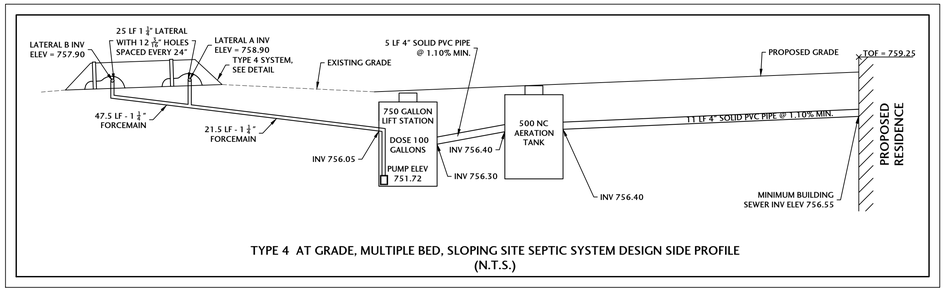
LOT 80 & 81
34681 NOKOMIS TRAIL
GRANT TOWNSHIP IL
PERMIT SEPTIC PLAN



TYPE 4 AT GRADE, MULTIPLE BED, SLOPING SITE SEPTIC SYSTEM DESIGN SIDE PROFILE
(N.T.S.)

OPERATES 24 Hours 365 Days

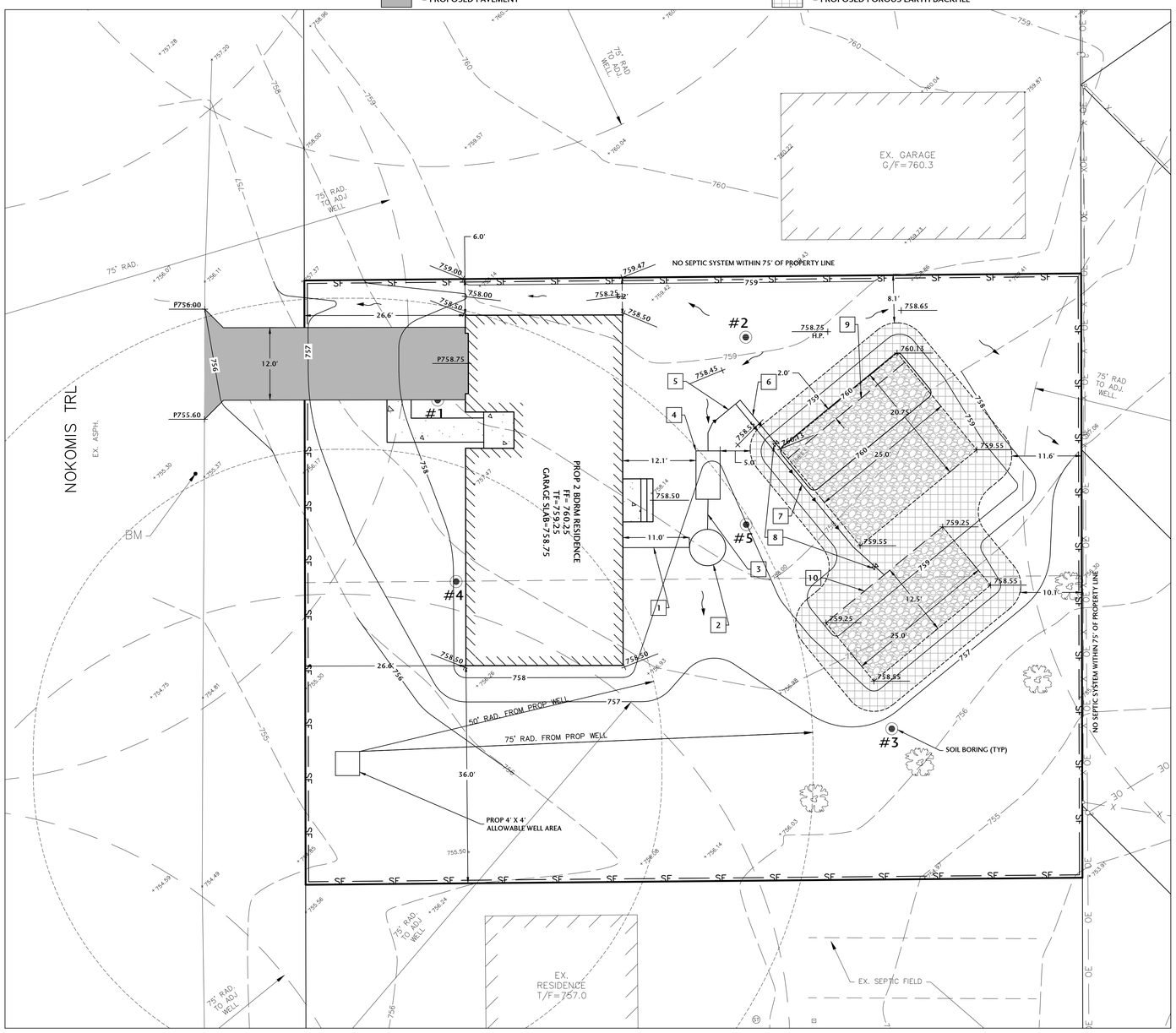
CALL JULIE 1-800-892-0123
WITH THE FOLLOWING:
COUNTY LAKE COUNTY
CITY-TOWNSHIP LAKE COUNTY
SEC. & ¼SEC. NO.# SW 1/4 SEC 21, T45N, R9E

48 Hours Before You Dig.
EXCLUDING SAT., SUN., & HOLIDAYS

811 Know what's below. Call before you dig.

GRAPHIC SCALE
10 0 5 10 20
(IN FEET)
1 inch = 10 ft.

= PROPOSED BUILDING
= PROPOSED CONCRETE SIDEWALK/PATIO
= PROPOSED GRAVEL BED
= PROPOSED PAVEMENT
= PROPOSED POROUS EARTH BACKFILL



SOIL BORINGS BY:

BOB OJA - SOIL SCIENTIST & CERTIFIED PROFESSIONAL SOIL CLASSIFIER

BENCHMARK

SITE BENCHMARK:
MAG NAIL SET IN ASPHALT
ELEV = 755.37 (NAVD88)

TYPE 4 AT-GRADE, MULTIPLE BED, SLOPING SITE SEWAGE DISPOSAL SYSTEM
PROPOSED 2 BEDROOM RESIDENCE
SOIL BASAL LOADING RATE = 0.4 GPD PER SQ.FT.
WITH AERATION, SOIL BASAL LOADING RATE = 0.48 GPD PER SQ. FT.
LINEAR LOADING RATE = 6 GPD PER LN.FT.

2 BEDROOMS = 300 GPD
MAX WIDTH OF STONE BED = 6/.48 = 12.5 FT EFFECTIVE
300 GPD/.48GPD/SQ.FT. = 625 SQ.FT. OF STONE BED
ABSORPTION AREA CONFIGURATION = 12.5X25 (2 BEDS)
625 SQ.FT. OF STONE BED PROVIDED

HEAD LOSS - LATERAL A
DISTAL HEAD = INLINE PRESSURE @ 3/16" HOLES = 3.5'
FORCE MAIN FRICTION LOSS (1.25" FORCE MAIN)
2.07' HEAD PER 100' OF FORCE MAIN = 2.07(21.5/100) = 0.45'
STATIC HEAD (LATERAL INVERT ELEV - PUMP ELEV) = 758.90 - 751.72= 7.18'
TOTAL HEAD LOSS: 3.5'+0.45'+7.18' = 11.08'

HEAD LOSS - LATERAL B
DISTAL HEAD = INLINE PRESSURE @ 3/16" HOLES = 3.5'
FORCE MAIN FRICTION LOSS (1.5" FORCE MAIN)
2.07' HEAD PER 100' OF FORCE MAIN = 2.07(74.5/100) = 0.98'
STATIC HEAD (LATERAL INVERT ELEV - PUMP ELEV) = 757.90 - 751.72= 6.18'
TOTAL HEAD LOSS: 3.5'+0.98'+6.18' = 10.66'

PUMP CAPACITY
(25) 3/16" HOLES IN 1 1/4" LATERAL @ 0.77 GAL/MIN = 19.25 GAL/MIN
19.25 GAL/MIN + 2.5 GAL/MIN (1/4" WEEP HOLE) = 21.75 GAL/MIN
TOTAL OF 21.75 GAL/MIN TO BE PROVIDED BY PUMP @ 11.08' OF HEAD (MIN)

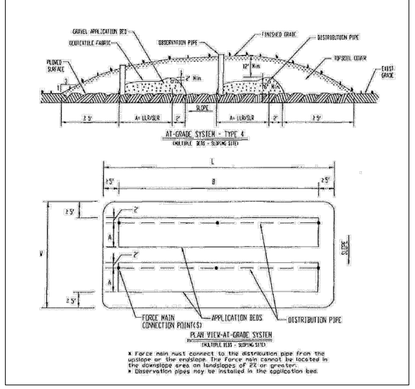
PRESSURE HEAD ADJUSTMENT
THE PRESSURE HEAD MUST BE ADJUSTED TO MATCH THAT SPECIFIED IN THE DESIGN. THE PRESSURE HEAD IS MEASURED AS THE HEIGHT LIQUID WILL RISE ABOVE THE TURN UP ELBOW WHEN THE PUMP IS RUNNING. TO ADJUST HEAD:
*GLUE A FOUR FOOT LENGTH OF PIPE (PREFERABLY CLEAR) TO A THREADED ADAPTER THAT WILL SCREW ONTO THE TURN UP ADAPTERS
*REPLACE THE TURN UP CAP WITH THE PIPE ADAPTER
*TURN THE POWER ON TO ALLOW THE LIQUID TO RISE IN THE PIPE
*ADJUST THE GATE OR GLOBE VALVE IN THE PUMPING TANK UNTIL THE EFFLUENT REACHES THE DESIRED HEIGHT IN THE PIPE. REMEMBER TO INCLUDE THE DISTANCE BELOW THE GROUND SURFACE TO THE LATERAL LINE WHEN MEASURING

CONTRACTOR NOTES:
LATERAL:
(12) 3/16" HOLES REQUIRED IN EACH LATERAL. FORCE MAIN TO CONTACT LATERAL AT LATERAL MIDPOINT. HOLES TO START AND FINISH 1' FROM LATERAL ENDS. HOLES TO BE DRILLED 24" APART ON BOTTOM OF LATERAL. A 1/4" TOP HOLE SHALL BE DRILLED AT THE END OF EACH LATERAL

UTILIZE DEEP SOCKET HIGH PRESSURE FITTINGS. 1 1/4" FORCE MAIN TO FEED 1 1/4" LATERALS. CHISEL PLOW FIELD AREA ALONG CONTOURS TO A DEPTH OF 8" PRIOR TO INSTALLATION.

WATER SOFTENER NOTE:
IF A WATER SOFTENER IS UTILIZED AT THIS SITE, IT MUST MEET NSF/ANSI 44 STANDARDS IN ORDER TO DRAIN DIRECTLY INTO THE SANITARY LINE. IF THE WATER SOFTENER DOES NOT MEET THIS STANDARD, THE DISCHARGE LINE MUST BYPASS THE AEROBIC TANK AND BE PIPED DIRECTLY TO THE DOSING TANK.

Illustration E.11: Type 4 - At-Grade System: Multiple Bed, Sloping Site



SEPTIC COMPONENTS

1. PROP 11 LF 4" SOLID PIPE @ 1.10% MIN
2. PROP CLEARSTREAM 500 NC OR APPROVED EQUAL
3. PROP 5 LF 4" SOLID PIPE @ 1.10% MIN.
4. PROP 750 GAL LIFT STATION W/ ALARM
5. PROP 10 LF 1.25" FM
6. PROP 11.5 LF 1.25" FM
7. PROP 37.5 LF 1.25" FM
8. PROP FLOW CONTROL GATE VALVE/BOX - 2 LOCATIONS
9. LATERAL A - 25 LF 1 1/4" PIPE W/ 12 2/16" HOLES SPACED 24" C-C
10. LATERAL B - 25 LF 1 1/4" PIPE W/ 12 2/16" HOLES SPACED 24" C-C

1. THE SEPTIC SYSTEM INSTALLER SHALL CONTACT THE DESIGNER PRIOR TO ONSET OF CONSTRUCTION TO RESOLVE ANY DISCREPANCIES IF IDENTIFIED.
2. THE AREA IN WHICH THE SEPTIC SYSTEM IS TO BE INSTALLED SHALL BE IDENTIFIED AND SHALL NOT BE CUT, EXCAVATED, FILLED, OR OTHERWISE ALTERED IN ANY WAY EXCEPT AS SPECIFIED IN THE APPROVED PLAN. THE AREA SHALL BE PROTECTED FROM CONSTRUCTION TRAFFIC AND ACTIVITIES THAT MIGHT COMPACT THE SOIL.
3. THE PROPOSED SEEPAGE AREA SHALL HAVE A BARRIER OF SUBSTANTIAL QUALITY TO PREVENT TRAFFICKING OR DISTURBANCES OF THE SEEPAGE AREA PRIOR TO RELEASE OF PERMIT, AND UNTIL THE SEEPAGE SYSTEM IS APPROVED AND BACKFILLED.
4. ANY REMOVAL OF TREES GREATER THAN OR EQUAL TO SIX INCHES IN DIAMETER SHALL BE BY CUTTING NEAR THE SURFACE. STUMPS MAY BE REMOVED BY GRINDING OR CUTTING, BUT SHALL NOT BE UPROOTED.
5. CHISEL PLOW SEPTIC FIELD AREA TO 8" DEEP ALONG CONTOUR WHEN TRENCH DEPTH IS LESS THAN 12" INTO EXISTING GRADE.
6. SEPTIC SYSTEM HAS NOT BEEN SIZED TO ACCOMMODATE HOT TUB USE.
7. SEPTIC FIELD HAS BEEN DETERMINED TO BE OUT OF FLOOD HAZARD.
8. SEPTIC TANK MUST HAVE ACCESS RISER TO GROUND SURFACE
9. SEPTIC TANK HAS NOT BEEN SIZED TO ACCOMMODATE GARBAGE DISPOSAL.
10. LIFT STATION MUST HAVE ACCESS RISER TO EXTEND 6" ABOVE NORMAL GROUND SURFACE. FORCE MAIN TO PITCH BACK TO TANK; PIPE FITTINGS SHALL BE LONG SOCKET SOLVENT WELD PRESSURE TYPE; QUICK DISCONNECT TO BE PROVIDED IN DISCHARGE PIPING. CORROSION RESISTANT ROPE OR CABLE TO BE AFFIXED TO PUMP. PROVIDE AUDIO VISUAL ALARM; ALARM TO BE SET TO PROVIDE 500 GAL CAPACITY. DOSE AS SPECIFIED ON DESIGN. PROVIDE 1/4" WEEP HOLE BETWEEN LIFT STATION OUTLET AND GATE VALVE. FORCE MAIN/LATERAL (2" & 1 1/4") SCH 40 PVC.
11. ALL SEWER LINES/HEADER LINES SHALL BE BEDDED PRIOR TO BACKFILLING.
12. ALL CONSTRUCTION/MATERIALS SHALL CONFORM TO THE LOCAL PUBLIC HEALTH ORDINANCE.
13. UNLESS SPECIFIED, NO CESSPOOLS, STORMWATER DRYWELLS, OR LEACH PITS WERE IDENTIFIED WITHIN REQUIRED ORDINANCE SETBACKS.
14. UNLESS SPECIFIED, NO UTILITIES WERE NOTED TO BE IN CONFLICT WITH THE PROPOSED SEPTIC SYSTEM DESIGN. THE SEPTIC SYSTEM INSTALLATION CONTRACTOR IS REQUIRED TO CONTACT J.U.L.I.E. PRIOR TO ONSET OF CONSTRUCTION. UTILITIES SERVICES SHALL NOT CROSS SEPTIC AREA.
15. FILL, IF PROPOSED, AS INDICATED WILL NOT NEGATIVELY AFFECT SURFACE WATER RUNOFF FROM/TO NEIGHBORING PROPERTIES. PROPOSED FILL TO BE 6" TOPSOIL. REMAINDER COARSE GRADED SAND OR POROUS EARTH FILL MEETING ORDINANCE REQUIREMENTS.
16. CLEAR WATER FROM FOOTING DRAINS, AIR CONDITIONERS, DE-HUMIDIFIER, DOWN SPOUTS, PERIPHERAL DRAIN TILE, AND ANY OTHER CLEAR WATER SHALL NOT BE DISCHARGED INTO OR ONTO THE SEPTIC FIELD.

MEGHAN A. MICHEL
062-057170
LICENSED PROFESSIONAL ENGINEER OF
ILLINOIS

I HEREBY CERTIFY THAT THE PLANS WITH THE FIRM'S NAME LISTED BELOW WERE PREPARED UNDER MY DIRECT SUPERVISION. FURTHERMORE, THE PROPOSED PROJECT WILL NOT RESULT IN DRAINAGE, EROSION OR RUNOFF WHICH ADVERSELY IMPACTS ADJACENT PROPERTIES OR THE PUBLIC RIGHT-OF-WAY.

DATED AT RINGWOOD, ILLINOIS THIS 17th DAY OF MARCH, 2025

Meghan A. Michel

MEGHAN A. MICHEL, P. E., J. CONDON & ASSOCIATES, INC.
ILLINOIS REG. PROF. ENGINEER No. 062-057170 EXPIRATION DATE 11-30-2025
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION FIRM NUMBER: 184-006759

J. CONDON & ASSOCIATES, INC.
CONSULTING ENGINEERS
5415 BUSINESS PARKWAY
RINGWOOD, ILLINOIS 60072
815.728.0068
IL DESIGN FIRM # 184-006759

HABITAT FOR HUMANITY OF McHENRY COUNTY
McHENRY, ILLINOIS

N W E S

SCALE
1"=10'

ISSUE DATE
3/17/25

PROJECT MANAGER
MAM

DESIGNER
LRT

QUALITY CONTROL
JEC

LOTS 80 & 81, 34681 NOKOMIS TRAIL
McHENRY, ILLINOIS

NO.	DATE	DESCRIPTION

LIMITATION OF WARRANTY OF ENGINEER'S INSTRUMENTS OF SERVICE

THE ENGINEER AND HIS CONSULTANTS DO NOT WARRANT OR GUARANTEE THE ACCURACY AND COMPLETENESS OF THE DELIVERABLES HEREIN BEYOND A REASONABLE DILIGENCE. IF ANY MISTAKES, OMISSIONS, OR DISCREPANCIES ARE FOUND TO EXIST WITHIN THE DELIVERABLES, THE ENGINEER SHALL BE PROMPTLY NOTIFIED SO THAT HE MAY HAVE THE OPPORTUNITY TO TAKE WHATEVER STEPS NECESSARY TO RESOLVE THEM. FAILURE TO PROMPTLY NOTIFY THE ENGINEER OF SUCH CONDITIONS SHALL ABSOLVE THE ENGINEER FROM ANY RESPONSIBILITY FOR THE CONSEQUENCES OF SUCH FAILURE. ACTIONS TAKEN WITHOUT THE KNOWLEDGE AND CONSENT TO THE ENGINEER, OR IN CONTRADICTION TO THE ENGINEER'S DELIVERABLES FOR RECOMMENDATIONS, SHALL BECOME THE RESPONSIBILITY NOT OF THE ENGINEER BUT OF THE PARTIES RESPONSIBLE FOR TAKING SUCH ACTION.

PROJECT NUMBER
HABI-24013-3

SHEET TITLE
SEPTIC PLAN

SHEET NUMBER
C1.1

X:\2024\24013\cad\24013-3.dwg, 3/17/2025 1:29:59 PM, DWG To PDF.pc3, 1:1