Kenneth Moore Architectural Engineering – Lighting/Electrical September 8, 2014

University of Maryland – Baltimore Health Sciences Facility III Tech Report 1, Part 1 Lighting Proposal Memo

Circulation Space - Atrium

Refer to A121E LEVEL ONE FLOOR PLAN EAST and A121W LEVEL ONE FLOOR PLAN WEST Room 1001: Lobby/Gathering Space

The main atrium will be a suitable space to implement the psychological counterpart system of Spaciousness versus Closure. Since the atrium is 7 stories in height, it will be an interesting challenge to make such a large space seem a pleasing, ambient space. The seventh floor has a series of coves, which will need to be adequately lit to be visible from the ground floor, while not visible from an angle outside of the building.

Outdoor Space + Building Façade

Refer to L101 LANDSCAPE PLAN, L201 PLANTING DETAILS & NOTES, L202 GREEN ROOF PLANTING PLAN, L203 GREEN ROOF PLANTING PLAN

I plan to use the majority of the outdoor space in my lighting design. There are multiple green roofs that can be seen in the planting plans. The majority of the site lighting will have to be integrated into the landscaping, some of which will need to showcase the façade of the building. There is also a large overhang space under the dry lab tower. This will require recessed outdoor lighting fixtures to be integrated into the first story ceiling.

Large Work Space

Refer to A121E LEVEL ONE FLOOR PLAN EAST and A121W LEVEL ONE FLOOR PLAN WEST Rooms 1140 and 1130: Nanomedicine PDoc/GS/TECH Workstation

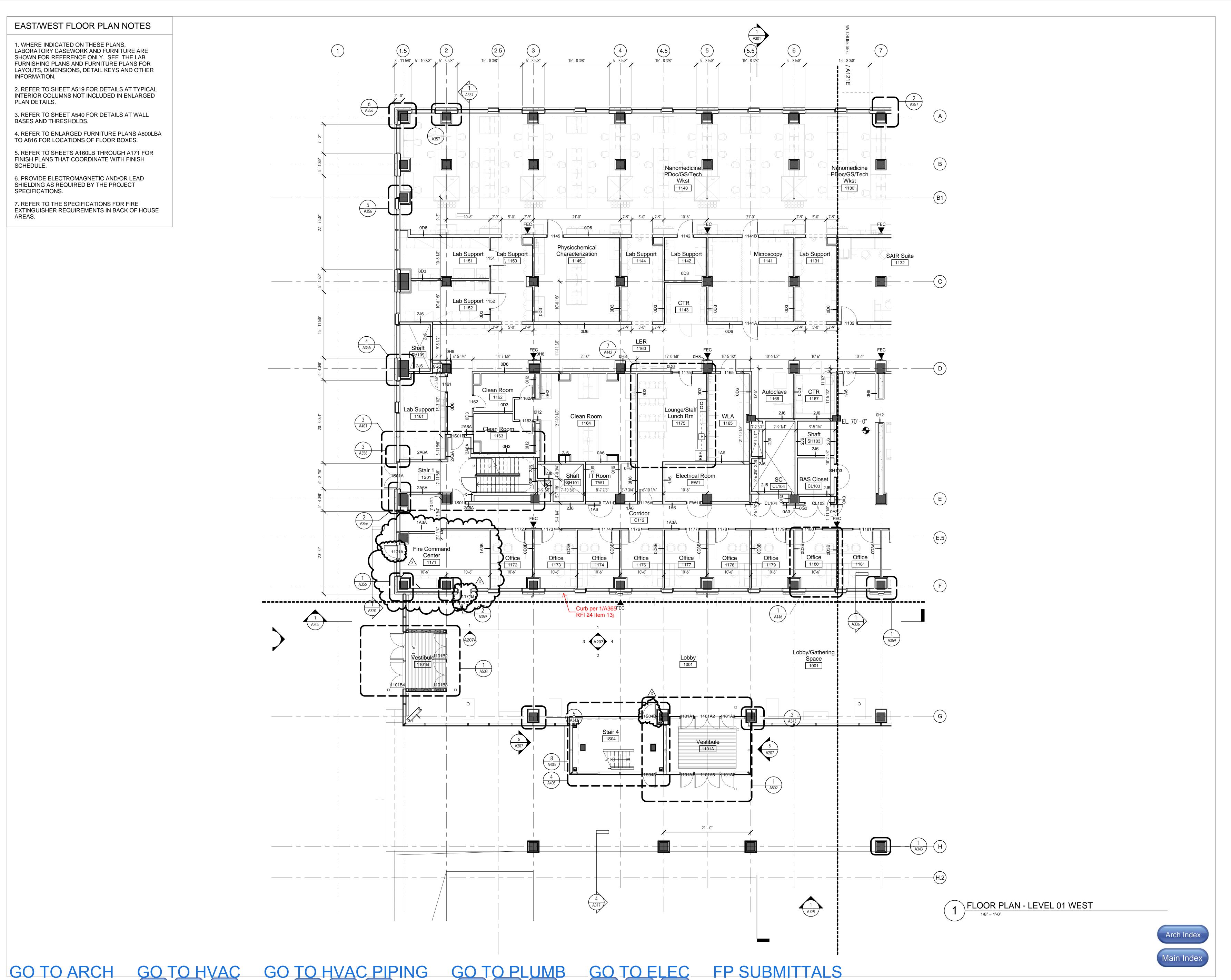
The large work space on the first floor is predominantly a workstation space. I will conduct lighting studies of the most appropriate design applicable to the desk height and intended layout. This will most likely result in evenly spaced recessed troffers or equally spaced pendant fixtures.

<u>Special Purpose Space – Large Conference Room</u>

Refer to A121E LEVEL ONE FLOOR PLAN EAST

Room 1010: Meeting Room

There are many conference rooms in this section of the building, however this one is located on the first floor with the majority of the room consisting of curtain walls. This means that the lighting design of the outdoor space must not interfere with the conference room lighting, and vice versa. This will be an important study in reducing glare and maximizing daylighting potential. The large conference room will be a suitable space for the three schematic design concepts. I would like to integrate this room into the surrounding landscape of the outdoor space which can be seen upon entering the space from the elevator lobby. My initial thoughts include cove lighting in the conference room ceiling and around the north wall of the room.



UNIVERSITY of MARYLAND

ADMINISTRATION & FINANCE

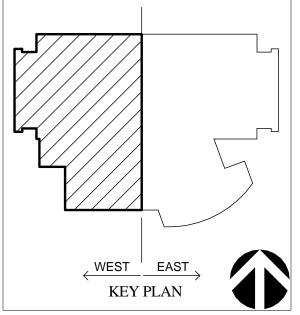
FACILITIES MANAGMENT
ARCHITECTURE, ENGINEERING &
CONSTRUCTION DIVISION
220 ARCH STREET, OFFICE LEVEL 3
BALTIMORE, MARYLAND 21201

PHONE NO. (410) 706-7740 FAX NO. (410) 706-8547

UMB EMERGENCY PHONE NUMBERS

UMB POLICE (410)706-6882

UMB WORK CONTROL (410)706-7570



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Tarrytown, NY 10591

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Baltimore, MD 21210

REGISTRATION / STAMP

PROJECT TITLE:
HEALTH
SCIENCES

FACILITY III

UMB BUILDING NO.: HSF III

UMB PROJECT NO.: 11-385

A/E PROJECT NO.: 12.14006.00

CAD FILE NO.:

DATE: 07/25/2014

DONOR NAME.:

SHEET TITLE:

LEVEL ONE FLOOR PLAN -WEST

No.	Date	Item
1	05/08/14	Addendum 4
2	6/13/14	Bulletin 9
3	7/25/14	Bulletin 10

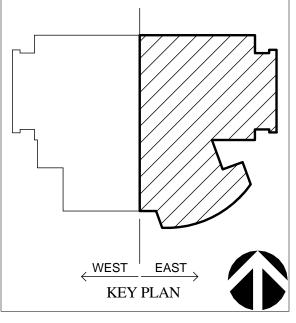
A121W



III University of MARYLAND

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Gaithersburg, MD 20878 Cagley & Associates Structural Engineer 6141 Executive Blvd, Rockville, MD 20852

Site Resources Civil Engineer / Landscape Architect Phoenix, MD 21131-0249 Jacobs Consultancy 303 South Broadway, Suite G20 Tarrytown, NY 10591

Melville Thomas Architects, Inc

Interior Architects 600 Wyndhurst Ave. Suite 315 Baltimore, MD 21210

DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE No. _____,

REGISTRATION / STAMP

PROJECT TITLE: HEALTH SCIENCES

UMB BUILDING NO.: HSF III UMB PROJECT NO.: 11-385

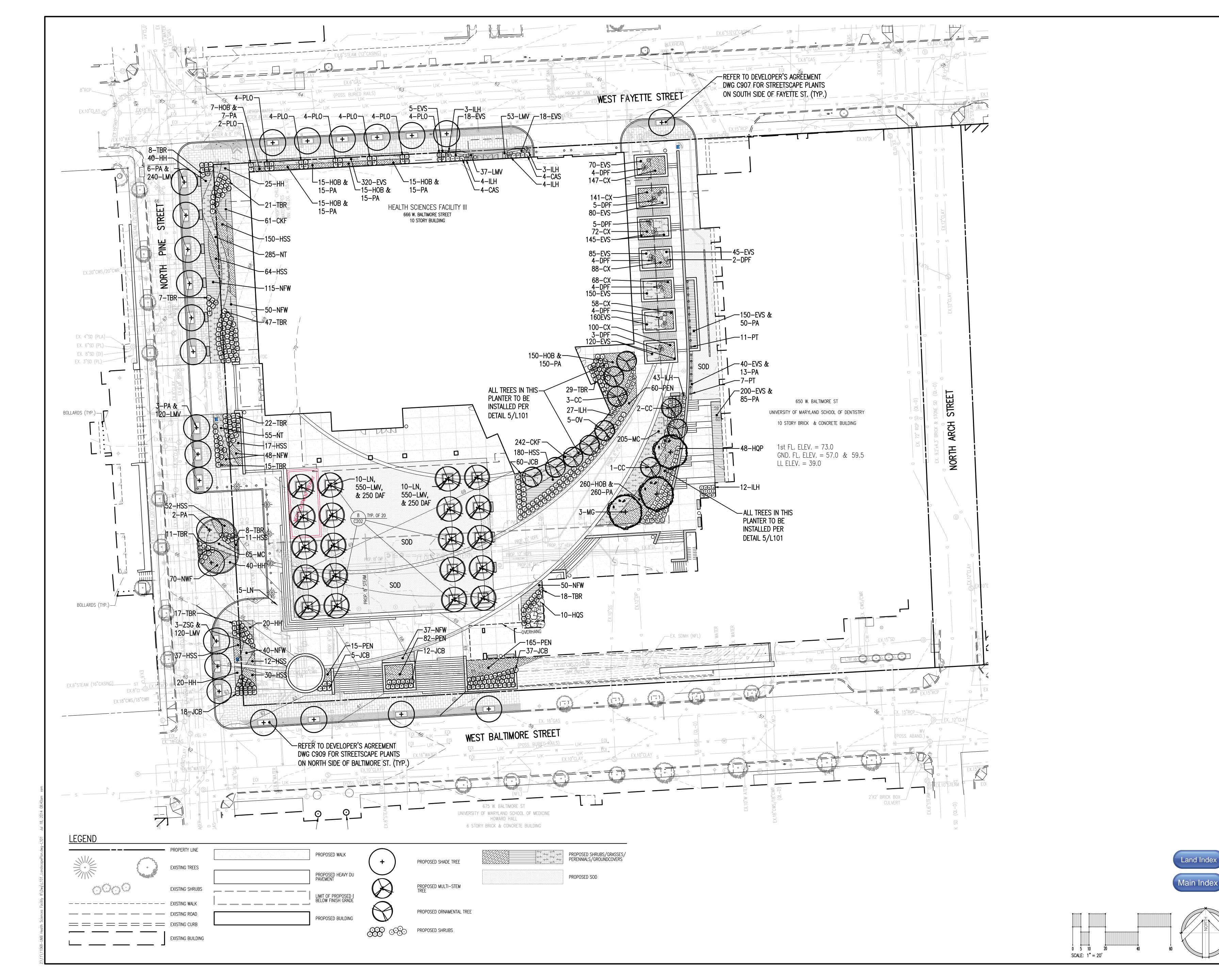
CAD FILE NO.: 07/25/2014 DONOR NAME.:

SHEET TITLE:

LEVEL ONE FLOOR PLAN -EAST

No.	Date	Item
1	04/18/14	Addendum 3
2	05/08/14	Addendum 4
3	6/13/14	Bulletin 9
4	6/13/14	Addendum 5
5	7/25/14	Bulletin 10

A121E





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UMB EMERGENCY PHONE NUMBERS

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UMB WORK CONTROL (410) 706-7570

KEY PLAN

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REGISTRATION / STAMP

PROJECT TITLE:
HEALTH
SCIENCES

FACILITY III

UMB BUILDING NO.: HSF III

UMB PROJECT NO.: 11–385

SRI PROJECT NO.: 11068

CAD FILE NO.:

DATE: 07/25/14

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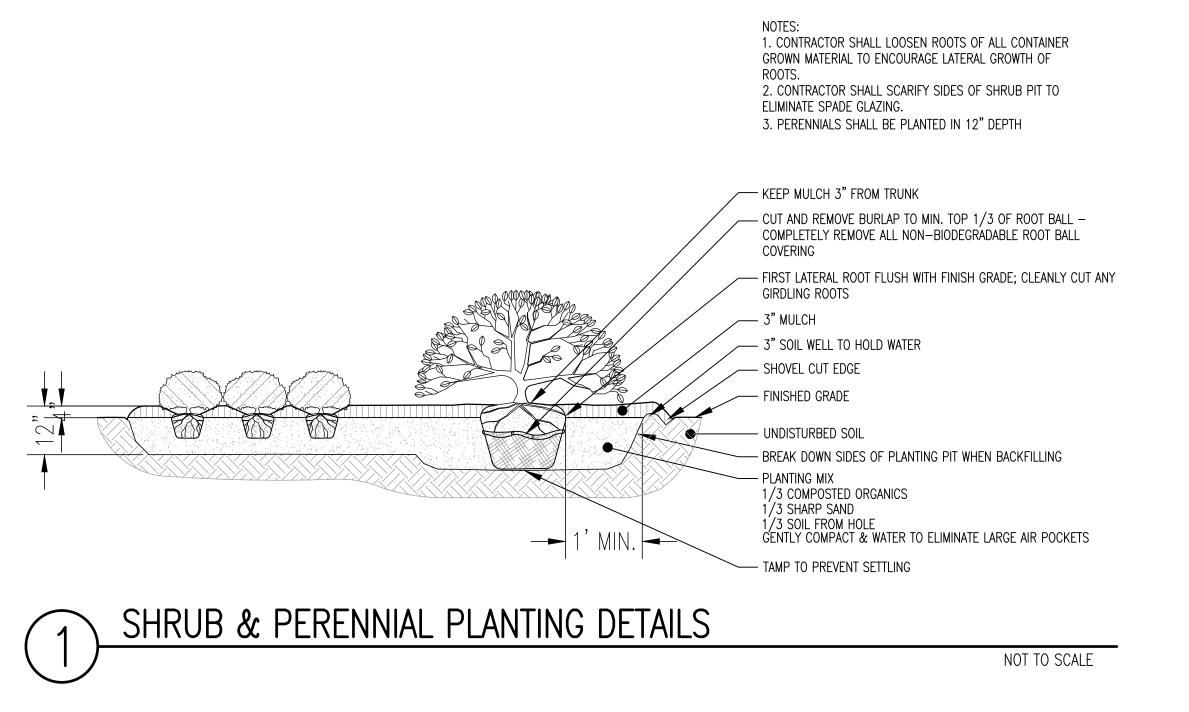
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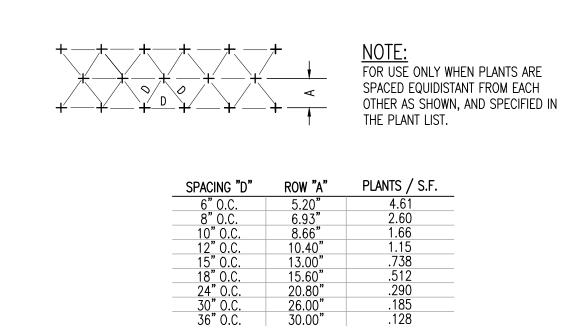
LANDSCAPE PLAN

REVISIONS			
NO	DATE	ITEM	
	1		

SHEET NO.

L101

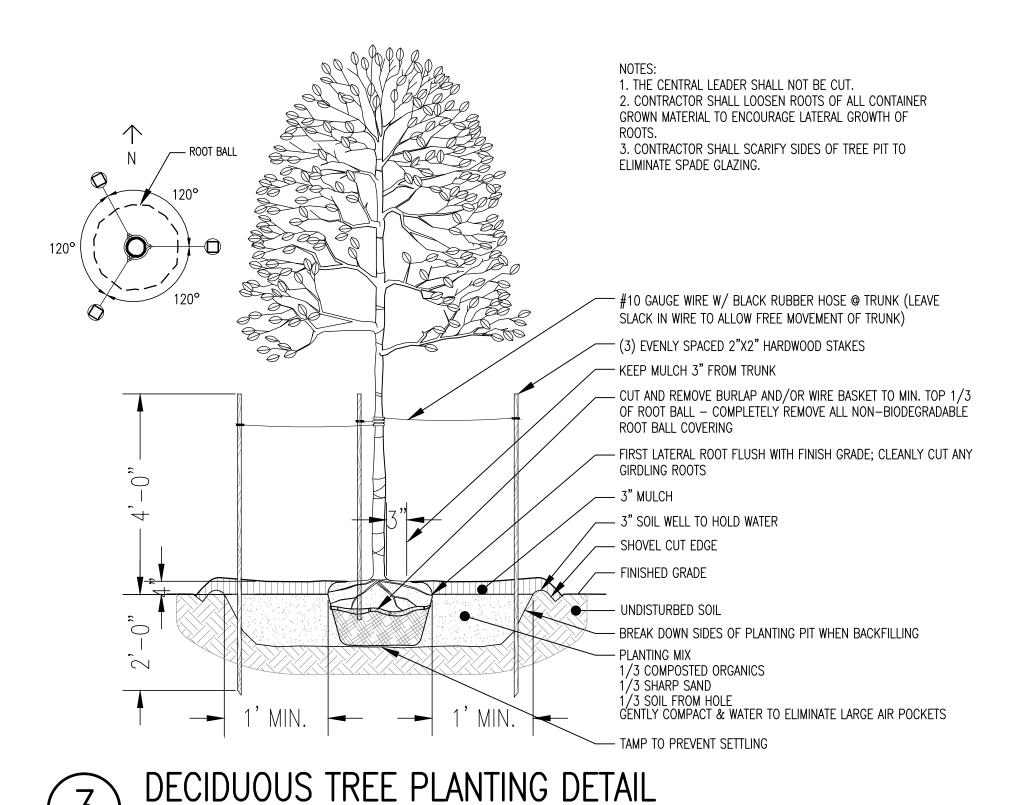




PLANT SPACING CHART

PLANT SPACING DETAILS

NOT TO SCALE



NOTES:

NOT TO SCALE

1. THE CENTRAL LEADER SHALL NOT BE CUT.

ELIMINATE SPADE GLAZING.

— KEEP MULCH 3" FROM TRUNK

— 3" SOIL WELL TO HOLD WATER

/3 COMPOSTED ORGANICS

- TAMP TO PREVENT SETTLING

ROOT BALL COVERING

— 3" MULCH

FINISHED GRADE

PLANTING MIX

1/3 SHARP SAND 1/3 SOIL FROM HOLE

UNDISTURBED SOIL

CONIFEROUS TREE PLANTING DETAIL

2. CONTRACTOR SHALL LOOSEN ROOTS OF ALL CONTAINER

GROWN MATERIAL TO ENCOURAGE LATERAL GROWTH OF

3. CONTRACTOR SHALL SCARIFY SIDES OF TREE PIT TO

#10 GAUGE WIRE W/ BLACK RUBBER HOSE @ TRUNK (LEAVE

— CUT AND REMOVE BURLAP AND/OR WIRE BASKET TO MIN. TOP 1/3

OF ROOT BALL - COMPLETELY REMOVE ALL NON-BIODEGRADABLE

- FIRST LATERAL ROOT FLUSH WITH FINISH GRADE; CLEANLY CUT ANY

- BREAK DOWN SIDES OF PLANTING PIT WHEN BACKFILLING

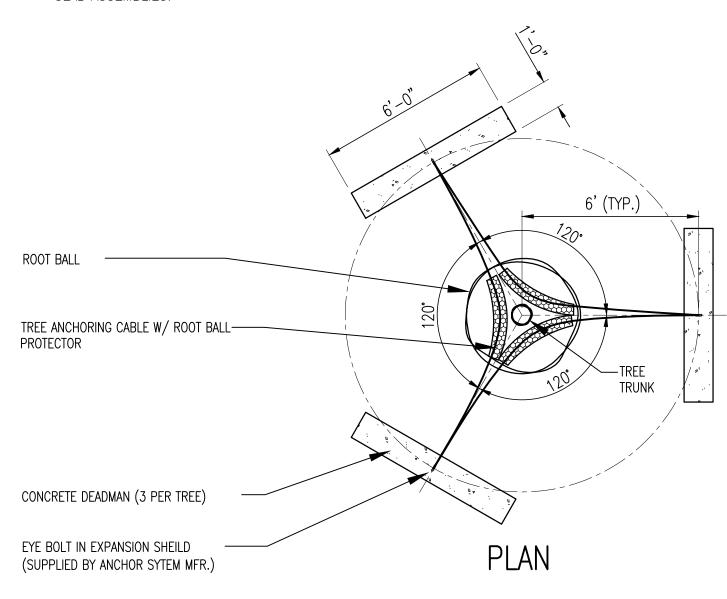
GENTLY COMPACT & WATER TO ELIMINATE LARGE AIR POCKETS

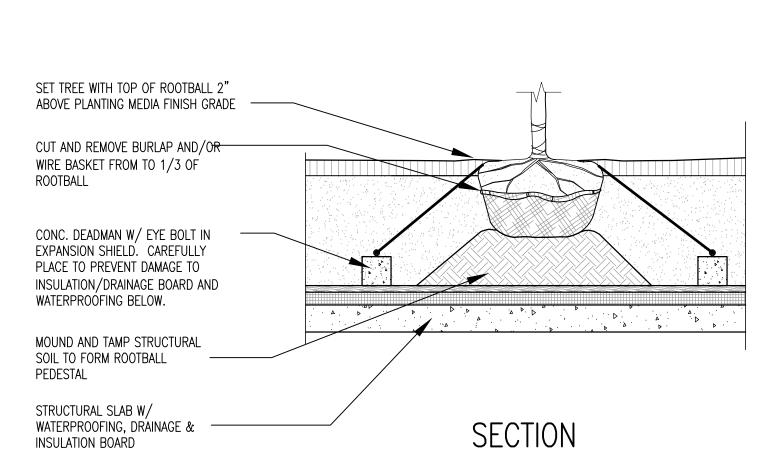
NOT TO SCALE

SLACK IN WIRE TO ALLOW FREE MOVEMENT OF TRUNK)

(2) EVENLY SPACED 2"X2" HARDWOOD STAKES

- 1. TREE ANCHORING SYSTEM SHALL BE PLATIPUS MODEL RF1R AS MANUFACTURED BY PLATIPUS ANCHORS LTD. www.platipus—anchors.com
- 2. ANCHORING SYSTEM WITH DEADMEN, EYEBOTS, CABLES, AND ROOTBALL PROTECTORS ARE TO BE USED ON ALL IN-GROUND TREES PLANTED OVER ROOF SLAB ASSEMBLIES.





TREE PLANTING WITH DEADMAN SUPPORT SYSTEM

NOT TO SCALE

5" CAL B&B AS SHOWN Limb up 5', Matched specimens Platanus x Acerfolia 'Bloodgood' Bloodgood London Plane Tree ZSG Zelkova serrata 'Green Vase' Green Vase Zelkova 5" CAL B&B AS SHOWN Specimen ORNAMENTAL TREES Lagerstroemia x 'Natchez' Natchez Crape Myrtle 15' HT B&B AS SHOWN 3 trunk minimum; Match Set; Specimen 3" CAL B&B AS SHOWN Single leader; Match Set; Specimen Cercis canadensis Fastigiate American Hophornbeam 3" CAL B&B AS SHOWN Single central leader; Match set; Specimen OV Ostrya virginiana Fastigiata EVERGREEN SHRUBS 138 Juniperus conferta 'Blue Pacific' Blue Pacific Shore Juniper 24" SPD | #3 can | AS SHOWN | Heavy Taxus baccata 'Repandens' Dwarf English Yew 30" SPD | #3 can | AS SHOWN | Heavy PLO Prunus laurocerasus 'Otto Luyken' Otto Luyken Cherry Laurel 30" SPD | #3 can | AS SHOWN | Heavy DECIDUOUS SHRUBS 36" HT | #7 can | AS SHOWN | Fully branched; 5 cane minimum HQS Hydrangea quercifolia 'Snow Queen' Snow Queen Oakleaf Hydrangea Hydrangea quercifolia 'Pee Wee' Pee Wee Oakleaf Hydrangea 24" HT | #3 can | AS SHOWN | Fully branched; 5 cane minimum Clethra alnifolia 'September Beauty' September Beauty Summersweet | 36" HT | #7 can | AS SHOWN | Fully branched; 5 cane minimum ILH Itea virginica 'Little Henry' 24" HT #3 can AS SHOWN Fully branched; 5 cane minimum Dwarf Virginia Sweetspire ORNAMENTAL GRASSES Sapphire Blue Oat Grass 553 Helictotrichon sempervirens 'Sapphire' 18" O.C. | Fully rooted container Pennisetum alopecuroides 'Cassian' Cassian Dwarf Fountain Grass 18" O.C. Fully rooted container 18" O.C. Fully rooted container Calamagrostis x acutiflora 'Karl Foerster' Feather Reed Grass Nassella tenuissima Mexican Feather Grass 18" O.C. Fully rooted container 18" O.C. Fully rooted container Muhlenbergia capillaries Pink Muhly Grass 674 CX Carex appalachica Appalachian Sedge 12" O.C. | Fully rooted container PERENNIALS/FERNS/VINES/BULBS Nepeta x faassenii 'Walker's Low' Walker's Low Catmint 18" O.C. | Fully rooted container 18" O.C. | Fully rooted container Hemerocallis 'Happy Returns' Happy Returns Daylily Epimedium x versicolor 'Sulphureum' 12" O.C. Fully rooted container Barrenwort 12" O.C. Fully rooted container Liriope muscari 'Variegata' Variegated Lily Turf Helleborus orientalis 'Brandywine' Brandywine Lenten Rose 15" O.C. Fully rooted container; mix in groupings or drifts with PA as noted on plan 15" O.C. | Fully rooted container; mix in groupings or drifts with HOB or EVS as noted on plan Polystichum acrostichoides Christmas Fern Dryopteris pseudo filix—mas Mexican Male Fern #1 can AS SHOWN | Fully rooted container #1 can Parthenocissus tricuspidata 'Veitchii' AS SHOWN | Fully rooted container Boston Ivy DAF Narcissus 'Thalia' Thalia Daffodils Drifts of 25 - 50 bulbs scattered throughout perennial plantings

SIZE CONT. SPACING COMMENTS

5" CAL B&B AS SHOWN Single central leader; Match set; Specimen

COMMON NAME

Dawn Redwood

LANDSCAPE NOTES

PLANT SCHEDULE

KEY BOTANICAL NAME

MG Metasequoia glyptostroboides

QTY

SHADE TREES

- (these notes apply to all planting in this contract)
- 1. Quantities shown on the plant list are for the contractor's convenience only. Symbols on the plan shall take precedence.
- Contractor shall verify all plant quantities to his own satisfaction.

 2. Plant material substitutions are subject to approval by the project landscape architect.
- 3. Plant material shall be tagged at the source by the landscape architect or owner's representative unless the requirement is specifically waived.
- 4. Locations of all plant material shall be staked by the contractor for approval by the project landscape architect prior to planting.5. All shrub and ground cover areas shall be planted in continuous prepared beds mulched with composted hardwood mulch as
- detailed and specified.

 6. Planting beds shall have positive drainage with a minimum 2% slope.
- 7. Contractor shall verify accuracy of base information and existing conditions and utilities in the field to his own satisfaction. Utilities bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from
- those indicated on drawings and specifications.

 8. The contractor shall notify miss utility at 1-800-257-7777 a minimum of two working days prior to beginning planting and
- 8. The contractor shall notify miss utility at 1-800-25/-/// a minimum of two working days prior to beginning planting construction.

 9. Damage to existing conditions and utilities shall be repaired and restored at the expense of the contractor.
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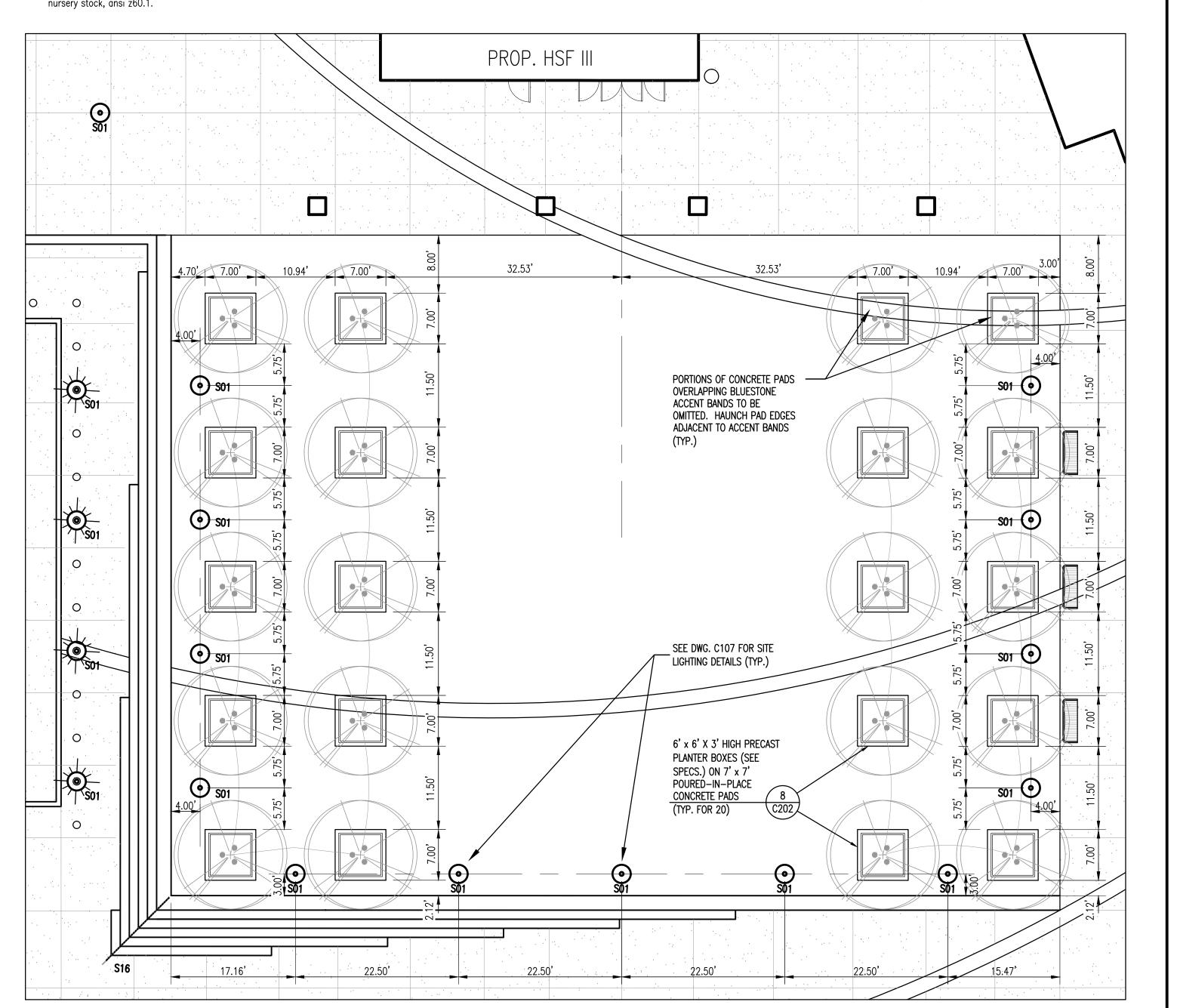
 10. All plant material shall be nursery grown and shall conform to american nursery & landscape association's american standard for

MINIMUM LANDSCAPE MAINTENANCE REQUIREMENTS

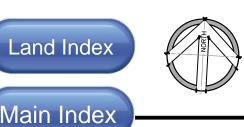
- Lawn areas shall be moved to a height of 2 to 3 inches and not allowed to reach a height of 4 inches before moving.
 All curbs and walks shall be edged as needed.
- All lawn areas adjacent to building faces or structures shall be trimmed.
 A slow release nitrogen balanced fertilizer with a 2-1-1 ratio shall be applied at a rate of 2 pounds of nitrogen per 1000 square feet in September, October, and February
- 1000 square feet in September, October, and February.
 5. Lime shall be applied at the rate determined by a soils report.
- 6. It is recommended that lawn areas be treated in mid—March to early April with pre—emergent herbicide (Betasan) or equal applied at the manufacturer's recommended rate.
- 7. A post—emergent herbicide (Trimec) or equal is recommended to be sprayed on lawn areas in the late spring or the early fall. Follow manufacturer's rates and recommendations.
- 8. Insecticides and fungicides are recommended for insect and disease control.
- 9. Re—seed bare areas of lawn as necessary. Yearly aeration is recommended.
 10. All trash, litter, and debris shall be removed from lawn areas, parking lots, and shrub beds as needed.
- 11. Mulch all shrub and groundcover beds yearly with 3 inches of shredded hardwood bark.

 12. Permit shrubs and trees to grow and enlarge to their design size. Consult project landscape grobitect for
- 12. Permit shrubs and trees to grow and enlarge to their design size. Consult project landscape architect for details.

 13. Prune trees in accordance with landscape contractors association guidelines.



6 LAYOUT DETAIL OF PLANTER BOX & SITE LIGHTING IN PLAZA LAWN



1" = 10'



ADMINISTRATION & FINANCE

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UMB WORK CONTROL (410) 706-7570

KEY PLAN

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Melville Thomas Architects, Inc
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Baltimore, MD 21210

REGISTRATION / STAMP

PROJECT TITLE:
HEALTH

FACILITY III

UMB BUILDING NO.: HSF III

UMB PROJECT NO.: 11–385

SRI PROJECT NO.: 11068

CAD FILE NO.:

07/25/14

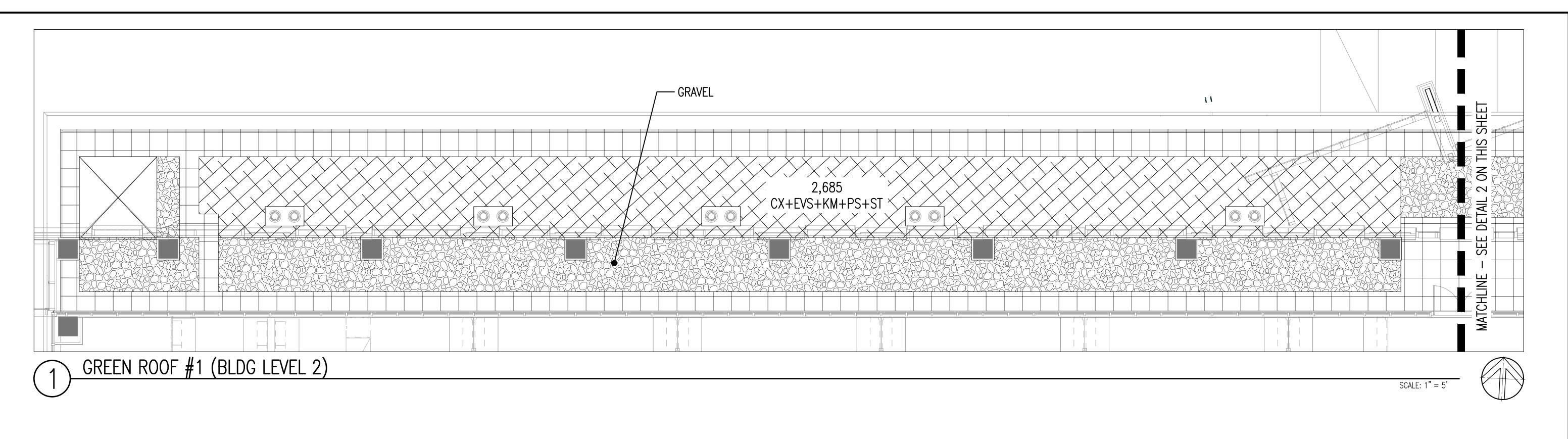
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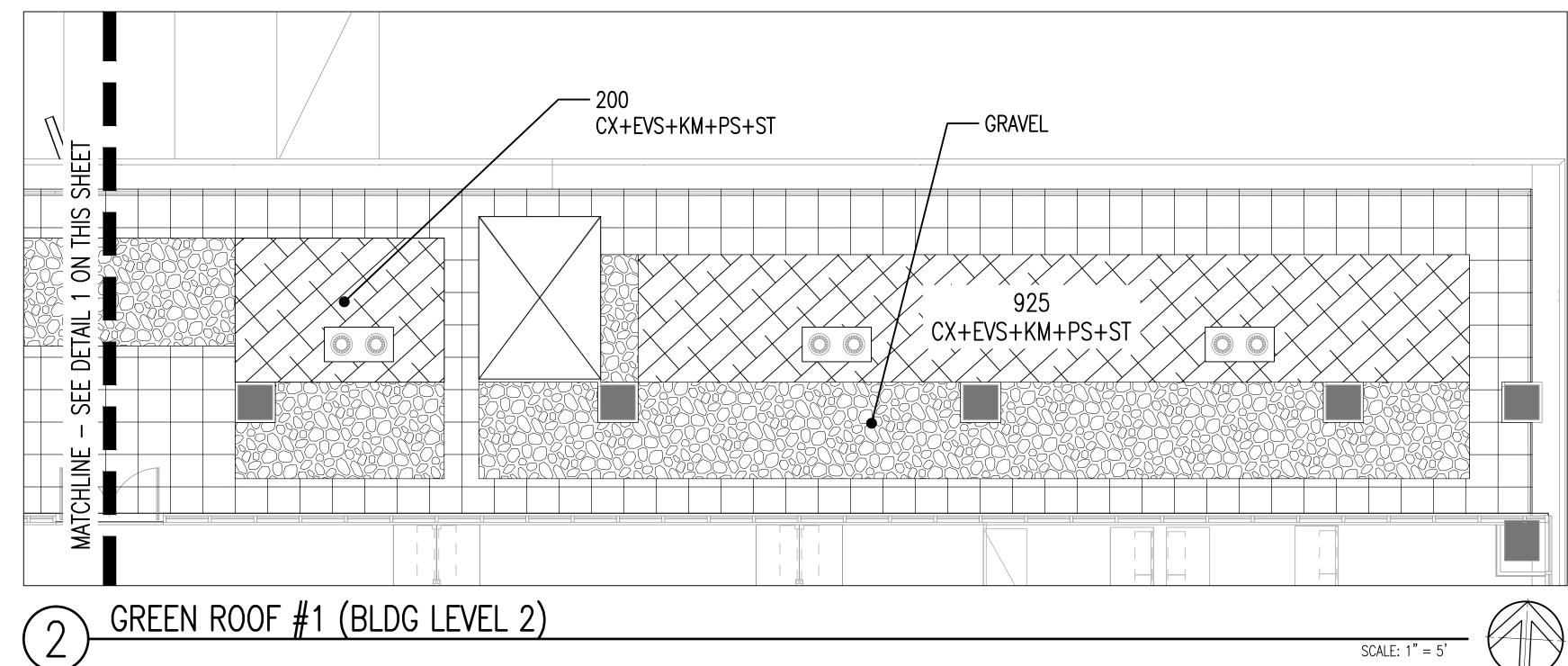
DONOR NAME:

PLANTING DETAILS & NOTES

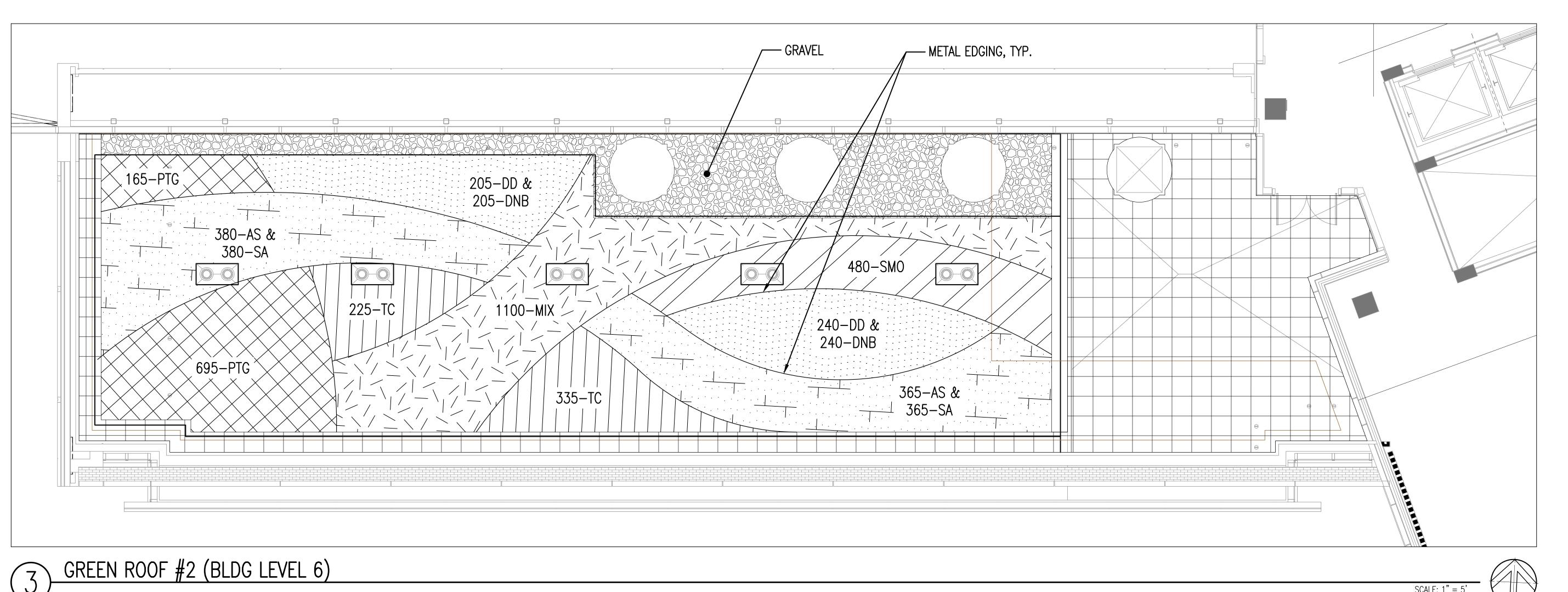
REVISIONS
NO DATE ITEM

SHEET NO.





REFER TO SHT. L203 FOR PLANT SCHEDULE, GREEN ROOF AS-BUILT TABLES, AND MAINTENANCE SCHEDULE FOR GREEN ROOFS.



PLANTING PLAN

Land Index

Main Index

REVISIONS			
NO	DATE	ITEM	
	I	l l	

ADMINISTRATION & FINANCE

220 ARCH STREET, OFFICE LEVEL 3 BALTIMORE, MARYLAND 21201

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GREEN ROOF

07/25/14

14315 Jarrettsville Pike, Phoenix, MD 21131-0249

Jacobs Consultancy

Tarrytown, NY 10591

Design Collective Associate Architect 601 East Pratt Street, Suite 300

AEI Engineers ME Engineers

FACILITIES MANAGEMENT ARCHITECTURE, ENGINEERING &

CONSTRUCTION DIVISION

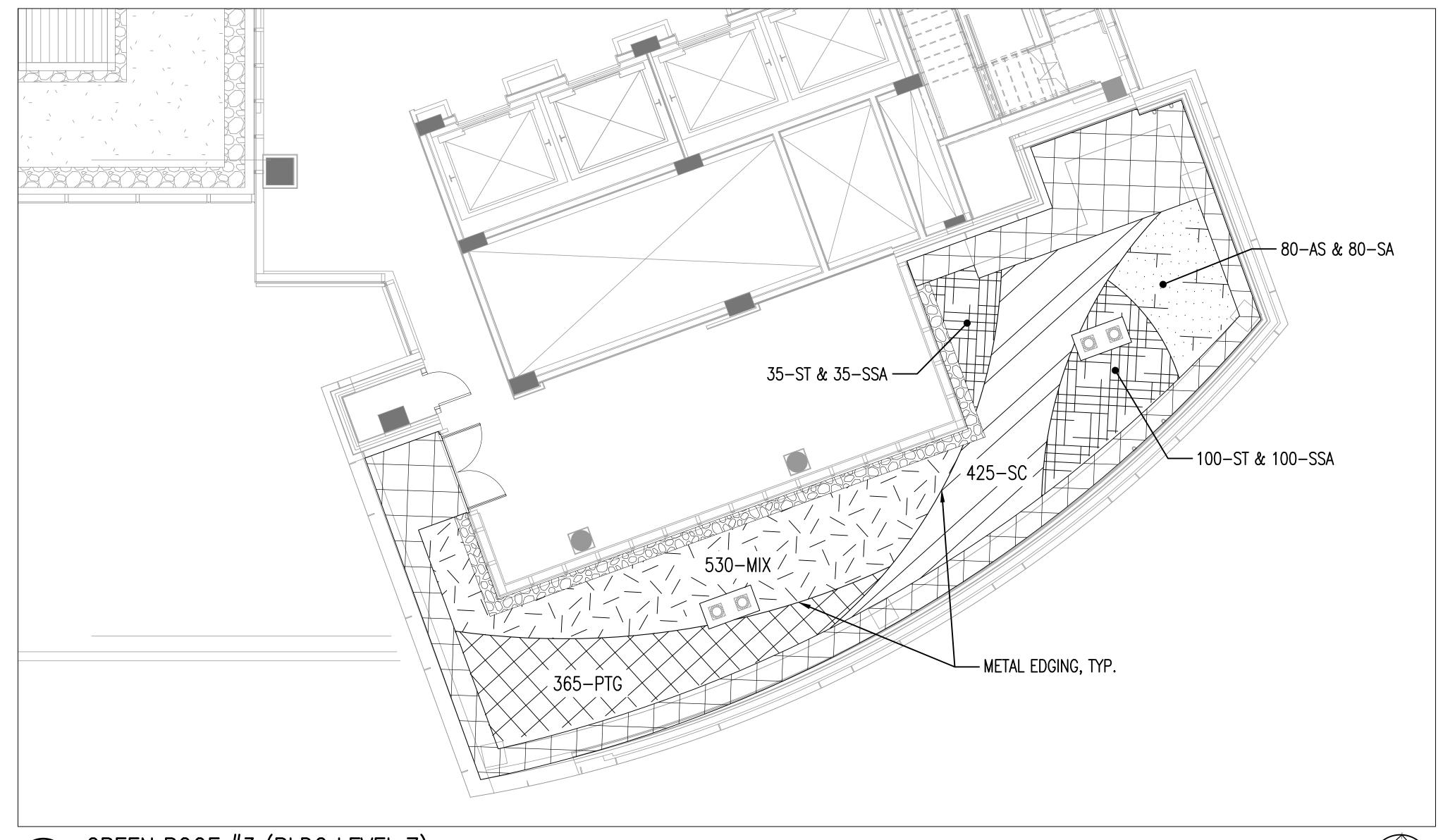
PHONE NO. (410) 706-7740 FAX NO. (410) 706-8547

UMB POLICE (410) 706-6882

L202

PLANT SCHEDULE FOR GREEN ROOFS

QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	CONT.	SPACING	COMMENTS
GREEN R	OOF #1						
762	CX	Carex appalachica	Appalachian Sedge	1 GAL	CONT.	8" O.C.	
762	EVS	Epimedium x versicolor 'Sulphureum'	Barrenwort	1 GAL	CONT.	8" O.C.	
762	KM	Koeleria macrantha	Prairie Junegrass	3" deep X 1.5" plug	PLUG	2.6 PLUGS PER S.F.	
762	PS	Phlox subulata	Moss Phlox	1 GAL	CONT.	8" O.C.	
762	ST	Sedum ternatum	Sedum	3" deep X 1.5" plug	PLUG	2.6 PLUGS PER S.F.	
GREEN R	00F #2						
745	AS	Allium schoenoprasum	Chive	Bulb	BULB	8" O.C.	
445	DD	Delosperma dyeri	Ice Plant	3" deep X 1.5" plug	PLUG	2.6 PLUGS PER S.F.	
445	DNB	Delosperma nubigenum 'Basutoland'	Ice Plant	3" deep X 1.5" plug	PLUG	2.6 PLUGS PER S.F.	
1,100	MIX	Emory Knoll Farms Mid—Atlantic Blend	Mixed blend (Emory Knoll Farms)	3" deep X 1.5" plug	PLUG	2.6 PLUGS PER S.F.	
860	PTG	Phedimus takesimensis 'Golden Carpet'	Stonecrop / Sedum	3" deep X 1.5" plug	PLUG	2.6 PLUGS PER S.F.	
480	SMO	Sedum montanum ssp. orientale	Stonecrop / Sedum	3" deep X 1.5" plug	PLUG	2.6 PLUGS PER S.F.	
745	SA	Sesleria autumnalis	Autumn Moor Grass	1 GAL	CONT.	8" O.C.	
560	TC	Talinum calycinum	Fameflower	3" deep X 1.5" plug	PLUG	2.6 PLUGS PER S.F.	
GREEN R	OOF #3						
80	AS	Allium schoenoprasum	Chive	Bulb	BULB	8" O.C.	
530	MIX	Emory Knoll Farms Mid—Atlantic Blend	Mixed blend (Emory Knoll Farms)	3" deep X 1.5" plug	PLUG	2.6 PLUGS PER S.F.	
365	PTG	Phedimus takesimensis 'Golden Carpet'	Stonecrop / Sedum	3" deep X 1.5" plug	PLUG	2.6 PLUGS PER S.F.	
135	SSA	Sedum spurium 'Album Superbum' a.k.a. 'White Form'	Stonecrop / Sedum	3" deep X 1.5" plug	PLUG	2.6 PLUGS PER S.F.	
135	ST	Sedum ternatum	Stonecrop / Sedum	3" deep X 1.5" plug	PLUG	2.6 PLUGS PER S.F.	
80	SA	Sesleria autumnalis	Autumn Moor Grass	1 GAL	CONT.	8" O.C.	
425	SC	Sesleria caerulea	Blue Moor Grass	1 GAL	CONT.	8" O.C.	



GREEN ROOF #3 (BLDG LEVEL 7)



PROJECT NAME: HEALTH SCIENCES FACILITIES III MDE NO. 13-SF-026				
AS-BUILT DATA FOR GREEN ROOF #1 *TO BE COMPLETED BY THE CERTIFYING ENGINEER				
FEATURE	DESIGN	*AS-BUILT		
SURFACE AREA	1,400 SF			
PLANTING MEDIA THICKNESS	8"			
PLANTINGS	SEE DWGS L202 \$ L203			

DATE AS-BUILT ACCEPTED BY MDE: ___

Maryland Registration Number (PE or LS)

AS-BUILT CERTIFICATION

I hereby certify that the stormwater management facilities (both BMPs and ESD practices) shown on the plans have been constructed in accordance with the plans approved by the Maryland Department of the Environment, except as noted in red on the "AS BUILT" drawings.

Name (Printed)	Signature	

MDE No.

GREEN ROOFS

Facilities being certified (list each individually using facility ID number and/or description): GREEN ROOF #1

FREQUENCY OF INSPECTION PREVENTATIVE MAINTENANCE

"Certify" means to state or declare a professional opinion based on sufficient and

STORMWATER MAINTENANCE SCHEDULE ENVIRONMENTAL SENSITIVE DESIGN

SEASONALLY (AND AFTER A MAJOR STORM)

PROJECT NAME: HEALTH SCIENCES FACILITIES III MDE NO. 13-9F-02		
	PATA FOR GREEN F ETED BY THE CERTIFYING	
FEATURE	DESIGN	*AS-BUILT
SURFACE AREA	2,000 SF	
PLANTING MEDIA THICKNESS	8"	
PLANTINGS	SEE SHTS. L202 \$ L203	

DATE AS-BUILT ACCEPTED BY MDE: _

AS-BUIL	Γ CERTIFICATION
v that the stormwater mana	gaement facilities (both BMPs and ESD practic

I hereby certify that the stormwater management facilities (both BMPs and ESD practices) shown on the plans have been constructed in accordance with the plans approved by the Maryland Department of the Environment, except as noted in red on the "AS BUILT" drawings.

Name (Printed)	Signature
Maryland Registration Number (PE or LS)	Date

MDE No.

MAINTENANCE REQUIREMENTS

PROVIDE PERIODIC IRRIGATION, WEEDING, FERTILIZING, AND IN-FILL PLANTING AS NEEDED.

CLEAN ASSOCIATED DRAINAGE PIPES, INLETS, STONE EDGE DRAINS, AND OTHER STRUCTURES DRAINING TO/FROM PRACTICE.

Facilities being certified (list each individually using facility ID number and/or description): GREEN ROOF #2

"Certify" means to state or declare a professional opinion based on sufficient and

PROJECT NAME: HEALTH SCIENCE	MDE NO. 13-5F-0263			
AS-BUILT DATA FOR GREEN ROOF #3 *TO BE COMPLETED BY THE CERTIFYING ENGINEER				
FEATURE	DESIGN	*AS-BUILT		
SURFACE AREA	600 SF			
PLANTING MEDIA THICKNESS	8"			
PLANTINGS	SEE SHT. L203			

DATE AS-BUILT ACCEPTED BY MDE: _

AS-BUILT CERTIFICATION

I hereby certify that the stormwater management facilities (both BMPs and ESD practices) shown on the plans have been constructed in accordance with the plans approved by the Maryland Department of the Environment, except as noted in red on the "AS BUILT" drawings.

Name (Printed)	Signature
M	10/

Maryland Registration Number (PE or LS)

Date

MDE No.

Facilities being certified (list each individually using facility ID number and/or description): GREEN ROOF #3

"Certify" means to state or declare a professional opinion based on sufficient and

Land Index Main Index

NO DATE

L203

ADMINISTRATION & FINANCE

ARCHITECTURE, ENGINEERING &

220 ARCH STREET, OFFICE LEVEL 3 BALTIMORE, MARYLAND 21201

UMB EMERGENCY PHONE NUMBERS

UMB WORK CONTROL (410) 706-7570

KEY PLAN

A/E CONSULTANTS

601 East Pratt Street, Suite 300 Baltimore, MD 21202

401 N. Washington St, Suite 400 Rockville, MD 20852

3223 Grace Street, NW Washington, DC 20007 Design Collective Associate Architect

ME Engineers

WFT Engineers Plumbing/FA/FP Engineers 9737 Washingtonian Blvd. Suite 588

Gaithersburg, MD 20878 Cagley & Associates Structural Engineer 6141 Executive Blvd, Rockville, MD 20852

Civil Engineer / Landscape Architect

Lab Planning 303 South Broadway, Suite G20 Tarrytown, NY 10591

Melville Thomas Architects, Inc

600 Wyndhurst Ave. Suite 315 Baltimore, MD 21210

REGISTRATION / STAMP

PROJECT TITLE:

HEALTH

SRI PROJECT NO.:

CAD FILE NO.:

DONOR NAME:

SHEET TITLE:

SCIENCES

FACILITY III

UMB BUILDING NO.: HSF III

UMB PROJECT NO.: 11–385

GREEN ROOF

PLAN & NOTES

REVISIONS

ITEM

PLANTING

07/25/14

14315 Jarrettsville Pike, Phoenix, MD 21131-0249

Jacobs Consultancy

FACILITIES MANAGEMENT

CONSTRUCTION DIVISION

PHONE NO. (410) 706-7740 FAX NO. (410) 706-8547

UMB POLICE (410) 706-6882

SHEET NO.