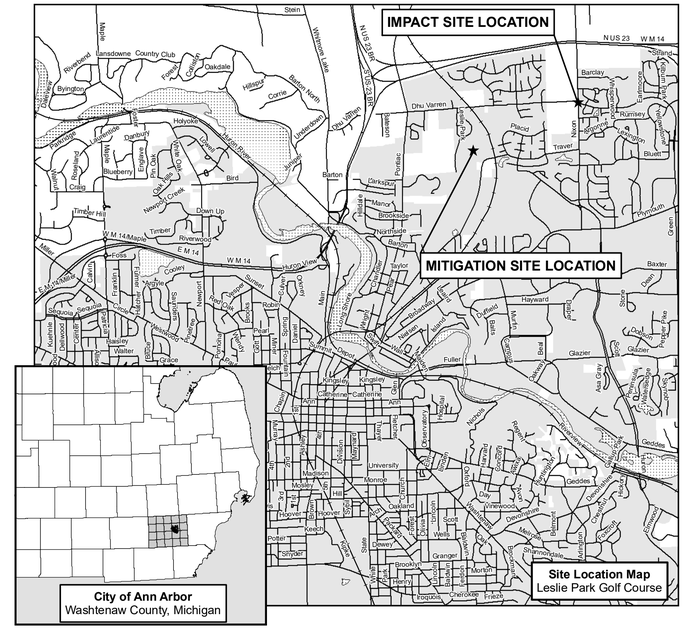
Nixon / Green / Dhu Varren Roundabout Wetland Mitigation

Leslie Park Golf Course

City of Ann Arbor (T02S, R06E, Sec. 16), Washtenaw County, Michigan



SHEET INDEX

Job No: NE 1465	Drawn: TJS 10-24-16	Revisions: TJS 10-27-17 TJS 11-14-17 TJS 12-11-18	**Nixon / Green / Dhu Varren Roundabout Wetland Mitigation** Site Location Leslie Park Golf Course City of Ann Arbor (T02S, R06E, Sec. 16), Washtenaw County, Michigan	Client: City of Ann Arbor Engineer: OHM, Inc. Survey provided by: OHM, Inc. Consultant: Niswander Environmental	NISWANDER ENVIRONMENTAL 9436 Maltby Road, Brighton, MI 48116 810.225.0539 *office* | 810.225.0653 *fax*	**1 OF 7**

#1331 ROUND CATCH BASIN T/CAST 868.17
6" CPP INV E 865.34
4" CPP INV W 865.50
3.58 TO BOTTOM

#1444 ROUND CATCH BASIN T/CAST 875.75

#1458 ROUND CATCH BASIN T/CAST 874.68

#1480 ROUND CATCH BASIN T/CAST 877.59

#1487 SQUARE CATCH BASIN T/CAST 879.44

#1510 ROUND CATCH BASIN T/CAST 871.40
4" CPP INV E 869.73
3.51 TO BOTTOM PIPE IN STRUCTURE
IN PROCESS OF BEING REMOVED/FIXED

#1354 ROUND CATCH BASIN T/CAST 868.96

#1573 ROUND CATCH BASIN T/CAST 867.30

#1594 ROUND CATCH BASIN T/CAST 865.05
8" CPP INV E 863.30
6" CPP INV S 863.47
6" CPP INV W 863.47
3.08 TO BOTTOM

CONSTRUCTION ROUTE (APPROXIMATE)
HEAVY WOODS
ASPH WALK
TEEBOX
#1487
#1444
#1458
#1331
#1510
#1354
#1573
#1594
LIGHT BRUSH
BIRD HOUSE
6" STM
4" STM
8" STM
CONIF TREE, (TYP)
WEATHER SHELTER
SAND TRAP
SAND TRAP
PROJECT LIMITS
DECID TREE, (TYP)
FAIRWAY EDGE
ASPH WALK
0 10 20 40 Feet

Job No: NE 1465	Drawn: TJS 10-24-16	Revisions: TJS 10-27-17 TJS 11-14-17 TJS 12-11-18	**Nixon / Green / Dhu Varren Roundabout Wetland Mitigation** Existing Conditions Leslie Park Golf Course City of Ann Arbor (T02S, R06E, Sec. 16), Washtenaw County, Michigan	Client: City of Ann Arbor Engineer: OHM, Inc. Survey provided by: OHM, Inc. Consultant: Niswander Environmental	NISWANDER ENVIRONMENTAL 9436 Maltby Road, Brighton, MI 48116 810.225.0539 *office* | 810.225.0653 *fax*	**2 OF 7**

Nixon / Green / Dhu Varren Roundabout Wetland Mitigation

Leslie Park Golf Course

City of Ann Arbor (T02S, R06E, Sec. 16), Washtenaw County, Michigan

LOCATION AND SCOPE OF PROJECT

The project site is located on City of Ann Arbor (Owner) property on the Leslie Park Golf Course, Ann Arbor, Washtenaw County, Michigan. The work to be done under this contract includes furnishing of all materials, equipment, and labor necessary to conduct vegetation clearing, earthwork (including excavation, placement of spoils and berms), installing the water control structure, seeding and other restoration work as necessary in accordance with these plans and specifications.

GENERAL NOTES

1. It is the intention of these plans to construct all work in accordance with applicable requirements of the City of Ann Arbor, the contract documents, and the plans referenced herein. Where this is a conflict between any of the aforementioned specifications and the permit requirements of any regulatory agency, the more restrictive shall govern.
2. The contractor and his subcontractors shall attend a mandatory pre-construction meeting at a time and place arranged by the City of Ann Arbor.
3. After a pre-construction meeting is held, the contractor shall notify the City of Ann Arbor and the Project Engineer a minimum of 3 working days prior to the start of the construction. No work can commence until all permits have been obtained and the contractor has been given authorization to proceed.
4. Contractor shall notify Miss Dig for existing utility stake out 72 hours in advance of construction.
5. Locations and elevations of existing utilities as shown on the plans are approximate. No guarantee is either expressed or implied as to the completeness or accuracy thereof. The contractor shall be exclusively responsible for determining and verifying the location, depth, and elevation of existing utilities prior to the start of construction. Contractor shall notify the City of Ann Arbor and the Project Engineer of any conflicts with the plans.
6. All elevations refer to current North American Vertical Datum of 1988 (NAVD '88).
7. All properties or facilities in the surrounding areas, public or private, destroyed or otherwise damaged by the contractor's operations shall be replaced or repaired to the satisfaction of the authority having jurisdiction of the property or facility by the contractor at their own expense.
8. All items referred to, as "incidental" or "cost shall be incidental" shall be included in the unit prices listed in the contract documents, no separate costs will be accepted.

PROJECT ACCESS

Project access will be granted using a construction access route determined by the Leslie Park Golf Course Management. The staging area for this project is located at Leslie Park, west of the project limits at 2498 Leslie Park Circle, Ann Arbor, Michigan 48105. The construction route and staging area are owned by the City of Ann Arbor. Any damage to the staging area or access drive will be repaired by the contractor to the City's satisfaction prior to the project closeout. Cost is incidental.

PROJECT SEQUENCE

Construction shall be completed in a manner that minimizes impact to areas outside the project limits. Any disturbed areas, including spoil locations, staging areas and wetland basin, shall be restored immediately upon the completion of finish grading. Cost is incidental.

VEGETATION REMOVAL/CLEARING

The contractor will determine the amount and extent of clearing necessary to accomplish the project. The existing reed canary grass excavation spoils are to be placed within the proposed low head berm and NOT within the proposed wetland cell. Disturbance is not permitted within the NO WORK AREAS. Cost is incidental.

Clearing can be accomplished by cutting or bulldozing vegetation. Tree stumps may be cut to grade and left. Logs, branches, or other woody vegetation, whole or in parts, shall not be used to construct any part of the berm. Other clearing methods may be used if agreed to by the Project Engineer prior to starting construction. Cost is incidental.

WATER CONTROL STRUCTURE INSTALLATION

The contractor will install the proposed water control structure as shown on the attached plans. The contractor shall install an equal diameter extension riser pipe to the existing riser pipe (#1331) with an ADS split coupler at the joint (Refer to Sheet 3).

The riser pipe extension shall be installed under direct supervision of the Project Engineer. The contractor shall provide 48 hours notice to the Project Engineer before installing. Any damage to the existing storm water infrastructure shall be repaired by the contractor. Cost is incidental.

PERMITS

The contractor is responsible for acquiring all state and local permits. Title V, Chapter 63, City of Ann Arbor Ordinance Code Soil Erosion and Sedimentation Control permit will be obtained by the contractor prior to construction. Contractor will be responsible for installing and maintaining SESC measures as required by the permit. The contractor shall review the permit for additional details and permit conditions. Costs are incidental.

SOIL EROSION CONTROL NOTES AND SESC MAINTENANCE NOTES/SCHEDULE

The contractor shall comply with the requirements of Part 91 of Act 451 of 1994, as amended, the Soil Erosion and Sedimentation Control Act of NRPEA, PA 451 of 1994, as amended and Title V, Chapter 63, City of Ann Arbor Ordinance Code.

All erosion and sedimentation control work shall conform to the standards and specifications of Title V, Chapter 63, City of Ann Arbor Ordinance Code.

Erosion and any sedimentation from work on this site shall be contained on the site and not allowed to collect on any off site areas or in waterways. Waterways include both natural and man-made open ditches, streams, storm drains, lakes, and ponds.

The project will be continually inspected by the Landowner or his/her representative for erosion control compliance deficiencies will be corrected by the contractor immediately upon notice of such deficiencies. Failure to correct deficiencies may result in issuance of a stop work order and there will be no contract time extension granted for this type of stoppage.

The contractor shall conduct work in such a manner as to prevent the entry of fuels, oils, bituminous materials, chemicals, sewerage or other harmful materials into nearby lakes and streams.

Staging of the work will be done by the landowner or landowner's representative as directed in these plans, and as required to ensure progressive stabilization of disturbed earth change.

The contractor shall be responsible for installation and maintenance of soil erosion and sedimentation control devices.

The contractor shall implement and maintain the soil erosion control measures as shown on the plans before, and at all times during construction on this project. Any modifications or additions to soil erosion control measures due to construction or changed conditions shall be complied with as required or directed by Title V, Chapter 63, City of Ann Arbor Ordinance Code.

If any of the SESC measures on the site are deemed inadequate or ineffective, the City of Ann Arbor has the right to require additional SESC measures at the expense of the contractor.

Install approximately 1014 linear feet of silt fence as indicated on the plan and at additional areas as necessary (or as approved in SESC Permit).

A. Silt fence shall be installed per detail.

B. Build up of sediment shall be removed when sediment accumulates to 1/3 to 1/2 of the height of the silt fence be replaced promptly.

C. If silt fence fabric decomposes or becomes ineffective prior to the end of its expected life and a barrier is still required, the silt fence shall be replaced promptly.

D. Silt fence shall be inspected weekly under normal conditions, within 24 hours of rainfall and daily during a prolonged rain event. Required maintenance shall be provided promptly.

Install Bag and Frame Inlet Protector as indicated on the plan. Bag and Frame Inlet Protector shall be inspected weekly under normal conditions, within 24 hours of rainfall and daily during a prolonged rain event. Required maintenance shall be provided promptly. If sediment accumulations are sufficient to impede function, replace bag and frame inlet protector.

Install Erosion Control Blanket on all slopes as indicated on plans.

All stockpiled soils shall be maintained in such a way as to prevent erosion from leaving the site. If the stockpile will be on site for more than 30 days, then the stockpile must be seeded. Erosion Eels must be installed around the perimeter of the stockpile.

If any dewatering is needed, it shall be discharged through a filter bag over a well-vegetated area. The pump must discharge at a non-erosive velocity. If necessary, an approved energy dissipater may be used. If dewatering is required, it shall be the contractor's responsibility to provide said pumping and obtain any and all related permits. Cost is incidental.

All dirt tracked onto any roadway shall be removed immediately.

During dry periods, all disturbed areas shall be watered for dust control.

All disturbed areas shall be restored as shown on the plans using the seed mixes listed on the plans. If not specifically stated on the plans, restoration shall consist of seeding all disturbed areas with a Native Michigan Seed Mix or Golf Course Approved Seed Mix.

Permanent soil erosion control measures for all slopes, channels, ditches, or any disturbed land area shall be completed within 5 calendar days after final grading or the final earth change has been completed. When it is not possible to permanently stabilize a disturbed area after earth change activity ceases, temporary soil erosion control measures shall be implemented immediately. All temporary soil erosion control measures shall be maintained until permanent soil erosion control measures are implemented. All permanent soil erosion control measures will be implemented and established before a certificate of compliance is issued.

Final grade, establish vegetation and/or landscape all disturbed areas not built or paved upon.

Remove all temporary soil erosion devices after permanent stabilization is established.

Soil types: Gravel Pit (Gp), Fox Sandy Loam (FoB), and Sebewa Loam (Sb).

Name of nearest watercourse: Traver Creek

Distance to nearest watercourse in feet: ~430 feet

Name(s) and phone number(s) for the person(s) responsible for the inspection of all temporary soil erosion control measures: City of Ann Arbor

Approximate start date: September 23, 2019

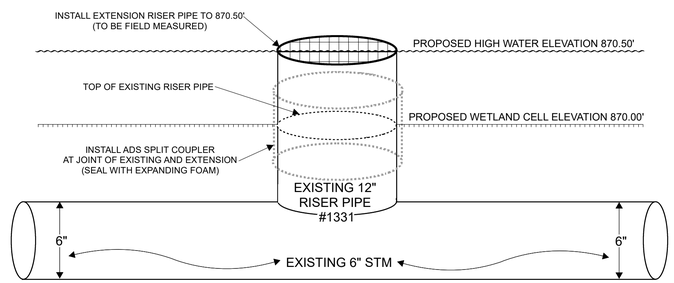
Approximate completion date: October 31, 2019

Total acres disturbed = 1 acre

Proposed Wetland Cell

	Average Excavation Depth (in)	Excavation (cyd)	Area (ac)
Wetland Cell	12	767	0.52
	TOTAL =	767	0.52
		Total Wetland Area =	**0.52**

WATER CONTROL STRUCTURE DETAIL



RISER PIPE EXTENSION TO BE INSTALLED UNDER DIRECT SUPERVISION OF THE PROJECT ENGINEER

THE CONTRACTOR SHALL PROVIDE 48 HOURS NOTICE TO THE PROJECT ENGINEER BEFORE INSTALLING

Construction Route (approximate)
Max Width = 12.00'
TO BE LOCATED AND STAKED BY LESLIE PARK GOLF COURSE MANAGEMENT
TO BE RESTORED TO ORIGINAL CONDITION WITHIN ONE WEEK OF CONSTRUCTION COMPLETION

Existing Trees and Light Brush to be Removed and Chipped
Spoils to be placed in designated location
determined by Leslie Park Golf Course Management

Existing Sod (i.e. Reed Canary Grass)
Excavation Spoils to be placed
in Proposed Low Head Berm

Grade Slope to 1:6

Existing Tree to Remain

Grade Slope to 1:3

Grade Wetland Cell
Flat to 870.00'

Install 12" HDPE
Riser Pipe to 870.50'
(See Detail)

Bird House to be Removed by
Leslie Park Golf Course Management

Install 4' Construction
Fence at the Drip Line
to Protect Existing Tree

Install 4' Construction
Fence at the Drip Line
to Protect Existing Tree

Grade Slope to 1:2

Existing Tree to be Removed and Chipped
Spoils to be placed in designated location
determined by Leslie Park Golf Course Management

Wetland Cell
Cell Elevation = 870.00'
High Water Elevation = 870.50'
Area = 0.52 acres
Wetland Type = Wet Meadow

Project Limits

Underground Utilities to be identified and flagged prior to proposed earthwork

Install 4' Construction
Fence at the Drip Line
to Protect Existing Trees

Final Grade to include the placement of 6 inches of topsoil stockpiled and replaced onsite (~420 cyds)

Excavation and Fill Balance On-site
In the event of excess material,
Spoils shall be incorporated into Proposed Berm
Berm shall be 872.00' or higher
and slopes no steeper than 1:6

Grade Slope to 1:6

Low Head Berm
Grade to 872.00'
Top Width = 3.00'
Side Slopes = 1:6

Emergency Spillway
Grade to 871.00'

Grade Slope to 1:6

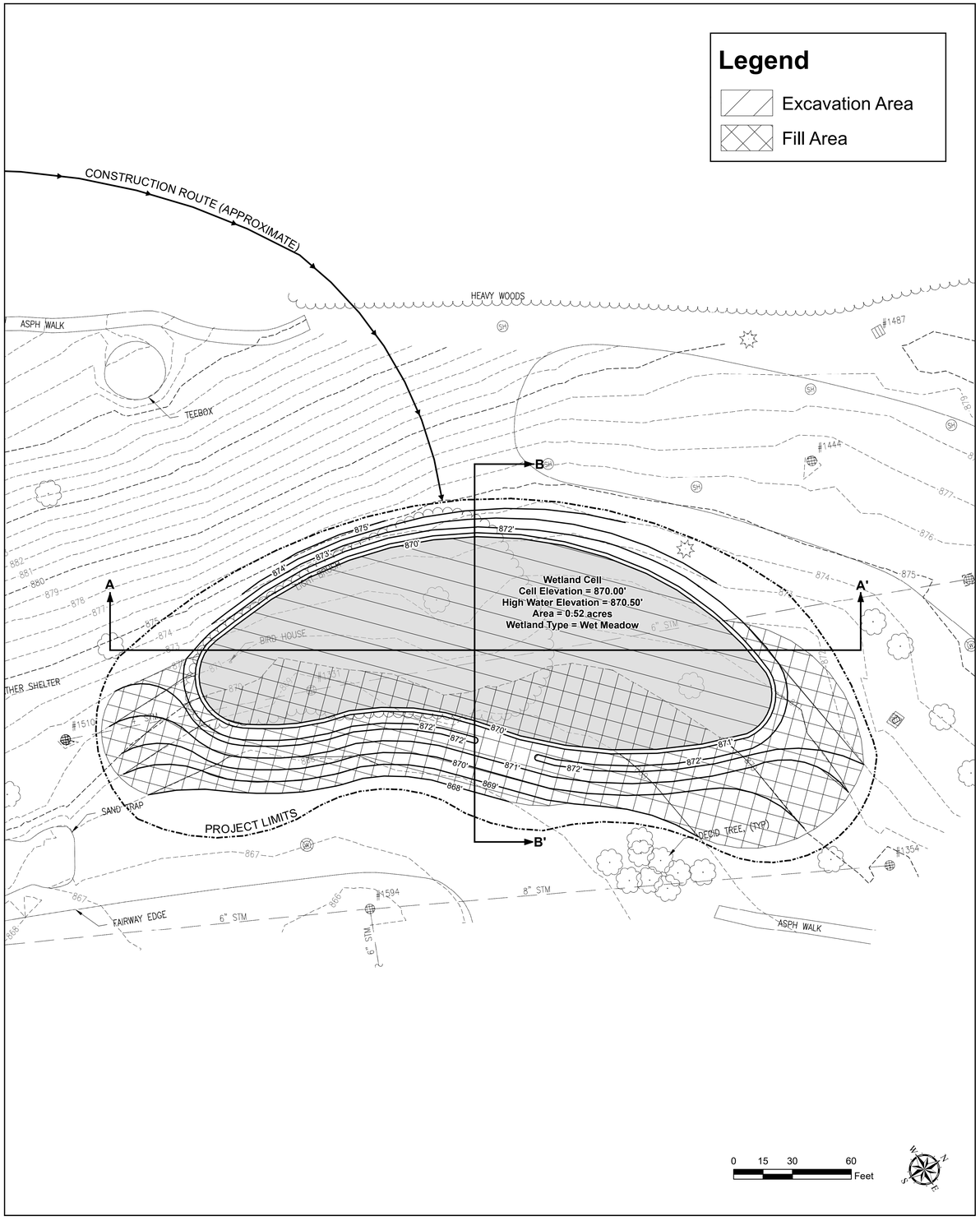
Install 4' Construction
Fence at the Drip Line
to Protect Existing Trees

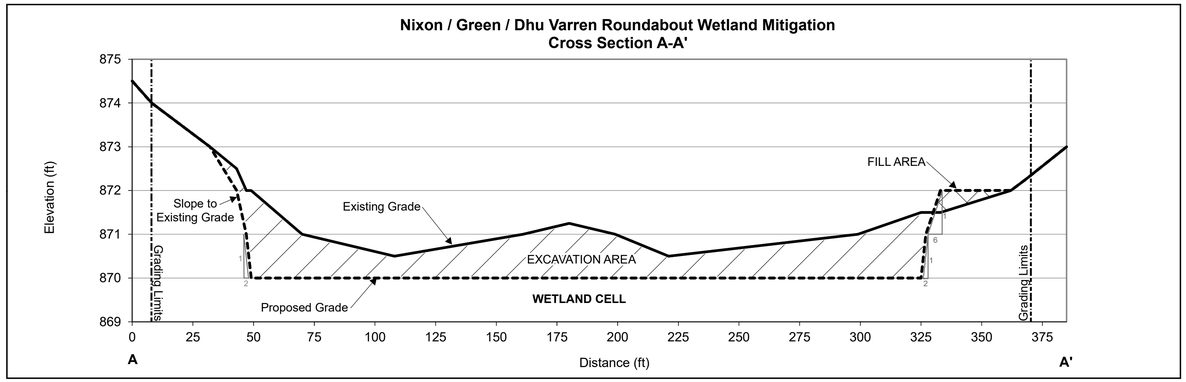
Existing Trees to Remain

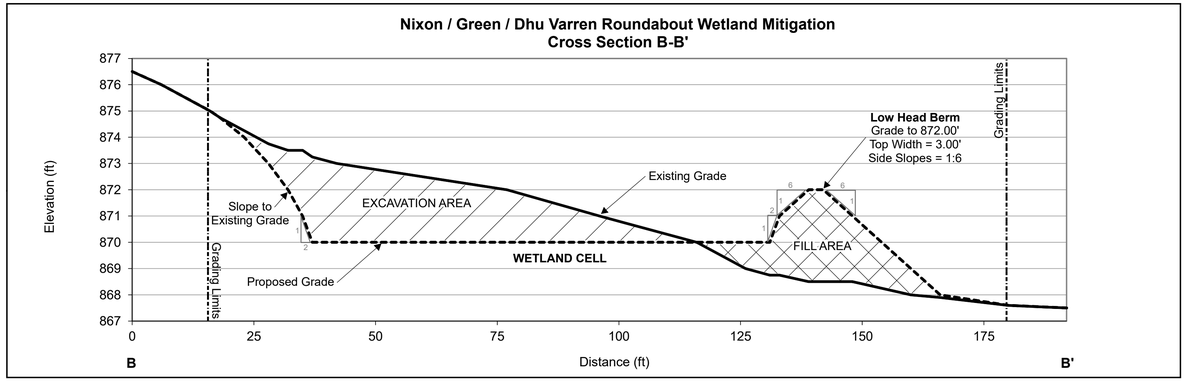
Install 4' Construction
Fence at the Drip Line
to Protect Existing Tree

0 15 30 60 Feet

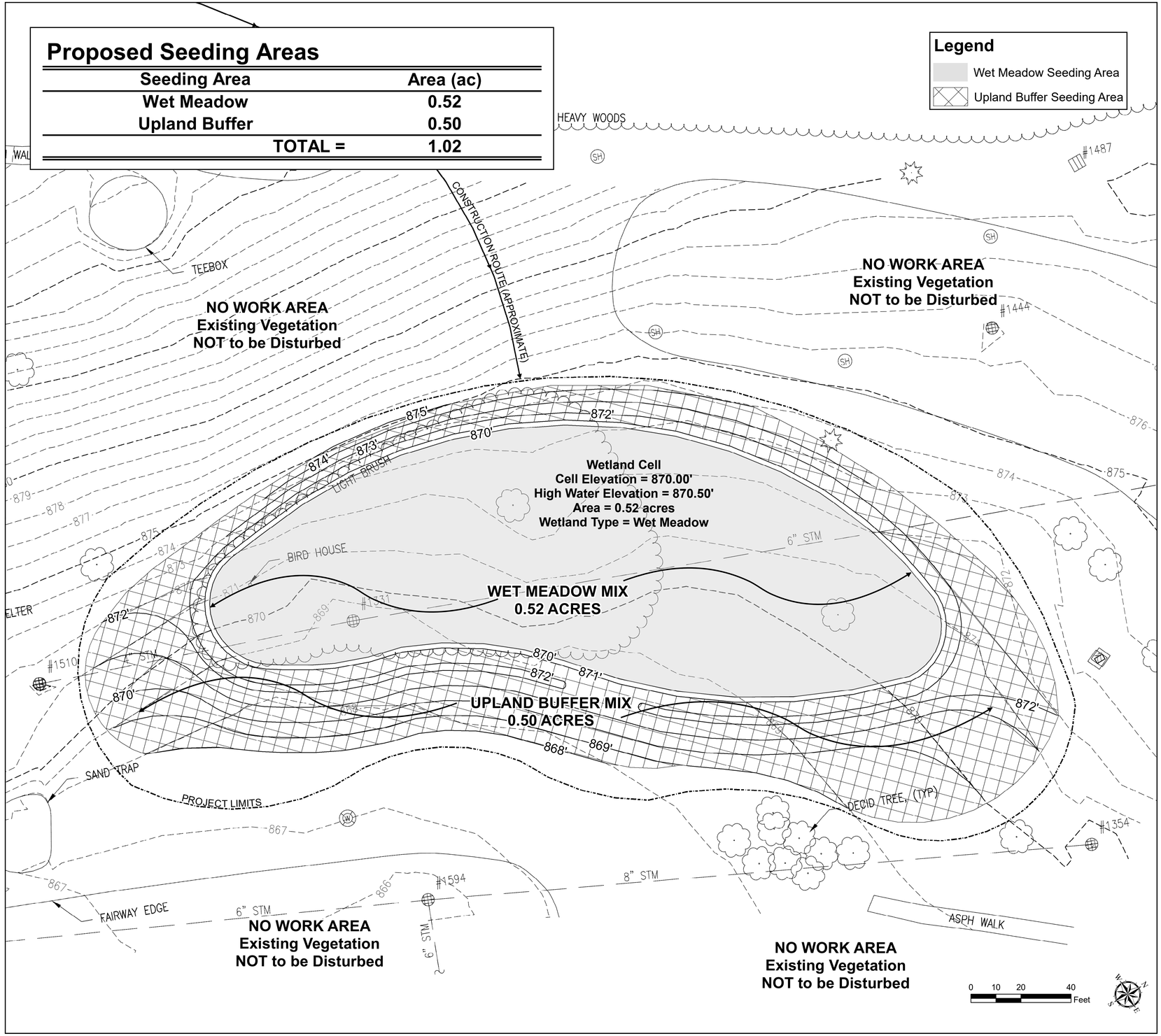
Job No: NE 1465	Drawn: TJS 10-24-16	Revisions: TJS 10-27-17 TJS 11-14-17 TJS 12-11-18	**Nixon / Green / Dhu Varren Roundabout Wetland Mitigation** Grading Plan Leslie Park Golf Course City of Ann Arbor (T02S, R06E, Sec. 16), Washtenaw County, Michigan	Client: City of Ann Arbor Engineer: OHM, Inc. Survey provided by: OHM, Inc. Consultant: Niswander Environmental	NISWANDER ENVIRONMENTAL 9436 Maltby Road, Brighton, MI 48116 810.225.0539 *office* | 810.225.0653 *fax*	**3 OF 7**







Job No: NE 1465	Drawn: TJS 10-24-16	Revisions: TJS 10-27-17 TJS 11-14-17 TJS 12-11-18	**Nixon / Green / Dhu Varren Roundabout Wetland Mitigation** Cross Section Plan Leslie Park Golf Course City of Ann Arbor (T02S, R06E, Sec. 16), Washtenaw County, Michigan	Client: City of Ann Arbor Engineer: OHM, Inc. Survey provided by: OHM, Inc. Consultant: Niswander Environmental	NISWANDER ENVIRONMENTAL 9436 Maltby Road, Brighton, MI 48116 810.225.0539 *office* | 810.225.0653 *fax*	**4 OF 7**



WET MEADOW SEED MIX (0.52 ACRES)

Grasses

Scientific Name	Common Name	Ind. Status	% by Wt.	Oz/Acre	Total Oz	LB/Acre	Total LB
Small Seed							
Carex vulpinoidea	Brown Fox Sedge	OBL	1.04	1	0.520	0.063	0.03
Scirpus atrovirens	Dark-green Bulrush	OBL	0.26	0.25	0.130	0.016	0.01
Scirpus cyperinus	Woolgrass	OBL	0.10	0.1	0.052	0.006	0.00
Large Seed							
Andropogon gerardii	Big Bluestem	FAC-	6.21	6	3.120	0.375	0.20
Bromus ciliatus	Fringed Brome	FACW	6.21	6	3.120	0.375	0.20
Carex bebbii	Bebb's Oval Sedge	OBL	0.52	0.5	0.260	0.031	0.02
Carex comosa	Bristly Sedge	OBL	1.04	1	0.520	0.063	0.03
Carex hystericina	Porcupine Sedge	OBL	1.04	1	0.520	0.063	0.03
Elymus virginicus	Virginia Wild Rye	FACW-	16.56	16	8.320	1.000	0.52
Panicum virgatum	Switchgrass	FACW-	6.21	6	3.120	0.375	0.20
Spartina pectinata	Prairie Cord Grass	FACW+	2.07	2	1.040	0.125	0.07
		Total Grasses:	41.25	39.85	20.72	2.49	1.30

Forbs

Scientific Name	Common Name	Ind. Status	% by Wt.	Oz/Acre	Total Oz	LB/Acre	Total LB
Small Seed							
Boltonia asteroides	False Aster	FACW	2.07	2	1.040	0.125	0.07
Campanula americana	Tall Bellflower	FAC	0.26	0.25	0.130	0.016	0.01
Eupatorium maculatum	Joe Pye Weed	OBL	1.55	1.5	0.780	0.094	0.05
Eupatorium perfoliatum	Boneset	FACW+	0.52	0.5	0.260	0.031	0.02
Gentiana andrewsii	Bottle Gentian	FACW	0.26	0.25	0.130	0.016	0.01
Helenium autumnale	Sneezeweed	FACW+	1.55	1.5	0.780	0.094	0.05
Lobelia cardinalis	Cardinal Flower	OBL	0.21	0.2	0.104	0.013	0.01
Lobelia siphilitica	Great Blue Lobelia	FACW+	0.26	0.25	0.130	0.016	0.01
Lycopus americanus	Water Horehound	OBL	0.26	0.25	0.130	0.016	0.01
Mentha arvensus	Wild Mint	FACW	0.21	0.2	0.104	0.013	0.01
Mimulus ringens	Monkey Flower	OBL	0.10	0.1	0.052	0.006	0.00
Pycanthemum virginianum	Mountain Mint	FACW+	0.26	0.25	0.130	0.016	0.01
Solidago riddellii	Riddell's Goldenrod	OBL	1.55	1.5	0.780	0.094	0.05
Verbena hastata	Blue Vervain	FACW+	3.11	3	1.560	0.188	0.10
Large Seed							
Asclepias incarnata	Swamp Milkweed	OBL	8.28	8	4.160	0.500	0.26
Aster novae-angliae	New England Aster	FACW	2.07	2	1.040	0.125	0.07
Aster umbellatus	Flat-topped Aster	FACW	0.52	0.5	0.260	0.031	0.02
Bidens cernua	Nodding Bur Marigold	OBL	4.14	4	2.080	0.250	0.13
Coreopsis tripteris	Tall Coreopsis	FAC	2.07	2	1.040	0.125	0.07
Hibiscus moscheutos	Swamp Rose Mallow	OBL	2.07	2	1.040	0.125	0.07
Liatris spicata	Marsh Blazing Star	FAC	6.21	6	3.120	0.375	0.20
Physostegia virginiana	Obedient Plant	FACW	0.52	0.5	0.260	0.031	0.02
Rudbeckia laciniata	Cutleaf Coneflower	FACW+	6.21	6	3.120	0.375	0.20
Vernonia missurica	Missouri Ironweed	FAC	8.28	8	4.160	0.500	0.26
Zizia aurea	Golden Alexanders	FAC+	6.21	6	3.120	0.375	0.20
		Total Forbs:	58.75	56.75	29.51	3.50	0.53
		Total Wetland Seed Mix:	**100.00**	**96.6**	**50.232**	**6.038**	**3.14**

UPLAND BUFFER SEED MIX (0.50 ACRES)

Grasses

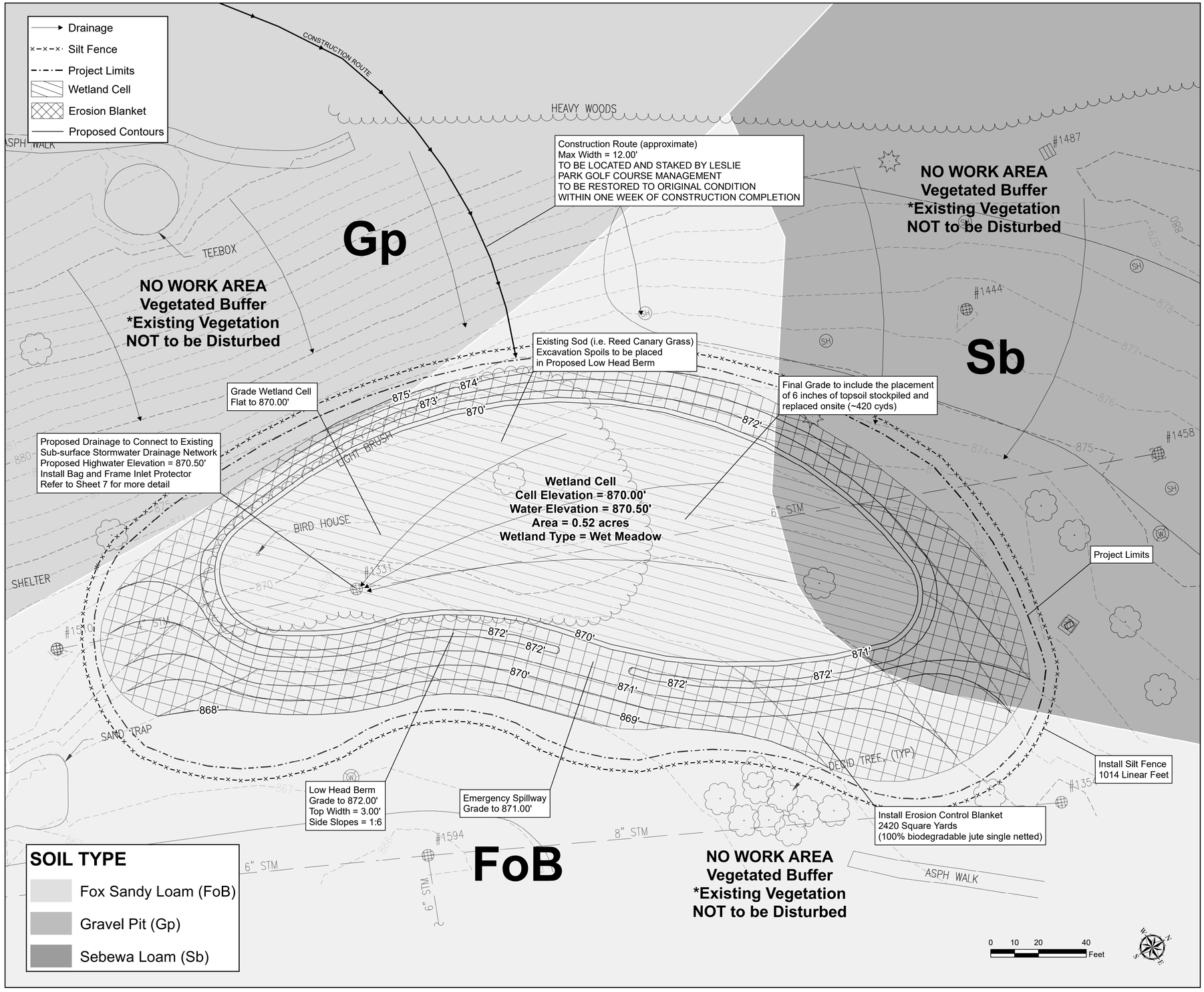
Scientific Name	Common Name	% by Wt.	LB/Acre	Total LB
Poa pratensis	Kentucky Bluegrass	40.00	80.00	40.00
Lolium perenne	Perennial Ryegrass	30.00	60.00	30.00
Festuca spp.	Fine Fescue	30.00	60.00	30.00
Total Upland Buffer Seed Mix:		100.00	**200.00**	**100.00**

TEMPORARY COVER CROP SEED MIX (1.02 ACRES)

Grasses

Scientific Name	Common Name	% by Wt.	LB/Acre	Total LB
Lolium multiflorum	Annual Ryegrass	100.00	20.00	20.40
Total Cover Crop Seed Mix:		100.00	**20.00**	**20.40**

Job No: NE 1465	Drawn: TJS 10-24-16	Revisions: TJS 01-18-17, TJS 10-27-17, TJS 11-14-17, TJS 12-11-18	**Nixon / Green / Dhu Varren Roundabout Wetland Mitigation** Seeding Plan Leslie Park Golf Course City of Ann Arbor (T02S, R06E, Sec. 16), Washtenaw County, Michigan	Client: City of Ann Arbor Engineer: OHM, Inc. Survey provided by: OHM, Inc. Consultant: Niswander Environmental	NISWANDER ENVIRONMENTAL 9436 Maltby Road, Brighton, MI 48116 810.225.0539 *office* | 810.225.0653 *fax*



SOIL EROSION CONTROL NOTES AND SESC MAINTENANCE NOTES/SCHEDULE

The contractor shall comply with the requirements of Part 91 of Act 451 of 1994, as amended, the Soil Erosion and Sedimentation Control Act of NRPEA, PA 451 of 1994, as amended and Title V, Chapter 63, City of Ann Arbor Ordinance Code.

All erosion and sedimentation control work shall conform to the standards and specifications of Title V, Chapter 63, City of Ann Arbor Ordinance Code.

Erosion and any sedimentation from work on this site shall be contained on the site and not allowed to collect on any off site areas or in waterways. Waterways include both natural and man-made open ditches, streams, storm drains, lakes, and ponds.

The project will be continually inspected by the Landowner or his/her representative for erosion control compliance deficiencies will be corrected by the contractor immediately upon notice of such deficiencies. Failure to correct deficiencies may result in issuance of a stop work order and there will be no contract time extension granted for this type of stoppage.

The contractor shall conduct work in such a manner as to prevent the entry of fuels, oils, bituminous materials, chemicals, sewerage or other harmful materials into nearby lakes and streams.

Staging of the work will be done by the landowner or landowner's representative as directed in these plans, and as required to ensure progressive stabilization of disturbed earth change.

The contractor shall be responsible for installation and maintenance of soil erosion and sedimentation control devices.

The contractor shall implement and maintain the soil erosion control measures as shown on the plans before, and at all times during construction on this project. Any modifications or additions to soil erosion control measures due to construction or changed conditions shall be complied with as required or directed by Title V, Chapter 63, City of Ann Arbor Ordinance Code.

If any of the SESC measures on the site are deemed inadequate or ineffective, the City of Ann Arbor has the right to require additional SESC measures at the expense of the contractor.

Install 1014 linear feet of silt fence as indicated on the plan and at additional areas as necessary (or as approved in SESC Permit).

A. Silt fence shall be installed per detail.

B. Build up of sediment shall be removed when sediment accumulates to 1/3 to 1/2 of the height of the silt fence be replaced promptly.

C. If silt fence fabric decomposes or becomes ineffective prior to the end of its expected life and a barrier is still required, the silt fence shall be replaced promptly.

D. Silt fence shall be inspected weekly under normal conditions, within 24 hours of rainfall and daily during a prolonged rain event. Required maintenance shall be provided promptly.

Install Bag and Frame Inlet Protector as indicated on the plan. Bag and Frame Inlet Protector shall be inspected weekly under normal conditions, within 24 hours of rainfall and daily during a prolonged rain event. Required maintenance shall be provided promptly. If sediment accumulations are sufficient to impede function, replace bag and frame inlet protector.

Install Erosion Control Blanket on all slopes as indicated on plans.

All stockpiled soils shall be maintained in such a way as to prevent erosion from leaving the site. If the stockpile will be on site for more than 30 days, then the stockpile must be seeded. Erosion Eels must be installed around the perimeter of the stockpile.

If any dewatering is needed, it shall be discharged through a filter bag over a well-vegetated area. The pump must discharge at a non-erosive velocity. If necessary, an approved energy dissipater may be used. If dewatering is required, it shall be the contractor's responsibility to provide said pumping and obtain any and all related permits. Cost is incidental.

All dirt tracked onto any roadway shall be removed immediately.

During dry periods, all disturbed areas shall be watered for dust control.

All disturbed areas shall be restored as shown on the plans using the seed mixes listed on the plans. If not specifically stated on the plans, restoration shall consist of seeding all disturbed areas with a Native Michigan Seed Mix or Golf Course Approved Seed Mix.

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Final grade, establish vegetation and/or landscape all disturbed areas not built or paved upon.

Remove all temporary soil erosion devices after permanent stabilization is established.

Soil types: Gravel Pit (Gp), Fox Sandy Loam (FoB), and Sebewa Loam (Sb).

Name of nearest watercourse: Traver Creek

Distance to nearest watercourse in feet: ~430 feet

Name(s) and phone number(s) for the person(s) responsible for the inspection of all temporary soil erosion control measures: City of Ann Arbor

Approximate start date: September 23, 2019

Approximate completion date: October 31, 2019

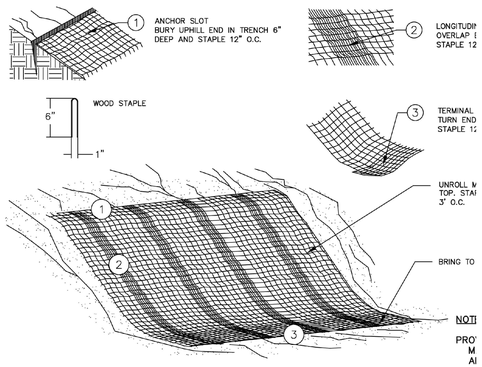
Total acres disturbed = 1 acre

Ownership Notes:
City of Ann Arbor
301 E. Huron Street
Ann Arbor, Michigan 48104

* ANY DAMAGE TO THE GOLF COURSE OUTSIDE THE PROJECT LIMITS WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

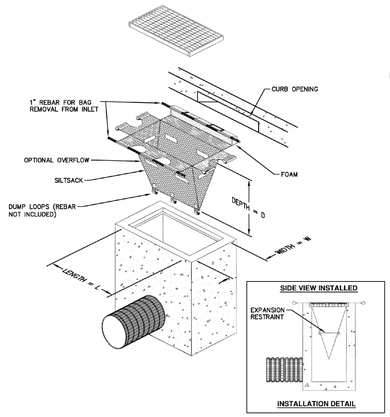
Vegetation Establishment Note:
All Bare Areas will be Seeded with Native Michigan Seed Mix or Golf Course Approved Seed Mix Immediately Upon Completion of Construction. See Seeding Plan For Detail (Sheet 4)

Job No: NE 1465	Drawn: TJS 10-24-16	Revisions: TJS 10-27-17 TJS 11-14-17 TJS 12-11-18	**Nixon / Green / Dhu Varren Roundabout Wetland Mitigation** Soil Erosion and Sedimentation Control (SESC) Plan Leslie Park Golf Course City of Ann Arbor (T02S, R06E, Sec. 16), Washtenaw County, Michigan	Client: City of Ann Arbor Engineer: OHM, Inc. Survey provided by: OHM, Inc. Consultant: Niswander Environmental	NISWANDER ENVIRONMENTAL 9436 Maltby Road, Brighton, MI 48116 810.225.0539 *office* | 810.225.0653 *fax*	**6 OF 7**



MULCH BLANKET DETAIL

APPLIES TO ALL AREAS TO BE PERMANENTLY RESTORED WITH GRASS. SEE LANDSCAPE PLANS FOR MORE DETAILS.



SILTSACK DETAIL

NOTE: THE SILTSACK WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS.

REGULAR FLOW SILTSACK

(FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF)

PROPERTIES	REQUIRED VALUE	TEST METHOD
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	70%
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC $^{-1}$

HI-FLOW SILTSACK

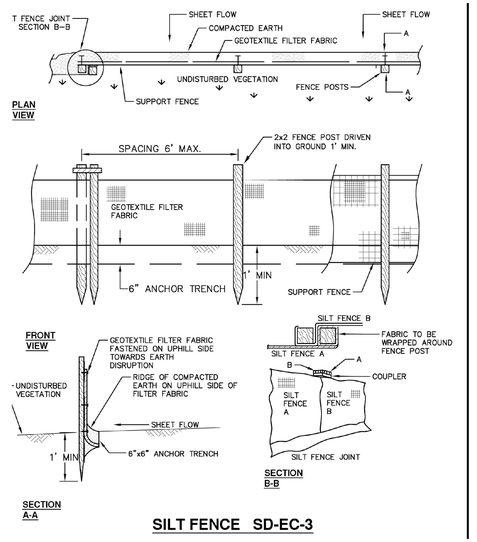
(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)

PROPERTIES	REQUIRED VALUE	TEST METHOD
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC $^{-1}$

OIL-ABSORBANT SILTSACK

(FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN-OFF OR SPILLS)

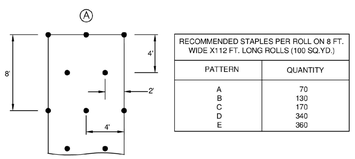
IT IS THE INTENT OF THE PLANS AND SPECIFICATIONS THAT THE CONTRACTOR INSTALL THE REBAR AS SHOWN IN THIS DETAIL TO PROVIDE A FULLY FUNCTIONING UNIT. ALL COSTS ASSOCIATED WITH FURNISHING, CLEANING AS MANY TIMES AS REQUIRED, DISPOSAL OF SEDIMENT, AND REMOVING THE INLET FILTER WHEN NO LONGER NEEDED IS INCLUDED IN THE ITEM OF WORK AND WILL NOT BE PAID FOR SEPARATELY.



SILT FENCE SD-EC-3

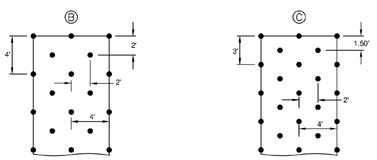
STAPLE PATTERN GUIDE 8 FT. WIDE ROLLS

(SESC-16)



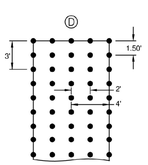
RECOMMENDED STAPLES PER ROLL ON 8 FT. WIDE X 112 FT. LONG ROLLS (100 SQ.YD.)	
PATTERN	QUANTITY
A	70
B	130
C	170
D	340
E	360

0.7 STAPLES PER SQ. YD.

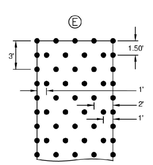


1.3 STAPLES PER SQ. YD.

1.7 STAPLES PER SQ. YD.



3.4 STAPLES PER SQ. YD.

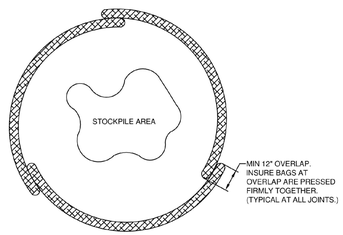


3.6 STAPLES PER SQ. YD.

TEMPORARY STOCKPILE AREAS

(SESC-37)

PLAN VIEW

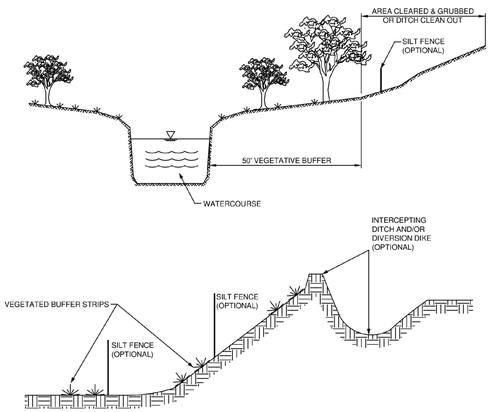


NOTES:
INSTALL STOCKPILE ON RELATIVELY FLAT TERRAIN. PLACE THREE EROSION EELS IN CIRCULAR PATTERN AS SHOWN WITH OVERLAPS. PROVIDE MORE EELS TO BROADEN CIRCUMFERENCE FOR LARGER STOCKPILES, IF DESIRED.

SEE DETAIL SESC-40 FOR GENERAL NOTES.

VEGETATED BUFFER

(SESC-54)



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NISWANDER ENVIRONMENTAL
9436 Maltby Road, Brighton, MI 48116
810.225.0539 *office* | 810.225.0653 *fax*