MISSOULA CITY-COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
301 WEST ALDER
MISSOULA, MONTANA 59802-4123
(406) 258-4755 FAX (406) 258-4781

File # _____

Log # 2013-038SE

APP

SITE EVALUATION REPORT

Name of Applicant: Daniel Terres and Vinette Harrington-Terres Phone: (719) 256-4370

Address: P. O. Box 461, Crestone, CO 81131

* Legal Description: NE 1/4 NW 1/4 S 25 T 20 R 17

* Subdivision or Certificate of Survey: Glacier Ridge Subdivision Size of lot or parcel: 25.78 acres

* Address of site (if any): 1034 Stoner Lake Road, Condon, MT 59825

Distance to nearest well, irrigation ditch, or surface water: 100+

Comment: _____

SOIL PROFILE HOLE #1: Latitude & Longitude 47deg 28' 10.0" 113deg 42' 35.3"

Depth	Texture	Structure	Color	Other Features
0-4"	topsoil	granular	brown	roots to 18"
4-18"	sandy clay loam	granular	brown	none
18"-60"	gravelly clay loam	subangular	tan	none
60"-108"	silty clay loam	subangular	tan	none

SOIL PROFILE HOLE #2: Latitude & Longitude 47deg 28' 09.2" 113deg 42' 34.6

Depth	Texture	Structure	Color	Other Features
0-5"	sandy clay loam	granular	brown	roots to 18"
5"-36"	gravelly clay loam	subangular blocky	tan	none
36"-60"	silty clay loam	subangular blocky	tan	none

Soil Description, 18-36" : clay loam

Slope of lot at site: 2 %

Other features: Grassy with sparse early growth pine

Application rate: perc test required

Recommendations: Must do perc testing to determine soil permeability.

* Soils acceptable for septic system: Yes ☑ No ☐

Non-Degradation Analysis Performed & Attached ☑ or Parcel is Categorically Exempt ☐

Copy given to Applicant: ☐ Mailed: ☑ Date: 10/22/13

* Evaluation conducted by: James L. Erwin on September 10, 20 13

* Indicates information required for data entry

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

NITRATE SENSITIVITY ANALYSIS

SITE NAME: 1034 Stoner Lake Rd, Condon, MT 59825
COUNTY: Missoula
LOT #: LOT 1 OF GLACIER RIDGE
NOTES: Receiving Water is a pond to the north west

VARIABLES	DESCRIPTION	VALUE	UNITS
K	Hydraulic Conductivity	3.360	ft/day
I	Hydraulic Gradient	0.0220	ft/ft
D	Mixing Zone Thickness (usually constant)	15.0	ft
L	Mixing Zone Length (see ARM 17.30.517(1)(d)(viii)	100	ft
Y	Width of Drainfield Perpendicular to Ground Water Flow	80	ft
Ng	Background Nitrate (as Nitrogen) Concentration	0.080	mg/L
Nr	Nitrate (as Nitrogen) Concentration in Precipitation (usually constant)	1.0	mg/L
Ne	Nitrate (as Nitrogen) Concentration in Effluent	50.00	mg/L
#I	Number of Single Family Homes on the Drainfield	1.0	
QI	Quantity of Effluent per Single Family Home	26.70	ft3/day
P	Precipitation	15.0	in/year
V	Percent of Precipitation Recharging Ground Water (usually constant)	0.20	

EQUATIONS			
W	Width of Mixing Zone Perpendicular to Ground Water Flow = (0.175)(L)+(Y)	97.50	ft
Am	Cross Sectional Area of Aquifer Mixing Zone = (D)(W)	1462.50	ft2
As	Surface Area of Mixing Zone = (L)(W)	9750.00	ft2
Qg	Ground Water Flow Rate = (K)(I)(Am)	108.11	ft3/day
Qr	Recharge Flow Rate = (As)(P/12/365)(V)	6.68	ft3/day
Qe	Effluent Flow Rate = (#I)(QI)	26.70	ft3/day

SOLUTION			
Nt	**Nitrate (as Nitrogen) Concentration at End of Mixing Zone =((Ng)(Qg)+(Nr)(Qr)+(Ne)(Qe)) / ((Qg)+(Qr)+(Qe))**	**9.54**	**mg/L**

BY: Jim Erven
DATE: October 22, 2013

REV. 03/2005

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

PHOSPHOROUS BREAKTHROUGH ANALYSIS

SITE NAME: 1034 Stoner Lake Rd, Condon, MT 59825
COUNTY: Missoula
LOT #: LOT 1 OF GLACIER RIDGE
NOTES: Receiving Water is a pond to the north west

VARIABLES	DESCRIPTION	VALUE	UNITS
Lg	Length of Primary Drainfield as Measured Perpendicular to Ground Water Flow	80.0	ft
L	Length of Primary Drainfield's Long Axis	65.0	ft
W	Width of Primary Drainfield's Short Axis	17.0	ft
B	Depth to Limiting Layer from Bottom of Drainfield Laterals*	7.0	ft
D	Distance from Drainfield to Surface Water	4564.0	ft
T	Phosphorous Mixing Depth in Ground Water (0.5 ft for coarse soils, 1.0 ft for fine soils)**	1.0	ft
Ne			
Sw	Soil Weight (usually constant)	100.0	lb/ft3
Pa	Phosphorous Adsorption Capacity of Soil (usually constant)	200.0	ppm
#I	Number of Single Family Homes on the Drainfield	1.0	
CONSTANTS			
PI	Phosphorous Load per Single Family Home (constant)	6.44	lbs/yr
X	Conversion Factor for ppm to percentage (constant)	1.0E+06	
EQUATIONS			
Pt	Total Phosphorous Load = (PI)(#I)	6.44	lbs/yr
W1	Soil Weight under Drainfield = (L)(W)(B)(Sw)	773500.0	lbs
W2	Soil Weight from Drainfield to Surface Water = [(Lg)(D) + (0.0875)(D)(D)] (T)(Sw)	218775340.0	lbs
P	Total Phosphorous Adsorption by Soils = (W1 + W2)[(Pa)/(X)]	43909.8	lbs
SOLUTION			
BT	**Breakthrough Time to Surface Water = P / Pt**	6818.3	years

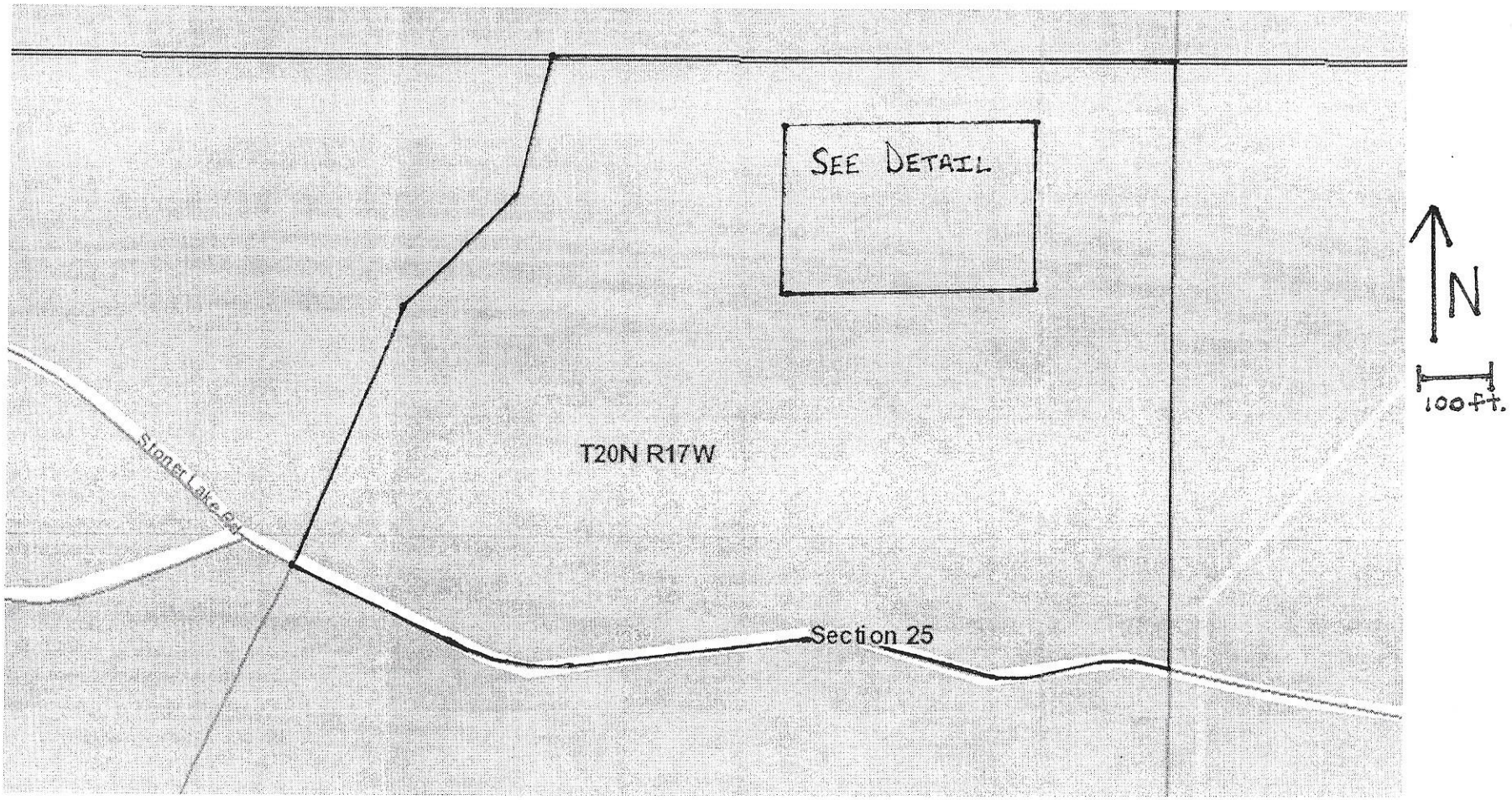
BY: Jim Erven
DATE: October 22, 2013

NOTES:

** Depth to limiting layer is typically based on depth to water in a test pit or bottom of a dry test pit minus two feet to account for burial depth of standard drainfield laterals.*
*** Material type is usually based on test pit. A soil that can be described as loam (e.g. gravelly loam, sandy loam, etc.) or finer according to the USDA soil texture classification system is considered a "fine" soil.*

REV. 12/2004

1034 Stoner Lake Rd., Condon, MT 59825



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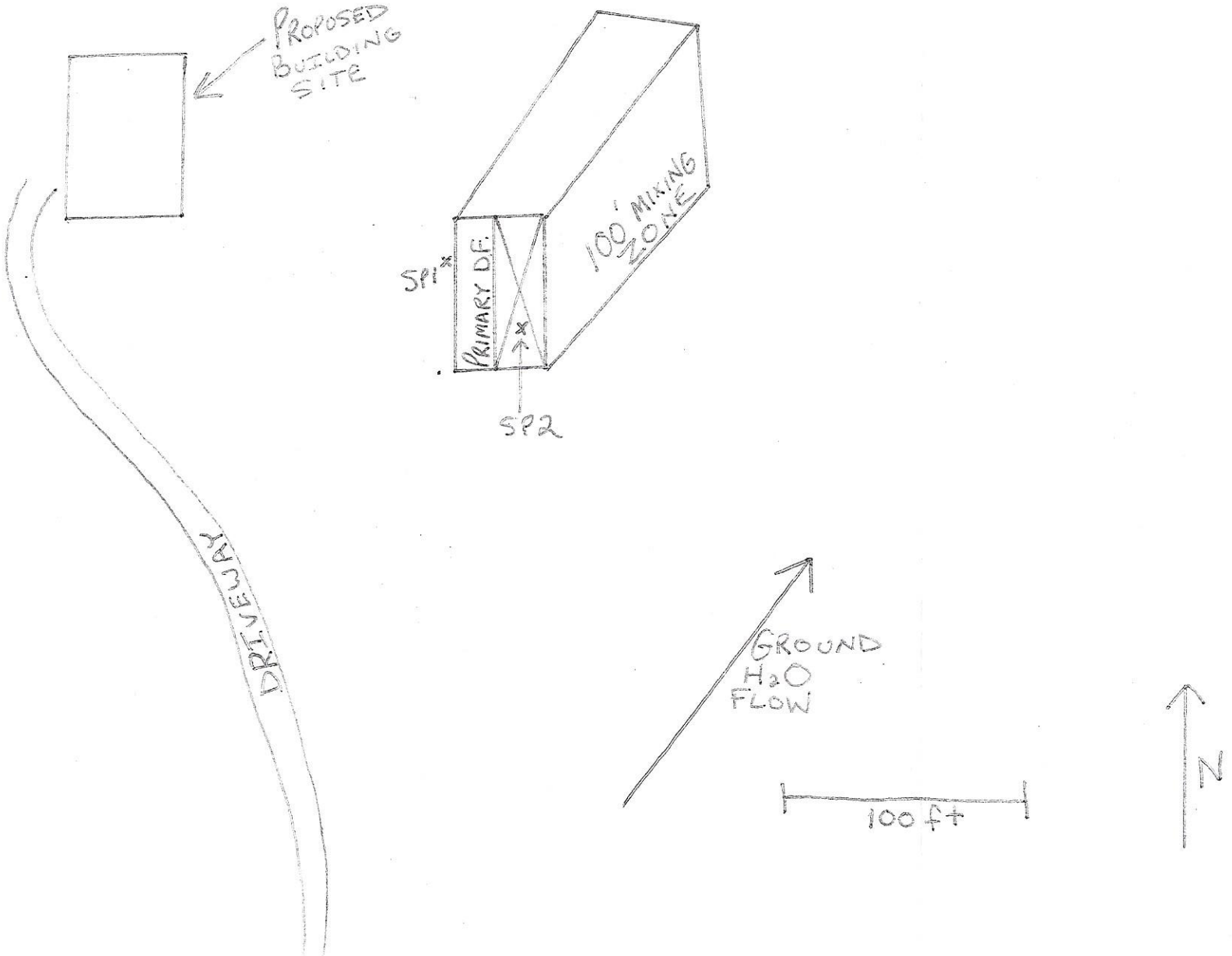
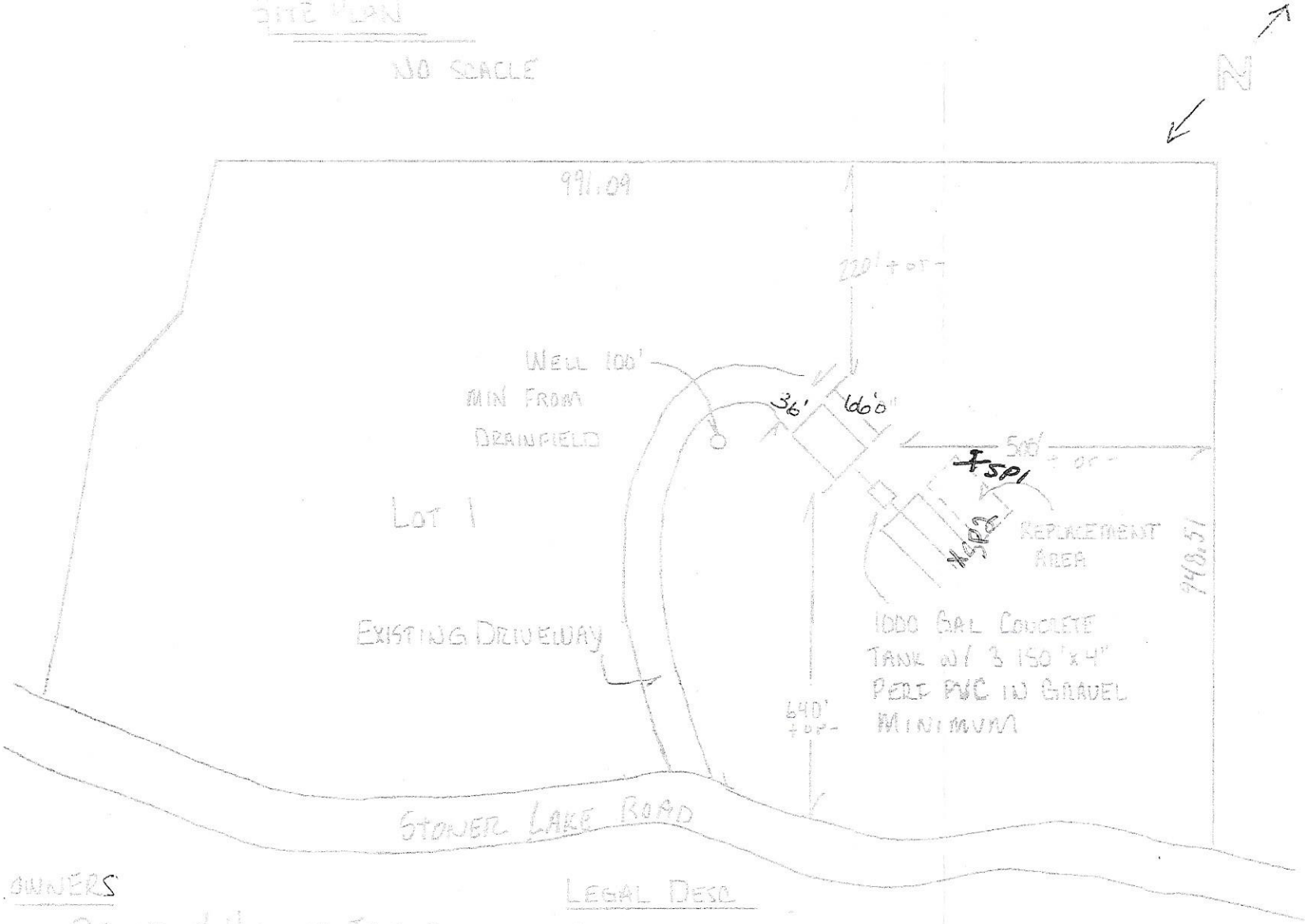


Site Plan

NO SCALE



OWNERS

DANIEL & VINETTE TERRES
BOX 961
CRESTONE, CO 81131-0961

LEGAL DESC

- LOT 1 GLACIER RIDGE COWDIN, MT.
- SEC 25 T20N R17W
- GEO CODE 04299252010100000
- 1034 STONER LAKE RD.

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