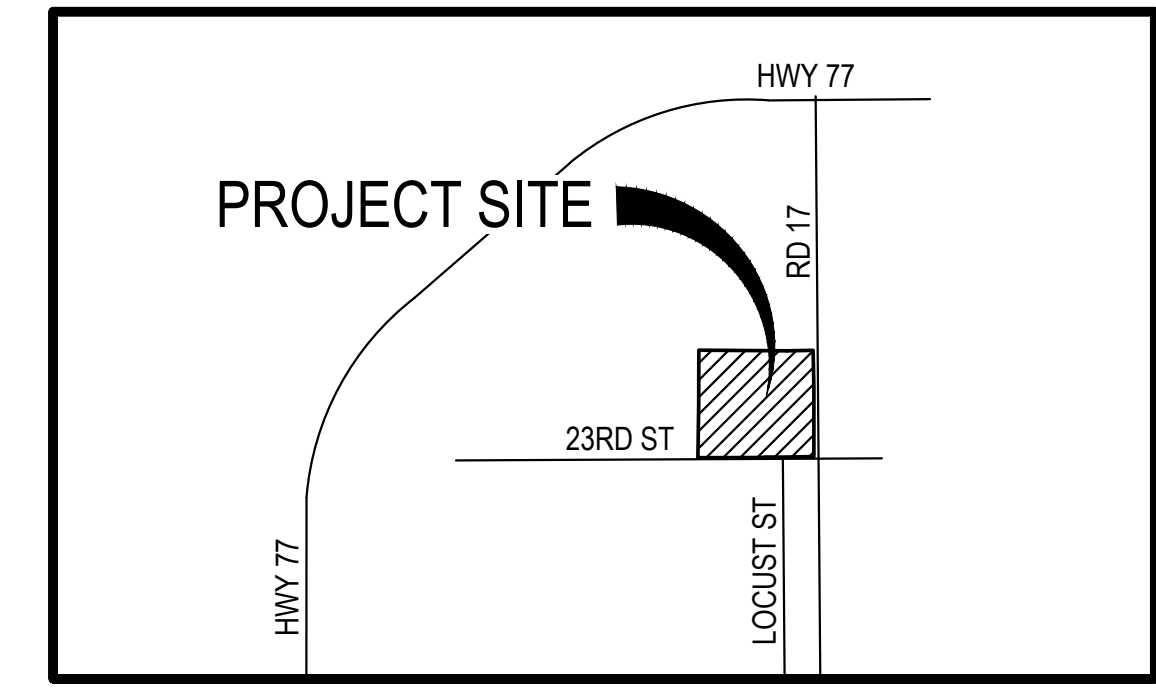
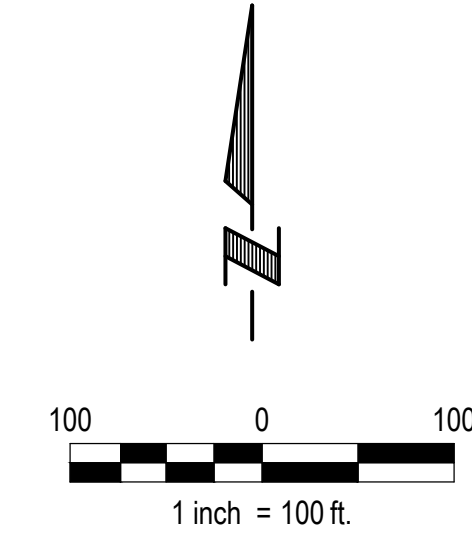


NORTH HIGHLANDS

LOTS 1 THRU 89 & OUTLOT "A" GRADING & STORM WATER POLLUTION PREVENTION PLAN Located in the NE 1/4 of Section 33, Township 15, Range 7E, of the 6th P.M. WAHOO, NEBRASKA

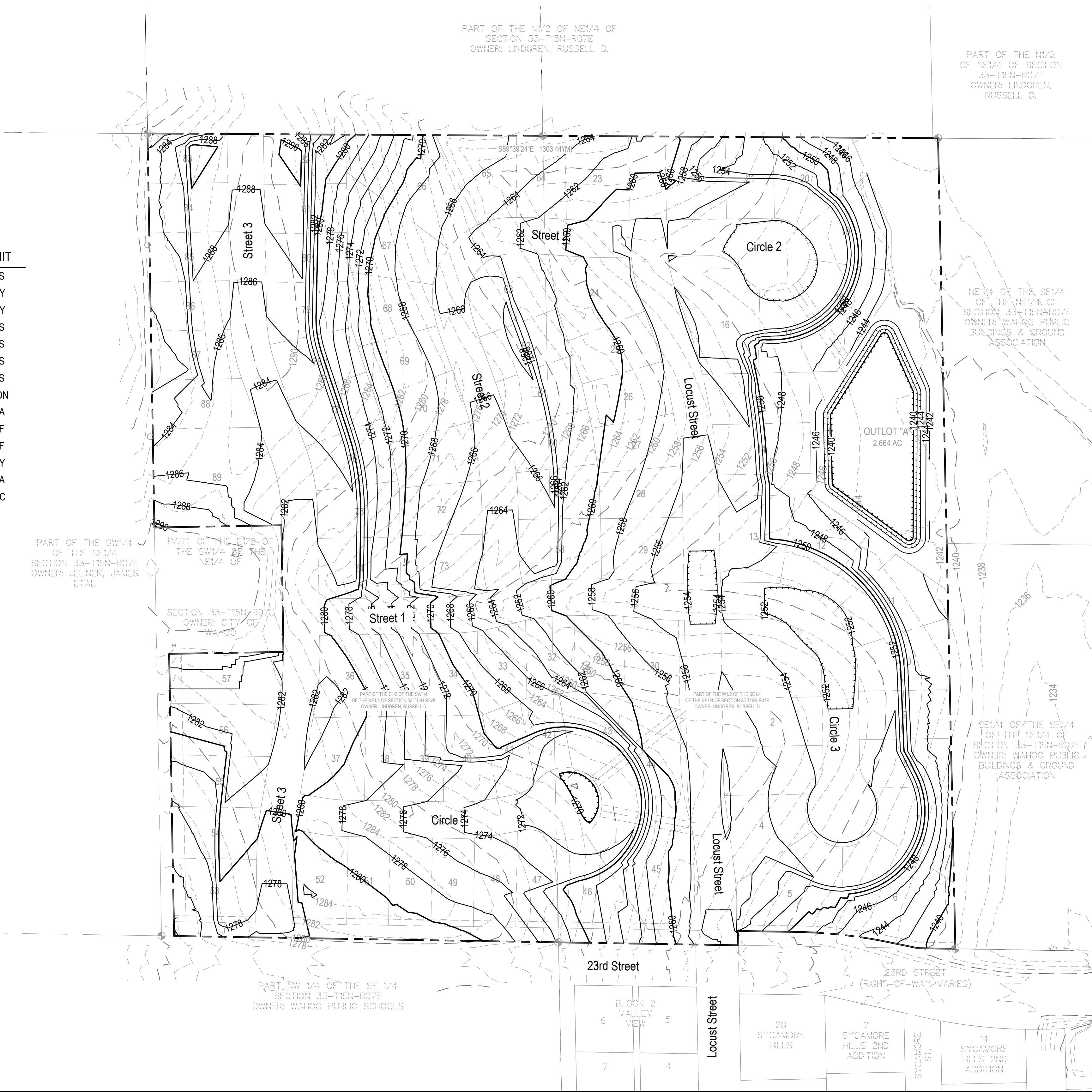


VICINITY MAP



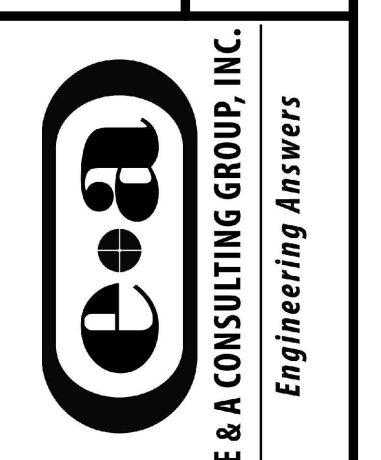
APPROXIMATE BID QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
1	CLEARING AND GRUBBING - GENERAL	1	LS
2	EXCAVATION ON-SITE (ESTABLISHED QUANTITY)	123,003	CY
3	STRIPPINGS (ESTABLISHED QUANTITY)	20,100	CY
4	CONSTRUCT SEDIMENT BASIN 'A'	1	LS
5	CONSTRUCT SEDIMENT TRAP 'A'	1	LS
6	CONSTRUCT SEDIMENT TRAP 'B'	1	LS
7	CONSTRUCT SEDIMENT TRAP 'C'	1	LS
8	CONSTRUCT TYPE B RIP-RAP	32	TON
9	INSTALL STABILIZED CONSTRUCTION ENTRANCE	1	EA
10	CONSTRUCT DIVERSION	2,062	LF
11	INSTALL SILT FENCE	3,316	LF
12	INSTALL EROSION CONTROL MATTING	13,008	SY
13	CONSTRUCT INLET FILTERS	26	EA
14	SEEDING	37.40	AC



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER
2	GENERAL NOTES AND DETAILS
3	SWPPP NOTES
4	DETAILS
5	GRADING & SWPPP
6	CUT-FILL MAP
7	SEDIMENT BASIN DETAIL
8	DRAINAGE MAP



Revisions	Date	Description
1	8/17/2021	Sediment Basin Outlet
2	10/29/2021	Permanent Outlet

Proj No: P2020-259-001
 Date: 3/2/2021
 Designed By: KGV
 Drawn By: JMB
 Scale: AS SHOWN
 Sheet: 1 of 8

Job: Baratta 10/29/2021 12:35 PM K:\Projects\2020\259\001\Engineering\CAD\Plan\Grading\SWPPP\001.dwg



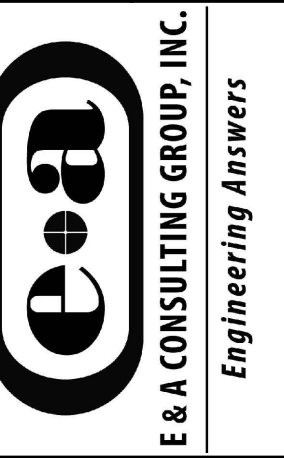
GRADING AND SWPPP GENERAL NOTES

1. All project procedures, materials, bonds and reserves shall conform to the City of Omaha Specifications for Public Works Construction 2014, and any additions thereto. It will be the responsibility of the Contractor to be aware of the contents of the aforementioned specifications. The aforementioned publication can be found at: <http://www.cityofomaha.org/pw/index.php/contractors-consultants2/contractors/standard-plates-curb-ramps-and-specifications>
2. Barricades shall conform to Omaha Public Works "Barricading Standards, Specifications, Methods Materials", and/or the "Manual on Uniform Traffic Control Devices", and any additions thereto, whichever is more stringent. The aforementioned publications can be found at <https://publicworks.cityofomaha.org/images/PDF/Barricading-Standards-Specs-Methods-and-Materials.pdf> and https://mutcd.fhwa.dot.gov/pdfs/2009r1r2/pdf_index.htm
3. Utilities are shown as a convenience for the Contractor. The locations of all aerial and underground utilities may or may not be indicated in these plans. The Contractor shall notify all utility companies before work is started to verify utility locations. No excavation will be permitted in the area until all utilities have been located and identified to the satisfaction of all parties and then, only with extreme care to avoid any possibility of damage. The Contractor will be responsible for repair of utilities damaged during construction.
4. The Contractor shall maintain positive drainage in existing road ditches and culverts draining into the project area.
5. Topsoil shall be stripped to a depth of at least 4" and stockpiled on site for redistribution in future unpaved areas upon completion of grading. The location of the stripping stockpiles are at the discretion of the Contractor; however, stockpiles must be located within an area protected by stormwater pollution prevention measures.
6. Payment for earthwork shall be based upon the bid item "EXCAVATION ON-SITE (ESTABLISHED QUANTITY)". This quantity is the fixed plan cut volume determined by a comparison of the proposed grade surface to the existing grade surface. The project has been designed assuming a 35% shrinkage factor on the fill unless otherwise indicated. There will be no deviation from this pay quantity without a written change order resulting from a plan revision or field change. Work shall include excavation, haul, placing and compacting earthwork necessary for a completed project for this fixed established quantity.
7. Payment for topsoil shall be based upon the bid item "STRIPPINGS (ESTABLISHED QUANTITY)". This quantity is the fixed plan 4" depth volume over the limits of grading. Work shall include stripping, stockpiling and respreading or stripping and transferring of topsoil for this fixed established quantity.
8. Following stripping operations and removal of any observed unsuitable soils, the exposed soils shall be proofrolled with a fully loaded, tandem axle dump truck providing a minimum gross weight of 25 tons, or other equipment with an equivalent subgrade loading. Unsuitable soils observed during proofrolling shall be improved by scarification to a 9" depth and recompacted. Scarified soils which cannot be recompacted to there recommended degree shall be undercut and replaced with stable fill.
9. Fill placed on a slope steeper than a 5H:1V shall be benched before placing fill, with a maximum riser height on the order of 2', separated by horizontal steps that are wide enough to accommodate compaction equipment.
10. All fill and backfill shall be placed in lifts of 8" or less in loose thickness. All fill shall be compacted to a minimum 95% of the maximum dry density at a moisture content 3% below to 4% above optimum as determined by ASTM D698 (Standard Proctor) or as recommended by the Geotechnical Engineer.
11. Fill and Backfill shall be inspected and tested periodically at the discretion of the Engineer for adherence to material, compaction, and moisture specifications.
 - a. Fill or backfill failing to meet compaction and moisture content specifications shall be reworked and retested at the Contractor's expense.
 - b. Material deemed unsuitable by the Engineer shall be removed and replaced. Reimbursement for removal of unsuitable materials will be made at the contract unit price for, "EXCAVATION ON-SITE (ESTABLISHED QUANTITY)".
12. Fill and backfill material shall be impervious material (clay/silt) free of frost, snow, ice, concrete, brick, stone, refuse, cinder ashes, organic matter, or any other material deemed unsuitable by the Engineer.
13. Excavation necessary for construction of the sediment basins is incorporated into the "EXCAVATION ON-SITE (ESTABLISH QUANTITY)" quantity.
14. Diversion berms and ditches shall be constructed as necessary throughout the term of the project to properly control sediment erosion and protect adjacent properties as directed by the Engineer. This work will not be paid for directly but shall be subsidiary to items for which direct payment is made.
15. Construct diversion ditches in accordance with Section 9.5.7 "Temporary Diversion Dike" found in the 2014 Omaha Regional Stormwater Design Manual.
16. Existing ditches and eroded areas shall be undercut a minimum of 12 inches on all bottoms and sides prior to placement of any fill. Separate payment will not be made for undercutting.
17. The Contractor shall give the Engineer 72 hours notice to allow time to perform a survey check of the graded site prior to respreading topsoil. The Contractor shall obtain the Engineer's approval of the work prior to respreading topsoil or removing equipment from the site. Any re-mobilization or re-work required due to the circumstances described in this paragraph shall be performed by the Contractor at no additional cost.
18. The final grade of street rights-of-way shall be within 0.2' +/- of the design grade. The final grade of the lots shall be within 0.5' +/- of the design grade. Any re-mobilization or re-work required to meet these tolerances shall be performed by the Contractor at no additional cost.
19. The Contractor shall monitor perimeter silt fencing and install additional silt fencing if necessary or as directed by the Engineer. Payment shall be made at the unit price for "Install Silt Fence". (See the Erosion Control Feature Maintenance Schedule).

GRADING AND SWPPP GENERAL NOTES

20. No tree removal shall occur between April 1 and July 15, unless a migratory bird inventory has been completed and no nesting of migratory birds is found. Tree removal between June 1 and July 31 shall further require a bat roosting inventory.
21. All disturbed areas except the street rights-of-way shall be seeded. Seeding shall be alfalfa, rye, oats or wheat cover crop at 90 lbs per acre. Fertilizer (20-10-10) shall be applied at 50 lbs per acre.
22. Areas to receive erosion control matting shall be seeded in accordance with the City of Omaha Type B mix.
23. The Contractor shall comply with all OSHA regulations.
24. A Geotechnical Exploration Report has been prepared for this project and is incorporated herein by reference. All recommendations of said report shall be followed in performing grading, paving, and utility operations. See Geotechnical Report prepared for this project by Thiele Geotech, dated September 26th, 2019.
25. The Owner retains salvage rights to all buildings structures, and the contents therein; however, the Contractor is responsible for the demolition and removal of all structures following the salvage operations.
26. The Contractor shall obtain all necessary demolition permits prior to beginning demolition activities on site.
27. The cost of the demolition permit, pre-demolition inspections, utility disconnect expenses, and any other expenses necessary to comply with demolition permits and regulations shall be paid for by the Contractor.
28. All wells on site shall be abandoned and properly closed in manner consistent with Nebraska Department of Health and Human Services Regulation and Licensure, Title 178, Chapter 12, Regulations Governing Water Well Construction, Pump Installation and Water Well Decommissioning Standards.
29. The Contractor shall obtain all necessary permits prior to beginning removal of the septic system.
30. Initial stripping can occur only in an area of cut and the corresponding fill area required to construct the embankment along the downstream side of the basins. At the end of each day, when weather conditions warrant, and until such time as it is possible to construct sediment basins, the contractor shall construct a sediment trap at any and all low spots where water falling on bare ground might leave the site. The temporary sediment traps shall conform to the Omaha Regional Stormwater Design Manual, Section 9.5.14. Once the sediment basin has been constructed and approval given by the Inspector, stripping can occur throughout the balance of the site.
31. The Contractor shall remove all structures, private utilities, pavements and debris from within the site including the following:
 - a. all buildings including the contents and foundations, retaining walls, decks,
 - b. all private utility lines, including sanitary sewer service, storm sewer, natural gas, electrical, and communication,
 - c. all utility appurtenances such as transformers, meters, valves, pressure reducers as well as concrete pads and structures, as coordinated with Metropolitan Utilities District or the Omaha Public Power District.
 - d. all foundation walls, partition walls, columns, piers, beams, or other projections, floors, and all other footings,
 - e. all asphalt and concrete pavement,
 - f. all light poles and light pole bases,
 - g. all gravel, and rubbish, or other debris found on site,
 - h. all fences within project boundary (all fences may not be shown on plan),
 - i. all septic tanks and septic appurtenances.
32. The Contractor shall maintain and preserve utilities traversing and servicing premises as long as those utilities are required.
33. All basement or other excavations shall be backfilled with suitable material and compacted as structural fill.
34. Where open excavations are not backfilled within 24 hours, the Contractor shall encircle the open area by a standard snow fence.
35. All rubbish, unsuitable material, debris, equipment, etc., resulting from demolition work shall be disposed of properly and in a legal manner.
36. The Contractor shall control dust during demolition and removals.
37. All demolition, removals, well closings, clearing and grubbing shall be paid for in a lump sum at the bid price for "CLEARING AND GRUBBING - GENERAL".

E & A CONSULTING GROUP, INC.
Engineering • Planning • Environmental & Field Services



NORTH HIGHLANDS
WAHOO, NEBRASKA

GENERAL NOTES

Revisions	
Date	Description
3/2/2021	KGJ
	JMB
	AS SLOWIN
2	of 8

Proj No: P2020-259-001
Date: 3/2/2021
Designed By: KGJ
Drawn By: JMB
Scale: AS SHOWN
Sheet: 2 of 8

MAINTENANCE SCHEDULE:

The following Maintenance Schedule has been provided. The INSPECTOR must perform the Inspections. 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 that are not listed below as well.

- 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 reworking 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.
- Silt Fence** - The maintenance measures 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; and (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.
- Storm Drain Inlet Protection** - The maintenance measures are as follows; (3.1) structures shall be inspected after each rain and repairs made as necessary and (3.2) structures shall be removed and the area stabilized when the remaining drainage area has been properly stabilized.
- Temporary Diversion Dike** - The measure shall be inspected after every storm and repairs made to the dike, flow channel, outlet or sediment trapping facility, as necessary. Once every two weeks, whether a storm event has occurred or not, the measure shall be inspected and repairs made if needed. Damages caused by construction traffic or other activity must be repaired before the end of each working day.
- Temporary Fill Diversion** - Since the practice is temporary and under most situations will be covered the next working day. The maintenance required should be low. If the practice is to remain in use for more than one day, an inspection shall be made at the end of each work day and repairs made to the measure if needed. The OPERATOR/CONTRACTOR should avoid the placement of any material over the structure while it is in use. Construction traffic should not be permitted to cross the diversion.
- Temporary Sediment Trap** - The maintenance measures are as follows: (6.1) sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one half the design volume of the wet storage, sediment removal from the basin shall be deposited in a suitable area and in such a manner that it will not erode and cause sedimentation problems; (6.2) filter stone shall be regularly checked to ensure that filtration performance is maintained, stone choked with sediment shall be removed and cleaned or replaced; and (6.3) the structure should be checked regularly to ensure that it is structurally sound and has not been damaged by erosion or construction equipment, the height of the stone outlet should be checked to ensure that its center is at least 1 foot below the top of the embankment.
- Temporary Sediment Basin** - The basin embankment should be checked regularly to ensure that it is structurally sound and has not been damaged by erosion or construction equipment. The emergency spillway should be checked regularly to ensure that its lining is well established and erosion-resistant. The basin should be checked after each runoff producing rainfall for sediment cleanout and trash removal. When the sediment reaches the cleanout level, it shall be removed and properly disposed of.
- Temporary Seeding** - Areas which fail to establish vegetative cover adequate to prevent rill erosion will be re-seeded as soon as such areas are identified. Control weeds by mowing.
- Permanent Seeding** - The maintenance measures are as follows: (9.1) in general, a stand of vegetation cannot be determined to be fully established until it has been maintained for one full year after planting; (9.2) new seedlings shall be supplied with adequate moisture, supply water as needed, especially late in the season, in abnormally hot or dry conditions, or on adverse sites, water applications shall be controlled to prevent excessive runoff; (9.3) inspect all seeded areas for failures and make necessary repairs, replacements, and reseedings within the planting season, if possible; [9.3a] if stand is inadequate for erosion control, over seed and fertilize using half of the rates originally specified; [9.3b] if stand is 60% damaged, re-establish following seedbed and seeding recommendations; [9.3c] 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 following seedbed and seeding recommendations.
- Mulching** - All mulches and soil coverings should be inspected periodically (particularly after rainstorms) to check for erosion. Where erosion is observed in mulched areas, additional mulch should be applied. Nets and mats should be inspected after rainstorms for dislocation or failure. If washouts or breakage occur, reinstall netting or matting as necessary after repairing damage to the slope or ditch. Inspections should take place until grasses are firmly established. Where mulch is used in conjunction with ornamental plantings, inspect periodically throughout the year to determine if mulch is maintaining coverage of the soil surface; repair as needed.
- Soil Stabilization Blankets & Matting** - All soil stabilization blankets and matting should be inspected periodically following installation, particularly after rainstorms to check for erosion and undermining. 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 monitor these areas until which time they become permanently stabilized; at that time an annual inspection should be adequate.
- Street Cleaning/Sweeping** - The maintenance measures are as follows; (12.1) evaluate access points daily for sediment tracking; (12.2) when tracked or spilled sediment is found on paved surfaces, it will be removed daily, during times of heavy track-out such as during rains, cleaning may be done several times throughout the day; (12.3) unknown spills or objects will not be mixed with the sediment; and (12.4) if sediment is mixed with other pollutants, it will be disposed of properly at an authorized landfill.

GENERAL NOTES

- All OPERATORS/CONTRACTORS must confirm with the APPLICANT that any and all applicable governmental approvals have been received prior to the start of work.
- BMP's may not be removed without INSPECTOR and applicable government approval.
- The APPLICANT, INSPECTOR, and CONTRACTORS/OPERATORS must adhere to all Good Housekeeping BMP's presented within the Omaha Regional Stormwater Design Manual Chapter 9 Section 9.6. Good Housekeeping BMP's focus on keeping the work site clean and orderly while handling materials and waste in a manner that eliminates the potential for pollutant runoff. Good Housekeeping BMP's such as Sanitary Waste Management (9.6.2), Solid Waste Management (9.6.3), Material Delivery & Storage (9.6.4), Street Cleaning/Sweeping (9.6.5), and Vehicle & Equipment Fueling (9.6.6) must be addressed when applicable. The aforementioned publications can be found at <http://www.omahastormwater.org>.
- The SWPPP documents (e.g., NDEQ-NPDES, SWPPP-SM, SWPPP-N, etc.) are essential and a requirement in one part is as binding as though occurring in all. The SWPPP documents are complementary. The documents describe and provide the complete SWPPP. The APPLICANT, INSPECTOR, and/or CONTRACTORS/OPERATORS may not take advantage of any apparent SWPPP errors or omissions. The INSPECTOR shall notify the APPLICANT, DESIGNER, and CONTRACTORS/OPERATORS promptly of any omissions or errors. The APPLICANT shall instruct the DESIGNER to make any corrections necessary to fulfill the overall intent of the SWPPP Documents (e.g., Grading Permit Modification Form). In the case of a discrepancy between parts of the SWPPP documents, the most stringent requirement shall rule.

STANDARD DETAILS

NUMBER	NAME	LOCATION
9.5.2	Construction Entrance	Omaha Regional Stormwater Design Manual
9.5.5	Storm Drain Inlet Protection	Omaha Regional Stormwater Design Manual
9.5.7	Temporary Diversion Dike	Omaha Regional Stormwater Design Manual
9.5.8	Temporary Fill Diversion	Omaha Regional Stormwater Design Manual
9.5.14	Temporary Sediment Trap	Omaha Regional Stormwater Design Manual
9.5.15	Temporary Sediment Basin	Omaha Regional Stormwater Design Manual
9.5.16	Dust Control	Omaha Regional Stormwater Design Manual
9.5.19	Temporary Seeding	Omaha Regional Stormwater Design Manual
9.5.20	Permanent Seeding	Omaha Regional Stormwater Design Manual
9.5.22	Mulching	Omaha Regional Stormwater Design Manual
9.5.23	Soil Stabilization Blankets & Matting	Omaha Regional Stormwater Design Manual
9.6.2	Sanitary Waste Management	Omaha Regional Stormwater Design Manual
9.6.3	Solid Waste Management	Omaha Regional Stormwater Design Manual
9.6.4	Material Delivery And Storage	Omaha Regional Stormwater Design Manual
9.6.5	Street Cleaning/Sweeping	Omaha Regional Stormwater Design Manual
9.6.6	Vehicle And Equipment Fueling	Omaha Regional Stormwater Design Manual
9.6.7	SWPPP Notification Sign	Omaha Regional Stormwater Design Manual
9.6.8	Concrete Washout	Omaha Regional Stormwater Design Manual

The Omaha Regional Stormwater Design Manual can be found at: <http://omahastormwater.org/orsdm/>

CONSTRUCTION ACTIVITIES & SCHEDULING

ACTIVITY	SCHEDULE
Install all BMP's needed and associated with the Grading Phase such as stabilized construction entrances, silt basins, riser pipes, outlet pipes, silt traps, silt fence, diversions, terraces, etcetera.	Prior to any stripping of existing vegetation or grading.
Proceed with stripping of existing vegetation and grading in accordance with the grading plan, while disturbing no more than is necessary.	After Installing all BMP's needed and associated with the Grading Phase. Furthermore, INSPECTOR approval must be obtained before the start of any stripping of existing vegetation or grading.
Proceed with infrastructure installation.	Infrastructure installation must occur prior to any lot development.
Implement the installation of Temporary Seeding, Permanent Seeding, and/or Mulching.	Stabilization measures must be initiated as soon as possible in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.
Implement the Installation all BMP's needed and associated with the Building Phase.	Building Phase BMP's must be installed concurrently with lot development.
Proceed with removal of BMP's.	BMP's may not be removed until each impacted drainage basin has been fully developed. Full development shall mean installation of pavement, buildings, and utilities, landscaping, and fully established permanent seeding. Furthermore, INSPECTOR approval must be obtained before the removal of any BMP's.

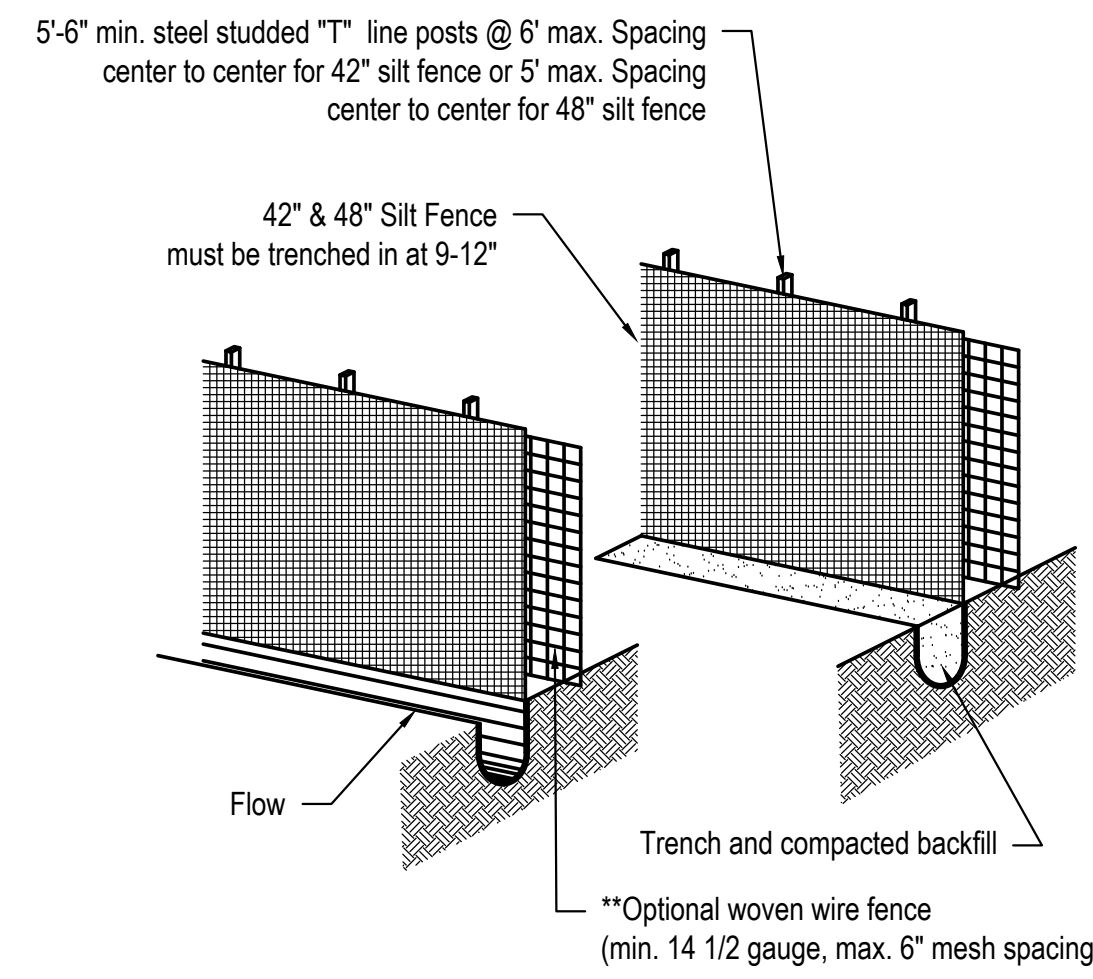


Revisions	Description

Proj No. P2020-259-001	Date 3/2/2021	Designed By: KGY	Drawn By: JMB	Scale: AS SHOWN	Sheet: 3 of 8
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Revisions	Description

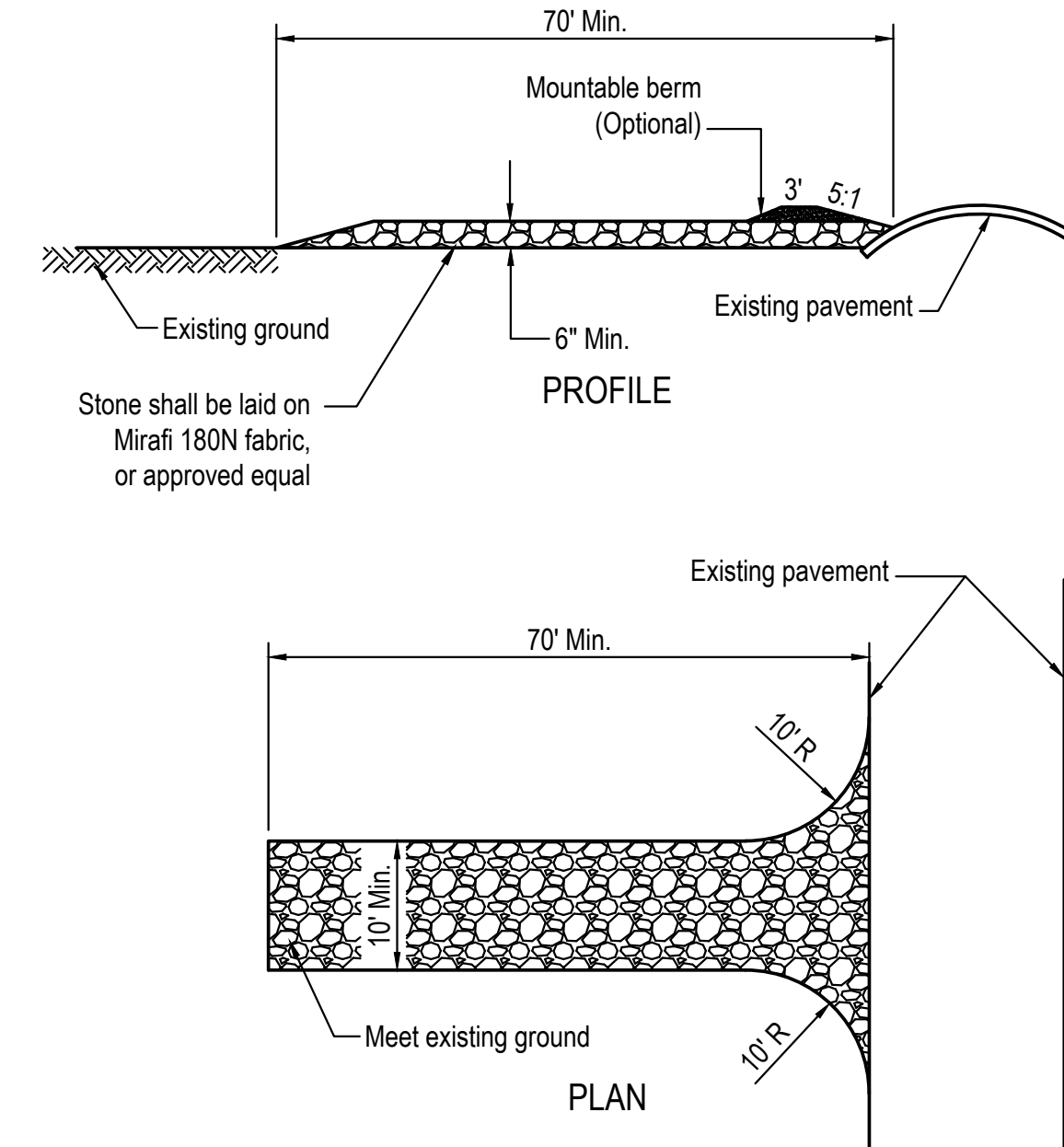
Proj No. P2020-259-001	Date 3/2/2021	Designed By: KGV	Drawn By: JMB	Scale: AS SHOWN	Sheet: 4 of 8
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SILT FENCE
 NOT TO SCALE

NOTES:

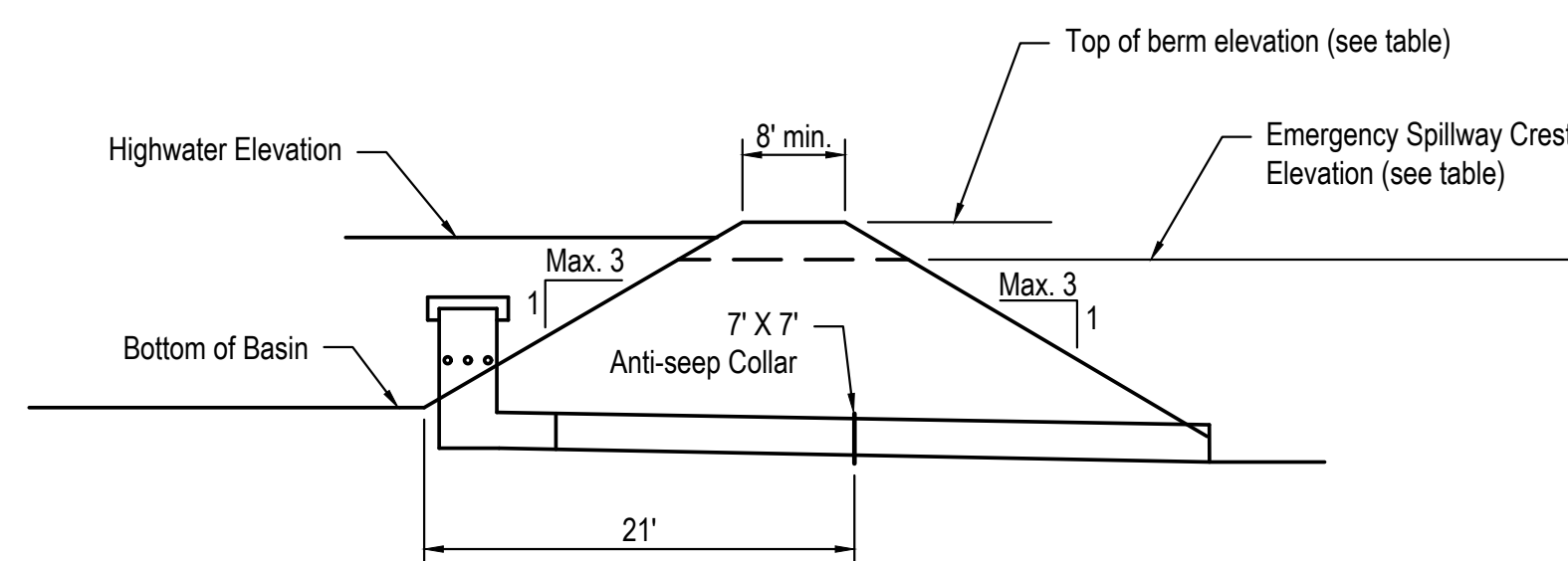
- Acceptable silt fence specifications- AOS (#20 - 50 Sieve), Water Flow Rate (50 gpm/ sq. ft. - 125 gpm/ sq.ft), Tensile Strength (Grab) - (Min. 120 Warp or greater and Elongation (5-25%).
- On each new run of silt fence spray paint the beginning of the run with 0+00 and spray paint the end with the date of installation and LF of the run.
- Silt fence should be securely 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 12" of the silt fence.
- Steel posts which support the silt fence shall be installed on a slight angle toward the anticipated runoff source. (Incline all posts 20° Max. from vertical, toward flow)
- 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.
- Silt fence shall be removed when it has served its usefulness so as not to block or impede storm flow or drainage.
- Sediment trapped by this practice shall be uniformly distributed on the source area prior to topsoiling.



NOTES

- The stone size shall be 2" diameter or a reclaimed broken concrete equivalent.
- Contractor to construct the road to the length required but not less than 50'.
- The thickness of the stone shall be 6".
- The width of the construction entrance shall be 10' minimum, but in no case less than the full width at points where ingress and egress occurs.
- All surface runoff flowing or diverted towards the construction entrance shall be piped across the entrance. If piping is impractical, a mountable berm with 5H:1V will be permitted.
- 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.
- 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.
- Periodic inspection and needed maintenance shall be provided after each rain.

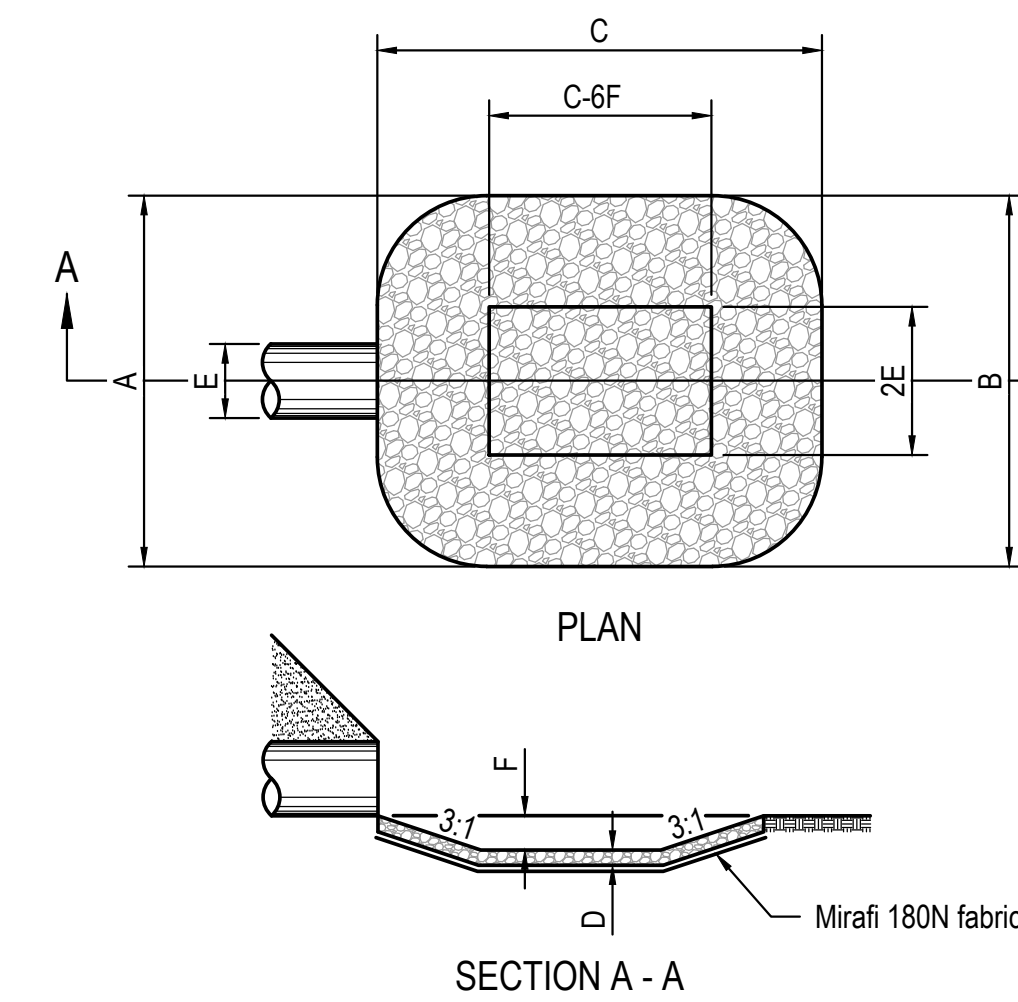
STABILIZED CONSTRUCTION ENTRANCE
 NOT TO SCALE



ANTI-SEEP COLLAR DETAIL
 NOT TO SCALE

NOTES

- Collars shall be a minimum of 2 feet from a joint.
- "See table" refers to the Sediment Basin Data.



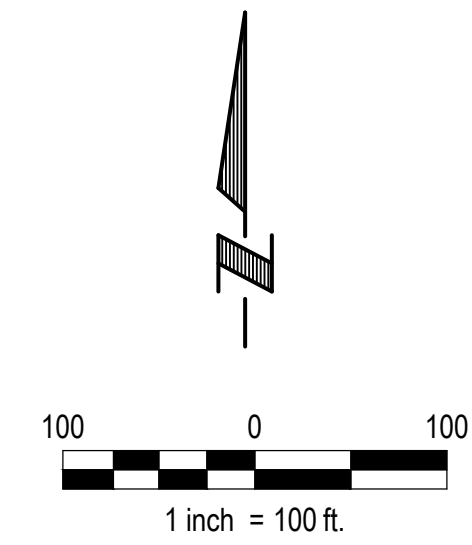
SCOUR HOLE TABLE									
BASIN	A	B	C	D	E	F	RIP-RAP TYPE	PAY QUANTITY	FABRIC QUANTITY
A	17'	17'	15'	2.4'	4.0'	1.5'	B	32 TN	48 SY

PREFORMED SCOUR HOLE DETAIL
 NOT TO SCALE

(NDOT Drainage and Erosion Control Manual, p. 2-54)
 (Fabric cost is subsidiary to riprap bid item)

LEGEND

- Diversion Berm
- Silt Fence
- Existing Contours
- Proposed Contours
- Sediment Basin Perimeter
- Limits of Construction
- Erosion Control Terrace
- Fill Areas
- Erosion Control Matting
- Inlet Protection



GRADING & EROSION CONTROL REFERENCE NOTES

CONSTRUCT STONE CONSTRUCTION ENTRANCE - See Figure 9.5.2-1 per ORSWDM

CE 1 Construct Stone Construction Entrance

CONSTRUCT DIVERSION - See Figures 9-13 per ORSWDM

- D 1 Diversion, 309 LF
- D 2 Diversion, 236 LF
- D 3 Diversion, 170 LF
- D 4 Diversion, 549 LF
- D 5 Diversion, 86 LF
- D 6 Diversion, 452 LF
- D 7 Diversion, 260 LF

CONSTRUCT SILT FENCE - See Detail Sheet

- SF 1 Silt Fence, 977 LF
- SF 2 Silt Fence, 1107 LF
- SF 3 Silt Fence, 601 LF
- SF 4 Silt Fence, 631 LF

Note: Install J Hooks every 100 LF or 4 feet of grade change, Cost is subsidiary to 'INSTALL SILT FENCE'

CONSTRUCT SEDIMENT BASIN

- SB A Sediment Basin 'A'

CONSTRUCT SEDIMENT TRAP

- ST A Sediment Trap 'A'
- ST B Sediment Trap 'B'
- ST C Sediment Trap 'C'

TYPE "A" SEEDING & EROSION CONTROL MATTING, NORTH AMERICAN GREEN S-150

- EM 1 Type "A" Seeding & Erosion Control Matting, 10,147 SY
- EM 2 Type "A" Seeding & Erosion Control Matting, 2,861 SY

INSTALL INLET FILTER - See Figure 9-7 ORSWDM

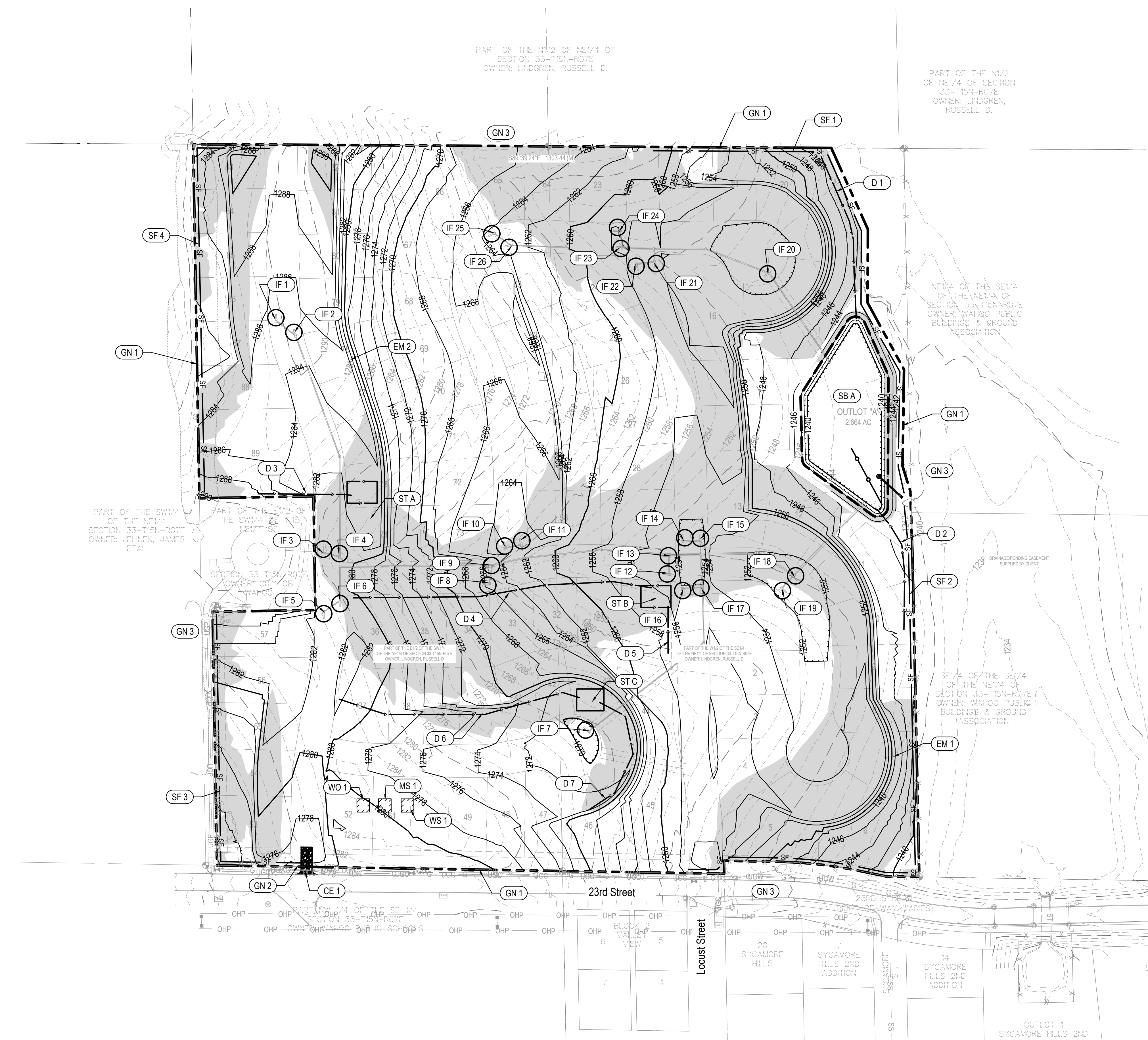
- IF X Construct Inlet Filters, 1 EA

GENERAL

- MS 1 Proposed Material Storage Area. Alternate location shall be approved by the inspector. Storage Area shall conform so Section 9.6.4 of the ORSWDM.
- WS 1 Proposed Waste Storage Area. Alternate location shall be approved by the inspector. Storage Area shall conform so Section 9.6.2 and 9.6.3 of the ORSWDM.
- WO 1 Proposed Concrete Washout Facility. Alternate location shall be approved by the inspector. Washout Facility shall conform so Section 9.6.8 of the ORSWDM.
- GN 1 Construction Limits
- GN 2 SWPPP Notification Sign location. Sign shall be provided by the INSPECTOR and shall conform to Section 9.6.7 of the ORSWDM.
- GN 3 Contractor shall not grade on adjacent property or ROW unless verifying with Engineer that an easement has been obtained from the adjacent property owner

SEDIMENT TRAP TABLE

NAME	LOT	AC.	L	W	D	STORAGE REQUIRED (CY)	TOTAL STORAGE PROVIDED (CY)
ST 'A'	75	2.87	55	40	5	385	407
ST 'B'	30	2.81	55	40	5	377	407
ST 'C'	43	2.74	50	40	5	367	370



NORTH HIGHLANDS
 WAHOO, NEBRASKA

GRADING AND SWPPP

Revisions	Description	Date
1	AS SHOWN	3/2/2021

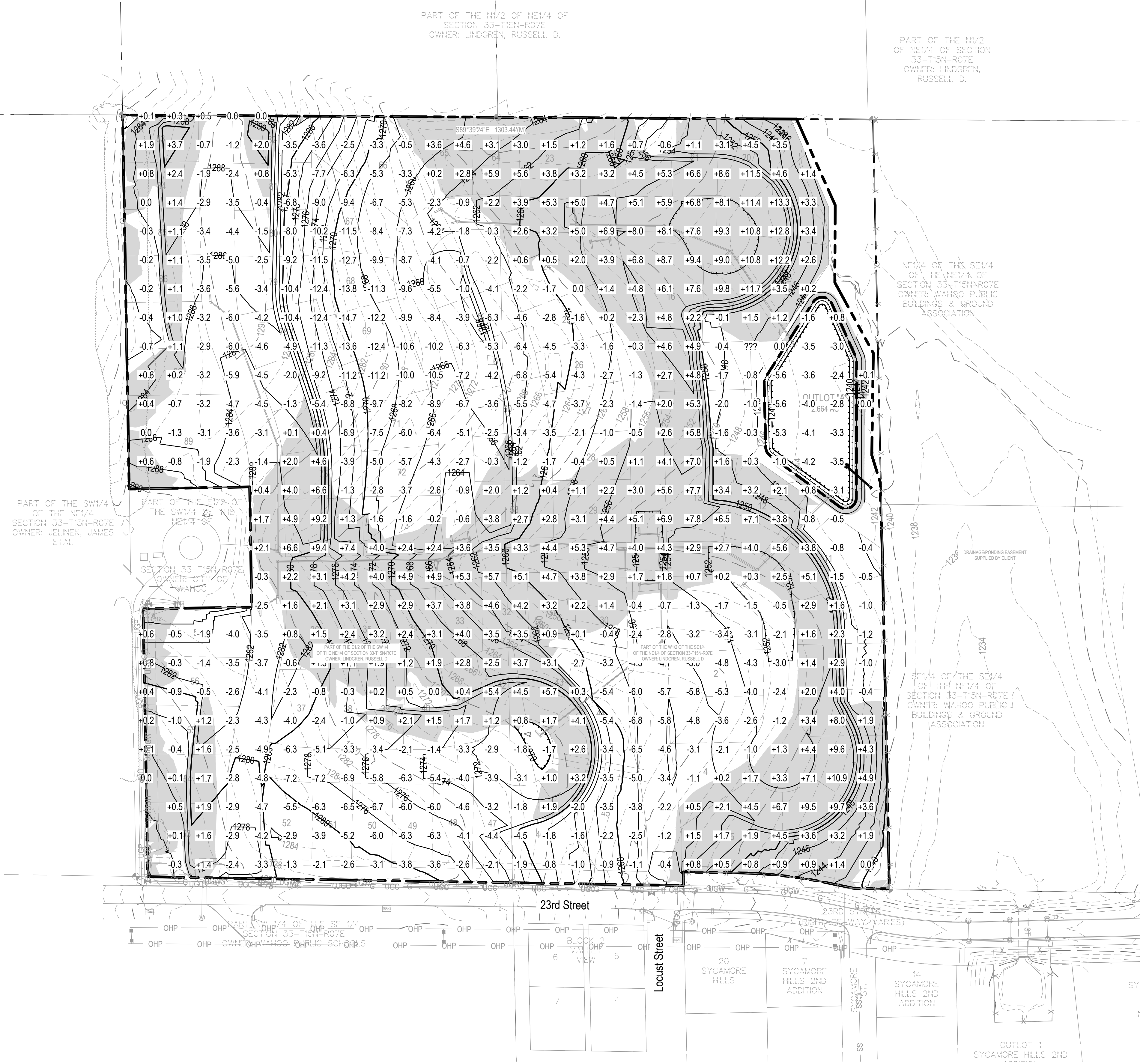
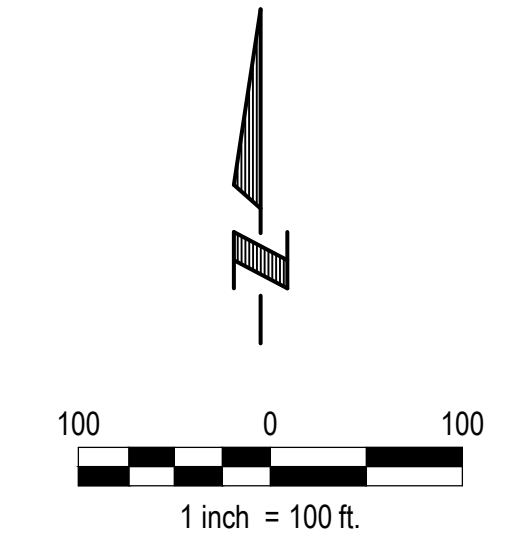
Proj No: P2020-259-001
 Date: 3/2/2021
 Designed By: KGV
 Drawn By: JMB
 Scale: AS SHOWN
 Sheet: 5 of 8

Revisions	Date	Description
1	3/2/2021	KGW
2		JMB
3		AS SHOWN
4		6 of 8

Proj No: P2020259.001
 Date: 3/2/2021
 Designed By: KGW
 Drawn By: JMB
 Scale: AS SHOWN
 Sheet: 6 of 8
 Job Name: 10/26/2021 12:35 PM K:\Project\2020259\01\Engineering\CAD\Plan\Grading\SWPPP\001.dwg

LEGEND

- Diversion Berm
- Silt Fence
- Existing Contours
- Proposed Contours
- Sediment Basin Perimeter
- Limits of Construction
- Fill Areas



PART OF THE NW/2 OF NE1/4 OF SECTION 33-T15N-R07E
 OWNER: LINDGREN, RUSSELL D.

PART OF THE NW/2 OF NE1/4 OF SECTION 33-T15N-R07E
 OWNER: LINDGREN, RUSSELL D.

PART OF THE SW1/4 OF THE NE1/4 OF SECTION 33-T15N-R07E
 OWNER: JELINEK, JAMES ETAL

PART OF THE SW1/4 OF THE NE1/4 OF SECTION 33-T15N-R07E
 OWNER: JELINEK, JAMES ETAL

NE1/4 OF THE SE1/4 OF THE NE1/4 OF SECTION 33-T15N-R07E
 OWNER: WAHOO PUBLIC BUILDINGS & GROUND ASSOCIATION

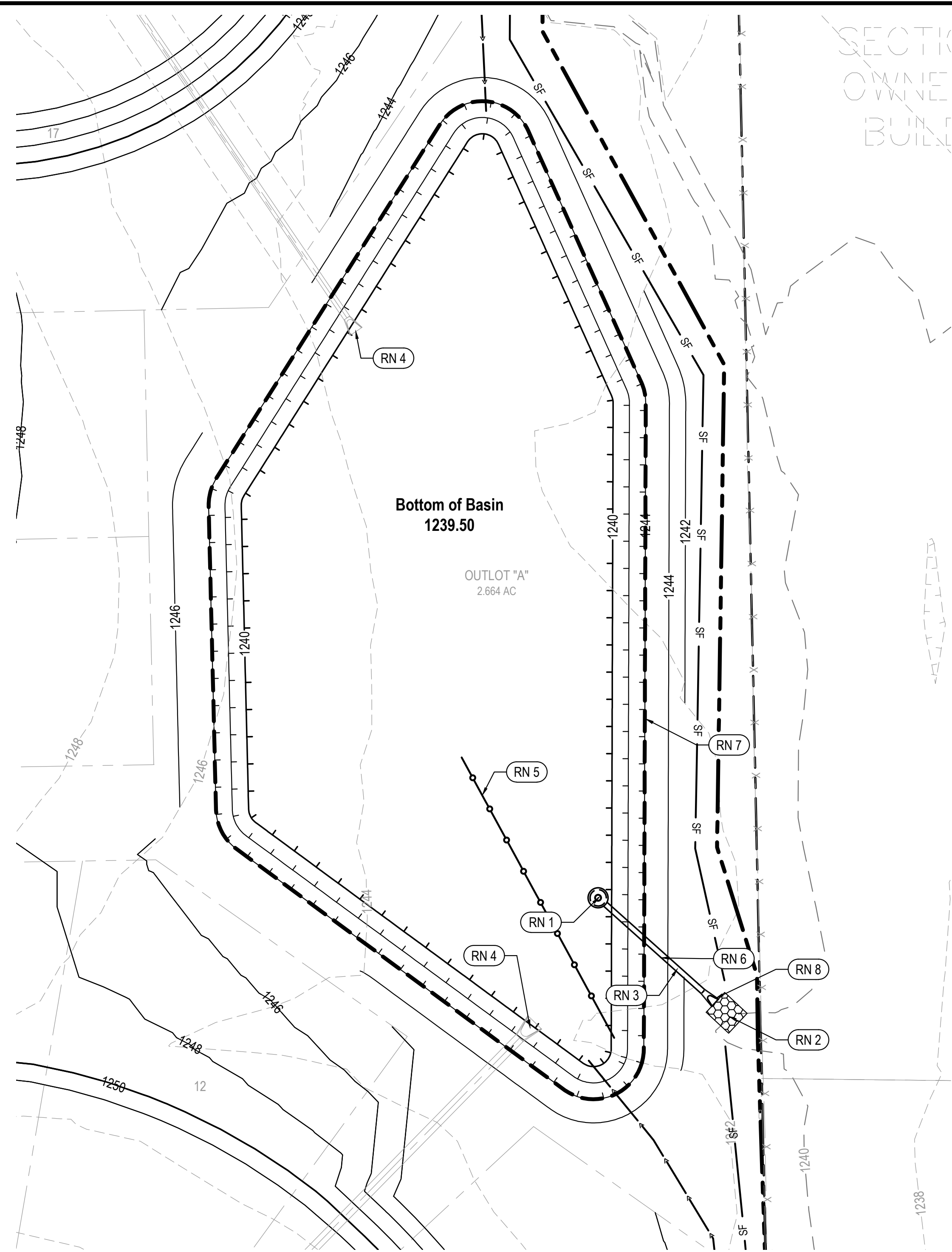
SE1/4 OF THE SE1/4 OF THE NE1/4 OF SECTION 33-T15N-R07E
 OWNER: WAHOO PUBLIC BUILDINGS & GROUND ASSOCIATION

23rd Street

Locust Street

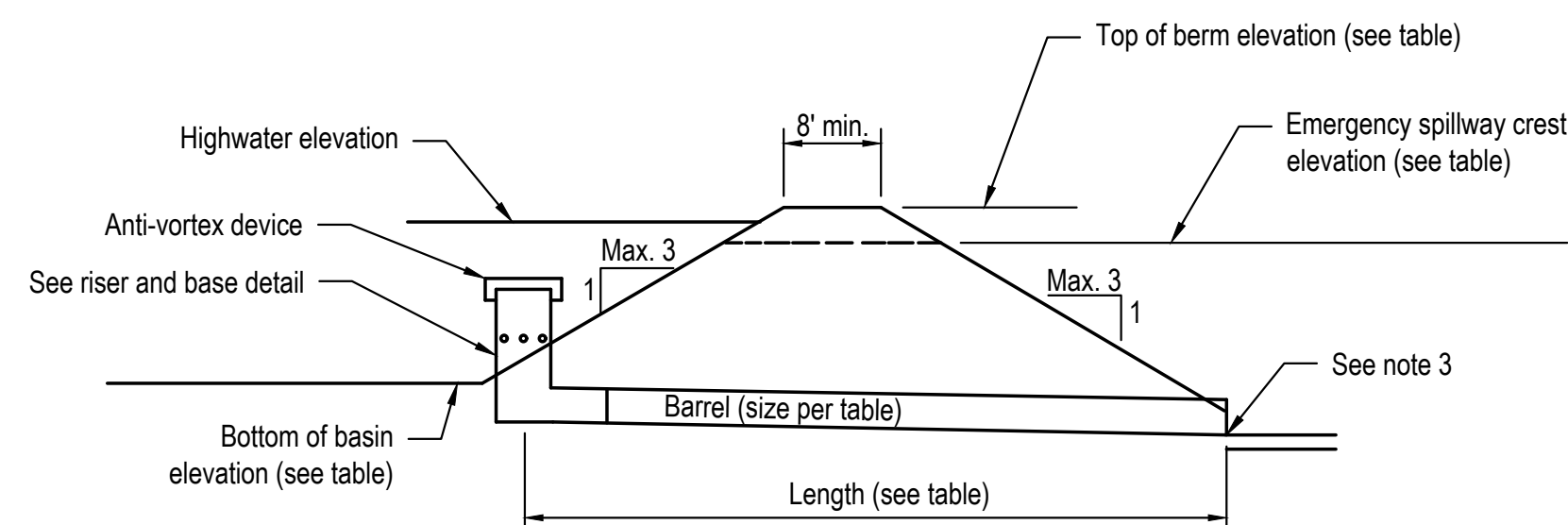
20 SYCAMORE HILLS
 7 SYCAMORE HILLS 2ND ADDITION
 14 SYCAMORE HILLS 2ND ADDITION

OUTLOT 1 SYCAMORE HILLS 2ND



SEDIMENT BASIN A
1" = 30'

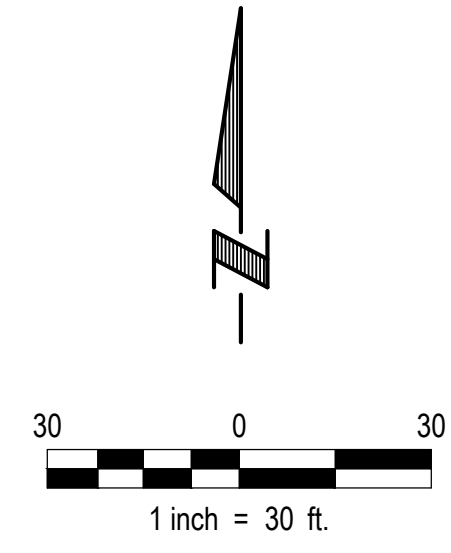
- NO REFERENCE NOTES**
- ▲ RN 1 Construct 72" Type II Area Inlet (per detail this sheet and data table below)
 - ▲ RN 2 Construct Type B rip-rap scour hole, 32 TN. See detail and table on sheet 4 for dimensions and depth of scour hole. Fabric shall be Mirafi 180N, or approved equal.
 - ▲ RN 3 Construct 18" RCP, 58 LF as sediment basin barrel.
 - RN 4 Future storm sewer outlet
 - RN 5 Construct 90' baffle per detail this sheet. Baffle cost is subsidiary to sediment basin construction.
 - RN 6 Construct anti-seep collar per detail on sheet 4 and Figure 9-39 of the Omaha Regional Stormwater Design Manual. Anti-seep collar cost is subsidiary to sediment basin construction.
 - ▲ RN 7 Construct emergency spillway, see sediment basin table for size.
 - ▲ RN 8 Construct 18" RC Flared End Section, 1 EA



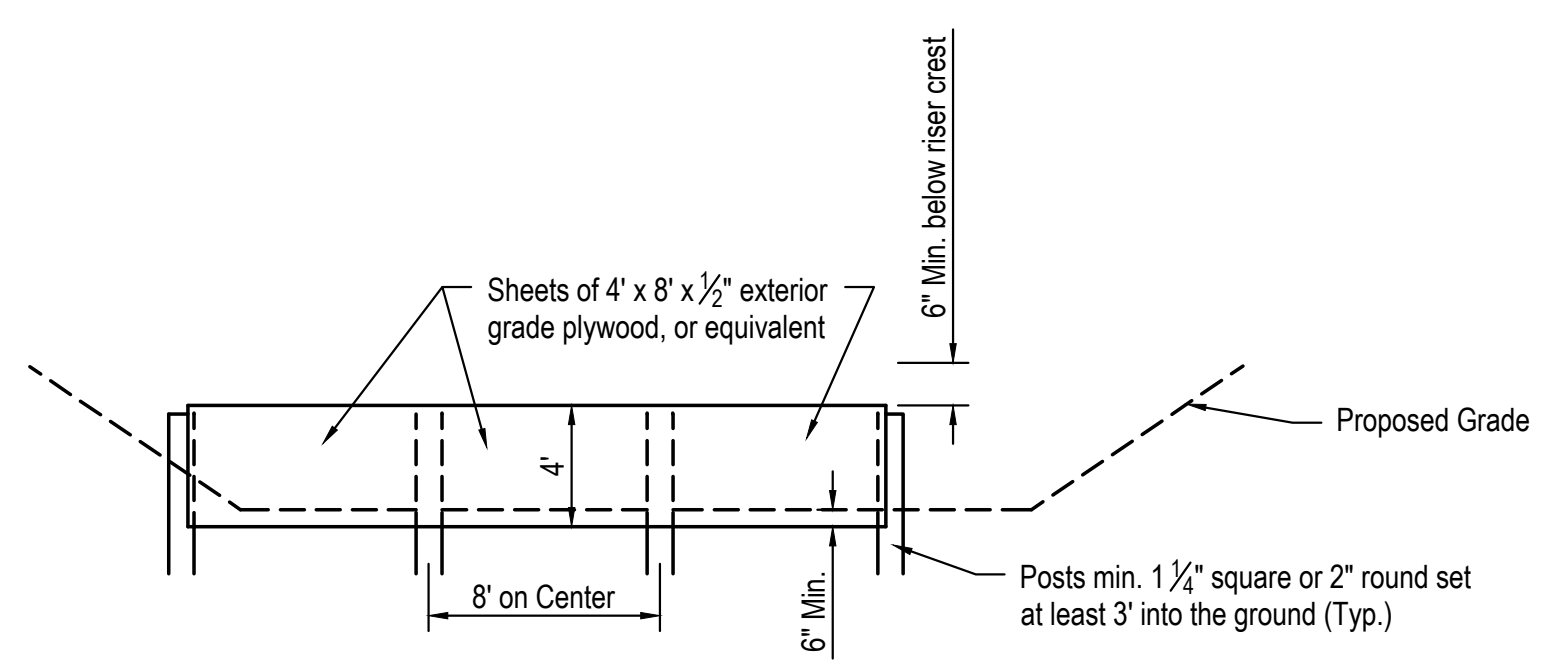
- NOTES**
- If spillway is constructed over fill, compact the embankment to a minimum of 90% of the Maximum Dry density within 3% below and 5% above optimum moisture as determined by ASTM D1557 (Modified Proctor), or as recommended by the Geotechnical Engineer. Conduct a minimum of one compaction test every vertical foot of compacted fill placed, every 50 feet of embankment length. Provide test reports to the Engineer for review and approval. No testing or special compaction is required if spillway is constructed in cut areas on natural ground.
 - Riser and barrels shall be corrugated metal pipe. Reused pipes in good condition meeting the size requirements may be used following approval by the Engineer. Reused risers will be required to crest at the elevation indicated in the table below. The configuration of orifice holes will also meet the requirements below - exceeding the number of orifice holes will not be permitted.
 - The discharge flow line of the barrel shall be verified by the Engineer.

BASIN DETAIL
NOT TO SCALE

Basin No.	Drainage Area (Ac.)	2-Year Storm Event Discharge (cfs)	10-Year Storm Event Discharge	Wet Storage Provided (CY)	Dry Storage Provided (CY)	Clean Out Storage Provided (CY)	Top Berm Elevation (ft)	Highwater Elevation (ft)	2-Year Storm Elevation (ft)	Emergency Spillway Elevation (ft)	Throat/ Riser Crest Elevation (ft)	Wet-Storage Pool Elevation (ft)	Clean Out Elevation (ft)	Bottom of Basin Elevation (ft)	Riser Type	Riser Diameter (in)	Riser Dewatering Holes Diameter (in)	Number of Dewatering Holes	Anti-Vortex Device Diameter (in)	Anti-Vortex Device Height (in)	Barrel Diameter (in)	Barrel Length (ft)	Barrel Inlet Elevation (ft)	Barrel Outlet Elevation (ft)	Barrel Material	Emergency Spillway Width (ft)	1 Collar Size (ft by ft)	2 Collar Size (ft by ft)
A	20.9	56	82	0	3209	718	1245.00	1244.00	1243.50	1243.50	1242.00	1239.50	1240.09	1239.50	Type II AI	72	3	3	N/A	N/A	18	58	1239.00	1238.70	RCP	210	3.8	2.9

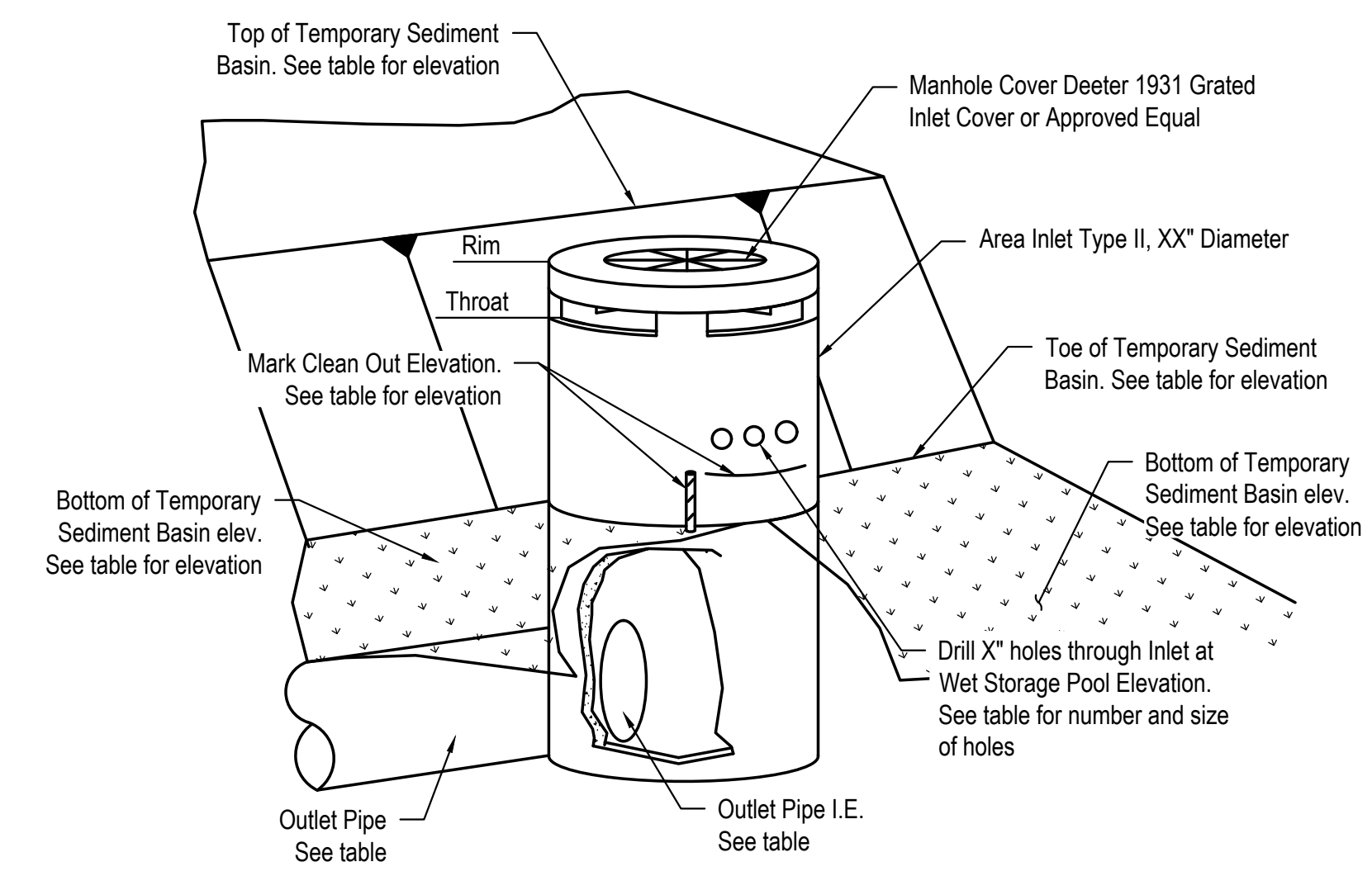


- LEGEND**
- Diversion Berm
 - SF— Silt Fence
 - Baffle
 - - - - - Existing Contours
 - Proposed Contours
 - Sediment Basin Perimeter
 - - - - - Limits of Construction
 - Future Storm Sewer
 - Rip-Rap Scour Hole



BAFFLE DETAIL
NOT TO SCALE

NOTE: Plywood sheets shall be attached to posts with galvanized exterior grade screws and washers.



TYPE 2 AREA INLET WITHOUT ORIFICE PLATE - DIAMETER VARIES
NOT TO SCALE

- Notes:**
- For conversion to PCSMP Basin, holes at Wet Storage Pool Elevation will be grouted in and new holes will be drilled at a lower elevation, See PCSMP Plans.

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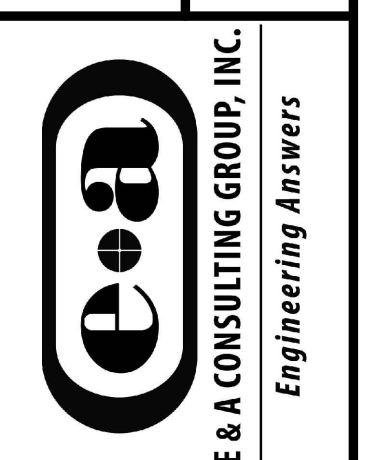
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Engineering Answers

NORTH HIGHLANDS
WAHOO, NEBRASKA

SEDIMENT BASIN

Revisions	Date	Description
1	8/17/2021	Sediment Basin Outlet
2	10/29/2021	Permanent Outlet

Proj No: P2020-059-001
Date: 3/2/2021
Designed By: KGV
Drawn By: JMB
Scale: AS SHOWN
Sheet: 7 of 8



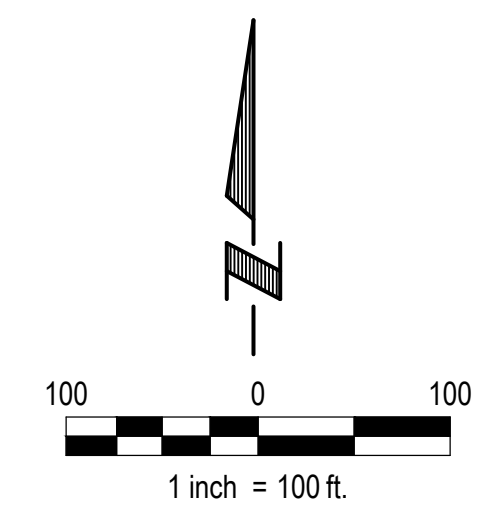
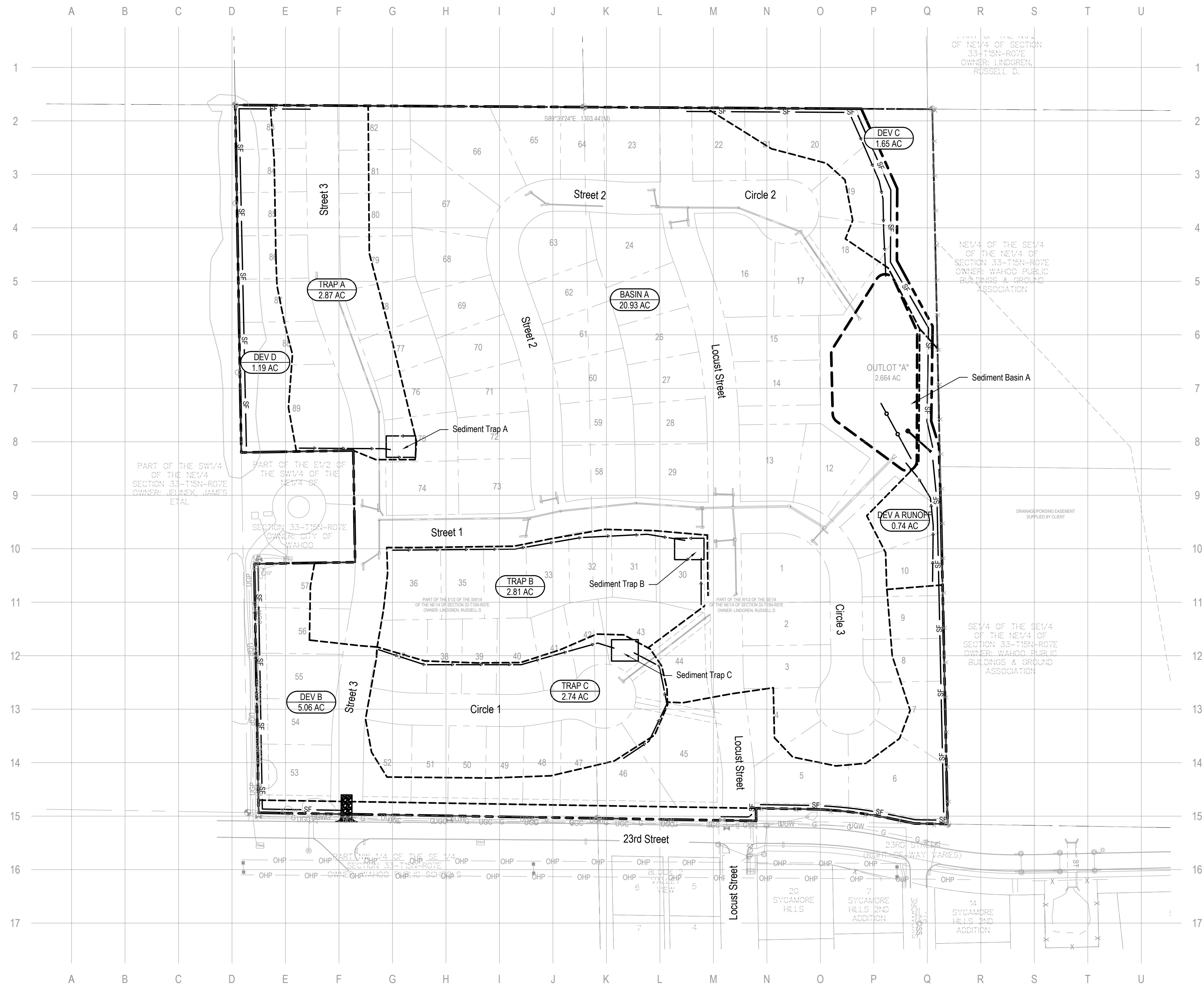
NORTH HIGHLANDS
 WAHOO, NEBRASKA

DRAINAGE MAP

Revisions	Description

Proj No:	P2020-259-001
Date:	3/2/2021
Designed By:	KGJ
Drawn By:	JMB
Scale:	AS SHOWN
Sheet:	B of 8

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LEGEND

	Diversion Berm
	Silt Fence
	Sediment Basin Perimeter
	Drainage Area Boundary
	Drainage Basin Label
	Future Storm Sewer