LOWER PLATTE SOUTH
natural resources district

3125 Portia Street | P.O. Box 83581 • Lincoln, Nebraska 68501-3581 | P: 402.476.2729 • F: 402.476.6454 | www.lpsnrd.org

TO: Board of Directors

FROM: Dan Schulz, Resources Coordinator Dan

DATE: December 7, 2018

SUBJECT: Minutes-Recreation, Forestry & Wildlife Subcommittee Meeting

The Recreation, Forestry and Wildlife Subcommittee met in the District conference room on Thursday, December 6, 2018 at 5:30PM. Members present were Chair-Sarah Wilson, Gary Aldridge, Don Jacobson, Chelsea Johnson and Ron Svoboda. Others present were Ariana Kennedy, Rick Onnen-E&A Engineering, Dan Schulz, Jay Seaton, Ray Stevens, Caleb Swanson-Project Control, Pat Wenzl-Lincoln Police Department and Paul Zillig.

The first item was the proposal for earth borrow operations and wetland construction the Lincoln Saline Wetland Nature Center. Onnen gave a presentation on the proposal explaining the location of the fill and borrow sites, why the borrow site was selected, site investigations and expected outcomes of the project. Attached is the information he went over. Onnen, Swanson and District staff provided additional information to the subcommittee member's questions.

It was moved by Jacobson, seconded by Johnson and unanimously approved to recommend that the Board of Directors approve the Lincoln Police Department's proposal to remove fill material from the Lincoln Saline Wetland Nature Center and authorize the General Manager to enter into an agreement with the City of Lincoln subject to legal counsel review.

The second item was to review the Community Forestry Program. Wilson reviewed emails she had received from Directors Bruce Johnson and Anthony Schutz and recent comments made by the Directors. Staff provided a brief history of the program and how it evolved to the present. Seaton reviewed staff's suggestions to the program guidelines, answered questions and provided clarification on the programs mechanics. See attached Community Forestry Program – Exhibit "A" showing the suggested changes discussed. Also attached is the programs application form and cooperator agreement with changes shown.

It was moved by Svoboda, seconded by Johnson and approved to recommend that the Board of Directors adopt the changes to the program and program documents.

Voting to approve the motion were Jacobson, Johnson, Svoboda and Wilson.

Aldridge not voting.

The last agenda item was comments about NRD lakes by Aldridge. He discussed the locations of the eight flood control, public use properties the District owns and that he is developing ideas to make these properties more attractive.

Wilson informed the subcommittee members she may not be able to travel back in time for the Board meeting and with her encouragement Svoboda agreed to make the subcommittee's report to the Board if necessary.

Wilson adjourned the meeting at 6:44PM

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November 27, 2018

Board of Directors
Lower Platte South NRD
PO Box 83581
3125 Portia Street
Lincoln, NE 68521

RE: Proposal for Earth Borrow Operations and Wetland Construction on NRD Property

Dear Board of Directors,

This proposal is being presented on behalf of the Lincoln Police Department for your consideration.

The Lincoln Police Department proposes to conduct earth borrow and grading operations designed to generate new wetlands on property owned by the Lower Platte South NRD. LPD has purchased property at 100 Oakcreek Drive for the purpose of relocating its vehicle maintenance operations from its current location at 635 J Street. Plans include an approximately 18,000 square foot expansion of the existing building on the new site. Much of the site lies within the flood plain of Salt Creek, with only the existing structure and isolated areas immediate adjacent to it elevated above the 100 year base flood elevation (BFE). Construction is estimated to require import of approximately 10,900 cubic yards of earth embankment to elevate grade for the building addition to a level above the BFE.

A study commissioned by the City of Lincoln in 2009 identified the area in the vicinity of the property as Salt Creek Storage Zone 10. The study results concluded that 40% of the flood storage within this zone could be filled without impacting the BFE. The project as proposed would be within this requirement, utilizing only 35 percent of the flood storage on site. However, the mayor's office has adopted a policy that all City projects must meet a no-net-fill condition – meaning that any displacement of flood storage due to fill must be mitigated with an equal volume of cut within the same storage zone. The only property identified within Storage Zone 10 with a potential to generate the required excavation volume was Outlot A of the Lincoln Saline Wetland Nature Center 1st Addition.

LPD's design consultants have work diligently with NRD staff to prepare an excavation plan on Outlot A. This plan serves two purposes. First, it provides the necessary excavation and borrow quantities within Storage Zone 10 to fulfill the City's no-net-rise requirement of LPD's project. Second, it will serve to expand and enhance areas of wetlands within the nature center. To that end, subsurface conductivity testing performed by UNL researcher Trenton Franz was utilized to identify areas with better potential to develop into Saline

wetlands. Geotechnical testing was conducted to identify soil and ground water conditions. A wetlands site assessment was conducted to identify areas of existing wetlands to be avoided. Results from each of the assessments was used to develop a borrow site grading plan designed to create new wetland areas. The plan also includes provisions to protect and restore areas around the excavation site, access roads, and public parking area during and following construction. Finally, the plan calls for the seeding of the borrow area with a seed mix designed by NRD staff to encourage the development of new saline wetlands.

Copies of the following site related documents are being provided for your review.

- Wetland Borrow Site Excavation Plans
- Soil Conductivity Test Results
- Geotechnical Test Report

We appreciate your consideration of this proposal and ask that you approve this request. LPD staff and their project consultants are available to address your questions and request the opportunity to present this proposal in more detail at your December sub-committee and board meetings.

Best Regards,

Rick Onnen
E & A CONSULTING GROUP, INC.

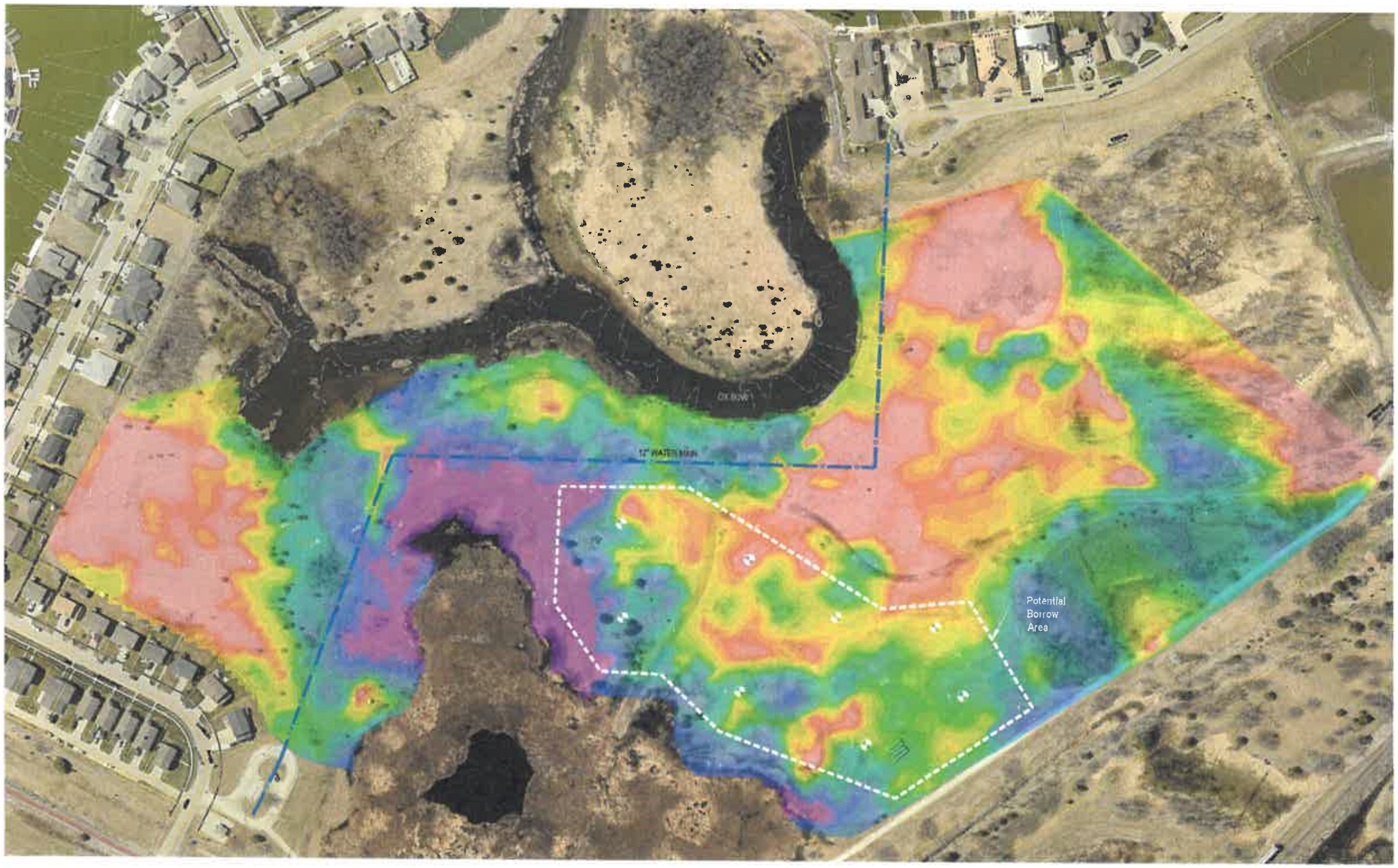
POTENTIAL SOIL BORE LOCATIONS

FIELD GEO LOCATION			
Point #	Raw Description	Northing	Easting
1	BORE	209268	152811
2	BORE	209058	152437
3	BORE	208878	152009
4	BORE	209440	152798
5	BORE	209730	152885
6	BORE	209474	152818
7	BORE	209861	152633
8	BORE	209414	152762

100 0 100

1 inch = 100 ft.

GROUND CONTOURS SHOWN ARE FROM 2016 CITY OF LINCOLN LIDAR SURVEY



SOIL CONDUCTIVITY RATINGS PER TESTING PERFORMED BY UNIVERSITY OF NEBRASKA - LINCOLN RESEARCHER, TRENTON FRANZ

Soil Conductivity			
#	Minimum	Maximum	Color
1	41,262	62,767	
2	62,767	68,138	
3	68,138	71,750	
4	71,750	75,059	
5	75,059	78,126	
6	78,126	81,453	
7	81,453	85,091	
8	85,091	89,231	
9	89,231	94,089	
10	94,089	98,550	
11	98,550	104,385	
12	104,385	109,137	
13	109,137	113,741	
14	113,741	119,815	
15	119,815	126,849	
16	126,849	134,275	
17	134,275	146,118	
18	146,118	160,183	
19	160,183	182,448	
20	182,448	211,246	
21	211,246	242,543	
22	242,543	279,237	
23	279,237	331,898	
24	331,898	420,014	

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BORROW SITE
LINCOLN, NEBRASKA

NRD WETLANDS CONSERVATION AREA SOIL CONDUCTIVITY MAP

Proj No: P2018.034.001
Date: 04/19/2018
Designed By: RPO
Drawn By: XXX
Scale: AS SHOWN
Sheet: 1

Date

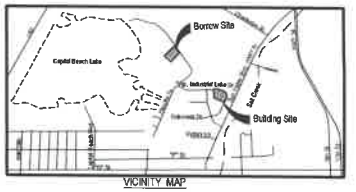
Richard Orman 5/15/2018 10:22 AM

INSPECTION/MAINTENANCE SCHEDULE

The INSPECTOR must perform the inspections. Inspections shall be conducted a minimum of once every seven days, or within 24 hours after a 1/2" or greater rainfall event. The following Maintenance Schedule has been provided. The OPERATOR/CONTRACTOR must perform all needed maintenance. Furthermore, all erosion control features requiring maintenance may not be listed below. The OPERATOR/CONTRACTOR and INSPECTOR must perform their respective duties on all BMP's (BEST MANAGEMENT PRACTICES) that are not listed below as well.

1. Construction Entrance - The entrance shall be maintained in a condition which will prevent tracking or flow of sediment onto public rights-of-way. This may require periodic top dressing with additional stone or the washing and resurfacing of existing stone as conditions demand and repair and/or cleanout of any structures used to trap sediment. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately. The use of water trucks to remove materials dropped, washed, or tracked onto roadways will not be permitted under any circumstances.
2. Silt Fence - The maintenance associates are as follows:
   2.1. Silt fences shall be inspected immediately after each rainfall and at least daily during prolonged rainfall, any required repairs shall be made immediately.
   2.2. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting.
   2.3. Should the fabric on a silt fence decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly.
   2.4. Sediment deposits must be removed when the level of deposition reaches approximately one-half the height of the barrier.
   2.5. Any sediment deposits remaining in place after the silt fence is no longer required shall be dressed to conform to the existing grade, prepared and seeded.
3. Temporary Seeding - Area to which fall to establish vegetative cover adequate to prevent rill erosion will be re-seeded as soon as such areas are identified. Control weeds by mowing.
4. Permanent Seeding - The maintenance associates are as follows:
   4.1. In general, a stand of vegetation cannot be determined to be fully established until it has been maintained for one full year after planting.
   4.2. Raw seedings shall be supplied with adequate moisture, supply water as needed, especially late in the season, in abnormally hot or dry conditions, or in advance alley, water applications shall be controlled to prevent excessive runoff.
   4.3. Inspect all seeded areas for failures and make necessary repairs, replacements, and reseedings within the planting season, if possible
      4.3.1. If stand is inadequate for erosion control, over seed and fertilize using half of the rates originally specified.
      4.3.2. If stand is 40% damaged, re-establish by following seedbed and seeding instructions.
      4.3.3. If stand has less than 40% cover, re-evaluate choice of plant materials and quantities of lime and fertilizer, the soil must be tested to determine if acidity or nutrient imbalances are responsible, re-establish the stand by following seedbed and seeding recommendations.
5. Soil Stabilization Blankets & Matting - All soil stabilization blankets and matting should be inspected periodically following installation, particularly after rainstorms to check for erosion and undercutting. Any dislocation or failure should be repaired immediately. If washouts or breakage occurs, reinstall the material after repairing damage to the slope or ditch. Continue to examine these areas until which time they become permanently stabilized at that time an annual inspection should be adequate.
6. Shred Covering/Spreading - The maintenance associates include:
   6.1. Evaluate access points daily for sediment tracking.
   6.2. When tracked or spilled sediment is found on paved surfaces, it shall be removed daily, during times of heavy truck-out such as during mine, cleaning may be done several times throughout the day.
   6.3 Unknown spills or objects are not to be mixed with the sediment. If sediment is mixed with other pollutants, it will be disposed of properly at an authorized landfill.

1 C2.0 PROJECT VICINITY AERIAL PLAN
SCALE 1" =200'



VICINITY MAP

GRADING & EROSION LEGEND

- Property Line
- Right of Way Line
- Easement
- Building
- Exist. Minor Contours
- Exist. Major Contours
- Prop. Major Contours
- Prop. Minor Contours
- Limits of Excavation

BENCHMARKS:

Benchmark #1: Top Arrow of Fire Hydrant located at the Southwest Corner Lenard Drive & West Industrial Lake Drive.
Elevation: 1153.62' (USGS NAVD 88)

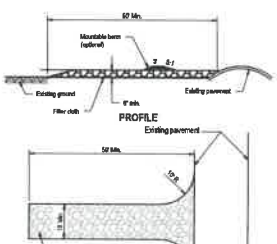
Benchmark #2: Chiseled "X" North Rim Sanitary Sewer Manhole to the East of Gravel Road, East of Northeast Corner of subject property. (Control Point 62)
Elevation: 1146.58' (USGS NAVD 88)

GENERAL GRADING NOTES:

1. Proposed contours represent the top of the proposed finished ground surface.
2. Utilities are shown as a convenience to the contractor. The locations of all aerial and underground utility facilities may not be indicated on these plans. Underground utilities, whether indicated or not, will be located and flagged by the utility companies at the contractor's request. No excavation shall be permitted in the area of underground utilities until all facilities have been located and identified to the satisfaction of all parties, and then, only with extreme care to avoid any possibility of damages to the facilities.
3. The contractor shall be responsible for prompt reconstruction of any erosion control improvements disturbed by his operations. All disturbed erosion control improvements shall be fully reconstructed at the end of each working day prior to leaving the site. Positive drainage in all work areas shall be maintained to the condition the construction site was prior to contractors arrival.
4. All disturbed areas that will not be impacted by construction activity for 14 consecutive days shall be stabilized with temporary or permanent seeding and mulch.
5. Before leaving the site, the contractor shall remove all construction debris and temporary surfacing and restore all staging areas to their original tone and grade and shape all areas for positive drainage.
6. Elevations are based on USGS NAVD 1988 Datum.

GENERAL SEDIMENT AND EROSION CONTROL NOTES

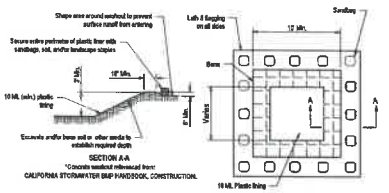
1. Unless otherwise indicated, all vegetative and structural erosion control and sediment control practices and stormwater management practices will be constructed and maintained according to the Nebraska Department of Environmental Quality guidelines.
2. All OPERATOR's shall notify utility companies 48 hours before work is started to verify utility locations (One Call 800-331-5666).
3. Existing Topsoil shall be removed, stockpiled, and respread as directed by the Inspector. Verify stockpile location with owners prior to construction.
4. All OPERATOR's shall be responsible to comply with OSHA regulations.
5. The APPLICANT and INSPECTOR shall manage construction activities so as to minimize the potential for erosion.
6. All OPERATOR's must comply with the APPLICANT and INSPECTOR in regards to the construction activities so as to minimize the potential for erosion and pollution.
7. Each OPERATOR must implement sediment control BMP's (Best Management Practices), within his or her areas of responsibility, and install additional silt fencing if necessary (refer to Erosion Control Feature Maintenance Schedule) or as directed by the INSPECTOR.
8. Each OPERATOR shall periodically remove accumulated sediment from behind silt fences, and all other erosion control measures that store sediment, within his or her areas of responsibility, if necessary (refer see Erosion Control Feature Maintenance Schedule) or as directed by the INSPECTOR.
9. Each OPERATOR shall build stabilized construction entrances, within his or her areas of responsibility. Each OPERATOR shall monitor all stabilized construction entrances, within his or her areas of responsibility, and maintain the entrance(s) as needed (refer see Erosion Control Feature Maintenance Schedule) or as directed by the INSPECTOR. OPERATOR's shall not use any other access to the site or allow others to use alternate access points.
10. Each OPERATOR must perform preventative maintenance on all pollution control measures, within his or her areas of responsibility, to ensure their proper function. The INSPECTOR shall ensure preventative maintenance through inspection of all pollution control measures.
11. All BMP's shall be kept in working order. Each OPERATOR shall repair all damages caused by soil erosion and construction equipment, within his or her areas of responsibility, at or before the end of each working day or as directed by the INSPECTOR.
12. BMP's may not be removed without INSPECTOR approval.
13. Each OPERATOR shall be responsible for adhering to all BMP's, within his or her areas of responsibility.
14. In the event of a release of oil or hazardous substance, all OPERATOR's shall comply with the requirements of the Nebraska Department of Environmental Quality for notification, containment, investigation, remedial action and disposal.
15. For dust control all OPERATOR's shall use measures to spread water on stripped areas.
16. If sediment is accidentally transported on to the surrounding streets it will be removed from the street surface on a daily basis. Sediment will be shoveled and/or swept from the street and disposed of in a manner which prevents contamination with storm water or surface water.
17. The APPLICANT, INSPECTOR, and/or OPERATOR's shall allow the State of Nebraska, or the Federal Government access to the site for inspections at any time, at the implementing agency's discretion.
18. Following soil disturbance, permanent or temporary stabilization shall be completed within fourteen (14) calendar days to the surface of all particular sediment controls, topsoil stockpiles, and any other disturbed or graded areas on the project site which are not being used for material storage, or on which actual earth moving activities are being performed.
19. Mulch shall be applied to all areas of permanent turf seeding. Straw mulch shall be mechanically crimped into the soil. Hydraulically applied mulch shall consist of a bonded fiber matrix applied with hydraulic seeding equipment placed concurrent with or no more than 24 hours after seeding application.



2 C2.0 STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

NOTES

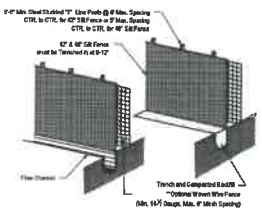
1. The stone size shall be 2" diameter or reclaimed broken concrete equivalent.
2. Contractor is construct the road to the length required but not less than 50'.
3. The thickness of the stone shall be 6".
4. The width of the construction entrance shall be 10' minimum, but in no case less than the full width of points where ingress and egress occurs.
5. Filter cloth will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
6. All surface runoff flowing or diverted towards the construction entrance shall be piped across the entrance. If piping is impractical, a mountable berm with 5% to will be permitted.
7. The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top-dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment, all sediment spilled, dropped, tracked, or washed onto public rights-of-way must be removed immediately.
8. Wheels shall be cleaned to remove sediment prior to entrance onto public right -of-way, when washing is required, it shall be done on an area stabilized with stone which drains into an approved sediment trapping device.
9. Periodic inspection and needed maintenance shall be provided after each rain.



NOTES

1. Temporary concrete washout facilities shall be located a minimum of 50 ft from storm drain inlets, open drainage facilities, and watercourses, each facility shall be located away from construction traffic or access to prevent disturbance or tracking.
2. A sign shall be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities.
3. Temporary concrete washout facilities shall be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations.
4. Washout of concrete trucks shall be performed in designated areas only.
5. Only concrete from mixer truck chutes shall be washed into concrete washout. Concrete washout from concrete pumper bins can be washed into concrete pumper trucks and discharged into designated washout area or properly disposed of offsite.
6. Once concrete wastes are washed into the designated area and allowed to harden, the concrete shall be broken up, removed, and disposed of properly.
7. Lath and flagging shall be of the commercial type.
8. Plastic lining materials shall be a minimum of 10 mil polyethylene sheeting and shall be free of holes, tears, or other defects that compromise the impermeability of the material.

3 C2.0 CONCRETE WASHOUT
NOT TO SCALE



4 C2.0 SILT FENCE DETAIL
NOT TO SCALE

NOTES

1. Acceptable silt fence specifications- AOS (#30 - 50 Sieve), Water Flow Rate (Gal./gpm/ sq. ft. - 125 gpm/ sq.ft). Tensile Strength (lb/in) - (Min. 120 Warp or greater and Elongation (5-25%).
2. On each non-run of silt fence spray paint the beginning of the run with 0-100 and spray paint the end with the date of installation and LF of the run.
3. Silt fence should be secured by fastened to each steel support post or to woven wire which is in turn attached to the steel fence posts. A minimum of 3 ties are required for each post. To be located in the top 1/3 of the silt fence.
4. Steel posts which support the silt fence shall be installed on a slight angle toward the anticipated runoff source, (fastive 48 posts 20° Max. from vertical, toward flow)
5. Silt fence shall be trenched in with a silt fence plow so that the downslope face of the trench is flat and perpendicular to the line of flow.
6. Silt fence shall be removed when it has served its usefulness so as not to block or impede storm flow or drainage.
7. Sediment trapped by this practice shall be uniformly distributed on the ground area prior to topsoiling.

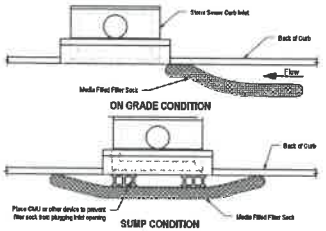
INLET PROTECTION - PLAN VIEW
NOT TO SCALE

WATTLE SECTION VIEW
NOT TO SCALE

NOTES:

1. Install wattle on the contour at a constant elevation.
2. Space stakes at 4' max. Install additional stakes as necessary to prevent movement and undermining
3. Abut overlapping wattles tightly.

5 C2.0 STRAW WATTLE INSTALLATION DETAIL
NOT TO SCALE



6 C2.0 INLET SEDIMENT FILTER DETAIL
NOT TO SCALE

Architectural Design Associates
Suite 105
7501 "O" Street
Lincoln, Nebraska 68510
www.adalincoln.com
tel 402 486 3232

Preliminary Not for Construction

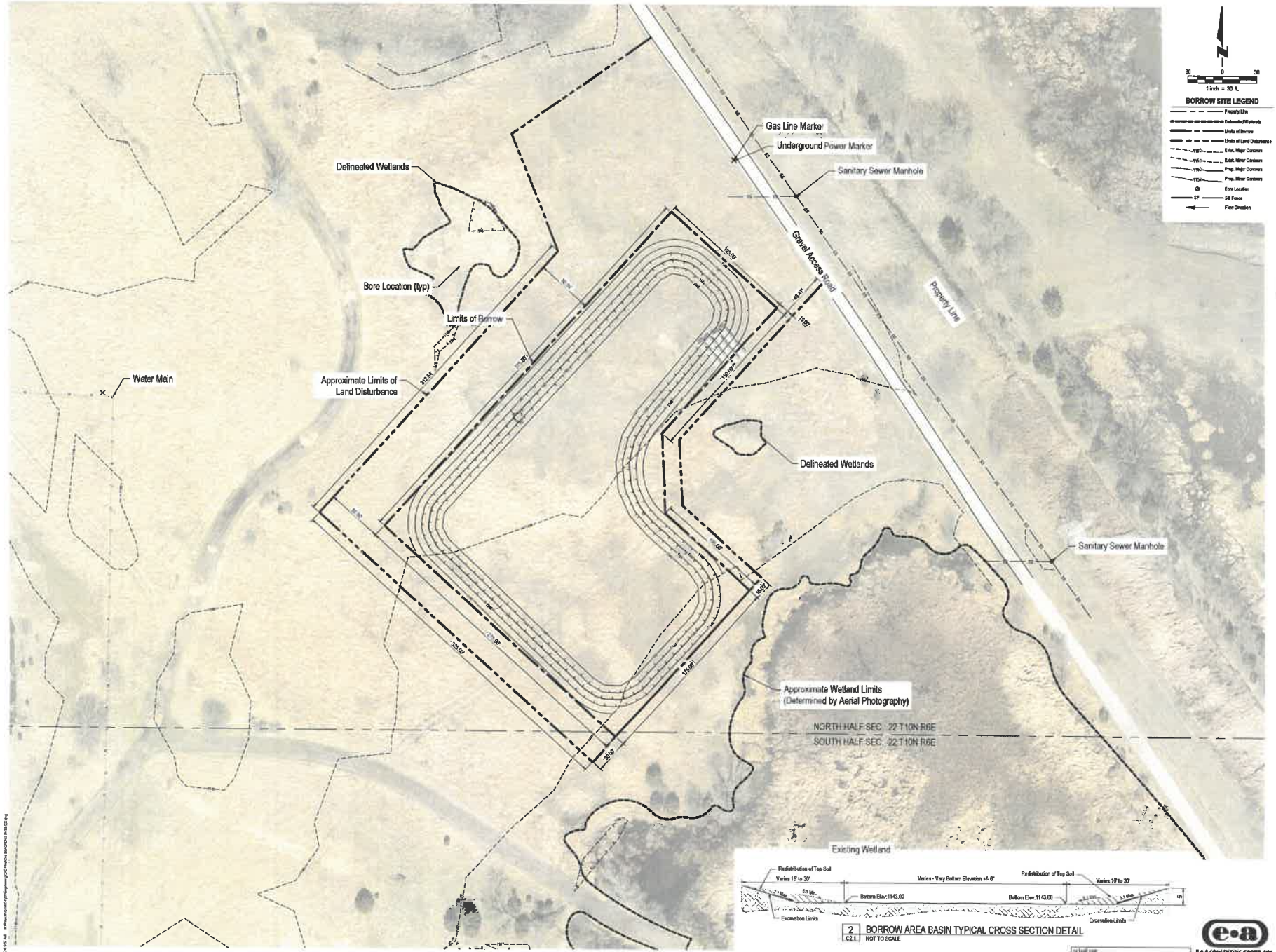
LPD FLEET MAINTENANCE FACILITY
100 OAKCREEK DRIVE
LINCOLN, NEBRASKA

Project Number: 19-008
Date: 12/20/19

E & A CONSULTING GROUP, INC.
Engineering Answers
7130 South 70th Street, Suite C
Lincoln, NE 68516-3941
Phone: 402.420.7217 Fax: 402.420.7218
E&A Project Number: 2019.0129.00

Nebraska 811 know what's below. Call before you dig. Dial: 811

C2.0
GENERAL GRADING INFORMATION



1 C2.1 BORROW AREA AERIAL SITE PLAN
SCALE 1"=30'

2 C2.1 BORROW AREA BASIN TYPICAL CROSS SECTION DETAIL
NOT TO SCALE

Architectural Design Associates
Suite 105
7501 'O' Street
Lincoln, Nebraska 68510
www.adalincoln.com
tel 402 466 3232

Preliminary Not for Construction

LPD FLEET MAINTENANCE FACILITY
100 OAKCREEK DRIVE
LINCOLN, NEBRASKA

Project Number
18-008
Date
revisions
Revisions

C2.1
BORROW AREA AERIAL

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7300 South 29th Street, Suite D
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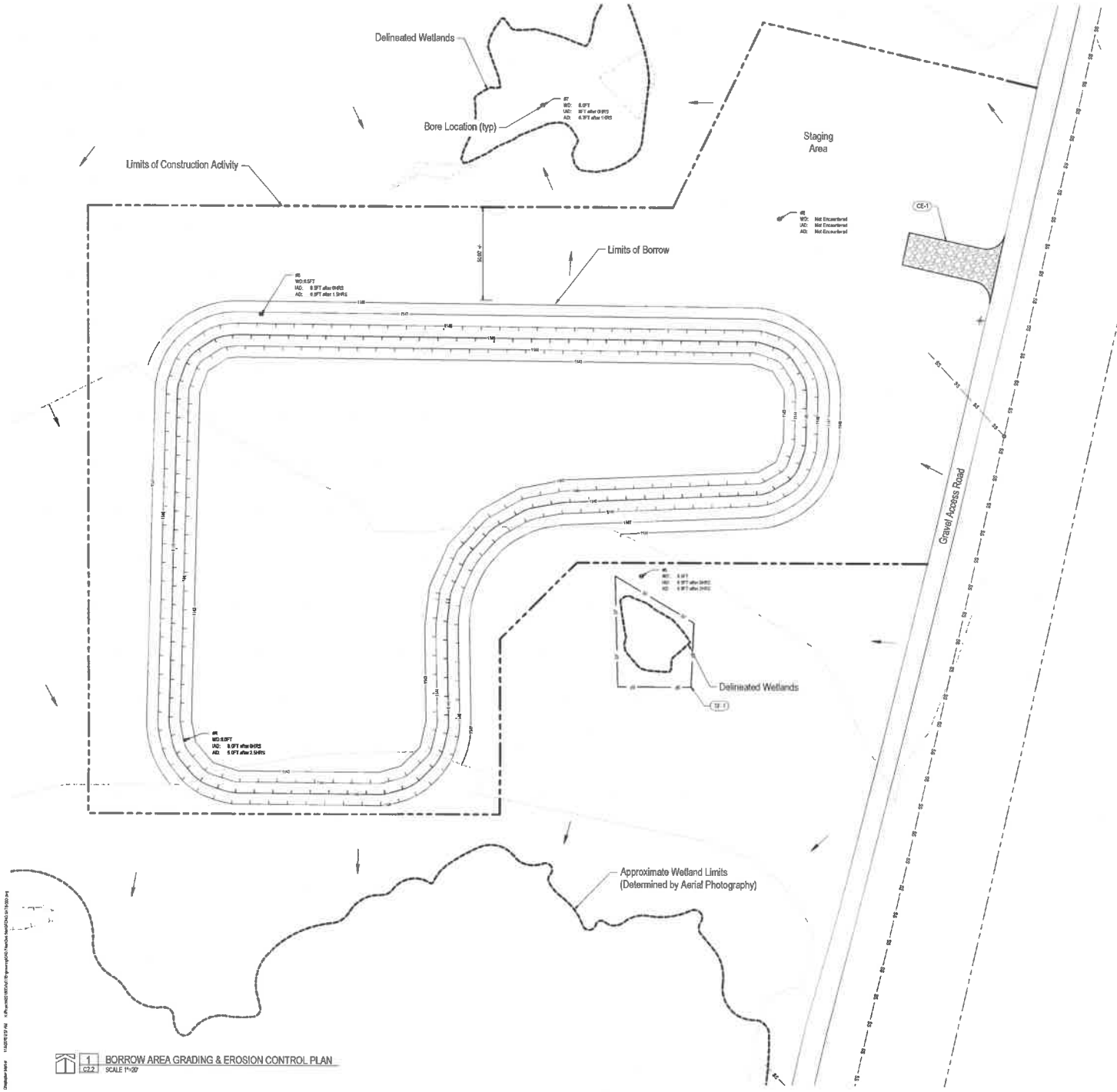

1 C2.2 BORROW AREA GRADING & EROSION CONTROL PLAN
SCALE 1"=20'

1 inch = 20 ft.

BORROW SITE LEGEND

- Property Line
- Delineated Wetlands
- Limits of Borrow
- Limits of Land Disturbance
- Estd. Major Contours
- Estd. Minor Contours
- Prop. Major Contours
- Prop. Minor Contours
- Bore Location
- SF Silt Fence
- Flow Direction

GRADING & EROSION CONTROL REFERENCE NOTES

Construct Stone Construction Entrance

CE 1 Construct stone construction entrance

Construct Silt Fence

SF 1 Silt fence, Contractor to Protect Wetland Area

APPROXIMATE GRADING QUANTITIES

6" Stripping (Remove & Replace)	1,314	cy
Excavation	10,669	cy

AREA OF LAND DISTURBANCE:

Total Site Area: 73.91 Ac
Construction Limits: 1.63 Ac

SEDIMENT & EROSION CONTROL BMP IMPLEMENTATION SCHEDULE

#	ID	BMP	INSTALL	REMOVE
2 C2.0	CE-X	Construction Entrance	Prior to Land Disturbance	Substantial Completion of Construction
4 C2.0	SF-X	Silt Fence	Prior to Stripping	After Final Seeding is Established
7 C2.0	EC-1	Seeding & Mulching	After Final Grading	NA

BORROW AREA EXCAVATION AND RESTORATION NOTES:

1. Borrow site access will be restricted as dictated by the Lower Platte South NRD. The contractor shall coordinate with NRD staff for access to keys to the entry gate. The gate shall remain locked when construction operations are not occurring. The contractor shall post signage that clearly identifies that the roadway is not open to the public.
2. The contractor shall erect a barrier fence with a minimum height of 4 feet around the limits of construction to discourage unauthorized individuals from entering the area during operations.
3. Prior to start of construction, photographic documentation of the condition of the existing rock roadway, public parking area, and entrance drive at West Industrial Lake Drive shall be conducted and provided to the Lower Platte South NRD and ZAA Consulting Group, Inc.
4. The contractor is advised of the potential presence of shallow ground water as noted in the geotechnical investigation report. Borrow operations shall be conducted to avoid excavation of saturated soils.
5. The contractor shall minimize the area of disturbance for borrow operations as much as practical.
6. Top soil removed from the borrow area shall be stockpiled on site and redistributed around the perimeter of the excavation at the completion of borrow operations.
7. Borrow removal shall be conducted so as to leave the bottom of the excavation area at elevations varying between 6 inches below and 6 inches above the elevation shown on the plans.
8. Any rubble or other material unsuitable for structural fill unearthed during borrow operations shall be properly disposed of off-site by the contractor.
9. Upon completion of borrow operations, the contractor shall restore all areas disturbed by construction activity to the satisfaction of the Lower Platte South NRD.
   a. Top soil shall be redistributed around the perimeter of the excavation to form transition slopes of 8:1 or flatter.
   b. Top soil shall not be redistributed on areas beyond the final perimeter toe of slope of the borrow area.
   c. Perimeter work areas and haul paths shall be graded smooth and drill seeded with a prairie grass mixture as approved by NRD staff.
   d. The stabilized construction entrance, including all rock and underlying geotextile fabric, shall be removed and the area reseeded.
   e. All perimeter barrier fencing and silt fence shall be removed from the site.
   f. The contractor shall restore the internal rock roadway, public parking area, and entrance drive at West Industrial Lake Drive to preconstruction conditions to the satisfaction of the Lower Platte South NRD.

ADA
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7501 "O" Street
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Preliminary Not for Construction

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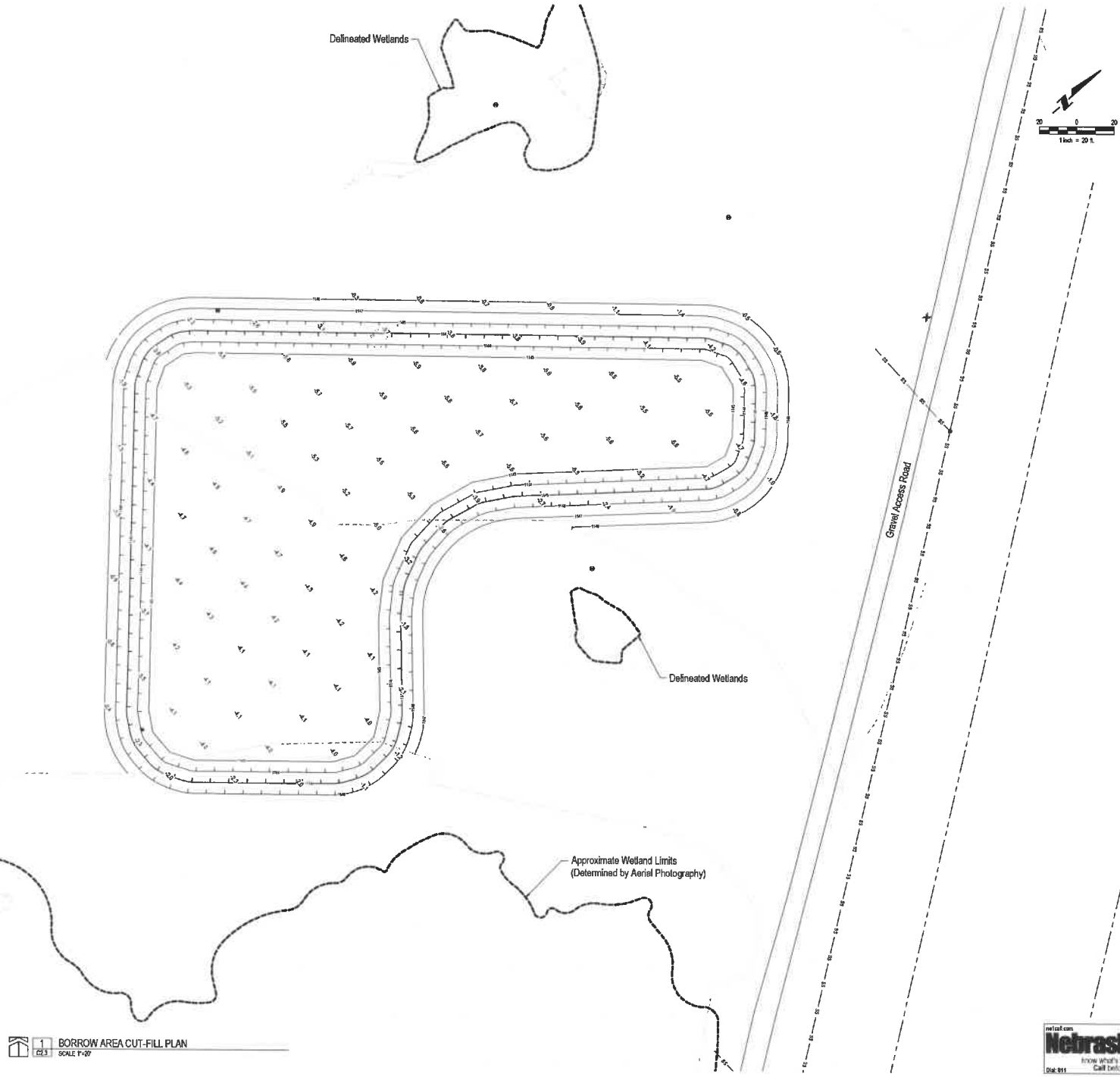
Phone: 402.420.7310 Fax: 402.420.7218

C2.2

BORROW AREA GRADING & EROSION CONTROL PLAN



1 C2.3 BORROW AREA CUT-FILL PLAN
SCALE 1"=20'

ADA
Architectural Design Associates
Suite 105
7501 'O' Street
Lincoln, Nebraska 68510
www.adalincoln.com
tel 402 466 3232

Preliminary
Not for Construction

LPD FLEET MAINTENANCE FACILITY
100 OAKCREEK DRIVE
LINCOLN, NEBRASKA

Project Number
Date
Drawn
Reviewed
Revisions

C2.3

BORROW AREA CUT-FILL PLAN

E & A CONSULTING GROUP, INC.
Engineering Answers
7366 South 29th Street, Suite D
Lincoln, NE 68516-5841
Phone: 402.420.7272 Fax: 402.420.7218
E&A Project Number: 2018.024.001

OLSSON ASSOCIATES

MEMO

X	Email
	Regular Mail
	Hand Delivery
	Other:

TO:	Pat Wenzl, City of Lincoln, Nebraska
FROM:	Thomas C. Kettler Jr, PE Steve Jensen, EI
RE:	Lincoln Police Department Garage Addition Borrow Area
PROJECT #:	017-2696
DATE:	August 17, 2018

This memorandum provides the laboratory results and recommendations for the proposed borrow material for use within the Lincoln Police Department (LPD) garage addition. The proposed borrow source is located north of the intersection of West Industrial Lake Drive and Pier 2 in the Capitol Beach development of Lincoln, Nebraska. The locations of the soil borings completed to evaluate the borrow material are shown on the Boring Location Map included in Attachment A. The soil boring logs are also included in Attachment B.

The soils encountered in the borings were visually classified and described in general accordance with the Unified Soil Classification System (USCS). We also performed laboratory tests to evaluate the engineering properties of the recovered soil samples. The testing program included moisture content, density/unit weight, Atterberg limits and soil chemistry including chloride, pH, and conductivity. Laboratory test results are included on the soil borings logs and summarized in Attachment C.

We understand the proposed borrow site comprises a saline wetland into which fill material was previously placed. Previous estimates indicated the fill may be 2 to 5 feet in thickness. Based on our borings, the fill exhibited a maximum thickness of 2 feet and in some areas appeared to be absent or was indistinguishable from the underlying alluvium.

Atterberg limits testing indicates the fill material and the underlying native alluvial soils are suitable for use as structural fill as defined in our original geotechnical report. However, soil chemistry

tests on select samples indicate that some of the fill and native soils may be saline, as indicated on the laboratory test report in Attachment C, and on the conductivity map compiled by E&A Consulting and presented in Attachment D. Where possible, saline soils should be confined to landscaped areas or below pavement soil subgrades. If foundations will be supported in imported saline soils, we recommend the use of epoxy coated rebar to reduce the risk of corrosion.

Please note, the soil test borings represent a limited statistical sampling of subsurface soils and it is possible that conditions may be encountered that are substantially different from those indicated by the soil test borings.

Olsson appreciates the opportunity to provide our services for this project and looks forward to working with you on future projects. Should you have any questions, please do not hesitate to contact us.

Respectfully submitted,
Olsson Associates

Steve Jensen

PROFESSIONAL CIVIL ENGINEER
THOMAS C. KETTLER, JR
E-14752
8-17-18
STATE OF NEBRASKA

Steve Jensen, EI
Assistant Geotechnical Engineer
402.458.5016

Thomas C. Kettler Jr, PE
Geotechnical Engineer
402.458.5077

Attachments:

Attachment A – Site Location Plan, Boring Location Map, Geologic Profiles

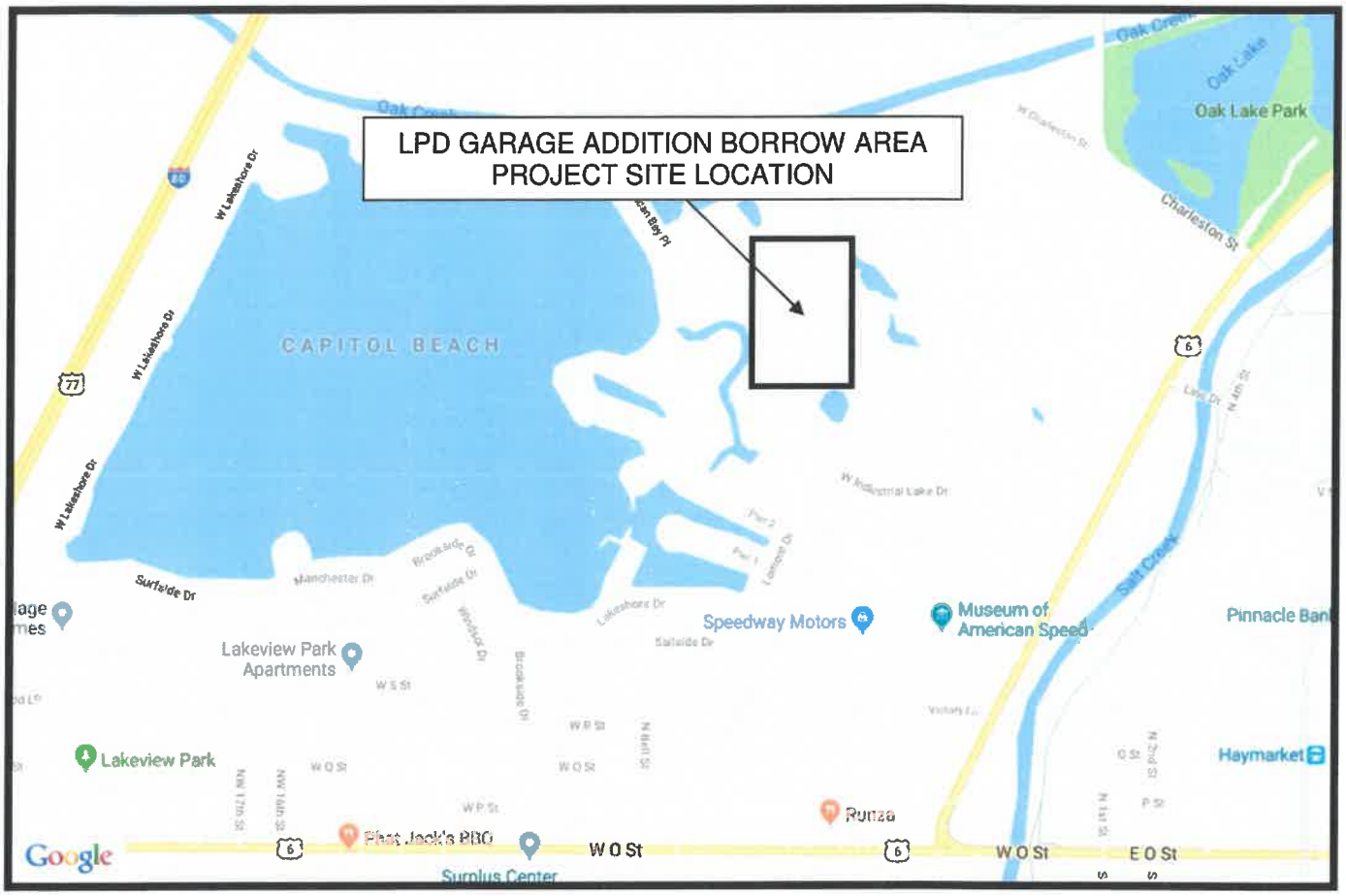
Attachment B – Symbols and Nomenclature, Boring Logs

Attachment C – Summary of Laboratory Test Results

Attachment D – Conductivity Map

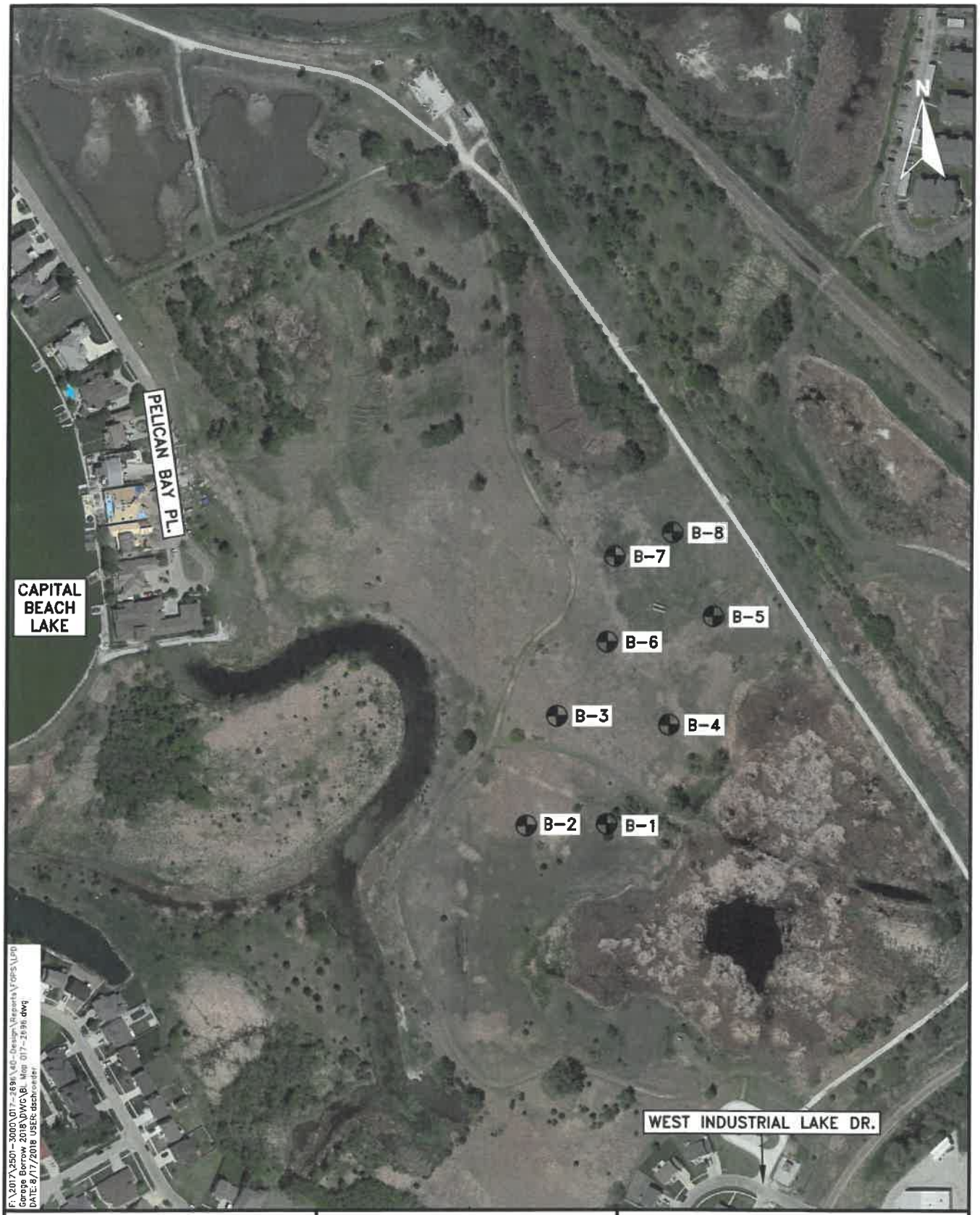
ATTACHMENT A

Site Location Map
Boring Location Map
Geologic Profiles



N

SITE LOCATION PLAN
LPD GARAGE ADDITION BORROW AREA
LINCOLN, NEBRASKA
OA PROJECT NO. 017-2696



LEGEND

SOIL BORING LOCATION

0 150 300 600

SCALE IN FEET

PROJECT: 017-2696

DATE:7.25.2018 | DRAWN BY:DJS

BORING LOCATION MAP
LINCOLN, NEBRASKA

OLSSON ASSOCIATES®
3800 South 6th Street
Lincoln, NE 68502
TEL 402.474.6311
FAX 402.474.5160
www.olssonassociates.com

ATTACHMENT B
Symbols and Nomenclature
Boring Logs

SYMBOLS AND NOMENCLATURE

DRILLING NOTES

DRILLING AND SAMPLING SYMBOLS

SS:	Split-Spoon Sample (1.375" ID, 2.0" OD)	HSA:	Hollow Stem Auger	NE:	Not Encountered
U:	Thin-Walled Tube Sample (3.0" OD)	CFA:	Continuous Flight Auger	NP:	Not Performed
CS:	Continuous Sample	HA:	Hand Auger	NA:	Not Applicable
BS:	Bulk Sample	CPT:	Cone Penetration Test	% Rec:	Percent of Recovery
MC:	Modified California Sampler	WB:	Wash Bore	WD:	While Drilling
GB:	Grab Sample	FT:	Fish Tail Bit	IAD:	Immediately After Drilling
SPT:	Standard Penetration Test Blows per 6.0"	RB:	Rock Bit	AD:	After Drilling
				CI:	Cave-In

DRILLING PROCEDURES

Soil samples designated as "U" samples on the boring logs were obtained in using Thin-Walled Tube Sampling techniques. Soil samples designated as "SS" samples were obtained during Penetration Test using a Split-Spoon Barrel sampler. The standard penetration resistance 'N' value is the number of blows of a 140 pound hammer falling 30 inches to drive the Split-Spoon sampler one foot. Soil samples designated as "MC" were obtained in using Thick-Walled, Ring-Lined, Split-Barrel Drive sampling techniques. Recovered samples were sealed in containers, labeled, and protected for transportation to the laboratory for testing.

WATER LEVEL MEASUREMENTS

Water levels indicated on the boring logs are levels measured in the borings at the times indicated. In relatively high permeable materials, the indicated levels may reflect the location of groundwater. In low permeability soils, the accurate determination of groundwater levels is not possible with only short-term observations.

SOIL PROPERTIES & DESCRIPTIONS

Descriptions of the soils encountered in the soil test borings were prepared using Visual-Manual Procedures for Descriptions and Identification of Soils.

PARTICLE SIZE

Boulders	12 in. +	Coarse Sand	4.75mm-2.0mm	Silt	0.075mm-0.005mm
Cobbles	12 in.-3 in.	Medium Sand	2.0mm-0.425mm	Clay	<0.005mm
Gravel	3 in.-4.75mm	Fine Sand	0.425mm-0.075mm		

COHESIVE SOILS

Consistency	Unconfined Compressive Strength (Qu) (tsf)
Very Soft	<0.25
Soft	0.25 – 0.5
Firm	0.5 – 1.0
Stiff	1.0 – 2.0
Very Stiff	2.0 – 4.0
Hard	> 4.0

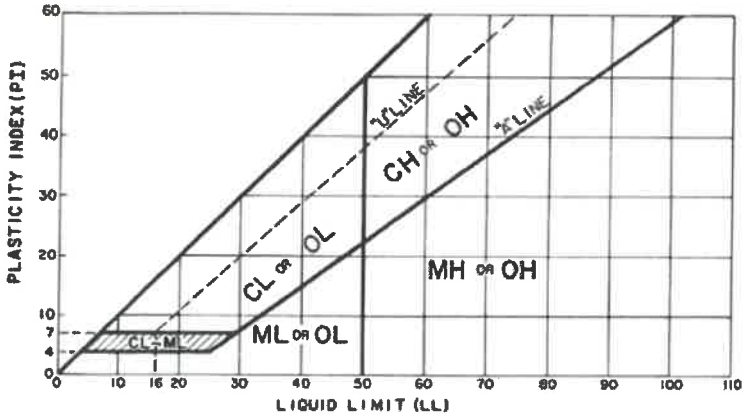
COHESIONLESS SOILS

Relative Density	'N' Value
Very Loose	0 – 3
Loose	4 – 9
Medium Dense	10 – 29
Dense	30 – 49
Very Dense	≥ 50

COMPONENT %

Description	Percent (%)
Trace	<5
Few	5 - 10
Little	15 - 25
Some	30 - 45
Mostly	50 - 100

PLASTICITY CHART



ROCK QUALITY DESIGNATION (RQD)

Description	RQD (%)
Very Poor	0 – 25
Poor	25 – 50
Fair	50 – 75
Good	75 – 90
Excellent	90 – 100

OLSSON ASSOCIATES

OLSSON ASSOCIATES

BOREHOLE REPORT NO. B-1

Sheet 1 of 1

PROJECT NAME	CLIENT
LPD Garage Addition Borrow Area	City of Lincoln, Nebraska
PROJECT NUMBER	**LOCATION**
017-2696	Lincoln, Nebraska

Shelby Tube ▮ Split Spoon ⊠

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" N-VALUE	UNC. STR. (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	APPROX. SURFACE ELEV. (ft):1149.0		0.0								
	DEVELOPED ZONE										
	0.5'										
	ALLUVIUM										
1147.5	*Lean clay with silt (CL): Stiff, grayish brown, moist, mostly lean clay, few silt, trace fine sand*			U 1				22.7	98.7		
			2.5								
	3.5'										
1145.0	*Lean clay (CL): Firm, brown to gray, very moist, mostly lean clay, trace fine sand, fat clay lens*			SS 2		2-2-3 N=5		34.1			
			5.0								
	6.0'										
1142.5	*Lean clay with silt (CL): Soft, grayish brown, wet, mostly lean clay, few silt, trace fine sand*			SS 3		1-1-1 N=2					
			7.5								
1140.0	*Lean clay with silt (CL): Very soft, grayish brown, wet, mostly lean clay, few silt, trace fine sand*			SS 4		0-0-1 N=1					
	10.0'		10.0								
	BASE OF BORING AT 10.0 FEET										

WATER LEVEL OBSERVATIONS	
WD	▽ 8.0 ft
IAD	▼ 8.0 ft after 0 Hrs
AD	▼ 5.2ft after 2.5Hrs

OLSSON ASSOCIATES
3800 SOUTH 6TH STREET
LINCOLN, NEBRASKA 68502

STARTED:	7/19/18	FINISHED:	7/19/18
DRILL CO.:	OLSSON	DRILL RIG:	CME 75 (A)
DRILLER:	D. LUDWIG	LOGGED BY:	B. HAMMOND
METHOD: CONTINUOUS FLIGHT AUGER			

OLSSON ASSOCIATES

BOREHOLE REPORT NO. B-2

Sheet 1 of 1

PROJECT NAME: LPD Garage Addition Borrow Area	CLIENT: City of Lincoln, Nebraska
PROJECT NUMBER: 017-2696	LOCATION: Lincoln, Nebraska

Shelby Tube ▮ Split Spoon ⊠

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" N-VALUE	UNC. STR. (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
1150.0	**APPROX. SURFACE ELEV. (ft):1150.0**		0.0								
	DEVELOPED ZONE 0.5'										
	FILL *Lean clay (CL): Firm, dark brown, moist, mostly lean clay, trace fine sand and brick* 1.5'										
	ALLUVIUM			U 1A	CL			22.6	88.7	40/20	
	Lean clay with silt (CL): Firm, grayish brown, very moist, mostly lean clay, little silt, trace fine sand			U 1B				27.5	91.1		
1147.5			2.5								
	Lean clay with silt (CL): Firm, grayish brown, wet, mostly lean clay, little silt, trace fine sand			SS 2		2-3-2 N=5		30.0			
1145.0			5.0								
	6.5'										
	Lean clay (CL): Firm, dark gray, wet, mostly lean clay, trace fine sand			SS 3		2-2-3 N=5					
1142.5			7.5								
	8.0'										
	Lean clay with silt (CL): Soft, brown, wet, mostly lean clay, little silt, trace fine sand			SS 4		1-1-3 N=4					
	9.5'										
1140.0	*Poorly graded sand (SP)* 10.0'		10.0								
	BASE OF BORING AT 10.0 FEET										

WATER LEVEL OBSERVATIONS	
WD	▽ 8.0 ft
IAD	▼ 8.0 ft after 0 Hrs
AD	▼ 3.8ft after 2Hrs

OLSSON ASSOCIATES
3800 SOUTH 6TH STREET
LINCOLN, NEBRASKA 68502

STARTED:	7/19/18	FINISHED:	7/19/18
DRILL CO.:	OLSSON	DRILL RIG:	CME 75 (A)
DRILLER:	D. LUDWIG	LOGGED BY:	B. HAMMOND
METHOD: CONTINUOUS FLIGHT AUGER			

OLSSON ASSOCIATES

BOREHOLE REPORT NO. B-3

Sheet 1 of 1

PROJECT NAME	CLIENT
LPD Garage Addition Borrow Area	City of Lincoln, Nebraska
PROJECT NUMBER	**LOCATION**
017-2696	Lincoln, Nebraska

Shelby Tube ☒ Split Spoon ◯ No Recovery

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" N-VALUE	UNC. STR. (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
1150.0	**APPROX. SURFACE ELEV. (ft):1150.0**		0.0								
	DEVELOPED ZONE 0.3'										
	ALLUVIUM										
	Lean clay with silt (CL): Firm, grayish brown, very moist, mostly lean clay, little silt, trace fine sand			U 1				28.2	89.6		
1147.5			2.5								
	Lean clay with silt (CL): Soft, grayish brown, very moist, mostly lean clay, little silt, trace fine sand			SS 2		1-2-1 N=3		26.6			
1145.0 ▼			5.0								
	Lean clay with silt (CL): Soft, grayish brown, wet, mostly lean clay, little silt, trace fine sand			NR 3		2-1-1 N=2					
1142.5 ▼			7.5								
	Lean clay with silt (CL): Soft, grayish brown, wet, mostly lean clay, little silt, trace fine sand			SS 4		0-0-2 N=2					
1140.0	10.0'		10.0								
	BASE OF BORING AT 10.0 FEET										

WATER LEVEL OBSERVATIONS	
WD	▽ 8.0 ft
IAD	▼ 8.0 ft after 0 Hrs
AD	▼ 5.0ft after 1.5Hrs

OLSSON ASSOCIATES
3800 SOUTH 6TH STREET
LINCOLN, NEBRASKA 68502

STARTED:	7/19/18	FINISHED:	7/19/18
DRILL CO.:	OLSSON	DRILL RIG:	CME 75 (A)
DRILLER:	D. LUDWIG	LOGGED BY:	B. HAMMOND
METHOD: CONTINUOUS FLIGHT AUGER			

OLSSON ASSOCIATES

BOREHOLE REPORT NO. B-4

Sheet 1 of 1

PROJECT NAME: LPD Garage Addition Borrow Area	CLIENT: City of Lincoln, Nebraska
PROJECT NUMBER: 017-2696	LOCATION: Lincoln, Nebraska

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" N-VALUE	UNC. STR. (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	Split Spoon										
	APPROX. SURFACE ELEV. (ft):1149.0		0.0								
	DEVELOPED ZONE 0.5'										
	ALLUVIUM										
1147.5	*Lean clay (CL): Firm, brown, moist, mostly lean clay, trace fine sand*			SS 1		4-4-4 N=8		18.4			
	3.5'		2.5								
1145.0	*Lean clay with silt (CL): Soft, brown, very moist, mostly lean clay, little silt, trace fine sand*			SS 2		1-2-2 N=4		28.6			
	▼		5.0								
1142.5	*Lean clay with silt (CL): Very soft, brown, wet, mostly lean clay, little silt, trace fine sand*			SS 3		0-0-0 N=0					
	▼		7.5								
1140.0	*Lean clay with silt (CL): Very soft, brown, wet, mostly lean clay, little silt, trace fine sand*			SS 4		0-0-0 N=0					
	10.0'		10.0								
	BASE OF BORING AT 10.0 FEET										

WATER LEVEL OBSERVATIONS	
WD	▽ 8.0 ft
IAD	▼ 8.0 ft after 0 Hrs
AD	▼ 5.0ft after 2.5Hrs

OLSSON ASSOCIATES
3800 SOUTH 6TH STREET
LINCOLN, NEBRASKA 68502

STARTED:	7/19/18	FINISHED:	7/19/18
DRILL CO.:	OLSSON	DRILL RIG:	CME 75 (A)
DRILLER:	D. LUDWIG	LOGGED BY:	B. HAMMOND
METHOD: CONTINUOUS FLIGHT AUGER			

OLSSON ASSOCIATES

BOREHOLE REPORT NO. B-5

Sheet 1 of 1

PROJECT NAME: LPD Garage Addition Borrow Area	CLIENT: City of Lincoln, Nebraska
PROJECT NUMBER: 017-2696	LOCATION: Lincoln, Nebraska

Shelby Tube ▮ Split Spoon ⊠

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" N-VALUE	UNC. STR. (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	APPROX. SURFACE ELEV. (ft):1149.0		0.0								
	DEVELOPED ZONE										
			0.5'								
	FILL										
1147.5	*Lean clay with silt (CL): Firm, grayish brown, moist, mostly lean clay, little silt*			U 1	CL			23.2	91.2	31/8	
			2.0'								
	ALLUVIUM		2.5								
1145.0	*Lean clay with silt (CL): Soft, grayish brown, very moist, mostly lean clay, little silt*		5.0	SS 2		2-2-2 N=4		29.0			
1142.5	*Lean clay with silt (CL): Soft, grayish brown, wet, mostly lean clay, little silt*		7.5	U 3							
1140.0	*Lean clay with silt (CL): Very soft, grayish brown, wet, mostly lean clay, little silt*		10.0	SS 4		0-0-0 N=0					
			10.0'								
	BASE OF BORING AT 10.0 FEET										

WATER LEVEL OBSERVATIONS	
WD	▽ 8.5 ft
IAD	▼ 8.5 ft after 0 Hrs
AD	▼ 6.8ft after 2Hrs

OLSSON ASSOCIATES
3800 SOUTH 6TH STREET
LINCOLN, NEBRASKA 68502

STARTED:	7/19/18	FINISHED:	7/19/18
DRILL CO.:	OLSSON	DRILL RIG:	CME 75 (A)
DRILLER:	D. LUDWIG	LOGGED BY:	B. HAMMOND
METHOD: CONTINUOUS FLIGHT AUGER			

OLSSON ASSOCIATES

BOREHOLE REPORT NO. B-6

Sheet 1 of 1

PROJECT NAME: LPD Garage Addition Borrow Area	CLIENT: City of Lincoln, Nebraska
PROJECT NUMBER: 017-2696	LOCATION: Lincoln, Nebraska

Shelby Tube ▪ Split Spoon

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" N-VALUE	UNC. STR. (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
1150.0	**APPROX. SURFACE ELEV. (ft):1150.0**		0.0								
	DEVELOPED ZONE 0.3'										
	FILL										
	Lean clay (CL): Stiff, brown, moist, mostly lean clay, trace fine sand			U 1				19.4	99.0		
	2.0'										
1147.5	***ALLUVIUM***		2.5								
	Lean clay with silt (CL): Very soft, grayish brown, very moist, mostly lean clay, little silt and fine sand			SS 2		1-1-0 N=1		31.6			
1145.0			5.0								
	Lean clay with silt (CL): Soft, grayish brown, wet, mostly lean clay, little silt, trace fine sand			SS 3		1-1-1 N=2					
1142.5			7.5								
	Lean clay with silt (CL): Soft, grayish brown, wet, mostly lean clay, little silt, trace fine sand			SS 4		2-1-1 N=2					
1140.0	10.0'		10.0								
	BASE OF BORING AT 10.0 FEET										

WATER LEVEL OBSERVATIONS	
WD	▽ 8.5 ft
IAD	▼ 8.5 ft after 0 Hrs
AD	▼ 6.6ft after 1.5Hrs

OLSSON ASSOCIATES
3800 SOUTH 6TH STREET
LINCOLN, NEBRASKA 68502

STARTED:	7/19/18	FINISHED:	7/19/18
DRILL CO.:	OLSSON	DRILL RIG:	CME 75 (A)
DRILLER:	D. LUDWIG	LOGGED BY:	B. HAMMOND
METHOD:	CONTINUOUS FLIGHT AUGER		

OLSSON ASSOCIATES

BOREHOLE REPORT NO. B-7

Sheet 1 of 1

PROJECT NAME: LPD Garage Addition Borrow Area	CLIENT: City of Lincoln, Nebraska
PROJECT NUMBER: 017-2696	LOCATION: Lincoln, Nebraska

Shelby Tube ■ Split Spoon ⊠

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" N-VALUE	UNC. STR. (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
1150.0	**APPROX. SURFACE ELEV. (ft):1150.0**		0.0								
	DEVELOPED ZONE 0.3'										
	FILL										
	Lean clay (CL): Stiff, moist, mostly lean clay, trace fine sand 2.0'			U 1	CL			17.1	109.5	34/12	
1147.5	***ALLUVIUM***		2.5								
	Lean clay with silt (CL): Firm, grayish brown, moist, mostly lean clay, little silt, few fine sand			SS 2	CL	2-2-3 N=5		24.2		31/9	
1145.0			5.0								
	Lean clay with silt (CL): Soft, grayish brown, wet, mostly lean clay, little silt, trace fine sand			SS 3		2-1-2 N=3					
1142.5			7.5								
	Lean clay with silt (CL): Soft, grayish brown, wet, mostly lean clay, little silt, trace fine sand			SS 4		0-0-2 N=2					
1140.0	10.0'		10.0								
	BASE OF BORING AT 10.0 FEET										

WATER LEVEL OBSERVATIONS	
WD	▽ 8.0 ft
IAD	▼ 8.0 ft after 0 Hrs
AD	▼ 6.7ft after 1Hrs

OLSSON ASSOCIATES
3800 SOUTH 6TH STREET
LINCOLN, NEBRASKA 68502

STARTED:	7/19/18	FINISHED:	7/19/18
DRILL CO.:	OLSSON	DRILL RIG:	CME 75 (A)
DRILLER:	D. LUDWIG	LOGGED BY:	B. HAMMOND
METHOD: CONTINUOUS FLIGHT AUGER			

OLSSON ASSOCIATES

BOREHOLE REPORT NO. B-8

Sheet 1 of 1

PROJECT NAME: LPD Garage Addition Borrow Area	CLIENT: City of Lincoln, Nebraska
PROJECT NUMBER: 017-2696	LOCATION: Lincoln, Nebraska

Shelby Tube ▩ Split Spoon ⊠

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" N-VALUE	UNC. STR. (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
1150.0	**APPROX. SURFACE ELEV. (ft):1150.0**		0.0								
	DEVELOPED ZONE 0.3'										
	FILL										
	Lean clay (CL): Stiff, light brown to dark brown, moist, mostly lean clay, trace fine sand and rock fragments			U 1A				15.8	102.8		
	2.0'			U 1B				20.0			
1147.5	***ALLUVIUM***		2.5								
	Lean clay with silt (CL): Firm, grayish brown, moist, mostly lean clay, little silt, trace fine sand			SS 2		3-3-4 N=7		20.0			
1145.0			5.0								
	Lean clay with silt (CL): Soft, grayish brown, moist, mostly lean clay, little silt, trace fine sand			SS 3		0-2-2 N=4					
1142.5			7.5								
	Lean clay with silt (CL): Soft, grayish brown, moist, mostly lean clay, little silt, trace fine sand			SS 4		0-1-1 N=2					
1140.0	10.0'		10.0								
	BASE OF BORING AT 10.0 FEET										

WATER LEVEL OBSERVATIONS	
WD	▽ Not Encountered
IAD	▼ Not Encountered
AD	▼ Not Performed

OLSSON ASSOCIATES
3800 SOUTH 6TH STREET
LINCOLN, NEBRASKA 68502

STARTED:	7/19/18	FINISHED:	7/19/18
DRILL CO.:	OLSSON	DRILL RIG:	CME 75 (A)
DRILLER:	D. LUDWIG	LOGGED BY:	B. HAMMOND
METHOD: CONTINUOUS FLIGHT AUGER			

ATTACHMENT C
Summary of Laboratory Test Results

OLSSON ASSOCIATES
3800 SOUTH 6TH STREET
LINCOLN, NEBRASKA 68502

OLSSON ASSOCIATES

SUMMARY OF LABORATORY RESULTS

PROJECT NAME: LPD Garage Addition Borrow Area
PROJECT NUMBER: 017-2696
CLIENT: City of Lincoln, Nebraska
PROJECT LOCATION: Lincoln, Nebraska

BORING NUMBER	SAMPLE I.D.	SAMPLE DEPTH (ft)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	VOID RATIO	SATURATION (%)	UNCONFINED STRENGTH (tsf)	STRAIN (%)	ATTERBERG LIMITS			P-200	USCS CLASS.
									LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX		
B-1	U-1	1.0 - 2.5'	22.7	98.7	0.707	86.5							
B-1	SS-2	3.5 - 5.0'	34.1										
B-2	U-1A	1.0 - 1.8'	22.6	88.7	0.901	67.8			40	20	20		CL
B-2	U-1B	1.8 - 2.5'	27.5	91.1	0.850	87.3							
B-2	SS-2	3.5 - 5.0'	30.0										
B-3	U-1	1.0 - 2.5'	28.2	89.6	0.882	86.3							
B-3	SS-2	3.5 - 5.0'	26.6										
B-4	SS-1	1.0 - 2.5'	18.4										
B-4	SS-2	3.5 - 5.0'	28.6										
B-5	U-1	1.0 - 2.5'	23.2	91.2	0.849	73.9			31	23	8		CL
B-5	SS-2	3.5 - 5.0'	29.0										
B-6	U-1	1.0 - 2.5'	19.4	99.0	0.703	74.5							
B-6	SS-2	3.5 - 5.0'	31.6										
B-7	U-1	1.0 - 2.5'	17.1	109.5	0.540	85.3			34	22	12		CL
B-7	SS-2	3.5 - 5.0'	24.2						31	22	9		CL
B-8	U-1A	1.0 - 1.8'	15.8	102.8	0.640	66.8							
B-8	U-1B	1.8 - 2.5'	20.0										
B-8	SS-2	3.5 - 5.0'	20.0										

Platte Valley Agricultural and Environmental Laboratories, Inc.

OLSSON ASSOCIATES, L
601 P ST
LINCOLN NE 68508

ATTN: STEVE JENSEN

BATCH 18080105
page 1

PROJECT LPD Garage Addition
LOCATION Borrow Area

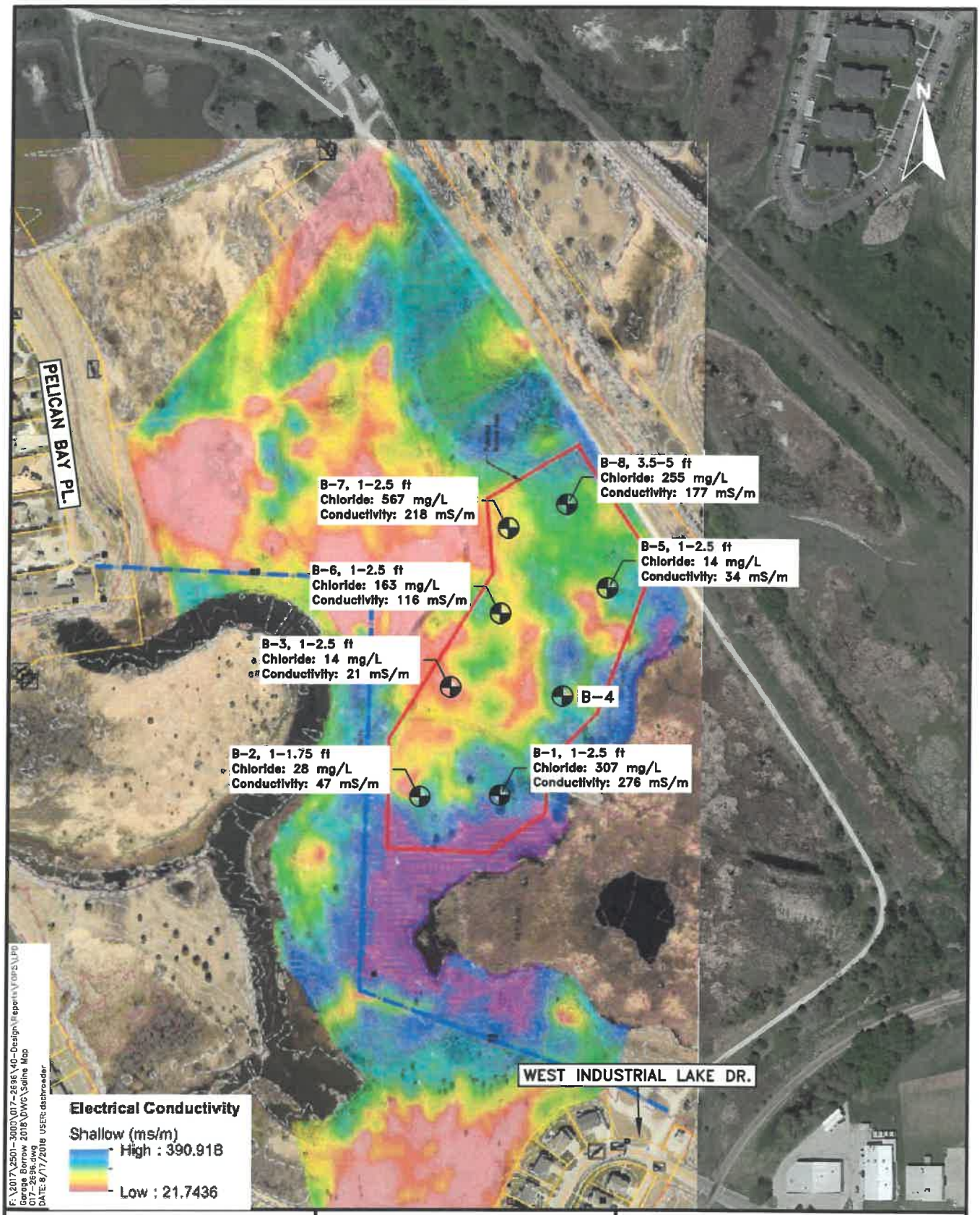
DATE RECEIVED 8/1/2018
DATE REPORTED 8/8/2018

SAMPLE ID		B1 U1	B2 U1A	B3 U1	B5 U1	B6 U1	B7 U1	B8 SS2
LAB NUMBER		74403	74404	74405	74406	74407	74408	74409
SAMPLE TYPE		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Chloride	mg/l	307	28	14	14	163	567	255
Method 325.2								
pH		6.5	6.3	6.3	6.4	6.3	6.1	7.4
Method 4500-H								
Conductivity	mS/cm	2.76	0.47	0.21	0.34	1.16	2.18	1.77
Method 2510-B								

REVIEWED BY:

P.O Box 807 ◆ 914 Highway 30 ◆ Gibbon, NE 68840 ◆ Phone: (308) 468-5975 ◆ Fax: (308) 468-6018 ◆ E-mail: info@soillab.com

ATTACHMENT D
Conductivity Map



LEGEND

SOIL BORING LOCATION

0 150 300 600

SCALE IN FEET

PROJECT: 017-2696

DATE:8.16.2018 | DRAWN BY:DJS

CONDUCTIVITY MAP
LINCOLN, NEBRASKA

OLSSON ASSOCIATES®
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Lincoln, NE 68502
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Lower Platte South Natural Resources District
Community Forestry Program – Exhibit "A"

The Lower Platte South Natural Resources District ("District") has budgeted funds for the purpose of sharing half of the total cost of trees and planting for the public good. Applicants must provide a brief written description on how the planting will be in the public good. Applicants can be neighborhood associations, service organizations, citizen groups, business associations, villages, towns and cities. Plantings can be on public & private lands such as school grounds, parks, cemeteries, common grounds, along street right-of-ways, etc. Lands cannot be owned by the United States government, the State of Nebraska, or any political subdivision of the State of Nebraska such as counties, cities, etc.

The applicants match must be a minimum of 25% cash (private funds only, no tax funds). The other 25% match can be non-NRD tax dollars (i.e. additional grant dollars) ~~or in-kind services for planting and tree care. Maximum amount for in-kind matching for planting is up to $100.00/tree and for tree care is $5.00/tree/year for 3 years; i.e. $15.00 for the 3 year maintenance agreement.~~

The District's portion for the tree planting project is up to 50% of the total cost of trees and planting. The cost of planting of the trees will not exceed $100.00 per tree. The District's portion of tree planting will not exceed $50.00 per tree. Maximum for an application for one year is $10,000 of District funds. Each applicant can only be approved for $10,000 every 3 years.

Participants in the Community Forestry Program are required to obtain trees through a local nursery (see Nebraska Department of Agriculture's Nursery Stock Distributor List) and are encouraged to utilize the technical expertise of the Nebraska Forest Service, the District Forester, the nursery, a landscape architect, or a professional arborist for the purpose of establishing a plan for the planting and maintenance of the trees.

Each application must include at least three written proposals from different vendors for the cost of the trees. Planting by the vendor may also be included on the proposal. The application, planting plan and vendor proposals will be reviewed and approved by the District Forester.

Orchard Trees, Shrubs, and Ornamental Grasses are NOT eligible for cost share assistance. Standard landscape size 1 ½" stock (1 ½" – 1 ¾") for deciduous trees and 4 – 5' for conifer trees is the recommended size. Root maker bag trees 3 gallon to 15 gallon trees are encouraged as well. Larger stock can be planted but cost share will be based on the price of the standard size stock. All trees must be guaranteed for 1 year.

Applicants must submit a project proposal to the District which shall include the following information:

1. Identification of the applicant (person(s), neighborhood association, village, town or city) applying for the cost-sharing funds, including the name address, phone number, and email of the person coordinating the project.

2. A detailed description of the project, including:

    a. The location for the tree plantings. Location can include before photos or drawings, a description of the existing vegetation (including trees), location of utilities such as water, sewer, electrical, and telephones lines or cable. If the trees along the street right of way are being planted, it is desirable to have the street addresses for the location of each tree. If

street addresses are not available, trees should be located on a map indicating the approximate proposed planting site.

b. The purpose of the project and a brief written description on how the project will benefit the general public (limit of 500 words), i.e. aesthetics, energy conservation, wildlife, windbreak, street trees, tree replacement, etc.

c. A schedule for implementing the project plan. Include approximate date of tree planting, tree care prior to planting, and maintenance for the following 3 years.

3. A detailed description of the cost of the trees, including:

   a. The number of trees, size, species, and the price per tree. For recommended species see Tree for Nebraska Ice Storm Recovery by Nebraska Statewide Arboretum and/or Lincoln, Nebraska's Approved Trees for the Streets.

   b. The cost of planting the trees (per tree) and an identification of who will be responsible for the planting.

   c. ~~Total cost of maintenance for the 3 year period can be included in the project~~.

   d. The total project cost.

4. Cost-sharing information including:

   a. The amount of cost-sharing funds requested from the District. (50% of the cost of the trees, planting, ~~and 3 years of maintenance~~, excluding tax).

   b. Set out the balance of the project funds (applicant's share) including the source of those funds, i.e. private, in-kind labor, grants, community budget, etc.

Applications will be accepted year around until available funds are expended. If applications are complete, meet all the guidelines, are on public ground and are less than $5,000, they will be approved by the District Forester and the District General Manager. For applications above $5,000 the appropriate committee of the District will review the application then refer the application to the Board of Directors of the District for approval.

Approved projects are required to complete an "Agreement" form. An example of the "Agreement" is enclosed.

All approved projects must be completed before June 1st. This allows the District forester the month of June to inspect the plantings and issue payment before the end of the fiscal year, which is July 1st. However, applicants need not wait until June 1st. It is best to contact the District forester as soon as the project is completed.

If you have any questions, call the District Forester at (402) 476-2729.

GUIDELINES FOR APPLYING TO THE LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT COMMUNITY FORESTRY PROGRAM

Areas in bold and with an asterisk * indicate these items are require for a completed application.

* **Identification of the individual(s), neighborhood association, village, school, town or city (applicant) and the coordinator of the project**
  * **Applicant:** _____
  * **Name of Coordinator:** _____
  * **Address:** _____
  * **Town and Zip Code:** _____
  * **Phone Number:** _____

* **Tree information**

# of Trees	Size	Species	Cost

*** TOTAL NUMBER OF TREES:_____** ***TOTAL COST OF TREES:_____**

* Cost of planting the trees (per tree) with a sum for all the trees_____/tree;
  Planting max $100/tree

* PLANTING TOTAL_____

* TOTAL COST OF PROJECT_____

* AMOUNT REQUESTED FROM NRD 50% max_____

* APPLICANT SHARE TOTAL_____

* Source of Applicants share:
  - $_____ donations (source)_____
  - $_____ adjacent homeowners
  - $_____ in-kind labor
  - $_____ grant (source) _____
  - $_____ community budget
  - $_____ neighborhood association funds
  - $_____ other sources

* Identification of who will be responsible for the planting for the 3 years:
  - _____ village or town
  - _____ neighborhood association
  - _____ adjacent landowners
  - _____ landowner
  - _____ other (explain)_____

* Description of care for the trees from the time they are picked up at the nursery until planting is completed:

_____

_____

_____

_____

* **Attach to the application a brief description of the purpose of the project and how it provides a public good to the Lower Platte South Natural Resources District.**

* **Trees should be located on a map indicating the approximate proposed planting site, please attach map.**

* **Street addresses for the location of proposed trees, please attach list of location(s) NO TREES CAN BE PLANTED BENEATH POWER LINES!**

Photographs or slides depicting the situation before the project is funded.

* **This application, planting plan, planting site, nursery proposals and public good description have been reviewed and approved by the Lower Platte South Natural Resources District Forester.**

_____

LPSNRD District Forester **Date**

COMMUNITY FORESTRY COST-SHARE AGREEMENT FOR PRIVATE LAND

This Community Forestry Cost-Share Agreement (the "Agreement") made and entered into by and among the LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT, a political subdivision of the State of Nebraska, with its principal business located at 3125 Portia Street, Lincoln, Nebraska 68521, telephone number (402) 476-2729, hereinafter referred to as the "District," and _____, Coordinator _____, "Address", "Phone", "Email", hereinafter referred to as "Landowner", whether one or more.

WITNESSETH:

RECITALS

A. The District has established a Community Forestry Program (the "Program") for the purpose of cost-sharing with certain eligible persons or entities for the purchase and planting of trees on public or private land. The term "private land" for purposes of this Agreement shall mean land not owned by a political subdivision of the State of Nebraska, the State of Nebraska, or the federal government.

B. The Landowner is either a group of private landowners or a neighborhood association which entity has been determined by the district to be eligible to participate in the Program. The Landowner has also filed a proposal which has been approved by the Board of Directors or the General Manager of the District on "Date".

NOW, THEREFORE, in consideration of the above recitals and the mutual promises and covenants contained herein, the parties agree as follows:

1. Landowner agrees to participate in the District's Program and further agrees to abide by the requirements of the Program, a copy of which is attached hereto as Exhibit "A", and incorporated herein by this reference.
2. Landowner agrees to purchase certain trees, the species and size of which are specified in the Landowner's approved proposal and plant such trees in accordance with the plot plan, a copy of which is attached hereto as Exhibit "B" and incorporated herein by this reference.
3. Landowner agrees to provide the District with a certificate of costs incurred and copies of all bills relating to the project.
4. District agrees to contribute fifty percent (50%) of the total approved costs of the project, with the District's portion not to exceed $"Total".
5. If within ten year(s) from the date of final completion of the project, any of the trees planted pursuant to this Agreement are permanently removed from the project, replaced, or moved to a new location, without the consent of the District, or die as a result of the lack of care, then Landowner agrees to either reimburse the District in an amount not to exceed the total amount of the District's contribution, determined by the District in its sole discretion, or replaces the trees with either the same species as originally planted or some other species approved by the District.
6. The District agrees to make the District Forester available to assist the Landowner in implementing the proposal.

IN WITNESS WHEREOF, the parties have executed this Agreement on "Date".

LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT, A Political Subdivision of the State of Nebraska,

_____ _____

Paul Zillig, General Manager Date:

(Authorized Representative) LANDOWNER,

_____ _____

Signature Date

_____

Print Name