

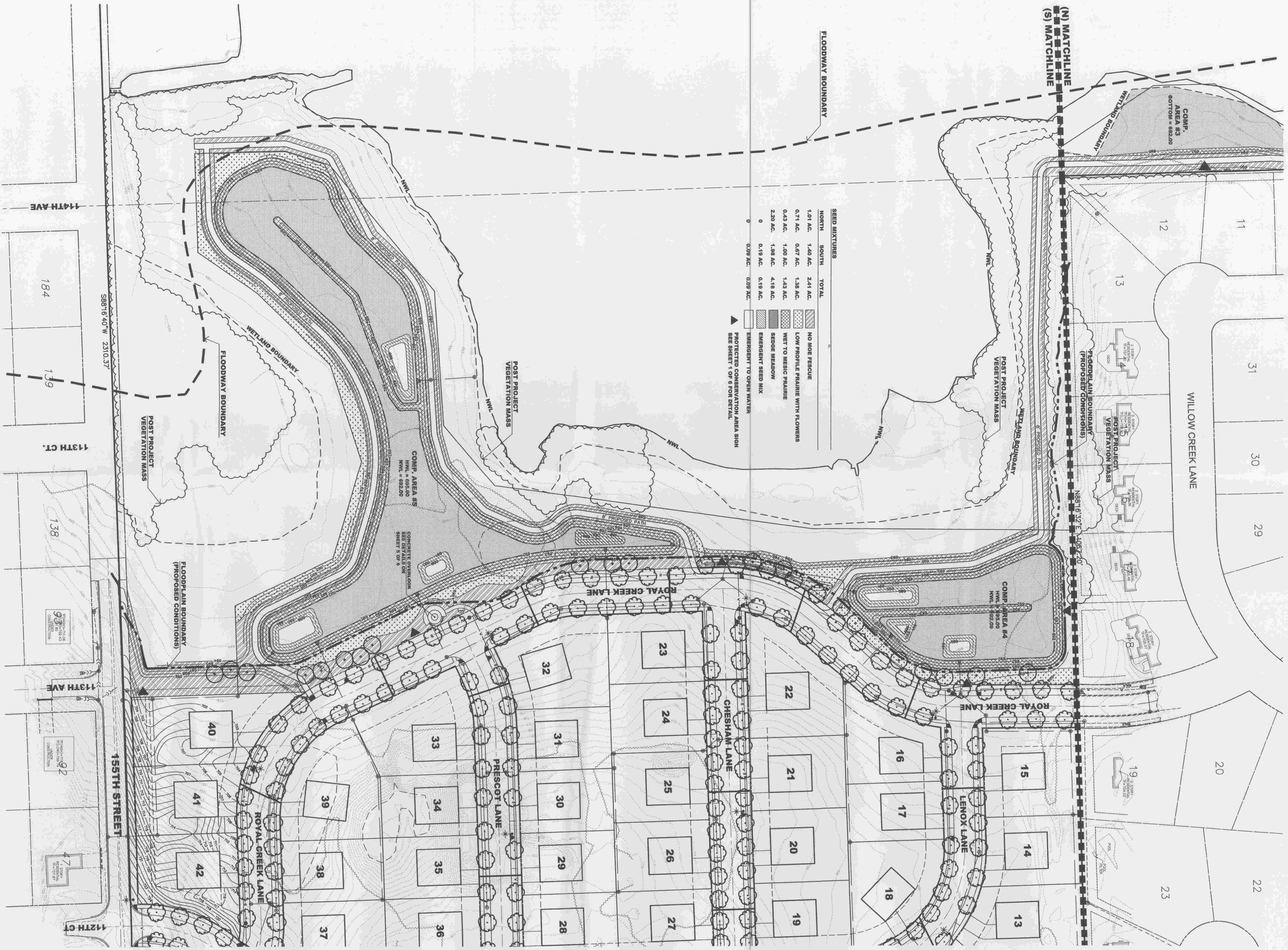


BOARD APPROVED
CASE NO. 2008-0444
DATE 8-4-08
W/CONDITIONS ✓
W/O CONDITIONS _____

DATE	REVISIONS	BY

NATIVE LANDSCAPE PLAN		SHEET 1 OF 6
DOCTOR EAST - ORLAND PARK, IL		
GALLAGHER & HENRY		716-040
PROJECT NO. <u>716-040</u>		
DRAWN BY: <u>T.M. BW</u>		1 OF 6
CHECKED BY: <u>4/24/08</u>		
DATE: <u>4/24/08</u>		716-040
SCALE: <u>1" = 60'</u>		



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NATIVE LANDSCAPE PLAN DOCTOR EAST - ORLAND PARK, IL GALLAGHER & HENRY	PROJECT NAME	<u>NLM</u>	SHEET 2 OF 6 716-040
	DRAWN BY	<u>RLM, RM</u>	
	CHECKED BY	<u></u>	
	DATE	<u>4/24/08</u>	
SCALE		<u>1" = 60'</u>	

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NATIVE LANDSCAPE PLAN SPECIFICATIONS (4.18.08)

1.0 INTRODUCTION

The purpose of this plan is to establish native plant communities within stormwater management facilities at the Doctor East residential development. The areas to be planted consist of 5 compensatory storage areas identified as Comp Areas #1-5 on sheets 1 and 2. Comp Areas 4 and 5 will function as stormwater detention as well as compensatory storage.

2.0 CONTRACTOR QUALIFICATIONS

The Native Landscape Contractor chosen for the establishment and enhancement of the natural areas must be experienced in the restoration, installation, and management of said areas. They must have a minimum of five years experience in the field. There shall be a supervisor available at all times that can identify non-native and native plants by genus and species. The goal of installing successful native plant communities is a long-term process. Therefore, it is imperative that a qualified Native Landscape Contractor perform the initial installation and maintenance.

3.0 QUALITY AND CONDITION

1. Native seed shall be obtained from sources east of the Mississippi River within the same EPA Level III Ecoregion as the project site (Central Corn Belt Plains). Plant origins outside of the Ecoregion shall be approved by the Wetland Consultant.

2. Native seeds shall be blended by the vendor, and the mixture and ratio shall be guaranteed in writing to be as specified. The amount of seed indicated on the specifications shall mean the total amount of pure live seed (PLS) per acre for all species listed. It is the sole responsibility of the Native Landscape Contractor to provide approved seed that meets industry-standard PLS requirements.

3. Native Landscape Contractor shall provide the Wetland Consultant with the name and location of the seed supplier, origin of the various kinds of plants, and a statement of the purity of the seed.

4. Seed shall conform to applicable State and Federal regulations as in effect on the date of letting. Unless otherwise specified, seed shall not contain in excess of 1 percent weed seeds; 0 percent is desirable.

5. All storage requirements, stratification, and scarification considerations shall be the sole responsibility of the Native Landscape Contractor.

6. Mycorrhizal inoculants shall be palletized and mixed at 1 lb. per acre with the fine seeds before installation. The inoculants shall contain a diverse mixture of Glomales fungal species (*Glomus* spp.) in palletized form.

7. Under no circumstances shall Wheat (*Triticum aestivum*), Cereal Rye (*Sacale cereale*), Perennial Rye (*Lolium perenne*), or Barley (*Hordeum vulgare*) be used as a temporary cover crop.

4.0 HANDLING

1. Native Landscape 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.

2. All native seeds shall be packed and covered in such a manner as to ensure adequate protection against damage and maintain dormancy while in transit, storage, or during planting operations.

3. Seed shall be kept dry and unopened until needed for use. Seed shall not be stored or temporarily stored in locations or vehicles where the temperature will be in excess of 90 degrees F.

5.0 SITE PREPARATION

1. The General Contractor and Native Landscape Contractor shall be responsible for performing all work necessary to achieve and maintain an acceptable seedbed prior to seeding. All areas must be properly prepared before seeding begins. Underground utility location maps and plans should be reviewed prior to work. Equipment having low unit pressure ground contact shall be utilized within the planting areas.

2. Unless the Wetland Consultant agrees to another approach, the seedbed shall be prepared by working the topsoil to a depth of 3 inches. Site preparation equipment shall be of a design that can be utilized efficiently by the Native Landscape Contractor to meet the requirements for the work specified. The equipment proposed for use by the Native Landscape Contractor for disk and herbicide applications shall be subject to approval by the Wetland Consultant.

3. Prior to seeding, at least 6 inches of topsoil shall be present and free of all clods, stones, roots, sticks, rivulets, gullies, crusting, and cracking. The soil aggregate size will be no greater than 2 inches in the largest diameter.

4. 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 to 18 inches of the soil horizon prior to disking. If compaction is not a concern and the seedbed needs to be loosened prior to seeding to ensure good seed-soil contact, disking or raking shall be performed using equipment and the approach recommended by the Native Landscape Contractor, subject to approval by the Wetland Consultant.

5. If needed, cultivation shall occur within 24 hours prior to seeding. Seeding should occur immediately after the last cultivation preferably before a rain.

6.0 PLANT MATERIALS

Scientific Name	Common Name	Lbs/Ac
<i>Festuca brevipila</i>	Hard Fescue	51.0
<i>Festuca ovina</i>	Sheeps Fescue	45.0
<i>Festuca rubra</i>	Longflower W Fescue	65.0
<i>Festuca rubra</i> sub. <i>Fallax</i>	Chewing Fescue	54.0
Total		215.00

Table 2. Temporary Matrix Seed Mix - to be installed within the Low Profile Prairie, Wet to Mesic prairie, and sedge meadow planting zones planting zones.

Scientific Name	Common Name	Lbs/Ac
<i>Avena sativa</i>	Seed Oats	32.0
<i>Elymus virginicus</i>	Virginia Wild Rye	4.0
<i>Lolium multiflorum</i>	Annual Rye	4.0
Total		40.0

Table 3. Low Profile Prairie

Scientific Name	Common Name	Lbs/Acre
<i>Agropyron trachycaulum</i>	Slender Wheat Grass	1.000
<i>Allium cernuum</i>	Nodding Wild Onion	0.125
<i>Amorpha canescens</i>	Leadplant	0.125
<i>Andropogon</i> (Schizachyrium) <i>scoparius</i>	Little Bluestem	4.000
<i>Anemone</i> sp.	Anemone	0.063
<i>Asclepias tuberosa</i>	Butterfly weed	0.063
<i>Asclepias verticillata</i>	Whorled Milkweed	0.063
<i>Aster azureus</i> (olettangiensis)	Sky Blue Aster	0.031
<i>Aster laevis</i>	Smooth Blue Aster	0.063
<i>Aster nova angliae</i>	New England Aster	0.063
<i>Astragalus canadensis</i>	Canada Milk Yetch	0.031
<i>Bouteloua curtipendula</i>	Side Oats Gramma	5.000
<i>Carex bicknellii</i>	Bicknell's Sedge	0.125
<i>Cassia</i> (Chamaecrista) <i>fasciculata</i>	Partridge Pea	0.500
<i>Cassia</i> (Senna) <i>marilandica</i>	Maryland Senna	0.063
<i>Careopsis lanceolata</i>	Sand Coreopsis	0.500
<i>Careopsis palmata</i>	Prairie Coreopsis	0.015
<i>Echinacea hybrida</i>	Pale Coneflower	0.125
<i>Echinacea purpurea</i>	Purple Coneflower	0.500
<i>Elymus virginicus</i>	Virginia Wild Rye	1.000
<i>Eryngium yuccifolium</i>	Rattlesnake Master	0.125
<i>Helopsis helianthoides</i>	Early Sunflower	0.063
<i>Lespedeza capitata</i>	Roundhead Bushclover	0.031
<i>Liatris aspera</i>	Button Blazing Star	0.015
<i>Parthenium integrifolium</i>	Wild Quinine	0.125
<i>Penstemon digitalis</i>	Foxglove Beardtongue	0.125
<i>Petalostemum</i> (Dalea) <i>candidum</i>	White Prairie Clover	0.015
<i>Petalostemum</i> (Dalea) <i>purpureum</i>	Purple Prairie Clover	0.063
<i>Potentilla arguta</i>	Prairie Cinquefoil	0.031
<i>Pycnanthemum</i> Species	ML Mint #	0.031
<i>Rudbeckia hirta</i>	Black-eyed Susan	0.500
<i>Rudbeckia subtomentosa</i>	Sweet Coneflower	0.015
<i>Silphium integrifolium</i>	Rosinweed	0.125
<i>Solidago</i> (Euthamia) <i>graminifolia</i>	Grass-leaved Goldenrod	0.015
<i>Solidago nemoralis</i>	Old-field Goldenrod	0.046
<i>Solidago</i> (Oligoneuron) <i>rigida</i>	Stiff Goldenrod	0.125
<i>Tradescantia ohioensis</i>	Ohio Spiderwort	0.063
<i>Verbena stricta</i>	Hoary Vervain	0.125
<i>Zizia aurea</i>	Golden Alexander	0.063
Total		19.156

Table 4. Wet Mesic Prairie

Scientific Name	Common Name	Lbs/Ac
<i>Andropogon</i> (Schizachyrium) <i>scoparius</i>	Little Bluestem	2.000
<i>Asclepias</i> Species	Milkweed	0.063
<i>Aster laevis</i>	Smooth Blue Aster	0.031
<i>Aster novae-angliae</i>	New England Aster	0.031
<i>Calamagrostis canadensis</i>	Yellow Sedge	0.063
<i>Carex annectens</i> xanthocarpa	Bebb's Sedge	0.063
<i>Carex bobbi</i>	Bicknell's Sedge	0.500
<i>Carex bicknellii</i>	Normal Sedge	0.063
<i>Carex normalis</i>	Fox Sedge	0.250
<i>Carex vulpinoidea</i>	Partridge Pea	0.188
<i>Elymus canadensis</i>	Canadian Wild Rye	1.000
<i>Elymus virginicus</i>	Virginia Wild Rye	1.000
<i>Epilobium coloratum</i>	Cinnamon Willow Herb	0.015
<i>Eupatorium perfoliatum</i>	Boneset	0.015
<i>Glyceria striata</i>	Fowl Manna Grass	0.063
<i>Hypericum pyramidatum</i>	Great St. John'swort	0.125
<i>Iris virginica</i> shrevei	Blue Flag Iris	0.125
<i>Juncus tenuis</i>	Path Rush	0.031
<i>Juncus torreyi</i>	Torrey's Rush	0.031
<i>Leersia oryzoides</i>	Rice Cut Grass	0.031
<i>Liatris pycnostachya</i>	Prairie Blazingstar	0.313
<i>Liatris spicata</i>	Spike Blazingstar	0.188
<i>Lobelia siphilitica</i>	Blue Lobelia	0.031
<i>Mimulus ringens</i>	Monkey Flower	0.031
<i>Monarda fistulosa</i>	Bergamot	0.016
<i>Panicum virgatum</i>	Switch Grass	0.031
<i>Parthenium integrifolium</i>	Wild Quinine	0.125
<i>Petalostemum</i> (Dalea) <i>purpureum</i>	Purple Prairie Clover	0.250
<i>Physostegia virginiana</i>	False Dragonhead	0.063
<i>Poa palustris</i>	Marsh Blue Grass	0.063
<i>Pycnanthemum virginicum</i>	Common ML Mint	0.016
<i>Ratibida pinnata</i>	Yellow Coneflower	0.250
<i>Rudbeckia hirta</i>	Black-eyed Susan	0.250
<i>Scirpus atrovirens</i>	Dark Green Rush	0.500
<i>Silphium laciniatum</i>	Compass Plant	0.188
<i>Silphium perfoliatum</i>	Cup Plant	0.125
<i>Solidago</i> (Oligoneuron) <i>riddellii</i>	Riddell's Goldenrod	0.063
<i>Solidago</i> (Oligoneuron) <i>rigida</i>	Stiff Goldenrod	0.125
<i>Spartina pectinata</i>	Cord Grass	0.250
<i>Sporobolus heterolepis</i>	Droopseed	0.500
<i>Veronica hastata</i>	Blue Vervain	0.063
<i>Vernonia fasciculata</i>	Common Ironweed	0.016
<i>Vernonia fasciculata</i>	Culver's Physic	0.063
<i>Vernonia fasciculata</i>	Golden Alexander	0.031
<i>Zizia aurea</i>		
Total		12.190

Table 5. Sedge Meadow/Wet Meadow

Scientific Name	Common Name	Lbs/Ac
<i>Aster novae-angliae</i>	New England Aster	0.125
<i>Aster puniceus</i>	Swamp Aster	0.031
<i>Biens cernua</i>	Nodding Bur Marigold	0.250
<i>Calamagrostis canadensis</i>	Sweet Indian Grass Plantain	0.031
<i>Calamagrostis</i> Species	Blue Joint Grass Reed Grasses	0.031
<i>Carex annectens</i> xanthocarpa	Yellow-fruited Sedge	0.125
<i>Carex comosa</i>	Bottlebrush Sedge	0.188
<i>Carex granularis</i>	Meadow Sedge	0.031
<i>Carex hystericina</i>	Porcupine Sedge	0.250
<i>Carex lupuliformis</i>	Knobbed Hop Sedge	0.125
<i>Carex projecta</i>	Necklace Sedge	0.125
<i>Carex retrorsa</i>	Retrorsed Sedge	0.063
<i>Carex utriculata</i>	Yellow Lake Sedge	0.031
<i>Carex vulpinoidea</i>	Fox Sedge	1.000
<i>Eleocharis</i> Species	Spike Rush Species	0.125
<i>Elymus canadensis</i>	Canada Wild Rye	1.000
<i>Elymus virginicus</i>	Virginia Wild Rye	2.000
<i>Eupatorium maculatum</i>	Spotted Joe Pye Weed	0.063
<i>Eupatorium perfoliatum</i>	Boneset	0.031
<i>Gentiana andrewsii</i>	Bottle Gentian	0.125
<i>Helianum autumnale</i>	Sneezeweed	0.063
<i>Juncus dudleyi</i>	Dudley's Rush	0.063
<i>Juncus effusus</i>	Common Rush	0.063
<i>Juncus torreyi</i>	Torrey's Rush	0.063
<i>Liatris spicata</i>	Spiked Gayfeather	0.125
<i>Leersia oryzoides</i>	Rice Cut Grass	0.125
<i>Lycopus americanus</i>	Common Water Horehound	0.063
<i>Lysimachia hybrida</i>	River Loosestrife	0.031
<i>Lythrum alatum</i>	Winged Loosestrife	0.015
<i>Mimulus ringens</i>	Monkey Flower	0.015
<i>Monarda fistulosa</i>	Bergamot	0.125
<i>Onoclea sensibilis</i>	Sensitive Fern	0.031
<i>Penstemon digitalis</i>	Foxglove Beardtongue	0.125
<i>Panthorum sedoides</i>	Ditch Stonecrop	0.031
<i>Physostegia virginiana</i>	False Dragonhead	0.063
<i>Poa palustris</i>	Marsh Blue Grass	0.375
<i>Polygonum</i> Species	Smart Weed Species	0.750
<i>Pycnanthemum virginianum</i>	Common Mt. Mint	0.031
<i>Rosa palustris</i>	Swamp Rose	0.015
<i>Rudbeckia subtomentosa</i>	Sweet Coneflower	0.094
<i>Scirpus atrovirens</i>	Dark Green Rush	0.500
<i>Scirpus cyperinus</i>	Wool Grass	0.031
<i>Solidago gigantea</i>	Late Goldenrod	0.015
<i>Solidago</i> (Oligoneuron) <i>ohiensis</i>	Old Goldenrod	0.015
<i>Solidago</i> (Oligoneuron) <i>riddellii</i>	Riddell's Goldenrod	0.125
<i>Spartina pectinata</i>	Cord Grass	0.500
<i>Sphenopholis intermedia</i>	Shrill Meadow Grass	0.063
<i>Thalictrum dasycarpum</i>	Purple Meadow Rue	0.188
<i>Veronica hastata</i>	Blue Vervain	0.188
<i>Vernonia fasciculata</i>	Common Ironweed	0.125
<i>Zizia aurea</i>	Golden Alexander	0.063
Total		9.829

Table 6. Emergent Seed Mix

Scientific Name	Common Name	Lbs/Ac
<i>Acorus americanus</i>	Sweet Flag	0.250
<i>Alisma subcordatum</i>	Water Plantain	0.094
<i>Carex comosa</i>	Bottlebrush Sedge	0.375
<i>Cephalanthus occidentalis</i>	Button Bush	0.125
<i>Echinochloa crusgalli</i>	Barnyard Grass	2.000
<i>Eleocharis palustris</i>	Marsh Spike Rush	0.063
<i>Eleocharis</i> Species	Spike Rush Species	0.063
<i>Glyceria grandis</i>	Reed Manna Grass	0.031
<i>Hibiscus laevis</i>	Halberd-leaved Rose Mallow	0.063
<i>Iris virginica</i> shrevei	Blue Flag Iris	0.250
<i>Juncus</i> Species	Rush Species	0.188
<i>Leersia oryzoides</i>	Rice Cut Grass	0.500
<i>Polygonum</i> Species	Smart Weed Species	1.500
<i>Pontederia cordata</i>	Pickerehweed	0.063
<i>Sagittaria latifolia</i>	Common Arrowhead	0.500
<i>Scirpus</i> (Schoenoplectus) <i>acutus</i>	Hard Stem Bulrush	0.063
<i>Scirpus fluviatilis</i>	River Bulrush	0.125
<i>Scirpus pungens</i>	Chaimakers Rush	0.125
<i>Scirpus validus</i>	Great Bulrush	0.250
<i>Spartanium eurycarpum</i>	Bur Reed	1.000
<i>Spartina pectinata</i> Cord	Grass	0.375
Total		8.063

7.0 SEED INSTALLATION

1. Wetland Consultant shall be notified at least 24 hours prior to beginning the seeding operations.

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

3. Seasonal Considerations:

November 1 through February 28: Seed must be protected from displacement due to water and wind erosion. Seeding on bare, graded surfaces must be protected with double netted erosion control blankets on slopes. Less cover crop will be observed during the following spring due to frost damage.

March 1 through June 29: Seeding during this period is appropriate but germination of a portion of the seed may not occur until the following season due to lack of cold stratification to break seed dormancy. Cover crop generally germinates within 2-3 weeks of seeding operation.

June 30 through September 15: Installation of native seed should be suspended unless irrigation can be provided or unseasonably cool conditions persist. Also, any annual forbs planted with the mix during this time period may germinate but not have sufficient time to flower before fall senescence.

September 15 through October 31: Seeding on bare, graded surfaces must be protected with double netted erosion control blankets on slopes. Less cover crop will be observed during the following spring due to frost damage.

4. 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.

5. Equipment shall be operated in a manner to ensure complete, uniform coverage of the entire area to be seeded and to avoid damage to existing woody plants. Any area inadequately covered, as solely determined by the Wetland Consultant, shall be retreated at no additional cost to the Owner.

6. Seeding and soil tracking/firming shall not be done during periods of rain, severe drought, high winds, excessive moisture, frozen ground, or other conditions that preclude satisfactory results.

7. To achieve best results, seed boxes should be kept more than one-quarter full at all times and ground speed should be no more than 2 to 3 mph.

8. Seeding operations must occur when soil moisture is appropriate for seeding operation.

9. Native plant seed shall not receive fertilizer.

10. Wet seed that is moldy or otherwise damaged in transit or storage shall not be used.

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

8.0 EROSION CONTROL

1. The Native Landscape Contractor shall be fully responsible for implementing erosion control measures within prescribed planting areas.

2. All areas are recommended to be covered with erosion control blanket; North American Green S150 or equivalent will be used at a minimum. The outlets into the stormwater management facilities shall be stabilized with C-360. Erosion control blanket shall be installed within 24 hours after an area is seeded. See manufacturer's specifications for erosion control blanket composition.

9.0 "NO MOWING AND/OR DUMPING" SIGNAGE

1. "No Mowing and/or Dumping" or other signage approved by the Wetland Consultant shall be installed along the perimeter of the native plantings as indicated on the plan to define the boundary of the naturalized areas.

10.0 CLEAN-UP AND PROTECTION

1. During landscape work, store materials and equipment where directed. Keep pavements clean and work areas and adjoining areas in an orderly condition.

2. Protect landscape work and materials from damage due to landscape operations or operations by other trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed by the Wetland Consultant.

11.0 INSPECTIONS AND ACCEPTANCE

1. Owner reserves the right to inspect all seeds and plants either at place of growth or at site before planting for compliance with requirements for name, variety, size, quantity, quality or mix proportion.

2. Native Landscape Contractor is to keep records of the certificates of composition or invoices of seed mixtures and integrity of plant materials with respect to species, variety, and source after purchase.

3. Native Landscape Contractor is to notify Owner within five days after completing initial and/or supplemental plantings in each area.

MONITORING AND MANAGEMENT PLAN

1.0 MONITORING METHODOLOGY

The naturalized areas will be monitored annually for a three-year period to ensure successful establishment of the desired plant communities. The primary objective of the monitoring program is to track the success of the planted species over the 3-year monitoring period. The monitoring documents changes in plant community composition and reveals the need for management changes to improve floristic quality. Specific goals of the monitoring are to determine the vegetative species present, the percent cover by vegetation, and identify hydrology and erosion problems.

Monitoring within the naturalized areas shall be conducted annually utilizing a meander survey methodology during August, September, or early October of each year. The meander survey methodology involves reviewing at least 20 percent of each vegetative community, per location. The monitoring shall identify 1) the three most dominant vegetative species within each planting zone, 2) the percent survival of planted species, 3) the approximate total percent of vegetative coverage, 4) the approximate percent vegetative coverage by native, non-invasive species within each designed planting zone, 5) water level or drainage problems, and 6) the presence of bare soil areas larger than 0.25 square-meter. Observations shall be made during the monitoring to identify specific management strategies necessary to reach design goals. Site conditions shall be photo documented during monitoring sessions.

No woody plant materials are proposed within the naturalized areas. Any and all woody plantings within the parkways and other open space areas will be covered under the traditional landscape warranty.

2.0 PERFORMANCE CRITERIA

1. By the end of the first full growing season, the planted areas shall exhibit 90% vegetative cover, primarily by species contained in the temporary erosion control seed mix. There shall be no areas greater than 0.25 square meters devoid of vegetation and 25% of the species present as measured by aerial coverage shall be native and non-invasive.

2. By the end of the second growing season, 80% of the ground as measured by aerial coverage shall be vegetated and 30% of the species present, within each planting zone, as measured by aerial coverage shall be native and non-invasive.

3. By the end of the third growing season, 90% of the ground as measured by aerial coverage shall be vegetated. No more than 25% cover in any plant community shall be individually or collectively dominated by non-native or weedy species or by annuals. The native floristic quality index value (native FQI) must be greater than or equal to 15 as measured over all the planted areas. The floristic quality assessment method is described in Swink and Wilhelm, *Plants of the Chicago Region*.

4. During all years, none of the three-most dominant species may be non-native or weedy, including but not limited to: Canada Thistle (*Cirsium arvense*), Purple Loosestrife (*Lythrum salicaria*), Reed Canary Grass (*Phalaris arundinacea*), Sweet Clover (*Melilotus* spp.), Kentucky Bluegrass (*Poa pratensis*), Barnyard Grass (*Echinochloa crusgalli*), Common Reed (*Phragmites australis*), or Sandbar Willow (*Salix interior*) unless otherwise indicated on the approved planting plan. Cattail species (*Typha* spp.) do not count towards the 25% weed criterion provided they represent no more than 20% cover and there are at least two other native, non-weedy perennial species as dominants.

5. Seeded areas shall have no rills or gullies greater than four inches wide by four inches deep, and basin shorelines shall not have more than six inches of cut as a result of erosion.

3.0 REPORTING

An annual vegetation monitoring report will be submitted to Gallagher & Henry, U.S. Army Corps of Engineers and the Village of Orland Park by January 31 following the monitoring season each year.

4.0 MANAGEMENT PLAN

1. **First Year:** Mow the planted areas to a height of 6-8 inches 2-4 times during the early growing season and as needed to control non-native and invasive species. Mowing (including weed whipping) shall take place prior to or when non-native and invasive species are flowering so as to prevent seed set. Control undesirable plant species, when present in small quantities, by hand pulling prior to the development and maturity of the plant. Hand removal shall include the removal of all aboveground and belowground stems, roots and flower masses prior to development of seeds. Apply herbicide (as necessary) to non-native and invasive species within the naturalized areas with appropriate herbicide



TREE REPLACEMENT CALCULATION

EXISTING TREE INVENTORY:			
TAG NO.	SCIENTIFIC NAME	COMMON NAME	CONDITION DBH
510	Quercus macrocarpa	Shagbark Hickory	GOOD 18
511 X	Quercus macrocarpa	Bur Oak	GOOD 8
512 X	Salix nigra	Black Willow	POOR 6
513 X	Salix nigra	Bur Oak	GOOD 8.4
514 X	Quercus macrocarpa	Bur Oak	GOOD 36
515 X	Quercus macrocarpa	Bur Oak	GOOD 5

X SCHEDULED FOR REMOVAL

REQUIRED NO. OF REPLACEMENT TREES	
QUANTITY AND DIAMETER	OF REMOVED TREE
5 - 4" - 12"	10 - 2.5" BB
5 - 13" - 25"	4 - 2.5" BB
1 - 26" OR GREATER	20 - TOTAL REPLACEMENT TREES

510

EXISTING TREE

510

EXISTING TREE TO BE REMOVED

* REPLACEMENT TREE	Size	Quantity
SHADE TREES		
DB	Swamp White Oak	9
DB	Quercus bicolor	2.5" BB

NOTE: EXISTING TREE INVENTORY WAS PREPARED BY ENCAP, INC. 7-16-04

PLANT LIST	Size	Quantity
SHADE TREES		
DB	Swamp White Oak	9
DB	Quercus bicolor	2.5" BB

OVERLOOK PLANT LIST	Size	Quantity
SHADE TREES		
DB	Swamp White Oak	9
DB	Quercus bicolor	2.5" BB

BUFFER YARD 'C' - WOLF ROAD - 1138 L.F. @ 20' WIDE:

PLANTING REQUIREMENT PER 100 L.F. =	TOTAL REQUIRED	TOTAL PROVIDED
4 CANOPY TREES	46(14)	62(16)
16 SHRUBS	162(59)	187(61)

() NUMBER OF EVERGREEN VARIETIES INCLUDED IN TOTAL

BUFFER YARD 'C' - 155TH STREET - 520 L.F. @ 20' WIDE:	TOTAL REQUIRED	TOTAL PROVIDED
4 CANOPY TREES	21(6)	24(9)
16 SHRUBS	83(25)	91(27)

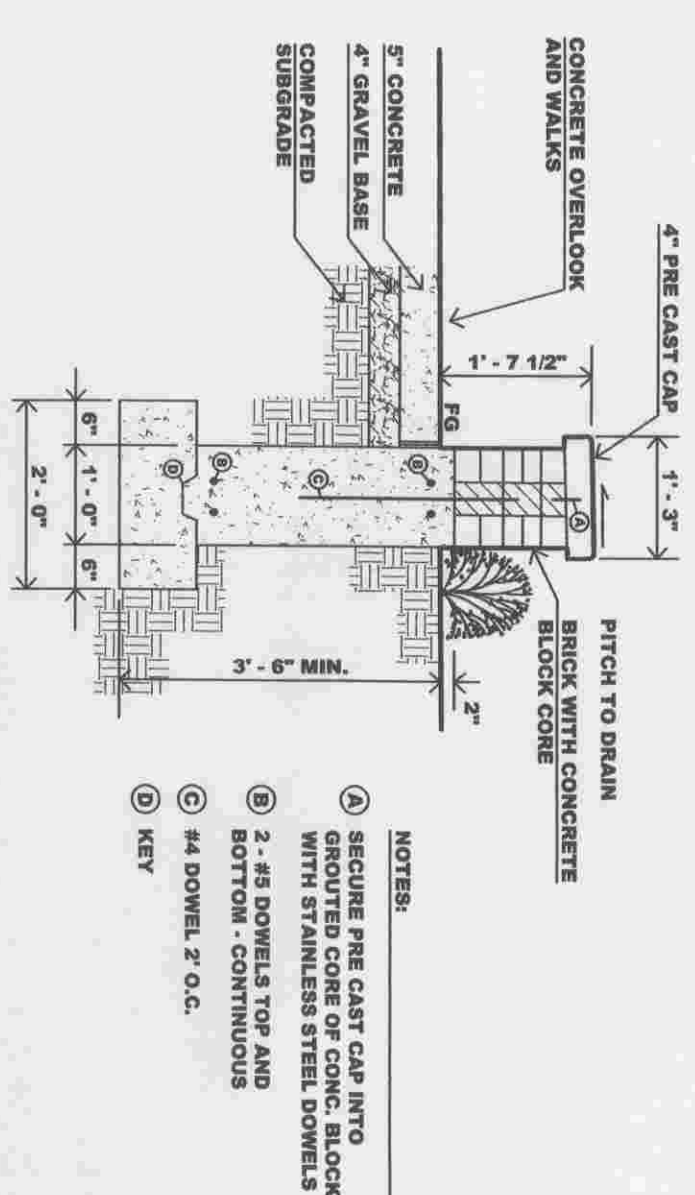
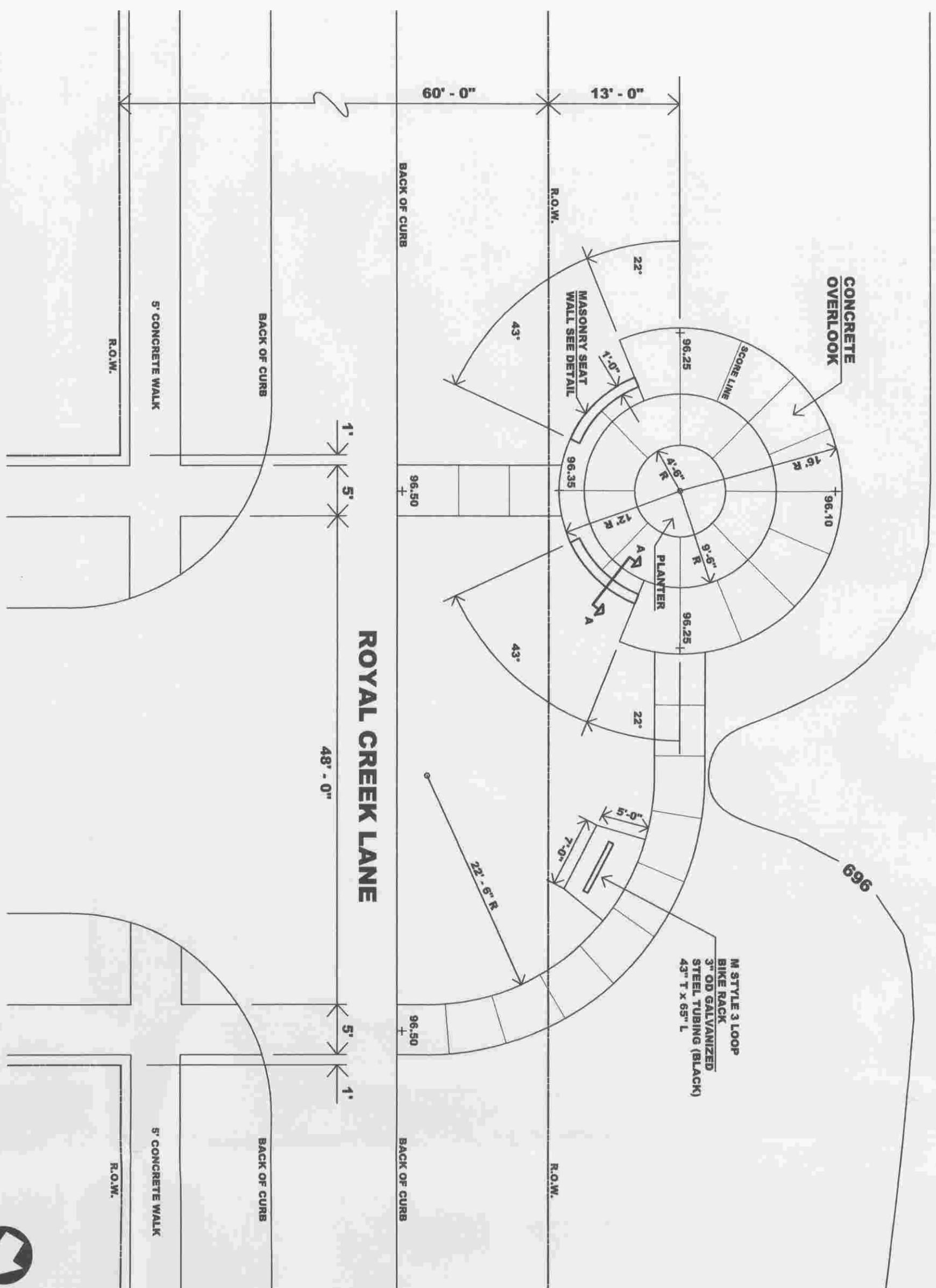
() NUMBER OF EVERGREEN VARIETIES INCLUDED IN TOTAL

BUFFER YARD 'C' (155TH STREET)

SHADE TREES		Size	Quantity	
CA	Catalpa speciosa	2.5' BB	22	
ACC	Acer glabrum 'unimacul'	8' CF	24	
ACORN TREES				
HA	Hamelia virginiana	6' BB	10	
EVERGREEN TREES				
PI	Pinus strobus	Norway Spruce	6' BB	16
BROAD LEAF SHRUBS				
JL	Juniperus chinensis 'Sea Green'	Swamp White Oak	30"/#5	32
Th	Thuja occidentalis 'Woodward'	Woodward globe Arborvitae	30"/#5	29
CC	Cornus florida	Sweet Shrub	2.5"/#5	36
CC	Cornus sericea 'Balsyle'	Bailey Redwood Dogwood	2.5"/#5	40
Rh	Rhus copallina var. 'Aetrolia 'Morton'	Prairie Flame Sumac	2"/#5	50

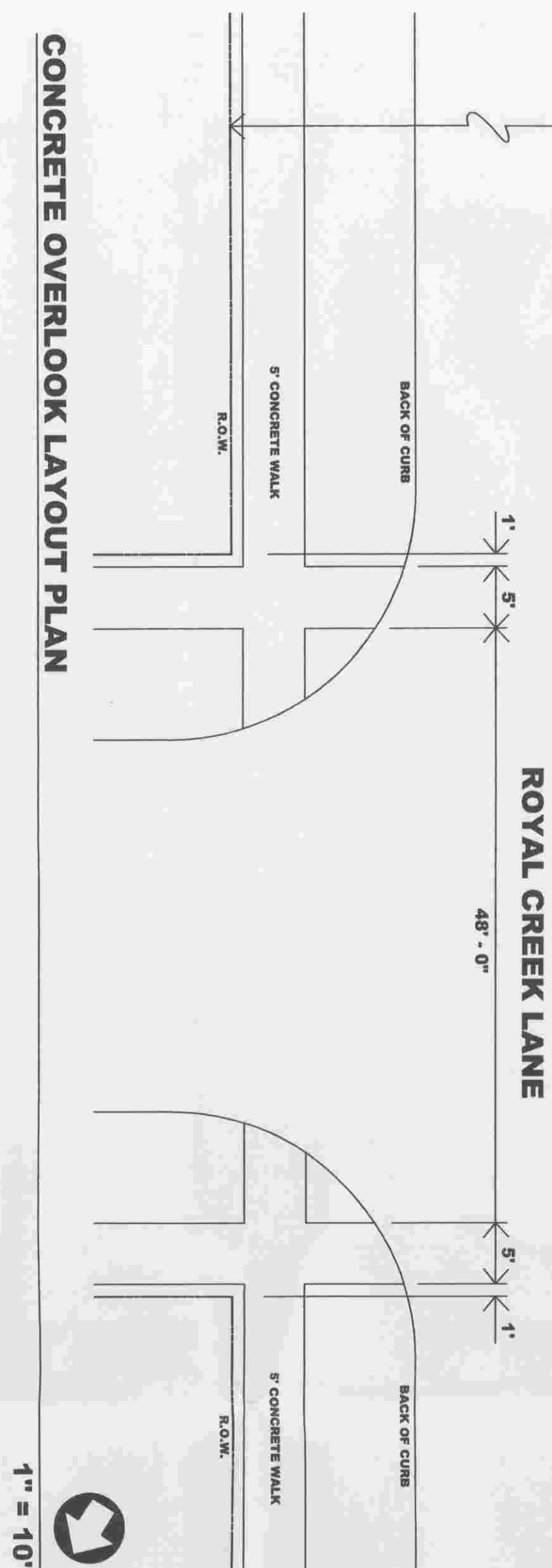
BIFFER YARD	C. 0.15319 (25%)			
SHADE TREES				
CA	Shade Tree	Northern Catalpa	2' BB	8
CA	Acer rubrum 'Fransford'	Red Sunset Red Maple	6' BB	9
ORNAMENTAL TREES				
NA	Hammamelis virginiana	Common Witchazel	6' BB	9
EVERGREEN TREES				
PI	Price above	Norway Spruce	6' BB	9
PI	Price above			
SEASONAL TREES				
CA	Christmas 'Seas Green'	Seas Green Juniper	30"/#5	20
CA	Christmas 'Aborvitae'	Aborvitae	30"/#5	17

NOTE: SEE SHEET 5 FOR BUFFER YARD PLANTING DETAILS

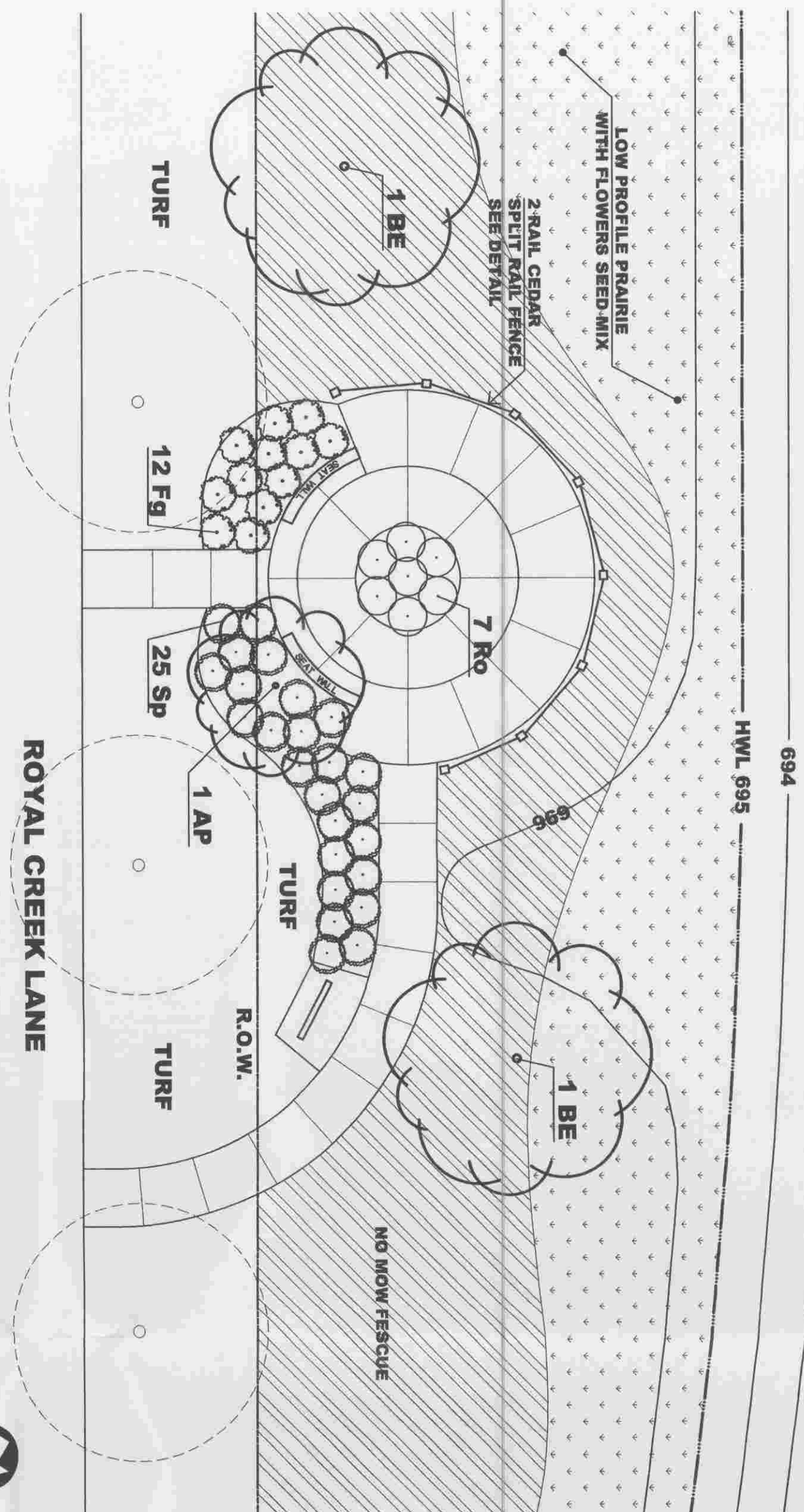


MASONRY SEAT WALL SECTION A-A

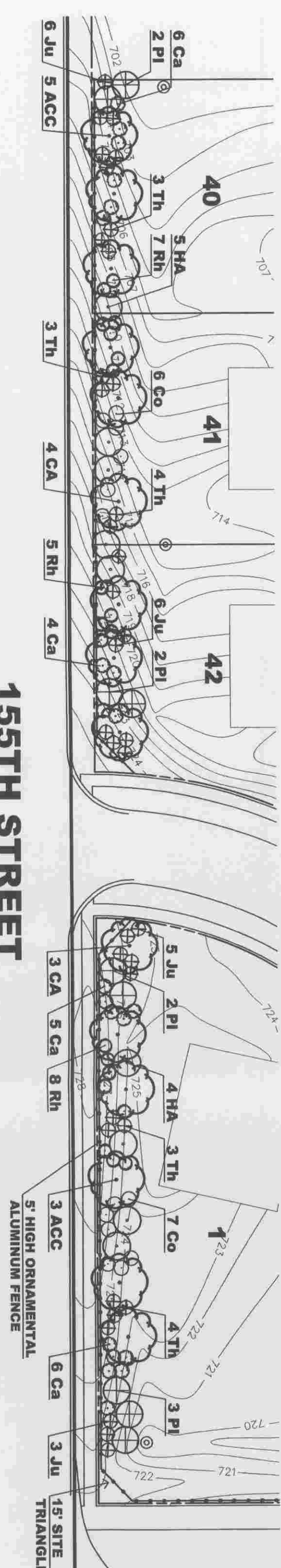
1/2" = 1'



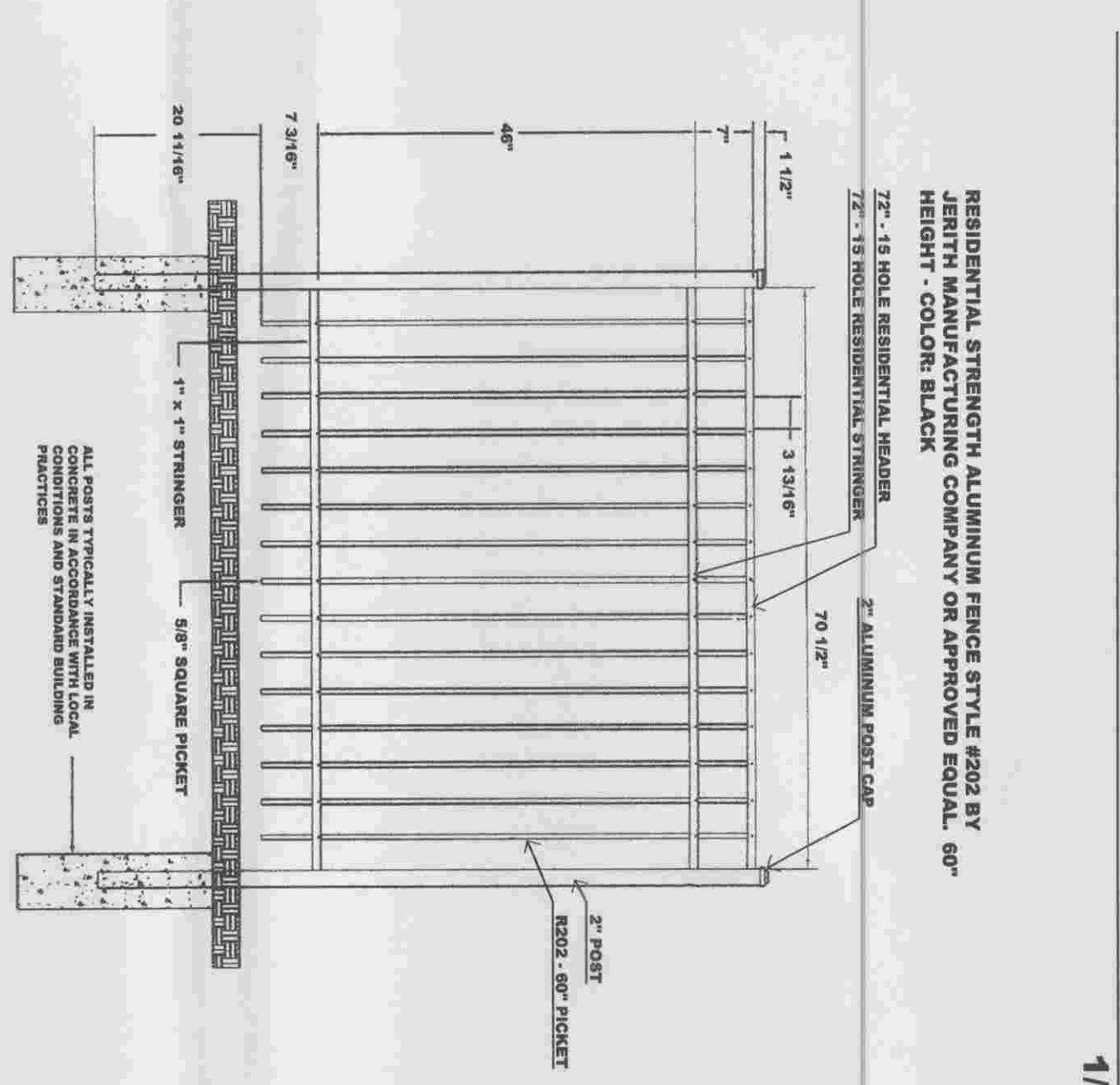
CONCRETE OVERLOOK LAYOUT PLAN



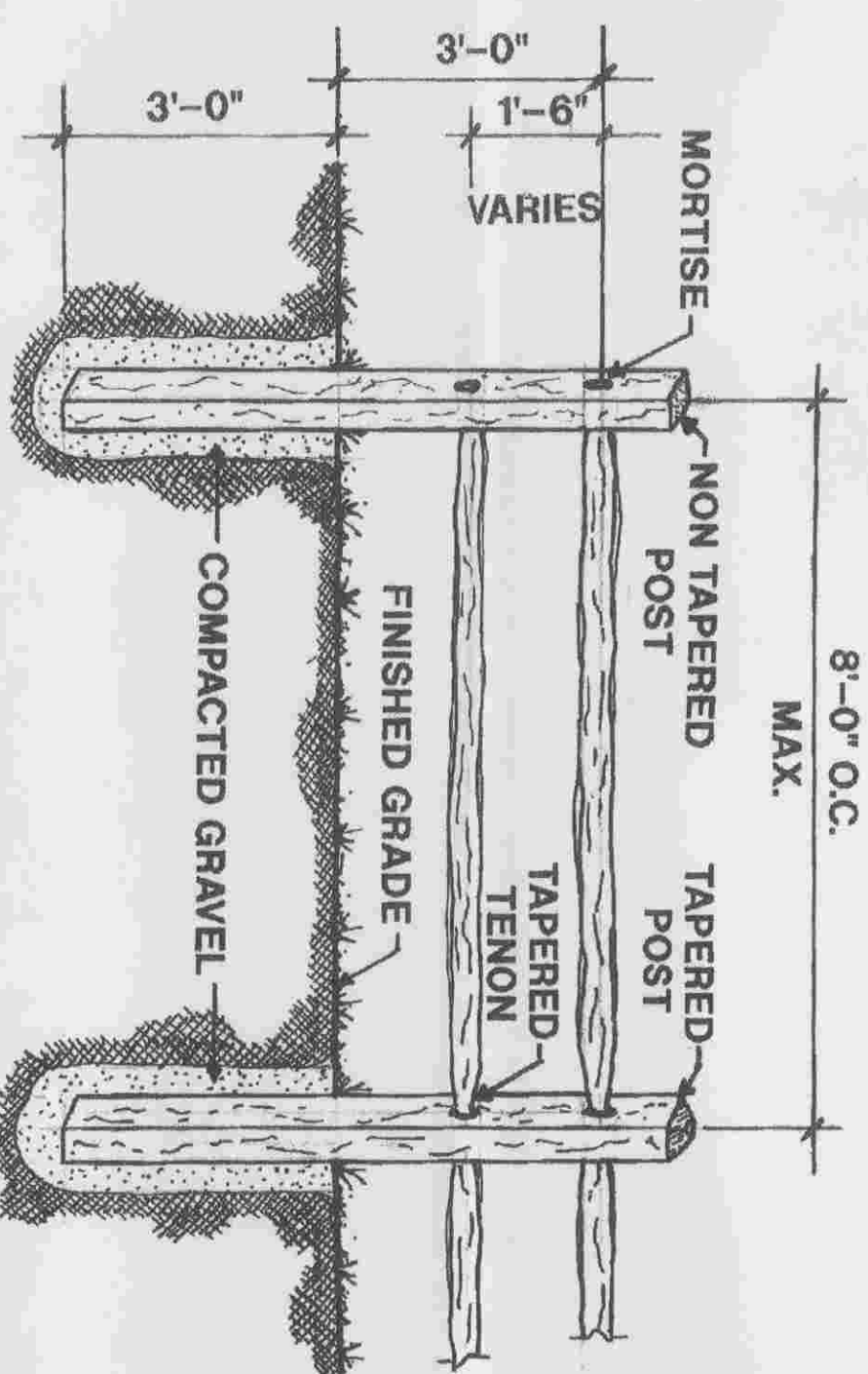
CONCRETE OVERLOOK LAYOUT PLAN



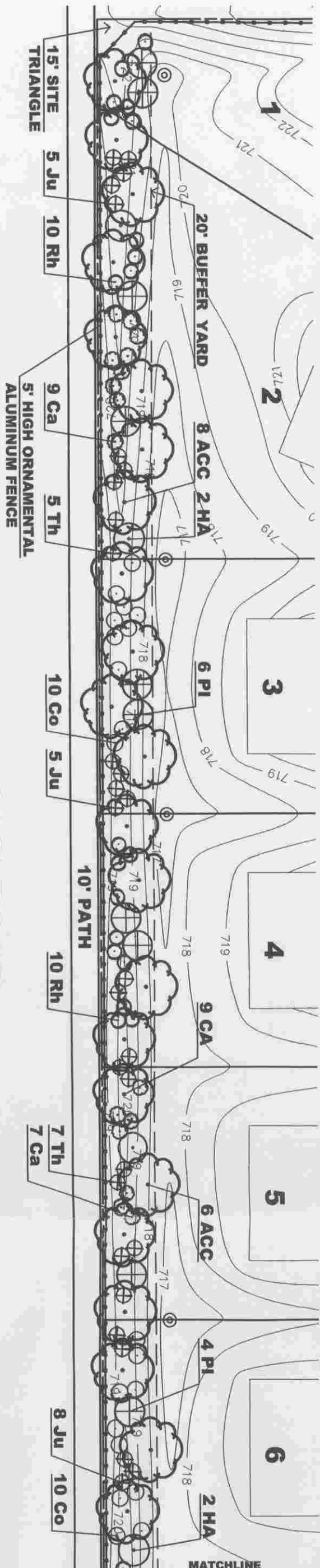
155TH STREET



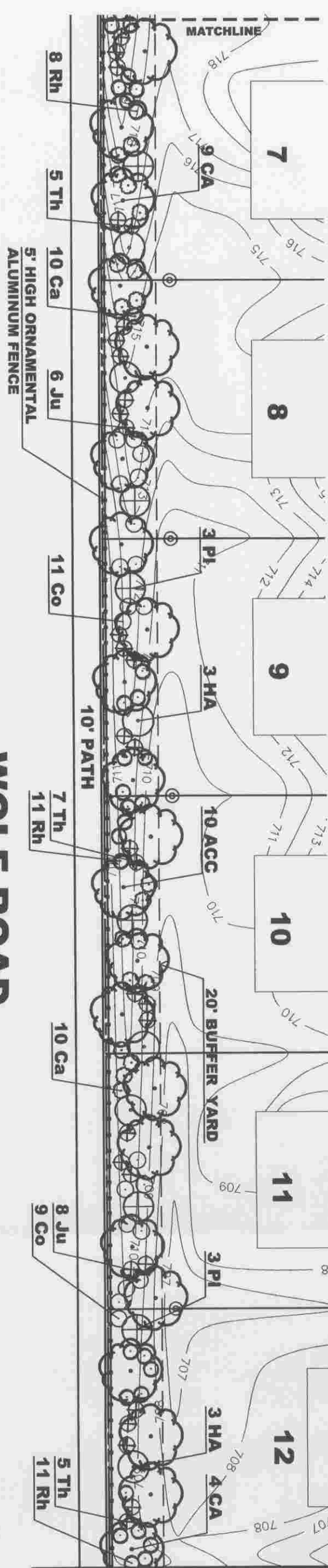
2 RAIL SPLIT-RAIL FENCE DETAIL



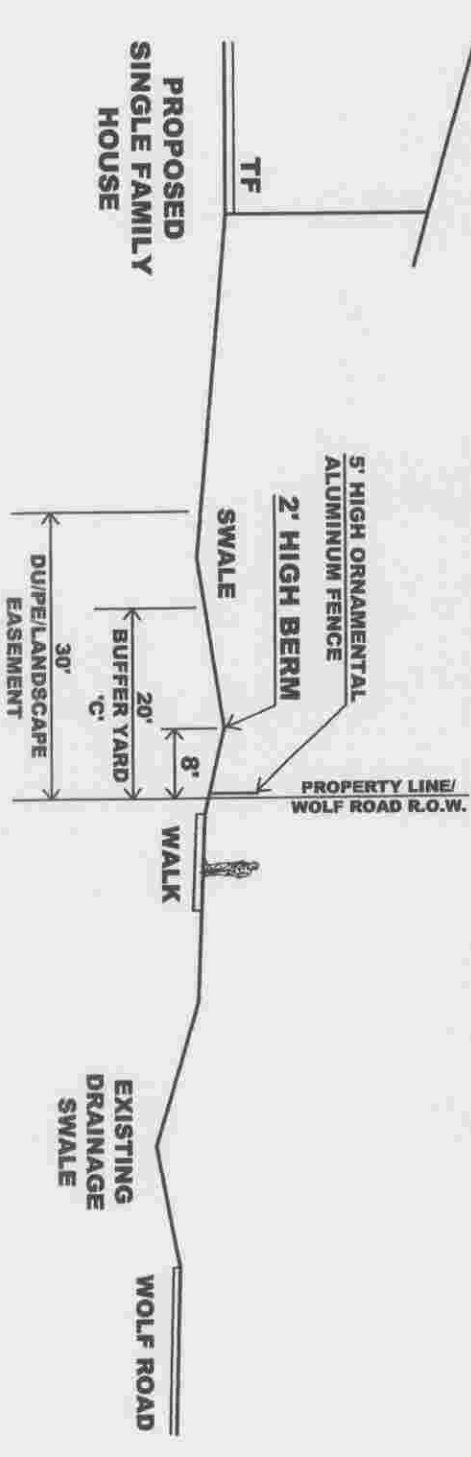
MASONRY SEAT WALL SECTION A-A



WOLF ROAD



WOLF ROAD



WOLF ROAD - 20' BUFFERYARD 'C' PLANTING PLAN DETAIL



FINAL LANDSCAPE IMPROVEMENT PLAN DOCTOR EAST - ORLAND PARK, IL GALLAGHER & HENRY	PROJECT NO. <u>11M</u>	SHEET 5 OF 6
	SUBMIT BY <u>11M, BH</u>	
	DRAWN BY <u>AS</u>	
	CHECKED BY <u>4/24/09</u>	
	DATE <u>4/24/09</u>	
	SCALE <u>AS NOTED</u>	
		716-040

TECHNICAL SPECIFICATIONS, SEEDING AND SODDING

SCOPE OF WORK - The work includes finished grading, furnishing fertilizer, seed and/or sod as stipulated in the project specifications and performance of all operations in connection with seeding and/or sodding in strict accordance with the applicable drawings and subject to the terms and conditions of the Contract.

MATERIALS

Tolerance for all seeding and sodding operations will be supplied by the Owner.

Commercial Fertilizer and Delivery - Fertilizer shall be delivered to the site in unopened, original containers, each bearing name and address of the manufacturer, name brand or trademark, and manufacturer's guaranteed analysis. The fertilizer shall contain a minimum basic percentage by weight of the following strength:

Fertilizer Strength - The fertilizer shall be a complete fertilizer containing a minimum basic percentage by weight of the following:

Prior to Seeding and/or Sodding 6-24-24

Nitrogen	65%	80%	80%
Phosphorus	24%	80%	80%
Potash	24%	80%	80%

or as approved by the Landscape Architect

Grass Seed shall be delivered seed of the most recent seed crop available. All seed shall meet requirements established by the state and federal seed and weed control laws.

Mixing of Seed - The seed shall be mixed thoroughly in accordance with the following:

	Quantity	% Pure	% Germination
Kentucky Bluegrass	65%	80%	80%
Fine Fescue Perennial Ryegrass	25%	80%	80%
Red Fescue	10%	80%	80%

or as approved by the Landscape Architect

Mulch shall consist of clean straw free from noxious weed seed and other elements harmful to lawns, or any of the commercially used materials available. Where specified on the plans, hydro-mulch shall consist of wood cellulose fiber and shall contain no growth or germination inhibiting factors and shall be dyed green to facilitate metering. The fiber shall have the additional characteristic of dispersing rapidly in water to form a homogeneous slurry and remain in such state while silted in a hydraulic mulching unit.

Bluegrass Sod shall comply with state and federal laws with respect to inspection for plant diseases and insect infestation. It shall be fresh cut, live, nursery grown sod, not less than one and one-half (1 1/2) inches thick having well-rooted roots. The turf shall be a Kentucky Bluegrass mixture and shall contain no bait or quick grass having any other noxious weed growth. It shall be cut firm, tough texture having a compact growth of grass. The sod sections shall be standard in size (16 inches wide x 3 feet in length) and each section shall be strong enough to support its own weight. Sod cut for more than 48 hours shall not be used without the approval of the Landscape Architect.

SITE PREPARATION

Rough Grading - All rough grading will be completed by the Owner. This will include the rough grading of each round (if applicable) and the grading and filling of other areas. Owner will also spread black top.

Finish Grading - The Contractor shall complete all finish grading operations. In all areas, surfaces shall have a smooth continental grade and shall be left in an even and properly compacted condition which, under its practical use, will not provide dips and pockets where water may stand. All areas shall be finish graded as needed to correct surface irregularities produced by preceding operations or by any other cause. All finish grading and earth movements shall be approved by the Landscape Architect or his authorized representative before any planting, seeding or sodding takes place.

Tilling - Areas to be seeded and sodded shall be thoroughly prepared to the required depth of approximately three inches (3") by disking, harrowing or other approved means. Limited areas as shown on the drawings which are too small to make these operations practicable shall receive special consideration prior to final filling. Tilling shall continue until the condition of the soil is suitable for the specified type of seeding and/or sodding.

Clean-Up - After completion of tilling operations, the surface shall be cleared of all stones, stumps and other objects larger than one inch (1") in thickness or diameter and of roots, brush, wire, grade stakes and other objects that may be a hindrance to planting, installation, and maintenance operations. Adjacent paved areas shall be kept clean and soil or other dirt that may be brought upon the surface shall be removed promptly.

Seeding Guarantee - Fertilizer shall be distributed uniformly over all areas indicated to be seeded or sodded at the manufacturer's recommended rate and shall be incorporated into the soil to the depth of at least two inches (2") by disking, harrowing or other acceptable methods.

SEEDINGS (Applies to all areas specified for seed on the Contract drawings)

Time Limits - The season for sowing seed in lawn areas shall be from April 1 to June 1 and from August 15 to October 1 or at such other times as are approved by the Landscape Architect. All sowing of seed shall be completed after trees and shrubs have been planted.

Seeding - No seeds shall be sown during high winds. Seed shall be applied at the rate of 5 pounds per 1,000 sq. ft. or 200 pounds per acre by mechanical means. Half the seed shall be sown with the sower moving in one direction and the remainder shall be sown with the sower moving at right angles to the first sowing. The seeded area shall be lightly rolled being careful not to rake seed from one area to another, thus causing an uneven seeding. This seed shall be covered to a depth from 1/8 inch to 1/4 inch. Seeding shall be done by individuals experienced in this type of work. In the event that seeding equipment does not compact, a separate rolling will be required.

Mulching - Mulching shall be performed immediately after seeding operations and shall consist of a hand or machine application of mulch uniformly to a depth of 2" loose measurement.

Where specified, hydro-mulch shall be applied uniformly with a hydroseeder at the rates of:

Surfaces sloping < 4:1 35 lbs. per 1,000 sq. ft. or 5500 lbs. per acre

Surfaces sloping > 4:1 45 lbs. per 1,000 sq. ft. or 2,000 lbs. per acre

Required Maintenance - Maintenance shall begin immediately after each seeding operation is completed and shall continue for 90 days through the period from April 1 to November 15. Maintenance periods that are incomplete on November 15 shall be completed beginning 15 days of the following year. Maintain seeded areas by watering, reseeding, leveling and repair of soil erosion and settlement where required to establish a uniform turf. Watering of seeded areas shall be as required to grow healthy turf. The Contractor shall be responsible for maintaining all seeded areas until final acceptance by the Landscape Architect.

Acceptance of Seeded Areas - When the grass has all been cut a minimum of three times and a uniform distribution of grass plants is established without evidence of excessive weed or crab grass infestation, the acceptance of seeded areas will be determined by the inspecting Landscape Architect.

If an infestation of weeds or crabgrass develops prior to acceptance of the lawn, the Contractor shall treat the infestation by hand weeding or chemical control. The chemical control shall be furnished and installed by the Contractor as recommended by the manufacturer. At least two weeks shall elapse after chemical control is applied before a request of inspection for acceptance is made to the Landscape Architect.

Areas having bare spots larger than one (1) square foot will not be accepted. In this situation, the bare spots must be reseeded in accordance with the seeding specifications, when less than fifty percent (50%) of the area contains bare spots. Where more than fifty percent (50%) of the area contains bare spots, the entire area shall be completely reseeded also in accordance with the seeding specifications.

In order to obtain final acceptance of seeded areas, the Contractor shall notify the Landscape Architect by telephone or letter that the work has been completed. The Landscape Architect will then conduct an inspection. His findings will be documented in a written field report which will be forwarded to both the Owner and Contractor. If the Landscape Architect approves the area inspected, the Contractor will then be eligible for final payment for work performed. If the Landscape Architect rejects the inspected area, the Contractor will be required to perform whatever work that is necessary to correct the deficiencies and receive the approval of the Landscape Architect before final payment will be authorized.

The Contractor shall not be held liable for damage incurred to the seeded areas caused by deicing compounds, toxic substances, fertilizers, pesticides and other materials not specified or not applied by him or under his supervision, nor those damages caused by vandalism or acts of God.

The Contractor shall be responsible for all damage to lawn areas that is caused by the work of his planting, mulching, plant maintenance or replacement being done after lawn areas are accepted.

SODDINGS (Applies to all areas specified for sod on the Contract drawings)

Time Limits - The season for sod installation shall be from March 15, when the soil becomes workable and unfrozen soil becomes available, to June 15 and from August 15 to November 1 or at other times as are approved by the Landscape Architect.

Laying - The surface on which the sod is laid shall be firm and free from depressions to allow for positive drainage. During periods of high temperature, the soil shall be lightly moistened immediately prior to laying the sod.

The sod shall be handled and laid by hand. The first row shall be laid in a straight line with subsequent rows placed parallel to and tightly against each other. Lateral joints shall be staggered (i.e. running bond) to promote more uniform growth and strength. Care should be exercised to insure that the soil is not stretched or overpacked and that all joints are butted tightly in order to prevent voids which could cause air drying of the roots and weed growth. On sloping areas where erosion may be a problem (3:1 or greater), sod shall be laid parallel to the contours of the slope with staggered lateral joints and secured by wooden pegs at a minimum of four (4) stakes per square yard and at least one (1) stake per piece of sod. All sod laying on sloping areas should begin at the toe of the slope.

As sodding is completed in any one section, the entire area shall be rolled by the Contractor to insure contact between the sod root system and the prepared soil bed. The Contractor shall water the sod immediately after installation to prevent excessive drying during the progress of the work.

Any disturbed joints or depressions caused by workmen or equipment shall be reworked to conform to the proper grade.

Required Maintenance - The Contractor shall be responsible for maintaining all sodded areas until such time as these areas are accepted by the Landscape Architect. This acceptance will be granted after the Contractor has established an acceptable stand of turf that has knit to the existing soil.

If an infestation of weeds or crab grass develops prior to acceptance of the lawn, the Contractor shall treat the infestation by hand weeding or chemical control. The chemical control shall be furnished and installed by the Contractor as recommended by the manufacturer. At least two weeks shall elapse after chemical control is applied before a request of inspection for acceptance is made to the Landscape Architect.

Areas which are dead or are in an unhealthy, unsightly or badly impaired condition shall be unacceptable and shall be re-sodded using the same type sod and source of soil. This shall be repeated until all areas display an acceptable stand of grass.

In order to obtain final acceptance of sodded areas, the Contractor shall notify the Landscape Architect by telephone or letter that the work has been completed. The Landscape Architect will then conduct an inspection. His findings will be documented in a written field report which will be forwarded to both the Owner and Contractor. If the Landscape Architect approves the area inspected, the Contractor will then be eligible for final payment (ten percent withholding). If the Landscape Architect rejects the inspected area, the Contractor will be required to perform whatever work that is necessary to correct the deficiencies and receive the approval of the Landscape Architect before final payment will be authorized.

Upon acceptance by the Owner, the Owner shall assume maintenance of the lawn areas.

The Contractor shall not be held liable for damage incurred to the sodded areas caused by deicing compounds, toxic substances, fertilizers, pesticides and other materials not specified or not applied by him or under his supervision, nor those damages caused by vandalism or acts of God.

The Contractor shall be responsible for all damage to lawn areas that is caused by the work of his planting, mulching, plant maintenance or replacement being done after lawn areas are accepted.

SOD AND SEED GUARANTEE - The Contractor shall guarantee all work covered by this specification to the extent that all sod shall be uniform in color, quality and coverage and shall be reasonably free of weeds, diseases or other visible imperfections.

TECHNICAL SPECIFICATIONS - LANDSCAPING

SCOPE OF WORK - The work includes furnishing of all plants, materials and performance of all operations in connection with the planting of trees, shrubs, evergreens and groundcover in strict accordance with the project specifications and the applicable drawings which are subject to the terms and conditions of the Contract.

GENERAL REQUIREMENTS - All plant material shall comply with the state of Illinois and federal laws with respect to inspection for plant diseases and insect infestation. The Landscape Architect reserves the right to inspect the plant material at place of origin, but such inspection shall not preclude the right of rejection at the site.

MATERIALS (Other than Plant Material)

Prepared Soil for all plant material and planting operations shall be amended as follows:

65% Topsoil	(Black topsoil furnished by the Owner)
20% Peat	(Minimum of 80% finely shredded organic peat moss)
15% Manure	(Well-rotted unleached horse or cow manure, free from chemicals and not more than 60% moisture by weight)

Mulch shall consist of shredded hardwood bark or hardwood chips and shall be free of leaves, twigs, and debris.

Mushroom Compost - Sterilized mixture of horse manure, straw, peat moss and fertilizer which has been used for mushroom growing and composted.

Fertilizer shall be of the following:

for bulbs:	Bonemeal, which shall be finely ground commercial bonemeal with a minimum of:	
	Nitrogen	4%
	Phosphorus	20%

for all trees:	A commercial fertilizer, which shall be a complete fertilizer with a minimum of:	
	Nitrogen	8%
	Phosphorus	24%
	Potash	24%

or as approved by the Landscape Architect

All fertilizer shall be delivered in standard size, unopened original containers bearing the name of the manufacturer, name brand or trademark as well as the manufacturer's guaranteed analysis. It shall be protected at all times. Any which is damaged or becomes unsuitable for any reason may be rejected by the Landscape Architect.

Watering Material for deciduous tree trunks 1/2" in caliper or more shall be first quality burlap or two thicknesses of waterproof crepe paper cemented together with bituminous material and not less than 6" or more than 10" wide.

PLANT MATERIALS

General - The Landscape Architect reserves the right to inspect plants at the place of growth at the nursery, but such inspection shall not preclude the right of rejection at the site. Contractor shall furnish and plant all plants shown on the drawings as specified and in quantities as actually designated on the drawings. The quantities in the plant list are included for convenience purposes only.

Quality and Size - Plants shall have a habit of growth that is normal for the species and shall be sound, healthy, vigorous and free from insect pests, their eggs or larvae, plant diseases and injuries.

All plants shall be nursery grown under climatic conditions similar to those which exist in the locality of the site for at least two (2) years and equal or exceed the measurements specified in the plant list. They shall be measured before pruning with branches in normal position. All necessary pruning shall be done only at the time of planting. Trees will not be accepted which have their leaders cut or which have their leaders damaged to the point of injury. Plants larger in size than specified may be used with the approval of the Landscape Architect, but the use of larger plants shall have no changes in the contract price. Requirements for the maintenance, watering, quality, baling and burlapping of plants in the plant list shall follow the code of standards (C20-1985) by the American Association of Nurserymen, Inc. All plant material with shrivelled dry roots or which is found not to comply with the specifications will be rejected.

All shrubs shall be at least twice transplanted and must have a fully developed fibrous root system typical of the stated species. All shrubs must be freshly dug immediately before shipping. Healed-in plants may be considered only in special cases involving planting during the hot months between the spring and fall planting seasons (Section 5 of the General Conditions). Use of such materials will be allowed only upon the approval of the Landscape Architect and is subject to this inspection prior to said approval.

Container Grown - All container grown plants shall have a heavy fibrous root system, or a well developed pit root, that has been developed by proper horticultural practice including transplanting and root pruning. The root system shall have developed sufficiently long for new fibrous roots to develop so that the root mass will retain its shape and hold together when removed from the container. In no case should the container strangle or girdle the natural growth of the plant.

Bare-Root Plants - Those plants marked BR (Bare Root) shall be dug at the nursery without injury to the fibrous root system necessary for the full recovery of the plant. Roots shall be covered with a suitable packing material immediately after they are dug for protection until delivery and installation.

All bare-root trees shall have a heavy fibrous root system characteristic of the species that has been developed by proper cultural treatment, transplanting and root pruning. The spread of the root system in field shall equal the trunk diameter in broken or additional air inches.

All bare-root plants shall have been maintained in cold storage at the temperature of approximately 30 degrees prior to being delivered to the site.

Balled and Burlapped Plants (designated "BB") shall be dug with firm natural roots of each diameter indicated hereinafter and of sufficient depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Plants having balls broken or cracked during delivery or at time of planting will cause the plant to be rejected by the Landscape Architect.

Balls - All burlap shall be the top size, as specified in American Standard for Nursery Stock and shall be live, clean, free of rot, bruises or abrasions.

Deliveries - All precautions that are demanded by good trade practice to insure arrival of the plant material at the stated delivery point in good condition for successful growth and without injury of any nature shall be taken by the Contractor. Plants shall be covered properly to prevent drying, frost damage or injury.

Temporary Storage - Insofar as it is practicable, plant material shall be planted on the day of delivery. In the event this is not possible, the Contractor shall protect the undug stock from sun and drying winds at all times. All balled and burlapped plants shall be shaded from the sun, have their ball set on the ground and heeled in with sawdust, peat, soil or other moisture-holding material and shall be kept moist. Plants should not remain undug for longer than three (3) days.

Substitutions - Substitutions may be permitted. Such substitution may be made only upon written authorization by the Landscape Architect.

Selection - All plants shall be obtained from reputable nurseries licensed by the State of Illinois and approved by the Landscape Architect. The Landscape Architect reserves the right to accompany the Contractor to the nurseries for the purpose of selecting (bidding) material.

PLANTING - Planting operations shall be conducted under favorable weather conditions during the season stated in the Contract.

Placement of Planting Area - Before excavations are made, the surrounding turf (if existing) shall be covered in a manner that will satisfactorily protect treated areas that are to be trucked or hauled over and upon which soil is to be temporarily stored.

Excavation for Planting - Excavation for planting shall include the stripping and stockpiling where desired and all acceptable backfill encountered within the areas to be excavated for tree holes, plant pits and planting beds. Circular pits with vertical sides shall be excavated for all plants except those plants specifically designed on the plans to be planted in beds. In general, the diameter of pits for trees shall be at least two feet greater than the diameter of the ball or spread of roots. Diameter of pits for shrubs shall be at least one foot greater than the diameter of the ball or the spread of roots.

The depth of pits for trees shall be suitable to accommodate the ball or roots when the plant is set in position and shall be at least 18 inches deep. The topsoil or prepared soil in bottom of the pit. The use of augers for plant pit excavation in wet clay soil conditions should be avoided.

For hedge plantings, a continuous trench instead of separate round pits may be utilized.

Where obstructions below or above ground are encountered, alternate locations may be selected as approved by the Landscape Architect. Where locations cannot be changed, removal of underground obstructions shall be the responsibility of the Contractor. All alternate locations shall be approved by the Landscape Architect.

Excavated topsoil or rich loam shall be stockpiled and re-used for backfilling of pits and all excavated material not suitable for backfilling shall be disposed of by the Contractor outside the project property.

Final Inspection - After the pit has been dug to the proper size (Section 5.2), the soil at the bottom of the pit shall be loosened to a minimum depth of four inches by raking or other effective methods. The pit shall then be backfilled with a six (6) inch layer of compacted, prepared soil. In wet conditions, the soil shall be an even depth of 1/4" diameter washed soils for the compacted soil bed. If the Contractor should encounter severe drainage problems or soil conditions which he feels could be detrimental to the growth and survival of the specified plant material, he should inform the Landscape Architect immediately by phone of the condition before proceeding with the work. The Landscape Architect will then confer with the Contractor so that a solution to the problem can be quickly agreed upon.

Setting and Fertilizing Plants - All plants shall be installed in accordance with the following:

a) **Balled and Burlapped Plants** - "BB" plants being planted in pits or trenches shall be placed in the center of the pit or trench on the six inches of compacted, prepared soil. The soil shall be adjusted so that the top of the root ball bears the same relationship to final grade as it bore to previous finish grade in the nursery.

All burlap tied around the tree trunk shall be removed. All treated burlap or plastic wrap shall be taken off all around the ball. If available, it shall be completely removed, along with prepared soil and other nondecomposable materials. Untreated burlap need not be removed, but should be loosened around the tree trunk.

Backfill the planting pits with prepared soil and fertilizer in 2" layers and tamp each layer to fill voids until the planting mixture is at final grade. The fertilizer (bonemeal or 6-24-24) should be incorporated in the backfill mixture at the rate recommended by the manufacturer.

b) **Container Grown Plants** - Open and remove potted plants from containers. If the growing medium is composed of seventy-two percent (72%) or more of peat, perlite, sand, or the material other than sand, put visible roots away from the container medium so as to leave the roots partially exposed. Place plants in the plant pit or trench and carefully backfill with prepared soil and fertilizer among the exposed roots. Continue backfilling and tamping in six inch (6") layers until the planting mixture is at final grade.

c) **Bare Root Plants** - "BR" plants which have been potted in a mud or peat and water solution shall be placed in the center of the pit or trench. All broken or frayed roots shall be cut off. The roots shall be spread out in a natural position and moist prepared soil and fertilizer shall be carefully backfilled among the roots in six inch layers until the planting mixture is at final grade.

Finishing Plant Day - A shallow saucer shall be formed around each isolated plant pit with prepared soil to retain water. All plants shall be watered immediately after planting. In all cases, the required fertilizer shall be incorporated into the prepared soil mixture at rates specified by the manufacturer.

Pruning of Planting Beds - As trees specified for ground cover, shrubs or perennials, shall be covered with a two-inch (2") layer of mushroom compost. This shall be worked into the soil at a minimum depth of nine inches (9") by the use of a subsoiler or other mechanism which cultivates. After completion of this operation, the bed shall be mulched in its entirety with an additional three inch (3") layer of mushroom compost prior to the planting of plants.

Wrapping - Trees shall be wrapped immediately after planting. Wrap up from bottom to three feet above grade level. Prior to wrapping, the trunks shall be inspected for injury to bark, improper pruning, and evidence of insect or disease infestation.

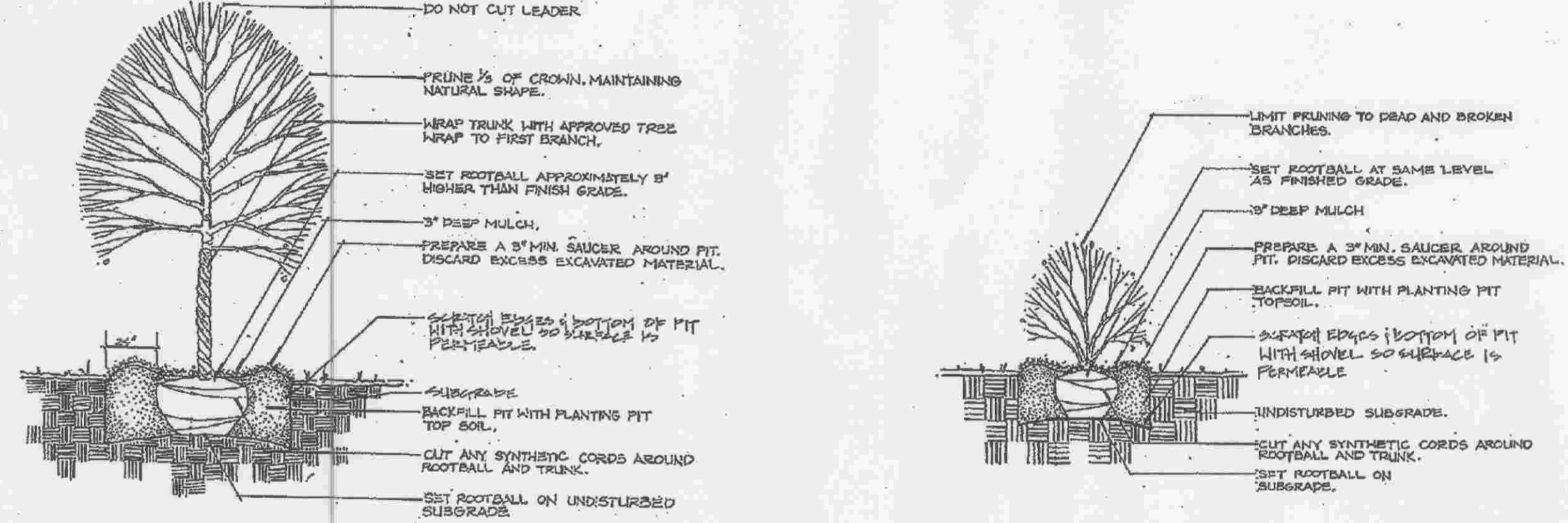
Pruning - Upon completion of the planting operations, all new trees and shrubs on the site shall have been pruned. Pruning shall be limited to the minimum necessary to remove dead or injured twigs and branches and to compensate for the loss of roots as a result of the transplanting operation. Pruning shall be done in such manner as not to change the natural habit or shape of the plants. All cuts shall be made flush, leaving no stubs. On all cuts over 2 1/2" in diameter and bruises and scars on the bark, the injured cambium shall be treated with a fungicide and removed wounds shall be smoothed and shaped so as not to retain water. Treating such areas with a tree paint is not recommended. Flowering trees shall be pruned only to remove dead or broken branches. In no case shall a leader be removed.

Staking - Securing trees via guy wires and stakes shall not be required unless, in the opinion of the Landscape Architect, conditions are such that certain individual plants require such staking which will be specified on landscape plan drawings. In such cases, the method of staking shall be as follows: stakes shall be of sound, durable, unfinished lumber capable of withstanding above and below ground conditions during the period of guarantee, at 2' or 4' and ranging from 24-30" long. A maximum of 12 of stakes shall be exposed above grade level. Guy wires shall be No. 12 gauge galvanized steel wire and hose shall be new two-ply reinforced rubber hose not less than 1/2 inch inside diameter.

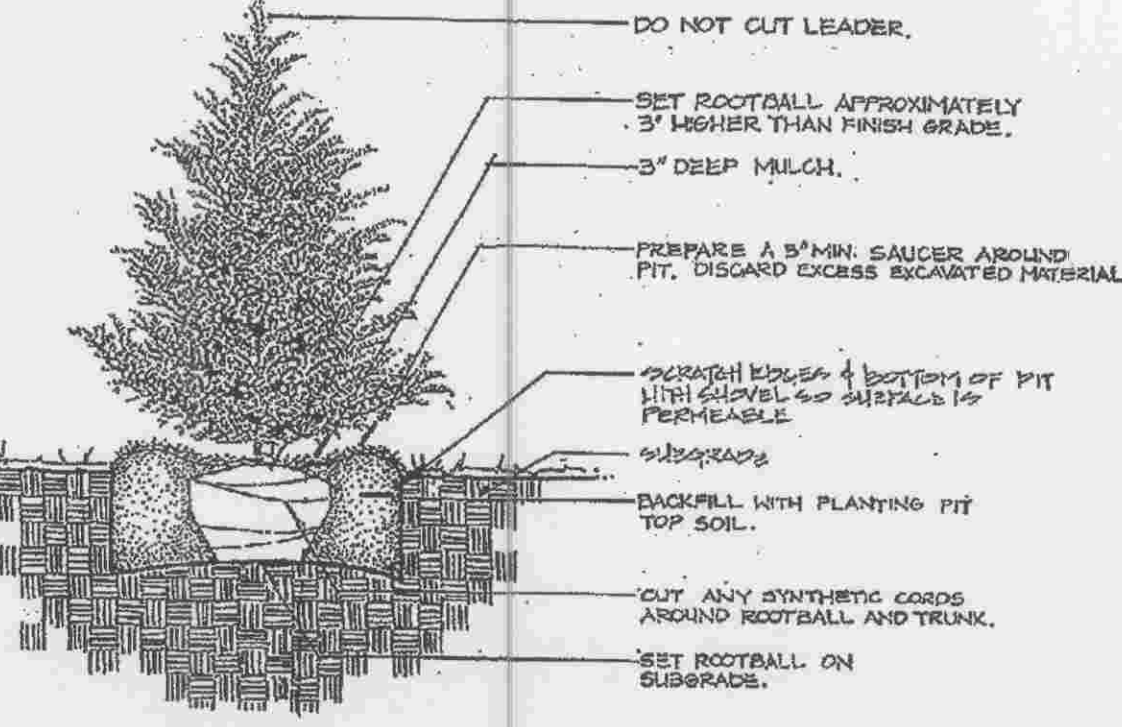
At locations without severely compacted sub-grades, no special plant pit preparation shall be required. Whereby severely compacted sub-grades exist, alternate drainage solutions shall be submitted to the Landscape Architect in accordance with Paragraph 5.4 of this section.

NOTE:

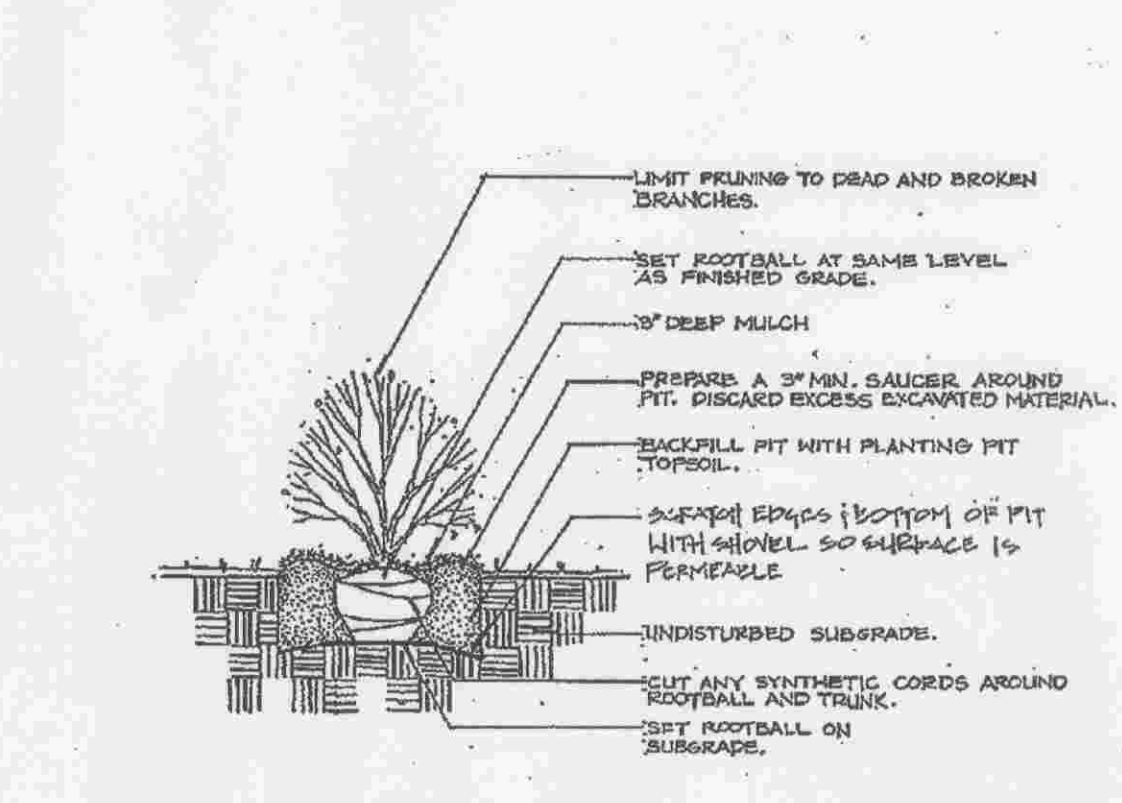
- SIZE AND GRADING STANDARDS OF PLANT MATERIALS SHALL CONFORM TO THE LATEST EDITION OF ANSI Z60.1, AMERICAN STANDARD FOR NURSERY STOCK, BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION
- ALL PLANT MATERIALS SHALL BE GROWN STOCK AND SHALL BE FREE OF ANY DEFORMITIES, DISEASES OR INSECT DAMAGE. ANY MATERIALS WITH DAMAGED OR BROOKED/DISFIGURED LEADERS, BARK ABRASION, SUNSCALD, INSECT DAMAGE, ETC. ARE NOT ACCEPTABLE AND WILL BE REJECTED.
- ALL PLANT MATERIALS SHALL BE INSPECTED AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. ANY MATERIALS INSTALLED WITHOUT APPROVAL MAY BE REJECTED.
- TREES NOT EXHIBITING A CENTRAL (OR SINGLE) LEADER WILL BE REJECTED UNLESS CALLED OUT IN THE PLANT SCHEDULE AS MULTI-STEM
- PLANT QUANTITIES SHOWN IN THE PLANT SCHEDULE ARE FOR CONVENIENCE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIALS SHOWN ON THE PLAN AND SHOULD RELY ON THE PLANT SCHEDULE FOR DETERMINING QUANTITIES.



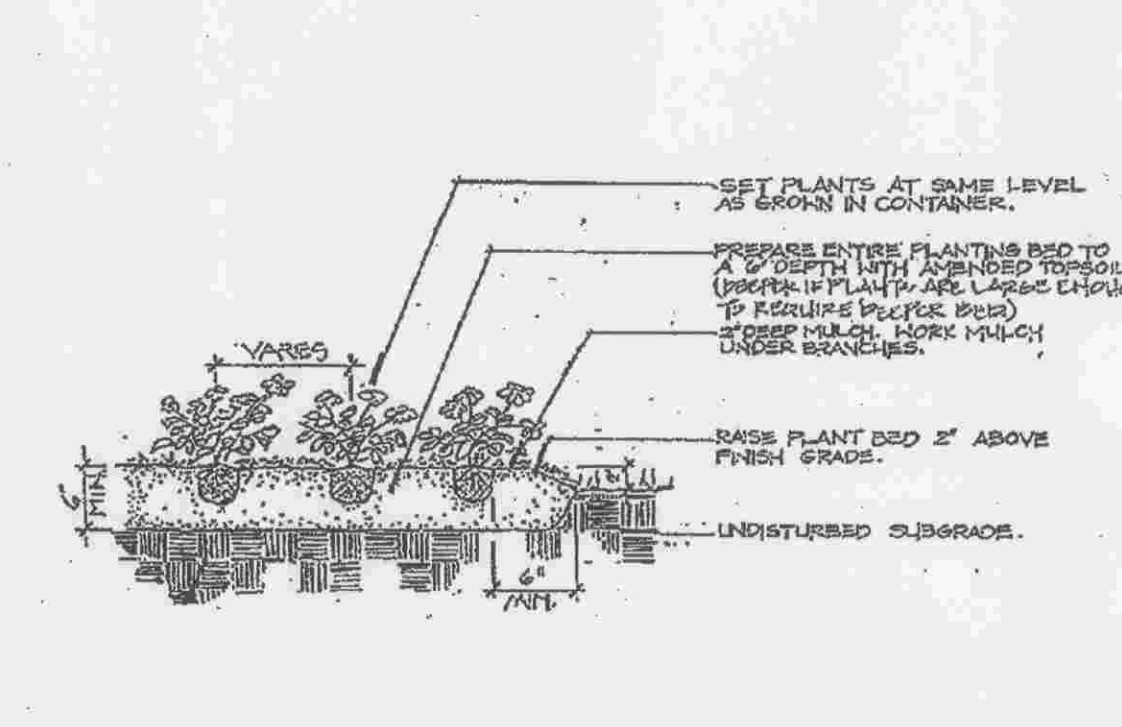
DETAIL: DECIDUOUS TREE



DETAIL: EVERGREEN



DETAIL: SHRUB



DETAIL: PERENNIAL/GRASS/GROUNDCOVER