STONEFIELD

STORMWATER OPERATIONS & MAINTENANCE MANUAL

ENCLAVE AT MILLINGTON
BLOCK 12301, LOT I & BLOCK 10100, LOT 7.01
DIVISION AVENUE & STONEHOUSE ROAD
MILLINGTON, TOWNSHIP OF LONG HILL
MORRIS COUNTY, NEW JERSEY

PREPARED FOR:

PRISM MILLINGTON, LLC

PREPARED BY:

STONEFIELD ENGINEERING & DESIGN, LLC
OCTOBER 25, 2019
T-17298

CHUCK D. OLIVO, PE, PP, PTOE NEW JERSEY PROFESSIONAL ENGINEER LICENSE #46719

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STORMWATER OPERATIONS & MAINTENANCE MANUAL **ENCLAVE AT MILLINGTON** OCTOBER 25, 2019

PROJECT DESCRIPTION

Prism Capital Partners is proposing the construction of a mixed-use multi-family and commercial development.

The subject property is designated Block 12301, Lot 1 & Block 10100, Lot 7.01, commonly known as 50 Division

Avenue. The subject property is located within the Millington, Township of Long Hill, MU-O Zone and is bounded

by an NJ Transit Railroad to the north, Division Avenue to the east, Stone House Road to the south, and the Passaic

River to the west.

The total project area is 518,332 SF (11.90 acres), the impervious surfaces has been reduced by 101,070 SF

(2.32 acres), and the total area of disturbance is 339,160 SF (7.79 acres). Project Figures can be found in Appendix

A of this Report.

This Stormwater Operations & Maintenance Manual has been prepared to analyze the potential stormwater

runoff impacts of the proposed project and discuss the measures proposed to conform to the stormwater

management requirements set forth by the Community of Millington within the Township of Longhill, Morris

County Soil Conservation District, and the New Jersey Department of Environmental Protection (NJDEP).

PROPOSED DEVELOPMENT

Under the proposed development plan, the project area will include a mixed-use family and commercial

development. The proposed development includes the construction of fourteen 10-unit multi-family residences, an

1,800 SF community building, a 4,992 SF retail building, and supporting improvements inclusive of parking facilities,

landscaping, utilities, site lighting, and stormwater management measures. The eastern portion of the site that is

within the limit of disturbance is being collected via the proposed conveyance system on site and either being sent

directly to the Passaic River or to the Municipal conveyance system via catch basins and 15" HDPE pipes.

3.0 STORMWATER MANAGEMENT OPERATIONAL PROCEDURES

Operation and maintenance of the permanent stormwater control BMPs shall be the responsibility of the

operator of the project site at the time that the applicable maintenance is required. The current owner and

responsible agent of the project is:

Prism Millington, LLC 200 Broadacres Drive, Suite 180 Bloomfield, NJ 07003

Phone: (201)-510-2032

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A copy of this report and shall be kept on-site at all times both during and after construction. Upon reviewing agency approval, the title and date of the maintenance plan as well as the contact information of the current agent responsible for maintaining the stormwater management measures for the project shall be recorded on the deed of the property on which the measures are located. Any future change in this information such as change in property ownership shall also be recorded on the deed.

The current responsible agent shall evaluate the maintenance plan for effectiveness at least annually and revise the plan as necessary. A detailed, written log of all preventative and corrective maintenance performed for each stormwater management measure must be kept, including a record of all inspections and copies of maintenance-related work orders. Upon request from a public entity with jurisdiction over the project area the responsible agent shall make available the maintenance plan and associate logs and other records for review.

3.1 Maintenance Equipment and Personnel

The current responsible agent shall ensure that adequate equipment and training is provided to maintenance personnel to perform the required maintenance tasks. Confined Space Entry Certification shall be required by personnel entering underground structures and pipes. The material and equipment necessary for inspection and maintenance activities shall include, but not be limited to, the following:

- Landscape Areas: Material and equipment customary in landscape maintenance practices.
- Street Sweeping: Litter vacuum or leaf/litter blower to collect sediment from asphalt surface, brooms, and disposal bags.

The estimated cost of routine, scheduled maintenance activities is estimated to be approximately \$6,500.00 per year. Approximate breakdown of yearly routine maintenance costs are noted below (excludes structural repairs):

MAINTENANCE COST BREAKDOWN

| Landscape Areas | \$3,000.00 per year |
|-----------------------------------|---------------------|
| Sediment Debris and Trash Removal | \$2,000.00 per year |
| Street Sweeping | \$1,500.00 per year |

4.0 STORMWATER BMP INVENTORY

The stormwater management measures incorporated into this development are listed below. The corresponding Field Manuals for the stormwater management measures are located in the Appendix of the Maintenance Plan.

4.1 GENERAL MAINTENANCE

The following general maintenance tasks shall be performed:

- All stormwater inlets and manholes shall be inspected for debris and sediment accumulation and structural
 integrity at least four (4) times annually. Debris and sediment removal shall be scheduled as required to
 maintain stormwater runoff conveyance efficiency and disposed of in compliance with all applicable local,
 state, and federal waste regulations.
- 2. Street sweeping shall occur at least once (I) monthly in all parking lot areas onsite. Regenerative air equipment shall be used.
- 3. Trash receptacles onsite shall be emptied, and their liners replaced at a minimum of three (3) times per week.
- 4. Landscaping within the developed portions of the site shall be trimmed/mowed twice (2) monthly during the growing season. Reforested portions of the site shall be left undisturbed to vegetate naturally.

5.0 STORMWATER BMP PREVENTATIVE MAINTENANCE ACTIONS

As per N.J.A.C. 7:8-5.8(b) & (e), preventative and corrective maintenance shall be performed to maintain the function of the stormwater management measure, including, but not limited to, repairs or replacement to the structure; removal of sediment, debris, or trash; restoration of eroded areas; snow and ice removal; fence repair or replacement; restoration of vegetation; and repair or replacement of non-vegetated linings

As per NJDEP BMP Manual Ch. 8 Feb. 2004), maintenance plans should include specific preventative and corrective maintenance tasks such as removal of sediment, trash, and debris; mowing, pruning, and restoration of vegetation; restoration of eroded areas; elimination of mosquito breeding habitats; control of aquatic vegetation; and repair or replacement of damaged or deteriorated components.

5. I GENERAL MAINTENANCE

A periodic inspection by the Township will be performed. The following general maintenance tasks shall be performed.

5.1.1 MONTHLY

- a. Street sweeping shall occur at least once (I) monthly in all parking lot areas onsite. Regenerative air equipment shall be used.
- b. Trash receptacles onsite shall be emptied, and their liners replaced at a minimum of three (3) times per week.
- c. Landscaping within the developed portions of the site shall be trimmed/mowed twice (2) monthly during the growing season. Reforested portions of the site shall be left undisturbed to vegetate naturally.

5.1.2 QUARTERLY

a. All stormwater inlets and manholes shall be inspected for debris and sediment accumulation and structural integrity at least four (4) times annually. Debris and sediment removal shall be scheduled as required to maintain stormwater runoff conveyance efficiency and disposed of in compliance with all applicable local, state, and federal waste regulations.

5.1.3 ANNUALLY

a. A submission to the Township from the owner of the end-of-year maintenance records will be required.

6.0 INSPECTION AND LOGS OF ALL PREVENTATIVE AND CORRECTIVE MEASURES

As per N.J.A.C. 7:8-5.8(f), the person responsible for maintenance shall maintain a detailed log of all preventative and corrective maintenance for the structural stormwater management measures incorporated into the design of the development, including a record of all inspections and copies of all maintenance-related work orders.

As per NJDEP BMP Manual Ch. 8 (Feb, 2004), a maintenance plan shall include a schedule of regular inspections and tasks, and detailed logs of all preventative and corrective maintenance performed on the stormwater management measure, including all maintenance-related work orders. The person with maintenance responsibility must retain and, upon request, make available the maintenance plan and associated logs and other records for review by a public entity with administrative, health, environmental, or safety authority over the site. Inspection Checklists in the Field Manual for the stormwater management measures on this site include:

- Appendix B-1: General Inspection Checklist Log
- Appendix B-2: General Preventative Maintenance Log
- Appendix B-3: General Corrective Maintenance Log
- Appendix B-4: Annual Evaluation Records

All inspection and maintenance activities shall be recorded to document frequency of inspection and maintenance, and implementation of corrective action. All regularly scheduled inspections, inspections following one (I) inch of precipitation, maintenance activities, and repairs shall be recorded. Refer to the Appendix of this Manual for the BMP Inspection & Maintenance Log for this facility. This log shall be considered a minimum standard for recording purposes, the Operator and Inspection/Maintenance Personnel are encouraged to supplement the Log with additional notes and photos.

7.0 Annual Evaluation of the Effectiveness of the Plan

As per N.J.A.C. 7:8-5.8(g), the person responsible for maintenance shall evaluate the effectiveness of the maintenance plan at least once per year and adjust the plan and the deed as needed.

The responsible party should evaluate the effectiveness of the maintenance plan by comparing the maintenance plan with the actual performance of the maintenance. The items to evaluate may include, but not limited to,

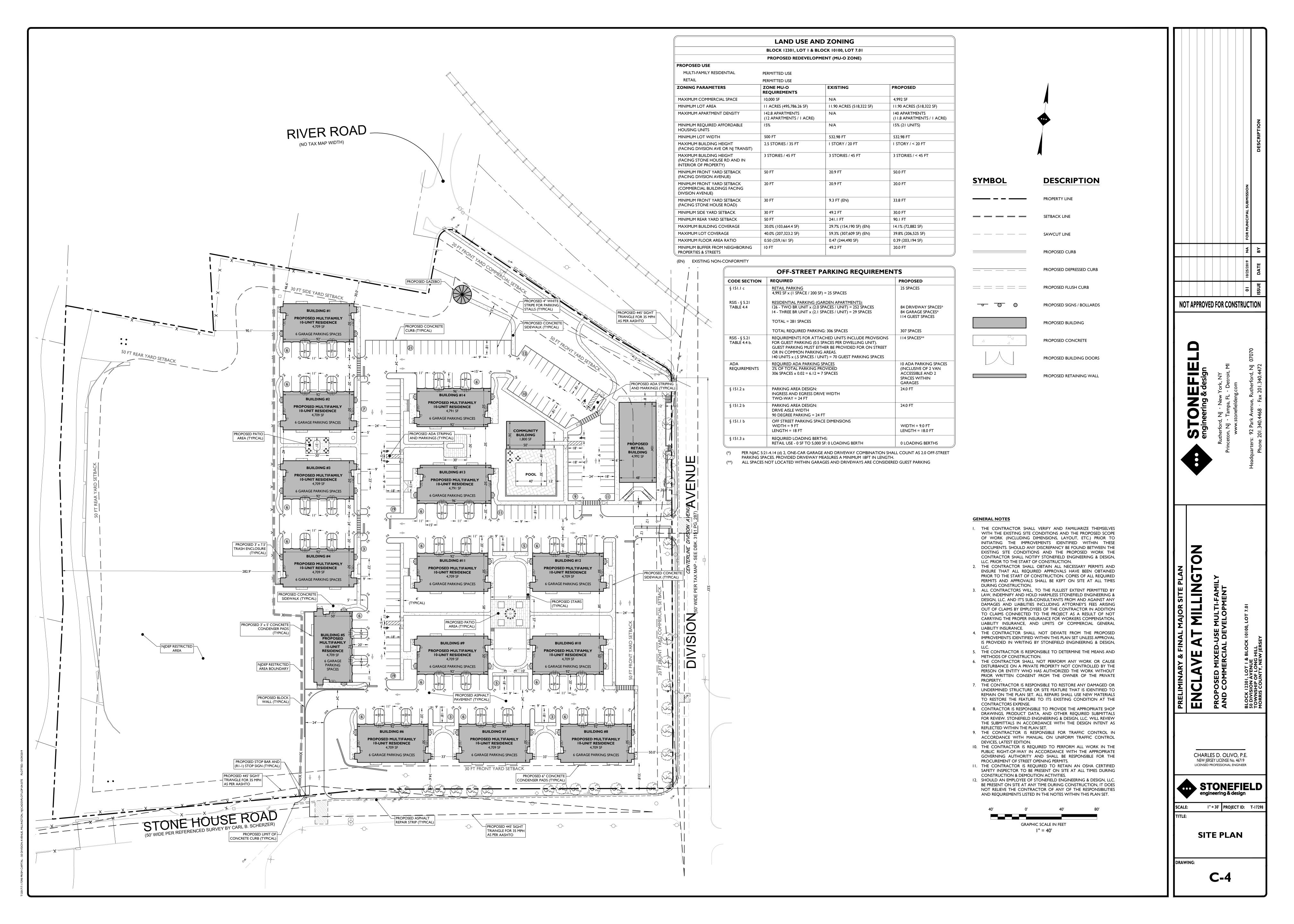
- Whether the inspections have been performed as scheduled;
- Whether the preventive maintenance has been performed as scheduled;
- Whether the frequency of preventative maintenance needs to increase or decrease;
- Whether the planned resources were enough to perform the maintenance;
- Whether the repairs were completed on time;
- Whether the actual cost was consistent with the estimated cost;
- Whether the inspection, maintenance, and repair records have been kept.

If actual performance of those items has been deviated from the maintenance plan, the responsible party should find the causes and implement solutions in a revised maintenance plan.

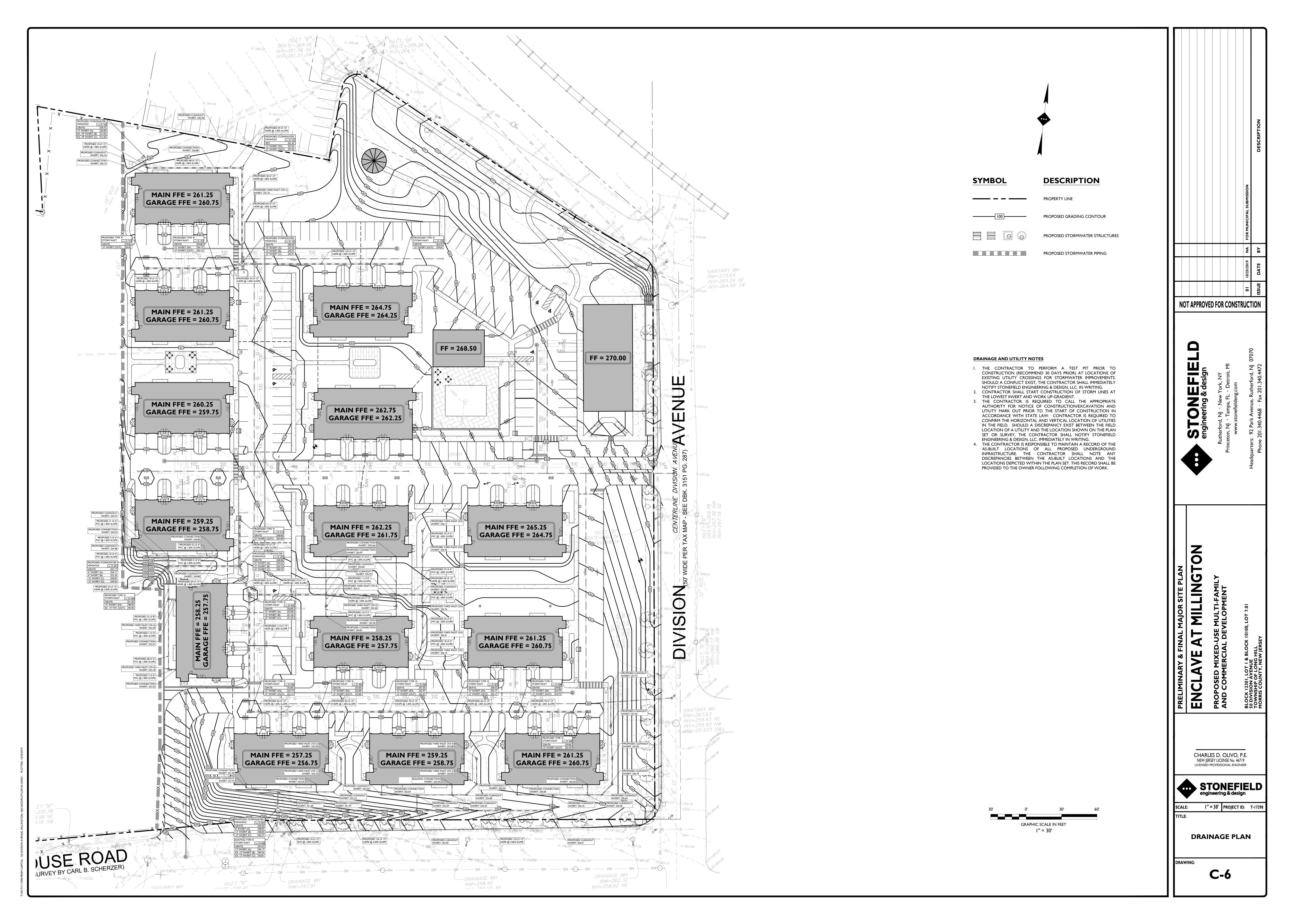
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APPENDIX A:
PROJECT PLANS
(NOT TO SCALE)

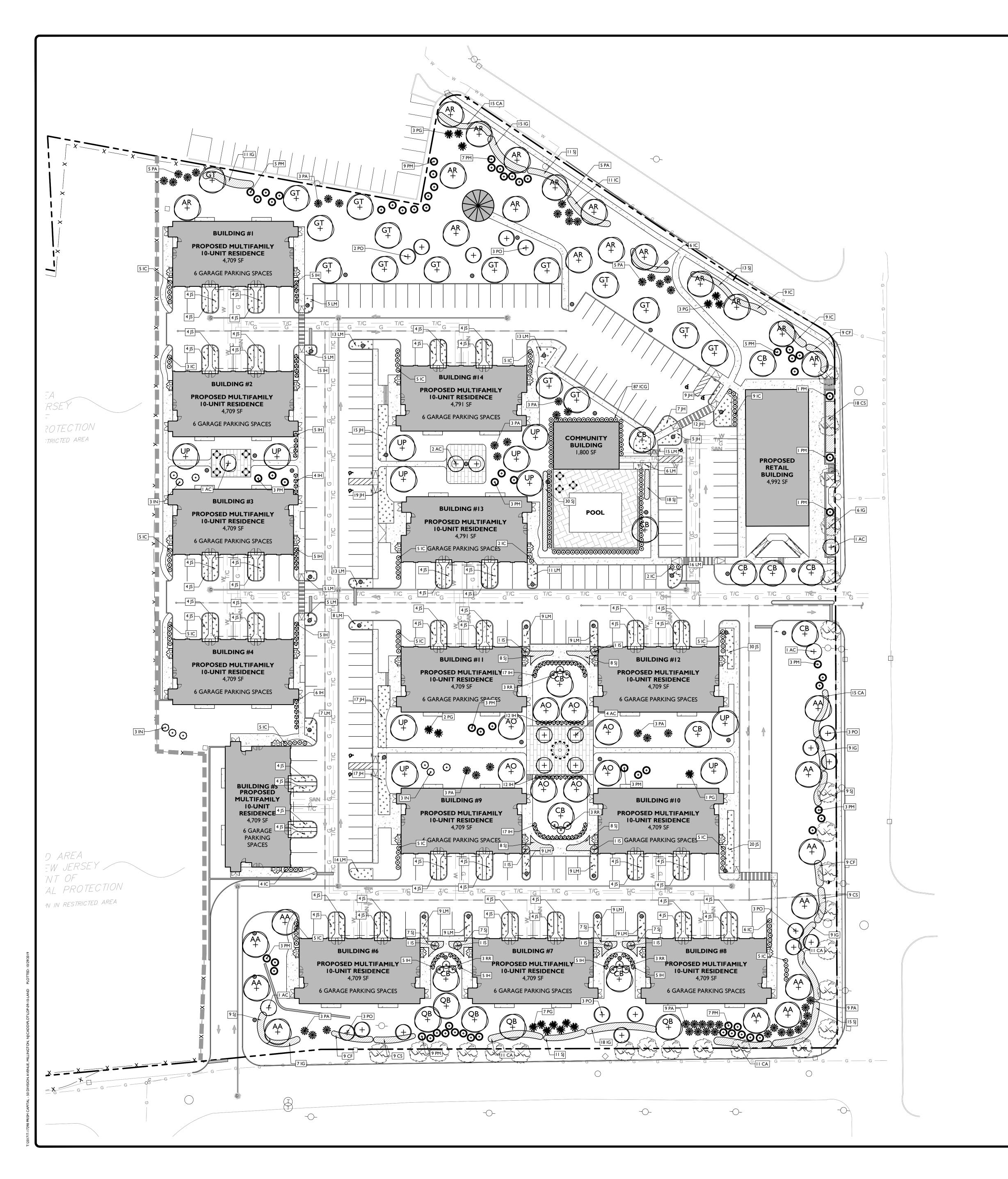
APPENDIX A-1: SITE PLAN

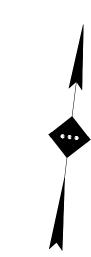


APPENDIX A-2: DRAINAGE PLAN



APPENDIX A-3: LANDSCAPING PLAN





PLANT SCHEDULE

ALL PLANTS TO BE UNIFORM WITHIN SPECIES, VIGOROUS, AND FULL.

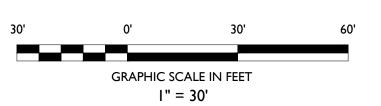
| QTY | KEY | BOTANICAL NAME | COMMON NAME | SIZE | REMARKS |
|-------------------------|-----|-------------------------------------|-----------------------------|--------------|---------------------------------|
| SHADE TREES | | | | | |
| H | AA | ACER RUBRUM 'ARMSTRONG' | ARMSTRONG MAPLE | 3" CAL. MIN. | B&B 7' MIN.CLR, STRAIGHT LEADER |
| 8 | AO | ACER RUBRUM 'OCTOBER GLORY' | OCTOBER GLORY RED MAPLE | 3" CAL. MIN. | B&B 7' MIN.CLR, STRAIGHT LEADER |
| 16 | AR | ACER RUBRUM 'RED SUNSET' | RED SUNSET RED MAPLE | 3" CAL. MIN. | B&B 7' MIN.CLR, STRAIGHT LEADER |
| 12 | CB | CARPINUS BETULUS 'FASTIGIATA' | UPRIGHT HORNBEAM | 3" CAL. MIN. | B&B 7' MIN.CLR, STRAIGHT LEADER |
| 16 | GT | GLEDITSIA TRIACANTHOS INERMIS | HONEY LOCUST | 3" CAL. MIN. | B&B 7' MIN.CLR, STRAIGHT LEADER |
| 5 | QB | QUERCUS BICOLOR | SWAMP WHITE OAK | 3" CAL. MIN. | B&B 7' MIN.CLR, STRAIGHT LEADER |
| II | UP | ULMUS AMERICANA 'PRINCETON' | PRINCETON ELM | 3" CAL. MIN. | B&B 7' MIN.CLR, STRAIGHT LEADER |
| ORNAMENTAL TREES | | | | | |
| 10 | AC | AMELANCHIER CANADENSIS | SERVICEBERRY | 8' - 10' HT. | B&B |
| 17 | PO | PRUNUS 'OKAME' | OKAME CHERRY | 6' - 8' | B&B |
| EVERGREENS | | | | | |
| 9 | IN | ILEX ATTENUATA 'NELLIE R. STEVENS' | NELLIE R. STEVENS HOLLY | 7' - 8' | B&B |
| 51 | PA | PICEA ABIES | NORWAY SPRUCE | 6' - 7' | B&B |
| 16 | PG | PICEA PUNGENS 'GLAUCA' | COLORADO BLUE SPRUCE | 6' - 7' | B&B |
| 66 | PM | PSEUDOTSUGA MENZIESII | DOUGLAS FIR | 6' - 7' | B&B |
| EVERGREEN SHRUBS | | | | | |
| 91 | IC | ILEX CRENATA | JAPANESE HOLLY | 24" - 36" | 5 GAL. |
| 87 | ICG | ILEX CRENATA 'GREEN LUSTRE' | GREEN LUSTRE JAPANESE HOLLY | 24" - 36" | 5 GAL. |
| 75 | IG | ILEX GLABRA | INKBERRY HOLLY | 24" - 36" | 5 GAL. |
| 113 | IH | ILEX CRENATA 'HELLERI' | HELLERI JAPANESE HOLLY | 24" - 36" | 5 GAL. |
| 8 | IS | ILEX CRENATA 'STEEDS' | STEEDS JAPANESE HOLLY | 24" - 36" | 5 GAL. |
| DECIDUOUS SHRUBS | | | | | |
| 63 | CA | CLETHRA ALNIFOLIA 'HUMMINGBIRD' | HUMMINGBIRD SUMMERSWEET | 12" - 18" | I GAL. |
| 27 | CF | CORNUS SERICEA 'BAILEYI' | RED TWIG DOGWOOD | 30" - 36" | 3 GAL. |
| 36 | CS | CORNUS SERICEA 'FLAVIRAMEA' | YELLOW TWIG DOGWOOD | 30" - 36" | 3 GAL. |
| 12 | RR | ROSA RUGOSA | RUGOSA ROSE | 12" - 18" | I GAL. |
| 176 | SJ | SPIREA JAPONICA 'LITTLE PRINCESS' | LITTLE PRINCESS SPIREA | 12" MIN. | I GAL. |
| GROUND COVERS | | | | | |
| 208 | LM | LIRIOPE MUSCARI 'BIG BLUE' | BIG BLUE LILY TURF | 18" MIN. | I GAL. |
| 101 | JH | JUNIPERUS HORIZONTALIS 'BAR HARBOR' | BAR HARBOR CREEPING JUNIPER | 18" MIN. | I GAL. |
| 278 | JS | JUNIPERUS PROCUMBENS 'NANA' | JAPANESE GARDEN JUNIPER | 12" MIN. | I GAL. |



- I. THE CONTRACTOR SHALL RESTORE ALL DISTURBED GRASS AND LANDSCAPED AREAS TO MATCH EXISTING CONDITIONS UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
- 2. THE CONTRACTOR SHALL RESTORE ALL DISTURBED LAWN AREAS WITH A MINIMUM 4 INCH LAYER OF TOPSOIL AND SEED. 3. THE CONTRACTOR SHALL RESTORE MULCH AREAS WITH A MINIMUM
- 3 INCH LAYER OF MULCH. 4. THE MAXIMUM SLOPE ALLOWABLE IN LANDSCAPE RESTORATION
- AREAS SHALL BE 3 FEET HORIZONTAL TO 1 FOOT VERTICAL (3:1 SLOPE) UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET. 5. THE CONTRACTOR IS REQUIRED TO LOCATE ALL SPRINKLER HEADS IN AREA OF LANDSCAPING DISTURBANCE PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL RELOCATE SPRINKLER

HEADS AND LINES IN ACCORDANCE WITH OWNER'S DIRECTION

WITHIN AREAS OF DISTURBANCE. 6. THE CONTRACTOR SHALL ENSURE THAT ALL DISTURBED LANDSCAPED AREAS ARE GRADED TO MEET FLUSH AT THE ELEVATION OF WALKWAYS AND TOP OF CURB ELEVATIONS EXCEPT UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET. NO ABRUPT CHANGES IN GRADE ARE PERMITTED IN DISTURBED LANDSCAPING AREAS.



CHARLES D. OLIVO, P.E. NEW JERSEY LICENSE No. 46719 LICENSED PROFESSIONAL ENGINEER



I" = 30' PROJECT ID: T-17298

LANDSCAPING PLAN

C-10

APPENDIX B:Inspection Checklists

APPENDIX B-1: GENERAL INSPECTION CHECKLIST LOG

INSPECTION CHECKLIST LOG

- 1. The responsible party shall report issues to the local authority and mosquito commission as required by local ordinances and regulatory authorities.
- 2. The maintenance crew should fill out the checklist in the field manual when performing each inspection/maintenance task.
- 3. After the maintenance task is performed, the checklist should be filed in the Maintenance Plan and recorded in the log below.

| Cycle of Inspection | Stormwater Management Measure No. | Checklist No. | Date(s) of Inspection |
|--------------------------------------|-----------------------------------|---------------|-----------------------|
| (1st Quarter) | | | |
| (2nd Quarter) | | | |
| (3rd Quarter) | | | |
| (4th Quarter) | | | |
| (Unscheduled | | | |
| Inspection; e.g., after | | | |
| I" rain) | | | |
| (Ist Quarter) | | | |
| (2nd Quarter) | | | |
| (3rd Quarter) | | | |
| (4th Quarter) | | | |
| (Unscheduled | | | |
| Inspection; e.g., after I" rain) | | | |
| | | | |
| (Ist Quarter) | | | |
| (2nd Quarter) | | | |
| (3rd Quarter) | | | |
| (4 th Quarter) | | | |
| (Unscheduled Inspection; e.g., after | | | |
| l" rain) | | | |

| Cools of look antique | Stormwater Management Measure | Charlin No. | Date (a) a Classical in | |
|---|-------------------------------|---------------|-------------------------|--|
| Cycle of Inspection | No. | Checklist No. | Date(s) of Inspection | |
| (Ist Quarter) | | | | |
| (2nd Quarter) | | | | |
| (3rd Quarter) | | | | |
| (4th Quarter) | | | | |
| (Unscheduled Inspection; e.g., after | | | | |
| l" rain) | | | | |
| (Ist Quarter) | | | | |
| (2nd Quarter) | | | | |
| (3rd Quarter) | | | | |
| (4 th Quarter) | | | | |
| (Unscheduled | | | | |
| Inspection; e.g., after I" rain) | | | | |

APPENDIX B-2: GENERAL PREVENTATIVE MAINTENANCE LOG

PREVENTATIVE MAINTENANCE LOG

| MAINTENANCE SCHEDULE | STORMWATER MANAGEMENT MEASURE NO. | PREVENTATIVE MAINTENANCE RECORD NO. | DATE(S) OF MAINTENANCE |
|-------------------------|-----------------------------------|-------------------------------------|---------------------------|
| (Ist Quarter) | | | |
| (2nd Quarter) | | | |
| (3rd Quarter) | | | |
| (4th Quarter) | | | |
| (Unscheduled | | | |
| Naintenance | | | |
| work; e.g., after | | | |
| l" rain) | | | |
| | | | |
| (Ist Quarter) | | | |
| (2nd Quarter) | | | |
| (3rd Quarter) | | | |
| (4th Quarter) | | | |
| (Unscheduled | | | |
| Inspection; e.g., | | | |
| after I" rain) | | | |
| | | | |

APPENDIX B-3: GENERAL CORRECTIVE MAINTENANCE LOG

CORRECTIVE MAINTENANCE LOG

| Maintenance | Stormwater Management | Corrective Maintenance Record | Date(s) of |
|-------------------|-----------------------|-------------------------------|-------------|
| Schedule | Measure No. | No. | Maintenance |
| (Ist Quarter) | | | |
| | | | |
| (2nd Quarter) | | | |
| | | | |
| (3rd Quarter) | | | |
| | | | |
| (4th Quarter) | | | |
| (Unscheduled | | | |
| Maintenance | | | |
| work; e.g., after | | | |
| l" rain) | | | |
| | | | |
| (Ist Quarter) | | | |
| , | | | |
| (2nd Quarter) | | | |
| | | | |
| (3rd Quarter) | | | |
| | | | |
| (4th Quarter) | | | |
| | | | |
| (Unscheduled | | | |
| Inspection; e.g., | | | |
| after I" rain) | | | |
| | | | |

APPENDIX B-4: ANNUAL EVALUATION RECORD

ANNUAL EVALUATION RECORD

As per N.J.A.C. 7:8-5.8(g), the person responsible for maintenance shall evaluate the effectiveness of the maintenance plan at least once per year and adjust the plan and the deed as needed.

The responsible party should evaluate the effectiveness of the maintenance plan by comparing the maintenance plan with the actual performance of the maintenance. The items to evaluate may include, but not limited to,

- Whether the inspections have been performed as scheduled;
- Whether the preventive maintenance has been performed as scheduled;
- Whether the frequency of preventative maintenance needs to increase or decrease;
- Whether the planned resources were enough to perform the maintenance;
- Whether the repairs were completed on time;
- Whether the actual cost was consistent with the estimated cost;
- Whether the inspection, maintenance, and repair records have been kept.

If actual performance of those items has been deviated from the maintenance plan, the responsible party should find the causes and implement solutions in a revised maintenance plan.

| Evaluator(s) | Date of Evaluation | Decision |
|--------------|--------------------|--|
| | | Maintain current version OR |
| | | Revise current version |
| | | Revision date |
| | | (also update the last revision date on the cover page) |
| | | Requires a new deed recording |
| | | (also update the last recording information on the cover page) |
| | | Maintain current version OR |
| | | Revise current version |
| | | Revision date |
| | | (also update the last revision date on the cover page) |
| | | Requires a new deed recording |
| | | (also update the last recording information on the cover page) |
| | | Maintain current version OR |
| | | Revise current version |
| | | Revision date |
| | | (also update the last revision date on the cover page) |
| | | Requires a new deed recording |
| | | (also update the last recording information on the cover page) |