#### **Outdoor Heritage Fund Grant Application**

#### Instructions

After completing the form, applications and supporting documentation may be submitted by e-mail to <a href="mailto:ndicgrants@nd.gov">ndicgrants@nd.gov</a>. It is preferred that only electronic copies are <a href="mailto:submitted">submitted</a>.

You are not limited to the spacing provided, except in those instances where there is a limit on the number of words. If you need additional space, please indicate that on the application form, answer the question on a separate page, and include with your submission.

The application and all attachments must be received by the application deadline. You may submit your application at any time prior to the application deadline. **Applicants are strongly encouraged to submit applications prior to the deadline for staff review in order ensure that proposals will be complete when submitted on deadline date.** Incomplete applications may not be considered for funding.

## <u>Please review the back of this form to determine project eligibility, definitions, budget criteria, and statutory requirements.</u>

Project Name - Williston Water World

Name of Organization – Williston Parks & Recreation District

Federal Tax ID# - 45-6002180

Contact Person/Title – Joe Barsh: Executive Director

Address – PO Box 1153

City – Williston

State - ND

Zip Code - 58802

E-mail Address – Joeb@wprd.us

Web Site Address - https://www.willistonparks.com/

Phone – 701-774-9773

List names of co-applicants if this is a joint proposal

#### **MAJOR Directive:**

Choose only one response

- O <u>Directive A</u>. Providing access to private and public lands for sportsmen, including projects that create fish and wildlife habitat and provide access for sportsmen;
- O <u>Directive B</u>. Improving, maintaining and restoring water quality, soil conditions, plant diversity, animal systems and by supporting other practices of stewardship to enhance farming and ranching;
- O <u>Directive C</u>. Developing, enhancing, conserving and restoring wildlife and fish habitat on private and public lands; and
- O <u>Directive D</u>. Conserving natural areas and creating other areas for recreation through the establishment and development of parks and other recreation areas.

#### **Additional Directive:**

Choose all that apply

- O Directive A.
- O Directive B.
- O Directive C.
- O Directive D. X

#### Type of organization:

- O State Agency
- O Political Subdivision X
- O Tribal Entity
- O Tax-exempt, nonprofit corporation.

#### **Abstract/Executive Summary.**

Summarize the project, including its objectives, expected results, duration, total project costs and participants. (no more than 500 words)

Williston Water World will be a destination that increases opportunities for outdoor recreation and will serve as an asset for the greater Williston community and beyond for years. The project is currently being fundraised by the Williston Community Builders, which is a 100% volunteer-based group in town. The Williston Park District has signed a letter of intent to own and operate the facility once it is completed. As the director of WPRD, I am applying for this grant on behalf of WPRD, to support the fundraising efforts to make this project a reality. If awarded, the funds will go towards the associated construction and contracting fees to bring

Williston Water World to life. A large variety of features are planned on the site, ranging from zero-depth entry, splash pad features, lazy river with wave mechanism, water slides, and a separate pool with a ninja course. The Ninja Cross course will be a regional highlight that we expect to draw crowds from out of state and country, as well as throughout North Dakota. The site will also include seating areas and shade structures that can be rented out for parties. Locker rooms/showers and concessions areas will ensure that everyone can enjoy the pool!

Due to our extreme climate, outdoor recreation opportunities are limited for the general population. It is essential to the health and wellness of area residents to have a variety of outdoor recreational activities available to them when the weather allows. Although there are outdoor pools currently in operation in nearby communities, the design and operational capacity of Williston Water World would be of a different breed. More than just a pool, Williston Water World will be an experience in itself, offering users a variety of activities to enjoy throughout their visit. From the zero-entry pool being connected to the lazy river, to the 2 different water slide options that are purposefully designed to provide different experience than that of the others throughout the state, to the lap pool with Ninja-cross, being the only outdoor option for the Ninja-cross platform in the state, the effects of Williston Water World will ripple throughout the region.

In year one, based on current operation statistics of outdoor pools in the region, it is projected that due to its location Williston Water World will sell roughly 31,000 Daily passes, & 2,446 membership passes, resulting in an average of 409 visits per day over a 77-day season. (QUALITY OF LIFE STRATEGIC EVENT FACILITY DEVELOPMENT AND IMPLEMENTATION STUDY)

The comprehensive budget for Williston Water World including phases 1 & 2 totals \$14.195,004

#### **Project Duration:**

#### Indicate the intended schedule for drawing down OHF funds.

Fundraising for Williston Water World has been ongoing for over 3 years to date. We are anticipating groundbreaking in the upcoming weeks and hoping for a grand opening of Spring 2025 with continued fundraising. Funds to reach this intended goal would be needed as soon as possible so that contractors can be secured to complete both phases of the project. If phase 2 of the project is to coincide with the completion of phase one, contractors will need to be secured by the end of Fall 2023 at the latest to ensure viability and avoid cost increases due to time.

Amount of Grant request: \$500,000

Total Project Costs: \$14,195,004

Note: in-kind and indirect costs can be used for matching funds.

Amount of Matching Funds: Funds raised/committed to date = \$8,732,262.22 A comprehensive donor list will be included with the submission of this application.

<u>A minimum of 25% Match Funding is required.</u> Indicate if the matching funds will be in-kind, indirect or cash. Please provide verification that these matching funds are available for your project. Note that effective as of July 1, 2015 no State General Fund dollars can be used for a match unless funding was legislatively appropriated for that purpose.

Amount of Match	Funding Source	Type of Match (Cash, In- kind or Indirect)
\$		
\$		
\$		
\$		
\$		
\$		

#### Certifications

XO I certify that this application has been made with the support of the governing body and chief executive of my organization.

XO I certify that if awarded grant funding none of the funding will be used for any of the exemptions noted in the back of this application.

#### **Narrative**

Organization Information – Briefly summarize your organization's history, mission, current programs and activities.

Include an overview of your organizational structure, including board, staff and volunteer involvement. (no more than 300 words)

The Williston Park and Recreation District, is a separate governing and taxing entity, with boundaries that are coterminous with the City of Williston, North Dakota. The District operates and maintains a system of parks, athletic fields, trails, and other recreation areas. The system covers approximately 390 acres and includes 14 urban parks and athletic fields (13 of which are currently developed) as well as the Williston Municipal Golf Course. The

District also maintains approximately 21 miles of trails. The District serves the residents of the City, as well as an approximately 5 to 10-mile radius surrounding the City.

The District operates under the Commission form of government. The five-member board is elected for four-year staggered terms. The District currently has 34 Full-time staff segmented by departments (Parks/athletic fields maintenance, Facilities, Recreation, Administration). Depending on the season, the District will also staff between 100 – 350 part-time staff to ensure that all programs and facilities have adequate coverage. Specific to the recreation department, nearly all programs rely heavily on volunteerism to be successful. Volunteer recruitment and retention is essential to the District's ability to accomplish its mission to "Provide Superior Parks & Programs for all to enjoy and Active Life."

## Purpose of Grant – Describe the proposed project identifying how the project will meet the specific directive(s) of the Outdoor Heritage Fund Program

Identify project goals, strategies and benefits and your timetable for implementation. Include information about the need for the project and whether there is urgency for funding. Indicate if this is a new project or if it is replacing funding that is no longer available to your organization. Identify any innovative features or processes of your project. Note: if your proposal provides funding to an individual, the names of the recipients must be reported to the Industrial Commission/Outdoor Heritage Fund. These names will be disclosed upon request.

<u>Directive D</u>. Conserving natural areas and creating other areas for recreation through the establishment and development of parks and other recreation areas.

The goal of Williston Water World is to create a place for outdoor water-based recreation. The old outdoor pool in Williston was closed in 2013, due to infrastructure issues and the community has longed for one ever since. This project is currently being fundraised by the Williston Community Builders, or local volunteer-based group in Williston, due to WPRD's inability to fund the project at this time. WPRD is working alongside the community builders in fundraising and design efforts of the pool to ensure that adequate operational measures are taken once the pool is handed over to the District of ongoing operations. Funding is needed now more than ever to sign off with the contractors to begin the project. Phase one will break ground in the upcoming weeks and phase to will be funding dependent. The Ninja-cross feature of Williston Water World will be its most innovative feature and will also work to separate the user experience from that of a standard outdoor pool in this region. Williston Water World will be a state-of-the-art facility in respect to the current standards of outdoor recreation facilities. The Ninja cross platform is as innovative as it gets and will be the first outdoor amenity in the State of North Dakota once completed. When you include the Ninja cross platform, waterslides, zero entry pool & lazy river, Williston Water World will without a doubt be an attraction that will stretch into Montana, Canada, and throughout North Dakotan communities as well.

ls th	is project part of	a Comprehensive C	Conservation Plan?	Yes x	No
If ye	s, provide a copy	with the application	n.		_

Note: Projects involving buildings and infrastructure will only be considered if part of a Comprehensive Conservation Plan. Please refer to the "Definitions" section at the back of the form for more details.

Management of Project – Provide a description of how you will manage and oversee the project to ensure it is carried out on schedule and in a manner that best ensures its objectives will be met.

Include a brief background and work experience for those managing the project.

Williston Water World is being developed and designed by a sub-committee of the Williston Community Builders' known as the "Pool Action Committee" or "PAC", which includes two members of the Community Builders, myself, and two community representatives. The goal of the PAC is to ensure that community input, operational input, input on oversight and accountability & a user's perspective, would be included in all phases of the design and development process. We are currently working with the Architect (EAPC) and CMAR (JeDunn) for the project on reviewing bids and determining a groundbreaking date that is in the best interest of the project financially. Contractor availability and time are an obstacle as well. We are hoping to break ground either late summer 2023 and anticipate a Grand Opening of the facility either late summer 2024 or early spring 2025.

#### **Evaluation – Describe your plan to document progress and results.**

Please be specific on the methods you will utilize to measure success. Note that regular reporting, final evaluation and expenditure reports will be required for every grant awarded.

After completion, Williston Water World will be owned and operated by the Williston Parks & Recreation District. The amenity will fall in line with all other WPRD facilities and a thorough financial accounting process will be put in place to manage the operation expenses & revenues of the facility. Williston Water World will also be included in the annual comprehensive financial audit the Park District undergoes to ensure transparency and accuracy in the processes that are put in place to manage its operations.

#### Financial Information –

A comprehensive lost of all donors and financials to date, as well as a breakdown of all Williston Water World Associated costs will be included with the submission of this application.

## Project Budget – Use the table below to provide an itemized list of project expenses and describe the matching funds being utilized for this project.

Indicate if the <u>matching funds</u> are in the form of cash, indirect costs or in-kind services. The budget should identify all other committed funding sources and the amount of funding from each source. <u>A minimum of 25% match funding is required.</u> An application will be scored higher the greater the amount of match funding provided. (See Scoring Form.)

Certain values have been identified for in-kind services as detailed under "Budget Information" at the back of this form. Refer to that section and utilize these values in identifying your matching funds. NOTE: No indirect costs will be funded. Supporting documentation for project expenses, including bids, must be included or application will be considered incomplete.

Project	OHF	Applicant's	Applicant's	Applicant's	Other	Total Each
Expense	Request	Match	Match Share	Match Share	Project	Project
		Share	(In-Kind)	(Indirect)	Sponsor's	Expense
		(Cash)			Share	
	\$	\$	\$	\$	\$	\$
	\$	\$	\$	\$	\$	\$
	\$	\$	\$	\$	\$	\$
	\$	\$	\$	\$	\$	\$
	\$	\$	\$	\$	\$	\$
	\$	\$	\$	\$	\$	\$
Total Costs	\$	\$	\$	\$	\$	\$

Note: Costs for seeding, fencing, pipelines, wells, and cover crops cannot exceed NRCS Field Office Tech Guide without justification. Projects involving perimeter fencing must follow NRCS eligibility standards.

## Budget Narrative – Use the space below to provide additional detail regarding project expenses.

# Sustainability – Indicate how the project will be funded or sustained in future years. Include information on the sustainability of this project after OHF funds have been expended and whether the sustainability will be in the form of ongoing management or additional funding from a different source.

WPRD will accept ownership and operational control of Williston Water World once it is completed, pending a signed Letter of Intent that the 3- years of operational funding are also provided on behalf of the Williston Community Builders. Going forward, Williston Water World will be funded and maintained as a park district amenity through Tax funding and the other revenue generating sources throughout the district.

## Partial Funding – Indicate how the project will be affected if less funding is available than that requested.

If less funding than requested is made available to this project, the PAC will continue its fundraising efforts to ensure that Williston Water World is completed in as timely a manner as possible. This project has garnered an immense amount of support throughout the community and region. Supporting documentation such as letters of support and partnerships will exhibit the support and help to ensure that this project becomes a reality.

Partnership Recognition - If you are a successful recipient of Outdoor Heritage Fund dollars, how would you recognize the Outdoor Heritage Fund partnership? \* There must be signage at the location of the project acknowledging OHF funding when appropriate.

The PAC will recognize this grant via signage on or at the facility once completed. All supporters of Williston Water World will also be publicly celebrated through social media marketing, as well as on WPRD marketing as well.

Awarding of Grants - Review the appropriate sample contract for your organization on the website at <a href="http://www.nd.gov/ndic/outdoor-infopage.htm">http://www.nd.gov/ndic/outdoor-infopage.htm</a>.

Can you meet all the provisions of the sample contract? XYes No
If there are provisions in that contract that your organization is unable to meet, please indicate below what those provisions would be:

#### **ABOUT OHF:**

The purpose of the North Dakota Outdoor Heritage Fund is to provide funding to state agencies, tribal governments, political subdivisions, and nonprofit organizations, with higher priority given to projects that enhance **conservation** practices in this state by:

<u>Directive A</u>. Providing access to private and public lands for sportsmen, including projects that create fish and wildlife habitat and provide access for sportsmen;

<u>Directive B</u>. Improving, maintaining and restoring water quality, soil conditions, plant diversity, animal systems and by supporting other practices of stewardship to enhance farming and ranching;

<u>Directive C</u>. Developing, enhancing, conserving and restoring wildlife and fish habitat on private and public lands; and

<u>Directive D</u>. Conserving natural areas and creating other areas for recreation through the establishment and development of parks and other recreation areas.

#### **EXEMPTIONS**

Outdoor Heritage Fund grants may not be used to finance the following:

- Litigation;
- Lobbying activities;
- Any activity that would interfere, disrupt, or prevent activities associated with surface coal
  mining operations; sand, gravel, or scoria extraction activities; oil and gas operations; or
  other energy facility or infrastructure development;
- The acquisition of land or to encumber any land for a term longer than twenty years; or
- Projects outside this state or projects that are beyond the scope of defined activities that fulfill the purposes of Chapter 54-17.8 of the North Dakota Century Code.

OHF funds may not be used, except after a finding of exceptional circumstances by the Industrial Commission, to finance:

- A completed project or project commenced before the grant application is submitted;
- A feasibility or research study;
- Maintenance costs:
- A paving project for a road or parking lot;
- A swimming pool or aquatic park;
- Personal property that is not affixed to the land;

- Playground equipment, except that grant funds may be provided for up to 25% of the
  cost of the equipment not exceeding \$10,000 per project and all playground equipment
  grants may not exceed 5% of the total grants per year (see Definitions/Clarifications for
  how this will be calculated);
- Staffing or outside consultants except for costs for staffing or an outside consultant to
  design and implement an approved project based on the documented need of the
  applicant and the expenditures may not exceed 5% of the grant to a grantee if the grant
  exceeds \$250,000 and expenditures may not exceed 10% of the grant to a grantee if the
  grant is \$250,000 or less (see Definitions/Clarifications for how this will be calculated);
- A building except for a building that is included as part of a comprehensive conservation plan for a new or expanded recreational project (see Definitions/Clarifications for definition of comprehensive conservation plan and new or expanded recreational project); or
- A project in which the applicant is not directly involved in the execution and completion of the project.

The goal of the Industrial Commission is that at a minimum 15% of the funding received for a biennium will be given priority for recreation projects that meet Directive D.

The following projects are not eligible for funding, unless there is a finding of exceptional circumstances by the Industrial Commission include:

- Construction or refurbishment of indoor/outdoor ice rinks,
- Construction or refurbishment of indoor/outdoor athletic courts and sports fields,
- Other substantially similar facilities.
- Infrastructure that is not part of a comprehensive conservation plan.
- Projects not meeting a minimum funding request of \$2,500.

#### **Budget Information**

In-kind services used to match the request for Outdoor Heritage Fund dollars shall be valued as follows:

Labor costs \$15.00 an hour

Land costs
 Average rent costs for the county as shown in the most recent

publication of the USDA, National Agricultural

Statistics Services,

North Dakota Field Office

documentation

showing actual cost. (For example: playground equipment)

Equipment usage Actual documentationSeed & Seedlings Actual documentation

• Transportation Mileage at federal rate

Supplies & materials Actual documentation

More categories will be added as we better understand the types of applications that will be submitted. We will use as our basis for these standards other State and Federal programs

that have established rates. For example, the North Dakota Nonpoint Source Pollution Management Program has established rates. If your project includes work that has an established rate under another State Program, please use those rates and note your source.

#### **Definitions/Clarifications**:

<u>Building</u> - Defined as "A structure with a roof either with walls or without walls and is attached to the ground in a permanent nature."

<u>Comprehensive Conservation Plan</u> - Defined as "A detailed plan that has been formally adopted by the governing board which includes goals and objectives--both short and long term, must show how this building will enhance the overall conservation goals of the project and the protection or preservation of wildlife and fish habitat or natural areas." This does not need to be a complex multi-page document. It could be included as a part of the application or be an attachment.

<u>New and Expanded Recreational Project</u> means that the proposed building cannot be a replacement of a current building. The proposed building must also be related to either a new or expanded recreational project--either an expansion in land or an expansion of an existing building or in the opportunities for recreation at the project site.

<u>Playground equipment calculation</u> - Only the actual costs of the playground equipment (a bid or invoice showing the amount of the equipment costs must be provided) - cannot include freight or installation or surface materials or removal of old equipment, etc.

Staffing/Outside Consultants Costs - If you are requesting OHF funding for staffing or for an outside consultant, you must provide information in your application on the need for OHF funding to cover these costs. For example, if you are an entity that has engineering staff you must explain why you don't have sufficient staff to do the work or if specific expertise is needed or whatever the reason is for your entity to retain an outside consultant. If it is a request for reimbursement for staff time then a written explanation is required in the application of why OHF funding is needed to pay for the costs of that staff member(s)' time. The budget form must reflect on a separate line item the specific amount that is being requested for staffing and/or the hiring of an outside consultant. This separate line item will then be used to make the calculation of 5% or 10% as outlined in the law. Note that the calculation will be made on the grant less the costs for the consultant or staff.

<u>Maintenance</u> – Activities that preserve or keep infrastructure in a given existing condition, including repairs. Repair means to restore to sound condition after damage, to renew or refresh; except repairs due to damage caused by Acts of God.

#### **Scoring of Grants**

<u>Oral Presentation.</u> Please note that you will be given an opportunity to make a ten-minute Oral Presentation at a meeting of the Outdoor Heritage Fund Advisory Board. These presentations are strongly encouraged.

<u>Open Record.</u> Please note that your application and any attachments will be open records as defined by law and will be posted on the Industrial Commission/Outdoor Heritage Fund website.

All applications will be scored by the Outdoor Heritage Fund Advisory Board after your tenminute oral presentation. The ranking form that will be used by the Board is available on the website at <a href="http://www.nd.gov/ndic/outdoor-infopage.htm">http://www.nd.gov/ndic/outdoor-infopage.htm</a>.

#### **Awarding of Grants**

All decisions on requests will be reported to applicants no later than 30 days after Industrial Commission consideration. The Commission can set a limit on duration of an offer on each application or if there isn't a specific date indicated in the application for implementation of the project, then the applicant has until the next Outdoor Heritage Fund Advisory Board regular meeting to sign the contract and get the project underway or the commitment for funding will be terminated and the applicant may resubmit for funding. Applicants whose proposals have been approved will receive a contract outlining the terms and conditions of the grant.

#### Responsibility of Recipient

The recipient of any grant from the Industrial Commission must use the funds awarded for the specific purpose described in the grant application and in accordance with the contract. The recipient cannot use any of the funds for the purposes stated under Exemptions on the first page of this application.

If you have any questions about the application, the Commission can be reached at 701-328-3722 or outdoorheritage@nd.gov.

Revised: November 4, 2019, April 12, 2023

Williston Water World Williston, North Dakota July 14, 2023



	Proposed	C I poly
Description	Trade Partner	Total
General Conditions	JED	953,829
Winter Conditions Allowance		200,000
Dewatering Allowance		50,000
Final Cleaning		4,768
Concrete Foundations & Slabs	Winn	242,136
Masonry	Hardscapes Plus	228,910
Structural Steel (Furnish)	TEK Steel	52,000
Structural Steel (Install)	12.1 (100)	20,716
Wood Framing & Rough Carpentry		144,449
Finish Carpentry	JED	98,536
Casework Supply	Sidney Millwork	23,650
Waterproofing	Quality Coatings	7,400
Metal Roofing & Soffit Panels	Herzog Roofing	165,000
Joint Sealants	Tierzeg reening	17,699
Doors, Frames, And Hardware Supply		24,667
Coiling Counter Door	CS Doors	8,996
Glass And Glazing	Fargo Glass	90,931
Drywall	LS Drywall	61,056
Painting	Oxentenko	58,000
Wall Tile And Resilient Base	House of Color	31,000
Acoustical Ceilings	LS Drywall	4,800
Specialties Supply	Bartley	48,485
Flagpoles	Dartiey	8,573
Site Furnishings		14,468
Swimming Pools	Associated Pools	2,879,000
Window Treatments	Haugom	6,427
Plumbing	All Seasons	286,220
HVAC	Selid Mechanical	205,000
Electrical	Berger	450,000
Earthwork	Three Forks	450,000
Earthwork (aggregate material)	Tillee Folks	75,000
Structural Excavation (building)	JMAC	
	Three Forks	84,000
Structural Excavation (pool) Site Concrete	Winn	
	vvinn	457,775
Pavement Markings	Landacana Clamatic	2,500
Landscaping and Irrigation	Landscape Elements	105,880
Fencing	INAAC	88,797
Site Utilities	JMAC	298,700

	7,499,367
Per City, no permit fee	0
	98,738
	72,374
	228,580
	Per City, no permit fee

Subtotal	7,899,059
Preconstruction Fee	39,495
Construction Contingency	238,157
JE Dunn Guaranteed Maximum Price	\$8,176,711
Splashtacular Proposal	470,000
Thiel Brothers Roofing	117,480

Williston Community Builders Williston, ND

# WILLISTON WATER WORLD Date: May 25, 2023

Call ellic Dadget Over view		
Budget Summary		
In the Bank	B	4,360,768
Pledged (not including in-kind) paid by 2024	S	3,958,717
In Kind Towards Construction	S	50,000
Budget Total	\$	8,369,485
Outstanding Grants		
Horizon Resources Hometown Pride Grant	G	25,000
Marathon Oil (June 2023)	B	100,000
Outdoor Heritage Fund Grant (August 2023)	G	1,000,000
Farm Credit Services Grant (2023)	S	1
2023 Walmart (August 2023)	B	5,000
STAR Grant Fund (2024-2026) (verbal guarantee by mayor)	s	150,000
Bush Foundation Grant (July 2023)	B	500,000
Englestad Foundation Grant (September 2023)	8	499,000
John & Elaine Andrist Charitable Trust Grant	G	50,000
Parks Renovation Grant (July 2023)	ь	880,000
Land & Water Conservation Fund Grant (May 2023)	B	
Williams County Grant (May 2023)	છ	1
Grant Total	S	2,909,999

Total Possible Amount			\$	\$ 11,279,484
A/E Fees			ь	360,000
A/E Fees Paid to Date	G	(189,758)	69	170,242
Soft Costs				
Soil Investigation	S	(2,000)		In Kind
Site Survey	S	(13,000)		In Kind
Reimbursable Expenses		-	<del>(S)</del>	6,500
Operational Costs (3 year)			49	1,500,000
Owner Contingency			69	250,000
ш 85 Ш			69	150,000
Total Estimated Soft Costs			65	2.076.742

Highlighted indicates estimated costs or placeholders

Prepared by: Emily Kreil, Project Designer EAPC Architects Engineers, PC

# CURRENT

# Construction Cost Estimate - Phase One

1,660,000 1,260,000 \$2,920,000.00

s s

Phase Two or Change Order

FUTURE

124,976 **3,044,976** 

95,000 50,000 **145,000** 

A& E Fees (Phase 2 CD's)
Soft Costs
Owner Contingency (5%)
FF&E
Total Estimated Soft Costs

3,189,976

1,150,000 1,000,000 1,102,000 625,000 765,000

Aquatics Alternate Options
Zero-Depth Entry
Lazy River
NinjaCross (Full Package)
Waterslide Package A
Waterslide Package C

Total Project Costs (Phase Two)	7,940,809	\$	Total GMP (Phase One)
Total Estimated Soft Cost			Accepted Alternates
FF&E	413,976	s	Construction Fee's + \$ Carried
Owner Contingency (		89	Escalation to 2nd Qtr 2023 (1.0%)
Soft Costs	376,342	ь	Construction Contingency (5.0%)
A& E Fees (Phase 2 CD's)	37,634	69	Preconstruction Fee (0.5%)
Total GMP (Phase Two)	7,526,833	ss.	Phase One Subtotal (Includes CMAR fee 4.28%)
CMAR Fee (4.28%)	2,395,236	G	Buildings & Canopy's (3,916 SF)
	1,933,625	S	Miscellaneous Site Work
Subtotal	250,000	ь	Spray/Play Feature Allowance
NinjaCross Package	672,972	ь	Waterslide Package B
Lap Pool with Ninja Foundations	2,275,000	s	Leisure Pool

10,281,039	4		(e	Total Project Costs (Phase One)
2,340,230	so.			Total Estimated Soft Costs
150,000	69			FF&E
397,040	ь			Owner Contingency (5%)
1,500,000	69			Operational Costs (3 year)
6,500	ь			Reimbursable Expenses
In Kind	<u> </u>	(13,000)	G	Site Survey
In Kind	<u> </u>	(2,000)	G	Soil Investigation
				Soft Costs
286,690	3) \$	(189,758)	બ	A/E Fees Paid to Date
476,448	υ			

Budgeted Total	s	8,369,485
Need to Raise	s	(1,911,555)
Need To Raise (with 1 Yr Operational)	v	(911,555)

AKA WHAT WE NEED TO BREAK GROUND!



## QUALITY OF LIFE STRATEGIC EVENT FACILITY **DEVELOPMENT AND** IMPLEMENTATION STUDY

In Williams County, North Dakota

July 14, 2023





## POTENTIAL DEVELOPMENT OPTIONS: Overview



Youth/Amateur Sports



Conventions/Meetings/ Gathering Space



Concerts/ Entertainment Venues



Tourism/Experiential





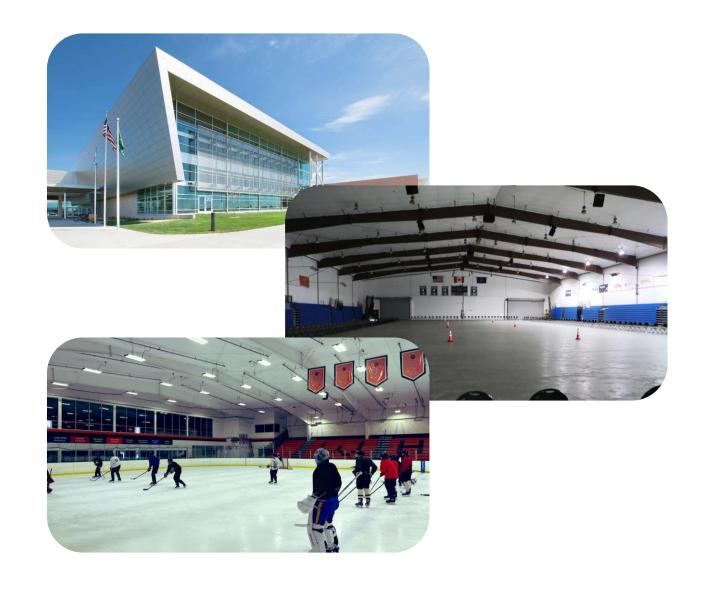
## **DEVELOPMENT OPTIONS: Youth/Amateur Sports**













## YOUTH/AMATEUR SPORTS: Outdoor Aquatics

The Williston Community Builders have approached City of Williston and Williams County leadership with a proposal to develop a new Outdoor Aquatic Center consisting of a zero-depth entry pool, lap pool and waterslide complex. Currently, recreational swimming and competitive aquatic events in Williams County predominately occur at the Williston Area Recreation Center (ARC). At the time of the ARC's construction, the City retired the deteriorating E.J. Hagan Aquatic Center and Eckert Outdoor Pool, positioning the \$72 million fitness and recreation facility as the sole aquatics venue in the City of Williston. The Eckert Outdoor Pool was constructed and first opened in 1934 and, funded by a donation from the Eckert Foundation, underwent a significant renovation in 1990 to extended its useful life. The facility's permanent closure in 2014 was largely attributable to its aging equipment, structural concerns, lack of ADA compliance and limited size, making renovation or replacement at the site infeasible. The decision to close the Hagan Aquatic Center and Eckert Pool was also influenced by the lack of lifeguards available to staff both these pools in addition to the newly constructed ARC.

Since its opening in 2014, the ARC has provided the area community with an indoor, 50-meter Olympic-size swimming pool with 500 spectator seats, as well as a secondary teaching pool, zero-depth entry kids pool, lazy river and water slide. Historically, the ARC has hosted youth and high school swim tournaments, offered privates swimming lessons, and has been used for open swim by its pass-holding members. Williams County residents within and proximate to the City of Tioga also have access to the Tioga Public Swimming Pool, a 25-yard, zero-depth entry outdoor pool. Community stakeholders have stated that the County has outgrown its current inventory of aquatic recreation spaces, prompting the proposal of Williston Water World to the City and County.







## **OUTDOOR AQUATICS: Potential Opportunity**

In order to address the need for additional aquatics space in Williams County, the Williston Community Builders, a non-profit 501(c)(3) organization based in the City of Williston, proposed an Outdoor Aquatic Center project to the City of Williston and Williams County. The Community builders have recently been involved with other area developments including the Davidson Park playground and Splash Pad and the Freedom Monument. This new outdoor aquatics project, commonly referred to as Williston Water World, has been initiated with the following objectives:

- 1. Create a safe, world-class, outdoor recreational aquatics destination for the region.
- 2. Provide an additional recreation option for the community at an affordable price.
- 3. Generate excitement in the community to drive participation, buy-in, and funding pledges.
- 4. Facilitate meaningful conversations with community stakeholders.

This proposed outdoor aquatic center will cover 2.3 acres near the intersection of Highway 2 and 9<sup>th</sup> Avenue Northwest. Across two phases, development of Williston Water World will include a 26,000-square foot bathhouse and concession stand, a zero-depth entry leisure pool with lazy river and water features, a two-slide water slide complex, and outdoor patio space with shade structures. A future second phase would add a 25-yard sport pool with foundations for a NinjaCross retractable obstacle course system. This new outdoor aquatic center will share parking with the adjacent Cutting Field Stadium and feature a dedicated drop-off lane as well as bike parking near its entrance. These amenities are further explored in the exhibit on the following page.









## **OUTDOOR AQUATICS: Williston Water World**

- Existing parking shared with Cutting Field Stadium
- 2 Drop-off lane
- 3 Bike parking
- 4 Entry plaza
- 5 Pool equipment / storage 1,820 sf
- 6 Bathhouse / concessions 26,220 sf
- 7 Outdoor patio
- 8 Kids play / dry amenities
- 9 Sunning / open space / future expansion
- 10 Shade structures / umbrellas
- 11) Zero-depth entry leisure pool, water features
- 12 Lazy river, water features, bubble pit, social areas
- 13 Water slides complex with (2) flumes and runouts
- 14 Natural screen / Landscaping
- 15 Sport pool, lap lanes, NinjaCross obstacle course
- 16 Fence line
- 17 Trash enclosure









## **OUTDOOR AQUATICS: Weather Patterns**

A key consideration in the development of any outdoor aquatic center is the climate of the local area, particularly for usage during times of extreme temperatures or excessive precipitation. The chart to the right summarizes the average monthly maximum and minimum temperatures, as well as precipitation and snowfall levels, for the City of Williston from 1991 through 2020.

Overall, Williston has a cool to temperate climate with annual temperatures averaging 41 degrees, dropping below 40 degrees on average from November through March. An outdoor aquatic center developed in Williston would operate during the months of June, July, and August, where average temperatures range from 64 to 70 degrees.

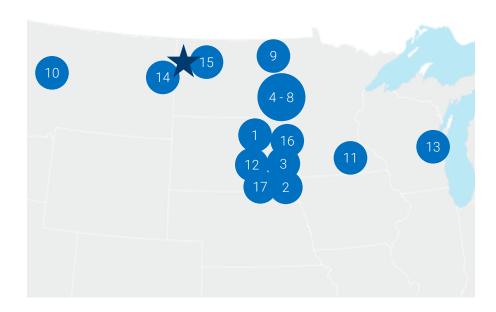
	Clim	nate Normals	- Williston, N	North Dakota	
	Ter	nperature (	*F)	Average	(inches)
MONTH	MINIMUM	MAXIMUM	AVERAGE	PERCIPITATION	SNOWFALL
January	1.0	22.1	11.6	0.6	11.2
Febuary	5.5	26.7	16.1	0.5	6.7
March	17.5	40.1	28.8	0.6	6.4
April	29.2	55.6	42.4	1.1	3.7
May	40.2	67.4	53.8	2.1	0.9
June	50.2	76.7	63.5	2.6	0.0
July	56.3	84.5	70.4	2.5	0.0
August	54.0	83.9	69.0	1.6	0.0
September	43.5	72.6	58.0	1.4	0.0
October	30.4	55.9	43.2	0.9	2.6
November	17.1	38.4	27.8	0.7	6.3
December	6.1	26.1	16.1	0.6	10.4
Annual	29.3	54.2	41.7	1.3	4.0

Source: National Oceanic and Atmospheric Administration, 1991-2020.



## OUTDOOR AQUATICS: Comparable Outdoor Aquatic Centers

We reviewed comparable outdoor aquatic centers in markets of similar size and/or geographic positioning to the greater Williston area to provide a deeper understanding into the difference in operational and financial activity among the various types of facilities. Each aquatic center reviewed was selected based on its program of aquatic facilities, opening year or year of recent significant renovation, and geographic positioning. The following list contains 17 identified outdoor aquatic centers and the specific program of aquatic facilities offered at each facility.



	Facility	City, State	Year Opened / Year Renovated	Zero Depth Entry	Water Slide Complex	Diving Well / Deep End	Current Chanel	Splash Pad	Lap Pool	# of Lanes in Lap Bool	Concessions
1	Aberdeen Aquatic Center	Aberdeen, SD	2007	Χ	Χ	Χ	Χ		Χ	8	Х
2	Brandon Municipal Pool	Brandon, SD	2004 / 2020	Χ	Х	Χ		Χ	Χ	6	
3	Hillcrest Aquatic Center	Brookings, SD	2006	Χ	Χ	Χ			Χ	8	Х
4	Davies Recreational Pool	Fargo, ND	2012	Χ	Χ						Х
5	Island Park Swimming Pool	Fargo, ND 2	1977/2025*			Χ			Χ	8	
6	Madison Pool & Splash Pad	Fargo, ND 3	1970/2008					Χ	Χ	n/a	
7	Roger G. Gress Northside Pool	Fargo, ND 4	1997	Х	Χ						
8	Southwest Recreational Pool	Fargo, ND 5	2000	Х	Χ						
9	Leistikow Park Outdoor Swimming Pool	Grafton, ND	1950/1980			Χ			Χ	8	Х
10	Last Chance Splash Waterpark & Pool	Helena, MT	1953 / 2009	Х	Χ	Χ	Χ	Χ	Χ	8	Х
11	Kasson Aquatic Center	Kasson, MN	1942 / 2015	Х	Χ	Χ			Χ	6	Х
12	Mitchell Aquatic Center	Mitchell, SD	2018	Х	Χ	Χ			Χ	6	Х
13	Pollock Community Water Park	Oshkosh, WI	1960/2006	Х	Χ	Χ	Χ	Χ	Χ	6	Х
14	Sidney Svarre Municipal Pool	Sidney, MT	1993		Χ	Χ		Χ	Χ	8	
15	Tioga Public Swimming Pool	Tioga, ND	TBC	Х		Χ			Χ	4	
16	Family Aquatic Center	Watertown, SD	2006	Х	Χ	Χ	Χ		Χ	6	Х
17	Huether Family Aquatics Center	Yankton, SD	2021	Х	Χ	Χ	Χ	Χ	Χ	8	Х
	Williston Water World	Williston, ND		Χ	X		Χ		Χ	6	Χ

Note: (1) Island Park Pool is undergoing a two-year master plan project to update the existing aquatic center by adding a 50-meter competition pool with diving boards and diving platform, a lifestyle pool, current channel, and water slide complex. Source: Facility management, 2023.



## OUTDOOR AQUATICS: Utilization Analysis – Total Population

We collected utilization data from 13 comparable outdoor aquatic centers for annual days of operations, as well as total annual and average daily attendance. We then compared these data with City population and population within 15- and 30-minutes of the analyzed outdoor aquatic centers. As shown, the average comparable outdoor aquatic center is open for approximately 77 days annually, attracting an average of more than 28,000 annual attendees (364 daily attendees over 77 day season). Average annual and daily visitors per population metrics were then calculated, as presented below.

	City, State	Days Open	Yearly Attendance (persons)	Daily Attendance (persons)	City Population (persons)	15-minute Population (persons)	30-minute Population (persons)	Annual Attendees Per City Population (000's)	Annual Attendees Per 15-minute Population (000's)	Annual Attendees Per 30-minute Population (000's)	Daily Attendees Per City Population (000's)	Daily Attendees Per 15-minute Population (000's)	Daily Attendees Per 30-minute Population (000's)
1	Aberdeen, SD	78	55,188	708	28,496	30,963	36,996	1.94	1.78	1.49	0.025	0.023	0.019
2	Brandon, SD	83	26,000	313	11,186	48,381	275,847	2.32	0.54	0.09	0.028	0.006	0.001
4	Fargo, ND	83	38,450	463	132,054	122,011	241,698	0.29	0.32	0.16	0.004	0.004	0.002
5	Fargo, ND 2	83	19,581	236	132,054	193,447	244,966	0.15	0.10	0.08	0.002	0.001	0.001
6	Fargo, ND 3	76	2,579	34	132,054	208,476	244,350	0.02	0.01	0.01	0.000	0.000	0.000
7	Fargo, ND 4	76	10,641	140	132,054	150,995	241,970	0.08	0.07	0.04	0.001	0.001	0.001
8	Fargo, ND 5	76	15,302	201	132,054	210,664	246,395	0.12	0.07	0.06	0.002	0.001	0.001
10	Helena, MT	59	20,000	339	32,944	58,992	72,324	0.61	0.34	0.28	0.010	0.006	0.005
11	Kasson, MN	81	24,300	300	7,057	21,865	193,185	3.44	1.11	0.13	0.043	0.014	0.002
12	Mitchell, SD	80	19,669	246	15,742	18,502	27,585	1.25	1.06	0.71	0.016	0.013	0.009
13	Oshkosh, WI	67	33,104	494	66,796	85,817	391,265	0.50	0.39	0.08	0.007	0.006	0.001
16	Watertown, SD	76	33,406	440	23,055	24,733	33,388	1.45	1.35	1.00	0.019	0.018	0.013
17	Yankton, SD	86	67,000	779	15,476	20,608	33,360	4.33	3.25	2.01	0.050	0.038	0.023
	LOW	59	2,579	34				0.02	0.01	0.01	0.00	0.00	0.00
	HIGH	86	67,000	779				4.33	3.25	2.01	0.05	0.04	0.02
	AVERAGE	77	28,094	361	66,200	92,000	175,600	1.27	0.80	0.47	0.02	0.01	0.01
	MEDIAN	78	24,300	313	32,900	59,000	241,700	0.61	0.39	0.13	0.01	0.01	0.00
	Williston, ND				30,007	32,142	36,326						

Source: Facility management, Esri, 2023.



## OUTDOOR AQUATICS: Utilization Analysis – Youth Population

The same utilization data outlined prior, which includes annual days of operations, annual and average daily attendance for 13 comparable aquatic facilities, is included in the exhibit below. These data have been compared against the youth population (age 18 and under) within City and 15- and 30-minute drivetimes of those identified facilities. These ratios will be utilized later here in to extrapolate estimates of daily and annual attendance for an Outdoor Aquatic Center in Williston.

	City, State	Days Open	Yearly Attendance (persons)	Daily Attendance (persons)	City Youth Population (persons)	15-minute Youth Population (persons)	30-minute Youth Population (persons)	Annual Attendees Per City Youth Population (000's)		Annual Attendees Per 30-minute Youth Population (000's)	Daily Attendees Per City Youth Population (000's)	Daily Attendees Per 15-minute Youth Population (000's)	Daily Attendees Per 30-minute Youth Population (000's)
1	Aberdeen, SD	78	55,188	708	6,405	7,017	8,382	8.62	7.86	6.58	0.110	0.101	0.084
2	Brandon, SD	83	26,000	313	3,505	13,076	72,831	7.42	1.99	0.36	0.089	0.024	0.004
4	Fargo, ND	83	38,450	463	28,289	29,949	56,340	1.36	1.28	0.68	0.016	0.015	0.008
5	Fargo, ND 2	83	19,581	236	28,289	42,386	57,314	0.69	0.46	0.34	0.008	0.006	0.004
6	Fargo, ND 3	76	2,579	34	28,289	47,107	57,099	0.09	0.05	0.05	0.001	0.001	0.001
7	Fargo, ND 4	76	10,641	140	28,289	30,769	56,475	0.38	0.35	0.19	0.005	0.005	0.002
8	Fargo, ND 5	76	15,302	201	28,289	47,884	57,711	0.54	0.32	0.27	0.007	0.004	0.003
10	Helena, MT	59	20,000	339	6,494	13,088	16,175	3.08	1.53	1.24	0.052	0.026	0.021
11	Kasson, MN	81	24,300	300	2,029	5,913	48,492	11.98	4.11	0.50	0.148	0.051	0.006
12	Mitchell, SD	80	19,669	246	3,602	4,284	6,489	5.46	4.59	3.03	0.068	0.057	0.038
13	Oshkosh, WI	67	33,104	494	12,844	16,907	87,106	2.58	1.96	0.38	0.038	0.029	0.006
16	Watertown, SD	76	33,406	440	5,512	5,933	8,267	6.06	5.63	4.04	0.080	0.074	0.053
17	Yankton, SD	86	67,000	779	3,345	4,419	7,022	20.03	15.16	9.54	0.233	0.176	0.111
	LOW	59	2,579	34				0.09	0.05	0.05	0.00	0.00	0.00
	HIGH	86	67,000	779				20.03	15.16	9.54	0.23	0.18	0.11
	AVERAGE	77	28,094	361	14,200	20,700	41,500	5.25	3.48	2.09	0.07	0.04	0.03
	MEDIAN	78	24,300	313	6,500	13,100	56,300	3.08	1.96	0.50	0.05	0.03	0.01
	Williston, ND				6,790	7,311	8,271						

Source: Facility management, Esri, 2023.



## **OUTDOOR AQUATICS: Utilization Extrapolation Analysis**

Based on the calculated average daily and annual visitors per population presented on the previous page, an extrapolation analysis was conducted based on the City, 15-minute and 30-minute drivetime populations of Williston and the area surrounding a proposed new Williston Water World outdoor aquatic center. As shown below, daily attendance ranges from 217 to 476 people, based on the average daily attendance among comparable outdoor aquatic centers. Assuming Water World would be open for 77 days (the average number of days of operation among comparable outdoor aquatic centers analyzed), this would translate to approximately 16,700 to 36,700 annual attendees, based on the population of Williston and the area surrounding a proposed new outdoor aquatic center. An additional extrapolation analysis was conducted using City, 15-minute and 30-minute drivetime youth populations (age 18 and under), presenting a similar range of estimated daily and annual attendance.

In the January 2023 Expense Analysis of Williston Water World performed by Counsilman-Hunsaker, an estimated 35,156 member/daily swims was projected, which is above the average and median number of annual visitors extrapolated based on the 15-minute population surrounding Water World.

EXTRAPOLATION ANALYSIS OF AVERAGE DAILY ATTENDANCE								
	City Population (persons)	15-minute Population (persons)	30-minute Population (persons)					
Williston, ND	30,007	32,142	36,326					
LOW	8	5	5					
HIGH	1,511	1,215	848					
AVERAGE	476	323	217					
MEDIAN	309	185	56					

EXTRAPOLATION ANALYSIS OF AVERAGE DAILY YOUTH ATTENDANCE								
	City Population (persons)	15-minute Population (persons)	30-minute Population (persons)					
Williston, ND	6,790	7,311	8,271					
LOW	8	5	5					
HIGH	1,581	1,289	918					
AVERAGE	448	320	218					
MEDIAN	354	189	51					

EXTRAF	EXTRAPOLATION ANALYSIS OF AVERAGE ANNUAL ATTENDANCE									
	City Population (persons)	15-minute Population (persons)	30-minute Population (persons)							
Williston, ND	30,007	32,142	36,326							
LOW	594	403	388							
HIGH	116,314	93,563	65,322							
AVERAGE	36,647	24,840	16,698							
MEDIAN	23,775	14,249	4,344							

EXTRAPOLATION ANALYSIS OF AVERAGE ANNUAL YOUTH ATTENDANCE									
	City Population (persons)	15-minute Population (persons)	30-minute Population (persons)						
Williston, ND	6,790	7,311	8,271						
LOW	627	406	378						
HIGH	121,770	99,248	70,658						
AVERAGE	34,477	24,637	16,776						
MEDIAN	27,291	14,580	3,940						

Source: Facility management, Esri, 2023.



## **OUTDOOR AQUATICS: Financial Analysis**

Additionally, we collected financial operating statements from 16 comparable outdoor aquatic centers. Data on operating revenue, expenses and net profit/(loss) has been compiled and analyzed. As shown, the average outdoor aquatic center generated approximately \$169,800 in annual revenue and incurred \$263,900 in operating expenses for a net operating loss of approximately \$94,100, annually. This translates to an estimated 58 percent coverage ratio of revenue to expense. On average, approximately 39 percent of revenue generated among comparable center was from daily pass sales, while 41 percent came from annual membership sales and 20 percent from other revenue sources, including concessions revenue, rentals, and merchandise. Based on the 2023 Expense Analysis developed by Counsilman-Hunsaker, Williston Water World is projected to incur approximately \$637,900 in annual operating expenses, which based on the average coverage ratio would require generation of approximately \$368,400 in annual operating revenue.

	SUMMARY OF COMPARABLE AQUATIC CENTER ANNUAL FINANCIAL OPERATIONS									
Aquatic Center	Operating Revenue	Operating Expenses	Net Profit / (Loss)	Coverage Ratio	Revenue from Daily Passes (Percentage)	Revenue from Membership Sales (Percentage)	Other Revenue (Percentage)			
Comp AC 1	\$112,340	\$224,183	(\$111,843)	50%	39%	45%	16%			
Comp AC 2	\$12,078	\$59,868	(\$47,790)	20%	34%	31%	35%			
Comp AC 3	\$40,949	\$105,291	(\$64,342)	39%	25%	75%	0%			
Comp AC 4	\$90,589	\$218,503	(\$127,913)	41%	46%	26%	27%			
Comp AC 5	\$244,611	\$231,831	\$12,780	106%	50%	28%	22%			
Comp AC 6	\$272,039	\$317,051	(\$45,012)	86%	32%	44%	24%			
Comp AC 7	\$103,435	\$269,349	(\$165,914)	38%	20%	52%	28%			
Comp AC 8	\$148,768	\$391,626	(\$242,858)	38%	39%	29%	32%			
Comp AC 9	\$44,964	\$76,932	(\$31,969)	58%	29%	32%	38%			
Comp AC 10	\$198,437	\$304,496	(\$106,059)	65%	31%	62%	7%			
Comp AC 11	\$205,172	\$311,033	(\$105,861)	66%	n/a	n/a	n/a			
Comp AC 12	\$84,174	\$273,659	(\$189,486)	31%	51%	43%	6%			
Comp AC 13	\$60,230	\$153,705	(\$93,475)	39%	46%	31%	23%			
Comp AC 14	\$544,197	\$601,067	(\$56,870)	91%	35%	45%	19%			
Comp AC 15	\$167,535	\$260,065	(\$92,529)	64%	75%	25%	0%			
Comp AC 16	\$386,976	\$424,232	(\$37,256)	91%	37%	41%	21%			
LOW	\$12,078	\$59,868	(\$242,858)	20%	20%	25%	0%			
HIGH	\$544,197	\$601,067	\$12,780	106%	75%	75%	38%			
AVERAGE	\$169,800	\$263,900	(\$94,100)	58%	39%	41%	20%			
MEDIAN	\$130,600	\$264,700	(\$93,000)	54%	37%	41%	22%			
Williston Water World		\$637,919	(\$637,919)							

Note: Williston Water World operating expenses based on January 2023 Expense Analysis of Williston Water World performed by Cousilman-Hunsaker. Source: Facility management, 2023.



## **OUTDOOR AQUATICS:** Daily Pass Pricing

Day-pass pricing information among comparable outdoor aquatic centers was collected and is presented below. As shown, all but one of the comparable centers for which data was collected offer free passes for children under two years old. Eight (8) centers offer free passes for children under two, and three more each offer free admittance to children under the age of three and four, respectively. On average, comparable centers charge \$5.55 per day entry fees for children and adults, regardless of resident status. Only the Last Chance Splash Waterpark and Pool in Helena, Montana charges increased rates for non-residents (a total of \$1.00 difference between residents and non-residents.

	SUMMARY OF COMPARABLE AQUATIC CENTER DAILY PASS RATES										
		_		Resident			Non Resident				
·	Aquatic Centers	Free	Daily Child	Daily Adult	Daily Senior	Daily Child	Daily Adult	Daily Senior			
1	Aberdeen, SD	<2	\$6.00	\$8.00	\$7.00	\$6.00	\$8.00	\$7.00			
2	Brandon, SD	None	\$4.00	\$5.00	\$4.00	\$4.00	\$5.00	\$4.00			
3	Brookings, SD	<2	\$7.00	\$7.00	\$7.00	\$7.00	\$7.00	\$7.00			
4	Fargo, ND	<2	\$4.25	\$5.50	\$5.50	\$4.25	\$5.50	\$5.50			
5	Fargo, ND 2	<2	\$3.25	\$4.50	\$4.50	\$3.25	\$4.50	\$4.50			
6	Fargo, ND 3	<2	\$3.25	\$4.50	\$4.50	\$3.25	\$4.50	\$4.50			
7	Fargo, ND 4	<2	\$4.25	\$5.50	\$5.50	\$4.25	\$5.50	\$5.50			
8	Fargo, ND 5	<2	\$4.25	\$5.50	\$5.50	\$4.25	\$5.50	\$5.50			
9	Grafton, ND	n/a	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00			
10	Helena, MT	<4	\$4.00	\$5.00	\$4.00	\$5.00	\$6.00	\$5.00			
11	Kasson, MN	<4	\$7.00	\$7.00	\$7.00	\$7.00	\$7.00	\$7.00			
12	Mitchell, SD	<3	\$6.00	\$6.00	\$6.00	\$6.00	\$6.00	\$6.00			
13	Oshkosh, WI	<3	\$4.50	\$5.50	\$3.50	\$4.50	\$5.50	\$3.50			
14	Sidney, MT	<3	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00			
15	Tioga, ND	n/a	\$4.00	\$4.00	\$4.00	\$4.00	\$4.00	\$4.00			
16	Watertown, SD	<2	\$7.00	\$7.00	\$7.00	\$7.00	\$7.00	\$7.00			
17	Yankton, SD	<4	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00			
	AVERAGE		\$5.22	\$5.88	\$5.59	\$5.28	\$5.94	\$5.65			
	MEDIAN		\$4.50	\$5.50	\$5.50	\$5.00	\$5.50	\$5.50			

Source: Facility management, 2023.



## **OUTDOOR AQUATICS: Membership Pass Pricing**

Similarly, annual individual membership pricing information was gathered among comparable outdoor aquatic centers. As shown, the average comparable outdoor aquatic center charges \$68.24 for an annual child membership, \$77.72 for an adult membership and \$74.19 for a senior membership. Three centers charge a higher annual membership rate to non-residents, which on average is approximately 25 percent higher than the resident membership price.

		SUMMARY	OF COMPARAE	LE AQUATIC CE	NTER DAILY PA	SS RATES		
			Resident		Non Resident			
	Aquatic Centers	Pass Child	Pass Adult	Pass Senior	Pass Child	Pass Adult	Pass Senior	
1	Aberdeen, SD	\$65.00	\$95.00	\$75.00	\$65.00	\$95.00	\$75.00	
2	Brandon, SD	\$40.00	\$50.00	\$40.00	\$40.00	\$50.00	\$40.00	
3	Brookings, SD	\$70.00	\$70.00	\$70.00	\$70.00	\$70.00	\$70.00	
4	Fargo, ND	\$69.00	\$87.25	\$87.25	\$69.00	\$87.25	\$87.25	
5	Fargo, ND 2	\$69.00	\$87.25	\$87.25	\$69.00	\$87.25	\$87.25	
6	Fargo, ND 3	\$69.00	\$87.25	\$87.25	\$69.00	\$87.25	\$87.25	
7	Fargo, ND 4	\$69.00	\$87.25	\$87.25	\$69.00	\$87.25	\$87.25	
8	Fargo, ND 5	\$69.00	\$87.25	\$87.25	\$69.00	\$87.25	\$87.25	
9	Grafton, ND	\$82.00	\$82.00	\$82.00	\$82.00	\$82.00	\$82.00	
10	Helena, MT	\$75.00	\$95.00	\$75.00	\$90.00	\$130.00	\$90.00	
11	Kasson, MN	\$100.00	\$100.00	\$100.00	\$125.00	\$125.00	\$125.00	
12	Mitchell, SD	\$84.00	\$84.00	\$84.00	\$84.00	\$84.00	\$84.00	
13	Oshkosh, WI	\$60.00	\$70.00	\$60.00	\$75.00	\$85.00	\$75.00	
14	Sidney, MT	\$40.00	\$40.00	\$40.00	\$40.00	\$40.00	\$40.00	
15	Tioga, ND	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	\$60.00	
16	Watertown, SD	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	
17	Yankton, SD	\$64.00	\$64.00	\$64.00	\$64.00	\$64.00	\$64.00	
	AVERAGE	\$68.24	\$77.72	\$74.19	\$71.47	\$82.13	\$77.43	
	MEDIAN	\$69.00	\$84.00	\$75.00	\$69.00	\$85.00	\$82.00	

Source: Facility management, 2023.



## **OUTDOOR AQUATICS: Family Pass Pricing**

Finally, family membership pricing information was gathered among comparable outdoor aquatic centers. As shown, the average comparable outdoor aquatic center charges \$173.34 for an annual four-person family membership, \$182.37 for a five-person family membership and \$188.43 for a six-person family membership. Four aquatic centers in the comparison set charge more for family passes depending on the number of persons utilizing the pass.

	SUMMARY OF COMPARABLE AQUATIC CENTER FAMILY PASS RATES									
			Resident							
	Aquatic Centers	Family of 4 Pass	Family of 5 Pass	Family of 6 Pass						
1	Aberdeen, SD	\$165.00	\$165.00	\$165.00						
2	Brandon, SD	n/a	n/a	n/a						
3	Brookings, SD	\$185.00	\$210.00	\$235.00						
4	Fargo, ND	\$183.50	\$183.50	\$183.50						
5	Fargo, ND 2	\$183.50	\$183.50	\$183.50						
6	Fargo, ND 3	\$183.50	\$183.50	\$183.50						
7	Fargo, ND 4	\$183.50	\$183.50	\$183.50						
8	Fargo, ND 5	\$183.50	\$183.50	\$183.50						
9	Grafton, ND	\$165.00	\$165.00	\$165.00						
10	Helena, MT	\$220.00	\$220.00	\$220.00						
11	Kasson, MN	\$200.00	\$200.00	\$200.00						
12	Mitchell, SD	\$167.00	\$167.00	\$167.00						
13	Oshkosh, WI	\$145.00	\$161.00	\$177.00						
14	Sidney, MT	\$150.00	\$170.00	\$190.00						
15	Tioga, ND	\$160.00	\$160.00	\$160.00						
16	Watertown, SD	\$200.00	\$200.00	\$230.00						
17	Yankton, SD	\$99.00	n/a	n/a						
	AVERAGE MEDIAN	\$173.34 \$183.50	\$182.37 \$183.50	\$188.43 \$183.50						

Source: Facility management, 2023.



## **OUTDOOR AQUATICS: Summary**

We have further analyzed the capacity of a potential new Outdoor Aquatic Center in Williston to achieve the revenue benchmarks required to maintain a coverage ratio consistent with comparable outdoor aquatic centers identified. As shown below, assuming an operating budget of \$627,900 as projected in Counsilman-Hunsaker's Expense Analysis from January 2023, and a coverage ratio of 58 percent, Williston Water World would need to generate approximately \$368,400 in annual revenue.

Based on an average of comparable outdoor aquatic centers analyzed, approximately 39 percent of annual revenue is generated through daily pass sales, 41 percent through annual membership sales, and 20 percent through other revenue sources, including concession revenue, private rentals, merchandise, etc. Assuming a daily pass rate of \$5.55 and an annual membership rate of \$72.98 (based on the average comparable outdoor aquatic centers analyzed), Williston Water World would need to sell approximately 26,100 daily passes (or approximately 339 per day over the course of a 77-day season), and just over 2,000 annual memberships to achieve revenue targets based on the allocated percentage of daily pass versus annual membership revenue generated. This would require Williston Water World to generate approximately \$73,500 in other annual revenue.

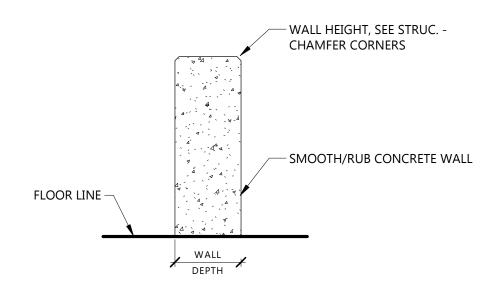
However, based on Counsilman-Hunsaker's Expense Analysis, annual concessions revenue was projected at approximately \$17,600. If we were to assume this level of 'Other' revenue, it would require slightly higher revenue generation among daily pass and annual membership sales. To achieve these higher revenue targets, maintaining \$5.55 per pass for daily use and \$72.98 per annual membership, this would require approximately 31,000 daily passes (of approximately 409 per day over a 77-day season) and 2,400 annual memberships sold.

UTILIZATION ESTIMATES TO ACHIEVE REVENUE BENCHMARKS  Based on Percentage of Revenue Split									
Туре	Daily Passes	Annual Memberships	Other						
Percentage of Revenue	39%	41%	20%						
Target Revenue	\$144,878	\$150,040	\$73,496						
Fee	\$5.55	\$72.98	n/a						
Units Sold 26,104 2,056 n/a									

UTILIZATION ESTIMATES TO ACHIEVE REVENUE BENCHMARKS  Based on Budgeted F&B Revenue Estimate				
Туре	Daily Passes	Annual Memberships	Other	
Percentage of Revenue	39%	41%	n/a	
Target Revenue	\$172,348	\$178,488	\$17,578	
Fee	\$5.55	\$72.98	n/a	
Units Sold	31,054	2,446	n/a	

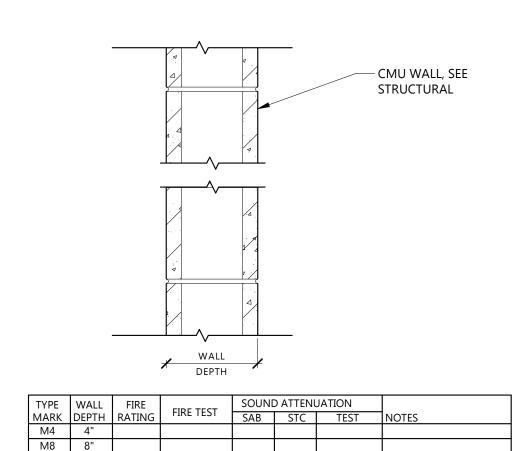
Source: Facility management, Counsilman-Hunsaker Expense Analysis, 2023.





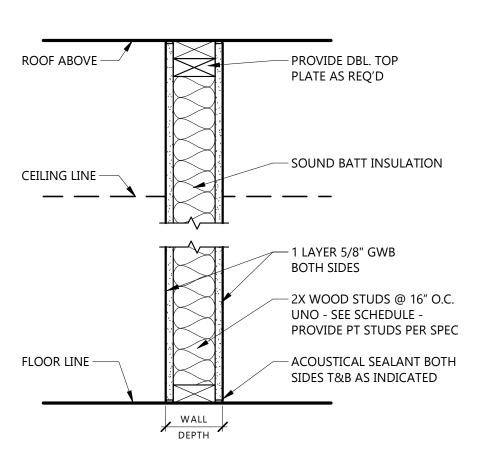
SEE STRUC. FOR ADDITIONAL DETAILS

' CONCRETE WALL



SEE EXTERIOR ELEVATIONS FOR BLOCK TYPE AND COLOR





TYPE	STUD	WALL	FIRE		SOU	ND ATTE	NUATION	
MARK	SIZE	DEPTH	RATING	FIRE TEST	SAB	STC	TEST	NOTES
В5	3 1/2"	4 1/8"	NR	-	3 1/2"	-	-	ONE SIDE 5/8" GYP. BD.
В7	5 1/2"	6 3/4"	NR					

SEE LIFE SAFETY PLAN FOR N.R. SMOKE-RESISTIVE WALL LOCATIONS

NON-RATED GWB ON WOOD STUDS

#### KEYNOTE LEGEND:

< < INDICATES KEYNOTE ON PLAN
</p>

AE 37 WASHER/DRYER BY OWNER - SEE MECH AND ELEC FOR HOOKUPS

AE 38 FLOOR JANITOR SINK - SEE MECH

AE 39 CANOPY COLUMN, PREP STEEL AND GRIND SMOOTH ALL WELDS AND UNEAVEN SURFACES FOR PAINT - SEE STRUCT

AEE 02 WATER FOUNTAINS, SEE MECH., CMU BLOCK TO BE SMOOTH PLAIN FACE AT WATER FOUNTAIN SURROUND

AEE 15 SOLID SURFACE COUNTER WITH METAL SUPPORT BRACKETS

AEE 20 SPLASH BLOCKS

AS 16 5'-0" HIGH PERIMETER GALVANIZED CHAIN LINK FENCE - SEE CIVIL

AS 24 FRONT ENTRY GATE - SEE DETAIL 1/A004

#### **GENERAL NOTES**

ATTENTION-CONTRACTORS, SUBCONTRACTORS, SUPPLIERS, MANUFACTURERS, TRADESPERSONS AND ALL USERS OF THESE DRAWINGS:

DRAWINGS. IT IS YOUR RESPONSIBILITY TO KNOW AND ADHERE TO THE

BE ALERTED THAT WORK YOU ARE INTERESTED IN MAY NOT BE CONTAINED ALL TOGETHER IN ONE PLACE OR IN ONE SERIES OF DRAWINGS (ARCH., STRUCT., MECH., ETC.), OR IN ONE SPECIFICATION SECTION. REQUIREMENTS FOR ELECTRICAL, MECHANICAL, PLUMBING, AND STRUCTURAL CAN ALSO BE SHOWN ON ARCHITECTURAL DRAWINGS: REQUIREMENTS FOR ANY DISCIPLINE CAN BE SHOWN ON THE DRAWINGS OF OTHER DISCIPLINES. REQUIREMENTS FOR ONE DISCIPLINE CAN BE SHOWN BOTH WITH THAT DISCIPLINE AND ANOTHER AS WELL. EVERY EFFORT HAS BEEN MADE TO MAKE THESE DOCUMENTS CONCISE AND COORDINATED, TO DEFINE WORK IN THE MOST LOGICAL PLACE, AND TO DESCRIBE WORK IN ONE PLACE ONLY. HOWEVER; REMEMBER YOUR SCOPE OF WORK CAN BE CONTAINED IN VARIOUS PLACES WITH VARYING DESCRIPTIONS. DO NOT CONSIDER THERE IS ONLY ONE CUSTOMARY PLACE TO LOCATE YOUR WORK. DO NOT OMIT WORK FROM YOUR SCOPE BECAUSE THE ENTIRE SET OF DOCUMENTS WAS NOT REVIEWED. DO NOT PRESUME YOUR SCOPE OF WORK IS SINGULARLY DEFINED. THE ENTIRE SET OF CONTRACT DOCUMENTS DEFINES THE SCOPE OF WORK FOR THE ENTIRE PROJECT AS WELL AS ANY PARTICULAR TRADE, ETC. YOU MUST REVIEW ALL DRAWING SHEETS AND SPECIFICATIONS DIVISIONS/SECTIONS TO

4. THIS SET OF DOCUMENTS IS ORGANIZED TO CONVEY INFORMATION AS CLEARLY AS POSSIBLE IN ONE PLACE.

A. THE WALL TYPES ARE DESCRIBED IN A SCHEDULE, AND KEYED ON THE FLOOR PLAN

B. DOORS ARE DESCRIBED IN A SCHEDULE ON SHEET A600, AND KEYED ON THE FLOOR PLAN SHEETS;

C. GLAZING FRAMES ARE DESCRIBED IN THE 600 SERIES SHEETS, AND KEYED ON THE FLOOR PLANS;

DESCRIBED IN SCHEDULES AND IN PLAN AT MULTIPLE LOCATIONS OF THIS DRAWING PACKAGE (REFER TO FULL PACKAGE);

MECHANICAL, ELECTRICAL AND SPRINKLER FEATURES MUST EXIST IN THE SAME CEILING SPACES. EACH TRADE MUST LAYOUT AND INSTALL THEIR RESPECTIVE CONDITIONS WITH AWARENESS OF THE OTHER TRADES THAT NEED TO SHARE THE SPACES. EACH TRADE MUST NOT ASSUME THEIR INSTALLATIONS CONDITIONS HAVE BEEN CONSIDERED IN THE DESIGN AND SHOP DRAWINGS PREPARED BY THE OTHER TRADE. EVERY EFFORT HAS BEEN MADE TO COORDINATE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL REQUIREMENTS, IN THESE DOCUMENTS. THE SPRINKLER DESIGN DOES NOT OCCUR UNTIL THE CONSTRUCTION IS UNDERWAY. SO IT HAS NOT BEEN ACTUALLY INCLUDED IN THESE DOCUMENTS. THERE CAN BE PLACES THAT REQUIRE ADDITIONAL COORDINATION AND MODIFICATIONS. EACH TRADE CONTRACTOR TO REVIEW THEIR REQUIREMENTS

CONSTRUCTION. THIS EFFORT TO BE OVERSEEN BY THE GENERAL CONTRACTOR. ALL REQUESTS FOR ADDITIONAL INFORMATION AND/OR CLARIFICATION MUST BE SUBMITTED TO THE ARCHITECT IN WRITING VIA A PROJECT REQUEST FOR INTERPRETATION(INFORMATION) FORM.

1. CAREFULLY AND THOROUGHLY REVIEW THE GENERAL NOTES FIRST BEFORE USING THE

QUALIFICATIONS LISTED BELOW.

DETERMINE THE EXTENT OF YOUR WORK. TYPICALLY MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS SHOW EQUIPMENT, PIPING, ETC. IN A DIAGRAMMATIC WAY WITHOUT DIMENSIONING. THESE DRAWINGS DO NOT NECESSARILY ACKNOWLEDGE ARCHITECTURAL DETAILING FOR SHAFTS, CHASES, EASEMENTS, ETC. GENERAL CONTRACTOR TO COORDINATE THE LOCATIONS OF ALL M.E.P. EQUIPMENT, FIXTURES, PIPING, ETC. WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.

SHEETS A101, A102, ETC;

D. MILLWORK, GUARDRAILS, BUILDING EQUIPMENT, AND BUILDING SPECIALTIES ARE

E. TOILET ACCESSORIES ARE DESCRIBED IN A SCHEDULE IN THE 600 SERIES, AND KEYED ON SHEETS IN THE 600 SERIES;

WITH THE OTHER TRADE AND PROVIDE COORDINATION DURING SHOP DRAWINGS AND

Architecture Engineering Interior Design

TELE **701.609.5290** FAX **701.609.5290\*51** 313 Main Street, Suite 308, Williston ND 58801

www.eapc.net

CONSULTANTS



**400 SANTA FE DRIVE DENVER, COLORADO 80203** T: 303.294.9244 www.olcdesigns.com

CLIENT

WILLISTON **COMMUNITY** BUILDERS

PROJECT DESCRIPTION WILLISTON WATER

WILLISTON CITY STATE

**ISSUE DATES** 

CD CONSTRUCTION 05/19/2023 DOCUMENTS DATE MARK DESCRIPTION

20224620 PROJECT NO: DRAWN BY: CHECKED BY:

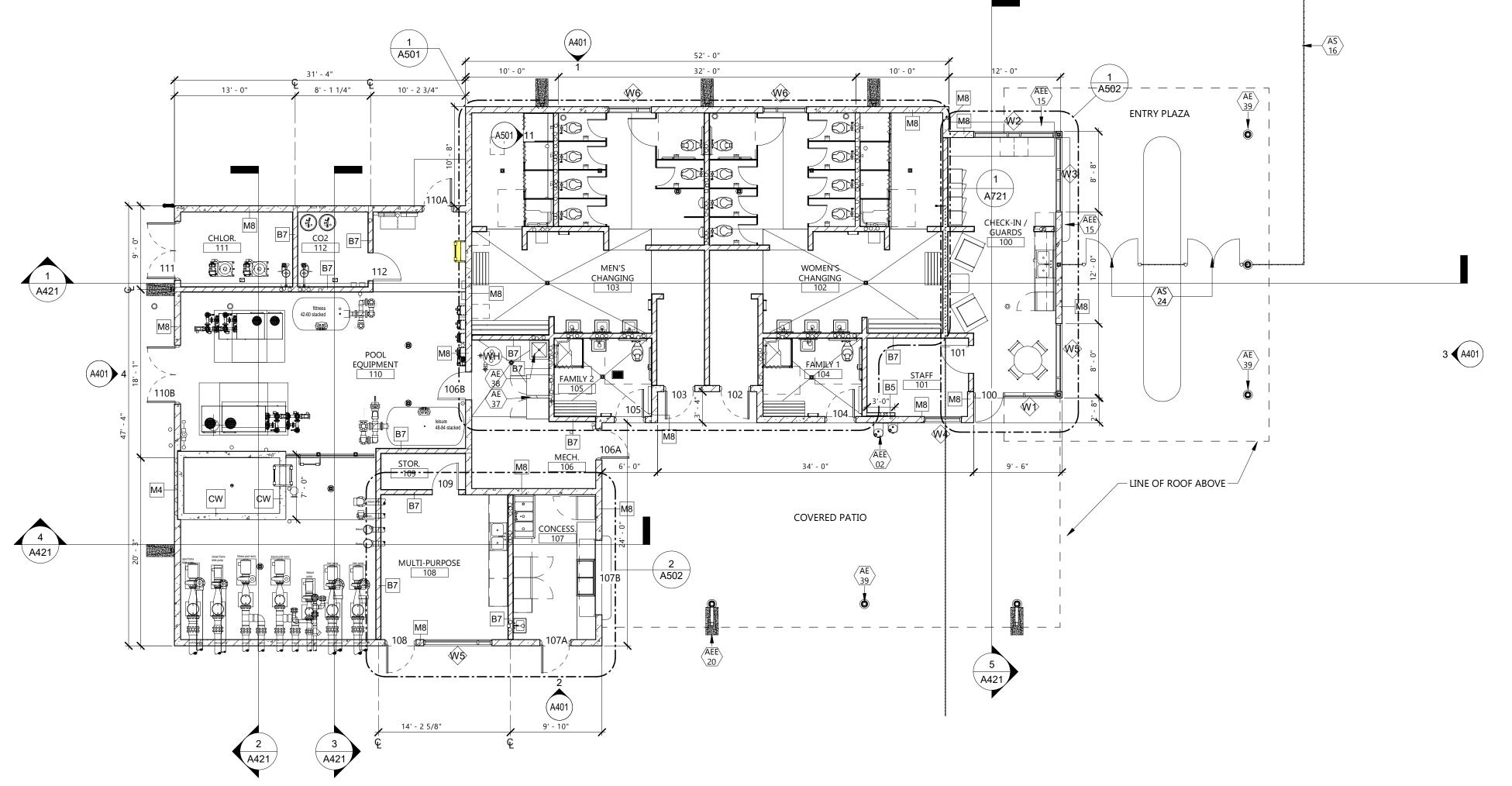
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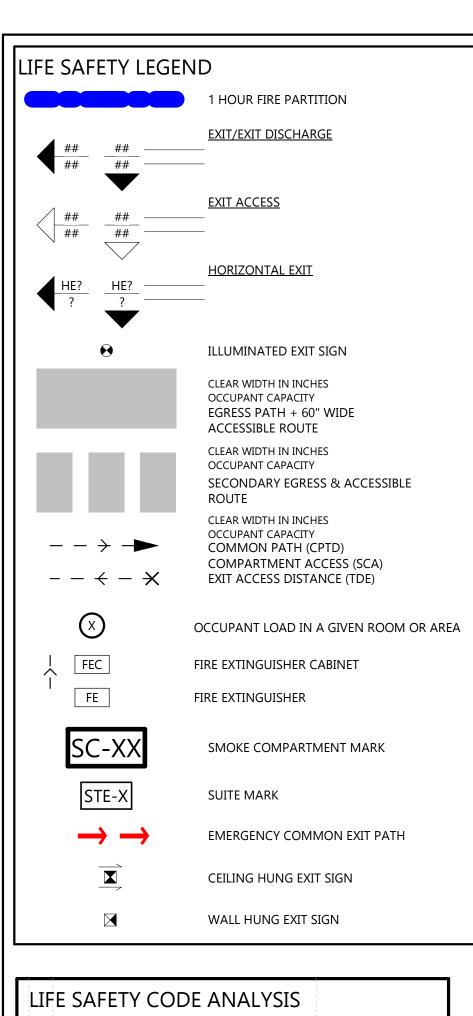
STAMP

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Architect under the laws of the State of North

Signature: Date: <u>5/19/2023</u> REG. NO. : <u>1718</u>

DRAWING TITLE FIRST FLOOR PLAN





OCCUPANT LOAD SIGNS WILL BE PROVIDED IN ACCORDANCE WITH

NFPA 101 SECTION 7.3.1.2 AND TO BE DISPLAYED AT CONSPICUOUS

CODE INFO

40'-0"

2,900 SF (TABLE 506.2, <9,000 SF FOR V-B, NS)

24'-0", ONE-STORY

0 (Per Table 602, X>30')

> 30', No Limit (UP,NS)

NOT APPLICAPLE

AUTOMATIC SPRINKLER SYSTEM: NOT REQUIRED (Chapter 5 &

ALARM, AND TO RELEASE ELECTRIC STRIKE ON ALARM CONDITION.

FIRE EXTINGUISHERS IS PROVIDED PER NFPA 101 SECTION 9.7.4.1

EGRESS COMPONENTS: .20 x 37 OCC. = 7.4", REQ'D

POOL EQUIP AREA 2 REQ'D (1006.2.2.1)

EGRESS PROVIDED: COMPLIES, SEE BATH HOUSE PLAN

1 PROVIDED, EACH

2 PROVIDED

B OCCUPANCY w/o SPRINKLERS: MAX: 75 FT (COMPLIES)

ASSEMBLY w/o SPRINKLERS: MAX: 200 FT (COMPLIES)

ALL DOOR HARDWARE TO MEET ACCESSIBILITY REQUIREMENTS

MAX COMMON PATH 100' @ OCC, < 45 FT (COMPLIES)

1 REQ'D (OCC LOAD < 49)

FIRE ALARM SYSTEM: NOT REQUIRED (907.2.2)

NOT REQUIRED (1020.1.4)

HR RATING

BUILDING = B (303.1.1: Assembly Group A-3

but < 50 Persons

**OCCUPANCY** 

**CONSTRUCTION** 

V-B

<u>ALLOWABLES</u> **GROSS AREA** 

**FIRE RESISTANCE** 

FIRE PROTECTION

Chapter 9)

ELEMENT / AREA

**BUILDING HEIGHT, MAX:** 

PRIMARY STRUCTURAL FRAME: BEARING WALLS--EXTERIOR: BEARING WALLS--INTERIOR:

NON BEARING WALLS--EXTERIOR:

NON BEARING WALLS--INTERIOR:

TABLE 705.8 MAX EXT OPN'G:

DOORS--FIRE RESISTANCE:

1004 - OCCUPANT LOAD

1006 - NUMBER OF EXITS

RESTROOM AREA

1016 - EXIT ACCESS

PLUMBING FIXTURES

**ENERGY REQUIREMENTS** 

1005 - EGRESS WIDTH (1005.3.2)

1017 - EXIT ACCESS TRAVEL DISTANCE

SEE POOL DECK PLAN

CORRIDORS--FIRE RESISTANCE:

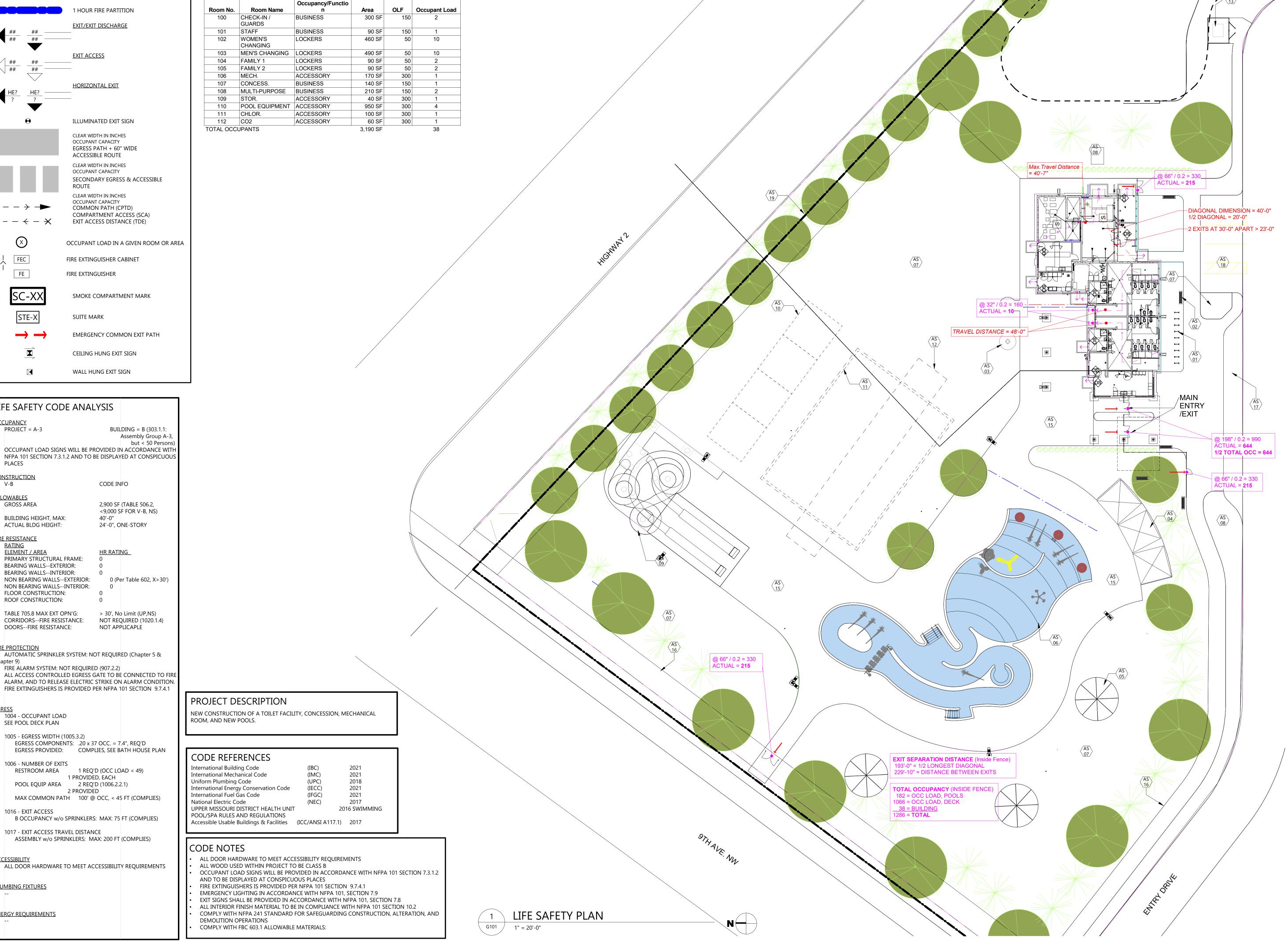
FLOOR CONSTRUCTION:

ROOF CONSTRUCTION:

ACTUAL BLDG HEIGHT:

PROJECT = A-3

ROOM OCCUPANT CALCULATIONS



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CLIENT WILLISTON **COMMUNITY** BUILDERS

PROJECT DESCRIPTION WILLISTON WATER WORLD

WILLISTON CITY ND STATE

**ISSUE DATES** 

CD CONSTRUCTION 05/19/2023 DOCUMENTS MARK DESCRIPTION DATE

20224620 **PROJECT NO:** DRAWN BY: CHECKED BY:

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STAMP

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Architect under the laws of the State of North Dakota.

Signature: Monthson Date: <u>5/19/2023</u> REG. NO. : <u>1718</u>

DRAWING TITLE

LIFE SAFETY PLANS



# Capacity

- Training capacity 5 swimmers per lane per session
- Daily training 3 sessions per day
- Recreation holding capacity (RHC)
- Shallow water 25 ft<sup>2</sup> per person
- Deep water 100 ft<sup>2</sup> per person
- Daily recreation capacity 2.5 x RHC
- Program holding capacity 32 ft<sup>2</sup> per person
- Health code capacity numbers will be higher than what is shown.

	Williston Water Park
WET-SIDE CAPACITY	
Training (Available 25-Yard Lanes)	
Outdoor Lap	6
Total	6
Estimated Training Holding Capacity	30
Daily Training Capacity	90
Recreation (Surface Area Sq. Ft.)	
Outdoor Lap	4,128
Outdoor Leisure	5,019
Total	9,147
Shallow Water	8,232
Deep Water	915
Estimated Recreation Holding Capacity	338
Daily Recreation Holding Capacity	846
Program Holding Capacity	286
Total Capacity	368
Total Daily Facility Capacity	936



# Expenses – Staffing

- Full time includes overhead
- Brian Assistant Manager
  - ½ Salary to Aquatic Center
- Additional Maintenance Sup
  - ½ Salary to Aquatic Center
- Custodial absorbed by PARD
- Lifeguards
  - \$15.20/hr. + 20% overhead
  - 2 LG from 8 10 AM
  - 9 LG from 10 AM 12 PM
  - 13 LG from 12 8 PM
- Pool Manager
  - \$17/hr. + 20% overhead
  - 1 Pool Manager from 8 AM 8 PM
- Estimated Part Time FTEs 29.83

# Facility Staff Maintonance Salaries \$45,000

Estimate Current as of:	1/3/2023
Total Labor	\$416,162
Training	\$12,000
Personnel Equipment Cost	\$10,739
Part-Time Maintenance	Not included
Cashiers/Concessions/Attendants	\$50,688
Lifeguard Personel	\$252,806
Part-Time Management	\$26,928
Full Time Benefits	\$18,000
Custodians	Not Included
Recreation Coordinator	Not Included
Aquatic Coordinator	Not Included
Food Service Manager	Not Included
Maintenance Salaries	\$45,000
Facility Staff	

Source: Counsilman-Hunsaker



## Utilities

## Assumptions

- Electricity \$0.10/kWH
- Water/Sewer \$4.88
- Gas \$.69/ Therm

### **Pool Heating**

- Heating May Sept
- Average pool temp 84°

CHART Direct Facility Expense 1	Budget Williston Water Park	
Utilities	Williston Water Fark	
HVAC	\$7,837	
Electricity	\$30,983	
Pool Heating	\$35,833	
Data/Communications	\$1,728	
Trash Service	\$3,120	
Water & Sewer	\$14,796	
<b>Total Utilities</b>	\$94,297	
Estimate Current as of:	1/3/2023	
Source: Counsilman-Hunsaker		



# Direct Facility Expenses

- Insurance Quotes from Rob Osborn
  - WC \$5.37 per \$100 of payroll
- Landscaping \$25 K per acre
- CC Fees
  - Mem/Daily swims 35,156
  - Programming Not included
- Chemicals \$2 per lb
- Advertising \$0.10 per attendee

CHART Direct Facility Expense Budget			
AQUATIC RESEARCH TOOL	Williston Water Park		
Direct Facility Expenses			
Insurance	\$32,318		
Repair and Maintenance	\$20,300		
Landscaping	\$41,082		
Credit Card Fees	\$12,219		
Operating Supplies	\$12,180		
Chemicals	\$9,362		
Advertising	Not Included		
Direct Expenses	\$127,460		
Estimate Current as of:	1/3/2023		
Source: Counsilman-Hunsaker			



## **Expense Summary**

- Includes Food and Beverage
  - 60% of estimated revenue
  - Revenue \$0.50 per cap
- Capital Replacement Fund
  - Budgeted annually for future capital improvement projects

**Total Operating Expenses - \$648,466** 

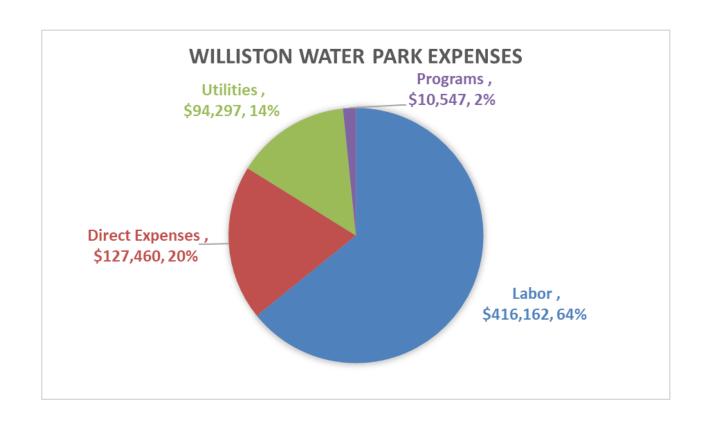
W Cap Improvement - \$688,966

1/3/2023

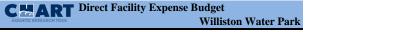
AGUATIC RESEARCH TOOL	Williston Water Park
Facility Staff	
Full Time Employment	Not Included
Maintenance Salaries	\$45,000
Food Service Manager	Not Included
Aquatic Coordinator	Not Included
Recreation Coordinator	Not Included
Custodians	Not Included
Full Time Benefits	\$18,000
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Total Labor	\$416,162
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Electricity	\$30,983
Pool Heating	\$35,833
Data/Communications	\$1,728
Trash Service	\$3,120
Water & Sewer	\$14,796
<b>Total Utilities</b>	\$94,297
Programs	
Program Supplies	Not Included
LG Class Materials	Not Included
Food and Beverage	\$10,547
Part-Time Program Staff	Not Included
Total Programs	\$10,547
Total On another Europe	φ.(40-4 <i>C</i> )
Total Operating Expenses	\$648,466
Capital Replacement Fund	\$40,500
Total Evnonce	\$600,000
Total Expense	\$688,966
Estimate Current as of:	1/3/2023
Source: Counsilman-Hui	nsaker



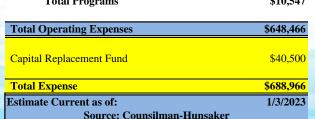
## **Expense Summary**



1/3/2023



AQUATIC RESEARCH TOOL	Williston Water Park
Facility Staff	
Full Time Employment	Not Included
Maintenance Salaries	\$45,000
Food Service Manager	Not Included
Aquatic Coordinator	Not Included
Recreation Coordinator	Not Included
Custodians	Not Included
Full Time Benefits	\$18,000
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Direct Expenses	\$127,460
TTAIliai	
Utilities HVAC	¢7.027
	\$7,837
Electricity	\$30,983
Pool Heating	\$35,833
Data/Communications	\$1,728
Trash Service	\$3,120
Water & Sewer	\$14,796
<b>Total Utilities</b>	\$94,297
Programs	
Program Supplies	Not Included
LG Class Materials	Not Included
Food and Beverage	\$10,547
Part-Time Program Staff	Not Included
Total Programs	\$10,547
<b>Total Operating Expenses</b>	\$648,466
Total Operating Expenses	\$048,466





# WILLISTON WATER WORLD

# **1324 9TH AVE NW** WILLISTON, ND 58801

## SHEET INDEX

### AQUATICS

AQ905

**COVER SHEET** LIFE SAFETY SHEET

### CIVIL

**GENERAL** 

**BASEMAP & ARIAL** BASEMAP **DETAILS** C2.1 **DETAILS DETAILS DETAILS** 

SITE PLAN & ARIAL C4.1 DECK LAYOUT OVERVIEW DECK GRADING PLAN

DROP-OFF AND HANDICAP PARKING DECK PERIMETER DITCHES POND & OVERFLOW DRAINAGE DITCH

#### STRUCTURAL

STRUCTURAL GENERAL NOTES STRUCTURAL LEGENDS AND ABBREVIATIONS SPECIAL INSPECTION TABLES FOUNDATION PLAN FIRST FLOOR SLAB PLAN ROOF FRAMING PLAN **ROOF FRAMING PLAN - CANOPY** FOUNDATION DETAILS FOUNDATION DETAILS

### **ARCHITECTURAL**

FRAMING DETAILS

GENERAL ARCHITECTURAL INFORMATION ARCHITECTURAL SITE & LANDSCAPING PLAN

SITE DETAILS FIRST FLOOR PLAN

**ROOF PLAN** FIRST FLOOR REFLECTED CEILING PLAN

**BUILDING ELEVATIONS BUILDING SECTIONS** 

WALL SECTIONS WET AREA ENLARDED PLAN & ELEVATIONS

**ENLARGED PLANS & ELEVATIONS** 

A601 DETAILS

MILWORK SECTIONS, DETAILS

DOOR SCHEDULE, DOOR & WINDOW ELEVATIONS A901 FIRST FLOOR INTERIOR FINISH PLAN, SCHEDULES

POOL REFERENCE PLAN FITNESS POOL STRUCTURAL PLAN LEISURE POOL STRUCTURAL PLAN POOL STRUCTURAL DETAILS AQ102 POOL STRUCTURAL SECTIONS AQ103 AQ104 POOL STRUCTURAL SECTIONS AQ200 FITNESS POOL PLAN & SECTIONS AQ201 FITNESS POOL DETAILS FITNESS POOL DETAILS

AQ300 LEISURE POOL PLAN & SECTIONS AQ301 LEISURE POOL DETAILS AQ302 LEISURE POOL DETAILS

AQ303 LEISURE POOL DETAILS AQ400 WATERSLIDE PLAN, ELEVATION & DETAILS AQ500 POOL LOCATION POINT SCHEDULES POOL LOCATION POINT PLAN AQ501

AQ600 POOL PIPING NOTES & SCHEDULES POOL SUCTION PIPING PLAN AQ601 AQ602 POOL RETURN PIPING PLAN

POOL FEATURE RETURN PIPING PLAN AQ603 AQ700 POO MECHANICAL NOTES & SCHEDULES AQ701 POOL MECHANICAL ROOM PLAN & SECTIONS

POOL MECHANICAL DETAILS AQ702 AQ703 POOL MECHANICAL DETAILS POOL MECHANICAL DETAILS AQ704 AQ705 POOL MECHANICAL DETAILS

AQ800 FITNESS POOL SYSTEMS SCHEMATIC AQ801 LEISURE POOL SYSTEMS SCHEMATIC AQ900 ELECTRICAL COVOR SHEET ELECTRICAL OVERALL PLAN AQ901 AQ902 ELECTRICAL FITNESS POOL PLAN AQ903 ELECTRICAL LEISURE POOL PLAN AQ904 ELECTRICAL WATERSLIDE PLAN

**PLUMBING** 

MECHANICAL SYMBOLS & LEGEND SHEET

PLUMBING SITE PLAN UNDERGROUND PLUMBING PLAN FIRST FLOOR PLUMBING PLAN SANITARY & VENT RISER DIAGRAM WATER SUPPLY RISER DIAGRAM PLUMBING DETAILS PLUMBING SCHEDULES

#### **MECHANICAL**

MECHANICAL PIPING PLAN FIRST FLOOR VENTILATION PLAN ROOF VENTILATION PLAN MECHANICAL DETAILS MECHANICAL SCHEDULES

**ELECTRICAL SYMBOLS & ABBREVIATIONS LEGEND** 

ELECTRICAL SITE PLAN FIRST FLOOR POWER AND SYSTEMS

FIRST FLOOR LIGHTING PLAN ONE-LINE DIAGRAM AND MOTOR RISER LIGHTING SCHEDULES AND DETAILS

E901 SCHEDULES

## EXTERIOR RENDERING



## LOCATION MAP



**CONSULTANTS** 

EAPC

**DENVER, COLORADO 80203** T: 303.294.9244 www.olcdesigns.com

CLIENT WILLISTON

**COMMUNITY BUILDERS** 

PROJECT DESCRIPTION WILLISTON WATER WORLD

WILLISTON

ISSUE DATES

CD CONSTRUCTION 05/19/2023 DOCUMENTS

MARK DESCRIPTION

20224620 PROJECT NO: DRAWN BY: CHECKED BY:

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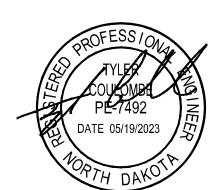
**G001** 

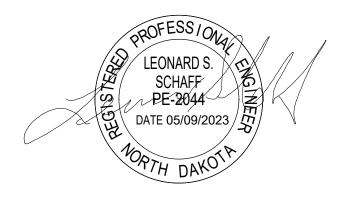
## STAMPS

ELECTRICAL POOL MECHANICAL ROOM PLAN

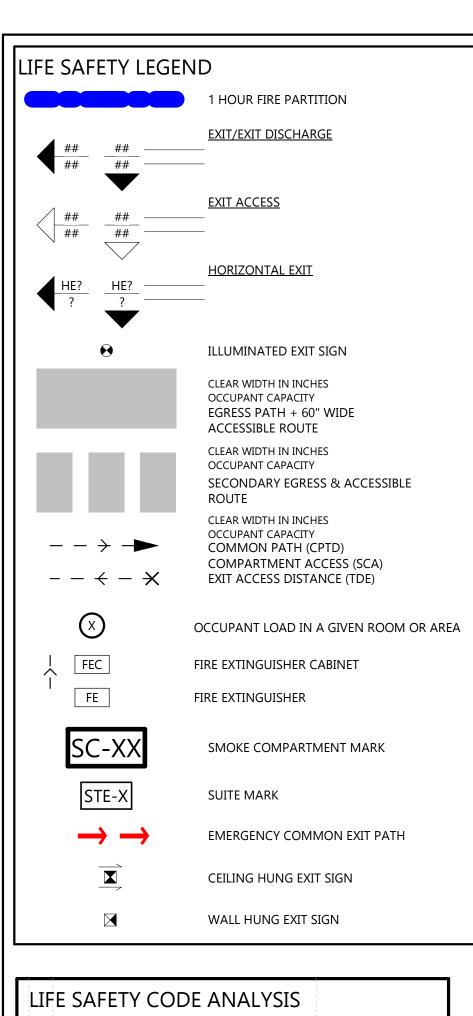
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OCCUPANT LOAD SIGNS WILL BE PROVIDED IN ACCORDANCE WITH

NFPA 101 SECTION 7.3.1.2 AND TO BE DISPLAYED AT CONSPICUOUS

CODE INFO

40'-0"

2,900 SF (TABLE 506.2, <9,000 SF FOR V-B, NS)

24'-0", ONE-STORY

0 (Per Table 602, X>30')

> 30', No Limit (UP,NS)

NOT APPLICAPLE

AUTOMATIC SPRINKLER SYSTEM: NOT REQUIRED (Chapter 5 &

ALARM, AND TO RELEASE ELECTRIC STRIKE ON ALARM CONDITION.

FIRE EXTINGUISHERS IS PROVIDED PER NFPA 101 SECTION 9.7.4.1

EGRESS COMPONENTS: .20 x 37 OCC. = 7.4", REQ'D

POOL EQUIP AREA 2 REQ'D (1006.2.2.1)

EGRESS PROVIDED: COMPLIES, SEE BATH HOUSE PLAN

1 PROVIDED, EACH

2 PROVIDED

B OCCUPANCY w/o SPRINKLERS: MAX: 75 FT (COMPLIES)

ASSEMBLY w/o SPRINKLERS: MAX: 200 FT (COMPLIES)

ALL DOOR HARDWARE TO MEET ACCESSIBILITY REQUIREMENTS

MAX COMMON PATH 100' @ OCC, < 45 FT (COMPLIES)

1 REQ'D (OCC LOAD < 49)

FIRE ALARM SYSTEM: NOT REQUIRED (907.2.2)

NOT REQUIRED (1020.1.4)

HR RATING

BUILDING = B (303.1.1: Assembly Group A-3

but < 50 Persons

**OCCUPANCY** 

**CONSTRUCTION** 

V-B

<u>ALLOWABLES</u> **GROSS AREA** 

**FIRE RESISTANCE** 

FIRE PROTECTION

Chapter 9)

ELEMENT / AREA

**BUILDING HEIGHT, MAX:** 

PRIMARY STRUCTURAL FRAME: BEARING WALLS--EXTERIOR: BEARING WALLS--INTERIOR:

NON BEARING WALLS--EXTERIOR:

NON BEARING WALLS--INTERIOR:

TABLE 705.8 MAX EXT OPN'G:

DOORS--FIRE RESISTANCE:

1004 - OCCUPANT LOAD

1006 - NUMBER OF EXITS

RESTROOM AREA

1016 - EXIT ACCESS

PLUMBING FIXTURES

**ENERGY REQUIREMENTS** 

1005 - EGRESS WIDTH (1005.3.2)

1017 - EXIT ACCESS TRAVEL DISTANCE

SEE POOL DECK PLAN

CORRIDORS--FIRE RESISTANCE:

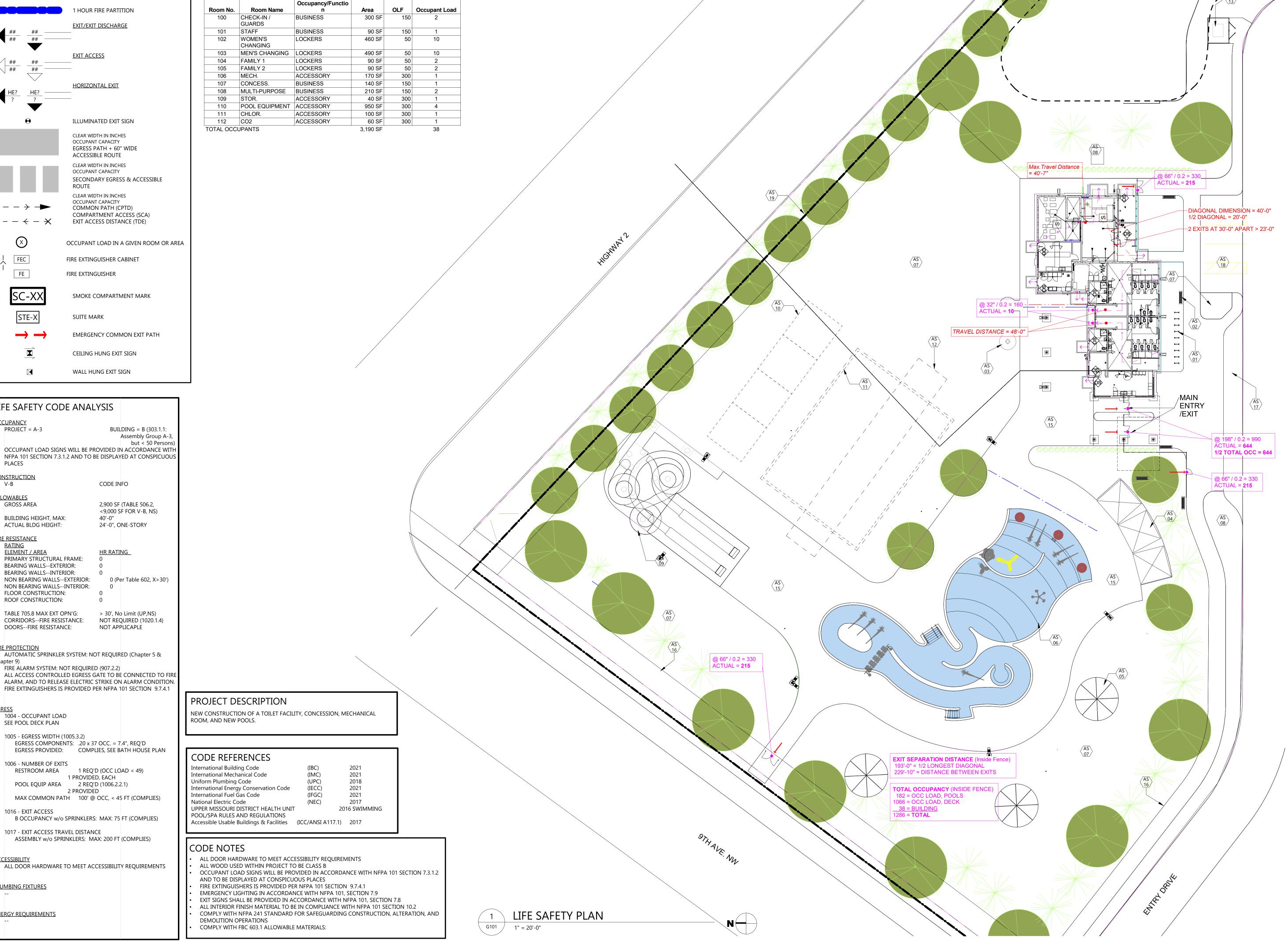
FLOOR CONSTRUCTION:

ROOF CONSTRUCTION:

ACTUAL BLDG HEIGHT:

PROJECT = A-3

ROOM OCCUPANT CALCULATIONS



EAPC

Architecture Engineering

TELE 701.609.5290 FAX 701.609.5290\*51 313 Main Street, Suite 308, Williston ND 58801

www.eapc.net

CONSULTANTS



400 SANTA FE DRIVE **DENVER, COLORADO 80203** T: 303.294.9244 www.olcdesigns.com

CLIENT WILLISTON **COMMUNITY** BUILDERS

PROJECT DESCRIPTION WILLISTON WATER WORLD

WILLISTON CITY ND STATE

**ISSUE DATES** 

CD CONSTRUCTION 05/19/2023 DOCUMENTS MARK DESCRIPTION DATE

20224620 **PROJECT NO:** DRAWN BY: CHECKED BY:

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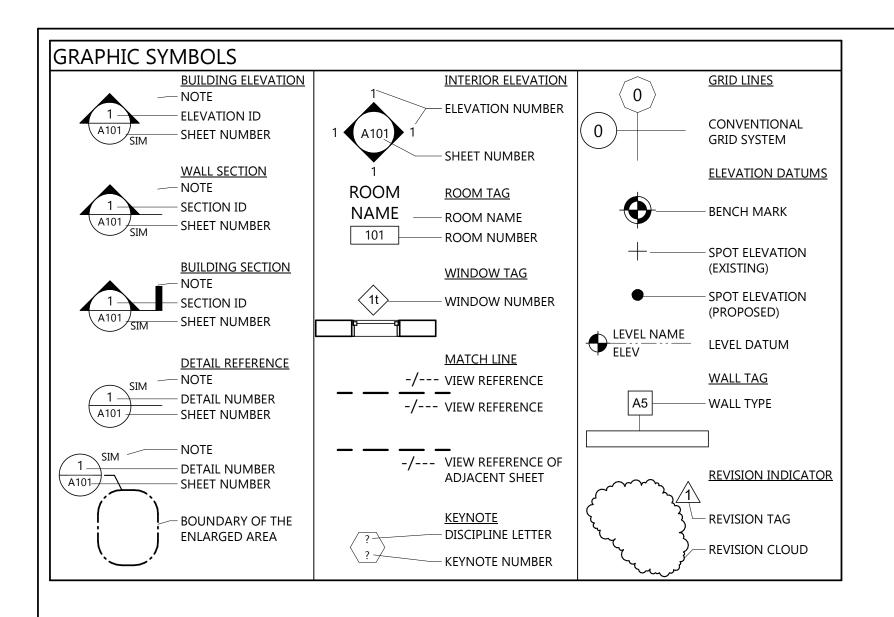
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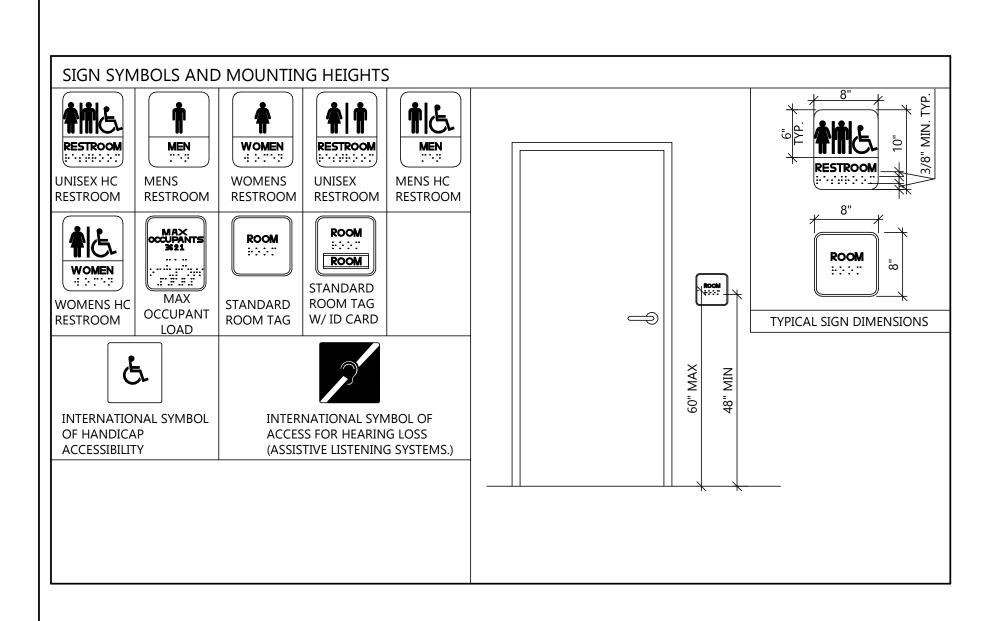
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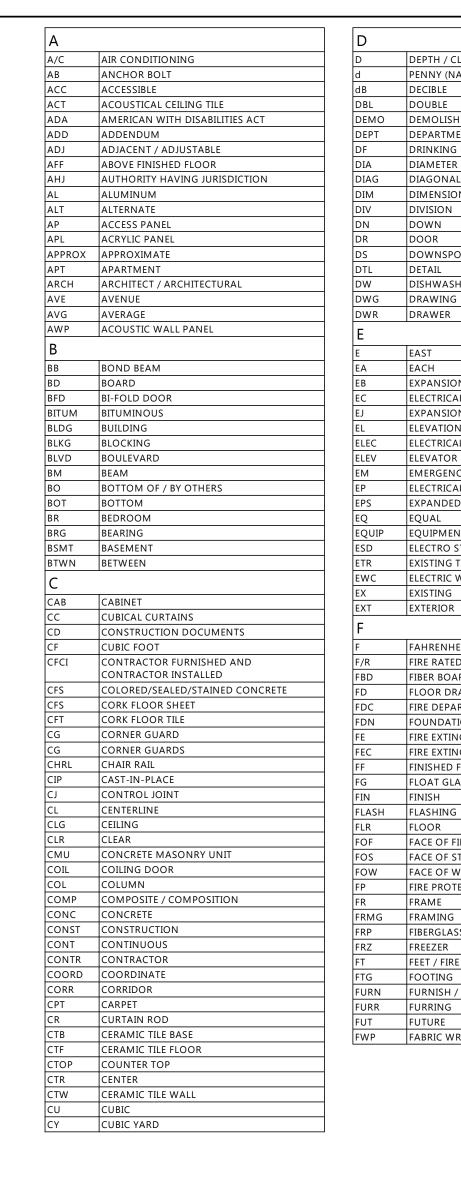
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DRAWING TITLE

LIFE SAFETY PLANS







DEPTH / CLOTHES DRYER

DEMOLISH / DEMOLITION

DRINKING FOUNTAIN

PENNY (NAILS)

DEPARTMENT

DECIBLE

DOUBLE

DIAMETER

DIAGONAL

DIVISION

DOWN

DOOR

DETAIL

EACH

EXPANSION BOLT

**EXPANSION JOINT** 

ELEVATION

ELECTRICAL

ELEVATOR

EQUAL

EXISTING

EXTERIOR

| FAHRENHEIT FIRE RATED

FIBER BOARD

FLOOR DRAIN

FOUNDATION

FIRE EXTINGUISHER

FINISHED FLOOR

FLOAT GLASS

FACE OF FINISH

FACE OF WALL

FIRE PROTECTION

FEET / FIRE TREATED

FURNISH / FURNISHINGS

FABRIC WRAP PANEL

FIBERGLASS REINFORCED PANEL

FACE OF STUDS

FINISH

FLOOR

FRAME

FRAMING

FREEZER

FOOTING

FURRING FUTURE

FIRE EXTINGUISHER CABINET

EMERGENCY

ELECTRICAL CONTRACTOR

ELECTRICAL PANEL / END PANEL

ELECTRO STATIC DISCHARGE VINYL TILE

FIRE DEPARTMENT CONNECTION

EXPANDED POLYSTYRENE

EXISTING TO REMAIN ELECTRIC WATER COOLER

DIMENSION

DOWNSPOUT

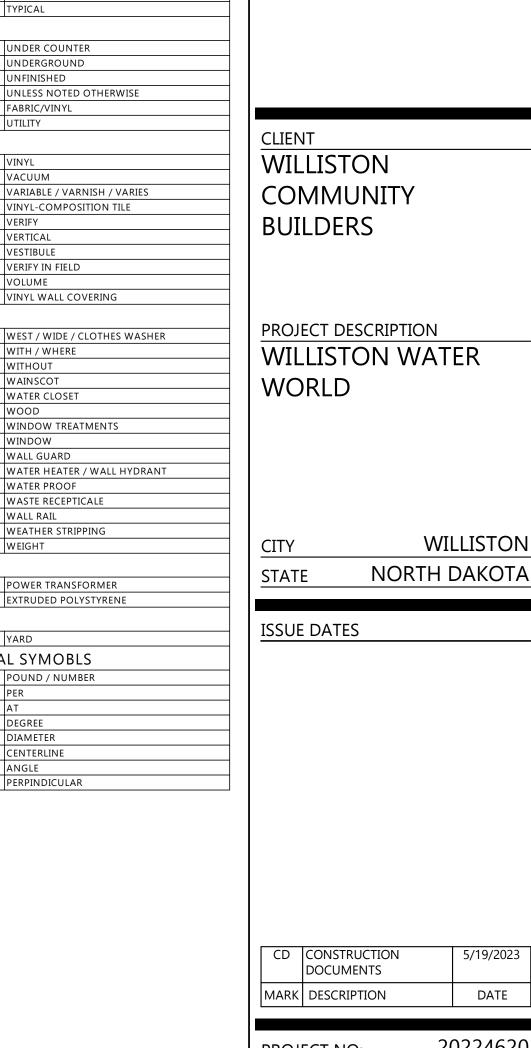
DISHWASHER

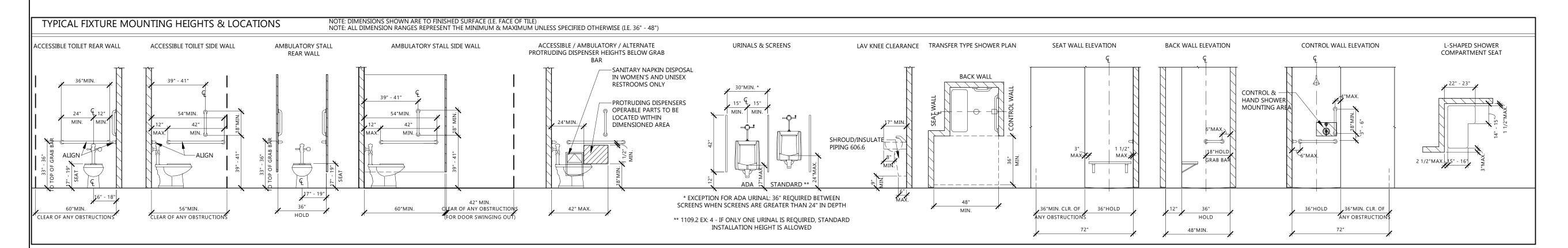
G	GENERAL
GA	GAUGE
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GDC	GYMNASIUM DIVIDER CURTAINS
GL	GLASS / GLAZING / GLAZED
GLAM	GLUE-LAMINATED WOOD
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
Н	
Н	HIGH
НС	HOLLOW CORE
HDBD	HARDBOARD
HDR	HEADER
HDWD	HARDWOOD
HDWE	HARDWARE
HM 	HOLLOW METAL
HNR	HANDRAILS
HOLD HORIZ	HOLD TO INDICATED DIMENSION
HORIZ HP	HORIZONTAL HIGH POINT
HR	HOUR
HSKP	HOUSEKEEPING
HT	HEIGHT
_	
I	T
ID	INSIDE DIAMETER / INSIDE DIMENSION
IG T	INSULATION IONIT
IJ	ISOLATION JOINT
IN INFO	INCHES
INSP	INSPECTION / INSPECTOR
INST	INSTALLATION
INSUL	INSULATION
INT	INTERIOR
INT STN	INTERIOR STONEWORK
IR	IMPACT RESISTANT
IRD	IMPACT RESISTANT DOORS
ISO	ISOLATION / INTERNATIONAL STANDARDS
_	ORGANIZATION
J	
JAN	JANITOR
7/11/1	JOIST BEARING ELEVATION
JBE	JOIST
JBE JST	JOIST JOINT
JBE JST JT	JOINT
JBE JST JT	
JBE JST JT K	JOINT
JBE JST JT  K KIT KO KP	JOINT  KITCHEN  KNOCK OUT
JBE JST JT  K KIT KO KP	KITCHEN KNOCK OUT KICK PLATE
JBE JST JT  K KIT KO KP L	KITCHEN KNOCK OUT KICK PLATE  LEFT / LENGTH
JBE JST JT  K KIT KO KP L LAB	KITCHEN KNOCK OUT KICK PLATE  LEFT / LENGTH LABORATORY
JBE JST JT  K KIT KO KP L L LAB LAM	KITCHEN KNOCK OUT KICK PLATE  LEFT / LENGTH LABORATORY LAMINATED
JBE JST JT  K KIT KO KP L L LAB LAM LAV	KITCHEN KNOCK OUT KICK PLATE  LEFT / LENGTH LABORATORY LAMINATED LAVATORY
JBE JST JT  K KIT KO KP L L LAB LAM LAV LB	KITCHEN KNOCK OUT KICK PLATE  LEFT / LENGTH LABORATORY LAMINATED LAVATORY POUND
JBE JST JT  K KIT KO KP L LAB LAM LAV LB	KITCHEN  KNOCK OUT  KICK PLATE  LEFT / LENGTH  LABORATORY  LAMINATED  LAVATORY  POUND  LEFT-HAND
JBE JST JT  K KIT KO KP L L LAB LAM LAV LB	KITCHEN KNOCK OUT KICK PLATE  LEFT / LENGTH LABORATORY LAMINATED LAVATORY POUND
JBE JST JT  K KIT KO KP L LAB LAM LAV LB LH	KITCHEN  KNOCK OUT  KICK PLATE  LEFT / LENGTH  LABORATORY  LAMINATED  LAVATORY  POUND  LEFT-HAND  LEFT-HAND
JBE JST JT  K KIT KO KP L LAB LAM LAV LB LH LHR LKR	KITCHEN KNOCK OUT KICK PLATE  LEFT / LENGTH LABORATORY LAMINATED LAVATORY POUND LEFT-HAND LEFT-HAND LEFT-HAND REVERSED LOCKER
JBE JST JT  K KIT KO KP L LAB LAM LAV LB LH LHR LKR	KITCHEN  KNOCK OUT  KICK PLATE  LEFT / LENGTH  LABORATORY  LAMINATED  LAVATORY  POUND  LEFT-HAND  LEFT-HAND  LEFT-HAND REVERSED  LOCKER  LOW POINT
JBE JST JT  K KIT KO KP L LAB LAM LAV LB LH LHR LKR LP LR	KITCHEN KNOCK OUT KICK PLATE  LEFT / LENGTH LABORATORY LAMINATED LAVATORY POUND LEFT-HAND LEFT-HAND LEFT-HAND REVERSED LOCKER LOW POINT LIVING ROOM
JBE JST JT  K KIT KO KP L LAB LAM LAV LB LH LHR LKR LP LR LSC	KITCHEN KNOCK OUT KICK PLATE  LEFT / LENGTH LABORATORY LAMINATED LAVATORY POUND LEFT-HAND LEFT-HAND REVERSED LOCKER LOW POINT LIVING ROOM NFPA 101 LIFE SAFETY CODE
JBE JST JT  K KIT KO KP L LAB LAM LAV LB LH LHR LKR LP LR LSC LSG	KITCHEN  KNOCK OUT  KICK PLATE  LEFT / LENGTH  LABORATORY  LAMINATED  LAVATORY  POUND  LEFT-HAND  LEFT-HAND REVERSED  LOCKER  LOW POINT  LIVING ROOM  NFPA 101 LIFE SAFETY CODE  LAMINATED SAFETY GLASS
JBE JST JT  K KIT KO KP L LAB LAM LAV LB LH LHR LKR LP LR LSC LSG LT	KITCHEN  KNOCK OUT  KICK PLATE  LEFT / LENGTH  LABORATORY  LAMINATED  LAVATORY  POUND  LEFT-HAND  LEFT-HAND REVERSED  LOCKER  LOW POINT  LIVING ROOM  NFPA 101 LIFE SAFETY CODE  LAMINATED SAFETY GLASS  LIGHT
JBE JST JT  K KIT KO KP L LAB LAM LAV LB LH LHR LKR LP LR LSC LSG LT LTWT	KITCHEN  KNOCK OUT  KICK PLATE  LEFT / LENGTH  LABORATORY  LAMINATED  LAVATORY  POUND  LEFT-HAND  LEFT-HAND REVERSED  LOCKER  LOW POINT  LIVING ROOM  NFPA 101 LIFE SAFETY CODE  LAMINATED SAFETY GLASS  LIGHT  LIGHTWEIGHT
JBE JST JT  K KIT KO KP L LAB LAM LAV LB LH LHR LKR LP LR LSC LSG LT LTWT LVT	KITCHEN KNOCK OUT KICK PLATE  LEFT / LENGTH LABORATORY LAMINATED LAVATORY POUND LEFT-HAND LEFT-HAND REVERSED LOCKER LOW POINT LIVING ROOM NFPA 101 LIFE SAFETY CODE LAMINATED SAFETY GLASS LIGHT LIGHTWEIGHT LUXURY VINYL TILE
JBE JST JT  K KIT KO KP L LAB LAM LAV LB LH LHR LKR LP LR LSC LSG LT LTWT LVT  M MA	KITCHEN  KNOCK OUT  KICK PLATE  LEFT / LENGTH  LABORATORY  LAMINATED  LAVATORY  POUND  LEFT-HAND  LEFT-HAND REVERSED  LOCKER  LOW POINT  LIVING ROOM  NFPA 101 LIFE SAFETY CODE  LAMINATED SAFETY GLASS  LIGHT  LIGHTWEIGHT  LUXURY VINYL TILE
JBE JST JT  K KIT KO KP L LAB LAM LAV LB LH LHR LKR LP LR LSC LSG LT LTWT LVT	KITCHEN KNOCK OUT KICK PLATE  LEFT / LENGTH LABORATORY LAMINATED LAVATORY POUND LEFT-HAND LEFT-HAND REVERSED LOCKER LOW POINT LIVING ROOM NFPA 101 LIFE SAFETY CODE LAMINATED SAFETY GLASS LIGHT LIGHTWEIGHT LUXURY VINYL TILE
JBE JST JT  K KIT KO KP L L L LAB LAM LAV LB LH LHR LKR LP LR LSC LSG LT LTWT LVT M MA MACH MAINT	KITCHEN  KNOCK OUT  KICK PLATE  LEFT / LENGTH  LABORATORY  LAMINATED  LAVATORY  POUND  LEFT-HAND  LEFT-HAND REVERSED  LOCKER  LOW POINT  LIVING ROOM  NFPA 101 LIFE SAFETY CODE  LAMINATED SAFETY GLASS  LIGHT  LIGHTWEIGHT  LUXURY VINYL TILE  MEDICAL AIR  MACHINE
JBE JST JT  K KIT KO KP L L LAB LAM LAV LB LH LHR LKR LP LR LSC LSG LT LTWT LVT M MA MACH	KITCHEN  KNOCK OUT  KICK PLATE  LEFT / LENGTH  LABORATORY  LAMINATED  LAVATORY  POUND  LEFT-HAND  LEFT-HAND REVERSED  LOCKER  LOW POINT  LIVING ROOM  NFPA 101 LIFE SAFETY CODE  LAMINATED SAFETY GLASS  LIGHT  LIGHTWEIGHT  LUXURY VINYL TILE  MEDICAL AIR  MACHINE  MAINTENANCE / MAINTAIN

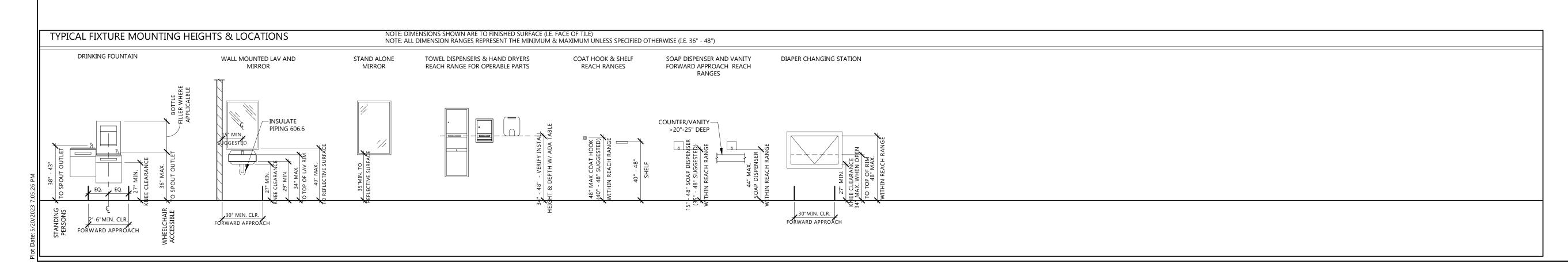
MAX	MAXIMUM
MBR	MASTER BEDROOM
МС	MECHANICAL CONTRACTOR
MCW	MINERAL CORE WOOD
MDF	MEDIUM-DENSITY FIBERBOARD
МЕСН	MECHANICAL
MED	MEDICAL / MEDICINE
MEMB	MEMBRANE
MEZZ	MEZZANINE
MFR	MANUFACTURER / MANUFACTURING
MIN	MINIMUM / MINUTE
MIRR	MIRROR
MISC	MISCELLANEOUS
MKBD	MARKER BOARD
МО	MASONRY OPENING
MOD	MODIFY / MODULE
MP	METAL PANEL
МТС	METAL TOILET COMPARTMENT
MTD	MOUNTED
MTL	METAL
MULL	MULLION
MULT	MULTIPLE
MWP	MODULAR/FOLDING PARTITION
N	
	NORTH / NITROCEN
N N2O	NORTH / NITROGEN
N20	NITROUS OXIDE
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NR	NOT RATED
NTS	NOT-TO-SCALE
	1110111000112
O	
02	OXYGEN
O/C	ON-CENTER
OA	OVERALL
OD	OUTSIDE DIAMETER / OUTSIDE DIMENSION
OFCI	OWNER FURNISHED AND CONTRACTOR
OTCI	INSTALLED
OFD	
OFD OFF	OVERFLOW DRAIN
	OFFICE
OFOI	OWNER FURNISHED AND OWNER INSTALLED
ОН	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
OSB	ORIENTED STRAND BOARD
OZ	OUNCE
P	
-	
Р	POWER
PA	PUBLIC ADDRESS
РВ	PARTICLE BOARD
PC	PRECAST
PERF	PERFORATED
PERP	PERPENDICULAR
PG	PLATE GLASS
PH	PHASE
PIR	POLYISOCYANURATE RIGID INSULATION
PL	PLATE / PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLYWD	PLYWOOD
PNL	PANEL
PNT	PAINT
POL	POLISH
PP	PUSH PLATE
	IDAID
PR	PAIR
PR PREFAB	PREFABRICATE
PR	
PR PREFAB	PREFABRICATE
PR PREFAB PSF	PREFABRICATE POUNDS PER SQUARE FOOT
PR PREFAB PSF PSI	PREFABRICATE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH
PR PREFAB PSF PSI	PREFABRICATE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH PRESERVATIVE TREATED / POINT /
PR PREFAB PSF PSI PT	PREFABRICATE  POUNDS PER SQUARE FOOT  POUNDS PER SQUARE INCH  PRESERVATIVE TREATED / POINT / POST-TENSIONED  PLASTIC TOILET COMPARTMENT
PR PREFAB PSF PSI PT PTC PTD	PREFABRICATE  POUNDS PER SQUARE FOOT  POUNDS PER SQUARE INCH  PRESERVATIVE TREATED / POINT / POST-TENSIONED  PLASTIC TOILET COMPARTMENT  PAPER TOWEL DISPENSER
PR PREFAB PSF PSI PT	PREFABRICATE  POUNDS PER SQUARE FOOT  POUNDS PER SQUARE INCH  PRESERVATIVE TREATED / POINT / POST-TENSIONED  PLASTIC TOILET COMPARTMENT

Q	T
QT	QUARRY TILE
QTR	QUARTER
R	
R	RISER / RADIUS
R&S	ROD & SHELF
RAD	RADIUS
RB	RESILIENT BASE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN / ROAD
REBAR	REINFORCING BAR
REC	RECESSED
RECEP	RECEPTION
RECEPT	RECEPTACLE
REF	REFERENCE
REFR	REFRIGERATOR
REG	REGISTRATION / REGISTER REINFORCED
REINF REM	REMOVE / REMOTE
REQ(D) RES	REQUIRE(D) RESILENT
RES	RESINOUS FLOORING
RET	RETAINING / RETURN
REV	REVERSE / REVISION
RH	RIGHT HAND
RL	RAINLEADER
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RSF	RESILIENT SHEET FLOOR
RTF	RESILIENT TILE FLOOR
S	
	COUTH / CUELE
S	SOUTH / SHELF
SB	SPLASH BLOCK
SC	SOLID CORE / SHOWER CURTAINS
SCD SCHED	SEAT COVER DISPENSER SCHEDULE
SCR	SHOWER CURTAIN ROD
SCS	SPECIALTY CEILING SYSTEM (WOOD/METAL)
SD	SOAP DISPENSER / SEE DETAIL
SEC	SECOND
SECT	SECTION
SF	SQUARE FEET
SGC	STAGE CURTAINS
SHT	SHEET
SHTG	SHEATHING
SHWR	SHOWER
SIM	SIMILAR
SL	SLOPE
SLNT	SEALANT
SND	SANITARY NAPKIN DISPENSER
SNW	SANITARY NAPKIN WASTE RECEPTICAL
SP	SPANDREL PANEL
SPEC	SPECIFICATION
SQ	SQUARE
SSF	SOLID SURFACE
SSTL	STAINLESS STEEL
ST	STONE
STA	STATION
STC	SOUND-TRANSMISSION CLASS
STD	STANDARD
STL	STEEL
STN	WOOD STAINING
STOR	STORAGE
STR	STAIR TREADS/RISERS
STRUCT	STRUCTURE / STRUCTURAL
	SURFACE
SURF	
SURF SUSP	SUSPENDED
	SUSPENDED SOUND WALL PANEL

T		
	TOD (TDEAD (THE	4
T T&B	TOP / TREAD / TILE TOP & BOTTOM	+   <del>+ - + </del>
T&G	TONGUE & GROOVE	I EAPC
TA	TOILET ACCESSORIES	
ТВ	TOWEL BAR	
TBD	TO BE DETERMINED	Architecture Engineering
TBE	TOP OF BEAM ELEVATION	
TDE TEL	TOP OF DECKING ELEVATION TELEPHONE	Interior Design Industrial
TEMP	TEMPERED / TEMPORARY / TEMPERATE	TELE <b>701.609.5290</b> FAX <b>701.609.5290*51</b>
TER	TERRAZZO	<b>-</b>
TFE	TOP OF FOOTING ELEVATION	313 Main Street, Suite 308, Williston ND 58801
TFF	TOP OF FINISH FLOOR	www.eapc.net
TG	TEMPERED GLASS	- I
THK	THICK	
THS TJE	THRESHOLD TOP OF JOIST ELEVATION	CONSULTANTS
TKBD	TACK BOARD	CONSOLIAINIS
TLT	TOILET	1
TOL	TOLERANCE	
ТОРО	TOPOGRAPHICAL	
TPD	TOILET PAPER DISPENSER	
TRS TSE	TRANSITION STRIPS TOP OF SLAB ELEVATION	-
TWE	TOP OF WALL ELEVATION	1
TYP	TYPICAL	- I
U	'	1
UC	UNDER COUNTER	-
UG	UNDERGROUND	-
UNFIN	UNFINISHED	7
UNO	UNLESS NOTED OTHERWISE	
UPH	FABRIC/VINYL	
UTIL	UTILITY	CLIENT
V		CLIENT
V	VINYL	
VAC	VACUUM	<u> </u>
VAR VCT	VARIABLE / VARNISH / VARIES  VINYL-COMPOSITION TILE	COMMUNITY
VER	VERIFY	BUILDERS
VERT	VERTICAL	
VEST	VESTIBULE	
VIF	VERIFY IN FIELD	4
VOL VWC	VOLUME VINYL WALL COVERING	-
W	VIVIE WALL COVERING	<del>-</del>
	WEST AWARE AS LOTHES WAS HER	PROJECT DESCRIPTION
W W/	WEST / WIDE / CLOTHES WASHER WITH / WHERE	
W/O	WITHOUT	WILLISTON WATER
WAIN	WAINSCOT	WORLD
WC	WATER CLOSET	
WD	WOOD	
WDT	WINDOW TREATMENTS	4
WDW WG	WINDOW WALL GUARD	1 1
WH	WATER HEATER / WALL HYDRANT	-
WP	WATER PROOF	7
WR	WASTE RECEPTICALE	
WRL	WALL RAIL	4
WS	WEATHER STRIPPING	CITY WILLISTON
WT	WEIGHT	- CITY VVILLISTOTA
Х		STATE NORTH DAKOTA
XFMR	POWER TRANSFORMER	- I <u> </u>
XPS	EXTRUDED POLYSTYRENE	
Υ		ISSUE DATES
YD	YARD	10001071110
SPEC	IAL SYMOBLS	
#	POUND / NUMBER	<u> </u>
	PER	4
<u>@</u>	AT	- 1
ø	DEGREE DIAMETER	1 1
¢.	CENTERLINE	<b>1  </b>
	ANGLE	<b>1 I</b>







CD	CONSTRUCTION DOCUMENTS		5/19/2023
MARK	DESCRIPTION		DATE
PROJ	ECT NO:	20	0224620
DRAV	VN BY:		EK
CHEC	KED DV.		ВD
CITEC	KED BY:		טט

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STAMP

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Date: <u>5/19/2023</u> REG. NO. : <u>1718</u>

DRAWING TITLE **GENERAL ARCHITECTURAL** INFORMATION

#### KEYNOTE LEGEND:

< < INDICATES KEYNOTE ON PLAN
</p>

AS 01 BIKE RACK (9) - SEE SPEC FOR ADDITIONAL DETAILS

AS 02 BENCH (6) - SEE SPEC FOR ADDITIONAL DETAILS

AS 03 SHOWER COLUMN (1) - SEE MECH FOR ADDITIONAL DETAILS

AS 04 SHADE STRUCTURE, (3) 15'-0" X 15'-0" - (FUTURE PHASE)

AS 05 SHADE UMBRELLA, (3) 20' DIA. - SEE SPEC FOR ADDITIONAL DETAILS - FUTURE PHASE

AS 06 LEISURE POOL - SEE AQUATICS FOR ADDITIONAL DETAILS

AS 07 SOD / SUNNING AREAS - SEE SPEC FOR ADDITIONAL DETAILS

AS 08 SEED AREA - SEE SPEC FOR ADDITIONAL DETAILS

AS 09 WATER SLIDES - SEE SPEC FOR ADDITIONAL DETAILS

AS 10 SHADE STRUCTURE, (4) 20'-0" X 20'-0" - (FUTURE PHASE)

AS 11 FITNESS POOL - (FUTURE PHASE)

AS 12 NINJA CROSS - (FUTURE PHASE)

AS 13 TRASH ENCLOSURE, SEE SHEET A004 - SEE CIVIL FOR ADDITIONAL DETAILS

AS 15 SLIP RESISTANT CONCRETE POOL DECK - SEE CIVIL

AS 16 5'-0" HIGH PERIMETER GALVANIZED CHAIN LINK FENCE - SEE CIVIL

AS 17 CAR DROP-OFF LANE - SEE CIVIL

AS 18 ACCESSIBLE PARKING - SEE CIVIL

AS 19 PROPERTY LINE / EXISTING 6'-0" HIGH PERIMETER FENCE

AS 20 SHADE TREE - CAKUER 1: AT 4-1/2' ABOVE GRADE

AS 21 SMALL UPRIGHT EVERGREEN TREES - 2'-0" HEIGHT ABOVE GRADE (5 GALLON)

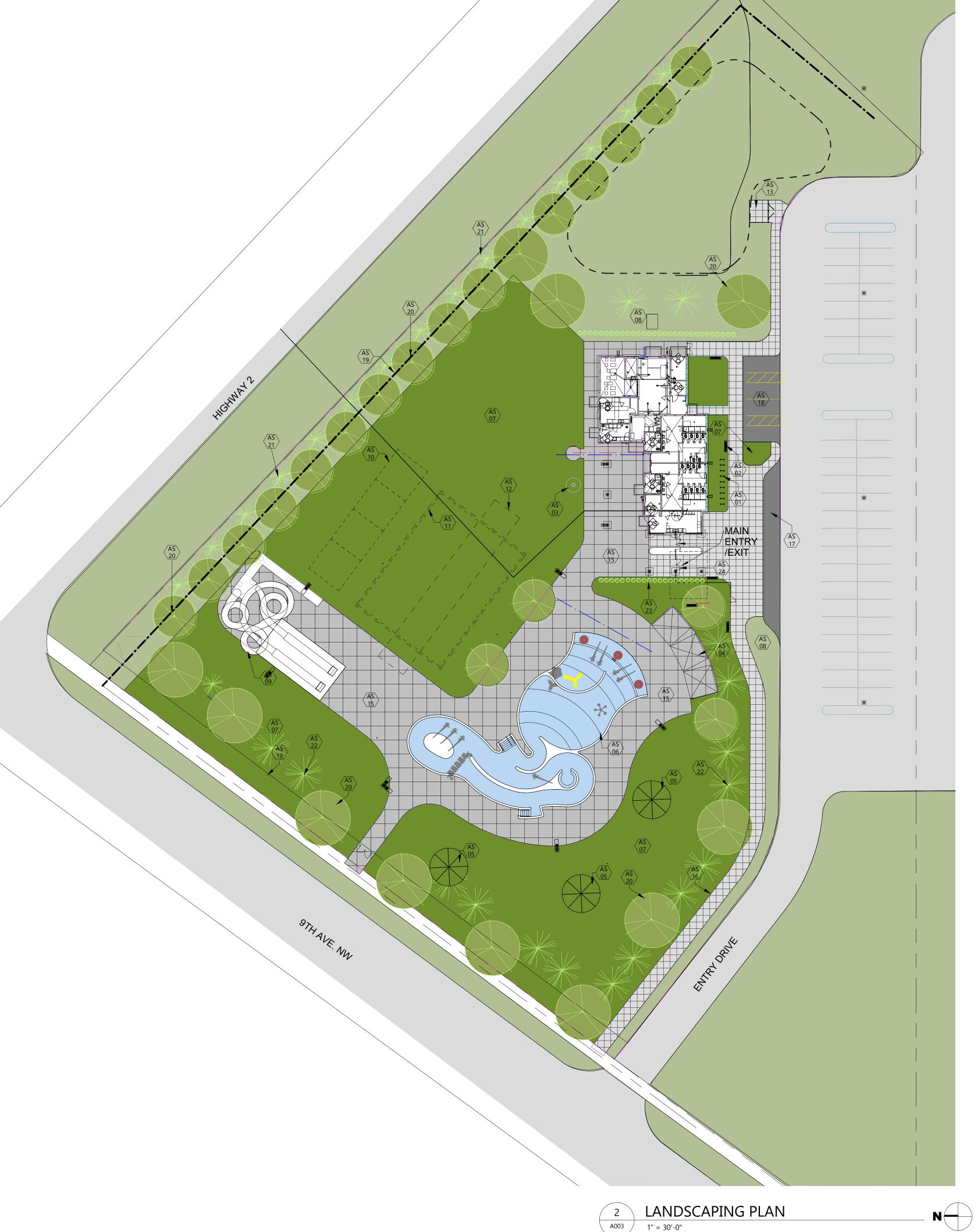
AS 22 LARGE UPRIGHT EVERGREEN TREES - 4'-0" HEIGHT ABOVE GRADE

AS 23 SHRUB - 2'-0" HEIGHT ABOVE GRADE (2 GALLON)

AS 24 FRONT ENTRY GATE - SEE DETAIL 1/A004

LANDSCAPING COMPLIANCE - SECTION 25.R

LOT SIZE: 116080 SF - 2.66 ACRES PLANTING REQUIREMENTS: 5 PLANT UNITS PER 1,000 SQ. FT. 116080 SQ.FT. DIVIDED BY 1,000 SQ.FT. = 116 x MIN 5 UNITS = 580 UNITS TABLE 1: PLANT UNITS -VEGETATION PROVIDED SHADE TREES - 30 TREES = 300 UNITS SMALL UPRIGHT EVERGREEN TREES - 16 TREES = 80 UNITS LARGE UPRIGHT EVERGREEN TREES - 16 TREES = 160 UNITS SHRUBS - 50 SHRUBS - 50 UNITS TOTAL UNITS PROVIDED - 590 UNITS





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CLIENT

WILLISTON COMMUNITY BUILDERS

PROJECT DESCRIPTION WILLISTON WATER WORLD

WILLISTON CITY

**ISSUE DATES** 

CD CONSTRUCTION 05/19/2023 DOCUMENTS DATE MARK DESCRIPTION

20224620 PROJECT NO: DRAWN BY: **CHECKED BY:** 

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Date: <u>5/19/2023</u> REG. NO. : <u>1718</u>

DRAWING TITLE ARCHITECTURAL SITE & LANDSCAPING PLAN

**A003** 

LANDSCAPING PLAN A003 1" = 30'-0"

Wilmington Collection Park Bench

Manufacturer: Belson Outdoors (Basis of Design)

Model: 947-S6

Mount Type: Surface

Color: Black

A Sophisticated Complement

parks or plazas.

mount installations.

Premium park bench seating from the Wilmington

Collection, a sophisticated accent for spaces

ranging from indoor lobbies or hallways to outdoor

Dimensions

Model 974-S6 - 76-1/4"L x 29"W x 32-5/16"H

These park benches are designed with broad high

arching armrests, which show-off the precision line

detailing of the cast aluminum frame. Engineered

ready for a wide variety of applications, the

footings are designed for both portable and surface

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Industrial Interior Design TELE **701.461.7222** FAX **701.461.7223** 

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CLIENT WILLISTON **COMMUNITY** BUILDERS

PROJECT DESCRIPTION WILLISTON WATER WORLD

WILLISTON CITY ND STATE

**ISSUE DATES** 

DD DESIGN DEVELOPMENT 01/20/2023 MARK DESCRIPTION DATE

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Signature: Bothom Date: <u>5/19/2023</u> REG. NO. : <u>1718</u>

**DRAWING TITLE** SITE DETAILS

#### 'U' Rack | Bicycle Storage Rack Flare Top Trash Receptacle



### Simple Reliability

TRASH RECEPTACLE w/ RAIN BONNET

Flare Top Trash Receptacle, built with reliability in mind. This tough, fully-welded commercial grade steel receptacle is a one-piece design with vertical slats and two horizontal bands at the neck and base that show off its simple clean

### MODEL CBTR-FT-BK

Manufacturer: Belson Outdoors (Basis of Design)

Model: CBTR-FT-BK wIith Rain Bonnet

NOT TO SCALE

Color: Black

Mount Type: Surface

A004



Mount Type: Surface

The 'U' Rack provides economical, safe and convenient bicycle storage which is ideal for apartment buildings, retail outlets, office malls or other settings where appearance is important but

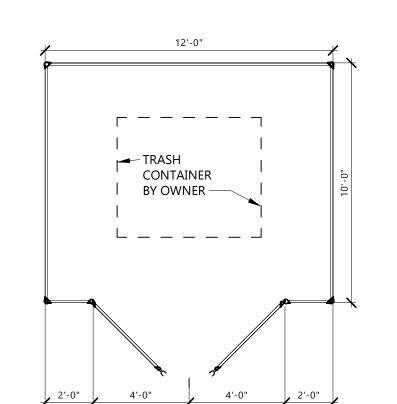
Secure and Easy Bicycle Storage

economy is a consideration. Meets Class II guidelines by providing exceptional support for the whole bicycle, frame and wheel, using just a single U-lock. This storage rack supports each bicycle in a stable upright position and holds up to two bicycles, one on each side.

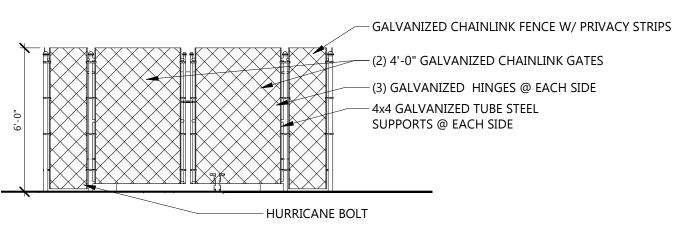
Constructed with 1-7/8" O.D. or 2-3/8" O.D. Schedule 40 steel tubing.

**BIKE RACK** PARK BENCH A004 NOT TO SCALE A004 NOT TO SCALE

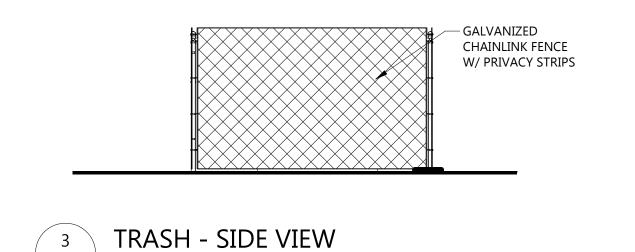
Manufacturer: Belson Outdoors (Basis of Design) Model: U190-SF-P Color: Black











Post size varies with Height

(See MONTAGE PLUS Post

Sizing chart) (1)

-Gate Upright 1 3/4"

- 3/4" x 14 ga.

- Weld on Box Hinge

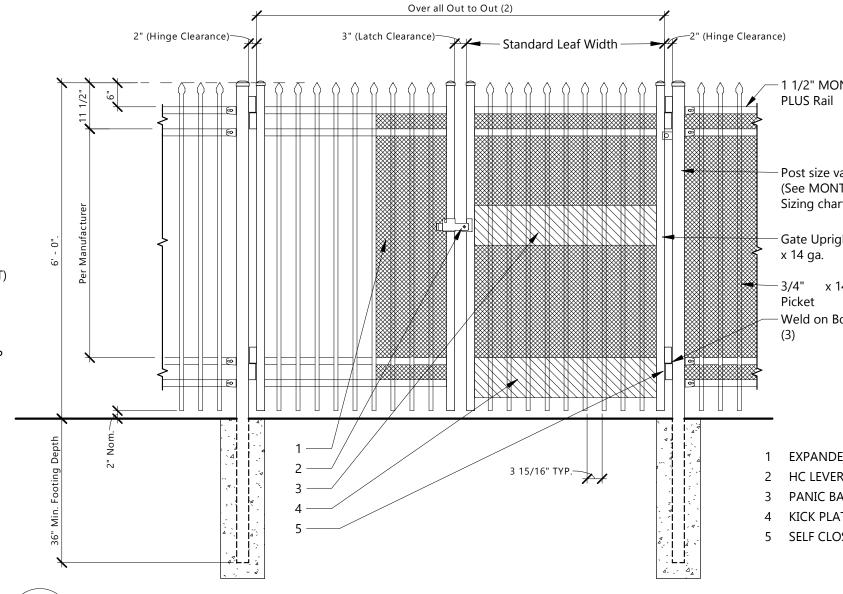
2 HC LEVER LOCKET 3 PANIC BAR MOUNT

5 SELF CLOSING HINGES

4 KICK PLATE

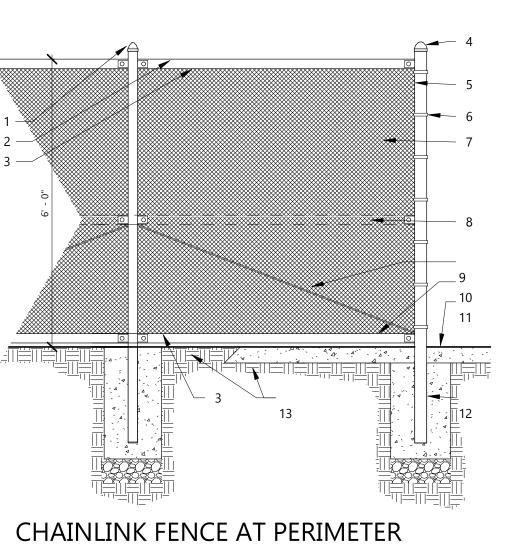
1 EXPANDED METAL PANEL, 1/2" DIA. #16 SHEET

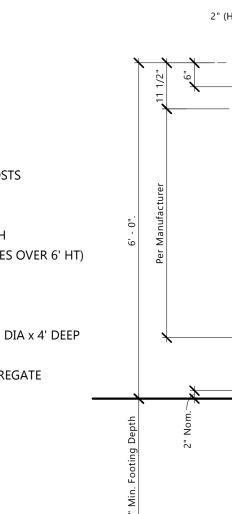
x 14 ga.



A004

1/4" = 1'-0"





8 MID RAILS (ON ALL FENCES OVER 6' HT) 12 CONCRETE FOOTING 12" DIA x 4' DEEP

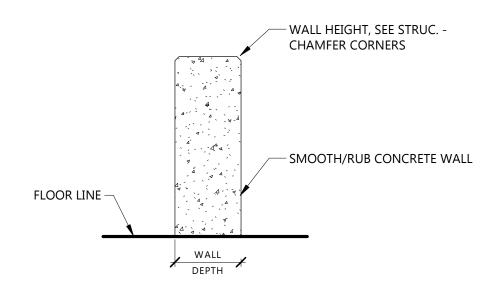
1 LINE POSTS 2 TOP RAIL 3 NUCKLED SELVAGE 4 END CORNER & GATE POSTS 5 STRETCHER BAR 6 STRETCHER BAR BAND 7 1 3/4" MESH VINYL FINISH 9 CROSS SUPPORT 10 BOTTOM RAIL 11 CONCRETE WALKWAY 13 COMPACTED SUBGRADE 14 6" FREE DRAINING AGGREGATE

DOUBLE GATE / FENCING AT BREEZEWAY

A004 1/2" = 1'-0"

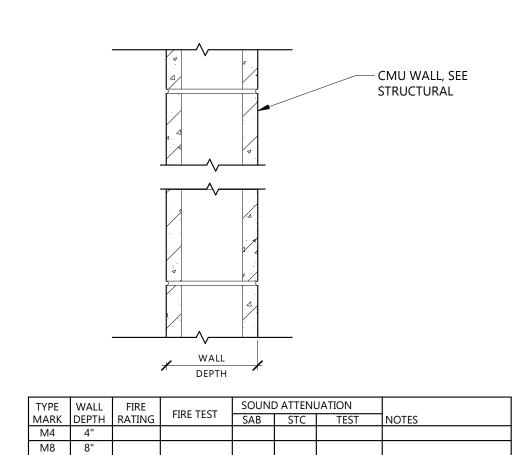
A004

1/2" = 1'-0"



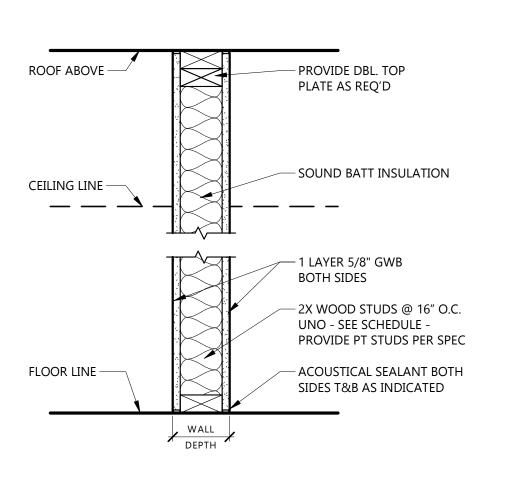
SEE STRUC. FOR ADDITIONAL DETAILS

' CONCRETE WALL



SEE EXTERIOR ELEVATIONS FOR BLOCK TYPE AND COLOR





TYPE	STUD	WALL	FIRE		SOU	ND ATTE	NUATION	
MARK	SIZE	DEPTH	RATING	FIRE TEST	SAB	STC	TEST	NOTES
В5	3 1/2"	4 1/8"	NR	-	3 1/2"	-	-	ONE SIDE 5/8" GYP. BD.
В7	5 1/2"	6 3/4"	NR					

SEE LIFE SAFETY PLAN FOR N.R. SMOKE-RESISTIVE WALL LOCATIONS



#### KEYNOTE LEGEND:

< < INDICATES KEYNOTE ON PLAN
</p>

AE 37 WASHER/DRYER BY OWNER - SEE MECH AND ELEC FOR HOOKUPS

AE 38 FLOOR JANITOR SINK - SEE MECH

AE 39 CANOPY COLUMN, PREP STEEL AND GRIND SMOOTH ALL WELDS AND UNEAVEN SURFACES FOR PAINT - SEE STRUCT

AEE 02 WATER FOUNTAINS, SEE MECH., CMU BLOCK TO BE SMOOTH PLAIN FACE AT WATER FOUNTAIN SURROUND

AEE 15 SOLID SURFACE COUNTER WITH METAL SUPPORT BRACKETS

AEE 20 SPLASH BLOCKS

AS 16 5'-0" HIGH PERIMETER GALVANIZED CHAIN LINK FENCE - SEE CIVIL

AS 24 FRONT ENTRY GATE - SEE DETAIL 1/A004

#### **GENERAL NOTES**

BE ALERTED THAT WORK YOU ARE INTERESTED IN MAY NOT BE CONTAINED ALL TOGETHER IN ONE PLACE OR IN ONE SERIES OF DRAWINGS (ARCH., STRUCT., MECH., ETC.), OR IN ONE SPECIFICATION SECTION. REQUIREMENTS FOR ELECTRICAL, MECHANICAL, PLUMBING, AND STRUCTURAL CAN ALSO BE SHOWN ON ARCHITECTURAL DRAWINGS: REQUIREMENTS FOR ANY DISCIPLINE CAN BE SHOWN ON THE DRAWINGS OF OTHER DISCIPLINES. REQUIREMENTS FOR ONE DISCIPLINE CAN BE SHOWN BOTH WITH THAT DISCIPLINE AND ANOTHER AS WELL. EVERY EFFORT HAS BEEN MADE TO MAKE THESE DOCUMENTS CONCISE AND COORDINATED, TO DEFINE WORK IN THE MOST LOGICAL PLACE, AND TO DESCRIBE WORK IN ONE PLACE ONLY. HOWEVER; REMEMBER YOUR SCOPE OF WORK CAN BE CONTAINED IN VARIOUS PLACES WITH VARYING DESCRIPTIONS. DO NOT CONSIDER THERE IS ONLY ONE CUSTOMARY PLACE TO LOCATE YOUR WORK. DO NOT OMIT WORK FROM YOUR SCOPE BECAUSE THE ENTIRE SET OF DOCUMENTS WAS NOT REVIEWED. DO NOT PRESUME YOUR SCOPE OF WORK IS SINGULARLY DEFINED. THE ENTIRE SET OF CONTRACT DOCUMENTS DEFINES THE SCOPE OF WORK FOR THE ENTIRE PROJECT AS WELL AS ANY PARTICULAR TRADE, ETC. YOU MUST REVIEW ALL DRAWING SHEETS AND SPECIFICATIONS DIVISIONS/SECTIONS TO

4. THIS SET OF DOCUMENTS IS ORGANIZED TO CONVEY INFORMATION AS CLEARLY AS POSSIBLE IN ONE PLACE.

SHEETS A101, A102, ETC;

B. DOORS ARE DESCRIBED IN A SCHEDULE ON SHEET A600, AND KEYED ON THE FLOOR PLAN SHEETS;

C. GLAZING FRAMES ARE DESCRIBED IN THE 600 SERIES SHEETS, AND KEYED ON THE

ON SHEETS IN THE 600 SERIES;

MECHANICAL, ELECTRICAL AND SPRINKLER FEATURES MUST EXIST IN THE SAME CEILING SPACES. EACH TRADE MUST LAYOUT AND INSTALL THEIR RESPECTIVE CONDITIONS WITH AWARENESS OF THE OTHER TRADES THAT NEED TO SHARE THE SPACES. EACH TRADE MUST NOT ASSUME THEIR INSTALLATIONS CONDITIONS HAVE BEEN CONSIDERED IN THE DESIGN AND SHOP DRAWINGS PREPARED BY THE OTHER TRADE. EVERY EFFORT HAS BEEN MADE TO COORDINATE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL REQUIREMENTS, IN THESE DOCUMENTS. THE SPRINKLER DESIGN DOES NOT OCCUR UNTIL THE CONSTRUCTION IS UNDERWAY. SO IT HAS NOT BEEN ACTUALLY INCLUDED IN THESE DOCUMENTS. THERE CAN BE PLACES THAT REQUIRE ADDITIONAL COORDINATION

CONSTRUCTION. THIS EFFORT TO BE OVERSEEN BY THE GENERAL CONTRACTOR. ALL REQUESTS FOR ADDITIONAL INFORMATION AND/OR CLARIFICATION MUST BE SUBMITTED TO THE ARCHITECT IN WRITING VIA A PROJECT REQUEST FOR

ATTENTION-CONTRACTORS, SUBCONTRACTORS, SUPPLIERS, MANUFACTURERS, TRADESPERSONS AND ALL USERS OF THESE DRAWINGS:

1. CAREFULLY AND THOROUGHLY REVIEW THE GENERAL NOTES FIRST BEFORE USING THE DRAWINGS. IT IS YOUR RESPONSIBILITY TO KNOW AND ADHERE TO THE

QUALIFICATIONS LISTED BELOW.

DETERMINE THE EXTENT OF YOUR WORK. TYPICALLY MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS SHOW EQUIPMENT, PIPING, ETC. IN A DIAGRAMMATIC WAY WITHOUT DIMENSIONING. THESE DRAWINGS DO NOT NECESSARILY ACKNOWLEDGE ARCHITECTURAL DETAILING FOR SHAFTS, CHASES, EASEMENTS, ETC. GENERAL CONTRACTOR TO COORDINATE THE LOCATIONS OF ALL M.E.P. EQUIPMENT, FIXTURES, PIPING, ETC. WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.

A. THE WALL TYPES ARE DESCRIBED IN A SCHEDULE, AND KEYED ON THE FLOOR PLAN

FLOOR PLANS;

D. MILLWORK, GUARDRAILS, BUILDING EQUIPMENT, AND BUILDING SPECIALTIES ARE DESCRIBED IN SCHEDULES AND IN PLAN AT MULTIPLE LOCATIONS OF THIS DRAWING PACKAGE (REFER TO FULL PACKAGE);

E. TOILET ACCESSORIES ARE DESCRIBED IN A SCHEDULE IN THE 600 SERIES, AND KEYED

AND MODIFICATIONS. EACH TRADE CONTRACTOR TO REVIEW THEIR REQUIREMENTS WITH THE OTHER TRADE AND PROVIDE COORDINATION DURING SHOP DRAWINGS AND

INTERPRETATION(INFORMATION) FORM.

WILLISTON WATER

Architecture Engineering

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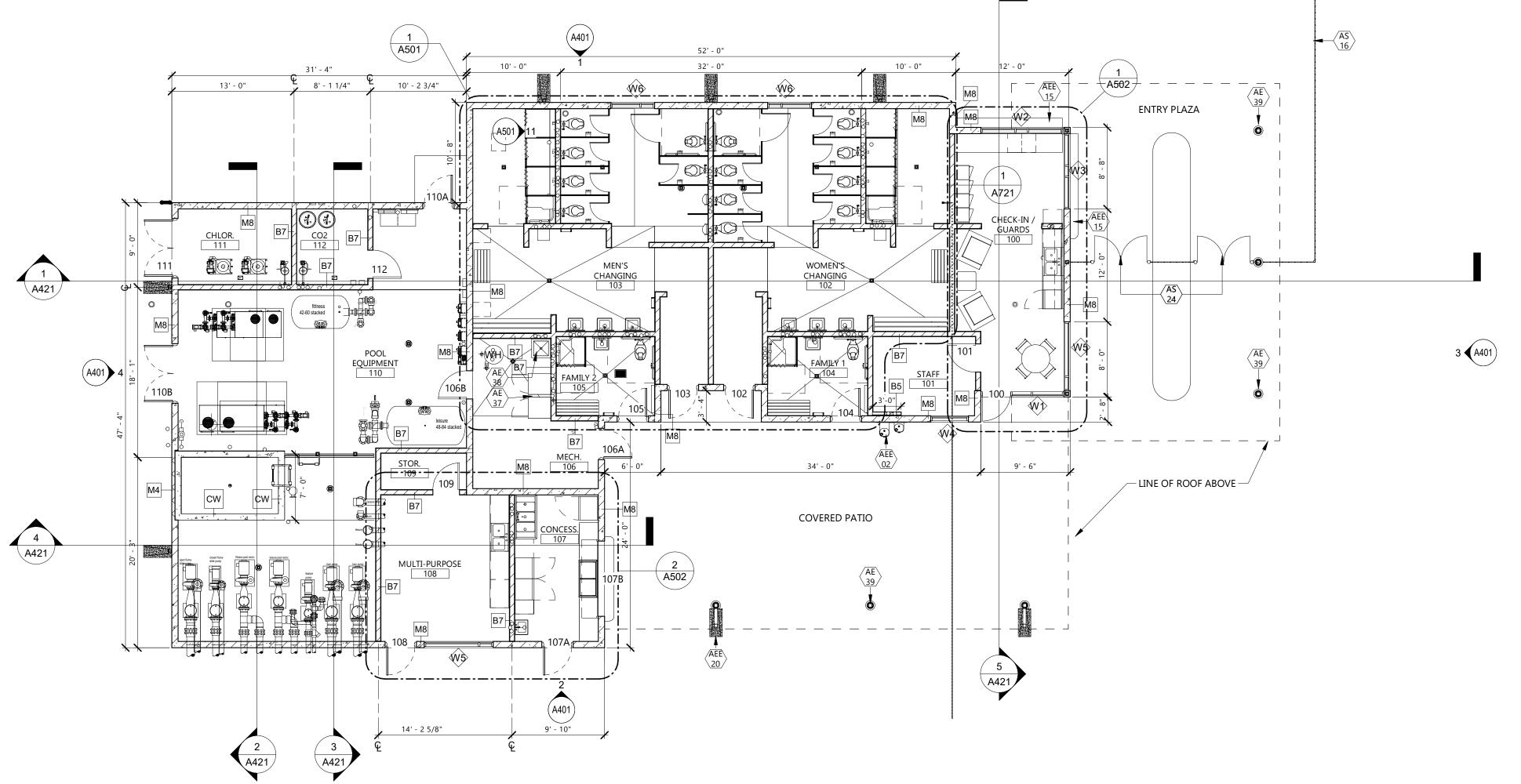
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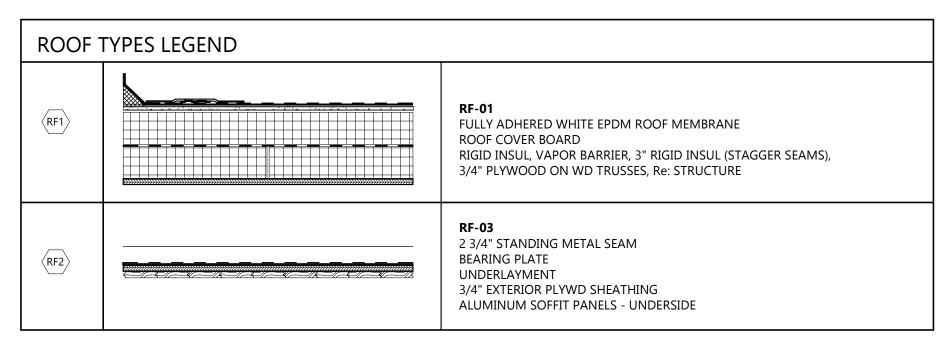
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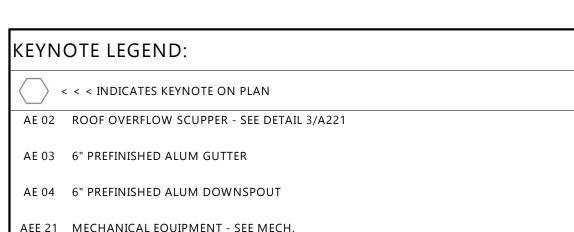
Date: <u>5/19/2023</u> REG. NO. : <u>1718</u>

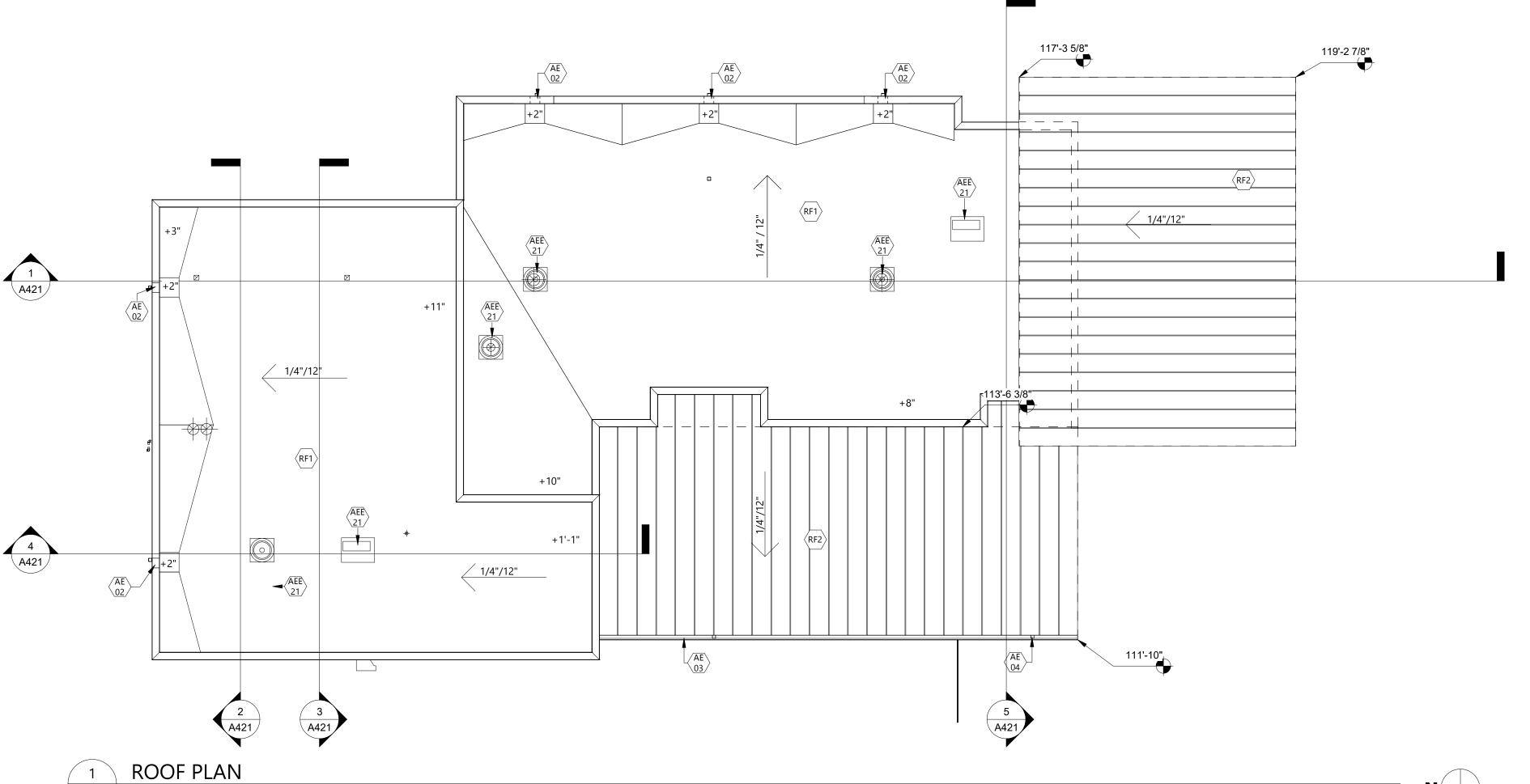
DRAWING TITLE FIRST FLOOR PLAN

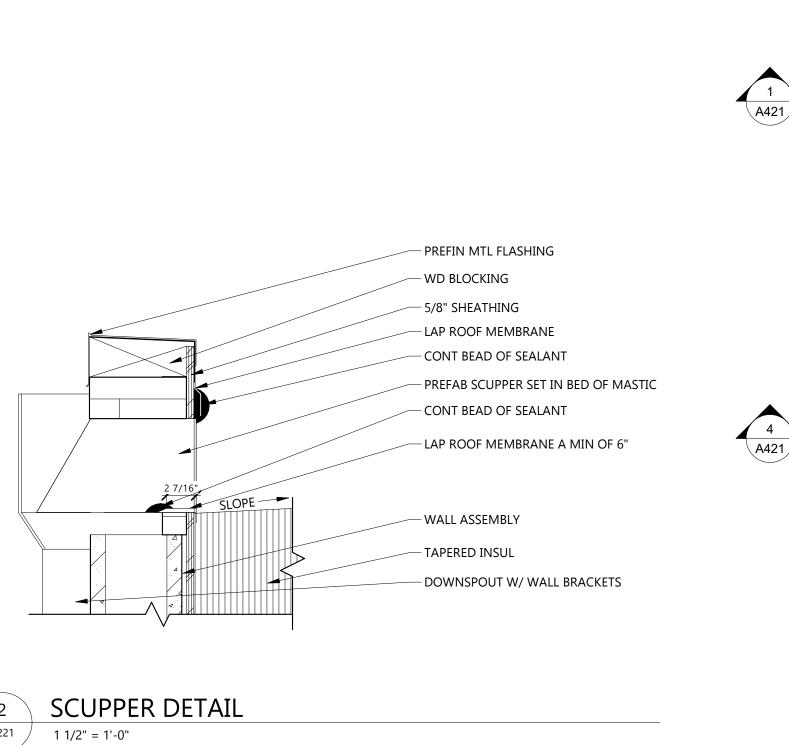


1/8" = 1'-0"









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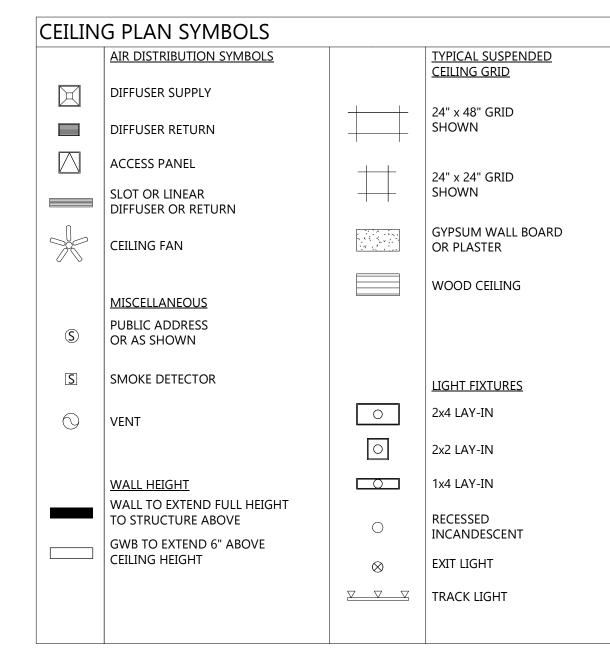
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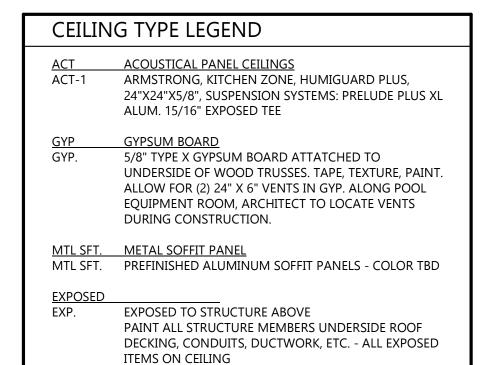
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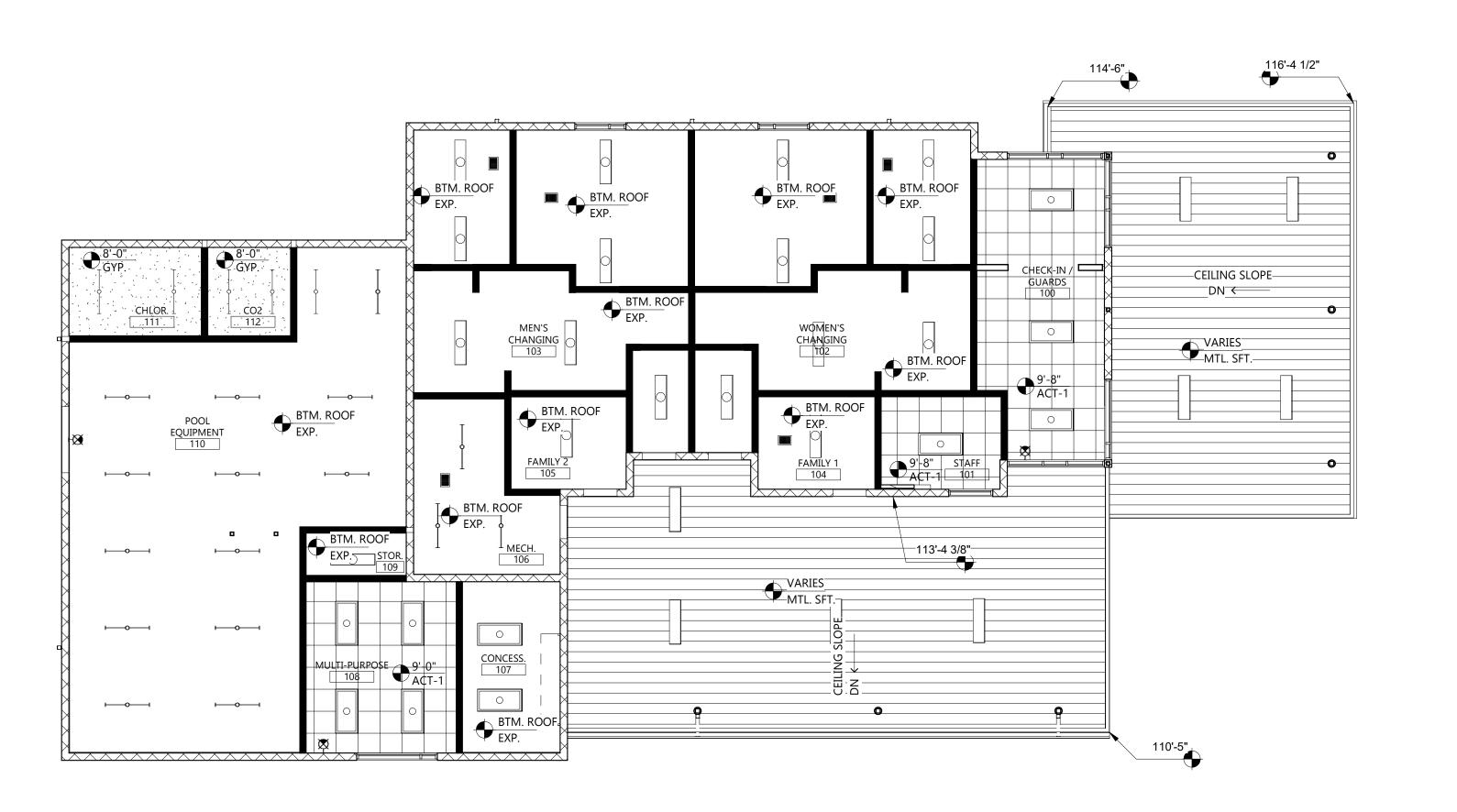
Date: <u>5/19/2023</u> REG. NO. : <u>1718</u>

DRAWING TITLE ROOF PLAN

Δ221











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CLIENT WILLISTON COMMUNITY BUILDERS

PROJECT DESCRIPTION WILLISTON WATER WORLD

WILLISTON CITY STATE ND

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Signature: Signature: Date: <u>5/19/2023</u> REG. NO. : <u>1718</u>

**DRAWING TITLE** FIRST FLOOR REFLECTED CEILING PLAN

#### KEYNOTE LEGEND:

< < < INDICATES KEYNOTE ON PLAN</p>

AE 40 TV MONITOR

AEE 01 PRE-FINISHED ALUM COPING, CHARCOAL.

AEE 02 WATER FOUNTAINS, SEE MECH., CMU BLOCK TO BE SMOOTH PLAIN FACE AT WATER FOUNTAIN SURROUND

AEE 03 STANDING SEAM METAL ROOF, GREY.

AEE 04 PRE-FINISHED ALUM PANEL FACIA.

AEE 05 PRE-FINISHED ALUM SOFFIT, GREY.

AEE 06 ANODIZED ALUMINUM STOREFRONT, CHARCOAL GREY.

AEE 07 HOLLOW METAL DOOR & FRAME, PAINTED, TBD.

AEE 09 PRE-FINISHED ALUM GUTER & DOWNSPOUT, CHARCOAL.

AEE 10 STEEL COLUMN, PAINTED, PREP STEEL AND GRIND SOOTH UNEVEN SPOTS AND WELDS

AEE 11 ALUM SERVICE WINDOWS, SLIDING, CHARCOAL.

AEE 12 BUILDING SIGNAGE B.O., SEE ELEC. FOR POWER

AEE 13 ORNAMENTAL STEEL FENCING AND GATE, TBD.

AEE 14 STAINLESS STEEL OVERHEAD COILING DOOR.

AEE 15 SOLID SURFACE COUNTER WITH METAL SUPPORT BRACKETS

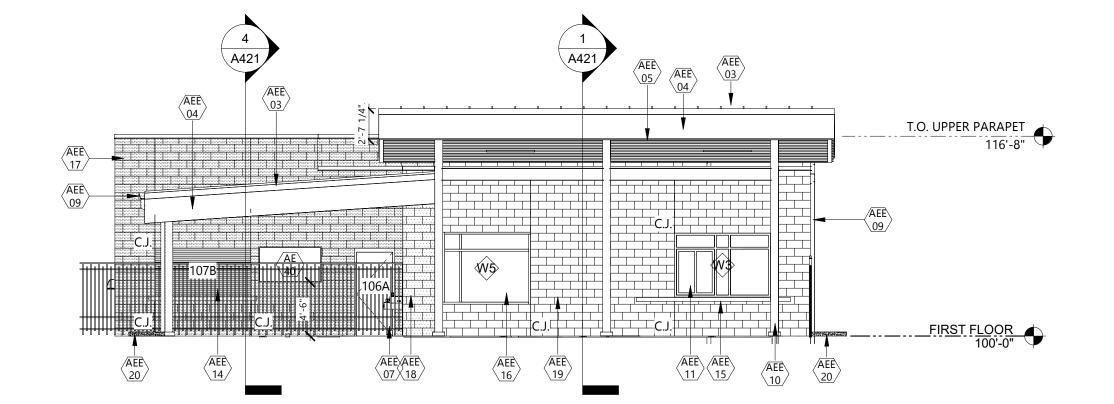
AEE 16 ALUM STOREFRONT WITH CLEAR GLASS, CHARCOAL.

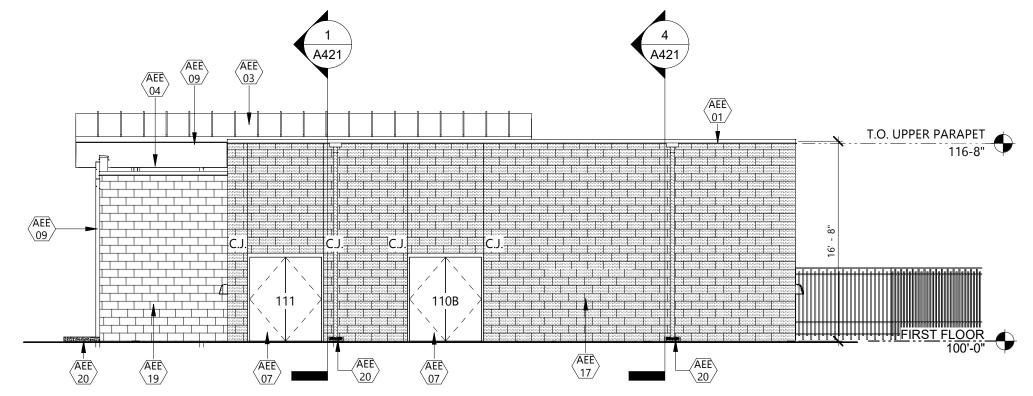
AEE 17 8"x8"x16" SPLIT FACE CMU, NATURAL

AEE 18 8"x8"x16" SPLIT FACE CMU, CHARCOAL 330

AEE 19 8"x8"x16" SPLIT FACE CMU, RED 110

AEE 20 SPLASH BLOCKS

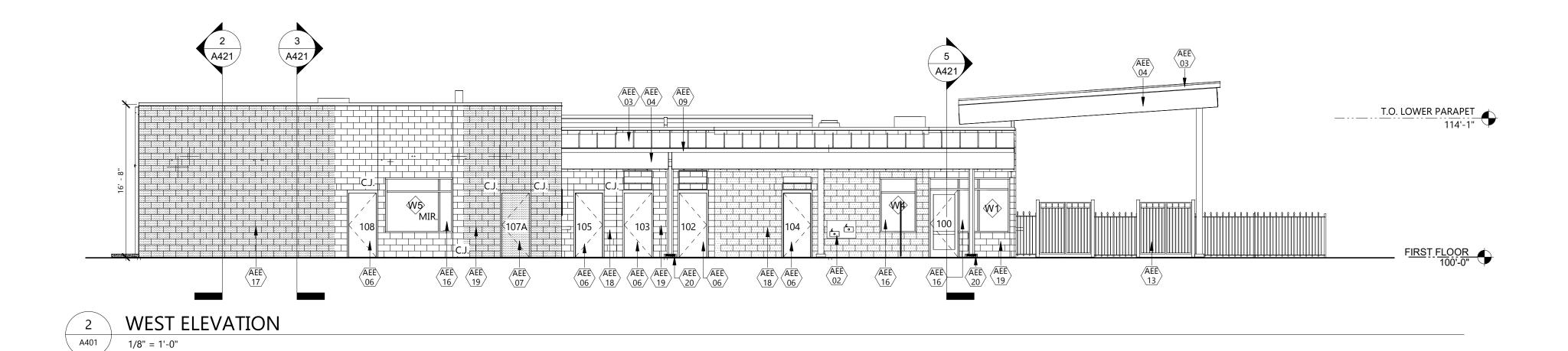


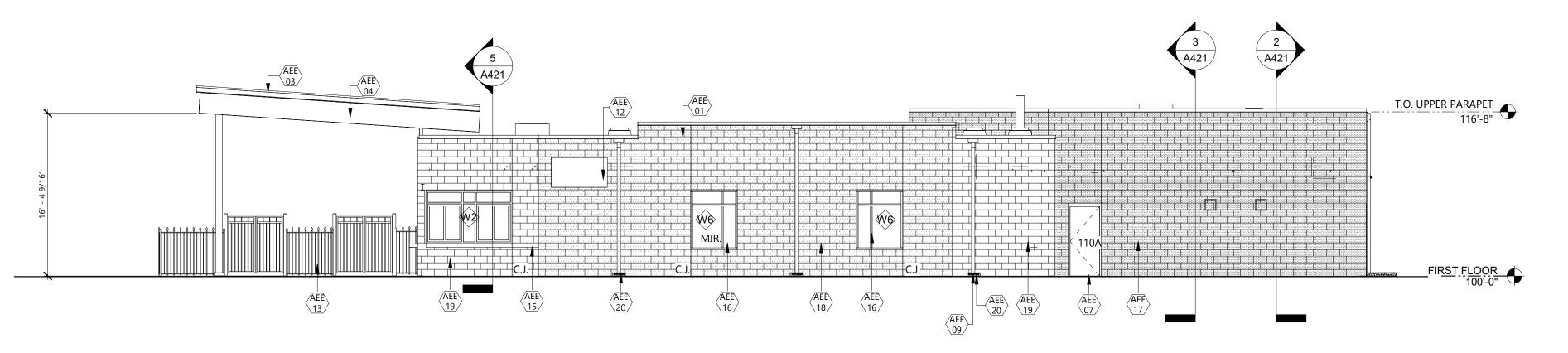


3 SOUTH ELEVATION

1/8" = 1'-0"







1 EAST ELEVATION

1/8" = 1'-0"

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PROJECT DESCRIPTION
WILLISTON WATER
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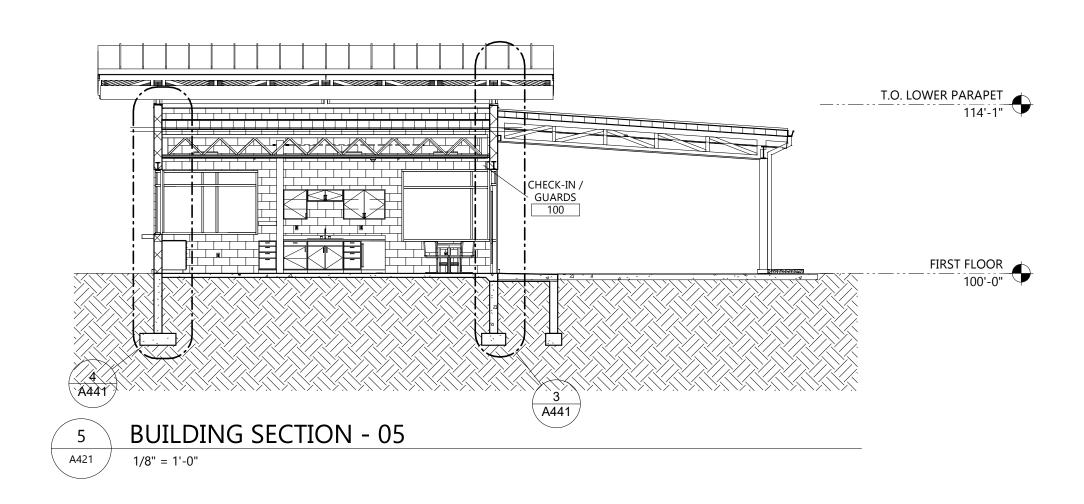
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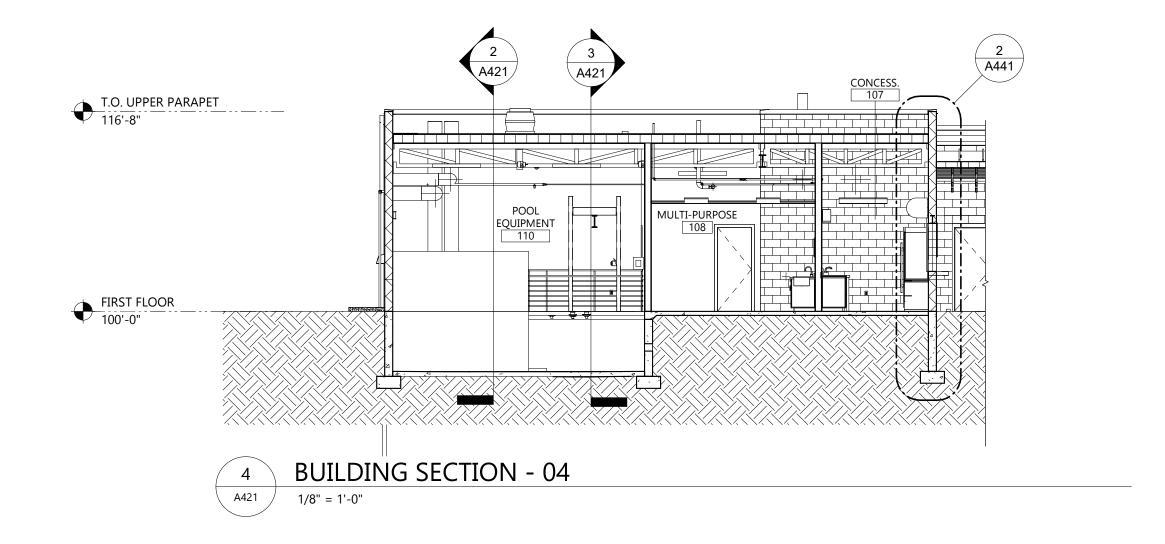
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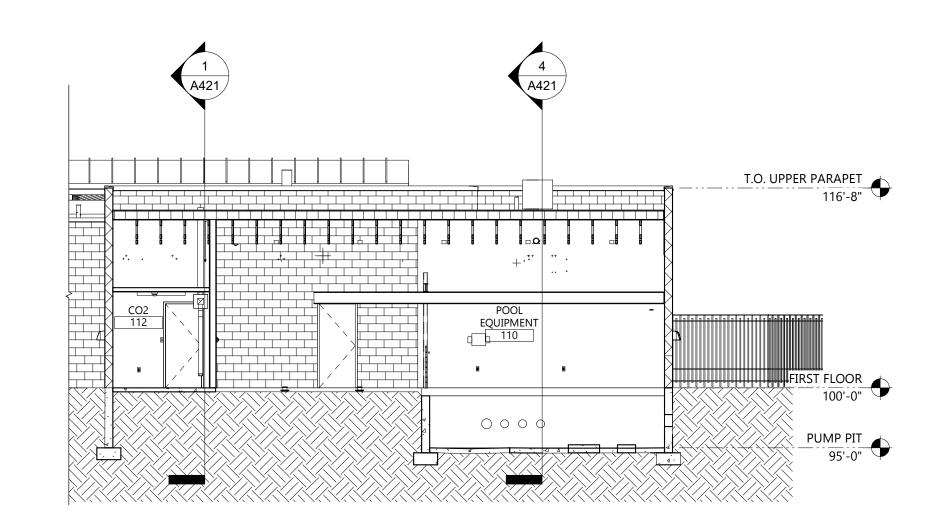
Signature: \_\_\_\_\_\_\_ REG. NO. : \_\_\_\_\_\_1718

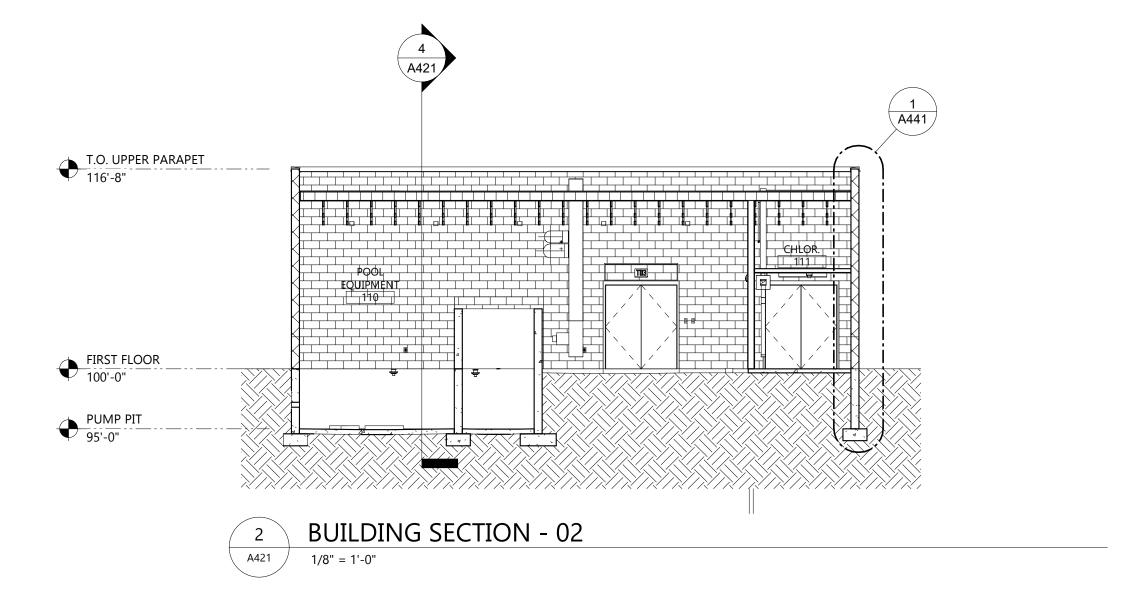
DRAWING TITLE
BUILDING ELEVATIONS

Δ401

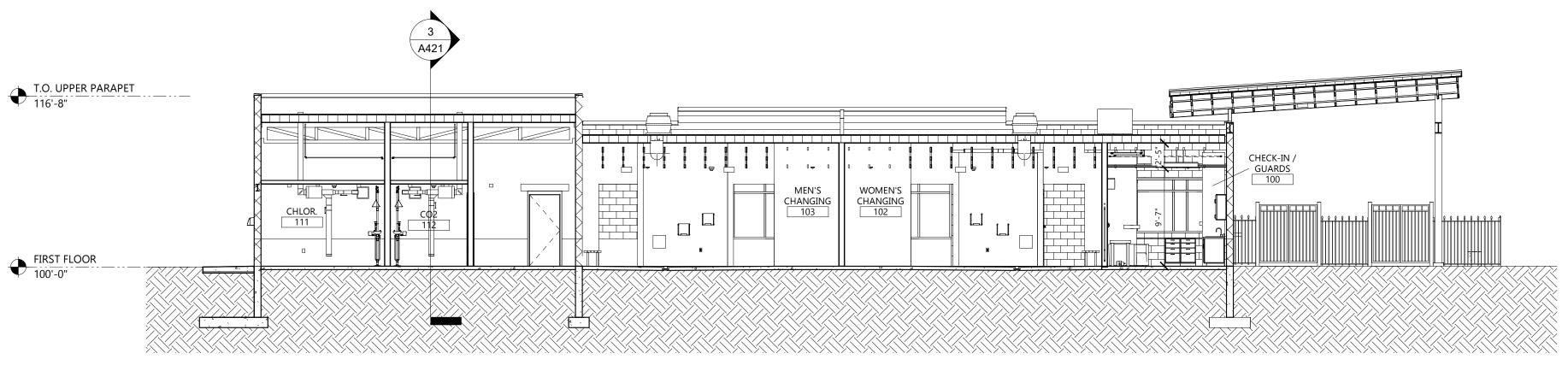












1 BUILDING SECTION - 01

A421 1/8" = 1'-0"

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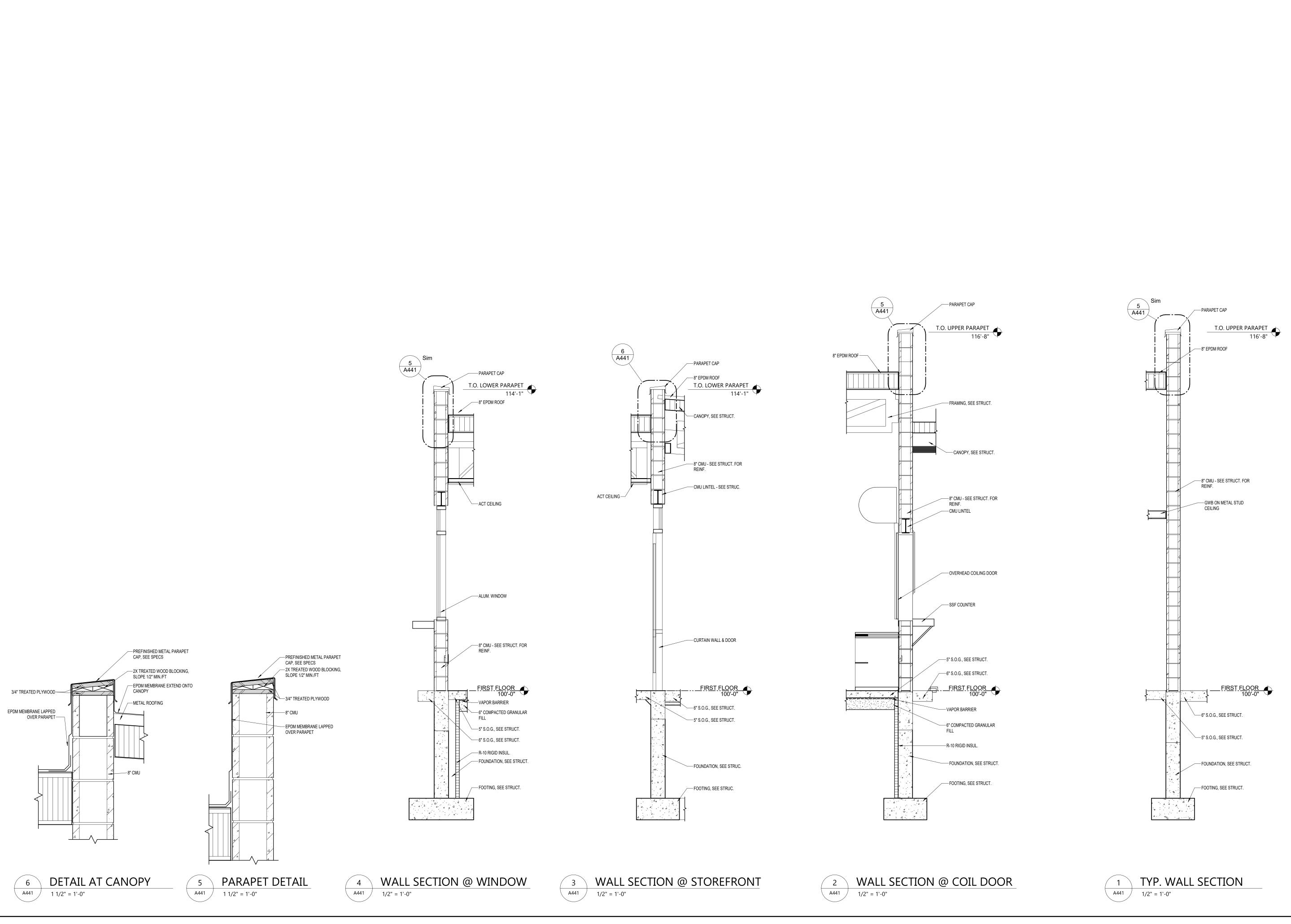
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DRAWING TITLE
BUILDING SECTIONS



Architecture Engineering

Interior Design TELE 701.609.5290 FAX 701.609.5290\*51

313 Main Street, Suite 308, Williston ND 58801 www.eapc.net

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CLIENT WILLISTON COMMUNITY BUILDERS

PROJECT DESCRIPTION WILLISTON WATER WORLD

WILLISTON CITY STATE

**ISSUE DATES** 

CD CONSTRUCTION DOCUMENTS 05/19/2023 DATE MARK DESCRIPTION

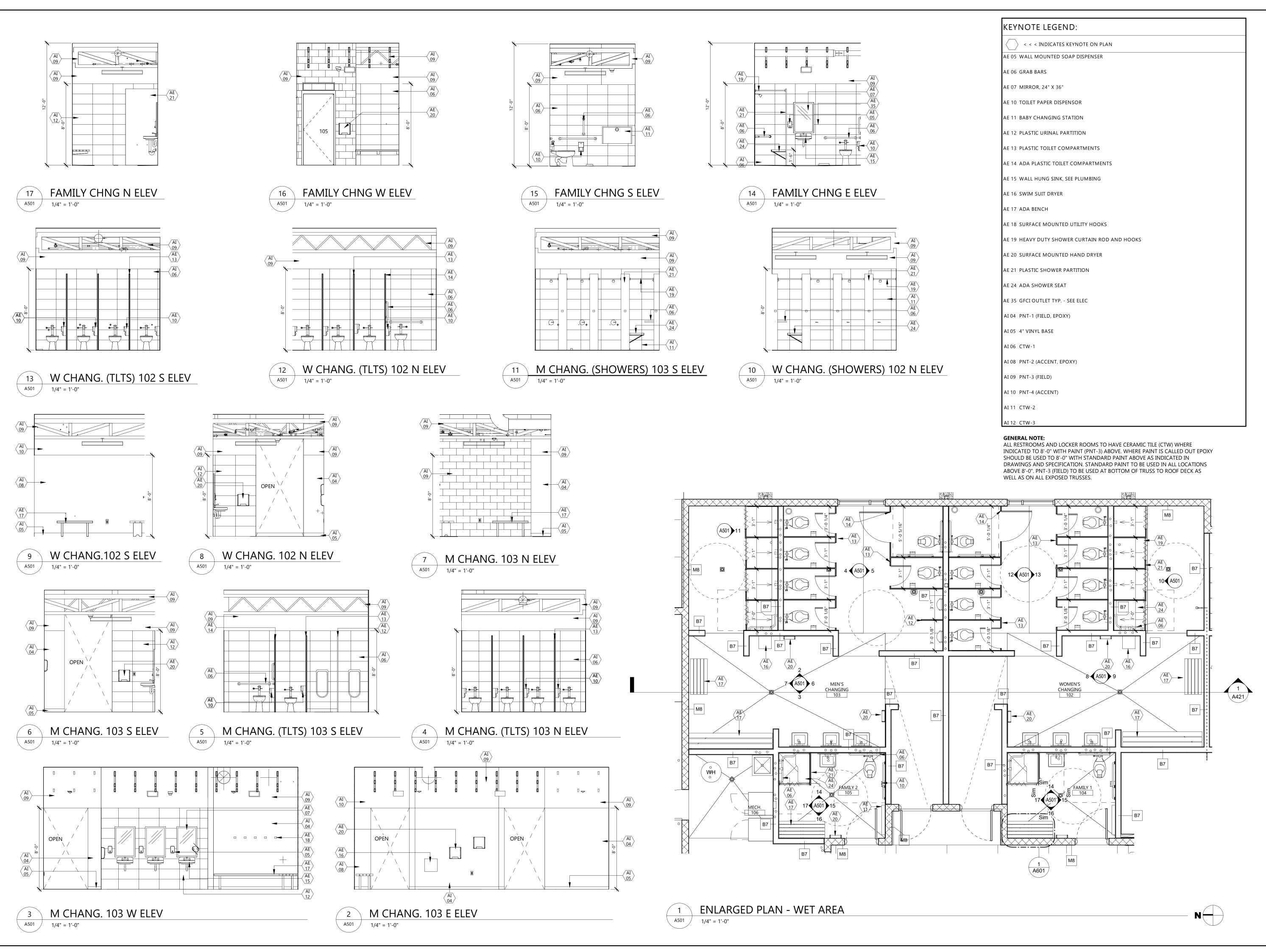
20224620 PROJECT NO: DRAWN BY: CHECKED BY:

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**DRAWING TITLE** WALL SECTIONS



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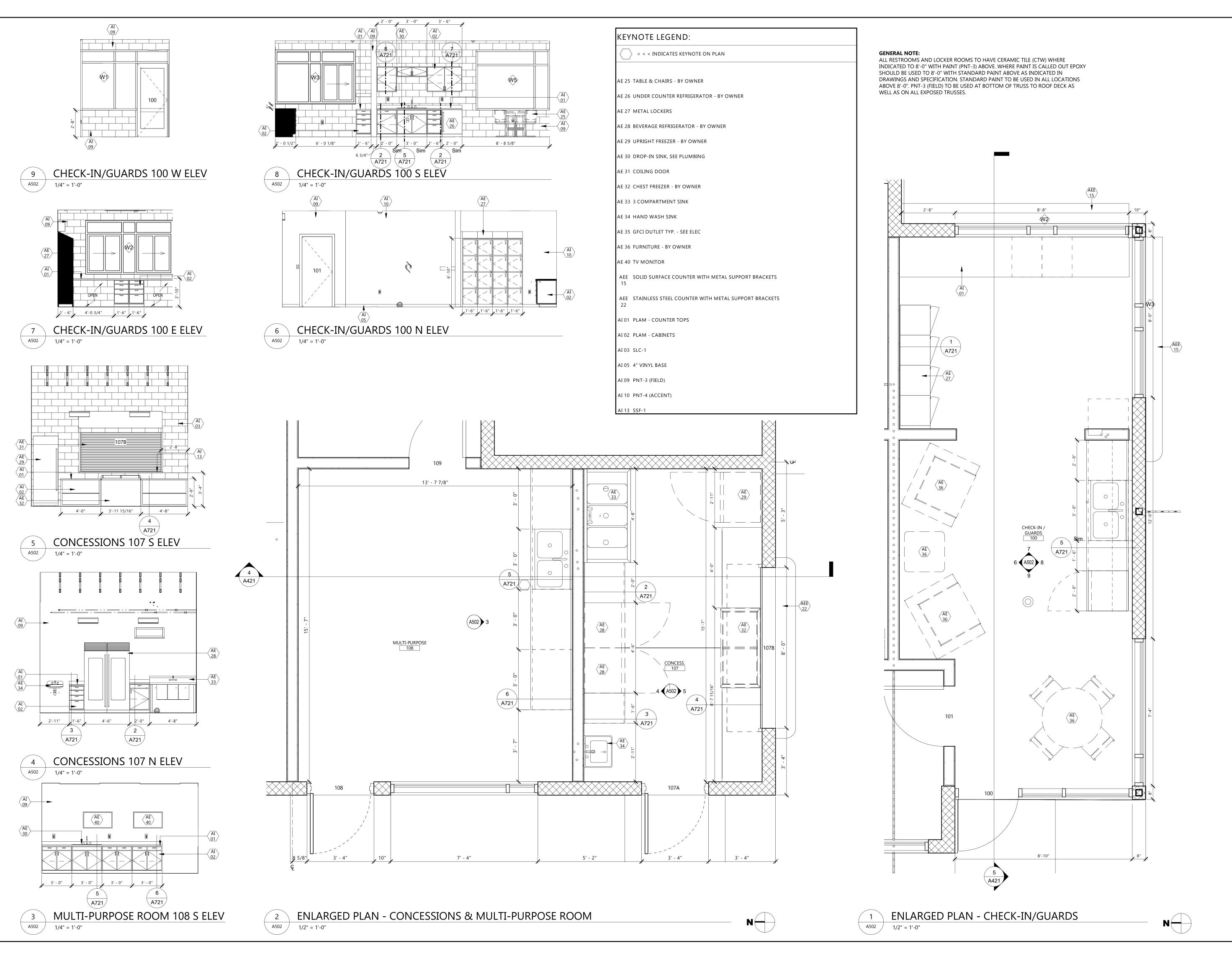
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DRAWING TITLE WET AREA ENLARGED PLAN & ELEVATIONS



Architecture Engineering

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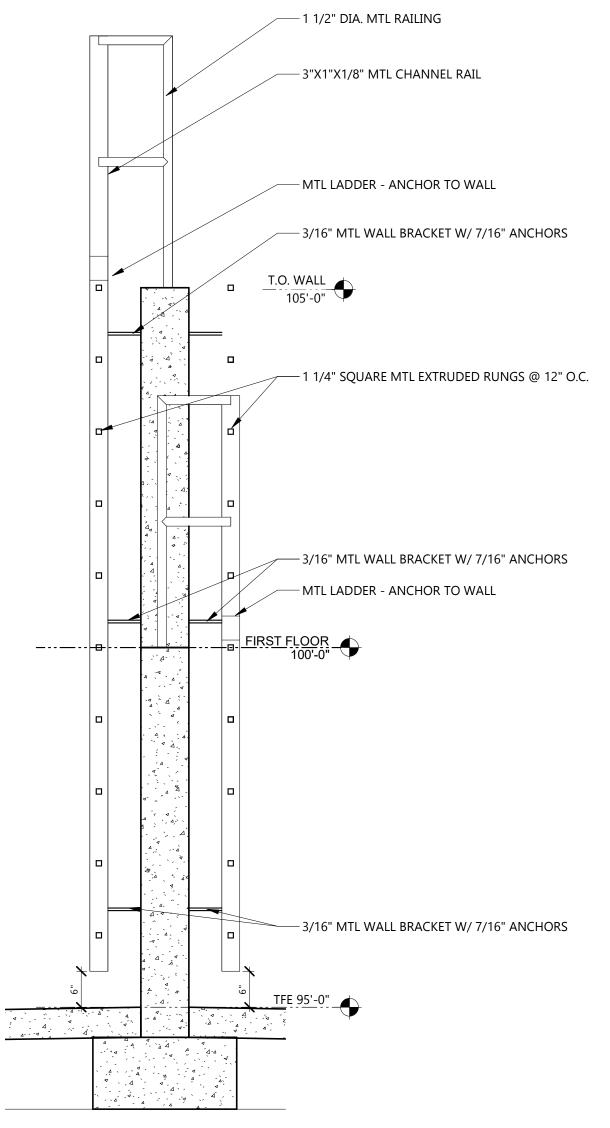
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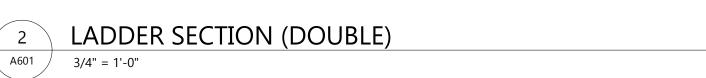
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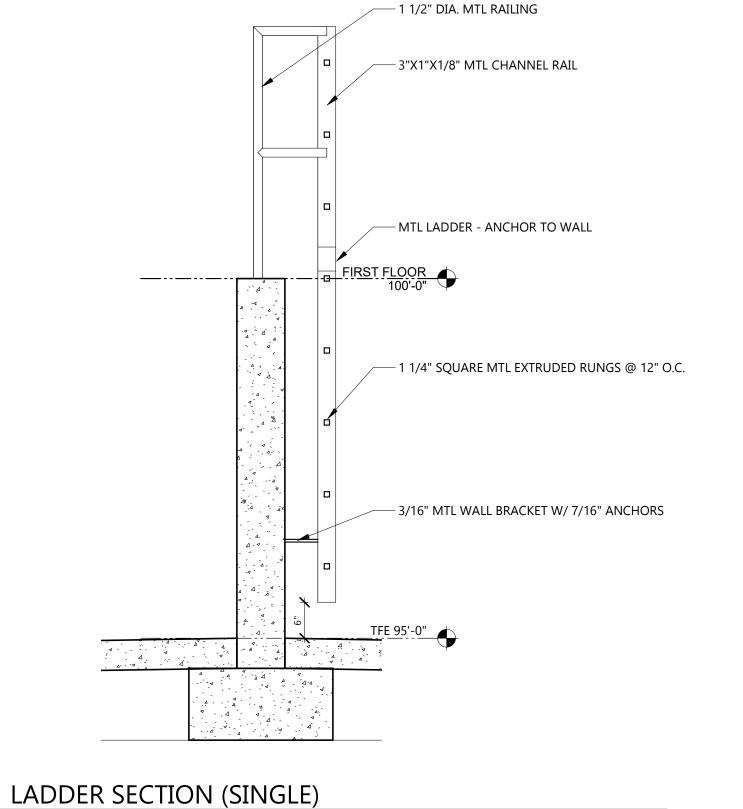
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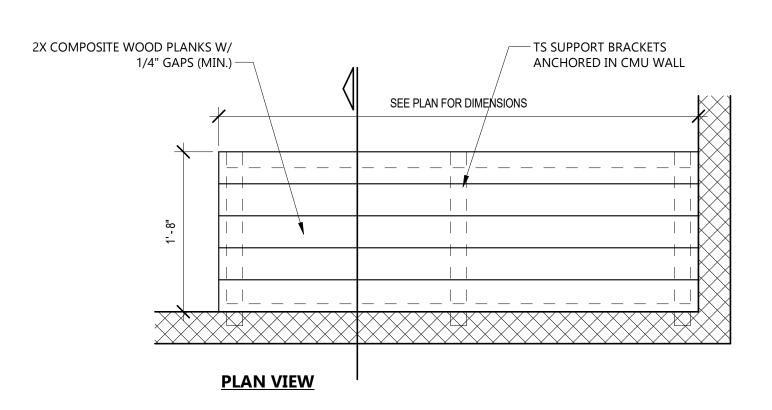
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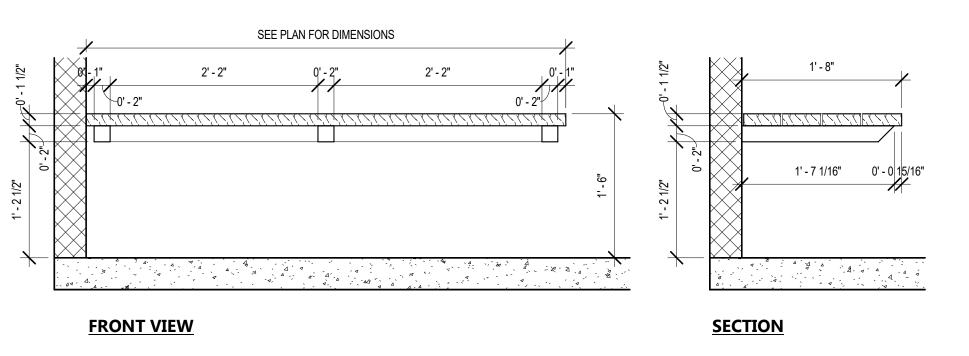
**DRAWING TITLE ENLARGED PLANS** 











A601

3/4" = 1'-0"

1 ADA BENCH DETAIL

A601 1" = 1'-0"

F EAPC

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PROJECT DESCRIPTION
WILLISTON WATER
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CITY WILLISTON
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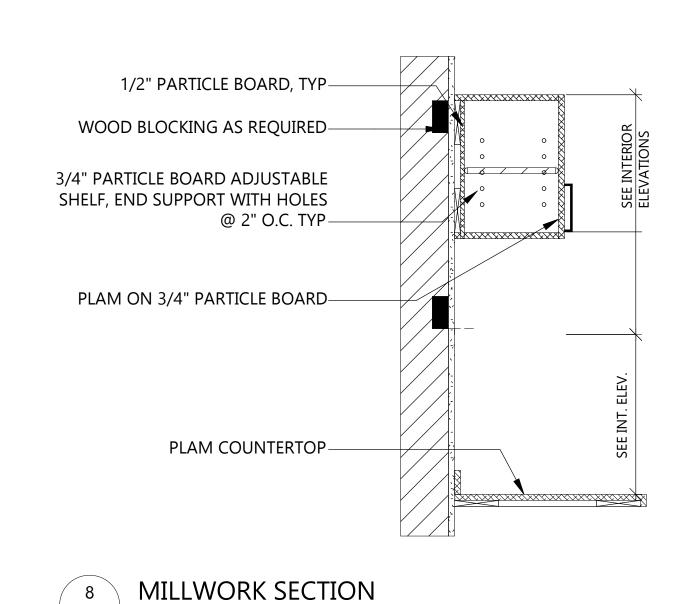
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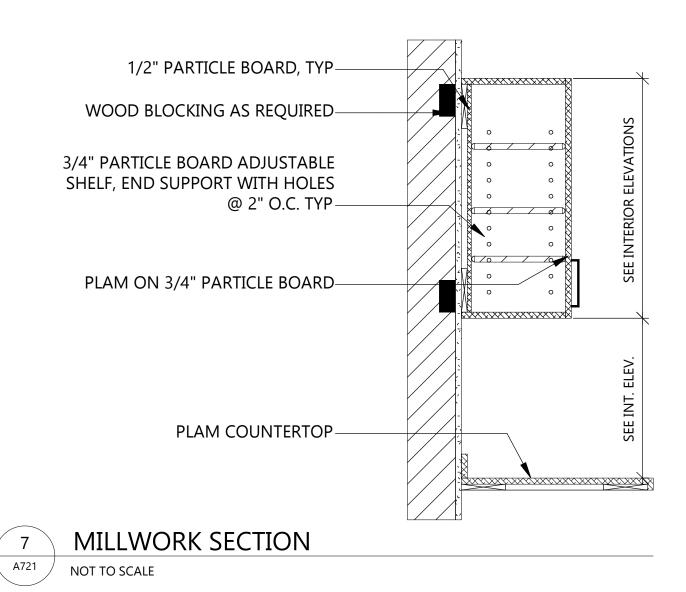
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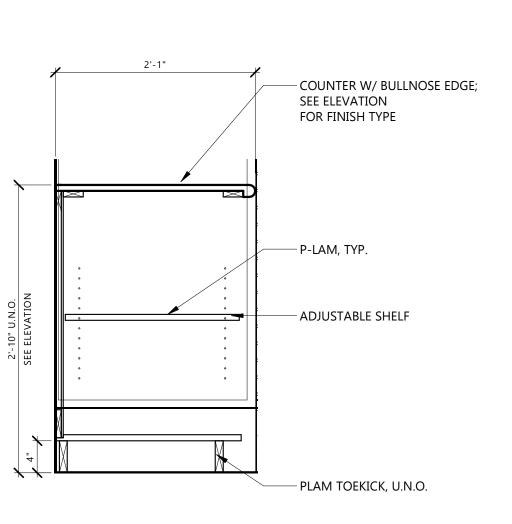
DRAWING TITLE

DRAWING TITLE
DETAILS

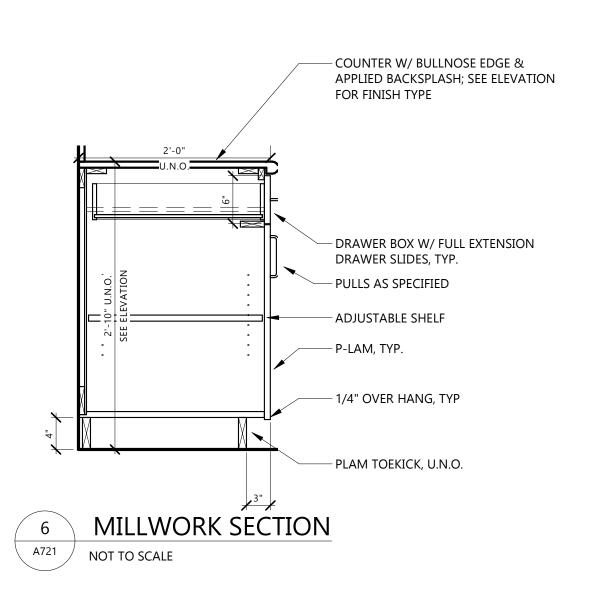


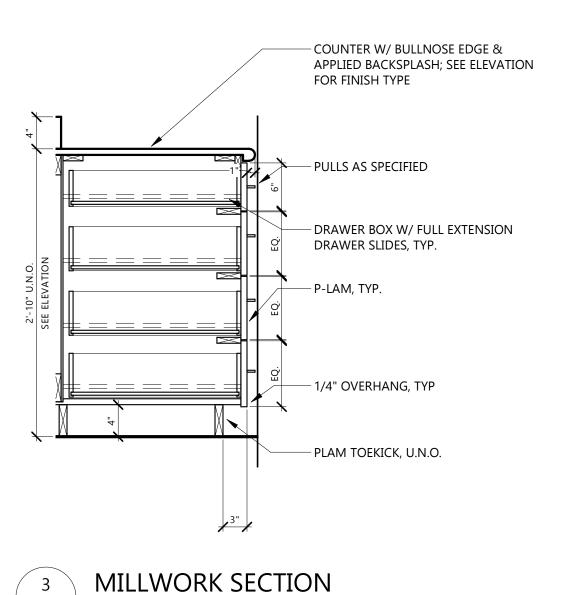
A721 NOT TO SCALE



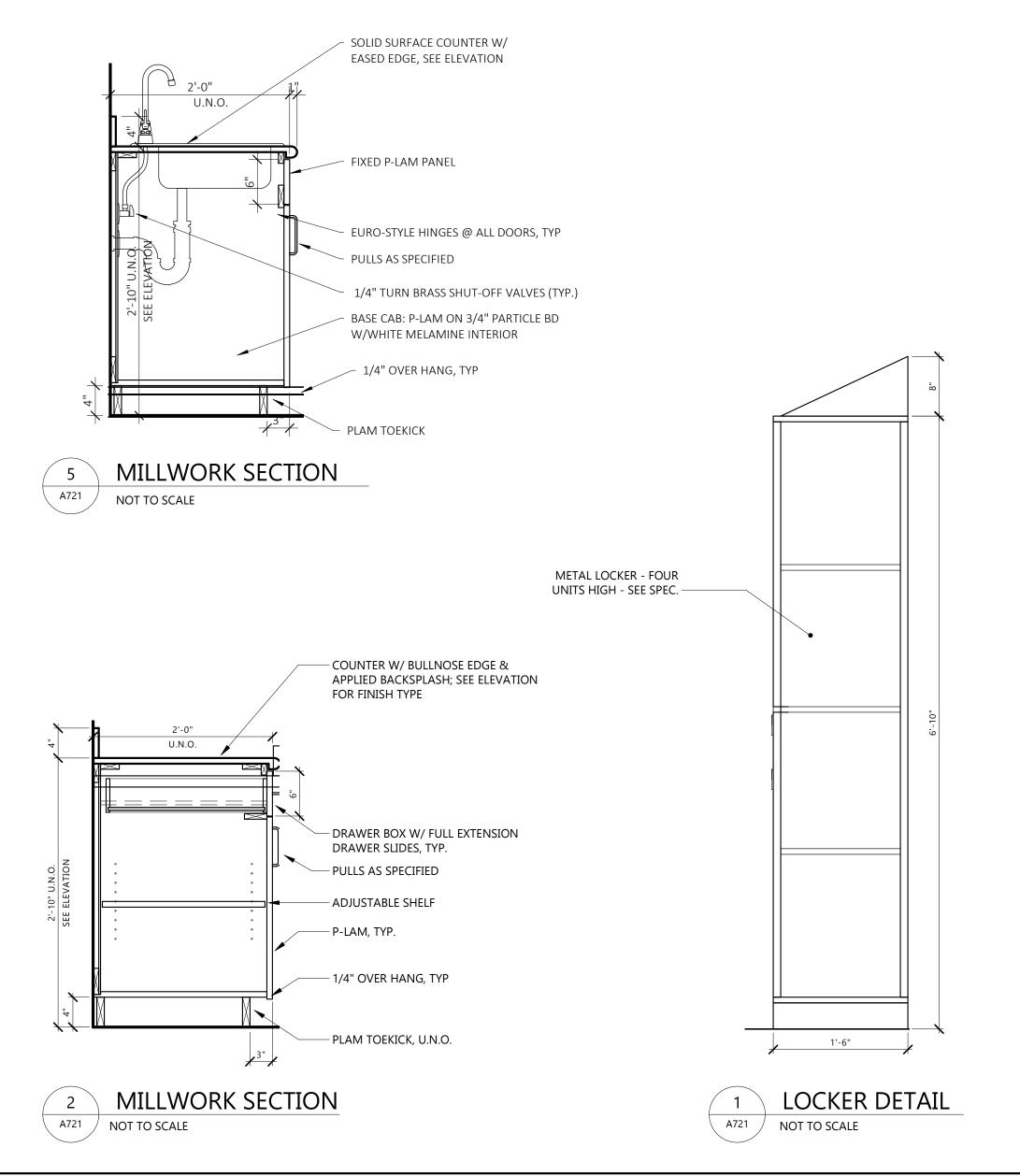








A721 NOT TO SCALE



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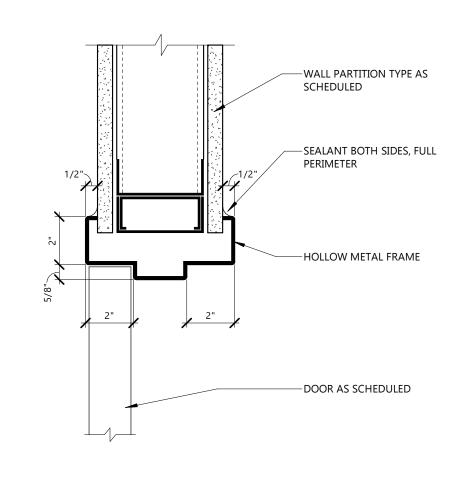
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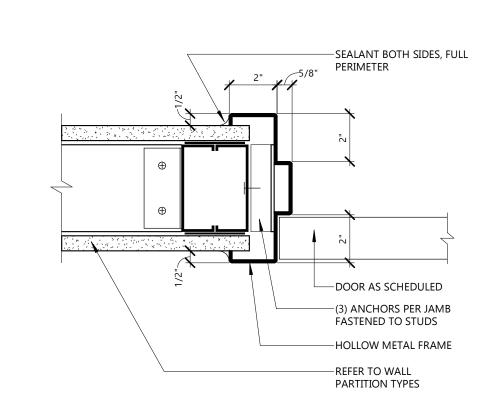
Signature:

Date: <u>5/19/2023</u> REG. NO. : <u>1718</u>

DRAWING TITLE
MILLWORK SECTIONS,
DETAILS

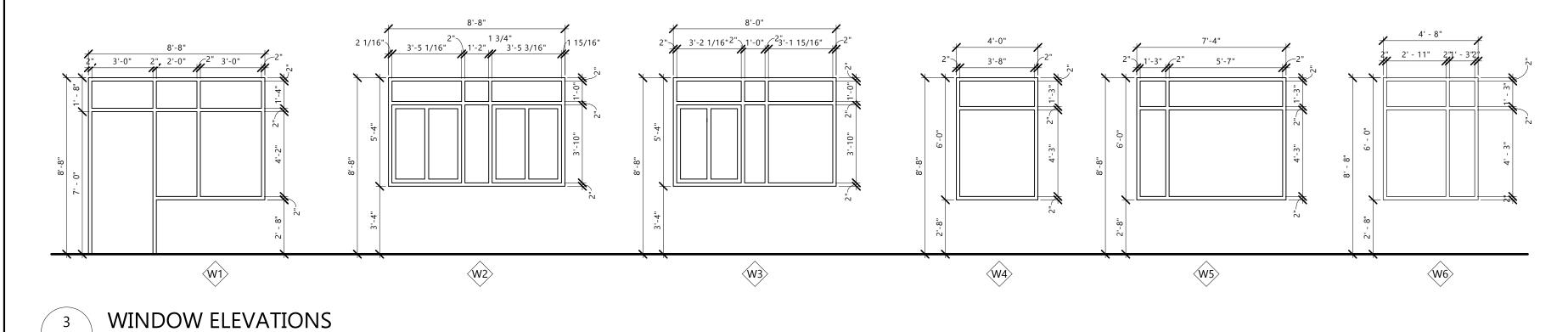
	DOOR SCHEDULE												
		DOOR PANEL					DOOR FRAME		DETAILS				
			SIZE									H.W.	
DR#	ROOM	W	Н	THK.	MAT.	TYPE	MAT.	TYPE	HEAD	JAMB	FIRE RATING	l l	NOTES
100	CHECK-IN/GUARDS	3'-0"	7'-4"	1 3/4"	AL	FGIR	AL	AL-1					
101	STAFF	3'-0"	7'-0"	2"	WD	F	НМ	HM-3					
102	WOMEN'S CHANGING	3'-0"	7'-0"	1 3/4"	AL	F	AL	HM-1					
103	MEN'S CHANGING	3'-0"	7'-0"	1 3/4"	AL	F	AL	HM-1					
104	FAMILY 1	3'-0"	7'-0"	1 3/4"	AL	F	AL	HM-1					
105	FAMILY 2	3'-0"	7'-0"	1 3/4"	AL	F	AL	HM-1					
106A	MECHANICAL	3'-0"	7'-0"	1 3/4"	НМ	F	НМ	HM-1					
106B		3'-0"	7'-0"	2"									
107A	CONCESSIONS	3'-0"	7'-0"	1 3/4"	НМ	F	НМ	HM-1					
107B	CONCESSIONS	8'-0"	4'-0"	1"	AL	-	AL						
108	MULTI-PURPOSE	3'-0"	7'-0"	1 3/4"	AL	F	AL	HM-1					
109	STORAGE	2'-10"	7'-0"	2"	WD	F	НМ	HM-3					
110A	POOL EQUIPMENT	3'-0"	7'-0"	1 3/4"	НМ	F	НМ	HM-1					
110B	POOL EQUIPMENT	6'-0"	7'-0"	1 3/4"	НМ	F	НМ	HM-2					
111	CHLOR.	6'-0"	7'-0"	1 3/4"	НМ	F	НМ	HM-2					
112	CO2	3'-0"	7'-0"	2"	НМ	F	НМ	HM-3					





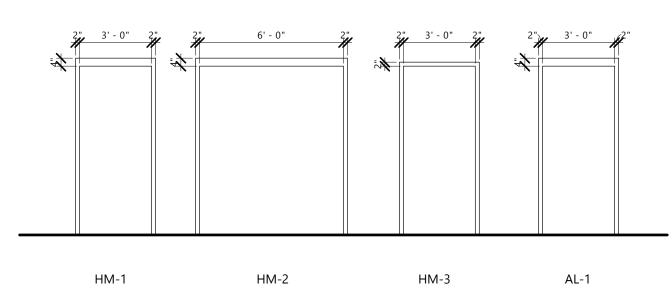


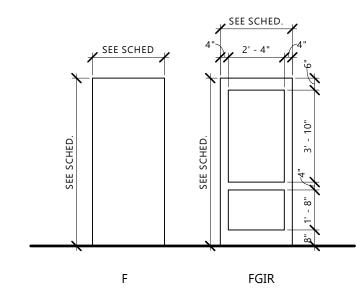




A801

1/4" = 1'-0"





2 DOOR FRAME ELEVATIONS

1/4" = 1'-0"

1 DOOR ELEVATIONS

A801 1/4" = 1'-0"

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PROJECT DESCRIPTION
WILLISTON WATER
WORLD

CITY	WILLISTON
STATE	ND

ISSUE DATES

	CONSTRUCTION DOCUMENTS	05/19/2023
/ARK	DESCRIPTION	DATE

PROJECT NO:	20224620
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CHECKED BY:	BD
CODVIDENT	

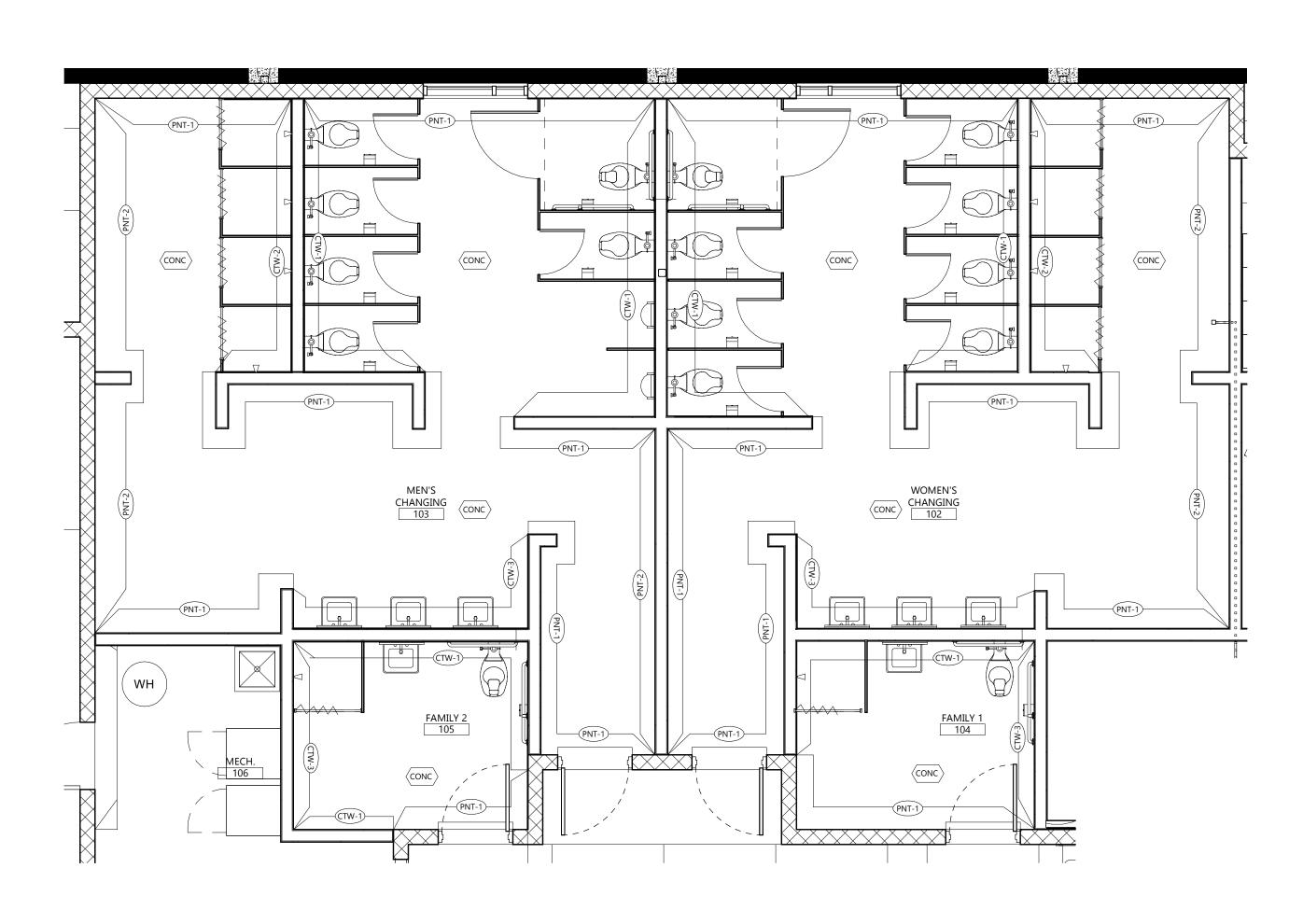
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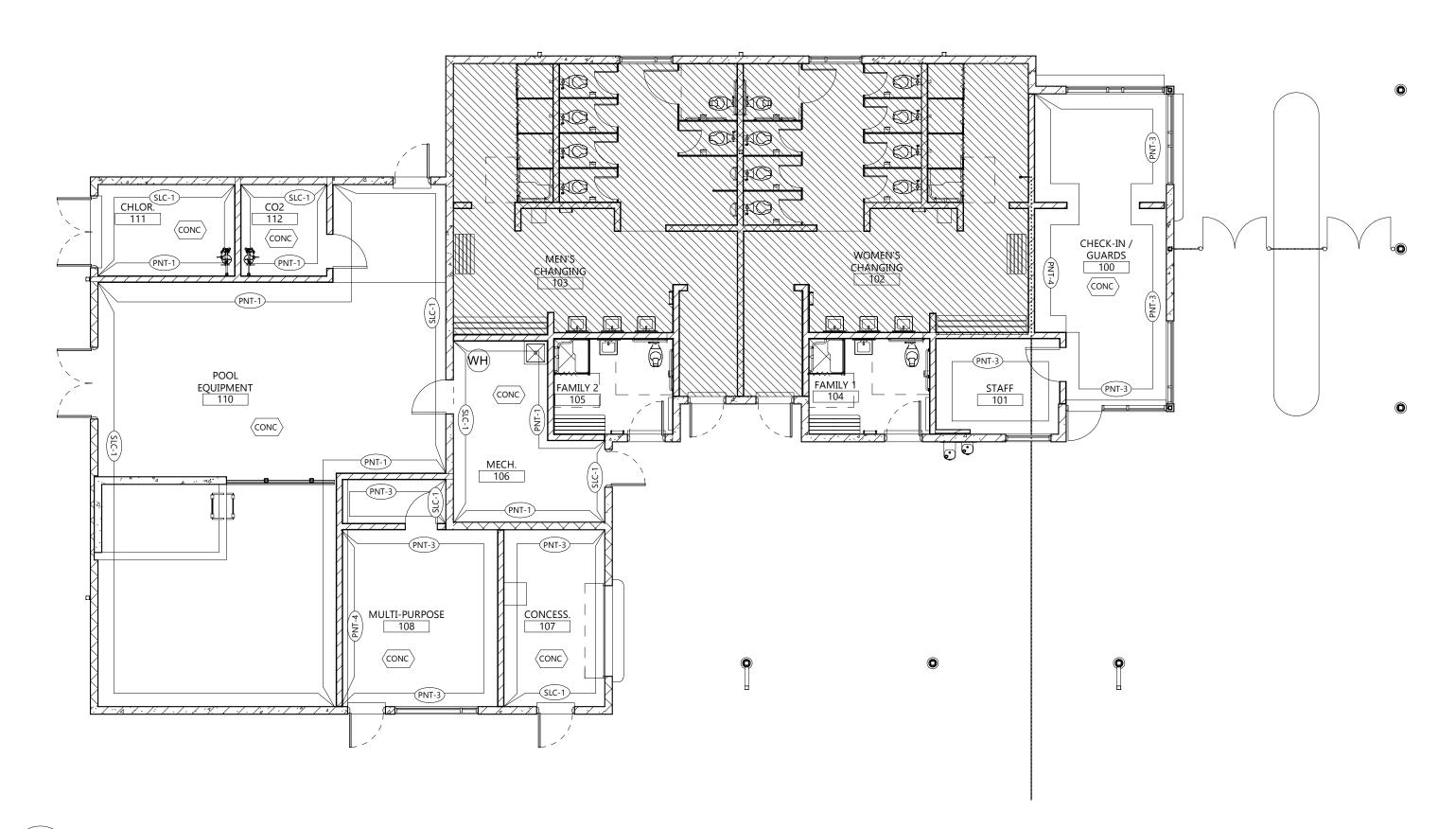
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DRAWING TITLE
DOOR SCHEDULE,
DOOR AND WINDOWS
ELEVATIONS



### ENLARGED WET AREA - FINISH PLAN



## FIRST FLOOR FINISH PLAN

#### GENERAL FINISH NOTES

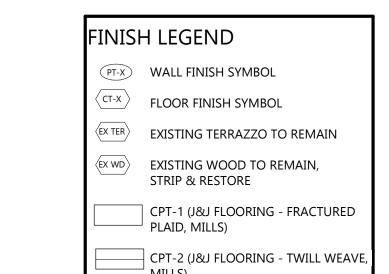
- ATTENTION IMMEDIATELY TO ALLOW FOR RE-SPECIFICATION IF NECESSARY. ALL TRANSITIONS OF FLOOR FINISH MATERIALS SHALL BE LOCATED DIRECTLY UNDER
- JOINTS IN VINYL BASE SHALL NOT OCCUR CLOSER THAN 6" FROM CORNER AND SHALL BE BUTTED TIGHTLY TOGETHER.
- PAINT ALL MISCELLANEOUS ITEMS SCHEDULED TO BE PAINTED, PAINT TO MATCH THE SURFACE IN WHICH THEY OCCUR.
- PAINTED TO MATCH ADJACENT FINISHES. UPON COMPLETION, REMOVE ALL PAINT FROM WHERE IT HAS SPILLED, SPLASHED OR
- EXAMINE ALL FINISH SURFACES AFTER COMPLETION OF WORK AND PROCEED WITH
- SOFFIT VERTICAL FINISH, UNO. 1. PAINT CEILING ACCESS PANELS WHERE THEY OCCUR TO MATCH ADJACENT CEILING FINISH. 12. STAINED AND PAINTED SURFACES SHALL BE FINISHED SUCH THAT JOINTS ARE NOT VISIBLE
- 3. REFER TO INTERIOR ELEVATIONS FOR LOCATIONS/TYPES OF PLASTIC LAMINATE AND SOLID
- 15. ALL COVER PLATES, SWITCHES, OUTLETS, RECEPTACLES AND DEVICES TO BE WHITE, UNO. UTILITY, EQUIPMENT STORAGE AREAS, AND OTHER ROOMS AS INDICATED IN THE
- 8. ALL RESTROOMS AND LOCKER ROOMS TO HAVE CERAMIC TILE (CTW) TO 8'-0" WITH PAINT (PNT-3) ABOVE. WHERE PAINT IS CALLED OUT EPOXY SHOULD BE USED TO 8'-0" WITH
- 20. ALL EXPOSED WOOD TRUSSES AND MECHANICAL EQUIPMENT TO BE PAINTED (PNT-3) AS

### **MATERIAL IDENTIFICATION CODES (BASIS OF DESIGN)**

06 4116	PLAM	PLASTIC LAMINATE CLAD ARCHITECTURAL CABINETS
	PLAM-2	FORMICA, 949-SP, WHITE, SCULPTED FINISH
09 3013	CTW	CERAMIC TILE (WALLS & FLOOR)
	CTW-1	VIRGINA TILE, ATLAS CONCORDE, REFLEX, MERCURY 12"X24"
		GROUT: TBD
		INSTALLED: VERTICAL
	CTW-2	VIRGINA TILE, FRIEZE, FLOW, WHITE 12"X24"
		GROUT: WHITE
	CTW-3	INSTALLED: VERTICAL VIRGINA TILE, ATLAS CONCORDE, BOOST PRO, POWDER BLUE 16"X31.5"
	CTVV-5	GROUT: TBD
		INSTALLED: HORIZONTAL
		MOTALLED. HOMZOWIAL
09 6513	RB, TS	RESILIENT BASE AND ACCESSORIES
	RB-1	JOHNSONITE-TARKETT, 4" COVE BASE, BURNT UMBER B 63
09 9124	PNT	INTERIOR PAINTING
	SLC-1	SEALED CONCRETE, COMMERCIAL GRADE ??
	PNT-1	SHERWIN WILLIAMS, SW7029, AGREEABLE GREY (EPOXY)??
	PNT-2	SHERWIN WILLIAMS, SW9141, WATERLOO (EPOXY)??
	PNT-3	SHERWIN WILLIAMS, SW7029, AGREEABLE GREY
	PNT-4	SHERWIN WILLIAMS, SW9141, WATERLOO
10 2113.19	PTC	PLASTIC TOILET COMPARTENTS
	PTC-1	SCRANTON PRODUCTS, GREY
10 2600	CG	WALL AND DOOR PROTECTION
	CG-1:	INPRO, SURFACE MOUNT STAINLESS STEEL CORNER GUARD, 4' HIGH, 2" WING
		INSTALLED: AT ALL OUTSIDE CORNERS
12 2413	WT	ROLLER WINDOW SHADES
	WT-1:	MECHOSHA, THERMOVEIL, 1300 SERIES, 5% OPENNESS, COLOR TBD
12 3553	PLAM	PLASTIC LAMINATE CLAD COUNTERTOPS
	PLAM-1	WILSONART, 5018-38, WASHI PEWTER, FINE VELVET FINISH
10.0001.10	665	

SOLID SURFACE FABRICATION

WILSONART, QUIET SWIRL, #924ISS



CPT-3 (J&J FLOORING - STRIA - PIMA)

Date: <u>5/19/2023</u> REG. NO. : <u>1718</u>

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STATE

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COMMUNITY

PROJECT DESCRIPTION

WILLISTON WATER

WILLISTON

05/19/2023

DATE

20224620

**DENVER, COLORADO 80203** 

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Interior Design

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DRAWING TITLE FIRST FLOOR INTERIOR FINISH PLAN, SCHEDULES

REFER TO FINISH PLANS AND ROOM ELEVATIONS FOR ADDITIONAL FINISH LOCATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALLOWING FOR DELIVERY LEAD TIMES FOR ALL FINISHES SPECIFIED WITHIN THE CONSTRUCTION SCHEDULE. ALL DELIVERY TIMES MUST BE CONFIRMED, AND ANY EXCESSIVE LEAD TIME MUST BE BROUGHT TO THE ARCHITECT'S

CENTER OF DOOR, WHERE OCCURS, UNO.

ALL SEALANTS TO MATCH SURFACE IN WHICH THEY OCCUR.

ALL EXPOSED MECHANICAL AND ELECTRICAL ITEMS SCHEDULED TO BE PAINTED SHALL BE

SPLATTERED ON EXPOSED SURFACES.

"TOUCH-UP" AS REQUIRED. 10. UNDERSIDE OF SOFFITS (WHERE OCCURS) TO RECEIVE A FINISH TO MATCH THE ADJACENT

WHEN VIEWED FROM ANY ANGLE AS DETERMINED BY THE ARCHITECT.

SURFACE MATERIALS.

14. ALL WALLS TO RECEIVE RB-1, UNO.

16. PROVIDE FIBERGLASS REINFORCED PANELS (FRP-1) 96" HEIGHT IN HOUSEKEEPING, SOILED ELEVATIONS AND THE WALL FINISH PLANS.

7. REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL LOCATIONS OF ACCENT MATERIALS AND PROTECTIVE WALLCOVERING.

STANDARD PAINT ABOVE AS INDICATED IN DRAWINGS AND SPECIFICATION.

19. ALL WINDOWS TO RECEIVE MANUAL ROLLER SHADES (WT-1), UNO. INDICATED ON DRAWINGS AND SPECIFICATIONS

<u>06 4116</u>	PLAM	PLASTIC LAMINATE CLAD ARCHITECTURAL CABINETS
	PLAM-2	FORMICA, 949-SP, WHITE, SCULPTED FINISH
09 3013	CTW	CERAMIC TILE (WALLS & FLOOR)
	CTW-1	VIRGINA TILE, ATLAS CONCORDE, REFLEX, MERCURY 12"X24"
		GROUT: TBD
		INSTALLED: VERTICAL
	CTW-2	VIRGINA TILE, FRIEZE, FLOW, WHITE 12"X24"
		GROUT: WHITE
		INSTALLED: VERTICAL
	CTW-3	VIRGINA TILE, ATLAS CONCORDE, BOOST PRO, POWDER BLUE 16"X31.5"
		GROUT: TBD
		INSTALLED: HORIZONTAL
09 6513	RB, TS	RESILIENT BASE AND ACCESSORIES
	RB-1	JOHNSONITE-TARKETT, 4" COVE BASE, BURNT UMBER B 63
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	PNT-3	SHERWIN WILLIAMS, SW7029, AGREEABLE GREY
	PNT-4	SHERWIN WILLIAMS, SW9141, WATERLOO
10 2113.19	PTC	PLASTIC TOILET COMPARTENTS
	PTC-1	SCRANTON PRODUCTS, GREY
10 2600	CG	WALL AND DOOR PROTECTION
	CG-1·	INPRO SURFACE MOUNT STAINLESS STEEL CORNER GUARD 4' HIGH 2" WING

#### **DESIGN CODES - ALL CODES LATEST EDITION UON:**

- AISC AMERICAN INSTITUTE OF STEEL CONSTRUCTION
- AWS AMERICAN WELDING SOCIETY STANDARDS FOR WELDING AS MODIFIED BY AISC SPEC. IBC INTERNATIONAL BUILDING CODE

NOTE: CODES ARE AMENDED AS REQUIRED BY THE STATE BUILDING CODE WITH JURISDICTION

AS PER ASCE 7

= 2,000 LBS

= 1.25

- ASCE AMERICAN SOCIETY OF CIVIL ENGINEERS MINIMUM DESIGN LOADS FOR BUILDINGS AND
- OTHER STRUCTURES AMERICAN CONCRETE INSTITUTE

GOVERNING THE PROJECT LOCATION.

SUPERIMPOSED ON THE COMPLETED BUILDING.

- CRSI CONCRETE REINFORCING STEEL INSTITUTE MANUAL OF STANDARD PRACTICE
- ANSI AMERICAN NATIONAL STANDARDS INSTITUTE

#### **DESIGN LOADS:**

THE DESIGN INCLUDED HEREWITH IS BASED ON THE FOLLOWING DESIGN LOADS

#### **SNOW LOADS:**

FLAT ROOF SNOW LOAD (BUILDING)	Pf = 26 PSF
GROUND SNOW LOAD	Pg = 30 PSF
SNOW EXPOSURE FACTOR	Ce = 1.0
THERMAL FACTOR (UNHEATED)	Ct = 1.2
SNOW LOAD IMPORTANCE FACTOR	I = 1.0 (RISK CATEGORY II)

#### DRIFT LOADS

#### **ROOF DEAD LOADS:**

TOP CHORD	= 10 PSF
BOTTOM CHORD	= 10 PSF
BOTTOM CHORD (OPEN CEILING)	= 5 PSF

### **FLOOR LIVE LOADS:**

CRANE LOAD:	
ALL OTHER AREAS	= 100 PSF
STORAGE AREAS	= 125 PSF
MECHANICAL ROOMS	= 125 PSF

#### LIVE LOAD LOAD IMPACT FACTOR

WALLS - MWFRS:

EXTERIOR LATERAL WIND PRESSURE - MWFRS = 20 PSF FROM 0-20 FEET HIGH EXTERIOR LATERAL WIND PRESSURE - MWFRS = 25 PSF FROM 20-40 FEET HIGH

#### WIND LOADS: (ALL WIND LOADS STATED ARE UNFACTORED)

WIND DESIGN CRITERIA: (PER ASCE 7)	
BASE WIND SPEED	

= 115 MPH (3 SECOND GUST) **RISK CATEGORY** = II**EXPOSURE** = C

INTERNAL PRESSURE COEFFICIENT  $= \pm 0.18$ **NET UPLIFT** = 10 PSF ON ROOF AREAS CANOPY = 30 PSF

#### CANOPY NET UPLIFT = 18 PSF

**COMPONENT & CLADDING DESIGN PRESSURE:** 

ZONE 1	= 9.6/-21.5 PSF
ZONE 2	= 9.6/-28.5 PSF
ZONE 3	= 9.6/-34 PSF
ZONE 4	= 14.7/-16.2 PSI
ZONE 5	= 14.7/-18 PSF

#### SEISMIC DESIGN CRITERIA

SEISMIC IMPORTANCE FACTOR	= 1.0
RISK CATEGORY	= II
SEISMIC SITE CLASS	= D (ASSUMED)
SEISMIC DESIGN CATEGORY	= A
MAPPED SPECTRAL RESPONSE COEFFICIENTS:(	(%g) - ASCE 7
	Ss = 0.066
	S1 = 0.022
SPECTRAL RESPONSE COEFFICIENTS:	

ALLOWABLE SOIL BEARING PRESSURE

= 1,800 PSF PER GEOTECHNICAL REPORT FROM AMERICAN ENGINNERING TESTING. (AET REPORT NO. P-0018831 DATED 02/07/2023)

Sds = 0.070

Sd1 = 0.036

#### MATERIAL SPECIFICATIONS:

SEE SPECIFICATIONS FOR COMPLETE SPECIFICATIONS

#### STRUCTURAL STEEL:

W-FLANGE/W-TEE SHAPES ASTM A992 (Fy=50 KSI) ASTM A500 GRADE B (Fy=46 KSI) HSS SQUARE/RECTANGULAR SECTIONS ASTM A36 (Fy=36 KSI) PLATES/ANGLES/CHANNELS MISCELLANEOUS SHAPES ASTM A36 (Fy=36 KSI) HIGH STRENGTH BOLTS ASTM A325 TYPE N, UON WELDING ELECTRODES E70XX ANCHOR RODS ASTM F1554 GR 36 CONCRETE FASTENERS HILTI HUS-H, SIMPSON TITEN HD **CHEMICAL ANCHORS** SIMPSON ACRYLIC TIE, HILTI HSE 2411 OR FASTENAL PROPOXY 300

#### WOOD:

SPF STUD GRADE (UON ON PLANS) DIMENSIONAL HEADERS/TOP PLATE SPF No. 1/No. 2 OR #2 SOUTHERN PINE MISCELLANEOUS BLOCKING SPF STUD GRADE SILL PLATE (TOP OF FOUNDATION) #2 SOUTHERN PINE (TREATED) INTERIOR POSTS AND COLUMNS DF No. 2 2x JOISTS SPF No. 1/No. 2 LAMINATED VENEER LUMBER (LVL)

Fb = 2600 PSIFV = 285 PSI

E = 1,900,000 PSISILL PLATE ANCHORS (GALVANIZED) 1/2"Øx4" SIMPSON TITEN HD SCREW ANCHORS (GALV) ROOF SHEATHING 15/32" (SPAN RATING 24/16)

WALL SHEATHING 7/16" (SPAN RATING 24/16) APA RATED EXPOSURE 1

#### CONCRETE:

LIGHT GAUGE STEEL:

FOUNDATION INSULATION

STUDS & TRACKS

REINFORCING BARS ASTM A615 GR 60, DEFORMED, FABRICATE TO CRSI STANDARDS WELDED REBAR ASTM A706, GR 60, DEFORMED

### CONCRETE (28 DAY COMPRESSIVE STRENGTH):

FOOTINGS/FOUNDATION WALLS/PIERS/SLABS f'c = 4000 PSI (USE 6% (+/- 1.5%)) ENTRAINED AIR AT EXTERIOR CONCRETE

Fy = 50 KSI, MINIMUM

ASTM C578 EXTRUDED POLYSTYRENE

#### GENERAL REQUIREMENTS

- GENERAL CONTRACTOR TO PROVIDE AN AS-BUILT SET OF DRAWINGS FOR EACH SHEET TO EAPC AT THE COMPLETION OF THE PROJECT WITH ALL CHANGES MADE IN THE FIELD
- CLEARLY MARKED ON IT. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ALL STRUCTURAL SYSTEMS WITH ARCHITECTURAL FINISHES, DETAILS, ETC. CONTRACTOR SHALL COORDINATE MECHANICAL AND ELECTRICAL SYSTEMS TO AVOID CUTTING OR ALTERING STRUCTURAL MEMBERS IN ANY MANNER. DO NOT FIELD CUT ANY STRUCTURAL STEEL BEAM, COLUMN, JOIST, ETC. WITHOUT WRITTEN APPROVAL FROM ENGINEER OF RECORD.

CONCRETE:

FREEZING OR REMOVE THEM PRIOR TO CONSTRUCTION.

CONTRACTOR WITH NO EXPENSE TO THE OWNER.

COURSE AND FINAL GRADE

AIR TEMPERATURE

ABOVE 30° F

0° F TO 30° F

BELOW 0° F

REINFORCING LOCATION

SLABS, WALLS OR JOISTS

BEAMS, COLUMNS

ENGINEER OF RECORD.

3. CONCRETE TESTS:

THERE OF.

APPEARS TO CHANGE.

#14 AND #18 BARS

#11 BARS AND SMALLER

CONCRETE REINFORCING:

CONCRETE SHALL NOT BE CAST AGAINST FROZEN SOILS. FROZEN SOILS SHALL BE REMOVED

PRIOR TO CASTING FOOTINGS. REPLACE FROZEN SOILS WITH COMPACTED ENGINEER FILL.

PROVIDE A MINIMUM 6" THICK DRAINAGE COURSE BELOW ALL INTERIOR FLOOR SLABS ON

SHALL BE ASTM C33 FINE AGGREGATE OR SIZE #8 COARSE AGGREGATE. BETWEEN DRAINAGE

CONCRETE FOOTINGS, WALLS, AND OTHER CONCRETE COMPONENTS SHALL BE PROTECTED

REQUIRED CONCRETE TEMPERATURES

SECTION SIZE, MINIMUM DIMENSION

12"-36"

50° F

55° F

60° F

65° F

MINIMUM COVER

1 1/2"

1 1/2"

3/4"

1 1/2"

< 12"

55° F

60° F

65° F

70° F

GRADE UNLESS NOTED OTHERWISE ON PLANS OR SPECIFICATIONS (DRAINAGE COURSE

INSULATED PROTECTIVE BLANKETS OR OTHER SUPPLEMENTAL HEAT SHALL BE USED TO

PROVIDE SUFFICIENT PROTECTION TO MAINTAIN DESIGNED CURING TEMPERATURES.

CONCRETE THAT FREEZES OR CRACKS DUE TO FREEZING SHALL BE REPLACED BY THE

FROM FREEZING FOR A MINIMUM OF 7 DAYS CURING TIME AS FOLLOWS:

MINIMUM CONCRETE TEMPERATURE AS PLACED AND MAINTAINED

PROVIDE CONCRETE COVER AT REINFORCING PER THE FOLLOWING:

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH

CONCRETE NOT EXPOSED TO EARTH OR IN CONTACT WITH GROUND:

PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS

CONTINUOUS LONGITUDINAL UNLESS NOTED OTHERWISE.

DISPLACEMENT, DO NOT DEVIATE FROM REQUIRED POSITION.

PERMISSION FROM ENGINEER OF RECORD.

INSPECTION AGENCY 24 HOURS PRIOR TO REQUESTED INSPECTION.

CONCRETE EXPOSED TO EARTH OR WEATHER #6 OR GREATER

CONCRETE EXPOSED TO EARTH OR WEATHER #5 OR SMALLER

MINIMUM CONCRETE TEMPERATURE AS MIXED FOR INDICATED WEATHER

ALL REINFORCING BAR LAPS SHALL BE CLASS "B" UNLESS NOTED OTHERWISE, PLUS 6" AT

NON-CONTACT SPLICES. SEE MASONRY/CONCRETE NOTES FOR BAR LAP SPLICE LENGTHS.

CONCRETE COVER AT STEEL REINFORCING

REINFORCE FOOTINGS BELOW ALL FOUNDATION WALLS WITH A MINIMUM OF TWO #5 BARS

REINFORCING IN WALLS AND FOOTINGS TO BEND 2'-6" AROUND ALL CORNERS OR USE 5'-0"

CONTRACTOR SHALL SUBMIT STEEL REINFORCEMENT SHOP DRAWINGS (INCLUDING BAR

SCHEDULES, SHAPES OF BENT BARS, SPACING OF BARS AND LOCATION OF SPLICES) TO

PLACEMENT OF STEEL REINFORCING SHALL BE IN ACCORDANCE WITH CRSI MANUAL OF

REINFORCEMENT SHALL BE INSPECTED BY THE SPECIAL INSPECTION AGENCY ACCORDING TO

THE SPECIAL INSPECTIONS AND TESTING SCHEDULE. CONTRACTOR SHALL NOTIFY SPECIAL

DO NOT WELD REINFORCING UNLESS SPECIFICALLY SHOWN ON PLANS OR WITH WRITTEN

CONTRACTOR SHALL ENGAGE A QUALIFIED TESTING AND INSPECTING AGENCY TO

C172 SHALL BE PREFORMED ACCORDING TO THE FOLLOWING REQUIREMENTS:

a. WHEN FREQUENCY OF TESTING WILL PROVIDE FEWER THAN THREE

2. SLUMP: ASTM C143/C 143M; ONE TEST AT POINT OF PLACEMENT FOR EACH

EACH BATCH IF FEWER THAN FIVE ARE USED.

DAY'S POUR OF EACH CONCRETE MIXTURE.

5. COMPRESSION TEST SPECIMENS: ASTEM C31/C31M.

SAMPLE AND TESTED AT AGE INDICATED

CURING IN-PLACE CONCRETE.

BOTH 7 AND 28 DAY TESTS.

. NON DESTRUCTIVE TESTING:

ADDITIONAL TESTS:

REJECTION OF CONCRETE.

DIRECTED BY ENGINEER.

TESTING OF COMPOSITE SAMPLES OF FRESH CONCRETE OBTAINED ACCORDING TO ASTM

1. TESTING FREQUENCY: OBTAIN ONE COMPOSITE SAMPLE FOR EACH DAY'S POUR OF

EACH CONCRETE MIXTURE EXCEEDING 5 CU. YD. (4 CU. M), BUT LESS THAN 25 CU. YD.

(19 CU. M), PLUS ONE SET FOR EACH ADDITIONAL 50 CU.YD. (38 CU. M) OR FRACTION

COMPRESSIVE-STRENGTH TEST FOR EACH CONCRETE MIXTURE, TESTING SHALL

COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH

CONCRETE MIXTURE. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY

ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH

TEMPERATURE IS 40 DEG F (4.4 DEG C) AND BELOW AND WHEN 80 DEG F (27 DEG C)

LABORATORY-CURED SPECIMENS AT 7 DAYS AND ONE SET OF TWO SPECIMENS AT 28

STRENGTH FROM A SET OF TWO SPECIMENS OBTAINED FORM SAME COMPOSITE

3. AIR CONTENT: ASTM C231, PRESSURE METHOD, FOR NORMAL-WEIGHT CONCRETE;

4. CONCRETE TEMPERATURE: ASTEM C1064/C 1064M; ONE TEST HOURLY WHEN AIR

a. CAST AND LABORATORY CURE TWO SETS (4 TOTAL) OF TWO STANDARD

a. A COMPRESSIVE-STRENGTH TEST SHALL BE THE AVERAGE COMPRESSIVE

COMPANION LABORATORY-CURED CYLINDERS, CONTRACTOR SHALL VALUATE

OPERATIONS AND PROVIDE CORRECTIVE PROCEDURES FOR PROTECTING AND

8. STRENGTH OF EACH CONCRETE MIXTURE WILL BE SATISFACTORY IF EVERY AVERAGE

OF ANY THREE CONSECUTIVE COMPRESSIVE-STRENGTH TEST EQUALS OR EXCEEDS

SPECIFIED COMPRESSIVE STRENGTH AND NO COMPRESSIVE-STRENGTH TEST VALUE

FALLS BELOW SPECIFIED COMPRESSIVE STRENGTH BY MORE THAN 500 PSI (3.4 MPa).

7. WHEN STRENGTH OF FIELD-CURED CYLINDERS IS LESS THAN 85 PERCENT OF

TEST RESULTS SHALL BE REPORTED IN WRITING TO ENGINEER, CONCRETE MANUFACTURE,

AND CONTRACTOR WITHIN 48 HOURS OF TESTING. REPORTS OF COMPRESSIVE-STRENGTH

CONCRETE BATCH IN WORK. DESIGN COMPRESSIVE STRENGTH, AND TYPE OF BREAK FOR

PLACEMENT, NAME OF CONCRETE TESTING AND INSPECTING AGENCY, LOCATION OF

IMPACT HAMMER, SONOSCOPE, OR OTHER NON DESTRUCTIVE DEVICE MAY BE

TESTS SHALL CONTAIN PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF CONCRETE

PERMITTED BY ENGINEER BUT WILL NOT BE USED AS SOLE BASIS FOR AN APPROVAL OR

TESTING AND INSPECTING AGENCY SHALL MAKE ADDITIONAL TEST OF CONCRETE WHEN

CORED CYLINDERS COMPLYING WITH ASTM C42/C42M OR BY OTHER METHODS AS

6. COMPRESSIVE-STRENGTH TESTS: ASTM C39/C39M; TEST ONE SET OF TWO

AND ABOVE, AND ONE TEST FOR EACH COMPOSITE SAMPLE.

CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE.

BE CONDUCTED FROM AT LEAST THREE RANDOMLY SELECTED BATCHES OR FROM

CAST-IN-PLACE CONCRETE FIELD QUALITY CONTROL:

PERFORM FIELD TESTS AND INSPECTIONS AND PREPARE TEST REPORTS.

STANDARD PRACTICE. POSITION, SUPPORT AND SECURE REINFORCEMENT AGAINST

- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PREPARED AS OUTLINED IN THE SPECIFICATIONS MANUAL PRIOR TO FABRICATING ANY STRUCTURAL MEMBER. FIELD MODIFICATIONS ARE NOT ALLOWED WITHOUT WRITTEN APPROVAL FROM ENGINEER OF RECORD.
- THE STRUCTURAL DESIGN IS BASED ONLY ON THE BUILDING IN ITS COMPLETED STATE. CONTRACTOR SHALL TAKE WHATEVER PRECAUTIONS ARE NECESSARY TO WITHSTAND ALL HORIZONTAL AND VERTICAL LOADINGS THAT MAY BE ENCOUNTERED DURING THE CONSTRUCTION PRIOR TO COMPLETION OF THE BUILDING
- THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. PROVIDE CONSTRUCTION SHORING AND BRACING AS NECESSARY TO COMPLETE THE INSTALLATION OF ALL STRUCTURAL MEMBERS/ FOOTINGS/ ETC. THE UNTOPPED COMPOSITE DECK WILL PROVIDE SUFFICIENT TEMPORARY DIAPHRAGM STRENGTH UNTIL
- TOPPING SLABS ARE PLACED. NO OPENINGS OR SLEEVES (EXCEPT AS DETAILED) SHALL BE CUT OR PROVIDED IN FOOTINGS, WALLS OR STRUCTURAL FLOOR CONSTRUCTION WITHOUT APPROVAL
- REFER TO ARCHITECTURAL PLANS FOR DETAILS OF CONCRETE, REVEALS, NOTCHES, REGLETS, DRIPS, BLOCKOUTS AT DOORWAYS, AND WATERPROOFING/DRAINAGE BOARD. CONTRACTOR SHALL EMPLOY AND PAY FOR SERVICES OF AN INDEPENDENT TESTING AGENCY TO PERFORM SPECIFIED TESTING AND SPECIAL INSPECTION AS REQUIRED PER THE INTERNATIONAL BUILDING CODE OR AS SPECIFICALLY NOTED.
- CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY AND COORDINATE INDEPENDENT TESTING AGENCY WORK DURING CONSTRUCTION. EMPLOYMENT OF AGENCY IN NO WAY RELIEVES CONTRACTOR OF OBLIGATION TO PERFORM WORK IN ACCORDANCE WITH REQUIREMENTS OF CONTRACT DOCUMENTS.
- ). CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS, AND
- CONDITIONS PRIOR TO BEGINNING WORK. REPORT ANY DISCREPANCIES TO A/E. . TESTING AGENCIES SHALL PROMPTLY SUBMIT COPIES OF SPECIAL INSPECTION AND TESTING REPORT TO ENGINEER OF RECORD UON.
- 2. RECESSED FLOOR FOR TILE SEE ARCHITECTURAL DRAWINGS FOR RECESS DEPTH & LOCATION.
- 13. ALL FOOTINGS SHALL REST ON UNDISTURBED SOIL OR APPROVED FILL COMPACTED TO A
- MINIMUM OF 95% OF MAXIMUM DENSITY. 4. ALL FOOTINGS TO BE CENTERED UNDER COLUMNS OR WALLS UNLESS NOTED. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING BEAM SIZES, TBE, DIMENSIONS, ETC.

#### SPECIAL INSPECTION/TESTING:

- IN ADDITION TO INSPECTIONS REQUIRED BY SECTION 110, SPECIAL INSPECTION AND TESTING AGENCIES SHALL PERFORM WORK IN ACCORDANCE WITH THE IBC 2018 EDITION IN CHAPTER
- TESTING FREQUENCY AND LOCATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIAL INSPECTION AND TESTING SCHEDULE INCLUDED WITH THE CONTRACT DOCUMENTS. CONTRACTOR SHALL PROVIDE SPECIAL INSPECTOR WITH SUFFICIENT NOTICE AND ACCESS TO
- ALL ITEMS REQUIRED FOR INSPECTION. THE SPECIAL INSPECTOR SHALL FURNISH REPORTS TO THE BUILDING OFFICIAL, ARCHITECT AND ENGINEER OF RECORD STATING WHEATHER THE WORK WAS IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:
- DATE REPORT IS ISSUED.
- PROJECT TITLE AND NUMBER. FIRM NAME AND ADDRESS
- NAME AND SIGNATURE OF INSPECTOR OR TESTING TECHNICIAN.
- DATE AND TIME OF SAMPLING
- DATE AND TIME OF TEST OR INSPECTION IDENTIFICATION OF PRODUCT AND SPECIFICATIONS SECTION.
- LOCATION OF THE PROJECT, INCLUDING ELEVATIONS, GRID LOCATIONS, AND DETAIL
- TYPE OF TEST/INSPECTION. RESULTS OF TEST/INSPECTION AND INTERPRETATION OF SAME
- OBSERVATIONS REGARDING COMPLIANCE WITH CONTRACT DOCUMENTS OR
- DEVIATIONS THERE FROM. ANY DISCREPANCIES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF DISCREPANCIES ARE NOT CORRECTED, IT SHALL BE
- BROUGHT TO THE ACCEPTANCE PRIOR TO COMPLETION OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF RETESTING OR ADDITIONAL inspection needed as a result of uninspected work, failed tests, or rejected
- FOR EPOXY AND EXPANSION ANCHORS: REVIEW INSTALLATION PROCEDURE PER SPECIFIED.

### CAST-IN-PLACE CONCRETE:

- CONCRETE SHALL BE REDI-MIXED PRODUCT (PLANT MIXED) ACCORDING TO APPROVED CONCRETE MIX DESIGN SUBMITTALS, CONTRACTOR SHALL PROVIDE CONCRETE MIX DESIGN SUBMITTAL TO ENGINEER OF RECORD. CONCRETE PLACEMENT SHALL NOT COMMENCE WITHOUT APPROVED CONCRETE MIX DESIGN SUBMITTALS. CONCRETE SHALL NOT BE MIXED ON SITE EXCEPT FOR SMALL PATCHING. DO NOT ADD WATER TO REDI-MIXED CONCRETE AT THE SITE EXCEPT TO REPLACE WATER LOST DURING TRANSPORTATION OF THE CONCRETE FROM THE REDI-MIX PLANT TO THE SITE.
- CONCRETE MIX DESIGN SHALL BE PREPARED WITH ONE OF THE FOLLOWING TWO OPTIONS: A. CONCRETE REDI-MIX PLANT SHALL PROVIDE A HISTORY FOR EACH MIX DESIGN. THE HISTORY SHALL SHOW TESTED CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS FOR A MINIMUM OF 30 CONSECUTIVE TESTS OR TWO GROUPS OF CONSECUTIVE TESTS TOTALING AT LEAST 30 TESTS.
- B. AN INDEPENDENT LABORATORY SHALL PREPARE EACH MIX DESIGN. THE MIX DESIGN SUBMITTAL SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER. THE COST TO PREPARE THE MIX DESIGN SUBMITTAL AND ANY ASSOCIATED COSTS FOR
- TESTING TO PROVIDE A HISTORY SHALL BE PAID BY THE CONTRACTOR. CONCRETE CURING ACCELERATORS SUCH AS CALCIUM CHLORIDE ARE NOT ALLOWED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER OF RECORD. FOOTING STEPS SHALL BE GENERALLY LOCATED WHERE INDICATED ON THE FOOTING AND
- FOUNDATION PLAN. ALL CONTINUOUS FOOTINGS SHALL BE CENTERED BELOW WALLS UNLESS OTHERWISE NOTED ON THE PLANS.
- ALL SPREAD FOOTINGS SHALL BE CENTERED BELOW WALLS/PIERS/COLUMNS UNLESS OTHERWISE NOTED ON THE PLANS.
- PROVIDE A ROUGH SURFACE AT THE TOP OF ALL FOOTINGS. . DOWEL VERTICAL WALL REINFORCING TO FOOTING OR THICKENED SLAB WITH BARS OF THE SAME SIZE AND SPACING AS THE VERTICAL WALL REINFORCING UNLESS OTHERWISE NOTED. PROVIDE A STANDARD HOOK AT THE BOTTOM OF THE DOWEL AND EMBED INTO THE

FOOTING. PROVIDE A CLASS "B" LAB WITH THE WALL VERTICAL REINFORCING.

- 10. PERIMETER FOUNDATIONS WALL CONSTRUCTION JOINTS SHALL BE SPACED AT NOT MORE THAN 50 FEET ON CENTER. 1. VERIFY WITH ARCHITECT ALL FLOOR SLAB DEPRESSIONS AND DETAILS RELATED TO ARCHITECTURAL FINISHES. VERIFY WITH MECHANICAL DRAWINGS ALL HOUSEKEEPING PAD
- LOCATIONS AND SIZES. FLOOR SLAB DEPRESSIONS AND MECHANICAL HOUSEKEEPING PADS ARE NOT TYPICALLY SHOWN ON THE STRUCTURAL DRAWINGS. 2. PROVIDE KEYED CONSTRUCTION JOINTS (KCJ) AT CONCRETE SLAB ON GRADE FLOORS AS
- REQUIRED AND AT TRANSITIONS OF CONCRETE POURS/REPLACMENTS. JOINTS SHALL BE DOWELED TOGETHER USING SMOOTH STEEL DOWEL BARS INSERTED INTO PLASTIC SLEEVES (GREENSTREAK SPEED DOWELS OR EQUAL) AS SHOWN ON THE KCJ DETAIL. 3. SEE STANDARD DETAILS FOR SLAB ON GRADE CONSTRUCTION AND CONTRACTION JOINTS. CONTRACTION JOINTS SHALL BE CUT WITHIN 24 HOURS OF CONCRETE PLACEMENT, SPACED
- NOT MORE THAN 3 TIMES THE SLAB THICKNEDD, AND WITH AN ASPECT RATIO NOT EXCEEDING 1.5/ 4. AT DROPPED SLABS ON COMPACTED SAND BASE, MAINTAIN CONCRETE THICKNESS AND WWF REINFORCING. LIMITS OF DROPPED AND DEPRESSED FLOOR AREAS TO BE LOCATED
- FROM ARCHITECTURAL PLANS. 5. PROVIDE 3" MINIMUM CONCRETE COVER AROUND STEEL COLUMNS AND STEEL BASE PLATES EXTENDING BELOW SLABS ON GRADE.

#### TEST RESULTS INDICATE THAT SLUMP, AIR ENTRAINMENT, COMPRESSIVE STRENGTH, OR OTHER REQUIREMENTS HAVE NOT BEEN MET, AS DIRECTED BY ENGINEER. TESTING AND INSPECTING AGENCY MAY CONDUCT TEST TO DETERMINE ADEQUACY OF CONCRETE BY

#### CORRECT DEFICIENCIES IN THE WORK THAT TEST REPORTS AND INSPECTIONS INDICATE DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS.

DETERMINE COMPLIANCE OF REPLACED OR ADDITIONAL WORK WITH SPECIFIED

#### MASONRY:

- CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT EXISTING SOILS FROM REINFORCE MASONRY WALLS THUS (UON):
  - VERTICAL REINFORCEMENT: #5 BARS AT 32" ON CENTER. HORIZONTAL REINFORCEMENT: NO. 9 WIRE JOINT TYPE ON 16" VERTICAL CENTERS.
    - BOND BEAM WHERE DETAILED GROUTED SOLID W/3000 PSI CONCRETE GROUT.
  - REINFORCE INTERIOR NON-BEARING WALLS W/(1)-#5 CENTERED @ 8'-0" O/C AND HORIZONTAL REINFORCING @ 16" O/C VERTICALLY.
  - GROUT MASONRY CORES AT VERTICAL REINFORCING SOLID IN 48" LIFTS WITH 3000 PSI CONCRETE GROUT. SUBMIT CONCRETE GROUT DESIGN MIX TO ENGINEER OF RECORD FOR REVIEW PRIOR TO GROUTING CORES
  - REINFORCE EACH SIDE OF ALL OPENINGS, AT CORNERS AND EACH SIDE OF VERTICAL CONTROL JOINTS IN MASONRY WALLS WITH (2) #5 VERTICAL FULL HEIGHT. (UON)
  - AT OPENINGS IN NON-BEARING CMU WALLS PROVIDE LINTELS AS FOLLOWS: OPENINGS LESS THAN OR EQUAL TO 3'-4" CLEAR PROVIDE 8" DEEP BOND BEAM W/ (2)-#5
  - BTM OPENINGS 3'-5" TO 6'-4" CLEAR PROVIDE A W8x10 WITH 1/4" THICK CONT. BTM. PLATE.
  - PROVIDE THE FOLLOWING BEARING LENGTHS FOR STEEL BEAM BEARING ON CMU (UON): BEAM PARALLEL WITH WALL: 8"
  - BEAM PERPENDICULAR TO WALL: 6" AFTER INSTALLATION INFILL AROUND BEARING LOCATIONS AND SIDES OF LINTELS/BEAMS W,
  - CMU (TYP). PROVIDE 16" DEEP MINIMUM SOLID MASONRY BELOW ALL LINTEL AND BEAM BEARINGS.
  - ANCHOR BEAMS TO WALL. REINFORCE ALL BOND BEAMS WITH TWO #5 BARS CONTINUOUS AT BOTTOM. REINFORCING
  - TO BEND 2'-0" AROUND ALL CORNERS OR USE 4'-0" CORNER BARS. PROVIDE REINFORCED CONCRETE BLOCK LINTELS AT ALL UNFRAMED OPENINGS 3'-8" WIDE OF NARROWER WHERE NO STEEL LINTEL IS INDICATED. REINFORCE WITH ONE #5 PER 5" WALL
  - THICKNESS (2-#5 MINIMUM). END BEARINGS 8" MINIMUM. DOWEL ALL MASONRY WALL VERTICAL REINFORCING TO CONCRETE FOUNDATION BELOW.
  - 12. LAP SPLICES IN MASONRY SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON PLANS: BAR SIZE LAP LENGTH (MINIMUM) (MINIMUM) #3 1'-6" 2'-0" 2'-6" #5

3'-0"

- 3'-6" PROVIDE VERTICAL CONTROL JOINTS PER ARCHITECTURAL PLANS AND/OR ELEVATIONS. BOND BEAM REINFORCING TO BE CONTINUOUS THRU VERTICAL CONTROL JOINTS. HORIZONTAL JOINT REINFORCEMENT SHALL BE TERMINATED AT EACH SIDE OF VERTICAL CONTROL JOINTS. INSTALL PREFORMED CONTROL JOINT BACKING AND CAULK PER ARCHITECTURAL
- SPECIFICATIONS. 14. FURNISH BOND BEAM WITH 2-#5 OVER ALL MASONRY OPENINGS LESS THAN 6'-0" WIDE, NOT SHOWN, PROVIDE W8x10 FOR OPENINGS LARGER THAN 6'-0".
- CONCRETE BLOCK SHALL BE HOLLOW NORMAL WEIGHT LOAD-BEARING CONCRETE MASONRY UNITS CONFORMING TO ASTM C90 WITH A MINIMUM NEW AREA COMPRESSIVE STRENGTH OF
- . MORTAR: MORTAR MIX SHALL CONFORM TO REQUIREMENTS OF IBC TABLE 2103.7.0.2 AND ASTM C270, TYPE M OR S. TYPE S MORTAR SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1800 PSI AT 28 DAYS. TYPE M MORTAR SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI.
- ". GROUT: GROUT SHALL CONFORM TO REQUIREMENTS OF ASTM C476 FOR COARSE GROUT. US SUFFICIENT WATER FOR GROUT TO FLOW INTO ALL JOINTS OF THE MASONRY WITHOUT SEGREGATION. GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS. ALL CELLS IN CONCRETE BLOCK CONTAINING REINFORCING SHALL BE FILLED SOLID WITH GROUT.

#### STRUCTURAL STEEL:

- TOP OF STEEL FRAMING IS INDICATED ON PLAN BY ( ) WHICH INDICATES THE ELEVATION OF
- USE 3/4" DIA A325-N HIGH STRENGTH BOLTS AT ALL CONNECTIONS UNLESS LARGER DIA OR HIGHER STRENGTH BOLTS ARE REQUIRED BY DESIGN. INDEPENDENT AGENCY TO VISUALLY
- INPSECT INSTALLED BOLTS. COLUMN AND BEAM LEVELING PLATES SHALL NOT BE USED.
- BEAM TO BEAM AND BEAM TO COLUMN SHEAR CONNECTIONS SHALL BE DESIGNED BY STEEL FABRICATOR FOR LOADS SHOWN ON PLANS AND DETAILS. WHERE NO LOADS ARE SHOWN. DESIGN CONNECTIONS FOR 50% OF TOTAL ALLOWABLE UNIFORM LOAD PER AISC BEAM TABLES BASED ON SIZE AND SPAN OF CONNECTED BEAM (TYP).

COLUMN CAP PLATES ARE 3/4" THICK UNLESS NOTED. SLOPE TO MATCH BEAM SLOPE.

- STEEL FABRICATOR SHALL PROVIDE STRUCTURAL STEEL SHOP DRAWINGS INDICATING MEMBER SIZE, LAYOUT PLAN, WELDED CONNECTIONS, METERIAL STRENGTHS, WELD SIZES, BOLTED CONNECTIONS, ANCHOR BOLT SIZE/LOCATIONS, AND FINISH. DO NOT FIELD CUT, WELD OR MODIFY STRUCTURAL STEEL MEMBERS UNLESS SPECIFICALLY
- INDICATED ON APPRVED SHOP DRAWINGS WITHOUT WRITTEN APPROVAL FROM ENGINEER ALL STEEL PRIME PAINTED WITH "SHERWIN-WILLIAMS" PAINT. VERIFY WITH OWNER.
- ALL STEEL FABRICATION SHALL COMPLY W/ OSHA ERECTION STANDARDS SUBPART R, 29 CFR SUBPART R 1926.750 THROUGH 761.

#### **ROUGH CARPENTRY:**

- FASTEN MULTIPLE MEMBERS TOGETHER AS FOLLOWS (UNO):
- 2-MEMBER 3 ROWS OF 12d NAILS @ 12" O/C
- 3-MEMBER 3 ROWS OF 12d NAILS @ 12" O/C FROM EACH SIDE 4-MEMBER 2 ROWS OF 1/2"ØTHRU-BOLTS @ 12" O/C (2" FROM MEMBER EDGE) PROVIDE WOOD FRAMING CONNECTIONS PER THE INTERNATIONAL BUILDING CODE NAILING
- SCHEDULE (TABLE 2304.9.1) UNLESS NOTED OTHERWISE ON THE PLANS AND DETAILS. USE A MINIMUM OF ONE JAMB STUD AND ONE KING STUD AT EACH SIDE OF EACH WALL OPENING AT OPENINGS LESS THAN 6 FEET WIDE UNLESS NOTED OTHERWISE ON PLAN. USE TWO JAMB STUDS AND TWO KING STUDS AT EACH SIDE OF EACH WALL OPENING AT OPENINGS EQUAL TO OR GREATER THAN 6 FEET UNLESS NOTED OTHERWISE ON PLAN. SEE PLAN FOR HEADER SCHEDULE AND ADDITIONAL INFORMATION REGARDING FRAMED
- SECURELY BRACE ALL WOOD NON-BEARING PARTITION WALLS TO FLOOR OR ROOF FRAMING ABOVE WITH HORIZONTAL BLOCKING AND SIMPSON CLIPS ALLOWING VERTICAL MOVEMENT
- UNLESS NOTED OTHERWISE. WOOD TRUSSES ARE SHOWN ON THE PLAN AS A GENERAL LAYOUT ONLY, EXCEPT AT GIRDER LOCATIONS. GIRDER LOCATIONS SHALL REMAIN AS SHOWN UNLESS APPROVED BY THE ENGINEER OF RECORD AND THE CONTRACTOR IS NOTIFIED OF THE CHANGE PRIOR TO POURING FOUNDATIONS. WOOD TRUSS MANUFACTURER SHALL PROVIDE SHOP DRAWINGS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE THE PROJECT IS LOCATED.
- STAINLESS STEEL SCNR RING SHANK NAILS (OR EQUAL) TO ATTACH ALL ROOF TRUSS TO THEIR STUDWALL OR HEADER SUPPORT. ALL ROOF TRUSS TO ROOF GIRDER TRUSS CONNECTIONS SHALL BE DESIGNED AND SUPPLIED BY THE ROOF TRUSS MANUFACTURER. WOOD IN CONTACT WITH CONCRETE SHALL BE PRESERVATIVE TREATED. BOLT TREATED SILL PLATES TO CONCRETE FOUNDATION WALLS WITH SILL PLATE ANCHORS NOT MORE THAN 4 FEET APART. ANCHORS SHALL BE PLACED WITHIN 12" OF END OF SILL PLATE SECTION. EACH

USE LIGHT GAUGE METAL STAINLESS STEEL CONNECTORS FASTENED WITH SIMPSON

- SILL PLATE SECTION SHALL HAVE AT LEAST (2) ANCHORS. ALIGN WOOD TRUSSES DIRECTLY ABOVE STUDS AT EXTERIOR AND INTERIOR BEARING WALLS WHERE POSSIBLE. PROVIDE A MINIMUM OF TWO STUDS DIRECTLY BELOW 2-PLY GIRDER TRUSS BEARING AND A MINIMUM OF THREE STUDS DIRECTLY BELOW 3-PLY GIRDER TRUSS BEARING UNLESS NOTED OTHERWISE ON PLAN. BLOCK FLOOR TRUSS CAVITY WITH SOLID BLOCKING DIRECTLY BELOW MULTIPLE PLY STUDS TO TOP OF BEARING WALL/FOUNDATION WALL UNLESS NOTED OTHERWISE. (SOLID BLOCKING TYPICAL @ DOOR/WINDOW JAMBS, BELOW GIRDER TRUSS BRG - ETC.)
- ALL WALL SHEATHING AND BRACING SHALL BE IN PLACE PRIOR TO CONSTRUCTION OF THE FLOOR OR ROOF ABOVE.
- 0. ALL WALL OPENINGS SUCH AS WINDOWS AND DOOR OPENINGS SHALL BE COVERED AND REMAIN COVERED UNTIL THE ACTUAL WINDOWS AND DOORS ARE PLACED. . END JOINTS OF TOP PLATES SHALL BE OFFSET AT LEAST 48" AND NAILED WITH NOT LESS THAN (8) 16d FACE NAILS EACH SIDE OF JOINT.

- ALL WALL SHEATHING AND BRACING SHALL BE IN PLACE PRIOR TO CONSTRUCTING THE FLOOR OR ROOF ABOVE.
- ALL WALL OPENINGS SUCH AS WINDOWS AND DOOR OPENINGS SHALL BE COVERED AND REMAIN COVERED UNTIL THE ACTUAL WINDOWS AND DOORS ARE PLACED. EVERY THIRD STUD IN THE EXTERIOR WALLS TO BE CONNECTED TO THE BASE AND TOP ADDITIONAL TESTING AND INSPECTING, AT CONTRACTOR'S EXPENSE, WILL BE PREFORMED TO PLATES WITH "HURRICANE CLIPS AND THE FLOOR AND ROOF TRUSSES TO BE CONNECTED TO

THE BEARING PLATES WITH "HURRICANE CLIPS".

#### **WOOD JOISTS & BEAMS:**

ALL JOISTS AND BEAMS SHALL BE HEM-FIR, S4S AND SHALL COMPLY WITH THE LATEST EDITION OF THE GRADING RULES OF THE WESTERN WOOD PRODUCTS ASSOCIATION. ALL THE LUMBER SHALL BE STAMPED WITH THE GRADE MARK OF AN APPROVED LUMBER GRADING AGENCY. ALL WOOD MEMBERS SHALL CONFORM TO THE FOLLOWING GRADES:

2 x JOISTS HEM-FIR No. 2 Fb = 850 PSIFb = 1050 PSI4 x JOISTS HEM-FIR No. 1 POSTS & TIMBERS HEM-FIR No. 1 Fb = 950 PSI

PSL (PARALLEL STRAND LUMBER) FOR BEAMS AND HEADERS

MULTIPLE BEAMS SHALL BE FASTENED TOGETHER WITH 2 ROWS OF 16d NAILS AT 12" O/C. FOR BEAMS 14" AND DEEPER, FASTEN TOGETHER WITH 3 ROWS OF 16d MAILS AT 12" O/C.

LVL (LAMINATED VENEER LUMBER) FOR BEAMS AND HEADERS

Fb = 2600 PSI, E = 1,900,000 PSI

MULTIPLE BEAMS SHALL BE FASTENED TOGETHER WITH 2 ROWS OF 16d NAILS AT 12" O/C. FOR BEAMS 14" AND DEEPER, FASTEN TOGETHER WITH 3 ROWS OF 16d MAILS AT 12" O/C.

LSL (LAMINATED STRAND LUMBER) FOR BEAMS AND HEADERS

Fb = 1700 PSI, E = 1,300,000 PSI Fb = 2250 PSI, E = 1.500,000 PSI

MULTIPLE BEAMS SHALL BE FASTENED TOGETHER WITH 2 ROWS OF 16d NAILS AT 12" O/C. FOR BEAMS 14" AND DEEPER, FASTEN TOGETHER WITH 3 ROWS OF 16d MAILS AT 12" O/C.

#### PREFABRICATED (PRE-ENGINEERED) WOOD TRUSSES:

- FABRICATED WOOD TRUSSES SHALL BE DESIGNED FOR THE LOADS INDICATED ON THE PLAN BY THE TRUSS FABRICATOR IN ACCORDANCE WITH THE NATIONAL FOREST PRODUCTS ASSOCIATION AND THE TRUSS PLATE INSTITUTE DESIGN SPECIFICATION FOR METAL PLATE CONNECTED WOOD TRUSSES.
- TRUSS FABRICATOR MAY AT THEIR OPTION FURNISH DIFFERENT ARRANGEMENT OF TRUSS WEB MEMBERS, AS MAY BE ECONOMICAL FOR THEIR METHOD OF FABRICATION. FOR EACH ARRANGEMENT. THE TRUSS FABRICATOR SHALL FURNISH SHOP DRAWINGS INDICATING
- DESIGN AND DETAIL PRIOR TO FABRICATION. ALL WOOD TRUSSES SHALL BE FABRICATED PER TRUSS PLATE INSTITUTE STANDARDS. TRUSS
- DESIGN SHALL BE BY TRUSS FABRICATOR. TRUSS SUPPLIER SHALL LIMIT FLOOR/ROOF TRUSS DEFLECTIONS AS FOLLOWS:
- FLOOR TOTAL LOAD: SPAN/360 FLOOR LIVE LOAD: SPAN/480
- ROOF TOTAL LOAD: SPAN/240
- ROOF LIVE LOAD: SPAN/360 LOAD COMBINATIONS SHALL BE APPLIED IN ACCORDANCE WITH THE CURRENT ASCE 7-10 (MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES) STANDARD. INCREASED SNOW LOADS DUE TO UNBALANCED SNOW LOAD LOADING, DRIFTING AND/OR SLIDING FROM AN UPPER ROOF OF ROOF PROJECTION SHALL BE INCLUDE IN THE LOAD
- COMBINATIONS. ALL TRUSS TO TRUSS CONNECTIONS SHALL BE BY AN APPROPRIATE SIMPSON HANGER (OR EQUAL) SPECIFIED AND SUPPLIED BY THE TRUSS MANUFACTURER. SPECIAL HANGERS OR OTHER SPECIAL HARDWARE SHALL BE DESIGNED, DETAILED AND CERTIFIED BY THE TRUSS FABRICATOR'S ENGINEER. ALL SUCH CONNECTORS TO BE STAINLESS STEEL
- TRUSS FABRICATOR SHALL DESIGN AND INDICATE ON ERECTION DRAWINGS ALL REQUIRED BRACING & BRIDGING FOR TRUSSES. CONTRACTOR SHALL PROVIDE AND INSTALL SUCH IN ACCORDANCE WITH TRUSS FABRICATORS RECOMMENDATIONS. THIS SHALL BE IN ADDITION TO ANY BRACING ON A/E DRAWINGS. IN ADDITION TO BRIDGING, X-BRACING SHALL BE INSTALLED AT EVERY 20 FT HORIZONTALLY PERPENDICULAR TO TRUSSES FROM BRIDGING
- DOWN TO LOWER CHORD OF TRUSS BETWEEN 3 TRUSSES. TRUSS FABRICATOR TO COORDINATE WITH MECHANICAL LOCATION OF DUCTWORK. TRUSS FABRICATIOR SHALL SUBMIT TRUSS DESIGN DRAWINGS SIGNED AND SEALED BY A
- PROFFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE BUILDING IS LOCATED. 10. ALL METAL CONNECTOR PLATES, METAL HANGERS, METAL STRAPS, METAL TIE DOWNS, ETC. SHALL BE STAINLESS STEEL. UNLESS OTHERWISE NOTED.

#### **EARTHWORK:**

DURING EXCAVATION.

- NOTIFY ENGINEER OF RECORD IMMEDIATELY IF ANY OUESTIONABLE SOIL CONDITIONS ARE ENCOUNTERED DURING EXCAVATION. FOOTING ELEVATIONS AND SUBGRADE PREPARATION ARE SUBJECT TO CHANGE DEPENDING ON CONDITIONS ENCOUNTERED
- OWNER'S GEOTECHNICAL ENGINEER SHALL TEST AND/OR INSPECT SUBGRADE BELOW ALL FOOTING EXCAVATIONS PRIOR TO PROCEEDING WITH PLACEMENT OF FOOTINGS. NO FILL SHALL BE PLACED UNTIL EXCAVATION BOTTOM HAS BEEN INSPECTED AND TESTING IS COMPLETE. CONTRACTOR SHALL NOTIFY TESTING AGENCY 24 HOURS MINIMUM PRIOR TO
- ENGINEERED FILL BELOW FOOTINGS AND SLAB WHERE REQUIRED SHALL BE COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR UNLESS NOTED OTHERWISE ON PLANS OR SPECIFICATIONS.
- ALL FOOTINGS SHALL BEAR ON UNDISTURBED NATURAL SOIL OR ENGINEERED FILL CAPABLE OF SAFELY SUPPORTING A UNIFORM LOAD EQUAL TO THE ALLOWABLE SOIL BEARING PRESSURE STATED IN THE DESIGN NOTES.
- MATERIAL FOR BACKFILL SHALL BE CLEAN, FREE OF WOOD SCRAPS OR OTHER DELETERIOUS SUBSTANCES, PLACED IN 8" COMPACTED LIFTS. BACKFILLING AGAINST THE FOUNDATION WALLS SHALL BE DONE CAREFULLY TO AVOID DAMAGE TO THE FOUNDATION WALLS, FOOTINGS, PIPES, CONDUITS, ETC. IN LAYERS NOT EXCEEDING 12" THICK AND PROPERLY COMPACTED. EXTEND BACKFILL UP EVENLY ON EACH SIDE OF THE WALL. BASEMENT FOUNDATION WALLS OR OTHER WALLS WITH
- DIFFERENTIAL SOIL ELEVATIONS DESIGNED TO RETAIN EARTH NEED NOT BE BRACED PRIOR THE EXISTING ON-SITE SOIL IS SUITABLE MATERIAL, PROVIDED THAT IT CAN BE CONDITIONED AND PLACED DURING THE PREVAILING WEATHER CONDITIONS EXPECTED
- DURING THE BACKFILL OPERATIONS. CONTRACTOR MAY ASSUME THE USE OF THE ON-SITE MATERIALS EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE, AND THEN ONLY IF IT CAN BE PLACED TO THE SPECIFIED
- WATER CONTENT AND RELATIVE COMPACTION REQUIREMENTS. PROVIDE A MINIMUM 6" THICK DRAINAGE COURSE BELOW ALL INTERIOR FLOOR SLABS ON GRADE UNLESS NOTED OTHERWISE. DRAINAGE COURSE SHALL HAVE LESS THAN 10% PASSING THE #4 SIEVE. PROVIDE 10 MIL VAPOR BARRIER BETWEEN DRAINAGE COURSE
  - AND UNDERSIDE OF CONCRETE SLAB. CRUSHED STONE/GRAVEL AROUND DRAINTILE SYSTEM SHALL HAVE LESS THAN 10% PASSING THE #4 SIEVE UNLESS NOTED OTHERWISE.

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CONSULTANTS

CLIENT WILLISTON

COMMUNITY **BUILDERS** 

PROJECT DESCRIPTION WILLISTON WATER

WILLISTON STATE

ISSUE DATES

05/19/2023

MARK DESCRIPTION DATE 20224620 PROJECT NO: DRAWN BY:

CD CONSTRUCTION

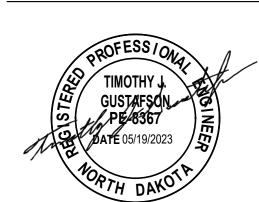
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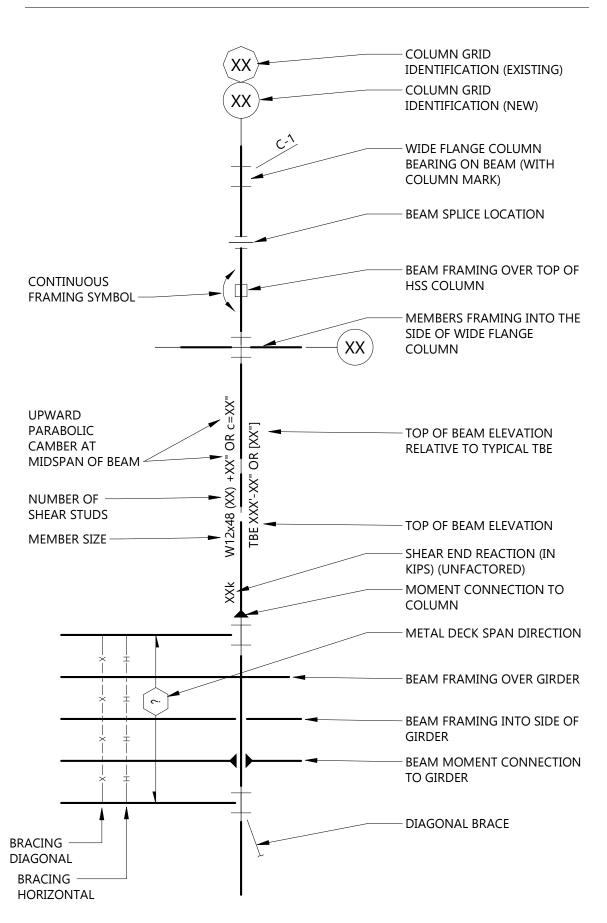
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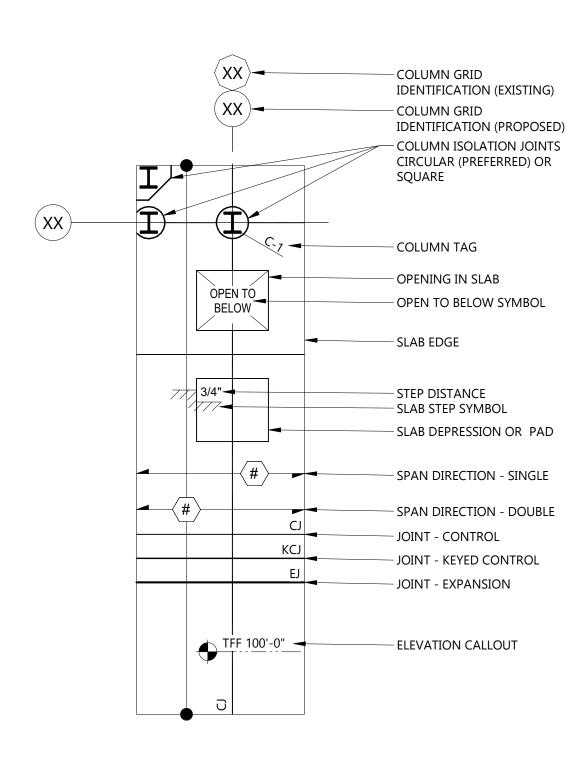


DRAWING TITLE STRUCTURAL GENERAL

### STEEL FRAMING LEGEND

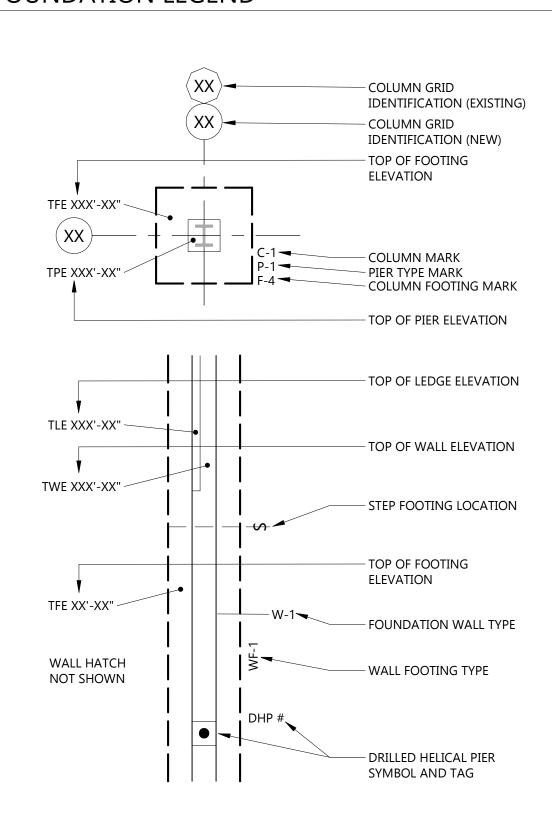


### STRUCTURAL SLAB LEGEND



SOME SYMBOLS, COMPONENTS OR TAGS IN THE LEGENDS ARE DUMMY ONES, USE THE ACTUAL SYMBOLS, COMPONENTS OR TAGS. IF THE ACTUAL DOESN'T WORK THEN USE THE DUMMY ONES.

### FOUNDATION LEGEND



Α		G		Q	
АВ	ANCHOR BOLT	GA	GAUGE	QTY	QUANTITY
ADDL	ADDITIONAL	GALV	GALVANIZED	<u> </u>	
ADH	ADHESIVE	GLB	GLUE-LAMINATED BEAM	R	
ADJ	ADJUSTABLE	GR	GRADE	R	RISER
ADJC	ADJACENT		0.0.02	RAD	RADIUS
AEFS	ARCHITECTURALLY EXPOSED	Н		RCP	REINFORCED CONCRETE PIPE
	FABRICATIONS STEEL	HC	HOLLOW CORE	RD	ROOF DRAIN
AESS	ARCHITECTURALLY EXPOSED	HEX	HEXAGONAL	REBAR	REINFORCING BAR
	STRUCTURAL STEEL	HGT	HEIGHT	REF	REFER(ENCE)
AFF	ABOVE FINISHED FLOOR	HORIZ	HORIZONTAL	REINF	REINFORC(E) (ED) (ING) (EMENT
AL	ALUMINUM	HPT	HIGH POINT	REM	REMOVABLE
ALT	ALTERNATE	HR	HANDRAIL	REQD	REQUIRED
ANC	ANCHOR(AGE)	HSS	HOLLOW STRUCTURAL SECTION	RF	ROOF
APPROX	APPROXIMATE	т		RO	ROUGH OPENING
ARCH	ARCHITECT(URAL)	I		C	
ASSY	ASSEMBLY	I/D	INSIDE DIAMETER	S	
	ASSEMBET	I/F	INSIDE FACE	S	S SHAPE
В		INFO	INFORMATION	SC	SOLID CORE
B/F	BOTH FACES	INS	INSULATION	SCHED	SCHEDULE
BBE	BEAM BEARING ELEVATION	INT	INTERIOR	SF	SQUARE FOOT
BFE	BOTTOM OF FOOTING	IT	INVERTED TEE	SIM	SIMILAR
BLDG	BUILDING	J		SL	SNOW LOAD
BLK(G)	BLOCK(ING)			SLV	SLEEVE
BM	BEAM	JBE	JOIST BEARING ELEVATION	SOG	SLAB-ON-GRADE
ВР	BENT PLATE	JST	JOIST	SPEC(S)	SPECIFICATION(S)
BRDG	BRIDG(E) (ING)	JT	JOINT	SQ	SQUARE
BRG	BEARING	K		SS	STAINLESS STEEL
BRK	BRICK	k	KIP	STD	STANDARD
BT	BENT	KCJ	KEYED CONTROL JOINT	STIF	STIFFENER
ВТМ	BOTTOM			STL	STEEL
BTOB	BACK-TO-BACK	KLF	KIP PER LINEAR FOOT	STRUCT	STRUCTUR(E) (AL)
БІОБ	BACK-10-BACK	КО	KNOCK OUT	SYM	SYMMETR(Y) (ICAL)
C		KSF	KIP PER SQUARE FOOT		STIVINIETK(T) (ICAL)
С	AMERICAN STANDARD CHANNEL	L		T	
C/C	CENTER TO CENTER	L	ANGLE	T&B	TOP AND BOTTOM
CAP	CAPACITY	LB	POUND	TBE	TOP OF BEAM ELEVATION
CF	CUBIC (FOOT) (FEET)	LIN	LINEAR	TCE	TOP OF COLUMN ELEVATION
CHAM	CHAMFER	LIIN	LIVE LOAD	TDE	TOP OF DECK ELEVATION
CHKD	CHECKED		LONG LEG HORIZONTAL	TEMP	TEMPERATURE/TEMPORARY
CIP	CAST-IN-FLACE	LLH	LONG LEG HORIZONTAL	TFE	TOP OF FOOTING ELEVATION
CJ	CONTROL/CONSTRUCTION JOINT	LLV		TFF	TOP OF FINISHED FLOOR
CJP	· · · · · · · · · · · · · · · · · · ·	LOC	LOCAT(E) (ION)	TGE	TOP OF GRATING ELEVATION
	COMPLETE JOINT PENETRATION	LONG	LONGITUDINAL(LY)	TJE	TOP OF JOIST ELEVATION
CL	CNETERLINE	LPT	LOW POINT	TLE	TOP OF LEDGE ELEVATION
CLR	CLEAR	LTL	LINTEL	TME	TOP OF MASONRY ELEVATION
CM	CONCRETE MASONEY LINE	LW	LIGHT WEIGHT	TO	TOP OF
CMU	CONCRETE MASONRY UNIT	LWC	LIGHT WEIGHT CONCRETE		TOP OF PIER ELEVATION
COL	COLUMN	M		TPE	
COMP	COMPOSITE	MAS	MASONRY	TRANS	TRANSVERSE
CONC	CONCRETE	MAX	MAXIMUM	TSE	TOP OF SLAB ELEVATION
CONN	CONNECT(ION)	MC	MISCELLANEOUS CHANNEL	TWE	TOP OF WALL ELEVATION
CONST	CONSTRUCTION	MECH	MECHANICAL	TYP	TYPICAL
CONT	CONTINU(E) (OUS) (ATION)	MEZZ	MEZZANINE	l lU	
CONTR	CONTRACTOR			UNO	UNLESS NOTED OTHERWISE
COORD	COORDINATE	MFR	MANUFACTURER	UON	UNLESS OTHERWISE NOTED
CORR	CORRIDOR	MIN	MINIMUM		ONLESS OFFICIALISE NOTES
D		MISC	MISCELLANEOUS	V	
	DOWN AND FROM CROUT	MTL	METAL	VAR	VARIES
D&E	DRILL AND EPOXY GROUT	N		VERT	VERTICAL
DBA	DEFORMED BAR ANCHOR	NIC	NOT IN CONTRACT	VIF	VERIFY IN FIELD
DBE	DECK BEARING ELEVATION	NO	NUMBER	VR	VAPOR BARRIER
DBL	DOUBLE	NOM	NOMINAL	١٨/	
DETL	DETAIL	NS	NEAR SIDE	W	
DIA	DIAMETER	NSG	NON-SHRINK GROUT	W	WIDE FLANGE SHAPE
DIAG	DIAGONAL	NTS	NOT TO SCALE	W/	WITH
DIM	DIMENSION	NW	NORMAL WEIGHT	W/O	WITHOUT
DL	DEAD LOAD	_	LACIMAL MEIGHT	WD	WOOD
DO	DITTO	0		WL	WIND LOAD
DR	DOOR	O/C	ON CENTER	WPT	WORK(ING) POINT
DT	DOUBLE TEE/DRAIN TILE	O/D	OUTSIDE DIAMETER	WS	WATER STOP
DWG(S)	DRAWING(S)	O/F	OUTSIDE FACE	WT	WEIGHT/STRUCTURAL TEE
DWL	DOWEL (REBAR)	ОН	OVERHEAD	WWF	WELDED WIRE FABRIC
E		OPG	OPENING	WWM	WELDED WIRE MESH
	[	OPP	OPPOSITE	X	
E/F	EACH FACE		[0.1.001.2	^	
E/S	EACH SIDE	P		XP(D)	EXPOSE(D)
E/W	EACH WAY	PAR	PARALLEL	SPEC	IAL SYMBOLS
EA	EACH	PC	PRECAST	#	POUND
EB	EXPANSION BOLT	PJP	PARTIAL JOINT PENETRATION	,	1 1
	EXPANSION JOINT	PL	PLATE	/	PER
EJ	ELEVATION	PLF	POUNDS PER LINEAL FOOT	@	AT
EL		PLWD	PLYWOOD	, a	DEGREE
EL EQ	EQUAL			Ø	DIAMETER
EL		PNL	PANEL	<b>€</b>	CENTERLINE
EL EQ	EQUAL				
EL EQ EQP	EQUAL EQUIPMENT	PNT	PAINT	_	ANGLE
EL EQ EQP ETR EX	EQUIPMENT EXISTING TO REMAIN	PNT PROJ	PAINT PROJECT(ION) (OR)		
EL EQ EQP ETR EX EXP	EQUAL EQUIPMENT EXISTING TO REMAIN EXISTING	PNT PROJ PSF	PAINT PROJECT(ION) (OR) POUNDS PER SQUARE FOOT		
EL EQ EQP ETR EX EXP EXT	EQUAL EQUIPMENT EXISTING TO REMAIN EXISTING EXPOSED/EXPANSION	PNT PROJ PSF PSI	PAINT PROJECT(ION) (OR) POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH		
EL EQ EQP ETR EX EXP	EQUAL EQUIPMENT EXISTING TO REMAIN EXISTING EXPOSED/EXPANSION	PNT PROJ PSF PSI PT	PAINT PROJECT(ION) (OR) POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POST TENSION(ED) (ING)		
EL EQ EQP ETR EX EXP EXT	EQUAL EQUIPMENT EXISTING TO REMAIN EXISTING EXPOSED/EXPANSION	PNT PROJ PSF PSI	PAINT PROJECT(ION) (OR) POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH		
EL EQ EQP ETR EX EXP EXT	EQUAL EQUIPMENT EXISTING TO REMAIN EXISTING EXPOSED/EXPANSION EXTERIOR	PNT PROJ PSF PSI PT	PAINT PROJECT(ION) (OR) POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POST TENSION(ED) (ING)		
EL EQ EQP ETR EX EXP EXT F	EQUAL EQUIPMENT EXISTING TO REMAIN EXISTING EXPOSED/EXPANSION EXTERIOR  FACE BRICK	PNT PROJ PSF PSI PT	PAINT PROJECT(ION) (OR) POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POST TENSION(ED) (ING)		
EL EQ EQP ETR EX EXP EXT F	EQUAL EQUIPMENT EXISTING TO REMAIN EXISTING EXPOSED/EXPANSION EXTERIOR  FACE BRICK FLOOR DRAIN	PNT PROJ PSF PSI PT	PAINT PROJECT(ION) (OR) POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POST TENSION(ED) (ING)		

FLOOR

FLANGE

FNDN FOUNDATION
FS FAR SIDE

FTG FOOTING

EAPC Architecture Engineering Interior Design

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CONSULTANTS

CLIENT WILLISTON **COMMUNITY** BUILDERS

PROJECT DESCRIPTION WILLISTON WATER WORLD

WILLISTON CITY ND STATE

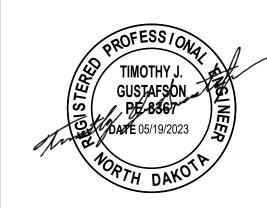
**ISSUE DATES** 

CD | CONSTRUCTION 05/19/2023 DOCUMENTS MARK DESCRIPTION DATE

20224620 PROJECT NO: WLM DRAWN BY: CHECKED BY:

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DRAWING TITLE STRUCTURAL LEGENDS AND ABBREVIATIONS

VERIFICATION & INSPECTION	CONTINUOUS	PERIODIC
1. INSPECTION OF REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT		Х
2. REINFORCING BAR WELDING:		
A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A 706		Х
B. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND		Х
C. INSPECT ALL OTHER WELDS	Х	
3. INSPECTION OF ANCHORS CAST INTO CONCRETE		Х
4. INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS		Х
A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARD INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS	Х	
B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED ABOVE		Х
5. VERIFYING USE OF REQUIRED DESIGN MIX		Х
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	Х	
7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	Х	
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		Х
9. INSPECTION OF PRESTRESSED CONCRETE FOR:		
A. APPLICATION OF PRESTRESSING FORCED; AND	N/A	
B. GROUTING OF BONDED PRESTRESSING TENDONS	N/A	
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS		N/A
11. VERIFICATION IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS		N/A
12. INSPECTION OF FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS PRIOR TO CONCRETE POUR		Х
NOTE 1: ALL SPECIAL INSPECTION IN ACCORDANCE WITH CURRENT IBC AND ACI STANDARDS		

VERIFICATION & INSPECTION	CONTINUOUS	PERIODI
PRIOR TO CONSTRUCTION, VERIFICATION OF COMPLIANCE OF SUBMITTALS.		Х
2. PRIOR TO CONSTRUCTION, VERIFICATION OF I'm AND I'aac EXCEPT WHERE SPECIFICALLY EXEMPTED THE CODE.	O BY	Х
3. DURING CONSTRUCTION, VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) WHEN SELF-CONSOLIDATING GROUT IS DELIVERED TO THE PROJECT SITE.	1 X	
4. AS MASONRY CONSTRUCTION BEGINS VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:		
A. PROPORTIONS OF SITE PREPARED MORTAR		Х
B. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES		Х
C. GRADE, TYPE AND SIZE OF REINFORCEMENT, CONNECTORS ANCHOR BOLTS AND PRESTRESSING TENDONS AND ANCHORAGE	G	Х
D. PRESTRESSING TECHNIQUE		-
E. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY	X (a)	X (b)
F. SAMPLE PANEL CONSTRUCTION		Х
5. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:		
A. GROUT SPACE		Х
B. PLACEMENT OF PRESTRESSING TENDONS AND ANCHORAGES		Х
C. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND ANCHOR BOLTS		Х
D. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS		Х
5. VERIFY COMPLIANCE OF THE FOLLOWING DURING CONSTRUCTION:		-
A. MATERIALS AND PROCEDURES WITH THE APPROVED SUBMITTALS		Х
B. PLACEMENT OF MASONRY UNITS AND MORTAR JOINT CONSTRUCTION		Х
C. SIZE AND LOCATION OF STRUCTURAL MEMBERS		Х
<ul> <li>TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHERS CONSTRUCTION.</li> </ul>		Х
E. WELDING OF REINFORCEMENT	X	
F. PERPETRATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F (44°C)) OR HOT WEATHER (TEMPERATURE ABOVE 90°F (32.2°C))		Х
G. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE	X	
H. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE	. X	
I. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS	X (a)	X (b)
7. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND OR PRISMS		Х

VERIFICATION & INSPECTION	CONTINUOUS	PERIODIO
VERIFY MATERIAL BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE DESIGN BEARING CAPACITY		Х
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL		Х
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS		Х
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	Х	
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY		Х

NOTE b: REQUIRED AFTER THE FIRST 5000 SQUARE FEET (A65 SQUARE METERS) OF AAC MASONRY

MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS, AND WASHERS:  . IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS  . MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED		
CONSTRUCTION DOCUMENTS		
MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED		
Will work to the total to the or the transfer of the transfer		
NSPECTION OF HIGH-STRENGTH BOLTING		
. SNUG-TIGHT JOINTS		
. PRETENSIONED AND SLIP-CRITICAL, JOINTS USING TURN-OF-NUT WITH MATCHMARKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION		١
. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITHOUT MATCHMARKING OR CALIBRATED WRENCH METHODS OF INSTALLATION	N/A	
MATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:		
FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360		
. FOR OTHER STEEL, IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS		
. MANUFACTURER'S CERTIFIED TEST REPORTS		
MATERIAL VERIFICATION OF WELD FILLER MATERIALS:		
. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS		
. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED		
NSPECTION OF WELDING		
. STRUCTURAL STEEL AND COLD-FORMED STEEL DECK		
COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS	Х	
2. MUTLIPASS FILLET WELDS	Х	
3. SINGLE-PASS FILLET WELDS >5/16"	Х	
4. PLUG AND SLOT WELDS	Х	
5. SINGLE-PASS FILLET WELDS OF 5/16" AND LESS		
6. FLOOR AND ROOF DECK WELDS		
. REINFORCING STEEL		
1. VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706		
2. REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES	Х	
3. SHEAR REINFORCEMENT	Х	
4. OTHER REINFORCING STEEL		
NSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE		
. DETAILS SUCH AS BRACING AND STIFFENING		N
. MEMBER LOCATIONS		Ν
. APPLICATION OF JOINT DETAILS AT EACH CONNECTION		Ν
E 1: ALL SPECIAL INSPECTION IN ACCORDANCE WITH CURRENT IBC AND AISC STANDARDS		
	OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION  PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITHOUT MATCHMARKING OR CALIBRATED WRENCH METHODS OF INSTALLATION  ATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:  FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360  FOR OTHER STEEL, IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS  MANUFACTURER'S CERTIFIED TEST REPORTS  ATERIAL VERIFICATION OF WELD FILLER MATERIALS:  IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS  MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED  ISPECTION OF WELDING  STRUCTURAL STEEL AND COLD-FORMED STEEL DECK  1. COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS  2. MUTLIPASS FILLET WELDS  3. SINGLE-PASS FILLET WELDS > 5/16"  4. PLUG AND SLOT WELDS  5. SINGLE-PASS FILLET WELDS OF 5/16" AND LESS  6. FLOOR AND ROOF DECK WELDS  REINFORCING STEEL  1. VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706  2. REINFORCING STEEL  1. VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706  2. REINFORCING STEEL  1. VERIFICATION OF STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES  3. SHEAR REINFORCEMENT  4. OTHER REINFORCEMENT  4. OTHER REINFORCING STEEL  ISPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE  DETAILS SUCH AS BRACING AND STIFFENING  MEMBER LOCATIONS  APPLICATION OF JOINT DETAILS AT EACH CONNECTION	OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION  PRETENSIONED AND SUP-CRITICAL JOINTS USING TURN-OF-NUT WITHOUT MATCHMARKING OR CALIBRATED WERNCH METHODS OF INSTALLATION  ATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:  FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AIST 360  FOR OTHER STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AIST STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS  MANUFACTURER'S CERTIFIED TEST REPORTS   ATERIAL VERIFICATION OF WELD FILLER MATERIALS:  IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED   CONSTRUCTURAL STEEL AND COLD-FORMED STEEL DECK  1. COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS  2. MUTLIPASS FILLET WELDS  3. SINGLE-PASS FILLET WELDS  3. SINGLE-PASS FILLET WELDS  5. SINGLE-PASS FILLET WELDS OF 5/16" AND LESS  6. FLOOR AND ROOF DECK WELDS  7. REINFORCING STEEL  1. VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706   2. REINFORCING STEEL  1. VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706   2. REINFORCING STEEL  1. VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706   2. REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES  3. SHEAR REINFORCEMENT  4. OTHER REINFORCEMENT  5. SIPCETION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE  DETAILS SUCH AS BRACING AND STIFFENING   DETAILS SUCH AS BRACING AND STIFFENING  MEMBER LOCATIONS  APPLICATION OF JOINT DETAILS AT EACH CONNECTION   AND JOINT MATERIAL JOINT DETAILS AT EACH CONNECTION   AND JOINT MATERIAL JOINT DETAILS AT EACH CONNECTION   AND

INSPECTION TASKS PRIOR TO WELDING	QUALITY ASSURANCE	QUALITY CONTROL
WELDER QUALIFICATION RECORDS AND CONTINUITY RECORDS	0	Р
2. WSP AVAILABLE	Р	Р
3. MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	Р	Р
4. MATERIAL IDENTIFICATIONS (TYPE/GRADE)	0	0
5. MATERIAL IDENTIFICATIONS SYSTEM (a)	0	0
<ul> <li>6. FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY)</li> <li>JOINT PREPARATOINS</li> <li>DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)</li> <li>CLEANLINESS (CONDITION OF STEEL SURFACE)</li> <li>TACKING (TACK WELD QUALITY AND LOCAITON)</li> <li>BACKING TYPE AND FIT (IF APPLICABLE)</li> </ul>	0	0
<ul> <li>7. FIT-UP OF CJP GROOVE WELDS OF HSS, T-, Y- AND K- JOINTS WITHOUT BACKING (INCLUDING J GEOMETRY)</li> <li>• JOINT PREPARATIONS</li> <li>• DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)</li> <li>• CLEANLINESS (CONDITION OF STEEL SURFACE)</li> <li>• TACKING (TACK WELD QUALITY AND LOCATION)</li> </ul>	OINT O	Р
8. CONFIGURATION AND FINISH OF ACCESS HOLES	0	0
9. FIT-UP OF FILLET WELDS  • DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)  • CLEANLINESS (CONDITION OF STEEL SURFACE  • TACKING (TACK WELD QUALITY AND LOCATION)	0	0
10. CHECK WELDING EQUIPMENT		0

NOTE a: THE FABRICATOR OR ERECTOR, AS APPLICABLE, SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. STAMPS, IF USED, SHALL BE THE LOW--STRESS TYPE.

NOTE 1: ALL SPECIAL INSPECTION IN ACCORDANCE WITH CURRENT IBC AND ACI STANDARDS

INSPECTION TASKS DURING WELDING	QUALITY ASSURANCE	QUALITY CONTROL
<ul> <li>1. CONTROL AND HANDLING OF WELDING CONSUMABLES</li> <li>PACKAGING</li> <li>EXPOSURE CONTROL</li> </ul>	0	0
2. NO WELDING OVER CRACKED TACK WELDS	0	0
3. ENVIRONMENTAL CONDITIONS  • WIND SPEED WITH LIMITS  • PRECIPITATION AND TEMERATURE	0	0
4. WPS FOLLOWED  • SETTINGS ON WELDING EQUIPMENT  • TRAVEL SPEED  • SELECTED WELDING MATERIALS  • SHIELDING GAS TYPE/FLOW RATE  • PREHEAT APPLIED  • INTERPASS TEMPERATURE MAINTAINED (MIN/MAX)  • PROPER POSITIONS (F, V, H, OH)	0	0
5. WELDING TECHNIQUES  • INTERPASS AND FINAL CLEANING  • EACH PASS WITHIN PROFILE LIMITATIONS  • EASH PASS MEETS QUALITY REQUIREMENTS	0	0
6. PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	Р	Р

INSPECTION TASKS DURING WELDING	QUALITY ASSURANCE	QUALITY CONTROL
1. WELDS CLEANED	0	0
2. SIZE, LENGTH, AND LOCATION OF WELDS	Р	Р
3. WELDS MEET VISUAL ACCEPTANCE CRITERIA  • CRACK PROHIBITION  • WELD/BASE METAL FUSION  • CRATER CROSS SECTION  • WELD PROFILE  • WELD SIZE  • UNDERCUT  • POROSITY	P	P
4. ARC STRIKES	Р	Р
5. K-AREA <sup>(a)</sup>	Р	Р
6. WELD-ACCESS HOLES IN ROLLED HEAVY SHAPED AND BUILT-UP HEAVY SHAPES(b)	Р	Р
7. BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	Р	Р
8. REPAIR ACTIVITIES	Р	Р
9. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	Р	Р
10. NO PROHIBITED WELDS HAVE BEEN ADDED WITHOUT THE APPROVAL OF THE EOR	0	0
NOTE: "P" DENOTES PERFORM; "O" DENOTES OBSERVE	·	
NOTE a: WHEN WELDING OF DOUBLE PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFO INSPECT THE WEB K-AREA FOR CRACKS WITHIN 3 IN (75 MM) OF THE WELD	RMED IN THE K-AREA. VISU	IALLY

INSPECTION TASKS PRIOR TO BOLTING	QUALITY ASSURANCE	QUALITY CONTROL
MANUFACTURERS CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	Р	0
2. FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	0	0
3. CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE)	0	0
4. CORRECT BOLTING PROCEDURES SELECTED FOR JOINT DETAILS	0	0
5. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS		
6. PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	0	Р
7. PROTECTED STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS, AND OTHER FASTENER COMPONENTS	0	0
NOTE: "P" DENOTES PERFORM; "O" DENOTES OBSERVE		

INSPECTION TASKS DURING TO BOLTING	QUALITY ASSURANCE	QUALITY CONTROL
1. FASTENER ASSEMBLIES PLACED IN ALL HOLES AND WASHERS ARE POSITIONED AS REQUIRED	0	0
2. JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRE-TENSIONING OPERATION	0	0
3. FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	0	0
4. FASTENERS ARE PRE-TENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	0	0

INSPECTION TASKS AFTER BOLTING 1		
INSPECTION TASKS AFTER TO BOLTING	QUALITY ASSURANCE	QUALITY CONTROL
1. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	Р	Р
NOTE: "P" DENOTES PERFORM; "O" DENOTES OBSERVE	•	•
NOTE 1: ALL SPECIAL INSPECTION IN ACCORDANCE WITH CURRENT IBC AND ACI STANDARDS		

REQUIRED SPECIAL INSPECTION AND TESTS FOR WIND RESIST WIND-RESISTING COMPONETS <sup>1</sup>	ANCE ON	
ТҮРЕ	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. FASTENING OF ROOF COVERING, ROOF DECK, ROOF FRAMING CONNECTIONS, EXTERIOR WALL COVERING AND WALL CONNECTIONS TO ROOF AND FLOOR DIAPHRAGM AND FRAMING	-	Х
NOTE 1: ALL SPECIAL INSPECTION IN ACCORDANCE WITH CURRENT IBC AND ACI STANDARDS	•	

REQUIRED SPECIAL INSPECTION AND TESTS OF WOOD CONST	RUCTION	1
ТҮРЕ	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. SPECIAL INSPECTION OF PREFABRICATED WOOD STRUCTURAL ELEMENTS AND ASSEMBLIES SHALL BE IN ACCORDANCE WITH SECTION 1704.2.5 OF THE IBE 2018.	-	Х
2. OWNER WILL ENGAGE A QUALIFIED SPECIAL INSPECTOR TO VERIFY TEMPORARY INSTALLATION RESTRAINT/BRACING AND THE PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT/BRACING INSTALLED IN ACCORDANCE WITH THE APPROVED TRUSS SUBMITTAL PACKAGE.	-	Х
NOTE 1: ALL SPECIAL INSPECTION IN ACCORDANCE WITH CURRENT IBC AND ACI STANDARDS		



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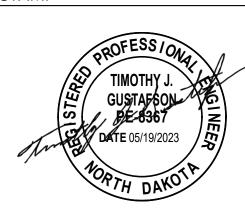
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SPECIAL INSPECTION
TABLES

			CING		
MARK	WIDTH	MATERIAL	VERTICAL	HORIZONTAL	REMARKS
W-1	8"	CONC	#5 @ 32" O/C	#4 @ 12" O/C	
W-2	1'-0"	CONC	#5 @ 24" O/C (2 CURTAINS)	#4 @ 12" O/C	4" BRICK LEDGE @ 100'-0 @ PIT AREA
W-3	8"	CONC	#5 @ 24" O/C	#4 @ 12" O/C	
W-4	8"	CONC	#5 @ 24" O/C MAX	#4 @ 12" O/C	SPACE REINF TO AVOID PIPE SLEEVES, IN WALL CONC BEAM @ TOP OF

KEYNOTE LEGEND:	
-----------------	--

- < < INDICATES KEYNOTE ON PLAN
  </p>
- 01 8" CONCRETE FOUNDATION WALL
- 02 12" CONCRETE FOUNDATION WALL W/ 4" BRICK LEDGE
- 03 \$ INDICATES STEP IN FOOTING. SEE DETAIL 16/S601
- 04 HSS4x4x3/8 STEEL COLUMN ON CONCRETE PIER. SEE 17/S601 FOR BASEPLATE
- 05 HSS5x5x1/4" STEEL COLUMN ON CONCRETE PIER. SEE 17/S601 FOR BASEPLATE

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TOP OF FOOTING ELEVATION = 95'-0" U.O.N.

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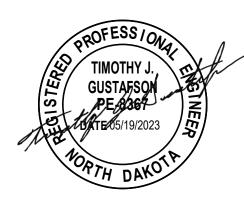
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DRAWING TITLE
FOUNDATION PLAN

**S200** 

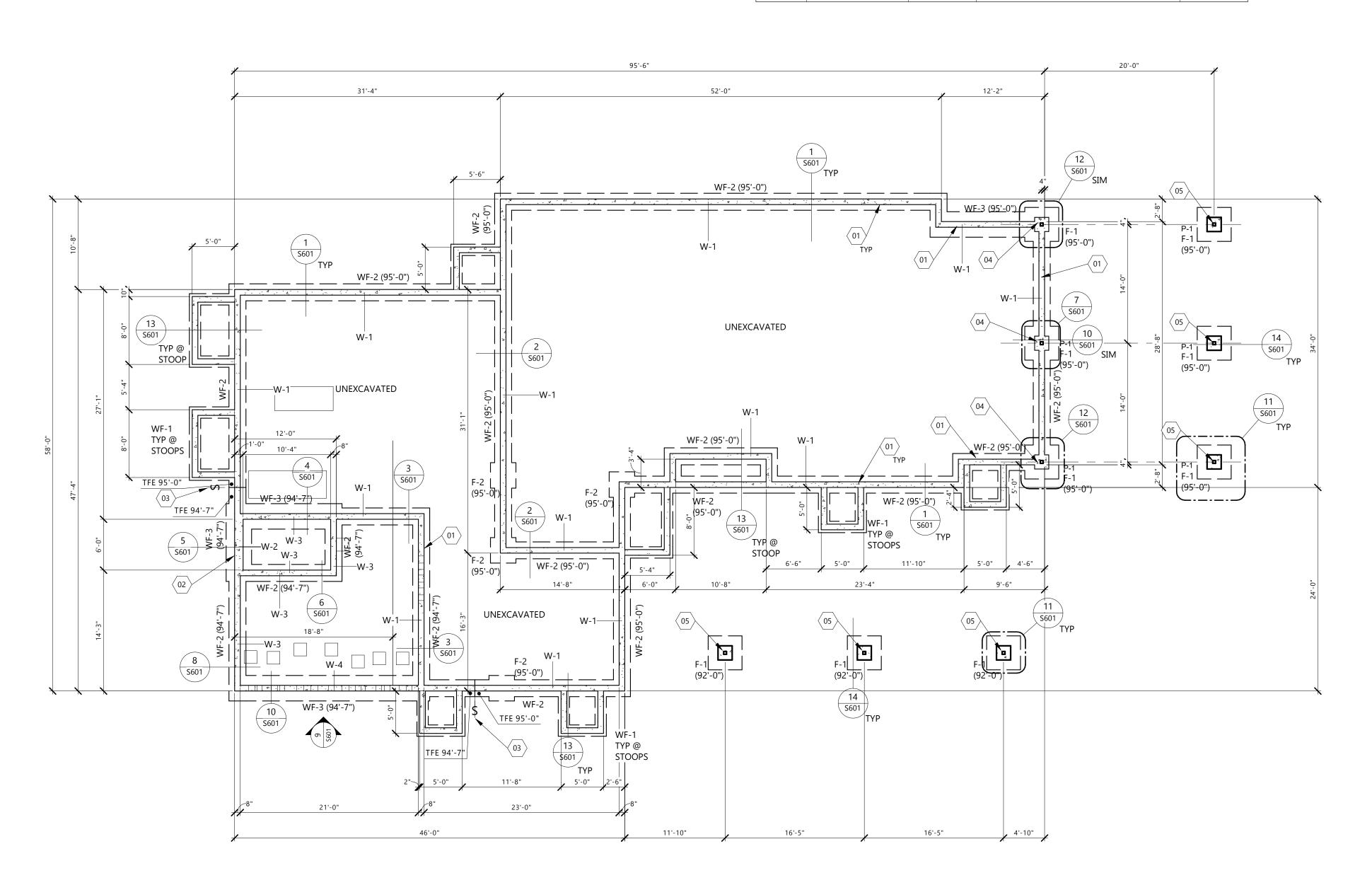
NOTES:

 VERTICAL BARS TO EXTEND 3'-0" ABOVE TOP OF WALL @ CMU WALL LOCATIONS
 ALIGN VERTICAL FOUNDATION WALL REINFORCING WITH CMU WALL VERTICAL REINFORCING ABOVE. EXTEND VERTICAL REINFORCING 2'-6" MINIMUM ABOVE TOP OF WALL AT CMU WALL LOCATIONS

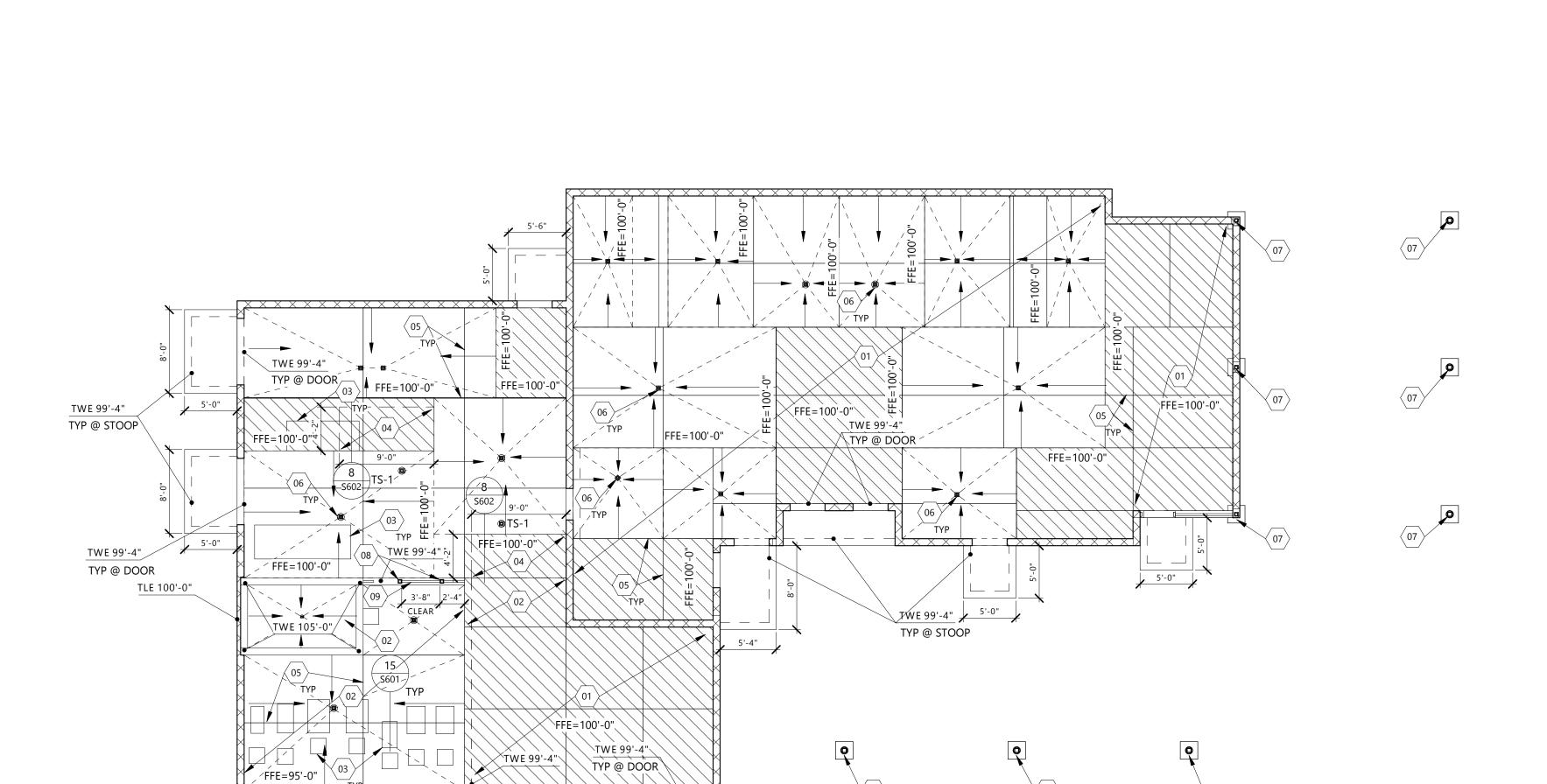
ONTINUOUS FOOTING SCHEDULE						
FOOTING SIZE			REINFORCING			
ИARK	WIDTH	THICKNESS	LONGITUDINAL	TRANSVERSE	REMARKS	
WF-1	1'-4"	1'-0"	(2) #5			
WF-2	2'-0"	1'-0"	(3) #5			
WF-3	3'-0"	1'-0"	(4) #5	#5 @ 32" O/C		

CONCRETE PIER SCHEDULE						
		REINFO				
MARK	PIER SIZE	VERTICAL	TIE SIZE/SPACING	REMARKS		
P-1	20" x 20"	(8) -#5	#3 TIES 3" O/C TOP 12", 12" O/C THEREAFTER	TPE 99'-4"		

SPREAD FOOTING SCHEDULE						
	FOOTING					
MARK	SIZE	THICKNESS	REINFORCING	REMARKS		
F-1	4'-0"x4'-0"	12"	#5 @ 12" O/C EACH WAY TOP AND BOTTOM			
F-2	3'-0"x3'-0"	12"	#5 @ 12" O/C EACH WAY			







KEYNOTE LEGEND:

< < < INDICATES KEYNOTE ON PLAN</p>

01 4" THICK CONCRETE SLAB-ON-GRADE W/ #3 @ 18" O/C EACH WAY.

02 5" THICK CONCRETE SLAB-ON-GRADE W/ #4 @ 16" O/C EACH WAY.

O3 CONCRETE EQUIPMENT PAD. COORDINATE THICKNESS AND DIMENSIONS W/ MECHANICAL CONTRACTOR. SEE DETAIL 15/S601 (TYPICAL).

MECHANICAL CONTRACTOR. SEE DETAIL 15/5601 (TYPICAL).

04 THICKENED SLAB 4'-2" x 9'-0" x 1'-0" THICK W/ #5 @ 12" O/C EACH WAY @ BOTTOM. COORDINATE LOCATION W/ MECHANICAL CONTRACTOR.

05 CONTROL JOINT.

06 FLOOR DRAIN. COORDINATE LOCATION W/ MECH.

07 STEEL COLUMN.

08 HSS4x4x1/4" COLUMN

09 REMOVABLE GUARD RAIL

ARROWS AND DASHED LINES INDICATE SLOPE TO DRAIN

SOLID LINES INDICATE CONTROL JOINTS

HATCHED AREAS DENOTE FLAT SLAB ON GRADE @ 100'-0"

TOP OF WALL ELEVATION 100'-0" U.O.N.

TOP OF WALL ELEVATION @ DOOR 99'-4" U.O.N.

TOP OF WALL ELEVATION 99'-4" @ STOOP

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STAN



DRAWING TITLE
FIRST FLOOR SLAB
PLAN

**S201** 

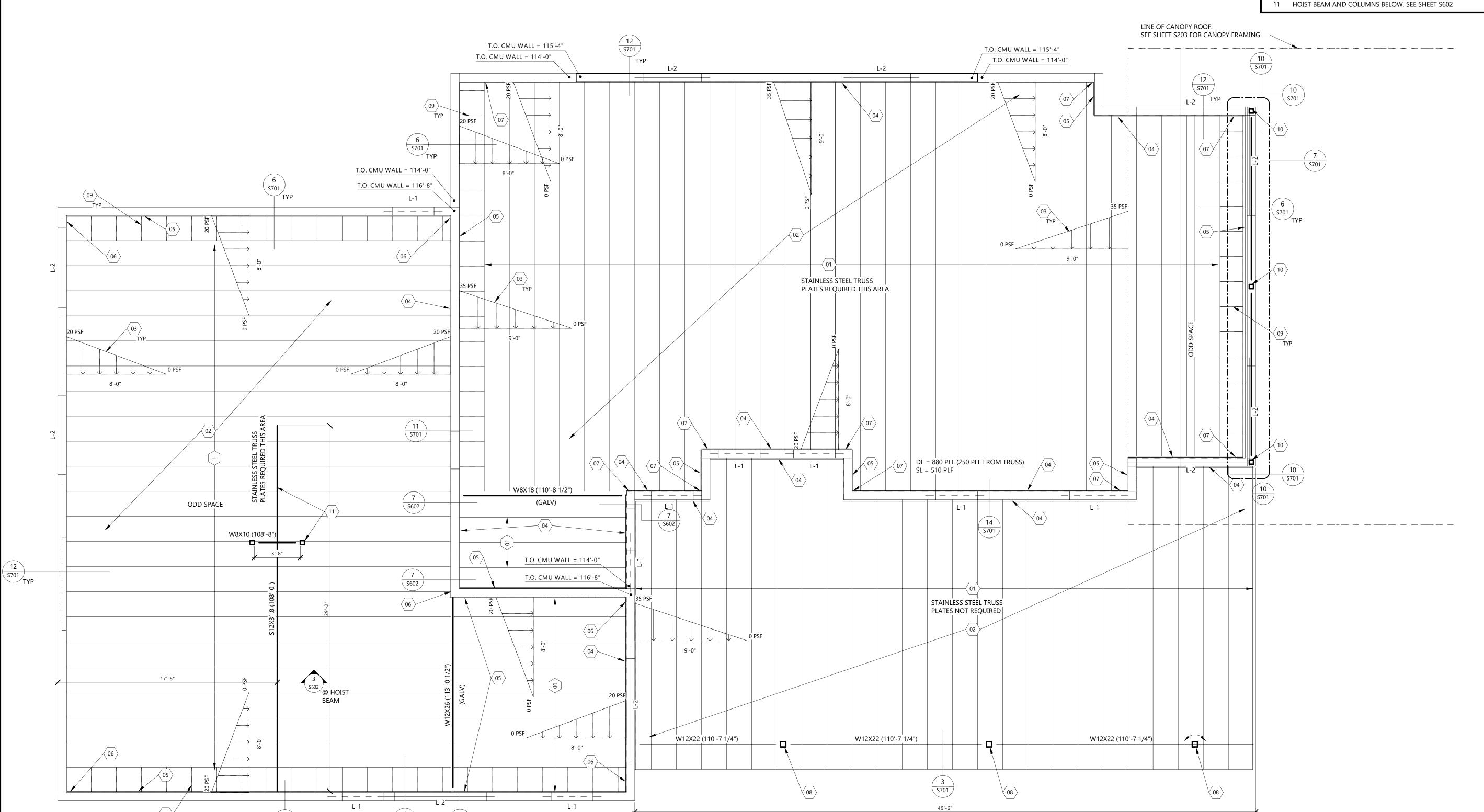
FIRST FLOOR SLAB PLAN

LINTEL SCHEDULE					
MARK	SIZE	MATERIAL	BEARING	REMARKS	
L-1	8"x8"	CMU	8" MINIMUM EACH END	DETAIL 9/S701	
L-2	W8x10	STEEL	6 1/2"x 6 1/2"x 3/8" STEEL PLATE	DETAIL 8/S701	

#### KEYNOTE LEGEND:

< < < INDICATES KEYNOTE ON PLAN</p>

- 01 PRE-ENGINEERED WOODEN ROOF TRUSSES @ 24" O/C. EXCEPT WHERE NOTED, (ALL METAL TRUSS CONNECTOR PLATES TO BE STAINLESS STEEL).
- 15/32" APA RATED ROOF SHEATHING (SPAN RATING 24/16). APPLY PANELS W/
  STRONG AXISS PERPANDICULAR TO ROOF FRAMING. SUPPORT PANEL EDGES @ MID
  SPAN BETWEEN TRUSSES W/ SIMPSON PSCA 15/32" SHEATHING CLIPS. FASTEN TO
  ROOF FRAMING W/ 8d NAILS @ 6" O/C AT PANEL EDGES AND 12" O/C AT
  INTERMEDIATE SUPPORTS.
- 03 SNOW DRIFT LOAD. THIS LOAD IS IN ADDITION TO BASE SNOW LOAD.
- 04 (2) 2x8 SYP NO. 2 (TREATED) LEDGER @ BOTTOM CHORD. (1) 2x6 SYP NO. 2 (TREATED) LEDGER @ TOP CHORD.
- 05 (1) 2x4 SYP NO. 2 (TREATED) LEDGER @ BOTTOM CHORD. (2) 2x6 SYP NO. 2 (TREATED) LEDGER @ TOP CHORD.
- 06 TRUSS BOTTOM CHORD ELEV = 112'-0". TRUSS BEARING ELEV @ LEDGER = 112'-7 1/4"
- 07 TRUSS BOTTOM CHORD ELEV = 110'-0". TRUSS BEARING ELEV @ LEDGER = 110'-7 1/4"
- 08 HSS 6x6x5/8" COLUMN
- 09 2x6 BLOCKING @ 24" O/C
- 10 HSS4x4x3/8" COLUMN
- 11 LIGICT DEAM AND COLLINANC DELOW. CEE CLIEFT C



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DRAWING TITLE
ROOF FRAMING PLAN

**S202** 

1 ROOF FRAMING PLAN

1/4" = 1'-0"

## <u>1</u> \$701 TBE 117'-10 1/2" (SLOPED) W12X30 5 S701 TYP TBE 115'-11 5/8" 4 S701 SIM \$701 SIM SEE SHEET S202 FOR ROOF FRAMING STAINLESS STEEL TRUSS PLATES NOT REQUIRED TBE 115'-11 5/8" W12X30 TBE 117'-10 1/2" S701 16 \$701 2 \$701 15 \$701 S701 TYP TBE 115'-11 5/8" TBE 117'-10 1/2" (SLOPED) W12X30 4 5701 SIM 20'-4" 28'-0"

1 CANOPY FRAMING - HIGH ROOF

1/4" = 1'-0"

KEYNOTE LEGEND:

< < < INDICATES KEYNOTE ON PLAN</p>

- 01 PRE-ENGINEERED WOODEN ROOF TRUSSES @ 24" O/C. EXCEPT WHERE NOTED, (ALL METAL TRUSS CONNECTOR PLATES TO BE STAINLESS STEEL).
- 02 15/32" APA RATED ROOF SHEATHING (SPAN RATING 24/16). APPLY PANELS W/
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  SPAN BETWEEN TRUSSES W/ SIMPSON PSCA 15/32" SHEATHING CLIPS. FASTEN TO
  ROOF FRAMING W/ 8d NAILS @ 6" O/C AT PANEL EDGES AND 12" O/C AT
  INTERMEDIATE SUPPORTS.

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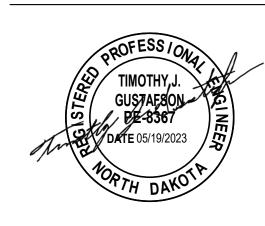
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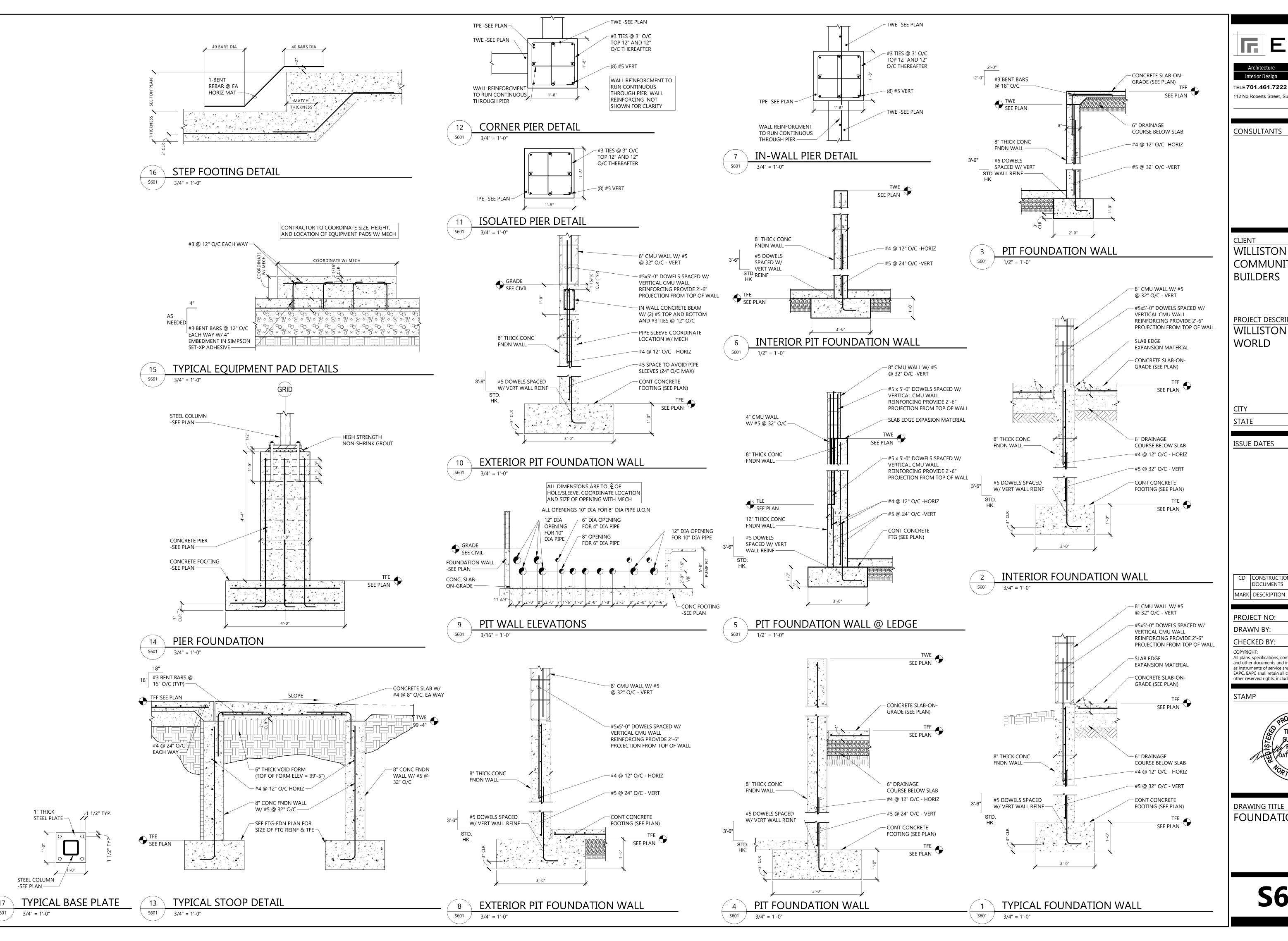
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PROJECT DESCRIPTION WILLISTON WATER

WILLISTON CITY ND STATE

**ISSUE DATES** 

CD CONSTRUCTION 05/19/2023 DOCUMENTS

DATE

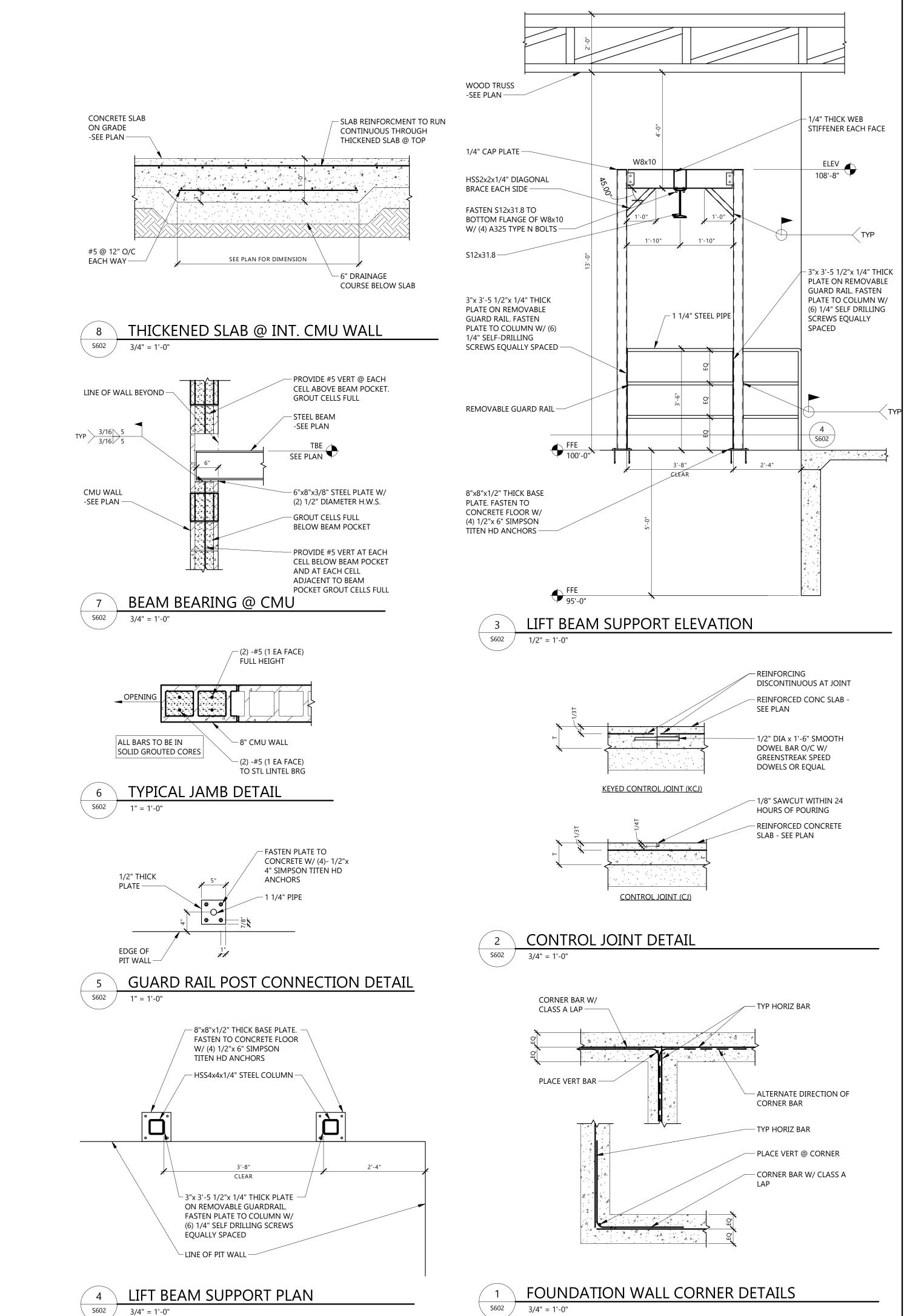
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PROJECT DESCRIPTION
WILLISTON WATER
WORLD

CITY WILLISTON
STATE ND

ISSUE DATES

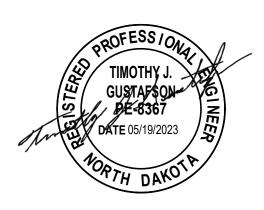
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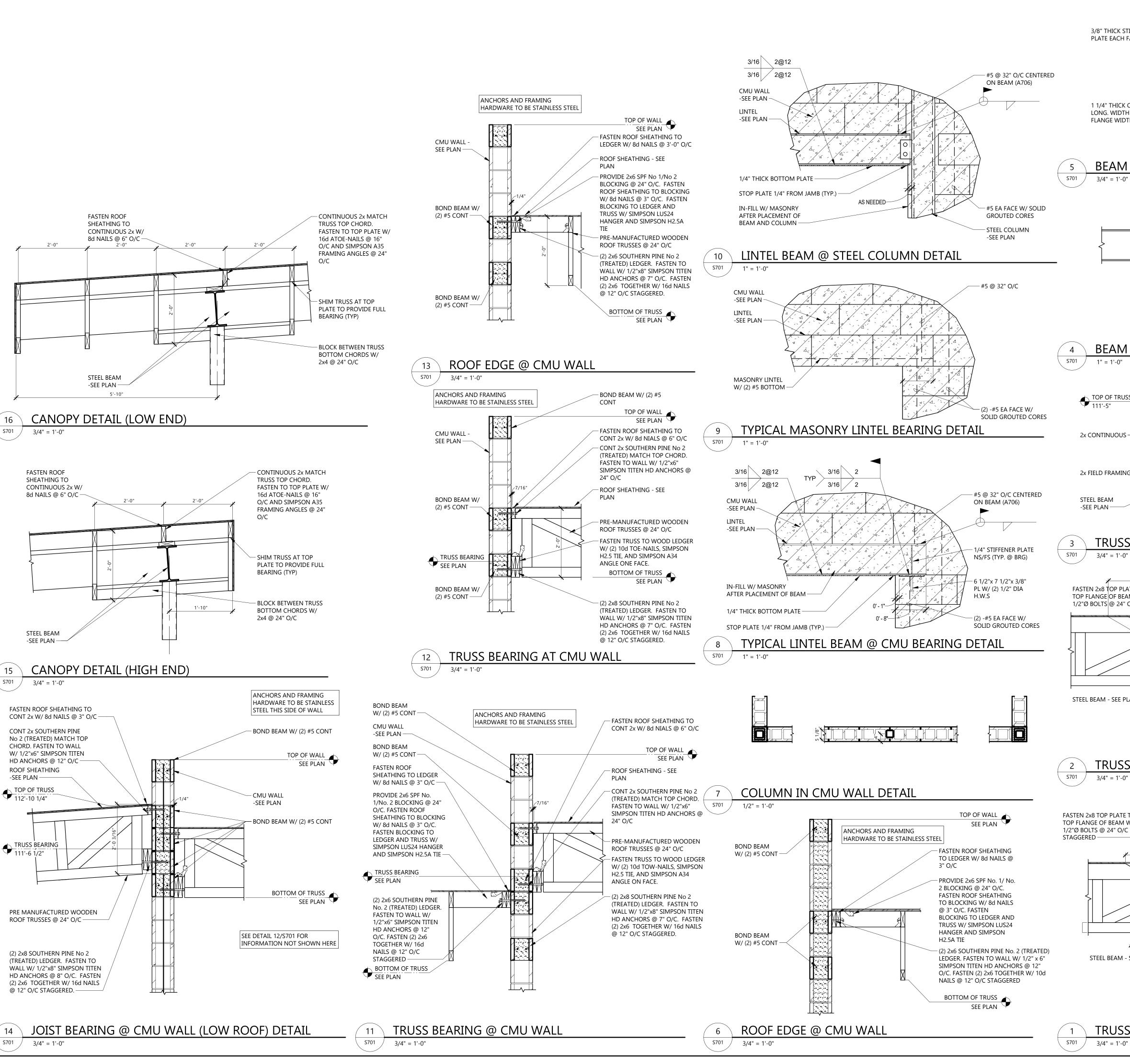
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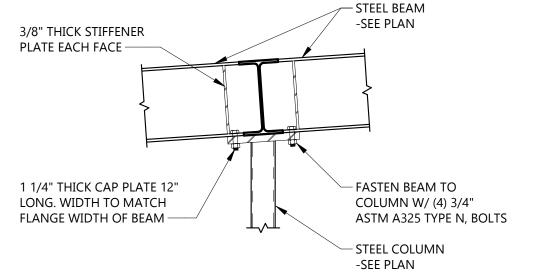
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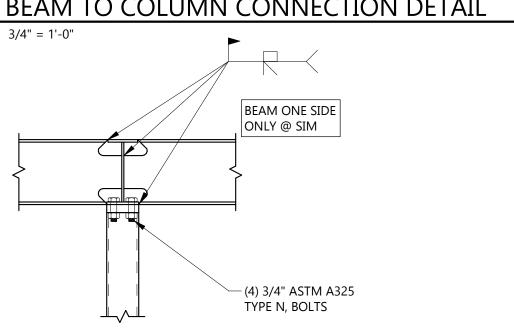


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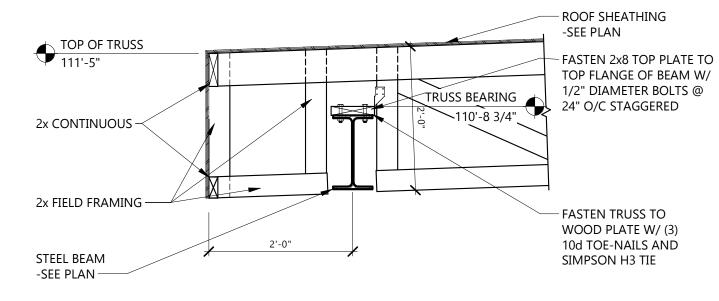




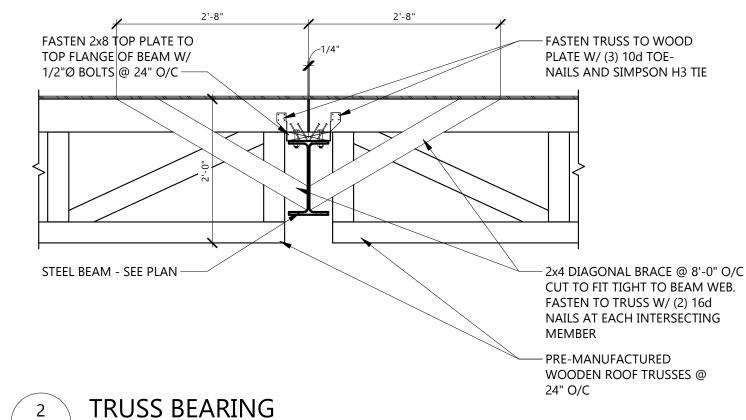
BEAM TO COLUMN CONNECTION DETAIL

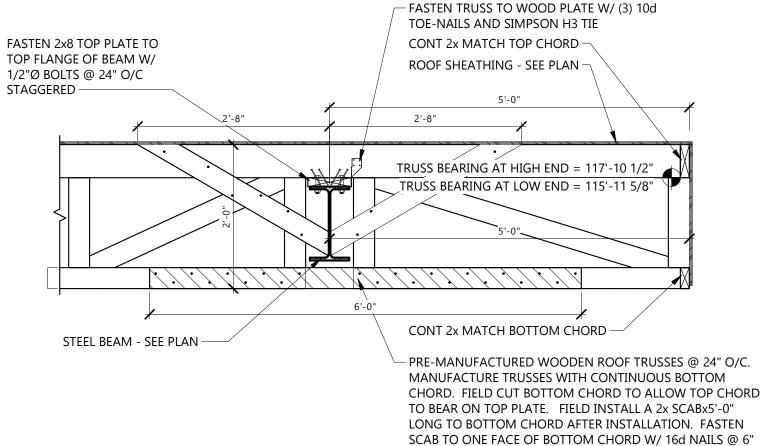


BEAM TO BEAM CONNECTION DETAIL



TRUSS BEARING DETAIL





O/C STAGGERED

TRUSS BEARING DETAIL

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WILLISTON CITY ND STATE

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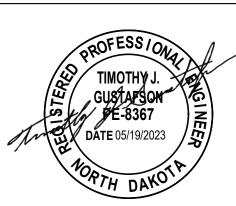
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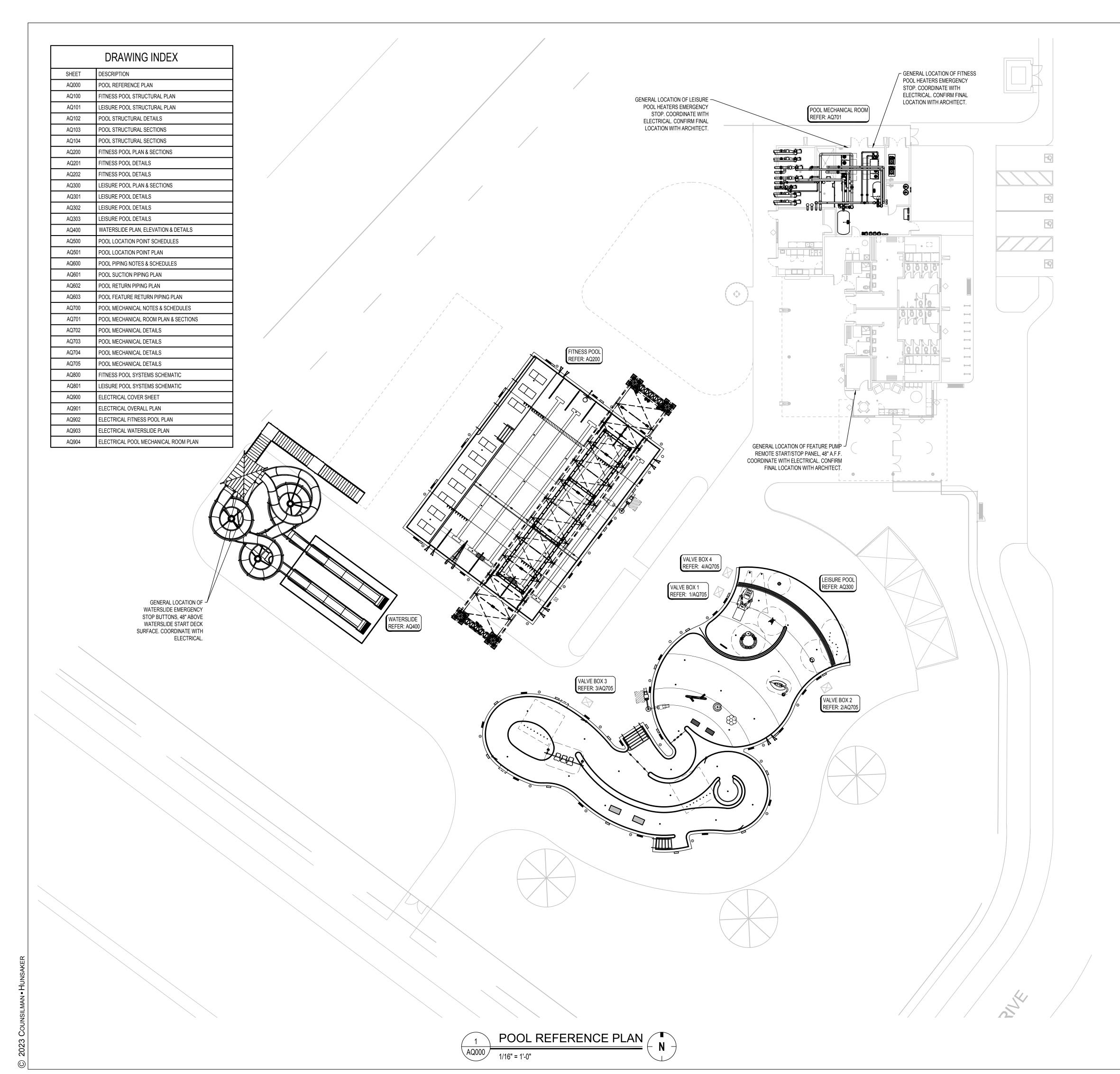
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	DESIGN I	DATA	
	UNITS	FITNESS POOL	LEISURE POOL
LENGTH	FT.	75'-0 3/4"	VARIES
WIDTH	FT.	55'-0"	VARIES
WATER SURFACE AREA	SQ. FT.	4,128	4,653
PERIMETER	FT.	260	405
VOLUME	GALLON	125,496	91,687
RECIRCULATION SYS	STEM		
POOL TURNOVER RATE	HOUR	3.98	1.91
RECIRCULATION RATE	GPM	525	800
SEWER CAPACITY	GPM	REFER TO PLUMBING	REFER TO PLUMBING
BATHER LOAD	PERSON	219	261
MAXIMUM FACILITY BATHER LOAD	PERSON	4	80

#### GENERAL POOL NOTES

- 1. DENOTES WATER DEPTH FROM WATER LEVEL.
- POOL FINISH MUST BE A PROPRIETARY AGGREGATE PLASTER WITH A 6"
  CERAMIC TILE BAND WITH A CAST-IN-PLACE PERIMETER COPING AND TILE DECK
  MARKINGS
- 3. ALL POOL FLOOR AREAS 18" AND SHALLOWER AND ALL STAIR TREADS MUST HAVE A SLIP RESISTANT FINISH.
- TYPICAL POOL DIMENSIONS SHOWN ARE FROM INSIDE FINISHED POOL WALL.
- 5. REFER TO POOL STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR ALL DIMENSIONS RELATING TO THE THICKNESS OF THE POOL SHELL AND CONCRETE CURING METHODS.
- 6. THE JUNCTION BETWEEN THE SWIMMING POOL WALL AND THE FLOOR MUST BE COVED WITH A MAXIMUM 6" RADIUS.
- 7. DEPTH MARKERS AND WARNING SIGNS ARE SHOWN IN APPROXIMATE LOCATIONS. DEPTH MARKERS AND WARNING SIGNS MUST NOT EXCEED 25'-0" APART FROM EACH OTHER, AND MUST BE PLACED AT EVEN FOOT INTERVALS PER LOCAL CODE.
- ALL PROPRIETARY NAMES MENTIONED ARE TO DESIGNATE PERFORMANCE
- STANDARDS. EQUIVALENT PRODUCTS MUST BE SUBMITTED FOR APPROVAL.

  SLIP RESISTANT DECK FINISH REQUIRED. REFER TO ARCHITECT.
- 10. REFER TO PLUMBING FOR DECK DRAINS AND HOSE BIBBS.
- 11. ALL SURFACE WATER MUST DRAIN AWAY FROM THE POOL.
- 12. REFER TO ELECTRICAL FOR GFI OUTLETS ON POOL DECK.
- 13. ELECTRICAL INSPECTOR MUST APPROVE INSTALLATION OF BONDING GRID FOR POOL REINFORCING AND ALL POOL EMBEDS PRIOR TO PLACEMENT OF CONCRETE
- 14. NO GROUND WATER MUST BE ALLOWED TO RISE ABOVE ANY PORTION OF THE POOL BOTTOM DURING CONSTRUCTION.
- 15. FITNESS POOL HAS BEEN DESIGNED TO BE IN COMPLIANCE WITH THE RULES AND REGULATIONS OF USA SWIMMING (USA-S).
- 16. REFER TO SWIMMING POOL SPECIFICATIONS FOR COMPETITION RACE COURSE
- TOLERANCES.
- 17. ALL METALLIC PORTIONS OF PLAY FEATURES MUST BE EPOXY COATED STAINLESS STEEL.
- 18. ALL POOL REINFORCING STEEL, METAL FITTINGS, EQUIPMENT WITHIN 5'-0" OF POOL EDGE AND ANY METAL PARTS OF POOL EQUIPMENT IN CONTACT WITH POOL RECIRCULATION SYSTEM MUST BE BONDED PER NEC 680. REFER: 4/AQ704 AND POOL ELECTRICAL.
- 19. IT IS RECOMMENDED THAT ZONE EVALUATIONS ACCORDING TO THE AMERICAN RED CROSS OR A SIMILAR APPLICABLE LIFEGUARD AGENCY ARE CONDUCTED PRIOR TO OPERATING THE FACILITY AND REGULARLY ACCORDING TO AGENCY GUIDELINES. ZONE EVALUATIONS ARE NECESSARY TO CONFIRM APPROPRIATE LIFEGUARD PLACEMENT AND ZONE COVERAGE.
- 20. CONTRACTOR TO PROVIDE CHEMICAL QUANTITIES PER CONTRACTOR SUPPLIED POOL CHEMICAL SCHEDULE AFTER INITIAL WATER BALANCE IS REACHED PRIOR TO OWNER TURNOVER.
- 21. THE POOLS MUST BE WATER TESTED IN ACCORDANCE TO THE HYDROSTATIC TIGHTNESS TESTING OF AN OPEN CONCRETE CONTAINMENT STRUCTURE AS REQUIRED BY THE AMERICAN CONCRETE INSTITUTE (ACI) 350.1-10 SECTION 2. REFER TO SPECIFICATIONS. REFER: 10/AQ704

#### DEFERRED APPROVAL NOTICE

INSTALLATION OF THE WATERSLIDE/SPRAY FEATURES AND ASSOCIATED FEATURE FOOTINGS SHALL NOT COMMENCE UNTIL CONTRACTOR PROVIDES DETAILED DRAWINGS, SPECIFICATIONS, AND COMPLETE ZONE 4 SEISMIC CALCULATIONS BEARING THE SEAL, SIGNATURE, AND DATE OF A LICENSED PROFESSIONAL ENGINEER TO BE REVIEWED AND APPROVED BY THE DEPARTMENT OF BUILDING AND SAFETY OR THE DEPARTMENT HAVING JURISDICTION. CONTRACTOR SHALL BE RESPONSIBLE FOR PERMITTING PROCESS AND ALL COSTS ASSOCIATED WITH OBTAINING PERMITTING APPROVAL

CONTRACTOR SUPPLIED POOL CHEMICALS				
DESCRIPTION	AMOUNT			
CALCIUM HYPOCHLORITE	FULL FEEDERS +300 LBS			
CO	FULL BULK TANKS: 750 LBS EACH			
SODIUM BICARBONATE	200 LBS			
CALCIUM CARBONATE	100 LBS			
SODIUM THIOSULFATE	50 LBS			

### FITNESS POOL ALTERNATE

BASE BID: THE FITNESS POOL SHALL NOT BE INSTALLED.
PROVISIONS FOR FUTURE INSTALLATION SHALL BE PROVIDED,
SUCH AS CAPPING PIPING STUBS FOR RECIRCULATION PUMP
WITHIN THE PUMP PIT, DEDICATED SPACE FOR THE
HEATERS/FILTERS/CONTROLLERS/FEEDERS, AND MANHOLE DEPTH
REQUIRED FOR FUTURE FITNESS POOL WINTERIZATION AND
UNDERDRAIN.

ALTERNATE: PROVIDE FITNESS POOL AND ALL ASSOCIATED PIPING, EQUIPMENT, AND ACCESSORIES IN THEIR ENTIRETY PER THE CONSTRUCTION DOCUMENTS.

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PROJECT DESCRIPTION
WILLISTON WATER
WORLD

CITY WILLISTON
STATE NORTH DAKOTA

ISSUE DATES

CD CONSTRUCTION 05/19/2023 DOCUMENTS

DD DESIGN DEVELOPMENT 01/20/2023

SD SCHEMATIC DESIGN 12/15/2022

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DRAWING TITLE
POOL REFERENCE
PLAN

**AQ000** 





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PROJECT DESCRIPTION WILLISTON WATER WORLD

WILLISTON NORTH DAKOTA STATE

ISSUE DATES

	CD	CONSTRUCTION DOCUMENTS	05/19/2023
	DD	DESIGN DEVELOPMENT	01/20/2023
	SD	SCHEMATIC DESIGN	12/15/2022
	MARK	DESCRIPTION	DATE

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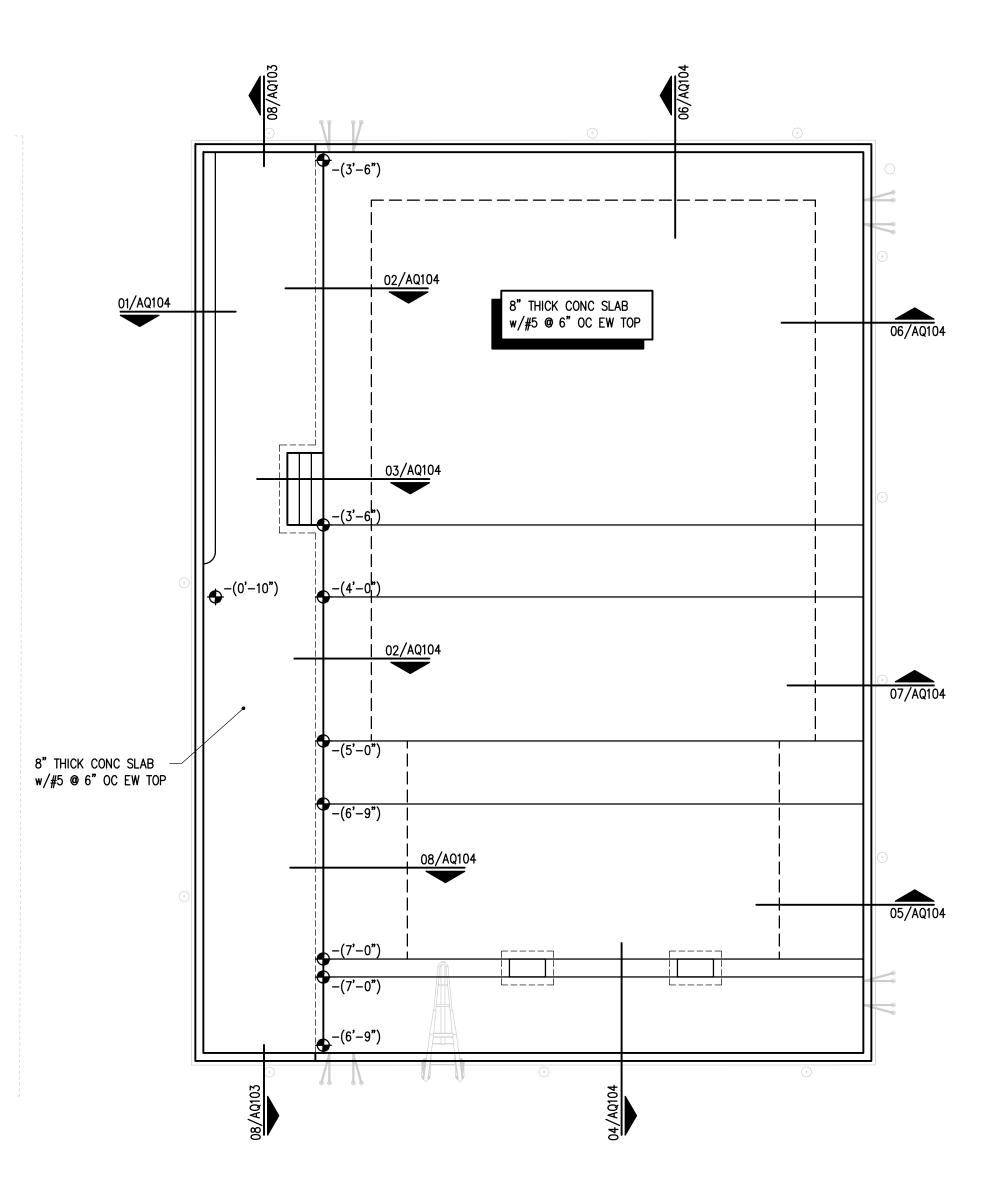
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DRAWING TITLE FITNESS POOL STRUCTURAL PLAN





## FITNESS POOL STRUCTURAL PLAN

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

1. WATER ELEVATION OF POOLS = +(0'-0"). SEE CIVIL DRAWINGS FOR CORRELATION TO ACTUAL SITE ELEVATION.

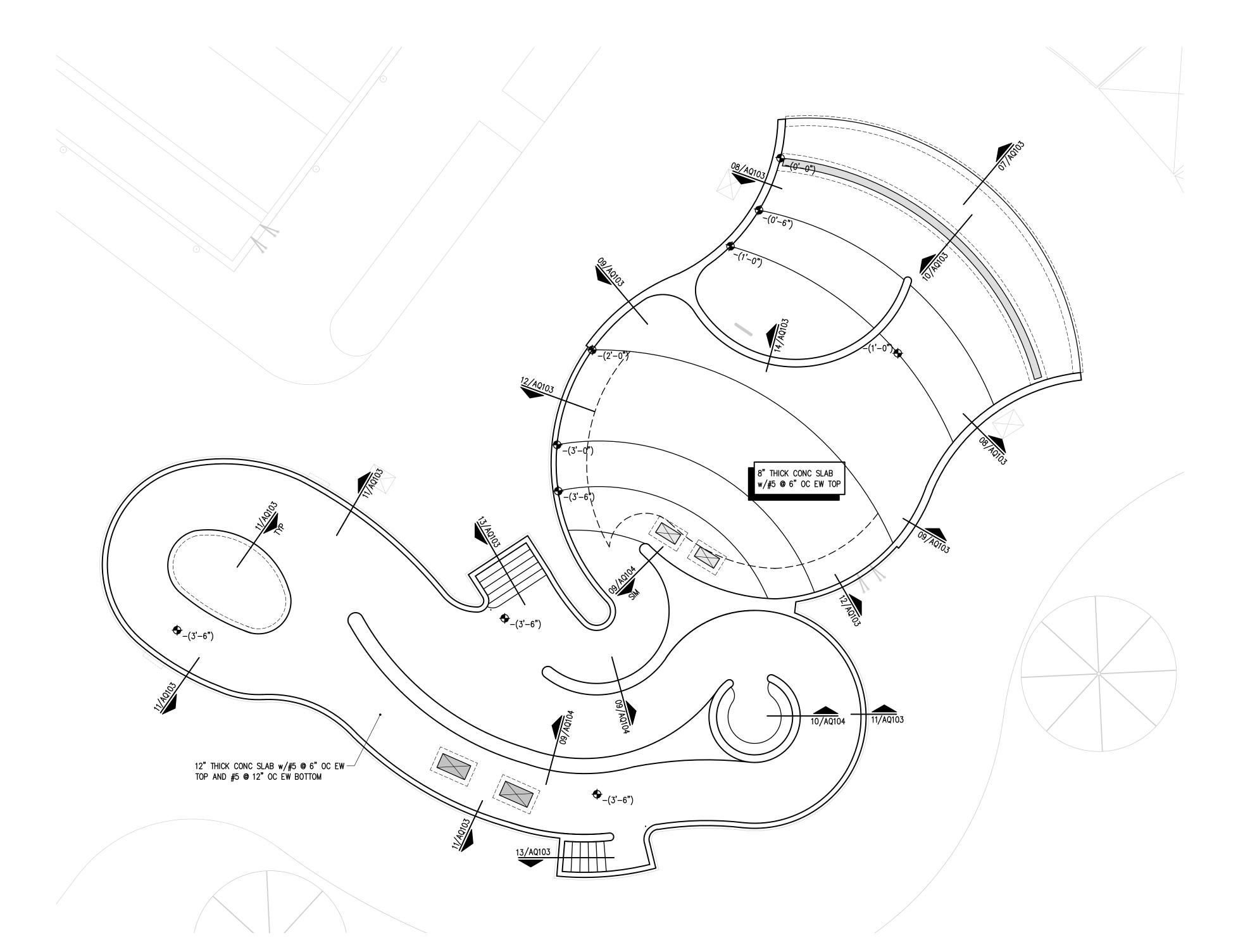
2. PROVIDE COMPACTED, FREE DRAINING FILL UNDER ALL POOL BOTTOM SLABS. SEE NOTE PF1 ON SHEET AQ102. 3. PROVIDE ELECTRICAL GROUNDING FOR ALL REINFORCING AND EMBEDDED ITEMS, SEE ELECTRICAL DRAWINGS.

4. SEE SWIMMING POOL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN.

5. WALLS ARE TYPICALLY SHOWN ON PLAN AT FOUNDATION LEVEL. SEE DETAILS & COORDINATE WITH SWIMMING POOL DRAWINGS FOR ALL WALL DETAIL ABOVE BASE SLAB.

6. ELEVATIONS ARE GIVEN RELATIVE TO POOL WATER SURFACE, UNO. COORDINATE WITH SWIMMING POOL DRAWINGS.

7. ALL ELEVATIONS ARE TO POOL FINISH.



### LEISURE POOL STRUCTURAL PLAN

SCALE: 1/8" = 1'-0" 0'1'2' 4' 8'

#### PLAN NOTES:

- 1. WATER ELEVATION OF POOLS = +(0'-0"). SEE CIVIL DRAWINGS FOR CORRELATION TO ACTUAL SITE ELEVATION. 2. PROVIDE COMPACTED, FREE DRAINING FILL UNDER ALL POOL BOTTOM SLABS. SEE NOTE PF1 ON SHEET AQ102.
- 3. PROVIDE ELECTRICAL GROUNDING FOR ALL REINFORCING AND EMBEDDED ITEMS, SEE ELECTRICAL DRAWINGS. 4. SEE SWIMMING POOL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN.
  5. WALLS ARE TYPICALLY SHOWN ON PLAN AT FOUNDATION LEVEL. SEE DETAILS & COORDINATE WITH SWIMMING POOL
- DRAWINGS FOR ALL WALL DETAIL ABOVE BASE SLAB.
- 6. ELEVATIONS ARE GIVEN RELATIVE TO POOL WATER SURFACE, UNO. COORDINATE WITH SWIMMING POOL DRAWINGS.
- 7. ALL ELEVATIONS ARE TO POOL FINISH.



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PROJECT DESCRIPTION WILLISTON WATER WORLD

	CITY	WILLISTON
	STATE	NORTH DAKOTA
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ISSUE DATES

CD	CONSTRUCTION DOCUMENTS	05/19/2023
DD	DESIGN DEVELOPMENT	01/20/2023
SD	SCHEMATIC DESIGN	12/15/2022
MARK	DESCRIPTION	DATE

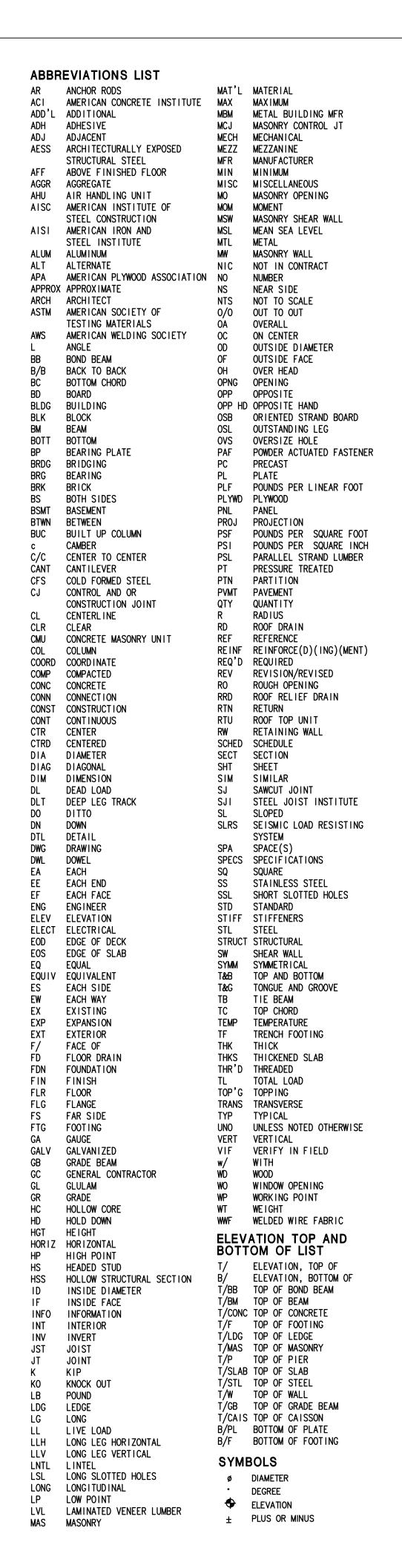
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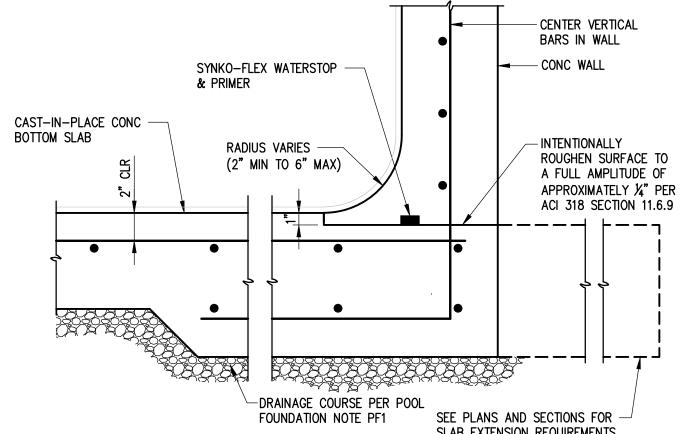
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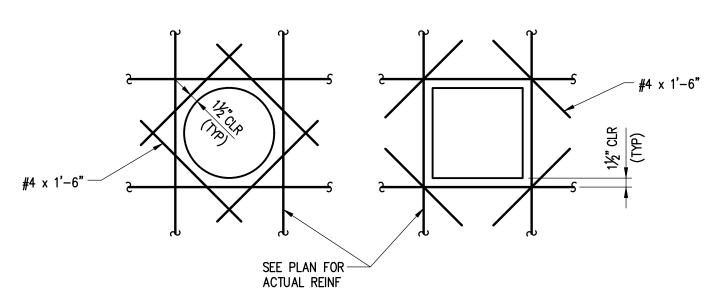
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DRAWING TITLE LEISURE POOL STRUCTURAL PLAN







SLAB EXTENSION REQUIREMENTS TYP SHOTCRETE WALL BASE SCALE:  $1\frac{1}{2}$ " = 1'-0"

FROST-PROOF DRAINAGE FILL - SEE -

NOTE PF1 OF POOL FOUNDATION

STRUCTURE NOTES

SCALE: NTS

P00L-007

FROST-PROOF DRAINAGE

FILL - SEE NOTE PF1 OF

-PERFORATED DRAIN AROUND

POOL AT MAX SPACING OF

30'-0" - SEE CIVIL DWGS

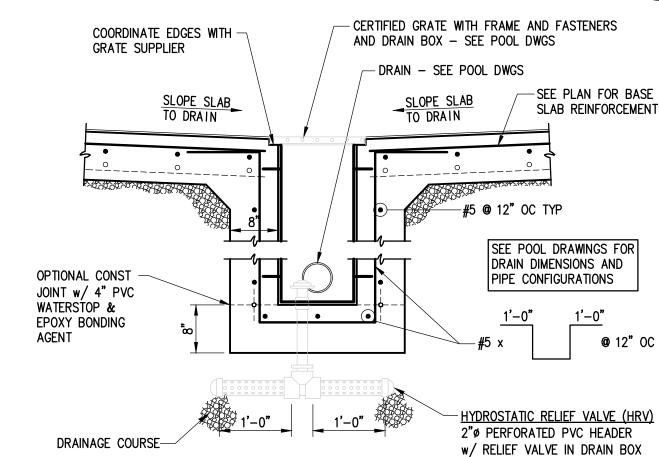
PERIMETER AND UNDER

FOR OUTFALL

POOL FOUNDATION

STRUCTURE NOTES

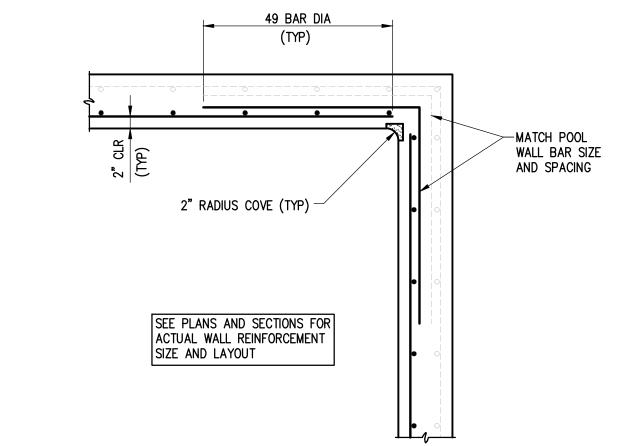
TYP REINFORCING AT EMBEDDED ITEMS (01 SCALE: NTS POOL-001



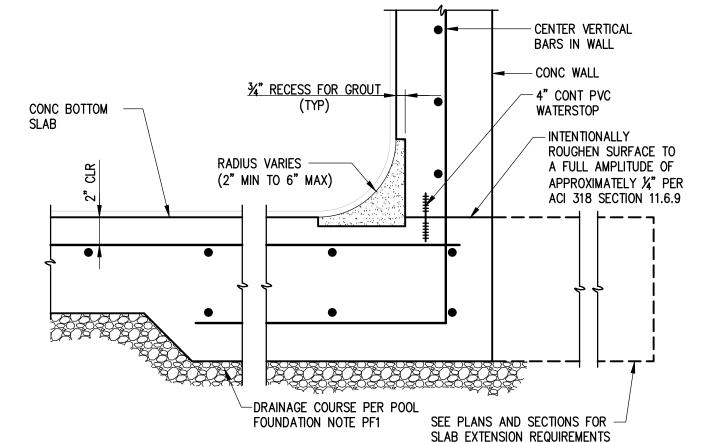
TYPICAL POOL FILL POOL-025\_POOL FILL

2'-0"

TYPICAL DRAIN BOX DETAIL P00L-002

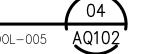


TYPICAL POOL WALL CORNER DETAIL 103 SCALE:  $\frac{3}{4}$ " = 1'-0"



TYP CAST-IN-PLACE WALL BASE

SCALE:  $1\frac{1}{2}$ " = 1'-0"





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#### SWIMMING POOL STRUCTURE NOTES

PG1. Building Codes:

International Building Code 2015 Concrete: American Concrete Institute ACI 318-14 American Concrete Institute ACI 350-06

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

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

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

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

#### HYRDOSTATIC RELIEF VALVES

HV1. HRV = Hydrostatic Relief Valve.

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

#### POOL SHELL AND RELATED ELEMENTS REINFORCED CONCRETE AND SHOTCRETE NOTES

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

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

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

PC4. All reinforcing steel shall be shop fabricated to conform to ASTM A615, Grade 60. PC5. All pool concrete shall be wet-cured using hoses and polyethylene covering. PC6. Reinforcing clearance: 2" Pool walls, surge tank walls

2" Pool bottom slabs, surge tank slabs 3" All surfaces cast or shot against earth

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

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

CONSTRUCTION LOAD NOTES

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

#### **WATER-TIGHTNESS TESTING**

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

#### POOL FOUNDATION STRUCTURE

PF1. All Slabs shall be placed on compacted, free-draining, frost-free drainage course: Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve. All fill shall be compacted to a minimum dry density of 95% of the Modified Proctor maximum dry density (ASTM-D1557), placed in 6" to 8" lifts. Place Mirafi 140N or equivalent between drainage fill and subgrade. See project geotechnical report for further recommendations.

Drainage Course Thickness (t): 72" For water depths of 0'-0" to 3'-0" 72" For water depths greater than 3'-0"

PF2. All pool walls shall be backfilled with compacted, free-draining, frost-free drainage fill: Drainage Fill: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve. All fill shall be compacted to a minimum dry density of 95% of the Modified Proctor maximum dry density (ASTM-D1557), placed in 6" to 8" lifts. Place Mirafi 140N or equivalent between drainage fill and subgrade See project geotechnical report for further recommendations.

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

> Geotechincal report by: American Engineering Testing, dated February 17, 2023. Support Type: Soil-supported

125 pcf Density Equivalent Fluid Pressure: 40 psf/ft depth (active) Passive Pressure: 475 psf/ft depth

Groundwater: None (underdrain system provided) Frost Depth: 6'-0" below finished grade Differential Settlement:

Total Settlement: Allowable Bearing Pressure: 1800 psf

#### BAR DEVELOPMENT & **SPLICE LENGTHS TENSION SPLICES** DEVELOPMENT BAR TOP BAR \* OTHER TOP BAR \* | OTHER 25" 19" 15" 19" 33**"** 25" 19" 25" 24" 41" 31**"** 37**"** 37**"** 49" 29" 42" 71**"** 54" 54**"** 62**"** 81" 62**"** 48" 70**"** 91" 70**"** 54" 79**"** 102" 79**"** 61"

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

67"

114"

87**"** 

87**"** 

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**WILLISTON COMMUNITY BUILDERS** 

PROJECT DESCRIPTION WILLISTON WATER **WORLD** 

WILLISTON

NORTH DAKOTA

12/15/2022

**ISSUE DATES** 

STATE

CD CONSTRUCTION 05/19/2023 DOCUMENTS DD DESIGN DEVELOPMENT 01/20/2023

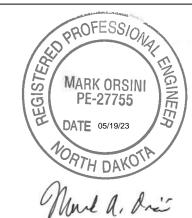
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SD SCHEMATIC DESIGN

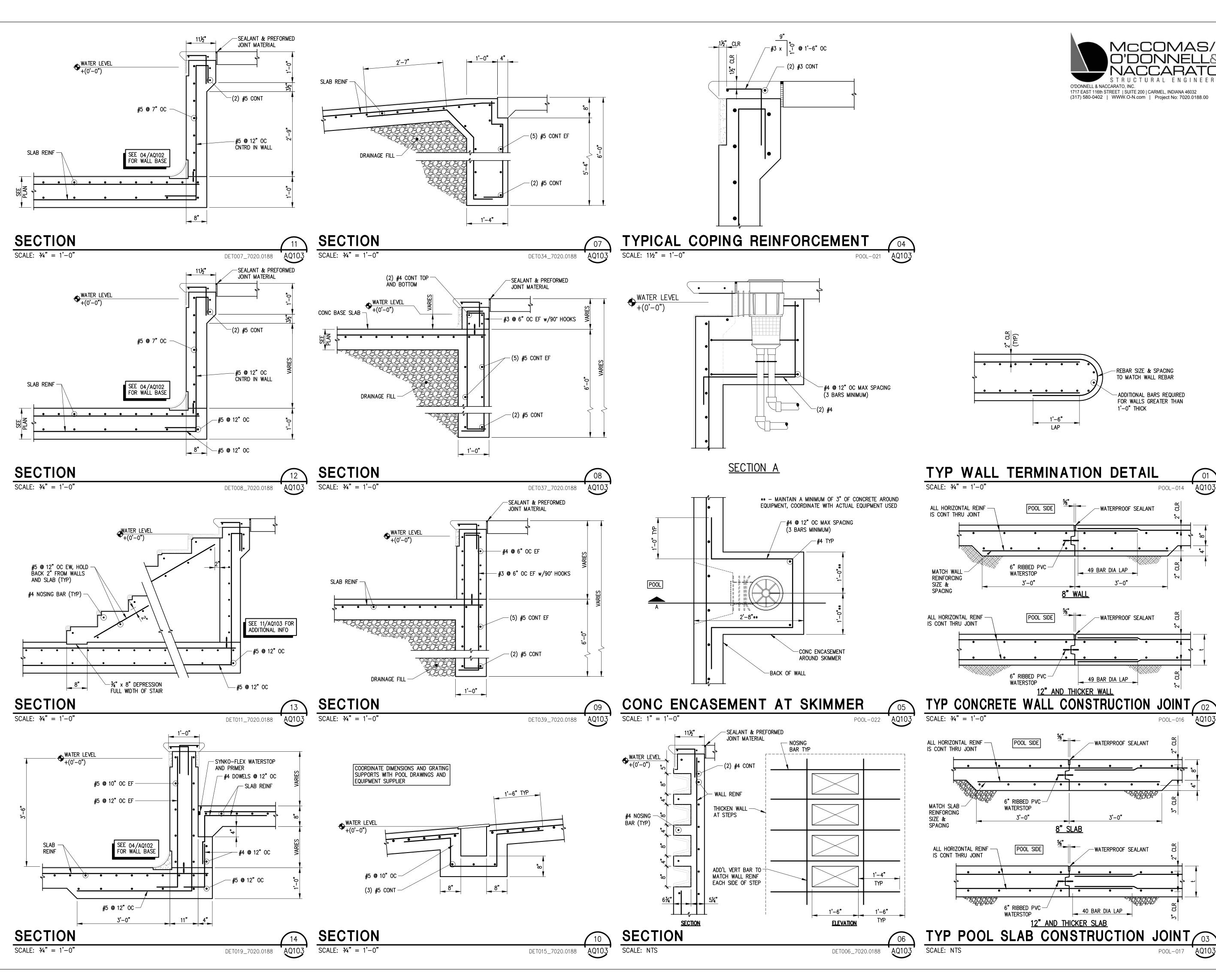
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**DRAWING TITLE** POOL STRUCTURAL **DETAILS** 





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PROJECT DESCRIPTION WILLISTON WATER WORLD

WILLISTON STATE NORTH DAKOTA

**ISSUE DATES** 

6" RIBBED PVC — WATERSTOP 3'-0" CD CONSTRUCTION 05/19/2023 8" WALL DOCUMENTS DD | DESIGN DEVELOPMENT | 01/20/2023 SD | SCHEMATIC DESIGN 12/15/2022 POOL SIDE -WATERPROOF SEALANT MARK DESCRIPTION PROJECT NO: DRAWN BY:

-REBAR SIZE & SPACING

TO MATCH WALL REBAR

1'-0" THICK

✓─ WATERPROOF SEALANT

49 BAR DIA LAP

-WATERPROOF SEALANT

-WATERPROOF SEALANT

40 BAR DIA LAP

12" AND THICKER WALL

8" SLAB

12" AND THICKER SLAB

1'-6" LAP

POOL SIDE

6" RIBBED PVC -WATERSTOP

POOL SIDE

6" RIBBED PVC —

WATERSTOP

3'-0"

POOL SIDE

6" RIBBED PVC —

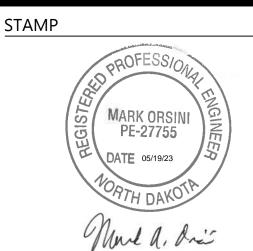
WATERSTOP

— ADDITIONAL BARS REQUIRED FOR WALLS GREATER THAN

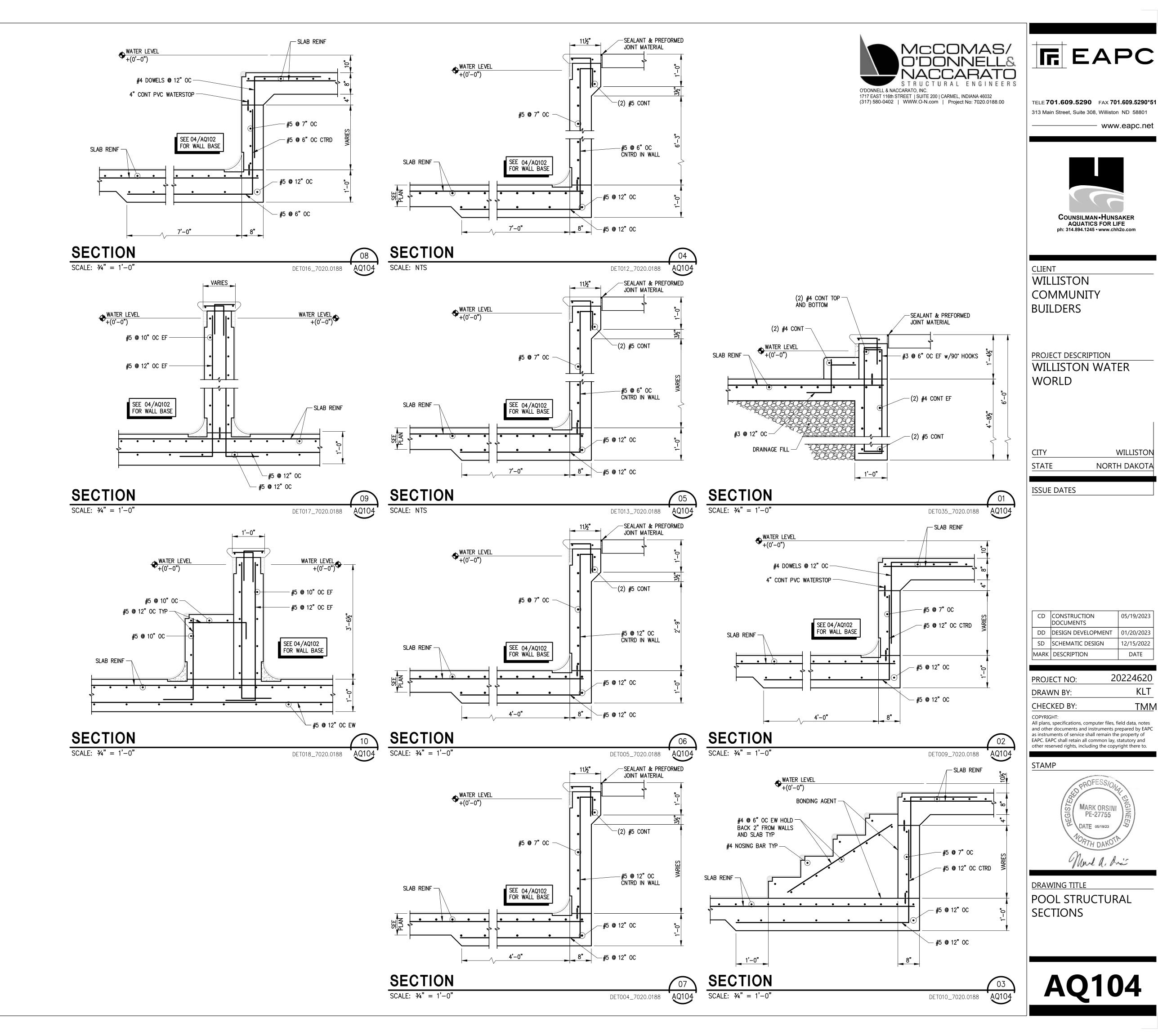
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DRAWING TITLE POOL STRUCTURAL SECTIONS



WILLISTON

05/19/2023

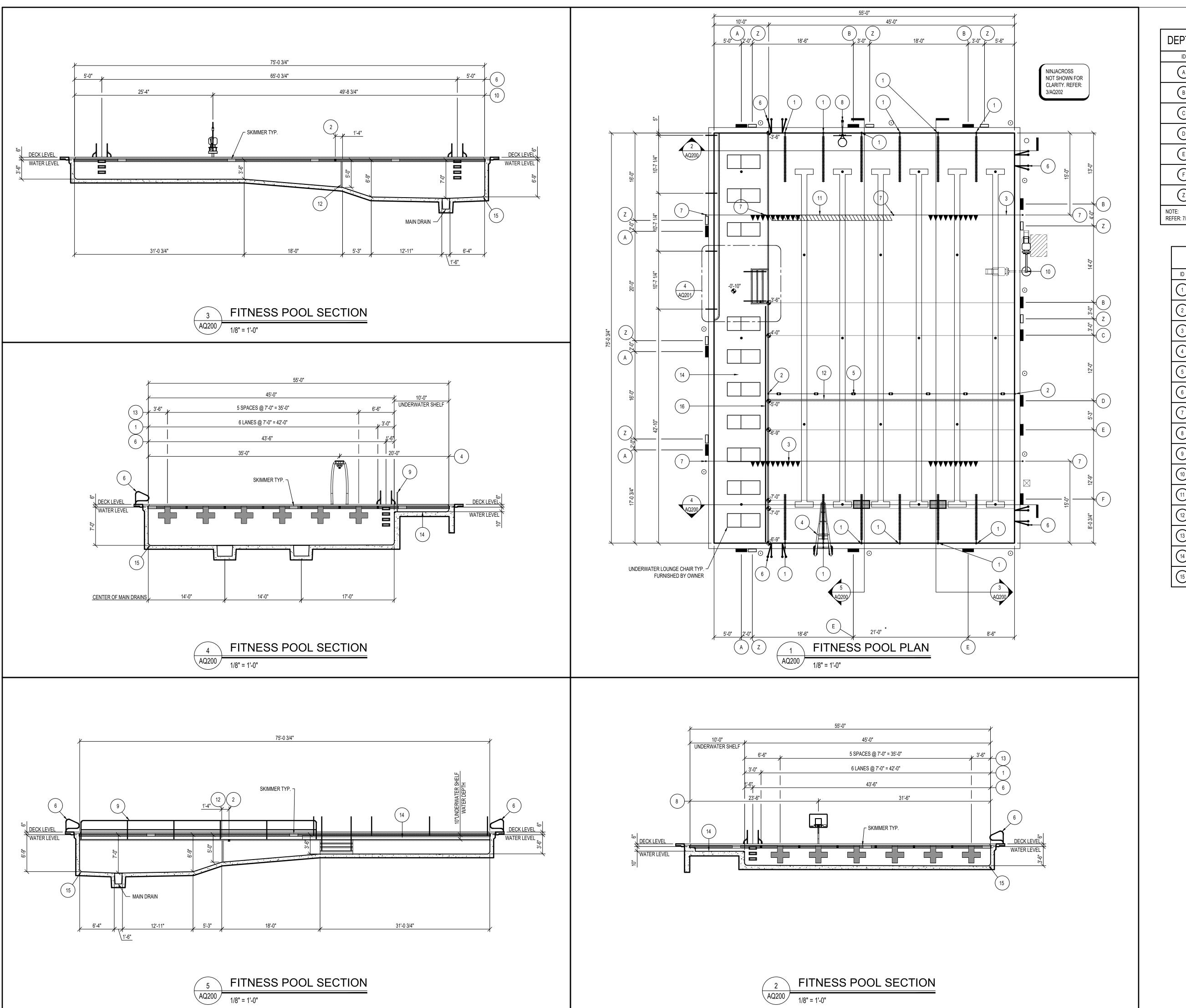
12/15/2022

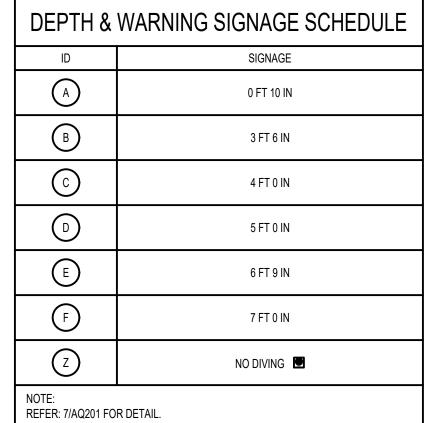
DATE

KLT

TMM

20224620





<b>EQUIPMENT SCHEDULE</b>		
ID	ITEM	
1	LANE ROPE CUP ANCHOR REFER: 1/AQ201	
2	SAFETY ROPE CUP ANCHOR REFER: 1/AQ201	
3	BACKSTROKE PENNANT	
4	AQUA ZIP'N FEATURE REFER: 1/AQ202	
5	SAFETY ROPE	
6	GRAB RAILS & RECESSED STEPS REFER: 10/AQ201	
7	STANCHION POST & ANCHOR REFER: 2/AQ202	
8	WATER BASKETBALL GOAL REFER: 13/AQ201	
9	UNDERWATER SHELF GUARD RAIL REFER: 4/AQ202	
10	POOL LIFT & ANCHOR REFER: 11/AQ201	
11	WATER VOLLEYBALL STANCHION POST & ANCHOR REFER: 12/AQ201	
12	4" CONTRASTING TILE BAND COLOR BY ARCHITECT	
13	WALL TARGET REFER: 8/AQ201	
14	UNDERWATER SHELF REFER: 5/AQ201	
15	POOL COVE REFER: 2/AQ201	



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COUNSILMAN - HUNSAKER AQUATICS FOR LIFE ph: 314.894.1245 - www.chh2o.com

CLIENT WILLISTON COMMUNITY BUILDERS

PROJECT DESCRIPTION WILLISTON WATER WORLD

CITY WILLISTON NORTH DAKOTA

**ISSUE DATES** 

CD CONSTRUCTION DOCUMENTS 05/19/2023 DD DESIGN DEVELOPMENT 01/20/2023 SD SCHEMATIC DESIGN 12/15/2022 MARK DESCRIPTION DATE

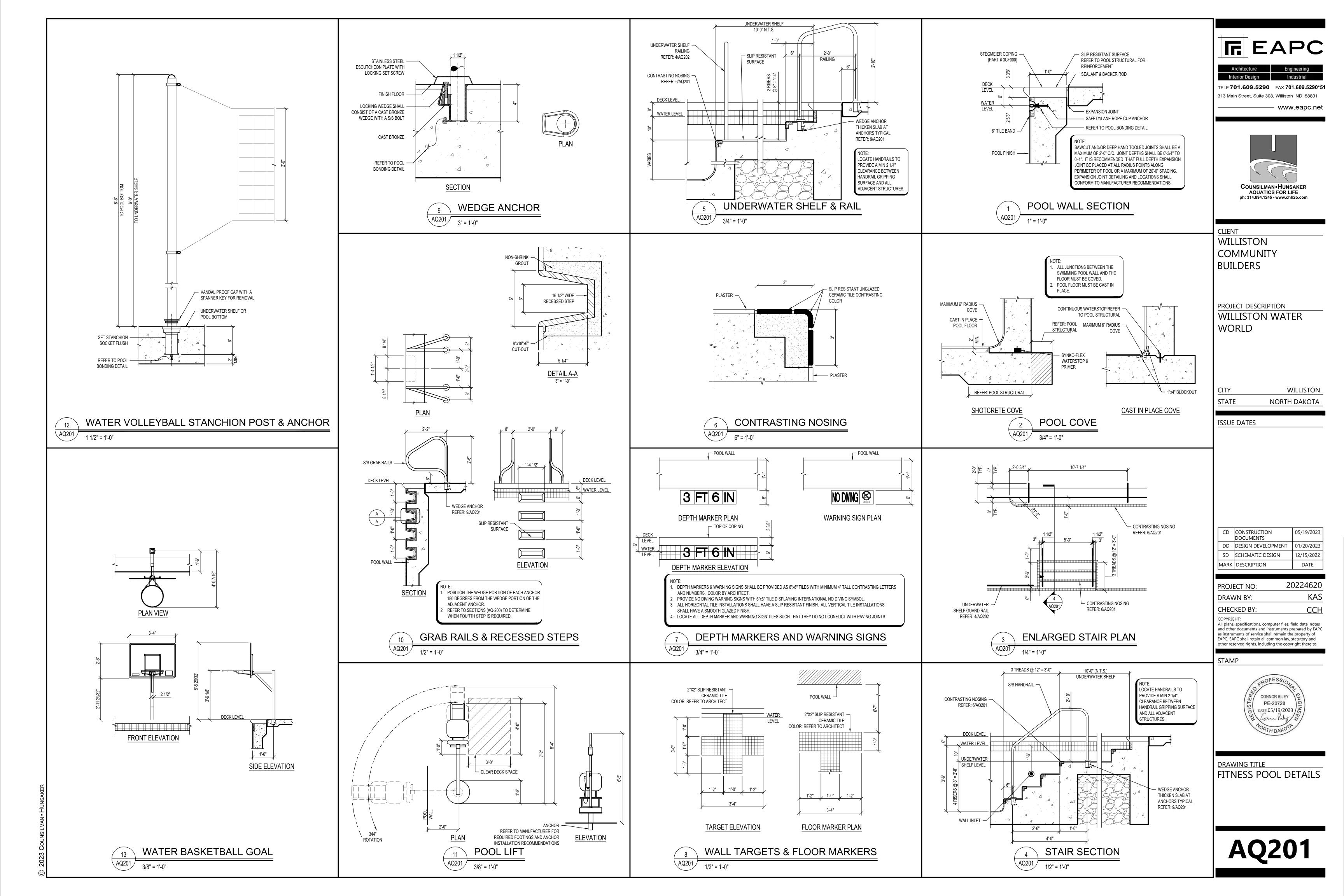
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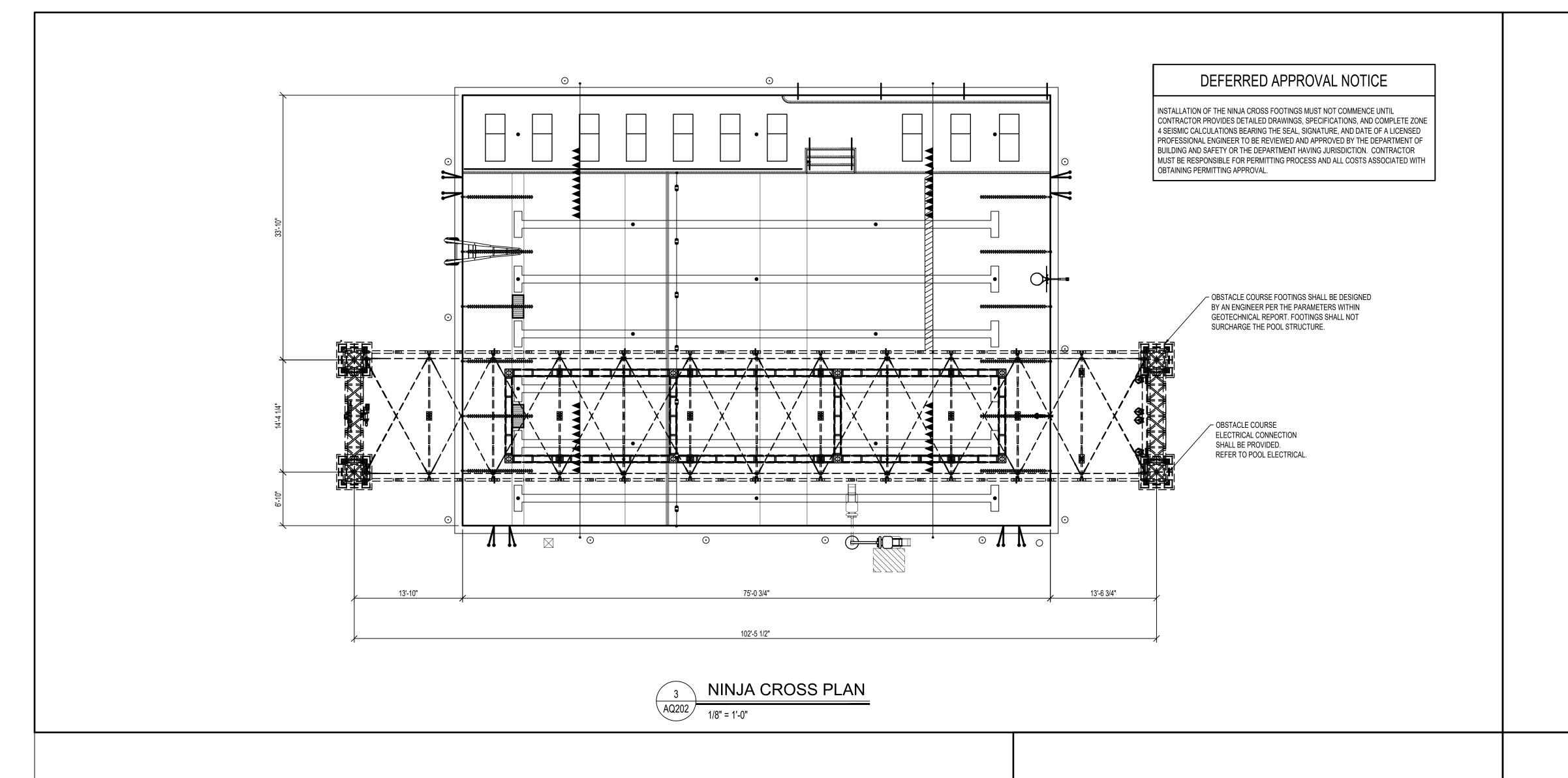
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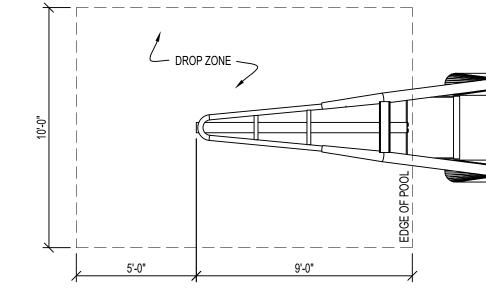
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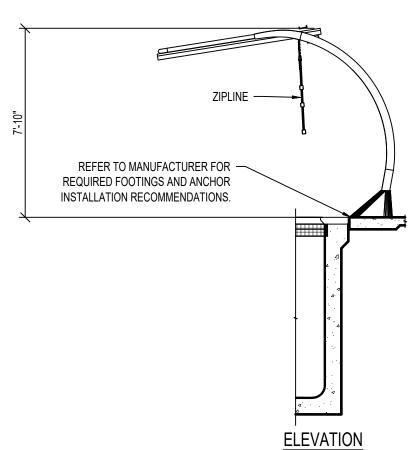


DRAWING TITLE FITNESS POOL PLAN & SECTIONS

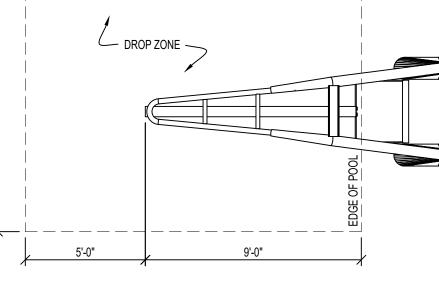


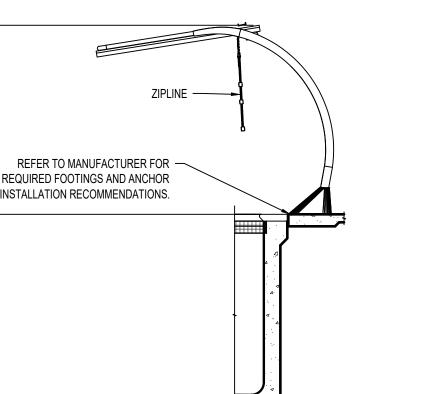






ZIPLINE FEATURE





STATE NORTH DAKOTA

CITY

CLIENT

WILLISTON

BUILDERS

WORLD

COMMUNITY

PROJECT DESCRIPTION

WILLISTON WATER

WILLISTON

**ISSUE DATES** 

Architecture Engineering

TELE **701.609.5290** FAX **701.609.5290\*51** 

Counsilman-Hunsaker

AQUATICS FOR LIFE
ph: 314.894.1245 • www.chh2o.com

— www.eapc.net

313 Main Street, Suite 308, Williston ND 58801

316 S/S, 1.5" DIA. — WATER LEVEL S/S ESCUTHEON — WEDGE ANCHOR -REFER: 9/AQ201 UNDERWATER ----SHELF SHELF LEVEL

REFER TO POOL BONDING DETAIL

UNDERWATER SHELF GUARD RAIL

5'-0" O.C. V.I.F.

**ELEVATION** 

SLIDING COLLAR -WITH EYEBOLT

VANDAL PROOF CAP & ─ SPANNER KEY FOR REMOVAL

STANCHION SOCKET -SET FLUSH WITH DECK

CONCRETE POOL DECK — (SEE ARCH)

REFER TO POOL -BONDING DETAIL

CD	CONSTRUCTION DOCUMENTS	05/19/2023
DD	DESIGN DEVELOPMEN	T 01/20/2023
SD	SCHEMATIC DESIGN	12/15/2022
MARK	DESCRIPTION	DATE
PROJE	ECT NO:	20224620
DRAWN BY:		KAS
CHEC	KED BY:	CCH

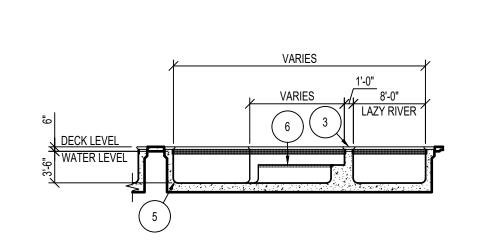
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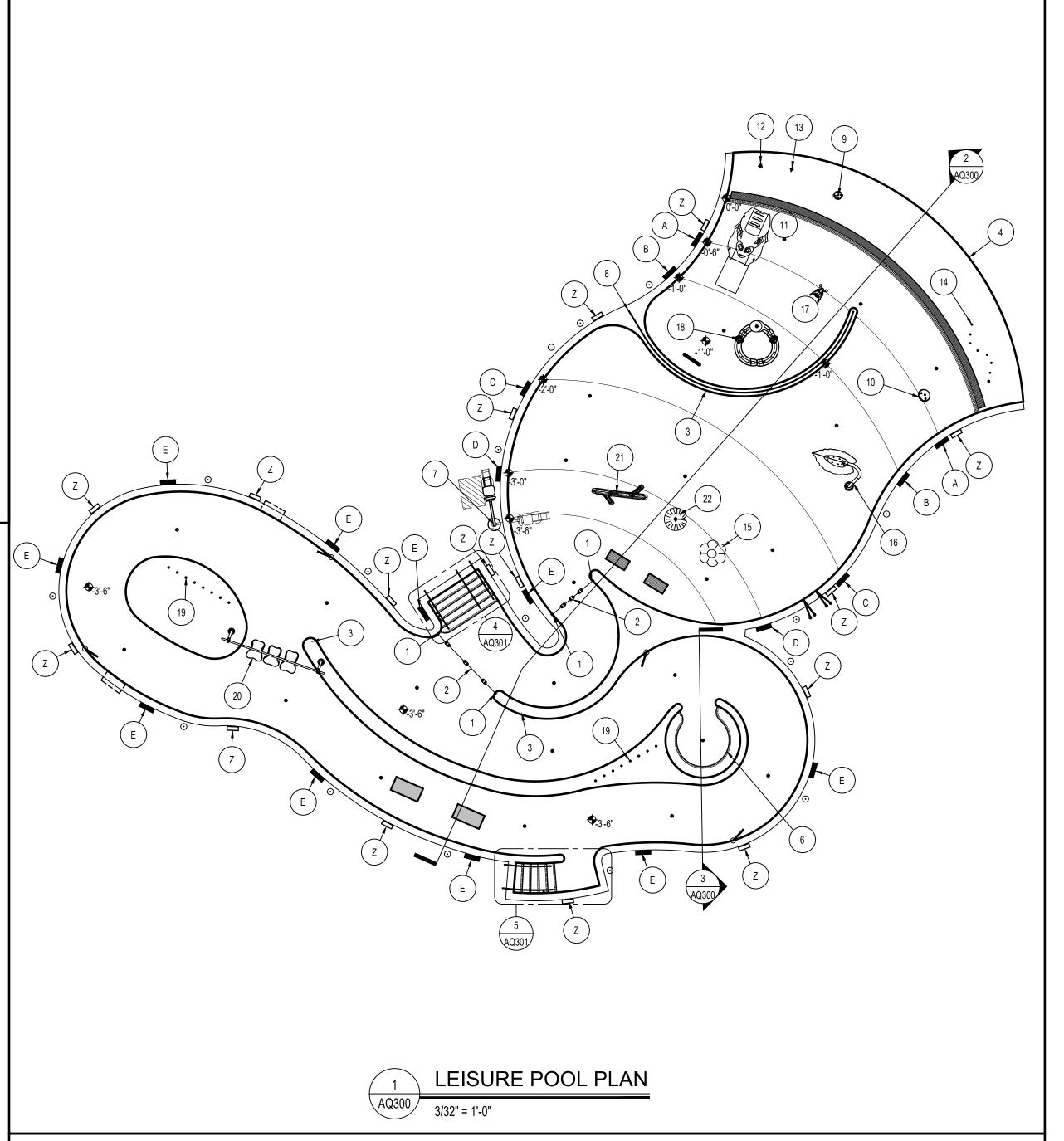


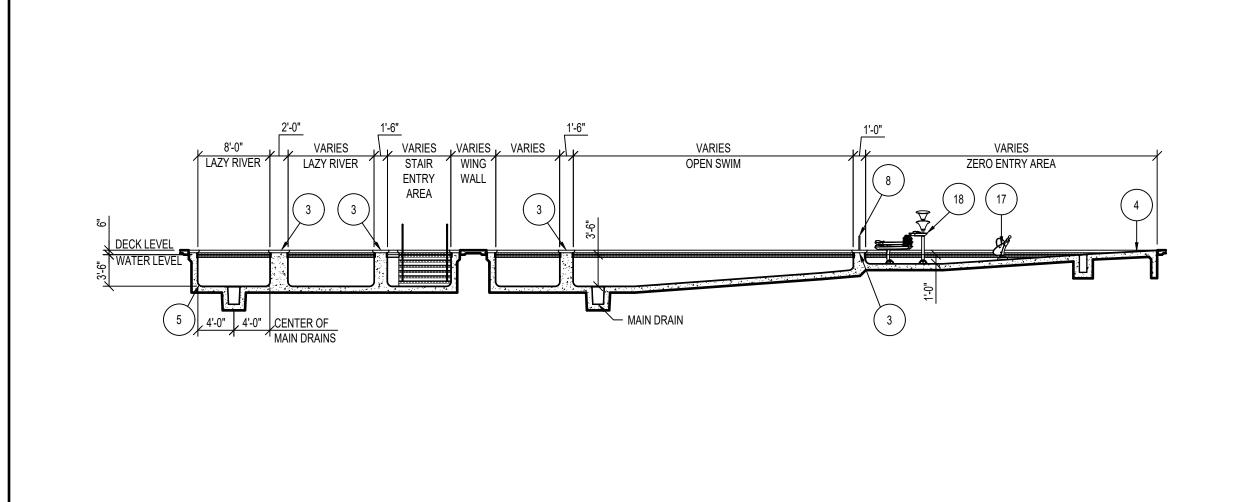
DRAWING TITLE FITNESS POOL DETAILS

STANCHION POST & ANCHOR AQ202 3" = 1'-0"



3 LEISURE POOL SECTION
AQ300 3/32" = 1'-0"





2 LEISURE POOL SECTION
AQ300 3/32" = 1'-0"

DEPTH & WARNING SIGNAGE SCHED				
ID	SIGNAGE			
A	0 FT 6 IN			
В	1 FT 0 IN			
(c)	2 FT 0 IN			
٥	3 FT 0 IN			
E	3 FT 6 IN			
Z	NO DIVING			
NOTE: REFER: 11/AQ301 FOR DETAIL.				

ID	EQUIPMENT SCHEDULE
ID 1	ITEM SAFETY ROPE CUP ANCHORS
$\frac{\circ}{\circ}$	REFER: 1/AQ301
(2)	SAFETY ROPE
3	WING WALL REFER: 3/AQ301
4	ZERO ENTRY REFER: 7/AQ301
5	POOL COVE REFER: 2/AQ301
6	UNDERWATER BENCH REFER: 9/AQ301
7	POOL LIFT & ANCHOR REFER: 5/AQ302
8	WING WALL RAILING REFER: 3/AQ302
9	FOAMING GEYSER 2 REFER: 7/AQ302
10	WATER BUG 2 REFER: 8/AQ302
11	FROG SLIDE REFER: 12/AQ302
12	ROOSTER TAIL REFER: 9/AQ302
13	DIRECTIONAL JET 3 REFER: 6/AQ302
14	TEAM SPRAY 1 REFER: 10/AQ302
15	FLOWER FLOATABLE REFER: 4/AQ302
16	SPRIG 2 REFER: 2/AQ303
17	BUTTERFLY 1 REFER: 3/AQ303
18	CASCADE LOOP REFER: 14/AQ303
19	TUNNEL SPRAY 1 REFER: 15/AQ03
20	RIO NANO 1 REFER: 1/AQ303
21	LOG FLOATABLE REFER: 1/AQ302
(22)	LILY PAD FLOATABLE REFER: 11/AQ302



Architecture Engineering
Interior Design Industrial
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CLIENT
WILLISTON
COMMUNITY
BUILDERS

PROJECT DESCRIPTION
WILLISTON WATER
WORLD

CITY WILLISTON
STATE NORTH DAKOTA

ISSUE DATES

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SD	SCHEMATIC DESIGN	12/15/2022
MARK	DESCRIPTION	DATE

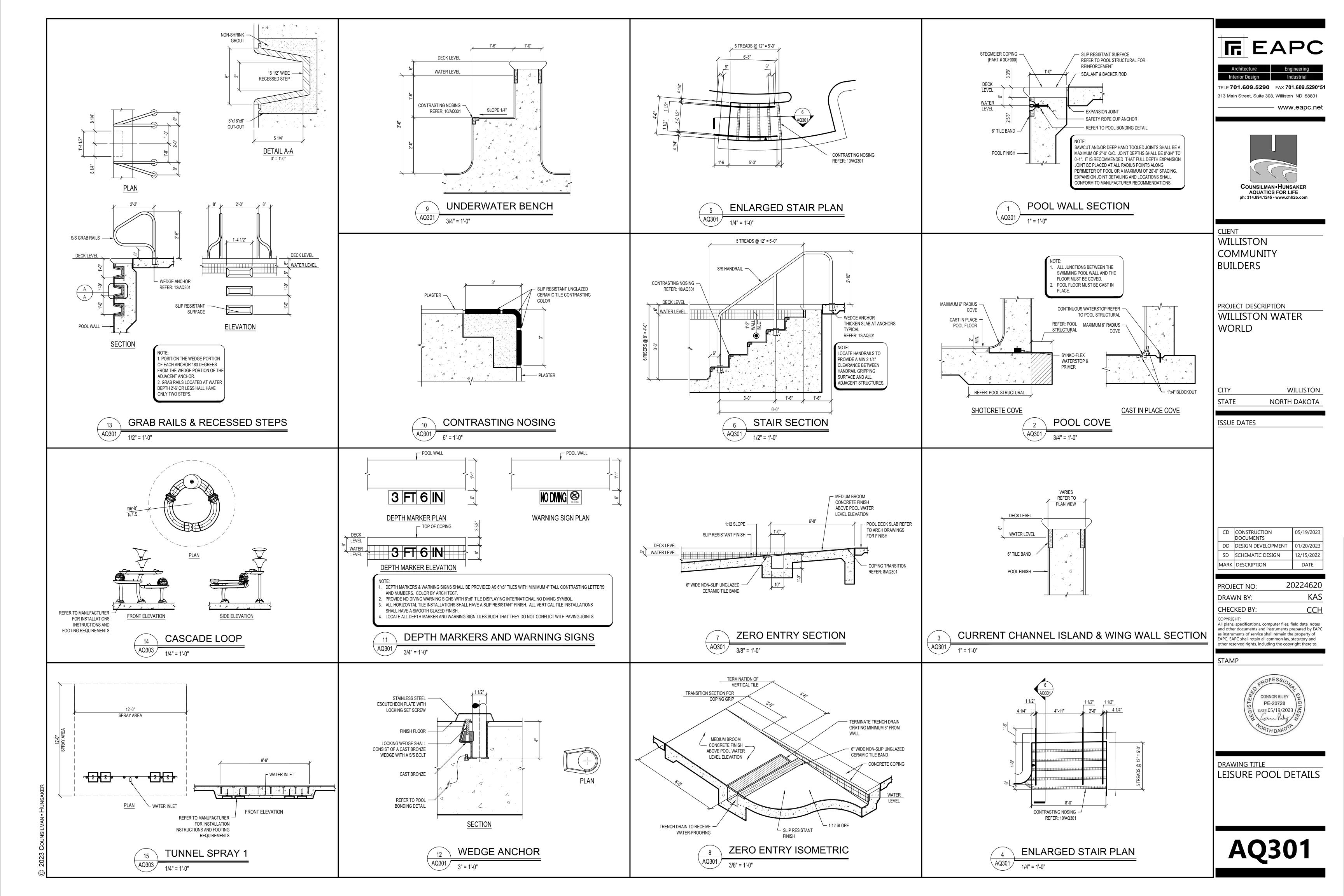
PROJECT NO:	20224620
DRAWN BY:	KAS
CHECKED BY:	ССН

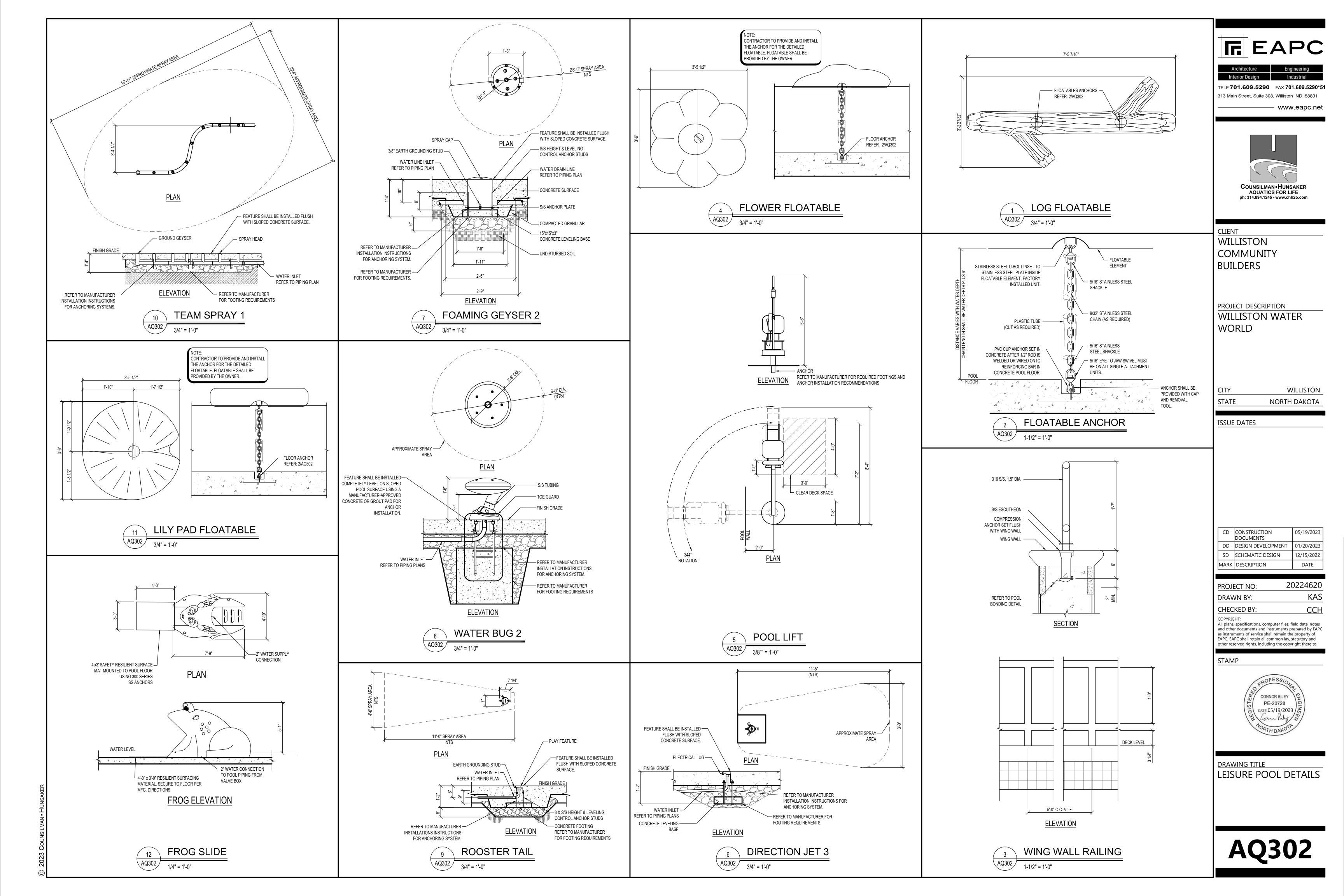
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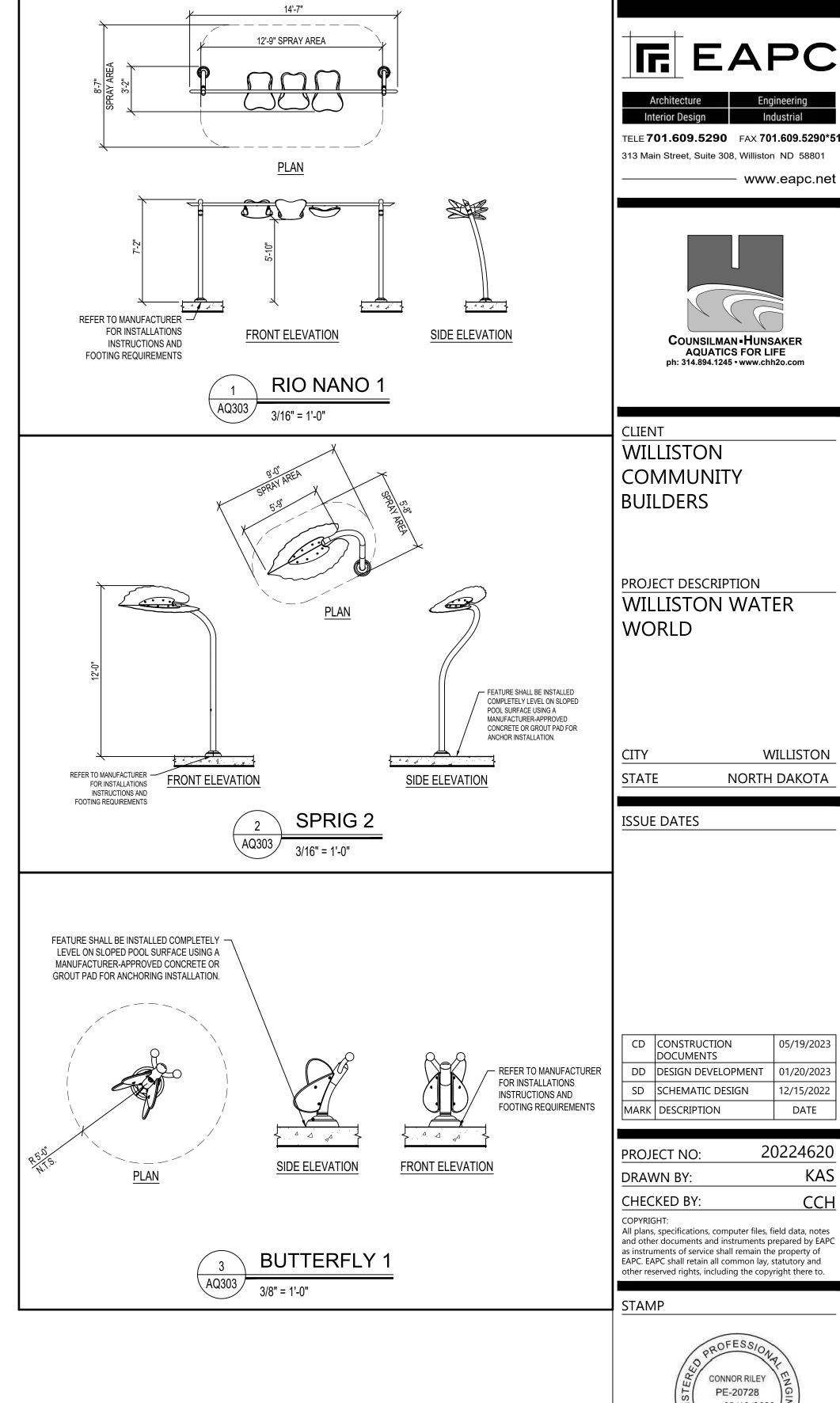
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DRAWING TITLE
LEISURE POOL PLAN
& SECTIONS

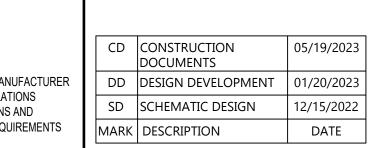








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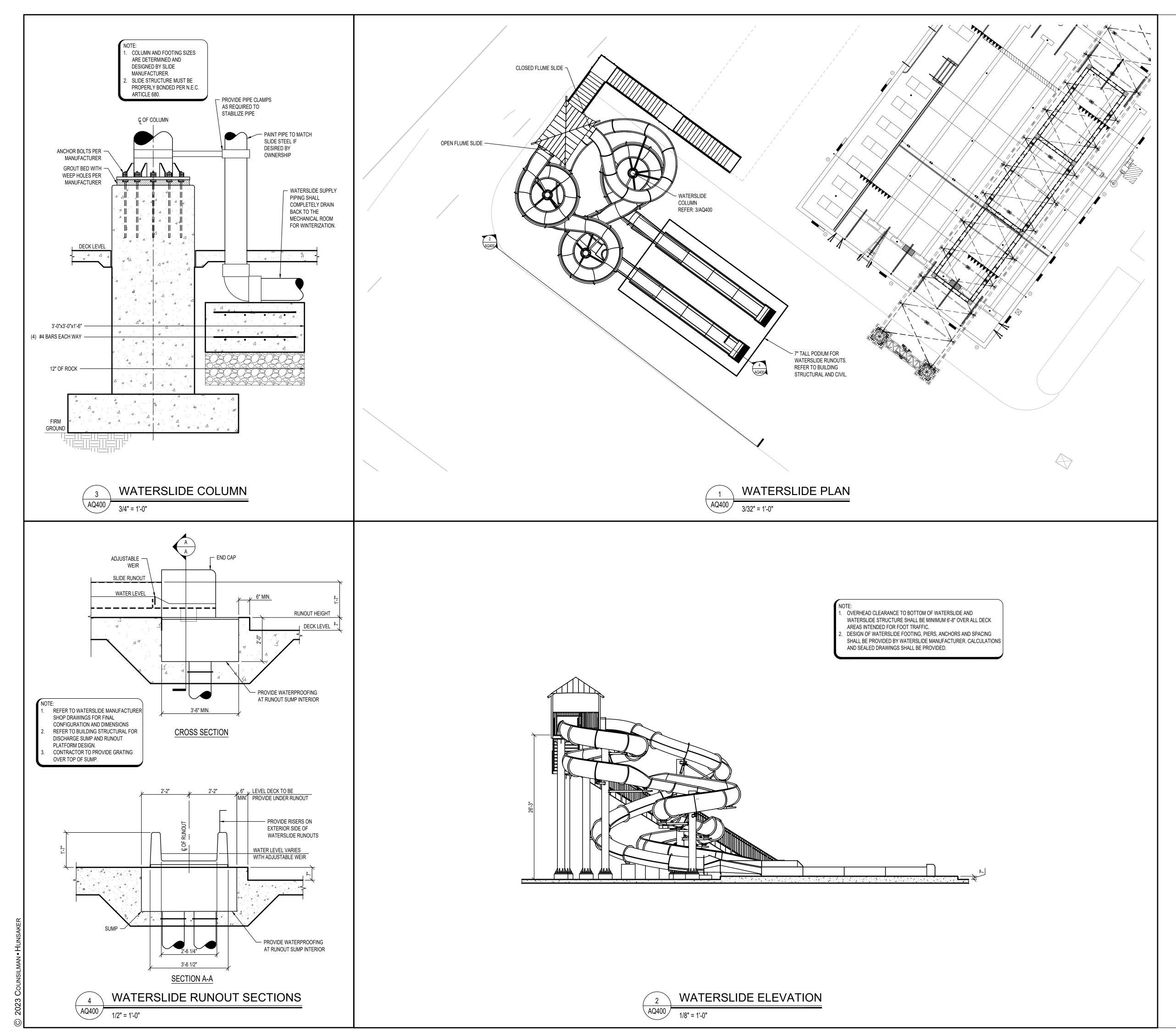


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DRAWING TITLE LEISURE POOL DETAILS



# DEFERRED APPROVAL NOTICE

INSTALLATION OF THE WATERSLIDE/SPRAY FEATURES AND ASSOCIATED FEATURE FOOTINGS SHALL NOT COMMENCE UNTIL CONTRACTOR PROVIDES DETAILED DRAWINGS, SPECIFICATIONS, AND COMPLETE ZONE 4 SEISMIC CALCULATIONS BEARING THE SEAL, SIGNATURE, AND DATE OF A LICENSED PROFESSIONAL ENGINEER TO BE REVIEWED AND APPROVED BY THE DEPARTMENT OF BUILDING AND SAFETY OR THE DEPARTMENT HAVING JURISDICTION. CONTRACTOR SHALL BE RESPONSIBLE FOR PERMITTING PROCESS AND ALL COSTS ASSOCIATED WITH OBTAINING PERMITTING APPROVAL.

WATERSLIE	DE DESIGN	DATA
POOL	OPEN FLUME SLIDE	CLOSED FLUM SLIDE
PLATFORM HEIGHT	26'-3"	26'-3"
WATERSLIDE LENGTH	205'-11'	141'-5"
RUNOUT LENGTH	43'-0"	43'-0"



Architecture Engineering

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CLIENT WILLISTON

COMMUNITY BUILDERS

PROJECT DESCRIPTION
WILLISTON WATER
WORLD

CITY WILLISTON
STATE NORTH DAKOTA

ISSUE DATES

CD	CONSTRUCTION DOCUMENTS	05/19/2023
DD	DESIGN DEVELOPMENT	01/20/2023
SD	SCHEMATIC DESIGN	12/15/2022
MAR	C DESCRIPTION	DATE

PROJECT NO:	20224620
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DRAWING TITLE
WATERSLIDE PLAN,
ELEVATION &
DETAILS

	LEISURE POOL LOCATION POINT SCHEDULE						
LP#	X	Υ	DESCRIPTION	LP#	Х	Y	DESCRIPTION
1	-63'-10"	-52'-5 1/4"	LEISURE POOL ARC CENTER POINT	98	-67'-5 3/4"	-115'-3 1/4"	LEISURE POOL SKIMMER
2 3	-47'-4" -55'-9 3/4"	-75'-5 3/4" -81'-0 1/4"	LEISURE POOL ARC CENTER POINT LEISURE POOL ARC CENTER POINT	99 100	-88'-6 1/2" -109'-11 3/4"		LEISURE POOL SKIMMER LEISURE POOL SKIMMER
4	-38'-3 1/2"	-69 <b>'</b> -7 1/4"	LEISURE POOL ARC CENTER POINT	101	-130'-9 1/4"	-112 <b>'</b> -4"	LEISURE POOL SKIMMER
5	-23'-7"	-74'-2 3/4"	LEISURE POOL ARC CENTER POINT	102	-64'-0 1/4"	-79'-0"	LEISURE POOL WATER LEVEL CONTROLLER
6 7	-36'-8 3/4" -40'-4 1/2"	-88'-9 3/4" -91'-7 1/4"	LEISURE POOL ARC CENTER POINT LEISURE POOL ARC CENTER POINT	103 104	-79'-2 1/2" -65'-0"	-115'-1 3/4" -152'-1 1/4"	LEISURE POOL WALL INLET LEISURE POOL WALL INLET
8	-41'-11 1/2"	-94'-1"	LEISURE POOL ARC CENTER POINT	105		-143'-1 1/2"	LEISURE POOL FLOOR INLET
9	-44'-0 3/4"	-98 <b>'</b> -3 <b>"</b>	LEISURE POOL ARC CENTER POINT	106	-47 <sup>'</sup> -10 1/2"	-141'-9"	LEISURE POOL FLOOR INLET
10	-58'-1 1/2"	-109'-7"	LEISURE POOL ARC CENTER POINT	107	-34'-11 3/4"	-136'-4 1/2"	LEISURE POOL FLOOR INLET
11 12	-63'-3 1/4" -43'-8 3/4"	-100'-6" -131'-7 3/4"	LEISURE POOL ARC CENTER POINT LEISURE POOL ARC CENTER POINT	108 109	-47'-5 1/2" -63'-10 1/4"	-122'-11" -133'-0 3/4"	LEISURE POOL FLOOR INLET LEISURE POOL FLOOR INLET
13	-56'-3 1/2"	-131 - 7 3/4 -147'-9 1/4"	LEISURE POOL ARC CENTER POINT	1109	-82'-0"	-124'-7"	LEISURE POOL FLOOR INLET
14	-62 <sup>'</sup> -9 1/4"	-147 <sup>'</sup> -5 1/4"	LEISURE POOL ARC CENTER POINT	111	-94'-0 3/4"	-113'-3"	LEISURE POOL FLOOR INLET
15	-107'-7 3/4"	-144'-2"	LEISURE POOL ARC CENTER POINT	112	-114'-1 1/2"	-103 <b>'</b> -5 1/4 <b>"</b>	LEISURE POOL FLOOR INLET
16 17	-130'-3" -115'-8 1/2"	-152'-7 3/4"	LEISURE POOL ARC CENTER POINT LEISURE POOL ARC CENTER POINT	113	-121'-2 1/4" -99'-6 3/4"	-119'-6" -126'-3 1/2"	LEISURE POOL FLOOR INLET LEISURE POOL FLOOR INLET
18	-109'-0 3/4"	-118'-2" -116'-5 1/4"	LEISURE POOL ARC CENTER POINT	114 115	-86'-9 3/4"	-136'-7 3/4"	LEISURE POOL FLOOR INLET
19	-112'-8 3/4"	-113'-7 3/4"	LEISURE POOL ARC CENTER POINT	116	-63'-8"	-123'-11 3/4"	LEISURE POOL FLOOR INLET
20	-116 <b>'</b> -3"	-111 <sup>'</sup> -8 3/4"	LEISURE POOL ARC CENTER POINT	117	-61 <b>'</b> -0 <b>"</b>	-110'-5 3/4 <b>"</b>	LEISURE POOL FLOOR INLET
21	-109'-2 1/4"	-107'-4 3/4" -125'-9 1/4"	LEISURE POOL ARC CENTER POINT	118	-43'-2 3/4"	-110'-0 1/2"	LEISURE POOL FLOOR INLET
22 23	-70'-11 1/4" -80'-3"	-125 -9 1/4 -111'-10 1/4"	LEISURE POOL ARC CENTER POINT LEISURE POOL ARC CENTER POINT	119 120	-34'-4 3/4" -46'-1 1/4"	-106'-2" -96'-3 1/2"	LEISURE POOL FLOOR INLET LEISURE POOL FLOOR INLET
24	-80 -3 -101'-2 1/2"	-94'-3"	LEISURE POOL ARC CENTER POINT	121	-62'-0 3/4"	-94'-1 3/4"	LEISURE POOL FLOOR INLET
25	-66 <b>'</b> -1 3/4 <b>"</b>	-115 <b>'</b> -10 3/4"	LEISURE POOL ARC CENTER POINT	122	-58'-10 1 <b>/</b> 4"	-85'-6 1/4"	LEISURE POOL FLOOR INLET
26	-66'-2 1/2"	-115'-4 3/4"	LEISURE POOL ARC CENTER POINT	123	-40'-11"	-76'-9 1/4"	LEISURE POOL FLOOR INLET
27 28	-64'-6 1/2" 2'-0"	-117'-8 1/2" -111'-4 1/2"	LEISURE POOL ARC CENTER POINT LEISURE POOL ARC CENTER POINT	124 125	-25'-10" -12'-5 3/4"	-89'-6" -81'-10 1/4"	LEISURE POOL FLOOR INLET  LEISURE POOL FLOOR INLET
29	2 -0 	-52'-11 1/4"	LEISURE POOL ARC CENTER POINT	126	-32'-10"		LEISURE POOL FLOOR INLET
30	<b>−10"</b>	-86'-3 3/4"	LEISURE POOL ARC END POINT	127	-22'-7 1/4"	-73 <b>'</b> -2 1/2 <b>"</b>	LEISURE POOL FLOOR INLET
31	-21'-2"	-101'-4 1/2"	LEISURE POOL ARC END POINT	128	-122'-2 1/4"	-123'-3"	LEISURE POOL CENTER OF WALL DRAIN
32	-41'-0 1/2"	-116'-1 1/4" -109'-0 3/4"	LEISURE POOL ARC END POINT	129	-101'-8 1/4" -126'-4 3/4"	-101'-6 3/4"	LEISURE POOL CENTER OF WALL DRAIN
33 34	-57'-7" -58'-8"	-109 -0 3/4 -110'-1 1/4"	LEISURE POOL ARC END POINT LEISURE POOL ARC END POINT	130 131	-126'-4 3/4" -39'-8"	-119'-5" -145'-0 1/2"	LEISURE POOL RIVER NOZZLE  LEISURE POOL RIVER NOZZLE
35	-50 -6 -57'-11 1/2"	-110'-9 1/2"	LEISURE POOL ARC END POINT	132	-59 -6 -51'-3 1/4"	-119'-10 1/4"	LEISURE POOL RIVER NOZZLE  LEISURE POOL RIVER NOZZLE
36	-70 <b>'</b> -5 3 <b>/</b> 4"	-125 <b>'</b> -2"	LEISURE POOL ARC END POINT	133	-93 <sup>'</sup> -6"	-107 <b>'</b> -1 1/4"	LEISURE POOL RIVER NOZZLE
37	-71 <b>'</b> -5"	-126'-4"	LEISURE POOL ARC END POINT	134	-70'-3 1/4"	-148'-3 1/4"	LEISURE POOL HANDRAIL END POINT
38 39	-55'-5 1/4" -45'-1 3/4"	-123'-11 1/2" -145'-6 3/4"	LEISURE POOL ARC END POINT LEISURE POOL ARC END POINT	135 136	-64'-0 1/2" -63'-9 1/2"	-148'-5 1/2" -151'-7 1/2"	LEISURE POOL HANDRAIL END POINT LEISURE POOL HANDRAIL END POINT
40	-56'-7 1/4"	-145'-9 3/4"	LEISURE POOL ARC END POINT	137	-70'-6 1/4"	-151'-5 1/4"	LEISURE POOL HANDRAIL END POINT
41	-58'-2 3/4"	-148'-3"	LEISURE POOL ARC END POINT	138	-74'-11 3/4"	-107'-8 1/4"	LEISURE POOL HANDRAIL END POINT
42	-57'-6 1/2"	-151'-1"	LEISURE POOL ARC END POINT	139	-71'-9"	-112'-9"	LEISURE POOL HANDRAIL END POINT
43	-47'-3 3/4" -46'-8 3/4"	-126'-10" -127'-7 3/4"	LEISURE POOL ARC END POINT	140	-73'-6 1/4"	-113'-11 1/4"	LEISURE POOL HANDRAIL END POINT
44 45	-40 -6 3/4 -41'-8 3/4"	-127'-0 1/2"	LEISURE POOL ARC END POINT LEISURE POOL ARC END POINT	141 142	-76'-8 3/4" -80'-11 1/2"	-108'-10 1/2" -111'-7 1/2"	LEISURE POOL HANDRAIL END POINT LEISURE POOL HANDRAIL END POINT
46	-41 <b>'</b> -4"	-126'-1 3/4"	LEISURE POOL ARC END POINT	143	-77'-8 3/4"	-116'-8 1/4"	LEISURE POOL HANDRAIL END POINT
47	-44 <sup>'</sup> -1 3/4"	-137 <sup>'</sup> -7 1/2"	LEISURE POOL ARC END POINT	144	-53 <sup>'</sup> -7 1/2"	-74 <b>'</b> -1 3/4 <b>"</b>	LEISURE POOL WING WALL RAILING END POINT
48	-48'-7 3/4"	-128'-2 3/4"	LEISURE POOL ARC END POINT	145	-23'-7"	-74'-2 3/4"	LEISURE POOL WING WALL RAILING END POINT
49 50	-59'-8" -73'-9 1/4"	-138'-2 1/2" -137'-10"	LEISURE POOL ARC END POINT LEISURE POOL ARC END POINT	146 147	-29'-5 1/4" -79'-2 1/4"	-112'-2 1/2" -117'-5 1/4"	LEISURE POOL GRAB RAILS  LEISURE POOL SAFETY ROPE CUP ANCHOR
51	-73'-8 1/4"	-135'-9 1/2"	LEISURE POOL ARC END POINT	148	-71'-6 1/4"	-125'-3 1/2"	LEISURE POOL SAFETY ROPE CUP ANCHOR
52	-97 <b>'</b> -1 <b>"</b>	-119'-6"	LEISURE POOL ARC END POINT	149	-58'-5 3/4"	-110 <b>'</b> -3 1/2"	LEISURE POOL SAFETY ROPE CUP ANCHOR
53	-95'-4 1/4"	-118'-6 1/4"	LEISURE POOL ARC END POINT	150	-63'-10 1/4"	-114'-9 1/4"	LEISURE POOL SAFETY ROPE CUP ANCHOR
54 55	-68'-8 3/4" -69'-0 3/4"	-148'-0 1/4" -152'-0"	LEISURE POOL ARC END POINT LEISURE POOL ARC END POINT	151 152	-71'-7 3/4" -36'-0"	-102'-8 3/4" -54'-8 1/4"	LEISURE POOL POOL LIFT ANCHOR  LEISURE POOL ROOSTER TAIL FEATURE
56	-75'-11 1/4"	-132 -0 -145'-6 1/2"	LEISURE POOL ARC END POINT	153	-31'-10 1/4"	-55'-3"	LEISURE POOL DIRECTIONAL JET
57	-97 <b>'</b> -0 1/2"	-132 <b>'</b> -10 1/2"	LEISURE POOL ARC END POINT	154	-25 <b>'</b> -7 1 <b>/2"</b>	-58'-8"	LEISURE POOL FOAMING GEYSER 2
58	-108'-5 3/4"	-128'-8 1/2"	LEISURE POOL ARC END POINT	155	-7 <b>'</b> -8 1/2"	-75'-11 1/2"	LEISURE POOL TEAM SPRAY 1
59	-114'-0 1/2" -124'-6 3/4"	-127'-8" -121'-4 1/2"	LEISURE POOL ARC END POINT	156	-7'-11" -7'-11 1/4"	-77'-3 1/2" -78'-5 3/4"	LEISURE POOL TEAM SPRAY 1 LEISURE POOL TEAM SPRAY 1
60 61	-124 -0 3/4 -119'-1 1/4"	-98'-11 3/4"	LEISURE POOL ARC END POINT LEISURE POOL ARC END POINT	157 158	-7-11 1/4 -6'-11 1/4"	-78-3 3/4 -79'-5 1/2"	LEISURE POOL TEAM SPRAY 1
62	-103'-7 1/4"	-100'-6 1/2"	LEISURE POOL ARC END POINT	159	-5'-8"	-80'-0"	LEISURE POOL TEAM SPRAY 1
63	-84'-10 3/4"	-115 <b>'</b> -7 3 <b>/</b> 4"	LEISURE POOL ARC END POINT	160	-5 <b>'</b> -1 1/4 <b>"</b>	-81'-1"	LEISURE POOL TEAM SPRAY 1
64 CF	-80'-2 1/2"	-117'-10 1/4"	LEISURE POOL ARC END POINT	161	-5'-3 1/4" 5' 5 1/2"	-82'-5"	LEISURE POOL TEAM SPRAY 1
65 66	-78'-11 1/2" -80'-6 1/2"	-115'-6 1/2" -113'-1 3/4"	LEISURE POOL ARC END POINT LEISURE POOL ARC END POINT	162 163	-5'-5 1/2" -14'-1"	-83'-6 3/4" -85'-5 1/4"	LEISURE POOL TEAM SPRAY 1 LEISURE POOL WATER BUG 2
67	-73'-9 3/4"	-108'-8 3/4"	LEISURE POOL ARC END POINT	164	-14-1 -24'-1 3/4"	-97'-7 1/2"	LEISURE POOL WATER BUG 2
68	-71 <b>'</b> -0 3/4"	-113 <b>'</b> -0 1 <b>/</b> 2"	LEISURE POOL ARC END POINT	165	-28'-2 1/2"	-71 <b>'</b> -9 1 <b>/</b> 2"	LEISURE BUTTEFLY 1
69	-66'-5 1/2"	-119'-4 1/2"	LEISURE POOL ARC END POINT	166	-37'-8 3/4"	-64'-7 1/2"	LEISURE FROG SLIDE
70 71	-62'-9 3/4"	-115'-11 1/4"	LEISURE POOL ARC END POINT	167 168	-36'-6" -56'-0 1/2"	-78'-6 3/4"	LEISURE CASCADE LOOP FEATURE
71 72	-117'-6" -119'-4"	-107'-2" -115'-3 3/4"	LEISURE POOL ARC END POINT LEISURE POOL ARC END POINT	168 169	-56 -0 1/2 -53'-1 1/4"	-98'-6" -98'-10 1/2"	LOG FLOATABLE ANCHOR LOG FLOATABLE ANCHOR
73	-110'-11 1/4"	-120'-3 1/4"	LEISURE POOL ARC END POINT	170	-47 <b>'</b> -5 <b>"</b>	-102 <b>'</b> -0 1 <b>/</b> 4"	LILY PAD FLOATABLE ANCHOR
74	-104 <b>'</b> -10 <b>"</b>	-115 <b>'</b> -8 3 <b>/</b> 4"	LEISURE POOL ARC END POINT	171	-42'-6 1/2"	-106 <b>'</b> -7 <b>3</b> /4"	FLOWER FLOATABLE ANCHOR
75 70	-58'-0"	-76'-6 3/4"	LEISURE POOL ARC END POINT	172	-49'-11 3/4"	-132'-5"	LEISURE POOL TUNNEL SPRAY 1 FEATURE
76 77	-51'-9 1/4" -23'-1 1/4"	-78'-2" -74'-4 1/2"	LEISURE POOL ARC END POINT LEISURE POOL ARC END POINT	173 174	-51'-1 3/4" -52'-3 1/2"	-133'-1" -133'-9"	LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE
78	' '/ '	,	LEISURE POOL ARC END POINT	175	-53'-5 1/2"	-134'-4 3/4"	LEISURE POOL TUNNEL SPRAY 1 FEATURE
/ U	-24'-0 3/4"	-74 <b>'</b> -1 1/4 <b>"</b>	LEGOTE 1 GOE 7110 END 1 GIVI		-54'-7 1/2 <b>"</b>		
79	-49'-9 3/4"	-72 <b>'</b> -1 1/2"	LEISURE POOL ARC END POINT	176		-135'-0 3/4"	LEISURE POOL TUNNEL SPRAY 1 FEATURE
79 80	-49'-9 3/4" -51'-0 1/2"	-72'-1 1/2" -77'-4 3/4"	LEISURE POOL ARC END POINT LEISURE POOL ARC END POINT	177	-55'-9 1/4"	-135'-8 3/4"	LEISURE POOL TUNNEL SPRAY 1 FEATURE
79 80 81	-49'-9 3/4" -51'-0 1/2" -18'-10"	-72'-1 1/2" -77'-4 3/4" -67'-7"	LEISURE POOL ARC END POINT LEISURE POOL ARC END POINT LEISURE POOL CENTER OF TRENCH DRAIN	177 178	-55'-9 1/4" -56'-11 1/4"	-135'-8 3/4" -136'-4 3/4"	LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE
79 80	-49'-9 3/4" -51'-0 1/2"	-72'-1 1/2" -77'-4 3/4"	LEISURE POOL ARC END POINT LEISURE POOL ARC END POINT	177	-55'-9 1/4"	-135'-8 3/4"	LEISURE POOL TUNNEL SPRAY 1 FEATURE
79 80 81 82 83 84	-49'-9 3/4" -51'-0 1/2" -18'-10" -45'-2 1/2" -50'-0" -55'-1 1/4"	-72'-1 1/2" -77'-4 3/4" -67'-7" -80'-7 3/4" -110'-7 3/4" -107'-6"	LEISURE POOL ARC END POINT  LEISURE POOL ARC END POINT  LEISURE POOL CENTER OF TRENCH DRAIN  LEISURE POOL CENTER OF CHANNEL DRAIN  LEISURE POOL CENTER OF MAIN DRAIN  LEISURE POOL CENTER OF MAIN DRAIN	177 178 179 180 181	-55'-9 1/4" -56'-11 1/4" -58'-1" -106'-10" -94'-10 1/4"	-135'-8 3/4" -136'-4 3/4" -137'-0 3/4" -117'-0 1/2" -121'-1 3/4"	LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL RIO NANO 1 FEATURE LEISURE POOL RIO NANO 1 FEATURE
79 80 81 82 83 84 85	-49'-9 3/4" -51'-0 1/2" -18'-10" -45'-2 1/2" -50'-0" -55'-1 1/4" -75'-1 1/4"	-72'-1 1/2" -77'-4 3/4" -67'-7" -80'-7 3/4" -110'-7 3/4" -107'-6" -141'-10"	LEISURE POOL ARC END POINT  LEISURE POOL ARC END POINT  LEISURE POOL CENTER OF TRENCH DRAIN  LEISURE POOL CENTER OF CHANNEL DRAIN  LEISURE POOL CENTER OF MAIN DRAIN  LEISURE POOL CENTER OF MAIN DRAIN  LEISURE POOL CENTER OF MAIN DRAIN	177 178 179 180 181 182	-55'-9 1/4" -56'-11 1/4" -58'-1" -106'-10" -94'-10 1/4" -115'-2 3/4"	-135'-8 3/4" -136'-4 3/4" -137'-0 3/4" -117'-0 1/2" -121'-1 3/4" -108'-6"	LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL RIO NANO 1 FEATURE LEISURE POOL RIO NANO 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE
79 80 81 82 83 84 85 86	-49'-9 3/4" -51'-0 1/2" -18'-10" -45'-2 1/2" -50'-0" -55'-1 1/4" -75'-1 1/4" -83'-4"	-72'-1 1/2" -77'-4 3/4" -67'-7" -80'-7 3/4" -110'-7 3/4" -107'-6" -141'-10" -138'-2 1/4"	LEISURE POOL ARC END POINT  LEISURE POOL ARC END POINT  LEISURE POOL CENTER OF TRENCH DRAIN  LEISURE POOL CENTER OF CHANNEL DRAIN  LEISURE POOL CENTER OF MAIN DRAIN	177 178 179 180 181 182 183	-55'-9 1/4" -56'-11 1/4" -58'-1" -106'-10" -94'-10 1/4" -115'-2 3/4" -114'-1"	-135'-8 3/4" -136'-4 3/4" -137'-0 3/4" -117'-0 1/2" -121'-1 3/4" -108'-6" -109'-2"	LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL RIO NANO 1 FEATURE LEISURE POOL RIO NANO 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE
79 80 81 82 83 84 85 86 87	-49'-9 3/4" -51'-0 1/2" -18'-10" -45'-2 1/2" -50'-0" -55'-1 1/4" -75'-1 1/4" -83'-4" -113'-2 1/2"	-72'-1 1/2" -77'-4 3/4" -67'-7" -80'-7 3/4" -110'-7 3/4" -107'-6" -141'-10" -138'-2 1/4" -129'-9 1/2"	LEISURE POOL ARC END POINT  LEISURE POOL ARC END POINT  LEISURE POOL CENTER OF TRENCH DRAIN  LEISURE POOL CENTER OF CHANNEL DRAIN  LEISURE POOL CENTER OF MAIN DRAIN	177 178 179 180 181 182 183 184	-55'-9 1/4" -56'-11 1/4" -58'-1" -106'-10" -94'-10 1/4" -115'-2 3/4" -114'-1" -112'-11 1/4"	-135'-8 3/4" -136'-4 3/4" -137'-0 3/4" -117'-0 1/2" -121'-1 3/4" -108'-6" -109'-2" -109'-10"	LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL RIO NANO 1 FEATURE LEISURE POOL RIO NANO 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE
79 80 81 82 83 84 85 86	-49'-9 3/4" -51'-0 1/2" -18'-10" -45'-2 1/2" -50'-0" -55'-1 1/4" -75'-1 1/4" -83'-4"	-72'-1 1/2" -77'-4 3/4" -67'-7" -80'-7 3/4" -110'-7 3/4" -107'-6" -141'-10" -138'-2 1/4"	LEISURE POOL ARC END POINT  LEISURE POOL ARC END POINT  LEISURE POOL CENTER OF TRENCH DRAIN  LEISURE POOL CENTER OF CHANNEL DRAIN  LEISURE POOL CENTER OF MAIN DRAIN	177 178 179 180 181 182 183	-55'-9 1/4" -56'-11 1/4" -58'-1" -106'-10" -94'-10 1/4" -115'-2 3/4" -114'-1"	-135'-8 3/4" -136'-4 3/4" -137'-0 3/4" -117'-0 1/2" -121'-1 3/4" -108'-6" -109'-2"	LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL RIO NANO 1 FEATURE LEISURE POOL RIO NANO 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE LEISURE POOL TUNNEL SPRAY 1 FEATURE
79 80 81 82 83 84 85 86 87 88 89	-49'-9 3/4" -51'-0 1/2" -18'-10" -45'-2 1/2" -50'-0" -55'-1 1/4" -75'-1 1/4" -83'-4" -113'-2 1/2" -93'-7" -77'-11" -56'-1 3/4"	-72'-1 1/2" -77'-4 3/4" -67'-7" -80'-7 3/4" -110'-7 3/4" -107'-6" -141'-10" -138'-2 1/4" -129'-9 1/2" -138'-6 1/4" -146'-10 1/2" -149'-0 3/4"	LEISURE POOL ARC END POINT  LEISURE POOL ARC END POINT  LEISURE POOL CENTER OF TRENCH DRAIN  LEISURE POOL CENTER OF CHANNEL DRAIN  LEISURE POOL CENTER OF MAIN DRAIN  LEISURE POOL SKIMMER  LEISURE POOL SKIMMER  LEISURE POOL SKIMMER	177 178 179 180 181 182 183 184 185 186 187	-55'-9 1/4" -56'-11 1/4" -58'-1" -106'-10" -94'-10 1/4" -115'-2 3/4" -114'-1" -112'-11 1/4" -111'-9 1/4" -110'-7 1/2" -109'-5 3/4"	-135'-8 3/4" -136'-4 3/4" -137'-0 3/4" -117'-0 1/2" -121'-1 3/4" -108'-6" -109'-2" -110'-6 1/4" -111'-2 1/4"	LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL RIO NANO 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE
79 80 81 82 83 84 85 86 87 88 89 90	-49'-9 3/4" -51'-0 1/2" -18'-10" -45'-2 1/2" -50'-0" -55'-1 1/4" -75'-1 1/4" -83'-4" -113'-2 1/2" -93'-7" -77'-11" -56'-1 3/4"	-72'-1 1/2" -77'-4 3/4" -67'-7" -80'-7 3/4" -110'-7 3/4" -107'-6" -141'-10" -138'-2 1/4" -129'-9 1/2" -138'-6 1/4" -146'-10 1/2" -149'-0 3/4" -139'-6"	LEISURE POOL ARC END POINT  LEISURE POOL ARC END POINT  LEISURE POOL CENTER OF TRENCH DRAIN  LEISURE POOL CENTER OF CHANNEL DRAIN  LEISURE POOL CENTER OF MAIN DRAIN  LEISURE POOL SKIMMER	177 178 179 180 181 182 183 184 185 186 187	-55'-9 1/4" -56'-11 1/4" -58'-1" -106'-10" -94'-10 1/4" -115'-2 3/4" -114'-1" -112'-11 1/4" -111'-9 1/4" -110'-7 1/2" -109'-5 3/4" -108'-4"	-135'-8 3/4" -136'-4 3/4" -137'-0 3/4" -117'-0 1/2" -121'-1 3/4" -108'-6" -109'-2" -109'-10" -110'-6 1/4" -111'-10 1/4" -112'-6 1/2"	LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL RIO NANO 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE
79 80 81 82 83 84 85 86 87 88 89 90 91	-49'-9 3/4" -51'-0 1/2" -18'-10" -45'-2 1/2" -50'-0" -55'-1 1/4" -75'-1 1/4" -83'-4" -113'-2 1/2" -93'-7" -77'-11" -56'-1 3/4" -29'-11 3/4" -31'-11 1/2"	-72'-1 1/2" -77'-4 3/4" -67'-7" -80'-7 3/4" -110'-7 3/4" -107'-6" -141'-10" -138'-2 1/4" -129'-9 1/2" -138'-6 1/4" -146'-10 1/2" -149'-0 3/4" -139'-6" -121'-0 3/4"	LEISURE POOL ARC END POINT  LEISURE POOL ARC END POINT  LEISURE POOL CENTER OF TRENCH DRAIN  LEISURE POOL CENTER OF CHANNEL DRAIN  LEISURE POOL CENTER OF MAIN DRAIN  LEISURE POOL SKIMMER	177 178 179 180 181 182 183 184 185 186 187 188	-55'-9 1/4" -56'-11 1/4" -58'-1" -106'-10" -94'-10 1/4" -115'-2 3/4" -114'-1" -112'-11 1/4" -111'-9 1/4" -110'-7 1/2" -109'-5 3/4" -108'-4" -107'-2"	-135'-8 3/4" -136'-4 3/4" -137'-0 3/4" -117'-0 1/2" -121'-1 3/4" -108'-6" -109'-2" -110'-6 1/4" -111'-2 1/4" -111'-10 1/4" -112'-6 1/2" -113'-2 1/2"	LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL RIO NANO 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE
79 80 81 82 83 84 85 86 87 88 89 90 91 92 93	-49'-9 3/4" -51'-0 1/2" -18'-10" -45'-2 1/2" -50'-0" -55'-1 1/4" -75'-1 1/4" -83'-4" -113'-2 1/2" -93'-7" -77'-11" -56'-1 3/4" -29'-11 3/4" -31'-1 1/2"	-72'-1 1/2" -77'-4 3/4" -67'-7" -80'-7 3/4" -110'-7 3/4" -107'-6" -141'-10" -138'-2 1/4" -129'-9 1/2" -138'-6 1/4" -146'-10 1/2" -149'-0 3/4" -139'-6" -121'-0 3/4" -115'-5 1/4"	LEISURE POOL ARC END POINT  LEISURE POOL ARC END POINT  LEISURE POOL CENTER OF TRENCH DRAIN  LEISURE POOL CENTER OF CHANNEL DRAIN  LEISURE POOL CENTER OF MAIN DRAIN  LEISURE POOL SKIMMER	177 178 179 180 181 182 183 184 185 186 187 188 189	-55'-9 1/4" -56'-11 1/4" -58'-1" -106'-10" -94'-10 1/4" -115'-2 3/4" -114'-1" -112'-11 1/4" -111'-9 1/4" -110'-7 1/2" -109'-5 3/4" -108'-4" -107'-2" -113'-7"	-135'-8 3/4" -136'-4 3/4" -137'-0 3/4" -117'-0 1/2" -121'-1 3/4" -108'-6" -109'-2" -110'-6 1/4" -111'-2 1/4" -111'-10 1/4" -112'-6 1/2" -113'-2 1/2" -122'-0 3/4"	LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL RIO NANO 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE
79 80 81 82 83 84 85 86 87 88 89 90 91	-49'-9 3/4" -51'-0 1/2" -18'-10" -45'-2 1/2" -50'-0" -55'-1 1/4" -75'-1 1/4" -83'-4" -113'-2 1/2" -93'-7" -77'-11" -56'-1 3/4" -29'-11 3/4" -31'-11 1/2"	-72'-1 1/2" -77'-4 3/4" -67'-7" -80'-7 3/4" -110'-7 3/4" -107'-6" -141'-10" -138'-2 1/4" -129'-9 1/2" -138'-6 1/4" -146'-10 1/2" -149'-0 3/4" -139'-6" -121'-0 3/4"	LEISURE POOL ARC END POINT  LEISURE POOL ARC END POINT  LEISURE POOL CENTER OF TRENCH DRAIN  LEISURE POOL CENTER OF CHANNEL DRAIN  LEISURE POOL CENTER OF MAIN DRAIN  LEISURE POOL SKIMMER	177 178 179 180 181 182 183 184 185 186 187 188	-55'-9 1/4" -56'-11 1/4" -58'-1" -106'-10" -94'-10 1/4" -115'-2 3/4" -114'-1" -112'-11 1/4" -111'-9 1/4" -110'-7 1/2" -109'-5 3/4" -108'-4" -107'-2"	-135'-8 3/4" -136'-4 3/4" -137'-0 3/4" -117'-0 1/2" -121'-1 3/4" -108'-6" -109'-2" -110'-6 1/4" -111'-2 1/4" -111'-10 1/4" -112'-6 1/2" -113'-2 1/2"	LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL RIO NANO 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE
79 80 81 82 83 84 85 86 87 88 89 90 91 92 93	-49'-9 3/4" -51'-0 1/2" -18'-10" -45'-2 1/2" -50'-0" -55'-1 1/4" -75'-1 1/4" -83'-4" -113'-2 1/2" -93'-7" -77'-11" -56'-1 3/4" -29'-11 3/4" -31'-11 1/2" -19'-1 1/2"	-72'-1 1/2" -77'-4 3/4" -67'-7" -80'-7 3/4" -110'-7 3/4" -107'-6" -141'-10" -138'-2 1/4" -129'-9 1/2" -138'-6 1/4" -146'-10 1/2" -149'-0 3/4" -139'-6" -121'-0 3/4" -115'-5 1/4" -101'-4"	LEISURE POOL ARC END POINT  LEISURE POOL ARC END POINT  LEISURE POOL CENTER OF TRENCH DRAIN  LEISURE POOL CENTER OF CHANNEL DRAIN  LEISURE POOL CENTER OF MAIN DRAIN  LEISURE POOL SKIMMER  LEISURE POOL SKIMMER	177 178 179 180 181 182 183 184 185 186 187 188 189 190	-55'-9 1/4" -56'-11 1/4" -58'-1" -106'-10" -94'-10 1/4" -115'-2 3/4" -114'-1" -112'-11 1/4" -110'-7 1/2" -109'-5 3/4" -108'-4" -107'-2" -113'-7" -46'-10 1/2"	-135'-8 3/4" -136'-4 3/4" -137'-0 3/4" -117'-0 1/2" -121'-1 3/4" -108'-6" -109'-2" -109'-10" -110'-6 1/4" -111'-10 1/4" -112'-6 1/2" -113'-2 1/2" -122'-0 3/4" -61'-6 3/4"	LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL RIO NANO 1 FEATURE  LEISURE POOL TUNNEL SPRAY 1 FEATURE  LEISURE POOL ARC CENTER POINT  VALVE BOX 1

10			CATION POINT SCHEDULE
LP#	X 444' O"	Υ	DESCRIPTION  FITNESS POOL CONSTRUCTION POINT
2	-111'-8" -67'-7"	21'-5" -11'-5 3/4"	FITNESS POOL CONSTRUCTION POINT FITNESS POOL CONSTRUCTION POINT
3	-112'-5 3/4"	-71'-7 3/4"	FITNESS POOL CONSTRUCTION POINT
4	-156'-6 3/4"	-38'-9"	FITNESS POOL CONSTRUCTION POINT
5	-130'-8 1/4"	-49'-3"	FITNESS POOL CENTER OF MAIN DRAIN
6	-119 <b>'</b> -6 <b>"</b>	-57'-7 3/4"	FITNESS POOL CENTER OF MAIN DRAIN
7	-150'-2 3/4"	-27'-2 1/4"	FITNESS POOL SKIMMER
8	-134 <b>'</b> -7 1/4"	-6'-2 3/4"	FITNESS POOL SKIMMER
9	-103'-9"	17'-9 3/4"	FITNESS POOL SKIMMER
10	-84'-6 3/4"	3'-6"	FITNESS POOL SKIMMER
11	-67'-1"	-9'-6 1/2"	FITNESS POOL SKIMMER
12	-71'-3 1/2"	-19'-6 3/4"	FITNESS POOL SKIMMER
13	-83'-3 1/2" -92'-4 3/4"	-35'-7 3/4"	FITNESS POOL SKIMMER FITNESS POOL SKIMMER
14 15	-92 -4 3/4" -101'-2 3/4"	-47'-10" -59'-8 1/4"	FITNESS POOL SKIMMER  FITNESS POOL SKIMMER
16	-101 -2 3/4 -114'-2 1/4"	-72'-8 1/4"	FITNESS POOL SKIMMER
17	-134'-11"	-57 <b>'</b> -2 1/2"	FITNESS POOL SKIMMER
18	-150'-10 1/4"	-45'-3 3/4"	FITNESS POOL SKIMMER
19	-123'-5 1/4"	-8'-6 3/4"	FITNESS POOL WALL INLET
20	-111'-10 3/4 <b>"</b>	12'-9"	FITNESS POOL FLOOR INLET
21	-130'-1 1/4"	-11'-8"	FITNESS POOL FLOOR INLET
22	-148 <b>'</b> -3 3/4 <b>"</b>	-36'-0 3/4"	FITNESS POOL FLOOR INLET
23	-133'-5 3/4"	-47'-1 1/2"	FITNESS POOL FLOOR INLET
24	-130'-4"	-31'-2 1/4"	FITNESS POOL FLOOR INLET
25	-119'-1 1/4"	-39'-6 3/4"	FITNESS POOL FLOOR INLET
26	-115'-3 1/4"	-22'-8 3/4"	FITNESS POOL FLOOR INLET
27	-111'-9 1/2" -100'-6 3/4"	-6'-4" -14'-8 1/2"	FITNESS POOL FLOOR INLET
28 29	-100 -6 3/4 -97'-0 3/4"	1'-8 1/4"	FITNESS POOL FLOOR INLET  FITNESS POOL FLOOR INLET
30	-85'-10 1/4"	-6'-8 1/4"	FITNESS POOL FLOOR INLET
31	-74'-7 1/2"	-15'-0 3/4"	FITNESS POOL FLOOR INLET
32	-89'-4"	-23 <b>'</b> -1"	FITNESS POOL FLOOR INLET
33	-104'-0 3/4"	-31'-1 1/4"	FITNESS POOL FLOOR INLET
34	-92 <b>'</b> -10 <b>"</b>	-39'-5 1/2"	FITNESS POOL FLOOR INLET
35	-107'-10 1/2"	-47 <sup>'</sup> -11 1/4"	FITNESS POOL FLOOR INLET
36	-111'-0 1/2"	-63 <b>'</b> -10 1/2 <b>"</b>	FITNESS POOL FLOOR INLET
37	-122'-3 1/4"	-55'-6"	FITNESS POOL FLOOR INLET
38	-66'-7 3/4"	-13'-11"	FITNESS POOL WATER LEVEL CONTROLLER
39	-125'-7 3/4" -122'-5 1/4"	-6'-6 1/4"	FITNESS POOL HANDRAIL END POINT
40 41	-122 -3 1/4 -119'-2 3/4"	-8'-11" -4'-7 1/4"	FITNESS POOL HANDRAIL END POINT FITNESS POOL HANDRAIL END POINT
42	-122'-5 1/4"	-2'-2 1/2"	FITNESS POOL HANDRAIL END POINT
43	-123'-1 1/4"	-9'-8 1/4"	FITNESS POOL GUARD RAIL END POINT
44	-148'-10"	-44'-2 1/4"	FITNESS POOL GUARD RAIL END POINT
45	-132'-1 3/4"	-3'-6 1/4"	FITNESS POOL HANDRAIL END POINT
46	-130 <b>'</b> -6 1 <b>/</b> 2"	-4'-8 3/4"	FITNESS POOL HANDRAIL END POINT
47	-125'-9 1/2"	4'-11 3/4"	FITNESS POOL HANDRAIL END POINT
48	-124'-2 1/2"	3'-9 1/4"	FITNESS POOL HANDRAIL END POINT
49	-119 <b>'</b> -5 1/2 <b>"</b>	13'-5 3/4"	FITNESS POOL HANDRAIL END POINT
50	-117'-10 1/4"	12'-3 1/4"	FITNESS POOL HANDRAIL END POINT
51	-113'-1 1/2"	21'-11 3/4"	FITNESS POOL HANDRAIL END POINT
52	-111'-6 1/4"	20'-9 1/4"	FITNESS POOL HANDRAIL END POINT
53	-132'-2 1/4"	-22'-10"	FITNESS POOL SAFETY ROPE CUP ANCHOR
54	-96'-1 1/2" -73'-2 1/4"	-49'-8 3/4" -7'-3 1/2"	FITNESS POOL LANE POPE CUP ANCHOR
55 56	-78'-9 3/4"	-7-3 1/2 -3'-1 1/4"	FITNESS POOL LANE ROPE CUP ANCHOR  FITNESS POOL LANE ROPE CUP ANCHOR
57	-76 -9 3/4 -84'-5"	1'-1"	FITNESS POOL LANE ROPE CUP ANCHOR  FITNESS POOL LANE ROPE CUP ANCHOR
58	-90'-0 1/4"	5'-3 1/4"	FITNESS POOL LANE ROPE CUP ANCHOR
59	-95'-7 3/4"	9'-5 1/2"	FITNESS POOL LANE ROPE CUP ANCHOR
60	-101 <b>'</b> -3"	13'-7 3/4"	FITNESS POOL LANE ROPE CUP ANCHOR
61	-146 <b>'</b> -1 1/2 <b>"</b>	-46'-6 1/4"	FITNESS POOL LANE ROPE CUP ANCHOR
62	-140'-6 1/4"	-50'-8 1/2"	FITNESS POOL LANE ROPE CUP ANCHOR
63	-134'-11"	-54'-10 3/4"	FITNESS POOL LANE ROPE CUP ANCHOR
64	-129'-3 3/4"	-59'-1"	FITNESS POOL LANE ROPE CUP ANCHOR
65	-123'-8 1/4"	-63'-3 1/4"	FITNESS POOL LANE ROPE CUP ANCHOR
66	-118'-1" -109'-5 3/4"	-67'-5 1/2" -67'-7 1/2"	FITNESS POOL CRAP PAILS
67 68	-109'-5 3/4" -70'-7"	-67'-7 1/2" -15'-5 3/4"	FITNESS POOL GRAB RAILS FITNESS POOL GRAB RAILS
69	-/0-/ -102'-5 1/2"	14'-6 1/2"	FITNESS POOL GRAB RAILS  FITNESS POOL GRAB RAILS
70	-102 -3 1/2 -147'-4"	-45'-7 1/2"	FITNESS POOL GRAB RAILS  FITNESS POOL GRAB RAILS
71	-148'-9 1/2"	-25'-10"	FITNESS POOL STANCHION POST ANCHOR
72	-102'-3 1/2"	-60'-6 1/4"	FITNESS POOL STANCHION POST ANCHOR
73	-81'-0"	-33'-0 3/4"	FITNESS POOL POOL LIFT ANCHOR
74	-92 <b>'</b> -10 <b>"</b>	7'-4 1/4"	FITNESS POOL WATER BASKETBALL
75	-94 <b>'</b> -3 3/4"	-10 <b>'</b> -3"	FITNESS POOL WATER VOLLEYBALL
76	-113 <b>'</b> -2"	3'-9 1/4"	FITNESS POOL WATER VOLLEYBALL
77	-121'-10"	10'-3 1/2"	FITNESS POOL STANCHION POST ANCHOR
78	-75'-4 1/4 <b>"</b>	-24'-4 3/4"	FITNESS POOL STANCHION POST ANCHOR
79	-140'-6 1/4"	-50'-8 1/2"	FITNESS POOL AQUA ZIP IN'
80	-131 <b>'</b> -7"	-5'-3 1/4"	FITNESS POOL ARC CENTER POINT
81	-132'-2"	-6'-1"	FITNESS POOL ARC END POINT
82	-130'-9 1/4"	-5'-10 1/2"	FITNESS POOL ARC END POINT
83 84	-122'-2 3/4"	-9'-5 1/2"	FITNESS POOL CONSTRUCTION POINT
04	-124 <b>'</b> -7 1/2 <b>"</b>	-7'-8"	FITNESS POOL CONSTRUCTION POINT
85	-121'-0 1/2"	-2'-10 1/4"	FITNESS POOL CONSTRUCTION POINT



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CLIENT
WILLISTON
COMMUNITY
BUILDERS

PROJECT DESCRIPTION
WILLISTON WATER
WORLD

CITY WILLISTON
STATE NORTH DAKOTA

ISSUE DATES

CD	CONSTRUCTION DOCUMENTS	05/19/2023
DD	DESIGN DEVELOPMENT	01/20/2023
SD	SCHEMATIC DESIGN	12/15/2022
MARK	DESCRIPTION	DATE

PROJECT NO: 20224620

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POOL LOCATION
POINT SCHEDULES



PIPING LEGEND					
LEGEND	QTY.	ITEM	MAKE	MODEL	
		FIT	NESS POOL		
<b>A</b>	1	WALL INLET REFER: 8/AQ703	HAYWARD	SP1421D & SP1022S	
	18	FLOOR INLET REFER: 10/AQ703	STA-RITE	8417-000 (WHITE), 8417-0200 (BLACK)	
0	1	WATER LEVEL CONTROLLER REFER: 3/AQ704	AQUATICONTROL TECHNOLOGY	ELC-810-XX-DW-000	
$\boxtimes$	1	SIGHT SUMP REFER: 1/AQ704	QUAZITE	PC1212CA00 W. PC1212BA12 (QUAZITE)	
$\odot$	12	SKIMMER REFER: 13/AQ703	STA-RITE	U-3 #08650-1403 (WHITE)	
	2	MAIN DRAIN REFER: 12/AQ703	REFER TO MAIN DRAII	N SCHEDULE	
		LEI	SURE POOL	_	
<b>A</b>	2	WALL INLET REFER: 8/AQ703	HAYWARD	SP1421D & SP1022S	
	24	FLOOR INLET REFER: 10/AQ703	STA-RITE	8417-000 (WHITE)	
0	15	SKIMMER REFER: 13/AQ703	STA-RITE	U-3 #08650-1403 (WHITE)	
	4	MAIN DRAIN REFER: 12/AQ703	REFER TO MAIN DRAII	N SCHEDULE	
	2	WALL DRAIN REFER: 11/AQ704	REFER TO MAIN DRAII	N SCHEDULE	
•	4	CURRENT CHANNEL NOZZLES REFER: 11/AQ703	FIELD FABRICATED		
	1	CHANNEL DRAIN REFER: 9/AQ704	REFER TO MAIN DRAII	N SCHEDULE	
	4	VALVE BOX REFER: 1-4/AQ705	QUAZITE	PC2436BA18 & PC2436CA00	
	1	TRENCH SUMP REFER: 9/AQ703	FIELD FABRICATED		
0	1	WATER LEVEL CONTROLLER REFER: 3/AQ704	AQUATICONTROL TECHNOLOGY	ELC-810-XX-DW-000	
		C	COMBINED		
	N/A	BELOW GRADE PIPING	CHEMTROL	SCH 80 PVC	

	PIPE SCHEDULE
ID	DESCRIPTION
P1	8" FROM M1 TO PP3
P2	8" FROM LEISURE POOL SKIMMERS TO PP3
P3	8" FROM PP3 TO F2
P4	8" FROM F2 TO LEISURE POOL RETURN INLETS
P5	4" FROM P4 TO H2
P6	4" FROM H2 TO P4
P7	8" FROM F2 TO BACKWASH CATCH BASIN
P8	6" FROM L2 TO M4
P9	4" FROM P3 TO BACKWASH CATCH BASIN
P10	6" FROM M1 TO PP4
P11	4" FROM PP4 TO LEISURE POOL VALVE BOXES
P12	3" FROM TRENCH DRAIN TO M1
P13	4" FROM M3 TO M1
P14	8" FROM M1 TO PP6
P15	6" FROM PP6 TO CLOSED FLUME SLIDE
P16	10" FROM M2 TO PP1
P17	10" FROM PP1 TO LEISURE POOL RIVER NOZZLES
P18	10" FROM M2 TO PP2
P19	10" FROM PP2 TO LEISURE POOL RIVER NOZZLES
P20	10" FROM M2 TO PP7
P21	8" FROM PP7 TO OPEN FLUME SLIDE
P22	2" FROM VALVE BOX 1 TO FROG SLIDE
P23	1.5" FROM VALVE BOX 1 TO CASCADE LOOP
P24	1.5" FROM VALVE BOX 1 TO BUTTERFLY 1
P25	1.5" FROM VALVE BOX 4 TO FOAMING GEYSER 2
P26	1.5" FROM VALVE BOX 4 TO DIRECTIONAL JET 3
P27	1.5" FROM VALVE BOX 4 TO ROOSTER TAIL
P28	1.5" FROM VALVE BOX 2 TO WATER BUG 2
P29	2" FROM VALVE BOX 2 TO TEAM SPRAY 1
P30	2" FROM VALVE BOX 2 TO SPRIG 2
P31	NOT USED
P32	2" FROM VALVE BOX 3 TO WATER TUNNEL NO 1
P33	2" FROM VALVE BOX 3 TO WATER TUNNEL NO 1
P34	1.5" FROM VALVE BOX 3 TO RIO NANO NO 1
P35	8" FROM M4 TO PP5
P36	8" FROM FITNESS POOL SKIMMERS TO PP5
P37	6" FROM PP5 TO F1
P38	6" FROM F1 TO FITNESS POOL RETURN INLETS
P39	4" FROM P38 TO H1
P40	4" FROM H1 TO P38
P41	6" FROM F1 TO BACKWASH CATCH BASIN
P42	6" FROM L1 TO M4
P43	4" FROM P37 TO BACKWASH CATCH BASIN
P44	12" FROM WATERSLIDE SUMP TO M5
P44 P45	12" FROM WATERSLIDE SUMP TO M5
P45 P46	12" FROM WATERSLIDE SUMP TO M5
	12" FROM WATERSLIDE SUMP TO M6
P47	12 I NOW WATERSLIDE SUMP TO MO

# GENERAL PIPING NOTES

- PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERATIONAL PIPING SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
- PIPE SIZES INDICATED ARE NOMINAL, I.P.S.
- UNLESS OTHERWISE NOTED, ALL OVERHEAD PIPING MUST BE TIGHT TO UNDERSIDE OF STRUCTURE OR SLAB.
- ALL BALANCING VALVES AND BUTTERFLY VALVES MUST BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (MEMORY STOPS).
- ALL VALVES MUST BE INSTALLED SO THAT THE VALVE REMAINS IN SERVICE WHEN THE EQUIPMENT OR PIPING ON THE EQUIPMENT SIDE OF THE VALVE IS REMOVED. PROVIDE CHAIN WHEEL OPERATORS FOR ALL VALVES IN EQUIPMENT ROOMS MOUNTED GREATER THAN 7'-0" ABOVE FINISHED FLOOR; CHAIN MUST EXTEND TO 7'-0" ABOVE FINISHED FLOOR LEVEL.
- ALL VALVE HARDWARE MUST BE 316L STAINLESS STEEL AND MEET ANSI HARDWARE INSTALLATION GUIDELINES. REFER: 7/AQ704
- INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.
- ALL PIPING WORK MUST BE COORDINATED WITH ALL TRADES AND SITE CONDITIONS. OFFSETS, EXPANSION LOOPS, OR TRANSITIONS IN PIPING AROUND OBSTRUCTIONS MUST BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- 10. ALL PIPING INDICATED MUST BE CONSIDERED DIAGRAMMATIC.
- 1. ALL SWIMMING POOL PIPING ROUTED BELOW THE POOL SHELL MUST BE ALL SCHEDULE 80 PVC, UNLESS OTHERWISE NOTED. REFER: 2/AQ704
- 12. ALL UNDERGROUND OR EXPOSED SWIMMING POOL PIPING MUST BE SCHEDULE 80 PVC, UNLESS OTHERWISE NOTED. CONTRACTOR MUST REFER TO PLANS AND SPECIFICATIONS FOR ANY SPECIFIC REQUIREMENTS REGARDING PLACEMENT AND BACKFILLING OF BELOW GRADE POOL PIPE.
- 3. ALL DIMENSIONS INDICATED FROM THE FINISH WALL SURFACE AND DO NOT ACCOUNT FOR ANY VARIATIONS IN EITHER GRADE OR SLOPE DISTANCES.
- 14. THE CHEMICAL SENSOR LINE MUST BE A 3/4" TO 1" DIAMETER, SCHEDULE 80 PVC PIPE EXTENDED FROM THE WET CELL SENSOR TO ITS RESPECTIVE FILL FUNNEL AND THE BACKWASH CATCH BASIN OR PUMP SUCTION.
- 15. ALL FLOOR INLETS MUST BE ADJUSTED TO ACHIEVE AN EVEN FLOW DISTRIBUTION THROUGHOUT SYSTEMS.
- 16. ALL PIPE TEES MUST BE SIZED FOR LARGEST PIPE CONNECTION.
- POOL PIPING WINTERIZATION NOTES
- ALL POOL PIPING MUST HAVE THE ABILITY TO BE DRAINED FOR WINTERIZATION.
- ALL POOL RICIRCULATION INLET PIPING MUST HAVE THE ABILITY TO COMPLETELY DRAIN TO THE 2" WINTERIZATION LINE AS SHOWN ON THE DRAWINGS.
- ALL POOL SUCTION PIPING MUST BE INSTALLED WITH A CONTANT SLOPE TO THE MAIN DRAINS.
- WATERSLIDE RUNOUT SUMP LINES MUST BE INSTALLED WITH A CONSTANT SLOPE TO THE POOL WALL GRATES.
- APPLICABLE POOL PIPING SHALL BE COMPLETELY DRAINED TO THE WINTERIZATION MANHOLE VIA A TEE FITTING CONNECTED AT THE LOW POINT OF THE PIPE AND A DIRECT BURIAL VALVE. REFER TO PIPING PLANS FOR DETAILS.
- BLOW OUT ALL PIPES BY MEANS OF AN AIR BLOWER AND A WINTERIZATION TAP. CAP ALL PIPES. FOR ADDED PROTECTION AGAINST FREEZING PIPES, THE PIPES CAN BE FILLED WITH RV ANTIFREEZE. REFER: 14/AQ703.

	PUMP SCHEDULE												
ID	HAIR & LINT												
ID	DESCRIPTION	MANUFACTURER	MODEL	SIZE	GPM	TDH	HP	NPSHR	MAKE	SIZE	NOTES		
PP1	LEISURE POOL RIVER PUMP REFER: 1/AQ702	AURORA	5X6X9.5A	6"X5"	1150	35	15	7.83	MERMADE	10"X6"	1,2,3,4, 6,7		
PP2	LEISURE POOL RIVER PUMP REFER: 1/AQ702	AURORA	5X6X9.5A	6"X5"	1150	35	15	7.83	MERMADE	10"X6"	1,2,3,4, 6,7		
PP3	LEISURE POOL RECIRCULATION PUMP REFER: 1/AQ702	AURORA	5X6X9.5A	6"X5"	800	85	30	8.30	MERMADE	8"X6"	1,2,3,4,9		
PP4	LEISURE POOL FEATURE PUMP REFER: 1/AQ702	AURORA	2.5X3X9.5	3"X2.5"	222	57	7.5	7.49	MERMADE	6"X3"	1,2,3,4, 6,7		
PP5	FITNESS POOL RECIRCULATION PUMP REFER: 1/AQ702	AURORA	3X4X9.5	4"X3"	525	80	20	7.99	MERMADE	8"X4"	1,2,3,4,9		
PP6	CLOSED FLUME SLIDE PUMP REFER: 1/AQ702	AURORA	3X4X9.5	4"X3"	500	55	15	7.54	MERMADE	8"X4"	1,2,3,4, 5,6,7,8		
PP7	OPEN FLUME SLIDE PUMP REFER: 1/AQ702	AURORA	5X6X9.5A	6"X5"	1000	55	20	7.89	MERMADE	10"X6"	1,2,3,4, 5,6,7,8		

- . THE MANUFACTURER INDICATED IS BASIS OF DESIGN. PUMP MANUFACTURERS: GRISWOLD, HERBORNER, PACO OR AURORA MUST BE CONSIDERED EQUAL PROVIDED THEY MEET
- SPECIFICATIONS AS INDICATED IN BID DOCUMENTS. 2. POOL PUMPS AND STRAINERS MUST BE INSTALLED ON HOUSEKEEPING PADS.
- 3. PROVIDE INFLUENT AND EFFLUENT GAUGES FOR EACH PUMP. PRESSURE GAUGES HAVE A RANGE OF 0-60 PSI. COMPOUND GAUGES HAVE A RANGE OF 0-30 HG / 0-60 PSI.
- 4. PROVIDE WITH 208 VOLT, 3 PHASE, 60HZ, 1800RPM MOTOR. 5. PROVIDE WITH CHECK VALVE.
- 6. PROVIDE VARIABLE FREQUENCY DRIVE.
- . PROVIDE REMOTE PUMP START.
- B. PROVIDE EMERGENCY STOP. 9. PROVIDE WITH VARIABLE FREQUENCY DRIVE WITH BYPASS PANEL.

	MAIN DRAIN SCHEDULE										
ID	DESCRIPTION	SIZE	QTY	DESIGN FLOW (GPM)	DESIGN VELOCITY (FPS)	MFG ALLOWABLE FLOW @ COVER (GPM)	MODEL	MANUFACTURER			
M1	LEISURE POOL RECIRCULATION	18"X36"	2	1,522	0.61	1,875	DALMAX-SG-1836	DALDORADO			
M2	LEISURE POOL RIVER PROPULSION & OPEN FLUME SLIDE	24"X48"	2	3,300	0.66	6,456	DALMAX-SG-2448	DALDORADO			
М3	WADING AREA EQUALIZER	5"X32"	1	N/A	N/A	122	32CDFL	AQUASTAR			
M4	FITNESS POOL RECIRCULATION	18"X36"	2	525	0.21	1,875	DALMAX-SG-1836	DALDORADO			
M5	WATERSLIDE EQUALIZER	18"X36"	1	N/A	N/A	1,875	DALMAX-SG-1836	DALDORADO			
M6	WATERSLIDE EQUALIZER	18"X36"	1	N/A	N/A	1,875	DALMAX-SG-1836	DALDORADO			

- MAIN DRAIN GRATING MUST BE MANUFACTURED BY DALDORADO, AQUASTAR, OR APPROVED EQUAL. MAXIMUM FACE VELOCITY MUST NOT EXCEED 1.5 FEET PER SECOND.
- B. OPEN AREA IS BASED ON MANUFACTURER'S DATA.
- I. THE INSTALLED LIFE OF THE MAIN DRAIN COVER MUST BE 25YEARS.
- 5. ALL MAIN DRAINS IN SUCTION MUST BE INSTALLED IN THE POOL FLOOR. WALL SUMPS WILL NOT BE PERMITTED.
- FASTEN MAIN DRAIN COVER TO EMBEDDED PVC FRAME/POOL FLOOR WITH S/S TAMPER PROOF FASTENERS AT A SPACING NO GREATER THAN 24" O.C. REFER TO FRAME AND
- GRATE MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE WATER BONDING FITTING IN MAIN DRAIN SUMP AT DEEPEST SECTION OF THE POOL. BASIS OF DESIGN: PERMA-CAST SWIMMING POOL PRODUCTS MODEL PB-SK-20.
- PROVIDE HYDROSTATIC RELIEF VALVE IN EACH MAIN DRAIN. BASIS OF DESIGN: HAYWARD MODEL SP1056 & SP1055.

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CLIENT WILLISTON COMMUNITY BUILDERS

PROJECT DESCRIPTION WILLISTON WATER WORLD

CITY WILLISTON STATE NORTH DAKOTA

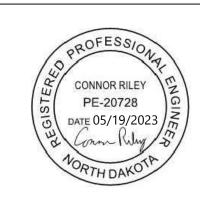
**ISSUE DATES** 

CD CONSTRUCTION DOCUMENTS 05/19/2023 DD DESIGN DEVELOPMENT 01/20/2023 SD SCHEMATIC DESIGN 12/15/2022 MARK DESCRIPTION DATE

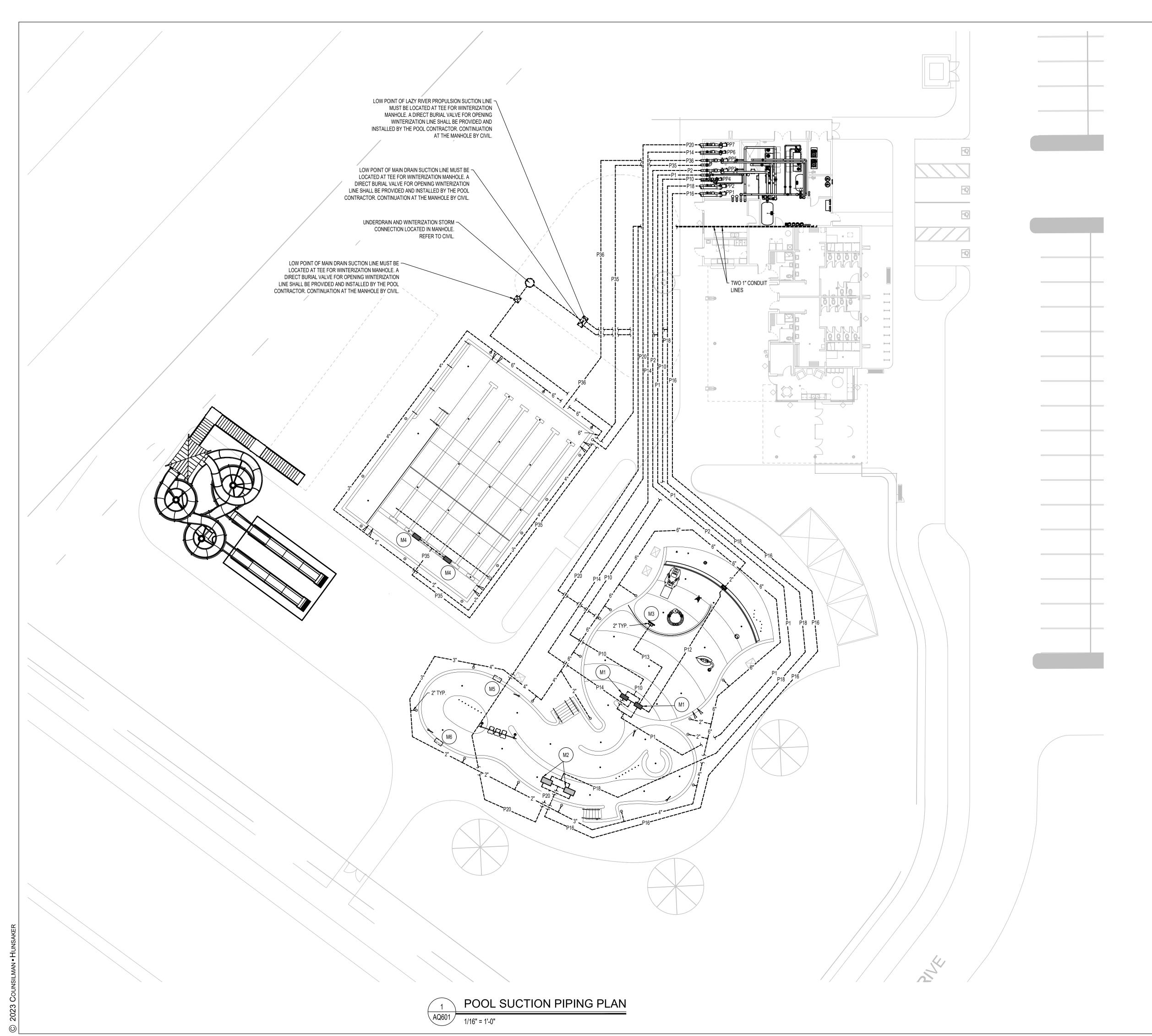
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DRAWING TITLE POOL PIPING NOTES & SCHEDULES



# PIPE SCHEDI II E

12" FROM WATERSLIDE SUMP TO M6

	PIPE SCHEDULE
ID	DESCRIPTION
P1	8" FROM M1 TO PP3
P2	8" FROM LEISURE POOL SKIMMERS TO PP3
P3	8" FROM PP3 TO F2
P4	8" FROM F2 TO LEISURE POOL RETURN INLETS
P5	4" FROM P4 TO H2
P6	4" FROM H2 TO P4
P7	8" FROM F2 TO BACKWASH CATCH BASIN
P8	6" FROM L2 TO M4
P9	4" FROM P3 TO BACKWASH CATCH BASIN
P10	6" FROM M1 TO PP4
P11	4" FROM PP4 TO LEISURE POOL VALVE BOXES
P12	3" FROM TRENCH DRAIN TO M1
P13	4" FROM M3 TO M1
P14	8" FROM M1 TO PP6
P15	6" FROM PP6 TO CLOSED FLUME SLIDE
P16	10" FROM M2 TO PP1
P17	10" FROM PP1 TO LEISURE POOL RIVER NOZZLES
P18	10" FROM M2 TO PP2
P19	10" FROM PP2 TO LEISURE POOL RIVER NOZZLES
P20	10" FROM M2 TO PP7
P21	8" FROM PP7 TO OPEN FLUME SLIDE
P22	2" FROM VALVE BOX 1 TO FROG SLIDE
P23	1.5" FROM VALVE BOX 1 TO CASCADE LOOP
P24	1.5" FROM VALVE BOX 1 TO BUTTERFLY 1
P25	1.5" FROM VALVE BOX 4 TO FOAMING GEYSER 2
P26	1.5" FROM VALVE BOX 4 TO DIRECTIONAL JET 3
P27	1.5" FROM VALVE BOX 4 TO ROOSTER TAIL
P28	1.5" FROM VALVE BOX 2 TO WATER BUG 2
P29	2" FROM VALVE BOX 2 TO TEAM SPRAY 1
P30	2" FROM VALVE BOX 2 TO SPRIG 2
P31	NOT USED
P32	2" FROM VALVE BOX 3 TO WATER TUNNEL NO 1
P33	2" FROM VALVE BOX 3 TO WATER TUNNEL NO 1
P34	1.5" FROM VALVE BOX 3 TO RIO NANO NO 1
P35	8" FROM M4 TO PP5
P36 P37	8" FROM FITNESS POOL SKIMMERS TO PP5  6" FROM PP5 TO F1
P37	6" FROM F1 TO FITNESS POOL RETURN INLETS
P39	4" FROM P38 TO H1
P40	4" FROM H1 TO P38
P41	6" FROM F1 TO BACKWASH CATCH BASIN
P42	6" FROM L1 TO M4
P43	4" FROM P37 TO BACKWASH CATCH BASIN
P44	12" FROM WATERSLIDE SUMP TO M5
P45	12" FROM WATERSLIDE SUMP TO M5
P46	12" FROM WATERSLIDE SUMP TO M6

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		_	

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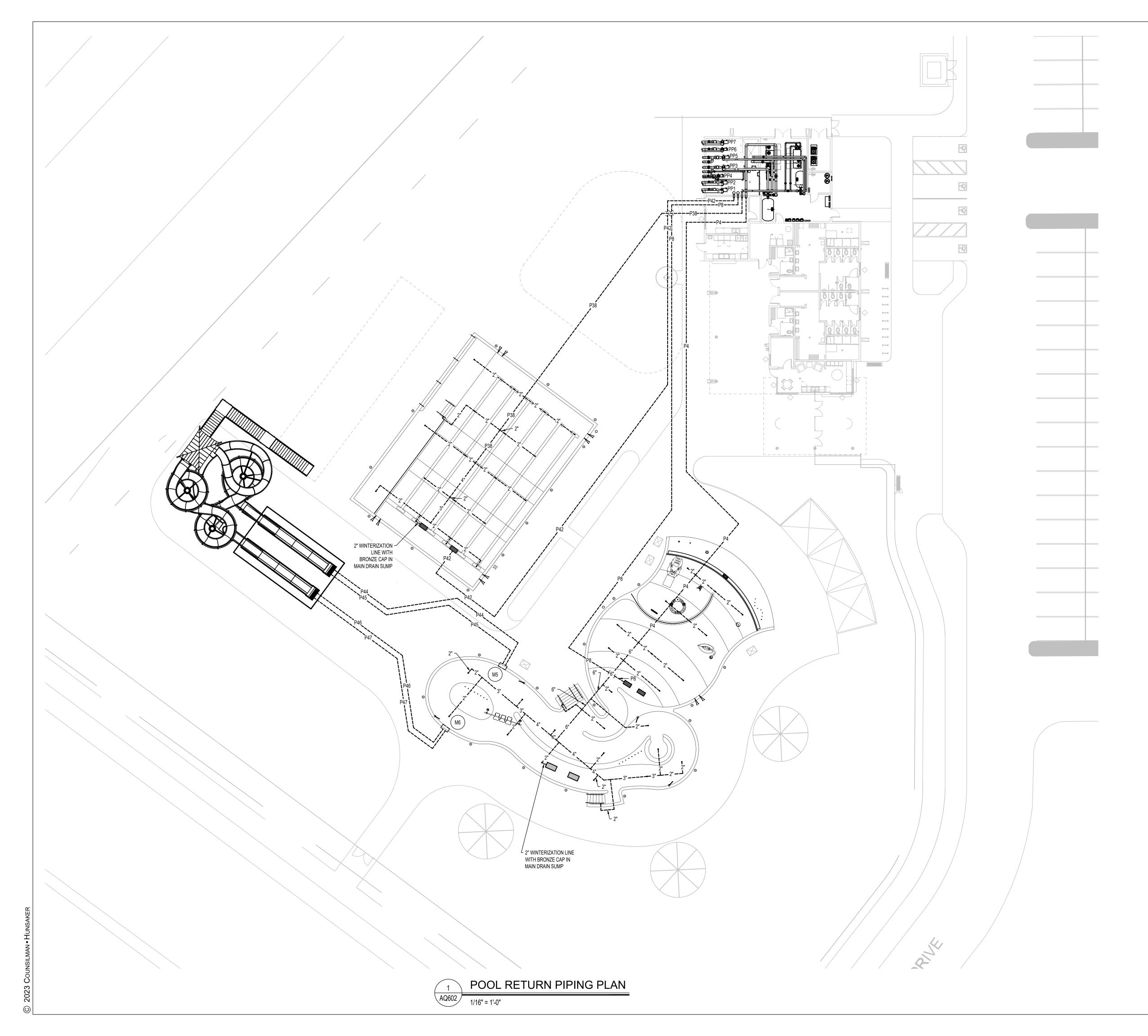
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DRAWING TITLE POOL SUCTION PIPING PLAN



# PIPE SCHEDULE

ID	DESCRIPTION
P1	8" FROM M1 TO PP3

P1 8" FROM M1 TO PP3
P2 8" FROM LEISURE POOL SKIMMERS TO PP3

P3 8" FROM PP3 TO F2
P4 8" FROM F2 TO LEISURE POOL RETURN INLETS

P4 8" FROM F2 TO LEISURE POOL RETURN INLETS
P5 4" FROM P4 TO H2

P5 4" FROM P4 TO H2
P6 4" FROM H2 TO P4

P6 4" FROM H2 TO P4

P7 8" FROM F2 TO BACKWASH CATCH BASIN

P8 6" FROM L2 TO M4

P9 4" FROM P3 TO BACKWASH CATCH BASIN
P10 6" FROM M1 TO PP4

P11 4" FROM PP4 TO LEISURE POOL VALVE BOXES
P12 3" FROM TRENCH DRAIN TO M1

P13 4" FROM M3 TO M1
P14 8" FROM M1 TO PP6
P15 6" FROM PP6 TO CLOSED FLUME SLIDE

P16 10" FROM M2 TO PP1
P17 10" FROM PP1 TO LEISURE POOL RIVER NOZZLES
P18 10" FROM M2 TO PP2

P18 10" FROM M2 TO PP2

P19 10" FROM PP2 TO LEISURE POOL RIVER NOZZLES

P20 10" FROM M2 TO PP7
P21 8" FROM PP7 TO OPEN FLUME SLIDE

P22 2" FROM VALVE BOX 1 TO FROG SLIDE
P23 1.5" FROM VALVE BOX 1 TO CASCADE LOOP

P24 1.5" FROM VALVE BOX 1 TO BUTTERFLY 1
P25 1.5" FROM VALVE BOX 4 TO FOAMING GEYSER 2

P26 1.5" FROM VALVE BOX 4 TO DIRECTIONAL JET 3

P27 1.5" FROM VALVE BOX 4 TO ROOSTER TAIL

P28 1.5" FROM VALVE BOX 2 TO WATER BUG 2

P29 2" FROM VALVE BOX 2 TO TEAM SPRAY 1
P30 2" FROM VALVE BOX 2 TO SPRIG 2

P31 NOT USED

P32 2" FROM VALVE BOX 3 TO WATER TUNNEL NO 1

P33 2" FROM VALVE BOX 3 TO WATER TUNNEL NO 1
P34 1.5" FROM VALVE BOX 3 TO RIO NANO NO 1

P35 8" FROM M4 TO PP5
P36 8" FROM FITNESS POOL SKIMMERS TO PP5
P37 6" FROM PP5 TO F1

P38 6" FROM F1 TO FITNESS POOL RETURN INLETS
P39 4" FROM P38 TO H1

P40 4" FROM H1 TO P38
P41 6" FROM F1 TO BACKWASH CATCH BASIN

P42 6" FROM L1 TO M4

P43 4" FROM P37 TO BACKWASH CATCH BASIN

P44 12" FROM WATERSLIDE SUMP TO M5

P44 12" FROM WATERSLIDE SUMP TO M5
P45 12" FROM WATERSLIDE SUMP TO M5

12" FROM WATERSLIDE SUMP TO M6 12" FROM WATERSLIDE SUMP TO M6 F A

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CLIENT
WILLISTON
COMMUNITY
BUILDERS

PROJECT DESCRIPTION
WILLISTON WATER
WORLD

CITY WILLISTON

STATE NORTH DAKOTA

ISSUE DATES

CD CONSTRUCTION 05/19/2023 DOCUMENTS

DD DESIGN DEVELOPMENT 01/20/2023

SD SCHEMATIC DESIGN 12/15/2022

MARK DESCRIPTION DATE

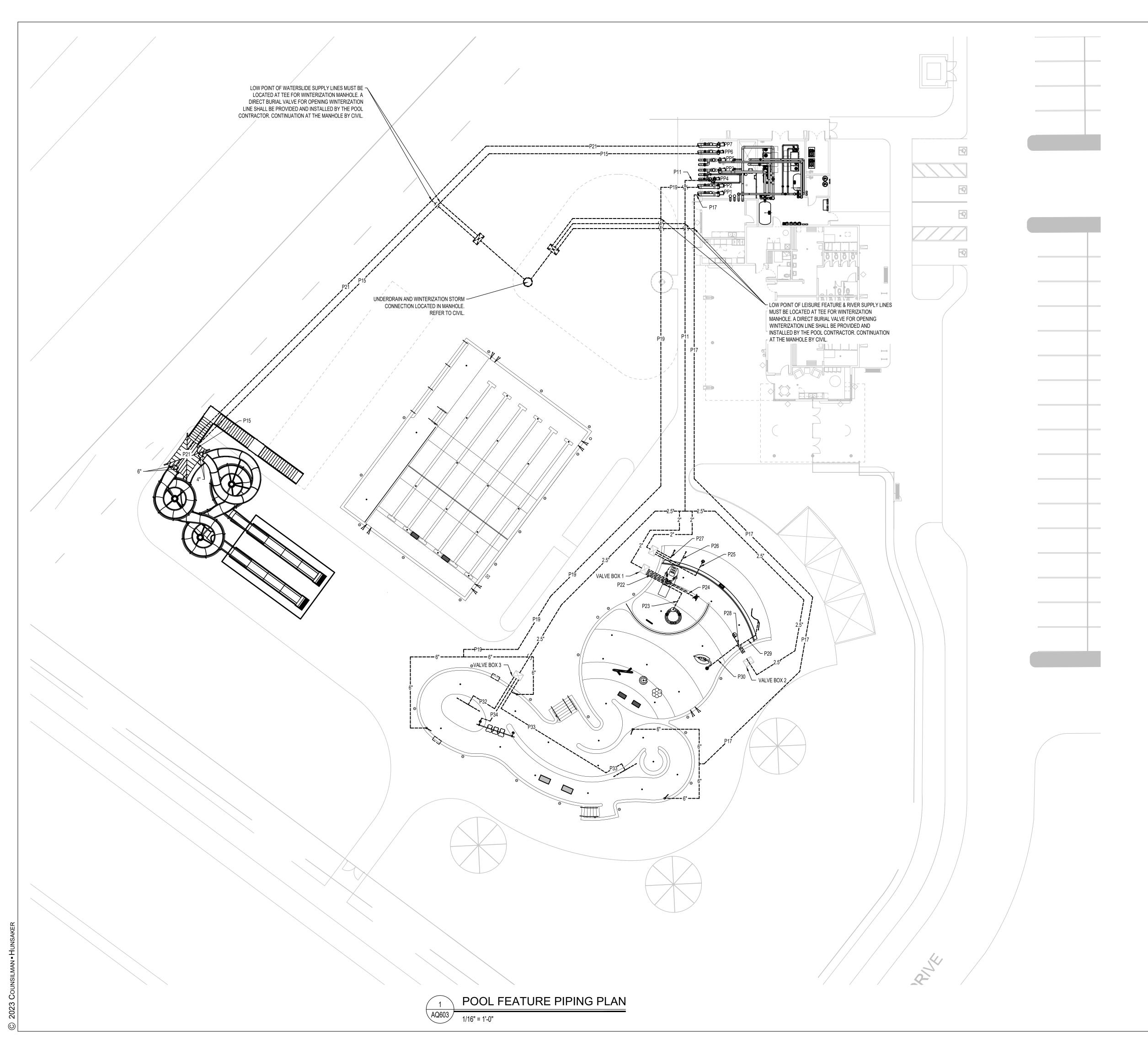
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DRAWING TITLE
POOL RETURN
PIPING PLAN



### PIPE SCHEDULE ID DESCRIPTION P1 8" FROM M1 TO PP3 P2 8" FROM LEISURE POOL SKIMMERS TO PP3 P3 8" FROM PP3 TO F2 P4 8" FROM F2 TO LEISURE POOL RETURN INLETS P5 4" FROM P4 TO H2 P6 4" FROM H2 TO P4 8" FROM F2 TO BACKWASH CATCH BASIN 6" FROM L2 TO M4 4" FROM P3 TO BACKWASH CATCH BASIN 6" FROM M1 TO PP4 4" FROM PP4 TO LEISURE POOL VALVE BOXES 3" FROM TRENCH DRAIN TO M1 4" FROM M3 TO M1 P14 8" FROM M1 TO PP6 6" FROM PP6 TO CLOSED FLUME SLIDE P16 10" FROM M2 TO PP1 10" FROM PP1 TO LEISURE POOL RIVER NOZZLES P18 10" FROM M2 TO PP2 P19 10" FROM PP2 TO LEISURE POOL RIVER NOZZLES P20 10" FROM M2 TO PP7 P21 8" FROM PP7 TO OPEN FLUME SLIDE P22 2" FROM VALVE BOX 1 TO FROG SLIDE 1.5" FROM VALVE BOX 1 TO CASCADE LOOP P24 1.5" FROM VALVE BOX 1 TO BUTTERFLY 1 1.5" FROM VALVE BOX 4 TO FOAMING GEYSER 2 1.5" FROM VALVE BOX 4 TO DIRECTIONAL JET 3 1.5" FROM VALVE BOX 4 TO ROOSTER TAIL 1.5" FROM VALVE BOX 2 TO WATER BUG 2 P29 2" FROM VALVE BOX 2 TO TEAM SPRAY 1 2" FROM VALVE BOX 2 TO SPRIG 2 P31 NOT USED 2" FROM VALVE BOX 3 TO WATER TUNNEL NO 1 2" FROM VALVE BOX 3 TO WATER TUNNEL NO 1 P34 1.5" FROM VALVE BOX 3 TO RIO NANO NO 1 P35 8" FROM M4 TO PP5 P36 8" FROM FITNESS POOL SKIMMERS TO PP5 P37 6" FROM PP5 TO F1 P38 6" FROM F1 TO FITNESS POOL RETURN INLETS P39 4" FROM P38 TO H1 4" FROM H1 TO P38 6" FROM F1 TO BACKWASH CATCH BASIN 6" FROM L1 TO M4 4" FROM P37 TO BACKWASH CATCH BASIN P44 12" FROM WATERSLIDE SUMP TO M5 2" FROM WATERSLIDE SUMP TO M5

12" FROM WATERSLIDE SUMP TO M6 12" FROM WATERSLIDE SUMP TO M6 F EAPC

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POOL FEATURE
RETURN PIPING
PLAN

	HEATER SCHEDULE												
ID	POOL	MAKE	MODEL	HEATER QUANTITY	BOILER EFF (%)	COMBINED INPUT (MBH)	AIR INLET SIZE (INCHES)	PIPE SIZE (IN/OUT)	VENT SIZE (INCH)	(2 REQU	ELECTRIC IRED CONNEC	CAL DATA CTIONS PER I	HEATER)
(H1)	FITNESS	LOCHINVAR	CPN-1262	2	85	2,500	12	2.5	12	V 120 120	PH 1 1	HZ 60 60	AMP 30 20
H2	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \												

THE BASIS OF DESIGN MANUFACTURER IS LOCHINVAR. ALTERNATE MANUFACTURER: RAYPACK OR APPROVED EQUAL.

. HEATERS MUST BE INSTALLED ON 4" TALL HOUSEKEEPING PADS.

. HEATERS FOR EACH POOL SHALL BE STACKED ON TOP OF EACH OTHER. REFER TO SPECIFICATION AND MANUFACTURER INSTALLATION INSTRUCTIONS FOR MORE INFORMATION.

4. REFER: 8/AQ704

5. EACH HEATER SHALL BE PROVIDED WITH AN EMERGENCY STOP BUTTON. REFER TO ELECTRICAL.

	UV TREATMENT SYSTEMS SCHEDULE							
ID	ID POOL MODEL NUMBER US EPA 3-LOG AND CALCULATED 40MJ/CM2 LAMPS AMPS (A) BREAKER SIZE (GPM) (60 HZ)							
U1	LEISURE POOL	SAG-480-APVC-CR	387	4	4.8	120 V (1Φ)-20A		

. THE BASIS OF DESIGN MANUFACTURER IS CHLORKING. . INTERLOCK UV SYSTEM WITH THE FEATURE PUMP VARIABLE FREQUENCY DRIVE.

. REFER: 12/AQ704

	FILL SCHEDULE										
ID	ID POOL FRESH WATER SUPPLY GPM (MIN.)  FILL FUNNEL SIZE REDUCER SIZE SPLASH COLLAR SIZE FILL LINE SIZE TO POOL (HOURS)										
(L1)	FITNESS	44	10"	10"X6"	8"	6"	48				
(L2)	L2         LEISURE         62         10"         10"X6"         8"         6"         24										
NOTE: REFER: 9	)/AQ702				-						

	CHEMICAL FEED SCHEDULE										
ID	DESCRIPTION	MANUFACTURER	MODEL	HP	FLOW						
CF1	FITNESS CHLORINATION BOOSTER PUMP REFER: 2/AQ702	ACCUTAB	3070AT	1.5	244 LBS/DAY						
CF2	LEISURE POOL CHLORINATION BOOSTER PUMP REFER: 2/AQ702	ACCUTAB	3070AT	1.5	244 LBS/DAY						
CF3	FITNESS POOL CO2 FEED REFER: 4/AQ702	BECS	BECSYSCO2	N/A	20-200 SCFH						
CF4	LEISURE POOL CO2 FEED REFER: 4/AQ702	BECS	BECSYSCO2	N/A	20-200 SCFH						

. THE MANUFACTURER INDICATED IS BASIS OF DESIGN.

PROVIDE WITH 120 VOLT, SINGLE PHASE, ADJUSTABLE FEED. INTERLOCK WITH POOL RECIRCULATION PUMP.

### GENERAL POOL MECHANICAL ROOM NOTES

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

### <u>PIPING</u>

- 1. MINIMUM 7'-0" CLEARANCE BENEATH ALL OVERHEAD PIPING.
- 2. PROVIDE AND SUPPORT OVERHEAD AND VERTICAL PIPING PER SPECIFICATION REQUIREMENTS.
- 3. LABEL AND IDENTIFY ALL PIPING IN COMPLIANCE WITH THE SPECIFICATIONS.
- 4. ALL FLOW METERS MUST BE SIZED TO MATCH THE PIPE ON WHICH IT IS INSTALLED. PROVIDE PRESSURE GAUGES ON INFLUENT AND EFFLUENT SIDE OF EACH FILTRATION SYSTEM AND A FULL LINE SIZE FLOW METER ON FILTER RETURN.
- HYDROSTATICALLY TEST ALL PIPING AT 50 PSI FOR TWO HOURS AND MAINTAIN A PRESSURE OF 20 PSI IN ALL PIPING THROUGHOUT CONSTRUCTION. SECURE ALL FIXTURES PER SPECIFICATION REQUIREMENTS BEFORE HYDROSTATIC TEST.
- 6. REFER TO DETAILS 2-7 ON DRAWING AQ703 FOR INSTALLATION OF PIPE SUPPORTS.
- . ALL PIPING ROUTED THROUGH THE CHEMICAL ROOM WALLS INTO THE MAIN MECHANICAL ROOM MUST BE PROPERLY SEALED AND FIREPROOFED PER THE FIRE RATING OF THE ROOM. REFER TO

# CHEMICAL TREATMENT

- . CHEMICAL FEED REQUIREMENTS REFER TO THE POOL SYSTEMS SCHEMATICS ON AQ800 & AQ801.
- 2. INTERLOCK POOL RECIRCULATION PUMPS WITH ITS CORRESPONDING WATER CHEMISTRY CONTROLLER, CHEMICAL FEED PUMPS AND HEATERS.
- 3. PROVIDE SIGNAGE ON CHEMICAL ROOM DOORS IN COMPLIANCE WITH THE STATE FIRE CODE. REFER: 8/AQ702
- 4. SECURE CHEMICAL METERING PUMP FEED LINES TO WALL AND/OR OVERHEAD WITH CLIPS OR DEVICES THAT DO NOT CRIMP, DISTORT OR ALLOW HIGH AND LOW AREAS IN TUBING RUNS. PROVIDE CHECK VALVE AND SHUT-OFF VALVE BEFORE LINES ENTER POOL RETURN PIPING.
- 5. WATER CHEMISTRY CONTROLLERS MUST CONTROL THE SANITIZING SYSTEM AND PH CONTROL SYSTEM AND SHUT THEM DOWN UPON LOSS OF SAMPLE STREAM FLOW.
- 6. SAMPLE FEED PIPING TO/FROM THE RECIRCULATION SYSTEM TO THE WATER CHEMISTRY CONTROLLER MUST BE PIPED PER THE SYSTEMS SCHEMATIC. BYPASS PIPING MUST BE SADDLED OR TEED. NO
- TAPPING OR DRILLING INTO THE PIPING WILL BE ALLOWED.
- PROVIDE ETHERNET CONNECTION FOR REMOTE ACCESS TO ALL WATER CHEMISTRY CONTROLLERS. REFER TO ELECTRICAL.
- . INSTALL SANITIZER INJECTION POINT DOWNSTREAM OF PH BUFFER INJECTION POINT ON FILTERED WATER RETURN PIPE. CHEMICAL INJECTION POINTS MUST BE LOCATED DOWNSTREAM OF ALL OTHER EQUIPMENT/SYSTEMS IN THE POOL MECHANICAL ROOM AT A MAXIMUM HEIGHT OF 7'-0" ABOVE FINISHED FLOOR. REFER: 7/AQ702

### ELECTRICAL

1. GFCI'S PROVIDED AT OUTLETS. REFER TO ELECTRICAL.

- 2. POOL EQUIPMENT ROOM AND CHEMICAL STORAGE AREAS MUST BE PROVIDED WITH ARTIFICIAL LIGHTING SUFFICIENT TO ILLUMINATE ALL EQUIPMENT AND SUPPLIES. REFER TO ELECTRICAL.
- 3. CONDUIT MUST BE ROUTED OVERHEAD OR BELOW GRADE.
- 4. PROVIDE ELECTRICAL CONNECTION TO POOL HEATERS. REFER TO ELECTRICAL.

					FIL	TER SCHE	DULE				
ID	POOL	MANUFACTURER	FILTER MODEL	QTY.	FILTRATION TYPE	MAXIMUM FILTRATION RATE (GPM/SQ. FT)	REQUIRED FILTRATION AREA (SQ. FT.)	DESIGN FILTRATION RATE (GPM/SQ.FT.)	DESIGN FILTRATION AREA (SQ. FT.)	FILTER BACKWASH RATE (GPM/SQ. FT.)	BACKWASH FLOW RATE PER FILTER (GPM)
F1>	FITNESS	NEPTUNE BENSON	SHFFG 42-60	2	HRS	13.0	40.4	12.9	40.8	20.0	408
<b>F</b> 2	LEISURE	NEPTUNE BENSON	SHFFG 48-84	2	HRS	13.0	61.5	12.6	63.4	20.0	634

# NOTE:

1. BACKWASH METHOD MUST BE MANUAL.

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

		PL	JMP SCHEI	DULE							
ID	DESCRIPTION	MANUFACTURER	ANUFACTURER MODEL SIZE GPM TDH HP NPSHR	NPSHR	HAIR & LINT		NOTES				
טו	DESCRIPTION	WANDFACTORER	WIODEL	SIZE	GFIVI	חטו	ПГ	NEOUL	MAKE	SIZE	NOTES
PP1	LEISURE POOL RIVER PUMP REFER: 1/AQ702	AURORA	5X6X9.5A	6"X5"	1150	35	15	7.83	MERMADE	10"X6"	1,2,3,4, 6,7
PP2	LEISURE POOL RIVER PUMP REFER: 1/AQ702	AURORA	5X6X9.5A	6"X5"	1150	35	15	7.83	MERMADE	10"X6"	1,2,3,4, 6,7
PP3	LEISURE POOL RECIRCULATION PUMP REFER: 1/AQ702	AURORA	5X6X9.5A	6"X5"	800	85	30	8.30	MERMADE	8"X6"	1,2,3,4,9
PP4	LEISURE POOL FEATURE PUMP REFER: 1/AQ702	AURORA	2.5X3X9.5	3"X2.5"	222	57	7.5	7.49	MERMADE	6"X3"	1,2,3,4, 6,7
PP5	FITNESS POOL RECIRCULATION PUMP REFER: 1/AQ702	AURORA	3X4X9.5	4"X3"	525	80	20	7.99	MERMADE	8"X4"	1,2,3,4,9
PP6	CLOSED FLUME SLIDE PUMP REFER: 1/AQ702	AURORA	3X4X9.5	4"X3"	500	55	15	7.54	MERMADE	8"X4"	1,2,3,4, 5,6,7,8
PP7	OPEN FLUME SLIDE PUMP REFER: 1/AQ702	AURORA	5X6X9.5A	6"X5"	1000	55	20	7.89	MERMADE	10"X6"	1,2,3,4, 5,6,7,8

1. THE MANUFACTURER INDICATED IS BASIS OF DESIGN. PUMP MANUFACTURERS: GRISWOLD, HERBORNER, PACO OR AURORA MUST BE CONSIDERED EQUAL PROVIDED THEY MEET

- SPECIFICATIONS AS INDICATED IN BID DOCUMENTS. 2. POOL PUMPS AND STRAINERS MUST BE INSTALLED ON HOUSEKEEPING PADS.
- 3. PROVIDE INFLUENT AND EFFLUENT GAUGES FOR EACH PUMP. PRESSURE GAUGES HAVE A RANGE OF 0-60 PSI. COMPOUND GAUGES HAVE A RANGE OF 0-30 HG / 0-60 PSI.
- 4. PROVIDE WITH 208 VOLT, 3 PHASE, 60HZ, 1800RPM MOTOR. 5. PROVIDE WITH CHECK VALVE. 6. PROVIDE VARIABLE FREQUENCY DRIVE.
- 7. PROVIDE REMOTE PUMP START.
- 8. PROVIDE EMERGENCY STOP. 9. PROVIDE WITH VARIABLE FREQUENCY DRIVE WITH BYPASS PANEL.

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CITY WILLISTON STATE NORTH DAKOTA

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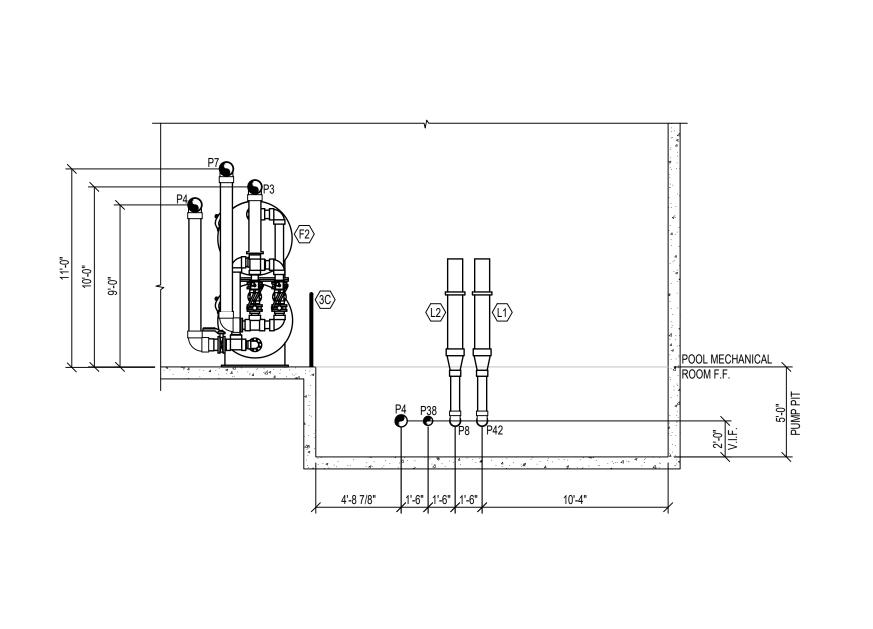
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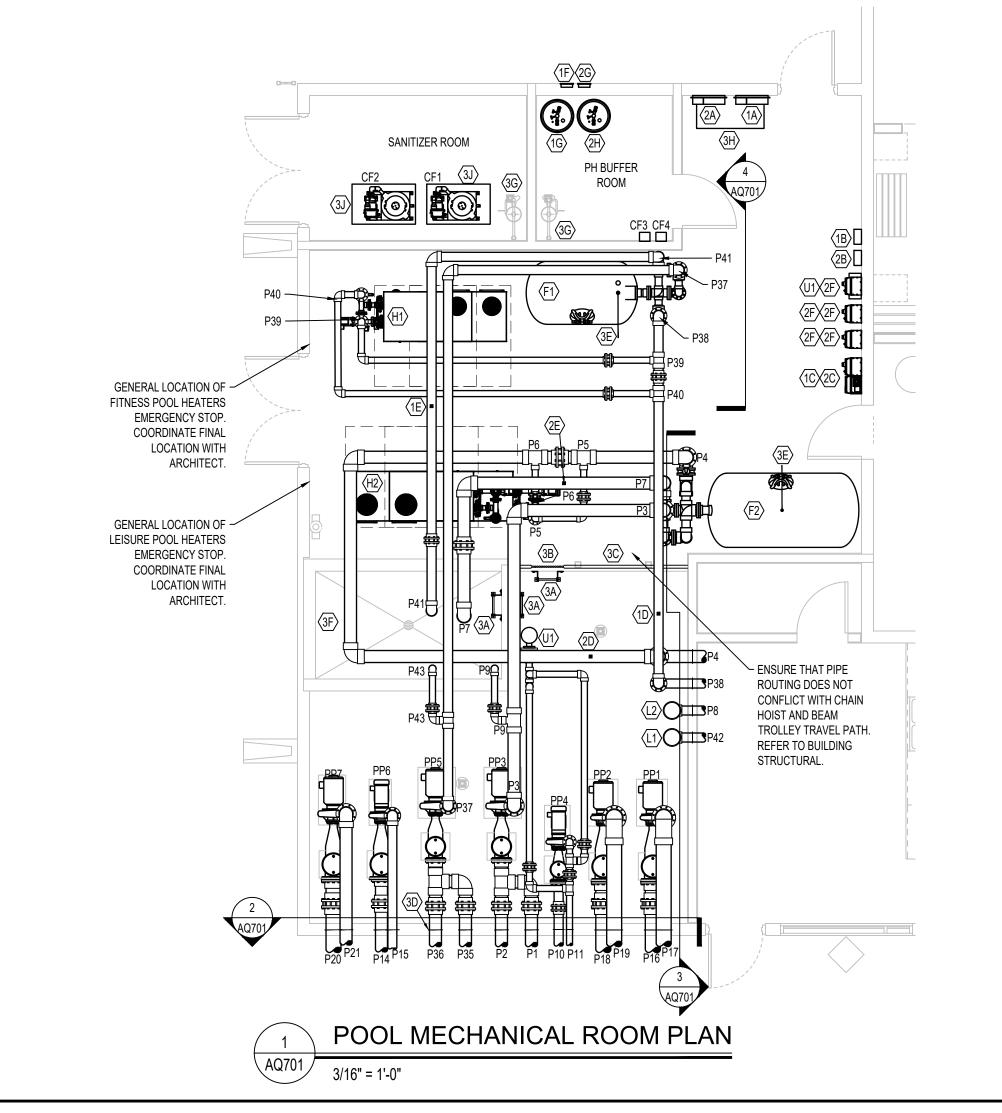


DRAWING TITLE POOL MECHANICAL **NOTES & SCHEDULES** 



POOL MECHANICAL ROOM SECTION

AQ701 3/16" = 1'-0"



NOTE:
IN THE CASE THAT THE FITNESS POOL IS PLANNED TO BE BUILT AT
A LATER DATE, PIPING MUST BE STUBBED AND CAPPED AT A
·
LENGTH OF 30" ON EACH SIDE OF THE PUMP PIT WALL.

	PIPE SCHEDULE		Е	QUIPMENT SCHEDULE
ID	DESCRIPTION	ľ	ID	ITEM
P1	8" FROM M1 TO PP3			FITNESS POOL
P2	8" FROM LEISURE POOL SKIMMERS TO PP3		<b>/</b> 1/\	CHEMICAL CONTROLLER
P3	8" FROM PP3 TO F2		(1A)	REFER: 3/AQ702
P4	8" FROM F2 TO LEISURE POOL RETURN INLETS		<b>(</b> 1B <b>)</b>	WATER LEVEL CONTROLLER
P5	4" FROM P4 TO H2		رت	REFER: 3/AQ704
P6	4" FROM H2 TO P4		<b>(</b> 1C <b>)</b>	VARIABLE FREQUENCY DRIVE AND BYPASS
P7	8" FROM F2 TO BACKWASH CATCH BASIN			PANEL
P8	6" FROM L2 TO M4		$\langle 1D \rangle$	FLOW METER SENSOR REFER: 10/AQ702
P9	4" FROM P3 TO BACKWASH CATCH BASIN	}		
P10	6" FROM M1 TO PP4		(1E)	IMPACT FLOW METER REFER: 11/AQ702
P11	4" FROM PP4 TO LEISURE POOL VALVE BOXES		$\overline{}$	CO FILLBOY
P12	3" FROM TRENCH DRAIN TO M1		(1F)	CO <sub>2</sub> FILLBOX REFER: 6/AQ702
P13	4" FROM M3 TO M1		$\overline{}$	CO <sub>2</sub> TANK
P14	8" FROM M1 TO PP6		<b>(</b> 1G <b>)</b>	REFER: 4/AQ702
P15	6" FROM PP6 TO CLOSED FLUME SLIDE			LEISURE POOL
P16	10" FROM M2 TO PP1		<u></u>	CHEMICAL CONTROLLER
P17	10" FROM PP1 TO LEISURE POOL RIVER NOZZLES		<b>(2A)</b>	REFER: 3/AQ702
P18	10" FROM M2 TO PP2	Ī	<b>7</b> 2D	WATER LEVEL CONTROLLER
P19	10" FROM PP2 TO LEISURE POOL RIVER NOZZLES		<b>(2B)</b>	REFER: 3/AQ704
P20	10" FROM M2 TO PP7		<b>(</b> 2C <b>)</b>	VARIABLE FREQUENCY DRIVE AND BYPASS
P21	8" FROM PP7 TO OPEN FLUME SLIDE		20/	PANEL
P22	2" FROM VALVE BOX 1 TO FROG SLIDE		<b>2</b> D	FLOW METER SENSOR
P23	1.5" FROM VALVE BOX 1 TO CASCADE LOOP			REFER: 10/AQ702
P24	1.5" FROM VALVE BOX 1 TO BUTTERFLY 1		$\langle 2E \rangle$	IMPACT FLOW METER REFER: 11/AQ702
P25	1.5" FROM VALVE BOX 4 TO FOAMING GEYSER 2			REFER. 11/AQ/02
P26	1.5" FROM VALVE BOX 4 TO DIRECTIONAL JET 3		$\langle 2F \rangle$	VARIABLE FREQUENCY DRIVE
P27	1.5" FROM VALVE BOX 4 TO ROOSTER TAIL	-		
P28	1.5" FROM VALVE BOX 2 TO WATER BUG 2		<b>2</b> G	CO₂ FILLBOX REFER: 6/AQ702
P29	2" FROM VALVE BOX 2 TO TEAM SPRAY 1	<b> </b>	$\overline{}$	CO TANK
P30	2" FROM VALVE BOX 2 TO SPRIG 2  NOT USED		<b>(</b> 2H <b>)</b>	CO₂ TANK REFER: 4/AQ702
P31 P32	2" FROM VALVE BOX 3 TO WATER TUNNEL NO 1			COMBINED
P33	2" FROM VALVE BOX 3 TO WATER TUNNEL NO 1		$\overline{}$	LADDER RUNGS
P34	1.5" FROM VALVE BOX 3 TO RIO NANO NO 1		$\langle 3A \rangle$	REFER TO ARCHITECT
P35	8" FROM M4 TO PP5		<b>7</b> 25	SAFETY CHAIN
P36	8" FROM FITNESS POOL SKIMMERS TO PP5		<b>(3B)</b>	REFER TO ARCHITECT
P37	6" FROM PP5 TO F1		<b>3</b> C <b>&gt;</b>	REMOVABLE RAILING
P38	6" FROM F1 TO FITNESS POOL RETURN INLETS		<u>~~</u>	REFER TO ARCHITECT
P39	4" FROM P38 TO H1		$\langle 3D \rangle$	WATER SEAL
P40	4" FROM H1 TO P38			REFER: 1/AQ703
P41	6" FROM F1 TO BACKWASH CATCH BASIN		$\langle 3E \rangle$	HARD PIPE TO DRAIN
P42	6" FROM L1 TO M4			
P43	4" FROM P37 TO BACKWASH CATCH BASIN		(3F)	10'-4"x6'-0"x10'-0" DEEP BACKWASH CATCH BASIN
P44	12" FROM WATERSLIDE SUMP TO M5			
P45	12" FROM WATERSLIDE SUMP TO M5		<b>3</b> G	EYE WASH STATION REFER TO PLUMBING
P46	12" FROM WATERSLIDE SUMP TO M6		_	WORKBENCH
P47	12" FROM WATERSLIDE SUMP TO M6		$\langle 3H \rangle$	REFER TO SPECIFICATION 131100 FOR DETAILS
		'		CHLORINE FEEDER SPILL PLATFORM
			<b>(3J)</b>	REFER TO SPECIFICATION 131100 FOR DETAILS
		_		

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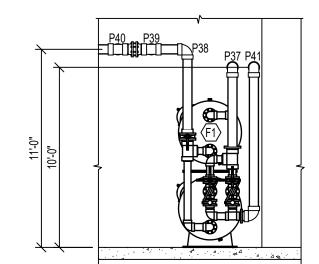
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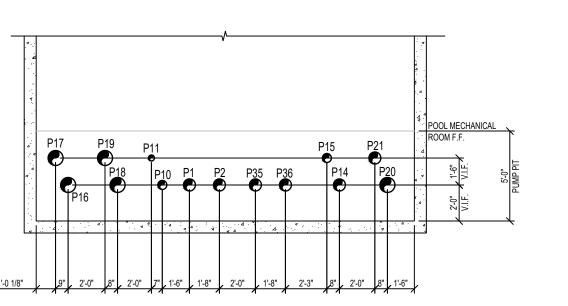
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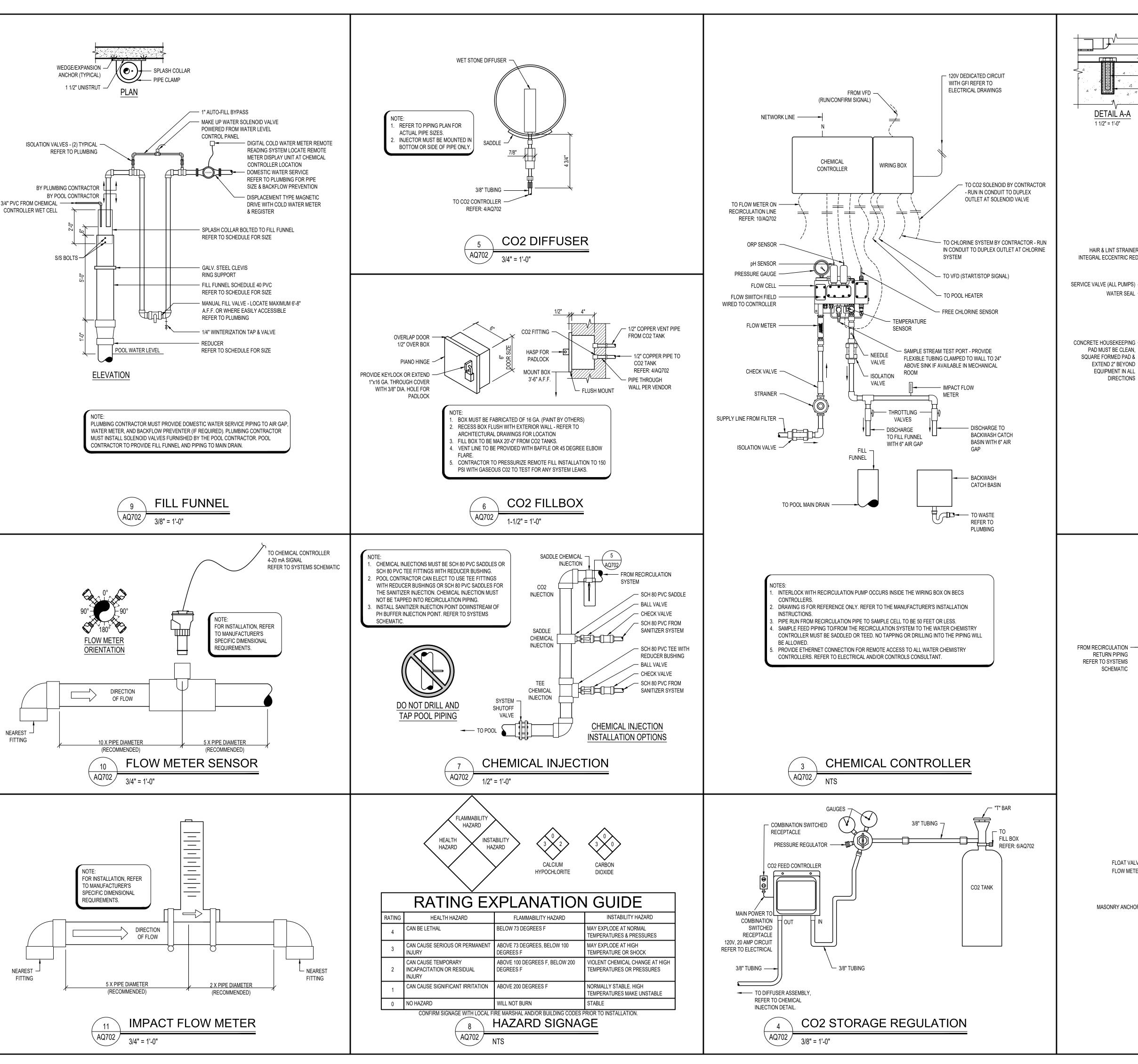
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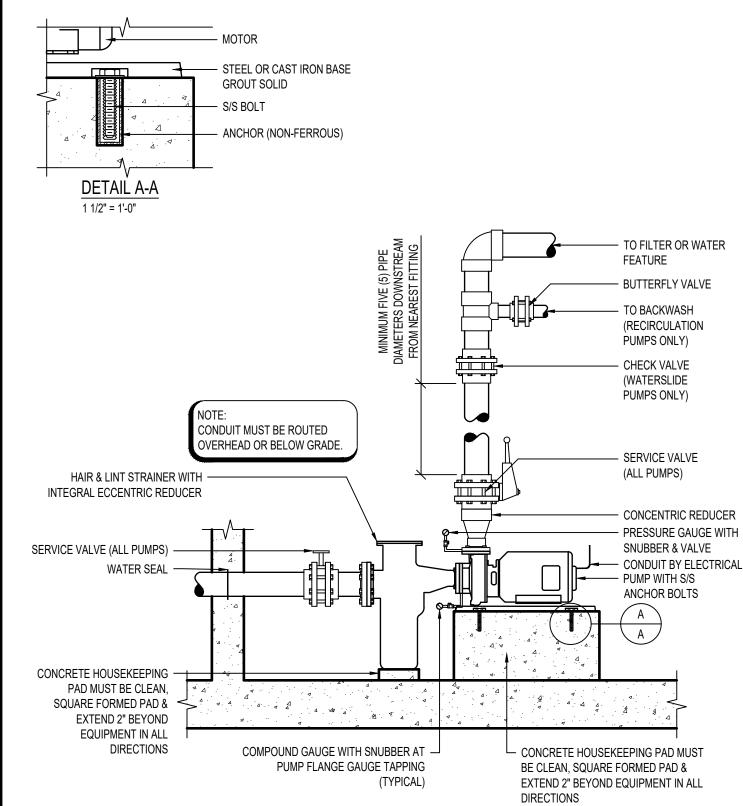


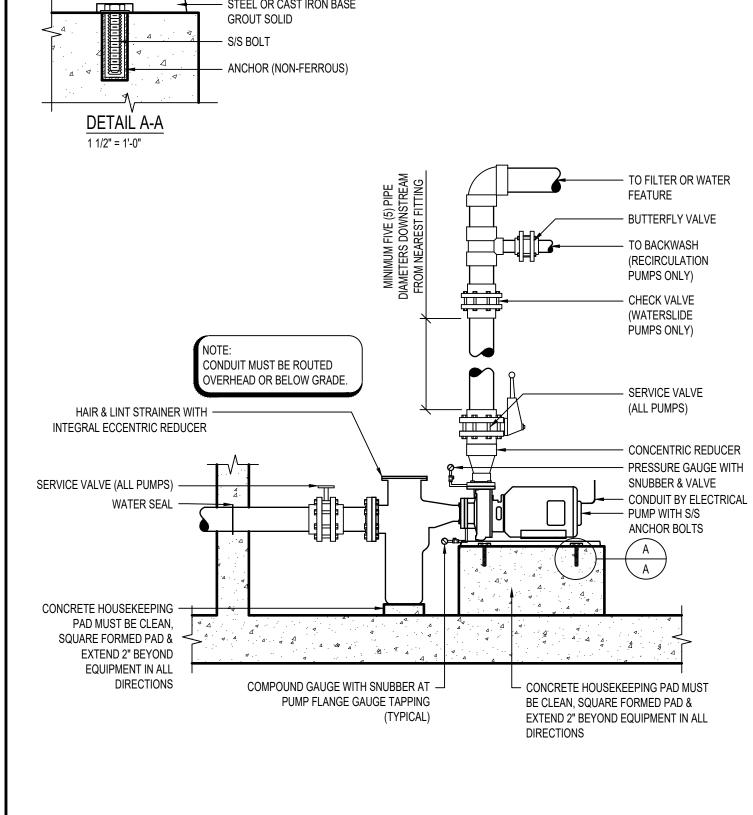


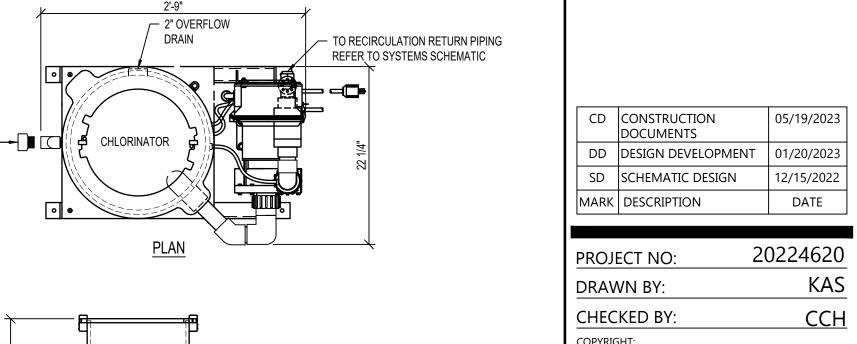


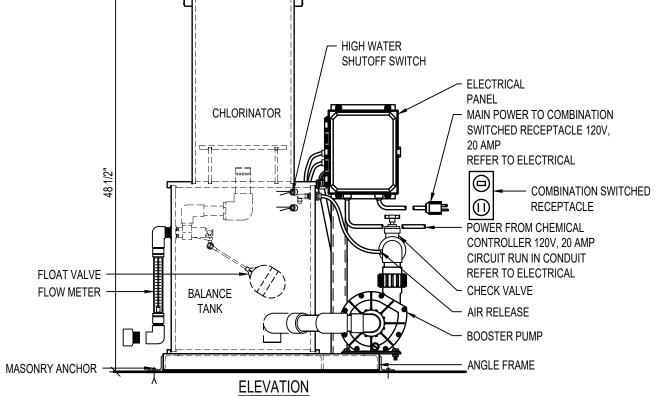














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Interior Design

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**WILLISTON** 

BUILDERS

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**ISSUE DATES** 

**COMMUNITY** 

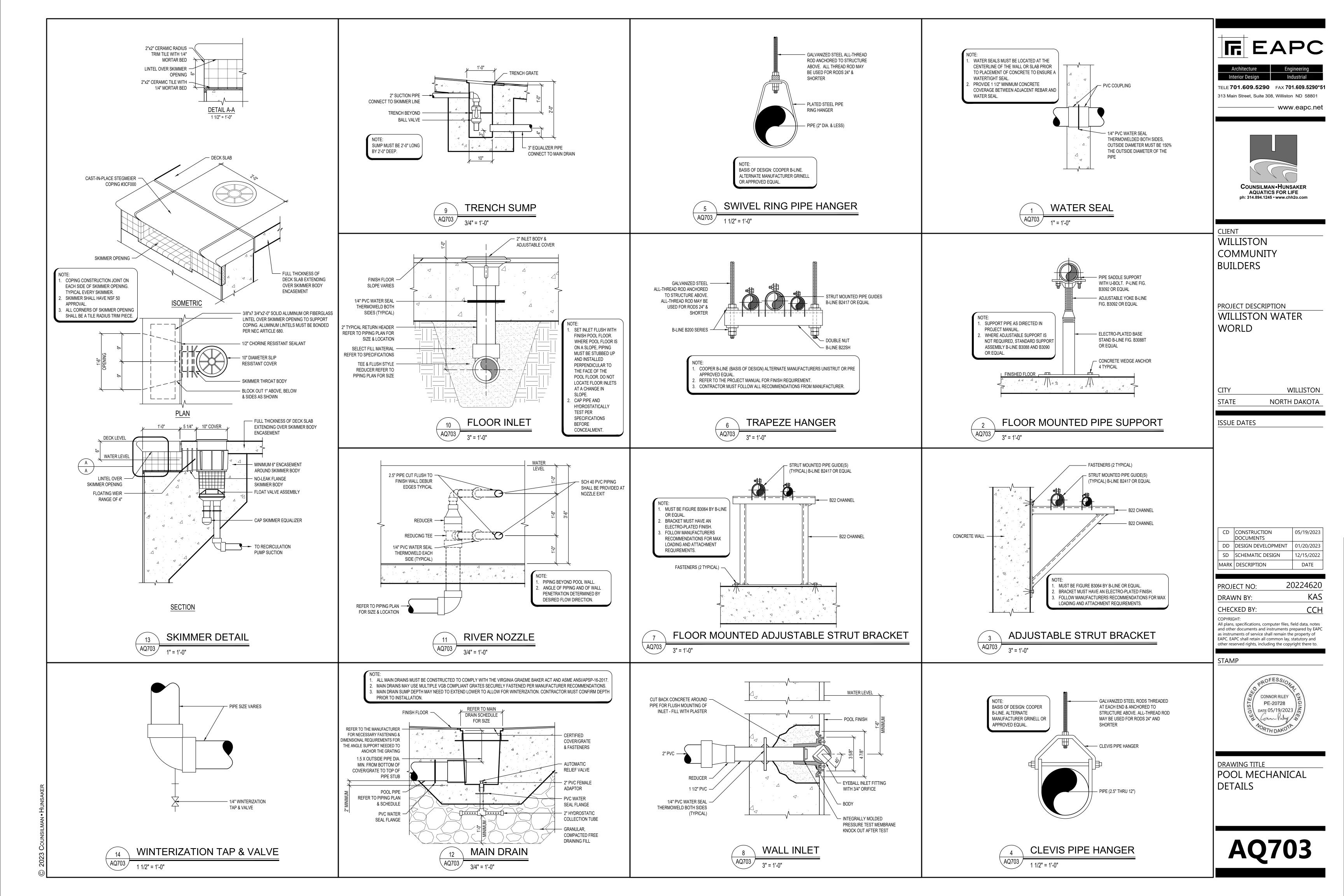
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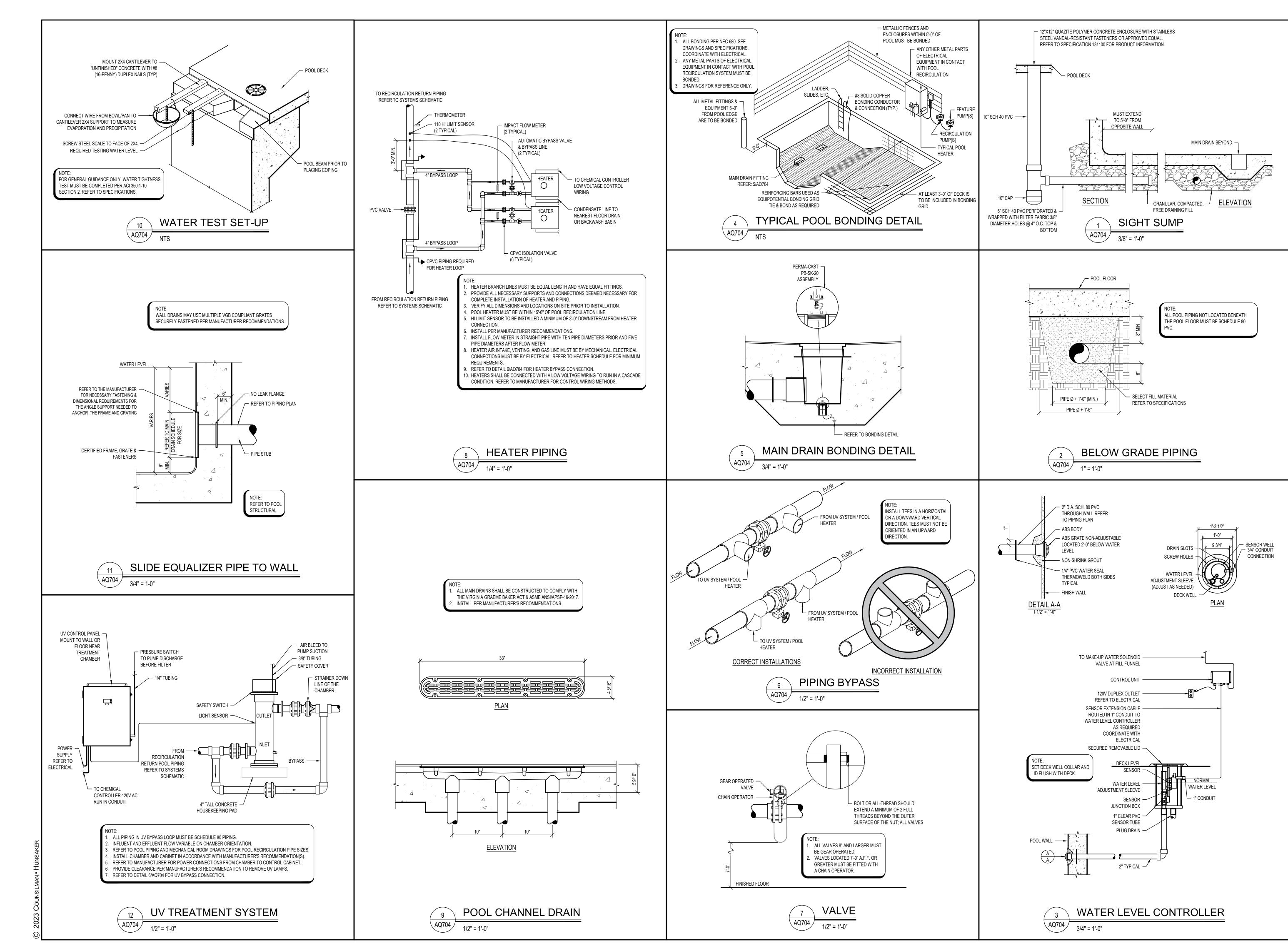
WILLISTON WATER

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ISSUE DATES

CD CONSTRUCTION 05/19/2023 DOCUMENTS

DD DESIGN DEVELOPMENT 01/20/2023

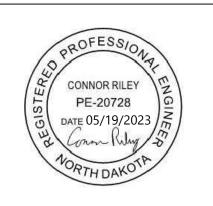
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MARK DESCRIPTION DATE

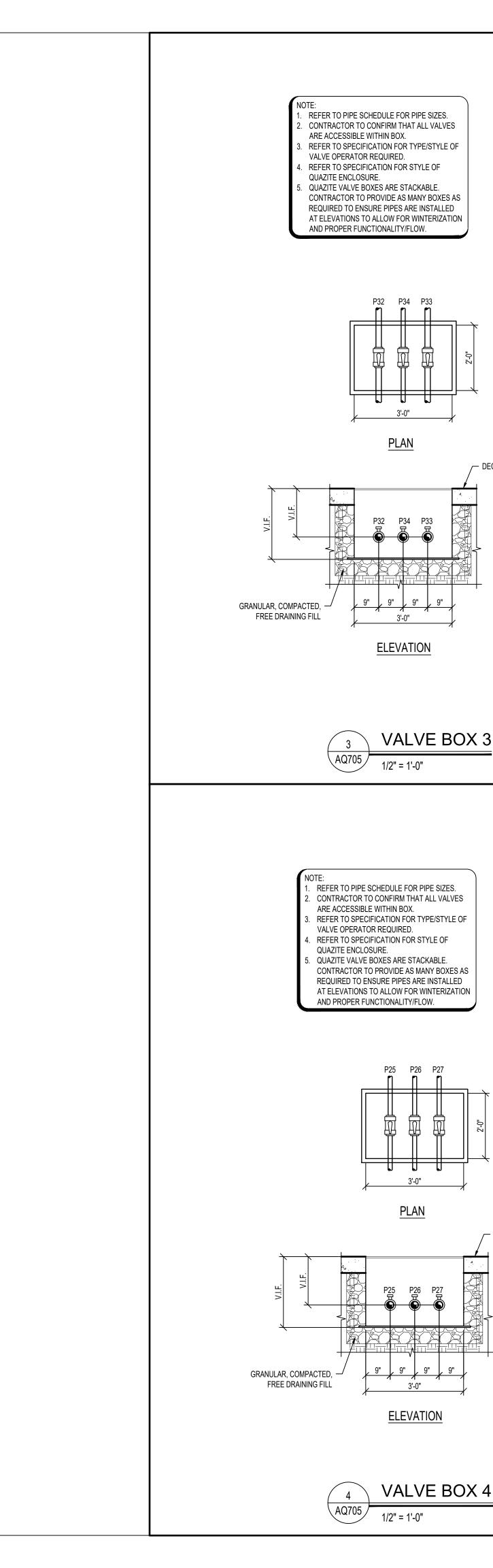
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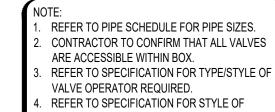
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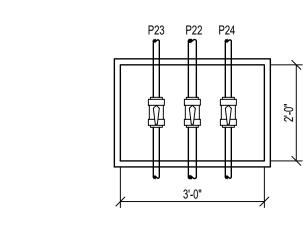
DRAWING TITLE
POOL MECHANICAL
DETAILS





QUAZITE ENCLOSURE. . QUAZITE VALVE BOXES ARE STACKABLE. REQUIRED TO ENSURE PIPES ARE INSTALLED

CONTRACTOR TO PROVIDE AS MANY BOXES AS AT ELEVATIONS TO ALLOW FOR WINTERIZATION AND PROPER FUNCTIONALITY/FLOW.



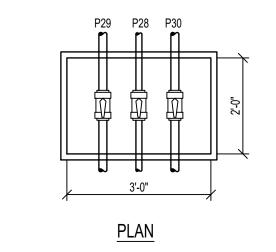
<u>PLAN</u> GRANULAR, COMPACTED, — FREE DRAINING FILL **ELEVATION** 

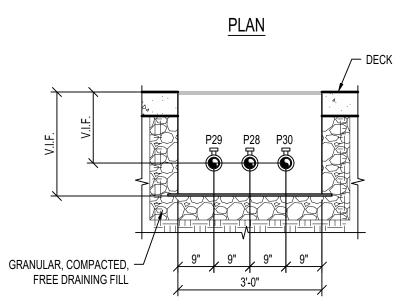
VALVE BOX 1

REFER TO PIPE SCHEDULE FOR PIPE SIZES. CONTRACTOR TO CONFIRM THAT ALL VALVES

ARE ACCESSIBLE WITHIN BOX. REFER TO SPECIFICATION FOR TYPE/STYLE OF VALVE OPERATOR REQUIRED. REFER TO SPECIFICATION FOR STYLE OF

QUAZITE ENCLOSURE. QUAZITE VALVE BOXES ARE STACKABLE. CONTRACTOR TO PROVIDE AS MANY BOXES AS REQUIRED TO ENSURE PIPES ARE INSTALLED AT ELEVATIONS TO ALLOW FOR WINTERIZATION AND PROPER FUNCTIONALITY/FLOW.





VALVE BOX 2

**ELEVATION** 

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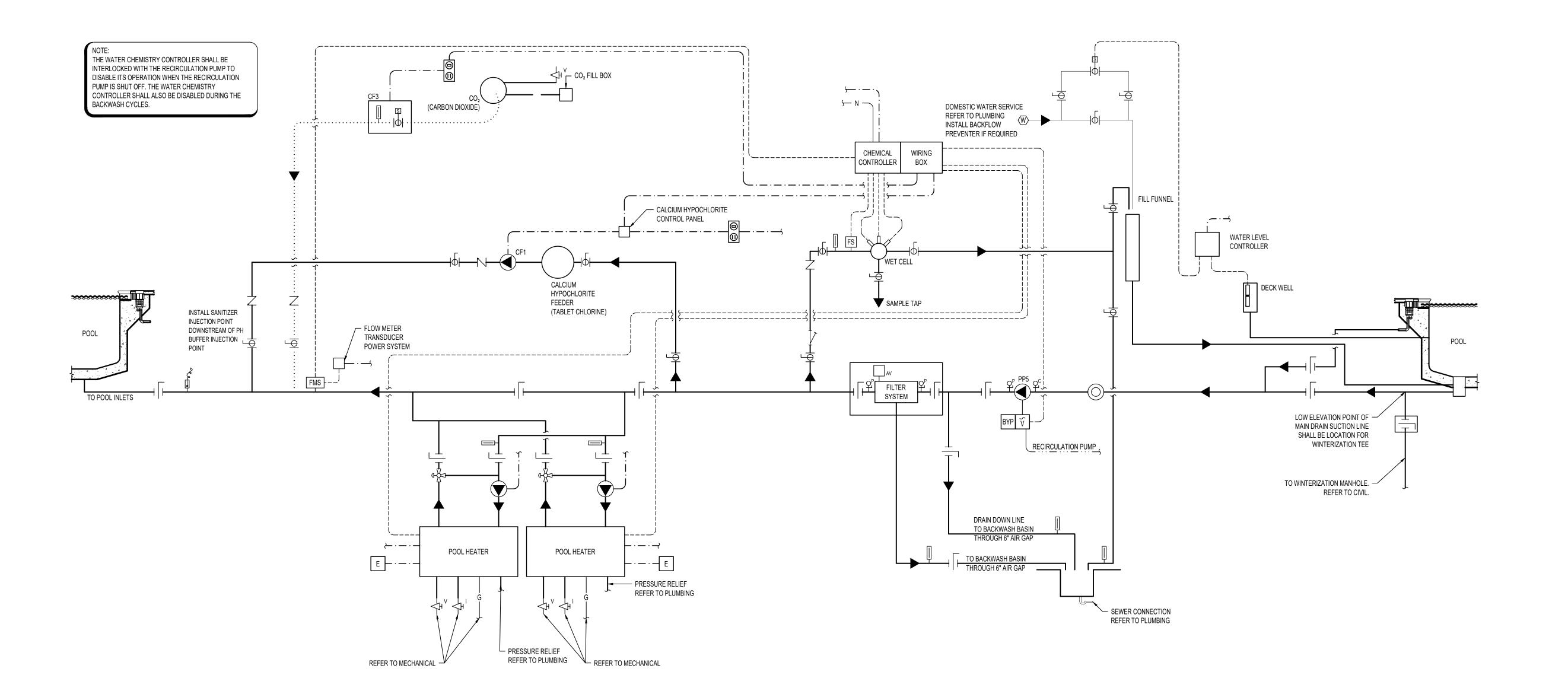
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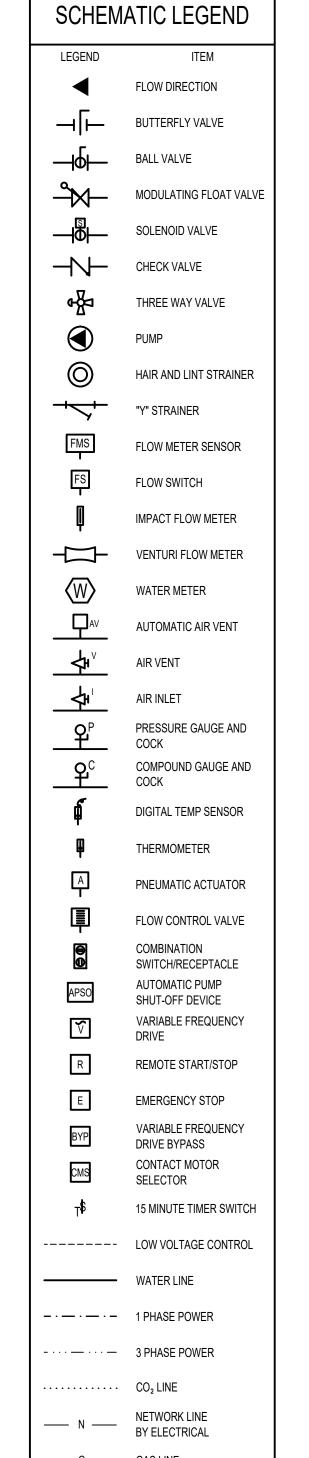
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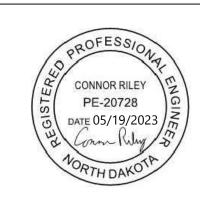
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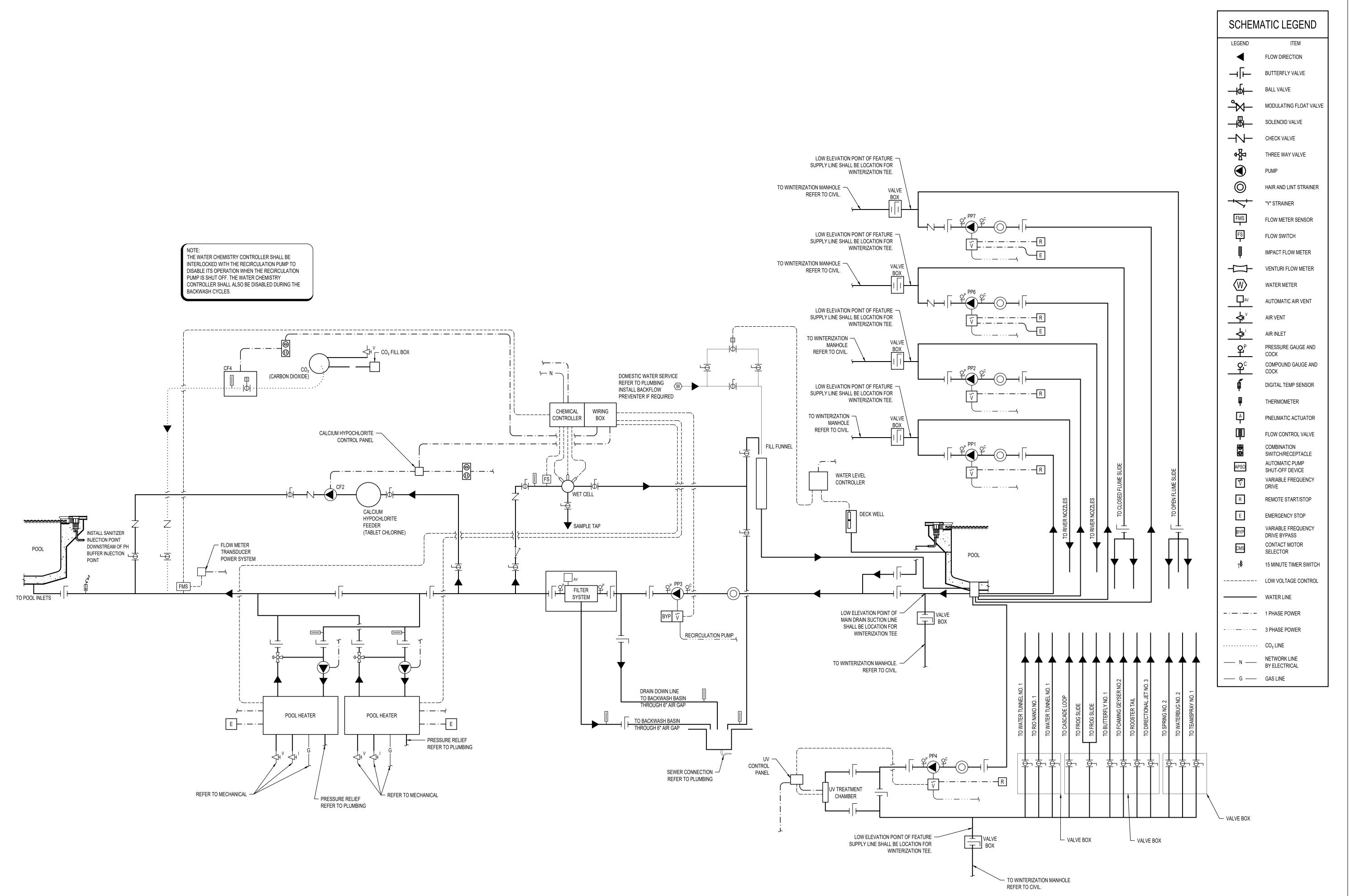
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DRAWING TITLE
FITNESS POOL
SYSTEMS SCHEMATIC



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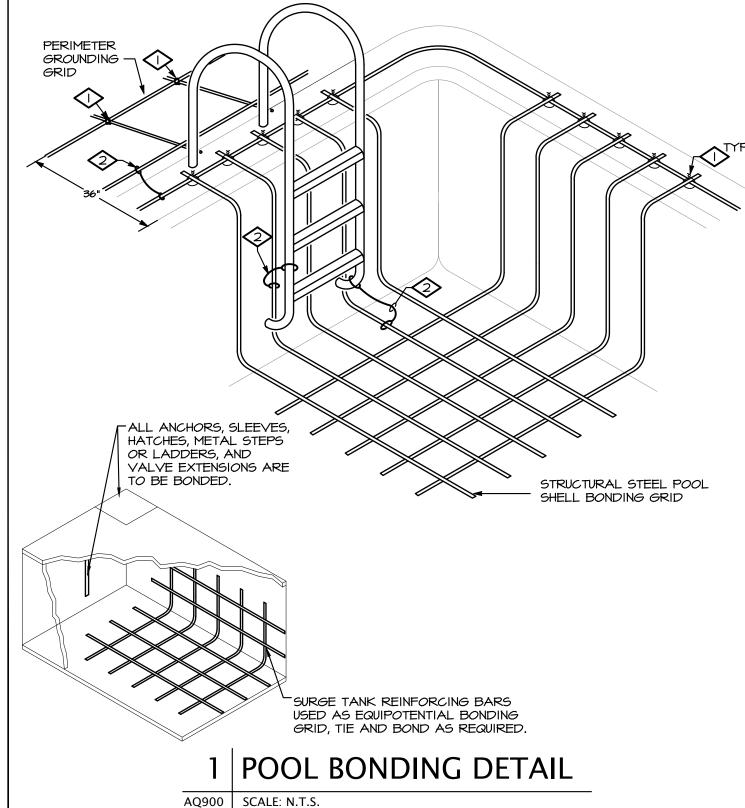
DRAWING TITLE
LEISURE POOL
SYSTEMS SCHEMATIC

### ELECTRICAL REQUIREMENTS FOR POOL BONDING

- ALL GROUNDING AND BONDING OF ALL METALLIC PARTS ASSOCIATED WITH THE POOL ARE TO BE IN COMPLIANCE WITH NEC SECTION 680.
- STRUCTURAL REINFORCING STEEL TERMINOLOGY IN NOTES BELOW REFERS TO REBAR OR WIREMESH INSTALLATIONS.
- BONDING TO CONDUCTIVE POOL SHELLS SHALL BE ACCOMPLISHED WITH REINFORCING STEEL BONDED WITH STEEL TIE WIRES, OR EQUAL, AND SHALL THEREBY SERVE AS A COMMON BONDING GRID FOR ALL PARTS REQUIRED TO BE BONDED TOGETHER. WHERE EPOXY-COATED REBAR IS UTILIZED, THEN A COPPER CONDUCTOR GRID SYSTEM SHALL BE INSTALLED, WITH MINIMUM #8 AWG BARE SOLID CONDUCTORS BONDED AT ALL CROSS POINT, CONFORM TO THE CONTOUR OF THE POOL, BE ARRANGED IN A 12" X 12" GRID PATTERN, AND BE SECURED WITHIN OR UNDER THE POOL NO MORE THAN 6" FROM THE OUTER CONTOUR OF THE
- BONDING TO PERIMETER SURFACES SHALL BE ACCOMPLISHED WITH REINFORCING STEEL REBAR BONDED WITH STEEL TIE WIRES, OR EQUAL. WHERE EPOXY-COATED REBAR IS UTILIZED, THEN A SINGLE #8 AWG COPPER, BARE, SOLID CONDUCTOR SHALL BE INSTALLED 18" TO 24" WITHIN THE INSIDE WALL OF THE POOL, AND WITHIN 4" TO 6" UNDER THE
- THE FOLLOWING PARTS SHALL BE BONDED TOGETHER AND CONNECTED TO THE COMMON BONDING GRID. BONDING LUGS SHALL BE SUPPLIED BY POOL CONTRACTOR.
- A. ALL METALLIC PARTS OF THE POOL STRUCTURE, INCLUDING COPYING STONES, DECK, STARTING BLOCK STRUCTURES AND/OR
- ALL METAL FITTINGS WITHIN OR ATTACHED TO THE POOL
- METAL PARTS ASSOCIATED WITH THE POOL WATER CIRCULATING SYSTEM, INCLUDING PUMPS, FILTERS, AND HEATERS LOCATED IN POOL EQUIPMENT ROOM.
- D. METAL PARTS ASSOCIATED WITH POOL COVERS.
- METAL SHEATHED CABLES AND RACEWAYS, METAL PIPING, AND ALL FIXED METAL PARTS WITHIN 5 FEET HORIZONTALLY OF INSIDE WALLS OF POOL AND WITHIN 12 FEET ABOVE THE MAXIMUM WATER LEVEL OF THE POOL.
- METAL PARTS ASSOCIATED WITH OBSERVATION STANDS, TOWERS, PLATFORMS, AND DIVING STRUCTURES.
- METAL PARTS ASSOCIATED WITH THE POOL SLIDE TOWER, SLIDE STAIRS, AND ASSOCIATED SLIDE STRUCTURE.
- ISOLATED PARTS THAT ARE NOT MORE THAN 4" IN ANY DIMENSION AND DO NOT PENETRATE INTO THE POOL STRUCTURE MORE THAN I" SHALL NOT REQUIRE BONDING.
- BONDING CONDUCTORS SHALL BE MINIMUM #8 SOLID COPPER, INSULATED. E.C. SHALL COORDINATE APPROVED CONNECTOR TYPE AND METHOD WITH LOCAL ELECTRICAL AND/OR POOL INSPECTOR.
- SPECIFIC MANUFACTURER'S INSTRUCTIONS REGARDING BONDING OR GROUNDING OF POOL EQUIPMENT, WHETHER INDICATED HEREIN OR NOT, SHALL BE STRICTLY FOLLOWED.
- THE COMMON BONDING GRID SHALL NOT BE CONNECTED TO ANY ELECTRICAL DISTRIBUTION EQUIPMENT.
- ANY PARTS IN ADDITION TO THOSE DESCRIBED HEREIN THAT ARE INDICATED BY POOL CONTRACTOR OR LOCAL INSPECTION AUTHORITY SHALL BE BONDED TO THE COMMON BONDING GRID WITH NO ADDITIONAL COSTS INCURRED BY THE OWNER.
- ROPE ANCHORS WHICH ARE ATTACHED TO A STAINLESS STEEL GUTTER ARE INTERNALLY BONDED TO GUTTER AND SO DO NOT REQUIRE ADDITIONAL BONDING.
- THE ELECTRICAL CONTRACTOR SHALL COORDINATE BONDING WITH POOL CONTRACTOR AND GENERAL CONTRACTOR.

### DETAIL NOTES

- SOUND ALL STRUCTURAL REINFORCING STEEL TOGETHER WITH STEEL TIE WIRES AT ALL STEEL
- (2) CONNECT STRUCTURAL REINFORCING STEEL GRID WITHIN POOL AND/OR PERIMETER POOL DECK TO, METAL FITTINGS, ELECTRICAL EQUIPMENT, AND METAL WIRING METHODS AND EQUIPMENT IN ACCORDANCE WITH ARTICLE 680 OF THE NATIONAL ELECTRIC CODE. CONNECT WITH MINIMUM #8 SOLID AWG BARE COPPER. REFER TO GENERAL NOTE #3 ABOVE FOR CONNECTION REQUIREMENTS.



# SLIDE EPO SEQUENCE OF OPERATION

- UPON ACTIVATION (DEPRESSION) OF SLIDE EPO SWITCH, LOCATED AT THE TOP OF THE SLIDE, POWER SHALL BE SHUT DOWN TO SLIDE PUMP. REMOTE START/STOP LOCATIONS SHALL BE INACTIVE WHILE A SLIDE EPO IS DEPRESSED.
- RESTART OF EQUIPMENT AFTER ACTIVATION OF EPO SHALL OCCUR BY MANUAL RESET: EPO SWITCH SHALL BE RESTORED TO ITS NORMAL STATE AND EQUIPMENT MUST BE RESTARTED VIA LOCAL START UP OR REMOTE START/STOP LOCATIONS.

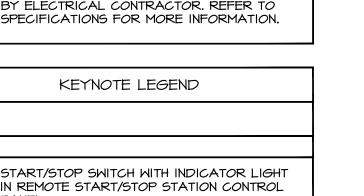
A. SCHEMATIC DIAGRAM IS SHOWN FOR GENERAL INTERLOCK INTENT AND IS NOT INTENDED TO BE USED AS A WIRING

GENERAL NOTES

B. | ADDITIONAL INTERLOCKING/CONTROL REQUIREMENTS INDICATED IN POOL EQUIPMENT SCHEDULE.

C. COMBINATION VFD/MOTOR STARTERS FURNISH AND INSTALLED BY POOL CONTRACTOR. LINE VOLTAGE CONNECTIONS BY ELECTRICAL CONTRACTOR. REFER TO SPECIFICATIONS FOR MORE INFORMATION.

KEYNOTE LEGEND



(TYPICAL FOR PP6, PP7)

2 WATER SLIDE INTERLOCK SCHEMATIC

SLIDE EPO SWITCH AT TOP OF SLIDE.

PRIOR TO ROUGH-IN.

CONFIRM FINAL LOCATION WITH ARCHITECT

AQ900 | SCALE: N.T.S.

VALUE

### ABBREVIATIONS AND SYMBOLS

- - ABOVE COUNTER
- ABOVE FINISHED FLOOR AFF
- AF6 ABOVE FINISHED GRADE
- AUTHORITY HAVING JURISDICTION
- AMPERES INTERRUPTING CAPACITY AIC
- ATS AUTOMATIC TRANSFER SWITCH BFF
- BELOW FINISHED FLOOR CONDU
- CATV CABLE TELEVISION
- CIRCUIT BREAKER
- CURRENT TRANSFORMER
- DISC DISCONNECT
- DISHWASHER
- DWG(S) DRAWING(S) EXISTING TO REMAIN
- ELECTRICAL CONTRACTOR
- EXHAUST FAN
- EXISTING TO BE RELOCATED
- EMERGENCY
- EMERGENCY POWER OFF EMC ELECTRIC WATER COOLER
- FUSE
- FULL LOAD AMPS FLA
- GENERAL CONTRACTOR
- GARBAGE DISPOSAL
- GROUND FAULT CIRCUIT INTERRUPTER
- GROUND FAULT PROTECTION
- HORSEPOWER
- IDF INTERMEDIATE DISTRIBUTION FACILITY
- ISOLATED GROUND
- ISC SHORT CIRCUIT CURRENT
- KVA KILOVOLT AMPERE(S)
- KILOWATT(S) LT6 LIGHTING
- MCA MINIMUM CIRCUIT AMPERE(S)
- MCB MAIN CIRCUIT BREAKER MDF
- MAIN DISTRIBUTION CENTER MDF MAIN DISTRIBUTION FACILITY
- MLO MAIN LUGS ONLY
- MANUAL TRANSFER SWITCH MTS
- MICROWAVE
- NORMALLY CLOSED
- NIGHT LIGHT SEE GENERAL NOTES NORMALLY OPEN
  - OR APPROVED EQUAL
- POLE

OVERHEAD

- PH, Φ PHASE
- PANE

OAE

- REMOVED, EXISTING TO BE REMOVED
- RCPT RECEPTACLE
- RFF REFRIGERATOR
- RELOCATED
- SURGE PROTECTION DEVICE
- UNDER COUNTER/CABINET UG
- UNDERGROUND UON UNLESS OTHERWISE NOTED
- VOLT(S)
- WATT(S) OR WIRE WIRE GUARD
- WEATHERPROOF
- XFMR TRANSFORMER
- POOL EQUIPMENT SCHEDULE NOTATION KITCHEN EQUIPMENT SCHEDULE NOTATION
- MECHANICAL EQUIPMENT SCHEDULE NOTATION
- $\otimes$ DETAIL NOTE
- DELTA REVISION NOTE
- ELECTRICAL WIRE SIZE

# SYSTEMS

- TTB, MDF OR IDF SYSTEM BACKBOARD
- TELECOMMUNICATION OUTLET
- FLOOR MOUNTED TELECOMMUNICATION OUTLET
- TELEVISION OUTLET
- SPEAKER PAGING AND OR SOUND SYSTEM  $\mathfrak{G}_{\mathsf{x}}$  (x) - INDICATES SPEAKER ZONE
- MICROPHONE OUTLET
- ♦ VOLUME CONTROL
- PUSH BUTTON
- CLOSED CIRCUIT TELEVISION CAMERA

CABLE TRAY (LENGTH AS INDICATED ON DRAWINGS)

### LIGHTING FIXTURES

- LUMINAIRE TYPE, REFERENCING LUMINAIRE A SCHEDULE, TYPICAL ALL FIXTURES. SUBSCRIPT, IF SHOWN, REFERENCES WALL SWITCH.
- MALL MOUNTED LUMINAIRE
- SURFACE MOUNTED LUMINAIRE

- RECESSED LUMINAIRE
- O DOWNLIGHT LUMINAIRE
- SURFACE CEILING LUMINAIRE
- PENDANT LUMINAIRE
- MALLWASH LUMINAIRE

EXTERIOR AREA LIGHT

DUPLEX RECEPTACLE

SINGLE RECEPTACLE

RECEPTACLE

JUNCTION BOX

ENCLOSURE

MOTOR

RELAY

TIME CLOCK

PHOTOCELL

3-WAY SWITCH

4-WAY SWITCH

\$D DIMMER SWITCH

R

MDC

CLOCK RECEPTACLE

WALL MOUNTED J-BOX

FLOOR MOUNTED JUNCTION BOX

NON-FUSED DISCONNECT SWITCH

FUSED DISCONNECT SWITCH

MOLDED CASE CIRCUIT BREAKER IN

MAGNETIC CONTROLLER (STARTER)

THERMAL OVERLOAD SWITCH

SINGLE POLE SWITCH

KEY OPERATED SWITCH

\$poor RECESSED DOOR SWITCH

POOL CO2 SYSTEM SENSOR

POOL CO2 SYSTEM ALARM LIGHT

LIGHTING CONTROL DEVICE. REFER TO DETAILS FOR CONTROL INTENT.

DISTRIBUTION AND RACEWAY

MAIN DISTRIBUTION CENTER (MDC)

CONDUIT CONCEALED IN FLOOR OR

GROUNDING ELECTRODE CONDUCTOR

GROUND FAULT PROTECTION

CONDUIT EXPOSED OR CONCEALED IN WALL

SURFACE MTD PANELBOARD

RECESSED PANELBOARD

TRANSFORMER

BRANCH CIRCUIT HOMERUN

UNDERGROUND

OR CEILING

RACEWAY UP

RACEWAY DOWN

- CAPPED CONDUIT

- CIRCUIT BREAKER SWITCH

FUSED SWITCH

CURRENT TRANSFORMER

COMBINATION STARTER/DISCONNECT SWITCH

► SR - SURFACE RACEWAY

FOUR PLEX RECEPTACLE

◆ COMBO RECEPTACLE/SWITCH

SWITCHED DUPLEX RECEPTACLE

SPECIAL PURPOSE RECEPTACLE

FLOOR MOUNTED SPECIAL PURPOSE

FLOOR MOUNTED RECEPTACLE DUPLEX/QUAD

- ► STRIP LUMINAIRE
- LINEAR PENDANT LUMINAIRE (LENGTH AS INDICATED ON DRAWINGS/SCHEDULE)

SURFACE OR PENDANT TRACK LUMINAIRE

- EXIT LUMINAIRE SHADED INDICATES
- FACE/ DIRECTIONAL ARROWS AS SHOWN. BATTERY PACK EMERGENCY LUMINAIRE
- EMERGENCY LUMINAIRE SHADED
- PROVIDE WITH INTEGRAL BATTERY BACKUP (K) PORCELAIN LAMP HOLDER

**WIRING DEVICES** 

- ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS AND RECOMMENDATIONS STEP LIGHT TYPE LUMINAIRE IO. ALL CUTTING, DRILLING AND PATCHING OF MASONRY, STEEL OR IRON WORK BOLLARD OR POST TOP LUMINAIRE BELONGING TO THE BUILDING MUST BE DONE BY THIS CONTRACTOR IN ORDER
  - MAY STRUCTURAL WORK BE CUT, EXCEPT AT THE DIRECTION OF THE ARCHITECT-DESIGNER OR THEIR REPRESENTATIVE. E.C. IS TO REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ALL FIRE RATED PENETRATION INSTALLATION REQUIREMENTS. E.C. IS TO NOTIFY ENGINEER AND ARCHITECT PRIOR TO INSTALLING ANY FIXTURES WITHIN A FIRE

ELECTRICAL GENERAL NOTES

FOR A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM.

CSA OR ANOTHER RECOGNIZED TESTING LAB.

HAVING JURISDICTION.

A. POOL PUMP FQUIPMENT

LISTED AMPERE RATING.

THE CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL NECESSARY

ORDINANCES OF FEDERAL, STATE AND LOCAL GOVERNING BODIES HAVING

MATERIALS AND EQUIPMENT SHALL BE LISTED AND/OR LABELED BY U.L., ETL,

COMPLIANCE WITH THE BUILDING STANDARDS, EXCEPT AS NOTED OTHERWISE.

GOVERNMENTAL FEES, TAXES AND LICENSES NECESSARY FOR THE PROPER

AGENCIES SHOP DRAWINGS, WHICH ARE REQUIRED BY THESE AGENCIES, FOR

THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER/OWNER OF ANY

VIOLATION OF LAWS, ORDINANCES, RULES OR REGULATIONS OF AUTHORITIES

STANDARDS AND LOCAL CONDITIONS RELATING TO THE WORK. FAILURE TO

ALL MATERIALS, AND EQUIPMENT SHALL BE ERECTED, INSTALLED, CONNECTED,

THAT HIS WORK MAY BE PROPERLY INSTALLED, BUT UNDER NO CONDITIONS

DO SO WILL NOT RELIEVE THE CONTRACTOR OF THE OBLIGATIONS OF THE

CLEANED, ADJUSTED, TESTED, CONDITIONED, AND PLACED IN SERVICE IN

MATERIALS OR APPARATUS BELIEVED TO BE INADEQUATE, UNSUITABLE, IN

8. THE CONTRACTOR SHALL CAREFULLY EXAMINE THE CONTRACT DOCUMENTS,

VISIT THE SITE, AND THOROUGHLY BECOME FAMILIAR WITH THE BUILDING

MATERIALS AND INSTALLATION SHALL COMPLY WITH CODES, LAWS AND

4. ALL WORK REQUIRED FOR THE INSTALLATION AS SHOWN ON DRAWINGS

THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS,

EXECUTION AND COMPLETION OF THE ELECTRICAL WORK.

INCLUDING LABOR, EQUIPMENT AND MATERIALS SHALL BE IN STRICT

THE CONTRACTOR SHALL PREPARE AND SUBMIT TO GOVERNMENTAL

RATED CEILING OR WALL. FIRE RATING MUST BE MAINTAINED FOR THIS TYPE OF INSTALLATION WITH DRYWALL TENTING. 12. SHOP DRAWINGS SHALL INCLUDE MANUFACTURER'S NAMES, CATALOG NUMBERS. CUTS. DIAGRAMS AND OTHER SUCH DESCRIPTIVE DATA AS MAY BE

REQUIRED TO IDENTIFY AND REVIEW THE EQUIPMENT. SUBMITTALS SHALL BE

IN LOGICAL GROUPS, FOR EXAMPLE, ALL LIGHTING FIXTURES, PARTIAL SUBMITTALS WILL NOT BE REVIEWED. 13. SUBMIT ELECTRONIC OF THE FOLLOWING SHOP DRAWINGS FOR REVIEW.

COMBINATION VFD/DISCONNECT/STARTERS

SPECIFICALLY INDICATED AS EXISTING TO BE REUSED.

- PROVIDE "AS-BUILT" DRAWINGS AND SUBMIT TO ARCHITECT/DESIGNER. 14. ALL MATERIAL, EQUIPMENT, WIRING DEVICES, ETC. SHALL BE NEW, UNLESS
- 15. ALL NEW CIRCUIT BREAKERS FOR NEW OR EXISTING PANELBOARDS SHALL MATCH EXISTING BUILDING PANELBOARD MANUFACTURER AND BREAKER TYPE. THE CONTRACTOR SHALL PROVIDE NEW TYPE WRITTEN PANEL DIRECTORIES FOR ALL NEW PANELS AND EXISTING PANELS WHICH HAVE CHANGED. PANELBOARD SHALL BE MARKED WHERE THE SOURCE OF POWER SUPPLY ORIGINATES, AND IF SERIES COMBINATION SYSTEMS ARE UTILIZED AND THEIR
- 16. DO NOT SHARE NEUTRAL CONDUCTORS FOR MULTIWIRE BRANCH CIRCUITS. WHERE SHARED NEUTRAL CONDUCTORS ARE REQUIRED (SUCH AS POWERED FURNITURE SYSTEMS), HANDLE TIES SHALL BE PROVIDED ON THE CIRCUIT BREAKERS, WITH SHARED NEUTRALS, SUCH THAT IT WILL SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS. ALL HANDLE TIES ARE REQUIRED TO BE INDICATED ON THE PANELBOARD SHOP DRAWINGS.
- 17. SHOULD ACTUAL FIELD CONDITIONS REQUIRE INDICATED CIRCUIT IONS TO VART, INDICATE THE CIRCUIT NUMBER USED ON THE "AS-BUILT" DRAWINGS.
- 18. ALL NEW CIRCUITS SHALL HAVE A GROUND WIRE INSTALLED.
- 19. ALL WIRING NOT INSTALLED IN CONDUIT AND INSTALLED IN THE CEILING SPACE SHALL BE PLENUM RATED. ALL WIRING WITHIN POOL EQUIPMENT ROOMS AND POOL SPACE SHALL BE WITHIN PVC CONDUIT.
- 20. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SPECIAL OUTLET BOXES THAT MAY BE REQUIRED TO ENCLOSE RECEPTACLES.
- 21. EACH SWITCH, LIGHT, RECEPTACLE AND OTHER MISCELLANEOUS DEVICE SHALL BE PROVIDED WITH A GALVANIZED OR PRESSED STEEL OUTLET BOX OF THE KNOCKOUT TYPE, OF NOT LESS THAN NO. 14 U.S. GAUGE STEEL. CONDUITS SHALL BE FASTENED WITH LOCKNUTS AND BUSHINGS AND ALL UNUSED KNOCKOUTS MUST BE LEFT SEALED. THERE MUST BE SUFFICIENT ROOM FOR WIRES AND BUSHINGS AND DEEP BOXES SHALL BE INSTALLED WHERE
- REQUIRED. BOXES SHALL BE SECURELY AND ADEQUATELY SUPPORTED. 22. MINIMUM CONDUIT SIZE IS 3/4".
- 23. "MC" CABLE IS NOT ACCEPTABLE.

AND MODIFIED AS REQUIRED.

- 24. IN EXPOSED AND SUSPENDED CEILING APPLICATIONS, ROUTE CONDUIT AS CLOSE TO STRUCTURAL SLAB OR DECK AS POSSIBLE, AND SUPPORT CONDUIT AND JUNCTION BOXES DIRECTLY FROM THE STRUCTURAL SLAB, DECK, OR FRAMING PROVIDED FOR THAT PURPOSE. LIGHTING BRANCH CIRCUIT CONDUITS SHALL NOT BE CLIPPED TO THE CEILING SYSTEM HAS BEEN SPECIFICALLY DESIGNED FOR THAT PURPOSE. ROUTING WITHIN POOL AREA SHALL BE
- 25. ALL EXPOSED CONDUIT SHALL BE CONCEALED TO THE GREATEST EXTENT POSSIBLE, AND SHALL BE INSTALLED PARALLEL AND CLOSE TO STRUCTURAL MEMBERS. GENERAL CONTRACTOR SHALL PAINT CONDUIT TO MATCH ADJACENT FINISHES.

CONFIRMED WITH ARCHITECT PRIOR TO ROUGH-IN.

- 26. ALL RECEPTACLES SHALL BE SPECIFICATION GRADE NEMA 5-20R, UNLESS OTHERWISE NOTED.
- 27. ALL LIGHT SWITCHES SHALL BE SPECIFICATION GRADE, QUIET OPERATION RATED 120/277 VOLT, 20 AMPS, UNLESS OTHERWISE NOTED.
- 28. ALL FACE PLATE AND DEVICE COLORS SHALL BE APPROVED BY ARCHITECT

29. ROUGH-IN FOR POOL EQUIPMENT SHALL ONLY OCCUR AFTER POOL EQUIPMENT

SUBMITTALS ARE THOROUGHLY REVIEWED FOR CHANGES. NOTIFY ENGINEER

- OF ANY DISCREPANCIES. 30. PROVIDE NEMA 3R AND CORROSION RESISTANT ELECTRICAL EQUIPMENT AND WIRING METHODS WITHIN POOL EQUIPMENT, POOL AND WHIRLPOOL AREAS.
- REFER TO DRAWINGS AND SPECIFICATION. 31. THE POWER AND CONTROL REQUIREMENTS FOR ALL EQUIPMENT CONNECTIONS SHALL BE CONFIRMED WITH APPROVED SHOP DRAWINGS PRIOR TO ELECTRICAL ROUGH-IN. FINAL POWER REQUIREMENTS, DIMENSIONED ROUGH-IN LOCATIONS, LOW VOLTAGE SYSTEM CONNECTIONS, ETC. SHALL BE CONFIRMED
- 32. ALL EXISTING ELECTRICAL SERVICES NOT SPECIFICALLY INDICATED TO BE
- REMOVED OR ALTERED SHALL REMAIN AS THEY PRESENTLY EXIST. 33. IDENTIFY EACH RECEPTACLE WITH PANELBOARD IDENTIFICATION AND CIRCUIT NUMBER. USE HOT, STAMPED, OR ENGRAVED MACHINE PRINTING WITH BLACK-FILLED LETTERING ON FACE OF PLATE, AND DURABLE WIRE MARKERS OR TAGS INSIDE OUTLET BOXES.
- 34. UNLESS OTHERWISE NOTED, ALL GFCI RECEPTACLES SHALL HAVE TEST/RESET SWITCHES INTEGRAL TO RECEPTACLE DEVICE.



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WILLISTON STATE NORTH DAKOTA

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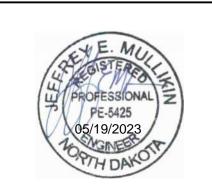
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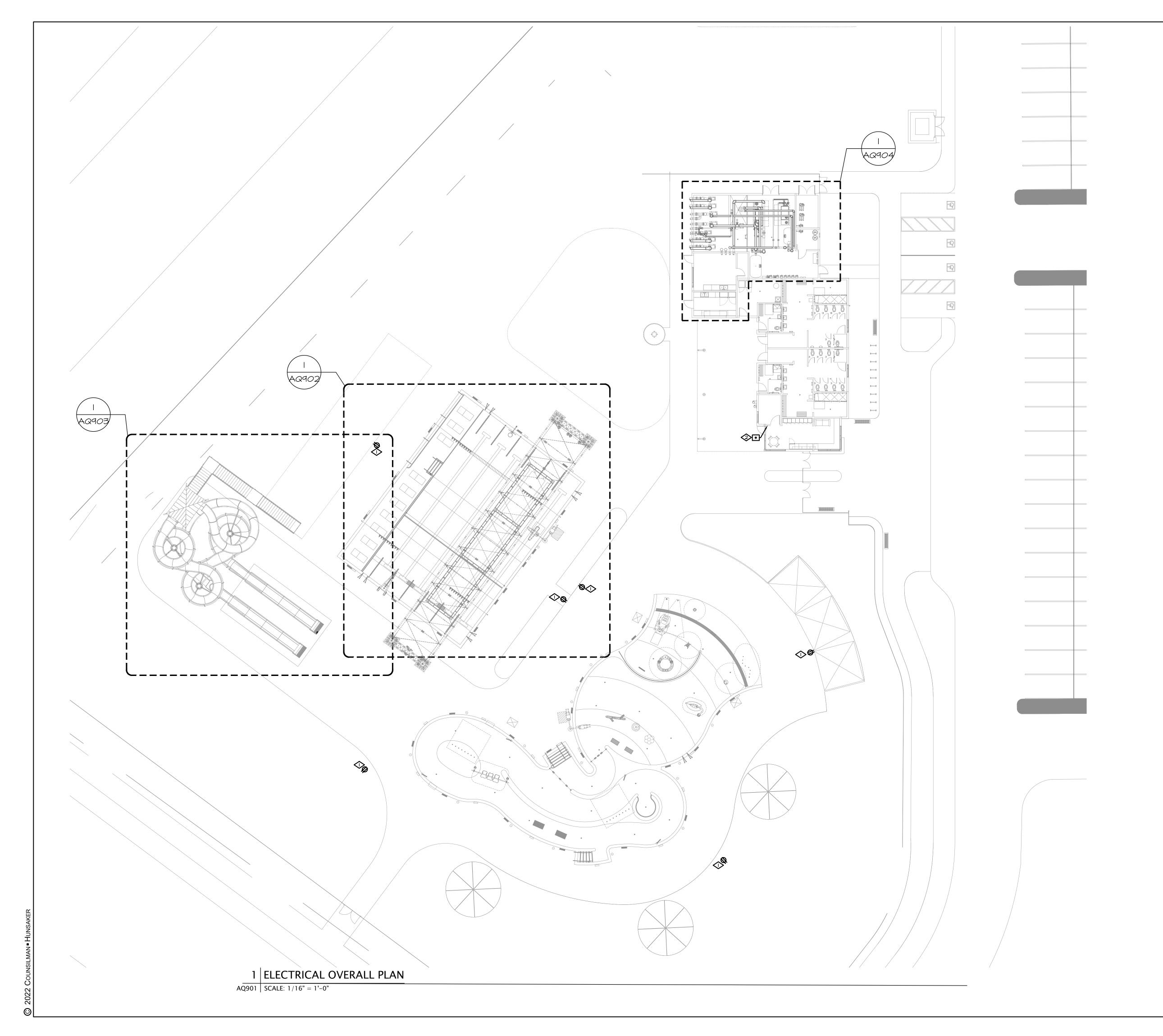
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### GENERAL NOTES

- C. REFER TO AQ904 FOR POOL EQUIPMENT SCHEDULES.

	KEYNOTE LEGEND
KEY VALUE	
$\Diamond$	
I.	PROVIDE NEMA 5-20R RECEPTACLE FOR CORD AND PLUG POWER CONNECTION TO OWNER PROVIDED PORTABLE VACUUM SYSTEM. RECEPTACLE SHALL BE PROTECTED WITH 30MA GFCI BREAKER. HINGED WATERTIGHT OUTLET BOX HOOD SHALL BE LISTED FOR "EXTRA DUTY" PER NEC 406.9 (B)(I). E.C. SHALL COORDINATE EXACT NEMA CONFIGURATION, LOCATION AND MOUNTING REQUIREMENTS WITH ARCHITECT PRIOR TO ROUGH-IN.
2.	PROPOSED LOCATION FOR POOL PUMP REMOTE START/STOP CONTROL PANEL FOR PPI, PP2, PP4, PP6 AND PP7. COORDINATE FINAL LOCATION WITH ARCHITECT AND OWNER. REFER TO POOL EQUIPMENT SCHEDULE AND AQUATICS SYSTEM SCHEMATIC DIAGRAMS FOR ADDITIONAL DETAILS.



- A. REFER TO AQ-900 FOR ELECTRICAL SYBMOLS AND ABBREVIATIONS.
- B. REFER TO ENLARGED PLANS FOR MORE INFORMATION.
- D. ALL DEVICES WITHIN POOL DECK AND POOL AREAS SHALL BE CORROSION RESISTANCE RECEPTACLES. REFER TO BUILDING ELECTRICAL ENGINEER'S SPECIFICATIONS FOR SPECIFIC REQUIREMENTS.

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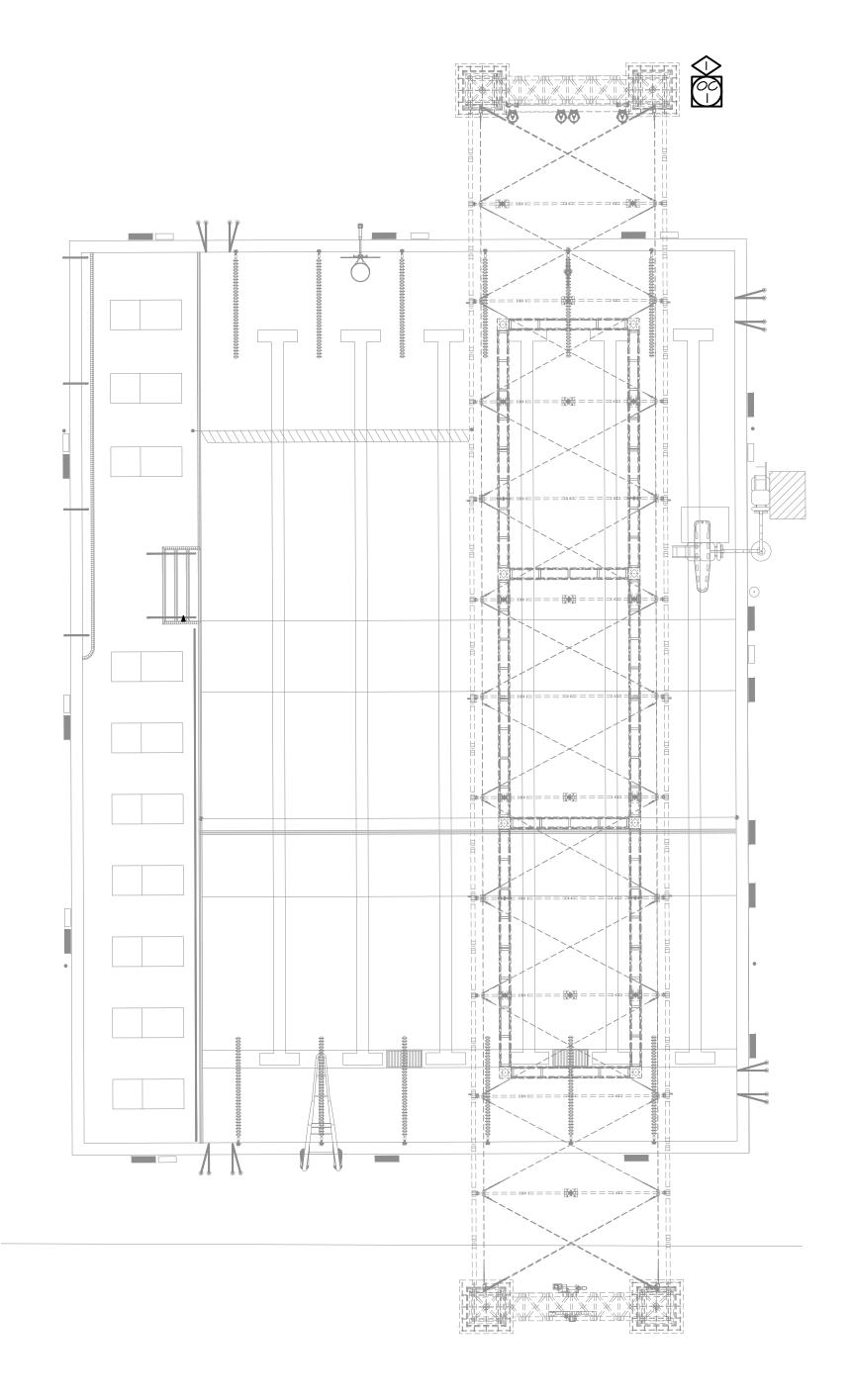
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DRAWING TITLE ELECTRICAL OVERALL PLAN



# GENERAL NOTES

- A. ALL DEVICES WITHIN POOL DECK AND POOL AREAS SHALL BE CORROSION RESISTANCE RECEPTACLES. REFER TO BUILDING ELECTRICAL ENGINEER'S SPECIFICATIONS FOR SPECIFIC REQUIREMENTS.
- B. EQUIPMENT AT THE POOL DECK AREAS SHALL BE BONDED AS REQUIRED BY NEC. REFER TO DETAIL #I SHEET AQ900 FOR MORE INFORMATION AND SPECIFIC REQUIREMENTS. REFER TO E-SERIES SHEETS FOR ADDITIONAL EQUIPMENT.
- C. REFER TO AQ904 FOR ENLARGED POOL EQUIPMENT ROOM PLAN AND SCHEDULE.

KEYNOTE LEGEND  KEY VALUE  I. PROVIDE DEDICATED 120V 20A CIRCUIT FOR OBSTACLE COURSE STRUCTURE POWER CONNECTION AS		
I. PROVIDE DEDICATED 120V 20A CIRCUIT FOR OBSTACLE COURSE		KEYNOTE LEGEND
CIRCUIT FOR OBSTACLE COURSE	KEY VALUE	
REQUIRED BY MANUFACTURER SHOP	1.	CIRCUIT FOR OBSTACLE COURSE STRUCTURE POWER CONNECTION AS

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DRAWING TITLE
ELECTRICAL FITNESS
POOL PLAN

A. ALL DEVICES WITHIN POOL DECK AND POOL AREAS SHALL BE CORROSION RESISTANCE RECEPTACLES. REFER TO BUILDING ELECTRICAL ENGINEER'S SPECIFICATIONS FOR SPECIFIC REQUIREMENTS.

GENERAL NOTES

- B. EQUIPMENT AT THE POOL DECK AREAS AND SLIDE STRUCTURE SHALL BE BONDED AS REQUIRED BY NEC. REFER TO DETAIL #I SHEET AQ900 FOR MORE INFORMATION AND SPECIFIC REQUIREMENTS. REFER TO E-SERIES SHEETS FOR ADDITIONAL EQUIPMENT.
- C. REFER TO AQ904 FOR ENLARGED POOL EQUIPMENT ROOM PLAN AND SCHEDULE.

	KEYNOTE LEGEND
KEY VALUE	
$\Diamond$	
1.	WATERSLIDE EPO SWITCH. EC SHALL FIELD COORDINATE EXACT LOCATION OF EPO SWITCH, AT THE TOP OF THE WATER SLIDE PLATFORM AS NOTED, WITH POOL CONTRACTOR AND ARCHITECT PRIOR TO ROUGH-IN. EPO SWITCH SHALL BE PROVIDED FOR THE SHUT DOWN OF PUMP ASSOCIATED WITH THE WATER SLIDES (PP6&PP7). LABEL EPO SWITCH AS "SLIDE EMERGENCY STOP". EPO SWITCH LOCATION AND INSTALLATION SHALL COMPLY WITH STATE HEALTH DEPARTMENT REGULATIONS AND NEC ARTICLE #680. CONFIRM ALL REQUIREMENTS PRIOR TO

INSTALLATION. PROVIDE A PLASTIC ENCLOSURE FOR E-STOP TO PREVENT

INADVERTENT ACTIVATION.



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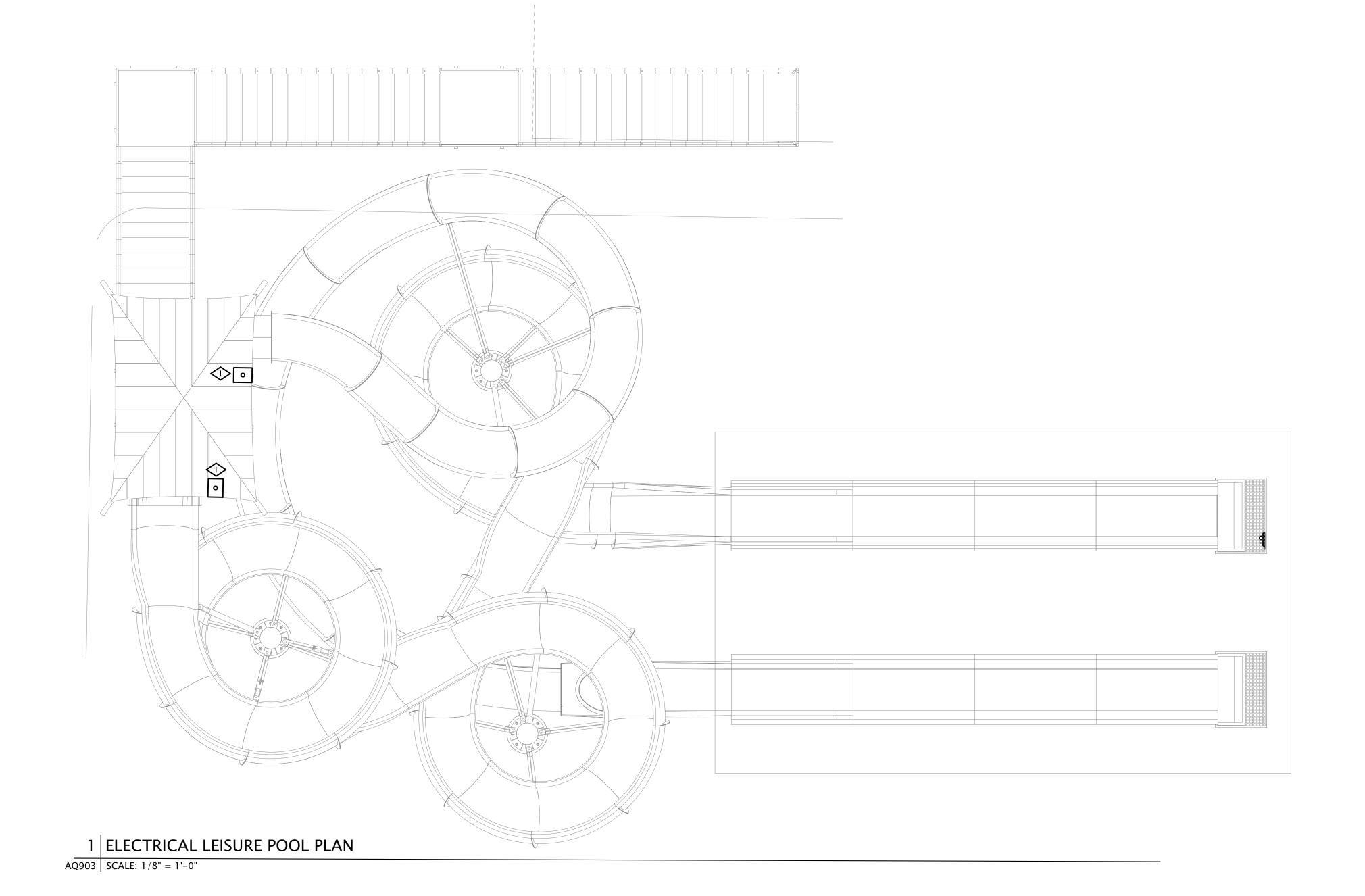
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WATERSLIDE
PLAN



KEY	QUIPMENT SCHEDULE  DESCRIPTION	VOLTS	PH	LOAD	MOCP/	FEEDER	DISCONNECT	1 6	TARTER	CIRCUIT	NOTES
		VOLIS	PH	HP,KW,FLA	MFS	FEEDER	DISCONNECT	NEMA SIZE	AUX CONTACT	CIRCUIT	NOTES
EISURE F											
H2A	POOL HEATING SYSTEM	120 120		14 A 7.4 A	30 A 20 A	2#10, 1#106, 3/4"C 2#12, 1#126, 3/4"C	30A/IP 30A/IP			P2-19 SEE E-DWGS	2, 4
H2B	POOL HEATING SYSTEM	120 120	I	14 A 7.4 A	30 A 20 A	2#10, 1#106, 3/4"C 2#12, 1#126, 3/4"C	30A/IP 30A/IP			P2-2I SEE E-DWGS	2, 4
CF2	CHLORINATION BOOSTER PUMP	120	İ	I.5 HP	20 A	2#I2, I#I2G, 3/4"C	5-20R, GFI SWITCHED			P2-26	2, 3
CF4	CO2 FEED PUMP	120	ı	FRAC	20A	2#12, 1#12 <i>G</i> , 3/4"C	5-20R, GFI SWITCHED			P2-28	2, 3
PPI	POOL RIVER PUMP	208	3	I5 HP	90 A	3#2, I#86,I-I/4"C	100A/3P	'SEE 2FI'		MPD-3	7
2FI	VFD FOR PPI	208	3	'SEE PPI'	'SEE PPI'	'SEE PPI'	'SEE PPI'		24V N.C.		2
PP2	POOL RIVER PUMP	208	3	15 HP	90 A	3#2, I#86, I-I/4"C	100A/3P	'SEE 2F2'		MPD-4	7
2F2	VFD FOR PP2	208	3	'SEE PP2'	'SEE PP2'	'SEE PP2'	'SEE PP2'		24V N.C.		2
PP3	RECIRCULATION PUMP	208	3	30 HP	125 A	3#I/O, I#6G, I-I/2"C	200A/3P	'SEE IC'		MPD-5	3
20	VFD FOR PP3 AND BYPASS PANEL	208	3	'SEE PP3'	'SEE PP3'	'SEE PP3'	'SEE PP3'		24V N.C.		2
PP4	POOL FEATURE PUMP	208	3	7.5 HP	50 A	3#6, I#I <i>OG</i> , I"C	60A/3P	'SEE 2F4'		MPD-6	7
2F4	VFD FOR PP4	208	3	'SEE PP4'	'SEE PP4'	'SEE PP4'	'SEE PP4'		24V N.C.		2
2A	CHEMICAL CONTROLLER	120	1	I5 FLA	20A	2#I2, I#I2G, 3/4"C	5-20R, GFI			P2-18	2
2B	WATER LEVEL CONTROLLER	120		I5 FLA	20A	2#12, 1#126, 3/4"C	5-20R, GFI			P2-20	
UIA	UV TREATMENT SYSTEM - CONTROL CABINET	120	1	4.8A	20A	2#I2, I#I2G, 3/4"C	30A/IP			P2-I7	26
UIB	UV TREATMENT SYSTEM -	120	1	SEE 'U-IB'	SEE 'U-IB'	SEE 'U-IB'	SEE 'U-IB'			P2-24	26
4J	CARBON DIOXIDE MONITOR SYSTEM	120		I5 FLA	20A	2#I2, I#I2G, 3/4"C	W/ UNIT			P2-I4	5
TNESS F		1		1				1		l .	
HIA	POOL HEATING SYSTEM	120 120	l I	10.5 A 7.4 A	30 A 20 A	2#10, 1#106, 3/4"C 2#12, 1#126, 3/4"C	30A/IP 30A/IP			P2-23 SEE E-DWGS	2, 4
HIB	POOL HEATING SYSTEM	120		1.4 A 10.5 A	30 A	2#10, 1#106, 3/4"C	30A/IP			P2-25	2, 4
		120	l i	7.4 A	20 A	2#12, 1#12 <i>G</i> , 3/4"C	30A/IP			SEE E-DWGS	<b>~</b> , 1
CFI	CHLORINATION BOOSTER PUMP	120	İ	I.5 HP	20 A	2#12, I#12 <i>G</i> , 3/4"C	5-20R, GFI SWITCHED			P2-27	2, 3
CF3	CO2 FEED PUMP	120		FRAC	20A	2#I2, I#I2G, 3/4"C	5-20R, GFI SWITCHED			P2-29	2, 3
PP5	RECIRCULATION PUMP	208	3	20 HP	100 A	3#I, I#86, I-I/2"C	IOOA/3P	'SEE 2C'		MPD-7	3
IC	VFD FOR PP5 AND BYPASS PANEL	208	3	'SEE PP5'	'SEE PP5'	'SEE PP5'	'SEE PP5'		24V N.C.		2
IA	CHEMICAL CONTROLLER	120		I5 FLA	20A	2#12,  #126, 3/4"C	5-20R, GFI			P2-16	2
IA	WATER LEVEL CONTROLLER	120		I5 FLA	20A	2#12,  #12 <del>6</del> , 3/4"C	5-20R, GFI			P2-22	
ATERSL	IDE	1		1				1			
PP6	CLOSED FLUME SLIDE PUMP	208	3	I5 HP	90 A	3#2,  #8 <del>6</del> ,  - /4"C	100A/3P	'SEE 2F6'		MPD-8	Ι,7
2F6	VFD FOR PP6	208	3	'SEE PP6'	'SEE PP6'	'SEE PP6'	'SEE PP6'		24V N.C.		2
PP7	OPEN FLUME SLIDE PUMP	208	3	20 HP	100 A	3#I, I#86, I-I/2"C	100A/3P	'SEE 2F7'		MPD-9	1,7
2F7	VFD FOR PP1	208	3	'SEE PP7'	'SEE PP7'	'SEE PP7'	'SEE PP7'		24V N.C.		2

- A. PROVIDE IZOV CONTROL WIRING AS REQUIRED PER POOL EQUIPMENT SCHEDULE ON POOL DRAWINGS. B. REFER TO POOL DRAWINGS, AQ-SERIES SHEETS, FOR EQUIPMENT LOCATIONS.
- C. FIELD VERIFY ALL EQUIPMENT LOADS, VOLTAGES, AND RECOMMENDED FUSE SIZING PRIOR TO ENERGIZING CIRCUIT.
- D. THE ELECTRICAL CONTRACTOR SHALL REVIEW ALL AQUATICS PLANS AND PROVIDE ALL WORK AS CALLED OUT TO BE COMPLETED BY
- THE ELECTRICAL CONTRACTOR. COORDINATE WITH POOL CONTRACTOR. E. ALL DISCONNECTS SHALL BE NEMA 4X RATED WITH NON-METALLIC ENCLOSURE AND STAINLESS STEEL HARDWARE FOR CORROSION RESISTANCE.
- F. MOTORS REQUIRING STARTERS SHALL UTILIZE COMBINATION START/DISCONNET. STARTERS SHALL BE NON-REVERSING WITH NEMA
- SIZE AS LISTED. ALL STARTERS SHALL UTILIZE CIRCUIT BREAKERS FOR OVERCURRENT PROTECTION. 6. PROVIDE LIQUID TIGHT FLEXIBLE CONDUIT CONNECTION AT ALL PUMP MOTORS, MINIMUM 18" IN LENGTH.
- H. WHERE MOTOR IS WITHIN SIGHT (PER THE DEFINITION OF THE NEC) OF AN ASSOCIATED MOTOR CONTROL CENTER, THE INDICATED DISCONNECT SWITCH IS NOT REQUIRED.
- I. ALL POOL PUMP MOTORS CONNECTED TO A SINGLE PHASE 120, 208, OR 240 BRANCH CIRCUIT SHALL BE PROVIDED WITH 5MA GROUND-FAULT CIRCUIT-INTERRUPTER.
- J. ALL MOTORS GREATER THAN 7.5 HORSEPOWER ARE TO BE PROVIDED WITH PHASE LOSS PROTECTION.
- K. PROVIDE CLEARLY LABELED EMERGENCY SHUTOFF BUTTONS FOR THE PURPOSE OF STOPPING THE MOTORS THAT PROVIDE POWER TO ALL NON-FILTRATION PUMPS
- PER POOL ENGINEER. EMERGENCY SHUTOFF BUTTON LOCATIONS SHALL BE COORDINATED WITH THE OWNER OR THE OWNER'S RISK MANAGEMENT CONSULTANT. L. PROVIDE CLEARLY LABELED EMERGENCY POWER OFF (EPO) SWITHCES FOR EMERGENCY SHUTDOWN OF ALL POOL WATER HEATER/BOILER SYSTEMS AS REQUIRED BY CODE. EPO SWITCH LOCATIONS SHALL BE AT EACH EGRESS DOOR LEADING FROM THE ROOM HOUSING THE POOL WATER HEATER SYSTEMS(S) AND SHALL BE
- COORDINATED WITH THE POOL ENGINEER AND OWNER'S RISK MANAGEMENT CONSULTANT. M. REFER TO MAIN BUILDING ELECTRICAL PLANS FOR CIRCUIT NUMBERS, PANELBOARD SCHEDULES, AND LOAD CALCULATIONS.
- N. ALL LOW VOLTAGE CONTROL WIRING AND CONNECTIONS BETWEEN POOL SYSTEMS SHALL BE PROVIDED BY POOL CONTRACTOR. ALL LINE VOLTAGE AND/OR HIGH VOLTAGE CONNECTIONS AND INTERLOCKS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.

VFD SPECIFICATION REQUIREMENTS:

- I. VFD UNIT SHALL BE RATED FOR THE SAME VOLTAGE AS THE DRIVE MOTOR AND THE ENCLOSURE SHALL BE NEMA 12 RATED.
- II. PROVIDE MANUAL SPEED ADJUSTMENT VIA KEY PAD OR DIAL MOUNTED ON THE ENCLOSURE'S EXTERIOR.
- III. VFD UNIT SHALL BE SUITABLE FOR OPERATING IN ENVIRONMENTS BETWEEN 15 TO 110 DEGREES FAHRENHEIT (STORAGE TEMPERATURE -40 TO 150 DEGREES FAHRENHEIT) AND HUMIDITY UP TO 90% NON-CONDENSING.
- IV. PROVIDE VFD WITH CAPABILITY OF 30 SECOND RAMP UP TO FULL SPEED AND 5 SECOND RAMP DOWN FROM FULL SPEED TO ZERO FOR ALL APPLICATIONS
- USING FILTRATION SYSTEM WITH REGENERATIVE MEDIA FILTER. COORDINATE LOCATIONS WITH POOL CONTRACTOR. V. PROVIDE THE VFD WITH REQUIRED NUMBER OF OUTPUTS FOR CONNECTION TO ALL EXTERNAL RELAY(S) AND EQUIPMENT AS REQUIRED BY THE POOL CONTRACTOR'S
- VI. VFD SHALL OPERATE AS CONTROLLED BY THE POOL CHEMICAL CONTROLLER TO ALLOW THE VFD TO MODULATE THE PUMP MOTOR TO MAINTAIN A CONSTANT FLOW RATE. VFD SHALL ACCEPT DIGITAL INPUT INTERLOCK SIGNAL FROM CONTROL SYSTEMS AS DETAILED IN POOL DRAWINGS. ALL LOW VOLTAGE CONNECTIONS TO THE RESPECTIVE
- POOL SYSTEM WILL BE BY THE POOL CONTRACTOR. ALL LINE VOLTAGE CONNECTIONS WILL BE BY THE ELECTRICAL CONTRACTOR. VII. WHEN INDICATED, VFDS SHALL INCLUDE A BYPASS FUNCTION TO ALLOW FOR PUMP MOTOR OPERATION IN BYPASS OPERATION. BYPASS MAY BE INTERNAL TO VFD OR IN
- SEPARATE NEMA 4X ENCLOSURE.
- VIII. APPROVED VFD MANUFACTURERS: H2FLOW #ECO-FLOW-C SERIES, PENTAIR #ACUDRIVE SERIES, OR APPROVED EQUAL. IX. MANUFACTURER OR DESIGNATED REPRESENTATIVE SHALL PERFORM FIELD TEST OF EACH DRIVE, AND PROVIDE OWNER WITH OPERATIONAL AND MAINTENANCE TRAINING.
- X. FOR PARALLEL OPERATION OF RECIRCULATION PUMPS (WHEN REQUIRED):
- THE VFD MUST BE RATED TO SIMULTANEOUSLY OPERATE ALL PUMPS IN PARALLEL AT FULL LOAD. - AN OVERLOAD RELAY FOR EACH MOTOR MUST BE PROVIDED AND CONFIGURED IN SUCH A WAY TO PROTECT THEIR RESPECTIVE MOTORS WHEN IN EITHER VFD

SPECIFIC NOTES:

- I. PUMP SHALL BE SHUT-DOWN WITH REMOTE EMERGENCY STOP BUTTON. REFER TO POOL PLANS FOR MORE INFORMATION. BUTTON LOCATION AND INSTALLATION
- SHALL COMPLY WITH STATE HEALTH DEPARTMENT REGULATIONS AND NEC ARTICLE 680. 2. LOW VOLTAGE CONTROL WIRING CONNECTIONS ARE REQUIRED BETWEEN THE POOL PUMP VFDs, THE WATER CHEMISTRY CONTROLLER,
- CHLORINE SYSTEM, CO2 FEED SYSTEM, FLOW METER, AND HEATING SYSTEM, FOR AUTOMATION AMONG POOL EQUIPMENT. CONDUIT SHALL BE PROVIDED BY EC. ALL LOW VOLTAGE CONTROL WIRING SHALL BE PROVIDED BY PC.
- 3. CIRCUIT SHALL BE INTERLOCKED WITH POOL PUMPS TO SUSPEND CHEMICAL FEEDING IN THE EVENT THE MAIN RECIRCULATION PUMPS ARE SHUT DOWN. INTERLOCK FUNCTION SHALL BE PROVIDED VIA CONNECTION BETWEEN DEVICE/CIRCUIT AND CHEMICAL CONTROLLER.

UNIT SHALL BE "CO2METER.COM" MODEL RAD-0102-6 CO2 STORAGE SAFETY 3 ALARM WITH CM-1026 DUAL STROBE KIT. INSTALL DETECTION PROBE IN PH BUFFER ROOM PER

- 4. ALL WIRING SHALL BE MADE WITH TYPE T WIRE. LINE VOLTAGE WIRE EXTERIOR TO APPLIANCE MUST BE ENCLOSED IN APPROVED CONDUIT. PROVIDE INTERCONNECTION LOW VOLTAGE
- CONTROL WIRING TO WATER CHEMISTRY CONTROLLER. 5. PROVIDE CARBON DIOXIDE MONITORING SYSTEM FOR THE PH BUFFER ROOM COMPLETE WITH A HEAD-END DISPLAY WITH DETECTION PROBE, DUAL WALL MOUNTED STROBES, SOLENOID SHUT-OFF VALVE, AND EF & DDC RELAY. THE UNIT WILL ACTIVATE A DEDICATED EXHAUST FAN, ALARM BUILDING DDC SYSTEM, ACTIVE LOCAL STROBES, AND SHUT THE SOLENOID VALVE.

MANUFACTURER'S APPROVED SHOP DRAWINGS. INSTALL ONE STROBE INSIDE PH BUFFER ROOM NEAR DOOR AT 7'-O" A.F.F. AND ONE STROBE OUTSIDE OF PH BUFFER ROOM AT 7'-O" A.F.F.

- INSTALL HEAD-END PANEL ON WALL OUTSIDE OF PH BUFFER ROOM AT 5'-O" A.F.F. TO CENTER. PROVIDE LOW VOLTAGE INTERCONNECTION WIRING TO BUILDING DDC SYSTEM. 6 OVERCURRENT PROTECTION SIZED PER MANUFACTURER RECOMMENDATION. UV SYSTEMS WITH MULTIPLE LAMPS OPERATE AS UNBALANCED LOADS DURING INITIAL STARTUP (BURN IN) OF THE LAMPS. THEY BURN INTO 100% OUTPUT SIMILAR TO SODIUM HALIDE LAMPS. DURING THAT INITIAL 'BURN IN' THE LAMPS FIRE IN SEQUENCE ABOUT 15 TO 25 SECONDS APART. LAMPS DRAW MORE CURRENT, MORE THAN DOUBLE, AT INITIAL IGNITING OF THE FILAMENT. THEREFORE, UNTIL THE LAMPS SETTLE IN, USUALLY ABOUT 5 MINUTES AFTER STARTUP OF THE SYSTEM, THEY DRAW SIGNIFICANTLY MORE AMPERAGE, THEREFORE LOAD CANNOT BE CALCULATED LIKE A MOTOR. MANUFACTURER RECOMMENDS THE LARGER BREAKERS TO PROTECT THE SYSTEM FROM TRIPPING
- OUT DURING THAT PERIOD. AFTER BURN IN, THE OPERATING LOAD IS MUCH LESS. 7 PROVIDE REMOTE/START STOP STATION FOR PUMPS INDICATED AND ASSOCIATED CONTROL WIRING FROM PUMP STARTER/VFD AUXILIARY CONTACTS
- TO REMOTE START/STOP STATION. REFER TO AQ901 FOR REMOTE START/STOP CONTROL PANEL LOCATION.

KEYNOTE LEGEND

EC SHALL PROVIDE EPO PUSH BUTTON ADJACENT TO DOOR FOR SHUT DOWN OF POOL HEATING EQUIPMENT. PROVIDE ALL CONTROL WIRING PER EQUIPMENT MANUFACTURERS REQUIREMENTS.

- 2. WIRE BOXES SUPPLIED WITH THE WATER CHEMISTRY CONTROLS SHALL RECEIVE 4-20MA OR LINE VOLTAGE CONTROL WIRING (BY POOL CONTRACTOR) CONNECTIONS FROM THE FOLLOWING POOL SYSTEMS FOR ADDITIONAL CONTROLS FUNCTION; CONFIRM EXACT REQUIREMENTS WITH APPROVED SHOP DRAWINGS AND POOL CONTRACTOR; EC SHALL PROVIDE 🖫 CONDUIT AS REQUIRED:
- POOL RECIRCULATION PUMP VFDs D. POOL CHLORINE FEED SYSTEM CO2 FEED SYSTEM POOL RECIRCULATION FLOW METER POOL HEATING SYSTEM
- . PROVIDE 2-INCH DEEP, 2-GANG OUTLET BOX WITH SINGLE-GANG PLASTER RING AND FOUR POSITION FACEPLATE FOR CHEMICAL CONTROLLER LAN CONNECTION AND TIE INTO BUILDING AUTOMATION SYSTEM AND REMOTE MONITORING AS REQUIRED. PROVIDE MINIMUM OF I-INCH EMT FROM OUTLET BOX TO STUB OUT ABOVE CEILING POINT WITH ROUTING ACCESS FROM MDF/IDF LOCATION. STRUCTURED CABLING, JACKS, AND CABLE TERMINATIONS SHALL BE BY MV CONTRACTOR/INTEGRATOR. PROVIDE SPARE PULL WIRE IN ALL CONDUIT RACEWAYS. COORDINATE EXACT REQUIREMENTS WITH OWNER/ARCHITECT.

PROVIDE 120V POWER CONNECTION TO CO2 MONITORING SYSTEM IN PH BUFFER ROOM. SYSTEM SHALL HAVE HEAD END DISPLAY

EF & DDC RELAY. PROVIDE ALL REQUIRED CONTROL AND INTERFACE WIRING PER

DRAWINGS AND WIRING DIAGRAMS. FIELD COORDINATE FINAL LOCATION WITH P.C.

APPROVED MANUFACTURER'S SHOP

WITH DETECTION PROBE, DUAL WALL MOUNTED STROBES, SOLENOID SHUT-OFF VALVE, AND

PLANS FOR CIRCUIT NUMBERS, CALCULATIONS.

GENERAL NOTES

- A. ALL WIRING ROUTED WITHIN WITHIN THIS ROOM SHALL BE WITHIN NON-METALLIC
- B. ALL RECEPTACLE DEVICES LOCATED WITHIN POOL MECHANICAL ROOM SHALL BE GFI, PROVIDED WITH WEATHERPROOF WHILE-IN-USE COVERS, UNLESS OTHERWISE NOTED.
- ALL DEVICES WITHIN POOL DECK AND POOL AREAS SHALL BE CORROSION RESISTANCE RECEPTACLES. REFER TO BUILDING ENGINEER SPECIFICATIONS FOR SPECIFIC REQUIREMENTS.
- D. | EQUIPMENT AT THE POOL DECK AREAS SHALL BE BONDED AS REQUIRED BY NEC. REFER TO DETAIL FOR MORE INFORMATION AND SPECIFIC REQUIREMENTS. REFER TO E-SERIES SHEETS FOR ADDITIONAL INFORMATION.
- REFER TO MAIN BUILDING ELECTRICAL PANELBOARD SCHEDULES, AND LOAD

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CITY WILLISTON STATE NORTH DAKOTA

**ISSUE DATES** 

CD CONSTRUCTION DOCUMENTS MARK DESCRIPTION

20224620 PROJECT NO: DRAWN BY: CHECKED BY:

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**DRAWING TITLE ELECTRICAL POOL** MECHANICAL ROOM PLAN

	LEGEND
<u></u>	ANGLE RELIEF VALVE
$\rightarrow$	ARROW INDICATES DIRECTION OF FLOW
ДA	AUTOMATIC AIR VENT
	AUTOMATIC 2-WAY CONTROL VALVE
—————————————————————————————————————	AUTOMATIC 3-WAY CONTROL VALVE
	AUTOMATIC FLOW CONTROL VALVE
	BACK FLOW PREVENTER-RPZ
	BALANCING VALVE
Ψ	BALL VALVE
	BOTTOM PIPE CONNECTION
	BUTTERFLY VALVE
<del></del> O-]	CAPPED PIPE WITH SHUT-OFF VALVE
$\overline{}$	CHECK VALVE, FLOW DIRECTION
$-\!$	CONCENTRIC REDUCER
	DIRT POCKET
	ECCENTRIC REDUCER (E.R.)
	FLOOR CLEANOUT/GRADE CLEANOUT
F	FLOW MEASURING STATION
Б——	GAS COCK VALVE
8	GAS PRESSURE REGULATOR
	GATE VALVE
——————————————————————————————————————	GLOBE VALVE
	HOSE BIBB
^	
<u>4</u>	MANUAL AIR VENT
	METER
——————————————————————————————————————	MIXING VALVE
	OS&Y (OUTSIDE SCREW & YOKE) VALVE
×	PIPE ANCHOR
	PIPE DOWN
——————————————————————————————————————	PIPE EXPANSION JOINT
	PIPE GUIDE
)———	PIPE UP
	PIPING FLEXIBLE CONNECTION
	PITCH PIPE DOWN IN DIRECTION OF FLOW
P	PRESSURE GAUGE AND GAUGE COCK
	PRESSURE REDUCING VALVE (PRV)
	PUMP
- Q	
T	SHOCK ABSORBER
	SLEEVE
X	SOLENOID VALVE
	STEAM TRAP
	TEMPERATURE-PRESSURE TEST FITTING
① ————	TEMPERATURE SENSOR
<u> </u>	THERMOMETER
	THERMOMETER WELL
<u>i</u>	TOP PIPE CONNECTION
	UNION
 ▽	VACUUM BREAKER
	VACOUN BREAKER  VALVE WITH TAMPER SWITCH
G	WALL CLEANOUT
<u> </u>	WATER FLOW SWITCH
1>1	"Y" TYPE STRAINER
14	"Y" TYPE STRAINER WITH HOSE END BLOW OFF VALVE

/	
1 7	"Y" TYPE STRAINER WITH HOSE END BLOW OFF VALVE
∪—JU	ZONE VALVE
	MEDICAL GAS
*	CARBON DIOXIDE
<u> </u>	INSTRUMENT AIR
	MEDICAL AIR
	MEDICAL VACUUM
	NITROGEN
	NITROUS OXIDE
G	OXYGEN
G 7	WASTE ANESTHESIA GAS DISPOSAL

	LEGEND
A	COMPRESSED AIR LINE
COND	CONDENSATE DRAIN OR RETURN
CHWR	CHILLED WATER RETURN
——CHWS——	CHILLED WATER SUPPLY
CWR	CONDENSER WATER RETURN
CW	CONDENSER WATER SUPPLY
 FOR	FUEL OIL RETURN PIPING
—— FOS ——	FUEL OIL SUPPLY PIPING
	FUEL OIL VENT PIPING
G HPC	NATURAL GAS PIPING
	HIGH PRESSURE CONDENSATE RETURN
– – HPR- – – -	HIGH PRESSURE STEAM RETURN
—— HPS ——	HIGH PRESSURE STEAM SUPPLY
– – –HWR- – – –	HEATING WATER RETURN
——HWS——	HEATING WATER SUPPLY
LPR	LOW PRESSURE STEAM RETURN
LPS	LOW PRESSURE STEAM SUPPLY
MPS	MEDIUM PRESSURE STEAM
-	PUMPED CONDENSATE RETURN
ST_	
=OST====	OVERFLOW STORM DRAIN PIPING
	(BELOW GRADE)  RAIN LEADER PIPING
RL	-
—— ORL——	OVERFLOW RAIN LEADER PIPING
	VENT PIPING (AV-ACID VENT)
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER CIRCULATION
	SANITARY WASTE, UNDERGROUND (AW - ACID WASTE UNDERGROUND)
	SANITARY WASTE, ABOVE GRADE (AW - ACID WASTE ABOVE GRADE)
MA	MEDICAL AIR
OX	OXYGEN
VAC	MEDICAL VACUUM
N2O	
	NITROUS OXIDE
WAGD	WASTE ANESTHESIA GAS DISPOSAL
N	NITROGEN
V-EX-	VACUUM EXHAUST
IA	INSTRUMENT AIR
CO2	CARBON DIOXIDE
MA-IN-	MEDICAL AIR INTAKE
RO	REVERSE OSMOSIS WATER
	1
	SYMBOLS
<u></u>	ELECTRIC WATER COOLER
• MB	MOP BASIN
□ ⊚ L	LAVATORY
☐ S	SINK URINAL
□ □ v	WATER CLOSET
- -	
<b>⊕</b> FD <b>図</b>	FLOOR DRAIN, AREA DRAIN
<u> </u>	HATCH INDICATES ITEM(S) TO BE REMOVED
	INTERNALLY LINED DUCTWORK
•	POINT OF CONNECTION (NEW TO EXISTING) POINT OF DEMOLITION
1	DETAIL DESIGNATION DETAIL NUMBER
M2.1/	DETAIL DESIGNATION DRAWING NUMBER
2 M3.1	SECTION DESIGNATION SECTION NUMBER DRAWING NUMBER
/XX\	SHEET / CONSTRUCTION NOTE NUMBER
\xx/	
Λ '	REVISION NUMBER
$\triangle$	REVISION NOWIDER
NO S-1	— S-SUPPLY, R-RETURN, E-EXHAUST, T-TRANSFER — CFM

	LEGEND
R	SLOPING RISE (R) OR DROP (D) IN DUCTWORK
18"x 12"	DUCT SIZE (CLEAR INSIDE DIMENSION) FIRST FIGURE INDICATES PLAN SIZE
18"Ø	ROUND DUCT DIAMETER SIZE
	FLEXIBLE CONNECTION IN DUCT
	FLEXIBLE DUCT
F/S RD FD SD	VOLUME DAMPER IN DUCT (VD)  (FD) FIRE DAMPER, (SD) SMOKE DAMPER,
	(F/S) COMBINATION FIRE SMOKE DAMPER, (BDD) BACK DRAFT DAMPER
	DUCT ACCESS DOOR
	ELBOW WITH TURNING VANES
18"x 12"	DUCT SPLIT WITH SPLIT SIZE
	BRANCH TAKEOFF WITH VOLUME DAMPER
	RADIUS ELBOW
	DUCT MOUNTED HEATING COIL, WITH DUCT ACCESS DOOR UPSTREAM OF HEATING COIL.
<u> </u>	SLOT DIFFUSER
ACCESS AREA	TERMINAL UNIT WITH HEATING COIL
	CEILING DIFFUSER RETURN REGISTER OR GRILLE
TRG 12"x 12"	TRANSFER GRILLES ON BOTH SIDES OF PARTITION OR WALL (SIZE)
→ S-1 100	SUPPLY REGISTER WITH AIR OUTLET DEVICE DESIGNATION (100 CFM)
← R-1 100	RETURN OR EXHAUST REGISTER OR GRILLE WITH AIR INLET DEVICE DESIGNATION (100 CFM)
	RECTANGULAR SUPPLY DUCT UP
ix	RECTANGULAR SUPPLY DUCT DOWN
	RECTANGULAR RETURN DUCT UP
<b>\</b>	RECTANGULAR RETURN DUCT DOWN
	RECTANGULAR EXHAUST DUCT UP
17	RECTANGULAR EXHAUST DUCT DOWN
	ROUND DUCT, UP
	ROUND DUCT, DOWN
Ф Т <sub>2</sub>	SQUARE FEET THERMOSTAT WITH ZONE OR EQUIPMENT DESIGNATION
<u>S</u>	DUCT SMOKE DETECTOR SUPPLIED BY ELECTRICA TRADE, INSTALLED BY MECHANICAL TRADE.
<u> </u>	FLOW SWITCH
Н	HUMIDISTAT

						Α	
	FIRE	- PRC	OTECTI	ON		A/C AHU	AIR CONDITIONING UNIT
•	SPRINI	KLER HEAD	D - PENDANI	-		AFFF	AIR HANDLING UNIT AQUEOUS FILM FORMING FOAM
•			D - PENDANI			AFF AD	ABOVE FINISHED FLOOR  ACCESS FLOOR OR AREA DRAIN
				ON DROP W	ITH GUARD	ACCU	ACCESS FLOOR OR AREA DRAIN AIR COOLED CONDENSING UNIT
<u>×</u>				WITH GUAR		B BV	BALANCING VALVE
				WITH GOARI		BTU	BRITISH THERMAL UNIT
0	+		O - UPRIGHT	ON CDDIC		BOP BOB	BOTTOM OF PIPE
<u> </u>	SPRINI	CLER HEAL	O - UPRIGHT	ON SPRIG		ВНР	BOTTOM OF BEAM  BRAKE HORSEPOWER
<b>Ø</b>	SPRINI	KLER HEAD	O - UPRIGHT	ON SPRIG WI	TH GUARD	BDD	BACK DRAFT DAMPER
<u>×</u>	SPRINI	KLER HEAD	D - UPRIGHT	WITH GUARD	) 	C CFM	CUBIC FEET PER MINUTE
$\triangleright$	SPRINI	KLER HEAD	) - SIDEWAL	-		CEF	CEILING EXHAUST FAN CEILING DIFFUSER OR CONDENSATE DRAIN
<b>&gt;</b>	SPRINI	KLER HEAD	) - Sidewali	- FULLY REC	ESSED	СС	COOLING COIL
$\triangleright$	SPRINI	KLER HEAD	o - Sidewal	_		C	CONVECTOR
⊳	SPRINI	KLER HEAD	) - Sidewali	SEMI-RECE	SSED	CV	COLD WATER & CONDENSER WATER CHECK VALVE
	<u>'</u>					CT CR	COOLING TOWER
DUC	ΓCON	STRU	JCTIO	N STAN	IDARDS	СР	CEILING REGISTER  CONDENSATE PUMP OR CIRCULATING PUMP
	H= HE	IGHT REFE	RRED TO IN	DIMENSIONS		CONT	CONVECTOR
	<b></b>	DDT (5	CLID			CONT	CONTINUATION CLEANOUT
(A)	<del></del>	DRIVE	: 2LIY			CLG	CEILING
		PLAIN	I "S" SLIP			CWR	CHILLED WATER SUPPLY CHILLED WATER RETURN
AIR FLC	· · · · · · · · · · · · · · · · · · ·					СИН	CABINET HEATER
		HEVV	MED "S" SLIP			CG CO2	CARRON DIOXIDE
AIR FLC	DW	I IEIVII	مالا د صان			D D	CARBON DIOXIDE
(C)						DX	DIRECT EXPANSION
 H 	{	BAR S	II TP			DWG DR	DRAWING DRAIN
		DANS	)LIT			DN	DOWN
AIR FLOW (E)						DIA Ø	DIAMETER DRY BULB
<u> </u>	<u> </u>					EA	EXHAUST AIR
H 		ALTER	RNATE BAR S	LIP		EDB ECH	ENTERING DRY BULB
AID FLOVA		(STAN	idard "s" si	-IP)		EAT	ELECTRIC CABINET HEATER ENTERING AIR TEMPERATURE
AIR FLOW (F)	<u>/_</u>					E EX	Towers to
						EWT	EXISTING ENTERING WATER TEMPERATURE
H I		REINF BAR S	ORCED SLIP (CLEAT)			EWB	ENTERING WET BULB
AIR FLOW			, ,			EUH	ELECTRIC UNIT HEATER EXPANSION TANK
(G)	<u> </u>					ER	EXHAUST REGISTER
<u> </u>						ELEV	ELEVATOR ELEVATION
H   <i>011111111</i>		ANGL	LE SLIP			EHC	ELECTRIC HEATING COIL
AIR FLOW						EG EFF	EXHAUST GRILLE EFFICIENCY
(H)						EF	EXHAUST FAN
H-1/8" <b>(</b> ((	Ţ	STAN	DING SEAM			EWC	ELECTRIC WATER COOLER
						F	ELECTRIC WATER COOLER
(I)						FDC	FIRE DEPARTMENT CONNECTION
H		ANICI	E DEINIEODO	- D		FD FCC	FLOOR DRAIN OR FIRE DAMPER FIRE CONTROL CENTER
H W	<i></i>		e reinforc Nding sean			FC	FLEXIBLE CONNECTION
<b>T</b>						°F	FURNISHED BY OTHERS  DEGREES FAHRENHEIT
DUCT	GN	IGES	TYPE	JOINT SPACING	H" DIMENSION	FU	FIXTURE UNIT
DIMENSION	STEEL/AL	UMINUM	JOINTS	(MAXIMUM)	(MINIMUM)	FTR FT	FIN TUBE RADIATION FEET
UP THRU 18" 19" THRU 24"		4(.020) 2(.025)	A & B C	8'-0" 5'-0"		FSD	COMBINATION FIRE AND SMOKE DAMPER
25" THRU 36"	24 2	2(.025)	E OR I	5'-0"	1"	FS FP	FLOW SWITCH OR FLOOR SINK FUEL OIL PUMP OR FIRE PUMP
37" THRU 54" 55" THRU 80"		0(.032) 8(.040)	E OR I F OR G	4'-0" 3'-0"	1 1/8" 1 1/2"X1/8"L	FOV	FUEL OIL VENT PIPING
81" THRU 96"	18 1	6(.051)	H OR J	2'-6"	1 1/2"X1/8"L	FOS FOR	FUEL OIL SUPPLY PIPING
OVER 96"	18 1	6(.051)	H OR J	2'-0"	2"X1/4"L	FLR	FUEL OIL RETURN PIPING FLOOR
						FLA	FULL LOAD AMPERES
						FHC G	FIRE HOSE CABINET
						GLY	GLYCOL
						GAL G	GALLONS LOW PRESSURE NATURAL GAS
						GHWS	GLYCOL HOT WATER SUPPLY
						GCWS GHWR	GLYCOL HOT WATER RETURN
						GCWR	GLYCOL HOT WATER RETURN GLYCOL CHILLED WATER RETURN
						GV	GATE VALVE
						GPM H	GALLONS PER MINUTE
						НВ	HOSE BIBB
						HW HVU	HOT WATER
						HWR	HEATING AND VENTILATION UNIT HOT WATER RETURN
						HWS	HOT WATER SUPPLY
						HC HP	HEATING COIL HORSEPOWER

AIR CONDITIONING UNIT	IJS	IN JOIST SPACE
AIR HANDLING UNIT AQUEOUS FILM FORMING FOAM	IN ID	INCHES INSIDE DIMENSION
ABOVE FINISHED FLOOR	IA	INSTRUMENT AIR
ACCESS FLOOR OR AREA DRAIN AIR COOLED CONDENSING UNIT	J JS	JANITOR'S SINK
AIN COOLED CONDENSING ONLY	JP	JOCKEY PUMP
BALANCING VALVE	L	
BRITISH THERMAL UNIT BOTTOM OF PIPE	LWT	LOUVER
BOTTOM OF BEAM	LSD	LINEAR SLOT DIFFUSER (CEILING, WALL, SILL, &
BRAKE HORSEPOWER	LDR	FLOOR)
BACK DRAFT DAMPER	LBS	LEADER POUNDS
CUBIC FEET PER MINUTE	LAT	LEAVING AIR TEMPERATURE
CEILING EXHAUST FAN	L	LAVATORY
CEILING DIFFUSER OR CONDENSATE DRAIN COOLING COIL	M MUA	MAKE UP AIR UNIT
CONVECTOR	MS	MOP SINK
COLD WATER & CONDENSER WATER	MOD	MOTOR OPERATED DAMPER
CHECK VALVE COOLING TOWER	MIN MH	MINIMUM MANHOLE
CEILING REGISTER	МСС	MOTOR CONTROL CENTER
CONDENSATE PUMP OR CIRCULATING PUMP	МВН	THOUSAND BTU PER HOUR
CONVECTOR	MAT	MIXED AIR TEMPERATURE  MAXIMUM
CONTINUATION CLEANOUT	MA	MEDICAL AIR
CEILING	MA IN	MEDICAL AIR INTAKE
CHILLED WATER SUPPLY	N	NOT TO SCALE
CHILLED WATER RETURN CABINET HEATER	NTS NO	NOT TO SCALE NORMALLY OPEN
CEILING GRILL	NIC	NOT IN CONTRACT
CARBON DIOXIDE	NFA	NET FREE AREA
DIRECT EXPANSION	NC N/E	NORMALLY CLOSED  NEW TO EXISTING CONNECTION
DRAWING	N2O	NITROUS OXIDE
DRAIN	N	NITROGEN
DOWN DIAMETER	O OS&Y	OUTSIDE SCREW & YOKE GATE VALVE
DRY BULB	OST	OVERFLOW STORM PIPING
EXHAUST AIR	OD	OUTSIDE DIMENSION
ENTERING DRY BULB	OBD OA	OPPOSED BLADE DAMPER OUTSIDE AIR
ELECTRIC CABINET HEATER ENTERING AIR TEMPERATURE	ОХ	OXYGEN
	Р	
EXISTING	PSIG PSI	POUNDS PER SQUARE INCH (GAUGE)
ENTERING WATER TEMPERATURE ENTERING WET BULB	PRV	POUNDS PER SQUARE INCH PRESSURE REDUCING VALVE OR POWER ROOF VEN
ELECTRIC UNIT HEATER	PIV	POST INDICATING VALVE
EXPANSION TANK	PHC	PREHEAT COIL
EXHAUST REGISTER ELEVATOR	PG PFHX	PRESSURE GAUGE PLATE AND FRAME HEAT EXCHANGER
ELEVATION	P/FT	PITCH PER FOOT
ELECTRIC HEATING COIL	PD	PRESSURE DROP OR PUMP DISCHARGE
EXHAUST GRILLE	P R	PUMP
EFFICIENCY EXHAUST FAN	RTU	ROOF TOP UNIT
ELECTRIC WATER HEATER	RPM	REVOLUTIONS PER MINUTE
ELECTRIC WATER COOLER	RAF RD	RETURN AIR FAN ROOF DRAIN
FIRE DEPARTMENT CONNECTION	RA	RETURN AIR
FLOOR DRAIN OR FIRE DAMPER	RO	REVERSE OSMOSIS WATER
FIRE CONTROL CENTER	S SPKR	CDDTMIKEED
FLEXIBLE CONNECTION FURNISHED BY OTHERS	SP	SPRINKLER STATIC PRESSURE OR SUMP PUMP
DEGREES FAHRENHEIT	SF	SUPPLY FAN OR SQUARE FEET
FIXTURE UNIT	SENS	SENSIBLE
FIN TUBE RADIATION	SE SD	SEWAGE EJECTOR  SMOKE DAMPER OR SMOKE DETECTOR
FEET COMBINATION FIRE AND SMOKE DAMPER	SA	SUPPLY AIR
FLOW SWITCH OR FLOOR SINK	S	SINK
FUEL OIL PUMP OR FIRE PUMP	ST	STORM PIPING OR SOUND TRAP (SOUND ATTENUATOR)
FUEL OIL VENT PIPING FUEL OIL SUPPLY PIPING	SS	SERVICE SINK
FUEL OIL RETURN PIPING	T	TVDIC
FLOOR	TYP TS	TYPICAL TAMPER SWITCH
FULL LOAD AMPERES FIRE HOSE CABINET	TOP	TOP OF PIPE
	TC-1	TERMINAL COIL - (COIL NUMBER)
GLYCOL	U UR	URINAL
GALLONS LOW PRESSURE NATURAL GAS	UH	UNIT HEATER
GLYCOL HOT WATER SUPPLY	V	
GLYCOL CHILLED WATER SUPPLY	VTR VD	VENT THRU ROOF
GLYCOL HOT WATER RETURN	VAV	VOLUME DAMPER  VARIABLE AIR VOLUME TERMINAL UNIT
GLYCOL CHILLED WATER RETURN  GATE VALVE	VAR	VARIABLE AIR VOLOME TERMINAL ONT
GALLONS PER MINUTE	VFD	VARIABLE FREQUENCY DRIVE
	VT VAC	VENT MEDICAL VACUUM
HOSE BIBB HOT WATER	V EX	VACUUM EXHAUST
HEATING AND VENTILATION UNIT	W	
HOT WATER RETURN	WO 12X12	WALL HYDRANT
HOT WATER SUPPLY	WC WC	WALL HYDRANT WATER CLOSET
HEATING COIL HORSEPOWER	WB	WET BULB
HOT WATER CIRCULATION	W	SANITARY WASTE
HOT WATER CIRCULATION	WAGD	WASTE ANESTHESIA GAS DISPOSAL

JP	JOCKEY PUMP
L LWT	LEAVING WATER TEMPERATURE
LW I LVR	LOUVER
LSD	LINEAR SLOT DIFFUSER (CEILING, WALL, SILL, &
-	FLOOR)
LDR	LEADER
LBS	POUNDS
LAT	LEAVING AIR TEMPERATURE
L	LAVATORY
М	'
MUA	MAKE UP AIR UNIT
MS	MOP SINK
MOD	MOTOR OPERATED DAMPER
MIN	MINIMUM
МН	MANHOLE
МСС	MOTOR CONTROL CENTER
МВН	THOUSAND BTU PER HOUR
MAT	MIXED AIR TEMPERATURE
MAX	MAXIMUM
MA	MEDICAL AIR
MA IN	MEDICAL AIR INTAKE
N	
NTS	NOT TO SCALE
NO	NORMALLY OPEN
NIC	NOT IN CONTRACT
NFA	NET FREE AREA
NC	NORMALLY CLOSED
N/E	NEW TO EXISTING CONNECTION
N2O	NITROUS OXIDE
N	NITROGEN
0	1
OS&Y	OUTSIDE SCREW & YOKE GATE VALVE
OST	OVERFLOW STORM PIPING
OD	OUTSIDE DIMENSION
OBD	OPPOSED BLADE DAMPER
OA	OUTSIDE AIR
OX	OXYGEN
P	
PSIG	POUNDS PER SQUARE INCH (GAUGE)
PSI	POUNDS PER SQUARE INCH
PRV	PRESSURE REDUCING VALVE OR POWER ROOF VENT
PIV	POST INDICATING VALVE
PHC	PREHEAT COIL
PG	PRESSURE GAUGE
PFHX	PLATE AND FRAME HEAT EXCHANGER
P/FT	PITCH PER FOOT
PD	PRESSURE DROP OR PUMP DISCHARGE
Р	PUMP
R	
RTU	ROOF TOP UNIT
RPM	REVOLUTIONS PER MINUTE
RAF	RETURN AIR FAN
RD	ROOF DRAIN
RA	RETURN AIR
RO	REVERSE OSMOSIS WATER
S	
SPKR	SPRINKLER
SP	STATIC PRESSURE OR SUMP PUMP
SF	SUPPLY FAN OR SQUARE FEET
SENS	SENSIBLE
SE	SEWAGE EJECTOR
SD	SMOKE DAMPER OR SMOKE DETECTOR
SA	SUPPLY AIR
S	SINK
ST	STORM PIPING OR SOUND TRAP (SOUND
cc	ATTENUATOR)
SS T	SERVICE SINK
T TYP	TVDICAL
TS	TAMPER SWITCH
TOP	TAMPER SWITCH
TC-1	TOP OF PIPE
	TERMINAL COIL - (COIL NUMBER)
U	LIDTNIAL
UR	URINAL
UH .,	UNIT HEATER
V	NENT TUST SO OF
VTR	VENT THRU ROOF
VD	VOLUME DAMPER
VAV	VARIABLE AIR VOLUME TERMINAL UNIT
	VARIABLE
VFD	VARIABLE FREQUENCY DRIVE
VFD VT	VENT
VAR VFD VT VAC V EX	

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CLIENT WILLISTON COMMUNITY BUILDERS

PROJECT DESCRIPTION WILLISTON WATER WORLD

WILLISTON CITY ND STATE

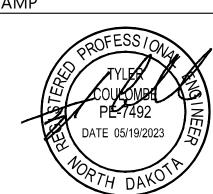
ISSUE DATES

CD CONSTRUCTION DOCUMENTS 05/19/2023 DD DESIGN DEVELOPMENT 01/20/2023 MARK DESCRIPTION

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DRAWING TITLE MECHANICAL SYMBOLS & LEGEND SHEET

SHEET INDEX PLUMBING & MECHANICAL

PM01 MECHANICAL SYMBOLS & LEGEND SHEET

PLUMBING

P200

P100 PLUMBING SITE PLAN

UNDERGROUND PLUMBING PLAN FIRST FLOOR PLUMBING PLAN

P201 P501 SANITARY & VENT RISER DIAGRAM P502 WATER SUPPLY RISER DIAGRAM

P601 PLUMBING DETAILS PLUMBING SCHEDULES

MECHANICAL MECHANICAL PIPING PLAN

FIRST FLOOR VENTILATION PLAN ROOF VENTILATION PLAN

MECHANICAL DETAILS MECHANICAL SCHEDULES

# KEYNOTE LEGEND:

- < < < INDICATES KEYNOTE ON PLAN
- PS 01 PER CODE HB-1 ARE APPROXIMATELY 75' APART AND 1' BELOW GRADE. HB-1 ARE TO BE FLUSH WITH GRADE. REFER TO INSTALLATION MANUAL.
- PS 02 PLUMBING CONTRACTOR TO DETERMINE ON SITE BEST ROUTE FOR PIPING UP TO AND INSIDE WATER SLIDE TOWER, COORDINATE WITH POOL CONTRACTOR. HB-2 SHALL BE MOUNTED 4' OFF FLOOR DECK OF TOWER.
- PS 03 ROUTE AROUND PERIMETER OF CONCRETE WALK PATH AREAS. BE AWARE OF STORM WATER PIPING UNDERGROUND AND MAN HOLE COVERS WHEN PIPING 1 1/4" HOSE BIB PIPING, COORDINATE WITH CIVIL CONTRACTOR.
- PS 04 1-1/4" LINE FOR FUTURE TO BE STUBBED UNDER GROUND, VALVE & CAP AT 1' BELOW

# **GENERAL NOTES**

1. ALL VALVES SHALL BE RECESSED IN AN INGROUND VALVE BOX WITH COVER.



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CLIENT
WILLISTON
COMMUNITY
BUILDERS

PROJECT DESCRIPTION
WILLISTON WATER
WORLD

CITYWILLISTONSTATEND

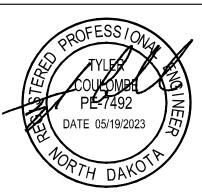
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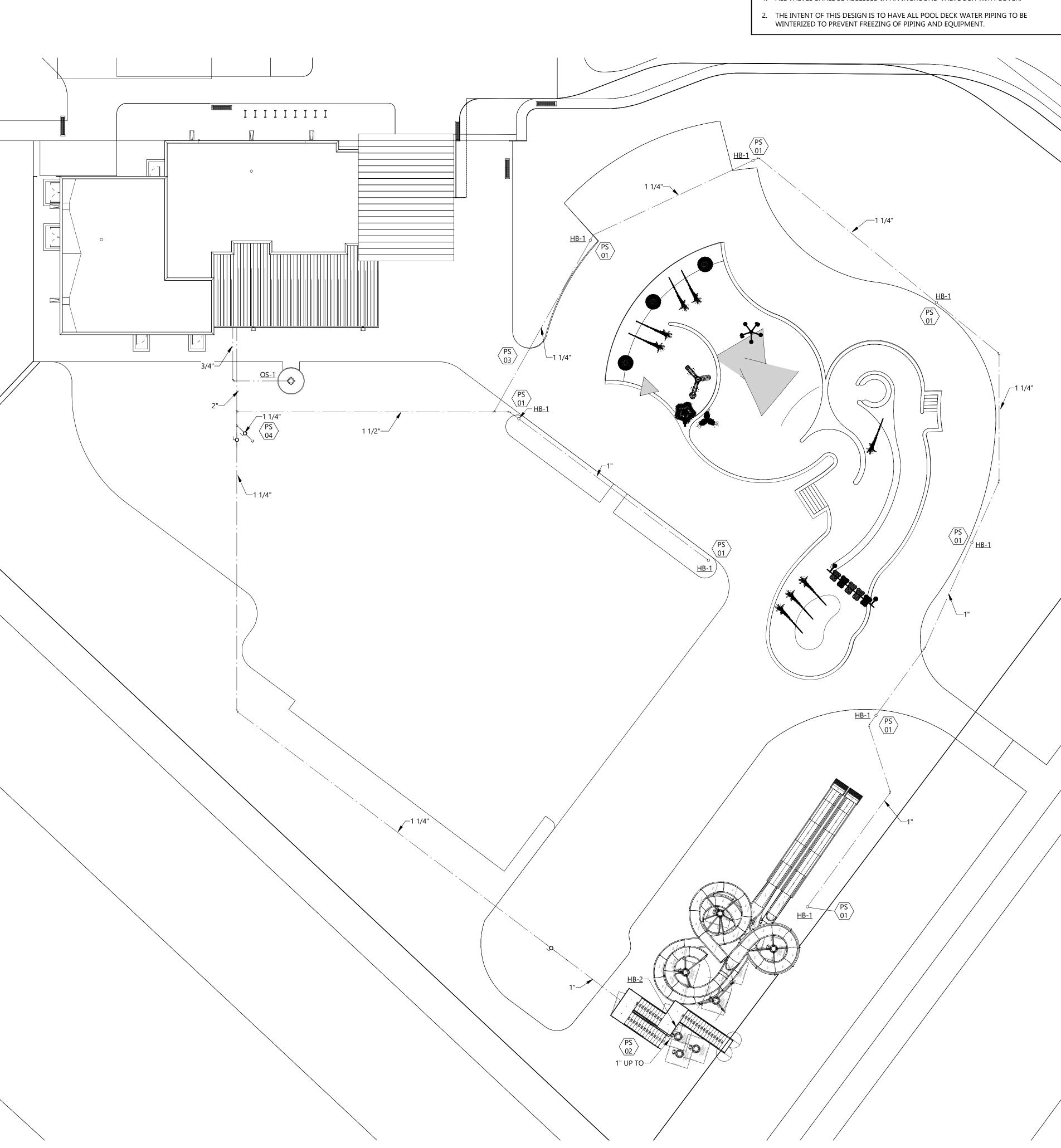
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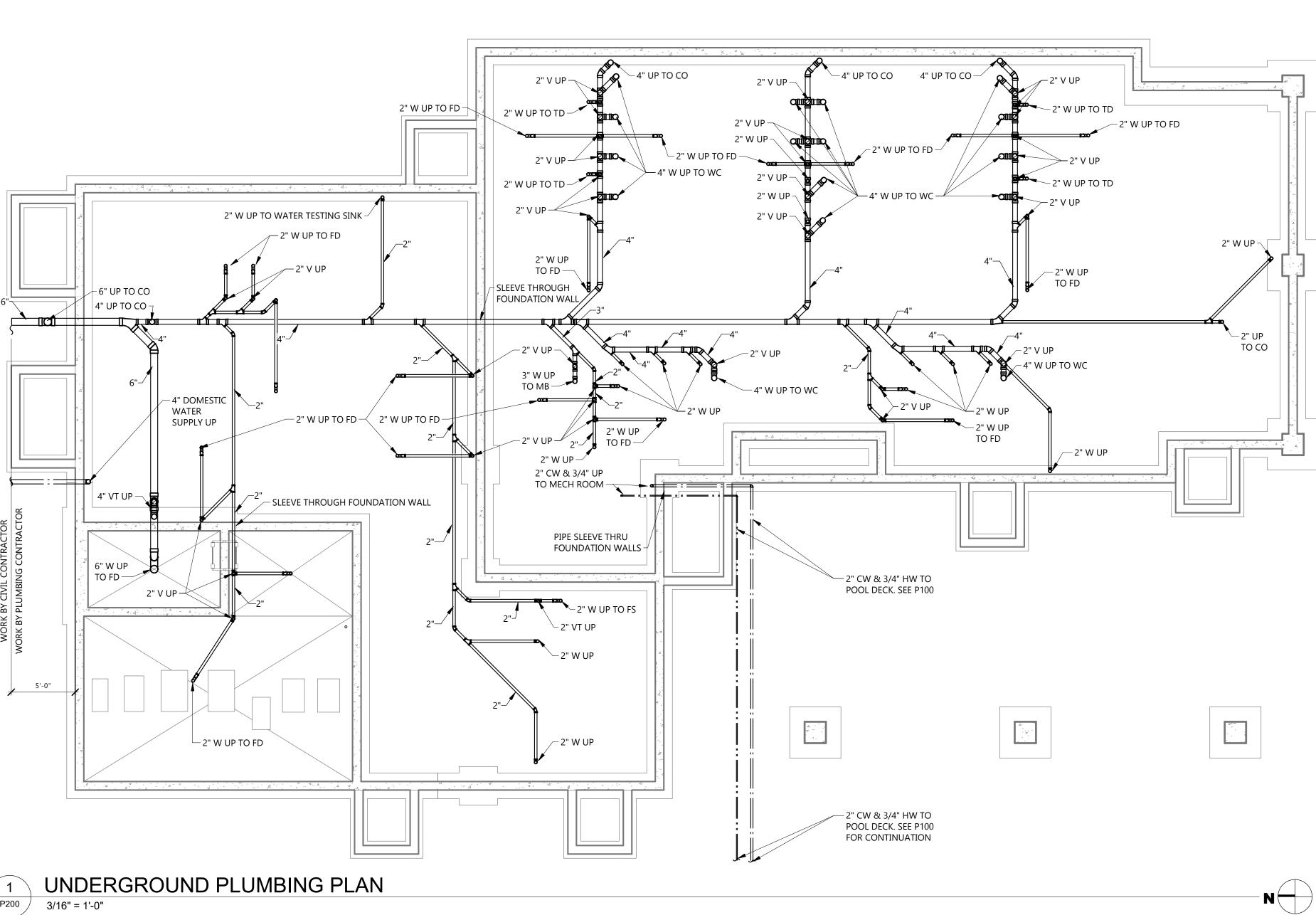
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DRAWING TITLE
PLUMBING SITE PLAN

P100







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CLIENT WILLISTON COMMUNITY BUILDERS

PROJECT DESCRIPTION WILLISTON WATER WORLD

WILLISTON CITY STATE

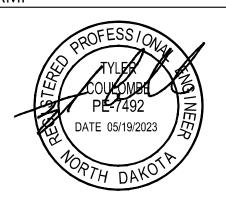
**ISSUE DATES** 

CD	CONSTRUCTION DOCUMENTS	05/19/2023
DD	DESIGN DEVELOPMENT	01/20/2023
MARK	DESCRIPTION	DATE

PROJECT NO:	20224620
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DRAWING TITLE UNDERGROUND PLUMBING PLAN

**P200** 

UNDERGROUND PLUMBING PLAN P200

# GENERAL NOTES

- REFER TO RISER DIAGRAMS ON P501 & P502 FOR ADDITIONAL PIPE SIZING INFORMATION.
- THE INTENT OF THIS DESIGN IS TO HAVE ALL DOMESTIC WATER AND SANITARY SEWER PIPING TO BE WINTERIZED TO PREVENT FREEZING OF PIPING AND FIXTURES.

# KEYNOTE LEGEND:

 $\langle ? \rangle$  < < INDICATES KEYNOTE ON PLAN

PP 01 FEMALE QUICK CONNECT COMPRESSED AIR FITTING

Architecture Engineering Interior Design

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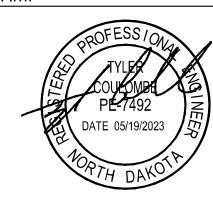
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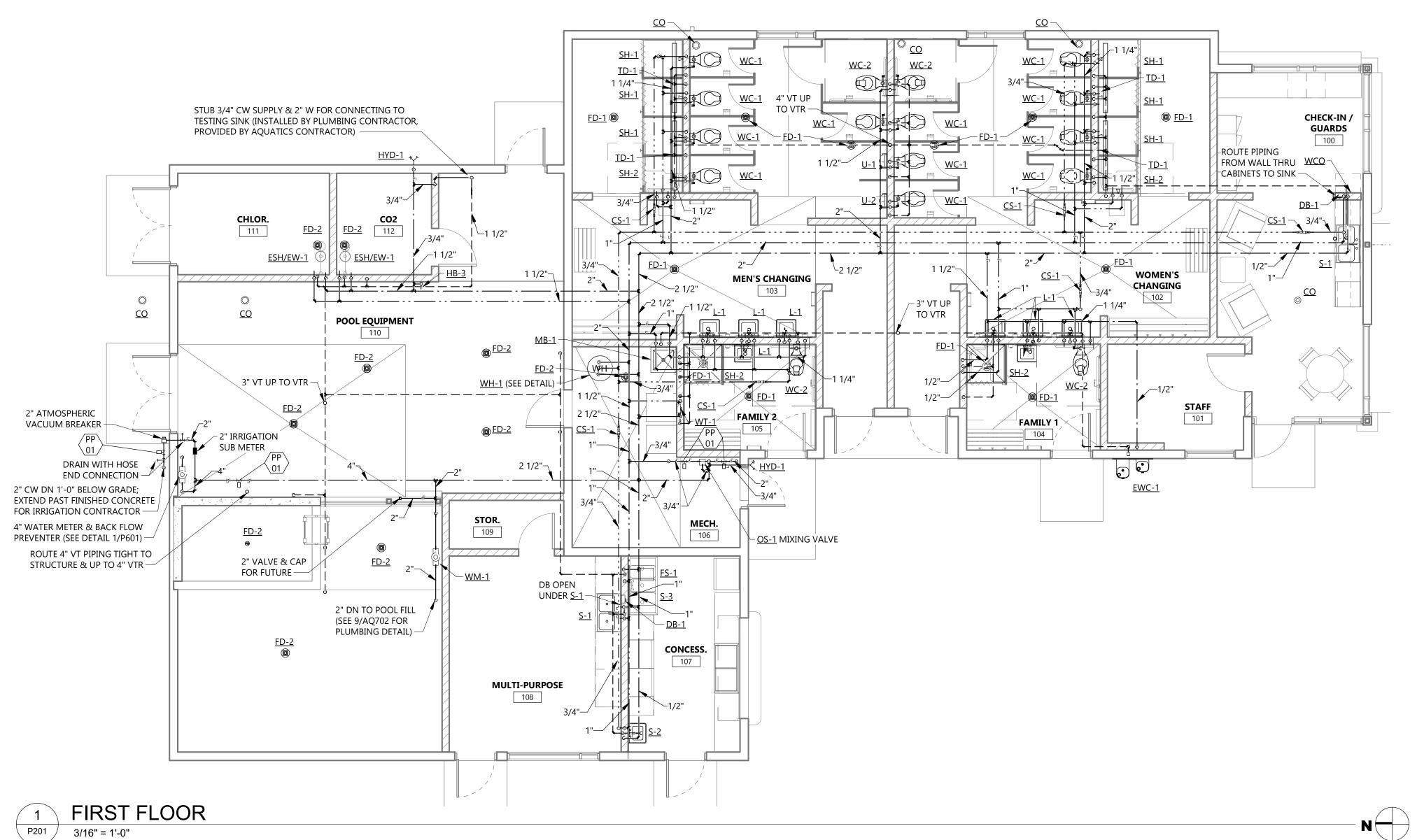
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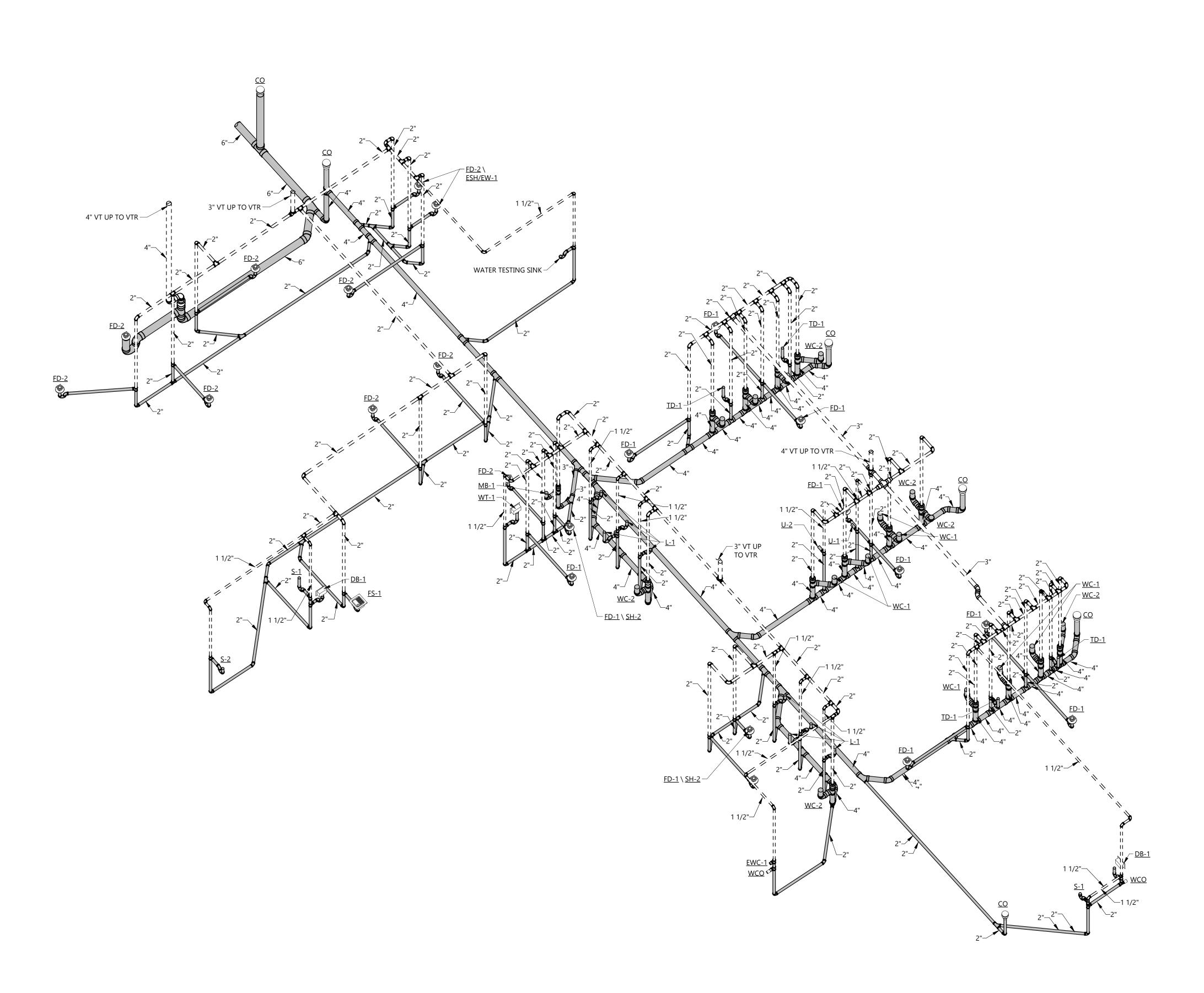
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DRAWING TITLE FIRST FLOOR PLUMBING PLAN

P201





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PROJECT DESCRIPTION
WILLISTON WATER
WORLD

CITY WILLISTON
STATE ND

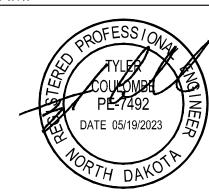
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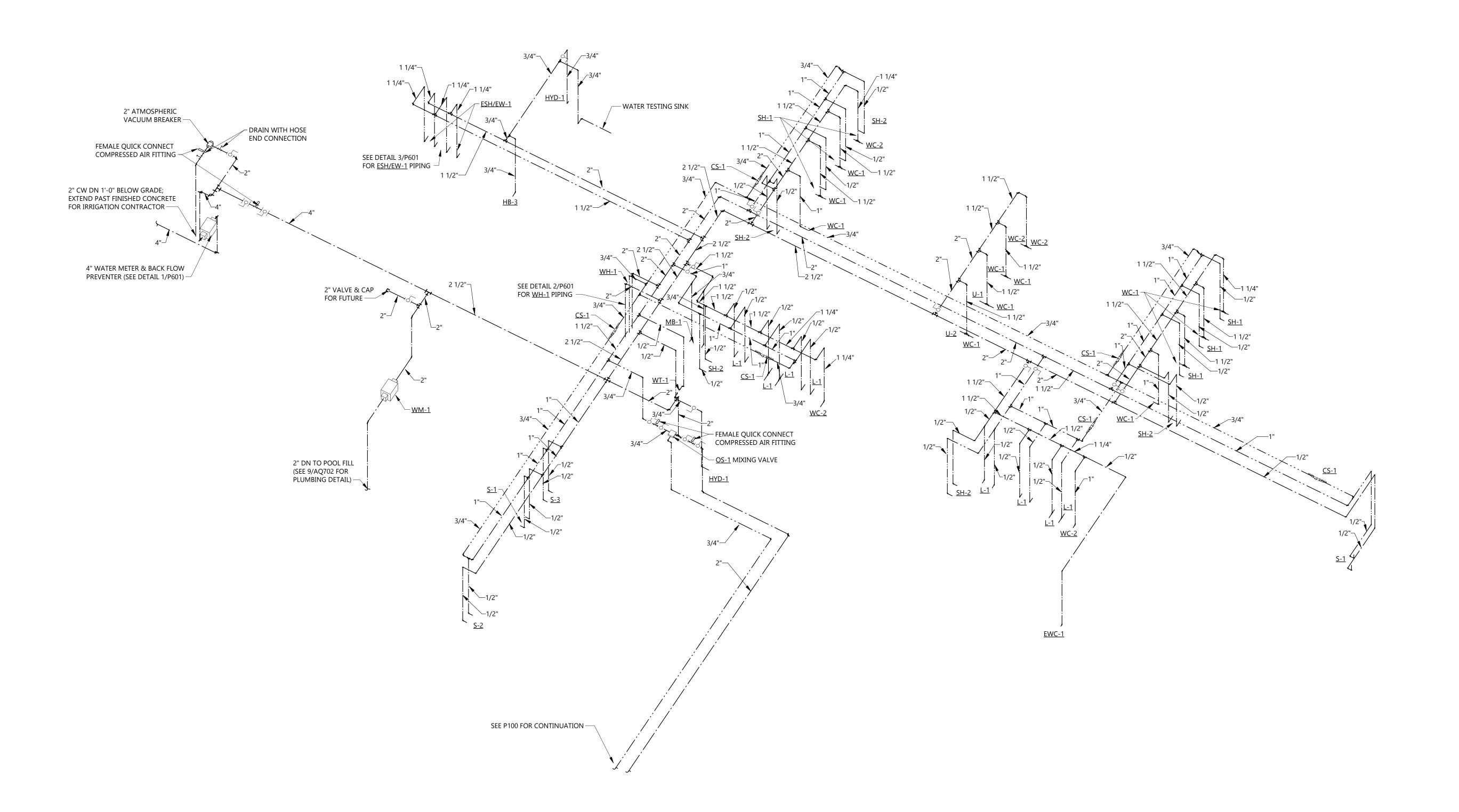
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RISER DIAGRAM

P501



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PROJECT DESCRIPTION WILLISTON WATER WORLD

WILLISTON CITY STATE

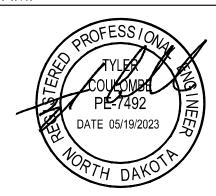
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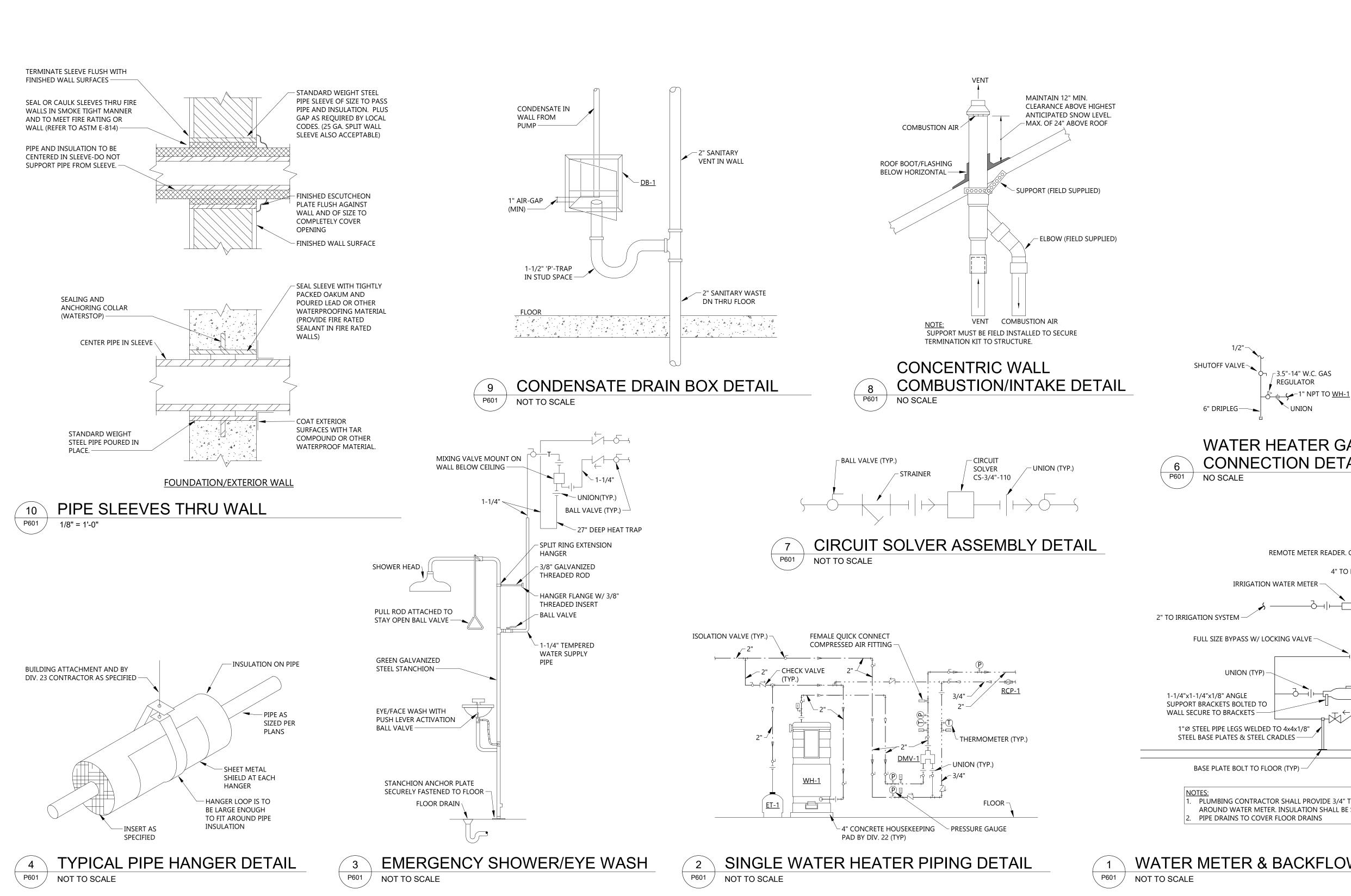
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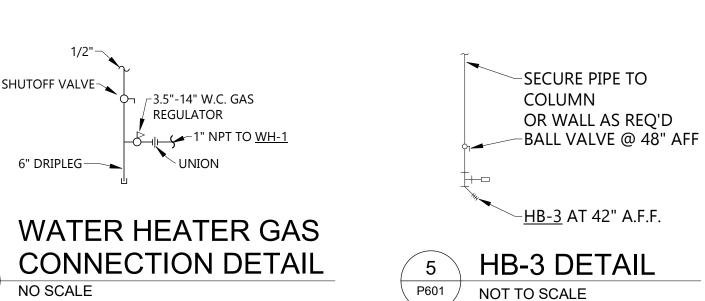
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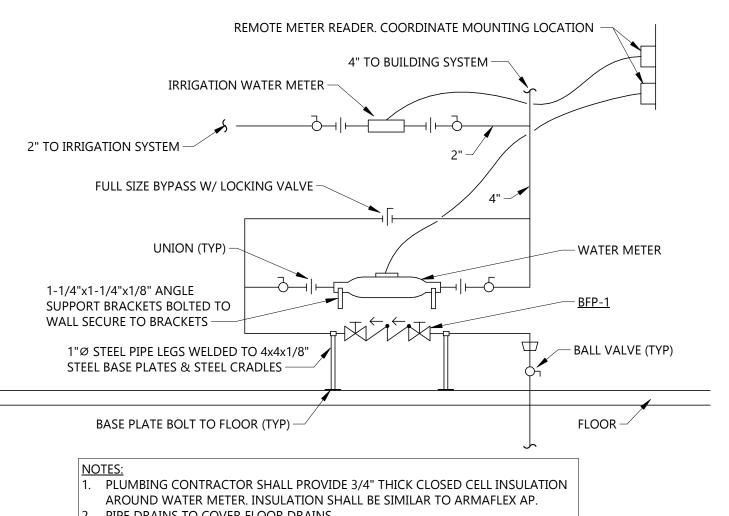
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DRAWING TITLE WATER SUPPLY RISER DIAGRAM







WATER METER & BACKFLOW PREVENTER PIPING DETAIL

P601

PLUMBING DETAILS

Architecture Engineering

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**COMMUNITY** 

PROJECT DESCRIPTION

WILLISTON WATER

WILLISTON

05/19/2023

01/20/2023

20224620

**DENVER, COLORADO 80203** 

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ITEM NO.	MANUFACTURER	MODEL NO.	DESCRIPTION	WASTE	CONNECTION VENT	N - INCHES CW	HW	REMARKS
WC-1	AMERICAN STANDARD	MADERA FLOWISE	FLOOR MOUNT, VITREOUS CHINA, TOP SPUD FLUSH VALVE, ELONGATED BOWL, CHINA BOLT CAPS WITH RETAINERS	4"	2"		1100	STANDARD MOUNTING HEIGHT
	SLOAN	3451.001 G2 8111-1.28	SENSOR OPERATED, BATTERY POWERED, 1.28 GPF, PISTON FLUSH VALVE, MANUAL FLUSH OVERRIDE, CHROME PLATED			1"		10 YEAR LONG LIFE BATTERY PACK
	BEMIS	9400SSCT	ELONGATED, OPEN FRONT, SELF-SUSTAINING CHECK HINGE					WHITE SOLID PLASTIC, SS HINGE & POSTS
NC-2	AMERICAN STANDARD	MADERA FLOWISE	FLOOR MOUNT, VITREOUS CHINA, TOP SPUD FLUSH VALVE, ELONGATED BOWL, CHINA BOLT CAPS WITH RETAINERS	4"	2"			MOUNT 16-1/2" FLOOR TO RIM FOR ADA COMPLIANCE
	SLOAN	3043.001 G2 8111-1.28	SENSOR OPERATED, BATTERY POWERED, 1.28 GPF, PISTON FLUSH VALVE, MANUAL FLUSH OVERRIDE, CHROME PLATED			1"		10 YEAR LONG LIFE BATTERY PACK
	BEMIS	9400SSCT	ELONGATED, OPEN FRONT, SELF-SUSTAINING CHECK HINGE					WHITE SOLID PLASTIC, SS HINGE & POSTS
U-1	AMERICAN STANDARD	WASHBROOK 6590.001EC	WALL HUNG, TOP SPUD, VITREOUS CHINA, CHAIR CARRIER	2"	1-1/2"	A/4II		STANDARD MOUNTING HEIGHT
	SLOAN	G2 8186-0.5-E	SENSOR OPERATED, BATTERY POWERED, 0.5 GPF, PISTON FLUSH VALVE, MANUAL FLUSH OVERRIDE, CHROME PLATED			3/4"		10 YEAR LONG LIFE BATTERY PACK
U-2	AMERICAN STANDARD SLOAN	WASHBROOK 6590.001EC G2 8186-0.5-E	WALL HUNG, TOP SPUD, VITREOUS CHINA, CHAIR CARRIER	2"	1-1/2"	3/4"		MOUNT 17" FLOOR TO RIM FOR ADA COMPLIANCE 10 YEAR LONG LIFE BATTERY PACK
			SENSOR OPERATED, BATTERY POWERED, 0.5 GPF, PISTON FLUSH VALVE, MANUAL FLUSH OVERRIDE, CHROME PLATED	4 4 (01)	4.4/00			TEAR EGNO EN E BATTERT FACE
L-1	AMERICAN STANDARD	LUCERNE 0356.421	WALL HUNG, VITREOUS CHINA, FRONT OVERFLOW, SINGLE HOLE, CONCEALED ARM SUPPORT, CHAIR CARRIER, BRASS P-TRAP	1-1/2"	1-1/2"			MOUNT 34" FLOOR TO RIM FOR ADA COMPLIANCE
	CHICAGO	E80-A11A-11ABCP	SENSOR ACTIVATED, SINGLE HOLE, CHROME PLATED, GOOSENECK FAUCET, TEMPERED SINGLE SUPPLY			1/2"	1/2"	0.5 GPM NON-AERATING FLOW 10 YEAR LONG TERM POWER SUPPLY
	LAWLER	TMM-1070	UNDER SINK THERMOSTATIC MIXING VALVE					2.1 GPM @ 45 PSI
S-1	ELKAY Moen	DLR332210 7590	DROP-IN, STAINLESS STEEL, 18 GAUGE, UNDERCOATED, SATIN FINISH CHROME PLATED, SINGLE HANDLE HIGH ARC PULLDOWN FAUCET	2"	1-1/2"	1/2"	1/2"	TWO BOWL, 33" x 22" x 10-1/8" 1.5 GPM NON-AERATING FLOW
S-2	ELKAY	SEHS-17X	WALL MOUNT, STAINLESS STEEL, 20 GAUGE, UNDERCOATED CHROME PLATED, GOOSE NECK FAUCET INCLUDED, 4" CENTERS	2"	1-1/2"	1/2"	1/2"	SINGLE BOWL, 17" x 15" x 11" 1.5 GPM NON-AERATING FLOW
S-3	ELKAY	WNSF83544	FLOOR MOUNT. TRIPLE COMPARTMENT SINK. 14 GAUGE STAINLESS STEEL WITH BUFFED SATIN FINISH	2"	1-1/2"	1/4	1/2	THREE BOWL, 57" x 27-1/2" x 14"
	CHICAGO	521-317XKABCP	CHROME PLATED, 4" WRISTBLADE HANDLES, RIGID/SWING DOUBLE-BEND SPOUT, 4" CENTERS			1/2"	1/2"	36" MINIMUM CABINET SIZE 1.5 GPM NON-AERATING FLOW
SH-1	DELTA	T13H132				1/2"	1/2"	ENTIRE ASSEMBLY TO BE CHROME PLATED
311-1	DELIA	11311132	PRESSURE BALANCED MIXING VALVE, 1.5 GPM FLOW, REFER TO MANUFACTURERS INSTALLATION GUIDE FOR HARDWARE MOUNTING LOCATIONS & HEIGHTS			1/2	1/2	ENTIRE ASSEMBLT TO BE CHROWLE PLATED
6H-2	DELTA	T13H332	PRESSURE BALANCED MIXING VALVE, HANDHELD SHOWER WITH INLINE VACUUM BREAKER, 24" SLIDE BAR, LEVER HANDLE, 60" HOSE, DIVERTER VALVE, 1.5 GPM FLOW, REFER TO MANUFACTURERS INSTALLATION GUIDE FOR HARDWARE MOUNTING LOCATIONS & HEIGHTS			1/2"	1/2"	ENTIRE ASSEMBLY TO BE CHROME PLATED ADA COMPLIANT HANDLE AND SLIDE BAR
MB-1	MOLDED-STONE	2424	FLOOR SET, MOLDED STONE, STAINLESS STEEL WALL GUARDS, VINYL BUMPER GUARDS, 30" HOSE & BRACKET	3"	1-1/2"			MOP HOLDER, FLAT STAINLESS STEEL STRAINER, COLOR SHALL BE WHITE
	CHICAGO	897-CRCF	CHROME PLATED, WALL HUNG, INTEGRAL VACUUM BREAKER, PAIL HOOK, WALL BRACE, 3/4" THREADED OUTLET			3/4"	3/4"	MOI HOLDER, FEAT GRAINELOG GREEL GRAINER, GOLGR GRALL DE WITTE
EWC-1	ELKAY	LZSTL8WSLP		1-1/2"	1-1/2"	1/2"		
			WALL HUNG, DUAL STATION WATER COOLER, STAINLESS STEEL BASIN, TWO TONE GRAY UPPER & LOWER SHROUDS, BOTTLE FILLING STATION, 8.0 GPH CHILLING CAPACITY, FILTER INCLUDED					ADA COMPLIANT
HYD-1	WOODFORD	MODEL B67	AUTOMATIC DRAINING, FREEZELESS WALL HYDRANT, DUAL CHECK BACKFLOW PREVENTER, LOCKABLE COVER			3/4"		LOOSE KEY OPERATES HYDRANT, CENTER HYDRANT IN CMU
WT-1	OATEY	38981	WASHING MACHINE SUPPLY/DRAIN BOX, QUARTER TURN BALL VALVES, BOTTOM SUPPLY, WATER HAMMER ARRESTORS	2"	1-1/2"	1/2"	1/2"	FIELD VERIFY MOUNTING HEIGHT
HB-1	JAY R. SMITH MFG.	5810-SAP-H-PB	GROUND HYDRANT WITH HINGED COVER POLISHED BRONZE BOX, INTEGRAL VACUUM BREAKER, 3/4" THREADED OUTLET			3/4"		
HB-2	JAY R. SMITH MFG.	5675-H-CP				3/4"		
HB-3	JAY R. SMITH MFG.	5670-H-CP	CHROME WALL FAUCET WITH INTEGRAL VACUUM BREAKER, 3/4" THREADED OUTLET			3/4"		
пв-3			CHROME WALL FAUCET WITH INTEGRAL VACUUM BREAKER, 3/4" THREADED OUTLET					
SH/ EW-1	HAWS	8336	EMERGENCY SHOWER/EYEWASH, FLOOR MOUNTED, BARRIER FREE, POSITIVE HOT WATER SHUTOFF, STAINLESS STEEL ROUND BOWL, 3.7 GPM LAMINAR FLOW FOR EYEWASH, 20 GPM FLOW FOR SHOWER			1-1	/4"	PROVIDE WITH DUST COVER, MODEL 9102
	AXION	9201E	EMERGENCY THERMOSTATIC MIXING VALVE, HIGH TEMP LIMIT STOP, AUTOMATIC RESET, COMPRESSION FITTINGS, ONBOARD TEMPERATURE ADJUSTMENT, 140° MAX INLET TEMP, VALVE BODY IN RECESSED CABINET			1-1/4"	1-1/4"	40° CW INLET, 140° HW INLET, 85° TEMPERED OUTLET, 20 GPM FLOW, MOUNT ABOVE FIXTURE AT EVEL
FD-1	ZURN	Z415B	CAST IRON BODY, ADJUSTABLE COLLAR, CHROME PLATED BRONZE ROUND STRAINER	;	SEE PLANS FO	R PIPE SIZES	1	PROVIDE JAY R. SMITH QUAD CLOSE TRAP SEAL OR SIMILAR
FD-2	ZURN	Z415I	CAST IRON BODY, ADJUSTABLE COLLAR, NICKEL BRONZE ROUND STRAINER, INSTALL WITH RECESS FLUSH WITH FLOOR	;	SEE PLANS FO	R PIPE SIZES		PROVIDE JAY R. SMITH QUAD CLOSE TRAP SEAL OR SIMILAR
FS-1	ZURN	Z1910	STAINLESS STEEL, 9" x 8" x 6" SUMP, STAINLESS STEEL INTERIOR DOME, 1/2 GRATE SUITABLE FOR APPLICATION	:	SEE PLANS FO	R PIPE SIZES		
СО	ZURN	Z1400	CAST IRON BODY, ADJUSTABLE COLLAR, NICKEL BRONZE TOP, ABS TAPERED PLUG		SEE PLANS FO	R PIPE SIZES		
TD-1	ZURN	ZS880-60	6" WIDE, 16 GAUGE 304 STAINLESS STEEL TRENCH DRAIN, APPROX. 60" LENGTH, NO-HUB BOTTOM OUTLET, PROVIDE W BASKET STRAINER	2"				PROVIDE WITH WAVE GRATE (WG), DRAIN SHALL SLOPE TO CENTER OUTLET
DB-1	OATEY	38980	RECESSED DRAIN BOX, DEEP SEAL P-TRAP, PROVIDE W/ COVER	2"	1-1/2"			FIXTURE TO ACCEPT CONDENSATE FROM
OS-1	MURDOCK	M-PCS24-GB				3/	<u> </u>	HVAC EQUIPMENT COLOR BY ARCHITECT
		332. 35	POOL SHOWER WITH TWO STANDARD HEIGHT STATIONS, PUSHBUTTON OPERATION AND TIMED SHUT-OFF, UNDERGROUND FREEZE-RESISTANT VALVE FOR THREE PUSHBOTTOMS, UNIT SHOULD BE PREPIPED AND HYDROSTATICALLY TESTED, CHROME PLATED SHOWER HEADS, PROVIDE W/ TWO VERTICAL GRAB BARS AND THIRD LOWER SHOWER HEAD AT 48"					
	LAWLER	410-CAB	THERMOSTATIC MIXING VALVE, 5 GPM FLOW AT 5 PSI PRESSURE DROP, SURFACE MOUNTED CABINET, REFER TO MANUFACTURERS INSTALLATION GUIDE FOR HARDWARE MOUNTING LOCATIONS & HEIGHTS			3/4"	3/4"	40° CW INLET, 120° HW INLET, 100° TEMPERED OUTLET

NOTES:

1. PROVIDE COLD AND HOT WATER SCREWDRIVER STOPS AT ALL SINKS., LAVATORIES, ELECTRIC WATER COOLERS, ETC.

2. PROVIDE ESCUTCHEONS AT ALL WASTE AND WATER SUPPLIES AT EACH FIXTURE. ESCUTCHEONS SHALL COMPLETELY COVER WALL OPENING.

3. PROVIDE CLEANOUT AT ALL SINKS BELOW P-TRAP.

DIGITAL V																
NUMBER	SERVICE	MFGR.	SERIES	MODEL	SYSTEM CAPACITY	INLET HW . WATER TEMP	INLET CW WATER TEMP.	OUTLET . WATER TEMP	RECIRC WATER TEMP.	HW CONN.	CW CONN.	HW OUTLET	HW-RECIR CONN.	. ALERT RELAY	INPUT POWER VOLTS/PHASE	COMMENTS
DMV-1	DOMESTIC HOT WATER	POWERS	INTELLISTATION JR.	LFIS200VL	48 GPM @ 5PSI DROP	140°	40°	120°	110°	2"	2"	2"	3/4"	30V	120/1	1, 2, 3

- SYSTEM SHALL HAVE SINGLE POINT POWER CONNECTION AND SHALL BE FRAME (UNI-STRUT) MOUNTED FROM FACTORY.
   COORDINATE INSTALLATION WITH ELECTRICAL CONTRACTOR AS REQUIRED.
   SYSTEM SHALL BE ASSE 1017 RATED.

PLUMBING PUMP SCHEDULE													
					PUMP		TOTAL		MOTOR CH	HARACTERIS	rics		
NUMBER	SERVICE	MFGR.	SERIES	MODEL	TYPE	GPM	HEAD	RPM	FLA	LRA	VOLTS/PHASE	COMMENTS	
RCP-1	DOMESTIC WATER CIRCULATOR	BELL & GOSSETT	NBF	NBF-36	INLINE	2	6	4,600	10	50.0	120/1	1, 2, 3	

- ITT BELL & GOSSET 100% LEAD-FREE BRONZE PUMP
   INSTALL WITH ISOLATION VALVES & UNIONS AS REQUIRED FOR PUMP MAINTANENCE.
- 3. PUMP SHALL BE SUITABLE FOR DOMESTIC POTABLE HOT WATER AND SHALL BE PROVIDED WITH A DISCONNECT SWITCH.

SELF-ACTING THERMOSTATIC BALANCING VALVE SCHEDULE											
	ITEM NUMBER	MANUFACTURER	MODEL#	SERVICE	CONNECTION SIZE	SERVICE TEMP (°F)	COMMENTS				
	CS-1	CIRCUIT SOLVER	CSUAS-3/4-110	RECIRCULATING HOT WATER	3/4"	110	1, 2, 3				

- 1. ANSI-61 RATED
- PROVIDE DEVICE COMPLETE WITH ISOLATION VALVES AND UNIONS
   VALVE SHALL BE SUITABLE FOR DOMESTIC WATER.

AS INDICATED BY MANUFACTURER.

WATER HEATER SCHEDULE										
TAG	MANUFACTURER	SERIES	MODEL#	TANK	FUEL	INPUT MBH	RECOVERY @ 100°F RISE	WATER TEMP	VOLTS/ PHASE	COMMENTS
WH-1	PVI	CONQUEST	50 L 130A-GCML	130 GAL	NATURAL GAS	500	588 GPH	140°	120/1	1, 2, 3, 4, 5, 6

- 1. ASME RATED
- 2. PIPE RELIEF VALVES OVER FLOOR DRAIN
- 3. PROVIDE UNIT COMPLETE WITH CONCENTRIC VENT KIT AND INSTALL AS PER MANUFACTURERS INSTRUCTIONS
  4. PROVIDE HEATER WITH CONDENSATE NEUTRALIZATION KIT AS PER MANUFACTURES RECOMMENDATIONS FOR CONDENSATE TREATMENT PRIOR TO DISPOSAL
- 5. ALL VENTING SHALL BY POLYPROPYLENE MATERIAL OR APPROVED EQUAL
- 6. PROVIDE A BELL & GOSSETT MODEL PTA-30V EXPANSION TANK WITH 15.0 GALLON TANK VOLUME AND 10.0 GALLON ACCEPTANCE VOLUME FOR DOMESTIC WATER HEATING SYSTEM ET-1

WATER METER SCHEDULE							
ITEM NUMBER	MANUFACTURER	MODEL#	SERVICE	CONNECTION SIZE	COMMENTS		
WM-1	XYLEM	OMNI+ Turbo (T2)	LEISURE POOL	2"	1, 2, 3		

2. PROVIDE DEVICE COMPLETE WITH ISOLATION VALVES AND UNIONS 3. METER SHALL BE SUITABLE FOR DOMESTIC WATER, AS INDICATED BY MANUFACTURER

BAC	BACKFLOW PREVENTER SCHEDULE							
ITEM NUMBER	MANUFACTURER	MODEL#	TYPE	CONNECTION SIZE	COMMENTS			
BFP-1	WATTS	757	DOUBLE CHECK	4"	1, 2, 3			

- PROVIDE DEVICE COMPLETE WITH ISOLATION VALVES AND UNIONS
   BACKFLOW PREVENTER SHALL BE SUITABLE FOR DOMESTIC WATER, AS INDICATED BY MANUFACTURER

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WILLISTON CITY STATE ND

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KEYNOTE LEGEND:

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</p>

MP 01 INSTALL REFRIGERANT LINES PER MANUFACTURER'S REQUIREMENTS



Architecture Engineering
Interior Design Industrial

Interior Design Industrial

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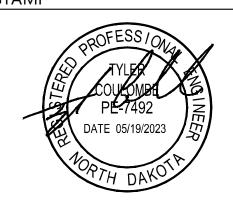
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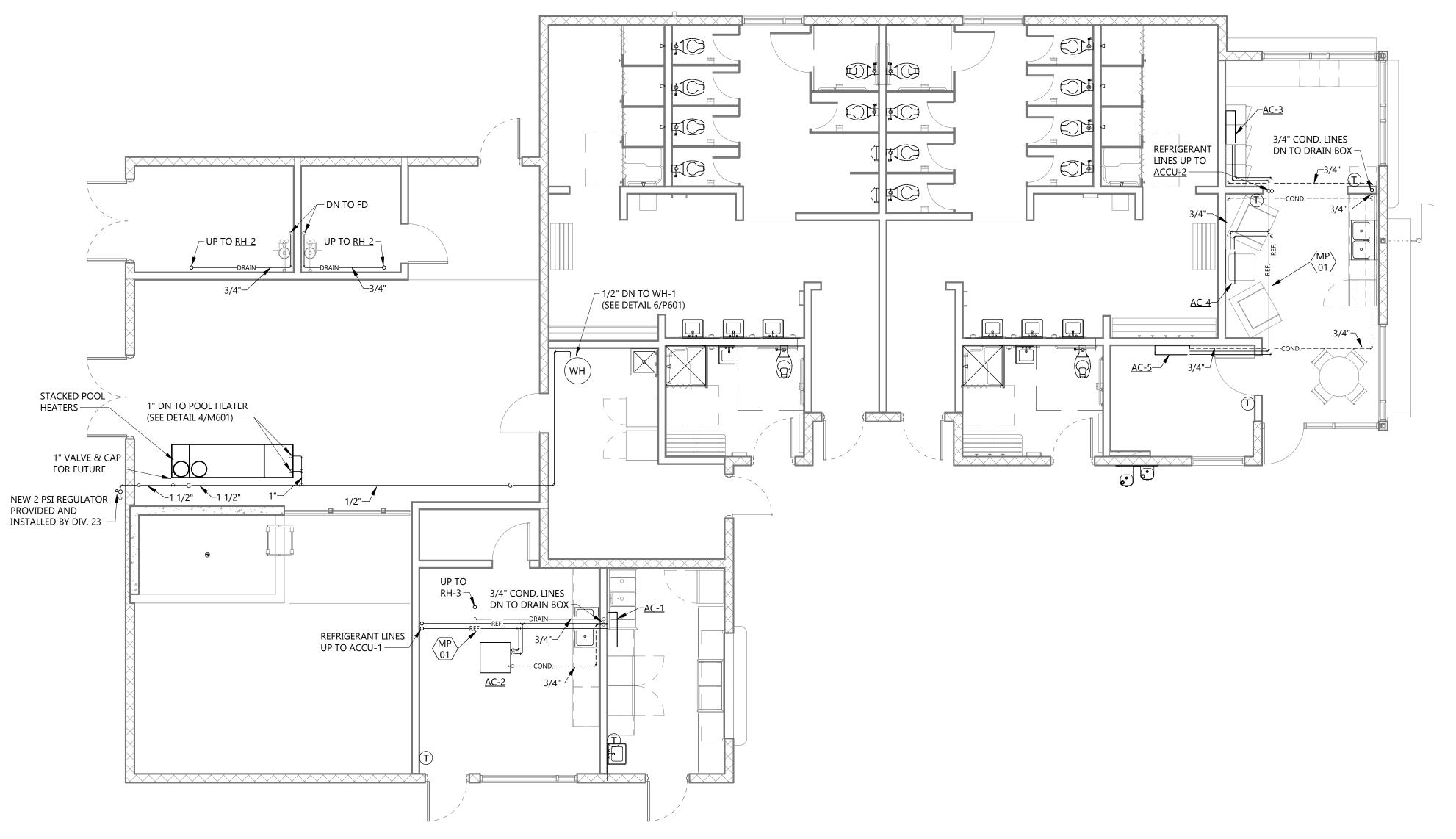
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DRAWING TITLE
MECHANICAL PIPING
PLAN





# **GENERAL NOTES**

1. THE INTENT OF THIS DESIGN IS TO HAVE ALL LOUVERS AND OTHER WALL OPENING COVERED IN THE WINTER TO PREVENT SNOW AND OTHER MOISTER FROM ENTERING THE

# KEYNOTE LEGEND:

< < INDICATES KEYNOTE ON PLAN
</p>

MV 01 VENT THROUGH ROOF USING 14"Ø TYPE-B DOUBLE-WALL VENT PIPE. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

MV 02 ROUTE COMBUSTION AIR THROUGH WALL USING 12"Ø PVC OR 12"Ø INSULATED GALVANIZED VENT PIPE. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

MV 03 INSTALL WALLS CAPS ON COMBUSTION AIR INLETS PER MANUFACTURER'S RECOMMENDATIONS. COLOR BY ARCHITECT.

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**ISSUE DATES** 

CD CONSTRUCTION DOCUMENTS 05/19/2023 DD DESIGN DEVELOPMENT 01/20/2023 MARK DESCRIPTION

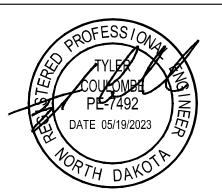
20224620 PROJECT NO: DRAWN BY: **CHECKED BY:** 

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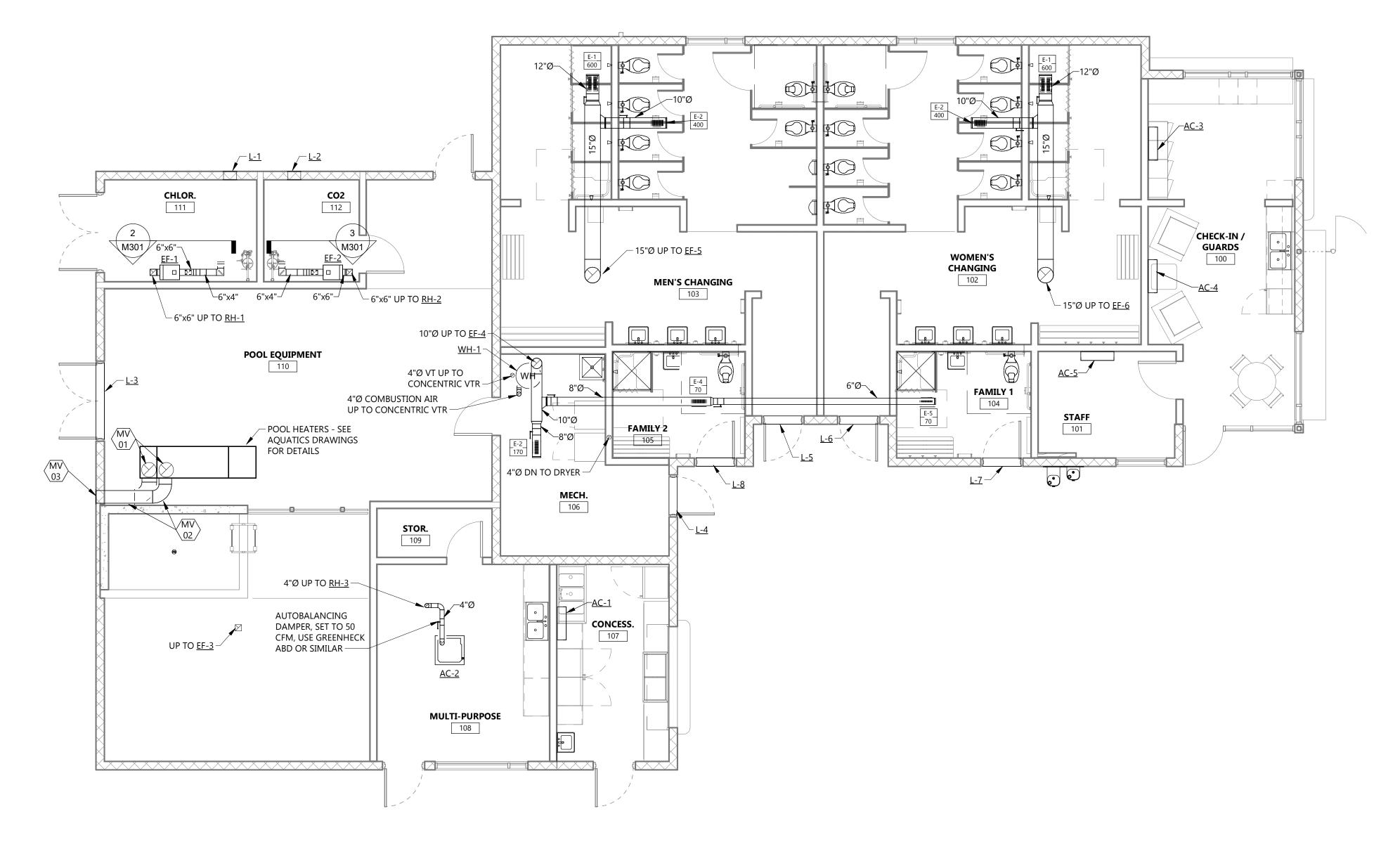
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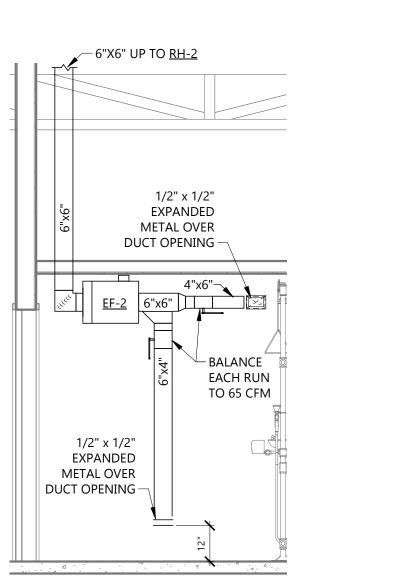
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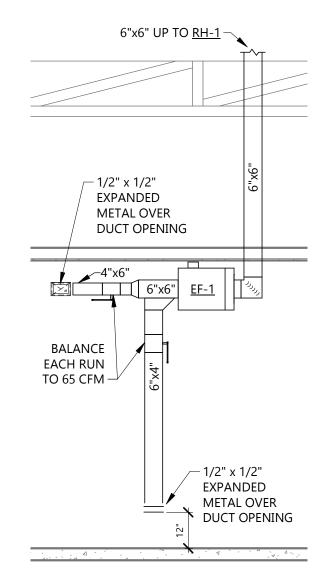
DRAWING TITLE FIRST FLOOR VENTILATION PLAN

M301





**EF-2 SECTION VIEW** 







**GENERAL NOTES** 

1. ALL HVAC EQUIPMENT SHALL BE GREATER THAN 10'-0" AWAY FROM ROOF EDGES.

JE EAPC

Architecture Engineering
Interior Design Industrial

TELE **701.609.5290** FAX **701.609.5290\*51**313 Main Street, Suite 308, Williston ND 58801

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CLIENT
WILLISTON
COMMUNITY
BUILDERS

PROJECT DESCRIPTION
WILLISTON WATER
WORLD

CITY WILLISTON
STATE ND

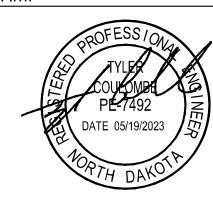
ISSUE DATES

CD	CONSTRUCTION DOCUMENTS	05/19/2023
DD	DESIGN DEVELOPMENT	01/20/2023
MARK	DESCRIPTION	DATE

PROJECT NO:	20224620
DRAWN BY:	LS
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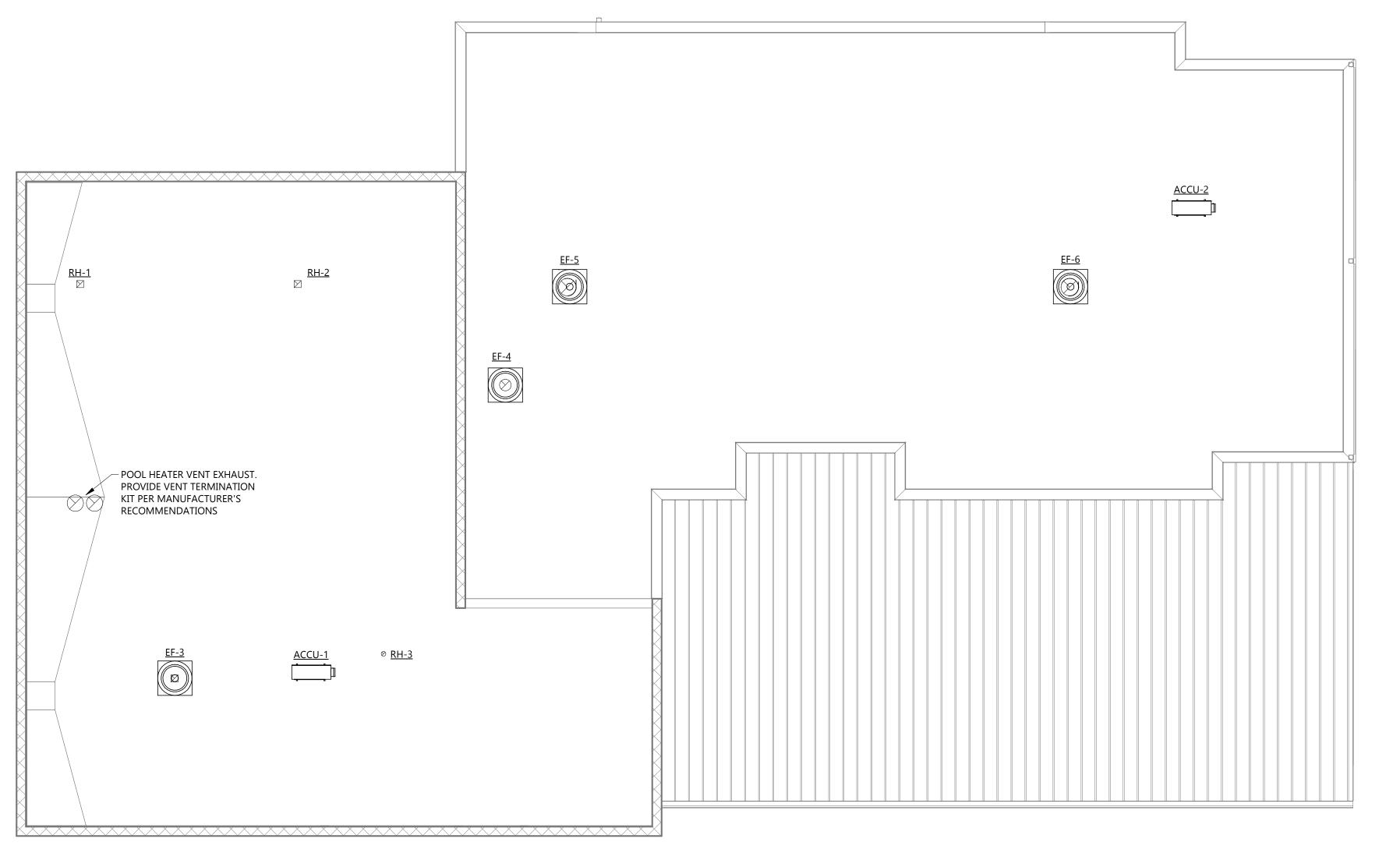
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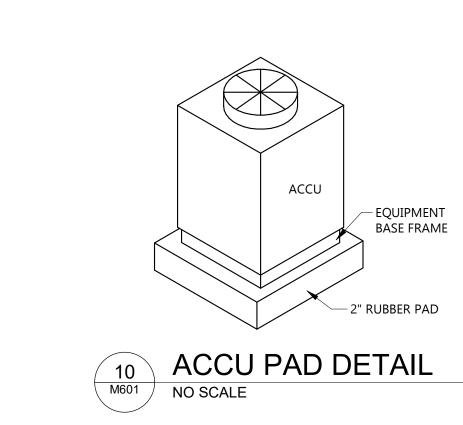
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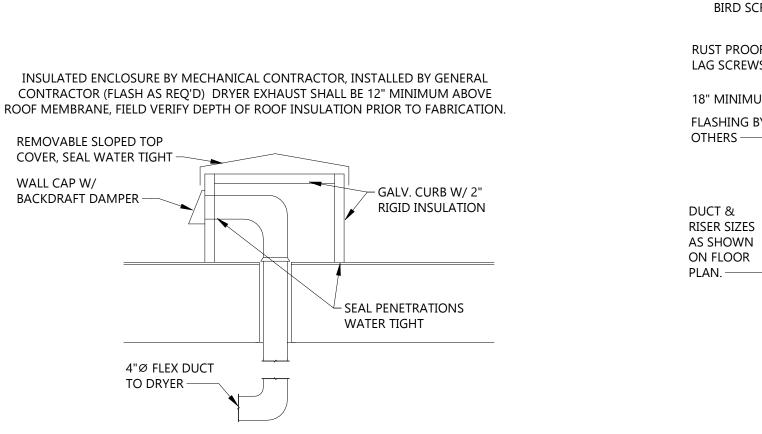


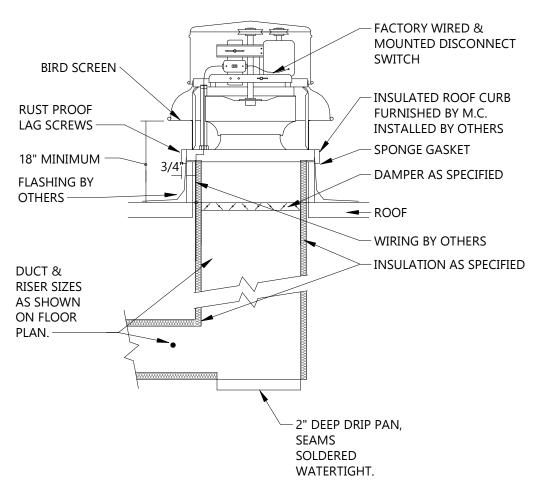
DRAWING TITLE
ROOF VENTILATION
PLAN

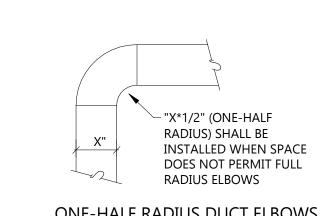
**M302** 

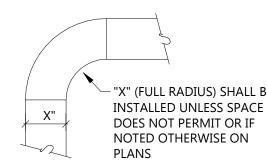














DRAWING TITLE MECHANICAL DETAILS

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STATE

**ISSUE DATES** 

CD CONSTRUCTION

MARK DESCRIPTION

PROJECT NO:

DRAWN BY:

**CHECKED BY:** 

STAMP

DOCUMENTS

DD DESIGN DEVELOPMENT

**COMMUNITY** 

PROJECT DESCRIPTION

WILLISTON WATER

WILLISTON

05/19/2023

01/20/2023

20224620

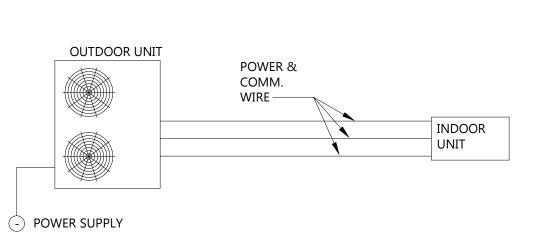
ND

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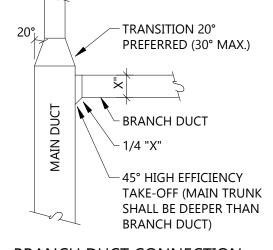
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M601



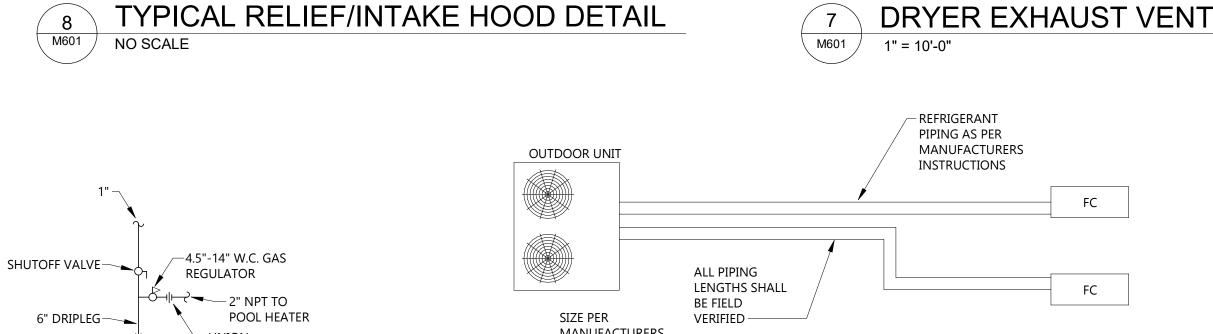
NO SCALE

FOR OUTDOOR UNIT MINI SPLIT SYSTEM TYPICAL WIRING DETAIL



**BRANCH DUCT CONNECTION** 

NOT TO SCALE



NO SCALE

- SPONGE GASKET

- RUST PROOF LAG SCREWS



CURB BY MC

FLASHING BY GO

INSULATION SEE SPECIFICATIONS -

4" DEEP DRIP PAN

PIPE 3/4" COPPER TO

DRAIN OR DRAIN BOX -

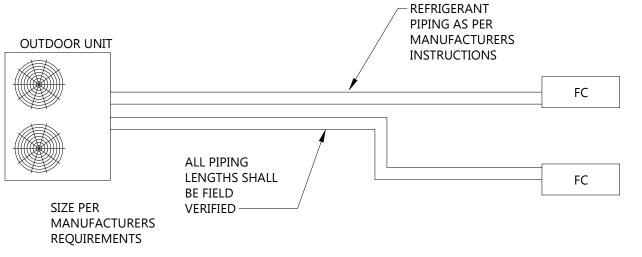
SOLDERED

WATER TIGHT -

NEAREST FLOOR

ROOFING BY

OTHERS —



MULTI-MINI SPLIT SYSTEM

TYPICAL PIPING DETAIL

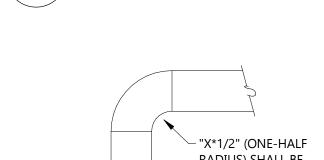


NO SCALE





RELIEF FAN DETAIL



MOUNT WITH VIBRATION ISOLATORS -

FLEXIBLE DUCT

CONNECTION —

NO SCALE

INSULATED ENCLOSURE BY MECHANICAL

CONTRACTOR, INSTALLED BY GENERAL

CONTRACTOR (FLASH AS REQ'D) PIPING PENETRATIONS SHALL BE 8" MINIMUM ABOVE ROOF MEMBRANE, FIELD VERIFY DEPTH OF

ROOF INSULATION PRIOR TO FABRICATION.

REMOVABLE SLOPED TOP COVER, SEAL WATER TIGHT —

PROTECTION (TYPICAL) -

SEAL PIPE PENETRATIONS WATER

IN SHEET METAL HOLES FOR PIPING

ENCLOSURE & FASTENERS SHALL

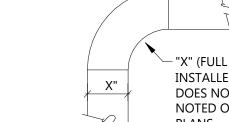
METAL THICKNESS: 16 GAUGE -

PIPING RUN ON ROOF (W/ BLOCKING AS REQ'D) VERIFY QTY

OF LINE W/ MANUFACTURER -

BE GALVANIZED STEEL, MIN. SHEET

TIGHT & INSTALL RUBBER GROMMETS



MOTOR GUARD, VERIFY LOCATION

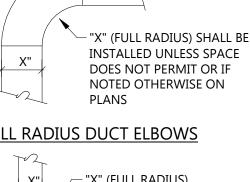
A/D

INLINE POWER VENT DETAIL

TRANSITION AS REQUIRED

– HINGED ACCESS

DOOR

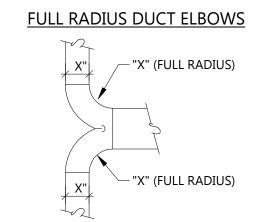


-4-1/2" THICK RIGID

BOARD. MINIMUM

R-VALUE OF 20

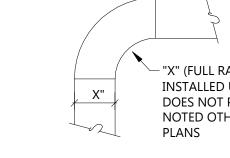
FIBERGLASS

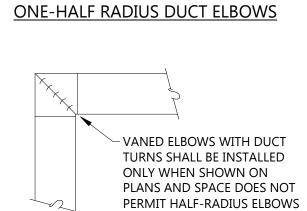


**EQUAL SPLIT EQUAL DEPTH** 

**SQUARE DUCT ELBOWS** 

PIPING WEATHER ENCLOSURE DETAIL M601 NOT TO SCALE





	ΓSYS	STEM HEAT	T PUMP SO	CHEDUL	.E									
				UNIT	OUTDOOR		COOLING	HEATING		SYSTEM POWER			SYSTEM	
TAG	ROOM	MANUFACTURER	MODEL#	TYPE	UNIT	CFM	(MBH)	(MBH)	SEER	V/PH/HZ	MFA	MCA	TYPE	NOTES
AC-1	107	DAIKIN	CTX07AXVJU	INDOOR	ACCU-1	350	7.0	7.0	-	208/60/1	-	-	MINI-SPLIT	1, 2, 3
AC-2	108	DAIKIN	FFQ12W2VJU9	INDOOR	ACCU-1	350	10.8	13.5	-	208/60/1	-	-	MINI-SPLIT	1, 2, 3
AC-3	100	DAIKIN	CTX09AXVJU	INDOOR	ACCU-2	350	9.0	10.0	-	208/60/1	-	-	MINI-SPLIT	1, 2, 3
AC-4	100	DAIKIN	CTX09AXVJU	INDOOR	ACCU-2	350	9.0	10.0	-	208/60/1	-	-	MINI-SPLIT	1, 2, 3
AC-5	101	DAIKIN	CTX09AXVJU	INDOOR	ACCU-2	350	9.0	10.0	-	208/60/1	-	-	MINI-SPLIT	1, 2, 3
ACCU-1	-	DAIKIN	2MX18AXVJU	OUTDOOR	-	-	17.0	17.0	17.0	208/60/1	15.0	10.9	MINI-SPLIT	1, 4
ACCU-2	-	DAIKIN	3MXS24WMVJU9	OUTDOOR	-	-	24.0	24.0	18.0	208/60/1	25.0	18.1	MINI-SPLIT	1, 4

- REFRIGERANT IS R-410A, INSTALL PER MANUFACTURERS RECOMMENDATIONS
   PROVIDE UNITS COMPLETE WITH WIRELESS REMOTE THERMOSTAT
- 3. PROVIDE WITH INTEGRAL CONDENSATE PUMP IN UNIT
- 4. INSTALL OUTDOOR UNITS PER MANUFACTURER'S REQUIREMENTS FOR SERVICE & OPERATING CLEARANCES

LOU	VER SCHEDU	LE

	MANUFACTURER		FREE	VELOCITY	PRESSURE DROP		<b>LOUVER SIZE</b>				
TAG	& MODEL #	CFM	AREA (FT2)	(FT/MIN)	(IN W.C.)	WIDTH	HEIGHT	DEPTH	FINISH	MATERIAL	NOTES:
L-1	GREENHECK EDD-401	130	0.3	417	0.03	12"	12"	4"	COLOR SELECTION BY ARCHITECT	ALUMINUM	1, 2, 3, 4
L-2	GREENHECK EDD-401	130	0.3	417	0.03	12"	12"	4"	COLOR SELECTION BY ARCHITECT	ALUMINUM	1, 2, 3, 4
L-3	GREENHECK EDD-401	1,000	3.4	293	0.01	72"	16"	4"	COLOR SELECTION BY ARCHITECT	ALUMINUM	1, 2, 3, 4
L-4	GREENHECK ESD-202	170	0.5	344	0.02	36"	8"	2"	COLOR SELECTION BY ARCHITECT	ALUMINUM	1, 2, 3, 4
L-5	GREENHECK ESD-435	1,000	2.8	354	0.02	36"	24"	4"	COLOR SELECTION BY ARCHITECT	ALUMINUM	1, 2, 3, 4
L-6	GREENHECK ESD-435	1,000	2.8	354	0.02	36"	24"	4"	COLOR SELECTION BY ARCHITECT	ALUMINUM	1, 2, 3, 4
L-7	GREENHECK ESD-202	70	0.5	344	0.02	36"	8"	2"	COLOR SELECTION BY ARCHITECT	ALUMINUM	1, 2, 3, 4
L-8	GREENHECK ESD-202	70	0.5	344	0.02	36"	8"	2"	COLOR SELECTION BY ARCHITECT	ALUMINUM	1, 2, 3, 4

- 1. MANUFACTURER TO PROVIDE LOUVER WITH 1/2"x 1/2" BIRDSCREEN 2. COLOR SELECTION BY ARCHITECT.
- 3. PROVIDE WITH COVER TO KEEP SNOW OUT DURING WINTERIZATION 4. LOUVERS PROVIDED AND INSTALLED BY M.C. LINTELS BY PROVIDED AND INSTALLED BY G.C.

	MANUFACTURER		THROAT	THROA	AT SIZE	HOOD :	SIZE			
TAG	& MODEL#	CFM	AREA (FT2)	DIAMETER	VELOCITY	DIAMETER	HEIGHT	FINISH	MATERIAL	NOTES
RH-1	GREENHECK GRSR-8	130	0.40	8"Ø	351	21"Ø	7"	COLOR SELECTION BY ARCHITECT	ALUMINUM	1, 2, 3
RH-2	GREENHECK GRSR-8	130	0.40	8"Ø	351	21"Ø	7"	COLOR SELECTION BY ARCHITECT	ALUMINUM	1, 2, 3
RH-3	GREENHECK GRSI-8	50	0.40	8"Ø	135	21"Ø	7"	COLOR SELECTION BY ARCHITECT	ALUMINUM	1, 2, 3

- 1. MANUFACTURER TO PROVIDE BIRDSCREEN
- 2. INSTALLED BY M.C.
- 3. PROVIDE WITH 12" INSULATED CURB

# REGISTER-GRILLE-DIFFUSER SCHEDULE

						1 = STEEL	1 = OFFWHITE	MANUF.	
						2 = ALUM.	2 = CLEAR-ALUM	<b>UNLESS NOTED</b>	NOTES
						3= S. STEEL	3 = #84 BLACK	OTHERWISE	
TAG	TYPE	FACE	NECK SIZE	FRAME	CFM	MATERIAL	FINISH	PRICE MODEL	NOTES
E-1	Е	SPIRAL DUCT GRILLE	12"Ø	12" x 12"	600	2	2	SDGER	1
E-2	Е	SPIRAL DUCT GRILLE	10"Ø	10" x 10"	400	2	2	SDGER	1
E-3	Е	SPIRAL DUCT GRILLE	10"Ø	10" x 6"	170	2	2	SDGER	1
E-4	Е	SPIRAL DUCT GRILLE	8"Ø	8" x 6"	70	2	2	SDGER	1
E-5	E	SPIRAL DUCT GRILLE	6"Ø	6" x 6"	70	2	2	SDGER	1

# EAN SCHEDIILE

			MOTO	OR SIZE							
TAG	CFM	E.S.P.	BHP	HP	VOLT/PHASE	FRPM	DRIVE	MANUFACTURER	MODEL	SONES	NOTES
EF-1	130	0.5	0.07	1/4	115 / 1	1,380	DIRECT	GREENHECK	SQ-97-VG	9.9	1,2,3,4,
EF-2	130	0.5	0.07	1/4	115 / 1	1,380	DIRECT	GREENHECK	SQ-97-VG	9.9	1,2,3,4,
EF-3	1,000	0.1	0.10	1/6	115 / 1	1,575	DIRECT	GREENHECK	G-095-VG	9.6	1,2,3,4
EF-4	310	0.5	0.07	1/10	115 / 1	1,720	DIRECT	GREENHECK	G-080-VG	8.7	1,2,3,4
EF-5	1,000	0.5	0.14	1/4	115 / 1	1,165	DIRECT	GREENHECK	G-120-VG	8.3	1,2,3,4
EF-6	1,000	0.5	0.14	1/4	115 / 1	1,165	DIRECT	GREENHECK	G-120-VG	8.3	1,2,3,4

- PROVIDE WITH FACTORY SUPPLIED DISCONNECT
   UNIT SHALL HAVE ECM MOTOR WITH DIAL SPEED CONTROL FOR BALANCING
- 3. FAN SHALL BE UL LISTED

1. MOUNT DIRECTLY TO DUCT USING PRE-DRILLED COUNTERSUNK SCREW HOLES.

4. PROVIDE FAN WITH BACKDRAFT DAMPER & BIRD SCREEN
5. MOUNT TO CEILING USING MANUFACTURER SUPPLIED HANGING ISOLATORS

# **GAS LOAD SCHEDULE**

9/ (0 E 9/ (D 9 9 1 1 E	or to bot to combott							
ROOM	TAG	CFH						
MECHANICAL ROOM	WH-1	500						
POOL EQUIPMENT ROOM	LEISURE POOL HEATER #1	1,800						
POOL EQUIPMENT ROOM	LEISURE POOL HEATER #2	1,800						
POOL EQUIPMENT ROOM	FITNESS POOL HEATER #1 (FUTURE)	1,250						
POOL EQUIPMENT ROOM	FITNESS POOL HEATER #2 (FUTURE)	1,250						
	TOTAL CFH =	6,100						

NOTE: CFH = CUBIC FEET PER HOUR

Architecture Engineering

313 Main Street, Suite 308, Williston ND 58801 — www.eapc.net

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CLIENT WILLISTON COMMUNITY BUILDERS

PROJECT DESCRIPTION WILLISTON WATER WORLD

CITY	WILLISTON
STATE	ND

ISSUE DATES

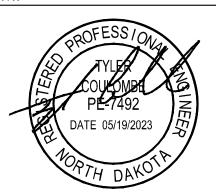
CD	CONSTRUCTION DOCUMENTS	05/19/2023
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DRAWN BY:	LS

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DRAWING TITLE MECHANICAL SCHEDULES

# ELECTRICAL LEGEND

.	REVIATIONS - AMPERES	FURN	- FURNISHED	OCP	E: 1. NOT ALL ABBREVIATIONS MAY BE USED ON THIS PROJE  - OVERCURRENT PROTECTION
VC	- ABOVE COUNTER	FUS	- FUSE, FUSED, FUSIBLE	OD	OUTSIDE DIMENSION, OUTSIDE DIAMETER
ACCU	- AIR COOLED CONDENSING UNIT	GND/G	- GROUND	ОН	- OVERHEAD
AF	- AMP-FUSE	GAL	- GALLONS	OL	- OUTLET, OVERLOAD
AFF	- ABOVE FINISHED FLOOR	GARB	- GARBAGE DISPOSAL	OP	- OPERATOR
AHJ	- AUTHORITY HAVING JURISDICTION	GC	- GENERAL CONTRACTOR	Р	- PUMP, POLE
AHU	- AIR HANDLING UNIT	GEN	- GENERATOR	PC	- PHOTO CONTROL
ALT	- ALTERNATE	GFI	- GROUND FAULT CIRCUIT INTERRUPTER	Ø, PH	- PHASE
AL	- ALUMINUM	GFP	- GROUND FAULT PROTECTION	P.H.	- PENTHOUSE
AMP	- AMPLIFIER - ANNUNCIATOR	GPM	- GALLONS PER MINUTE - HIGH, HOT	PNL PR	- PANEL, PANEL BOARD - PAIR
ANN ARCH	- ARCHITECT(URAL)	H HC	- HEATING COIL	PRI	- PRIMARY
ATS	- AUTOMATIC TRANSFER SWITCH	HD	- HEAVY DUTY	PRIV	- PRIVATE
AV	- AUDIO VISUAL	HID	- HIGH INTENSITY DISCHARGE	PROJ	- PROJECTOR
AUX	- AUXILIARY	HP	- HORSE POWER	PRV	- POWER ROOF VENT
BFG	- BELOW FINISHED GRADE	HPS	- HIGH PRESSURE SODIUM	PS	- PULSE START/POWER SUPPLY
BK	- BLACK	НОА	- HAND-OFF-AUTO	QTY	- QUANTITY
BKR	- BREAKER	HT	- HEIGHT	R	- REFRIGERATOR
BR	- BRANCH	HTR	- HEATER	RA	- RETURN AIR
вти	- BRITISH THERMAL UNIT	HVU	- HEATING & VENTILATING UNIT	REC	- RECESSED
CAB	- CABINET	HW	- HOT WATER	RCVR	- RECEIVER
CALC	- CALCULATION	HWH	- HOT WATER HEATER	RECPT	
CAT	- CATALOG	ID	- INSIDE DIMENSION	REF	- REFERENCE, REFER TO
СВ	- CIRCUIT BREAKER	IDF	- INTERMEDIATE DISTRIBUTION FRAME	REQ/RQD	- REQUIRE(D)
CBIC	- CIRCUIT BREAKER INTERRUPTING CURRENT	IN	- INCHES	REV	- REVISION
CCT	- CIRCUIT	INB/OUT	- INBOARD/OUTBOARD	REX	- REQUEST TO EXIT
CFL	- COMPACT FLOURESENT LIGHT		- INCANDESCENT	RLA	- RUNNING LOAD AMPS
CKT CLG/C	- CIRCUIT - CEILING	INFO	- INFORMATION	RM RTU	- ROOM - ROOF TOP UNIT
CLG/C COMM	- CEILING - COMMUNICATIONS	INSUL	- INSTALLATION - INSULATED/INSULATOR	SA	- ROOF TOP UNIT
COMPR		INSUL	- INSULATED/INSULATOR - INVERTER	SC	- SHORT CIRCUIT
COND	- CONDUCTOR	JB	- JUNCTION BOX	SF	- SQUARE FEET
CONN	- CONNECTION	KA	- THOUSAND AMPS	SHT	- SHEET
CR	- CARD READER	KS	- KNEE SPACE	SD	- SMOKE DAMPER
CT	- CURRENT TRANSFORMER	L	- LAMP	SP	- SUMP PUMP
CTR	- CENTER	LCP	- LIGHTING CONTROL PANEL	SPEC	- SPECIFICATION
CU	- COPPER	LI	- LAYIN	SSTL	- STAINLESS STEEL
CUH	- CABINET UNIT HEATER	LOC	- LOCATION, LOCATE	STD	- STANDARD
dB	- DECIBEL	LRA	- LOCKED ROTOR AMPS	SURF	- SURFACE MOUNT
DED	- DEDICATED CIRCUIT	LTG	- LIGHTING	SW	- SWITCH
DEV	- DEVICE	LTS	- LIGHTS	SWBD	- SWITCHBOARD
DIA	- DIAMETER	LV	- LOW VOLTAGE	SYS	- SYSTEM
DISC	- DISCONNECT	M, MAINT	- MAINTENANCE	TCC	- TEMPERATURE CONTROL CONTRACTOR
DISP	- DISPOSAL	MAG	- MAGNETIC	TCP	- TEMPERATURE CONTROL PANEL
DISTR	- DISTRIBUTION	MAU	- MAKE UP AIR UNIT	TD	- TIME DELAY
DN	- DOWN - DUTY STATION	MAX MC	- MAXIMUM MECHANICAL CONTRACTOR	TEL	- TELEPHONE TEMPORARY TEMPERATURE
DS DTL	- DETAIL	MCA	MECHANICAL CONTRACTOR     MINIMUM CIRCUIT AMPS	TEMP TP	TEMPORARY, TEMPERATURE      TAMPERPROOF
DWG	- DRAWING	MCB	- MAIN CIRCUIT BREAKER	TRT	- TRIPLE TUBE
EC	- ELECTRICAL CONTRACTOR	MCC	MOTOR CONTROL CENTER	TS	- TIME SWITCH
EF	- EXHAUST FAN	MDF	MAIN DISTRIBUTION FRAME	STAT	- THERMOSTAT
EL	- ELECTRICAL, ELECTRIC	MDP	MAIN DISTRIBUTION PANEL	TV	- TELEVISION
ELEV	- ELEVATOR OR ELEVATION	MICRW		TVSS	- TRANSIENT VOLTAGE SURGE SUPPRESSOR
EM	- EMERGENCY	MFR	- MANUFACTURER	TYP	- TYPICAL
EQ	- EQUAL, EQUIPMENT	MFS	- MAXIMUM FUSE SIZE	U	- URINAL
ERU	- ENERGY RECOVERY UNIT	МН	- METAL HALIDE, MOUNTING HEIGHT, MANHOLE	UBC	- UNITED BUILDING CODE
EUH	- ELECTRIC UNIT HEATER	MIN	- MINIMUM	UG	- UNDER GROUND
EWC	- ELECTRIC WATER COOLER	MLO	- MAIN LUGS ONLY	UH	- UNIT HEATER
EWH	- ELECTRIC WATER HEATER	MOP	- MAX OVERCURRENT PROTECTION	UNV	- UNIVERSAL
EX	- EXISTING	MSB	- MAIN SWITCHBOARD	UTIL	- UTILITY
EXH	- EXHAUST	MTD	- MOUNTED	UTP	- UNSHIELDED TWISTED PAIR
EXPL	- EXPLOSION PROOF	MTG	- MOUNTING	V	- VOLT
F	- FUSE OR FRONT	MATL	- MATERIAL	VA	- VOLT-AMPS
°F	- DEGREES FAHRENHEIT	MTR	- MOTOR OR METER	VAV	- VAV BOX
FA	- FIRE ALARM	N	- NEUTRAL	VERT	- VERTICAL
FAAP	- FIRE ALARM ANNUNCIATOR PANEL	NA NC	- NOT APPLICABLE	VFD	- VARIABLE FREQUENCY DRIVE
FACP	- FIRE ALARM CONTROL PANEL	NC	- NORMALLY CLOSED	WG	- WIRE GUARD
FD	- FIRE DAMPER	NEC	- NATIONAL ELECTRICAL CODE	WC WTD LITD	- WATER CLOSET
FIXT	- FIXTURE, LUMINAIRE	NF NIC	- NON FUSED	WTR HTR WP	- WATER HEATER
	- FULL LOAD AMPERES	NIC	- NOT IN CONTRACT - NIGHT LIGHT	WP W/	WEATHERPROOF, NEMA 3R IF ENCLOSURE     WITH
FLA	- FLOOR	1 1311	1805 0111   1871   1	. 44/	******
FL	- FLOOR - FIRER OPTICS	NL N.O			
	<ul><li>FLOOR</li><li>FIBER OPTICS</li><li>FLOW SWITCH</li></ul>	N.O. NORM	- NORMALLY OPEN - NORMAL(LY)	W/O XFMR	- WITHOUT - TRANSFORMER

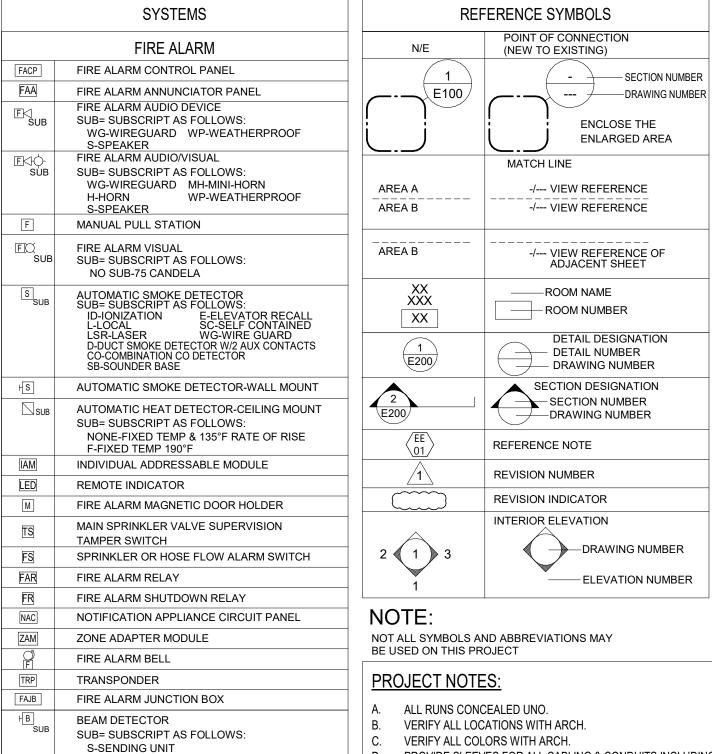
	$\vdash$ $($ $,$ $\mid$ $\vdash$		$\Delta \Gamma \Gamma \Gamma \Gamma$
	$\bot$		
	POWER		LIGHTING
	-		LIGITINO
	RACEWAY  HOMERUN-TEXT DESIGNATES PANEL AND CIRCUIT		LUMINAIRE IDENTIFICATION LEGEND
-1,3,5	BREAKER NUMBER. HASH MARKS INDICATE NUMBER OF #12 AWG CONDUCTORS IN A 3/4"		ING CONTROL LUMINAIRE TYPE TAG (UPPERCASE
*	CONDUIT. NO HASH MARKS INDICATE 2 #12 AWG IN A 3/4" CONDUIT UNLESS NOTED	(LOWERO	CASE LETTER)  A LETTER)
0.0	OTHERWISE. PROVIDE A CODE SIZED GROUND IN EACH CONDUIT.		NCH CIRCUIT TAG AND CIRCUIT) HA(2)
	SURFACE RACEWAY - RECEPTACLES SURFACE RACEWAY - DATA/TELEPHONE	(PANEL A	AND CIRCUIT) $\Pi A(2)$
<u> </u>	CONDUIT STUB		INTERIOR LIGHTING
	CONDUIT UP		GHTING FIXTURES ARE IDENTIFIED BY A LETTER(S) RDINATE WITH LUMINAIRE SCHEDULE AS TO THE
\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-	CONDUIT DOWN  EXPLOSION PROOF SEAL OFF		RES: IDENTIFICATION, MANUFACTURER, CATALOG ER, LAMPS, MOUNTING, LOCATION AND COMMENTS.
معع	FLEX CONDUIT	A .	RECESSED TROFFER
1	CONDUIT/BRANCH CIRCUIT	A	RECESSED TROFFER EMERGENCY
	CABLE TRAY	. O .	SURFACE MOUNTED LIGHT FIXTURE
	RECEPTACLES	A A	SURFACE MOUNTED LIGHT FIXT EMERGENCY
$\Rightarrow_{SUB}$	DUPLEX RECEPTACLE - 20A, 125V	A	RECESSED LED STRIP LIGHT RECESSED LED STRIP LIGHT EMERGENCY
€SUB	ISOLATED GROUND SINGLE RECEPTACLE	A A	PENDANT MOUNTED
$\rightarrow_{\text{SUB}}$	DOUBLE DUPLEX RECEPTACLE-20A, 125V		PENDANT MOUNTED EMERGENCY
⇒ <sub>SUB</sub>	HALF-SWITCHED RECEPTACLE-20A, 120V	A A	UNDER CABINET
SUB SUB	SPECIAL RECEPTACLE  BOX SURROUNDING DEVICE DEPICTS FLOOR	A	WALL MOUNTED FIXTURE
SUB SUB	MOUNTED CEILING DUPLEX - 20A. 125V		STRIP LIGHT OR INDUSTRIAL FIXTURE  RECESSED DOWN LIGHT EMERGENCY
₩SUB	CEILING DOUBLE DUPLEX -20A, 125V	○ <sup>A</sup>	RECESSED DOWN LIGHT
DF	DEAD FRONT GFCI DEVICE	<b>○→</b>	RECESSED DOWN LIGHT WALL WASH WALL MOUNTED FIXTURE
	SUB= SUBSCRIPT AS FOLLOWS: AC-ABOVE COUNTER	+	WALL MOUNTED FIXTURE EMERGENCY
	CLG-CEILING OUTLET EM-EMERGENCY	₿ <sup>A</sup>	RECESSED WALL
	EWC-ELECTRIC WATER COOLER F-FLOOR	₽ <sup>A</sup>	RECESSED WALL EMERGENCY SURFACE MOUNTED LIGHT FIXTURE
	G-GROUND FAULT INTERRUPTER H-HORZONTALLY MOUNTED	<u></u>	PENDANT MOUNT FIXTURE
	P-PLUG MOLD S-SURFACE MOUNTED		EXIT - EMERGENCY
	SS-SURGE SUPPRESSION RECEPTACLE TP-TAMPER PROOF	⊢ <b>⊘</b> A	WALL MOUNTED EXIT LIGHT
	W-WELDING RECEPTACLE WP-WEATHERPROOF	Ø <sub>A</sub> ,	CEILING MOUNTED EXIT LIGHT  SURFACE MOUNTED EMERGENCY LIGHT
	XP-EXPLOSION PROOF 10-NUMBER INDICATES CIRCUIT NUMBER	▼ VA	RECESSED EMERGENCY LIGHT
	-WALL MOUNTED HEIGHTS UNLESS NOTED OTHERWISE	P AMA	REMOTE HEAD FOR EMERGENCY FIXTURE  COMBINATION EXIT/EMERGENCY
	JUNCTION BOXES		SPECIAL LIGHTING
(J)	JUNCTION BOX	□ A ∇ A	TRACK LIGHTING
<u> </u>	FLOOR MOUNTED JUNCTION BOX		COMBINATION FAN/LIGHT
HD	LARGE JUNCTION BOX HAND DRYER		COMBINATION FAMILION
	TORS & HVAC EQUIPMENT & CONTROLS		EXTERIOR/SITE
(#)/	MOTOR-# INDICATES MOTOR NUMBER	□ T CA	POLE WITH LIGHT FIXTURE(S) FIXTURE SHOWN DEFINE QUANTITY AND
<u>(XX)</u> /	SMALL MOTOR-XX LETTERS INDICATE SERVICE SUB AS FOLLOWS:	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	ORIENTATION.  POST TOP FIXTURE
	EF-BATHROOM EXHAUST FAN GD-GARBAGE DISPOSAL HD-HAND DRYER	- <del>-</del> -A	BOLLARD
\$ <sub>M</sub>	MANUAL MOTOR STARTER  MANUAL MOTOR DISCONNECT W/THERMAL	→ A → A	SPOT LIGHT FLOOD LIGHT
₩ OL	PROTECTION MAGNETIC MOTOR STARTER	T	LIGHTING CONTROL
	STARTER/DISCONNECT COMBINATION UNIT	\$ <sub>SUB</sub>	SINGLE POLE SWITCH, 120V, 20A
TCP	DISCONNECT SWITCH TEMPERATURE CONTROL PANEL	300	SUB= SUBSCRIPT AS FOLLOWS: NONE-SINGLE-POLE, 120V, 20A
(Ť)	THERMOSTAT		2-TWO-POLE, 120V, 20A 3-THREE-WAY, 120V, 20A
R	RELAY  MAGNETIC CONTACTOR		4-FOUR-WAY, 120V,20A F-FUSED
	EMERGENCY SHUNT TRIP		K-KEYED TYPE L-LIGHTED TOGGLE
	PANELS/EQUIPMENT		LV-LOW VOLTAGE P-SWITCH W/PILOT LIGHT
MDP	MAIN DISTRIBUTION PANEL		T-TIMER WP-WEATHERPROOF
(	PLYWOOD BACKBOARD FLUSH MOUNTED PANELBOARD	Ф	WF-WEATHERPROOF FUSED SWITCH LINE VOLTAGE DIMMER
	SURFACE MOUNTED PANELBOARD	(OS)	CEILING MOUNTED DUAL TECHNOLOGY
T	DRY TRANSFORMER	DH DH	OCCUPANCY SENSOR  DAYLIGHT SENSOR
MCC MCC	MOTOR CONTROL CENTER  METER	ÚL)	UL 924 DEVICE
H	ELECTRIC HEATER/REHEATER	<del>OD</del>	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR WITH INTEGRAL
BB	BACK BOX FOR FUTURE WIRING DEVICE		DIMMING WALL MOUNTED DUAL TECHNOLOGY
		OS	OCCUPANCY SENSOR WITH ON/OFF SWITCH
		\$	DIGITAL SWITCH (CAT6)  DITIAL DIMMER (CAT6)
		#	WALL MOUNTED MULTI-BUTTON SWITCH, # TO INDICATE QUANTITY OF BUTTONS (CAT6)
		TS	TOUCH SCREEN (CAT6)
		) I	DIGITAL CEILING MOUNTED DUAL
		NB	DIGITAL NETWORK BRIDGE TIE TO DIGITAL
		RC#	LIGHTING CONTROL SYSTEM (CAT6) DIGITAL DIMMING ROOM CONTROLLER, #
		. NOIT	INDICATES QUANTITY OF RELAYS (CAT6)

DIGITAL NETWORK BRIDGE TIE TO DIGITAL LIGHTING CONTROL SYSTEM (CAT6)

RGB DMX TOUCHSCREEN CONTROLLER

DIGITAL DAYLIGHT SENSOR

	SYSTEMS	
		-
	TELEPHONE/DATA	_
V <sub>SUB</sub>	SUB= SUBSCRIPT AS FOLLOWS: #-INDICATES NUMBER OF OUTLETS	
7	DATA/VOICE OUTLET	-
SUB	SUB= SUBSCRIPT AS FOLLOWS: #D/#V-INDICATES # & TYPE OF OUTLETS	
<b>7</b>	DATA/VOICE/QUADPLEX FLOOR BOX	
F		-
\ \P\ \P\ \F	DATA/VOICE/DUPLEX FLOOR BOX	
Y	DATA OUTLET CEILING  DATA OUTLET FLOOR BOX	_
V <sub>F</sub>	DATA/OUTLET FLOOR BOX  DATA/VOICE OUTLET FLOOR BOX	+
▼ <sub>SUB</sub>	VOICE OUTLET	_
	SUB= SUBSCRIPT AS FOLLOWS: M-VOICE OUTLET/MULTI	
	P-VOICE OUTLET/PUBLIC W-VOICE OUTLET/WALL	
WAP	WIRELESS ACCESS POINT	1
TCC	TERMINAL CABINET	$\dashv$
CPP	DIGITAL COMMUNICATIONS PATCH PANEL VOICE/DATA/VIDEO	
TTB/D	TELEPHONE TERMINAL BLOCK UTILITY DEMARK	1
	3/4" PLYWOOD BACKBOARD	
	W/ 2 COATS RETARDANT  EQUIPMENT RACK - FREE STANDING	
	EQUIPMENT RACK - WALL MOUNTED	-
		_
	PAGING/SOUND/DATA/SURVEILLANCE	
SUB	SPEAKER - CEILING MOUNTED SPEAKER - WALL MOUNTED	
SUB	SUB= SUBSCRIPT AS FOLLOWS: H-HORN SPEAKER	
005	N-NURSE CALL P-SPEAKER WITH PUSHBUTTON	
	WG-WIREGUARD WP-WEATHERPROOF	
M	MASTER INTERCOM AND DIRECTORY UNIT	
M VC	VOLUME CONTROL	-
IC	INTERCOM HANDSET	+
SUB	SUB= SUBSCRIPT AS FOLLOWS: DM-DESK MOUNTED	
	M-MASTER MD-MASTER DESK MOUNT	
	W-WALL MOUNTED	
(A) SUB	AUXILIARY INPUT SUB= SUBSCRIPT AS FOLLOWS:	
	I-INPUT O-OUTPUT	
(V <sub>B</sub> )	VIDEO OUTLET	
SPP	SOUND SYS. PATCH PNL	
(TV)	TELEVISION OUTLET	
	DOOR SECURITY/SECURITY EXIT	
•	PUSHBUTTON	4
	HAND STATION (NORMALLY PUSH BUTTONS) BELL	_
, A	SUB= SUBSCRIPT AS FOLLOWS: B-BUZZER	
	D-DOOR CHIME/BELL	
	E-ELEVATOR CHIME P-PROGRAM BELL	
DO	DOOR OPENER	
K	DOOR KEYPAD	4
FP ES	FINGER PRINT SCANNER  ELECTRIC STRIKE DOOR LATCH	$\dashv$
MD	MOTION DETECTOR	
BG	BREAK GLASS DETECTOR	_
C	SECURITY CAMERA SUB= SUBSCRIPT AS FOLLOWS:	
	HS-HIGH SECURITY C-CEILING PTZ-PAN TILT ZOOM W-WALL	
	WP-WEATHERPROOF	
SMON	SECURITY MONITOR	$\perp$
DC DC	SECURITY DOOR CONTACTS	+
CR	CARD READER	$\dashv$
SUB	SUB= SUBSCRIPT AS FOLLOWS: I-INTERCOM	
	WP-WEATHERPROOF	
REX	REQUEST TO EXIT SENSOR	
Р	PANIC BAR	4
CCTV	MAGNETIC LOCK  CCTV CABLE OUTLET	$\dashv$
W	WANDER GUARD	-
***	CLOCK/PROGRAM	$\dashv$
(C) +(C)	WALL MOUNTED CLOCK	-
SUB	SUB= SUBSCRIPT AS FOLLOWS: B-WITH BUZZER	
	R-RECESSED WG-WITH WIREGUARD	
		$\dashv$
(Mc)	MASTER CLOCK	
MC TC Cs		



R-RECEIVER

LOW PRESSURE SWITCH

NURSE CALL

NURSE CALL MASTER CONSOLE

SINGLE PATIENT BED STATION

DOUBLE PATIENT BED STATION

STAFF ASSIST STATION

CODE BLUE STATION

PILLOW SPEAKER

SPEAKER

MULTIPLE PURPOSE STATION

Z-ZONE ADDRESSABLE

NURSE CALL ANNUNCIATOR

MISCELLANEOUS

GROUND/ROD CONNECTION POINT

CARBON MONOXIDE DETECTORS

SUB=SUBSCRIPT AS FOLLOWS:

A-AUDIBLE ALARM

OVERHEAD ELECTRICAL

UNDERGROUND ELECTRICAL

EXTERIOR UTILITY POWER POLE

SOUND CONTROL PANEL

LIGHTING CONTROL PANEL

EXTERIOR UTILITY POWER POLE W/XFMR

L-LOCAL V-VISUAL

**GUY WIRE** 

POST

FAN

EMERGENCY/BATH STATION PUSH BUTTON

STAFF REGISTRATION STATION(IN ROOMS)

EMERGENCY/BATH PULL CORD STATION

STAFF ASSIST/CODE BLUE COMBO

NURSES CALL TERMINAL CABINET

D. PROVIDE SLEEVES FOR ALL CABLING & CONDUITS INCLUDING THOSE FOR USE OF OWNER & HIS OTHER CONTRACTORS. COORDINATE WITH OTHER TRADES & OTHER CONTRACTORS. OBTAIN LOCATIONS FROM THEM.

PROVIDE ALL SLEEVES THROUGH WALLS, FLOORS, CEILINGS & ACROSS

SOLID CEILING AREAS. COORDINATE INSTALLATION OF SLEEVES TO ACCOMMODATE MULTIPLE SYSTEMS, I.E.; VOICE, DATA, SECURITY, CCTV, SPEAKER, MICROPHONE, LINE LEVEL AUDIO, VIDEO & CONTROL WIRING.

F. ALL SYSTEMS IN CONDUIT UNO. CONDUITS SIZED TO CODE OR LARGER
G. COMPLY WITH APPICABLE STANDARDS & CODES.

H. NOT EVERY PART OF EVERY SYSTEM IS SHOWN. PROVIDE

H. NOT EVERY PART OF EVERY SYSTEM IS SHOWN. PROVIDE COMPLETE SYSTEMS PROPERLY OPERATING TO OWNER SATISFACTION.

J. ALL FINAL COLORS, FINISHES, MATERIAL SELECTIONS, TRIMS, HARDWARE

AND ACCESSORIES, SHALL BE DETERMINED BY ARCHITECT. SUBMIT SHOP DRAWINGS AND SAMPLES.

K. EC SHALL PROVIDE ALL FIRE STOPPING PER SPECIFICATIONS IN OTHER DIVISIONS. ALSO SEAL ALL ELECTRICAL PENETRATIONS THROUGH SMOKE AND OR FIRE PENETRATIONS AS SHOWN ON THE ARCHITECTURAL PLANS.

L. TEST ALL SYSTEMS TO OWNER'S SATISFACTION IN THE PRESENCE OF

OWNER'S FIELD REPRESENTATIVE.

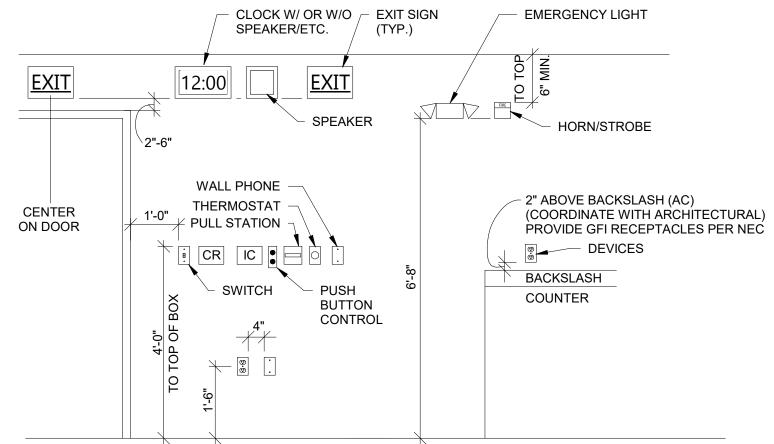
M. SATISFY APPLICABLE CODES.

N. LABEL EVERYTHING.

N. LABEL EVERYTHING.
P. PROVIDE PULL CORDS IN EMPTY CONDUITS
Q. SUBMIT SHOP DWGS FOR ALL ITEMS

# ELECTRICAL MOUNTING HEIGHT NOTES:

- A. HEIGHTS SHOWN ARE TYPICAL TO BOTTOM OF DEVICE UNLESS NOTED OTHERWISE.
- B. MOUNTING HEIGHTS SHOWN ON ARCHITECTURAL ELEVATIONS SHALL GOVERN OVER ALL ELEVATIONS SHOWN OR INDICATED ON ELECTRICAL DRAWINGS.
- C. INSTALL FIRE ALARM NOTIFICATION APPLIANCES AT 80" AFF, OTHERWISE INSTALL AT 6" BELOW CEILING, WHICH EVER IS LOWER.
- D. VERIFY EXIT LIGHT HEIGHTS WITH ARCHITECT.
- E. TYPICAL HEIGHTS SHOWN, HEIGHTS ON PLANS SHALL GOVERN OVER THESE. DEVICES WITH KNOW OBSTRUCTIONS SUCH AS, BUT NOT LIMITED TO COUNTERTOPS & SHELVING MAY REQUIRE A LOWER HEIGHT, VERIFY WITH ARCHITECT/ENGINEER.
- . SYMBOLS NOT SHOWN SHALL BE VERIFIED WITH ARCHITECT/ENGINEER.



DEVICES, RECEPTACLES, DATA/TELEPHONE OUTLETS (TYP HEIGHT)

ELECTRICAL DEVICE MOUNTING HEIGHTS

E001 NOT TO SCALE

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COMMUNITY
BUILDERS

PROJECT DESCRIPTION
WILLISTON WATER
WORLD

CITY WILLISTON
STATE ND

ISSUE DATES

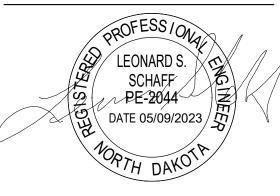
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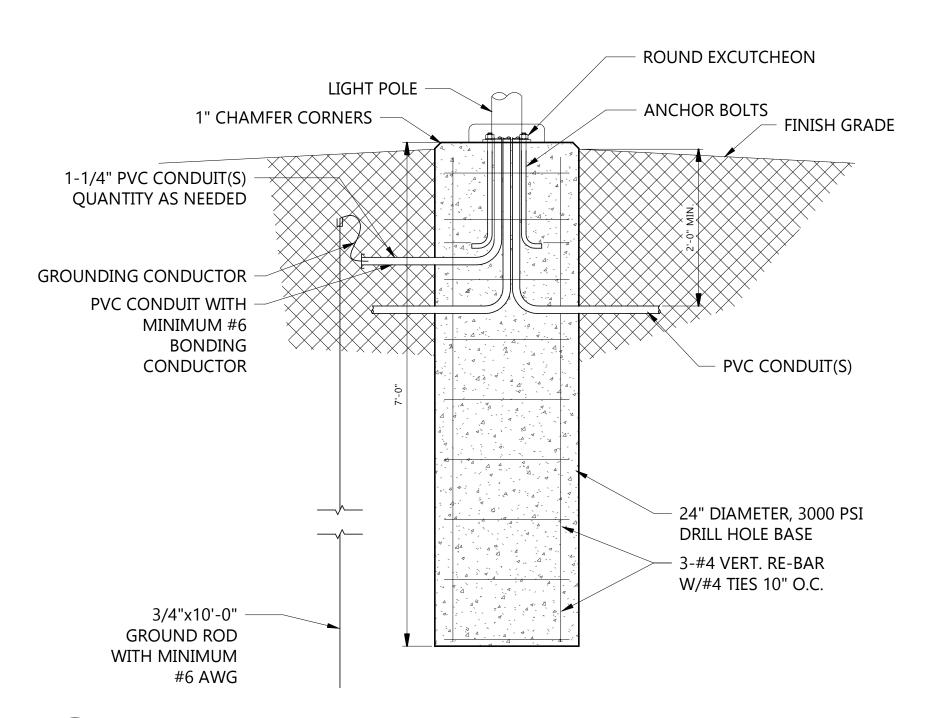
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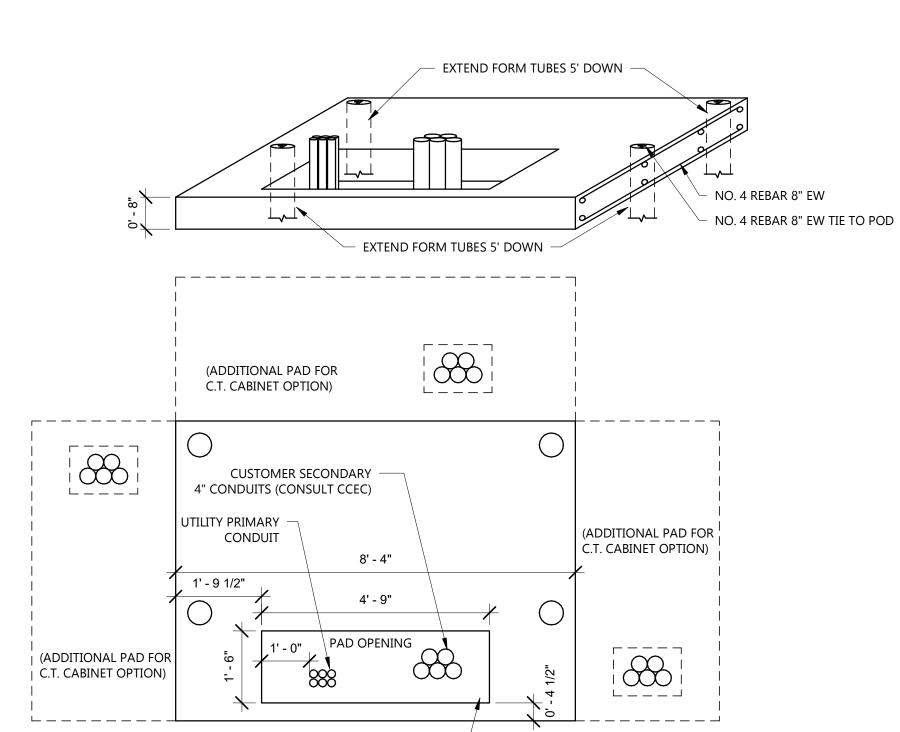


ELECTRICAL SYMBOLS
& ABBREVIATIONS
LEGEND



LIGHT POLE BASE DETAIL

NOT TO SCALE



ASSEMBLY DOOR MUST NOT BE OBSTRUCTED. —

A MINIMUM 12 FT CLEARANCE IS REQURED ON THIS SIDE OF PAD.

GENERAL NOTE: XFMR PAD DETAIL BASED OFF CASS COUNTY ELECTRIC COOPERATIVE REQUIREMENTS. COORDINATE WITH UTILITY ON LOCATION FOR CT CABINET AND CONCRETE BLOCKOUTS AS NEEDED.

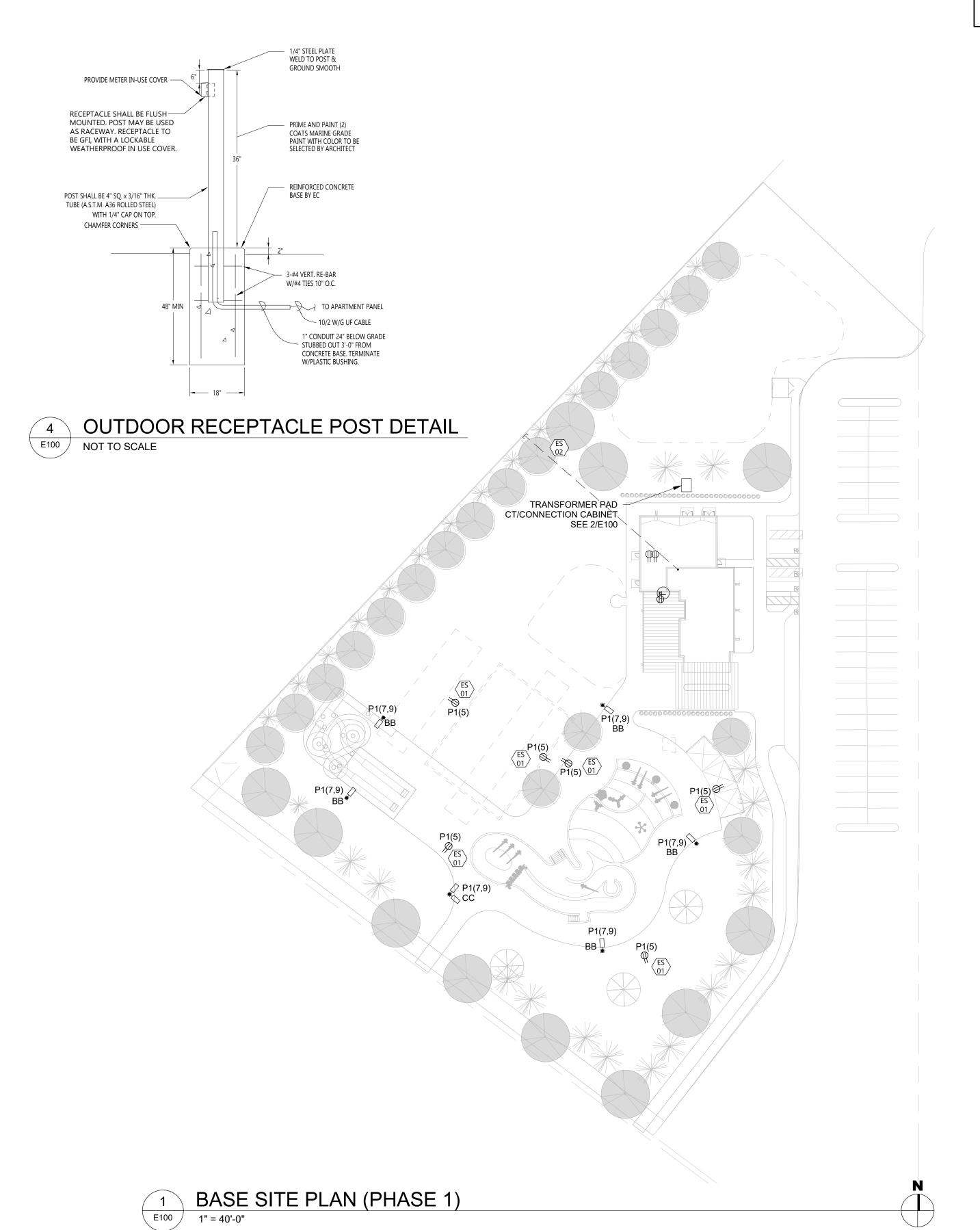
NOTES: 1. FOOTINGS ARE REQUIRED 5' DEPTH FOR FORM TUBES

MINIMUM SPACE BETWEEN BUILDING AND TRANSFORMER: 3FT
 MAINTAIN CUSTOMER CONDUITS WITH 19" OF END OF PAD OPENING

IF C.T. CABINET IS USED, CUSTOMER MUST PROVIDE CONDUIT BETWEEN C.T. CABINET AND TRANSFORMER ALL CONCRETE EDGES MUST BE ROUNDED INSIDE AND OUTSIDE OF PAD

TRANSFORMER PAD DETAIL

E100 NOT TO SCALE



#### GENERAL NOTES

1. USE 3/4" PVC C & 2#10, + 1 #10 GND CONDUCTOR FOR EXTERIOR POLE LIGHTING.

2. REFER TO AQUATIC DRAWINGS (A6) FOR SHUT-OFF DEVICES. USE ROBROY CONDUIT WHEN EXPOSED. VERIFY EXACT LOCATION & INSTALLION DETAIL WITH POOL EQUIPMENT SUPPLEIER & ARCHITECT.

### KEYNOTE LEGEND:

< < INDICATES KEYNOTE ON PLAN
</p>

RECEPTACLE AS CALLED OUT ON AQ DRAWINGS. VERIFY EXACT LOCATION WITH ARCH PRIOR TO ROUGH IN. SEE DETAIL 4/E100.

PROVIDE (2) 2" CONDUIT FOR LOW VOLTAGE SERVICES. STUB TO EDGE OF PROPERTY LINE & VERIFY EXACT ROUTING WITH ARCHITECT.

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PROJECT DESCRIPTION
WILLISTON WATER
WORLD

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DD DESIGN DEVELOPMENT 01/20/2023

MARK DESCRIPTION DATE

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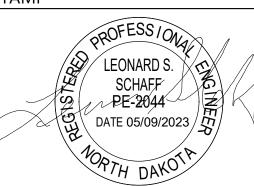
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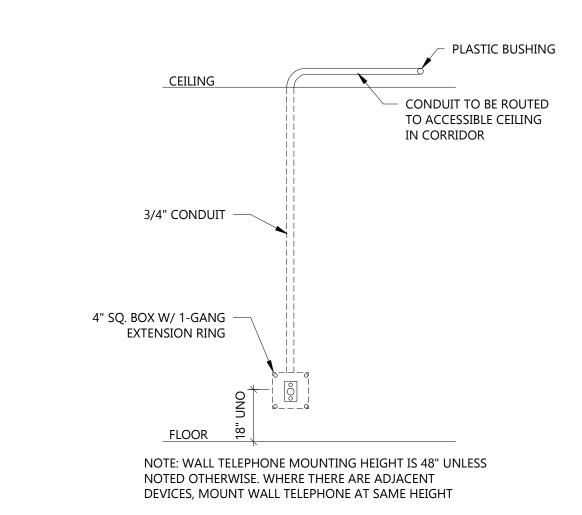
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DRAWING TITLE
ELECTRICAL SITE PLAN



DATA/TELEPHONE ROUGH-IN DETAIL E201 1/8" = 1'-0"

### **GENERAL NOTES**

- REFER TO AQUATIC DRAWINGS (A6) FOR DISC, VFDS CONNECTION, ETC FOR POOL EQUIPMENT MOTORS. INCLUDE ALL POOL ELECTRICAL IN BID.
- 2. PROVIDE GALVANIZED UNISTRUT BRAKETS TO MOUNT VFD, STARTERS & DISCONNECTS.

# KEYNOTE LEGEND:

< < INDICATES KEYNOTE ON PLAN
</p>

- PROVIDE 8 FOOT HIGH, 3/4" THICK FIRE RETARDANT PLYWOOD PRIMED & PAINTED TWO COATS GREY ON WEST & NORTH WALLS FOR TELEPHONE EQUIPMENT & PANEL
- LOCATION MANUEL MOTOR STARTER FOR MOTORS #28 & 29.
- PROVIDE (1) CAT5 PLENUM RATED CABLE TO TELEPHONE TERMINAL BOARD.
- SWITCH OUTLET FOR POOL EQUIPMENT.
- PROVIDE W.P. GFI RECEPTACLE AT APPROX. 7'-0". VERIFY EXACT LOCATION WITH
- PROVIDE FLUSH JUNCTION BOX WITH CAT5 CABLE & RG6 COAX CABLE IN 3/4" C BACK TO TELEPHONE TERMINAL BOARD. PROVIDE DATA OUTLET AS DIRETED BY OWNER. APPROX 7'-0".

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PROJECT DESCRIPTION WILLISTON WATER WORLD

WILLISTON CITY STATE ND

**ISSUE DATES** 

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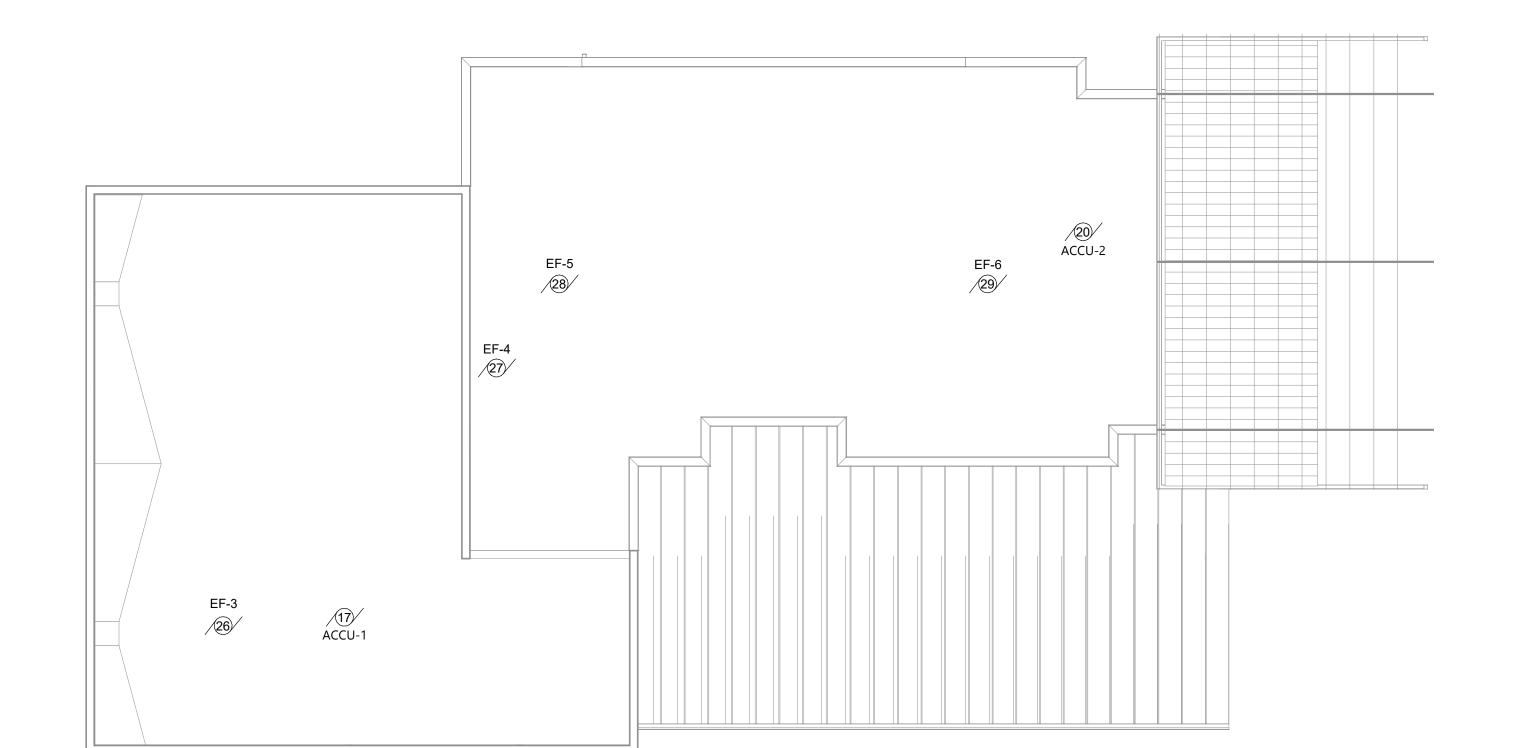
**DRAWING TITLE** FIRST FLOOR POWER AND SYSTEMS

FIRST FLOOR POWER & SYSTEMS PLAN

SEE AQ DRAWING FOR POOL EQUIPMENT CONNECTIONS AND CONTROLLERS.

INCOM COMMUNICATIONS

CONDUIT



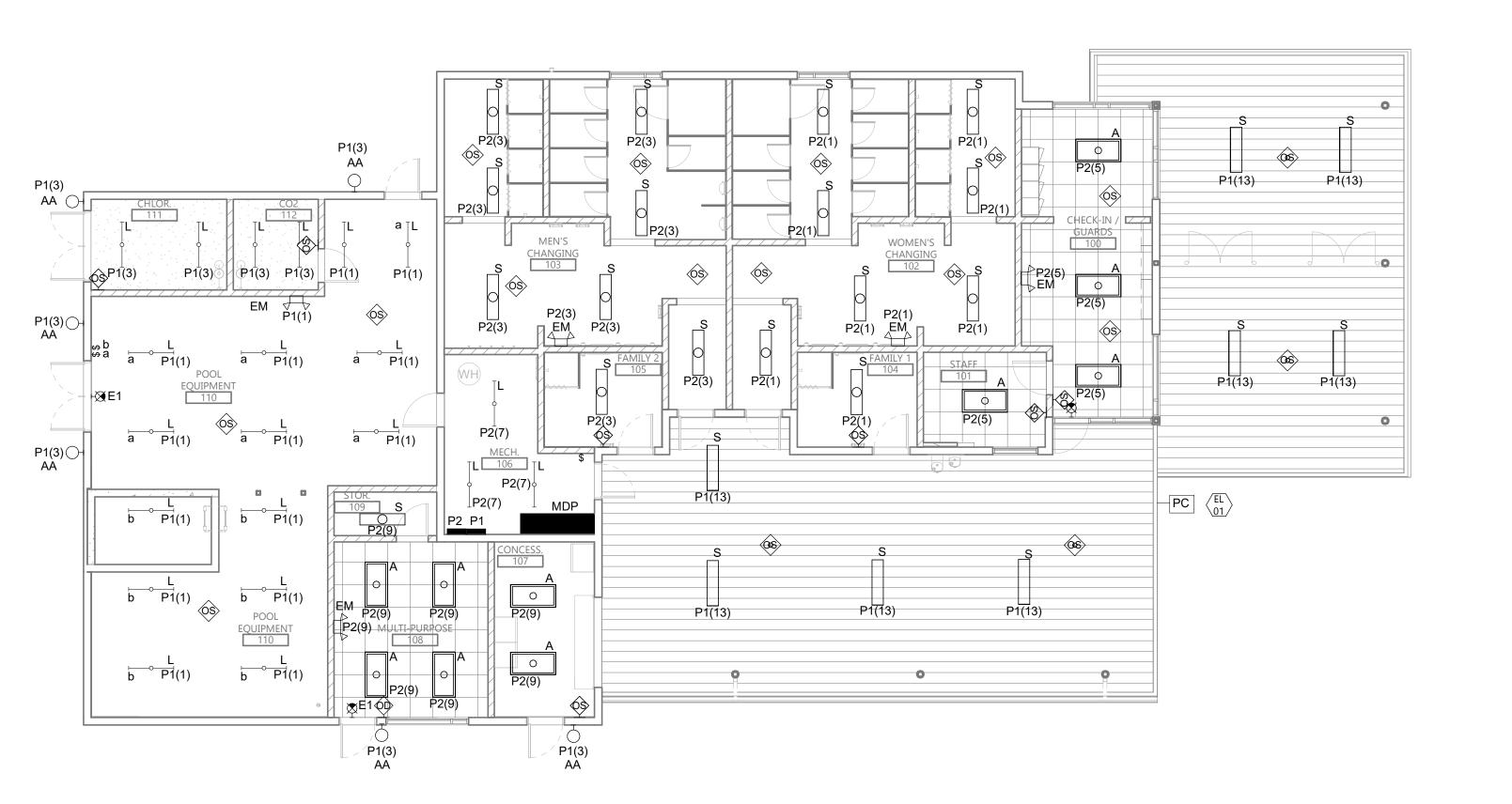






ROOF POWER PLAN 1/8" = 1'-0"

	LUMINAIRE SCHEDULE											
ТҮРЕ	MANUFACTURER	CATALOG NUMBER	LAMP	MOUNTING	LOCATION	VOLTAGE	ССТ	LUMENS	WATTS	NOTES	DESCRIPTION	
А	LITHONIA	CPANL	LED	RECESS	CEILING	120	4000	4000	32.4		FLAT PANEL, WIPE DOWN RATED, 0-10V DIMMING	
E1	LITHONIA	EXRG	LED	RECESS	CEILING/WALL	120			1		SINGLE AND DOUBLE FACE EXIT LIGHT, GRENN LETTERS WHITE FINISH, NIMH BATTERY.	
L	LITHONIA	ZL1D L48	LED	SURFACE	CEILING	120	4000	5000	41		48" STRIPLIGHT FIXTURE,0-10V DIMMING, IP55 RATED	
S	LITHONIA	CSVT L48	LED	SURFACE	CEILING	120	4000	5000	42		STRIP LIGHT FIXTURE, IP65, IP66 RATED, 0-10V DIMMING	
EM	LITHONIA	ELM1 LED SD	LED	SURFACE	CEILING/WALL	120					BATTERY PACK	
AA	LITHONIA	KAXW-LED-P1-50K-R4-120-PER-PIRH-DDBXD	LED	SURFACE	WALL	120	5000	3707	29	1		
ВВ	LITHONIA	(1)DSX2-P4-50K-T3M-208-RPA-PIRH-PE-DDXD/RTA-2S-8J-TXXD	LED	CONC. BASE	OUTSIDE	208	5000	13,457	125	1,2		
СС	LITHONIA	(2)DSX-2-P4-50K-T3M-208-RPA-PIRH-PE-DDXD/RTA-25-8J-TXX	LED	CONC. BASE	OUTSIDE	208	5000	26,914	250			
NOTES:			L				1	1		L		



GENERAL NOTES

1. NOTE 1

2. NOTE 2

KEYNOTE LEGEND:

< < < INDICATES KEYNOTE ON PLAN</p>

PROVIDE PHOTO SWITCH TO CONTROL CANOPY LIGHT CIRUIT. COORDINATE MOUNTING WITH CONDTIONS.

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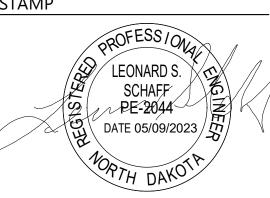
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DRAWING TITLE
FIRST FLOOR LIGHTING
PLAN

1. USE POLE DETAIL 3/E100

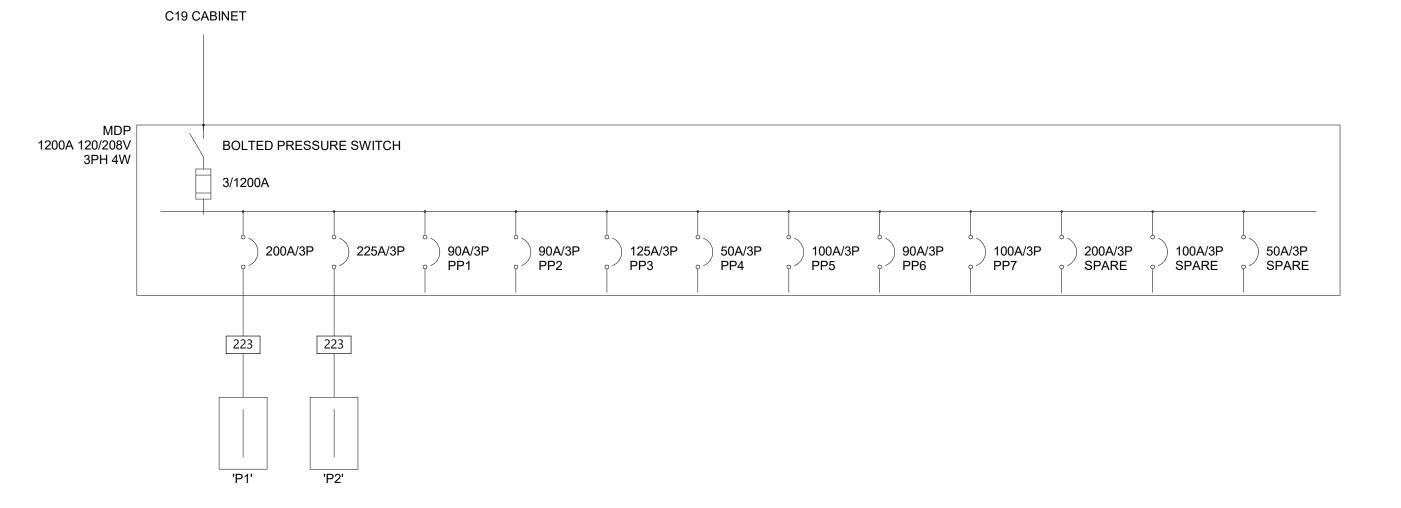
2. TWO HEADS AT 90 DEGREES.

FEEDER SCHEDULE										
AMPACITY	FEEDER TAG	CONDUIT & THHN WIRE 75°C								
15	14	3/4" C - 4 #14 & 1 #14 GND								
20	22	3/4" C - 2 #12 & 1 #12 GND								
30	32	3/4" C - 2 #10 & 1 #10 GND								
40	44	1" C - 4 #8 & 1 #10 GND								
70	73	1 1/4" C - 3 #4 & 1 #8 GND								
100	104	1 1/2" C - 4 #2 & 1 #8 GND								
200	204	2 1/2" C - 4 #3/0 & 1 #6 GND								
225	223	2 1/2" C - 3 #4/0 & 1 #4 GND								
400	404	4" C - 4 #500KCMIL & 1 #3 GND								

H1-A	<u></u>	SEE AQ904
H1-A	<b>►</b>	SEE AQ904
H1-B	<u></u>	SEE AQ904
H1-B	<b>├</b>	SEE AQ904
U1	<u> </u>	SEE AQ904
CF1	<u> </u>	SEE AQ904
CF2	<u> </u>	SEE AQ904
CF3	<b>├</b>	SEE AQ904
CF4	<b>├</b>	SEE AQ904
PP1	<b>►</b>	SEE AQ904
PP2	<b>├</b>	SEE AQ904
PP3	<u> </u>	SEE AQ904
PP4	<u> </u>	SEE AQ904
PP5	<u> </u>	SEE AQ904
PP6	<b>├</b>	SEE AQ904
PP7	_	SEE AQ904
ACCU-1	22 22 = 22 = 22 = 22 = 22 = 22 = 22 =	P1(19,21)
AC-1	14	
AC-2	19/	
ACCU-2		P1(22,24)
AC-3	@ UNIT BY EC 21 14	
AC-4	22/ 14	
AC-5	23/	
EF-1		P1(31)
EF-2	\$ @ UNIT BY MC 1111 M 22 \	P1(31)
EF-3		P1(31)
EF-4		P1(33)
EF-5	\$ @ UNIT BY MC 106 28 22 \$ 22	P1(33)
EF-6	\$ @ UNIT BY MC 106 106 106 106 106 106 106 106 106 106	P1(33)
WH-1	@ UNIT BY MC 106	P1(17)
	@ UNIT BY EC 106	,

2	MOTOR RISER	
		Т

LEGEND:		CB-CIRCU	BINATION IT BREAKER RICAL CONTRACTOR NG		NF-NON FUSED OW-OWNER PC – POOL CONTRACTOR TC-TEMPERATURE CONTRACTOR RF-ROOF								RM-ROOM RPB-REMOTE PUSHBUTTON SC-SELF CONTAINED VC-VENTILATION CONTRACTOR WP-WEATHERPROOFED								
DESCRIPTION	MOTOR #	FURN BY	LOCATION ROOM #	HP KW	мса	FLA	МОР	VOLTAGE	PH (Ø)	TYPE	STARTER	R	ВУ	NTROL	POWER WIRING	INTER BY	tocks To	ВҮ	DISCONNEC SIZE/TYPE		NOTE
H1-A		PC	POOL EQUIP RM							ITPE	3126	БТ	БТ	WIKING	WIKING	БТ	10	БТ	312E/11PE	NEWA	1
H1-A		PC	POOL EQUIP RM																		1
H1-B		PC	POOL EQUIP RM																		1
H2-B		PC	POOL EQUIP RM																		1
U1		PC	POOL EQUIP RM																		1
CF1		PC	CHLOR ROOM																		1
CF2		PC	CHLOR ROOM																		1
CF3		PC	CO2 ROOM																		1
CF4		PC	CO2 ROOM																		1
PP1		PC	POOL EQUIP RM																		1
PP2		PC	POOL EQUIP RM																		1
PP3		PC	POOL EQUIP RM																		1
PP4		PC	POOL EQUIP RM																		1
PP5		PC	POOL EQUIP RM																		1
PP6		PC	POOL EQUIP RM																		1
PP7		PC	POOL EQUIP RM																		1
ACCU-1	17	МС	CONCESSIONS		10.9		15	208	1				TC	MC	EC			EC			
AC-1	18	MC	ROOF	.038									TC	MC	EC			EC	30/2 NF	3R	
AC-2	19	МС	MULTI-PURPOSE	.038									TC	MC	EC						
AACU-2	20	МС	CONCESSIONS		18.1		25	208	1				TC	МС	EC						
AC-3	21	МС	CHECK-IN/GUARD	.038									TC	MC	EC			EC	30/2 NF	3R	
AC-4	22	МС	CHECK-IN/GUARD	.038									TC	MC	EC						
AC-5	23	МС	GUARD	.038									тс	MC	EC						
EF-1	24	МС	CHOR 111	1/4		5.8		115	1	ММ		ВС	TC	МС	EC						
EF-2	25	МС	CO2 112	1/4		5.8		115	1	ММ			тс	МС	EC			EC			
EF-3	26	МС	ROOF	1/4		5.8		115	1	ММ			TC	МС	EC			EC	TOGGLE		
EF-4	27	МС	ROOF	1/10				115	1				TC	МС	EC			EC			
EF-5	28	МС	ROOF	1/4		5.8		115	1	ММ			TC	МС	EC			EC			
EF-6	29	МС	ROOF	1/4		5.8		115	1	ММ			TC	МС	EC			EC			
WH-1	30	PC	MECH RM			11.0		120							EC			EC	TOGGLE		
RCP-1	31	МС	MECH RM	1/20				120	1									EC	TOGGLE		







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www.olcdesigns.com

CLIENT
WILLISTON
COMMUNITY
BUILDERS

PROJECT DESCRIPTION
WILLISTON WATER
WORLD

CITY WILLISTON
STATE ND

ISSUE DATES

CD CONSTRUCTION 05/19/2023 DOCUMENT 01/20/2023

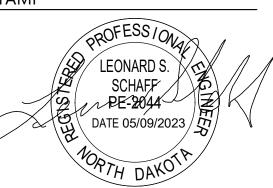
DD DESIGN DEVELOPMENT 01/20/2023

MARK DESCRIPTION DATE

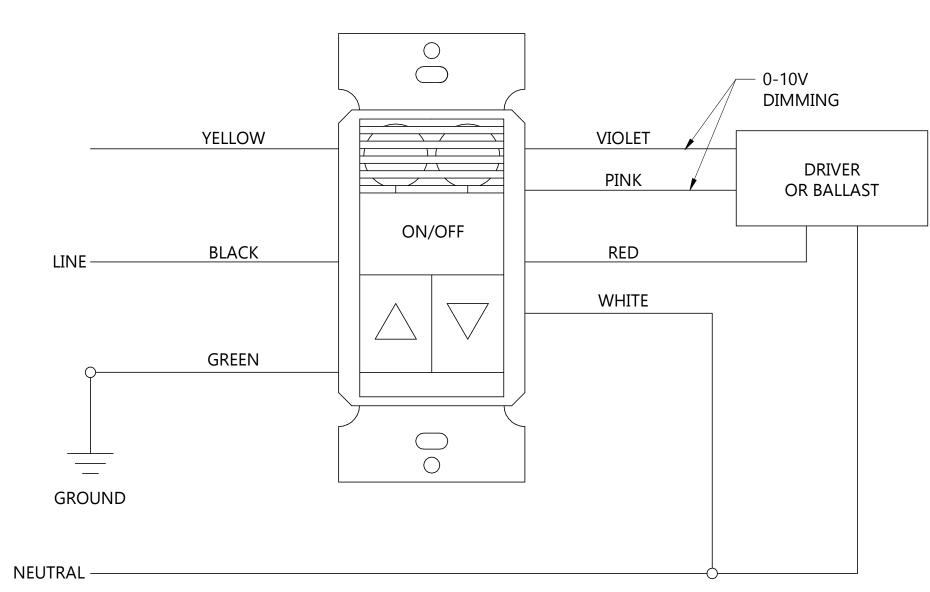
PROJECT NO: 20224620
DRAWN BY: RD/HN
CHECKED BY: LS

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ONE-LINE DIAGRAM
AND MOTOR RISER



NOTE: REQUIRES CLASS 1 WIRING FOR 0-10V DIMMING

1 DUAL TECH SENSOR SWITCH OD WIRING DETAIL

NOT TO SCALE

LIGHTING CONTROL SCHEDULE

SYMBOL	MANUFACTURER	CATALOG NAME		MOUNTING	VOLTAGE			ТҮРЕ		NOTES	S DESCRIPTION		
		CATALOG NAME	WALL	CEILING	ABOVE CLG	LINE	LOW	OCCUPANCY	VACANCY	OTHER	NOTES		
RC#	NLIGHT	NPP16 D EFP	Х									DIGITAL DIMMER ROOM CONTROLLER, # INDICATES NUMBER OF RELAYS (CAT6) PROVIDE AS REQ'D.	
ÓD	SENSOR SWITCH	WSXA-PDR-D	Х				х					WALL MOUNTED DUEL TECHNOLOGY OCCUPANCY SENSOR WITH INTEGRAL DIMMING	
ÓS	SENSOR SWITCH	CM PDT 9	Х			Х		Х				WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR WITH ON/OFF SWITCH	
<u>OS</u>	SENSOR SWITCH	CMR PDT 9 2D		Х		Х		х				CEILING MOUNTED DIGITAL DUAL TECHNOLOGY OCCUPANCY SENSOR	

NERAL NOTES:

A. ALL SENSORS ARE SHOWN FOR CONTROL PURPOSE ONLY; ADDITIONAL DEVICE/POWER MAY BE REQUIRED FOR A COMPLEX SYSTEM. VERIFY REQUIRED DEVICES WITH SYSTEM PROVIDER AND INSTALL COMPLETE SYSTEM.

S:

NOTES:

1. NUMBER REPRESENTS QUANTITY OF RELAYS PER DEVICE. SEE LIGHTING SHEETS FOR NUMBER OF RELAYS AND CONTROL ZONES. MULTI-RELAY ROOM CONTROLLERS MAY BE USED IN LIEU OF SINGLE RELAY ROOM CONTROLLERS.

2. SEE SWITCH DETAILS FOR MORE INFORMATION ON SPECIFIC TIMECLOCK SWITCHES/DIMMERS BUTTON LAYOUT AND ENGRAVING.

EAPC

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PROJECT DESCRIPTION
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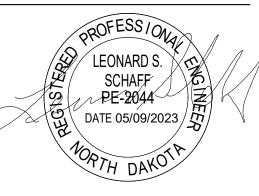
ISSUE DATES

	CD	CONSTRUCTION DOCUMENT	05/19/2023
	DD	DESIGN DEVELOPMENT	01/20/2023
	MARK	DESCRIPTION	DATE

PROJECT NO:	20224620
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LIGHTING SCHEDULES
& DETAILS

E	BRANCH PANEL: P1													
	LOCATION: MEC	H. 106			<b>VOLTS</b> : 120/208 Wye							ATING: 22,000 AIC		
	SUPPLY FROM: MDP	PHASES: 3							AVAIL.	FAULT:				
	MOUNTING: Surfa	WIRES: 4							MAINS RATING: 225A					
	ENCLOSURE: Type	1									MAINS	S TYPE: MLO		
													_	
СКТ	CIRCUIT DESCRIPTION	TRIP	POLES	,	4	E	3	С		POLES	TRIP	CIRCUIT DESCRIPTION		
1	LIGHTS	20 A	1	449 VA	360 VA					1	20 A	CONCESS: FRIDGE	_	
3	LIGHTS	20 A	1			128 VA	360 VA			1	20 A	CONCESS: FRIDGE		
5	RECEPT: EXTERIOR	20 A	1					1080 VA	360 VA	1	20 A	CONCESS: FRIDGE	_	
7				0 VA	1260 VA					1	20 A	RECEPT: CHECK IN AND STAFF		

СКТ	CIRCUIT DESCRIPTION	TRIP	POLES		A	ı	В		С	POLES	TRIP	CIRCUIT DESCRIPTION	СКТ
1	LIGHTS	20 A	1	449 VA	360 VA					1	20 A	CONCESS: FRIDGE	2
3	LIGHTS	20 A	1			128 VA	360 VA			1	20 A	CONCESS: FRIDGE	4
5	RECEPT: EXTERIOR	20 A	1					1080 VA	360 VA	1	20 A	CONCESS: FRIDGE	6
7	SITE LIGHTING	20 A	2	0 VA	1260 VA					1	20 A	RECEPT: CHECK IN AND STAFF	8
9	SITE LIGHTING	20 A				0 VA	900 VA			1	20 A	RECEPT: WOMANS BATHROOM	10
11	RECEPT: MECH RM	20 A	1					360 VA	900 VA	1	20 A	RECEPT: MENS BATHROOM	12
13	LIGHTING: PATIO	20 A	1	328 VA	900 VA					1	20 A	RECEPT: STAFF ROOM AND OUTDOOR	14
15	RECEPT:WASHING MACHINE	20 A	1			180 VA	1260 VA			1	20 A	RECEPT: MULTI-PURPOSE	16
17	WH-1 (#30)	20 A	1					0 VA	250 VA		20.4	DECEDT, DDVED	18
19	ACCIL 4 (#47)	20. 4	2	1123 VA	250 VA					2	30 A	RECEPT: DRYER	20
21	ACCU-1 (#17)	20 A	2			1123 VA	0 VA			2	20.4	A C C L 2 (#20)	22
23	RECEPT: CHLOR AND CO2	20 A	1					360 VA	0 VA	] 2	20 A	ACCU-2 (#20)	24
25	RECEPT: POOL EQUIPMENT	20 A	1	720 VA	0 VA					1	20 A	SPARE	26
27	RECEPT: POOL EQUIPMENT	20 A	1			720 VA	0 VA			1	20 A	SPARE	28
29	RCP-1 (#31)	20 A	1					0 VA	0 VA	1	20 A	SPARE	30
31	EF-1-3	20 A	1	2001 VA	0 VA					1	20 A	SPARE	32
33	EF-4-6	20 A	1			1334 VA	0 VA			1	20 A	SPARE	34
35	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	36
37	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	38
39	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	40
41	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	42
		TOTAL	LOAD:	7356	3 VA	5999	9 VA	3310	0 VA				•
		TOTAL	_ AMPS:	65	iΑ	53	3 A	28	3 A	_			

LOAD CLASSIFICATION:	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL 1	TOTALS
Lighting	904 VA	125.00%	1130 VA		
Motor	5581 VA	100.00%	5581 VA	TOTAL CONN. LOAD:	16663 VA
Other	1 VA	100.00%	1 VA	TOTAL EST. DEMAND:	16769 VA
Receptacle	10220 VA	98.92%	10110 VA	TOTAL CONN:	46 A
				TOTAL EST. DEMAND:	47 A

LEGEND:

LOCATION: MECH. 106 SUPPLY FROM: MDP MOUNTING: Surface ENCLOSURE: Type 1				VOLTS: 120/208 Wye PHASES: 3 WIRES: 4						A.I.C. RATING: 22,000 AIC AVAIL. FAULT: MAINS RATING: 225A MAINS TYPE: MLO				
СКТ	CIRCUIT DESCRIPTION	TRIP	POLES		<b>A</b>	E	3		3	POLES	TRIP	CIRCU	IT DESCRIPTION	СК
1	Lighting	20 A	1	329 VA	0 VA					1	20 A	SPARE		2
3	Lighting	20 A	1			329 VA	0 VA			1	20 A	SPARE		4
5	LIGHTS	20 A	1					161 VA	0 VA	1	20 A	SPARE		6
7	LIGHTS	20 A	1	96 VA	0 VA					1	20 A	SPARE		8
9	LIGHTS	20 A	1			282 VA	0 VA			1	20 A	SPARE		10
11	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE		12
13	SPARE	20 A	1	0 VA	0 VA					1	20 A	4J - POOL EQU	IPMENT	14
15	SPARE	20 A	1			0 VA	0 VA			1	20 A	2A - POOL EQU	IPMENT	16
17	2H - POOL EQUIPMENT	20 A	1					0 VA	0 VA	1	20 A	1A - POOL EQU	IPMENT	18
19	H1A - POOL EQUIPMENT	30 A	1	3600 VA	0 VA					1	20 A	1B - POOL EQU	IPMENT	20
21	H1A - POOL EQUIPMENT	20 A	1			2400 VA	0 VA			1	20 A	2B - POOL EQU	IPMENT	22
23	H1B - POOL EQUIPMENT	30 A	1					3600 VA	1440 VA	1	20 A	U1 - POOL EQU	IIPMENT	24
25	H1B - POOL EQUIPMENT	20 A	1	2400 VA	2400 VA					1	20 A	CF1 - POOL EQ	UIPMENT	26
27	CF2 - POOL EQUIPMENT	20 A	1			2400 VA	0 VA			1	20 A	CF3 - POOL EQ	UIPMENT	28
29	CF4 - POOL EQUIPMENT	20 A	1					0 VA	0 VA	1	20 A	SPARE		30
31	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE		32
33	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE		34
35	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE		36
	SPARE	20 A	1	0 VA	0 VA					1		SPARE		38
	SPARE	20 A	1			0 VA	0 VA			1		SPARE		40
	SPARE	20 A	1					0 VA	0 VA	1		SPARE		42
•••			LOAD:	880	⊥ 5 VA	5384	L V/A	5193	l .	'	2071	OI 7 II LE		- 12
			AMPS:		ł A	45		43		_				
	CLASSIFICATION:		CON	NECTED L	OAD D	EMAND FAC		ESTIMATED				PANEL	TOTALS	
Lighting			1193 VA		125.00% 1491					10201 \/^				
Motor			18240 VA		100.00%		18240							
Other		4 VA			100.00%		4 VA	\		IUIAL	EST. DEMAND:			
											TOTAL	TOTAL CONN:		
											IOIAL	EST. DEMAND:	55 A	
NOTE	S:													

LOCATION: MECH. 106 SUPPLY FROM: UTILITY MOUNTING: FREESTANDING ENCLOSURE: SWITCHBOARD CONSTUCTION				VOLTS: 2 PHASES: 3 WIRES: 4			A.I.C RATING: 45,000 AIC AVAIL. FAULT: MAINS RATING: 1200A MAINS TYPE: MSC.
СКТ	CIRCUIT DESCRIPTION	POLES	RATING	Α	В	С	REMARKS
1	PANEL P1	3	200 A	7356 VA	5999 VA	3310 VA	
2	PANEL P2	3	225 A	8805 VA	5384 VA	5193 VA	
3	PP1	3	90 A	7452 VA	7452 VA	7452 VA	
4	PP2	3	90 A	7452 VA	7452 VA	7452 VA	
5	PP3	3	125 A	11040 VA	11040 VA	11040 VA	
6	PP4	3	40 A	3036 VA	3036 VA	3036 VA	
7	PP5	3	100 A	7452 VA	7452 VA	7452 VA	
8	PP6	3	90 A	5796 VA	5796 VA	5796 VA	
9	PP7	3	100 A	7452 VA	7452 VA	7452 VA	
10	SPARE	1	200 A	0 VA			
11	SPARE	1	100 A	0 VA			
12	SPARE	1	50 A	0 VA			
		CONNECTI	ED LOAD:	65837 VA	61060 VA	58183 VA	
		EXISTI	NG LOAD:	0 A	0 A	0 A	
тот			AL AMPS:	552 A	513 A	485 A	

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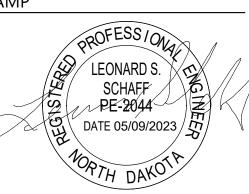
PROJECT NO: 20224620

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SCHEDULES

### CURRENT

<b>Project Costs (Phase</b>	One)	\$	10,501,622
stimated Soft Costs		\$	2,560,813
	FF&E	\$	150,000
	Owner Contingency (5%)		397,040
	Operational Costs (3 year)	\$ \$	1,500,000
	Reimbursable Expenses	\$	6,500
	Site Survey	\$	20,000
	Soil Investigation	\$	10,000
ests	Legal Expense	\$	825
	A/E Fees Paid to Date	\$	476,448
es			
GMP (Phase One)		\$	7,940,809
ted Alternates			
ruction Fee's + \$ Carried		\$	413,976
	Escalation to 2nd Qtr 2023 (1.0%)	\$	-
	Construction Contingency (5.0%)	\$	376,342
	Preconstruction Fee (0.5%)	\$	37,634
One Subtotal (Includes CMA	AR fee 4.28%)	\$	7,526,833
	Buildings & Canopy's (3,916 SF)	\$	2,395,236
	Miscellaneous Site Work	\$	1,933,625
	Spray/Play Feature Allowance	\$	250,000
	Waterslide Package B	\$	672,972
	Leisure Pool	\$	2,275,000
	Leisure Pool		\$

<u>Donor</u>	Total
Buck & Lois Scheele (Williston Industrail)	2,600,000.00
Marvene Larvick	2,160,000.00
Cleo Erickson	500,000.00
Williston Community Builders	400,500.00
American Legion	360,000.00
CHI St. Alexius Health Foundation	250,000.00
Williston Convention & Visitors Bureau, Inc.	250,000.01
First State Bank and Trust	150,000.00
Rich Vestal	125,000.00
Kathy Lynn Vestal	125,000.00
Noble Casing Inc	110,000.00
Calfrac Well Services Corp	100,000.01
N. J. & A., Inc.	100,000.00
ONEOK Foundation Inc	100,000.00
Cynthia Aafedt	100,000.00
Garrison Diversion Grant	75,000.00
Western Cooperative Credit Union	75,000.00
Empire Oil Company	75,000.00
1st International Bank and Trust	56,800.00
Brigston Contracting LLC dba Brigston Electric	51,000.00
John Kasmer	50,600.00
Marcus & Patricia Lee	50,000.00
Dean Aafedt	50,000.00
Ritter, Laber & Associates, Inc.	50,000.00
CCP Properties, LLC (Basin/Cymbaluks)	50,000.00
Vincent Gaffney Foundation	50,000.00
MDU Resources	50,000.00
David & Bridget Kjorstad	40,000.00
Lewis and Clark	37,548.43
Jason & Kalliann Arnson	30,000.00
Janet Skadeland	27,000.00
American State Bank	25,000.00
James Powers	25,000.00
Tom and Cheryl Powers Family Fund	25,000.00
Triangle Electric, Inc.	20,000.00
Busy Bee's Hot Oil, Inc.	17,000.00
Roger & Paula Cymbaluk	15,000.00
The Aafedt Foundation, Inc.	15,000.00
Interstate Engineering (in-kind - survey and plat)	14,400.00
Manger Insurance, Inc.	10,800.00
Carol Jenson	10,000.00
Enbridge	10,000.00
Paulette Seaton	10,000.00
Troy & Kris Lippert	10,000.00

Walmart	10,000.00
Josh Otteson Memorial	9,000.00
Expanse Electrical	8,000.00
Prairie Winds Services, LLC	7,500.00
Coca-Cola of Williston	7,500.00
Richard & Suzanne Lasch	7,500.00
Sioux Energy	7,000.00
Messer Dental, PC	6,000.00
Moose Lodge 239	6,000.00
NA	5,825.07
Various	5,669.63
Scenic Sports Little Lot, Inc.	5,386.92
American Engineering Testing, Inc.	5,000.00
Aafedt-McCabe Family Fund	5,000.00
T&J Agnes Theatres, Inc.	5,000.00
Aaron and Kristal Schmit	5,000.00
Christopher Jundt	5,000.00
First Lutheran Church	5,000.00
G&G Rx Inc. dba G&G Pharmacy	5,000.00
Marathon Community Investment Programs	5,000.00
Marilyn M Geyerman	5,000.00
Mike & Lori Erickson	5,000.00
Thomas & Dina Archipley	5,000.00
Williams County Abstract Company	5,000.00
Williston Basin Chapter API	5,000.00
Mitch Fearing	4,550.00
Stacy and Kelly Gunlikson	4,350.00
Connie J Ferrell	3,000.00
DC Power Tong, LLC	2,800.00
Douglas & Donnette Taylor	2,500.00
ASB Innovation Academy	2,120.09
BoDo's Appliace & Outdoor Living	2,500.00
David & Linda McAdoo	2,500.00
Mark & Kari Kringen	2,500.00
Lee Suess, LLC	2,200.00
Dorothy Westphal	2,000.00
Robert & Debora Kemp	2,000.00
Melyssa Ostler	1,600.00
Western Veterinary Clinic	1,600.00
Clarke & Associates, PC	1,550.00
Gene & Tamara Johnson	1,500.00
Busted Knuckle Brewery Williston LLP	1,500.00
Kenny Kukuk	1,500.00
Susan Helstad	1,500.00
Furuseth Olson and Evert, PC	1,400.00
Interstate Engineering	1,400.00
Ryan & Sarah Senderhauf	1,400.00

Coatty and Kriston Dohal	1 500 00
Scotty and Kristen Rehak	1,500.00
Cade Dorval	1,300.00
Billie Pippenger	1,450.00
Crowley Fleck, PLLP	1,350.00
Wayco Construction, LLC	1,240.00
Summer Nights on Main Dunk Tank	1,053.00
Ackerman-Estvold	1,000.00
Automotive Hail Specialist, LLC	1,000.00
Simonson Station Stores, Inc.	1,000.00
Basin Hearing Solutions	1,000.00
Damien Allen	1,000.00
David & Sharon Kupper	1,000.00
Dean Darby	1,000.00
Dr. Tony Fisher, Orthodondist	1,000.00
Gabriel Gratz	1,000.00
Gary & Patsy Levang	1,000.00
Green Thumb Weed Servics, LLC	1,000.00
Greyson Mill	1,000.00
Grondahl Recreation, Inc.	1,000.00
Kent & Sandi Blikre	1,000.00
Land Shark Services, LLC	1,000.00
Live in Motion	1,000.00
M&H Well Service	1,000.00
Nemont Telephone Cooperative	1,000.00
Pacific Steel & Recylcing	1,000.00
RGD Trucking, Inc.	1,000.00
Spark Monkey Fab & Design LLC	1,000.00
Spartan Alert, LLC	1,000.00
Western Skies Hot Shot & Transport	1,000.00
Williston Basin Eyecare	1,000.00
Williston State College Foundation	1,000.00
Annette Sluder	900.00
Arkota Energy, Inc.	800.00
B Safety Consulting and Training Kent Reirson	800.00
	800.00
Mchale & Brooke Maristuen	800.00
Nodak Oilfield Services	800.00
Red Rock Ford	800.00
Amanda Colebank	770.00
MRK Funancial Solutions, Inc	750.00
Bambinos, LLC	700.00
Boss Ladies	700.00
Lana Bracher	700.00
Hagan Elementary School	688.00
Glenn Olsen Golf Team	600.00
Howard Klug	550.00
DC Power Tong, LLC	550.00

T 0. I T. 0 .	550.00
Terry & Joan Tofte	550.00
Pro Safe Services, Inc.	550.00
Palmer Bit Company Inc	550.00
Milestone Health Partners, LLC	550.00
Jon & Jill Irgens	550.00
Thomas John Irgens	550.00
Megan Wold	550.00
Christopher Grad	550.00
E Ward & Joetta Koeser	550.00
Ryan & Emily O'Rear	550.00
Westen B Houle	550.00
Western Skies Hot Shot & Transport	550.00
Oasis Petroleum	550.00
Audrey Kalil	538.56
Sasha Iverson	538.56
Ashley Hansen	538.56
Pit 105, LLC	528.00
Misc	520.00
All Source Plumbing, LLC	500.00
Big Game Investments, LLC	500.00
Callie Zeibarth	500.00
Dakota Fence	500.00
Impact Foundation	500.00
David & Lori Geltel	
	500.00
EAPC Architects Engineers Frank and Karen Weisz	500.00
	500.00
Gerald & Kim Gratz	500.00
Jer Bears Sno Shack	500.00
Karen Smith	500.00
Liberty Oilfield Services, LLC	500.00
Mountrial Williams Electric Coop	500.00
Neil and Paula Hagen	500.00
Precision Completions and Production Services	500.00
Richard & Janey Tangedal	500.00
Sabin Metal West Corp	500.00
Vintage & Classic Car Club	500.00
TNT Fireworks	500.00
Williston Parks & Rec	484.50
Ashley Weisz	450.00
Kent Lynch	440.00
INTEREST EARNED	425.70
Ramage Geltel Law Firm	400.00
Rick Albert	400.00
B Crack Sealing, LLC	350.00
Jacob & Kristin Stoltz	350.00
Robyn Beaudoin	350.00
Curtis A. Hansen	350.00
	220.00

Gloria Jordan	350.00
Jocelyn Rice	342.54
Miranda Bergstrom	342.54
Katie Shannon	325.00
Caffeinated	300.00
Chris Burke	300.00
Groth Family Trust	300.00
Kerry & Carol Hoffman	300.00
Rick & Lori Lee	300.00
GNLCC Summer After School Program	251.00
Phyllis Sylte	250.00
Susie Qs Ice Cream Truck, LLC	250.00
TruWealth Financial	250.00
William & Laura Carl	250.00
Windsong Contracting, LLC	250.00
CASH	250.00
Wayne and JoAnne Colebank	250.00
Lonnies Road House	244.10
Jason Slater	240.00
Amanda Kosior	200.00
Christrpher & Lisa Bean	200.00
Connie Rueb	250.00
Cynthia Aafedt	200.00
Dale Robertson	200.00
Eric Fee	200.00
Gene & Tamara Johnson	200.00
Leslie Bieber	200.00
Lyndsey McCoy	200.00
Richard (Ian) & Jessica Vestal	200.00
Sharlo Halvorson	200.00
Anonymous	195.00
Zachary McCoy	190.00
MISC	171.00
Trenton Berglee	160.00
Leslie and Mabel Colebank	150.00
Colby and Tarren Rehak	125.00
Credence Energy & Shift Services	100.00
Darwin and Deborah Stevens	100.00
Jaime Tamez	100.00
Jessica Bimgemanvestal	100.00
Joe Barsh	100.00
James & Lisa McKenzie	100.00
Michael & Holly Tkachyk	100.00
Pam Ramage	100.00
Paula & Russell Schilke	100.00
Sandy Blinke	100.00
Shawn Wenko	100.00

Beth Hokanson	50.00
Bridgette D Washington	50.00
Dan Weber	50.00
Jeabs Thai Food LLC	50.00
Kassie Gorder	50.00
Carmine Megaro	50.00
Ken Kjos	50.00
Meri Lombardi	50.00
Ronelle Gravgaard	50.00
Cash Donation	51.00
Darcy Olsen	30.00
Kayla Wilson	25.00
Slaters	25.00
Gage & Brianna Clem	20.00
Greg Everson	20.00
Dawn Hustad	15.00
Lacey Hendrickson	10.00
Paige Monzon	10.00
Steph Johnson	5.00

8,732,262.22



June 5, 2023

Williston Community Builders,

On behalf of the Williston Parks & Recreation District, I am happy to announce our support for the Williston Community Builders' ongoing fundraising for Williston Water World, a new outdoor pool, to be constructed in Williston. WPRD is a strong supporter of Williston Water World and maintains every intention of operating the pool once it has been completed and turned over to the Park District. WPRD is very appreciative of the Community builders for supporting the Park District through endeavor, enabling us to continue to serve our mission of providing "Superior parks, facilities and programs for all to enjoy an active life."

Sincerely,

Joe Barsh MBA, CPRP
Executive Director
Williston Parks & Recreation District
701-774-9773 Office
701-770-9767 Cell
www.Willistonparks.com



Letter of Support, Williston Community Builders Williston Water World May 31, 2023

To Whom It May Concern:

Since their inception, The Williston Community Builders have been an overwhelmingly positive presence in the Williston Community. Their countless fundraising efforts, most notably the annual Festival of Trees, have benefited a variety of non-profits, organizations and individuals, helping to make The City of Williston a better place.

With the closure of the city's only outdoor pool nearly 10 years ago, the citizens of Williston have been hoping for another option for outdoor recreation. Thanks to the Williston Community Builder's efforts and partnerships, that vision is close to becoming a reality in the form of Williston Water World. The Community Builders have put forth considerable time and effort to raise the funds needed to bring this project to fruition and are very close to reaching that goal.

The City of Williston fully supports the Williston Water World project and the Community Builders' ongoing fundraising efforts. That support has included working with Williston Basin School District 7 to provide the best property for the pool, in a location that is accessible for all of Williston's residents and welcoming to those traveling to the City of Williston.

This project will be a major positive for the residents of Williston and benefit the community in a number of ways. This project will not only give our residents another outdoor recreation option during the warmer months but will become a place for our community members to gather, socialize and connect with their neighbors, as well as encouraging those in surrounding communities to visit the City of Williston.

I ask that you give the Williston Community Builders your support as they continue to promote community, kindness and charity as they endeavor to bring this and other worthwhile projects to our community to improve the overall quality of life for our residents.

Sincerely,

Howard Klug

President, City of Williston Board of Commissioners



June 6, 2023

RE: Williston Community Builders Water World Project

To Whom It May Concern:

The Williams County Board of County Commissioners supports the determined efforts of the Williston Community Builders to bring an outdoor pool to the Williston community.

Over the past decade the population of Williams County has nearly doubled, which has increased the demand for family-friendly recreational activities. Most of this growth has occurred in Williston.

In the early 2010's, due to a boom in the oil and gas industry, northwestern North Dakota had a highly transient population. Over time, as the industry leveled out again, and new industries are looking to make Williams County their home base, many workers are bringing their families and planning to stay awhile. To maintain a high quality of life as we continue to attract workforce, and also meet the needs of a diverse population, organizations such as the Community Builders, are diligently working to create a welcoming experience in Williams County.

Williams County encourages you to support the Water World project through grant funding to help bring this project to fruition.

Thank you for your consideration,

Copy Hanson

Chairman, Williams County Board of County Commissioners

(701)572-1580 phone (701)572-3547 fax 1201 9th Ave NW P.O. Box 1407 Williston, ND 58802

www.willistonschools.org

5-26-23

Williston Community Builders PO Box 2720 Williston, ND 58802

RE: Letter of support for Williston Community Builders Fundraising

Greetings,

It is my pleasure to write a letter in support of the ongoing fundraising the Williston Community Builder's have been doing to construct a waterpark for the community of Williston. The creation of a waterpark will have many benefits for the community and for our students. Water play releases energy, promotes cognitive development, supports the development of motor and social skills and can stimulate communication, creativity and imagination.

WBSD 7 supports any application for funding through grants to finalize the completion of the waterpark. We ask that you give this your full consideration. If you have any questions you may contact me at Richard.Faidley@willistonschools.org

Sincerely,

Richard H. Faidley Williston Basin School District 7 Superintendent of Schools



#### EIGHT MILE PUBLIC SCHOOL DISTRICT NO. 6

P.O. Box 239 Trenton, North Dakota 58853

> Phone: 701-774-8221 Fax: 701-774-8040

District Website www.trenton.k12.nd.us

Facebook Page @trentonschool

May 12, 2022

Dear Williston Pool Action Committee,

The Eight Mile School District and Trenton School is excited to provide this letter of support for Williston's outdoor pool project being promoted by the Williston Pool Action Committee.

Trenton School very much supports initiatives that work to promote community and regional bonds and, as a part of the Williston region, we know that our community will benefit from this addition to Williams County.

As strong supporters of life-long wellness, we recognize the benefits that a community pool can provide, including but not limited to the following:

- Getting people outside in the summer!
- Providing an opportunity for kids to make new friends.
- Teaching kids of ALL ages how to swim and be safe in the water.
- Encouraging fitness for individuals as well as the whole family.
- Increasing public safety by providing fun and wholesome experiences.
- Providing life-saving instruction opportunities.
- Promoting business and community partnerships.
- And much more!

Outdoor swimming areas truly are assets for the entire community and this project has the support of our school district!

Sincerely,

Matt Schriver, Superintendent

Williston Office 222 University Ave.



58801

609-5681

Williston, ND

Phone: (701)

https://www.gnwec.org/ | werc.center@wercenter.com

#### To Whom it may concern:

As the new Executive Director of the Western Education Regional Cooperative, I am writing this letter to give my full support to the Williston Outdoor Waterpark Project. I have served as the Superintendent of Schools in Ray, ND for the past ten years and in that time my family and many other families from Ray have used a plethora of services and taken advantage of many opportunities provided in Williston.

I believe this project will be no different. To have opportunities like this in our region is a not only a buoy to all surrounding communities economically, they add quality of life and healthy fun for families to partake in.

The opportunity to be outside, enjoy the summer, and have fun in Williston would be a huge value add to the region. I fully support this project and hope to be able to use the waterpark with my family in the near future! Please feel free to contact me at <a href="mailto:ben.schafer@werccenter.com">ben.schafer@werccenter.com</a> with any questions you might have.

Thank You,

Benjamin L. Schafer, Executive Director, WERC Center



#### GRENORA PUBLIC SCHOOL DISTRICT NO. 99

PO Box 38 ~ 402 Robinson Street ~ Grenora, ND ~ 58845-0038 Phone: 701.694.2711 • Fax: 701.694.2717

8/10/2022

Dear Williston Pool Action Committee,

Grenora Public School is happy to provide this letter of support for the Williston's outdoor pool project being promoted by the Williston Pool Action Committee.

Grenora School supports all initiatives that promote community and regional bonds. As part of the Williston region, we know that our community will benefit from this addition to Williams County.

The Community Club in Grenora currently buses children to area pools throughout the summer months. The addition of an outdoor swimming area in Williston will add another location for them to attend. Outdoor swimming areas are an asset for the entire community and this project has the support of our school district.

Sincerely,

Aaron Rudningen Superintendent

Grenora Public Schools

aaron.rudningen@gpsd99.org

(701) 694-2711