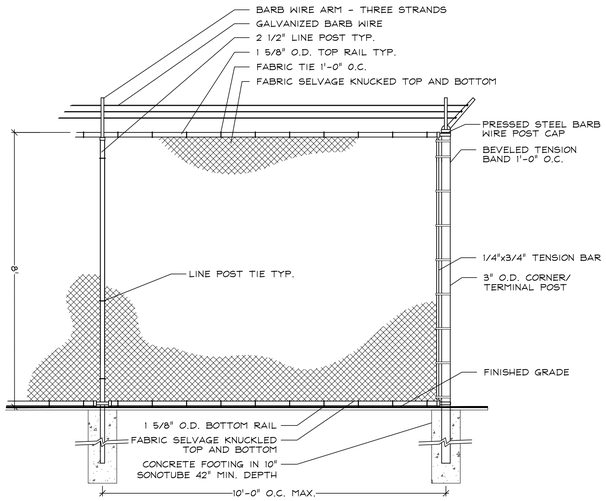
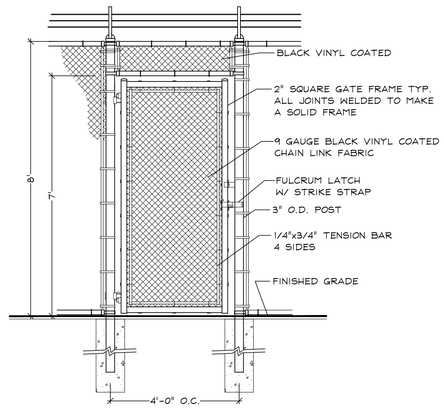
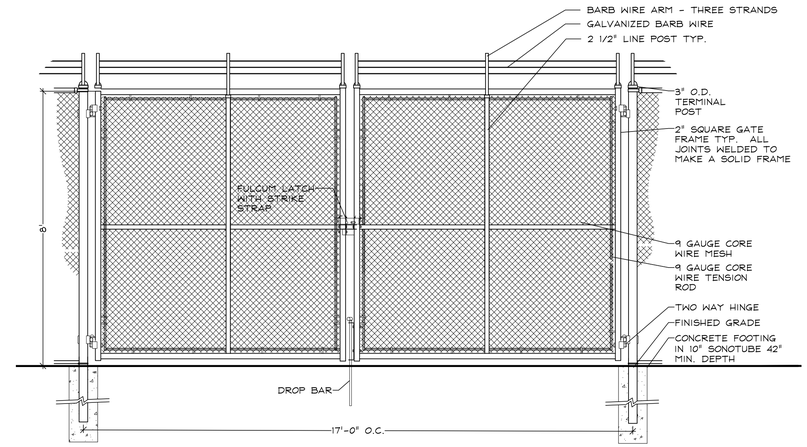


CHAINLINK FENCE DETAIL
SCALE: NOT TO SCALE

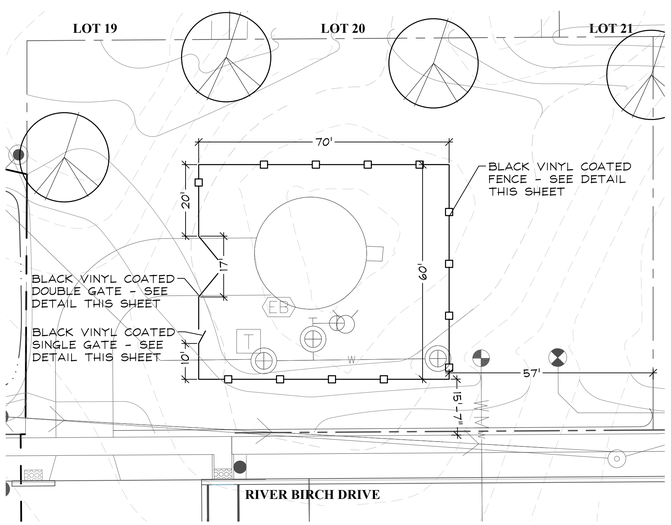
NOTES:
1. FENCING MESH TO BE INSTALLED ON THE OUTSIDE.
2. FENCING MESH TO BE BLACK VINYL COATED
3. HARDWARE AND POLES TO BE BLACK



CHAINLINK SINGLE GATE DETAIL
SCALE: NOT TO SCALE



CHAINLINK DOUBLE GATE DETAIL
SCALE: NOT TO SCALE

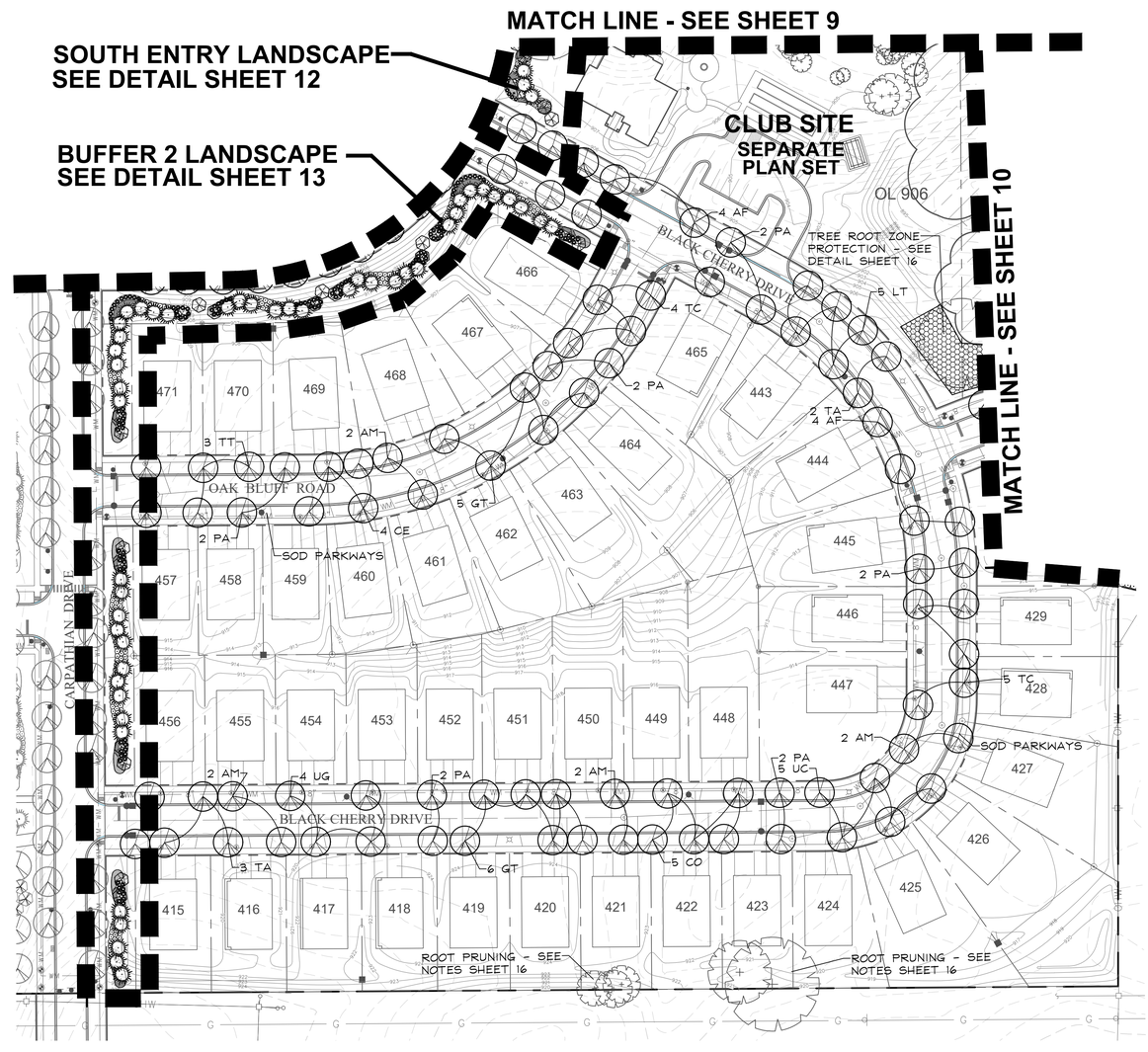


WATER TOWER FENCE LAYOUT PLAN
0 10' 20' 40' 60'
SCALE: 1"=20'
NORTH

FENCE MATERIAL SCHEDULE

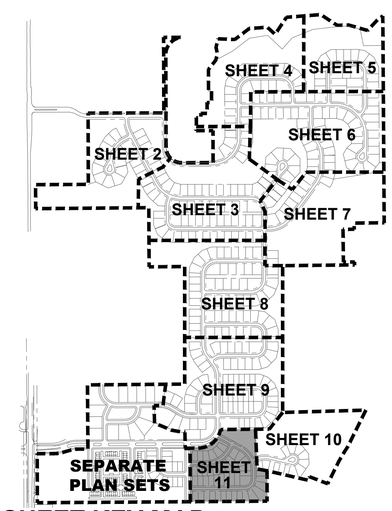
ITEM	QTY	COMMENTS
CHAINLINK FENCE	239 L.F.	8' HEIGHT WITH BARBWIRE EXTENSION BLACK VINYL-COATED
CHAINLINK DOUBLE GATE	1	8' HEIGHT WITH BARBWIRE EXTENSION BLACK VINYL-COATED
CHAINLINK SINGLE GATE	1	8' HEIGHT WITH BARBWIRE EXTENSION BLACK VINYL-COATED
SPLIT RAIL FENCE	927 L.F.	STAIN 1 YEAR AFTER INSTALLATION

0 30' 60' 120' 180'
SCALE: 1"=60'
NORTH



NATIVE AREAS LEGEND

Key	Description
	EMERGENT SEED MIX
	WET MEADOW SEED MIX
	LOW PROFILE PRAIRIE SEED MIX
	UPLAND MEADOW SEED MIX
	WOODLAND MANAGEMENT AREA
	WETLAND RESTORATION AREA



SHEET KEY MAP
NOT TO SCALE

GRWA
GARY R. WEBER ASSOCIATES, INC.
LAND PLANNING
ECOLOGICAL CONSULTING
LANDSCAPE ARCHITECTURE
212 SOUTH MAIN STREET
WHEATON, ILLINOIS 60187
PHONE: 630-668-7197

CLIENT
LENNAR
1141 E. MAIN STREET
SUITE 108
EAST DUNDEE, ILLINOIS 60118

ENGINEER
MACKIE CONSULTANTS, LLC
9575 W. HIGGINS ROAD
SUITE 500
ROSEMONT, IL 60018

ECOLOGICAL
MIDWEST ECOLOGICAL, INC.
P.O. BOX 321
GILBERTS, ILLINOIS 60136

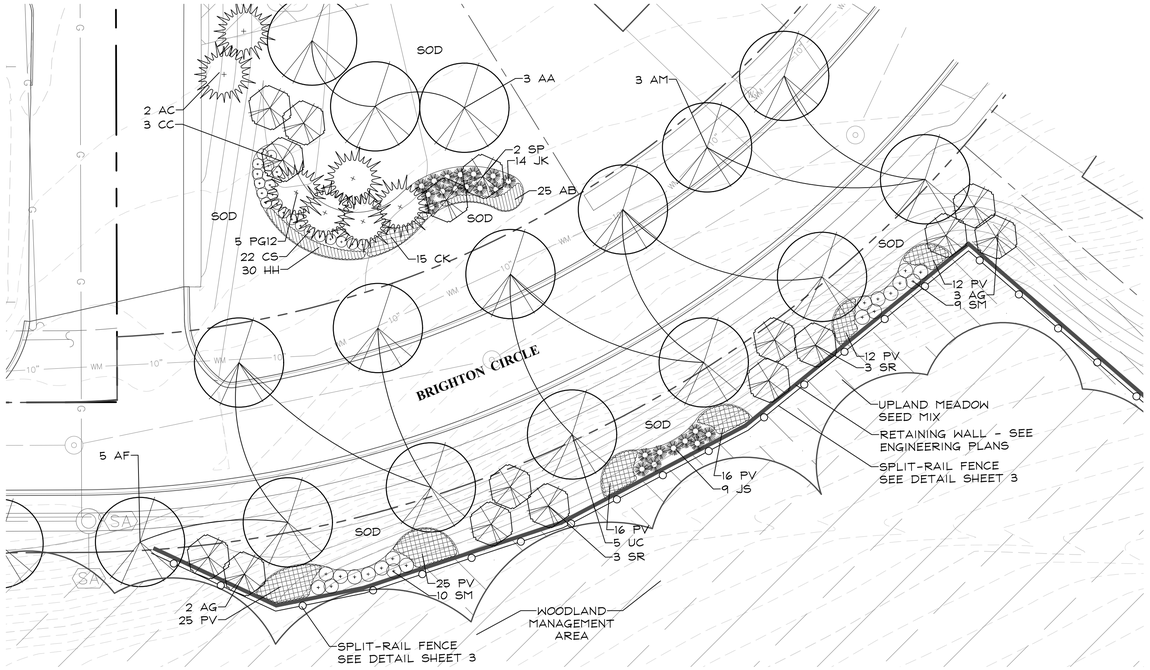
FORESTRY
URBAN FOREST MANAGEMENT, INC.
960 ROUTE 22, SUITE 207
FOX RIVER GROVE, ILLINOIS 60021

WOODLORE ESTATES
CRYSTAL LAKE, ILLINOIS
LANDSCAPE PLAN

2	8.10.18
1 - FOR BID	6.18.18
REVISIONS	

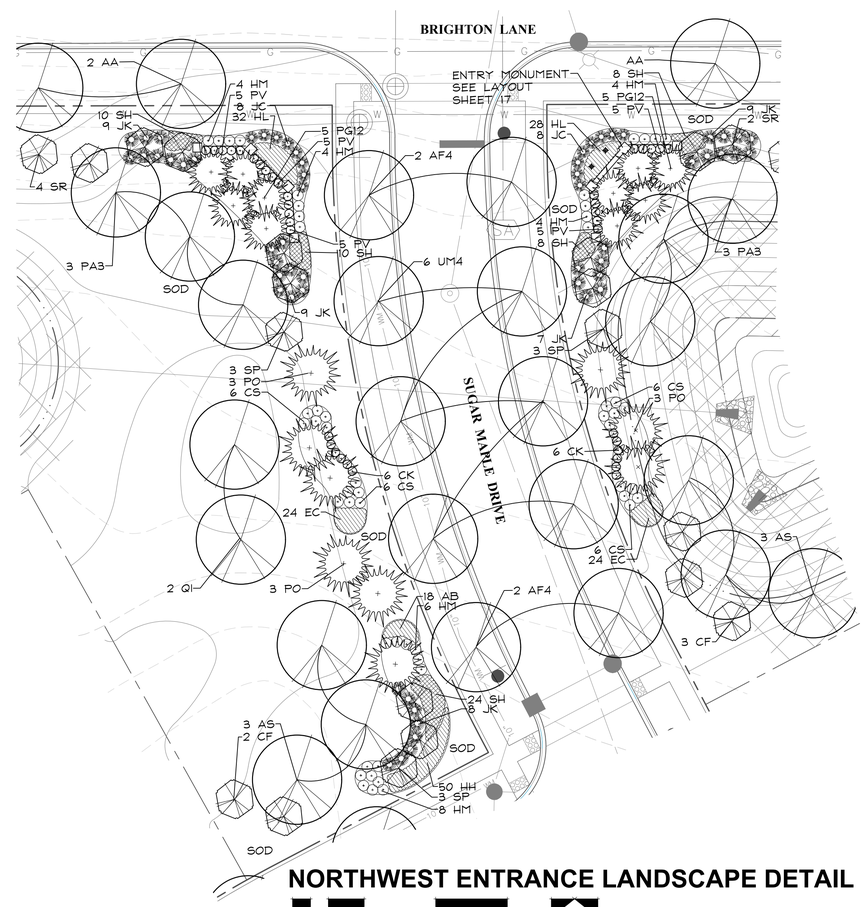
DATE	6.11.18
PROJECT NO.	CA1624
DRAWN	GFB
CHECKED	MGM
SHEET NO.	11 OF 21

811 Know what's below. Call before you dig.



NORTHEAST ENTRANCE LANDSCAPE DETAIL

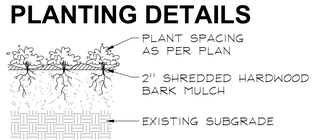
0 10' 20' 40' 60'
SCALE: 1"=20'
NORTH



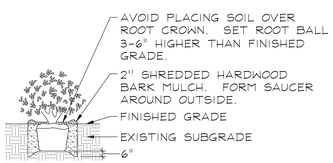
NORTHWEST ENTRANCE LANDSCAPE DETAIL

0 10' 20' 40' 60'
SCALE: 1"=20'
NORTH

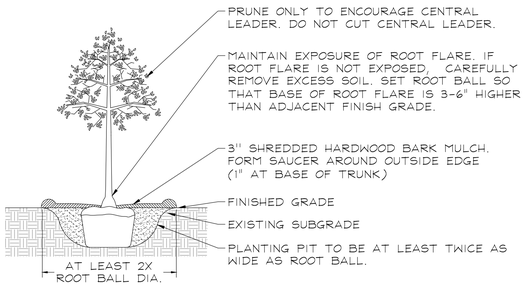
PLANTING DETAILS



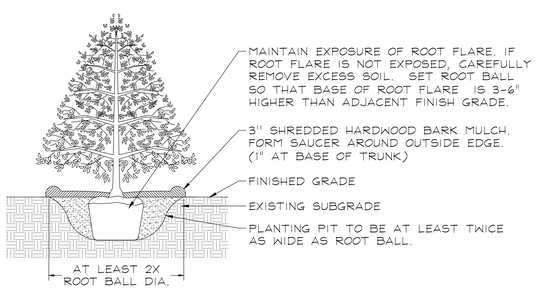
PERENNIALS AND GROUNDCOVERS
NOT TO SCALE



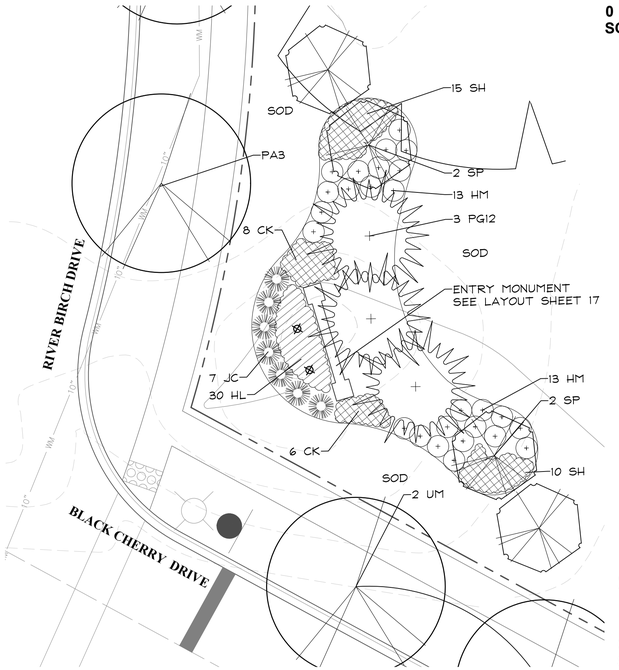
DECIDUOUS AND EVERGREEN SHRUBS
NOT TO SCALE



DECIDUOUS TREES
NOT TO SCALE



EVERGREEN TREES
NOT TO SCALE



SOUTH ENTRANCE LANDSCAPE DETAIL

0 5' 10' 20' 30'
SCALE: 1"=10'
NORTH

GRWA
GARY R. WEBER ASSOCIATES, INC.
LAND PLANNING
ECOLOGICAL CONSULTING
LANDSCAPE ARCHITECTURE
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WHEATON, ILLINOIS 60187
PHONE: 630-668-7197

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1141 E. MAIN STREET
SUITE 108
EAST DUNDEE, ILLINOIS 60118

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MACKIE CONSULTANTS, LLC
9575 W. HIGGINS ROAD
SUITE 500
ROSEMONT, IL 60018

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P.O. BOX 321
GILBERTS, ILLINOIS 60136

FORESTRY
URBAN FOREST MANAGEMENT, INC.
960 ROUTE 22, SUITE 207
FOX RIVER GROVE, ILLINOIS 60021

WOODLORE ESTATES

CRYSTAL LAKE, ILLINOIS

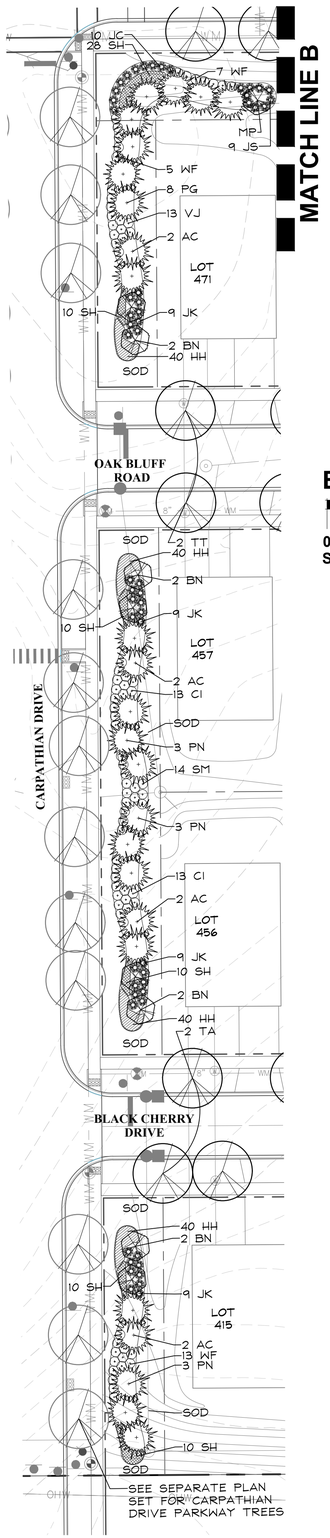
LANDSCAPE DETAILS

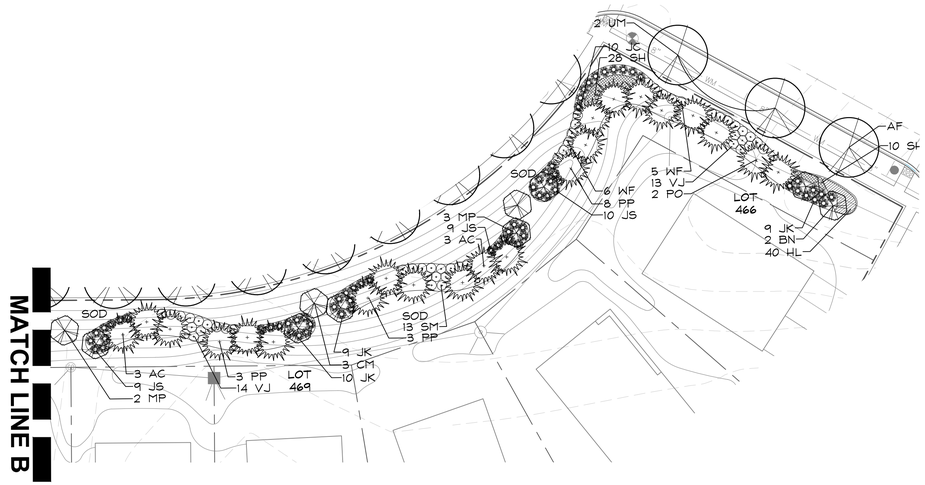
2	8.10.18
1 - FOR BID	6.18.18

REVISIONS

DATE	6.11.18
PROJECT NO.	CA1624
DRAWN	GFB
CHECKED	MGM
SHEET NO.	

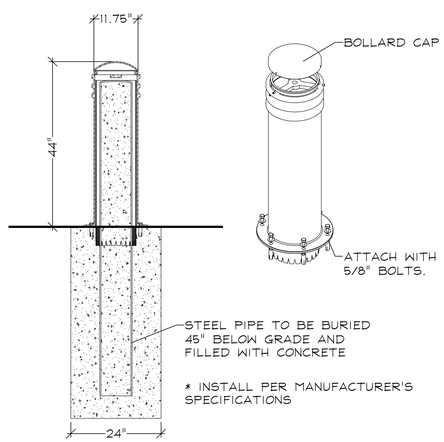
XREFS:
PLOT CONFIG:





BUFFER 2 LANDSCAPE DETAIL

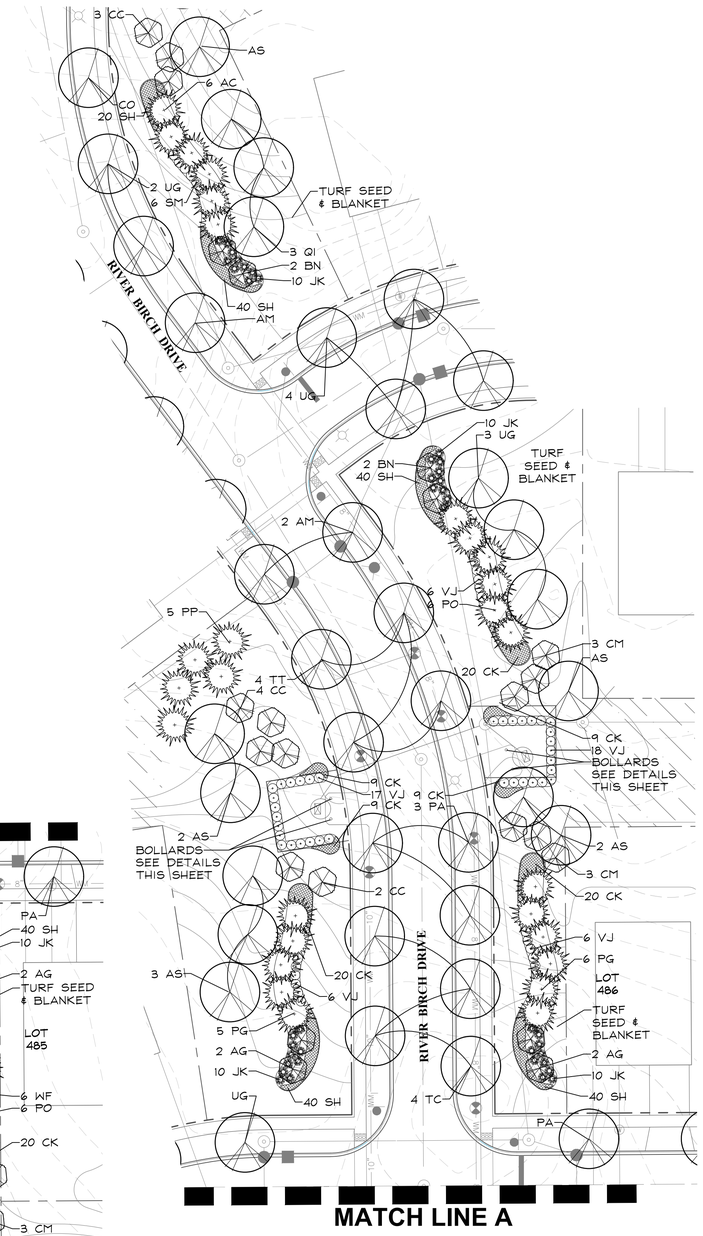
0 15' 30' 60' 90'
SCALE: 1"=30'
NORTH

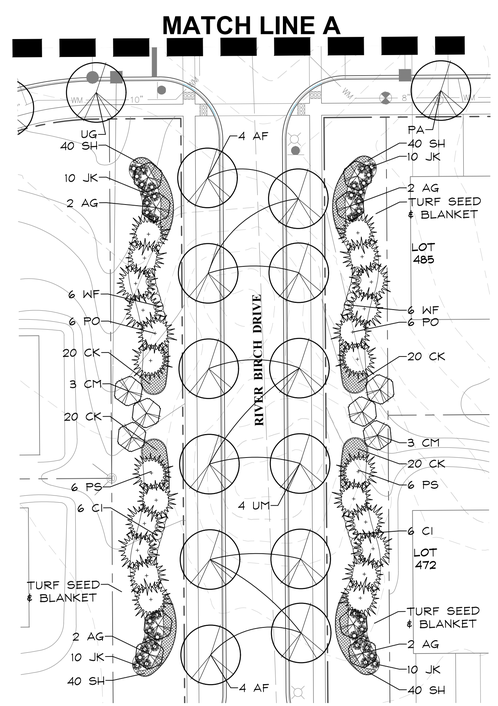


BOLLARD DETAIL
SCALE: NOT TO SCALE

BOLLARD SCHEDULE
*** APPROVED EQUALS ALLOWED - SUBMIT TO OWNER'S REPRESENTATIVE FOR APPROVAL**

ITEM	QTY	COMMENTS
BOLLARD	8	BOLLARD COVER: RELIANCE FOUNDRY R-7743-FL STEEL PIPE: RELIANCE FOUNDRY R-1007-8





BUFFER 1 LANDSCAPE DETAIL

0 15' 30' 60' 90'
SCALE: 1"=30'
NORTH

GARY R. WEBER ASSOCIATES, INC.
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WOODLORE ESTATES
CRYSTAL LAKE, ILLINOIS

LANDSCAPE DETAILS

REVISIONS	
2	8.10.18
1 - FOR BID	6.18.18

DATE	6.11.18
PROJECT NO.	CA1624
DRAWN	GFB
CHECKED	MGM
SHEET NO.	13 OF 21

811 Know what's below. Call before you dig.

NATIVE SEED MIXTURES

A. Temporary Cover Crop:

Cover crops shall be installed in all planting areas containing dry mesic, mesic, and wet mesic soils to, stabilize soils, and combat weed pressure during the germination and establishment of the native seeding area.

For spring plantings use Seed Oats at the specified rate below:

Botanical Name	Common Name	lbs /AC.
Avena sativa	Seed Oats	30.0 lbs.

For fall or dormant plantings, use Regreen at the specified rates below:

Botanical Name	Common Name	lbs /AC
Tricticum aestivum	Regreen	10.0 lbs.

B. Emergent Plantings - Stormwater Basin Bottoms in areas with 6" water depth

Botanical Name	Common Name	lbs /AC	Plugs/AC
Acorus calamus	Sweet Flag	0.500	494
Alisma subcordatum	Water Plantain	1.250	
Iris virginica shrevei	Blue Flag	0.500	494
Juncus effusus	Common Rush	0.500	
Leersia Oryzoides	Rice Cut Grass	1.250	494
Pontederia Cordata	Pickerelweed	0.250	494
Sagittaria latifolia	Common Arrowhead	1.250	494
Scirpus acutus	Hardstem Bulrush	0.500	988
Scirpus fluviatilis	River Bulrush	1.000	494
Scirpus pungens	Chairmakers Rush	0.250	
Scirpus validus	Great Bulrush	0.500	988
Sparganium eurycarpum	Bur Reed	1.000	494
Total:		8.750	5434

C. Wet Meadow Seed Mixture - Lower slopes of basin

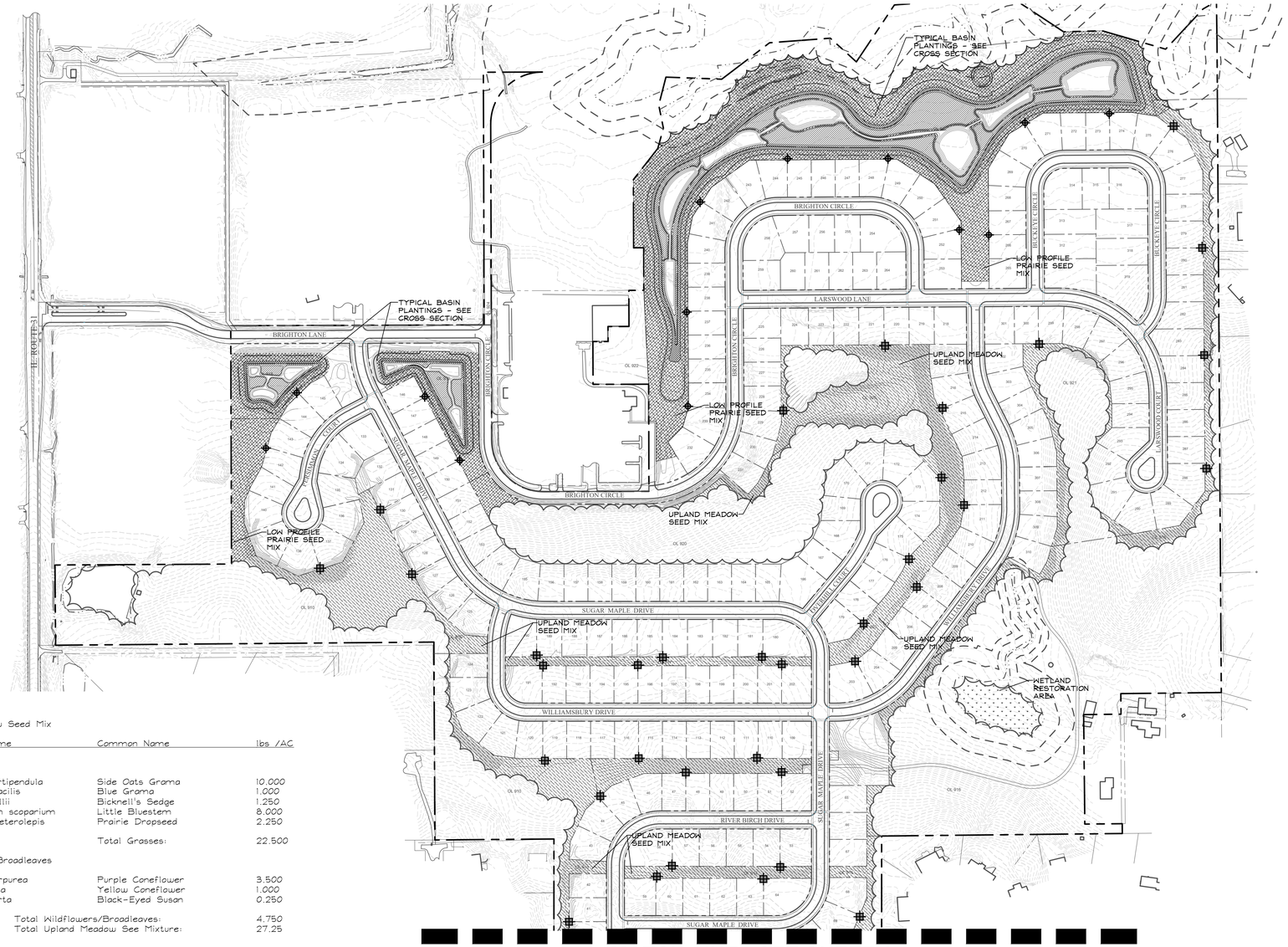
Botanical Name	Common Name	lbs /AC
Grasses and Sedges		
Carex bebbii	Bebbs Oval Sedge	0.250
Carex bicknellii	Bicknells Sedge	0.125
Carex brevior	Plains Oval Sedge	0.250
Carex cristatella	Crested Oval Sedge	0.060
Carex molesta	Field Oval Sedge	0.250
Carex normalis	Speading Oval Sedge	0.015
Carex scorparia	Pointed Broom Sedge	0.190
Carex stipata	Common Fox Sedge	0.060
Carex vulpinoidea	Brown Fox Sedge	0.250
Elymus virginicus	Virginia Wild Rye	3.000
Glyceria striata	Fowl manna grass	0.130
Juncus dudleyi	Dudleys Rush	0.020
Juncus torreyi	Torreys Rush	0.031
Panicum virgatum	Switch Grass	3.000
Scirpus atrovirens	Dark Green Rush	0.060
Scirpus cyperinus	Wool Grass	0.030
Total Grasses and Sedges:		7.721
Wildflowers/Broadleaves		
Alsclepias incarnata	Swamp Milkweed	0.125
Bidens cernua	Nodding Bur Marigold	0.190
Boltonia asteroids	False Aster	0.031
Chamaecrista fasciculate	Partridge pea	0.188
Euthamia gramnifolia	Grassleaved Goldenrod	0.300
Eupatorium perfoliatum	Common Boneset	0.015
Helenium autumnale	Sneezeweed	0.063
Iris virginica shrevei	Blue Flag	1.000
Loebelia siphilitica	Great Blue Lobelia	0.031
Mimulus ringens	Monkey Flower	0.031
Symphyotrichum novae-angliae	New England Aster	0.250
Pycnanthemum virginianum	Common Mountain Mint	0.063
Rudebeckia fulgida var.sullvantii	Showy Black-Eyed Susan	0.250
Zizia aurea	Golden Alexanders	0.500
Total Wildflowers/Broadleaves:		3.037
Total Wet Meadow Seed Mixture:		10.758

D. Low Profile Prairie With Flowers Seed Mixture - Upper Basin Slopes

Botanical Name	Common Name	lbs /AC
Grasses		
Bouteloua curtipendula	Side Oats Grama	8.000
Panicum virgatum	Prairie Switch Grass	0.125
Elymus trachycaulus	Slender Wheatgrass	2.000
Elymus canadensis	Prairie Wild Rye	1.000
Schizachyrium scoparium	Little Blue Stem	6.000
Total Grasses:		17.125
Wildflowers/Broadleaves		
Allium cernuum	Nodding Wild Onion	0.190
Amorpha canescens	Lead Plant	0.125
Asclepias tuberosa	Butterflyweed	0.500
Asclepias canadensis	Whorled Milkweed	0.063
Astragalus canadensis	Canada Milk Vetch	0.063
Coreopsis palmata	Prairie Coreopsis	0.025
Echinacea pallida	Pale Purple Coneflower	1.000
Echinacea purperea	Purple Coneflower	0.500
Eryngium yuccifolium	Rattlesnake Master	0.125
Lespedeza capitata	Round-Headed Bush Clover	0.125
Liatris aspera	Rough Blazing Star	0.250
Liatris pycnostachya	Prairie Blazing Star	0.188
Monarda fistulosa	Prairie Bergamont	0.063
Parthenium integrifolium	Wild Quinine	0.016
Penstemon didgitalis	Foxglove Beardtongue	0.125
Petalostemum candidum	White Prairie Clover	0.125
Petalostemum purpureum	Purple Prairie Clover	0.156
Potentilla arguta	Prairie Cinquefoil	0.031
Pycanthemum tenuifolium	Slender Mt Mint	0.031
Ratibida pinnata	Yellow Coneflower	0.125
Rudebeckia fulgida var.sullvantii	Showy Black-Eyed Susan	0.500
Rudbeckia hirta	Black-Eyed Susan	0.500
Rudbeckia subtomentosa	Sweet Black-Eyed Susan	0.063
Symphyotrichum laeve	Smooth Blue Aster	0.063
Tradescanthia ohiensis	Spiderwort	0.063
Verbena stricta	Hoary Vervain	0.125
Zizia aurea	Golden Alexanders	0.500
Total Wildflowers/Broadleaves:		5.640
Total Lo Pro Prairie Seed Mixture:		22.765

E. Upland Meadow Seed Mix

Botanical Name	Common Name	lbs /AC
Grasses		
Bouteloua curtipendula	Side Oats Grama	10.000
Bouteloua gracilis	Blue Grama	1.000
Carex bicknellii	Bicknell's Sedge	1.250
Schizachurium scoparium	Little Bluestem	8.000
Sporobolus heterolepis	Prairie Dropseed	2.250
Total Grasses:		22.500
Wildflowers/Broadleaves		
Echinacea purpurea	Purple Coneflower	3.500
Ratiba pinnata	Yellow Coneflower	1.000
Rudbeckia hirta	Black-Eyed Susan	0.250
Total Wildflowers/Broadleaves:		4.750
Total Upland Meadow See Mixture:		27.25

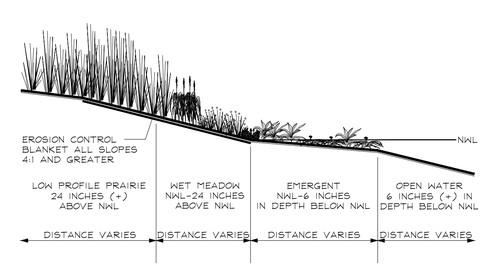


MATCH LINE - SEE SHEET 15

0 100' 200' 400' 600'
SCALE: 1"=200'
NORTH

NATURALIZED AREA LEGEND

Key	Qty (AC.)	Description
	5.20	EMERGENT PLANTINGS
	1.96	WET MEADOW SEED MIX & EROSION CONTROL BLANKET
	12.68	LOW PROFILE PRAIRIE SEED MIX & EROSION CONTROL BLANKET
	20.33	UPLAND MEADOW SEED MIX & EROSION CONTROL BLANKET
	0.73	WETLAND RESTORATION AREA
	13	NATURALIZED STORMWATER MANAGEMENT SIGN
	50	PROTECTED NATIVE VEGETATION SIGN



BASIN PLANT COMMUNITY SECTION
NOT TO SCALE

GRWA
GARY R. WEBER ASSOCIATES, INC.
LAND PLANNING
ECOLOGICAL CONSULTING
LANDSCAPE ARCHITECTURE
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WOODLORE ESTATES

CRYSTAL LAKE, ILLINOIS

SEEDING PLAN

REVISIONS	
2	8.10.18
1 - FOR BID	6.18.18

DATE	6.11.18
PROJECT NO.	CA1624
DRAWN	GFB
CHECKED	MGM
SHEET NO.	14 OF 21

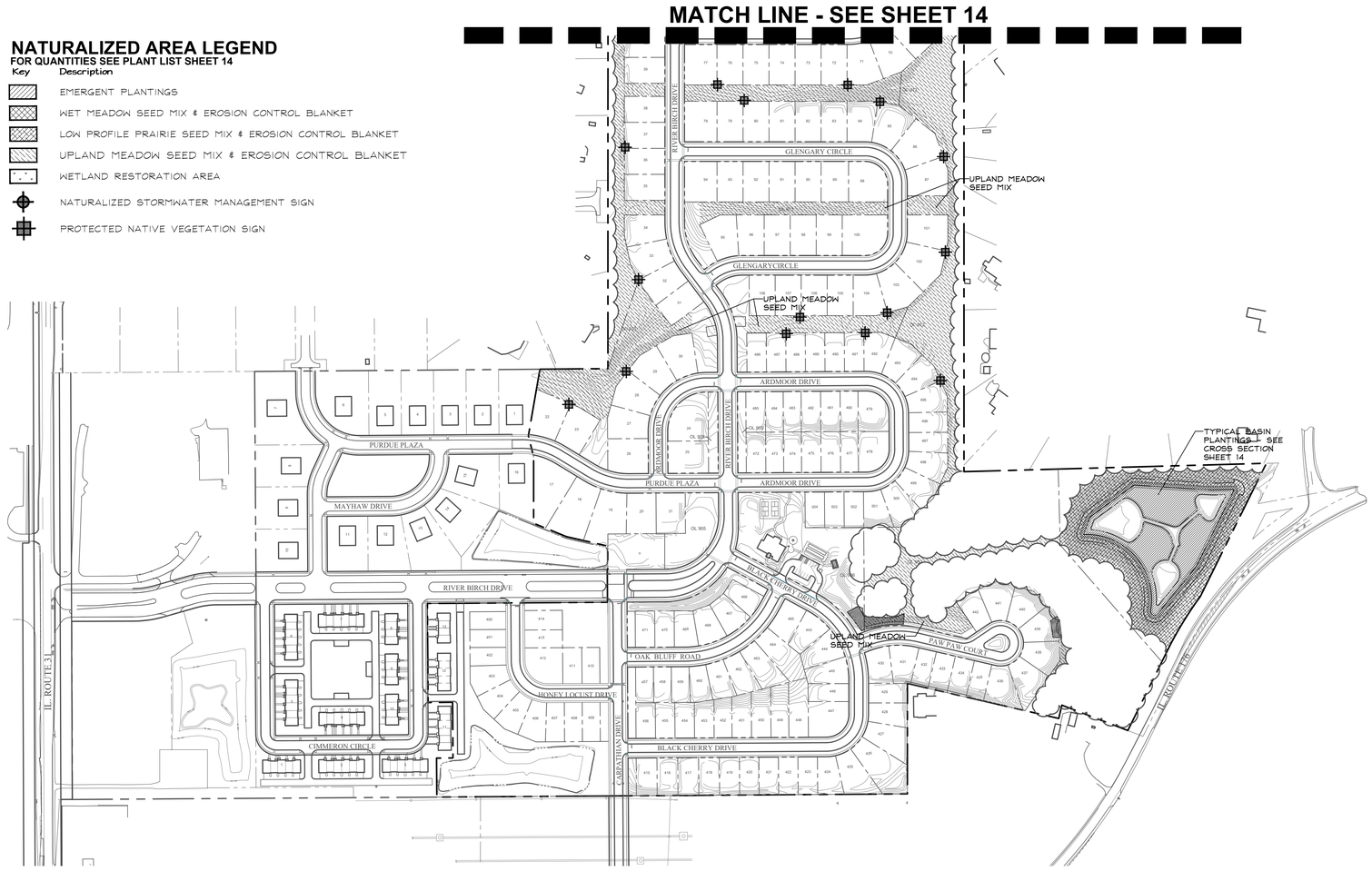
811 Know what's below. Call before you dig.

FOR CONFIG

NATURALIZED AREA LEGEND

FOR QUANTITIES SEE PLANT LIST SHEET 14

Key	Description
	EMERGENT PLANTINGS
	WET MEADOW SEED MIX & EROSION CONTROL BLANKET
	LOW PROFILE PRAIRIE SEED MIX & EROSION CONTROL BLANKET
	UPLAND MEADOW SEED MIX & EROSION CONTROL BLANKET
	WETLAND RESTORATION AREA
	NATURALIZED STORMWATER MANAGEMENT SIGN
	PROTECTED NATIVE VEGETATION SIGN

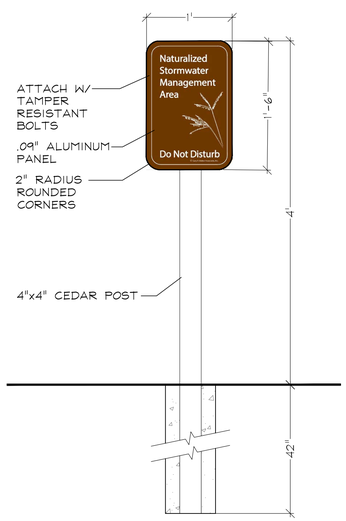


0 100' 200' 400' 600'
SCALE: 1"=200'

NORTH

SIGN NOTES:

1. SIGN BACKGROUND COLOR: C=40, M=70, Y=100, K=28 SIGN FONT AND GRAPHIC COLOR: WHITE
2. FONT STYLE: MYRIAD PRO FONT SIZE: 116 PT.
3. SIGN ARTWORK SHALL BE PROVIDED BY GARY R. WEBER ASSOCIATES, INC.
4. CONTRACTOR TO SUBMIT SHOP DRAWING AND COLOR SAMPLE FOR THE STORMWATER MANAGEMENT AREA SIGN FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO FABRICATION AND INSTALLATION.



NATURALIZED STORMWATER MANAGEMENT SIGN DETAIL

NOT TO SCALE

PROTECTED NATIVE VEGETATION SIGN DETAIL

NOT TO SCALE

Wetland Restoration Seed Mix*:

Botanical Name	Common Name	lbs. /AC.
Grasses and Sedges		
Carex bebbii	Bebbs Oval Sedge	0.250
Carex bicknellii	Bicknells Sedge	0.250
Carex brevior	Plains Oval Sedge	0.250
Carex cristatella	Crested Oval Sedge	0.150
Carex molesta	Field Oval Sedge	0.250
Carex normalis	Spreading Oval Sedge	0.250
Carex scorparia	Pointed Broom Sedge	0.190
Carex stipata	Common Fox Sedge	0.250
Carex vulpinoidea	Brown Fox Sedge	0.250
Elymus virginicus	Virginia Wild Rye	3.000
Glyceria striata	Fowl manna grass	0.130
Juncus dudleyi	Dudleys Rush	0.003
Juncus torreyi	Torreys Rush	0.005
Panicum virgatum	Switch Grass	1.000
Scirpus atrovirens	Dark Green Rush	0.060
Scirpus cyperinus	Wool Grass	0.015
Total Grasses and Sedges:		6.303
Wildflowers/Broadleaves		
Alsclepias incarnata	Swamp Milkweed	0.500
Bidens cernua	Nodding Bur Marigold	0.190
Boltonia asteroides	False Aster	0.031
Chamaecrista fasciculata	Partridge pea	1.000
Euthamia gramnifolia	Grassleaved Goldenrod	0.025
Eupatorium perfoliatum	Common Boneset	0.015
Helenium autumnale	Sneezeweed	0.063
Iris virginica shrevei	Blue Flag	1.500
Loebelia siphilitica	Great Blue Lobelia	0.031
Mimulus ringens	Monkey Flower	0.003
Symphyotrichum novae-angliae	New England Aster	0.250
Pycnanthemum virginianum	Common Mountain Mint	0.063
Rudebeckia fulgida var.sullivantii	Showy Black-Eyed Susan	0.250
Zizia aurea	Golden Alexanders	0.050
Total Wildflowers/Broadleaves:		3.97
Total Wet Meadow Seed Mixture:		10.27

*Management of invasive vegetation in the wetland restoration areas should follow specifications included in the Plan. Additional management recommendations may be required as determined by the Owner's Enviornmental Specialist.

GRWA
GARY R. WEBER ASSOCIATES, INC.
LAND PLANNING
ECOLOGICAL CONSULTING
LANDSCAPE ARCHITECTURE
212 SOUTH MAIN STREET
WHEATON, ILLINOIS 60187
PHONE: 630-668-7197

CLIENT
LENNAR
1141 E. MAIN STREET
SUITE 108
EAST DUNDEE, ILLINOIS 60118

ENGINEER
MACKIE CONSULTANTS, LLC
9575 W. HIGGINS ROAD
SUITE 500
ROSEMONT, IL 60018

ECOLOGICAL
MIDWEST ECOLOGICAL, INC.
P.O. BOX 321
GILBERTS, ILLINOIS 60136

FORESTRY
URBAN FOREST MANAGEMENT, INC.
960 ROUTE 22, SUITE 207
FOX RIVER GROVE, ILLINOIS 60021

WOODLORE ESTATES

CRYSTAL LAKE, ILLINOIS

SEEDING PLAN

2	8.10.18
1 - FOR BID	6.18.18

REVISIONS

DATE	6.11.18
PROJECT NO.	CA1624
DRAWN	GFB
CHECKED	MGM

SHEET NO.

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TREE PRESERVATION SPECIFICATIONS

TREE PRESERVATION WORK PART 1: EXCECUTION

Place plastic mesh fencing and straw wattle at least 6ft away from the trunk in areas where the CRZ is impacted.

3.1 ACTIVITIES PROHIBITED WITHIN FENCED PROTECTION ZONES:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Drainage changes or impoundment of water.
6. Cutting tree roots by utility trenching, foundation digging, placement of curbs, trenches and other miscellaneous excavation or other digging.
7. Soil disturbance, soil compaction or grade change.
8. Washout activities
9. Attachment of signs to or wrapping materials around trees or plants.
10. Do not direct vehicle or equipment exhaust toward protection zones.
11. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch

3.2 ACTIVITIES PERMITTED OR REQUIRED WITHIN PROTECTION ZONES AND WHERE NECESSARY WITHIN CRITICAL ROOT ZONES AS INDICATED ON THE PLAN:

1. Mulching - should be used during construction to protect the soil from compaction, conserve soil moisture, and moderate soil temperature. Refer to project plans for specific trees or areas within the Critical Root Zone (CRZ) that require mulching. Spread wood chips or similar material to a depth of 4 (four) inches, leaving the trunk clear of mulch.
2. Wood chip mulch can be used for temporary road access and to reduce compaction in and near tree protection areas. When used for this purpose, at least 12 (twelve) and up to 18 (eighteen) inches of chips should be applied where vehicles will travel or park.
3. Root protection matting (rpm) can be used to protect existing roots and soils from proposed short-term construction traffic and activities within the Critical Root Zone (CRZ). Exact location and layout of rpm should be approved by the Owner's environmental consultant. Rpm should be installed by an arborist experienced in root protection matting for construction applications.
4. Planting and seeding that has been specifically approved can occur within the Critical Root Zone (CRZ).

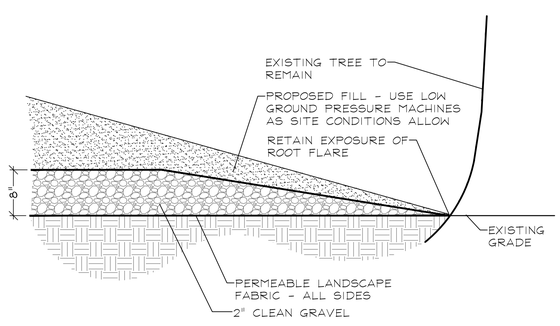
3.3 ROOT PRUNING

Preventative root pruning: recommended when roots of healthy, vigorous, and/or significant community trees designated for protection must be removed.

1. Where excavation or construction within the critical root zone of a tree is necessary and less than 50% of the root system will be affected, root pruning can occur.
2. Cut roots cleanly prior to mechanical excavation near tree to minimize damage to remaining roots and reduce the risk of causing disease, decay and instability.
3. As a temporary measure, place burlap material and/or spread mulch over exposed roots after cuts are made and before soil is replaced. Keep this material damp until backfilled to prevent the fine roots from drying and dying.
4. Proposed root cuts should be marked in the field and reviewed by the Owner's environmental consultant and/or appropriate consultant prior to trenching, excavating or cutting to determine the impact on any structural critical roots and the closest point to tree that soil may be disturbed.
5. The contractor shall arrange for the Owner's environmental consultant and/or appropriate consultant to be on-site during the process to monitor, photograph and document all root cuts.
6. Root pruning shall occur along or behind the line of a planned excavation and therefore should coordinate with the tree protection fencing.
7. Root pruning can be accomplished with circular saws of varying types and/or a rotary-type stump grinder to a depth of 18" or to the maximum depth of the required grading cut, whichever is less. Saw blades and grinder teeth should be sharpened prior to use.
8. Root pruning can also be accomplished with the aid of a supersonic air tool and a trained operator.
9. The exact location and depth of root pruning will be determined during the pre-construction meeting. Specific equipment and methods will be determined by the Owner's environmental consultant and/or appropriate consultant based upon depth and tree impact.

3.4 DAMAGE TO TREES

Reporting: any damage or injury to trees shall be reported within 6 (six) hours to the owner or authorized representative so that the appropriate actions can be determined.



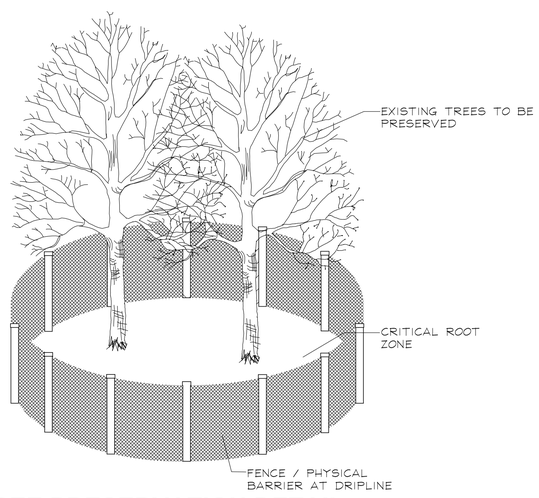
TREE ROOT ZONE PROTECTION DETAIL
NOT TO SCALE

TREE PRESERVATION NOTES

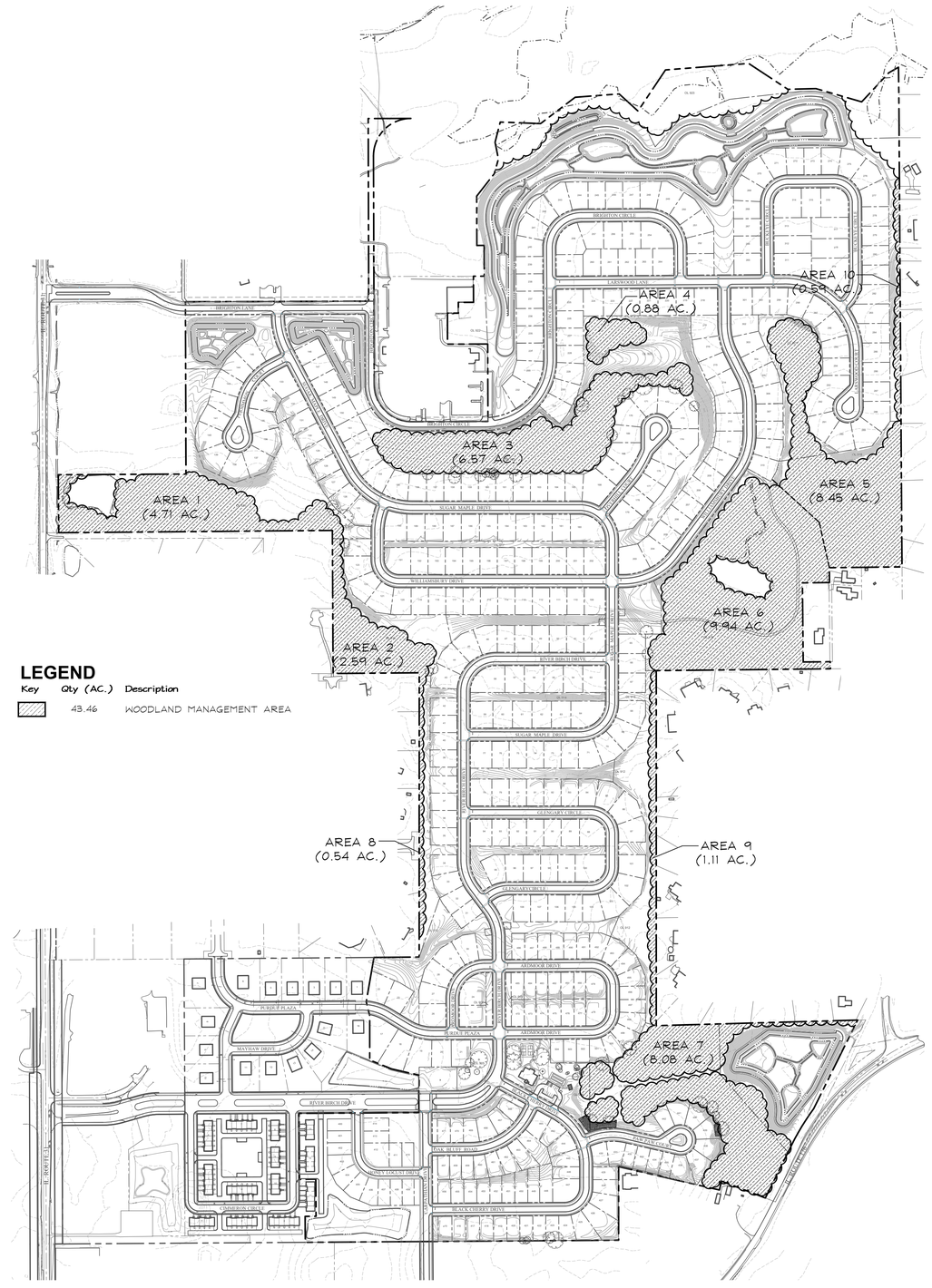
1. 48" high snow fence or wood barriers shall extend to the dripline of the tree or tree mass whenever possible, shall be installed before construction begins, and should not be removed until the completion of construction.
2. All accidental damage to existing trees that are to be preserved shall be promptly treated as required in accordance with recognized horticultural practices and the instructions of the professional Arborist, Landscape Architect or Horticulturist.
3. Broken or badly bruised branches shall be removed with a clean cut. If recommended by the professional Arborist, Landscape Architect or Horticulturist.
4. Care shall be exercised by the contractors to protect all overhead limbs and branches from damage by contact with material, machinery or equipment and by damage from engine exhaust.
5. Contractors shall protect trees and vegetation against spills or discharge of fuels, lubricating oils, hydraulic fluids, anti-freeze and coolants, calcium chloride, lime and all other similar hydrocarbons, organic chemicals, and other materials which can be harmful.
6. When underground utilities are proposed within 5' of a preserved tree trunk, they must be augered if possible.

F. Woodland Seed Mix

Botanical Name	Common Name	lbs /AC
Wildflowers		
Allium tricoccum	Wild Leek	0.250
Aquilegia canadensis	Wild Columbine	0.063
Arisaema triphyllum	Jack-in-the-Pulpit	0.250
Asclepias exaltata	Poke Milkweed	0.042
Aster drummondii	Drummond's Aster	0.125
Aster prenanthoides	Crooked-Stemmed Aster	0.125
Aster sagittifolius	Arrow-Leaved Aster	0.125
Blephilia hirsuta	Wood Mint	0.063
Campanula americana	Tall Bellflower	0.063
Caulphyllum thalictroides	Blue Cohosh	0.250
Desmodium glutinosum	Pointed-Leaved Tick Trefoil	0.250
Eupatorium rugosum	White Snakeroot	0.063
Geranium maculatum	Wild Geranium	0.125
Hydrophyllum virginianum	Virginia Waterleaf	0.250
Mertensia virginica	Virginia Bluebells	0.042
Osmorhiza claytonii	Sweet Cicely	0.250
Penstemon calycosus	Calico Beardtongue	0.063
Polemonium reptans	Jacob's Ladder	0.417
Polygonatum canaliculatum	Solomon's Seal	0.250
Polygonum virginianum	Woodland Knotweed	0.125
Prenanthes alba	Lion's Foot	0.042
Pycnanthemum pilosum	Hairy Mountain Mint	0.063
Rudbeckia triloba	Brown-Eyed Susan	0.125
Scrophularia marilandica	Late Figwort	0.063
Smilacina racemosa	False Solomon's Seal	0.250
Thalictrum dioicum	Early Meadow Rue	0.125
Zizia aurea	Golden Alexanders	0.125
	Total Wildflowers:	3.692
Grasses, Sedges, & Rushes		
Bromus purgans	Hairy Wood Chess	0.250
Carex brevior	Plains Oval Sedge	0.125
Carex granularis	Meadow Sedge	0.125
Carex molesta	Field Oval Sedge	0.125
Carex sprengelii	Long-Beaked Sedge	0.063
Carex vulpinoidea	Brown Fox Sedge	0.125
Diarrhena americana	Beak Grass	0.500
Elymus villosus	Silky Wild Rye	1.000
Elymus virginicus	Virginia Wild Rye	1.500
Festuca obtusa	Nodding Fescue	0.125
Hystrix patula	Bottlebrush Grass	1.500
	Total Grasses, Sedges, & Rushes:	5.928



TREE PRESERVATION DETAIL
NOT TO SCALE



LEGEND

Key	Qty (AC.)	Description
	43.46	WOODLAND MANAGEMENT AREA

0 150' 300' 600' 900'
SCALE: 1"=300'

NORTH

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GARY R. WEBER ASSOCIATES, INC.
LAND PLANNING
ECOLOGICAL CONSULTING
LANDSCAPE ARCHITECTURE
212 SOUTH MAIN STREET
WHEATON, ILLINOIS 60187
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URBAN FOREST MANAGEMENT, INC.
960 ROUTE 22, SUITE 207
FOX RIVER GROVE, ILLINOIS 60021

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CRYSTAL LAKE, ILLINOIS

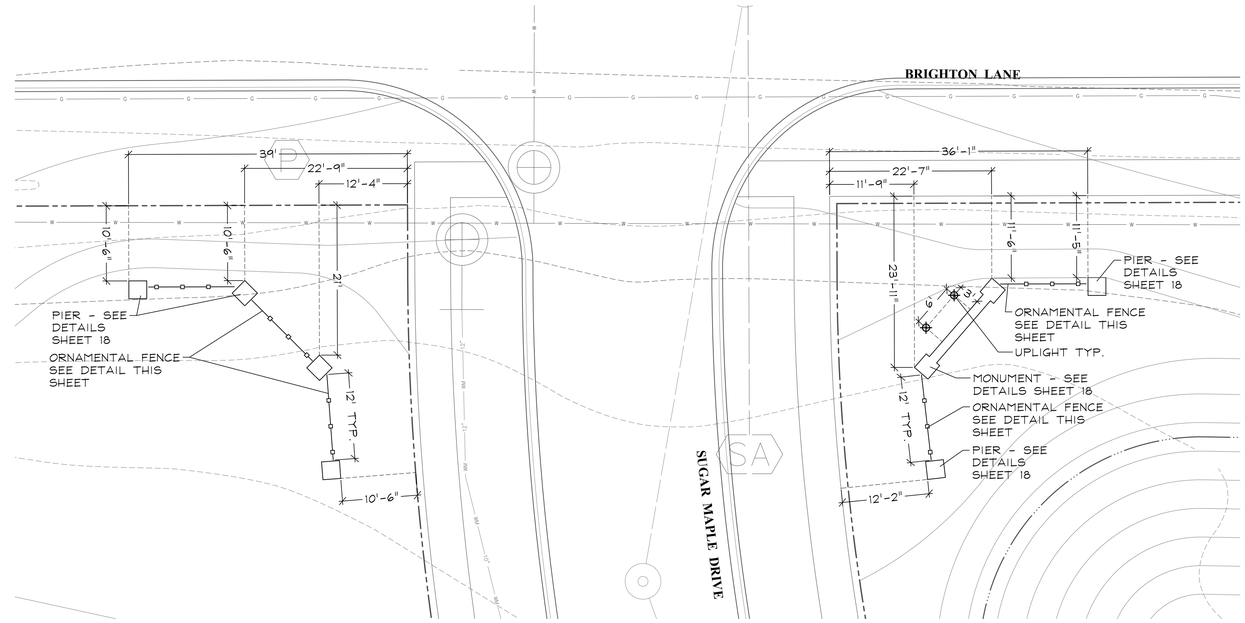
WOODLAND MANAGEMENT PLAN

2	8.10.18
1 - FOR BID	6.18.18
REVISIONS	

DATE	6.11.18
PROJECT NO.	CA1624
DRAWN	GFB
CHECKED	MGM
SHEET NO.	

Know what's below. Call before you dig.

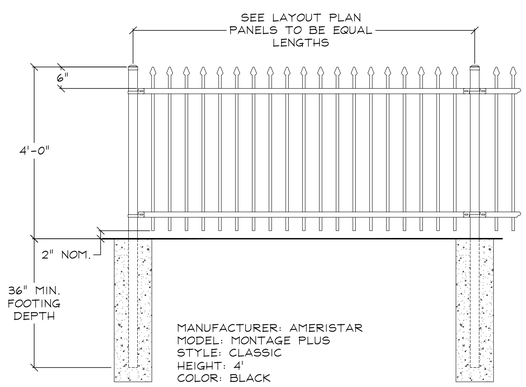
WRBFB
PLOT CONFIG:



NORTH ENTRY MONUMENT LAYOUT PLAN

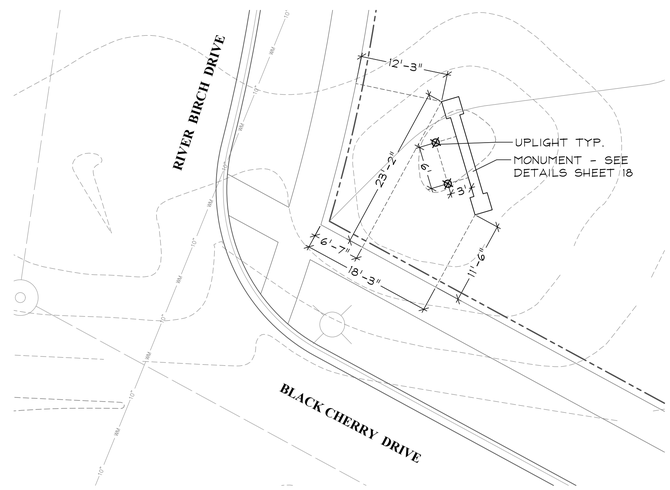
0 5' 10' 20' 30'
SCALE: 1"=10'

NORTH



ORNAMENTAL FENCE DETAIL

SCALE: NTS



SOUTH ENTRY MONUMENT LAYOUT PLAN

0 5' 10' 20' 30'
SCALE: 1"=10'

NORTH

MATERIAL SCHEDULE

(APPROVED EQUALS ALLOWED - SEND ALTERNATIVES TO LANDSCAPE ARCHITECT AND OWNER'S REPRESENTATIVE FOR APPROVAL)

ITEM	MANUFACTURER	MODEL	QTY	COMMENTS/CONTACT
MONUMENT UPLIGHT	B-K LIGHTING	YOSEMITE	4	CATALOG NUMBER: YO-LED-x45-WW-BZP-9-11-CV
4' ORNAMENTAL FENCE	AMERISTAR	MONTAGE PLUS	60 L.F.	CLASSIC STYLE COLOR: BLACK
MONUMENT			2	
PIER			6	

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MIDWEST ECOLOGICAL, INC.
P.O. BOX 321
GILBERTS, ILLINOIS 60136

FORESTRY
URBAN FOREST MANAGEMENT, INC.
960 ROUTE 22, SUITE 207
FOX RIVER GROVE, ILLINOIS 60021

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MONUMENT LAYOUT PLANS

2	8.10.18
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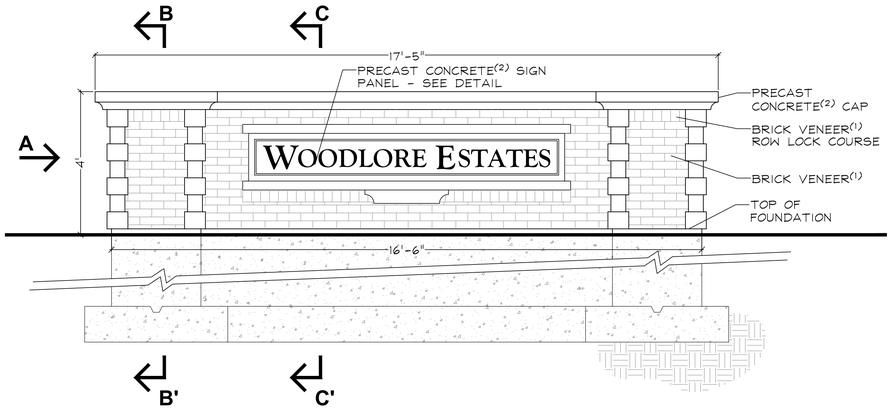
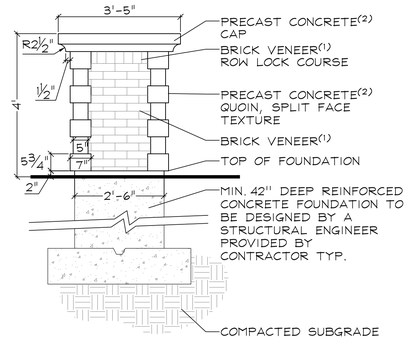
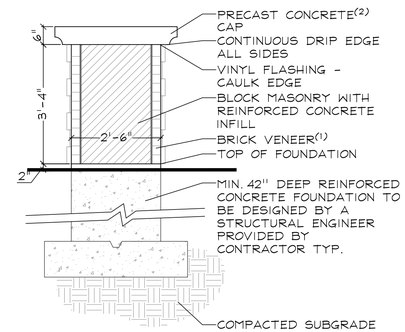


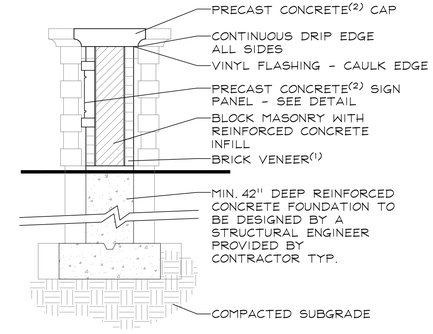
MONUMENT FRONT ELEVATION
SCALE: 1/2"=1'-0"



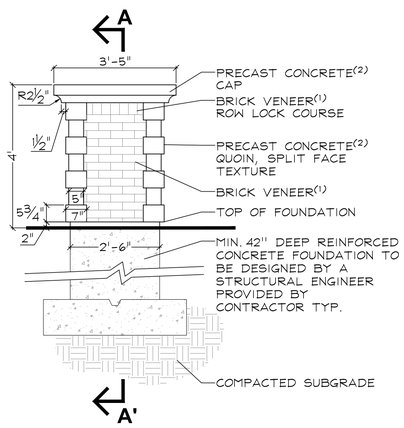
ELEVATION A



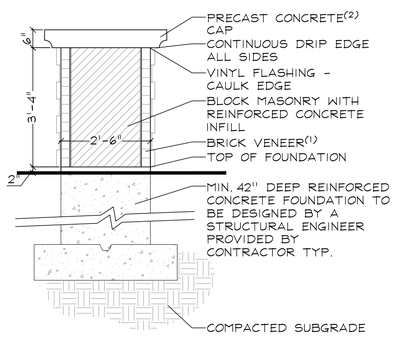
SECTION B-B'



SECTION C-C'



PIER FRONT ELEVATION
SCALE: 1/2"=1'-0"

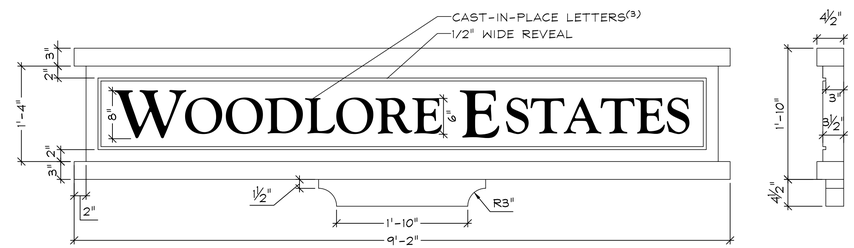


SECTION A-A'

(1) BRICK VENEER: MERIDIAN BRICK
MICHIGAN COLLECTION
GRAND RIVER
SUBMIT SAMPLES TO DEVELOPER FOR APPROVAL

(2) PRE-CAST CONCRETE COLOR: NATURAL
SUBMIT SAMPLES TO DEVELOPER FOR APPROVAL

(3) SIGN LETTERING FONT: GOUDY OLD STYLE
PAINTED BLACK



SIGN PANEL DETAILS
SCALE: 1"=1'-0"

MONUMENT NOTES

1. Contractor shall submit color and material samples to owner for approval prior to construction.
2. Submit shop drawings for review to Landscape Architect and Owner for approval prior to installation.
3. Reinforced concrete foundation to be designed by Contractor's Structural Engineer.
4. Contractor shall verify all existing conditions in the field prior to construction and shall notify Landscape Architect of any variance from construction drawings.
5. Contractor shall verify underground utility lines and is responsible for any damage.
6. Contractor shall secure and pay for all permits, fees, and inspection necessary for the proper execution of the work and comply with all codes applicable to this work.

ENTRANCE MONUMENT SPECIFICATIONS

1.0 DESCRIPTION OF WORK

A. The work consists of all labor, materials, work and equipment necessary and required to complete monuments, fence and foundations as shown on drawings or specified herein, including, but not limited to:

1. Submission of color and material samples
2. Submission of shop drawings
3. Submission of construction schedule
4. Verification of existing conditions and underground utilities
5. Secure and pay for all permits, fees, inspections and schedule all inspections related to work, including J.U.L.I.E. locates.
6. Comply with all applicable codes

2.0 QUALITY ASSURANCE

A. Construction shall conform to ©Building Code Requirements for Engineered Brick Masonry," BIA, latest edition.

B. All brick and stone shall be finest architectural grade free of cracks, chips, defects, etc.

C. Installation shall be by a company continuously and regularly employed in the installation of brick and stone monuments for a period of at least 5 consecutive years.

D. No masonry shall be laid when the temperature is expected to fall below 40 degrees F, unless suitable means, submitted in writing to the owner, are provided to heat materials and protect the work. Protect work from cold and frost and insure that mortar will harden without freezing. N o additives shall be used, unless approved in writing by the owner.

E. All corners of monuments and piers are to be staked by engineer and verified by the contractor.

3.0 JOB CONDITIONS

A. Examine and evaluate grades, and soils. Provide soil testing and verify soils structural integrity. Observe the conditions under which work is to be performed and notify the owner of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

B. Utilities: Review underground utility location maps and plans; Notify J.U.L.I.E.; demonstrate an awareness of utility locations; and certify acceptance of liability for the protection of utilities during course of work. Contractor shall be responsible for any damage to utilities or property.

C. All streets and curbs must be cleaned at the end of each working day.

D. All OSHA requirements for safety must be adhered to at all times.

4.0 GUARANTEES

A. Guarantee monuments 1 year from final acceptance on owner's representative on workmanship and materials.

B. Where failures have occurred resulting from the concrete not meeting the specified design strength, or workmanship, it shall be the responsibility of the subcontractors in connection with the supplier to take whatever corrective actions are necessary to eliminate the problem. In addition, it shall be their responsibility to make restitution for their resulting repair work created by the problem.

5.0 SUBMITTALS

A. Construction Schedule: After award of the Contract, the Contractor shall prepare and submit to the owner or an owner authorized representative an estimated construction progress schedule for the work, including sub-schedules of related activities which are essential to its progress, as well as lead-time for materials.

1. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction. Schedule to represent a continuous flow of construction activities so that there are no days of non-activity on site.

B. Product Samples: Submit samples of stone, architectural pre-cast, mortars and sealants, slate, light fixtures, tile, and ornamental fencing for the owner's design conformance review prior to delivery to site.

C. Product Data: Submit product data for stone, limestone, architectural pre-cast, mortars and joint sealants, slate, tile, light fixtures, and ornamental fencing.

D. Provide certificate of insurance per the owner's requirements.

E. Provide names and contact information for any subcontractors and suppliers.

F. Shop Drawings:

1. Prepare and submit to the Owner's Representative for design conformance review complete cutting and setting drawings for all masonry work:
2. Submit one (1) set prints with following items in detail:
   a) Sizes
   b) Sections
   c) Dimensions and numbering of stone and brick.
   d) Arrangements of joints and bond.
3. Show jointing as indicated on the contract drawings, unless modification is reviewed for design conformance by Owner's Representative prior to preparation of shop drawings.
4. Establish jointing in accordance with industry standards and practices where not indicated on contract drawings.

6.0 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Loading and Shipment:

1. Pack carefully for transportation, with exercise of all customary and reasonable precautions against damage in transit, all brick, and limestone to be used for the work.
2. Load and ship all brick and cut stone in a sequence mutually agreed upon by the General Contractor and the material supplier.

B. Unloading and Storage:

1. Receive and unload at site all brick and stone with necessary care in handling to avoid damage or soiling.
2. Store brick and stone clear of ground on non-staining skids. Wood containing tannin, chemical treatment, or excessive amounts of resin shall not be used.
3. Cover brick and stone with waterproof, clean canvas, or polyethylene for protection from construction or natural elements.

7.0 INSTALLATION

A. Mortar:

1. Cement: white, non-staining masonry cement, conforming to ASTM-C91.
2. Sand: Clean, sharp, and washed, capable of passing a No. 16 sieve, and in conformance with ASTM-C1AA. Carefully select sand for use in pointing mortar for color to match limestone. For pointing mortar, select a white sand.
3. Lime: Hydrated, conforming to ASTM-C207, Type S.
4. Water: Clear, non-alkaline, potable and free of oils, salts, and other harmful elements.

B. Foundation

Concrete mix air entrainment, compressive strength at twenty-eight (28) days, and slump are to be designed and specified by the contractor's structural engineer.

C. Mortar Beds:

1. Lay brick with full mortar coverage on horizontal and vertical joints in all courses.
2. Provide sufficient mortar on ends of brick to completely fill head joints.
3. Rack closure into place with head joints thrown against two adjacent bricks in place.

D. Mortar Joints; Horizontal and vertical face joints:

1. Nominal thickness: 3/8 inch.
2. Construct uniform joints.
3. Shove vertical joints tight.
4. Tool concave joints in exposed surfaces when thumbprint hard.
5. Width, depth, and tooling of all mortar joints shall be consistent and shall not vary more than 1/8".
6. Movement joints: Keep clean of all mortar and debris.

E. Flashing:

1. Install complete and continuous under stone copings and other projections.
2. Lap joints 6". Seal entire contact surface with mastic.
3. Provide a mortar wash at the base of the cavity, underneath the through-wall flashing, pitching out.
4. Cover flashing with mortar.

F. Weepholes

1. Provide 3/8" cotton rope weeps. Rope weeps shall extend thru the veneer face and inside the cavity, lying on top and along the bottom length of the flashing. Cut rope flush with wall face.
2. Maximum spacing: rope weeps: 16 inches o.c., at wall base; 16 inches o.c. at lintels above openings.
3. Keep weepholes and area above flashing free of mortar droppings.

8.0 CLEAN UP AND PROTECTION

A. All material shall be washed with fiber brushes, soap powder, and clean water or Owner reviewed mechanical cleaning process.

B. Sand blasting, wire brushes, or acids shall not be used. Exceptions may be considered if reviewed by the Owner or an Owner authorized representative.

C. During work, store materials and equipment as directed by the owner.

D. Protect work and materials from damage due to operations by other trades and trespassers. Maintain protection during installation.

9.0 INSPECTION AND ACCEPTANCE

A. The Owner and or the Owner's representative reserves the right to inspect materials and workmanship at the site prior to, during construction, or at the time of inspection for compliance with these specifications.

B. Notify the Owner's representative when completed, for final design conformance review.

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CRYSTAL LAKE, ILLINOIS

MONUMENT DETAILS

REVISIONS	
2	8.10.18
1 - FOR BID	6.18.18

DATE	6.11.18
PROJECT NO.	CA1624
DRAWN	GFB
CHECKED	MGM
SHEET NO.	18 OF 21

811 Know what's below. Call before you dig.

WRSFS
PLOT CONFIG:

I. GENERAL SPECIFICATIONS

A. Scope of Work

1. This work shall consist of preparing the planting beds, seedbed or ground surface, and furnishing, transporting and placing plants, mulch, seed, sod, fertilizer and other materials required in the specified operations.
2. Planting required for this work is indicated on the Landscape Plans and, in general consists of the following:
   a. The establishment of trees, shrubs, perennials, annuals, lawn and natural areas as shown on the Landscape Plans;
   b. The provision of post-planting management as specified herein;
   c. Any remedial operations necessary for conformance with The Landscape Plans as specified in this document;
   d. The design, furnishing and installation of a complete underground sprinkler system at locations noted on plan.

B. General

1. Permits

   The Landscape Contractor shall be responsible for obtaining any permits required for the completion of the work and shall be responsible for the cost of the same.

2. Field Verification

   Upon notice to begin work the Landscape Contractor shall verify all existing conditions of the site and shall report any conditions that will impede the beginning of work to the Landscape Architect in writing. The Landscape Contractor shall examine areas, conditions, grades, soils and water levels under which work is to be performed and notify the Landscape Architect of conditions detrimental to the proper and timely completion of the work.

3. Existing Utilities

   The Landscape Contractor shall verify location of all underground utilities before construction. Contact J.U.L.I.E at 1.800.892.0123; 48 hours prior to digging. Notification of any disturbance of existing utilities shall be given to the Landscape Architect immediately. Should uncharted or incorrect utilities be encountered, notify the Landscape Architect immediately.

4. Inspections of Project

   During the construction period, all phases of work shall be available for inspections by the Landscape Architect. All plant material shall be subject to inspection and approval, and the Landscape Architect reserves the right to reject any plants which fail to meet the standards of this inspection. The Landscape Architect reserves the right to inspect nursery stock either at place of growth or at site for compliance with requirements of variety, size and quality.

C. Quality Assurance

1. The Landscape Contractor shall provide at least one person who shall be present at all times during execution of this portion of the work and who shall be thoroughly familiar with the type of materials being installed and the best methods for their installation and who shall direct all work performed under this Section and shall comply with work site requirements.
2. The Landscape Contractor must verify with the Landscape Architect at the commencement of work that he has the most current set of plans for the project and that one set of the current plans, clearly marked "Field Set", must be on the jobsite at all times.
3. The Landscape Contractor shall provide protection for structures, utilities, roads, trees and vegetation from damages caused by settlement, undermining, washout and other hazards created by landscape operations.
4. The Landscape Contractor shall provide and maintain fences, planking, guard lights, barricades, warning signs and guards as necessary for protection of material storage, curbs, sidewalks, streets, drives and adjoining property.
5. Any damage to utilities, structures, plantings, or lawns which result from the Landscape Contractor's course of work will be repaired at the Landscape Contractor's expense, to the satisfaction of the Landscape Architect, in a reasonably timely manner with as little inconvenience to the Owner as possible.
6. Existing trees, shrubs and plant material to remain shall be protected. Damage to existing plants which result from the Landscape Contractor's course of work shall be repaired by a qualified nurseryman or replaced with approved material per village ordinance at the expense of the Landscape Contractor.
7. All planting techniques and methods shall be consistent with the latest edition of "Horticulture Standards of Nurseryman" and as detailed on the drawings.
8. Landscape Contractor shall maintain all relevant erosion control devises destroyed or disrupted during landscape installation. Erosion control devises include measures shown on the approved erosion control plans, plus any additional measures deemed necessary by the Owner or public agency having jurisdiction over erosion control. Erosion control devices include, but are not limited to, silt fence, straw bales, erosion control logs, filter fabric in storm structures, filter baskets ditch checks and siltation basins.

D. Substitutions

1. Substitution from the approved plans will be accepted only when satisfactory evidence in writing is submitted to the Landscape Architect,showing that the plant specified is not available.
2. Landscape Contractor shall submit request for approval to substitute plant material available and shall include Common and Botanical names and size of substitute material.
3. Only those substitutions of equivalent size and having essential characteristics similar to the originally specified material will be approved.
4. Acceptance or rejection of substitute plant materials will be issued in writing by the Landscape Architect, following approval by Lennar and the governing Municipality or Regulatory Agency.
5. Any unauthorized substitutions will be removed and replaced by the Landscape Contractor at the expense of the Landscape Contractor.

E. Submittals

1. Nursery List: In Bid Proposal Form Landscape Contractor shall identify a list of area nurseries from where nursery stock for the job will be obtained.
2. Materials List: Before any plant materials are delivered to the job site, submit to the Landscape Architect a complete list of all plants and other items to be installed and the nursery sources.
3. Certification of Inspection: Shall accompany each shipment of plants as may be required by law for transportation. File certificates with the Landscape Architect prior to acceptance of the material. Inspection by Federal or State authorities at place of growth does not preclude rejection of the plants at the site.
4. Planting Schedule: Submit proposed planting schedule with dates for review and inspection of plants by the Landscape Architect prior to planting.
5. Soil Tests: Submit two (2) copies of soils test of existing topsoil with recommendations for soil amendments for Landscape Architect's review.
6. Seed: Submit seed vendor's certification for required grass seed mixture, indicating percentage by weight, and percentage of purity, germination, and weed seed for each grass species and date tested.
7. Sod: Submit sod grower's certification of grass species. Identify source location in Bid Proposal Form.
8. Mulch and Erosion Control Blankets: Submit two (2) samples of shredded hardwood bark mulch, erosion control blankets, and all other products and materials as specified on plans to Landscape Architect for review and written approval.
9. Maintenance Instructions: Submit to the Landscape Architect typewritten instructions recommending procedures to be established by the Owner for the maintenance of landscape work after preliminary acceptance of plantings and turf areas. Submit prior to beginning of warranty period. Instructions shall include: watering, fertilizing, spraying, mulching and pruning for plant material and trimming groundcover. Instructions for watering, fertilizing and mowing grass areas shall be submitted prior to request for preliminary inspection for acceptance.

F. Product Handling

1. Delivery and Storage
   a. Deliver all items to the site in their original containers with all labels intact and legible at the time of inspection.
   b. Immediately remove from the site all plants which are not true to name and all materials which do not comply with the provisions of these Specifications.
   c. Use all means necessary to protect plant materials before, during, and after installation and to protect the installed work and materials of all other trades.
   d. Cover all plant material transported in open vehicles with a protective covering to prevent windburn.
2. Time of Planting
   a. All planting shall be performed during favorable weather conditions and only during normal and accepted planting seasons when satisfactory growing conditions exist.
   b. The planting operations shall not be performed during times of extreme drought, when ground is frozen or during times of other unfavorable climatic conditions unless otherwise approved by the Landscape Architect. The Landscape Contractor assumes full and complete responsibility for such plantings and operations.

G. Materials

1. Plant Material

   Provide plants typical of their species or variety with normal, densely developed branches and vigorous, fibrous root systems. Provide only sound, healthy, vigorous plants free from defects, disfiguring knots, sunscald injuries, frost cracks, abrasions of the bark, plant diseases, insect eggs, borers, and all forms of infestation. All plants shall have a fully developed form without voids and open spaces.

   a. Balled and burlapped plants shall have a firm natural ball of earth of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Provide ball sizes complying with the latest edition of the "American Standard for Nursery Stock". Cracked or mushroomed balls are not acceptable
   b. Tree spade transplanting is acceptable for plants 6" caliper and larger after acceptance of plant by the Landscape Architect. Tree spade must be of a size generally accepted in the trade to safely move the tree size.
   c. Container grown stock shall be grown in a container for a sufficient length of time for the root system to have developed to hold its soil together, firm and whole.
      (i) No plants shall be loose in the container.
      (ii) Container stock shall not be pot bound.
      (iii) All container plants used on the project shall conform to the sizes indicated on the plant list and on the drawings.
   d. No evidence of wounds and/or pruning cuts shall be permitted unless approved by the Landscape Architect.
   e. When specified by caliper, provide shade and ornamental trees with a single main trunk. When specified by height, provide shade and ornamental trees as multi-stemmed plants with not less than three main trunks and side branches that are generous and well twigged.
   f. Evergreen trees shall be branched to the ground unless otherwise specified and accepted.
   g. Provide plants matched in form when arranged in groups.
   h. All plants shall be nursery grown under climatic conditions similar to those in the locality of the project for a minimum of two years. Comply with sizing and grading standards of the latest edition of "American Standards of Nursery Stock" A plant shall be dimensioned as it stands in its natural position. No plants shall be loose in the container.
      (i) Shade Tree and Ornamental Tree caliper shall be measured at a point on the trunk six (6) inches above natural ground line for trees up to and including four (4) inches in diameter, and at a point twelve (12) inches above the natural ground line for trees over four (4) inches in diameter.
      (ii) Height of Evergreen Trees is measured from the natural ground line to the first lateral branch closest to the top.
      (iii) Height of Clump Ornamental Trees is measured from the natural ground line to the beginning last year's growth.
      (iv) Shrub and small plants shall meet the requirements for spread and/or height indicated on the plant list and with not less than the minimum number of canes required by ANSI Z60.1 for the type and height of shrub required.
2. Sub-drainage Systems
   a. Provide piping types and sizes indicated. Provide matching reducers, adapters, couplings, fittings and accessory components to ensure continuity of the sub-drainage system.
      i) Plastic tubing shall be ASTM F405, corrugated Polyethylene drainage tubing, perforated or solid as required.
      ii) Sub-drainage fill shall be AASHTO M43 (3/8" to 3/4") clean uniformly graded stone or gravel.
      iii) Sub-drainage filter fabric shall be DuPont "Typar" or other non-woven porous polypropylene fabric approved by the Landscape Architect.
3. Grass Seed
   a. All seeds shall be guaranteed by the vendor to be true to name and variety.
   b. Seed mixtures shall be fresh, clean new crop with a tolerance for purity and germination established by the Official Seed Analysts of North America. Seed will not contain any noxious weed seeds.
   c. Seed mixtures shall be proportioned by weight and shall be as specified on the drawings. If no seed mix is specified, the following general turf seed mix shall be used:

      65% Improved Kentucky Bluegrass (minimum three (3) varieties)

      25% Improved Perennial Ryegrass (minimum two (2) varieties with endophytes)

      10% Creeping Red Fescue

      If this general turf seed mix is used, the Landscape Contractor must submit the vendor's seed varieties, composition and application rate to the Landscape Architect for approval prior to ordering.
4. Erosion Control Blanket
   a. Futerra environet seed blanket matting shall be used. Secure with 4" biostakes.
5. Sod

   Sod used shall be an approved blend of improved Kentucky Bluegrass (such as: Midnight, Allure, Viva, Washington and Liberty) with a mineral back that is adapted to the locality of work. It shall be either nursery grown or field grown and be well rooted. The consistency of adherent soil shall be such that it will not break, crumble, or tear during handling and placing of the sod. Landscape Architect reserves the right to reject unacceptable sod.

   a. Each piece of sod shall be well covered with turf grass, shall not be less than two (2) years old, shall be free from noxious weeds and other objectionable plants, and shall not contain substances injurious to growth.
   b. All sod used shall comply with state and federal laws with respect to inspection for plant diseases and insect infestation.
   c. Each sod shipment shall be accompanied by an invoice from the vendor giving quantity and certifying that the sod received meets all requirements contained in these specifications.
6. Seed Fertilizer
   a. Fertilizer for seeded areas shall be a granular non-burning product from a commercial source composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer, uniform in composition, free flowing and suitable for application with approved equipment. Fertilizer types and ratios shall be as follows:
      i) Starter fertilizer with an approximate analysis of 13-25-12 at the rate of 4 lbs. per 1,000 S.F. or similar composition approved by the Landscape Architect.
      ii) Post emergent fertilizer with an approximate analysis of 25-0-5 at a rate of 4 lbs. per 1,000 S.F. or similar composition approved by the Landscape Architect.
7. Sod Fertilizer
   a. Fertilizer for sod areas shall be a granular non-burning professional product from a commercial source, uniform in composition, free flowing and suitable for application with approved equipment. Fertilizer ratio shall be a ratio of 13-25-12 at the rate of 4 lbs. per 1,000 S.F.
8. Plant Fertilizer
   a. Fertilizer for plants shall be a granular non-burning standard commercial grade product, uniform in composition, free flowing and suitable for application with approved equipment and an analysis of 14-14-14 at the rate of 6 lbs. per 1,000 S.F.
9. Native Planting Mixtures

   Provide fresh, clean, new crop of the species and proportions as specified. Native seed and live plant material shall be obtained from a reputable supplier (approved by Landscape Architect) that has collected from sources west of the Mississippi River within the same EPA Level III Ecoreqion as the project site (Central Corn Belt Plains). Any material sourced from outside this ecoregion must be approved by the Landscape Architect prior to installation.

   For each species, the amount of seed indicated on the specifications shall mean the total amount of pure live seed (PLS) per acre. Seed tags and PLS testing information shall be provided to the Landscape Architect prior to seeding.

   It is the sole responsibility of the Native Landscape Contractor to provide approved seed that meets industry-standard PLS requirements.
10. Mulch
    a. Mulch for tree and shrub planting beds shall be dark shredded hardwood bark mulch, six month old, not larger than 4" in length and 1/2" in width, free of woodchips and sawdust. Submit sample to Landscape Architect for approval.
    b. Mulch for perennial flower, annual flower and groundcover planting beds shall be pinebark fines. Submit sample to Landscape Architect for approval.
11. Topsoil
    a. Topsoil shall be available adjacent to the community site for use on project or in backfill mixes as specified. Initial fine grading to be done by Excavation Contractor.
    b. Touch up movement and placement of this topsoil shall be at the sole expense of the Landscape Contractor.
    c. Topsoil stockpile placement will be coordinated with Excavator to ensure easy access to Contractor.
12. Planting Bed Soil Mixture (Perennial, Annual and Groundcover Beds)
    a. Provide planting soil mixture consisting of equal parts cooled mushroom compost and pinebark fines (Same as Midwest Trading CM30 mix) at 1 C.Y. per 100 S.F. incorporated into all perennial, annual and groundcover areas. Planting pits shall be excavated and filled with friable topsoil (stockpiled at site) to a depth of 8" prior to adding and incorporating planting bed soil mixture.
13. Accessories
    a. Water: Water provided by the Landscape Contractor shall be free of substances harmful to plant growth. All necessary hose piping, tank truck and other methods of transportation shall be supplied by the Landscape Contractor.
    b. Downspout Splash Areas:
       i) Downspout splash areas in lawns shall be 24" concrete splash blocks.
       ii) Downspout splash areas in mulch shall be washed gravel sub-base 0.5-0.75" diameter and 3-4" diameter granite cobblestone surface with geotextile filter fabric lining sides and bottom of trench.
    c. Sand: Sand shall be coarse "torpedo" sand.
    d. Pea gravel: Pea gravel shall be 1/8" to 1/4" washed gravel.
    e. Retaining Walls: Retaining walls must always be installed in strict compliance with manufacture's recommendations for sizing and reinforcement
       i) Retaining wall material shall be as specified on the drawings or as approved by the Landscape Architect
    f. Anti-Desiccant: Anti-Desiccant shall be an applicable emulsion which forms a transparent protective film over plant surface, permeable enough to permit transpiration. (Wilt-Pruf, manufactured by Nursery Specialty Products, Inc. or approved equal).
    g. Herbicide: Herbicide shall be a granular form of herbicide applied in shrub and ground cover beds in strict accordance with the manufacturer's directions and recommendations. Acceptable products are "Treflan", "Ronstar" or approved equal.

H. Installation and Execution

1. Inspection
   a. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that such work is complete to the point where this installation may properly commence. Verify that planting may be completed in accordance with the original design and the referenced standards. Work will commence only when satisfactory conditions exist.
   b. Check that grading, including spreading of topsoil and all other sub-surface work in lawn areas have been completed and accepted by Lennar. Start of work in this section shall constitute acceptance of grade. Lawn irrigation system must be completed and in operation before seeding and sodding begins.
   c. Saturate and fill tree and shrub pits with water to test drainage before planting. Provide gravel drains and venting tubes at pits, which are more than half full of water after 24 hours.
   d. Landscape Contractor shall notify the Landscape Architect prior to plant installation. The Landscape Architect, at his discretion, may inspect all plant material and layout prior to planting.
2. Preparation

   Trees, Shrubs, Perennials, Annuals and Groundcovers

   a. Planting shall be performed only by experienced workmen familiar with planting procedures under the supervision of a qualified supervisor.
   b. Locate plants as indicated or as approved in the field by the Landscape Architect after staking by the Landscape Contractor. If obstructions are encountered that are not shown on the drawings, do not proceed with planting operations until alternate locations have been selected by the Landscape Architect.
   c. Excavate circular plant pits with tapered sides as shown on the drawing details. In general, all plant pits shall have a rounded bottom with the depth of the pit equal to the depth of the ball to be planted. The diameter of the pit shall be a minimum of two (2) times the width of the ball.
   d. Excavate all clay and debris to 8" depth beneath all perennial, ornamental grass, annual flower, and groundcover beds. Backfill with 12" amended topsoil, thus resulting in all these areas being elevated or crowned by 4" wherever site drainage allows.

   Seeding and Sodding

   a. Seed and sod bed preparation shall not be started until all stones, boulders, debris, and similar material larger than 1 inch in diameter have been removed. The area to be seeded shall be worked to a minimum depth of 6 inches with a disk or other equipment, reducing all soil particles to a size not larger than 1 inch in the largest dimension. Bed prep shall occur on the contour, where possible. The prepared surface shall be relatively free from all weeds, stones, roots, sticks, rivulets, gullies, crusting and caking. Do not overwork or powder final seedbed.
   b. Upon completion of the above, any rocks or stones larger than one (1) inch in diameter shall be removed from the surface prior to seeding. If excessive amount of rocks are present in native soil Contractor should contact the Landscape Architect immediately.
   c. Landscape Contractor shall remove all debris and dispose of such material legally off-site.
   d. The areas to be seeded shall be assumed to be at final grades established by Excavator. The Landscape Contractor, however, shall be responsible for the proper drainage of the entire area. The Landscape Contractor shall fine grade all turf areas including any grading necessary to eliminate ponding of water, ruts or ridges. Limit preparation to areas which will be grassing within 48 hours.
   e. Immediately prior to the seed and sod bed preparation, specified fertilizer nutrients shall be uniformly spread at the following rate:
      i) 5 lbs. per 1000 S.F.
   f. Final surface of topsoil immediately before seeding shall be within plus or minus 1/2" of required elevation, with no pockets or low spots in which water can collect. Restore prepared areas to specific condition if eroded, settled, or otherwise disturbed after fine grading and prior to seeding or sodding. Finish grade surface with a drag or rake, Round out all breaks in grade, smooth down all lumps and ridges, fill in all holes and crevices.
   g. In the event of settlement, re-adjust the work to required finish grade.
3. Planting

   Plant nursery stock immediately upon delivery to the site and approval by the Landscape Architect. If immediate planting is not possible a holding area on-site must be established in a location approved by Lennar. All plant material in the holding area must have the rootball heeled in damp mulch and be protected from excessive sun and wind. The Landscape Contractor must operate and maintain the holding area in a neat and orderly appearance.

   All planting shall be performed during favorable weather conditions and only during normal and accepted planting seasons when satisfactory growing conditions exist. The planting operations shall not be performed during times of extreme drought, when ground is frozen or during times of other unfavorable climatic conditions unless otherwise approved by the Landscape Architect. The Contractor assumes full and complete responsibility for such plantings and operations.

   Trees and Shrubs

   a. Set plant material in the planting pit to proper grade and alignment. Set plants upright, plumb and faced to give best appearance or relationship to each other or adjacent structure. Set plant material 2" above the adjacent grade. The Contractor is responsible for planting to correct grades and alignment and all plants shall be set so that when settled will bear the same relationship to finished grade as they did before being transported.
   b. Remove all non-biodegradable strings and twine from top of ball. Remove non-biodegradable burlap from to 1/3 of ball after the tree is set in the planting hole. The wire basket should remain. Fold the top portion of the wire basket into the hole.
   c. Any topsoil excavated from plant pits shall be used in the backfill soil mixture. No filling will be permitted around trunks or stems. Backfill the pit with topsoil. Do not use frozen or muddy mixture for backfilling. Form a ring of soil around the edge of each planting pit to retain water.
   d. After setting plants in pit to proper grade compact 6" of soil around base of ball. Fill the entire planting hole with water and allow to soak in. Gradually backfill remaining space around the ball or roots and compact the soil thoroughly using water to eliminate all voids and thoroughly soak the plant root ball.
   e. Within 24 hours of planting slowly re-water the plant thoroughly soaking the root ball again.
   f. Install enough topsoil to insure finished grades are met after settling.
   g. All excess soil, other than topsoil, excavated from pits, shall be removed from the holes and left on site in locations designated by Lennar.
   h. After planting apply specified commercial pre-emergent herbicide per manufacturer's directions to all shrub beds.

   Perennials, Ornamental Grasses, Annual Flowers and Groundcovers

   a. Where perennials, ornamental grasses, annual flowers and groundcovers are specified on the plans, prepare entire plant bed incorporating a 1 C.Y. layer of planting soil mixture per 100 S.F. Incorporate commercial 14-14-14 fertilizer into prepared soil mixture at a approximate rate of 6 lbs. per 1000 S. F.
   b. Space plants in accordance with dimensions indicated on the plans. Adjust spacing as necessary to evenly fill planting bed with indicated quantity of plants. Plant to within 18" of the trunks of trees and shrubs or at edge of plant ball whichever is closest. Plant to within 12" of edge of bed.
   c. After planting apply specified commercial pre-emergent herbicide per manufacturer's directions to all planting beds. Confirm herbicide compatibility with all plant material in beds and notify the Landscape Architect immediately if a conflict exists.

   Seeding

   a. Install seed under favorable weather conditions unless approved by the Landscape Architect. The conditions of the guarantee apply regardless of the date of installation. The generally accepted times for seeding are:

      Spring - April 1st to June 15th

      Fall - September 15th to just before first frost
   b. Seed indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operations.
   c. Seed with specified seed mix at rate specified on the drawings or at a rate of 5 lbs. per 1000 S.F.
   d. Broadcast Seeding: Using a broadcast seeder, sow seed evenly over entire area by sowing equal quantities in two directions at right angles to each other. Do not seed when wind speed exceeds five (5) miles per hour. Seeding by hand is not allowed.
   e. Following seeding the area shall be lightly raked to incorporate seed into top 1/8" to 1/4" of soil. Remove all stones and other debris greater than 1 inch in any dimension which are visible shall be removed and disposed of legally off-site. Areas shall then be smoothed by rolling with a hand roller.
   f. Mechanical Seeding: Using a "Brillion-type" seeder and cultipacker, sow seed evenly over entire area sowing equal quantities in two directions at right angles to each other. Using this method raking and rolling is not required.
   g. Following seeding, all seed areas will be covered with specified erosion control seed matting and stapled in place.
   h. Following seeding, raking and matting, the entire area shall be watered by use of lawn sprinklers or other means approved by the Landscape Architect. Landscape Contractor shall assure initial watering continues until the equivalent of two inches of water has been applied to entire seed surface, at a rate which will not dislodge the seed.
   i. Landscape Contractor shall assure watering is repeated thereafter as frequently as required to prevent drying of the surface and to ensure proper establishment.
   j. Landscape Contractor shall mow the lawn area as soon as top growth reaches a 3 inch height. Cut back to 2 inch height. Not more than 33% of grass leaf shall be removed at any single mowing. The contract shall include a minimum of 3 (three) mowings. Repeat mowing as required to maintain specific height until Landscape Architect issues preliminary acceptance of completed work.
   k. It shall be the Landscape Contractor's responsibility to determine and implement whatever procedures deemed necessary to establish the turf as part of the work. Reseed bare areas and provide erosion control as necessary until complete establishment achieved.
   l. Areas of seed installation will not be accepted unit it meets the growth coverage specifications detailed by Illinois Department of Transportation.

   Sodding

   a. Transport sod in either a closed van or in properly covered open trucks.
   b. Maintain sod in a moist condition from cutting until placement. Any sod that has dried out, or excessively heated will be rejected and shall be immediately removed and legally disposed of off-site by the Landscape Contractor. Replacement of rejected sod shall be at the expense of the Landscape Contractor.
   c. Sod shall be placed within 24 hours of cutting. Do not use sod cut for more than 24 hours without the approval of the Landscape Architect.
   d. Sod shall be placed when the ground is in a workable condition and temperatures are less than 90oF. Do not lay dormant sod or install sod on saturated or frozen soil or during an extended drought.
   e. The sod shall be placed on the prepared surface with the edges in close contact and alternate courses staggered. Lay sod to form a solid mass with tightly-fitted joints. Butt ends and sides of sod strips. Do not overlay edges. Stagger strips to offset joints in adjacent courses. Remove excess sod to avoid smothering of adjacent grass. Provide sod pad top flush with adjacent curbs, sidewalks, drains, and seeded areas.
   f. In ditches, the sod shall be placed with the longer dimension perpendicular to the flow of water in the ditch. On slopes, install preliminary row of sod in a straight line, starting at the bottom of the slope, the sod shall be placed with the longer dimension parallel to the contours of the ground. Place subsequent rows parallel to and lightly against previously installed row. The exposed edges of sod shall be buried flush with the adjacent soil.
   g. All sod shall be rolled with a light drum roller to ensure contact with sub-grade, uniformity and foster root knitting.
   h. The sod shall be staked on all slopes of 3:1 or steeper to prevent slippage. Sod shall be staked with ±2 stakes per square yard of sod as necessary to stabilize with at least one stake for each piece of sod.
   i. Sodded areas shall be watered to ensure proper establishment. Sod shall be watered thoroughly with fine spray immediately after laying and not be allowed to dry out. Any sod that has shrunk shall be replaced. Landscape Contractor shall assure initial watering continues until the equivalent of two inches of water has been applied to entire sod surface, at a rate which will not dislodge the sod.
   j. Landscape Contractor shall assure watering is repeated thereafter as frequently as required to prevent drying of the surface and watering shall continue through preliminary acceptance to ensure proper establishment.
   k. Landscape Contractor shall mow the lawn area as soon as top growth reaches a 3 inch height. Cut back to 2 inch height. Not more than 40% of grass leaf shall be removed at any single mowing. The contract shall include a minimum of 3 (three) mowings. Repeat mowing as required to maintain specific height until Landscape Architect issues preliminary acceptance of completed work.

   Native Seeding and Planting

   a. The period for planting prairie seed shall be between April 1st and June 15th, or as soon thereafter as the soil is free of frost and in workable condition, and from September 15 to freeze up. If these dates are adjusted, it shall be the responsibility of the Landscape Contractor to ensure establishment of the seed.
   b. Remove existing grass, vegetation and turf. Dispose of such material legally off-site. Do not turn over into soil being prepared for lawns.
   c. If present, compacted soils shall be disked or raked prior to seeding. Remedial measures for the access area may at the direction of the Wetland Consultant, involve ripping from 12-18 inches of the soil horizon prior to disking.
   d. Prior to seeding, planting areas shall have at least twelve inches of clean un-compacted topsoil. Clumps, clods, stones of 2" diameter, roots and other extraneous matter shall be removed and disposed of legally offsite.
   e. Granular mycorrhizal inoculants shall be installed with the seed mix at a rate of 40 lbs\acre. Inoculant can be banded under seed, worked into seed or added into spray tanks. NATIVE AREAS SHALL NOT RECEIVE FERTILIZER.
   f. Contractor shall be solely responsible for the proper handling and storage of the seed according to the best seed handling and storage practices, including fungicide treatments and stratification considerations. Owner shall make no compensation for damage to the seed because of improper storage, cleaning, threshing or screening operations.

GRWA
GARY R. WEBER ASSOCIATES, INC.
LAND PLANNING
ECOLOGICAL CONSULTING
LANDSCAPE ARCHITECTURE
212 SOUTH MAIN STREET
WHEATON, ILLINOIS 60187
PHONE: 630-668-7197

CLIENT
LENNAR
1141 E. MAIN STREET
SUITE 108
EAST DUNDEE, ILLINOIS 60118

ENGINEER
MACKIE CONSULTANTS, LLC
9575 W. HIGGINS ROAD
SUITE 500
ROSEMONT, IL 60018

ECOLOGICAL
MIDWEST ECOLOGICAL, INC.
P.O. BOX 321
GILBERTS, ILLINOIS 60136

FORESTRY
URBAN FOREST MANAGEMENT, INC.
960 ROUTE 22, SUITE 207
FOX RIVER GROVE, ILLINOIS 60021

WOODLORE ESTATES
CRYSTAL LAKE, ILLINOIS
LANDSCAPE SPECIFICATIONS

REVISIONS	
2	8.10.18
1 - FOR BID	6.18.18

DATE	6.11.18
PROJECT NO.	CA1624
DRAWN	GFB
CHECKED	MGM
SHEET NO.	

811 Know what's below. Call before you dig.

WBS FS

PLOT CONFIG

I. GENERAL SPECIFICATIONS CONTINUED

g. Seeding operations, including installation of erosion control matting, must be accomplished within 24 hours of any area which is fine graded. Fine grade, plant and cover only areas small enough to be completed within the required time frame.

h. Except where site conditions preclude their use, seeding shall be performed using a Truax drill, Truax Trillion seeder, or comparable equipment designed specifically for the installation of native seed. For areas where site conditions preclude the use of specialized equipment, seed may be installed through hand broadcasting and followed by light raking. Hand broadcast seed shall be spread at twice the specified rate. Other methods of seed installation may be used with prior approval from the Landscape Architect.

i. Do not seed when wind velocity exceeds five (5) miles per hour. Equipment shall be operated in a manner to insure even distribution of seed and complete coverage of the entire area to be seeded.

j. Prior to starting work, all seeding equipment shall be calibrated and adjusted to sow seeds at the proper seeding rate. In general, the optimum seeding depth is 0.25 inch below the soil surface. Areas where the seed has not been incorporated into the soil to the proper depths will not be accepted, and no compensation for materials or labor for the rejected work will be made by the owner.

k. Seed mixture shall be as specified on the drawings or the specified Prairie planting mixture. Sow not less than specified rate.

l. If a broadcast method of seeding is used, the following requirements shall be met. Within twelve hours, if conditions permit or as soon thereafter as is practical rake prairie seed lightly into top 1/4" of soil, roll at right angles to the run-off with an approved type roller to compact the seedbed and place the seed in contact with the soil.

m. If a drill-seed method is used, rolling of the seedbed will not be required.

n. After the seeding, raking and rolling operations are completed, water with a fine spray and install specified erosion control blanket per manufacturer's specifications over the entire prairie area.

o. The Landscape Contractor shall monitor all seeded areas to insure at least one inch of water per week from a combination of watering and natural rainfall and shall mow plantings to a height of 6-10 inches for the enhancement of native species until preliminary acceptance by the Landscape Architect.

p. It shall be the Landscape Contractor's responsibility to determine and implement whatever procedures deemed necessary to establish the turf as part of the work.

q. Wet mesic and emergent areas shall be planted and seed allowed to germinate (if possible), prior to the flooding with significant amounts of water. Any areas of significant permanent water located within the planting area will receive live plugs in lieu of seed.

r. After seeding operation is completed, install erosion control blanket per manufacturer's specifications.

s. Emergent plugs, if used, shall be planted in natural groupings within designed areas containing saturated soils or inundation. Plants within groupings shall be planted at 2 foot centers.

t. Emergent plugs shall not be planted less than the specified rate and shall be protected with goose enclosures surrounding all natural groupings of plugs.

4. Preparation of Reconditioned Naturalized Areas

The Contractor chosen for the enhancement and maintenance of native areas must be must be experienced in the restoration, installation, and management of said areas. They must have a minimum of five years' experience in the field and shall be able to identify non-native and native plants by genus and species. It is imperative that a qualified Native Landscape Contractor perform the initial installation and maintenance.

A basic work procedure is outlined below. The contractor is required to evaluate all existing conditions prior to bidding the work. Any proposed changes to the work plan shall be submitted to the Landscape Architect as required under Section 1.3 (A)(B)

a. Woody Vegetation Removal

i. All woody, non-planted species shall be removed from basin slopes and bottoms for existing ponds

ii. Contractor will cut all woody species to be removed with hand tools including, but not, limited to gas powered chainsaws, gas powered clearing saws, bow saws, and loppers.

iii. All stumps shall be cut flat with no sharp points and to within two inches of surrounding grade. Stumps shall be painted with Garlon 4, or equivalent, immediately after cutting.

iv. A supply of chemical absorbent shall be kept on-site. Spills shall be properly cleaned up and reported immediately to the owner.

v. The contractor shall maintain copies at the project site of all current pesticide applicator's licenses, herbicide labels, and MSDS's (Material Safety Data Sheets) for all chemicals utilized during completion of work.

vi. Cut brush piles shall be disposed of off site legally. No cut brush shall be burned within city limits.

vii. A prescribed burn can be conducted on existing basins as per the Maintenance Section 3.4. Following burn, over-seed lower slopes and bottoms of existing basins with Wet Meadow species as necessary (see section 2.4B)

viii. Spot treat invasive and undesirable herbaceous species on existing basin slopes with glycophosphate to remove undesirable species in planted areas. Undesirable species are included, but not limited to, species list in 1.5C Guarantees.

ix. Over-seed slopes of existing basins with low profile prairie grasses (see section 2.4C) as necessary. Seeding protocol should follow Section 3.2D 8-12 noted below.

x. If adequate top soil is not present, top soil can be added to slopes with approval of Landscape Architect.

Repair: Repair any damages caused by Contractor during completion of the work. Said damages may include but are not limited to tire ruts in the ground, damage to lawn areas, damage to trails, etc. In the event any vegetation to be preserved is damaged, notify the owner within 24 hours. The Contractor will be liable for remedying damages to plant materials to the satisfaction of the owner.

5. Reconditioning Existing Turf

a. Recondition existing turf damaged by Contractor's operations, including storage of materials or equipment and movement of construction vehicles.

b. Provide fertilizer, seed and soil amendments as specified for new lawns and as required to provide a satisfactory reconditioned lawn. Provide topsoil as required to fill low areas and meet new finished grades.

c. Prior to over-seeding cultivate or rototill bare and compacted areas thoroughly to a depth of four (4) inches. Remove all rocks, stones, turf clumps and other debris larger than one (1) inch in diameter and rake smooth.

d. Remove diseased or unsatisfactory lawn areas. Do not bury into soil. Remove topsoil containing foreign materials resulting from contractor's operations, including oil drippings, stone, gravel and other construction materials.

e. Where substantial, but thin lawn remains, rake, aerate if compacted, and cultivate soil, fertilize and seed.

f. Water newly seeded areas. Maintain adequate soil moisture as specified for new lawns, until new grass is established.

6. Mulching

Trees and Shrubs

a. Apply the specified mulch to a depth of two (2) inches, evenly spread over the entire area of each tree basin and shrub bed. Maintain exposed root flare at all times. Thoroughly water mulched bed areas. After watering, rake mulch to provide a uniform finished surface.

Perennials, Ornamental Grasses, Annual Flowers and Groundcovers

a. Apply the specified mulch to a depth of one (1) inch, evenly spread over the entire area of each planting bed using care to keep foliage exposed. Thoroughly water mulched bed areas.

7. Pruning

a. Prune branches of deciduous stock, after planting, to preserve the natural character appropriate to the particular plant requirements. Remove or cut back dead and badly bruised branches, broken and tangled branches, damaged and unsymmetrical growth of the new wood, suckers, water sprout growth and unnatural growth habits. No plants will be sheared for any reason.

b. Prune with clean, sharp tools.

c. Prune trees and evergreens at the direction of the Landscape Architect and in accordance with standard horticulture practice to preserve the natural character of the plant.

d. In general, tree pruning requires removing 1/4 to 1/3 of the leaf bearing buds. Prune multiple leader plants to preserve the leader which best promote the symmetry of the plant. Do not apply paint to pruning marks.

8. Care of Existing Trees

a. Selectively prune existing trees in construction limits as required, at the direction of the Landscape Architect. Remove shoots, dead, rubbing and damaged branching.

b. Clean up miscellaneous organic debris within construction limits and dispose of legally off-site.

9. Clean-up

a. The Landscape Contractor shall store materials and equipment, during landscape work, where directed by the landscape architect.

b. The Landscape Contractor shall thoroughly clean the project area daily during the progress of work and upon completion of the work.

c. Landscape Contractor shall keep pavement clean and all work areas and adjoining areas in an orderly condition. The Landscape Contractor shall remove and clean any excess dirt or mud left on the streets adjacent to the site as a result of this work daily. The Landscape Contractor shall be liable for any future charges incurred to clean streets affected by his work.

d. No storing of rubbish or debris will be allowed on the site.

e. No debris shall be buried at the site.

f. No landscaping debris is allowed on the site dumpsters.

g. The Landscape Contractor shall protect the property of the owner and the work of other contractors.

h. The Landscape Contractor shall be directly responsible for all damage caused by the Landscape Contractor's activities and shall remove and properly dispose of all resultant dirt, rubbish, debris and other waste materials resulting from the work daily.

10. Inspections

In addition to normal progress inspections, the Landscape Contractor shall schedule and conduct the following inspections, giving the Landscape Architect at least 48 hours prior notice of readiness for inspection.

a. Inspection of plants and containers prior to planting.

b. Inspection of plant locations to verify compliance with the current revisions of the Landscape Plans and As-Built Drawings.

c. Preliminary acceptance inspection after completion of planting. Schedule this inspection sufficiently in advance and in cooperation with the Landscape Architect so that the inspection may be conducted in a timely manner.

d. Final acceptance inspection at the end of the maintenance period provided that all previous deficiencies have been corrected.

e. All other inspections necessary for replacement warranty work and completion of the project.

I. Maintenance and Monitoring

1. Traditional Landscaping: Landscape Contractor shall maintain all planting, starting with the planting operations and continuing until all planting for that portion of the project is complete and through preliminary acceptance in writing from the Landscape Architect.

a. Maintenance of plants and planting beds shall include resetting plants to proper grades or upright position, restoring planting saucers, tightening and repair of guy wires and stakes, weeding, cultivating, pruning, application of appropriate insecticides and fungicides necessary to keep the plant materials in a healthy growing condition and to keep the planted areas neat and attractive.

b. Maintenance of lawn areas shall be as specified, including spot weeding, mowing, application of weed and insect controls and reseeding necessary to promote proper establishment the lawn areas.

c. Contractor shall water all sod and plantings for the first two weeks following installation.

2. Native Planting Areas: The Owner shall notify the City upon completion of plantings. The Owner's Environmental Specialist shall inspect the plantings and provide the City with a copy of the planting locations, species, and quantities for verification by applicable regulatory authority.

a. Native planting areas shall be maintained as specified below, continue for the three full (3) years after preliminary installation acceptance, and meet annual establishment performance criteria:

i. First Season - With the exception of the emergent area, native seeding areas should be mowed to a height of 6" to control annual nonnative and invasive species early in the growing season. Mowing, including weed whipping, should be conducted during prior to weed seed production. Mowing height and timing may need to be adjusted per target species. Small quantities of undesirable plant species, shall be controlled by hand pulling prior to the development and maturity of the plant. Hand removal shall include the removal of all above-ground and below-ground stems, roots and flower masses prior to development of seeds. Herbicide should be applied as necessary by a trained and licensed operator that is competent in the identification of native and nonnative herbaceous plants. Debris and litter shall be removed from the native areas and storm structures shall be inspected and maintained as necessary.

ii. Second Season - Control of undesirable plant species during the second growing season shall consist primarily of precise herbicide application. Mowing and weed whipping shall be conducted as needed during the early growing season and as needed to a height of 6 to 8 inches to prevent annual weeds from producing seed. Debris and litter shall be removed from the native areas and storm structures shall be inspected and maintained as necessary.

iii. Third Year - Seasonal mowing and herbicide will continue as above but should be reduced over time. Debris and litter shall be removed from the native areas and storm structures shall be inspected and maintained as necessary. At the completion of the third growing season (dependent on fuel availability; dominance of graminoid species; and favorable weather conditions), fire may be introduced to the planted areas as a management tool.

b. General performance criteria is outlined below. Contractor is responsible to ensure native areas meet Federal, County and local requirements as necessary.

i. 1st Full Growing Season: 90% of cover crop shall be established. There shall be no bare areas greater than two (2) square feet in seeded areas. At least 25% of vegetation coverage shall be native, non-invasive species. At least 50% of the emergent species, if planted as plugs shall be alive and apparent.

ii. 2nd Full Growing Season: All areas with the exception of emergent zones shall exhibit full vegetative cover. At least 50% of the vegetation coverage shall be native, non-invasive species.

iii. 3rd Full Growing Season: At least 75% of vegetation coverage shall be native, non-invasive species. Non-native species shall constitute no more than 25% relative aerial coverage of the planted area. Invasive species for this project shall include the following: Ambrosia artemisiifolia & trifida (Common & Giant Ragweed), Cirsium arvense (Canada Thistle), Dipsacus laciniatus (Cut-leaved Teasel), Dipsacus sylvestris (Common Teasel), Lythrum salicaria (Purple Loosestrife), Melilotus sp. (Sweet Clover), Phalaris arundinacea (Reed Canary Grass), Phragmites australis (Giant Reed), Fallopia japonica (Japanese Knotweed), Rhamnus cathartica & frangula (Common & Glossy Buckthorn), Typha sp. (Broadleaf, Narrowleaf, and Hybrid Cattail) Lonicera sp. (Honeysuckle).

c. Long Term Wetland and Prairie Management/Maintenance

A Long -Term Operation and Maintenance Plan is included in the Home Owner's Association covenants with guidelines and schedules for burning, mowing, application of herbicide, debris/litter removal and inspection schedule for storm structures and sediment removal.

i. State and local permits shall be required prior to controlled burning. Burning shall be conducted by trained professionals experienced in managing smoke in urban environments. Prior to a controlled burn, surrounding property owners as well as local fire and police departments shall be notified. A burn plan detailing preferred wind direction and speed, location of fire breaks, and necessary personnel and equipment shall be prepared and utilized in planning and burn implementation.

ii. The initial burn shall be dependent on fuel availability which is directly related to the quantity and quality of grasses contained within the plant matrix. Timing of the burn shall be determined based on results of the annual monitoring indicating species composition of the management area and other analysis of management goals. Generally, burns shall be scheduled from spring to fall on a rotational basis. Burn frequency shall also be dependent on the species composition within the management area. Generally, a new prairie restoration area shall be burned annually for two years after the second or third growing season after planting and then every 2-3 years thereafter, burning 50-75% of the area.

iii. Owner to provide all supplemental watering and proper care and maintenance of all plant materials, seed and sod areas (except for native planting areas) after preliminary acceptance of the Landscape Contractor's work.

J. Preliminary Acceptance

1. When the preliminary landscape work is completed, including maintenance, the Landscape Architect will, upon request, make a preliminary inspection of initial installation to determine acceptability.

2. The inspection for preliminary acceptance of the initial installation will be for general conformance to establishment of turf areas, specified size, character and quality of plant materials, workmanship and maintenance and shall not relieve the Landscape Contractor of responsibility for full conformance of the contract documents, including correct species.

3. It shall be the responsibility of the Landscape Contractor to verify all work is completed for the initial installation and maintained as per plan prior to notifying the Landscape Architect for preliminary inspection.

4. For preliminary acceptance of the initial installation all plant material shall be in a healthy growing condition. Any plants, lawn areas, workmanship, etc. not meeting the standards will be rejected and the Landscape Contractor will be instructed to make the necessary corrections immediately before preliminary acceptance of the initial installation will be granted.

5. Seeded areas will be inspected for acceptance after the first mowing by the Landscape Contractor and will be satisfactory provided requirements, including maintenance, have been complied with and a uniform healthy close stand of the specified grass is established, free of weeds, bare spots exceeding 5 by 5 inches, undesirable grass species, disease, insects and surface irregularities.

6. Sodded areas will be inspected for acceptance after the first mowing by the Landscape Contractor and will be satisfactory provided requirements, including maintenance, have been complied with and when all areas show a uniform stand of the specified grass in a healthy, well-rooted, even-colored, viable lawn condition, free of weeds, undesirable grass species, open joints, bare areas, disease, insects and irregular surfaces.

7. The Landscape Contractor shall assume liability for the correction of his work and liability for any other charges incurred due to the correction of his work. The cost of follow-up inspections of the initial installation required to receive acceptance will be charged to the Landscape Contractor.

8. Upon the receipt of written acceptance of the preliminary inspection of the initial installation the Owner will be responsible for maintenance.

9. The warranty period will begin upon receipt of written acceptance of the preliminary inspection for initial installation from the Landscape Architect.

10. After preliminary acceptance of the initial installation and receipt of notification in writing from the Landscape Architect, the Landscape Architect will recommend the release of payment, less retainers deemed necessary by the Owner, for the completed work.

11. The release of all fees will be at the discretion of Lennar upon receipt of written invoice from the Landscape Contractor.

K. Warranty Agreement

1. The Landscape Contractor shall provide a replacement warranty for all plant material and shall guarantee all work free of any defect in quality or workmanship for a minimum period of one (1) year or until final inspection and written acceptance by the Landscape Architect.

a. Warranties of native plantings are excluded from this section and shall conform to the specified establishment performance criteria.

2. The warranty period will be from the date of the Landscape Architect's written preliminary acceptance of the initial installation and will continue through the end of the following years growing season upon the final inspection and written acceptance of the work.

3. The warranty shall provide against defects including death, unsatisfactory growth, and provides the material to be in good, healthy and flourishing condition, except for defects resulting from neglect by the owner, abuse or damage by others or unusual phenomena or incidents which are beyond Landscape Contractor's control. For verification of such defects, neglect, abuse or damage by others the Landscape Contractor must notify the Landscape Architect in writing immediately upon identifying said occurrences.

4. Annual increases in the size of required replacements shall serve to maintain the continuity of the landscape design. At the time of the scheduled replacements, the required landscape replacement material shall be increased in size from the original plan to match the new growth size of the surrounding plants.

5. The Landscape Contractor shall make as many periodic inspections as necessary, at no extra cost to the Owner during the warranty period to determine what changes, if any, should be made to the Owner's maintenance program. The Landscape Contractor shall submit, in writing to the Landscape Architect, any recommended changes.

6. During the warranty period, should the appearance of any plant die, indicate weakness and/or probability of dying, the Landscape Contractor shall immediately begin replacement of said plants with new and healthy plants of the same type and size as soon as weather conditions permit and within a specified planting period after notification of such occurrences from the Landscape Architect without additional cost to the Owner.

7. The Landscape Contractor shall make all necessary repairs of damage due to plant replacements. Such repairs shall be done at no extra cost to the Owner.

8. Replacements shall be in accordance with and subject to all requirements of landscape installation, mulching, maintenance, warranty and acceptance procedures.

9. The Contractor is responsible for the watering and maintenance necessary to ensure establishment of the replacement plants until the Landscape Architect inspects the replacement plants and issues preliminary acceptance in writing.

10. The Landscape Contractor, prior to notifying Landscape Architect for preliminary acceptance, shall maintain the replacement plants for a period of 45 days at no additional cost to the owner.

11. The Landscape Contractor shall notify the Landscape Architect in writing, upon completion of replacements and extended maintenance period, for preliminary acceptance and written notification of new warranty period.

12. The Landscape Contractor, upon written preliminary acceptance of the replacements, shall warranty all replacements until the end of the following growing season and written final acceptance. The Landscape Contractor shall notify the Landscape Architect in writing at the end of the warranty period of replacement plants for final inspection and acceptance.

13. The Landscape Contractor shall remove tree wrapping, tree guy wires, stakes and tags from all established plants prior to contacting the Landscape Architect for final acceptance inspection. Tags, tree wrap, guy wires and stakes shall remain on all replacements until completion of additional warranty period.

14. All subsequent inspections required due to unacceptability of the replacements will be at the cost of the Contractor.

L. Final Acceptance

1. Inspection of all work will be made by the Landscape Architect at the end of the warranty periods upon written request of the Landscape Contractor.

2. The Landscape Architect shall prepare and submit, to Lennar and the Landscape Contractor, a list of warranty replacement items to be completed before final acceptance shall be deemed to have occurred. The failure to include any items on such list does not alter the responsibility of the Landscape Contractor to complete all work in accordance with the contract.

3. The Landscape Contractor shall complete all warranty replacement work as deemed necessary by the Landscape Architect, shall verify completion of all work required to satisfy the contract and shall notify the Landscape Architect upon completion of all work for review and final acceptance.

4. The Landscape Architect will perform a final inspection of the completed work with the Landscape Contractor and a representative from Lennar. At that time if all work is satisfactory, a written statement will be issued by the Landscape Architect that will constitute final acceptance of completed work to date.

5. After the final inspection and acceptance of the work, the Landscape Architect will notify Lennar in writing and will recommend release of fees in retention for the completed work, except for retention fees deemed necessary by Lennar and the Landscape Architect for work still under additional warranty.

6. The Landscape Architect will make a follow-up inspection of all additional warranty replacements at the written request of the Landscape Contractor and issue a written report accepting satisfactory completion of the warranty obligations and request release of the remaining retention fees.

7. The release of all retention fees will be at the discretion of Lennar after receipt of written notification from the Landscape Architect and upon receipt of written invoice from the Landscape Contractor.

8. The written final acceptance of all work following any necessary replacements shall terminate the Landscape Contractor's plant warranty period.

II. DAMAGES: STREET AND SITE

1. The Landscape Contractor shall be responsible for any damages to streets, curbs or site improvements as a result of his work or his employees. The Landscape Contractor shall be responsible for any future charges resulting from the repair/replacement of damage.

2. Curb damage will be billed to the contractor at fault at a rate of $25.00/lineal foot with a ten foot minimum

3. Subcontractor shall not park on any asphalt or concrete driveways at any time. Violators will be fined $500 per occurrence.

IV. TRADITIONAL LANDSCAPE MAINTENANCE

A. Turf Maintenance

1. Mowing

a. All litter (i.e. paper, cans and bottles) will be removed from turf and plant bed areas prior to mowing.

b. All lawn areas will be mowed weekly to a height of 3" from April through November, or as needed. No more than 1/3 of the grass blade is to be removed per cutting. Mowing height may be seasonally adjusted depending upon weather conditions in order to reduce stress and promote healthy turf.

c. Mowing patterns shall be altered on a weekly basis wherever possible. Mowing patterns shall create straight lines for a more manicured appearance.

d. Clippings shall be bagged and removed when clipping buildup is such that the excess clipping lay in an unsightly matted condition on the lawn.

e. The turf shall be cut in such a manner as to avoid blowing clippings toward structures, patios, air conditioners, and planting beds.

f. If the turf could potentially be damaged by equipment due to weather, mowing should not be performed.

g. Turf bordering vertical surfaces such as foundations, fences, and utility boxes shall be trimmed to match the mowing height.

h. Clippings shall be removed from all pavement areas.

2. Edging

a. Turf areas adjacent to walks, driveways and curbing will be mechanically edged monthly in a uniform manner.

b. Shrub beds and tree rings shall be neatly and uniformly edged twice per year; once during the spring cleanup, and again in August or September weather permitting.

3. Fertilizer & Weed Control

a. Pesticides must be applied by a licensed individual.

b. Notice shall be given to the homeowners association or owner's representative 1 week prior to any pesticide application.

c. The lawn shall be fertilized three (3) times with a high quality granular or liquid formula. The applications should be made approximately in April, May and September. Timing, frequency and rate of application shall be adjusted to meet the development's current needs and conditions

d. A pre-emergent weed control application for annual grass prevention shall be incorporated into the first turf fertilization in spring.

e. The entire turf area will be treated one (1) time with a post emergent broad leaf weed control at the appropriate time of year. Spot treatment should be done as necessary.

f. Flags shall be posted throughout the community following each fertilizer application. Remove flags once the application is dry or as directed by the product's label.

B. Planting Bed Maintenance

1. Pruning

a. Trees, shrubs and evergreens should be pruned, trimmed or sheared at the appropriate time for each species to maintain the plant's proper form. Methods and timing shall conform to standard horticultural practices. The initial spring pruning will include:

1. Removal of dead or injured limbs.

2. Removal of branches that are touching structures.

3. Shaping and internal thinning of the plant to allow for its natural form and habit.

b. Shrubs will be pruned two (2) additional times at the appropriate time so as not to interfere with flowering.

c. Trees over 6" in diameter will not be pruned other than removal of low branches hazardous to pedestrian traffic and sucker growth which may occur.

d. Groundcovers should be pruned twice during the season to maintain a neat appearance.

e. Ornamental grasses should be trimmed during the spring cleanup.

f. All pruning debris shall be removed from the site by the contractor immediately after the work is complete.

2. Fertilizer & Weed Control

a. Pesticides must be applied by a licensed individual.

b. Notice shall be given to the homeowner's association 1 week prior to any pesticide application.

c. Pre-emergent weed control shall be applied at the beginning of the growing season.

d. Post emergent applications or hand pulling shall be used on any weeds that appear throughout the season.

e. Trees, shrubs and groundcover shall be fertilized one (1) time during the season. The application rate will be determined by the specific needs of the plant material.

C. Spring & Fall Cleanup

1. Spring Cleanup

a. Lawn areas and planting beds will be raked as necessary to remove leaves, dead branches, litter and debris.

b. All mulch beds shall be cultivated to break up any existing compaction in the mulch.

c. Fresh mulch should be applied to any bare spots in the planting beds.

d. Monitor plant health and notify homeowner's association or owner's representative of any dead plants.

e. Debris generated during the cleanup shall be disposed of legally off site.

2. Fall Cleanup

a. All lawn areas will have leaves removed either by raking or through the mowing process so as to prevent leaf buildup on the turf on a weekly basis.

b. All planting beds will have leaves and debris removed at the end of the season.

c. Perennials without winter interest shall be cut back.

d. Monitor plant health and notify homeowner's association or owner's representative of any dead plants.

e. Debris generated during the cleanup shall be disposed of legally off site.

IV. PERSONAL CONDUCT / SAFETY

1. Consumption of alcoholic beverages or drugs on the job site is strictly prohibited.

2. Any offensive of obnoxious behavior (loud radio, profanity, etc.) is strictly prohibited.

3. Reckless operation of vehicles or equipment by Subcontractor's employees while in the subdivision will not be tolerated.

4. Hard hats to be worn by all employees at all times.

5. Failure to comply with Lennar's Safety Policy, OSHA or any other presiding safety institution could result in fines starting at $100.00 per occurrence.

6. Subcontractor to provide a competent person trained in OSHA requirements on site at all times.

Landscape Contractor Name _____

Landscape Contractor Company_____

Landscape Contractor Signature_____ Date_____

GRWA
GARY R. WEBER ASSOCIATES, INC.
LAND PLANNING
ECOLOGICAL CONSULTING
LANDSCAPE ARCHITECTURE
212 SOUTH MAIN STREET
WHEATON, ILLINOIS 60187
PHONE: 630-668-7197

CLIENT
LENNAR
1141 E. MAIN STREET
SUITE 108
EAST DUNDEE, ILLINOIS 60118

ENGINEER
MACKIE CONSULTANTS, LLC
9575 W. HIGGINS ROAD
SUITE 500
ROSEMONT, IL 60018

ECOLOGICAL
MIDWEST ECOLOGICAL, INC.
P.O. BOX 321
GILBERTS, ILLINOIS 60136

FORESTRY
URBAN FOREST MANAGEMENT, INC.
960 ROUTE 22, SUITE 207
FOX RIVER GROVE, ILLINOIS 60021

WOODLORE ESTATES
CRYSTAL LAKE, ILLINOIS
LANDSCAPE SPECIFICATIONS

2	8.10.18
1 - FOR BID	6.18.18
REVISIONS	

DATE	6.11.18
PROJECT NO.	CA1624
DRAWN	GFB
CHECKED	MGM
SHEET NO.	

811 Know what's below. Call before you dig.

1. PROJECT DESCRIPTION

The project consists of ±41.65 acres of existing woodland. These preserved woodlands shall not be subject to earthmoving activities. Woodlands have been divided into areas as described on the attached Woodland Management Plan (Plan). Each of these areas will be managed and maintained as noted below.

The work shall consist of furnishing, transporting and installing all seeds, plants and other materials required for:

1. The establishment of trees and seeded areas as shown on the Plan;
2. The provision of management as specified herein;
3. Any remedial operations necessary in conformance with the plans as specified in this document;
4. Permits which may be required.

2. WOODLAND MANAGEMENT GOALS

1) Areas 1, 4, & 5
- Goal of 98% kill of Buckthorn, Honeysuckle, and Multiflora Rose; and 80% kill of the other target species listed in section 5.
- Removal of any attractive nuisance.

2) Areas 2 & 7
- Goal of 98% kill of Buckthorn, Honeysuckle, and Multiflora Rose; and 80% kill of the other target species listed in section 5.
- Removal of any attractive nuisance.
- Thinning of canopy and sapling plantings for the reintroduction of native tree species.

3) Areas 3 & 6
- Goal of 98% kill of Buckthorn, Honeysuckle, and Multiflora Rose; and 80% kill of the other target species listed in section 5.
- Removal of any attractive nuisance.
- Thinning of canopy to allow for the natural spread of existing trees.

4) Areas 8, 9, & 10
- Goal of 98% kill of all target species listed in section 5.
- Removal of any attractive nuisance.

By the end of the 3-year management period, 75% of the managed area shall be native cover consisting of woody and herbaceous material.

3. WOODLAND MANAGEMENT PROCEDURE

Year 1 Management Items (Starting Fall of 2018)
- Fall/Early Winter: Invasive shrub removal. Debris and Junk removal.
- Winter: Arborist or Landscape Architect review for hazardous and nuisance trees for removal.
- Winter: Arborist or Landscape Architect to review of select tree removal for canopy thinning.
- Spring: Evaluation of natural seed bank. Cut and treat woody re-sprouts. Treat weedy herbaceous species.
- Summer: Evaluation of invasive woody/herbaceous species. Re-treat if necessary.
- Fall: If sufficient fuel is present, a controlled burn may be conducted in areas specified by Arborist. Burns shall meet all criteria noted in SECTION 4 of the General Specifications.
- Late Fall: Following Arborist review, dormant over-seeding with Woodland Seed Mix or Meadow Seed Mix shall be done in select Areas.

Year 2 Management Items
- Spring: Evaluation of herbaceous understory in over-seeding and natural areas. Additional over-seeing shall be done if necessary.
- Spring/Summer: Cut and treat woody re-sprouts. Treat weedy herbaceous species.
- Fall: Saplings may be planted in areas specified by the Arborist.

Year 3 Management Items
- Spring: Evaluation of herbaceous understory in over-seeding and natural areas. Additional over-seeing shall be done if necessary.
- Spring/Summer: Cut and treat woody re-sprouts. Treat weedy herbaceous species.
- Fall: Arborist shall evaluate the health and regeneration of managed areas. The arborist shall make recommendations for additional management if needed.

4. TREATMENT METHODS

Treatment methods used by the Contractor shall vary depending on the target species, quality of the community, and specificity required (See Project Descriptions and Herbicide Application Table). Contractor must have a minimum of five years' experience in the field and shall be able to identify non-native and native plants by genus and species. It is imperative that a qualified Native Landscape Contractor perform the initial installation and maintenance. In general, the following methods shall be used:

A. CHEMICAL CONTROL – The majority of the work included in this project shall consist of chemical application to control selected target species. All herbicides shall be applied according to the manufactures label specifications. All herbicides shall be applied with a non-ionic surfactant, water conditioner (if specified on label), and a pH Balancer (if specified on the label) – provided by the Owner.

1) Wick Application – The use of highly selective absorbent material that provides complete coverage of herbicide mix on leaves, stems, and or cut stumps (Hand wicking with an absorbent glove, wick bars for swiping larger areas). Wick applications generally require a higher percent concentration of chemical application compared to other application methods. A wick application shall be used on target species, such as Cattails, Common Reed, cut woody stumps and small stems. The Contractor shall also use the wick application method in areas of high quality vegetation or in areas where desirable natives are intermixed with target species, as designated by the Owner.

2) Cut Stump Treatment – This herbicide application shall take place on the same day the woody species to be treated are cut, weather conditions permitting. This shall be accomplished by utilizing wick or sponge-type applicators only. No herbicide applications shall be made with broadcast spray equipment.

3) Small Woody Stems – Small stems (i.e., 1-2 cm diameter at base) shall be wick or sponge treated with a basal bark application from the ground surface up at least 6 inches from the root collar.

4) Backpack Spray Application – The use of a portable backpack and spray wand / nozzle that can be used to selectively spot spray or broadcast spray target species. Spray application generally use a lower percent concentration of chemical application compared to a wick application. The Contractor may use a backpack spray application in highly disturbed, low quality areas to treat any of the target species listed above, to treat small clumps of a particular target species, such as Reed Canary Grass or dense stands of Cattail, Common Reed, or Teasel. The Contractor shall not use a spray application to treat cut stumps.

5) ATV Mounted Spray Application – The use of a (relatively) high volume sprayer mounted on an All-terrain vehicle used to spot spray or broadcast spray target species. The Contractor may use an ATV mounted sprayer to treat monotypic stands or clumps of target species in highly disturbed areas AND only at the direction of the Owner's Project Manager.

8. CULTURAL CONTROL

1) Hand Clearing Woody Species – Hand cutting methods that may be used by the contractor include, but are not limited to, the following: chainsaws, brush clearing saws, handsaws, gas powered clearing saws, bow saws, and loppers. All stems in upland areas shall be cut level (horizontal) at a height of no more than 2 inches above the soil surface. All stems in submerged or aquatic zones shall be cut level at a height of 4 inches above the water or ice surface. All stems shall be cut horizontally flat. Brush shall be piled by the Contractor in locations designated by the Owner. All stems shall be painted with Garlon 4, or equivalent, immediately after cutting. Spot treat invasive and undesirable herbaceous species on existing basin slopes with glycophosphate to remove undesirable species in planted areas.

2) Hand Pulling – Hand pulling shall be used by the Contractor to remove target species as determined by the Owner. Any hand pulled material shall be bagged and removed from the site.

B. MECHANICAL CONTROL

1) Mowers – mowing may be used to prevent flowering of target invasive plants if other control methods cannot be implemented due to uncontrollable weather conditions or to augment the effectiveness of other control techniques. All mowing equipment (tractors, mowers, etc.) used in the work shall be thoroughly cleaned after the completion of mowing work at a particular site, and prior to beginning the work on the next site. This is in order to prevent the transfer of weed seeds and invasive plants from one site to another.

Prairie mowing shall be done at a height of 6" unless otherwise agreed to by the Owner Project Manager. Reforestation mowing shall be done at a height of 6" unless otherwise agreed to by the Owner Project Manager. These areas require mowing with equipment that allows the Contractor to mow in between individual trees and shrubs that area planted as close as 10 feet apart. The Contractor shall not damage in any way the individual trees, shrubs, mulch, T-posts, or the welded-wire caging around the trees and shrubs. Contractor shall be held responsible for any reforestation trees shrubs, fencing and posts damaged or destroyed, or any other site damage as a result of the mowing operations. Costs of replacement shall be deducted from the final payment to the Contractor. The Contractor shall be responsible for replacing (includes costs for materials and labor to plant) at a 1:1 ratio any tree damaged during mowing and shall guarantee all replacements for 1 year from the date of planting.

Roundup mowing from the outside of the tract to the center should not be allowed. This has the potential to corral wildlife into the middle of a tract causing greater damage. Large tracts should be mowed from the center in a back and forth fashion allowing wildlife to move into unaffected areas or edges.

The Contractor is responsible for repair of any soil disturbances, including rutting, caused by mowing under conditions not approved by the Owner. It is the responsibility of the contractor/operator to pre-inspect the site for hazards such as debris, rocks, gullies, wet spots or other potentially damaging items. The Owner shall not be responsible for damage to equipment.

Contractor shall use Flail or Rotary mowing equipment to complete all projects

5. TARGET SPECIES

Target species include, but are not limited to:

Garlic mustard	Allaria petiolate
Oriental Bittersweet	Celastrus orbiculatus
Canada thistle	Cirsium arvense
Crown vetch	Coronilla varia
Teasel	Dipsacus spp.
Leafy spurge	Euphorbia esula
Yellow Iris	Iris pseudoacorus
Honeysuckle	Lonicera spp.
Purple Loosestrife	Lythrum salicaria
Reed Canary Grass	Phalaris arundinacea
Common Reed	Phragmites australis
Japanese knotweed	Polygonum cuspidatum
Buckthorn	Rhamnus spp.
Multiflora Rose	Rosa multiflora
Common Goldenrod	Solidago altissima
Grass Cattails	Typha x glauca and T. angustifolia

6. HERBICIDES

All chemicals, adjuvants, and dyes shall be provided by the contractor. The contractor shall be responsible for providing the water for mixing and preparing the herbicide mixes prior to traveling to the project site.

Herbicides (Trade Names) that may be used by the Contractor to complete herbicide treatments include, but are not limited to:

- Transline
- AquaMaster/Aquaneat
- Round-up
- Journey
- Poast
- Garlon 3A
- Garlon 4
- Escort
- Milestone
- Habitat

An aquatic-approved Glyphosate herbicide (e.g., Aquamaster) or Habitat shall be used to treat all populations growing in or near standing water.

Owner Project Manager shall approve herbicide type, timing of application and application method for each target species at the project site prior to application. The Owner shall require that the Contractor use a dye in the herbicide mix to help the Contractor and Project Manager assess where herbicide has been applied.

7. TREATMENT PROTOCOL

The Contractor shall be responsible for positively identifying all target species before they are cut or treated with herbicide. Failure to do so may incur unnecessary damage done to the Owner and shall be repaired or replanted at the Contractors expense. Any replacement materials are subject to Owner's approval.

Weather Conditions

The Contractor shall adhere to the following protocol when determining whether conditions are appropriate for chemical application:

1) Wind speeds within the label specifications at the project site.
2) Daytime temperature is below label recommendations (critical for herbicides that volatilize)
3) If the chance of precipitation is 40% or greater, the contractor shall call the Owner's Project Manager 24 hours in advance of the predicted weather to discuss work for the day in question.
4) If weather conditions are questionable, the decision to proceed shall be left to the discretion of the Owner's Project Manager.

Application shall be done by State of Illinois Licensed Pesticide Operator or Applicator only. Current licenses of all operators and applicators shall be provided to the Owner with photo ID prior to commencement of work.

Herbicide shall not be mixed at the project site.

Mix only the amount of solution to be used in 1-3 days (reduced activity may result with use of leftover solution).

8. BRUSH PILE DISPOSAL

Cut brush piles shall be disposed of off site legally. No cut brush shall be burned within city limits.

10 MATERIALS STORAGE AND HANDLING

All equipment and materials shall be stored in the designated staging area and shall not be left overnight at any project area. Herbicide shall not be mixed at the project sites.

11. ACCESS

The Owner's Project Manager shall designate all access points prior to the Contractor performing any work. Access points shall be off of roadways and trail heads to minimize potential damage to desirable vegetation. Maps showing access shall be provided to the successful bidder by the Owner upon award of bid.

All areas damaged (pitted, rutting, erosion) during the work shall be repaired and reseeded by the Contractor with a native seed mixture determined by the Project Manager at no additional cost to the Owner.

12. NOTIFICATION

The Owner's Project Manager shall be notified at least 24 hours before the start of any work. Additionally, a Project Notification Form shall be filled out by the Owner's Project Manager and distributed to the Contractor. The Contractor shall keep a copy of this form with them at all times while on site, including a visible copy placed in all vehicles.

13. PERSONNEL AND PUBLIC SAFETY

The Contractor is responsible for immediate resolution of any damages and other incidents resulting from the use of herbicides or other chemicals. These incidents include but are not limited to spills, smoke, fumes and vapors. The contractor will bear all cost for the resolution of these incidents.

It shall be the responsibility of the Contractor to adhere to all applicable Owner and OSHA safety regulations and guidelines, as well as Federal Construction Safety and Health Standards while carrying out activities related to this project.

Labels and MSDS

H erbicide applicators shall have on the work site the appropriate herbicide labels and Material Safety Data Sheets (MSDS) for the chemicals being applied. All herbicide applications shall follow appropriate label instructions.

Notification of Event

In the event of the following occurrences: pesticide spillage, fuel spillage, any personal injury or death related to the project, or damage to Owner facilities, the Project Manager shall be notified at once.

In the event of such occurrences, the Owner shall file the appropriate incident reports with the assistance of the Contractor within the required filing period.

Appropriate caution shall be taken when work is performed near trails, utilities, and roads. This shall include the posting of sentinels if there is the possibility of debris or brush from project activities landing in the trail or road area.

The Contractor shall ensure that the following safety equipment is available at the project site at all times for personnel involved in this project:

a. First Aid Kit
b. Portable emergency eye wash station
c. Chemical spill kit

Procedures for Herbicide Spill Containment

An emergency spill kit, with directions for use, will be present when herbicides are being mixed, transported, and applied. Employees will be trained in the use of the spill kit prior to initiation of operations.

The spill kit will contain the following equipment:

a. Shovel
b. Broom
c. Ten pounds of absorbent material
d. Box of large plastic bags
e. Nitrile gloves

14. SIGNAGE AND PUBLIC NOTIFICATION OF HERBICIDE TREATMENT

The Contractor shall post herbicide application signs immediately after herbicide application in treated areas, and any areas designated by the Project Manager. Signs shall remain posted for duration of not less than twenty-four (24) hours and not more than forty-eight (48) hours after the time of herbicide application. The Contractor is responsible for movement and placement of signage in the appropriate location(s) as the project proceeds.

15. FIELD INSPECTION AND MONITORING

The owner's representative shall conduct periodic inspections of the treated populations in order to verify that the target species is being effectively removed, herbicide solutions are properly applied, and native species and sensitive areas are protected. The Project Manager shall inspect all herbicide treatments within two-four (2-4) weeks after the completion of initial and follow-up herbicide application by the Contractor.

16. RECORD KEEPING AND COMMUNICATION OF PROJECT STATUS

The Contractor shall fill out the Owner's Herbicide Application form for each day herbicide application is made within a project area to document herbicide used, time, and conditions. Records of herbicide application shall be provided to the Owner by the Contractor on a weekly basis via an excel spread sheet (the Owner's representative shall format and provide a blank copy of the spread sheet to the Contractor).

17. QUALITY

Provide, perform, and complete all of the foregoing in a proper and workmanlike manner consistent with highest standards of professional and construction practices in full compliance with and as required by or pursuant to these specifications, and with the greatest economy, efficiency, and expedition consistent therewith, with only undamaged and first-quality equipment, materials, and supplies. Any derivation from this shall cause the Owner to require restoration to areas damaged by not adhering to these standards.

18. AUTHORITY OF THE OWNER PROJECT MANAGER

All work shall be inspected by the Owner Project Manager or a representative of the Owner and performed to the satisfaction of the Owner Project Manager and or Representative. He or She shall decide all questions that arise as to the quality and acceptability of work performed, rate of progress of the work, interpretation of the plans and specifications, and acceptable fulfillment of the contract.

19. EVALUATION OF TREATMENT RESULTS

The Owner Project Manager or a designee shall perform the evaluation of the success and fulfillment of the herbiciding results and contract specifications after each population is treated (includes initial treatment and any scheduled follow-up). Field inspections shall occur 2-4 weeks following an herbicide treatment application, depending on herbicide applied. Percent kill shall be determined by visual estimate by the Owner Project Manager or Owner representative.

If during inspection there is found to be excessive impact to desirable native species or damage to Owner property as a result of the Contractor's work, the Contractor shall be required to implement an Owner-approved restoration plan at the Contractor's expense.

20. PROTECTION AND CARE OF TREES AND SHRUBS THAT ARE TO REMAIN

Contractor shall not damage, cut, prune, transplant or remove any tree; attach any rope, wire, nail or other object to any tree; allow any gaseous, liquid or solid substance or equipment to contact any tree or the soil located within the dripline of any tree; impair normal surface drainage around any tree; or allow any fire to burn which will injure any tree or act in any way to affect the vigor or appearance of any tree, except as such action is specifically authorized by the Drawings for individually designated trees or groups of trees.

- All accidental damage to existing trees that are to be preserved shall be promptly treated as required in accordance with recognized horticultural practices and the instruction so the professional Arborist, Landscape Architect, or Horticulturalist.
- Broken or badly bruised branches shall be removed with a clean cut. If recommended by the professional Arborist, Landscape Architect, or Horticulturist.
- Care shall be exercised by the contractors to protect all overhead limbs and branches from damage by contact with material, machinery, or equipment and by damage from engine exhaust.
- Contractors shall protect trees and vegetation against spills or discharge of fuels, lubricating oils, hydraulic fluids, anti-freeze and coolants, calcium chloride, lime and all other similar hydrocarbons, organic chemicals, and other materials which can be harmful.
- When underground utilities are proposed within 5' of a preserved tree trunk, they must be augured if possible.

GRWA
GARY R. WEBER ASSOCIATES, INC.
LAND PLANNING
ECOLOGICAL CONSULTING
LANDSCAPE ARCHITECTURE
212 SOUTH MAIN STREET
WHEATON, ILLINOIS 60187
PHONE: 630-668-7197

CLIENT
LENNAR
1141 E. MAIN STREET
SUITE 108
EAST DUNDEE, ILLINOIS 60118

ENGINEER
MACKIE CONSULTANTS, LLC
9575 W. HIGGINS ROAD
SUITE 500
ROSEMONT, IL 60018

ECOLOGICAL
MIDWEST ECOLOGICAL, INC.
P.O. BOX 321
GILBERTS, ILLINOIS 60136

FORESTRY
URBAN FOREST MANAGEMENT, INC.
960 ROUTE 22, SUITE 207
FOX RIVER GROVE, ILLINOIS 60021

WOODLORE ESTATES

CRYSTAL LAKE, ILLINOIS

WOODLAND MANAGEMENT SPECIFICATIONS

2	8.10.18
1 - FOR BID	6.18.18
REVISIONS	

DATE	6.11.18
PROJECT NO.	CA1624
DRAWN	GFB
CHECKED	MGM
SHEET NO.	

Know what's below. Call before you dig.