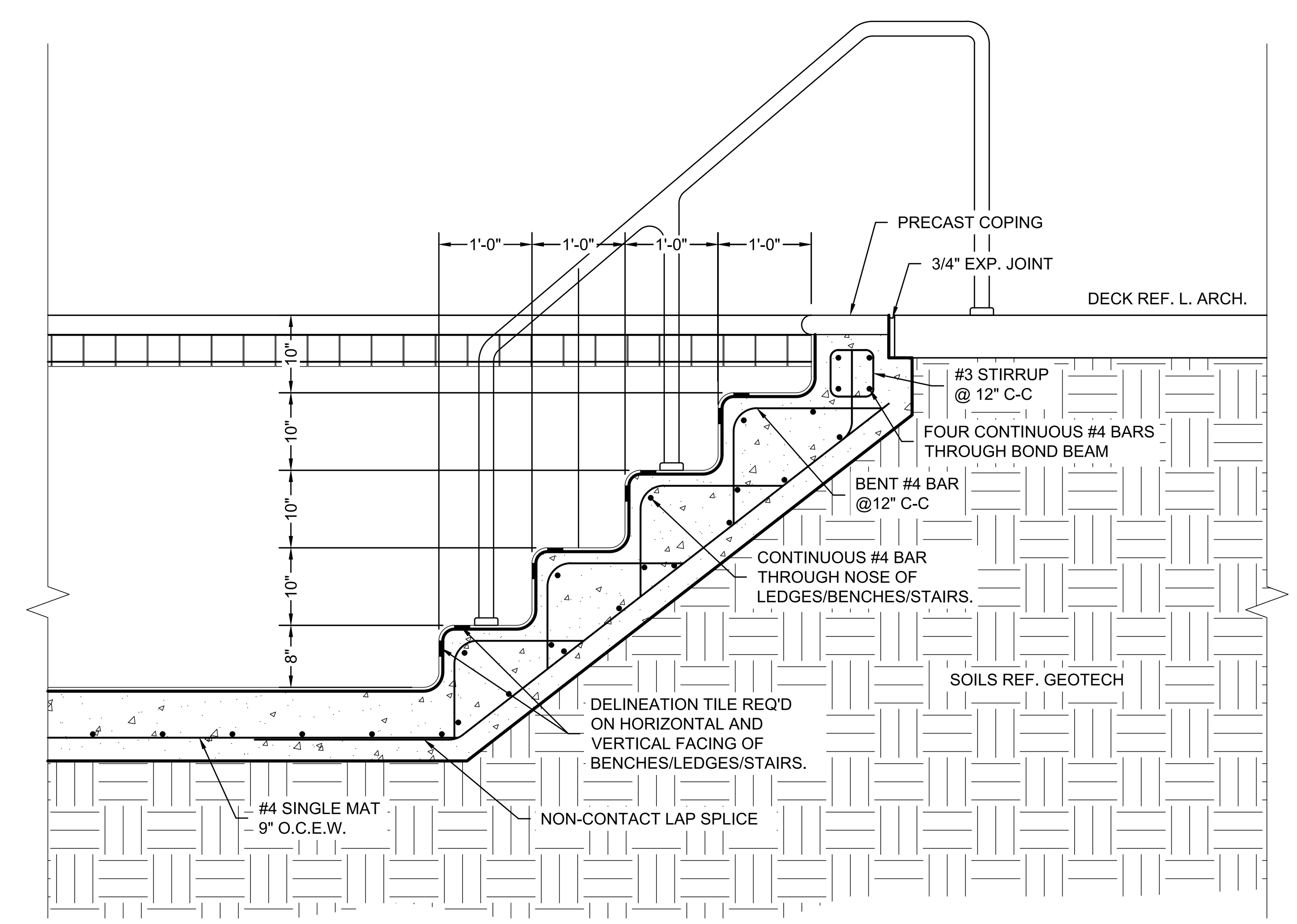
2 CURRENT RIVER SECTION

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



3 CURRENT RIVER SECTION

SCALE: 3/4" = 1'-0"



4 STAIR SECTION

SCALE: 3/4" = 1'-0"

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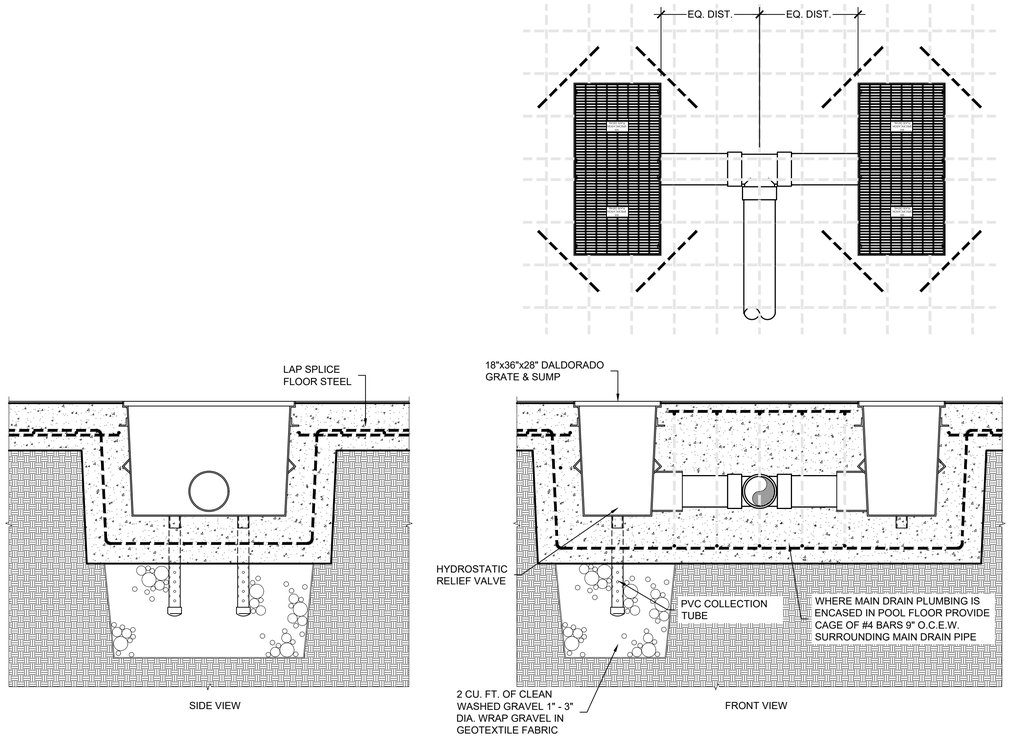
POOL SECTIONS

SP4.1 POOL SECTIONS.dwg

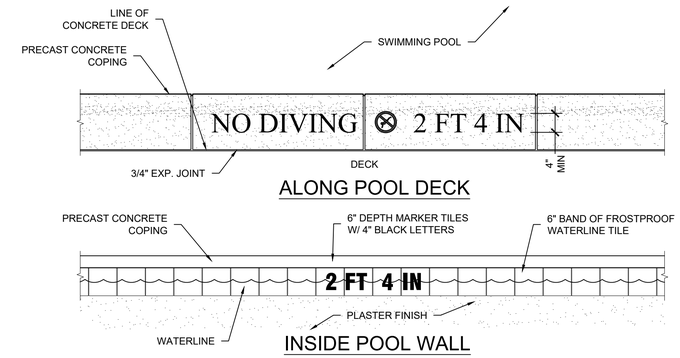
SHEET NUMBER

SP4.1



1 MAIN DRAIN DETAIL

SCALE: NTS

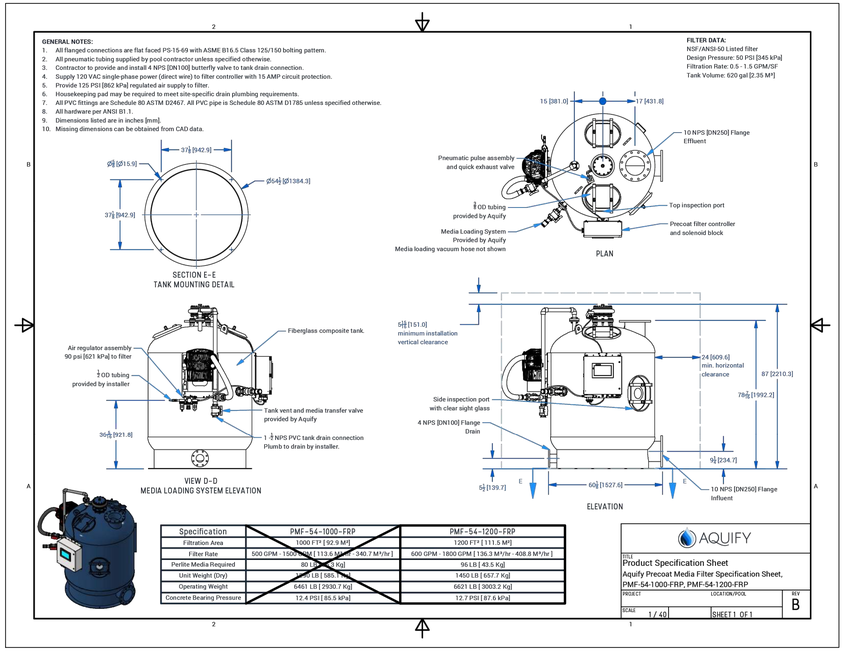


GENERAL NOTES - TILE MARKINGS:

- REFER PLAN SHEET FOR DEPTHS
- EACH DEPTH MARKER SHALL SHOW FEET AND INCHES. (EXCEPTION: TILE MARKINGS AT EVEN FOOT INCREMENTS - SUCH AS 2'-0" - ARE REQUIRED TO SHOW FEET OF DEPTH ONLY.
- ALL DECK MARKERS ON WALKING SURFACE SHALL HAVE A SLIP RESISTANT FINISH
- MAXIMUM SPACING BETWEEN DEPTH MARKINGS SHALL NOT EXCEED 25'-0"
- WHERE POOL FLOOR TRANSITIONS FROM SHALLOW END TO DEEP END, MARK THE DEPTH AT THE SHALLOW AND DEEP SIDES OF THE SLOPE AS WELL AS EVERY TWO FOOT INCREMENT IN BETWEEN
- NO DIVING AND DEPTH MARKER LETTERS AND NUMERALS TO BE ARIAL FONT, 4" TALL, SANDBLASTED INTO COPING AND PAINTED WITH BLACK LITHOCHROME PAINT. CENTER OF LETTERS AND NUMERALS TO BE AT CENTERLINE OF COPING STONES.

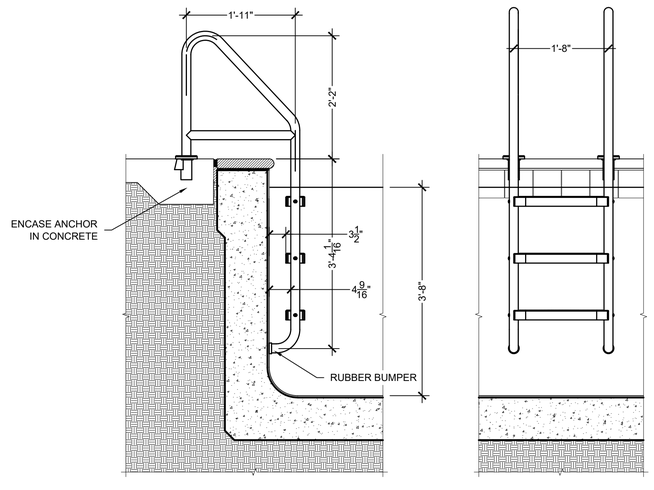
2 DEPTH MARKER DETAIL

SCALE: NTS



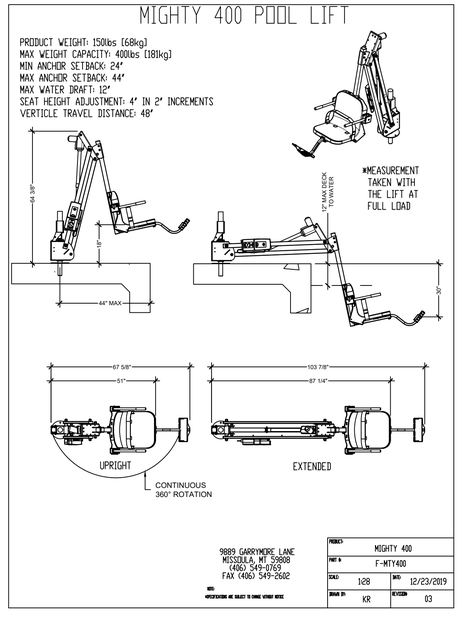
3 AQUIFY FIBERGLASS REGEN FILTER

SCALE: NTS



4 POOL LADDER DETAIL

SCALE: NTS



5 LIFT CHAIR DETAIL

SCALE: NTS

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Landscape Architecture
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San Antonio, Texas 78215
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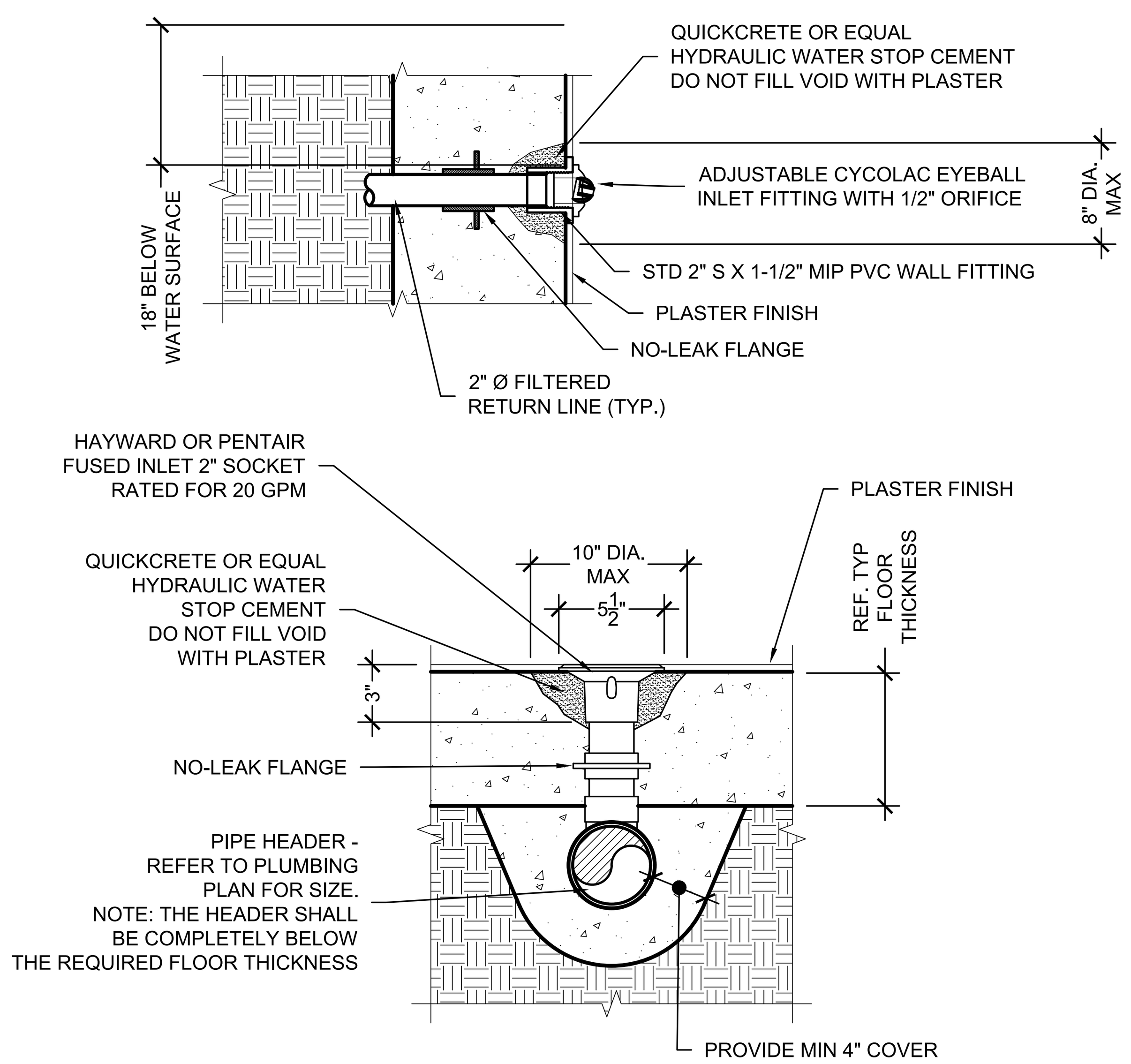
SHEET TITLE

POOL DETAILS

SHEET NUMBER

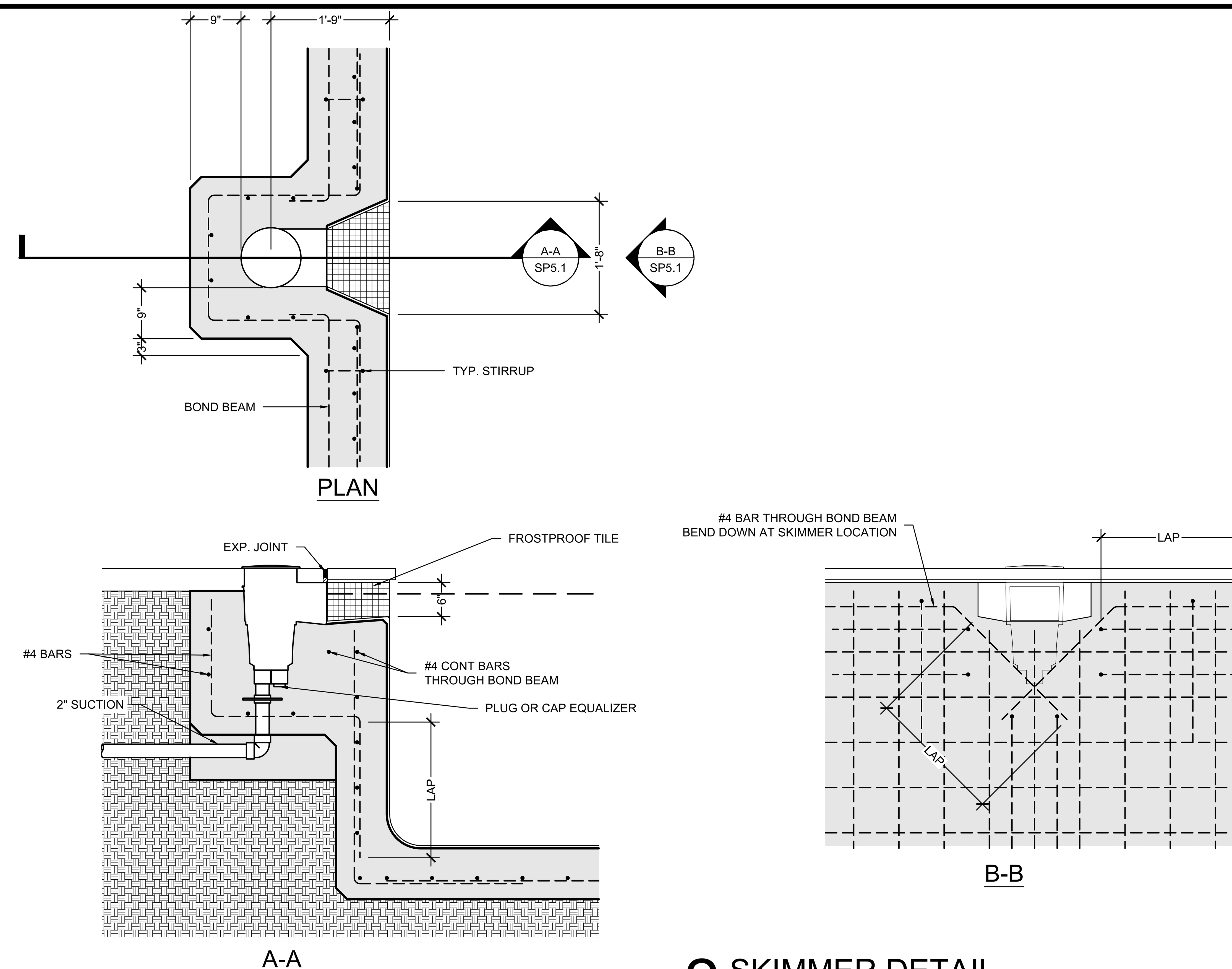
SP5.0

SP5.0 POOL DETAILS.dwg



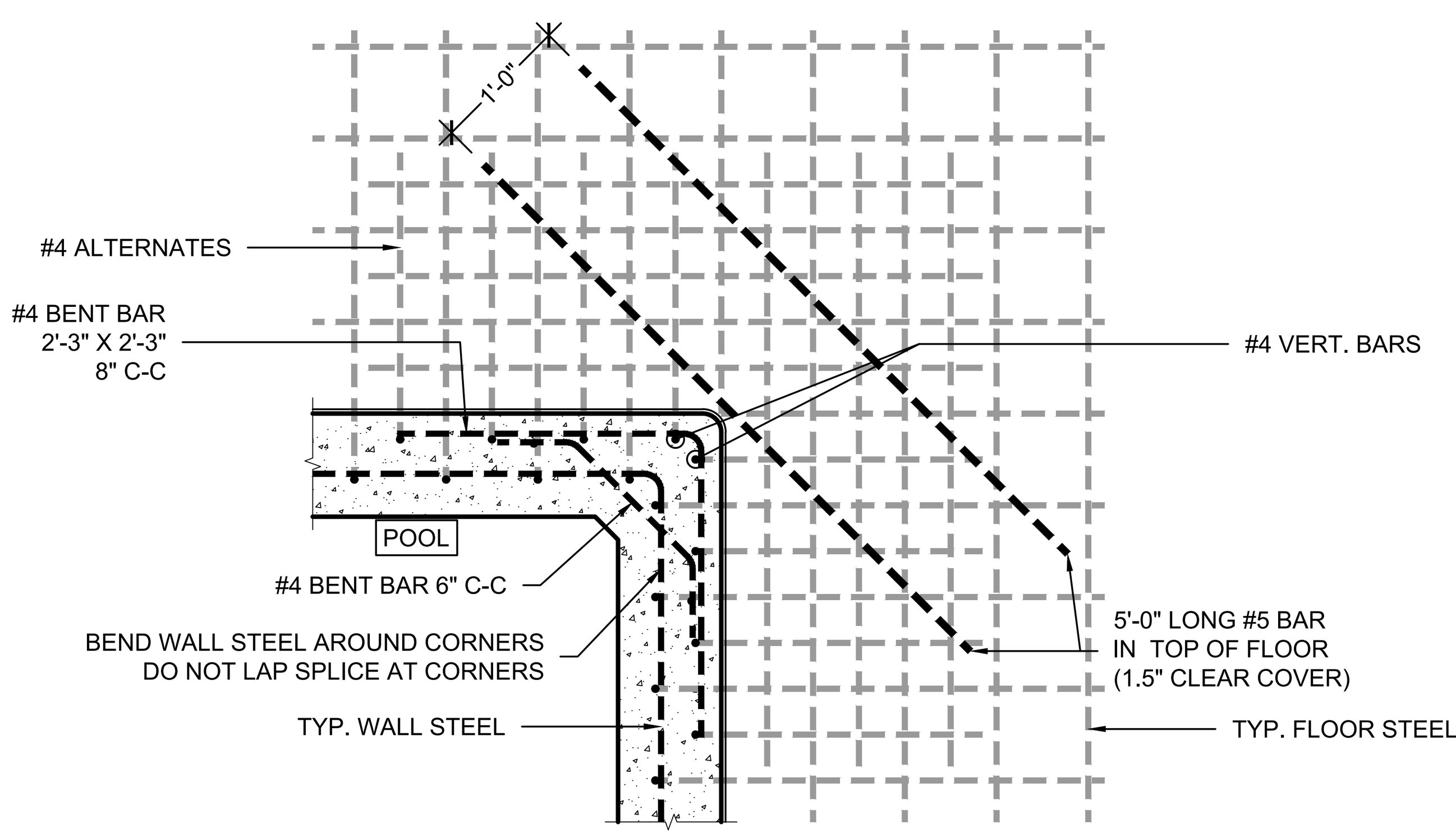
1 FILTERED RETURN DETAIL

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



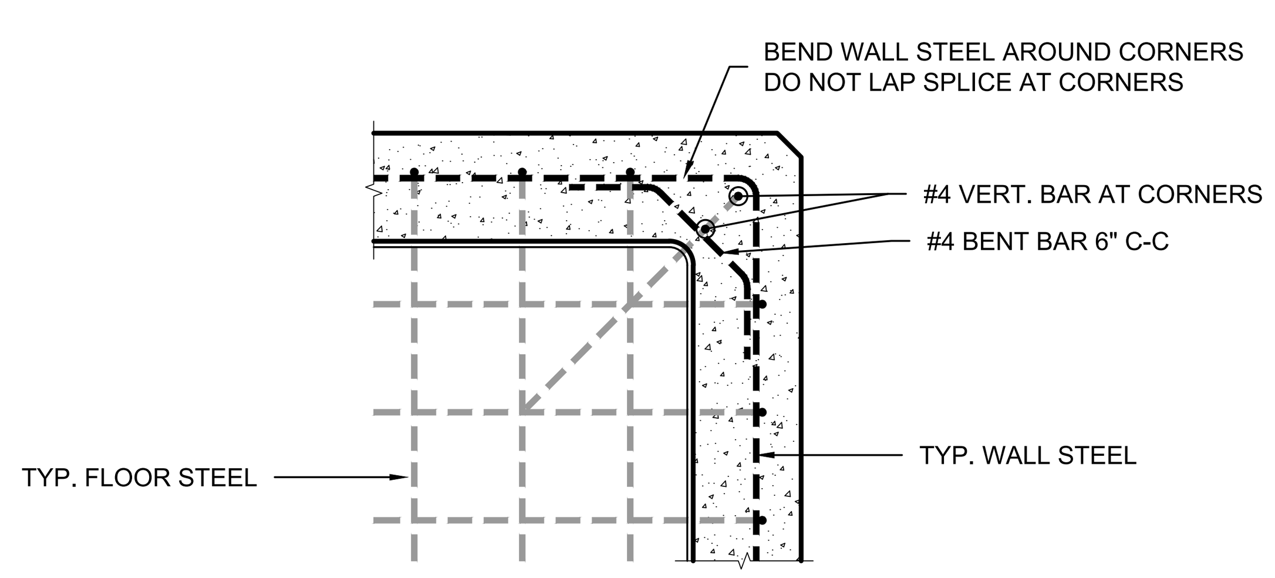
2 SKIMMER DETAIL

SCALE: 3/4" = 1'-0"



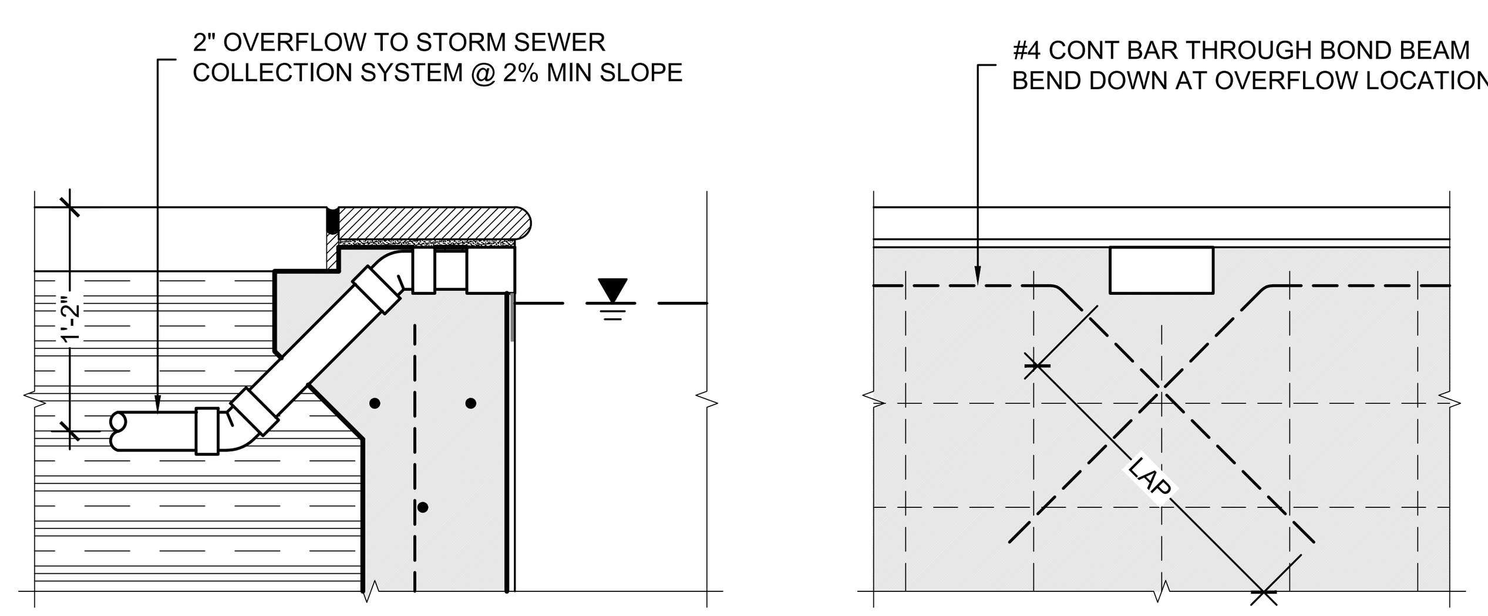
3 INTERIOR CORNER DETAIL

SCALE: 3/4" = 1'-0"



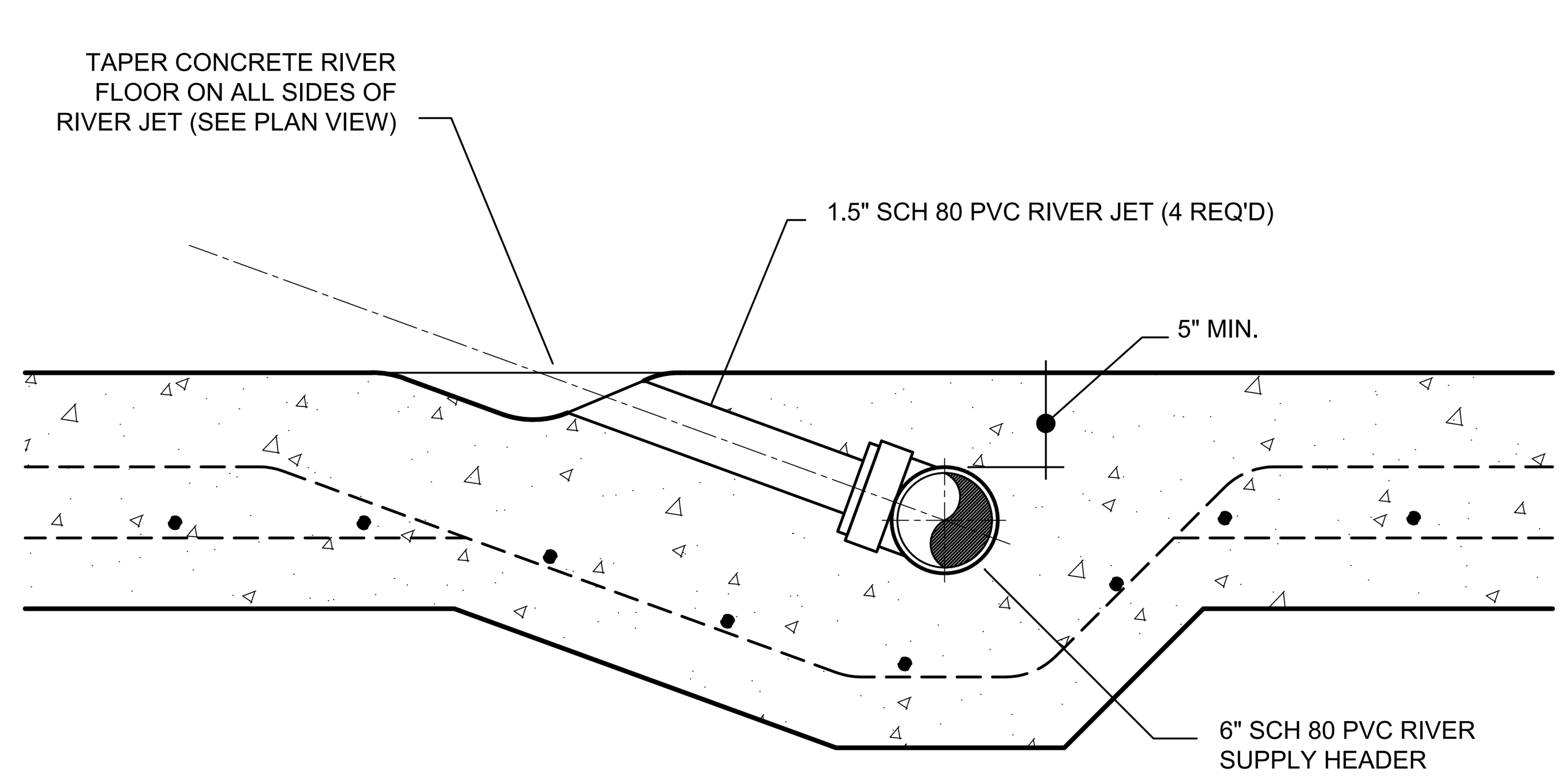
4 EXTERIOR CORNER DETAIL

SCALE: 3/4" = 1'-0"



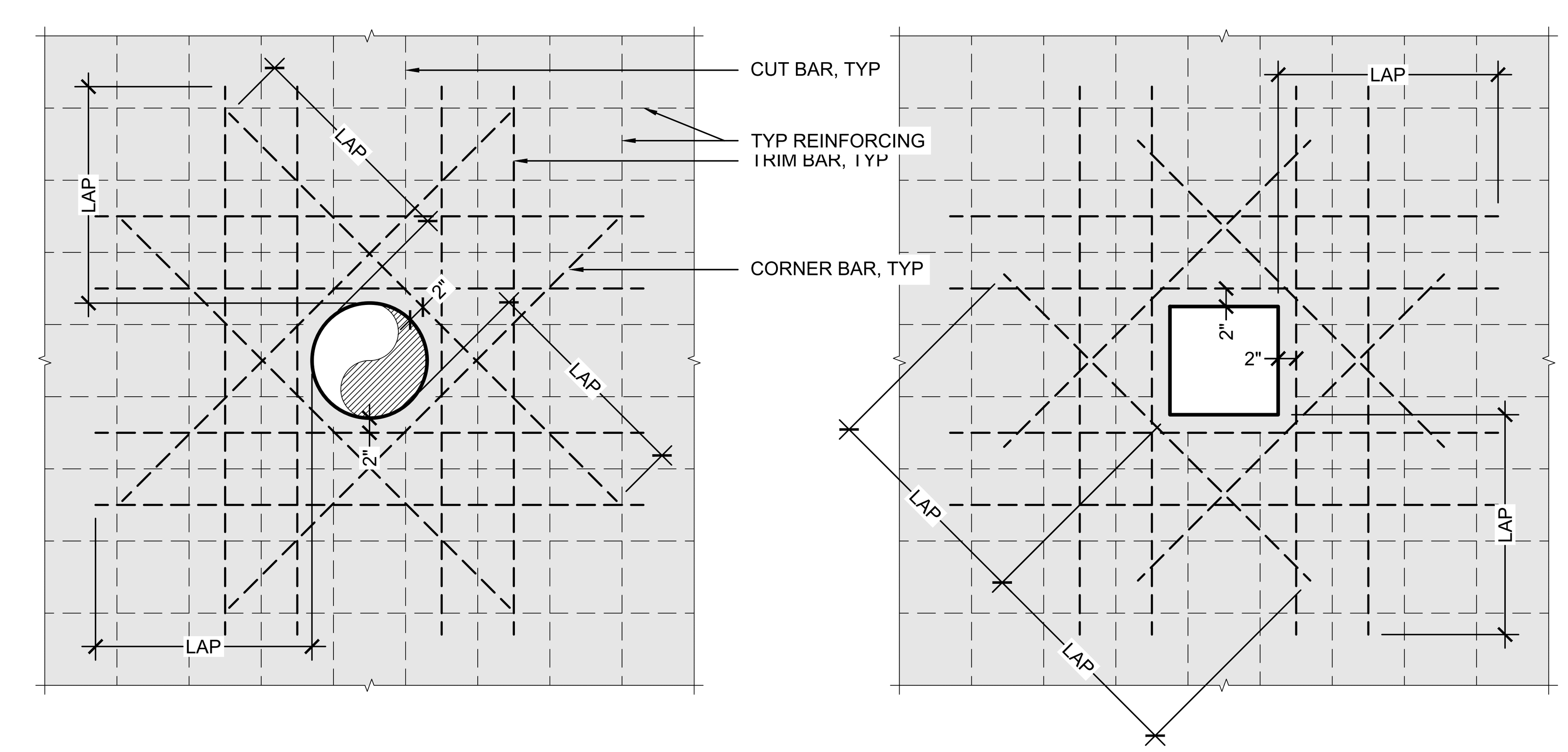
5 POOL OVERFLOW DETAIL

SCALE: 1" = 1'-0"



6 RIVER JET DETAIL

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



- INTERRUPT REINFORCING 2" CLEAR FROM OPENINGS / PENETRATIONS / EMBEDS.
- FOR EACH MAT: ADD TRIM BAR FOR EACH CUT BAR. MATCH FLOOR / WALL REINFORCEMENT SCHEDULE. SPACE HALF OF THE TOTAL NUMBER OF TRIM BARS ON EACH SIDE OF OPENING. ALTERNATE WITH TYP FLOOR / WALL BAR SPACING. ROUND UP NUMBER OF TRIM BARS FOR ODD NUMBER OF CUT BARS.
- FOR EMBEDS (DRAINS, LIGHT NICHES, ETC) THAT CUT BARS IN ONLY ONE MAT, TRIM AND CORNER BARS ARE ONLY REQUIRED FOR THAT MAT.
- AT A MINIMUM, INSTALL CORNER BARS AND ONE TRIM BAR ON EACH SIDE OF OPENINGS / PENETRATIONS / EMBEDS WITH MAXIMUM DIMENSION GREATER THAN 4". INSTALL CORNER / TRIM BARS WITH MINIMUM CLEAR COVER TO INTERIOR FACE OF FLOOR / WALL.
- TRIM BARS AND CORNER BARS ARE NOT REQUIRED FOR OPENINGS / PENETRATIONS / EMBEDS WITH MAXIMUM DIMENSION 4" OR LESS.

7 OPENING REINFORCING DETAIL

SCALE: 3/4" = 1'-0"

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Landscape Architecture
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San Antonio, Texas 78215
210.828.1155

BRANNON ENGINEERING & CONSULTING
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STATE OF TEXAS
TRAVIS A. BOZICK
104560
LICENSED
PROFESSIONAL ENGINEER
10/23/2025

District 3 Aquatics Facility
San Antonio, TX

ISSUE DATE	10/23/2025
REVISION	
PROJECT NUMBER	23010
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SCALE	

SHEET TITLE

POOL DETAILS

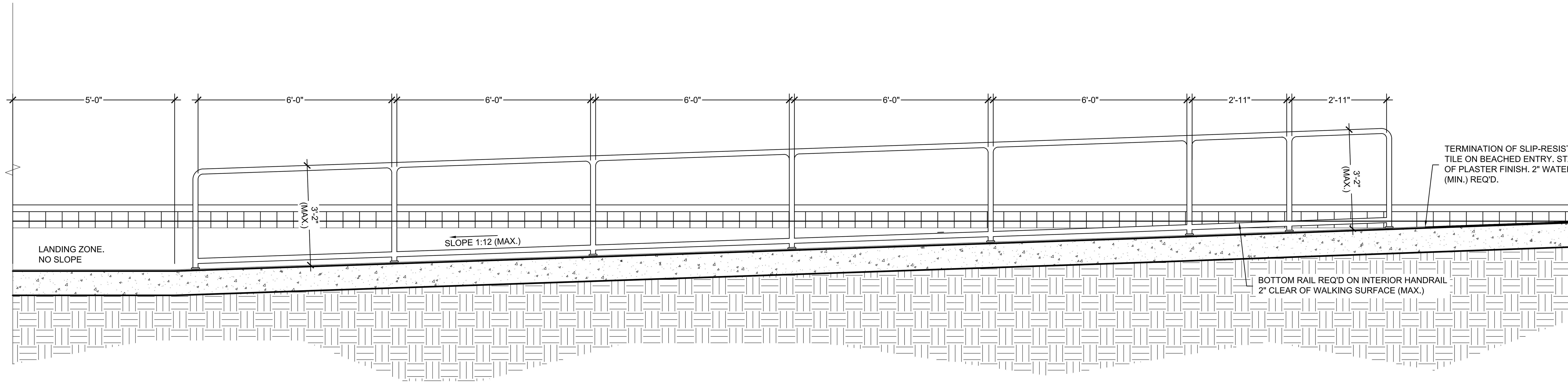
SP5.1 POOL DETAILS.dwg

SHEET NUMBER

SP5.1

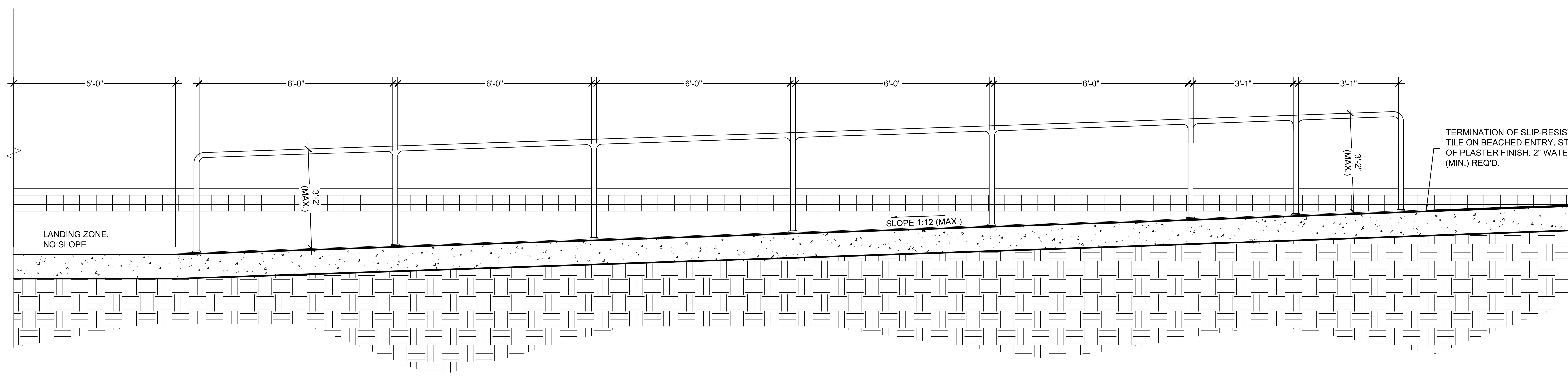
ADA HANDRAIL NOTES:

1. ADA HANDRAILS TO BE INSTALLED WITH 2'-0" CLEAR BETWEEN HANDRAILS.
2. HANDRAIL ADJACENT TO WALL SHALL BE MOUNTED NO MORE THAN 2" CLEAR OF WALL.
3. TOP OF HANDRAIL MUST BE 34" (MIN.) AND 38" (MAX.) ABOVE WALKING SURFACE.
4. 316 MARINE GRADE S.S. IS REQUIRED. S.S ESCUTCHEONS AND BRASS ANCHORS REQUIRED. HANDRAILS MUST BE BONDED. REF. SP6.0, SP6.1, SP6.2.
5. SUBMITTAL TO E.O.R. AT BRANNON CORPORATION IS REQUIRED PRIOR TO PURCHASE OF THE HANDRAILS.
6. A 5'-0" X 5'-0" FLAT ZONE LANDING MUST BE MAINTAINED AT THE TERMINATION OF THE HANDRAILS.



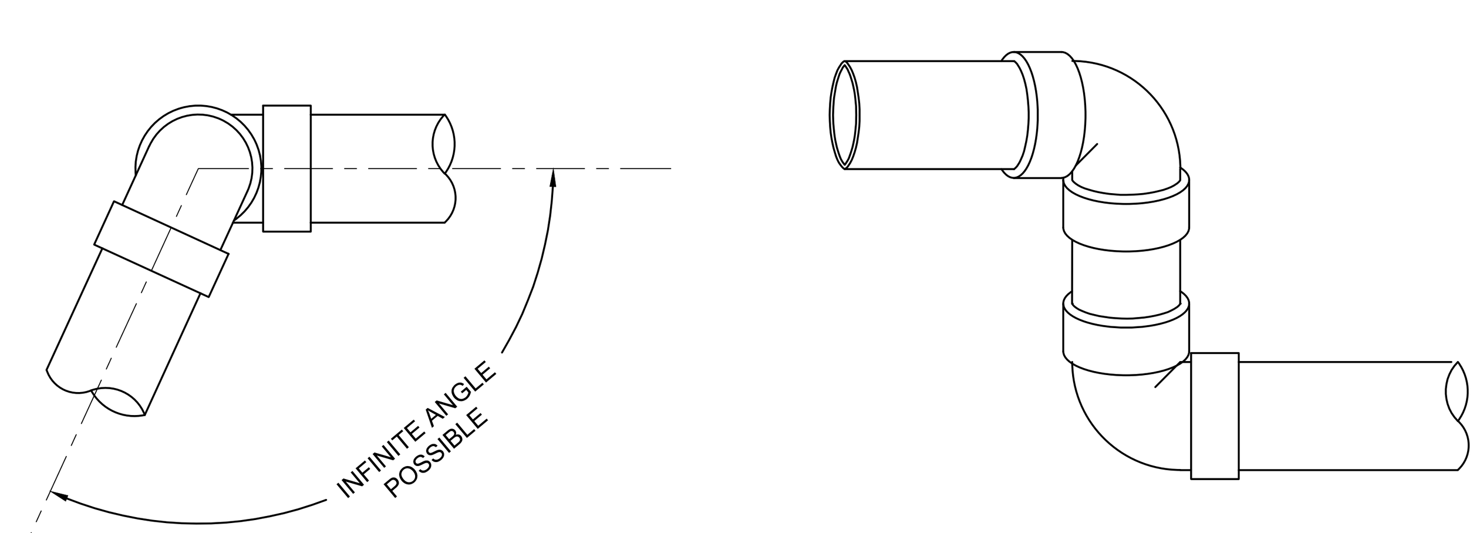
1 ADA HANDRAIL DETAIL

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



2 ADA HANDRAIL DETAIL

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



3 SWIVEL JOINT DETAIL

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

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Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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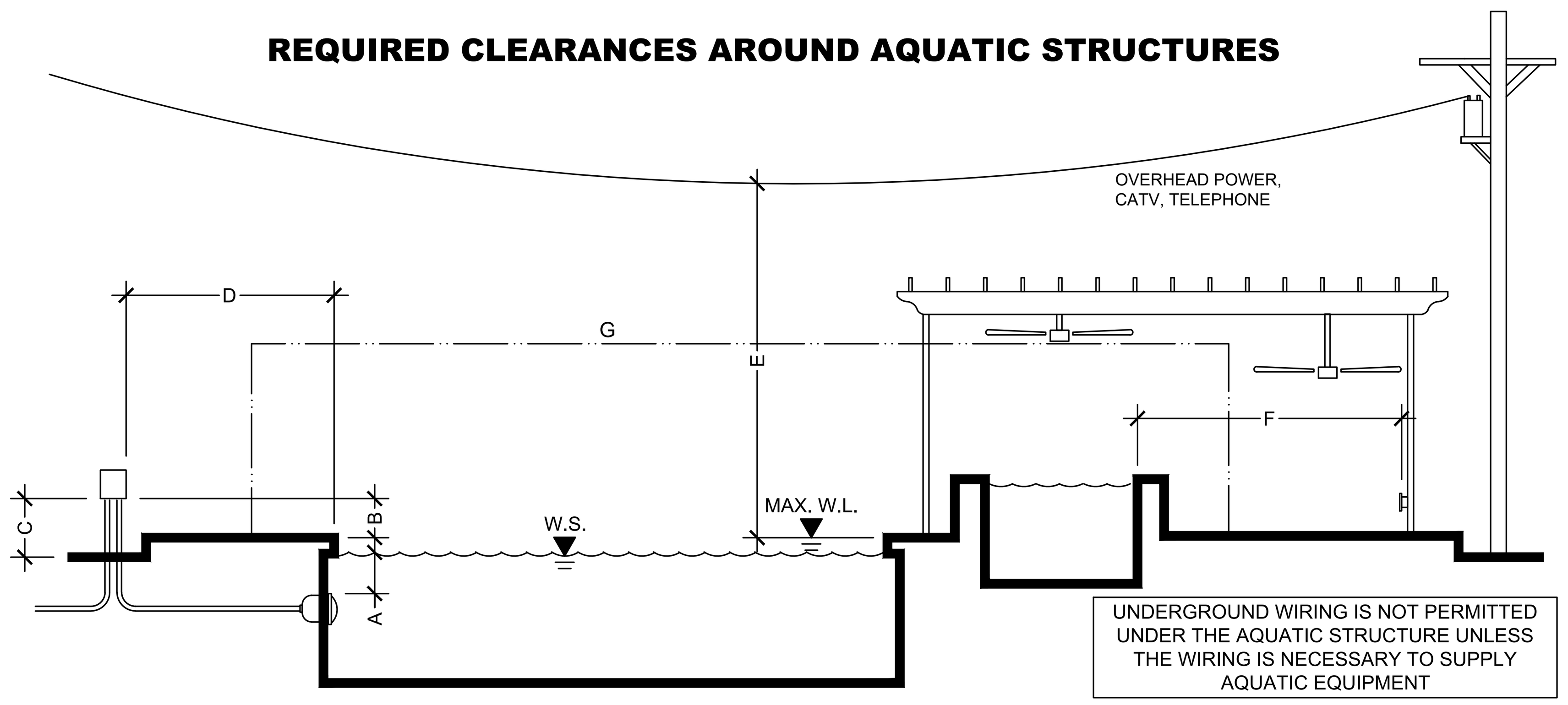
POOL DETAILS

SHEET NUMBER

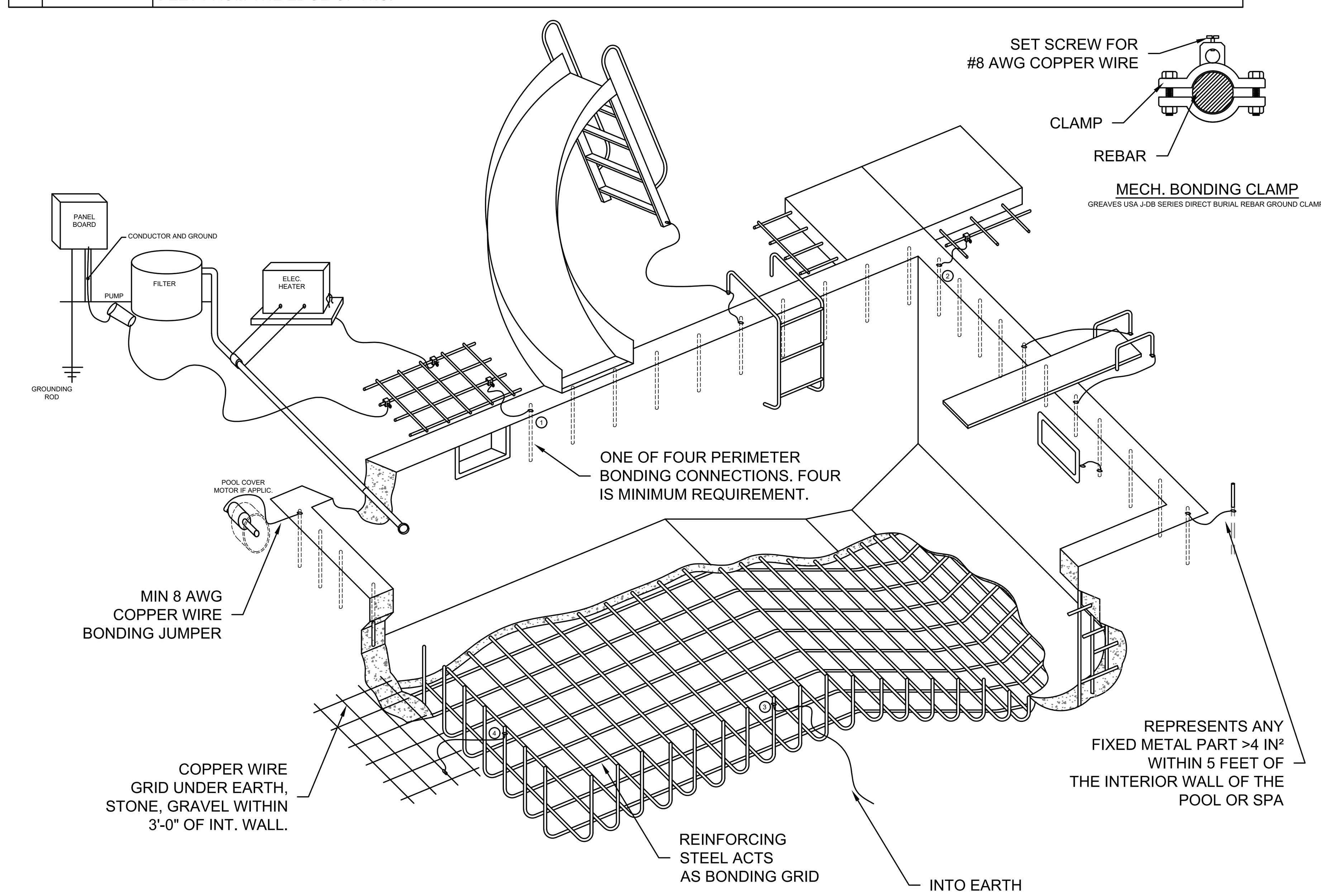
SP5.2

SP5.2 POOL DETAILS.dwg

REQUIRED CLEARANCES AROUND AQUATIC STRUCTURES



	CLEARANCE	CLEARANCE PARAMETER
A	18 INCHES	MIN. SUBMERSION BELOW NORMAL W.L. FOR U.W. LIGHTS UNLESS THE LIGHT IS LISTED AND IDENTIFIED FOR USE AT LESSER DEPTHS; NO U.W. LIGHT SHALL BE INSTALLED LESS THAN 4" BELOW NORMAL W.L.; SUBMERSION IS MEASURED TO TOP OF U.W. LIGHT LENS
B	8 INCHES	CLR. DISTANCE FROM MAX. W.L. TO BOTTOM OF U.W. LIGHT JUNCTION BOX OR LOW VOLTAGE TRANSFORMER
C	4 INCHES	CLR. DISTANCE FROM GROUND LEVEL TO BOTTOM OF U.W. LIGHT JUNCTION BOX OR LOW VOLTAGE TRANSFORMER
D	5 FEET	HORIZ. CLR. DISTANCE BETWEEN EDGE OF W.S. AND JUNCTION BOX OR LOW VOLTAGE TRANSFORMER
E	27 FEET	CLR. DISTANCE IN ANY DIRECTION FROM O.H. CONDUCTORS TO MAX. W.L., EDGE OF W.S., BASE OF DIVING PLATFORM, OR PERMANENTLY ANCHORED RAFT; ENVELOPE EXTENDS HORIZ. FROM THE EDGE OF THE W.S. TO THE OUTER EDGE OF STRUCTURES LISTED ABOVE, BUT NOT LESS THAN 10 FEET
	18 FEET	CLR. DISTANCE DISTANCE IN ANY DIRECTION FROM O.H. CONDUCTORS TO OBSERVATION STAND, TOWER, OR DIVING PLATFORM; ENVELOPE EXTENDS HORIZ. FROM THE EDGE OF THE W.S. TO THE OUTER EDGE OF STRUCTURES LISTED ABOVE, BUT NOT LESS THAN 10 FEET
F	6 FEET	CLR. DISTANCE BETWEEN EDGE OF W.S. AND RECEPTACLES
	5 FEET	HORIZ. CLR. DISTANCE BETWEEN SWITCHING DEVICES AND EDGE OF W.S.
	10 FEET	CLR. DISTANCE BETWEEN OTHER OUTLETS (FIRE ALARM, COMMUNICATIONS, ETC.) AND EDGE OF W.S.
G	12 FEET	CLR. DISTANCE BETWEEN MAX. W.L. AND O.H. LIGHTS, LIGHTING OUTLETS, AND CEILING SUSPENDED FANS; ENVELOPE EXTENDS HORIZ. 5 FEET FROM THE EDGE OF W.S.



TEXAS HEALTH CODE (TITLE 25, CHAPTER 265.199) REQUIRES ALL POOLS AND SPAS TO HAVE A TELEPHONE THAT IS CAPABLE OF IMMEDIATELY SUMMONING HELP THAT IS READILY ACCESSIBLE AND WITHIN 200 FEET OF THE POOL OR SPA WATER. OTHER PROVISIONS APPLY AND ALTERNATIVE ELECTRONIC DEVICES FOR SUMMONING HELP MAY QUALIFY - CONSULT PARAGRAPH 265.199(j) OF THE CODE. COMPLIANCE WITH THIS REQUIREMENT IS NOT PART OF THE CONSTRUCTION CONTRACT BUT SHALL BE COMPLIED WITH BY THE OWNER BEFORE THE POOL IS OPENED FOR SERVICE.

GENERAL POOL ELECTRICAL REQUIREMENTS:
NATIONAL ELECTRICAL CODE SECTION 680 (NEC 680) GOVERNS ELECTRICAL REQUIREMENTS IN ALL POOL AND FOUNTAIN STRUCTURES. NEC 680 IS INCORPORATED BY REFERENCE HEREIN IN ITS ENTIRETY AND SHALL BE IN SUCH FORCE AND EFFECT AS IF FULLY SHOWN HEREIN. EXCERPTS BELOW ARE SHOW FOR YOUR CONVENIENCE.

GROUNDING
ELECTRICAL EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH NEC 250 PARTS V, VI, AND VII. THE FOLLOWING EQUIPMENT SHALL BE GROUNDED: THROUGH WALL UNDERWATER LIGHTS WITH VOLTAGE RATINGS GREATER THAN 16V, ELECTRICAL EQUIPMENT WITHIN 5 FEET OF THE WATER FILLED BASIN INTERIOR WALL, JUNCTION BOXES, ELECTRICAL EQUIPMENT THAT CIRCULATES THE WATER, TRANSFORMER AND POWER SUPPLY ENCLOSURES, GFCI UNITS, PANELBOARDS THAT SERVE THE ELECTRICAL EQUIPMENT THAT OPERATES THE WATER FILLED BASIN.

UNDERGROUND WIRING MUST BE INSTALLED IN SCHEDULE 80 PVC RIGID CONDUIT. DIRECT BURY CABLE IS NOT ALLOWED. ALUMINUM CONDUIT IS NOT PERMITTED FOR THIS POOL WIRING INSTALLATION.

RECEPTACLES 15 OR 20 AMP 125V WITHIN 20 FEET OF THE INTERIOR WALL OF THE POOL OR SPA MUST HAVE GFCI PROTECTION. NO RECEPTACLES ARE ALLOWED WITHIN 72" OF THE INTERIOR WALL OF THE POOL OR SPA. AT LEAST ONE WEATHERPROOF GFCI OUTLET MUST BE PROVIDED ON A DEDICATED 20 AMP CIRCUIT.

ALL SPA AND HOT TUB PUMP MOTORS MUST HAVE AN EMERGENCY SHUT OFF SWITCH THAT IS CLEARLY LABELED, VISIBLE, WITHIN FIFTY FEET OF THE SPA, AND READILY ACCESSIBLE TO USERS. SHUT OFF SWITCH MUST BE INSTALLED FARTHER THAN 60" FROM THE SPA/HOT TUB WATER SURFACE. SHUT OFF SWITCH SHALL STOP PUMP MOTOR.

WORKING SPACE IN FRONT OF A STARTER/DISCONNECT, DISTRIBUTION PANELS, MAIN LUGS, AND OTHER ELECTRICAL SERVICE EQUIPMENT REQUIRES ADEQUATE LIGHTING AND A 30" WIDE, 36" DEEP, AND 78" HIGH CLEAR AREA TO PERFORM SERVICE/MAINTENANCE ON ELECTRICAL EQUIPMENT.

LOW VOLTAGE LIGHTING MAY BE INSTALLED IN JUNCTION BOXES FLUSH WITH THE DECK. LOW VOLTAGE UNDER WATER LIGHTING DEFINED AS LIGHTS OPERATING AT OR BELOW 15V. FLUSH MOUNTED JUNCTION BOXES MUST BE FILLED WITH AN APPROVED POTTING COMPOUND AND MUST BE INSTALLED GREATER THAN 48" FROM THE INSIDE WALL OF THE WATER FILLED BASIN.

TRANSFORMERS AND POWER SUPPLIES USED FOR THE SUPPLY OF UNDERWATER LIGHTS MUST BE LISTED FOR SWIMMING POOL USE. WHERE THE POOL IS OUT DOORS THE TRANSFORMER AND POWER SUPPLY MUST BE LISTED FOR SWIMMING POOLS AND BE MARKED "FOR OUTDOOR USE".

NON-REVERSING STARTER/DISCONNECT SCHEDULE

STARTER/DISCONNECT SWITCHES REQUIRED FOR PUMP MOTORS IN EXCESS OF 2Hp OR 300V LOADING. REFER TO NEC 430.109 FOR DISCONNECT REQUIREMENTS FOR CORD AND PLUG MOTORS AND MOTORS LESS THAN 2Hp AND OR 300V.

NEMA ENCLOSURE TYPE 4X REQUIRED FOR PANELS AND ALL STARTER/DISCONNECT UNITS. MOTORS INSTALLED FOR SWIMMING POOLS 10 Hp TO 2Hp SHALL HAVE A COMBINATION MOTOR STARTER/DISCONNECT WITH FUSED SHORT CIRCUIT PROTECTION MANUFACTURED BY SIEMENS OR SQUARE D. MOTORS INSTALLED FOR SWIMMING POOLS WITH A LOAD GREATER THAN 10Hp REQUIRE THE INSTALLATION OF A REDUCED VOLTAGE STARTER MANUFACTURED BY SIEMENS OR SQUARE D. CONTRACTOR TO CONFIGURE REDUCED VOLTAGE STARTER TO 'SOFT START' (10 SEC) AND 'SOFT STOP' (25 SEC). INSTALL STARTER/DISCONNECT WITHIN SIGHT OF MOTOR AND PROVIDE LOCK OUT MECHANISM TO DISALLOW START DURING MAINTENANCE.

BONDING:
REINFORCING STEEL-NON ENCAPSULATED ONLY
UNENCAPSULATED STRUCTURAL REINFORCING SHALL BE BONDED TOGETHER BY STEEL TIE WIRES OR THE EQUIVALENT TO FORM THE BONDING GRID. THE STRUCTURAL REINFORCING STEEL SHALL BE BONDED WITH A FASTENER ADHERING TO NEC 250.8 IN NO LESS THAN FOUR LOCATIONS UNIFORMLY SPACED AROUND THE POOL PERIMETER.

POOLS LARGER THAN 5,000 SQ. FT SHALL HAVE AN ADDITIONAL BONDING GRID/REINFORCING STEEL JUMPER MEETING THE REQUIREMENTS OF NEC 250.8 FOR EVERY 1,000 SQ. FT OF POOL IN ADDITION TO 5,000 SQ FT. FOR EXAMPLE 6,100 SQ FT POOL WOULD REQUIRE FOUR (MINIMUM) PLUS 1.1 CONNECTION LOCATIONS. SIX CONNECTIONS FROM THE PERIMETER TO THE BONDING GRID WOULD BE REQUIRED IN THE EXAMPLE.

THE FOLLOWING EQUIPMENT IF SHOWN MUST BE CONNECTED TO THE BONDING GRID PER NEC 250.8.

METALLIC COMPONENTS
ALL METALLIC PARTS OF THE POOL STRUCTURE OR EMBEDDED THEREIN AND HAVING AN EXPOSED SURFACE AREA GREATER THAN FOUR SQUARE INCHES SHALL BE BONDED.

UNDERWATER LIGHTING
ALL METAL FORMING SHELLS, MOUNTING BRACKETS OF NO-NICHE LUMINARES SHALL BE BONDED. REFER TO NEC 680 FOR LOW VOLTAGE EXCEPTIONS.

METAL FITTINGS
ALL METAL FITTINGS WITHIN OR ATTACHED TO THE POOL STRUCTURE SHALL BE BONDED.

ELECTRICAL EQUIPMENT
METAL PARTS OF ELECTRICAL EQUIPMENT ASSOCIATED WITH POOL WATER. FOR EXAMPLE POOL PUMPS WITH MOTORS AND POOL COVERS WITH MOTORS SHALL BE BONDED.

POOL HEATERS RATED IN EXCESS OF 50 AMPERES REQUIRE BONDING. REFER TO POOL HEATER INSTALLATION SPECIFIC INSTRUCTIONS REGARDING PARTS OF THE POOL HEATER THAT REQUIRE BONDING.

FIXED METAL PARTS
ALL FIXED METAL PARTS WITHIN 5 FEET OF THE INTERIOR WALL OF THE POOL OR SPA SHALL BE BONDED INCLUDING, BUT NOT LIMITED TO, METAL SHEATHED CABLES AND RACEWAYS, METAL PIPING, METAL AWNINGS, METAL FENCES, AND METAL DOOR AND WINDOW FRAMES. REFER TO NEC 680 FOR EXCEPTIONS.

NO METAL COMPONENTS IN POOL SHELL
IF THERE ARE NO METAL COMPONENTS IN THE POOL SHELL OR MOUNTED TO THE POOL SHELL AN INTENTIONAL BOND OF A MINIMUM S.S. CONDUCTIVE SURFACE AREA OF 9 SQUARE INCHES MUST BE INSTALLED. THE BONDING PLATE MUST BE INSTALLED IN CONTACT WITH THE POOL WATER BY THE POOL CONTRACTOR IN A LOCATION AS DETERMINED BY THE ENGINEER.

PERIMETER SURFACES
BONDING GRID SHALL BE EXTENDED 3 FEET HORIZONTALLY BEYOND THE INSIDE WALL OF THE POOL OR SPA INTO THE ADJACENT SURFACES. BONDING GRID SHALL BE INSTALLED IN ADJACENT DECK, GRAVEL, NOT REINFORCED DECK, EARTH, LANDSCAPING, BUILDING, OR OTHER STRUCTURES PER NEC 680 'BURIED' DEFINITIONS.

THE POOL SHALL NOT OPERATE AT NIGHT OR DURING PERIODS OF LOW NATURAL ILLUMNIATION.

1 POOL ELECTRICAL NOTES
SCALE: N.T.S.

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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POOL ELECTRICAL NOTES

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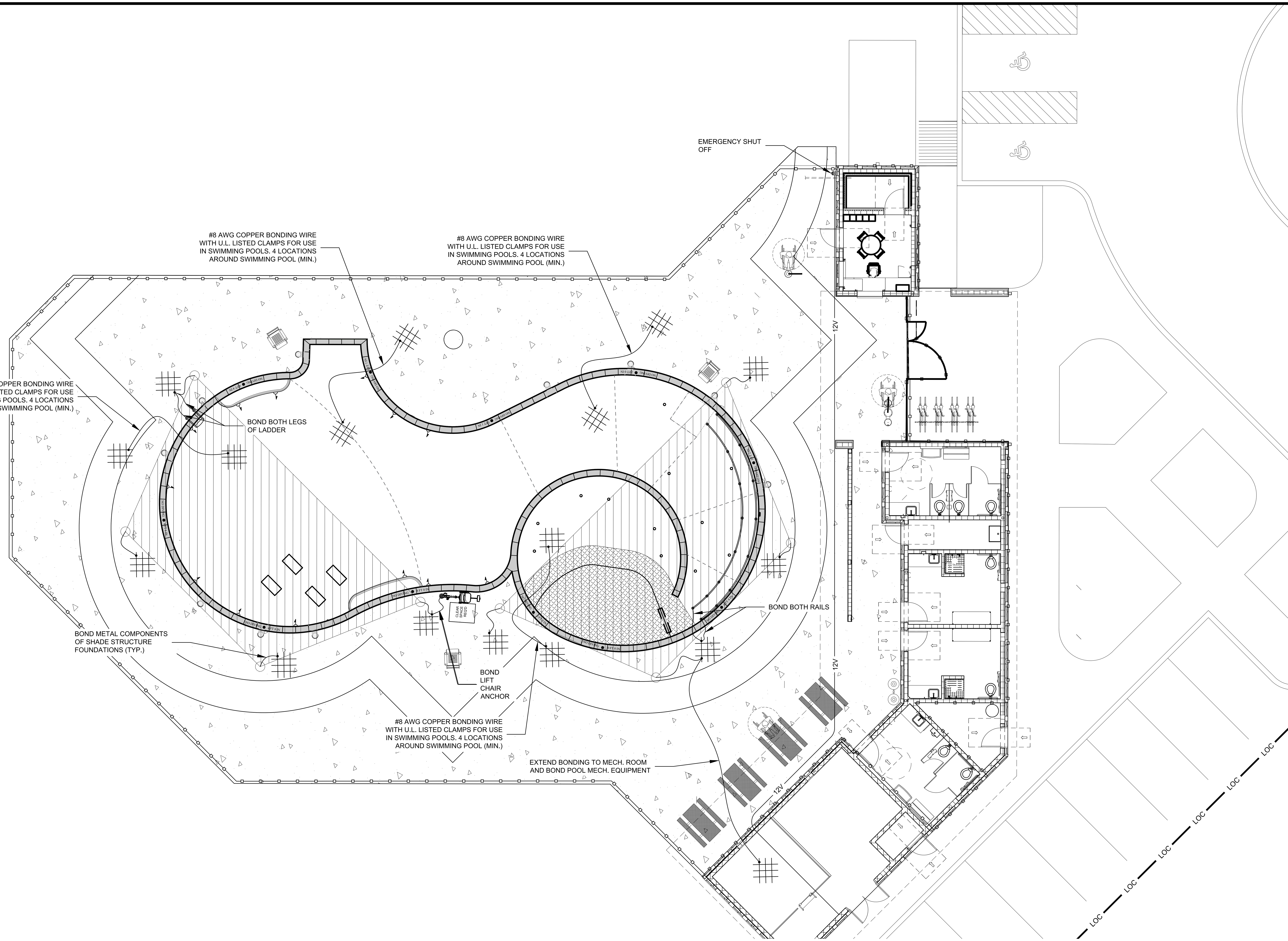
SP6.0

SP6.0 POOL ELECTRICAL NOTES.dwg



1 ELECTRICAL SITE PLAN

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

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Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
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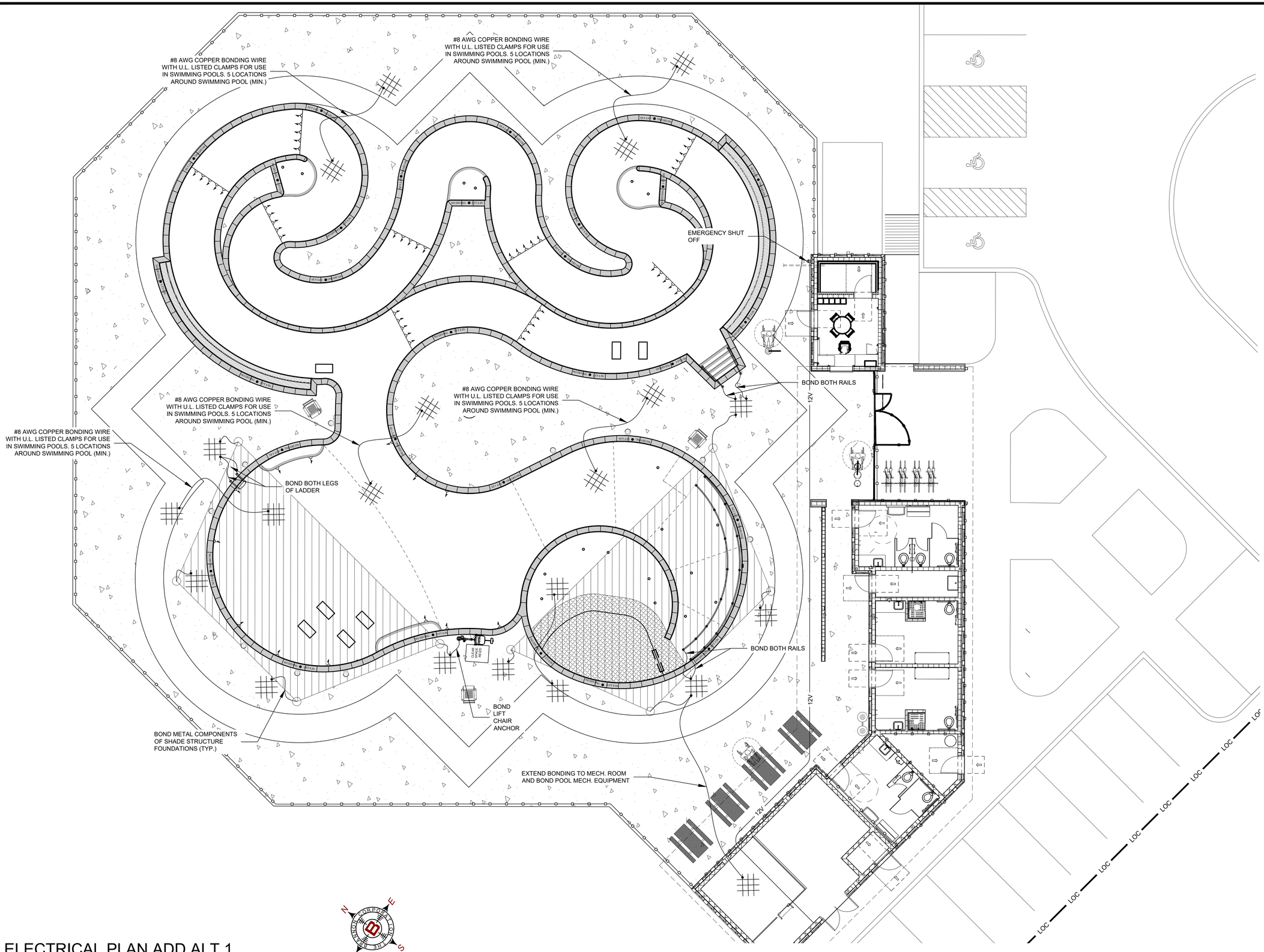
POOL ELECTRICAL PLAN

SHEET NUMBER

SP6.1

SP6.1 POOL ELECTRICAL PLAN.dwg



1 POOL ELECTRICAL PLAN ADD ALT 1
SCALE: 1/8" = 1'-0"

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Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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SHEET TITLE
POOL ELECTRICAL PLAN ADD ALT 1

SHEET NUMBER
SP6.2

SP6.2 POOL ELECTRICAL PLAN ADD ALT.dwg

S T R U C T U R A L N O T E S

1000 COORDINATION

A. The Contractor shall compare the Architectural, Structural, Mechanical, Electrical, Plumbing, and other series drawings and report any discrepancies between each set of drawings and within each set of drawings prior to fabrication and installation of any structural members.

B. Only larger sleeve openings and framed openings in structural framing component members are indicated on the Structural Drawings. However, all sleeves, inserts and openings, including frames and/or sleeves shall be provided for passage, provision and/or incorporation of the work of the contract, including but not limited to Mechanical, Electrical and Plumbing work. This work shall include the coordination of sizes, alignment, dimensions, position, locations, elevations and grades as required to serve the intended purpose. Openings not indicated on the Structural Drawings, but required as noted above, shall be submitted to the Engineer for review.

C. Refer to Architectural, Mechanical, Electrical and Plumbing drawings for floor elevations, slopes, drains and location of depressed and elevated floor areas.

D. Compatibility of the structure and provisions for building equipment supported on or from structural components shall be verified as to size, dimensions, clearances, accessibility, weights and reaction with the equipment for which the structure has been designed prior to submission of shop drawings and data for each piece of equipment and for structural components. Differences shall be noted on the submittals.

E. Shop drawings shall be prepared for all structural items and submitted for review by the Engineer. Structural Drawings shall not be reproduced and used as shop drawings. All items deviating from the Structural Drawings or from previously submitted shop drawings shall be clouded.

F. The details designated as "Typical Details" apply generally to the Structural Drawings in all areas where conditions are similar to those described in the details.

G. All structural elements of the project have been designed by the Engineer to resist the required Code vertical and lateral forces that could occur in the final completed structure only. It is the responsibility of the Contractor to provide all required bracing during construction to maintain the stability and safety of all structural elements during the construction process until the lateral-load resisting or stability-providing system is completely installed and the structure is completely tied together. Temporary supports shall not result in the overstress or damage of the elements to be braced nor any elements used as brace supports.

H. The Contract Structural Drawings and Specifications represent the finished structure, and except where specifically shown do not indicate the means or methods of construction. The Contractor and their Sub-Contractors shall supervise and direct the Work and shall be solely responsible for all construction means, methods, procedures, techniques, sequences and safety measures including, but not limited to, adherences to all OSHA guidelines. The Engineer shall not have control of, and shall not be responsible for, construction means, methods, techniques, sequences or procedures, for safety precautions and programs in connection with the Work, for the acts or omissions of the Contractor, Subcontractors, or any other person performing any of the Work, or for the failure of any of these persons to carry out the Work in accordance with the Structural Contract Documents.

I. Where conflict exists among the various parts of the Structural Contract Documents, Structural Drawings, General Notes, and Specifications, the strictest requirements, as indicated by the Engineer, shall govern.

J. Periodic site observation by field representatives of Intelligent Engineering Services, LLP (IES) is solely for the purpose of determining if the Work is proceeding in accordance with the Structural Contract Documents. This limited site observation is not intended to be a check of the quality or quantity of the Work, but rather a periodic check in an effort to inform the Owner against defects and deficiencies in the work of the Contractor.

1020 CODES

A. The General Building Code used as the basis for the structural design is as follows:

City of San Antonio Building Code (2021 International Building Code with City of San Antonio Amendments)

1030 IBC 2021 DESIGN LOADS

A. Dead Loads include the self-weight of the structural elements and the following superimposed loads:

Ceiling and Mechanical at roof	10 psf
Roofing and rigid insulation	8 psf

B. Live Loads

OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (lbs.)
Mechanical rooms, typical	125	Equip. Wt.
Restrooms	60	2000
Offices	50	
Roof - See Section Design Loads Note C		
Storage		
Light	125	N/A

Notes:
1. Live load shall not be reduced.

C. Roof Live Loads

ROOF USE	ROOF LIVE LOAD UNIFORM	CONCENTRATED
Ordinary Flat, and Pitched Roofs	20 psf	N/A

Notes:

1. Concentrated load applied to supporting roof frame members only.

D. Snow Loads

Ground snow load, P_g	5 psf
Snow exposure factor, C_e	1.0
Importance factor, I_s	1.0
Thermal factor, C_t	1.0
Flat Roof Snow Load	2.8 psf

E. Roof Rain Loads

Rain Intensity, i	4.25 in/hr

1030 IBC 2021 DESIGN LOADS (CONT)

F. Wind Loads

1. Wind lateral load on structural frame is based on ASCE 7 using the following:

Ultimate Design Wind Speed (V_{ult})	108 mph
Nominal Design Wind Speed (V_{asd})	84 mph
Exposure Category	C
Internal Pressure Coefficient, GCpi	+/-0.18
Risk Category	II

2. Ultimate Level Components and Cladding Wind Pressures:

Surface	(psf)	Zone	Area, A_e (ft^2)
Exterior	+30.5	Interior and edge	10 or less
Walls	-33.1	Interior	10 or less
	-40.7	Edges	10 or less
	+22.9	Interior and edge	500 or greater
	-25.4	Interior and edge	500 or greater
Roof	+16.0	Interior, edges, and corners	10 or less
	-53.1	Interior	10 or less
	-70.1	Edges	10 or less
	-95.5	Corners	10 or less
	+16.0	Interior	100 or greater
	-41.6	Interior	100 or greater
	-55.1	Edges	100 or greater
	-65.6	Corners	100 or greater

- Pressure for Tributary Areas in between the listed values may be linearly interpolated.
- Negative value signifies pressure acting away from the surface (suction).
- Edge and corner zone distances with a=x.xft determined in accordance with referneced standard. <<or>> For edge and corner zone distances refer to Wind Zone summary plan for location and extent of wind zones and wind load pressures for both roof components & cladding and wall components & cladding
- Pressures on parapets shall be determined by combining positive and negative wall pressures or wall and roof pressures listed above in accordance with the referenced standard.
- Wind loads provided in above table are in [ASD (0.6W) or LRFD (1.0W)]. Add to the WL pressure legend, reference framing plan notes.

*Pressures are for gross uplift conditions. Refer to roof plan(s) for net uplift values for design of joists, joist girders, and bridging.

G. Seismic Loads

1. The structure and structural components of the building have been designed in accordance with General Building Code with the following criteria:

Seismic Importance Factor, I_e	1.0
Risk Category	II
Mapped Spectral Response Accelerations	
S_s (g)	0.051
S_1 (g)	0.022
Site Class	D
Design Spectral Response Accelerations	
S_{DS} (g)	0.055
S_{D1} (g)	0.035
Seismic Design Category	A
Basic Seismic-force-resisting system	N/A
Design Base Shear, V	N/A
Seismic Response Coefficient(s), Cs	N/A
Response Modification Factor(s), R	N/A
Analysis Procedure Used	ASCE 7-16 Section 11.7

H. Mechanical Equipment Loads

1. Loading for mechanical rooms are based on the weights of equipment and concrete pads as indicated on the Structural Drawings. The Contractor shall submit actual weights of equipment to be used in the project to the Structural Engineer for verification of loads used in the design at least three weeks prior to fabrication and construction of the supporting structure. Any revisions in equipment type, size, or quantity shall be reported to the Architect immediately for verification of the structural design.

I. Load Combinations

1. Allowable Stress Design:
   a. D + F
   b. D + H + F + L
   c. D + H + F + (Lr or S or R)
   d. D + H + F + 0.75L + 0.75(Lr or S or R)
   e. D + H + F + (0.6W or 0.7E)
   f. D + H + F +0.75(0.6W) + 0.75L + 0.75(Lr or S or R)
   g. D + H + F +0.75(0.7E) + 0.75L + 0.75S
   h. 0.6D + 0.6W + H
   i. 0.6(D+F) + 0.7E + H

Future Expansion: Provision has not been made in the structural design for any future expansion:

1100 SUBMITTALS

A. Shop drawings shall be prepared for all structural items and submitted for review by the Engineer. Structural Drawings shall not be reproduced and used as shop drawings. All items deviating from the Structural Drawings or from previously submitted shop drawings shall be clouded.

B. Contractor shall review shop drawings for compliance with the Structural Drawings and shall certify that they have done so by a stamp noting that the drawings have been "Approved" and which bears the signature (or initials) of an authorized representative of the Contractor and the date. Submittals which do not reflect the Contractor's approval, signature and date will be returned without review.

C. Contractor shall be responsible for delays caused by rejection of inadequate shop drawings.

D. where review and return of shop drawings is required or requested, the Engineer will review each submittal and, where possible, return within two weeks of receipt.

E. Corrections or comments on shop drawings or manufacturer's data sheets do not relieve the Contractor from compliance with requirements of the plans and specifications. Engineer's review is for general conformance with the requirements of the Structural Drawings. Contractor is responsible for confirming and correcting all quantities and dimensions, selecting fabrication processes and techniques of construction, and coordinating the work with that of all other contractors.

F. Refer to individual sections for specific submittal requirements.

2315 BUILDING PAD PREPARATION:

A. Structural select fill material shall have a plasticity index between 8 and 20. Gradation of material shall be as follows:

1. Retained on No 4 Sieve 35% - 75% (gravel content)
2. Retained on No. 40 sieve 60% - 90% (coarse sand content)
3. Rocks no larger than2inches in any dimension

or a crushed linestone base material meeting the requirements of the Texas Department of Transportation (TxDOT) 2014 Standard Specifications Items 247, Type A, Grade 3.

Alternatively, a low-plasticity granular fill material that does not meet these specifications may be used utilized only if approved by Gessner Engineering.

B. Prior to placing fill material, remove all organic and other deleterious material from the existing surface for a distance of 3' 0" beyond building line, to a depth of one foot below existing grade elevation. Roots of trees within the proposed building footprint should be excavated and removed from the construction area. Remove additional material as required to place a minimum of two feet of structural select fill beneath the building slab.

C. All exposed surfaces shall then be proof rolled with a 15-ton roller (minimum) or equivalent equipment as approved by the engineer to detect weak zones. Weak areas detected during the proof rolling process as well as zones containing debris and or organics and voids resulting from the removal of tree roots, etc., should be removed and replaced with soils exhibiting similar classification, moistutre conctent, and density as the adjacent in situ soils.

D. The minimumamount of selelct fill shall be placed to evenly build up the pad. Select fill amounts may be increased to raise the building pad to the desired finished floor elevation or to decrease the movement potential of the site.

E. Structural select fill shall be placed in eight (8) inch loose lifts with compacted thickness not to exceed six (6) inches. Water as required and compacted to a minimum of 95 percent of the Standard Proctor maximum dry density as defined in ASTM D 698 at a moisture content within two (2) percent of the optimum moisture content for depths of 3 feet or less. If fill in excess of 3-feet is required, all select fill deeper than 3-feet shall be compacted to 98 percent of standard Proctor (ASTM /D698).

F. Compaction and moisture content of subgrade and each lift of structural fill shall be inspected and approved by a qualified engineering technician, supervised by a Geotechnical Engineer.

G. Provide a vapor retarder that conforms to ASTM E1745, Class A or better with a maximum water vapor permeance of 0.01 perms per ASTM E154. Vapor retarder shall be no less than 15 mils thick.

H. Building pad preparation information is based on a geotechnical report provided by Gessner engineering, dated February 9, 2024, Report number 23-0513.

3000 CAST-IN-PLACE CONCRETE

A. Structural Concrete Code: Building Code Requirements for Structural Concrete, American Concrete Institute, ACI 318, as referenced by the General Building Code.

B. Classes of Concrete

1. All concrete shall conform to the requirements as specified in the table below, unless noted otherwise on the Structural Drawings:

2. Concrete Mix Schedule:

Conc Class	Strength psi	Agg Type	Max Agg Size	Slump Inches	Max w/c	Notes
A	3000	NAT	3/4"	5-7	---	All Concrete

   a. NAT" refers to normal concrete having an dry unit weight of approximately 145 pcf (ASTM c33 AGGREGATE)
   b. Where the w/c ratio is not indicated in the Concrete Mix Schedule, it shall be as necessary to meet strength requirements.
   c. Where the w/c ratio is shown, it shall be adhered to regardless of the strength requirements.
   d. Strength" is required compressive cylinder strength at an age of 28 days.
   e. "Maximum aggregate size" is defined as first sieve with greater than 15 cumulative percent retained.

C. Fly ash shall not be used in architecturally exposed concrete.

D. Provide 4 1/2 percent plus or minus 1 1/2 percent of entrained air in concrete permanently exposed to the weather and elsewhere at the contractor's option.

E. Horizontal construction joints in concrete placements shall be permitted only where indicated on the Structural Drawings. All vertical construction joints shall be made in the center of spans in accordance with the typical details. Contractor shall submit proposed locations for construction joints not shown on the Structural Drawings for review by the Architect and Engineer. Additional construction joints may require additional reinforcing as specified by the Engineer which shall be provided by the contractor at no additional cost to the owner.

F. Embedded conduits, pipes, and sleeves shall meet the requirements of ACI 318, and the following:

1. Conduits and pipes running within a slab, beam, or wall shall not be larger in outside dimension than 1/3 the overall thickness of the slab, wall or beam and shall be located within the middle third of that thickness.

2. Conduits, pipes, and sleeves passing horizontally through a beam shall not be larger in outside dimension than 1/3 the overall depth of the beam and shall be located within the middle third of that depth.

3. Conduits, pipes, and sleeves passing vertically through a beam shall utilize a sleeve not larger in outside dimension than 1/3 the overall width of the beam or 6 inches (whichever is less). The sleeve shall be made of hot dip galvanized schedule 40 steel.

4. Conduits, pipes and sleeves shall not be spaced closer than three diameters or widths on center.

G. Concrete sampling for quality assurance: Concrete that is pumped shall be sampled at the point of discharge from the truck.

H. Concrete sampling for quality assurance: Concrete that is pumped shall be sampled at the point of discharge from the truck for information, including slump; and shall be sampled at the point of placement for acceptance of slump and air content.

I. Submittal: Submit proposed mix designs in accordance with ACI 301, chapter 4.2.3. Each proposed mix design shall be accompanied by a record of past performance or by three laboratory trial mixtures with confirmation tests

3200 CONCRETE REINFORCING

A. Concrete reinforcement for the project shall conform to the following:

1. All reinforcing steel shall be new billet steel in accordance ASTM A615, Grade 60, unless noted otherwise in the Structural Drawings or these notes.

2. Welded wire reinforcement. Welded smooth wire reinforcement, ASTM A1064, yield strength 65,000 psi where noted on the Structural Drawings. Welded wire reinforcement to be provided in flat sheets.

B. Detailing of reinforcing steel shall conform to the American Concrete Institute 315 Detailing Manual and all hooks and bends in reinforcing bars shall conform to ACI detailing standards, unless noted otherwise on the Structural Drawings.

C. Reinforcement in Housekeeping Pads shall be as called for on the Structural Drawings.

D. In unscheduled grade beams, walls, and slabs, detail reinforcing as follows:

1. Class A lap beam top reinforcing bars at mid span.

2. Class A lap beam bottom reinforcing bars at the supports.

3. Provide Class B lap at other location pending Engineer's approval.

4. Provide standard hooks in top bars at cantilever and discontinuous ends of beams, walls and slabs.

5. Provide corner bars for all horizontal bars at the inside and outside faces of intersecting beams or walls. Corner bars are not required if horizontal bars are hooked.

6. Provide 2-#4 diagonal bars at all slab re-entrant corners placed under the top mat of steel.

E. Welding of reinforcing steel will not be permitted unless specifically shown on the Structural Drawings.

F. Heat shall not be used in the fabrication or installation of reinforcement.

G. Reinforcing steel clear cover shall be as follows:

1. Earth-formed Grade Beams 1-1/2" top, 3" sides, 3" bottom
2. Slab-on-grade 3/4" top

H. Submittal: Submit shop drawings for fabrication, bending, and placement of concrete reinforcement. Comply with ACI 315 "Details and Detailing of Concrete Reinforcement". Do not reproduce the Structural Drawings for use as shop drawings.

4800 STRUCTURAL MASONRY

A. Concrete Masonry: Building Code Requirements for Masonry Structures, American Concrete Institute, ACI 530 & 530.1, as referenced by the General Building Code.

B. Minimum compressive strength of the masonry (f'm) shall be 2,000 pounds per square inch.

C. Mortar shall conform to ASTM C270, Type S. Masonry cement shall not be used.

D. Concrete masonry units shall be hollow load bearing units which conform to ASTM C90, with a minimum net compressive strength as follows:

f'm (psi)	Net area Compressive Strength of CMU Block (psi)
2000	2000

E. Chases shall be built in and not cut in. Chases shall be plumb and shall be minimum one-unit length from jambs of openings. Anchors, wall plugs, accessories and other items to be built in shall be installed as the masonry work progresses. All cutting and fitting of masonry, including that required to accommodate the work of other sections shall be done by masons with masonry saws.

F. Coarse grout shall conform to ASTM C476, with a maximum aggregate size of 1/2" and a minimum compressive strength equal to the specified minimum compressive strength, f'm, but not less than 2000 psi. Course grout shall be placed in accordance with ACI 530.1 Section 3.5.

G. Reinforce concrete masonry unit joints with ladder type hot dip galvanized cold-drawn steel conforming to ANSI/ASTM A82, with W2.8 side rods with W1.7 cross rods.

1. Space joint reinforcing at 16 inches o.c. unless noted otherwise.

2. Lap joint reinforcing 14 inches at splices.

3. Provide prefabricated joint reinforcing corner pieces at all wall corners and intersections.

4. Joint reinforcing shall be discontinuous at control and expansion joints.

H. Lap reinforcing bars in grouted masonry as noted below. Splices in reinforcing shall be staggered so that not more than 1/2 of all bars are spliced at the same location.

I. Z-ties shall be provided in all masonry surfaces used as a form for grout at 16 inches on center each way in vertical masonry surfaces and at 8 inches on center each way in horizontal masonry surfaces. The leg embedded in the masonry joint shall have its hook placed 3/4 inch from the outside face of the masonry.

J. Z-ties shall be manufactured from 3/16 inch diameter cold drawn wire. Ties shall be hot dip galvanized, 6 inches long with a 2 inches hook at each end, unless noted otherwise on the Structural Drawings.

K. Provide 1 inch clear cover between ties or longitudinal reinforcing and the inside face of masonry used as forms in grouted beams, pilasters and columns.

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

INTELLIGENT ENGINEERING SERVICES
ENGINEERING COMMUNITIES FROM THE GROUND UP
1045 CENTRAL PARKWAY NORTH, SUITE 200 SAN ANTONIO, TEXAS 78232
210.349.9098 ie-services.com
IES JOB NO: 1243365 TBPE FIRM F-432

STATE OF TEXAS
JOSEPH H. HUIZAR
87226
LICENSED PROFESSIONAL ENGINEER
10/30/25

District 3 Aquatics Facility
San Antonio, TX

ISSUE DATE	10/23/2025
REVISION	
PROJECT NUMBER	23010
DRAWN BY	IES STAFF
CHECKED BY	JHH
SCALE	AS NOTED

SHEET TITLE

STRUCTURAL NOTES

SHEET NUMBER

S001

S T R U C T U R A L N O T E S

5050 POST-INSTALLED ANCHORS AND DOWELS

A. Expansion Anchors shall be one of the following:

1. Concrete:

   a. Kwik Bolt TZ2, Hilti Inc.
   b. Strong Bolt, Simpson Strong-Tie
   c. Power-Stud+ SD1, DeWalt (Powers)

2. Grouted Masonry

   a. Kwik Bolt 1, Hilti Inc.
   b. Wedge-All, Simpson Strong-Tie
   c. Power-Stud+ SD1, DeWalt (Powers)

B. Screw Anchors shall be one of the following:

1. Concrete:

   a. Kwik HUS-EZ, Hilti Inc.
   b. Titen HD, Simpson Strong-Tie
   c. Wedge-Bolt+, DeWalt (Powers)

2. Grouted Masonry

   a. Kwik HUS-EZ, Hilti Inc.
   b. Titen HD, Simpson Strong-Tie
   c. Wedge-Bolt+, DeWalt (Powers)

C. Adhesive Anchors shall be one of the following:

1. Concrete:

   a. HIT-RE 500-V3, Hilti Inc.
   b. HIT-HY 200, Hilti Inc.
   c. Pure 110+, DeWalt (Powers)
   d. AC200+, DeWalt (Powers)
   e. SET 3G, Simpson Strong-Tie.

2. Grouted Masonry

   a. HIT-HY 270, Hilti Inc.
   b. SET, Simpson Strong-Tie.
   c. AC100+ Gold, DeWalt (Powers)

D. Adhesive Doweling

1. Adhesive doweling system shall be one of the following products:

   a. HIT RE 500-V3, Hilti Inc.
   b. Pure 110+, DeWalt (Powers)
   c. AC200+, DeWalt (Powers)
   d. SET 3G, Simpson Strong-Tie.

E. Install dowels in strict accordance with the adhesive manufacturer's instructions.

F. Clean out holes with compressed air after drilling per manufacturer's printed installation instructions or use manufacturer's alternate hole cleaning procedures.

G. Unless noted otherwise on the structural drawings, embedment depth shall be as required to develop full yield strength of the embedded dowels.

H. Prior to drilling holes for dowels, locate existing reinforcing steel with a Pachometer (R-Meter) or by drilling 1/4 inch diameter pilot holes. Relocate bolt holes as required to avoid existing reinforcement.

I. Anchors and dowels of the size and embedment shown on the Drawings shall be installed in accordance with the Contract Documents, the manufacturer's recommendations, and the manufacturer's current ICC ES report for the anchor. If conflicts exist between these referenced documents, the most stringent requirements shall govern.

J. The Contractor shall locate all existing reinforcing steel and other embedded items contained in the concrete using non-destructive methods and shall position anchor locations to avoid conflicts with existing embedded items. Anchor locations can be adjusted by a maximum of 1 1/2 inch from detailed locations to avoid conflicts, unless noted otherwise. Submit an as-built of anchor locations to engineer.

K. Based on field verified locations of reinforcing steel and embedded items, the Contractor shall create templates for each anchor group. Submit template dimensions for review prior to fabrication of connection plates.

L. Holes for anchors and dowels shall be drilled in a continuous operation using the bit type and size recommended by the anchor manufacturer. Diamond cored holes shall not be used unless noted otherwise on the structural drawings. Holes shall be drilled perpendicular to the concrete surface and shall not be enlarged or redirected at any point along its length. All debris shall be blown out of the holes with compressed air after drilling.

M. All abandoned holes shall be filled with non-shrink grout.

N. Holes in connection plates shall be no more than 1/16 inch larger than the anchor diameter. If larger holes are required for erection purposes, Contractor shall notify Engineer such that a plate washer size can be provided.

O. Installation of anchors and dowels shall be continuously inspected by the testing agency to ensure that holes are of specified size, and that bolts are properly installed including application of minimum installation torques.

6180 GLUE LAMINATED WOOD

A. Glue laminated wood members shall be douglas fir, with grade combinations that furnish a minimum allowable extreme fiber stress in bending of 2400 pounds per square inch in the tension zone.

B. Members noted to be "balanced" shall be provided with laminations conforming to tension zone requirements in both the top and bottom of the member resulting in a minimum extreme fiber bending stress in bending of 2400 pounds per square inch in both the tension and compression zones.

C. Members shall conform to the latest edition of "Standard Specifications for Structural Glued Laminated Timber of Softwood Species (AITC 117)," The American Institute of Timber Construction.

D. Members to be covered shall be AITC Industrial Appearance Grade. Exposed members shall be AITC Architectural appearance grade.

E. All holes for bolts or connectors shall be shop drilled using templates. Bolt holes shall be 1/16" larger than bolt diameter.

F. Provide standard camber in all members to compensate for short and long term dead load deflection, unless camber is shown on the Structural Drawings.

6181 TONGUE AND GROOVE DECKING

A. Tongue and groove decking shall be (2x6 inches, 2x8 inches) nominal solid sawn lumber. Wood shall be no. 2 or better Douglas Fir.

B. Tongue and groove glue laminated decking shall be (3", 4" or 5") nominal thickness x (6" or 8") nominal width (2 3/16")(2 7/8")(3 21/32")x(5 1/4")(7") actual). See plans for limits of wood decking.

C. Glue Laminated decking shall be (Southern Pine (or)Ponderosa Pine (or) Douglas Fir/Larch), with grade combinations that furnish a minimum allowable extreme fiber stress in bending of 2,400 pounds per square inch, and a minimum modulus of elasticity of 1,800,000 pounds per square inch.

D. Tongue and groove glue-laminated decking shall have the following minimum cross-sectional properties.

Nominal Thickness (in)	Area (in2/ft)	Moment of Inetia, Ix (in4/ft)	Section Modules, Sx (in3/ft)
3	25.88	10.49	9.39
4	33.95	23.44	16.30
5	43.13	48.04	26.26

E. Pattern shall be standard vee grooved. Finish shall be smooth surface.

F. Lay-up shall be random length continuous. The distance between end joints in adjacent rows shall be at least 2'-0". The distance between end joints of decking separated by only one course shall be at least 1'-0". One third of the courses in end spans shall not have end joints.

G. Lay-up shall be continuous.

H. Nailing Schedule

Toenailing Along Courses	Face Nailing to Supports
2" Nominal	6d@30"2-16d
3" Nominal	8d@30"2-20d
4" Nominal	16d@30"2-30d
5" Nominal	16d@30"2-50d

I. Toenailing or "slant" nailing shall be started approximately 12" from the end of each piece. Nails shall be ring shank nails. Pre-drill holes for 30d and larger nails.

J. Provide a layer of 3/4" panels of APA rated sheathing with an exposure 1 rating over the tongue and groove decking. Joints in panels shall be offset by 48". Nail 3/4" sheathing to decking with Simpson 10d x 1 1/2" AN10" nails at 6" on center at the perimeter and at 12" on center in two interior rows 16" apart.

100000 DESIGN BY CONTRACTOR

A. In accordance with the Specifications the items listed below are not included in the Contract Documents. Design of these elements shall be the responsibility of the Contractor, and shall be designed and sealed by a Professional Engineer licensed in the State of Texas.

1. Embedded assemblies and inserts, clamps, hangers, trapezes, unistrut, etc. for the support of MEP systems.

B. Design of the items listed above shall be in accordance with the General Building Code, and shall include all attachments to the structure.

STRUCTURAL ABBREVIATIONS

A/C -	AIR CONDITIONER
AB -	ANCHOR BOLT
ABV -	ABOVE
ACI -	AMERICAN CONCRETE INSTITUTE
ADDL -	ADDITIONAL
ADH -	ADHESIVE
ADJ -	ADJACENT
AEC -	ARCHITECTURALLY EXPOSED CONCRETE
AESS -	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF -	ABOVE FINISHED FLOOR
AGGR -	AGGREGATE
AHU -	AIR HANDLING UNIT
AISC -	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT -	ALTERNATE
APPROX -	APPROXIMATE
ARCH -	ARCHITECT (OR) ARCHITECTURAL
B TO B -	BACK TO BACK
BD -	BOARD
B.O. -	BOTTOM OF
BF -	BACK FACE
BFF -	BELOW FINISH FLOOR
BIL -	BOTTOM INSIDE LAYER
BL -	BUILDING LINE
BLDG -	BUILDING
BLKG -	BLOCKING
BM -	BEAM
BOL -	BOTTOM OUTSIDE LAYER
BOS -	BOTTOM OF STEEL
BOTT -	BOTTOM
BP -	BASE PLATE
BRDG -	BRIDGING
BRG -	BEARING
BRKT -	BRACKET
BRL -	BRICKLEDGE
BSMT -	BASEMENT
BTWN -	BETWEEN
C -	CAMBER (OR) COMPRESSION
CANT -	CANTILEVER
CFS -	COLD FORMED STEEL
CG -	CENTER OF GRAVITY
CGS -	CENTER OF GRAVITY OF STRAND
CIP -	CAST-IN-PLACE
CJ -	CONTROL JOINT
CJP -	COMPLETE JOINT PENETRATION
CL -	CENTER LINE
CLG -	CEILING
CLR -	CLEAR (OR) CLEARANCE
CMU -	CONCRETE MASONRY UNIT
COL -	COLUMN
C OR COMP -	COMPRESSION
CONC -	CONCRETE
CONN(S) -	CONNECTION(S)
CONST -	CONSTRUCTION
CONST JT -	CONSTRUCTION JOINT
CONT -	CONTINOUS
CONTR -	CONTRACTOR
COORD -	COORDINATE
CVR -	COVER
DBA -	DEFORMED BAR ANCHORS
DBL -	DOUBLE
DE -	DECK EDGE
DEV -	DEVELOPMENT
DFL -	DOUGLAS FIR LARCH
DIA -	DIAMETER
DIAG -	DIAGONAL
DIM(S) -	DIMENSION(S)
DKG -	DECKING
DL -	DEAD LOAD
DN -	DOWN
DS -	DOWNSPOUT
DTL -	DETAIL
DWG(S) -	DRAWING(S)
DWL(S) -	DOWELS
EA -	EACH
EF -	EACH FACE (OR) EXHAUST FAN
EJ -	EXPANSION JOINT
EL -	ELEVATION
ELEC -	ELECTRICAL
ELEV -	ELEVATOR
EMBED -	EMBEDMENT
ENGR -	ENGINEER
EOR -	ENGINEER OF RECORD
EQ -	EQUAL (OR) EQUIVALENT
EQUIP -	EQUIPMENT
EW -	EACH WAY
EXIST -	EXISTING
EXP -	EXPANSION
EXT -	EXTERIOR
EXTN -	EXTENSION
F TO F -	FACE TO FACE
FABR -	FABRICATOR
FD -	FLOOR DRAIN
FDN -	FOUNDATION
FFE -	FINISHED FLOOR ELEVATION
FIN -	FINSH (OR) FINISHED
FIN FL -	FINISHED FLOOR
FL -	FLOOR
FLG -	FLANGE
FP -	FIREPROOF(ING)
FRMG -	FRAMING
FS -	FAR SIDE
FT -	FOOT (OR) FEET
FTG -	FOOTING
FV -	FIELD VERIFY
GA -	GAGE (OR) GAUGE
GALV -	GALVANIZED
GC -	GENERAL CONTRATOR
GLULAM -	GLUE LAMINATED TIMBER
GR -	GRADE
GR BM -	GRADE BEAM
HB -	HORIZONTAL BRACE
HCA -	HEADED CONCRETE ANCHOR
HDG -	HOT DIPPED GALVANIZED
HDR -	HEADER
HI -	HIGH
HK -	HOOK
HL -	HOLE
HORIZ -	HORIZONTAL
HP -	HIGH POINT
HS -	HEADED STUD
HSS -	HOLLOW STRUCTURAL SECTION
HT -	HEIGHT
ID -	INSIDE DIAMETER
IF -	INSIDE FACE
IN -	INCH
INFO -	INFORMATION
INT -	INTERIOR
INTERM -	INTERMEDIATE
JG -	JOIST GIRDER
JST(S)	JOIST(S)
JT -	JOINT
K -	KIPS (1000 LBS)
KLF -	KIP PER LINEAR FOOT
KSF -	KIP PER SQUARE FOOT
KSI -	KIP PER SQUARE INCH
L -	LENGTH
LBS -	POUNDS
LL -	LIVE LOAD
LLH -	LONG LEG HORIZONTAL
LLV -	LONG LEG VERTICAL
LO -	LOW
LOC -	LOCATION
LONG -	LONGITUDINAL
LP -	LOW POINT
LSH -	LONG SIDE HORIZONTAL
LSL -	LONG SLOTTED HOLES
LSV -	LONG SIDE VERTICAL
LVL -	LAMINATED VENEER LUMBER
LW -	LIGHTWEIGHT
LWC -	LIGHTWEIGHT CONCRETE
M -	MOMENT
MAS -	MASONRY
MATL -	MATERIAL
MAX -	MAXIMUM
MC -	MOMENT CONNECTION(S)
MECH -	MECHANICAL
MEP -	MECHANICAL, ELECTRICAL, PLUMBING
MEZZ -	MEZZANINE
MFR -	MANUFACTURER
MID -	MIDDLE
MIN -	MINIMUM
MISC -	MISCELLANEOUS
MTL -	METAL
NF -	NEAR FACE
NIC -	NOT IN CONTRACT
NOM -	NOMINAL
NS -	NON-SHRINK
NTS -	NOT TO SCALE
OC -	ON CENTER
OCEW -	ON CENTER EACH WAY
OD -	OUTSIDE DIAMETER (OR) OVERFLOW DRAIN
OF -	OUTSIDE FACE
OH -	OPPOSITE HAND
OPNG(S) -	OPENING(S)
OPP -	OPPOSITE
P -	PAN
P/C -	PRECAST CONCRETE
P/E -	PRE-ENGINEERED
PAF -	POWDER ACTUATED FASTENER
PAR -	PARALLEL
PCF -	POUNDS PER CUBIC FOOT
PEMB -	PRE-ENGINEERED METAL BUILDING
PERP -	PERPENDICULAR
PI -	PLASTICITY INDEX
PJ -	PANEL JOINT
PJP -	PARTIAL JOINT PENETRATION
PL -	PLATE
PLF -	POUNDS PER LINEAR FOOT
PLYWD -	PLYWOOD
PREFAB -	PREFABRICATED
PRELIM -	PRELIMINARY
PROJ -	PROJECTION
PSF -	POUNDS PER SQUARE FOOT
PSI -	POUNDS PER SQUARE INCH
PSL -	PARALLEL STRAND LUMBER
PT -	POINT (OR) PRESSURE TREATED
P-T -	POST-TENSION(ED)
QTY -	QUANTITY
R -	RADIUS (OR) REACTION (OR) REMAINDER
RD -	ROOF DRAIN
REINF -	REINFORCE(ING)(ED)(MENT)
REQ -	REQUIRE(MENT)
REQD -	REQUIRED
RETG -	RETAINING
RET SYS -	RETENTION SYSTEM
RF -	ROOF
RIS -	RISER
RM -	ROOM
RO -	ROUGH OPENING
RTU -	ROOF TOP UNIT
SCHED -	SCHEDULE(D)
SECT -	SECTION
SF -	SQUARE FOOT
SHT -	SHEET
SHTG -	SHEATHING
SIM -	SIMILAR
SJI -	STEEL JOIST INSTITUTE
SL -	SLOPE
SOG -	SLAB ON GRADE
SP -	SOUTHERN PINE
SPA -	SPACE
SPECD -	SPECIFIED
SPEC(S) -	SPECIFICATION(S)
SQ -	SQUARE
SS -	STAINLESS STEEL
SSL -	SHORT SLOTTED HOLE
STAGG -	STAGGERED
STD -	STANDARD
STIFF -	STIFFENER
STIRR -	STIRRUPS
STL -	STEEL
STRUCT -	STRUCTURE (OR) STRUCTURAL
SUBCONTR -	SUBCONTRACTOR
SW -	SHEARWALL (OR) SIDEWALK
T -	TENSION
T.O. -	TOP OF
T&B -	TOP AND BOTTOM
T&G -	TONGUE AND GROOVE
TEMP -	TEMPERATURE
THK -	THICK
THRD -	THREAD(ED)
TIL -	TOP INSIDE LAYER
TOB -	TOP OF BEAM
TOC -	TOP OF CONCRETE
TOF -	TOP OF FOOTING
TOJ -	TOP OF JOIST
TOL -	TOP OUTSIDE LAYER
TOP -	TOP OF PIER
TOPC -	TOP OF PIER (PILE) CAP
TOS -	TOP OF STEEL
TOW -	TOP OF WALL
TR -	TREAD
TRANSV -	TRANSVERSE
TYP -	TYPICAL
UNO -	UNLESS NOTED OTHERWISE
V -	SHEAR
VB -	VERTICAL BRACE
VERT -	VERTICAL
W -	WIDTH
W/ -	WITH
W/O -	WITHOUT
WD -	WOOD
WDW -	WINDOW
WL -	WIND LOAD
WP -	WORK POINT
WPFG -	WATERPROOFING
WS -	WATERSTOP
WT -	WEIGHT
WWM -	WELDED WIRE MESH
X-STR -	EXTRA STRONG
XX-STR -	DOUBLE EXTRA STRONG

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
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1045 CENTRAL PARKWAY NORTH, SUITE 200 SAN ANTONIO, TEXAS 78232
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S002

SPECIAL INSPECTIONS TABLES FOR STRUCTURAL ELEMENTS - 2021

SPECIAL INSPECTIONS

1. Special inspections shall be performed in accordance with Chapter 17 of the 2021 International Building Code (IBC) by a Special Inspector hired by the Owner to perform the Special Inspections listed below. The Special Inspector shall be qualified by an approved agency according to the City's building official to perform the special inspections for which they will be undertaking. The Contractor shall coordinate with and notify the Special Inspector of all required tests and inspections listed in the following tables. The Special Inspector shall be responsible to verify that the items detailed in the Construction Documents were built accordingly and shall prepare, sign, and furnish inspection reports to the building official and the Architect for all time spent at the site. The inspector shall bring discrepancies to the immediate attention of the General Contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the building official and to the Architect prior to the completion of that phase of the work. These special inspections are in addition to the other inspections listed in these Structural Notes or Project Specifications.

2. Where structural members and assemblies are shop fabricated, the Special Inspector shall verify that the fabricator maintains detailed fabrication and quality control procedures that provide a basis for inspection control of the workmanship and the fabricator's ability to conform to the Construction Documents and Referenced Standards, unless the fabricator is registered and approved to perform such work without special inspection.

REQUIRED SPECIAL INSPECTIONS OF CONCRETE CONSTRUCTION (IBC Table 1705.3)				
SPECIAL INSPECTION TYPE	INSPECTION FREQUENCY		REFERENCED STANDARD	IBC REFERENCE
	CONTINUOUS	PERIODIC		
1. Inspect reinforcement and verify placement	--	X	ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	--
2. Inspect anchors cast in concrete	--	X	ACI 318: 17.8.2	--
3. Inspect anchors post-installed in hardened concrete members				
a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads	X	--	ACI 318: 17.8.2.4	--
b. Mechanical anchors and adhesive anchors not defined in 3.a	--	X	ACI 318: 17.8.2	--
4. Verifying use of required design mix	--	X	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2
5. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete	X	--	ASTM C172 ASTM C31 ACI 318: 26.5, 26.12	--
6. Inspect concrete placement for proper application techniques	X	--	ACI 318: 26.5	--
7. Verify maintenance of specified curing temperature and techniques	--	X	ACI 318: 26.5.3-26.5.5	--
8. Inspect formwork for shape, location and dimensions of the concrete members being formed	--	X	ACI 318: 26.11.1.2(b)	--

REQUIRED SPECIAL INSPECTIONS OF WOOD (IBC 1705.5)		
SPECIAL INSPECTION TYPE	INSPECTION FREQUENCY	
	CONTINUOUS	PERIODIC
1. Fabrication process of prefabricated wood structural elements and assemblies shall be in accordance with IBC 1704.2.5 and local amendments	--	X
2. Inspect wood structural panel sheathing construction for the following:		
a. Grade and thickness shown on approved construction documents	--	X
b. Nominal size of framing members at adjoining panel edges, per approved construction documents	--	X
c. Nail or staple diameter and length, per approved construction documents	--	X
d. Number of fastener lines and the spacing between fasteners in each line and at edge margins, per approved construction documents	--	X

REQUIRED SPECIAL INSPECTIONS OF SOILS (IBC Table 1705.6)		
SPECIAL INSPECTION TYPE	INSPECTION FREQUENCY	
	CONTINUOUS	PERIODIC
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity	--	X
2. Verify excavations are extended to proper depth and have reached proper material	--	X
3. Perform classification and testing of compacted fill materials	--	X
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill	X	--
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly	--	X

LEVEL 1 REQUIRED SPECIAL INSPECTIONS OF MASONRY CONSTRUCTION (TMS 402 Table 3 & 4)
MINIMUM TESTS
None
INSPECTION TASK
Prior to construction, verification of compliance of submittals.

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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210.349.9098 ie-services.com
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STATE OF TEXAS
JOSEPH H. HUIZAR
87226
LICENSED PROFESSIONAL ENGINEER
10/30/25

District 3 Aquatics Facility
San Antonio, TX

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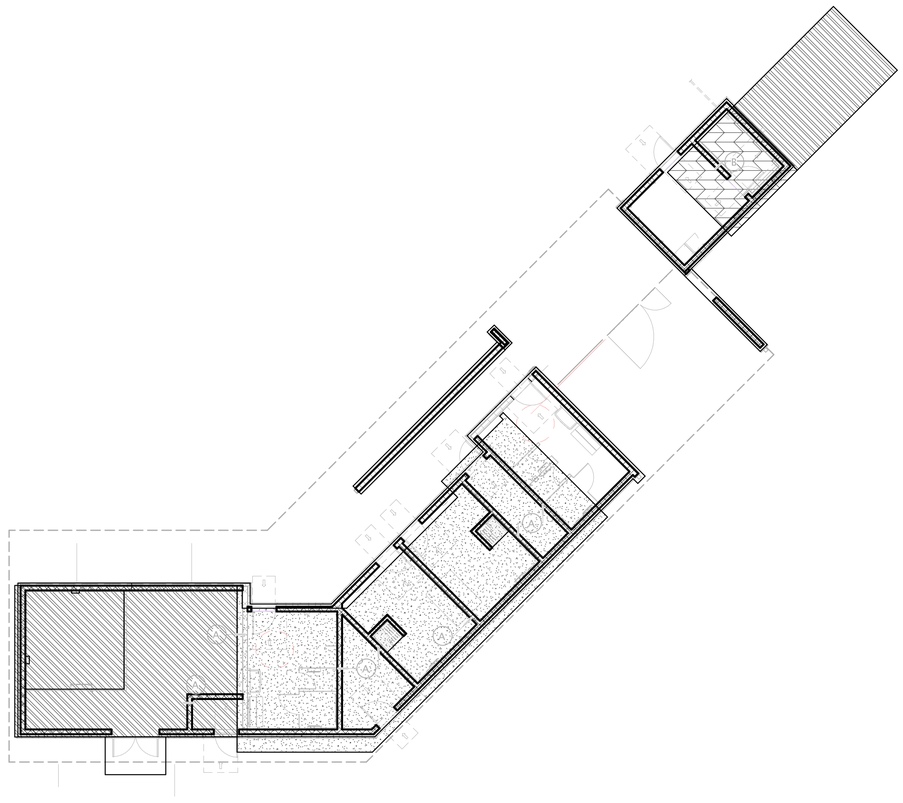
SHEET TITLE
SPECIAL INSPECTIONS

SHEET NUMBER
S003



north

1 LIVE LOAD FLOOR PLAN
SCALE: 1" = 10'-0"

LIVE LOAD LEGEND		
HATCH PATTERN	UNIFORM LOAD(PSF)	OCCUPANCY, USE , ROOM, OR LOCATION
	50	---
	60	---
	125	---

LIVE LOAD PLAN NOTES:

1. A PARTITION LIVE LOAD OF 15 PSF HAS BEEN ADDED TO ALL UNIFORM LOADS THAT DO NOT EXCEED 80 PSF.
2. ALL FLOORS HAVE ADDITIONALLY BEEN DESIGNED FOR SUPERIMPOSED DEAD (COLLATERAL) LOAD OF X PSF.
3. LIVE LOADS DENOTED WITH AN ASTERISK (*) HAVE NOT BEEN REDUCED. SEE STRUCTURAL NOTES "DESIGN LOADS" FOR INFORMATION REGARDING LIVE LOAD REDUCTION.
4. SEE STRUCTURAL NOTES "DESIGN LOADS" FOR INFORMATION REGARDING CONCENTRATED LOADS AT EACH UNIFORM LOAD. THESE LOADS ARE NOT CONCURRENT WITH THE UNIFORM LOAD.
5. SEE STRUCTURAL NOTES "DESIGN LOAD" FOR ADDITIONAL INFORMATION ON WHEEL LIVE LOADS. THESE LOADS ARE CONCURRENT WITH A 20 PSF CONSTRUCTION LIVE LOAD.

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Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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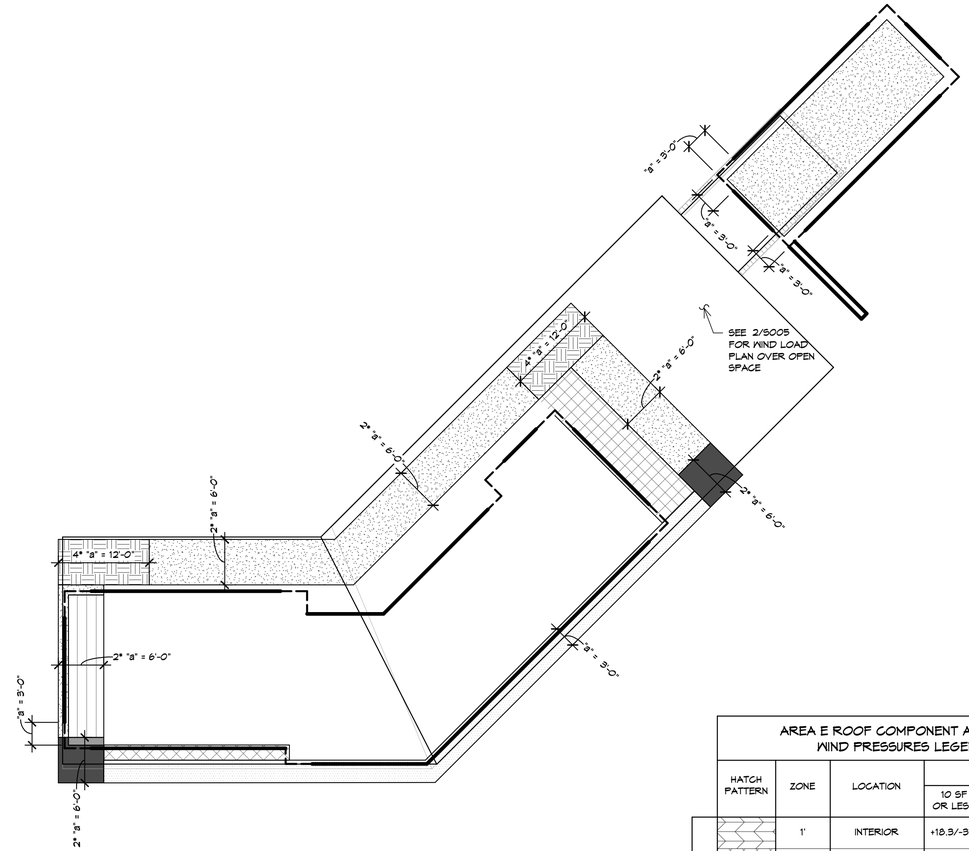
SHEET TITLE
LIVE LOAD FLOOR PLAN

SHEET NUMBER
S004



north

1 WIND LOAD PLAN FOR ROOF OVER BUILDING

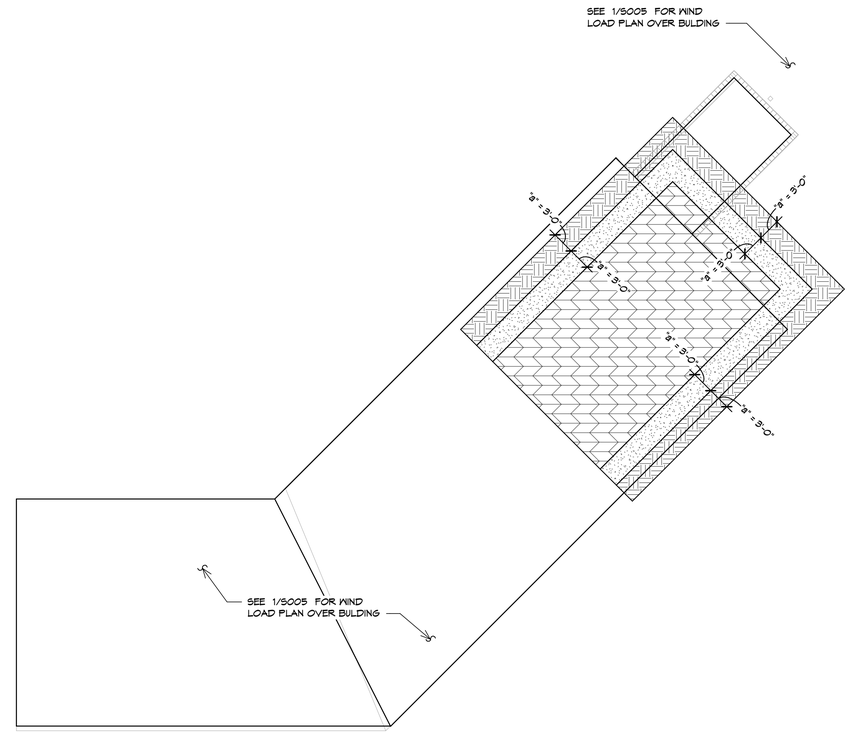
SCALE: 1" = 10'-0"

AREA E ROOF COMPONENT AND CLADDING WIND PRESSURES LEGEND (PSF)						
	HATCH PATTERN	ZONE	LOCATION	TRIBUTARY AREA		
				10 SF OR LESS	100 SF	500 SF OR GREATER
ROOF		1'	INTERIOR	+18.3/-35.5	+16.2/-35.5	+16.2/-35.5
		1H	INTERIOR-OVERHANG	+23.4/-65.7	+18.3/-44.2	+18.3/-44.2
		2H	PERIMETER EAVE - OVERHANG	+23.4/-65.7	+18.3/-44.2	+18.3/-44.2
		2'	PERIMETER RIDGE	+23.3/-87.3	+18.3/-64.1	+18.3/-54.9
		2'H	PERIMETER RIDGE - OVERHANG	+18.3/-50.6	+16.2/-37.7	+16.2/-37.7
		3	CORNER EAVE	+23.4/-100.1	+18.3/-60.1	+18.3/-44.2
		3H	CORNER EAVE - OVERHANG	+23.4/-119.1	+18.3/-61.4	+18.3/-61.4
		3'H	CORNER EAVE	+16.0/-83.2	+16.0/-57.1	+16.0/-38.9
WALLS		4	CORNER EAVE - OVERHANG	+31.2/-33.2	+27.8/-29.8	+25.4/-27.4
		5	CORNER RIDGE - OVERHANG	+31.2/-39.0	+27.8/-32.1	+25.4/-27.4

COMPONENT AND CLADDING AT LOW ROOF PARAPET WIND PRESSURE LEGEND (PSF)				
ZONE	A (WINDWARD) 10 SF OR LESS	A (WINDWARD) 100 SF OR GREATER	B (LEEWARD) 10 SF OR LESS	B (LEEWARD) 100 SF OR LESS
2/4	+92.6	+77.8	-64.8	-57.6
3/4 & 3/5	+112.0	+85.8	-70.2	-60.0

WIND LOAD PLAN NOTES:

1. PRESSURES SHOWN ARE ULTIMATE STRENGTH LEVEL PRESSURES (Vult). ALLOWABLE LEVEL PRESSURES (Vasd) MAY BE OBTAINED BY MULTIPLYING THE INDICATED VALUE BY 0.6. SEE STRUCTURAL NOTES FOR ADDITIONAL INFORMATION.
2. PRESSURES FOR TRIBUTARY AREA IN BETWEEN THE LISTED VALUES MAY BE LINEARLY INTERPOLATED.
3. NEGATIVE VALUES SIGNIFY PRESSURES ACTING AWAY FROM THE SURFACE (SUCTION).
4. PRESSURES ARE FOR GROSS UPLIFT CONDITIONS. DEAD LOADS AND LOAD COMBINATIONS ARE LISTED IN THE STRUCTURAL NOTES.
5. "a" = 3'-0". SEE PLAN FOR "a" AND OTHER ZONE DIMENSIONS.
6. ALL WALL EDGE ZONE 5 EXTEND "a" FROM THE WALL CORNER.



north

2 WIND LOAD PLAN FOR ROOF OVER OPEN SPACE

SCALE: 1" = 10'-0"

ROOF OVER OPEN SPACE COMPONENT AND CLADDING WIND PRESSURES LEGEND (PSF)						
	HATCH PATTERN	ZONE	LOCATION	TRIBUTARY AREA		
				10 SF OR LESS	10 SF TO 40 SF	40 SF OR GREATER
ROOF		1	INTERIOR	+29.3/-31.1	+29.3/-31.1	+29.3/-31.1
		2	INTERIOR-PERIMETER	+44.0/-47.6	+44.0/-47.6	+29.3/-31.1
		3	PERIMETER	+58.6/-93.4	+44.0/-47.6	+29.3/-31.1

WIND LOAD PLAN NOTES:

1. PRESSURES SHOWN ARE ULTIMATE STRENGTH LEVEL PRESSURES (Vult). ALLOWABLE LEVEL PRESSURES (Vasd) MAY BE OBTAINED BY MULTIPLYING THE INDICATED VALUE BY 0.6. SEE STRUCTURAL NOTES FOR ADDITIONAL INFORMATION.
2. PRESSURES FOR TRIBUTARY AREA IN BETWEEN THE LISTED VALUES MAY BE LINEARLY INTERPOLATED.
3. NEGATIVE VALUES SIGNIFY PRESSURES ACTING AWAY FROM THE SURFACE (SUCTION).
4. PRESSURES ARE FOR GROSS UPLIFT CONDITIONS. DEAD LOADS AND LOAD COMBINATIONS ARE LISTED IN THE STRUCTURAL NOTES.
5. "a" = 3'-0". SEE PLAN FOR "a" AND OTHER ZONE DIMENSIONS.
6. ALL WALL EDGE ZONE 5 EXTEND "a" FROM THE WALL CORNER.

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Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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STATE OF TEXAS
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87226
LICENSED PROFESSIONAL ENGINEER
10/30/25

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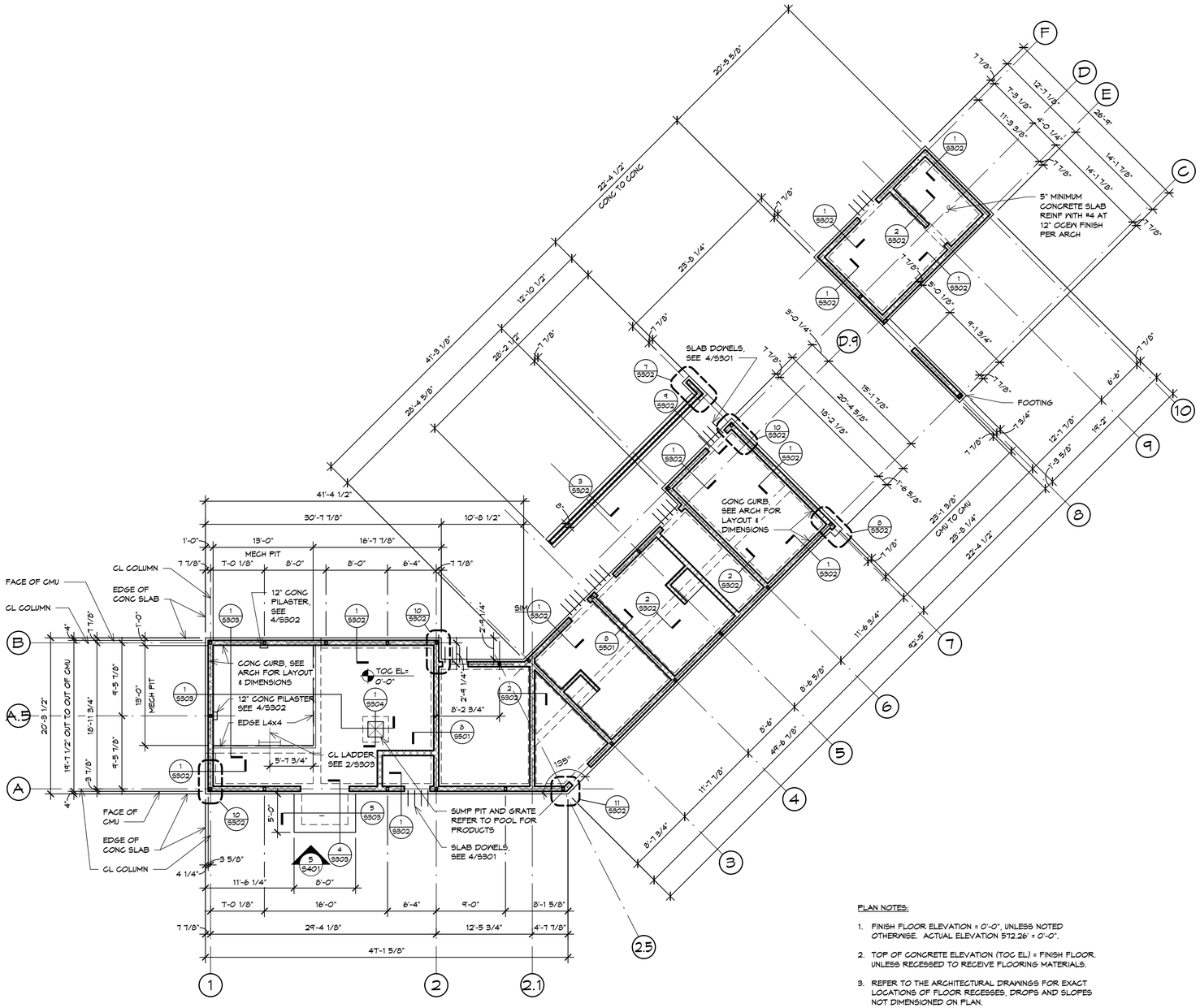
WIND LOAD PLANS

SHEET NUMBER

S005



north

1 FOUNDATION PLAN

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

PLAN NOTES:

1. FINISH FLOOR ELEVATION = 0'-0", UNLESS NOTED OTHERWISE. ACTUAL ELEVATION 512.26' = 0'-0".
2. TOP OF CONCRETE ELEVATION (TOC EL) = FINISH FLOOR, UNLESS RECESSED TO RECEIVE FLOORING MATERIALS.
3. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF FLOOR RECESSES, DROPS AND SLOPES NOT DIMENSIONED ON PLAN.
4. TYPICAL CONCRETE SLAB THICKNESS IS 5" (OVERALL) WITH #4 AT 12" OC EW FINISH PER ARCH, OVER 15 MIL VAPOR RETARDER, UNLESS NOTED OTHERWISE.
5. SEE SHEET S501 FOR MASONRY DETAILS.
6. SEE 2/S304 FOR MECHANICAL PIT WALL PIPE PENETRATIONS.

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Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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210.349.9098 ie-services.com
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87226
LICENSED PROFESSIONAL ENGINEER
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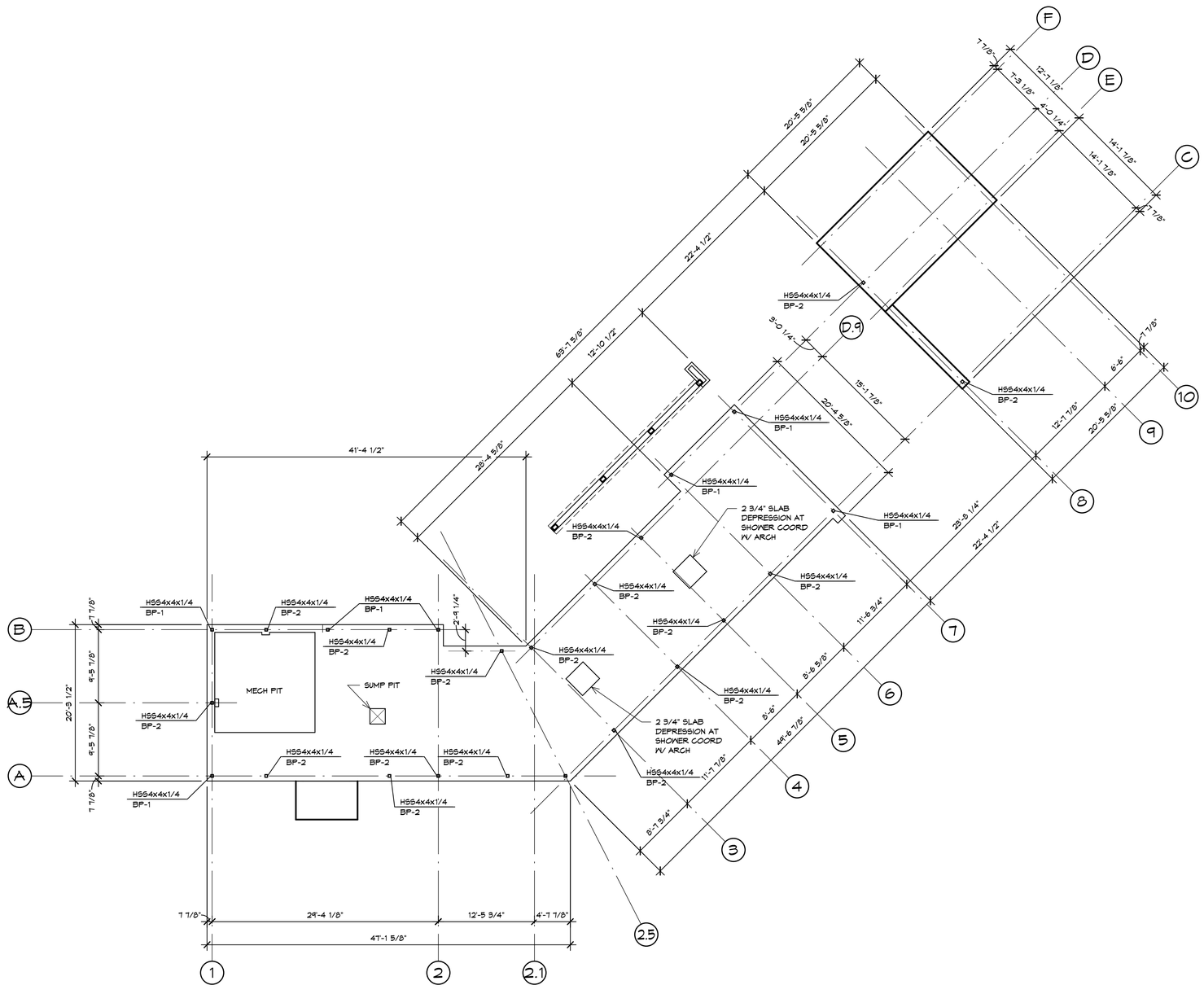
FOUNDATION PLAN

SHEET NUMBER

S101



north

1 FOUNDATION PLAN

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

PLAN NOTE

SEE 7/S301 FOR REINF AT SLAB DROP.

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Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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1045 CENTRAL PARKWAY NORTH, SUITE 200 SAN ANTONIO, TEXAS 78232
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STATE OF TEXAS
JOSEPH H. HUIZAR
87226
LICENSED
PROFESSIONAL ENGINEER
10/30/25

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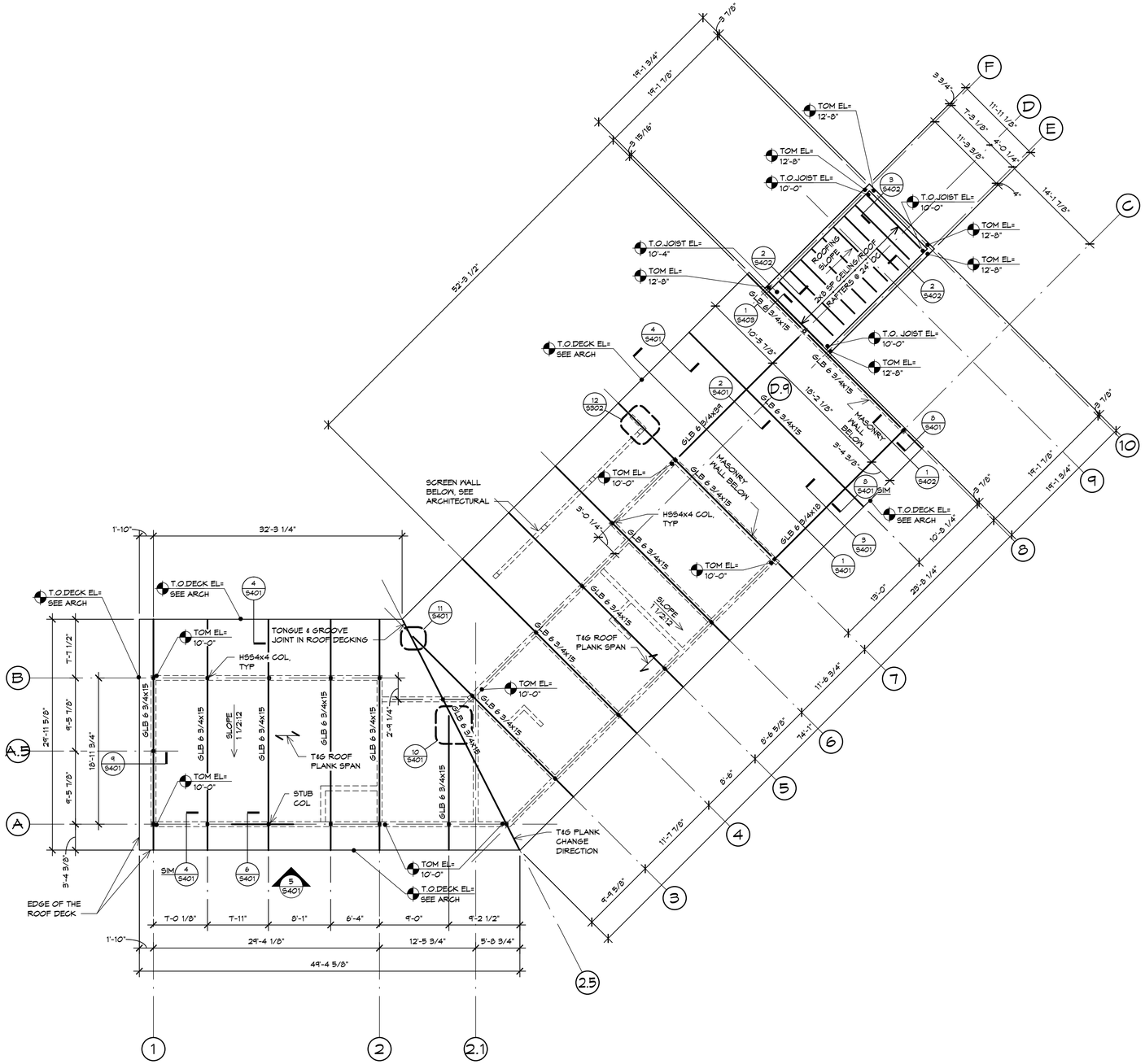
SLAB PLAN

SHEET NUMBER

S102



1 ROOF FRAMING PLAN

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

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Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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210.349.9098 ie-services.com
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JOSEPH H. HUIZAR
87226
LICENSED PROFESSIONAL ENGINEER
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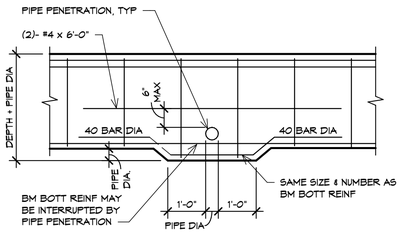
SHEET TITLE

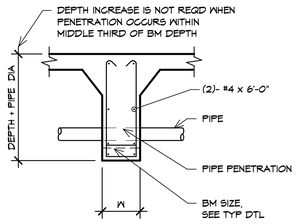
ROOF FRAMING PLAN

SHEET NUMBER

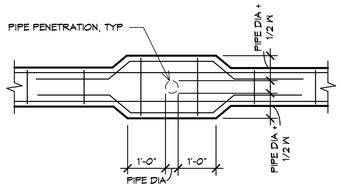
S201



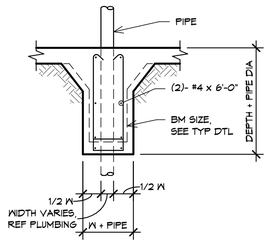
ELEVATION - HORIZONTAL PENETRATION



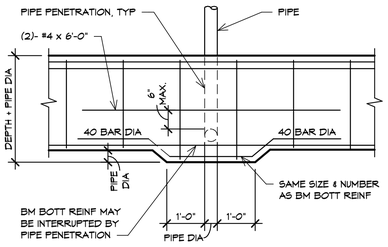
SECTION - HORIZONTAL PENETRATION



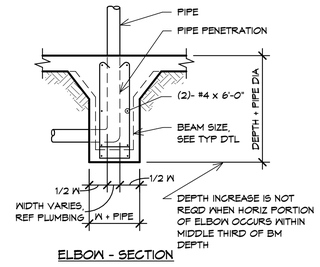
PLAN VIEW
VERTICAL PENETRATION



SECTION - VERTICAL PENETRATION



ELBOW - ELEVATION



ELBOW - SECTION

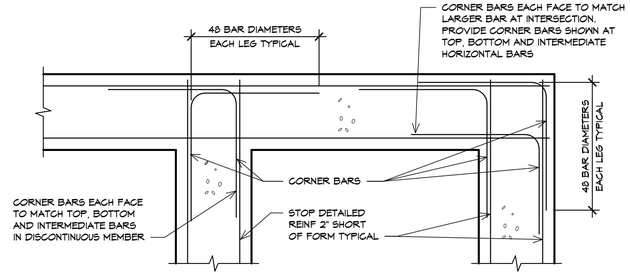
NOTES:

1. THIS DETAIL APPLIES TO HORIZ PENETRATIONS THAT OCCUR OUTSIDE OF THE MIDDLE THIRD OF THE BM DEPTH AND TO ALL VERT PENETRATIONS AND ALL ELBOWS. FOR HORIZ BM PENETRATIONS THAT OCCUR IN THE MIDDLE THIRD OF THE BM DEPTH, SEE DETAIL CTP-16
2. PERIMETER BM PENETRATION SHALL BE SLEEVED.
3. FOR PIPE SLEEVES LARGER THAN 4" O.D., ADJACENT PIPE PENETRATIONS SHALL HAVE A MINIMUM CLR OF THE LARGER PIPE SLEEVE DIA BTWN THEM.

1 TYPICAL GRADE BEAM PENETRATION
NO SCALE

NOTES:

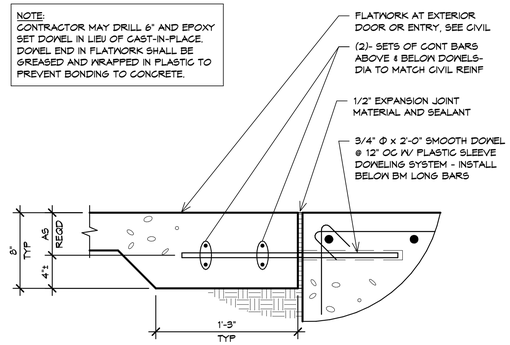
1. MATCH SIZE, LOCATION AND NUMBER OF HORIZONTAL BEAM AND WALL BARS, EXCEPT THAT WHERE THERE ARE MORE THAN 2 TOP OR BOTTOM BARS, ONLY THE INSIDE AND OUTSIDE BARS MUST BE MATCHED.
2. WHERE 90 DEGREE HOOKS ARE PROVIDED FOR TOP BARS CORNER BARS MAY BE OMITTED AT TOP. WHERE 90 DEGREE HOOKS ARE PROVIDED FOR BOTTOM BARS, CORNER BARS MAY BE OMITTED AT BOTTOM.



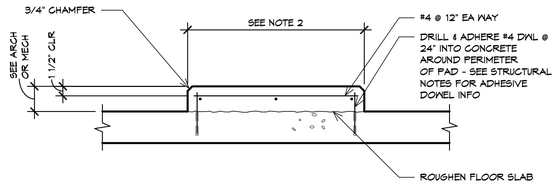
PLAN

2 TYPICAL CORNER BARS AT WALL OR GRADE BEAM INTERSECTION DETAIL
NO SCALE

NOTE:
CONTRACTOR MAY DRILL 6" AND EPOXY SET DOWEL IN LIEU OF CAST-IN-PLACE. DOWEL END IN FLATWORK SHALL BE GREASED AND WRAPPED IN PLASTIC TO PREVENT BONDING TO CONCRETE.



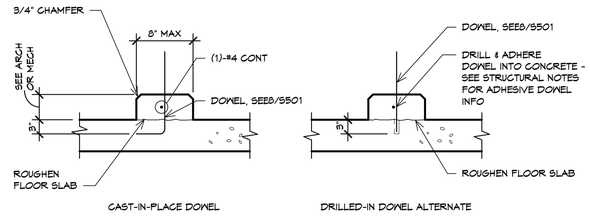
4 TYPICAL FLATWORK AT EXTERIOR DOORS AND ENTRIES DETAIL
NO SCALE



NOTES:

1. EQUIPMENT PADS TO BE PROVIDED UNDER EQUIPMENT SUPPORTED ON SLAB-ON-GRADE OR ELEVATED SLABS.
2. COORDINATE MECHANICAL PAD SIZE, LOCATION AND EMBEDDED ITEMS WITH MEP DRAWINGS AND EQUIPMENT MANUFACTURER.

3 TYPICAL MECHANICAL EQUIPMENT PAD DETAIL
NO SCALE



5 TYPICAL CONCRETE CURB DETAILS
NO SCALE

Ld TENSION DEVELOPMENT LENGTH (GRADE 60 BARS - NORMAL WEIGHT CONCRETE)						
BAR SIZE	f'c = 3000 psi		f'c = 4000 psi		f'c = 5000 psi	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	1'-10"	1'-5"	1'-7"	1'-3"	1'-5"	1'-1"
#4	2'-5"	1'-10"	2'-1"	1'-7"	1'-11"	1'-5"
#5	3'-0"	2'-4"	2'-7"	2'-0"	2'-4"	1'-10"
#6	3'-7"	2'-9"	3'-1"	2'-5"	2'-10"	2'-2"
#7	5'-3"	4'-0"	4'-6"	3'-6"	4'-1"	3'-2"
#8	6'-0"	4'-7"	5'-2"	4'-0"	4'-8"	3'-7"
#9	6'-9"	5'-2"	5'-10"	4'-6"	5'-3"	4'-0"
#10	7'-7"	5'-10"	6'-7"	5'-1"	5'-11"	4'-6"
#11	8'-5"	6'-6"	7'-3"	5'-7"	6'-6"	5'-0"

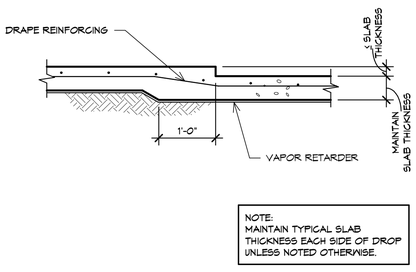
BASIC TENSION LAP SPLICES-CLASS B (GRADE 60 BARS - NORMAL WEIGHT CONCRETE)						
BAR SIZE	f'c = 3000 psi		f'c = 4000 psi		f'c = 5000 psi	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	2'-4"	1'-10"	2'-1"	1'-7"	1'-10"	1'-5"
#4	3'-2"	2'-5"	2'-9"	2'-1"	2'-5"	1'-11"
#5	3'-11"	3'-0"	3'-5"	2'-7"	3'-0"	2'-4"
#6	4'-8"	3'-7"	4'-1"	3'-1"	3'-8"	2'-10"
#7	6'-9"	5'-3"	5'-11"	4'-6"	5'-3"	4'-1"
#8	7'-9"	6'-0"	6'-9"	5'-2"	6'-0"	4'-8"
#9	8'-9"	6'-9"	7'-7"	5'-10"	6'-9"	5'-3"
#10	9'-10"	7'-7"	8'-6"	6'-7"	7'-8"	5'-11"
#11	10'-11"	8'-5"	9'-6"	7'-3"	8'-6"	6'-6"

Ldh HOOK DEVELOPMENT LENGTH (GRADE 60 BARS - NORMAL WEIGHT CONCRETE)			
BAR SIZE	f'c = 3000 psi	f'c = 4000 psi	f'c = 5000 psi
#3	0'-9"	0'-8"	0'-7"
#4	0'-11"	0'-10"	0'-9"
#5	1'-2"	1'-0"	0'-11"
#6	1'-5"	1'-3"	1'-1"
#7	1'-8"	1'-5"	1'-3"
#8	1'-10"	1'-7"	1'-5"
#9	2'-1"	1'-10"	1'-8"
#10	2'-4"	2'-1"	1'-10"
#11	2'-7"	2'-3"	2'-0"

NOTES:

1. BAR SPACING NOT LESS THAN 2 BAR DIAMETERS, CLEAR COVER NOT LESS THAN 1 BAR DIAMETER.
2. FOR CONCRETE STRENGTHS (f'c) NOT SPECIFICALLY LISTED IN SCHEDULES ABOVE, USE CLOSEST LOWER CONCRETE STRENGTH VALUE.
3. TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BAR OR SPLICE.

6 TYPICAL REINFORCEMENT DEVELOPMENT LENGTHS & LAP SPLICES SCHEDULES (GRADE 60 REINFORCEMENT)
NO SCALE



NOTE:
MAINTAIN TYPICAL SLAB THICKNESS EACH SIDE OF DROP UNLESS NOTED OTHERWISE.

7 TYPICAL DROP IN SLAB-ON-GRADE DETAIL
NO SCALE

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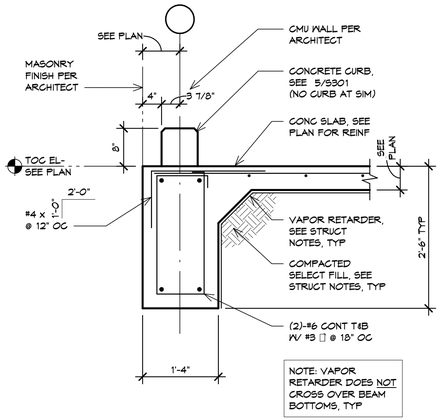
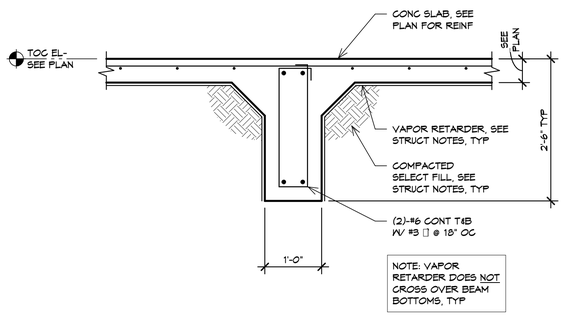
SHEET TITLE
FOUNDATION TYPICAL DETAILS

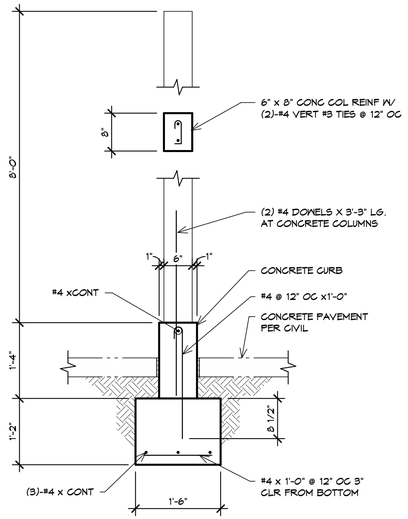
SHEET NUMBER
S301



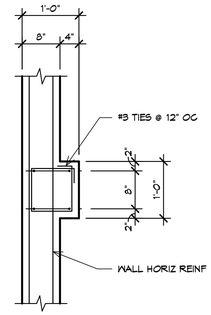
1 PERIMETER SECTION
SCALE: 3/4" = 1'-0"



2 INTERIOR SECTION
SCALE: 3/4" = 1'-0"



3 SECTION
SCALE: 3/4" = 1'-0"



4 COLUMN PILASTER DETAIL
SCALE: 3/4" = 1'-0"

5 CONCRETE CURB REINF DETAILS
SCALE: 3/4" = 1'-0"

6 BASE PLATE DETAILS
SCALE: 1" = 1'-0"

7 PLAN DETAIL
SCALE: 1" = 1'-0"

8 PLAN DETAIL
SCALE: 1" = 1'-0"

9 SECTION AT BREEZE BLACK WALL
SCALE: 3/4" = 1'-0"

10 PLAN DETAIL
SCALE: 1" = 1'-0"

11 PLAN DETAIL
SCALE: 1" = 1'-0"

12 PLAN DETAIL
SCALE: 1" = 1'-0"

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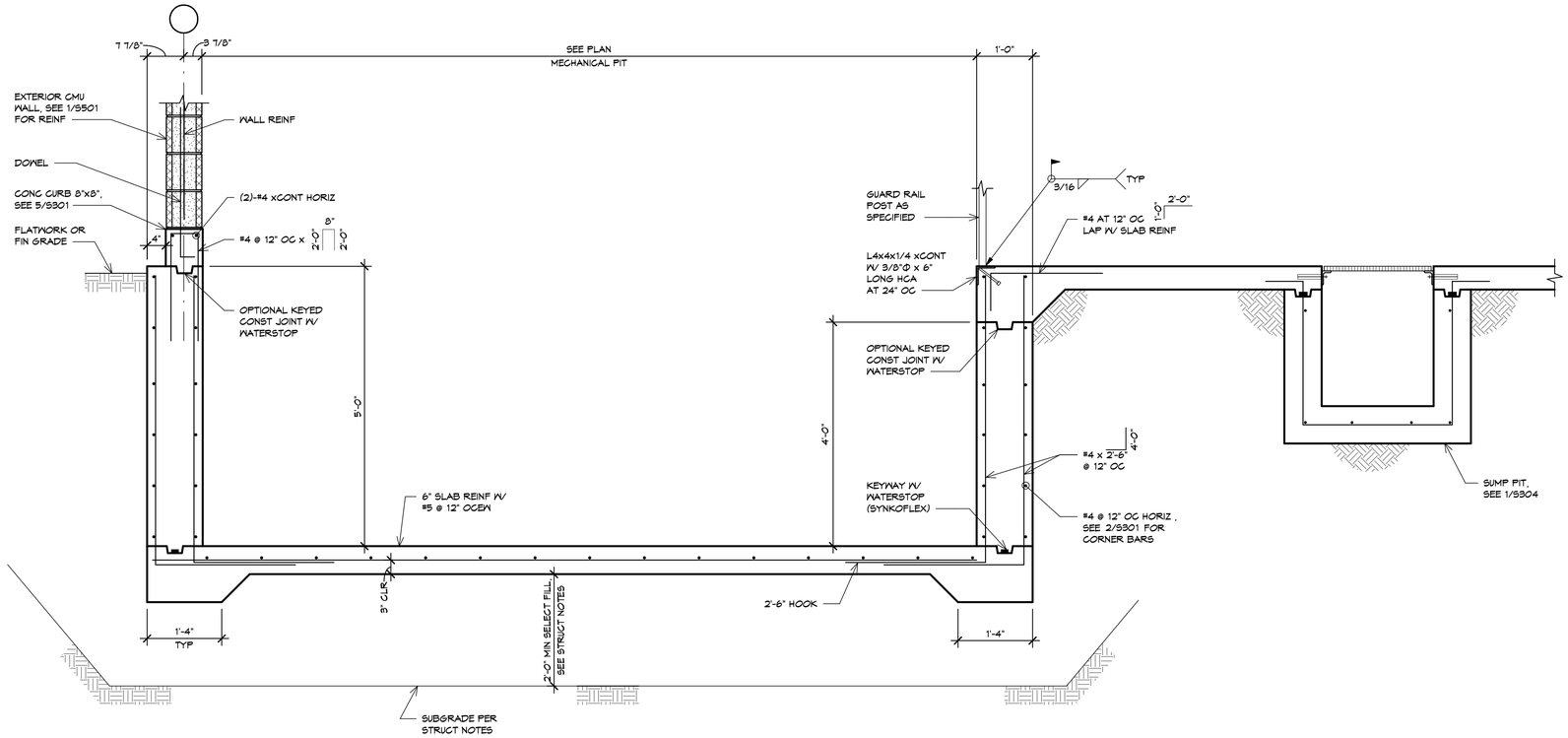
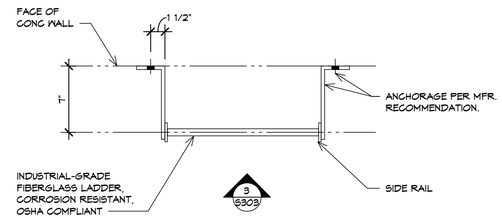
SHEET TITLE
SECTIONS AND DETAILS

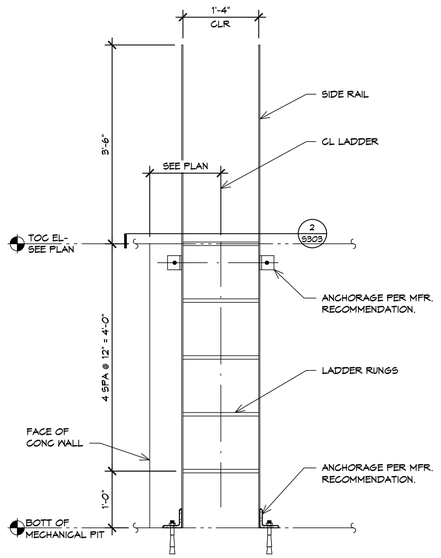
SHEET NUMBER
S302



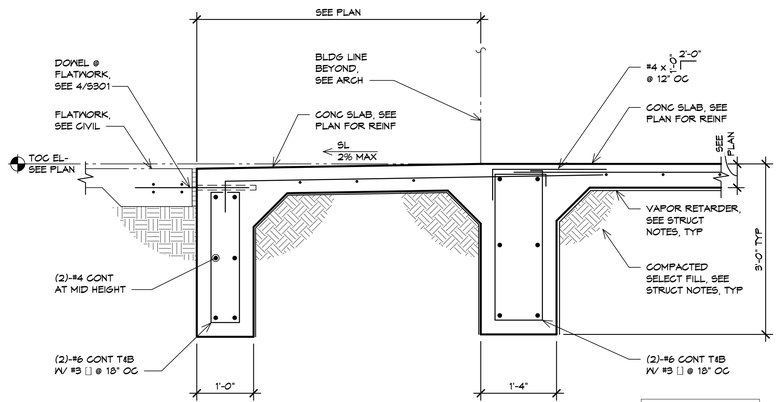
1 MECHANICAL PIT SECTION
SCALE: 3/4" = 1'-0"



2 LADDER PLAN DETAIL
NO SCALE

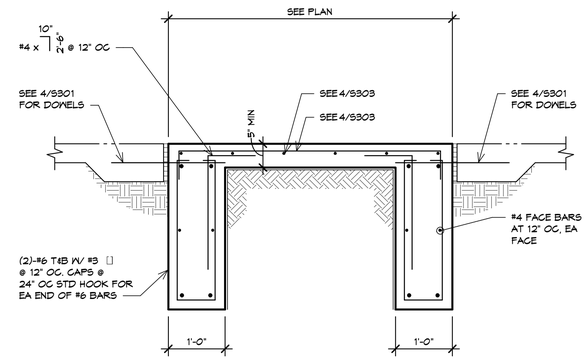


3 MECHANICAL PIT LADDER ELEVATION DETAIL
NO SCALE



NOTE: VAPOR RETARDER DOES NOT CROSS OVER BEAM BOTTOMS, TYP

4 SECTION AT STOOP
SCALE: 3/4" = 1'-0"



5 SECTION AT STOOP
SCALE: 3/4" = 1'-0"

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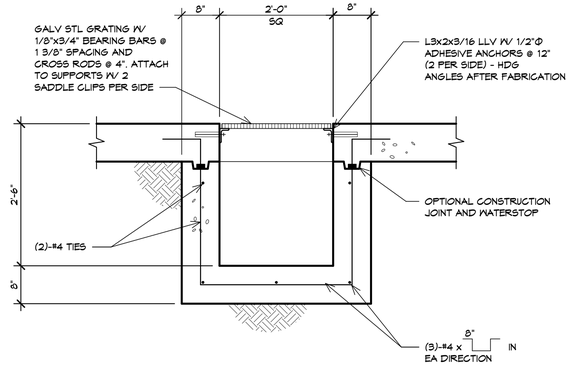
SHEET TITLE
SECTIONS AND DETAILS

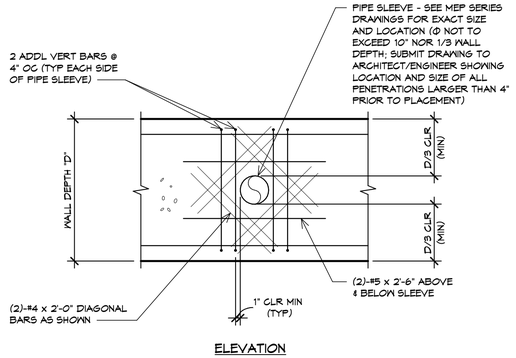
SHEET NUMBER
S303



SECTION

1 TYPICAL ELEVATOR SUMP PIT DETAIL

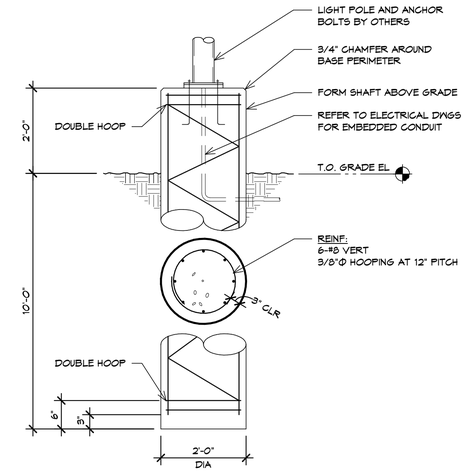
NO SCALE



ELEVATION

2 TYPICAL HORIZONTAL MECH PIT WALL PENETRATION DETAIL

NO SCALE



ELEVATION

3 TYPICAL LIGHTPOLE FOUNDATION DETAIL

SCALE: 3/4" = 1'-0"

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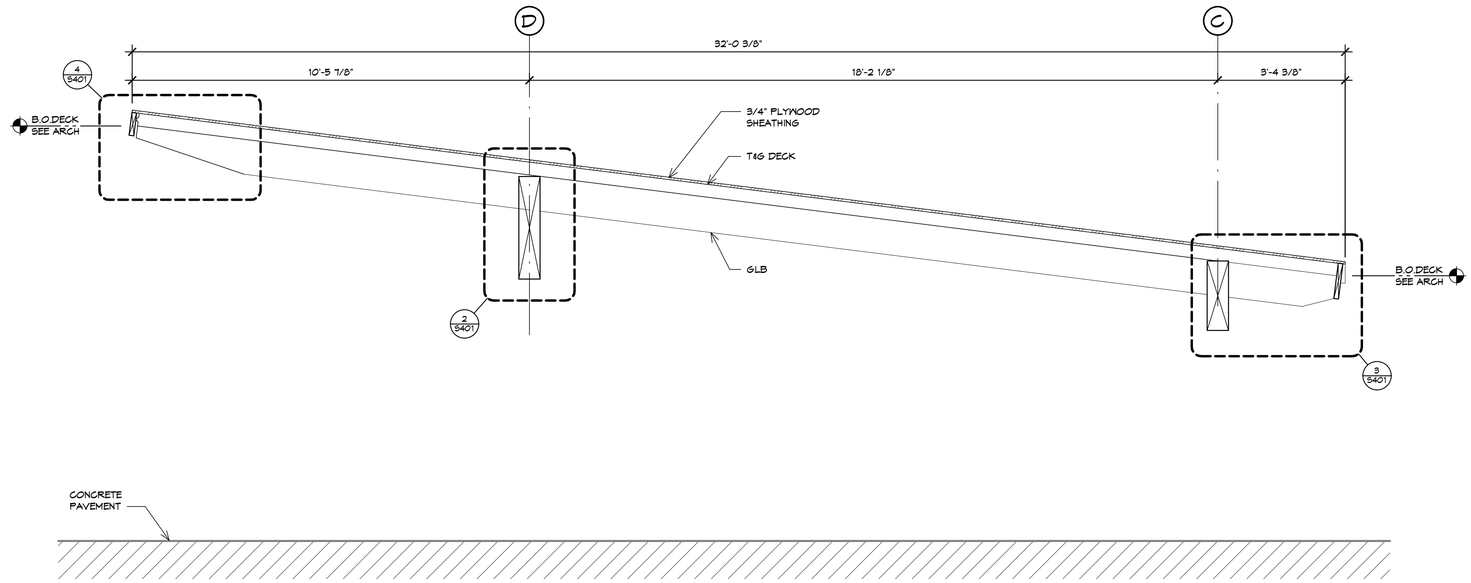
SHEET TITLE

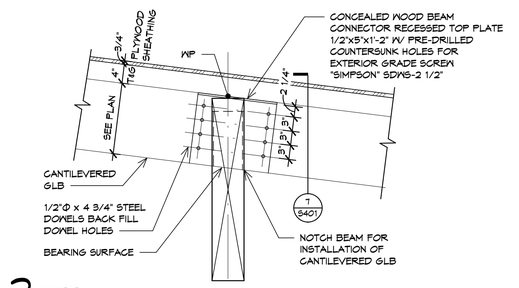
SECTIONS AND DETAILS

SHEET NUMBER

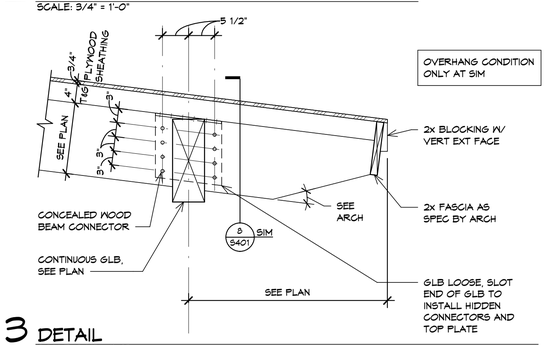
S304



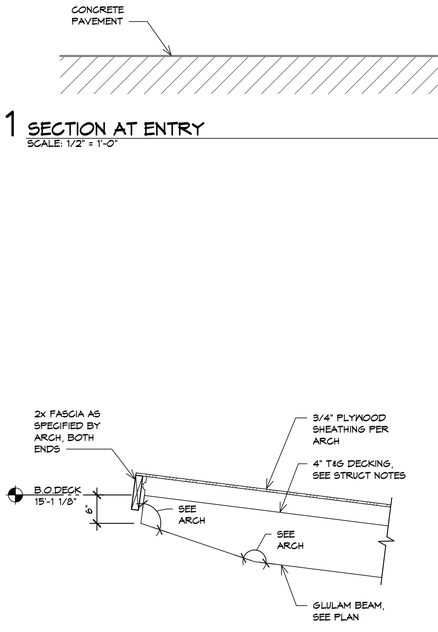
1 SECTION AT ENTRY
SCALE: 1/2" = 1'-0"



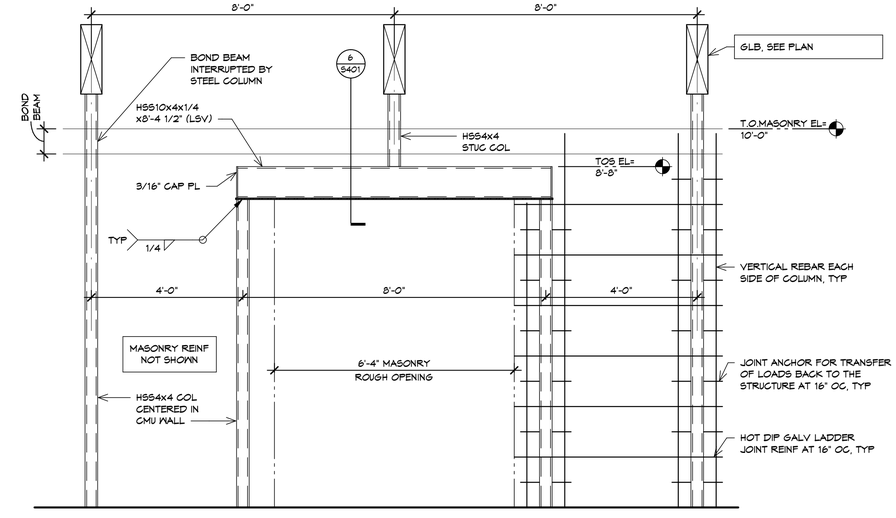
2 DETAIL
SCALE: 3/4" = 1'-0"



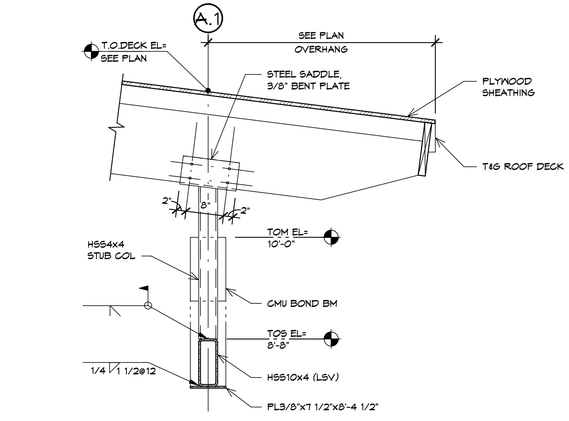
3 DETAIL
SCALE: 3/4" = 1'-0"



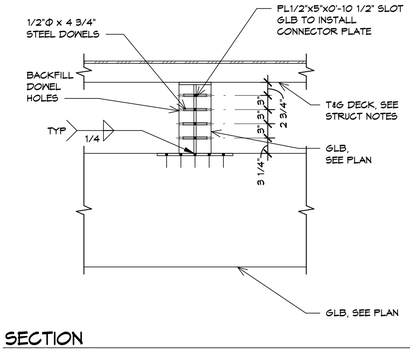
4 DETAIL
SCALE: 3/4" = 1'-0"



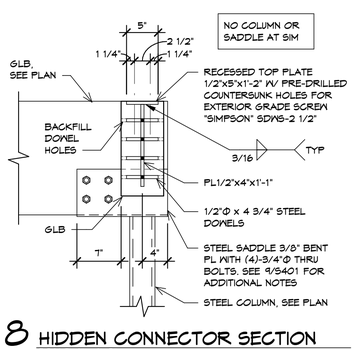
5 SOUTH EXTERIOR ELEVATION - MECHANICAL ROOM ENTRY
SCALE: 1/2" = 1'-0"



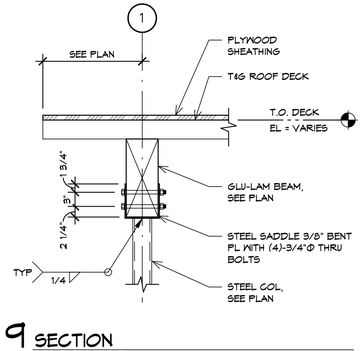
6 SECTION
SCALE: 3/4" = 1'-0"



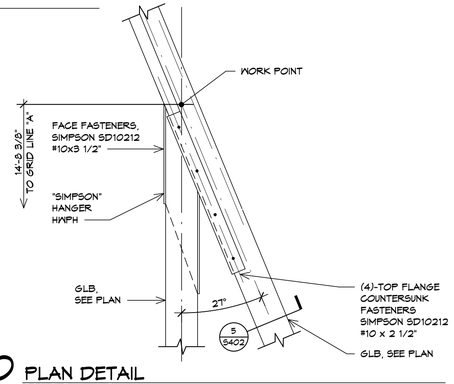
7 SECTION
SCALE: 3/4" = 1'-0"



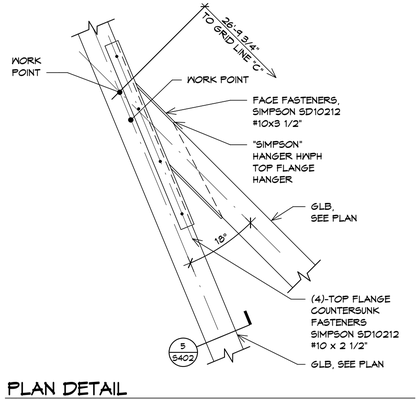
8 HIDDEN CONNECTOR SECTION
SCALE: 1" = 1'-0"



9 SECTION
SCALE: 3/4" = 1'-0"



10 PLAN DETAIL
SCALE: 3/4" = 1'-0"



11 PLAN DETAIL
SCALE: 3/4" = 1'-0"

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87226
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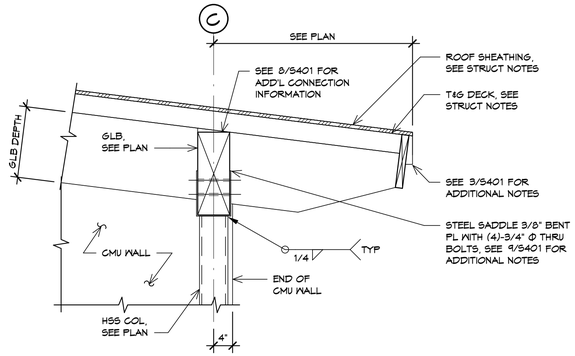
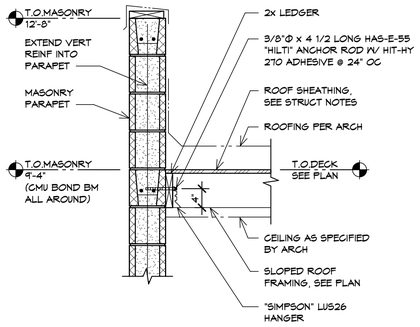
SHEET TITLE
ROOF SECTIONS AND DETAILS

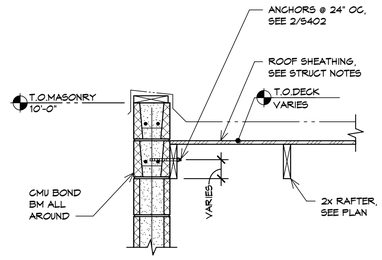
SHEET NUMBER
S401



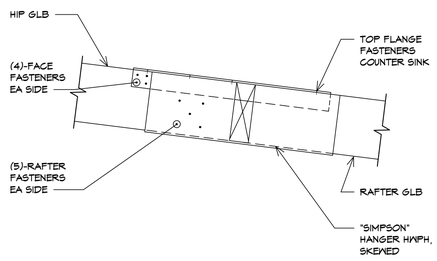
1 SECTION
SCALE: 3/4" = 1'-0"



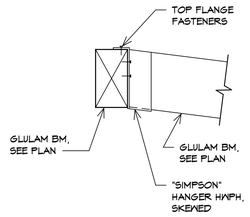
2 SECTION
SCALE: 3/4" = 1'-0"



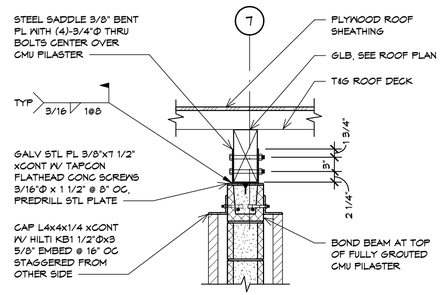
3 SECTION
SCALE: 3/4" = 1'-0"



4 DETAIL
SCALE: 3/4" = 1'-0"



5 SECTION
SCALE: 3/4" = 1'-0"



6 SECTION
SCALE: 3/4" = 1'-0"

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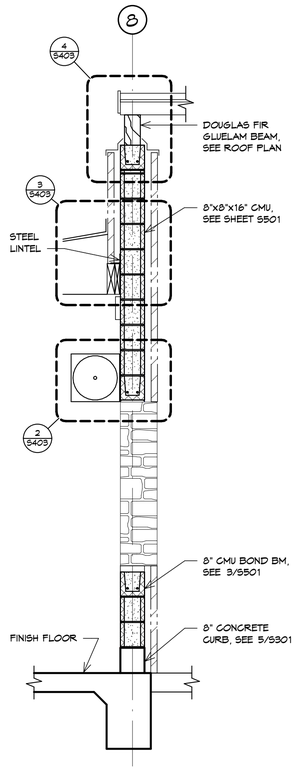
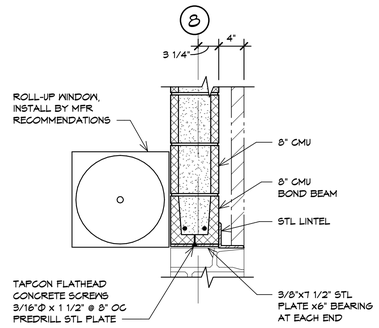
SHEET TITLE
SECTIONS AND DETAILS

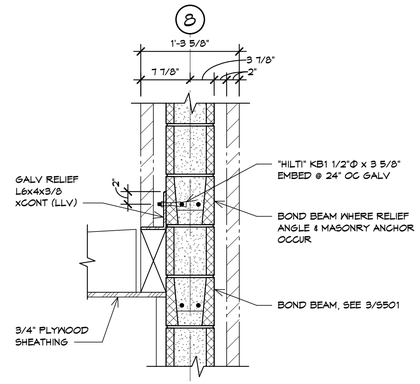
SHEET NUMBER
S402



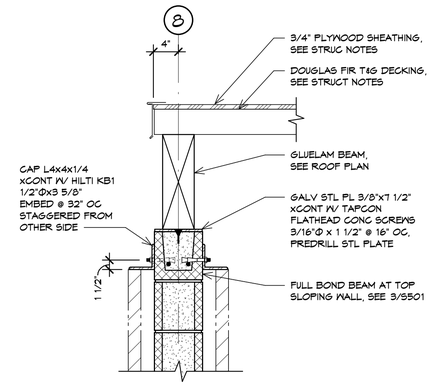
1 SECTION
SCALE: 1/2" = 1'-0"



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



3 DETAIL
SCALE: 1" = 1'-0"



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

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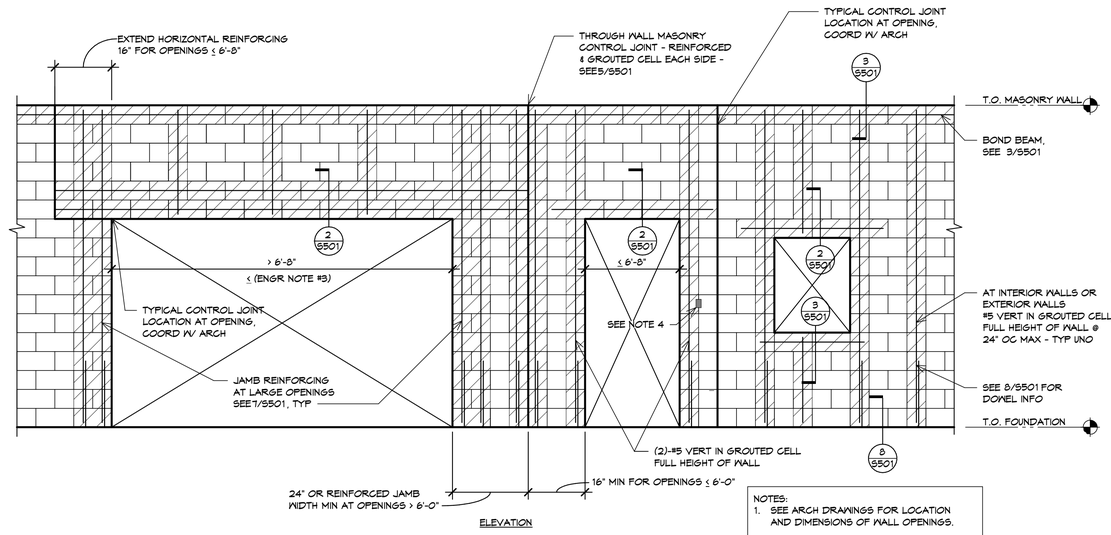
SHEET TITLE
SECTIONS AND DETAILS

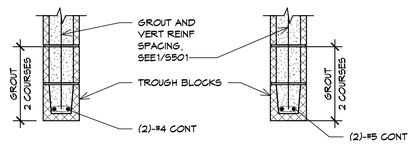
SHEET NUMBER
S403

1 TYPICAL EXTERIOR CMU WALL REINFORCING DETAIL
NO SCALE



ELEVATION

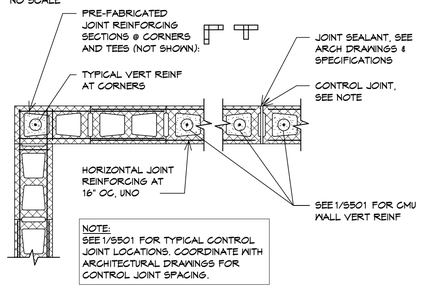
NOTES:
1. SEE ARCH DRAWINGS FOR LOCATION AND DIMENSIONS OF WALL OPENINGS.
2. SEE10/S501 FOR LAP SPLICE LENGTHS.
3. SEE STRUCTURAL NOTES FOR ADDITIONAL CMU REQUIREMENTS.
4. ELECTRICAL JUNCTION BOXES SHALL NOT INTERRUPT WALL REINFORCEMENT.



OPENINGS ≤ 6'-8" | 6'-8" < OPENINGS ≤ 12'-0"

NOTES:
1. LINTELS SHALL REMAIN SHORED UNTIL MASONRY CONSTRUCTION ABOVE HAS CURED FOR A MINIMUM OF 14 DAYS.
2. SEE ARCHITECTURAL DRAWINGS FOR OPENING SIZE AND LOCATION.
3. EXTEND LINTELS PAST EDGES OF OPENINGS PER 1/S501.
4. VERTICAL CONTROL JOINTS SHALL NOT CROSS LINTEL REINFORGING.

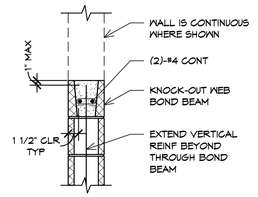
2 TYPICAL CMU LINTEL DETAIL
NO SCALE



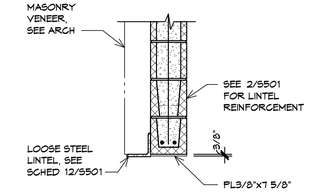
NOTE:
SEE 1/S501 FOR TYPICAL CONTROL JOINT LOCATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR CONTROL JOINT SPACING.

PLAN

3 TYPICAL CMU BOND BEAM DETAIL
NO SCALE

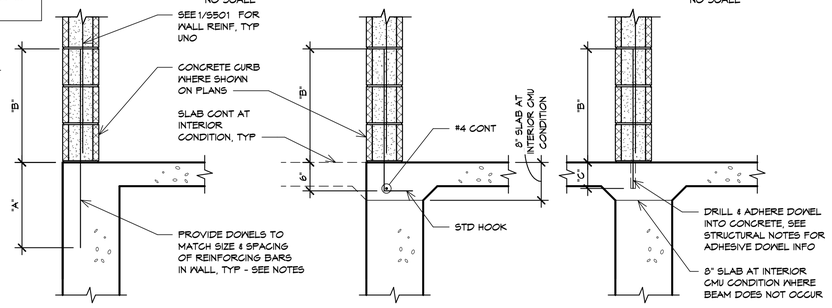


4 TYPICAL MASONRY VENEER SUPPORT AT CMU BACK-UP DETAIL
NO SCALE



NOTES:
1. PROVIDE LOOSE LINTEL ANGLES PER 12/S501 FOR VENEER SUPPORT AT OPENINGS EQUAL TO OR LESS THAN 8'-0".

5 TYPICAL CMU BAR PLACEMENT DETAIL
NO SCALE

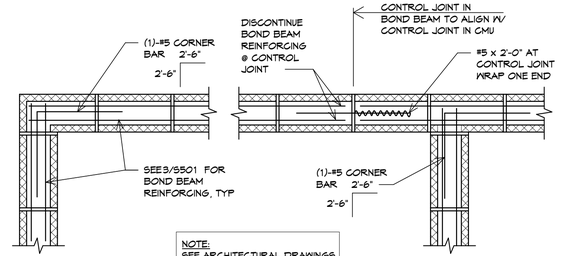


CAST-IN-PLACE (STRAIGHT BAR) | CAST-IN-PLACE (HOOKED BAR) | DRILLED-IN ALTERNATE (@ INTERIOR PARTITIONS ONLY)

NOTES:
1. MASONRY DOWELS SHALL BE TIED IN OR DRILLED AND ADHERED. MASONRY DOWELS SHALL NOT BE "STABBED" IN.
2. HOLES FOR MASONRY DOWELS MUST BE CLEANED WITH A WIRE BRUSH AND COMPRESSED AIR. SEE STRUCTURAL NOTES FOR ADDITIONAL INFORMATION. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.

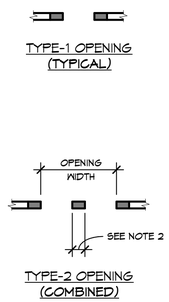
DOWEL SIZE	DIMENSIONS		
	"A"	"B"	"C"
#4	1'-6"	2'-0"	5 1/2"
#5	1'-6"	2'-6"	7"
#6	2'-0"	3'-6"	8 1/2"
#7	2'-6"	4'-10"	10"

6 TYPICAL CORNER BARS AT BOND BEAMS DETAIL
NO SCALE

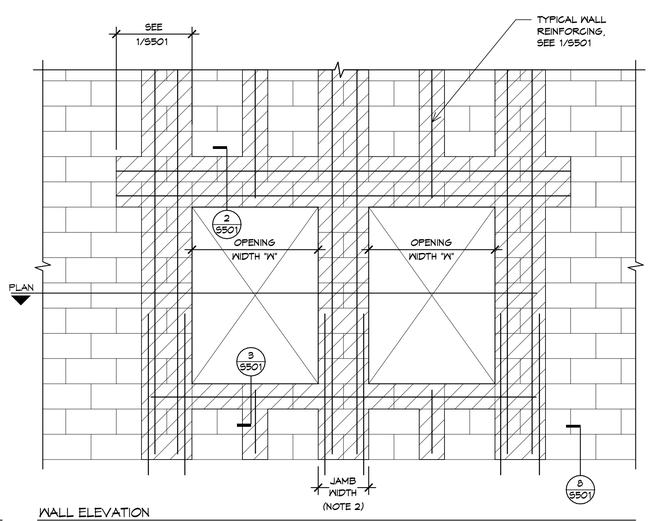


NOTE:
SEE ARCHITECTURAL DRAWINGS FOR CONTROL JOINT SPACING.

7 TYPICAL EXTERIOR CMU WALL JAMB REINFORCING DETAIL (8" NOMINAL)
NO SCALE



PLAN
NO SCALE



WALL ELEVATION
NO SCALE

WALL HEIGHT BETWEEN SUPPORTS *	CLEAR OPENING SIZE (W)				
	< 8'-0"	<10'-0"	<12'-0"	<14'-0"	<16'-8"
≤10'-0"	8" / 2-#5	8" / 2-#5	8" / 2-#5	8" / 2-#5	16" / 4-#6
≤12'-0"	8" / 2-#5	8" / 2-#5	8" / 2-#6	16" / 4-#6	16" / 4-#6
≤14'-0"	8" / 2-#6	8" / 2-#7	16" / 4-#5	16" / 4-#6	24" / 6-#6
≤16'-0"	16" / 4-#6	16" / 4-#6	16" / 4-#6	16" / 4-#7	24" / 6-#7
≤18'-0"	16" / 4-#6	16" / 4-#6	24" / 6-#6	24" / 6-#7	32" / 8-#7

* SUPPORTS ARE DEFINED AS FLOORS, ROOFS, GIRTS, ETC THAT ARE CONNECTED TO THE WALL AND BRACE THE WALL OUT-OF-PLANE.

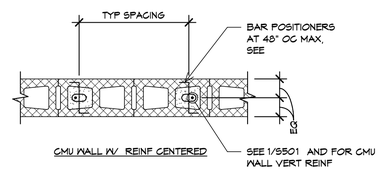
NOTES:
1. FOR OPENING AT EXTERIOR WALL, EXTEND JAMB REINFORCING TO TOP OF WALL.
2. FOR TYPE-2 OPENINGS, LINTEL SHALL SPAN ACROSS BOTH OPENINGS. INTERMEDIATE CMU WALL BETWEEN OPENINGS SHALL BE EQUIVALENT OF COMBINED JAMB REINFORCING FROM EACH OPENING.
3. SEE 5/S501 FOR REINFORCING DETAIL AT JAMB CONDITIONS.
4. SEE 5/S501 FOR CORNER DETAIL AND TEE JAMB CONDITIONS.

8 TYPICAL MASONRY WALL DOWEL DETAIL
NO SCALE

CMU WALL LAP SPLICE SCHEDULE		
BAR SIZE	LAP LENGTH	
	BOND BEAMS	VERTICAL REINF
#4	1'-8"	2'-8"
#5	2'-1"	3'-4"
#6	2'-6"	4'-0"
#7	2'-11"	4'-8"

NOTES:
1. SPLICES SHALL BE STAGGERED SO THAT NO MORE THAN 1/2 OF ALL BARS ARE SPLICED AT THE SAME LOCATION.
2. DO NOT SPLICE BARS IN LINTELS.
3. BARS SHALL BE SPACED WITH WIRE-BOND CORELOCK OR HOHMANN + BARNARD RB BAR POSITIONERS OR APPROVED EQUAL.

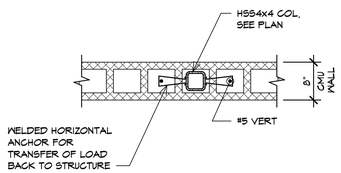
9 TYPICAL CMU BAR PLACEMENT DETAIL
NO SCALE



NOTE:
PROVIDE BAR POSITIONERS AT TOP AND BOTTOM OF LAP SPLICES AND AT 48" OC MAX VERTICALLY.

10 CMU WALL LAP SPLICE SCHEDULE
NO SCALE

11 PLAN DETAIL ANCHOR TO STEEL COLUMN
NO SCALE



MASONRY LOOSE LINTEL SCHEDULE		
OPENING	LINTEL SIZE	DETAIL
1'-0" TO LESS THAN 6'-0"	L4x3 1/2x5/16 (LLH)	
6'-0" TO LESS THAN 6'-8"	L4x4x5/16	
6'-8" TO LESS THAN 8'-0"	L6x4x5/16 (LLV)	

NOTES:
1. SEE ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF OPENINGS.
2. PROVIDE 1" OF BEARING AT EACH JAMB FOR EACH FOOT OF CLEAR SPAN, BUT NOT LESS THAN 6".
3. WHERE MINIMUM BEARING CANNOT BE ACHIEVED, PROVIDE ADEQUATE CONNECTION TO ADJACENT STRUCTURAL MEMBER OR PROVIDE SEPARATE VERTICAL SUPPORT. SUBMIT SUCH DETAILS FOR ENGINEER'S APPROVAL.
4. ALL LINTELS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
5. FOR MASONRY OPENING LARGER THAN 8'-0", REFER TO ENGINEER.
6. BRICK HEIGHTS OVER OPENINGS GREATER THAN ONE HALF THE LINTEL SPAN SHALL BE SHORED UNTIL MORTAR HAS SET AND CURED.

12 MASONRY LOOSE LINTEL SCHEDULE
NO SCALE

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

INTELLIGENT ENGINEERING SERVICES
ENGINEERING COMMUNITIES FROM THE GROUND UP
1045 CENTRAL PARKWAY NORTH, SUITE 200 SAN ANTONIO, TEXAS 78232
210.349.9098 ie-services.com
IES JOB NO: 1243365 TBPE FIRM F-432

STATE OF TEXAS
JOSEPH H. HUIZAR
87226
LICENSED PROFESSIONAL ENGINEER
10/30/25

District 3 Aquatics Facility
San Antonio, TX

ISSUE DATE	10/23/2025
REVISION	
PROJECT NUMBER	23010
DRAWN BY	IES STAFF
CHECKED BY	JHH
SCALE	AS NOTED

SHEET TITLE
TYPICAL MASONRY DETAILS

SHEET NUMBER
S501

MECHANICAL GENERAL NOTES, ABBREVIATIONS & SYMBOLS

[SOME SYMBOLS MAY NOT BE USED ON THIS PROJECT]

ABBR. DESCRIPTION

ABBR.	DESCRIPTION
ABV	ABOVE
AC	ABOVE CEILING
A/C	AIR CONDITIONED
ACC	AIR COOLED CHILLER
AD	ACCESS DOOR
AF	AIR FOIL
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AMCA	AIR MOVING AND CONDITIONING ASSOCIATION, INC.
AP	ACCESS PANEL
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
AHRI	AIR CONDITIONING, HEATING, & REFRIGERATION INSTITUTE
ANSI	AMERICAN NATIONAL STANDARD INSTITUTE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
AV	AUTOMATIC AIR VENT ASSEMBLY
B	BOILER
BDD	BACK DRAFT DAMPER
BFV	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BI	BACKWARD INCLINED
BLDG	BUILDING
BLV	BALANCING VALVE
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BSMT	BASEMENT
BV	BALL VALVE
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CHP	CHILLED WATER PUMP
CHS/R	CHILLED WATER SUPPLY / RETURN
CLG	CEILING
CO	CLEANOUT
CD	CONDENSATE DRAIN
CONN	CONNECTION
CONT	CONTINUATION
CP	CONTROLLABLE PITCH
CT	COOLING TOWER
CU	CONDENSING UNIT
CW	COLD WATER
CWP	CONDENSING WATER PUMP
CV	CHECK VALVE
C	CENTER LINE
D	DRAIN
DB	DRY BULB
DCP	DATA COLLECTION PANEL
DDC	DIRECT DIGITAL CONTROL
DEG	DEGREE
DG	DOOR GRILLE
DIA	DIAMETER
DPT	DEW POINT TEMPERATURE
DWG	DRAWING
DX	DIRECT EXPANSION
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY-BULB TEMPERATURE
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
EFF	EFFICIENCY
ELEC	ELECTRICAL
ELEV	ELEVATION
EG	EXHAUST GRILLE
EHC	ELECTRICAL HEATING COIL
EJ	EXPANSION JOINT
ENT	ENTERING
EQUIP	EQUIPMENT
ER	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET-BULB TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
(E)	EXISTING
F	FAHRENHEIT
FA	FACE AREA
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FEF	FUME EXHAUST FAN
FC	FLEXIBLE CONNECTOR
FLG	FLANGE
FLR	FIRE DAMPER
FM	FACTORY MUTUAL
FO	FLAT OVAL DUCT
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOV	FUEL OIL VENT
FPM	FEET PER MINUTE
FT	FEET, FOOT
FS	FLOW SWITCH
G	LOW-PRESSURE GAS
GAL	GALLON
GALV	GALVANIZED
GLV	GLOBAL VALVE
GPM	GALLONS PER MINUTE
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GV	GATE VALVE
HB	HOSE BIBB
HG	HIGH-PRESSURE GAS
HGT	HIGH, HEIGHT
HP	HORSEPOWER
HPC	HIGH-PRESSURE CONDENSATE
HR	HOUR
HVAC	HEATING/VENTILATING/AIR CONDITIONING
HWP	HOT WATER PUMP
HWS/R	HOT WATER SUPPLY/ RETURN
HZ	HERTZ
ID	INSIDE DIAMETER
IE	INVERT ELEVATION (FLOW LINE)
IN	INCHES
IN WG	INCHES OF WATER
KW	KILOWATT(S)

ABBR. DESCRIPTION

ABBR.	DESCRIPTION
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LDB	LEAVING DRY-BULB TEMPERATURE
LPC	LOW-PRESSURE CONDENSATE
LP	LOW-PRESSURE STREAM SUPPLY
LVR	LOUVER
MA	MIXED AIR
MAU	MAKEUP AIR HANDLING UNIT
MAX	MAXIMUM
MD	MANUAL DAMPER
MECH	MECHANICAL
MG	MEDIUM-PRESSURE GAS
MIN	MINIMUM
MPC	MEDIUM-PRESSURE CONDENSATE
MPS	MEDIUM-PRESSURE STREAM SUPPLY
NA	NOT APPLICABLE
NC	NOISE CRITERIA
N.C.	NORMALLY CLOSED
(N)	NEW
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSITE BLADE DAMPER
OD	OUTSIDE DIAMETER
PA	PIPE ANCHOR
PBD	PARALLEL BLADE DAMPER
PCHP	PRIMARY CHILLED WATER PUMP
PD	PRESSURE DROP OR DIFFERENCE
PG	PRESSURE GUAGE WITH GAUGE COCK
PH	PHASE
POC	POINT OF CONNECTION
PPB	PARTS PER BILLION
PPM	PARTS PER MILLION
PRESS	PRESSURE
PRV	PRESSURE REDUCING VALVE
PSIG	POUNDS PER SQUARE INCH (GAUGE)
PV	PLUG VALVE
RA	RETURN AIR
RE:	REFER TO
REF	REFERENCE, CALLED OUT ELSEWHERE
RH	RELATIVE HUMIDITY
RPM	REVOLUTIONS PER MINUTE
RV	PRESSURE-RELIEF VALVE
RZBP	REDUCE PRESSURE BACKFLOW PREVETER
SA	SUPPLY AIR
SCH	SCHEDULE
SCHP	SECONDARY CHILLED WATER PUMP
SD	SMOKE DAMPER
SF	SUPPLY FAN
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SP	STATIC PRESSURE
SQ.FT	SQUARE FEET
STD	STANDARD
SW	SWITCH
TEMP	TEMPATURE
T'STAT	THERMOSTAT
TXV	THERMOSTATIC EXPANSION VALVE
TYP	TYPICAL
UF	UNDER FLOOR
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
VB	VALVE BOX
VD	VOLUME DAMPER
VEL	VELOCITY
VENT	VENTILATE
VOL	VOLUME
VOLT	VOLTAGE
W	WIDE, WIDTH
WB	WET BULB

CONTROLS

T	THERMOSTAT SERVING TERMINAL UNIT TU-1-01
H	HUMIDITY SENSOR
TS	TEMPERATURE SENSOR
C	CARBON DIOXIDE SENSOR
CO	CARBON MONOXIDE SENSOR
NO2	NITROGEN DIOXIDE SENSOR

DRAWING SYMBOLS

2	KEYED NOTE 2
2 DETAIL 1/8" = 1'-0"	DETAIL: NO. 2, DRAWING SCALE OF 1/8" = 1'-0"
1 / M-2	SECTION ARROW: SECTION 1, SHEET M-2

APPLICABLE PROJECT CODES

- 2024 IBC
- 2021 IECC
- 2024 IFC
- 2024 IMC
- 2024 IPC
- 2024 ISPSC

DESCRIPTION — DOUBLE LINE / SINGLE LINE

DIRECTION OF FLOW

DUCT SIZE, FIRST FIGURE IS SIDE SHOWN (DIMENSIONS ARE CLEAR INSIDE) — 24x12

DUCT CAP

RECTANGULAR DUCT DROP

ROUND DUCT DROP

SUPPLY DUCT TURNING UP

SUPPLY DUCT TURNING DOWN

RETURN OR EXHAUST DUCT TURNING UP

RETURN OR EXHAUST DUCT TURNING DOWN

FLEXIBLE DIFFUSER DROP

12" DIA. ROUND DUCT — 12"Ø

12" BY 24" FLAT OVAL DUCT — 12"x24"

EXISTING DUCTWORK (LIGHT LINES) — (E) 12x8

DEMOLITION DUCTWORK (DARK LINES) — (D) 12x8

TRANSITION (ROUND TO ROUND) OR (SQUARE TO SQUARE)

DUCT TRANSITION (SQUARE TO ROUND)

TRANSITION TO REGISTER

45° RECTANGULAR ELBOW

90° RECTANGULAR ELBOW

45° RADIUS ELBOW

STANDARD SYMBOLOGY

ROUND DUCT SECTION

FLAT OVAL DUCT SECTION

SUPPLY DUCT SECTION, POSITIVE PRESS.

EXH., RET., O.A. DUCT SECTION NEGATIVE PRESS.

ACOUSTICALLY LINED DUCT

DUCT ACCESS DOOR — A.D. A.D.

FLEXIBLE CONNECTION (DUCT)

CHANGE OF ELEVATION IN DIRECTION SHOWN — R
R-RISE D-DROP

BRANCH DUCT WITH VOLUME DAMPER

SIDEWALL REGISTER

DUCT WITH TURNING VANES

PROPORTIONAL SPLIT -DIMENSIONS INDICATE SPLIT — 4" 12"

VOLUME DAMPER TYPE INDICATED — VD

MOTORIZED DAMPER TYPE INDICATED (OBD, PBD) — M PBD

VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS W/ VANES EVEN IF SYMBOL IS MISSING)

VANED ELBOW (SHORT RADIUS)

STANDARD RADIUS ELBOW

LOUVER

SUPPLY AIR DIFFUSER

RETURN AIR GRILLE

EXHAUST AIR GRILLE

LINEAR SUPPLY AIR DEVICE

LINEAR RETURN AIR DEVICE

FAN (SCHEMATIC)

DIFFERENTIAL PRESSURE GAUGE — DPG

COMBINATION FIRE/SMOKE DAMPER AND SLEEVE (PROVIDE ACCESS DOOR) — FSD

FIRE DAMPER — FD

GENERAL NOTES

A. THERMOSTATS SHALL BE MOUNTED AT 48" A.F.F., WITH ALL CONTROL BUTTONS AND OPERATORS NOT HIGHER THAN 48"A.F.F.

B. PROGRAM EACH THERMOSTAT, SCHEDULES AND TEMPERATURES TO SUIT OWNER'S NEED. GIVE OWNER A RECORD OF ALL SETTINGS.

C. PROVIDE AND INSTALL ALL DUCT TRANSITIONS AND OFFSETS AS REQUIRED ALTHOUGH NOT SHOWN.

D. THESE DRAWINGS INDICATE THE GENERAL EXTENT OF THE WORK AND ARE NOT INTENDED TO INDICATE OR DESCRIBE ALL WORK REQUIRED FOR THE FULL PERFORMANCE AND COMPLETION OF THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

E. CONTRACTOR IS RESPONSIBLE TO COORDINATE HIS WORK WITH OTHER TRADES, PARTICULARLY TO PREVENT THE WORK OF OTHER TRADES ENTERING SPACE REQUIRED FOR DUCT AND HVAC EQUIPMENT.

F. DO NOT OPERATE HVAC EQUIPMENT DURING OTHER CONSTRUCTION OPERATIONS UNLESS ALL RETURN INLETS ARE PROTECTED WITH TEMPORARY FILTERS. ALL DUCT AND HVAC EQUIPMENT SHALL BE COMPLETELY CLEAN INTERNALLY UPON COMPLETION OF WORK.

G. COMPLETE AND ADJUST SYSTEMS TO PROPER OPERATION. DEMONSTRATE PROPER OPERATION OF ALL SYSTEMS TO OWNER'S PERSONNEL PRIOR TO COMPLETION OF WORK.

H. ALL EQUIPMENT ABOVE CEILING SPACE TO MAINTAIN MANUFACTURER REQUIRED AND CODE REQUIRED CLEARANCES.

I. COORDINATE LOCATION OF ALL HVAC EQUIPMENT, DUCT PENETRATIONS, AND PIPE PENETRATIONS WITH STRUCTURAL ENGINEER PRIOR TO CREATING OPENINGS OR SETTING EQUIPMENT.

J. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR MANAGING AND SUBMITTING FULLY COORDINATED SHOP DRAWINGS OF THE REFLECTED CEILING PLAN (RCP), AND PROPOSED MECHANICAL EQUIPMENT LOCATIONS THROUGHOUT THE FACILITY. RCP SHALL INDICATE ALL DEVICES PROVIDED BY ALL DISCIPLINES LOCATED ON THE CEILING. RCP AND PROPOSED EQUIPMENT LOCATIONS SHALL BE SUBMITTED FOR REVIEW BY DESIGN TEAM PRIOR TO ROUGH-IN. THIS INCLUDES ALL MAJOR EQUIPMENT ROOMS AND ABOVE CEILING.

K. LOCATIONS OF MECHANICAL EQUIPMENT AND DEVICES ARE DIAGRAMMATIC. EXACT LOCATIONS SHALL BE COORDINATED WITH OTHER DISCIPLINES AND DETERMINED IN THE FIELD. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY CONFLICTS PRIOR TO ROUGH-IN.

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

CNG ENGINEERING
8350 BROADWAY STREET
SAN ANTONIO, TEXAS 78229
T 210.226.8661 | www.cngengineering.com
TBPE FIRM # F-7966

STATE OF TEXAS
JOSHUA BAUMGARTNER
119197
LICENSED
PROFESSIONAL ENGINEER
11-5-25

District 3 Aquatics Facility
San Antonio, TX

SAN ANTONIO CITY OF

ISSUE DATE	10/30/2025
REVISION	
PROJECT NUMBER	23010
DRAWN BY	SA
CHECKED BY	JB
SCALE	

SHEET TITLE
MECHANICAL SYMBOLS AND ABBREVIATIONS

SHEET NUMBER
M0.0

N

1 MECHANICAL PLAN

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

GENERAL NOTES: (THIS SHEET ONLY)

1. COORDINATE DUCT AND PIPE PENETRATIONS WITH STRUCTURAL ENGINEER AND ARCHITECT PRIOR TO CREATING OPENING OR SETTING EQUIPMENT.
2. PENETRATIONS. LOCATIONS, DIMENSIONS AND SHAPE OF ROOF PENETRATIONS MAY VARY DEPENDING UPON SELECTION OF EQUIPMENT.
3. DIMENSIONS, SPACING AND CONFIGURATION OF EQUIPMENT ON ROOF WILL DEPEND UPON SELECTION OF EQUIPMENT.
4. WHERE DUCT SIZE IS NOT SHOWN, DUCT SHALL HAVE INSIDE AREA NOT LESS THAN THE EQUIPMENT CONNECTION AREA.
5. DUCT SYSTEMS SHALL BE CONSTRUCTED AND ERECTED TO COMPLY WITH 2024 IMC AND 2021 IECC SECTION C403.12.2.1.
6. ALL DUCT DIMENSIONS NOTED ARE INSIDE DIAMETER.
7. DUCT RUN SECTIONS NOT LABELED FOR SIZE SHALL BE THE SAME SIZE AS NEAREST SIZE LABEL UPSTREAM.
8. ROOF PENETRATIONS. LOCATION, DIMENSIONS AND SHAPE OF ROOF PENETRATIONS MAY VARY DEPENDING UPON SELECTION OF EQUIPMENT.
9. ALL INTERFACE WITH ROOFING SHALL BE IN ACCORDANCE WITH ARCHITECTURAL PLANS AND SPECIFICATIONS.
10. DUCT INLETS AND OUTLETS TO THE AMBIENT AIR SHALL BE A SMACNA DESIGN TO REDUCE RAIN ENTRY. COVER INLETS AND OUTLETS WITH 1/2" GALVANIZED BIRDSCREEN (EXCEPT AS OTHERWISE STATED IN KEYED NOTES), ALL SEAMS, AND ROOF PENETRATIONS SHALL BE CAULKED TO BE WEATHER TIGHT.
11. DUCT HEIGHTS ARE FROM FINISHED FLOOR TO DUCT CENTERLINES.
12. SUMMER OUTSIDE AIR DESIGN TEMPERATURES: 105 °F AMBIENT, 99.3°F DRY BULB, 73.0°F WET BULB.
13. DUCT RUN SECTIONS NOT LABELED FOR SIZE SHALL BE THE SAME SIZE AS NEAREST SIZE LABEL UPSTREAM.
14. ALL DUCTWORK SERVING AND/OR LOCATED IN POOL MECHANICAL ROOM AND CHEMICAL STORAGE ROOM TO BE FIBERGLASS REINFORCED PLASTIC. MONOXIVENT FRP OR EQUAL. REFER TO SPECIFICATIONS.

ALL DUCTWORK SHALL BE CONSTRUCTED AND ERECTED TO COMPLY WITH 2024 IMC AND 2021 IECC SECTION C403.12.2.1.

ALL PIPING SHALL BE INSULATED TO MEET THE REQUIREMENTS LISTED BELOW:

2021 IECC TABLE C403.12.3 MINIMUM PIPE INSULATION THICKNESS (IN.)

FLUID OPERATING TEMPERATURE RANGE (°F)	INSULATION DATA		NOMINAL PIPE SIZE (IN.)				
	CONDUCTIVITY (BTUH x IN / SF x °F)	MEAN RATING TEMPERATURE (°F)	<1	1 TO < 1-1/2	1-1/2 TO < 4	4 TO < 8	>8
>350	0.32 -0.34	250	4.5	4.5	4.5	4.5	4.5
251 -350	0.29 -0.32	200	3	3	3	3	3
201 -251	0.27 -0.30	150	2.5	2.5	2.5	2.5	2.5
141 -200	0.25 -0.29	125	1.5	1.5	1.5	1.5	1.5
105 -140	0.21 -0.28	100	1	1	1	1	1
40 -60	0.21 -0.27	75	0.5	0.5	0.5	0.5	0.5
< 40	0.20 -0.26	50	0.5	0.5	0.5	0.5	0.5

NOTE: PIPING INSULATION THAT IS EXPOSED TO THE WEATHER SHALL BE IN METALLIC JACKETING MADE OF EITHER ALUMINUM OR STEEL.

(#) KEYED NOTES: (THIS SHEET ONLY)

1. GROUND-MOUNTED EXHAUST FAN TO BE LOCATED AS SHOWN. MOUNT ON 4" HOUSEKEEPING PAD WITH NEOPRENE PADS FOR VIBRATION ISOLATION. ROUTE EXHAUST DUCT FROM FLEXIBLE CONNECTION AT FAN DISCHARGE UP TO ROOF AND TERMINATE WITH GOOSENECK. PROVIDE CORROSION-RESISTANT BIRD SCREEN AT GOOSENECK OPENING. RE: ARCHITECT FOR ROOF PENETRATION REQUIREMENTS. COORDINATE FINAL DUCT ROUTING, GOOSENECK LOCATION, AND EQUIPMENT LOCATION WITH ARCHITECT AND OTHER TRADES BEFORE BIDDING AND CONSTRUCTION. FOLLOW ALL MANUFACTURER REQUIREMENTS AND CLEARANCES. SEE SCHEDULE.
2. SPACE TO BE NATURALLY VENTILATED IN ACCORDANCE WITH 2024 IMC §401 AND 402.
3. NEW MINI-SPLIT INDOOR UNIT TO BE LOCATED AS SHOWN. FOLLOW ALL MANUFACTURER RECOMMENDED CLEARANCES. ROUTE 3/4" CONDENSATE AT MINIMUM 1/8" PER FT. SUPPORT PIPE PER CODE AND PROVIDE CLEANOUTS AS REQUIRED BY CODE. COORDINATE EXTERIOR WALL PENETRATION SUCH THAT ALL VISIBLE EXTERIOR CONDENSATE PIPING IS PARALLEL AND ADJACENT TO DOWNSPOUT. REFER TO DETAILS.
4. NEW MINI-SPLIT CONDENSING UNIT TO BE WALL-MOUNTED AS SHOWN OR MOUNTED ON CONCRETE HOUSEKEEPING PAD IN SAME AREA. CONFIRM LOCATION WITH ARCHITECT AND LANDSCAPE ARCHITECT AND PROCURE ACCESSORIES ACCORDINGLY. FOLLOW ALL MANUFACTURER RECOMMENDED CLEARANCES.
5. FOR CHEMICAL STORAGE ROOM, PROVIDE DIFFERENTIAL PRESSURE ALARM SYSTEM IN APPROX. LOCATION SHOWN WITH ADJUSTABLE SETPOINT THAT SHALL SOUND IF THE SPECIFIED DIFFERENTIAL AIR PRESSURE IS NOT MAINTAINED FOR A PERIOD OF 30 MINUTES. ALARM SHALL HAVE MINIMUM OUTPUT LEVEL OF 85 dbA AT 10 FEET AND SHALL REQUIRE MANUAL RESET TO SILENCE IT. LOCATE MANUAL RESET ADJACENT TO ALARM. ENSURE SYSTEM IS COMPLIANT WITH 2024 ISPSC §325.8.2. MEASURE PRESSURE BETWEEN CHEMICAL STORAGE ROOM AND OUTDOORS. MOUNT ALARM OUTSIDE CHEMICAL STORAGE ROOM DOOR. LOCATE TRANSMITTER IN POOL MECHANICAL ROOM. FOLLOW ALL MANUFACTURER REQUIREMENTS AND CLEARANCES. PROVIDE ALL ACCESSORIES FOR FULL OPERATION.
6. PROVIDE CORROSION-RESISTANT COATED BIRDSCREEN OR OTHER SAFETY GUARD ON FAN INLET.
7. RE: ARCHITECT SHEETS FOR MAKE UP AIR LOUVER LOCATIONS IN APPROXIMATE AREA.
8. ROUTE 5" Ø OR LARGER EXHAUST DUCT FROM FLEXIBLE CONNECTION AT FAN INTAKE THROUGH WALL AS SHOWN. SEAL WALL AIRTIGHT. LOCATE BOTTOM OF WALL OPENING WITHIN 12" OF FLOOR. PROVIDE CORROSION-RESISTANT COATED BIRDSCREEN ON DUCT INLET.
9. ROUTE CONDENSATE PIPE BELOW GRADE, THEN SLOPE TO STORMWATER SUMP IF PERMITTED BY CITY, OTHERWISE, ROUTE TO CONDENSATE DRYWELL TO BE LOCATED AWAY FROM FOUNDATION. CONFIRM LOCATION WITH LANDSCAPE ARCHITECT, RE: L2.02, L2.07, AND L3.01. COORDINATE FINAL ROUTING WITH SITE AND OTHER TRADES. REFER TO DETAIL.

0 4' 8' 16'

1/8" = 1'-0" SCALE

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

CNG ENGINEERING
8350 BROADWAY STREET TBPE FIRM # F-7964
SAN ANTONIO, TEXAS 78209
T 210.226.8661 | www.cngengineering.com

STATE OF TEXAS
JOSHUA BAUMGARTNER
119197
LICENSED
PROFESSIONAL
ENGINEER
11-5-25

District 3 Aquatics Facility
San Antonio, TX

CITY OF SAN ANTONIO

ISSUE DATE	10/30/2025
REVISION	
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DRAWN BY	SA
CHECKED BY	JB
SCALE	1/8" = 1'- 0"

SHEET TITLE
MECHANICAL PLAN

SHEET NUMBER
M1.0

MINI-SPLIT AIR CONDITIONER SCHEDULE

OUTDOOR UNIT											INDOOR FAN COIL						
					ELECTRICAL REQUIREMENTS												
TAG	TYPE	MANUFACTURER	COOLING CAPACITY (MBH)	REF. TYPE	OUTSIDE AMBIENT TEMP. (DEG F BD)	MCA (AMPS)	MOCP (AMPS)	VOLT / PH	SEER2	MODEL NUMBER	WEIGHT (LBS)	TAG	SERVICE	TYPE	AIRFLOW H /M /L (CFM)	MODEL NUMBER	WEIGHT (LBS)	NOTES
MSCU-1	WALL-MOUNTED	DAIKIN	12	R-32	105	9.4	15.0	208-230 / 1	21	RXF12AXVJU	60	MSIU-1	103 IDF ROOM	WALL-MOUNTED	436 / 316 / 247	FTXF12AXVJU	20.9	1 THRU 10

GENERAL:

CONTRACTOR TO INSTALL EQUIPMENT TO MAINTAIN MANUFACTURER REQUIRED CLEARANCES. PROVIDE ANY AND ALL HARDWARE AND SOFTWARE REQUIRED TO CALIBRATE, TROUBLESHOOT, AND REPAIR THIS UNIT.

NOTES:

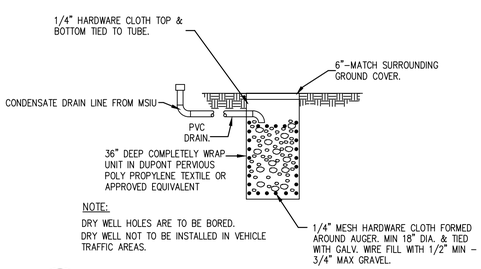
1. SIZE, ROUTE, AND SUPPORT REFRIGERANT PIPING AS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE LONG LINE LENGTH UPGRADE KIT FOR EACH UNIT WHERE REQUIRED.
2. PROVIDE A WIRED REMOTE THERMOSTAT CONTROLLER FOR INDOOR UNITS, MOUNT THERMOSTAT AS SHOWN ON PLAN.
3. CONTRACTOR TO COORDINATE ANY REQUIRED OIL TRAPS ON REFRIGERANT PIPING SYSTEMS WITH MANUFACTURER.
4. PROVIDE ANY AND ALL HARDWARE AND SOFTWARE REQUIRED TO CALIBRATE, TROUBLESHOOT, AND REPAIR THIS UNIT.
5. CONTRACTOR TO LOCK OUT HEAT PUMP OPERATION, IF PRESENT.
6. PROVIDE WITH MANUFACTURER WALL-MOUNTING KIT AND ALL REQUIRED ACCESSORIES FOR OUTDOOR CONDENSING UNIT.
7. PROVIDE INDOOR UNIT WITHOUT CONDENSATE PUMP. CONDENSATE SHALL GRAVITY DRAIN.
8. PROVIDE FIELD-INSTALLED COIL HAIL GUARD ACCESSORY.
9. INCLUDE CONDENSATE OVERFLOW PROTECTION TO SHUT DOWN MINI SPLIT IF DRAIN IS BLOCKED.
10. PROVIDE LOW AMBIENT OPERATION CONTROL DOWN TO 20 DEG F.

FAN SCHEDULE

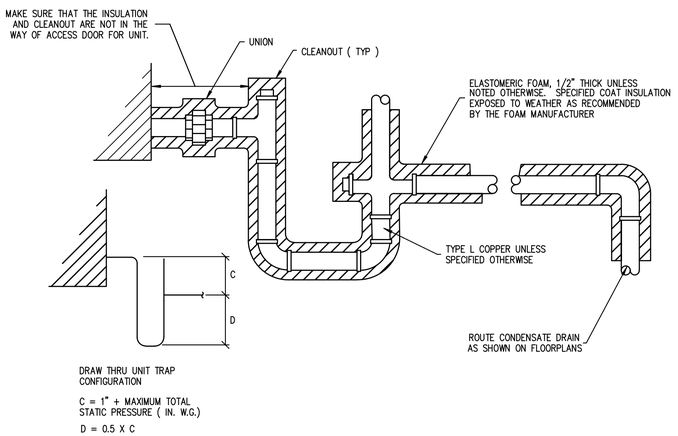
MARK	CONFIGURATION	AREA SERVED	CONTROL	CFM	S.P. (IN. WG)	FAN RPM	MOTOR HP	V/PH	DRIVE	MANUFACTURER	MODEL	WEIGHT LBS	NOTES
EF-1	GROUND-MOUNTED	POOL MECHANICAL ROOM	CONTINUOUS	1220	0.50	1670	3/4	208/1	DIRECT	PLASTEC	P25SS4P075	28.9	1, 2, 3, 4, 5
EF-2	GROUND-MOUNTED	POOL MECHANICAL ROOM	CONTINUOUS	100	0.50	1720	1/3	208/1	DIRECT	PLASTEC	P15SS4P033	17.7	1, 2, 3, 4, 5

NOTES:

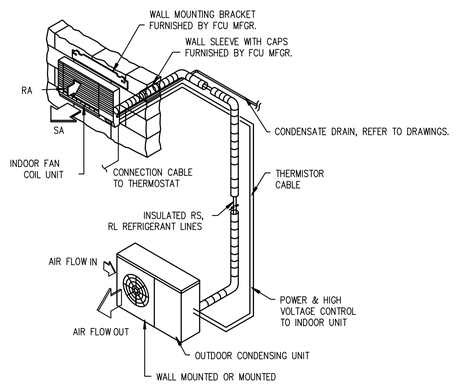
1. PROVIDE WITH PRE-WIRED DISCONNECT.
2. FAN TO BE MADE OF POLYPROPYLENE FOR ANTI-CORROSION PURPOSES.
3. PROVIDE WITH FLEXIBLE CONNECTIONS. PLASTEC PVC REDUCERS / COUPLINGS OR EQUAL.
4. PROVIDE WITH FACTORY NEOPRENE VIBRATION ISOLATORS.
5. COORDINATE DISCHARGE ORIENTATION AND HANDEDNESS WITH ALL TRADES PRIOR TO PROCUREMENT.
6. PROVIDE WITH FIBER-REINFORCED POLYMER BALANCING DAMPER CONSTRUCTIONDOWNSTREAM OF FAN, AND BALANCE TO CFM INDICATED.



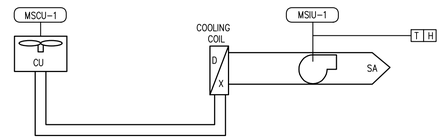
1 M2.0 DRY WELL DETAIL
NOT TO SCALE



2 M2.0 CONDENSATE TRAP DETAIL
NOT TO SCALE



3 M2.0 MINI SPLIT (DUCTLESS) DETAIL
NOT TO SCALE



SEQUENCE OF OPERATION:

DX SPLIT-SYSTEM UNIT:
UNIT WILL HAVE STAND ALONE CONTROLLER TO SERVE IT AND ELECTRICAL ROOMS.

INDOOR/OUTDOOR UNITS START/STOP: THE UNITS SHALL OPERATE. IF THE UNIT FAN STATUS DOES NOT MATCH THE COMMANDED VALUE, AN ALARM WILL BE GENERATED. WHEN THE SUPPLY FAN STATUS INDICATES THE FAN STARTED, THE CONTROL SEQUENCE WILL BE ENABLED.

DISCHARGE AIR CONTROL: THE DISCHARGE AIR TEMPERATURE SET POINT WILL RESET AS NECESSARY TO MAINTAIN THE ZONE TEMPERATURE SET POINT AS SENSED BY THE ZONE TEMPERATURE SENSOR. ON A CALL FOR COOLING THE ASSOCIATED CONDENSING UNIT WILL ENERGIZE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT SET POINT.

SAFETY:
ALL OF THE SAFETY DEVICES ARE MANUAL RESET; THE DEVICE THAT HAS TRIPPED MUST BE MANUALLY RESET BEFORE RESTARTING THE AIR HANDLING UNIT.
IF A TEMPERATURE LOW LIMIT SWITCH SENSES A TEMPERATURE BELOW SET POINT THE SUPPLY FAN WILL BE SHUTDOWN.

SHUTDOWN:
WHEN THE UNIT IS SHUTDOWN BY EITHER A STOP COMMAND OR SYSTEM SAFETY THE UNIT WILL BE SET AS FOLLOWS:
SUPPLY FAN WILL BE OFF
CONDENSING UNIT WILL DE-ENERGIZE.

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

CNG ENGINEERING

STATE OF TEXAS
JOSHUA BAUMGARTNER
119197
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SHEET TITLE
MECHANICAL SCHEDULES AND DETAILS

SHEET NUMBER
M2.0

ELECTRICAL SYMBOLS & ABBREVIATIONS

[SOME SYMBOLS MAY NOT BE USED ON THIS PROJECT]

GENERAL

SYMBOL	DESCRIPTION
	MOTOR, HP AS INDICATED
	DISCONNECT SWITCH
	MOTOR CONTROLLER
	COMBINATION MOTOR CONTROLLER/DISCONNECT UNIT
VFD	VARIABLE FREQUENCY DRIVE
J	JUNCTION BOX, CEILING MOUNTED
J	JUNCTION BOX, WALL MOUNTED
	EQUIPMENT CONNECTION, HARD WIRED

LOW VOLTAGE TRANSFORMERS (26 22 00)

SYMBOL	DESCRIPTION
	LOW VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMER, FLOOR MOUNTED (SEE E7 SERIES TRANSFORMER SCHEDULE)

PANELBOARDS (26 24 16)

SYMBOL	DESCRIPTION
	208Y/120V PANELBOARD, SURFACE MOUNTED (SEE E7 SERIES FOR PANEL SCHEDULES)

INTERIOR & EXTERIOR LIGHTING (26 51 00 & 26 56 00)

SYMBOL	DESCRIPTION
	LED DOWNLIGHT, ON NORMAL POWER / EMERGENCY
a/01 a/01 a/01 a/01	2' x 2' OR 2' x 4' LED DIRECT/INDIRECT FIXTURE, ON NORMAL POWER / EMERGENCY (WITH SWITCHLEG "a" AND DAYLIGHT ZONE "01" INDICATED)
	LED PENDANT OR RECESSED LINEAR STRIP LIGHTING FIXTURES ON NORMAL POWER / EMERGENCY
	OUTDOOR IN-GRADE MONUMENT SIGN UPLIGHT
	FLAGPOLE UPLIGHT
	BOLLARD
	BOLLARD WITH WP. RECEPTACLE
	CIRCULAR POST TOP POLE LIGHT
	OUTDOOR SINGLE / MULTIPLE HEAD POLE-MOUNTED LED
	EXIT SIGN, SINGLE/DOUBLE FACE, CEILING MOUNTED WITH ARROWS AS INDICATED IN DRAWINGS
	EXIT SIGN, WALL MOUNTED, SINGLE/DOUBLE FACE WITH ARROWS AS INDICATED IN DRAWINGS

RACEWAYS (26 05 33)

SYMBOL	DESCRIPTION
OHE	OVERHEAD ELECTRIC PRIMARY UTILITY LINE
UES	UNDERGROUND ELECTRIC SECONDARY
OE	EXISTING OVERHEAD UTILITY LINE
UGE	EXISTING UNDERGROUND UTILITY LINE
PANEL–2,4,6 IG G N	BRANCH CIRCUIT HOMERUN, WITH PANEL AND BREAKER POSITION INDICATED. SMALL TICK(S) = PHASE CONDUCTORS, LARGE TICK = NEUTRAL CONDUCTOR AND LARGE TICK WITH CIRCLE = GROUND CONDUCTOR.

WIRING DEVICES (26 27 26) (NUMBER ADJACENT TO SYMBOL INDICATES IN INCHES TO CENTERLINE ABOVE FINISHED FLOOR. SYMBOL WITHOUT NUMBER INDICATES 18" MOUNTING HEIGHT)

SYMBOL	DESCRIPTION
	SIMPLEX RECEPTACLE - 20A, 120V, 3W, NEMA 5-20R
AC	DUPLEX RECEPTACLE - 20A, 120V, 3W, NEMA 5-20R AC = ABOVE COUNTER (INSTALLED 6" ABOVE COUNTER TOP)
	CONTROLLED DUPLEX RECEPTACLE - 20A, 120V, 3W, NEMA 5-20R
	ISOLATED GROUND, DUPLEX RECEPTACLE - 20A, 120V, 3W, NEMA 5-20R
	EMERGENCY, DUPLEX RECEPTACLE - 20A, 120V, 3W, NEMA 5-20R (WITH RED OUTLETS AND FACEPLATE)
WP	WEATHER RESISTANT, GFCI, DUPLEX RECEPTACLE - 20A, 125V, 3W, NEMA 5-20R (WP = NEMA 3R WHILE IN USE)
	SPECIAL PURPOSE RECEPTACLE - SEE DRAWINGS FOR NEMA RATING
	QUADRAPLEX RECEPTACLE - 20A, 120V, 3W, NEMA 5-20R
	AFCI RECEPTACLE - 20A, 120V, 3W, NEMA 5-20R
A	POKE THRU DEVICE, REFER TO SHEETS FOR APPLICATION TYPE
A	FLOOR CORE DEVICE, REFER TO SHEETS FOR APPLICATION TYPE

SWITCH DEVICES (26 27 26)

SYMBOL	DESCRIPTION
D	WALL MOUNTED 0-10V DIMMER SWITCH
a	SINGLE POLE, SINGLE THROW TOGGLE SWITCH (WITH SWITCHLEG "A" INDICATED)
2b	DOUBLE POLE, SINGLE THROW TOGGLE SWITCH (WITH SWITCHLEG "B" INDICATED)
3c	THREE-WAY - SINGLE POLE, DOUBLE THROW TOGGLE SWITCH (WITH SWITCHLEG "C" INDICATED)
4d	FOUR-WAY - DOUBLE POLE, DOUBLE THROW TOGGLE SWITCH (WITH SWITCHLEG "D" INDICATED)
K	SINGLE POLE, SINGLE THROW KEY OPERATED TOGGLE SWITCH
3K	THREE-WAY - SINGLE POLE, DOUBLE THROW KEY OPERATED TOGGLE SWITCH
WP	SINGLE POLE, SINGLE THROW WEATHERPROOF TOGGLE SWITCH
OS	WALL MOUNTED, DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH
OR	WALL MOUNTED MANUAL OVERRIDE SWITCH
PIR	WALL MOUNTED PASSIVE INFRARED OCCUPANCY SENSOR SWITCH (AS NOTED)
OS	CEILING MOUNT, DUAL TECHNOLOGY OCCUPANCY SENSOR
PC	CEILING MOUNT, DAYLIGHT PHOTOCELL SENSOR

REFERENCE SYMBOLS

SYMBOL	DESCRIPTION
	CIRCUIT END EXTENSION
X	KEYED NOTE TAG, HEXAGON
X	DEMOLITION KEYED NOTE TAG, ROUND
1	ADDENDUM, ASI, ASR, PR TAG
XXX-XX	EQUIPMENT TAG
1 / E1.0	ENLARGED PLAN, DETAIL TAG
5 / E303	ELEVATION TAG
5 / E303	SECTION TAG

APPLICABLE CODES

NATIONAL FIRE PROTECTION ASSOCIATION:
- 2021 NFPA 1 - FIRE CODE
- 2023 NFPA 70 - NATIONAL ELECTRIC CODE
- 2024 NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN WORKPLACE

INTERNATIONAL CODE COUNCIL:
- 2021 INTERNATIONAL BUILDING CODE (IBC)
- 2021 INTERNATIONAL FIRE CODE (IFC)

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
A	AMPERE(S)
ABV	ABOVE
AC	ABOVE COUNTER
A/C	AIR CONDITIONING
AIC	AMPERE INTERRUPTING CAPACITY
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
ATS	AUTOMATIC TRANSFER SWITCH
BC	BELOW COUNTER
BFF	BELOW FINISHED FLOOR
BLDG	BUILDING
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
COND	CONDUCTOR
CPU	CENTRAL PROCESSING UNIT
CU	COPPER
DIA	DIAMETER
DIST	DISTRIBUTION
DN	DOWN
DWGS	DRAWINGS
EC	ELECTRICAL CONTRACTOR
EDF	ELECTRIC DRINKING FOUNTAIN
EF	EXHAUST FAN
EGC	EQUIPMENT GROUNDING CONDUCTOR
EMT	ELEC. METALLIC TUBING
EOR	ENGINEER OF RECORD
EQPT	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXH	EXHAUST
EXIST	EXISTING
EWH	ELECTRIC WATER HEATER
FAS	FIRE ALARM SYSTEM
FC	FOOT CANDLES
FCU	FAN COIL UNIT
FMC	FLEXIBLE METAL CONDUIT
FT	FEET, FOOT
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
HP	HORSE POWER
HOA	HAND OFF AUTOMATIC
HVAC	HEATING/VENTILATING/AIR CONDITIONING
HZ	HERTZ
IC	INTERCOM
ID	INSIDE DIAMETER
IMC	INTERMEDIATE STEEL CONDUIT
IN	INCHES
IG	ISOLATED GROUND
JB	JUNCTION BOX
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KVAC	KILOVOLT AMPERE CAPACITIVE
KVAR	KILOVOLT AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT HOUR
LED	LIGHT EMITTING DIODE
LB	POUND
LGT	LIGHTING
M	MANHOLE
MCB	MAIN CIRCUIT BREAKER
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MEP	MECHANICAL, ELECTRICAL & PLUMBING
MH	MOUNTING HEIGHT
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MTG	MOUNTING

ABBREVIATION	DESCRIPTION
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NF	NON FUSED
N.O.	NORMALLY OPEN
N.T.S.	NOT-TO-SCALE
N, NEMA	NEMA=NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
OC	ON CENTER
OCP	OVER CURRENT PROTECTIVE DEVICE
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OH	OVERHEAD
P	POLE
PB	PUSH BUTTON
PNL	PANELBOARD
PSI	POUNDS PER SQUARE INCH
PVC	POLY VINYL CHLORIDE CONDUIT
PWR	POWER
RGS	RIGID GALVANIZED STEEL CONDUIT
RMC	RIGID METAL CONDUIT
SC	SPLIT CIRCUIT
SN	SOLID NEUTRAL
SF	SQUARE FEET,FOOT
SPD	SURGE PROTECTIVE DEVICE
SQ	SQUARE
SW	SWITCH
SWBD	SWITCHBOARD
TELE	TELEPHONE
TSTAT	THERMOSTAT
TV	TELEVISION
TYP.	TYPICAL
UH	UNIT HEATER
UEP	UNDERGROUND ELECTRIC PRIMARY
UES	UNDERGROUND ELECTRIC SECONDARY
UEB	UNDERGROUND ELECTRIC BRANCH CIRCUIT
U.N.O.	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTED POWER SYSTEM
V	VOLT(S)
W	WIRE
WP	WEATHERPROOF
XFMR	TRANSFORMER
XPD	TRANSPONDER
Z	IMPEDANCE
1P	ONE POLE
2P	TWO POLE
3P	THREE POLE
Ø	PHASE

LIGHTING GENERAL NOTES

A. PROVIDE UNSWITCHED CONDUCTORS IN CIRCUITS SERVING BATTERY POWERED EGRESS LIGHTS AND EXIT SIGNS.

B. ELECTRICAL DRAWINGS INDICATE GENERAL LOCATIONS OF LIGHTING FIXTURES REFER TO ARCHITECTURAL DRAWINGS FOR COORDINATION, LOCATIONS, AND HEIGHT. IF THERE IS A DIFFERENCE IN QUANTITY OF FIXTURES SHOWN ON THE ARCHITECTURAL AND ELECTRICAL DRAWINGS, HE SHALL USE THE GREATER QUANTITY FOR BIDDING AND CONTACT THE DESIGN TEAM FOR FINAL RESOLUTION.

C. COORDINATE LIGHTING FIXTURE LOCATIONS IN MECHANICAL AND TELECOMMUNICATION EQUIPMENT ROOMS BASED ON ACTUAL EQUIPMENT LAYOUT. REVIEW LAYOUT WITH MECHANICAL AND LOW VOLTAGE CABLING CONTRACTORS PRIOR TO ROUGH-IN.

D. PROVIDE LIGHTING CONTROL SYSTEM WITH ALL NECESSARY ACCESSORIES FOR A COMPLETE INSTALLATION.

E. REFERENCE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL FIXTURE INFORMATION.

F. PROVIDE A RELAY FOR STANDBY POWER CONNECTION OF LOCALLY CONTROLLED EGRESS LIGHTS WITHIN DOORS.

GENERAL NOTES

A. CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS AND REVIEW ALL RELATED DRAWINGS AND SPECIFICATIONS PRIOR TO BID.

B. THE DRAWINGS ARE DIAGRAMMATIC. CONTRACTOR SHALL VERIFY FIELD CONDITIONS AND DETERMINE CONDUIT ROUTING AND EXACT LOCATIONS OF EQUIPMENT AND DEVICES. NOTIFY THE ARCHITECT/ENGINEER IF THE APPROXIMATE CONDUIT ROUTING SHOWN ON PLANS IS NOT FEASIBLE. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY CONFLICTS PRIOR TO ROUGH-IN.

C. LOCATIONS OF DEVICES ARE DIAGRAMMATIC. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY CONFLICTS PRIOR TO ROUGH-IN.

D. PROVIDE LISTED FIRE-STOP AND CAULKING TO MAINTAIN INTEGRITY OF RATED WALLS AT ALL RACEWAY AND CABLE TRAY PENETRATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF RATED WALLS.

E. CONTRACTOR SHALL GROUND CABLE TRAY TO BUILDING GROUNDING SYSTEM. EACH SECTION OF THE CABLE TRAY SHALL BE BONDED TOGETHER WITH A GROUNDING JUMPER. CONDUIT TERMINATING AT THE CABLE TRAY SHALL BE BONDED AT THAT LOCATION. REFER TO SPECIAL SYSTEMS DRAWINGS FOR CABLE TRAY LOCATIONS.

F. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE CURRENT ISSUE OF THE NATIONAL ELECTRIC CODE AND ALL APPLICABLE LOCAL CODES. ALL WORK SHALL MATCH THE EXISTING BUILDING'S ELECTRICAL INSTALLATION. ALL SYSTEMS SHALL BE INSTALLED IN A WORKMANLIKE MANNER IN ACCORDANCE WITH APPLICABLE STANDARDS AND SPECIFICATIONS APPROVED BY ALL AUTHORITIES HAVING JURISDICTION.

G. PROVIDE A TYPED PANEL DIRECTORY FOR EACH NEW OR MODIFIED ELECTRICAL PANEL. DIRECTORY SHALL IDENTIFY THE CIRCUIT NUMBER, DEVICES SERVED, AND LOCATION OF DEVICES BY ROOM NUMBER. FILE COPY OF DIRECTORIES WITH THE OWNER'S REPRESENTATIVE WHEN WORK IS COMPLETED, AND PROVIDE COPIES WITH THE OWNER'S MANUALS.

H. INDICATED SPARE AND/OR SPACES IN ALL EQUIPMENT ON THE ELECTRICAL ONE-LINE DIAGRAM AND IN THE PANEL SCHEDULES ARE THE MINIMUM NUMBER REQUIRED FOR THIS PROJECT.

I. PROVIDE 3-1/2" HIGH CONCRETE HOUSEKEEPING PADS, EXTENDING 3" MIN. BEYOND ENCLOSURE DIMENSIONS FOR SWITCHBOARDS, MOTOR CONTROL CENTERS, TRANSFORMERS AND FLOOR-MOUNTED PANELS/PANELBOARDS.

J. ALL CONNECTIONS TO MOTORS, OR OTHER DEVICES SUBJECT TO VIBRATION SHALL BE MADE USING A MINIMUM OF 12" LENGTH OF LIQUID TIGHT FLEXIBLE METALLIC CONDUIT. PROVIDE CONTINUOUS SEPARATE GROUND WIRE THROUGH ALL FLEXIBLE METALLIC CONDUIT CONNECTIONS.

K. IDENTIFY PANEL AND CIRCUIT NUMBER FOR ALL INSTALLED ELECTRICAL DEVICES ON THE OUTSIDE OF THE JUNCTION BOX.

L. ALL FUSES/CIRCUIT BREAKERS IN PANELS, DISCONNECT SWITCHES, MOTOR STARTERS, ETC., SERVING MOTORS AND EQUIPMENT SHALL BE SIZED AS RECOMMENDED BY THE MANUFACTURER OF THE PARTICULAR LOAD DEVICE SERVED. COORDINATE WITH OTHER TRADES AS REQUIRED.

POWER GENERAL NOTES

A. REFERENCE EQUIPMENT CONNECTION SCHEDULE FOR REQUIREMENTS AND ADDITIONAL INFORMATION OF TAGGED EQUIPMENT SHOWN ON PLAN.

B. COORDINATE ALL RECEPTACLE LOCATIONS AND HEIGHTS WITH ARCHITECTURAL INTERIOR ELEVATIONS.

C. RECEPTACLES LOCATED WITHIN 6' OF ANY PLUMBING FIXTURE, AT BREAK ROOM COUNTERTOPS, WITHIN 6' OF EXTERIOR DOORS, AT THE EXTERIOR, OR OTHERWISE EXPOSED TO WATER SHALL BE TYPE GFCI. PROVIDE "WHILE IN-USE", NEMA 3R, NON METALLIC COVERS FOR EXTERIOR RECEPTACLES EQUAL TO HUBBELL TAYMAC #ML45G.

D. ALL RECEPTACLES SHALL BE COMMERCIAL SPECIFICATION GRADE UNLESS NOTED OTHERWISE.

E. PROVIDE 120V CIRCUIT TO ALL FIRE/SMOKE DAMPERS. CONNECT NO MORE THAN FOUR(4) DAMPERS TO NEAREST 120V PANEL. DAMPERS ON DIFFERENT FLOORS SHALL NOT BE CONNECTED TOGETHER. DAMPER CONTROL SHALL BE COORDINATED WITH MECHANICAL CONTRACTOR. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS AND QUANTITIES OF ALL FIRE/SMOKE DAMPERS.

F. PROVIDE 120V POWER FOR DOOR OPERATORS, MAG LOCKS, ELECTRIC STRIKES AND EMERGENCY PANIC DOORS WHERE REQUIRED. COORDINATE REQUIREMENTS, EXACT LOCATIONS, QUANTITIES AND ROUGH-IN REQUIREMENTS WITH ARCHITECTURAL AND SECURITY DRAWINGS.

G. PROVIDE 120V POWER TO EACH HVAC DDC CONTROL PANEL. COORDINATE EXACT LOCATIONS AND QUANTITIES WITH MECHANICAL DRAWINGS.

H. COORDINATE DISCONNECT SWITCHES, VFDS AND MOTOR STARTER LOCATIONS WITH EQUIPMENT INSTALLERS TO MAINTAIN PROPER MAINTENANCE AND CODE CLEARANCES.

I. LOCATIONS OF ELECTRICAL EQUIPMENT AND DEVICES ARE DIAGRAMMATIC. EXACT LOCATIONS SHALL BE COORDINATED WITH OTHER DISCIPLINES AND DETERMINED IN THE FIELD. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY CONFLICTS PRIOR TO ROUGH-IN.

J. RECEPTACLES ARE INTENDED AND SHALL BE INSTALLED ADJACENT TO EACH WALL MOUNTED DATA OUTLET, WITH THE RESPECTIVE BOXES SPACES 10-12" ON CENTER TO BE CONSIDERED AS ADJACENT. CONTRACTOR SHALL REVIEW IT AND ELECTRICAL DRAWINGS TO CONFIRM THAT THE DIAGRAMMATIC SYMBOLS INDICATE AN ELECTRICAL OUTLET ADJACENT TO EACH DATA OUTLET AS INTENDED. IF UPON SUCH REVIEW, THE CONTRACTOR NOTES ANY DISCREPANCIES BETWEEN THE IT AND ELECTRICAL DRAWINGS, THEN THEY SHALL PREPARE A SINGLE RFI LISTING FOR EACH INSTANCE, THE ASSOCIATED ROOM NUMBER FOR RESOLUTION BY THE DESIGN TEAM. FAILURE OF THE CONTRACTOR TO REQUEST CLARIFICATION OF SUCH DISCREPANCIES WILL RESULT IN THE CONTRACTOR BEING REQUIRED TO MOVE RECEPTACLE OR DATA OUTLET LOCATIONS TO MEET THE STATED CRITERIA AT THEIR EXPENSE, REGARDLESS OF THE PHASE OF CONSTRUCTION.

K. CONTRACTOR SHALL SUBMIT FULLY COORDINATED SHOP DRAWINGS SHOWING ALL ELECTRICAL EQUIPMENT AND DEVICES FOR REVIEW BY THE DESIGN TEAM PRIOR TO ROUGH-IN. CONTRACTOR SHALL INCLUDE ALL PROPOSED EQUIPMENT LOCATIONS IN DRAWINGS. THIS INCLUDES ALL MAJOR EQUIPMENT ROOMS.

L. MC CABLE MAY BE USED IN BRANCH CIRCUITS FROM LAST JUNCTION BOX TO LOAD SERVED, EXCEPT IN LABS AND KITCHENS, WHERE ALL CIRCUITING SHALL BE IN CONDUITS. MC CABLE IS NOT ALLOWABLE FOR HORIZONTAL FEEDERS OF BRANCH CIRCUITING AHEAD OF THE LAST JUNCTION BOX. MC CABLE SHALL BE UL-LISTED FOR 600-VOLTS.

M. PROVIDE 120V POWER TO RESTROOMS WITH PLUMBING SENSORS FOR AUTOMATIC LAVATORY, WATER CLOSET, URINALS AND SINK CONTROLS AS NEEDED. COORDINATE EXACT LOCATIONS, QUANTITIES AND ROUGH-IN REQUIREMENTS WITH ARCHITECTURAL AND PLUMBING DRAWINGS.

N. PROVIDE 120V POWER TO MOTORIZED DAMPERS, AND MOTORIZED VALVES, INCLUDING OTHER HVAC ACCESSORIES NEEDING POWER SUPPLY. CONNECT TO A 120V RECEPTACLE CIRCUIT NEAREST TO THE HVAC DAMPERS, VALVE OR ACCESSORY. THE CONTRACTOR SHALL NOT EXCEED THE BRANCH CIRCUIT RATING OF 1200 VA PER CIRCUIT WHEN CONNECTING TO THE NEAREST 20A BRANCH CIRCUIT. THE CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL DRAWINGS AND FIELD VERIFY THE LOCATIONS WITH THE INSTALLER BEFORE BEGINNING ANY INSTALLATION.

O. PROVIDE POWER TO EXTERNAL CONDENSATE PUMPS FOR MINI-SPLIT AND F/C UNITS. COORDINATE WITH MECHANICAL INSTALLER.

P. PROVIDE 120V POWER SUPPLY TO LINE VOLTAGE THERMOSTATS AS REQUIRED. COORDINATE EXACT LOCATIONS, QUANTITIES AND ROUGH-IN REQUIREMENTS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.

Q. PROVIDE HEAT TRACE CIRCUIT WITH GFP PROTECTION AND SUPERVISION FOR FIRE PROTECTION SYSTEM PER NFPA 13.

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

CNG ENGINEERING
8350 BROADWAY STREET TBPE FIRM # F-7764
SAN ANTONIO, TEXAS 78229
T 210.226.8661 | www.cngengineering.com

STATE OF TEXAS
TRAVIS E. WILTSHIRE
85219
LICENSED
PROFESSIONAL ENGINEER
11/04/25

District 3 Aquatics Facility
San Antonio, TX

ISSUE DATE 10/30/2025

REVISION

PROJECT NUMBER 23010
DRAWN BY
CHECKED BY
SCALE

SHEET TITLE
ELECTRICAL SYMBOLS AND ABBREVIATIONS

SHEET NUMBER
E0.0

CITY OF SAN ANTONIO - MILITARY OVERLAY DISTRICT COMPLIANCE STATEMENT		
PROJECT:	CoSA - D3 Aquatics Facility	The Projects consisits of a recreational aquatics center, with a storage/office building, and new exterior lighting.
PROJECT NO:	240039	
PROJECT TYPE:	New Construction	
TYPES OF BUILDINGS:	Business/Storage	
GROSS SQ. FT.:	~1600	
Compliance Statement	The project site at Missions Plaza, San Antonio, Texas 78214. The Park is not located within the Military Lighting Overlay District. This was confirmed with the One Stop Map for the City Of San Antonio listed here for reference: https://gis.sanantonio.gov/DSD/ONESTOP/INDEX.HTML.	

CITY OF SAN ANTONIO -AIRPORT HAZARD OVERLAY DISTRICT COMPLIANCE STATEMENT		
PROJECT:	CoSA - D3 Aquatics Facility	The Projects consisits of a recreational aquatics center, with a storage/office building, and new exterior lighting.
PROJECT NO:	240039	
PROJECT TYPE:	New Construction	
TYPES OF BUILDINGS:	Business/Storage	
GROSS SQ. FT.:	~1600	
Compliance Statement	Persuant to the San Antonio Unified Development Code Article lll, Zoning and Division 4, in Section 35-331 - Airport Hazard Overlay District:	
	The project site at Missions Plaza, San Antonio, Texas 78214. The Park is located within the Airport Hazard Overlay District. This was confirmed with the One Stop Map for the City Of San Antonio listed here for reference: https://gis.sanantonio.gov/DSD/ONESTOP/INDEX.HTML. The exterior lighting will be required to be in compliance with the Airport Hazard Overlay District's requirements for exterior full cut-off and fully shielded lighting fixtures. The exterior lighting shall be in compliance with San Antonio Chapter 10 and Unified Development Code Section 35-392. The Project electrical drawings shall be submitted to the City of San Antonio Airport Zoning Administrator, Mr. Antonio Augiliar and FAA for a reivew of the Proposed Exterior pedestrian walkway, tree lighting and under bridge lighting. FAA final review will determine that all lighting compliance issues if requried are satsified. This information is submitted for CoSA Permit Plan Review process.	

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

CNG ENGINEERING

TRAVIS E. WILTSHIRE
85219
LICENSED PROFESSIONAL ENGINEER
11/04/25

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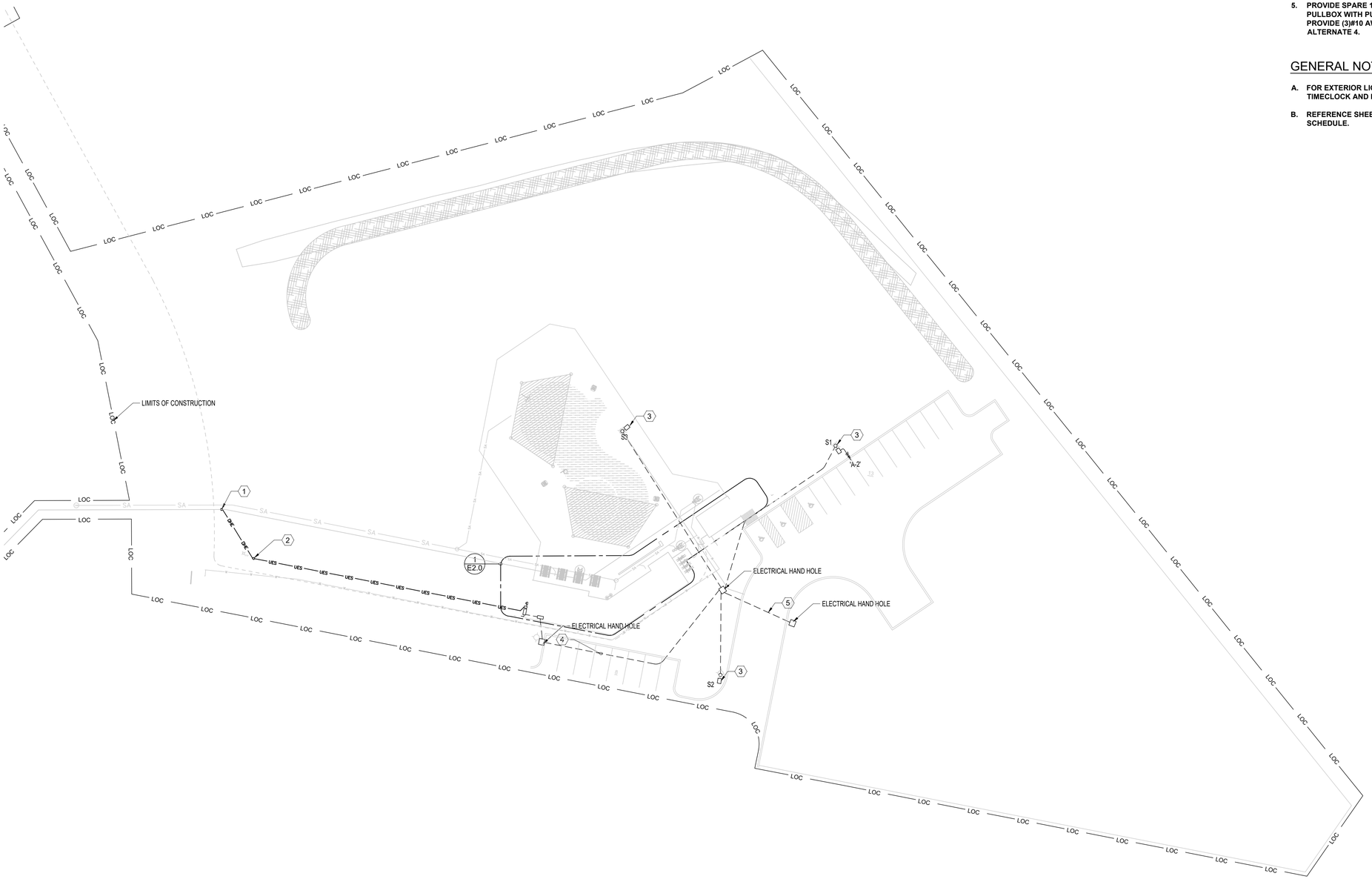
SHEET TITLE
ELECTRICAL CODE COMPLIANCE

SHEET NUMBER
E0.1



N

1 ELECTRICAL SITE PLAN - POWER & LIGHTING

SCALE: 1" = 30'

0 15' 30' 60'

1" = 30' SCALE

KEYED NOTES: (THIS SHEET ONLY)

1. NEW CPS ENERGY IN-LINE POLE PROVIDED AND INSTALLED BY CPSE.
2. NEW CPSE TRANSFORMER RISER POLE PROVIDED AND INSTALLED BY CPSE.
3. INSTALL LIGHTS AND WIRE/CONDUIT FROM ADJACENT PULL BOX, IF ALTERNATE 4 IS ACCEPTED.
4. PROVIDE (3)#10 AWG, #10 GND IN ONE (1) 1" PVC SCH. 40 CONDUIT. PROVIDE ADDITIONAL (3) #10 AWG, #10 GND IN 1" PVC SCH. 40 CONDUITS WITH PULL-STRING FOR LIGHT FIXTURES AS INCLUDED IN ALTERNATE 4.
5. PROVIDE SPARE 1" PVC SCH. 40 CONDUIT TO IN-GRADE PULLBOX WITH PULL-STRING INCLUDED AS ALTERNATE 4. PROVIDE (3)#10 AWG, AND #10 GND INCLUDED AS ALTERNATE 4.

GENERAL NOTES: (THIS SHEET ONLY)

A. FOR EXTERIOR LIGHTING CONTROLS; INCLUDING TIMECLOCK AND PHOTOCELL, REFERENCE SHEET E5.0 .

B. REFERENCE SHEET E5.0 FOR LIGHTING FIXTURE SCHEDULE.

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

CNG ENGINEERING
CNG ENGINEERING
8350 BROADWAY STREET TBPE FIRM # F-7946
SAN ANTONIO, TEXAS 78229
T 210.226.8661 | www.cngengineering.com

STATE OF TEXAS
TRAVIS E. WILTSHIRE
85219
LICENSED PROFESSIONAL ENGINEER
11/04/25

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San Antonio, TX

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SCALE	1" = 30'- 0"

SHEET TITLE
ELECTRICAL SITE PLAN - POWER & LIGHTING

SHEET NUMBER
E1.0

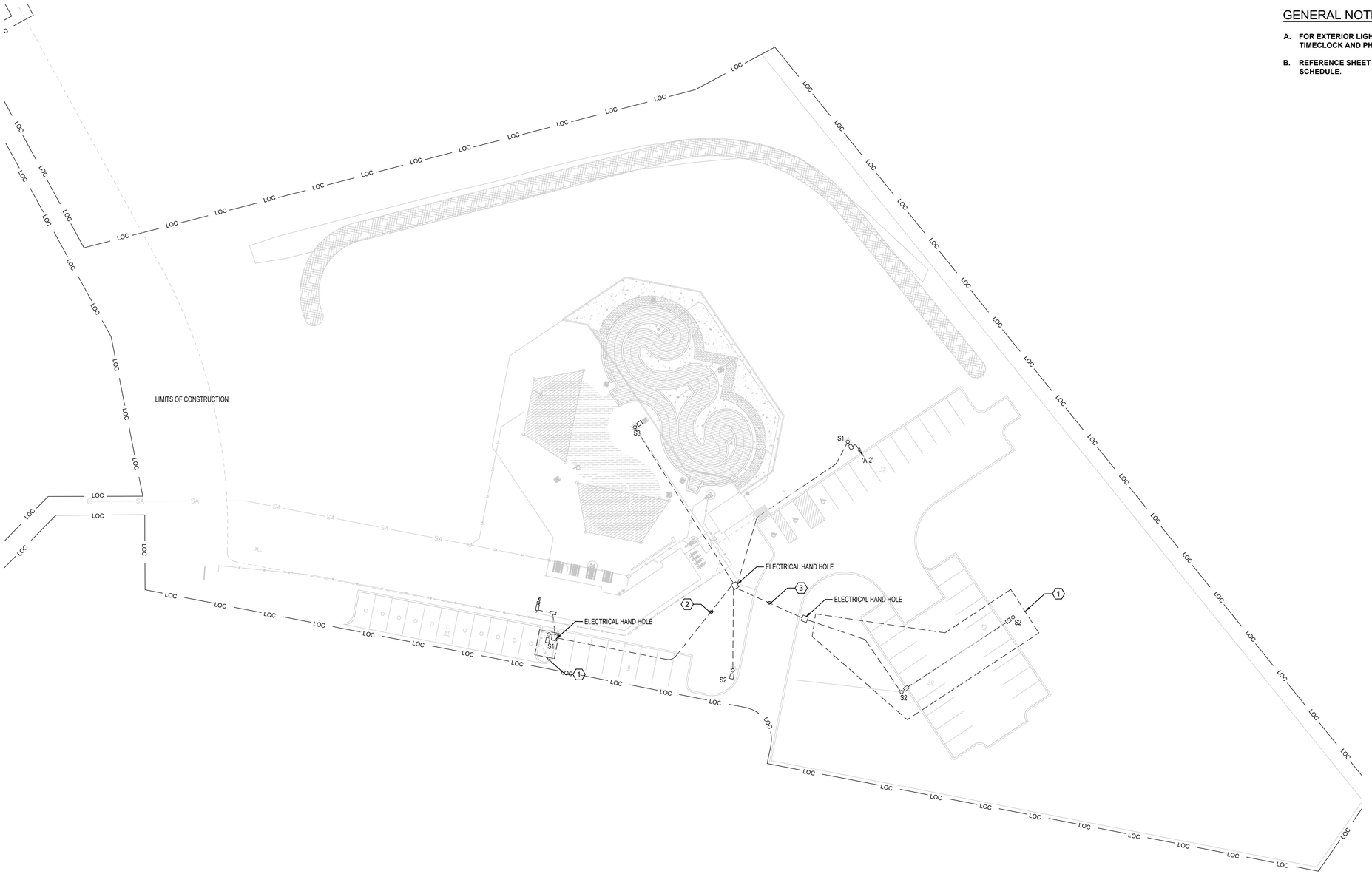
KEYED NOTES: (THIS SHEET ONLY)

1. **LIGHTS SHALL BID AS ALTERNATE 4. INSTALL LIGHTS AND WIRE/CONDUIT FROM ADJACENT PULL BOX, IF ALTERNATE #4 IS ACCEPTED.**
2. **PROVIDE (3)#10 AWG, #10 GND IN ONE (1) 1" PVC SCH. 40 CONDUIT. PROVIDE ADDITIONAL (3) #10 AWG, #10 GND IN 1" PVC SCH. 40 CONDUITS WITH PULL-STRING FOR LIGHT FIXTURES AS INCLUDED IN ALTERNATE 4.**
3. **PROVIDE (3)#10 AWG, AND #10 GND INCLUDED AS ALTERNATE #4.**

GENERAL NOTES: (THIS SHEET ONLY)

A. **FOR EXTERIOR LIGHTING CONTROLS; INCLUDING TIMECLOCK AND PHOTOCELL, REFERENCE SHEET E4.0 .**

B. **REFERENCE SHEET E4.0 FOR LIGHTING FIXTURE SCHEDULE.**



1 ELECTRICAL SITE PLAN - POWER & LIGHTING - ALTERNATE #4
SCALE: 1" = 30'

0 15' 30' 60'
1" = 30' SCALE

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

CNG ENGINEERING
CNG ENGINEERING
8350 BROADWAY STREET SAN ANTONIO, TEXAS 78209
T 210.226.8661 | www.cngengineering.com
TBPE FIRM # F-7966

STATE OF TEXAS
TRAVIS E. WILTSHIRE
85219
LICENSED PROFESSIONAL ENGINEER
11/04/25

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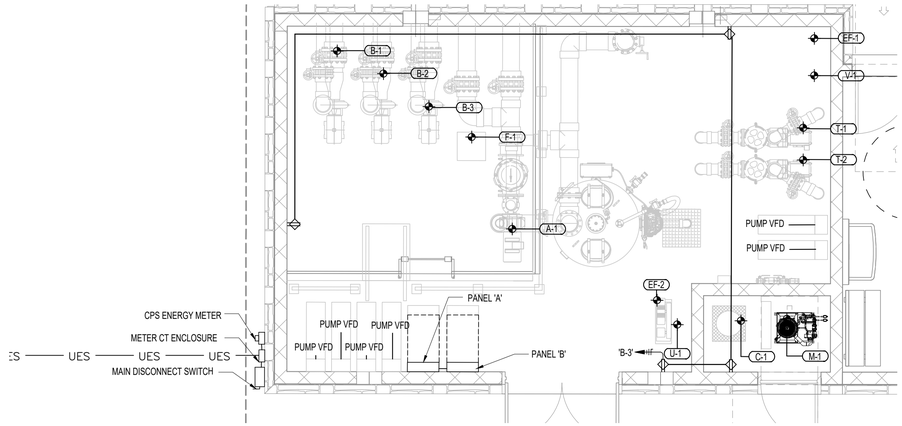
SCALE	1" = 30'- 0"

SHEET TITLE
ELECTRICAL SITE PLAN - POWER & LIGHTING ALTERNATE #4

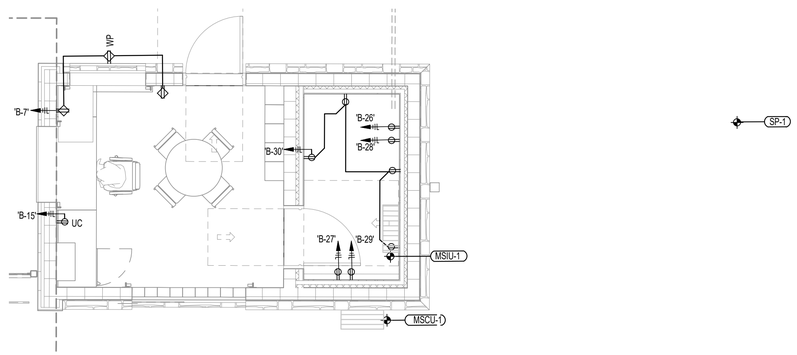
SHEET NUMBER
E1.1

KEYED NOTES

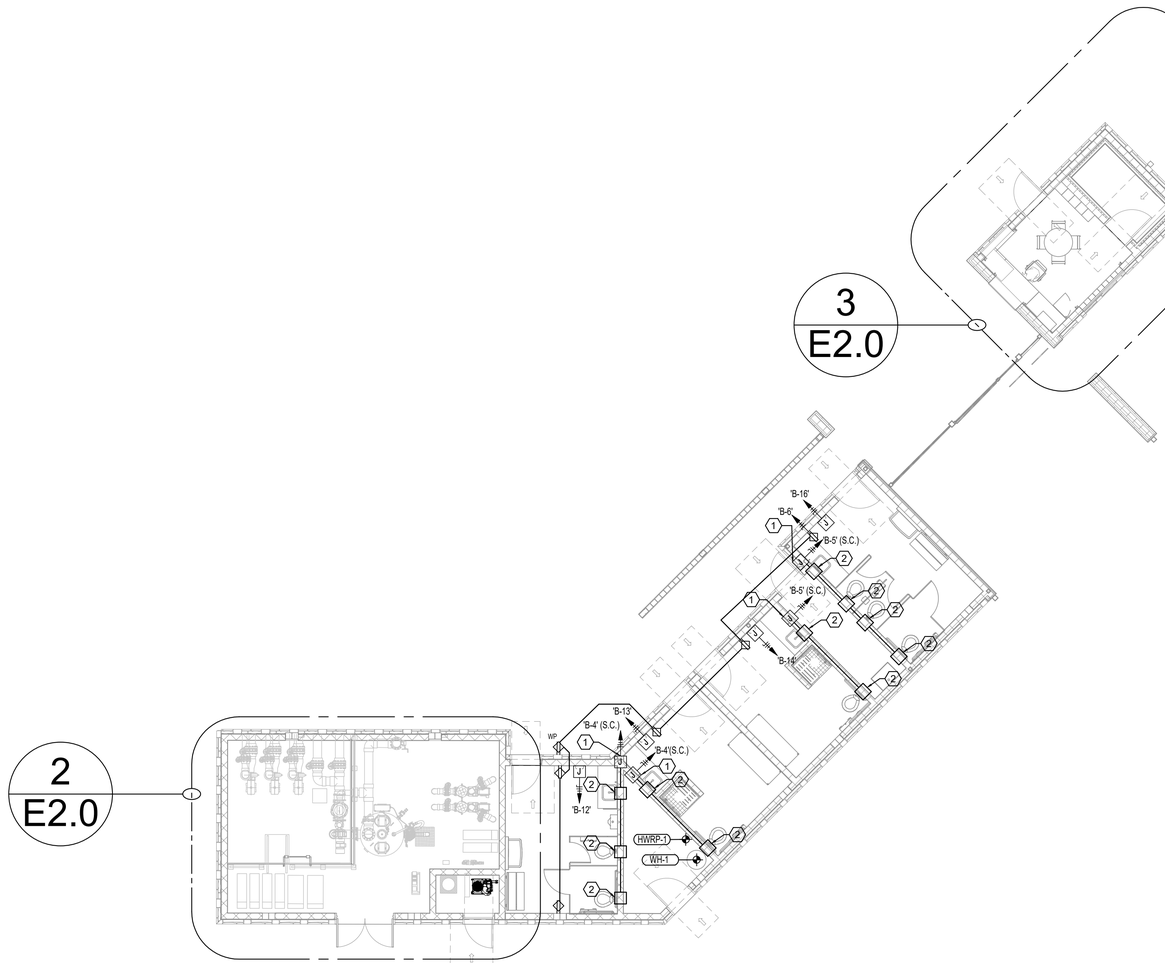
1. PROVIDE 120V CONNECTION TO LOW VOLTAGE TRANSFORMERS. EACH TRANSFORMER TO SERVE A MAXIMUM OF THREE WATER CLOSET, URINAL AND/OR LAVATORY VALVES. NO MORE THAN FOUR TRANSFORMERS ON A SINGLE CIRCUIT. REFER TO PLUMBING SCHEDULE FOR MORE INFORMATION.
2. CONTRACTOR TO INSTALL TRANSFORMER IN A 2-GANG ELECTRICAL BOX, 4" X 4" X 2-1/2". IN A CONVENIENT LOCATION WITHIN 25' OF WATER CLOSET, LAVATORY OR URINAL. [I.E. A CHASE OR DIRECTLY ABOVE THE CIELING] COORDINATE EXACT LOCATION WITH OTHER DISCIPLINES.



2 ELECTRICAL ENLARGED PLAN - WEST BUILDING POWER
SCALE: 1/4" = 1'-0"



3 ELECTRICAL ENLARGED PLAN - IT ROOM AND OFFICE POWER
SCALE: 1/4" = 1'-0"



1 ELECTRICAL ENLARGED PLAN - WEST BUILDING POWER
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
1/8" = 1'-0" SCALE

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

CNG ENGINEERING
CNG ENGINEERING
8350 BROADWAY STREET
SAN ANTONIO, TEXAS 78209
T 210.226.8611 www.cngengineering.com
TBPE FIRM # F-7946

STATE OF TEXAS
TRAVIS E. WILTSHIRE
85219
LICENSED
PROFESSIONAL ENGINEER
11/04/25

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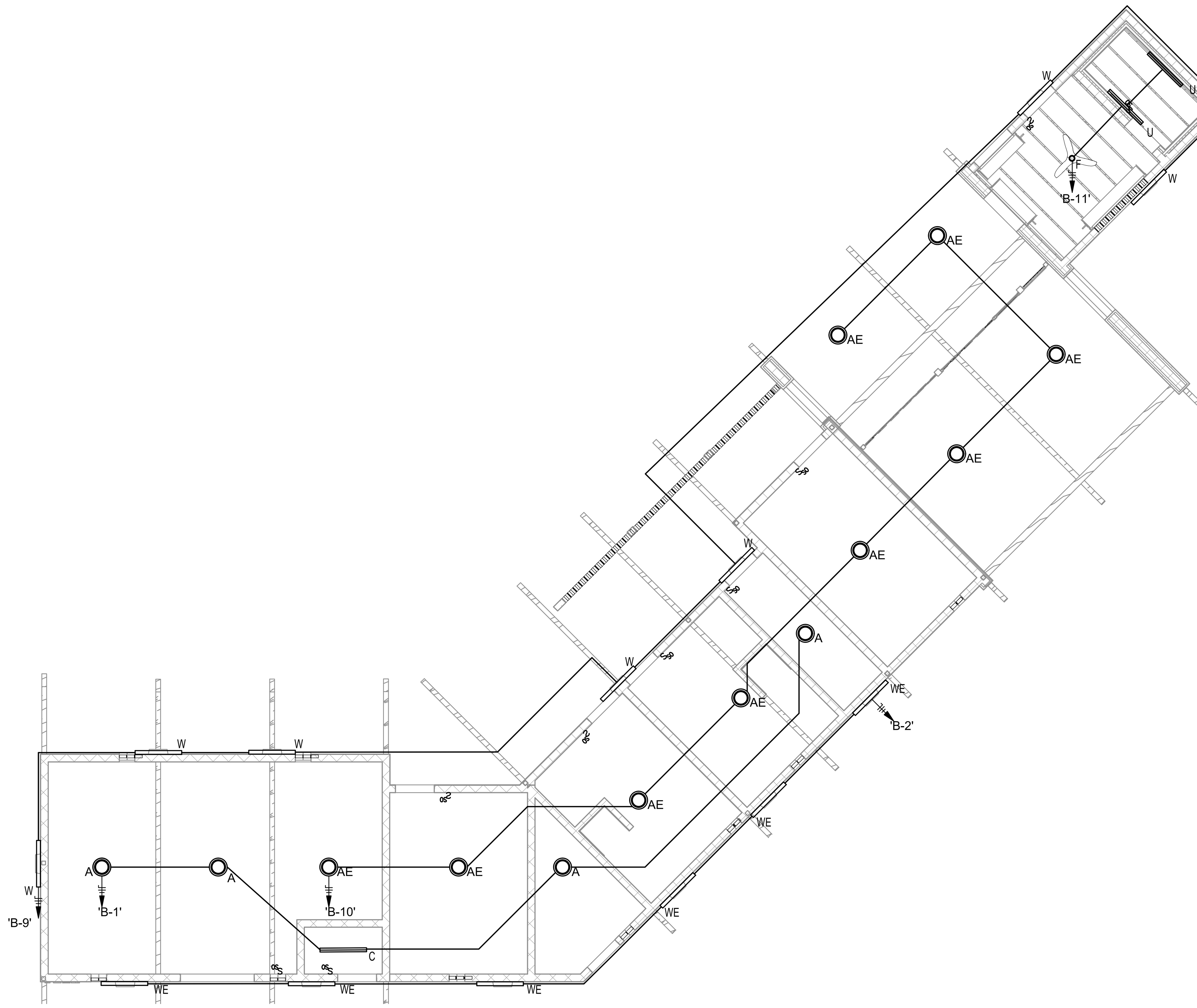
SCALE	1/8" = 1'- 0"

SHEET TITLE
ELECTRICAL ENLARGED POWER PLANS

SHEET NUMBER
E2.0



ELECTRICAL ENLARGED PLAN - WEST BUILDING LIGHTING

2

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

0 4' 8' 16'

1/8" = 1'-0" SCALE

RIALTO STUDIO

Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

CNG ENGINEERING
MEP DESIGN | PLANNING | COMMISSIONING
8302 BROADWAY STREET TBPE FIRM # F-7964
SAN ANTONIO, TEXAS 78209
T 210.224.8841 | www.cngengineering.com

STATE OF TEXAS
TRAVIS E. WILTSHIRE
85219
LICENSED
PROFESSIONAL ENGINEER
11/04/25

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SCALE	1/8" = 1'- 0"

SHEET TITLE

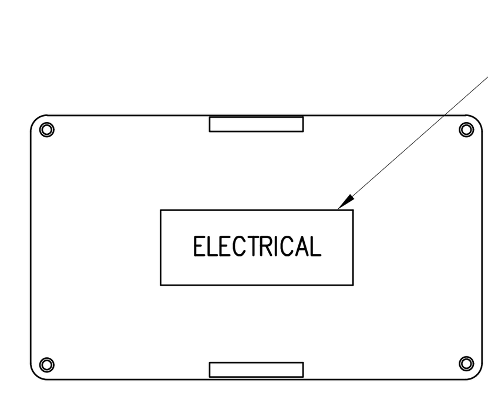
ELECTRICAL ENLARGED LIGHTING PLANS

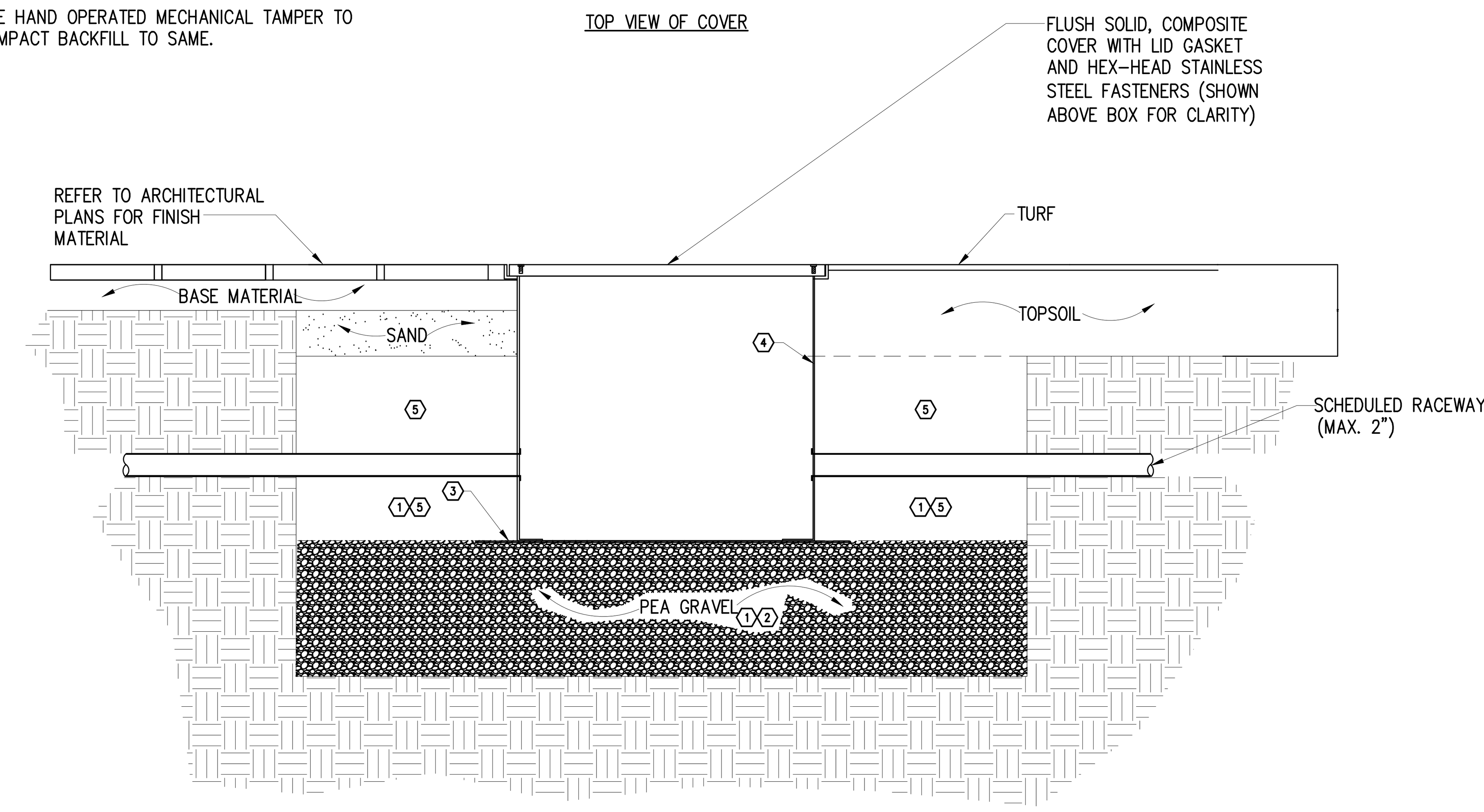
SHEET NUMBER

E2.1

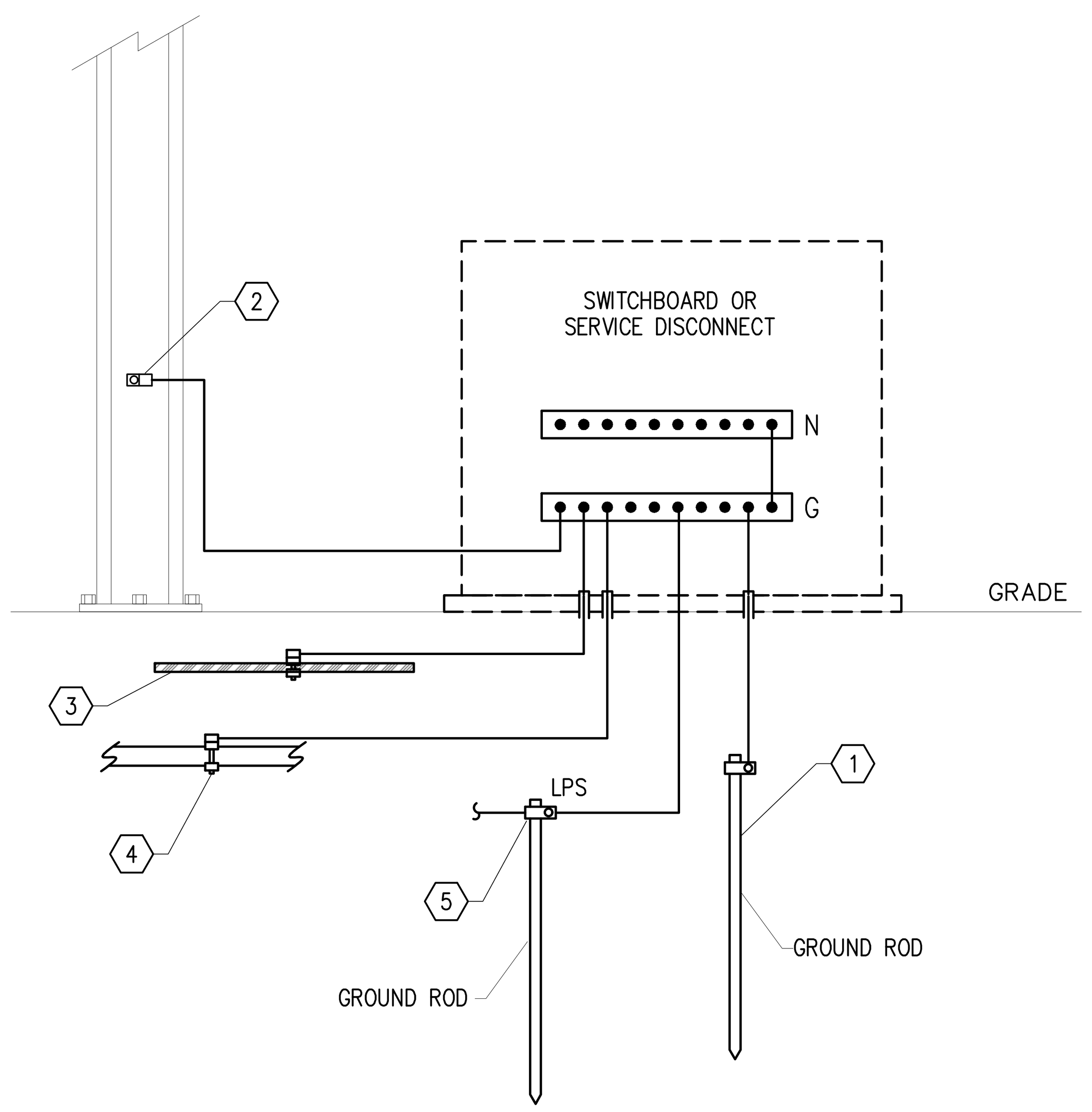
KEYED NOTES:

1. OVER EXCAVATE 18" ALL AROUND ENCLOSURE AND 12" ADDITIONAL DEPTH.
2. PLACE 1/2" CRUSHED STONE OR PEA GRAVEL AT BASE OF EXCAVATED HOLE.
3. PLACE 1/2" SQUARE GALVANIZED HARDWARE CLOTH BELOW PULLBOX, 6" LARGER IN EACH DIMENSION.
4. INSTALL PULLBOX PER MANUFACTURER'S WRITTEN DIRECTIONS.
5. USE HAND OPERATED MECHANICAL TAMPER TO COMPACT BACKFILL TO SAME.





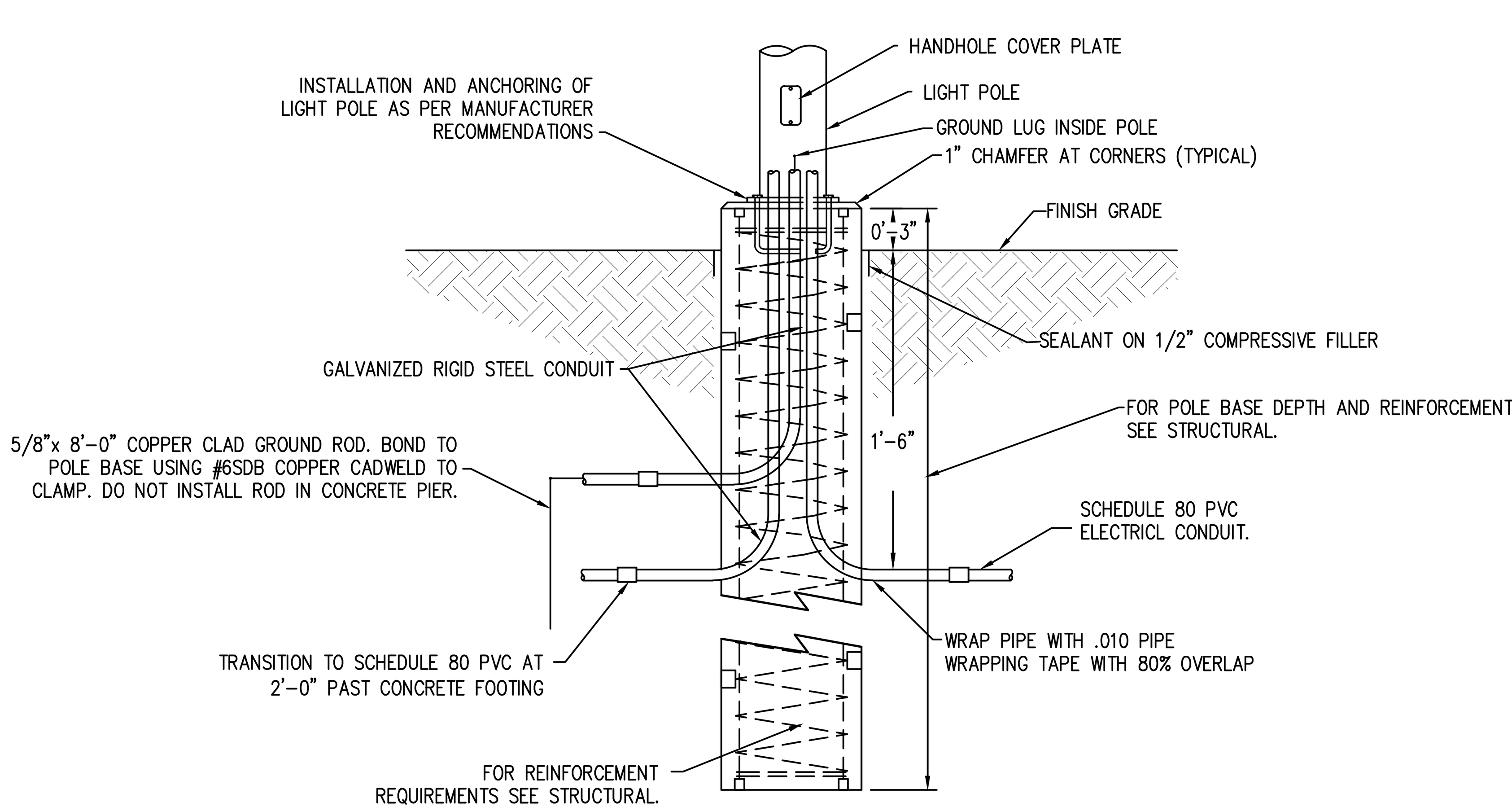
1 MEDIUM DUTY PULL BOX DETAIL
SCALE:N.T.S



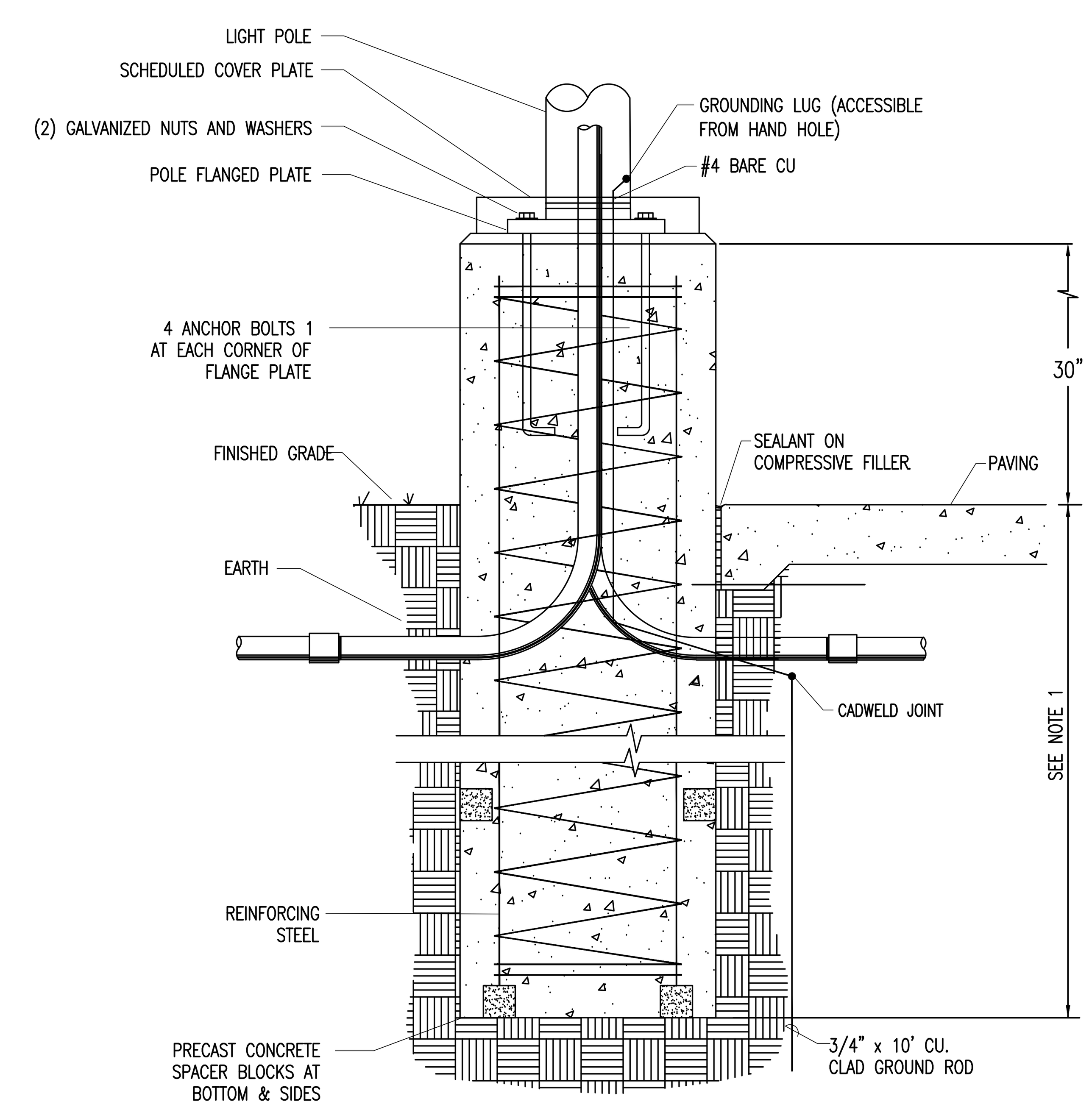
KEYED NOTES: (THIS DETAIL ONLY)

1. #3/0 COPPER CROUNDING ELECTRODE IN 1" PVC TO EXOTHERMIC CONNECTION AT 3/4" x 10' COPPER CLAD STEEL GROUND ROD OUTSIDE BUILDING AT IRRIGATED AREA.
2. #3/0 COPPER GROUNDING ELECTRODE TO EXOTHERMIC CONNECTION AT BUILDING STEEL. PROVIDE CONDUIT PROTECTION FOR SECTION BELOW 8' AFF.
3. #3/0 COPPER GROUNDING ELECTRODE TO EXOTHERMIC CONNECTION AT CONCRETE ENCASED ELECTRODE. CONNECTION SHALL OCCUR AT LOWEST HORIZONTAL STEEL WITHIN GRADE BEAM OR AT VERTICAL REINFORCING STEEL BELOW FINISHED GRADE. PROVIDE 1" PVC CONDUIT SLEEVE FOR CONDUCTOR PROTECTION AT SLAB PENETRATION.
4. #3/0 COPPER GROUNDING ELECTRODE EXOTHERMIC CONNECTION AT BUILDING STEEL. PROVIDE METAL CONDUIT PROTECTION IN LOCATIONS BELOW 8' AFF.
5. #3/0 COPPER GROUNDING ELECTRODE TO EXOTHERMIC CONNECTION AT LIGHTNING PROTECTION SYSTEM ELECTRODE, IF APPLICABLE. PROVIDE 1" PVC CONDUIT SLEEVE FOR CONDUCTOR PROTECTION AT SLAB PENETRATION.

3 GROUNDING ELECTRODE SYSTEM DIAGRAM
SCALE:N.T.S



2 TYPICAL LANDSCAPE POLE LIGHT BASE DETAIL
SCALE:N.T.S



4 TYPICAL PARKING LOT LIGHTING BASE DETAIL
SCALE:N.T.S

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

CNG ENGINEERING
MEP DESIGN | PLANNING | COMMISSIONING
8302 BROADWAY STREET
SAN ANTONIO, TEXAS 78209
T 210.224.8841 | www.cngengineering.com
TBPE FIRM # F-7964

STATE OF TEXAS
TRAVIS E. WILTSHIRE
85219
LICENSED PROFESSIONAL ENGINEER
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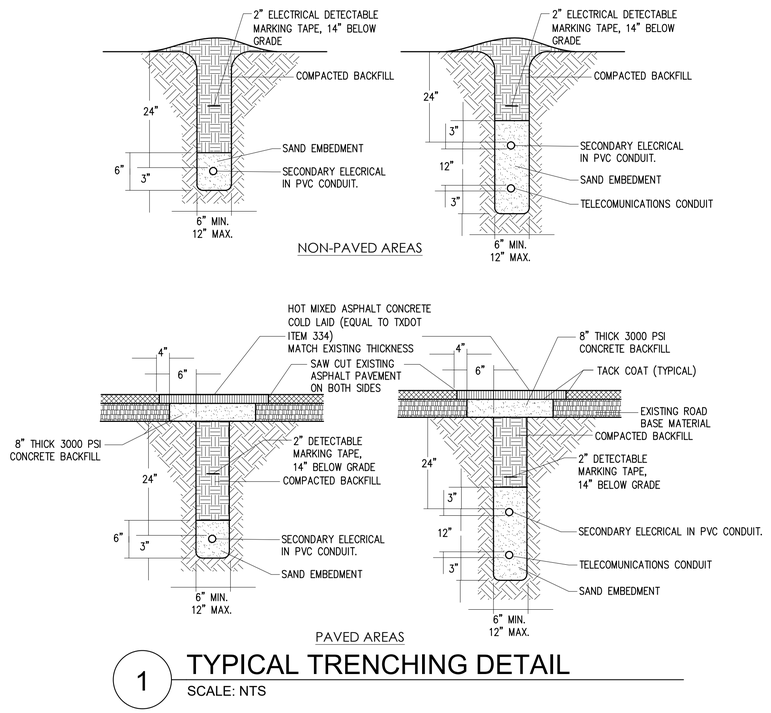
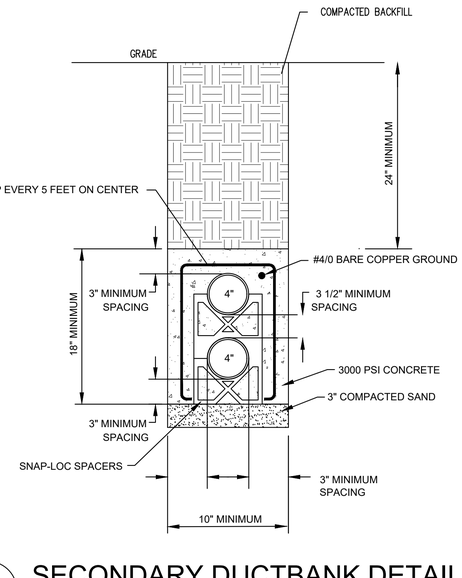
SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E3.0



1 TYPICAL TRENCHING DETAIL

SCALE: NTS



2 SECONDARY DUCTBANK DETAIL

SCALE: NTS

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

CNG ENGINEERING
8350 BROADWAY STREET TBPE FIRM # F-7946
SAN ANTONIO, TEXAS 78209
T 210.226.8661 | www.cngengineering.com

STATE OF TEXAS
TRAVIS E. WILTSHIRE
85219
LICENSED PROFESSIONAL ENGINEER
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SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E3.1

EQUIPMENT CONNECTION SCHEDULE

EQUIPMENT TAG	KW HEAT	VOLTAGE / PHASE	MOTOR (HP)	EQUIPMENT (FLA)	EQUIPMENT (MCA)	OCP	DISCONNECTING MEANS	ENCLOSURE NEMA RATING	WIRE & CONDUIT	PANEL	CIRCUIT NUMBER	NOTES
MINI SPLIT CONDENSING UNIT												
MSCU-1	-	208/1	-	7.5	9.4	20	MOTOR RATED SWITCH	N4X	20.2	PANEL A	6,8	8
MINI SPLIT INDOOR UNIT												
MSIU-1	-	208/1	-	0.00	0.00		MOTOR RATED SWITCH	N4X	20.2		-	8
ELECTRIC WATER HEATER												
EWH-1	12.30	208/3	-	34.00	42.50	50	MOTOR RATED SWITCH	N4X	50.3	PANEL A	7,9,11	
HOT WATER RECIRCULATION PUMP												
HWRP-1	-	120/1	1/16	0.40	0.50	20	240V, 30A, NF, HD	N4X	20.1	PANEL A	4	
POOL CIRCULATION PUMP												
A-1	-	208/3	25	74.8	93.5	125	VFD	N4X	125.3	PANEL A	13,15,17	2
MOTIVATION PUMP												
B-1	-	208/3	15	46.2	57.8	80	VFD	N4X	80.3	PANEL A	19,21,23	2
B-2	-	208/3	15	46.2	57.8	80	VFD	N4X	80.3	PANEL A	25,27,29	2
B-3	-	208/3	15	46.2	57.8	80	VFD	N4X	80.3	PANEL A	26,28,30	2
ACID TANK												
C-1	-	120/1	1/6	0.6	0.8	20	240V, 30A, NF, HD	N4X	20.1	PANEL B	25	
SANITIZATION PUMP												
M-1	-	208/1	1	8.8	11.0	20	240V, 30A, NF, HD	N4X	20.2	PANEL A	26,28	
EXHAUST FAN												
EF-1	-	208/1	3/4	7.1	8.9	20	240V, 30A, NF, HD	N4X	20.2	PANEL A	10,12	7
EF-2	-	208/1	1/3	3.5	4.4	20	240V, 30A, NF, HD	N4X	20.2	PANEL A	22,24	7
AIR COMPRESSOR												
U-1	-	208/3	5	16.7	20.9	25	240V, 30A, NF, HD	N4X	25.3	PANEL B	18,20,22	
(FUTURE) SLIDE PUMP												
T-1	-	208/3	15	46.2	57.8	80	FUTURE VFD	N4X	80.3	PANEL A	31,33,35	2
T-2	-	208/3	15	46.2	57.8	80	FUTURE VFD	N4X	80.3	PANEL A	37,39,41	2
SUB PUMP												
F-1	-	120/1	1/6	4.4	5.5	20	240V, 30A, NF, HD	N4X	20.1	PANEL B	24	
ELECTRONIC AUTO FILL CONTROLLER												
V-1	-	120/1	-	0.5	0.6	20	240V, 30A, NF, HD	N4X	20.1	PANEL B	19	
SUMP PUMP												
SP-1		120/1	1/2	9.8	12.3	20	240V, 30A, NF, HD	N4X	20.1	PANEL B	17	

1 5-Nov

NOTES:

1. STARTER PROVIDED BY DIVISION 15. INSTALL AND WIRE THROUGH DIVISION 16.
2. VFD PROVIDED BY OTHERS. INSTALL AND WIRE THROUGH DIVISION 16.
3. DISCONNECT SWITCH PROVIDED , INSTALLED, AND WIRED THROUGH DIVISION 16.
4. DUAL PUMP CONTROLLER PROVIDED BY DIVISION 15. INSTALL AND WIRE THROUGH DIVISION 16.
5. CONTROL PANEL PROVIDED BY DIVISION 15. INSTALL AND WIRE THROUGH DIVISION 16.
6. N/A
7. CONTROLS PROVIDED BY DIVISION 15. INSTALL AND WIRE THROUGH DIVISION 16.
8. PROVIDE POWER CONNECTION BETWEEN INDOOR AND OUTDOOR UNIT PER MECHANICAL DRAWINGS/EQUIPMENT CONNECTION SCHEDULE
9. INSTALL SMOKE DETECTORS AS REQUIRED BY MECHANICAL. COORDINATE CONTROLS WITH FIRE ALARM FOR FUNCTIONALITY.

GENERAL NOTES:

1. VERIFY ELECTRICAL REQUIREMENTS WITH MECHANICAL / PLUMBING EQUIPMENT SUBMITTALS PRIOR TO ELECTRICAL ROUGH-IN.

WIRE SCHEDULE (CU.)

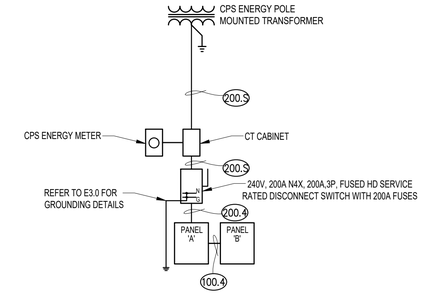
(100.4) 4#1, #8 GND, IN 1-1/4"C.

(200.4) 4#3/0, #6 GND, IN 2"C.

(200.3) 4#3/0, IN 2"C, WITH SPARE 2" CONDUIT.

NOTES:

1. PANEL FEEDERS SHALL BE INCREASED IN RATING FOR VOLTAGE DROP TO SATISFY NO GREATER THAN A 1.5 % VOLTAGE DROP PER IEEE REQUIREMENTS AND RECOMMENDATIONS. MAXIMUM VOLTAGE DROP OF 5% OVERALL APPLIES TO VOLTAGE DROP FOR SERVICE ENTRANCE, CONTINUING TO FEEDERS AND TO BRANCH CIRCUITS.
2. AMPACITY VALUES ARE BASED ON NEC 310.15(B)(16), 75C RATING.
3. CONDUIT FILL BASED ON EMT RACEWAY.
4. OCPD'S RATED 100A AND LESS ARE ASSUMED TO HAVE LUGS RATED AT 60C.



1 ELECTRICAL ONE-LINE DIAGRAM
SCALE: N.T.S.

STANDARD FEEDER SCHEDULE

MARK	RACEWAYS # RACEWAYS IN PARALLEL	RACEWAYS EMT SIZE	THHN/ THWN CONDUCTORS PHASE WIRE	PHASE (QTY.)	NEUTRAL (QTY. 1 UNO)	EQPT GROUND	NOTES
20.1	1	3/4"	#10	1	-	#10	1
20.2	1	3/4"	#10	2	#10	#10	1
20.3	1	3/4"	#10	3	-	#10	1
25.3	1	3/4"	#10	3	-	#10	1
50.3	1	3/4"	#8	3	-	#10	1
80.3	1	1-1/4"	#3	3	-	#8	1
125.3	1	1-1/4"	#1	3	-	#6	

GENERAL NOTES:
A. AMPACITY VALUES ARE BASED ON NEC T310.15(B)(16), 75C RATING
B. CONDUIT FILL BASED ON EMT RACEWAY
NOTES:
1 OCPDS RATED 100A AND LESS ARE ASSUMED TO HAVE LUGS RATED @60C

TYPE	LUMEN PACKAGE	COLOR TEMPERATURE	MOUNTIN
A	LED	3000K 80 CRI	PENDANT
W	LED	3000K 80 CRI	WALL
U	LED	4000K 80 CRI	CEILING
F	LED	4000K 80 CRI	CEILING
S1	LED	4000K 80 CRI	POLE
S2	LED	4000K 80 CRI	POLE
S3	LED	4000K 80 CRI	POLE
AE	LED	3000K 80 CRI	PENDANT
WE	LED	4000K 80 CRI	WALL
C	LED	3000K 80 CRI	CEILING

GENERAL NOTES:
A. ARCHITECT SHALL SELECT FIXTURE FINISH COLOR.
B. EXTERIOR ILLUMINATION SHALL INCLUDE 10KV SURGE

PANEL 'A'

PROJECT : D3 AQUATICS CENTER
PROJECT # : 240039
LOCATION : PUMP STORAGE
NOTES :

MAIN CIRCUIT BREAKER : 200A
MAIN LUGS ONLY : -
BUSSING : 225A
VOLTAGE : 208/120V, 3PH, 4W
INTERRUPTING : 10kAIC

ENCLOSURE : NEMA 4X
MOUNTING : SURFACE
CB TYPE : BOLT-ON
PROVIDE : NEUTRAL BUS
GROUND BUS

0	RCPT	5	HEAT
1	INT LTG	6	A/C
2	EXT LTG	7	KITCH
3	EQPT	8	ELEV
4	FANS	9	EWH

CKT	AMPS	POLE	CIRCUIT DESCRIPTION	LOAD	TYPE	PH	TYPE	LOAD	CIRCUIT DESCRIPTION	AMPS	POLE	CKT
1,3,5	100	3	PANEL 'B'	4,522	3	A	2	546	SITE LIGHTING	20	1	2
				4,806	3	B	9	48	HWRP-1	20	1	4
				5,646	3	C	3	780	MSCU-1	20	2	6
7,9,11	25	3	EWH-1	4,100	9	A	3	780				8
				4,100	9	B	3	734	EF-1	20	2	10
				4,100	9	C	3	734				12
13,15,17	125	3	A-1	8,982	3	A	3		SPARE	20	1	14
				8,982	3	B	3	5,548	B-3	80	3	16
				8,982	3	C	3	5,548				18
19,21,23	80	3	B-1	5,548	3	A	3	5,548				20
				5,548	3	B		364	EF-2	20	2	22
				5,548	3	C		364				24
25,27,29	80	3	B-2	5,548	3	A		915	M-1	20	2	26
				5,548	3	B		915				28
				5,548	3	C			SPARE	20	1	30
31,33,35	80	3	T-1	5,548	3	A			SPARE	20	1	32
				5,548	3	B			SPARE	20	1	34
				5,548	3	C			SPARE	20	1	36
37,39,41	80	3	T-2	5,548	3	A			SPARE	20	1	38
				5,548	3	B			SPARE	20	1	40
				5,548	3	C			SPARE	20	1	42

	PANEL VA	SUB FEED	FEED THRU	TOTAL CONN	TOTAL DEMAND VA	TOTAL DEMAND AMPS	NOTES :
PHASE A	42,141	5,444	-	47,585	48,595	175	
PHASE B	41,333	6,356	-	47,689	48,702	176	
PHASE C	41,420	6,926	-	48,346	49,373	178	
TOTAL	124,894	18,726	-	143,620	146,670	176	REVISIONS: CNG ENGINEERING, PLLC. R3.1 - Nov. 4

PANEL 'B'

PROJECT : D3 AQUATICS CENTER
PROJECT # : 240039
LOCATION : PUMP STORAGE
NOTES :

MAIN CIRCUIT BREAKER : -
MAIN LUGS ONLY : 100A
BUSSING : 100A
VOLTAGE : 208/120V, 3PH, 4W
INTERRUPTING : 10kAIC

ENCLOSURE : NEMA 4X
MOUNTING : SURFACE
CB TYPE : BOLT-ON
PROVIDE : NEUTRAL BUS
GROUND BUS

0	RCPT	5	HEAT
1	INT LTG	6	A/C
2	EXT LTG	7	KITCH
3	EQPT	8	ELEV
4	FANS	9	EWH

CKT	AMPS	POLE	CIRCUIT DESCRIPTION	LOAD	TYPE	PH	TYPE	LOAD	CIRCUIT DESCRIPTION	AMPS	POLE	CKT
1	20	1	PUMP ROOM LIGHTING	78	1	A	2	150	EGRESS EXTERIOR LIGHTING	20	1	2
3	20	1	PUMP STORAGE RECEPTACLES	720	0	B	3	1,000	FLUSH SENSORS	20	1	4
5	20	1	FLUSH SENSORS	1,000	3	C	0	1,080	RESTROOM RECEPTACLES	20	1	6
7	20	1	OFFICE RECEPTACLES	540	0	A	0	180	IT ROOM RECEPTACLE	20	1	8
9	20	1	EXTERIOR LIGHTING	225	2	B	1	147	EGRESS INTERIOR LIGHTING	20	1	10
11	20	1	OFFICE/ IT LIGHTING	78	1	C	3	800	HAND DRYERS	20	1	12
13	20	1	HAND DRYERS	800	3	A	3	800	HAND DRYERS	20	1	14
15	20	1	UNDER COUNTER REFRIDGERATOR	500	0	B	3	800	HAND DRYERS	20	1	16
17	20	1	SP-1	1,176	3	C	3	1,164				18
19	20	1	V-1	60	3	A	3	1,164	U-1	25	3	20
21	20	1	SPARE			B	3	1,164				22
23	20	1	SPARE			C	3	528	F-1	20	1	24
25	20	1	C-1	72	3	A	0	1600	IDF RACK RECEPTACLE	20	1	26
27	20	1	SECURITY PANEL RECEPTACLE	200	0	B	0	1600	IDF RACK RECEPTACLE	20	1	28
29	20	1	SECURITY PANEL RECEPTACLE	200	0	C	0	900	IDF ROOM RECEPTACLES	20	1	30

	PANEL VA	SUB FEED	FEED THRU	TOTAL CONN	TOTAL DEMAND VA	TOTAL DEMAND AMPS	NOTES :
PHASE A	5,444	-	-	5,444	5,493	20	
PHASE B	6,356	-	-	6,356	6,414	23	
PHASE C	6,926	-	-	6,926	6,989	25	
TOTAL	18,726	-	-	18,726	18,896	23	REVISIONS: CNG ENGINEERING, PLLC. R3.1 - Nov. 4

BUILDING SHORT CIRCUIT CALCULATIONS

TRANSFORMER AMP (208Y) = $\frac{150\ KVA \times 1000}{(208V)(\sqrt{3})}$ = 416 AMPS

I = $\frac{\text{TRANSFORMER AMPS}}{Z\ \%}$ = $\frac{416}{5.75\%}$ = 7241 AMPS

MINIMUM AIC RATING = 10000

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

CNG ENGINEERING
1150 BROADWAY STREET TBPE FIRM # F-7946
SAN ANTONIO, TEXAS 78209
T 210.226.8611 | www.cngengineering.com

STATE OF TEXAS
TRAVIS E. WILTSHIRE
85219
LICENSED PROFESSIONAL ENGINEER
11/04/25

District 3 Aquatics Facility
San Antonio, TX

ISSUE DATE 10/30/2025
REVISION

PROJECT NUMBER 23010
DRAWN BY GP
CHECKED BY JC
SCALE N.T.S.

SHEET TITLE
ELECTRICAL SCHEDULES AND ONE-LINE DIAGRAM

SHEET NUMBER
E5.0

PLUMBING SYMBOLS & ABBREVIATIONS

(SOME SYMBOLS MAY NOT BE USED ON THIS PROJECT)

SYMBOL / DESCRIPTION — GENERAL

SYMBOL	DESCRIPTION
CW	DOMESTIC POTABLE COLD WATER
HW	DOMESTIC HOT WATER SUPPLY
HWR	DOMESTIC HOT WATER RETURN - RECIRCULATING
TW	TEMPERED WATER
SW	SOFT DOMESTIC POTABLE COLD WATER
SS	SANITARY SEWER
V	VENT (SANITARY SEWER)
GW	GREASE WASTE
GV	GREASE VENT
AW	ACID WASTE
CD	CONDENSATE DRAIN (HVAC)
AV	ACID VENT
G	NATURAL GAS
FP	FIRE PROTECTION
CA	COMPRESSED AIR
CD	CONDENSATE DRAIN
PRD	PRIMARY ROOF DRAIN
SRD	SECONDARY ROOF DRAIN
V	VACUUM
O2	OXYGEN
N2O	NITROUS OXIDE
N2	NITROGEN
RD	ROOF DRAIN
TP	TRAP PRIMER
FDC	FIRE DEPARTMENT CONNECTION
PDM	PIPE EQUIPMENT TO BE REMOVED.

REFERENCE / DESCRIPTION

REFERENCE	DESCRIPTION
X	KEYED NOTE TAG, HEXAGON
X	DEMOLITION KEYED NOTE TAG, ROUND
X	ADDENDUM, ASI, ASR, PR TAG
XXX-XX	EQUIPMENT TAG
1 / P1.0	ENLARGED PLAN, DETAIL TAG
5 / P303	ELEVATION TAG
5 / E303	SECTION TAG
101	ROOM NUMBER
K	KITCHEN EQUIPMENT NUMBER
	CONNECTION TO EXISTING
	SCHEMATIC FAN OR PUMP
S	TEMPERATURE SENSOR
H	HUMIDISTAT
	FUTURE TENANT CONNECTION

SYMBOL / DESCRIPTION — PLUMBING

SYMBOL		DESCRIPTION
	SV	STOP, SHUT-OFF OR GATE VALVE
	GV	BALANCING VALVE
	BV	BY-PASS OR GLOBE VALVE
	CBV	CALIBRATED BALANCE VALVE
		BALL VALVE
		BUTTERFLY VALVE
		HOSE END DRAIN VALVE
	CKV	CHECK VALVE, FLOW AS SHOWN
M M		MOTOR OPERATED VALVE
		SOLENOID VALVE
		PRESSURE REDUCING VALVE
		RELIEF VALVE
		ANGLE VALVE
		VALVE IN RISER
		GAUGE COCK
	AV	AIR VENT
	ST	STEAM TRAP
	STR	STRAINER
		UNION
	EJ	EXPANSION JOINT
		PIPE ANCHOR
		FLEXIBLE CONNECTION
		PIPE GUIDE
M		FLOW MEASURING STATION
T		DIAL THERMOMETER
P		PRESSURE GAUGE
		THERMOMETER
		THERMOMETER WELL
P&T		PRESS. & TEMP. TEST PLUG
		SLOPE DN IN DIRECTION SHOWN
		FLOW DIRECTION
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		CAPPED PIPE TERMINATION
		ELBOW DOWN
		ELBOW UP
		CONNECTION BOTTOM OF MAIN
		CONNECTION SIDE OF MAIN
		CONNECTION TOP OF MAIN
		45 DEGREE OFFSET DOWN
		PIPE UP AND DOWN
		PIPE UP AND DOWN
		HOSE BIBB
		FLOOR DRAIN
		DOUBLE CHECK BACKFLOW PREVENTER
		REDUCED PRESS. PRINCIPLE

SYMBOL / DESCRIPTION — FIRE PROTECTION

SYMBOL	DESCRIPTION
	SPRINKLER BRANCH & HEADS
	FIRE DEPT. VALVE WITH CABINET
FS FS	FLOW SWITCH
	ALARM VALVE
	DRY PIPE VALVE
	UPRIGHT SPRINKLER HEAD
	PENDENT SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD
	DRY PENDENT SPRINKLER HEAD
	SIDEWALK SIAMESE CONN.
	FLUSH TYPE SIAMESE CONN.
	EXPOSED TYPE SIAMESE CONN.
	INSPECTORS TEST CONN.
	TEST HEADER CONN.
	MOTOR GONG
	POST INDICATOR VALVE
	O.S.&Y. VALVE
T	TAMPER SWITCH
	FLOOR CONTROL VALVE
	FIRE HOSE VALVE

ABBREVIATION / DESCRIPTION — GENERAL

ABBREVIATION	DESCRIPTION
A	AMPERE(S)
ABV	ABOVE
AC	ABOVE COUNTER
A/C	AIR CONDITIONING
AIC	AMPERE INTERRUPTING CAPACITY
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
ATS	AUTOMATIC TRANSFER SWITCH
BC	BELOW COUNTER
BFF	BELOW FINISHED FLOOR
BLDG	BUILDING
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
COND	CONDUCTOR
CPU	CENTRAL PROCESSING UNIT
CU	COPPER
DIA	DIAMETER
DIST	DISTRIBUTION
DN	DOWN
DWGS	DRAWINGS
EC	ELECTRICAL CONTRACTOR
EDF	ELECTRIC DRINKING FOUNTAIN
EF	EXHAUST FAN
EGC	EQUIPMENT GROUNDING CONDUCTOR
EMT	ELEC. METALLIC TUBING
EOR	ENGINEER OF RECORD
EQPT	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXH	EXHAUST
EXIST	EXISTING
EWH	ELECTRIC WATER HEATER
FAS	FIRE ALARM SYSTEM
FC	FOOT CANDLES
FCU	FAN COIL UNIT
FMC	FLEXIBLE METAL CONDUIT
FT	FEET, FOOT
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
HP	HORSE POWER
HOA	HAND OFF AUTOMATIC
HVAC	HEATING/VENTILATING/AIR CONDITIONING
HZ	HERTZ

ABBREVIATION / DESCRIPTION — PLUMBING

ABBREVIATION	DESCRIPTION
IE	INVERT ELEVATION
INC	INCLUDE OR INCLUDED
IN	INCHES (")
IW	INDIRECT WASTE
KW	KILOWATTS
LAV	LAVATORY
LB	POUNDS
LTG	LIGHTING
LWT	LEAVING WATER TEMPERATURE
MA	MEDICAL AIR
MAX	MAXIMUM
MB	MOP BASIN
MBH	THOUSAND BTU PER HOUR
MCC	MOTOR CONTROL CENTER
MECH.	MECHANICAL
MIN	MINIMUM
MFR.	MANUFACTURER
MH	MANHOLE
MIN.	MINUTES
MTD	MOUNTED
MTR	MOTOR
N_2	NITROGEN
N_2O	NITROUS OXIDE
NC	NORMALLY CLOSED
(N)	NEW
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OD	OVERFLOW DRAIN
OH	OVER HEAD
OS&Y	OUTSIDE SCREW AND YOKE
PRESS	PRESSURE
PH	PHASE
PIV	POST INDICATOR VALVE
PLBG	PLUMBING
PNL	PANEL
PPH	POUNDS PER HOUR
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REGULATING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	PRESSURE IN PSI GAUGE
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
RE:	REFER TO
REC	RECESSED
REF	REFERENCE, CALLED OUT ELSEWHERE
REQD	REQUIRED
RL	ROOF DRAIN LEADER
RM	ROOM
RO	REVERSE OSMOSIS
RPM	REVOLUTIONS PER MINUTE
RT	RAIN TIGHT
RV	RELIEF VALVE
SD	STORM DRAIN
SEC	SECONDS
SF	SQUARE FEET
SHT	SHEET
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SQ	SQUARE
STL	STEEL
SSTL	STAINLESS STEEL
SW	SOFT WATER
TD	TRENCH DRAIN
TEMP	TEMPORARY
TP	TOTAL PRESSURE
T&PRV	TEMPERATURE & PRESSURE
TYP	TYPICAL
UF	UNDERFLOOR
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
UTIL	UTILITY
VB	VACUUM BREAKER
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VP	VELOCITY PRESSURE
VTR	VENT THROUGH ROOF
W/	WITHOUT
W/O	WITHOUT
WCO	WALL CLEAN OUT
WF	WASH FOUNTAIN
WH	WALL HYDRANT
WM	WATER METER
WMA	WATER METER ALARM
WP	WEATHERPROOF
WPD	WATER PRESSURE DROP
WS	WET STACK
WSFU	WATER SUPPLY FIXTURE UNIT
WTR	WATER
YD	YARD DRAIN
YCO	YARD CLEANOUT

GENERAL NOTES

1. SCOPE OF PLUMBING WORK IS TO FURNISHED AND INSTALL ALL FIXTURES, EQUIPMENT, PLUMBING AND PIPING. ALSO IN THE SCOPE ARE MISCELLANEOUS FIXTURES, EQUIPMENT, PLUMBING AND PIPING ON THE SITE.

2. THESE DRAWINGS INDICATE THE GENERAL EXTENT OF WORK AND ARE NOT INTENDED TO INDICATE OR DESCRIBE ALL WORK REQUIRED FOR THE FULL PERFORMANCE AND COMPLETION OF THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

3. ALL DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE.

4. ALL TEMPERATURES ARE IN DEGREES F° UNLESS NOTED OTHERWISE.

5. WHEREVER HOT AND COLD WATER CONTROLS, FAUCETS, VALVES OR STOP VALVES ARE INSTALLED TOGETHER, HOT SHALL BE ON LEFT AND COLD SHALL BE ON RIGHT AS SEEN BY THE USER.

6. SOME SYMBOLS SHOWN MAY NOT BE USED.

7. REFER TO ARCHITECTURAL DRAWINGS FOR MOST ACCURATE WALLS, CEILING ELEMENTS AND PLUMBING FIXTURE LOCATIONS. UTILITY LOCATIONS ARE APPROXIMATE AND ARE BASED ON INFORMATION SUPPLIED BY OTHERS.

8. PHYSICALLY VERIFY LOCATIONS AND ELEVATIONS BEFORE BEGINNING INSTALLATIONS. WASTE PIPING IS GENERALLY UNDER THE FLOOR. ALL OTHER PIPING IS GENERALLY ABOVE THE FLOOR OR CEILING EXCEPT AS INDICATED, OR AS NECESSARY.

9. PIPING SHALL BE ROUTED HIDDEN FROM VIEW. WHERE PIPING CANNOT BE HIDDEN FROM VIEW, OBTAIN ARCHITECT APPROVAL OF ROUTING AND FINISHED APPEARANCE OF PIPING. FACTORY FINISH OF PIPING IS ACCEPTABLE. REMOVE NON-FACTORY AND VISIBLY OBJECTIONABLE MARKS ON FINISHED PIPING AND INSULATION.

10. CONTRACTOR SHALL FIELD VERIFY EXISTING DOMESTIC WATER PRESSURE AND PROVIDE PRESSURE REDUCING VALVE IF WATER PRESSURE IS GREATER THAN 80 P.S.I.. PRESSURE REDUCING VALVE SHALL BE SET BETWEEN 75 TO 80 P.S.I..

11. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND SUBMITTING BID.

12. REFER TO ARCHITECTURAL DRAWING FOR MOUNTING HEIGHT OF PLUMBING FIXTURES.

13. CONTRACTOR SHALL COORDINATE WITH ALL TRADES DURING CONSTRUCTION.

14. SLOPE ALL WASTE PIPING AT 1/4" PER FOOT UNLESS OTHERWISE NOTED.

15. REFER TO ARCHITECTURAL ELEVATION AND SECTIONS PRIOR TO ROUTING OF PIPING.

16. INSTALL FLUSH VALVE HANDLE FOR WATER CLOSET ON OPEN SIDE OF ADA STALL AND COORDINATE FLUSH VALE WITH ADA GRAB BAR PRIOR TO ROUGH-IN.

RIALTO STUDIO

Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

CNG ENGINEERING
8302 BROADWAY STREET
SAN ANTONIO, TEXAS 78209
T 210.224.8841 | www.cngengineering.com
TBPE FIRM # F-7964

STATE OF TEXAS
JOSHUA BAUMGARTNER
119197
LICENSED PROFESSIONAL ENGINEER
11-5-25

District 3 Aquatics Facility
San Antonio, TX

CITY OF SAN ANTONIO TEXAS

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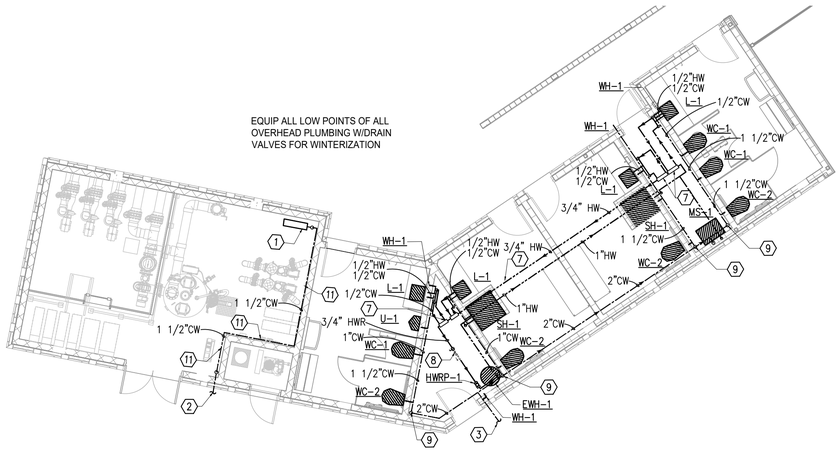
PROJECT NUMBER	23010
DRAWN BY	OR
CHECKED BY	FR
SCALE	

SHEET TITLE

PLUMBING SYMBOLS AND ABBREVIATIONS

SHEET NUMBER

P0.0



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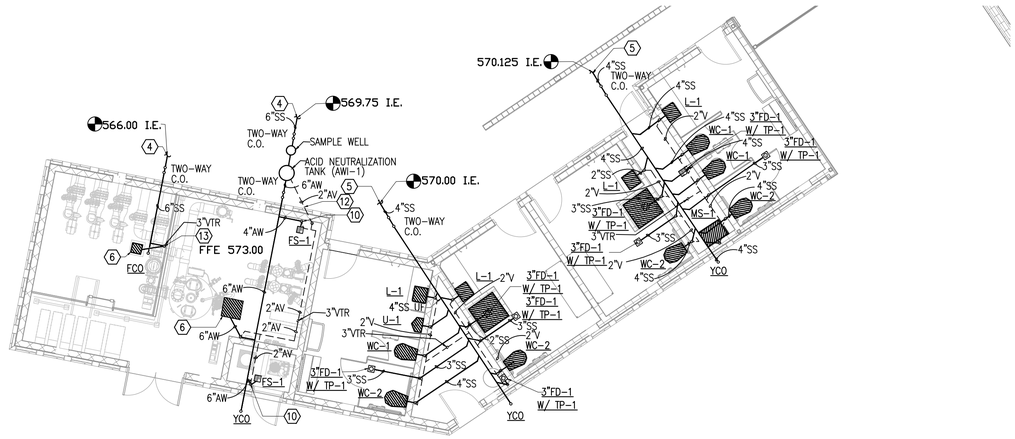
1 PLUMBING ENLARGED PLAN - WEST BUILDING DOMESTIC WATER

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



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2 PLUMBING ENLARGED PLAN - WEST BUILDING SANITARY & VENT

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

KEYED NOTES

1. 1-1/2" RPZ TYPE BACKFLOW PREVENTER PROVIDED BY POOL CONRACTOR. REFER TO POOL CONSULTANT DRAWINGS FOR POOL WATER CONTINUATION.
2. 1-1/2"CW BELOW GRADE. REFER TO CIVIL FOR CONTINUATION.
3. 2"CW BELOW GRADE. REFER TO CIVIL FOR CONTINUATION.
4. 6"SS BELOW GRADE. REFER TO CIVIL FOR CONTINUATION.
5. 4"SS BELOW GRADE. REFER TO CIVIL FOR CONTINUATION.
6. SUMP PIT AND GRATE REFER TO POOL FOR PRODUCTS.
7. PROVIDE KEMPER FLOW SPLITTER VALVE. PROVIDE SHUT-OFF VALVES ON SECONDARY LOOPS.
8. PROVIDE AUTO BALANCING VALVE ASSEMBLY. REFER TO DETAIL 10 ON P3.00.
9. PROVIDE SHUT OFF VALVES 5'-0" A.F.F.
10. PROVIDE FLOOR SINK WITH A 2" VENT.
11. ENSURE THAT THERE IS NO TAP TO THE 1 ½ CW LINE PRIOR TO THE BACK FLOW PREVENTER
12. X" ACID VENT LINE ROUTED UNDERGROUND. ACID VENT LINE TO ROUTE UP IN MECHANICAL ROOM TO CONNECT TO ACID VENT SYSTEM.
13. PROVIDE 2" VENT LINE. 2" VENT LINE SHALL TRANSITION INTO A 3" V.T.R. .

0 4' 8' 16'

1/8" = 1'-0" SCALE

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

CNG ENGINEERING
8350 BROADWAY STREET TBPE FIRM # F-7764
SAN ANTONIO, TEXAS 78229
T 210.226.8611 | www.cngengineering.com

STATE OF TEXAS
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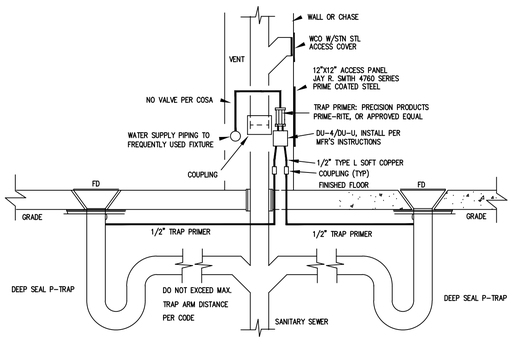
SHEET TITLE

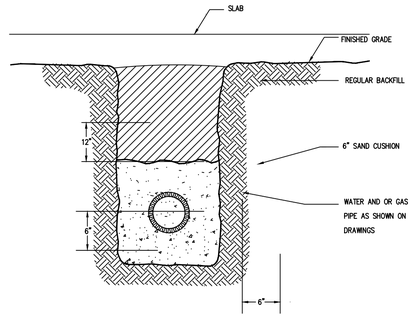
PLUMBING ENLARGED PLANS

SHEET NUMBER

P2.0



1 P3.0 FD/FS PIPING DETAIL
NOT TO SCALE



2 P3.0 TYPICAL PIPE TRENCHING DETAIL
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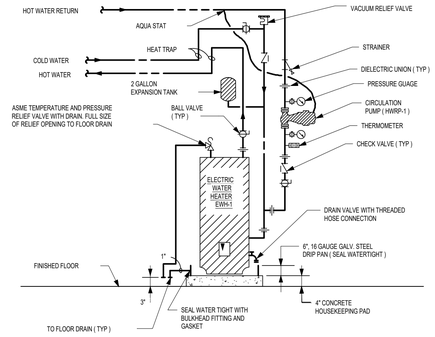

3 P3.0 ELECTRIC WATER HEATER PIPING DETAIL
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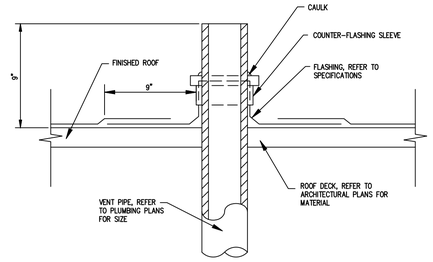
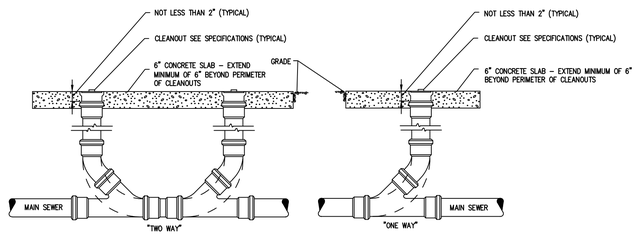
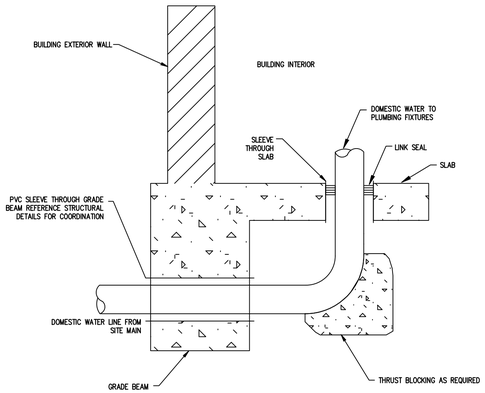


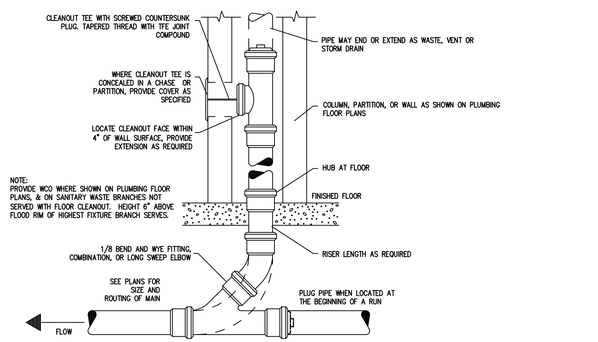
4 P3.0 VENT PIPING FLASHING DETAIL
NOT TO SCALE



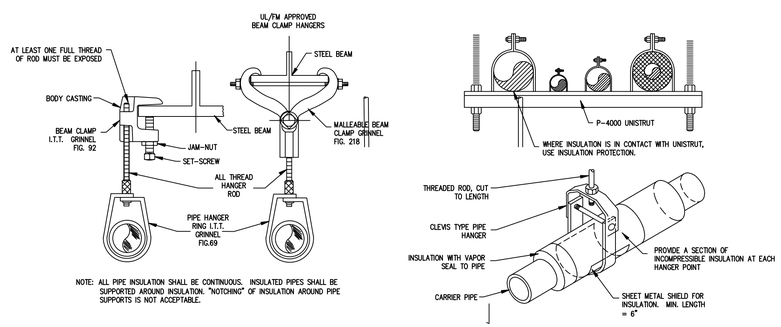
5 P3.0 ONE WAY AND TWO WAY CLEANOUT DETAIL
NOT TO SCALE



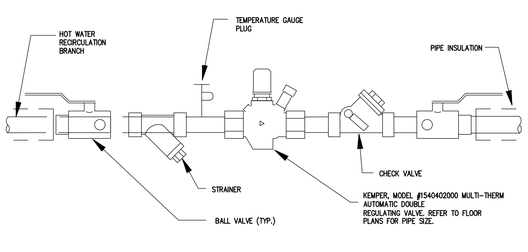
6 P3.0 DOMESTIC WATER ENTRANCE RISER DETAIL
NOT TO SCALE



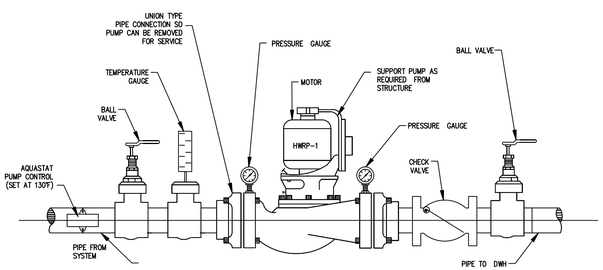
7 P3.0 WALL CLEANOUT DETAIL
NOT TO SCALE



9 P3.0 PIPE HANGER DETAIL
NOT TO SCALE



10 P3.0 AUTO BALANCING VALVE ASSEMBLY DETAIL
NOT TO SCALE



11 P3.0 HOT WATER CIRCULATING PUMP DETAIL
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RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

CNG ENGINEERING
8350 BROADWAY STREET TBPE FIRM # F-7946
SAN ANTONIO, TEXAS 78229
T 210.226.8611 | www.cngengineering.com

STATE OF TEXAS
JOSHUA BAUMGARTNER
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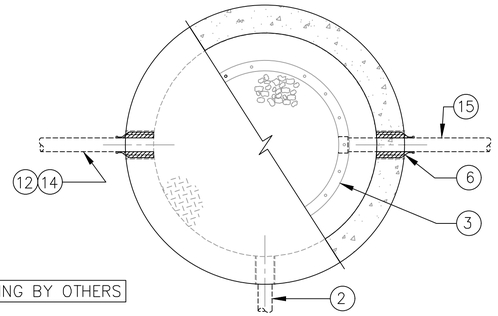
PLUMBING DETAILS

SHEET NUMBER

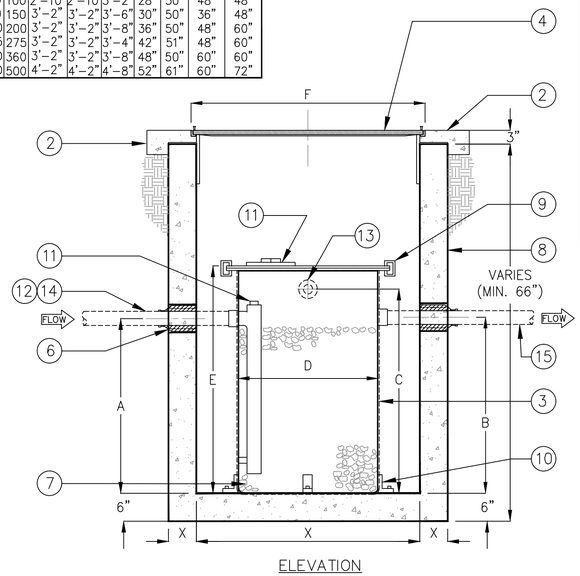
P3.0



DASHED PIPING BY OTHERS

TOP VIEW

MODEL NO.	GAL CAP	INLET A	OUTLET B	VENT C	DIA D	HT E	COVER F	VAULT X
ANPT-15	15	10"	10"	12"	17"	16"	24"	36"
ANPT-30	30	2'-1"	2'-1"	2'-3"	18"	30"	24"	36"
ANPT-55	55	2'-3"	2'-3"	2'-7"	24"	36"	24"	36"
ANPT-100	100	2'-10"	2'-10"	3'-2"	28"	50"	48"	48"
ANPT-150	150	3'-2"	3'-2"	3'-6"	30"	50"	36"	48"
ANPT-200	200	3'-2"	3'-2"	3'-8"	36"	50"	48"	60"
ANPT-275	275	3'-2"	3'-2"	3'-4"	42"	51"	48"	60"
ANPT-360	360	3'-2"	3'-2"	3'-8"	48"	50"	60"	60"
ANPT-500	500	4'-2"	4'-2"	4'-8"	52"	61"	60"	72"



ELEVATION

KEYED NOTES		
MARK	QTY	DESCRIPTION
1	1	PRECAST CONCRETE ACID NEUTRALIATION TANK
2	1	CONCRETE APRON (BY OTHERS)
3	8	HIGH DENSITY POLYETHYLENE ACID NEUTRALIZATION TANK w/ BOLT-DOWN ACCESS COVER w/ ¼" NEOPRENE GASKET
4	1	48" DIA ACCESS COVER, GALV STEEL, BOLT DOWN & H20 TRAFFIC w/ 16" ADJUSTABLE SKIRT
5	1	INSPECTION PORT
6	3	RUBBER FLEXIBLE PIPE BOOT
7	1	NEUTRALIZING FILL TO CONSIST OF CHEMICAL MEDIA OF 1" TO 3" DIA. w/ 92% CALCIUM CARBONATE
8	1	BITUMASTIC EXTERIOR COATING
9	1	NON-CORROSIVE QUICK CLAMP FOR EASY REMOVAL
10	1	STAINLESS STEEL POSITIONING BRACKET
11	1	CLEANOUT
12	1	ACID WASTE PIPING, BY OTHERS (REFER TO PIPE SPECIFICATIONS)
13	1	XX" VENT
14	1	XX" INLET PIPING
15	1	XX" OUTLET PIPING

1 / P3.1 ACID WASTE TANK DETAIL
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RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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PLUMBING DETAILS

SHEET NUMBER

P3.1

PLUMBING FIXTURE AND CONNECTION SCHEDULE

MARK	DESCRIPTION	MANUFACTURERS	CONNECTIONS						
			TW	CW	HW	SS	V	AW	AV
WC-1 WATER CLOSET	BACK SPUD. FLOOR MOUNTED, WHITE VITREOUS CHINA ELONGATED BOWL, SLOAN CONCEALED SENSOR FLUSHOMETER, 1.28 GALLON PER FLUSH. CHURCH WHITE OPEN FRONT SEAT LESS COVER.	AMERICAN STANDARD # 3453001.020 SLOAN # CX 8158-1.28-BN CHURCH # 9500C	-	1 1/2	-	4"	2"	-	-
WC-2 WATER CLOSET A.D.A. COMPLIANT	BACK SPUD. FLOOR MOUNTED WHITE VITREOUS CHINA ELONGATED BOWL, SLOAN CONCEALED SENSOR FLUSHOMETER, 1.28 GALLON PER FLUSH. CHURCH WHITE OPEN FRONT SEAT LESS COVER.	AMERICAN STANDARD # 3453001.020 SLOAN #CX 8158-1.28-BN CHURCH # 9500C	-	1 1/2	-	4"	2"	-	-
SH-1 SHOWER	ADA COMPLIANT IN-WALL SHOWER WITH THE ABILITY TO INSTALL AS RIGHT OR LEFT-HANDED CONFIGURATIONS AS REQUIRED. METAL LEVER HANDLE WITH ADJUSTABLE STOP SCREW TO LIMIT HANDLE TURN. 1 MODE SHOWERHEAD WITH EASY TO CLEAN NOZZLES. POLISHED CHROME-PLATED FINISH. 1.5 GPM FLOW.	SYMMONS "ORIGINS" 9601-PLR-TRM-1.5 SHOWER TRIM WITH TEMPTROL PRESSURE BALANCING SHOWER VALVE	-	3/4"	3/4"	3"	2"	-	-
L-1 LAVATORY A.D.A. COMPLIANT	UNDER MOUNT, VITREOUS CHINA, NOMINAL 21-1/16" X 14" FRONT OVERFLOW, UNGLAZED RIM. T&S SINGLE TEMP DECK MOUNT FAUCET WITH PUSH BUTTON METERING CARTRIDGE, WITH GRID STRAINER DRAIN. CHROME PLATED BRASS SPOUT. 0.5 GPM AERATOR. McGUIRE 8872, 17 GA. CHROME PLATED P-TRAP, ESCUTCHEON. CHICAGO NO. 1006 LOOSE KEY STOPS WITH RISERS. INSULATE DRAIN TAILPIECE, P-TRAP AND SUPPLIES WITH TRUEBRO "HANDI-LAV-GUARD", McGUIRE "PROWRAP" OR BROCAR "TRAP WRAP". PROVIDE MIXING VALVE EQUAL TO WATTS LFe480 AND SET TO 85F	AMERICAN STANDARD "STUDIO" 0614.000 T&S # B-0805	-	1/2"	1/2"	2"	2"	-	-
U-1 URINAL ADA COMPLIANT	WALL MOUNTED, VITREOUS CHINA, BACK SPUD, .5 GPF, MANUAL CONCEALED FLUSHOMETER. MOUNT ADA HEIGHT AS INDICATED ON ARCHITECTURAL PLANS. PROVIDE CARRIER AS REQUIRED.	AMERICAN STANDARD # 6590.005 SLOAN # CX 198-0.5BN	-	3/4"	-	2"	2"	-	-
WH-1 WALL HYDRANT	APPROVED ENCASED TYPE, SELF DRAINING, NON FREEZE COLD WALL HYDRANT, ¾" MALE HOSE CONNECTION, ANTI-SIPHON VACUUM BREAKER. CHROME PLATED BRONZE HEAD CASTING, CHROME PLATED FACE PLATE AND POLISHED NICKEL BRONZE BOX WITH HINGED LOCKING COVER, LOOSE TEE OPERATING KEY.	WOODFORD FROST PROOF MFG. – MODEL 65	-	3/4"	-	-	-	-	-
MS-1 MOP SINK ADA COMPLIANT	FLOOR MOUNTED STANDARD HEIGHT UNIT 36" X 36" X 12" HIGH RECEPTOR COMPOSED OF PRECAST TERRAZZO WITH STAINLESS STEEL THRESHOLD CAP. INTEGRAL STOPS, 4-ARM BRASS HANDLE, PAIL HOOK, TOP BRACE WITH WALL FLANGE, VACUUM BREAKER, ROUGH CHROME PLATED. PROVIDE HOSE.	ACORN TNZ-36-TF2 T&S FAUCET NO. B-0665-BSTP	-	1/2"	1/2"	3"	2"	-	-
FD-1 FLOOR DRAIN	BOTTOM OUTLET CAST IRON BODY, ADJUSTABLE 4" DIAMETER NICKEL BRONZE STRAINER WITH VANDAL PROOF SCREWS AND ACID RESISTANT COATED BODY. PROVIDE CLAMPING DEVICE FOR DRAINS IN MEMBRANE FLOOR AREAS.	MIFAB F1100-1-4-11.	-	-	-	3"	2"	-	-
FS-1 FLOOR SINK	SQUARE CAST IRON 6-1/4" DEEP SUPER-FLO-SEPTOR® FLOOR SINK WITH ACID RESISTING INTERIOR, BOTTOM OUTLET, ALUMINUM INTERNAL DOME STRAINER, NIKALOY SANITARY SLOPED RIM AND NIKALOY LIGHT-DUTY SUPER-FLO®, ANTI-TILTING GRATE.	JOSAM 49320A-LF-NB	-	-	-	-	-	4"	2"
TP-1 TRAP PRIMER	THE PR-500 AUTOMATIC PRESSURE DROP ACTIVATED TRAP PRIMER VALVE,693 BRASS, EPDM E70 O-RINGS, DOW #7 SILICONE, #60 STAINLESS STEEL MESH SCREEN. PRIME UP TO 2 FLOOR DRAINS.	PPP PR-500-DU-U	-	1/2"	-	-	-	-	-
FCO FLOOR CLEANOUT	MIFAB C220-R SERIES ADJUSTABLE FLOOR CLEANOUT WITH LACQUERED CAST IRON BODY, SECONDARY CLOSURE PLUG AND SCORIATED COMBINED GASKETED COVER AND PLUG TOP ASSEMBLY WITH STAINLESS STEEL VANDAL PROOF ALLEN KEY SCREWS.	MIFAB C1100-6	-	-	-	6"	-	-	-

NOTES:

1. FURNISH AND INSTALL SLOAN TRANSFORMER MODEL NO. EL-154 TO WATERCLOSET FLUSH VALVE. MAXIMUM THREE (3) WATERCLOSET FLUSH VALVES PER TRANSFORMER. DIV. 22 CONTRACTOR IS RESPONSIBLE FOR ARRANGING FOR FINAL 115/1/60 CONNECTION TO TRANSFORMER PRIMARY SIDE AND ALL LOW VOLTAGE CONNECTIONS. ALL LOW VOLTAGE WIRING SUBJECT TO MECHANICAL DAMAGE SHALL BE ROUTED IN CONDUIT. CONDUIT AND INSTALLATION OF SAME TO BE IN ACCORDANCE WITH DIV. 26 SPECIFICATIONS.
2. CONTRACTOR SHALL COORDINATE REQUIREMENT FOR A SHUTOFF SWITCH AHEAD OF EVERY TRANSFORMER TO ALLOW FACILITY TO PERFORM MAINTENANCE ON SENSOR RESET.
3. CONTRACTOR SHALL PROVIDE SURGE PROTECTORS SERVICING SLOAN TRANSFORMER (TYPICAL)
4. TRANSFORMERS WIRING AND MOUNTING SHALL BE ACCESSIBLE FOR SERVICING/MAINTENANCE.

ELECTRIC WATER HEATER SCHEDULE

MARK	LOCATION	GALS. PER HR. RECOVERY RATE 78° F RISE	STORAGE CAPACITY GALLONS	ELECTRICAL				STORED WATER TEMP.	BASIS OF DESIGN, MANUFACTURER, & MODEL	NOTES
				VOLTS/PH/HZ	TOTAL KW INPUT	AMP	MOCP			
EWH-1	STORAGE 107	63	50	208/3/60	12.3	34	---	140°F	AO SMITH, DRE-52	1, 2, 3, 4, 5, 6

NOTES:
1. ALL WATER HEATERS INSTALLED ON EQUIPMENT PADS IN SPECIFIED ROOMS, REFER TO PLANS FOR WATER HEATER TAGS.
2. ALL WATER HEATERS SHALL BE UL RATED, TANKS SHALL BE ASME APPROVED AND STAMPED.
3. INSTALL VACUUM RELIEF VALVES ON ALL WATER HEATERS.
4. ROUTE T&P DRAIN LINES TO ADJACENT FLOOR SINK.
5. HEAT TRAPS SHALL BE PROVIDED AT VERTICAL WATER PIPES CONNECTING TO THE INLET AND OUTLET OF THE TANK. (IECC SEC. C404.3.)
6. THE PUMP CONTROLS THAT CIRCULATE WATER BETWEEN WATER STORAGE AND WATER HEATER SHALL BE LIMITED FROM HEATING CYCLE STARTUP NOT GREATER THAN 5MIN AFTER THE END OF CYCLE (IECC SEC. 404.6.3)

HOT WATER RECIRCULATING PUMP

MARK	DESCRIPTION	SERVICE TO	TYPE	GPM	HEAD FEET	H.P. MIN	VOLT/ PHASE	MAX. RPM	MANUFACTUER AND MODEL	NOTES
HWRP-1	HOT WATER RECIRC. PUMP	EWH-1	IN-LINE BRONZE	1.0	2	1/16	115/1	3300	BELL & GOSSETT PL-36	1, 2, 3

NOTES:
1. INSTALL ONE HWRP FOR EACH WATER HEATER.
2. MOUNT TO WALL IN AN ACCESSIBLE LOCATION.
3. THE CONTROLS FOR PUMP SHALL AUTOMATICALLY TURN OFF PUMP WHEN WATER IN CIRCULATION LOOP IS AT DESIRED TEMPERATURE AND THERE IS NO DEMAND FOR HOT WATER. PER IECC SEC. C404.6.1.

ACID NEUTRALIZATION TANK SCHEDULE

MARK	TYPE	QUANTITY	SYSTEM	LOCATION	CAPACITY (GAL)	MANUFACTERER	MODEL
AWI-1	LIMESTONE TANK	1	ACID WASTE	BUILDING EXTERIOR	100	NWPX-PARK	ANPT-100

NOTES:
1. PROVIDE WITH pH SENSOR ALARM PROBE AND SYSTEM.

THERMOSTATIC MIXING VALVE SCHEDULE

ITEM NO.	TEMP SET POINT	MAX. FLOW RATE (GPM)	MINIMUM PRESSURE DROP (PSI)	MINIMUM FLOW (GPM)	MANUFACTURER & MODEL NUMBER	NOTES
TMV-1	85°	3.5	10	.25	SYMMONS # 8210CK	1, 3

NOTES:
1. MAKE WATER CONNECTIONS TO THERMOSTATIC MIXING VALVE(S) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE PIPE INCREASERS AND/OR VALVES AS REQUIRED.
3. MIXING VALVE SHALL CONFORM TO ASSE 1070.

PIPE MATERIALS LIST

DOMESTIC WATER PIPING

ABOVE SLAB INSIDE THE BUILDING SHALL BE SEAMLESS ASTM B 88 TYPE L COPPER WATER TUBE. FITTINGS SHALL BE WROUGHT COPPER, ANSI B16.22.SOLDER MATERIAL SHALL BE LEAD FREE, ASTM B 32.
THE USE OF DRILLED-T CONNECTIONS IS NOT PERMITTED.

BELOW SLAB WITHIN 5'-0" OF THE BUILDING SHALL BE ASTM B 88 TYPE K SOFT DRAWN COPPER WATER TUBE. FITTINGS SHALL NOT BE USED BELOW SLAB.

ALL DOMESTIC WATER PIPING SHALL BE INSULATED.

PROVIDE PVC JACKETING TO ALL PIPING INSIDE THE MECHANICAL ROOM.

***ALL DOMESTIC WATER PIPING SHALL BE INSULATED. REFER TO SPECIFICATIONS AND PIPE INSULATION SCHEDULE. PIPING INSULATION SHALL BE AT MINIMUM IN COMPLIANCE WITH IECC TABLE C403.12.3 FOR INSULATION THICKNESS.

SANITARY SOIL WASTE AND VENT PIPING

ABOVE FLOOR INSIDE BUILDING WITHIN ENCLOSED CHASES, OUT OF RETURN AIR PLENUMS SHALL BE SCHEDULE 40 DWV POLYVINYL CHLORIDE PIPE AND FITTINGS CONFORMING TO ASTM D-1784-82 WITH SOLVENT WELDED JOINTS.

ABOVE FLOOR WITHIN RETURN AIR PLENUMS SHALL BE NO-HUB CAST IRON SYSTEM CONFORMING TO CISPI STANDARD NO. 301-75. NEOPRENE GASKETS SHALL CONFORM TO ASTM STANDARD C564-75 WITH STAINLESS STEEL HEAVY DUTY COUPLINGS.
ALTERNATELY, PVC AS DESCRIBED ABOVE WITH FIREWRAP CONFORMING TO ASTM E84 OR UL 723, NO MORE THAN 25/50 FLAME SPREAD / SMOKE-DEVELOPED.

BELOW GRADE SHALL BE SCHEDULE 40 DWV POLYVINYL CHLORIDE PIPE AND FITTINGS CONFORMING TO ASTM D-1784-82 WITH SOLVENT WELDED JOINTS.

ACID WASTE AND VENT PIPING

ABOVE FLOOR INSIDE BUILDING WITHIN ENCLOSED CHASES, OUT OF RETURN AIR PLENUMS SHALL BE SCHEDULE 40 POLYPROPYLENE PIPE AND FITTINGS CONFORMING TO ASTM D-2146 WITH MECHANICAL JOINTS.

BELOW GRADE SHALL BE SCHEDULE 40 POLYPROPYLENE PIPE AND FITTINGS CONFORMING TO ASTM D-2146 WITH MECHANICAL JOINTS.

DOMESTIC CW ESTIMATED ADDITIONAL CAMPUS LOAD - WSFU

FIX	FIXTURES	WSFU PER FIX	SUB-TL BLDG FIX
WATER CLOSET	7	10	70
URINAL	1	5	5
LAVATORY	4	1	4
SINGLE SINK	1	2	2
SHOWER, PRIVATE	2	2	4
TOTAL WSFUs			94

TOTAL WATER DEMAND LOAD APPROX: 94 WSFU's
94 WSFUs = APPROX. 65 GPM
65 GPM THROUGH 2" PIPE = 6 FEET PER SECOND
PER IPC 2024

SANITARY DRAINAGE LOAD- DFU

DESCRIPTION	TOTAL FIXTURE NO.	DFU PER FIX	SUB-TL BLDG FIX
WATER CLOSET	7	4	28
URINAL	1	2	2
LAVATORY	4	1	4
MOP SINK	1	2	2
FD/FS 3"	8	5	40
FD/FS 4"	2	6	12
EST. TOTAL PER IPC 2024 DFU			88

TOTAL WASTE LOAD APPROX: 88 DFUs
ALLOWED DFUs: 4" DRAIN PIPE AT 1/8" PER FOOT = 180

WATER HAMMER ARRESTORS

P.D.I. SYMBOL	FIXTURE UNITS	CHAMBER LENGTH	SWEAT CONNECTION
A	1-11	9-5/8"	1/2"
B	12-32	11-3/4"	3/4"
C	33-60	14-11/18"	1"
D	61-113	12-3/8"	1"
E	114-154	15-3/8"	1"
F	155-330	17-3/8"	1"

PIPE INSULATION SCHEDULE

SERVICE TYPE	INSULATION TYPE	INSULATION THICKNESS	NOTES
COLD WATER	CELLULAR GLASS	1"	1
HOT WATER	CELLULAR GLASS	1-1/2"	1
CONDENSATE	CELLULAR GLASS	1"	1

NOTES:
1. PIPING INSULATION SHALL BE AT MINIMUM IN COMPLIANCE WITH IECC TABLE C403.12.3 FOR INSULATION THICKNESS.

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

CNG ENGINEERING
8350 BROADWAY STREET TBPE FIRM # F-7964
SAN ANTONIO, TEXAS 78209
T 210.226.8611 | www.cngengineering.com

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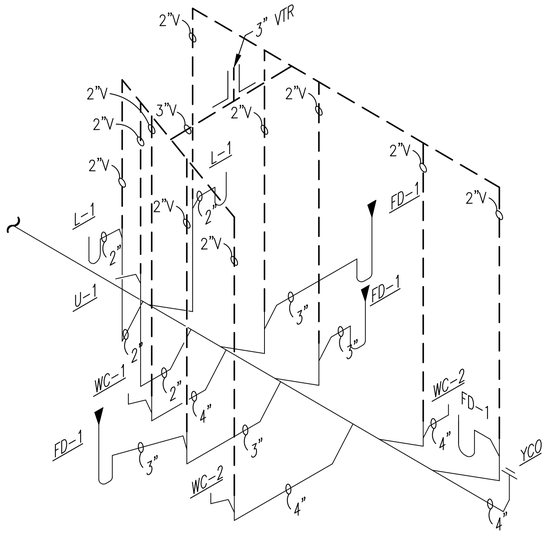
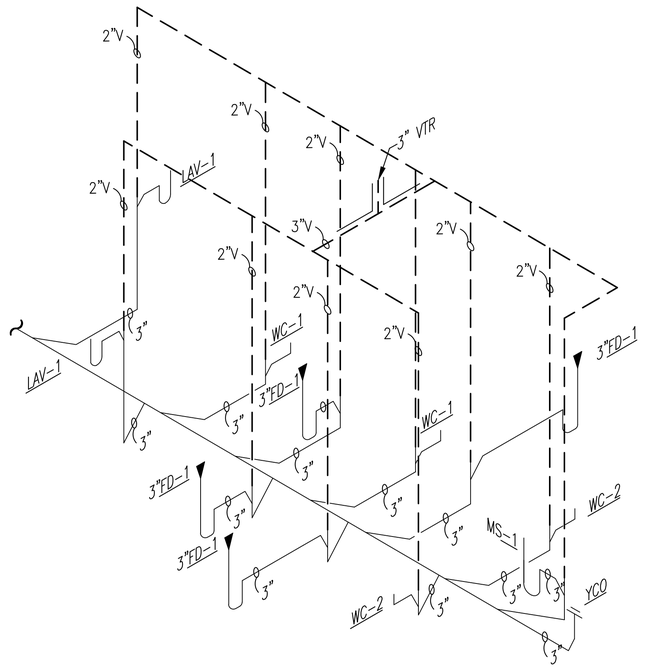


1 PLUMBING ENLARGED PLAN - WEST BUILDING SANITARY & VENT - RM 107 AND 105

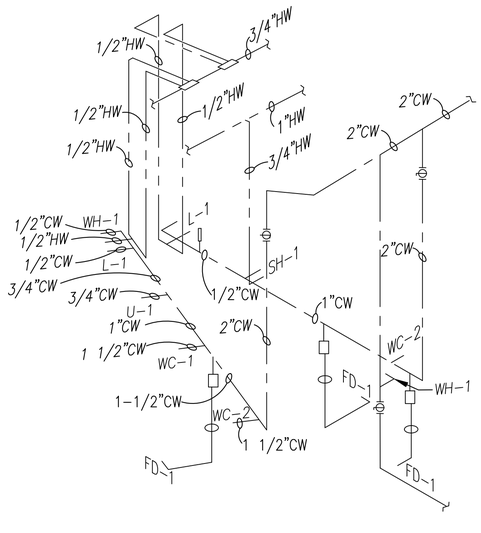
NOT TO SCALE



2 PLUMBING ENLARGED PLAN - WEST BUILDING SANITARY & VENT - RM 103 AND 104

NOT TO SCALE

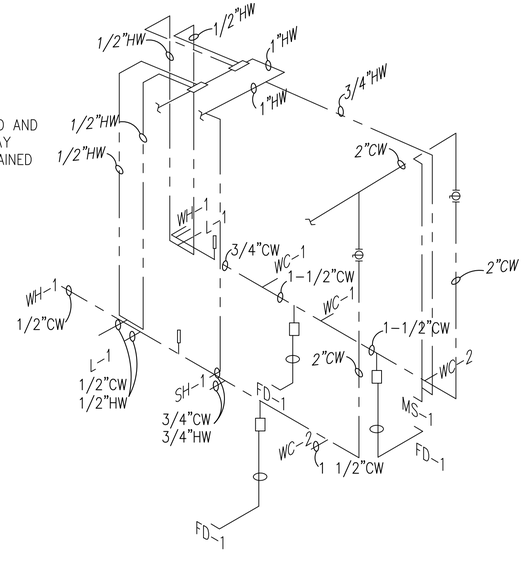
ENSURE PIPING IS SLOPED AND INSTALLED IN SUCH A WAY THAT WATER CAN BE DRAINED FROM PIPES FOR WINTERIZATION



3 PLUMBING ENLARGED PLAN - WEST BUILDING DOMESTIC WATER - RM 107 AND 105

NOT TO SCALE

ENSURE PIPING IS SLOPED AND INSTALLED IN SUCH A WAY THAT WATER CAN BE DRAINED FROM PIPES FOR WINTERIZATION



4 PLUMBING ENLARGED PLAN - WEST BUILDING DOMESTIC WATER - RM 103 AND 104

NOT TO SCALE

RIALTO STUDIO

Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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8350 BROADWAY STREET TBPE FIRM # F-7946
SAN ANTONIO, TEXAS 78209
T 210.226.8661 | www.cngengineering.com

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JOSHUA BAUMGARTNER
119197
LICENSED PROFESSIONAL ENGINEER
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San Antonio, TX

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PROJECT NUMBER	23010
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SHEET TITLE

PLUMBING RISER

SHEET NUMBER

P5.0

GENERAL NOTES

GENERAL CONTRACTOR/CONSTRUCTION MANAGER NOTES:

1.) GENERAL CONTRACTOR/CONSTRUCTION MANAGER IS RESPONSIBLE TO ENSURE THAT ALL DIVISIONS AND TRADES ARE AWARE OF WORK REQUIRED TO SUPPORT THE INSTALLATION OF RELATED SYSTEMS AND SUB-SYSTEMS. CONTRACTORS ARE RESPONSIBLE TO REVIEW ALL RELATED SPECIFICATIONS AND DRAWINGS.

2.) PROVIDE AND INSTALL WALL MOUNTED ¾" AC GRADE FIRE RESISTANT PLYWOOD IN ALL COMMUNICATIONS ROOMS AND CLOSETS ON ALL WALLS. APPLY FIRE RETARDANT FLAT WHITE PAINT TO BOTH SIDES OF THE PLYWOOD AND LEAVING THE FIRE RETARDANT STAMP UNDISTURBED. REFERENCE COMMUNICATIONS ROOM DETAILS.

3.) CABLE TRAY, SLEEVES, BOXES, POWER, AND CONDUITS SHOWN ON COMMUNICATIONS DRAWINGS ARE FOR COORDINATION ONLY. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS.

ELECTRICAL CONTRACTOR NOTES:

1.) THE ELECTRICAL CONTRACTOR SHALL FURNISH AND PROVIDE THE FOLLOWING FOR COMMUNICATIONS CABLING: CONDUIT, SLEEVES, WALL, AND FLOOR BOXES REFER TO THE ELECTRICAL AND COMMUNICATIONS DETAIL DRAWINGS.

A.) STANDARD DATA AND VOICE SERVICE BOXES FOR COMMUNICATIONS SHALL BE A FLUSH $4^{11}/_{16}$" SQ DEEP BOX ($2^{1}/_{8}$" MIN) WITH SINGLE GANG REDUCTION PLATE AND A 1"Ø CONDUIT FROM BOX TO ACCESSIBLE CEILING SPACE.

B.) WALL MOUNTED TELEPHONE OUTLET SHALL BE A FLUSH $4^{11}/_{16}$" SQ DEEP BOX ($2^{1}/_{8}$" MIN) WITH SINGLE GANG REDUCTION PLATE AND A 1"Ø CONDUIT FROM BOX TO ACCESSIBLE CEILING SPACE. MOUNT BOX 48" AFF OR AS REQUIRED BY ADA.

C.) FLOOR BOXES FOR DATA, VOICE, AND POWER SHALL HAVE TWO(2) 1"Ø CONDUITS PROVIDED FOR COMMUNICATIONS IN ADDITION TO POWER AND AV REQUIREMENTS.

D.) CEILING BOXES FOR COMMUNICATIONS OUTLETS SHALL BE A $4^{11}/_{16}$" SQ DEEP BOX ($2^{1}/_{8}$" MIN) WITH A SINGLE GANG REDUCTION PLATE, AND A 1"Ø CONDUIT FROM EACH BOX TO ACCESSIBLE CEILING SPACE.

2.) CONTRACTOR SHALL PROVIDE RACEWAY INSTALLATION IN A MANNER THAT WILL PROTECT ALL DATA/VOICE/FIBER CABLING FROM MECHANICAL DAMAGE. INSTALL CONDUITS FOR COMMUNICATIONS WITH LONG RADIUS BENDS, BUSHED ENDS THAT ARE GROUNDED AND BONDED AS PER CODES AND STANDARDS.

3.) CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AND COMMUNICATIONS TRADE ON CONDUIT ROUTING FOR COMMUNICATIONS CABLES PRIOR TO INSTALLATION OF PATHWAYS TO ENSURE CABLE PATHWAYS DO NOT CAUSE CABLE LENGTHS TO EXCEED MAXIMUM DISTANCES. IN GENERAL, CONDUITS FROM CABLE TRAY TO TELECOM OUTLETS SHOULD BE THE MOST DIRECT ROUTE POSSIBLE FOLLOWING BUILDING LINES.

4.) CONTRACTOR SHALL INSTALL A TIED OFF NYLON PULL STRING IN ALL CONDUITS.

5.) CONDUITS SHALL NOT EXCEED 180° OF BENDS BETWEEN PULL POINTS. INSTALL PERMANENTLY ACCESSIBLE PULL BOXES AS REQUIRED TO MEET THIS REQUIREMENT. DO NOT CHANGE DIRECTION OR BEND WITHIN A JUNCTION BOX OR PULL BOX.

6.) GROUNDING AND BONDING:

A.) BUILDING GROUNDING SYSTEM BY ELECTRICAL CONTRACTOR.

B.) ALL PATHWAYS INSTALLED FOR COMMUNICATIONS SHALL BE BONDED TO COMMUNICATION GROUND BUS BARS.

C.) REFER TO ELECTRICAL SERIES DRAWINGS AND SPECIFICATIONS FOR OTHER COMMUNICATION GROUNDING REQUIREMENTS AND INFO ON INSTALLATION OF MATERIALS AND HARDWARE.

D.) DISSIMILAR METALS BONDED TO EACH OTHER AND APT TO CORRODE IN NORMAL ENVIRONMENTAL CONDITIONS SHALL BE SEPARATED BY A CONDUCTIVE MATERIAL SPACER TO PREVENT CORROSION. REFER TO SPECIFICATIONS FOR OTHER GROUNDING REQUIREMENTS.

E.) BUS BARS SHALL BE PRE-DRILLED WITH STANDARD NEMA BOLT HOLE SIZING & SPACING FOR CONNECTIONS OF THE BONDING CONDUCTORS TO THE BUSBAR.

7.) IDENTIFICATION:

A.) SPRAY ALL BOXES AND CONDUIT FOR COMMUNICATIONS WITH A DISTINCTIVE COLOR FOR EASY IDENTIFICATION. COLOR SHALL BE DIFFERENT FROM OTHER TRADES.

COMMUNICATION NOTES

1.) THE TELECOMMUNICATIONS CONTRACTOR SHALL REVIEW ALL CONSTRUCTION DOCUMENTS FOR RELATED SECTIONS, WHICH MAKE UP THE CONTRACT DOCUMENTS AND SHALL COORDINATE ALL COMMUNICATIONS WORK ON THE COMMUNICATIONS PLANS WITH ANY COMMUNICATIONS SECTIONS OF RELATED DRAWINGS AND SPECIFICATIONS.

A.) STRUCTURED CABLING REQUIREMENTS FOR THE PROJECT ARE THE RESPONSIBILITY OF THE COMMUNICATIONS CABLING CONTRACTOR UNLESS OTHERWISE NOTED. COORDINATE WITH ALL TRADES THAT APPLY.

2.) TELECOMMUNICATIONS CONTRACTOR, CABLING CONTRACTOR, OR COMMUNICATIONS CONTRACTOR SHALL HERE AFTER BE REFERRED TO AS CONTRACTOR UNLESS OTHERWISE NOTED.

3.) CONTRACTOR SHALL PROVIDE ALL MATERIALS, COMPONENTS, TOOLS, AND LABOR NECESSARY TO COMPLETE THIS INFRASTRUCTURE INSTALLATION.

4.) ALL COMMUNICATIONS CABLING PATHWAYS OUTSIDE OF COMMUNICATIONS ROOMS BY ELECTRICAL CONTRACTOR.

5.) CONTRACTOR SHALL PROVIDE 'J' HOOKS ON THREADED ROD RATED FOR SUPPORTING DATA CABLING THAT IS NOT IN CONDUIT OR CABLE TRAY. CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR ON CABLE PATHS PRIOR TO INSTALLATION OF CABLING.

COMMUNICATIONS CABLING:

1.) ALL UTP HORIZONTAL CABLING MUST BE WITHIN A PHYSICAL LENGTH OF 295'.

2.) PROVIDE ALL NECESSARY MEANS TO PROTECT ALL COPPER/FIBER CABLING AND JACK/PORTS FROM MECHANICAL DAMAGE AND DUST DURING CONSTRUCTION.

3.) FIBER BACKBONE CABLE SHALL BE INSTALLED IN CONDUIT OR ON LADDER RUNWAY UNLESS IT IS ARMORED.

4.) CABLING CONTRACTOR RESPONSIBLE FOR FINAL CONNECTION, TERMINATION AND TESTING TO THE DATA OUTLETS IN LAB BENCHES AND MODULAR FURNITURE, INCLUSIVE OF PATCH CORD ROUTING.

5.) CABLING CONTRACTOR SHALL CONFIRM ALL CABLE LENGTHS PRIOR TO BID AND ROUGH-IN

COMMUNICATIONS ROOMS:

1.) CONTRACTOR TO PROVIDE EQUIPMENT RACKS, HORIZONTAL CABLE RUNWAYS AND MANAGERS, VERTICAL CABLE MANAGERS, TERMINATION HARDWARE, POWER STRIPS FOR RACKS, TERMINATION, LABELING, AND TESTING AS SPECIFIED IN CONTRACT DOCUMENTS.

2.) GRAPHIC REPRESENTATION OF PATCH PANELS, BLOCKS, VERTICAL, AND HORIZONTAL CORD MANAGEMENT DO NOT REPRESENT EXACT QUANTITIES. CONTRACTOR SHALL PROVIDE SUFFICIENT QUANTITIES FOR ALL CABLING, PLUS 20% GROWTH. (REFER ALSO TO SPECIFICATIONS).

GROUNDING AND BONDING:

1.) CONTRACTOR SHALL BOND ALL METALLIC COMPONENTS TO BUSBAR IN THE FOLLOWING MANNER:

A.) BOND/STRAP ALL LADDER RACKS TO ADJACENT SECTIONS WITH A STRANDED BONDING COPPER CONDUCTOR. INSTALL A BONDING CONDUCTOR FROM BUSBAR TO LADDER RACKS.

B.) BONDING SHALL BE IN AN APPROVED MANNER.

C.) DISSIMILAR METALS BONDED TO EACH OTHER AND APT TO CORRODE IN NORMAL ENVIRONMENTAL CONDITIONS SHALL BE SEPARATED BY A CONDUCTIVE MATERIAL SPACER TO PREVENT CORROSION. REFER TO SPECIFICATIONS FOR OTHER GROUNDING REQUIREMENTS.

FIRESTOPPING:

1.) COORDINATE ANY AND ALL FIRESTOPPING WITH THE GENERAL CONTRACTOR BEFORE PROCEEDING WITH ANY WORK INVOLVING FIRESTOPPING.

2.) ALL FIRESTOPPING SHALL CONFORM TO THE SPECIFICATIONS AND RECOMMENDATIONS OF THERMAL AND MOISTURE PROTECTION ON FIRESTOPPING OF THROUGH PENETRATION SYSTEMS IN THE CONSTRUCTION SPECIFICATIONS DOCUMENT.

3.) SOLUTIONS AND SHOP DRAWINGS/SUBMITTALS FOR FIRE STOP MATERIALS AND SYSTEMS SHALL BE PRESENTED TO THE GENERAL CONTRACTOR FOR WRITTEN APPROVAL OF MATERIAL & SYSTEMS PRIOR TO PURCHASE AND INSTALLATION. ALL MATERIALS AND SYSTEMS SHALL BE COMPLETE, UL LISTED FOR INTENDED INSTALLATION, AND PROVIDE APPROPRIATE RATING AT THE COMPLETION OF JOB.

4.) SEAL ALL PENETRATIONS THROUGH FIRE-RATED BARRIERS (CONDUITS, SLEEVES, SLOTS, CHASES) CREATED BY OR MADE FOR OR ON THE BEHALF OF THE TELECOMMUNICATIONS CONTRACTOR TO PREVENT THE PASSAGE OF SMOKE, FIRE, TOXIC GAS, OR WATER THROUGH PENETRATIONS.

5.) CONTRACTOR SHALL PROVIDE TRAINING MANUALS WHICH INCLUDE INSTRUCTIONS ON METHODS OF ADDING OR REMOVING CABLING TO/FROM FIRESTOPPED SLEEVES AND CHASES.

6.) LAMINATE AND PERMANENTLY AFFIX TO EACH COMMUNICATIONS ROOM WALL ADJACENT TO CHASES THE FOLLOWING INFORMATION:

A.) NAME OF MANUFACTURER OF FIRE STOP SYSTEM.

B.) PART & MODEL NUMBERS OF SYSTEM AND ALL COMPONENTS.

C.) PHONE NUMBERS OF MANUFACTURER'S CORPORATE HEADQUARTERS IN U.S. AND LOCAL DISTRIBUTOR'S NAME AND NUMBER.

LEGEND

#D ▽	WALL DATA INFORMATION OUTLET. NUMBER(#) DENOTES QUANTITY OF CABLES.
WAP	DATA OUTLET FOR WIRELESS ACCESS POINT (WAP) CONNECTIVITY ABOVE LAY-IN CEILING. TERMINATE WITH MODULAR CONNECTORS AND LABEL.
#D	CEILING MOUNTED DATA INFORMATION OUTLET FOR POLE MOUNTED PC MONITOR.
1D,S ▽	WALL DATA OUTLET FOR IP CAMERA. REFER TO SECURITY DRAWINGS AND SPECIFICATIONS FOR EXACT PLACEMENT.
1D,S	CEILING DATA OUTLET FOR IP CAMERA. REFER TO SECURITY DRAWINGS AND SPECIFICATIONS FOR EXACT PLACEMENT.
#D	CEILING MOUNTED DATA INFORMATION OUTLET FOR POLE MOUNTED FLAT PANEL DISPLAY.
#D ▽	WALL DATA INFORMATION OUTLET FOR FLAT PANEL DISPLAY.
W ▼	WALL PHONE (VOICE) OUTLET AT 48" AFF.

ABBREVIATIONS

BAS:	BUILDING AUTOMATION SYSTEM
BET:	BUILDING ENTRANCE TERMINAL
DIV 01:	GENERAL REQUIREMENTS
DIV 07:	THERMAL & MOISTURE PROTECTION
DIV 23:	HEATING, VENTILATING, AND AIR-CONDITIONING
DIV 25:	INTEGRATED AUTOMATION
DIV 26:	ELECTRICAL
NIC:	NOT IN CONTRACT
OFOI:	OWNER FURNISHED, OWNER INSTALLED
TBB:	TELECOM BONDING BACKBONE
TBC:	TELECOM BONDING CONDUCTOR
TMBC:	TELECOM MAIN BONDING CONDUCTOR
PBB:	PRIMARY BONDING BUSBAR
UTP:	UNSHIELDED TWISTED PAIR
WAP:	WIRELESS ACCESS POINT
SIM:	SIMILAR

DRAWING LIST

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

DATACOM DESIGN GROUP
voice | data | audio | video | security | acoustics
SAN ANTONIO
P: (210) 698-6455

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
Alfonso M Delgado
BICSI ID # 163780
EXPIRES 12-31-27
RCDD

District 3 Aquatics Facility
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LEGEND AND NOTES - COMMUNICATIONS

SHEET NUMBER

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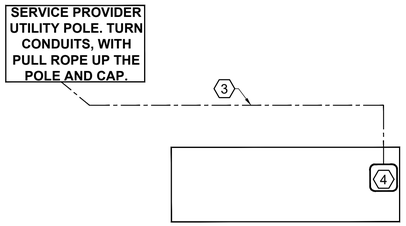

2 FIBER RISER DIAGRAM
Not to Scale

1 SITE PLAN - COMMUNICATIONS
1" = 30'-0"

GENERAL NOTES FOR TELECOMMUNICATIONS CONDUIT SYSTEMS SHALL:

1.) BE SCHEDULE 80 WHEN PLACED UNDER GROUND.

2.) CONTAIN A MINIMUM OF (2) 3-INCH 3-CELL MAXCELL FABRIC INNERDUCT INSIDE EACH CONDUIT. COORDINATION WITH AND APPROVAL BY THE CITY OF SAN ANTONIO INFORMATION SERVICES TECHNOLOGY DEPARTMENT IS REQUIRED TO DETERMINE THE EXACT QUANTITY AND SIZE OF THE MAXCELL INNERDUCT INSIDE EACH CONDUIT. PULL TAPE SHALL BE PROVIDED INTEGRAL WITH EACH CELL OF THE MAXCELL FABRIC INNERDUCT..

3.) A METALLIC TRACER WIRE SHALL BE PROVIDED FOR THE PURPOSE OF LOCATING DUCT ROUTE IN CASE OF ROUTE DISTURBANCE. IN A BANK OF CONDUITS, TRACER WIRE SHALL BE PROVIDED IN A LEAST ONE OF THE CONDUITS.CONTAIN NO MORE THAN THE EQUIVALENT OF (2) 90 DEGREE BENDS BETWEEN PULL BOXES.

4.) MAINTAIN A MINIMUM BEND RADIUS OF 10 TIMES THE DIAMETER OF THE CONDUIT.

5.) NOT EXCEED 40 PERCENT FILL RATIO.

6.) BE PLACED AT A MINIMUM DEPTH OF 36-INCHES FROM THE TOP OF THE CONDUIT TO THE FINISHED GRADE WITH 3-INCHES OF COMPACTED SAND ABOVE AND BELOW THE BURIED CONDUIT AND AN ORANGE METALLIC TRACER WARNING TAPE STENCILED "TELECOMMUNICATIONS" 12-INCHES BELOW GRADE THROUGHOUT THE ENTIRE PATHWAY.

7.) THE ELECTRICAL CONTRACTOR SHALL FURNISH AND PROVIDE THE FOLLOWING FOR COMMUNICATIONS CABLING: CABLE TRAY, CONDUIT, SLEEVES, WALL, AND FLOOR BOXES REFER TO THE ELECTRICAL AND COMMUNICATIONS DETAIL DRAWINGS.

A.) PULL BOXES SHALL BE OF ADEQUATE DEPTH FOR CONDUITS TO ENTER FROM THE SIDE OF THE PULL BOX AND NOT BE REQUIRED TO SWEEP UP INTO THE BOTTOM OF BOX.

B.) PULL BOXES SHALL BE 30 INCHES x 48 INCHES x 30 INCHES.

C.) ALL ACCESSORIES SUCH AS RACKING, GROUNDING AND BONDING, LADDERS AND ANCILLARY EQUIPMENT SHALL BE PROVIDED.

D.) ALL COVERS SHALL BE STENCILED WITH "COSA COMMUNICATIONS".

E.) PULL BOXES SHALL BE DESIGNED TO ENSURE PROPER CONSTRUCTION TYPES AND LOAD RATINGS (I.E., TRAFFIC BEARING) ARE OBSERVED AND UTILIZED BASED ON THE LOCATION OF THE PULL BOXES.

8.) STUB UP INTO THE MDF AT 4-INCHES ABOVE THE FINISHED FLOOR, NO MORE THAN 2-INCHES FROM THE FINISHED WALL AND INSTALLED PARALLEL TO THE FINISHED WALL.

9.) CONTAIN A MARKED DETECTABLE PULLING TAPE WITH 1800 LBS TENSION STRENGTH, BE FITTED WITH BUSHINGS, AND SEALED APPROPRIATELY AT BOTH ENDS.

10.) ALL COPPER CABLING OUTSIDE OF BUILDING SHALL BE OSP RATED AND WILL REQUIRE LIGHTNING PROTECTION AT BOTH ENDS.

KEYED NOTES:

1 COMMUNICATIONS CONDUIT (AS INDICATED).

2 PULL BOX (AS INDICATED).

3 SERVICE PROVIDER AT&T FIBER.

4 APPROXIMATE LOCATION OF MDF.

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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voice | data | audio | video | security | acoustics
SAN ANTONIO
P: (210) 698-6455

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BICSI ID # 163780
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RCDD

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SHEET TITLE
SITE PLAN - COMMUNICATIONS

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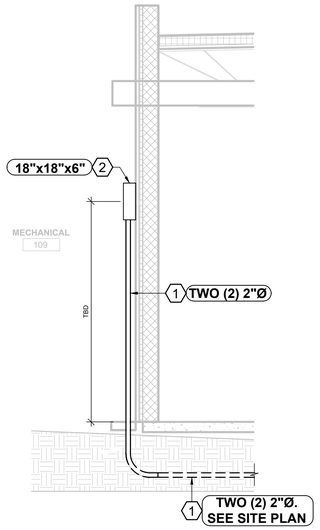

2 PULL BOX ENTRANCE DETAIL
Not to Scale

1 FLOOR PLAN - COMMUNICATIONS
1" = 30'-0"

GENERAL NOTES:

1.) ALL CABLING SHALL BE RATED FOR THE ENVIRONMENT IN WHICH IT WILL RESIDE.

2.) ALL COMMUNICATIONS CONDUITS TO UTILIZE PULL STRINGS AND PLASTIC PROTECTIVE BUSHINGS AT EACH END PRIOR TO PULLING OF ANY CABLING.

3.) DO NOT ROUTE HVAC DUCTWORK OR PIPING OVER OR THROUGH THE TELECOM ROOMS.

4.) ALL WIRING IN MECHANICAL ROOMS, ELECTRICAL ROOMS, DRYWALL CEILING, INACCESSIBLE AREAS, CRAWL SPACE, PLASTER CEILING, INSIDE CONCEALED WALLS, AREAS EXPOSED TO OCCUPANT VIEW, AND OTHER AREAS SUBJECT TO PHYSICAL DAMAGE SHALL BE RUN IN CONDUIT.

5.) PROVIDE CONDUIT SLEEVES WITH BUSHINGS OUT IN TO THE CORRIDOR FOR THE STRUCTURED CABLING SYSTEM. REFERENCE ARCH FOR WALL PENETRATION DETAIL.

6.) PROVIDE OSP RATED CABLING FOR ALL CABLES ROUTED OUTSIDE OF THE FOOTPRINT OF THE BUILDING OR BELOW GRADE UNLESS OTHERWISE NOTED.

7.) TRANSITION CABLE FROM OSP TO INDOOR RATED WITH BUILDING ENTRANCE TERMINALS. CONTINUE INSIDE THE BUILDING WITH PLENUM RATED CABLE.

KEYED NOTES:

1 COMMUNICATIONS CONDUIT. (SIZE AS INDICATED)

2 PULL BOX (AS INDICATED).

3 DATA CONNECTIVITY TO SERVE BAS/BMS. REFERENCE DIV 25. COORDINATE WITH DIV 23/26 FOR EXACT LOCATION.

4 PROPOSED SURFACE MOUNTED RACEWAY. COORDINATE WITH ARCHITECT ON EXACT LOCATION.

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Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

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SHEET TITLE

FLOOR PLAN - COMMUNICATIONS

SHEET NUMBER

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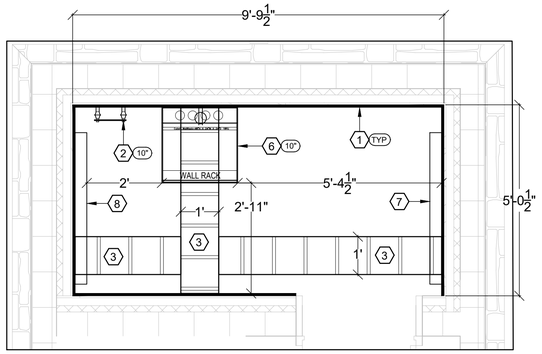

1 IDF ROOM 102 - PLAN VIEW
SCALE: 1/2" = 1'-0"

MDF ROOM GENERAL NOTES:

1.) IN THE EVENT THE CONTRACTOR PROVIDES AND INSTALLS 2-POST EQUIPMENT RACKS IN THE MDF/IDF ROOMS, THE DIVISION 27 CONTRACTOR SHALL COORDINATE WITH THE OWNER TO DETERMINE IF THE OWNER NEEDS ADDITIONAL EQUIPMENT RACK SUPPORT SUCH AS RAILS OR DEEP SHELVING TO SUPPORT FUTURE OWNER PROVIDED/OWNER INSTALLED UPS SYSTEM EQUIPMENT.

2.) CONTRACTOR SHALL CONFIRM PATCH PANEL COUNTS WITH CABLE QUANTITIES PRIOR TO BIDDING.

3.) EQUIPMENT NOT RELATED TO THE SUPPORT OF THE TELECOMMUNICATIONS ROOM (E.G., PIPING, DUCTWORK, PNEUMATIC TUBING) SHALL NOT BE INSTALLED IN, PASS THROUGH, OR ENTER THE TELECOMMUNICATIONS ROOM.

4.) A VERTICAL SECTION OF LADDER RACK SHALL BE ATTACHED TO THE WALLBOARD TO MANAGE BACKBONE CABLES, SERVICE PROVIDER CABLES, OR CABLES AS THEY TRANSITION FROM THE ENTRANCE CONDUITS TO OVERHEAD LADDER RACK.

KEYED NOTES:

1 4-FEET X 8-FEET X 3/4-INCH A-C GRADE, VOID FREE, FIRE RATED PLYWOOD INSTALLED VERTICALLY STARTING AT 12-INCHES ABOVE FINISHED FLOOR ON ALL PERIMETER WALLS. PAINT WITH TWO (2) COATS OF FIRE RETARDANT PAINT. (BY DIV.27)

2 GROUND BUS BAR MOUNTED AT 84-INCHES ABOVE FINISHED FLOOR.

3 12-INCH LADDER RACK MOUNTED AT 87-INCHES ABOVE FINISHED FLOOR. LADDER RACK SHALL BE SUPPORTED PER MANUFACTURE AND INDUSTRY STANDARDS. (BY DIV. 27)

4 VERTICAL LADDER RACK. (AS INDICATED)

5 CONDUIT SLEEVES. (AS INDICATED) (BY DIV 26)

6 WALL MOUNTED ENCLOSURE. PANDUIT - WME9BL.

7 48-INCHES WIDE X 84-INCHES HIGH RESERVED FOR SECURITY PANELS. (NIC)

8 48-INCHES WIDE X 84-INCHES HIGH RESERVED FOR SERVICE PROVIDER TERMINATION.

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Landscape Architecture
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San Antonio, Texas 78215
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SAN ANTONIO
P: (210) 698-6455

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SHEET TITLE

TELECOM ROOM DETAILS - COMMUNICATIONS

SHEET NUMBER

T301

GENERAL NOTES:

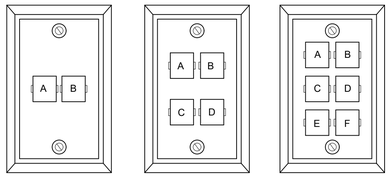
1.) ROTATE FACE PLATE 90° CLOCKWISE FOR HORIZONTAL CONFIGURATION.

2.) STAINLESS STEEL FACE PLATE SHALL BE USED IN ALL SURFACE MOUNT, OVERHEAD, AND LAB TABLE RACEWAY OUTLETS. COORDINATE COLOR W/ARCHITECT.

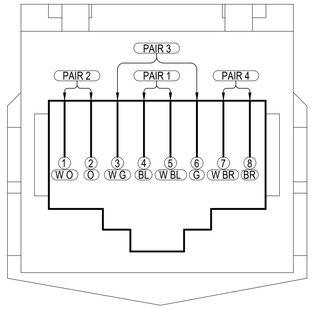
3.) COLOR CODES:
REFERENCE SPECIFICATION 271500 FOR JACK COLORS.

4.) ALL COMMUNICATIONS OUTLETS, TERMINATIONS BLOCKS AND PASSIVE CONNECTION DEVICES SHALL BE CONFIGURED TO TIA/EIA T568B WIRING STANDARDS.

CONNECTOR PIN ASSIGNMENTS	
8 PIN MODULE JACK PIN No.	DATA CONNECTION COLOR CODE
1	WHITE/ORANGE
2	ORANGE
3	WHITE/GREEN
4	BLUE
5	WHITE/BLUE
6	GREEN
7	WHITE/BROWN
8	BROWN



2-PORT 4-PORT 6-PORT



JACK POSITIONS

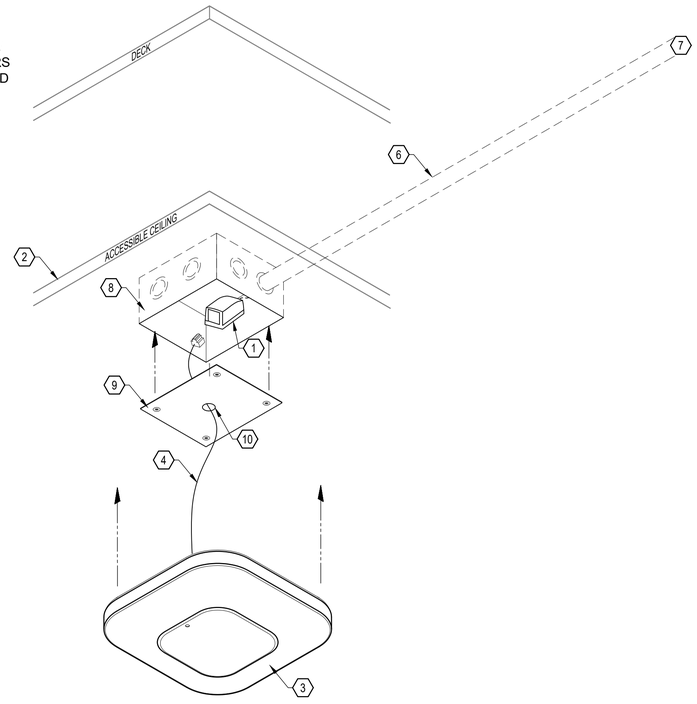
1 T568B CONNECTOR WIRING DETAIL
SCALE: Not to Scale

KEYED NOTES:

1. PLENUM RATED 2-PORT SURFACE MOUNT BOX.
2. CEILING GRID/LAY IN CEILING.
3. HORIZONTAL SURFACE MOUNTED WIRELESS ANTENNA BY OWNER (OFOI).
4. COORDINATE PLENUM RATED PATCH CORD LENGTH WITH OWNER (OFOI).
5. COVERAGE AREA IS OMNI-DIRECTIONAL.
6. ONE (1) 1"Ø CONDUIT WITH UTP CABLE ROUTED OVER HARD CEILING TO CABLE TRAY AT ACCESSIBLE CEILING. PROVIDE PULL STRING AND PROTECTIVE BUSHING AT END.
7. PROVIDE 10 FOOT CABLE SLACK STORED IN A FIGURE EIGHT ON J-HOOK WHERE CABLE EXITS CONDUIT (NOT SHOWN).
8. 4 1/16"X4 1/16"X2 1/8" TWO GANG BOX MOUNTED FLUSH WITH GYP CEILING FOR ACCESS. (BY DIV 26)
9. BOX COVER PLATE WITH TORX TAMPER RESISTANT SCREWS.
10. PROVIDE AND INSTALL GROMMET FOR KNOCK-OUT.

GENERAL NOTES:

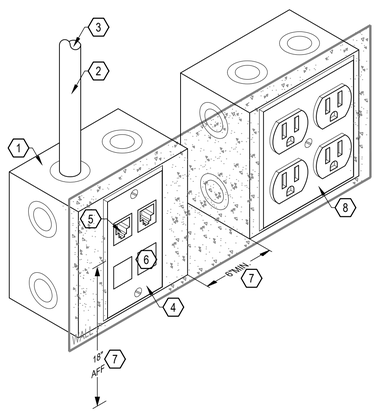
1.) BOXES MAY BE MOVED BY OWNER. THEREFORE MOUNT BOXES TO STRUCTURE WITH FASTENERS THAT WILL PERMIT BOXES TO BE DETACHED AND RE-MOUNTED SECURELY.



2 OMNI DIRECTIONAL WIRELESS ANTENNA DETAIL
SCALE: Not to Scale

KEYED NOTES:

1. RECESSED DOUBLE GANG BOX (4 1/16"X4 1/16"X2 1/8") WITH SINGLE GANG REDUCTION PLATE. (BY DIV 26)
2. 1"Ø CONDUIT WITH 200 LBS ¼" POLYLINE PULL STRING. (BY DIV 26)
3. END OF CONDUIT DEBURRED AND FITTED WITH PROTECTIVE GROMMET. (BY DIV 26)
4. STRUCTURED CABLING, OUTLETS, COVER PLATES, AND JACKS SUPPLIED AND INSTALLED BY COMMUNICATION CONTRACTOR. COORDINATE COVERPLATES COLOR WITH ARCHITECT.
5. PROVIDE RJ-45 JACK FOR EACH CABLE.
6. FILL UNUSED POSITIONS WITH BLANKS.
7. COORDINATE EXACT MOUNTING HEIGHT AND DISTANCE WITH ARCHITECT/GC.
8. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR BOX, FACEPLATE, AND CONDUIT REQUIREMENTS.



3 POWER AND DATA OUTLET DETAIL
SCALE: Not to Scale

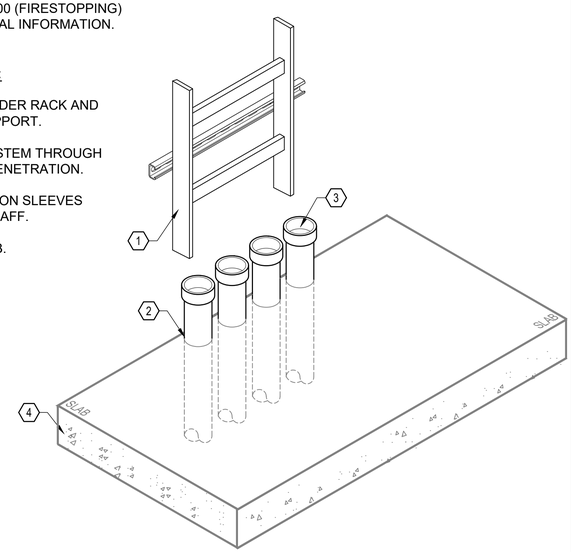
4 NOT USED
SCALE: Not to Scale

GENERAL NOTES:

1.) REFER TO SPECIFICATIONS SECTION 270000 (FIRESTOPPING) FOR ADDITIONAL INFORMATION.

KEYED NOTES:

1. VERTICAL LADDER RACK AND UNISTRUT SUPPORT.
2. FIRE STOP SYSTEM THROUGH FIRE RATED PENETRATION.
3. COMMUNICATION SLEEVES TERMINATE 4" AFF.
4. FINISHED SLAB.



5 CONDUIT SLEEVE DETAIL
SCALE: Not to Scale

DATACOM DESIGN GROUP
voice | data | audio | video | security | acoustics
SAN ANTONIO
P: (210) 698-6455

RIALTO STUDIO
Rialto Studio, Inc.
Landscape Architecture
2425 Broadway
San Antonio, Texas 78215
210.828.1155

DATACOM DESIGN GROUP
voice | data | audio | video | security | acoustics
SAN ANTONIO
P: (210) 698-6455

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
Alfonso M Delgado
BICSI ID # 163780
EXPIRES 12-31-27
RCDD

District 3 Aquatics Facility
San Antonio, TX

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GENERAL DETAILS - COMMUNICATIONS

SHEET NUMBER

T401