Title 123 – Nebraska Department of Environmental Quality
Appendix A

For NDEQ USE ONLY
Permit Number
Reviewed By
Date Approved

Nebraska Department
ntal Quality

2019-0108
101458

RECEIVED
JUN 19 2019
Nebraska Dept of Environmental Quality

JCTION PERMIT APPLICATION FORM
WASTEWATER WORKS

ıg Address:

For Municipalities/SIDs: Board Chairperson, Mayor, Utility Superintendent, or City Administrator
For Commercial or Industrial Facilities: Owner, Designated Company Officer
For Private Developments: Owner, Developer, or Association President

EA: _____ DEQ#195_____

Stonebrook Roofing, Steve Kinkel, CEO	402-438-5559	
Name and Title	Phone	Fax
1919 S 40th Street, Suite 222	Lincoln	Ne 68506
Mailing Address	City	State Zip

B. Project Engineer Information:

Justin Stark	Olsson, Inc.	402-474-6311		jstark@olsson.com
Name of Project Engineer	Firm	Phone	Fax	Email
601 P Street, Suite 200		Lincoln	Ne	68508
Mailing Address		City	State	Zip

C. Project Information: Stonebrook Roofing Lagoon (Project Name) 017-2929 (Project Number)

Legal Description:	SE	SW	35	11	7E	Lancaster	40.8789	-96.5960
	¼	¼	Sect.	Town.	Range	County	Latitude	Longitude

D. Project Types: (Check all that apply)

- ☐ Gravity Sewer System
- ☐ Lift Station and Force Main
- ☒ Other Collection System
- ☐ New WWTF
- ☒ Modification to WWTF
- ☐ Industrial Pretreatment Facility

E. For Sanitary Sewer Extensions: Name of Receiving WWTF _____

F. Engineering Statement for Sanitary Sewers: Check box if not applicable ☒

I have reviewed the available design data, flow records, and compliance history of the receiving WWTF. In my professional judgment, the WWTF has the hydraulic and treatment capacity to receive the additional wastewater from this sewer addition and remain in compliance with applicable Department regulations. (If unable to sign statement, attach explanation).

_____ _____
Project Engineer's Signature Date



G. Check sheet for Onsite Wastewater Treatment System Review

Check sheet for Onsite Wastewater Treatment System Review

Project Number: 2019-0108 101458 Name of Facility: Stonebrook Roofing

Submitting Firm: Olsson

Title 124	Description	MET	NOT MET	NA
	Confirm application legal description or lat/long matches up to actual project site.	X		
1-009	Onsite systems begin 30" from foundation of building. Consider requesting information up to that point if it is helpful.	X		
2-001	Design flow > 1,000 gallon per day not using soil absorption system subject to Title 123	X		
2-009	Design flow > 1,000 gallon per day, or > 20 persons, or receiving non-domestic wastes **>>> contact UIC**			X
3-003	02A-G Permit complete? Three sets of plans submitted shall include: 02H1 Description of flow and peak single-day flow 02H2 Detailed site plan 02H3 Type, size, location of system, show lot, grades, features 02H4 Depth of seasonal gw table or barrier/bedrock, if < 10 ft, borings required 02H5 GW flow direction 02H6 Soil conditions, properties and soil per test locations, data & results 03A Plans and specs sealed and signed by PE 03B Flow < 1000 gpd, domestic, meets setbacks but not all requirements for authorization by rule may be prepared by Master Installer	X		
4 Site Evaluation and Subdivisions				
4-001	01 Scaled drawing w type, size, location, elevation of system, legal description, property lines, buildings, types of wells w/in 1000', water pipes, utility lines, ordinary high water line for lakes, streams, etc. 02 Depth to seasonal highest gw level or bedrock if shallower than gw, if depth < 10' borings required	X		
4-002	Sources & methods for determining seasonal high gw elevations (see regs for acceptable sources and methods)	X		
4-003	Subdivision Review and Approval 04A-G Permit complete and fee? 04H Three sets of plans submitted, refer to regulation for required site evaluation information 04H1-3 Requirements for drawing details and perc tests based on lot size, refer to regs H1 Lots < 3 acre and >/= 1.75 acre H2 Lots < 1.75 acre and >/= 1.25 acre H3 Lots < 1.25 acre			X
4-004	Reserve area meets requirements? (Recommended when possible, but not required for existing buildings or replacement onsite systems that did not have a reserve area already established.)			X

Pressure-Service Connection	25 ft. (7.6 m)			X
Suction Line	100 ft. (30.5 m)			X
Property Lines	50 ft. (15.2 m)			X
Trees and Brush	50 ft. (15.2 m)			X
Foundations: (see definitions above)				
Except Neighbor's Foundation:				X
Class 1	100 ft. (30.5 m)	X		
Class 2	100 ft. (30.5 m)			X
Class 3	50 ft. (15.2 m)			X
Neighbor's Foundation:				
Class 1	200 ft. (61.0 m)	X		
Class 2	200 ft. (61.0 m)			X
Class 3	100 ft. (30.5 m)			X

5-009	No impermeable surface over or within 5' of absorption system or reserve area.			X
	6 Soil Percolation			
6-001	Soil percolation tests shall be conducted in soil absorption system area.			X
6-002	02.01 At least 3 test holes, if difference between fastest and slowest perc is > 20 mpi then minimum 4 test holes and 2 test holes per lateral required 02.02 – 07 Perc testing procedure…check as needed			X
6-003	Design perc rate is average of perc tests unless difference between fastest and slowest is > 20 mpi, then use slowest perc rate for design. **If any perc test rate is faster than 5 mpi or slower than 60 mpi, see 6-004.**			X
6-004	02 Perc rate faster than 5 mpi acceptable if 12" thick loamy sand soil liner with perc rate 15-20 mpi installed in trench or bed as provided in Chap 14 and trench or bed design based on soil liner perc rate 03 Soil absorption system not allowed for perc rate slower than 60 mpi unless designed by PE 04 Installation of alternative design to accommodate unsuitable soils requires permit 05 Soil absorption system constructed in fill prohibited except as provided in Chapter 14			X
7 Tank Construction Materials				
7-001, 004	Tank materials acceptable (concrete, FRP, HDP, fiberglass), concrete block and steel tanks unacceptable			X
7-002, 005	Concrete tank properly cured and watertight, tank designed to withstand soil pressures when empty			X
7-003	Concrete tank interior exposed to air shall be coated with bitumastic			X
7-006	Septic tanks shall be permanently marked with capacity in gallons, manufacturer name and address			X
8 Septic Tank And Holding Tank Design and Placement				
8	See applicable figures for reference at end of Chapter 8			X
8-001	Depth from outlet invert to septic tank floor not less than 36", liquid depth greater than 78" not included in determining tank capacity. Diameter of septic tank not less than 60" and length shall be 2-3 times diameter.			X
8-002	No septic tank or compartment of tank horizontal dimension < 24"			X

	grease trap tank, grease trap tank located ahead of septic tank, additional septic tank may be used in lieu of grease trap under following conditions: 01 Facility constructed before date of regulations 02 Current kitchen and blackwater waste streams are not separated 03 Additional septic tank is sized following Section 004 of this Chapter and 04 Additional tank is placed in series with other tanks and all comply with Title 124			
9-002	01 Grease trap tank shall be watertight, durable, and same materials as septic tanks 02 Inlet invert at least 3" above the outlet invert 03 Inlet baffle or sanitary tee shall extend at least 24" below liquid level 04 Outlet baffle or sanitary tee shall extend to within 8" of tank bottom 05 Grease trap tank shall be provided with inspection/cleanout covers over inlet and outlet 06 Blackwater other than kitchen waste shall not be connected to grease trap tank 07 All wastewater from kitchen operation shall be connected to grease trap tank, effluent from grease trap tank shall connect to inlet line of septic tank			X
9-004	01 Grease trap tank shall provide 24 hrs of detention time for average daily flow 02 Minimum capacity of any grease trap tank shall be 750 gal			X
10 Tank Capacity				
10-001	01 Min septic tank capacity for single/multi family dwelling based on design flow (Chap 12) and Table 10.1, pump tank or chamber is not part of required min septic tank volume 02 Dwelling served by > 1 septic system, divide flow to systems and see Table 10.1, min tank capacity is 1000 gal 03 Holding tank for dwelling min capacity of 1000 gal for 2 or fewer bedrooms plus 300 gal/bedroom 04 Pump tank serving dwelling or non-dwelling shall have min storage capacity above normal high (pump start level) for 1 day flow			X
10-002	01 For flows over 1500 gpd, capacity of septic tank for non-dwelling at least 1125 gal plus 0.75 * daily flow, for flows 1500 gpd or less, 1.5 * daily flow with min 1000 gal septic tank, non-dwelling served by multiple systems min tank size is 1000 gal 02 Holding tank for non-dwelling min capacity at least 5 * daily flow but at least 1000 gal			X
10-003	Septic systems with > 2,000 gpd flow require two-compartment tank or 2 septic tanks in series			X
10-004	Septic tank capacity required for high strength or high temperature wastewater (laundry, butcher shop, camper dump station, restaurant) is doubled			X
10-005	Septic tank volume increased by 50% when pump delivers wastewater to tank			X
11 Mound Systems				
11-002	01 Min 1' vertical separation of native undisturbed soil between bottom of sand fill of mound system and top of seasonal high groundwater, bedrock, or other limiting soil feature 02 Min 4' vertical separation from treatment media distribution bed to top of seasonal high gw, bedrock or other limiting soil feature 03 Perc rate of native undisturbed soil shall not be slower than 60 mpi 04 Perc rate measured in top 12" of native undisturbed soil 05 Ground slope shall not be > 5% 06 Restrictions and horizontal setbacks, see Table 5.1, measure from toe of mound 07 Mound shall not cause water to pond or retain runoff			X
11-003	**Site Prep** 01A Vegetation and loose organic matter shall be removed, trees/brush cut flush leaving roots 01B Supply pipe from pump to effluent distribution system shall be installed prior to prep of soil surface with minimum native soil disruption, trench backfill and compacted with native soil 01C Native undisturbed soil under entire mound shall be roughened to 6" depth using backhoe teeth or chisel plow, 4"-6" layer of sand in place during roughening, rototilling not permitted **Sand Layer** 02A Clean sand shall be installed over original ground surface to thickness providing at least 48" vertical separation from gw, bedrock or other barrier layer, sand at least 12" thick at uphill edge of treatment media distribution bed 02B Sand shall be clean, natural silica (See Table 11.1 for gradation) 02C Sand to be placed without driving vehicles onto roughened area, minimize compaction 02D Top of sand layer shall be level 02E Sand layer shall extend up on all sides of treatment media layer to top of treatment media layer 02F Sides slopes of sand layer shall not be steeper than 3:1 02G Sand layer shall be constructed to dimensions shown in Table 11.3 thru Table 11.5			X

	05G Pump control panel shall include externally mounted visible and audible alarms located visible to owner 05H Pump power supplied on separate circuit from alarm circuit 05J Electrical panels sealed off from tank atmosphere			
12 Design Flow				
12-001	**Design Flow for Other Than Lagoon** 01 For single-family dwelling not less than 100 gpd plus 100 gal per bedroom (Table 12.1) 02 For multi-family dwelling or multiple single-family dwellings connected to common wastewater system, not less than 100 gpd per dwelling unit plus 100 gpd per bedroom (Table 12.2) 03 For non-dwelling facility, not less than the highest daily wastewater flow based on characteristics of occupancy and use of facility			X
12-002	**Design Flow for Onsite Wastewater Lagoon** 01 For single or multi-family dwelling, 150 gpd for one bedroom plus 75 gpd for each additional bedroom (Table 12.3) 02 For non-dwelling facility, the average daily wastewater flow 1,600 GAL/DAY	X		
12-003	If non-dwelling facility includes residential occupancy, non-residential use shall be added to residential design flow of 100 gpd plus 100 gpd per bedroom			X
14 Trench and Bed Soil Absorption Systems				
14-001	Bottom of trenches and beds shall be at least 4' above seasonal high groundwater table or other barrier layer			X
14-002	Soil absorption systems shall not be installed in fill except where sand is fill or bottom 12" or more of trench or bed is installed in native undisturbed soil below the fill.			X
14-003	If installing trench or bed where perc faster than 5 mpi: 1. 12" thick loamy sand soil liner providing perc of 15-20 mpi, 2. loamy sand soil liner shall cover bottom of trench or bed and extend up sidewalls of trench minimum of 9" for system using filter material, for system that does not use filter material, liner shall cover bottom of trench and extend up the sidewalls at least to the top of the slotted sidewalls on a gravelless chamber or to the top of the pipe on gravelless pipe. 3. Soil absorption area shall be sized based on soil liner perc rate.			X
14-004	Bottom of trench or bed excavation shall be level			X
14-005	Trench or bed for gravity distribution shall not exceed 150' in length Trench or bed for pressure distribution is not restricted in length when trench or bed is level. Dosing (see 020 and 021) shall be provided when the distribution system has more than 500 linear ft of distribution line.			X
14-006, 007, 008	Excavation of soil absorption system will leave soil in natural, unsmeared, and uncompacted condition, where perc slower than 10 mpi equipment or vehicles shall not drive on area, absorption trenches shall follow ground surface contours			X
14-009	When ground slope < 10%, minimum 4' undisturbed soil between adjacent trenches and between septic tanks and the nearest trench When ground slope 10-20%, minimum 6' undisturbed earth between adjacent trenches and between septic tanks and the nearest trench When ground slope > 20%, minimum of 10' undisturbed soil between adjacent trenches and between the septic tanks and the nearest trench			X
14-010	Trenches or beds shall be backfilled and crowned above finish grade to allow for settling.			X
14-011	Minimum depth of cover over distribution pipes at least 8". Maximum depth of cover over distribution pipes shall be no more the 36 inches			X
14-012	Soil absorption system shall not be installed in area that has an impermeable surface or soil has been excessively compacted by traffic or parking. No parking area, driveway, etc installed over or within 5' of soil absorption system or reserve area.			X
14-013	**Gravity Distribution Piping and Devices** 01 Where slope 3% or less, septic tank effluent may be conveyed through piping to soil absorption system through a distribution box, drop box or a header pipe 02 Where slope >3%, gravity distribution shall be through a drop box or pressure distribution 03 Distribution pipes shall be laid level or on uniform slope away from distribution devise of no more than 4" per 100" 04 Distribution pipe in seepage bed shall be uniformly spaced no more than 5' apart and not more than 30" from the side walls of the bed			X
14-014	When **distribution box** is used it can be integral part of septic tank or separate unit at drain field 01 Distribution box shall be set level 02 Each distribution line shall connect individually to the distribution box 03 Pipe connecting distribution box to the distribution line shall be tight joint construction laid on undisturbed earth or properly bedded 04 Distribution boxes shall be constructed of durable watertight, non-corrosive material 05 Distribution boxes provided with min 12" secured opening for inspection, cleaning and maintenance			X

	Biodiffuser 11" Standard 27" 40.5" (3.375') Biodiffuser 14" HC & 16" HC 29" 43.5" (3.625') Bio 2 12" 18" (1.50') Bio 3 19" 28.5" (2.375')					
	02C Effective width of the trench for system using bundled expanded polystyrene synthetic aggregate contained in high-strength polyethylene netting in cylinders 9-12" in diameter, designed for use without filter material, may be up to 1.5 times the maximum external width of the synthetic aggregate bundle. Trench may contain multiple bundles, but at least one bundle length must include perforated distribution pipe. The effective width of the trench shall not exceed 5' 02D For soil absorption systems that do not use filter material, any trench wider than 36" for pipes and 5' for gravelless chambers shall be considered a bed and have the required square footage of the absorption area or drainfield trench increased by the appropriate factor from Table 14.1.					X
14-019	**Absorption Trench Sizing** 01 Required square footage for absorption trench for dwelling determined by Table 14.2 02 Required square footage for non-dwelling facility determined by 14.2 or equation $sq.ft. = design.flow(gpd) \times 0.20 \times \sqrt{percolation(\text{min}/\ in)}$ 03 Required soil absorption area for a bed shall be determining area for a trench and multiplying by factor in Table 14.1					X
14-020	**Dosing** 01 Dosing required when total length of distribution line is greater than 500 linear feet. May use pumps or siphons, discharge designed to dissipate velocity and prevent erosion or disruption of filter material 02 When greater than 1,000 ft of distribution piping, soil absorption system shall be divided into two equal portions and dosed alternately with equal volumes of effluent 03 Design so system is dosed at least once but not more than 4 times per day based on design flow 04 Dose volume for undivided system shall be daily volume divided by dosing frequency or ¾ of internal volume of distribution lines whichever is greater, for divided system volume of dose is half amount determined for undivided system 05 Where dosing pump or siphon device is installed in tank or tank compartment, the volume of the tank or compartment shall not be considered part of required septic tank volume					X
14-021	Pressure distribution must be accomplished by use of a pump					X
16	**Waste Prohibitions** Check 001 for wastes prohibited unless approved in operating permit Check 002 for prohibited motor vehicle waste Check 003 for chemical containing wastes prohibited unless approved in operating permit					X
18 Lagoons: Site Location, Evaluation, and Design						
18-001	Lagoon site permits unobstructed wind, timber removed to at least 50' horizontally from high water mark of max operating depth and not less than 10' from outer dike toe	X				
18-002	Lagoon shall not receive surface runoff water	X				
18-003	Lagoon shall not be located on lot less than 3 acres	X				
18-004	Lagoon shall be designed for complete retention	X				
18-005	Lagoon floor at least 2' above seasonal high groundwater, bedrock or other barrier layer	X				
18-006	Top of dike at least 1' above 100 year flood elevation	X				
18-007	Maximum allowable seepage rate 1/8" per day after sealing and compaction. Determined by soils lab, two barrel method (see 007.01 for procedure) or comparison test (see 007.02 for procedure)	X				
18-008	**Lagoon Sizing** 01 Size based on design flow, seepage rate, and average evaporation (Figure 18.1) and precipitation (Figure 18.2) rates 01A For dwelling, design flow = 150 gpd + ((# bedrooms -1) X 0.75) 01B For non-dwelling, design flow = highest daily wastewater flow 02 Lagoon water surface area at max operating level determined by following water balance; $Maximum\ Water\ Surface\ Area = \frac{(flow) \times 976}{((evap. - precip.) \times 1.67) + (OD) + (seepage \times 608)}$ Where: flow (gpd) = daily design flow or inflow evap. (inches) = annual lake evaporation for location from Fig. 18.1 precip. (inches) = annual precipitation for location from Fig. 18.2	X				

TITLE 123 WASTEWATER WORKS CONSTRUCTION COMPLETION CARD - PLEASE RETURN

OWNER: Stonebrook Roofing

PROJECT NAME: Stonebrook Roofing Lagoon

For NDEQ Use Only
Program: WWF
Program ID NO: 19 - 0108
Facility ID NO: 101458
File Category: P

DATE APPROVED: 7/1/19 **CONSTRUCTION PERMIT NO:** 19 . 0108

DATE CONTRACT AWARDED: 5/23/19 **CHANGE ORDERS:** 2

DATE CONSTRUCTION STARTED: 7/8/19 **DATE ENDED:** 1/13/2020

This project was constructed and tested according to the approved plans, specifications and change orders.

PROFESSIONAL ENGINEER'S SIGNATURE: Justin R Stark

PRINT ENGINEER'S NAME: Justin R. Stark **PE LICENSE NO:** E-13167

ENGINEERING FIRM NAME/CITY: Olsson / Lincoln, NE

June 2009

Consent to Apply to Afalfa

LAND APPLICATION AGREEMENT FORM

By signing this Agreement form, all parties agree to the terms and conditions for the land application of lagoon effluent/slurry from the _____ lagoon in accordance with the rates, crops, application timing and acres as approved by the agronomist or responsible party.

All parties understand that the __DEQ_____ may monitor compliance with the terms of this work plan by conducting on-site inspections, samplings, or other oversight activities _ Lagoon Pumping & Dredging, Inc.__ reserves the right to modify or rescind this proposal for just and reasonable cause upon written notification to the parties.

_____Brian Jakub_____	**Lagoon Pumping & Dredging, Inc.**
Name of Agronomist or Responsible Party	*Name of Applicator*
Brian Jakub 6-17-19	_____ _____
Signature *Date*	*Signature of Applicator* *Date*

LANDOWNER CONSENT

As owner/operator of the property that is to receive the Stonebrook effluent/slurry, I, Mark Beres, agree to provide access to my property for the purposes of land application at the agronomic application rates approved by the DEQ.

I understand and agree that the Deq may monitor compliance with the terms of this work plan by conducting on-site inspections, sampling, or other oversight activities. Deq reserves the right to modify or rescind this proposal for just and reasonable cause upon written notification to the parties. BJ

I understand and agree to accept the effluent/slurry from __~~Red Barn~~ Stone brook and to receive $2000.00 at ~~NO CHARGE~~ in ~~exchange for the N-P-K nutrient value and water value of the~~ product. I also agree to hold __Red Barn_____ and applicator harmless from any residual or incidental impact on the land due to the application process or from the product applied. BJ for ~~Applog~~ receiving

All lab sample results, effluent/slurry sample lab reports and application map will be given to the landowner when they become available. farmer

Mark Beres	Mark Beres 6-17-19
Printed Name of ~~Landowner~~ farmer	*Signature of ~~Landowner~~* farmer *Date*

Location of source effluent/slurry: Stonebrook 8505 cornhusker hiway

Volume of water/effluent/slurry to be applied: Approximately 15,000 gpa 450,000 gal

Acres on which the product to be applied: 30

Application Rate: 15,000 gpa

Crop to be grown on land following application of product: Alfalfa

Application Schedule: June 2019

County of Application: Lancaster

Legal Description of Land for application: _____ _____ _____ _____
Township *Range* *Section* *Parcel*

from Hiway 6 and 98th St ½ So west side of road

Consent to Cross Canfield

LAND APPLICATION AGREEMENT FORM

By signing this Agreement form, all parties agree to the terms and conditions for the land application of lagoon effluent/slurry from the _____ lagoon in accordance with the rates, crops, application timing and acres as approved by the agronomist or responsible party.

All parties understand that the DEQ may monitor compliance with the terms of this work plan by conducting on-site inspections, samplings, or other oversight activities. Lagoon Pumping & Dredging, Inc. reserves the right to modify or rescind this proposal for just and reasonable cause upon written notification to the parties.

Brian Jakub — *Name of Agronomist or Responsible Party*

Lagoon Pumping & Dredging, Inc. — *Name of Applicator*

Signature _____ *Date* _____ *Signature of Applicator* _____ *Date* _____

LANDOWNER CONSENT

As owner/operator of the property that is to receive the _____ effluent/slurry, I, _____, agree to provide access to my property for the purposes of land application at the agronomic application rates approved by the _____.

I understand and agree that the _____ may monitor compliance with the terms of this work plan by conducting on-site inspections, sampling, or other oversight activities. _____ reserves the right to modify or rescind this proposal for just and reasonable cause upon written notification to the parties.

allow to lay hose across field store brook receive $500.00

I understand and agree to accept the ~~effluent/slurry~~ from ~~Red Barn~~ at ~~NO CHARGE~~ in ~~exchange for the N-P-K nutrient value and water value of the product~~. I also agree to hold Red Barn and applicator harmless from any residual or incidental impact on the land due to the application process or from the product applied.

for right to lay hose

All lab sample results, effluent/slurry sample lab reports and application map will be given to the landowner when they become available.

Raymond Siekman — *Printed Name of Landowner*

Raymond Siekman — *Signature of Landowner* _____ *Date*

Location of source effluent/slurry: 2700 NW 27th Lincoln NE 68527

Volume of water/effluent/slurry to be applied:

Acres on which the product to be applied:

Application Rate:

Crop to be grown on land following application of product:

Application Schedule:

County of Application:

Legal Description of Land for application: _____ *Township* _____ *Range* _____ *Section* _____ *Parcel*

Stonebrook Roofing Wastewater Flow Estimates

User	Unit	Units/day	Flow (gal/unit)	Flow (gal/day)	Flow (ft^3/day)	User days per month	Flow (ft^3/month)	Total Flow (ft^3/month)
Typical Work Week								
Full Time Emloyee (8 hrs)	Person	91	15	1,365	183	22	4,015	
Field Staff (6;30-9;00; 2.5 hrs)	Person	100	2.5	250	33	22	735	
Part Time (4 hrs/day)	Person	10	7.5	75	10	22	221	4,971
				1,690				

Proposed Lagoon Area	0.400	acres	17,424 square feet
Proposed Initial Depth	2.0	feet	2 foot minimum per NDEQ Title 124
Anticipated Seepage Rate	0.0625	in/day	1/8" per day minimum per NDEQ Title 124, but typically tighter
Annual Evaporation at Site	44.0		From Title 124, Figure 18.1
Annual Precipitation at Site	28.5		From Title 124, Figure 18.2

Lagoon Levels Over One Year

Month	# Days per	WW Inflow	Monthly	Precipitation	Lake	Evaporation	Seepage	Volume	Lagoon Level
August	31	4,971	3.50	5,082	7.89	11,456	2,813	-4,216	1.7580
September	30	4,971	3.40	4,937	6.07	8,812	2,723	-1,627	1.6647
October	31	4,971	2.20	3,194	4.55	6,609	2,813	-1,257	1.5925
November	30	4,971	1.20	1,742	-	-	2,723	3,991	1.8216
December	31	4,971	0.40	581	-	-	2,813	2,739	1.9787
January	31	4,971	0.50	726	-	-	2,813	2,884	2.1442
February	28	4,971	0.80	1,162	-	-	2,541	3,592	2.3504
March	31	4,971	2.10	3,049	-	-	2,813	5,207	2.6492
April	30	4,971	2.70	3,920	-	-	2,723	6,169	3.0032
May	31	4,971	4.00	5,808	6.78	9,840	2,813	-1,875	2.8957
June	30	4,971	4.20	6,098	9.00	13,071	2,723	-4,724	2.6245
July	31	4,971	3.50	5,082	9.71	14,099	2,813	-6,860	2.2308

6/17/2019
RJS

LAGOON SIZE REVIEW

COMMUNITY : **Stonebrook Roofing**

Design Flow, gallons per day =	1,600
Evaporation, inches per year =	44
Precipitation, inches per year =	28
Controlled Discharge Operating Depth, feet =	2
Total Depth for Complete Retention, feet =	4
Number of Cells =	1
Interior Slope, H : V of _ : 1 =	3

BOD loading, lb/d =	27
Minimum Area Required, acres =	1.1
Minimum Primary Area Required, acres =	0.9

Controlled Discharge Lagoon with 180 Days of Storage

Seepage, inches per day	0.0	0.031	0.0625		0.13
Losses, feet	0.51	0.98	1.45		2.39
Area at mid-depth, acres	0.4	0.3	0.3		0.2
Area at high water, acres	**0.4**	**0.3**	**0.3**		**0.2**

Complete Retention for 20 Years

Seepage, inches per day	0.0	0.031	0.0625		0.13
Losses, feet	26.67	45.71	64.69	fixed	102.71
Area at mid-depth, acres	1.2	0.7	0.5		0.3
Area at high water, acres	**1.2**	**0.8**	**0.6**	0.55 Ac	**0.4**

Ok

Controlled Discharge Lagoon with 365 Days of Storage

(over)

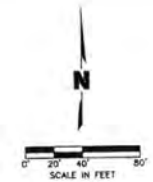
STONEBROOK ROOFING

EXISTING LAGOON CLOSURE PLAN



PROJECT LOCATION

VICINITY MAP
NOT TO SCALE



LEGEND

- AIR CONDITIONING UNIT
- BILLBOARD
- CONIFEROUS TREE
- DECIDUOUS TREE
- ELECTRIC METER
- FIBER OPTIC BOX
- FOUND PROPERTY CORNER
- GUY WIRE
- LIGHT POLE
- OVERHEAD TRANSFORMER
- POWER POLE
- RIGHT-OF-WAY MARKER
- SANITARY SEWER CLEANOUT
- SECTION CORNER
- SIGN
- TELEPHONE PEDESTAL
- UTILITY MANHOLE
- WOOD POST
- CONTOUR LINE
- CENTER LINE
- PROPERTY LINE
- SECTION LINE
- EASEMENT LINE
- W — W — WOOD FENCE
- C — C — CHAIN LINK FENCE
- 10"SS — SANITARY SEWER LINE
- 10"SD — STORM SEWER LINE
- 10"W — WATER LINE
- G — UNDERGROUND GAS MAIN
- P-OH — OVERHEAD POWER
- P-UG — UNDERGROUND POWER
- TEL — UNDERGROUND TELEPHONE LINE
- CATV — UNDERGROUND CABLE TELEVISION LINE
- FO — UNDERGROUND FIBER OPTIC LINE
- T — UNDERGROUND TRAFFIC LINE
- ST — STEAM TUNNEL
- TREE MASS
- TREE ROW/BUSHES
- ADA ACCESSIBLE ROUTE
- X — EXISTING FENCE
- PROPOSED FENCE

NOTES:

1. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED, ALTHOUGH THE SURVEYOR DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. THIS INCLUDES PRIVATE AND PUBLIC UTILITIES.

2. TREE SIZES ARE THE TRUNK SIZE AT APPROX. 3' FROM GROUND LEVEL. TREE CANOPY SIZES ARE NOT INCLUDED.

3. HORIZONTAL CONTROL IS: LANCASTER COUNTY GRID.

CONTROL POINTS

PNT.	NORTHING	EASTING	ELEV.	DESC.
20	229727.04	188496.36		1" PIPE
28	229292.10	188894.07		CHISELED "X"

BENCHMARKS

1. CHAIR NAILS IN W. FACE OF POWER POLE, SE. CORNER OF N. 98TH STREET AND ALVO ROAD.
ELEV.=1133.56 (N.A.V.D. 1988)

LAGOON CLOSURE NOTES

1. CONTRACTOR SHALL DRAIN & CLEAN EXISTING LAGOON. THE CONTRACTOR WILL BE REQUIRED TO TEST EXISTING WASTEWATER FOR VOC (VOLATILE ORGANIC COMPOUNDS), METALS, AND PETROLEUM PRIOR TO DISPOSAL. THE CONTRACTOR SHALL COORDINATE DISPOSAL AT LINCOLN WASTEWATER OR BY LAND APPLICATION.
2. THE CONTRACTOR SHALL REMOVE THE SETTLED SOLIDS ON THE LAGOON FLOOR.
3. ALLOW BOTTOM TO DRY SUFFICIENTLY TO FACILITATE PREPARATION OF PROPOSED LAGOON BOTTOM.
4. EXISTING PUMP STATION OR OIL/WATER SEPARATOR SHALL BE DRAINED AND EFFLUENT & STRUCTURES SHALL BE DISPOSED OF PROPERLY.
5. CLOSURE OF EXISTING LAGOONS SHALL BE IN ACCORDANCE WITH CHAPTER 17 OF TITLE 124-RULES AND REGULATIONS FOR THE DESIGN, OPERATION, AND MAINTENANCE OF ON-SITE WASTEWATER SYSTEMS, MOST CURRENT EDITION.

Pollution Control Project

APPROVED

6-17-19

RECEIVED

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Lincoln, NE 68508
TEL 402.474.6311
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www.olssonassociates.com

COPY

JUSTIN R. STARK
E-13949
6-17-19
REGISTERED PROFESSIONAL ENGINEER
STATE OF NEBRASKA

COPY

REV NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

2019

EXISTING LAGOON CLOSURE PLAN

STONEBROOK ROOFING

LINCOLN, NEBRASKA

drawn by: JM
checked by: RD
approved by: JS
QA/QC by: JM
project no.: 017-2929
drawing no.:
date: 06.21.19

SHEET
C301

DWG: F:\2017\2501-3000\017-2929\40-Design\AutoCAD\Final Plans\Sheets\GNCX\C_LAGOON CLOSURE_172929.dwg
DATE: Jun 21, 2019 9:54am
XREFS: C_PBASE_172929
USER: jkotenhaus
2018.11.12 - ACAD-x-Grat Roor plan
2018.5.02 1st Roor
2nd Roor
V_CAS_MAIN_172929



VICINITY MAP
NOT TO SCALE

CORNHUSKER HIGHWAY

NOTES:

1. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED, ALTHOUGH THE SURVEYOR DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. THIS INCLUDES PRIVATE AND PUBLIC UTILITIES.

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CONTROL POINTS

PNT	NORTHING	EASTING	ELEV.	DESC.
20	229727.04	189496.36		1" PIPE
28	229292.10	188894.07		CHISELED "X"

BENCHMARKS

1. CHAIR NAILS IN W. FACE OF POWER POLE, SE. CORNER OF N. 98TH STREET AND ALVO ROAD.
ELEV.=1133.56 (N.A.V.D. 1988)

LEGEND

- AIR CONDITIONING UNIT
- BILLBOARD
- CONIFEROUS TREE
- DECIDUOUS TREE
- ELECTRIC METER
- FIBER OPTIC BOX
- FOUND PROPERTY CORNER
- GUY WIRE
- LIGHT POLE
- OVERHEAD TRANSFORMER
- POWER POLE
- RIGHT-OF-WAY MARKER
- SANITARY SEWER CLEANOUT
- SECTION CORNER
- SIGN
- TELEPHONE PEDESTAL
- UTILITY MANHOLE
- WOOD POST
- CONTOUR LINE
- CENTER LINE
- PROPERTY LINE
- SECTION LINE
- EASEMENT LINE
- WOOD FENCE
- CHAIN LINK FENCE
- SANITARY SEWER LINE
- STORM SEWER LINE
- WATER LINE
- UNDERGROUND GAS MAIN
- OVERHEAD POWER
- UNDERGROUND POWER
- UNDERGROUND TELEPHONE LINE
- UNDERGROUND CABLE TELEVISION LINE
- UNDERGROUND FIBER OPTIC LINE
- UNDERGROUND TRAFFIC LINE
- STEAM TUNNEL
- TREE MASS
- TREE ROW/BUSHES
- ADA ACCESSIBLE ROUTE
- EXISTING FENCE
- PROPOSED FENCE

F.F.E. = 1134.10
UNIT 2
JIFFY CONDOMINIUM

UNIT 1
JIFFY CONDOMINIUM

EXISTING WELL LOCATION

N: 229236.80 E: 189282.56
STA: 2+22.46
CONNECT TO BUILDING SEWER
FL(6")=1130.13
COORDINATE WITH BUILDING MECHANICAL PLANS FOR EXACT LOCATION AND ELEVATION

A C304 — N: 229223.81 E: 189282.52
STA: 2+09.46
BUILD SEWER MANHOLE W/OUTLET PIPE IN BOTTOM OF MANHOLE.
REFER TO DETAIL ON SHEET C304
RIM EL.=1133.83
FL(6")=1130.00

INSTALL 129.80 LF OF 6" PVC SEWER PIPE @ S=0.01000

D C304 — N: 229101.43 E: 189305.80
STA: 0+79.65
BUILD DOUBLE CLEANOUT
FINISHED GRADE=1134.00
FL(6")= 1126.55

A C302 — CONSTRUCT LAGOON ACCESS ROAD

B C304 — INSTALL 12' WIDE ACCESS GATE

C C304 — BUILD CONCRETE DEPTH MARKER

INSTALL 79.88 LF OF 6" DIP SEWER PIPE@ S=0.01000

B C304 — BUILD 4' HIGH CHAIN LINK FENCE, PLACE FENCE AT TOP OF BERM AS SHOWN

N: 229026.33 E: 189335.37
STA: 0+00
CENTER OF LAGOON
BEGIN 6" SEWER
BOTTOM OF LAGOON ELEV.=1125.50
FL(6")=1125.75

FENCE TO BE PLACED 6.00' MIN, TYPICAL ALL SIDES, FROM TOP OF BERM

PROPOSED HIGH WATER MARK

PROVIDE CLAY LINER ON ALL INTERIOR WET SURFACES OF LAGOON BELOW ELEVATION 1130.50. SEE NOTE 10 ON THIS SHEET AND SPECIFICATIONS

REFER TO SPLASH PAD DETAIL ON SHEET C304.

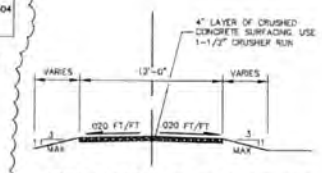
SOIL PIPE COVER PER DETAIL ON SHEET C303

NOTE:
EXISTING LAGOON FORMERLY USED BY SHUSTER'S MEAT. THE EXISTING BUILDING WILL BE DEMOLISHED AND THE EXISTING LAGOON SHALL BE CLOSED PRIOR TO CONSTRUCTION OF THE NEW LAGOON. REFER TO LAGOON CLOSURE PLAN.

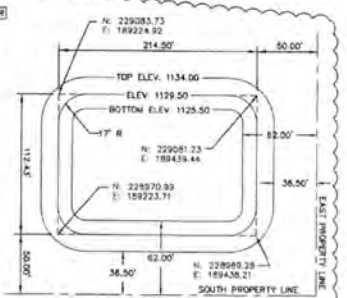
NOTE: FOR INFORMATIONAL PURPOSES ONLY THE ESTIMATED EARTHWORK VOLUME FOR LAGOON CONSTRUCTION = 650 CY FILL

N

0 20' 40' 80'
SCALE IN FEET



LAGOON ACCESS ROAD SECTION A C302
NOT TO SCALE



LAGOON STAKING DIAGRAM
NOT TO SCALE

GENERAL NOTES

1. THE LOCATIONS OF ALL EXISTING AERIAL AND UNDERGROUND UTILITY FACILITIES HAVE BEEN LOCATED BASED UPON THE BEST AVAILABLE INFORMATION. UNDERGROUND UTILITIES, WHETHER INDICATED OR NOT, SHALL BE LOCATED AND FLAGGED BY THE UTILITIES AT THE REQUEST OF THE CONTRACTOR.
2. NO EXCAVATION WILL BE PERMITTED UNTIL ALL SUCH UTILITIES HAVE BEEN LOCATED AND IDENTIFIED TO THE SATISFACTION OF ALL PARTIES. EXCAVATION MUST BE ACCOMPLISHED WITH EXTREME CARE IN ORDER TO AVOID ANY POSSIBLE DAMAGE TO THE UTILITY FACILITY. CONTRACTOR SHALL MAKE EXPLORATION EXCAVATIONS TO LOCATE UNDERGROUND UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF NECESSARY BECAUSE OF ACTUAL LOCATIONS OF EXISTING FACILITIES.
3. THE EXISTING TOPSOIL AT ALL AREAS WHICH IS TO BE DISTURBED DURING CONSTRUCTION SHALL BE STRIPPED AND STOCKPILED PRIOR TO EXCAVATION. THE STOCKPILED TOPSOIL SHALL BE SPREAD OVER ALL AREAS WHICH ARE SCHEDULED TO BE SEEDED OR SODDED. NO TOPSOIL SHALL BE PLACED WITHIN THE LAGOON LINER.
4. ALL BARRICADES, WARNING SIGNS, LIGHTS, DEVICES, ETC., FOR THE GUIDANCE AND PROTECTION OF TRAFFIC AND PEDESTRIANS SHALL CONFORM TO THE 2009 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS CURRENTLY AMENDED.
5. WATER MAIN AND WATER SERVICE LINES SHALL MAINTAIN 10 FEET HORIZONTAL AND 18 INCHES VERTICAL SEPARATION FROM SEWER MAINS OR SEWER SERVICE LINES.
6. LAGOONS SHALL BE CONSTRUCTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH TITLE 123–RULES AND REGULATIONS FOR THE DESIGN, OPERATION, AND MAINTENANCE OF ON-SITE WASTEWATER SYSTEMS, MOST CURRENT EDITION.
7. INSTALLATION OF LAGOON SHALL BE COMPLETED BY INSTALLERS CERTIFIED IN ACCORDANCE WITH NDEQ TITLE 123.
8. CONTRACTOR TO PERFORM SEEPAGE TESTS IN ACCORDANCE WITH NDEQ TITLE 123. ALL TESTS PERFORMED SHALL BE RECORDED AND PROVIDED TO THE ENGINEER.
9. ALL 6" SANITARY SERVICE PIPE SHALL BE SDR26–SCHEDULE 40 PVC.
10. THE SOIL MATERIAL OF THE LAGOON FLOOR AND SIDES SHALL BE CONSTRUCTED SO THAT IT SHALL NOT SEEP MORE THAN 1/8 INCH PER DAY. THE CONTRACTOR SHALL PROVIDE PRE-CONSTRUCTION PROCTOR TESTS AFTER THE EXISTING LAGOON IS DRAINED TO DETERMINE THE DEPTH OF THE NEW LINER. THE CONTRACTOR SHALL ALSO PROVIDE POST CONSTRUCTION PERMEABILITY TESTING TO VERIFY SEEPAGE RATE. PERFORM 3 PERMEABILITY TESTS. ONE IN THE SIDE SLOPE AND ONE IN THE LAGOON FLOOR.
11. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY EXISTING GROUND ELEVATIONS AND REPORT TO THE ENGINEER IF FINDINGS DO NOT AGREE WITH THE PLANS.
12. SEED ALL DISTURBED AREAS WITH NATIVE GRASSES. NO SEED SHALL BE PLANTED WITHIN 1' OF THE LAGOON FLOOR. CONTRACTOR TO PROVIDE PERMANENT EROSION CONTROL MATS INSIDE THE LAGOON ON THE SIDE SLOPES TO PREVENT DAMAGE TO THE LINER.
13. CONTRACTOR SHALL PRE-FILL THE LAGOON IN ACCORDANCE WITH TITLE 123 RULES AND REGULATIONS.
14. A SIGN SHALL BE PLACED ON ALL FOUR SIDES OF THE LAGOON THAT READS "NO TRESPASSING – WASTEWATER LAGOON" PER TITLE 123, CHAPTER 5 – 5.12.

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Lincoln, NE 68508
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JUSTIN R. STAHR
E-12687
REGISTERED
PROFESSIONAL ENGINEER
STATE OF NEBRASKA

REV NO	DATE	REVISIONS DESCRIPTION
A	8-21-19	NDEQ COMMENTS

REVISIONS

LAGOON SITE PLAN

STONEBROOK ROOFING

2019

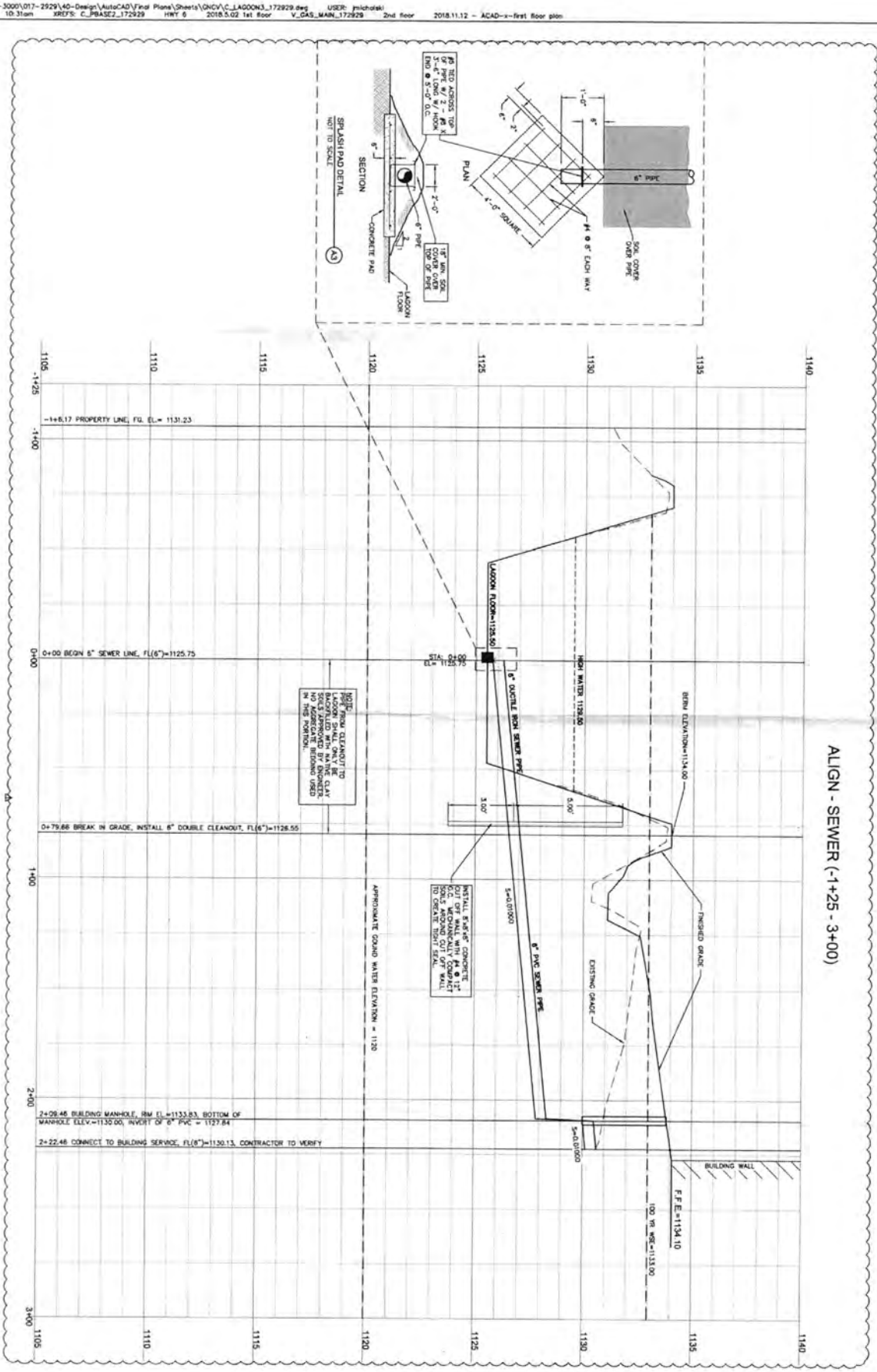
LINCOLN, NEBRASKA

drawn by:
checked by:
approved by:
QA/QC by:
project no.: 017.2920
drawing no.:
date: 05-21-19

SHEET
C302

DWG: F:\2017\2501-3000\017-2920\40-Design\Autocad\Civil Plans\Sheets\GNCV_LAGOON3_172929.dwg USER: westerhaus
DATE: Jun 21, 2019 11:33am XREFS: C_BASE2_172929 HWY 6 2018.5.02 1st floor V_GAS_MAIN_172929 2nd floor 2018.11.12 – ACAD – x – first floor plan

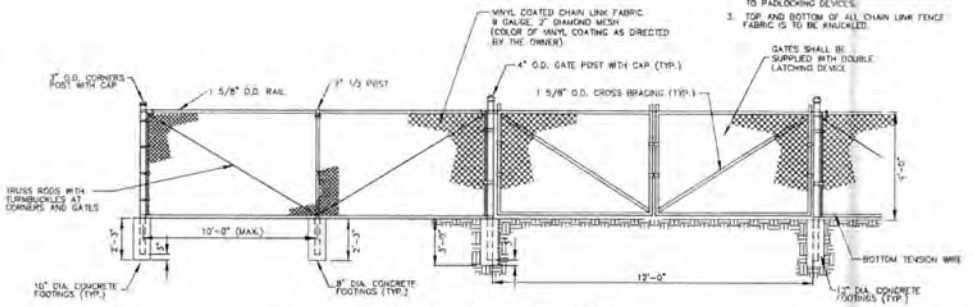
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DATE: Jun 24, 2019 10:31am XREFS: C_PBASE2_172929 HWY 6 2018.5.02 1st floor V_GAS_MAIN_172929 2nd floor 2018.11.12 - ACAD-x-first floor plan



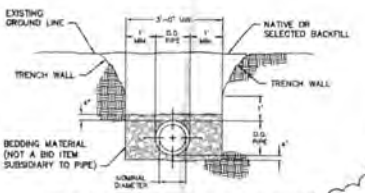
SHEET C303	LAGOON PIPING PROFILE	REV. NO.	DATE	REVISIONS DESCRIPTION	OLSSON ASSOCIATES
	STONEBROOK ROOFING	1	6-21-19	NDEQ COMMENTS	601 P Street, Suite 200 P.O. Box 84608 Lincoln, NE 68508 TEL 402.474.6311 FAX 402.474.5160
	LINCOLN, NEBRASKA 2019			REVISIONS	

GENERAL NOTES:

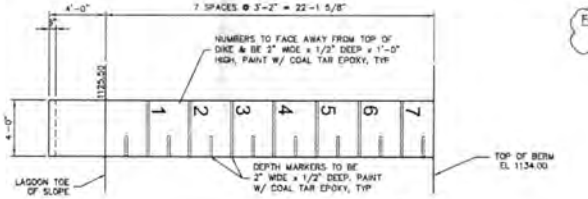
1. ALL CHAIN LINK FENCE MATERIAL AND HARDWARE SHALL BE HOT DIPPED GALVANIZED.
2. ALL GATES ARE TO HAVE OFFSET HINGES AND A LATCHING DEVICE THAT ALLOWS ACCESS TO TO PADLOCKING DEVICES.
3. TOP AND BOTTOM OF ALL CHAIN LINK FENCE FABRIC IS TO BE KNUCKLED.

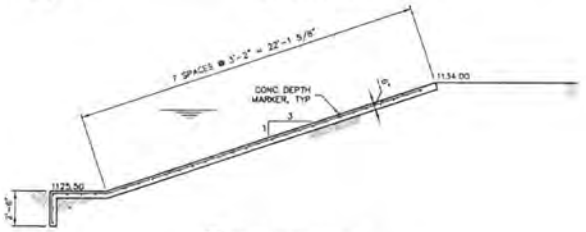


4' HIGH CHAIN LINK FENCE DETAIL WITH 12' WIDE DOUBLE GATE (B / C302)
NOT TO SCALE

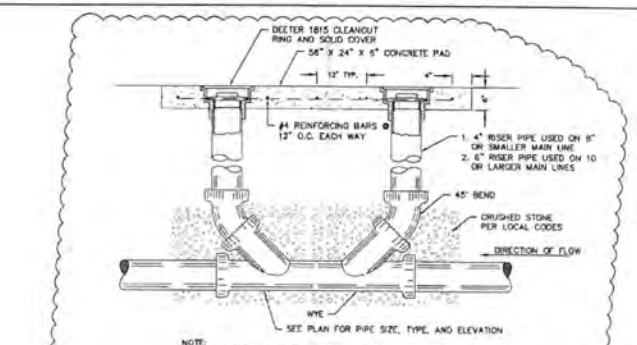


FOUNDATION & BEDDING MATERIAL DETAIL FOR 6" SANITARY SEWER
NOT TO SCALE



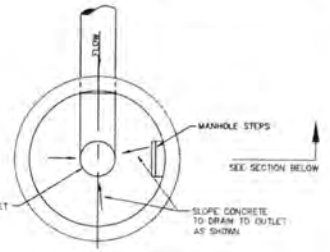


DEPTH MARKER DETAIL (C / C302)
NOT TO SCALE

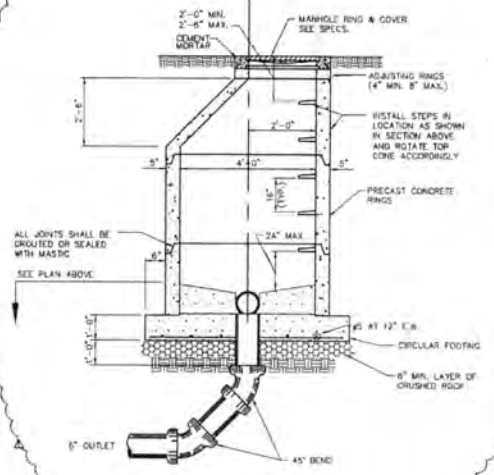


NOTE:
1. DOUBLE CLEAN OUTS TO BE INSTALLED AT ALL CONNECTIONS TO BUILDING STORM AND SERVICES.
2. DOUBLE CLEAN OUT TO BE INSTALLED ON STORM BUILDING DRAIN MAINS ONLY. DOUBLE CLEANOUT IS NOT REQUIRED ON STORM OVERFLOW LINES.

STORM AND SANITARY SEWER DOUBLE CLEAN-OUT (D / C302)
NOT TO SCALE



PLAN



SECTION

MANHOLE DETAIL (A / C302)
NOT TO SCALE

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REVISIONS

REV NO	DATE	REVISIONS DESCRIPTION
A	8-21-19	MDEQ COMMENTS

LAGOON DETAILS

STONEBROOK ROOFING

LINCOLN, NEBRASKA

2019

SHEET C304

DWG: F:\2017\2501-3000\017-2923\40-Design\AutoCAD\Final Plans\Sheets\DWG\C_LAGOON3_172929.dwg USER: aspiemeier
DATE: Jun 21, 2019 11:36am XREFS: C_PHASE2_172929 HWY 6 2018.5.02 1st floor V_GAS_MAIN_172929 2nd floor 2018.11.12 - ACAD---first floor pipe

WARD Laboratories, Inc.

2016 Certified Manure Testing Program — MINNESOTA DEPARTMENT OF AGRICULTURE

Ag Testing - Consulting

Account No. : 22810

Slurry Analysis Report

ROSS, AARON
LAGOON PUMPING & DREDGING INC
825 23RD ST
#1100
COLUMBUS NE 68601

Invoice No. : 1289696
Date Received : 05/30/2019
Date Reported : 05/31/2019

Lab No. : 11175

Results For : ~~BROOKE~~STONE BROOK
Sample ID :

	Analysis As Received	Lbs per Acre Inch	Lbs per 1000 gal	Available First Year Lbs per Acre Inch	Available First Year Lbs per 1000 gal
Organic N, ppm N	229.0	51.9	1.9	26.0	1.0
Ammonium, ppm N	48.8	11.1	0.4	10.5	0.4
Nitrate, ppm N	0.6	0.1	0.0	0.1	0.0
Total N (TKN), ppm N	278.5	63.1	2.3	36.6	1.4
Phosphorus, ppm P_2O_5	208.8	47.3	1.8	33.1	1.2
Potassium, ppm K_2O	393.4	89.2	3.3	80.3	3.0
Sulfur, ppm S	122.8	27.8	1.0	11.1	0.4
Calcium, ppm Ca	798.4	181.0	6.7	126.7	4.7
Magnesium, ppm Mg	287.2	65.1	2.4	45.6	1.7
Sodium, ppm Na	192.7	43.7	1.6	43.7	1.6
Sodium Adsorption Ratio (SAR)	2.10				
Zinc, ppm Zn	12.4	2.8	0.1	2.0	0.1
Iron, ppm Fe	980.3	222.2	8.2	155.5	5.8
Manganese, ppm Mn	27.4	6.2	0.2	4.3	0.2
Copper, ppm Cu	2.5	0.6	0.0	0.4	0.0
Boron, ppm B	1.0	0.2	0.0	0.2	0.0
Soluble Salts, mmho / cm	1.42	193	7	193	7
pH	7.1				
Dry Matter (TS), %	6.28				

Reviewed By : Nick Ward **6/12/2019** **Copy : 1**

Bus: 308-234-2418
Fax: 308-234-1940
web site
www.wardlab.com
4007 Cherry Ave., P.O. Box 788
Kearney, Nebraska 68848-0788

WARD Laboratories, Inc.

PAP-Accredited NAPT 2017

Ag Testing - Consulting

Account No. : 22810

ROSS, AARON
LAGOON PUMPING & DREDGING INC
825 23RD ST
#1100
COLUMBUS, NE 68601

Soil Analysis Report

Invoice No. : 1289701
Date Received : 05/30/2019
Date Reported : 06/03/2019

Results For : ~~BROOK~~STONE Brook
Location : SOIL

Sample ID / Lab No.	Soil pH 1:1	Modified WDRF	Soluble Salts 1:1 mmho/c	Excess Lime Rating	Organic Matter LOI-%	KCl Nitrate ppm N	Depth / Nitrate Lbs N/A	Method / Phosphorus	-Ammonium Acetate- K ppm	Ca ppm	Mg ppm	Na ppm	M-3 Sulfate ppm S	DTPA Zn ppm	Fe ppm	Mn ppm	Cu ppm	Hot Water Boron	CaNO3 Chloride	Sum of Cations me/100	% Base Saturation H	K	Ca	Mg	Na
0-6							0 - 6 in	M-3																	
57115	6.1	6.7	0.09	NONE	4.9	7.6	14	64	271	1893	204	17	6.1	1.31	68.5	10.1	0.50			15.1	21	5	63	11	0
6-12							6 - 12 in																		
57116						4.4	8																		

Reviewed By: Raymond Ward

Copy : 1 **6/12/2019** **Page 1 of 1**