

Board of Adjustment Hearing Application - Entry #359

Property Address

16664 KEHRSGROVE DRIVE
CHESTERFIELD, MO
63005
US

Property Owner Name

LAUREN POHLE

Property Owner Phone

+16362445651

Applicant Name (if other than property owner)

KAYLA PETERSON

Applicant Phone

+16362445651

REQUESTED APPEAL

Area variance (deviation from area requirements such as yard, setback, building, sign etc.)

Type of Project

Addition
Other

If other, please specify:

SWIMMING POOL AND FENCE

Type of structure, please describe:

IN-GROUND SWIMMING POOL AND NEW FENCE

Pursuant to the provisions of Chapter 405.160 of the Municipal Code of the City of Clarkson Valley, application is hereby made for a hearing before the Board of Adjustment of the City of Clarkson Valley, Missouri, for the following purpose(s):

This application is for a variance to permit the installation of a fence within the required yard setback area at 16664 Kehrsgrove Drive, Chesterfield, MO 63005. The property is a through lot with double frontage, which causes both the front and rear portions of the property to be treated as front yard areas under the City's requirements. Due to the unique lot, it limits the area significantly for a residential fence to be located around a pool.

We are asking that the Board of Adjustment grant a variance allowing the proposed fence to be located as shown on the submitted site plan. The requested variance is intended to provide enclosure of the property while maintaining appropriate visibility, safety, and access to any applicable easements.

Has the project previously been submitted to the Board of Adjustment?

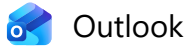
No

A transcript of the proceeding is available at your request. The cost is determined by the length of the proceeding. Order transcript?

No

File Upload

-  [16664-Kehrsgrove-Deck-drainage-2.jpg](#)
-  [16664-Kehrsgrove-Depth-1.jpg](#)
-  [16664-Kehrsgrove-Pool-Measurements-1.jpg](#)
-  [16664-kehrsgrove-pool-letter-1.pdf](#)
-  [Approval-of-back-yard-renovations-for-16664-Kehrsgrove-Dr.pdf](#)
-  [NLS_2603363_STRUCTURE-f9dad461a4441c8b43fc263c4df5ee6.pdf](#)
-  [NLS_2603363_SP_2026-5-22-0de3d337bfa70e09542fb4ecd829d5e2.pdf](#)
-  [B2605122_000-Structural-Calculation-Report-dc620acdb28ab79bbf0b619d20a9c592.pdf](#)
-  [16664-Kehrsgrove-Site-Plan-8-6-26-MOST-RECENT.pdf](#)
- [Pool-Specifications-Materials-Colors.png](#)



Re: Building Permit Application - 16664 Kehrsgrrove Dr.

From Paul Mercurio <buildingcommissioner@clarksonvalley.org>

Date Mon 8/10/2026 1:32 PM

To Kayla Peterson <kayla@nelsonlandservices.com>

Cc Megan Eldridge <cityhall@clarksonvalley.org>; Kelsey Moser <assist@clarksonvalley.org>

 1 attachment (446 KB)

Kehrsgrrove Site Plan 8-6-26.pdf;

Kayla,

I did some research and it appears the site survey is correct. The lot is identified as a "Through Lot/Double Frontage" see the definition below.

Definition

LOT, THROUGH/LOT, DOUBLE FRONTAGE

An interior lot having a frontage on each of two (2) streets approximately parallel to each other.

Here is the zone requirements based on a Through Lot.

Section 405.080"A" Semi-Rural District Regulations.

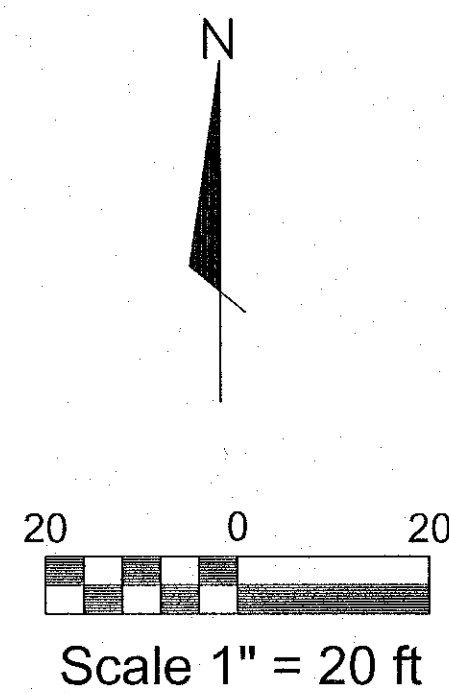
E. Area Regulations And Building Lines.

Front Yard And Front Building Line. There shall be a front yard having a depth of not less than seventy-five (75) feet. The line drawn parallel to and seventy-five (75) feet distance from the street line shall be the front building line. On through lots (double frontage) there shall be a front yard and a rear yard each having a depth of not less than seventy-five (75) feet. On corner lots there shall be a front yard and a side yard, each having a depth of not less than seventy-five (75) feet, and not withstanding any other provision of this Chapter, no structure or plant material

Please note the fence in within the 75' building setback line and will require a variance approval before a permit can be issued for the pool project.

Contact Clarkson Valley staff to assist with the Board of Adjustment application process if this is the desired location of the fence.

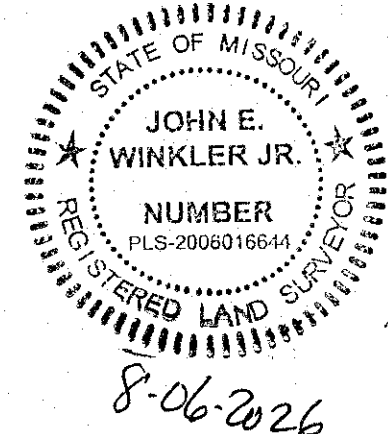
***Thank you,
Paul Mercurio
Clarkson Valley Building Commissioner***



LEGEND	
ASPH	DENOTES ASPHALT
AI	AREA INLET
BF	BACK FLOW
BOLL	BOLLARD
CO	CLEANOUT
CONC.	CONCRETE
CTV	CABLE TELEVISION
DCI	DOUBLE CURB INLET
EM	ELECTRIC METER
EB	ELECTRIC BREAKER BOX
EP	EXPOSED PIPE
FH	FIRE HYDRANT
GV	GAS VALVE
ICV	IRRIGATION CONTROL VALVE
IR	IRON ROD
IP	IRON PIPE
LSB	LANDSCAPE BORDER
MB	MAILBOX
MON.	MONUMENT
NIP	NOT PLOTTABLE
POL	POINT ON LINE
R	RECORD
RETWALL	RETAINING WALL
SL	SEPTIC LID
TF	TRANSFORMER
TSB	TRAFFIC SIGNAL BASE
UP	UTILITY POLE
VC	VENT CLEANOUT
WM	WATER METER
E	ELECTRIC LINE MARKED
G	GAS LINE MARKED
P	OVERHEAD POWER LINE
W	WATER LINE MARKED
CONC.	CONCRETE
EDGE OF ASPHALT PVT.	EDGE OF ASPHALT PVT.
NUMBER OF PARKING SPACES	NUMBER OF PARKING SPACES
SPOT ELEVATION	SPOT ELEVATION
EXISTING FENCE	EXISTING FENCE
EXISTING TREE WIDIAMETER	EXISTING TREE WIDIAMETER

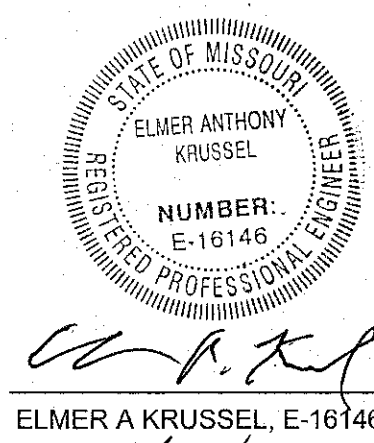
THIS IS TO CERTIFY THAT WE HAVE DURING AUGUST, 2026 AT THE ORDER OF NELSON LAND SERVICES EXECUTED A SITE PLAN SURVEY. ACCORDING TO THE CURRENT MINIMUM STANDARDS FOR PROPERTY BOUNDARY SURVEYS AND MEETS THE ACCURACY STANDARDS FOR URBAN PROPERTY OF THE DEPARTMENT OF AGRICULTURE, DIVISION OF WEIGHTS AND MEASURES, AND THE MISSOURI BOARD OF REGISTRATION FOR ARCHITECTS, PROFESSIONAL ENGINEERS, PROFESSIONAL LAND SURVEYORS AND LANDSCAPE ARCHITECTS AND THAT THE RESULTS OF SAID SURVEY ARE CORRECTLY SHOWN HEREON.

John E. Winkler Jr.
JOHN E. WINKLER JR., PLS 2006016644



Call Before you DIG
TOLL FREE
1-800-344-7483
MISSOURI ONE-CALL SYSTEM INC.

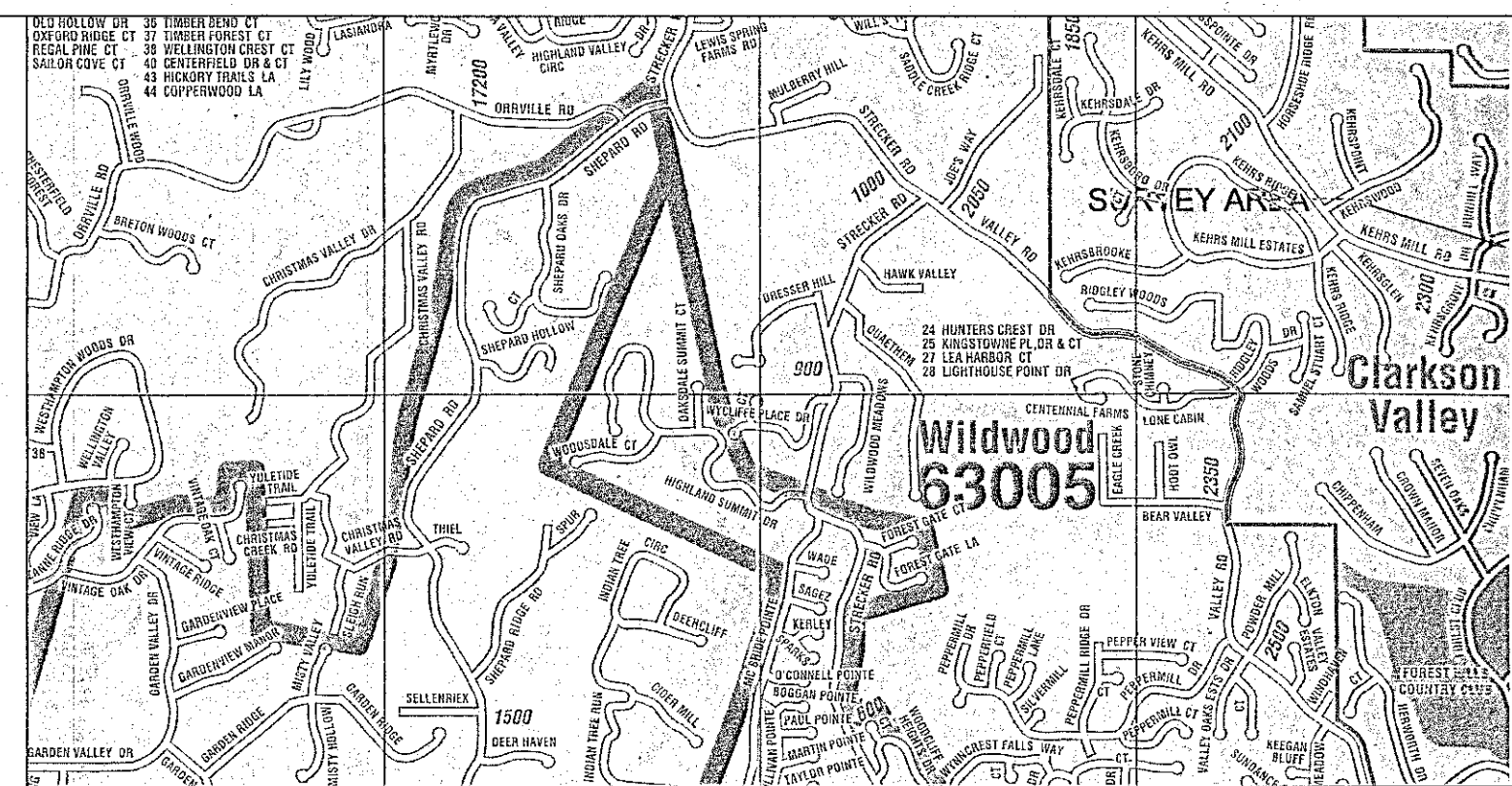
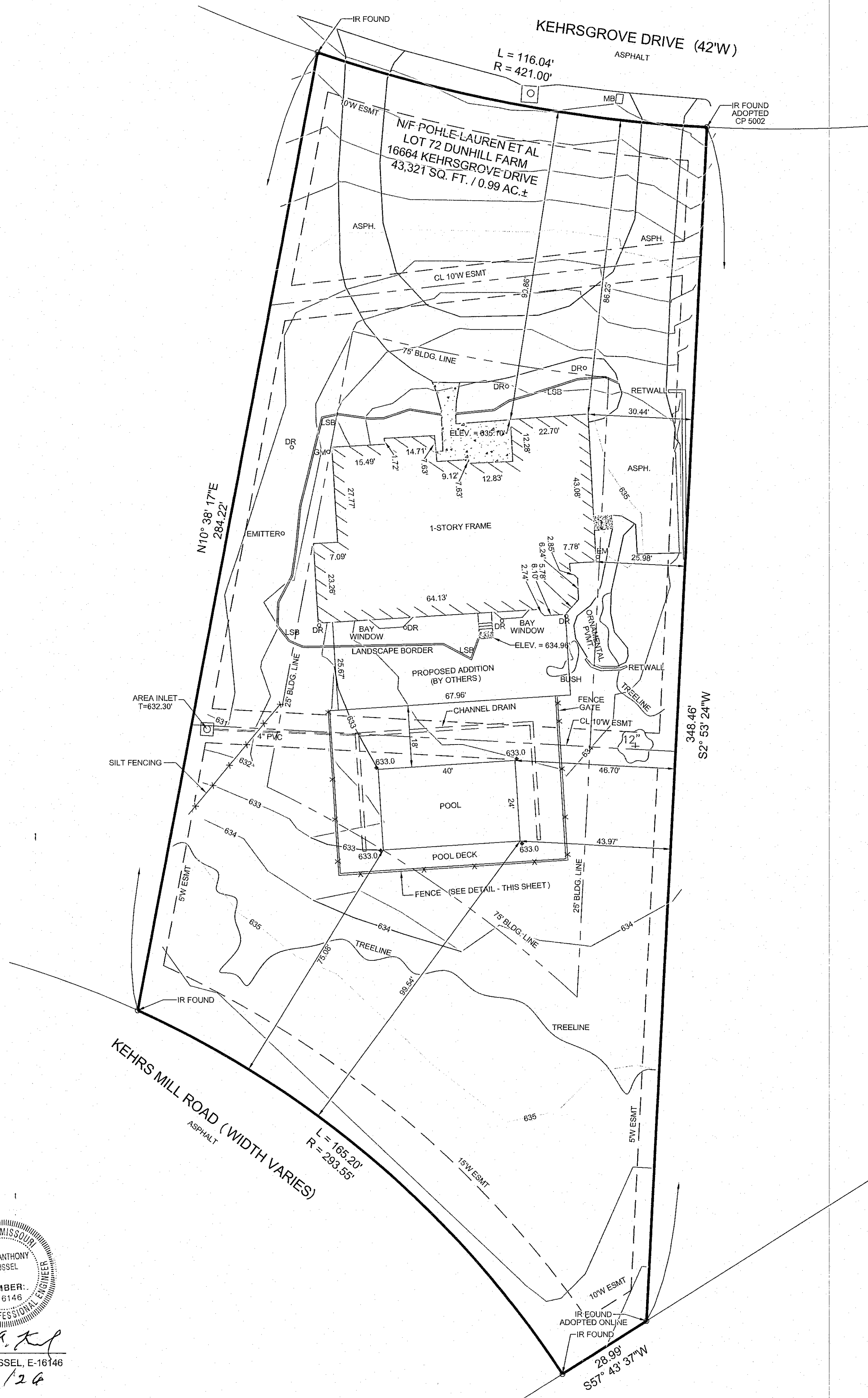
Underground facilities, structures & utilities have been plotted from available surveys, records & information, and therefore, do not necessarily reflect the actual existence, nonexistence, size, type, number of, or location of these facilities, structures, & utilities. The Contractor shall be responsible for verifying the actual location of all underground facilities, structures, & utilities, either shown or not shown on these plans. The underground facilities, structures, & utilities shall be located in the field prior to any grading, excavation or construction of improvements. These provisions shall in no way absolve any party from complying with the Underground Facility Safety and Damage Prevention Act, Chapter 319, RSMO.



SITE PLAN

16664 KEHRSGROVE DRIVE

LOT 72 OF DUNHILL (P.B. 264 P. 16)
SEC. 20, T. 45 N., R. 4 E., CITY OF CLARKSON VALLEY, ST. LOUIS COUNTY, MISSOURI



LOCATION MAP
NOT TO SCALE

LEGAL DESCRIPTION: 16664 KEHRSGROVE DRIVE

LOT 72 OF DUNHILL FARM, A SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 264 PAGE 16 OF THE ST. LOUIS COUNTY MISSOURI RECORDER OF DEEDS OFFICE.

SITE BENCHMARK:

"CP 5002" ELEV. = 625.65'

A FOUND IRON ROD LOCATED AT THE NE CORNER OF LOT 72.

LOCAL BENCHMARK:

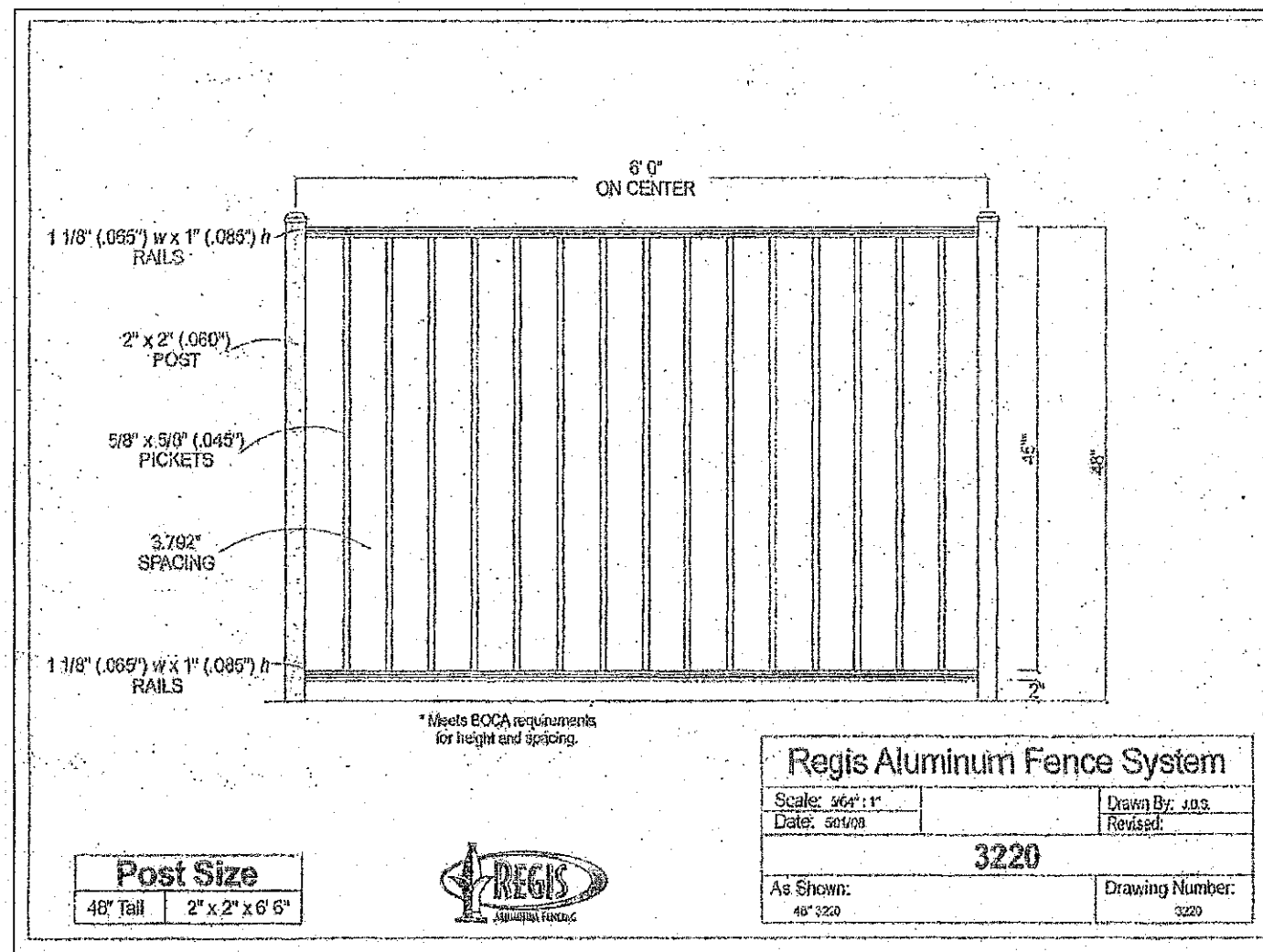
"SL-36" ELEV. = 656.50'

A STANDARD MO DNR BENCHMARK LOCATED ON THE NORTH OF BENT TREE DRIVE AND EAST OF WILSON AVENUE.

GENERAL NOTES:

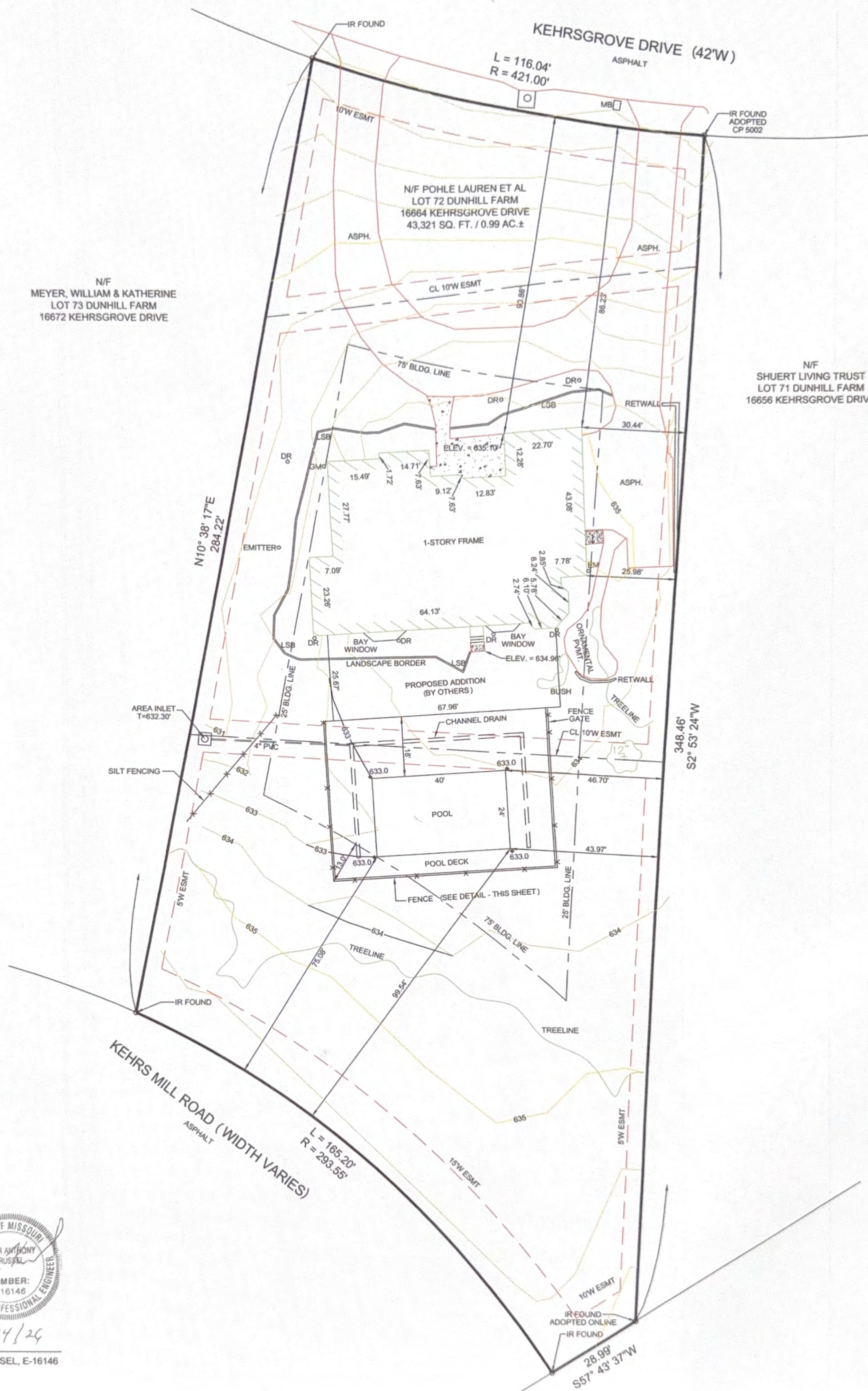
CONSTRUCTION OF SWIMMING POOL AND POOL DECK SHALL BE COORDINATED WITH HOME ADDITION CONSTRUCTION.

A LAND DISTURBANCE PERMIT FROM THE CITY OF CLARKSON VALLEY WILL BE REQUIRED.



SWIMMING POOL SITE PLAN				
For: NELSON LAND SERVICES KAYLA PETERSON 1414 BRYAN ROAD O'FALLON, MISSOURI 63366				
E. KRUSSEL, LLC 35 THOREAU COURT O'FALLON, MO. 63366 636-544-1691				
REV.	DATE	DESCRIPTION	BY	CHKD
	8-06-2026	ORDER NO. 11556		
		DATE 8-06-2026		
		DRAWN JEW		
		CHECKED EAK		

LOT 72 OF DUNHILL (P.B. 264 P. 16)
SEC. 20, T. 45 N., R. 4 E., CITY OF CLARKSON VALLEY, ST. LOUIS COUNTY, MISSOURI



8/14/24

ELMER A KRUSSEL, E-16146

Pohle Project



8/27/2026, 4:02:46 PM

Parcels

Streets 1.2K

Secondary

Parcel Data

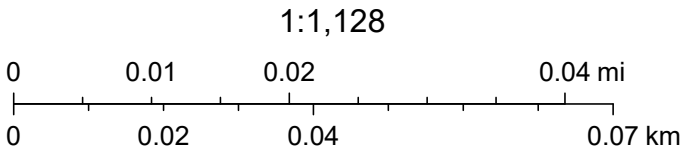
Parcel Address

Aerials2024Cache

Red: Band_1

Green: Band_2

Blue: Band_3

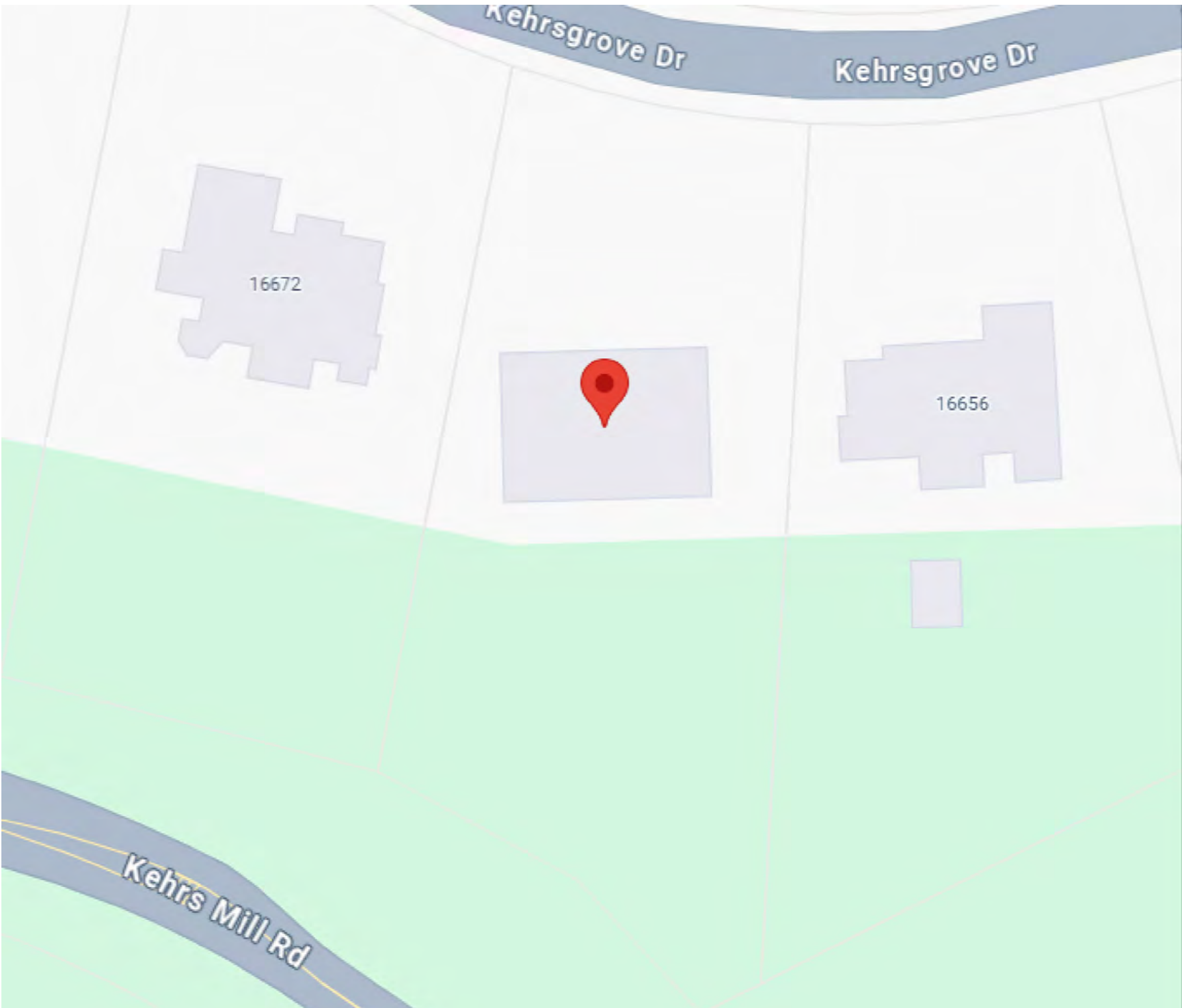


St. Louis County GIS Service Center, County of St. Louis, Missouri Dept. of Conservation, MSDIS, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA

NELSON LAND SERVICE
16664 KEHRSGROVE DR CHESTERGIELD MO



1 VICINITY MAP



2 SITE MAP

APPLICABLE CODES

THIS WORK SHALL CONFORM TO THE FOLLOWING CODES IN EFFECT BUT NOT LIMITED TO THE FOLLOWING:

2021 International Building Code	(IBC)
2021 International Residential Code	(IRC)
2020 National Electrical Code	(NEC)
2021 Uniform Plumbing Code	(UPC)
2021 International Swimming Pool & Spa Code	(ISPS)

THIS NOTE APPLIES TO ALL SHEETS

THE PROFESSIONAL ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS AND DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHER'S FAILURE TO OBTAIN AND OR/ FOLLOW THE PROFESSIONAL ENGINEER GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES, OR CONFLICTS WHICH ARE ALLEGED. BUILDINGS SHALL BE CONSTRUCTED IN FULL CONFORMANCE WITH ALL APPLICABLE CODES AND RESTRICTIONS. PROFESSIONAL ENGINEER SHALL BE NOTIFIED PRIOR TO CONSTRUCTION IN THE EVENT OF CODE REVISION AND/OR CHANGES.

GENERAL NOTES:

- ALL CONTRACTORS SHALL OBSERVE ALL REGULATIONS IMPOSED BY THE APPROPRIATE GOVERNING BODIES, AND ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE BUILDING CODES, ACCIDENT AND FIRE PREVENTION REGULATIONS. ALL MATERIALS, EQUIPMENT, WORKMANSHIP, WORKING CONDITIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE LATEST APPLICABLE SECTIONS OF LOCAL, MUNICIPAL, CITY, STATE & FEDERAL CODES, ORDINANCES, & STANDARDS.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS PRIOR TO STARTING ANY CONSTRUCTION AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES AT THE BUILDING SITE.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS SHOWN ON THE DRAWINGS & CONSTRUCT ALL NEW WORK IN A NEAT & APPROVED MANNER.
- THE CONTRACTOR SHALL ESTABLISH AND VERIFY ALL OPENINGS & INSERTS FOR MECHANICAL AND ELECTRICAL WORK AS REQUIRED FOR THEIR INSTALLATION AND PER DRAWINGS (IF APPLICABLE).
- THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY BRACING, SHORING, GUYING, OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD STRUCTURAL ELEMENTS IN PLACE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY AND SECURITY IN & AROUND THE JOB SITE DURING CONSTRUCTION.
- THE CONTRACTOR SHALL SUBMIT / FILE FOR, PAY & SECURE ALL APPROVALS, BUILDING PERMITS, FIRE PERMITS, TEST, AND CERTIFICATES OF COMPLIANCE & OCCUPANCY.
- THE DIMENSIONS ON THESE DRAWINGS IN ALL CASES SUPERSEDE SCALE. CONTRACTOR IS NOT TO SCALE DRAWINGS. ALL DIMENSIONING IS TO FINISH FACE OF CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RUBBISH SWEEP UP & REMOVED. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL LEAVE WORK IN A FINISHED CONDITION.
- IT WILL BE THE DUTY OF THE CONTRACTORS TO COMMUNICATE IMMEDIATELY WITH EACH OTHER IN ORDER TO SCHEDULE WORK, STORAGE AREAS, ETC. IN AN APPROVED MANNER AND WITHIN THE TIME SPECIFIED.

POOL LEGEND/SYMBOLS

----	=	FILTERED RETURN		=	2 WAY SUCTION VALVE
----	=	FEATURE RETURN		=	3 WAY SUCTION VALVE
----	=	SKIMMER SUCTION		=	GATE VALVE
----	=	MAIN DRAIN SUCTION		=	BALL VALVE
----	=	ELEVATION CHANGE		=	CHECK VALVE
----	=	REBAR		=	BUTTERFLY VALVE
----	=	POOL FOOTPRINT		=	STRAINER
-----	=	TILE EDGE		=	CHLORINATOR
-----	=	WATER EDGE		=	POOL PUMP
♀	=	FLOW METER		=	HEATER
♀	=	PRESSURE GAUGE		=	FILTER
♂	=	CHEMICAL INLET		=	SKIMMER
☑	=	BF PREVENTOR		=	POOL INLET
AFS	=	AUTOFILL SENSOR		=	MAIN DRAIN
C	=	CONTROLLER		=	POOL LIGHT
◀	=	FLOW DIRECTION			
☑	=	SOLENOID VALVE			
☑	=	FILTER MULTIPOINT VALVE			

SHEET LIST

SHEET NO.	TITLE
SP-0.0	SWIMMING POOL NOTES
SP-1.0	POOL LAYOUT
SP-1.1	POOL SECTIONS
SP-2.0	CIRCULATION PLAN
SP-3.0	DETAILS
SP-4.0	ELECTRICAL DETAILS



PROFESSIONAL SEAL
STATE OF MISSOURI
ILDEFONSO GONZALEZ-ARTIGAS
NUMBER 161234
05/22/26
PROFESSIONAL ENGINEER
DOTec Professional Corp.
118 N 2nd Street
St. Charles, MO 63301
Ph: 636-724-9872
Fx: 636-724-9032
WWW.DOTECENGINEERING.COM
ADMIN@DOTECENGINEERING.COM

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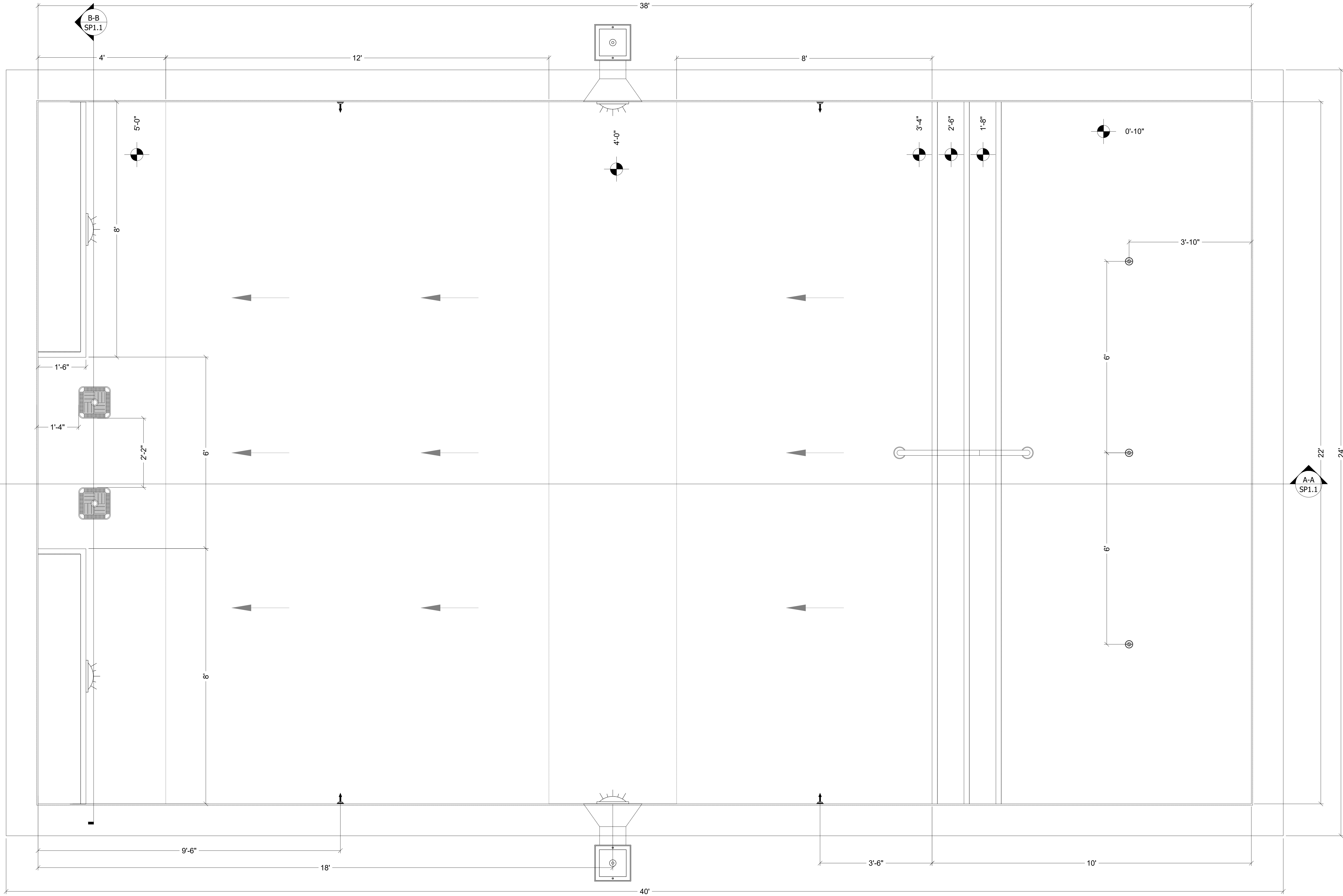
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PROJECT: 16664 KEHRSGROVE DR CHESTERFIELD MO 63005
CLIENT: NELSON LAND SERVICE

DATE: 5/22/26
SHEET NAME:

NOTES

SHEET NUMBER: SP0.0
PROJECT NUMBER: 2605122
DRAWN BY: KMS
CHECKED BY: ALG
SCALE: VARIES



1 POOL LAYOUT

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



PROFESSIONAL SEAL
STATE OF MISSOURI
ILDEFONSO GONZALEZ-ARTIGAS
NUMBER
E-21224
05/22/2026
PROFESSIONAL ENGINEER

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PROJECT: 16664 KEHRSGROVE
DR CHESTERFIELD
MO 63005
CLIENT: NELSON LAND
SERVICE

DATE: 5/22/26
SHEET NAME:

POOL LAYOUT

SHEET NUMBER:
SP1.0

PROJECT NUMBER: 2605122
DRAWN BY: KMS
CHECKED BY: ALG
SCALE: VARIES



PROFESSIONAL SEAL



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PROJECT: 16664 KEHRSGROVE DR
CHESTERFIELD MO
63005
CLIENT: NELSON LAND
SERVICE

DATE: 5/22/26

SHEET NAME:

POOL SECTIONS

SHEET NUMBER:

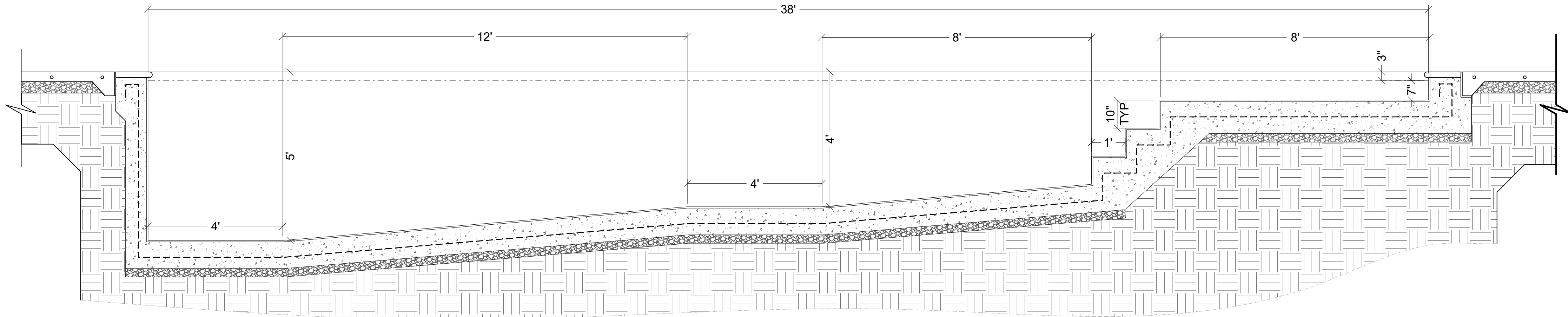
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PROJECT NUMBER: 2605122

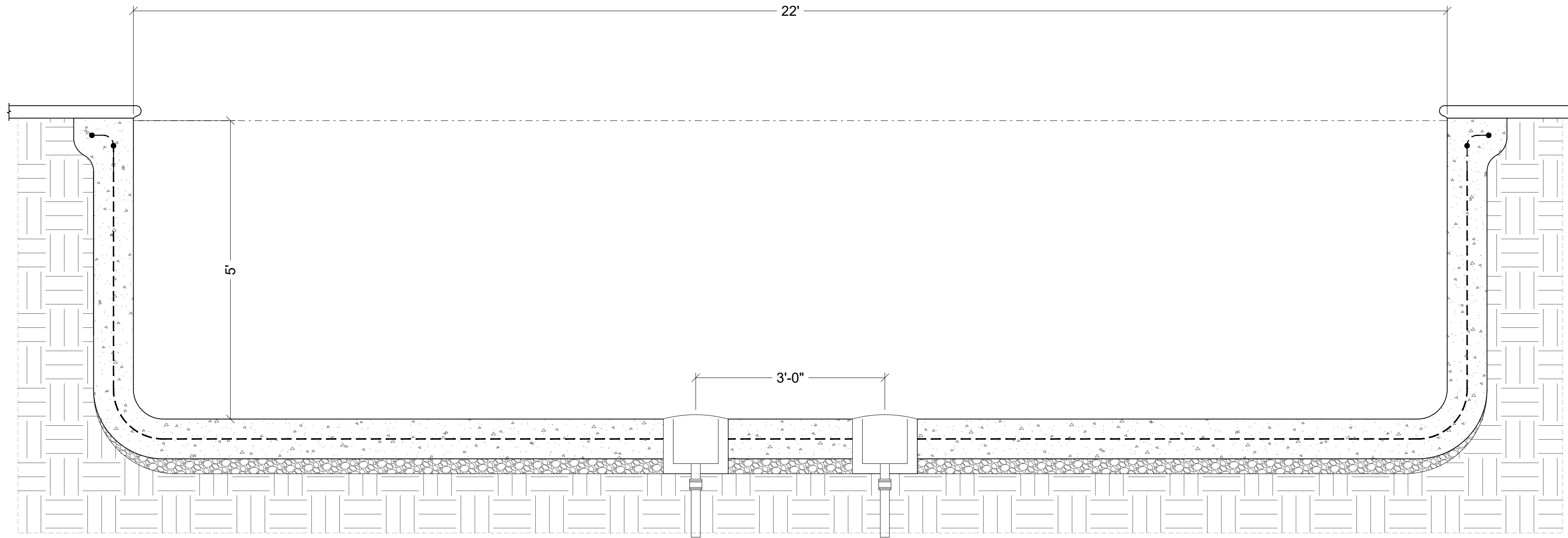
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SCALE: VARIES



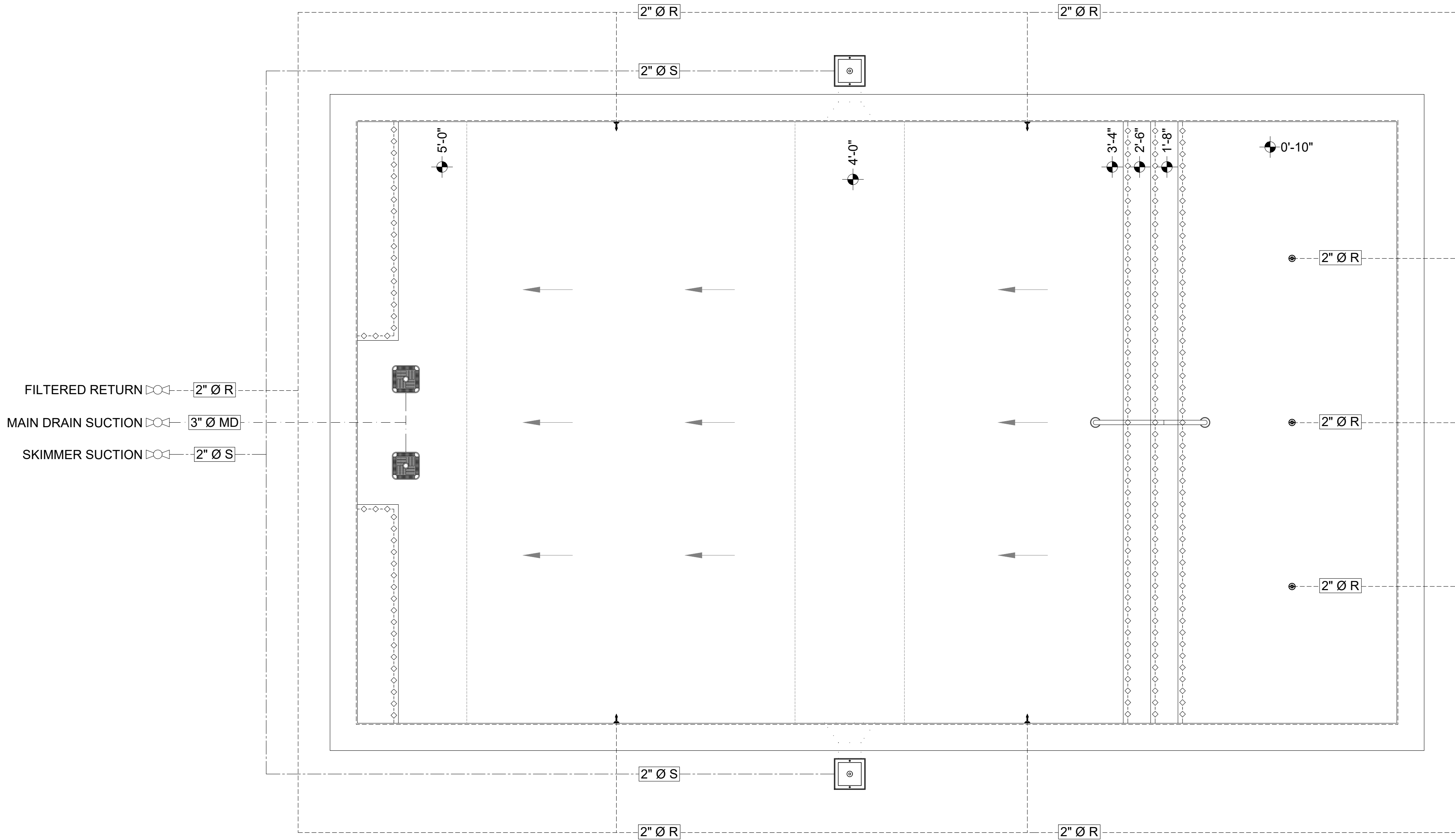
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1 SECTION A-A

2 SECTION B-B



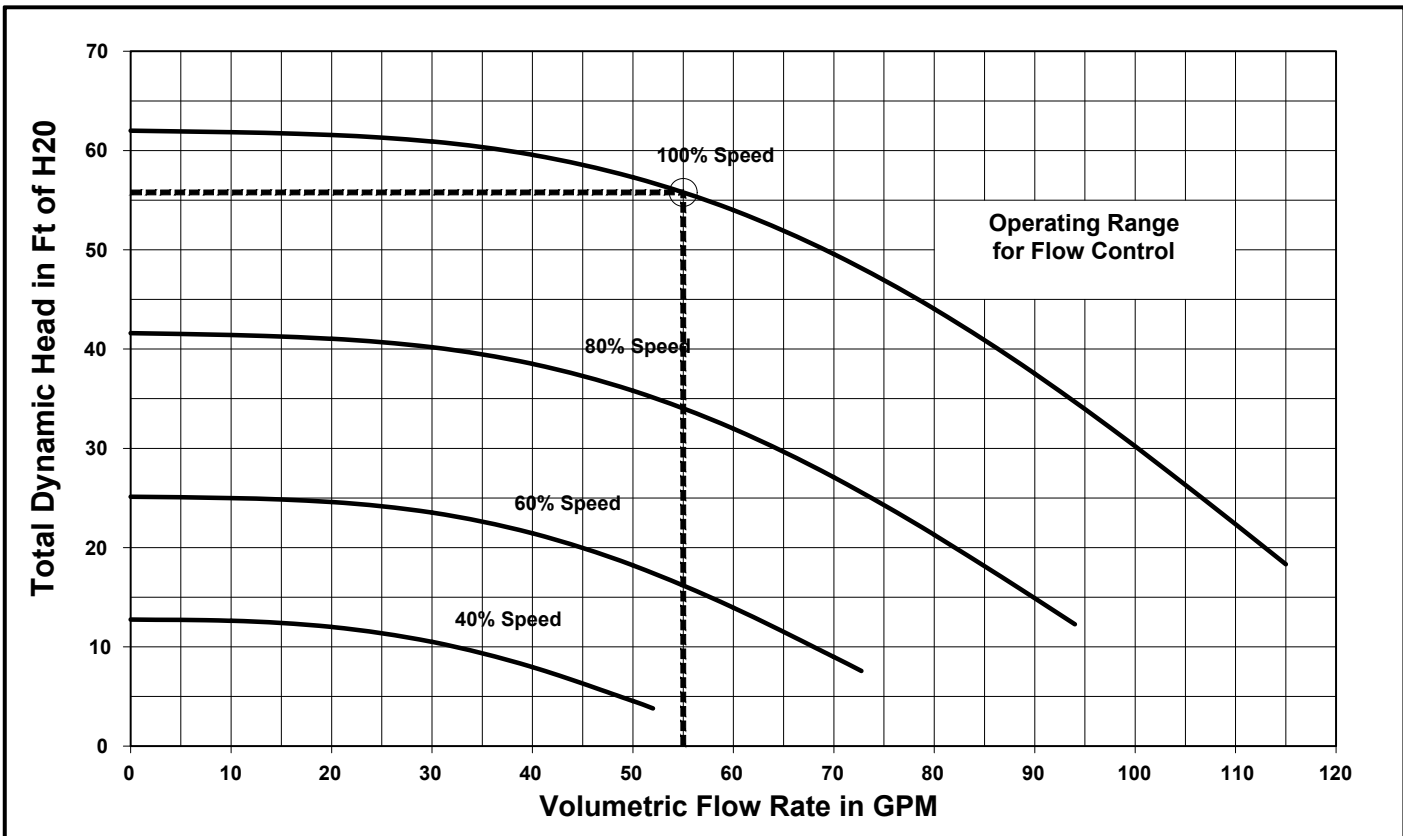
POOL LEGEND/SYMBOLS

---	= FILTERED RETURN		= 2 WAY SUCTION VALVE
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- - -	= REBAR		= BUTTERFLY VALVE
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---	= WATER EDGE		= POOL PUMP
	= FLOW METER		= HEATER
	= PRESSURE GAUGE		= FILTER
	= CHEMICAL INLET		= SKIMMER
	= BF PREVENTOR		= POOL INLET
	= AUTOFILL SENSOR		= MAIN DRAIN
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	= FILTER MULTIPORT VALVE		

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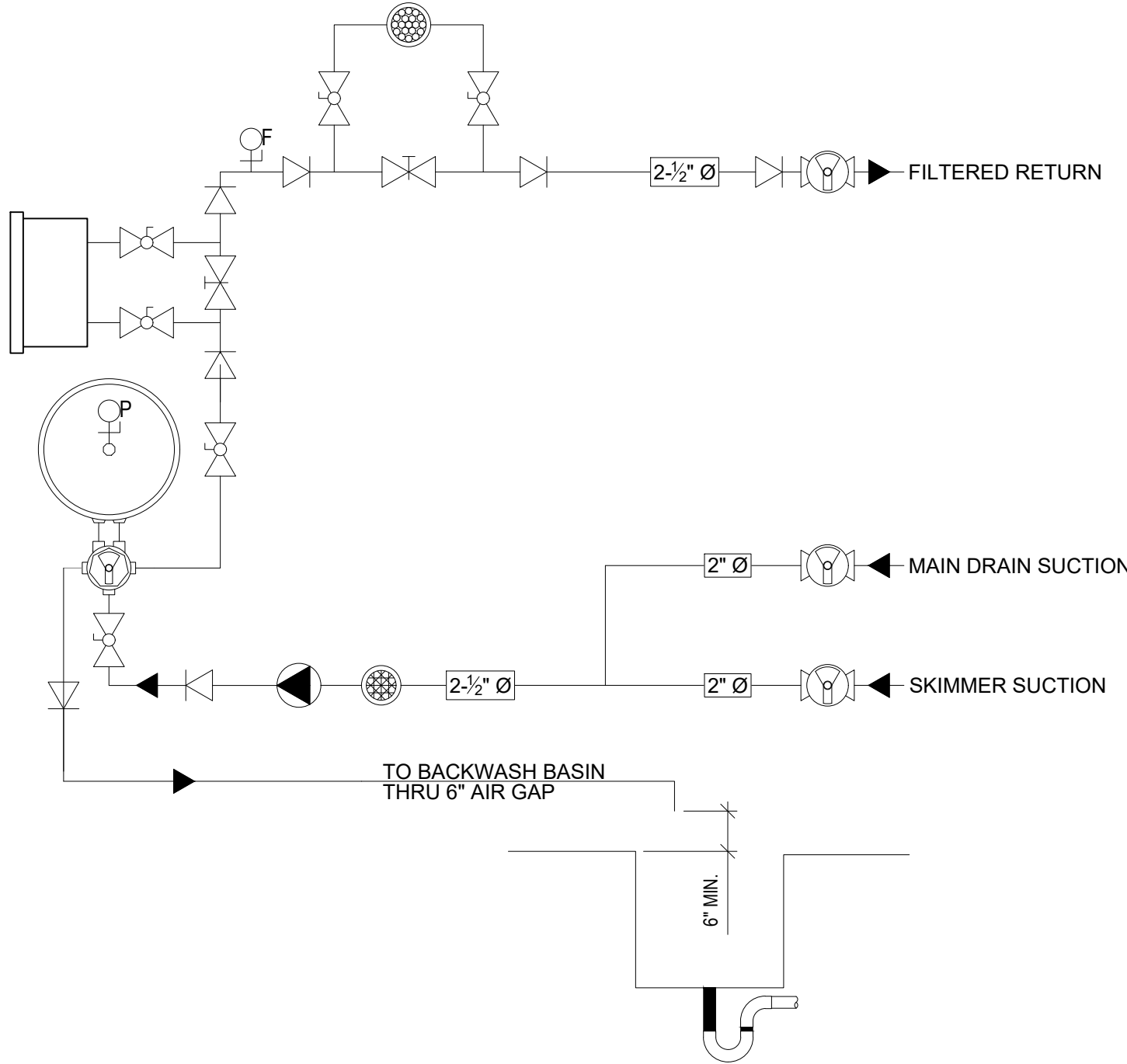
Pump Performance Curves (1.5 HP Models)



POOL EQUIPMENT		
EQUIPMENT	MODEL #	QTY
CIRCULATION PUMP	PENTAIR INTELLIFLO3 1.5HP	1
FILTERS	PENTAIR TR100	1
HEATER	PENTAIR ULTRATEMP ETi /Master Temp 400	1
CHEMICAL FEEDER	PENTAIR RAINBOW	1
SKIMMERS	AQUSTAR FLOW STAR SKR201	2
MAIN DRAIN	HAYWARD 12" MAIN DRAIN	2
INLETS	AQUASTAR 3/4" #8201	4

POOL DESIGN DATA	
VOLUME	20000 GAL
PERIMETER	120 LF
WATER SURFACE AREA	836 SF
MAXIMUM DEPTH	5'
REQUIRED T/O RATE @ 6 HOURS	56 GPM
PROVIDED T/O RATE @ 6 HOURS	60 GPM
REQUIRED FILTER SURFACE AREA	3.7 SF
PROVIDED FILTER SURFACE AREA	4.91 SF

- GENERAL POOL NOTES:
- ALL POOL PIPING SHALL BE SCHEDULE 40 PIPE. ALL OTHER PIPING SHALL MATCH EXISTING PIPE TYPE
 - PIPING SHOWN IS DIAGRAMMATICAL - COORDINATE WITH MECHANICAL AND ELECTRICAL FOR POOL PIPING TO OVERCOME ANY CONFLICTS. ADJUST EQUIPMENT AS NECESSARY TO ALLOW FOR MANUFACTURER'S CLEARANCES AND SERVICEABILITY
 - DANGEROUS CHEMICALS MUST BE STORED ABOVE THE DFE.
 - INSTALL ALL POOL EQUIPMENT PER MANUFACTURER RECOMMENDATIONS.
 - COORDINATE WITH ALL SITE CONDITIONS (UTILITIES, CONSTRUCTION, OBSTRUCTIONS, ETC.) PRIOR TO POOL PIPING INSTALLATION
 - FLOW MEASURING DEVICE MUST BE NSF STANDARD 50, NSF STANDARD 60, OR NSF STANDARD 61 LOCATED TO SHOW THE RATE OF FLOW THROUGH THE FILTER. MUST INDICATE A GPM, AND NEEDS TO BE ACCURATE WITHIN +/-10 PERCENT OF ACTUAL FLOW
 - DESIGN AND DRAWINGS ON THIS SET ARE STAMPED FOR POOL DESIGN & FILTRATION ONLY.



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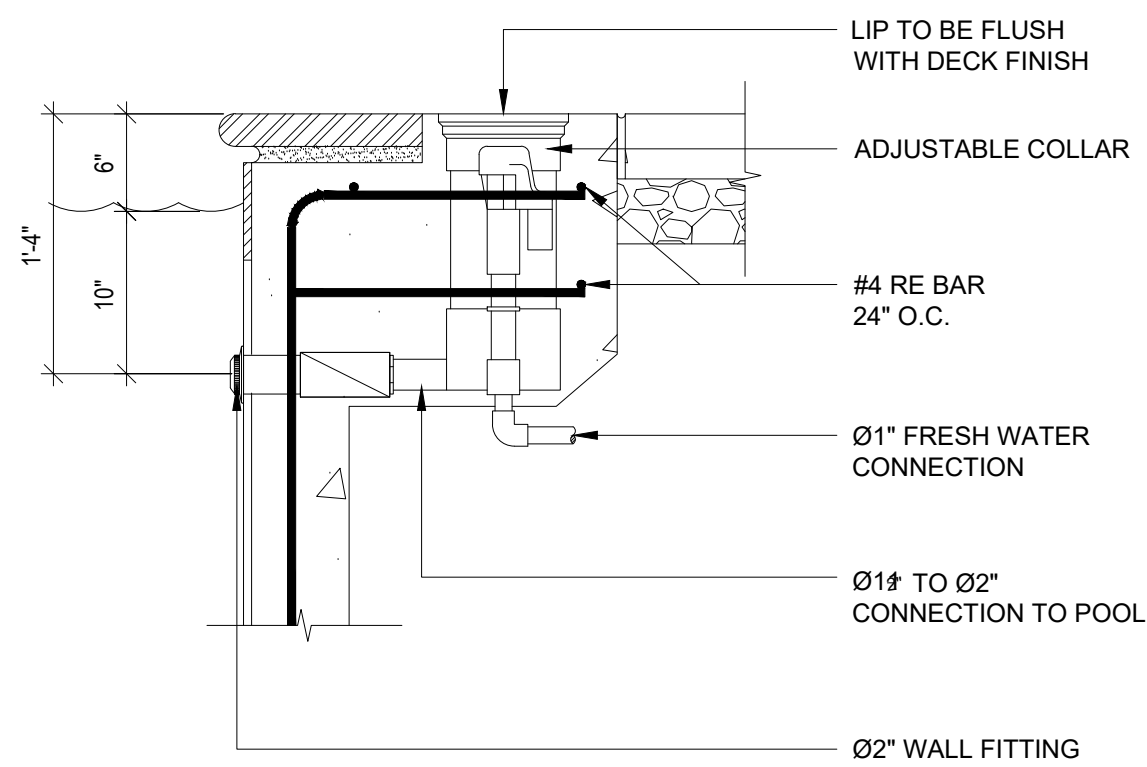
PROJECT: 16664 KEHRSGROVE
DR CHESTERFIELD
MO 63005
CLIENT: NELSON LAND
SERVICE

DATE: 5/22/26
SHEET NAME:

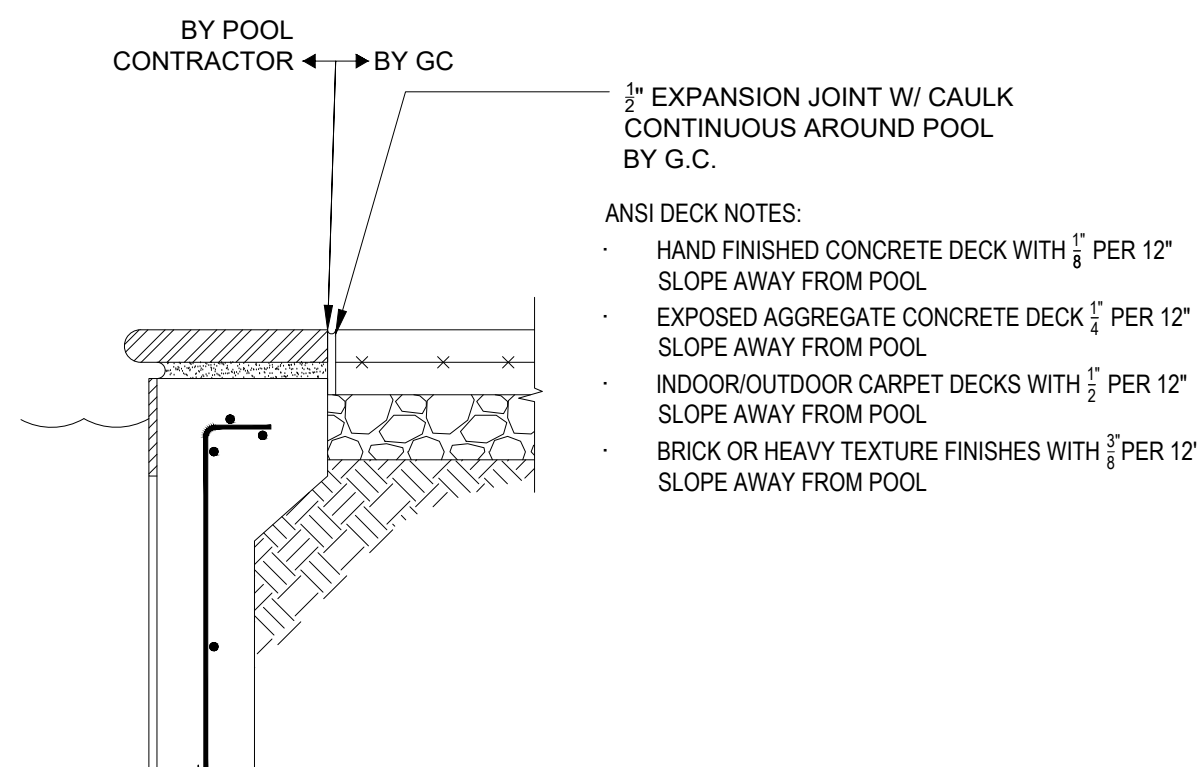
CIRCULATION PLAN

SHEET NUMBER:
SP2.0

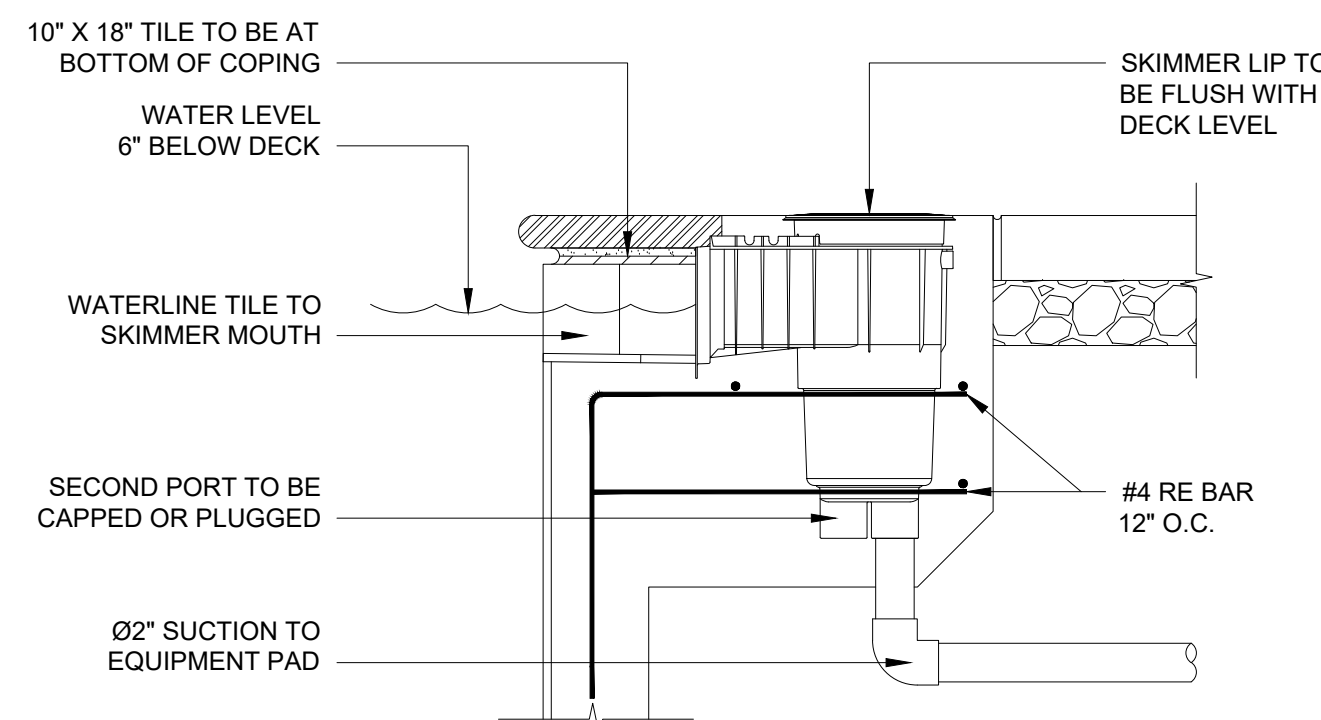
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DRAWN BY: KMS
CHECKED BY: ALG
SCALE: VARIES



Scale: NTS

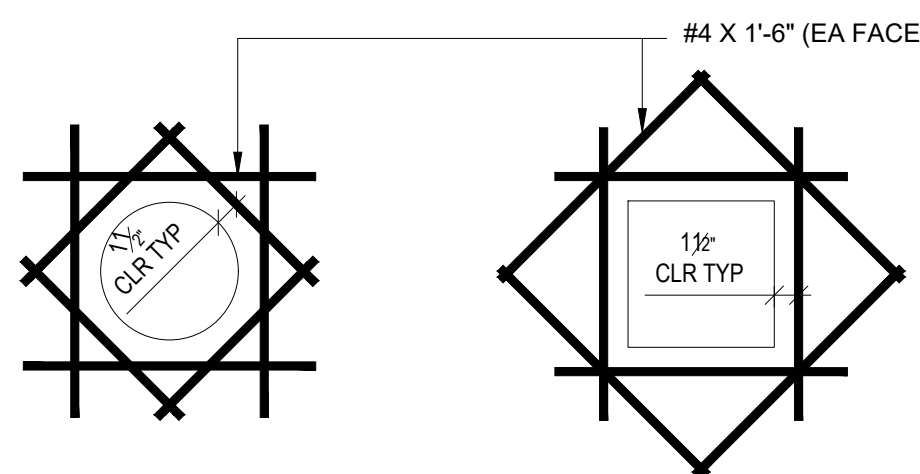


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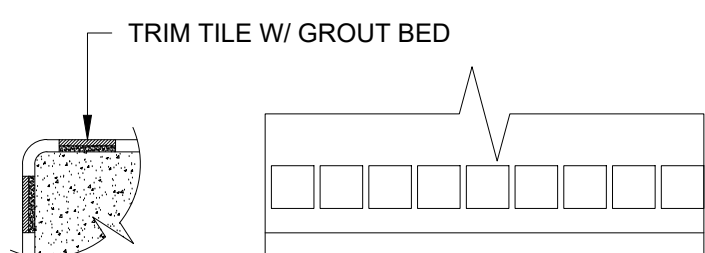


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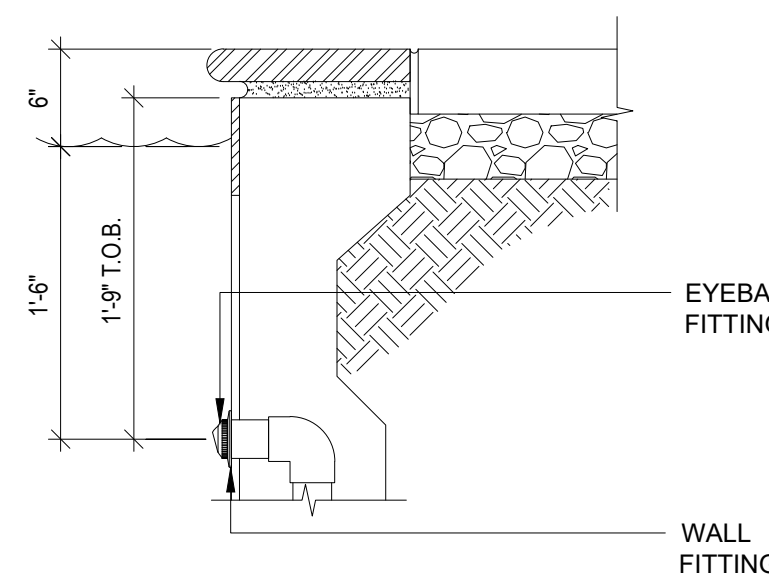
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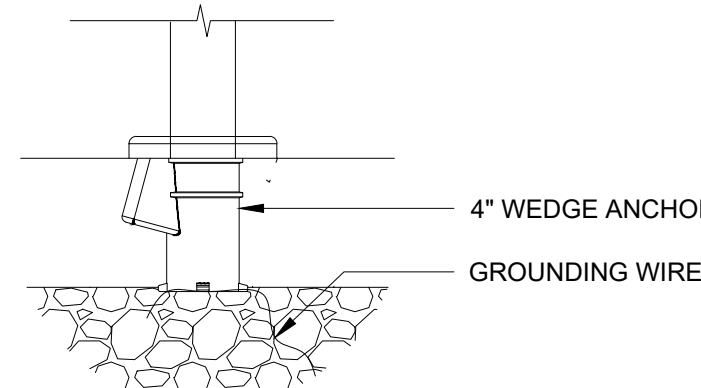
NOTE:

- TRIM TILE TO OCCUR AT ALL STEPS AND BENCHES
- TRIM TILE TO BE CONTRASTING COLOR TO PLASTER

Scale: NTS

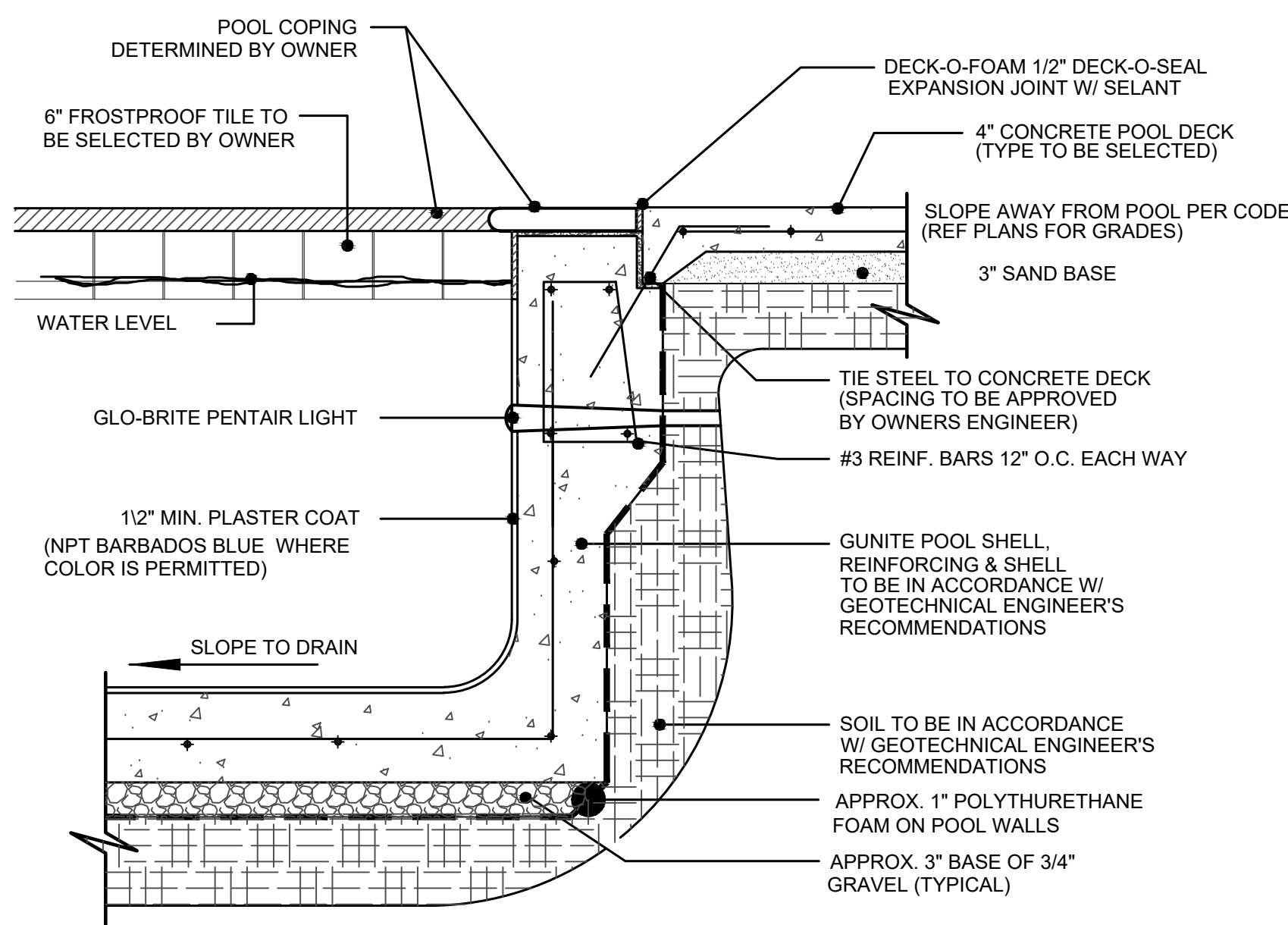


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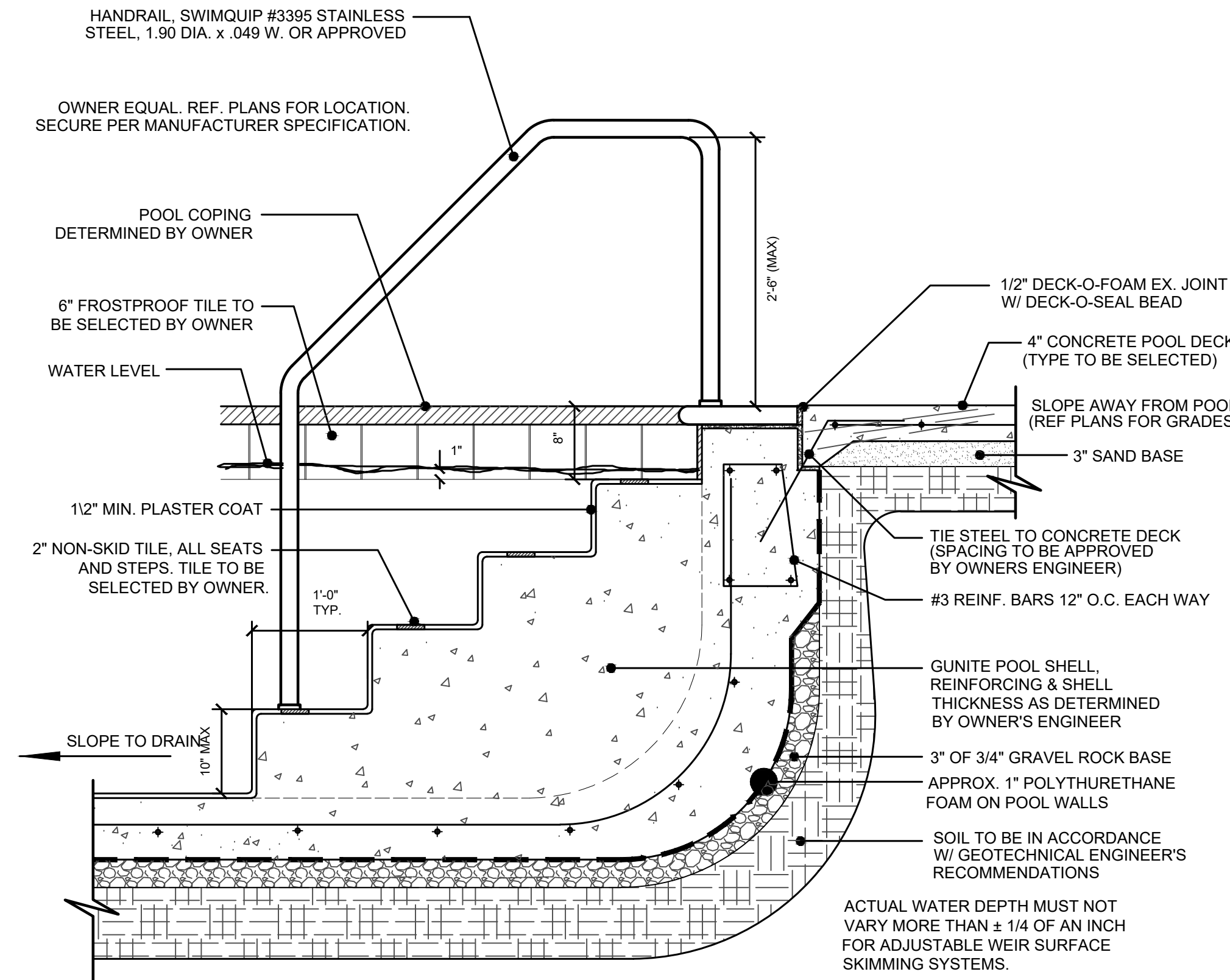


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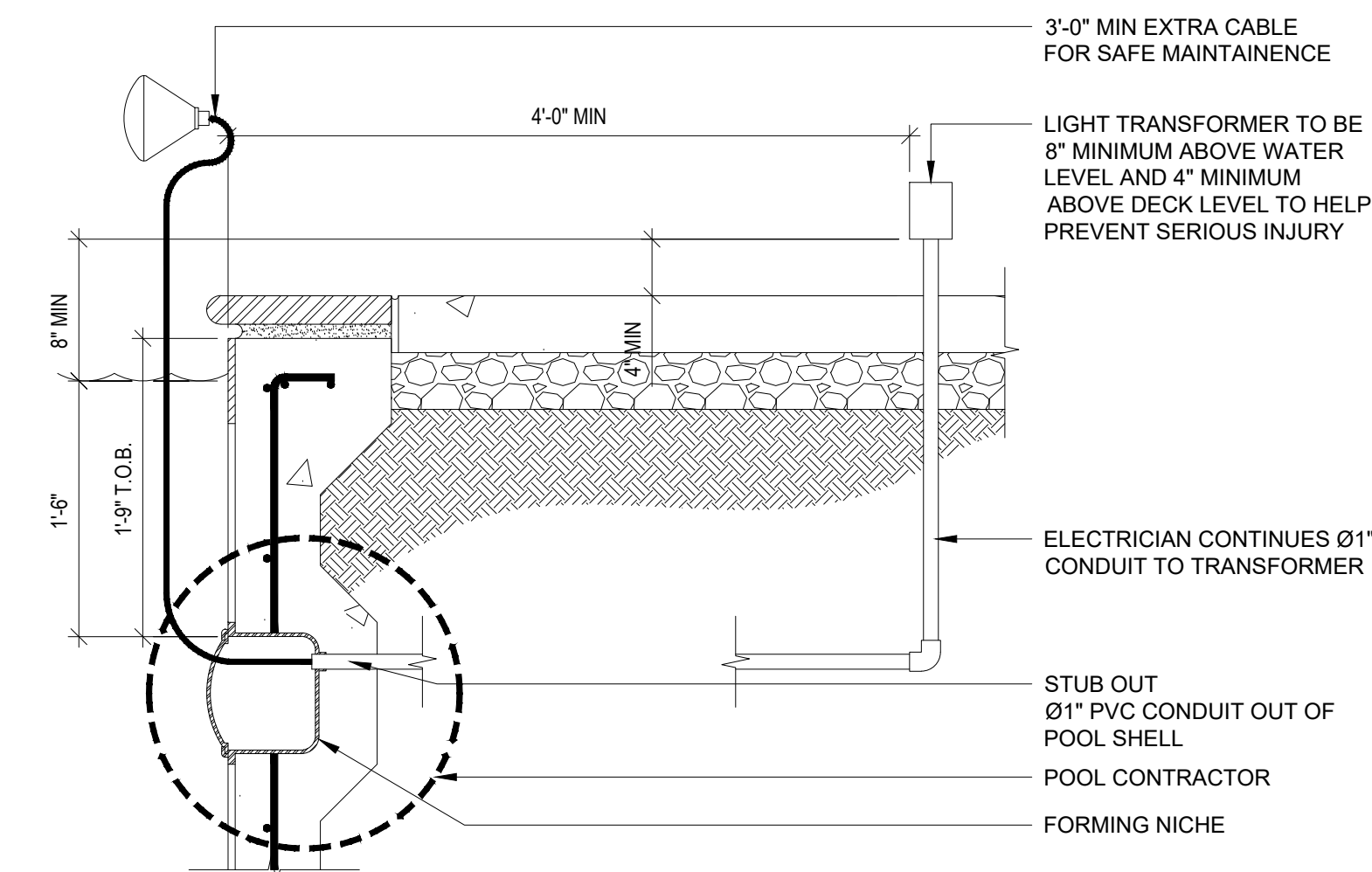
ACTUAL WATER DEPTH MUST NOT VARY MORE THAN $\pm \frac{1}{4}$
OF AN INCH FOR ADJUSTABLE WEIR SURFACE SKIMMING SYSTEMS



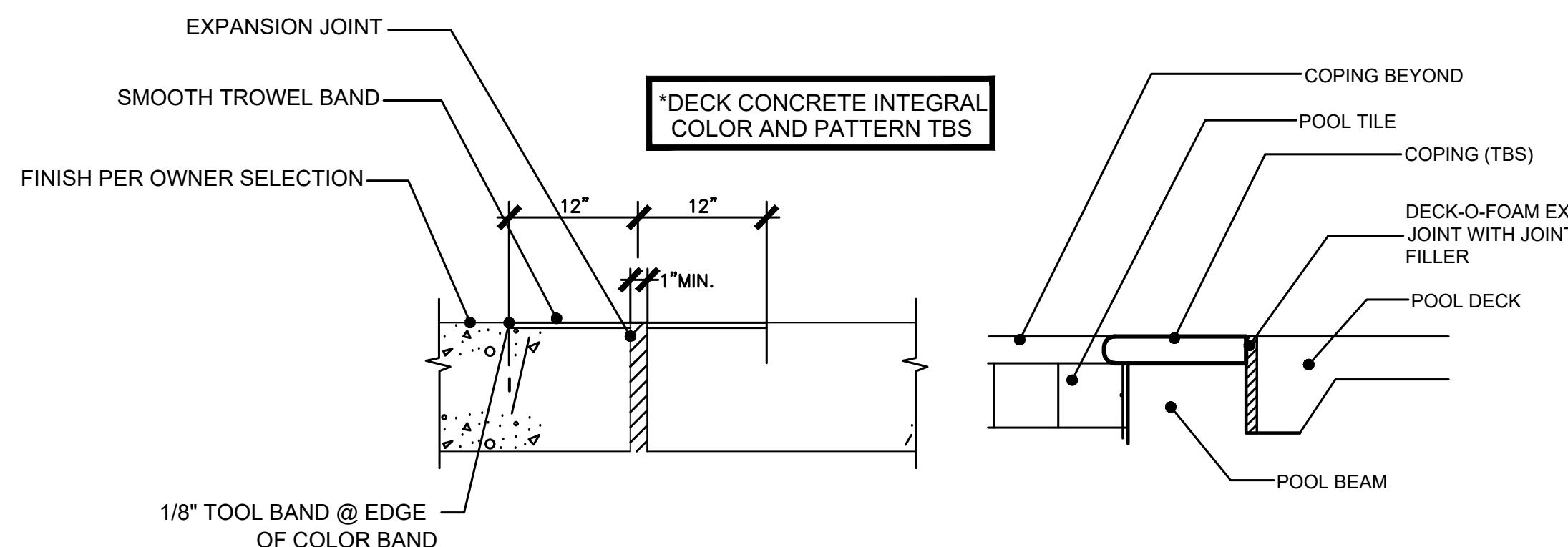
Scale: NTS



Scale: NTS



Scale: NT9



Scale: NTS



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PROJECT: 16664 KEHRSGROVE DR
CHESTERFIELD MO
63005

CLIENT: NELSON LAND
SERVICE

SHEET NAME:

DETAILS

SHEET NUMBER

SP3.0

PROJECT NUMBER: 2605122

DRAWN BY: KMS

CHECKED BY:	ALG
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SCALE:	VARI
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ELECTRICAL SPECIFICATIONS

PART 1 -GENERAL

1.01 RELATED DOCUMENTS:
THE GENERAL DOCUMENTS APPLY TO WORK SPECIFIED IN THIS SECTION;
CONSULT THEM IN DETAIL FOR APPLICABLE INSTRUCTIONS.

1.02 WORK INCLUDED:
PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE ALL
WORK OF THIS SECTION. WITHOUT RESTRICTING THE GENERALITY OF THE
FOREGOING, THE FOLLOWING ITEMS OF WORK ARE INCLUDED:

- A. PERMITS AND FEES
- B. TEMPORARY POWER AND LIGHT
- C. SERVICE PROVISIONS AND METERING
- D. PANELBOARDS
- E. TELEPHONE PROVISIONS
- F. RACEWAYS
- G. BOXES
- H. WIRING
- I. GROUNDING
- J. LIGHTING FIXTURES AND LAMPS
- K. WIRING DEVICES AND PLATES
- L. CONNECTIONS TO EQUIPMENT
- M. DIRECTORIES AND NAMEPLATES
- N. TESTING
- O. CLEANING AND REMOVAL OF RUBBISH
- P. SUBMITTALS

1.03 RELATED WORK OF OTHER SECTIONS

- A. CONCRETE AND MASONRY
- B. PAINTING

1.04 QUALITY ASSURANCE

- A. USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS NEEDED FOR THE PROPER PERFORMANCE OF THE WORK OF THIS SECTION.
- B. ALL WORK SHALL BE OF THE HIGHEST QUALITY IN CONFORMANCE WITH THE BEST PRACTICES OF THE TRADE AND IN COMPLIANCE WITH ALL GOVERNING CODES

1.05 CODES, PERMITS, FEES, AND REGULATIONS

- A. ALL WORK SHALL BE CARRIED OUT IN CONFORMITY WITH THE RULES AND REGULATIONS OF THE NATIONAL ELECTRICAL CODE, AS ADOPTED BY THE VARIOUS LOCAL AGENCIES HAVING JURISDICTION.
- B. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS AND PAY ALL GOVERNMENTAL TAXES, FEES, DEPOSITS AND OTHER COSTS IN CONNECTION WITH HIS WORK; FILE ALL NECESSARY PLANS, PREPARE ALL DOCUMENTS AND OBTAIN NECESSARY APPROVALS OF ALL AGENCIES BEFORE REQUEST FOR ACCEPTANCE AND FINAL PAYMENT FOR THE WORK.

1.06 STORAGE OF MATERIALS

- A. STORE MATERIALS AND EQUIPMENT ON THE PREMISES WHERE DIRECTED BY THE OWNER.

1.07 OTHER TRADES

- A. BIDDERS SHALL EXAMINE THE SIZE AND THE COMPLETE SET OF PLANS AND SPECIFICATIONS COVERING THE ENTIRE PROJECT. THEY SHALL BECOME FULLY CONVERSANT WITH THE TYPE OF GENERAL CONSTRUCTION AS WELL AS ALL PERTINENT FACTS AFFECTING THE COST OF CARRYING OUT THE WORK THEY WILL CONTRACT TO PERFORM.
- B. THE CONTRACTOR SHALL COOPERATE TO THE FULLEST WITH ALL OTHER TRADES. HE SHALL PLAN HIS WORK IN SUCH A WAY, AND FURNISH ALL NECESSARY EQUIPMENT AND INFORMATION TO THE OTHER TRADES SO AS NOT TO DELAY ANY OTHER TRADE OR HINDER THE PROGRESS OF THE WORK.

1.08 SUBMITTALS

- A. SUBMIT MANUFACTURER'S TECHNICAL PRODUCT DATA LITERATURE FOR ALL MATERIALS SPECIFIED HEREIN. INDICATE AND HIGHLIGHT ON THE SUBMITTALS DETAILS OF ALL ITEMS TO INDICATE CORRECT INTERPRETATION OF THE CONTRACT DOCUMENTS. INCLUDE SUBMITTALS FOR THE FOLLOWING:
 - 1. LIGHTING FIXTURES
 - 2. WIRING DEVICES

1.09 CONFLICTS

- A. ANY CONTRADICTIONS BETWEEN THE WRITTEN SPECIFICATIONS AND DRAWINGS SHALL BE CONSIDERED AMBIGUOUS, AND WILL BE THE RESPONSIBILITY OF THE BIDDER TO SECURE CLARIFICATION PRIOR TO BIDDING.

PART 2 - PRODUCTS

2.01 GENERAL

- A. ALL MATERIAL, EQUIPMENT, AND INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES:
 - 1. L&I CODE
 - 2. NATIONAL ELECTRICAL CODE
 - 3. INTERNATIONAL BUILDING CODE
 - 4. OSHA
 - 5. LOCAL JURISDICTIONAL CODES

2.03 PANELBOARDS

- A. INSTALL NEW PANELBOARDS AS DETAILED ON THE DRAWINGS COMPLETE WITH REQUIRED CIRCUIT BREAKERS.
- B. CIRCUIT BREAKERS SHALL BE: QUICK MAKE, QUICK BREAK, THERMAL MAGNETIC, TRIP INDICATION, AIC RATING, AMPACITY AS REQUIRED.
- C. DETAILS OF THE PANELBOARDS AND BRANCH CIRCUIT BREAKERS SHALL BE AS INDICATED ON THE DRAWING PANEL SCHEDULES.

2.04 LIGHTING

- A. THE CONTRACTOR SHALL PROVIDE ALL LIGHTING FIXTURES, POLES AND ACCESSORIES IN CONFORMANCE WITH THE FIXTURE SCHEDULE.
- B. FURNISH PHOTOCELL(S), TIME CLOCK(S), AND CONTACTOR(S) AS REQUIRED FOR SITE LIGHTING CONTROL.

2.05 WIRING DEVICES

- A. FURNISH AND INSTALL QUALITY DEVICES BEARING UL LABEL FOR THE SERVICE AND ELECTRICAL RATING WHERE USED.
- B. SWITCHES SHALL BE 20 AMPERE, 120/277 VOLT A.C. RATED AS SCHEDULED IN LEGEND.
- C. GFCI RECEPTACLES SHALL BE 20 AMPERE DUPLEX, UNLESS NOTED OTHERWISE.

2.06 RACEWAYS

- A. ALL BRANCH CIRCUIT WIRING SHALL BE IN RIGID GALVANIZED CONDUIT WHERE EXPOSED TO DAMAGE AND TO THE PUBLIC. E.M.T. MAY BE USED WITHIN BUILDING INTERIORS, UNLESS CONDUIT IS EXPOSED TO SEVERE DAMAGE.
- B. WHERE FLEXIBLE CONNECTIONS ARE NECESSARY PROVIDE F.M.C., NO LONGER THAN 6 FEET LONG. PROVIDE LIQUID-TIGHT F.M.C. IN WET LOCATIONS.
- C. ALL RACEWAYS SHALL BE 1/2" MINIMUM SIZE, UNLESS OTHERWISE NOTED.

2.07 OUTLET AND JUNCTION BOXES

- A. OUTLET BOXES FOR CEILING FIXTURES SHALL BE 4" OCTAGONAL GALVANIZED STEEL BOXES NOT LESS THAN 2-1/2" DEEP.
- B. CONCEALED OUTLET BOX(ES) FOR WALL-MOUNTED EQUIPMENT, SWITCH(ES), OR RECEPTACLE(S) SHALL BE A 4" SQUARE GALVANIZED STEEL BOX WITH RAISED COVER OF SUFFICIENT DEPTH TO ACCOMMODATE WALL SURFACE MATERIAL, UNLESS NOTED OTHERWISE.
- C. EXPOSED OUTLET BOX(ES) IN DRY LOCATIONS FOR EQUIPMENT, SWITCHES, OR RECEPTACLES SHALL BE A 4" SQUARE GALVANIZED STEEL BOX WITH GALVANIZED STEEL COVER, UNLESS NOTED OTHERWISE.

2.08 WIRES AND CABLES

- A. PROVIDE AND INSTALL ALL WIRING AND CABLE AS REQUIRED TO CONNECT ALL ELECTRICAL EQUIPMENT AND DEVICES INDICATED ON THE PLANS.
- B. ALL WIRES #10 AWG AND SMALLER SHALL BE SOLID COPPER, 75 DEGREE C, AND 600 VOLT INSULATION, TYPE THWN.
- C. ALL WIRES #8 AWG AND LARGER SHALL BE STRANDED COPPER, 75 DEGREE C, AND 600 VOLT INSULATION, TYPE THWN.
- D. LIGHTING FIXTURE WIRES SHALL NOT BE LESS THAN #14 AWG, SFF-2.
- E. CONTROL WIRING SHALL NOT BE LESS THAN #14 AWG, THWN.
- F. UNLESS INDICATED OTHERWISE ALL LIGHTING AND POWER CONDUCTORS SHALL BE #12 AWG, THWN.

PART 3 - EXECUTION

3.01 WORKMANSHIP

- A. ALL WORK SHALL BE INSTALLED: IN ACCORDANCE WITH NECA 1 IN STRICT ACCORDANCE WITH THE RESPECTIVE MANUFACTURER'S PUBLISHED INSTRUCTIONS.

3.02 TEMPORARY LIGHTING AND POWER

- A. FURNISH AND INSTALL TEMPORARY LIGHTING & POWER AS MAY BE REQUIRED BY ALL TRADES.

3.03 SUPPORTS

- A. PROVIDE ALL MATERIALS AND LABOR REQUIRED TO ADEQUATELY SUPPORT AND BRACE EQUIPMENT AND FIXTURES FURNISHED AS PART OF THIS WORK.
- B. ALL RACEWAYS, BOXES, ETC., SHALL BE SUPPORTED DIRECTLY FROM THE STRUCTURE, INDEPENDENT OF DUCT, PIPING OR OTHER WORK.
- C. ALL CONDUITS SHALL BE SECURELY AND INDEPENDENTLY SUPPORTED SO THAT NO TENSION WILL BE TRANSMITTED TO OUTLET BOX AND PULL BOX SUPPORTS, ETC.

3.04 BRANCH CIRCUITS

- A. PROVIDE ALL CONDUITS, OUTLETS, BOXES, WIRES, SWITCHES, RECEPTACLES, ETC., FOR A COMPLETE ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS.
- B. CONTRACTOR SHALL REVIEW AND ACKNOWLEDGE THE MECHANICAL DRAWINGS AND SPECIFICATIONS TO CONFIRM THE EXTENT OF POWER AND CONTROL WIRING TO BE PROVIDED. CONTROL WIRING SHALL BE THE RESPONSIBILITY OF OTHERS.
- C. CONTRACTOR SHALL ENSURE ALL PHASES ARE BALANCED WITHIN 15% OF EACH OTHER.

3.05 GROUNDING

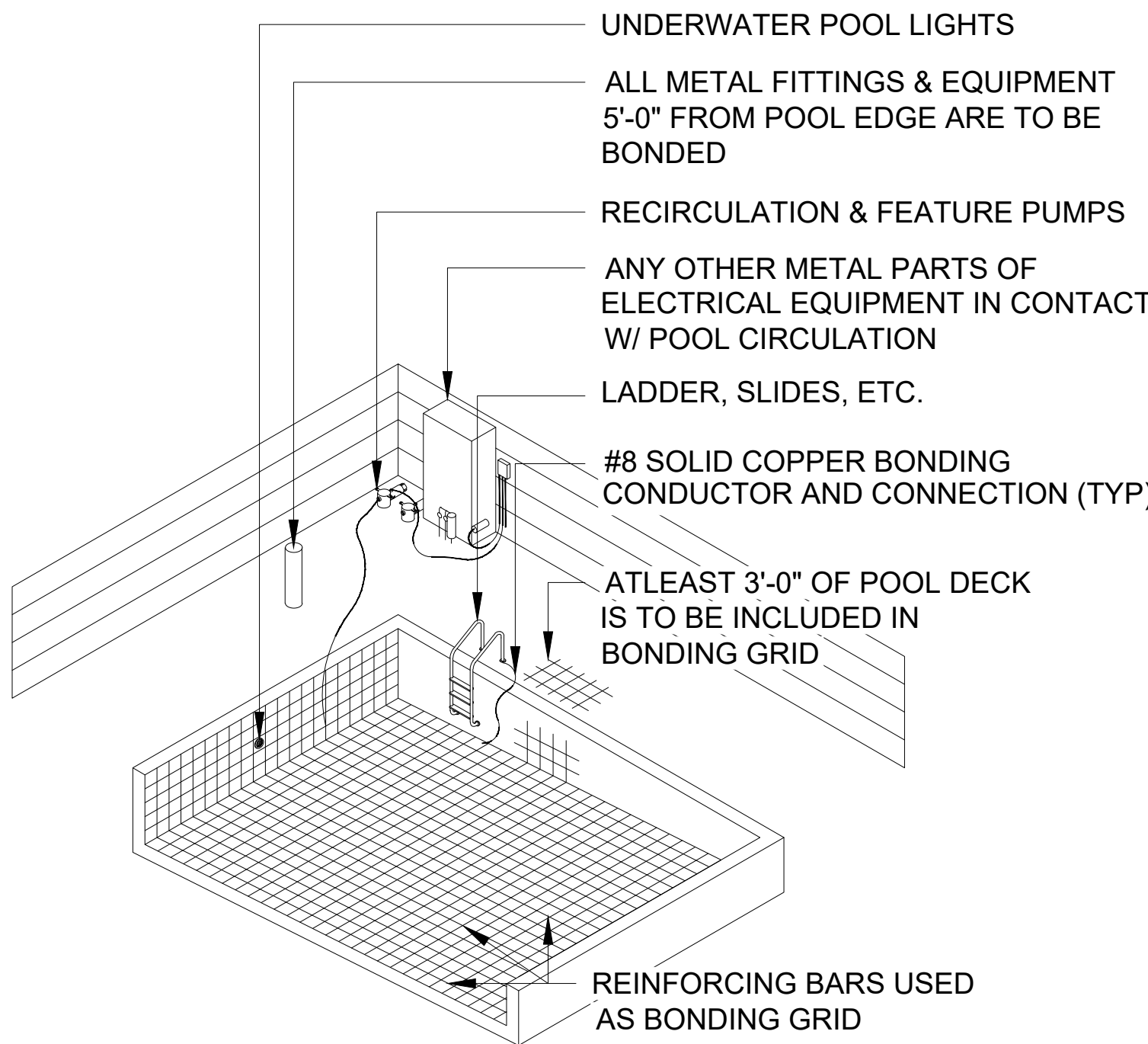
- A. THE ELECTRICAL SYSTEMS SHALL BE COMPLETELY AND EFFECTIVELY GROUNDED AS REQUIRED BY THE NATIONAL ELECTRICAL CODE. ALL GROUND SYSTEMS AND CONNECTIONS SHALL BE MECHANICALLY SECURE AND ELECTRICALLY CONTINUOUS.

3.06 LOCATION OF RECEPTACLES AND EQUIPMENT

- A. THE PLANS SHOW CONDITIONS AS ACCURATELY AS POSSIBLE BUT DO NOT NECESSARILY SHOW ALL THE FITTINGS, ETC., NECESSARY TO SUIT BUILDING CONDITIONS. LOCATIONS OF RECEPTACLES, EQUIPMENT, ETC., ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING THE PROPER LOCATIONS IN ORDER TO COORDINATE WITH DETAILS FROM ARCHITECTURAL DRAWINGS.
- B. THE OWNER OR ARCHITECT RESERVE THE RIGHT TO CHANGE LOCATION OF RECEPTACLES AND EQUIPMENT WITHIN A DISTANCE OF THREE FEET FROM LOCATION SHOWN AT NO ADDITIONAL COST TO THE OWNER.
- C. UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL DEVICES SHALL BE MOUNTED AT A STANDARD HEIGHT OR ADJUSTED BY THE CONTRACTOR.
- D. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ELECTRICAL EQUIPMENT WITH THE WORK OF OTHERS.
- E. VERIFY ALL DOOR SWINGS BEFORE ROUGHING IN FOR SWITCHES.
- F. ALL ELECTRICAL INSTALLATIONS IN AREAS OF NEW CONSTRUCTION SHALL BE FLUSH MOUNTED. ELECTRICAL EQUIPMENT IS NOT TO BE SURFACE MOUNTED WITHOUT THE APPROVAL OF THE ENGINEER OR ARCHITECT, WITH THE EXCEPTION OF SURFACE MOUNTED LIGHTING FIXTURES, UNLESS NOTED OTHERWISE.

3.07 CLEANING AND REMOVAL OF RUBBISH

- A. CONTRACTOR SHALL KEEP THE PREMISES FREE OF ALL WASTE, SURPLUS MATERIALS, RUBBISH OR DEBRIS GENERATED BY HIS CREW.
- B. RUBBISH SHALL BE PLACED IN DUMPSTERS DAILY.
- C. AFTER ALL EQUIPMENT AND DEVICES HAVE BEEN INSTALLED, REMOVE ALL TEMPORARY LABELS, STICKERS, STAINS, TEMPORARY COVERS, ETC.



NOTE:
· BONDING DETAIL FOR REFERENCE ONLY.
· ALL BONDING PER NEC 680
· SEE DRAWINGS AND SPECIFICATIONS. COORDINATE W/ ELECTRICAL
· ANY METAL PARTS OF ELECTRICAL EQUIPMENT IN CONTACT WITH POOL RECIRCULATION SHALL BE BONDED.

1 TYPICAL BONDING DETAIL

SCALE: NTS



PROFESSIONAL SEAL



DOTec Professional Corp.
118 N 2nd Street
St. Charles, MO 63301
Ph: 636-724-9872
Fx: 636-724-9032
WWW.DOTECENGINEERING.COM
ADMIN@DOTECENGINEERING.COM

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PROJECT: 16664 KEHRSGROVE DR
CHESTERFIELD MO
63005
CLIENT: NELSON LAND
SERVICE

DATE: 5/22/26

SHEET NAME:

ELECTRICAL
DETAILS

SHEET NUMBER:

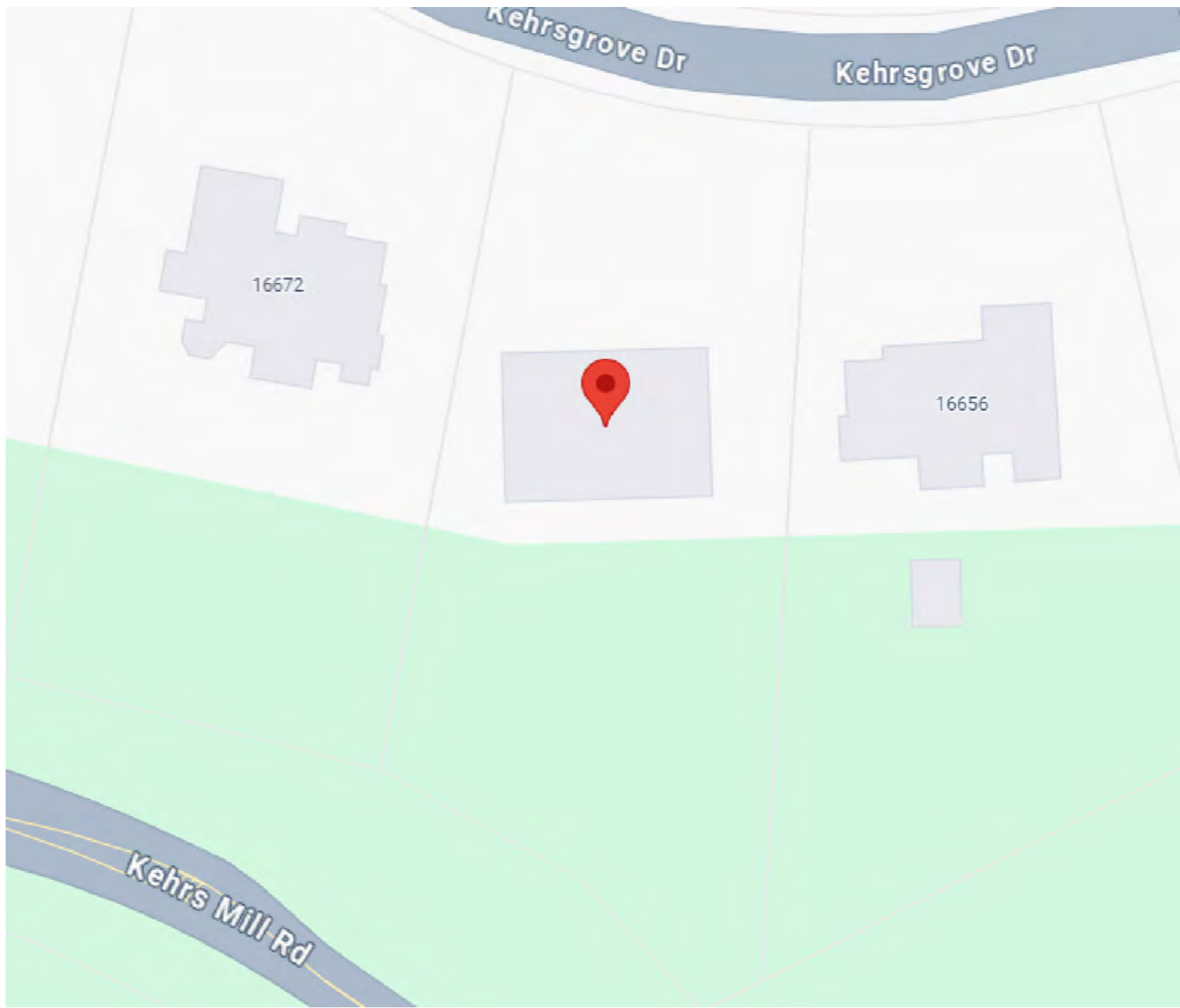
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PROJECT NUMBER: 2605122

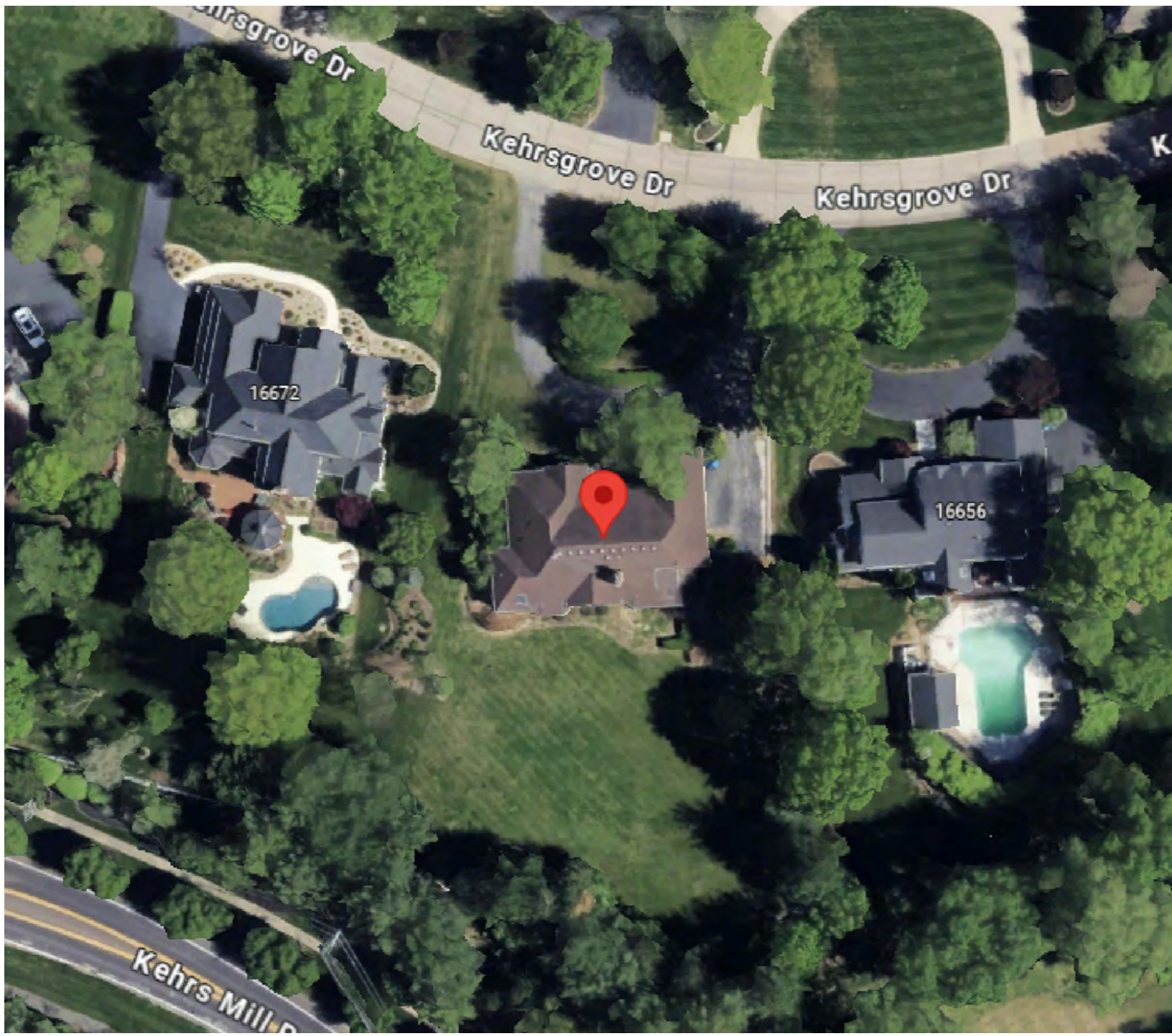
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CHECKED BY: ALG

SCALE: VARIES



1 SITE PLAN
Scale: NTS



2 VICINITY PLAN
Scale: NTS

APPLICABLE CODES

THIS WORK SHALL CONFORM TO THE FOLLOWING CODES IN EFFECT BUT NOT LIMITED TO THE FOLLOWING:

- 2021 International Building Code
- 2021 ADA Standards
- 2021 National Electrical Code
- 2021 International Mechanical Code
- 2021 International Plumbing Code
- 2021 ISPSC

SHEETS INDEX

SHEET NO.	DRAWING TITLES
S0	COVER SHEET
S1	POOL PLAN
S2	POOL SECTIONS & DETAILS

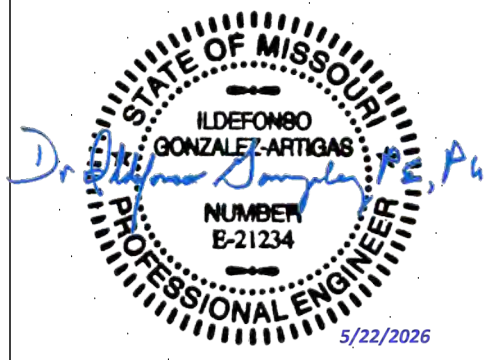
THIS NOTE APPLIES TO ALL SHEETS
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BUILDINGS SHALL BE CONSTRUCTED IN FULL CONFORMANCE WITH ALL APPLICABLE CODES AND RESTRICTIONS.
PROFESSIONAL ENGINEER SHALL BE NOTIFIED PRIOR TO CONSTRUCTION IN THE EVENT OF CODE REVISION AND/OR CHANGES.

GENERAL PROJECT/ CONSTRUCTION NOTES

- THE INFORMATION ON THIS SET OF CONSTRUCTION DOCUMENTS IS RELATED TO BASIC DESIGN INTENT AND FRAMING DETAILS. THEY ARE INTENDED AS A CONSTRUCTION AID, NOT A SUBSTITUTE FOR GENERALLY ACCEPTED GOOD BUILDING PRACTICE AND COMPLIANCE WITH CURRENT APPLICABLE BUILDING CODES. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING STANDARD CONSTRUCTION DETAILS AND PROCEDURES TO ENSURE A PROFESSIONALLY FINISHED, STRUCTURALLY SOUND AND WEATHERPROOF COMPLETED PRODUCT.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR INSURING THAT ALL WORK AND CONSTRUCTION MEETS OR EXCEEDS ALL CURRENT FEDERAL, STATE, COUNTY AND LOCAL CODES, ORDINANCES AND REGULATIONS, ETC. THESE CODES ARE TO BE CONSIDERED AS PART OF THE SPECIFICATIONS FOR THIS BUILDING AND SHOULD BE ADHERED TO EVEN IF THEY ARE IN VARIANCE WITH THE PLAN.
- DIMENSIONS SHALL TAKE PRECEDENT OVER SCALE DRAWINGS (DO NOT SCALE DRAWINGS).
- THE DESIGNER HAS NOT BEEN ENGAGED FOR CONSTRUCTION SUPERVISION AND ASSUMES NO RESPONSIBILITY FOR CONSTRUCTION COORDINATING WITH THESE PLANS, NOR RESPONSIBILITY FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THERE AR NO WARRANTIES FOR A SPECIFIC USE EXPRESSED OR IMPLIED IN THE USE OF THESE PLANS.
- REFER TO FLOOR PLANS, EXTERIOR ELEVATIONS, AND WINDOW & EXTERIOR DOOR SCHEDULE FOR TYPES AND SIZES OF WINDOWS AND EXTERIOR DOORS.
- GENERAL CONTRACTOR TO CONSULT AND COORDINATE WITH OWNER FOR ALL BUILT-IN ITEMS SUCH AS BOOKCASES, SHELVING, PANTRY, CLOSETS, TRIM, ETC.
- WIND LOAD REQUIRED CONNECTIONS SHALL BE TAKEN INTO ACCOUNT DURING CONSTRUCTION.
- ALL CONTRACTORS SHALL OBSERVE ALL REGULATIONS IMPOSED BY THE APPROPRIATE GOVERNING BODIES, AND ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE BUILDING CODES, ACCIDENT AND FIRE PREVENTION REGULATIONS. ALL MATERIALS, EQUIPMENT, WORKMANSHIP, WORKING CONDITIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE LATEST APPLICABLE SECTIONS OF LOCAL, MUNICIPAL, CITY, STATE & FEDERAL CODES, ORDINANCES, & STANDARDS.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS PRIOR TO STARTING ANY CONSTRUCTION AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES AT THE BUILDING SITE.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS SHOWN ON THE DRAWINGS & CONSTRUCT ALL NEW WORK IN A NEAT & APPROVED MANNER.
- THE CONTRACTOR SHALL ESTABLISH AND VERIFY ALL OPENINGS & INSERTS FOR MECHANICAL AND ELECTRICAL WORK AS REQUIRED FOR THEIR INSTALLATION AND PER DRAWINGS (IF APPLICABLE).
- THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY BRACING, SHORING, GUYING, OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD STRUCTURAL ELEMENTS IN PLACE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY AND SECURITY IN & AROUND THE JOB SITE DURING CONSTRUCTION.
- THE CONTRACTOR SHALL SUBMIT / FILE FOR, PAY & SECURE ALL APPROVALS, BUILDING PERMITS, FIRE PERMITS, TEST, AND CERTIFICATES OF COMPLIANCE & OCCUPANCY.
- THE DIMENSIONS ON THESE DRAWINGS IN ALL CASES SUPERSEDE SCALE. CONTRACTOR IS NOT TO SCALE DRAWINGS. ALL DIMENSIONING IS TO FINISH FACE OF CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RUBBISH SWEPT UP & REMOVED. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL LEAVE WORK IN A FINISHED CONDITION.
- IT WILL BE THE DUTY OF THE CONTRACTORS TO COMMUNICATE IMMEDIATELY WITH EACH OTHER IN ORDER TO SCHEDULE WORK, STORAGE AREAS, ETC. IN AN APPROVED MANNER AND WITHIN THE TIME SPECIFIED.



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DOTec Professional Corp.
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Fx: 636-724-9032
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PROJECT: 16664 KEHRSGROVE
DR CHESTERFIELD MO
63005
CLIENT: NELSON LAND
SERVICE

DATE: 5/22/26

SHEET NAME:

NOTES

SHEET NUMBER:

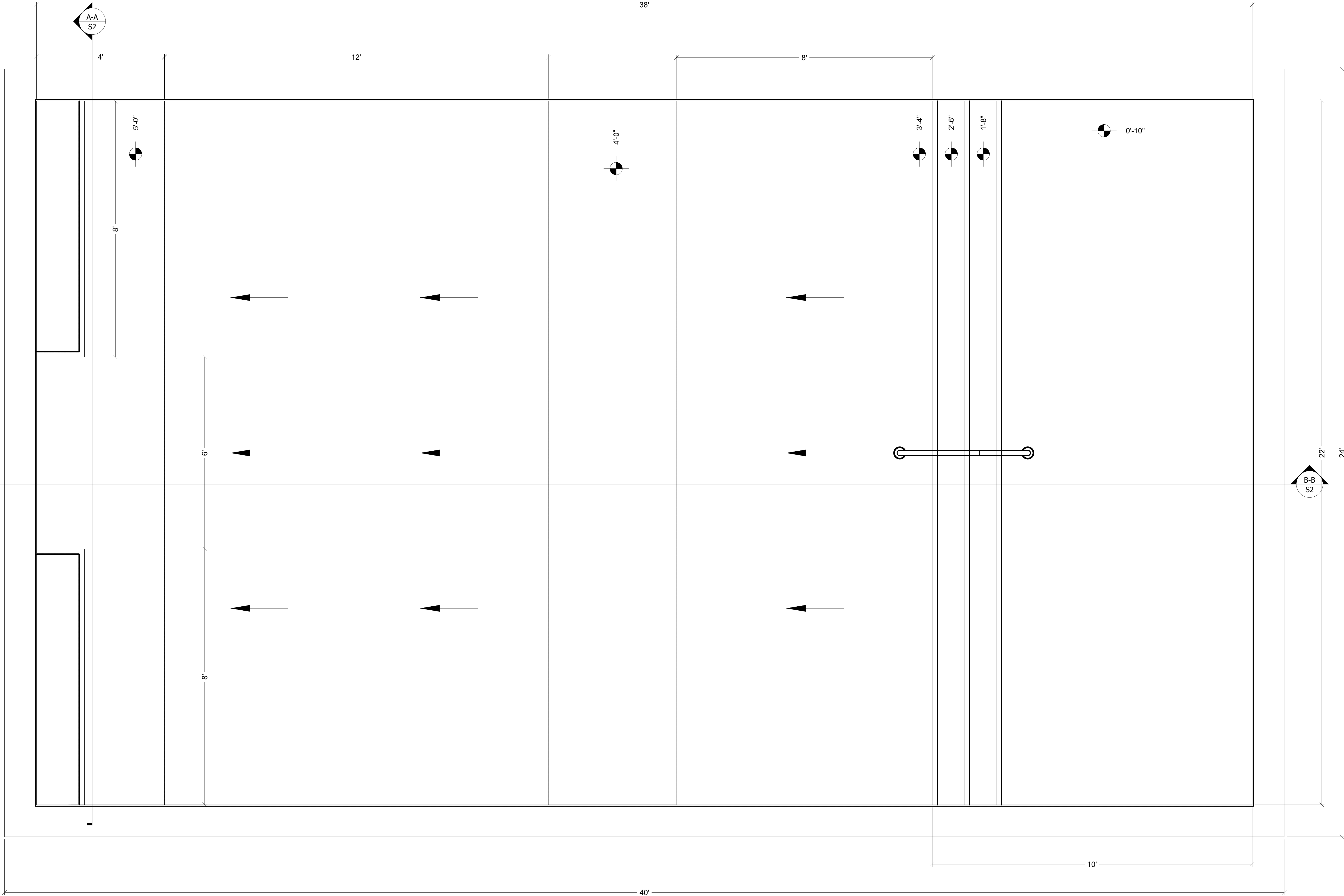
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PROJECT NUMBER: 2603363

DRAWN BY: HMO

CHECKED BY: MOA

SCALE: VARIES



PROFESSIONAL SEAL



DOTec Professional Corp.
118 N 2nd Street
St. Charles, MO 63301
Ph: 636-724-9872
Fx: 636-724-9032
www.dotecengineering.com
ADMIN@DOTECENGINEERING.COM

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PROJECT: 16664 KEHRSGROVE
DR CHESTERFIELD
MO 63005
CLIENT: NELSON LAND
SERVICE

DATE: 5/22/26

SHEET NAME:

POOL LAYOUT

SHEET NUMBER:

S1

PROJECT NUMBER: 2603363
DRAWN BY: HMO
CHECKED BY: MOA
SCALE: VARIES



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DOTec Professional Corp.
118 N 2nd Street
St. Charles, MO 63301
Ph: 636-724-9872
Fx: 636-724-9032
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#	DATE	ISSUE / REVISION
1	-	-
2		
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4		
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9		
10		

PROJECT: 16664 KEHRSGROVE DR
CHESTERFIELD MO
63005
CLIENT: NELSON LAND
SERVICE

DATE: 5/22/26

SHEET NAME:

POOL SECTIONS

SHEET NUMBER:

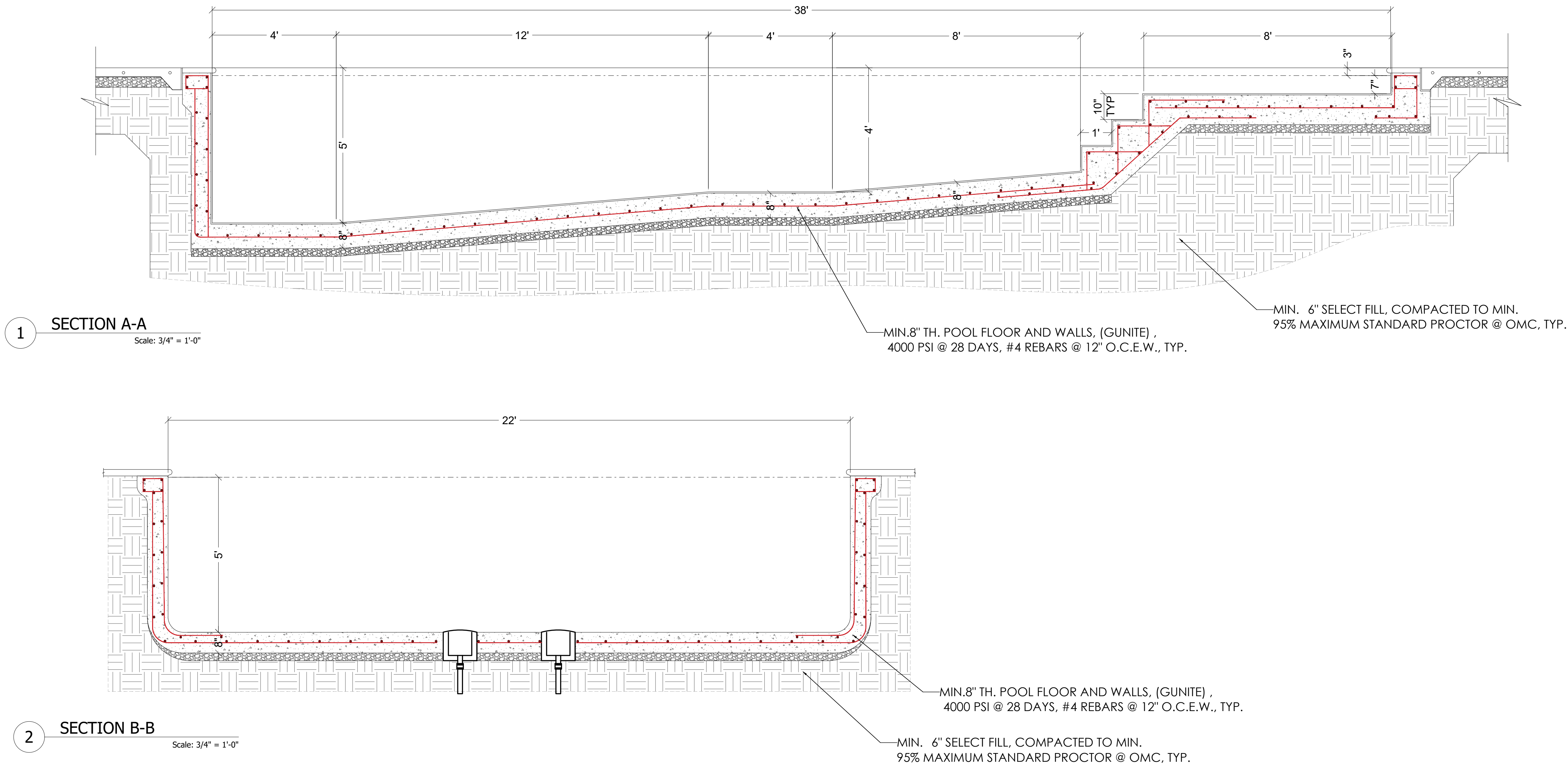
S2

PROJECT NUMBER: 2603363

DRAWN BY: HMO

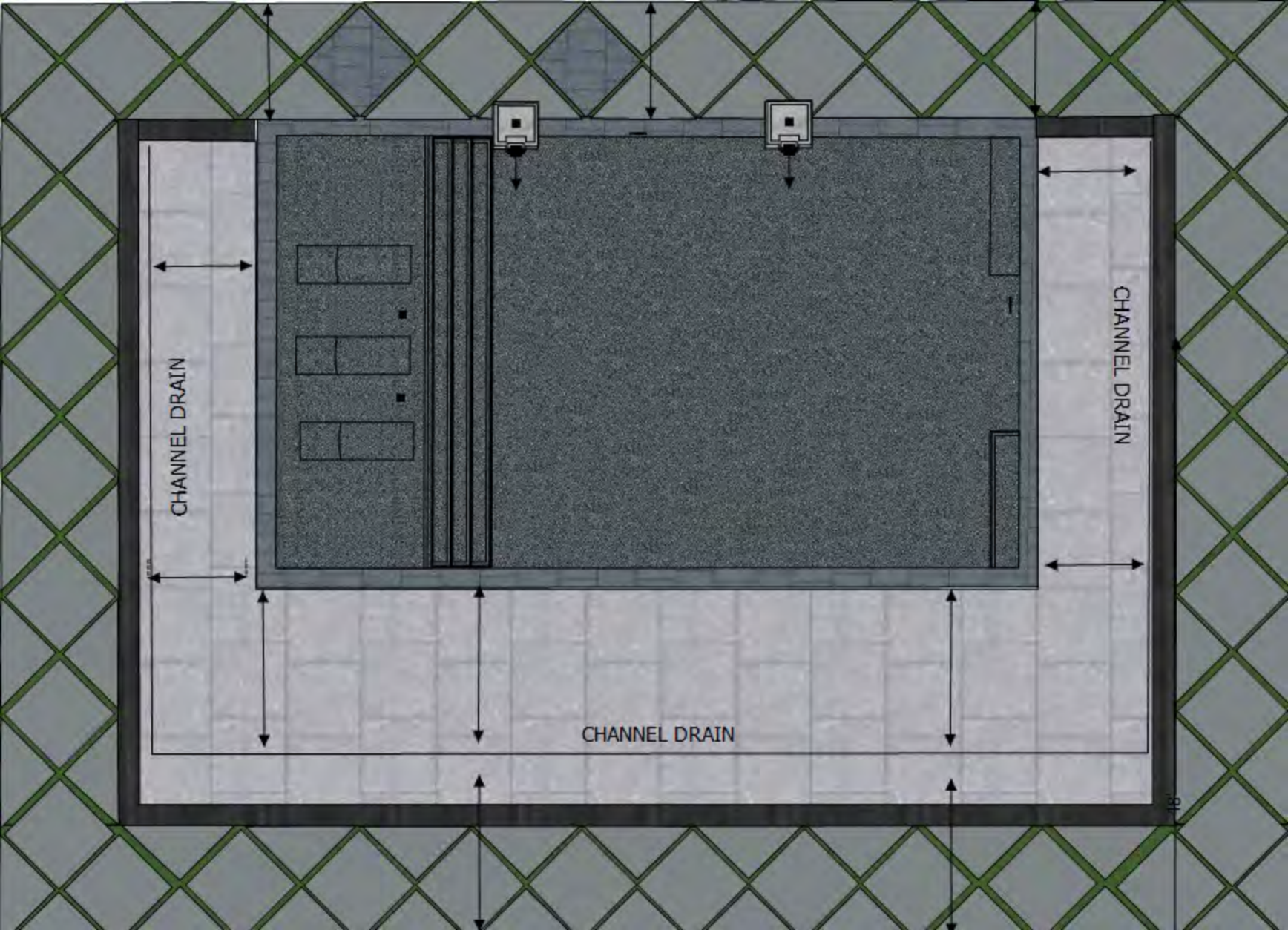
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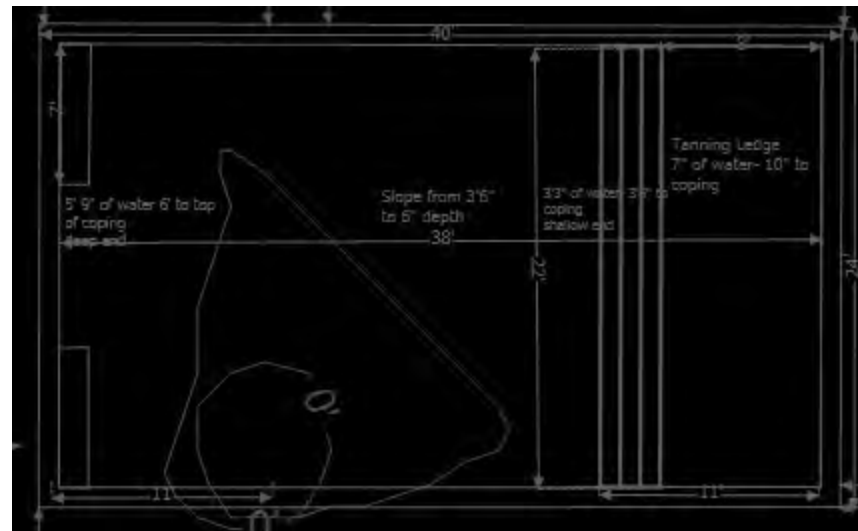
SCALE: VARIES

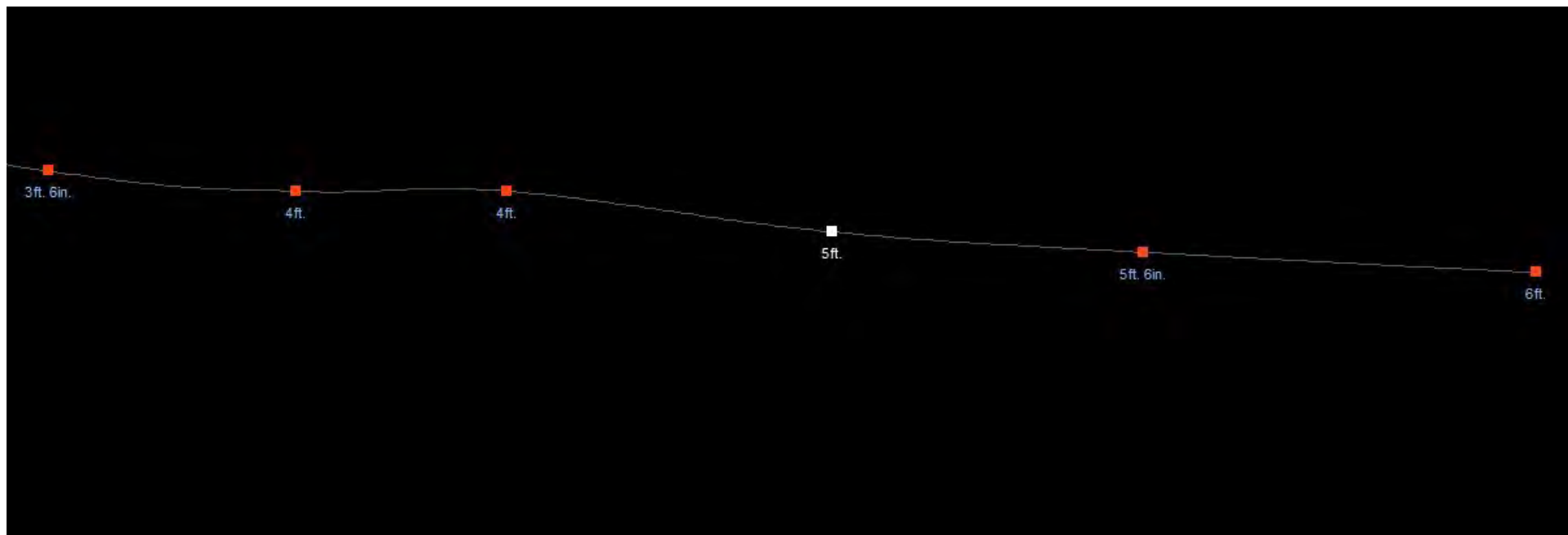


POOL & RETAINING WALL STRUCTURAL NOTES

- POOL STRUCTURAL NOTES: *ALL CIP CONC. SHALL MAINTAIN 4,000 PSI. @ 28 DAYS MIN. UNLESS NOTED OTHERWISE. GUNITÉ SHALL MAINTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI @ 28 DAYS. GUNITÉ SHALL USE PORTLAND CEMENT ASTM C 150 TYPE 1, SEVEN (7) SACK MIX. CURING OF GUNITÉ SHALL CONSIST OF FREQ. MOISTURE APPLICATION FOR A MIN. SEVEN (7) DAY PERIOD.
- REINFORCING STEEL SHALL BE #4 GRADE 60 PLACED @12" O.C.E.W. IN POOL FLOOR, AND 12" O.C.E.W. IN POOL WALLS, UNLESS NOTED OTHERWISE.
- ALL STEEL SHALL MAINTAIN MIN. 2" COVERAGE (ABOVE GRADE) AND 1-12" COVERAGE (BELOW GRADE)
- REINFORCING STEEL SHALL BE GOVERNED BY THE LATEST EDITIONS OF THE FOLLOWING CODES OR SPECIFICATIONS; ASTM A615/A615M. NEW, DEFORMED BILLET STEEL BARS, GRADE 60. REBAR SHALL BE TIED WITH FS QQ-W-461, BLACK ANNEALED STEEL, 16 GA. (MIN) GALVANIZED TIES ALSO ACCEPTABLE. SPLICED IN ACCORDANCE WITH ACI 315, AND SPLICES SHALL BE 40x DIA. OF BAR SIZE (MIN).
- INSTALL MIN. 6" SELF-COMPACTING FILL, (3 CRUSHED STONE GRAVEL OR SIMILAR) UNDER POOL SHELL.
- IF EXISTING SUBGRADE (OR SITEWORK SUBGRADE/FILL MATERIAL) DOES NOT YIELD 95% COMPACTION (OR GREATER) OF THE MAXIMUM STANDARD PROCTOR AT OPTIMUM MOISTURE CONTENT.







Fence / Safety Barrier

- Regis Aluminum Fence System
- Post size: 48" tall, 2" x 2" x 6'6"
- Color: Black
- Gate will be self-closing and self-latching
- Gate will swing away from the pool and meet city guidelines

Pool Deck / Hardscape Materials

- Techo-Bloc Terrazzo – pool deck
- Techo-Bloc Industria 3x3 slabs with synthetic turf
- Techo-Bloc Linea Border Pavers

Pool Specifications

- Pebble Tech - Pebble Sheen finish (plaster type)
- Gunitite

Construction Plan / Site Logistics

- We haul away everything we bring; there will be no dumpster
- We contract R&R Sanitation for the porta potty. It is serviced weekly.

Pool Specifications

- Color is cool blue
- Autocover will be installed
- Equipment: pipe gas heater, salt generator, Intellicenter, 3 bubblers, 4 lights, Grand Effects fire and water bowls

Construction Plan / Site Logistics

- Concrete will be mixed and poured on site. Gunitite is sprayed and hosed down from the street
- We do not bring equipment until ready for installation
- The engineering is ANSI code compliant



STRUCTURAL CALCULATIONS

OF

Nelson Land Service Kehrsgrrove

PROJECT NO.: #B2605122_000

CLIENT: Nelson Land Services

BILLING ADDRESS:

ADDRESS: 35 Jamie Lane
CITY: Eldon
STATE: MO
ZIP: 65026
COUNTRY: US

CLIENT CONTACT INFO

CONTACT: Alek Nelson
TEL: 573-434-2160
FAX:
MOBILE:
E-MAIL: alek@nelsonlandservices.com

SITE ADDRESS:

ADDRESS: 16664 Kehrsgrrove Dr
CITY: Chesterfield
STATE: Missouri
ZIP: 63005
CONFIRM ZIP: 63005
COUNTRY: USA

SEAL:



REVISION HISTORY

#	DATE	DESCRIPTION	PREPARED BY	CHECKED BY
01	5/22/2026	First Submittal	MOD	AES
02				
03				

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Drafted By: HBM



Client Name : Nelson Land Services
Designer : HBM
Job Number : #B2605122_000

Revision No : 1
Checked By :
Date : 5/22/2026

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2	INTRODUCTION	4
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6	POOL CALCULATION	5
7	FOOTING ANALYSIS	11



Client Name : Nelson Land Services
Designer : HBM
Job Number : #B2605122_000

Revision No : 1
Checked By :
Date : 5/22/2026

1 PROJECT OVERVIEW

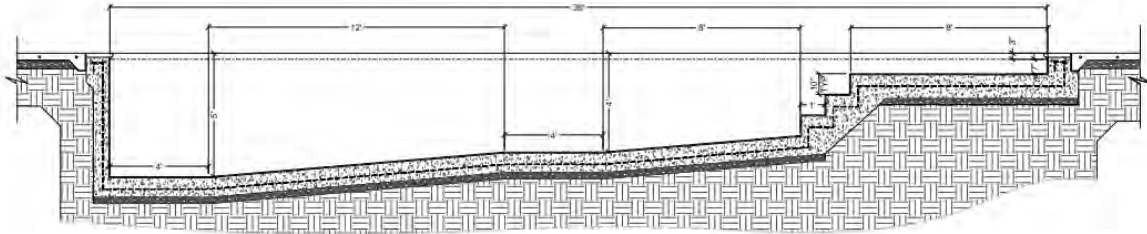


Figure-1: 3D view of the structure

2 INTRODUCTION



Client Name : Nelson Land Services
Designer : HBM
Job Number : #B2605122_000

Revision No : 1
Checked By :
Date : 5/22/2026

The purpose of this report is to present the structural analysis and design check for producing Produce structural calculations package and analysis report for residential ~38x22 pool, as per client provided documents, Loads are:

Dead Load = self-weight

Live Load =100psf

Water Load = 312psf

3 STANDARDS AND CODES

- The adopted standards in this document are listed as follows:

Code	Description
ASCE 7-16	American Society of civil engineering
IBC 2021	International Building Code 2024
MOBC 2021	Missouri Modular Building Code 2024
ACI 318-19 (22)	American Concrete Building 2019 (22)

4 MATERIAL PROPERTIES

- The following table lists the mechanical properties of structural steel and connecting bolts used:

Concrete	
Gr 4000	Compressive Strength $f_c=4000\text{psi}$

5 Serviceability Criteria

1. Beam/Girder/Frame Deflection Limit: L/240 For Live Load, L/180 for Dead + Live load

6 STRUCTURAL ANALYSIS

The analysis of the concrete pool system was conducted using Risa 3D Software Package to determine the internal straining actions in structural members and reactions of the structure on the foundations.

POOL CALCULATIONS

MATERIAL PROPERTIES:

Concrete Compressive Strength,	$F_c' := 4000 \text{ psi}$	
Yield Strength of Steel,	$F_y := 60000 \text{ psi}$	Grade 60 rebars
Unit Weight of Concrete,	$\gamma_c := 150 \text{ pcf}$	
Unit Weight of Water,	$\gamma_w := 62.4 \text{ pcf}$	
Unit Weight of Soil,	$\gamma_{soil} := 120 \text{ pcf}$	
Surcharge Load,	$p_s := 100 \text{ psf}$	
Internal Friction Angle of Soil,	$\Phi := 28^\circ$	

POOL DIMENSIONS:

$d_p := 5 \text{ ft}$	maximum depth of pool
$t_{pw} := 8 \text{ in}$	thickness of pool wall
$h := 5 \text{ ft}$	wall span
$b := 12 \text{ in}$	strip of wall considered for design
$cover := 3 \text{ in}$	concrete cover, ACI 318-14
$D_{bar_ \#4} := \frac{4}{8} \text{ in} = 0.5 \text{ in}$	
$A_{bar_ \#4} := \frac{\pi}{4} D_{bar_ \#4}^2 = 0.196 \text{ in}^2$	
$d := \frac{t_{pw}}{2} + \frac{D_{bar_ \#4}}{2} = 4.25 \text{ in}$	Wall Effective Depth
$h_s := \frac{p_s}{\gamma_{soil}} = 0.833 \text{ ft}$	equivalent height to the surcharge
$K_a := \frac{1 - \sin(\Phi)}{1 + \sin(\Phi)} = 0.361$	

LOADINGS:

$$P_{soil} := \gamma_{soil} \cdot h \cdot K_a = 216.62 \text{ psf}$$

$$P_{sur} := \gamma_{soil} \cdot h_s \cdot K_a = 36.103 \text{ psf} \quad P_{soil} + P_{sur} = 252.723 \text{ psf}$$

$$P_{water} := \gamma_w \cdot h = 312 \text{ psf} \quad P_{water} = 0.312 \text{ ksf}$$

WALL ANALYSIS and DESIGN

Part I. ANALYSIS

CASE I. Walls Subjected to Surcharge and Soil Pressure Only

$$w_{sur} := P_{sur} \cdot b = 36.103 \text{ plf}$$

$$w_{soil} := P_{soil} \cdot b = 216.62 \text{ plf}$$

Support Reactions,

$$R_{top} := \frac{w_{sur} \cdot h}{2} + \frac{w_{soil} \cdot h}{6} = 270.775 \text{ lbf}$$

$$R_{bot} := \frac{w_{sur} \cdot h}{2} + \frac{1}{3} \frac{w_{soil} \cdot h}{3} = 451.292 \text{ lbf}$$

Location of Max. Moment (Zero Shear),

$$x := \frac{-w_{sur} + \sqrt{w_{sur}^2 + \left(2 \frac{w_{soil}}{h} \cdot R_{top}\right)}}{\frac{w_{soil}}{h}} = 2.799 \text{ ft}$$

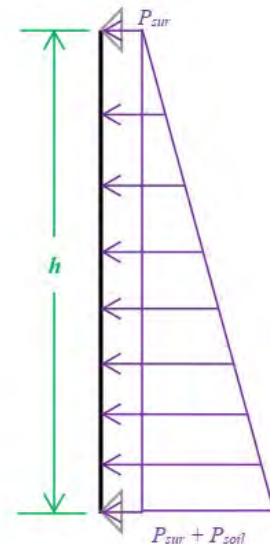
Maximum Moment along Wall Height,

$$M := R_{top} \cdot x - \left(\frac{w_{soil} \cdot x^3}{6 h}\right) - \left(\frac{w_{sur} \cdot x^2}{2}\right) = 458.137 \text{ lbf} \cdot \text{ft}$$

Moment and Shear,

$$M_{u_caseI} := M = 458.137 \text{ lbf} \cdot \text{ft}$$

$$V_{u_caseI} := \max(R_{top}, R_{bot}) = 451.292 \text{ lbf}$$



CASE I
Walls Subjected to Surcharge
and Soil Pressure Only

CASE II. Walls Subjected to Surcharge, Soil and Water Pressures (full height)

$$w_{sur} := P_{sur} \cdot b = 36.103 \text{ plf}$$

$$w_{soil} := P_{soil} \cdot b = 216.62 \text{ plf}$$

$$w_{water} := P_{water} \cdot b = 312 \text{ plf}$$

Support Reactions,

$$R_{top} := \left| \frac{w_{sur} \cdot h}{2} + \frac{w_{soil} \cdot h}{6} - \frac{w_{water} \cdot h}{6} \right| = 10.775 \text{ lbf}$$

$$R_{bot} := \left| \frac{w_{sur} \cdot h}{2} + \frac{w_{soil} \cdot h}{3} - \frac{w_{water} \cdot h}{3} \right| = 68.708 \text{ lbf}$$

Location of Max. Moment (Zero Shear),

$$x := \frac{-w_{sur} - \sqrt{w_{sur}^2 + \left(2 \frac{w_{soil} - w_{water}}{h} \cdot R_{top} \right)}}{\frac{w_{soil} - w_{water}}{h}} = 3.459 \text{ ft}$$

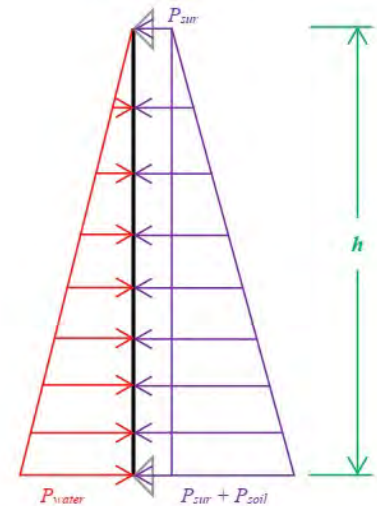
Maximum Moment along Wall Height,

$$M_{caseII} := -R_{top} \cdot x - \left(\frac{w_{soil} \cdot x^3}{6 h} \right) - \left(\frac{w_{sur} \cdot x^2}{2} \right) + \left(\frac{w_{water} \cdot x^3}{6 h} \right) = -121.665 \text{ lbf} \cdot \text{ft}$$

Ultimate Moment and Shear,

$$M_{u_caseII} := |M_{caseII}| = 121.665 \text{ lbf} \cdot \text{ft}$$

$$V_{u_caseII} := \max(R_{top}, R_{bot}) = 68.708 \text{ lbf}$$



CASE II
Walls Subjected to Surcharge, Soil
and Water Pressures (full height)

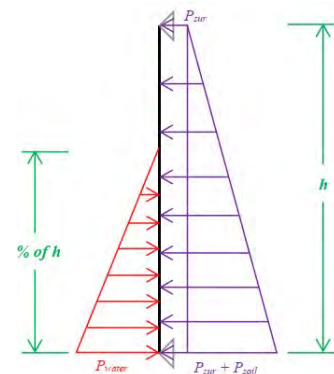
CASE III. Walls Subjected to Surcharge, Soil and Water Pressures (depth of water < pool depth)

This case need not be analyzed since the actual moment for this case will be in between the Case I moment and Case II moment. The same can be said for the actual shear values.

Therefore, the Shear and Moment Values to be used for the design of the pool walls are as follows:

$$M_u := \max(M_{u_caseI}, M_{u_caseII}) = 0.458 \text{ kip} \cdot \text{ft}$$

$$V_u := \max(V_{u_caseI}, V_{u_caseII}) = 0.451 \text{ kip}$$



CASE III
Walls Subjected to Surcharge, Soil and Water
Pressures (depth of water < pool depth)

Part II. DESIGN

a.) Design for Flexure:

$$\phi_f := 0.90$$

Strength Reduction Factor, Bending

$$R_n := \frac{M_u}{\phi_f \cdot b \cdot d^2} = 0.028 \text{ ksi}$$

$$\rho := \frac{0.85 \cdot F_{c'}}{F_y} \left(1 - \sqrt{1 - \frac{2 \cdot R_n}{0.85 \cdot F_{c'}}} \right) = 0.00047$$

Vertical Reinforcement:

$$\phi_s := 0.75$$

Strength Reduction Factor, Shear

$$V_c := 2 \cdot \sqrt{F_{c'} \cdot \text{psi}} \cdot b \cdot d = 6.451 \text{ kip}$$

Shear Strength Provided by Concrete

$$\text{if} (V_u \geq 0.5 \phi_s \cdot V_c, \text{"Yes"}, \text{"No"}) = \text{"No"}$$

Therefore, refer to Section 11.6.1

$$\rho_{min} := 0.0020$$

minimum steel ratio

$$\rho_{reqd} := \max(\rho, \rho_{min}) = 2 \cdot 10^{-3}$$

required steel ratio

$$A_{s_{reqd}} := \rho_{reqd} \cdot b \cdot d = 0.102 \text{ in}^2$$

required steel area

$$s_{reqd} := \frac{b \cdot A_{bar\#4}}{A_{s_{reqd}}} = 23.1 \text{ in}$$

required spacing of rebars

$$s_{max} := \min(3 t_{pw}, 18 \text{ in}) = 18 \text{ in}$$

max. rebar spacing, Section 11.7.2.1

$$s_o := \min(s_{max}, s_{reqd}) = 18 \text{ in}$$

Actual spacing, $s := 8 \text{ in}$

$$\text{if} (s \leq s_o, \text{"OK"}, \text{"NOT OK"}) = \text{"OK"}$$

Horizontal Reinforcement:

$$\rho_{min} := 0.0020$$

minimum steel ratio

$$A_{s_reqd} := \rho_{min} \cdot b \cdot d = 0.102 \text{ in}^2$$

required steel area

$$s_{reqd} := \frac{b \cdot A_{bar_#4}}{A_{s_reqd}} = 23.1 \text{ in}$$

required spacing of rebars

$$s_{max} := \min(3 t_{pw}, 18 \text{ in}) = 18 \text{ in}$$

max. rebar spacing, Section 11.7.2.1

$$s_o := \min(s_{max}, s_{reqd}) = 18 \text{ in}$$

$$\text{Actual spacing, } s := 12 \text{ in}$$

$$\text{if}(s \leq s_o, \text{"OK"}, \text{"NOT OK"}) = \text{"OK"}$$

a.) Check for Shear:

$$\phi_s := 0.75$$

Strength Reduction Factor, Shear

$$V_c := 2 \cdot \sqrt{F_c \cdot \text{psi}} \cdot b \cdot d = 6.451 \text{ kip}$$

Shear Strength Provided by Concrete

$$V_1 := 8 \cdot \sqrt{F_c \cdot \text{psi}} \cdot b \cdot d = 25.804 \text{ kip}$$

$$V_{u_max} := \phi_s \cdot (V_c + V_1) = 24.191 \text{ kip}$$

$$ACI_{SEC_22.5.1.2} := \text{if}(V_u \leq V_{u_max}, \text{"OK"}, \text{"Increase thickness"}) = \text{"OK"}$$

$$ACI_{SEC_22.5.8.1} := \text{if}(V_u \leq \phi_s \cdot V_c, \text{"OK"}, \text{"Design for Shear Reinf."}) = \text{"OK"}$$

Therefore, the section alone is adequate to resist the shear demand.

POOL SLAB ANALYSIS and DESIGN

Part I. Analysis

$$l_s := 1 \text{ ft}$$

$$t_s := 8 \text{ in}$$

$$p_{water} := \gamma_w \cdot d_p = 312 \text{ psf}$$

$$F_{water} := p_{water} \cdot b \cdot l_s = 312 \text{ lbf}$$

$$W_{slab} := \gamma_c \cdot b \cdot l_s \cdot t_s = 100 \text{ lbf}$$

ASD Load Combinations:

$$\text{Dead Load, } D := W_{slab}$$

$$\text{Live Load, } L := 75 \text{ psf} \cdot b \cdot l_s = 75 \text{ lbf}$$

$$\text{Load Due to Fluids, } F := F_{water}$$

$$p_a := D + F + L = 487 \text{ lbf}$$

$$\sigma_a := \frac{p_a}{b \cdot l_s} = 487 \text{ psf}$$

$$\sigma_{allow} := 1500 \text{ psf}$$

presumptive load bearing value

$$\text{if } (\sigma_a \leq \sigma_{allow}, \text{"OK"}, \text{"Not OK"}) = \text{"OK"}$$

Check for Shear:

$$V_u := \frac{p_a}{2} = 243.5 \text{ lbf}$$

$$\phi_s := 0.75$$

Strength Reduction Factor, Shear

$$V_c := 2 \cdot \sqrt{F_c \cdot \text{psi}} \cdot b \cdot d = 6.451 \text{ kip}$$

Shear Strength Provided by Concrete

$$V_1 := 8 \cdot \sqrt{F_c \cdot \text{psi}} \cdot b \cdot d = 25.804 \text{ kip}$$

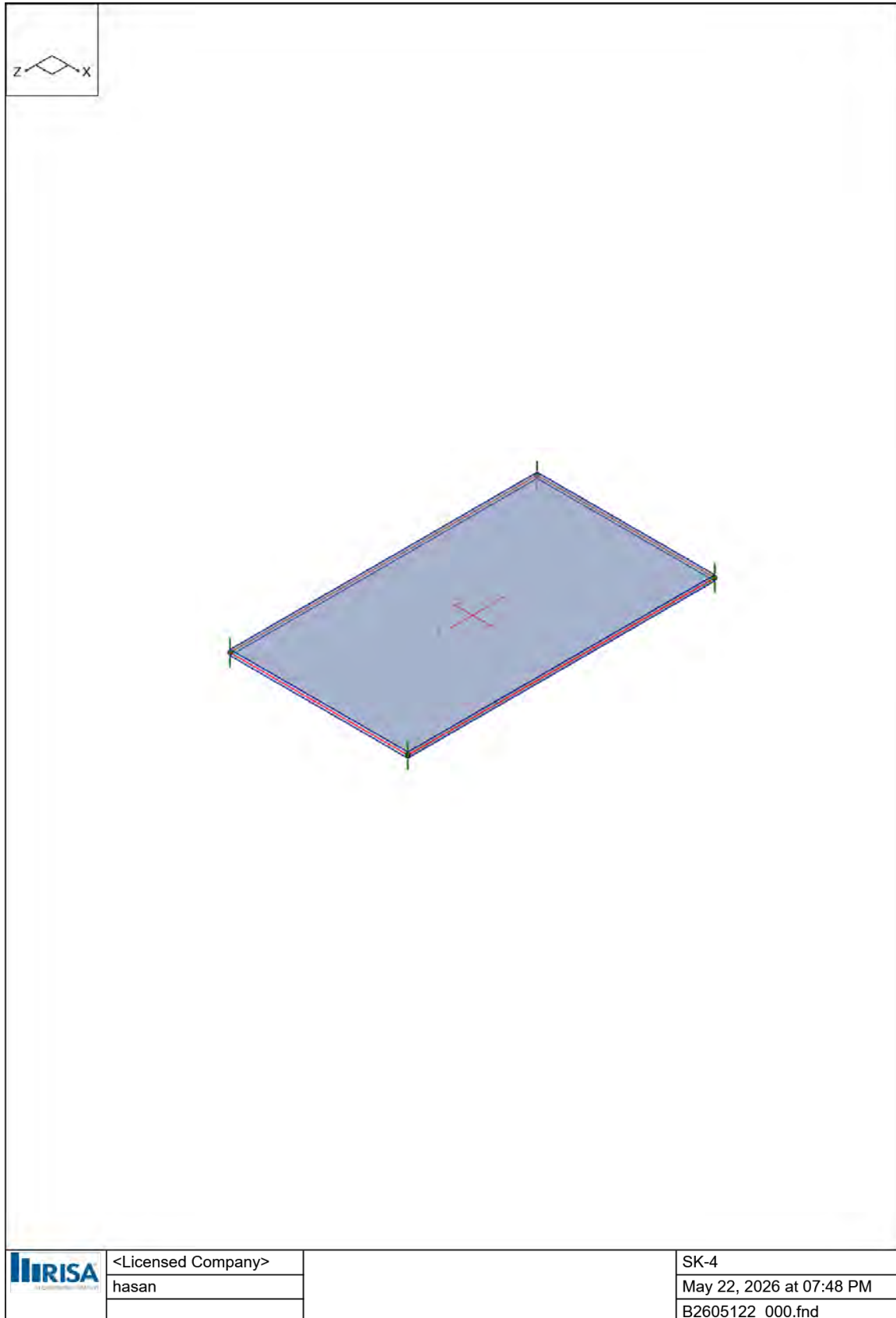
$$V_{u_{max}} := \phi_s \cdot (V_c + V_1) = 24.191 \text{ kip}$$

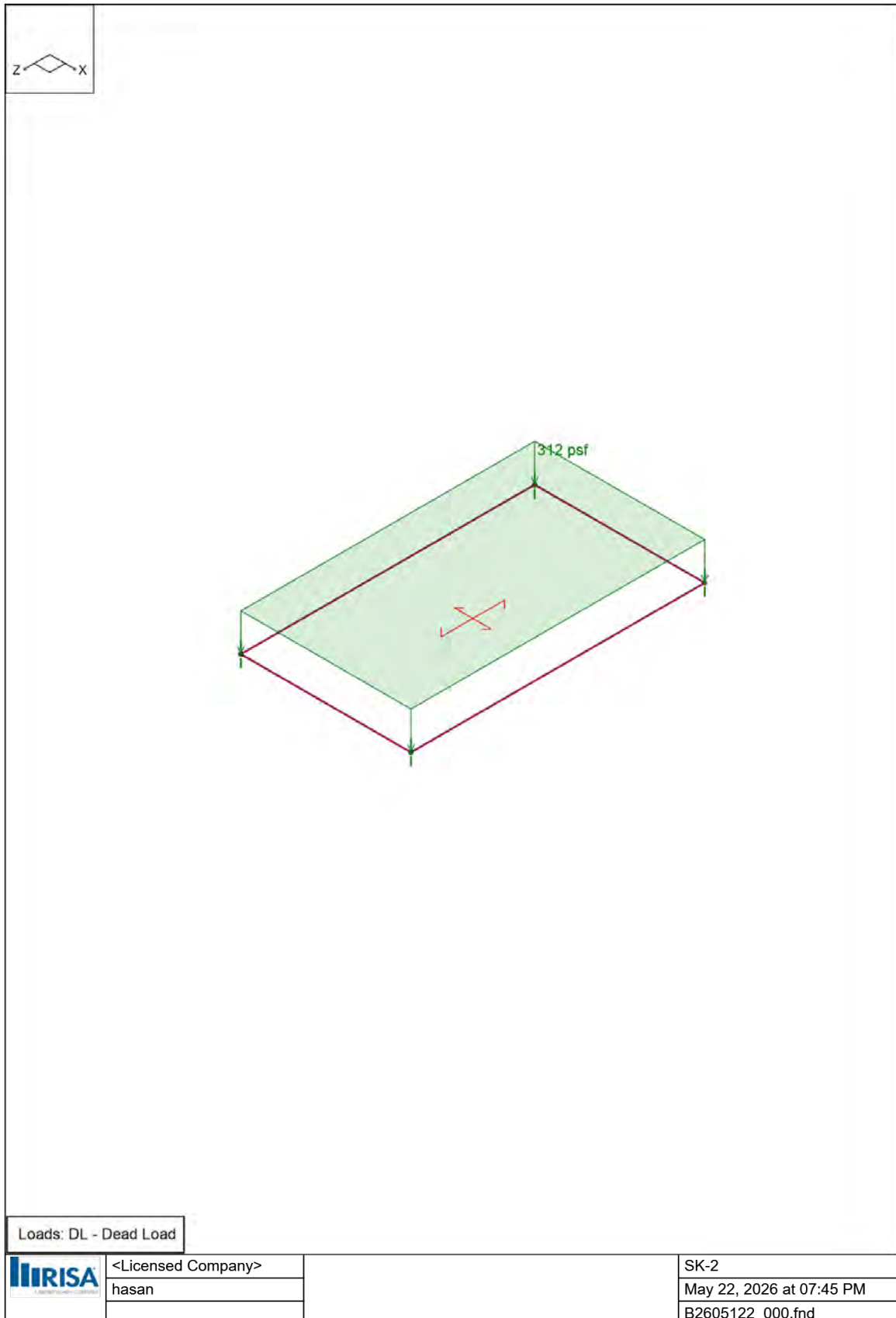
ACI 318, Eq. 22.5.1.2

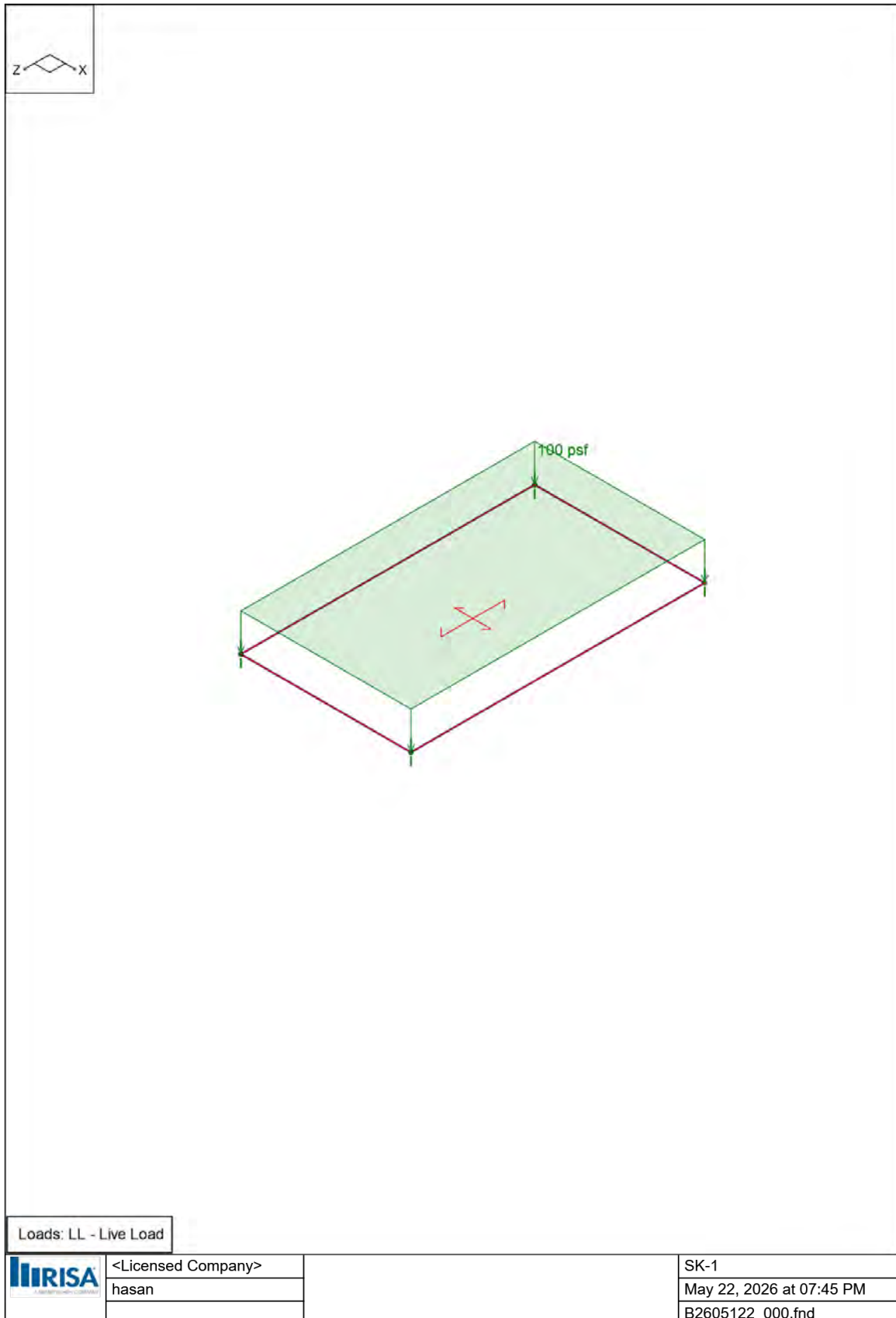
$$ACI_{SEC_22.5.1.2} := \text{if } (V_u \leq V_{u_{max}}, \text{"OK"}, \text{"Increase thickness"}) = \text{"OK"}$$

$$ACI_{SEC_22.5.8.1} := \text{if } (V_u \leq \phi_s \cdot V_c, \text{"OK"}, \text{"Design for Shear Reinf."}) = \text{"OK"}$$

Therefore, the section alone is adequate to resist the shear demand.







Slab

	Label	Thickness [in]	Material	Local Axis Angle [deg]	Analysis Offset [in]	Passive Pressure [psf]	Soil Overburden [psf]	Icr Factor
1	S1	8	Conc3000NW	0	0	0	0	0.25

Area Load (Cat 1: DL)

	Label	Base Magnitude [psf]	Peak Magnitude [psf]
1	AL1	312	N/A

Area Load (Cat 2: LL)

	Label	Base Magnitude [psf]	Peak Magnitude [psf]
1	AL2	100	N/A

Load Combination

	Label	Solve	Service	Category	Factor	Category	Factor	Category	Factor
1	Service	Yes	Yes	DL	1	LL	1	HL	1
2	Strength	Yes		DL	1.2	LL	1.6	HL	1.6

Envelope Spread Footing Soil Pressures

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Strip Reinforcing

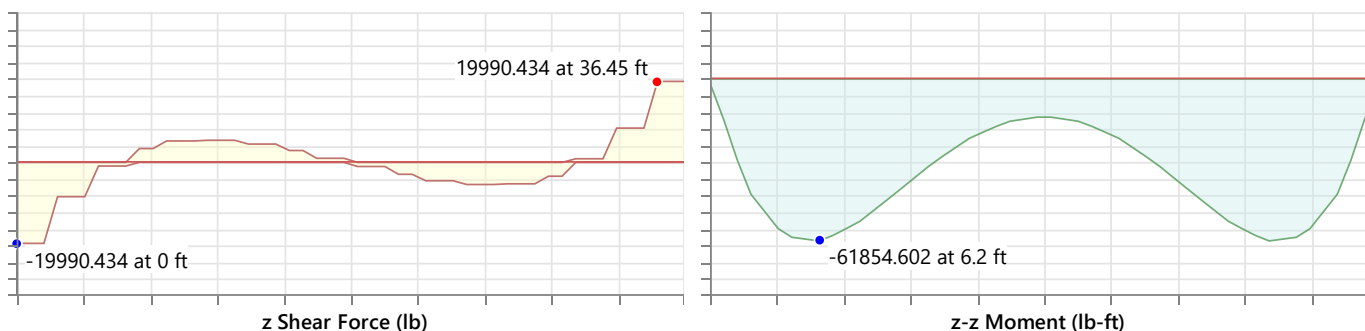
	Label	UC Top	LC	UC Bot	LC	Bot Bars/Mid Bars	Gov Design Cut	UC Bot	UC Shear	LC	Gov Design Cut	UC Shear
1	DS1	0	N/A	0.801	2	#4@12in	DS1-X42		0.355	2	DS1-X50	
2	DS2	0	N/A	0.625	2	#4@12in	DS2-X25		0.213	2	DS2-X5	

Detail Report: DS1

Input Data

Material:	Conc3000NW	Max Top Bar Spac. (in):	18	Stress Block:	Rectangular
Strip Width (in):	264	Min Top Bar Spac. (in):	3	Rebar Orientation:	0
Total Cuts:	50	Max Bot Bar Spac. (in):	12	Rebar Spacing Inc (in):	12
Tension Bar Fy (ksi):	60	Min Bot Bar Spac. (in):	12	Design Rule:	Typical
Shear Bar Fy (ksi):	60	Concrete Weight (lb/ft³):	145		
F'c (ksi):	3	λ:	1		
Flex. Rebar Set:	ASTM A615	EConcrete (psi):	3.156e+6		
		Rho Mid Prvd:	0.00428		
		Prvd Mid Bar Spac.:	#4@12in		

Diagrams



ACI 318-19 (22) Code Check

Top Bending Check:	0.000	Bot Bending Check:	0.801	1 Way Shear Check:	0.355
Gov Mu Top (lb-ft):	0	Gov Mu Bot (lb-ft):	-61854.602	Gov Vu (lb):	19990.434
phi*Mn Top (lb-ft):	77198.881	phi*Mn Bot (lb-ft):	77198.881	phi*Vn (lb):	56330.084
Governing Cut:	NA	Governing Cut:	DS1-X42	Governing Cut:	DS1-X50
Governing LC:	N/A	Governing LC:	2	Governing LC:	2

Bending Steel Req'd/Prvd, Units: in²

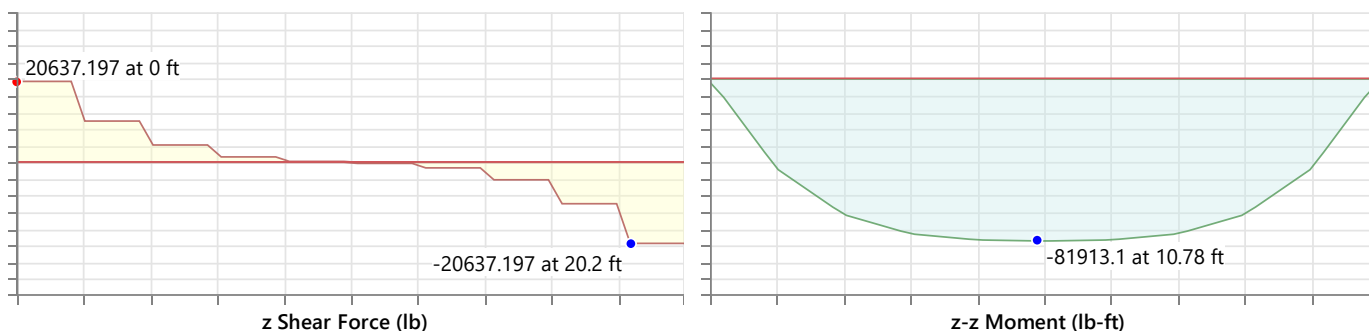
Cut Label	Top As Req'd	Top As Prvd	Bot As Req'd	Bot As Prvd	Rho Req'd(T/S)	Rho Req'd(Flex)	Rho Prvd(Gross)
NA	NA	NA	0.093	4.516	0.00180	0.00180	0.00214
DS1-X42	NA	NA	3.579	4.516	0.00180	0.00180	0.00214

Detail Report: DS2

Input Data

Material:	Conc3000NW	Max Top Bar Spac. (in):	18	Stress Block:	Rectangular
Strip Width (in):	456	Min Top Bar Spac. (in):	3	Rebar Orientation:	90
Total Cuts:	50	Max Bot Bar Spac. (in):	12	Rebar Spacing Inc (in):	12
Tension Bar Fy (ksi):	60	Min Bot Bar Spac. (in):	12	Design Rule:	Typical
Shear Bar Fy (ksi):	60	Concrete Weight (lb/ft³):	145		
F'c (ksi):	3	λ:	1		
Flex. Rebar Set:	ASTM A615	EConcrete (psi):	3.156e+6		
		Rho Mid Prvd:	0.00420		
		Prvd Mid Bar Spac.:	#4@12in		

Diagrams



ACI 318-19 (22) Code Check

Top Bending Check:	0.000	Bot Bending Check:	0.625	1 Way Shear Check:	0.213
Gov Mu Top (lb-ft):	0	Gov Mu Bot (lb-ft):	-81913.1	Gov Vu (lb):	20637.197
phi*Mn Top (lb-ft):	131029.406	phi*Mn Bot (lb-ft):	131029.406	phi*Vn (lb):	96700.028
Governing Cut:	NA	Governing Cut:	DS2-X25	Governing Cut:	DS2-X5
Governing LC:	N/A	Governing LC:	2	Governing LC:	2

Bending Steel Req'd/Prvd, Units: in²

Cut Label	Top As Req'd	Top As Prvd	Bot As Req'd	Bot As Prvd	Rho Req'd(T/S)	Rho Req'd(Flex)	Rho Prvd(Gross)
NA	NA	NA	0.096	7.658	0.00180	0.00180	0.00210
DS2-X25	NA	NA	4.693	7.658	0.00180	0.00180	0.00210



August 10, 2026

**AMEREN MISSOURI POOL CLEARANCE FOR
ZACHARY HAFEZ
16664 KEHRSGROVE DR
CHESTERFIELD MO 63305**

To whom it may concern

The above referenced address was field checked for swimming pool clearance on **8/10/26**. The pool's water edge is outside of the required 5' from all underground electric power cables. Per Ameren Missouri, the services have met the clearance codes for safety.

The sketch for the site of the proposed pool is within acceptable limits of the *National Electrical Safety Code*.

If you have any questions, please call **Rita Green 636.793.1594**, mgreen@ameren.com.

Sincerely,

Rita Green

Mo Electrical Dist. Designer III

Ellisville Operating Center



Kayla Peterson <kayla@nelsonlandservices.com>

Fw: Approval of back yard renovations for 16664 Kehrsgrrove Dr

Lauren Pohle <nurselaurenstl@gmail.com>
To: Kayla Peterson <kayla@nelsonlandservices.com>

Tue, Aug 25, 2026 at 8:32 PM

I have my neighbor approval

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From: Z Hafez <hafez83@gmail.com>
Sent: Tuesday, 25 August 2026 20:26:26
To: [nurselaurenstl@gmail.com](#) <nurselaurenstl@gmail.com>
Subject: Fw: Approval of back yard renovations for 16664 Kehrsgrrove Dr

Hafez

From: William L Meyer <wlmeyer@cutterco.com>
Sent: Tuesday, 25 August 2026 20:24:02
To: Hafez <hafez83@gmail.com>
Subject: RE: Approval of back yard renovations for 16664 Kehrsgrrove Dr

Zac,

Kathy & I live at 16672 Kehrsgrrove Drive and as your next store neighbor we approve the proposed plan and wish you the best of luck getting it accomplished quickly.

Cordially,

William L. Meyer, AIF, CLU, CHFC

Cutter & Company, Inc./Prospera Financial

[15415 Clayton Rd.](#)

[Ballwin, Mo. 63011](#)

636-779-1602 Direct Dial 314-207-9498 To Text me

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From: Hafez <hafez83@gmail.com>
Sent: Tuesday, August 25, 2026 4:21 PM
To: William L Meyer <wlmeyer@cutterco.com>
Subject: Approval of back yard renovations for 16664 Kehrsgrrove Dr

Bill, we would like your approval for us to renovate our backyard which will include a pool and a patio. Attached is the site plan for the proposed renovation. Please let me know if you have any questions!

Thank you again,

Zac Hafez

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Notice sent to: 2300 Kehrs Mill Road, 2208 Kehrsgrrove Court, 16656 Kehrsgrrove Drive

NOTICE OF PUBLIC HEARING

City of Clarkson Valley, Missouri

Notice is hereby given that the Board of Adjustment of the City of Clarkson Valley, Missouri, will conduct a public hearing on Thursday, September 10, 2026, at 6:30 p.m. at 15933 Clayton Road, Suite 300, Ballwin, Missouri, 63011, for a request by:

Kayla Peterson, Nelson Land Services, on behalf of Lauren Pohle, 16664 Kehrsgrrove Dr. – Requesting a variance from the *Rear Yard and Rear Building Line* requirements to allow a swimming pool and fence to encroach into the rear yard located at 16664 Kehrsgrrove Drive.

Attendees may also join the meeting virtually through Zoom:

<https://us06web.zoom.us/j/4576311732?omn=83295289144>

Meeting ID: 457 631 1732

Dial in by phone: (312) 626-6799

Richard Ulrich, Chairman
Board of Adjustment
City of Clarkson Valley

Posted: September 2, 2026 at 12:08 p.m.