



STANDARD OPERATING PROCEDURE (SOP)

POOL PLAN DRAWINGS

VERSION 1.0

UNLESS TOLD OTHERWISE OUR STANDARDS ARE AS FOLLOWS

Table of Contents

Standard Operating Procedure	3
Pool Drawing Standard	
Prior To Starting Pool & Spa Plans	
Pool & Spa Calculations	
Pool Sheet Layout	4-6
Cover Sheet	
Pool Life Safety Sheet	
Control Joint & Dimension Plan	
Overall Pool Plan Layout	
Enlarged Pool Plan Layout	
Piping & Electrical Plan Layout	
Enlarged Pumproom Plan	
Pool Sections & Details	
Pool Specifications	
Spa Sheet Layout	7-9
Cover Sheet	
Spa Life Safety Sheet	
Control Joint & Dimension Plan	
Overall Spa Plan Layout	
Piping & Electrical Plan Layout	
Enlarged Pumproom Plan	
Spa Sections & Details	
Spa Specifications	
Pool Sheet Required Notations	10-11
Spa Sheet Required Notations	12-13
Additional Requirements	14

Standard Operating Procedure

Having a Standard Operating Procedure (SOP) is essential for ensuring efficiency in the workplace, as it promotes consistency, streamlines processes, and minimizes errors. SOPs serve as effective training resources for new employees, clarify roles and responsibilities for accountability, and help maintain compliance with regulatory standards. They also encourage continuous improvement by allowing teams to identify areas for enhancement. If you believe a section needs to be added or amended, please email Joey Davis and Derik Jones, and we will discuss your suggestions and implement necessary changes. Your input is crucial in refining our procedures!

Pool Drawing Standard

Unless otherwise specified, the plans should contain the following:

- 3/32" Ariel Text Notes
- 3/32" Ariel Dimensions

Prior To Starting

Prior to starting pool plans, verify the following information:

- Has a central model been set up?
- All building & pool footprints final?
- Does the project have any of the following special conditions:
 - Salt Water
 - Pool Heated
 - Competition Pool
 - Water Feature

Calculations

Prior to starting pool plans, perform the following calculations:

- Circulation Pool Depth & GPM Calculations (6 Hour Turn-over Rate)
 - Make sure that the transition points of the pool are spaced out 1ft drop for every 10ft minimum and is consistent until the 5ft depth is reached. Make sure there is at least 5ft min in the 5ft deep section to make room for the main drain cover and sumps.
 - Make sure that any benches (if applicable) do not exceed 4ft in depth.
 - Make sure that steps do not exceed 4ft in depth.
- Circulation Spa Depth & GPM Calculations (1/2 Hour Turn-over Rate)
 - Spa shall be a depth of 3'-6"
- Water Feature GPM Calculations (6 Hour Turn-over Rate)
 - When selecting a water feature, make the specifications do not exceed 210 GPM, unless client specifically wants a water feature that exceeds it.
- There are two separate calculation sheets that will be used to determine GPM and circulation / feature pump requirements. These files will be in **\\dciserver\DCI Design\01 - Current Project Revit Files\01 - DCI_STANDARDS_TEMPLATES\#1K - POOL CALCULATION SPREADSHEETS.**
 - 2024 11 08 – Pool Gallons & GPM Requirements
 - This is the first spreadsheet you will use to determine what your gallon and GPM requirements are.
 - 2024 11 08 – Pumproom Calculation & Pool Equipment
 - This spreadsheet will help you determine pumproom equipment as well as main drain cover & sump information.

Pool Sheet Layout

Cover Sheet (If required) – SP0.0

The cover sheet should contain the following items:

- Title of Project
- Location of Project
- Vicinity Map
- Overall Site Plan
- Drawing Index
- Architect & Engineers Logo & Contact Information

Life Safety Plan (If required) – SP0.1

The life safety sheet should contain the following items:

- Overall Pool & Pool Deck Layout
- Occupancy Schedule
- Diagonal Distance
- Exit Separation Requirements
- Max Travel Distance
- Emergency Equipment Location
- Gate Occupancy Calculations
- General Pool Deck Life Safety Notes
- Life Safety Symbol Legend

Control Joint & Dimension Plan (All plans) – SP1.0

The control joint & dimension sheet should contain the following items:

- Pool Control Joint Plan
- Pool Dimension Plan

Overall Pool Layout Plan – SP2.0

The overall pool layout plan sheet should contain the following items:

- Overall Pool Layout Plan
 - Make sure that pool has a handrail from pool deck onto sun shelf per NC Pool Codes.
- Main Pool Data
- Pool Deck Exit Requirements
- Building Fixture Data (Health Department Calculations)
- Pool Safety Requirements
- Pool Deck Markings
- Pool Deck Signage
- Pool Construction Notes
- Pool Equipment Schedule

Piping & Electrical Layout Plan – SP3.0

The piping & electrical sheet should contain the following items:

- Pool Piping & Electrical Plan
 - Side Note: Make sure that actual wattage does not exceed 100W per junction box when laying out light niche locations
 - Side Note: Make sure that Color Vision Bubblers (If applicable) are on their own junction box.
- Enlarged Pumproom Plan
- Chemical Storage Data

- Pump Flow Piping Sizing Chart
- Main Pool Data
- Pumproom & Chemical Room Notes
- Pool Equipment Schedule
- Underwater Lighting Data

Pool Sections & Details – SP4.0 & SP4.1

The pool sections & details sheet should contain the following items:

Sheet SP4.0

- North/South Pool Section
- East/West Pool Section
- Typ. Pool Fence & Gate Detail
- Typ. Chemical Storage Shelf Detail
- Typ. Sump Pit Detail
- Typ. Sump Pit & Air Gap Detail

Sheet SP4.1

- Typ. Pool Bonding Detail
- Typ. Pool Wall Detail
- Typ. Pool Stair & Shelf Detail
- Typ. Commercial Ladder Detail
- Typ. Main Drain Detail
- Typ. Pool Skimmer Detail
- Typ. Pool Autofill Detail
- Typ. Wall Return Inlet
- Typ. Floor Return Inlet
- Typ. Vacuum Lock Inlet
- Typ. Recessed Cup Anchor (If Applicable)
- Typ. Bench Detail (If Applicable)

Pool Specifications – SP5.0, SP5.1, SP5.2

The pool specification sheets will be guided by the pool equipment schedule and should contain the following items:

Sheet SP5.0 (8 slots available)

- Pump Specification
- Backwash Valve Specification
- Filter Specification
- Salt System Specification (If applicable)
- Chlorinator Specification
- Pool Heater (If applicable) Specification
- Pool UV System Specification (If applicable)
- Return Flow Meter Specification
- Main Drain Cover Specification
- Main Drain Sump Specification
- Hydrostatic Relief Valve Specification

Sheet SP5.1 (8 slots available)

- Skimmer Specification
- Vacuum Lock Cap Specification
- Overflow Drain Specification
- Wall Return Inlet Specification
- Floor Return Inlet Specification
- Autofill Specification

Last Updated- 11/11/2024

- Micro Brite Light Specification (If applicable)
- Glo Brite Light Specification (If applicable)
- Intellibrite Light Specification
- Junction Box Specification

Sheet SP5.2 (8 slots available)

- Pool Handrail Specification – Deck (Short)
- Pool Handrail Specification – Shelf (Standard)
- ADA Multi-lift Specification
- Pool Plaster Specification
- **Any additional specifications that are specific to that project including but not limited to:
 - Backstroke Stanchion
 - Post Anchors
 - Diving Platforms
 - Feature Panel Control
 - Etc.

Spa Sheet Layout

Cover Sheet (If required) – SP0.0

The cover sheet should contain the following items:

- Title of Project
- Location of Project
- Vicinity Map
- Overall Site Plan
- Drawing Index
- Architect & Engineers Logo & Contact Information

Life Safety Plan (If required) – SP0.1

The life safety sheet should contain the following items:

- Overall Spa & Spa Deck Layout
- Occupancy Schedule
- Diagonal Distance
- Exit Separation Requirements
- Max Travel Distance
- Emergency Equipment Location
- Gate Occupancy Calculations
- General Spa Deck Life Safety Notes
- Life Safety Symbol Legend

Control Joint & Dimension Plan (All plans) – SP1.0

The control joint & dimension sheet should contain the following items:

- Spa Control Joint Plan
- Spa Dimension Plan

Overall Spa Layout Plan – SP2.0

The overall spa layout plan sheet should contain the following items:

- Overall Spa Layout Plan
- Main Spa Data
- Spa Deck Exit Requirements
- Building Fixture Data (Health Department Calculations)
- Spa Safety Requirements
- Spa Deck Markings
- Spa Deck Signage
- Spa Construction Notes
- Spa Equipment Schedule

Piping & Electrical Layout Plan – SP3.0

The piping & electrical sheet should contain the following items:

- Spa Piping & Electrical Plan
 - Circulation
 - Spa Jet Feature
- Enlarged Pumproom Plan
- Chemical Storage Data
- Pump Flow Piping Sizing Chart
- Main Spa Data
- Pumproom & Chemical Room Notes
- Spa Equipment Schedule
- Spa Underwater Lighting Data

Spa Sections & Details – SP4.0 & SP4.1

The pool sections & details sheet should contain the following items:

Sheet SP4.0

- North/South Spa Section
- East/West Spa Section
- Typ. Pool Fence & Gate Detail
- Typ. Chemical Storage Shelf Detail
- Typ. Sump Pit Detail
- Typ. Sump Pit & Air Gap Detail

Sheet SP4.1

- Typ. Spa Bonding Detail
- Typ. Spa Wall Detail
- Typ. Spa Stair Detail
- Typ. Main Drain Detail
- Typ. Spa Skimmer Detail
- Typ. Spa Autofill Detail
- Typ. Wall Return Inlet
- Typ. Spa Jet Return Inlet
- Typ. Vacuum Lock Inlet
- Typ. Bench Detail

Spa Specifications – SP5.0, SP5.1, SP5.2

The spa specification sheets will be guided by the pool equipment schedule and should contain the following items:

Sheet SP5.0 (8 slots available)

- Pump Specification – Circulation
- Pump Specification – Spa Jet
- Backwash Valve Specification
- Filter Specification
- Salt System Specification (If applicable)
- Chlorinator Specification
- Spa Heater Specification
- Pool UV System Specification (If applicable)
- Return Flow Meter Specification

Last Updated- 11/11/2024

- Main Drain Cover Specification - Circulation
- Main Drain Sump Specification – Spa Jet
- Hydrostatic Relief Valve Specification

Sheet SP5.1 (8 slots available)

- Skimmer Specification
- Vacuum Lock Cap Specification
- Overflow Drain Specification
- Wall Return Inlet Specification
- Autofill Specification
- Micro Brite Light Specification (If applicable)
- Glo Brite Light Specification (If applicable)
- Junction Box Specification

Sheet SP5.2 (8 slots available)

- Spa Handrail Specification – 3 Bend ADA Handrail
- ADA Multi-lift Specification
- Spa Plaster Specification
- **Any additional specifications that are specific to that project including but not limited to:
 - Feature Panel Control
 - Etc.

Pool Sheet Notations Required

Project Sheet Required Notations - Pools

This section will change as plans develop. Below is a breakdown of current notations required on each sheet.

Cover Sheet – SP0.0

- See Pool Sheet Layout guide for required items.

Pool Life Safety Sheet – SP0.1

- 60" high commercial grade fence tight to edge of pool deck with no greater gap than 1-1/2" between pool deck & solid grade.
- 48" wide commercial grade gate. All gate post to be 4x4 SQ. steel, primed and painted black. See fence details on SP4.0.x (detail number). All access points must be self-closing and positive self-latching with panic hardware at all exits.
- Max allowable travel distance: 200'-0". Actual travel distance: xxx (once a path has been selected).
- Fire extinguisher (show location with text note)
- Emergency 911 phone (show location with text note)
- Safety equipment life hook & pole, throw rope, 24" life ring (show location with text note)

Control Joint & Dimension Plan – SP1.0

- Pool Control Joint Plan
 - EJ (Expansion Joint – Show text note on expansion joint locations)
 - CJ (Control Joint – Show text note on control joint locations)
- Pool Dimension Plan
 - Overall pool length
 - Overall pool width

Overall Pool Layout Plan – SP2.0

- Spot elevations reflect req's slopes away from pool edge at a slope between ¼" per 1'0" and ½" per 1'0" for health department approval. Any deviations or conflicts need to be brought to pool designers' attention immediately. See civil drawings for elevations by others.
- Safety equipment life hook & pole, throw rope, 24" life ring.
- Pool rules and signage
- 48" wide commercial grade gate. All gate post to be 4x4 sq steel, primed and painted black. See fence details SP4.0.xxx. All access points must be self-closing & have positive self-latching mechanisms with panic hardware at all exits.
- Slope ¼" per 1'0" away from pool min.
- F.E.X., emergency "911" phone
- Hi/Lo water cooler & hose bib.
- 4" thick light broom finished concrete pool deck w/ 6x6 W2.1 x W2.1 WWF over 4" #57 stone base.
- Fence line.
- Independent cantilever coping line.
- ADA compliant multi-lift.
- "Depth" & "No Diving" markers are set max 24' apart at coping line. See pool deck marking notes for more details.
- 60" high commercial grade fence tight to edge of pool deck with no greater gap than 1-1/2" between pool deck solid grade and B.O. fence. See fence details on SP4.0.xxx
- 2"x2" tile (black or blue) set 1" back from nose of stairs and benches typ.
- Edge of pool.

- Pool depth is measured from water level. The waterline is located 6-1/2" below top of pool deck.
- Any additional project specific notations as needed.
- Yard Hydrant. Verify location with G.C. and civil team prior to installation.
- 18" deep bench max (If applicable).

Overall Pool Layout Plan (Cont.) – SP2.0

- G.C. to coordinate fence connections to the building to avoid all footholds (45") typically.
- 4" track deck drains w/ removable cover. Coordinate w/ G.C. & P.C. on connection point for drainage to either sump pit or run to daylight to storm drain.
- Sanitary Rinse Shower
- Show pool depth in various locations around the pool.

Piping & Electrical Plan – SP3.0

- Bond all ladders to bonding grid.
- Bond all handrails to bonding grid.
- Typical bonding grid connection per detail on SP4.0.xxx – Min (4) Required to be spaced equally around the pool.
- Bond HC lift to bonding grid.
- Dash line indicates min 1'-6" extent of equipotential bonding grid. See details on SP4.1.xxx.
- Provide a tile line overflow drain. Field locate the overflow drain after site coordination with G.C. & Civil. Overflow drain to run to either sump pit or to storm drain via daylight draining.
- Typ. Junction Box to be mounted outside of pool deck. Field locate and coordinate location with G.C. & Civil prior to install. Run pool lighting circuit to electrical room. See electrical plans by others for panel schedules and wire sizes.
- Typ. Vacuum Inlet
- Typ. Wall Return Inlet. All wall return branch lines are 2".
- Typ. Skimmer. All skimmer branch lines are 2".
- Typ. Floor Return Inlet.
- Yard Hydrant. Verify location w/ G.C. & Civil prior to install.
- Typ. Pool Autofill.
- Typ. Light Niche.

Enlarged Pumproom Plan – SP3.0

- Non-corrosive shelf mounted 16" AFF on CMU base. See detail on SP4.0.xxx for details.
- Cont. running exhaust fan. See mechanical plans for details.
- 8' x 4' x 16" Sump Pit w/ fiberglass grate. See detail on SP4.0.xxx. Sump pit to drain to sanitary sewer.
- (3) pool lighting conduits + 2 spare.
- Provide min 2" air gap between top of backwash pipe & top of sump pit. Cut 4" square under pipe to prevent backsplash during backwash. See sump pit detail on SP4.0.xxx.
- Slope all pumproom floor ¼" per 1'0" to floor drain in sump pit.
- RPZ w/ hose bib. Run autofill line & yard hydrant from RPZ.

Sections & Details – SP4.0

- East/West Pool Section
 - 8" Shotcrete floor
 - 4" bed of crushed #57 stone
 - 2500 PSI compacted earth
 - 6" waterline tile
 - Waterline
 - Slope pool deck ¼" per 1'0" away from edge of pool
- North/South Pool Section
 - 8" Shotcrete floor
 - 4" bed of crushed #57 stone
 - 2500 PSI compacted earth
 - 6" waterline tile
 - Waterline
 - Slope pool deck ¼" per 1'0" away from edge of pool

Sections & Details – SP4.0.1

These details will already have their required notations on them so no additional information will be required on these details. Only additional information that may be required is on the main drain detail. You will just need to add the size of the pipe coming out of the sump pit with a text notation.

Spa Sheet Notations Required

Spa Project Sheet Required Notations (If applicable)

This section will change as plans develop. Below is a breakdown of current notations required on each sheet.

Cover Sheet – SP0.0

- See Spa Sheet Layout guide for required items.

Pool Life Safety Sheet – SP0.1

- 60" high commercial grade fence tight to edge of pool deck with no greater gap than 1-1/2" between pool deck & solid grade.
- 48" wide commercial grade gate. All gate post to be 4x4 SQ. steel, primed and painted black. See fence details on SP4.0.x (detail number). All access points must be self-closing and positive self-latching with panic hardware at all exits.
- Max allowable travel distance: 200'-0". Actual travel distance: xxx (once a path has been selected).
- Fire extinguisher (show location with text note)
- Emergency 911 phone (show location with text note)
- Safety equipment life hook & pole, throw rope, 24" life ring (show location with text note)
- Emergency pump shut off (show location with text note)

Control Joint & Dimension Plan – SP1.0

- Pool Control Joint Plan
 - EJ (Expansion Joint – Show text note on expansion joint locations)
 - CJ (Control Joint – Show text note on control joint locations)
- Pool Dimension Plan
 - Overall spa length
 - Overall spa width

Overall Spa Layout Plan – SP0.0

- Spa bench to have a max depth of 18". See detail on SP4.0.xxx
- Slope spa to pool deck drain at ¼" per 1'0" away from spa edge.
- 2" x 2" tile (Black or Blue) set 1" back from nose of stairs and benches typ.
- Independent spa coping.
- ADA compliant multi-lift.
- Spa 15 min timer & Emergency pump shut off.
- Tie spa overflow drain to deck drain. Field locate the overflow drain after site coordination with G.C. & Civil. Overflow drain to run to either sump pit or to storm drain via daylight draining.

Spa Piping & Electrical Plan – SP3.0

- Tie spa over-flow drain to deck drain. Field locate the overflow drain after site coordination with G.C. & Civil. Overflow drain to run to either sump pit or to storm drain via daylight draining.
- Align circulation returns between the top of bench and bottom of floor.
- Typ. Spa Autofill
- Typ. Skimmer
- Typ. Spa wall return inlet
- Typ. Spa jet return inlet
- Spa circulation main drain covers.

- Space all spa jets equally along spa wall.
- Spa jet main drain covers.
- Bond all handrails to bonding grid.
- Dash line indicates max 1'6" extent of equipotential bonding grid. See details on SP4.1.xxx
- Typ. Bonding grid connection per detail on SP4.1.xxx. Min of (4) required to be spaced equally around spa.
- Typ. Junction Box to be mounted outside of pool deck or on wall (if located inside). Field locate and coordinate location with G.C. & Civil prior to install. Run pool lighting circuit to electrical room. See electrical plans by others for panel schedules and wire sizes.
- Bond HC lift to bonding grid.
- Typ. Spa light niche

Sections & Details – SP4.0

- East/West Pool Section
 - 8" Shotcrete floor
 - 4" bed of crushed #57 stone
 - 2500 PSI compacted earth
 - 6" waterline tile
 - Waterline
 - Slope pool deck $\frac{1}{4}$ " per 1'0" away from edge of pool
- North/South Pool Section
 - 8" Shotcrete floor
 - 4" bed of crushed #57 stone
 - 2500 PSI compacted earth
 - 6" waterline tile
 - Waterline
 - Slope pool deck $\frac{1}{4}$ " per 1'0" away from edge of pool

Sections & Details – SP4.0.1

These details will already have their required notations on them so no additional information will be required on these details. Only additional information that may be required is on the main drain detail. You will just need to add the size of the pipe coming out of the sump pit with a text notation.

Last Updated- 11/11/2024

Additional Information

Future Items

This section serves to add additional information to check prior to completing plans.