

GENERAL NOTES

- 1. THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY DESIGN STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED...
2. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE PER HOWARD COUNTY RECORDS.
3. ALL EXISTING UNDERGROUND UTILITIES TO BE FIELD VERIFIED...
4. THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL PHOTOGRAMMETRY DATED APRIL 9, 2005...
5. BASED ON NREA SURVEY MARYLAND COORDINATE SYSTEM NAD 83/91 ESTABLISHED BY GPS AND PREVIOUS TRAVERSE RUNS...
6. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
7. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE STATE HIGHWAY ADMINISTRATION (SHA)...
8. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-8800 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK...
9. WATER IS PUBLIC CONTRACT 844-1802-D. HOWEVER, A NEW CONTRACT HAS BEEN SUBMITTED AS PART OF THE DEVELOPMENT OF THIS SITE...
10. IN THE EX. CONDITIONS THE SEWER IS PRIVATE. HOWEVER, ON 4/24/09 JAH/AR REQUESTED THAT HOWARD COUNTY ACCEPT OWNERSHIP AND OPERATIONAL RESPONSIBILITIES FOR THE SEWER LINE...
11. EXISTING UTILITIES ARE BASED ON HOWARD COUNTY RECORDS. ALL EXISTING UNDERGROUND UTILITIES TO BE FIELD VERIFIED...
12. THIS SITE IS LOCATED IN THE HAMMOND BRANCH WATERSHED.
13. PER FEMA MAPS 244440002MS DATED DECEMBER 04, 1998. THIS SITE IS LOCATED WITHIN THE 100 YR FLOODPLAIN...
14. THERE ARE EXISTING WETLANDS ON SITE AS DETERMINED BY MCCARTHY AND ASSOCIATES, IN A REPORT DATED MAY 2008.
15. THERE ARE STEEP SLOPES AND SOME HIGHLY ERODIBLE SOILS ON THIS SITE.
16. THERE ARE NO KNOWN CEMETERIES OR BURIAL GROUNDS ON THIS SITE. HOWEVER, UPON DISCOVERY OF ANY EVIDENCE OF BURIAL OR GRAVES...
17. THIS SUBJECT PROPERTY IS ZONED PEC (PLANNED EMPLOYMENT CENTER) PER THE COMPREHENSIVE ZONING PLAN (02/02/2004) AND THE COMPLETE ZONING REGULATION AMENDMENTS EFFECTIVE JULY 28, 2006.
18. THE SITE IS SUBJECT TO DEVELOPMENT CRITERIA FOR STORMWATER MANAGEMENT...
19. A TOTAL OF 5.58 ACRES OF FOREST RETENTION AND 3.81 ACRES OF AFFORESTATION ARE PROPOSED UNDER THIS PLAN...
20. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL...
21. THE EXISTING BUILDINGS ON SITE HAVE BEEN DEMOLISHED UNDER GP-09-034.
22. UNLESS OTHERWISE NOTED, DIMENSIONS FROM CURB ARE MEASURED AT FACE OF CURB.
23. THE TRAFFIC STUDY WAS PREPARED BY NHA, ON OCTOBER 8, 2008.
24. THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY HILLS CARNES BASED ON A FIELD EXPLORATION COMPLETED IN JAN-2009.
25. NO NOISE STUDY IS REQUIRED FOR THIS SITE.
26. FOREST STAND DELINEATION WAS PREPARED BY CPJ ENVIRONMENTAL SERVICES.
27. PREVIOUS CASE FILES: F-04-117 APPROVED 11/2/04 FOR THE ROAD IMPROVEMENTS, PLAT OF EASEMENT, AND RIGHT-OF-WAYS...
28. A KNOX BOX FOR FIRE DEPARTMENT ACCESS IS REQUIRED TO BE PLACED ON THE FRONT OF THE BUILDING AND AT EACH GATE...
29. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
30. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS PRIOR TO STARTING ON THESE PLANS...
31. CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS AS NECESSARY TO GRADE THE SITE AND COMPLETE ANY REQUIRED EXCAVATIONS...
32. christopher consultants, llc SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION, MEANS, METHODS, TECHNIQUES, OR PROCEDURES, UTILIZED BY THE CONTRACTOR...
33. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES WHICH ARE TO REMAIN FREE FROM DAMAGE...
34. SCALING OF THESE PLANS IS DISCOURAGED UNLESS DIRECTED BY THE ENGINEER...
35. PROVIDE SIGNAGE ON THE BUILDING AND AT THE STREET IDENTIFYING THE BUILDING ADDRESS...
36. ALL SIGN POSTS USED FOR TRAFFIC CONTROL...
37. PER HOWARD COUNTY BUILDING CODE SECTION 904.1 ALL BUILDINGS IN EXCESS OF 5,000 SF IN SIZE WILL HAVE A COMPLETE AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM...
38. TREES WITH MATURE HEIGHTS GREATER THAN 25' SHALL NOT BE PLANTED WITHIN 20' OF EITHER SIDE OF THE UTILITY POLE LINES...
39. NO GRADING, REMOVAL OF VEGETATION COVER OR TREES, PLANTING, FOREST CONSERVATION EASEMENT AREAS, STREAMS, 100 YR FLOODPLAIN AND/OR NEW STRUCTURES SHALL BE PERMITTED WITHIN THE EXISTING WETLANDS AND NETLAND BUFFERS.
40. ALL EXTERIOR LIGHT FIXTURES SHALL BE ORIENTED TO DIRECT LIGHT INWARDS AND DOWNWARDS ON-SITE AWAY FROM ALL ADJOINING RESIDENTIAL PROPERTIES AND PUBLIC ROADS...
41. THIS SITE COMPLIES WITH HOWARD COUNTY GREEN BUILDINGS LAW SET FORTH UNDER TITLE 3, SUBTITLE 10 OF THE HOWARD COUNTY CODE AND SECTION 3.009(a) OF THE CODE...
42. NO PRIVATELY OWNED STRUCTURES, FENCE POSTS OR STORMDRAIN SHALL BE LOCATED WITHIN THE PUBLIC UTILITY EASEMENTS.

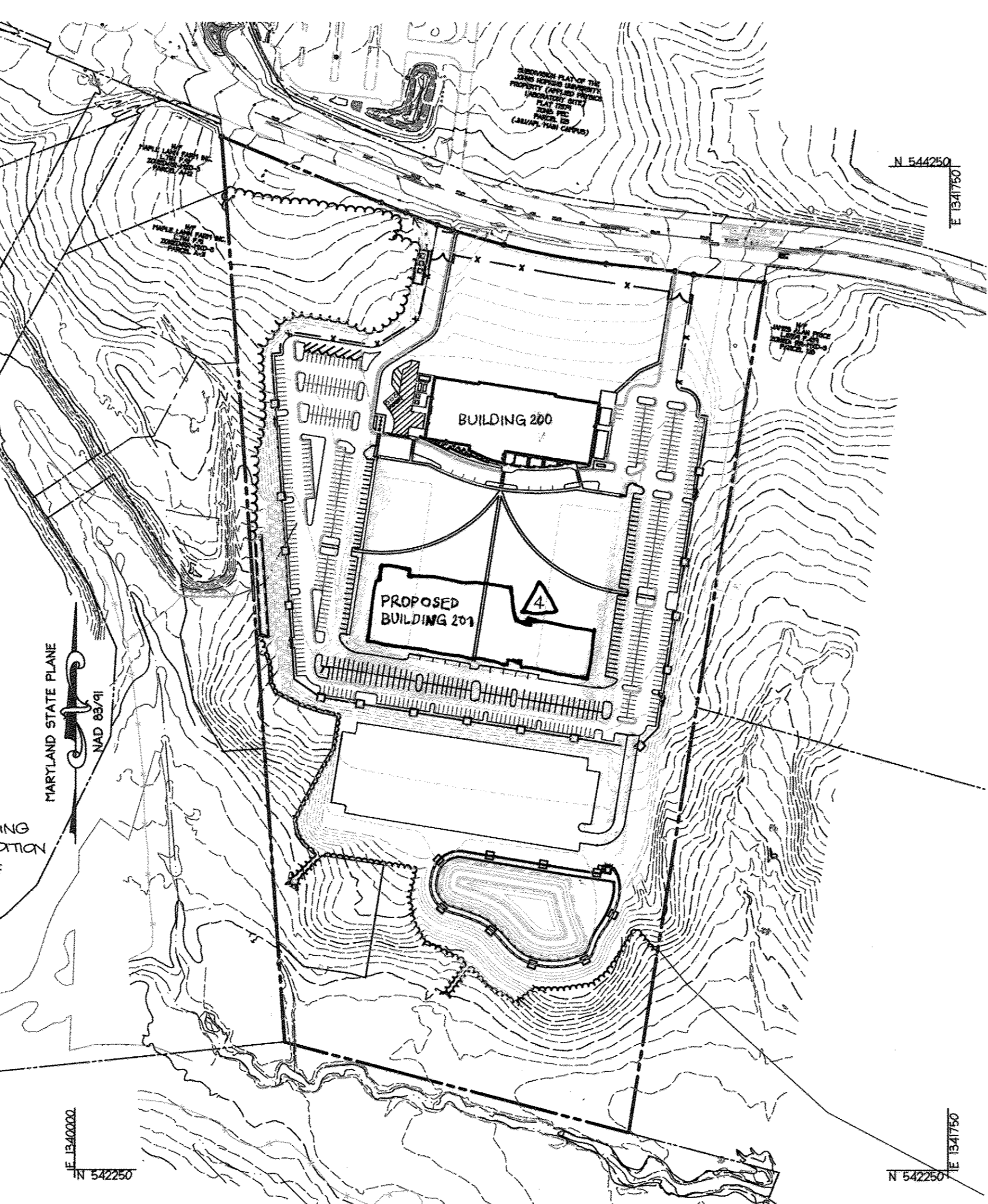
THIS SEAL IS FOR 2 REVISIONS MADE BY SITE RESOURCES, INC.



PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE 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. 20527, EXPIRATION DATE: 07/19/19.

NOTE: REFER TO SDP-17-047 FOR SITE IMPROVEMENTS RELATED TO PROPOSED BUILDING 201. SHEETS 4, 5, 25 AND 26 OF THIS SET.

SITE DEVELOPMENT PLAN JHU/APL - SOUTH CAMPUS - BUILDING 200 11101 JOHNS HOPKINS ROAD LAUREL, MARYLAND 20723-2608



OVERALL SITE PLAN SCALE: 1" = 200'

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

SITE ANALYSIS DATA CHART

Table with 3 columns: NO., TITLE, and SHEET INDEX. Lists various site analysis sheets including cover sheet, site grading and utility plans, utility profiles, and stormwater management notes.

SHEET INDEX table with 3 columns: NO., TITLE, and SHEET INDEX. Lists sheets for cover, site grading, utility profiles, stormwater management, and forest conservation.

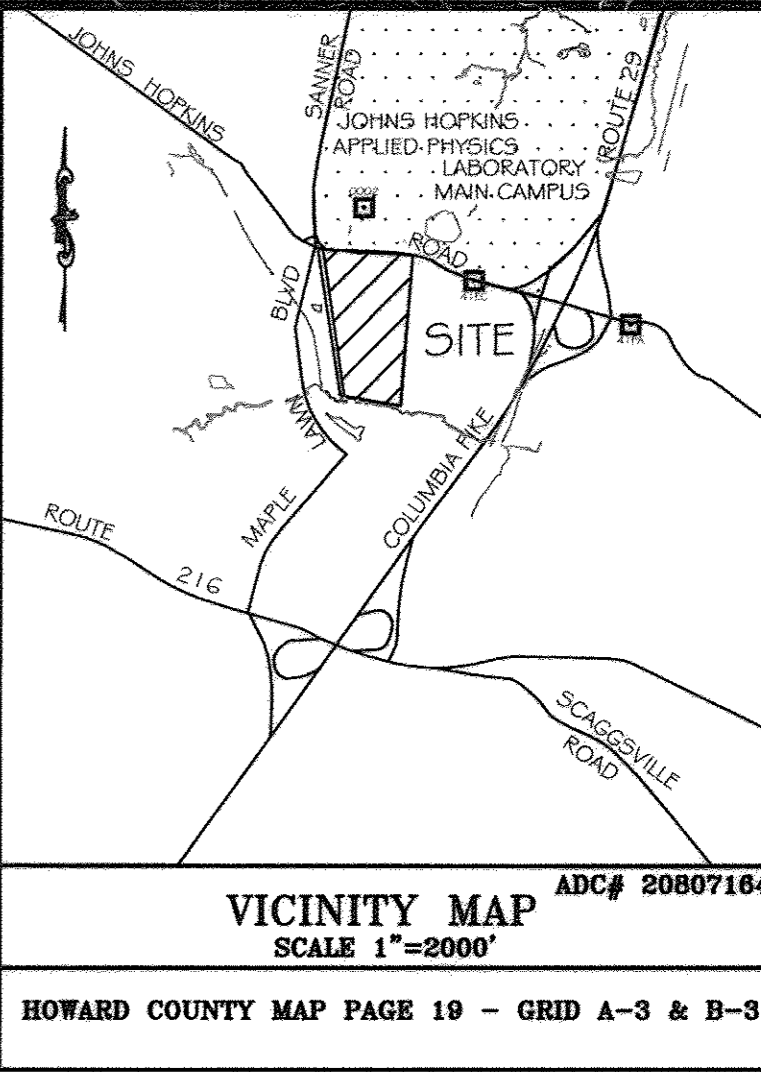
LEGEND

- EXISTING CONTOURS
EXISTING STORMDRAIN
EXISTING SANITARY SEWER
EXISTING FENCE
PROPERTY LINE
TREE LINE
SETBACK LINES
FLOODPLAIN
STREAM
PROPOSED CONTOUR
PROPOSED STORM DRAIN
PROPOSED SANITARY SEWER
PROPOSED WATER
PROPOSED FIRE HYDRANT
PROPOSED TREELINE
PROPOSED POLES 4 KV OVERHEAD LINES 34 KV
PROPOSED LINES 34 KV UNDERGROUND LINES 34 KV
BORING LOCATION
SOILS DIVIDES
SETBACK
EXISTING CURB & GUTTER
PROPOSED CURB AND GUTTER
PROPOSED DEPRESSIONED CURB
PROPOSED SPILL GUTTER
PARKING COUNT
WETLANDS
WETLANDS BUFFER
STREAM BUFFER
FOREST CONSERVATION EASEMENT
PARKING LOT - P3 PAVING
LOADING DOCK AND MAIN ENTRANCE - P5 PAVING
CP-1 HANOVER CONCRETE PAVEMENT CHARCOAL TUDOR FINISH ORTHOGONAL PATTERNS
PAVING PATCH
CP-2 HANOVER CONCRETE PAVEMENT NATURAL TUDOR FINISH RADIAL PATTERNS
PROPOSED 5' CONCRETE SIDEWALK
PROPOSED 5' ASPHALT SIDEWALK
PROPOSED 8' CHAINLINK FENCE
PROPOSED 8' WROUGHT-IRON FENCE
PROPOSED LIMIT OF DISTURBANCE
PROPOSED SILT FENCE
PROPOSED STREET LIGHT
PROPOSED PARKING LIGHT
PROPOSED SITE LIGHT
PROPOSED SITE LIGHT

BENCHMARK

HORIZONTAL: MARYLAND NAD83 (ADJ 1981)
VERTICAL: NAVD83
GEODETIC SURVEY CONTROL: 0002
NORTHING: 544836.517
EASTING: 1342629.327
ELEVATION: 444.835
GEODETIC SURVEY CONTROL: 41EC
NORTHING: 543550.817
EASTING: 1342629.748
ELEVATION: 439.292
GEODETIC SURVEY CONTROL: 41FA
NORTHING: 543109.846
EASTING: 1344797.481
ELEVATION: 407.532

DESCRIPTIONS: STAMPED DISC SET ON 3" DEEP COLUMN OF CONCRETE



VICINITY MAP ADC# 20807184 SCALE 1"=2000' HOWARD COUNTY MAP PAGE 19 - GRID A-3 & B-3

DEVELOPMENT PHASE CHART table with columns: PHASE-DATE, IMPERVIOUS & COVERAGE (ac), OPEN SPACE (ac), REMAINING STORAGE IN POND, BUILDING COVERAGE, PARKING SPACES.

ADDRESS CHART

Table with 2 columns: PARCEL NO. (300) and ADDRESS (1101 JOHNS HOPKINS ROAD).

MISS UTILITY logo and contact information: 1-800-257-7777

APPROVED: DEPARTMENT OF PLANNING AND ZONING. Table with columns: No., Revision Description, Date.

JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY 1100 JOHNS HOPKINS ROAD LAUREL, MARYLAND 20723-6089 ATTN: JAMES LOESCH, PE, CFM PHONE: 443.778.5384 FAX: 443.778.6122

christopher consultants logo and contact information: engineering - surveying - land planning

PERMIT INFORMATION CHART table with columns: PROJECT NAME, LOT/PARCEL NO., CENSUS TRACT, DEED REF., GRID NO., ZONE, TAX MAP, ELECTION DISTRICT.

AS-BUILT COVER SHEET. DESIGN: SSA, SCALE: AS SHOWN, PROJECT: 08A901.00, DRAWN: SSA, DATE: OCTOBER, 2009, CHECKED: JMH, APPROVED: JMH, 01 of 54

LEED ACCREDITED PROFESSIONAL CERTIFICATE GREEN NEIGHBORHOOD PLAN FOR SITES. I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.

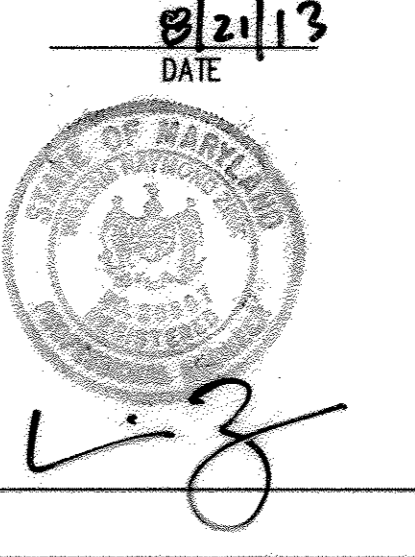
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. SIGNATURE OF BRIAN COLLINS, LEED ACCREDITATION NO. DATE: 11/19/09

DEVELOPER'S CERTIFICATE. I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE IN ACCORDANCE WITH THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO APPROVE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT. SIGNATURE OF DEVELOPER: Richard Troca, DATE: 11/5/09

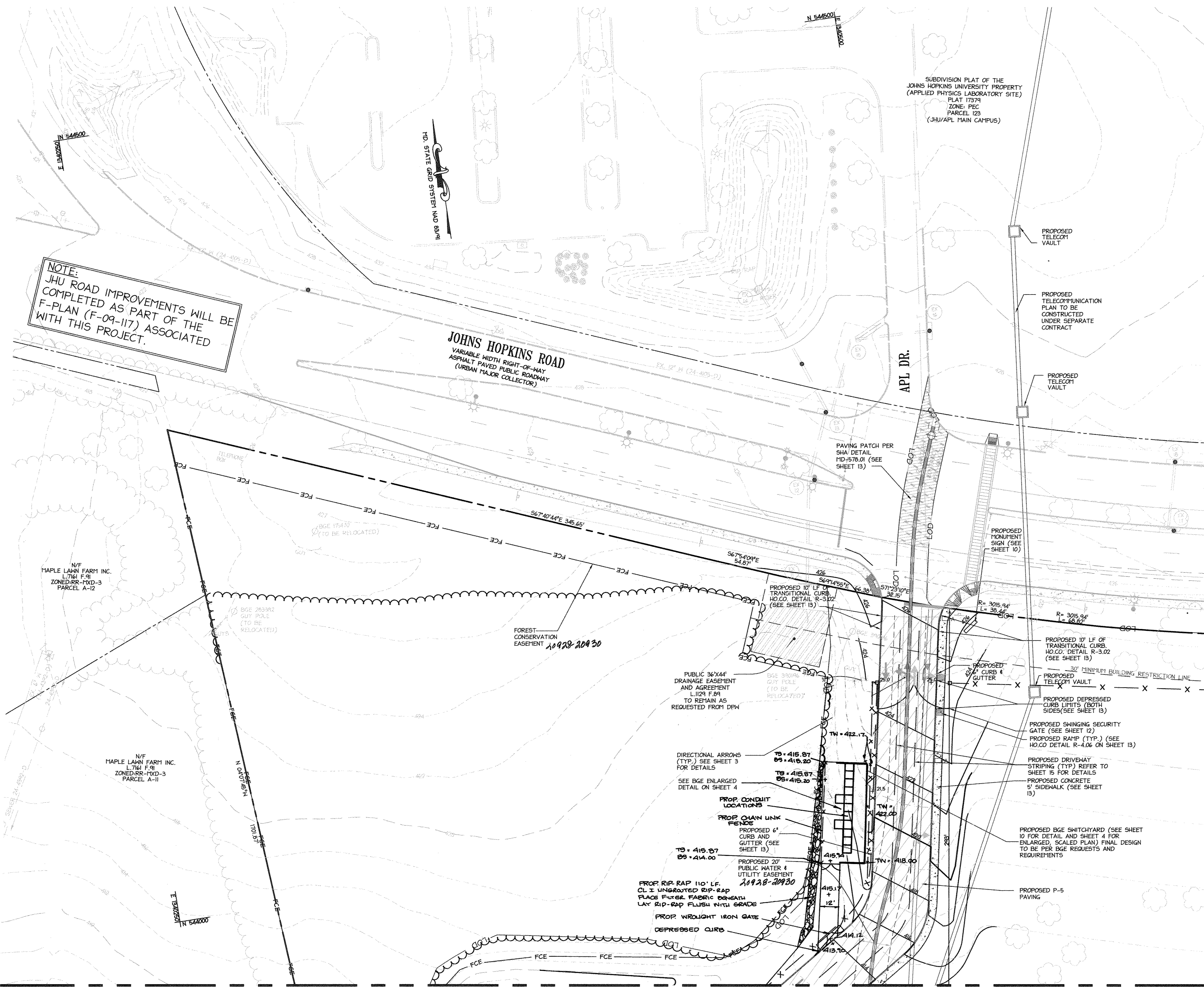
ENGINEER'S CERTIFICATE. I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. SIGNATURE OF ENGINEER: William R. Zink, PE, DATE: 8/21/13

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. SIGNATURE OF ENGINEER: William R. Zink, PE, DATE: 8/21/13

LEED ACCREDITED PROFESSIONAL CERTIFICATE GREEN NEIGHBORHOOD PLAN FOR SITES. I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST. SIGNATURE OF BRIAN COLLINS, LEED ACCREDITATION NO. DATE: 11/19/09



SDP-09-047



NOTE:
THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

NOTE:
THE DUCTS WILL NOT BE CONSTRUCTED UNDER THIS SITE DEVELOPMENT PLAN AND HAVE ONLY BEEN SHOWN FOR INFORMATIONAL PURPOSES.

NOTE:
THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD THE AS-BUILT CONDITION OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.

MATCHLINE - FOR CONTINUATION SEE SHEET 3 OF 54

MATCHLINE - FOR CONTINUATION SEE SHEET 4 OF 54

| | |
|---|----------------|
| APPROVED: DEPARTMENT OF PLANNING AND ZONING | |
| <i>[Signature]</i> Chief, Development Engineering Division | Date: 11/7/09 |
| <i>[Signature]</i> Chief, Division of Land Development | Date: 11/02/10 |
| <i>[Signature]</i> Director | Date: 11/11/10 |

| | | |
|---|----------|---|
| 1 | 8.7.10 | REDLINED FOR ADDITIONAL PARKING CURB & GUTTER AND APPROX. GRADING |
| 2 | 9.2.10 | ADD 1" BGE SWITCHYARD |
| 3 | 10.14.10 | ADDED REDLINE SUMMARY NOTE |

| Date | No. | Revision Description |
|------|-----|----------------------|
|------|-----|----------------------|

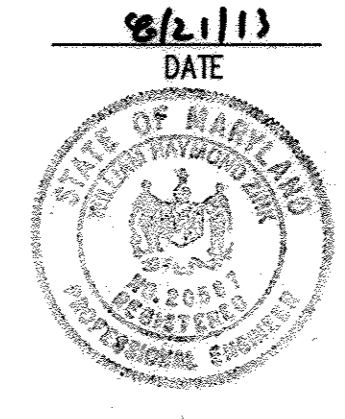
JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 1100 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6009
 ATTN: JAMES LOESCH, P.E., CFM
 PHONE: 443.778.5834 FAX: 443.778.6122

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 christopher consultants, inc.
 1172 Colchester Gateway Drive Suite 100 Columbia, Md. 21046-2990
 410.872.8800 • fax: 410.872.8811 • www.christopherconsultants.com

| | | | |
|--|-------------------------|-------------------------|--------------------------|
| PERMIT INFORMATION CHART | | | |
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 | |
| DEED REF. L10412, F.396 | GRID NO. ZONE 22 PEC | TAX MAP 41 | ELECTION DISTRICT 5th |
| DATE: 8/21/11 | | | |
| TITLE: SITE, GRADING & UTILITY PLAN | | | |
| DESIGN: CRH/SJ | SCALE: 1" = 30' | PROJECT: 08A901.00 | |
| DRAWN: SSA | DATE: OCTOBER, 2009 | CHECKED: JMH | |
| APPROVED: JMH | | 02 of 54 | |

LEED ACCREDITED PROFESSIONAL CERTIFICATE
 GREEN NEIGHBORHOOD PLAN FOR SITES
 I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
[Signature]
 SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. 20929 DATE 09-20-2011

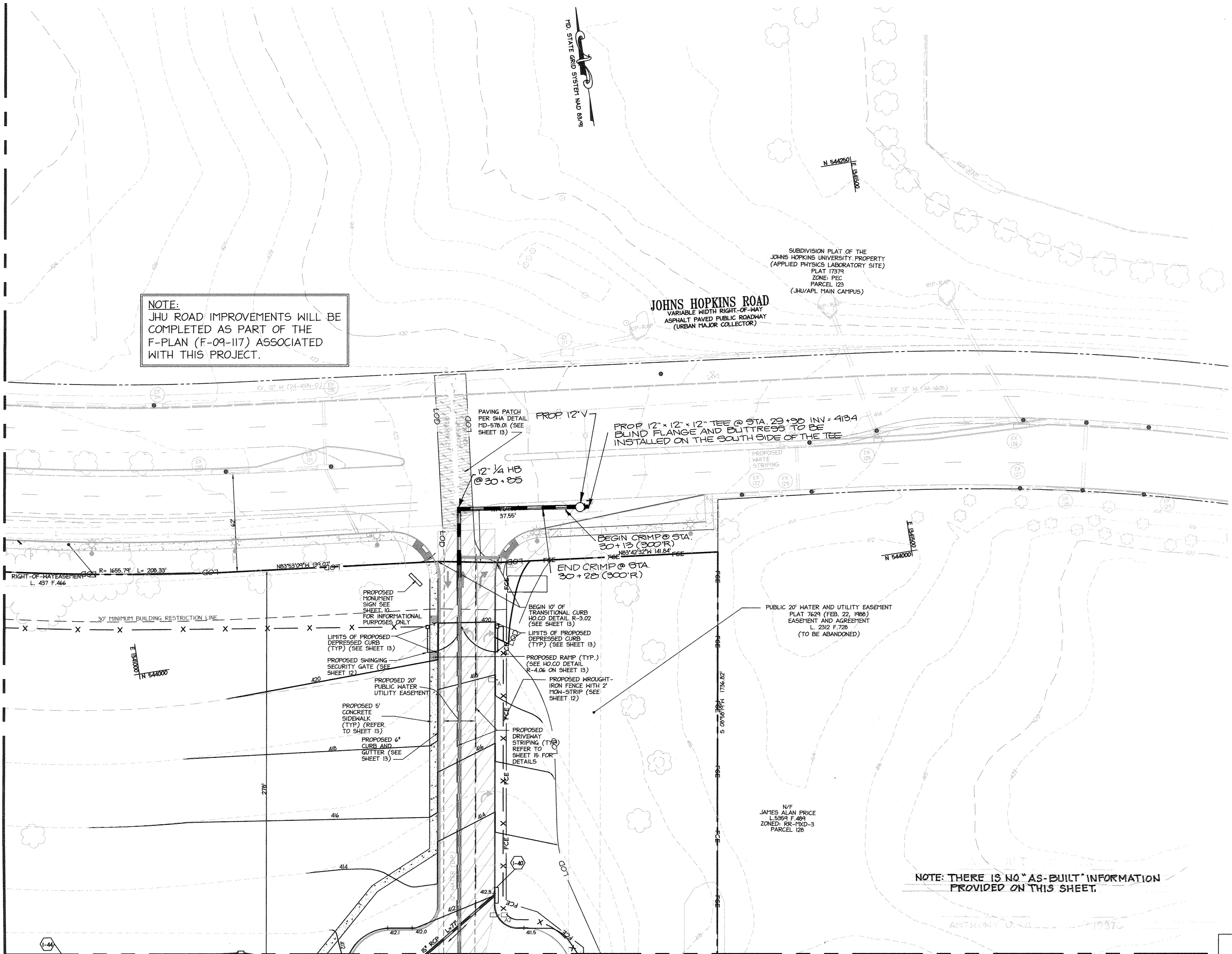
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
[Signature]
 SIGNATURE OF ENGINEER
 WILLIAM R. ZINK, P.E.
 MD LICENSE NUMBER: 20587
 EXPIRATION DATE: 09-20-2014
 DATE: 8/21/11



MDC-930(SDP)

MATCHLINE - FOR CONTINUATION SEE SHEET 2 OF 54

NOTE:
 JHU ROAD IMPROVEMENTS WILL BE COMPLETED AS PART OF THE F-PLAN (F-09-117) ASSOCIATED WITH THIS PROJECT.



NOTE:
 THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD THE AS-BUILT CONDITION OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.

MATCHLINE - FOR CONTINUATION SEE SHEET 5 OF 54

MATCHLINE - FOR CONTINUATION SEE SHEET 5 OF 54

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division 4/17/09
 Chief, Division of Land Development 1/28/10
 Director 1/16/10

| Date | No. | Revision Description |
|------|-----|--|
| | 1 | 8910 REDLINED FOR ADDITIONAL PARKING, CURB AND GUTTER AND ASSOC. GRADING |
| | 2 | 04.13 ADDED REDLINE SUMMARY NOTE |

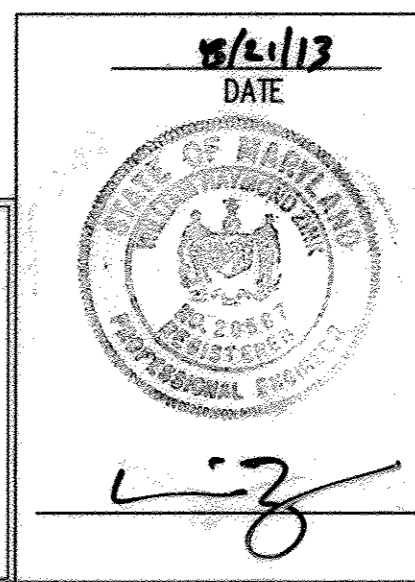
JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 1100 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099
 ATTN: JAMES LOESCH, PE, CFM
 PHONE: 443.778.5834 FAX 443.778.6122

christopher consultants
 engineering - surveying - land planning
 christopher consultants, inc.
 7172 oakdale greenway drive suite 100 coltsville, md. 21046-2800
 410.872.8800 faxes 301.681.0148 fax 410.872.8803

| PERMIT INFORMATION CHART | | | | |
|--|-----------------------|-------------------------|---------------|--------------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 | | |
| DEED REF. L10412, F.396 | GRID NO. 22 | ZONE PEC | TAX MAP 41 | ELECTION DISTRICT 5th |
| 1/16/12 20928 20930 AS-BUILT | | | | |
| TITLE: SITE, GRADING & UTILITY PLAN | | | | |
| DESIGN: CRH/SJ | SCALE: 1" = 30' | PROJECT: 08A901.00 | | |
| DRAWN: SSA | DATE: OCTOBER, 2009 | | | |
| CHECKED: JMH | APPROVED: JMH | 03 of 54 | | |

LEED ACCREDITED PROFESSIONAL CERTIFICATE
 GREEN NEIGHBORHOOD PLAN FOR SITES
 I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
 SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 SIGNATURE OF ENGINEER
 WILLIAM R. SINK PE
 MID LICENSE NUMBER: 20507
 EXPIRATION DATE: 09-20-2014
 DATE: 8/21/13



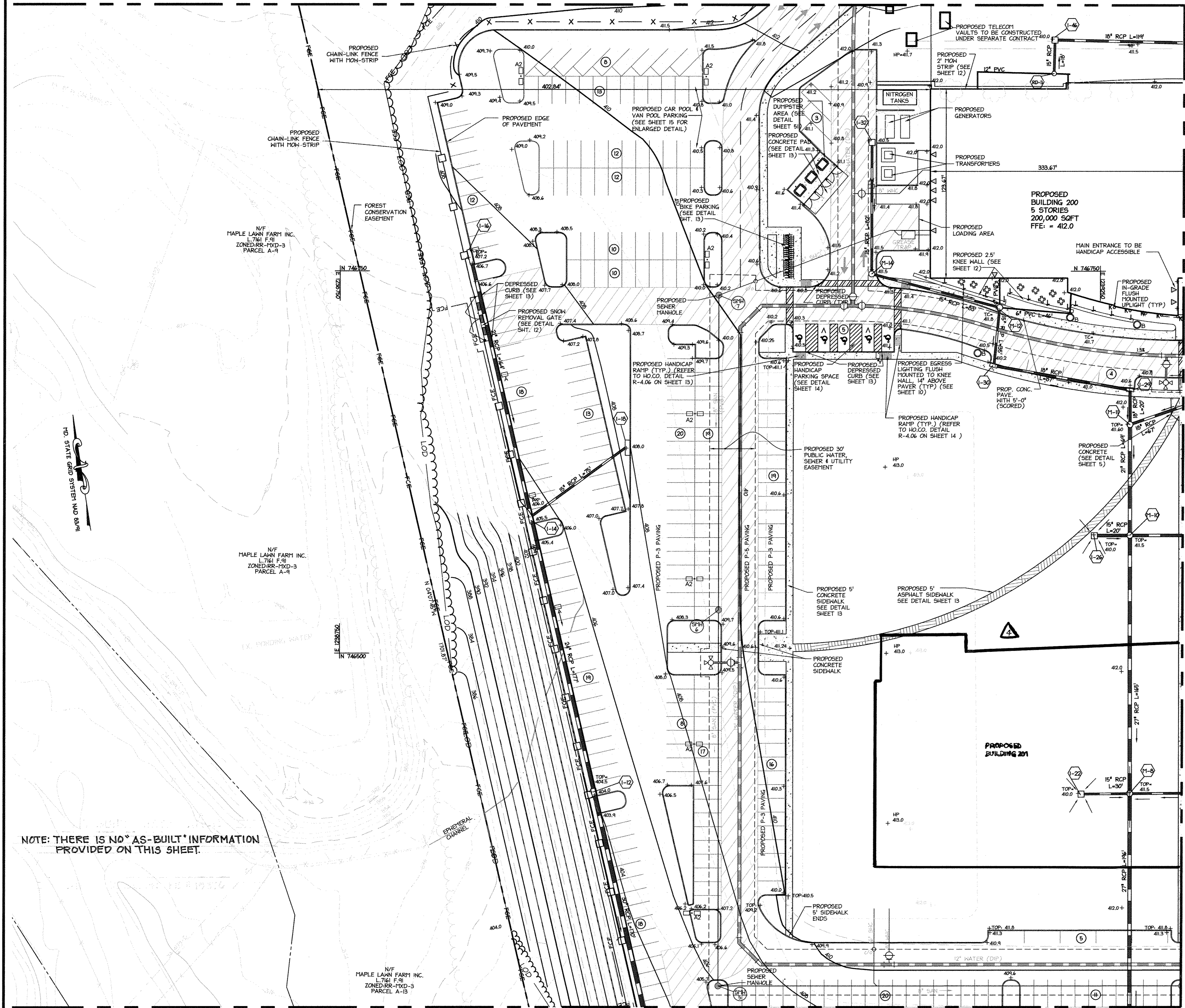
MDC-930(SDP)

MATCHLINE - FOR CONTINUATION SEE SHEET 2 OF 54

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 SIGNATURE OF ENGINEER: *William R. Zink* DATE: 06-14-2013
 WILLIAM R. ZINK, P.E. MD LICENSE NUMBER: 20567 EXPIRATION DATE: 09-26-2014

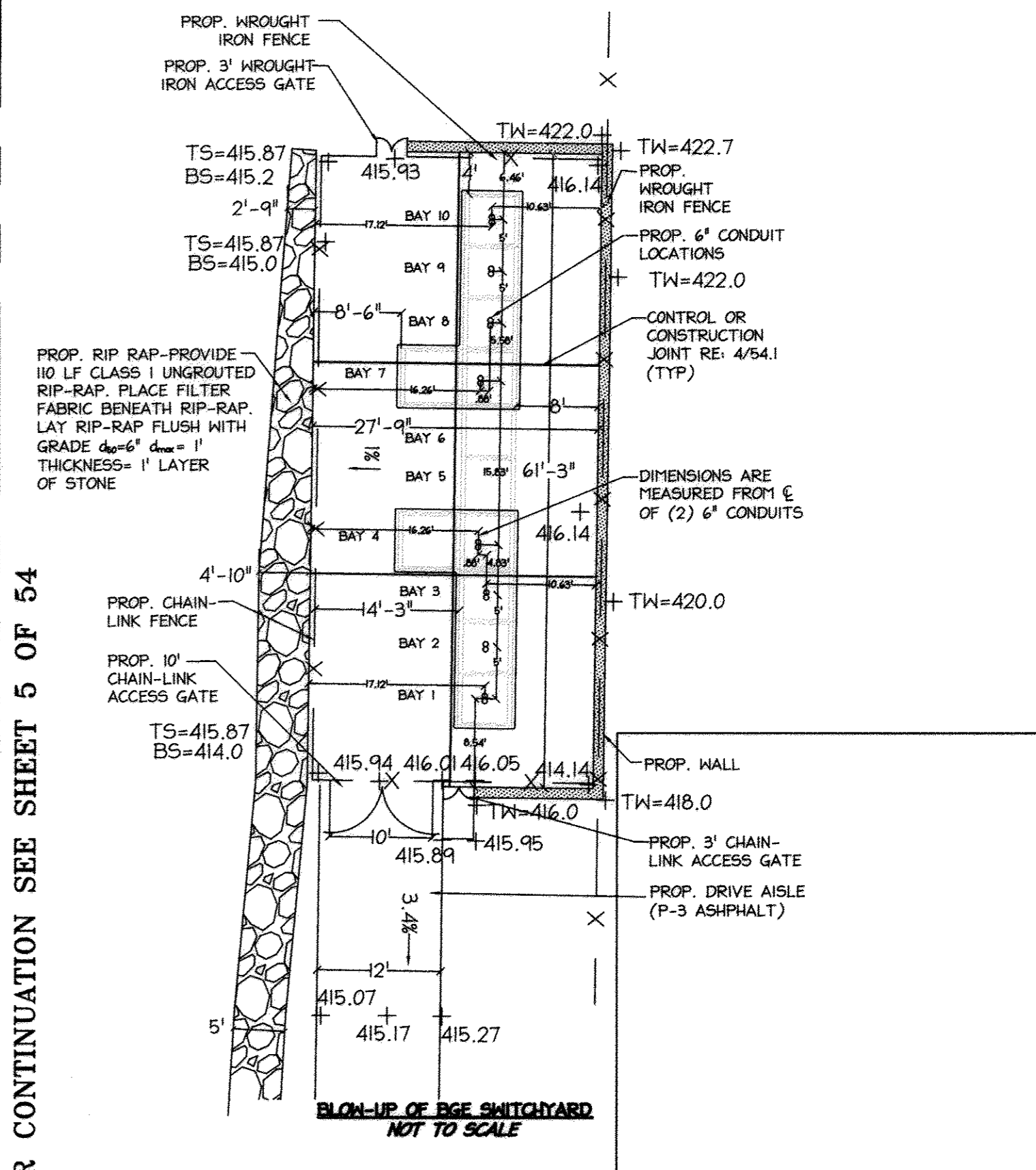
NOTE:
 SEE SHEET II FOR HANDICAP ACCESSIBLE ROUTE BLOW UP DETAIL.

LEED ACCREDITED PROFESSIONAL CERTIFICATE GREEN NEIGHBORHOOD PLAN FOR SITES
 I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
 SIGNATURE OF BRIAN COLLINS: *Brian Collins* LEED ACCREDITATION NO.: 129-09 DATE: 06-14-2013



MATCHLINE - FOR CONTINUATION SEE SHEET 5 OF 54

MATCHLINE - FOR CONTINUATION SEE SHEET 6 OF 54



NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

NOTE:
 THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD THE AS-BUILT CONDITION OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.

06/14/2013
 DATE

 PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: *David...* Date: 6/13/13
 Chief, Division of Land Development: *...* Date: 9/14/13
 Director: *M...* Date: 9/14/13

| Director | Revision | Description |
|----------|----------|---|
| 1 | 6.9.10 | REDLINED FOR ADDITIONAL PARKING, CURB & GUTTER AND ASSOC. GRADING |
| 2 | 9.24.10 | ASH 8% - BGE SWITCHYARD |
| 3 | 6.14.13 | ADDED REDLINE SUMMARY NOTE |
| 4 | 6.5.17 | SEE SDP-17-047 FOR BLDG 201 SITE IMPROVEMENTS |

Date: No. Revision Description

JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
 1100 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6089
 ATTN: JAMES LOESCH, P.E., CFM
 PHONE: 443.778.5844 FAX 443.778.6122

christopher consultants
 engineering - surveying - land planning
 christopher consultants, inc.
 7777 coltsville gateway drive suite 100 coltsville, md. 21046-2900
 410.872.8800 - 410.301.8151 fax 410.872.8803

PERMIT INFORMATION CHART

| PROJECT NAME: | LOT/PARCEL NO. | CENSUS TRACT | | |
|--|---------------------|--------------------|---------|-------------------|
| JHU/APL - SOUTH CAMPUS BUILDING 200 | 300 | 6051.02 | | |
| DEED REF. | GRID NO. | ZONE | TAX MAP | ELECTION DISTRICT |
| L10412, F.396 | 22 | PEC | 41 | 5th |
| Revised SDP AS-BUILT | | | | |
| TITLE: SITE, GRADING & UTILITY PLAN | | | | |
| DESIGN: CRH/SJ | SCALE: 1" = 30' | PROJECT: 08A901.00 | | |
| DRAWN: SSA | DATE: OCTOBER, 2009 | APPROVED: JMH | | |
| CHECKED: JMH | APPROVED: JMH | 04 of 54 | | |

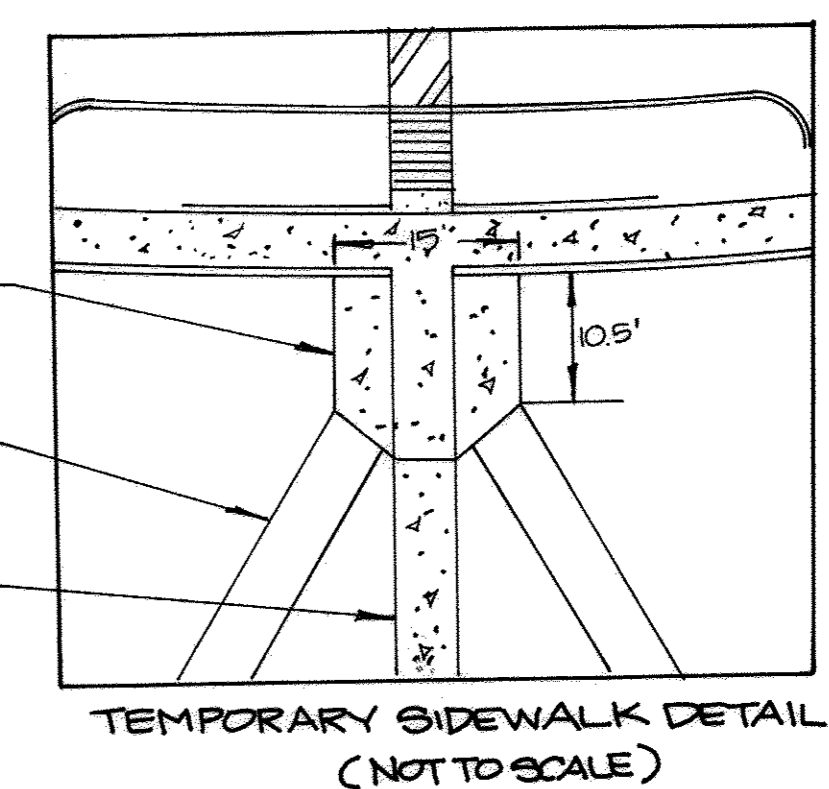
MDC-9301(SDP)

MATCHLINE - FOR CONTINUATION SEE SHEET 3 OF 54

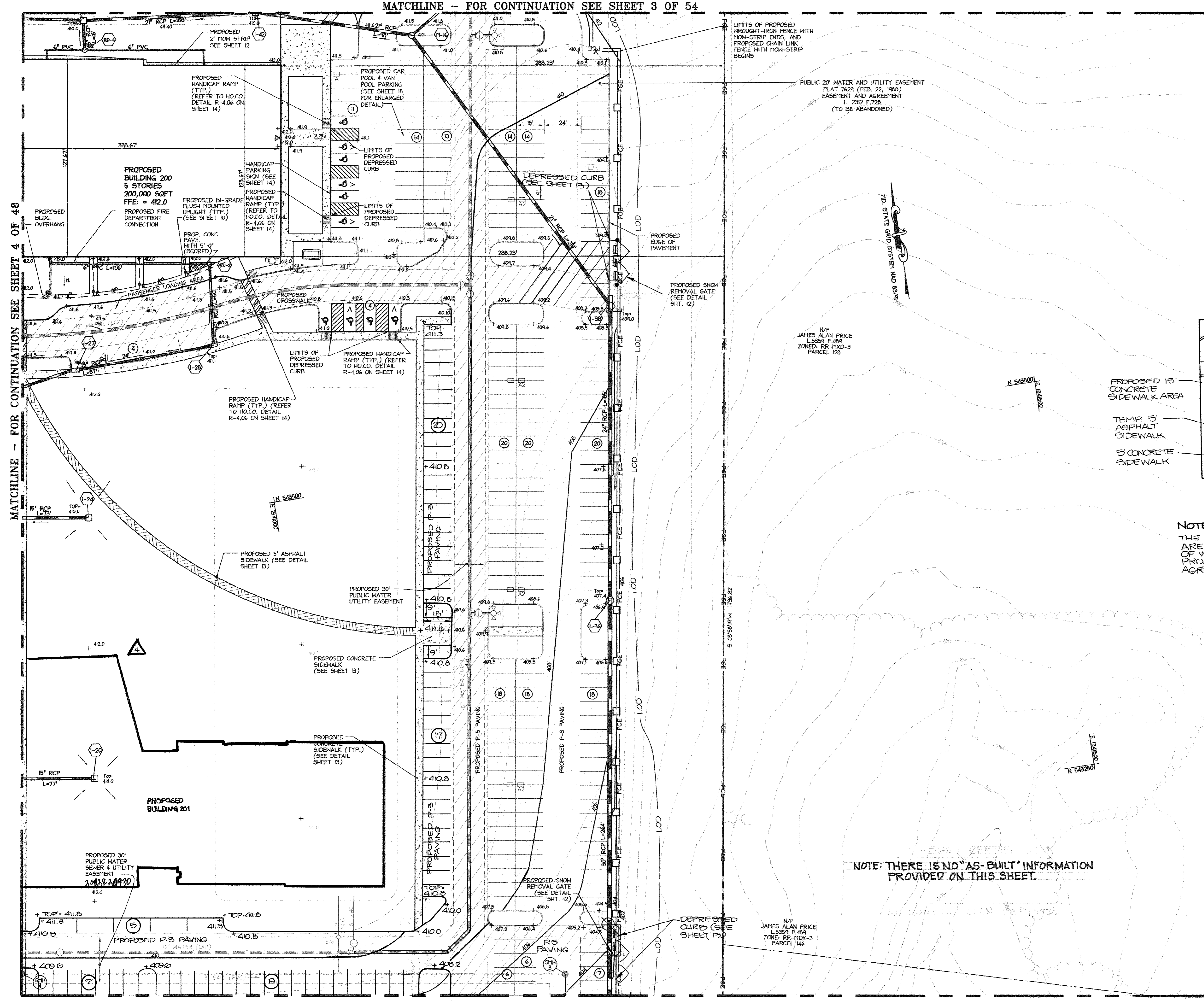
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 SIGNATURE OF ENGINEER: *[Signature]* DATE: 8/21/13
 WILLIAM R. ZINK, P.E.
 MD LICENSE NUMBER: 20557
 EXPIRATION DATE: 09-20-2014

LEED ACCREDITED PROFESSIONAL CERTIFICATE
 GREEN NEIGHBORHOOD PLAN FOR SITES
 I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
 SIGNATURE OF BRIAN COLLINS: *[Signature]* LEED ACCREDITATION NO.: 10-9-09 DATE: 8/21/13

NOTE:
 SEE SHEET 11 FOR HANDICAP ACCESSIBLE ROUTE BLOW UP DETAIL.



NOTE:
 THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD THE AS-BUILT CONDITION OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.



MATCHLINE - FOR CONTINUATION SEE SHEET 7 OF 54

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: *[Signature]* Date: 4/17/09
 Chief, Division of Land Development: *[Signature]* Date: 1/05/10
 Director: *[Signature]* Date: 11/1/10

| | | |
|---|--------|---|
| 1 | 8.9.10 | REDLINED FOR ADDITIONAL PARKING CURB AND GUTTER AND APPROX. GRADING |
| 2 | 04.13 | ADDED REDLINE SUMMARY NOTE |
| 4 | 6.5.17 | SEE SDP-17-047 FOR BLD G 201 SITE IMPROVEMENTS |

JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 1100 JOHNS HOPKINS ROAD
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 PHONE: 443.778.5134 FAX: 443.778.6122

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 christopher consultants, inc.
 11710 coltsville gateway drive, suite 100, coltsville, md 21046-2900
 410.872.8500 · mdca.301.851.9746 · fax.410.872.8500

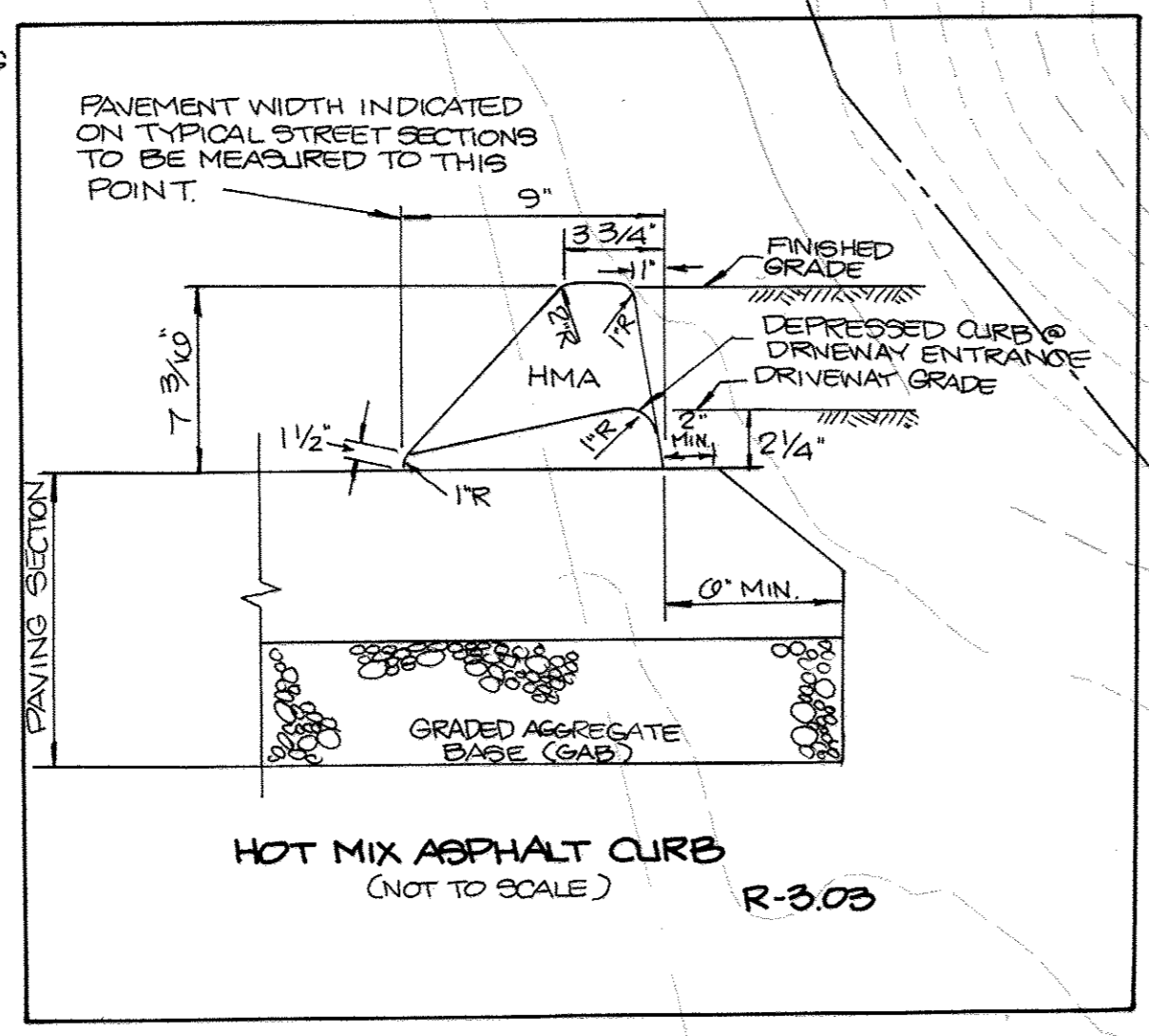
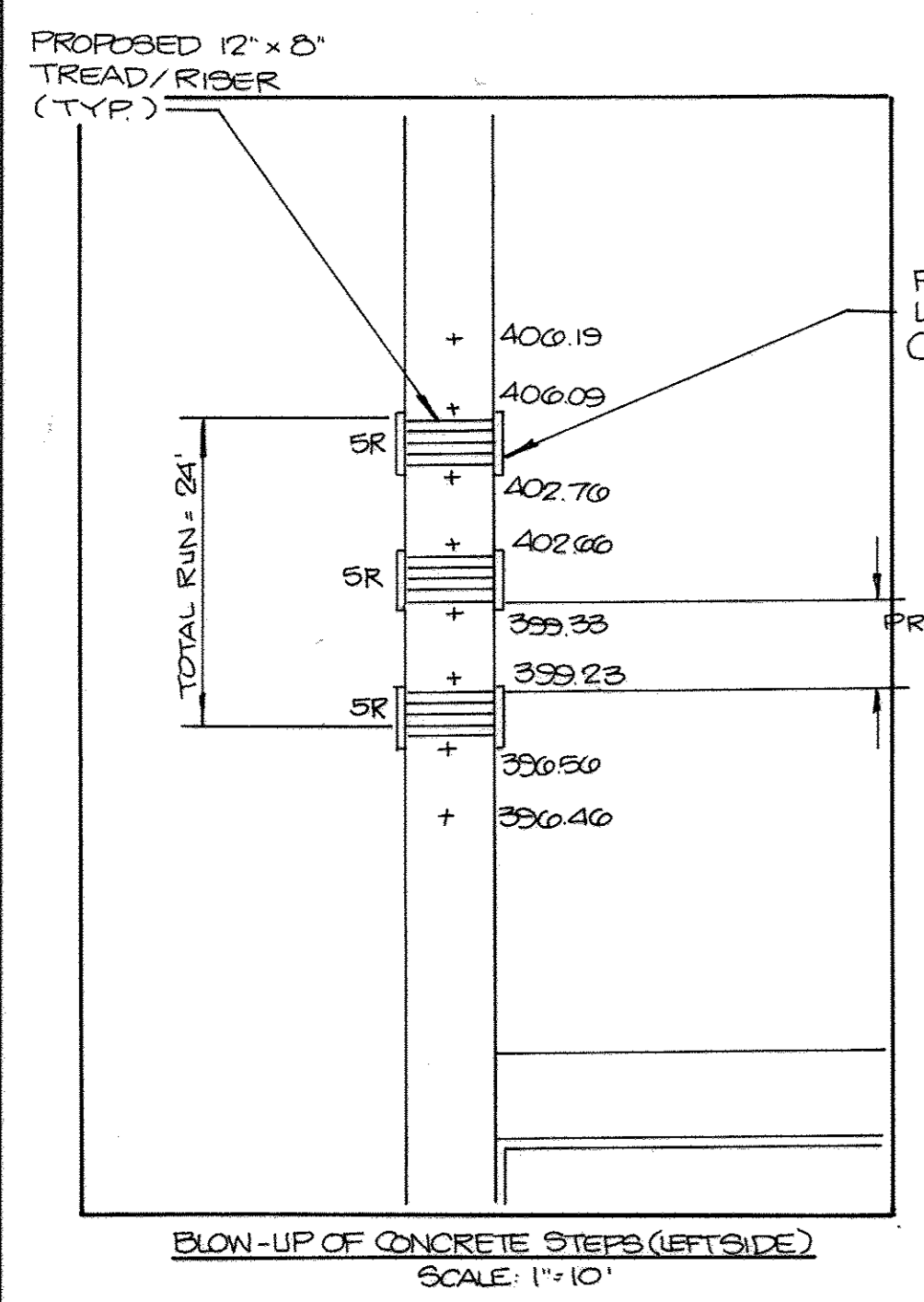
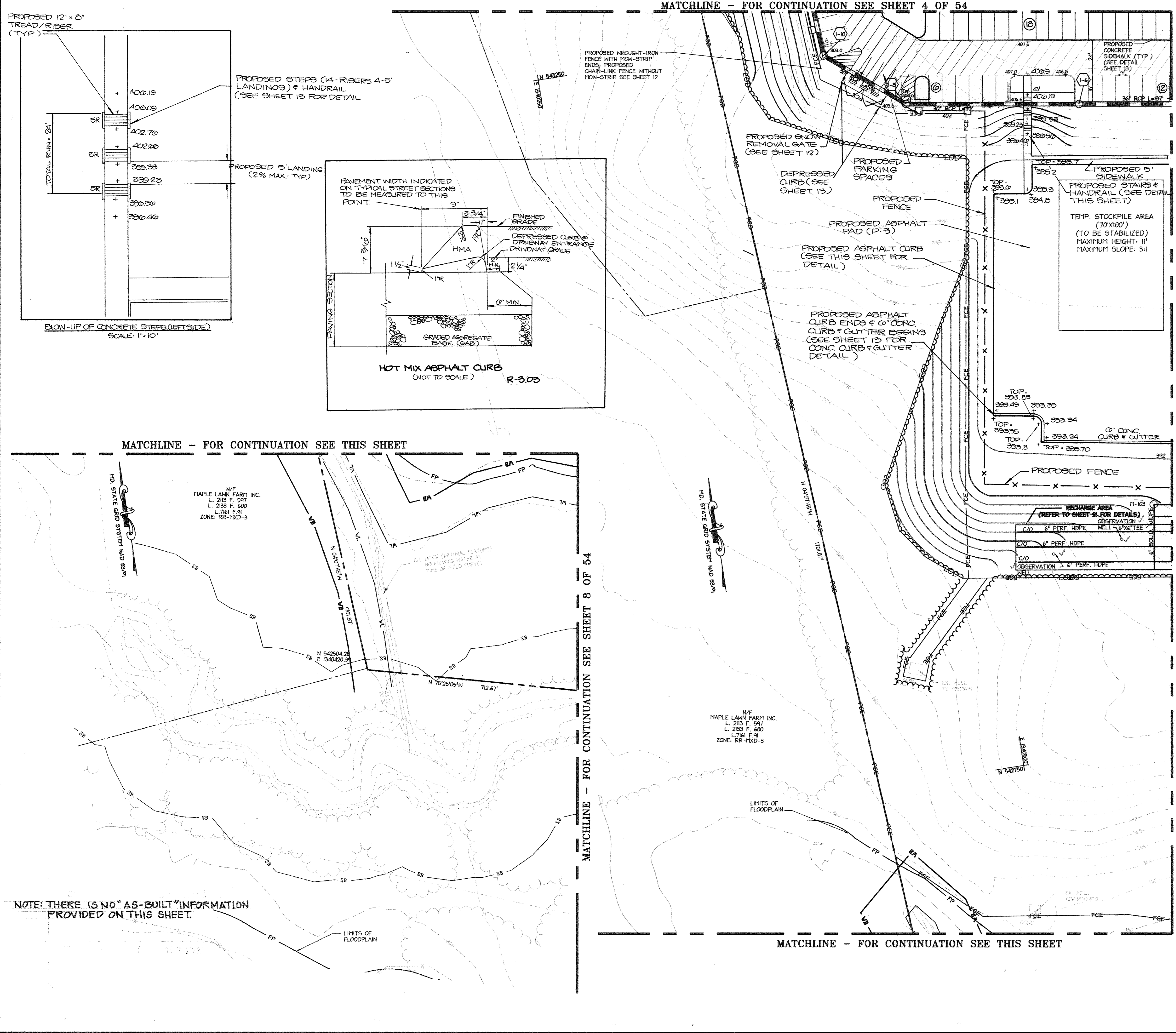
PERMIT INFORMATION CHART

| | | |
|--|-------------------------|-------------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 |
| DEED REF. L10412, F.396 | GRID NO. ZONE 22 PEC | TAX MAP 41 |
| ELECTION DISTRICT 5th | AS-BUILT | |
| TITLE: SITE, GRADING & UTILITY PLAN | | |
| DESIGN: CRH/SJ | SCALE: 1" = 30' | PROJECT: 08A910.00 |
| DRAWN: SSA | DATE: OCTOBER, 2009 | |
| CHECKED: MH | APPROVED: JMH | 05 OF 54 |



DATE: 8/21/13
 STATE OF MARYLAND PROFESSIONAL ENGINEER
 WILLIAM R. ZINK, P.E.
 LICENSE NO. 20557

MDC-980(SDP)



NOTE:
THE CHANGES SHOWN ON THIS PLAN ARE RECORD THE AS-BUILT CONDITIONS OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.

LEED ACCREDITED PROFESSIONAL CERTIFICATE GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
SIGNATURE OF ENGINEER DATE
WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20527
EXPIRATION DATE: 09-20-2014

NOTE:
THE STOCKPILE WILL REMAIN ON SITE UNTIL THE GARAGE IS CONSTRUCTED VEGETATIVELY STABILIZE MAX SIDE SLOPES WILL BE 3:1 MAX HEIGHT: 10'

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Development Engineering Division 4/17/09
Chief, Division of Land Development 1/2/10
Director 11/1/10

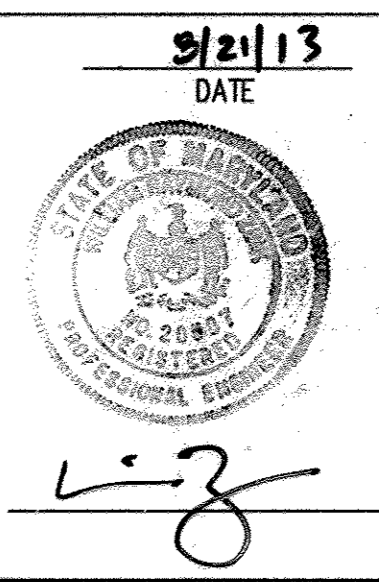
| No. | Revision Description |
|-----|---|
| 1 | REDLINED FOR ADDITIONAL PARKING, CURB & GUTTER AND ASSOC. GRADING |
| 2 | REDLINED FOR STORM SEWER |
| 3 | ADDED REDLINE SUMMARY NOTE. |

JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
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7172 GARDNER GARDNER DRIVE SUITE 100 GARDNER, MD 21046-2900
410.872.8855 FAX 410.872.8858

PERMIT INFORMATION CHART

| | | |
|---|-----------------------|----------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 |
| DEED REF. L10412, F.396 | GRID NO. 22 | ZONE PEC |
| TAX MAP 41 | ELECTION DISTRICT 5th | |
| DATE: 9/21/13 | AS-BUILT | |
| TITLE: SITE, GRADING & UTILITY PLAN | | |
| DESIGN: CRH/SJ | SCALE: 1" = 30' | PROJECT: 08A901.00 |
| DRAWN: SSA | DATE: OCTOBER, 2009 | |
| CHECKED: JMH | APPROVED: JMH | 06 of 54 |



MDC-930(SDP)

MATCHLINE - FOR CONTINUATION SEE SHEET 5 OF 54

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 SIGNATURE OF ENGINEER: *W.R. Zink*
 WILLIAM R. ZINK, PE
 MD LICENSE NUMBER: 20587
 EXPIRATION DATE: 09-20-14
 DATE: 8/21/13

POND SUMMARY TABLE

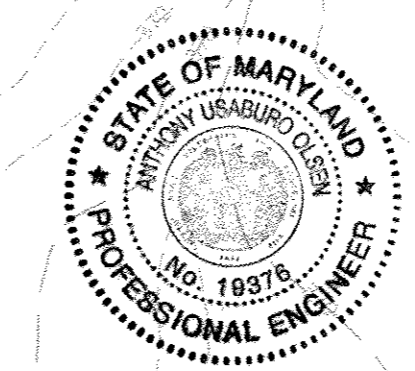
| BMP #1 | ELEVATION |
|--------------------|-----------|
| POND BOTTOM | 378.00 |
| NORMAL POOL | 382.3 |
| CPV | 386.00 |
| SPILLWAY | N/A |
| 10-YEAR (BLOCKED) | 384.78 |
| 100-YEAR (BLOCKED) | 390.27 |
| TOP OF POND | 392.3 |

LEED ACCREDITED PROFESSIONAL CERTIFICATE GREEN NEIGHBORHOOD PLAN FOR SITES

I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
 SIGNATURE OF BRIAN COLLINS: *Brian Collins*
 LEED ACCREDITATION NO. 1579
 DATE: 8/21/13

REQUIREMENT SUMMARY TABLE

| REQUIREMENTS | BEFORE CREDITS | AFTER CREDITS | CREDITS / BMP'S | |
|--------------|----------------|---------------|-----------------------------|--|
| MDv | 2.40 AC.-FT. | 1.09 AC.-FT. | NATURAL AREA POND | 13.87 AC. (39.2%) 1.09 AC.-FT. (60.8%) |
| Rev | 0.62 AC.-FT. | 0.381 AC.-FT. | RECHARGE AREAS NATURAL AREA | 0.381 AC.-FT. (60.8%) 13.87 AC. (39.2%) |



AS-BUILT CERTIFICATION

I HEREBY CERTIFY BY MY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
 SIGNATURE: *Anthony U. Olsen*
 ANTHONY U. OLSEN PE# 19376
 DATE OF AS-BUILT: 11/28/17

NOTES:

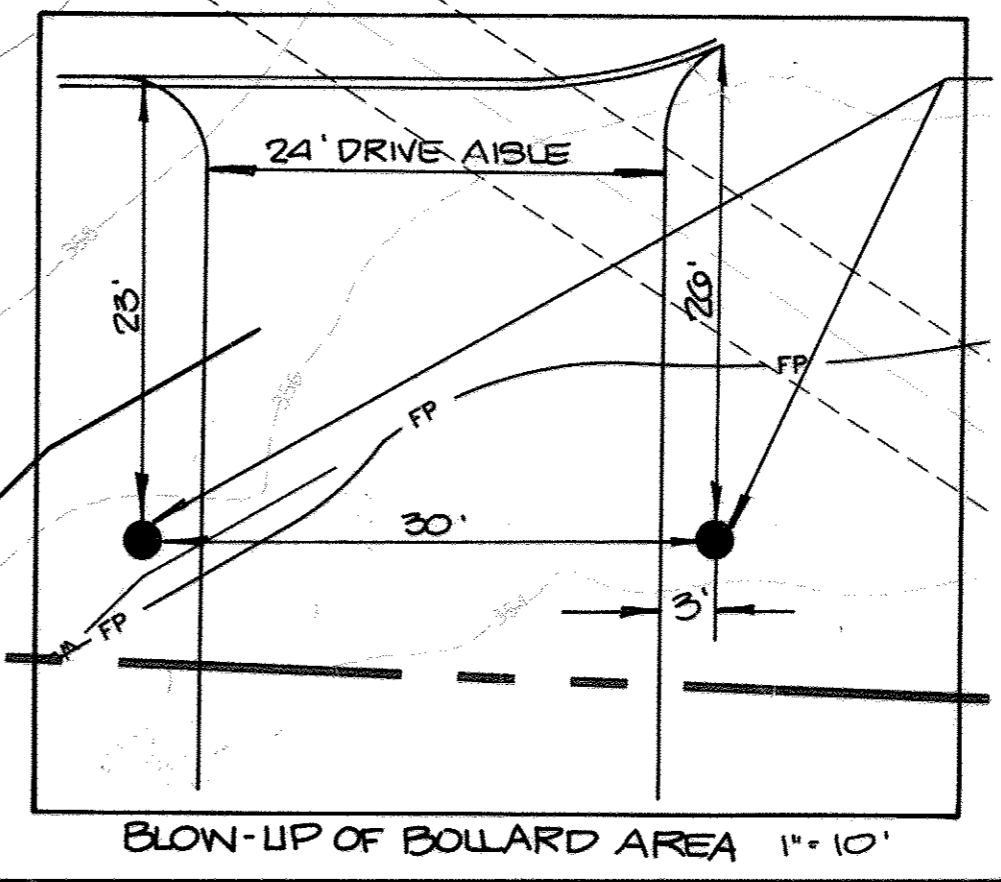
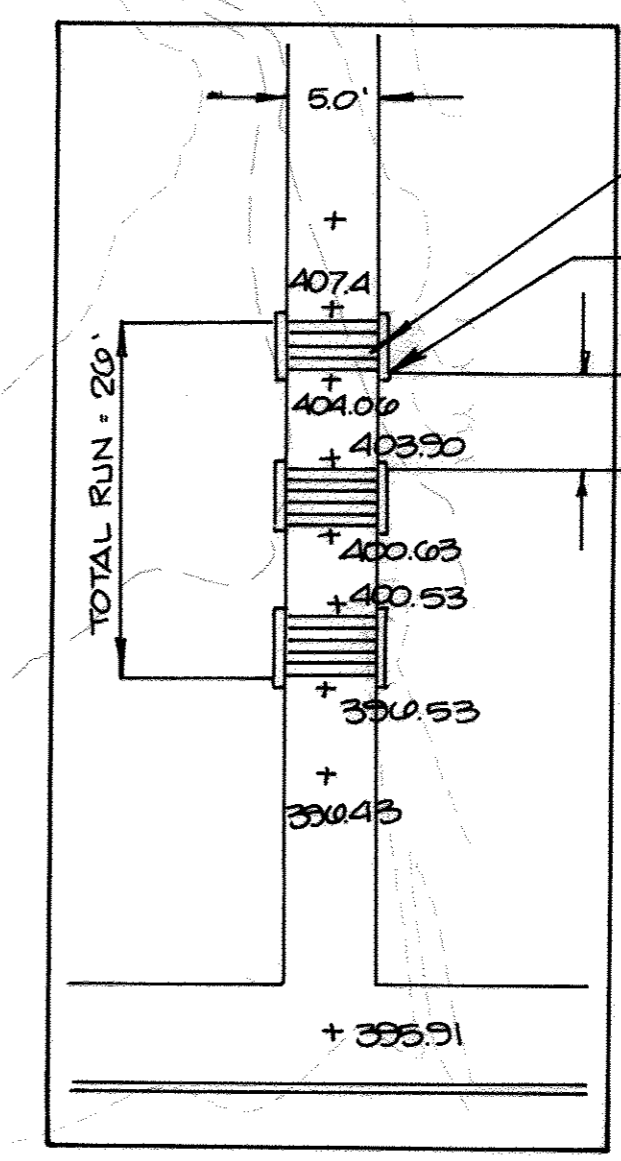
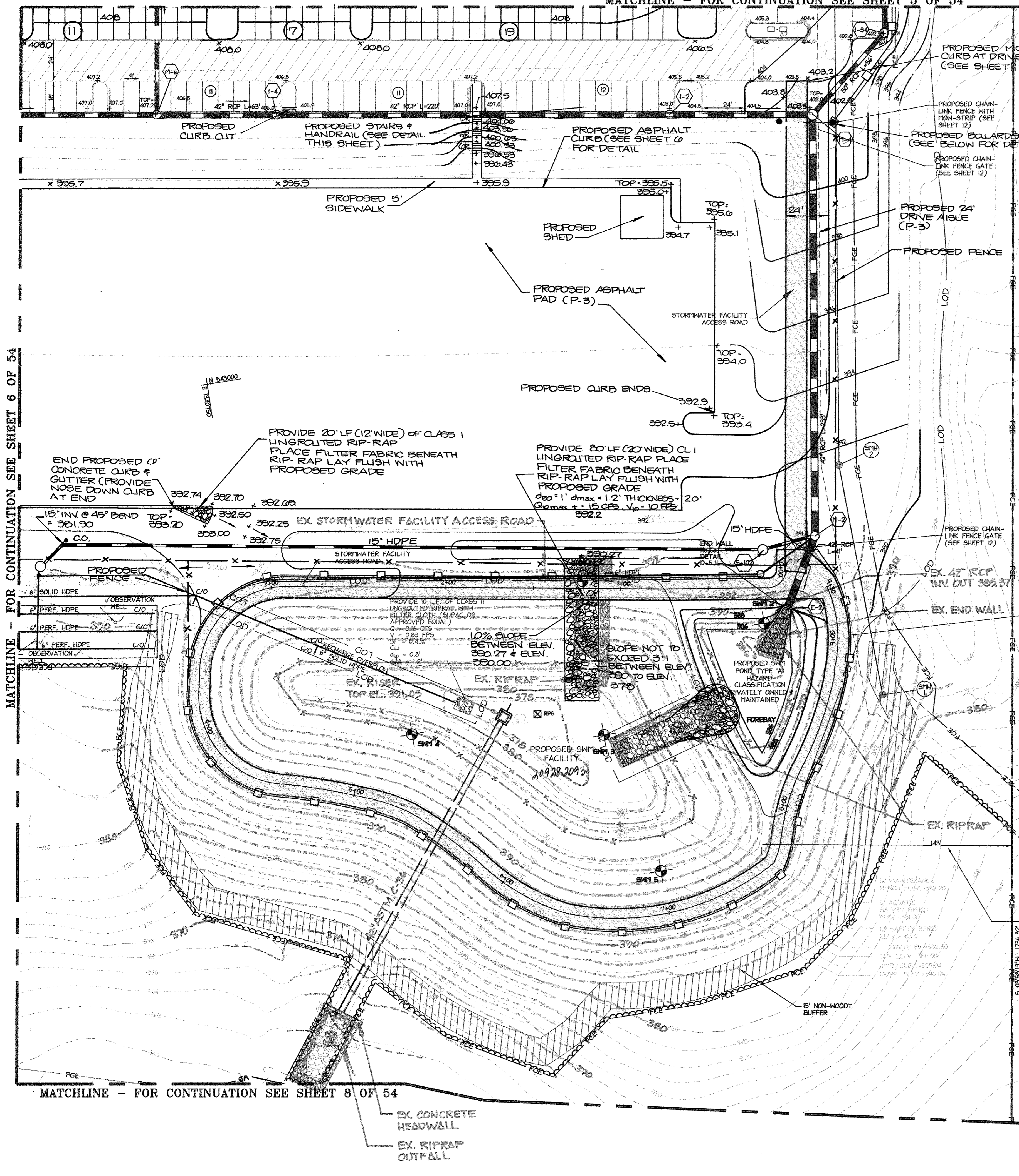
1. DUE TO THE INFILTRATION RATE AND THE PRESENCE OF FRACTURED ROCK NEAR THE BOTTOM ELEVATION OF THE POND, A 6" CLAY LINER SHALL BE PROVIDED UP TO THE PERMANENT POOL ELEVATION TO HELP MAINTAIN A CONSTANT WET POOL.

SEWER NOTE:

EXISTING 8" PRIVATE SANITARY SEWER AND EASEMENT TO BE PUBLIC & CONVEYED TO COUNTY UNDER PUBLIC WATER & SEWER PLAN CONTRACT NO. 24-4614-D

NOTE:

THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD THE AS-BUILT CONDITIONS OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2005



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: *W. Dammann* 11/17/09
 Chief, Division of Land Development: *W. Stalder* 1/23/10
 Director: *Thomas J. Butler* 1/11/10

| No. | Revision Description |
|-----|--|
| 1 | 89.10 REDLINED FOR ADDITIONAL PARKING CURB & GUTTER AND ASSOC. GRADING |
| 2 | 2.20.13 REDLINED FOR STORM SEWER |
| 3 | 04.12 ADDED REDLINE SUMMARY NOTE |

JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
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 7177 cedarbluff gateway drive suite 302, coventry, md 21046-2900
 410.872.8800 • faxes 301.581.5148 • fax 410.872.8803

PERMIT INFORMATION CHART

| PROJECT NAME: | LOT/PARCEL NO. | CENSUS TRACT | | |
|-------------------------------------|----------------|--------------|---------|-------------------|
| JHU/APL - SOUTH CAMPUS BUILDING 200 | 300 | 6051.02 | | |
| DEED REF. | GRID NO. | ZONE | TAX MAP | ELECTION DISTRICT |
| L10412, F.396 | 22 | PEC | 41 | 5th |

DATE: 8/21/13
 TITLE: **SITE, GRADING & UTILITY PLAN**
 DESIGN: EJ
 DRAWN: SSA
 CHECKED: JMH
 SCALE: 1" = 30'
 DATE: OCTOBER, 2009
 APPROVED: JMH
 PROJECT: 08A901.00
07 of 54

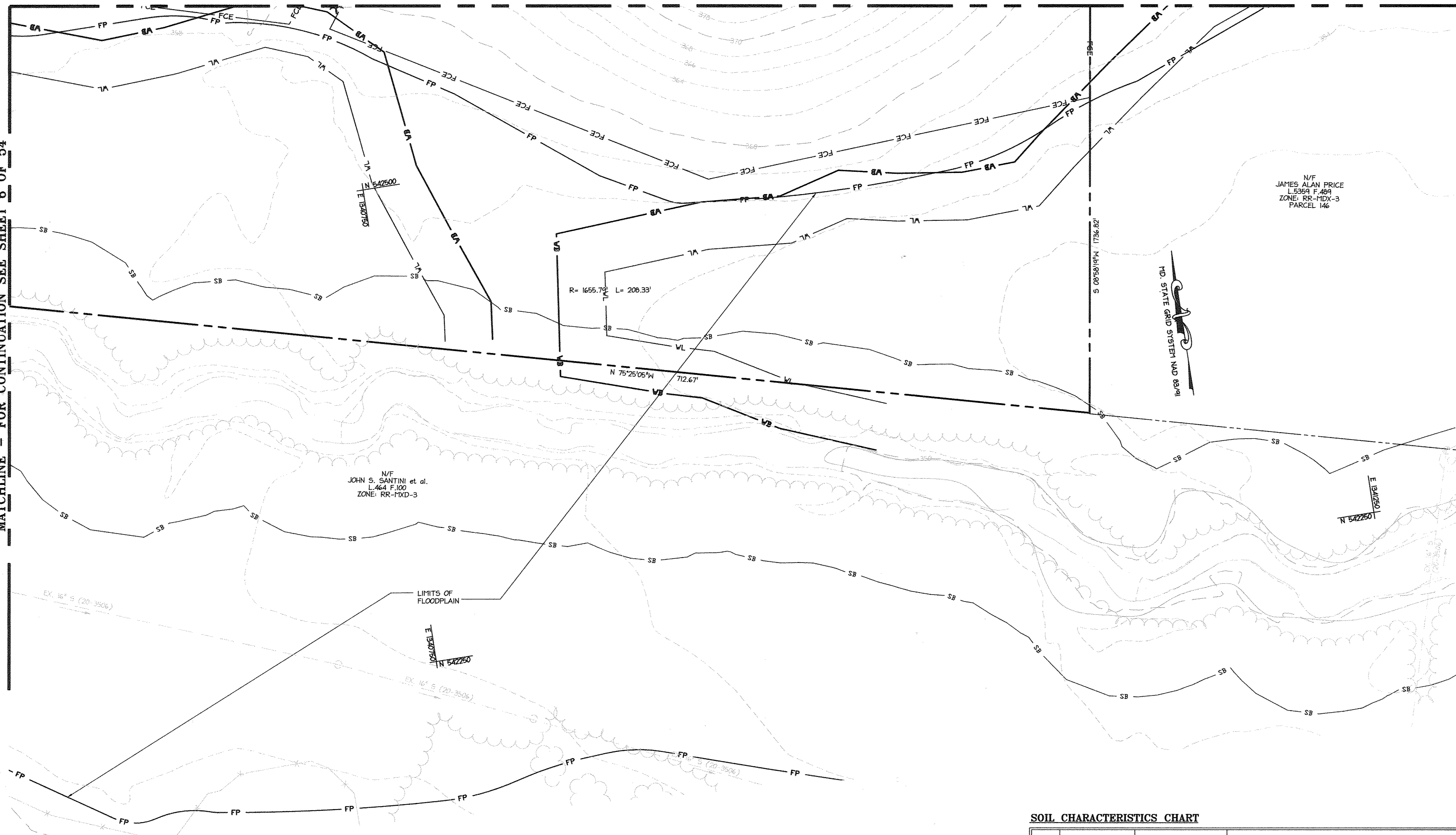
MATCHLINE FOR CONTINUATION SEE SHEET 6 OF 54

MATCHLINE - FOR CONTINUATION SEE SHEET 8 OF 54

MDC-930(SDP)

MATCHLINE - FOR CONTINUATION SEE SHEET 7 OF 54

MATCHLINE - FOR CONTINUATION SEE SHEET 6 OF 54



N/F
JAMES ALAN PRICE
L 5393 F 409
ZONE: RR-TDX-3
PARCEL 146

N/F
JOHN S. SANTINI et al.
L 464 F 100
ZONE: RR-TDX-3

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
SIGNATURE OF ENGINEER _____ DATE _____
MD LICENSE NUMBER: _____
EXPIRATION DATE: _____

LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
Brian Collins 10-9-09
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

SOIL CHARACTERISTICS CHART

| SERIES | NAME | SUBGROUP | DESCRIPTION | HYDRIC | K-FACTOR |
|--------|----------------------------------|-------------------------|--|--------|----------|
| ChA | CHESTER SILT LOAM, 0-3% | TYPIC HAPLUDULTS | 4 TO 10 FEET DEPTH TO BEDROCK; 20+ FEET TO WATER TABLE; SLIGHT TO MODERATE LIMITATIONS FOR SEWAGE DISPOSAL FIELDS AND HOMES WITH BASEMENTS DEPENDING ON SLOPE; EROSION HAZARD. | N | 0.32 |
| Co | CODRUS SILT LOAM | FLUVENTIC DYSTROCHREPTS | - | N | 0.37 |
| GgA | GLENELG LOAM1, 0-3% | TYPIC HAPLUDULTS | 4 TO 10 FEET TO BEDROCK; 10+ FEET TO WATER TABLE; SLIGHT TO SEVERE LIMITATIONS FOR SEWAGE DISPOSAL FIELDS AND HOMES WITH BASEMENTS DEPENDING ON SLOPE; EROSION HAZARD. | N | 0.20 |
| GgB | GLENELG LOAM1, 3-8% | TYPIC HAPLUDULTS | 4 TO 10 FEET TO BEDROCK; 10+ FEET TO WATER TABLE; SLIGHT TO SEVERE LIMITATIONS FOR SEWAGE DISPOSAL FIELDS AND HOMES WITH BASEMENTS DEPENDING ON SLOPE; EROSION HAZARD. | N | 0.20 |
| GgC | GLENELG LOAM1, 8-15% | TYPIC HAPLUDULTS | 4 TO 10 FEET TO BEDROCK; 10+ FEET TO WATER TABLE; SLIGHT TO SEVERE LIMITATIONS FOR SEWAGE DISPOSAL FIELDS AND HOMES WITH BASEMENTS DEPENDING ON SLOPE; EROSION HAZARD. | N | 0.20 |
| GgB | GLENVILLE-BAILE SILT LOAM1, 0-8% | TYPIC HAPLUDULTS | 4 TO 10 FEET TO BEDROCK; 10+ FEET TO WATER TABLE; SLIGHT TO SEVERE LIMITATIONS FOR SEWAGE DISPOSAL FIELDS AND HOMES WITH BASEMENTS DEPENDING ON SLOPE; EROSION HAZARD. | N | 0.20 |
| Hs | HATBORO SILT LOAM | FLUVENTIC HAPLUDULTS | - | Y | 0.37 |
| HgB2 | HANDR GRAVELLY LOAM1, 3-8% | TYPIC DYSTROCHREPTS | 4 TO 10 FEET TO BEDROCK; 20+ FEET TO WATER TABLE; SLIGHT TO SEVERE LIMITATIONS FOR SEWAGE DISPOSAL FIELDS AND HOMES WITH BASEMENTS DEPENDING ON SLOPE; EROSION HAZARD. | N | 0.48 |

WARNING: ALL SOILS HAVE LIMITATIONS, RANGING FROM SLIGHT TO SEVERE, FOR BUILDING HOMES, CONSTRUCTING ROADS AND PONDS AND VARIOUS OTHER USES. PLEASE CONSULT THE SOIL SURVEY OF HOWARD COUNTY FOR DETERMINING SOIL TYPES AND THEIR SUITABILITY FOR DEVELOPMENT, ENGINEERING AND BUILDING.

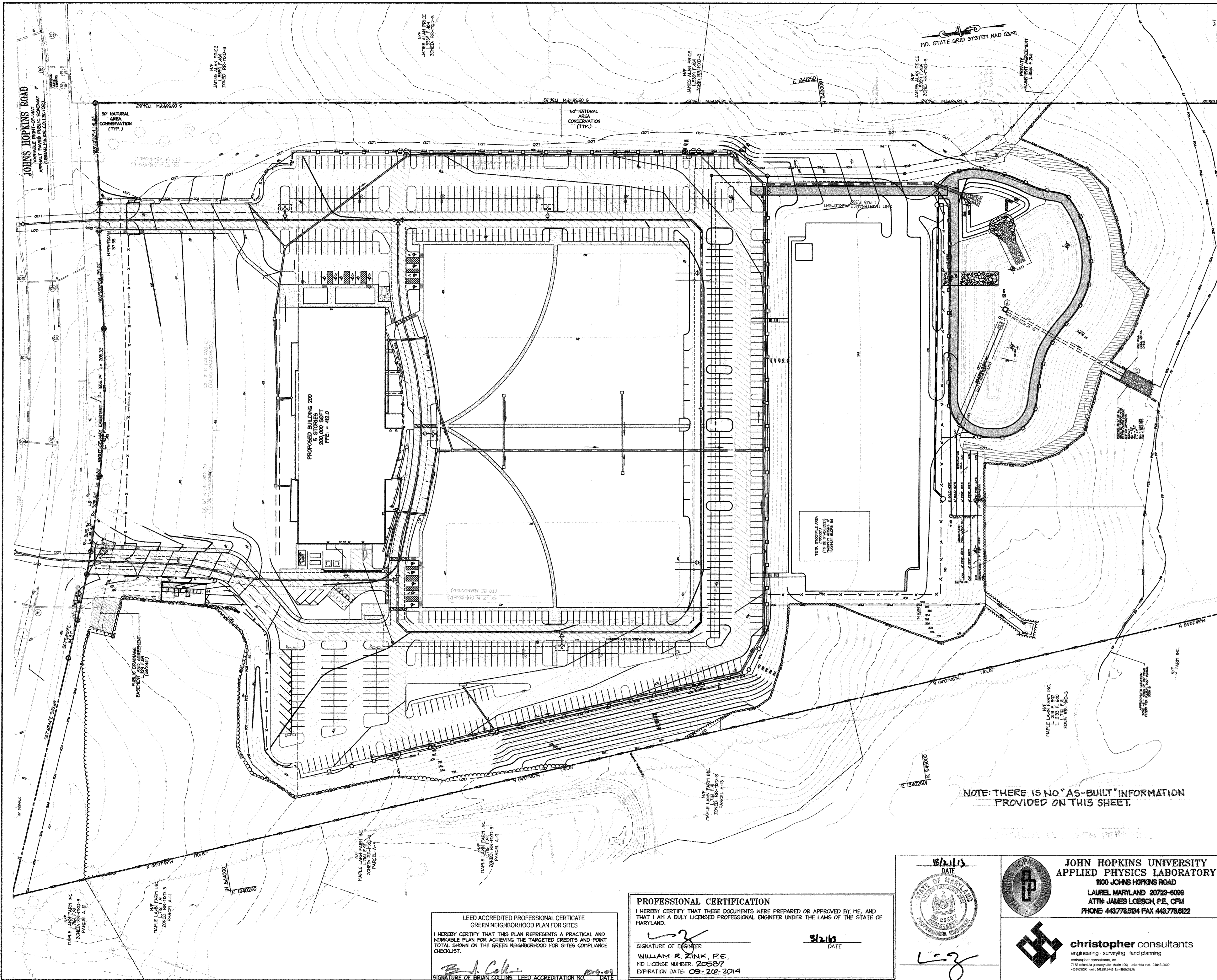
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad DeWitt 11/17/09
Chief, Development Engineering Division Date
W. J. Shuler 1/10/10
Chief, Division of Land Development Date
Progeny J. Butler 1/11/10
Director Date

JOHNS HOPKINS UNIVERSITY
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christopher consultants, inc.
11770 columbia gateway drive suite 1000 columbia, md 21046-2900
410.527.8500 · fax: 410.307.3811 cell: 410.452.8210

PERMIT INFORMATION CHART
PROJECT NAME: JHU/APL- SOUTH CAMPUS BUILDING 200 LOT/PARCEL NO. 300 CENSUS TRACT 6051.02
DEED REF. L10412, F.396 GRID NO. 22 ZONE PEC TAX MAP 41 ELECTION DISTRICT 5th
Plot ref. 20928-20930 AS-BUILT
TITLE: **SITE, GRADING & UTILITY PLAN**
DESIGN: EJJ SCALE: 1" = 30' PROJECT: 08A901.00
DRAWN: SSA DATE: OCTOBER, 2009
CHECKED: JMH APPROVED: JMH **08 of 54**

MDC-930(SDP)



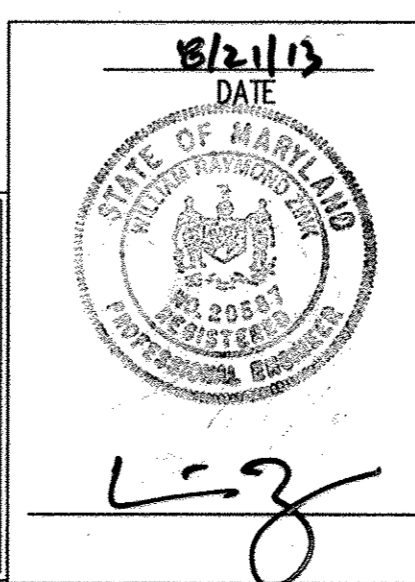
NOTE:
 THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD THE AS-BUILT CONDITIONS OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

| | | | |
|--|-----------------------------------|--|-------------------------------------|
| APPROVED: DEPARTMENT OF PUBLIC WORKS | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Chief, Bureau of Highway | | | |
| APPROVED: DEPARTMENT OF PLANNING AND ZONING | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Chief, Development Engineering Division | <i>[Signature]</i> | 11/2/10 | Date |
| Chief, Division of Land Development | <i>[Signature]</i> | 11/11/10 | Date |
| Director | <i>[Signature]</i> | 11/11/10 | Date |
| 1 | 8.3.10 | REDLINED FOR ADDITIONAL PARKING CURB & GUTTER AND ASSOCIATED GRADING | |
| 2 | 2.20.13 | REDLINED FOR STORM SEWER | |
| 3 | 02.12 | | |
| Date | No. | Revision Description | |
| PERMIT INFORMATION CHART | | | |
| PROJECT NAME: | JHU/APL-SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. | 300 |
| CENSUS TRACT | 6051.02 | | |
| DEED REF. | L10412, F.396 | GRID NO. | 22 |
| | | ZONE | PEC |
| TAX MAP | 41 | ELECTION DISTRICT | 5th |
| DATE REF. | 2009.09.30 | AS-BUILT | |
| TITLE: OVERALL SITE, GRADING & UTILITY PLAN | | | |
| DESIGN: ENJ | SCALE: 1" = 60' | PROJECT: 08A901.00 | |
| DRAWN: BSM/SSA | DATE: SEPTEMBER 2009 | | |
| CHECKED: ENJ/JMH | APPROVED: JMH | 09 of 54 | |

LEED ACCREDITED PROFESSIONAL CERTIFICATE GREEN NEIGHBORHOOD PLAN FOR SITES
 I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
[Signature]
 SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

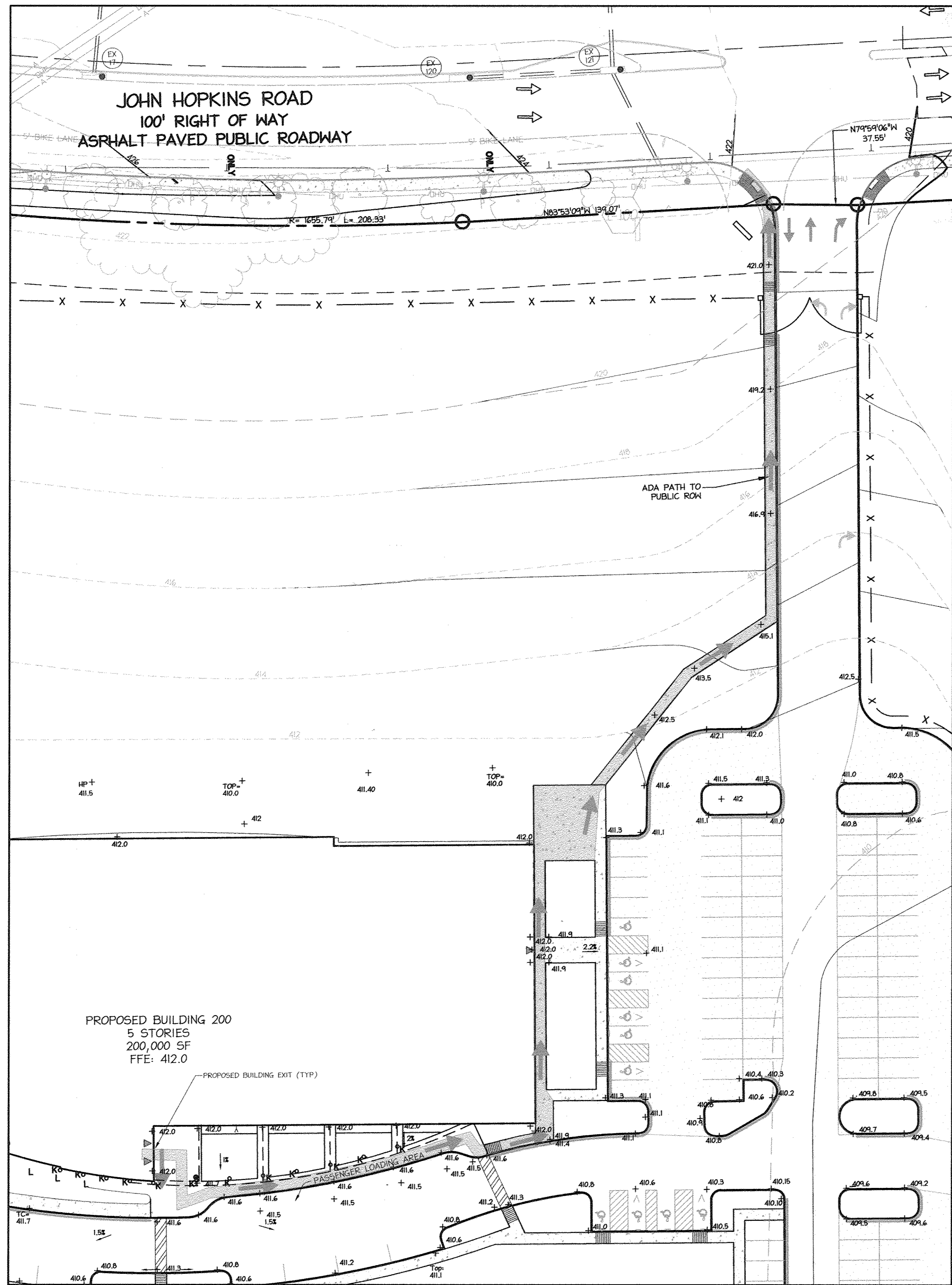
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
[Signature]
 SIGNATURE OF ENGINEER
WILLIAM R. ZINK, P.E.
 MD LICENSE NUMBER: 20587
 EXPIRATION DATE: 09-20-2014
 DATE: 8/21/13



JOHN HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
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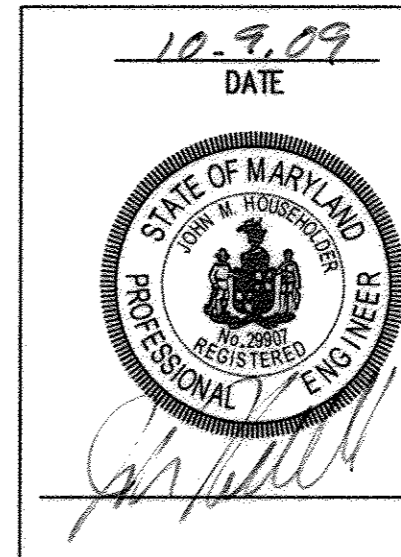
MDC-930(SDP)



ADA PATH OF TRAVEL TO PUBLIC ROW
SCALE: 1" = 30'

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

ANTHONY U. OLSON, P.E.



APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division *[Signature]* Date: 11/17/09

Chief, Division of Land Development *[Signature]* Date: 1/02/10

Director *[Signature]* Date: 1/11/10

| Date | No. | Revision Description |
|------|-----|----------------------|
| | | |

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APPLIED PHYSICS LABORATORY
 1100 JOHN HOPKINS ROAD
 LAUREL MARYLAND 20723-6099
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 PHONE: 443.778.5334 FAX 443.778.6122



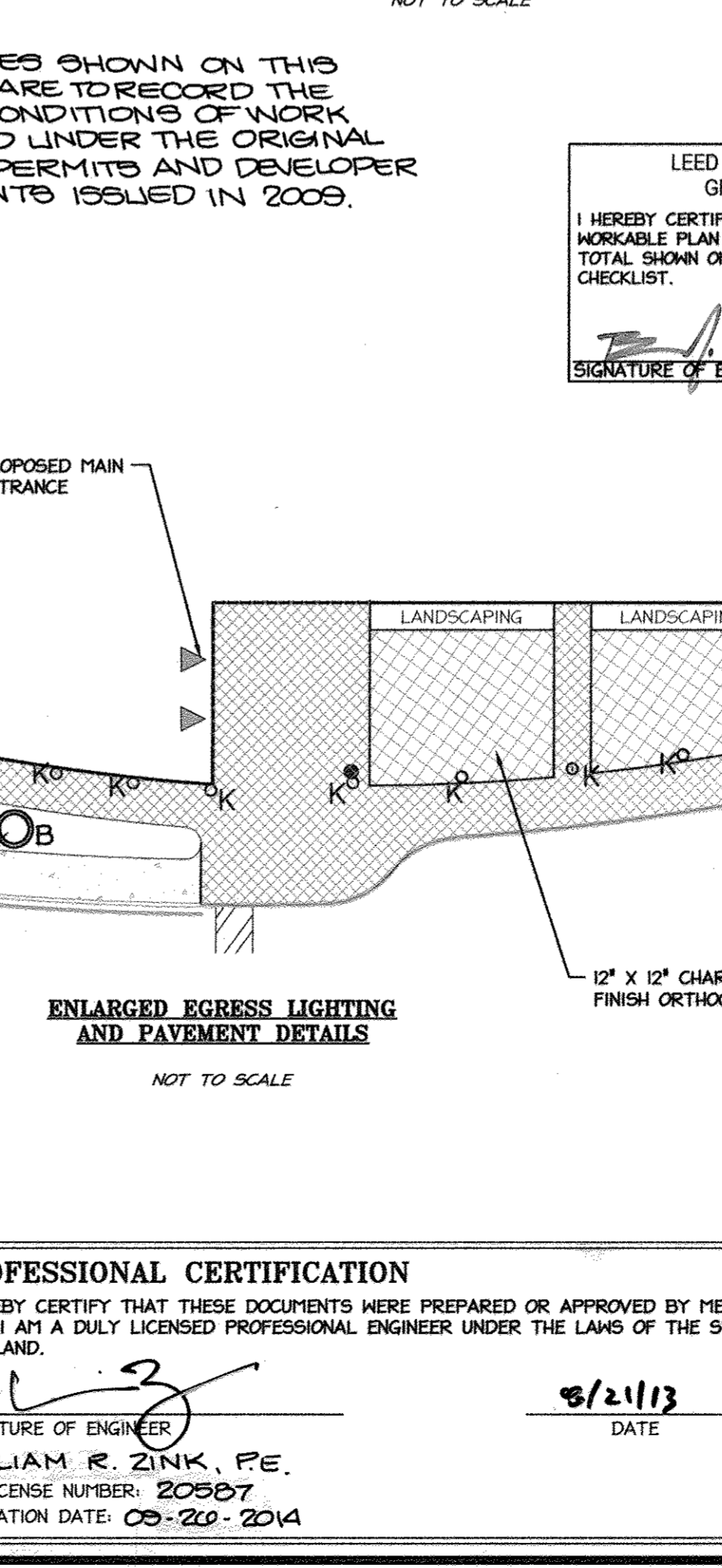
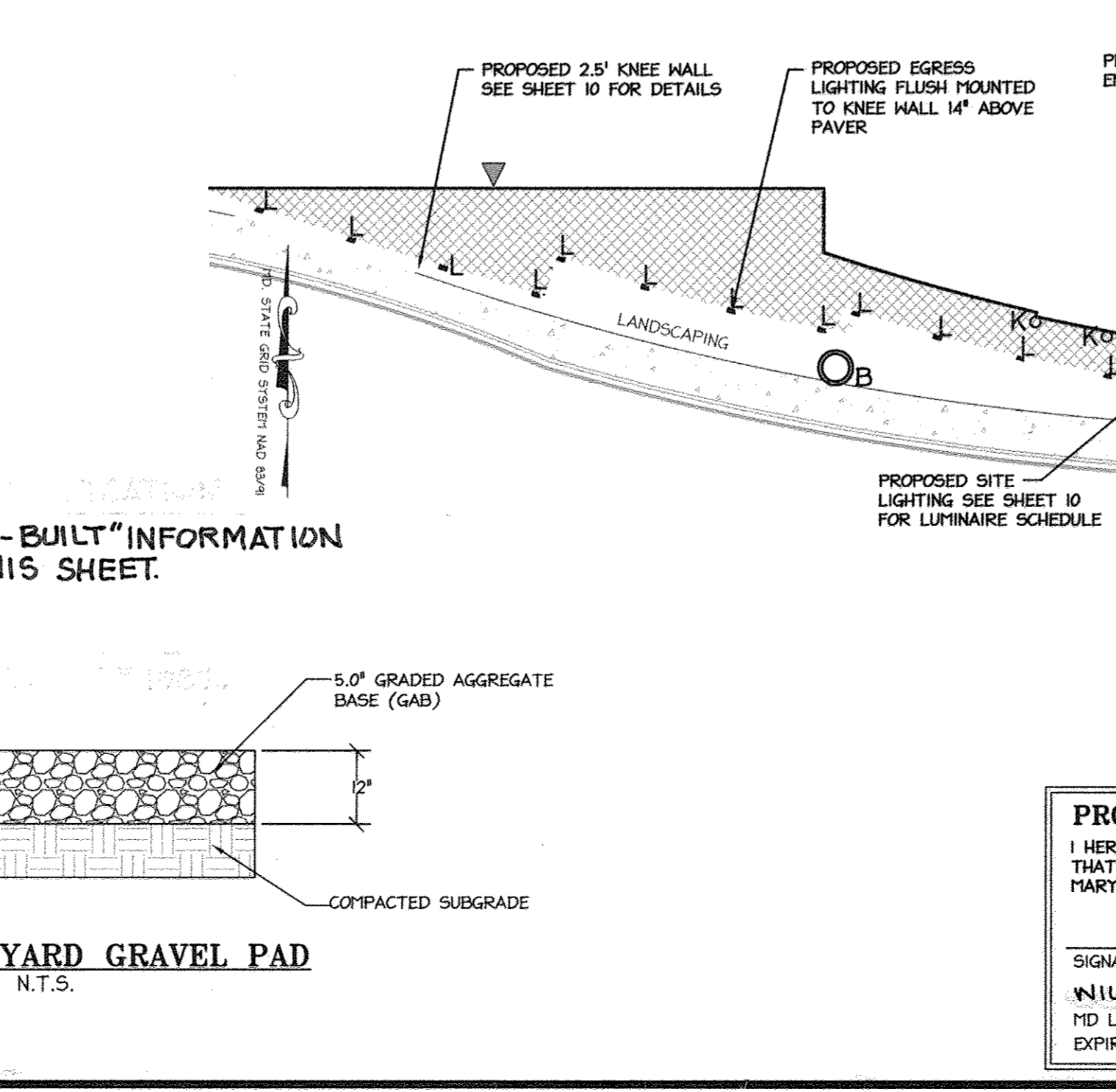
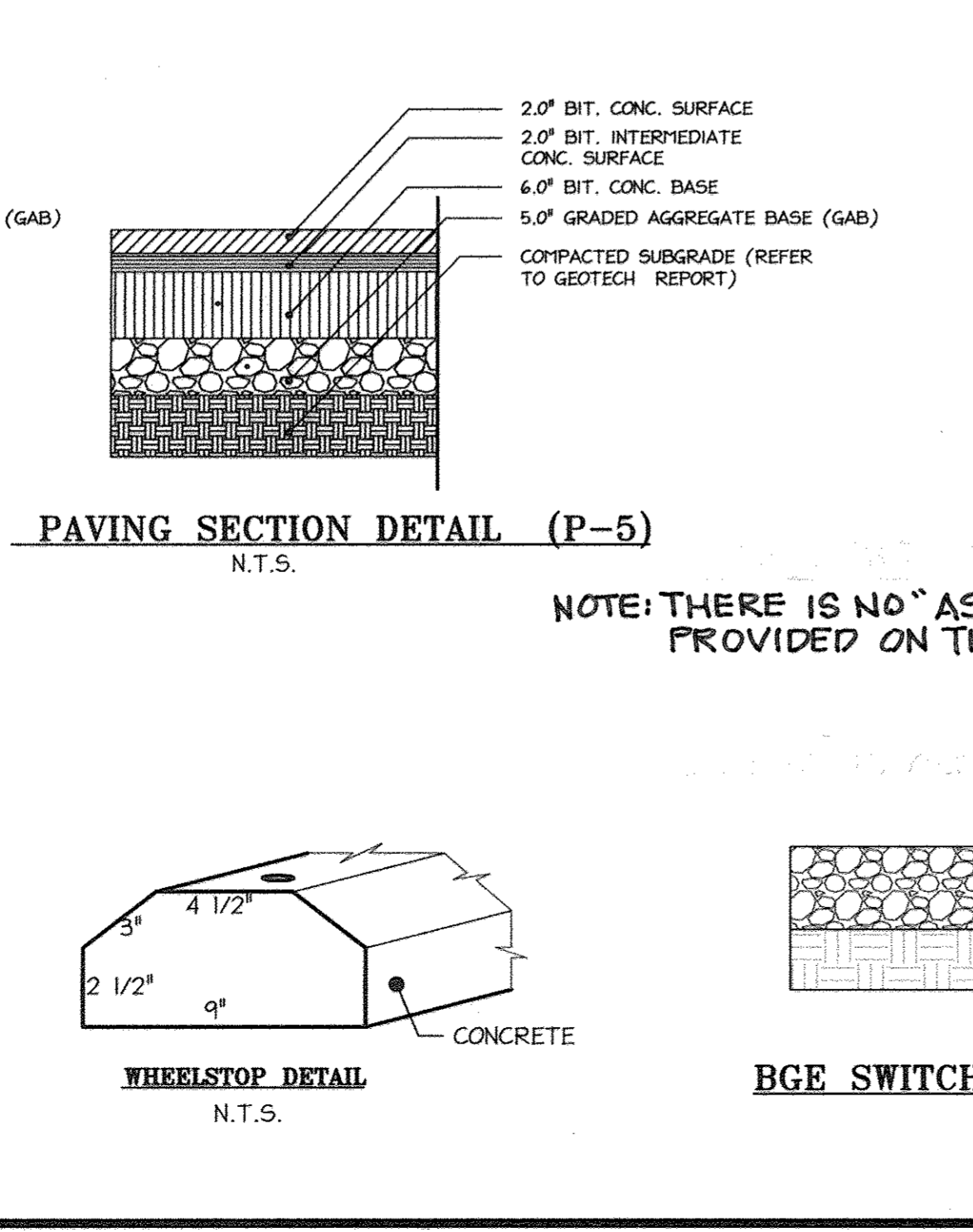
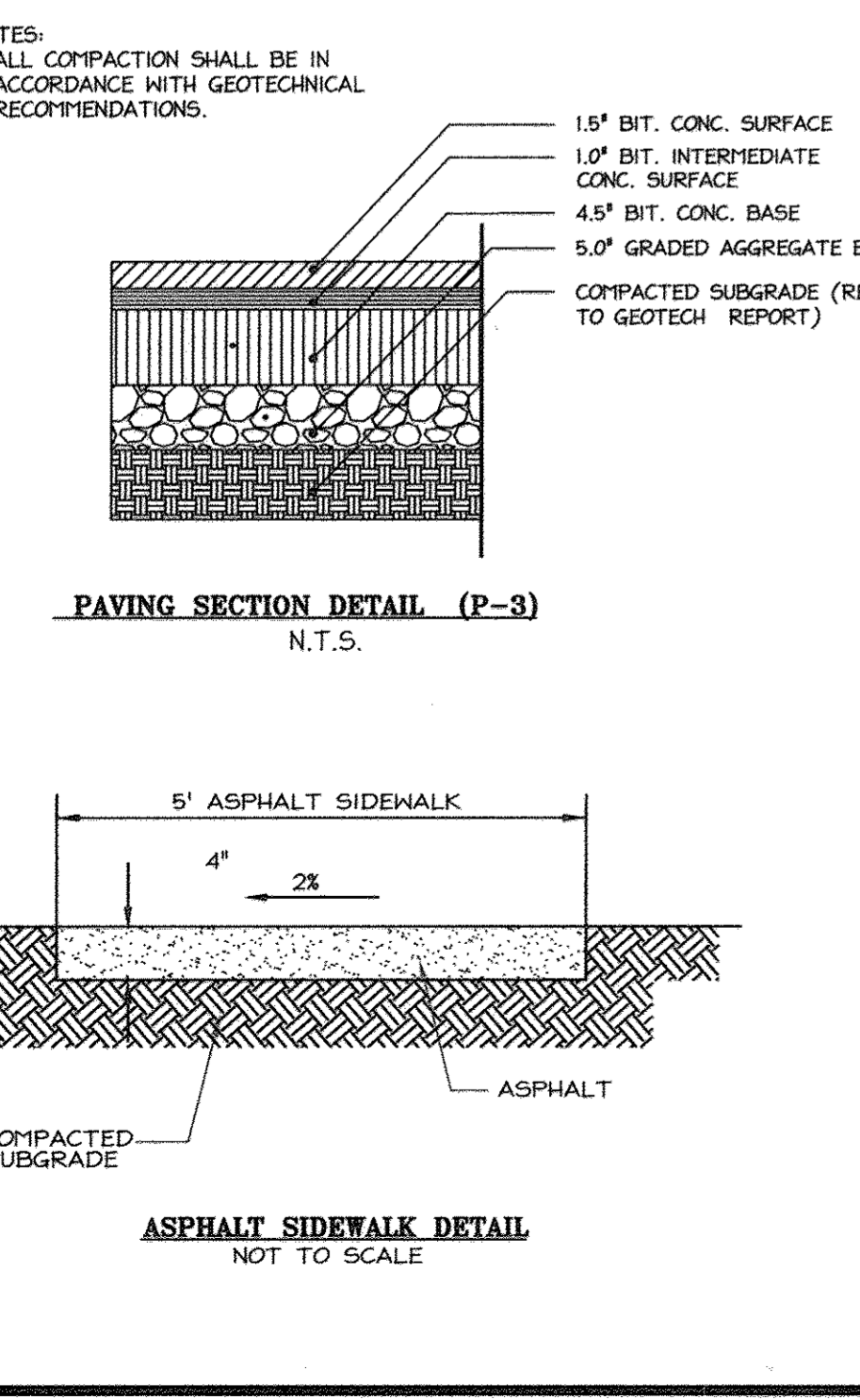
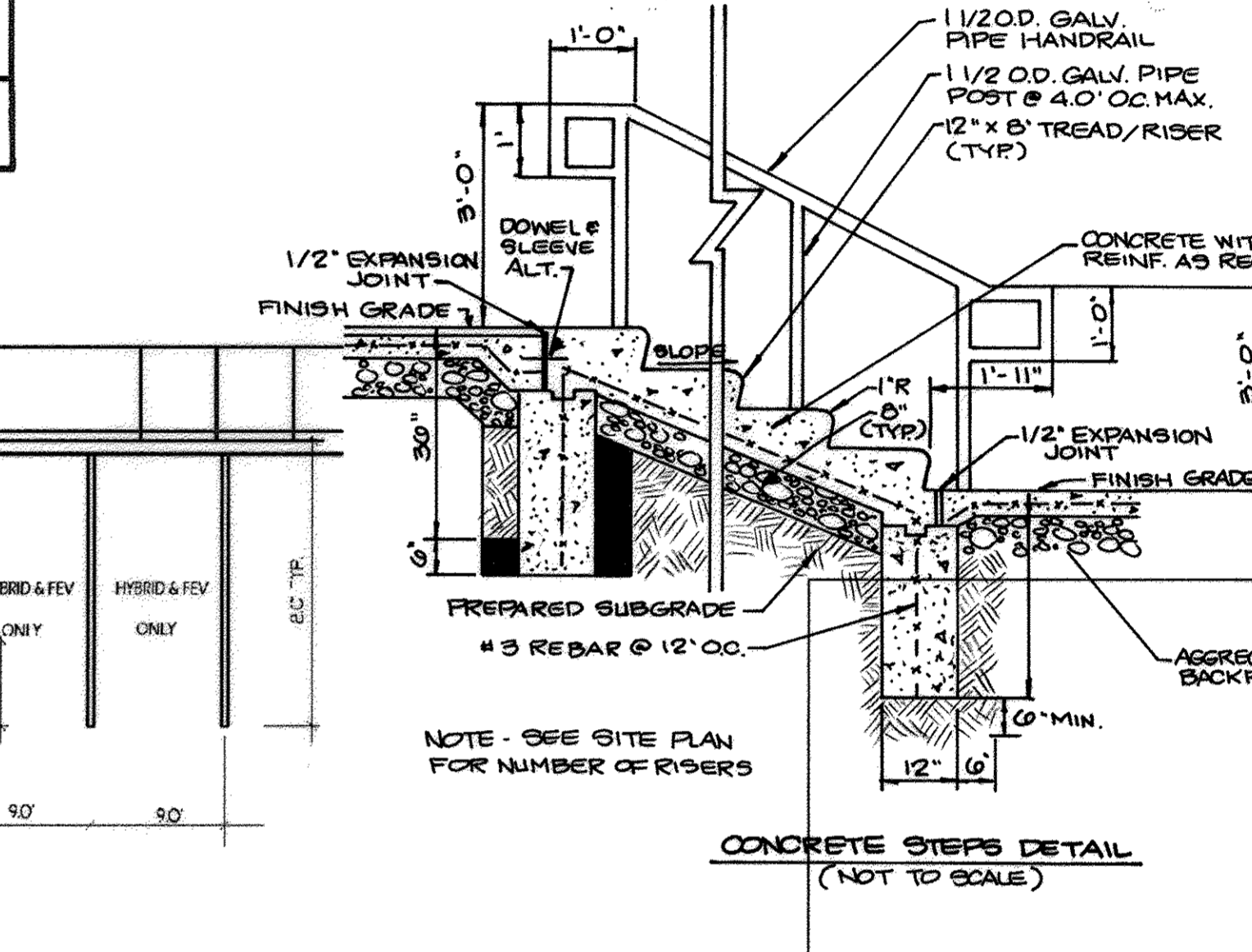
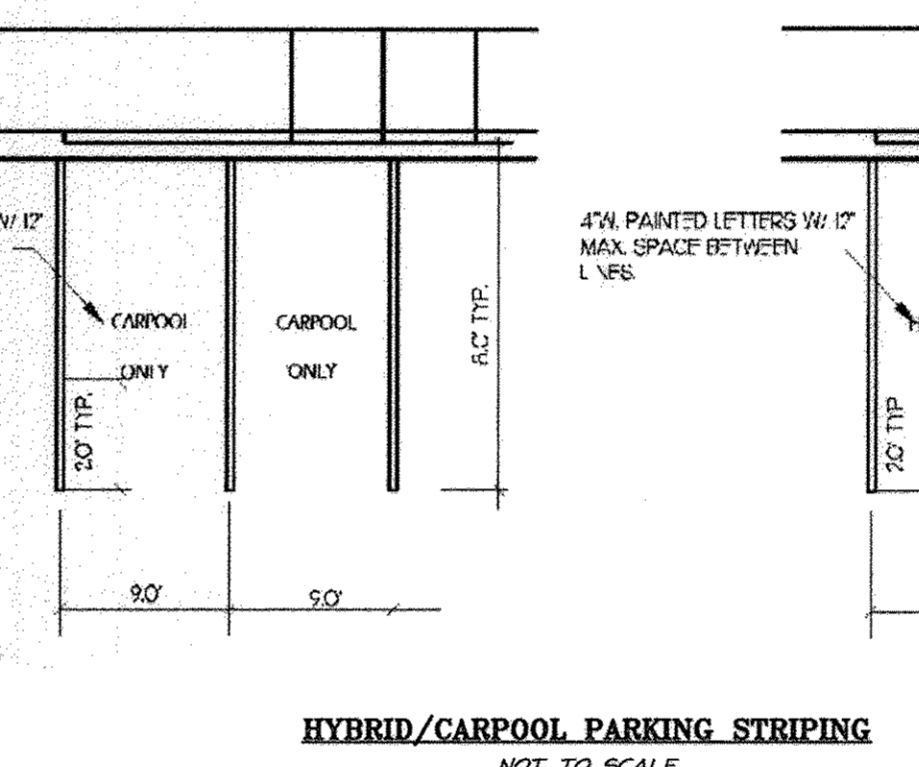
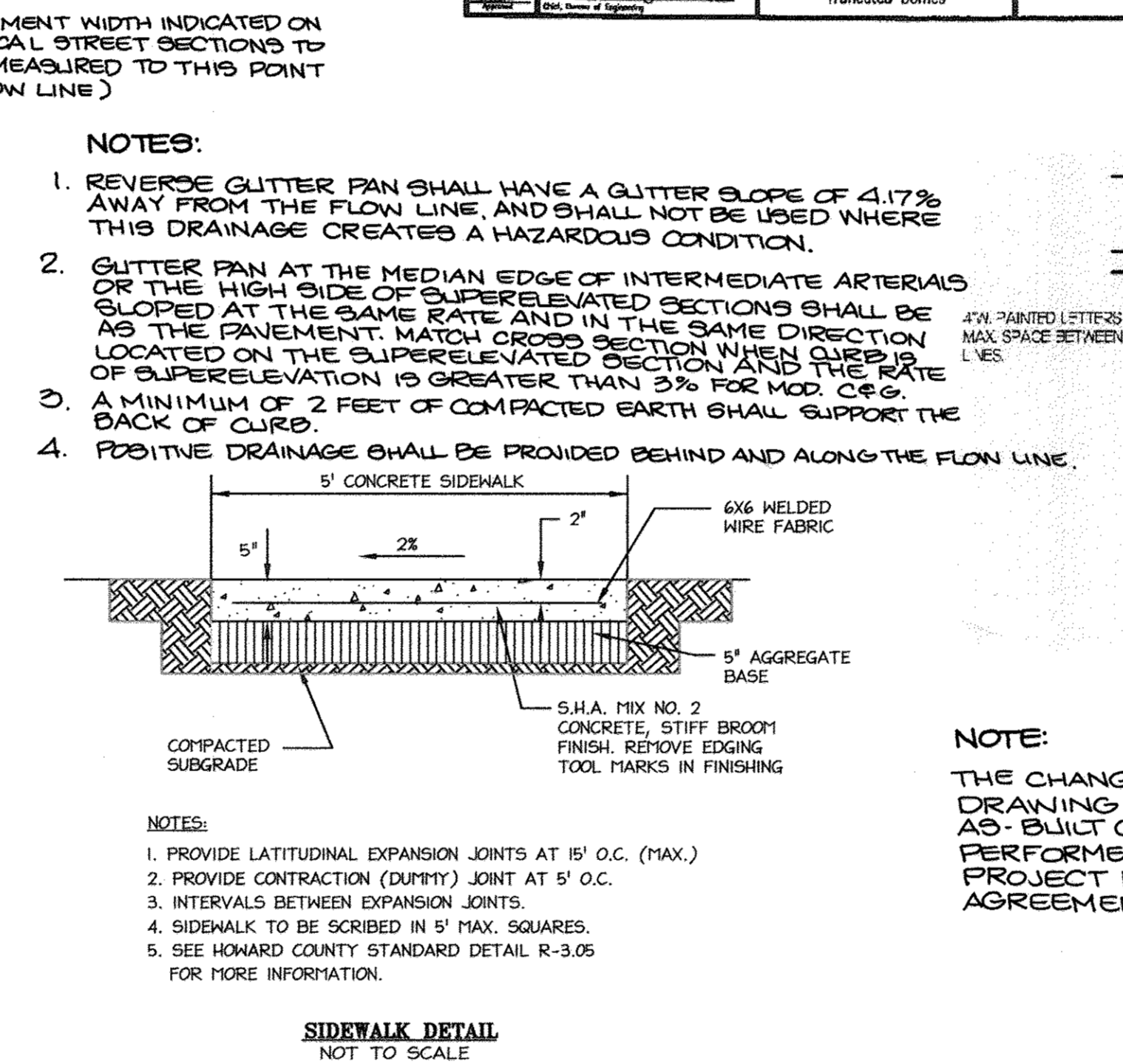
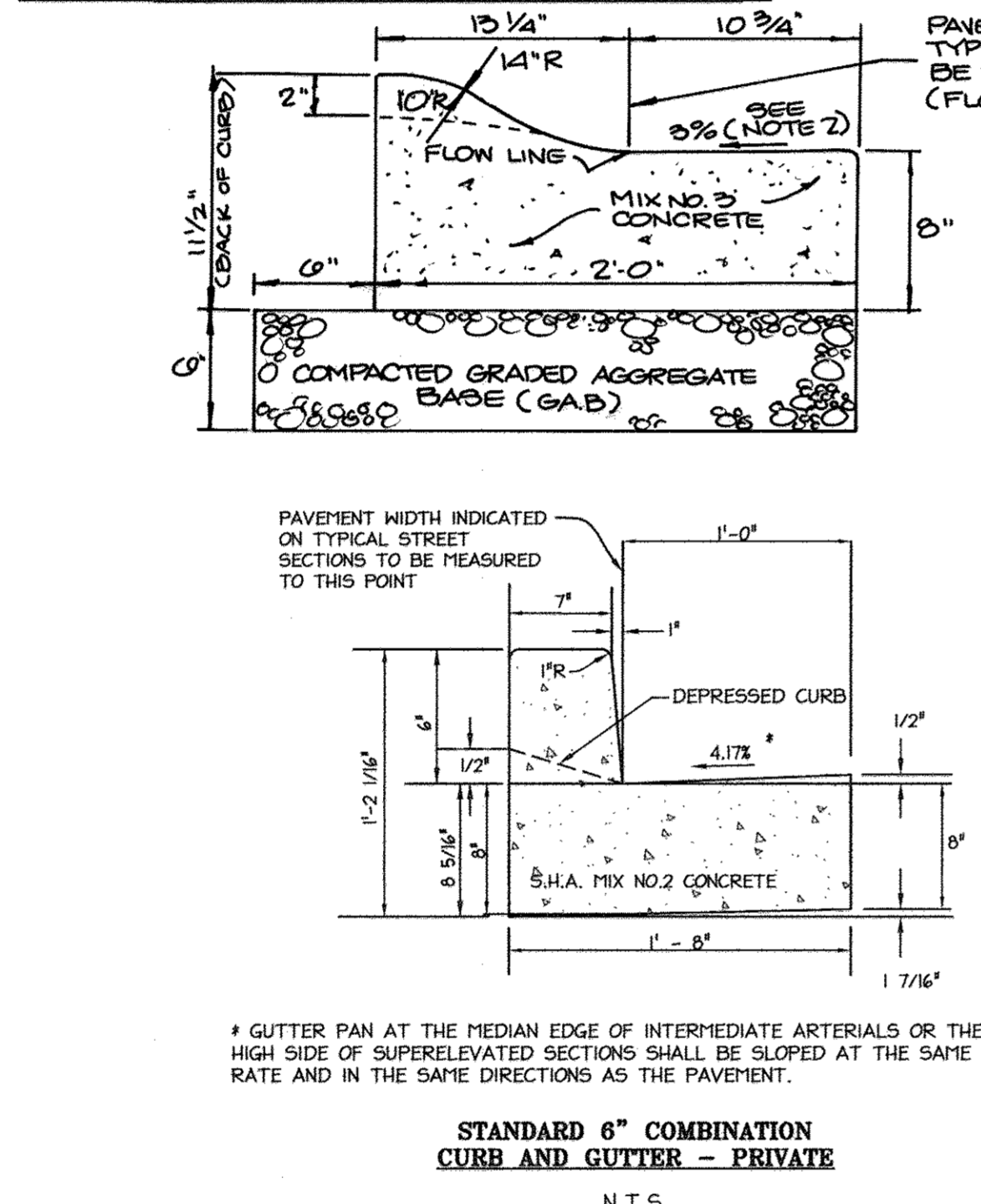
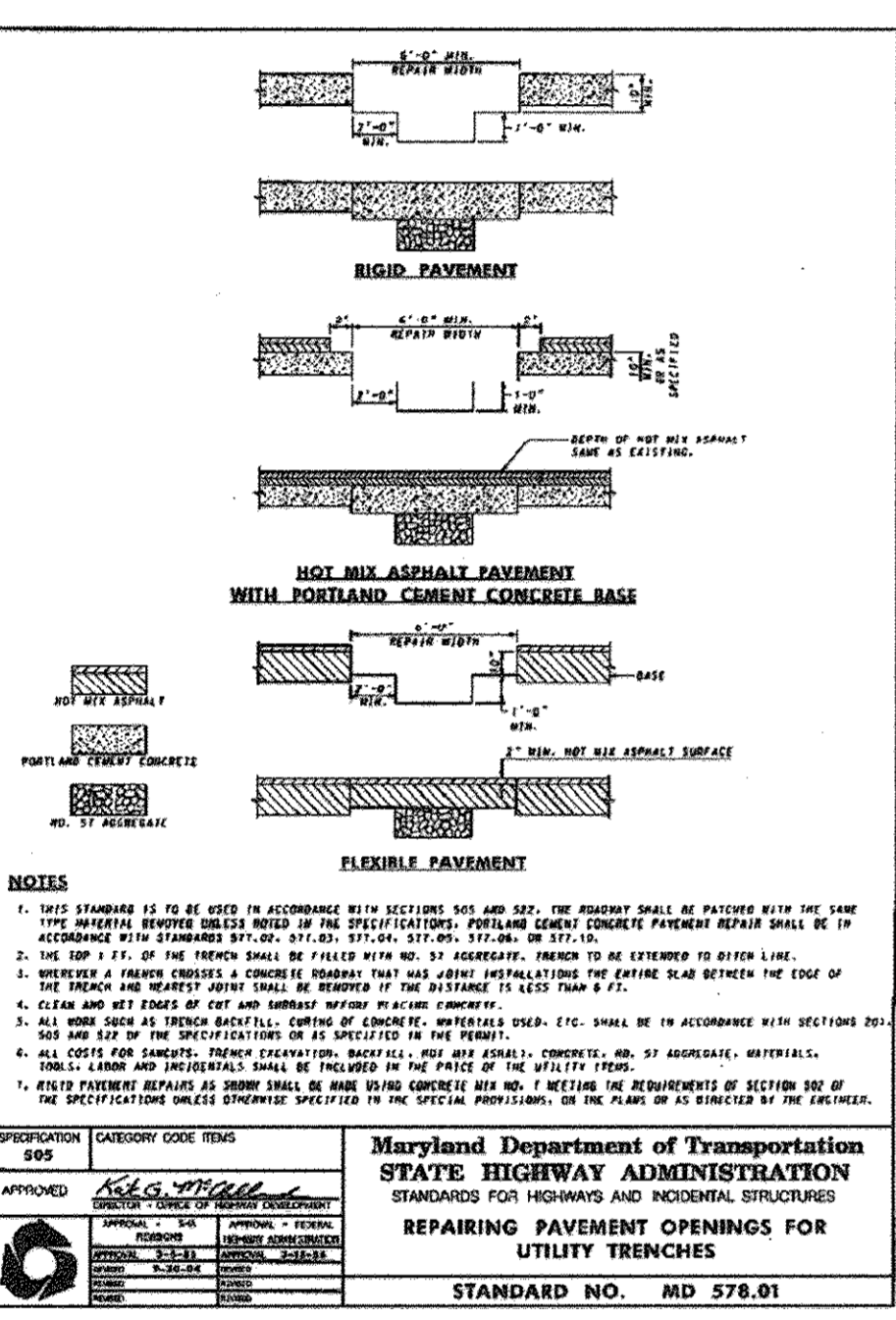
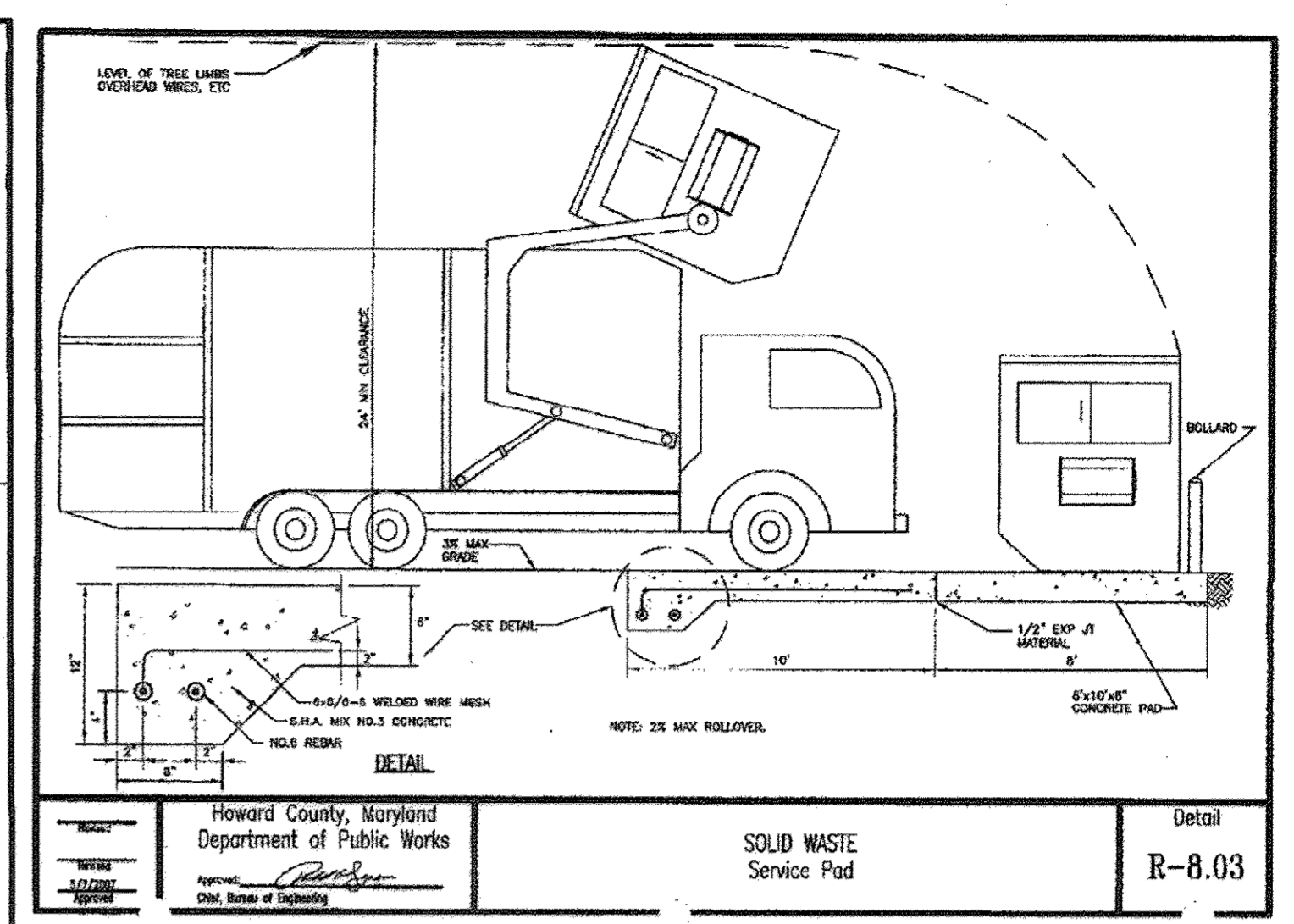
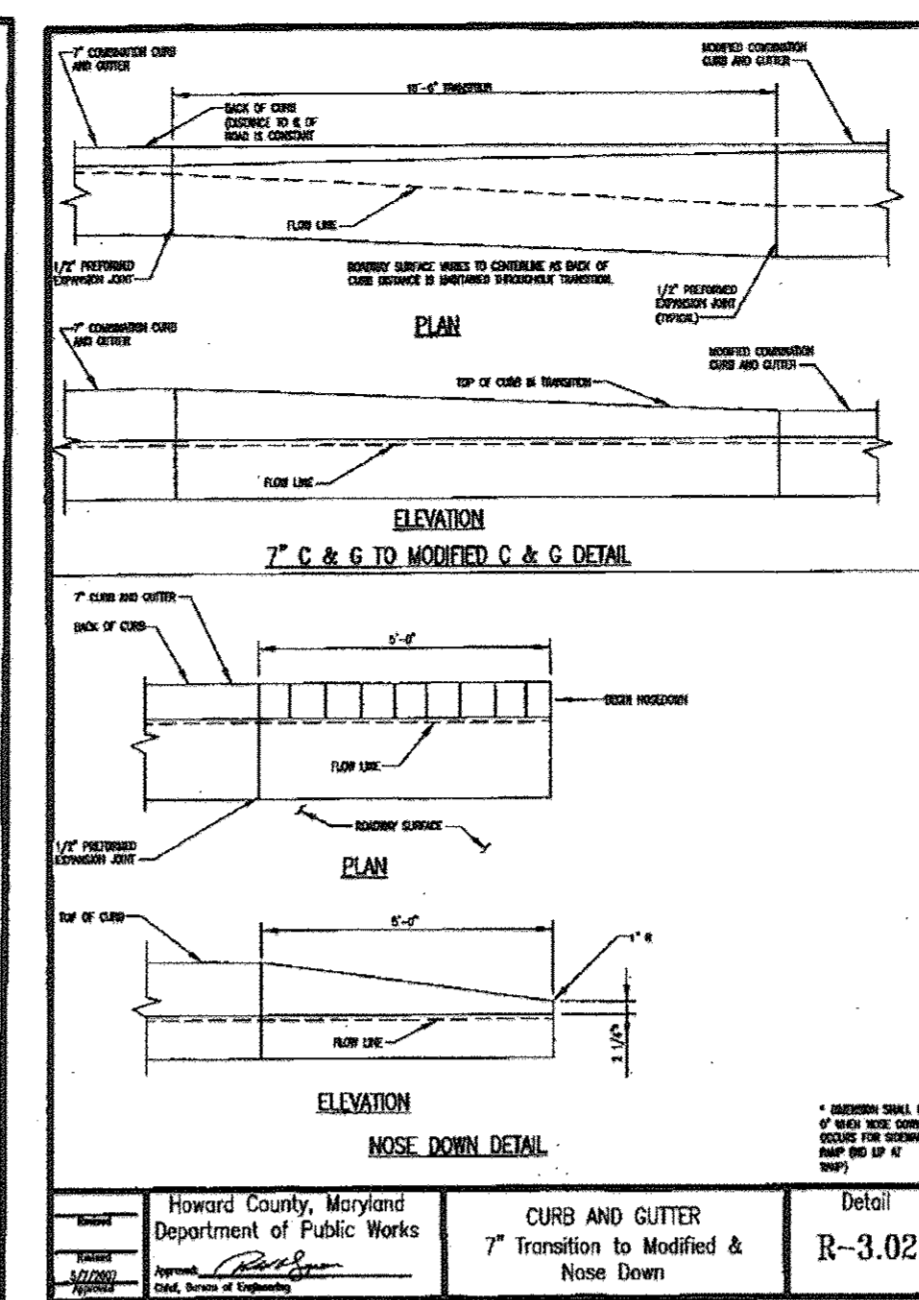
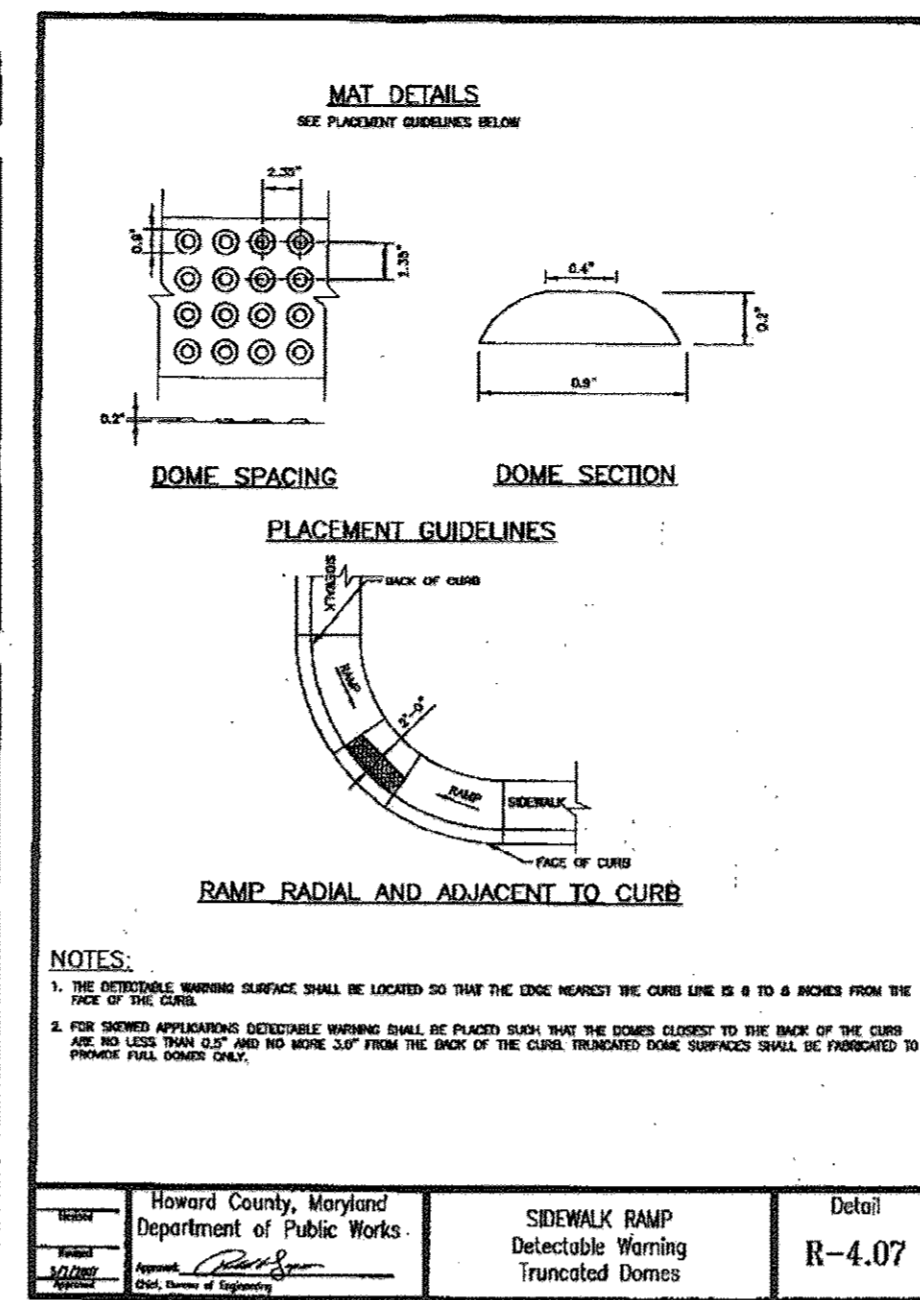
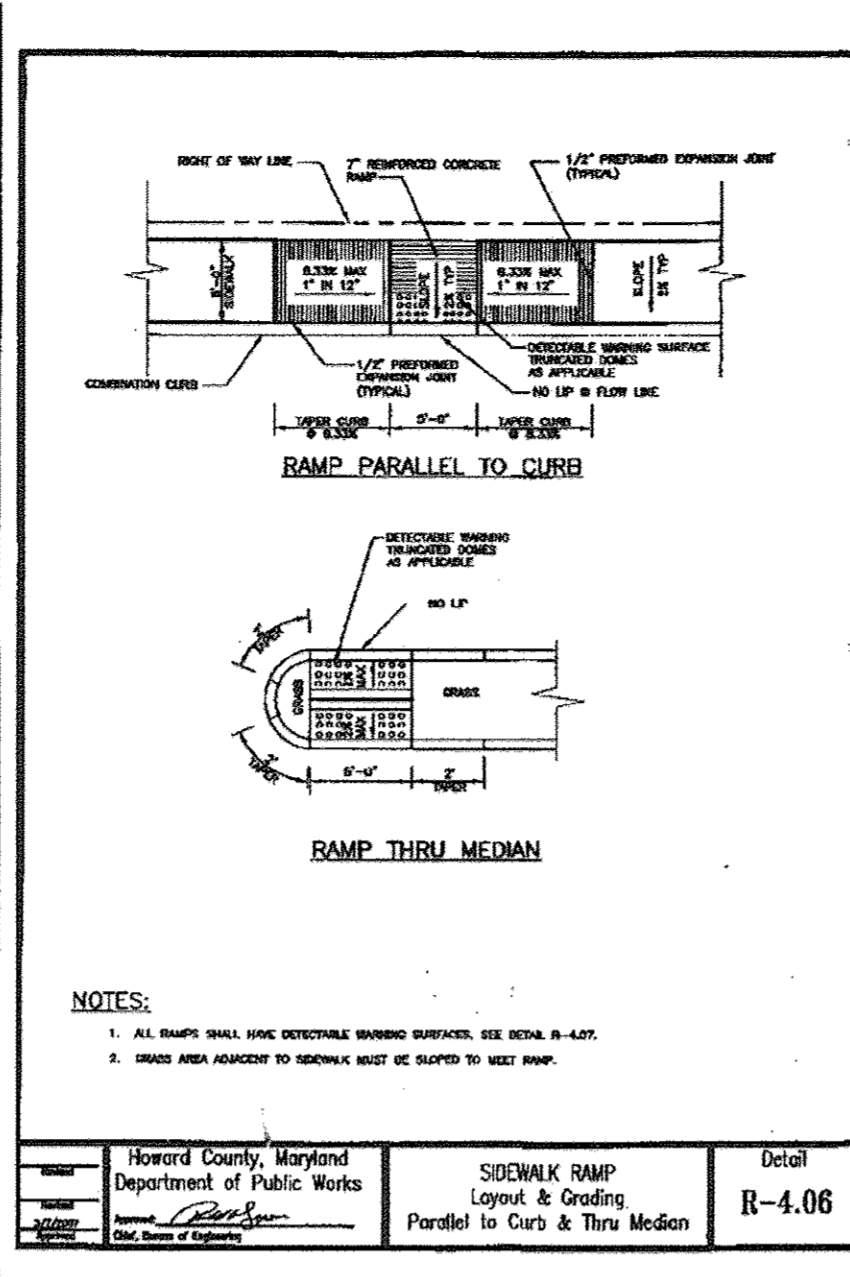
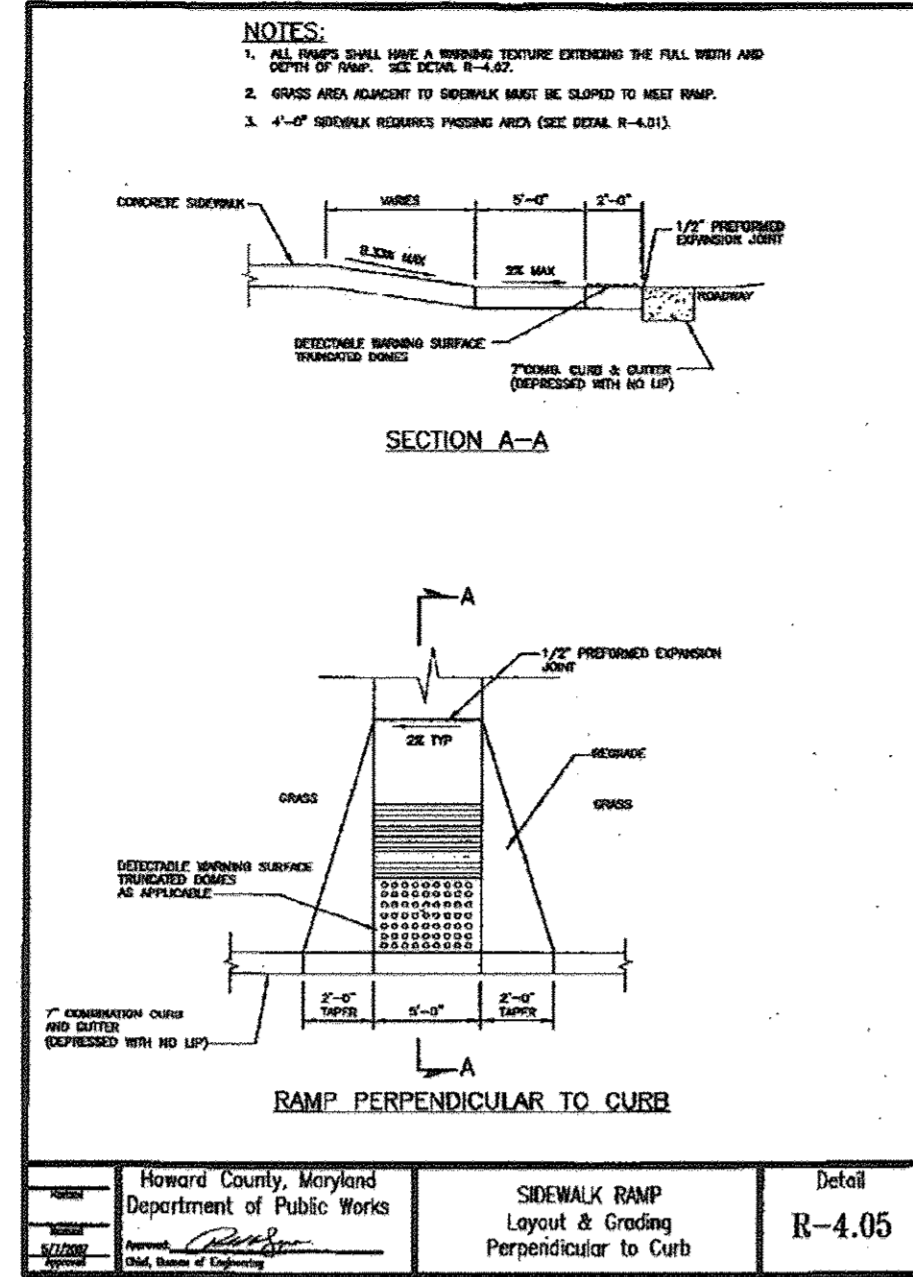
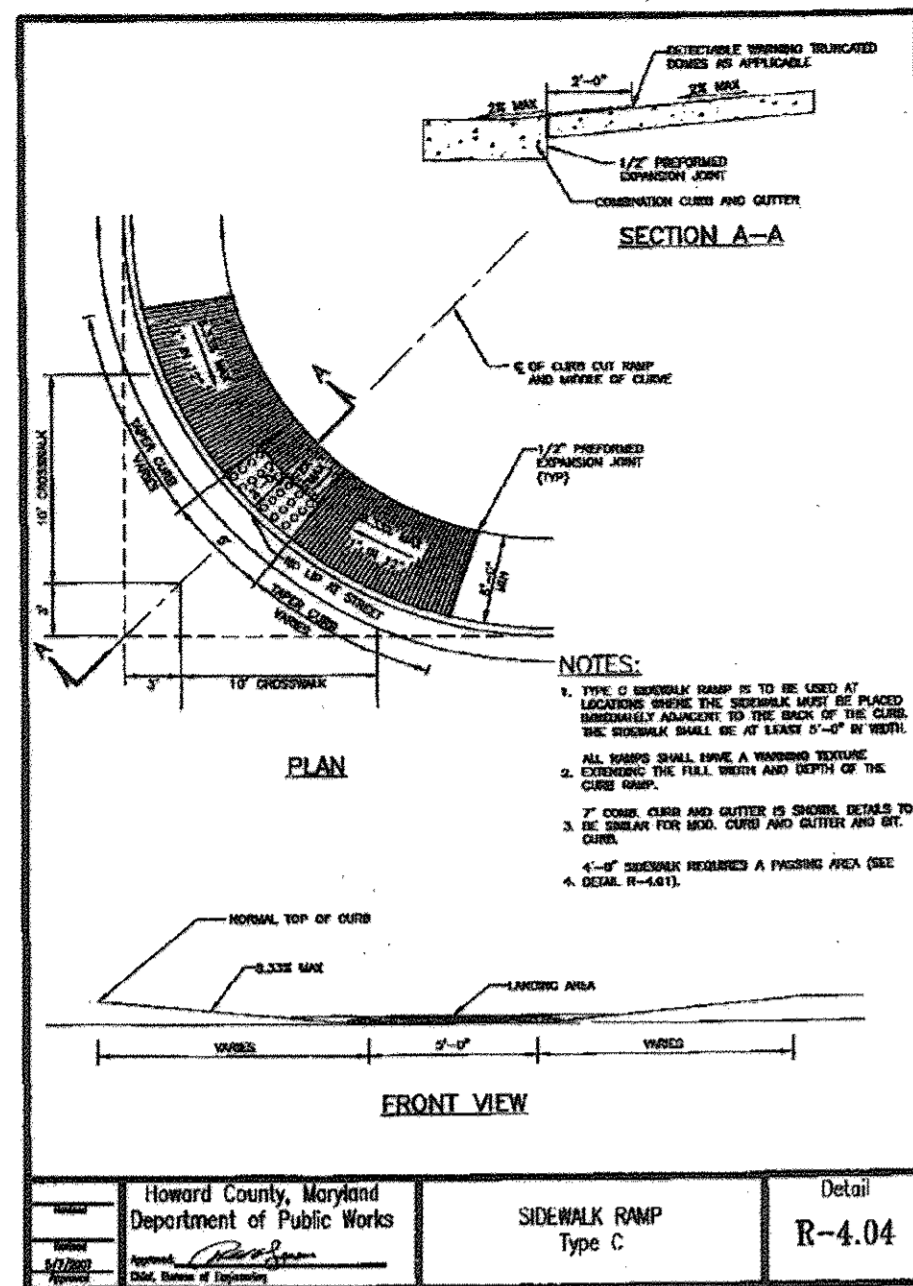
PERMIT INFORMATION CHART

| | | |
|--|-----------------------|--------------------------|
| PROJECT NAME: JHU/APL- SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 |
| DEED REF. L10412, F.396 | GRID NO. 22 | ZONE PEC |
| TAX MAP 1104 F.396 | TAX MAP 41 | ELECTION DISTRICT 5th |

TITLE: AS-BUILT
ADA ROUTES SHEET

| | | |
|--------------|---------------------|--------------------|
| DESIGN: CRH | SCALE: 1" = 30' | PROJECT: 08A901.00 |
| DRAWN: SSA | DATE: OCTOBER, 2009 | |
| CHECKED: AMH | APPROVED: JMH | 11 of 54 |

MDC-930(SDP)



LEED ACCREDITED PROFESSIONAL CERTIFICATE GREEN NEIGHBORHOOD PLAN FOR SITES

I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.

SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division 4: *[Signature]* Date: 11/1/09

Chief, Division of Land Development: *[Signature]* Date: 10/21/10

Director: *[Signature]* Date: 11/11/10

| No. | Revision Description |
|-----|--|
| 1 | 0.4.10 REDEFINED FOR ADDITIONAL CURB & GUTTER AND AS-BUILT GRADING |
| 2 | 0.4.12 ADDED REDEFINE SUMMARY NOTE |

JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723-6099
ATTN: JAMES LOEBCH, P.E., CFM
PHONE: 443.778.534 FAX: 443.778.6122

christopher consultants
engineering, surveying, land planning
2172 colchester gateway drive suite 1000 coltsville, md. 21046-2990
410.872.8800 - exts 301 881 0416 fax 410.872.8800

PERMIT INFORMATION CHART

| PROJECT NAME: | LOT/PARCEL NO. | CENSUS TRACT |
|-------------------------------------|----------------|--------------|
| JHU/APL - SOUTH CAMPUS BUILDING 200 | 300 | 6051.02 |

| DEED REF. | GRID NO. ZONE | TAX MAP | ELECTION DISTRICT |
|---------------|---------------|---------|-------------------|
| L10412, F.396 | 22 PEC | 41 | 5th |

DATE: 8/21/13

AS-BUILT

TITLE: **SITE NOTES & DETAILS SHEET**

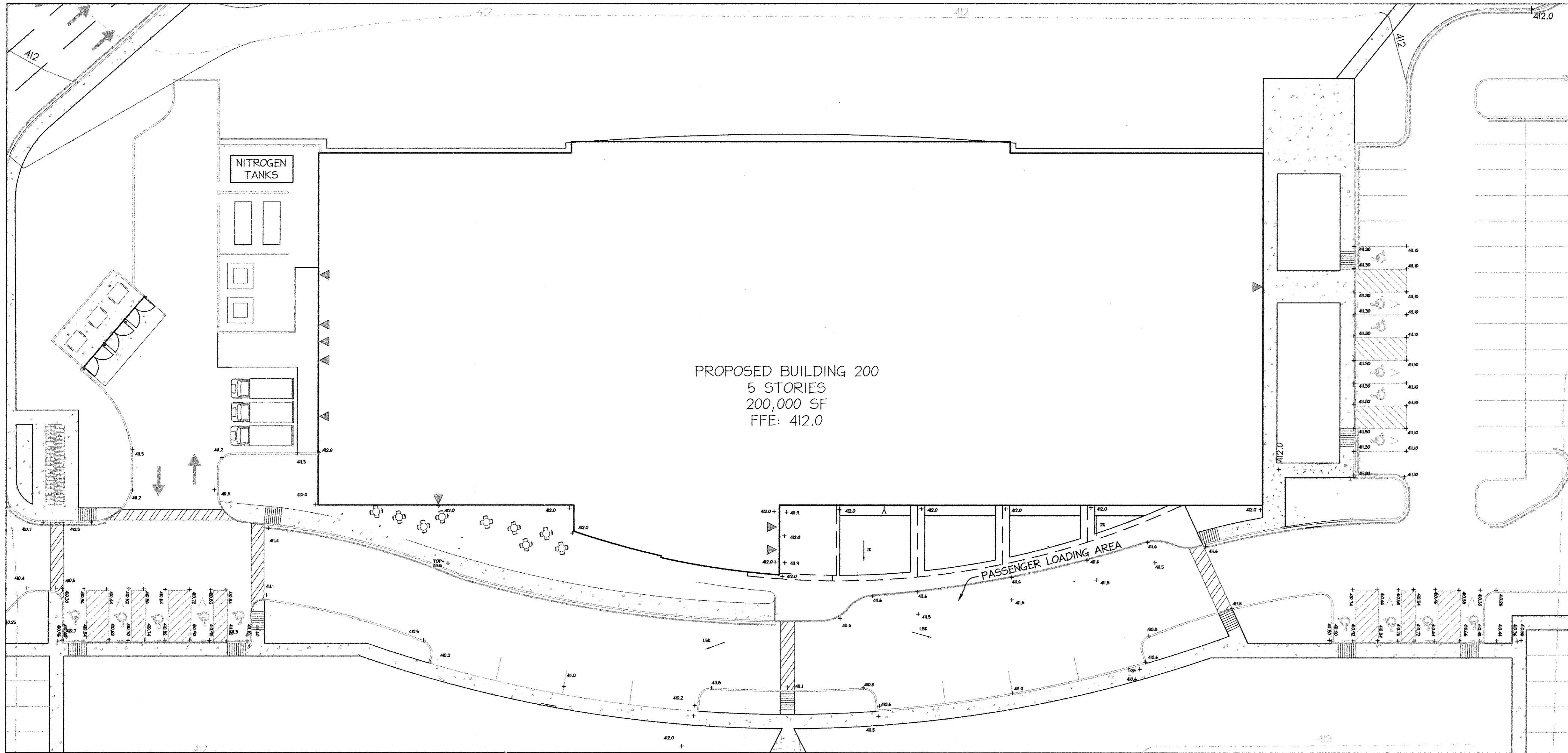
| DESIGN: | SCALE: | PROJECT: |
|---------|-----------|-----------|
| CRH | VARIABLES | 08A901.00 |

| DRAWN: | DATE: |
|--------|---------------|
| SSA | OCTOBER, 2009 |

| CHECKED: | APPROVED: |
|----------|-----------|
| JMH | JMH |

13 of 54

SDP-09-047



PROPOSED BUILDING 200
 5 STORIES
 200,000 SF
 FFE: 412.0

PASSENGER LOADING AREA

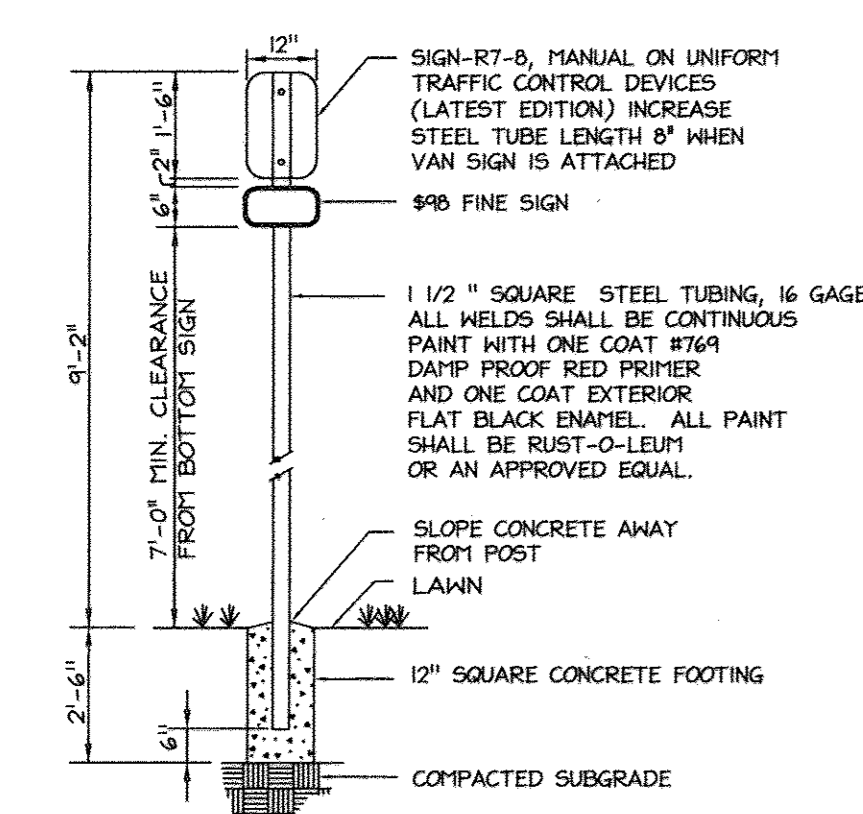
PASSENGER LOADING AREA DETAIL
 SCALE: 1"=20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chris Dammann 11/17/09
 Chief, Development Engineering Division
Robert Sheehan 1/08/10
 Chief, Division of Land Development
Thomas G. Rutler 1/14/10
 Director

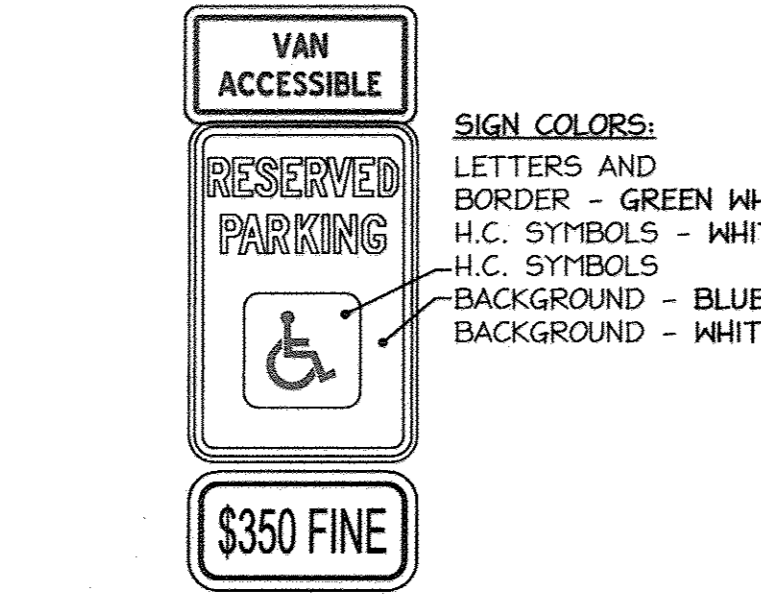
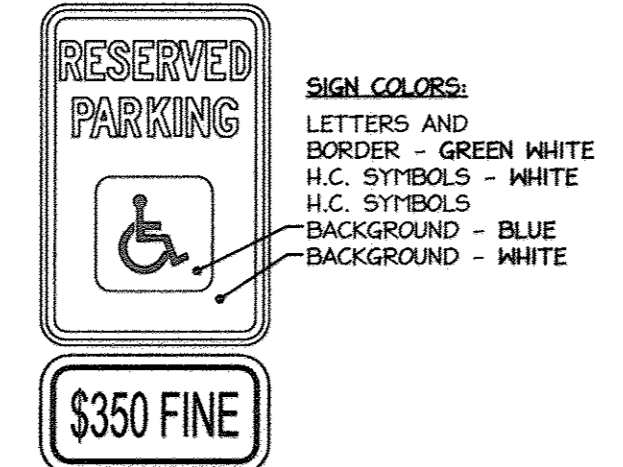
JOHNS HOPKINS UNIVERSITY
 APPLIED PHYSICS LABORATORY
 1100 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6009
 ATTN: JAMES LOEBCH, PE, CFM
 PHONE: 443.778.5134 FAX: 443.778.6122

christopher consultants
 engineering - surveying - land planning
 christopher consultants, inc.
 7172 colchester greenway drive suite 100 colabeta, md 21046-2996
 410.527.8800 - ext 307 (t) 410 - fax 410.527.8800

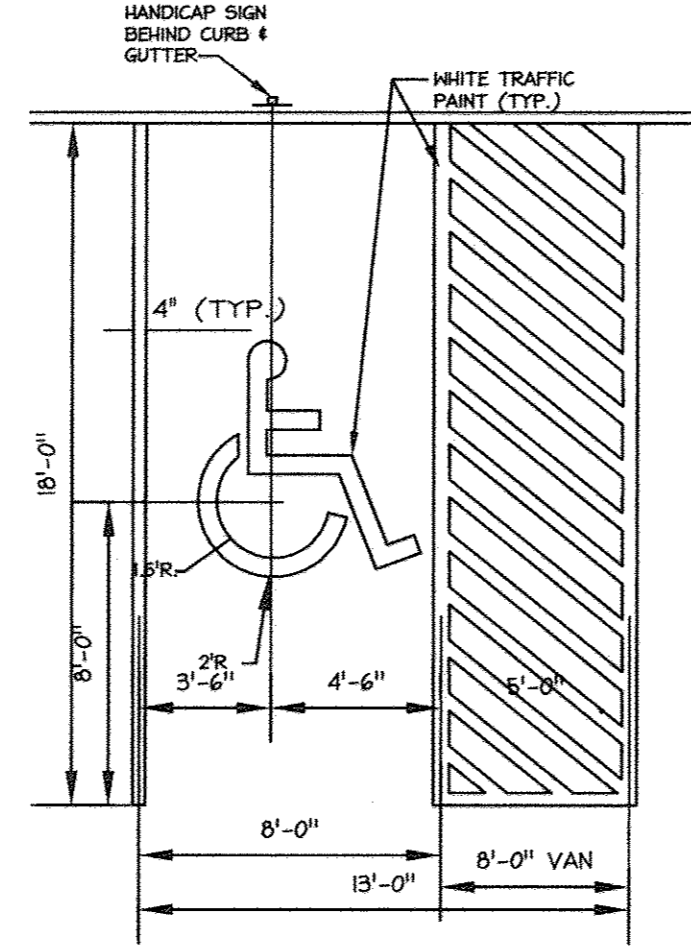
| PERMIT INFORMATION CHART | | | | |
|--|--------------------------|-------------------------|--------------------------|--|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 | | |
| DEED REF. L10412, F.396 | GRID NO. [ZONE 22 PEC | TAX MAP 41 | ELECTION DISTRICT 5th | |
| DATE 10.9.09 | AS-BUILT | | | |
| TITLE: HANDICAP PARKING DETAILS AND NOTES | | | | |
| DESIGN: DRAWN: SSA | SCALE: 1" = 10' | PROJECT: 08A901.00 | | |
| CHECKED: JMH | DATE: OCTOBER, 2009 | APPROVED: JMH | 14 of 54 | |



HANDICAP PARKING SIGN
 NOT TO SCALE



VAN ACCESSIBLE HANDICAP PARKING SIGN
 NOT TO SCALE

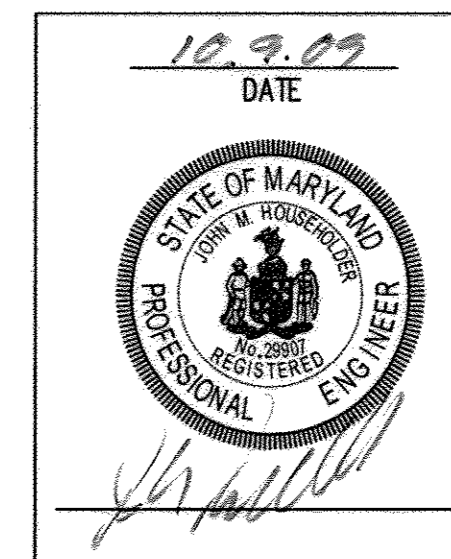


HANDICAP PARKING SPACE
 NOT TO SCALE

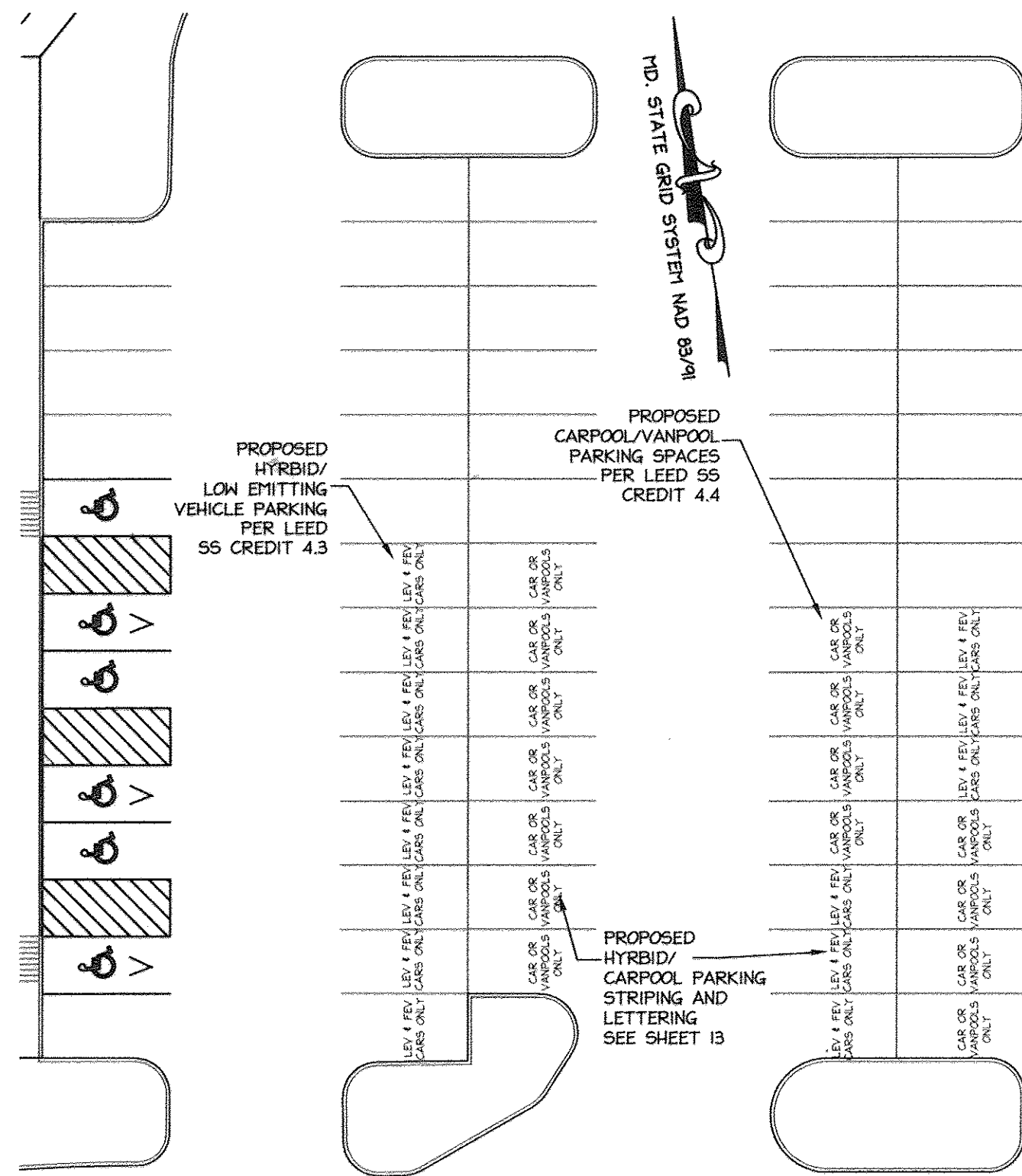
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

LEED ACCREDITED PROFESSIONAL CERTIFICATE
 GREEN NEIGHBORHOOD PLAN FOR SITES
 I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
Brian Collins 10.9.09
 SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

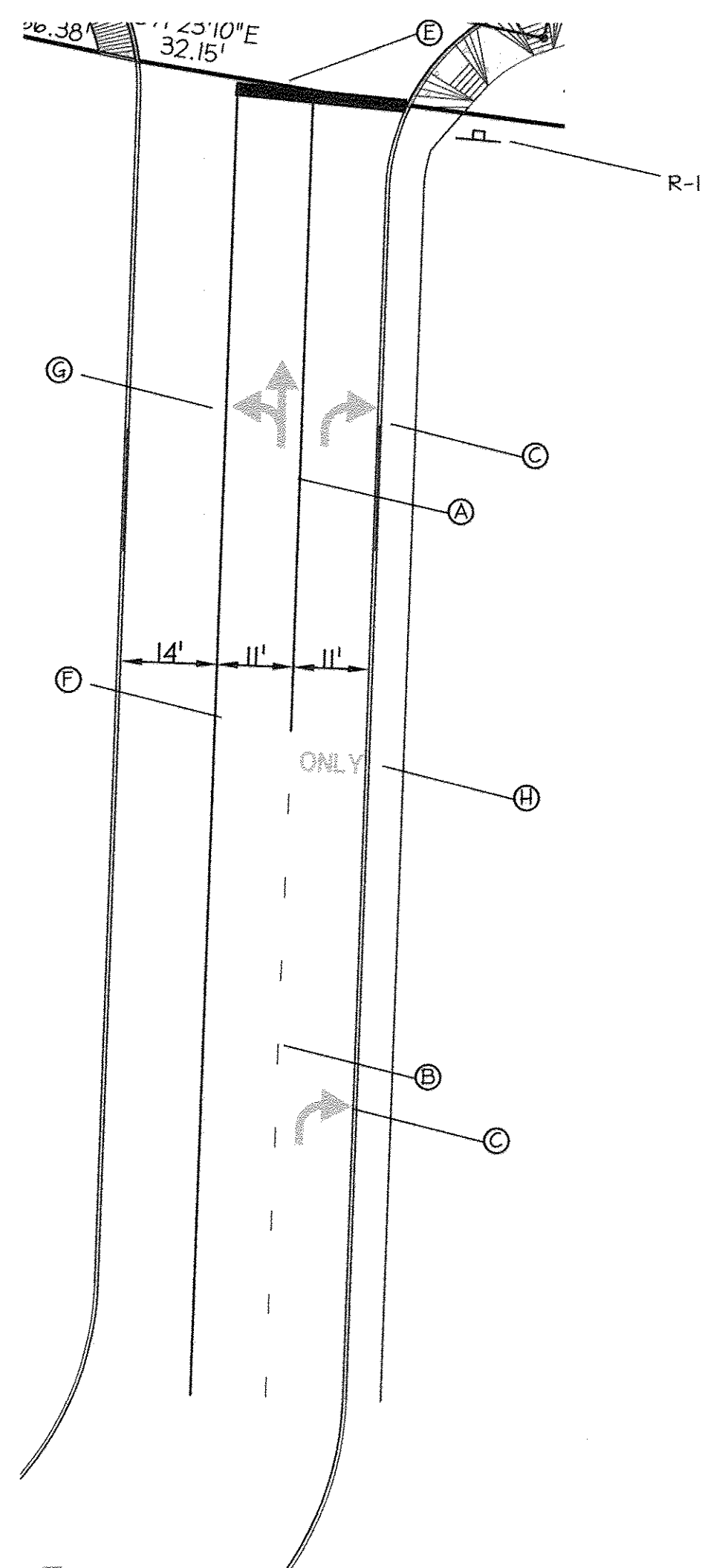
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
John M. Householder 10.9.09
 SIGNATURE OF ENGINEER DATE
 JOHN M. HOUSEHOLDER
 MD LICENSE NUMBER: 29907
 EXPIRATION DATE: 1-27-2010



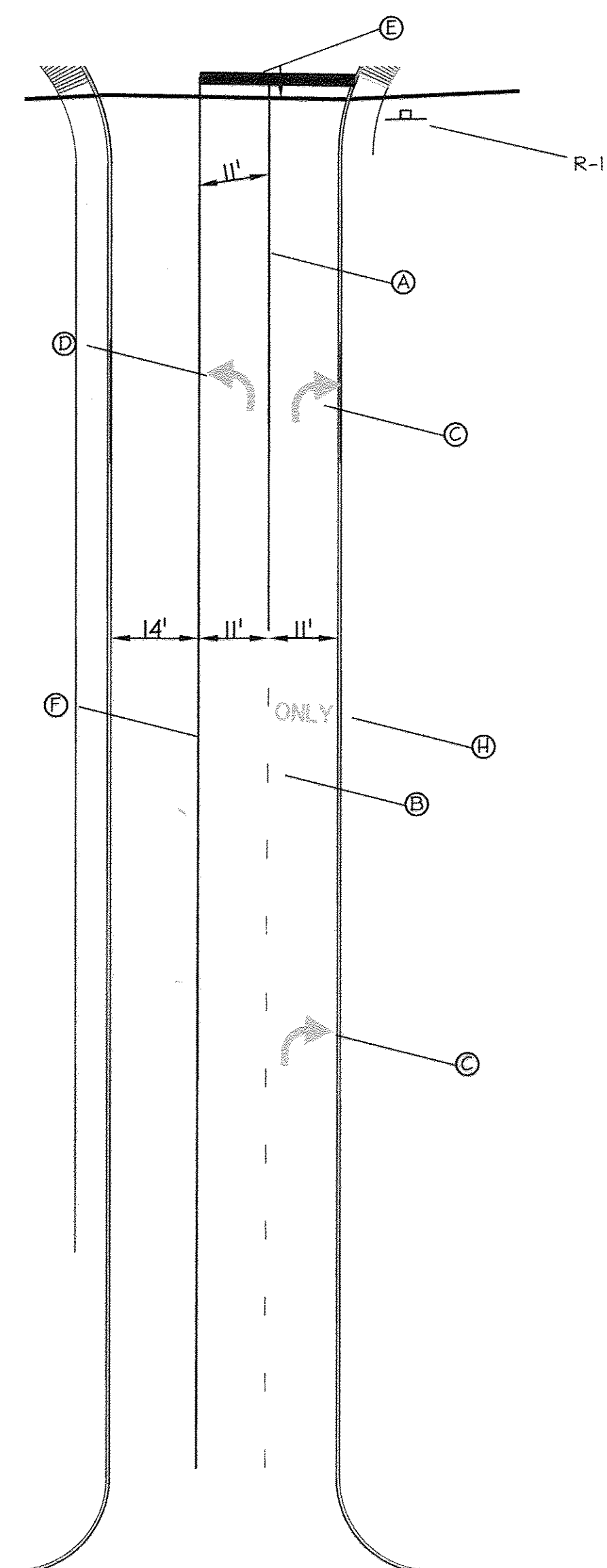
MDC-930(SDP)



ENLARGED PROPOSED HYBRID/CARPOOL PARKING SPACES-EAST DETAIL (SEE SHEET 5)
SCALE: 1" = 30'



ENLARGED PROPOSED WESTERN ENTRANCE
SCALE: 1" = 20'



ENLARGED PROPOSED EASTERN ENTRANCE
SCALE: 1" = 20'

PAVEMENT MARKING LEGEND

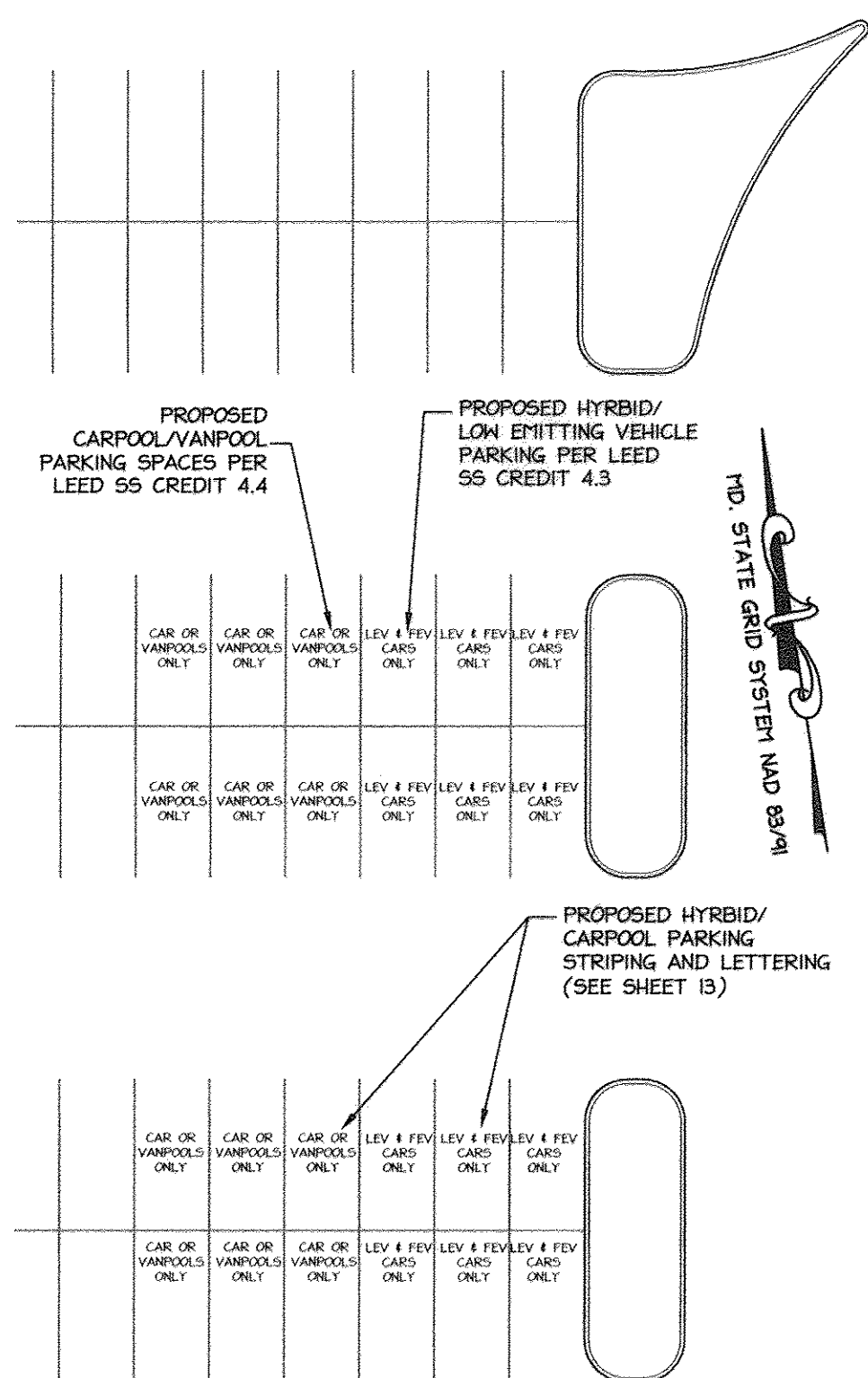
- (A) 5" SOLID WHITE
- (B) 5" PUPPY TRACKS (3/4\"/>

SIGNING NOTES:

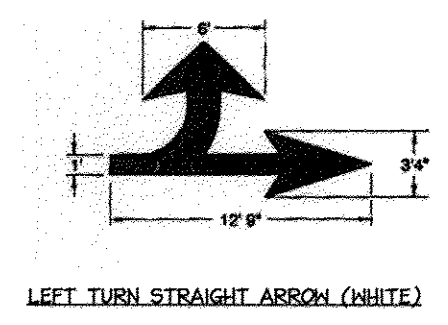
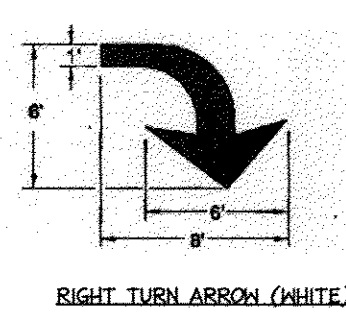
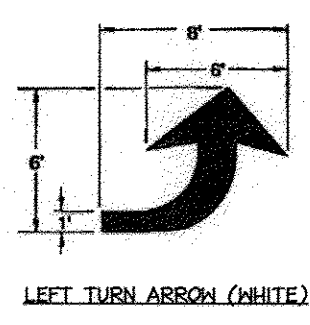
1. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2\"/>

PAVEMENT MARKING NOTES

1. ALL PAVEMENT MARKING TO BE APPLIED USING SETFAST PREMIUM ALKYD THERMOPLASTIC OR APPROVED EQUAL.
2. ALL PAVEMENT MARKINGS ARE TO BE EITHER LOCATED OR APPROVED BY THE TRAFFIC DIVISION PRIOR TO THE PLACEMENT OF ANY MARKINGS
3. MARKINGS THAT ARE NO LONGER BEING USED SHALL BE REMOVED OR OBLITERATED TO BE UNIDENTIFIABLE AS A MARKING.
4. PAVEMENT MARKINGS FOR THE DIRECTIONAL ARROWS SHALL BE WHITE. THE DIMENSIONS HAVE BEEN PROVIDED ON THIS SHEET.

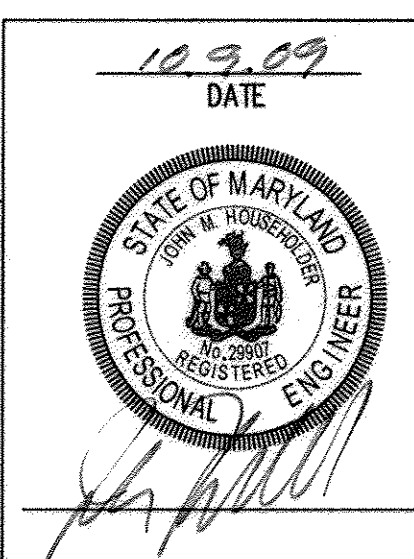


ENLARGED PROPOSED HYBRID/CARPOOL PARKING SPACES-WEST DETAIL (SEE SHEET 4)
SCALE: 1" = 30'



NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
SIGNATURE OF ENGINEER: *John M. Householder*
DATE: 10.9.09
JOHN M. HOUSEHOLDER
MID LICENSE NUMBER: 29907
EXPIRATION DATE: 1-27-2010



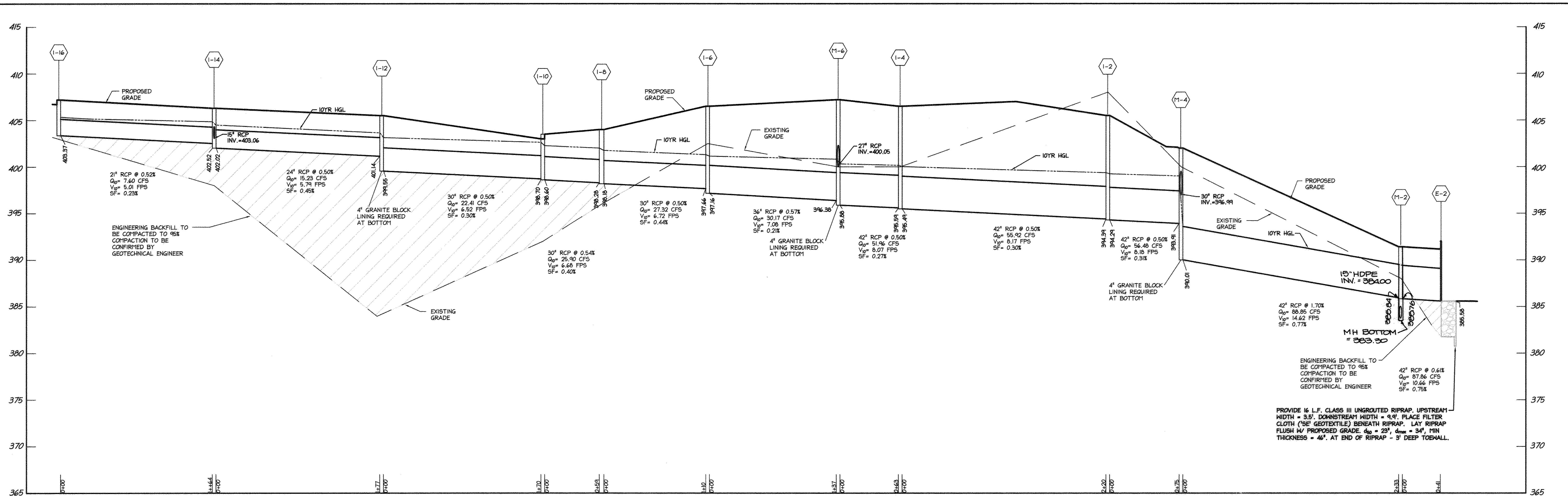
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Development Engineering Division: *Chris DeMunn* Date: 11/7/09
Chief, Division of Land Development: *Ken...* Date: 1/28/10
Director: *Mona...* Date: 1/1/10

JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099
ATTN: JAMES LOESCH, P.E., CFM
PHONE: 443.778.5834 FAX: 443.778.6122

christopher consultants
engineering - surveying - land planning
7172 columbian gateway drive (suite 100) - columbia, md. 21046-2999
410.852.9800 - faxes 301.281.0148 - fax 410.852.9800

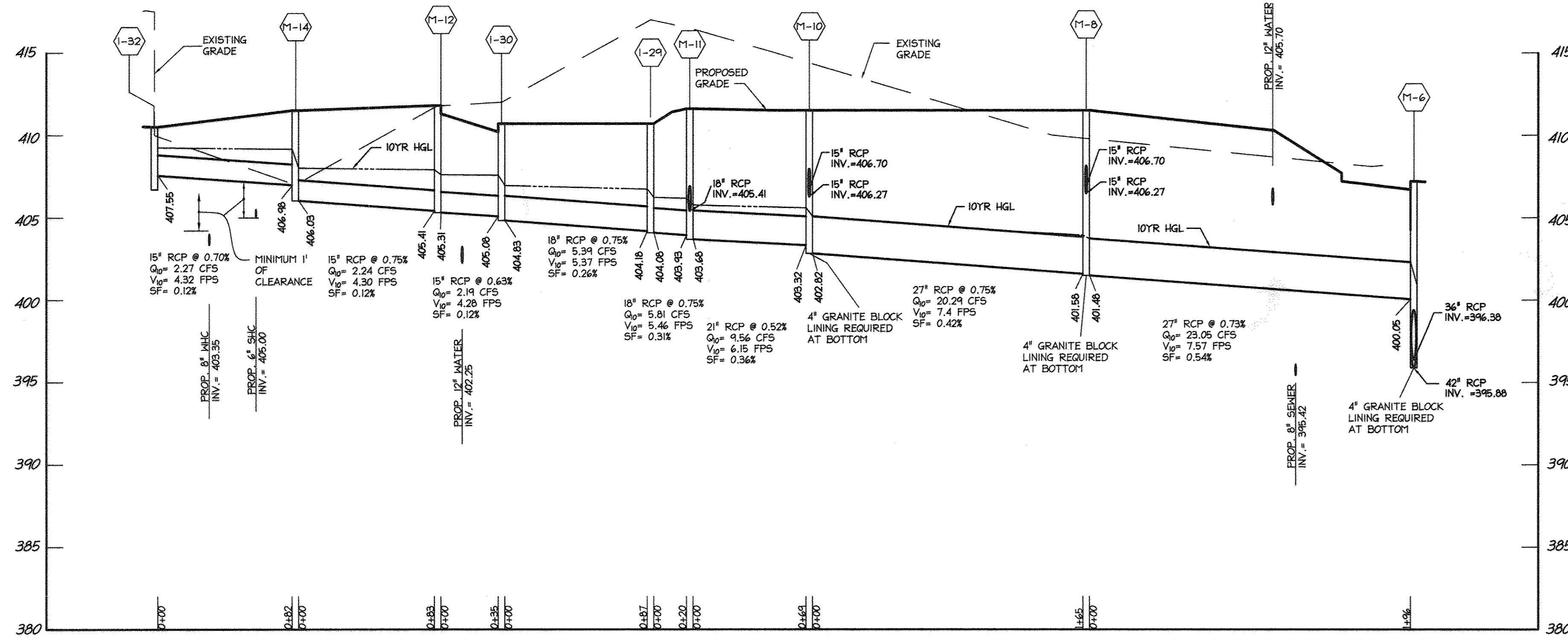
| PERMIT INFORMATION CHART | | | |
|--|-----------------------------|-------------------------|-------------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 | |
| DEED REF. L10412, F.396 | GRID NO. / ZONE 22 / PEC | TAX MAP 41 | ELECTION DISTRICT 5h |
| DATE: 10.9.09 | | | |
| TITLE: SITE, GRADING & UTILITY PLAN | | | |
| DESIGN: CRH/SJ | SCALE: AS SHOWN | PROJECT: 08A901.00 | |
| DRAWN: SSA | DATE: OCTOBER, 2009 | CHECKED: JMH | |
| 15 of 54 | | | |

MDC-930(SDP)



STORM DRAIN PROFILE - INLET 16 TO ENDWALL E2

SCALE: HORIZONTAL: 1"=50'
VERTICAL: 1"=5'



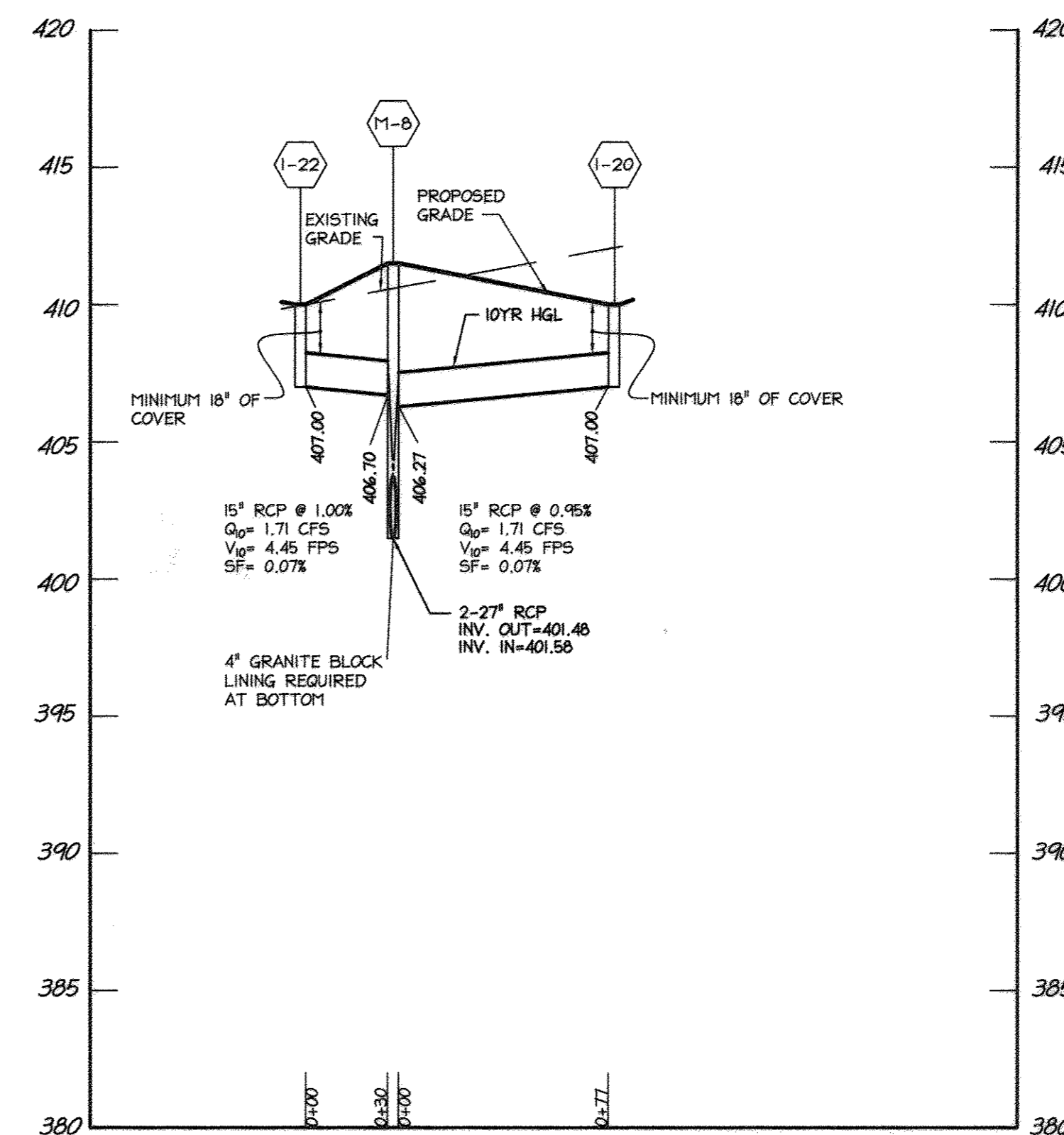
STORM DRAIN PROFILE - INLET 32 TO MANHOLE 6

SCALE: HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

NOTE:

THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD THE AS-BUILT CONDITION OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.



STORM DRAIN PROFILE - INLET 22 TO INLET 20

SCALE: HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

SIGNATURE OF ENGINEER
WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20087
EXPIRATION DATE: 08-20-2014

8/21/12
DATE



LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
SIGNATURE OF BRIAN COLLINS
LEED ACCREDITATION NO. 6299
DATE 11/10/10

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Development Engineering Division
Chief, Division of Land Development
Director

| | | |
|---|---------|------------------------------------|
| 1 | 2/20/12 | REDLINED FOR STORM SENIOR |
| 2 | 4/10/12 | REDLINED FOR LOWERING STORM INVERT |
| 3 | 12/4/12 | ADDED REDLINE SUMMARY NOTE |

Date No. Revision Description

JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099
ATTN: JAMES LOEBCH, P.E., CFM
PHONE: 443.778.5134 FAX 443.778.6122

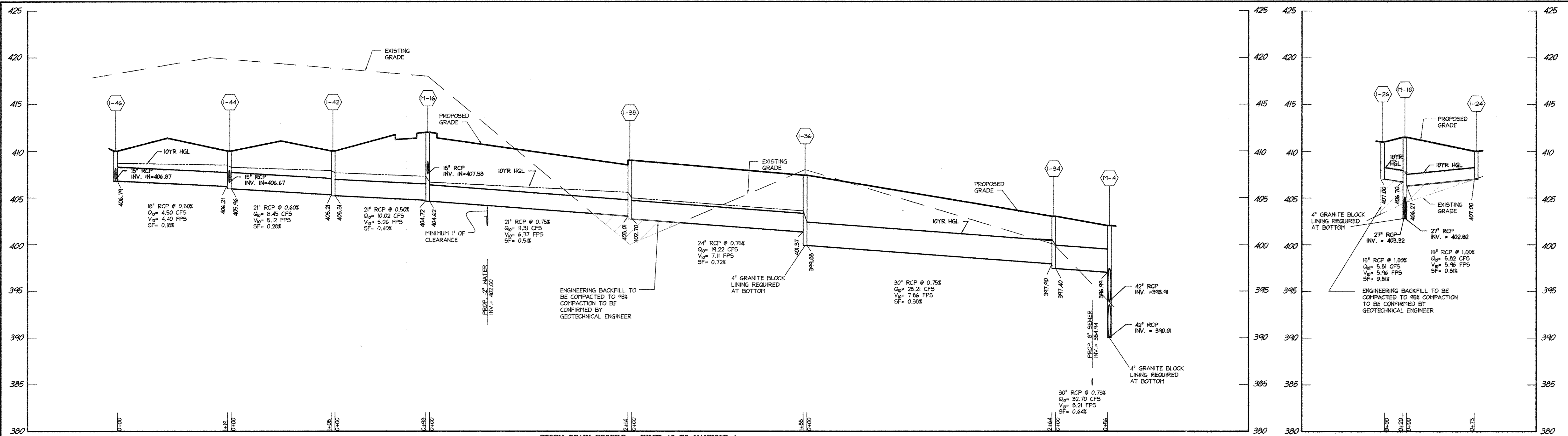
christopher consultants
engineering, surveying, land planning
christopher consultants, inc.
7122 columbian gateway drive suite 100, columbia, md 21046-3900
410.329.1800 fax 410.329.1802

PERMIT INFORMATION CHART

| | | |
|--|-------------------------|-------------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 |
| DEED REF. L10412, E. 398 | GRID NO. ZONE 22 PEC | TAX MAP 41 |
| ELECTION DISTRICT 5th | DATE 8/21/12 | |

TITLE:
AS-BUILT
UTILITY PROFILES

| | | |
|--------------|---------------------|--------------------|
| DESIGN: | SCALE: 1" = 50' | PROJECT: 08A901.00 |
| DRAWN: SSA | DATE: OCTOBER, 2009 | |
| CHECKED: JMH | APPROVED: JMH | 16 of 54 |

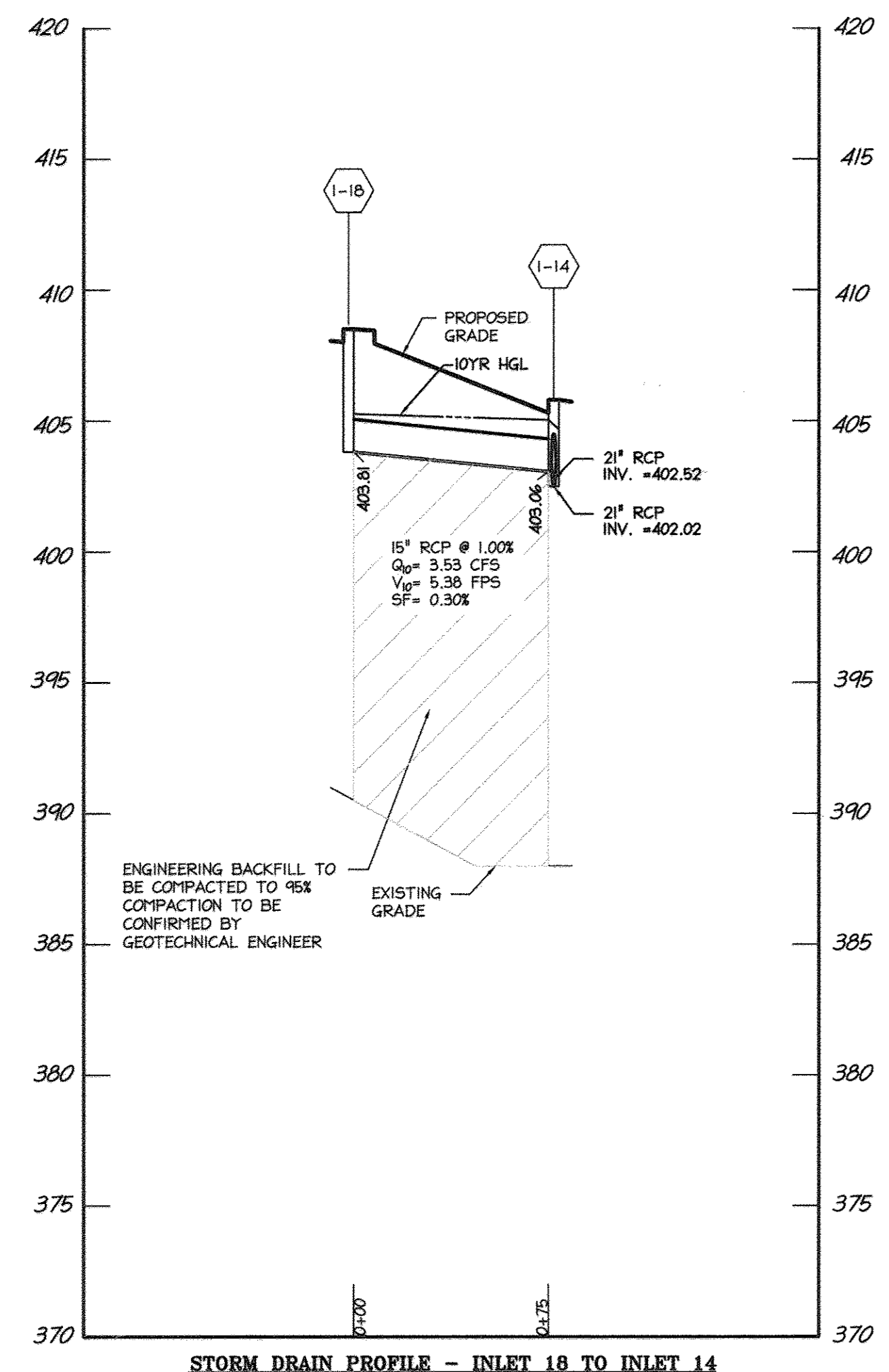


STORM DRAIN PROFILE - INLET 46 TO MANHOLE 4

SCALE: HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

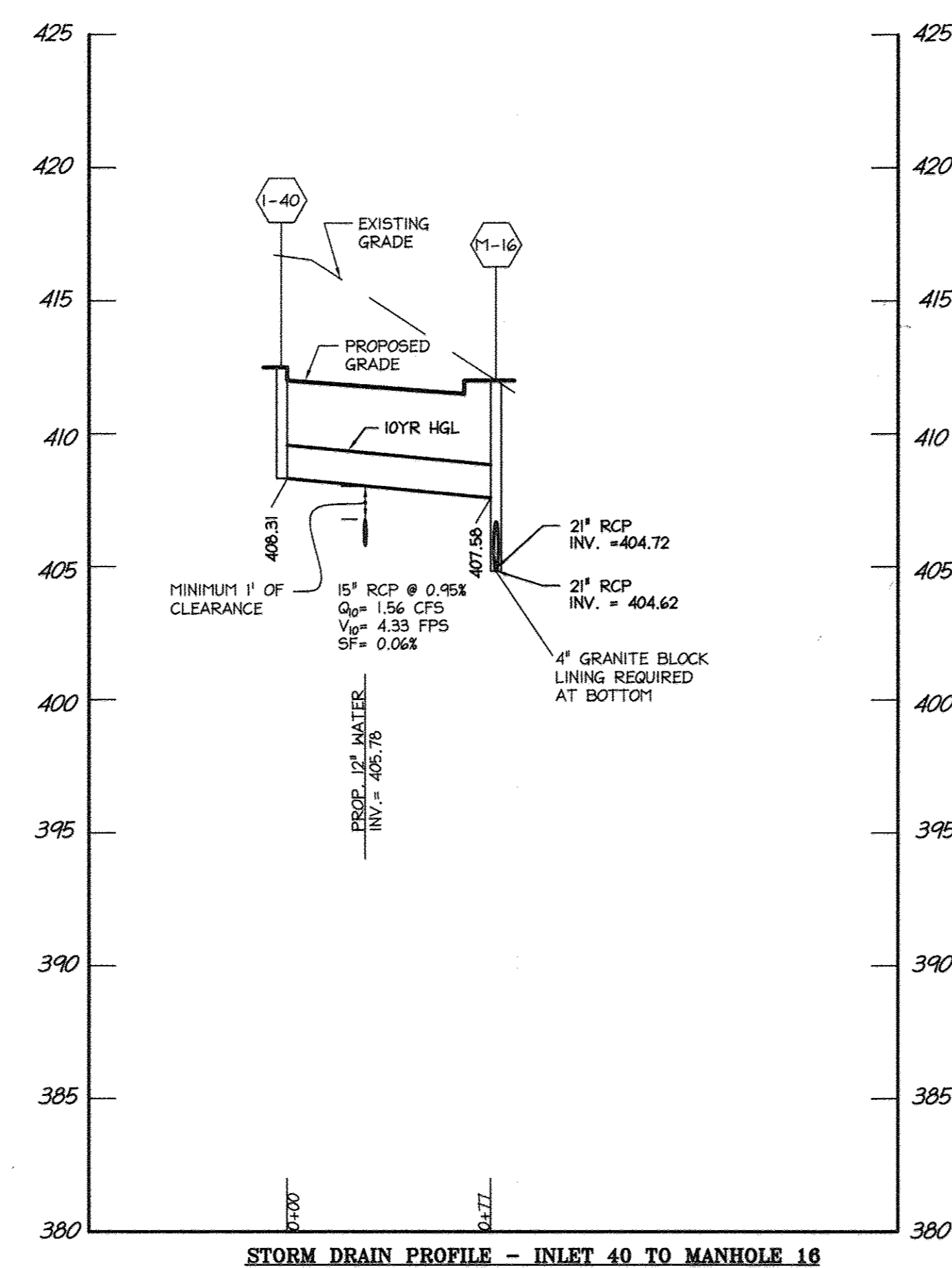
STORM DRAIN PROFILE - INLET 26 TO MANHOLE 24

SCALE: HORIZONTAL: 1"=50'
VERTICAL: 1"=5'



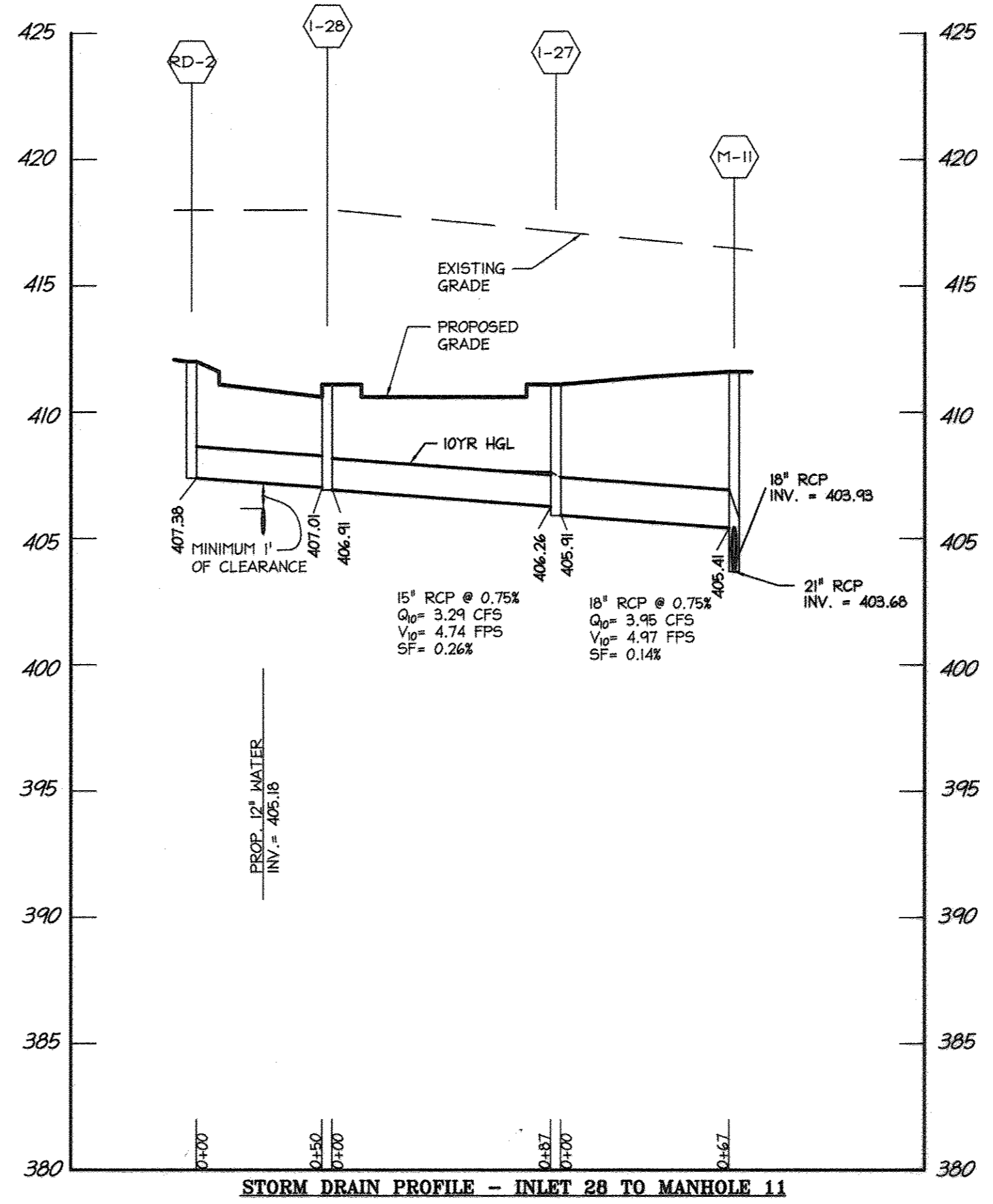
STORM DRAIN PROFILE - INLET 18 TO INLET 14

SCALE: HORIZONTAL: 1"=50'
VERTICAL: 1"=5'



STORM DRAIN PROFILE - INLET 40 TO MANHOLE 16

SCALE: HORIZONTAL: 1"=50'
VERTICAL: 1"=5'



STORM DRAIN PROFILE - INLET 28 TO MANHOLE 11

SCALE: HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
John H. Householder 10.9.09
DATE
SIGNATURE OF ENGINEER
JOHN H. HOUSEHOLDER 2997
P.E. LICENSE NUMBER
EXPIRATION DATE: 1-27-2010

LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
Brian Collins 10.9.09
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
John Dammus 11/17/09
Chief, Development Engineering Division Date
Neil Shubert 1/23/10
Chief, Division of Land Development Date
Thomas J. Yantler 1/11/10
Director Date

| Date | No. | Revision Description |
|------|-----|----------------------|
| | | |
| | | |
| | | |

JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723-6099
ATTN: JAMES LOESCH, P.E., CFM
PHONE: 443.778.5134 FAX: 443.778.6122

christopher consultants
engineering • surveying • land planning
christopher consultants, inc.
2172 columbian greenway drive suite 100 • columbia, md 21046-2890
410.872.8850 • fax 410.872.8863

PERMIT INFORMATION CHART

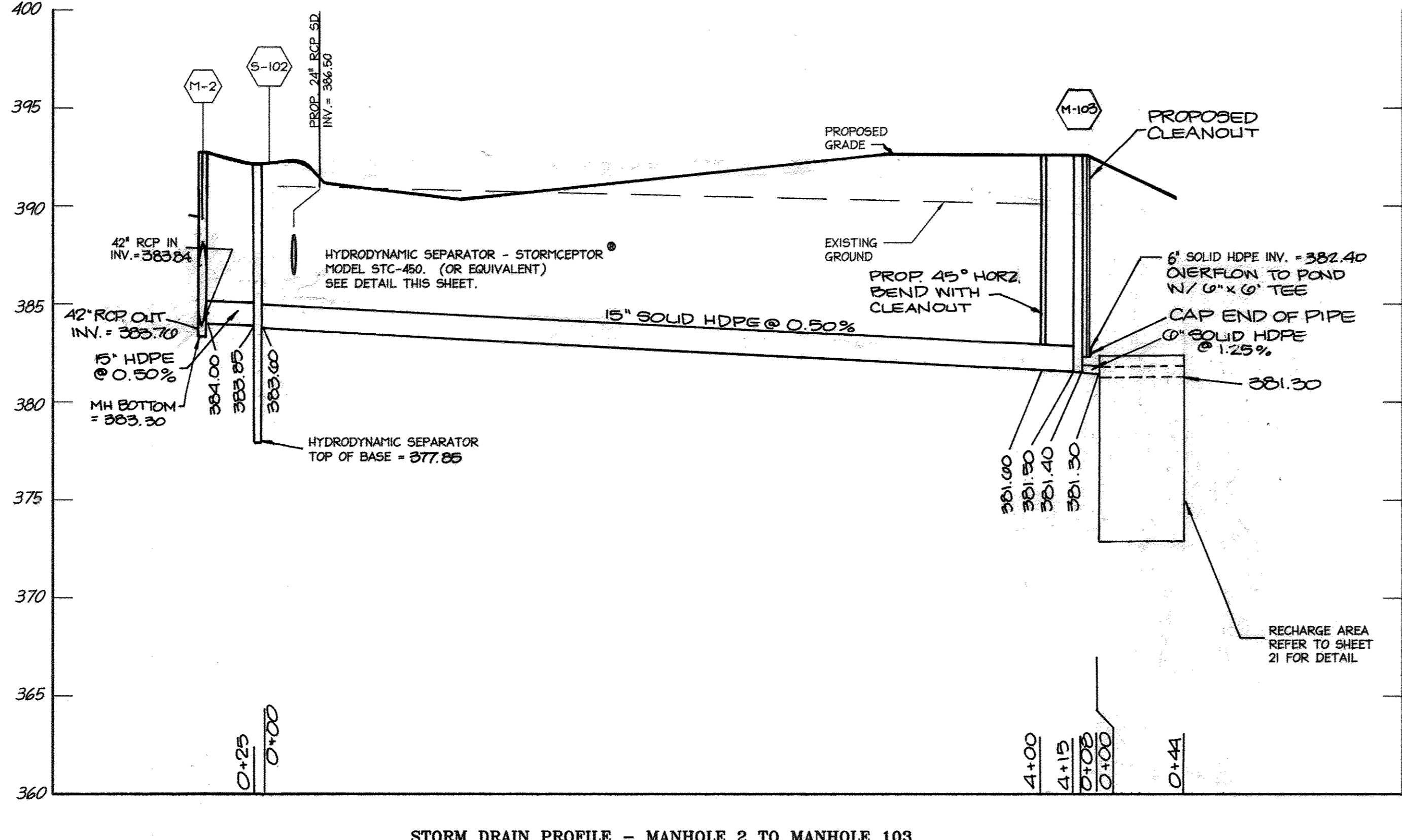
| | | |
|--|-------------------------|-------------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 |
| DEED REF. L10412, F.396 | GRID NO. ZONE 22 PEC | TAX MAP 41 |
| ELECTION DISTRICT 5th | DATE 10.9.09 | |

TITLE: **AS-BUILT UTILITY PROFILES**

DESIGN: SCALE: 1" = 50' PROJECT: 08A901.00
DRAWN: SSA DATE: OCTOBER, 2009
CHECKED: JMH APPROVED: JMH

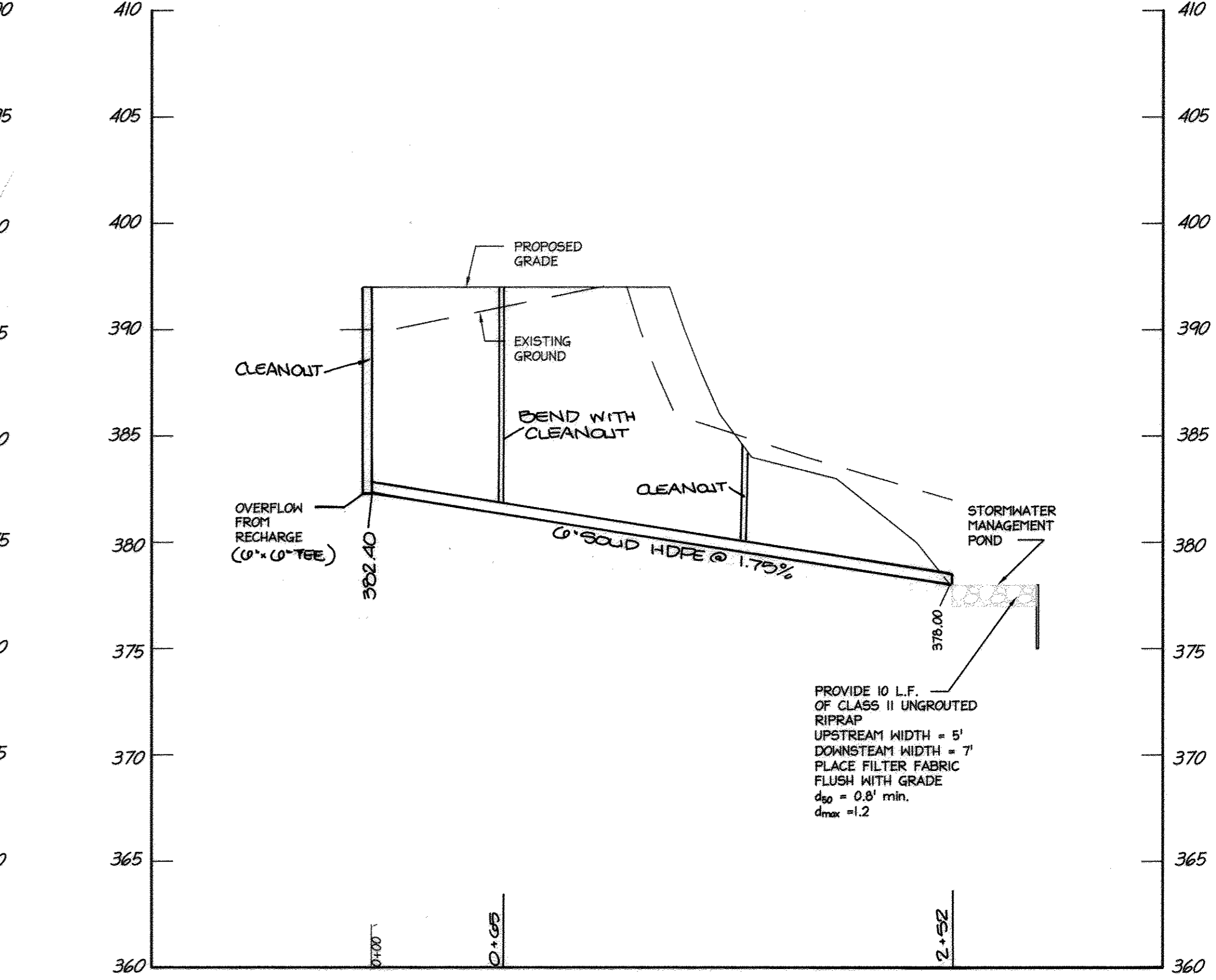
MDC-930(SDP)

| STANDARD STRUCTURE SCHEDULE | | | | | | |
|-----------------------------|------------------|------------------|--|--------------------------------|---------------|-----------------|
| NO. | TYPE | WIDTH / DIAMETER | INVERT IN ELEVATION | INVERT OUT ELEVATION | TOP ELEVATION | STANDARD DETAIL |
| I-2 | "A-5" INLET | 5'-0" DIAM | 394.39 | 394.29 | 405.50 | D.4.01/GS.13 |
| I-4 | "A-5" INLET | 5'-0" DIAM | 395.59 | 395.49 | 406.50 | D.4.01/GS.13 |
| I-6 | "A-5" INLET | 5'-0" DIAM | 397.66 | 397.16 | 406.50 | D.4.01/GS.13 |
| I-8 | "A-5" INLET | 5'-0" DIAM | 398.28 | 398.18 | 403.50 | D.4.01/GS.13 |
| I-10 | "A-5" INLET | 5'-0" DIAM | 398.70 | 398.50 | 403.50 | D.4.01/GS.13 |
| I-12 | "A-5" INLET | 3'-6" | 403.14 | 399.55 | 404.50 | D.4.02 |
| I-14 | "A-5" INLET | 2'-6" | 15" INV=403.06, 21" INV=402.52 | 402.02 | 406.00 | D.4.01 |
| I-16 | "A-5" INLET | 2'-6" | 403.37 | 403.67 | 407.20 | D.4.01 |
| I-18 | "A-5" INLET | 2'-6" | 403.81 | 403.81 | 408.50 | D.4.01 |
| I-20 | YARD INLET | 4'-0" | 407.00 | 407.00 | 410.00 | D.4.14 |
| I-22 | YARD INLET | 4'-0" | 407.00 | 407.00 | 410.00 | D.4.14 |
| I-24 | YARD INLET | 4'-0" | 407.00 | 407.00 | 410.00 | D.4.14 |
| I-26 | YARD INLET | 4'-0" | 407.00 | 407.00 | 410.00 | D.4.14 |
| I-27 | "A-5" INLET | 2'-6" | 406.26 | 405.91 | 411.10 | D.4.01 |
| I-28 | "A-5" INLET | 2'-6" | 407.01 | 406.91 | 411.10 | D.4.01 |
| I-29 | "A-5" INLET | 2'-6" | 404.18 | 404.08 | 411.10 | D.4.01 |
| I-30 | WR INLET | 2'-6" | 405.08 | 404.83 | 410.70 | D.4.01 |
| I-32 | WR INLET | 2'-6" | 406.70 | 406.70 | 410.50 | D.4.37 |
| I-34 | "A-5" INLET | 5'-0" DIAM | 397.90 | 397.40 | 403.00 | D.4.01/GS.13 |
| I-36 | "A-5" INLET | 5'-0" DIAM | 401.37 | 399.88 | 407.40 | D.4.01/GS.13 |
| I-38 | "A-10" INLET | 4'-0" DIAM | 403.01 | 402.70 | 409.00 | D.4.01/GS.12 |
| I-40 | "A-10" INLET | 2'-6" | 408.31 | 408.31 | 412.50 | D.4.03 |
| I-42 | YARD INLET | 3'-0" | 405.31 | 405.21 | 410.00 | D.4.14 |
| I-44 | YARD INLET | 4'-0" | 18" INV=406.21, 15" INV=405.67 | 406.96 | 410.00 | D.4.14 |
| I-46 | YARD INLET | 4'-0" | 15" INV=406.87, 18" INV=406.79 | 406.79 | 410.00 | GS.13 |
| M-2 | STD MANHOLE | 6'-0" | 385.84 | 42" INV=385.74, 15" INV=384.00 | 392.00 | GS.13 |
| M-4 | STD MANHOLE | 5'-0" | 390" INV=396.99, 42" INV=393.91 | 390.01 | 402.00 | GS.13 |
| M-6 | STD MANHOLE | 5'-0" | 27" INV=400.05, 36" INV=396.38 | 395.88 | 407.20 | GS.13 |
| M-8 | STD MANHOLE | 5'-0" | 15" INV=406.70, 15" INV=406.27, 27" INV=401.58 | 401.48 | 411.50 | GS.13 |
| M-10 | STD MANHOLE | 5'-0" | 15" INV=406.70, 15" INV=406.27, 21" INV=403.32 | 402.82 | 411.50 | GS.13 |
| M-11 | STD MANHOLE | 4'-0" | 18" INV=405.41, 18" INV=403.93 | 403.68 | 411.60 | GS.12 |
| M-12 | STD MANHOLE | 4'-0" | 405.41 | 405.31 | 411.80 | GS.12 |
| M-14 | STD MANHOLE | 4'-0" | 406.98 | 406.03 | 411.50 | GS.12 |
| M-16 | STD MANHOLE | 4'-0" | 21" INV=404.72, 15" INV=407.58 | 404.62 | 412.00 | GS.12 |
| E-2 | TYPE "A" ENDWALL | 42" | 385.58 | 392.00 | 392.00 | GS.11 |
| S-102 | STORMCEPTOR | 4'-0" | 383.85 | 383.60 | 382.49 | RINKOR 027 |
| M-103 | STD MANHOLE | 4'-0" | 381.82 | 382.49 | 382.49 | GS.12 |
| R-100 | STD MANHOLE | 4'-0" | 379.40 | 392.00 | 392.00 | GS.12 |



STORM DRAIN PROFILE - MANHOLE 2 TO MANHOLE 103
6" PIPE TO HYDRODYNAMIC SEPARATOR AND RECHARGE AREA

SCALE: HORIZONTAL: 1"=50'
VERTICAL: 1"=5'



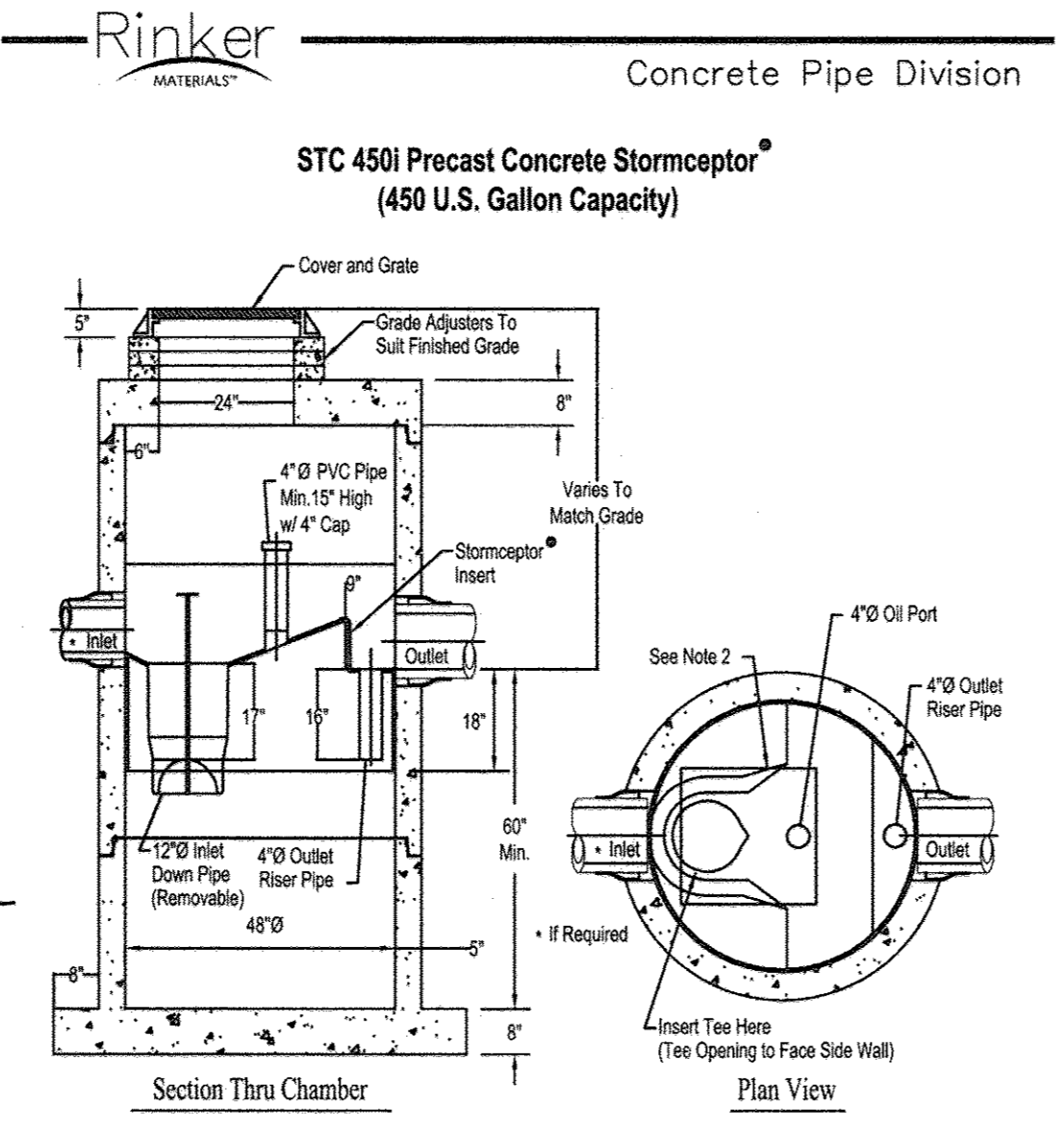
RECHARGE OVERFLOW PROFILE

SCALE: HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

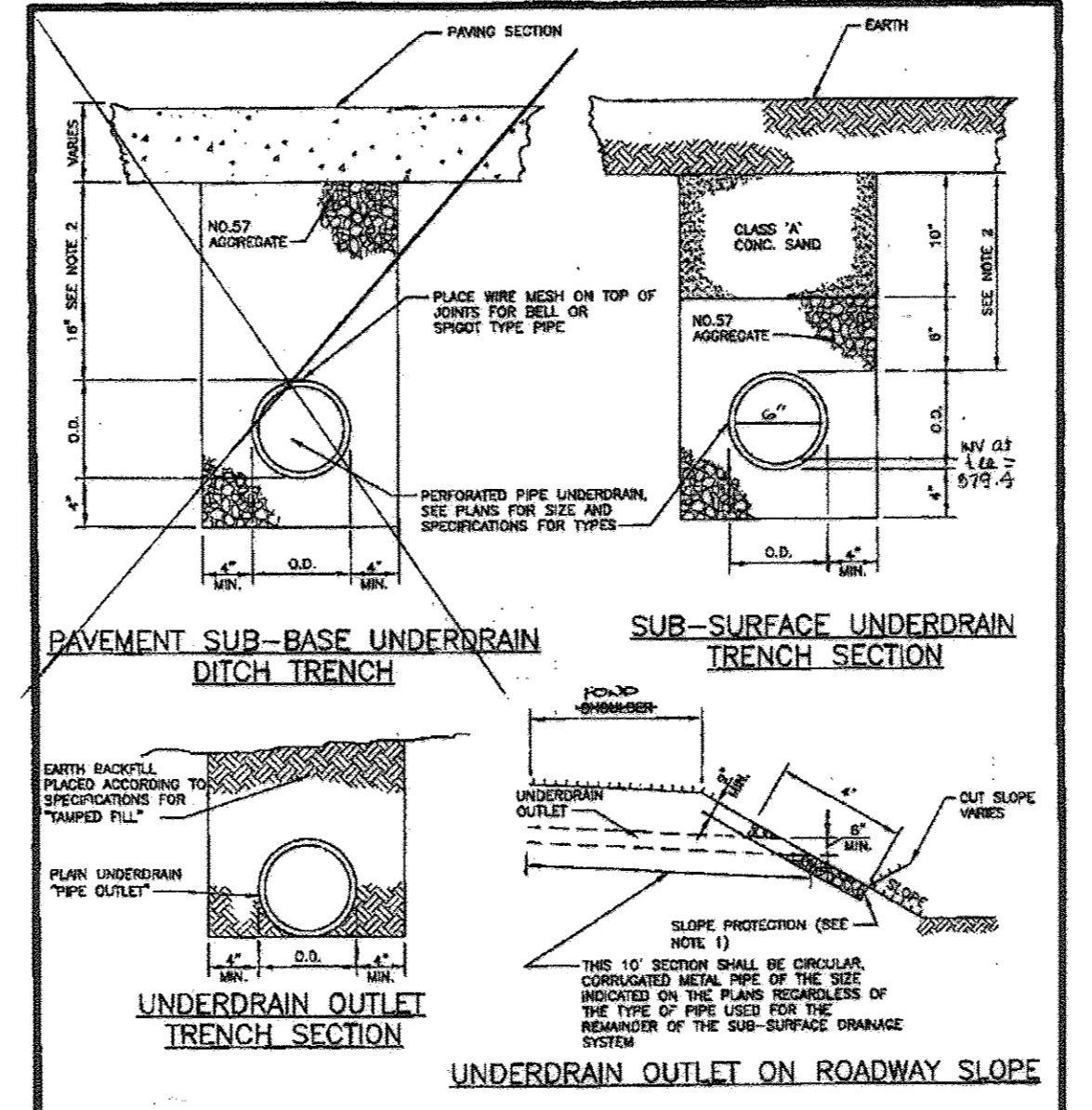
| PIPE SUMMARY | | | | |
|--------------|-------|----------|-----------|--------|
| FROM | TO | SIZE | TYPE | LENGTH |
| I-46 | I-44 | 18 | RCP CL-IV | 119 |
| I-44 | I-42 | 21 | RCP CL-IV | 108 |
| I-42 | M-16 | 21 | RCP CL-IV | 98 |
| I-40 | M-16 | 15 | RCP CL-IV | 77 |
| M-16 | I-38 | 21 | RCP CL-IV | 214 |
| I-38 | I-36 | 24 | RCP CL-IV | 185 |
| I-36 | I-34 | 30 | RCP CL-IV | 264 |
| I-34 | M-4 | 30 | RCP CL-IV | 56 |
| I-32 | M-14 | 15 | RCP CL-IV | 82 |
| M-14 | M-12 | 15 | RCP CL-IV | 85 |
| M-12 | I-30 | 15 | RCP CL-IV | 33 |
| I-30 | I-29 | 18 | RCP CL-IV | 87 |
| I-29 | M-11 | 18 | RCP CL-IV | 20 |
| I-28 | I-27 | 15 | RCP CL-IV | 87 |
| I-27 | M-11 | 18 | RCP CL-IV | 67 |
| M-11 | M-10 | 21 | RCP CL-IV | 69 |
| I-26 | M-10 | 15 | RCP CL-IV | 20 |
| I-24 | M-10 | 15 | RCP CL-IV | 73 |
| M-10 | M-8 | 27 | RCP CL-IV | 165 |
| I-22 | M-8 | 15 | RCP CL-IV | 30 |
| I-20 | M-8 | 15 | RCP CL-IV | 77 |
| M-8 | M-6 | 27 | RCP CL-IV | 196 |
| I-16 | I-14 | 21 | RCP CL-IV | 164 |
| I-18 | I-14 | 15 | RCP CL-IV | 75 |
| I-14 | I-12 | 24 | RCP CL-IV | 177 |
| I-12 | I-10 | 30 | RCP CL-IV | 170 |
| I-10 | I-8 | 30 | RCP CL-IV | 59 |
| I-8 | I-6 | 30 | RCP CL-IV | 110 |
| I-6 | M-6 | 36 | RCP CL-IV | 137 |
| M-6 | I-4 | 42 | RCP CL-IV | 63 |
| I-4 | I-2 | 42 | RCP CL-IV | 220 |
| I-2 | M-4 | 42 | RCP CL-IV | 75 |
| M-4 | M-2 | 42 | RCP CL-IV | 233 |
| M-2 | E-2 | 42 | RCP CL-IV | 41 |
| M-2 | S-102 | 15" HDPE | | 25 |
| S-102 | M-103 | 15" HDPE | | 419 |

| PIPE SUMMARY | | |
|----------------|-----------|--------|
| SIZE | TYPE | LENGTH |
| 15" | RCP CL-IV | 639 |
| 18" | RCP CL-IV | 293 |
| 21" | RCP CL-IV | 653 |
| 24" | RCP CL-IV | 362 |
| 27" | RCP CL-IV | 361 |
| 30" | RCP CL-IV | 659 |
| 36" | RCP CL-IV | 137 |
| 42" | RCP CL-IV | 632 |
| 15" HDPE SOLID | | 440 |
| 6" HDPE SOLID | | 200 |
| 6" HDPE PERF. | | 555 |
| TOTAL | | 4991 |

NOTE:
THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD THE AS-BUILT CONDITION OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.



- Notes:
- The Use of Flexible Connection is Recommended at the Inlet and Outlet Where Applicable.
 - The Cover Should be Positioned Over the Inlet Drop Pipe and the Oil Port.
 - The Stormceptor System is protected by one or more of the following U.S. Patents: #4985148, #5498331, #5725760, #5753115, #5849181, #6068765, #6371690.
 - Contact a Concrete Pipe Division representative for further details not listed on this drawing.

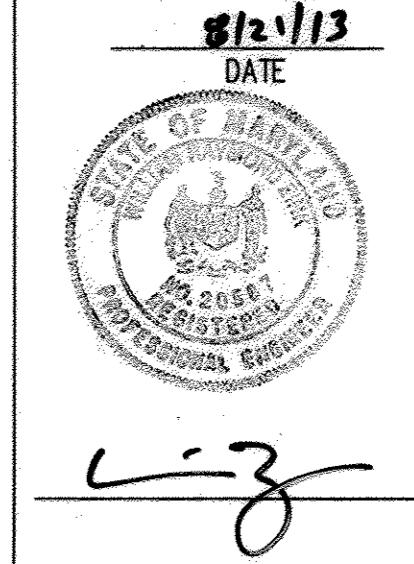


- NOTES:
- SLOPE PROTECTION USING 4" TO 7" STONE SHALL BE USED. THE WIDTH OF STONE PROTECTION TO BE 2'.
 - WITH THE APPROVAL OF THE ENGINEER, THE UNDERDRAIN SHALL BE WHERE WARE UNDERDRAIN DISCHARGED INTO AN INLET OR WHERE OTHER UNLAWFUL CONDITIONS PREVAIL. SEE SPECIFICATIONS PERTAINING TO PAVEMENT FOR EXTRA TRENCH DEPTH.
 - UNDERDRAIN SHALL BE LAID ON A MINIMUM 0.5% GRADE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
 - UNDERDRAIN SHALL BE DISCHARGED INTO INLETS AND MANHOLES WHERE POSSIBLE AND SHALL BE DISCHARGED ONTO THE ROADWAY SLOPE ONLY WHERE NO INLETS OR MANHOLES ARE AVAILABLE FOR CONNECTION.
 - FOR JOINTS, REFER TO SPECIFICATIONS.

| | | | |
|---------|---|---|------------------|
| NO. 109 | Howard County, Maryland Department of Public Works | Finalized by: [Signature] Fixed Reference to Existing Underdrain | Detail R-1.09 |
|---------|---|---|------------------|

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
[Signature]
WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20557
EXPIRATION DATE: 09-20-2014



LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
[Signature]
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

| | |
|---|----------------|
| APPROVED: DEPARTMENT OF PLANNING AND ZONING | |
| Chief, Development Engineering Division | Date: 11/17/09 |
| Chief, Division of Land Development | Date: 11/08/10 |
| Director | Date: 11/11/10 |

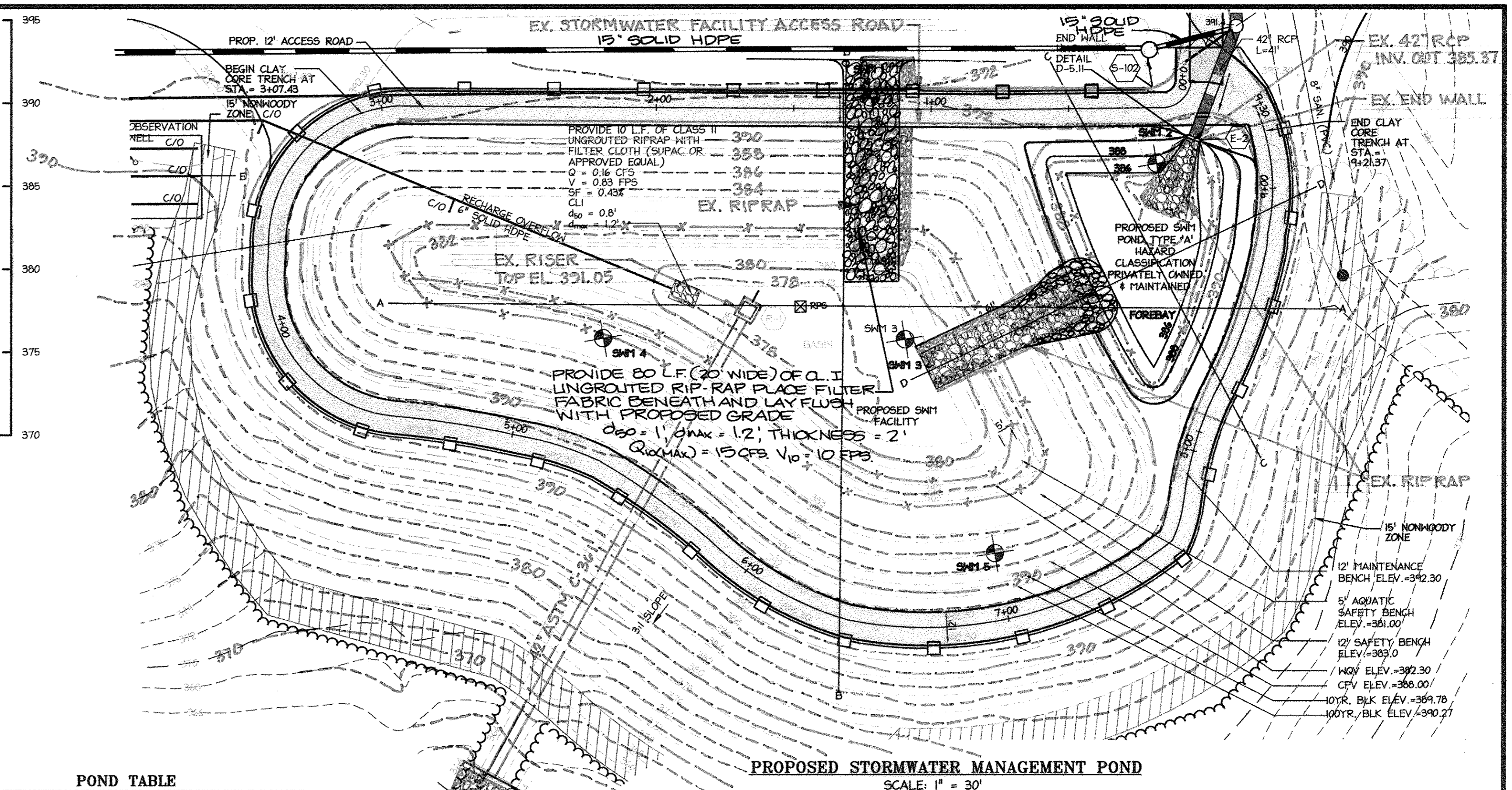
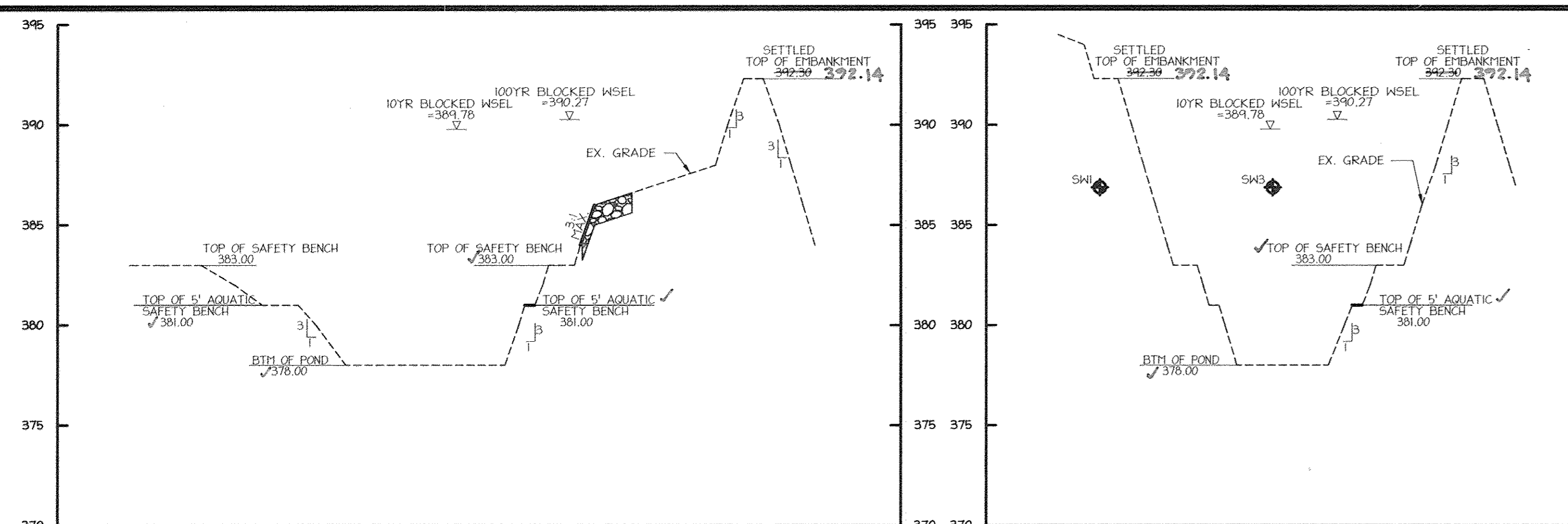
| No. | Revision Description |
|-----|--|
| 1 | 2.20.10 REDLINED FOR STORM SEWER |
| 2 | 4.18.10 REDLINED FOR LOWERING OF STORM INVERTS |
| 3 | 4.23.10 REDLINED FOR LOWERING STORMCEPTOR BOTTOM |
| 4 | 01.11.12 ADDED REDLINE SUMMARY NOTE |

JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723-6099
ATTN: JAMES LOEBCH, P.E., CFM
PHONE: 443.778.8134 FAX: 443.778.8122

christopher consultants
engineering surveying land planning
1772 columbian gateway drive suite 100, columbia, md 21046-9900
410.572.8500 • fax 410.572.8503

| | | |
|--|-------------------------|-------------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 |
| DEED REF. L10412 - F.396 | GRID NO. ZONE 22 PEC | TAX MAP 41 |
| DATE 1/27/13 | ELECTION DISTRICT 5h | |

| | | |
|-------------------------------------|---------------------|--------------------|
| TITLE: AS-BUILT UTILITY PROFILES | | |
| DESIGN: SSA | SCALE: 1" = 50' | PROJECT: 08A901.00 |
| DRAWN: JMH | DATE: OCTOBER, 2009 | |
| CHECKED: JMH | APPROVED: JMH | 18 of 54 |

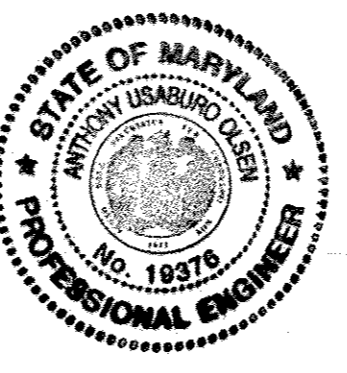
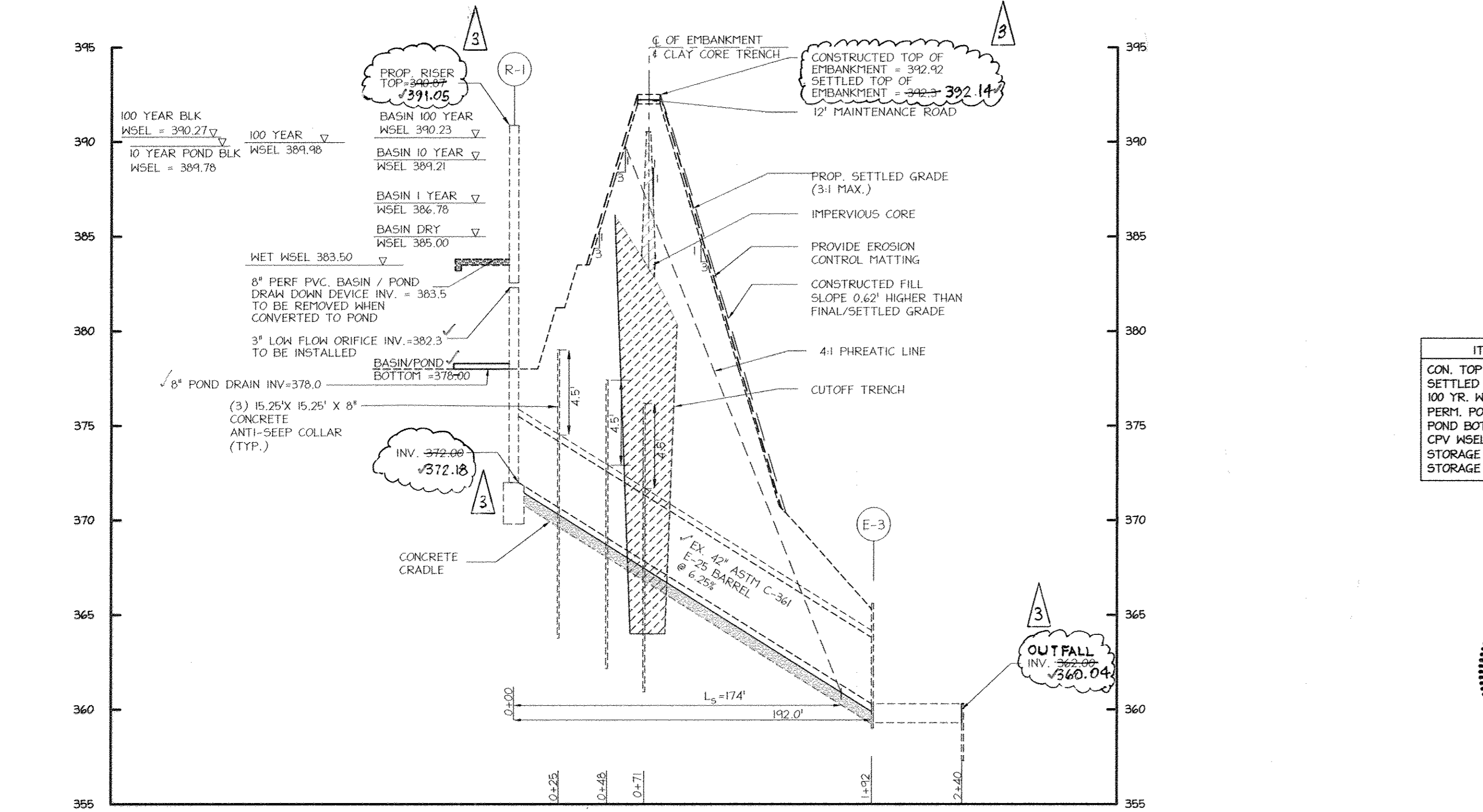


POND TABLE

| ITEM | DESIGN | AS BUILT |
|--------------------------|------------|----------|
| CON. TOP OF DAM ELEV. | 392.62 | |
| SETTLED TOP OF DAM ELEV. | 390.27 | |
| 100 YR. WSEL (BLOCKED) | 382.30 | |
| PERM. POOL ELEV (HW) | 378.00 | |
| POND BOTTOM ELEV. | 368.0 | |
| CPV WSEL | 316 AC-FT | |
| STORAGE AT 100YR WSEL | 4.64 AC-FT | |

REQUIREMENT SUMMARY TABLE

| REQUIREMENTS | BEFORE CREDITS | AFTER CREDITS | CREDITS / BMP'S |
|--------------|----------------|---------------|--|
| HW | 2.40 AC.-FT. | 1.09 AC.-FT. | NATURAL AREA 15.87 AC. (39.2%) POND 1.09 AC.-FT. (60.8%) |
| Rev | 0.62 AC.-FT. | 0.381 AC.-FT. | RECHARGE AREAS 0.381 AC.-FT. (60.8%) NATURAL AREA 15.87 AC. (39.2%) |



AS-BUILT CERTIFICATION
I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
Anthony U. Olsen
ANTHONY U. OLSEN PE #19376
11/08/17
DATE OF AS-BUILT

NOTES:
1. POND WILL BE CONSTRUCTED UNDER GP-10-009 INFORMATION PROVIDED ON THIS SHEET IS FOR THE CONSTRUCTION OF THE FOREBAY.
2. DUE TO THE INFILTRATION RATE AND THE PRESENCE OF FRACTURED ROCK NEAR THE BOTTOM ELEVATION OF THE POND, A 6" CLAY LINER SHALL BE PROVIDED UP TO THE PERMANENT POOL ELEVATION TO HELP MAINTAIN A CONSTANT NET POOL.
3. CONTRACTOR TO REFER TO SEDIMENT CONTROL SEQ. OF CONSTRUCTION FOR INSTRUCTIONS ON BASIN REMOVAL AND POND (FOREBAY) CONSTRUCTION AND STABILIZATION.

NOTE:
THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD THE AS-BUILT CONDITIONS OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
William R. Carey
Chief, Development Engineering Division
Date: 11/17/15

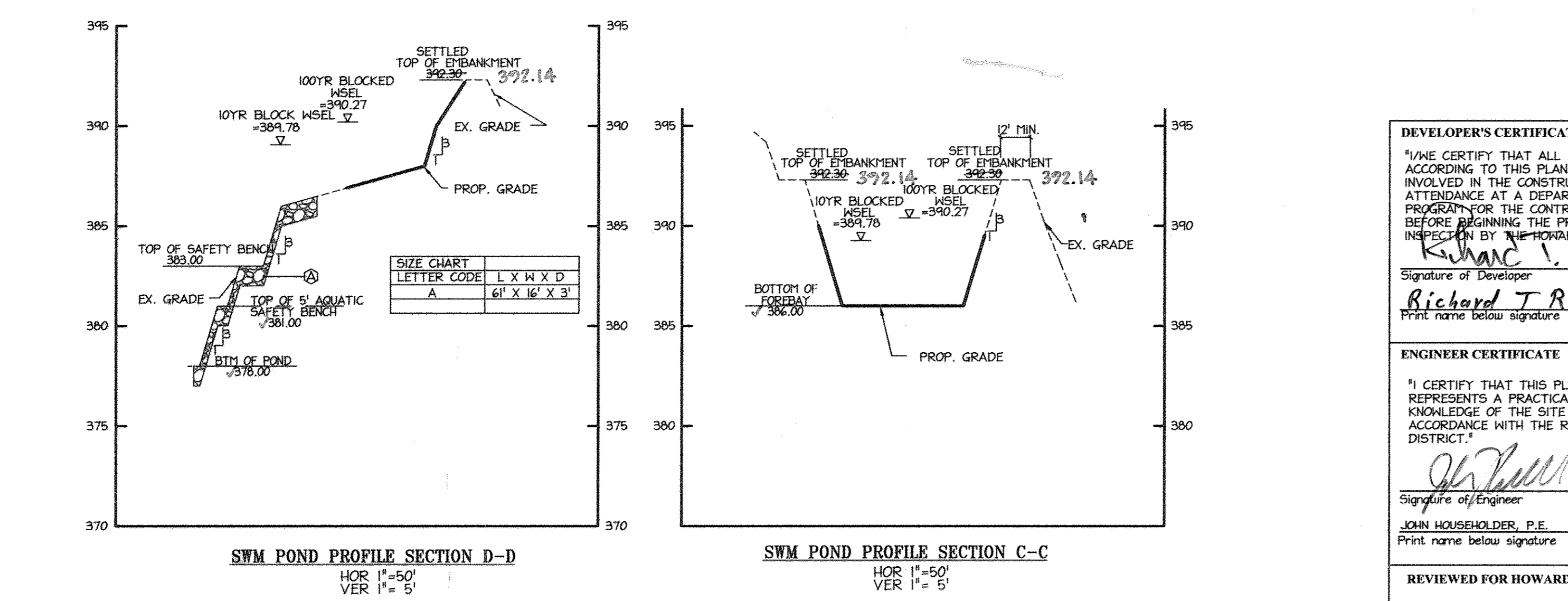
Kurtis...
Chief, Division of Land Development
Date: 11/20/15

Morgan...
Director
Date: 11/10/15

| No. | Date | Revision Description |
|-----|----------|----------------------------|
| 1 | 2.26.10 | REDLINED FOR STORM SEWER |
| 2 | 10.14.13 | ADDED REDLINE SUMMARY |
| 3 | 6.19.15 | AS-BUILT INVERT ELEVATIONS |

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christopher consultants, ltd.
7115 cornerstone gateway drive suite 100 | coltsville, md 21046-2900
410.877.8800 | fax: 301.881.0146 | sa: 410.877.8800



DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE ONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
Richard J. Recca
Signature of Developer
Richard J. Recca
Print name below signature
11/5/09
Date

ENGINEER CERTIFICATE
I/WE CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
William R. Zink
Signature of Engineer
JOHN HOUSEHOLDER, P.E.
Print name below signature
10/9/09
Date

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Richard J. Recca
11/10/09
Date

NOTE: THE SWM FACILITY TO BE CONSTRUCTED UNDER GRADING PERMIT GP-10-009

LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
Brian Collins
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. 0-9-009
DATE: 8/11/13

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
William R. Zink
SIGNATURE OF ENGINEER
WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE: 09-20-2014
8/11/13
DATE

PERMIT INFORMATION CHART

| PROJECT NAME: | LOT/PARCEL NO. | CENSUS TRACT | |
|------------------------------------|----------------|--------------|-------------------|
| JHU/APL- SOUTH CAMPUS BUILDING 200 | 300 | 6051.02 | |
| DEED REF.: | GRID NO. ZONE | TAX MAP | ELECTION DISTRICT |
| L10412 - F.396 | 22 PEC | 41 | 5th |

TITLE: **AS-BUILT STORMWATER MANAGEMENT NOTES & PROFILES**
DESIGN: ENJ
SCALE: AS SHOWN
PROJECT: 08A901.00
DRAWN: SSA
DATE: OCTOBER, 2009
CHECKED: JMH
APPROVED: JMH
19 of 54

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER POND

ROUTINE MAINTENANCE:

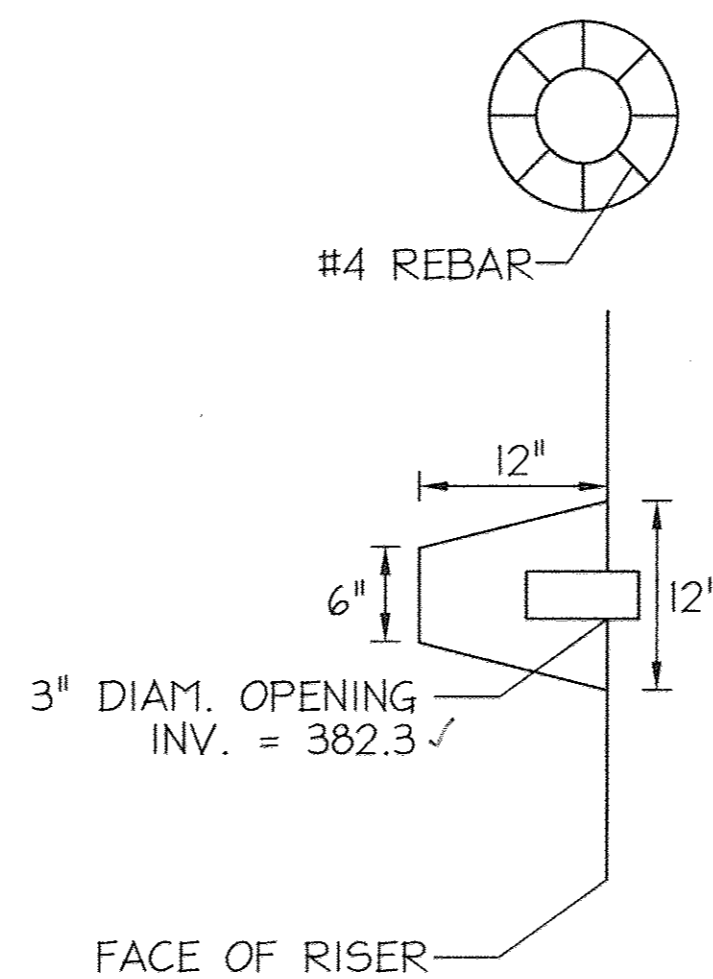
1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS PROPERLY.
2. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.
3. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS THE RIPRAP OR GABION OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE:

1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
2. SEDIMENT SHALL BE REMOVED FROM THE POND, AND FOREBAY, NO LATER THAN WHEN THE CAPACITY OF THE POND, OR FOREBAY, IS HALF FULL OF SEDIMENT, OR, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS

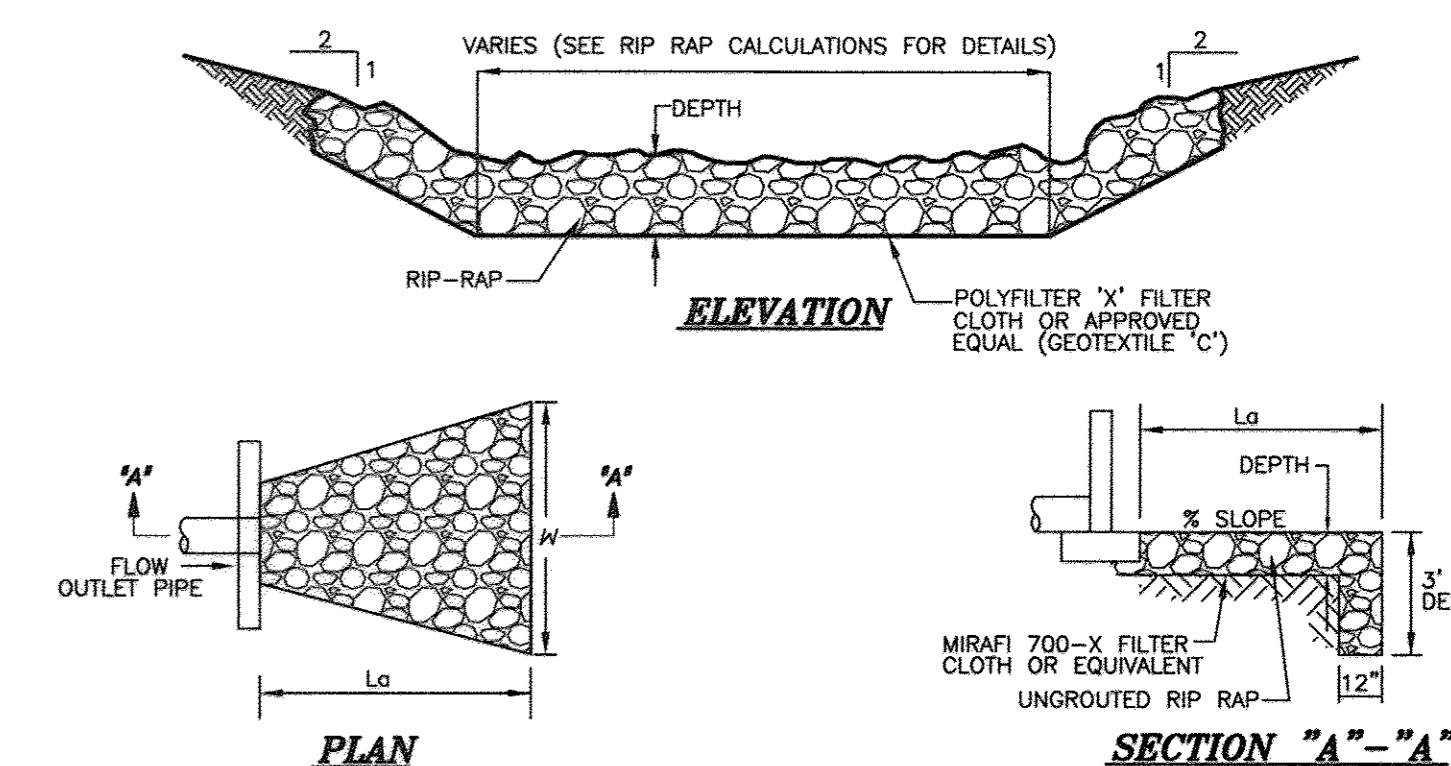
OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS WITHIN USGA, SCS STANDARDS AND SPECIFICATIONS FOR PONDS (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING, OR SLUMPING.



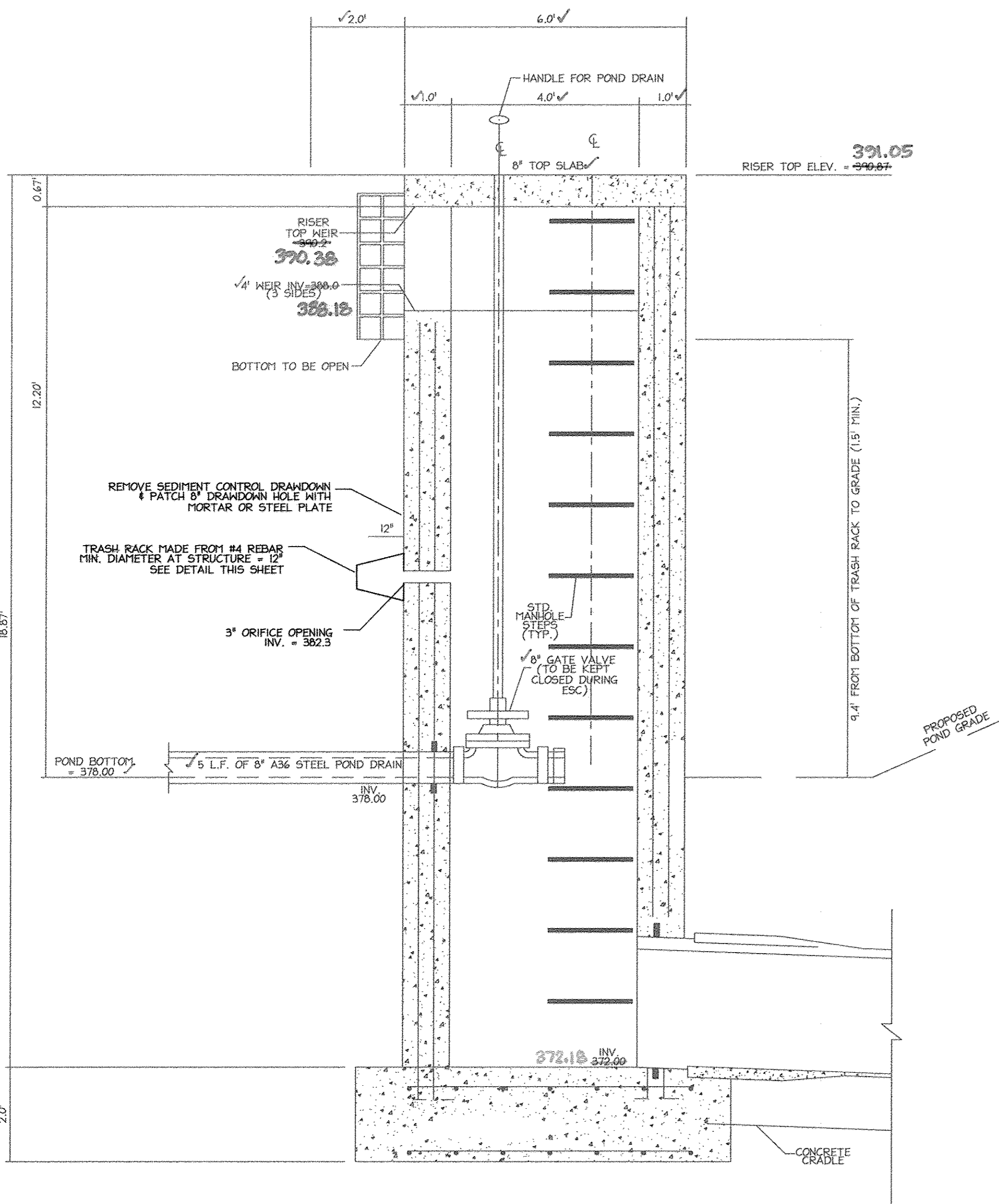
TRASH RACK DETAIL

SCALE: 1" = 1"
TO BE BOLTED TO STRUCTURE

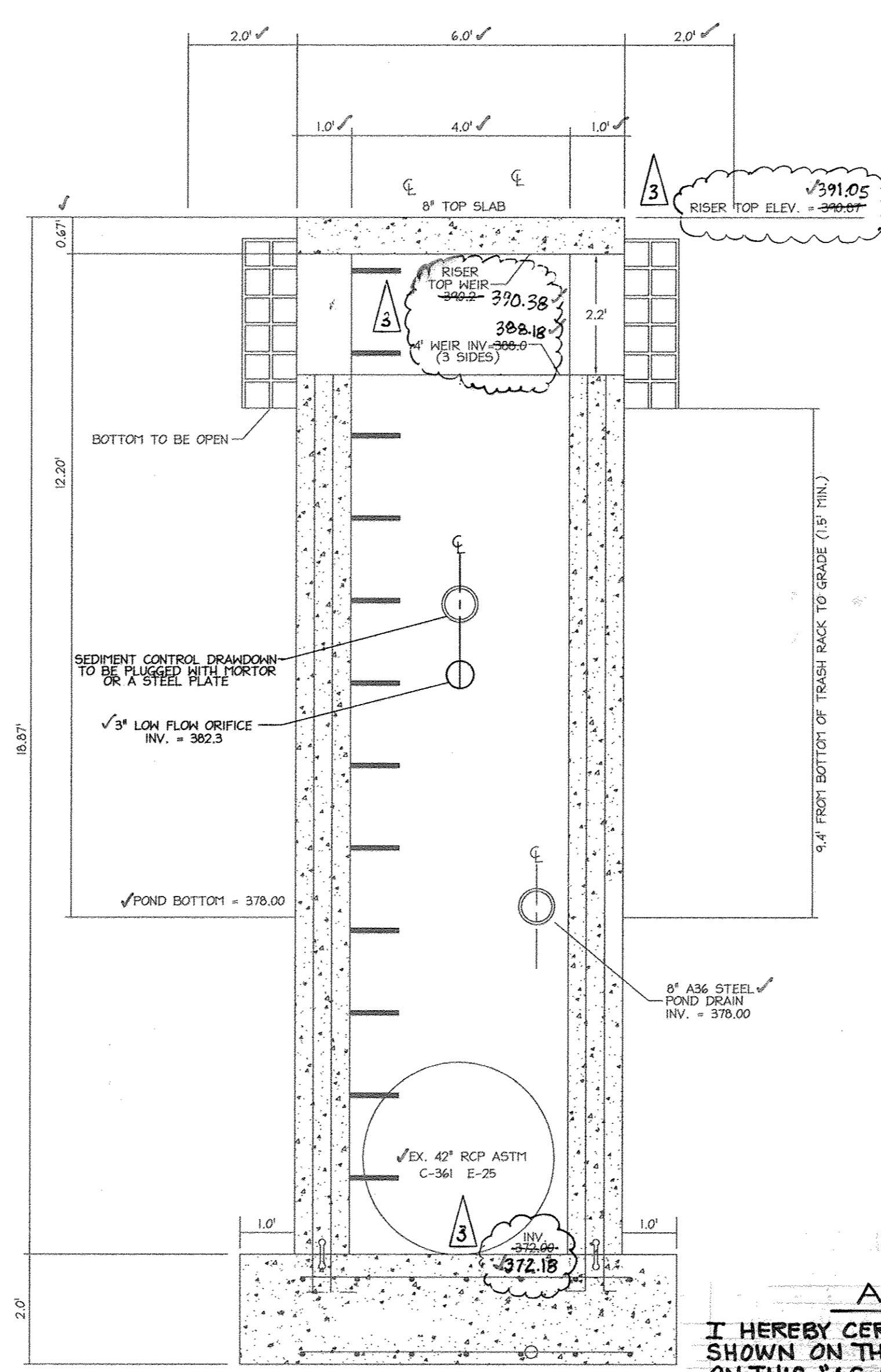


RIP RAP DETAILS

(N.T.S.)

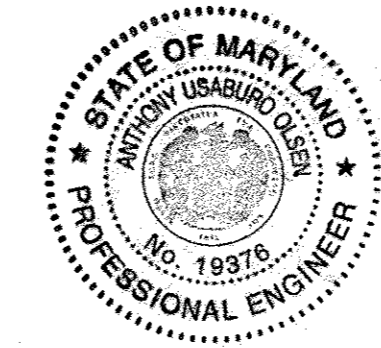


RISER DETAIL -- SECTION A
SCALE: 1" = 2"



RISER DETAIL -- SECTION B
SCALE: 1" = 2"

AS-BUILT CERTIFICATION
I HEREBY CERTIFY BY MY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
Anthony U. Olsen
ANTHONY U. OLSEN PE #19376 DATE OF AS-BUILT 11/08/17



DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE ONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
Richard T. Roca
Signature of Developer Date 11/5/09

ENGINEER CERTIFICATE
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Joan Householder
Signature of Engineer Date 10.9.09
JOAN HOUSEHOLDER, P.E.
Print name below signature

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
[Signature]
Howard Soil Conservation District Date 11/10/09

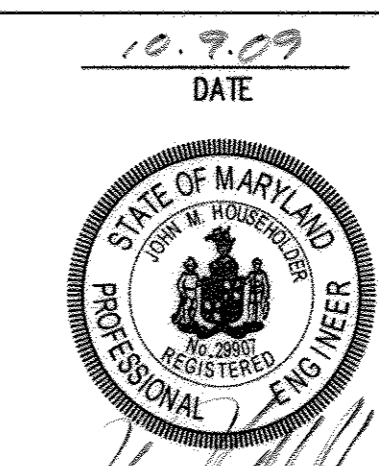
APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] Chief, Development Engineering Division 4 Date 11/7/09
[Signature] Chief, Division of Land Development Date 1/29/10
[Signature] Director Date 1/11/10

6-19-15 AS-BUILT INVERT ELEVATIONS

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1100 JOHNS HOPKINS ROAD
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engineering - surveying - land planning
christopher consultants, inc.
7172 colchester gateway drive suite 100 colchester, md 21046-2900
410.872.8800 - faxes 301.861.0148 fax 410.872.8883

| PERMIT INFORMATION CHART | | | | |
|--|-----------------------|-------------------------|---------------|--------------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 | | |
| DEED REF. L10412, F.396 | GRID NO. 22 | ZONE PEC | TAX MAP 41 | ELECTION DISTRICT 5th |
| TITLE: AS-BUILT SWM RISER CONVERSION NOTES & DETAILS | | | | |
| DESIGN: ENJ | SCALE: 1" = 30' | PROJECT: 08A901.00 | | |
| DRAWN: SSA | DATE: OCTOBER, 2009 | | | |
| CHECKED: JMH | APPROVED: JMH | 20 of 54 | | |



MDC-9301(SDP)

MD-378 CONSTRUCTION SPECIFICATIONS

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARDS FOR PRACTICE MD-378. ALL REFERENCE TO ASTM AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

SITE PREPARATION AREAS DESIGNATED TO BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIALS SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED FOR ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIALS UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 25-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIALS SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR THE USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

FILL

MATERIAL - THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, MOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIALS FOR THE DRAINPIPE OR BACKFILL SHALL CONFORM TO THE FOLLOWING: UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNATED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNATIONS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER.

EMBANKMENT CORE - THE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORE SHALL BE A MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10-YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS. THE CORE SHALL BE PLACED ON 1:1 OR FLATTER. THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TENDERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.

MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE EMBANKMENT.

PLACEMENT - AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8-INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. EACH LAYER OF FILL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION - THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OR ONE TRACK OF EACH TRACK OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPFOOT, RUBBER Tired OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIREMENTS OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE, YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

WHEN REQUIRED BY THE REVIEWING AGENCY THE MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN +/- 2% OF THE OPTIMUM. THE FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME ON CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99 (STANDARD PROCTOR).

CUT-OFF TRENCH - THE CUT-OFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1:1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS OR HAND TENDERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TENDERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY THE JOINTS AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE PIPE.

STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION MATERIALS SECTION 312 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI, 20 DAY UNCONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 4.0 AND A MINIMUM RESISTIVITY OF 2,000 OHM-CM. MATERIALS SHALL BE PLACED SUCH THAT A MINIMUM OF 4" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND, ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS. AVERAGE SLURP OF THE FILL SHALL BE 7" TO ASSURE FLOWABILITY OF THE MATERIAL. METALS MUST BE TAKEN (SAND BAGS, ETC.) TO PREVENT FLOATING OF PIPE. WHEN USING FLOWABLE FILL, ALL METAL PIPE SHALL BE BITUMINOUS COATED. ANY ADJOINING SOIL FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TENDERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL SHALL COMPLETELY FILL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED OF THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

PIPE JOINTS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

CORRUGATED METAL PIPE ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:

- 1. MATERIALS - (POLYMER COATED STEEL PIPE) - STEEL PIPE WITH POLYMERIC COATING SHALL HAVE A MINIMUM COATING THICKNESS 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THIS PIPE AND IT APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATER TIGHT COUPLING BANDS OR FLANGES. ALUMINUM PIPE WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS PRESENT INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATIONS M-190 TYPE A. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

- 2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AND COATINGS AS THE PIPE. METALS MUST BE INSULATED FOR DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS.

- 3. CONNECTIONS - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATER TIGHT. THE DRAINPIPE OR BARREL CONNECTION TO RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATER TIGHT. DIPPLE BANDS ARE NOT CONSIDERED TO BE WATER TIGHT.

ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED AN ADEQUATE NUMBER IF CORRUGATIONS TO ACCOMMODATE THE BANDWIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 24 INCHES IN DIAMETER. FLANGES ON BOTH ENDS OF THE PIPE WITH A CIRCULAR 3/8 INCH CLOSED CELL NEOPRENE GASKET, PRE-PUNCHED TO THE FLANGE BOLT CIRCLE, SANDWICHED BETWEEN ADJACENT FLANGES; A 12-INCH WIDE STANDARD LAP TYPE BAND WITH 12-INCH BY 3/8-INCH THICK CLOSED CELL CIRCULAR NEOPRENE; AND A 12-INCH WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF 2 INCH GREATER THAN THE CORRUGATION DEPTH. PIPES 24 INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED WITH A 24 INCH LONG ANNULAR COLLAR WITH AN INSIDE DIAMETER OF 4 (FOUR) RODS AND LUGS, 2 ON EACH CONNECTING PIPE END. A 24-INCH WIDE BY 3/8-INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 12 INCHES ON THE END OF EACH PIPE. FLANGED JOINTS WITH 3/8 INCH CLOSED CELL GASKETS THE FULL WIDTH OF THE FLANGE IS ALSO ACCEPTABLE.

HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

- 4. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSUITABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

- 5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL"

- 6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

REINFORCED CONCRETE PIPE- ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE.

- 1. MATERIALS - REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTY C-361.

- 2. BEDDING - REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING/ CRADLE FOR THEIR ENTIRE LENGTH. THIS BEDDING/ CRADLE SHALL CONSIST OF HIGH SLURP CONCRETE PLACED UNDER THE PIPE AT LEAST 50% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6 INCHES. WHERE A CONCRETE CRADLE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN THE "STRUCTURE BACKFILL" SECTION OF THIS STANDARD. GRAVEL BEDDING IS NOT PERMITTED.

- 3. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FULLY FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 4 FEET FROM THE RISER.

- 4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL"

- 5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

PLASTIC PIPE- THE FOLLOWING CRITERIA SHALL APPLY FOR PLASTIC PIPE:

- 1. MATERIALS - PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241. CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) PIPE, COUPLINGS AND FITTINGS SHALL CONFORM TO THE FOLLOWING: 4" - 10" INCH PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M252 TYPE S, AND 12" - 24" INCH PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M294

- 2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATER TIGHT.

- 3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSUITABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

- 4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL"

- 5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

POLYVINYL CHLORIDE (PVC) PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR POLYVINYL CHLORIDE (PVC) PIPE:

- 1. MATERIALS - PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241.

- 2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATER TIGHT.

- 3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSUITABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

- 4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILLING."

- 5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

ROCK RIPRAP - ROCK RIPRAP SHALL BE PLACED TO THE REQUIRED THICKNESS IN ONE OPERATION. THE ROCK SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THAT RIPRAP IN PLACE SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCKS UNIFORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE TO ANOTHER WITH THE SMALL ROCKS FILLING THE VOIDS BETWEEN THE LARGER ROCKS. FILTER CLOTH SHALL BE PLACED UNDER RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION MATERIALS, SECTION 414.12.

DRAINAGE DIAPHRAGMS- WHEN A DRAINAGE DIAPHRAGM IS USED, A REGISTERED PROFESSIONAL ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.

CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION MATERIALS, SECTION 414, MIX NO. 3.

NOTES:

- 1. ANTI-SEEP COLLARS SHALL BE PLACED A MINIMUM OF 2.0 FT. FROM PIPE JOINTS.
- 2. THE FIRST JOINT WHILE LAYING MUST BE LOCATED WITH 4.0 FT. FROM THE RISER.

- 3. ALL ANTI-SEEP COLLARS AND PIPE CONNECTION WITH RISER STRUCTURE SHALL BE WATER TIGHT.

- 4. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT AND CUT OFF TRENCH SHALL CONFORM TO UNIFORM SOIL CLASSIFICATION GC, SC, CH OR CL.

- 5. OFF-SITE BORROW OR SPOIL AREAS MUST HAVE AN APPROVED AND ACTIVE SEDIMENT CONTROL PLAN.

STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERTHS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE NATURAL RESOURCE CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES.

ROCK RIPRAP SHALL MEET THE REQUIREMENT OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION MATERIALS, SECTION 311.

GEOTECHNICAL SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION MATERIALS, SECTION 421.09, CLASS C.

CARE OF WATER DRAINING STRUCTURE

ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS AND STREET DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL NECESSARY PUMPING AND OTHER PARTS OF THE WORK FREE FROM WATER AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION, AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED OR DIRECTED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE PERMANENT STRUCTURE. STRONG FLOOD CONTROL STRUCTURES SHALL BE MAINTAINED UNTIL FULL FLOOD CONTROL STRUCTURES ARE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM REQUIRED FOR EXCAVATIONS AND OTHER PARTS OF THE WORK. ALL MATERIALS USED IN ALL CONSTRUCTED OPERATIONS, DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS BE REFINISHED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATIONS AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER SLOPPS FROM WHICH THE WATER SHALL BE PUMPED.

STORMWATER MANAGEMENT STUDY APL South Campus Page 4

PROJECT DESCRIPTION The project site is located at 11101 Johns Hopkins Road in the Laurel area of Howard County, Maryland...

EXISTING SITE CONDITIONS The site is presently occupied by several existing building structures in the north of the site...

FIELD TESTING In order to determine the general subsurface conditions, five SPT borings labeled SWM-1 through SWM-5 were drilled at locations specified by the Civil Engineer...

CONCRETE CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION MATERIALS, SECTION 414, MIX NO. 3.

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DRAINAGE DIAPHRAGMS- WHEN A DRAINAGE DIAPHRAGM IS USED, A REGISTERED PROFESSIONAL ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.

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Stormwater Management Study APL South Campus Page 4

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ROCK RIPRAP ROCK RIPRAP SHALL BE PLACED TO THE REQUIRED THICKNESS IN ONE OPERATION. THE ROCK SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THAT RIPRAP IN PLACE SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCKS UNIFORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE TO ANOTHER WITH THE SMALL ROCKS FILLING THE VOIDS BETWEEN THE LARGER ROCKS.

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OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER RECHARGE TRENCHES

1. THE MONITORING WELLS AND STRUCTURES SHALL BE INSPECTED ON A QUARTERLY BASIS AND AFTER EVERY LARGE STORM EVENT.
2. WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS SHALL BE RECORDED OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
3. A LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
4. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN THE 72 HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
5. THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
6. ONCE THE PERFORMANCE CHARACTERISTICS OF THE RECHARGE FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

RECHARGE TRENCH GENERAL NOTES AND SPECIFICATIONS

- A RECHARGE TRENCH MAY NOT RECEIVE RUN-OFF UNTIL THE ENTIRE CONTRIBUTING DRAINAGE AREA TO THE RECHARGE TRENCH HAS RECEIVED FINAL STABILIZATION.
1. HEAVY EQUIPMENT AND TRAFFIC SHALL BE RESTRICTED FROM TRAVELING OVER THE PROPOSED LOCATION OF THE RECHARGE TRENCH TO MINIMIZE COMPACTION OF THE SOIL.
 2. EXCAVATE THE RECHARGE TRENCH TO THE DESIGN DIMENSIONS. EXCAVATED MATERIALS SHALL BE PLACED AWAY FROM THE TRENCH SIDES TO ENHANCE TRENCH WALL STABILITY. LARGE TREE ROOTS MUST BE TRIMMED FLUSH WITH THE TRENCH SIDES IN ORDER TO PREVENT FABRIC PUNCTURING OR TEARING OF THE FILTER FABRIC DURING SUBSEQUENT INSTALLATION PROCEDURES. THE SIDEWALLS OF THE TRENCH SHALL BE ROUGHENED WHERE SHEARED AND SEALED BY HEAVY EQUIPMENT.
 3. A CLASS "C" GEOTEXTILE OR BETTER (SEE SECTION 24.0, MATERIAL SPECIFICATIONS, 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, MDE, 1994) SHALL INTERFACE BETWEEN THE TRENCH SIDEWALLS AND EARTH AND 1/2" GALVANIZED MESH CLOTH BETWEEN THE SAND AND GRAVEL LAYER. A PARTIAL LIST OF NON-MOVING FILTER FABRICS THAT MEET THE CLASS "C" CRITERIA FOLLOWS. ANY ALTERNATIVE FILTER FABRIC MUST BE APPROVED BY THE PLAN APPROVAL AUTHORITY.

AMOCO #52
GELON N70
WEBTEC N07

CARTHAGE FX-805
MIRAFI 180-N

THE WIDTH OF THE GEOTEXTILE MUST INCLUDE SUFFICIENT MATERIAL TO CONFORM TO TRENCH PERIMETER IRREGULARITIES AND FOR A 6" MINIMUM TOP OVERLAP AND 1' AT JOINT. STONES OR OTHER ANCHORING OBJECTS SHOULD BE PLACED ON THE FABRIC AT THE EDGE OF THE TRENCH TO KEEP THE TRENCH OPEN DURING WINDY PERIODS. WHEN OVERLAPS ARE REQUIRED BETWEEN ROLLS, THE UPHILL ROLL SHOULD LAP A MINIMUM OF 2 FEET OVER THE DOWNHILL ROLL IN ORDER TO PROVIDE A SHINGLED EFFECT.

4. IF A 6 INCH SAND FILTER LAYER IS PLACED ON THE BOTTOM OF THE RECHARGE TRENCH, THE SAND FOR THE RECHARGE TRENCH SHALL BE WASHED AND MEET AASHTO-M-43, SIZE NO. 9 OR NO. 10. ANY ALTERNATIVE SAND GRADATION MUST BE APPROVED BY THE PLAN APPROVAL AUTHORITY.

5. THE STONE AGGREGATE SHOULD BE PLACED IN A MAXIMUM LOOSE LIFT THICKNESS OF 12 INCHES. THE GRAVEL (ROUNDED "BANK RUN" GRAVEL IS PREFERRED) FOR THE RECHARGE TRENCH SHALL BE WASHED AND MEET ONE OF THE FOLLOWING AASHTO-M-43, SIZE NO. 2 OR NO. 3.

6. FOLLOWING THE STONE AGGREGATE PLACEMENT, THE FILTER FABRIC SHALL BE FOLDED OVER THE STONE AGGREGATE TO FORM A 12-INCH MINIMUM LONGITUDINAL LAP. THE DESIRED FILL SOIL OR STONE AGGREGATE SHALL BE PLACED OVER THE LAP AT SUFFICIENT INTERVALS TO MAINTAIN THE LAP DURING SUBSEQUENT BACKFILLING.

7. CARE SHALL BE EXERCISED TO PREVENT NATURAL OR FILL SOILS FROM INTERMIXING WITH THE STONE AGGREGATE. ALL CONTAMINATED STONE AGGREGATE SHALL BE REMOVED AND REPLACED WITH UNCONTAMINATED STONE AGGREGATE.

8. VOIDS MAY OCCUR BETWEEN THE FABRIC AND THE EXCAVATION SIDES SHALL BE AVOIDED. REMOVING BOULDERS OR OTHER OBSTACLES FROM THE TRENCH WALLS IS ONE SOURCE OF SUCH VOIDS. THEREFORE, NATURAL SOILS SHOULD BE PLACED IN THESE VOIDS AT THE MOST CONVENIENT TIME DURING CONSTRUCTION TO ENSURE FABRIC CONFORMITY TO THE EXCAVATION SIDES.

9. VERTICALLY EXCAVATED WALLS MAY BE DIFFICULT TO MAINTAIN IN AREAS WHERE SOIL MOISTURE IS HIGH OR WHERE SORT COHESIVE OR COHESIVE SOILS ARE DOMINANT. THESE CONDITIONS MAY REQUIRE LAYING BACK OF THE SIDE SLOPES OR MECHANICAL SUPPORT OF EXCAVATION METHODS TO MAINTAIN STABILITY.

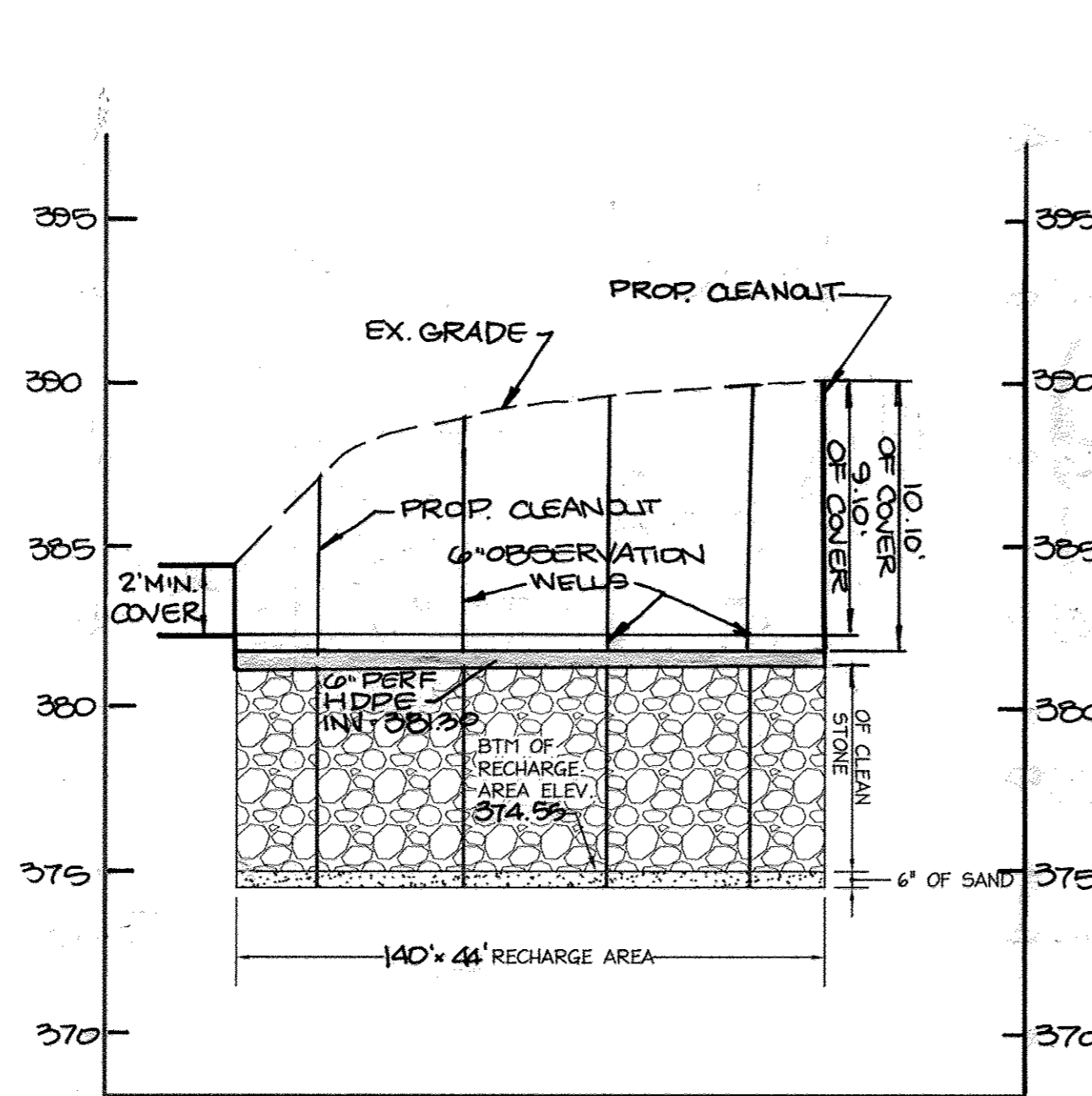
10. THE OBSERVATION WELL IS TO CONSIST OF 6-INCH DIAMETER PERFORATED PVC SCHEDULE 40 PIPE (M 270 OR F 750, TYPE PS 20) WITH A CAP SET 6 INCHES ABOVE GROUND LEVEL AND IS TO BE LOCATED NEAR THE LONGITUDINAL CENTER OF THE RECHARGE TRENCH. THE PIPE SHALL HAVE A PLASTIC COLLAR WITH RIBS TO PREVENT ROTATION WHEN REMOVING THE CAP. THE SCREEN TOP LID SHALL BE A CLEANOUT WITH A LOCKING MECHANISM OR SPECIAL BOLT TO DISCOURAGE VANDALISM. THE DEPTH TO THE INVERT SHALL BE MARKED WITH A LOCKING LID. THE PIPE SHALL BE PLACED VERTICALLY WITHIN THE GRAVEL PORTION OF THE RECHARGE TRENCH AND A CAP PROVIDED AT THE BOTTOM OF THE PIPE. THE BOTTOM OF THE CAP SHALL REST ON A PIECE OF MARINE PLYWOOD ON THE RECHARGE TRENCH BOTTOM.

11. CORRUGATED METAL DISTRIBUTION PIPES SHALL CONFORM TO AASHTO-M-36, AND SHALL BE ALUMINIZED IN ACCORDANCE WITH AASHTO-M-274. ALUMINIZED PIPE IN CONTACT WITH CONCRETE SHALL BE COATED WITH AN INERT COMPOUND CAPABLE OF PREVENTING THE DELETERIOUS EFFECT OF THE ALUMINUM ON THE CONCRETE. PERFORATED DISTRIBUTION PIPES SHALL CONFORM TO AASHTO-M-36, CLASS 2 AND SHALL BE PROVIDED ONLY WITHIN THE RECHARGE TRENCH AND SHALL TERMINATE 1 FOOT SHORT OF THE RECHARGE TRENCH WALL. AN ALUMINIZED METAL PLATE SHALL BE WELDED TO THE END OF THE PIPE.

12. IF A DISTRIBUTION STRUCTURE WITH A MET WELL IS USED, A 4-INCH DRAIN PIPE SHALL BE PROVIDED AT OPPOSITE ENDS OF THE RECHARGE TRENCH DISTRIBUTION STRUCTURE. TWO (2) CUBIC FEET OF POROUS BACKFILL MEETING AASHTO-M-43, SIZE NO. 57 SHALL BE PROVIDED AT EACH DRAIN.

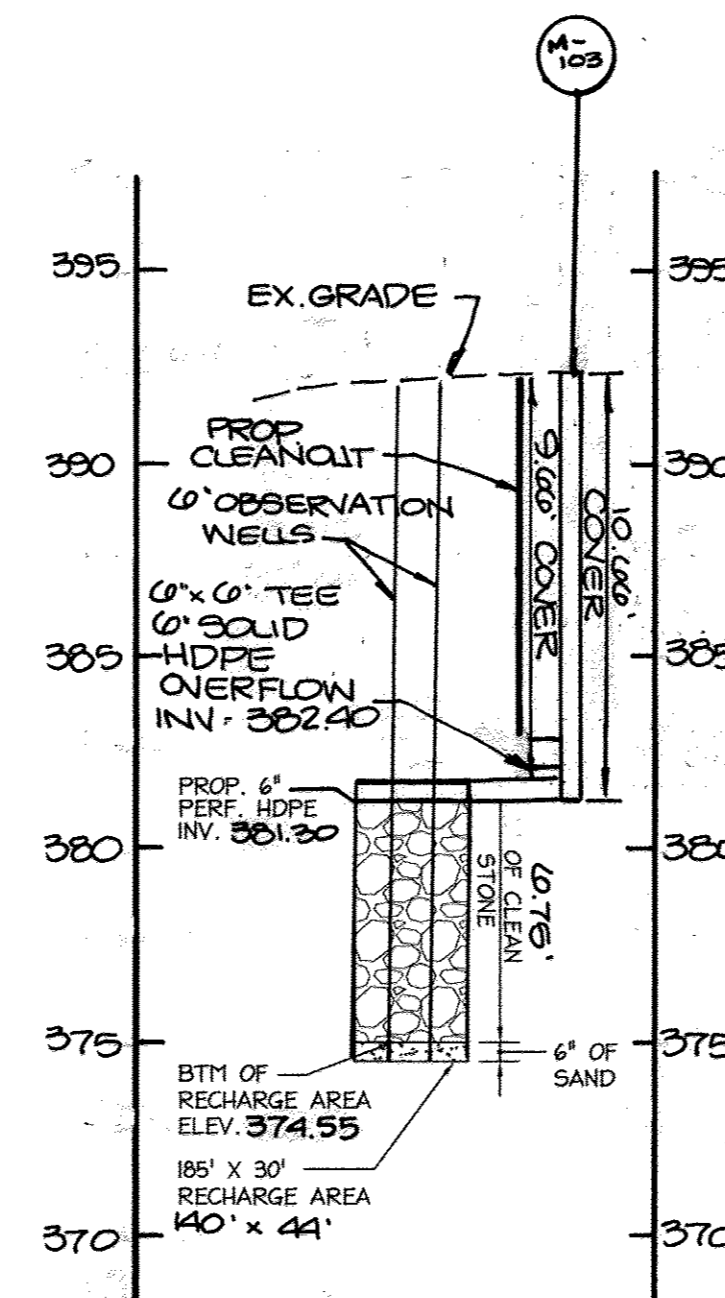
13. IF A DISTRIBUTION STRUCTURE IS USED, THE MANHOLE COVER SHALL BE BOLTED TO THE FRAME.

NOTE:
THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD THE AS-BUILT CONDITION OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.



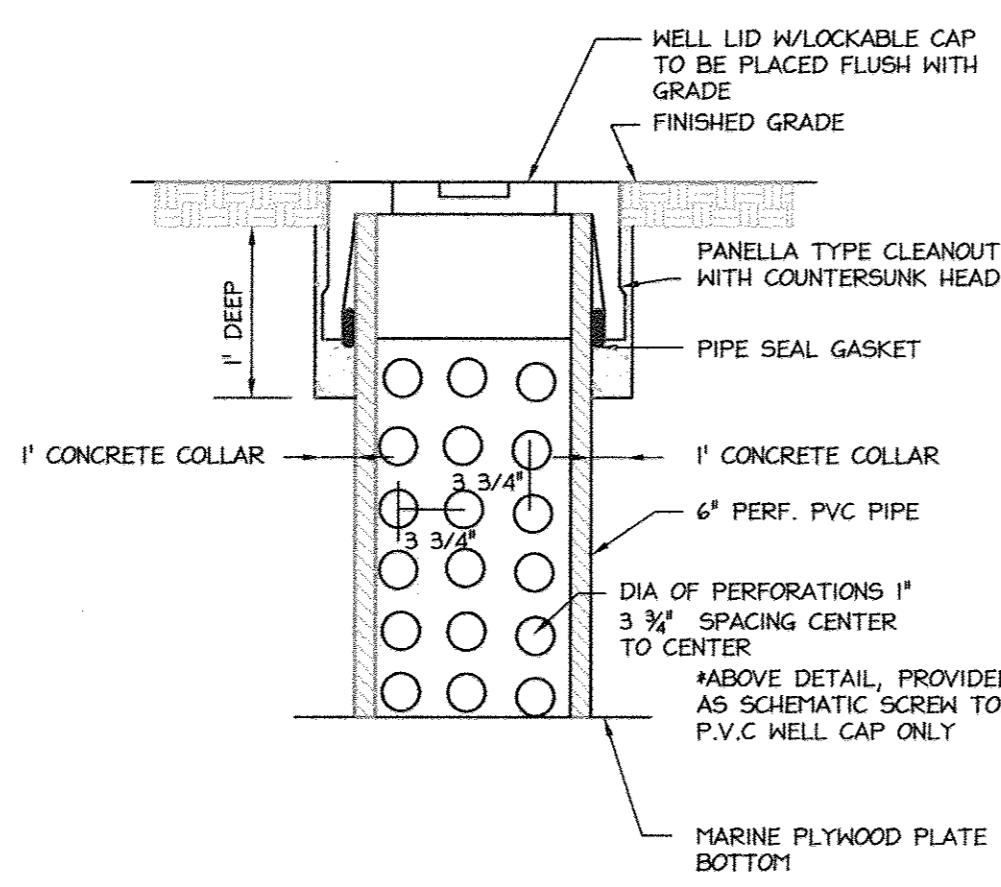
SWM RECHARGE AREA PROFILE E-E

HOR 1"=50'
VER 1"=5'



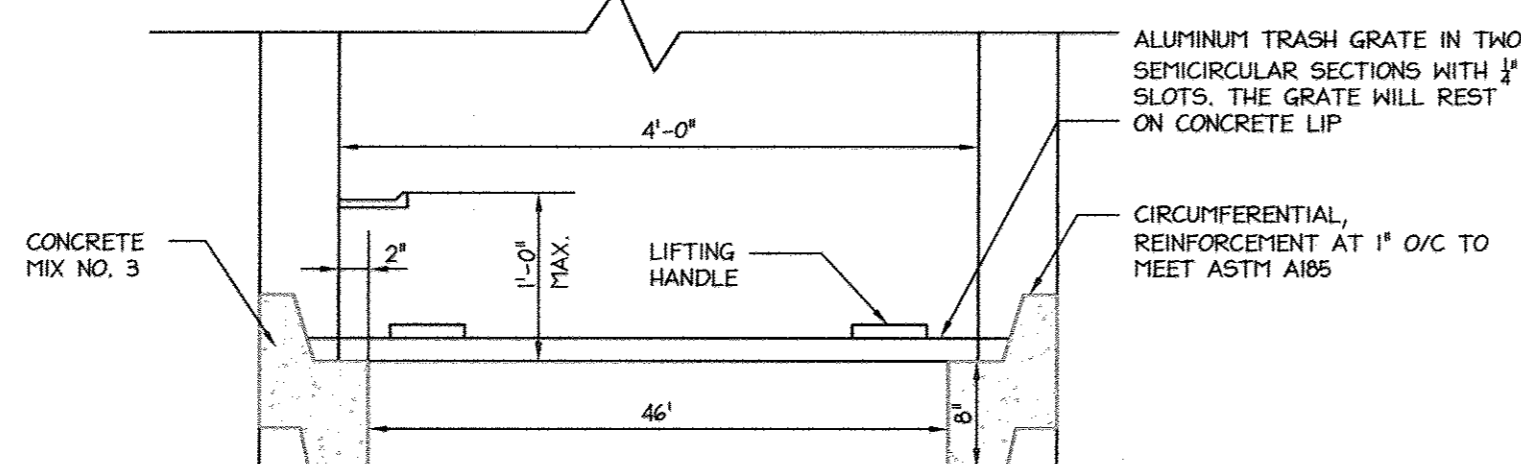
SWM RECHARGE AREA PROFILE F-F

HOR 1"=50'
VER 1"=5'



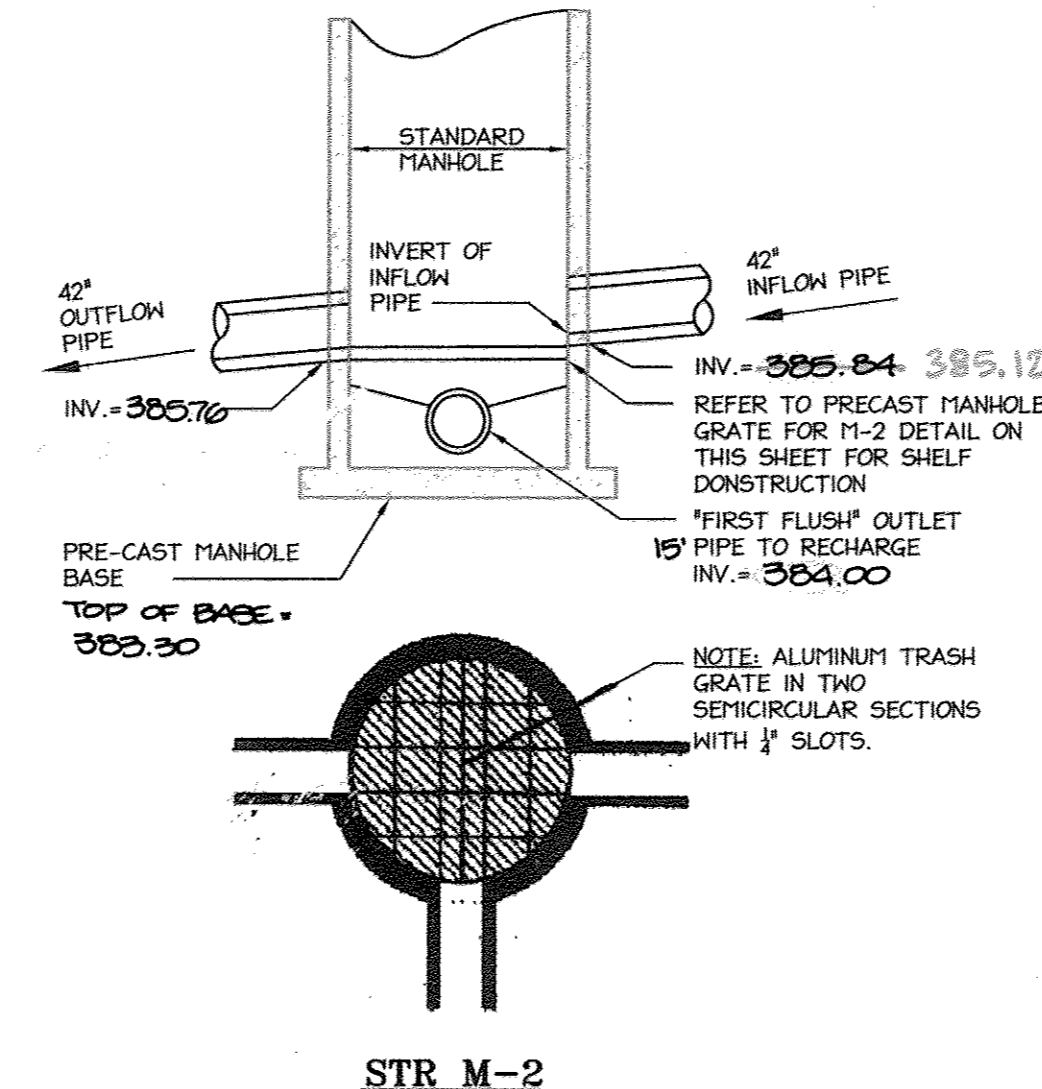
OBSERVATION WELL DETAIL

NOT TO SCALE



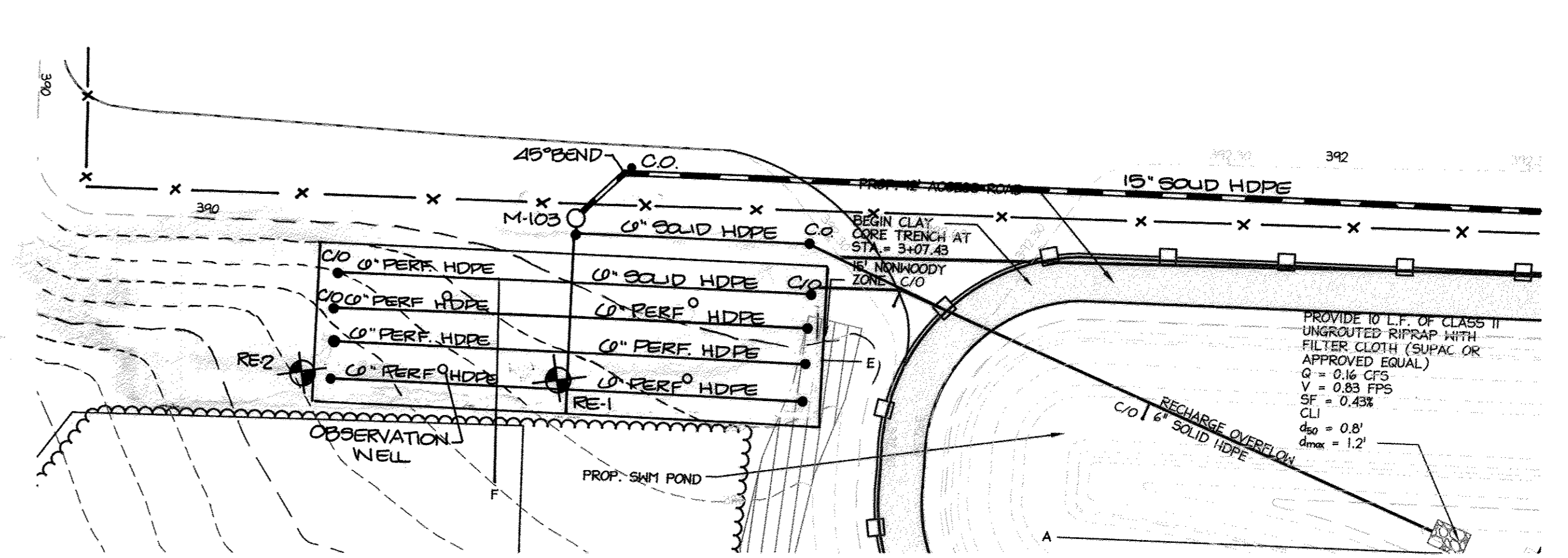
PRECAST MANHOLE GRATE FOR M-2

NOT TO SCALE



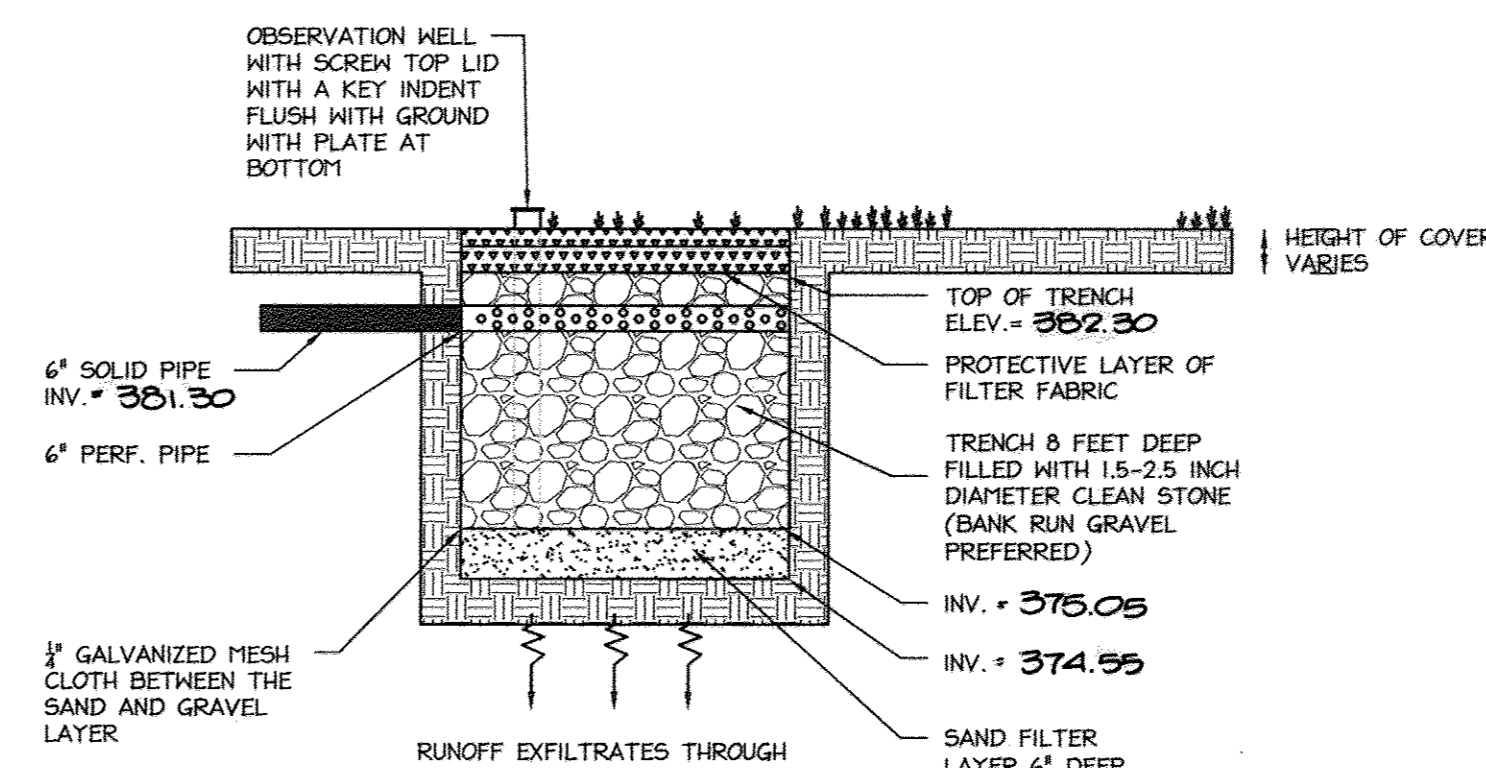
STR M-2

- NOTES:**
1. REFER TO HOWARD COUNTY STD. DETAIL G.903 FOR MANHOLE CONSTRUCTION.



PROPOSED RECHARGE AREA

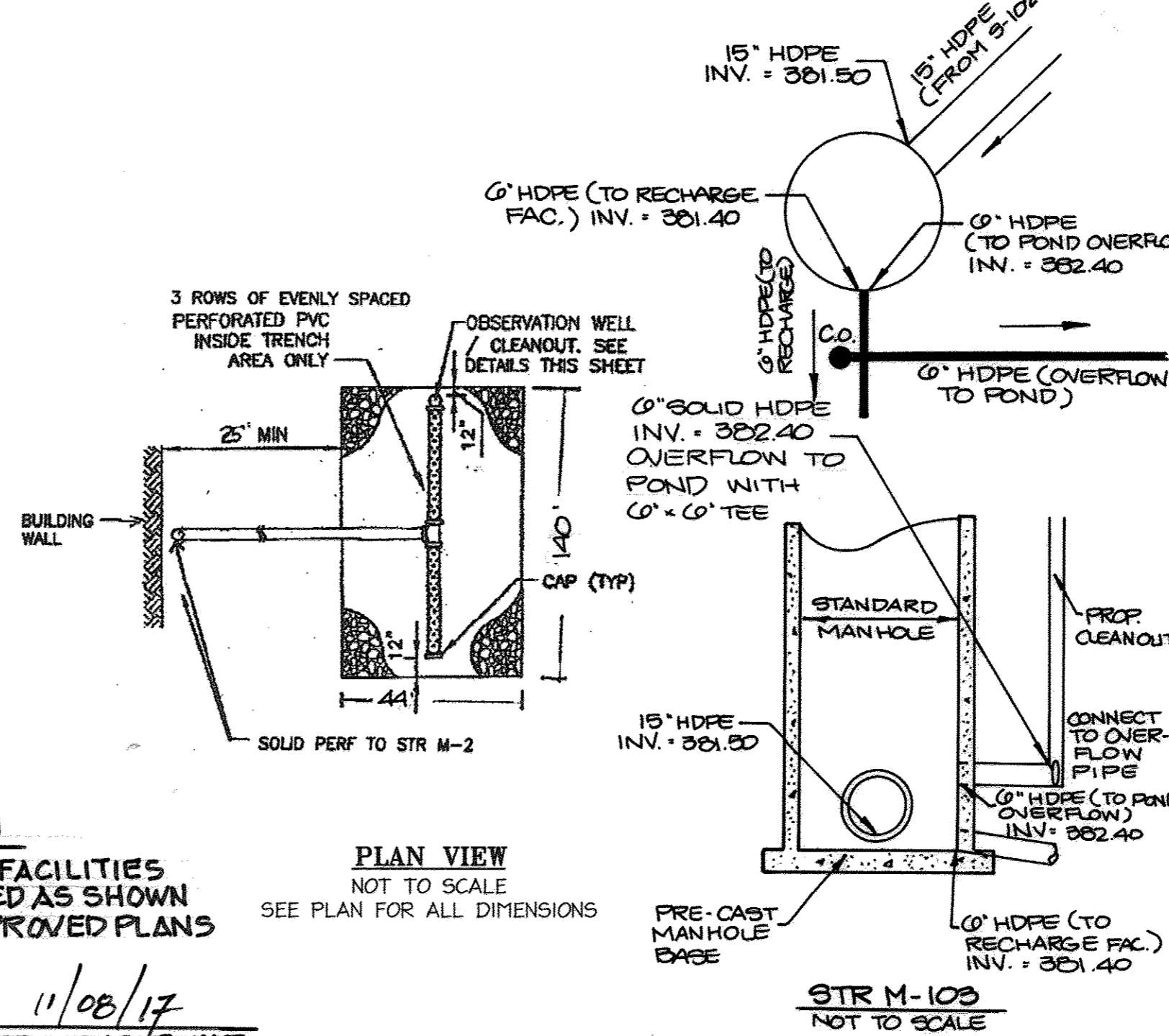
SCALE: 1" = 30'



RECHARGE AREA

NOT TO SCALE

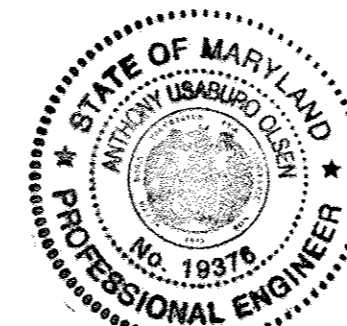
- NOTES:**
1. THIS TRENCH IS FOR RECHARGE ONLY.
 2. REFER TO TABLE D.2 IN THE 2000 MDE STORMWATER DESIGN MANUAL FOR MATERIAL SPECIFICATIONS FOR INFILTRATION PRACTICES.
 3. FILTER FABRIC SHALL ONLY BE PROVIDED ALONG TOP AND SIDES OF THE TRENCH WITH A 1' OVERLAP AT FABRIC JOINTS.



PLAN VIEW

NOT TO SCALE
SEE PLAN FOR ALL DIMENSIONS

AS-BUILT CERTIFICATION
I HEREBY CERTIFY BY MY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
Anthony U. Olsen
ANTHONY U. OLSEN PE #19376 DATE OF AS-BUILT 11/08/17



LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
Brian Collins
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE 09-09

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
William R. Zink
SIGNATURE OF ENGINEER WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20507
EXPIRATION DATE: 03-26-2014



DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE ONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
Richard Treca
Signature of Developer
JOHN HOUSEHOLDER, P.E.
Print name below signature
Date 11/5/09

ENGINEER CERTIFICATE
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
John Householder
Signature of Engineer
JOHN HOUSEHOLDER, P.E.
Print name below signature
Date 10.9.09

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
John Householder
Signature of Engineer
JOHN HOUSEHOLDER, P.E.
Print name below signature
Date 11/10/09

APPROVED DEPARTMENT OF PLANNING AND ZONING
John Householder
Signature of Engineer
JOHN HOUSEHOLDER, P.E.
Print name below signature
Date 11/17/09
John Householder
Signature of Engineer
JOHN HOUSEHOLDER, P.E.
Print name below signature
Date 11/08/10
Thomas J. Jettles
Signature of Engineer
THOMAS J. JETTLES, P.E.
Print name below signature
Date 11/11/10

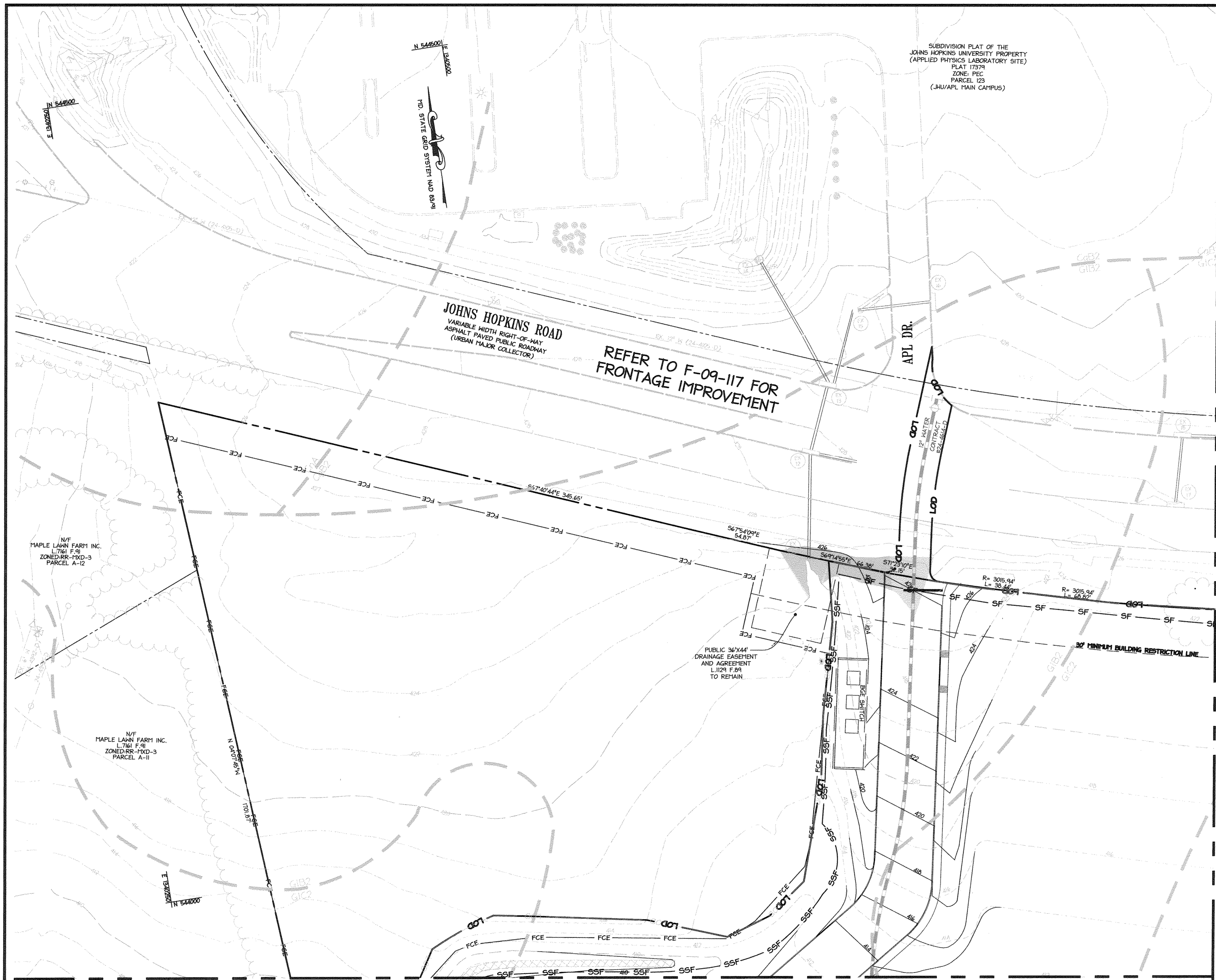
| Date | No. | Revision Description |
|------|-----|---|
| | 1 | 2.20.10 REDLINED FOR STORM SEWER |
| | 2 | 4.18.10 REDLINED FOR LOWERING OF STORM INV. |
| | 3 | 02.15.10 ADDED REDLINE SUMMARY NOTE |

JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723-6009
ATTN: JAMES LOEBCH, P.E., CFM
PHONE: 443.778.5134 FAX: 443.778.6122

christopher consultants
engineering, surveying, land planning
christopher consultants, inc.
1712 colchester greenway drive suite 100, colandrea, md. 21046-2900
410.872.8800 fax: 410.872.8801

PERMIT INFORMATION CHART

| | | |
|--|---|-------------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 |
| DEED REF. L10412, F.396 | GRID NO./ZONE 22 PEC | TAX MAP 41 |
| ELECTION DISTRICT 5th | TITLE: AS-BUILT STORMWATER MANAGEMENT NOTES & PROFILES | |
| DESIGN: ENJ | SCALE: AS SHOWN | PROJECT: 08A901.00 |
| DRAWN: SSA | DATE: OCTOBER, 2009 | |
| CHECKED: JMH | APPROVED: JMH | 22 of 54 |



LEGEND

| | | | |
|-------------------------------------|-----|------------------------------|---------------------|
| EXISTING CONTOURS | --- | BORING LOCATION | SH-11 |
| EXISTING STORMDRAIN | --- | FOREST CONSERVATION EASEMENT | FCE |
| EXISTING SANITARY SEWER | --- | STEEP SLOPES 15% TO 25% | [Hatched Box] |
| EXISTING FENCE | X | STEEP SLOPES 25% & ABOVE | [Hatched Box] |
| EXISTING SILT FENCE | --- | EARTH DIKE | ← |
| EXISTING SUPER SILT FENCE | --- | EROSION CONTROL MATTING | [Cross-hatched Box] |
| EX. LIMIT OF DISTURBANCE | --- | WETLAND BUFFER | WB |
| EXISTING/PROP. LIMIT OF DISTURBANCE | --- | WETLANDS | WL |
| EXISTING EARTH DIKE | ← | FLOODPLAIN | FP |
| PROPERTY LINE | --- | | |
| TREELINE | --- | | |
| PROPOSED SETBACK LINES | --- | | |
| SILT FENCE | SF | | |
| SUPER SILT FENCE | SSF | | |
| LIMIT OF DISTURBANCE | LOD | | |
| PROPOSED CONTOUR | --- | | |

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE ONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

Richard Treca
Signature of Developer
Richard Treca
Print name below signature

11/5/09
Date

ENGINEER CERTIFICATE

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

John Householder
Signature of Engineer
JOHN HOUSEHOLDER, P.E.
Print name below signature

10.9.09
Date

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature]
Howard Soil Conservation District

11/10/09
Date

MATCHLINE - FOR CONTINUATION SEE SHEET 23 OF 54

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature]
Chief, Development Engineering Division

[Signature]
Chief, Division of Land Development

[Signature]
Director

11/7/09
Date

11/8/10
Date

11/11/10
Date

JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723-6099
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PHONE: 443.778.5834 FAX: 443.778.6122

christopher consultants
engineering · surveying · land planning
christopher consultants, inc.
11722 ROUTE 103, GREENBELT, MD 21040-2900
410.572.8000 · FAX 410.572.8001

PERMIT INFORMATION CHART

| | | | | | |
|---------------|-------------------------------------|-----------------|-----|--------------------|---------|
| PROJECT NAME: | JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO.: | 300 | CENSUS TRACT: | 6051.02 |
| DEED REF.: | L10412, F.396 | GRID NO.: | 22 | TAX MAP: | 41 |
| PLAT REF.: | 20928, 20930 | ZONE: | PEC | ELECTION DISTRICT: | 5th |

TITLE: **AS-BUILT SEDIMENT AND EROSION CONTROL PLANS**

| | | | |
|--------------|---------------------|----------|-----------|
| DESIGN: | SCALE: 1" = 30' | PROJECT: | 08A091.00 |
| DRAWN: SSA | DATE: OCTOBER, 2009 | | |
| CHECKED: JMH | APPROVED: JMH | | |

23 of 54

- NOTES:**
- SUPER SILT FENCE AND LIMIT OF DISTURBANCE ARE SHOWN OUTSIDE THE PROPERTY LINE FOR DISPLAY PURPOSE ONLY. ALL WORK WITH THE EXCEPTION OF RIGHT-OF-WAY IMPROVEMENTS IS TO BE DONE ON SITE.
 - SILT FENCE IS TO BE INSTALLED ALONG THE SOUTHWESTERN L.O.D. AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR.
 - ALL FENCING SHALL BE INSTALLED WITH A "J" HOOK CONFIGURATION AT APPROXIMATELY 36-FOOT INTERVALS.
 - LIMIT OF DISTURBANCE SHALL NOT INCLUDE RIGHT OF WAY IMPROVEMENTS ON JOHNS HOPKINS ROAD. LIMIT OF DISTURBANCE SHALL BE MAINTAINED ON THE LIMITS ON THE PROPERTY AND SHALL NOT EXCEED PROPERTY LIMITS.
 - STOCKPILING IS PERMITTED ON THIS SITE.
 - ALL SEDIMENT CONTROLS INSTALLED UNDER GP-10-09 SHALL REMAIN ACTIVE UNTIL SUPERCEDED BY THESE PLANS. CONTROLS FROM GP-10-09 SHALL ONLY BE REMOVED WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR.
 - STEEP SLOPES SHOWN REFLECT EXISTING TOPOGRAPHY PRIOR TO MASS GRADING (GP-010-09).

MATCHLINE - FOR CONTINUATION SEE SHEET 24 OF 54

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES

I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.

[Signature]
SIGNATURE OF BRIAN COLLINS

10.9.09
DATE

LEED ACCREDITATION NO. _____

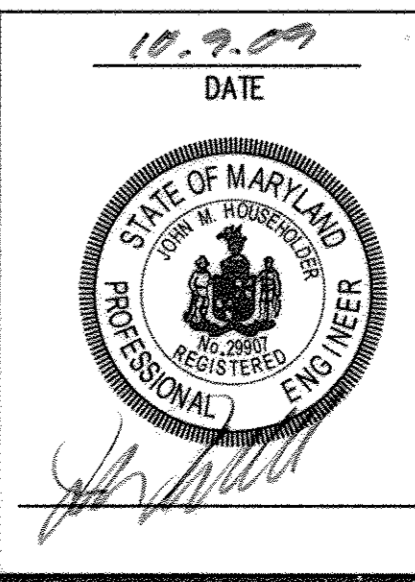
PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

[Signature]
SIGNATURE OF ENGINEER

JOHN M. HOUSEHOLDER
MID LICENSE NUMBER: 29907
EXPIRATION DATE: 1-27-2010

10.9.09
DATE



MDC-9301 (SDP)

NOTE

1. ALL SEDIMENT CONTROLS INSTALLED UNDER GP-10-09 SHALL REMAIN ACTIVE UNTIL SUPERCEDED BY THESE PLANS. CONTROLS FROM GP-10-09 SHALL ONLY BE REMOVED WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR.
2. STEEP SLOPES SHOWN REFLECT EXISTING TOPOGRAPHY PRIOR TO MASS GRADING (GP-00-09)

LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES

I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.

Brian Collins
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE ONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

Richard T. Reza
Signature of Developer 11/5/09
Date

Richard T. Reza
Print name below signature

ENGINEER CERTIFICATE

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

John Householder
Signature of Engineer 10.9.09
Date

JOHN HOUSEHOLDER, P.E.
Print name below signature

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

James Loesch
Howard Soil Conservation District 11/10/09
Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

John DeWanna
Chief, Development Engineering Division 11/17/09
Date

Kurt Schluender
Chief, Division of Land Development 1/25/10
Date

Thomas G. Sutler
Director 1/16/10
Date

JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHN HOPKINS ROAD
LAUREL MARYLAND 20723-6099
ATTN: JAMES LOESCH, P.E., CFM
PHONE: 443.778.5834 FAX: 443.778.6122

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christopher consultants, inc.
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410.672.8800 · 410.672.8801 FAX 410.672.8803

| PERMIT INFORMATION CHART | | | | |
|--|---------------------|--------------------|--------------|-------------------|
| PROJECT NAME: | GRID NO. | LOT/PARCEL NO. | CENSUS TRACT | |
| JHU/APL - SOUTH CAMPUS BUILDING 200 | 22 | 300 | 6051.02 | |
| DEED REF. | GRID NO. | ZONE | TAX MAP | ELECTION DISTRICT |
| L.10412, F.396 | 22 | PEC | 41 | 5th |
| Plat ref: 20928-20930 | | | | |
| TITLE: | | | | |
| AS-BUILT SEDIMENT AND EROSION CONTROL PLANS | | | | |
| DESIGN: | SCALE: 1" = 30' | PROJECT: 08A901.00 | | |
| DRAWN: SSA | DATE: OCTOBER, 2009 | 24 of 54 | | |
| CHECKED: JMH | APPROVED: JMH | | | |

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

John Householder
SIGNATURE OF ENGINEER 10.9.09
DATE

JOHN M. HOUSEHOLDER
MD LICENSE NUMBER: 29907
EXPIRATION DATE: 1-27-2010

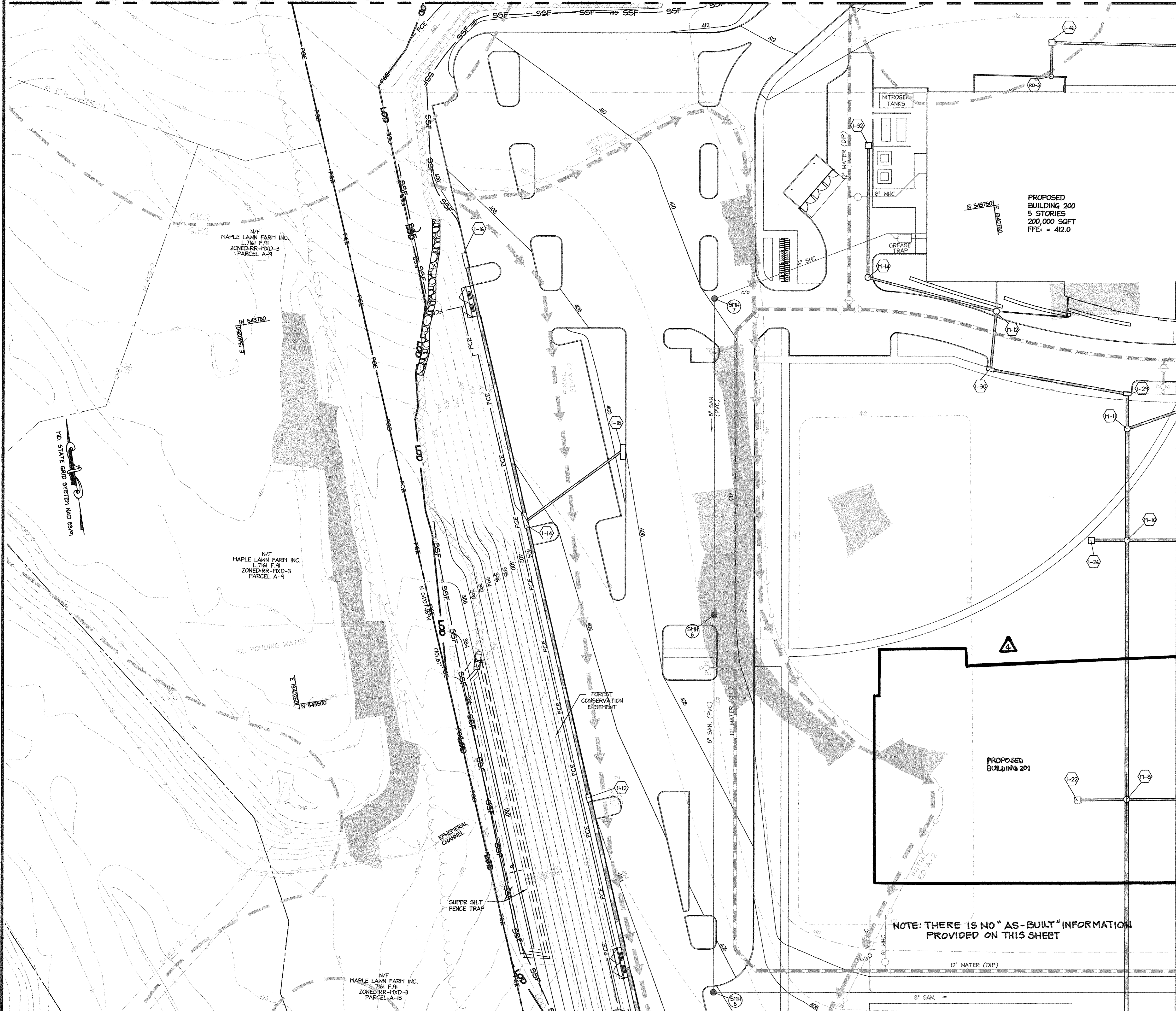


MATCHLINE - FOR CONTINUATION SEE SHEET 22 OF 54

MATCHLINE - FOR CONTINUATION SEE SHEET 25 OF 54

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

MDC-930(SDP)



MATCHLINE - FOR CONTINUATION SEE SHEET 25 OF 54

- NOTES:**
1. SUPER SILT FENCE AND LIMIT OF DISTURBANCE ARE SHOWN OUTSIDE THE PROPERTY LINE FOR DISPLAY PURPOSE ONLY. ALL WORK WITH THE EXCEPTION OF RIGHT-OF-WAY IMPROVEMENTS IS TO BE DONE ON SITE.
 2. SILT FENCE IS TO BE INSTALLED ALONG THE SOUTHWESTERN L.O.D. AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR.
 3. ALL FENCING SHALL BE INSTALLED WITH A "J" HOOK CONFIGURATION AT APPROXIMATELY 35-FOOT INTERVALS.
 4. LIMIT OF DISTURBANCE SHALL NOT INCLUDE RIGHT OF WAY IMPROVEMENTS ON JOHNS HOPKINS ROAD. LIMIT OF DISTURBANCE SHALL BE MAINTAINED ON THE LIMITS ON THE PROPERTY AND SHALL NOT EXCEED PROPERTY LIMITS.
 5. STOCKPILING IS PERMITTED ON THIS SITE.
 6. ALL SEDIMENT CONTROLS INSTALLED UNDER GP-10-09 SHALL REMAIN ACTIVE UNTIL SUPERSEDED BY THESE PLANS. CONTROLS FROM GP-10-09 SHALL ONLY BE REMOVED WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR.
 7. STEEP SLOPES SHOWN REFLECT EXISTING TOPOGRAPHY PRIOR TO MASS GRADING (GP-010-09)

LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES

I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.

Brian Collins
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. 7 DATE 11/2/09

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE ONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

Richard T. Roca
SIGNATURE OF DEVELOPER DATE 11/5/09

Richard T. Roca
Print name below signature

ENGINEER CERTIFICATE

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

William F. Whelan III PE #200451 DATE 11/06/09
SIGNATURE OF ENGINEER

WILLIAM F. WHELAN III, P.E.
Print name below signature

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Howard Soil Conservation District DATE 11/10/09

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

William F. Whelan III DATE 11/06/09
SIGNATURE OF ENGINEER

WILLIAM F. WHELAN III
MD LICENSE NUMBER: 200451
EXPIRATION DATE: 9-17-2011

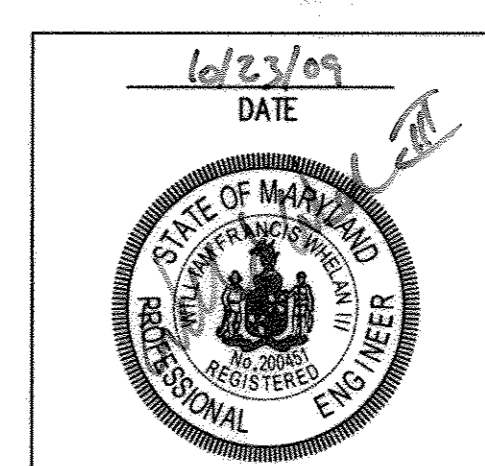
APPROVED: DEPARTMENT OF PLANNING AND ZONING

John J. ... DATE 11/17/09
Chief, Development Engineering Division

... DATE 1/09/10
Chief, Division of Land Development

Mona G. ... DATE 1/11/10
Director

| | | |
|--|--------|---|
| 4 | 6.5.17 | SEE SDP 17047 FOR BLD G 201 SITE IMPROVEMENTS |
| Date | No. | Revision Description |
| <p>JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY 1100 JOHNS HOPKINS ROAD LAUREL, MARYLAND 20723-6009 ATTN: JAMES LOESCH, P.E., CFM PHONE: 443.778.5134 FAX: 443.778.6122</p> | | |
| <p>christopher consultants engineering - surveying - land planning christopher consultants, inc. 1712 COURTESY GARDENS DRIVE SUITE 1001 - COLLETSVILLE, MD 21046-2900 410.972.8800 mobile 301.981.0141 fax 410.972.8803</p> | | |



PERMIT INFORMATION CHART

| | | |
|--|-------------------------|-------------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 |
| DEED REF. L.10412, F.396 | GRID NO./ZONE 22 PEC | TAX MAP 41 |
| ELECTION DISTRICT 5th | DATE 10/23/09 | |

TITLE:
**AS-BUILT
SEDIMENT AND EROSION
CONTROL PLANS**

DESIGN: SCALE: 1" = 30'
DRAWN: SSA DATE: OCTOBER, 2009
CHECKED: JMH APPROVED: JMH

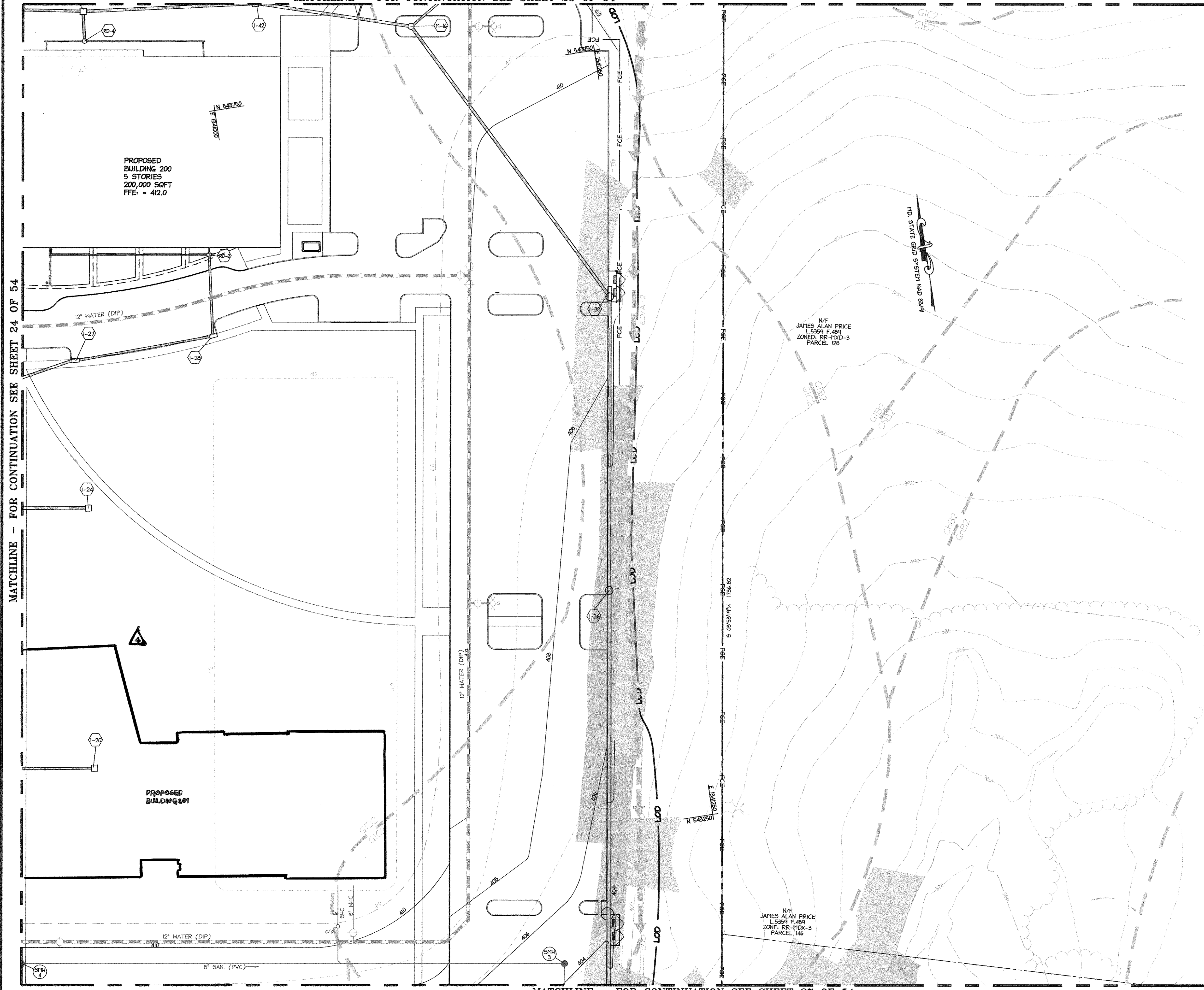
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

MDC-930(SDP)

MATCHLINE - FOR CONTINUATION SEE SHEET 23 OF 54

MATCHLINE - FOR CONTINUATION SEE SHEET 24 OF 54

MATCHLINE - FOR CONTINUATION SEE SHEET 27 OF 54



NOTE

1. ALL SEDIMENT CONTROLS INSTALLED UNDER GP-10-09 SHALL REMAIN ACTIVE UNTIL SUPERCEDED BY THESE PLANS. CONTROLS FROM GP-10-09 SHALL ONLY BE REMOVED WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR.
 STEEP SLOPES SHOWN REFLECT EXISTING TOPOGRAPHY PRIOR TO MASS GRADING (GP-10-09)

LEED ACCREDITED PROFESSIONAL CERTIFICATE
 GREEN NEIGHBORHOOD PLAN FOR SITES
 I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
Brian Collins 10/9/09
 SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE ONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
Richard T. Roca 11/5/09
 Signature of Developer Date
 Richard T. Roca
 Print name below signature

ENGINEER CERTIFICATE

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
John M. Householder 10.9.09
 Signature of Engineer Date
 JOHN HOUSEHOLDER, P.E.
 Print name below signature

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Shane A. ... 11/10/09
 Howard Soil Conservation District Date

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
John M. Householder 10.9.09
 SIGNATURE OF ENGINEER DATE
 JOHN M. HOUSEHOLDER
 MD LICENSE NUMBER: 29907
 EXPIRATION DATE: 1-27-2010

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad ... 11/17/09
 Chief, Development Engineering Division Date
Kevin ... 1/19/10
 Chief, Division of Land Development Date
Thomas ... 11/10
 Director Date

| | | |
|---|--------|--|
| 4 | 6.5.17 | SEE SDP-47047 FOR BLDG 201 SITE IMPROVEMENTS |
|---|--------|--|

JOHNS HOPKINS UNIVERSITY
 APPLIED PHYSICS LABORATORY
 1100 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6089
 ATTN: JAMES LOESCH, P.E., CFM
 PHONE: 443.778.5834 FAX: 443.778.6122

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 7717 columbia gateway drive suite 100 · columbia, md 21046-2900
 410.872.8600 · fax 410.872.8602



| | | | | | |
|--|---------------------|--------------------------|--|------------------------|--|
| DATE: 10.9.09 | | LOT/PARCEL NO.: 300 | | CENSUS TRACT: 6051.02 | |
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | | GRID NO.: L.10412, F.396 | | ZONE: 22 | |
| DEED REF.: 20928, 20930 | | TAX MAP: 41 | | ELECTION DISTRICT: 5th | |
| TITLE: AS-BUILT SEDIMENT AND EROSION CONTROL PLANS | | | | | |
| DESIGN: SSA | SCALE: 1" = 30' | PROJECT: 08A901.00 | | | |
| DRAWN: SSA | DATE: OCTOBER, 2009 | 26 of 54 | | | |
| CHECKED: JMH | APPROVED: JMH | SDP-09-047 | | | |

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

MDC-930(SDP)

NOTE

1. ALL SEDIMENT CONTROLS INSTALLED UNDER GP-10-09 SHALL REMAIN ACTIVE UNTIL SUPERCEDED BY THESE PLANS. CONTROLS FROM GP-10-09 SHALL ONLY BE REMOVED WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR.

2. STEEP SLOPES SHOWN REFLECT EXISTING TOPOGRAPHY PRIOR TO MASS GRADING (GP-010-09)

STOCKPILE NOTES:

1. SLOPES IN THE STOCKPILE SHALL NOT EXCEED 3:1.
2. THE STOCKPILE SHALL BE STABILIZED WITH GRASS IF IT IS REMAINING UNDISTURBED FOR MORE THAN 7 DAYS.

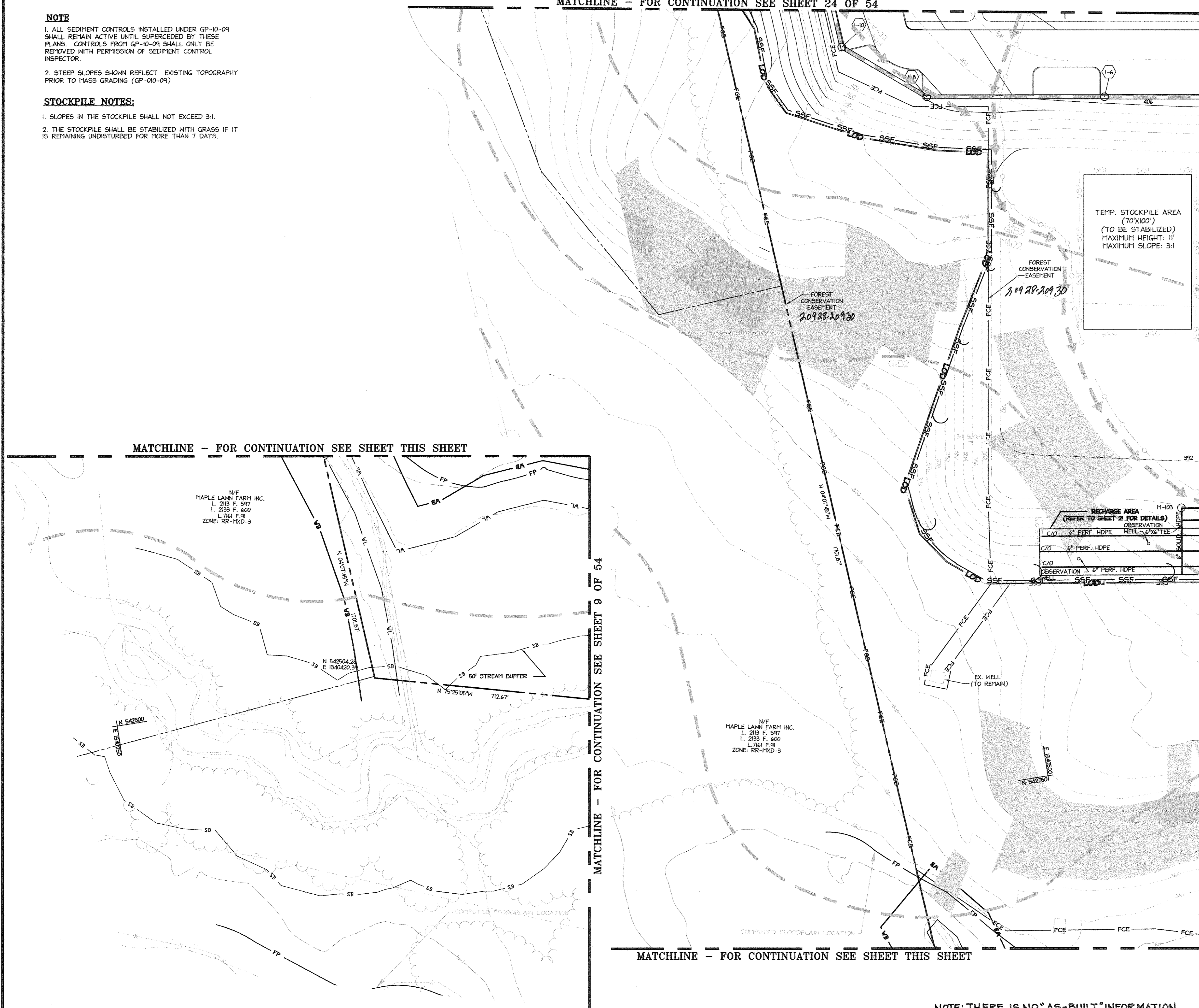
MATCHLINE - FOR CONTINUATION SEE SHEET 24 OF 54

MATCHLINE - FOR CONTINUATION SEE SHEET THIS SHEET

MATCHLINE - FOR CONTINUATION SEE SHEET 9 OF 54

MATCHLINE - FOR CONTINUATION SEE SHEET THIS SHEET

MATCHLINE - FOR CONTINUATION SEE SHEET 27 OF 54



LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
Signature of Brian Collins LEED ACCREDITATION NO. DATE 10-9-09

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
Signature of Engineer DATE 10-9-09
JOHN M. HOUSEHOLDER
MD LICENSE NUMBER: 29907
EXPIRATION DATE: 1-27-2010

DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE ONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
Signature of Developer DATE 11/5/09
Richard T. Boca
Print name below signature

ENGINEER CERTIFICATE
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Signature of Engineer DATE 10-9-09
JOHN HOUSEHOLDER, P.E.
Print name below signature

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Signature of Howard Soil Conservation District DATE 11/10/09

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Development Engineering Division DATE 11/7/09
Chief, Division of Land Development DATE 11/20/10
Director DATE 11/16/10

JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
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engineering - surveying - land planning
christopher consultants, inc.
7172 columbia gateway drive suite 1000 columbia, md. 21046-2990
410.872.8800 fax 410.872.8800

10-9-09
DATE
STATE OF MARYLAND
JOHN W. RODDENBERG
REGISTERED PROFESSIONAL ENGINEER

| PERMIT INFORMATION CHART | | | |
|--|-------------------------|-------------------------|--------------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 | |
| DEED REF. L10412, F-396 | GRID NO. ZONE 22 PEC | TAX MAP 41 | ELECTION DISTRICT 5th |
| TITLE: AS-BUILT SEDIMENT AND EROSION CONTROL PLANS | | | |
| DESIGN: SSA | SCALE: 1" = 30' | PROJECT: 08A901.00 | |
| DRAWN: SSA | DATE: OCTOBER, 2009 | 27 OF 54 | |
| CHECKED: MH | APPROVED: JMH | SDP-09-047 | |

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

MDC-930(SDP)

| | | |
|--------------------------------|----------|-----------|
| Basin | | 1 |
| Existing Drainage Area (acres) | | 3.07 |
| Proposed Drainage Area (acres) | | 23.2 |
| Storage Required (cubic feet) | Cleanout | 20,880 |
| | Wet | 41,760 |
| | Total | 83,520 |
| Storage Provided (cubic feet) | Cleanout | 20,880 |
| | Wet | 41,760 |
| | Total | 83,520 |
| Basin Depth | | 4 |
| | | 5.5 |
| | | 10 |
| Existing Ground Elevation | | 394.0 |
| Top Embankment Elevation | | 392.2 |
| Riser Crest Elevation | | 385.5 |
| Permanent pool elevation | | 383.5 |
| Cleanout Elevation | | 382.0 |
| Bottom Elevation | | 378.0 |
| Freeboard Provided | | 2 |
| Barrel Diameter | | 42 |
| Riser Size | | 6'x6' |
| Bottom Dimensions | | 120'x150' |
| 10 Year WSEL | | 389.06 |
| 100 Year WSEL | | 390.23 |
| Q1 existing (cfs) | | 0.00 |
| Q1 during (cfs) | | 2.68 |
| Q1 ultimate (cfs) | | 2.88 |

DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE ONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Developer: *Richard T. Recca* Date: 11/6/09
 Print name below signature: **Richard T. Recca**

ENGINEER CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Engineer: *John Householder* Date: 10.9.09
 Print name below signature: **JOHN HOUSEHOLDER, P.E.**

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: *[Signature]* Date: 11/10/09
 Howard Soil Conservation District

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: *[Signature]* Date: 11/17/09
 Chief, Division of Land Development: *[Signature]* Date: 11/08/10
 Director: *[Signature]* Date: 11/11/10

JOHNS HOPKINS UNIVERSITY
 APPLIED PHYSICS LABORATORY
 1100 JOHNS HOPKINS ROAD
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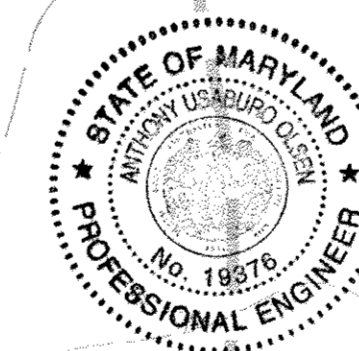
PERMIT INFORMATION CHART

| | | | | | |
|---------------|-------------------------------------|----------------|-----|-------------------|---------|
| PROJECT NAME: | JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. | 300 | CENSUS TRACT | 6051.02 |
| DEED REF. | L10412, F.396 | GRID NO. | 22 | TAX MAP | 41 |
| | 20928-20930 | ZONE | PEC | ELECTION DISTRICT | 5th |

TITLE: **AS-BUILT SEDIMENT AND EROSION CONTROL PLANS**

| | | | |
|--------------|---------------------|----------|-----------|
| DESIGN: | SCALE: 1" = 30' | PROJECT: | 08A901.00 |
| DRAWN: SSA | DATE: OCTOBER, 2009 | | |
| CHECKED: JMH | APPROVED: JMH | | |

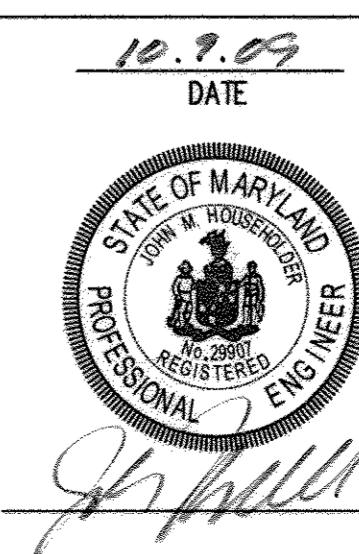
NOTE:
 SEE SHEETS 18, 19 AND 20 FOR SWM AS-BUILT INFORMATION



AS-BUILT CERTIFICATION
 I HEREBY CERTIFY BY MY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
 Signature: *Anthony U. Olsen* Date: 11/08/17
 ANTHONY U. OLSEN PE # 19376 DATE OF AS-BUILT

LEED ACCREDITED PROFESSIONAL CERTIFICATE
 GREEN NEIGHBORHOOD PLAN FOR SITES
 I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
 Signature: *Brian Collins* Date: 10.9.09
 SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 Signature: *John Householder* Date: 10.9.09
 SIGNATURE OF ENGINEER DATE
 JOHN M. HOUSEHOLDER
 MD LICENSE NUMBER: 29907
 EXPIRATION DATE: 1-27-2010

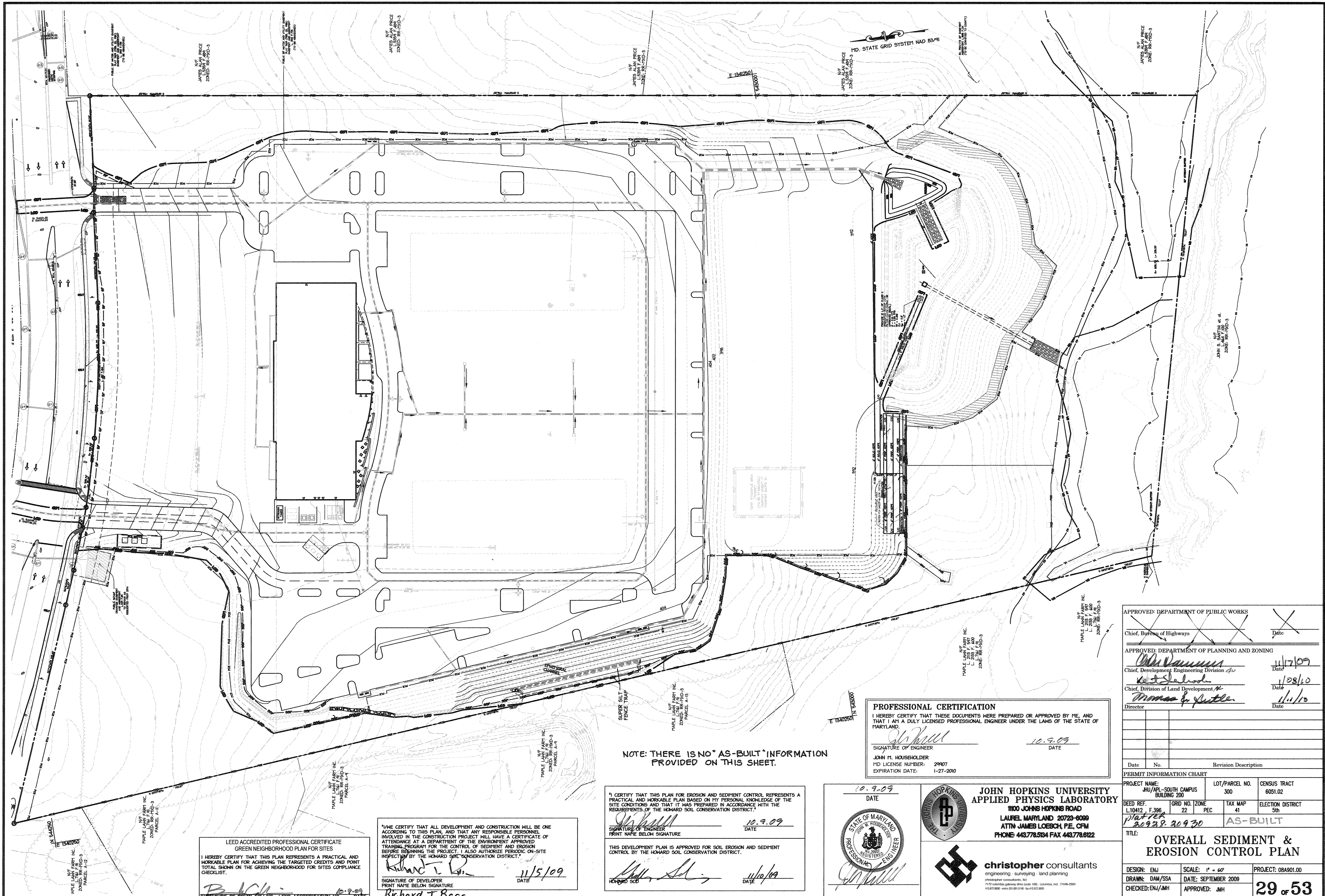


MATCHLINE - FOR CONTINUATION SEE SHEET 26 OF 54

MATCHLINE - FOR CONTINUATION SEE SHEET 9 OF 54

NOTE:
 1. ALL SEDIMENT CONTROLS INSTALLED UNDER GP-10-09 SHALL REMAIN ACTIVE UNTIL SUPERCEDED BY THESE PLANS. CONTROLS FROM GP-10-09 SHALL ONLY BE REMOVED WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR.
 2. STEEP SLOPES SHOWN REFLECT EXISTING TOPOGRAPHY PRIOR TO MASS GRADING (GP-010-09)

MDC-930(SDP)



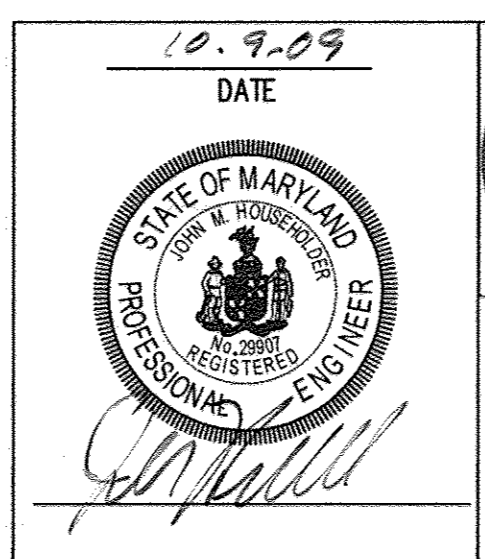
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
Brian Collins
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

"I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE ONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
Richard T. Recca
SIGNATURE OF DEVELOPER DATE
Richard T. Recca

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
John H. Householder
SIGNATURE OF ENGINEER DATE
John H. Householder
PRINT NAME BELOW SIGNATURE
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
John H. Householder
DATE

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
John H. Householder
SIGNATURE OF ENGINEER DATE
John H. Householder
JOHN H. HOUSEHOLDER
MID LICENSE NUMBER: 29907
EXPIRATION DATE: 1-27-2010



10.9.09
DATE
JOHN HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099
ATTN: JAMES LOESCH, P.E., CFM
PHONE 443.778.5934 FAX 443.778.6122
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christopher consultants, Inc.
7722 southpark gateway drive suite 1000 columbia, md 21046-2909
410.872.8800 memo 201.881.0148 fax 410.872.8800

| | | | |
|---|---|-------------------|-----------------|
| APPROVED: DEPARTMENT OF PUBLIC WORKS | | | |
| Chief, Bureau of Highways | <i>[Signature]</i> | Date | <i>11/17/09</i> |
| APPROVED: DEPARTMENT OF PLANNING AND ZONING | | | |
| Chief, Development Engineering Division | <i>[Signature]</i> | Date | <i>1/28/10</i> |
| Chief, Division of Land Development | <i>[Signature]</i> | Date | <i>1/11/10</i> |
| PERMIT INFORMATION CHART | | | |
| PROJECT NAME: | JHU/APL-SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. | 300 |
| DEED REF. | L10412, F.396 | GRID NO. / ZONE | 22 / PEC |
| TAX MAP | 41 | ELECTION DISTRICT | 5th |
| TITLE: | OVERALL SEDIMENT & EROSION CONTROL PLAN | | |
| DESIGN: | ENJ | SCALE: | 1" = 60' |
| DRAWN: | DAM/SSA | DATE: | SEPTEMBER 2009 |
| CHECKED: | ENJ/JMH | APPROVED: | JMH |
| PROJECT: | | 08A901.00 | |
| | | 29 of 53 | |

SDP-09-047

MDC-930(SDP)

19.0 Standards and Specifications For Land Grading

Definitions

Reshaping of the existing land surface in accordance with a plan as determined by engineering survey and layout.

Purpose

The purpose of a land grading specification is to provide for erosion control and vegetative establishment on those areas where the existing land surface is to be reshaped by grading according to plan.

Design Criteria

The grading plan should be based upon the incorporation of building designs and street layouts that fit and utilize existing topography and desirable natural surrounding to avoid extreme grade modifications.

Many counties have regulations and design procedures already established for land grading and cut and fill slopes. Where these requirements exist, they should be followed.

1. Provisions shall be made to safely conduct surface runoff to storm drains, protected outlets or to stable water courses to insure that surface runoff will not damage slopes or other graded areas.

2. Cut and fill slopes that are to be stabilized with grasses shall not be steeper than 2:1. (Where the slope is to be mowed the slope should be no steeper than 3:1; 4:1 is preferred because of safety factors related to mowing steep slopes.)

3. Reverse benches shall be provided whenever the vertical interval (height) of any 2:1 slope exceeds 20 feet; for 3:1 slopes it shall be increased to 30 feet and for 4:1 to 40 feet. Benches shall be located to divide the slopes face as equally as possible and shall convey the water to a stable outlet.

a. Benches shall be a minimum of six-feet wide to provide ease of maintenance.

b. Benches shall be designed with a reverse slope of 6:1 or flatter to the top of the upper slope and with a minimum of one foot in depth. Bench gradient to the outlet shall be between 2 percent and 3 percent, unless accompanied by appropriate design and computations.

c. The flow length within a bench shall not exceed 800' unless accompanied by appropriate design and computations. For flow channel stabilization see temporary swales.

4. Surface water shall be diverted from the face of all cut and/or fill slopes by the use of earth dikes, ditches and swales or conveyed downslope by the use of a designated structure, except where:

a. The face of the slope is or shall be stabilized and the face of all graded slopes shall be protected for surface runoff until they are stabilized.

b. The face of the slope shall not be subjected to any concentrated slous of surface water such as from natural drainways, graded swales, downspouts, etc.

c. The faces of the slope will be protected by special erosion control materials, to include, but not limited to: approved vegetative stabilization practices (see section G), rip-rap or other approved stabilization methods.

5. Cut slopes occurring in ripable rock shall be serrated as shown on the following diagram. These serrations shall be made with conventional equipment as the excavation is made. Each step or serration shall be constructed on the contour and will have steps cut as nominal two-foot intervals with nominal three-foot horizontal shelves. These steps will vary depending on the slope ratio or the cut slope.

6. Surface drainage shall be provided where necessary to intercept seepage that would otherwise adversely affect slope stability or create excessively wet site conditions.

7. Slopes shall not be created too close to property lines as the danger adjoining properties without adequately protecting such properties against sediment, erosion, slippage, settlement, subsidence or other related damages.

8. Fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris, and other objectionable material. It should be free of stones over two (2) inches in diameter where compacted by hand or mechanical tampers over eight (8) inches in diameter where compacted by rollers or other equipment.

9. Stockpiles, borrow areas and spoil shall be shown on the plans and shall be subjected to the provisions of the Standard and Specifications.

All disturbed areas shall be stabilized structurally or vegetatively in compliance with 20.0 Standards and Specifications for Vegetative Stabilization.

20.0 Standards and Specifications For Topsoil

Definitions

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

To provide a suitable soil medium for vegetative growth. Solid of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

This practice is limited to areas having 2:1 or flatter slopes where:

- a. The texture of the exposed subsoil/parent material in not adequate to produce vegetative growth.
b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
c. The original soil to be vegetated contains materials toxic to plant growth
d. The soil is so acidic that treatment with limestone is not feasible.

For the purpose of these Standards and Specification, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization.

Construction and Material Specifications

Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

Topsoil Specifications - Soil to be used as topsoil must meet the following:

i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority.

ii. Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or other as specified.

iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread to the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

For sites having disturbed areas under 5 acres:

Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

For sites having disturbed areas over 5 acres:

On soil meeting Topsoil Specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:

- a. pH for topsoil shall be between 6.0 and 7.5. If tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise pH to 6.5 or higher.
b. Organic content of topsoil shall be not less than 1.5 percent by weight.
c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 day min.) to permit dissipation of phyto-toxic materials.

Note: Topsoil substitutes or amendments as recommended by a qualified agronomist or soil scientist approved by the appropriate approval authority, may be used in lieu of natural topsoil.

Place topsoil (if required) and apply soil amendments as specified on 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

Topsoil Application

When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fences and Sediment Traps and Basins.

Grades in the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.

Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage.

Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

Composted Sludge Materials for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:

- a. Composted sludge shall be supplied by, or originated from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.

Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding. MD-VA, Pub #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

30.0 Dust Control

Definition

Controlling dust blowing and movement on construction sites and roads.

Purpose

To prevent blowing and movement of dust from exposed soil surfaces, reduce on and off-site damage, health hazards, and improve traffic safety.

Conditions Where Practice Applies

This practice is applicable to areas subject to dust blowing and movement where in and off-site damage is likely without treatment.

Specifications

Temporary Methods

1. Mulches - See standards for vegetative stabilization with mulches only. Mulch should be crimped or tacked to prevent blowing.

2. Vegetative Cover - See standards for temporary vegetative cover.

3. Tillage - To roughen surface and bring clumps to the surface. This is an emergency measure which should be used before soil blowing starts.

4. Irrigation - This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist.

5. Barriers - Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar materials can be used to control air currents and soil blowing.

Permanent Methods

1. Permanent Vegetation - See standards for permanent vegetative cover, and permanent stabilization with sod.

2. Topsoil - Covering with less erosive materials. See Standards for Topsoiling.

3. Stone - Cover surface with crushed stone or coarse gravel.

References

- 1. Agriculture Handbook 346. Wind Erosion Forces in the United States and Their Use in Predicting Soil Loss.
2. Agriculture Information Bulletin 354. How to Control Wind Erosion, USDA - ARS.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:

- 1. Preferred--Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding.
2. Acceptable--Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs/acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding.

Seeding -- For the periods March 1 -- April 30, and August 1 -- October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 -- July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/1000 sq. ft.) of weeping lovegrass.

Mulching -- Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of rotted small grain straw immediately after seeding.

Maintenance -- Inspect all seeding areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed.

Seedbed preparation: -- Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: -- Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).

Seeding: -- For periods March 1 -- April 30 and from August 15 -- October 15, seed with 2-1/2 bushel per acre of annual ryegrass (3.2 lbs/1000 sq. ft.).

Mulching -- Apply 1-1/2 to 2 tons/acre (70 to 90 lbs/1000 sq. ft.) of rotted weed-free, small grain straw immediately after seeding.

Refer to the 1994 Maryland Standards and Specification for Soil Erosion and Sediment Control for additional rates and methods not covered.

SEQUENCE OF CONSTRUCTION

NOTE: THIS WORK CAN BE DONE SIMULTANEOUSLY WITH WORK SHOWN THE OTHER ASSOCIATED PROJECTS F-09-047 AND GP-10-09.

- 1. OBTAIN THE GRADING PERMIT FROM HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS DIVISION. (1 DAY)
2. ARRANGE AN ON-SITE PRE-CONSTRUCTION MEETING WITH COUNTY INSPECTORS, THE CONTRACTOR, AND ENGINEER PRIOR TO THE START OF CONSTRUCTION OF THIS PLAN. (1 DAY)
3. CONTRACT A PRIVATE UTILITY LOCATING COMPANY TO ADEQUATELY MARK ALL EXISTING UTILITIES. (2 DAYS)
4. USE STABILIZED CONSTRUCTION ENTRANCES FROM GP-10-09 AND THEN RELOCATE AS SHOWN ON THIS PLAN. (1 DAY)
5. VERIFY ALL EXISTING CONTROL DEVICES FROM MASS GRADING PLAN GP-10-09 ARE STILL IN PLACE. PERIMETER CONTROLS MAY NEED TO BE RELOCATED AND/OR RE-ESTABLISHED AS SHOWN ON THIS PLAN. OBTAIN INSPECTOR'S APPROVAL PRIOR TO GRADING. (2 DAYS)
6. ONCE INSPECTOR'S APPROVAL IS OBTAINED, BEGIN ON-SITE GRADING, MAINTAIN POSITIVE DRAINAGE TO EXISTING SEDIMENT BASIN AT ALL TIMES. (28 DAYS)
7. BEGIN INSTALLATION OF THE UNDERGROUND UTILITIES, INCLUDING STORMWATER RECHARGE FACILITIES. STORMDRAIN SHALL BE CONSTRUCTED FROM DOWNSTREAM TO UPSTREAM. (15 DAYS)
8. BEGIN FINE GRADING OF THE SITE AND BUILDING CONSTRUCTION. INSTALL BASE PAVEMENT FOR THE PARKING LOTS, BEGIN CURB AND GUTTER CONSTRUCTION AND ALL OTHER SITE IMPROVEMENTS (SIDEWALK, RAMPS, ETC.) (15 DAYS)
9. REMOVE STABILIZED CONSTRUCTION ENTRANCES AND BASE PAVE ANY RETAIN AREAS. SURFACE PAVE ALL ROADWAYS. (7 DAYS)
10. IMMEDIATELY UPON COMPLETION OF GRADING, PROVIDE STABILIZATION PER THE SEEDING TABLES PROVIDED ON THE PLANS. (7 DAYS)
11. ONCE ALL GRADING, PAVEMENT, CURB AND GUTTER ARE COMPLETED AND THE SITE IS STABILIZED, OBTAIN INSPECTOR'S APPROVAL PRIOR TO REMOVAL OF ANY SEDIMENT CONTROL DEVICES AND THE CONVERSION OF THE ON-SITE SEDIMENT BASIN TO A PERMANENT STORMWATER MANAGEMENT FACILITY AS SHOWN AND APPROVED UNDER SDP-09-047. (10 DAYS)
12. REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES. (5 DAYS)
13. STABILIZE ANY REMAINING DISTURBED AREAS ON-SITE. (4 DAYS)
14. ONCE ALL SEDIMENT CONTROL DEVICES ARE REMOVED AND THE SITE IS STABILIZED, OBTAIN FINAL APPROVAL FROM INSPECTOR. (2 DAYS)

ESTIMATED CONSTRUCTION TIME: 115 DAYS

WETLAND NOTE:

IT IS THE APPLICANT'S RESPONSIBILITY TO OBTAIN ANY STATE PERMITS, IF REQUIRED, FOR ANY CONSTRUCTION ACTIVITY COVERED BY THIS PLAN WHICH IMPACTS A STATE REGULATED WETLAND. ANY CHANGES TO PLANS FOR THIS DEVELOPMENT WHETHER REQUIRED BY THE STATE OR INITIATED BY THE APPLICANT TO MEET STATE REQUIREMENTS, MUST BE APPROVED BY HOWARD SCD.

SOIL CHARACTERISTICS CHART

Table with 6 columns: SERIES, NAME, SUBGROUP, DESCRIPTION, HYDRIC, K-FACTOR. Rows include OVA, CO, GA, GB, GC, GD, HE, HGB2.

WARNING: ALL SOILS HAVE LIMITATIONS, RANGING FROM SLIGHT TO SEVERE, FOR BUILDING HOMES, CONSTRUCTING ROADS AND PONDS AND VARIOUS OTHER USES. PLEASE CONSULT THE SOIL SURVEY OF HOWARD COUNTY FOR DETERMINING SOIL TYPES AND THEIR SUITABILITY FOR DEVELOPMENT, ENGINEERING AND BUILDING.

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

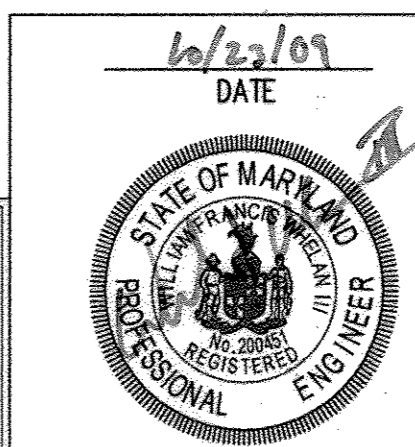
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE ONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF DEVELOPER: Richard T. Roeg 11/5/09 DATE
SIGNATURE OF ENGINEER: WILLIAM F. WHELAN III PE # 200951 11/05/09 DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. 11/10/09 DATE

LEED ACCREDITED PROFESSIONAL CERTIFICATE GREEN NEIGHBORHOOD PLAN FOR SITES. I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST. SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. 7 DATE 11/23/09

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. SIGNATURE OF ENGINEER: William F. Whelan III DATE: 11/23/09



HOWARD COUNTY SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- 1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (410-313-1855).
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol 1, Chapter 12 of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specific above in accordance with the 1996 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 51), sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Section 52). Temporary stabilization with mulch along can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained by the Howard County Sediment Control Inspector.
7. Site Analysis: Total Area of Site 35.10 Acres, Area Disturbed 22.73 Acres, Area to be seeded or paved 9.04 Acres, Total Cut 0 Cu. Yds., Total Fill 0 Cu. Yds., Offsite waste/borrow area location: To a site with approved sediment control plan and grading permit.
8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
10. On all site with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
11. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized any construction as shown on these plans by the end of each work day, whichever is shorter. Secure an As-built approval letter from Howard SCD and County.

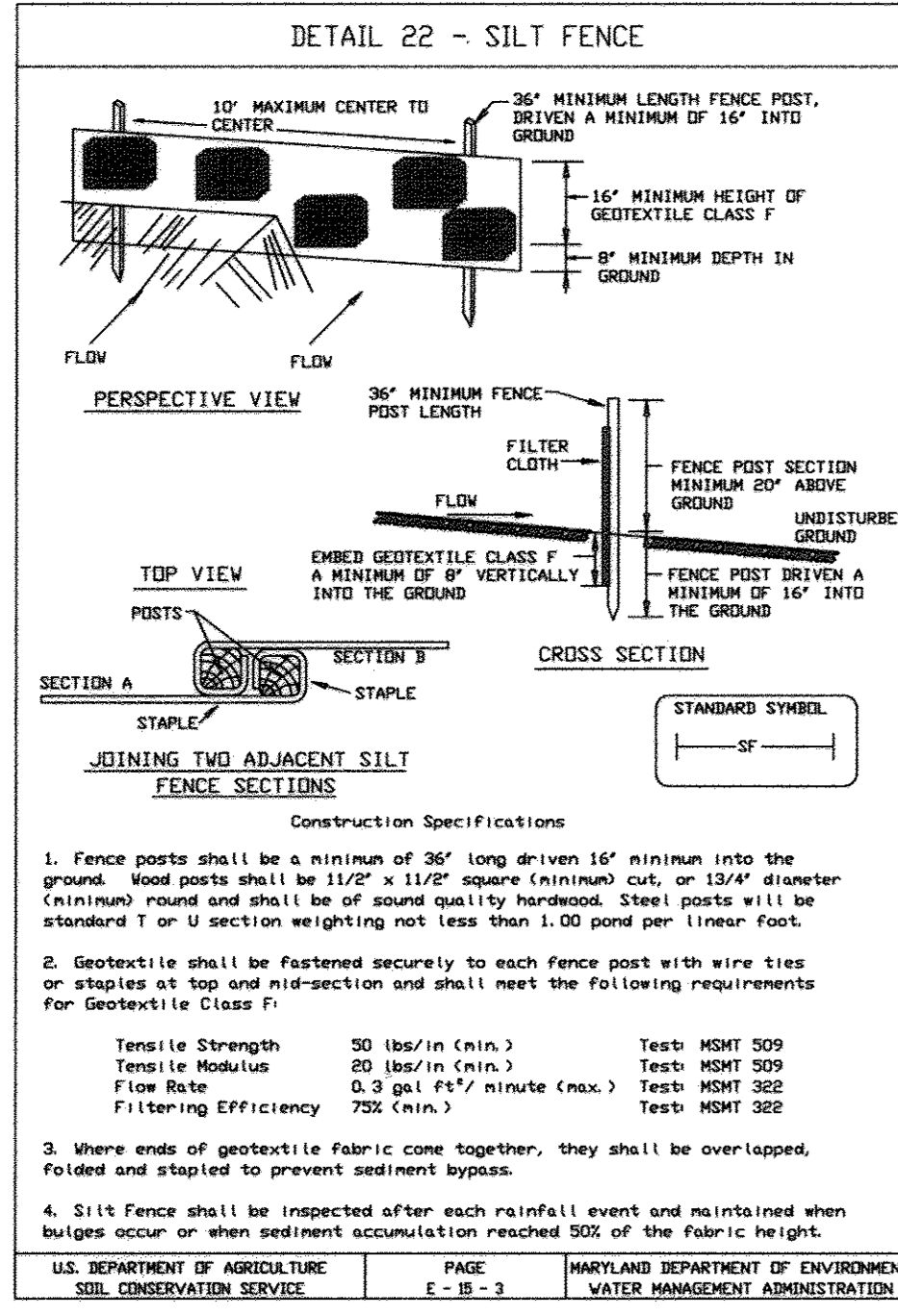
APPROVED: DEPARTMENT OF PLANNING AND ZONING. Chief, Development Engineering Division: 11/17/09 Date. Chief, Division of Land Development: 11/23/10 Date. Director: 11/11/10 Date.

JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY. 1100 JOHNS HOPKINS ROAD. LAUREL MARYLAND 20723-6039. ATTN: JAMES LOEBCH, P.E., CFM. PHONE: 443.778.5934 FAX 443.778.6122

christopher consultants. engineering - surveying - land planning. christopher consultants, Inc. 7122 Columbia Gateway Drive Suite 103, Columbia, MD 21046-9989. (410) 726-9900. www.chris-llp.com fax 410-726-9900

PERMIT INFORMATION CHART. PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200. LOT/PARCEL NO. 300. CENSUS TRACT 6051.02. DEED REF. L10412, F.396. GRID NO. 22. ZONE PEC. TAX MAP 41. ELECTION DISTRICT 5th. TITLE: AS-BUILT SEDIMENT AND EROSION NOTES & DETAILS. DESIGN: SSA. SCALE: AS SHOWN. PROJECT: 08A901.00. DRAWN: SSA. DATE: OCTOBER, 2009. CHECKED: JMH. APPROVED: JMH. 30 of 54.

MDC-930(SDP)



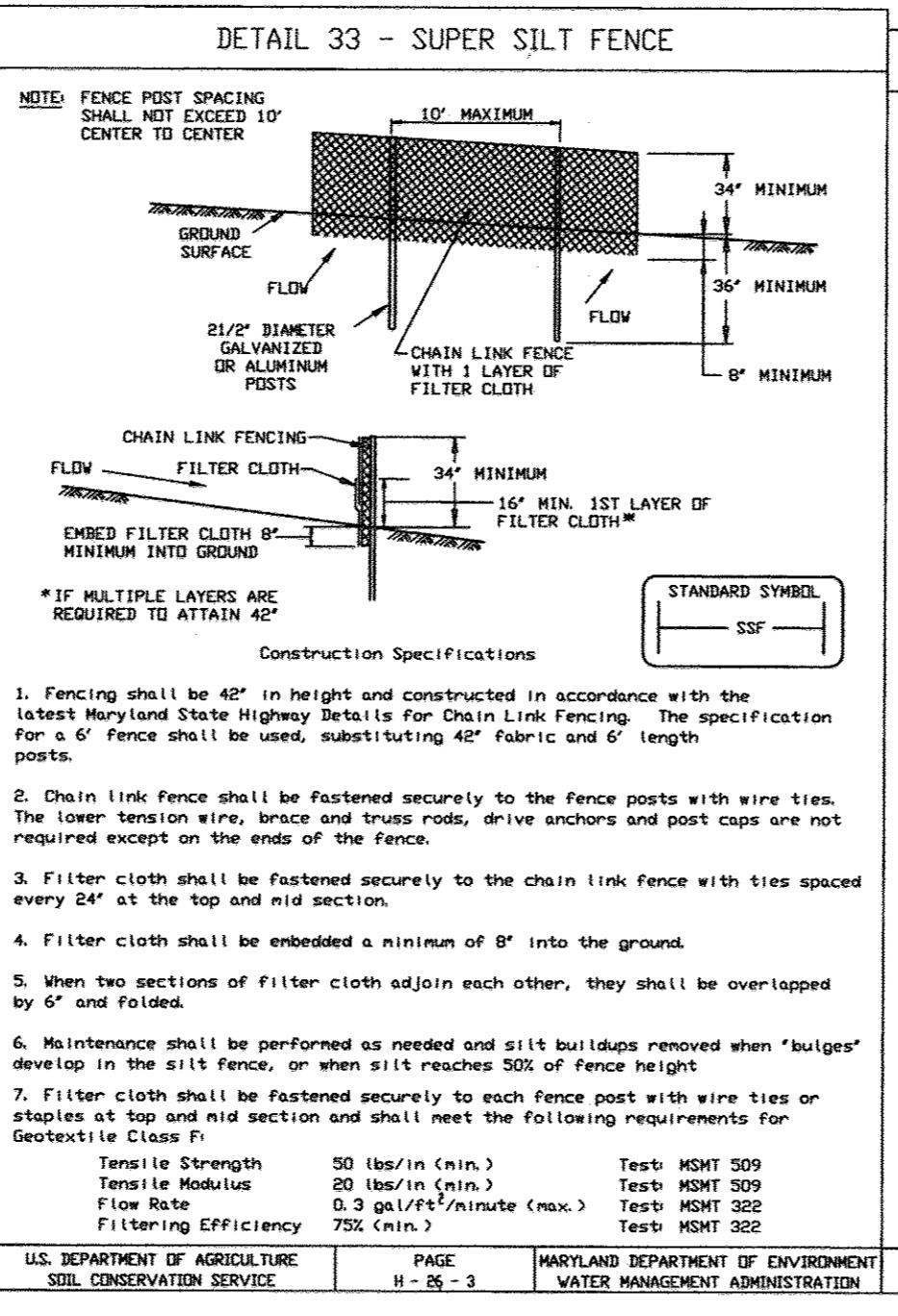
SILT FENCE

Silt Fence Design Criteria

| Slope Steepness | Silt Fence Length | |
|-------------------|-------------------|------------|
| | (Maximum) | (Minimum) |
| Flatter than 50:1 | unlimited | unlimited |
| 50:1 to 10:1 | 125 feet | 1,000 feet |
| 10:1 to 5:1 | 100 feet | 750 feet |
| 5:1 to 3:1 | 60 feet | 500 feet |
| 3:1 to 2:1 | 40 feet | 250 feet |
| 2:1 and steeper | 20 feet | 125 feet |

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, PAGE E-15-3A, MARYLAND DEPARTMENT OF ENVIRONMENT, WATER MANAGEMENT ADMINISTRATION

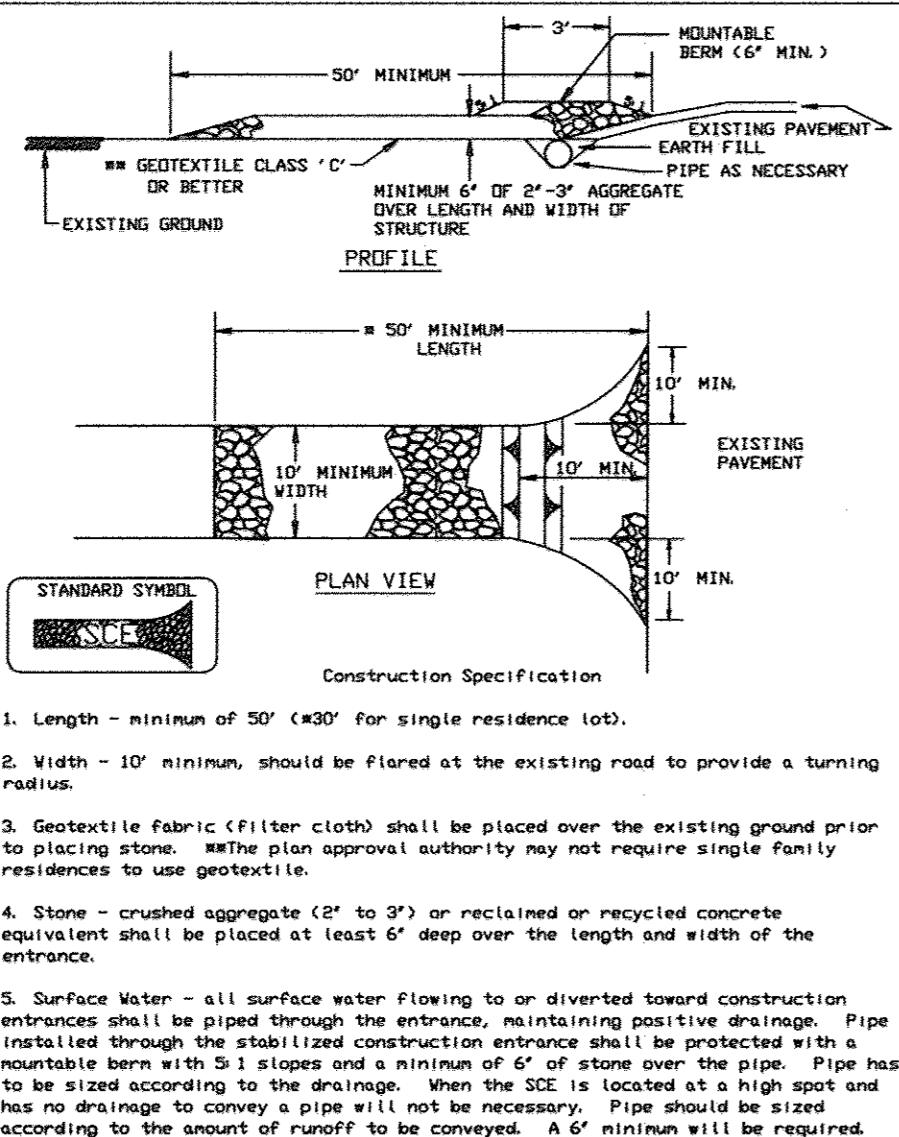
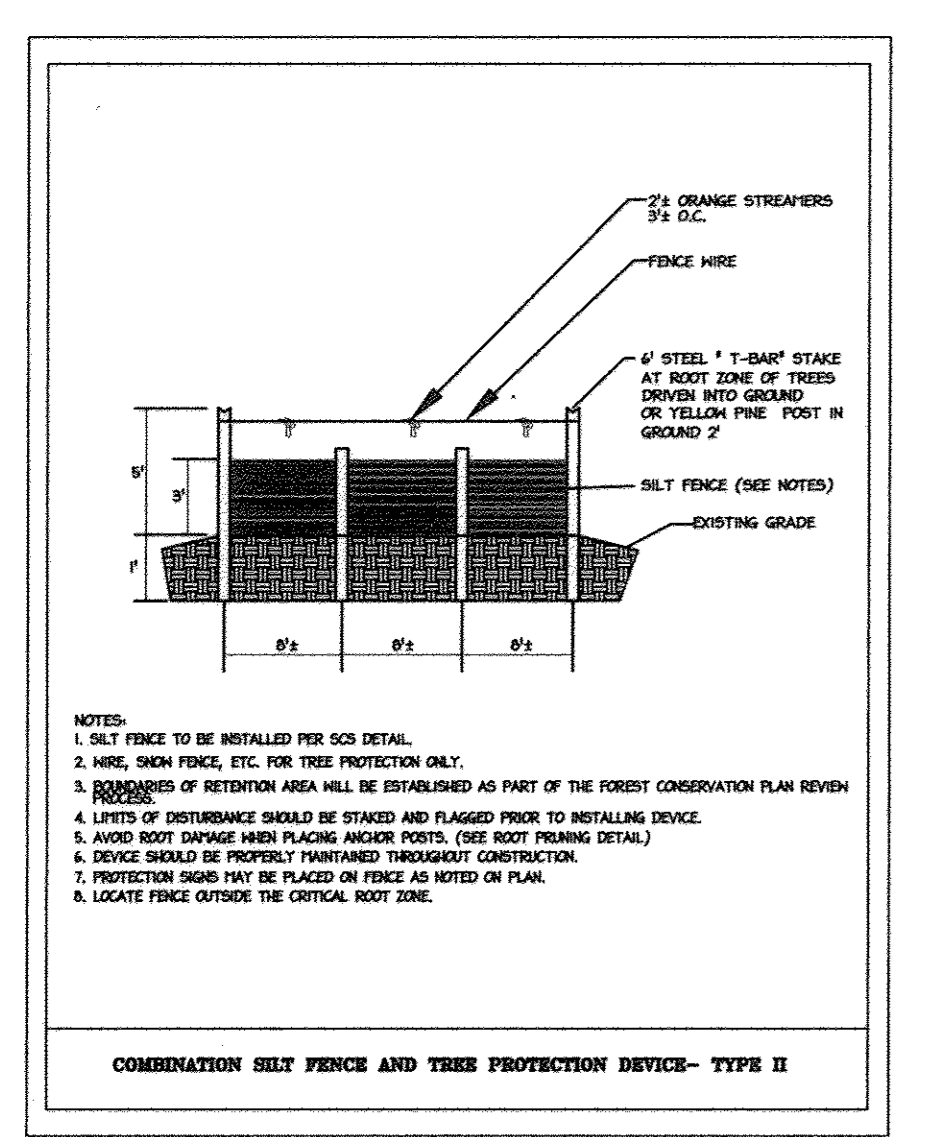
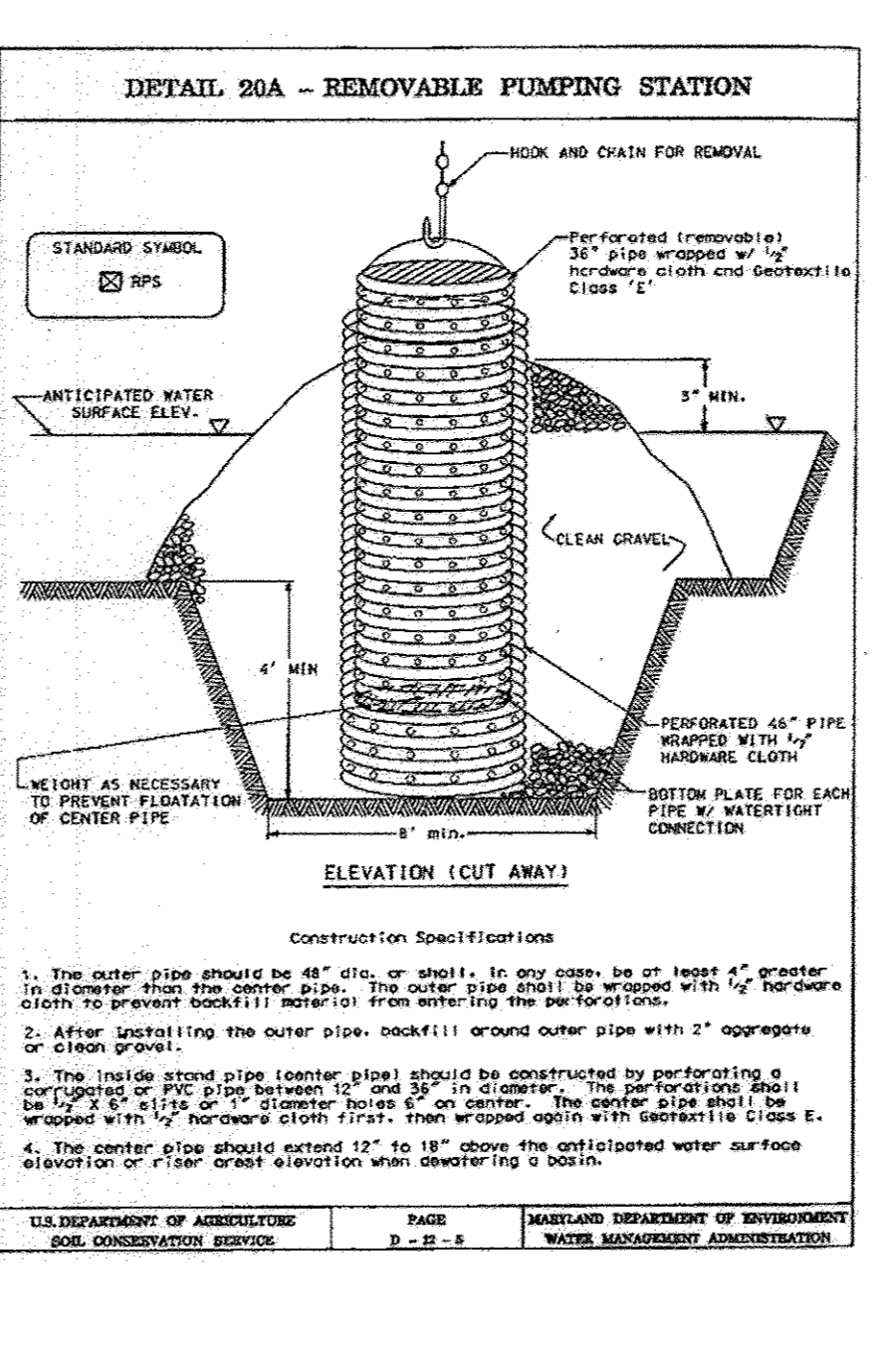


SUPER SILT FENCE

Design Criteria

| Slope Steepness | Silt Fence Length (Maximum) | |
|-----------------|-----------------------------|-----------------------------|
| | Slope Steepness | Silt Fence Length (Maximum) |
| 0 - 10% | 0 - 10:1 | Unlimited |
| 10 - 20% | 10:1 - 5:1 | 200 feet |
| 20 - 30% | 5:1 - 3:1 | 100 feet |
| 30 - 50% | 3:1 - 2:1 | 100 feet |
| 50% + | 2:1 + | 50 feet |

U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, PAGE H-26-3A, MARYLAND DEPARTMENT OF ENVIRONMENT, WATER MANAGEMENT ADMINISTRATION



I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE IN ACCORDANCE WITH THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Developer: *Richard T. Boco* DATE: 11/5/09
 PRINT NAME BELOW SIGNATURE: Richard T. Boco

Signature of Engineer: *John M. Collins* DATE: 10.9.09
 PRINT NAME BELOW SIGNATURE: John M. Collins

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of SCD: *John M. Collins* DATE: 11/6/09
 HOWARD SCD

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *John M. Collins* DATE: 11/7/09
 Chief, Division of Land Development: *John M. Collins* DATE: 11/8/09
 Director: *Morgan G. Butler* DATE: 11/10/09

JOHNS HOPKINS UNIVERSITY
 APPLIED PHYSICS LABORATORY
 1100 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099
 ATTN: JAMES LOESCH, P.E., CFM
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 christopher consultants, inc.
 7172 columbia gateway drive (suite 100) columbia, md. 21046-2990
 410.272.9600 fax: 410.272.9140 tw: 410.272.9600

PERMIT INFORMATION CHART

| | | |
|--|-------------------------|-------------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 |
| DEED REF. L.10412 - F.396 | GRID NO. ZONE 22 PEC | TAX MAP 41 |
| ELECTION DISTRICT 5th | DATE: 10.9.09 | |

TITLE: **AS-BUILT SEDIMENT AND EROSION NOTES & DETAILS**

| | | |
|--------------|---------------------|--------------------|
| DESIGN: SSA | SCALE: AS SHOWN | PROJECT: 08A901.00 |
| DRAWN: SSA | DATE: OCTOBER, 2009 | |
| CHECKED: JMH | APPROVED: JMH | 31 of 54 |

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

LEED ACCREDITED PROFESSIONAL CERTIFICATE
 GREEN NEIGHBORHOOD PLAN FOR SITES

I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.

Signature of Brian Collins: *Brian Collins* DATE: 10.9.09
 SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

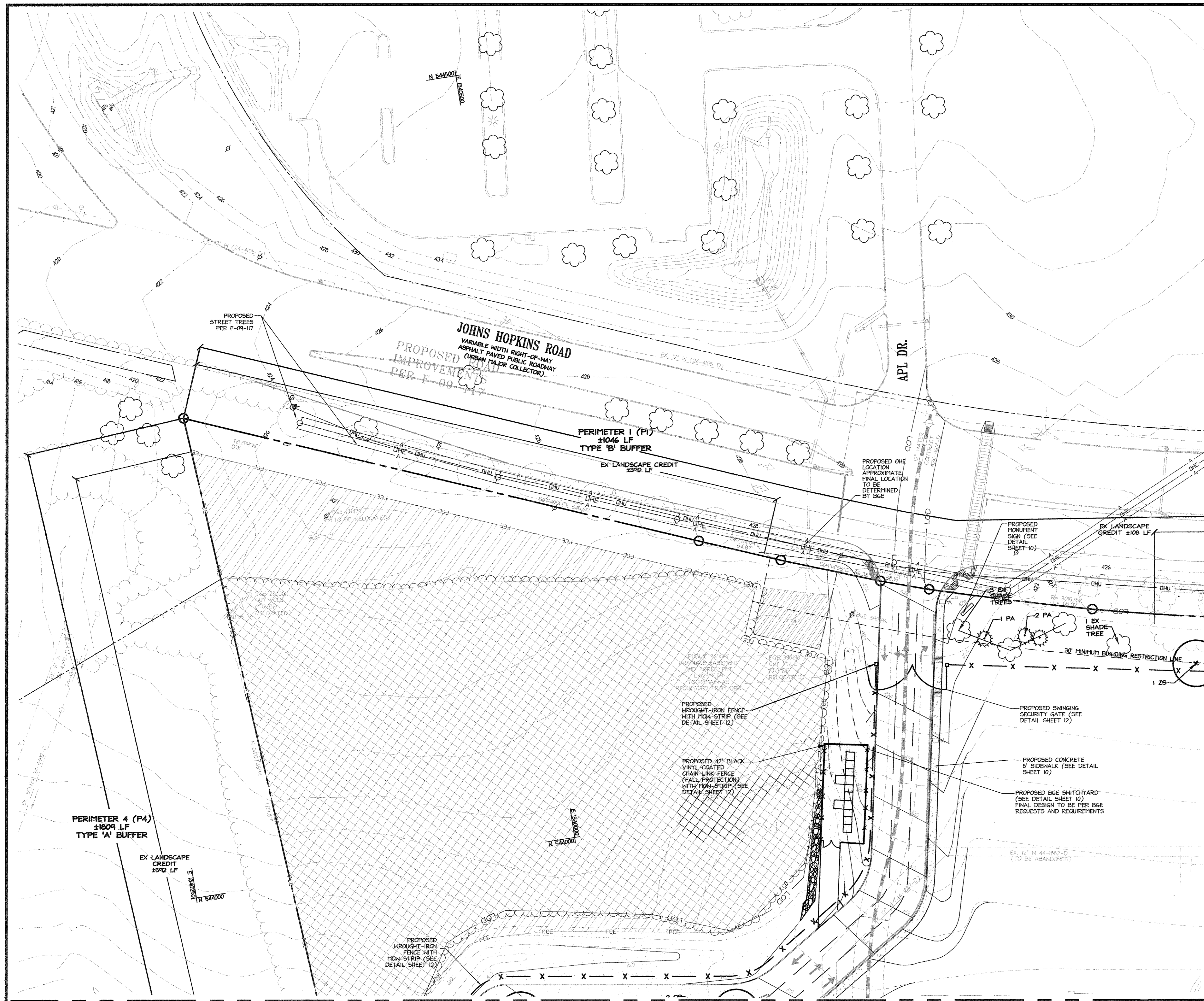
PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

Signature of Engineer: *John M. Collins* DATE: 10.9.09
 JOHN M. HOUSEHOLDER
 MD LICENSE NUMBER: 29907
 EXPIRATION DATE: 1-27-2010



TDC-950(SDP)



PLANT LIST:

| SYMBOL | SCIENTIFIC NAME | COMMON NAME | QTY. | SIZE | REMARKS |
|--------|---|--------------------------|------|---------------------|---------|
| ZS | ZELKOVA SERRATA | JAPANESE ZELKOVA | 1 | 2 1/2" - 3" caliper | B&B |
| GT | GLEDTISIA TRIACANTHOS INERMIS 'IMPERIAL' | THORNLESS HONEYLOCUST | 8 | 2 1/2" - 3" caliper | B&B |
| QR | QUERCUS RUBRA | RED OAK | 50 | 2 1/2" - 3" caliper | B&B |
| AR | ACER RUBRUM 'RED SUNSET' | RED SUNSET RED MAPLE | 31 | 2 1/2" - 3" caliper | B&B |
| BN | BETULA NIGRA | RIVER BIRCH | 4 | 2 1/2" - 3" caliper | B&B |
| PA | PICEA ABIES | SERBIAN SPRUCE | 6 | 6'-8' HT. | B&B |
| CD | CEDRUS DEODORA | DEODAR CEDAR | 8 | 6'-8' HT. | B&B |
| IO | ILEX OPACA | AMERICAN HOLLY | 51 | 6'-8' HT. | B&B |
| PS | PINUS STROBUS | EASTERN WHITE PINE | 4 | 6'-8' HT. | B&B |

LEGEND

| | |
|------------------------------|-----|
| EXISTING CONTOUR | --- |
| PROPOSED CONTOUR | --- |
| EXISTING SANITARY SEWER | --- |
| EXISTING WATER | --- |
| PROPOSED W/ROUGHT IRON FENCE | --- |
| PROPOSED CHAIN LINK FENCE | --- |
| PROPERTY LINE | --- |
| STREAM CENTERLINE | --- |
| WETLAND LIMITS | --- |
| 25' WETLAND BUFFER | --- |
| LIMIT OF DISTURBANCE | --- |
| EXISTING TREELINE | --- |
| PROPOSED FOREST CON EMT | --- |
| PROPOSED CURB AND GUTTER | --- |
| PROPOSED DEPRESSION CURB | --- |
| PROPOSED SPILL CURB | --- |
| EXISTING TREE | --- |

NOTE:
THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD THE AS-BUILT CONDITIONS OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.

MATCHLINE - FOR CONTINUATION SEE SHEET 32 OF 54

MATCHLINE - FOR CONTINUATION SEE SHEET 33 OF 54

LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Development Engineering Division
Chief, Division of Land Development
Director

REDLINED FOR PARKING LOT REVISION
ADDED REDLINE SUMMARY NOTE

JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6009
ATTN: JAMES LOESCH, P.E., CFM
PHONE 443.778.5134 FAX 443.778.6122

christopher consultants
engineering - surveying - land planning

PERMIT INFORMATION CHART

| | | |
|---|----------------------|----------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 |
| DEED REF. L10412, F.396 | GRID NO./ZONE 22 PEC | TAX MAP 41 |
| ELECTION DISTRICT 5th | DATE 6/14/10 | |

TITLE: AS-BUILT LANDSCAPE PLAN

| | | |
|--------------|---------------------|--------------------|
| DESIGN: CRH | SCALE: 1" = 30' | PROJECT: 08A901.00 |
| DRAWN: SSA | DATE: OCTOBER, 2009 | |
| CHECKED: JMH | APPROVED: JMH | |

32 of 54

SDP-09-047

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

MATCHLINE - FOR CONTINUATION SEE SHEET 33 OF 54

PERIMETER 4 (P4)
±1809 LF
TYPE 'A' BUFFER

EX LANDSCAPE CREDIT
±592 LF

JOHNS HOPKINS ROAD
VARIABLE WIDTH RIGHT-OF-WAY
ASPHALT PAVED PUBLIC ROADWAY
(URBAN MAJOR COLLECTOR)
IMPROVED ROAD
PER F-09-117

PERIMETER 1 (P1)
±1046 LF
TYPE 'B' BUFFER

EX LANDSCAPE CREDIT
±390 LF

PROPOSED MONUMENT SIGN (SEE DETAIL SHEET 10)

EX LANDSCAPE CREDIT ±100 LF

PROPOSED WROUGHT-IRON FENCE WITH MON-STRIP (SEE DETAIL SHEET 12)

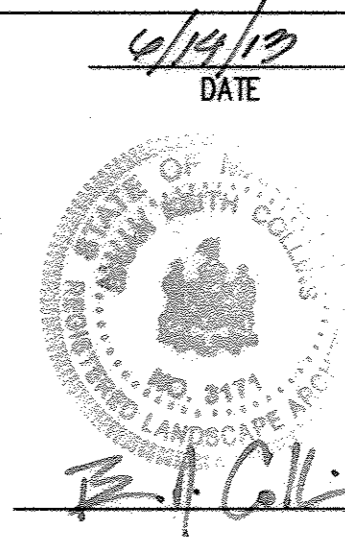
PROPOSED 42" BLACK VINYL-COATED CHAIN-LINK FENCE (FALL PROTECTION) WITH MON-STRIP (SEE DETAIL SHEET 12)

PROPOSED SWINGING SECURITY GATE (SEE DETAIL SHEET 12)

PROPOSED CONCRETE 5' SIDEWALK (SEE DETAIL SHEET 10)

PROPOSED BGE SWITCHYARD (SEE DETAIL SHEET 10)
FINAL DESIGN TO BE PER BGE REQUESTS AND REQUIREMENTS

PROPOSED WROUGHT-IRON FENCE WITH MON-STRIP (SEE DETAIL SHEET 12)

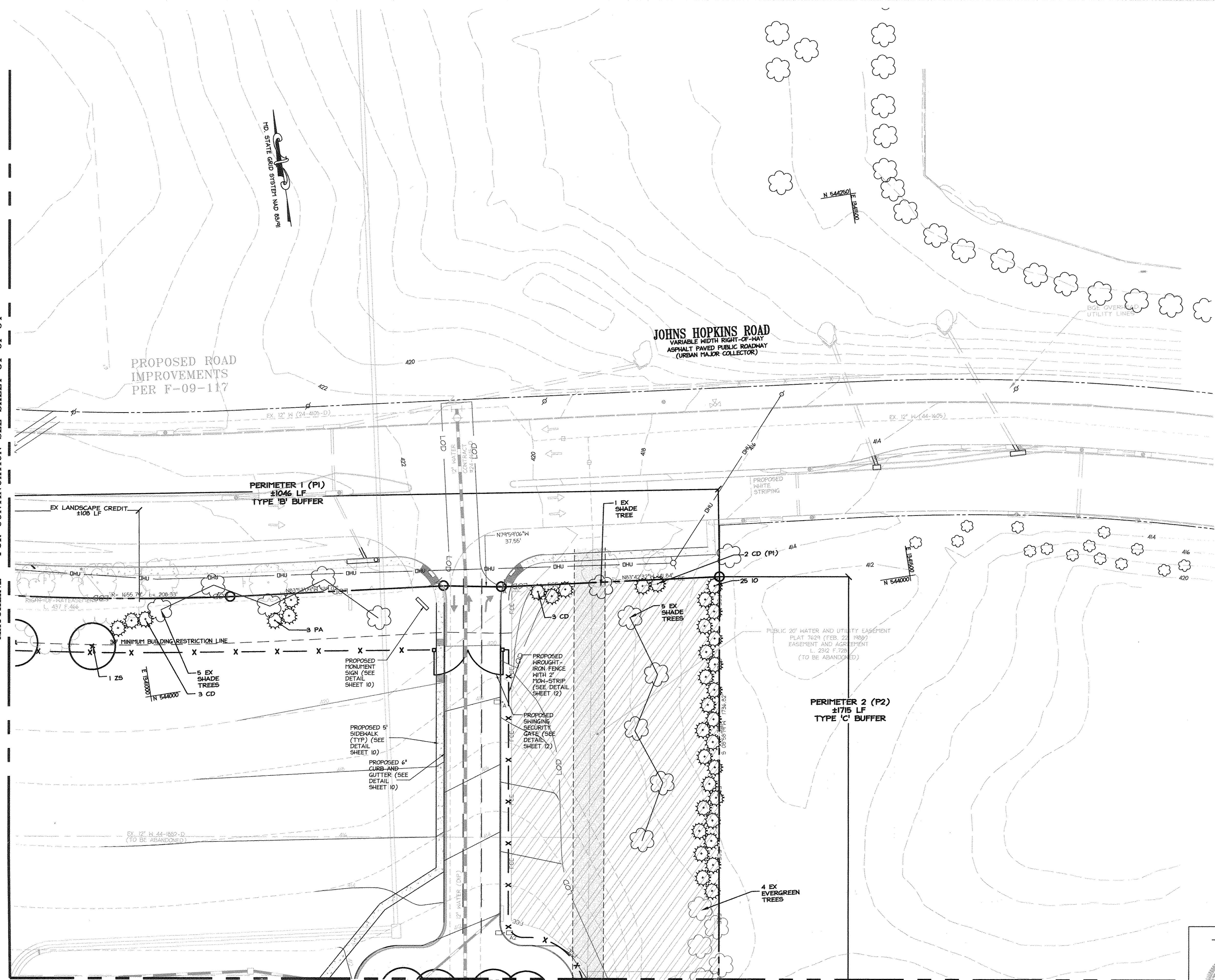


MDC-930(SDP)

LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
Brian Collins
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

NOTE:
THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD THE AS-BUILT CONDITION OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.

MATCHLINE - FOR CONTINUATION SEE SHEET 31 OF 54



MATCHLINE - FOR CONTINUATION SEE SHEET 34 OF 54

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chris Dammann 11/17/09
 Chief, Development Engineering Division
Scott Johnson 11/08/10
 Chief, Division of Land Development
Thomas G. Sullivan 11/11/10
 Director

1 02/14/13 REDLINED FOR PARKING LOT REVISION
 ADDED REDLINE SUMMARY NOTE

JOHNS HOPKINS UNIVERSITY
 APPLIED PHYSICS LABORATORY
 1100 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099
 ATTN: JAMES LOESCH, P.E., CFM
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 11712 colonial greenway drive suite 100, colandrea, md. 21046-2990
 410.572.8000 - mobile 301.581.0140 fax 410.572.8003

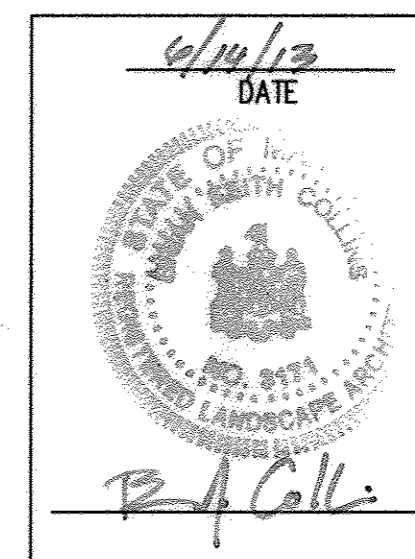
| PERMIT INFORMATION CHART | | | | |
|--|-----------------------------|-------------------------|--------------------------|--|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 | | |
| DEED REF. L 10412, F. 396 | GRID NO. / ZONE 22 / PEC | TAX MAP 41 | ELECTION DISTRICT 5th | |
| DATE: 6/14/13 | | | | |
| PROJECT NO.: 20930 | | | | |

TITLE: AS-BUILT LANDSCAPE PLAN

DESIGN: CRH SCALE: 1" = 30' PROJECT: 08A901.00
 DRAWN: SSA DATE: OCTOBER, 2009
 CHECKED: JMH APPROVED: JMH

33 of 54

SDP-09-047



MDC-930(SDP)

MATCHLINE - FOR CONTINUATION SEE SHEET 31 OF 53



LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
Brian Collins
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

NOTE:
THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD AS-BUILT CONDITION OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.

MATCHLINE - FOR CONTINUATION SEE SHEET 34 OF 53

MATCHLINE - FOR CONTINUATION SEE SHEET 35 OF 53

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
W.D. [Signature] 11/17/09
Chief, Development Engineering Division
Kevin [Signature] 1/28/10
Chief, Division of Land Development
Thomas G. [Signature] 1/14/10
Director

1 014.10 REDLINED FOR PARKING REVISION, ADDED REDLINE SUMMARY NOTE

Date No. Revision Description
JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723-6099
ATTN: JAMES LOESCH, P.E., CFM
PHONE: 443.778.5134 FAX 443.778.6122

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christopher consultants, inc.
1717 colchester gateway drive suite 100 calverton md 21046-2990
410.672.8800 fax 410.672.8801

| | | | |
|--|-------------------------|-----------------------|--------------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 |
| DEED REF. L10412, F.396 | GRID NO. ZONE 22 PEC | TAX MAP 41 | ELECTION DISTRICT 5th |
| DATE 4/14/10 | | | |

TITLE: **AS-BUILT LANDSCAPE PLAN**

DESIGN: CRH SCALE: 1" = 30'
DRAWN: SSA DATE: OCTOBER, 2009
CHECKED: JMH APPROVED: JMH PROJECT: 08A901.00

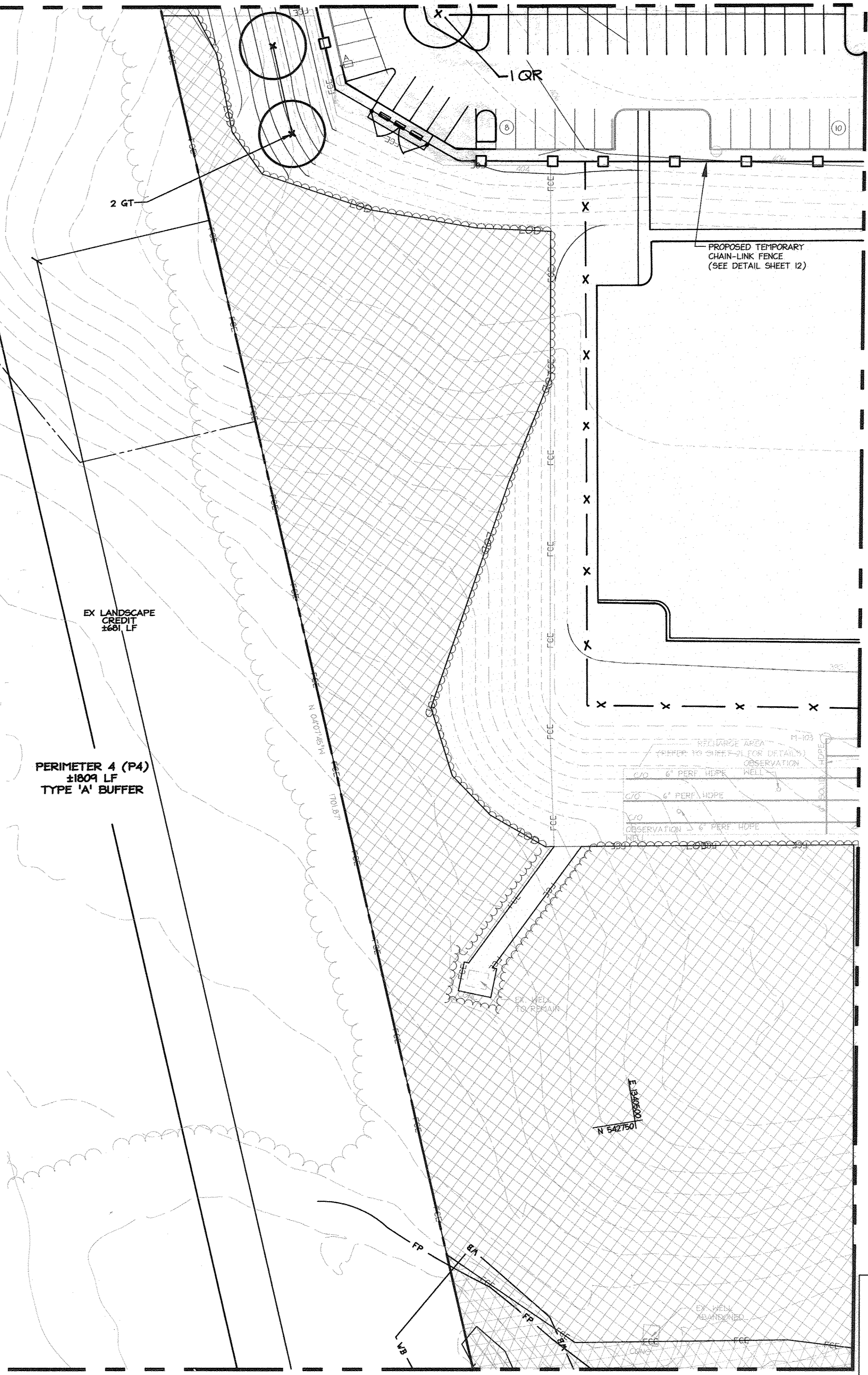
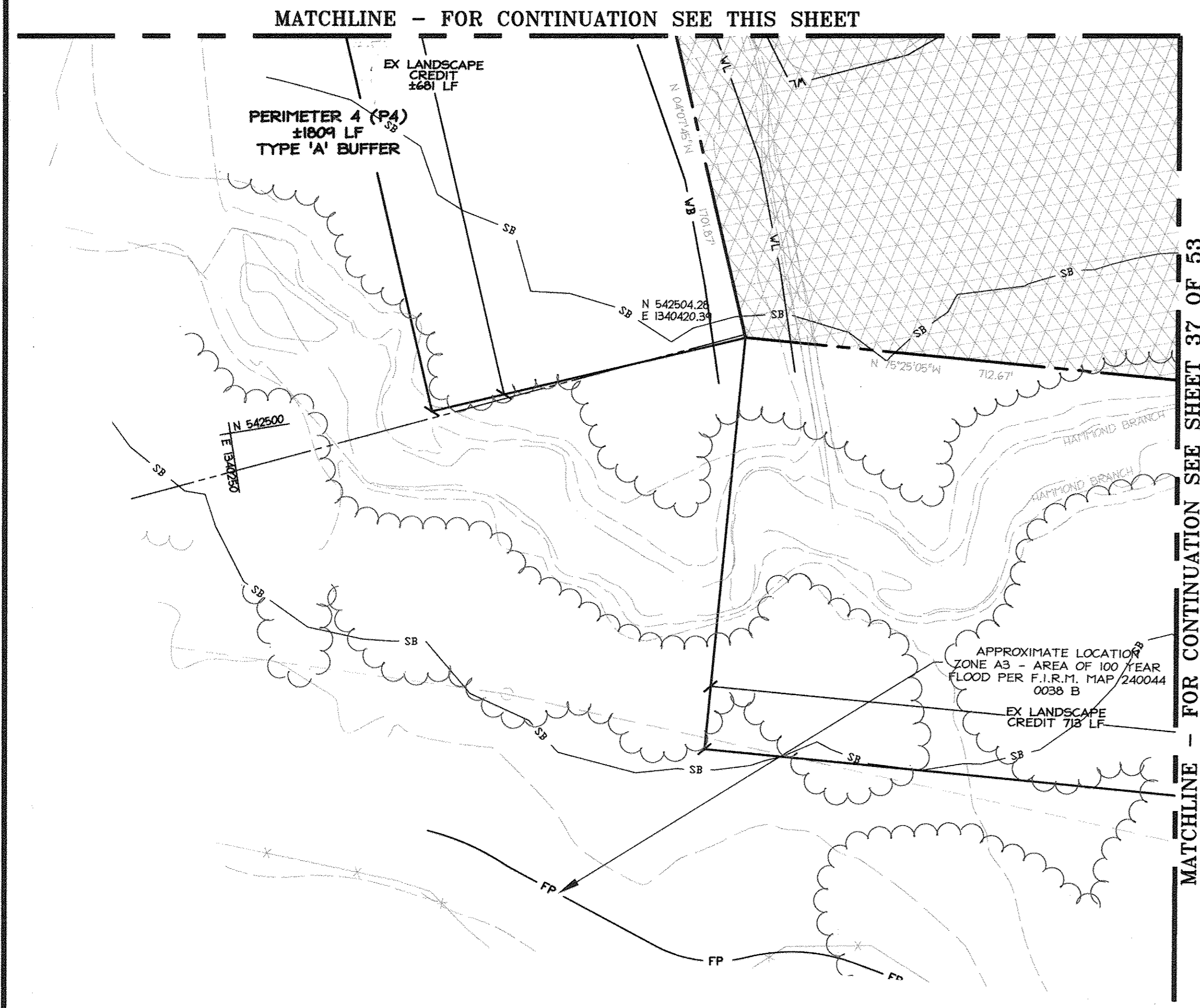
MDC-930(SDP)

MATCHLINE - FOR CONTINUATION SEE SHEET 33 OF 54

LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD PLAN FOR SITES COMPLIANCE CHECKLIST.
Brian Collins
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

NOTE:
THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD THE AS-BUILT CONDITIONS OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.

MATCHLINE - FOR CONTINUATION SEE SHEET 36 OF 54



MATCHLINE - FOR CONTINUATION SEE THIS SHEET

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
John Vanaman 11/17/09
Chief, Development Engineering Division
W. J. ... 11/29/10
Chief, Division of Land Development
Thomas J. ... 11/10/10
Director

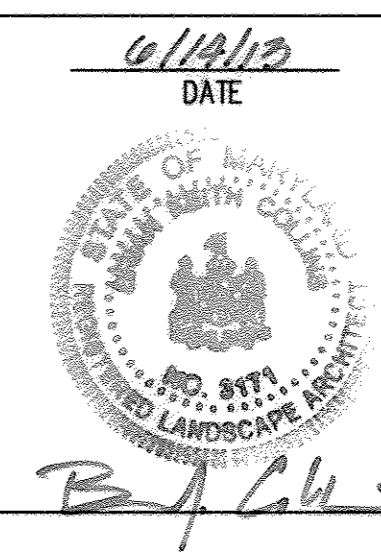
1 014.13 REDUNDANT FOR PARKING LOT REVISION
ADDED REDLINE SUMMARY NOTE

Date No. Revision Description

JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHN HOPKINS ROAD
LAUREL MARYLAND 20723-6099
ATTN: JAMES LOESCH, P.E., CFM
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410.872.8800 · fax: 410.381.5148 · sa: 410.872.8800

| PERMIT INFORMATION CHART | | | |
|---|-------------------------|-------------------------|--------------------------|
| PROJECT NAME: JHU/APL- SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 | |
| DEED REF. L10412 - F.396 | GRID NO. ZONE 22 PEC | TAX MAP 41 | ELECTION DISTRICT 5th |
| DATE 11/10/10 | | | |
| TITLE: AS-BUILT LANDSCAPE PLAN | | | |



DESIGN: CRH SCALE: 1" = 30' PROJECT: 08A901.00
DRAWN: SSA DATE: OCTOBER, 2009
CHECKED: JMH APPROVED: JMH

MDC-930(SDP)

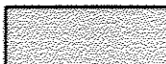



MATCHLINE - FOR CONTINUATION SEE SHEET 34 OF 54

LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
B. J. Collins
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

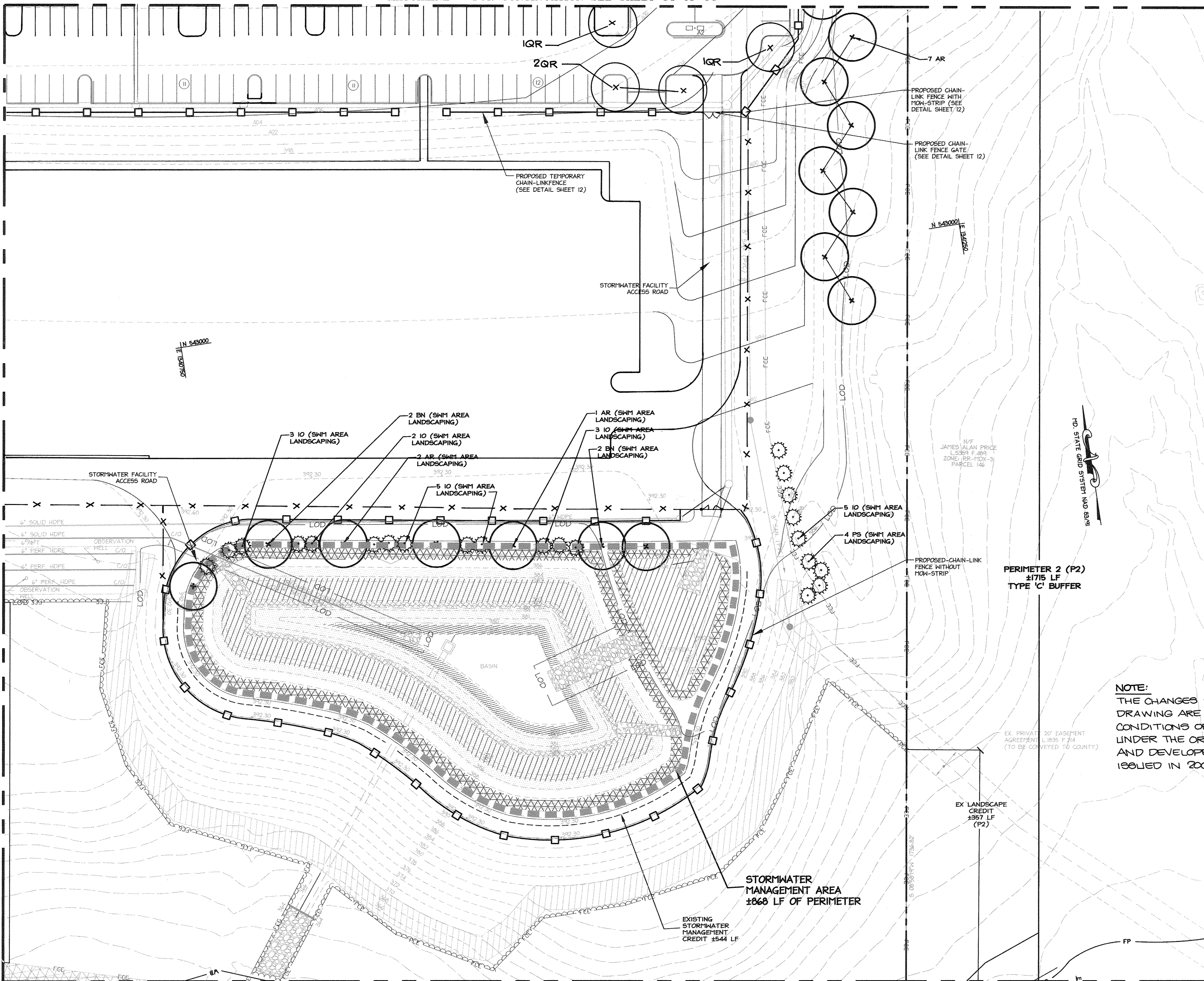
PLANT LIST-STORMWATER MANAGEMENT POND

| ZONE 1 (12'-36" DEPTH BELOW NORMAL POOL ELEVATION) | | | | |
|---|----------------------------|-----------------------|----------|---------|
| QUANTITY | LATIN NAME | COMMON NAME | SPACING | REMARKS |
| 230 | NYMPHAE ODORATA | WHITE WATER LILY | 36" O.C. | OBL |
| 230 | SAGITTARIA FALCATA | DEEPWATER DUCK POTATO | 36" O.C. | OBL |
| 230 | VALLISNERIA AMERICANA | WILD CELERY | 36" O.C. | OBL |
| ZONE 2 (0'-12" DEPTH BELOW NORMAL POOL ELEVATION) | | | | |
| QUANTITY | LATIN NAME | COMMON NAME | SPACING | REMARKS |
| 66 | LOBELIA CARDINALIS | CARDINAL FLOWER | 36" O.C. | FACH |
| 66 | SAGITTARIA LATIFOLIA | DUCK POTATO | 36" O.C. | OBL |
| 66 | IRIS VIRGINICA SHREVEI | BLUE FLAG IRIS | 36" O.C. | FACH |
| ZONE 3 (0'-12" ELEVATION ABOVE NORMAL POOL ELEVATION) | | | | |
| QUANTITY | LATIN NAME | COMMON NAME | SPACING | REMARKS |
| 70 | RUDBECKIA HIRTA | BLACK EYED SUSAN | 36" O.C. | OBL |
| 70 | ASTER NOVAR-ANGLIAE | NEW ENGLAND ASTER | 36" O.C. | FACH+ |
| 70 | ECHINACEA PURPUREA | PURPLE CONEFLOWER | 36" O.C. | OBL |
| ZONE 4 (1'-4' ELEVATION ABOVE NORMAL POOL ELEVATION) | | | | |
| QUANTITY | LATIN NAME | COMMON NAME | SPACING | REMARKS |
| 700 | DICHANTHELIUM CLANDESTINUM | DEER TONGUE GRASS | 36" O.C. | OBL |
| 700 | LOTUS CORNICULATUS | BIRDS FOOT TREFOIL | 36" O.C. | OBL |
| 700 | PANICUM VIRGATUM | SWITCHGRASS | 36" O.C. | FACH |
| 700 | LESPEDEZA CUNEATA | LESPEDEZA | 36" O.C. | FACH |

LEGEND

-  ZONE 1 WATER QUALITY PLANTINGS
-  ZONE 2 WATER QUALITY PLANTINGS
-  ZONE 3 WATER QUALITY PLANTINGS
-  ZONE 4 WATER QUALITY PLANTINGS

MATCHLINE - FOR CONTINUATION SEE SHEET 35 OF 54



MATCHLINE - FOR CONTINUATION SEE SHEET 37 OF 54

PERIMETER 2 (P2)
±1715 LF
TYPE 'C' BUFFER

NOTE:
THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD AS-BUILT CONDITIONS OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMIT AND DEVELOPER AGREEMENTS ISSUED IN 2009.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
John Vanaman 11/10/09
Chief, Development Engineering Division 4 Date
Walt Stalder 1/10/10
Chief, Division of Land Development Date
Thomas G. Suttler 1/10/10
Director Date

1 01.12 REDLINED FOR PARKING LOT REVISION
ADDED REDLINE SUMMARY NOTE

Date No. Revision Description
JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723-6099
ATTN: JAMES LOESCH, P.E., CFM
PHONE: 443.778.5134 FAX 443.778.6122

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christopher consultants, inc.
1110 COLLETTA DRIVE, SUITE 1000, COLLETTA, MD 21046-2990
410.577.8800 · FAX 410.577.8148 · SA 410.577.8805

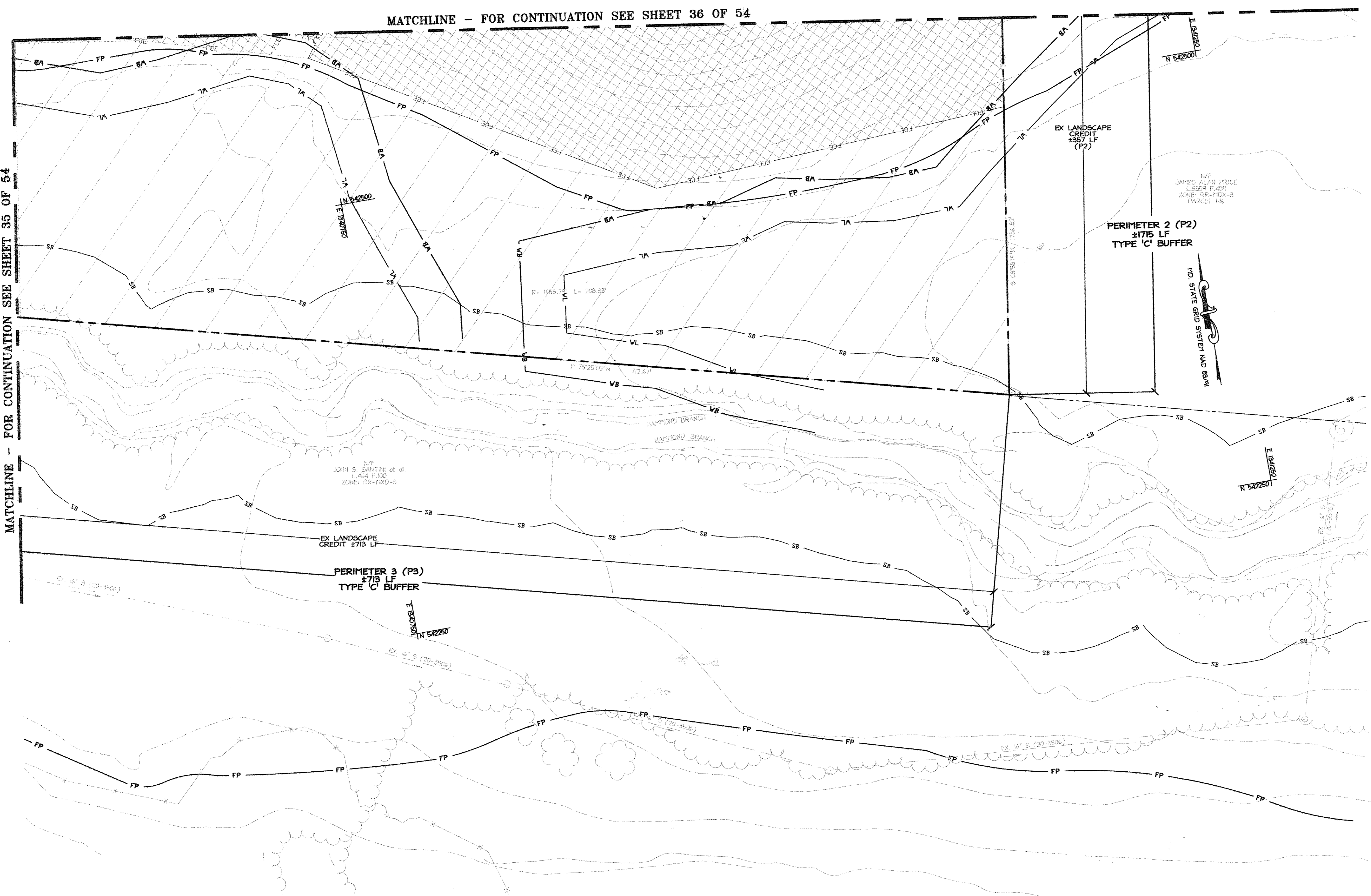
PERMIT INFORMATION CHART
PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 LOT/PARCEL NO. 300 CENSUS TRACT 6051.02
DEED REF. L10412, F.396 GRID NO. 22 ZONE 22 TAX MAP 41 ELECTION DISTRICT 5th
DATE 6/14/10
DATE 2009.08.20
TITLE: AS-BUILT LANDSCAPE PLAN
DESIGN: CRH SCALE: 1" = 30' PROJECT: 08A901.00
DRAWN: SSA DATE: OCTOBER, 2009
CHECKED: MH APPROVED: JMH

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

MATCHLINE - FOR CONTINUATION SEE SHEET 36 OF 54

MATCHLINE - FOR CONTINUATION SEE SHEET 35 OF 54

LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
B.A. Collins
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE



NOTE:
THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD THE AS-BUILT CONDITION OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 11/17/09
Chief, Development Engineering Division
[Signature] 1/02/10
Chief, Division of Land Development
[Signature] 6/11/10
Director

| | | |
|---|---------|---|
| 1 | 4.16.12 | REDLINED FOR PARKING LOT REVISION ADDED REDLINE SUMMARY NOTE |
|---|---------|---|

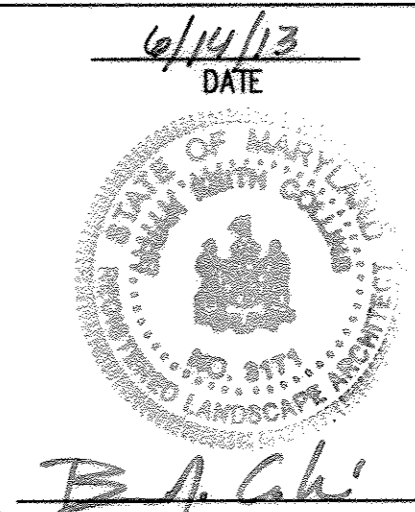
Date No. Revision Description

JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099
ATTN: JAMES LOESCH, P.E., CFM
PHONE: 443.778.5184 FAX 443.778.6122

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christopher consultants, inc.
7177 COLLETTA PARKWAY SUITE 1000 - COLLETTA MD 21046-2900
410.577.8800 ext 307 881 0143 fax 410.577.8800

| | | | |
|---|---------------------------|-------------------------|--------------------------|
| PERMIT INFORMATION CHART | | | |
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 | |
| DEED REF. L10412, F.396 | GRID NO. / ZONE 22 PEC | TAX MAP 41 | ELECTION DISTRICT 5th |
| DATE: 6/14/13 | | | |
| TITLE: AS-BUILT LANDSCAPE PLAN | | | |
| DESIGN: CRH | SCALE: 1" = 30' | PROJECT: 08A901.00 | |
| DRAWN: SSA | DATE: OCTOBER, 2009 | 38 of 54 | |
| CHECKED: JMH | APPROVED: JMH | SDP-09-047 | |

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.



MDC-930(SDP)

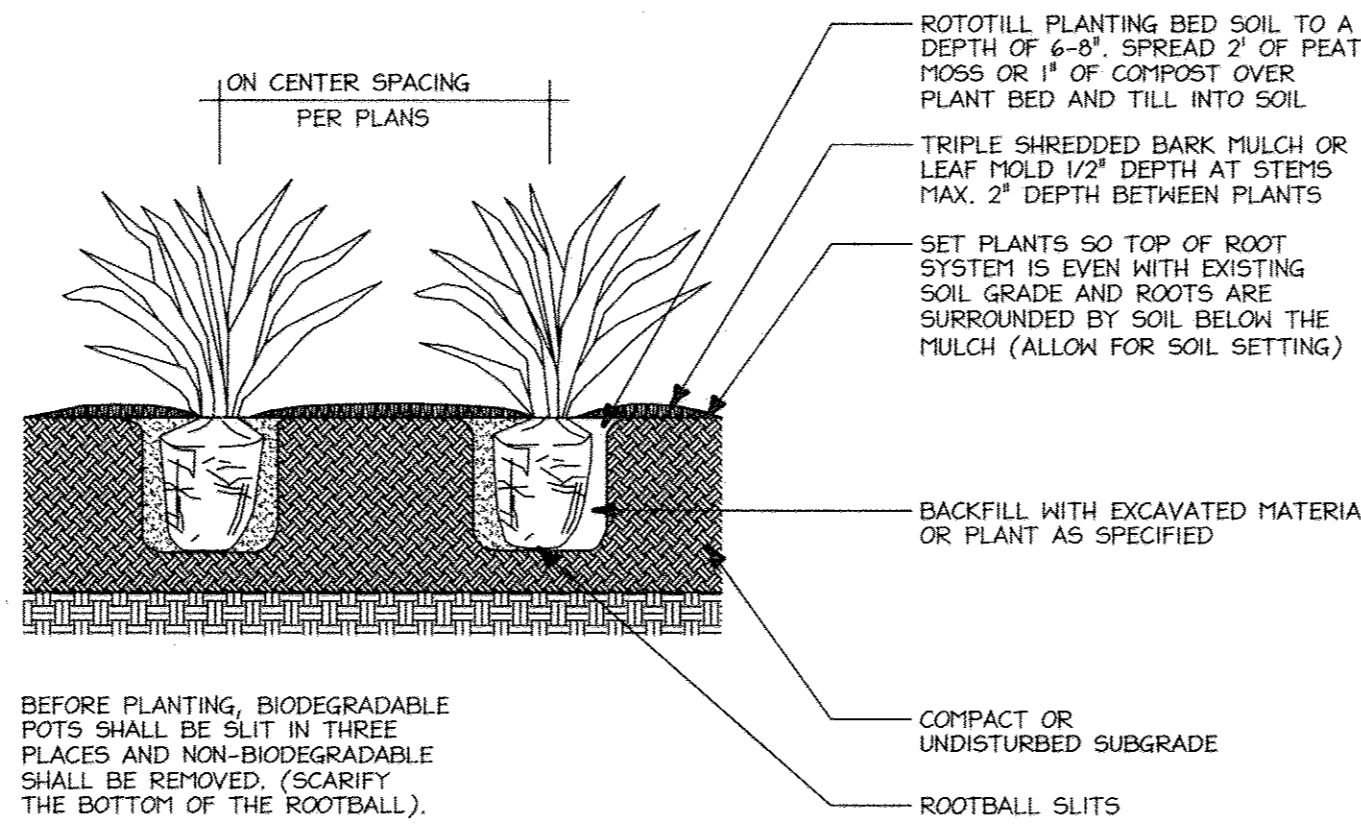
GENERAL PLANTING NOTES

- ALL PLANT MATERIAL TO MEET A.A.N. STANDARDS.
- LANDSCAPING CONTRACTOR TO FOLLOW LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE WASHINGTON METRO AREA APPROVED BY LCA/M.
- NO SUBSTITUTIONS TO BE MADE WITHOUT CONSENT OF LANDSCAPE ARCHITECT OR OWNER.
- IN THE EVENT OF VARIATION BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND THE PLANS, THE PLANS SHALL CONTROL. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL PLANT QUANTITIES PRIOR TO THE COMMENCEMENT OF WORK. SOD QUANTITY TAKE-OFFS ARE THE RESPONSIBILITY OF THE CONTRACTOR. ALL DISCREPANCIES SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT FOR CLARIFICATION PRIOR TO BIDDING. THE CONTRACTOR SHALL FURNISH PLANT MATERIAL IN SIZES AS SPECIFIED IN THE PLANT LIST.
- ALL BEDS TO BE TOPPED WITH THREE INCHES OF HARDWOOD MULCH.
- LANDSCAPE CONTRACTOR TO VERIFY LOCATION OF UTILITIES WITH OWNERS BEFORE PLANTING.
- LANDSCAPE ARCHITECT/OWNER SHALL SELECT, VERIFY AND/OR APPROVE ALL PLANT MATERIAL. AT OWNER'S DISCRETION, SPECIMEN AND OTHER PLANT MATERIAL WILL BE SELECTED.
- LANDSCAPE CONTRACTOR SHALL COORDINATE PLANT BED FILLING OPERATIONS AND PLANT MATERIAL INSTALLATION WITH GENERAL CONTRACTOR AND UTILITIES CONTRACTOR. AT THE TIME OF FINAL INSPECTION WITH ACCEPTANCE, ALL ELECTRIC, WATER, DRAINAGE, AND FOUNTAIN UTILITIES, AS WELL AS ALL PLANT MATERIALS, SHALL REMAIN UNDISTURBED. LANDSCAPE CONTRACTOR AND UTILITIES CONTRACTOR SHALL COORDINATE EFFORTS TO ENSURE THAT SURFACE UTILITIES ARE AT THE PROPER ELEVATION RELATIVE TO FINAL GRADES.
- CONTRACTOR SHALL NOTIFY MISS UTILITY 72 HOURS PRIOR TO CONSTRUCTION.
- THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERRIS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- TOPSOIL MIX
 - PLANTING MIX SHALL BE PREPARED AT APPROVED ON-SITE STAGING AREA USING APPROVED ON-SITE EXISTING SOIL. MIX MINIMUM QUANTITIES OF 20 CUBIC YARDS OR SUFFICIENT MIX FOR ENTIRE JOB IF LESS THAN 20 CUBIC YARDS IS REQUIRED.
 - THOROUGHLY MIXED IN THE FOLLOWING PROPORTIONS FOR TREE AND SHRUB PLANTING MIX: 5 CY EXISTING SOIL, 2 CY SHARP SAND, 3 CY MOOD RESIDUALS, 4.5 LBS TREBLE SUPERPHOSPHATE, 5 LBS DOLMONITE LIMESTONE (ELIMINATE FOR ACID LOVING PLANTS)
 - FOR BED PLANTING, SHRUBS AND GROUNDCOVER SPACES 24 INCHES OR CLOSER, INCORPORATE THE FOLLOWING INGREDIENTS PER 20 SF AND INCORPORATE INTO TOP 8 INCHES OF EXISTING SOILS BY ROTOTILLING OR SIMILAR METHOD OF INCORPORATION: 2 CY SHARP SAND, 3 CY ORGANIC MATERIAL, 4.5 LBS TREBLE SUPERPHOSPHATE, 5 LBS DOLMONITE LIMESTONE (ELIMINATE FOR ACID LOVING PLANTS)
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL WITH 64 SHADE TREES AND 64 EVERGREEN TREES ARE PROVIDED WITH LANDSCAPE SURETY IN THE AMOUNT OF \$91,050 WITH THE DPW DEVELOPER'S AGREEMENT. LANDSCAPE SURETY IS BASED ON THE NUMBER OF REQUIRED PLANTS PER THE LANDSCAPE MANUAL (64 SHADE TREES x \$930.00 EA. AND 64 EVERGREEN TREES x \$150.00 EA.).
- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.
- THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, AND IS THE RESPONSIBILITY OF THE DEVELOPER (AT FINAL PLAN) OR THE BUILDER (INTERNAL LANDSCAPING AT SITE DEVELOPMENT PLAN). PER SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPING MANUAL, UPON TREES COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.
- A TOPSOIL SAMPLE SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT/OWNER FOR REVIEW AND APPROVAL. TOPSOIL SPECIFICATIONS SHOULD BE IN ACCORDANCE WITH SPECIFICATIONS NOTED ON THE SEDIMENT AND EROSION NOTES AND DETAILS (SHEET 24).

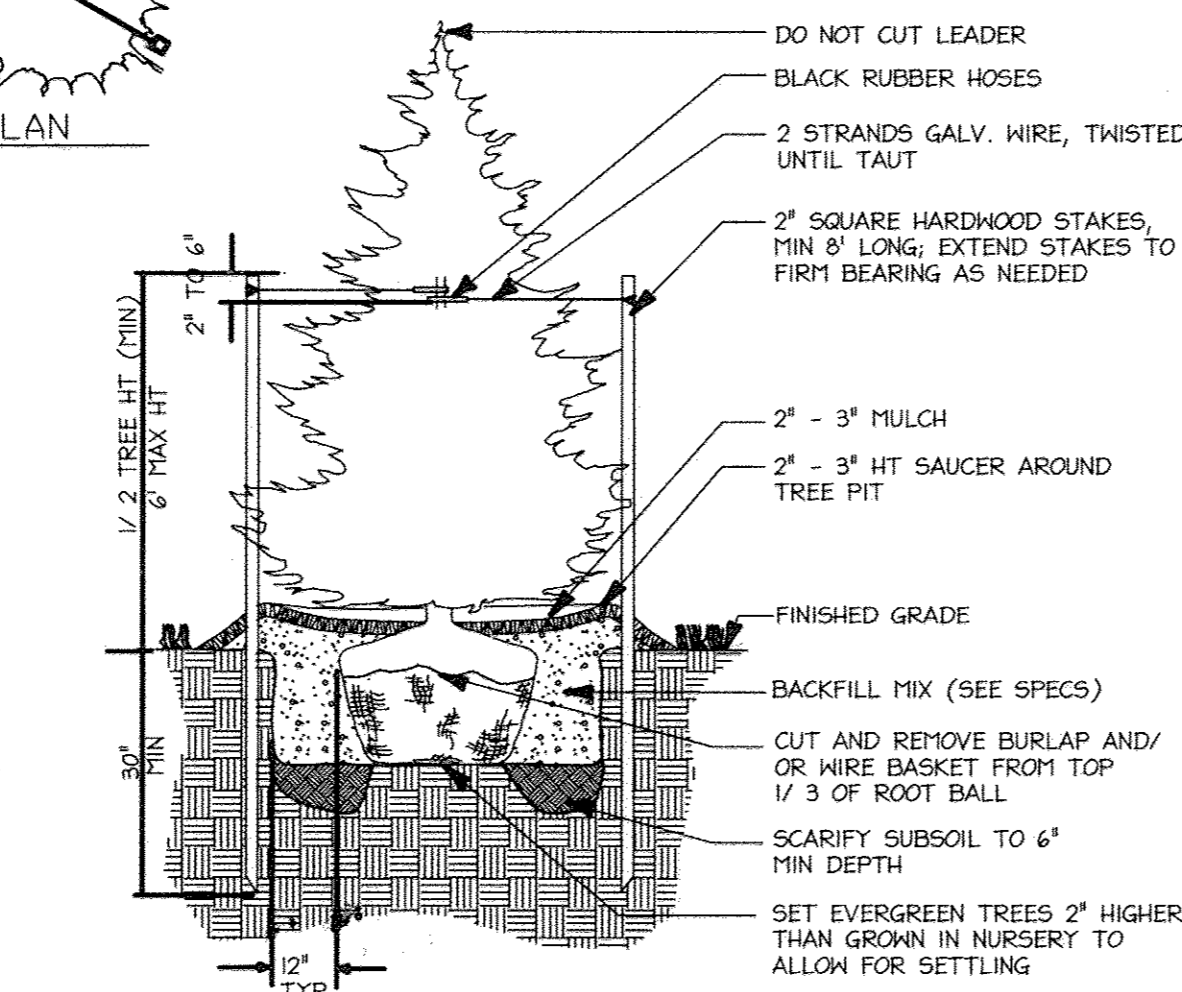
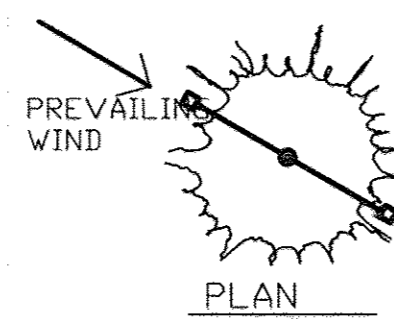
DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPING MANUAL. I/WE FURTHER CERTIFY THAT UPON TREES COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Richard T. Roca
 NAME: Richard T Roca DATE: 11/5/09

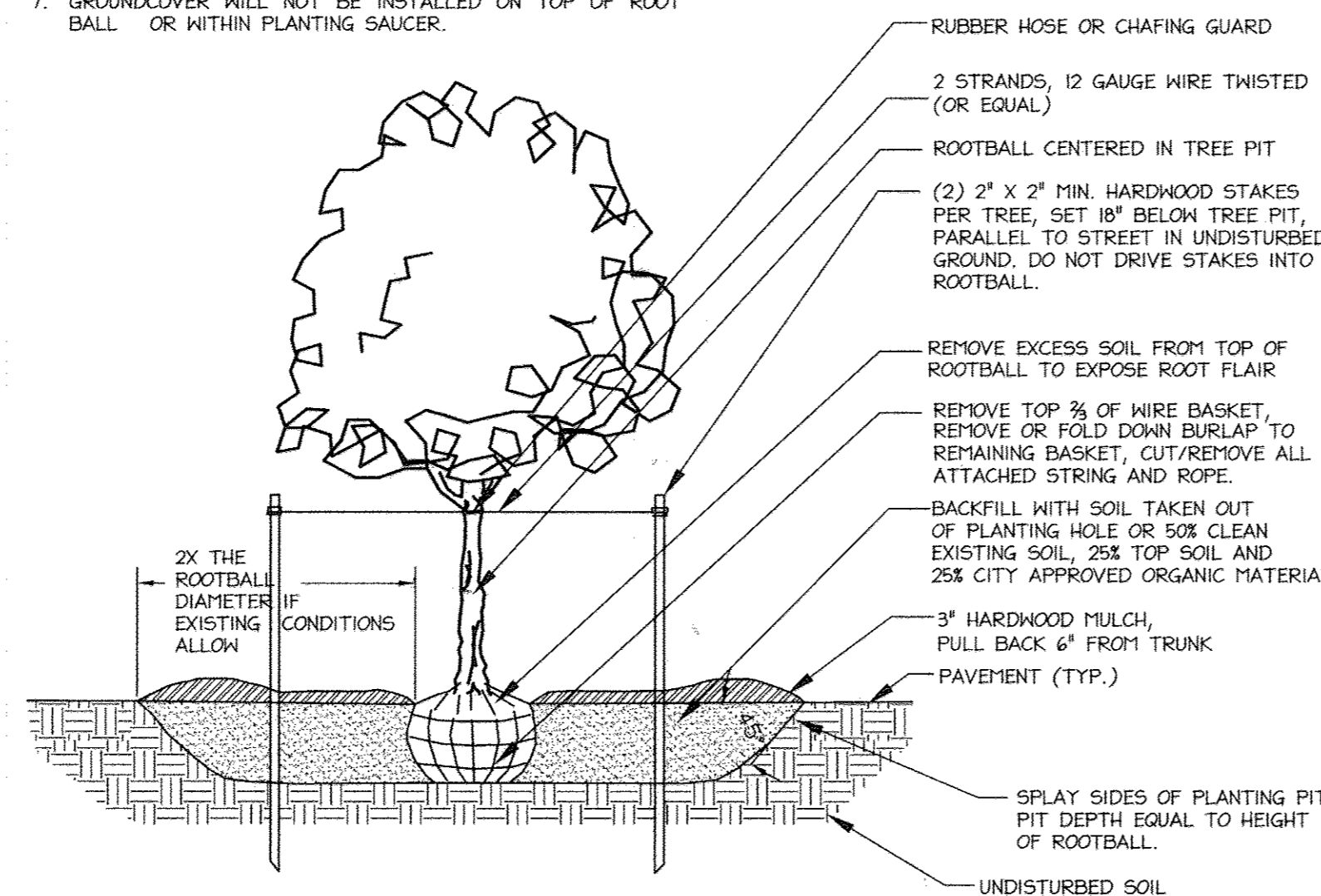


B PERENNIAL PLANTING
Not To Scale



C EVERGREEN TREE PLANTING
Not To Scale

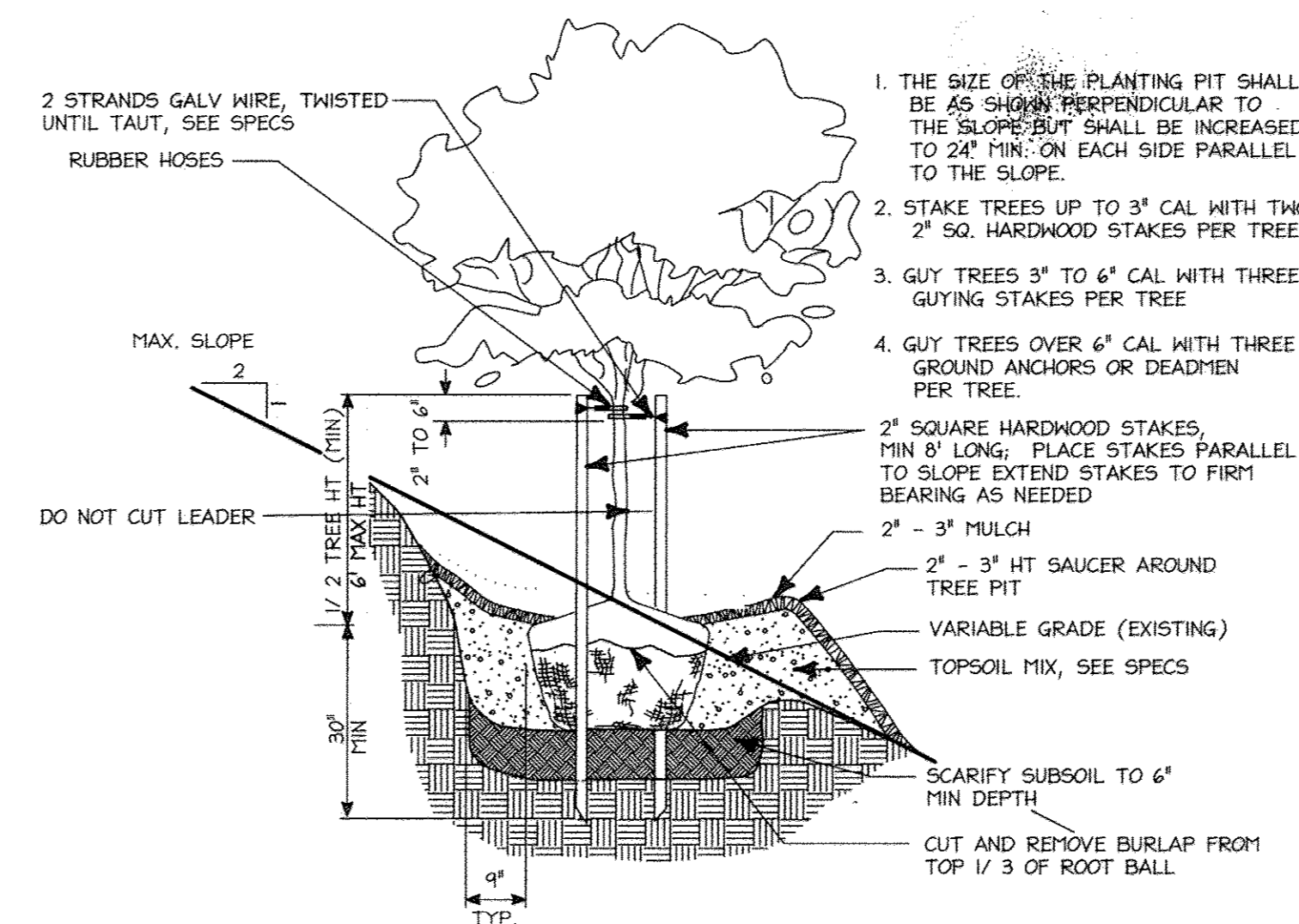
- NOTES:**
- PRUNE TO REMOVE DAMAGED, DISEASED OR BROKEN BRANCHES
 - DO NOT REMOVE MORE THAN 1/3 OF BRANCH SYSTEM
 - DO NOT CUT LEADER. TREE MUST RETAIN NATURAL CROWN SHAPE
 - REMOVE ALL STAKES WITHIN THE REQUIRED PERIOD.
 - MULCH AND SOIL SHALL BE HELD AWAY FROM TREE TRUNK AT TOP OF ROOT BALL
 - TREE TRENCHES SHALL HOLD A MINIMUM OF 300 CUBIC FEET OF SOIL PER TREE
 - GROUNDCOVER WILL NOT BE INSTALLED ON TOP OF ROOT BALL OR WITHIN PLANTING SAUCER.



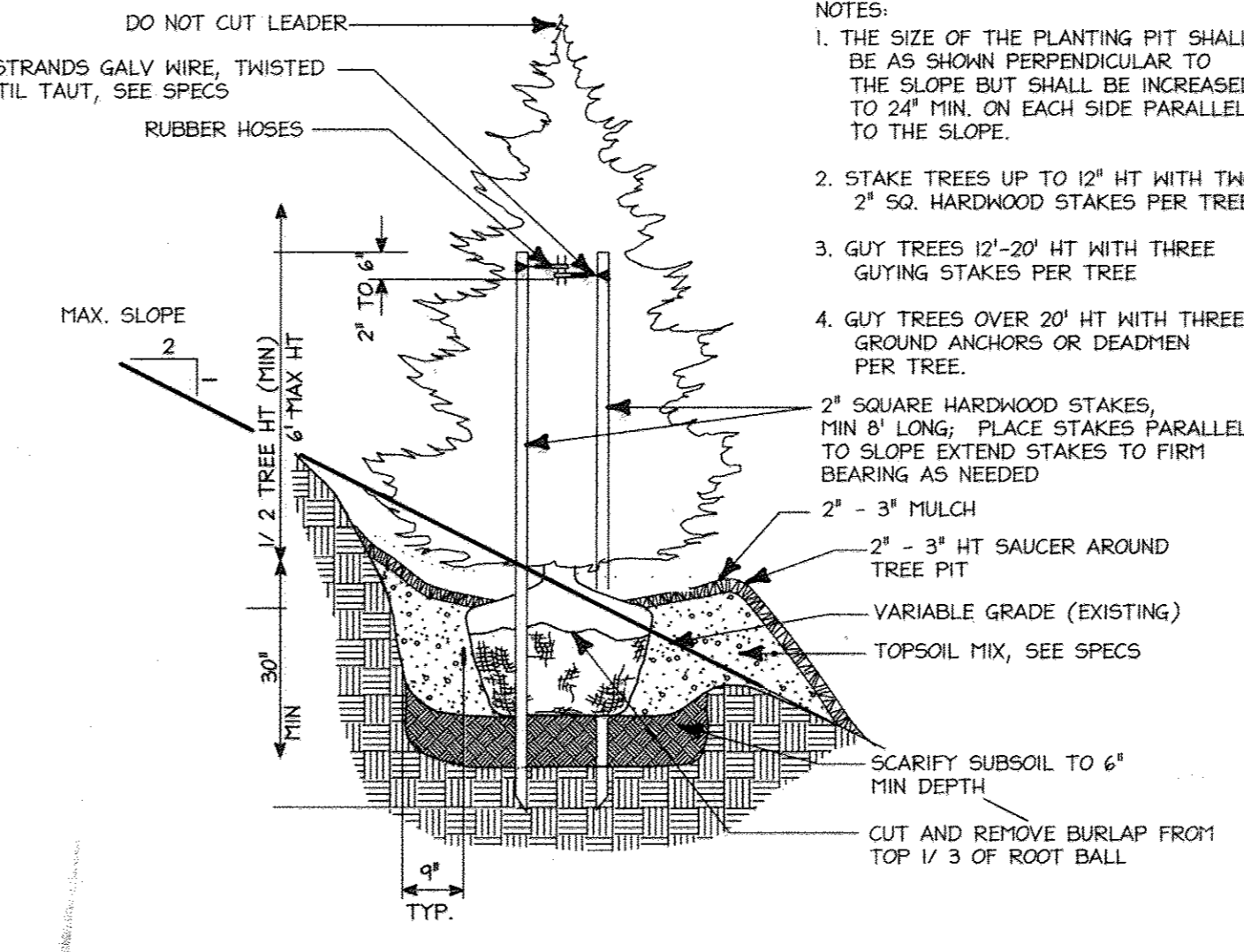
D TREE PLANTING IN TURF OR PLANTED AREA
NOT TO SCALE

SCHEDULE A PERIMETER LANDSCAPE EDGE

| CATEGORY | ADJACENT TO ROADWAYS | ADJACENT TO PERIMETER PROPERTIES | ADJACENT TO PERIMETER PROPERTIES | ADJACENT TO PERIMETER PROPERTIES | |
|--|--|---|----------------------------------|----------------------------------|----------------|
| PERIMETER | P1 | P2 | P3 | P4 | |
| LANDSCAPE TYPE "A" 1 SHADE TREE PER 60 L.F. | | | | | ±1702 LF |
| LANDSCAPE TYPE "B" 1 SHADE TREE PER 50 L.F. 1 EVERGREEN TREE PER 40 L.F. | ±1046 LF | | | | |
| LANDSCAPE TYPE "C" 1 SHADE TREE PER 40 L.F. OF PER. 1 EVERGREEN TREE PER 20 L.F. | | ±1715 LF | 713 LF | | |
| CREDIT FOR EX. VEG. BELOW IF NEEDED | *YES, 4% LF EX VEG & 10 EX SHADE TREES | YES, 357 LF EX VEG & 36 EX EVERGREEN TREES & 5 EX SHADE TREES | YES, 100% EX VEG | YES, 1273 LF OF EX VEG | |
| CREDIT FOR WALL, FENCE, OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED) | NO | NO | NO | NO | |
| NO. OF PLANTS REQ. | | | | | Plant Totals |
| SHADE TREES | 1 | 26 | 0 | 0 | 37 SHADE TREES |
| EVG. TREES | 14 | 33 | 0 | 0 | 47 EVG. TREES |
| SHRUBS | 0 | 0 | 0 | 0 | 0 SHRUBS |
| NO. OF PLANTS PROV. | | | | | Plant Totals |
| SHADE TREES | 1 | 26 | 0 | 0 | 37 SHADE TREES |
| EVG. TREES | 14 | 33 | 0 | 0 | 47 EVG. TREES |
| OTHER TREES | 0 | 0 | 0 | 0 | 0 OTHER TREES |
| SHRUBS | 0 | 0 | 0 | 0 | 0 SHRUBS |



E TREE PLANTING ON SLOPE DETAIL
Not To Scale



F EVERGREEN TREE PLANTING ON SLOPE DETAIL
Not To Scale

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING

| NUMBER OF PROPOSED PARKING SPACES | 0200 |
|---|------|
| INTERNAL ISLANDS REQUIRED (1 ISLAND/ 20 PARKING SPACES) | 35 |
| INTERNAL ISLANDS PROVIDED (200 SQ. FT./ISLAND) | 45 |
| NUMBER OF TREES REQUIRED (1 SHADE TREE/ 20 PARKING SPACES) | 35 |
| NUMBER OF TREES PROVIDED (SHADE TREES OTHER TREES (2:1 SUBSTITUTION)) | 50 |

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

| LINEAR FEET OF PERIMETER | 042 |
|--|-------------------|
| NUMBER OF TREES REQUIRED (LANDSCAPE TYPE "C" L.F. OF PER. 1 SHADE TREE PER 40 L.F. AND 1 EVERGREEN TREE PER 20 L.F.) | 9 |
| CREDIT FOR EXISTING VEGETATION (NO, YES AND %) | YES, 60% (530 LF) |
| CREDIT FOR OTHER LANDSCAPING (NO, YES AND %) | NO |
| NUMBER OF TREES PROVIDED (SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)) | 7 |

44 EVERGREEN TREES TO BE SUBSTITUTED FOR 2 SHADE TREES, BECAUSE OF A LACK OF PLANTING SPACE.

LEED ACCREDITED PROFESSIONAL CERTIFICATE GREEN NEIGHBORHOOD PLAN FOR SITES

I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.

Brian Collins 10.9.09
 SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

NOTE:
 THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD AS-BUILT CONDITION OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

John D. Williams 11/17/09
 Chief, Development Engineering Division Date

W. T. Shubert 11/09/10
 Chief, Division of Land Development Date

Morgan G. Burtler 11/10/10
 Director Date

1 0.14.13 REDUNDANT FOR PARKING LOT LANDSCAPING TABULATIONS ADDED REDLINE SUMMARY NOTE

PERMIT INFORMATION CHART

| PROJECT NAME: | LOT/PARCEL NO. | CENSUS TRACT |
|-------------------------------------|--------------------------------------|---------------------|
| JHU/APL - SOUTH CAMPUS BUILDING 200 | 300 | 6051.02 |
| DEED REF.: | GRID NO. ZONE | TAX MAP |
| L10412, F.396 | 22 PEC | 41 |
| ELECTION DISTRICT | 5th | |
| 7/20/09 20930 AS-BUILT | | |
| TITLE: | LANDSCAPE NOTES & DETAILS | |
| DESIGN: | CRH | SCALE: VARIES |
| DRAWN: | SSA | DATE: OCTOBER, 2009 |
| CHECKED: | JMH | APPROVED: JMH |

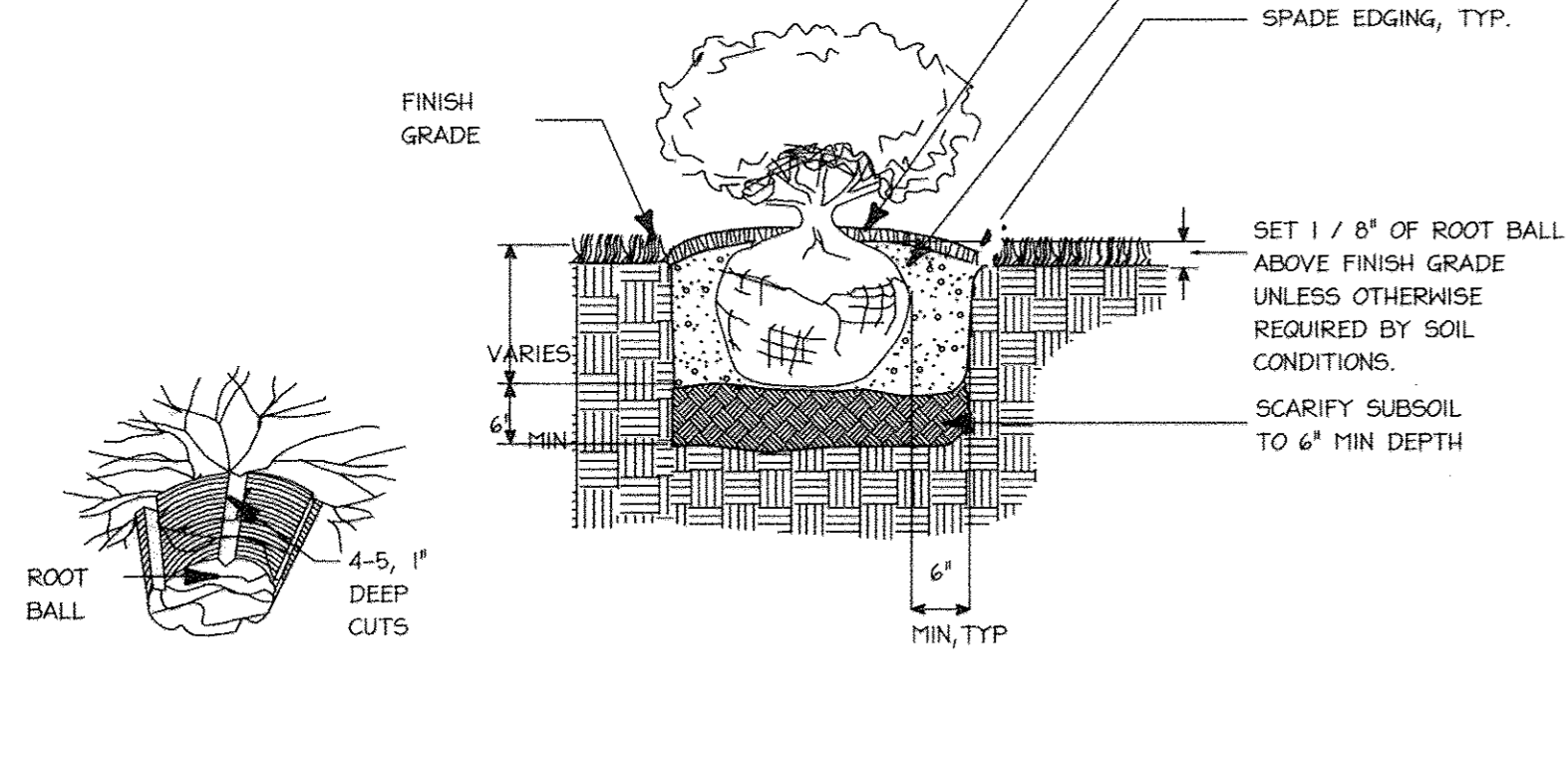
PROJECT: 08A901.00

39 of 54

SDP-09-047

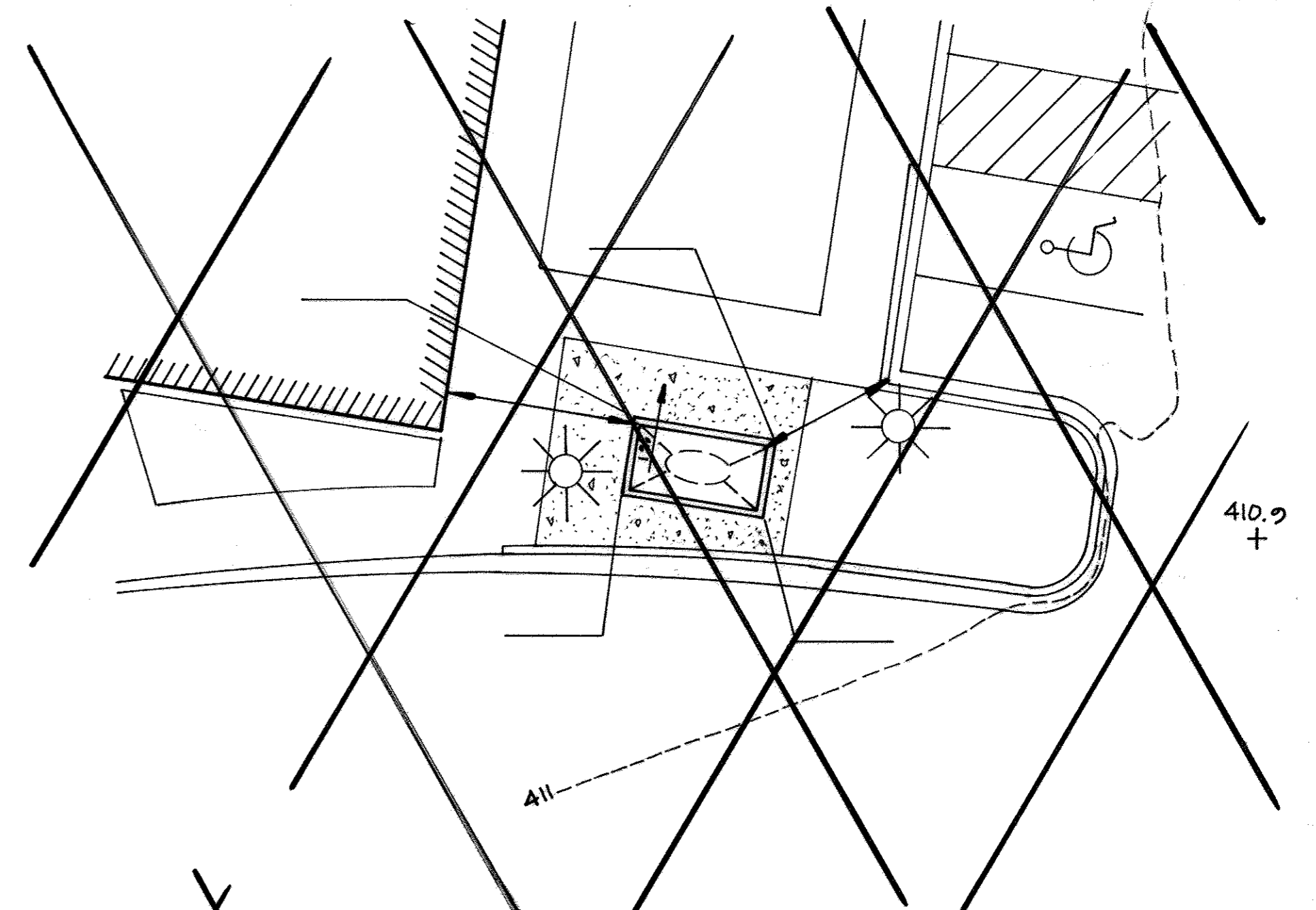
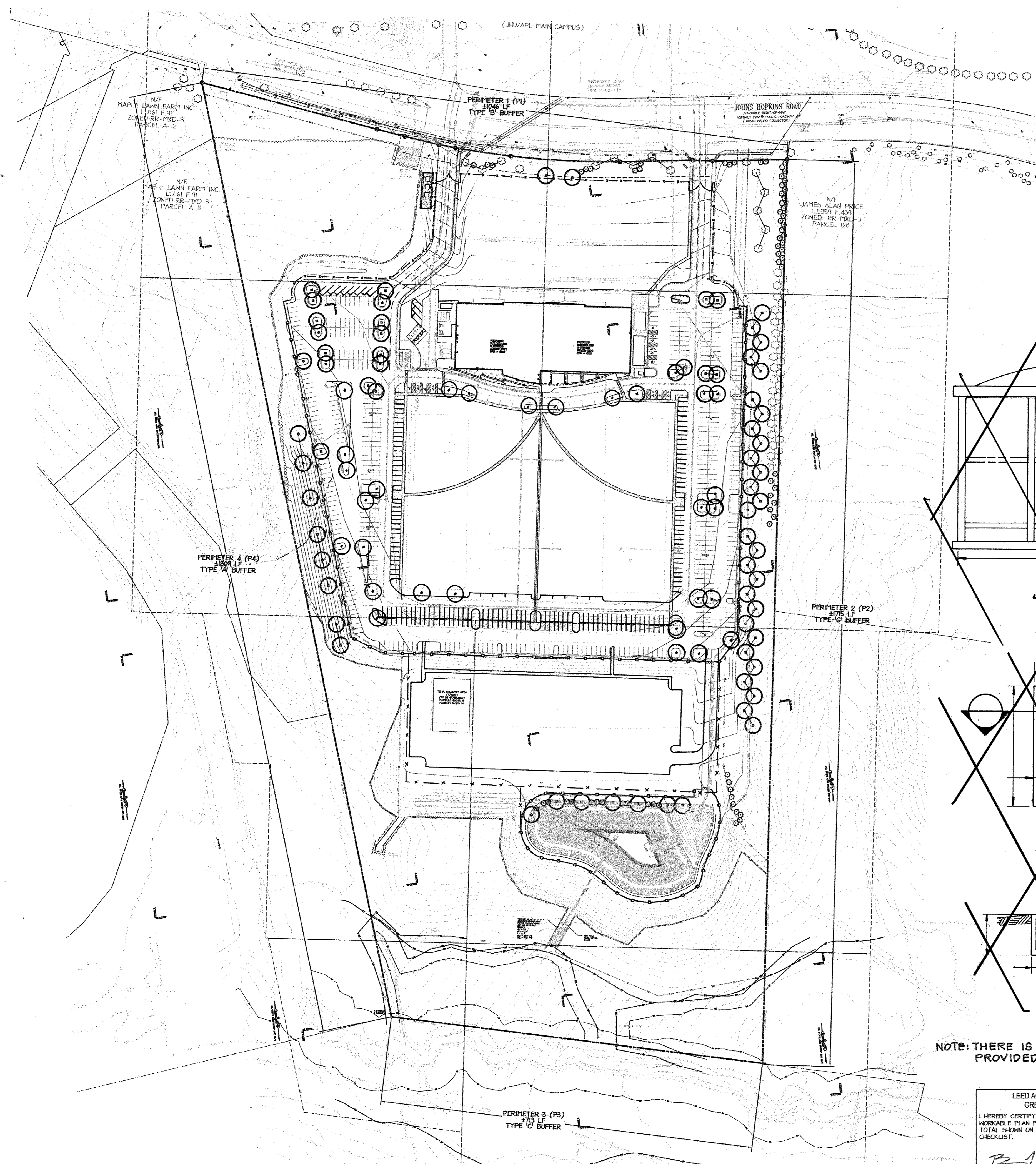
NOTES:

- FOR CONTAINER SHRUBS, COMPLETELY REMOVE ALL NON-BIODEGRADABLE CONTAINERS AND SCARIFY ROOTBALL BY USING A SHARP BLADE AND MAKING 4 TO 5 ONE INCH CUTS THE LENGTH OF THE ROOTBALL.
- FOR B&B SHRUBS, CUT AND REMOVE BURLAP FROM TOP 1/3 OF ROOT BALL

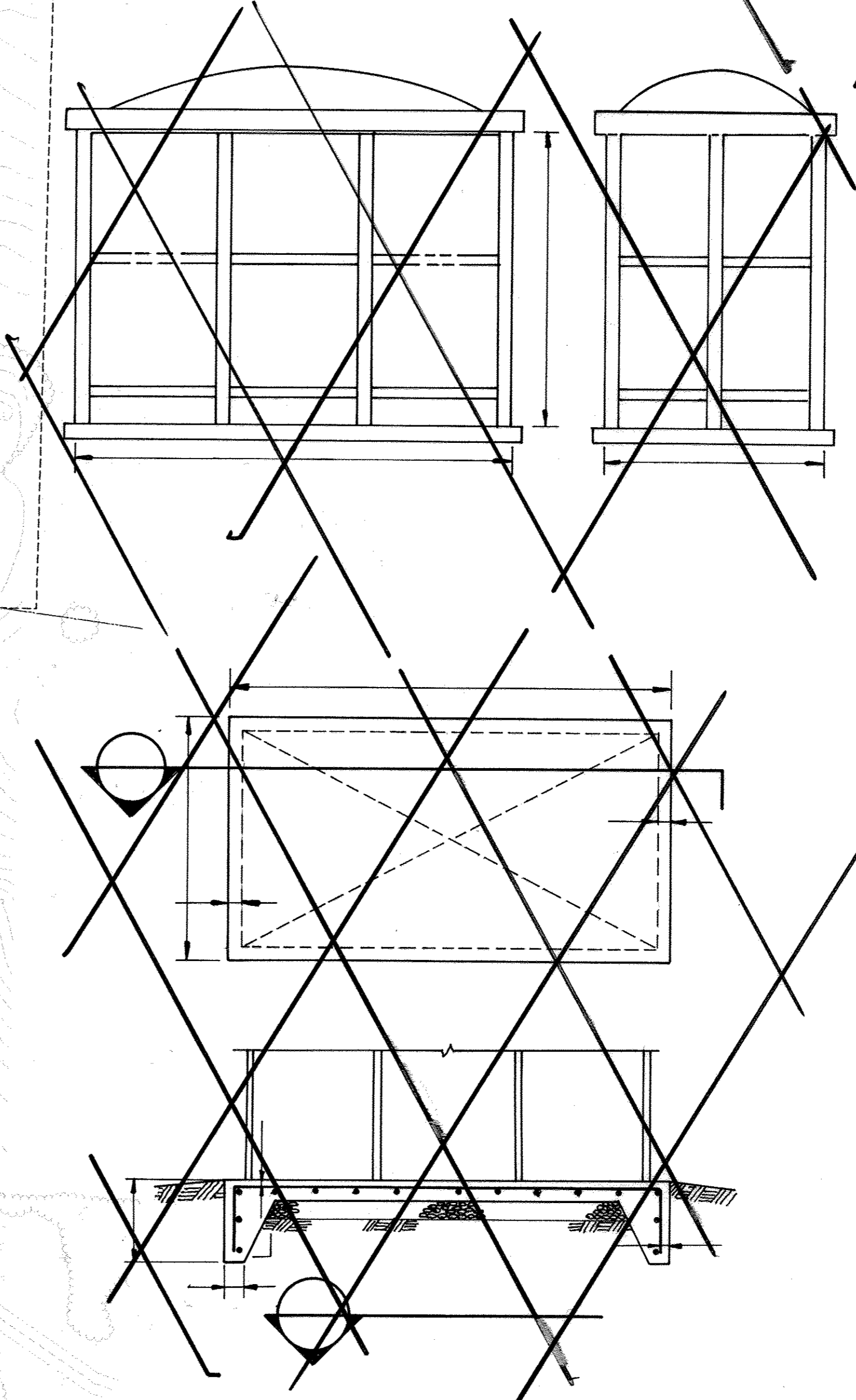


A SHRUB BED PLANTING
NOT TO SCALE

MDC-930(SDP)

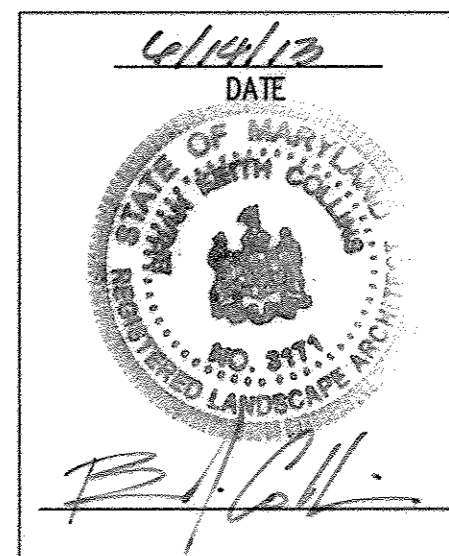


NOTE:
THE CHANGES SHOWN ON THIS DRAWING ARE TO RECORD THE AS-BUILT CONDITION OF WORK PERFORMED UNDER THE ORIGINAL PROJECT PERMITS AND DEVELOPER AGREEMENTS ISSUED IN 2009.



NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
Brian Collins
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. 7 DATE 10/27/09



APPROVED: DEPARTMENT OF PLANNING AND ZONING

| | | | |
|---|--------------------|------|----------|
| Chief, Development Engineering Division | <i>[Signature]</i> | Date | 11/17/09 |
| Chief, Division of Land Development | <i>[Signature]</i> | Date | 11/09/10 |
| Director | <i>[Signature]</i> | Date | 11/10/10 |

1 0.14.10 REDLINED FOR PARKING LOT REVISION
ADDED REDLINE SUMMARY NOTE

JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723-6089
ATTN: JAMES LOESCH, P.E., CFM
PHONE: 443.778.5134 FAX: 443.778.6122

christopher consultants
engineering · surveying · land planning
christopher consultants, inc.
7172 columbia gateway drive suite 101, columbia, md 21046-5990
410.272.8833 · fax 410.272.8148 · tx 410.272.8833

PERMIT INFORMATION CHART

| | | | | | |
|---------------|-------------------------------------|----------------|-----|-------------------|---------|
| PROJECT NAME: | JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. | 300 | CENSUS TRACT | 6051.02 |
| DEED REF. | L.10412, F.396 | GRID NO. | 22 | TAX MAP | 41 |
| DATE | 10/27/09 | ZONE | PEC | ELECTION DISTRICT | 5th |

TITLE: **AS-BUILT OVERALL LANDSCAPE PLAN**

| | | |
|--------------|---------------------|--------------------|
| DESIGN: CRH | SCALE: 1" = 100' | PROJECT: 08A901.00 |
| DRAWN: SSA | DATE: OCTOBER, 2009 | 40 of 54 |
| CHECKED: JMH | APPROVED: JMH | |

MDC-9301(SDP)

SHEET 41

FOREST CONSERVATION EASEMENT
9.30 AC
RETENTION THIS SHEET = 1.86 AC
REFORESTATION THIS SHEET = 0.37 AC
CLEARING THIS SHEET = 0.40 AC
20928-20930

SHEET 43

FOREST CONSERVATION EASEMENT
9.30 AC
RETENTION THIS SHEET = 0.28 AC
REFORESTATION THIS SHEET = 0.61 AC
CLEARING THIS SHEET = 4.50 AC
20928-20930

SHEET 45

FOREST CONSERVATION EASEMENT
9.30 AC
RETENTION THIS SHEET = 1.71 AC
REFORESTATION THIS SHEET = 0.30 AC
CLEARING THIS SHEET = 1.66 AC
FLOODPLAIN THIS SHEET = 0.07 AC
20928-20930

SHEET 45

FOREST CONSERVATION EASEMENT
9.30 AC
FLOODPLAIN THIS SHEET = 0.54 AC
20928-20930



FOREST STAND NARRATIVES

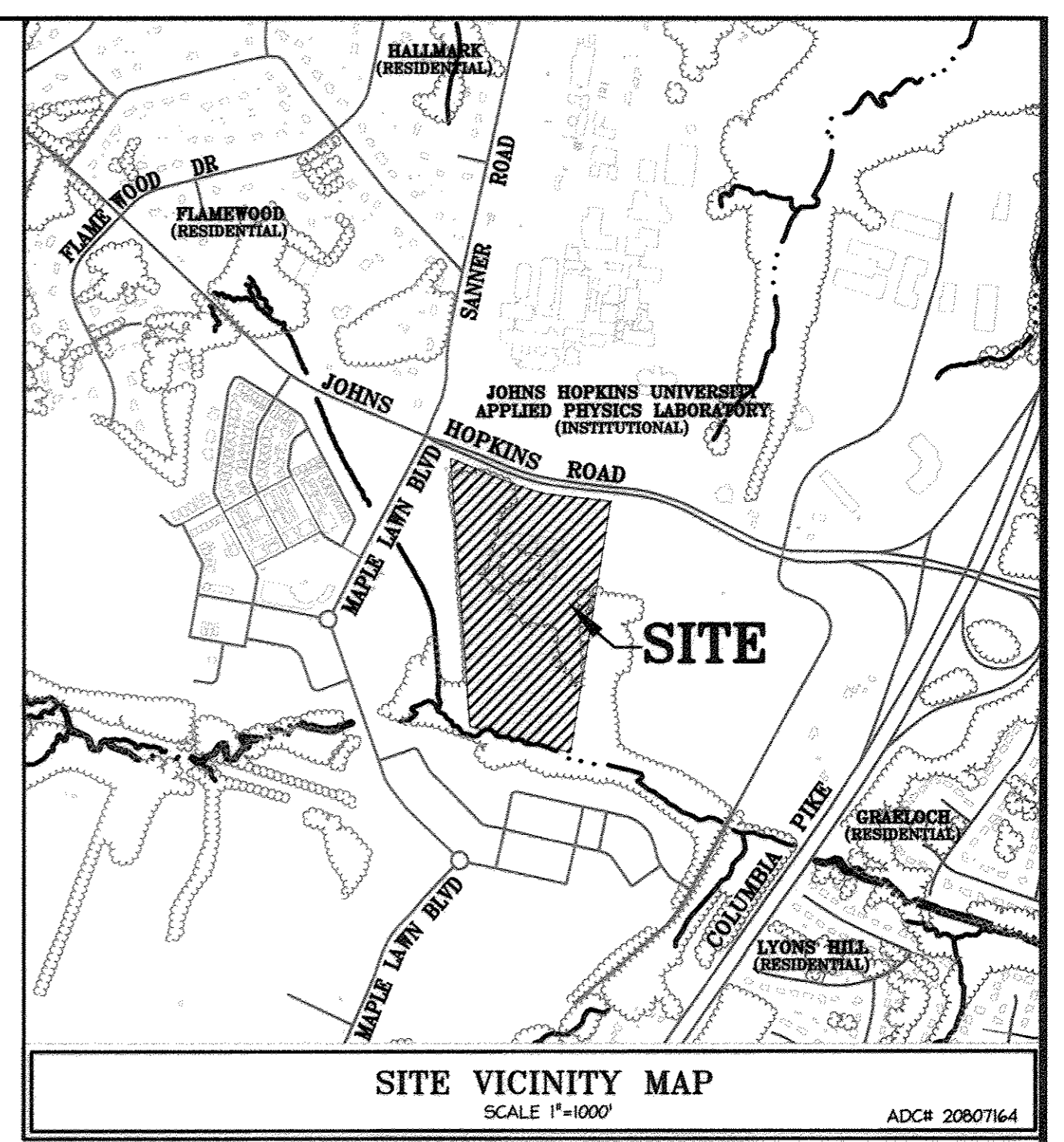
F1 - FOREST STAND ONE
Stand One is approximately 13.7 acres in size and runs along the western edge of the parcel to its southern limit where it is delineated from Stand #2 by the change in topography and associated soil type. Stand #1 does not continue offsite to the west and is bounded on its eastern edge by the existing site development. This mature stand is dominated by 20 to 30 inch dbh Tulip Poplars (Liriodendron tulipifera), Red Oak (Quercus rubra), and White Oak (Quercus alba) within the canopy. The understory was dominated by Black Cherry (Prunus serotina) and Bush Honeysuckle (Lonicera sp.) with other species such as Oak (Quercus sp.), American holly (Ilex opaca), Flowering Dogwood (Cornus florida), Spicebush (Lindera benzoin), Multiflora rose (Rosa multiflora) and Greenbrier (Smilax rotundifolia) recorded. Due to winter survey no herbaceous layer was noted, but leaf litter was noted as well developed (greater than 4 inches).
Stand #1 contains the highest quality forest on the site from the perspective of timber quality and biodiversity. The structural diversity of this stand is high and there is healthy regeneration of oak species. The intermittent stream, its buffer and the 19 specimen trees should be given high priority for retention. Invasive species were located throughout the stand but were concentrated along the edges and in the southwestern section. Some distress was seen in the oak community and several dead oaks were observed. It is believed that this decline was due to past gypsy moth damage and should be monitored and treated as necessary.

F2 - FOREST STAND TWO
Stand Two is a mid-successional stage forest approximately 4.7 acres in size and is located along the southern portion of the property within or adjacent to the floodplain of Hagerwood Branch. Stand #2 extends offsite to the East, West, and South and is delineated from Stand #1 and #3 by topography as it is associated with the floodplain. The stand is dominated by 12 to 20 inch dbh Red Maples (Acer rubrum) with Tulip Poplars, Black Cherry, Green Ash (Fraxinus pennsylvanica), and Pin Oaks (Quercus palustris) also noted. The understory of Stand #2 was comparable to Stand #1 with the addition of Muscadine (Carpinus caroliniana) and Arrowwood (Viburnum dentatum). The herbaceous layer was lacking due to winter survey but the emergence of Skunk Cabbage (Sympllocarpus foetidus) within the delineated wetland area was noted. A small isolated stand of mature Loblolly Pines (Pinus taeda) was noted near the northern edge of the stand and a large bird, possibly a barred owl, was noted on several occasions roosting in this area.
Due to its location within the 100 yr floodplain and the presence of delineated wetlands Stand #2 represents the highest priority stand for retention and contains 2 specimen trees. Multiflora Rose and Honey-suckle were found in dense concentrations at regular intervals throughout the stand.

F3 - FOREST STAND THREE
Forest Stand Three is approximately 1.6 acres in size and located on a small knob between Stand #2 and the existing stormwater management pond. The stand is essentially a monoculture of young Tulip Poplar trees under 15" in diameter though Black Cherry and Red Maples were also observed. The understory contained species similar to Stand #1, however, invasive shrubs and vines were more prevalent and quite dense in many areas.
Stand #3 does not contain any specimen trees. Due to a lack of diversity, low species value, and the extensive presence of invasive species Stand #3 should be considered of low retention value where other environmental factors such as slope are not an issue.

H1 & H2 - HEDGEROWS ONE AND TWO
Two hedgerows exist along the eastern edge of the property. H1 consists of a buffer planting of White Pine trees currently approximately 20' in height. H2 is a scrubby mix of young Tulip Poplars, Black cherries, Tree of Heaven, and other opportunistic species which are becoming increasingly overgrown by invasive vines and shrubs. Currently the hedgerows are not serving as a buffer to adjacent land uses (vacant) so retention is not a high priority. Selective thinning and invasives control is recommended if these areas are retained.

T1 & L1 LAWN AREAS
Two distinct manicured areas exist on the site. Lawn Area #1 consists of the existing stormwater management dry detention pond to the south of the southern most parking area. Lawn Area #1 consists entirely of manicured turf with no woody growth. Lawn Area #2 consists of the remaining lawn area within the campus area. This area contains various groupings and singular plantings of trees planted for aesthetic value. Many of these trees are mature in size although none have reached specimen size (>30" dbh).



SHEET 42

FOREST CONSERVATION EASEMENT
9.30 AC
REFORESTATION THIS SHEET = 0.76 AC
20928-20930

SHEET 44

FOREST CONSERVATION EASEMENT
9.30 AC
CLEARING THIS SHEET = 0.99 AC
REFORESTATION THIS SHEET = 0.99 AC
20928-20930

SHEET 46

FOREST CONSERVATION EASEMENT
9.30 AC
RETENTION THIS SHEET = 1.17 AC
REFORESTATION THIS SHEET = 0.77 AC
CLEARING THIS SHEET = 4.92 AC
FLOODPLAIN THIS SHEET = 0.01 AC
20928-20930

SHEET 47

FOREST CONSERVATION EASEMENT
9.30 AC
RETENTION THIS SHEET = 0.56 AC
FLOODPLAIN THIS SHEET = 1.66 AC
CLEARING THIS SHEET = 0.01 AC

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOUR
- EXISTING SANITARY SEWER
- EXISTING WATER
- SOILS
- PROPERTY LINE
- STREAM CENTERLINE
- WETLAND LIMITS
- 25' WETLAND BUFFER
- 100-YEAR FLOODPLAIN
- LIMIT OF DISTURBANCE
- PROPOSED TREELINE
- EXISTING TREELINE
- FOREST CONSERVATION EASEMENT (OFFSET FOR VISUAL CLARITY)
- SILT FENCE
- SUPER SILT FENCE
- FOREST STAND BOUNDARY
- NON-FOREST STAND OUTLINES
- SPECIMEN TREE
- ±2% STEEP SLOPES (SLOPES SHOWN REFLECT EXISTING TOPOGRAPHY PRIOR TO MASS GRADING PLAN GP-04-10)
- ±5-25% STEEP SLOPES (SLOPES SHOWN REFLECT EXISTING TOPOGRAPHY PRIOR TO MASS GRADING PLAN GP-04-10)
- FOREST PRESERVATION AREA
- FOREST CLEARING AREA
- FOREST REFORESTATION AREA
- 100 YEAR FLOODPLAIN
- PERMANENT FOREST CONSERVATION SIGN
- TEMPORARY FOREST CONSERVATION SIGN

SOIL CHARACTERISTICS

| SERIES | NAME | SUBGROUP | WISCONSIN SUITABILITY GROUP | HYDRIC? | K FACTOR |
|--------|--|------------------------|-----------------------------|---------|----------|
| CgB2 | Chester gravelly silt loam, 2-8% slopes, moderately eroded | Typic Hapludult | 30 | No | 0.32 |
| CgC2 | Chester gravelly silt loam, 0-10% slopes, most eroded | Typic Hapludult | 31 | No | 0.32 |
| CvA | Chester silt loam, 0-5% slopes | Typic Hapludult | 30 | No | 0.32 |
| Cv | Chester Silt Loam | Fluvisol Dystricceptis | 4 | No | 0.37 |
| O1B2 | Glenelg Loam, 3-8% slope, most eroded | Typic Hapludult | 30 | N | 0.32 |
| O1C2 | Glenelg Loam, 8-15% slope, most eroded | Typic Hapludult | 30 | N | 0.32 |
| qvA | Glenelg Silt Loam, 0-7% slopes | Typic Hapludult | 12 | N | 0.37 |
| hA | Hagerwood Silt Loam | Fluvisol Hapludult | 2 | Y | 0.37 |
| MgB2 | Marys gravelly loam, 3-8% slopes, moderately eroded | Typic Dystricceptis | 43 | No | 0.41 |
| MBC2 | Mt. Airy clayey loam, 3-8% slope, most eroded | Typic Dystricceptis | 51 | No | 0.28 |
| MBC3 | Mt. Airy clayey loam, 8-10% slopes, severely eroded | Typic Dystricceptis | 51 | No | 0.28 |
| MBC2 | Mt. Airy clayey loam, 10-20% slopes, most eroded | Typic Dystricceptis | 51 | No | 0.28 |

SPECIMEN TREE LIST

| ID | Species | Common Name | DBH | Condition | Trunk | CRZ |
|-----|-------------------------|------------------|------|-----------|--------|-------|
| 225 | Liriodendron tulipifera | Tulip Poplar | 31 | Good | Single | 46.5 |
| 226 | Acer rubrum | Red Maple | 30 | Poor | Single | 45 |
| 227 | Quercus falcata | Southern Red Oak | 40.5 | Good | Single | 60.75 |
| 228 | Liriodendron tulipifera | Tulip Poplar | 43 | Good | Double | 64.5 |
| 229 | Quercus alba | White Oak | 38 | Good | Single | 57 |
| 230 | Quercus falcata | Southern Red Oak | 33 | Good | Single | 49.5 |
| 231 | Quercus falcata | Southern Red Oak | 39.5 | Good | Single | 59.25 |
| 232 | Liriodendron tulipifera | Tulip Poplar | 30 | Fair | Single | 45 |
| 233 | Liriodendron tulipifera | Tulip Poplar | 33 | Good | Single | 49.5 |
| 234 | Liriodendron tulipifera | Tulip Poplar | 30 | Good | Single | 45 |
| 235 | Quercus falcata | Southern Red Oak | 31.5 | Good | Single | 47.25 |
| 236 | Quercus falcata | Southern Red Oak | 36.5 | Good | Single | 54.75 |
| 237 | Quercus falcata | Southern Red Oak | 30 | Good | Single | 45 |
| 238 | Liriodendron tulipifera | Tulip Poplar | 30 | Good | Single | 45 |
| 239 | Liriodendron tulipifera | Tulip Poplar | 30.5 | Good | Single | 45.75 |
| 240 | Liriodendron tulipifera | Tulip Poplar | 30 | Good | Single | 45 |
| 241 | Liriodendron tulipifera | Tulip Poplar | 33 | Good | Single | 49.5 |
| 242 | Quercus alba | White Oak | 31 | Good | Single | 46.5 |
| 243 | Liriodendron tulipifera | Tulip Poplar | 30.5 | Good | Single | 45.75 |
| 244 | Quercus falcata | Southern Red Oak | 35 | Good | Single | 52.5 |
| 245 | Quercus falcata | Southern Red Oak | 30.5 | Good | Single | 45.75 |
| 246 | Liriodendron tulipifera | Tulip Poplar | 33 | Good | Single | 49.5 |

LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
B. H. Collins
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. 10-9-09 DATE

GOALS & OBJECTIVES

THE GOAL OF THIS PLAN IS TO ADDRESS THE FOREST CONSERVATION ACT AND ANY REFORESTATION/AFFORESTATION THAT MAY BE REQUIRED FOR THE DEVELOPMENT OF THE PROPERTY. THIS PROJECT PROPOSES SITE CLEARING TO ALLOW FOR DEVELOPMENT OF THE EXISTING LOTS IN ACCORDANCE WITH THE ZONING CODE. PROPOSED REFORESTATION AND REFORESTATION LOCATED ON-SITE ARE TO THE FULLEST EXTENT POSSIBLE.

FOREST CONSERVATION NOTES

- TOTAL FORESTED AREA ON SITE (EXCLUDING FLOODPLAINS) = 17.41 AC
- FOREST CLEARING PROPOSED = 11.83 AC
- ON-SITE RETENTION = 5.58 AC
- ON-SITE REFORESTATION = 3.81 AC
- TOTAL REFORESTATION REQUIRED = 4.61 AC
- REPAIRING 0.80 AC OF REFORESTATION REQUIRED WILL BE SATISFIED BY FEE-IN-LIEU
- STEEP SLOPES (15%-25% OR 25% OR GREATER) HAVE BEEN IDENTIFIED ON THE SITE.
- THE 100 YEAR FLOODPLAIN AREA HAS BEEN IDENTIFIED ON-SITE.
- NONTIDAL WETLAND, WETLAND BUFFERS STREAMS OR STREAM BUFFERS DO EXIST ON SITE.

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

*****FOREST CONSERVATION WORKSHEET LOCATED ON SHEET 46*****

FOREST STAND ANALYSIS TABLE

| STAND | TYPE OF COMMUNITY | AREA | SOIL INFORMATION | | | EXISTING VEGETATION (Dominant Species and Approx %) | STAND CHARACTERISTICS | | | FOREST AREA IN SENSITIVE ENVIRONMENTS (Acres) | HABITAT VALUE |
|-------|-------------------|-------------|-------------------------|--|----------------------------|---|-----------------------|-------------|--------------------|---|---------------|
| | | | Soil Type | Typical forest cover for soil type | Woodland Suitability Index | | Size (Dx) | Age (Years) | General Conditions | | |
| 1 | Tulip Poplar | 13.81 acres | Cv GvB GvC GvE | Upland Hardwood Hardwood Upland Hardwood Tolerant Hardwood Tolerant | 30 30 12 4 | Tulip Poplar 50% Red Oak 15% White Oak 15% | 20'-30' | 60-80 | Good | 0.46 | Good |
| 2 | Tulip Poplar | 4.72 acres | GvC-Hs | Upland Hardwood Bottom Hardwood | 30 | Red Maple 50% Tulip Poplar 20% | 12'-20' | 30-50 | Good | 2.30 | Good |
| 3 | Tulip Poplar | 1.54 acres | GvB GvC | Upland Hardwood Upland Hardwood | 30 30 | Tulip Poplar 80% | 8'-15' | 10-20 | Good | 0.00 | Good |

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Development Engineering Division
Chief, Division of Land Development
Director

| Date | No. | Revision Description |
|----------|-----|----------------------|
| 11/17/09 | | |
| 1/09/10 | | |
| 1/11/10 | | |

JOHNS HOPKINS UNIVERSITY
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christopher consultants
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1717 Columbia Gateway Drive Suite 1000 Columbia, MD 21046-2900
410.732.2800 fax: 410.732.2811 e-mail: info@christopher.com

PERMIT INFORMATION CARD

| | | |
|--|---|-------------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 |
| DEED REF. L10412, F.396 | GRID NO. [ZONE] 22 PEC | TAX MAP 41 |
| ELECTION DISTRICT 5th | TITLE: AS-BUILT OVERALL FOREST CONSERVATION PLAN | |
| DESIGN: SSA | SCALE: AS SHOWN | PROJECT: 08A910.00 |
| DRAWN: SSA | DATE: OCTOBER, 2009 | CHECKED: JMH |
| CHECKED: JMH | APPROVED: JMH | 41 of 54 SDP-09-047 |

MDC-930(SDP)

LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
B.A. Cho
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

SUBDIVISION PLAT OF THE
JOHNS HOPKINS UNIVERSITY PROPERTY
(APPLIED PHYSICS LABORATORY SITE)
PLAT 17379
ZONE PEC
PARCEL 123
(JHU/APL MAIN CAMPUS)



FOREST CONSERVATION EASEMENT
9.39 AC
RETENTION THIS SHEET = 1.86 AC
REFORESTATION THIS SHEET = 0.37 AC
CLEARING THIS SHEET = 0.40 AC
200908200930

MATCHLINE - FOR CONTINUATION SEE SHEET 43 OF 54

MATCHLINE - FOR CONTINUATION SEE SHEET 42 OF 54

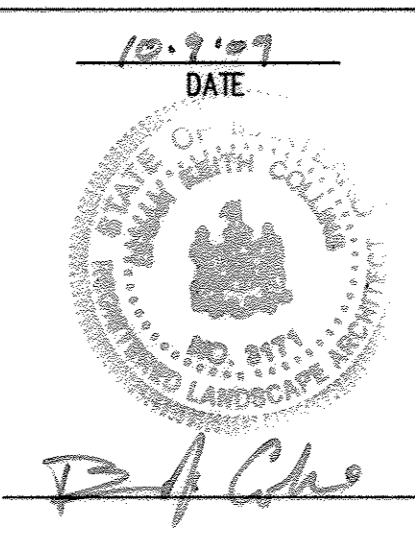
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 11/17/09
Chief, Development Engineering Division Date
[Signature] 1/09/10
Chief, Division of Land Development Date
[Signature] 1/11/10
Director Date

JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
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LAUREL, MARYLAND 20723-6099
ATTN: JAMES LOESCH, P.E., CFM
PHONE: 443.778.5134 FAX 443.778.6122

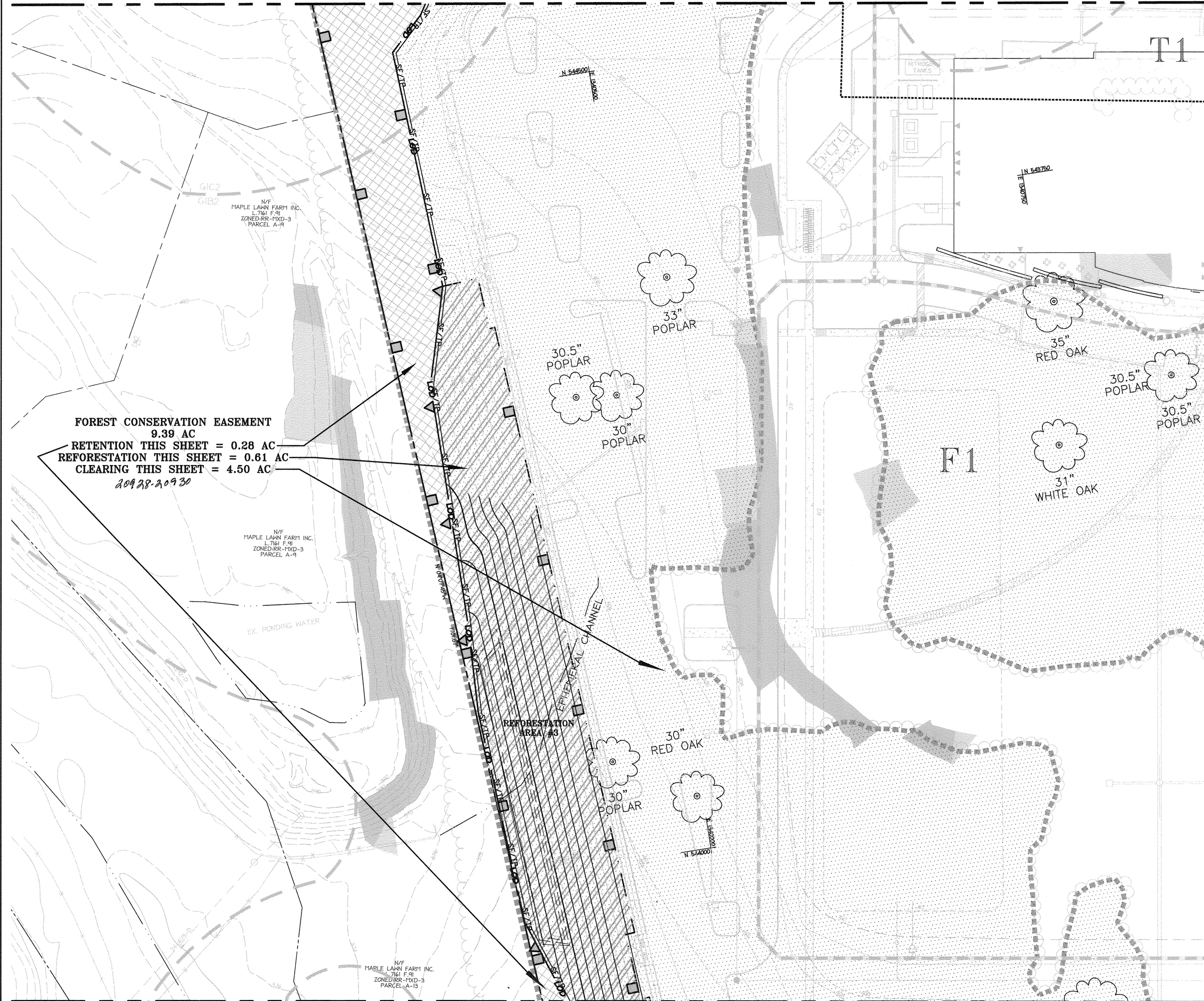
christopher consultants
engineering surveying land planning
christopher consultants, llc
7177 columbia gateway drive (suite 100) catonsville, md 21046-2990
410.276.8800 www.christopherconsultants.com

PERMIT INFORMATION CHART
PROJECT NAME: JHU/APL SOUTH CAMPUS BUILDING 200 LOT/PARCEL NO. 300 CENSUS TRACT 6051.02
DEED REF. L10412, F.396 GRID NO. 22 ZONE PEC TAX MAP 41 ELECTION DISTRICT 5h
DATE: 10.9.09
TITLE: AS-BUILT FOREST CONSERVATION PLAN



DESIGN: SCALE: 1" = 30' PROJECT: 08A901.00
DRAWN: SSA DATE: OCTOBER, 2009
CHECKED: JMH APPROVED: JMH

MDC-930(SDP)



FOREST CONSERVATION EASEMENT
 9.39 AC
 RETENTION THIS SHEET = 0.28 AC
 REFORESTATION THIS SHEET = 0.61 AC
 CLEARING THIS SHEET = 4.50 AC
 20928-20930

MATCHLINE - FOR CONTINUATION SEE SHEET 44 OF 54

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

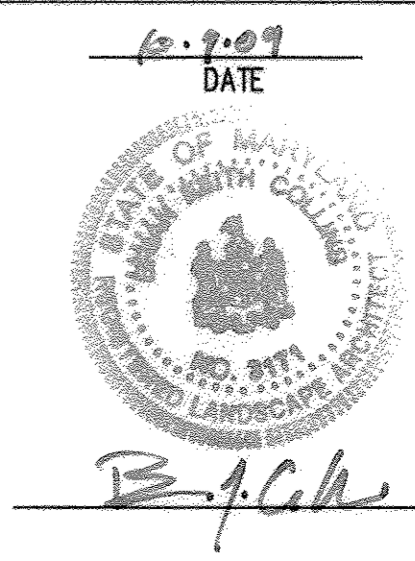
LEED ACCREDITED PROFESSIONAL CERTIFICATE
 GREEN NEIGHBORHOOD PLAN FOR SITES
 I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
 SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development
 Director

JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
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 7172 COLUMBIA GATEWAY DRIVE (SUITE 100) COLUMBIA, MD 21046-2990
 (410) 872-8800 (410) 872-8810 (410) 872-8800

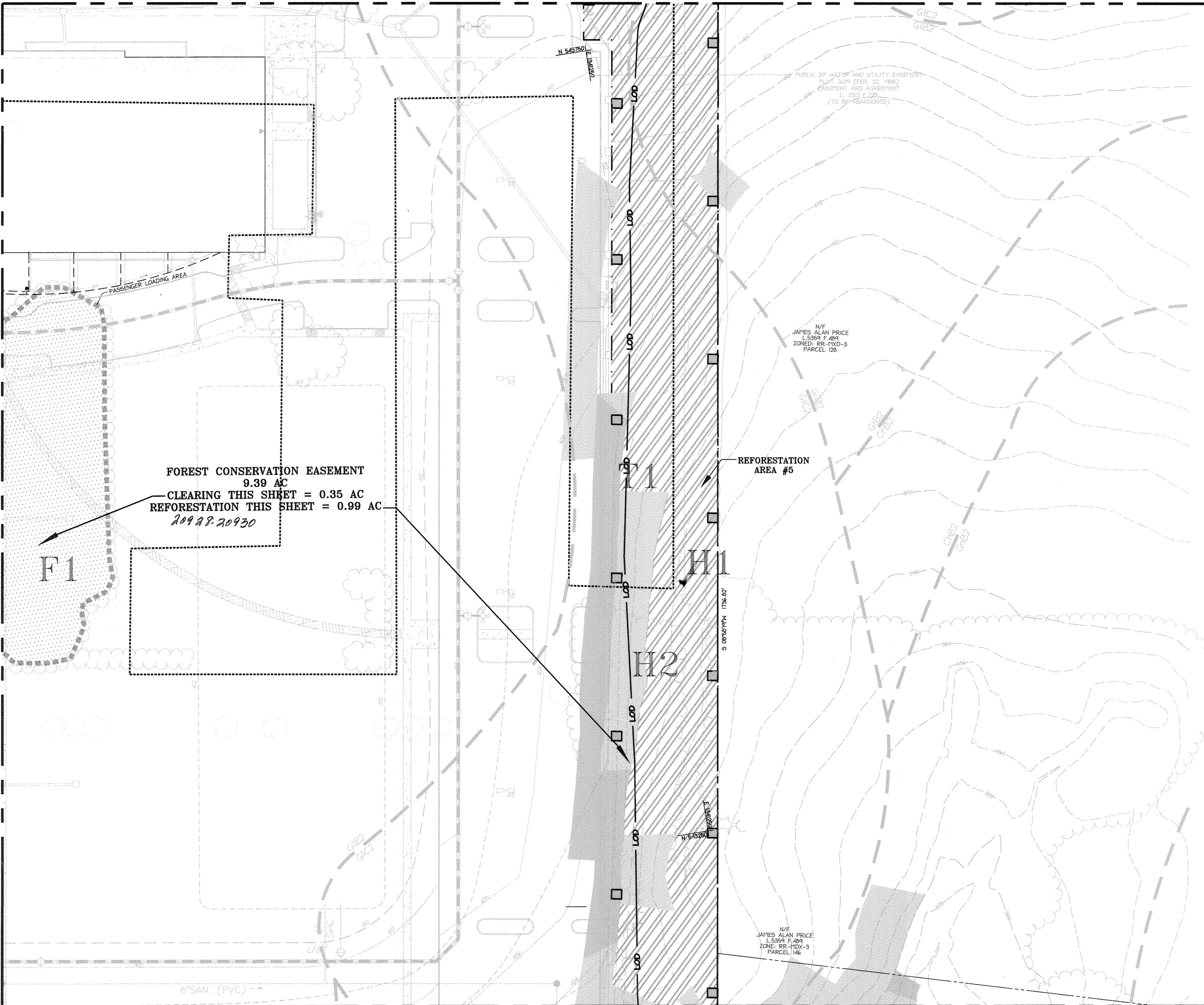
| PERMIT INFORMATION CHART | | | | |
|--|---|-------------------------|---------------|--------------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 | | |
| DEED REF. L-10412, F-396 | GRID NO. 22 | ZONE PEC | TAX MAP 41 | ELECTION DISTRICT 5th |
| DATE: 10-9-09 | | | | |
| TITLE: AS-BUILT FOREST CONSERVATION PLAN | | | | |
| DESIGN: DRAWN: SSA CHECKED: JMH | SCALE: 1" = 30' DATE: OCTOBER, 2009 APPROVED: JMH | PROJECT: 08A901.00 | | |



MDC-930(SDP)

MATCHLINE - FOR CONTINUATION SEE SHEET 42 OF 54

MATCHLINE - FOR CONTINUATION SEE SHEET 43 OF 54



MATCHLINE - FOR CONTINUATION SEE SHEET 46 OF 54

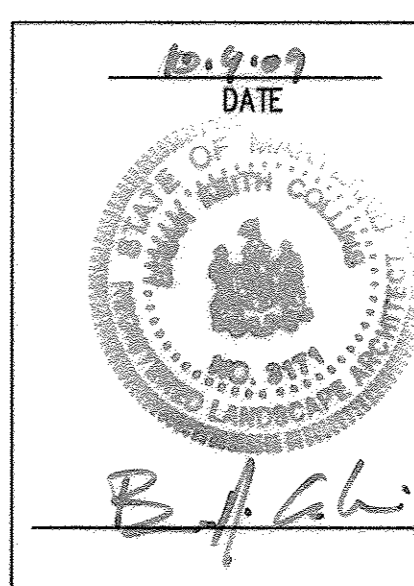
LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
B.A.C. 10-9-09
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
W.D. Deussen 11/17/09
Chief, Development Engineering Division Date
Robert S. Sullivan 1/28/10
Chief, Division of Land Development Date
Thomas J. Butler 1/11/10
Director Date

Date No. Revision Description
JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099
ATTN: JAMES LOESCH, P.E., CFM
PHONE: 443.778.5134 FAX: 443.778.6122

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christopher consultants, inc.
1117 COLUMBIA GREENWAY DRIVE SUITE 100 COLUMBIA, MD 21046-2900
410.512.8800 FAX: 410.512.8800

| PERMIT INFORMATION CHART | | | |
|---|-------------------------|-------------------------|--------------------------|
| PROJECT NAME: JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 | |
| DEED REF: L10412, F. 396 1/27/09 20928.20930 | GRID NO. ZONE 22 PEC | TAX MAP 41 | ELECTION DISTRICT 5th |
| TITLE: AS-BUILT FOREST CONSERVATION PLAN | | | |
| DESIGN: SSA | SCALE: 1" = 30' | PROJECT: 08A901.00 | |
| DRAWN: SSA | DATE: OCTOBER, 2009 | APPROVED: JMH | |
| CHECKED: JMH | | 45 of 54 | |

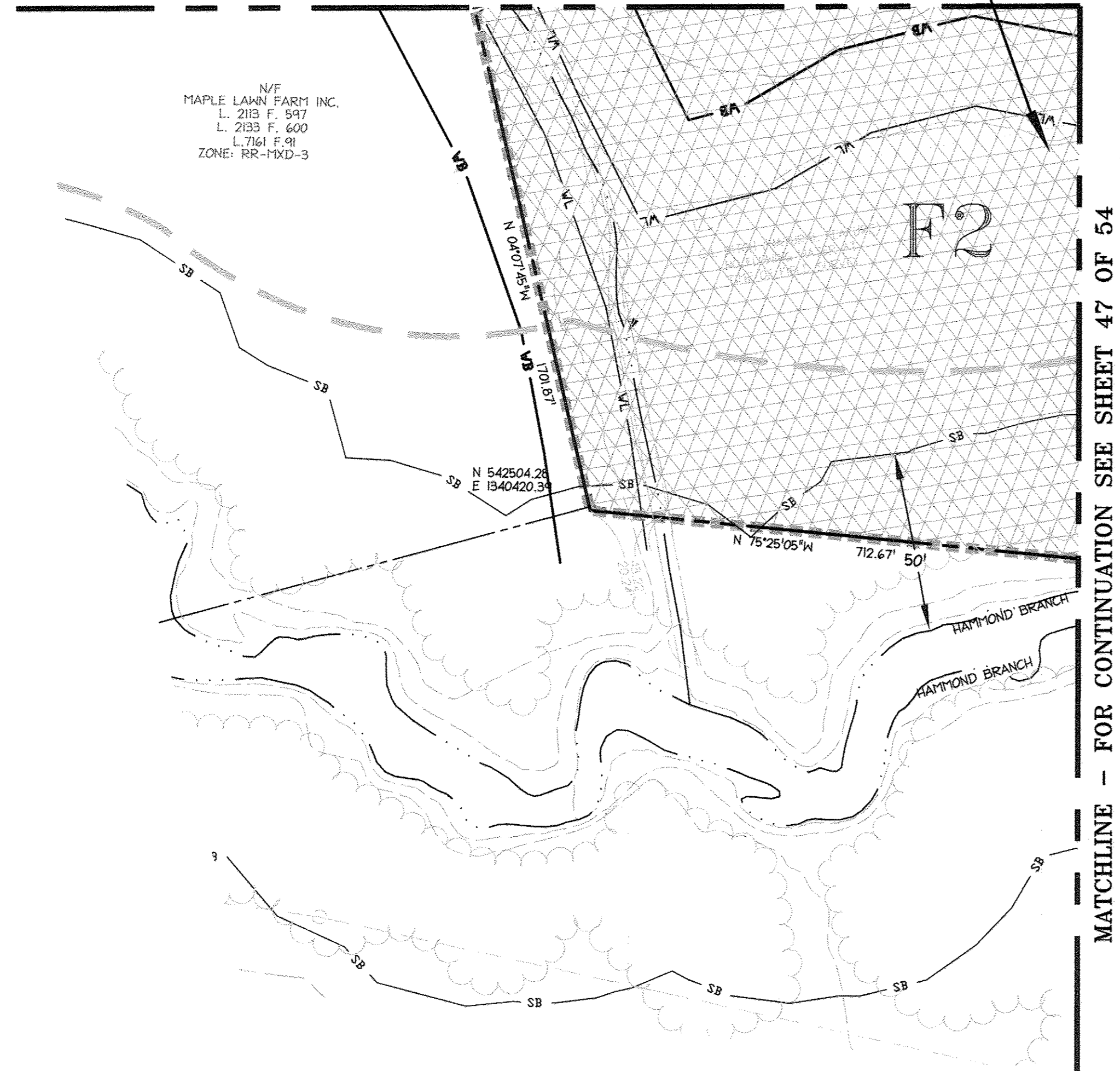


NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

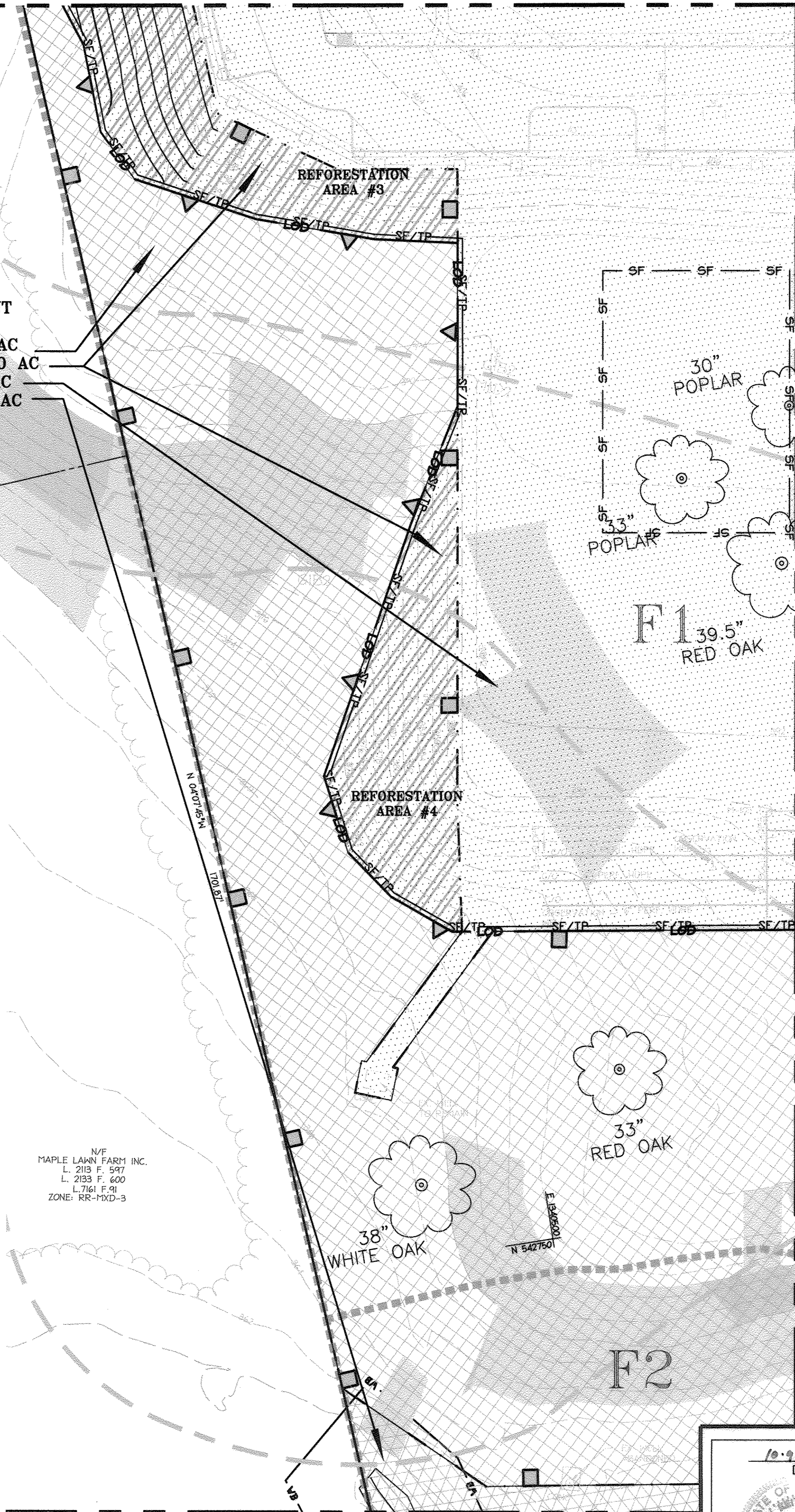
FOREST CONSERVATION EASEMENT
 9.39 AC
 RETENTION THIS SHEET = 1.71 AC
 REFORESTATION THIS SHEET = 0.30 AC
 CLEARING THIS SHEET = 1.66 AC
 FLOODPLAIN THIS SHEET = 0.07 AC
 20928.20930

FOREST CONSERVATION EASEMENT
 9.39 AC
 FLOODPLAIN THIS SHEET = 0.54 AC
 20928.20930

MATCHLINE - FOR CONTINUATION SEE THIS SHEET



MATCHLINE - FOR CONTINUATION SEE SHEET 47 OF 54



MATCHLINE - FOR CONTINUATION SEE SHEET 46 OF 54

LEED ACCREDITED PROFESSIONAL CERTIFICATE
 GREEN NEIGHBORHOOD PLAN FOR SITES
 I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
 Signature of Brian Collins
 LEED ACCREDITATION NO. 1099
 DATE 10-9-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development
 Director

JOHNS HOPKINS UNIVERSITY
 APPLIED PHYSICS LABORATORY
 1100 JOHNS HOPKINS ROAD
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 christopher consultants, inc.
 7172 columbus gateway drive (suite 100) - columbia, md 21046-2990
 410.321.8800 - fax: 410.321.8800

| PERMIT INFORMATION CHART | | | |
|---|-----------------------------|-------------------------|--------------------------|
| PROJECT NAME: JHU/APL- SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 | |
| DEED REF. L10412, F.396 | GRID NO. ZONE 22 PEC | TAX MAP 41 | ELECTION DISTRICT 5th |
| DATE: 10-9-09 | | | |
| TITLE: AS-BUILT FOREST CONSERVATION PLAN | | | |
| DESIGN: DRAWN: SSA | SCALE: 1" = 30' | PROJECT: 08A901.00 | |
| CHECKED: JMH | DATE: OCTOBER, 2009 | APPROVED: JMH | 46 of 54 |

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.



MDC-930(SDP)

MATCHLINE - FOR CONTINUATION SEE SHEET 46 OF 54



LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
Brian Collins
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

FOREST CONSERVATION EASEMENT
9.39 AC
RETENTION THIS SHEET = 0.55 AC
FLOODPLAIN THIS SHEET = 1.85 AC
CLEARING THIS SHEET = 0.01 AC
20998, 20930

MATCHLINE - FOR CONTINUATION SEE SHEET 45 OF 54

JHU
Job# 08A901.00
FOREST CONSERVATION WORKSHEET
07-Aug-09

NET TRACT AREA:

| | | |
|---|-----------|-------|
| A. Total tract area | = | 35.10 |
| B. Area within 100 year floodplain | = | 2.47 |
| C. Miscellaneous Area: Steep Slopes (above 25%) | = | 0.00 |
| D. Net tract area | = | 32.63 |
| E. Afforestation Threshold | 15% x D = | 4.89 |
| F. Conservation Threshold | 20% x D = | 6.53 |

EXISTING FOREST COVER:

| | | |
|---|---|-------|
| G. Existing forest cover (excluding floodplain) | = | 17.41 |
| H. Area of forest above afforestation threshold | = | 12.52 |
| I. Area of forest above conservation threshold | = | 10.88 |

BREAK EVEN POINT:

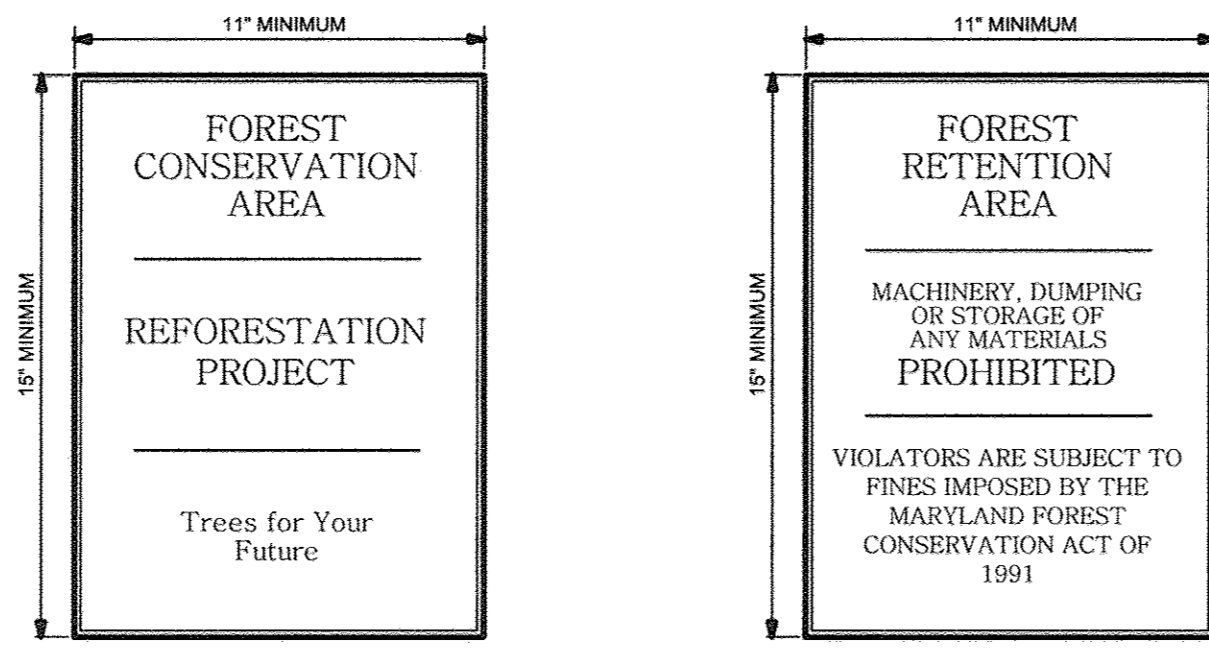
| | | |
|--|---|------|
| J. Forest retention above threshold with no mitigation | = | 8.70 |
| K. Clearing permitted without mitigation | = | 8.71 |

PROPOSED FOREST CLEARING:

| | | |
|--|---|-------|
| L. Total area of forest to be cleared | = | 11.83 |
| M. Total area of forest to be retained | = | 5.58 |

PLANTING REQUIREMENTS:

| | | |
|--|---|------|
| N. Reforestation for clearing above conservation threshold | = | 2.72 |
| P. Reforestation for clearing below conservation threshold | = | 1.89 |
| Q. Credit for retention above conservation threshold | = | 0.00 |
| R. Total reforestation required | = | 4.61 |
| S. Total afforestation required | = | 0.00 |
| T. Total reforestation and afforestation required | = | 4.61 |



Permanent Signage
Not To Scale
PLAN SYMBOL = ■
(TO REMAIN IN PERPETUITY)

Temporary Signage
Not To Scale
PLAN SYMBOL = ▼
VIOLATORS ARE SUBJECT TO FINES IMPOSED BY THE MARYLAND FOREST CONSERVATION ACT OF 1991
Signs May Not be Attached to Trees.

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

44.61 AC OF REFORESTATION REQUIRED ON-SITE
OF THAT 3.81 AC OF REFORESTATION WILL BE SATISFIED ON-SITE
OF THAT 0.80 AC OF REFORESTATION WILL BE SATISFIED BY FEE-IN-LIEU

APPROVED: DEPARTMENT OF PLANNING AND ZONING
William D. ... 11/17/09
Chief, Development Engineering Division Date
Kent ... 1/02/10
Chief, Division of Land Development Date
Thomas E. ... 1/10/10
Director Date

JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099
ATTN: JAMES LOESCH, P.E., CFM
PHONE: 443.778.5134 FAX 443.778.6122

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engineering - surveying - land planning
christopher consultants, Inc.
1172 Columbia Gateway Drive, Suite 1000 - Columbia, MD 21046-2990
410.572.8800 - mobile 301.981.0148 - fax 410.572.8803

PERMIT INFORMATION CHART

| | | | | | |
|-------------------|-------------------------------------|-----------------|----------|--------------|---------|
| PROJECT NAME: | JHU/APL - SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. | 300 | CENSUS TRACT | 6051.02 |
| DEED REF. | L10412, F.396 | GRID NO. / ZONE | 22 / PEC | TAX MAP | 41 |
| ELECTION DISTRICT | 5th | | | | |

DATE: 10-9-09
TITLE: AS-BUILT FOREST CONSERVATION PLAN & WORKSHEET

DESIGN: SCALE: 1" = 30'
DRAWN: SSA DATE: OCTOBER, 2009
CHECKED: JMH APPROVED: JMH

MDC-930(SDP)

REMOVAL OF HAZARDOUS TREES OR LIMBS by developers or builders

1. THE DEVELOPER AND/OR BUILDER IS RESPONSIBLE FOR THE COMPLETE PRESERVATION OF ALL FORESTED AREAS SHOWN ON THE APPROVED PLAN TO REMAIN UNDISTURBED. ONLY TREES OR PARTS THEREOF DESIGNATED BY THE DEPARTMENT OF PLANNING AND ZONING AS DEAD, DYING, OR HAZARDOUS MAY BE REMOVED.
2. CORRECTIVE MEASURES REQUIRING THE REMOVAL OF THE HAZARDOUS TREE OR PORTIONS THEREOF SHALL REQUIRE AUTHORIZATION BY THE BUILDING OR GRADING INSPECTOR IF THERE IS A VALID GRADING OR BUILDING PERMIT FOR THE SUBJECT LOTS OR PARCELS ON WHICH THE TREES ARE LOCATED. ONLY AFTER APPROVAL OF THE APPROPRIATE INSPECTOR MAY THE TREE BE CUT BY CHAINSAW TO NEAR THE EXISTING GROUND LEVEL. THE STUMP MAY NOT BE REMOVED OR COVERED WITH SOIL, MULCH OR OTHER MATERIALS THAT WOULD INHIBIT SPROUTING.

WOODCHIP MULCH SPECIFICATIONS

WOODCHIP MULCH SHALL BE COMPOSTED A MINIMUM OF 2-3 MONTHS TO MINIMIZE AND CONTROL INVASIVE WEED SPROUTING. MULCH SHALL BE PLACED IN A 3 INCH LAYER IN AN AREA 2.5 TIMES THE ROOTBALL DIAMETER OF EACH PLANTED TREE (APPROXIMATELY 2.5 FEET FROM THE TRUNK).

TEMPORARY TREE PROTECTION DEVICE

THE TPD SHALL BE PLACED AS INDICATED AT THE BEGINNING OF THE SITE DEVELOPMENT PROCESS. SIGNAGE SHALL BE PLACED ON THE FENCE POSTS TO INDICATE A FOREST RETENTION AREA. THESE FENCES AND SIGNS SHALL REMAIN IN PLACE UNTIL THE COMPLETION OF GRADING WITHIN 90 FEET OF THE RETENTION AREA, UNLESS THE COUNTY INSPECTOR APPROVES THEIR REMOVAL, OR AS NECESSARY TO GAIN ENTRY TO AND REMOVE INVASIVE VEGETATION FROM THE RETENTION AREA.

FINAL TREE PROTECTION DEVICE

UPON COMPLETION OF ALL GRADING, PLANTING AND INVASIVE SPECIES REMOVAL ACTIVITIES NEAR AND WITHIN THE FOREST RETENTION AND AFFORESTATION AREA, THE FINAL TPD AND SIGNAGE SHALL BE PLACED AS INDICATED ON THE PLAN. THE FINAL TPD AND SIGNS SHALL REMAIN IN PLACE IN ACCORDANCE WITH THE MANAGEMENT PLAN INCLUDED ON THIS PLAN OR UNTIL APPROVAL IS GIVEN BY THE HOWARD COUNTY INSPECTOR TO REMOVE THEM.

FOREST RETENTION

WOODLAND CONSERVATION AREAS WILL BE DELINEATED WITH HIGH VISIBILITY FENCING AND TEMPORARY SIGNAGE AS SPECIFIED (SEE TREE PROTECTION FENCE AND TEMPORARY SIGNAGE DETAILS) PRIOR TO THE BEGINNING OF ANY CONSTRUCTION ACTIVITIES OCCURRING ADJACENT TO THESE AREAS. FENCING SHALL NOT BE CONSIDERED INSTALLED CORRECTLY UNTIL REVIEWED BY A LANDSCAPE ARCHITECT OR QUALIFIED NATURAL RESOURCE PROFESSIONAL FAMILIAR WITH THE PLAN. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.

PRECONSTRUCTION MEETING/CONSTRUCTION PERIOD PRACTICES

1. THE HOWARD COUNTY INSPECTOR MUST BE CONTACTED PRIOR TO THE START OF ANY WORK ON THE SITE TO ADDRESS IMPLEMENTATION OF TREE CONSERVATION MEASURES SHOWN ON THIS PLAN.
2. ALL APPROPRIATE BONDS WILL BE POSTED WITH THE BUILDING OFFICIAL PRIOR TO THE ISSUANCE OF ANY PERMITS. THESE BONDS WILL BE RETAINED AS SURETY BY THE BUILDING OFFICIAL UNTIL ALL REQUIRED ACTIVITIES HAVE BEEN COMPLETED.
3. THE LOCATION OF ALL TREE PROTECTION DEVICES (TPD) SHOWN ON THIS PLAN SHALL BE FLAGGED OR STAKED IN THE FIELD PRIOR TO THE PRE-CONSTRUCTION MEETING WITH THE SEDIMENT AND EROSION CONTROL INSPECTOR FROM HOWARD COUNTY. UPON APPROVAL OF THE FLAGGED OR STAKED TPD LOCATIONS BY THE INSPECTOR, INSTALLATION OF THE TPDs MAY BEGIN. TPD INSTALLATION SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF THE INITIAL SEDIMENT CONTROLS. NO CUTTING OR CLEARING OF TREES MAY BEGIN BEFORE FINAL APPROVAL OF TPD INSTALLATION.
4. WOODLAND CONSERVATION-TREE SAVE AREAS SHALL BE POSTED AS SHOWN AT THE SAME TIME AS THE TREE PROTECTIVE DEVICE INSTALLATION. THESE SIGNS SHALL REMAIN IN PLACE.
5. NO GRADING, EXCAVATION, UTILITY PLACEMENT, SEDIMENT AND EROSION CONTROL DEVICES, OR VEHICULAR TRAFFIC WILL OCCUR WITHIN WOODLAND CONSERVATION AREAS.
6. STORAGE OF EQUIPMENT AND MATERIALS SHALL NOT BE PERMITTED IN THE WOODLAND CONSERVATION AREAS.
7. THERE WILL BE NO BURIAL OR DISPOSAL OF DISCARDED MATERIAL ON SITE WITHIN THE WOODLAND CONSERVATION AREAS.
8. THERE WILL BE NO OPEN BURNING WITHIN 100 FEET OF WOODLAND CONSERVATION AREAS.
9. TEMPORARY STRUCTURES INCLUDING, BUT NOT LIMITED TO CONSTRUCTION TRAILERS, SANITARY FACILITIES, ETC. SHALL NOT BE PLACED WITHIN THE WOODLAND CONSERVATION AREAS.
10. EMPLOYEE PARKING SHALL NOT BE PERMITTED IN THE WOODLAND CONSERVATION AREAS.

REFORESTATION PLANTING NOTES

1. ALL PLANTING STOCK SHALL BE A SEED SOURCE SUITED TO THIS GEOGRAPHIC REGION.
2. ROOT PRUNING OF THE PLANTING STOCK SHALL BE DONE AT THE NURSERY.
3. PLANTING WILL BE DONE BETWEEN FEBRUARY 15 AND MAY 31, AS LONG AS THE GROUND IS NOT FROZEN.
4. DISTURBED SOILS WITHIN THE REFORESTATION AREA SHOULD HAVE ORGANIC MULCH INCORPORATED WITHIN THE TOP 12 INCHES AND HAVE ADDITIONAL SOIL AMENDMENTS AS DETERMINED BY A SOILS ANALYSIS.
5. SITE PREPARATION FOR TREE PLANTING SHALL MINIMIZE ADVERSE COMPETITION FROM HERBACEOUS GROWTH IN THE REFORESTATION AREAS BY USING THE FOLLOWING METHODS:
 - A. NON REFORESTATION AREA CLOSE TO GROUND ONE HECK (OR LESS) PRIOR TO PLANTING DATE.
 - B. USE CHEMICAL HERBACEOUS VEGETATION CONTROL PRODUCT AFTER MOWING TO ENSURE REMOVAL OF ALL HERBACEOUS VEGETATION.
 - C. MULCH THE PLANTED TREE IN AN AREA 2.5 TIMES THE DIAMETER OF THE ROOTBALL WITH COMPOSTED WOOD CHIPS IN A 3 INCH LAYER.
 - D. CONTROL PLANTS AND WEEDS AROUND TREE PLANTINGS BY HAND AS NEEDED TO INSURE SURVIVAL (NO MECHANICAL MOWING IN REFORESTATION AREA).
6. THE TREE SPECIES PLANTED SHALL MIMIC NATURAL SPECIES COMPOSITION AND DISTRIBUTION PATTERNS, AS INDICATED ON THE PLANTING DESIGN DETAIL ON THIS SHEET.
7. THE MANAGEMENT PLAN FOR THIS SITE INCLUDES THE FOLLOWING SCHEDULE OF ACTIVITIES:

| | |
|------------------|--------------------------------------|
| YEAR 1 FEB-APRIL | SITE PREPARATION AND TREE PLANTING |
| JUNE | VEGETATION CONTROL, IF NEEDED |
| SEPTEMBER | VEGETATION CONTROL, IF NEEDED |
| DECEMBER | SURVIVAL CHECK (75% MINIMUM) |
| YEAR 2 FEB-APRIL | REPLACEMENT TREE PLANTING, IF NEEDED |
| JUNE | VEGETATION CONTROL, IF NEEDED |
| SEPTEMBER | VEGETATION CONTROL, IF NEEDED |
| DECEMBER | SURVIVAL CHECK (75% MINIMUM) |

FOREST CONSERVATION SURETY NOTE

A TOTAL OF 5.88 ACRES OF FOREST RETENTION AND 3.81 ACRES OF AFFORESTATION ARE PROPOSED UNDER THIS PLAN. THE REQUIRED SURETY AMOUNT FOR THE RETENTION ACREAGE IS \$40,618 AND THE REQUIRED SURETY AMOUNT FOR THE AFFORESTATION IS \$62,892. THE TOTAL AMOUNT OF THE REQUIRED FOREST CONSERVATION SURETY IS \$103,510. THE REMAINING 0.80 AC OF REQUIRED REFORESTATION WILL BE SATISFIED BY FEE-IN-LIEU PAYMENT OF \$0.75 PER SQUARE FOOT, TOTALING \$26,136.

NOTE

ALL FOREST RETENTION, REFORESTATION AND AFFORESTATION AREAS SHOWN ON THIS PLAN SHALL BE PLACED IN A FOREST CONSERVATION EASEMENT.

POST CONSTRUCTION MANAGEMENT/MAINTENANCE BY CONTRACTOR

A 2-YEAR CONTRACTOR'S MAINTENANCE AND MONITORING PERIOD SHALL BEGIN AT MOBILIZATION. SEVENTY FIVE PERCENT SURVIVORSHIP MUST BE GUARANTEED FOR THIS PERIOD. THE SITE SHALL BE INSPECTED AT THE END OF THE TWO-YEAR PERIOD TO ASCERTAIN SURVIVORSHIP AND PROVIDE FOR REPLACEMENT IF NECESSARY.

THE CONTRACTOR'S MAINTENANCE OF NEW PLANTING SHALL CONSIST OF WATERING, CULTIVATING, WEEDING, AND MULCHING AS NECESSARY TO INSURE SURVIVAL.

CONTRACTOR SHALL PROTECT PLANTING AREAS AND PLANTS AT ALL TIMES AGAINST DAMAGE OF ALL KINDS FOR DURATION OF MAINTENANCE PERIOD. MAINTENANCE INCLUDES TEMPORARY PROTECTION BARRIERS AND SIGNS AS REQUIRED FOR PROTECTION. IF ANY PLANTS BECOME DAMAGED OR INJURED, BECAUSE SUFFICIENT PROTECTION HAS NOT PROVIDED, TREAT OR REPLACE AS DIRECTED BY LANDSCAPE ARCHITECT AT NO ADDITIONAL COST TO OWNER.

STANDARDS AND SPECIFICATIONS FOR PLANTING

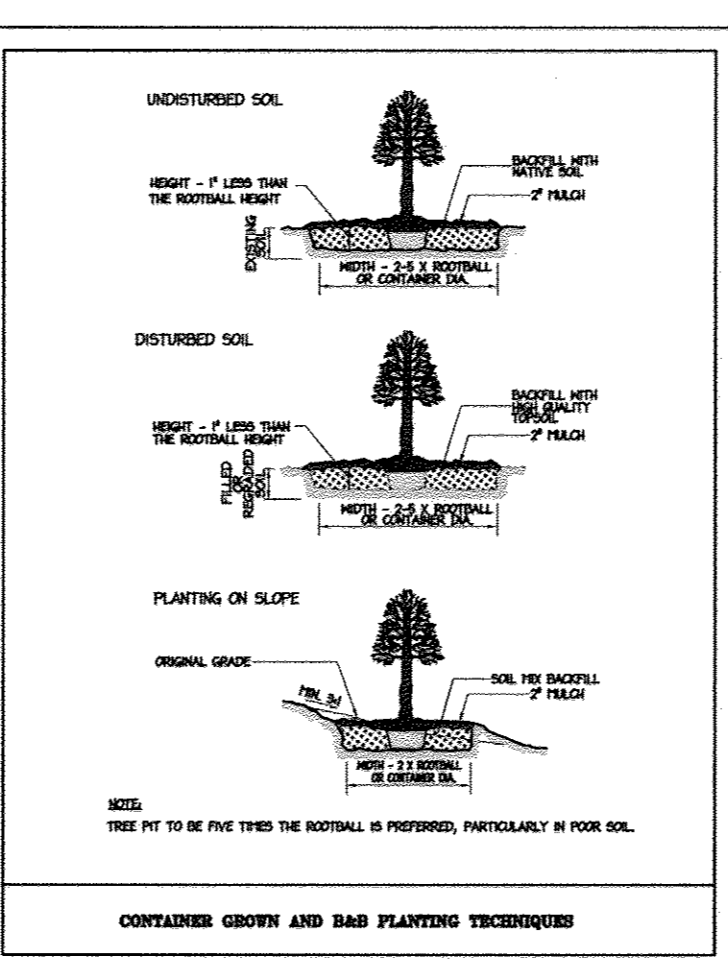
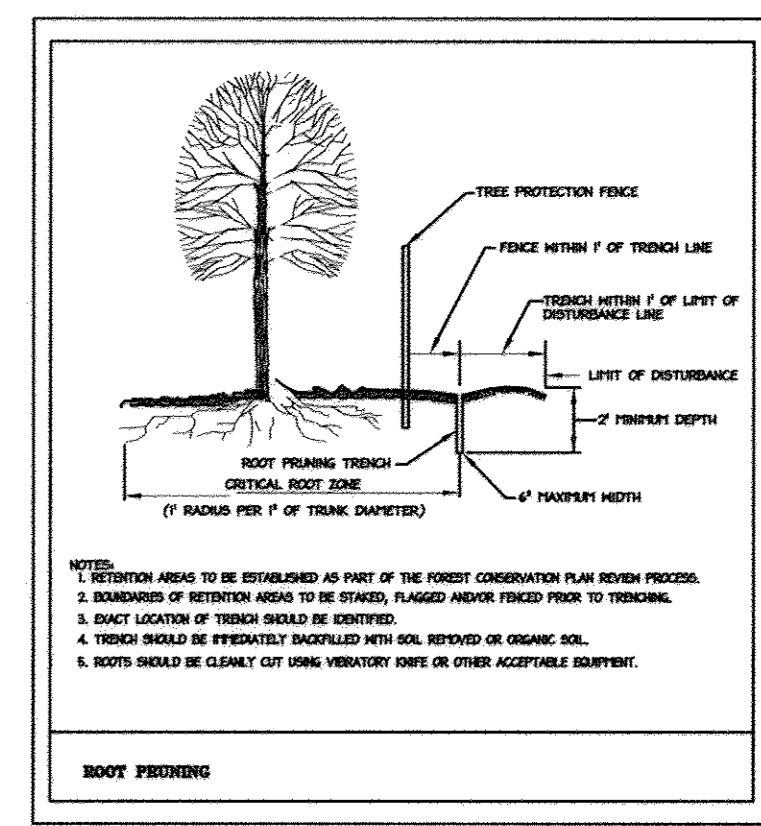
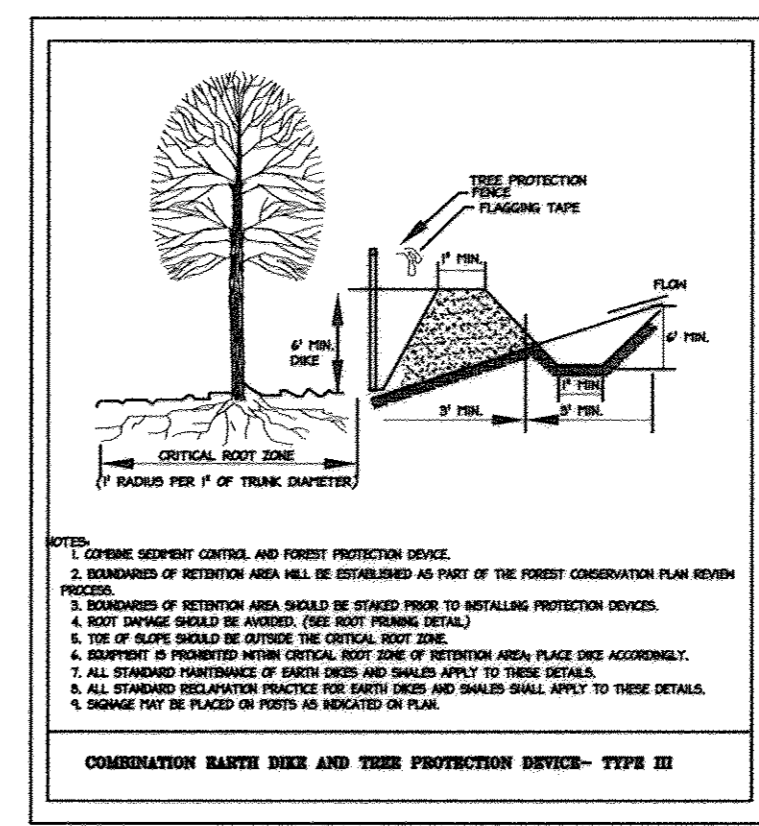
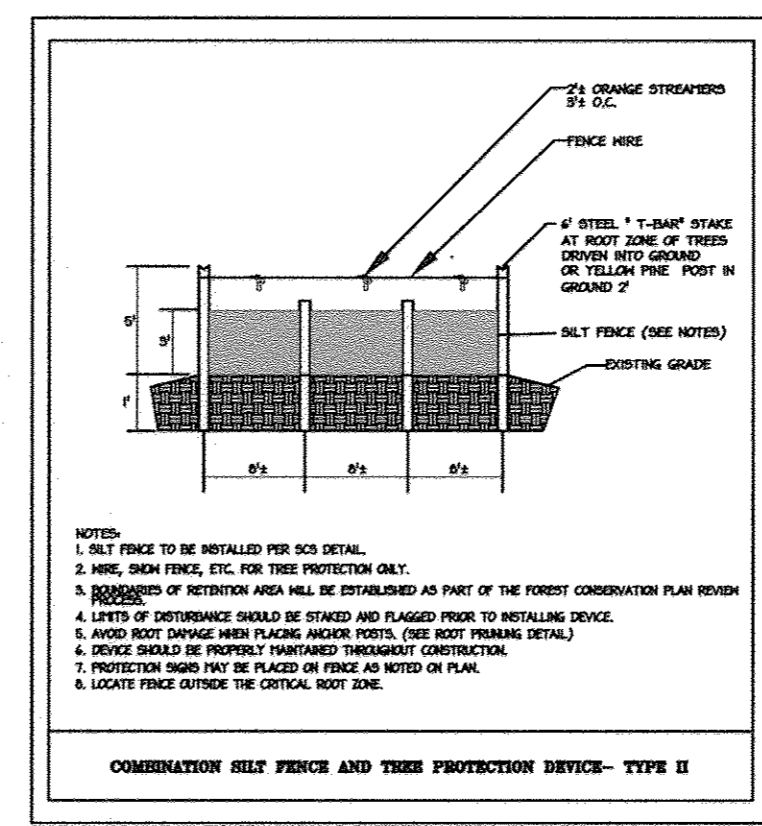
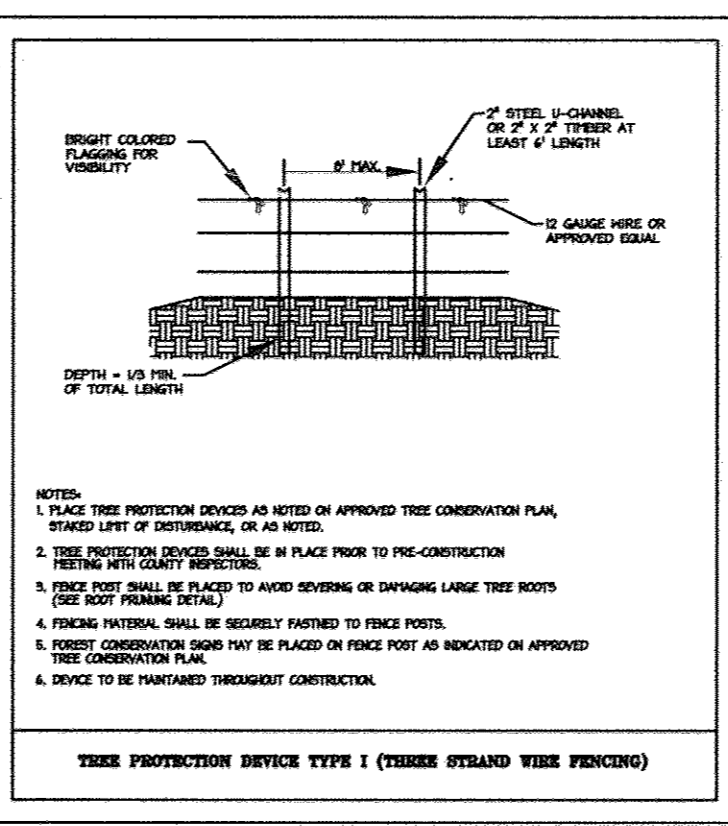
1. PLANT MATERIAL SELECTION
 - A. NURSERY GROWN PLANT MATERIALS GREATER THAN 1" CALIPER SHOULD MEET OR EXCEED THE REQUIREMENTS OF THE INTERNATIONAL SOCIETY OF ARBORICULTURE AND AMERICAN NURSERYMAN SPECIFICATIONS, I.E. SHOULD BE TYPICAL OF THE SPECIES AND VARIETY, HAVE A NORMAL HABIT OF GROWTH, BE FIRST QUALITY, SOUND, VIGOROUS, WELL-BRANCHED, HAVE HEALTHY, WELL-FURNISHED ROOT SYSTEMS, AND BE FREE OF DISEASE, INSECT PESTS AND MECHANICAL INJURIES. PLANTING STOCK SEED SOURCE SHALL BE FROM WITHIN GEOGRAPHIC REGION SUITABLE TO THE SITE.
 - B. PLANTING STOCK LESS THAN 1" CALIPER SHOULD MEET THE FOLLOWING STANDARDS:
 - SEEDLINGS/WHIPPS:
 - HARDWOODS -- 1/4" TO 1/2" CALIPER WITH ROOTS NOT LESS THAN 8" LONG
 - SHRUBS -- 1/8" OR LARGER CALIPER WITH 8" ROOT SYSTEM.
 - CONIFERS -- 1/8" TO 1/4" CALIPER WITH ROOTS NOT LESS THAN 8" LONG AND TOP HEIGHT OF 6' OR MORE.
 - C. THERE SHALL BE NO ROOT RUNNING ON THE SITE.
 2. PLANTING SITE PREPARATION
 - SOILS SHALL NOT BE DISTURBED OUTSIDE THE AREA NECESSARY FOR PLANTING INDIVIDUAL SPECIMENS AND THE REMOVAL OF EXOTIC INVASIVE PLANT MATERIAL.
 3. PLANTING PERIOD
 - ALL MATERIAL SHALL BE PLANTED BETWEEN SEPTEMBER 15 AND MAY 31. MATERIAL SHALL NOT BE INSTALLED WHEN GROUND IS FROZEN. SEEDLING PLANTING ONLY BETWEEN DECEMBER AND APRIL.
 4. PLANT MATERIAL STORAGE
 - PLANTS SHOULD BE PLANTED WITHIN 24 HOURS OF DELIVERY IF POSSIBLE. PLANT MATERIAL WHICH IS LEFT UNPLANTED FOR MORE THAN 24 HOURS, SHALL BE PROTECTED FROM DIRECT SUN AND WEATHER AND KEPT MOIST. NURSERY STOCK SHOULD NOT BE LEFT UNPLANTED FOR MORE THAN TWO WEEKS.
 5. ON-SITE INSPECTION
 - PRIOR TO PLANTING, PLANTING STOCK SHALL BE INSPECTED BY THE LANDSCAPE ARCHITECT OR OTHER QUALIFIED PROFESSIONAL FAMILIAR WITH THIS PLAN. PLANT MATERIAL NOT CONFORMING TO STANDARD NURSERYMAN SPECIFICATIONS FOR SIZE, FORM, VIGOR, ROOTS, TRUNK WOUNDS, INSECTS, AND DISEASE SHOULD BE REPLACED.
 6. TOPSOIL FOR PLANTING
 - A. ON-SITE MATERIAL OR IMPORTED FROM SAME SOURCE AS TOPSOIL USED ON SITE FOR FINISH GRADING.
 - 1) UNIFORM COMPOSITION, FREE OF SUBSOIL, CLAY LUMPS, STONES, STUMPS, ROOTS OR SIMILAR OBJECTS LARGER THAN 1 INCH.
 - 2) TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS OF BERTIUMGRASSES, QUACKGRASSES, JOHNSONGRASS, NUTSEDGE, POISON IVY, CANADA THISTLE, OR OTHERS AS SPECIFIED. SOIL MUST ALSO BE FREE OF CONTAMINANTS (IE OIL PRODUCTS, CONCENTRATED SOLUBLE SALTS, SOLUBLE ALUMINUM, PHTHATES, AND HERBICIDES, ETC.)
 - 3) ALL TOPSOIL SHALL BE TESTED BY A RECOGNIZED LABORATORY FOR PH AND SOLUBLE SALTS. A PH OF 4.5 TO 7.5 IS REQUIRED. SOLUBLE SALTS SHALL NOT BE HIGHER THAN 500 PARTS PER MILLION.
 7. ADDITIVE FOR BACKFILL MIX
 - A. MOOD RESIDUALS:
 - SOURCE SHALL BE WELL COMPOSTED, NOT CHEMICALLY TREATED.
 - B. PHYSICAL PROPERTIES - GRADING:

| U.S. SIEVE | DRY HEIGHT | PERCENT PASSING |
|------------|------------|-----------------|
| 3/8" | 100 | |
| 1/4" | 90-100 | |
| NO. 8 | 70-100 | |
| NO. 35 | 0-30 | |
 - C. ORGANIC CONTENT BY ASH ANALYSIS: 90 - 100 PERCENT DRY HEIGHT
 - CHEMISTRY RANGE:
 - A. SATURATION EXTRACT CONDUCTIVITY (EC) -----NIL - 3.5
 - B. REACTION (PH) -----3.0 - 5.5
 - C. SALINITY: MAXIMUM SATURATION EXTRACT CONDUCTIVITY 1.0 HILLIFLOWS PER CM AT 25 DEGREES CENTIGRADE.
 - D. SAND
 - PHYSICAL PROPERTIES - GRADING:

| U.S. SIEVE | DRY HEIGHT | PERCENT PASSING |
|------------|------------|-----------------|
| NO. 4 | 100 | |
| NO. 10 | 90-100 | |
| NO. 15 | 90-100 | |
| NO. 35 | 65-100 | |
| NO. 40 | 0-50 | |
| NO. 140 | 0-20 | |
| NO. 270 | 0-7 | |
 - 2) CHEMISTRY:
 - A. SATURATION EXTRACT CONDUCTIVITY (EC) -----NIL - 3.0
 - B. SODIUM ABSORPTION RATIO (SAR) -----NIL - 6.0
 - C. BORON - PPM IN SATURATION EXTRACT SOLUTION -----NIL - 1.0
 - D. REACTION (PH) -----4.0 - 7.5
 - E. AVAILABLE CALCIUM - SODIUM ACETATE EXTRACTABLE - PPM -----NIL - 2000
 - E. 4.5 LBS. TRIPLE SUPERPHOSPHATE
 - F. 2 LBS. TRIPLE SUPERPHOSPHATE
 - G. 5 LBS. DOLOMITE LIMESTONE (LIMINATE FOR ACID LOVING PLANTS)
 10. LAYOUT AND EXCAVATION OF PLANTING AREAS
 - A. PLANTS SHALL BE PLACED IN EACH ZONE AT RANDOM LOCATIONS SHOWN AS INDICATED ON THE PLAN.
 - B. THE LANDSCAPE ARCHITECT OR QUALIFIED PROFESSIONAL WILL CHECK LOCATION OF PLANTS IN THE FIELD AND SHALL ADJUST TO EXACT POSITION BEFORE PLANTING BEGINS.
 - C. SUBSOIL SHALL NOT BE WORKED WHEN MOISTURE CONTENT IS SO GREAT THAT EXCESSIVE COMPACTION WILL OCCUR, NOR WHEN IT IS SO DRY THAT CLODS WILL NOT READILY BREAK. WATER SHALL BE APPLIED, IF NECESSARY, TO BRING SOIL TO AN OPTIMUM MOISTURE CONTENT BEFORE TILLING AND PLANTING.
 - D. TREE PITS SHALL NOT BE EXCAVATED MORE THAN 24 HOURS IN ADVANCE OF PLANTING OPERATION. TREE PITS SHALL BE EXCAVATED TO THE FOLLOWING DIMENSIONS:

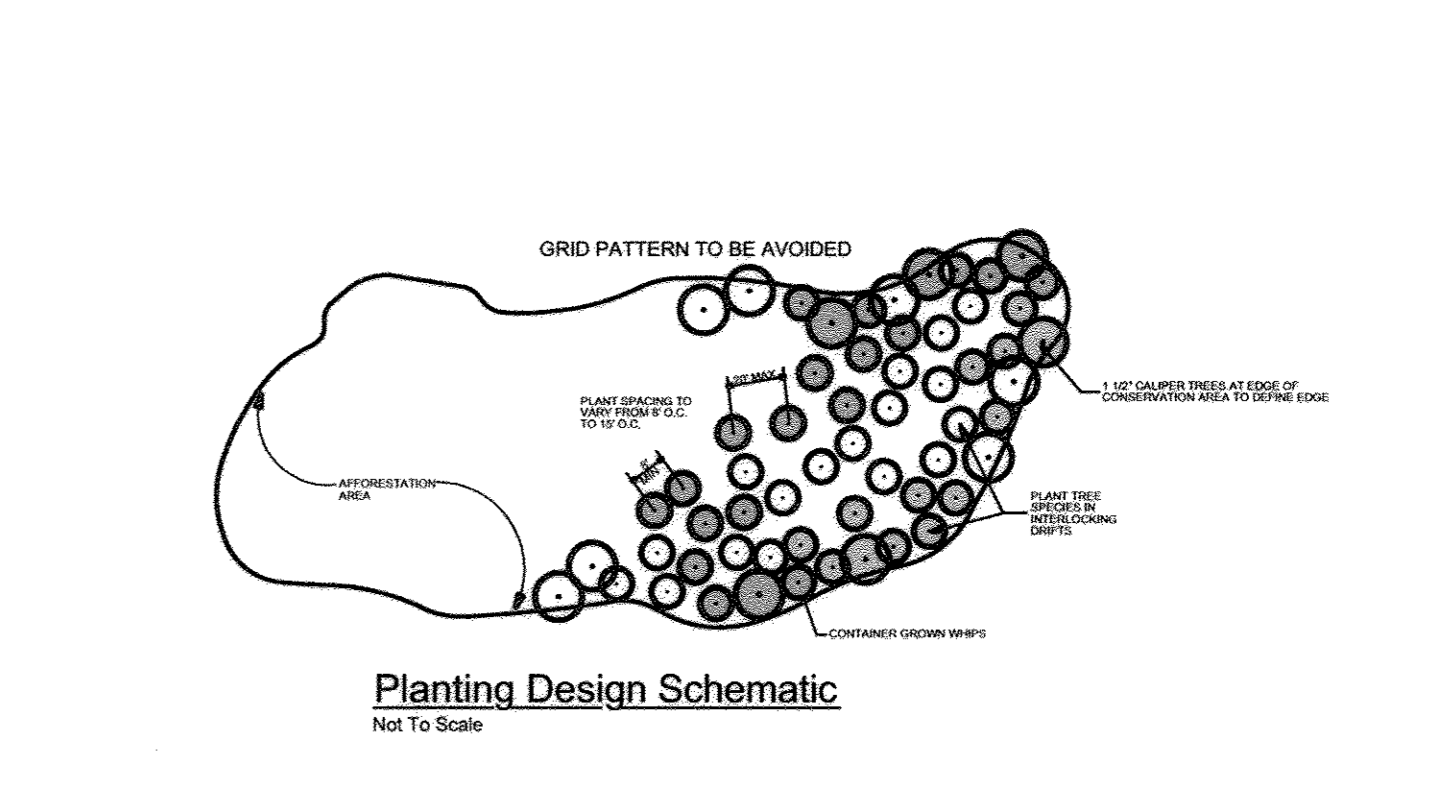
| EXCAVATION FOR: | WIDTH | DEPTH |
|-----------------|---------------|--------------|
| CANNED TREE | CAN + 12 IN. | CAN + 4 IN. |
| BIB TREES | BALL + 12 IN. | BALL + 4 IN. |
 - E. EXCAVATE SHRUB PITS TO THE FOLLOWING DEPTHS:

| EXCAVATION FOR: | WIDTH | DEPTH |
|-----------------|---------------------|-----------------------------------|
| SHRUB | BALL OR CAN + 8 IN. | CAN + 4 IN., NOT LESS THAN 12 IN. |
 - F. PREPARING PLANT MATERIALS FOR PLANTING
 - A. CONTAINER STOCK SHALL BE REMOVED CAREFULLY AFTER CANS HAVE BEEN CUT ON TWO SIDES WITH APPROVED CUTTER. DO NOT USE SPADE TO CUT CANS. DO NOT LIFT OR HANDLE CONTAINER PLANTS BY TOPS, STEMS OR TRUNKS AT ANY TIME.
 - B. DO NOT BIND OR HANDLE ANY PLANT WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE BARK OR BREAK BRANCHES. LIFT AND HANDLE PLANTS ONLY FROM BOTTOM OF BALL.
 - C. BALLED AND BURLAPPED (BB) PLANTS SHALL HAVE FIRM BALLS OF EARTH. PLANTS MOVED WITH A BALL WILL NOT BE ACCEPTED IF THE BALL IS CRACKED OR BROKEN BEFORE OR DURING PLANTING OPERATIONS. BB MATERIAL SHALL BE DUG ONLY WHEN DORMANT. PRE-DUG STORED BB MATERIAL SHALL BE INSPECTED AND APPROVED AT THE STORAGE SITE.
 - D. DO NOT FORCE ROOTS FOR BARE ROOTED TREES INTO EXCAVATED PITS - CUSTOM DIG PITS TO RECEIVE ROOTS WITHOUT DEFORMATION.
 - G. FIXING:
 - A. MIX SOIL BASES, AMENDMENTS AND CHEMICAL ADDITIVES BY MECHANICAL MEANS.
 - B. SOIL AND SAND BASES SHALL BE COMPLETELY FULVURIZED AND FREE OF LUMPS OR AGGREGATED MATERIAL. MOISTURE CONTENT OF BASE MATERIALS SHALL NOT BE SUCH THAT CHEMICAL GRANULAR OR PALLETTIZED ADDITIVES BECOME DISSOLVED DURING THE MIXING PROCESS.
 - C. MIX MEDIA IN QUANTITIES OF NOT LESS THAN 20 CUBIC YARDS OF MIX TOTAL QUANTITY REQUIRED IF LESS THAN 50 CUBIC YARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUITY BETWEEN BATCHES.
 - D. CONTAMINATED BACKFILL MIX WITH UNMIXED SOIL IN BACKFILL MIXING LOTS SHALL BE AVOIDED.
 - H. INSTALLATION OF PLANT MATERIAL
 - A. SCARIFY THE WALLS AND BOTTOM OF ALL PLANT PITS IMMEDIATELY PRIOR TO THE PLACEMENT OF PLANT AND BACKFILL MIX. THE CONTRACTOR SHALL REMOVE ALL GLAZING OF SOIL CAUSED BY AN AUGER OR MECHANICAL HOLE DIGGER.
 - B. HILLS AROUND TREES AND SHRUBS - AFTER PLANTING IS COMPLETE, FORM A SOIL HELL 3 INCHES HIGH AROUND EACH PLANT, EXTENDING TO THE OUTER LIMIT OF THE PLANT PIT IN ACCORDANCE WITH PLANTING DETAILS SHOWN ON THE DRAWINGS.
 - C. SMOOTH PLANTED AREAS TO CONFORM TO SPECIFIED GRADES AFTER FULL SETTLEMENT AS OCCURRED. CONTRACTOR SHALL BEAR FINAL RESPONSIBILITY FOR PROPER SURFACE DRAINAGE OF PLANTED AREAS. ANY DISCREPANCY IN THE DRAWINGS OR SPECIFICATIONS, OBSTRUCTIONS ON THE SITE, OR PRIOR WORK DONE BY ANOTHER PARTY, WHICH CONTRACTOR FEELS PRECLUDES ESTABLISHING PROPER DRAINAGE, SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT IN WRITING.
 - D. WATER ALL PLANTS IMMEDIATELY AGAIN AFTER PLANTING.
 - E. SPREAD MULCH IN REQUIRED AREAS TO THE COMPACTED DEPTH OF 2 INCHES.



| | J | F | M | A | M | J | J | A | S | O | N | D |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Transplant of 2" DBH Greater | | | | | | | | | | | | |
| Planting of Saplings, Whips | | | | | | | | | | | | |
| Inspection | | X | | X | | X | | | | | | |
| Fertilizer (if needed) | | N | R | | | | | | | | | |
| Water | | | | | | | | | | | | |
| Key: | | | | | | | | | | | | |
| | | | | | | | | | | | | |

Note: Activities during November through February are dependent upon ground conditions. No planting shall occur when ground is frozen.



Tree Planting and Maintenance Calendar

General Guidelines

| RA # | Area Before Reduction (square feet) | Area Before Reduction (acres) | # of trees 2.5" caliper = | | Total credits to be counted toward reforestation (sq. ft.) | Area After Reduction (square feet) | Area After Reduction (acres) | Original # Whips Required | New # Whips Required |
|--------------|-------------------------------------|-------------------------------|---------------------------|-------------|--|------------------------------------|------------------------------|---------------------------|----------------------|
| | | | 400 sq. ft. | 225 sq. ft. | | | | | |
| 1 | 13991 | 0.32 | 0 | 0 | 0 | 13,991 | 0.32 | 225 | 225 |
| 2 | 2162 | 0.05 | 0 | 0 | 0 | 2,162 | 0.05 | 35 | 35 |
| 3 | 33321 | 0.76 | 8 | 0 | 3200 | 30,121 | 0.69 | 535 | 484 |
| 4 | 6,611 | 0.15 | 0 | 0 | 0 | 6,611 | 0.15 | 106 | 106 |
| 5 | 109,824 | 2.52 | 28 | 45 | 21325 | 88,499 | 2.03 | 1765 | 1422 |
| TOTAL | 165909 | 3.81 | 36 | 45 | 24525 | 141,384 | 3.25 | 2666 | 2272 |

GENERAL NOTES:

1. NO RARE, THREATENED OR ENDANGERED SPECIES OR HABITATS WERE OBSERVED DURING ANY SITE VISIT.
2. THERE ARE 22 SPECIMEN TREES ON THE SITE.
3. THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL PHOTOGRAMMETRY DATED APRIL 9, 2005, WITH ONE-FOOT CONTOUR INTERVALS PREPARED BY HRA DATED NOVEMBER 29, 2005. THIS TOPOGRAPHY WAS SUPPLEMENTED BY FIELD RUN SURVEY WITH TWO-FOOT CONTOUR INTERVALS BY CHRISTOPHER CONSULTANTS, INC. DATED NOVEMBER 2006.
4. THERE ARE EXISTING WETLANDS ON SITE AS DETERMINED BY MCCARTHY AND ASSOCIATES, IN A REPORT BY CPU DATED MAY 2000.
5. THERE ARE NO CEMETERIES, HISTORIC STRUCTURES, OR RESOURCES ON THE SITE.
6. PER FEHA MAP# 2000A00398 DATED DECEMBER 04, 1996, THIS SITE IS LOCATED WITHIN THE 100 FT FLOODPLAIN. HOWEVER THE WORK TAKING PLACE ON THIS SITE IS APPROX. 200 FEET AWAY FROM AND APPROXIMATELY 32 FEET ABOVE THE FLOODPLAIN LIMITS. THE WORK ON THIS SITE WILL NOT REQUIRE FEHA LCMV/LCIR REVISIONS. A NON-CRITICAL FLOODPLAIN STUDY HAS BEEN SUBMITTED TO DED FOR REVIEW AND WAS APPROVED AS PART OF THE PRELIMINARY EQUIVALENT SKETCH APPROVAL PLAN APPROVAL.
7. THIS SITE ADJACENT TO HAMPDEN BRANCH WHICH IS IN THE PATIENT WATERSHED (HUC 20060006).

| REFORESTATION PLANT SCHEDULE | | | | | | | |
|------------------------------|-------|------------|-----------|------------|------------|-------------|-------------|
| SPECIES | SIZE | RA-1 QTY | RA-2 QTY | RA-3 QTY | RA-4 QTY | RA-5 QTY | TOTAL |
| RED OAK | WHIPS | 0 | 9 | 121 | 27 | 365 | 512 |
| RED MAPLE | WHIPS | 0 | 9 | 121 | 26 | 355 | 511 |
| WHITE OAK | WHIPS | 0 | 9 | 121 | 26 | 356 | 512 |
| TULIP POPULAR | WHIPS | 0 | 8 | 121 | 27 | 356 | 512 |
| E. REDBUD | WHIPS | 75 | 0 | 0 | 0 | 0 | 75 |
| DOGWOOD | WHIPS | 75 | 0 | 0 | 0 | 0 | 75 |
| AM. HOLLY | WHIPS | 75 | 0 | 0 | 0 | 0 | 75 |
| TOTAL PER RA | | 225 | 36 | 484 | 106 | 1422 | 2272 |

| LEED ACCREDITED PROFESSIONAL CERTIFICATE GREEN NEIGHBORHOOD PLAN FOR SITES | | | | | | | |
|---|--|------------------------|--|--------|--|--|--|
| I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST. | | | | | | | |
| SIGNATURE OF BRIAN COLLINS | | LEED ACCREDITATION NO. | | DATE | | | |
| [Signature] | | [Number] | | [Date] | | | |

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature]
 Chief, Development Engineering Division
 [Signature]
 Chief, Division of Land Development
 [Signature]
 Director

| Date | No. | Revision Description |
|----------|-----|----------------------|
| 11/7/07 | | |
| 11/29/07 | | |
| 11/11/07 | | |

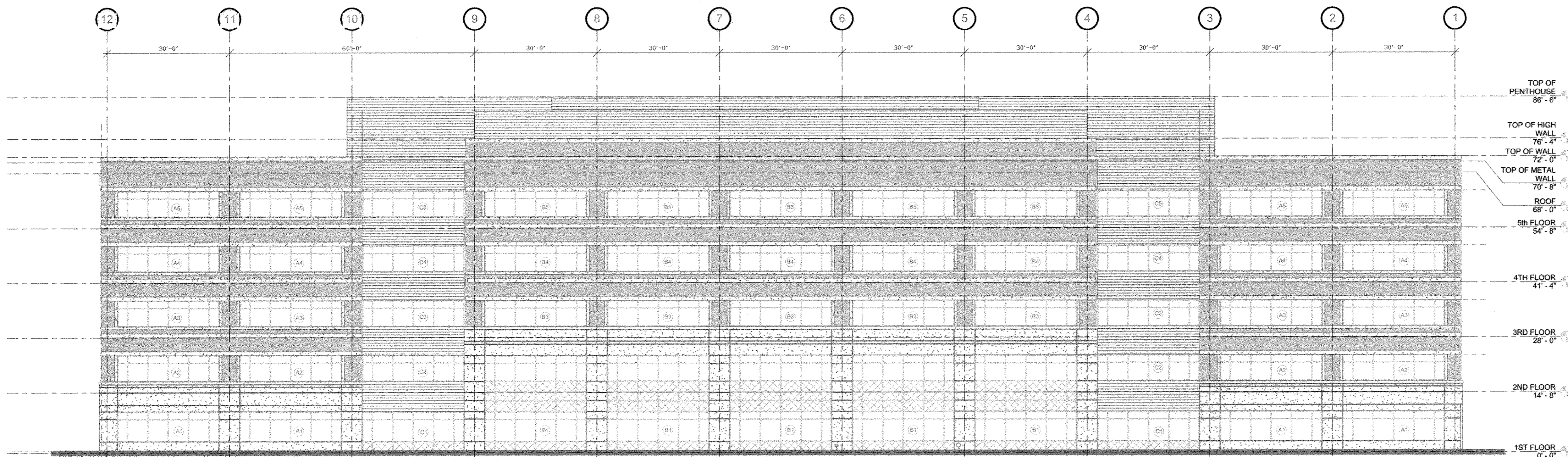
JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
 1100 JOHN HOPKINS ROAD
 LAUREL, MARYLAND 20723-6089
 ATTN: JAMES LOESCH, P.E., CFM
 PHONE: 443.778.534 FAX 443.778.6122

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 7172 caldera/galaxy drive suite 100, coltsville, md 21046-2990
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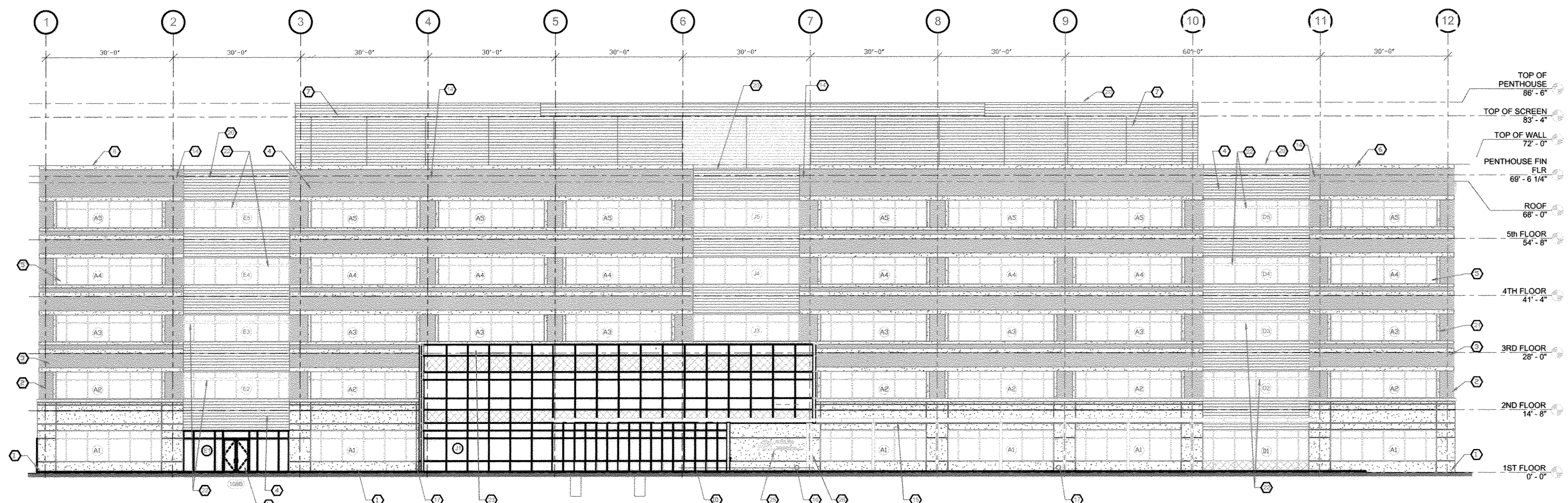
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| TITLE: FOREST CONSERVATION PLAN DETAILS | | | |

| | | |
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| DRAWN: SSA | DATE: OCTOBER, 2009 | |
| CHECKED: JMH | APPROVED: JMH | 49 of 54 |

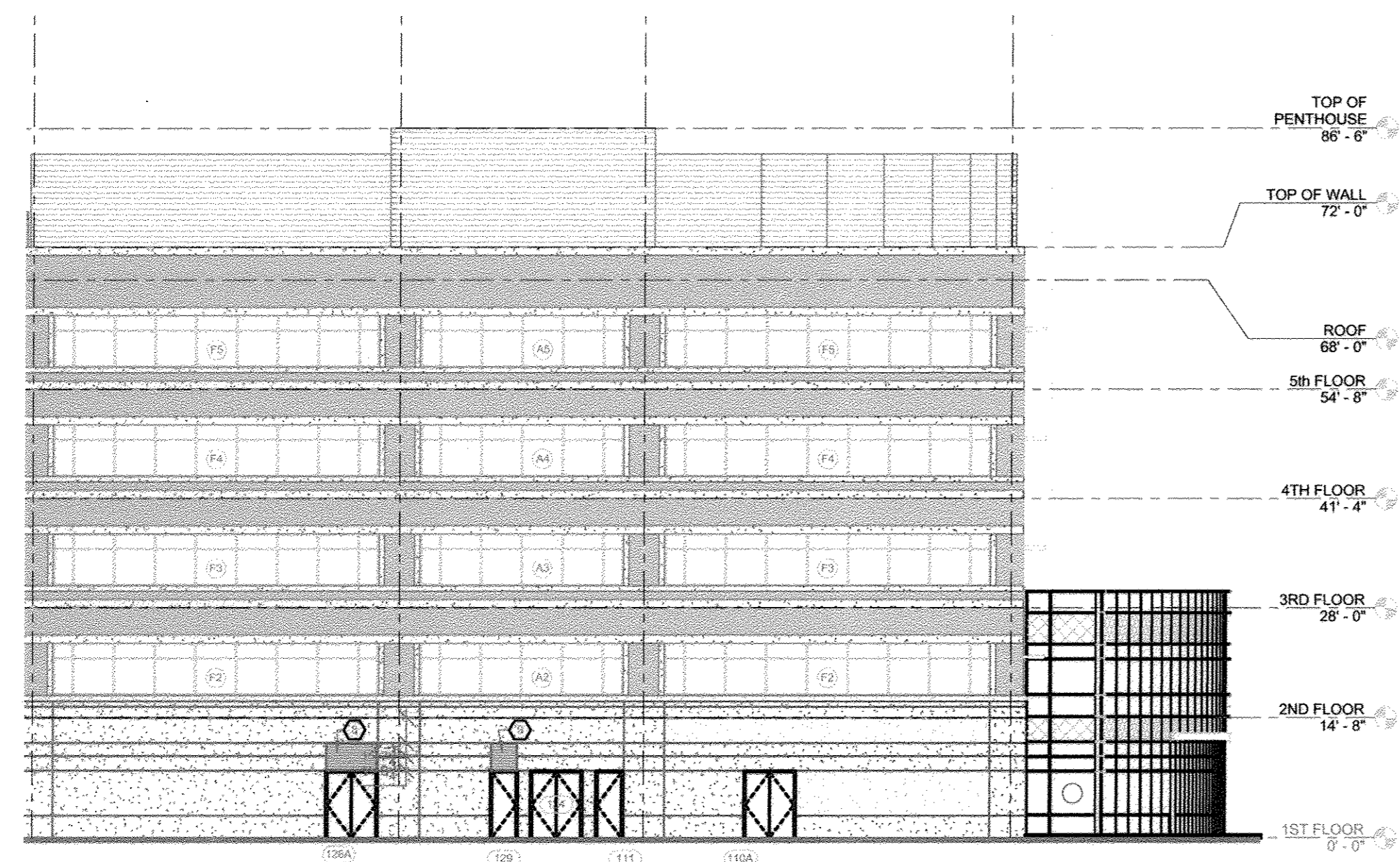
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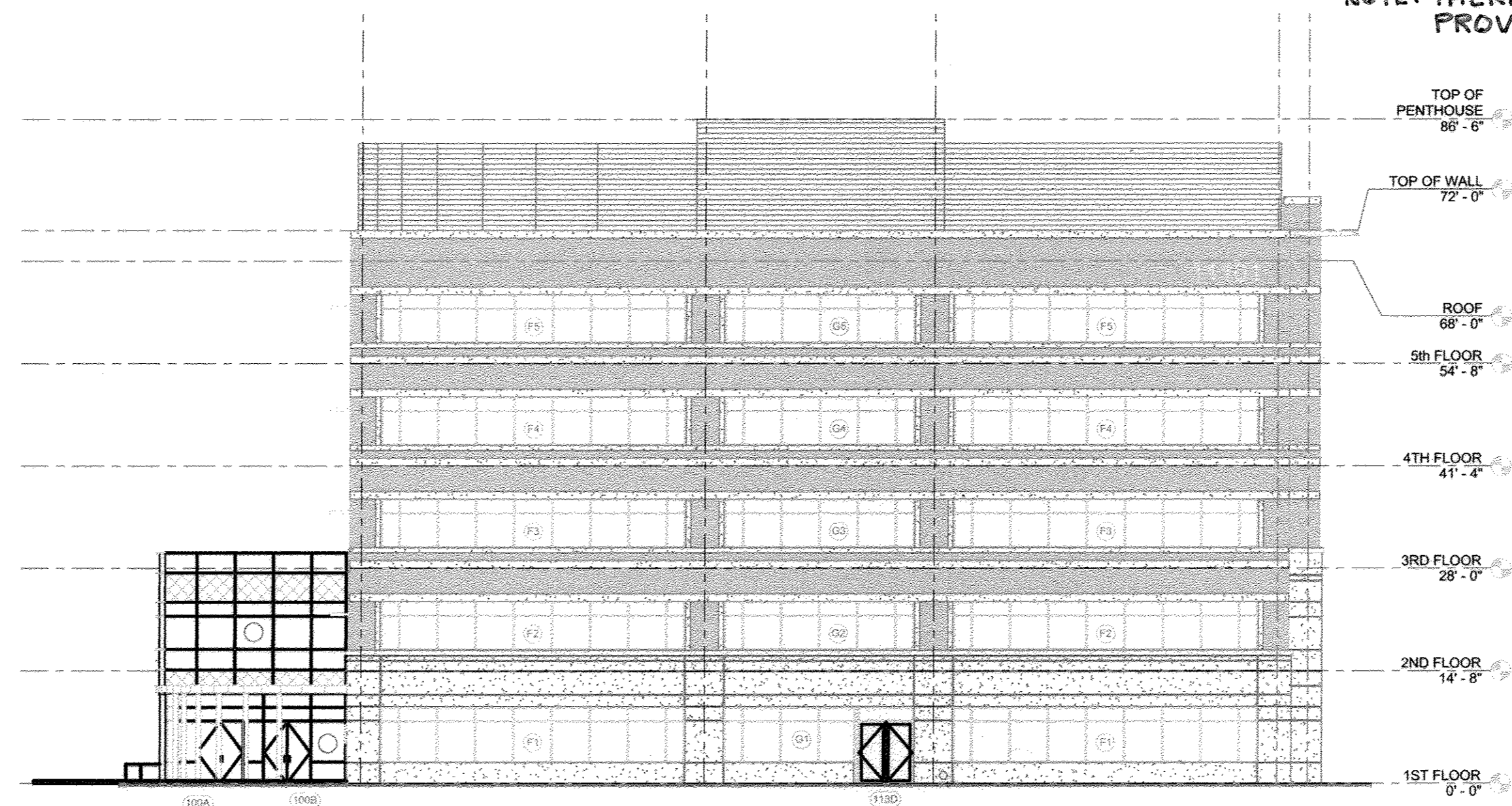
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SOUTH ELEVATION
NOT TO SCALE



WEST ELEVATION
NOT TO SCALE



EAST ELEVATION
NOT TO SCALE

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
SIGNATURE OF ENGINEER: *[Signature]* DATE: 10.9.09
JOHN M. HOUSEHOLDER
MD LICENSE NUMBER: 29907
EXPIRATION DATE: 1-27-2010

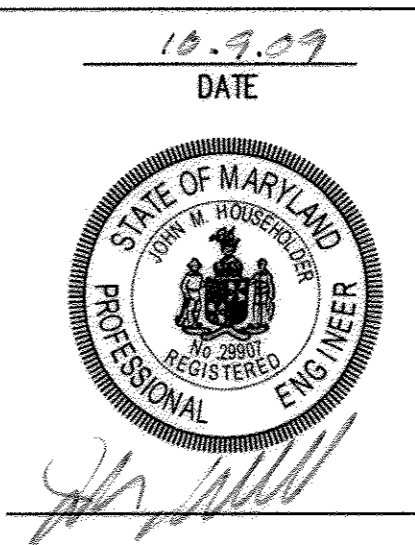
LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES
I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE: 10.9.09

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Development Engineering Division: *[Signature]* Date: 11/17/09
Chief, Division of Land Development: *[Signature]* Date: 1/28/10
Director: *[Signature]* Date: 1/16/10

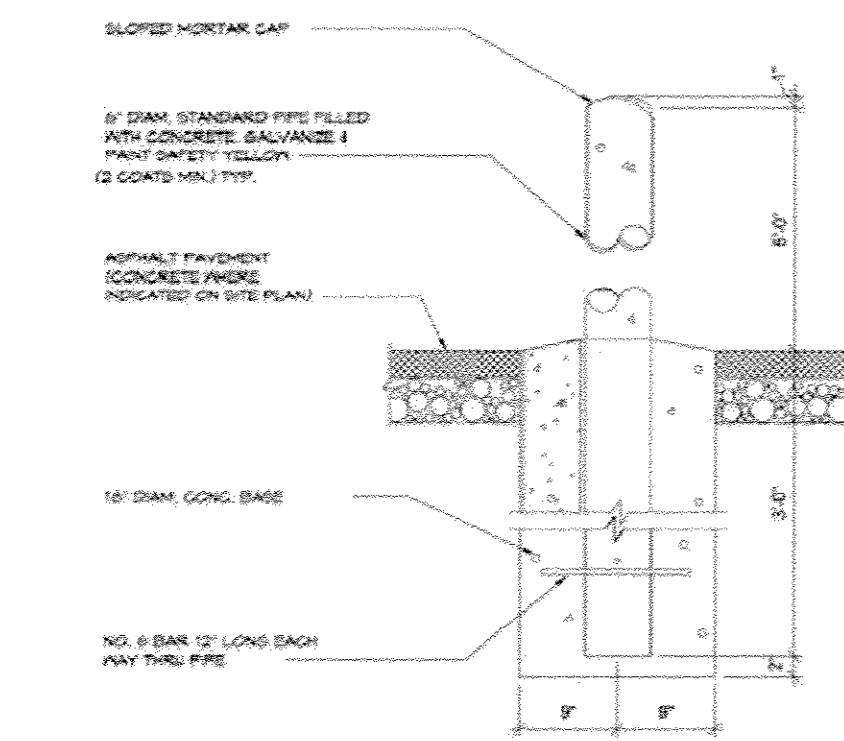
46 ARCHITECTURE
Date No. Revision Description
JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
1100 JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6089
ATTN: JAMES LOESCH, P.E., CFM
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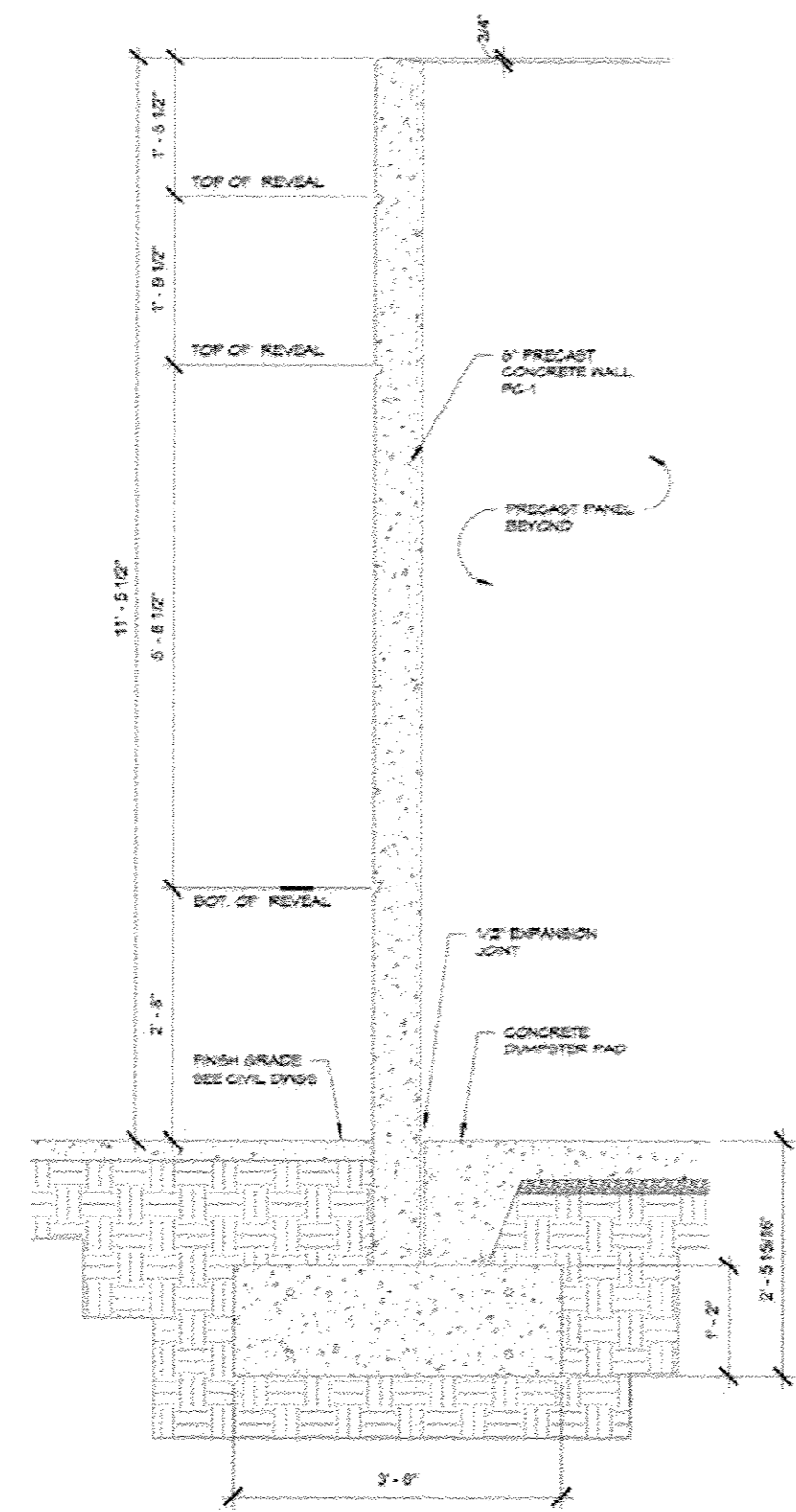
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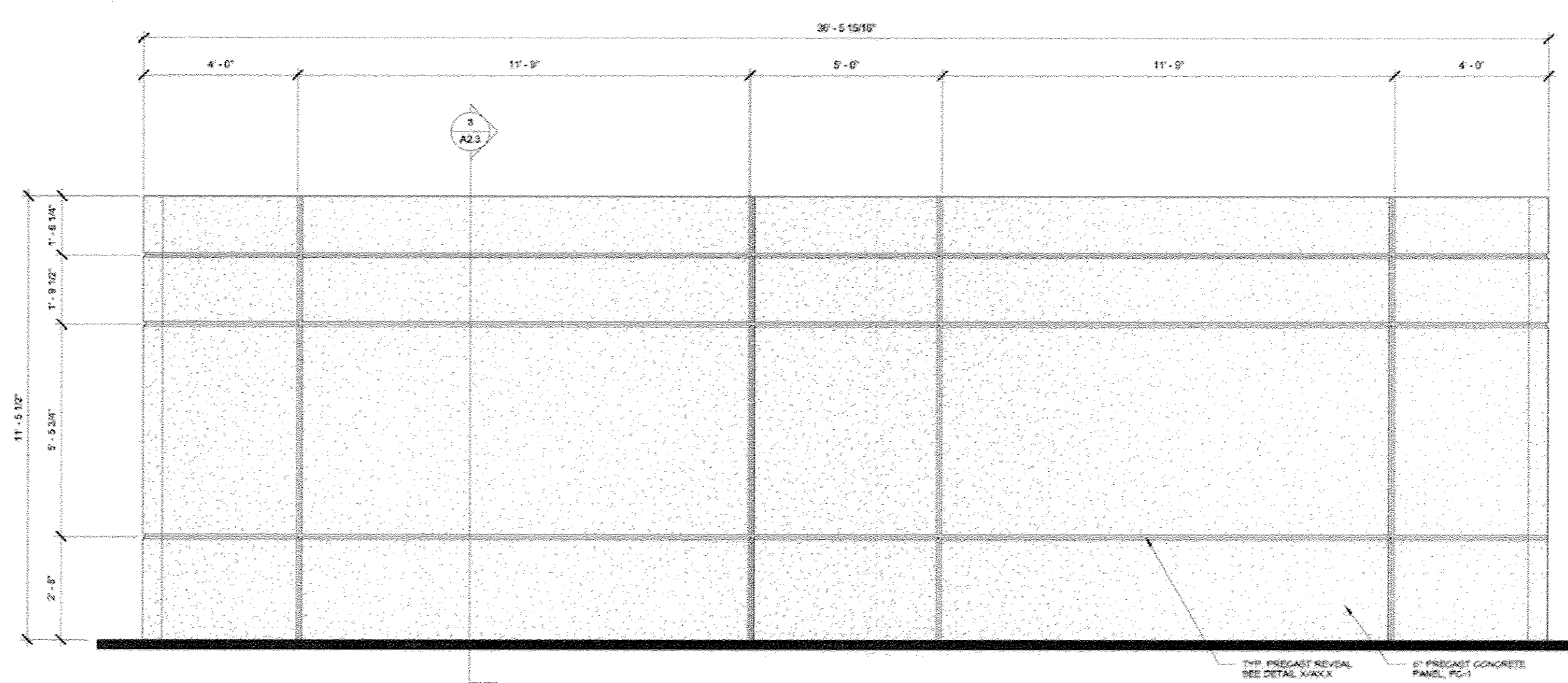
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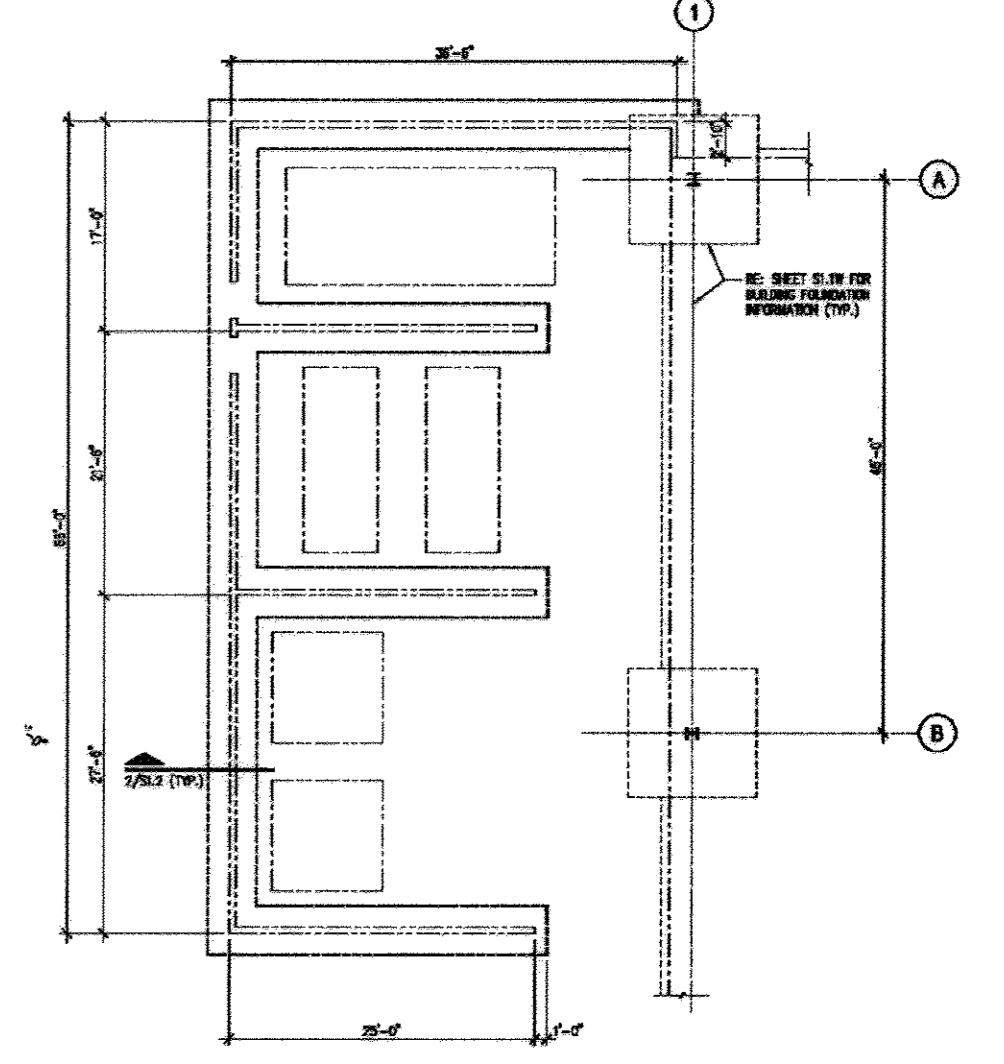
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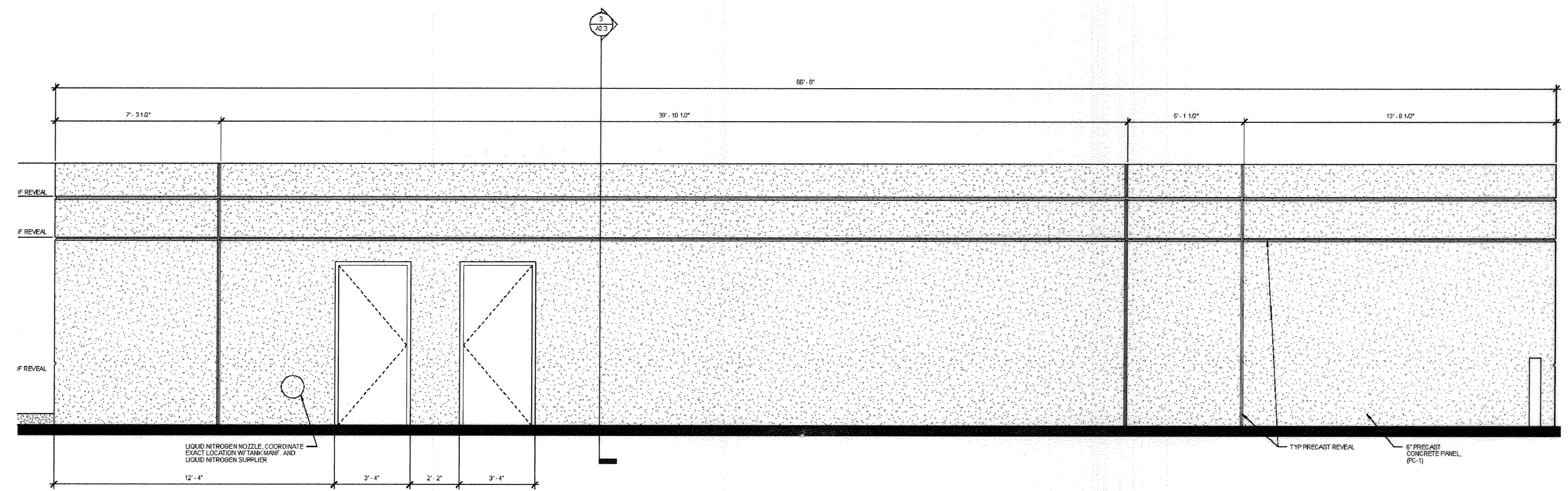
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2 SERVICE AREA NORTH ELEVATION
NOT TO SCALE



SERVICE AREA PLAN
NOT TO SCALE



SERVICE AREA WALL ELEVATIONS
NOT TO SCALE

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development
 Director

46 ARCHITECTURE

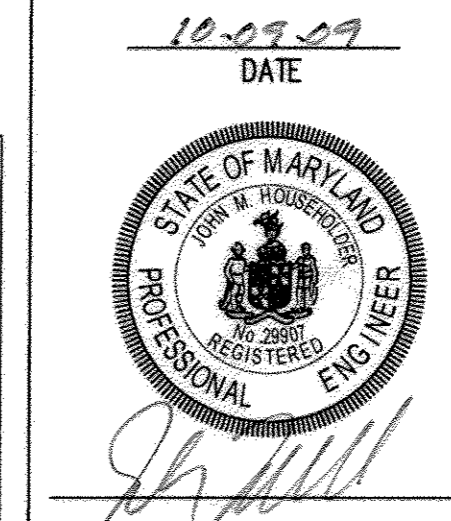
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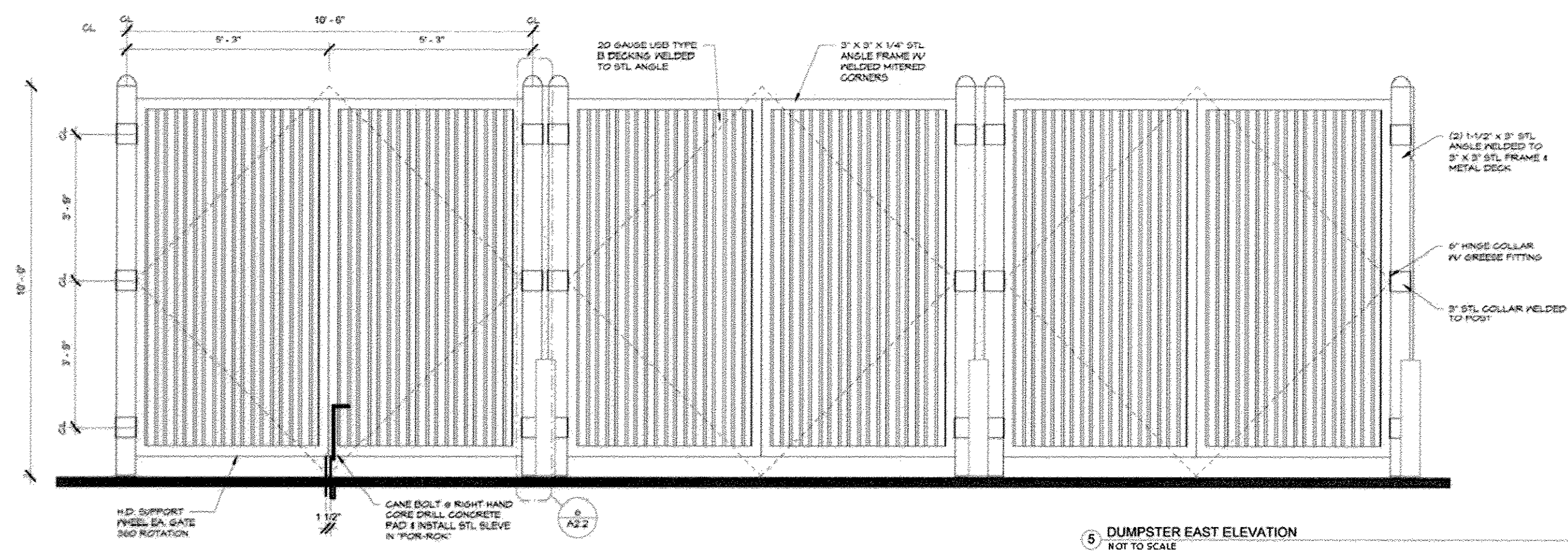
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| DEED REF. | L-10412, F.396 | GRID NO. | 22 | ZONE | PEC |
| | | TAX MAP | 41 | ELECTION DISTRICT | 5th |
| TITLE: | AS-BUILT ARCHITECTURE | | | | |
| DESIGN: | SCALE: AS SHOWN | PROJECT: | 08A901.00 | | |
| DRAWN: SSA | DATE: OCTOBER, 2009 | | | | |
| CHECKED: JMH | APPROVED: JMH | | | | |

LEED ACCREDITED PROFESSIONAL CERTIFICATE
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 SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. DATE

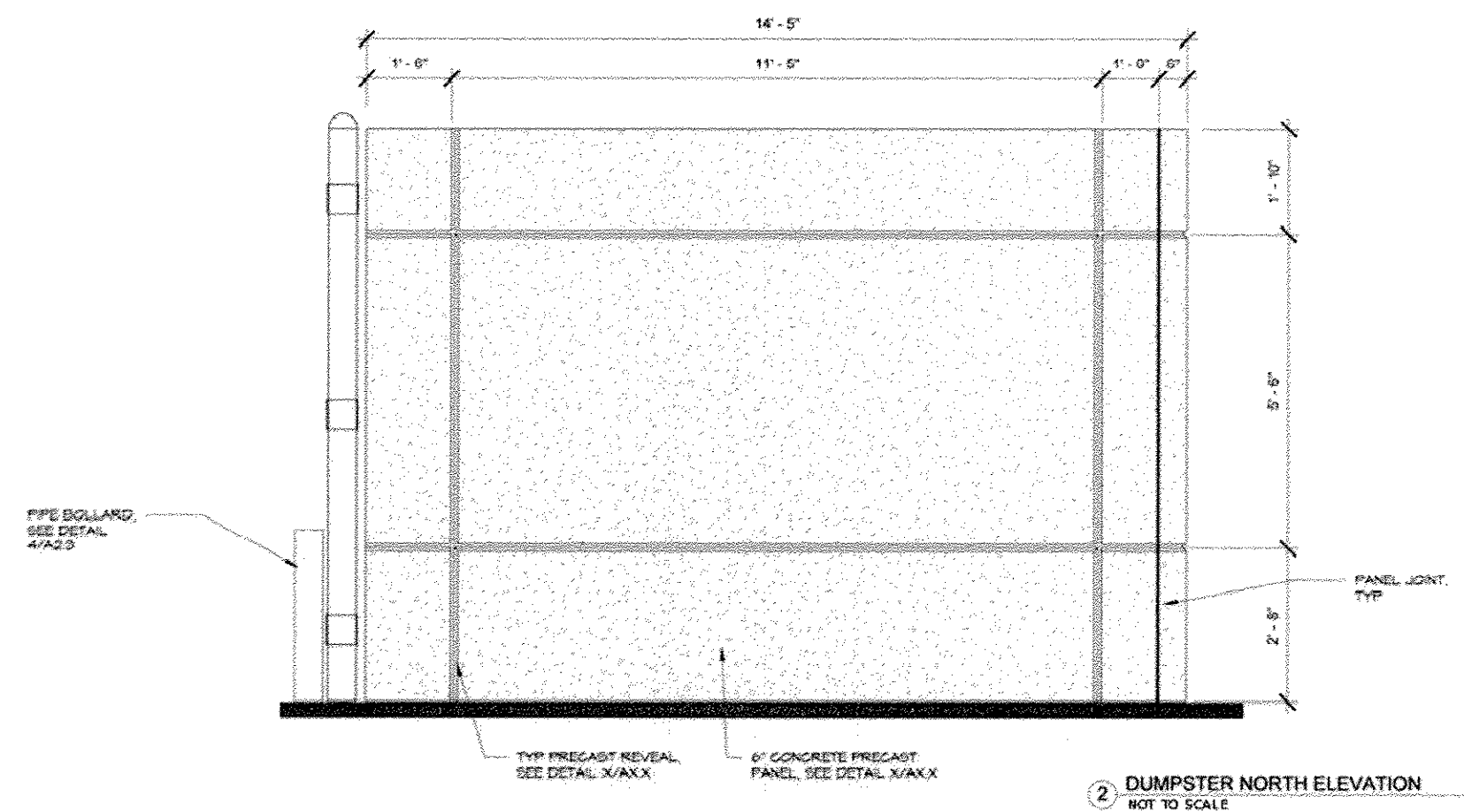
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 SIGNATURE OF ENGINEER
 JOHN M. HOUSEHOLDER
 MD LICENSE NUMBER: 29907
 EXPIRATION DATE: 1-27-2010
 DATE: 10.7.09



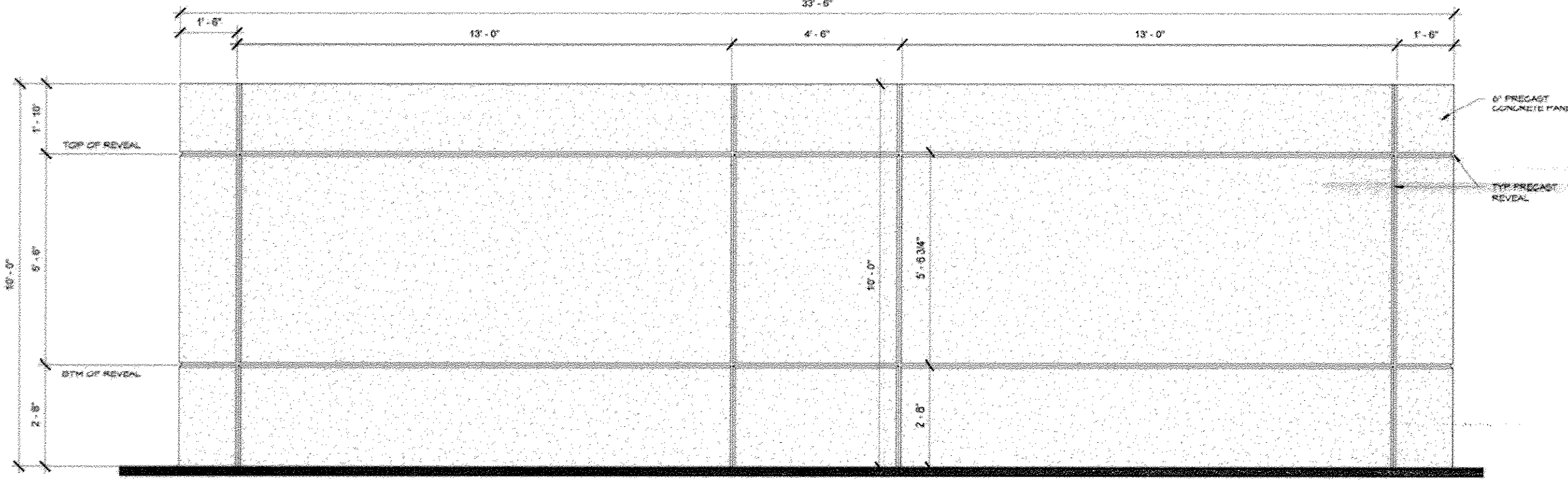
MDC-930(SDP)



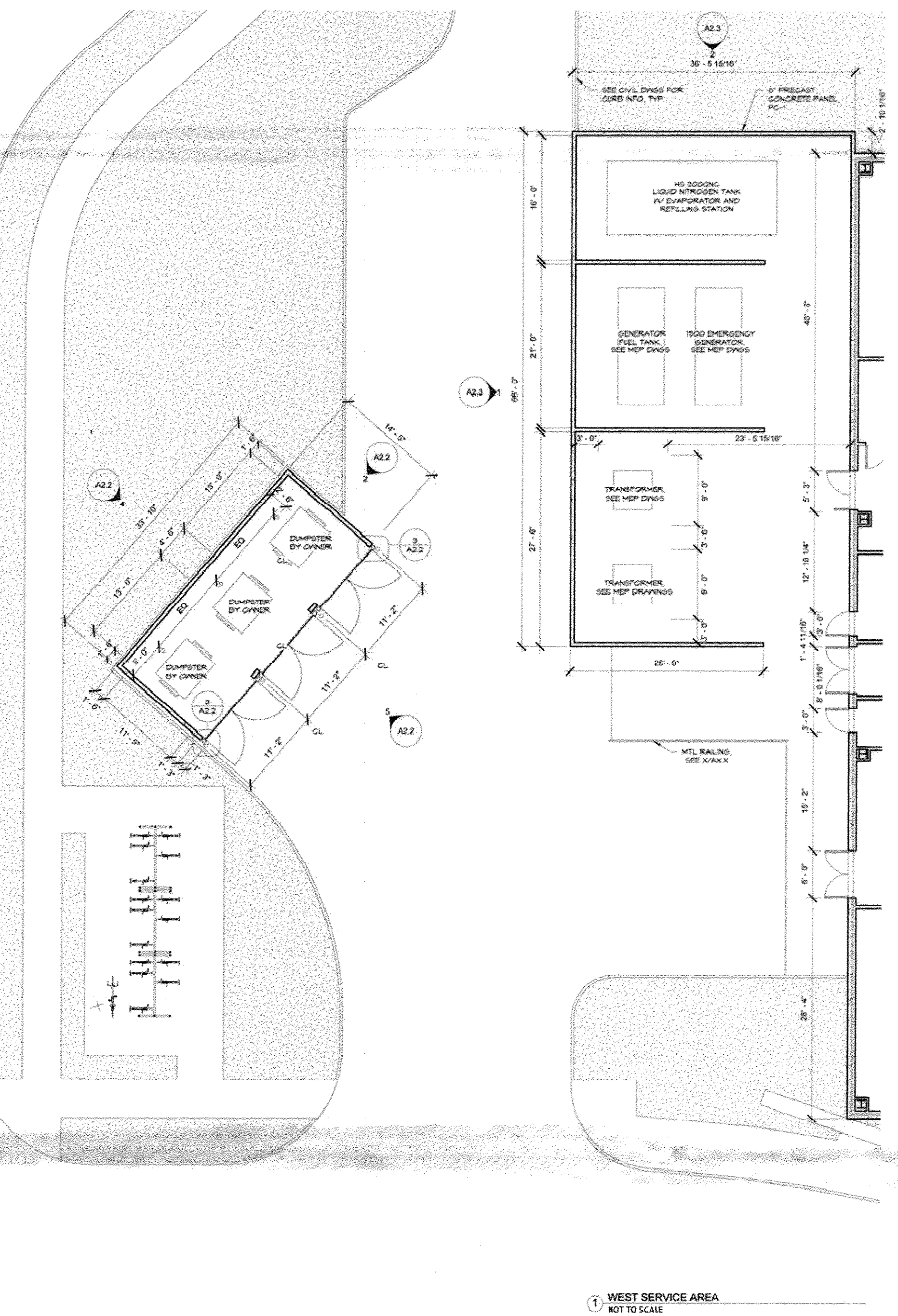
5 DUMPSTER EAST ELEVATION
NOT TO SCALE



2 DUMPSTER NORTH ELEVATION
NOT TO SCALE

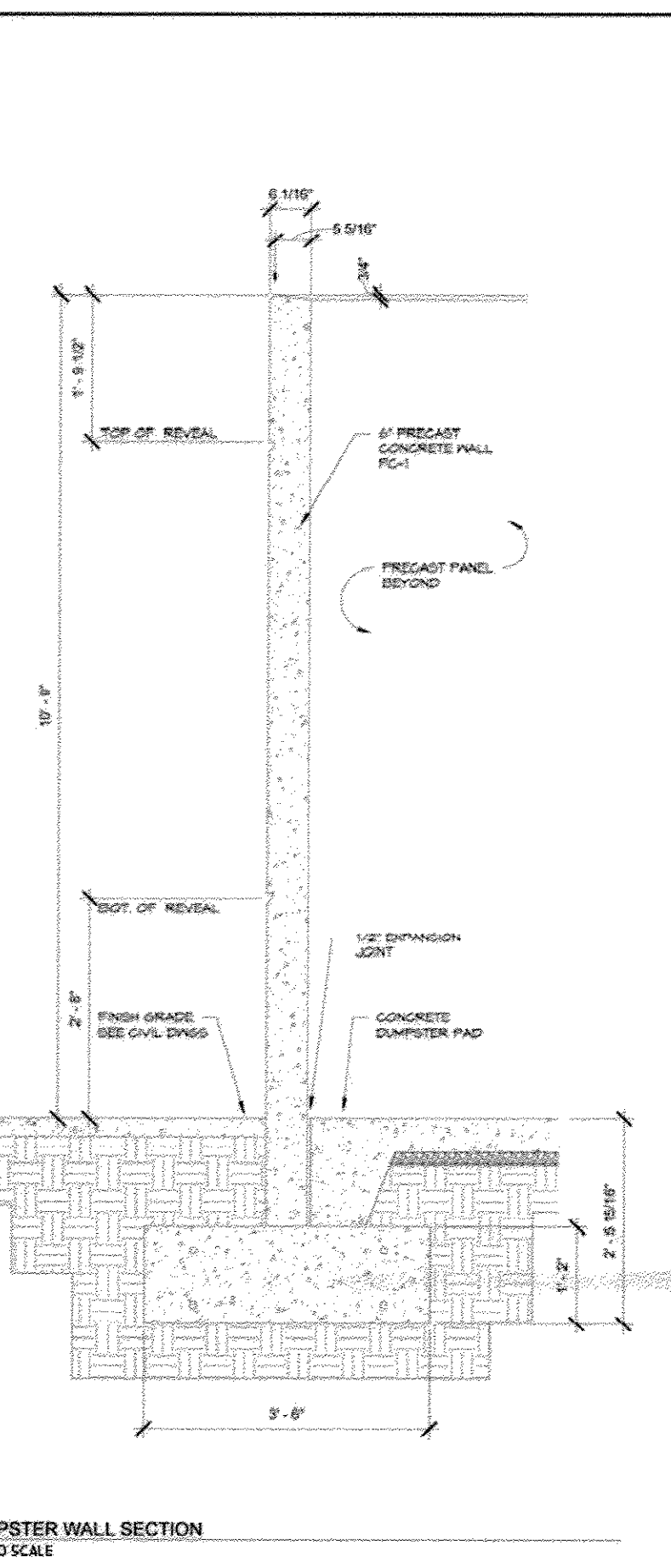


4 DUMPSTER WEST ELEVATION
NOT TO SCALE

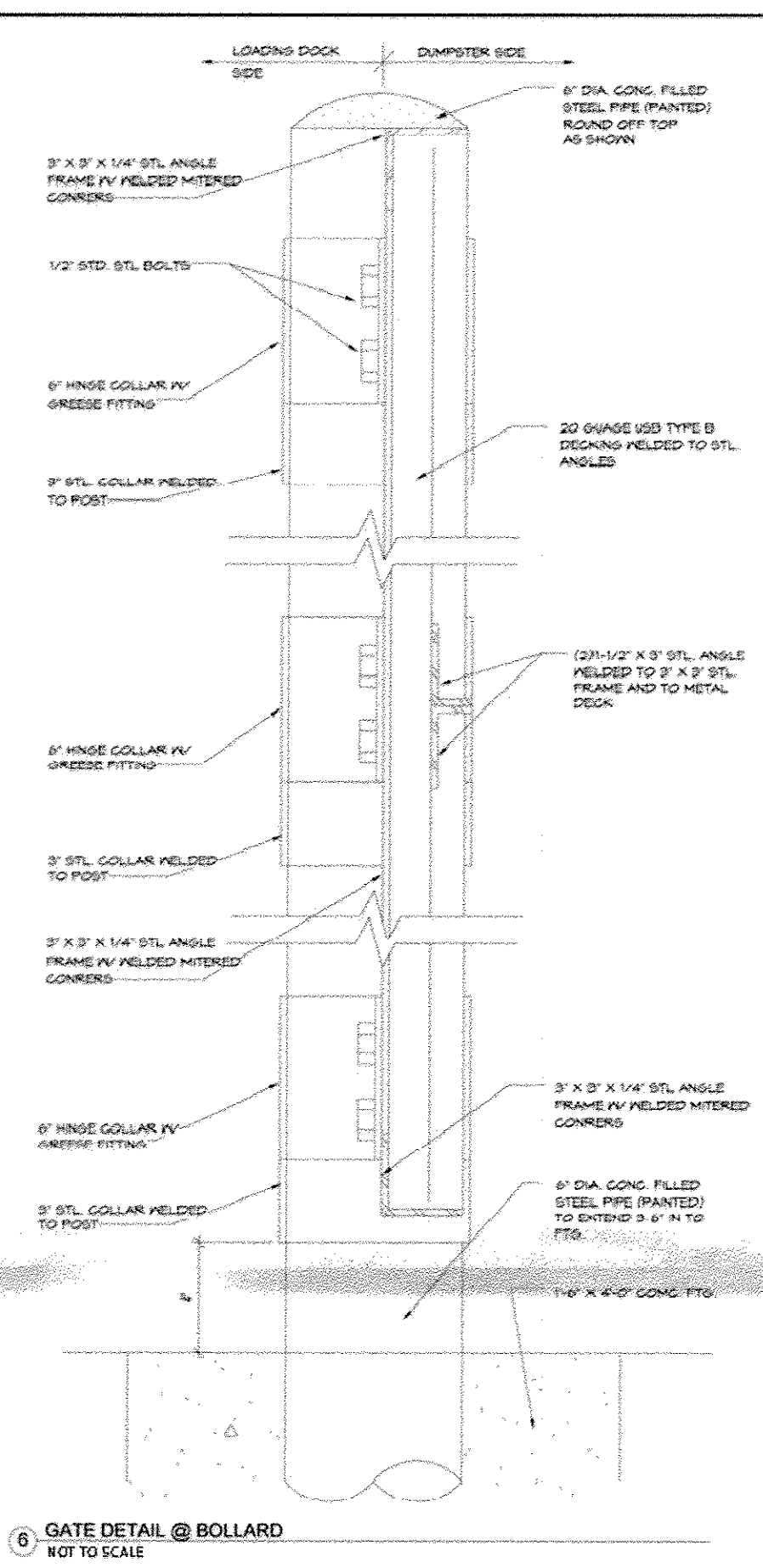


1 WEST SERVICE AREA
NOT TO SCALE

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 SIGNATURE OF ENGINEER: *[Signature]* DATE: 10-9-09
 JOHN M. HOUSEHOLDER MD LICENSE NUMBER: 29907 EXPIRATION DATE: 1-27-2010



7 DUMPSTER WALL SECTION
NOT TO SCALE

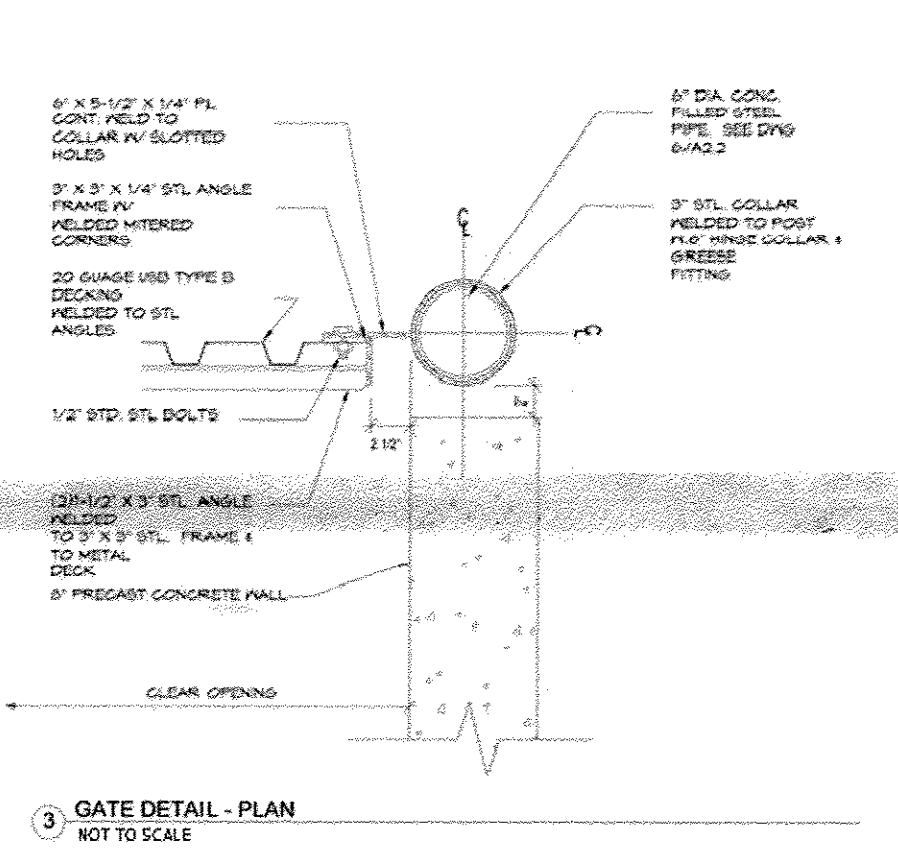


6 GATE DETAIL @ BOLLARD
NOT TO SCALE

SITE NOTES:

- REFER TO SITE PLAN, UTILITY PLAN, AND DIMENSION PLAN PREPARED BY PATTON HARRIS RUST & ASSOC. FOR SITE SERVICES, FINISH GRADING, EXTENT OF NEW ASPHALT PAVING, LOCATION OF CURBS, AND GUTTERS, ETC.
- THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS WHEN EXCAVATING ON THIS SITE TO FIRST DETERMINE LOCATIONS OF UNDERGROUND SERVICES. ARCHITECTURAL SITE PLAN SHALL BE READ IN CONJUNCTION WITH MECHANICAL AND ELECTRICAL UTILITY DRAWINGS.
- THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND CHECK DIMENSIONS, DISCREPANCIES BETWEEN DRAWINGS AND ACTUAL SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE CONSULTANT'S BEFORE COMMENCEMENT OR RESUMPTION OF WORK.
- THE CONTRACTOR SHALL ENSURE THAT WORK IN PROGRESS AREAS ARE EFFECTIVELY DEMARCADED FOR PUBLIC SAFETY AND CONFORM TO THE LATEST SAFETY CODES.
- PROTECT EXISTING UNDERGROUND UTILITY WORK. REPAIR AND MAKE GOOD DAMAGES DUE TO THIS WORK AT NO EXTRA COSTS TO THE OWNER.
- REPAIR AND MAKE GOOD DAMAGES TO EXISTING SEWERED AND ASPHALT AREAS DUE TO THIS WORK AT NO EXTRA COSTS TO THE OWNER.
- CONTRACTOR TO REVEAL SOIL REPORT FOR ADDITIONAL SITE INFORMATION AND REQUIREMENTS.

LANDSCAPE NOTE:
 INTENDED GRASS AREAS ADJACENT TO BLDGS. BETWEEN EXTERIOR WALL & SIDEWALK TO BE SEEDDED. OTHER AREAS TO BE HYDRIC SEEDDED.

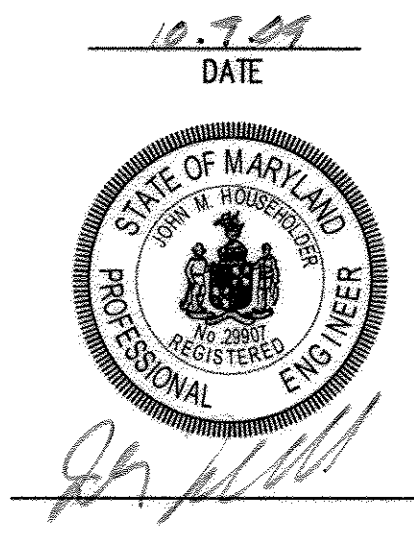


3 GATE DETAIL - PLAN
NOT TO SCALE

DUMPSTER AREA DETAILS
NOT TO SCALE

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.

LEED ACCREDITED PROFESSIONAL CERTIFICATE
 GREEN NEIGHBORHOOD PLAN FOR SITES
 I HEREBY CERTIFY THAT THIS PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN FOR ACHIEVING THE TARGETED CREDITS AND POINT TOTAL SHOWN ON THE GREEN NEIGHBORHOOD FOR SITES COMPLIANCE CHECKLIST.
 SIGNATURE OF BRIAN COLLINS LEED ACCREDITATION NO. 02907 DATE: 10-7-09



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division: *[Signature]* Date: 11/17/09
 Chief, Division of Land Development: *[Signature]* Date: 1/29/10
 Director: *[Signature]* Date: 1/16/10

46 ARCHITECTURE
 JOHN'S HOPKINS UNIVERSITY
 APPLIED PHYSICS LABORATORY
 1100 JOHN'S HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099
 ATTN: JAMES LOESCH, P.E., CFM
 PHONE: 443.778.5134 FAX: 443.778.6122

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 410.872.8600 · metro 301.881.0148 · fax 410.872.8603

| PERMIT INFORMATION CHART | | | | |
|---|------------------------|-------------------------|---------------|--------------------------|
| PROJECT NAME: JHU/APL- SOUTH CAMPUS BUILDING 200 | LOT/PARCEL NO. 300 | CENSUS TRACT 6051.02 | | |
| DEED REF. L10412 F.396 | GRID NO. 22 | ZONE PEC | TAX MAP 41 | ELECTION DISTRICT 5th |
| DATE: 10-7-09 | | | | |
| TITLE: AS-BUILT ARCHITECTURE | | | | |
| DESIGN: SSA | SCALE: AS SHOWN | PROJECT: 08A901.00 | | |
| DRAWN: SSA | DATE: OCTOBER, 2009 | 52 of 54 | | |
| CHECKED: JMH | APPROVED: JMH | SDP-09-047 | | |

MDC-9301(SDP)

