Woodlawn Center North Apartments
"The Grant at Woodlawn Park"
Chicago, IL

Illinois Green Infrastructure Grant Program for Stormwater Management (IGIG):
Small Projects Category,
Financial Assistance Agreement 1209,
Final Report

Impaired Waters Impacted:
HUC 10: 0404000201
Lake Michigan: Jackson Park Lgn West (IL_QZH), Jackson Pk Lgn East (IL_QZE),
Jackson Pk South Lgn (IL_QZM);
Jackson Park/63rd Street Beach, (IL_QS-02)

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Please note: the project evaluation and report was prepared using Illinois Green Infrastructure Grant Program for Stormwater Management (IGIG) and distributed through the Illinois Environmental Protection Agency. The findings and recommendations herein are not necessarily those of the funding agency.

Table of Contents

Summary……..…3

Introduction…….. 4

Discussion……... 8

Results……. 15

Appendix……16

Summary

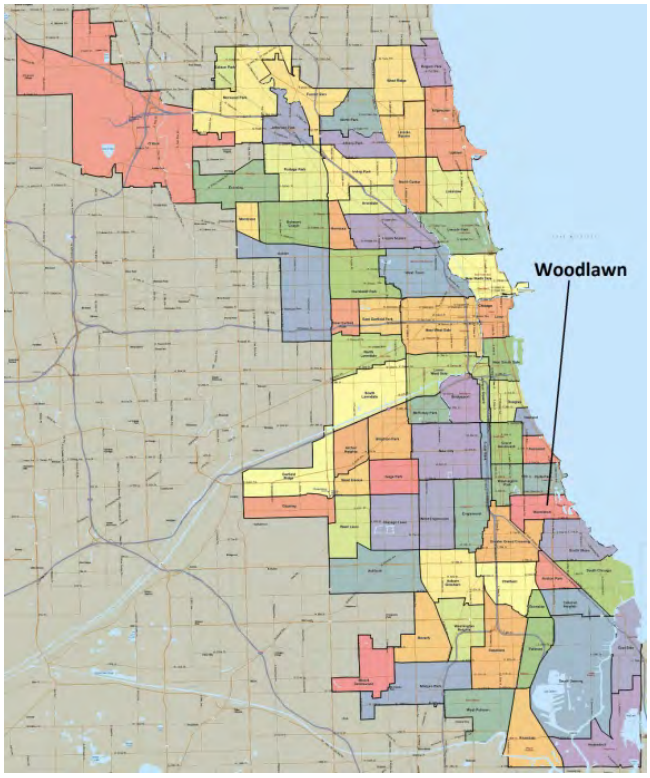
The Grant at Woodlawn Park (former Woodlawn Center North Apartments) is the second phase in the Preservation of Affordable Housing's (POAH) redevelopment of Grove Parc Plaza Apartments, a distressed 504-unit Section 8 development, as an environmentally sustainable, mixed-use and mixed-income community. The redevelopment of the multi-block site includes a firm commitment to green infrastructure and storm water retention as a centerpiece of the redeveloped district. The development, a one-acre site with a 33-unit building, is designed for complete retention (100% reduction) of runoff and associated pollutants for all events up to a 100-year event. The site is located in an area of sandy soils and there is no storm connection to the City's combined sewer system. Through the Illinois Environmental Protection Agency's Illinois Green Infrastructure Grant for Stormwater Management for Financial Assistance Agreement 1209, POAH has been able to implement green infrastructure best management practices including: permeable paving and bioretention in the form of planters, tree planters, and rain gardens.

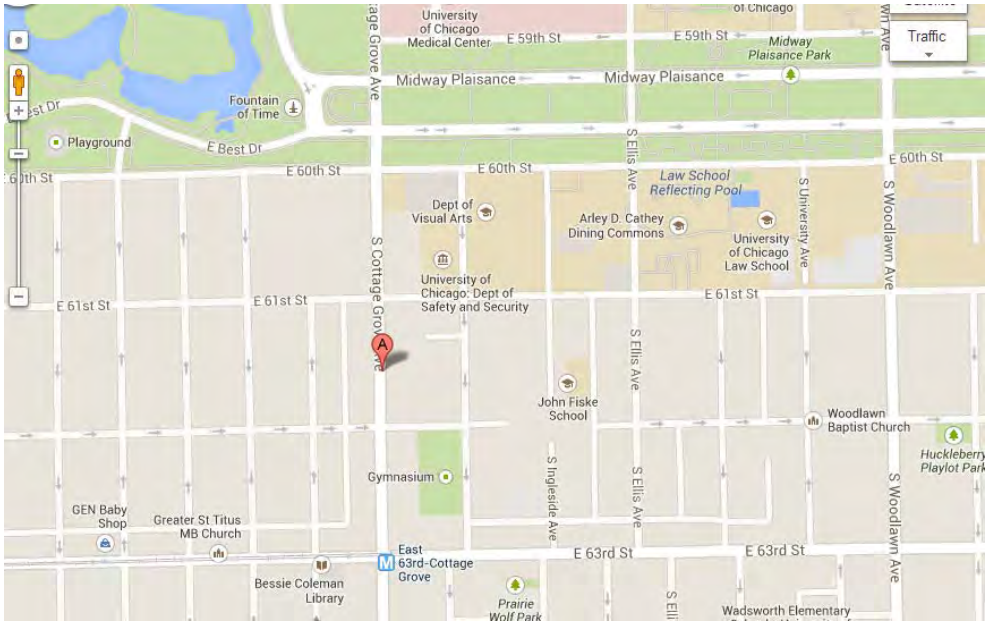
As of 9/30/2013, the project's construction was completed and all best management practices installed as designed. The project has experienced several rainfall events since that time, and like the first phase of construction that has the same systems installed with no connection to the municipal storm sewers, the site has absorbed all rainfall. POAH expects that as the planting grows in over the next year, the system's effectiveness will increase.

POAH estimates that the costs attributable to the best management practices are approximately $279,679 and the Illinois Environmental Protection Agency (Illinois EPA)'s Illinois Green Infrastructure Grant Program for Stormwater Management (IGIG) has made this system possible at the property.

Introduction

The Grove Parc redevelopment project is located in the South Side neighborhood of Woodlawn.





Characterization of the CSO or MS4 area

The Grove Parc Apartments, and this subject redevelopment phase known as The Grant at Woodlawn Park, are located less than two miles west of Lake Michigan. Grove Parc, a five-block, 24-building development built in 1969 for low income families, is covered almost completely by impervious surfaces and all storm drains are tied into the City of Chicago's combined sewer system. It is this condition across many neighborhoods in the City of Chicago that has resulted in combined sewer overflow incidents which impair the City's rivers and threaten the safety of Lake Michigan and its beaches. This hits home in the Woodlawn neighborhood: the Jackson Park Lagoons are on the state's 303(d) listing and the 63rd Street Beach is also listed as an impaired waterway and not always safe or open for public use due to pollutants and bacteria from combined-sewer discharge into the Lake. This condition is also costly to taxpayers – maintaining the storm sewer system costs taxpayers $50 million per year.

In the redevelopment of the Grove Parc Apartments, the Preservation of Affordable Housing (POAH), its engineers and partners saw the opportunity to implement green infrastructure to increase storm water retention and to contribute to the health and safety of the waterways and public areas that are amenities for neighborhood residents. Improving water quality and correcting years of development patterns that have impaired water systems in the City is a priority for this project, because the overarching goal is to create a neighborhood of choice for residents and a model of responsible urban development in Illinois. As such, the inclusion of bioretention and pervious paving improve the immediate environment and contribute to the vision of making Woodlawn a healthier neighborhood that is more connected to its environment. In designing systems for this phase, architect Landon Bone Baker, civil engineer Prism Engineering and landscape architect Conservation Design Forum designed for 100% retention a reduction in the pollutant load accordingly. Beyond this, projects such as these will contribute to the image of a Woodlawn as a healthy and sustainable neighborhood and help build momentum for similar green infrastructure throughout the neighborhood.

Project plan

The overall development of the five-block site is scheduled to take place over the next five years. The first phase, two buildings with 67 apartments on both sides of the 6200 block of South Cottage Grove, was completed in September 2011. The buildings are designed to comply with LEED for Homes standards and the developer will seek LEED for Neighborhood Development designation for the entire project. The nearly identical green infrastructure systems installed last year one block south of the current project site are performing as designed.

The work proposed for the Illinois Green Infrastructure Program involves the installation of the same bioretention planters and rain gardens which has resulted in complete management of all storm water onsite, and no water entering the municipal storm system. This represents a reduction in 644,891[1] gallons of stormwater in a year through the installation of the bioretention planters and rain gardens and pervious paving.

[1] The Porous Pavement utilized the following values: 36.27 inches (Annual Precipitation); 9320 sq ft (Porous Pavement Area); 100% (Percent Capture); *144; *0.004333 = 210,772 Gal/Yr.; The Infiltration Basin utilized the following values: 36.27 inches (Annual Precipitation); 4196 sq ft (Infiltration Basin Area); 15000sqft ; 100% (Percent Capture); *144; *0.004333 = 434,119 Gal/Yr. The total of the implemented practices would than equal 644,891 Gal/Yr.

It is estimated, that the installation of these stormwater management systems will decrease pollutants a significant amount which is shown in the table below:

Infiltration Basin:

	Sewered	Unsewered
Commercial		
Industrial		
Institutional		
Transportation		
Multi-Family		
Residential	0.0963269	
Agriculture		
Vacant		
Open Space		

Estimated Load and Load Reductions

	Load before BMP (lbs/yr)	Load after BMP (lbs/yr)	Load Reduction (lbs/yr)
BOD	2	U	U
COD	13	5	9
TSS	30	7	22
LEAD	0	0	0
COPPER	0	U	U
ZINC	0	0	0
TDS	42	U	U
TN	1	0	0
TKN	0	U	U
DP	0	U	U
TP	0	0	0
CADMIUM	0	U	U

Porous Pavement:

	Sewered	Unsewered
Commercial		
Industrial		
Institutional		
Transportation		
Multi-Family		
Residential	0.2139578	
Agriculture		
Vacant		
Open Space		

Estimated Load and Load Reductions

	Load before BMP (lbs/yr)	Load after BMP (lbs/yr)	Load Reduction (lbs/yr)
BOD	5	U	U
COD	30	6	24
TSS	66	7	60
LEAD	0	0	0
COPPER	0	U	U
ZINC	0	0	0
TDS	93	U	U
TN	1	0	1
TKN	1	U	U
DP	0	U	U
TP	0	0	0
CADMIUM	0	U	U

Permeability testing for these sites have shown high percolation levels and suitability for natural drainage. See appendix for detailed construction schedule.

Project components:

- Site work for bioretention planters and pavement systems began in the summer of 2013 and planting was completed by September 30, 2013. System specifications include:

Downspouts and interior roof drains that empty into bio-retention planters;
Shallow vegetated depression or planter box underlain with open-graded aggregate and whose topsoil is composed of amended topsoil.;
Engineered topsoil that has been uniformly modified with soil amendments to meet specifications and designed to readily infiltrate storm water runoff down to open-graded aggregate layer below;
Open-graded aggregate in the form of sound, clean crushed stone or gravel for drainage within bioretention facilities;

Rain gardens planted to retain and purify water, including shrubs and grasses such as Kentucky Bluegrass, Perennial Ryegrass, and Creeping Red Fescue;
Two dozen new tree planters containing, among other species, Burr Oak, Northern Hackberry and Kentucky Crabtree, with a minimum of a 4" caliper;
Geotextiles and erosion control materials for both planters and underlay to porous paving;
Specialized excavation and grading for system installation;
Solid concrete pavers with openings between pavers filled with aggregate setting;
Specifications for bed preparation and pavement-setting;
Materials testing and statements of material properties for all approved pavers;
All materials sourced within 500 miles of the site.

Programmatic Capability/Technical Experience

Preservation of Affordable Housing, Inc. (POAH, a 501(c) 3 corporation, is the project proponent and long-term owner of the project. POAH is a nationally recognized nonprofit specializing in the acquisition, rehabilitation and long-term preservation of affordable housing. Since its founding in 2001, POAH has preserved over 8,500 units of housing at over 60properties in 9 states and the District of Columbia, including the 132-unit Crestview Village in Kankakee, Illinois. POAH's affiliated property manager, Preservation Housing Management, combines nationwide management experience with rich local knowledge, and has been publicly recognized for the positive change it has wrought at the existing Grove Parc site.

POAH is also a leader in implementing high standards of sustainable design in its developments, including LEED for Homes and Enterprise Green Communities-certified projects. It completes trainings with residents living in its buildings to introduce them to building systems – including the project's water and energy systems, to teach energy efficient and waste-reducing household practices, and overall, to build a sense of ownership in people's new homes and neighborhood.

POAH was recently chosen among hundreds of applicants across the country to be one of the first five recipients' of HUD's Choice Neighborhoods grant, which will contribute toward the renovation of housing in the neighborhood, commercial development and the coordination of educational resources and social services across the neighborhood. POAH has invested significant time and effort in the capacity and leadership required to undertake this grant program. In addition, the organization brings a commitment to strict accountability for public funds and the ability to leverage public and private resources, and the involvement of diverse stakeholders to succeed in making Woodlawn a neighborhood of choice.

POAH's work in Woodlawn involves the ongoing financial commitment of the City of Chicago, which contributed a loan in the amount of $1,700,000 to The Grant project. The City would be prepared to certify that $18,750 of that award is a contribution toward green infrastructure systems, to constitute a 25% match to the project.

POAH's work in Woodlawn strategy has its origins in the creation in 2005 of the Woodlawn New Communities Program (WNCP) with the support of LISC-Chicago – and builds on local assets such as strong transit access, local leadership and activism, and the existing service infrastructure. The Choice Neighborhoods Plan is the result of resident and grassroots inspiration and refined with the expertise of an intensely qualified team. Focused on the deconcentration of poverty, the creation of opportunity for youth and adults and a quality of life

transformation of the Woodlawn neighborhood, the Plan harnesses the community's existing assets – including its water resources and open space - into an integrated and coordinated vision of personal and neighborhood development.

The generous grant given by the Illinois EPA through the Illinois Green Infrastructure Grant Program for Stormwater Management (IGIG) Program was vital in implementing the stormwater management systems at the Grant at Woodlawn Park development. It is also contributing to the LEED certification of the building. While the grant money was used to install specific green infrastructure on this one property, its positive effects, specifically pollutant reduction, and stormwater management, are felt throughout the entire neighborhood, thereby contributing to POAH's mission of transforming Woodlawn into a sustainable neighborhood of choice.

Discussion

Throughout this project, POAH has relied on its partners; specifically the design and engineering team. With their help, this project has come to life, and POAH is successfully helping to transform Woodlawn into a neighborhood of choice with much better sustainable practices.

Our Partner:
The Grant design and engineering team is instrumental in the implementation of this project:

- Architect Landon Bone Baker Architects has been committed to environmentally sustainable design since 1987 when the practice was established. The firm embraces the latest advances in engineering, energy-efficiency and environmental technology that are appropriate to each project. They strive to define environmental objectives with clients early in the design process to achieve an integrated design that builds on fundamental environmental concepts, including water management systems.
- Landscape Architect Conservation Design Forum was chosen because of its focus on water management and water quality. They are experts in green infrastructure, from a large-scale corridor or waterfront plan to a rain garden and their expertise in this field has made this project possible.
- Civil Engineer Prism Engineering was also chosen for their work with sustainable design and green infrastructure. They are a high-capacity firm with extensive experience in multi-family construction and district improvement plans.

Preservation of Affordable Housing is also actively involved in sustainability planning taking place in Woodlawn and surrounding neighborhoods the context of the Green + Healthy Neighborhood Planning process facilitated by the Chicago Metropolitan Agency for Planning as well as the evolution of the New Communities Plan for Woodlawn: Rebuilding the Village, and the roadmap it lays out for community and intergenerational engagement, increasing economic opportunity, improving the business environment and creating housing choices. POAH and Preservation Housing Management's involvement with these planning efforts and the life of the neighborhood, has begun to multiply the benefit of the state's investment in green infrastructure through education and public awareness, and will lead to larger neighborhood and district-wide green infrastructure efforts in the future.

Project Specifics:

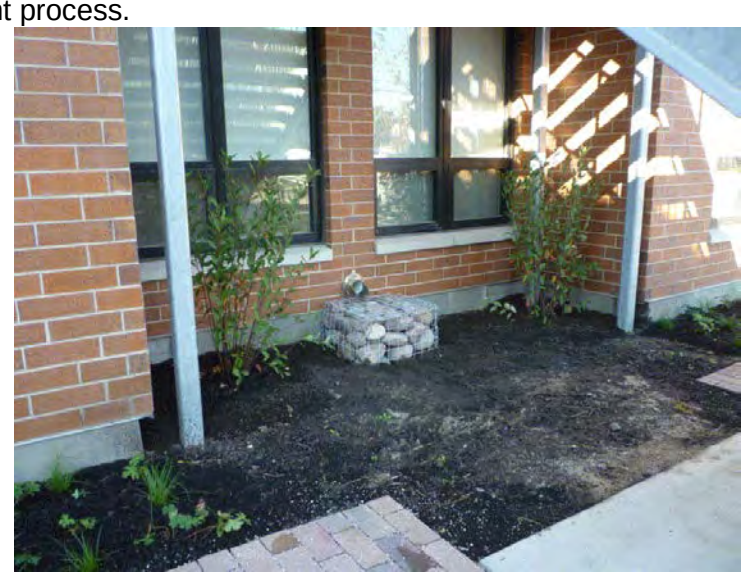
Pictures of the original Grove Parc apartments before POAH's transformation highlight the poor condition of the building and lack of stormwater management systems in place.

With the help of the Illinois EPA and the Illinois Green Infrastructure Grant, the Grant at Woodlawn Park is a brand new affordable housing building, which utilizes state of the art stormwater management techniques.

Each component of the project is described and analyzed below as to how it aids to the overall storm water management on the property to ensure a 100% retention goal.

- <u>Downspouts and interior roof drains that empty into bio-retention planters</u> - With the installation of downspouts that drain directly into bio-retention planters, this building is eliminating unnecessary water runoff onto the property. Instead, the water is being directed strait to the bio-retention planters in order to hydrate the vegetation and enable the water to percolate the soil below.

- <u>Shallow vegetated depression or planter box underlain with open-graded aggregate and whose topsoil is composed of amended topsoil</u> -- All planter boxes for this property are specifically designed to aid in the filtration and infiltration of rain water. Each planter is also underlain with open-graded aggregate to further assist in the storm water management process.



- <u>Engineered topsoil that has been uniformly modified with soil amendments to meet specifications and designed to readily infiltrate storm water runoff down to open-graded aggregate layer below; -</u> The use of specifically engineered top soil aids in the infiltration and storm water management. It increases the speed at which the water is absorbed into the ground, while also being beneficial to the growth of the native plant species in the planter box. The soil used on this project is not a typical silty loam, sandy loam or heavy clay soil that one would find existing in nature; the mix is specifically a blend of 50% sand and 50% compost. By design the sand will hold no water but the compost in this mix will absorb water and hold it for an undefined period of time. As the sand in the mix does not hold water and as soon as the compost becomes fully saturated all remaining water will continue down to the sub surface gravel storage area where it is

held until it infiltrates in the virgin soil below or it evaporates up through the drain basins that are installed vertically in all the planters that surround the building. The engineered topsoil also helps to remove significant quantities of total suspended solids, nitrite, phosphate, phosphorus, and oil and grease.

- <u>Open-graded aggregate in the form of sound, clean crushed stone or gravel for drainage within bioretention facilities</u> -- The use of this specific type of open-graded aggregate is designed to speed up the process of infiltration, ensuring there is little to no pooling of water during heavy rain storms. This is another addition to the project which ultimately helps to retain 100% of the storm water.

- <u>Rain gardens planted to retain and purify water, including shrubs and grasses such as Kentucky Bluegrass, Perennial Ryegrass, and Creeping Red Fescue; --</u> The rain gardens planted on the property are designed to help infiltrate rainwater, reduce runoff, and prevent pollutants from infiltrating into the ground. These gardens have been

planted with native Illinois plants. The use of native shrubs and grasses is important because they are resilient to many common insects and diseases, are best adapted to the local conditions, and aid in the conservation of water since there is no need for supplemental watering once established in the rain garden.

- Two dozen new tree planters containing, among other species, Burr Oak, Northern Hackberry and Kentucky Crabtree, with a minimum of a 4" caliper -- The addition of the native trees to our site enhances the overall look of the property, while also aiding in storm water management. The trees planted, which all have a minimum of a 4'' caliper, help to intercept precipitation. The branches and leaves hold water, and allow it to evaporate, which helps to retain flow and dissipate the energy of runoff. Especially since the sidewalks surrounding the property were installed with concrete, the new trees are extremely important in the facilitation of storm water infiltration and groundwater recharge. The tree canopy intercepts much of the rainfall, which slows the process of the water reaching the ground and absorbing into the soil.

- Geotextiles and erosion control materials for both planters and underlay to porous paving -- The use of geotextiles in the planters and underneath the porous paving has been used to strengthen the soil. It also helps with overall erosion control. All of these measures help manage the storm water, while also preserving the integrity of the environment around the site.

- Specialized excavation and grading for system installation - For this project, where necessary the builders dug down to 3' in places to add crushed stone so all the systems (pavers, rain gardens, other planted areas) drained properly. All special building techniques used were permitted under the general building permit.

- Solid concrete pavers with openings between pavers filled with aggregate setting -- The use of permeable interlocking concrete pavement also helps in reducing storm water runoff volume, rate and pollutants. While the individual pavers are impervious units, the openings between the permeable joints allow for water to infiltrate and absorb into the aggregate layer below. These pavers are durable and easy to repair, which help to ensure that they will not be replaced by impervious surfaces over time.

- Specifications for bed preparation and pavement-setting -- Specific plans and directions for installation of all special storm water management techniques were clearly defined in the architectural plans. Moreover, plans for continuing operations and management of the new pavers, planter boxes, rain gardens, and native vegetation. Please see appendix for details in the architectural plans.

- Materials testing and statements of material properties for all approved pavers – All materials were tested before installation to ensure suitability for project sustainability requirements.

- All materials sourced within 500 miles of the site -- The use of materials within 500 miles of the site was also a priority for this project. We believe that using 'local' materials helps with the overall sustainability of the project and promote best construction practices as guided by the LEED certification standards.

Financial Integrity/Budget:

Powers and Sons Construction Company was the general contractor for this project. Their total landscaping contract was priced at $140,000. Total site improvements including excavation, pavers, site contract was priced at $209,679. POAH has conservatively estimated a specific proportion of those fees for the costs of the green infrastructure system, as shown below. Total consultant fees for this project total $81,236. POAH has assigned 10% of these fees to the work of the landscape architect and the civil engineer for the green infrastructure features, including LBBA's oversight, for a total of $8,124, bringing the stated total for the green infrastructure for the Grant project to $293,563. Because the majority of the design costs were incurred before the grant period, this has been left out of the IGIG budget, for a new project total covering just the construction costs at $279,679. The Illinois Green Infrastructure Grant Programs share is 27% of the total cost, as calculated.

Description of Work	Total Budget	Related to Biorentention	Total for Project
Excavation	$250,000.00	10%	$25,000
Pavers	$107,544	30%	32,263
Site Concrete: Conc planters, Curbs and Gutters, Edging	$508,053	30%	$152,416
Landscaping	$140,000	50%	$70,000
Consultant Fees – Outside of Grant Period	0		0
Total			$279,679

Results

As of 9/30/2013, the project's construction was completed and all best management practices installed as designed.

Though a very small part of the watershed, POAH would expect to see a neighborhood-level and institutional commitment to the health of Jackson Park water bodies and the 63rd Street beach into the future and improved state statistics and ratings for these natural resources within the next 5-10 years.

Beyond this, POAH and its management arm Preservation Housing Management, have trained their staff on the care of these installations and its residents on the overall system.
POAH has also begun to inform the residents of the Woodlawn Center North Apartments that green infrastructure and water quality will become part of the neighborhood planning that is being undertaken in Woodlawn. The different sustainable storm water retention practices have been discussed in resident meetings, highlighted in the resident newsletter, and updates on the systems have been posted throughout the building. Furthermore, there will be a LEED training session involving the residents for the building that will highlight the stormwater management techniques used, similar to the training conducted at a sister building, Woodlawn Center South.

Appendix

1. Executed FAA IGIG1209
2. Construction schedule
3. Architect's plans for installation
4. BMPs installation specifications
5. Photo documentation of BMPs
6. LEED certification in progress checklist
7. Operation and Maintenance Plan
8. Sign design and graphics
9. Media releases

Financial Assistance Agreement

State of Illinois
Illinois Environmental Protection Agency
Bureau of Water

AGREEMENT PERIOD:
The period of performance covered by this Agreement shall be from **The Date of Execution** through December 31, 2013. No services will be paid which are performed prior to or subsequent to this performance period.

Assistance Amount $ 75,000.00

Agreement Type IGIG Agreement Number IGIG1209

Recipient Preservation of Affordable Housing

Address 77 West Washington, Suite 1001 Telephone (312) 283-0033
Chicago, Illinois 60602 Fax (312) 658-0666

Project Description/Scope of Work

WOODLAWN CENTER NORTH APARTMENTS

Under this Agreement, the Recipient shall complete the following tasks.

DESIGN SPECIFICATIONS

1. The Recipient shall prepare design specifications (Design) for the construction of stormwater best management practices (BMPs) to reduce stormwater volume and nonpoint source pollution to the Washington Park Lagoon and Lake Michigan – 63rd Street Beach from the Woodlawn Center North Apartments in Chicago in Cook County, Illinois. The Design shall achieve complete management of all stormwater onsite, with 100% retention of all potential stormwater flows. The Design shall include the construction of 1) 9,320 square feet of permeable pavement area (8,152 square feet clean stone for parking and pavement areas, and 1,168 square feet over structural soil surrounding the tree planters) and 2) 5,503 square feet of shallow vegetated bio-infiltration or bio-retention areas with native plant materials. The shallow vegetated bio-infiltration or bio-retention areas may include rain gardens, twenty-four tree planters, 4,196 square feet of engineered topsoil with soil amendments practices, and redirection of exterior downspouts and interior drains into the bioretention bio-buffer area. The BMPs shall be designed to filter runoff so as to remove suspended sediment, heavy metals, oil and grease, nutrients, and other suspended and soluble nonpoint source pollutants as well as reduce runoff volume and velocity while providing other beneficial hydrologic functions. The BMPs shall be designed so as to retain all rain events.

   The Design shall identify the type and location of selected BMPs, describe the environmental problems associated with the sites and the criteria used to select each practices, and provide a detailed blueprint for their cost, advantages and disadvantages, location, design, maintenance, installation and construction, and materials used including plant species. The Design shall also

include an estimate of pollutant removal efficiency calculated using the Illinois EPA's Estimating Pollutant Load Reductions for Nonpoint Source Pollution Control BMPs workbook. The Design shall meet the requirements of the Illinois Urban Manual and the Native Plant Guide for Streams and Stormwater Facilities in Northeastern Illinois. The Design must be certified by a registered professional engineer or NRCS staff unless the Recipient obtains a waiver of this certification requirement from the Illinois EPA. Two (2) copies of the draft Design and "IGIG BMP Application Form" shall be completed and submitted by the Recipient to the Illinois EPA by July 31, 2012. Two (2) paper copies and one (1) electronic copy of the final Design and IGIG BMP Application Form" shall be completed and submitted by the Recipient to the Illinois EPA by August 31, 2012.

PERMITS & LANDOWNERS AGREEMENTS

2. The Recipient shall secure all necessary permits prior to the implementation of the Design developed under Item 1 of this Agreement. The Recipient shall enter into appropriate legally binding arrangements with participating landowners to ensure that the BMPs are maintained as designed and that the operation and maintenance procedures are implemented for at least ten (10) years from the implementation of the BMPs. The Recipient shall submit a draft of the arrangement to the Illinois EPA by July 31, 2012. The Recipient shall submit a copy of the executed arrangement to the Illinois EPA by August 31, 2012.

DESIGN IMPLEMENTATION

3. The Recipient shall implement the Design developed under Item 1 of this Agreement. The Recipient shall complete the installation and construction of the BMPs by October 31, 2013. Photographic images, including before and after shots of the BMP location, documenting Design implementation shall be completed and submitted by the Recipient to the Illinois EPA by December 31, 2013.

PROJECT EVALUATION AND REPORT

4. The Recipient shall prepare a report explaining the execution of the Woodlawn Center North Apartments (i.e., pre and post conditions, type and location of practices, practice design, methods of practice installation) and evaluating the project's success, including but not limited to improvements in water quality and stormwater runoff reductions. The report shall document the project tasks and summarize the findings of the project, including a discussion of the cost-effectiveness of selected practices in relationship to alternative management strategies. Two (2) copies of the draft report shall be completed and submitted by the Recipient to the Illinois EPA by November 30, 2013. The final report shall be completed and three (3) paper copies and one (1) electronic copy submitted by the Recipient to the Illinois EPA by December 31, 2013.

OTHER DIRECTED ACTIVITIES

5. The Recipient shall be available for coordination and progress briefings. The dates and locations of these briefings will be specified by the Illinois EPA in consultation with the Recipient during the course of the project.

6. The Recipient shall submit a written progress report by the fifteenth (15th) of January, April, July and October occurring during the Agreement Period. Whenever practical reports should be submitted printed two-sided.

7. All products produced and all work performed by the Recipient under this Agreement shall be subject to review and approval by the Illinois EPA to determine eligibility and acceptability in meeting the terms and intent of this Agreement.

8. The Recipient and the Illinois EPA retain the right to cite, quote, circulate, and reprint all documents and other materials produced under this Agreement. The Recipient will include in any publications for external general circulation (including all press releases, brochures, newsletters, Web sites, and presentation materials) the following phrase: "Funding for this project provided, in part, by the Governor of Illinois and the Illinois Environmental Protection Agency through the Illinois Green Infrastructure Grant Program."

9. At each site where BMPs are installed under this Agreement, the Recipient shall design and erect a sign which acknowledges the participating agencies and identifies the Illinois Green Infrastructure Grant Program for Stormwater Management as a funding source of the project. Sign design must be approved by, and consistent with the specifications of, the Illinois EPA prior to their installation at any site. Designs for all signs shall be completed and submitted by the Recipient to the Illinois EPA by July 31, 2012. The Recipient shall erect the signs approved by the Illinois EPA prior to the installation of the BMPs at its particular site. The signs shall remain in place throughout the installation of the BMPs and for a period thereafter as mutually agreed upon by the Recipient and the Illinois EPA. The Recipient shall complete the installation of all signs approved by the Illinois EPA by August 31, 2012.

10. The Recipient shall develop Operation and Maintenance Plans (O & M Plan) for the BMPs implemented under this Agreement to ensure their long-term viability (at least ten years). The O & M Plan shall identify regular inspection needs and appropriate management activities such as sediment and debris removal, replacement of vegetation and hardware, chemical treatment, etc. The O & M Plan shall identify both coordinating (i.e., local governments) and participating (i.e., citizen groups, landowners) parties to carry out inspection and management needs and the financial resources necessary for implementation of the O & M Plan. A draft of all O & M Plans shall be completed and submitted by the Recipient to the Illinois EPA by July 31, 2012. The final O & M Plan shall be completed and submitted by the Recipient to the Illinois EPA by August 31, 2012.

Project Schedule

Description	Completion Date
DESIGN SPECIFICATIONS	
1. Draft Design Specifications	July 31, 2012
Final Design Specifications	August 31, 2012
PERMITS & LANDOWNER AGREEMENTS	
2. Draft Permits and Landowner Agreements	July 31, 2012
Final Permit and Landowner Agreements	August 31, 2012
DESIGN IMPLEMENTATION	
3. Design Implementation	October 31, 2013
Submit Photographic Documentation of Implementation	December 31, 2013

PROJECT EVALUATION & REPORT

4. Draft Report	November 30, 2013
Final Report	December 31, 2013

OTHER DIRECTED ACTIVITIES

6. Progress Reports	Quarterly as stipulated
9. Sign Design	July 31, 2012
Install Sign	August 31, 2012
10. Draft O & M Plan	July 31, 2012
Final O & M Plan	August 31, 2012

Estimated Allowable Project Costs

Project Cost Summary	Totals
1. Direct Labor	0.00
Professional	0.00
Technical	0.00
Administrative	0.00
2. Indirect Costs	0.00
Indirect	0.00
3. Equipment, Materials, Supplies	0.00
Equipment, Materials, Supplies	0.00
4. Subcontracts	194,808.00
Design/Engineering	8,133.00
Permitting	0.00
Construction	186,675.00
Construction Oversight	0.00
5. Other	0.00
Other	0.00
TOTAL	**$ 194,808.00**

Assistance Amount at	**38%**	**$ 75,000.00**
Recipient Share at	**62%**	**$ 119,808.00**

Comments on Allowable/Excluded Costs

Offer and Acceptance

This Financial Assistance Agreement is subject to all applicable State and Federal statutory provisions, State and Federal Grant Regulations, and the Organization Certifications and Grant Conditions attached hereto and provided as part of the Recipient's Application for Assistance.

For the State of Illinois Environmental Protection Agency:

The Director (herein called the "Director") of the Illinois Environmental Protection Agency, in accordance with the authority given in the Environmental Protection Act, and in appropriation by the General Assembly made pursuant thereby, hereby offers financial assistance to the Recipient, up to and not exceeding the specified amount, for the support of the efforts contained in the Project Description.

Director John J. Kim **Date** 6/15/12

(John J. Kim - Interim Director)

By Lisa Bonnett

Printed Name

Title

On behalf of the Recipient:

I the undersigned, being duly authorized to take such actions, do hereby accept this offer and agree to all terms and conditions including the Organization Certifications and Grant Conditions provided as part of the Recipient's Application for Assistance. I certify under oath that all information in this Agreement is true and correct to the best of my knowledge, information, and belief, that the funds shall be used only for the purposes described in this Agreement, and the award of grant funds is conditional upon such certification.

Recipient Preservation of Affordable Housing, Inc **Date** 7/2/12

Signature

By

Printed Name William EAGER

Title V.P., Real Estate Development - Chicago

For the State of Illinois Environmental Protection Agency:

Therefore, the State of Illinois executes this Agreement this ____day of _____, 2012.

TAXPAYER IDENTIFICATION NUMBER

I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. person (including a U.S. resident alien).

- *If you are an individual, enter your name and SSN as it appears on your Social Security Card.*
- *If you are a sole proprietor, enter the owner's name on the name line followed by the name of the business and the owner's SSN or EIN.*
- *If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's name on the name line and the d/b/a on the business name line and enter the owner's SSN or EIN.*
- *If the LLC is a corporation or partnership, enter the entity's business name and EIN and for corporations, attach IRS acceptance letter (CP261 or CP277).*
- *For all other entities, enter the name of the entity as used to apply for the entity's EIN and the EIN.*

Name: _____

Business Name: Preservation of Affordable Housing

Taxpayer Identification Number:

Social Security Number: _____

or

Employer Identification Number: 31-1616634

Legal Status (check one):

- ☐ Individual
- ☐ Sole Proprietor
- ☐ Partnership
- ☐ Legal Services Corporation
- ☐ Tax-exempt
- ☐ Nonresident alien
- ☐ Governmental
- ☐ Corporation providing or billing classification) medical and/or health care services
- ☒ Corporation NOT providing or billing medical and/or health care services
- ☐ Estate or trust
- ☐ Pharmacy (Non-Corp.)
- ☐ Pharmacy/Funeral Home/Cemetery (Corp.)
- ☐ Limited Liability Company (select applicable tax)
  - ☐ D = disregarded entity
  - ☐ C = corporation
  - ☐ P = partnership

Signature: William E _____ Date: 12/13/11

Agreement No. IGIG1209

Offer and Acceptance

This Financial Assistance Agreement is subject to all applicable State and Federal statutory provisions, State and Federal Grant Regulations, and the Organization Certifications and Grant Conditions attached hereto and provided as part of the Recipient's Application for Assistance.

For the State of Illinois Environmental Protection Agency:

The Director (herein called the "Director") of the Illinois Environmental Protection Agency, in accordance with the authority given in the Environmental Protection Act, and in appropriation by the General Assembly made pursuant thereby, hereby offers financial assistance to the Recipient, up to and not exceeding the specified amount, for the support of the efforts contained in the Project Description.

Director John J. Kim **Date** 6/15/12

(John J. Kim - Interim Director)

By Lisa Bonnett

Printed Name Lisa Bonnett

Title Deputy Director

On behalf of the Recipient:

I the undersigned, being duly authorized to take such actions, do hereby accept this offer and agree to all terms and conditions including the Organization Certifications and Grant Conditions provided as part of the Recipient's Application for Assistance. I certify under oath that all information in this Agreement is true and correct to the best of my knowledge, information, and belief, that the funds shall be used only for the purposes described in this Agreement, and the award of grant funds is conditional upon such certification.

Recipient Preservation of Affordable Housing, Inc **Date** 7/2/12

Signature William E

By

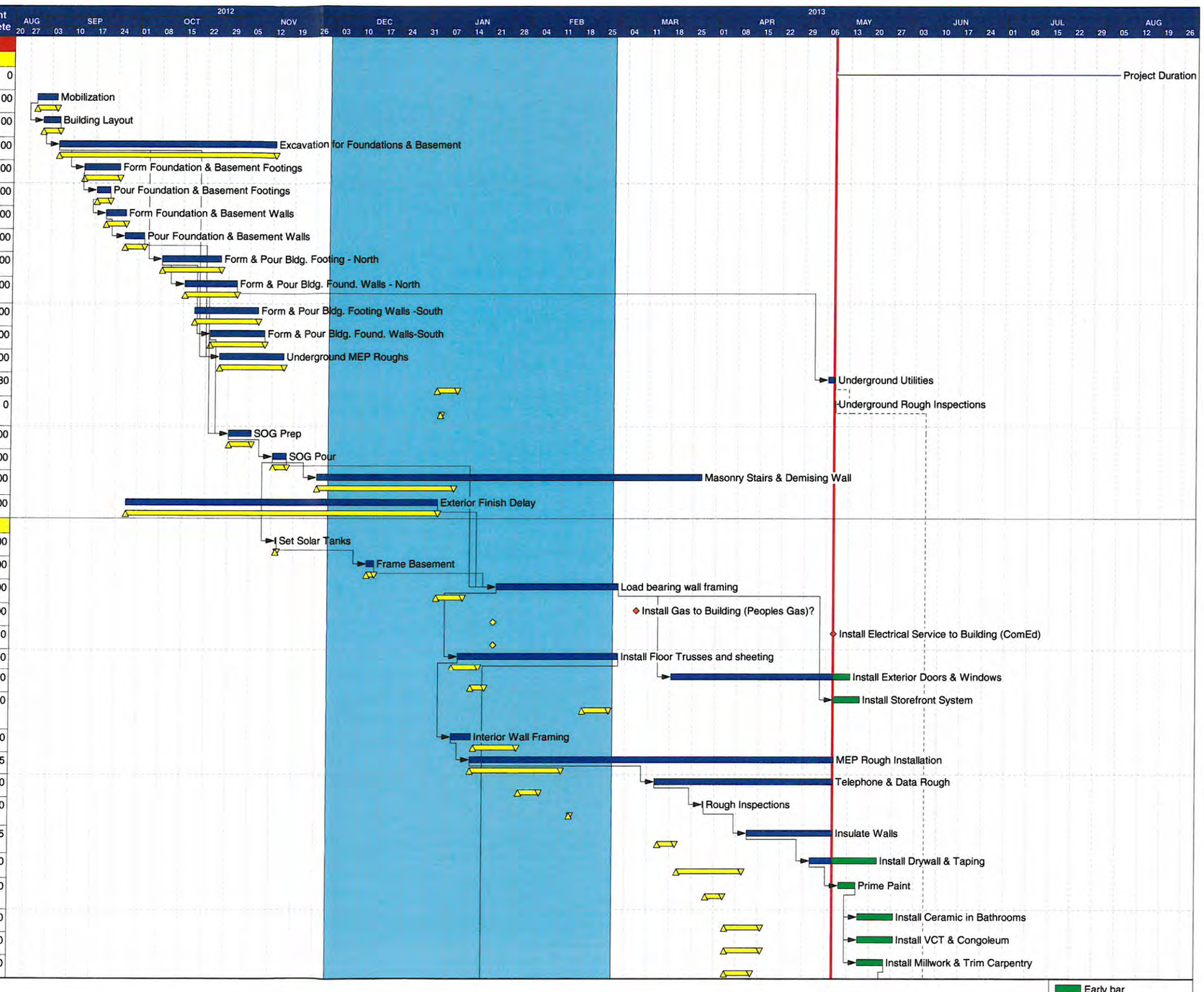
Printed Name William EAGER

Title V.P., Real Estate Development - Chicago

For the State of Illinois Environmental Protection Agency:

Therefore, the State of Illinois executes this Agreement this 2 **day of** July **, 2012.**

Act ID	Description	Orig Dur	Early Start	Target Start	Early Finish	Target Finish	Percent Complete
WOODLAWN CENTER NORTH							
Site Construction							
0000	Project Duration	62d4h	08MAY13		05AUG13		0
1000	Mobilization	0	29AUG12 A	29AUG12	04SEP12 A	04SEP12	100
1001	Building Layout	3d	31AUG12 A	31AUG12	05SEP12 A	05SEP12	100
1005	Excavation for Foundations & Basement	15d	05SEP12 A	05SEP12	12NOV12 A	12NOV12	100
1015	Form Foundation & Basement Footings	10d	13SEP12 A	13SEP12	24SEP12 A	24SEP12	100
1020	Pour Foundation & Basement Footings	5d	17SEP12 A	17SEP12	21SEP12 A	21SEP12	100
1025	Form Foundation & Basement Walls	10d	20SEP12 A	20SEP12	26SEP12 A	26SEP12	100
1030	Pour Foundation & Basement Walls	5d	26SEP12 A	26SEP12	02OCT12 A	02OCT12	100
1035	Form & Pour Bldg. Footing - North	6d	08OCT12 A	08OCT12	26OCT12 A	26OCT12	100
1040	Form & Pour Bldg. Found. Walls - North	5d	15OCT12 A	15OCT12	31OCT12 A	31OCT12	100
1041	Form & Pour Bldg. Footing Walls -South	6d	18OCT12 A	18OCT12	07NOV12 A	07NOV12	100
1042	Form & Pour Bldg. Found. Walls-South	6d	23OCT12 A	23OCT12	09NOV12 A	09NOV12	100
1045	Underground MEP Roughs	7d	26OCT12 A	26OCT12	15NOV12 A	15NOV12	100
1046	Underground Utilities	3d	06MAY13 A	03JAN13	08MAY13	09JAN13	80
1050	Underground Rough Inspections	1d	08MAY13	04JAN13	08MAY13	04JAN13	0
1055	SOG Prep	5d	29OCT12 A	29OCT12	05NOV12 A	05NOV12	100
1060	SOG Pour	5d	12NOV12 A	12NOV12	16NOV12 A	16NOV12	100
1070	Masonry Stairs & Demising Wall	10d	26NOV12 A	26NOV12	27MAR13 A	08JAN13	100
1080	Exterior Finish Delay	10d	27SEP12 A	27SEP12	03JAN13 A	03JAN13	100
1st Floor							
1100	Set Solar Tanks	1d	13NOV12 A	13NOV12	13NOV12 A	13NOV12	100
1105	Frame Basement	3d	12DEC12 A	12DEC12	14DEC12 A	14DEC12	100
1110	Load bearing wall framing	7d	22JAN13 A	03JAN13	01MAR13 A	11JAN13	100
1117	Install Gas to Building (Peoples Gas)?	0	07MAR13 A	21JAN13			100
1118	Install Electrical Service to Building	0	08MAY13 *	21JAN13			0
1120	Install Floor Trusses and sheeting	7d	10JAN13 A	08JAN13	01MAR13 A	16JAN13	100
1125	Install Exterior Doors & Windows	5d	18MAR13 A	14JAN13	13MAY13	18JAN13	20
1126	Install Storefront System	7d	08MAY13 *	18FEB13	16MAY13	26FEB13	0
1130	Interior Wall Framing	10d	08JAN13 A	15JAN13	14JAN13 A	28JAN13	100
1135	MEP Rough Installation	15d	14JAN13 A	14JAN13	08MAY13	11FEB13	95
1137	Telephone & Data Rough	5d	13MAR13 A	29JAN13	08MAY13	04FEB13	90
1140	Rough Inspections	1d	28MAR13 A	14FEB13	28MAR13 A	14FEB13	100
1145	Insulate Walls	4d	11APR13 A	14MAR13	08MAY13	19MAR13	95
1150	Install Drywall & Taping	15d	01MAY13 A	20MAR13	22MAY13	09APR13	30
1160	Prime Paint	4d	10MAY13	29MAR13	15MAY13	03APR13	0
1165	Install Ceramic in Bathrooms	8d	16MAY13	04APR13	27MAY13	15APR13	0
1170	Install VCT & Congoleum	8d	16MAY13	04APR13	27MAY13	15APR13	0
1180	Install Millwork & Trim Carpentry	7d	16MAY13	04APR13	24MAY13	12APR13	0



Start date	29AUG12
Finish date	05AUG13
Data date	08MAY13
Run date	09MAY13
Page number	1A

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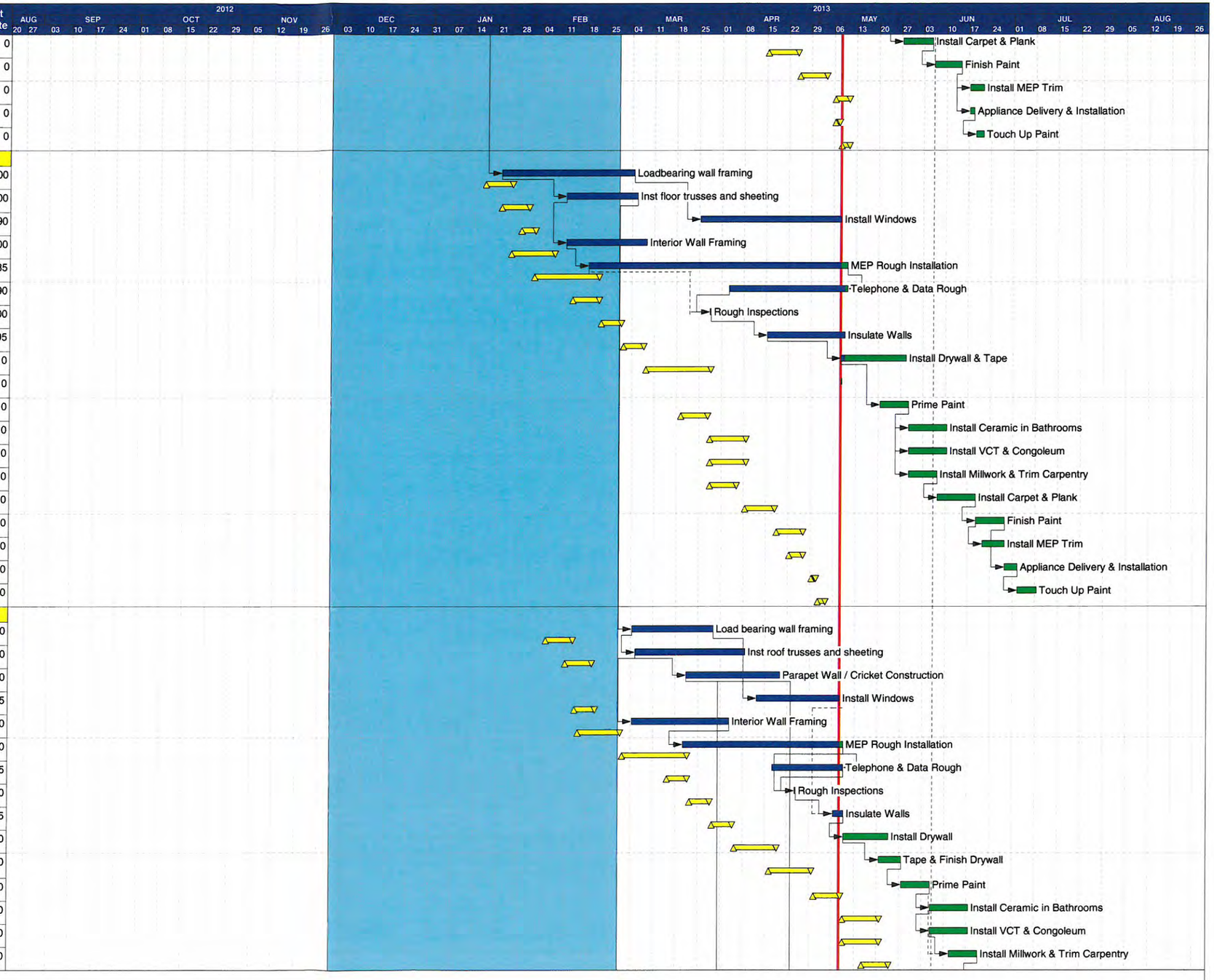
Wood lawn Center North

- Early bar
- Target start point
- Target finish point
- Target bar
- Progress bar
- Critical bar
- Summary bar
- Start milestone point
- Finish milestone point

Act ID	Description	Orig Dur	Early Start	Target Start	Early Finish	Target Finish	Percent Complete
1185	Install Carpet & Plank	8d	27MAY13	15APR13	05JUN13	24APR13	0
1190	Finish Paint	7d	06JUN13	25APR13	14JUN13	03MAY13	0
1191	Install MEP Trim	5d	17JUN13	06MAY13	21JUN13	10MAY13	0
1192	Appliance Delivery & Installation	2d	17JUN13	06MAY13	18JUN13	07MAY13	0
1193	Touch Up Paint	3d	19JUN13	08MAY13	21JUN13	10MAY13	0
2nd Floor							
2020	Loadbearing wall framing	7d	22JAN13 A	17JAN13	04MAR13 A	25JAN13	100
2022	Inst floor trusses and sheeting	7d	11FEB13 A	22JAN13	05MAR13 A	30JAN13	100
2025	Install Windows	5d	25MAR13 A	28JAN13	08MAY13	01FEB13	90
2030	Interior Wall Framing	10d	11FEB13 A	25JAN13	08MAR13 A	07FEB13	100
2035	MEP Rough Installation	15d	18FEB13 A	01FEB13	10MAY13	21FEB13	85
2037	Telephone & Data Rough	7d	03APR13 A	13FEB13	10MAY13	21FEB13	90
2040	Rough Inspections	1d	28MAR13 A	22FEB13	28MAR13 A	28FEB13	100
2045	Insulate Walls	5d	15APR13 A	01MAR13	09MAY13	07MAR13	95
2050	Install Drywall & Tape	15d	08MAY13 A	08MAR13	28MAY13	28MAR13	10
2055		1d	08MAY13		08MAY13		0
2060	Prime Paint	7d	20MAY13	19MAR13	29MAY13	27MAR13	0
2065	Install Ceramic in Bathrooms	8d	29MAY13	28MAR13	10JUN13	08APR13	0
2070	Install VCT & Congoleum	8d	29MAY13	28MAR13	10JUN13	08APR13	0
2080	Install Millwork & Trim Carpentry	7d	29MAY13	28MAR13	07JUN13	05APR13	0
2085	Install Carpet & Plank	8d	07JUN13	08APR13	19JUN13	17APR13	0
2090	Finish Paint	7d	19JUN13	18APR13	28JUN13	26APR13	0
2091	Install MEP Trim	5d	21JUN13	22APR13	28JUN13	26APR13	0
2092	Appliance Delivery & Installation	2d	28JUN13	29APR13	02JUL13	30APR13	0
2093	Touch Up Paint	3d	02JUL13	01MAY13	08JUL13	03MAY13	0
3rd Floor							
3005	Load bearing wall framing	7d	04MAR13 A	05FEB13	29MAR13 A	13FEB13	100
3010	Inst roof trusses and sheeting	7d	05MAR13 A	11FEB13	08APR13 A	19FEB13	100
3012	Parapet Wall / Cricket Construction	10d	21MAR13 A		19APR13 A		100
3015	Install Windows	5d	12APR13 A	14FEB13	08MAY13	20FEB13	95
3020	Interior Wall Framing	10d	04MAR13 A	15FEB13	03APR13 A	28FEB13	100
3025	MEP Rough Installation	15d	20MAR13 A	01MAR13	09MAY13	21MAR13	90
3027	Telephone & Data Rough	5d	17APR13 A	15MAR13	09MAY13	21MAR13	95
3030	Rough Inspections	1d	24APR13 A	22MAR13	24APR13 A	28MAR13	100
3035	Insulate Walls	5d	06MAY13 A	29MAR13	09MAY13	04APR13	95
3040	Install Drywall	10d	09MAY13	05APR13	23MAY13	18APR13	0
3045	Tape & Finish Drywall	5d	20MAY13	16APR13	27MAY13	29APR13	0
3050	Prime Paint	7d	27MAY13	30APR13	05JUN13	08MAY13	0
3055	Install Ceramic in Bathrooms	8d	05JUN13	09MAY13	17JUN13	20MAY13	0
3060	Install VCT & Congoleum	8d	05JUN13	09MAY13	17JUN13	20MAY13	0
3070	Install Millwork & Trim Carpentry	7d	11JUN13	15MAY13	20JUN13	23MAY13	0



Start date	29AUG12
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Run date	09MAY13
Page number	2A

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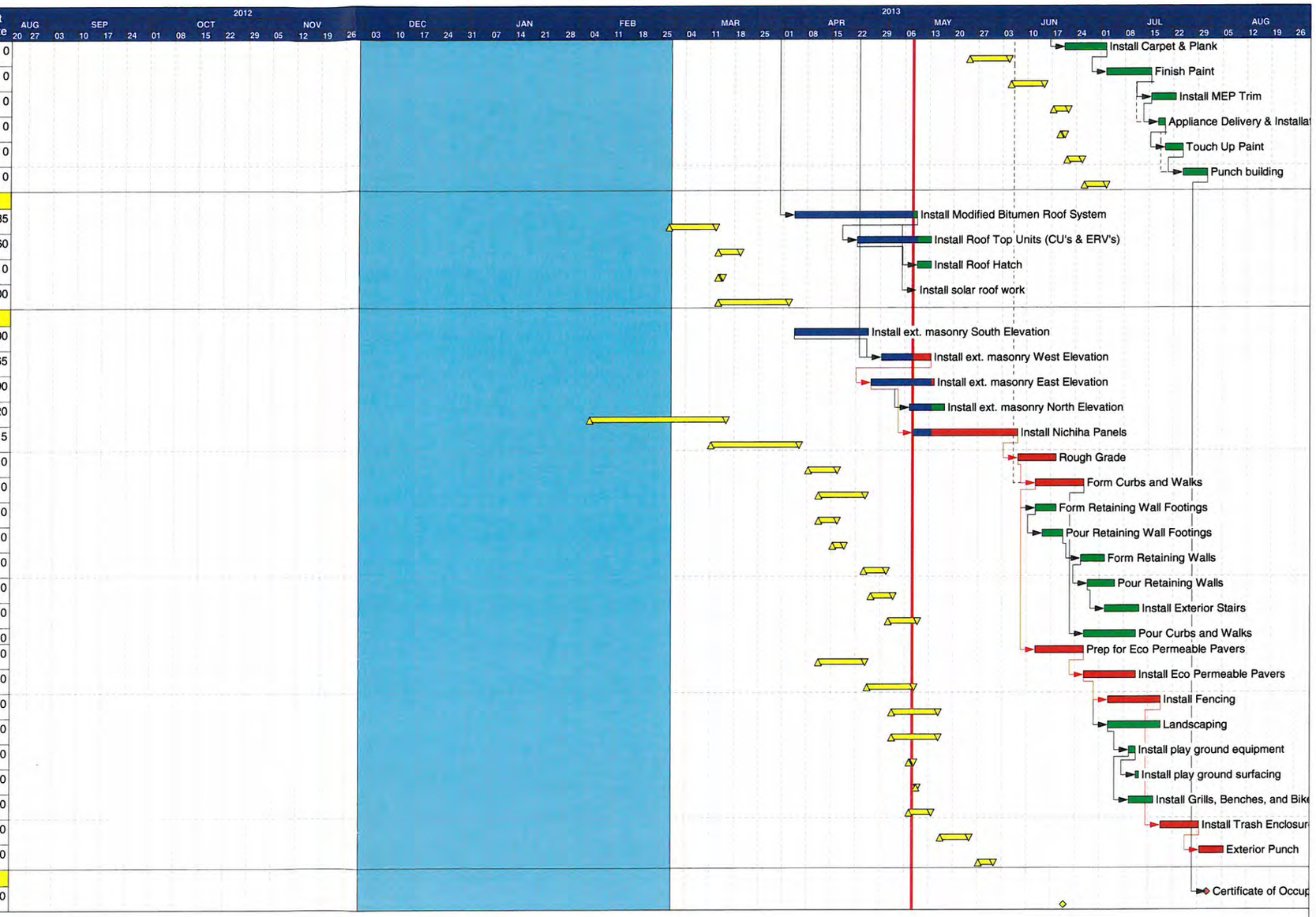
Act ID	Description	Orig Dur	Early Start	Target Start	Early Finish	Target Finish	Percent Complete
3075	Install Carpet & Plank	8d	20JUN13	24MAY13	02JUL13	04JUN13	0
3080	Finish Paint	8d	02JUL13	05JUN13	15JUL13	14JUN13	0
3085	Install MEP Trim	5d	15JUL13	17JUN13	22JUL13	21JUN13	0
3090	Appliance Delivery & Installation	2d	17JUL13	19JUN13	19JUL13	20JUN13	0
3091	Touch Up Paint	3d	19JUL13	21JUN13	24JUL13	25JUN13	0
3101	Punch building	5d	24JUL13	26JUN13	31JUL13	02JUL13	0
Roof System							
4005	Install Modified Bitumen Roof System	10d	04APR13 A	27FEB13	09MAY13	12MAR13	85
4010	Install Roof Top Units (CU's & ERV's)	5d	22APR13 A	13MAR13	13MAY13	19MAR13	60
4015	Install Roof Hatch	2d	09MAY13	13MAR13	13MAY13	14MAR13	0
4020	Install solar roof work	15d	09MAY13 A	13MAR13	09MAY13	02APR13	100
Landscape & Ext. Finishes							
5015	Install ext. masonry South Elevation	5d	04APR13 A		25APR13 A		100
5016	Install ext. masonry West Elevation	10d	29APR13 A		13MAY13		65
5017	Install ext. masonry East Elevation	10d	26APR13 A		14MAY13		90
5020	Install ext. masonry North Elevation	5d	07MAY13 A	04FEB13	17MAY13	15MAR13	20
5025	Install Nichiha Panels	20d	08MAY13 A	11MAR13	07JUN13	05APR13	5
5029	Rough Grade	7d	07JUN13	08APR13	18JUN13	16APR13	0
5030	Form Curbs and Walks	10d	12JUN13	11APR13	26JUN13	24APR13	0
5031	Form Retaining Wall Footings	4d	12JUN13	11APR13	18JUN13	16APR13	0
5032	Pour Retaining Wall Footings	4d	14JUN13	15APR13	20JUN13	18APR13	0
5033	Form Retaining Walls	5d	25JUN13	24APR13	02JUL13	30APR13	0
5034	Pour Retaining Walls	5d	27JUN13	26APR13	05JUL13	02MAY13	0
5035	Install Exterior Stairs	7d	02JUL13	01MAY13	12JUL13	09MAY13	0
5040	Pour Curbs and Walks	10d	26JUN13	25APR13	11JUL13	08MAY13	0
5050	Prep for Eco Permeable Pavers	10d	12JUN13	11APR13	26JUN13	24APR13	0
5060	Install Eco Permeable Pavers	10d	26JUN13	25APR13	11JUL13	08MAY13	0
5065	Install Fencing	10d	03JUL13	02MAY13	18JUL13	15MAY13	0
5070	Landscaping	10d	03JUL13	02MAY13	18JUL13	15MAY13	0
5080	Install play ground equipment	2d	09JUL13	07MAY13	11JUL13	08MAY13	0
5090	Install play ground surfacing	1d	11JUL13	09MAY13	12JUL13	09MAY13	0
5100	Install Grills, Benches, and Bike Racks	5d	09JUL13	07MAY13	16JUL13	13MAY13	0
5110	Install Trash Enclosure	7d	18JUL13	16MAY13	29JUL13	24MAY13	0
5120	Exterior Punch	5d	29JUL13	27MAY13	05AUG13	31MAY13	0
City of Chicago							
3192	Certificate of Occupancy	0			31JUL13	20JUN13	0



Start date	29AUG12
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Page number	3A

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WOODLAWN CENTER NORTH BUILDING C4

6129 S. COTTAGE GROVE AVE.
CHICAGO, IL 60637

PLANS FOR SITE CONSTRUCTION

ARCHITECT
LANDON BONE BAKER
734 WEST MILWAUKEE AVE.
CHICAGO, IL. 60642
(312) 988-9100

PLANS PREPARED BY
PRISM ENGINEERING INC.
CIVIL ENGINEERS
122 S. MICHIGAN AVE., SUITE 1830
CHICAGO, IL. 60603
(312) 362-9900

ISSUED FOR CONSTRUCTION
07/12/2012

LEGEND

- PROPERTY LINE
- EXISTING CURB & GUTTER TO REMAIN
- NEW CURB AND GUTTER
- NEW CONCRETE WALK/CURB
- NEW HANDICAPPED RAMP
- x 15.34 — EXISTING SPOT ELEVATION
- x14.80 — NEW SPOT ELEVATION
- 14.80 / 14.30 — TOP OF CURB ELEVATION / PAVEMENT ELEVATION
- F.F. — FINISHED FLOOR
- CCD — CHICAGO CITY DATUM
- (14.0) — CITY OF CHICAGO ORDINANCE GRADE
- P.C. CONCRETE PAVEMENT / DRIVEWAY
- (S) — SEWER MANHOLE
- NEW MANHOLE (MH)
- CATCH BASIN
- NEW CATCH BASIN (CB)
- (W) (W) — WATER MANHOLE
- NEW VALVE BOX
- (T) — COMM. MANHOLE
- (E) (E) — ELECTRIC MANHOLE
- GV — GAS VALVE
- WV — WATER VALVE
- MG — METAL GUARD
- FIRE HYDRANT
- CENTER LINE
- TREE w/DIAMETER
- 10 — PARKING STALL COUNT
- COMM. — COMMUNICATION (TELEPHONE, INTERNET, ETC.)
- EXT. — EXTENDED
- FND. — EXTENDED
- SANITARY LINE
- NEW SANITARY SEWER MAIN (SAN)
- NEW COMBINED STORM SEWER MAIN
- STORM LINE
- NEW STORM SEWER MAIN (ST)
- W — WATER LINE
- GAS — GAS LINE
- B-B — BACK OF CURB
- R.O.W. — RIGHT OF WAY
- CHAIN LINK FENCE
- IRON FENCE
- WOOD FENCE
- POWER POLE W/WIRES
- LIGHT POST/WALL LIGHT
- E — ELECTRIC PAINT MARK
- W — WATER PAINT MARK
- G — GAS PAINT MARK
- ATT — COMM.(ATT) PAINT MARK

ALL DRAWINGS FOR WORK IN THE PUBLIC WAY MUST BE STAMPED AND SIGNED BY A LICENSED ARCHITECT, LANDSCAPE ARCHITECT OR LICENSED ENGINEER FOR CERTIFICATION

CERTIFICATION:

THIS CERTIFIED THAT THESE DRAWINGS HAVE BEEN REVIEWED TO THE BEST OF MY KNOWLEDGE AND THAT I BELIEVE THEY ARE IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA), AND ALL CODES AND BUILDING ORDINANCES OF THE CITY OF CHICAGO, STATE OF ILLINOIS.

Joanne Morris

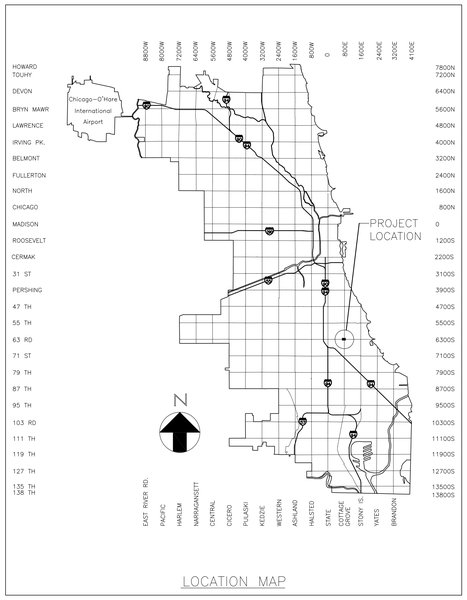
LICENSED ARCHITECT / LANDSCAPE ARCHITECT / LICENSED ENGINEER

City of Chicago
Richard M. Daley, Mayor
Department of Transportation
Division of Engineering
www.chicagodot.org
CDOT

DATE	REVISION
02/09/07	REVISION 1
11/15/07	REVISION 2
11/14/08	REVISION 3
11/05/08	REVISION 4

CITY OF CHICAGO SEAL
SHEET B-3-5
SCALE: NOT TO SCALE
DATE: 10/15/2008
DRAWN BY: CDOT
CHECKED BY: LCM

JOANNE M. MORRIS 062-043791 LICENSED ENGINEER OF ILLINOIS



LOCATION MAP

INDEX OF SHEETS

Sheet No.	DESCRIPTION
C000	COVER SHEET
C001	SITE SURVEY
C101	SITE GEOMETRY PLAN
C201	SITE PAVING AND GRADING PLAN
C301	SITE UTILITY PLAN
C401	PAVING DETAILS
C501	UTILITY DETAILS
C502	UTILITY DETAILS
C601	OPERATION AND MAINTENCE PLAN

BENCHMARK NO. 306

LOCATED AT 63.4 FEET NORTH OF SOUTH LINE OF E. 62nd ST. AND 88.2 FEET WEST OF WEST LINE OF C. COTTAGE GROVE AVE.

ELEV. = 10.602 (CITY OF CHICAGO BENCHMARK DATUM)

BENCHMARK NO. 16

LOCATED IRON ROD IN CONCRETE AT THE SOUTHWEST CORNER OF COTTAGE GROVE AVENUE AND EAST 55th STREET. 76.5 FEET WEST OF WEST LINE OF COTTAGE GROVE AVE. AND 18 FEET SOUTH OF THE SOUTH LINE OF EAST 55th STREET.

ELEV. = 13.880 (CITY OF CHICAGO BENCHMARK DATUM)

3

GENERAL NOTES FOR WORK IN THE PUBLIC WAY

1. THE ILLINOIS DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION." LATEST EDITION, AND ALL ADDENDA THERETO, AND CITY OF CHICAGO CONSTRUCTION STANDARDS FOR WORK IN THE PUBLIC WAY SHALL GOVERN THE EARTHWORK AND PAVING WORK UNDER THIS CONTRACT.
2. THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS," LATEST EDITION, SHALL GOVERN THE UNDERGROUND WORK UNDER THIS CONTRACT, EXCEPT AS MODIFIED BY THESE SPECIFICATIONS, OR WHERE IN CONFLICT WITH CITY OF CHICAGO STANDARDS.
3. ALL WORK SHALL BE CONDUCTED IN ACCORDANCE WITH OSHA REQUIREMENTS AND CITY OF CHICAGO REGULATIONS AND STANDARDS AND SHALL CONFORM IN ALL RESPECTS TO ALL STATE AND FEDERAL LAWS AND REGULATIONS.
4. THE CONTRACTORS SHALL NOTIFY ALL UTILITY COMPANIES FOR FILE LOCATIONS OF THEIR FACILITIES PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE MAINTENANCE AND PRESERVATION OF THESE FACILITIES. ANY UTILITY LOCATIONS SHOWN ON THE PLANS AREA BASE ON AVAILABLE RECORDS AND ARE FOR GENERAL DIRECTION ONLY. ANY UTILITY LOCATIONS SHOWN MUST BE VERIFIED BY THE CONTRACTOR IN THE FIELD.
5. ALL UTLITY TRENCHES UNDER AND WITHIN TWO FEET OF PAVEMENT, SIDEWALK, CURB AND GUTTER, ETC. SHALL BE BACKFILLED WITH CA-6 CRUSHED STONE (GRADE 8 OR 9), COMPACTED IN 9" LIFTS TO 95% OF MODIFIED PROCTOR.
6. UTILITY CONNECTIONS WITHIN THE STREET RIGHT-OF-WAY SHALL BE ACCOMPLISHED BY SAW CUTTING AND REMOVING THE EXISTING PAVEMENT. BACKFILL AND RESTORATION SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE DEPT. OF TRANSPORTATION

PRIOR TO UNDERTAKING ANY WORK IN THE PUBLIC WAY CONTACT:

George Black, Department of Transportation, 312-746-6450 relative to any City of Chicago signs, Traffic or Street.

Thomas Stevens, Department of Revenue relitive to parking meters, 312-742-6978.

John Weslow, CTA, prior to undertaking any work in the vicinity of a bus shelter, 312-681-4217.

Mike Rasher, Bureau of Electricity, 312-746-4656.

ALL WORK IN THE PUBLIC WAY REQUIRES A PERMIT FROM THE OFFICE OF EMERGENCY MANAGEMENT; COMMUNICATIONS TRAFFIC MANAGEMENT AUTHORITY, PERMIT DIVISION, ROOM 901 CITY HALL.

Contractor Shall Notify The Owner, Engineer, and The Chicago Utility Alert Network, DIGGER, @ 312-744-7000, 48 Hours in Advance of Performing Any Work.

THESE PLANS COMPLY WITH THE CURRENT POLICY OF THE CITY OF CHICAGO TO FACILITATE THE MOBILITY OF PEOPLE WITH DISABILITIES

DUTY OF INDEMNIFY

The contractor shall defend, indemnify, keep and save harmless the municipality, owner, and engineer and their respective board members, representatives, agents and employees, in both individual and official capacities, against all suits, claims, damages, losses and expenses including attorney's fees, caused by, growing out of, or incidental to the performance of the work under the contract by the contractor or its subcontractors to the full extent as allowed by the laws of the state of Illinois and not beyond any extent which would render these provisions void or unenforceable. This obligation includes but is not limited to: The Illinois laws regarding structural work [IL. Rev. Stat. CH. 48, Par. 60 at Seq.] and regarding the protection of adjacent landowners [IL. Rev. Stat. CH. 17-1/2 Par. 51 Et. Seq.]. In the event of any such injury [including death] or loss of damage, or claims therefore, the contractor shall give prompt notice to the owner.

DIGGER

CHICAGO UTILITY ALERT NETWORK
TELEPHONE: (312) 744-7000
24 HOURS / DAY
CALL 48 HOURS PRIOR TO DIGGING

PRISM ENGINEERING INC.
CIVIL ENGINEERING CONSULTANTS
122 S. MICHIGAN AVENUE SUITE 1830
CHICAGO, IL 60603
312-362-9900 T
312-362-9901 F

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED UNDER MY SUPERVISION AND THAT THEY COMPLY, TO THE BEST OF MY KNOWLEDGE, WITH ALL THE BUILDING CODES AND ORDINANCES OF THE CITY OF CHICAGO, IL.

○ ISSUED FOR PRICING	2011-11-16
○ ISSUED FOR PERMIT	2011-11-30
○ ISSUED FOR DWM PERMIT CORRECTIONS	2012-03-06
○ ISSUED FOR DWM PERMIT	2012-05-21
● ISSUED FOR CONSTRUCTION 3	2012-07-12

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CHICAGO IL 60637

1122

CERTIFICATION, LEGEND AND NOTES

C000

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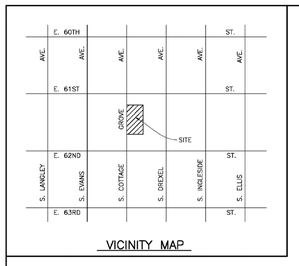


VICINITY MAP

LEGEND:

- Manhole
- Storm Catch Basin/Inlet
- Fire Hydrant w/B-Box
- Water Valve Vault
- Light Pole
- Utility Pole W/Overhead Wire
- Utility Pole W/Light & Overhead Wire
- Gas Valve
- Electric Transformer
- Electric Vault
- Telephone Manhole
- Underground Electric Lines Per Paint Markings
- Underground Gas Lines Per Paint Markings
- Depressed Curb
- Concrete
- BC=12.70 Back of Curb Elevation
- G=12.16 Gutter Elevation
- C=12.73 Concrete Elevation
- P=13.46 Pavement Elevation
- 13.9 Ground Elevation
- R Rim
- I Invert
- 15" Tree W/Trunk Diameter

EDWARD J. MOLLOY & ASSOCIATES, LTD.

LAND & CONSTRUCTION SURVEYORS

1236 MARK STREET, BENSENVILLE, ILLINOIS 60106 (630) 595-2600 Fax (630) 595-4700

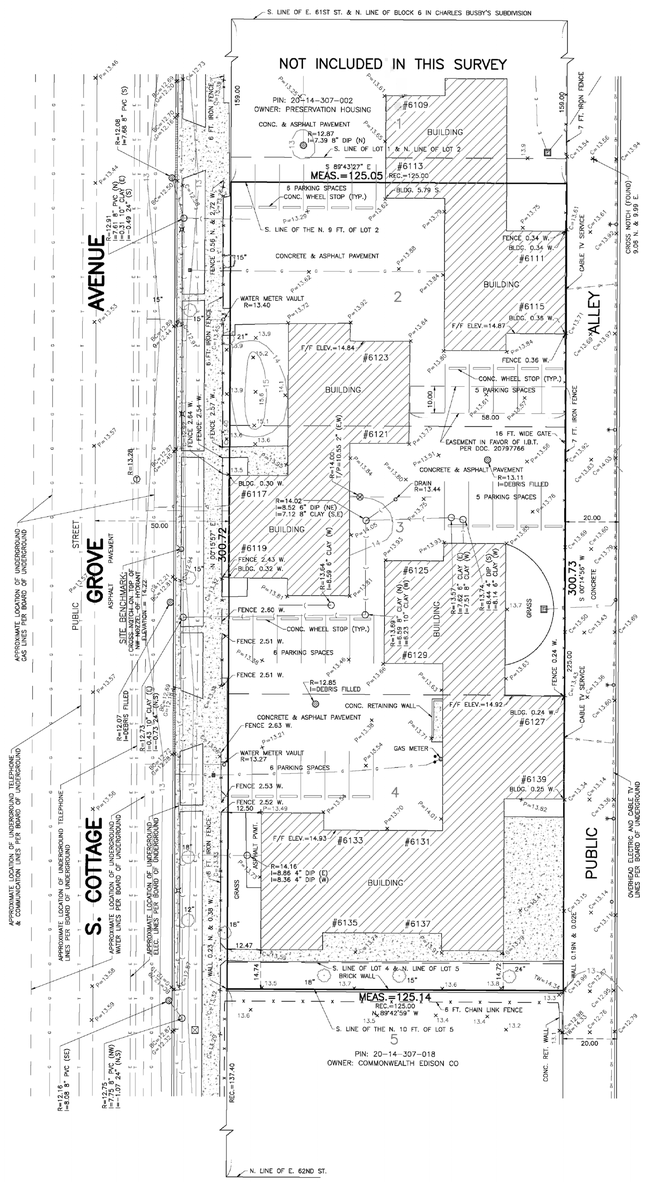
e-mail: emolloy@ejmolloy.com

ALTA/ACSM LAND TITLE SURVEY

OF

LOT 2, EXCEPT THAT PART THEREOF LYING NORTH OF A LINE 159.00 FEET, AS MEASURED ALONG THE EAST LINE OF S. COTTAGE GROVE AVENUE, SOUTH OF AND PARALLEL WITH THE SOUTH LINE OF E. 61ST STREET, AND LOTS 3, 4 AND THE NORTH 10 FEET OF LOT 5 IN BLOCK 6 IN SNOW AND DICKERSON'S SUBDIVISION OF BLOCKS 4, 5 AND 6 (EXCEPT THE NORTH 50 FEET THEREOF) IN CHARLES BUSBY'S SUBDIVISION OF THE SOUTH HALF OF THE SOUTHWEST QUARTER (EXCEPT 2 1/2 ACRES) OF SECTION 14, TOWNSHIP 38 NORTH, RANGE 14 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.

COMMONLY KNOWN AS: 6115-6139 S. COTTAGE GROVE AVE., CHICAGO, ILLINOIS



SURVEYOR'S NOTES

TITLE COMMITMENT: THE FOLLOWING MATTERS OF TITLE ARE REFERENCED IN SCHEDULE B OF TITLE SERVICES, INC. COMMITMENT FOR TITLE INSURANCE NUMBER 212072 WITH AN EFFECTIVE DATE OF SEPTEMBER 26, 2011: (THE TITLE COMMITMENT COVERS THE PROPERTY SURVEYED AND ADDITIONAL LAND)

2. EASEMENT IN FAVOR OF ILLINOIS BELL TELEPHONE COMPANY AS ESTABLISHED BY GRANT:
FOR: TELEPHONE FACILITIES
RECORDED: APRIL 1, 1969
DOCUMENT #: 20797766
AFFECTS: VARIOUS 10 FOOT STRIPS OF LAND OVER PORTIONS OF SUBJECT PREMISES AS DESCRIBED IN SAID INSTRUMENT. (PLOTTED ON THE DRAWING)

3. EASEMENT IN FAVOR OF COMMONWEALTH EDISON COMPANY AND ILLINOIS BELL TELEPHONE COMPANY AS ESTABLISHED BY GRANT:
FOR: ELECTRIC AND TELEPHONE FACILITIES
RECORDED: DECEMBER 17, 1970
DOCUMENT #: 21346681
FILED: DECEMBER 17, 1970
DOCUMENT #: 2535499
AFFECTS: VARIOUS STRIPS OF LAND OVER PORTIONS OF SUBJECT PREMISES AS SHOWN ON THE EXHIBITS ATTACHED TO SAID INSTRUMENT. (EASEMENT PREMISES NOT LOCATED ON THE PROPERTY SURVEYED HEREON)

TAX PARCEL PERMANENT INDEX NUMBERS: 20-14-307-002 & 20-14-307-019

ACCESS STATEMENT: THE PROPERTY HAS DIRECT ACCESS TO AND FROM COTTAGE GROVE AVENUE, A LEGALLY OPENED AND PUBLICLY DEDICATED, USED AND MANTAINED STREET OR HIGHWAY.

TABLE A – ITEM 1 STATEMENT AS TO MONUMENTS PLACED: SEE DRAWING FOR ALL MONUMENTS PLACED OR FOUND WHILE COMPLETING THE FIELD SURVEY.

TABLE A – ITEM 2 STATEMENT AS TO ADDRESS: THE OBSERVED ADDRESS OF THE PROPERTY IS 6113-6139 S. COTTAGE GROVE AVENUE, CHICAGO, ILLINOIS.

TABLE A – ITEM 3 STATEMENT AS TO FLOOD ZONE CLASSIFICATION: OUR EXAMINATION OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY (F.E.M.A.) FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NO. 17031C0540J WITH A MAP REVISED DATE OF AUGUST 19, 2008, SHOWS THAT NO PART OF THE PROPERTY FALLS WITHIN A SPECIAL FLOOD HAZARD AREA AND THAT SAID PROPERTY DOES FALL WITHIN ZONE "X" DEFINED AS AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

TABLE A – ITEM 5 STATEMENT AS TO VERTICAL RELIEF, CONTOUR INTERVAL, DATUM, AND ORIGINATING BENCHMARK: REFERENCE BENCHMARK: CITY OF CHICAGO BENCHMARK NUMBER 306 63.4 FEET NORTH OF THE SOUTH LINE OF 60TH STREET AND 88.2 FEET WEST OF THE WEST LINE OF WOODLAWN AVENUE. ELEVATION = 10.602 (C.C.D.). SEE DRAWING FOR CONTOURS AND SITE BENCHMARKS.

TABLE A – ITEM 4 STATEMENT AS TO GROSS LAND AREA: THE PROPERTY CONTAINS 37,618 SQUARE FEET OR 0.8636 ACRES.

TABLE A – ITEM 7(a) STATEMENT AS TO EXTERIOR DIMENSIONS OF BUILDINGS AT GROUND LEVEL: SEE DRAWING FOR EXTERIOR DIMENSIONS OF BUILDINGS AT GROUND LEVEL.

TABLE A – ITEM 8 STATEMENT AS TO SUBSTANTIAL FEATURES OBSERVED: SURVEYOR HAS SHOWN LOCATION OF FEATURES EXISTING ON THE SURVEYED PROPERTY AS DETERMINED BY OBSERVED EVIDENCE.

TABLE A – ITEM 9 STATEMENT AS TO PAINT STRIPED PARKING SPACES: THE LAND SURVEYED HEREON CONTAINS A TOTAL OF 28 EXISTING PARKING SPACES INCLUDING 0 DESIGNATED HANDICAP PARKING SPACES.

TABLE A – ITEM 11(a) STATEMENT REGARDING EXISTING UTILITIES: SURVEYOR HAS SHOWN LOCATION OF UTILITIES EXISTING ON OR SERVING THE SURVEYED PROPERTY AS DETERMINED BY OBSERVED EVIDENCE.

TABLE A – ITEM 13 STATEMENT REGARDING ADJOINING OWNERS: SEE DRAWING FOR NAMES OF ADJOINING OWNERS.

TABLE A – ITEM 14 STATEMENT REGARDING DISTANCE TO NEAREST INTERSECTING STREET: SEE DRAWING FOR THE DISTANCE TO THE NEAREST INTERSECTING STREET.

TABLE A – ITEM 16 STATEMENT REGARDING EARTH MOVING AND BUILDING CONSTRUCTION: SURVEYOR FINDS NO OBSERVABLE EVIDENCE OF EARTH MOVING OR BUILDING CONSTRUCTION.

TABLE A – ITEM 17 STATEMENT REGARDING CHANGES IN STREET RIGHT-OF-WAY LINES: SURVEYOR HAS NO KNOWLEDGE OF ANY CHANGES IN STREET RIGHT-OF-WAY LINES CONTEMPLATED OR PROPOSED.

TABLE A – ITEM 18 STATEMENT REGARDING SITE USE: SURVEYOR FINDS NO OBSERVABLE EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.

DECEMBER 28, 2011: ADDED BOARD OF UNDERGROUND INFORMATION
NOVEMBER 18, 2011: ADDED TREES
NOVEMBER 2, 2011: ADDED ELEVATIONS

STATE OF ILLINOIS)
) SS
COUNTY OF DUPAGE)

I, THOMAS A. MOLLOY, AN ILLINOIS PROFESSIONAL LAND SURVEYOR AND MANAGING AGENT OF EDWARD J. MOLLOY AND ASSOCIATES, LTD., AN ILLINOIS PROFESSIONAL DESIGN FIRM, HEREBY CERTIFY TO:
WCN PRESERVATION ASSOCIATES LIMITED PARTNERSHIP,
A DISSOLVED ILLINOIS LIMITED PARTNERSHIP;
TITLE SERVICES, INC.;
COMMONWEALTH LAND TITLE INSURANCE COMPANY;
THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY THE AMERICAN LAND TITLE ASSOCIATION (ALTA) AND THE NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS (NSPS) AND INCLUDES ITEMS 1, 2, 3, 4, 7(a), 8, 9, 11(a), 13, 14, 16, 17 AND 18 OF TABLE "A" THEREOF. THE FIELD WORK WAS COMPLETED ON SEPTEMBER 22, 2011. DIMENSIONS ARE SHOWN IN FEET AND DECIMAL PARTS THEREOF.

SIGNED AT BENSENVILLE, ILLINOIS THIS 27TH DAY OF OCTOBER , A.D. 2011

EDWARD J. MOLLOY AND ASSOCIATES, LTD.
AN ILLINOIS PROFESSIONAL DESIGN FIRM – LICENSE NO. 184-002910

THOMAS A. MOLLOY
ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 35-3409
(EXPIRES NOVEMBER 30, 2012 AND IS RENEWABLE)
MANAGING AGENT, ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE NO. 184-002910
(EXPIRES APRIL 30, 2013 AND IS RENEWABLE)

THOMAS A. MOLLOY 35-3409 PROFESSIONAL LAND SURVEYOR STATE OF ILLINOIS BENSENVILLE, ILLINOIS

VALID ONLY WITH EMBOSSED SEAL

DRAFTED BY: BJE
ORDER NO.: *2011-0223*
FILE: *14-38-14*
PROJECT NO.: 2079

NOTE:

EXISTING SITE TOPOGRAPHY, UTILITIES, HORIZONTAL AND VERTICAL CONTROLS SHOWN ON THIS SURVEY, AND THE PLANS WERE PROVIDED BY EDWARD J. MOLLOY & ASSOCIATES, LTD. LAND AND CONSTRUCTION SURVEYORS PRISM ENGINEERING, INC. DOES NOT GURANTEE THE ACCURACY OR COMPLETENESS OF THIS INFORMATION.

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED UNDER MY SUPERVISION AND THAT THEY COMPLY, TO THE BEST OF MY KNOWLEDGE, WITH ALL THE BUILDING CODES AND ORDINANCES OF THE CITY OF CHICAGO IL.

ISSUED FOR PRICING	2011-11-16
ISSUED FOR PERMIT	2011-11-30
ISSUED FOR DWG PERMIT CORRECTIONS	2012-03-06
ISSUED FOR PERMIT REVISION	2012-05-25
ISSUED FOR CONSTRUCTION	2012-07-12

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www.landonbonebaker.com

WOODLAWN CENTER NORTH
BUILDING C4

6129 S. COTTAGE GROVE
CHICAGO IL 60637

1122

SITE SURVEY

C001

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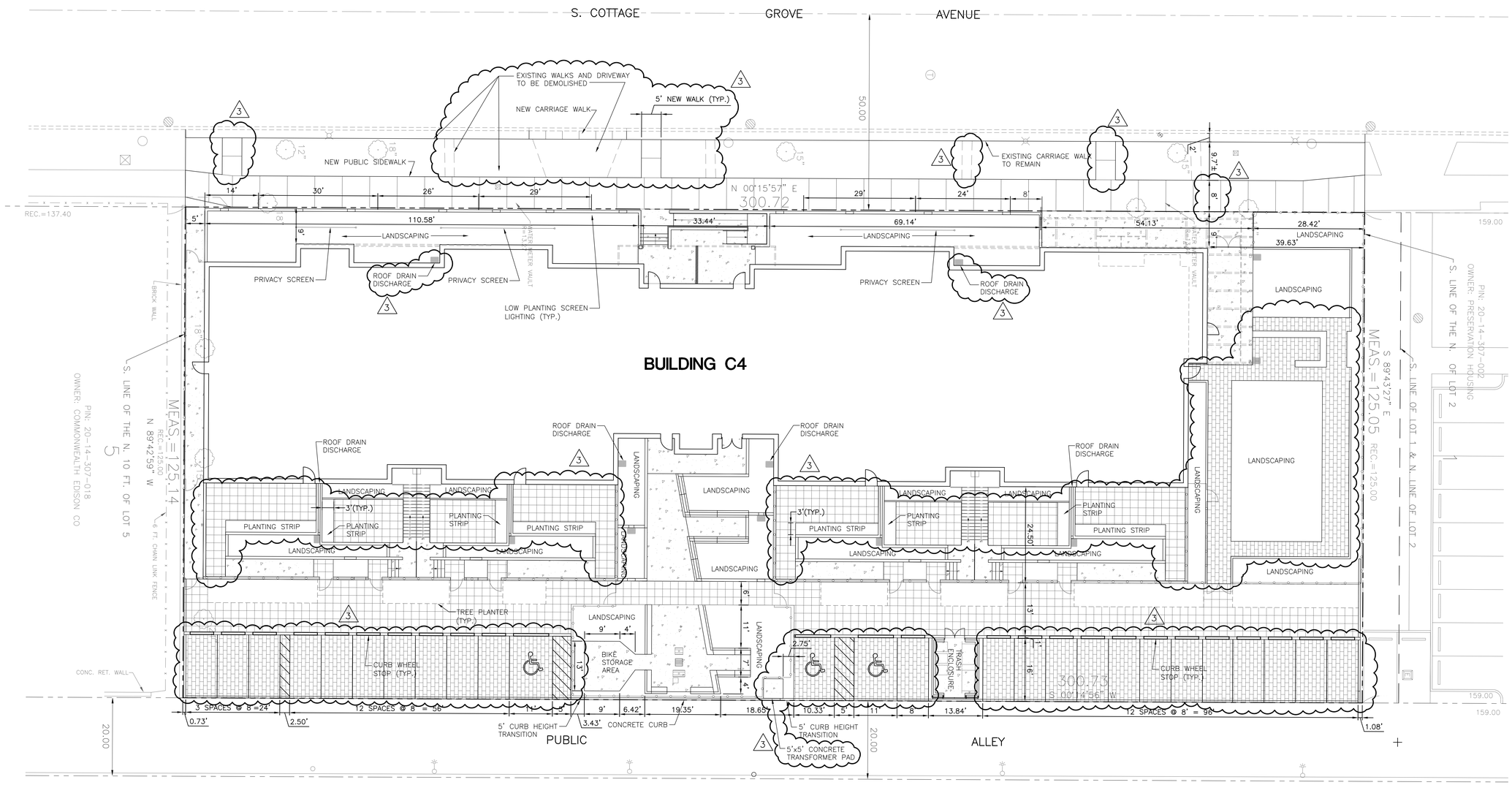

NOTES:

1. ALL CURB RADII REFER TO FACE OF CURB. LANE DIMENSIONS REFER TO FACE OF CURB.
2. FIELD CHECK ALL DIMENSIONS, COORDINATES AND ELEVATIONS BEFORE PROCEEDING WITH NEW WORK. IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
3. CONSTRUCTION ACCESS POINTS TO THE SITE SHALL BE PROTECTED IN SUCH A WAY AS TO PREVENT TRACKING OF MUD OR SOIL ONTO PUBLIC ROADWAYS.

LEGEND

- PROPERTY LINE (PL)
- NEW SIDEWALK
- EXISTING CURB AND GUTTER TO REMAIN
- NEW CURB AND GUTTER

NORTH

GRAPHIC SCALE

(IN FEET)
1 inch = 10 ft.

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CIVIL ENGINEERING CONSULTANTS
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312-362-9900 T
312-362-9901 F

JOANNE M. MORRIS 062-043791 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

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ISSUED FOR PROJECT	2011-11-16
ISSUED FOR ZONING REVIEW	2011-11-22
ISSUED FOR PERMIT	2011-11-30
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ISSUED FOR DWM APPROVAL	2012-03-23
ISSUED FOR CONSTRUCTION	2012-07-12

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BUILDING C4

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1122

SITE GEOMETRY PLAN

C101

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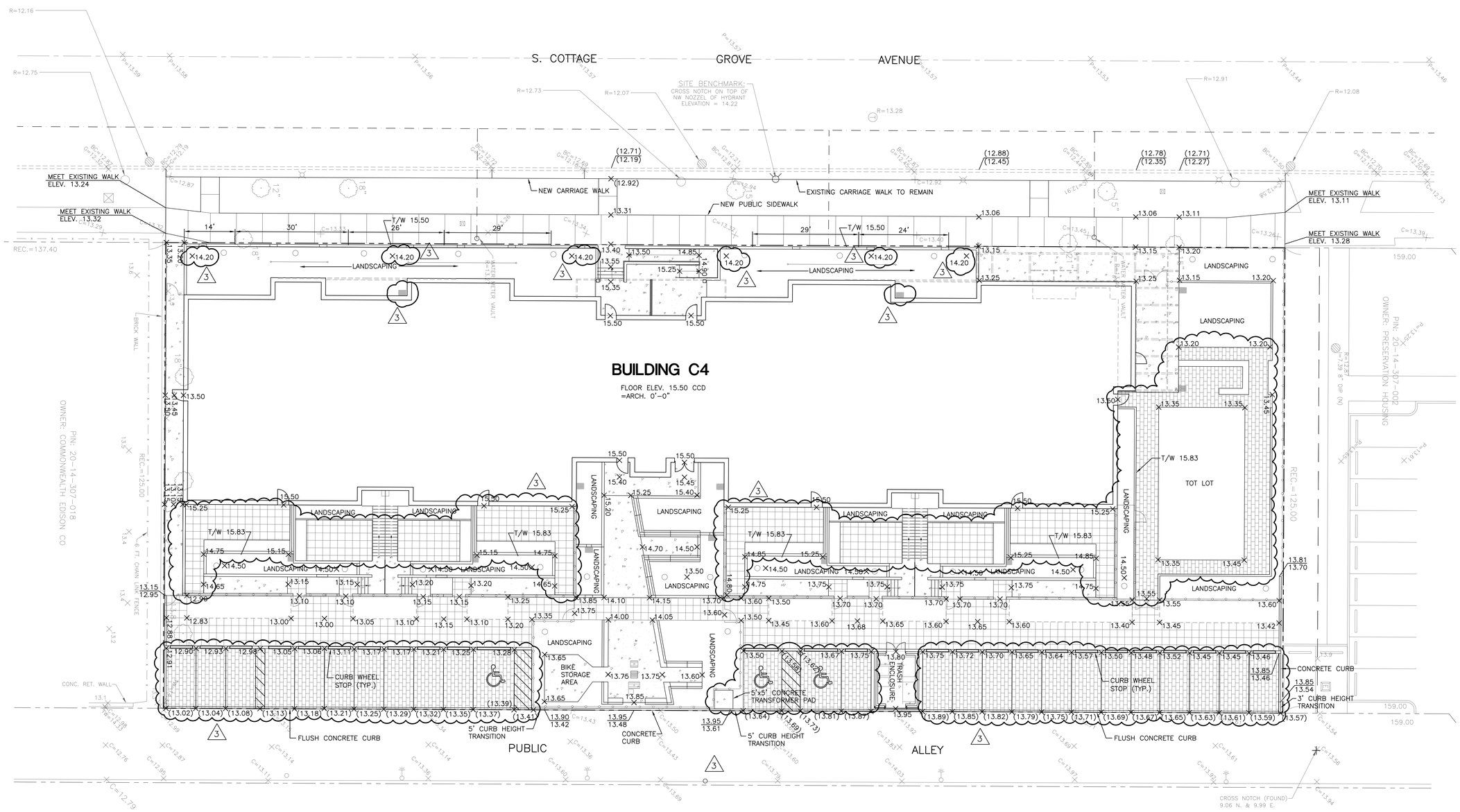

NOTES

1. PROPOSED SPOT ELEVATIONS INDICATE FINISHED CONDITION. FOR LANDSCAPE AREAS SEE LANDSCAPE DRAWINGS FOR TOP SOIL PLACEMENT.
2. EXISTING PAVING AND CURBS TO REMAIN SHALL BE PROTECTED FROM DAMAGE, AND IF DAMAGED, SHALL BE REPLACED TO MEET CITY OF CHICAGO SPECIFICATIONS IN MATERIAL AND WORKMANSHIP.
3. PROVIDE SMOOTH VERTICAL CURVES THROUGH HIGH LOW POINTS INDICATED BY SPOT ELEVATIONS. PROVIDE UNIFORM SLOPES BETWEEN NEW AND EXISTING GRADES. AVOID RIDGES AND DEPRESSIONS.
4. ALL ELEVATIONS SHOWN ON PLANS REFER TO CHICAGO CITY DATUM (CCD) WHICH IS 579.88 FEET ABOVE MEAN SEA LEVEL AT NEW YORK, 1935 ADJUSTMENT.
5. ALL PUBLIC WAY SIDEWALK CROSS SLOPES TO BE 1.56%.
6. DURING CONSTRUCTION THE CONTRACTOR TO AVOID COMPACTING THE SOILS UNDERLYING THE PERMEABLE PAVEMENT.
7. FOR BENCH AND RETAINING WALL DETAILS SEE LANDSCAPE DRAWINGS.

LEGEND

+15.34	EXISTING SPOT ELEVATION
x14.80	NEW SPOT ELEVATION
14.80 / 14.30	TOP OF CURB ELEVATION GUTTER ELEVATION
	EXISTING CURB AND GUTTER TO REMAIN
	NEW CURB AND GUTTER
3 CCD	CHICAGO CITY DATUM
	NEW ECO-OPTILOCK (SAND)
	NEW CONCRETE PAVING (WALK/RAMP)
	NEW ECO-PRIORA RECTANGLE, PARQUET (AUTUMN RED)
	EXISTING CATCH BASIN
	EXISTING MANHOLE

NORTH

GRAPHIC SCALE

(IN FEET)
1 inch = 10 ft.

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WOODLAWN CENTER NORTH

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1122

SITE PAVING AND GRADING PLAN

C201

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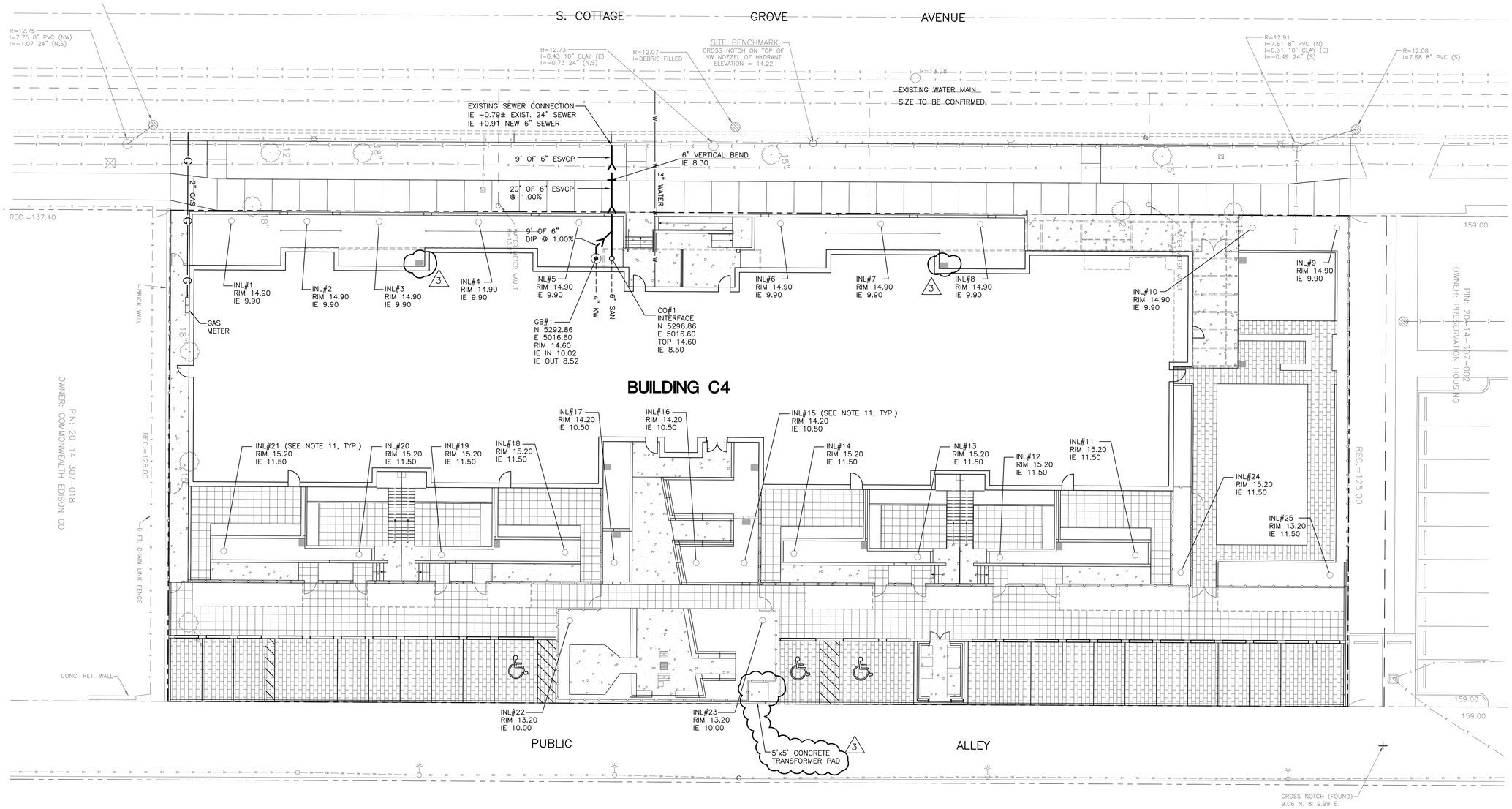

NOTES:

1. PRIOR TO NEW WORK CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF EXISTING UTILITY LINES AND STRUCTURES TO BE CONNECTED TO NEW WORK. IMMEDIATELY REPORT ANY DISCREPANCIES TO THE ENGINEER.
2. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING EXISTING STORM DRAINAGE SYSTEM BY THE USE OF SAND BAGS, INTERCEPTOR, DIKES, OR OTHER APPROVED FUNCTIONAL METHODS.
3. ALL UTILITY CONNECTIONS TO EXISTING UTILITY LINES SHALL BE DONE IN ACCORDANCE WITH REGULATIONS AND TO THE SATISFACTION OF THE CITY OF CHICAGO.
4. ALL UTILITY COORDINATES ARE TO THE CENTER OF STRUCTURE OR PIPE UNLESS OTHERWISE NOTED.
5. CATCH BASIN DIAMETERS ARE 4'.
6. INTERFACE WITH PLUMBING 5' OUTSIDE OF BUILDING. FOR PIPING WITHIN BUILDING SEE PLUMBING DRAWINGS.
7. WHERE A SEWER MAIN CROSSES ABOVE A WATER LINE, CONSTRUCT THE SEWER LINE AT A MINIMUM OF 20' OF DUCTILE IRON PIPE CENTERED ABOVE THE WATER LINE. WHERE SEWER CROSSES BELOW A WATER LINE AND 18" OR MORE SEPARATION IS NOT PROVIDED, CONSTRUCT THE SEWER LINE OF A MINIMUM OF 20' OF DUCTILE IRON PIPE CENTERED BELOW THE WATER LINE.
8. STORM AND SANITARY SEWER PIPE LESS THAN 24" DIA. SHALL BE EXTRA STRENGTH VITRIFIED CLAY PIPE (ESVCP) OR DUCTILE IRON PIPE (DIP). PROVIDE COUPLINGS FOR DISSIMILAR PIPES AS REQUIRED. PIPES OF 24" DIA. AND ABOVE SHALL BE REINFORCED CONCRETE PIPE (RCP).
9. FIELD VERIFY ALL EXISTING SEWER INVERT ELEVATIONS BEFORE START OF CONSTRUCTION. NOTIFY OWNER AND ENGINEER OF ANY DISCREPANCIES.
10. PERFORATED PIPE SHALL BE POLYVINYL CHLORIDE (PVCP)
11. INLETS TO BE NYLOPLAST PERFORATED DRAIN BASIN. SEE LANDSCAPE SHEET L302 FOR DETAIL.

LEGEND

- EXISTING CATCH BASIN
- NEW CATCH BASIN (CB)
- EXISTING MANHOLE
- NEW MANHOLE (MH)
- CLEANOUT (CO)
- EXISTING WATER MAIN
- NEW WATER MAIN
- EXISTING SEWER MAIN
- NEW SANITARY SEWER MAIN (SAN)
- NEW GAS MAIN

NORTH

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

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ISSUED FOR PERMIT	2011-11-30
ISSUED FOR DWM PERMIT CORRECTIONS	2012-03-26
ISSUED FOR PERMIT REVISION	2012-05-31
ISSUED FOR CONSTRUCTION	2012-07-12

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SITE UTILITY PLAN

C301

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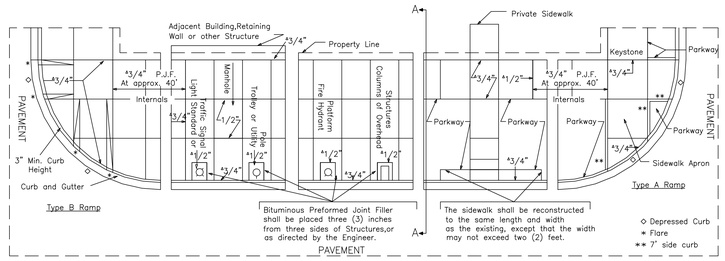
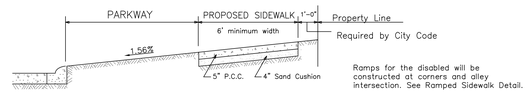




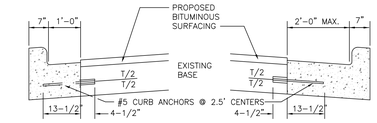
SECTION A–A

Ramps for the disabled will be constructed at corners and alley intersection. See Ramped Sidewalk Detail.

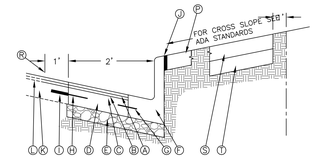
Sidewalks to be replaced will be constructed on the existing base. New sidewalks will be constructed on a 4" sand cushion.

* The 1/2" and 3/4" dimensions noted on the drawing refer to the thickness of the bituminous Preformed Joint Filler required at the various locations. Bituminous Preformed Joint Filler is not paid for separately, but included in the cost of the sidewalk.

5 DETAILS OF PORTLAND CEMENT CONCRETE SIDEWALK CONSTRUCTION
FOR CITY OF CHICAGO STREETS
NOT TO SCALE



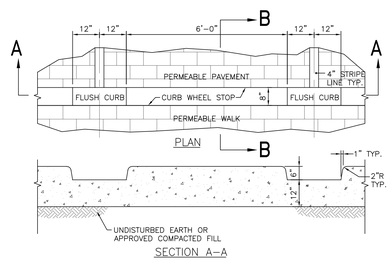
P.C.C. COMBINED CURB AND GUTTER ADJACENT TO EXISTING CONCRETE BASE



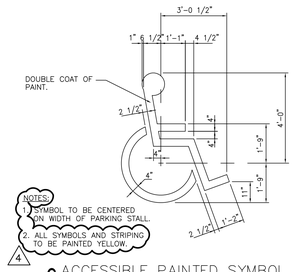
LEGEND:

- (A) 1–1/2" HOT MIX ASPHALT COURSE
- (B) 2–1/4" HOT MIX ASPHALT BINDER COURSE, N50/N30
- (C) BITUMINOUS MATERIAL (PRIME COAT) & AGGREGATE (PRIME COAT)
- (D) P.C. CONCRETE BASE COURSE 7" RESIDENTIAL STREET
- (E) SUB–BASE GRANULAR MATERIAL, TYPE B, 6"
- (F) TYPE 3 CURB AND GUTTER / TYPE 4 CURB
- (G) TIE–BAR – SEE CURB & GUTTER STANDARD DETAILS
- (H) TIE–BAR – #5 DOWEL BARS – 18" LONG @ 30" O.C; DRILL & GROUT
- (I) DRILL AND GROUT
- (J) 3/4" PRE FORMED JOINT FILLER
- (K) EXISTING CONCRETE BASE
- (L) EXISTING BITUMINOUS SURFACE
- (P) WALK OR PARKWAY
- (R) SAW CUT EXISTING BITUMINOUS MATERIAL
- (S) PROPOSED 5" P.C.C. SIDE WALK
- (T) 4" SAND CUSHION

1 DETAIL OF CONSTRUCTION ADJACENT TO EXISTING CONCRETE BASE
FOR CITY OF CHICAGO STREETS
NOT TO SCALE

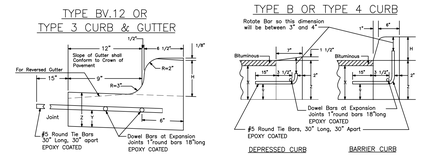


8 CURB WHEEL STOP DETAIL
NOT TO SCALE



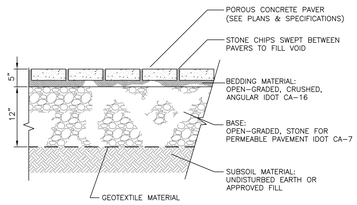
6 ACCESSIBLE PAINTED SYMBOL
NOT TO SCALE

NOTE: H = Variable from 3" to 9"
X = Thickness of Pavement
Y = One half the thickness of concrete pavement or concrete base.
Z = 10" or thickness of Pavement – Whichever is GREATER



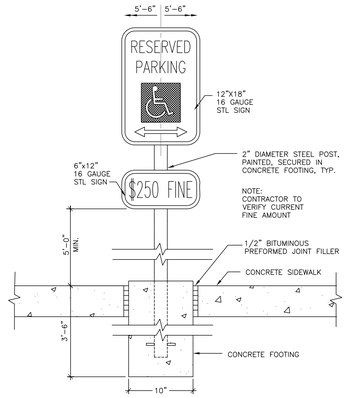
JOINTS IN CURB, COMBINED CURB & GUTTER

Transverse Joints of a type similar to that used in the adjacent pavement shall be installed in the curb, gutter and Combined Curb & Gutter in prolongation with the joints in the pavement. The details of the Transverse Joints in the Curb, Gutter and Combined Curb & Gutter shall be Approved by the Commissioner. Curb, Gutter or Combined Curb & Gutter is constructed adjacent to a flexible base pavement, 1" thick expansion Joints composed of Bituminous Preformed Joint Filler shall be installed in the Curb and/or Gutter at points of curvature and at construction Joints. Contraction Joints shall also be placed between these expansion joints at distances not exceeding 20 feet. All Tie Bars shall be corrugated–all Dowel Bars shall be smooth.

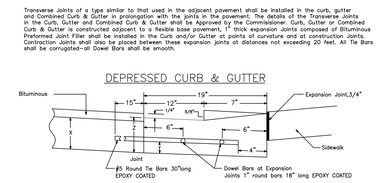


NOTE:
PERMEABLE PAVING SHALL BE RESTRAINED ON ALL SIDES BY CONCRETE CONTAINMENT CURB OR RESTRAINING EDGE.

9 POROUS UNIT PAVING
NOT TO SCALE

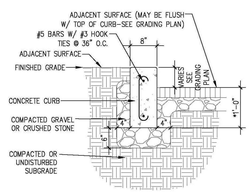


7 HANDICAPPED SIGN DETAIL
NOT TO SCALE



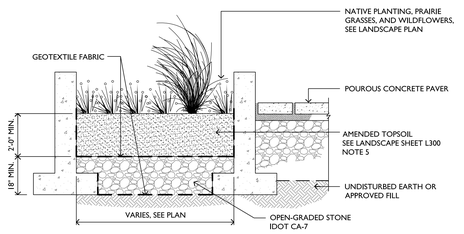
NOTE:
ALL TIE BARS AND DOWEL BARS TO BE EPOXY CAOTED (INCIDENTAL).

2 DETAILS OF P.C.C. CURB & GUTTER
FOR CITY OF CHICAGO STREETS
NOT TO SCALE

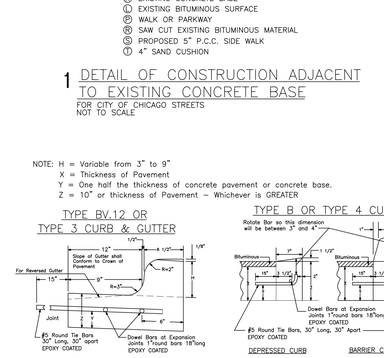


NOTE:
1. CURBS OVER 6 INCHES IN HEIGHT SHALL EXTEND 18 INCHES BELOW GRADE.

10 CONCRETE CONTAINMENT CURB
NOT TO SCALE



11 TYPICAL SECTION THROUGH BIORETENTION PLANTER
NOT TO SCALE

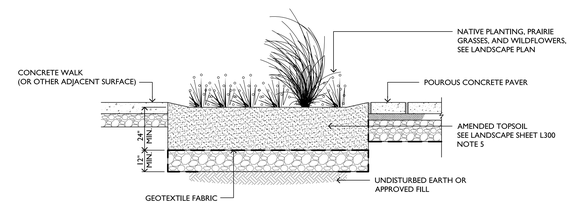


CONTRACTION JOINT DETAIL

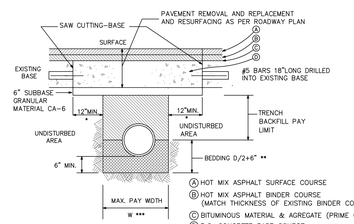
EXPANSION JOINT DETAIL

NOTE: UNLESS OTHERWISE NOTED ON PLANS,CONTRACTION JOINTS TO BE 5'–0"O.C. AND EXPANSION JOINTS TO BE 40'–0" O.C. MAX. OR AT THE BACK OF CURB, CHANGE OF DIRECTION, OTHER WALK,

3 TYPICAL CONCRETE SIDEWALK AND JOINTING DETAILS
NOT TO SCALE



12 TYPICAL STORM WATER SECTION
NOT TO SCALE



NOTES:
1– The portland cement concrete base shall be 9" or more inches. For concrete streets the concrete shall be brought to grade (including 1'–0" overlap) and appopriate finished.
2– All existing pavements shall be saw cut 1'–0" on either side of the trench or pavement opening. Under no circumstances, should existing pavement, which has been undermined or otherwise disturbed, be left in place and not restored.
3– All arterial street pavement which have been reconstructed in the last seven years will require placement of #5 dowel bars, 18 inches long drilled grouted (non shrink) at 30" centers on all sides. A minimum of two dowel bars will be required on each side of saw cut boundaries.

4 PAVEMENT RESTORATION FOR STREET SEWER TRENCH
FOR CITY OF CHICAGO STREETS
SCALE: NONE

PRISM ENGINEERING INC.
CIVIL ENGINEERING CONSULTANTS
122 S. MICHIGAN AVENUE SUITE 1830
CHICAGO, IL. 60603
312–362–9900 T
312–362–9901 F

JOANNE M. MORRIS 062-043791 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED UNDER MY SUPERVISION AND THAT THEY COMPLY, TO THE BEST OF MY KNOWLEDGE, WITH ALL THE BUILDING CODES AND ORDINANCES OF THE CITY OF CHICAGO, IL.

ISSUED FOR PRICING	2011-11-16
ISSUED FOR PERMIT	2011-11-30
ISSUED FOR IWM PERMIT CORRECTIONS	2012-03-06
ISSUED FOR CONSTRUCTION	2012-03-09
ISSUED FOR CONSTRUCTION REV 1	2012-03-12
ISSUED FOR CONSTRUCTION REV 2	2012-08-14

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WOODLAWN CENTER NORTH
BUILDING C4

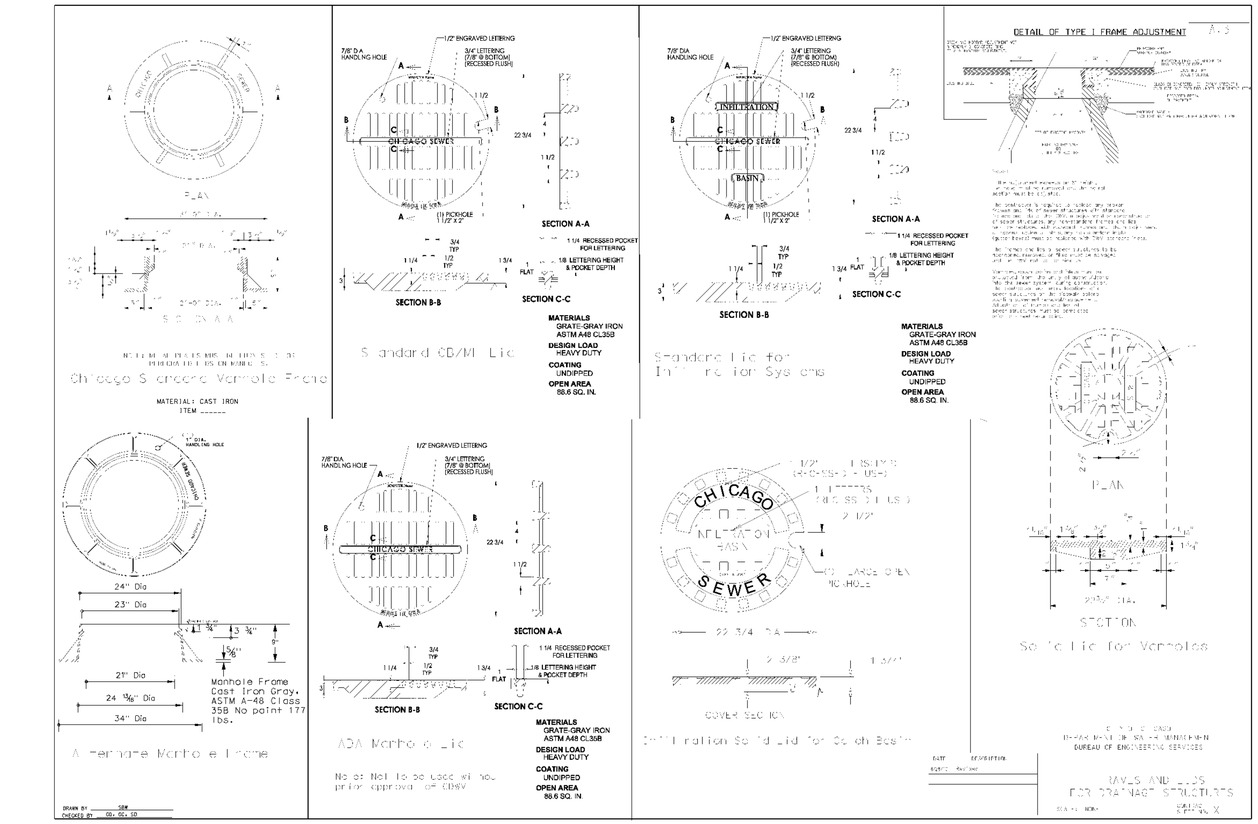
6129 S. COTTAGE GROVE
CHICAGO IL 60637

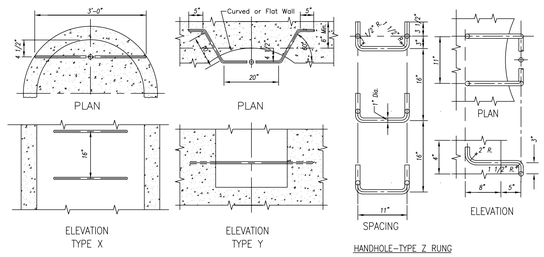
1122

PAVING DETAILS

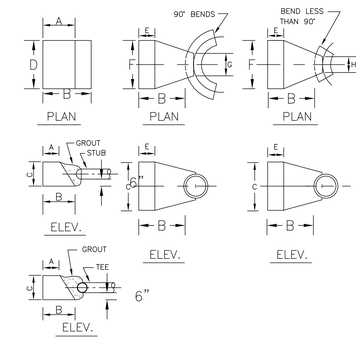
C401

11/15/2011 2:02 PM



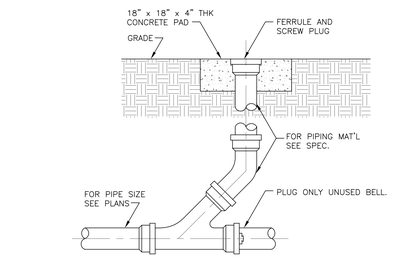


6 STANDARD LADDER RUNGS
SCALE: NONE

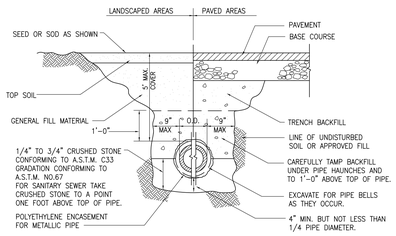


RUN	BRANCH	STUB	A	B	C	D	E	F	G	H
12"	12"AND SMALLER	12"	1"–6"	2"–6"	3'–6"	5"–0"	1"–0"	3'–0"	1"–0"	6"
8"	8"AND SMALLER	8"	1"–6"	2"–6"	3'–0"	3'–6"	1"–0"	2'–0"	6"	3"
6"	6"AND SMALLER	6"	1"–0"	1"–6"	2'–0"	3'–0"	1"–0"	2'–0"	6"	3"
4"	4"	4"	1"–0"	1"–6"	2'–0"	3'–0"	1"–0"	2'–0"	6"	3"

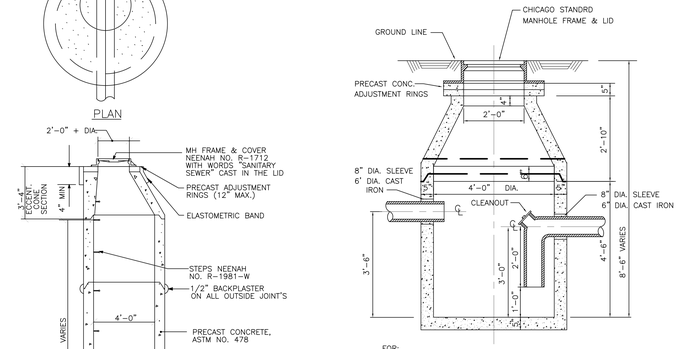
4 THRUST BLOCKS FOR WATER LINES
NOT TO SCALE



2 GRADE CLEANOUT
NOT TO SCALE

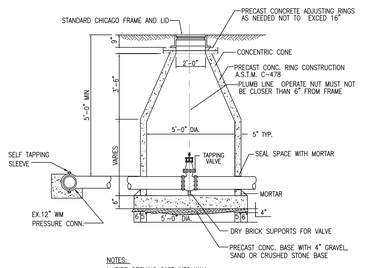


3 SITE TRENCH DETAIL
NOT TO SCALE



8 SANITARY SEWER MANHOLE DETAIL
SCALE: NONE

7 PRECAST GREASE BASIN
SCALE: NONE



5 STANDARD PRECAST VALVE VAULT DETAIL
NOT TO SCALE

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122 S. MICHIGAN AVENUE SUITE 1830
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312-362-9900 T
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JOANNE M. MORRIS 062-043791 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

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ISSUED FOR PRICING	2011-11-16
ISSUED FOR PERMIT	2011-12-30
ISSUED FOR DWM PERMIT CORRECTIONS	2012-03-08
ISSUED FOR PERMIT	2012-03-16
ISSUED FOR CONSTRUCTION	2012-12-12

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WOODLAWN CENTER NORTH

BUILDING C4

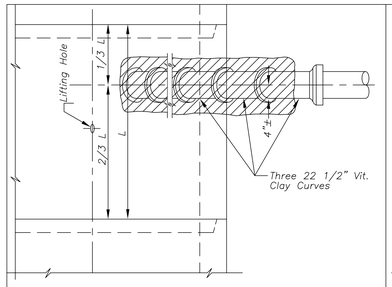
6129 S. COTTAGE GROVE
CHICAGO IL 60637

1122

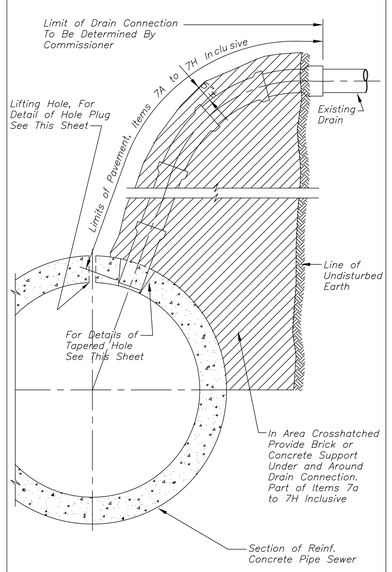
UTILITY DETAILS

C501

11/15/2011 2:02 PM



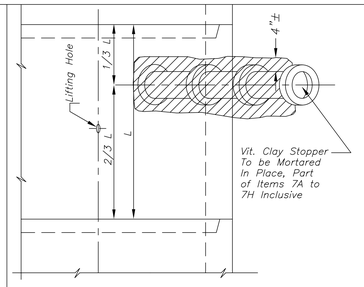
PLAN



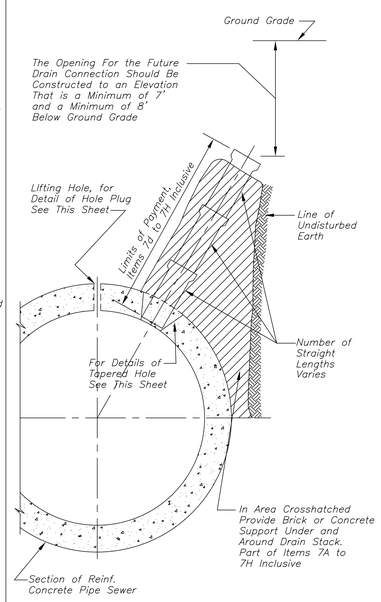
ELEVATION

TYPICAL DRAIN CONNECTIONS FOR EXISTING DRAINS

Items 7A to 7H Inclusive



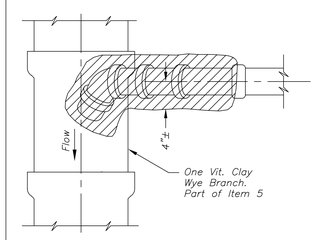
PLAN



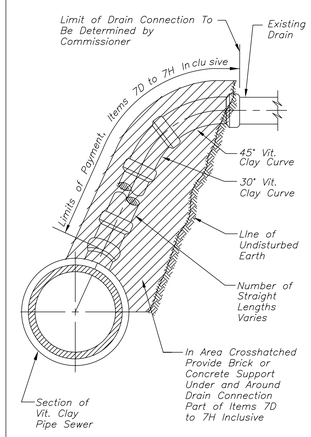
ELEVATION

TYPICAL DRAIN STACKS FOR FUTURE USE

Items 7A to 7H Inclusive



PLAN

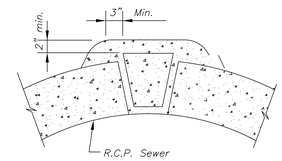


ELEVATION

TYPICAL DRAIN CONNECTIONS FOR EXISTING DRAINS

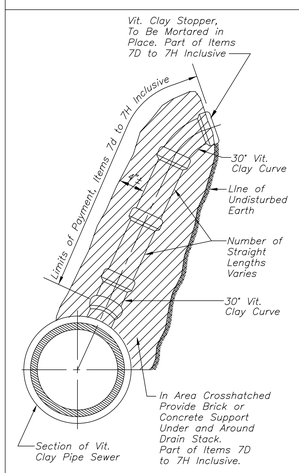
Items 7D to 7H Inclusive

NOTE:
Plug to be Coated With MOrtar and Driven Into Place With a Wooden Mallet and Then Sealed With Mortar.



LIFTING HOLE PLUG DETAIL FOR CONCRETE PIPE

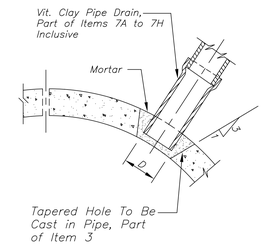
Part of Item 3



ELEVATION

TYPICAL DRAIN STACKS FOR FUTURE USE

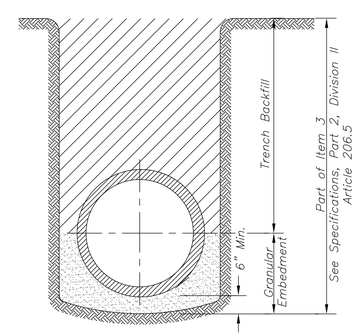
Items 7D to 7H Inclusive



SIZE OF DRAIN	"D"
6"	6 7/8"
8"	9 1/2"
10"	11 1/2"
12"	13 1/2"
15"	17"
18"	20 1/4"
21"	23 7/8"
24"	27 1/4"

DETAIL OF TAPERED HOLE

NOTE:
Granular Material Will Be Used As Bedding For All Pipe Sewers; See Specifications, Part 2, Division II, Articles 210, & 211.3



DETAIL OF GRANULAR EMBEDMENT FOR PIPE SEWERS

No Scale

All Drain Connections Joints Shall Be Made With Oakum and Mortar As Specified in Specifications, Part 2, Article 210.5

REVISIONS

DATE	DESCRIPTION	

CITY OF CHICAGO
DEPARTMENT OF SEWERS
ENGINEERING DIVISION

VITRIFIED CLAY PIPE DRAIN CONNECTIONS

SCALE: AS SHOWN

CONTRACT SHEET NO.

PRISM ENGINEERING INC.
CIVIL ENGINEERING CONSULTANTS
122 S. MICHIGAN AVENUE SUITE 1830
CHICAGO, IL. 60603
312-362-9900 T
312-362-9901 F

JOANNE M. MORRIS 062-043791 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

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ISSUED FOR PERMIT	2011-11-30
ISSUED FOR DWM PERMIT CORRECTIONS	2012-03-06
ISSUED FOR BID/NEGOTIATION	2012-05-11
ISSUED FOR CONSTRUCTION	2012-07-12

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WOODLAWN CENTER NORTH
BUILDING C4

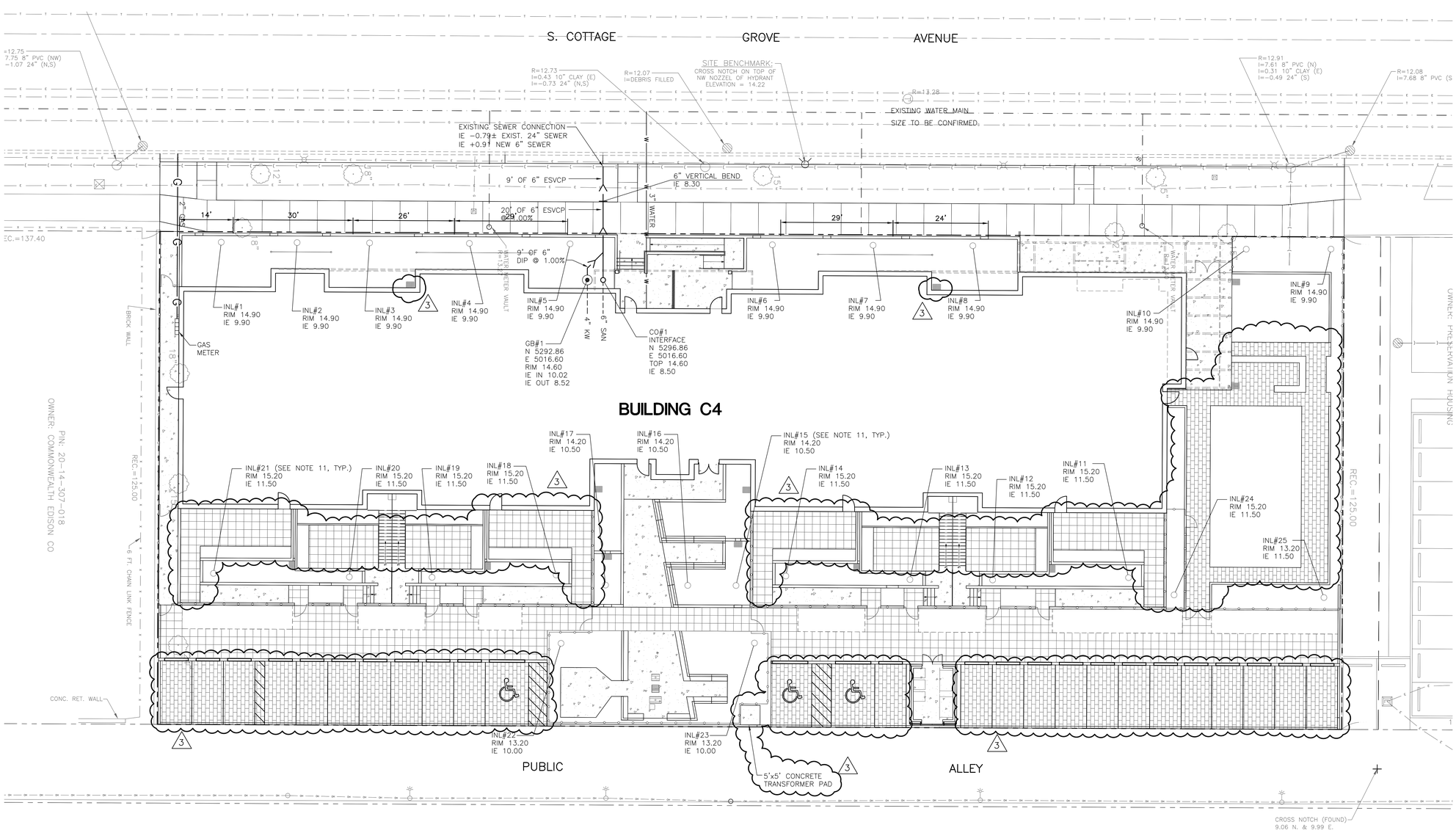
6129 S. COTTAGE GROVE
CHICAGO IL 60637

1122

UTILITY DETAILS

C502

11/15/2011 2:02 PM



Operation and Maintenance Plan Owner's Certification Statement

Property Name: WOODLAWN CENTER NORTH APARTMENTS–C4

Property Address: 6129 SOUTH COTTAGE GROOVE AVE.

As the owner(s) of the subject property, by signing this document, I/we acknowledge that I/we have received and reviewed the Operation and Maintenance Plan, dated _____, and understand its contents. (as required by the Stormwater Management Ordinance, Section 11-18-030).

In the event that I/we were to sell this property, I/we agree to give a copy of the Plan to the new owner(s) and this Owner's Certification Statement for signature. This signed Certification Statement must be submitted to the City's Department of Buildings upon transfer of ownership.

I/we further agree to adhere to the maintenance schedule of best management practices stipulated in the Plan. I/we also acknowledge that if I/we don't maintain the measures as shown in the Plan, upon City inspection, I/we could be liable for a violation of the City's Municipal Code (according to Stormwater Management Ordinance Section 11-18-130).

Initial Owner(s) Printed Name

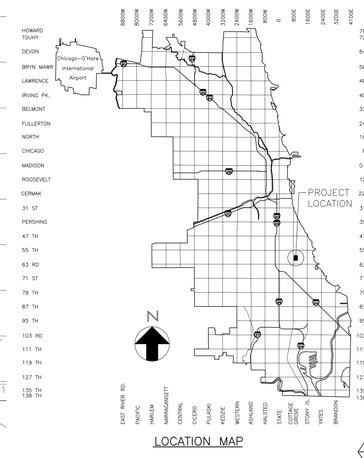
Initial Owner(s) Signature Date Notary Public

2nd Owner(s) Printed Name

2nd Owner(s) Signature Date Notary Public

3rd Owner(s) Printed Name

3rd Owner(s) Signature Date Notary Public



LOCATION MAP

PRISM ENGINEERING INC.
CIVIL ENGINEERING CONSULTANTS
122 S. MICHIGAN AVENUE SUITE 1830
CHICAGO, IL. 60603
312–362–9900 T
312–362–9901 F

LEGEND

- NEW ECO–OPTILOCK (SAND)
- NEW CONCRETE PAVING (WALK/RAMP)
- NEW ECO–PRIORA RECTANGLE, PARQUET (AUTUMN RED)

Bioinfiltration System Maintenance Guidelines

Properly designed and installed bioinfiltration systems require little maintenace. During periods of extended drought, bioinfiltration systems may require watering approximately every 10 days.

Activity Schedule

As needed	• Water plants during first growing season • Water plants during dry periods after first growing season • Remulch void areas • Keep overflow free and clear of leaves
Monthly	• Inspect soil and repair eroded areas • Remove litter and debris • Clear leaves and debris from overflow
Twice per Year	• Inspect trees and shrubs to evaluate health
Once per Year	• Add additional mulch • Inspect facility and pretreatment areas for sediment buildup, erosion, vegetative conditions, etc.

Permeable Pavement Maintenance Guidelines

Maintenance recommendations for permeable pavement systems.

Activity Schedule

As needed	• Do not use sand during the winter months • Keep landscaped areas well-maintained and prevent soil from being transported onto the pavement. • Monitor regularly to ensure that the paving surface drains properly after storms. • Ensure that surface is free of sediment. • Remove vegetation established in gravel spaces in pavement
Twice per Year	• Vacuum surface to keep free of sediment. • Clean out inlet structures within or draining to the subsurface bedding beneath surface
Once per Year	• Inspect surface for signs of deterioration or settling. • Inspect void areas and replace or add joint material.

Woodlawn Center North Aprtments - C4
Operation and Maintenance Plan
Stormwater System/Best Management Practices (BMP)

Contact: Patricia Belden
Preservation of Affordable Housing (POAH)
77 W. Washington St., Suite 1001
Chicago, Illinois 60602
312.283.0033

Operations and Maintenance Practices for Woodlawn Center North Apt. - C4:

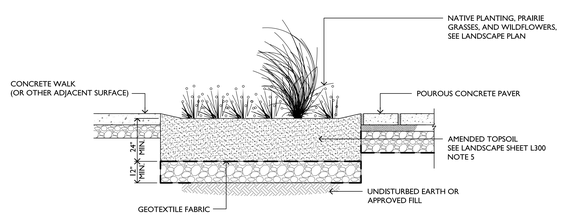
1. Review O&M Plan Annually.
2. Inspect all access routes annually, including roadways and sidewalks. Perform maintenance as required.
3. Inspect and clean all drainage structures and flow restrictors (as noted on attached plan) semi-annually.
4. Inspect Volume Control BMPs (as noted on attached plan) semi-annually and following significant rainfalls (> 1.5 inches).
5. Maintain log book on all O&M practices. Produce the log book to all City Inspectors.
6. Maintain the site's vegetation on a regular basis. This includes reseeding bare areas.
7. Implement pest control measures to address insect and rodent infestation as needed.
8. Install and maintain signage and fencing across the entire site.
9. Follow all confined space safety procedures when cleaning underground vaults. Request safety plan from all subcontractors performing this work.

Implementation plan for O&M practices for Woodlawn Center North Apt. - C4:

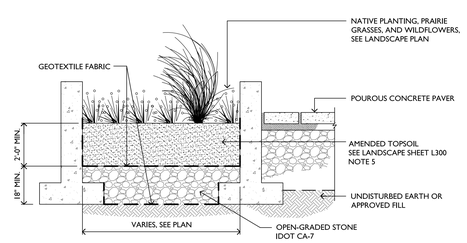
Spring: Items 1, 2, 3, 4, 5, 6, 7, 8, 9
Fall: Items 3, 4, 5, 6, 7, 8, 9
Following a significant rainfall: Item 4

Employee Training:

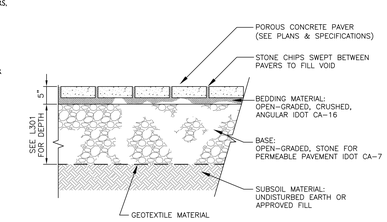
All Maintenance and Management staff at Woodlawn Center North Apt. - C4 are required to familiarize themselves with the Operations and Maintenance Plan.The maintenance supervisor is responsible for all inspections and maintenance of the stormwater BMP system. The maintenance supervisor is also responsible for maintaining a log of all activities relating to the stormwater BMP system.



3 TYPICAL STORM WATER SECTION
NOT TO SCALE



2 TYPICAL SECTION THROUGH BIORETENTION PLANTER
NOT TO SCALE



NOTE:
PERMEABLE PAVING SHALL BE RESTRAINED ON ALL SIDES BY CONCRETE CONTAINMENT CURB OR RESTRAINING EDGE.

1 POROUS UNIT PAVING
NOT TO SCALE

NORTH

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

JOANNE M. MORRIS 062-043791 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED UNDER MY SUPERVISION AND THAT THEY COMPLY TO THE BEST OF MY KNOWLEDGE, WITH ALL THE BUILDING CODES AND ORDINANCES OF THE CITY OF CHICAGO, IL.

○	ISSUED FOR PRICING 2011-11-16
○	ISSUED FOR PERMIT 2011-12-30
○	ISSUED FOR DWM PERMIT CORRECTIONS 2012-02-06
●	ISSUED FOR PERMIT 2012-03-01
○	ISSUED FOR CONSTRUCTION 2012-07-12

LANDON BONE BAKER ARCHITECTS
734 N Milwaukee Avenue Chicago IL60642
p 312-988-9100 f 312-829-3302
www.landonbonebaker.com

WOODLAWN CENTER NORTH
BUILDING C4

6129 S. COTTAGE GROVE
CHICAGO IL 60637

1122

OPERATION AND MAINTENANCE PLAN

C601

11/15/2011 2:02 PM

Existing Trees			
Tree ID	**DBH**	**Scientific Name**	**Condition**
100	15"	Gleditsia triacanthos	Fair
101	15"	Gleditsia triacanthos	Fair
102	21"	Gleditsia triacanthos	Fair
103	15"	Gleditsia triacanthos	Fair
104	18"	Gleditsia triacanthos	Fair
105	12"	Gleditsia triacanthos	Fair
106	18"	Gleditsia triacanthos	Fair
107	18"	Ulmus americana	Fair
108	15"	Acer negundo	Poor
109	24"	Elaeagnus umbellata	Fair

TREE 100

TREE 101

TREE 102

TREE 103

TREE 104

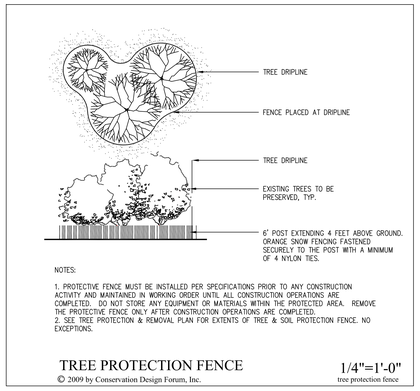
TREE 105

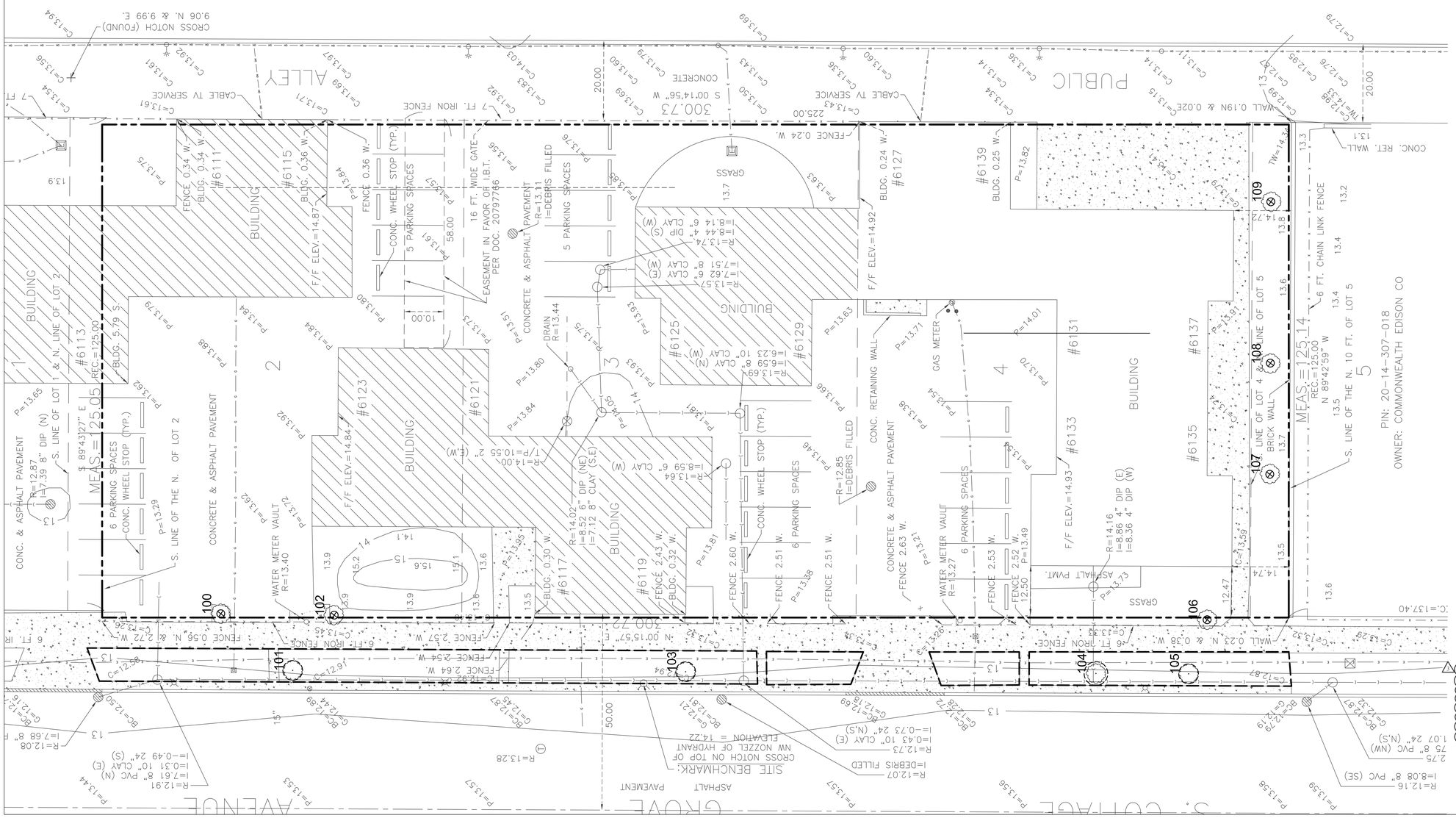
TREE 106

TREE 107

TREE 108

TREE 109





Key Notes

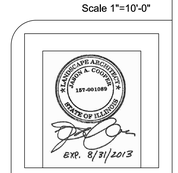
- PROPERTY BOUNDARY
- TREE PROTECTION FENCE
- TREES TO BE REMOVED
- SMALL TREES (<9" DBH)
- MEDIUM TREES (10–15" DBH")
- LARGE TREES (>15" DBH)
- 109 TREE ID – SEE TABLE

E N S W

0 5 10 20
Scale 1"=10'-0"

Sheet Notes

1. WORK MUST COMPLY WITH CITY OF CHICAGO "TREE PROTECTION & REMOVAL GUIDELINES"
2. SEE SPECIFICATIONS, SECTION 015369 - TEMPORARY TREE & PLANT PROTECTION.
3. TREE PROTECTION MUST OCCUR BEFORE COMMENCEMENT OF DEMOLITION.
4. FOR PRUNING GUIDELINES, REFER TO SPECIFICATION 015639
5. PROTECT EXISTING TREES DURING CONSTRUCTION. KEEP TRAFFIC AND STAGING OF MATERIALS CONFIRMED TO IMMEDIATE AREA OF CONSTRUCTION. PRUNE ALL EXPOSED ROOTS OVER 0.5 INCHES IN DIAMETER WITHIN 24 HOURS OF EXPOSING THEM. COVER ALL EXPOSED ROOTS WITHIN 24 HOURS OF EXPOSING THEM WITH TOPSOIL OR SHREDDED HARDWOOD MULCH.



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ISSUED FOR REVIEW	2011-09-29
ISSUED FOR PRICING	2011-11-16
ISSUED FOR ZONING REVIEW	2011-11-22
ISSUED FOR PERMIT	2012-05-15
ISSUED FOR PERMIT	2012-06-29
ISSUED FOR CONSTRUCTION	2012-07-12

WOODLAWN CENTER NORTH
BUILDING C4

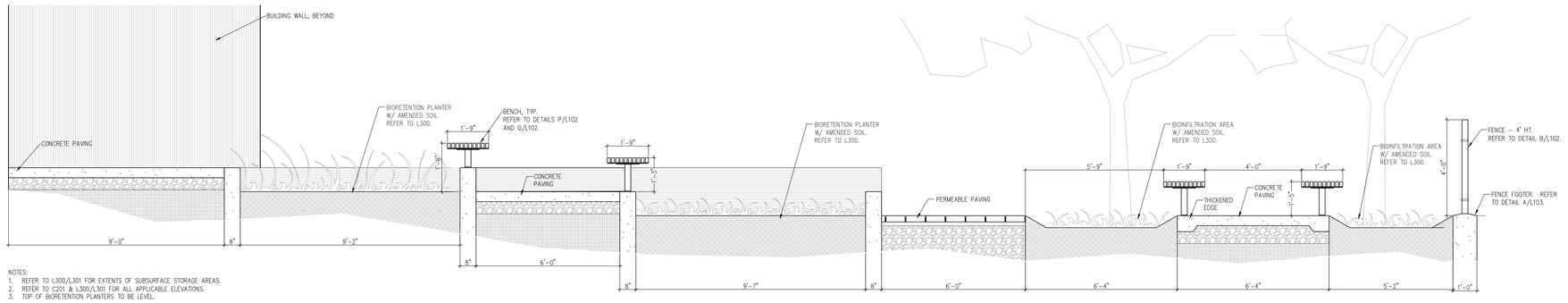
6129 S. COTTAGE GROVE
CHICAGO IL 60637

1122

TREE PRESERVATION & REMOVAL PLAN

L001

11/15/2011 2:02 PM



NOTES:
1. REFER TO L300/L301 FOR EXTENTS OF SUBSURFACE STORAGE AREAS.
2. REFER TO C201 & L300/L301 FOR ALL APPLICABLE ELEVATIONS.
3. TOP OF BIORETENTION PLANTERS TO BE LEVEL.

A COMMONS AREA - SECTION

1/2"=1'-0"

COMMUNITY AREA - COMMONS

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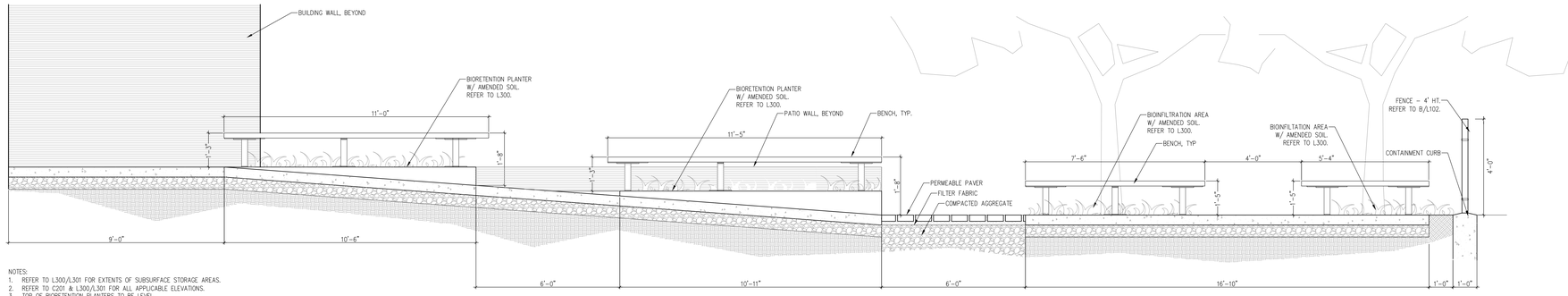

NOTES:
1. REFER TO L300/L301 FOR EXTENTS OF SUBSURFACE STORAGE AREAS.
2. REFER TO C201 & L300/L301 FOR ALL APPLICABLE ELEVATIONS.
3. TOP OF BIORETENTION PLANTERS TO BE LEVEL.

B COMMONS - RAMP SECTION

1/2"=1'-0"

COMMUNITY AREA - COMMONS

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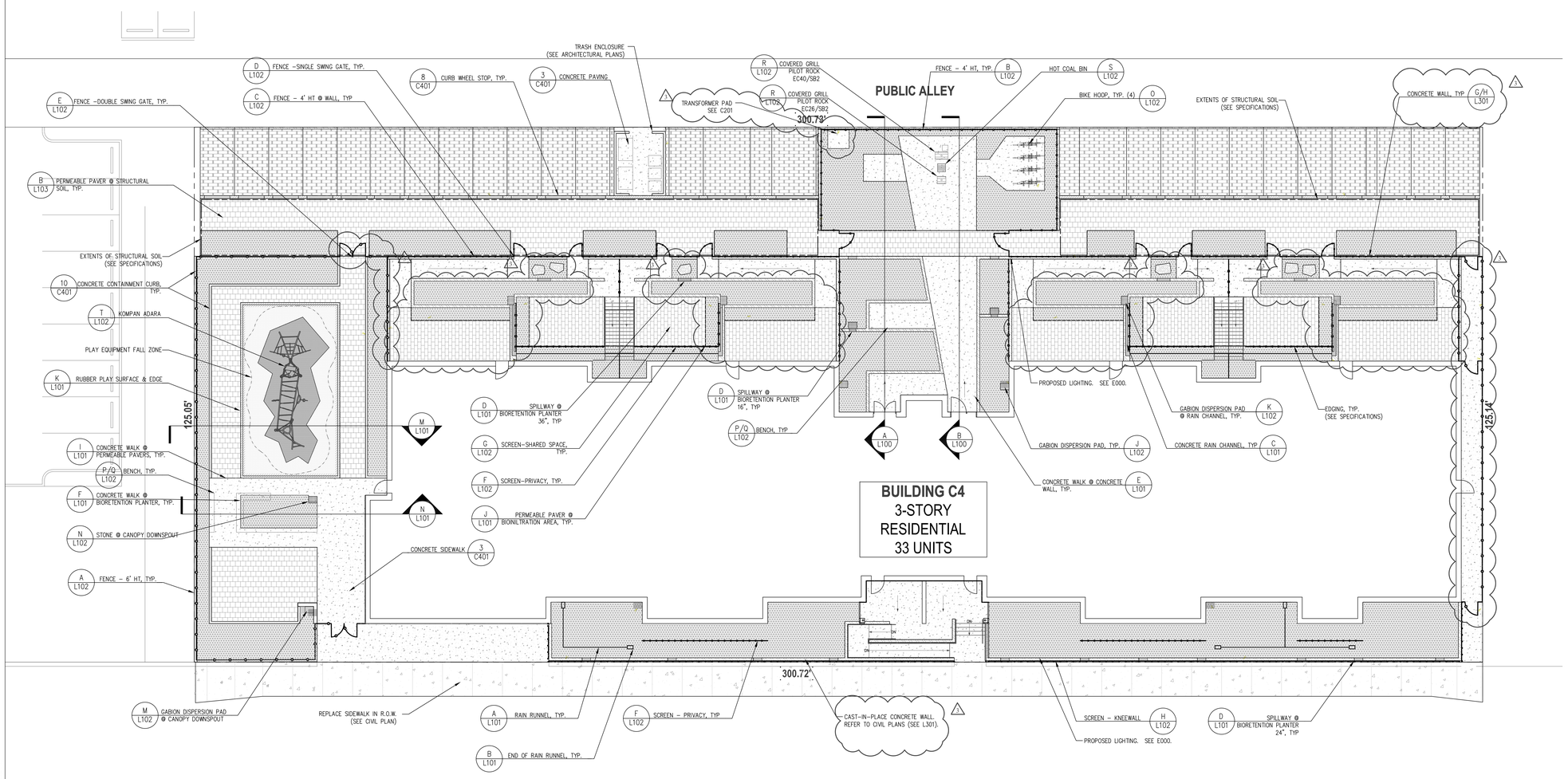


Key Notes

- 16' SPILLWAY
- 24' SPILLWAY
- 36' SPILLWAY
- GABION DISPERSION PAD
- PROPERTY LINE
- EDGING (SEE SPECIFICATIONS)
- EXTENTS OF STRUCTURAL SOIL (SEE SPECIFICATIONS)
- FENCE - 6' HT. - REFER TO ARCHITECTURAL SHEETS
- FENCE - 4' HT. - REFER TO ARCHITECTURAL SHEETS
- FENCE - 4' HT. @ WALL -REFER TO ARCHITECTURAL SHEETS
- SCREEN - KNEE WALL - REFER TO ARCHITECTURAL SHEETS
- SCREEN - PRIVACY - REFER TO ARCHITECTURAL SHEETS
- SCREEN - SHARED SPACE - REFER TO ARCHITECTURAL SHEETS
- SHREDDED LEAF MULCH OVER AMENDED TOPSOIL
- ECO-PRIORA - RECTANGLE, PARQUET (CHARDONNAY TAN)
- ECO-PRIORA - SQUARE, RUNNING BOND (SAND)
- ECO-OPTILOCK (SAND)
- CONCRETE PAVING
- CONCRETE CONTAINMENT CURB
- RAISED RIBBON CURB
- CAST-IN-PLACE CONCRETE WALL
- RAIN CHANNEL
- RUBBER PLAY SURFACE
- FLAGSTONE (SEE C/L103)

E N S W

0 5 10 20

Scale 1"=10'-0"

Sheet Notes

1. SEE C201 FOR FINISH ELEVATIONS.
2. CURB WHEEL STOP TO EXTEND ENTIRE LENGTH OF PARKING AREA. TOP OF RAISED RIBBON CURB SHALL DROP TO GRADE AT ADJACENT PARKING STALLS. SEE C401
3. RAISED RIBBON CURB & TREE GRATES TO ALIGN ON CENTER PER PLAN.
4. SHREDDED LEAF MULCH TO BE 60% COMPOSTED, AND MEET REQUIREMENTS OF SPECIFICATION.
5. SEE L101/L102 FOR MATERIAL INTERSECTION DETAILS.
6. SEE C201 & L300/301 FOR APPLICABLE WALL HEIGHT & PROFILE.
7. LANDSCAPE ARCHITECT TO SPECIFY COLOR & PATTERN FOR RUBBER PLAY SURFACE IN CONJUNCTION WITH SURFACE INSTALLER. SEE SPECIFICATION 11 DIVISION "PLAY SURFACES"
8. INSTALLER TO LAYOUT FOR REVIEW & APPROVAL BY LANDSCAPE ARCHITECT ALL POST & MOUNT LOCATIONS FOR ALL SCREENS & FENCES BEFORE INSTALLATION & MOUNTING BEGINS.
9. INSTALLER TO PROVIDE SAMPLE GABION & SPLASHPAD FOR REVIEW & APPROVAL BY LANDSCAPE ARCHITECT, PRIOR TO INSTALLATION.

LANDSCAPE ARCHITECT JOHN A. KOSSIN 187-001089 STATE OF ILLINOIS

EXP. 8/31/2013

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED UNDER MY SUPERVISION AND THAT THEY COMPLY, TO THE BEST OF MY KNOWLEDGE, WITH ALL THE BUILDING CODES AND ORDINANCES OF THE CITY OF CHICAGO, IL.

2011-09-29	ISSUED FOR REVIEW
2011-11-16	ISSUED FOR PRICING
2011-12-09	ISSUED FOR REVIEW
2011-11-30	ISSUED FOR PERMIT
2012-05-02	ISSUED FOR PERMIT
2012-07-12	ISSUED FOR CONSTRUCTION

WOODLAWN CENTER NORTH

BUILDING C4

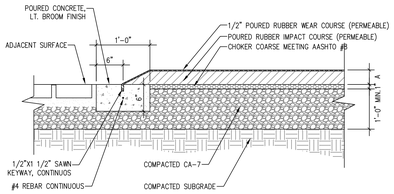
6129 S. COTTAGE GROVE
CHICAGO IL 60637

1122

MATERIALS PLAN

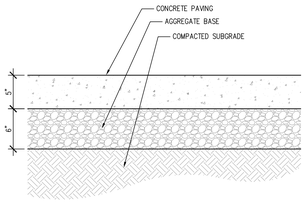
L100

11/15/2011 2:02 PM



NOTES:
1. MINIMUM DEPTH OF POURED RUBBER SYSTEM SHALL BE 3 INCHES. CONTRACTOR SHALL INCREASE DEPTH OF IMPACT COURSE TO MEET, OR EXCEED, ALL FALL REQUIREMENTS OF PLAY MANUFACTURER AND ASTM F1497.
2. CONFIRM PERMEABILITY OF RUBBER SURFACE WITH LANDSCAPE ARCHITECT DURING PRODUCT SELECTION.
3. SEE L100 FOR EXTENTS OF POURED RUBBER SURFACE.
4. COLOR TO BE DETERMINED BY LANDSCAPE ARCHITECT A MINIMUM OF 2 WEEKS PRIOR TO INSTALLATION.
4. REFER TO L300/L301 FOR EXTENTS OF SUBSURFACE STORAGE AREAS.

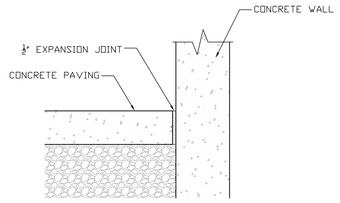
K POROUS RUBBER SURFACE & EDGE — 1"=1'-0"
© 2010 BY CONSERVATION DESIGN FORUM, INC. L101 Materials Details.dwg



NOTES:
1. REFER TO 3/C401 FOR MATERIALS
2. REFER TO 3/C401 FOR JOINTING DETAILS

I CONCRETE WALK — 1 1/2"= 1'-0"
© 2010 by Conservation Design Forum, Inc File Name

G NOT USED



NOTES:
1. REFER TO 3/C401 FOR MATERIALS AND DIMENSIONS OF WALK.

E CONCRETE WALK @ CONCRETE WALL — 1 1/2"= 1'-0"
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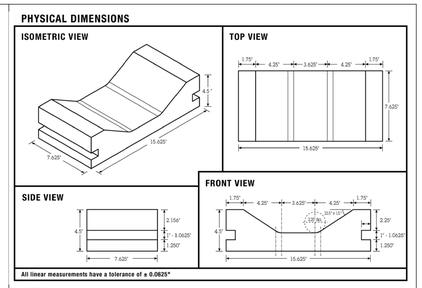
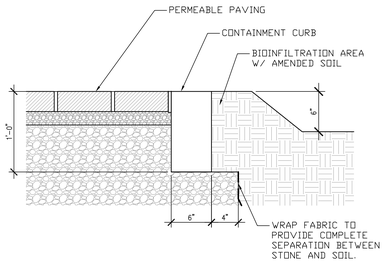


NOTES:
1. RAIN RUNNEL TO BE MODULAR DRAINAGE MD1545L OR APPROVED EQUAL.
2. INSTALLATION PER MANUFACTURER RECOMMENDATION.
3. SEE L100 FOR LOCATIONS.
4. SEE B/L101 FOR END OF RAIN RUNNEL DETAIL.

A RAIN RUNNEL — NTS

L NOT USED

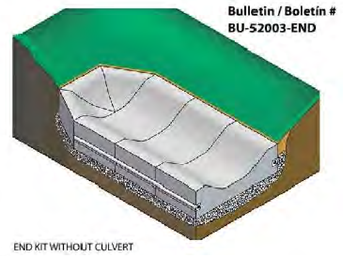


NOTES:
1. REFER TO CIVIL & LANDSCAPE PLANS FOR ALL MATERIAL DETAILS.
2. SET EDGING STAKE IN STONE BASE.

J PERMEABLE PAVER @ BIOINFILTRATION AREA — 1 1/2"= 1'-0"
© 2010 by Conservation Design Forum, Inc File Name

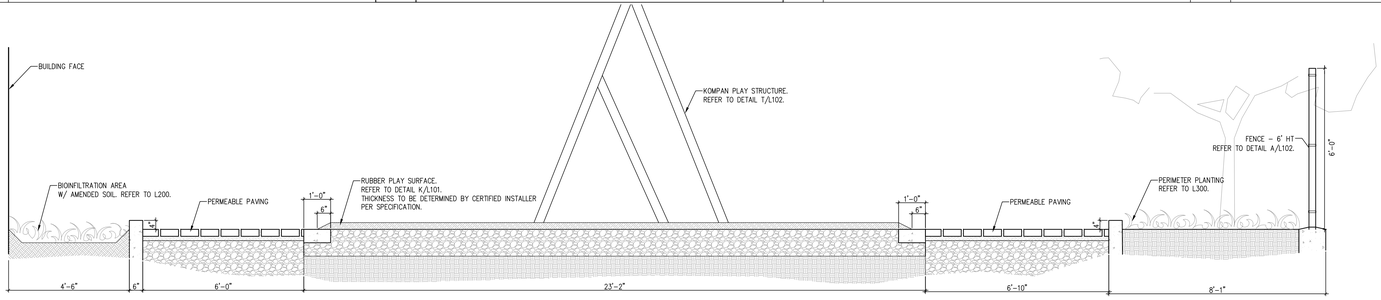
H NOT USED

F NOT USED



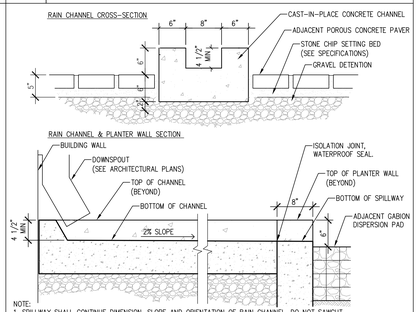
NOTES:
1. END OF RAIN RUNNEL TO BE MODULAR DRAINAGE BU-52003-END OR APPROVED EQUAL.
2. INSTALLATION PER MANUFACTURER RECOMMENDATION.
3. SEE L100 FOR LOCATIONS.

B END OF RAIN RUNNEL — NTS



NOTES:
1. REFER TO L300/L301 FOR EXTENTS OF SUBSURFACE STORAGE AREAS.
2. REFER TO C 301 AND L300/L301 FOR FINAL GRADING.

M PLAYLOT - SECTION — 1/2"=1'-0"
© 2009 by Conservation Design Forum, Inc COMMUNITY AREA - COMMONS



NOTE:
1. SPILLWAY SHALL CONTINUE DIMENSION, SLOPE AND ORIENTATION OF RAIN CHANNEL. DO NOT SAWCUT.
2. APPLY LIGHT SANDBLAST FINISH TO TOP AND EXTERIOR SIDE OF CHANNEL TO EXPOSE AGGREGATE. DO NOT SANDBLAST INTERIOR OF CHANNEL.
3. REFER TO 3/C401 FOR CONTRACTION JOINTS.

C CONCRETE RAIN CHANNEL — 1"=1'-0"
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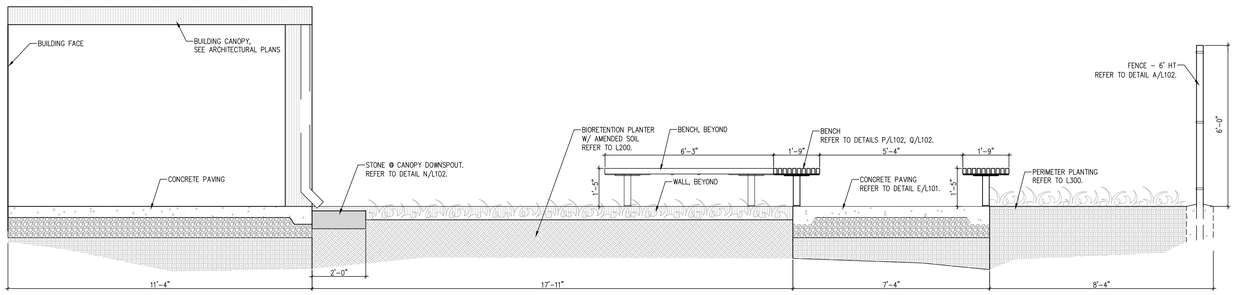
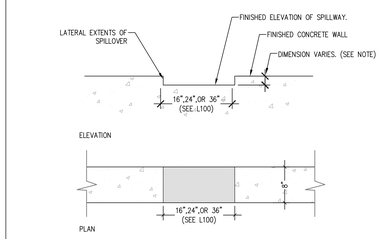


NOTES:
1. REFER TO L300/L301 FOR EXTENTS OF SUBSURFACE STORAGE AREAS.
2. REFER TO C 301 AND L300/L301 FOR FINAL GRADING.

N BIOINFILTRATION AREA @ PLAYLOT — 1/2"=1'-0"
© 2009 by Conservation Design Forum, Inc COMMUNITY AREA - COMMONS



NOTES:
1. DO NOT SAWCUT SPILLWAY.
2. 16" SPILLWAY TO BE 2" DEEP. 24" & 36" SPILLWAY TO BE 1" DEEP.
3. APPLY LIGHT SANDBLAST FINISH TO FINISHED ELEVATION OF SPILLOVER TO EXPOSE AGGREGATE. MASK ADJACENT CONCRETE WALL TO PROTECT FINISH.

D SPILLWAY @ BIORETENTION PLANTER — 1"=1'-0"
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● ISSUED FOR REVIEW	2011-09-29
● ISSUED FOR PERMIT	2011-11-18
● ISSUED FOR PERMIT REVIEW	2011-12-12
● ISSUED FOR PERMIT	2011-11-30
● ISSUED FOR PERMIT	2012-06-12
● ISSUED FOR CONSTRUCTION	2012-08-27

WOODLAWN CENTER NORTH
BUILDING C4

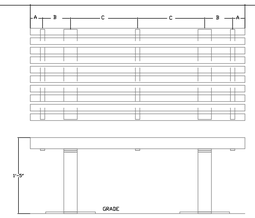
6129 S. COTTAGE GROVE
CHICAGO IL 60637

1122

MATERIALS PLAN DETAILS

L101

S:\1000\1122\CAD\L101.dwg
8/31/2012 2:26 PM



	4'-0	5'-0	6'-0	7'-0	8'-0
A	2 3/4"	2 3/4"	2 3/4"	2 3/4"	2 3/4"
B	6 1/4"	8 1/4"	10 1/4"	12 1/4"	14 1/4"
C	1'-3"	1'-3"	1'-11"	2'-3"	2'-7"

NOTES:
1. BENCH TO BE SITE-CRAFT WOODCREST (BKF), OR EQUAL TO BE APPROVED BY LANDSCAPE ARCHITECT. (WWW.SITE-CRAFT.COM)
2. SURFACE MOUNT TO BE ALIGNED & CENTERED PARALLEL TO LENGTH OF WALL.
3. HOT-DIP GALVANIZED TO 1.25 OUNCES PER SQUARE FOOT MINIMUM ZINC COATING IN ACCORDANCE WITH ASTM A123, TO MATCH SCREEN. INSTALLER TO REMOVE ANY EXTRANEOUS COATING THAT OCCURS AS A RESULT OF GALVANIZATION PROCESS THAT MAY CAUSE SNAGS, BEFORE INSTALLATION.
4. BENCH SLATS TO BE MITER CUT PER L100. SEAL MITER CUT ENDS PER MANUFACTURER'S RECOMMENDATION.
5. UNION OF BENCHES SHOULD NOT EXCEED 1/4".
6. FINISH: IPE WOOD, NATURAL.

Q BENCH ELEVATION & PLAN — 1"=1'-0"

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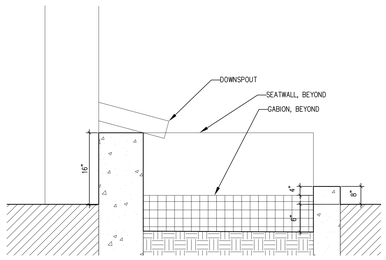
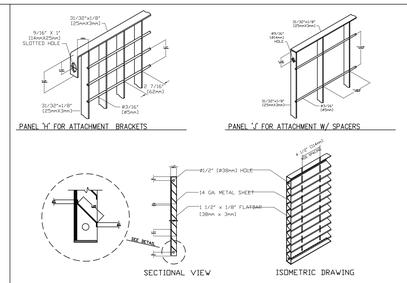


M GABION DISPERSION PAD @ CANOPY DOWNSPOUT — 1/2"=1'-0"

2011 by Conservation Design Forum, Inc File Name

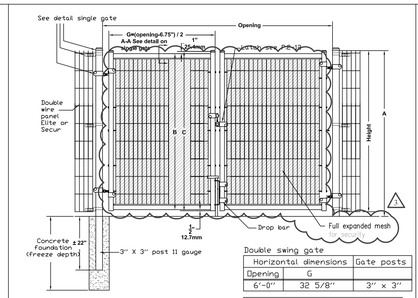


LOUVER PANEL – 80% SUN & VIEW BLOCKED

NOTE
1. CONTRACTOR TO PROVIDE SHOP DRAWING FOR REVIEW & APPROVAL BY LANDSCAPE ARCHITECT, BEFORE MANUFACTURE.
2. ALL COMPONENTS SHALL BE HOT-DIP GALVANIZED TO 1.25 OUNCES PER SQUARE FOOT MINIMUM ZINC COATING IN ACCORDANCE WITH ASTM A123.
3. CONTRACTOR TO PROVIDE FULL-SCALE ON-SITE MOCK-UP FOR REVIEW & APPROVAL BY LANDSCAPE ARCHITECT, BEFORE INSTALLATION.

I SCREEN - PANELS — 1/2"=1'-0"

© 2010 by Conservation Design Forum, Inc File Name



Double swing gate

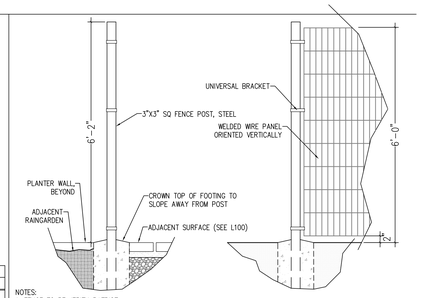
Horizontal dimensions		Gate posts
Opening	G	
6'-0"	32 5/8"	3" x 3"

Vertical dimensions			
Height	A	B	C
4'-½"	4'-3"	45"	46-½"

NOTES:
1. FENCE TO BE JERITH PATRIOT
2. FINISH: POWDERCOAT, BLACK

E FENCE - DOUBLE-SWING GATE — 1/2"=1'-0"

© 2009 by Conservation Design Forum, Inc File Name



NOTES:
1. FENCE TO BE JERITH PATRIOT.
2. SQUARE POST TO BE GALVANIZED, THEN POLYESTER POWDER-COATED (BLACK).
3. PANELS TO BE 72" HIGH 2 GAUGE VERTICALS.
4. VERIFY THAT POSTS ARE SET PLUMB, ALIGNED, AND AT CORRECT HEIGHT AND SPACING, AND HOLD IN POSITION DURING PLACEMENT AND FINISHING OPERATIONS UNTIL CONCRETE IS SUFFICIENTLY CURED.
5. SEE DETAIL A/L103 FOR FENCE FOOTER.

A FENCE - 6' HT — 3/4"=1'-0"

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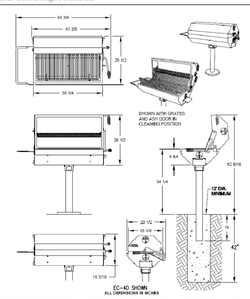

NOTES:
1. COVERED GRILL TO BE PILOTROCK EC40 & EC26 AS SPECIFIED PER PLAN, OR EQUAL TO BE APPROVED BY LANDSCAPE ARCHITECT. (WWW.PILOTROCK.COM)
2. GRILL POST TO BE SET IN SLEEVE TO ALLOW TEMPORARY REMOVAL OF GRILL BY OWNER. GRILL MUST BE CAPABLE OF BEING LOCKED INTO PLACE.
3. CONTRACTOR TO SUBMIT SHOP DRAWINGS PRIOR TO INSTALLATION.

R COVERED GRILL — NTS

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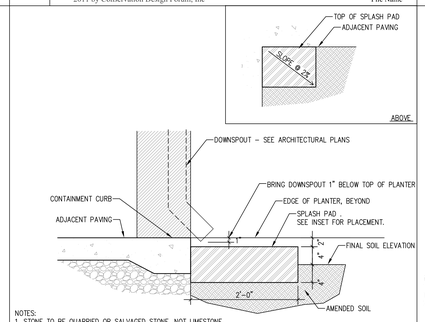

NOTES:
1. STONE TO BE QUARRIED OR SALVAGED STONE. NOT LIMESTONE.
2. STONE COLOR: SAND.
3. STONE TYPE & COLOR TO BE APPROVED BY LANDSCAPE ARCHITECT BEFORE PLACEMENT.

N STONE @ CANOPY DOWNSPOUT — 1"=1'-0"

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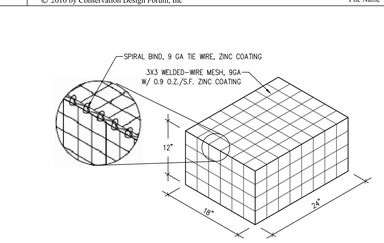

NOTES:
1. SPIRAL BINDER SHALL BE SCREWED INTO POSITION SUCH THAT IT PASSES THROUGH EACH MESH OPENING ALONG THE JOINT. BOTH ENDS OF THE ALL 9 GA SPIRAL BINDERS SHALL BE CRIMPED TO SECURE THE SPIRAL IN PLACE.
2. USE TUMBLED STONE FOR FILLING GABIONS, AS FOLLOWS:
   100% PASSING 8 INCHES.
   0–5% PASSING 4 INCHES.
3. NO SHARP EDGE SHALL PROJECT THROUGH WIRE MESH.
4. FILL COLOR TO BE NATURAL. LANDSCAPE ARCHITECT TO FIELD VERIFY FILL MATERIAL.

J GABION DISPERSION PAD — N.T.S

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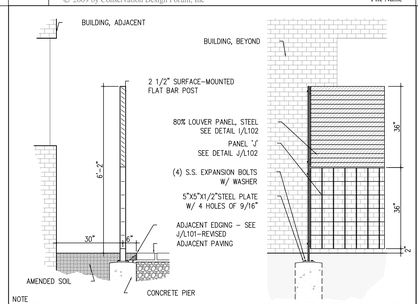

NOTE
1. CONTRACTOR TO PROVIDE SHOP DRAWING FOR REVIEW & APPROVAL BY LANDSCAPE ARCHITECT, BEFORE MANUFACTURE.
2. ALL COMPONENTS SHALL BE HOT-DIP GALVANIZED TO 1.25 OUNCES PER SQUARE FOOT MINIMUM ZINC COATING IN ACCORDANCE WITH ASTM A123.
3. CONTRACTOR TO PROVIDE FULL-SCALE ON-SITE MOCK-UP FOR REVIEW & APPROVAL BY LANDSCAPE ARCHITECT, BEFORE INSTALLATION.

F SCREEN - PRIVACY — 1/2"=1'-0"

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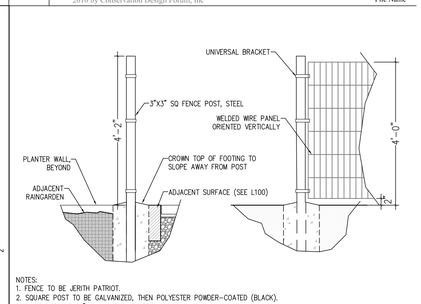

NOTES:
1. FENCE TO BE JERITH PATRIOT.
2. SQUARE POST TO BE GALVANIZED, THEN POLYESTER POWDER-COATED (BLACK).
3. PANELS TO BE 48" HIGH 2 GAUGE VERTICALS.
4. VERIFY THAT POSTS ARE SET PLUMB, ALIGNED, AND AT CORRECT HEIGHT AND SPACING, AND HOLD IN POSITION DURING PLACEMENT AND FINISHING OPERATIONS UNTIL CONCRETE IS SUFFICIENTLY CURED.
5. SEE DETAIL A/L103 FOR FENCE FOOTER.

B FENCE - 4' HT — 3/4"=1'-0"

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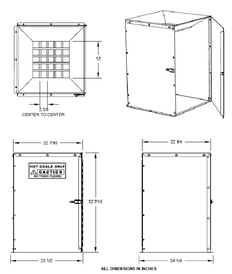

NOTES:
1. HOT COAL BIN TO BE PILOTROCK HCB/B1, OR EQUAL TO BE APPROVED BY LANDSCAPE ARCHITECT. (WWW.PILOTROCK.COM)
2. HOT COAL BIN TO ALLOW FOR TEMPORARY REMOVAL BY OWNER. BIN MUST BE CAPABLE OF BEING LOCKED INTO PLACE.
3. CONTRACTOR TO SUBMIT SHOP DRAWINGS PRIOR TO INSTALLATION.

S HOT COAL BIN — NTS

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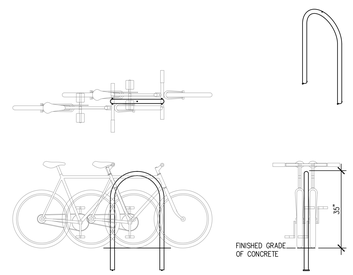

NOTES:
1. BIKE HOOP TO BE DERO HOOP BIKE RACK (WWW.DERO.COM).
2. BIKE HOOP TO BE MOUNTED IN-GROUND USING 1" DIAMETER CONCRETE FOOTING AT 42" DEEP. 3. BIKE HOOPS TO BE SPACED EVENLY AT 36" O.C. PER PLANS.
3. TOP OF FOOTING TO SLOPE AWAY FROM POST. FOOTING TO BE SET FLUSH WITH TOP OF PAVEMENT.
4. FINISH: GALVANIZED

O BIKE HOOP — 1/2"=1'-0"

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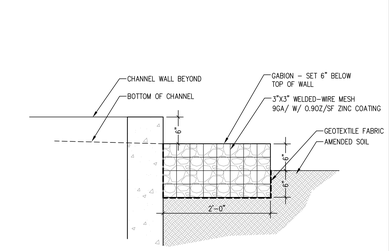

NOTES:
1. SET GABION DISPERSION PAD DURING SOIL INSTALLATION. BOTTOM OF PAD TO EXTEND NO MORE THAN 6" BELOW FINISHED GRADE OF SOIL MEDIA.
2. SEE DETAIL J/L102 FOR GABION DISPERSION PAD.

K GABION DISPERSION PAD @ RAIN CHANNEL — 1"=1'-0"

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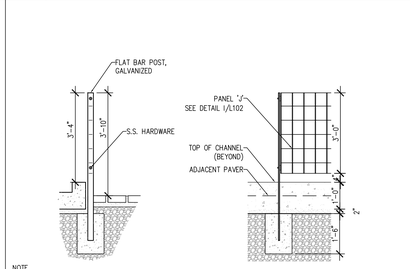

NOTE
1. CONTRACTOR TO PROVIDE SHOP DRAWING FOR REVIEW & APPROVAL BY LANDSCAPE ARCHITECT, BEFORE MANUFACTURE.
2. ALL COMPONENTS SHALL BE HOT-DIP GALVANIZED TO 1.25 OUNCES PER SQUARE FOOT MINIMUM ZINC COATING IN ACCORDANCE WITH ASTM A123.
3. CONTRACTOR TO PROVIDE FULL-SCALE ON-SITE MOCK-UP FOR REVIEW & APPROVAL BY LANDSCAPE ARCHITECT, BEFORE INSTALLATION.
4. SCREEN TO BE CONTINUOUS ALONG LENGTH OF SHARED SPACE. REFER TO L100 FOR LOCATIONS.

G SCREEN - SHARED SPACE — 1/2"=1'-0"

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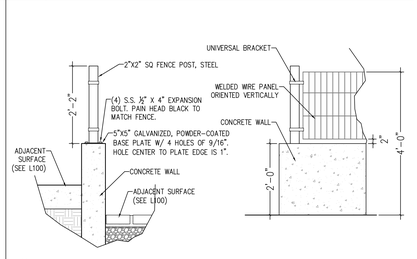

NOTES:
1. FENCE TO BE JERITH PATRIOT.
2. SQUARE POST TO BE GALVANIZED, THEN POLYESTER POWDER-COATED (BLACK).
3. PANELS TO BE 72" HIGH 2 GAUGE VERTICALS, CUT TO 24" HIGH PANELS. GALVANIZE & POWDER-COAT AFTER CUTTING TO CORRECT INSTALLED HEIGHT. PANELS WITH EXPOSED RAW METAL WILL BE REJECTED.
4. PROVIDE 2-PANEL MOCK-UP FOR REVIEW & APPROVAL BY LANDSCAPE ARCHITECT BEFORE INSTALLATION.
5. VERIFY THAT POSTS ARE SET PLUMB, ALIGNED, AND AT CORRECT HEIGHT AND SPACING, AND HOLD IN POSITION DURING PLACEMENT AND FINISHING OPERATIONS UNTIL CONCRETE IS SUFFICIENTLY CURED.

C FENCE 4' HT @ WALL — 3/4"=1'-0"

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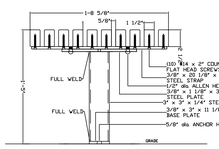
NOTES:
1. BEST USER AGE: 5–12
2. SPACE REQUIRED: 39'4" X 21'7"
3. HIGHEST DESIGNATED PLAYSURFACE: 9'1"
4. SEE SPECIFICATIONS.
5. SEE L100 FOR LAYOUT AND EXTENTS OF FALL ZONE.

T KOMPAN - ADARA GXY906 — NTS



NOTES:
1. BENCH TO BE SITECRAFT WOODCREST (BKF), OR EQUAL TO BE APPROVED BY LANDSCAPE ARCHITECT. (WWW.SITE-CRAFT.COM)
2. SURFACE MOUNT TO BE ALIGNED & CENTERED PARALLEL TO LENGTH OF WALL.
3. HOT-DIP GALVANIZED TO 1.25 OUNCES PER SQUARE FOOT MINIMUM ZINC COATING IN ACCORDANCE WITH ASTM A123, TO MATCH SCREEN. INSTALLER TO REMOVE ANY EXTRANEOUS COATING THAT OCCURS AS A RESULT OF GALVANIZATION PROCESS THAT MAY CAUSE SNAGS, BEFORE INSTALLATION.
4. FINISH: IPE WOOD, NATURAL.

P BENCH - SECTION — 1 1/2"= 1'-0"

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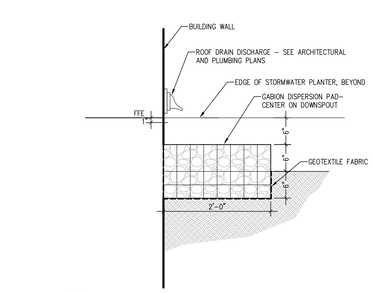

NOTES:
1. SET GABION DISPERSION PAD DURING SOIL INSTALLATION. BOTTOM OF PAD TO EXTEND NO MORE THAN 6" BELOW FINISHED GRADE OF SOIL MEDIA.
2. SEE DETAIL J/L102 FOR GABION DISPERSION PAD.

L GABION DISPERSION PAD @ BUILDING FOUNDATION — 1"=1'-0"

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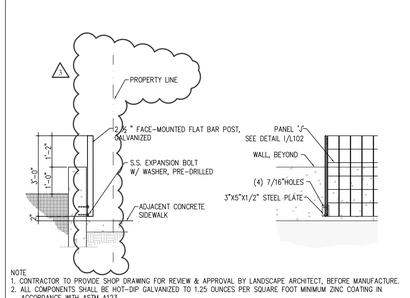

NOTE
1. CONTRACTOR TO PROVIDE SHOP DRAWING FOR REVIEW & APPROVAL BY LANDSCAPE ARCHITECT, BEFORE MANUFACTURE.
2. ALL COMPONENTS SHALL BE HOT-DIP GALVANIZED TO 1.25 OUNCES PER SQUARE FOOT MINIMUM ZINC COATING IN ACCORDANCE WITH ASTM A123.
3. CONTRACTOR TO PROVIDE FULL-SCALE ON-SITE MOCK-UP FOR REVIEW & APPROVAL BY LANDSCAPE ARCHITECT, BEFORE INSTALLATION.
4. SCREEN TO BE CONTINUOUS ALONG LENGTH OF KNEEWALL. REFER TO L100 FOR LOCATIONS.

H SCREEN - KNEEWALL — 1/2"=1'-0"

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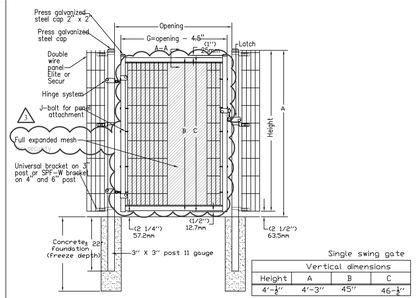

Single swing gate

Horizontal dimensions		Gate posts
Opening	G	
3'-0"	31 1/2"	3" x 3"

Vertical dimensions			
Height	A	B	C
4'-½"	4'-3"	45"	46-½"

NOTES:
1. GATE TO BE JERITH PATRIOT.
2. FINISH: POWDERCOAT, BLACK

D FENCE - SINGLE-SWING GATE — 1/2"=1'-0"

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I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED UNDER MY SUPERVISION AND THAT THEY COMPLY, TO THE BEST OF MY KNOWLEDGE, WITH ALL THE BUILDING CODES AND ORDINANCES OF THE CITY OF CHICAGO, IL.

ISSUED FOR REVIEW	2011-05-29
ISSUED FOR PERMIT REVIEW	2011-11-16
ISSUED FOR PERMIT	2011-11-30
ISSUED FOR PERMIT	2012-02-02
ISSUED FOR CONSTRUCTION	2012-02-02

WOODLAWN CENTER NORTH
BUILDING C4

6129 S. COTTAGE GROVE
CHICAGO IL 60637

1122

MATERIALS PLAN DETAILS

L102

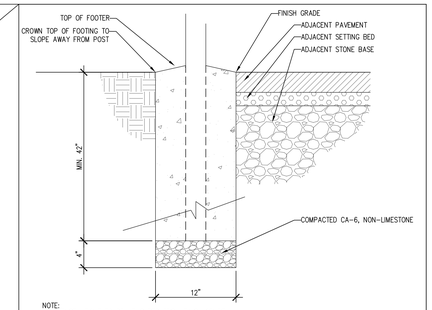
11/15/2011 2:02 PM

Q NOT USED

M NOT USED

I NOT USED

E NOT USED



NOTE:
1. FENCE HEIGHT TO BE MEASURED FROM FINISH GRADE.
2. FOOTING DEPTH TO BE MINIMUM 42" FOR IN-LINE POSTS. MINIMUM 60" FOOTING FOR ALL GATE POSTS.
3. POSTS TO BE 5' OC SPACING.

A FENCE - TOP OF FOOTER 1 1/2"= 1'-0"

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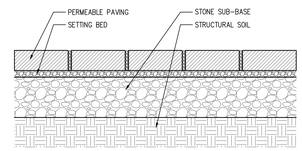
File Name

R NOT USED

N NOT USED

J NOT USED

F NOT USED



NOTES:
1. REFER TO 9/C401 FOR MATERIALS AND DIMENSIONS.
2. REFER TO L100 FOR LAYOUT.
3. COMPACT SUBBASE IN MAX. 3" LIFTS.

B PERMEABLE PAVER @ STRUCTURAL SOIL 1 1/2"= 1'-0"

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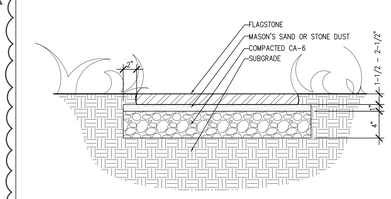
File Name

S NOT USED

O NOT USED

K NOT USED

G NOT USED



NOTES:
1. FLAGSTONE SHALL BE 1-1/2" - 2-1/2" THICK.
2. FLAGSTONE SHALL BE LEVEL AT SURFACE WITHOUT FRACTURES OR IMPERFECTIONS.
3. DIMENSION OF FLAGSTONE SHALL BE 2'-0" BY 3'-0" AT THE SMALLEST.

C FLAGSTONE 1 1/2"= 1'-0"

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File Name

T NOT USED NTS

P NOT USED

L NOT USED

H NOT USED

D NOT USED

LANDSCAPE ARCHITECT
JOHN A. CORRIGAN
157-001089
STATE OF ILLINOIS
EXP. 8/31/2013

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED UNDER MY SUPERVISION AND THAT THEY COMPLY TO THE BEST OF MY KNOWLEDGE, WITH ALL THE BUILDING CODES AND ORDINANCES OF THE CITY OF CHICAGO, IL.

ISSUED FOR REVIEW	2011-09-29
ISSUED FOR REVIEW	2011-11-16
ISSUED FOR ZONING REVIEW	2011-12-14
ISSUED FOR PERMIT	2011-11-30
ISSUED FOR PERMIT	2012-05-29
ISSUED FOR CONSTRUCTION	2012-06-04

WOODLAWN CENTER NORTH
BUILDING C4

6129 S. COTTAGE GROVE
CHICAGO IL 60637

1122

MATERIALS PLAN DETAILS

L103

11/15/2011 2:02 PM

PLANTING ZONES

BIORETENTION PLANTER @ STREET - TYPE A

	SPECIES NAME	Common Name	SPACING	SIZE	QTY	QTY	QTY	QTY
					A1	A2	A3	A4
Grass #1	*Sporobolus heterolepis*	Prairie Dropseed	15"OC	quart	94	84	92	93
Grass #2	*Schizachyrium scoparium 'Carousel'*	Carousel Little Bluestem	15"OC	quart	38	34	37	37
Forb #1	*Allium 'Summer Beauty'*	Summer Beauty' Ornamental Chive	15"OC	quart	57	51	55	56
Bulb #1	*Allium moly*	----------	----	Bulb	76	67	74	75
Vine #1	*Parthenocissus quinquefolia*	Virginia Creeper	24" OC	#1 pot	5	4	5	5
Vine #2	*Clematis virginiana*	Virgin's Bower	24" OC	#1 pot	5	4	5	5

BIORETENTION PLANTER @ STREET - TYPE B

	SPECIES NAME	Common Name	SPACING	SIZE	QTY	QTY	QTY
					B1	B2	B3
Grass #1	*Sporobolus heterolepis*	Prairie Dropseed	15"OC	quart	87	88	45
Grass #2	*Sesleria autumnalis*	Autumn Moor Grass	15"OC	quart	35	35	18
Forb #1	*Echinacea 'Pixie Meadowbrite'*	Pixie Meadowbrite Coneflower	15"OC	quart	52	53	27
Bulb #1	*Allium atropurpureum*	----------	----	Bulb	69	70	36
Vine #1 at screen	*Parthenocissus quinquefolia*	Virginia Creeper	48"OC	#1 pot	2	2	1
Vine #2 at screen	*Lonicera x brownii*	Brown's Honeysuckle	36"OC	quart	4	4	2
Vine #1 at wall	*Parthenocissus quinquefolia*	Virginia Creeper	24" OC	#1 pot	7	7	4
Vine #2 wall	*Clematis virginiana*	Virgin's Bower	24" OC	#1 pot	7	7	4

BIORETENTION PLANTER @ COMMONS - UPLAND

	SPECIES NAME	Common Name	SPACING	SIZE	QTY	QTY
					C1	C2
Grass #1	*Sesleria autumnalis*	Autumn Moor Grass	15"OC	quart	19	36
Grass #2	*Sporobolus heterolepis*	Prairie Dropseed	15"OC	quart	47	91
Forb #1	*Geranium sanguineum 'Max Frei'*	Max Frei Bloody Cranesbill	15"OC	quart	14	27
Forb #2	*Allium 'Summer Beauty'*	Summer Beauty' Ornamental Chive	15"OC	quart	14	27
Bulb #1	*Allium moly*	----------	----	Bulb	38	73
Vine #1	*Parthenocissus quinquefolia*	Virginia Creeper	24" OC	#1 pot	3	2
Vine #2	*Clematis virginiana*	Virgin's Bower	24" OC	#1 pot	3	2

BIORETENTION PLANTER @ COMMONS - LOWLAND

	SPECIES NAME	Common Name	SPACING	SIZE	QTY	QTY
					D1	D2
Grass #1	*Sporobolus heterolepis*	Prairie Dropseed	15"OC	quart	13	32
Grass #2	*Sesleria autumnalis*	Autumn Moor Grass	15"OC	quart	32	79
Forb #1	*Geranium sanguineum 'Max Frei'*	Max Frei Bloody Cranesbill	15"OC	quart	9	24
Forb #2	*Allium 'Summer Beauty'*	Summer Beauty' Ornamental Chive	15"OC	quart	9	24
Bulb #1	*Allium moly*	----------	----	Bulb	25	63
Vine #1	*Parthenocissus quinquefolia*	Virginia Creeper	24" OC	#1 pot	3	4
Vine #2	*Clematis virginiana*	Virgin's Bower	24" OC	#1 pot	3	4

BIOINFILTRATION AREA @ COMMONS

	SPECIES NAME	Common Name	SPACING	SIZE	QTY
					E1
Grass #1	*Sporobolus heterolepis 'Tara'*	Dwarf Prairie Dropseed	15"OC	quart	106
Grass #2	*Sesleria autumnalis*	Autumn Moor Grass	15"OC	quart	213
Forb #1	*Geranium sanguineum 'Max Frei*	Max Frei Bloody Cranesbill	15"OC	quart	106
Forb #2	*Allium 'Summer Beauty'*	Summer Beauty' Ornamental Chive	15"OC	quart	53
Forb #3	*Echinacea purpurea 'Magnus'*	Magnus' Purple Coneflower	15"OC	quart	53
Bulb #1	*Narcissus spp.(Early, Mid, Late Spring Mix)*	----------	----	Bulb	213
Vine #1	*Parthenocissus quinquefolia*	Virginia Creeper	24" OC	#1 pot	29
Vine #2	*Clematis virginiana*	Virgin's Bower	24" OC	#1 pot	29

BIORETENTION PLANTER @ PATIO

	SPECIES NAME	Common Name	SPACING	SIZE	QTY	QTY	QTY	QTY
					F1	F2	F3	F4
Grass #1	*Sporobolus heterolepis*	Prairie Dropseed	15"OC	quart	69	62	62	69
Forb #1	*Echinacea purpurea 'Magnus'*	Magnus' Purple Coneflower	15"OC	quart	23	21	21	23
Forb #2	*Heliopsis helianthoides 'Summer Nights'*	Smooth Oxeye	15"OC	quart	23	21	21	23
Bulb #1	*Narcissus spp.(Early, Mid, Late Spring Mix)*	----------	----	Bulb	46	42	42	46

SCREEN @ PATIO

	SPECIES NAME	Common Name	SPACING	SIZE	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY
					G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12
Grass #1	*Carex pensylvanica*	Pennsylvania Sedge	12"OC	plug	32	31	32	34	21	21	31	31	31	21	21	34
Forb #1	*Geranium maculatum*	Wild Geranium	12"OC	plug	11	10	10	11	11	7	7	10	10	378	7	11
Forb #2	*Fragaria virginiana*	Wild Strawberry	12"OC	plug	11	10	10	11	11	7	7	10	10	7	7	11
Vine #1	*Parthenocissus quinquefolia*	Virginia Creeper	24" OC	#1 pot	4	4	4	4	----	----	----	----	----	----	----	----
Vine #2	*Clematis virginiana*	Virgin's Bower	24" OC	#1 pot	4	4	4	4	----	----	----	----	----	----	----	----

BIOINFILTRATION AREA @ PLAYLOT - PERIMETER

	SPECIES NAME	Common Name	SPACING	SIZE	QTY	QTY
					H1	H2
Grass #1	*Panicum virgatum 'Shenandoah'*	Shenandoah Red Switch Grass	15"OC	quart	85	113
Forb #1	*Rudbeckia fulgida*	Prairie Coneflower	15"OC	quart	28	38
Forb #2	*Echinacea purpurea 'Magnus'*	Magnus' Purple Coneflower	15"OC	quart	28	38
Bulb #1	*Allium atropurpureum*	----------	----	Bulb	57	75
Vine #1	*Parthenocissus quinquefolia*	Virginia Creeper	24" OC	#1 pot	10	11
Vine #2	*Clematis virginiana*	Virgin's Bower	24" OC	#1 pot	10	11

BIOINFILTRATION AREA @ PLAYLOT - CENTRAL

	SPECIES NAME	Common Name	SPACING	SIZE	QTY	QTY
					I1	I2
Grass #1	*Carex pensylvanica*	Pennsylvania Sedge	15"OC	plug	28	44
Grass #2	*Sesleria autumnalis*	Autumn Moor Grass	15"OC	quart	37	59
Forb #1	*Geranium sanguineum 'Max Frei'*	Max Frei Bloody Cranesbill	15"OC	quart	14	22
Forb #2	*Geranium sanguineum 'alba'*	White Cranesbill	15"OC	quart	14	22
Bulb #1	*Narcissus spp.(Early, Mid, Late Spring Mix)*	----------	----	Bulb	37	59

PERIMETER PLANTING @ PLAYLOT

	SPECIES NAME	Common Name	SPACING	SIZE	QTY
					J1
Grass #1	*Sesleria Autumnalis*	Autumn Moor Grass	15"OC	quart	72
Forb #1	*Calamintha nepeta spp. Nepeta*	Lesser Calamintha	15"OC	quart	18
Forb #2	*Amsonia hubrichti*	Narrow Leaf Blue Star	15"OC	quart	30
Bulb #1	*Narcissus spp.(Early, Mid, Late Spring Mix)*	----------	----	Bulb	48
Vine #1	*Parthenocissus quinquefolia*	Virginia Creeper	24" OC	#1 pot	20
Vine #2	*Clematis virginiana*	Virgin's Bower	24" OC	#1 pot	20

BIOINFILTRATION AREA @ STRUCTURAL SOIL

	SPECIES NAME	Common Name	SPACING	SIZE	QTY	QTY	QTY	QTY	QTY	QTY	QTY
					L1	L2	L3	L4	L5	L6	L7
Forb #1	*Liriope spicata*	Lily Turf	15"OC	quart	121	124	59	59	40	59	104
Forb #2	*Fragaria virginiana*	Wild Strawberry	15"OC	quart	121	124	59	59	40	59	104

PLANTING BETWEEN GATES

	SPECIES NAME	Common Name	SPACING	SIZE	QTY	QTY	QTY	QTY
					M1	M2	M3	M4
Forb #1	*Liriope spicata*	Lily Turf	18	quart	12	8	8	12
Forb #2	*Geranium macrorrhizum 'Bevan's Variety'*	Bigroot Geranium	18	quart	5	5	5	8

UNDER STAIRS

	SPECIES NAME	Common Name	SPACING	SIZE	QTY	QTY
					N1	N2
Forb #1	*Packysandra procumbrens*	Allegheny Spurge	15"OC	quart	45	45
Forb #2	*Parthenocissus quinquefolia--for ground*	Virginia Creeper	24" OC	#1 pot	6	6
Vine #1	*Parthenocissus quinquefolia--for screen*	Virginia Creeper	24" OC	#1 pot	1	1
Vine #2	*Clematis virginiana--for screen*	Virgin's Bower	24" OC	#1 pot	1	1

TURF GRASS SEED MIX

	SPECIES NAME	Common Name	SIZE	%
Seed #1	Fine Leaf Turf - Type Fescue 3/	----------	Seed	45
Seed #2	Perennial Ryegrass	----------	Seed	30
Seed #3	Creeping Red Fescue	----------	Seed	25
	Seed @ 7lbs/1000sf	Total Seed	214 LBS	

PARKWAY TREE

QTY	KEY	SPECIES NAME	COMMON NAME	SPACING	SIZE	CONTAINER	COMMENTS
5	CE OC	*Celtis occidentalis*	Northern Hackberry	N/A	4"CAL	B&B	Well-formed, Central Leader
4	QU MA	*Quercus macrocarpa*	Burr Oak	N/A	4"CAL	B&B	Well-formed, Central Leader

CANOPY TREE

QTY	KEY	SPECIES NAME	COMMON NAME	SPACING	SIZE	CONTAINER	COMMENTS
5	GL TR	*Gleditsia triacanthus ver. inermis 'skyline'*	Skyline Thornless Honeylocust	N/A	4"CAL	B&B	Well-formed, Central Leader, non-Fruiting
5	PL AC	*Platanus x acerifolia 'Morton Circle'*	Exclamation! London Planetree	N/A	4"CAL	B&B	Well-formed, Central Leader
4	CE OC	*Celtis occidentalis*	Northern Hackberry	N/A	4"CAL	B&B	Well-formed, Central Leader

ORNAMENTAL TREE

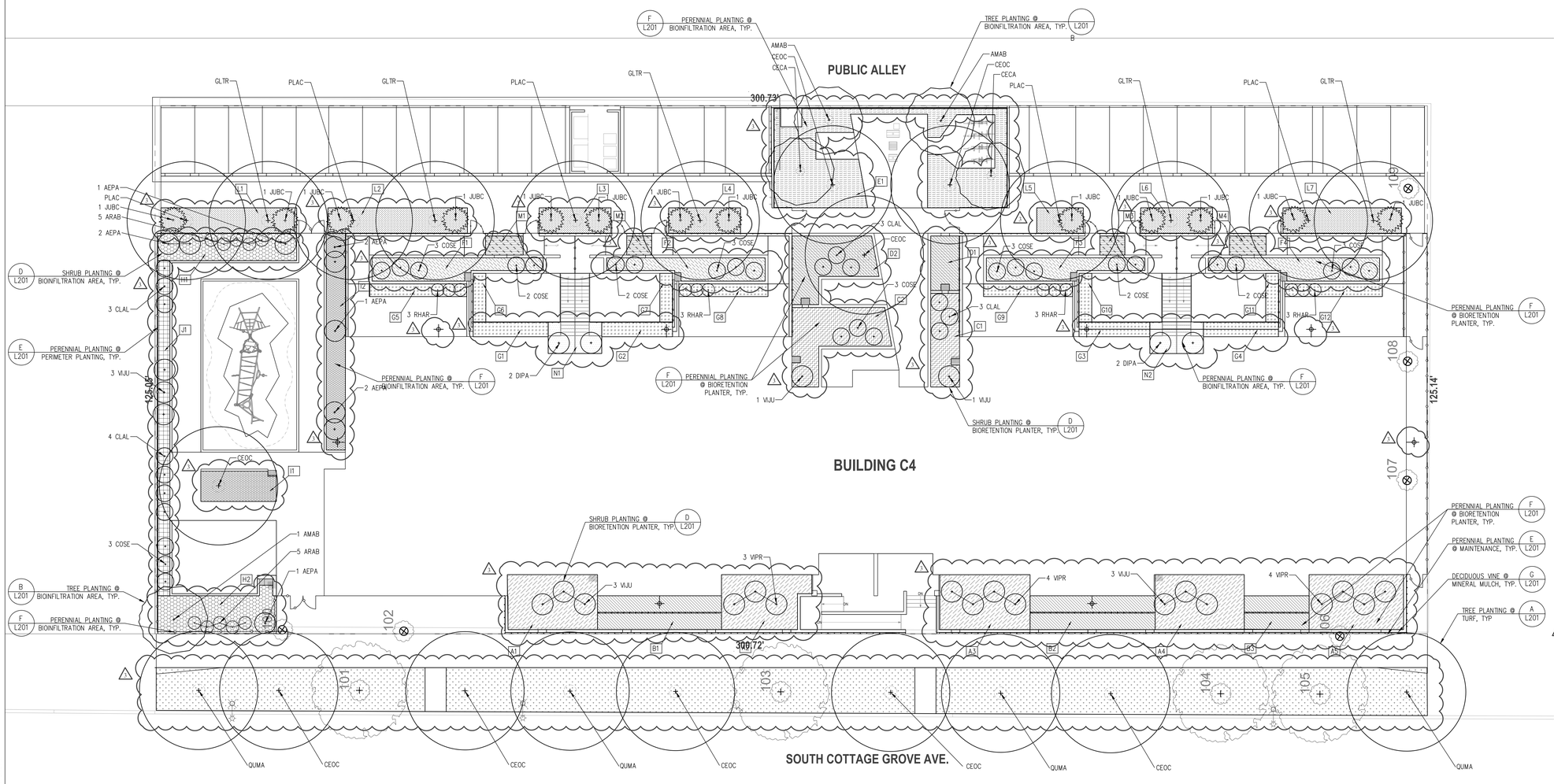
QTY	KEY	SPECIES NAME	COMMON NAME	SPACING	SIZE	CONTAINER	COMMENTS
3	AM AB	*Amelanchier x grandiflora 'Autumn Brilliance'*	Autumn Brilliance Apple Serviceberry	N/A	8' ht	#20 / B&B	Multi-stem, Well-formed, Specimen
2	CE CA	*Cercis canadensis*	Eastern Redbud	N/A	8' ht	#20 / B&B	Multi-stem, Well-formed, Specimen

LARGE SHRUB / SMALL TREE

QTY	KEY	SPECIES NAME	COMMON NAME	SPACING	SIZE	CONTAINER	COMMENTS
9	AE PA	*Aesculus pavioflora*	Brilliantcandy Buckeye	N/A	8' ht	#5 / B&B	Multi-branched, min. 6 canes
10	AR AB	*Aronia arbutifolia 'Brilliantissima'*	Brilliant Red Chokeberry	N/A	3' ht	#5 / B&B	Multi-branched, min. 4 canes
13	JU BC	*Juniperus horizontalis 'Blue Chip'*	Blue Chip Juniper	N/A	-	#5 / B&B	Multi-branched
12	RH AR	*Rhus aromatica 'Gro-Low'*	Gro-Low Sumac	N/A	2' ht	#5 / B&B	Multi-branched, min. 4 canes
11	VI JU	*Viburnum x juddii*	Judd Fragrant Viburnum	N/A	5' ht	#5 / B&B	Multi-branched, min. 6 canes
11	VI PR	*Viburnum prunifolium*	Blackhaw Viburnum	N/A	5' ht	#5 / B&B	Multi-branched, min. 6 canes
4	DI PA	*Dirca palustris*	Leatherwood	N/A	5' ht	#5 / B&B	Multi-branched, min. 6 canes
27	CO SE	*Cornus sericea 'Isanti'*	Redosier dogwood	N/A	4' ht	#5 / B&B	Multi-branched, min. 6 canes
13	CL AL	*Clethra alnifolia 'Hummingbird'*	Sweet Pepperbush	N/A	3' ht	#5 / B&B	Multi-branched, min. 6 canes

Existing Trees

Tree ID	DBH	Scientific Name	Condition
100	15"	Gleditsia triacanthos	Fair
101	15"	Gleditsia triacanthos	Fair
102	21"	Gleditsia triacanthos	Fair
103	15"	Gleditsia triacanthos	Fair
104	18"	Gleditsia triacanthos	Fair
105	12"	Gleditsia triacanthos	Fair
106	18"	Gleditsia triacanthos	Fair
107	18"	Ulmus americana	Fair
108	15"	Acer negundo	Poor
109	24"	Elaeagnus umbellata	Fair



Landscape Statement

LANDSCAPE ARCHITECT'S CERTIFICATION STATEMENT

I HEREBY CERTIFY THAT THIS LANDSCAPE PLAN AND PLANTING DETAILS SHOWN ON THIS AND ALL ATTACHED LANDSCAPE PLAN(S) FOR THE PROPERTY LOCATED AT 6129 S. COTTAGE GROVE AVE HAVE BEEN DESIGNED IN ACCODANCE WITH THE REQUIREMENTS OF TITLE 10, CHAPETER 32 OF THE CHICAGO MUNICIPAL CODE, AND THE LANDSCAPE STANDARDS OF THE CHICAGO ZONING ORDINACE.

LANDSCAPE ARCHITECT'S NAME: Jason Cooper

IL ARCHITECTS LICENSE NO. 157-001089 **EXPIRATION DATE:** 8/31/2013

SIGNED: **DATE:** 11/22/11

For New Planting:

OWNER'S CERTIFICATION STATEMENT

THE UNDERSIGNED ACKNOWLEDGES THAT THE LANDSCAPE PLANTING SHOWN ON THE LANDSCAPE PLAN(S) FOR THE PROPERTY LOCATED AT 6129 S. COTTAGE GROVE AVE TO THE BEST OF THE UNDERSIGNED APPLICANT'S KNOWLEDGE IS DESIGNED AND WILL BE INSTALLED, MAINTAINED AND REPLACED AS REQUIRED, BY CURRENT AND SUBSEQUENT OWNERS IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 32 OF THE CHICAGO MUNICIPAL CODE, THE LANDSCAPING STANDARDS OF THE CHICAGO ZONING ORDINANCE, AND THE "GUIDE TO THE CHICAGO LANDSCAPE ORDINANCE."

PLANTING TIME WILL BE: FALL 2012

PROPERTY OWNER'S NAME:

SIGNED: **DATE:**

For Existing Trees:

OWNER'S CERTIFICATION STATEMENT

EXISTING PARKWAY AND ON-SITE INTERIOR TREES ARE TO BE PROTECTED WHILE PROJECT IS UNDER CONSTRUCTION AND WILL BE REPLACED BY CURRENT OR SUBSEQUENT OWNER IF DAMAGED.

PROPERTY OWNER'S NAME:

SIGNED: **DATE:**

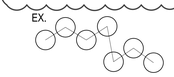
Key Notes

- EXISTING TREE
- EXISTING TREE - TO BE REMOVED
- DECIDUOUS SHADE TREE
- TALL DECIDUOUS SHRUB
- LOW DECIDUOUS SHRUB
- LOW EVERGREEN SHRUB
- BIORETENTION PLANTER @ STREET - TYPE A
- BIORETENTION PLANTER @ STREET - TYPE B
- BIORETENTION PLANTER @ COMMONS - UPLAND
- BIORETENTION PLANTER @ COMMONS - LOWLAND
- BIOINFILTRATION AREA @ COMMONS
- BIORETENTION PLANTER @ PATIO
- SCREEN @ PATIO
- BIOINFILTRATION AREA @ PLAYLOT - PERIMETER
- BIOINFILTRATION AREA @ PLAYLOT - CENTRAL
- PERIMETER PLANTING @ PLAYLOT
- BIOINFILTRATION AREA @ STRUCTURAL SOIL
- PLANTING BETWEEN GATES
- UNDER STAIRS
- TURF GRASS SEED MIX
- MAINTENANCE PLANTING
- VINE ENHANCEMENT
- EXISTING STREETLIGHT
- PROPOSED HOSE BIB, SEE PLUMBING PLANS
- 109 EXISTING TREE ID - SEE TABLE
- FENCE - 6' HT.
- FENCE - 4' HT.
- FENCE - 4' HT. @ WALL
- SCREEN - KNEE WALL
- SCREEN - PRIVACY
- SCREEN - SHARED SPACE

Sheet Notes

1. LANDSCAPE ARCHITECT TO VERIFY LAYOUT AND ADJUST SPECIES LOCATIONS IN THE FIELD, BEFORE PLANTING OCCURS.
2. PLANTING ZONES TO BE PLANTED AT SPACING SPECIFIED IN PLANT SCHEDULE; SPECIES TO BE DISTRIBUTED THROUGHOUT PLANTING ZONE AT EQUAL INTERVALS.
3. PLANTING AREA SOIL TO BE AMENDED TOPSOIL. SEE L300 FOR COMPOSITION.
4. REFER TO SHEET L201 FOR PLANTING DETAILS.
5. PLANT BULBS IN NATURALIZED DRIFTS; IRREGULAR GROUPS OF 3, 5, 7 BULBS AT 5-8" OC. SEE EXAMPLE BELOW.

EX.



N S E W

0 5 10 20

Scale 1"=10'-0"

LICENSED LANDSCAPE ARCHITECT JASON A. COOPER 157-001089 STATE OF ILLINOIS

EXP. 8/31/2013

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED UNDER MY SUPERVISION AND THAT THEY COMPLY, TO THE BEST OF MY KNOWLEDGE, WITH ALL THE BUILDING CODES AND ORDINANCES OF THE CITY OF CHICAGO, IL.

ISSUED FOR REVIEW	2011-09-29
ISSUED FOR REVISIONS	2011-11-02
ISSUED FOR ZONING REVIEW	2011-11-02
ISSUED FOR PERMIT	2011-11-30
ISSUED FOR PERMIT	2012-02-23
ISSUED FOR PERMIT	2012-02-23
ISSUED FOR CONSTRUCTION	2012-05-29

Landscape Architect:
Conservation Design Forum
375 West First Street
Elmhurst, IL 60126
(630) 559-2200
www.cdfinc.com

WOODLAWN CENTER NORTH

BUILDING C4

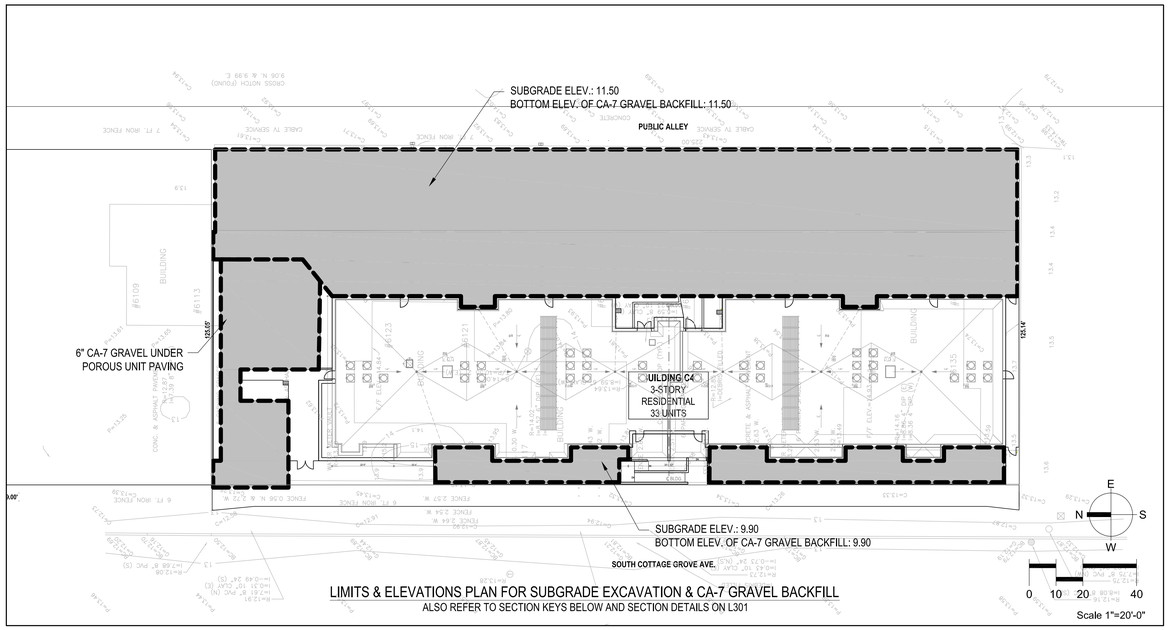
6129 S. COTTAGE GROVE
CHICAGO IL 60637

1122

PLANTING PLAN

L200

11/15/2011 2:02 PM



LIMITS & ELEVATIONS PLAN FOR SUBGRADE EXCAVATION & CA-7 GRAVEL BACKFILL

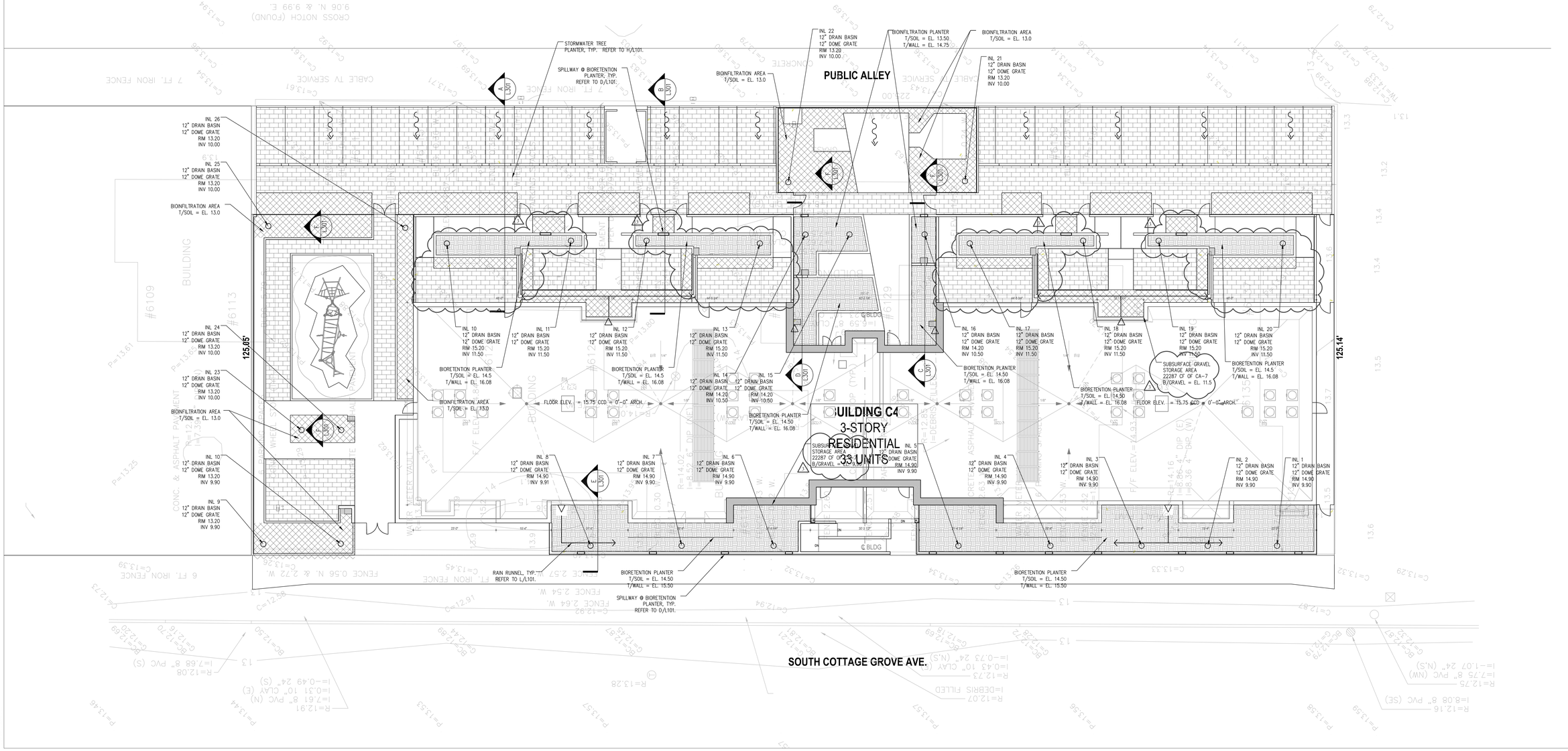
ALSO REFER TO SECTION KEYS BELOW AND SECTION DETAILS ON L301

LEGEND

- BIORETENTION PLANTER (SEE NOTES 5,6,16)
- BIOINFILTRATION AREA (SEE NOTES 5,6,16)
- POROUS UNIT PAVING (SEE NOTES 7,8)
- SUBSURFACE GRAVEL STORAGE AREA (SEE NOTE 9)
- COMPACTED CLAY BACKFILL (SEE NOTE 4)
- ROOF DOWNSPOUT DISCHARGE (SEE NOTE 2)
- INLET (SEE NOTES 11,12; DETAILS L302)
- WALL NOTCH (SEE NOTES 17,19)
- SHEET FLOW DIRECTION

NOTES

1. 2/3 OF BUILDING ROOF SHALL DRAIN TO FRONT BIORETENTION PLANTERS; 1/3 OF BUILDING ROOF SHALL DRAIN TO REAR BIORETENTION PLANTERS.
2. ALL BUILDING ROOF DOWNSPOUT DISCHARGES SHALL HAVE STONE-FILLED GABION SPLASH PADS.
3. ALL PERIMETER FOUNDATION WALLS SHALL BE WATERPROOFED.
4. ALL FOUNDATION WALLS FOR FULL BASEMENT SHALL BE BACKFILLED WITH COMPACTED CLAY.
5. AMENDED TOPSOIL IN BIORETENTION PLANTERS AND BIOINFILTRATION AREAS SHALL BE A 50:50 BY-VOLUME MIXTURE OF COMMERCIAL COMPOST AND IDOT FA-2 SAND.
6. STONE SUBBASE FOR BIORETENTION PLANTERS AND BIOINFILTRATION AREAS SHALL BE IDOT CA-7 STONE (12" MINIMUM).
7. STONE SETTING BED FOR POROUS UNIT PAVING SHALL BE IDOT CA-16 STONE.
8. STONE SUBBASE FOR POROUS UNIT PAVING SHALL BE IDOT CA-7 STONE (12" MIN. FOR VEHICULAR USES; 6" MIN. FOR PEDESTRIAN USES; REFER TO PLAN).
9. SUBSURFACE GRAVEL STORAGE AREA SHALL BE IDOT CA-7 STONE. REFER TO PLAN FOR BOTTOM ELEVATION OF SUBSURFACE GRAVEL STORAGE AREA.
10. GEOTEXTILE FABRIC IN BIORETENTION PLANTERS, BIOINFILTRATION AREAS, AND POROUS UNIT PAVING SHALL BE LINQ 130EX.
11. ALL INLETS SHALL BE 12" ADS NYLOPLAST PERFORATED DRAIN BASINS WITH 12" DOME GRATE ASSEMBLY.
12. ALL INLET LIDS AND GRATES SHALL HAVE LOCKING OPTION.
13. ALL CONCRETE SHALL BE IDOT CLASS SI.
14. REFER TO UTILITY PLAN FOR UNDERGROUND UTILITY COORDINATION.
15. REFER TO GRADING PLAN FOR GRADING COORDINATION.
16. NORTH AMERICAN GREEN S150BN EROSION CONTROL BLANKET SHALL BE INSTALLED IN ALL BIORETENTION PLANTERS AND BIOINFILTRATION AREAS.
17. WALL NOTCHES SHALL BE 24" WIDE BY 1" DEEP. WALL NOTCHES SHALL BE FORMED, NOT CUT.
18. ALL UTILITY TRENCHES THAT PASS UNDER OR THROUGH THE SUBSURFACE GRAVEL STORAGE AREA CA-7 STONE SHALL BE BACKFILLED WITH COMPACTED CLAY.
19. REFER TO LANDSCAPE PLAN FOR WALL NOTCH SPACING AND DETAILS.



EXP. 8/31/2013

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED UNDER MY SUPERVISION AND THAT THEY COMPLY TO THE BEST OF MY KNOWLEDGE, WITH ALL THE BUILDING CODES AND ORDINANCES OF THE CITY OF CHICAGO, IL.

ISSUED FOR REVIEW	2011-05-29
ISSUED FOR PRICING	2011-11-02
ISSUED FOR DOWNS REVIEW	2011-11-30
ISSUED FOR PERMIT	2012-06-29
ISSUED FOR PERMIT	2012-08-24
ISSUED FOR CONSTRUCTION	2013-08-02

WOODLAWN CENTER NORTH

BUILDING C4

6129 S. COTTAGE GROVE
CHICAGO IL 60637

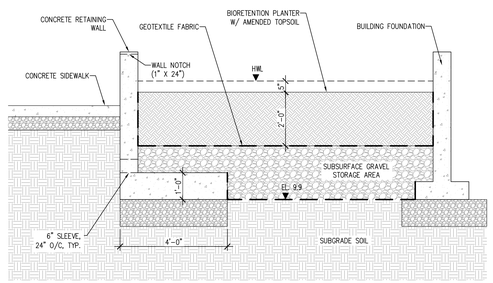
1122

STORMWATER PLAN

L300

11/15/2011 2:00 PM

REFER TO CIVIL DRAWINGS FOR APPLICABLE ELEVATIONS.



NOTES:
1. SEE G/L301 AND H/L301 FOR FOOTING DETAILS.
2. SEE CIVIL PLANS FOR GRADING.
3. SEE ELECTRICAL PLANS FOR LIGHTING COORDINATION.
4. CONCRETE RETAINING WALL TO BE ARCHITECTURAL QUALITY FINISH

E STORMWATER SECTION E

1/2"=1'-0"
stormwater section E

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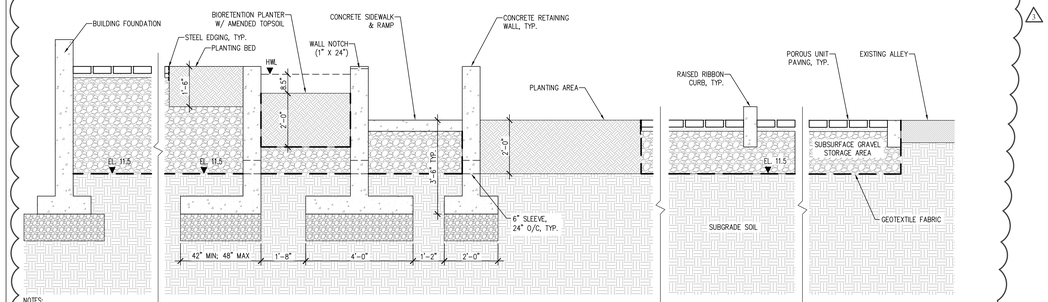

NOTES:
1. SEE G/L301 AND H/L301 FOR FOOTING DETAILS.
2. SEE CIVIL PLANS FOR GRADING.
3. SEE ELECTRICAL PLANS FOR LIGHTING COORDINATION.

A STORMWATER SECTION A

1/2"=1'-0"
stormwater section A

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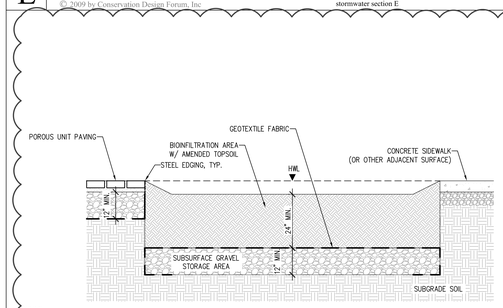

NOTES:
1. SEE G/L301 AND H/L301 FOR FOOTING DETAILS.
2. SEE CIVIL PLANS FOR GRADING.
3. SEE ELECTRICAL PLANS FOR LIGHTING COORDINATION.

F STORMWATER SECTION F

1/2"=1'-0"
stormwater section F

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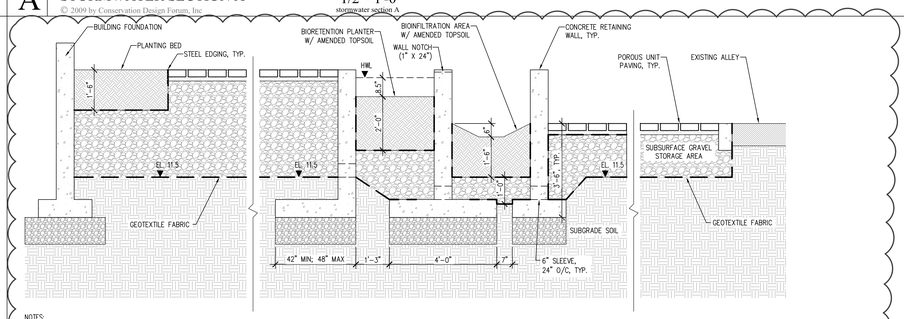

NOTES:
1. SEE G/L301 AND H/L301 FOR FOOTING DETAILS.
2. SEE CIVIL PLANS FOR GRADING.
3. SEE ELECTRICAL PLANS FOR LIGHTING COORDINATION.

B STORMWATER SECTION B

1/2"=1'-0"
stormwater section B

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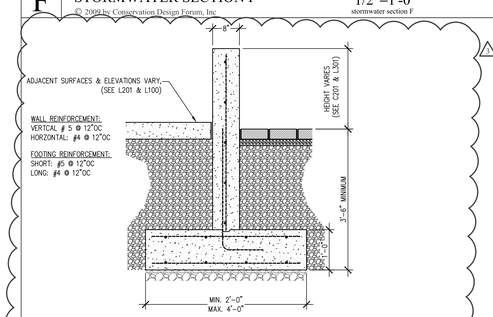

NOTES:
1. SEE C201 & L300/L301 FOR FINAL ELEVATIONS, RETAINING WALL LOCATIONS, AND FOOTING PROFILE.
2. ALL REINFORCEMENT TO BE EPOXY-COATED.
3. CONCRETE RETAINING WALL TO BE ARCHITECTURAL QUALITY FINISH.

G CONCRETE RETAINING WALL W/ SPREAD FOOTING

3/4"=1'-0"
File Name

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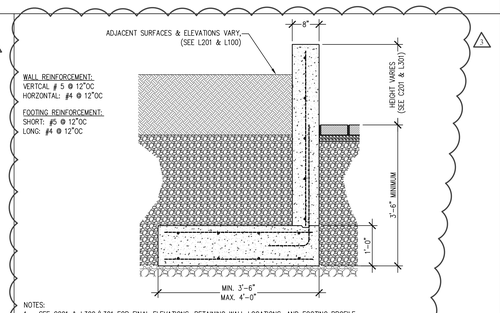

NOTES:
1. SEE C201 & L300/L301 FOR FINAL ELEVATIONS, RETAINING WALL LOCATIONS, AND FOOTING PROFILE.
2. ALL REINFORCEMENT TO BE EPOXY-COATED.
3. CONCRETE RETAINING WALL TO BE ARCHITECTURAL QUALITY FINISH.

H CONCRETE RETAINING WALL W/ L-SHAPED FOOTING

3/4"=1'-0"
File Name

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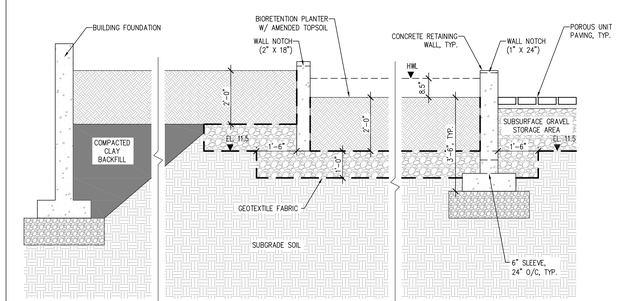

NOTES:
1. SEE G/L301 AND H/L301 FOR FOOTING DETAILS.
2. SEE CIVIL PLANS FOR GRADING.
3. SEE ELECTRICAL PLANS FOR LIGHTING COORDINATION.

C STORMWATER SECTION C

1/2"=1'-0"
stormwater section C

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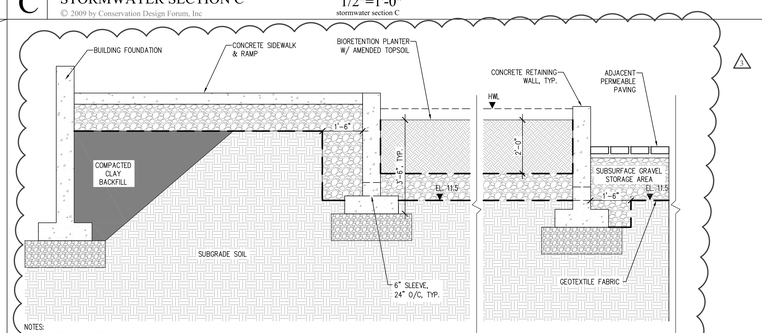
H NOT USED



NOTES:
1. SEE G/L301 AND H/L301 FOR FOOTING DETAILS.
2. SEE CIVIL PLANS FOR GRADING.
3. SEE ELECTRICAL PLANS FOR LIGHTING COORDINATION.

D STORMWATER SECTION D

1/2"=1'-0"
stormwater section D

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ISSUED FOR REVIEW	2011-06-29
ISSUED FOR PRICING	2011-11-15
ISSUED FOR PRICING REVIEW	2011-12-20
ISSUED FOR PERMIT	2011-11-30
ISSUED FOR PERMIT	2012-06-29
ISSUED FOR CONSTRUCTION	2012-08-29

WOODLAWN CENTER NORTH
BUILDING C4

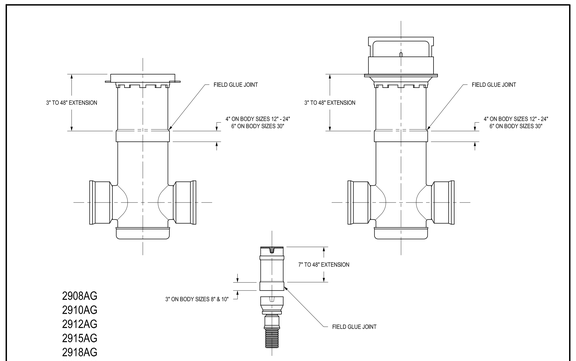
6129 S. COTTAGE GROVE
CHICAGO IL 60637

1122

STORMWATER DETAILS

L301

11/15/2011 2:02 PM



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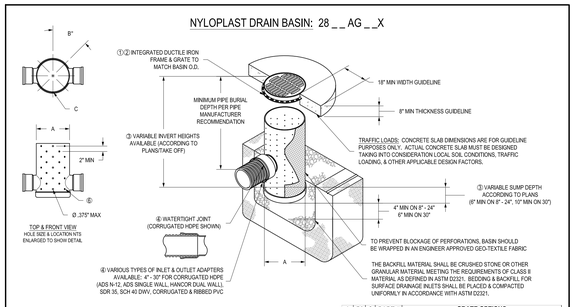
DRAWN BY CJA	MATERIAL	Nyloplast	3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplastusa.com
DATE 9-10-05			
APPD BY CJA	PROJECT NO.NAME	TITLE 8 IN - 30 IN RISER EXTENSION	
DATE 9-10-05			
DWG SIZE A	SCALE 1:20 SHEET 1 OF 1	DWG NO. 7001-110-005	REV B

NYLOPLAST DRAIN BASIN: 28 _ _ AG _ _X



① - GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05, WITH THE EXCEPTION OF THE 8", 10", 12" & 15" BRONZE GRATES.
② - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
③ - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS SEE DRAWING NO. 7001-110-005
④ - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC.
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE ANGLE OF ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012, 7001-110-013, & 7001-110-014
⑥ - PERFORATIONS SHOULD NOT BE ON OR WITHIN 1" OF ADAPTERS.
7 - HOLES SHOULD BE STAGGERED EVERY OTHER ROW, AS SHOWN.
8 - GRATES SHALL MEET H-10 LOAD RATING FOR 12" - 24" PED
9 - GRATES SHALL MEET H-20 LOAD RATING FOR 30" PED & 12" - 30" STD & SOLID
10 - ALL BRONZE GRATES, DROP IN GRATES, & 8" & 10" PEDESTS GRATES & SOLID COVERS ARE RATED FOR LIGHT DUTY APPLICATIONS ONLY
11 - DOME GRATES HAVE NO LOAD RATING.

A	B"	C	PART #	GRATE OPTIONS				
8"	10"	4	2908AG	PEDESTRIAN	STANDARD	SOLID	BRONZE	DOME	DROP IN
10"	10"	4	2910AG	PEDESTRIAN	STANDARD	SOLID	BRONZE	DOME	DROP IN
12"	10"	6	2912AG	PEDESTRIAN	STANDARD	SOLID	BRONZE	DOME	DROP IN
15"	10"	6	2915AG	PEDESTRIAN	STANDARD	SOLID	BRONZE	DOME	DROP IN
18"	10"	8	2918AG	PEDESTRIAN	STANDARD	SOLID	N/A	DOME	DROP IN
24"	10"	8	2924AG	PEDESTRIAN	STANDARD	SOLID	N/A	DOME	DROP IN
30"	30"	10	2930AG	PEDESTRIAN	STANDARD	SOLID	N/A	DOME	N/A

A - BASIN SIZE, B" - ANGLE BETWEEN HOLES, C - NUMBER OF HOLES

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DRAWN BY ESC	MATERIAL	Nyloplast	3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplastusa.com
DATE 3-14-06			
APPD BY CJA	PROJECT NO.NAME	TITLE 8 IN - 30 IN PERFORATED DRAIN BASIN WITH STANDARD GRATE QUICK SPEC INSTALLATION DETAIL	
DATE 3-14-06			
DWG SIZE A	SCALE 1:40 SHEET 1 OF 1	DWG NO. 7001-110-121	REV B

Section 2721
Engineered Surface Drainage Products

GENERAL
PVC surface drainage inlets shall include the drain basin type as indicated on the contract drawing and referenced within the contract specifications. The ductile iron grates for each of these fittings are to be considered an integral part of the surface drainage inlet and shall be furnished by the same manufacturer. The surface drainage inlets shall be as manufactured by Nyloplast, a division of Advanced Drainage Systems, Inc., or prior approved equal.

MATERIALS
The drain basins required for this contract shall be manufactured from PVC pipe stock, utilizing a thermo-molding process to reform the pipe stock to the specified configuration. The drainage pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system. This joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals . The flexible elastomeric seals shall conform to ASTM F477. The pipe bell spigot shall be joined to the main body of the drain basin or catch basin. The raw material used to manufacture the pipe stock that is used to manufacture the main body and pipe stubs of the surface drainage inlets shall conform to ASTM D1784 cell class 12454.

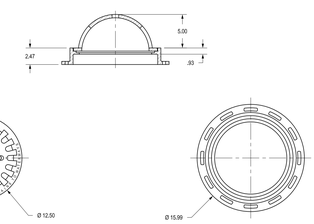
The grates and frames furnished for all surface drainage inlets shall be ductile iron for sizes 8", 10", 12", 15", 18", 24", and 30" and shall be made specifically for each basin so as to provide a round bottom flange that closely matches the diameter of the surface drainage inlet. Grates for drain basins shall be capable of supporting H-20 wheel loading for traffic areas or H-10 loading for pedestrican areas. 12" and 15" square grates will be hinged to the frame using pins. Metal used in the manufature of the castings shall conform to ASTM A536 grade 70-50-05 for ductile iron. Grate shall be provided painted black.

INSTALLATION
The specified PVC surface drainage inlet shall be installed using conventional flexible pipe backfill materials and procedures. The backfill material shall be crushed stone or other granular material meeting the requirements of class 2 material as defined in ASTM D2321. Bedding and backfill for surface drainage inlets shall be placed and compacted uniformly in accordance with ASTM D2321. The drain basin body will be cut at the time of the final grade. No brick, stone or concrete block will be required to set the grate to the final grade height. For H-20 load rated installations, a concrete ring will be poured under and around the grate and frame. The concrete slab must be designed taking into the consideration local soil conditions, traffic loading, and other applicable design factors. For other installation considerations such as migration of fines, ground water, and soft foundations refer to ASTM D2321 guidelines.

DRAWN BY CJA	MATERIAL	Nyloplast	3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplastusa.com
DATE 3-10-05			
APPD BY CJA	PROJECT NO.NAME	TITLE 8 IN - 30 IN SPECIFICATIONS	
DATE 3-10-05			
DWG SIZE A	SCALE 1:1 SHEET 1 OF 1	DWG NO. 7001-110-011	REV E

1299CGD

APPROX. DRAIN AREA = 70.37 SQ IN
APPROX. WEIGHT WITH FRAME = 34.95 LBS



ALL DIMENSIONS IN INCHES UNLESS NOTED OTHERWISE
QUALITY: MATERIAL SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
LOCKING DEVICE AVAILABLE UPON REQUEST SEE DRAWING NO. 7001-110-229

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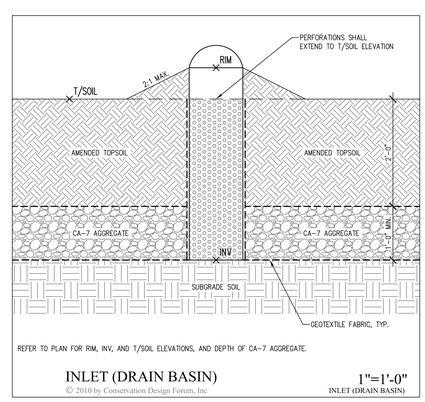
DRAWN BY ESC	MATERIAL DUCTILE IRON	Nyloplast	3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplastusa.com
DATE 3-6-06			
APPD BY CJA	PROJECT NO.NAME	TITLE 12 IN DOME GRATE ASSEMBLY	
DATE 3-6-06			
DWG SIZE A	SCALE 1:8 SHEET 1 OF 1	DWG NO. 7001-110-206	REV B



REFER TO PLAN FOR RIM, INV, AND T/SOIL ELEVATIONS, AND DEPTH OF CA-7 AGGREGATE.

INLET (DRAIN BASIN)
1"=1'-0"
INLET (DRAIN BASIN)

© 2010 by Conservation Design Forum, Inc

REGISTERED ARCHITECT
MARK A. COOPER
157-001089
STATE OF ILLINOIS
EXP. 8/31/2013

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED UNDER MY SUPERVISION AND THAT THEY COMPLY, TO THE BEST OF MY KNOWLEDGE, WITH ALL THE BUILDING CODES AND ORDINANCES OF THE CITY OF CHICAGO, IL.

ISSUED FOR REVIEW	
●	2011-09-29
●	2011-11-16
●	2011-12-02
●	2011-11-30
●	2012-06-29
●	2012-09-12
○	
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○	
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○	

WOODLAWN CENTER NORTH
BUILDING C4

6129 S. COTTAGE GROVE
CHICAGO IL 60637

1122

STORMWATER DETAILS

L302

9/12/2012 12:02:28 PM

SECTION 31 29 00 - BIORETENTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Testing, mixing, and installation of amended topsoil material and installation of aggregate material associated with bioretention facilities.

2. Inlets located within bioretention facilities.

B. Related Sections:

1. Division 01 Section "Temporary Facilities and Controls" for temporary controls, utilities, and support facilities; also for temporary site fencing if not in another Section.
2. Division 03 Section "Cast-in-Place Concrete" for granular course if placed over vapor retarder and beneath the slab-on-grade.
3. Divisions 21, 22, 23, 26, 27, 28, and 33 Sections for installing underground mechanical and electrical utilities and buried mechanical and electrical structures.
4. Division 31 Section "Site Clearing" for site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.
5. Division 31 Section "Earth Moving" for preparing subgrades, excavations, and backfills.
6. Division 31 Section "Dewatering" for lowering and disposing of ground water during construction.
7. Division 31 Section "Excavation Support and Protection" for shoring, bracing, and sheet piling of excavations.
8. Division 32 Section "Turf and Grasses" for finish grading in turf and grass areas, including preparing and placing planting soil for turf areas.
9. Division 32 Section "Plants" for finish grading in planting areas and tree and shrub pit excavation and planting.
10. Division 33 Section “Pond and Reservoir Liners”

1.3 DEFINITIONS

A. Amended Topsoil: Engineered topsoil that has been uniformly modified with soil amendments to meet the requirements of this section and designed to readily infiltrate stormwater runoff down to open-graded aggregate layer below.

B. Backfill: Soil material used to fill an excavation.

C. Bioretention Facility: Shallow vegetated depression or planter box underlain with open-graded aggregate and whose topsoil is composed of amended topsoil.

D. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

E. Fill: Soil materials used to raise existing grades.

F. Open-Graded Aggregate: Open-graded aggregate for drainage within bioretention facilities.

G. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

H. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.

I. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.4 SUBMITTALS

A. Qualification Data: For qualified testing agency.

B. Product Data: For the following:

1. Geotextile.
2. Sand: provide gradation and source.
3. Open-graded aggregate: provide gradation and source.

C. Samples: For the following:

1. Geotextile: 12-by-12-inch sample.
2. Amended topsoil: 1-gallon sample.

D. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:

1. Organic content and pH measurement of amended topsoil mix shall be in accordance with AASHTO T 194 and ASTM D 4972, respectively.
2. Particle size analysis of amended topsoil mix shall be in accordance with ASTM D 422-63.

E. Field Control Tests: An adequate number of field control tests shall be taken and submitted to demonstrate that amended topsoil meets the required parameters and is uniform:

1. Two samples per amended topsoil batch prior to placement.
2. Two samples within each bioretention facility.

1.5 QUALITY ASSURANCE

A. Workmanship: The contractor shall demonstrate that they have the equipment and expertise to perform the requirements of the installation conditions for this section and have been employed in three (3) similar types of work of similar size and scope within the last five (5) years. The contractor shall provide a list of similar types of projects and references.

1.6 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt offsite utilities serving facilities occupied by Owner or others unless permitted in writing by Architect and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Architect not less than two (2) days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's written permission.
3. Contact utility-locator service for are where project is located prior to excavating.

1.7 SCHEDULING AND COORDINATION

A. Coordinate amended topsoil placement with preparation activities and recommended seeding and planting schedules to meet the requirements of this section and Division 32, and provide the required maintenance from the date of substantial completion.

1.8 DELIVERY AND STORAGE

A. Coordinate with Architect for delivery and storage of required materials for this section.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Amended Topsoil: A 50:50 by volume mixture of sand and commercial compost. Amended topsoil shall be thoroughly mixed prior to placement.

B. Open-Graded Aggregate: Sound crushed stone or gravel complying with ASTM D 448 for Size No. 57, or IDOT CA-7.

C. Compost: The compost matter shall be well-composted, stable, and weed-free with a pH range of 5.5 to 7.0. Compost used to supplement organic matter shall also meet the following requirements:

1. The compost shall be derived of material that consists of chipped, shredded, or ground vegetation or clean, processed, recycled wood products.
2. The compost shall be processed or completed to reduce weed seeds, pathogens, and deleterious material, and shall not contain paint, petroleum products, herbicides, fungicides, or other chemical residues that would be harmful to plant or animal life. Other deleterious material, plastic, glass, metal, or rocks shall not exceed 0.1 percent by weight or volume.
3. Maturity: the compost shall be resistant to further decomposition and free of compounds, such as ammonia and organic acids, in concentrations toxic to plant growth

   a. The compost shall measure a minimum of 7 on the maturity and stability scale of Solvita by Woods End Research.

D. Sand: ASTM C 33 fine aggregate, or IDOT FA-2.

E. Topsoil: Refer to Division 32 Section "Plants".

F. Structural Soil: Refer to Division 32 Section " Plants".

2.2 GEOTEXTILES

A. Geotextiles: By Thrace-LINQ, Inc., 2550 West Fifth North St., Summerville, SC 29483.

1. LINQ 130EX needlepunched nonwoven, or approved equal.

2.3 INLETS

A. Inlets and appurtenances shall be ADS Perforated Drain Basins, with size and grate per plan.

2.4 EROSION CONTROL BLANKETS

A. Erosion Control Blankets: By North American Green, 14649 Highway 41 North, Evansville, IN 47725.

1. NAG S150 double net short-term, or approved equal.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.

B. Protect and maintain erosion and sedimentation controls during operations.

3.2 BIORETENTION

A. Verify that subgrades are constructed to lines, dimensions, and elevations indicated on plans.

B. Verify rough grades prior to placement of open-graded aggregate and amended topsoil layers.

C. Place separation geotextile (filter fabric) between subgrade soil and open-graded aggregate layers as indicated on plans.

D. Place open-graded aggregate in maximum 8-inch lifts and compact to 90% modified proctor density to meet depths and elevations indicated on plans. Do not over-compact, which can create fines that may clog subgrade soils.

E. Place inlets to lines and elevations indicated on plans. Inlets shall be installed per manufacturer recommendations.

F. Place separation geotextile (filter fabric) between open-graded aggregate and amended topsoil layers as indicated on plans.

G. Place amended topsoil in 8- to 12-inch lifts. Overfill above elevations indicated on plans to allow for natural settlement. Avoid over-compaction by allowing time for natural settlement and compaction. If time does not allow for natural settlement of amended topsoil, one of the following light compaction methods, as specified below, may be implemented. If needed, additional amended topsoil shall be placed to meet elevations indicated on plans.

1. Amended topsoil may be compacted by soaking the placed amended topsoil. Water for soaking shall be applied by spraying or sprinkling. Additional settlement may occur subsequent to the initial watering.
2. Amended topsoil may be compacted by rolling the entire bioretention facility with a hand roller weighing no more than 100 pounds per foot of width. During the rolling, all depressions caused by settlement shall be filled with additional amended topsoil and the surface shall be regraded and rolled until a smooth and even finish to meet the elevations indicated on the plans is achieved.

H. Open-graded aggregate or amended topsoil contaminated by construction site runoff, sediment, or other foreign materials shall be removed and replace at no additional expense to the Owner.

3.3 FINE GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.

B. Finish bioretention facilities surfaces to required elevations within the following tolerances:

1. Bioretention Facilities: Plus or minus 1 inch.

3.4 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. During and after excavation of bioretention areas, placement of open graded aggregate, placement of filter gravel, and placement of amended topsoil, bioretention facilities shall be protected from construction traffic and construction site runoff. Any rutting, over-compaction, clogging, or other damage to the bioretention facility shall be repaired to establish lines, elevations, and tolerances at no additional expense to the Owner.

1. Bioretention excavations contaminated by construction site runoff shall be over-excavated to remove clogged subgrade soils. Over-excavation shall be replaced with Sand meeting the product and execution specifications herein.

2. Remove and replace contaminated sand, open graded aggregate, filter gravel, or amended topsoil.

3. Scarify or remove and replace over-compacted amended topsoil material to depth as directed by Architect; reshape and recompact.

3.5 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION

SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

B. City of Chicago “Tree Removal & Replacement Guildelines”

1.2 SUMMARY

A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.

B. Related Sections:

1. Division 01 Section "Temporary Facilities and Controls" for temporary site fencing.
2. Division 31 Section "Site Clearing" for removing existing trees and shrubs.

1.3 DEFINITIONS

A. Caliper: Diameter of a trunk measured by a diameter tape at 6 inches above the ground for trees up to, and including, 4-inch size; and 12 inches above the ground for trees larger than 4-inch size.

B. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings.

C. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and indicated on Drawings.

D. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 SUBMITTALS

A. Tree Pruning Schedule: Written schedule detailing scope and extent of pruning of trees to remain that interfere with or are affected by construction.

1. Species and size of tree.
2. Location on site plan. Include unique identifier for each.
3. Reason for pruning.
4. Description of pruning to be performed.
5. Description of maintenance following pruning.

B. Qualification Data: For qualified arborist and tree service firm.

C. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.

1. Use sufficiently detailed photographs or videotape.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

1.5 QUALITY ASSURANCE

A. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed temporary tree and plant protection work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site during execution of the Work.

B. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to temporary tree and plant protection including, but not limited to, the following:

a. Construction schedule. Verify availability of materials, personnel, and equipment needed to make progress and avoid delays.
b. Enforcing requirements for protection zones.
c. Arborist's responsibilities.
d. Field quality control.
e. Review City of Chicago *Tree Removal & Replacement Guidelines* for compliance
f. Notifying City if Damage is Suspected during construction activities

1.6 PROJECT CONDITIONS

A. The following practices are prohibited within 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. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

B. Do not direct vehicle or equipment exhaust toward protection zones.

C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Organic Mulch: Free from deleterious materials and suitable as a top dressing for trees and shrubs, consisting of one of the following:

1. Type: Wood and bark chips.
2. Size Range: 3 inches maximum, 1/2 inch minimum.
3. Color: Natural.

B. Protection-Zone Fencing: Fencing fixed in position and meeting the following requirements. Previously used materials may be used when approved by Landscape Architect.

1. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with 2-inch maximum opening in pattern and weighing a minimum of 0.4 lb/ft. ; remaining flexible from minus 60 to plus 200 deg F ; inert to most chemicals and acids; minimum tensile yield strength of 2000 psi and ultimate tensile strength of 2680 psi ; secured with minimum 4 locking nylon ties, evenly spaced at each post and supported by tubular or T-shape galvanized-steel posts 6 feet in length, spaced not more than 5 feet apart. Posts must be set into the ground 2 feet and extend above the ground 4 feet.

a. Height: 4 feet.
b. Color: High-visibility orange, nonfading.
c. City of Chicago Bureau of Forestry 'Tree Protection Guidelines' to take precedence over all specifications.

C. Protection-Zone Signage: Shop-fabricated, rigid plastic or metal sheet with attachment holes prepunched and reinforced; legibly printed with nonfading lettering and as follows:

1. Size and Text: 11" X 17" reading, "TREE & SOIL PROTECTION ZONE – NO ACCESS. NO STORAGE OF EQUIPMENT OR MATERIAL ALLOWED. NOTIFY CITY WITHIN 24 HRS, IF DAMAGE TO TREES IS SUSPECTED."
2. Lettering: 3-inch- high minimum, black characters on white background.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

B. For the record, prepare written report, endorsed by arborist, listing conditions detrimental to tree and plant protection.

3.2 PREPARATION

A. Locate and clearly identify trees, shrubs, and other vegetation to remain. Tie a 1-inch blue-vinyl tape around each tree trunk at 54 inches above the ground.

B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.

C. Tree-Protection Zones: Mulch areas inside tree-protection zones and other areas indicated.

1. Apply 3-inch average thickness of organic mulch. Do not place mulch within 6 inches of tree trunks.

3.3 TREE- AND PLANT-PROTECTION ZONES

A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people from easily entering protected area except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.

1. Posts: Set or drive posts into ground one-third the total height of the fence without concrete footings. Where a post is located on existing paving or concrete to remain, provide appropriate means of post support acceptable to Architect.

B. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by Landscape Architect. Install one sign spaced approximately every 50 feet on protection-zone fencing, but no fewer than four signs with each facing a different direction.

C. Maintain protection zones free of weeds and trash.

D. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Architect.

E. Maintain protection-zone fencing and signage in good condition as acceptable to Architect and remove when construction operations are complete and equipment has been removed from the site.

1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
2. Temporary access is permitted subject to preapproval in writing by arborist if a root buffer effective against soil compaction is constructed as directed by arborist. Maintain root buffer so long as access is permitted.

3.4 EXCAVATION

A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Division 31 Section "Earth Moving."

B. Trenching near Trees: Where utility trenches are required within protection zones, hand excavate under or around tree roots or tunnel under the roots by drilling, auger boring, or pipe jacking. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots as required for root pruning.

C. Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches back from new construction and as required for root pruning.

D. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3.5 ROOT PRUNING

A. Prune roots that are affected by temporary and permanent construction. Prune roots as follows:

1. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
2. Cut Ends: Do not paint cut root ends.
3. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
4. Cover exposed roots with burlap and water regularly.
5. Backfill as soon as possible according to requirements in Division 31 Section "Earth Moving."

B. Root Pruning at Edge of Protection Zone: Prune roots 12 inches outside of the protection zone, by cleanly cutting all roots to the depth of the required excavation.

C. Root Pruning within Protection Zone: Clear and excavate by hand to the depth of the required excavation to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.

3.6 FIELD QUALITY CONTROL

A. Inspections: Engage a qualified arborist to direct plant-protection measures in the vicinity of trees, shrubs, and other vegetation indicated to remain and to prepare inspection reports.

3.7 REPAIR AND REPLACEMENT

A. Per City of Chicago *Tree Removal & Replacement Guidelines*.

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove excess excavated material, displaced trees, trash and debris, and legally dispose of them off Owner's property.

END OF SECTION 015639

Photo Documentation of BMPs:

08.30.2013

LEED for Homes Project Checklist

for Homes

Builder Name:	***Chris Harris, Powers and Sons/POAH***
Project Team Leader:	***Julie Klump, POAH, Preservation of Affordable Housing (POAH)***
Home Address (Street/City/State):	***6129 S. Cottage Grove, Chicago, Illinois***

Project Description

Building Type: ***Multi-family*** Project type: ***Multi-family Developer***

# of Units: ***33*** Avg. Home Size Adjustment: ***-10***

Adjusted Certification Thresholds

Certified: ***35.0*** Gold: ***65.0***

Silver: ***50.0*** Platinum: ***80.0***

Project Point Total

Prelim: ***88 + 7.5 maybe pts*** **Final:** ***16.5***

Certification Level

Prelim: ***Platinum*** **Final:** ***Not Certified***

Final Credit Category Point Totals

ID: 0 ***SS: 4*** ***EA: 2*** ***EQ: 3***

LL: 5 ***WE: 0*** ***MR: 2.5*** ***AE: 0***

Minimum Point Thresholds Not Met for Final Rating

Date Most Recently Updated: *5/1/2013* *Updated by:* *Laureen Blissard*

✍ Indicates that an Accountability Form is required.

	Max Pts. Available	Preliminary Rating Y / Pts	Maybe	No	Notes	Project Points
Innovation & Design Process (ID) (Minimum 0 ID Points Required)	***Max: 11***	***Y:8***	***M:0***			***Final: 0***
1. Integrated Project Planning						
1.1 Preliminary Rating	*Prereq.*	*Y*				*Y*
Target performance tier: ***Gold***						
1.2 Integrated Project Team *(meet all of the following)*	*1*	*1*	*0*			*0*
☑ a) Individuals or organizations with necessary capabilities	☑ c) Regular meetings held with project team					
☑ b) All team members involved in various project phases						
1.3 Professional Credentialed with Respect to LEED for Homes	*1*	*0*	*0*	*N*	*please see ID 01-06 for details*	*0*
1.4 Design Charrette	*1*	*1*	*0*			*1*
1.5 Building Orientation for Solar Design *(meet all of the following)*	*1*	*0*	*0*	*N*		*0*
☐ a) Glazing area on north/south walls 50% greater than on east/west walls	☐ c) At least 450 sq. ft. of south-facing roof area, oriented for solar applications					
☐ b) East-west axis is within 15 degrees of due east-west	☐ d) 90% of south-facing glazing is shaded in summer, unshaded in winter					
2. Quality Management for Durability						
2.1 Durability Planning *(meet all of the following)*	*Prereq.*	*Y*				
☑ a) Durability evaluation completed	☑ d) Durability strategies incorporated into project documentation					
☑ b) Strategies developed to address durability issues	☑ e) Durability measures listed in durability inspection checklist					
☑ c) Moisture control measures from Table 1 incorporated						
2.2 Durability Management *(meet one of the following)*	*Prereq.*	*Y*				
☑ Builder has a quality management process in place	☑ Builder conducted inspection using durability inspection checklist					
2.3 Third-Party Durability Management Verification	*3*	*3*	*0*			*0*

3. Innovative or Regional Design							
3.1	✍ Innovation 1 (ruling #):	*SS5 exemplary*	*1*	*0.5*	*0*		*0*
3.2	✍ Innovation 2 (ruling #):	*MR1.4 exemplary*	*1*	*0.5*	*0*		*0*
3.3	✍ Innovation 3 (ruling #):	*MR2.2 exemplary*	*1*	*1*	*0*		*0*
3.4	✍ Innovation 4 (ruling #):	*MR2.2 exemplary*	*1*	*1*	*0*		*0*

Location & Linkages (LL)	(Minimum 0 LL Points Required)		*Max: 10*	*Y:10*	*M:0*	*Notes*	*Final: 5*
1. LEED for Neighborhood Development							
1	LEED for Neighborhood Development		*10*	*0*	*0*	*N*	*0*
2. Site Selection							
2	✍ Site Selection *(meet all of the following)*		*2*	*2*	*0*		*0*
	☑ a) Built above 100-year floodplain defined by FEMA		☑ d) Not built on land that was public parkland prior to acquisition				
	☑ b) Not built on habitat for threatened or endangered species		☑ e) Not built on land with prime soils, unique soils, or soils of state significance				
	☑ c) Not built within 100 ft of water, including wetlands						
3. Preferred Locations							
3.1	Edge Development		*1*	*0*	*0*	*N*	*0*
OR 3.2	Infill		*2*	*2*	*0*		*2*
AND/OR 3.3	Previously Developed		*1*	*1*	*0*		*1*
4. Infrastructure							
4	Existing Infrastructure		*1*	*1*	*0*		*1*
5. Community Resources / Transit							
5.1	Basic Community Resources / Transit *(meet one of the following)*		*1*	*0*	*0*	*N*	*0*
	☐ a) Within 1/4 mile of 4 basic community resources		☐ c) Within 1/2 mile of transit services providing 30 rides per weekday				
	☐ b) Within 1/2 mile of 7 basic community resources						
OR 5.2	Extensive Community Resources / Transit *(meet one of the following)*		*2*	*0*	*0*	*N*	*0*
	☐ a) Within 1/4 mile of 7 basic community resources		☐ c) Within 1/2 mile of transit services providing 60 rides per weekday				
	☐ b) Within 1/2 mile of 11 basic community resources						
OR 5.3	Outstanding Community Resources / Transit *(meet one of the following)*		*3*	*3*	*0*		*0*
	☐ a) Within 1/4 mile of 11 basic community resources		☑ c) Within 1/2 mile of transit services providing 125 rides per weekday				
	☐ b) Within 1/2 mile of 14 basic community resources						
6. Access to Open Space							
6	Access to Open Space		*1*	*1*	*0*		*1*

Sustainable Sites (SS) (Minimum 5 SS Points Required)	***Max: 22***	***Y:19***	***M:2***	***Notes***	***Final: 4***

1. Site Stewardship

1.1	Erosion Controls During Construction *(meet all of the following)*	*Prereq.*	*Y*		
	☑ a) Stockpile and protect disturbed topsoil from erosion.	☑ d) Provide swales to divert surface water from hillsides			
	☑ b) Control the path and velocity of runoff with silt fencing or equivalent.	☑ e) Use tiers, erosion blankets, compost blankets, etc. on sloped areas.			
	☑ c) Protect sewer inlets, streams, and lakes with straw bales, silt fencing, etc.				
1.2	Minimize Disturbed Area of Site *(meet the appropriate requirements)*	*1*	*1*	*0*	*0*
	Where the site is not previously developed, meet all the following:				
	☐ a) Develop tree / plant preservation plan with "no-disturbance" zones				
	☐ b) Leave 40% of buildable lot area, not including area under roof, undisturbed				
OR	Where the site is previously developed, meet all the following:				
	☐ c) Develop tree / plant preservation plan with "no-disturbance" zones AND				
	☐ Rehabilitate lot; undo soil compaction and remove invasive plants AND				
	☐ Meet the requirements of SS 2.2				
OR	☑ d) Build on a lot of 1/7 acre or less, or 7 units per acre.				

2. Landscaping

	2.1 ✍ No Invasive Plants	*Prereq.*	*Y*			
	2.2 ✍ Basic Landscaping Design *(meet all of the following)*	*2*	*0*	*0*	*N*	*0*
	☑ a) Any turf must be drought-tolerant.	☑ d) Add mulch or soil amendments as appropriate.				
	☑ b) Do not use turf in densely shaded areas.	☑ e) All compacted soil must be tilled to at least 6 inches.				
	☑ c) Do not use turf in areas with slope of 25%					
AND/OR	2.3 ✍ Limit Conventional Turf	*3*	*0*	*0*	*N*	*0*
	☐ Percentage of designed landscape softscape area that is turf					
AND/OR	2.4 ✍ Drought-Tolerant Plants	*2*	*0*	*0*	*N*	*0*
	☐ Percentage of installed plants that are drought-tolerant					
OR	2.5 ✍ Reduce Overall Irrigation Demand by at Least 20%	*6*	*6*	*0*		*0*
	☐ Percentage reduction in estimated irrigation water demand	*(calculate)*				

3. Reduce Local Heat Island Effects

3	✍ Reduce Local Heat Island Effects *(meet one of the following)*	*1*	*1*	*0*	*0*
	☐ a) Locate trees / plantings to provide shade for 50% of hardscapes	☑ b) Install light-colored, high-albedo materials for 50% of sidewalks, patios, and drivew			

4. Surface Water Management

4.1	✍ Permeable Lot	4	2	2		0

- [ ] vegetative landscape
- [ ] permeable paving
- [ ] impermeable surfaces directed to infiltration features
- [ ] other impermeable surfaces (areas not counted towards credit)

4.2	Permanent Erosion Controls *(meet one of the following)*	1	1	0		0

- [ ] a) For portions of lot on steep slope, use terracing and retaining walls
- [x] b) Plant trees, shrubs, or groundcover

4.3	✍ Management of Runoff from Roof *(meet any, see Rating System for pts)*	2	2	0		0

- [ ] a) Install permanent stormwater controls to manage runoff from the home
- [ ] b) Install vegetated roof to cover 50% of roof area
- [ ] c) Install vegetated roof to cover 100% of roof area
- [x] d) Have lot designed by professional to manage runoff from home on-site

5. Nontoxic Pest Control

5	Pest Control Alternatives *(meet any of the following, 1/2 pt each)*	2	2	0		0

- [x] a) Keep all exterior wood at least 12" above soil
- [x] b) Seal external cracks, joints, etc. with caulking and install pest-proof screens
- [x] c) Include no wood-to-concrete connections, or separate connections with dividers
- [ ] d) Install landscaping so mature plants are 24" from home

e) In 'moderate' to 'very heavy' termite risk areas:

- [ ] i) Treat all cellulosic material with borate product to 3' above foundation
- [ ] ii) Install sand or diatomaceous earth barrier
- [ ] iii) Install steel mesh barrier termite control system
- [ ] iv) Install non-toxic termite bait system
- [x] v) Use noncellulosic wall structure
- [x] vi) Use solid concrete foundation walls or pest-proof masonry wall design

6. Compact Development

	6.1	Moderate Density	2	0	0	N	0
		33 # of total units on the lot; 0.8 lot size (acres); 41.3 density (units/acre)					
OR	6.2	High Density	3	0	0	N	0
OR	6.3	Very High Density	4	4	0		4

Water Efficiency (WE) (Minimum 3 WE Points Required)

Max: 15 Y:5 M:0 Notes Final: 0

1. Water Reuse

	1.1	Rainwater Harvesting System	4	0	0	N	0
AND/OR	1.2	Graywater Reuse System	1	0	0	N	0
OR	1.3	Use of Municipal Recycled Water System	3	0	0	N	0

- [ ] Percentage of roof area used for harvesting
- [ ] Application

2. Irrigation System

	2.1	✍ High-Efficiency Irrigation System *(meet any of the following, 1 pt each)*	3	0	0	N	0
		☐ a) Irrigation system designed by EPA Water Sense certified professional					
		☐ b) Irrigation system with head-to-head coverage					
		☐ c) Install central shut-off valve					
		☐ d) Install submeter for the irrigation system					
		☐ e) Use drip irrigation for 50% of planting beds					
		☐ f) Create separate zones for each type of bedding					
		☐ g) Install timer or controller for each watering zone					
		☐ h) Install pressure-regulating devices					
		☐ i) High-efficiency nozzles with distribution uniformity of at least 0.70.					
		☐ j) Install check valves in heads					
		☐ k) Install moisture sensor or rain delay controller					
AND/OR	2.2	Third-party Inspection	1	0	0	N	0
OR	2.3	✍ Reduce Overall Irrigation Demand by at Least 45%	4	2	0		0
		☐ Percentage reduction in estimated irrigation water demand	*(calculate)*				

3. Indoor Water Use

3.1	High-Efficiency Fixtures and Fittings *(meet any of the following, 1 pt each)*	3	3	0		0
	☑ a) Average flow rate of lavatory faucets is ≤ 2.00 gpm					
	☑ b) Average flow rate for all showers is ≤ 2.00 gpm per stall					
	☑ c) Average flow rate for all toilets is ≤ 1.30 gpf; OR					
	☐ Toilets are dual-flush; OR					
	☐ Toilets meet the EPA Water Sense specification					
3.2	Very High-Efficiency Fixtures and Fittings *(meet any, 2 pts each)*	6	0	0		0
	☐ a) Average flow rate of lavatory faucets is ≤ 1.50 gpm; OR					
	☐ Lavatory faucets meet the EPA Water Sense specification					
	☐ b) Average flow rate for all showers ≤ 1.75 gpm per stall					
	☐ c) Average flow rate for all toilets is ≤ 1.10 gpf					

Energy & Atmosphere (EA) (Minimum 0 EA Points Required)

		Max: 38	Y:15	M:1	Notes	Final: 2

1. Optimize Energy Performance

1.1	Performance of ENERGY STAR for Homes	Prereq.	Y			
1.2	Exceptional Energy Performance	34	0	0	See Prescriptive	0
	☐ IECC climate zone ☐ HERS Index					

7. Water Heating

7.1	✍ Efficient Hot Water Distribution System *(meet one of the following)*	2	0	0	See Prescriptive	0
	☐ a) Structured plumbing system					
	☐ b) Central manifold distribution system					
	☐ c) Compact design of conventional system					
7.2	Pipe Insulation	1	0	0	See Prescriptive	0

11. Residential Refrigerant Management

11.1	Refrigerant Charge Test	Prereq.			See Prescriptive	
11.2	Appropriate HVAC Refrigerants *(meet one of the following)*	1	0	0	See Prescriptive	0
	☐ a) Use no refrigerants					
	☐ b) Use non-HCFC refrigerants					
	☐ c) Use refrigerants that complies with global warming potential equation					

Materials & Resources (MR) (Minimum 2 MR Points Required)

	Max: 16	Y:11	M:4.5	Notes	Final: 2.5

1. Material-Efficient Framing

	1.1	Framing Order Waste Factor	Prereq.	Y			
	1.2	Detailed Framing Documents	1	1	0		0
AND/OR	1.3	Detailed Cut List and Lumber Order	1	1	0		0
		☑ Requirements of MR 1.2 have been met		☑ Detailed cut list and lumber order corresponding to framing plans or scopes			
AND/OR	1.4	Framing Efficiencies *(meet any of the following, see Rating System for pts)*	3	3	0	*taking 2 for panelized walls - have 1/2 exemp.*	0
		☐ Precut framing packages		☐ Stud spacing greater than 16" on center			
		☑ Open-web floor trusses		☐ Ceiling joist spacing greater than 16" on center			
		☐ Structural insulated panel walls		☐ Floor joist spacing greater than 16" on center			
		☐ Structural insulated panel roof		☐ Roof rafter spacing greater than 16" on center			
		☐ Structural insulated panel floors		☑ Two of the following: Size headers for loads; ladder blocking; drywall clips; 2-stud corn			
OR	1.5	Off-site Fabrication *(meet one of the following)*	4	0	0	N	0
		☐ a) Panelized construction		☐ b) Modular, prefabricated construction			

2. Environmentally Preferable Products

2.1	✍ FSC Certified Tropical Wood *(meet all of the following)*	Prereq.	Y				
	☑ a) Provide suppliers with a notice of preference for FSC products; AND		☑ b) No tropical wood installed (exceptions for FSC-certified or reclaimed wood)				
	☑ Request country of manufacture for each wood product						
2.2	✍ Environmentally Preferable Products *(meet any, 1/2 pt each)*	8	3.5	4.5	*2 additional - 2 accounded for in ID3*		0

Assembly : component	(a) EPP			(b) Low emission		(c) Local production	
Exterior wall: framing	☐		type:			☐	
Exterior wall: siding or masonry	☐		type:			☑	
Floor: flooring	☑	(45%)	type: TBD	☑	90% hard flooring	☐	(45%)
Floor: flooring	☑	(90%)	type: TBD	☐	SCS FloorScore	☐	(90%)
Floor: flooring				☐	Green Label Plus		
Floor: framing	☑		type: ?			☑	
Foundation: aggregate	☐		type:			☑	
Foundation: cement	☑		type: Fly Ash			☑	
Interior wall: framing	☐		type:			☐	
Interior wall, ceiling: gypsum board	☑		type: Recycled			☑	
Interior wall, ceiling, millwork: paint	☐		type:	☐	type:		
Landscape: decking and patio	☑		type: Recycled			☑	
Other: cabinet	☑		type: Recycled			☐	
Other: counter	☑		type: Recycled			☐	
Other: door	☐		type:			☐	
Other : interior trim	☐		type:			☐	
Other : adhesive, sealant				☑	type:		
Other : window frame	☐		type: Recycled			☑	
Roof: framing	☐		type:			☐	
Roof: roofing	☐		type:			☐	
Roof, floor, wall: cavity insulation	☑		type: Recycled	☐	type:	☑	
Roof, floor, wall (2 of 3): sheathing	☑		type: Recycled			☐	
Other: water supply piping	☐		type:				
Other: driveway	☐		type:				

3. Waste Management

3.1	Construction Waste Management Planning *(meet both of the following)*	*Prereq.*	*Y*			

☑ a) Investigate local options for waste diversion ☑ b) Document diversion rate for construction waste

3.2	Construction Waste Reduction *(use one of the following methods)*	*3*	*2.5*	*0*		*2.5*

[ ] a) pounds waste / square foot

[ ] cubic yards waste / 1,000 square feet

[*75%*] b) percentage of waste diverted

Indoor Environmental Quality (EQ) (Minimum 6 EQ Points Required) *Max: 21* *Y:17* *M:0* *Notes* *Final: 3*

1. ENERGY STAR with Indoor Air Package

1	ENERGY STAR with Indoor Air Package	*13*	*0*	*0*	*N*	*0*

2. Combustion Venting

2.1	Basic Combustion Venting Measures (meet all of the following)	*Prereq.*	*Y*			

☑ a) no unvented combustion appliances
☑ b) carbon monoxide monitors on each floor (of each unit, if applicable)
☑ c) no fireplace installed, OR
☐ all fireplaces and woodstoves have doors
☑ d) space, water heating equipment designed with closed combustion; OR
☐ space and water heating equipment has power-vented exhaust; OR
☐ space and water heating equipment located in detached or open-air facility; OR
☐ no space- or water-heating equipment with combustion

2.2	Enhanced Combustion Venting Measures (meet one of the following)	*2*	*2*	*0*		*0*

Type of Fireplace or stove	*Better practice (1 pt)*	*Best practice (2 pts) (must also meet Better Practice)*
None		☑ granted automatically
Masonry wood-burning fireplace	☐ masonry heater	☐ back-draft potential test
Factory-built wood-burning fireplace	☐ listed by testing lab and meets EPA standards	☐ back-draft potential test
Woodstove and fireplace insert	☐ listed by testing lab and meets EPA standards	☐ back-draft potential test
Natural gas, propane, or alcohol stove	☐ listed, power- or direct-vented, fixed doors	☐ electronic pilot
Pellet stove	☐ EPA certified or meets safety requirements	☐ power- or direct-venting

3. Moisture Control

3	Moisture Load Control (meet one of the following)	*1*	*0*	*0*	*N*	*0*

☐ a) Additional dehumidification system ☐ b) Central HVAC system equipped with additional dehumidification mode

4. Outdoor Air Ventilation

4.1	Basic Outdoor Air Ventilation (meet one of the following)	*Prereq.*	*Y*			

☐ a) Qualifies under ASHRAE Std. 62.2-2007 climate exemption.
☑ b) Continuous ventilation
☐ c) Intermittent ventilation
☐ d) Passive ventilation

4.2	Enhanced Outdoor Air Ventilation *(meet one of the following)*	*2*	*2*	*0*		*0*

☐ a) Meets EQ 4.1 part (a), active ventilation system installed ☑ b) Install heat recovery system

4.3	Third-Party Performance Testing	*1*	*1*	*0*		*0*

5. Local Exhaust

5.1	Basic Local Exhaust (meet all of the following)	*Prereq.*	*Y*		*HRV connected exh.*	
	☑ a) Bathroom and kitchen exhaust meets ASHRAE Std. 62.2 air flow requirement	☑ c) Air exhausted to outdoors				
	☑ b) Fans and ducts designed and installed to ASHRAE Std. 62.2	☑ d) ENERGY STAR labeled bathroom exhaust fans				
5.2	Enhanced Local Exhaust *(meet one of the following)*	*1*	*1*	*0*		*0*
	☐ a) Occupancy sensor	☐ c) Automatic timer tied to switch to operate fan for 20+ minutes post-occupancy				
	☐ b) Automatic humidistat controller	☑ d) Continuously operating exhaust fan				
5.3	Third-Party Performance Testing	*1*	*1*	*0*		*0*

6. Distribution of Space Heating and Cooling

6.1	Room-by-Room Load Calculations	*Prereq.*	*Y*		*Trace*	
6.2	Return Air Flow / Room-by-Room Controls (meet one of the following)	*1*	*1*	*0*		*0*
	A. Forced-Air Systems	B. Nonducted HVAC Systems				
	☑ a) Return air opening of 1 sq. inch per cfm of supply	☐ Flow control valves on every radiator; OR				
	☑ b) Limited pressure differential between closed room and adjacent spaces	☐ Radiant floor system with thermostatic controls in every room				
6.3	Third-Party Performance Test / Multiple Zones (meet one of the following)	*2*	*2*	*0*		*0*
	A. Forced-Air Systems	B. Nonducted HVAC Systems				
	☑ Have supply air flow rates in each room tested and confirmed	☐ Install at least two distinct zones with independent thermostat control				

7. Air Filtering

	7.1	Good Filters	*Prereq.*	*Y*			
	7.2	Better Filters	*1*	*1*	*0*		*0*
OR	7.3	Best Filters	*2*	*0*	*0*	*N*	*spec calls for MERV13*	*0*

8. Contaminant Control

8.1	Indoor Contaminant Control during Construction	*1*	*1*	*0*	*finish phase ok with will?*	*0*
8.2	Indoor Contaminant Control *(meet any of the following, 1 pt each)*	*2*	*1*	*0*		*0*
	☑ a) Design and install permanent walk-off mats at each entry	☐ c) Install central vacuum system with exhaust to outdoors				
	☐ b) Design shoe removal and storage space near primary entryway					
8.3	Preoccupancy Flush	*1*	*1*	*0*		*0*

9. Radon Protection

9.1	Radon-Resistant Construction in High-Risk Areas	*Prereq.*	*N/A*			
9.2	Radon-Resistant Construction in Moderate-Risk Areas	*1*	*0*	*0*	*N*	*0*

10. Garage Pollutant Protection

	10.1	No HVAC in Garage	*Prereq.*	*Y*			
	10.2	Minimize Pollutants from Garage (meet all of the following)	*2*	*0*	*0*	*N*	*0*
		a) In conditioned spaces above garage:	b) In conditioned spaces next to garage				
		☐ Seal all penetrations and connecting floor and ceiling joist bays	☐ Weather-strip all doors				
			☐ Carbon monoxide detectors in rooms that share a door with garage				
			☐ Seal all penetrations and cracks at the base of walls				
AND/OR	10.3	Exhaust Fan in Garage (meet one of the following)	*1*	*0*	*0*	*N*	*0*
		☐ a) Fan runs continuously	☐ b) Fan designed with automatic timer control				
OR	10.4	Detached Garage or No Garage	*3*	*3*	*0*		*3*

Awareness & Education (AE) (Minimum 0 AE Points Required)

Max: 3 ***Y:3*** ***M:0*** ***Notes*** ***Final: 0***

1. Education of the Homeowner or Tenant

1.1	✍ Basic Operations Training *(meet both of the following)*	*Prereq.*	*Y*			
	☑ a) Operations and training manual	☑ b) One-hour walkthrough with occupant(s)				
1.2	✍ Enhanced Training	*1*	*1*	*0*		*0*
1.3	Public Awareness *(meet three of the following)*	*1*	*1*	*0*		*0*
	☐ a) Open house on at least four weekends	☑ c) Newspaper article on the project				
	☑ b) Website about features and benefits of LEED homes	☑ d) Display LEED signage on the exterior of the home				

2. Education of the Building Manager

2	✍ Education of the Building Manager *(meet both of the following)*	*1*	*1*	*0*		*0*
	☑ a) Operations and training manual	☑ b) One-hour walkthrough with building manager				

USGBC LEGAL DISCLAIMER

USGBC makes no warranty with respect to any LEED certified project, including any warranty of habitability, merchantability, or fitness for a particular purpose. There are no warranties, express or implied, written or oral, statutory or otherwise, with respect to the certifications provided by USGBC. By way of example only, and without limiting the broad scope of the foregoing, it is understood that LEED certification, whether at the Certified level or any other level, does not mean that the project is structurally sound or safe, constructed in accordance with applicable laws, regulations or codes, free of mold or mildew, free of volatile organic compounds or allegens, or free of soil gases including radon.

SIGNATURES BY RESPONSIBLE PARTIES

By affixing my signature below, the undersigned does hereby declare and affirm to the USGBC that the LEED for Homes requirements, as specified in the LEED for Homes Rating System, have been met for the indicated credits and will, if audited, provide the necessary supporting documents.

Project Team Leader	***Julie Klump, POAH***	Company	***Preservation of Affordable Housing (POAH)***
Signature		Date	

By affixing my signature below, the undersigned does hereby declare and affirm to the USGBC that the required inspections and performance testing for the LEED for Homes requirements, as specified in the LEED for Homes Rating System, have been completed. I have evaluated this project's documentation package and conducted the necessary QA/QC procedures with the Green Rater, and I hereby declare and affirm to USGBC that the homes included in this submittal are ready to earn LEED for Homes certification, as per the attached checklist.

Provider QAD	***William D'Arrigo***	Company	***Conservation Services Group***
Signature		Date	

By affixing my signature below, the undersigned does hereby declare and affirm to the USGBC that the required inspections and performance testing for the LEED for Homes requirements, as specified in the LEED for Homes Rating System, have been completed.

I also hereby confirm that all verification services were performed in accordance with the LEED for Homes Verification & Submittal Guidelines and Addendum.

Green Rater	***Laureen T. Blissard***	Company	***LTLB Envirotecture***
Signature		Date	

By affixing my signature below, the undersigned does hereby declare and affirm to the USGBC that the required inspections and performance testing for the LEED for Homes requirements, as specified in the LEED for Homes Rating System, have been completed.

I also hereby confirm that all verification services were performed in accordance with the LEED for Homes Verification & Submittal Guidelines and Addendum.

Green Rater		Company	
Signature		Date	

LEED for Homes Project Checklist

Addendum: Prescriptive Approach for Energy and Atmosphere (EA) Credits

Points cannot be earned in both the Prescriptive (below) and the Performance paths of the EA section.	*Max Pts. Available*	*Preliminary Rating* Y / Pts	Maybe	No	*Notes*	*Project Points*
Energy & Atmosphere (EA) (Minimum 0 EA Points Required)	***Max: 38***	***Y:15***	***M:1***		***Notes***	***Final: 2***
2. Insulation						
2.1 Basic Insulation *(meet both of the following)*	*Prereq.*	*Y*			*IECC 2009*	
☑ a) Insulation meets R-value requirements of IECC	☑ b) Insulation meets HERS Grade II specifications for installation					
2.2 Enhanced Insulation *(meet both of the following)*	*2*	*2*	*0*			*0*
☑ a) Insulation exceeds R-value requirements of IECC by 5%	☑ b) Insulation meets HERS Grade I specifications for installation					
3. Air Infiltration						
3.1 Reduced Envelope Leakage	*Prereq.*	*Y*				*Y*
3.0 Air leakage rate in ACH50						
3.2 Greatly Reduced Envelope Leakage	*2*	*0*	*0*	*N*		*2*
OR 3.3 Minimal Envelope Leakage	*3*	*3*	*0*			*0*
4. Windows						
4.1 Good Windows *(meet all of the following)*	*Prereq.*	*Y*				
☑ a) Windows and glass doors meet ENERGY STAR BOP window specifications	☑ b) Skylight glazing area is ≤ 3% of floor area AND ☐ Skylights meet ENERGY STAR requirements for skylights					
4.2 Enhanced Windows	*2*	*0*	*0*	*N*		*0*
OR 4.3 Exceptional Windows	*3*	*0*	*0*	*N*		*0*
5. Heating and Cooling Distribution System						
5.1 Reduced Distribution Losses *(meet all of the following, as appropriate)*	*Prereq.*	*Y*				
A. Forced-Air Systems	B. Nonducted HVAC Systems					
☑ a) Duct leakage of ≤ 4.0 CFM at 25 Pascals per 100 sq.ft.	☐ At least R-3 insulation around pipes in unconditioned spaces					
☑ b) No ducts in exterior walls unless extra insulation is added						
☑ c) At least R-6 insulation around ducts in unconditioned spaces						
5.2 Greatly Reduced Distribution Losses *(meet the following, as appropriate)*	*2*	*2*	*0*			*0*
A. Forced-Air Systems	B. Nonducted HVAC Systems					
☑ Duct leakage of ≤ 3.0 CFM at 25 Pascals per 100 sq.ft.	☐ Keep the boiler and pipes entirely within conditioned envelope					
OR 5.3 Minimal Distribution Losses *(meet one of the following, as appropriate)*	*3*	*0*	*0*	*N*		*0*
A. Forced-Air Systems	B. Nonducted HVAC Systems					
☐ a) Duct leakage of ≤ 1.0 CFM at 25 Pascals per 100 sq.ft.	☐ Outdoor reset control to set distribution temp. based on outdoor temp.					
☐ b) Air-handler and all ductwork is within conditioned envelope and EA 3.3 is met						
☐ c) Air-handler and all ductwork visibly within conditioned spaces (not in walls, etc.)						

6. Space Heating and Cooling Equipment

6.1	✍ Good HVAC Design and Installation *(meet all of the following)*	*Prereq.*	*Y*			*ASHRAE Book of Fund. - AFUE .93*	
	☑ a) Design and size HVAC equipment using ACCA Manual J or equivalent			☑ c) Install ENERGY STAR programmable thermostat OR			
	☑ b) Install efficient heating AND cooling equipment (see Table)			☐ Heat pump or hydronic installed and exempted from part (c)			
	Condensing — Type of cooling system			Gas Fired — Type of heating system			
	14.0 — Cooling efficiency (SEER / EER)			0.9 — Heating Efficiency (AFUE / HSPF / COP)			
6.2	High-Efficiency HVAC	*2*	*2*	*0*			*0*
OR 6.3	Very High Efficiency HVAC	*4*	*0*	*0*	*N*		*0*

7. Water Heating

7.1	✍ Efficient Hot Water Distribution System *(meet one of the following)*	*2*	*0*	*0*	*N*		*0*
	☐ a) Structured plumbing system			☐ c) Compact design of conventional system			
	☐ b) Central manifold distribution system						
7.2	Pipe Insulation	*1*	*0*	*1*			*0*
7.3	Efficient Domestic Hot Water Equipment	*3*	*1*	*0*		*100 gal not 80 / revisit for actual system*	*0*
	Gas, storage, 80 gal. — Type of DHW system						
	96.0 — Efficiency; 50.0 — Solar: Percentage of annual DHW load						

8. Lighting

8.1	ENERGY STAR Lights	*Prereq.*	*Y*				
8.2	Improved Lighting *(meet one of the following, see Rating System for pts)*	*1.5*	*0*	*0*			*0*
	☐ a) Indoor lighting - 3 additional ENERGY STAR lights in high-use rooms			☐ b) Exterior lighting - motion sensor controls or integrated PV			
OR 8.3	Advanced Lighting Package *(meet one of the following)*	*3*	*3*	*0*			*0*
	☑ a) 60% of fixtures are ENERGY STAR fixtures			☑ b) 80% of lamps are ENERGY STAR CFLs			

9. Appliances

9.1	High-Efficiency Appliances *(meet any, see Rating System for pts)*	*2*	*1*	*0*		*washers are central / shared*	*0*
	☑ a) ENERGY STAR labeled refrigerator			☐ c) ENERGY STAR labeled dishwasher using 6.0 gallons per cycle or less			
	☐ b) ENERGY STAR labeled ceiling fans in living/family room and all bedrooms			☐ d) ENERGY STAR clothes washer			
9.2	Water-Efficiency Clothes Washer	*1*	*0*	*0*	*N*		*0*

10. Renewable Energy

10	✍ Renewable Energy System	*10*	*0*	*0*	*N*		*0.0*
	Reference electric load, kWh/yr (based on HERS model)			Electricity supplied by renewable system, kWh/yr			
	0.0% — Percentage of annual reference electric load met by renewable system						

11. Residential Refrigerant Management

11.1	Refrigerant Charge Test	*Prereq.*	*Y*				
11.2	Appropriate HVAC Refrigerants *(meet one of the following)*	*1*	*1*	*0*			*0*
	☐ a) Use no refrigerants			☐ c) Use refrigerants that complies with global warming potential equation			
	☑ b) Use non-HCFC refrigerants						

LEED for Homes Project Checklist, Project Notes

This section was created to give project teams additional space to make internal notes on the progress of the project. It does not need to be used and it **should not** be submitted to USGBC. This section is unlocked, so project teams are welcome to make changes to the format as necessary. Any comments or directions provided below have not been created or endorsed by the US Green Building Council.

Date project began:	10/1/2011
Initiated by:	

Credits	*Responsible Party*	*Last Updated*	*Additional Notes*
ID 1. Integrated Project Planning			
1.1	Laureen		
1.2	Chris		
1.3	Not Attempted		
1.4	Laureen		
1.5	Not Attempted		
ID 2. Quality Mgmt for Durability			
2.1	Julie / Chris		
2.2	Chris		
2.3	Laureen		

3. Innovative or Regional Design			
3.1	Chris		
3.2	Chris		
3.3	Chris		
3.4	Chris		

Credits	***Responsible Party***	***Last Updated***	***Additional Notes***
LL 1. LEED for Neighborhood Development			
1	Not Attempted		
LL 2. Site Selection			
2	Julie		
LL 3. Preferred Locations			
3.1	Not Attempted		
3.2	Visually Verified 10/19/12		
3.3	Visually Verified 10/19/12		
LL 4. Infrastructure			
4	Visyally Verified 10/19/12		
LL 5. Community Resources			
5.1	Using other strategy		
5.2	Using other strategy		
5.3	Julie		Laureen park name
LL 6. Access to Open Space			
6	Visyally Verified 10/19/12		

Credits	Responsible Party	Last Updated	Additional Notes
SS 1. Site Stewardship			
1.1	Chris / Raymond		
1.2	Julie		
SS 2. Landscaping			
2.1	Jenna		
2.2	Not Attempted / info needed for SS2.5		
2.3	Not Attempted / info needed for SS2.5		
2.4	Not Attempted / info needed for SS2.5		
2.5	Jenna		
SS 3. Reduce Local Heat Island Effects			
3	Chris - specifications / Jenna - calculations		

SS 4. Surface Water Management			
4.1	Raymond		
4.2	Jenna		
4.3	Raymond		Laureen note
SS 5. Nontoxic Pest Control			
5	Chris		
SS 6. Compact Development			
6.1	Using other strategy		
6.2	Using other strategy		
6.3	Julie		

Credits	***Responsible Party***	***Last Updated***	***Additional Notes***
WE 1. Water Reuse			
1.1	Not Attempted		
1.2	Not Attempted		
1.3	Not Attempted		

WE 2. Irrigation System			
2.1	Not Attempted		
2.2	Not Attempted		
2.3	Jenna		
WE 3. Indoor Water Use			
3.1	Dominik		
3.2	Using other strategy		

Credits	***Responsible Party***	***Last Updated***	***Additional Notes***
EA 1. Optimize Energy Performance			
1.1	Not Attempted		
1.2	Testing by verification team		
EA 7. Water Heating			
7.1	See presecriptive		
7.2	See presecriptive		
EA 11. Residential Refrigerant Management			
11.1	See presecriptive		
11.2	See presecriptive		

Credits	Responsible Party	Last Updated	Additional Notes
MR 1. Material-Efficient Framing			
1.1	Chris		
1.2	Chris (shop drawings)		
1.3	Chris		
1.4	Visually verified		
1.5	Not Attempted		
MR 2. Environmentally Preferable Products			
2.1	Chris		
2.2	Chris		

MR 3. Waste Management			
3.1	Chris		
3.2	Chris		

Credits	***Responsible Party***	***Last Updated***	***Additional Notes***
EQ 1. ENERGY STAR w/ IAP			
1	Not Attempted		
EQ 2. Combustion Venting			
2.1	Kathryn		
2.2	Will be visually verified		
EQ 3. Moisture Control			
3	Not Attempted		
EQ 4. Outdoor Air Ventilation			
4.1	Kathryn		
4.2	Kathryn		
4.3	Testing by verification team		

EQ 5. Local Exhaust			
5.1	Kathryn		
5.2	Kathryn		
5.3	Testing by verification team		
EQ 6. Distribution of Space Heating and Cooling			
6.1	Kathryn		
6.2	Kathryn		
6.3	Testing by verification team		
EQ 7. Air Filtering			
7.1	Visually verified		
7.2	Visually verified		
7.3	Not Attempted		
EQ 8. Contaminant Control			
8.1	Chris		
8.2	Visually verified		
8.3	Chris		
EQ 9. Radon Protection			
9.1	Not Attempted		
9.2	Not Attempted		

EQ 10. Garage Pollutant Protection			
10.1	Visually verified		
10.2	Using other strategy		
10.3	Using other strategy		
10.4	Visually verified		

Credits	*Responsible Party*	*Last Updated*	*Additional Notes*
AE 1. Education of Home Owner / Tenant			
1.1	See AE2		
1.2	Julie		
1.3	Julie		
AE 2. Education of the Building Manager			
2	Julie		

Credits		Responsible Party	Last Updated	Additional Notes
EA 2. Insulation				
	2.1	Chris		
	2.2	Chris		
EA 3. Air Infiltration				
	3.1	Testing by verification team		
	3.2	Using other strategy		
OR	**3.3**	Testing by verification team		
EA 4. Windows				
	4.1	Chris		
	4.2			
OR	**4.3**			
EA 5. Heating and Cooling Distribution				
	5.1	Kathryn / Testing by verification team		
	5.2	Testing by verification team		
OR	**5.3**	Using other strategy		

EA 6. Space Heating and Cooling Equipment				
	6.1	Kathryn		
	6.2	Kathryn		
OR	**6.3**	Using other strategy		
EA 7. Water Heating				
	7.1	Not attempted		
	7.2	Chris		
	7.3	Kathryn		
EA 8. Lighting				
	8.1	Chris		
	8.2	Using other strategy		
OR	**8.3**	Chris		
EA 9. Appliances				
	9.1	Chris - Ref		
	9.2	Not attempted		
EA 10. Renewable Energy				
	10	Not attempted		
EA 11. Residential Refrigerant Management				
	11.1	Chris / Sub		
	11.2	Chris / Sub		

Woodlawn Center North Apartments
Chicago, IL

Illinois Green Infrastructure Grant Program for Stormwater Management (IGIG#1209)

Operations and Maintenance Plan

From: Jones, Jenna [mailto:JJones@cdfinc.com]
Sent: Wednesday, September 19, 2012 3:03 PM
To: 'mekerdt@poah.org'
Subject: FW: WCS O&M Plan For Landscaping

Hi Molly,

Here's the link to the Unilock paver maintenance guidelines:
http://www.unilock.com/default/linkservid/56C569A8-1C25-1A51-FAC0109FE0E3DCC4/showMeta/0/

See my note below regarding the maintenance of the planting areas. I'm also attaching the referenced planting specification if you'd like to copy any text from here.

As I just mentioned on the phone, maintenance for the bioretention areas would primarily be weeding and plant maintenance related, but you should also check regularly for ponding in these areas. If there is ponding, you would want to replace the soil (with the same product specified in the CDs).

Please let me know if there's anything else you need from us.

Thanks,
Jenna

Jenna Jones MLA, ASLA
Project Manager
Graphics Manager
jjones@cdfinc.com

From: Jones, Jenna
Sent: Thursday, August 30, 2012 5:11 PM
To: 'Dominik Soltys'
Subject: RE: WCS O&M Plan For Landscaping

Hi Dominik,

The watering plan looks fine. The one thing I would add is to water in the mornings. This can be done with soaker hoses that are left in the landscape to reduce man hours. For O&M for plants, I would also refer to section 3.11 in specification 329300-13 for maintenance, including watering, weeding, mulching, etc during the establishment period.

Let me know if you have additional questions.

Thanks,
Jenna

Jenna Jones MLA, ASLA
Project Manager
Graphics Manager
jjones@cdfinc.com

Conservation Design Forum
Landscape Architecture · Planning · Civil / Water Resources Engineering · Sustainable Urbanism · Ecosystem Sciences

SUBMITTAL RESPONSE

Date:	August 16, 2011
To:	Dominik Solltys, LBBA
From:	Eric L. Otto, PE, CPESC
Re:	Submittal response for: ***[320190.26-001] – Landscape Watering Plan***
cc:	Jamie Bell, Linn-Mathes
Ref. #:	[09033.00] – 320190.26-001 – Landscape Watering Plan

RESPONSE

☑ ***No Exceptions Taken***	☐ ***Make Correction Noted***
☐ ***Rejected***	☐ ***Revise and Resubmit***
☐ ***Submit Specified Item***	☐ ***Not Reviewed***

Review is only for conformance with the general design concept of the project and does not extend to consideration of structural integrity, safety, detailed compliance with contract requirements or any other obligation of the Contractor. Any action shown is subject to the requirements of the plans and specifications; Contractor is responsible for confirming and correlating all dimensions, fabricating, and construction techniques, coordinating his work with that of all other trades, and the satisfactory performance of his entire work in strict accordance with contract documents. This review is undertaken solely to satisfy Conservation Design Forum's obligation to the Owner and does not relieve the Contractor from the obligation to fully perform all contract requirements, nor shall such review give rise to any right of action or suit in favor of Contractor or third person, against Conservation Design Forum or the Owner.

Reviewed by: Eric L. Otto, PE, CPESC 630-559-2006 eotto@cdfinc.com	***Date:*** August 16, 2011

375 West First Street
Elmhurst, IL 60126
general 630 559 2000
fax 630 559 2030

www.cdfinc.com

220 South Main Street
Ann Arbor, MI 48104
general 734 663 3751
fax 734 663 0722

LINN - MATHES INC.

General Contractors

309 Green Street Chicago, Illinois 60607 Phone (312) 454-0200 Fax (312) 454-6182

Submittals

Woodlawn Center South

To:	Dominik Soltys	LMI Submittal Number	320190.26-001-0
	Landon Bone Baker Architects	Date	8/16/2011
	734 North Milwaukee Avenue	Sent Via	email
	Chicago, IL 60622		

From: Jamie Bell

Transmitting: Herewith

ForYour: Information

TheFollowing: Documents

Copies Sent	Description:	Drawings:	Drawing Date	Submittal #
1	Submittal for Information of Landscape Watering Plan			320190.26-001-0

Attachments:

CC:

Catherine Baker - Landon Bone Baker Architects
Eric Otto - Conservation Design Forum
Dena Bell - POAH - Preservation of Affordable Housing
Julie Klump - POAH - Preservation of Affordable Housing
Matt Lenzini - Solutions for Development and Construction

Approved for Submittal

Project:	Woodlawn Center South
Address:	6227 and 6230 South Cottage Grove Chicago, IL 60637
Architect:	Landon Bone Baker Architects
General Contractor:	Linn Mathes Inc.
By:	Jamie Bell
Submittal Number	320190.26-001-0
Date:	8/16/2011

F. Garcia Landscaping Inc.

P.O. Box 572 Barrington, Illinois 60011
Phone: (847) 526-0126 Fax: (847) 526-0263

August 6, 2011

Linn-Mathes
309 South Green Street
Chicago, IL 60607

Att: Jamie Bell

Re: WCS
Plant Maintenance
Watering

Jamie,

In regards to the operation of watering the perennials at Woodlawn Center South Buildings #3 and #4.

The soil used on this project is not a typical silty loam, sandy loam or heavy clay soil that one would find existing in nature; the mix is specifically a blend of 50% sand and 50% compost. By design the sand will hold no water but the compost in this mix will absorb water and hold it for an undefined period of time. As the sand in the mix does not hold water and as soon as the compost becomes fully saturated all remaining water will continue down to the sub surface gravel storage area where it is held until it infiltrates in the virgin soil below or it evaporates up through the drain basins that are installed vertically in all the planters that surround the building.

It is our recommendation that plants be watered:
Seven days per week when the temperature exceed 95 degrees
Three days per week when the temperature is between 80-95 degrees
Two days per week when the temperature is between 70-80 degrees
Watering is not required when it rains.

If you have any question, do not hesitate to call me at 847-526-0126.

Sincerely,

Steven Los
F. Garcia Landscaping, Inc.

SECTION 329300 - PLANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Specification, Installation & Warranty for Plant Material
2. Planting Soil (Structural & Topsoil) *Refer to Section 32 "BIORETENTION" for Amended Soil*
3. Tree grates

B. Related Sections:

1. Division 01 Section "Temporary Tree and Plant Protection" for protecting, trimming, pruning, repairing, and replacing existing trees to remain that interfere with, or are affected by, execution of the Work.
2. Division 12 Section "Site Furnishings" for exterior unit planters.
3. Division 31 Section "Site Clearing" for protection of existing trees and plantings, topsoil stripping and stockpiling, and site clearing.
4. Division 31 Section "Bioretention" for ammended soil specifications & execution, and edging.
5. Division 31 Section "Earth Moving" for excavation, filling, and rough grading and for subsurface aggregate drainage and drainage backfill materials.
6. Division 32 Section "Turf and Grasses" for turf (lawn) and erosion-control materials.

1.3 DEFINITIONS

A. Amended Topsoil: Engineered topsoil that has been uniformly modified with soil amendments to meet the requirements of this section and designed to readily infiltrate stormwater runoff down to open-graded aggregate layer below.

B. Backfill: The earth used to replace or the act of replacing earth in an excavation.

C. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with ball size not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required; wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1.

D. Balled and Potted Stock: Plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required.

E. Bare-Root Stock: Plants with a well-branched, fibrous-root system developed by transplanting or root pruning, with soil or growing medium removed, and with not less than minimum root spread according to ANSI Z60.1 for type and size of plant required.

F. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.

G. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.

H. Fabric Bag-Grown Stock: Healthy, vigorous, well-rooted plants established and grown in-ground in a porous fabric bag with well-established root system reaching sides of fabric bag. Fabric bag size is not less than diameter, depth, and volume required by ANSI Z60.1 for type and size of plant.

I. Finish Grade: Elevation of finished surface of planting soil.

J. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

K. Open Graded Stone for Structural Soil: Sound crushed stone or gravel meeting ASTM C33, gradation number 4.

L. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

M. Pests: Living organisms that occur where they are not desired, or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

N. Planting Area: Areas to be planted.

O. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.

P. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.

Q. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.

R. Structural Soil: A manufactured soil medium to be used in specified locations where topsoil for tree roots is limited. See drawings for locations.

S. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before amended topsoil is placed.

T. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

U. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated, including soils.

1. Plant Materials: Include quantities, sizes, quality, and name and address of supplier for all plant materials.

2. Submit written documentation to Landscape Architect eight (8) weeks prior to delivery to project site.

B. Samples for Verification: For each of the following:

1. Leaf Mulch: 1-quart volume of each organic mulch required; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and organic makeup.
2. Bark Mulch: 1-quart volume of each organic mulch required; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and organic makeup.
3. Tree Grates, Frames, and Accessories: One (1) of each tree grate and frame specified, per plan, delivered to the site for review, to verify design and color selected.
4. Structural Soil: 1-lb. sample

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified landscape Contractor. Include list of similar projects completed by Contractor demonstrating Contractor's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.

B. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:

1. Manufacturer's certified analysis of standard products.
2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.

C. Material Test Reports: *For amended soil , refer to Division 31 Section "Bioretention"*

1. Organic content and pH measurement of Clay Loam shall be in accordance with AASHTO T194 and ASTM D4972, respectively.
2. Organic content and pH measurement of structural soil mix shall be in accordance with AASHTO T194 and ASTM D4972, respectively.
3. Gradation of Open Graded Stone for Structural Soil mix shall be in accordance with ASTM D422-63.
4. Gradation and clay content of Clay Loam shall be in accordance with ASTM D422-63.
5. Gradation and clay content of structural soil mix shall be in accordance with ASTM D422-63.

D. Field Control Tests:

1. An adequate number of field control tests shall be taken and documented to demonstrate that Structural Soil meets the required parameters and is uniform.

   a. Two samples per Structural Soil batch prior to placement.
   b. Two samples within each Structural Soil facility.

E. Invoices: Vendor or grower's invoice for each shipment of plants shall show botanical name, common name, size, quantity by species, location where grown, and root treatment of plants.

F. Warranty: Sample of warranty.

1.6 QUALITY ASSURANCE

A. Contractor Qualifications: A qualified landscape Contractor whose work has resulted in successful establishment of plants.

1. Professional Membership: Contractor shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
2. Experience: Five years' experience in landscape installation in addition to requirements in Division 01 Section "Quality Requirements."
3. Contractor's Field Supervision: Require Contractor to maintain an experienced, full-time supervisor on Project site when work is in progress.
4. The Contractor shall comply with all federal, state and local ordinances, and permits issues for the project.

B. Soil-Testing Laboratory Qualifications: An independent or university laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.

C. Soil Analysis: For each non-amended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; deleterious material; pH; and mineral and plant-nutrient content of the soil.

1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
2. The soil-testing laboratory shall oversee soil sampling; with depth, location, and number of samples to be taken per instructions from Landscape Architect. A minimum of three representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes.
3. Report suitability of tested soil for plant growth.

   a. Based upon the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory amended topsoil suitable for healthy, viable plants.
   b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.

D. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.

E. Measurements: Measure according to ANSI Z60.1 'American Standard for Nursery Stock'. Do not prune to obtain required sizes.

1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements 6 inches above the root flare for trees up to 4-inch caliper size, and 12 inches above the root flare for larger sizes.

2. Other Plants: Measure with stems, petioles, and foliage in their normal position.

F. Plant Observation: Landscape Architect may observe plant material either at place of growth or at site before planting for compliance with requirements for genus, species, variety, cultivar, size, and quality. Landscape Architect retains right to observe trees and shrubs further for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.

G. Plant Substitutions: Must be approved in writing by the Landscape Architect following proof of non-availability and proposal for use of equivalent material. For proof of non-availability, submit a list of resources queried.

H. Pre-installation Conference: Conduct conference at Project site a minimum of seven(7) days prior to beginning work to review Planting Schedule, Planting Plan and Specifications.

1. Conference to include Landscape Architect, Owner's Representative, Contractor, and Contractor's Field Supervisor.

2. Coordinate Pre-installation Conference with Landscape Architect & Owner's Representative.

3. Notify all parties of Preinstallation Conference a minimum of five (5) days prior to conference.

I. Installation Conditions: Submit to Landscape Architect date and conditions at time of installation, including weather (temperature, winds, precipitation, etc) and soil conditions.

1. Reference Later

J. Approval and Selection of Materials and Work: The selection of all materials and the execution of all operations required under the specifications and drawings are subject to the approval of the Landscape Architect. He has the right to reject any and all materials and any and all work, which, in his opinion, does not meet the requirements of the contract documents at any stage of the operations. The Contractor shall remove rejected work and/or material from job site and replace immediately.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws if applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk mulches and soil amendments with appropriate certificates.

C. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.

D. Handle planting stock by root ball.

E. Store bulbs, corms, and tubers in a dry place at 60 to 65 deg F until planting.

F. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.

1. Set balled stock on ground and cover ball with soil, or other acceptable material.
2. Do not remove container-grown stock from containers before time of planting.
3. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly-wet condition.

1.8 PROJECT CONDITIONS

A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.

B. Interruption of Existing Services or Utilities: Do not interrupt services or utilities to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary services or utilities according to requirements indicated:

1. Notify Owner no fewer than two (2) days in advance of proposed interruption of each service or utility.
2. Do not proceed with interruption of services or utilities without Owner's written permission.

C. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Do not plant when weather conditions are unfavorable such as high winds, or wet or muddy conditions.

1.9 WARRANTY

A. Warranty: Contractor agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Death and unsatisfactory growth, except for defects resulting from abuse, or neglect by Owner, or incidents that are beyond Contractor's control.
b. Structural failures including plantings falling or blowing over.
c. Faulty performance of tree grates.
d. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Periods from Date of Substantial Completion:

a. Trees, Shrubs, and Vines: 24 months.
b. Grasses, Forbs, Perennials, and Other Plants: 24 months.

3. Include the following remedial actions as a minimum:

a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season,

b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
c. Replace woody material that have lost their natural shape due to dead branches.
d. A limit of one replacement of each plant will be required except for losses or replacements due to failure to comply with requirements.
e. Fully restore areas damaged by replacement operations to their original and specified conditions.
f. Provide extended warranty for period equal to original warranty period, for replaced plant material. In the event that a replacement plant is not acceptable during or at the end of said extended guarantee, the Landscape Architect may elect subsequent replacement or credit for that item.

B. Warranty/Performance Standards:

1. At the end of the Warranty Maintenance Period and at the time of final acceptance the following performance standards shall be met:

a. 100% of the woody material shall be alive and growing in a healthy condition.
b. 95% of the planted plugs and container-grown plants shall be alive and growing in a healthy condition.

C. Special Requirements:

1. When Warranty & Maintenance is a seperately-bid item, all conditions set forth in this specification shall be met. Any deviation from this specification in separately-bid items, without written consent from the Landscape Architect & Owner, will be considered non-compliant. When a Warranty & Maintenance is a separately bid item, this also establishes the beginning of the warranty period.

a. Final acceptance will not be granted until all separately-bid Warranty & Maintenance items are agreed upon by Contractor, Owner & Landscape Architect in writing.

PART 2 - PRODUCTS

2.1 PLANT MATERIAL

A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant Schedule shown on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

1. Trees with damaged, crooked, or multiple leaders; trees with broken or cut back terminal leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling roots will be rejected.
2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery.
3. Do not prune trees and shrubs before delivery.
4. Plants designated as plugs shall be rown in containers with sidewall grooves, ribs, or slits and a minimum of 2-1/2" in diameter by 5-1/2" inches.

B. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Landscape Architect, with a proportionate increase in size of roots or balls.

C. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which shall begin at root flare according to ANSI Z60.1. Root flare shall be visible before planting.

D. Labeling: Label each plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant as shown on Drawings.

E. If formal arrangements or consecutive order of plants is shown on Drawings, select stock for uniform height and spread, and number the labels to assure symmetry in planting.

2.2 ORGANIC SOIL AMENDMENTS

A. Compost: Refer to Division 31 Section “Bioretention”.

2.3 FERTILIZERS

A. Do not apply fertilizers unless coordinated with and approved by the Landscape Architect.

2.4 PLANTING SOIL

A. Amended Topsoil: Refer to Division 31 Section "Bioretention".

B. Topsoil: Verify suitability of existing surface soil to produce viable planting soil. Remove stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth.

1. Amend Existing in-place soil in top 6" with 3-4" stable Organic Matter.

2.5 STRUCTURAL SOIL

A. Structural soil shall be a mixed in the following proportions.

1. Open Graded Stone for Structural Soil: 100 lbs
2. Clay loam: 25 lbs
3. Tackifier: 0.5 oz dry
   a. Type: Gelscape® Hydrogel Tackifier or approved equal.

B. Clay loam soil: Soil shall be a “loam” with a minimum clay content of 20% or a “clay loam” based on the Unified Soil Calssification system as determined by mechanical analysis (ASTM D-422) and it shall be of uniform composition, without admixture of subsoil. It shall be free of stones, lumps, plants and their roots, debris and other extraneous matter. It shall not contain toxic substances harmful to plant growth. Clay loam shall contain not less than 2% or more than 5% organic matter as determined by the loss on ignition of oven-dried samples. Test samples shall be oven-dried to a constant weight at a temperature of 230 degrees F., plus or minus 9 degrees.

1. Mechanical analysis for the loam or clay loam shall be as follows:

Textural Class	% of Total Weight
Gravel	less than 5%
Sand	20-45%
Silt	20-50%
Clay	20-40%

2. Chemical analysis: Meet, or be amended to meet the following criteria:
   a. pH between 5.5 and 6.5
   b. Percent organic matter 2% - 5% by dry weight
   c. Soluble salt less than 1.0 mmho/cm
   d. Cation Exchange Capacity (CEC) greater than 10
   e. Carbon/Nitrogen ratio less than 33:1

3. Loam or clay loam shall not come from, USDA-classified prime farmland.

C. Mix: Structural soil shall be thoroughly mixed prior to placement, and shall meet the following properties in accordance with ASTM D422-63. Tests shall be submitted for two discrete samples per structural soil batch and approved by the Owners authorized representative prior to placement:

1.	Proportion of Clay Loam Soil	18% - 22%
2.	Proportion of Open Graded Stone	78% - 82%
3.	Tackifier	< 0.05%

2.6 pH $6.5 \leq pH < 8.5$MULCHES

A. Bark Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:

1. Type: Premium Hardwood Bark Mulch. Double-shredded, well-composted, clean, free from branches, free of pieces over 2” in length, free of foreign matter and free of insects

   a. Size Range: 2” maximum, ½ minimum. No greater than 10% fines.
   b. Color: Natural. No color additives applied.

B. Leaf Mulch: Free from deleterious materials and suitable as a top dressing of grasses, perennials, forbs & vines, consisting of one of the following:

1. Type: Shredded Leaf Mulch. Composted to 60% maturity.

   a. Color: Natural. No color additives applied.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive plants for compliance with requirements and conditions affecting installation and performance. Notify Landscape Architect in writing of any unsatisfactory conditions.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Do not mix or place soils and soil amendments in high wind, frozen, wet, or muddy conditions.

3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected. Notify Landscape Architect in writing before proceeding.

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Landscape Architect and replace with new amended topsoil.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

C. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Landscape Architect's acceptance of layout before excavating or planting. Make minor adjustments as required.

D. Lay out plants at locations directed by Landscape Architect. Stake locations of individual trees and shrubs and outline areas for multiple plantings.

E. Fully protect all Permeable Paver installations from impact by soil and debris that results from planting installation. Any damage or impact that results from planting operations shall be promptly repaired to their original condition at no cost to the owner.

3.3 PLANTING SCHEDULE

1. Deciduous trees & shrubs: Sequence tree/shrub installation after completion of construction work including construction access. Trees & shrubs shall be planted before herbaceous planting. Preferred installation timeframe is April 15 to June 15 or September 1 to October 15.

2. Herbaceous Material Installation: Sequence herbaceous installation with completion of construction work and tree/shrub installation. Herbaceous material installation shall be installed between May 1 and June 15 or September 1 and October 15.

3. Bulb Installation: Install when material becomes available, after the first frost and before the ground freezes, but no later than November 15.

4. If special conditions arise which warrant installation outside the proposed planting timeframes, submit a request to the Landscape Architect describing conditions and stating the proposed variance. If approved, the installation contractor will be responsible for the supplemental watering at a frequency and duration for proper vegetation establishment and development.

3.4 PLANTING AREA ESTABLISHMENT

A. Bioretention Planter & Bioinfiltration Area (see L200):

1. Comply with specification Division 31 Section 'Bioretention'.

B. Maintenance Planting & Perimeter Planting (see L200):

1. Loosen subgrade of planting areas to a minimum depth of 4 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

   a. Thoroughly blend amended topsoil off-site before spreading.
   b. Spread amended topsoil to a depth of 12 inches but not less than required to meet finish grades after natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
   c. Spread approximately one-half the thickness of planting soil over loosened subgrade. Mix thoroughly into top 4 inches of subgrade. Spread remainder of planting soil.

2. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.
3. Before planting, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.5 EXCAVATION FOR TREE & SHRUB PLANTING

A. Planting Pits and Trenches: Excavate circular planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are not acceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.

1. Excavate approximately three times as wide as ball diameter for balled and burlapped & container-grown stock.
2. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
3. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
4. Maintain required angles of repose of adjacent materials as shown on the Drawings. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
5. Maintain supervision of excavations during working hours.
6. Keep excavations covered or otherwise protected after working hours.
7. If subsurface gravel storage is shown on Drawings or required under planting areas, maintain 6” minimum of soil below root ball.

B. Subsoil and topsoil removed from excavations may not be used as planting soil.

C. Obstructions: Notify Landscape Architect if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.

1. Hardpan Layer: Drill 6-inch- diameter holes, 24 inches apart, into free-draining strata or to a depth of 10 feet , whichever is less, and backfill with free-draining material.

D. Drainage: Notify Landscape Architect if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.

E. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

3.6 TREE & SHRUB PLANTING

A. Before planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.

B. Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.

C. Remove top ¾" soil in container-grown & balled and burlapped plants. Discard soil offsite to reduce weed seed germination.

D. Set balled and burlapped stock plumb and in center of planting pit or trench. See plan & details for location of root flare relative to finish grade.

1. Use amended topsoil for backfill.
2. After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
4. Continue backfilling process. Water again after placing and tamping final layer of soil.

E. Set container-grown stock plumb and in center of planting pit or trench . See plan & details for location of root flare relative to finish grade.

1. Use amended topsoil for backfill.
2. Carefully remove root ball from container without damaging root ball or plant.
3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
4. Continue backfilling process. Water again after placing and tamping final layer of soil.

F. Mulch: Per Section 3.8 'Mulching'.

3.7 TREE & SHRUB PRUNING

A. Prune, thin, and shape trees & shrubs according to standard professional horticultural and arboricultural practices. Unless otherwise indicated by Landscape Architect, do not cut tree leaders; and remove only injured, dying, or dead branches from trees and shrubs.

B. Do not apply pruning paint to wounds.

3.8 MULCHING

A. Protect planting areas from hot, dry weather or drying winds by applying mineral mulch within 24 hours after completing installation of topsoil, and tree & shrub planting, and PRIOR to Herbaceous planting.

B. Mulch backfilled surfaces of planting areas and other areas indicated.

1. Planting Areas: Apply 1.5"-2" inch thickness of Leaf Mulch over whole surface of planting area, and finish level with adjacent finish grades.

2. Trees in Planting Areas: Apply Bark Mulch in ring of 3-inch average thickness, with a minimum 18-inch radius around trunks. Do not place mulch within 3-4" inches of trunks.

3.9 HERBACEOUS PLANTING

A. Install herbaceous plant material within specified timeframe as provided in Section 3.3 'Planting Schedule'. Planting may be installed through Leaf Mulch layer.

B. Remove top ½” to ¾” soil in container-grown plants. Discard soil offsite to reduce weed seed germination. . Do not remove soil from plugs.

C. Herbaceous plant zones and plant spacing shall be as per plan documents. Landscape Architect to verify layout and adjust species location in the field, before planting occurs.

D. Remove plants from containers, loosen roots and install in prepared soil.

E. Dig holes large enough to allow spreading of roots, and backfill with planting soil. Plant to a depth to sufficiently cover all roots. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water. Replace any mulch displaced during planting activities, to specified mulch depth.

F. Plants shall be moist at time of planting. Water thoroughly after planting, taking care not to cover plant crowns with wet soil. Apply water with care to not disturb soil and expose plant roots.

G. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

H. Do not fertilize, or apply PREEN or other pre-emergent herbicide to planted areas.

3.10 BULB PLANTING

A. Store bulbs in a cool, dry palce before planting; do not allwo bulbs to dry out of become moldy. Install bulbs within specified timeframe as provided in Section 3.3 'Planting Schedule'.

B. Plant to a sufficient depth to assure the top of each bulb is covered with 3-4" of top soil without breaking off any sprout growth.

C. Allium: Plant 4" deep; 3-4" apart minimum or as directed on plans.

D. Narcissus: Plant 6-8" deep; 6" apart minimum or as directed on plans.

3.11 ESTABLISHMENT PERIOD

A. Maintain plantings by watering, weeding, mulching, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.

1. Do not let any weedy volunteer species flower or seed. Remove weedy volunteer species prior to flowering or seeding.
2. Do not let weedy volunteer species exceed 5% of total ground cover unless a different rate is agreed to in writing prior to contract award.

3. Hand weed and/or use of appropriate herbicide (by licensed applicator) at a minimum 12 times each growing season during the maintenance period. Submit dated time sheets of required maintenance operations to Design Professional.

   a. Hand pulling should include the removal of all aboveground and belowground stems, roots, and flower masses prior to the development of seeds. Care should be taken to disturb as little soil as possible during hand pulling to avoid exposure of additional weed seed in the soil layer. Maintain complete mineral mulch coverage.

4. Watering:

   a. Contractor shall provide temporary irrigation measures to water all areas as needed during warranty period.

   b. Provide sufficient supplemental irrigation to provide 2" water per week for the first 6 weeks after installation. Thereafter, provide supplemental irrigation sufficient to provide 1" water per week. The amount of supplemental irrigation may be calculated in accordance with average weekly rainfall if the Contractor maintains and monitors rain gauges on site.

5. Failure to comply with the above requirements shall result in an extension of the warranty and maintenance period.

B. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace leaf mulch materials damaged or lost in areas of subsidence.

C. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated past management practices whenever possible to minimize the use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

3.12 STRUCTURAL SOIL BASE COURSE

A. Structural Soil
   1. Where indicated, place structural soil to minimum thickness indicated in the drawings
   2. Shape structural soil to required crown elevations and cross-slope grades.
   3. Place structural soil 6 inches or less in compacted thickness in a single layer.
   4. Place structural soil that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
   5. Compact structural soil at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.

3.13 ACCEPTANCE

A. Substantial Completion: Notify the Landscape Architect in writing of the completion of planting.

   1. Within ten (10) calendar days after notification of completion of work, the Landscape Architect will inspect the work and prepare a Notice of Substantial Completion, along with a list of items the require completion or correction.
   2. Issuance of the “Notice of Substantial Completion” shall constitute the start of the Warranty Maintenance Period for any portion accepted.

B. At six-month intervals, from the time of substantial completion, the Landscape Architect, Contractor & Owner's representative will inspect and evaluate the growth and success of the plant material. If, during

these intermediate inspections, it is determined that the plant material is more than 25 percent dead or in an unhealthy or unsightly condition, the Contractor shall remove and replace plant material immediately.

C. Periodic inspections will be made from time to time by the Landscape Architect to review the quality and progress of the work. Work found to be unacceptable must be corrected within fifteen (15) calendar days

D. Final Acceptance Inspection: The final inspection of all plantings will be made by the Landscape Architect. Before final acceptance shall be made, the terms of the warranty shall be met.

1. Acceptance of all planting will be granted after warranty conditions and warranty performance standards are met and all materials are viable and vigorous, free of insects and diseases, firmly rooted and reflect industry standards of appearance.

E. If all of the above and the warranty conditions are met, the work will be accepted. If not accepted and the work is deemed by the Landscape Architect to be an installation failure, the contractor shall replant the appropriate zones at no additional cost to the owner.

3.14 CLEANUP AND PROTECTION

A. During planting, keep adjacent paving and construction clean and work area in an orderly condition.

B. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.

C. After installation and before Substantial Completion, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

3.15 DISPOSAL

A. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Owner's property.

END OF SECTION 329300

UNILOCK PRODUCT CARE

Thank you for choosing Unilock products for your landscape project. Whether your investment includes a small walkway, a large driveway or a complete landscape project, we want you to enjoy the benefits of Unilock products to the fullest. For the most part, Unilock pavers require no maintenance. However, certain environmental conditions and certain types of use may require some additional care and maintenance to enable you to enjoy your Unilock installation for years to come.

Take a few moments to determine if your installation requires additional care.

Taking a few moments to read this brochure will help you determine what, if any, additional care may be required for your project. By doing so, you will be able to maximize the benefits of owning a Unilock paving stone installation and avoid any unexpected problems.

General Maintenance

When correctly installed and maintained, all Unilock products will provide a durable and pleasing surface for years to come. However, like many things around the home, periodic maintenance is needed to maintain the beauty and integrity of your installation.

A general cleaning performed each spring using a coarse-bristle "stable" broom and Unilock's General Purpose Paver Cleaner, followed by the application of a granular weed preventative in the joints, can make all the difference. While dirt and algae stains are merely aesthetically unpleasing, some weeds, if left unaddressed, can push pavers apart from each other.

The joints between paving stones are undoubtedly the most vulnerable areas.

The joints between paving stones are undoubtedly the most vulnerable areas of any paving stone installation. Depending on the climate and amount of use, even the most expertly installed patio may require attention to the joints at some time in its life.

When using a garden hose to clean a paved area, you should direct water at the surface at an angle not greater than 30º and across the diagonal (i.e., not parallel to the joints as the intensity of the water stream may be too harsh and may dislodge the jointing sand). A power washer may be used but you must exercise caution to avoid damaging the surface of the pavers. Many pressure washers have enough power to expose the aggregate on the surface. Nozzle style, distance from the surface and pressure (psi) are all factors which can affect the outcome. We recommend that you always test the cleaning on several spare stones left over from the original installation.

Hold hose nozzle at 30 degree angle.

Finally, when using a cleaning product, the product must be thoroughly rinsed from the surface and channeled to suitable drainage points. Once the area has been cleaned, it should be inspected to ensure the integrity of the sand joints. Any eroded joints should be re-sanded as necessary.

Joint Sand Maintenance

Eroded joints should be re-sanded.

During the first few months after a new installation, the joints between the paving stones are relatively porous. The infiltration of rain or other water eventually consolidates the sand in the joints. However, with very sloped installations, the sand can potentially wash out of the joints. It is important that these joints be topped up with jointing sand to prevent the sand-bedding layer below from washing out, causing the pavers to settle. Keeping the joint sand topped up is also one of the best ways to prevent weed seeds from settling between the joints and germinating. To prevent weeds from taking root, we strongly recommend that paver joints be filled with Unilock Polymeric Jointing Sand. Preventing the sand from being washed or blown out of the joints is critical in this early period. Although regular jointing sand is acceptable for most applications, sloped areas, areas around swimming pools or any area subject to erosion should have Unilock Polymeric Jointing Sand swept into the joints at the time of installation. However, if regular jointing sand was used, you can also stabilize the joints by using Unilock Joint Sand Stabilizer Sealer.

Keep joint sand topped up to maintain the integrity of the project and to keep weeds out.

Over time, the joints in a paving stone installation will become established and the joints will no longer erode. However, if wash-out occurs, we recommend "retrofitting" the joints with Unilock Polymeric Jointing Sand to re-stabilize the joints. For extra-wide joints or areas subject to heavy erosion, use Unilock Polymeric Max.

If you decide that you would like to replace the regular sand in your paver joints with Unilock Polymeric Jointing Sand, you will need to first remove the existing sand. This can be done with a garden hose fitted with a jet nozzle, or it can be carefully done using a pressure washer. Care must be taken that no bedding sand from the area beneath the pavers gets washed out.

Product recommendation:

UNILOCK POLYMERIC JOINTING SAND or POLYMERIC MAX
These products are a special mix of graded sand and binder specifically formulated for achieving optimum lock-up of pavers or slabs by filling the joints between them. Unlike regular sand, Polymeric Sand resists insect penetration, weed growth and erosion.

Alternate recommendation:

UNILOCK JOINT SAND STABILIZER SEALER
This product is a special acrylic sealer designed to bind the sand particles in the paving stone joints. This sealer should be used in applications where the use of Unilock Polymeric Jointing Sand would be impractical. This sealer also provides some protection against the penetration of stains, without creating a film or glossy appearance on the surface of the stone. An additional regular sealer is not required with this product.

Cleaning

General Cleaning

Always trial clean first. If there is no negative surface or color reaction, proceed.

Cleaning is an essential step in preparing for the sealing of concrete pavers. Depending on the age of the installation and the intensity of use, the area should be inspected for any stones that may have been damaged. The perfect time to replace these stones is prior to cleaning. It is always a good idea to keep some of the stones left over from your installation for this purpose.

Make sure that any adjacent flowers, plants or shrubs are pulled back or covered to protect them from the over-spray of cleaning and sealing solutions. Before using any cleaning solution on an entire area, always test a small inconspicuous area to be sure that the results are what you expect and that there is no reaction to other sealers or substances which may have been applied to the installation previously. If there is no negative surface or color reaction, proceed with cleaning the entire area. Always rinse the cleaning solution off thoroughly.

Important note: Be sure to read and follow the directions printed on container labels for use, application, precautions and first aid. Protective clothing and goggles must be worn when working with cleaners and sealers.

Spills should always be soaked up and not rubbed.

Some cleaning systems mix water and a cleaning product together in a spray. The force of the spray depends on the flow and pressure in the hose, the type of nozzle, and the distance and angle between the nozzle and the surface. Care must be taken not to blow or wash the sand from the joints. Sand will remain in the joints if a "fan" spray nozzle is used and the angle of the spray is kept from directly blasting (or targeting) the joints.

Removing Grease and Oil Stains

Much like your indoor kitchen, your outdoor kitchen may require cleaning. Certain stains, such as those from soft drinks, barbeque grease, cooking or salad oils, or snack foods, can be stubborn to clean. Old stains resulting from oil dripping onto a driveway from a vehicle can also be difficult to remove. Oil will penetrate readily into a paved area but will not stain if the spill is removed promptly with granular oil absorbent. Spills should be soaked up, not rubbed, because rubbing will spread the oil over a larger area, driving the stain deeper into the concrete. Hint: Always keep some paper towels handy in the garage, as well as a small pail of oil-absorbent material such as cat litter, for those unexpected spills. For very small oil spills, a small amount of laundry detergent may also work.

Product Recommendation:

UNILOCK GENERAL PURPOSE CLEANER

This cleaner removes dirt, grease and oil from paving stones and concrete. It removes ground-in dirt and can be used on unsealed or previously sealed surfaces. An oil spot that has soaked into the concrete may resurface 24 hours after cleaning. If this happens repeat the cleaning process. An oil stain on a light-colored surface may still be slightly noticeable after cleaning, but it can be significantly lightened by using Unilock Paint and Tar Remover.

Removing Efflorescence

Efflorescence is a naturally occurring powder-like deposit, usually white, that occasionally develops on the surface of concrete, often just after an installation is completed. Although unattractive, efflorescence is usually not a problem and will generally disappear on its own over time.

Efflorescence generally disappears over time.

Efflorescence is caused by the soluble salts in the raw material used in manufacturing, and may react with moisture, humidity and frequent temperature fluctuations. These elements wick any salts that are present to the surface. In the summer, after periods of rain, the moisture evaporates so quickly that small amounts of salt are brought to the surface.

Sometimes there are white deposits on the surface which resemble efflorescence but are actually stains resulting from salts wicked to the surface from the actual jointing sand or even the bedding sand below the surface. These salts come to the surface in repeated wetting and drying situations. These stains too will eventually disappear. The best way to treat an affected area remains open to debate, with natural weathering, time and patience being the recommendation of many. If you wish to speed up the cleaning process, you can remove any surface efflorescence with an appropriate cleaner. This cleaner can be somewhat abrasive, so a trial clean on a small inconspicuous area is recommended before you tackle the entire job.

Product Recommendation:

UNILOCK EFFLORESCENCE REMOVER
This product is specially formulated to dissolve efflorescence (whitish salt deposits) and remove ground-in dirt on paving stones and concrete, without discoloring or damaging surfaces. It cleans evenly and enables the sealant to better penetrate the pavers.

Important note: Efflorescence can be minimized by avoiding the use of base and jointing materials such as limestone screenings or slag. Properly graded and washed jointing sand is also recommended over regular pit sand.

Removing Rust

The intensity and age of a rust stain determines whether you can get it out.

Whenever steel or iron sits on concrete for a period of time, the rust-colored oxidation that develops on the metal will wash onto the paver surface, resulting in a stain. Trailer hitches, barbecues, screws, nails and metal toys are some of the usual offenders. Removing rust stains can be challenging. The intensity and age of the stain will affect the outcome of the cleaning. Deeply embedded rust stains require the application of Unilock Rust Remover, which is an acidic solution designed to dissolve and remove rust stains. Unilock Rust Remover will generally not damage or discolor the surface of the paver, and will effectively remove the stain. However, if several applications are required to remove the stain, there may be some surface etching. Rust on light gray pavers is also more difficult to clean than stains on darker pavers.

Product Recommendation:

UNILOCK RUST REMOVER
This is specially formulated to remove rust stains on paving stones and concrete, without discoloring or damaging surfaces. It will also remove efflorescence where present. If this product leaves a darker area where applied you may wish to clean the entire surface with Unilock Efflorescence Remover to make the surface more uniform.

Removing Paint, Tar or Tire Marks

In general, tire marks can easily be removed.

From time to time a more serious stain will be caused – by a paint can tipping over or someone tracking in tar from a neighboring property or the street. Rubber tires can also mark up a beautiful installation. Tire marks are usually due to a combination of factors. When the weather is hot and both the tires and the paving stone driveway are new, you may get some marking. If you were to look at one of the stones under a microscope you would see tiny particles of rubber clinging to the surface of the stone. New paving stones are generally a little more abrasive than older pavers are. The tiny aggregate particles on the surface will sometimes remove tiny particles of rubber from a tire, especially a new tire or one with the rubber softened by design or temperature. Always avoid turning a tire needlessly on a paver surface. The vehicle should always move and turn simultaneously in a non-aggressive manner. The good news is that rubber markings are easily removed and can sometimes be removed simply by weather, or water along with a light scrubbing.

Product Recommendation:

UNILOCK PAINT, TAR AND RUBBER REMOVER
This cleaner removes paint, tar, rubber, chewing gum and other sticky substances from paving stones and concrete slabs. Follow directions on the container for best results.

Removing Moss

Moss can be removed with a simple solution of 20% soap and 80% water.

Moss is one of those things that one person considers a nuisance and another considers attractive, adding to the "country" or "old English" look and feel of the installation. Moss generally develops in shaded areas that are slow to dry up after rain. (West coast installations are particularly subject to the emergence of moss.) If you want to remove moss, it is recommended that you simply pressure wash the surface after applying a solution of 20% dish soap and 80% water to the surface. Do not use the pressure washer on high power when rinsing, or you risk damaging the surface. Always keep the nozzle at a 30° angle to the surface and use the fanned nozzle setting. If some jointing sand washes out, you may need to sweep in some new sand.

Removing moss may need to be done annually, depending on the location and conditions. Hint: If you like the look of moss but do not like its staining aspect, you can plant some creeping thyme seeds into the joints. This may not be suitable for all paving stone styles, but certainly is for those styles with large joints. This type of planting is not recommended on driveways or where surface integrity is critical.

Product recommendation:

UNILOCK GENERAL PURPOSE CLEANER
You may also try warm water and dish soap; however, if the moss is ground in by foot traffic, UNILOCK GENERAL PURPOSE CLEANER will do a much better job.

Removing Stains Caused by Plants

Plant stain removal usually only requires water.

Trees can stain paving stone surfaces in a number of ways. Flowers, fall leaves, birch tree branches and certain seed pods can leave stains on the surface when combined with moisture. In the majority of cases, several rains or the passing of a winter will resolve the issue naturally, but the combination of moisture and the branches from young birch trees (the brown stems) can stain in mid-season even after a heavy rain.
A light pressure washing or the application of copious amounts of water in combination with a light scrubbing will yield favorable results. Common dish soap or Unilock General Purpose Cleaner will also accelerate the cleaning.

Product Recommendation:

UNILOCK GENERAL PURPOSE CLEANER

SEALING

Sealers enhance the color and give your pavers a wet look.

There are basically two types of Unilock Protective Sealers. One is a solvent-based thermoplastic acrylic protective sealant and the other is a water-based thermoplastic acrylic emulsion. Both are effective in protecting your paver surface from the penetration of dirt and oil-based stains. Both types will enhance the original color of the units and give them a satin "wet" look. Be sure to read the label instructions carefully when cleaning and sealing.

Unilock Semi-Gloss Protective Sealer (solvent based)

Unilock Semi-Gloss Protective Sealer is a micro-porous transparent resin that protects pavers and slabs made of concrete. It reduces oil and dirt penetration and makes cleaning easier. Easy to apply with a foam roller or sprayer, it penetrates deeply for maximum effectiveness and durability. Unilock Protective Sealer will not peel or discolor and is capable of resisting the effects of people's use and nature (rain, snow, ice, vehicle tires, etc.).

Unilock Wet-Look Finish Protective Sealer (water based)

Easy to apply with a foam roller.

Unilock Wet-Look Finish Protective Sealer is a color-enhancing micro-porous transparent resin that protects pavers and slabs made of concrete. It reduces oil and dirt penetration and makes cleaning easier. Easy to apply with a foam roller or sprayer, it penetrates deeply for maximum effectiveness and durability.

Note: Sealers should not be applied more than once in three years, to a maximum of two applications. Too many applications will create a film on the surface which may discolor in sunlight.

Caution: When using chemicals to clean paving stones, the manufacturer's instructions should be carefully read and strictly adhered to. In general, the following precautions should be taken:

- When using chemicals, wear protective clothing such as gloves, goggles, boots and overalls.
- Proper ventilation is required for confined spaces when using chemicals.
- When using any chemicals, take care not to damage, contaminate or stain any adjoining material.
- When diluting acids, ALWAYS add acid to water and not water to acid.
- Any clothing that is contaminated with chemicals should be disposed of safely. Do not wash it with your regular clothing.

- Take care to protect personnel working in the area of the cleaning from any injury or hazard created by the cleaning.
- Dispose of any run-off material carefully.
- Empty containers must be disposed of at your local household hazardous waste return facility.

Winter Maintenance and De-icing

Unilock paving stones have some of the highest compressive strength and lowest water absorption levels in the industry.

If there is one question that remains in the minds of many people, it's the question about the performance of paving stones during the winter. The question covers such concerns as durability, skid resistance, snow clearing and de-icing.

Durability is one of the things that Unilock paving stones are known for. Unilock paving stones have some of the highest compressive strength and lowest water absorption levels in the industry. The advantage of this is that the concrete will not absorb and trap water in its micro-voids, minimizing the risk of any water freezing and expanding, ultimately damaging the concrete.

Skid resistance is one of the greatest benefits of Unilock paving stones. Many styles of Unilock paving stones have excellent skid resistance because of their textured surface. If skid resistance is a concern because of a sloped surface, you should select a Unilock textured surface for all or part of the installation.

To be safe, always use a plastic snow shovel.

Snow clearing on paving stone surfaces is much easier than you think. Almost all Unilock paving stones have a slight bevel around the edge of the stone. Not only does this facilitate the movement of rainwater across the surface, but it also protects the edges from potential chipping by snow clearing equipment. We recommend that you always use a plastic snow shovel for paving stones. This means that your snow blower should also be fitted with a plastic shoe on the adjustable gliders and on the scoop edge. Hint: If you hire someone to plow your driveway, you must have your snow clearing firm confirm in writing that it has protective edges on the snowplow to avoid scratching the surface. Although the metal on snow clearing equipment will not adversely affect Unilock paving stones structurally, the contact of any steel on concrete can potentially leave tiny particles of metal in the surface of the concrete which will rust and leave unsightly brown streaks after a couple of months. (A good example of this can be seen on the municipal curbs at the street. Take a close look and you will see what the snowplows have done.)

De-icing substances, when used in proper amounts, will not damage good-quality concrete. They will, however, speed up the surface wear on some styles of pavers. Many of the exposed aggregate products and tumbled products are unaffected by virtue of their style.

There are four types of de-icing salts:

De-icing substances won't generally damage concrete.

- Sodium chloride (common rock salt) is the most popular de-icing salt. It is widely available and it will melt snow and ice at temperatures down to approximately 16° F (-9° C). Below 16° F (-9° C), rock salt stops melting snow and ice. Sodium chloride can damage adjacent grass, plants and metal. Apply with caution and use as sparingly as possible.

- Mix with sand to increase effectiveness and to reduce the amount of salt used. Do not use calcium chloride, potassium chloride or magnesium chloride. These will have harmful effects on the concrete.

Hint: If you do not know what is in your de-icing material, do not use it on concrete surfaces; just use sand to prevent slipping and sliding.

Note: Fertilizers that contain ammonium nitrate and ammonium sulfate should not be used for de-icing since these substances attack the integrity of concrete. Always read manufacturers' recommendations for use and heed all warnings and cautions.

Retaining Wall Maintenance

Unilock retaining walls, if installed properly, should be virtually maintenance free. If your retaining wall has efflorescence or any other stain on its face, you may use the same cleaners as described for pavers. One important thing to check for is loose coping. If coping was not adhered to the top of the wall or steps properly, it could result in injury. We recommend Unilock Concrete Adhesive for maximum adhesion strength. This adhesive is one of the strongest adhesives on the market and will provide years of performance.

Product Recommendation:

UNILOCK CONCRETE ADHESIVE
Use this adhesive wherever a permanent bond is desired between two concrete surfaces. It will also adhere to masonry brick, wood and unpolished metals.

Retaining walls are generally maintenance free.

We trust this information has been helpful. If at any time you wish to speak with a Unilock Representative, simply call us at 1-800-UNILOCK or visit www.unilock.com

Note: The recommendations regarding cleaning and sealing as described in this guide should provide you with enough information to properly maintain your paving stone or retaining wall installation. ALWAYS conduct a test on a small area or spare stone to make sure that the results are satisfactory. ALWAYS read product labels before applying anything. ALWAYS heed all product handling and safety warnings (MSDS information available at www.unilock.com).

Unilock is not liable for damages resulting from the improper use of equipment and/or cleaning and sealing solutions.

WARRANTY: Unilock's liability is limited to the replacement of the UNICARE® product only. Proof of purchase will be required for any claim.

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ILLINOIS GREEN INFRASTRUCTURE GRANT PROGRAM FOR STORMWATER MANAGEMENT

WOODLAWN CENTER NORTH APARTMENTS

33 NEW MIXED-INCOME HOUSING UNITS

Best management practices have been installed at this site to improve water quality within the Lake Michigan watershed.

FAA Number: IGIG1209

For more information, contact Illinois EPA at (217) 782-3362 or Preservation of Affordable Housing at (312) 283-0033

2013 RESIDENTIAL ENERGY EFFICIENCY AWARDS

CONGRATULATIONS TO THIS YEAR'S RESIDENTIAL ENERGY EFFICIENCY AWARD WINNERS

We started the Residential Energy Efficiency Awards five years ago to recognize the efforts of those who have successfully leveraged government funds to make U.S. homes healthier, more durable, and more efficient.

These are the stories of the men and women who have put their hearts and minds into finding solutions to our country's energy problems—starting in their own communities. We commend their hard work and dedication, and we hope you are as inspired as we are by their acts of innovation, leadership, and creativity.

This year's winners have raised the bar for residential energy efficiency by developing new models for investment, identifying sustainable revenue streams, designing incredibly healthy buildings, and training the workforce that will impact energy efficiency now and in the future. Here's how they did it.

By Sanyu Kyeyune

MULTIFAMILY AWARD

PRESERVATION OF AFFORDABLE HOUSING

Until the Preservation of Affordable Housing (POAH) intervened, Grove Parc Plaza was a run-down stretch of Section 8-assisted housing along Cottage Grove Avenue in Woodlawn on Chicago's South Side. The 504-unit complex, one of the most dilapidated in the city, faced foreclosure and demolition. POAH, a nonprofit organization whose mission is to restore at-risk affordable housing, tore down the existing structure and replaced it with Woodlawn Center South (WCS), a new LEED Silver-certified apartment building.

Before WCS, the layout of Grove Parc Plaza left dark, unpatrolled areas around entrances and walkways. Frequent crime, such as gang violence, fatal shootings, and robbery, drove retailers away and made joblessness rampant. Lack of access to technology or reliable Internet left residents disconnected from opportunities for self-advancement.

POAH saw in the 40-year-old complex an opportunity to bring stability and hope to Woodlawn. In 2008 the organization began meeting with residents to discuss how an energy- and water-efficient new construction could meet their needs. The residents welcomed the intervention and in December 2008 POAH opened a Chicago office and secured the site.

Photos courtesy of Landon Bone Baker Architects

Implementing a creative financial structure enabled POAH to break ground two years later. The organization pooled low-income tax credit equity from JP Morgan Chase, tax credit exchange funds from the Illinois Housing Development Authority, a low-income housing development grant from the City of Chicago, solar thermal grants, municipal funding, and private loans to finance WSC's construction, which took about a year.

Along with the LEED certificate, WCS earned a two-star rating from the Green Homes for Chicago program for employing sustainable design and construction methods. Every appliance in the building has an Energy Star rating. A super-insulated slab, walls, and roof; low U-value windows; and an airtight building envelope keep residents comfortable throughout the year.

POAH secured a $75,000 grant to build a system of pervious paving, catch basins that double as planting beds, rain gardens, a permeable walkway, planters, and patio pavements. The system keeps 100% of storm water on-site and returns it to the landscape to nourish native plants and reduce pollution and maintenance.

Four years after their initial meeting, POAH and WCS residents remain in contact. "When people move into our newer housing," said POAH's vice president, Bill Eager, "our property management meets with them. Part of the meeting is the orientation with what they can and are expected to do to help us maximize the efficiency of the building."

The revitalization of Woodlawn has only just begun. The completion of WCS kicks off a 5-year redevelopment effort that includes several new buildings, including a youth center, housing for seniors and market-rate buyers, and 65,000 square feet of commercial and retail space. A centerpiece of the project is the Woodlawn Resource Center, which gives the community access to job placement, financial counseling, literacy, education, and training opportunities. It also hosts community meetings, empowering residents to come together in a newly invigorated environment.

To finance the latest effort, POAH pursued and won a $30.5 million grant from the U.S. Department of Housing and Urban Development's (HUD) Choice Neighborhoods initiative in 2011. The initiative is part of HUD's reinvestment in distressed housing sites. It supports the creation of "neighborhoods of choice," with investments in community infrastructure, including new and renovated housing, schools, day care, health services, public safety programs, and other resources for residents.

POAH continues to invest in the Woodlawn community. The organization plans to monetize energy savings from the apartments and return the benefits to the neighborhood. "The housing we replaced was very old, obsolete, and in poor shape," said Eager. "Having something brighter and more welcoming has already changed the character and safety of Cottage Grove Avenue."

Preservation of Affordable Housing, Inc.

April 24, 2012

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Solar thermal panel on the roof of new affordable housing construction in Woodlawn captures the sun's energy to generate hot water

Woodlawn affordable housing receives EPA Green Infrastructure Grant

adds to redevelopment's environmental features

Preservation of Affordable Housing (POAH) has received a $75,000 Green Infrastructure Grant from the Illinois Environmental Protection Agency (EPA) to help reduce pollution of Illinois waterways through environmentally-based landscaping at its new development in the Woodlawn neighborhood of Chicago.

This will add another component to the greening of its Woodlawn properties that includes a solar thermal hot water system and green spaces at its South Cottage Grove Avenue apartment buildings in addition to Energy Star appliances, extensive storm water retention systems, super insulation and tight building envelopes in the other buildings being renovated.

The grant, which was announced to coincide with Earth Day, will help POAH protect the state's water quality through the creation of rain gardens, permeable pavements and planters. "Green infrastructure" refers to storm water management practices with the goal of preserving or restoring natural hydrology and includes methods of using soil and vegetation to promote soil percolation, evapotranspiration and filtration.

"Green Infrastructure Grants are another one of the Agency's tools to control stormwater pollution in Illinois," said Illinois EPA Interim Director John Kim through the agency's press release. "Well over half of the impairments to Illinois waterways are due to nonpoint source and stormwater pollution and it comes from many different sources," he said.

"This grant from EPA will help us expand our comprehensive greening program that is an important part of the revitalization of the former Grove Parc site," said POAH Chicago Development Director Bill Eager.

The first new construction on Cottage Grove Avenue south of 61stStreet in decades the buildings on either side of the street are LEED (Leadership in Energy and Environmental Design) designed. POAH also recently completed a $1.5 million renovation of a three-story apartment building at 64thStreet and S. Maryland Avenue, where 12 families are now enjoying newly renovated apartments with energy efficient appliances, new windows, flooring and exterior tuckpointing – all of which earned the building a two-star rating from Green Homes for Chicago.

"There was a time when the goals of creating environmentally-healthy housing, energy-efficient housing and affordable housing were not always in synch, but new technologies, materials and awareness have made it possible to change that perception, said Julie Klump, POAH Manager of Design and Technical Services

POAH is also using a Sustainability Training grant from Enterprise Communities to develop and implement a Living in a Green Healthy Home education program for the residents in the new and replacement housing.

Preservation of Affordable Housing, a nonprofit affordable housing developer with an office in Chicago, was one of the country's first four recipients of a green retrofit grant funded by the HUD Green Retrofit Program for Multifamily Housing in 2010.

In 2011, the Woodlawn team received a HUD Choice Neighborhoods Initiative implementation grant in the amount of $30.5 million to revitalize the distressed Section 8 Grove Parc Plaza Apartments, located on a 12-acre site at the heart of the Woodlawn community. The site was historically a barrier to investment in the surrounding blocks but today is being rebuilt as a vibrant, healthy and attractive mixed-use/mixed-income urban community developed through a collaborative planning process with a broad range of community stakeholders.

POAH owns and maintains 7,000 affordable housing units in nine states and the District of Columbia and is actively engaged in greening its portfolio through solar power generation, building envelope improvements, water fixture and lighting retrofits, equipment upgrades and comprehensive green retrofits that include all of these components.