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- C-046 BUILDING 33 STORMWATER MANAGEMENT DETAILS
- L-101 BUILDING 33 LANDSCAPE PLAN

BUILDING #33 PROJECT AREA: 0.3 ACRES
AREA OF PLAN SUBMISSION: 0.5 ACRES
LIMIT OF DISTURBANCE: 0.5 ACRES
NO NEW EMPLOYEES
REQUIRED ADDITIONAL PARKING: N/A
PROPOSED BUILDING COVERAGE: 0.1 ACRES
GROSS FLOOR AREA COVERAGE: 0.1 ACRES
0.1% OF TOTAL LOT AREA
EXISTING OPEN SPACE (WITHIN LOD): 0.12 AC.
PROPOSED OPEN SPACE (WITHIN LOD): 0.17 AC.
NOTE: PROPOSED ONSITE PARKING IS ONE HANDICAPPED ACCESSIBLE SPACE.

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. 19376 EXPIRATION DATE: 09-22-2019

SEAL APPLIES TO ADDENDUM #2 ONLY

- GENERAL NOTES:**
- THE TOPOGRAPHIC AND UTILITY INFORMATION SHOWN IN THIS PLAN WERE OBTAINED FROM FIELD SURVEYS PERFORMED BY CENTURY ENGINEERING, INC. (2003), A. MORTON THOMAS AND ASSOCIATES (2003) AND JHU APPLIED PHYSICS LAB AERIAL TOPOGRAPHY AND UTILITY INFORMATION. SINCE NOT ALL INFORMATION SHOWN MAY REFLECT CURRENT CONDITIONS IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY CURRENT TOPOGRAPHIC AND UTILITY INFORMATION TO HIS OWN SATISFACTION.
 - THE CONTRACTOR SHALL CONTACT MR. RUSTY OBER (443) 778-0167 AT LEAST TEN DAYS BEFORE STARTING WORK OR DISRUPTION OF ANY UTILITIES.
 - THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION 24 HOURS IN ADVANCE OF COMMENCING WORK AT (410) 313-1880.
 - CONTRACTOR SHALL CONTACT JHU/APL PLANT FACILITIES OFFICE (443) 778-0167 AND "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO START OF THE EXCAVATION AND MUST NOTIFY ALL PUBLIC UTILITY COMPANIES AND THE OWNER OF UNDERGROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION.
 - WATER IS PUBLIC (HOWARD COUNTY)
 - SEWER IS PUBLIC (HOWARD COUNTY)
 - SOIL MAP USED SHEET NO. 29, SOIL SURVEY JULY 1968 HOWARD COUNTY, MARYLAND, USDA.
 - THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY F 02-40.
 - NO FLOODPLAINS, WETLANDS, STREAMS OR STEEP SLOPES ARE LOCATED WITHIN 100' OF LIMIT OF DISTURBANCE.
 - NO PERIMETER LANDSCAPING IS REQUIRED FOR THIS PLAN DUE TO INTERNAL LOCATION OF PROPOSED BUILDINGS.
 - THE SITE PLAN FOR BASIN G MUST BE UNDER CONSTRUCTION OR FINISHED BEFORE THIS BUILDING CONSTRUCTION CAN PROCEED.

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. 12376 EXPIRATION DATE: 07/27/2021

NOTE: THIS SEAL & CERTIFICATION APPLIES ONLY TO REVISION

SITE ANALYSIS DATA CHART

TOTAL PROJECT AREA: 361 Ac +/-
 AREA OF PLAN SUBMISSION: 10.7 Ac +/-
 LIMIT OF DISTURBANCE: 10.7 Ac +/-
 PRESENT ZONING: PEC
 PROPOSED USE: SERVICE AREA COMPLEX / RESEARCH FACILITY
 MAXIMUM NUMBER OF EMPLOYEES (FOR PARKING COMPUTATIONS)
 TRADES BUILDING (#29): NO NEW EMPLOYEES
 MULTI-USE BUILDING (#35): NO NEW EMPLOYEES
 MAXIMUM NUMBER OF JHU/APL EMPLOYEES: 3937
 EXISTING MAXIMUM NUMBER OF PARKING SPACES REQUIRED BY ZONING: 2450 (SDP 99-11)
 EXISTING ONSITE PARKING SPACES: 2975 (SDP 04-66)
 REQUIRED ADDITIONAL EMPLOYEE PARKING SPACES: N/A
 PROPOSED ADDITIONAL EMPLOYEE PARKING SPACES: N/A

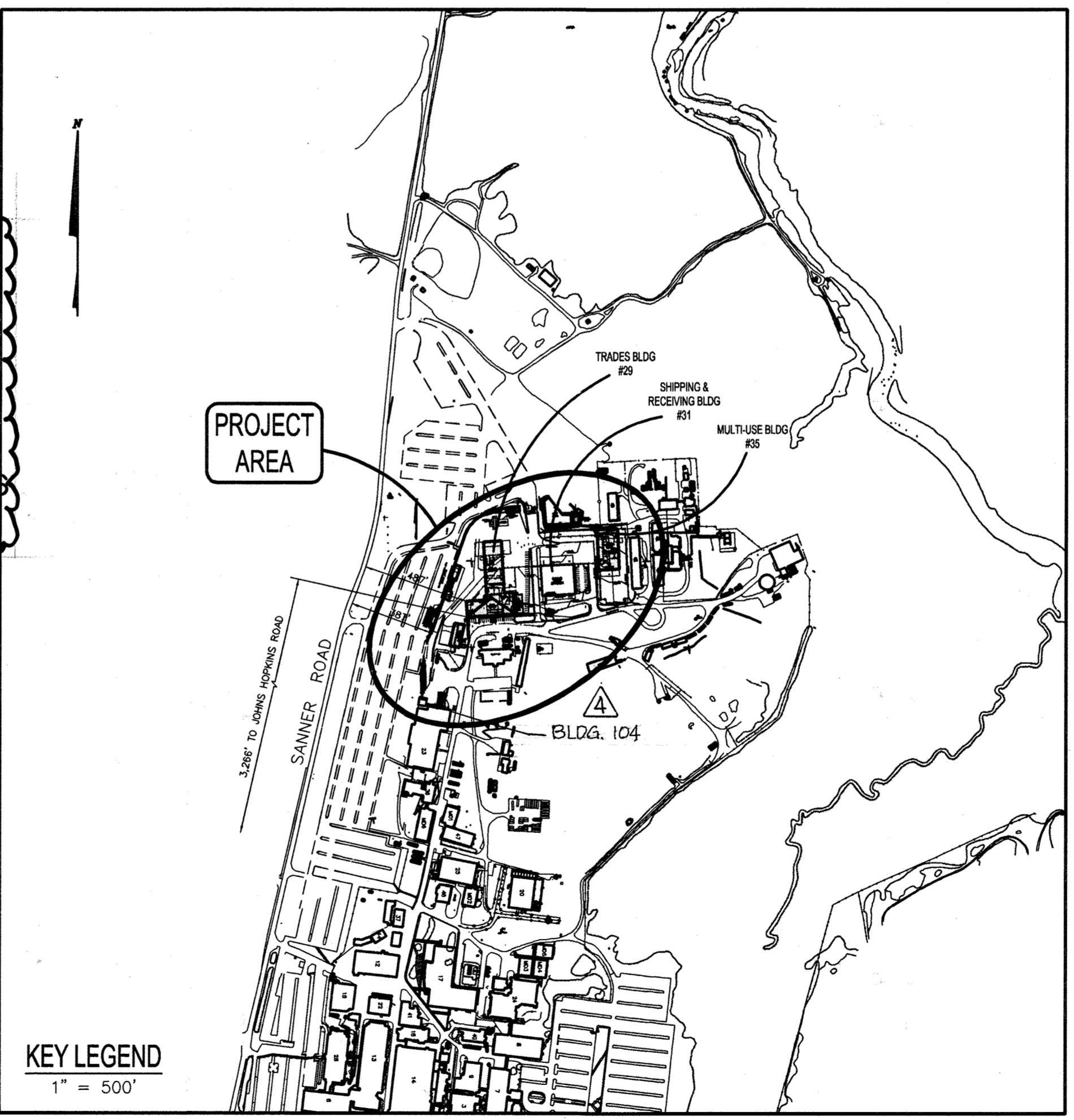
NOTE: PROPOSED ONSITE PARKING SPACES ARE FOR FLEET VEHICLES ONLY.

EXISTING BUILDING COVERAGE = 19.7 ACRES
 EXISTING GROSS FLOOR AREA COVERAGE = 42.7 ACRES,
 11.8% OF TOTAL LOT AREA
 PROPOSED BUILDING COVERAGE = 1.4 ACRES
 GROSS FLOOR AREA COVERAGE = 2.1 ACRES
 6% OF TOTAL LOT AREA
 TOTAL GROSS FLOOR AREA COVERAGE = 44.8 ACRES
 12.4% OF TOTAL LOT AREA
 CASE NUMBERS APPLICABLE: IMPROVEMENTS
 F 02-40 - SWM BASIN A, APFO, AND FOREST CONSERVATION
 SDP 04-35 - SWM BASIN G
 SDP 90-218 - BUILDING #31 & EXISTING SWM BASIN G
 SDP 99-63 B52 F 02-77 - SWM BASIN B
 SDP 04-66 MAIN PARKING LOT

SANITARY SEWER/WATER SERVICE - PRIVATE ONSITE SYSTEM, PUBLIC CONNECTION

EXISTING OPEN SPACE AREA (TOTAL AREA MINUS PARKING & BUILDINGS)
 = 300 ACRES, 83% OF TOTAL LOT AREA
 = 291 ACRES, 80.6% OF TOTAL LOT AREA
 = 287 ACRES, 79.5% OF TOTAL LOT AREA

PROPOSED OPEN SPACE AREA = 300 ACRES, 83% OF TOTAL LOT AREA



BENCHMARKS:

COURSES AND COORDINATES ARE BASED ON THE MARYLAND STATE COORDINATE SYSTEM (NAD 83) AND ARE DERIVED FROM THE FOLLOWING JOHNS HOPKINS UNIVERSITY CONTROL STATIONS:

STATION	NORTH	EAST	ELEV.	DESCRIPTION
HOPKINS	544836.5300	1340825.3542		
G12	550256.5002	1342325.2642		
G7	548107.0328	1341025.0830		
G8	549478.7005	1341170.4345		
41 EA	544825.8093	1339217.4439		
503	547910.16	1341784.40	380.65	"X"-CUT ON N.W. FIRE HYDRANT BONNET BOLT
504			362.77	BOX-CUT ON N.E. COR. OF POND INLET STRUCT.
644	548783.0482	1341364.4945	394.92	REBAR AND CAP
645	548275.6339	1341941.2036	363.53	REBAR AND CAP

SITE DEVELOPMENT PLAN

SDP 04-76

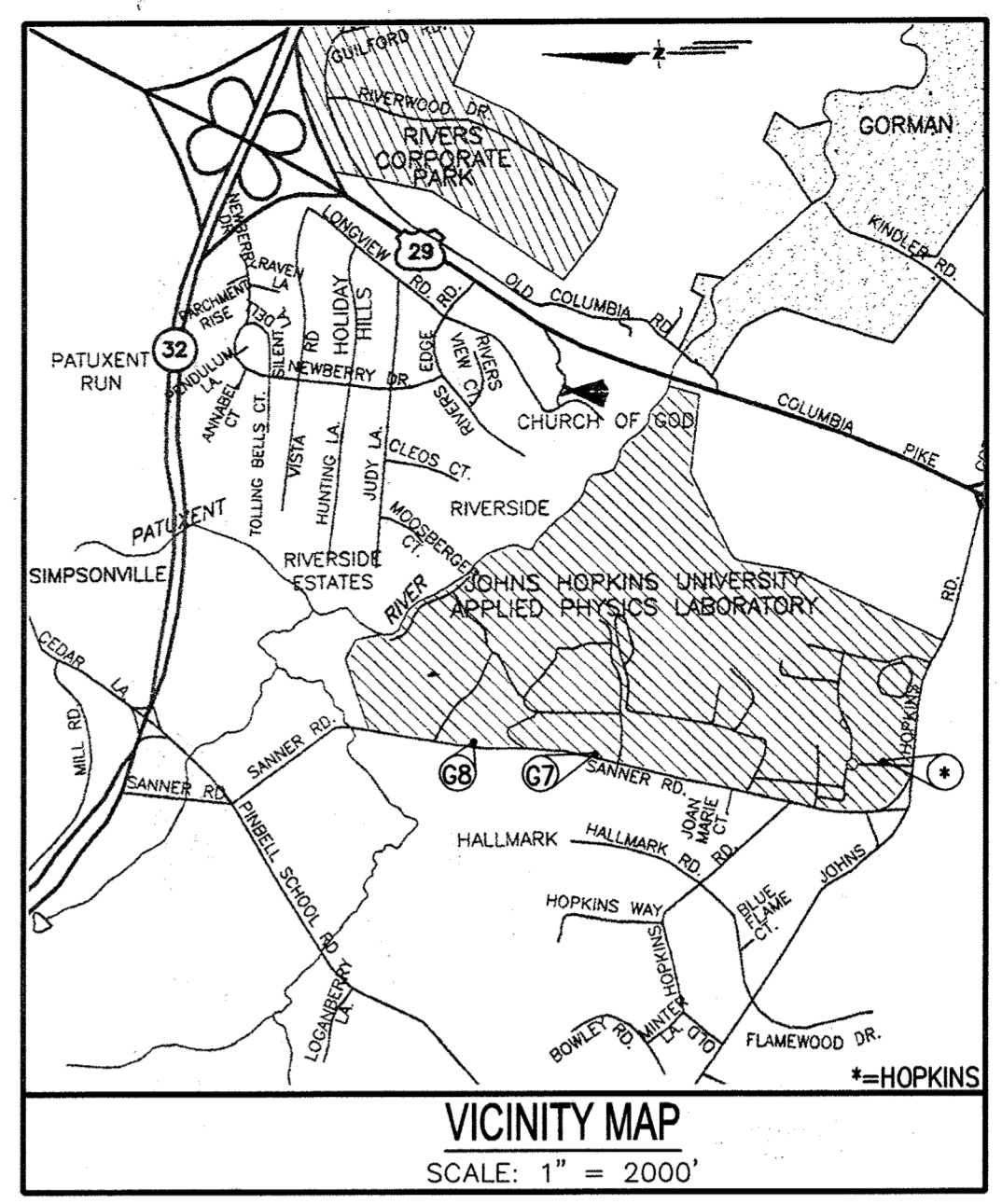
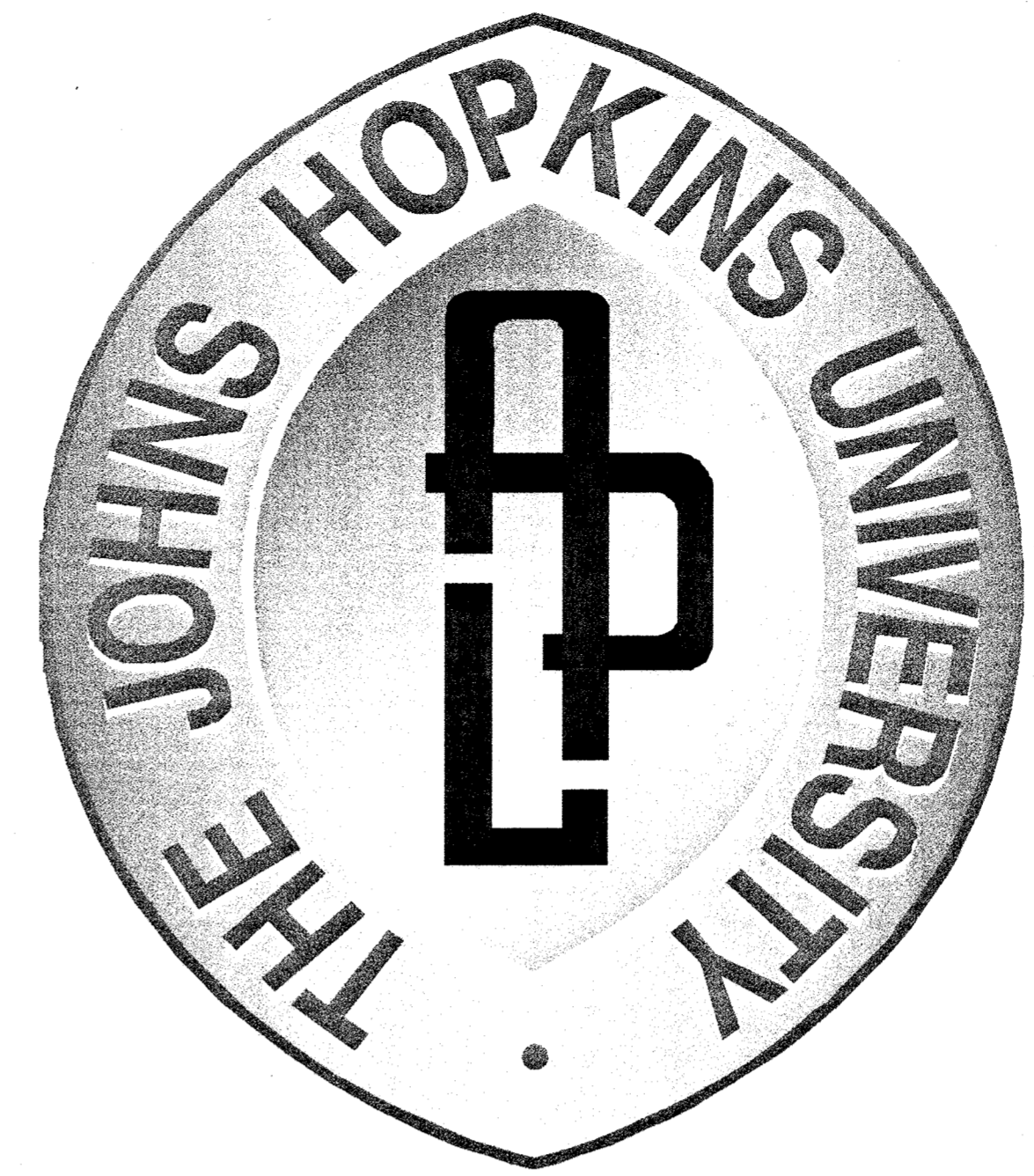
SERVICES AREA COMPLEX

TRADES AND MULTI-USE BUILDINGS

BUILDINGS 29 AND 35

THE JOHNS HOPKINS UNIVERSITY

APPLIED PHYSICS LABORATORY



LEGEND

TOPOGRAPHIC FEATURE	EXISTING	PROPOSED
MINOR CONTOUR	--- 391 ---	--- 379 ---
MAJOR CONTOUR	--- 390 ---	--- 380 ---
SPOT ELEVATION	387.6	385.58
FIRE HYDRANT	dh	dh
STORM DRAIN	--- 50 --- 50 ---	--- 50 --- 50 ---
WATER LINE	--- W --- W ---	--- W --- W ---
SANITARY SEWER	--- S --- S ---	--- S --- S ---
GAS LINE	--- G --- G ---	--- G --- G ---
ELECTRIC LINE	--- E --- E ---	--- E --- E ---
COMMUNICATIONS LINE	--- C --- C ---	--- C --- C ---
FUEL LINE	--- F --- F ---	--- F --- F ---
MANHOLE	o	o
INLET	o	o
TREE LINE	~ ~ ~ ~ ~	~ ~ ~ ~ ~
BUILDING	[Solid rectangle]	[Solid rectangle]
CURB AND GUTTER	--- ---	--- ---
ROLLED CURB AND GUTTER	--- ---	--- ---
BITUMINOUS PAVING	--- ---	--- ---
HEAVY DUTY CONCRETE PAVING	--- ---	--- ---
CONCRETE SIDEWALK	--- ---	--- ---
FENCE	-X-X-X-	-X-X-X-
WALL	--- ---	--- ---
BORING	o	o
CLEANOUT	o	o
LIGHT STANDARD	o	o
BUSH	o	o
TREE	o	o
PIPE BOLLARD	o	o
UTILITY POLE	o	o

CONTACT PERSON FOR THE OWNER
 MR. RUSTY OBER
 VOICE: (443) 778-0167
 FAX: (443) 778-6122

OWNER / ADDRESS
 THE JOHNS HOPKINS UNIVERSITY
 APPLIED PHYSICS LABORATORY
 11100 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723

PERMIT INFORMATION CHART

SUBDIVISION NAME: JHU APPLIED PHYSICS LAB	SECTION/AREA: N/A	LOT/PARCEL NO.: 1
PLAT# OR L/F: 15429, 15433	GRID: #16, ZONING: PEC	TAX MAP: #41, ELEC. DIST.: 5, CENSUS TRACT: 6051
WATER CODE: E-21	SEWER CODE: 6480000	

APPROVED, DEPARTMENT OF PLANNING AND ZONING

CHIEF-DEVELOPMENT ENGINEERING DIVISION: MK, DATE: 3/16/14

DIVISION OF LAND DEVELOPMENT: RB, DATE: 3/18/14

DIRECTOR: RB, DATE: 3/18/14

aba ARCHITECTS
 Amos Bailey Arnold + Associates, Inc.
 3600 Clipper Mill Road, Suite 300
 Baltimore, Maryland 21211
 Phone: 410.235.9812 Fax: 410.235.3715

Century Engineering, Inc.
 32 West Road Town, Maryland 21204
 Voice (410) 823-8070
 Fax (410) 823-2184

Project Title:
SERVICES AREA COMPLEX
 TRADES BLDG. - #29
 MULTI-USE BLDG. - #35

JHU - APL
 11100 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6059

- Revisions:
- △ ADDENDUM #1 - 01/09/04
 - △ RED LINED PLAN CHANGES 12/04/04
 - △ ADDENDUM #2 4/2015
 - △ REMOVAL OF BLDG. 23A. ADDED ANCILLARY BATTERY BUILDING 1/2021

Certification:

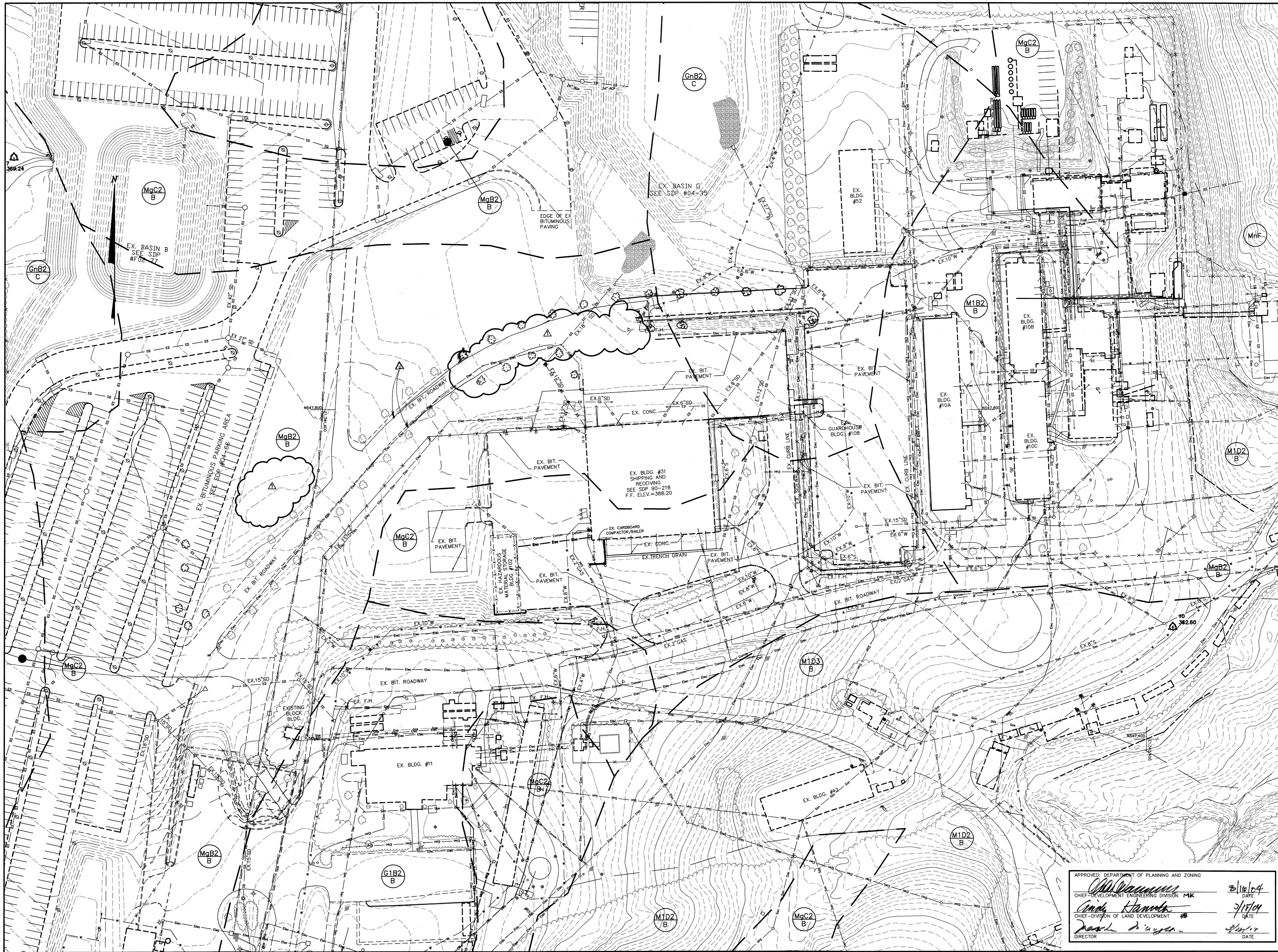
Robert S. Bethel
 2/24/14

- Issued for:
- REVIEW
 - NOT FOR CONSTRUCTION
 - BID
 - CONSTRUCTION
 - PERMIT
 - 90% CD SUBMISSION

Drawing Title:
COVER SHEET

Project No.:
 Scale: AS NOTED
 Date: 12-10-03

Sheet No.:
C-001
 Sheet 1 of 31



Project Title:
**SERVICES AREA
COMPLEX**
TRADES BLDG. - #29
MULTI-USE BLDG. - #35

JHU - AFL
1100 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20723-6099

Revisions:
▲ ADDENDUM #1 - 01/09/04
▲ RED-LINED PLANS CHANGE 10/06/04

Certification:

Issued for:
 REVIEW NOT FOR CONSTRUCTION
 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
**EXISTING
CONDITIONS
PLAN**

Project No.: Sheet No.:
C-002

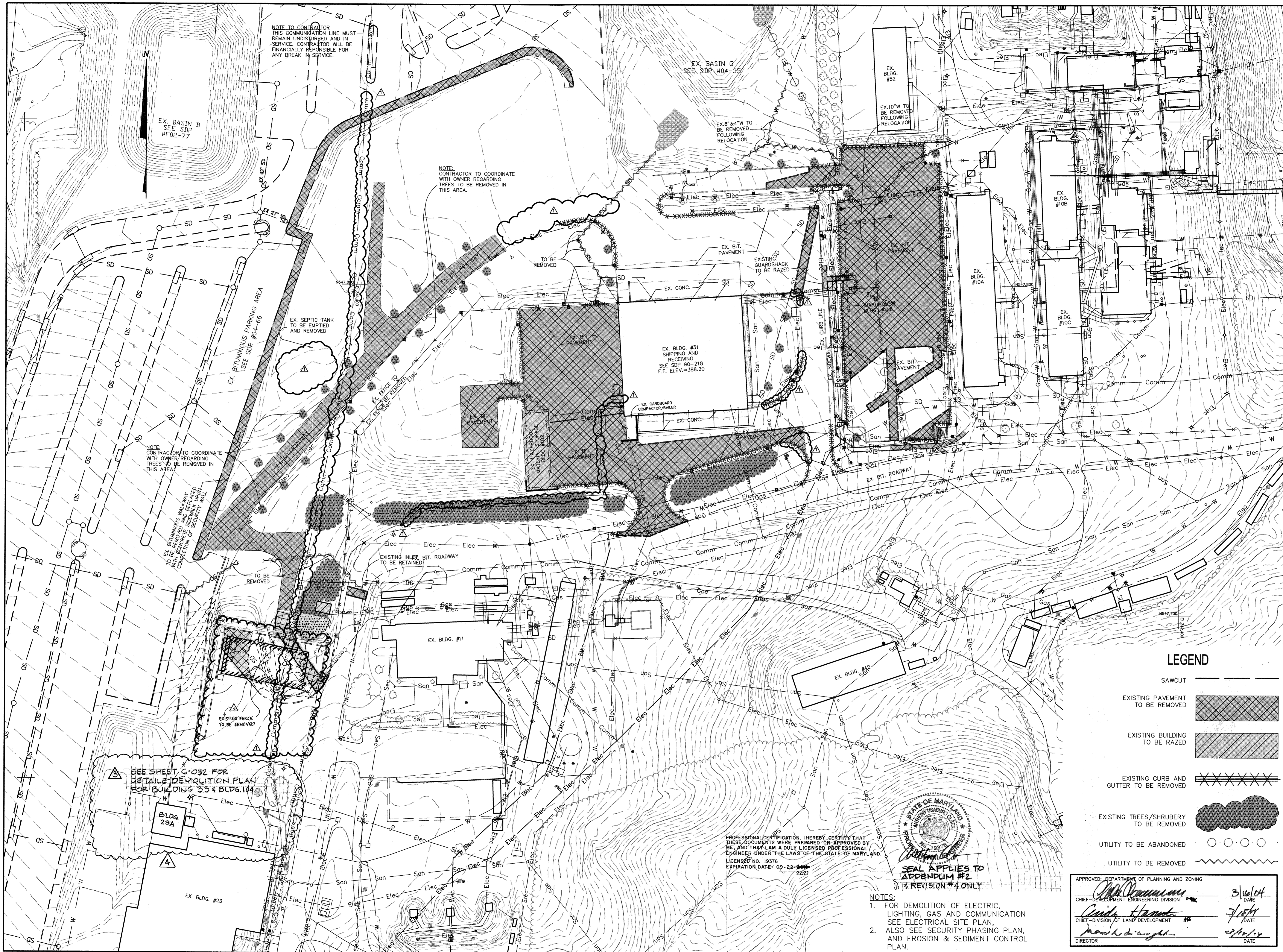
Scale: 1" = 50'
Date: 12-10-03 Sheet 2 of 31

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF-DEVELOPMENT ENGINEERING DIVISION 1-MK 3/16/04 DATE

CHIEF-DIVISION OF LAND DEVELOPMENT 1-B 3/15/04 DATE

DIRECTOR 3/16/04 DATE



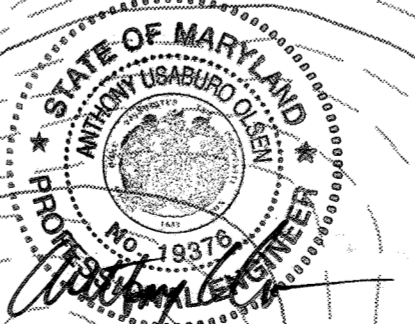
NOTE TO CONTRACTOR
THIS COMMUNICATION LINE MUST
REMAIN UNDISTURBED AND IN
SERVICE. CONTRACTOR WILL BE
FINANCIALLY RESPONSIBLE FOR
ANY BREAK IN SERVICE.

NOTE:
CONTRACTOR TO COORDINATE
WITH OWNER REGARDING
TREES TO BE REMOVED IN
THIS AREA.

NOTE:
CONTRACTOR TO COORDINATE
WITH OWNER REGARDING
TREES TO BE REMOVED IN
THIS AREA.

SEE SHEET C-032 FOR
DETAILED DEMOLITION PLAN
FOR BUILDING 33 & BLDG. 104

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. 19376
EXPIRATION DATE: 09-22-2021



SEAL APPLIES TO
APPENDIX #2
SHEET #4 ONLY

- NOTES:
- FOR DEMOLITION OF ELECTRIC, LIGHTING, GAS AND COMMUNICATION SEE ELECTRICAL SITE PLAN.
 - ALSO SEE SECURITY PHASING PLAN, AND EROSION & SEDIMENT CONTROL PLAN.

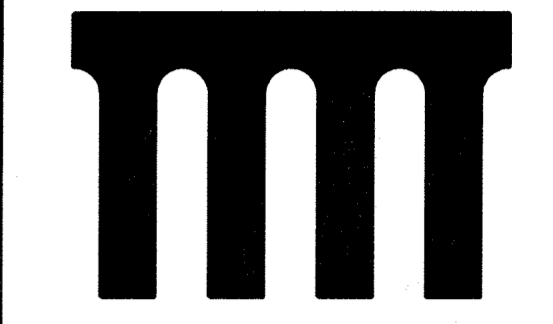
LEGEND

- SAWCUT ————
- EXISTING PAVEMENT TO BE REMOVED [Cross-hatched pattern]
- EXISTING BUILDING TO BE RAZED [Diagonal line pattern]
- EXISTING CURB AND GUTTER TO BE REMOVED [Parallel line pattern]
- EXISTING TREES/SHRUBERY TO BE REMOVED [Cloud-like pattern]
- UTILITY TO BE ABANDONED (○ ○ ○ ○)
- UTILITY TO BE REMOVED (~~~~~)

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>[Signature]</i> CHIEF-DEVELOPMENT ENGINEERING DIVISION	3/16/04 DATE
<i>[Signature]</i> CHIEF-DIVISION OF LAND DEVELOPMENT	7/15/04 DATE
<i>[Signature]</i> DIRECTOR	2/10/10 DATE



Amos Bailey Arnold
+ Associates, Inc.
3600 Clipper Mill Road, Suite 300
Baltimore, Maryland 21211
Phone: 410.235.9812 Fax: 410.235.3715



Century Engineering, Inc.
32 West Road Town, Maryland 21204
Voice (410) 623-6070
Fax (410) 623-2184

Project Title:
SERVICES AREA COMPLEX
TRADES BLDG. - #23
MULTI-USE BLDG. - #35

JHU - APL
11820 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723-6099

- Revisions:
- ▲ ADDENDUM #1 - 01/09/04
 - ▲ REE-LINED PLAN CHANGES 10/06/09
 - ▲ ADDENDUM #2 4/10/10
 - ▲ REMOVAL OF BLDG. 23A 1/10/21

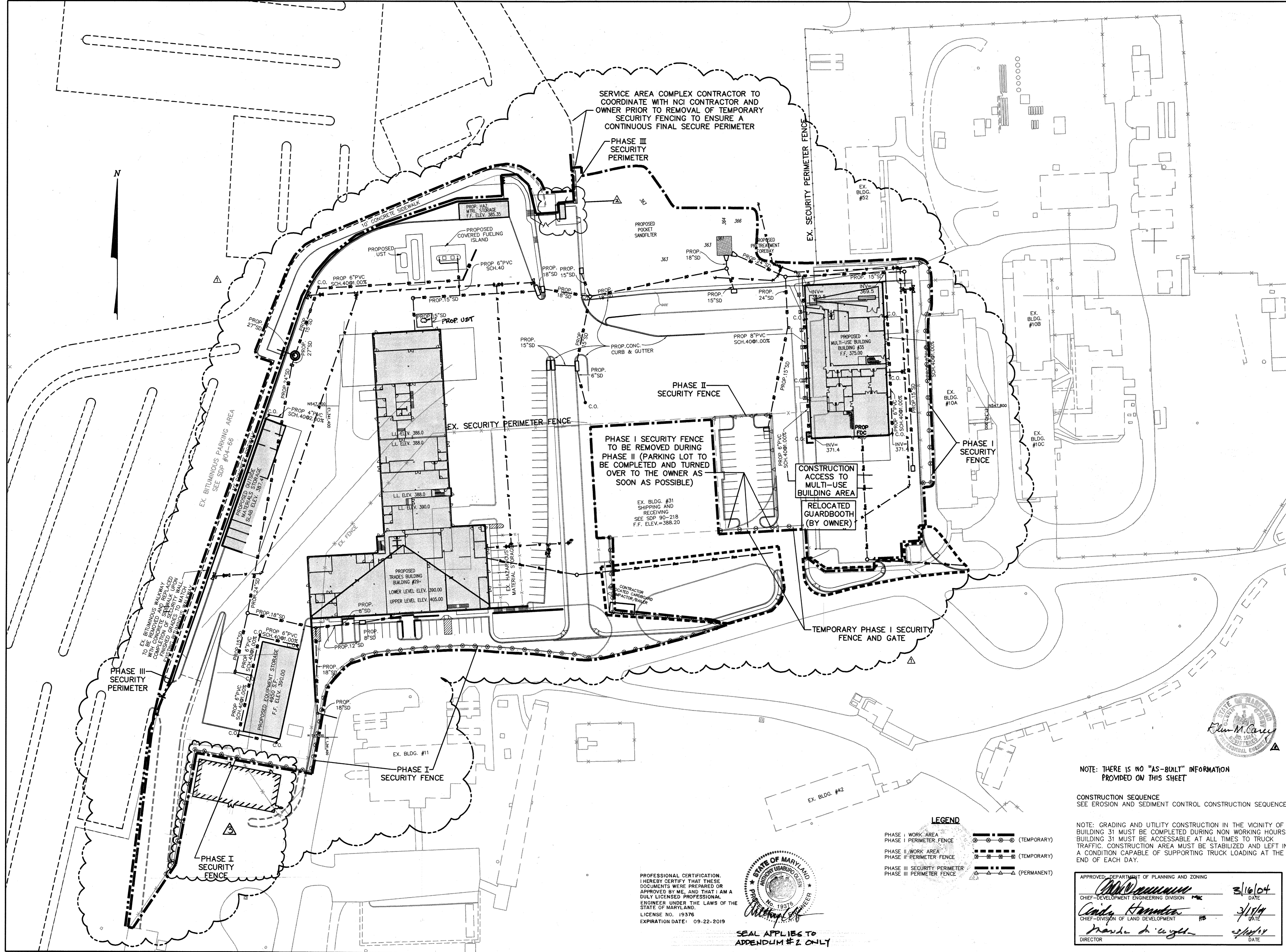
Certification:

[Signature]
2/24/04

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- REVIEW
 - NOT FOR CONSTRUCTION
 - BID
 - CONSTRUCTION
 - PERMIT
 - 90% CD SUBMISSION

Drawing Title:
DEMOLITION PLAN

Project No.: Sheet No.:
Scale: 1" = 50'
Date: 12-10-03 Sheet 3 of 31



SERVICE AREA COMPLEX CONTRACTOR TO COORDINATE WITH NCI CONTRACTOR AND OWNER PRIOR TO REMOVAL OF TEMPORARY SECURITY FENCING TO ENSURE A CONTINUOUS FINAL SECURE PERIMETER

PHASE III SECURITY PERIMETER

PHASE II SECURITY FENCE

PHASE I SECURITY FENCE TO BE REMOVED DURING PHASE II (PARKING LOT TO BE COMPLETED AND TURNED OVER TO THE OWNER AS SOON AS POSSIBLE)

CONSTRUCTION ACCESS TO MULTI-USE BUILDING AREA

RELOCATED GUARDBOOTH (BY OWNER)

TEMPORARY PHASE I SECURITY FENCE AND GATE



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. 19376
EXPIRATION DATE: 09-22-2019



SEAL APPLIES TO APPENDUM # 2 ONLY

LEGEND

- PHASE I WORK AREA (TEMPORARY)
- PHASE I PERIMETER FENCE (TEMPORARY)
- PHASE II WORK AREA (TEMPORARY)
- PHASE II PERIMETER FENCE (TEMPORARY)
- PHASE III SECURITY PERIMETER (PERMANENT)
- PHASE III PERIMETER FENCE (PERMANENT)

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

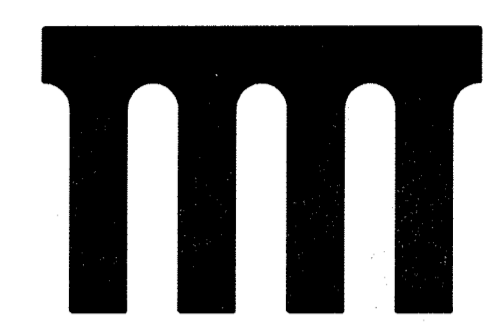
CONSTRUCTION SEQUENCE
SEE EROSION AND SEDIMENT CONTROL CONSTRUCTION SEQUENCE

NOTE: GRADING AND UTILITY CONSTRUCTION IN THE VICINITY OF BUILDING 31 MUST BE COMPLETED DURING NON WORKING HOURS. BUILDING 31 MUST BE ACCESSIBLE AT ALL TIMES TO TRUCK TRAFFIC. CONSTRUCTION AREA MUST BE STABILIZED AND LEFT IN A CONDITION CAPABLE OF SUPPORTING TRUCK LOADING AT THE END OF EACH DAY.

APPROVED - DEPARTMENT OF PLANNING AND ZONING	
<i>[Signature]</i>	3/16/04
CHIEF-DEVELOPMENT ENGINEERING DIVISION	DATE
<i>[Signature]</i>	3/1/04
CHIEF-DIVISION OF LAND DEVELOPMENT	DATE
<i>[Signature]</i>	2/24/04
DIRECTOR	DATE



Amos Bailey Arnold + Associates, Inc.
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32 West Road Townson, Maryland 21204
Voice (410) 823-8070
Fax (410) 823-2184

Project Title:
SERVICES AREA COMPLEX
TRADES BLDG. - #29
MULTI-USE BLDG. - #35

JHU - AFL
11020 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20723-6029

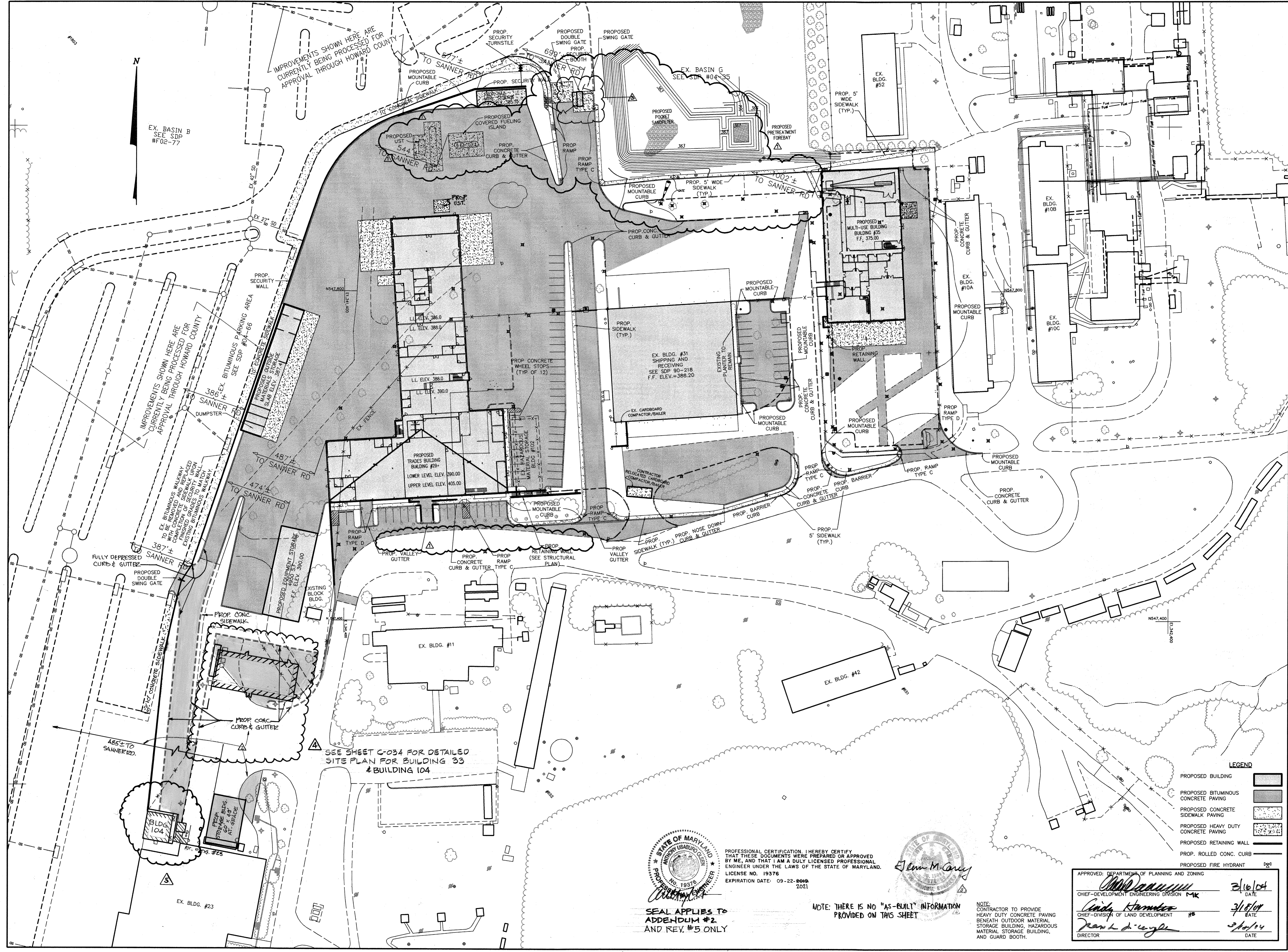
Revisions:
▲ ADDENDUM #1 - 01/09/04
▲ NEW GUARD BOOTH 06/12/15
▲ ADDENDUM #2 4/2019

Certification:
[Signature]
2/24/04

Issued for:
 REVIEW NOT FOR CONSTRUCTION
 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
SECURITY PHASING PLAN

Project No.: Sheet No.:
Scale: 1" = 50'
Date: 12-10-03
C-004
Sheet 4 of 31



Project Title:

**SERVICES AREA
COMPLEX**
TRADES BLDG. - #23
MULTI-USE BLDG. - #35

JHU - AFL
1102 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20713-6099

- Revisions:
- ▲ ADDENDUM #1 - 01/09/04
 - ▲ RED-LINED RAIN GUTTERS 10/06/04
 - ▲ NEW GUARD BOOTH 06/12/15
 - ▲ ADDENDUM #2 4/2/2019
 - ▲ ADDED BLDG. 104 1/2/2021

Certification:

Robert D. ...
2/24/04
PROFESSIONAL ENGINEER

Issued for:

- | | |
|--|--|
| <input type="checkbox"/> REVIEW | <input type="checkbox"/> NOT FOR CONSTRUCTION |
| <input checked="" type="checkbox"/> BID | <input checked="" type="checkbox"/> CONSTRUCTION |
| <input checked="" type="checkbox"/> PERMIT | <input type="checkbox"/> 90% CD SUBMISSION |

Drawing Title:

SITE PLAN

Project No.:

Sheet No.:

Scale: 1" = 50'

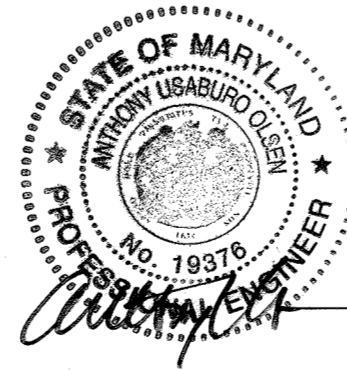
C-005

Date: 12-10-03

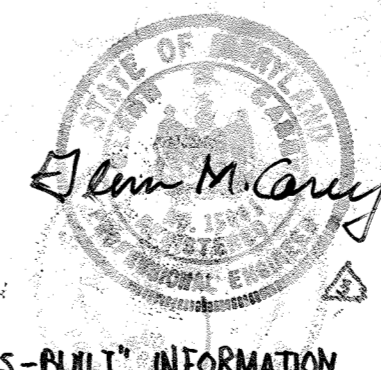
Sheet 5 of 31

LEGEND

- PROPOSED BUILDING
- PROPOSED BITUMINOUS CONCRETE PAVING
- PROPOSED CONCRETE SIDEWALK PAVING
- PROPOSED HEAVY DUTY CONCRETE PAVING
- PROPOSED RETAINING WALL
- PROP. ROLLED CONC. CURB
- PROPOSED FIRE HYDRANT



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LICENSE NO. 19376
EXPIRATION DATE: 09-22-2019

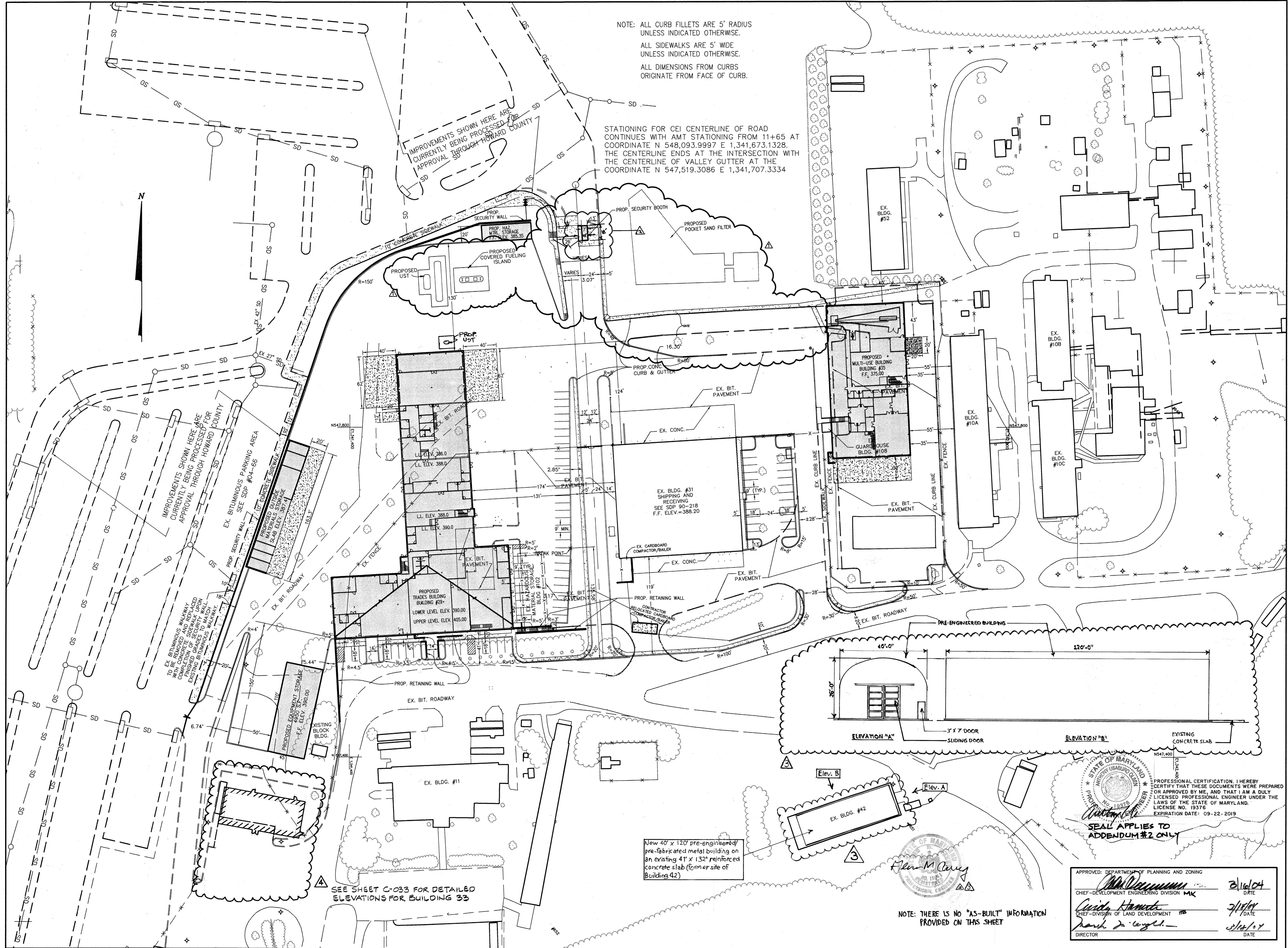


NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

NOTE: CONTRACTOR TO PROVIDE HEAVY DUTY CONCRETE PAVING BENEATH OUTDOOR MATERIAL STORAGE BUILDING, HAZARDOUS MATERIAL STORAGE BUILDING, AND GUARD BOOTH.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF-DEVELOPMENT ENGINEERING DIVISION
[Signature] 3/16/04 DATE
[Signature] 3/16/04 DATE
DIRECTOR

SEAL APPLIES TO ADDENDUM #2 AND REV. #3 ONLY



NOTE: ALL CURB FILLETS ARE 5' RADIUS UNLESS INDICATED OTHERWISE.
ALL SIDEWALKS ARE 5' WIDE UNLESS INDICATED OTHERWISE.
ALL DIMENSIONS FROM CURBS ORIGINATE FROM FACE OF CURB.

STATIONING FOR CEI CENTERLINE OF ROAD CONTINUES WITH AMT STATIONING FROM 11+65 AT COORDINATE N 548,093.9997 E 1,341,673.1328. THE CENTERLINE ENDS AT THE INTERSECTION WITH THE CENTERLINE OF VALLEY GUTTER AT THE COORDINATE N 547,519.3086 E 1,341,707.3334

IMPROVEMENTS SHOWN HERE ARE CURRENTLY BEING PROCESSED FOR APPROVAL THROUGH HOWARD COUNTY

IMPROVEMENTS SHOWN HERE ARE CURRENTLY BEING PROCESSED FOR APPROVAL THROUGH HOWARD COUNTY

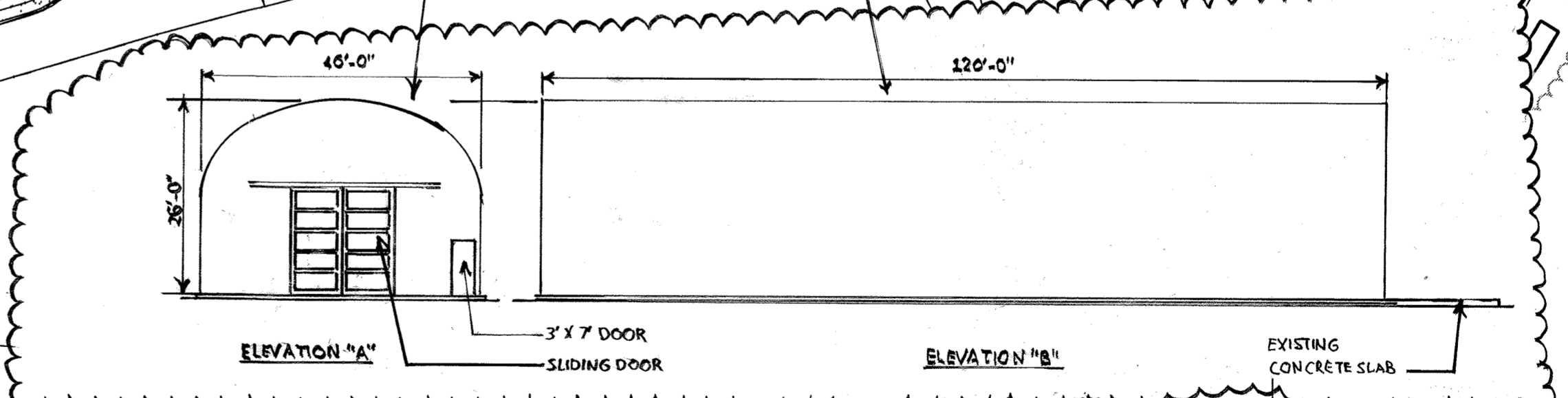
EX. BITUMINOUS SIDEWALK TO BE REMOVED AND REPLACED WITH CONCRETE AND SIDEWALK UPON COMPLETION OF SIDEWALK IMPROVEMENTS TO MATCH EX. BITUMINOUS SIDEWALK

PROPOSED EQUIPMENT STORAGE BLDG. #40
F.F. ELEV. 390.00

SEE SHEET C-033 FOR DETAILED ELEVATIONS FOR BUILDING 33

New 40' x 120' pre-engineered/pre-fabricated metal building on an existing 41' x 132' reinforced concrete slab (former site of Building 42)

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



APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] DATE: 2/16/04

[Signature] DATE: 3/1/04

[Signature] DATE: 3/14/04

SEAL APPLIES TO ADDENDUM #2 ONLY

Project Title:
SERVICES AREA COMPLEX
TRADES BLDG. - #29
MULTI-USE BLDG. - #35

JHU - AFL
11020 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20712-6033

Revisions:
A ADDENDUM #1 - 01/09/04
B NEW GUARD BOOTH 06/12/15

Red-line showing new pre-engineered building on an existing concrete slab (10/19/2015)
A ADDENDUM # 2 4/2013

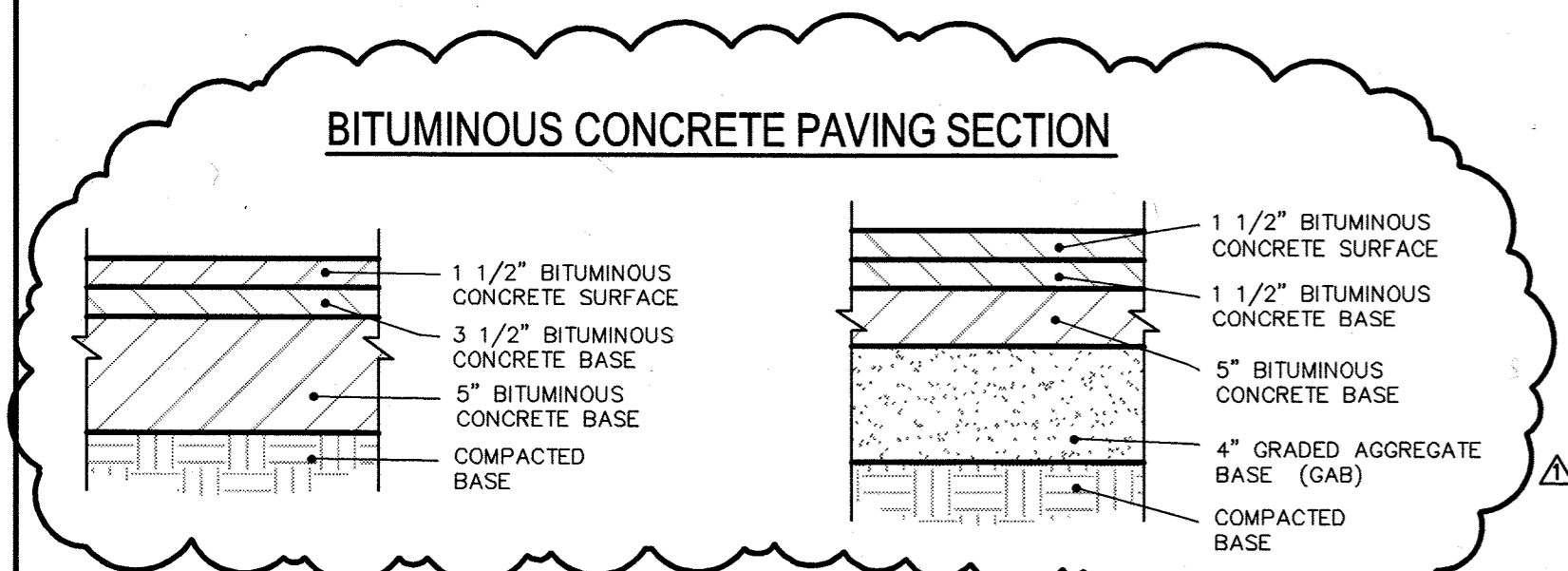
Certification:
[Signature]
PROFESSIONAL ENGINEER

Issued for:
 REVIEW NOT FOR CONSTRUCTION
 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
LAYOUT PLAN

Project No.: Sheet No.:
Scale: 1" = 50'
Date: 12-10-03
Sheet 6 of 31

C-006

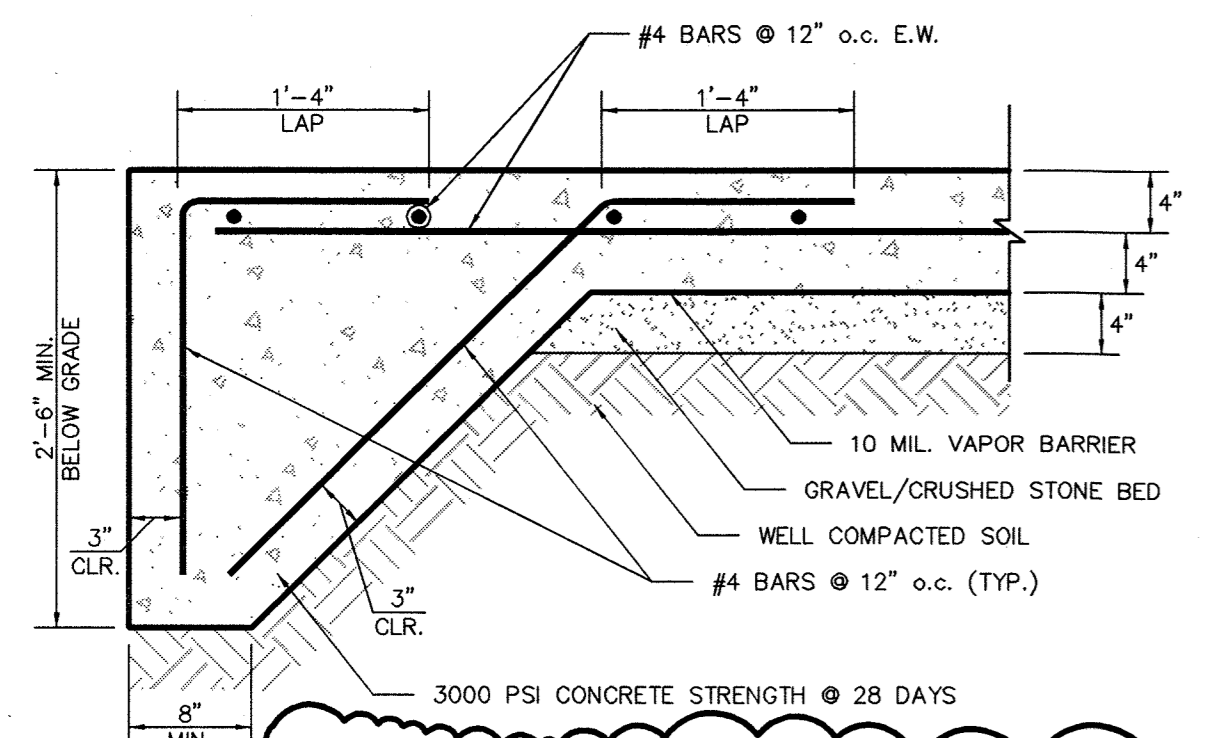


FULL DEPTH BITUMINOUS CONCRETE ALTERNATE
SCALE: N.T.S.

GRANULAR BASE ALTERNATE
SCALE: N.T.S.

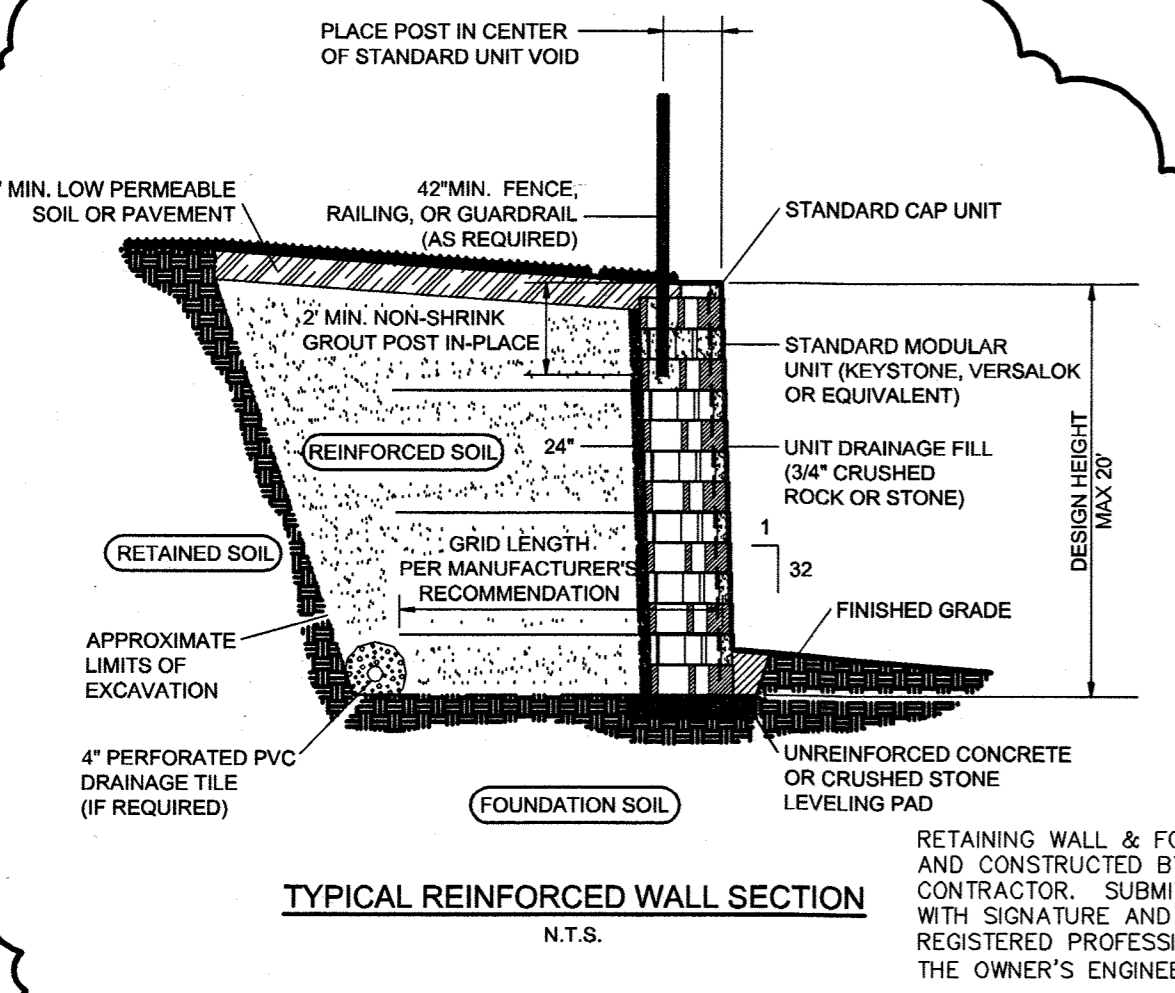
NOTES:
BITUMINOUS CONCRETE PAVEMENT SECTION DESIGNED BY FROEHLING & ROBERTSON, INC. SEE REPORT DATED SEPTEMBER 12, 2003 ENTITLED "REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL EVALUATION - APPLIED PHYSICS LABORATORY ADDITIONS - JOHNS HOPKINS UNIVERSITY".

THE SECTION SHOWN REPRESENTS A HOWARD COUNTY STANDARD P-4 PAVING SECTION

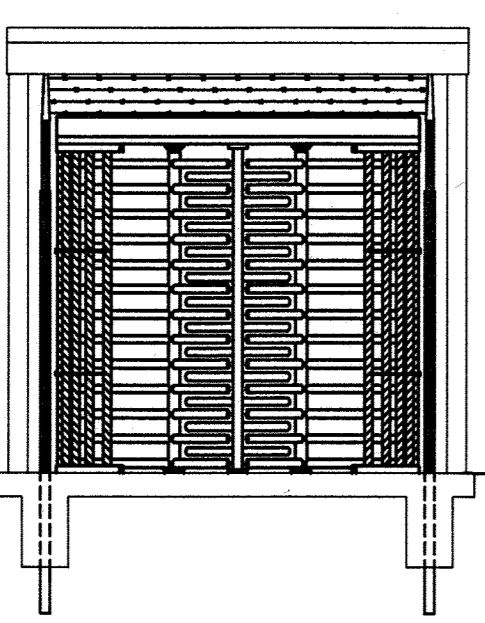


NOTE:
TURN DOWN SLAB AT ENTIRE PERIMETER OF PROPOSED SECURITY BOOTH, PROPOSED HAZARDOUS MATERIAL STORAGE BUILDING, PROPOSED OUTSIDE MATERIAL STORAGE BUILDING, PROPOSED EQUIPMENT STORAGE BUILDING, PROPOSED FUELING ISLAND, AND AT RELOCATED COMPACTOR / BAILER.

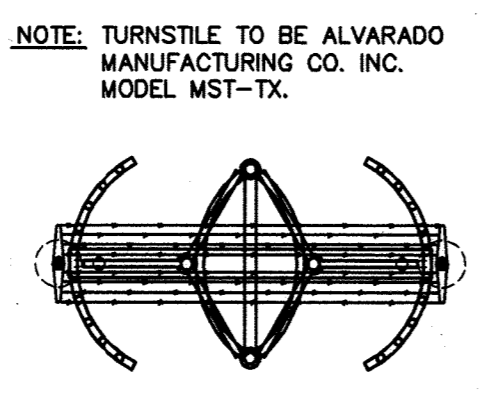
HEAVY DUTY CONCRETE PAVING SECTION
SCALE: N.T.S.



TYPICAL REINFORCED WALL SECTION
N.T.S.

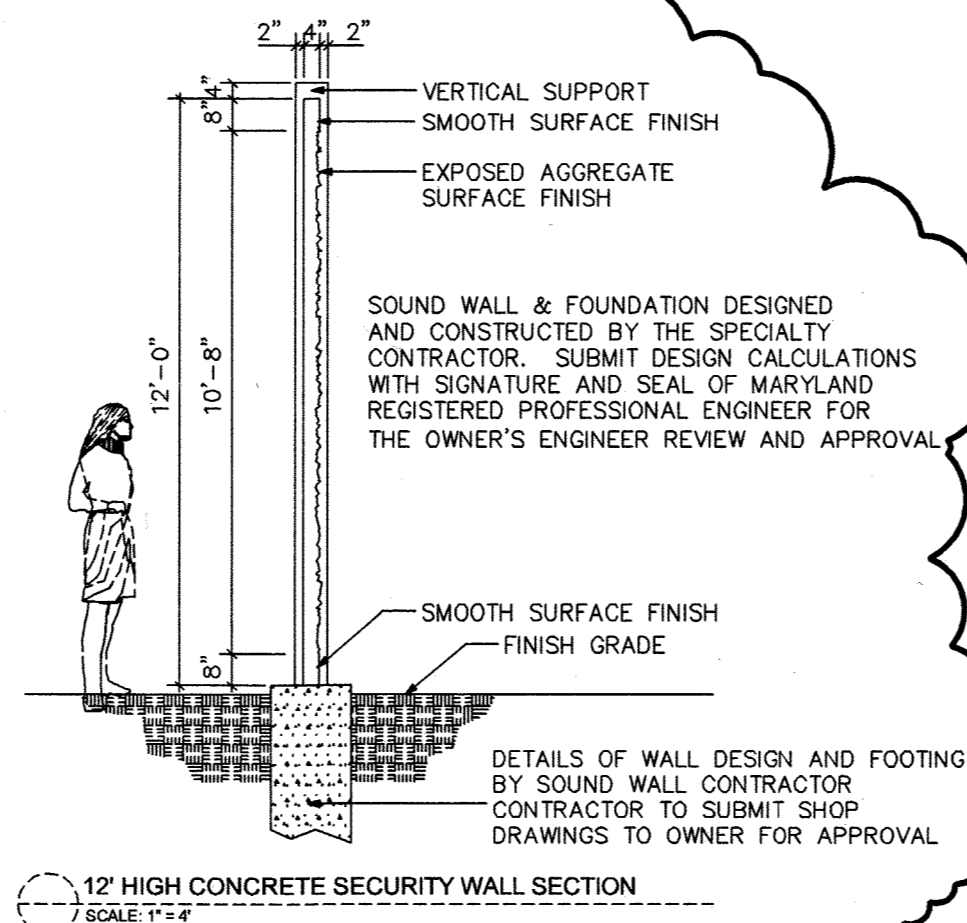


ELEVATION
SCALE: N.T.S.

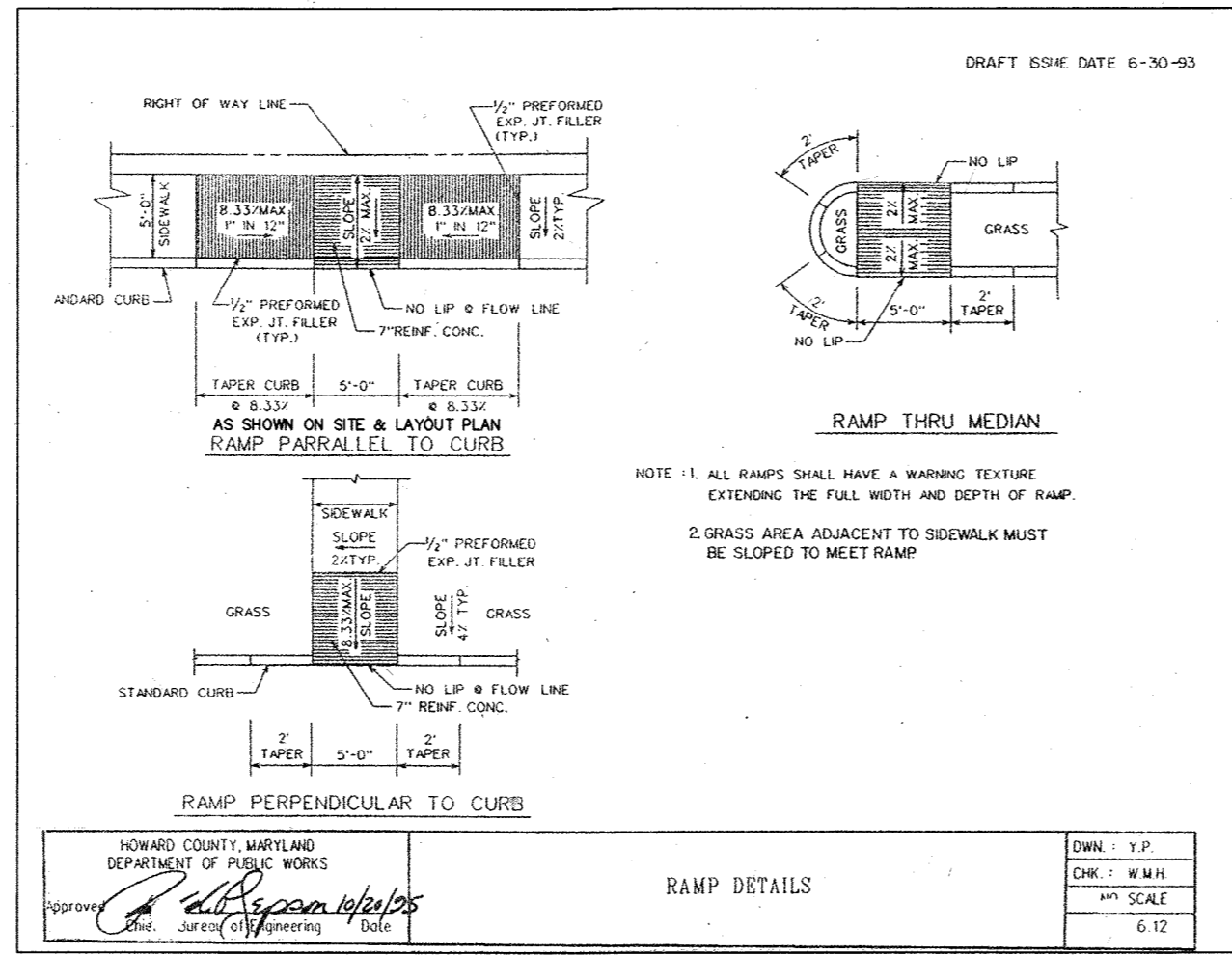


PLAN VIEW
SCALE: N.T.S.

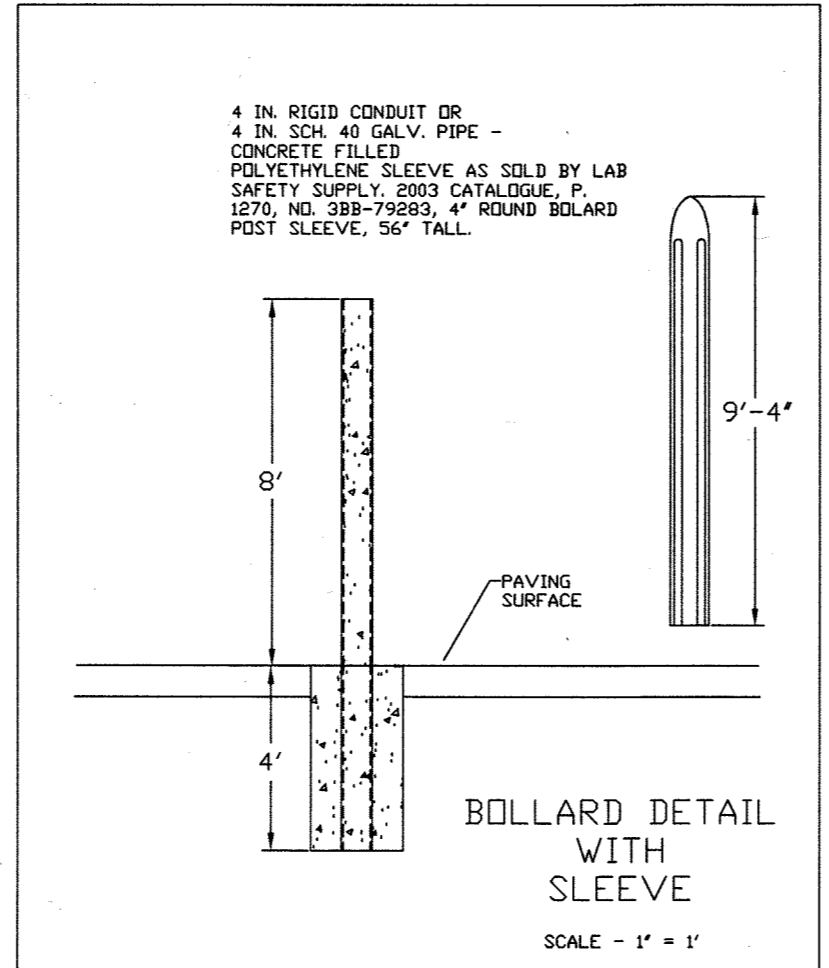
NOTE: TURNSTILE TO BE ALVARADO MANUFACTURING CO. INC. MODEL MST-TX.



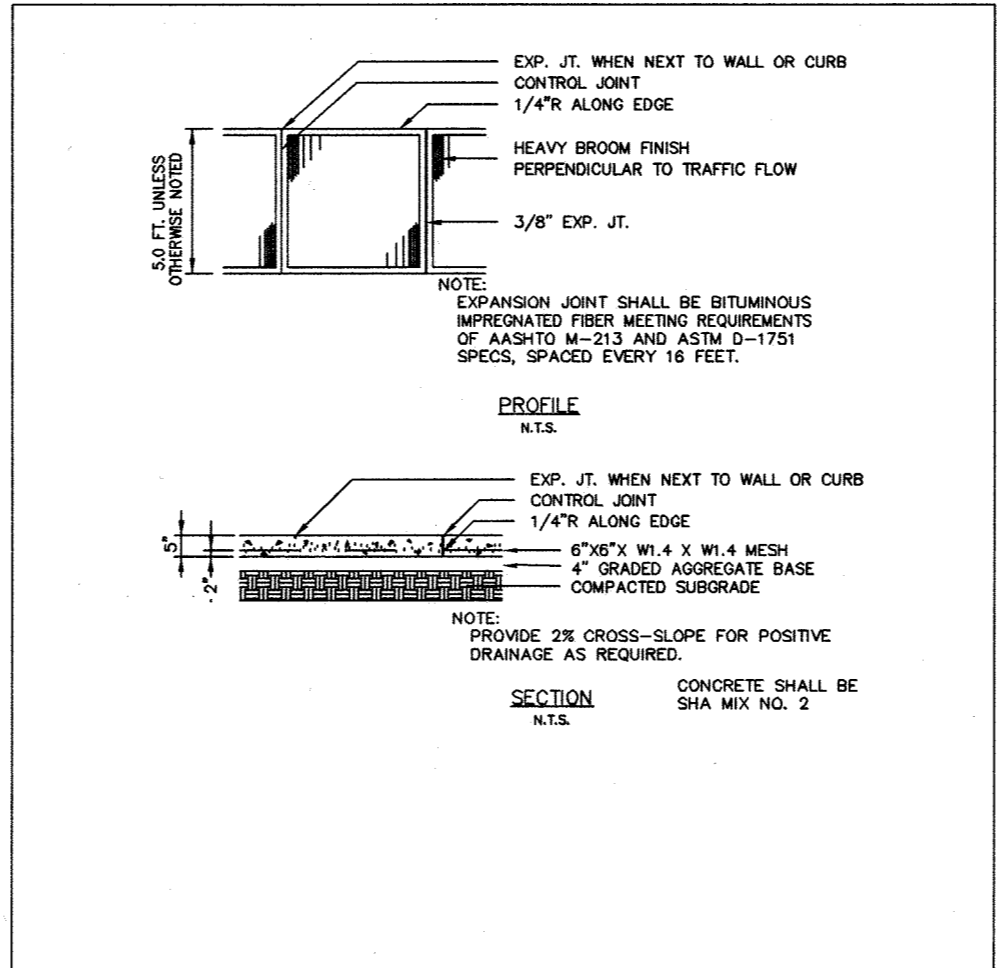
12' HIGH CONCRETE SECURITY WALL SECTION
SCALE: 1/4" = 1'-0"



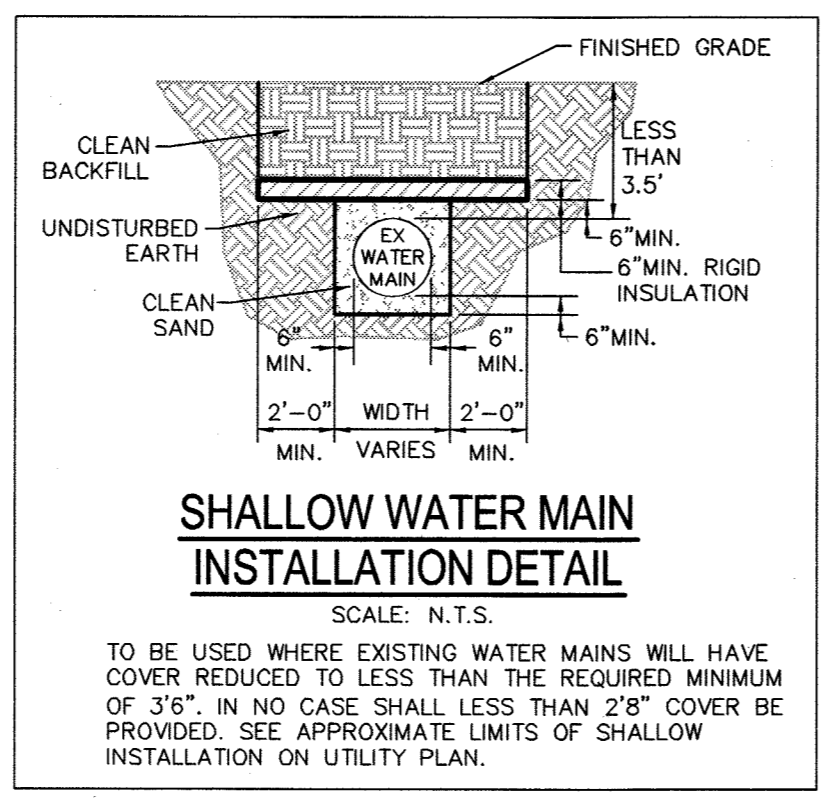
RAMP DETAILS



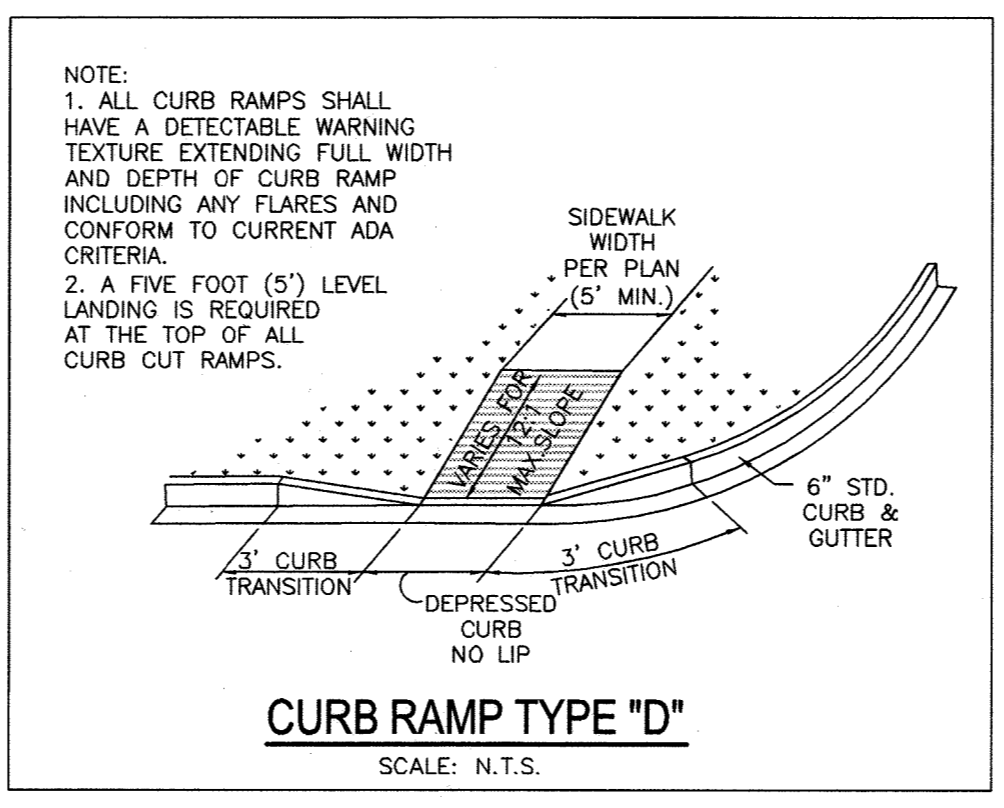
BOLLARD DETAIL WITH SLEEVE
SCALE: 1" = 1'



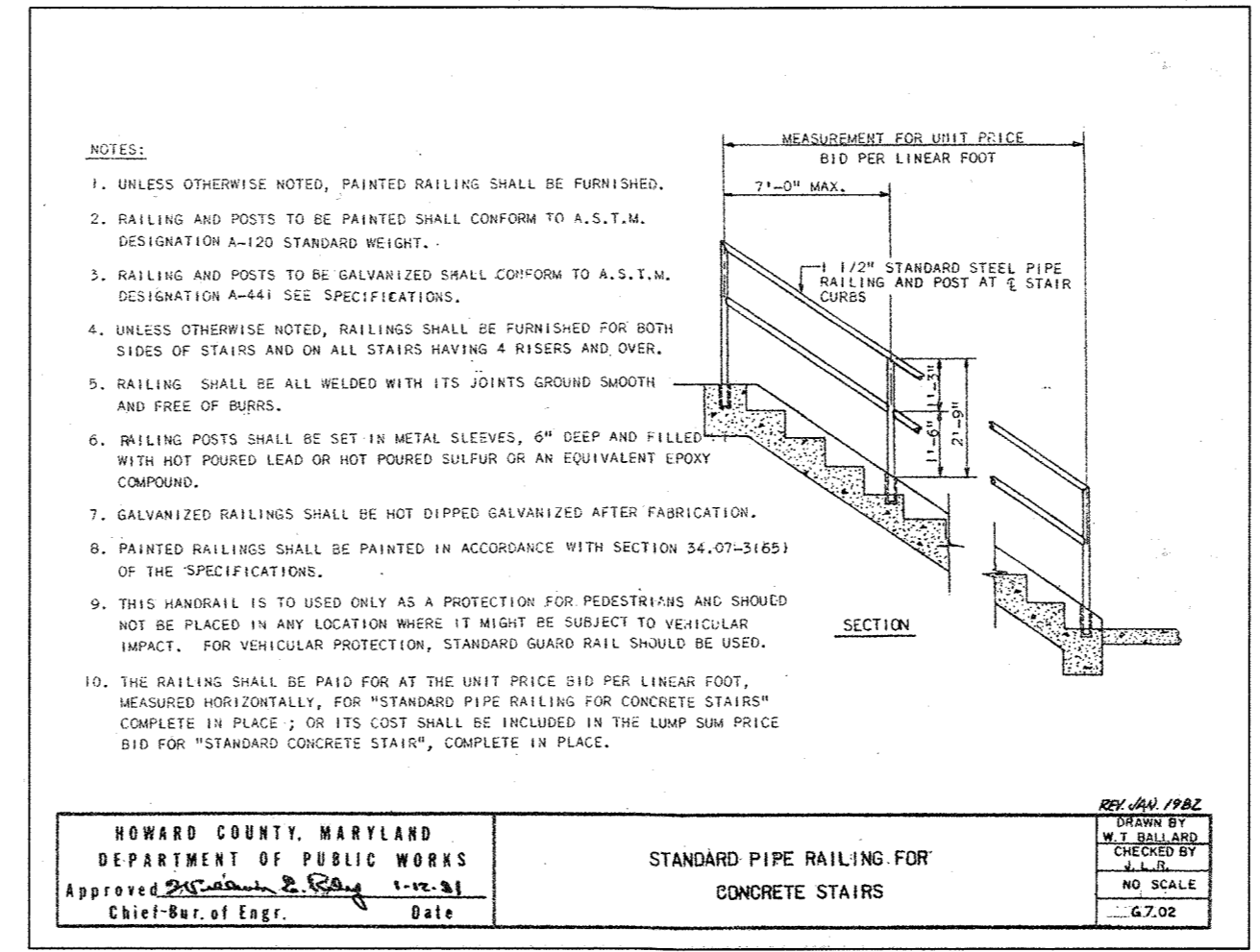
CONCRETE WALK
SCALE: N.T.S.



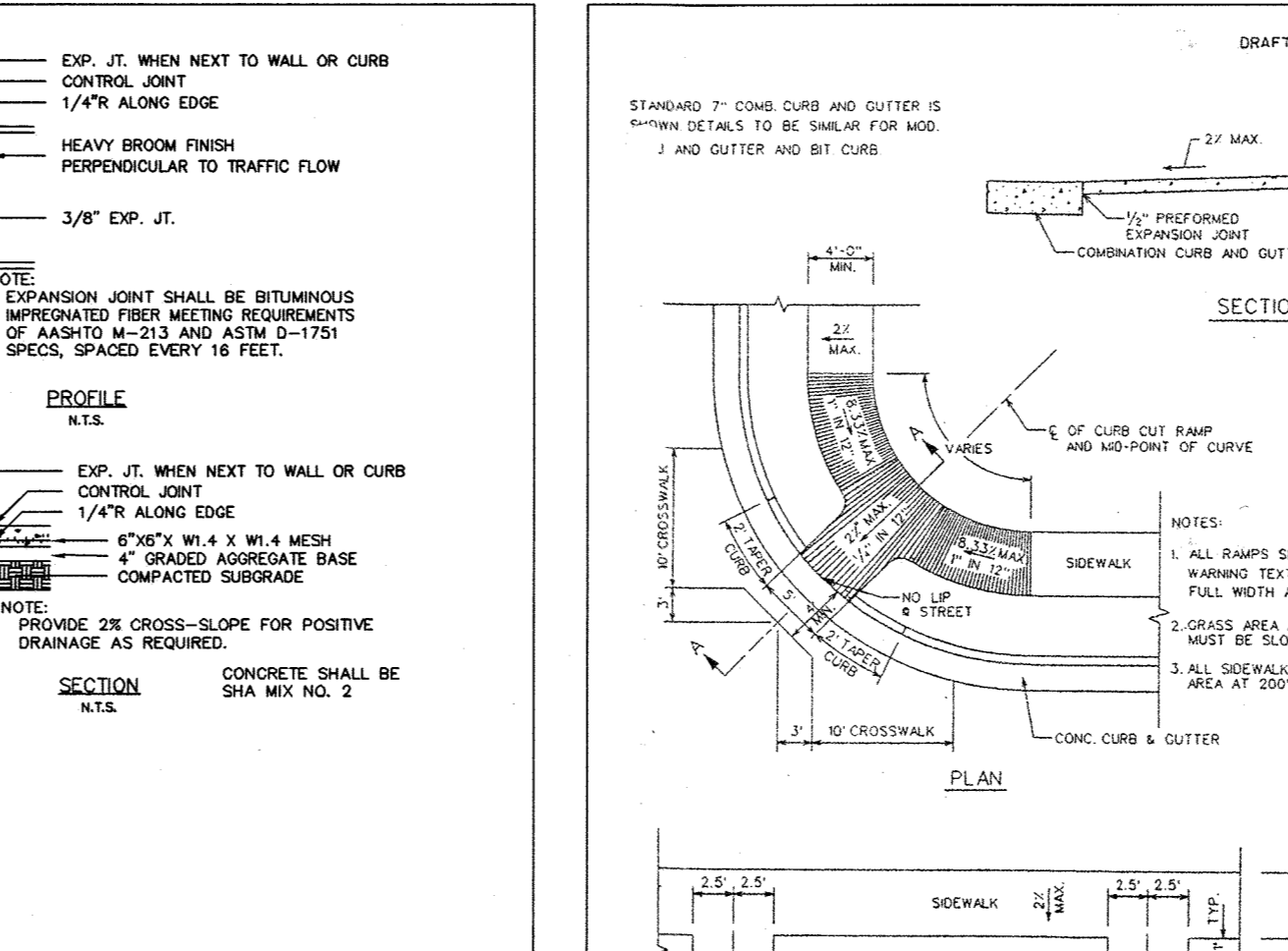
SHALLOW WATER MAIN INSTALLATION DETAIL
SCALE: N.T.S.



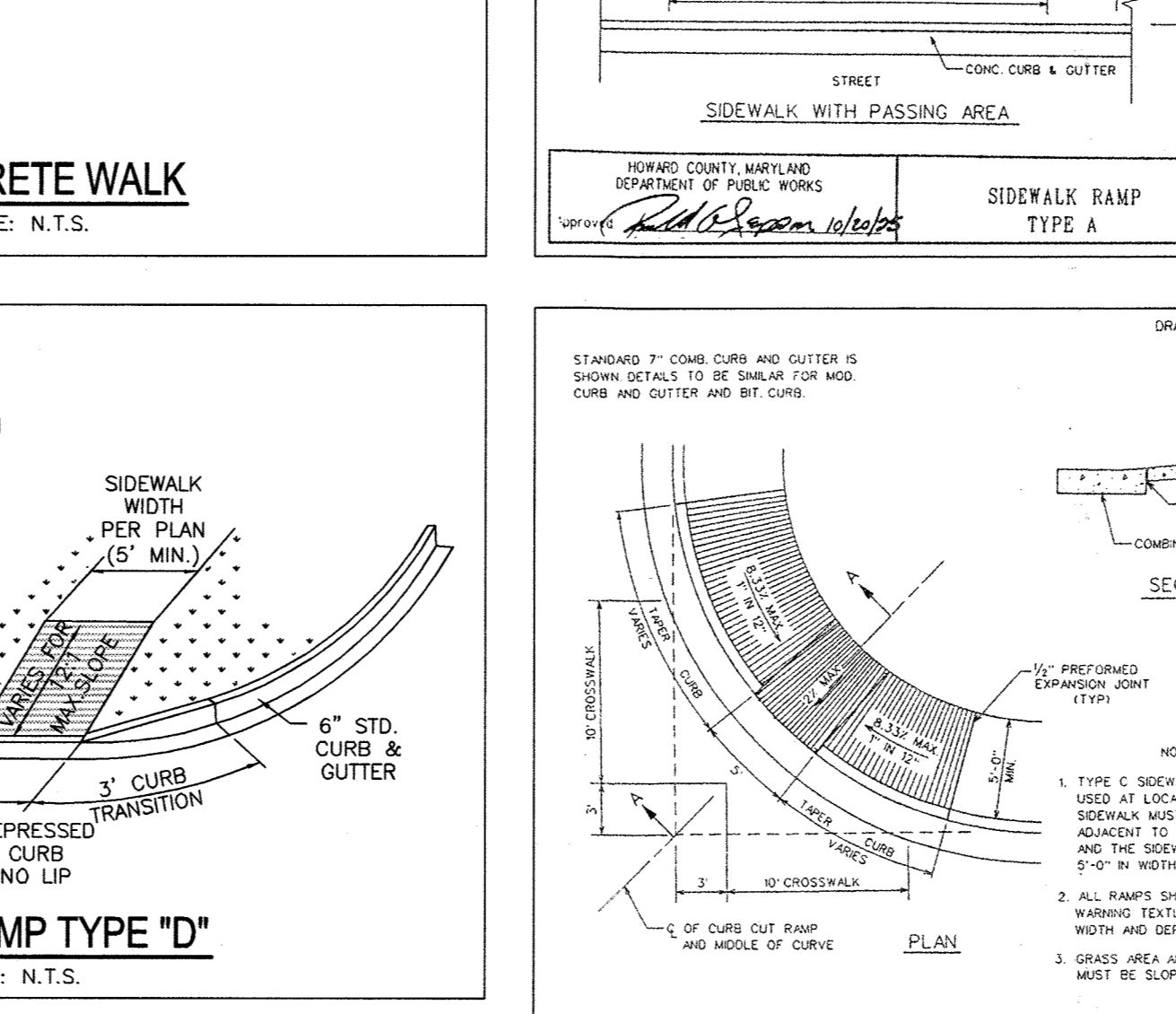
CURB RAMP TYPE "D"
SCALE: N.T.S.



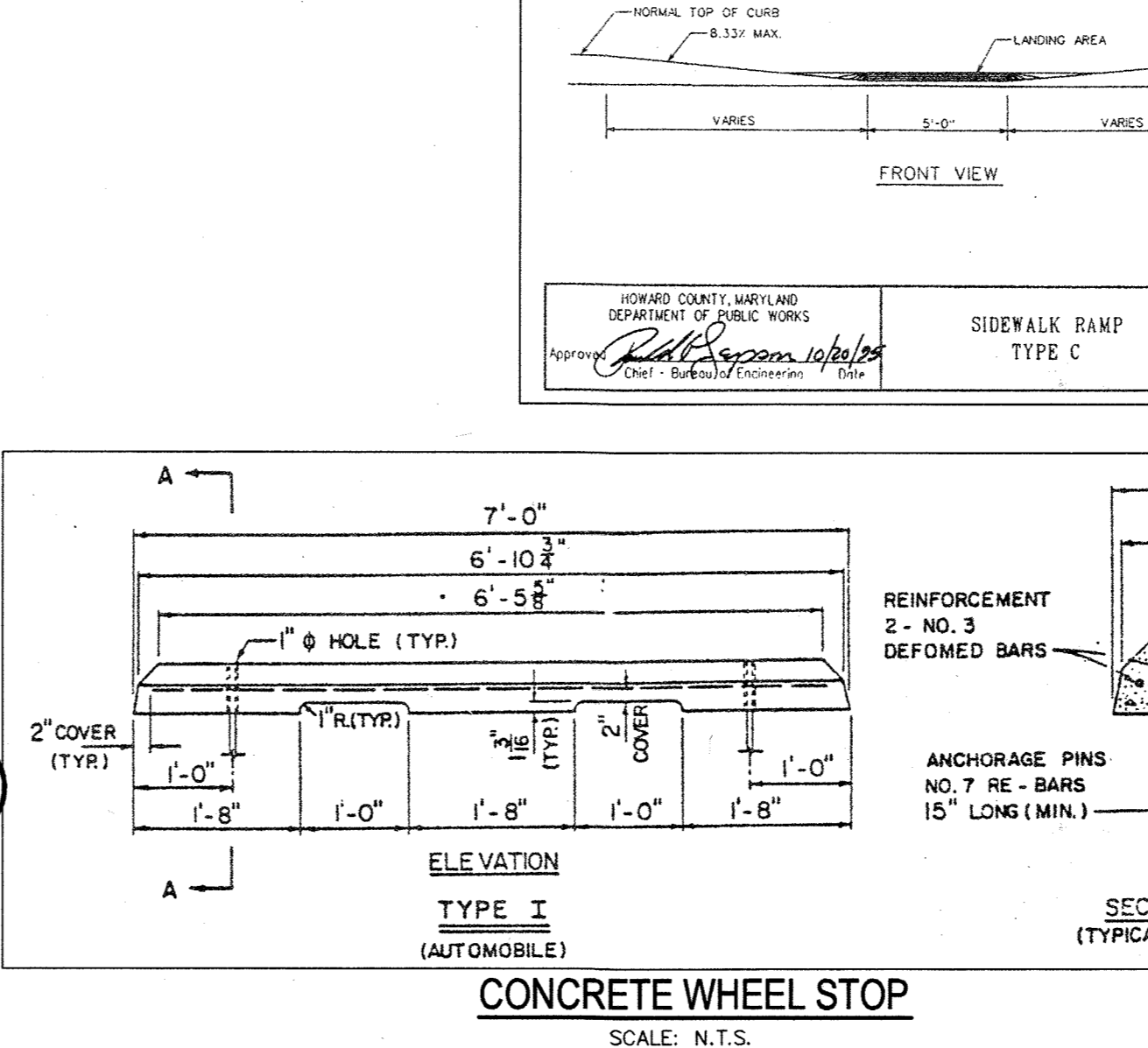
STANDARD PIPE RAILING FOR CONCRETE STAIRS



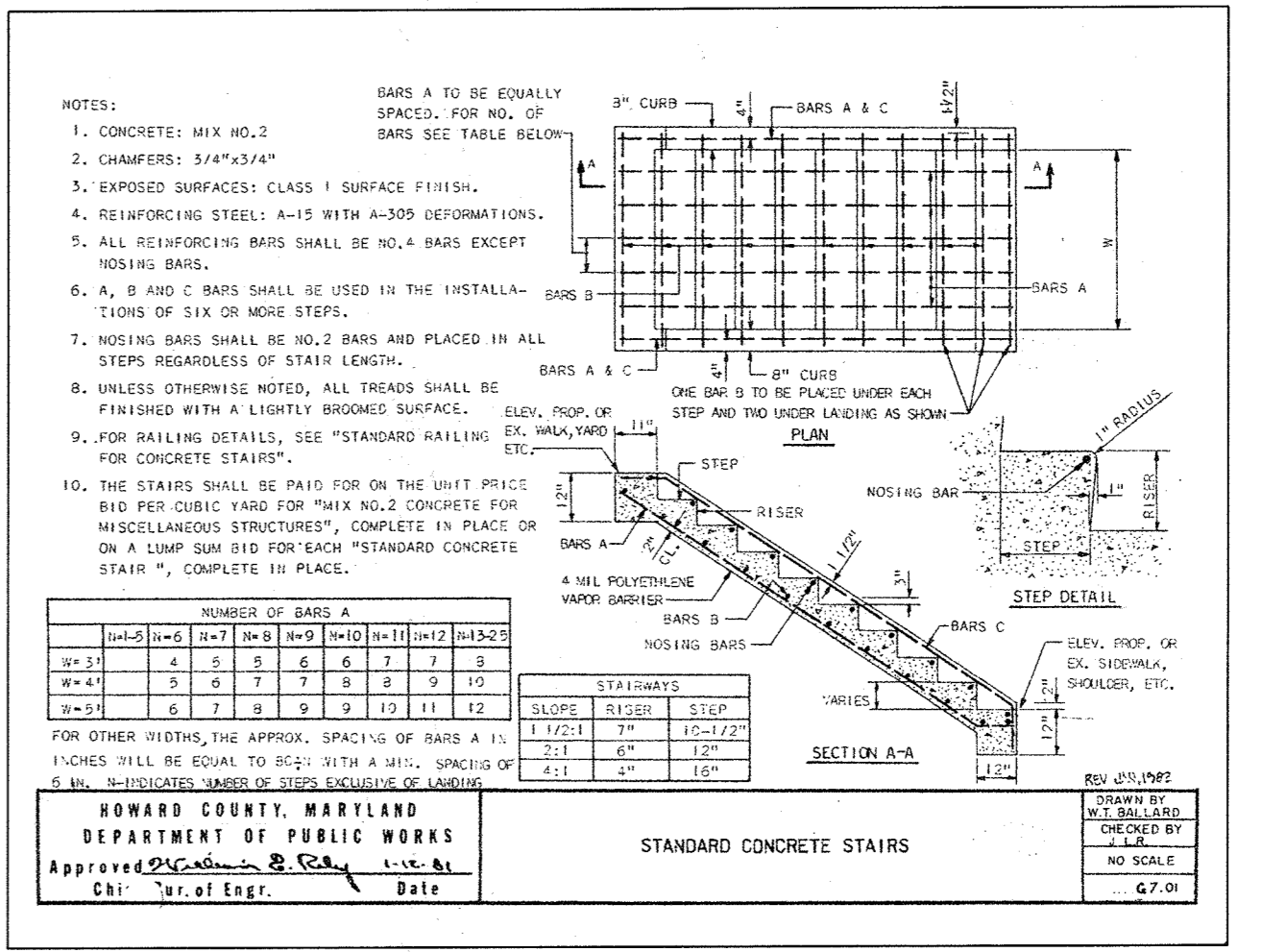
SIDEWALK RAMP TYPE A



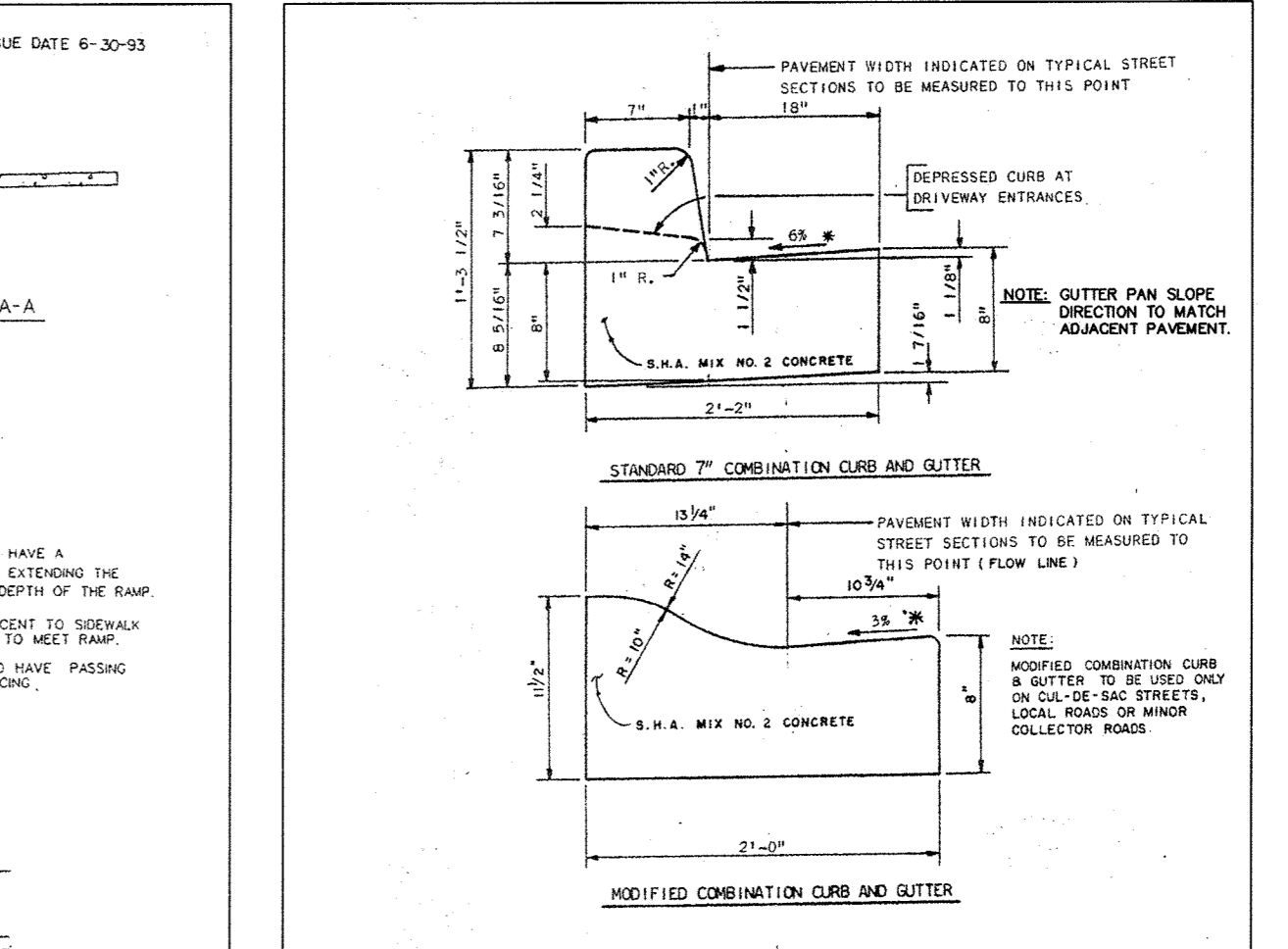
SIDEWALK RAMP TYPE C



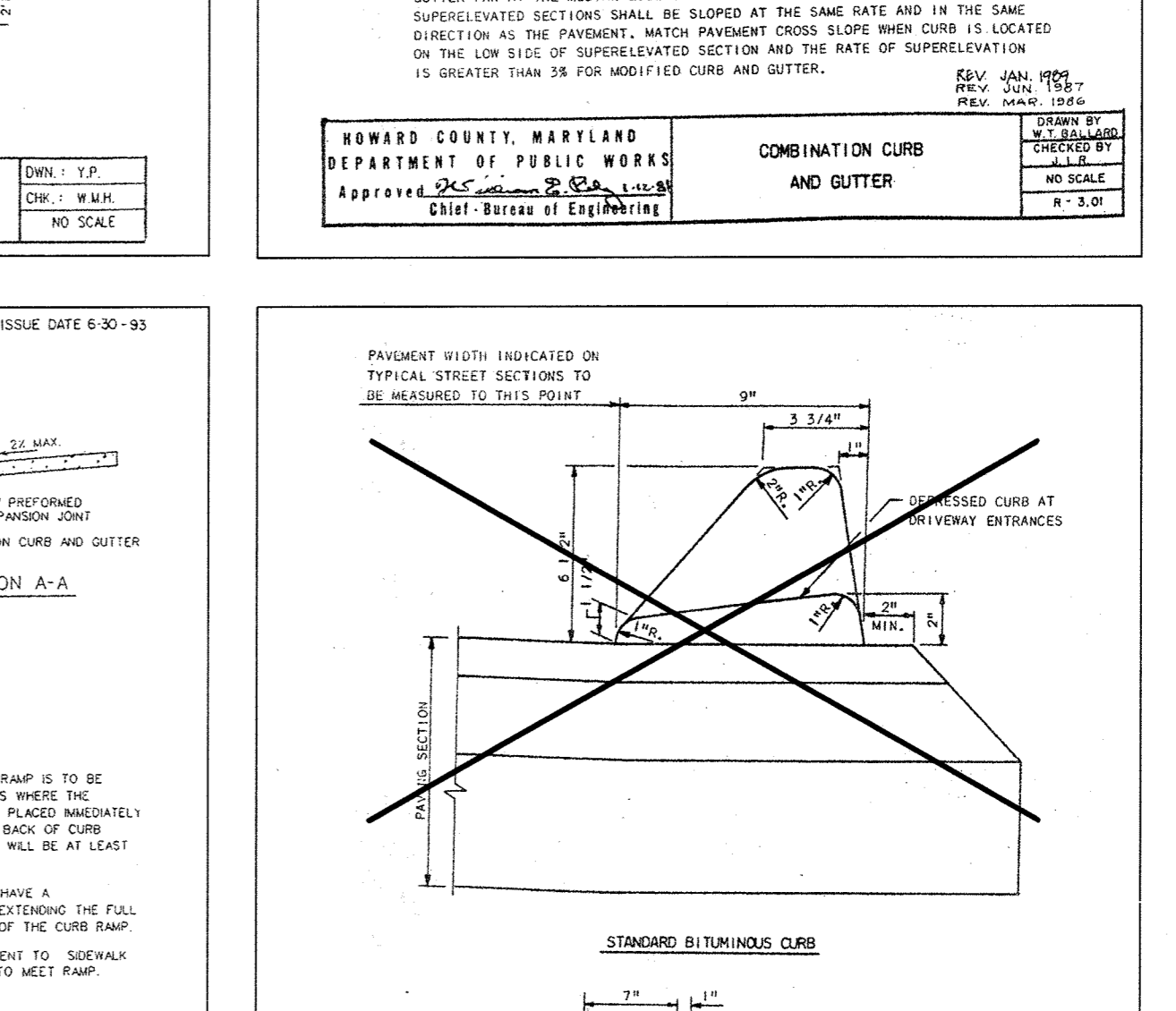
CONCRETE WHEEL STOP
SCALE: N.T.S.



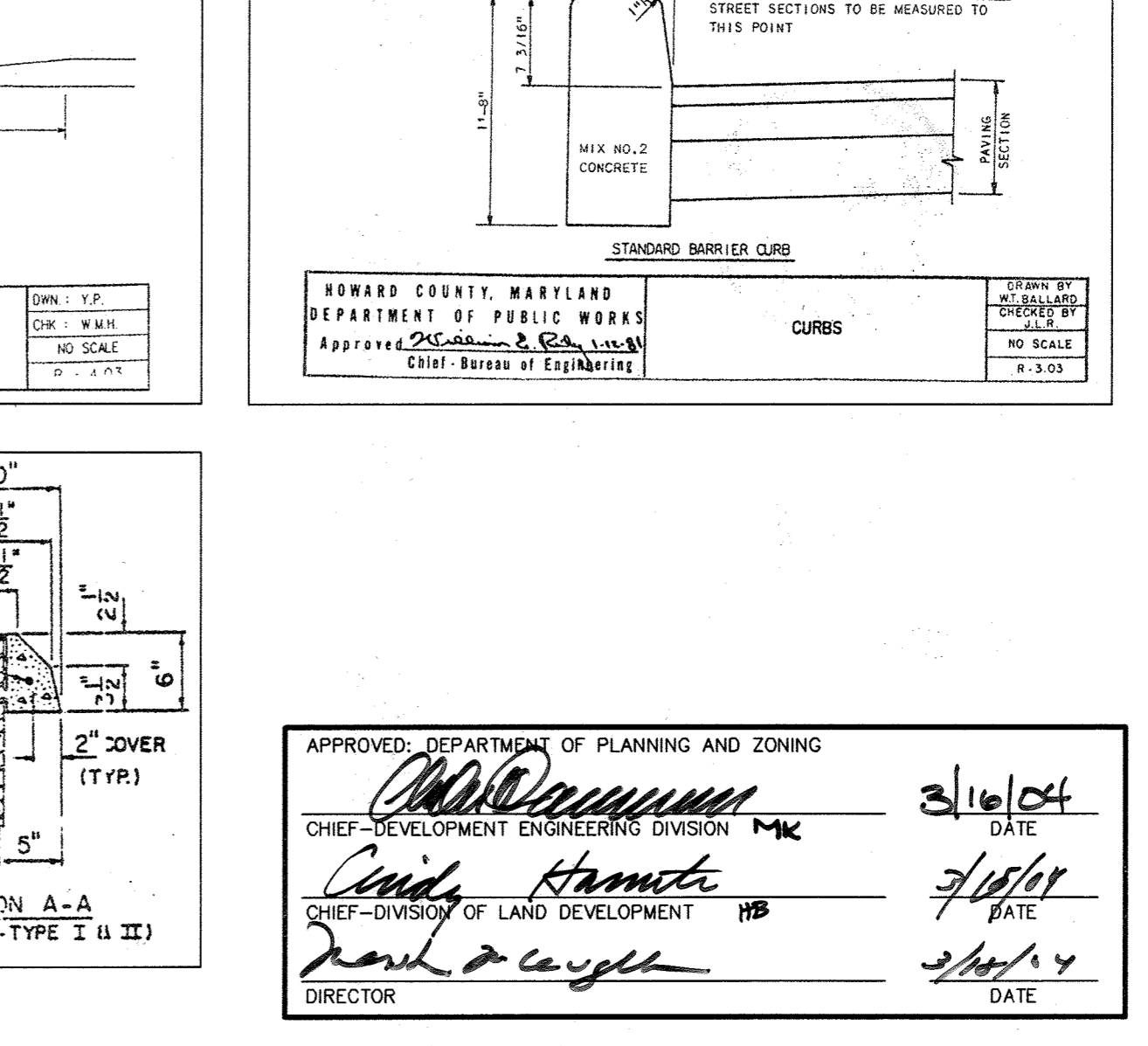
STANDARD CONCRETE STAIRS



COMBINATION CURB AND GUTTER



STANDARD BITUMINOUS CURB



STANDARD BARRIER CURB

aba ARCHITECTS
Amos Bailey Arnold + Associates, Inc.
3600 Clipper Mill Road, Suite 300
Baltimore, Maryland 21211
Phone: 410.235.9812 Fax: 410.235.3715

Century Engineering, Inc.
32 West Road Towson, Maryland 21284
Voice (410) 823-8070
Fax (410) 823-2184

Project Title:
SERVICES AREA COMPLEX
TRADES BLDG. - #23
MULTI-USE BLDG. - #35

Revisions:
ADDENDUM #1 - 01/09/04

Certification:

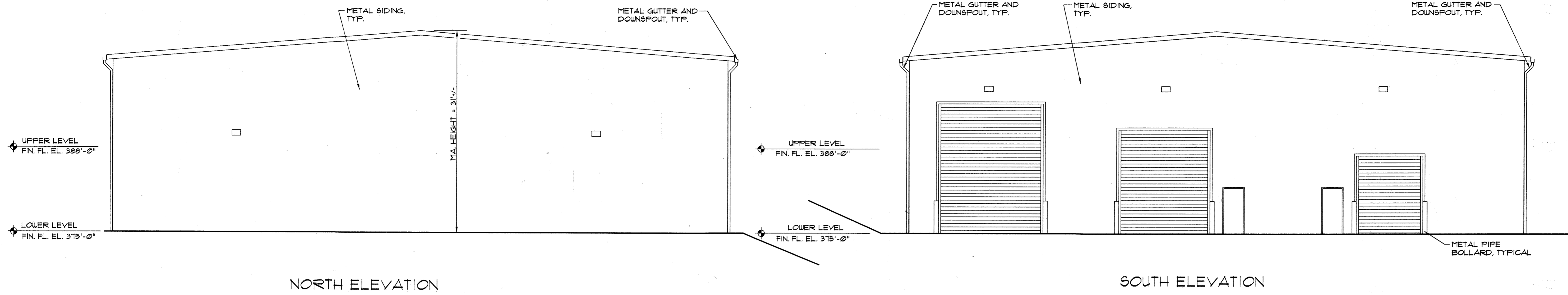
APPROVED: DEPARTMENT OF PLANNING AND ZONING
3/16/04
3/18/04
3/20/04

Issued for:
 REVIEW NOT FOR CONSTRUCTION
 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
SITE DETAILS

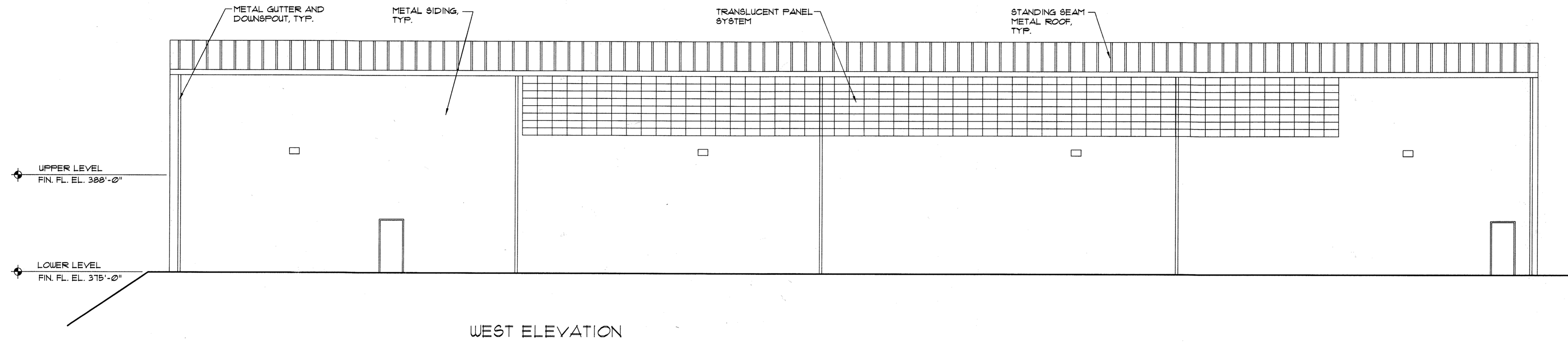
Project No.: **C-007**
Scale: NONE
Date: 12-10-03
Sheet 7 of 31

SDP-04-76

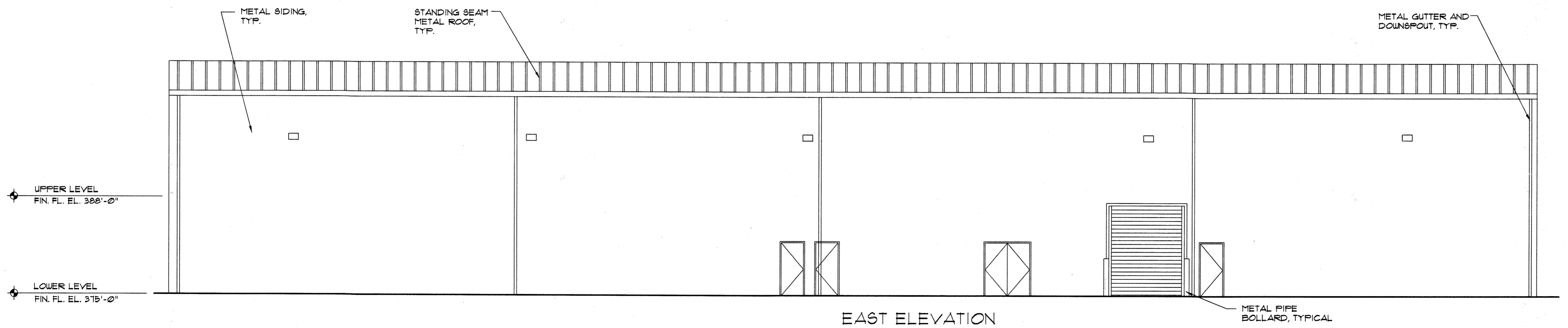


NORTH ELEVATION

SOUTH ELEVATION



WEST ELEVATION



EAST ELEVATION

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] DATE 3/16/04
 CHIEF-DEVELOPMENT ENGINEERING DIVISION MK
 [Signature] DATE 3/15/04
 CHIEF-DIVISION OF LAND DEVELOPMENT HB
 [Signature] DATE 3/16/04
 DIRECTOR

Project Title:
SERVICES AREA COMPLEX
TRADES BLDG. - #29
MULTI-USE BLDG. - #35

JHU - APL
1180 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20713-6099

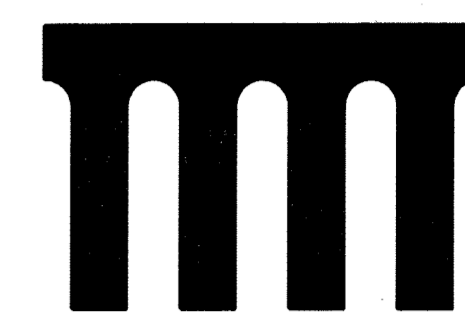
Revisions:

Certification:

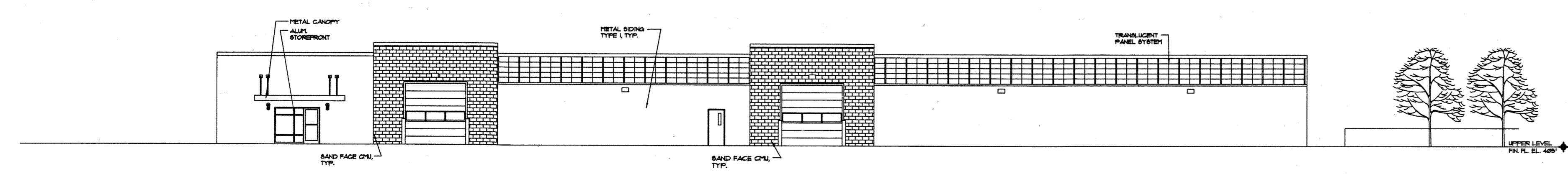
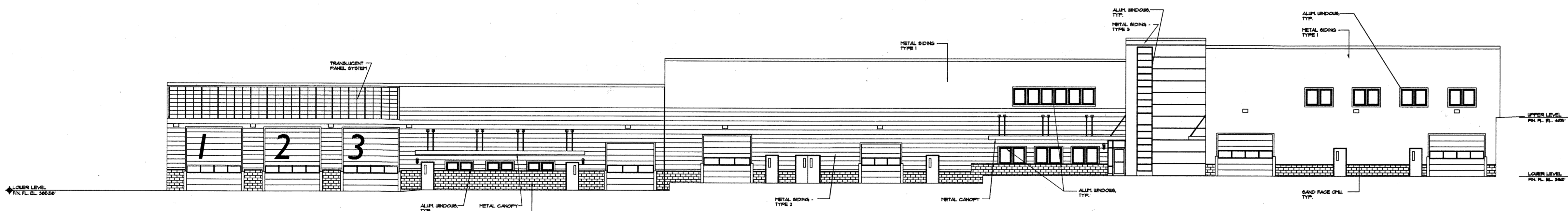
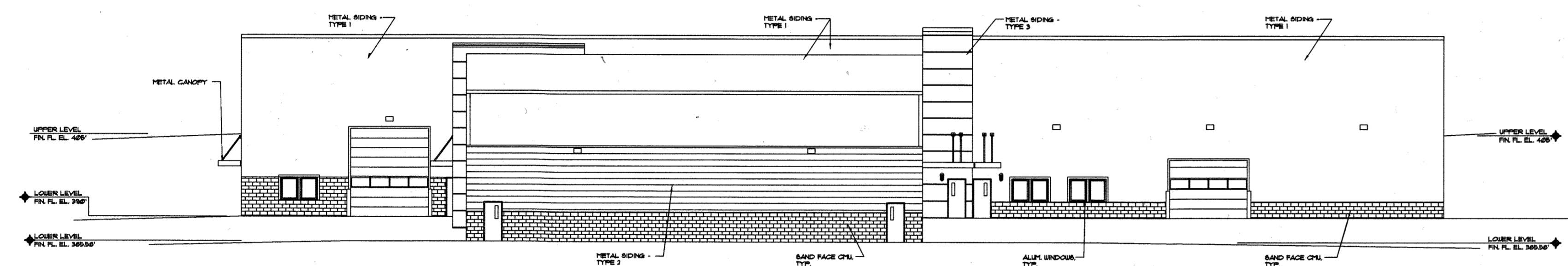
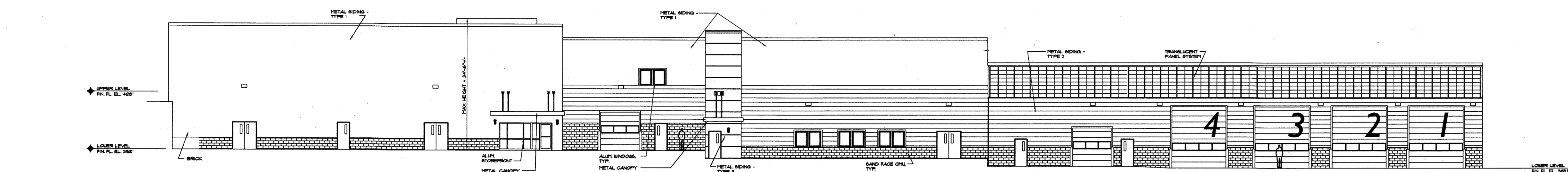
Issued for:
 REVIEW NOT FOR CONSTRUCTION
 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
MULTI-USE BUILDING ELEVATIONS

Project No.: Sheet No.:
 Scale: 1/8"=1'-0"
 Date: 12-10-03
C-008
 Sheet 8 of 31



Century Engineering, Inc.
32 West Road Towson,
Maryland 21284
Voice (410) 823-8070
Fax (410) 823-2184

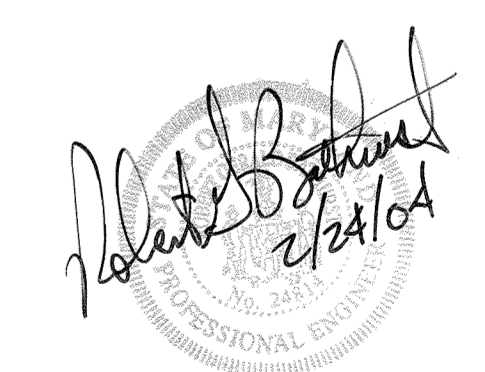


Project Title:
SERVICES AREA COMPLEX
TRADES BLDG. - #29
MULTI-USE BLDG. - #35

JHU - APL
11120 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20723-6099

Revisions:

Certification:

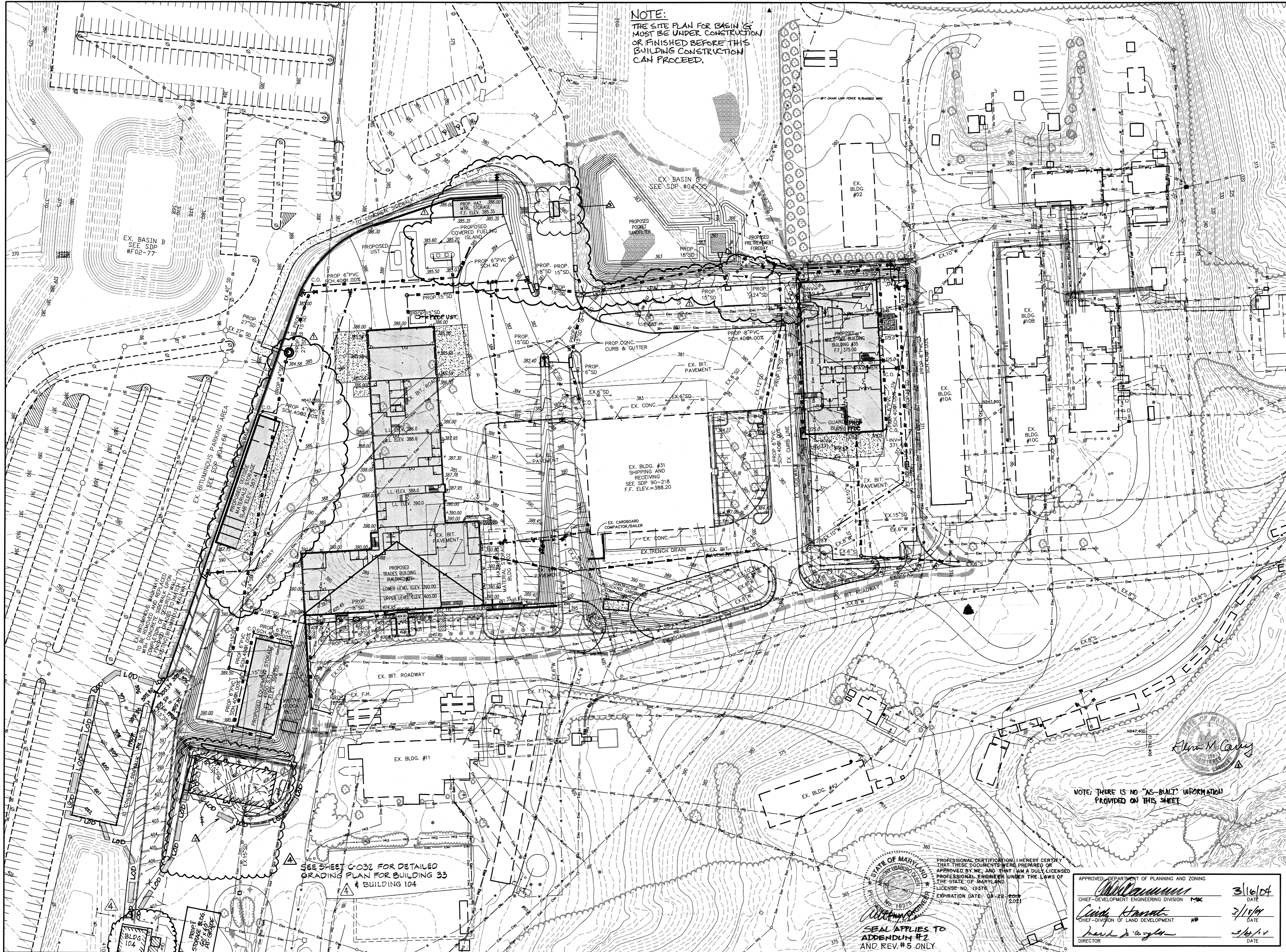


Issued for:
 REVIEW NOT FOR CONSTRUCTION
 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
TRADES BUILDING ELEVATIONS

Project No.: Sheet No.:
 Scale: 1/16"=1'-0" **C-009**
 Date: 12-10-03 Sheet 9 of 31

APPROVED, DEPARTMENT OF PLANNING AND ZONING
 CHIEF-DEVELOPMENT ENGINEERING DIVISION MK 3/16/04 DATE
 Cindy Hammett 3/18/04 DATE
 CHIEF-DIVISION OF LAND DEVELOPMENT HB
 Paul D. Wright 3/16/04 DATE
 DIRECTOR



NOTE:
 THE SITE PLAN FOR BASIN 15
 MUST BE UNDER CONSTRUCTION
 OR FINISHED BEFORE THIS
 BUILDING CONSTRUCTION
 CAN PROCEED.

aba
 ARCHITECTS
 Amos Bailey Arnold
 + Associates, Inc.
 3600 Clipper Mill Road, Suite 300
 Baltimore, Maryland 21211
 Phone: 410.235.9812 Fax: 410.235.3715

CE
 Century Engineering, Inc.
 32 West Road Towson,
 Maryland 21284
 Voice (410) 823-8070
 Fax (410) 823-2184

Project Title:
SERVICES AREA COMPLEX
 TRADES BLDG. - #29
 MULTI-USE BLDG. - #35

 JHU - APL
 11800 JOHN HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099

Revisions:
 ▲ ADDENDUM #1 - 01/09/04
 ▲ RED-LINED PLAN CHANGES 10/06/04
 ▲ NEW GUARD BENCH 05/12/18
 ▲ ADDENDUM #2 4/2019
 ▲ ADDED BLDG. 104 11/2021

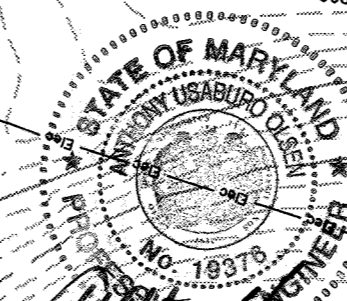
Certification:

Issued for:
 REVIEW NOT FOR CONSTRUCTION
 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
GRADING PLAN
 Project No.: Sheet No.:
 Scale: 1" = 50' **C-010**
 Date: 12-10-03 Sheet 10 of 31

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

SEE SHEET C-032 FOR DETAILED GRADING PLAN FOR BUILDING 33 & BUILDING 104



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. 19376
 EXPIRATION DATE: 09-22-2019

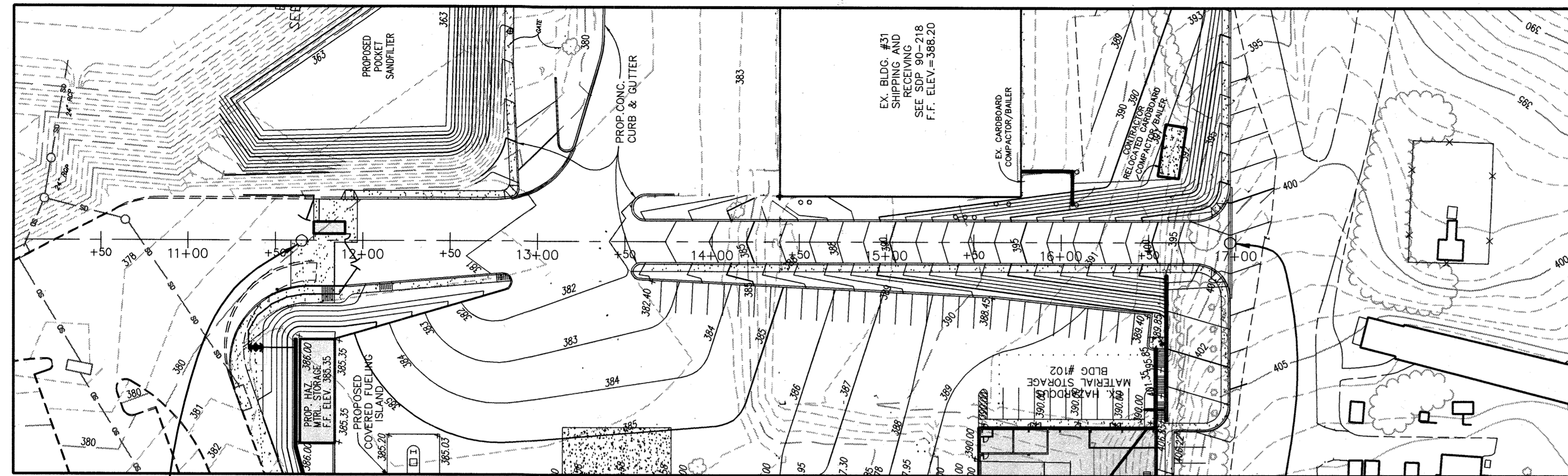
APPROVED - DEPARTMENT OF PLANNING AND ZONING

 CHIEF-DEVELOPMENT ENGINEERING DIVISION P-MK 3/16/04 DATE

 CHIEF-DIVISION OF LAND DEVELOPMENT JPB 3/15/04 DATE

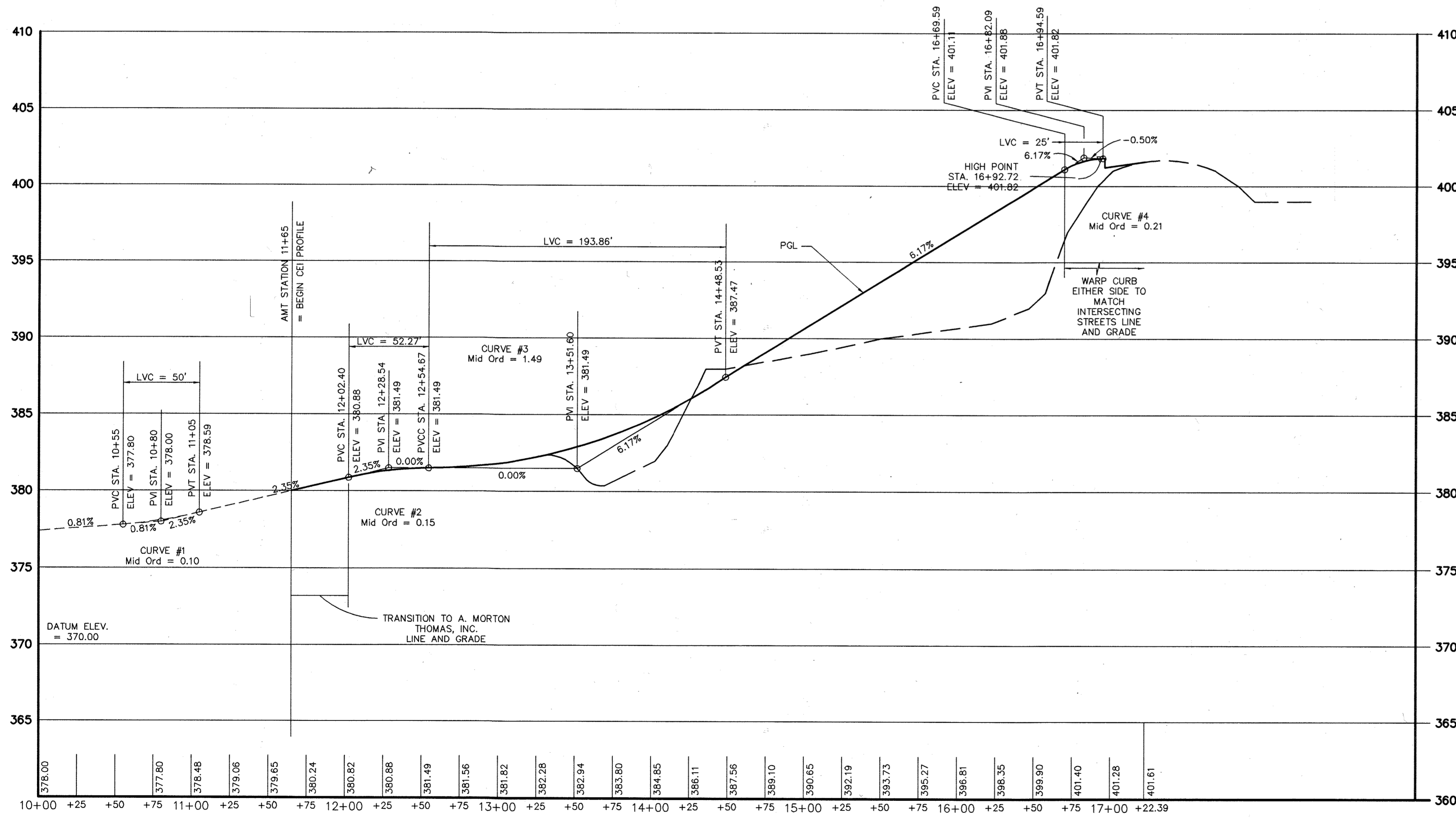
 DIRECTOR 3/18/11 DATE

SEAL APPLIES TO ADDENDUM #2 AND REV.#5 ONLY

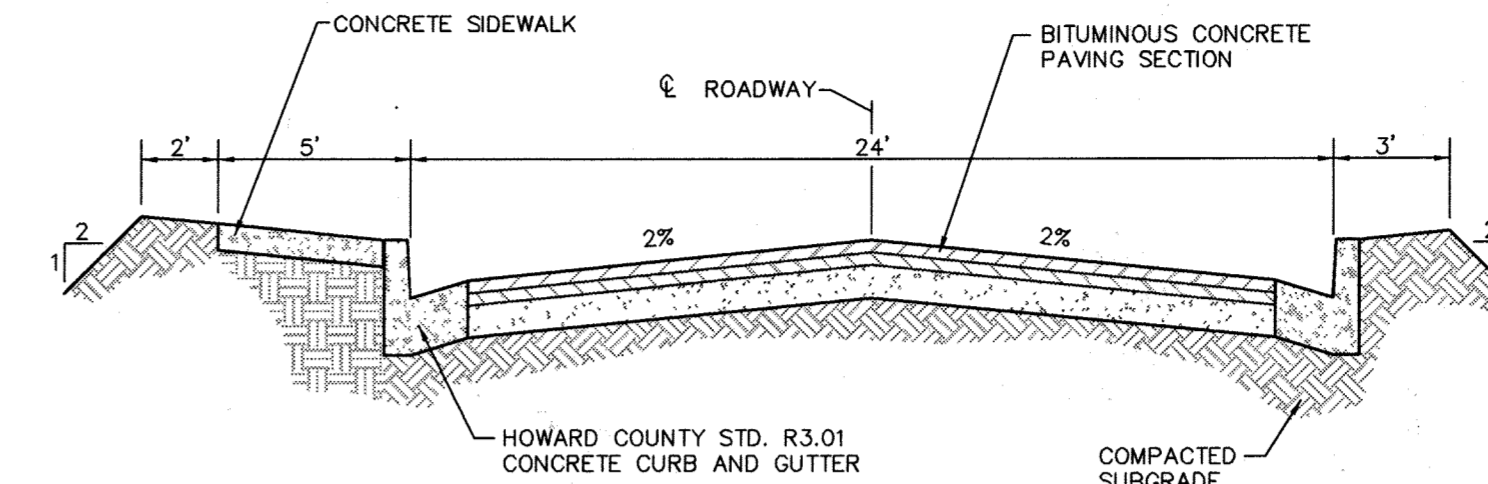


PROPOSED ROADWAY PLAN
SCALE: 1" = 50'

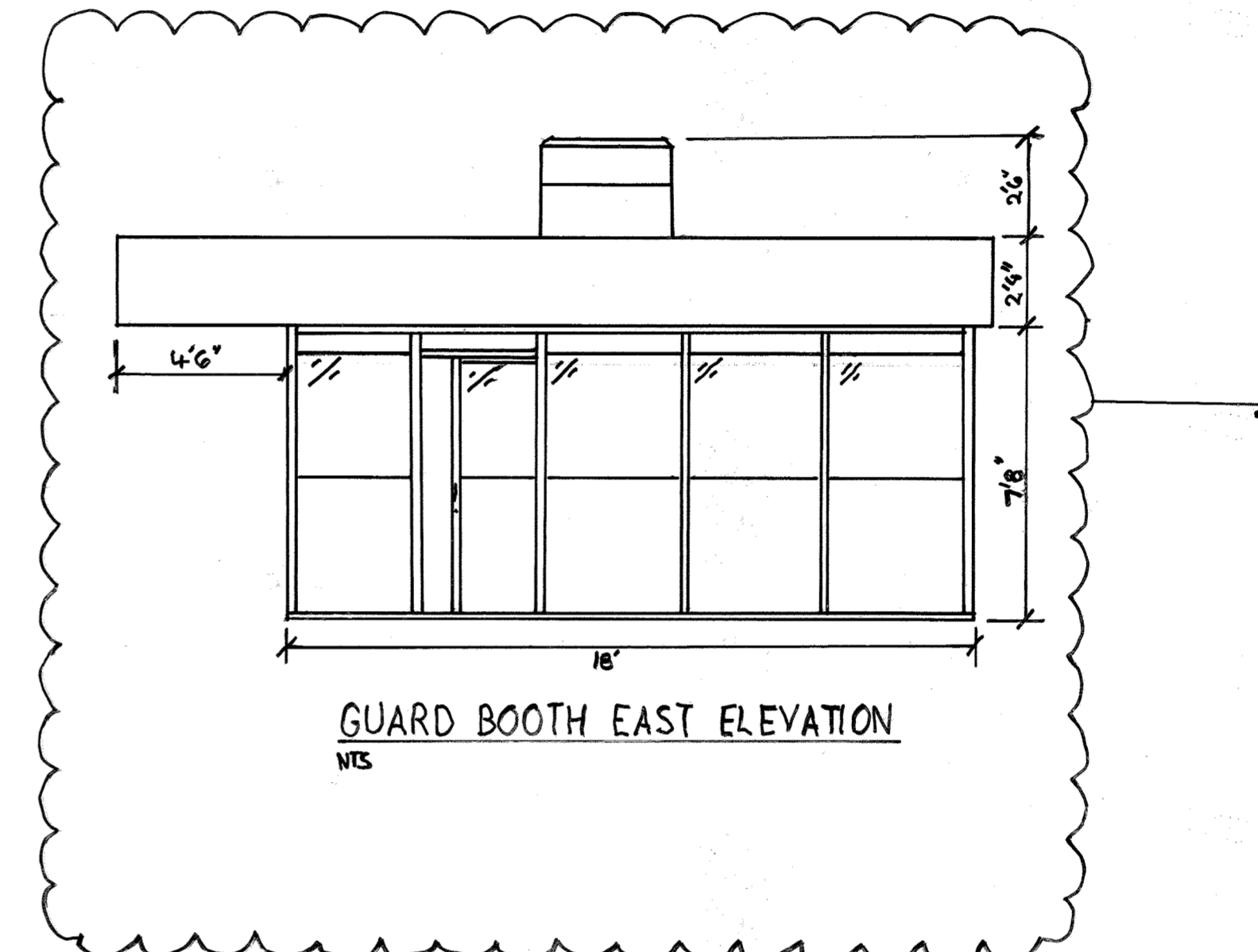
STATIONING FOR CEI CENTERLINE OF ROAD CONTINUES WITH AMT STATIONING FROM 11+65 AT COORDINATE N 548,093.9997 E 1,341,673.1328. THE CENTERLINE ENDS AT THE INTERSECTION WITH THE CENTERLINE OF VALLEY GUTTER AT THE COORDINATE N 547,519.3086 E 1,341,707.3334



ROAD PROFILE
FROM AMT, INC. TO EX. ROAD
SCALE { HORIZ: 1" = 50'
VERT: 1" = 5'



SPLINE ROAD TYPICAL SECTION
SCALE: N.T.S.



GUARD BOOTH EAST ELEVATION
N.T.S.

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>[Signature]</i>	3/16/04
CHIEF DEVELOPMENT ENGINEERING DIVISION	DATE
<i>[Signature]</i>	3/23/04
CHIEF-DIVISION OF LAND DEVELOPMENT	DATE
<i>[Signature]</i>	3/16/04
DIRECTOR	DATE

Project Title:
SERVICES AREA COMPLEX
TRADES BLDG. - #29
MULTI-USE BLDG. - #35

JHU - APL
1100 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20723-6099

Revisions:
NEW GUARD BOOTH 06/12/15

Certification:
[Signature]
2/21/04

Issued for:
 REVIEW NOT FOR CONSTRUCTION
 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
PROPOSED ROAD PROFILE

Project No.: Sheet No.:
Scale: AS NOTED **C-011**
Date: 12-10-03 Sheet 11 of 31



Project Title:

SERVICES AREA COMPLEX
TRADES BLDG. - #29
MULTI-USE BLDG. - #35

JHU - APL
11020 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20723-6099

Revisions:

Certification:

Issued for:

- REVIEW
- NOT FOR CONSTRUCTION
- BID
- CONSTRUCTION
- PERMIT
- 90% CD SUBMISSION

Drawing Title:

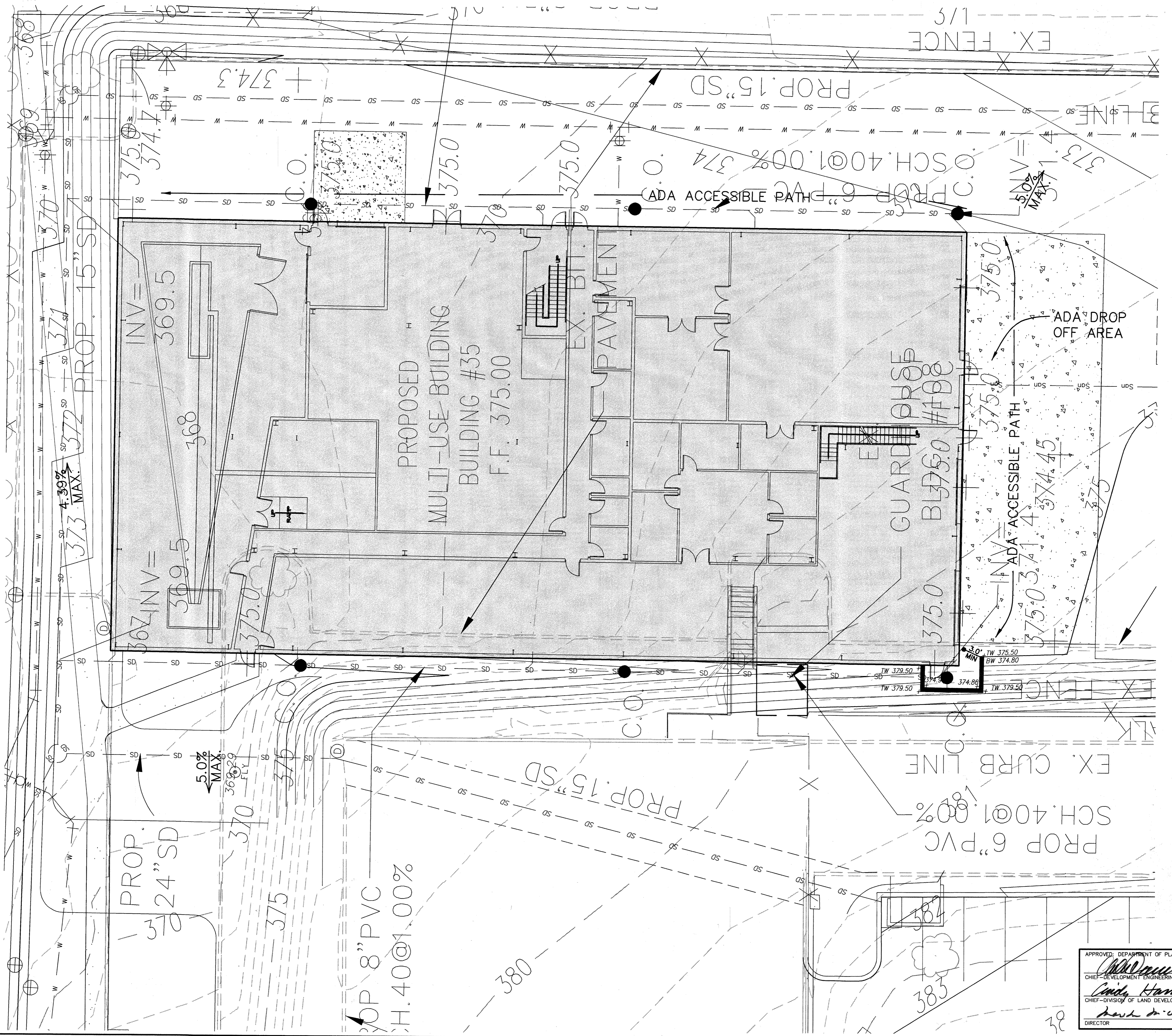
GRADING AT MULTI-USE BLDG

Project No.: Sheet No.:

Scale: 1"=10'
Date: 12-10-03

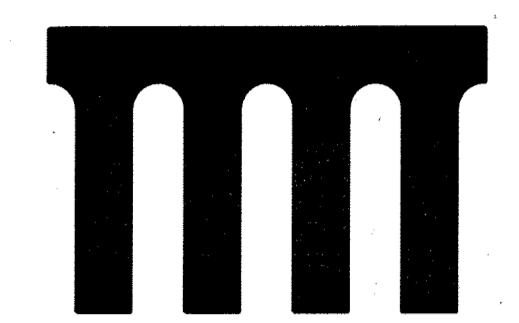
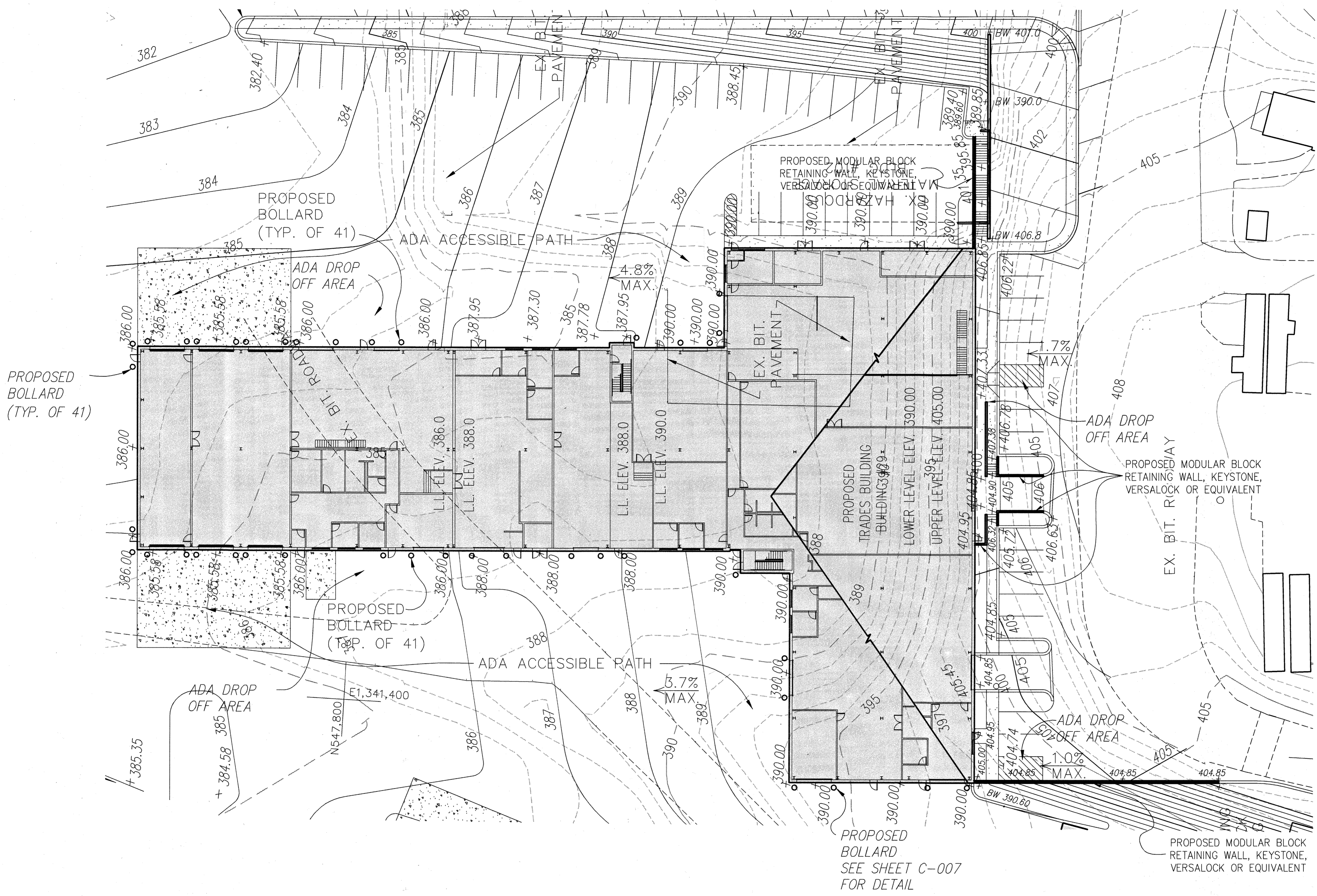
Sheet 12 of 31

SDP-04-76



APPROVED: DEPARTMENT OF PLANNING AND ZONING

<i>[Signature]</i>	3/16/04
CHIEF-DEVELOPMENT ENGINEERING DIVISION MK	DATE
<i>[Signature]</i>	3/15/04
CHIEF-DIVISION OF LAND DEVELOPMENT HB	DATE
<i>[Signature]</i>	3/16/04
DIRECTOR	DATE



Project Title:
SERVICES AREA COMPLEX
TRADES BLDG. - #29
MULTI-USE BLDG. - #35

JHU - AFL
1100 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20723-6099

Revisions:

Certification:

- Issued for:
- REVIEW
 - NOT FOR CONSTRUCTION
 - BID
 - CONSTRUCTION
 - PERMIT
 - 90% CD SUBMISSION

Drawing Title:
GRADING AT TRADES BUILDING

Project No.:
Scale: 1" = 20'
Date: 12-10-03

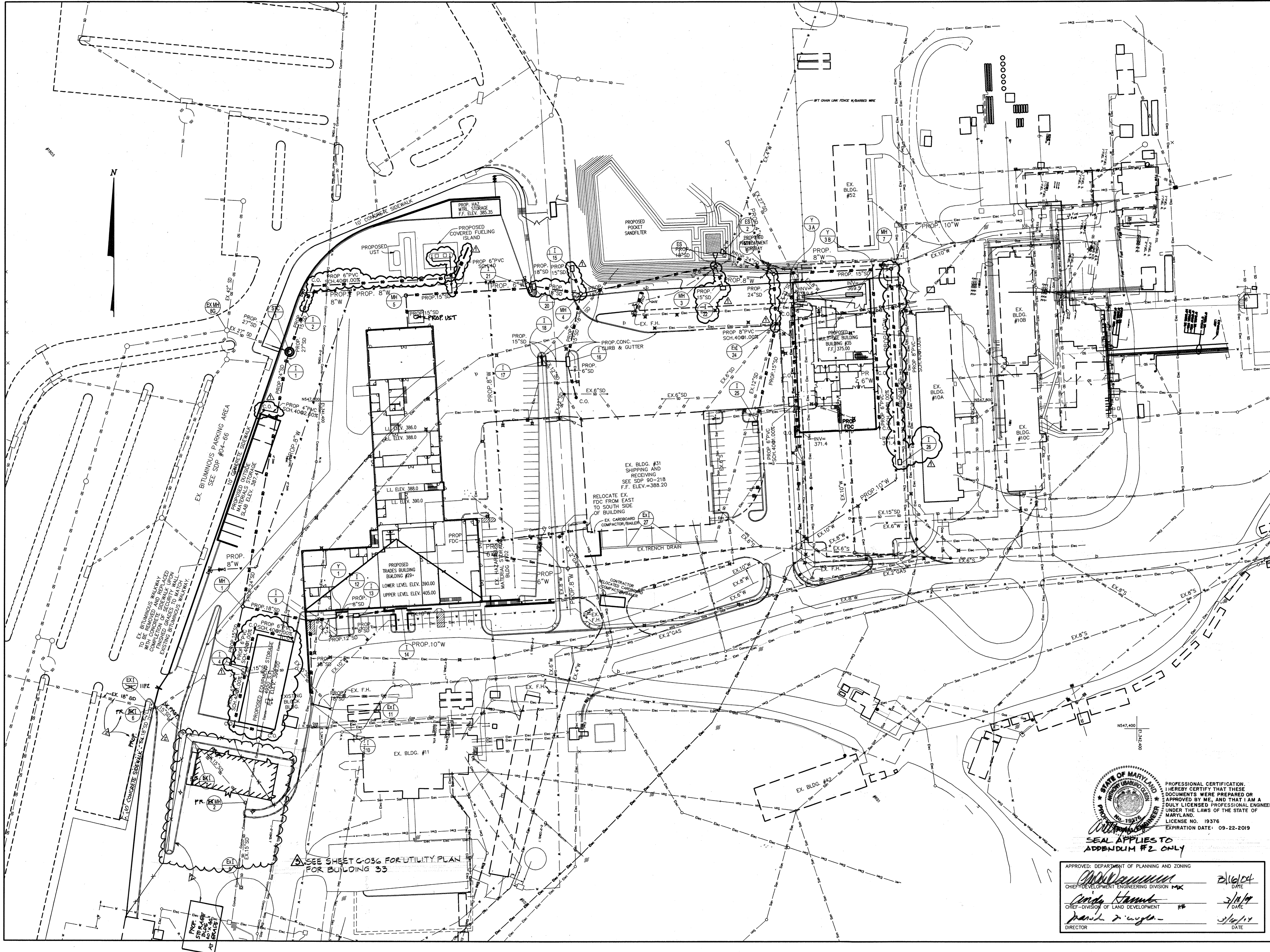
Sheet No.:
C-013
Sheet 13 of 31

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Robert S. Brathwaite 3/16/04
CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE

Cinda Hammett 3/19/04
CHIEF-DIVISION OF LAND DEVELOPMENT DATE

Ronald A. Laughlin 2/10/04
DIRECTOR DATE



Project Title:
SERVICES AREA COMPLEX
TRADES BLDG. - #29
MULTI-USE BLDG. - #35

JHU - APL
11020 Johns Hopkins Road
Laurel, Maryland 20713-6299

Revisions:
▲ ADDENDUM #1 - 01/09/04
▲ RED-LINED PLAN CHANGES 10/06/04
▲ ADDENDUM #2 4/2019

Certification:

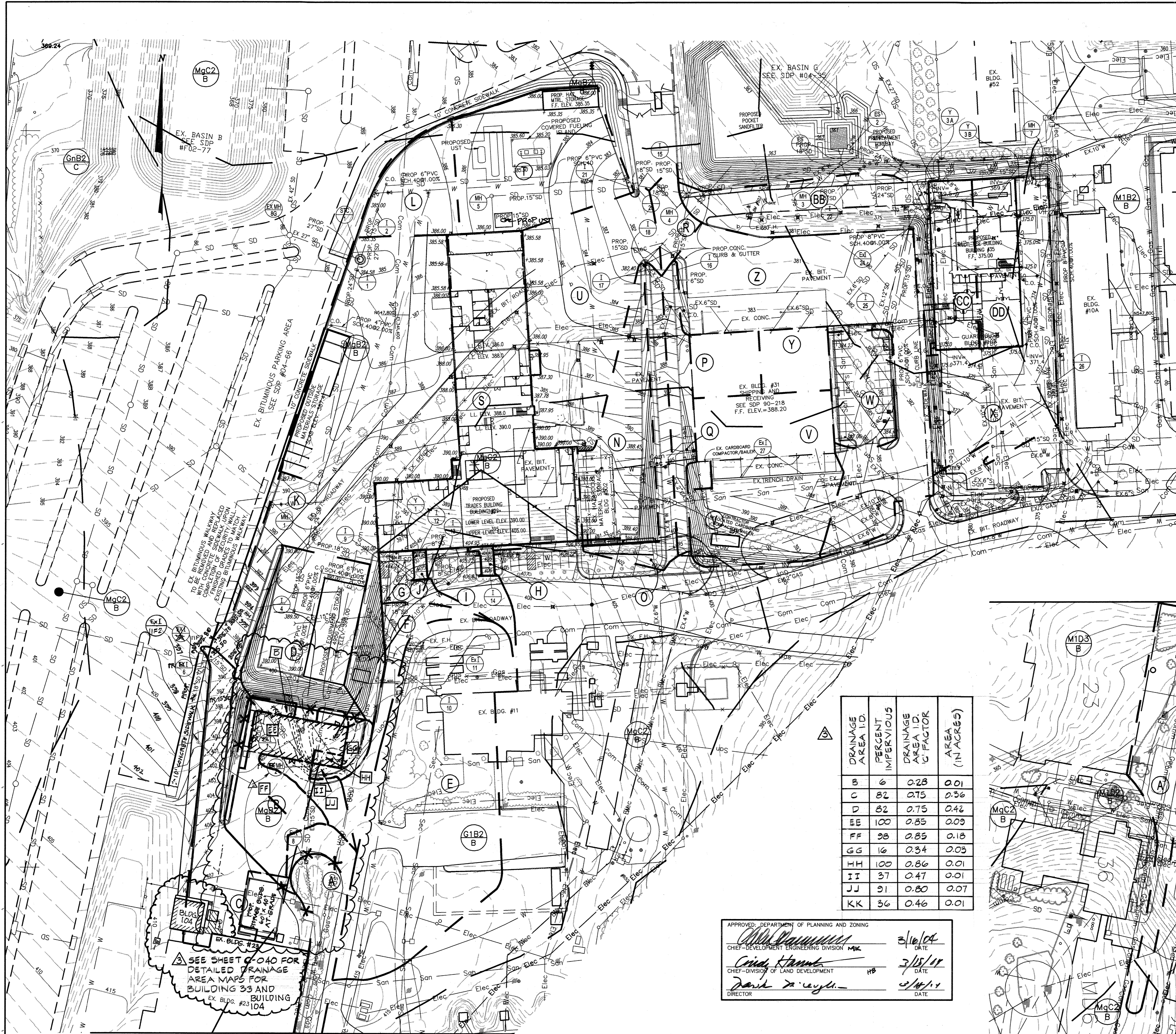
Issued for:
 REVIEW NOT FOR CONSTRUCTION
 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
STORM DRAIN PLAN

Project No.: Sheet No.:
Scale: 1" = 50'
Date: 12-10-03 Sheet 14 of 31

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. 19376 EXPIRATION DATE: 09-22-2019
SEAL APPLIES TO APPENDUM #2 ONLY
APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] DATE 2/16/04
[Signature] DATE 3/18/04
[Signature] DATE 3/18/04

SEE SHEET C-036 FOR UTILITY PLAN FOR BUILDING 33



DRAINAGE AREA ID	PERCENT IMPERVIOUS	DRAINAGE AREA ID	'C' FACTOR	AREA (IN ACRES)
A	22	72	0.86	0.40
B	72	72	0.86	0.52
C	72	72	0.86	0.43
D	72	72	0.86	0.42
E	55	72	0.86	1.12
F	100	72	0.86	0.15
G	100	72	0.86	0.07
H	100	72	0.86	0.01
I	95	72	0.86	0.12
J	100	72	0.86	0.01
K	92	72	0.86	1.34
L	100	72	0.86	0.22
M	NOT USED			
N	22	72	0.69	0.35
O	27	72	0.86	0.18
P	100	72	0.86	0.12
Q	63	72	0.69	0.15
R	100	72	0.86	0.07
S	100	72	0.86	0.92
T	94	72	0.86	0.54
U	100	72	0.86	0.64
V	87	72	0.86	0.64
W	83	72	0.86	0.20
X	92	72	0.86	0.51
Y	100	72	0.86	0.12
Z	95	72	0.86	0.95
AA	NOT USED			
BB	28	72	0.69	0.45
CC	100	72	0.86	0.20
DD	100	72	0.86	0.20

aba
ARCHITECTS

Amos Bailey Arnold
+ Associates, Inc.

3600 Clipper Mill Road, Suite 300
Baltimore, Maryland 21211
Phone: 410.235.9812 Fax: 410.235.3715

mm

Century Engineering, Inc.
32 West Road Towson,
Maryland 21204
Voice (410) 823-8070
Fax (410) 823-2184

Project Title:
SERVICES AREA COMPLEX
TRADES BLDG. - #23
MULTI-USE BLDG. - #25

JHU - APL
11020 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20713-6099

Revisions:
 ▲ ADDENDUM #1 - 01/09/04
 ▲ RED-LINED PLAN CHANGES 10/04/04
 ▲ ADDENDUM #2 4/2015
 ▲ ADDED BLDG. 104 1/2021

Certification:

 Robert J. Hoffman
2/24/04

Issued for:
 REVIEW NOT FOR CONSTRUCTION
 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
STORM DRAIN DRAINAGE AREA MAP

Project No.: Sheet No.:
C-015

Scale:
1" = 50'

Date:
12-10-03

Sheet 15 of 31

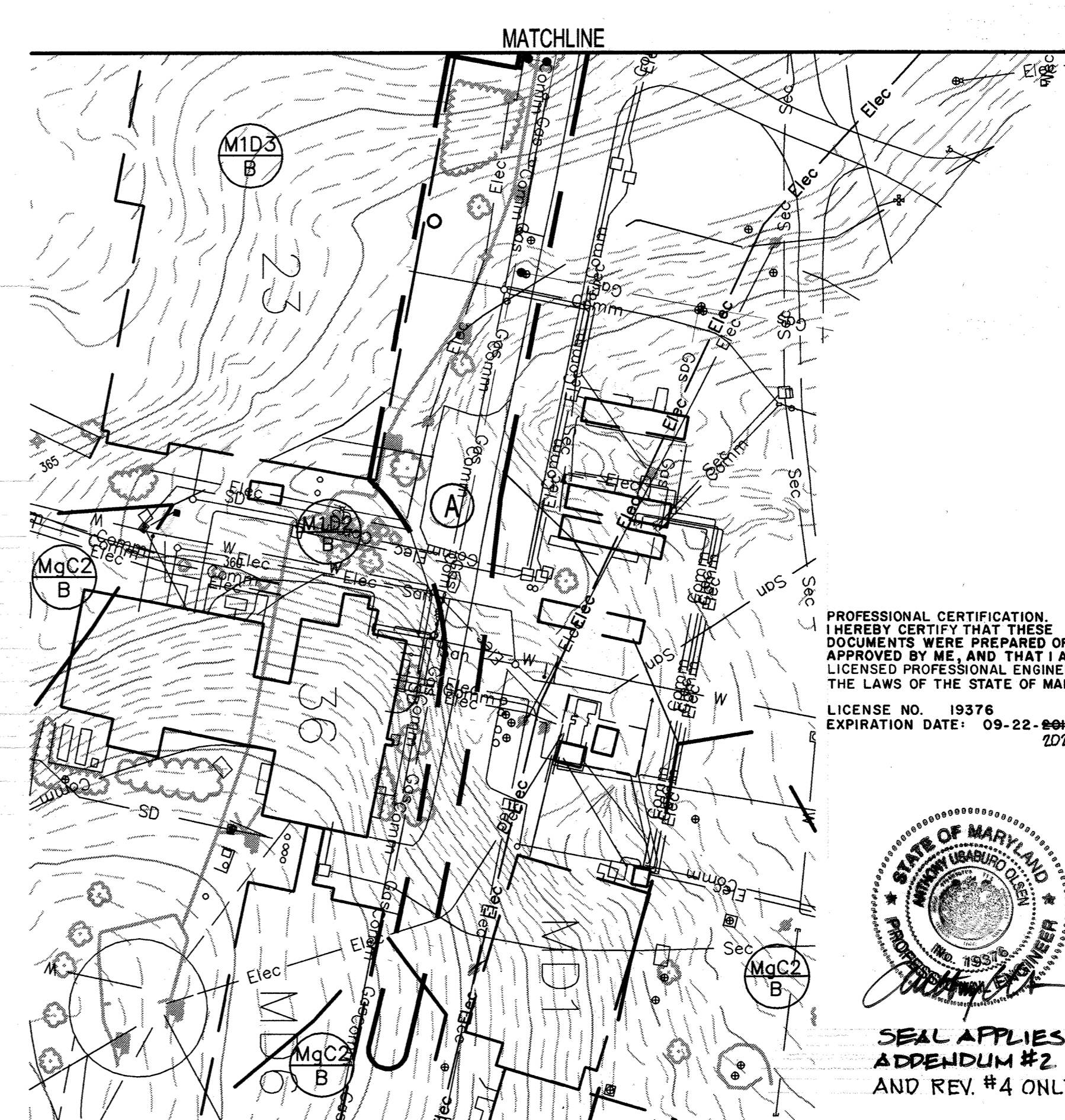
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C	82	82	0.75	0.36
D	82	82	0.75	0.42
EE	100	82	0.85	0.09
FF	98	82	0.85	0.18
GG	16	82	0.34	0.03
HH	100	82	0.86	0.01
II	37	82	0.47	0.01
JJ	91	82	0.80	0.07
KK	36	82	0.46	0.01

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chris Hann
CHIEF-DEVELOPMENT ENGINEERING DIVISION MJK 3/16/04 DATE

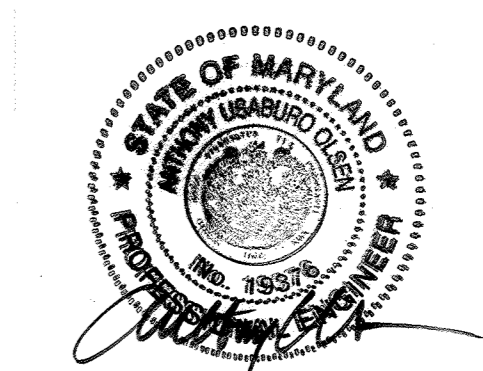
Chris Hann
CHIEF-DIVISION OF LAND DEVELOPMENT HB 3/15/11 DATE

David A. Lepp
DIRECTOR 3/14/11 DATE

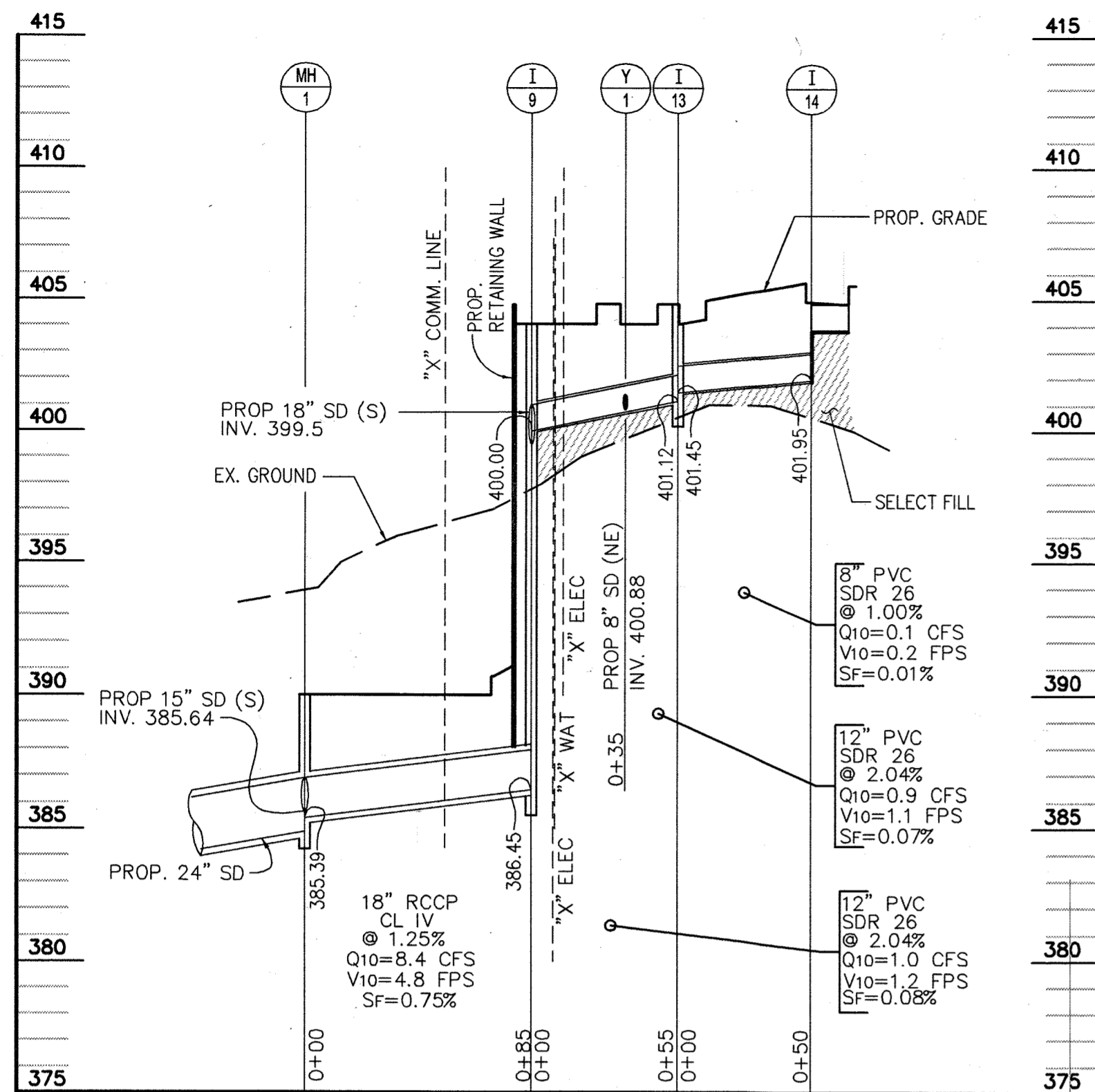


PROFESSIONAL CERTIFICATION:
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

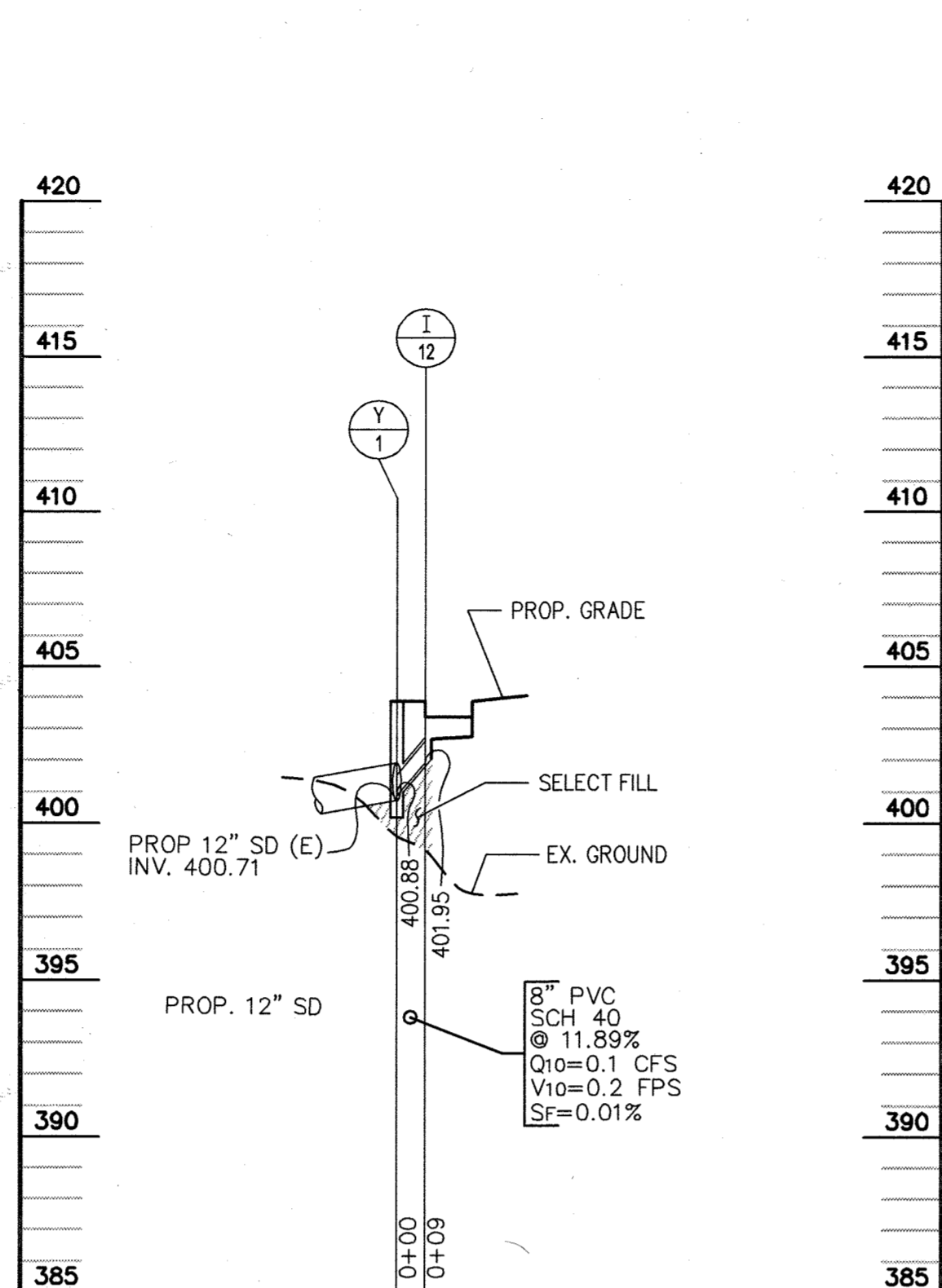
LICENSE NO. 19376
 EXPIRATION DATE: 09-22-2021



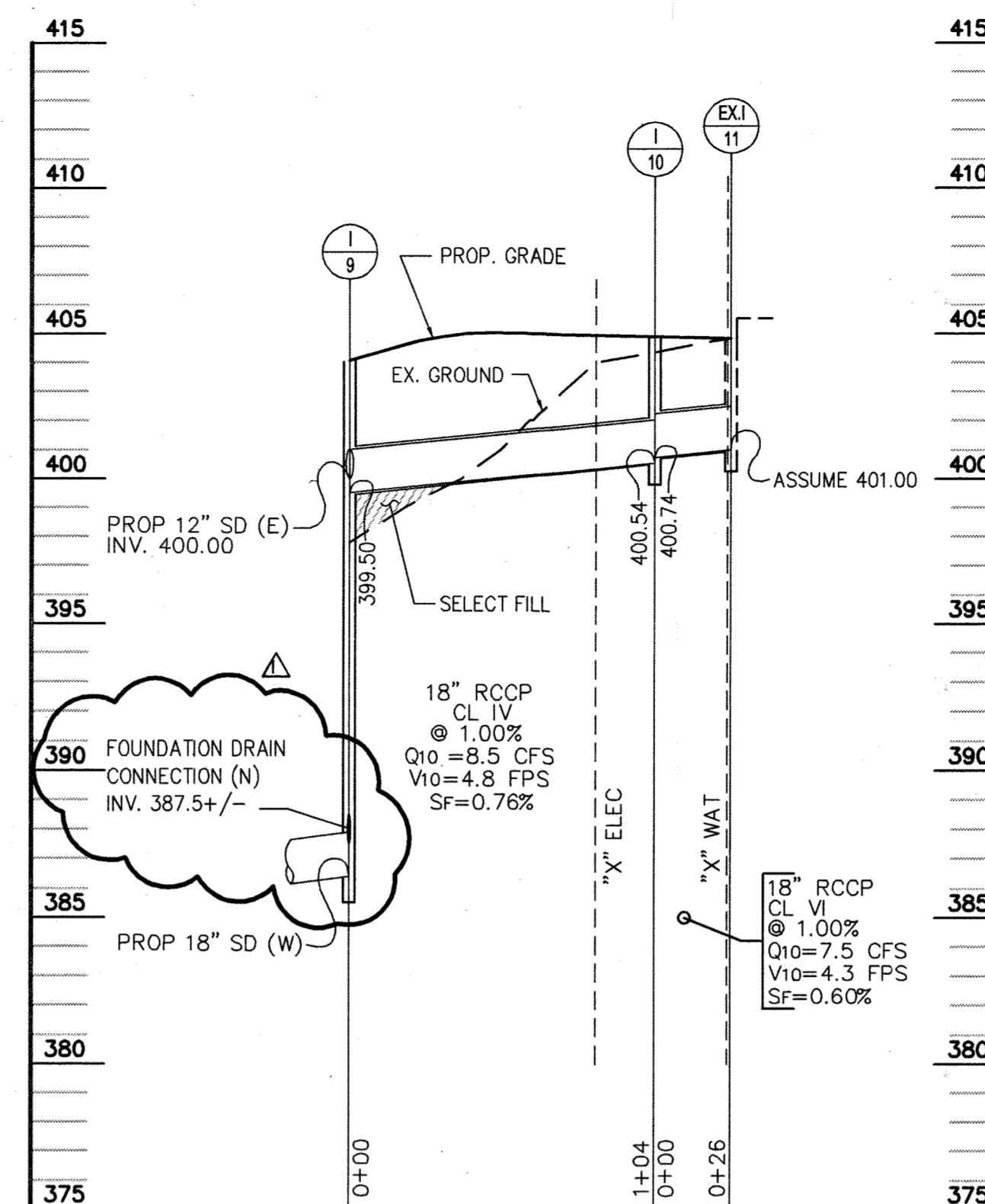
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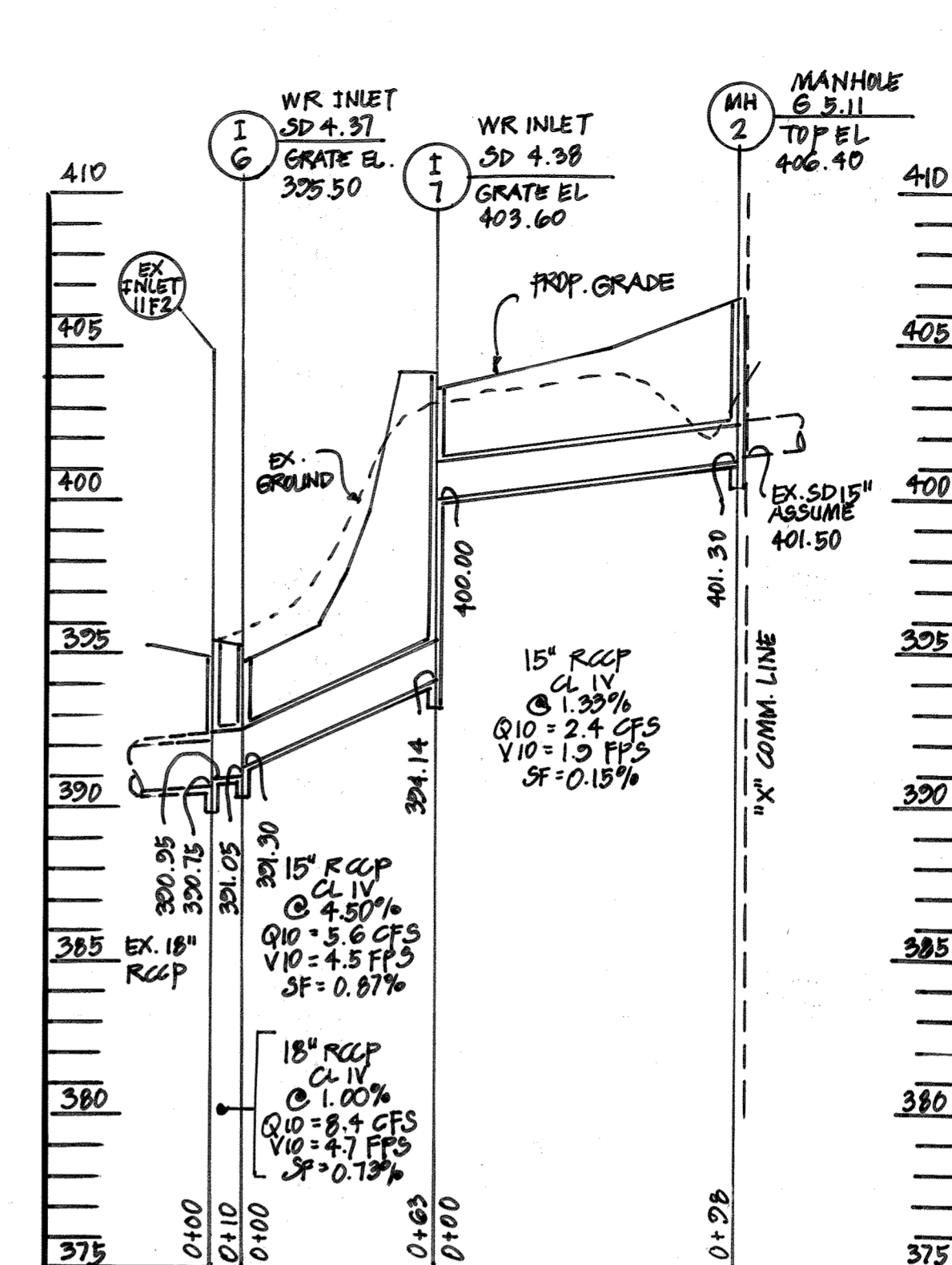
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 SCALE { HORIZ: 1" = 50'
 VERT: 1" = 5'



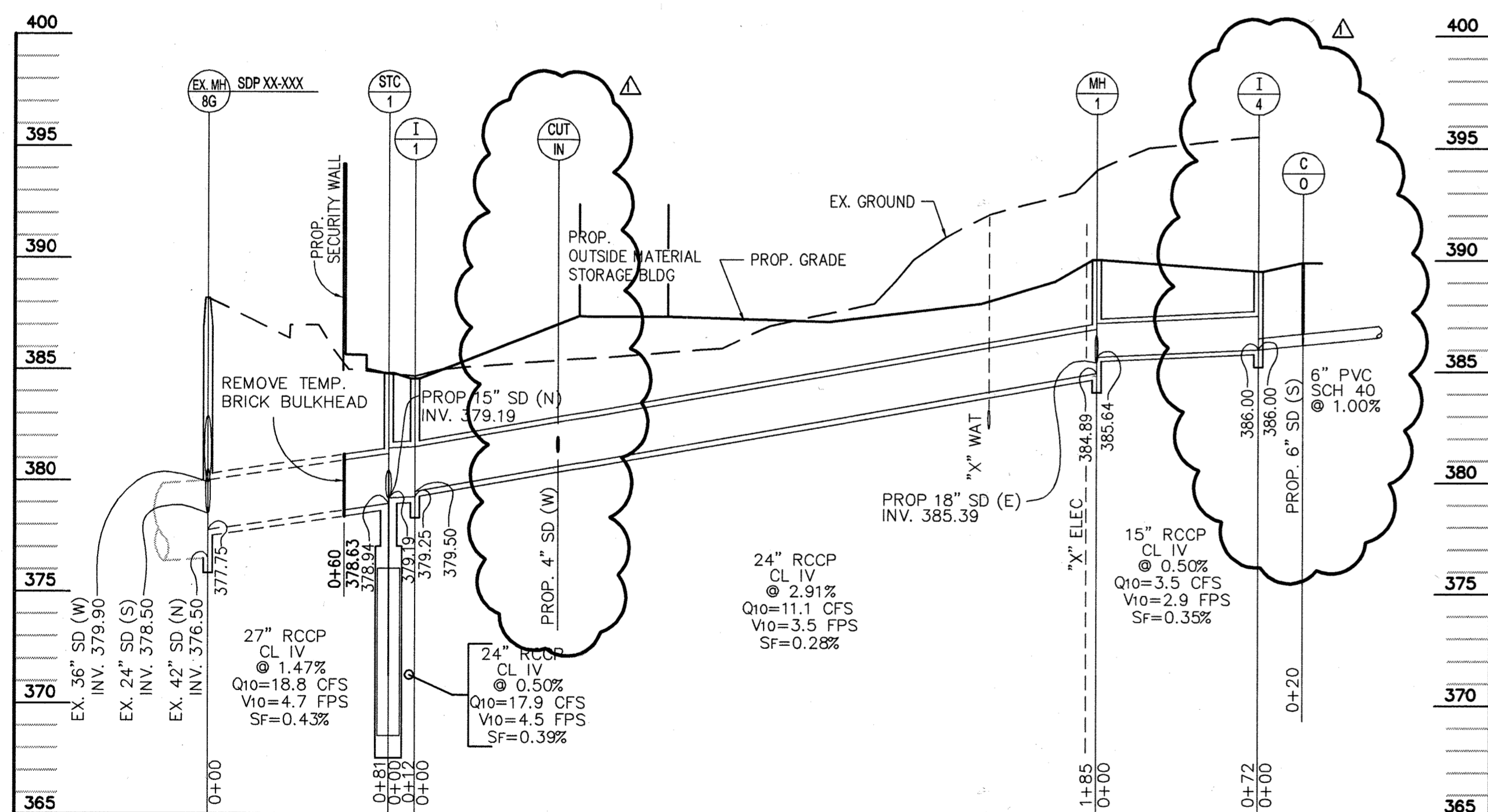
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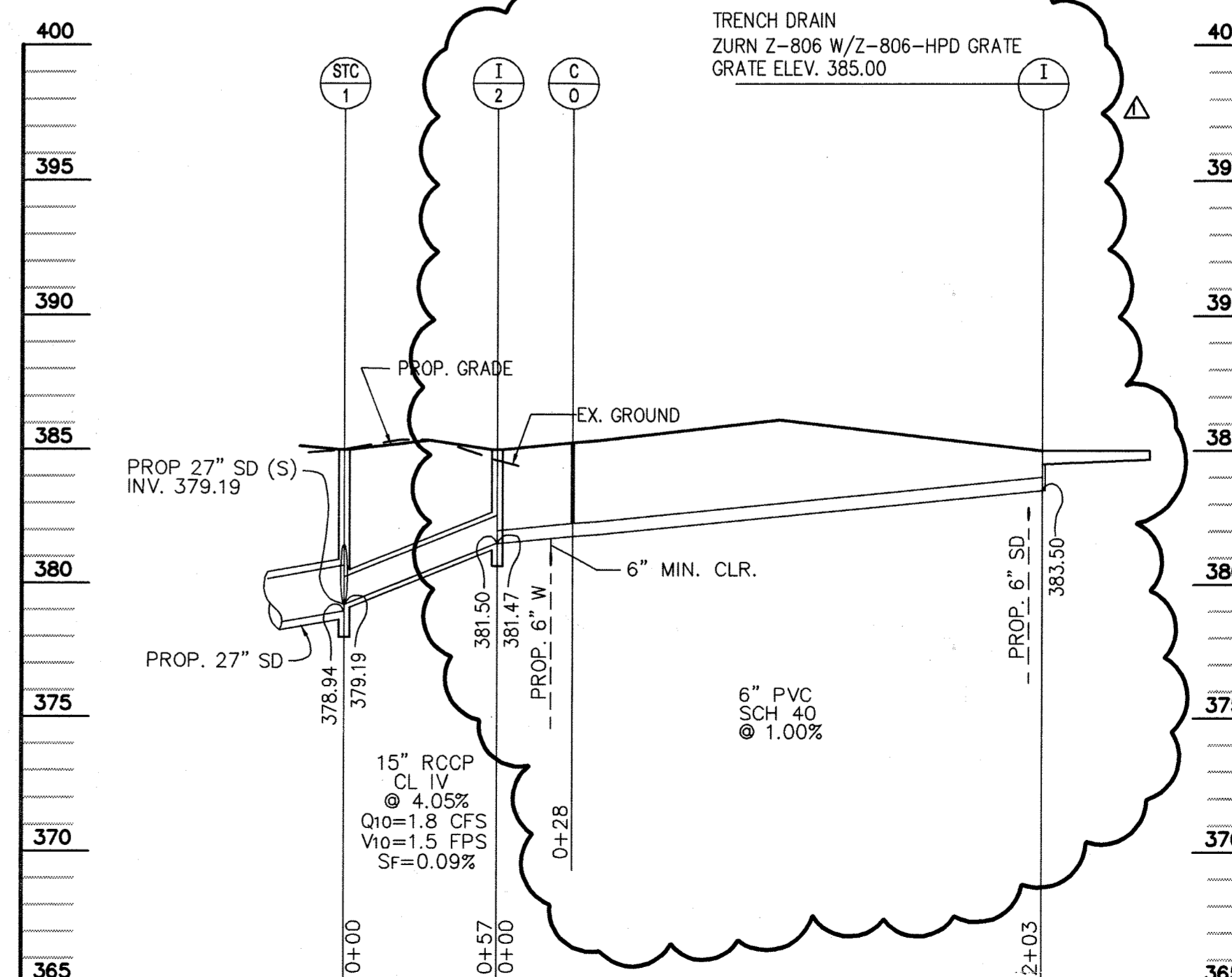
STORM DRAIN PROFILE
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 VERT: 1" = 5'



STORM DRAIN PROFILE
 SCALE { HORIZ: 1" = 50'
 VERT: 1" = 5'



STORM DRAIN PROFILE
 SCALE { HORIZ: 1" = 50'
 VERT: 1" = 5'



STORM DRAIN PROFILE
 SCALE { HORIZ: 1" = 50'
 VERT: 1" = 5'

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF-DEVELOPMENT ENGINEERING DIVISION *[Signature]* 2/16/04
 CHIEF-DIVISION OF LAND DEVELOPMENT *[Signature]* 2/18/04
 DIRECTOR *[Signature]* 2/18/04

Project Title:

**SERVICES AREA
 COMPLEX**
 TRADES BLDG. - #23
 MULTI-USE BLDG. - #35

JHU - APL
 11020 JOHN HOPKINS ROAD
 LAUREL, MARYLAND 20713-6099

Revisions:
 ADDENDUM #1 - 01/09/04
 RED-LINED PLAN CHANGES 10/04/04

Certification:

[Signature]
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- BID
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- 90% CD SUBMISSION

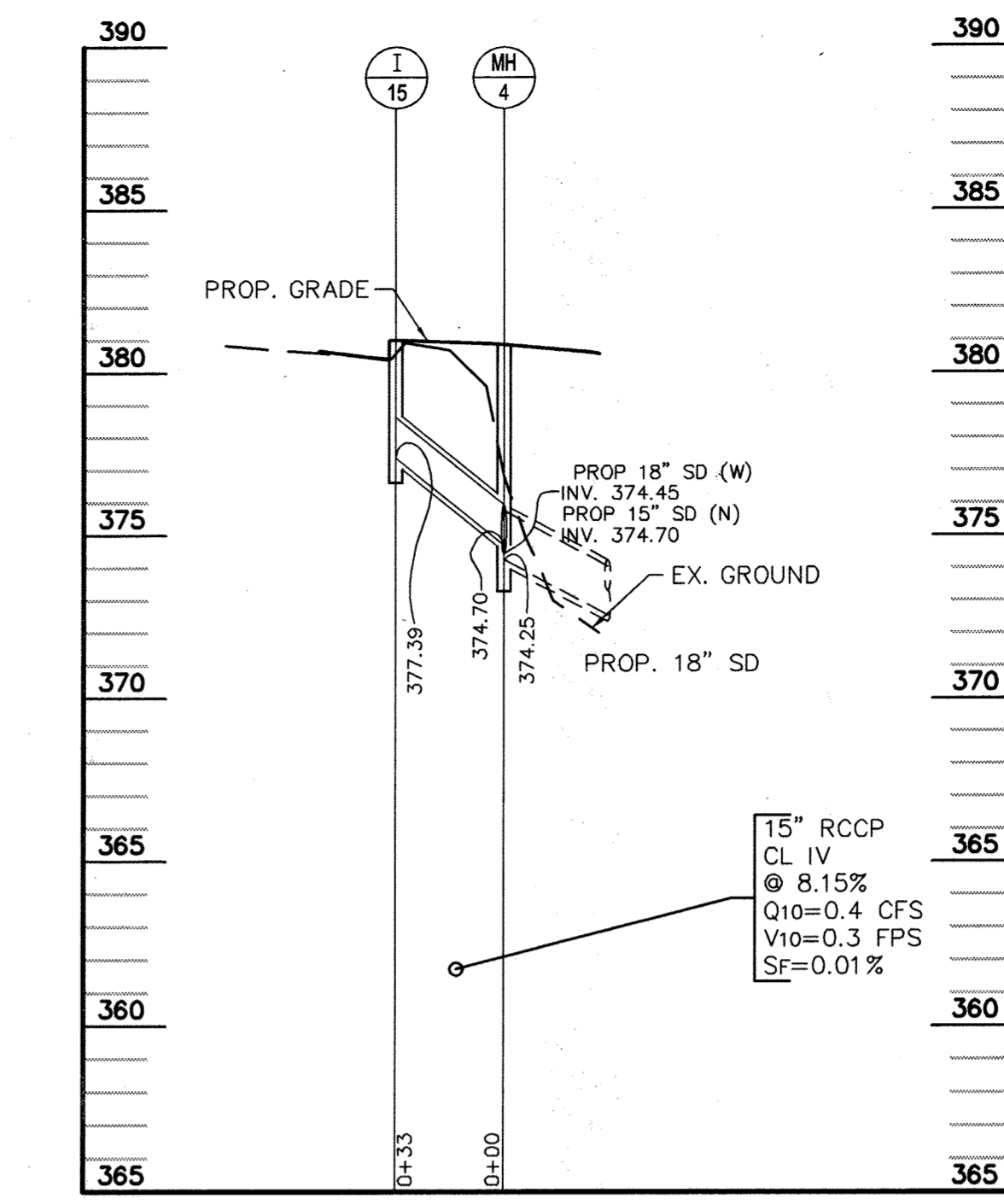
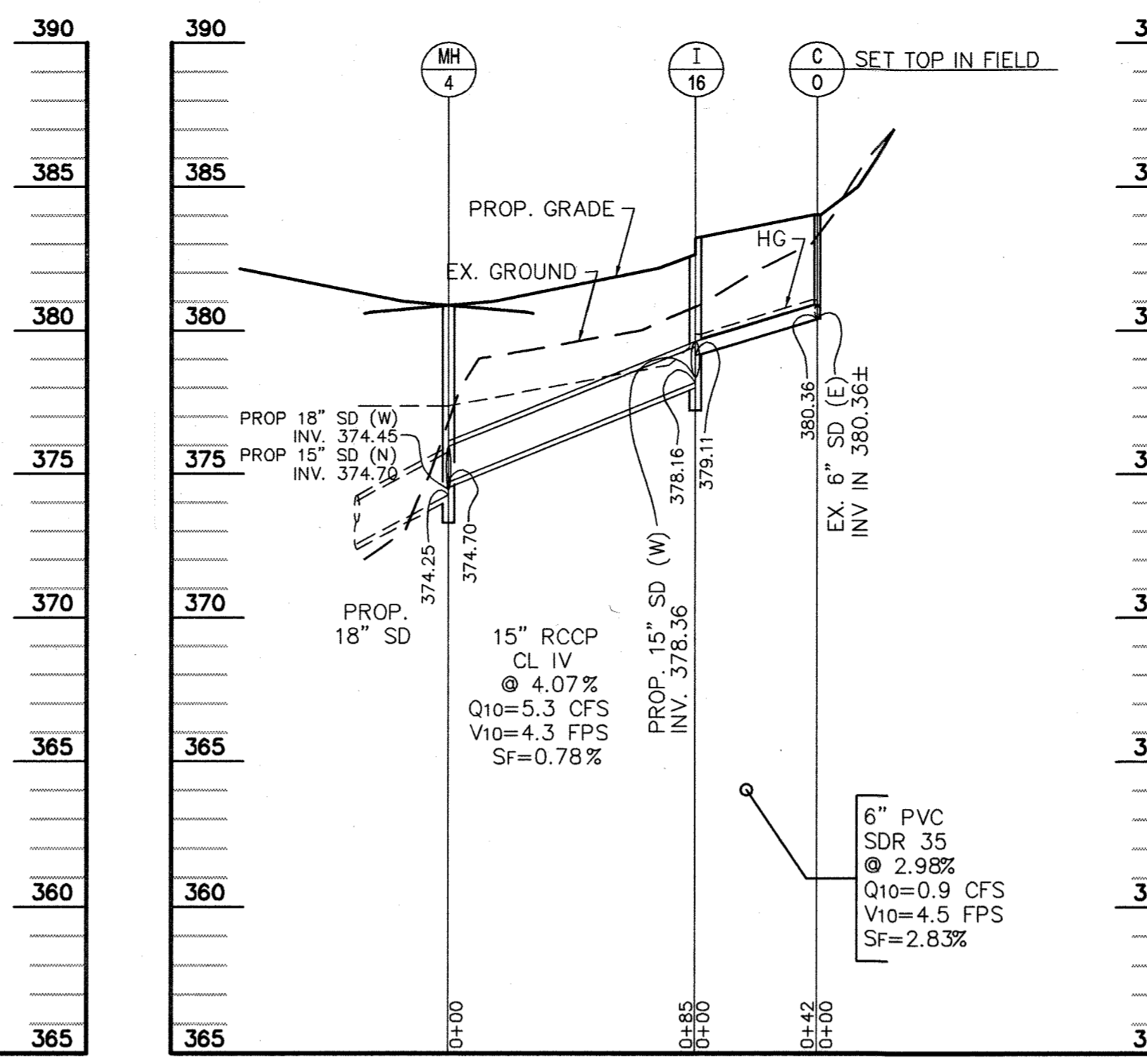
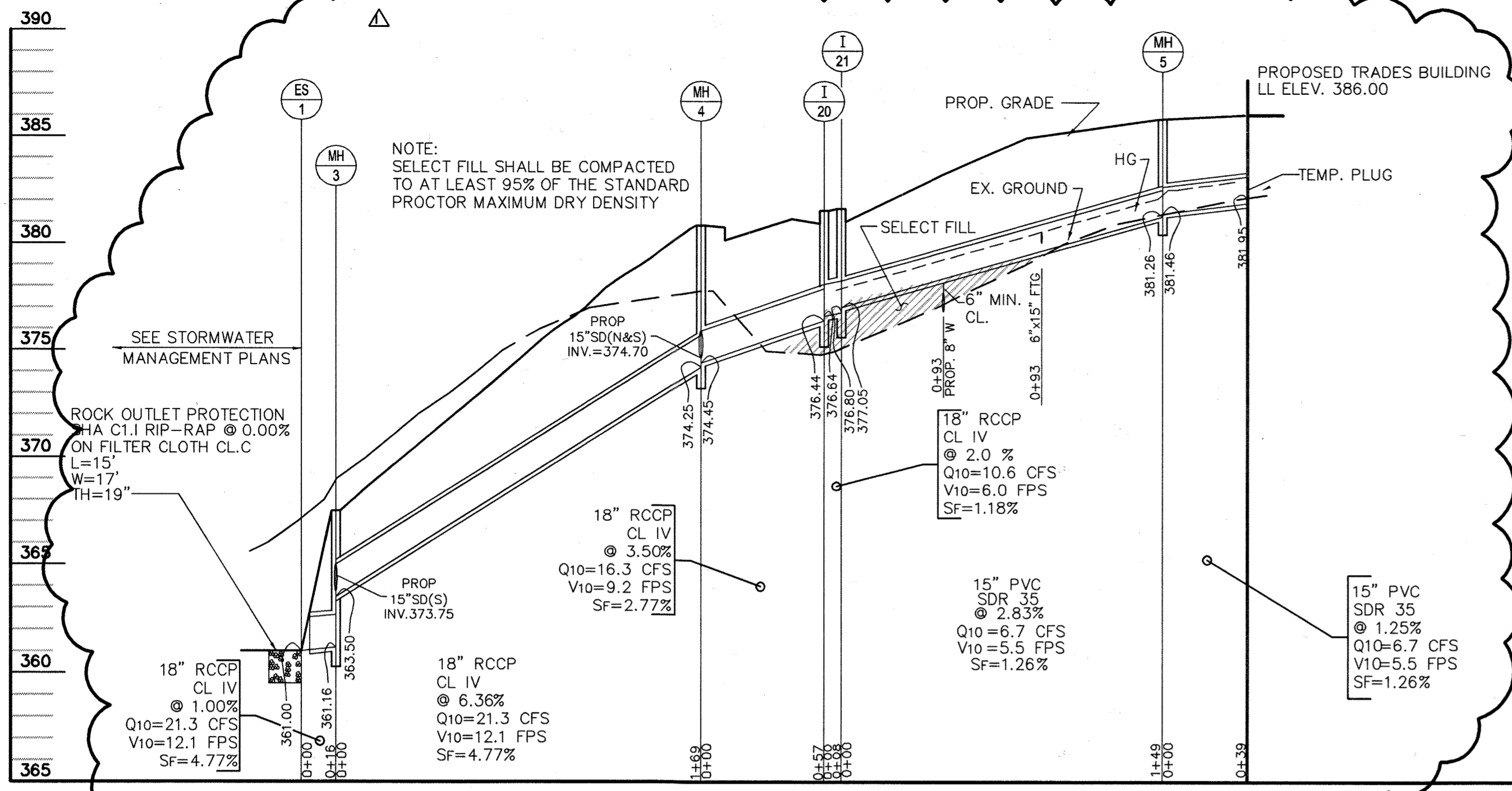
Drawing Title:

**STORM DRAIN
 PROFILES**

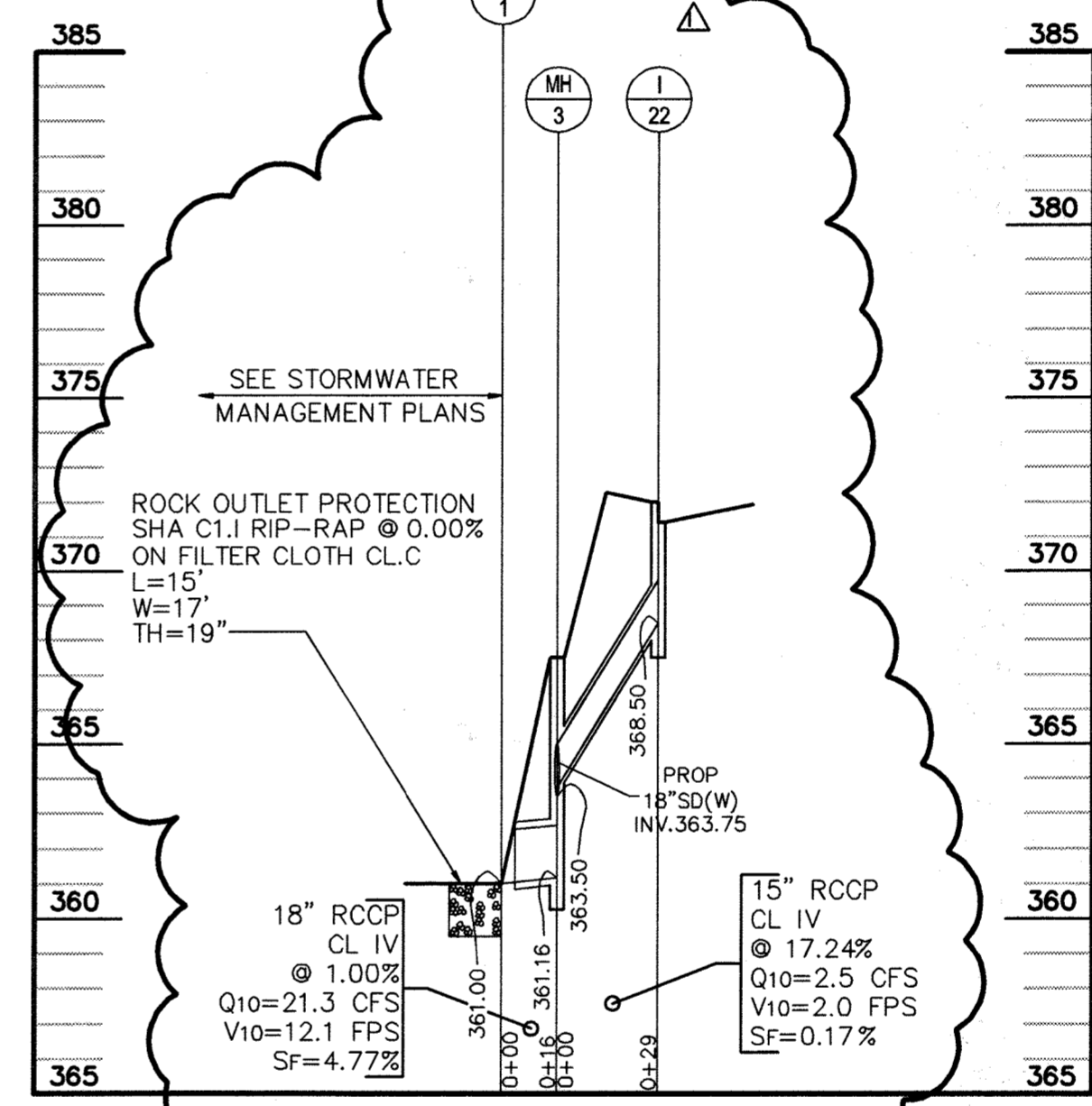
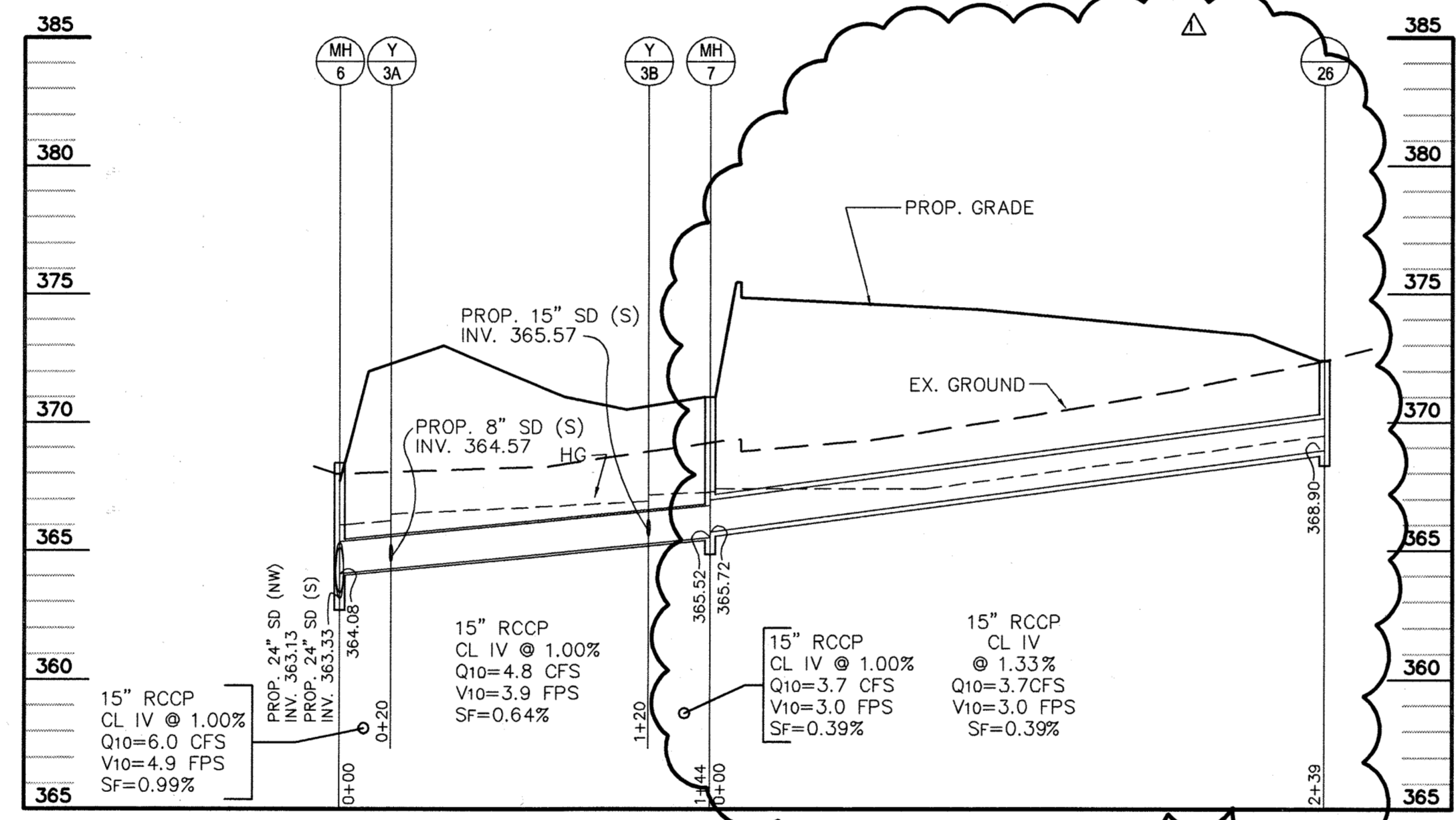
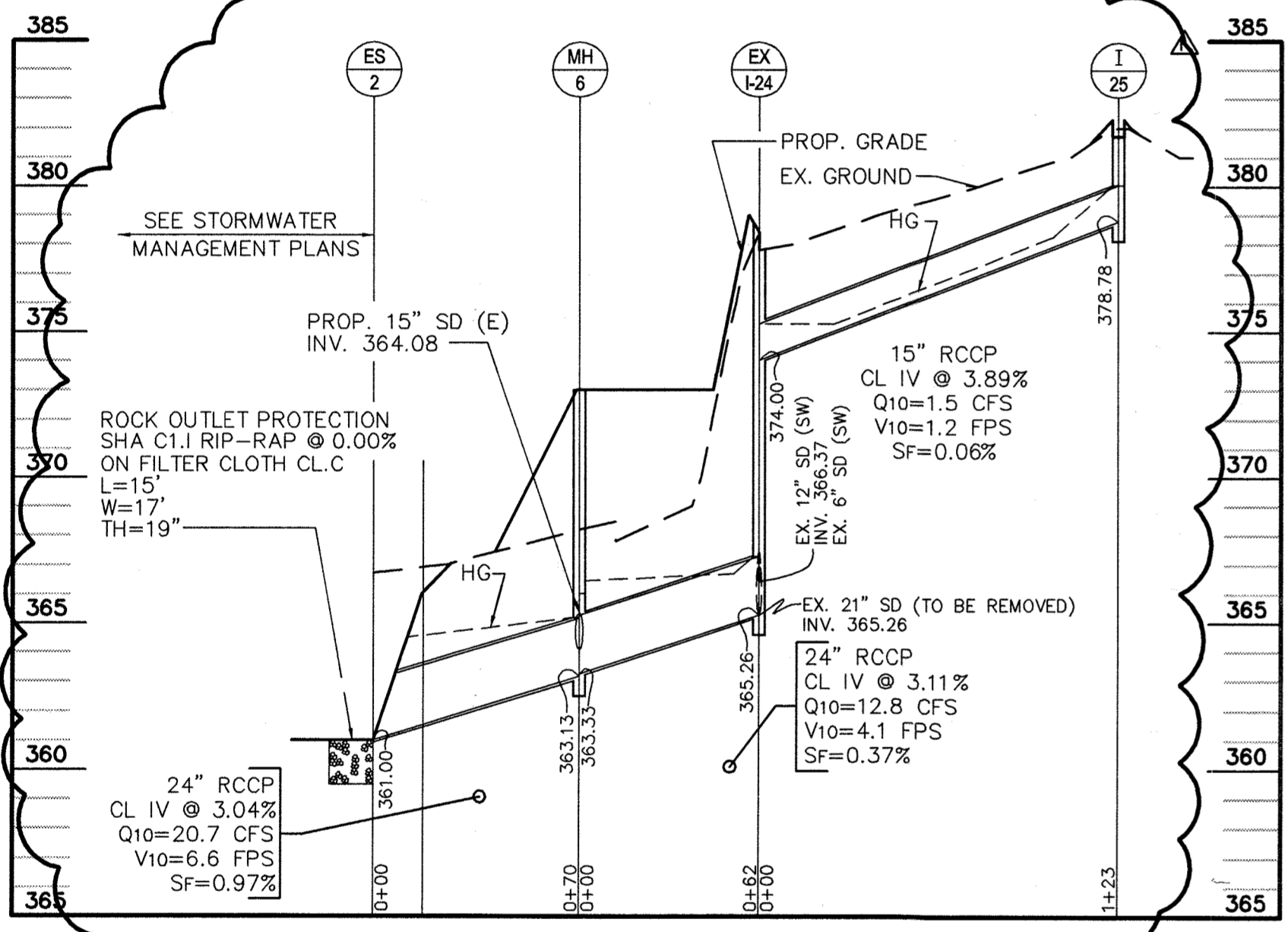
Project No.: Sheet No.:

Scale: AS NOTED **C-016**

Date: 12-10-03 Sheet 16 of 31



STORM DRAIN PROFILES
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VERT: 1" = 5'

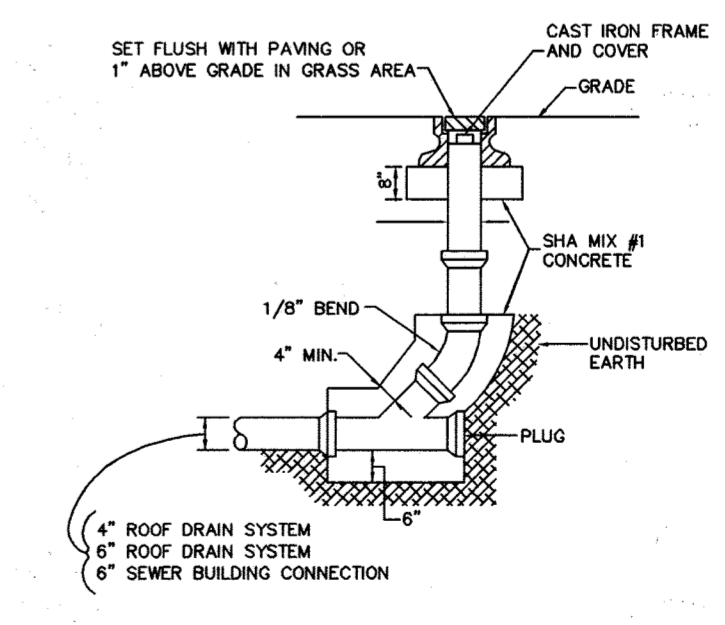
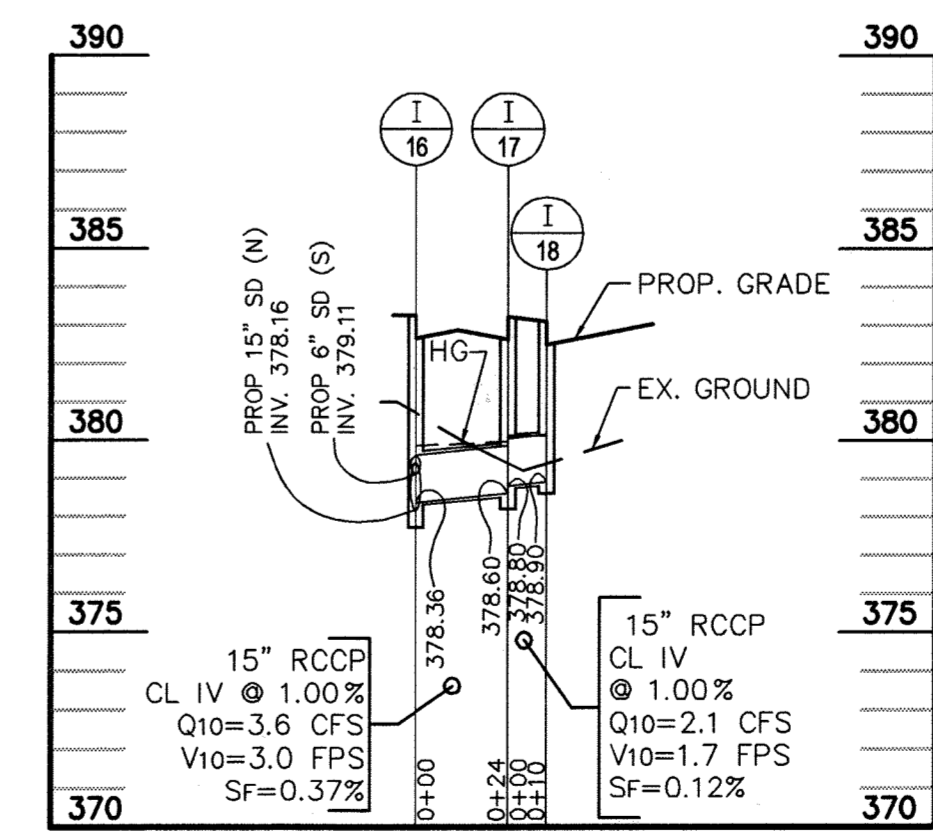


STORM DRAIN PROFILES
SCALE { HORIZ: 1" = 50'
VERT: 1" = 5'

INLET SCHEDULE					
* TOP CURB ELEV. FOR CURB INLET					
INLET No.	TYPE	STANDARD	TOP ELEV.*	INVERT IN	INVERT OUT
1	WR	HO. CO. SD. 4.35	384.58	379.50	379.25
2	WR	HO. CO. SD. 4.35	385.00	381.47	381.50
3	NOT USED				
4	WR	HO. CO. SD. 4.35	389.50	386.00	386.00
5	NOT USED				
6	NOT USED				
7	NOT USED				
8	EXISTING	N/A	N/A	N/A	N/A
9	WR	HO. CO. SD. 4.35	404.74	400.54	398.50
10	WR	HO. CO. SD. 4.22	404.50	400.54	400.54
11	EXISTING	N/A	N/A	N/A	N/A
12	TRENCH	ZURN Z-806 W/Z-806-HPD GRATE	404.85	N/A	401.95
13	A-5	HO. CO. SD. 4.40	405.45	401.45	401.12
14	TRENCH	ZURN Z-806 W/Z-806-HPD GRATE	404.85	N/A	401.95
15	SHA COG 5	MD SHA MD 374.62	381.49	N/A	377.39
16	A-5	HO. CO. SD. 4.40	383.35	378.35	378.16
17	A-5 W/DEFLECTOR	HO. CO. SD. 4.40 W/ SD 4.83	383.27	378.80	378.60
18	A-5 W/DEFLECTOR	HO. CO. SD. 4.40 W/ SD 4.83	383.10	N/A	378.90
19	A-5	HO. CO. SD. 4.40	381.49	377.03	376.83
20	A-5	HO. CO. SD. 4.40	381.52	376.23	376.19
21	A-10	HO. CO. SD. 4.41	381.69	377.05	376.80
22	WR	HO. CO. SD. 4.35	372.00	N/A	368.50
23	NOT USED				
24	EXISTING	N/A	N/A	374.00	365.26
25	WR	HO. CO. SD. 4.35	382.30	N/A	378.78
26	WR	HO. CO. SD. 4.35	372.40	N/A	368.90

MANHOLE SCHEDULE					
MANHOLE No.	TYPE	STANDARD	TOP ELEV.	INVERT IN	INVERT OUT
1	NOT USED				
2	NOT USED				
3	STD 4' MANHOLE	HO. CO. G. 5.12	367.50	363.50	361.16
4	STD 4' MANHOLE	HO. CO. G. 5.12	380.86	374.70	374.25
5	STD 4' MANHOLE	HO. CO. G. 5.12	385.89	381.46	381.26
6	STD 4' MANHOLE	HO. CO. G. 5.12	373.00	365.72	363.13
7	STD 4' MANHOLE	HO. CO. G. 5.12	371.00	365.72	365.52

STRUCTURE SCHEDULE					
STRUCTURE No.	TYPE	STANDARD	TOP ELEV.	INVERT IN	INVERT OUT
STC-1	STC-4800	SEE STORMWATER MGMT. PLAN	384.82	379.19	378.94
ES-1	END SECTION	SD 5.51	N/A	N/A	361.00
ES-2	END SECTION	SD 5.51	N/A	N/A	361.00



APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief-Development Engineering Division MK 5/16/04 DATE

Chief-Division of Land Development HP 7/15/04 DATE

Director 2/14/14 DATE

aba
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Project Title:
SERVICES AREA COMPLEX
TRADES BLDG. - #29
MULTI-USE BLDG. - #35

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Revisions:
ADDENDUM #1 - 01/09/04

Certification:

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Drawing Title:
STORM DRAIN PROFILES

Project No.: Sheet No.:
Scale: AS NOTED **C-017**
Date: 12-10-03 Sheet 17 of 31

West Branch Flow Tabs

CEI Project Name: John Hopkins APL Service Area Complex 10 Yr. Design 25 Year Sumps Date: 11/18/2003
 Project Number: 23076.03 West Branch Operator: R. Bathurst

LOCATION	AREA		COEFF. "C"	CXA		TIME CONC.			INTE.N.	Peak Flow Q=C.I.A.	PIPE				REMARKS		
	L.D.	"A"-ACRES		"C"	SUMP	25 Year	10 Year	Total			25 Year	10 Year	Q=C.I.A.	Manning's n=.014		Vel.	Lgth.
FROM To		Sub. Total															
Ex. I-8	I-7	A	.40	.69	0.28	-	-	5.0	-	5.0	8.50	2.35	15"	0.15%	4.9	200'	
I-7		B	.52	.86	0.45	-	-	5.0	-	5.0	8.50	3.80	"	"	"	"	
I-7	I-6	A+B	.92	.86	0.37	-	0.72	5.0	1.7	6.7	7.72	5.58	15"	0.87%	4.5	63'	
I-6		C	.43	.86	0.37	-	-	5.0	-	5.0	8.50	3.14	"	"	"	"	
I-6	Ex. I-XX	A+C	1.35				1.09	6.7	0.2	6.9	7.64	8.35	18"	0.73%	4.7	10'	
			.00														
I-14	I-13	H	.01	.86	0.01	0.01	-	5.0	-	5.0	9.76	8.50	.08	8"	0.01%	0.2	52'
I-13		I	.12	.86	0.10	0.12	-	5.0	-	5.0	9.76	8.50	1.01	"	"	25'	SUMP
I-13	Y-1	H+I	.13				0.13	5.0	3.6	8.6	7.02	.90	12"	0.07%	1.1	25'	
I-12	Y-1	J	.01	.86	0.01	0.01	-	5.0	-	5.0	9.76	8.50	.08	8"	0.01%	0.2	9'
Y-1	I-9	H+J	.14				0.14	8.6	0.4	9.0	6.90	.95	12"	0.08%	1.2	30'	
Ex. I-11	I-10	E	1.12	.69	0.77	0.89	-	5.0	-	5.0	9.76	7.54	18"	0.60%	4.3	24'	
I-10		F	.12	.86	0.10	0.12	-	5.0	-	5.0	9.76	8.50	1.01	"	"	25'	SUMP
I-10	I-9	E+F	1.24				1.01	5.0	0.1	5.1	8.45	8.50	18"	0.76%	4.8	105'	
I-9		G	.10	.86	0.09	0.10	-	5.0	-	5.0	9.76	8.50	.84	"	"	25'	SUMP
Y-1	I-9	H+J	.00	.00	-	-	-	0.14	8.6	0.4	9.0	6.90	.95	12"	0.08%	1.2	30'
			.24					9.0	0.4	9.4	6.78	#VALUE!	"	"	"	"	
I-10	I-9	E+F	.00	.00	-	-	-	1.01	5.0	0.1	5.1	8.45	8.50	18"	0.76%	4.8	105'
I-9	MH-1	E-J	1.48				1.24	9.4	-	9.4	6.78	8.43	18"	0.75%	4.8	84'	
I-4	MH-1	D	.42	.86	0.36	0.41	-	5.0	-	5.0	9.76	8.50	3.53	15"	0.35%	2.9	70'
MH-1	I-1	D+J	1.90				1.66	9.4	0.3	9.7	6.69	11.09	24"	0.28%	3.5	186'	
I-1		K	1.31	.86	1.13	-	-	5.0	-	5.0	8.50	9.58	"	"	"	"	
I-1	SC-1	D-K	3.21				2.78	9.7	0.9	10.6	6.42	17.87	27"	0.39%	4.5	123'	
I-2	SC-1	L	.25	.86	0.22	-	-	5.0	-	5.0	8.50	1.83	15"	0.09%	1.5	67'	
SC-1	Ex. M-XX	D-L	3.46				3.00	10.6	0.5	11.1	6.78	18.82	27"	0.43%	4.7	15'	

East Branch Flow Tabs

CEI Project Name: John Hopkins APL Service Area Complex 10 Yr. Design 25 Year Sumps Date: 11/18/2003
 Project Number: 23076.03 East Branch Operator: R. Bathurst

LOCATION	AREA		COEFF. "C"	CXA		TIME CONC.			INTE.N.	Peak Flow Q=C.I.A.	PIPE				REMARKS	
	L.D.	"A"-ACRES		"C"	SUMP	25 Year	10 Year	Total			25 Year	10 Year	Q=C.I.A.	Manning's n=.014		Vel.
FROM To		Sub. Total														
Ex. I-27	Ex. I-24	V	.64	.86	0.55	-	-	5.0	-	5.0	8.50	4.68	12"	2.00%	6.0	275'
I-25	Ex. I-24	W	.20	.86	0.17	-	-	5.0	-	5.0	8.50	1.46	15"	0.06%	1.2	123'
			.84					5.0	1.7	6.7	7.72	"	"	"	"	
Roof	Ex. I-24	Y	.12	.86	0.10	-	-	5.0	-	5.0	8.50	.88	6"	2.83%	4.5	140'
Ex. I-24		Z	.96	.86	0.83	-	-	5.0	-	5.0	8.50	7.02	"	"	"	
Ex. I-24	Y-2	V,W,Y,Z	1.92				1.65	6.7	-	6.7	7.72	12.75	24"	0.37%	4.1	20'
I-23	Y-2	AA	.12	.86	0.10	-	-	5.0	-	5.0	8.50	.88	12"	0.07%	1.1	10'
Y-2	I-22	V,W,Y-AA	2.04				1.75	6.7	0.1	6.8	7.68	13.47	24"	0.41%	4.3	40'
I-22		BB	.27	.69	0.19	-	-	5.0	-	5.0	8.50	1.58	"	"	"	
I-22	M-6	V,W,Y-BB	2.31				1.94	6.8	0.2	7.0	7.60	14.75	24"	0.49%	4.7	10'
Roof	Y-3B	DD	.20	.86	0.17	-	-	5.0	-	5.0	8.50	1.46	8"	1.05%	4.2	196'
I-26	Y-3B	X	.51	.86	0.44	-	-	5.0	-	5.0	8.50	3.73	15"	0.39%	3.0	260'
Y-3B	Y-3A	X,DD	.71	.86	0.17	-	0.61	5.0	1.4	6.4	7.84	4.79	15"	0.64%	3.9	110'
Roof	Y-3A	CC	.20	.86	0.17	-	-	5.0	-	5.0	8.50	1.46	8"	1.05%	4.2	196'
Y-3A	M-6	X,DD	.91				0.78	6.4	0.5	6.9	7.64	5.98	15"	0.99%	4.9	17'
I-22	M-6	V,W,Y-BB	.00	.86	0.17	-	-	5.0	-	5.0	8.50	1.46	8"	1.05%	4.2	196'
M-6	Ex. 2	V-DD	3.22				2.72	6.9	0.1	7.0	7.60	20.70	24"	0.97%	6.6	70'

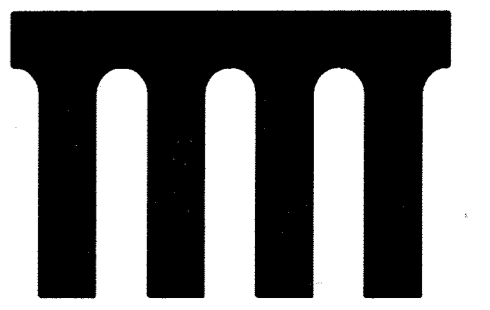
Middle Branch Flow Tabs

CEI Project Name: John Hopkins APL Service Area Complex 10 Yr. Design 25 Year Sumps Date: 11/18/2003
 Project Number: 23076.03 Middle Branch Operator: R. Bathurst

LOCATION	AREA		COEFF. "C"	CXA		TIME CONC.			INTE.N.	Peak Flow Q=C.I.A.	PIPE				REMARKS		
	L.D.	"A"-ACRES		"C"	SUMP	25 Year	10 Year	Total			25 Year	10 Year	Q=C.I.A.	Manning's n=.014		Vel.	Lgth.
FROM To		Sub. Total															
Roof	I-21	S	.92	.86	0.79	-	-	5.0	-	5.0	8.50	6.73	15"	1.26%	5.5	200'	
I-21		T	.58	.86	0.50	-	-	5.0	-	5.0	8.50	4.24	"	"	"		
			1.50				1.29	5.0	0.6	5.6	8.20	10.58	18"	1.18%	6.0	10'	
I-15	I-20	R	.06	.86	0.05	-	-	5.0	-	5.0	8.50	.44	8"	0.15%	1.3	56'	
I-20		U	.66	.86	0.57	0.65	-	5.0	-	5.0	9.76	8.50	5.54	"	"	25'	
			2.22				1.99	5.0	0.7	5.7	8.15	16.25	18"	2.77%	9.2	51'	
I-18	I-17	N	.35	.69	0.24	-	-	5.0	-	5.0	8.50	2.05	15"	0.12%	1.7	10'	
I-17		O	.22	.86	0.19	-	-	5.0	-	5.0	8.50	1.61	"	"	"		
I-17	I-16	N-O	.57				0.43	5.0	0.1	5.1	8.45	3.64	15"	0.37%	3.0	24'	
I-16		Q	.15	.69	0.10	-	-	5.0	-	5.0	8.50	.88	"	"	"		
Roof	I-16	P	.12	.86	0.10	-	-	5.0	-	5.0	8.50	.88	6"	2.83%	4.5	100'	
I-16	M-4	N-Q	.84				0.64	5.0	0.4	5.4	8.30	5.29	15"	0.78%	4.3	85'	
I-20	M-4	R-U	.00	.86	0.10	-	-	1.99	5.0	0.7	5.7	8.15	16.25	18"	2.77%	9.2	51'
M-4	E-1	N-U	3.06				2.63	5.7	0.1	5.8	8.10	21.31	18"	4.77%	12.1	185'	



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Project Title:

SERVICES AREA COMPLEX
 TRADES BLDG. - #29
 MULTI-USE BLDG. - #35

JHU - AFL
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Revisions:

Certification:

[Handwritten Signature]
 2/24/04

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Drawing Title:

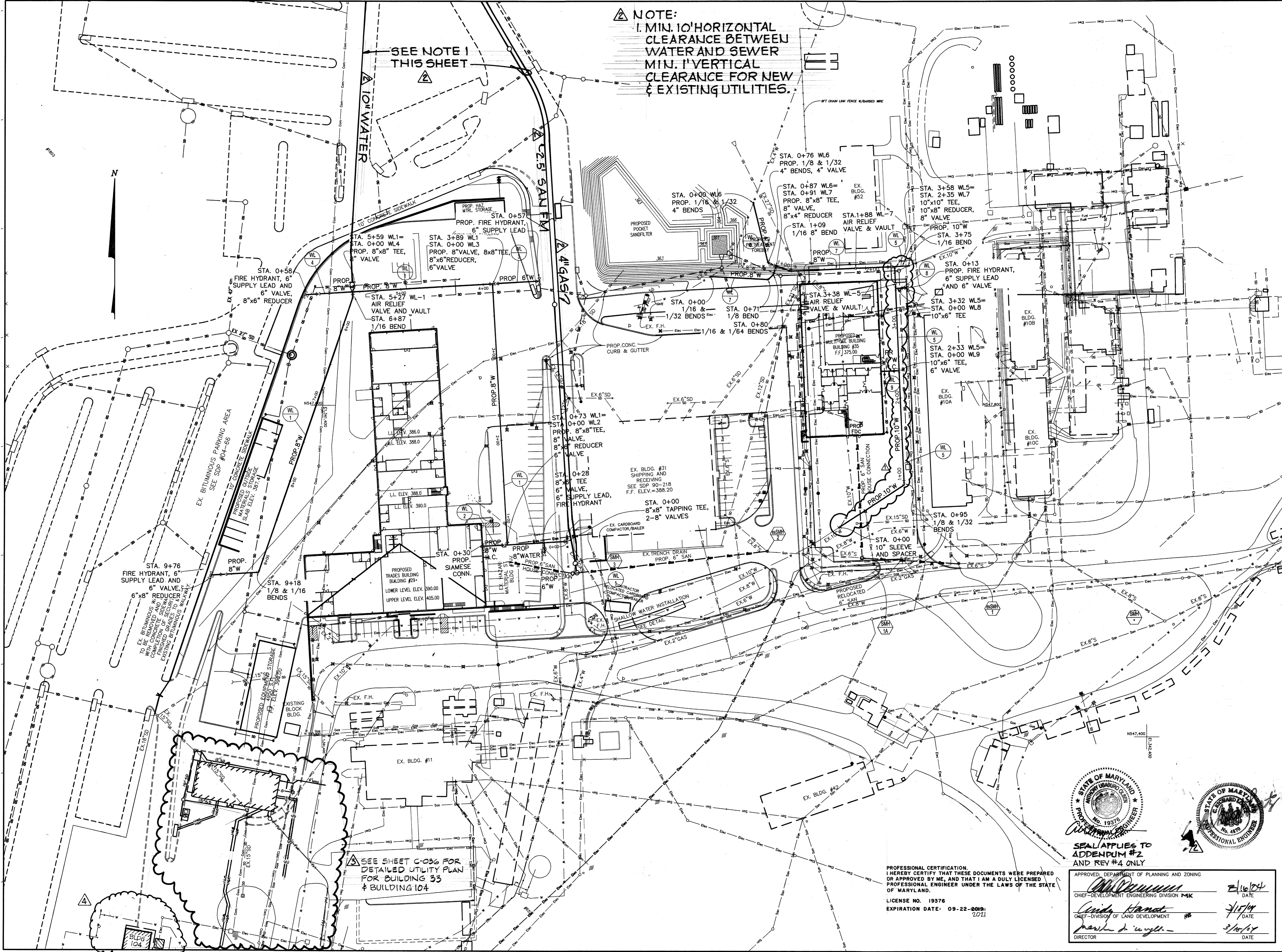
STRUCTURE FLOW TABULATION

Project No.: Sheet No.:

Scale: NONE C-018

Date: 12-10-03 Sheet 18 of 31

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 2/16/04
 CHIEF-DEVELOPMENT ENGINEERING DIVISION
[Signature] 2/18/04
 CHIEF-DIVISION OF LAND DEVELOPMENT
[Signature] 2/24/04
 DIRECTOR



NOTE:
 1. MIN. 10' HORIZONTAL CLEARANCE BETWEEN WATER AND SEWER
 MIN. 1' VERTICAL CLEARANCE FOR NEW & EXISTING UTILITIES.

SEE NOTE 1 THIS SHEET

SEE SHEET C-036 FOR DETAILED UTILITY PLAN FOR BUILDING 33 & BUILDING 104

aba
 ARCHITECTS

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 ADDENDUM #2 4/20/13
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Certification:

Issued for:
 REVIEW NOT FOR CONSTRUCTION
 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
UTILITY PLAN

Project No.: Sheet No.:
C-019

Scale:
 1" = 50'

Date:
 12-10-03 Sheet 19 of 31

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. 19376
 EXPIRATION DATE: 09-22-2018

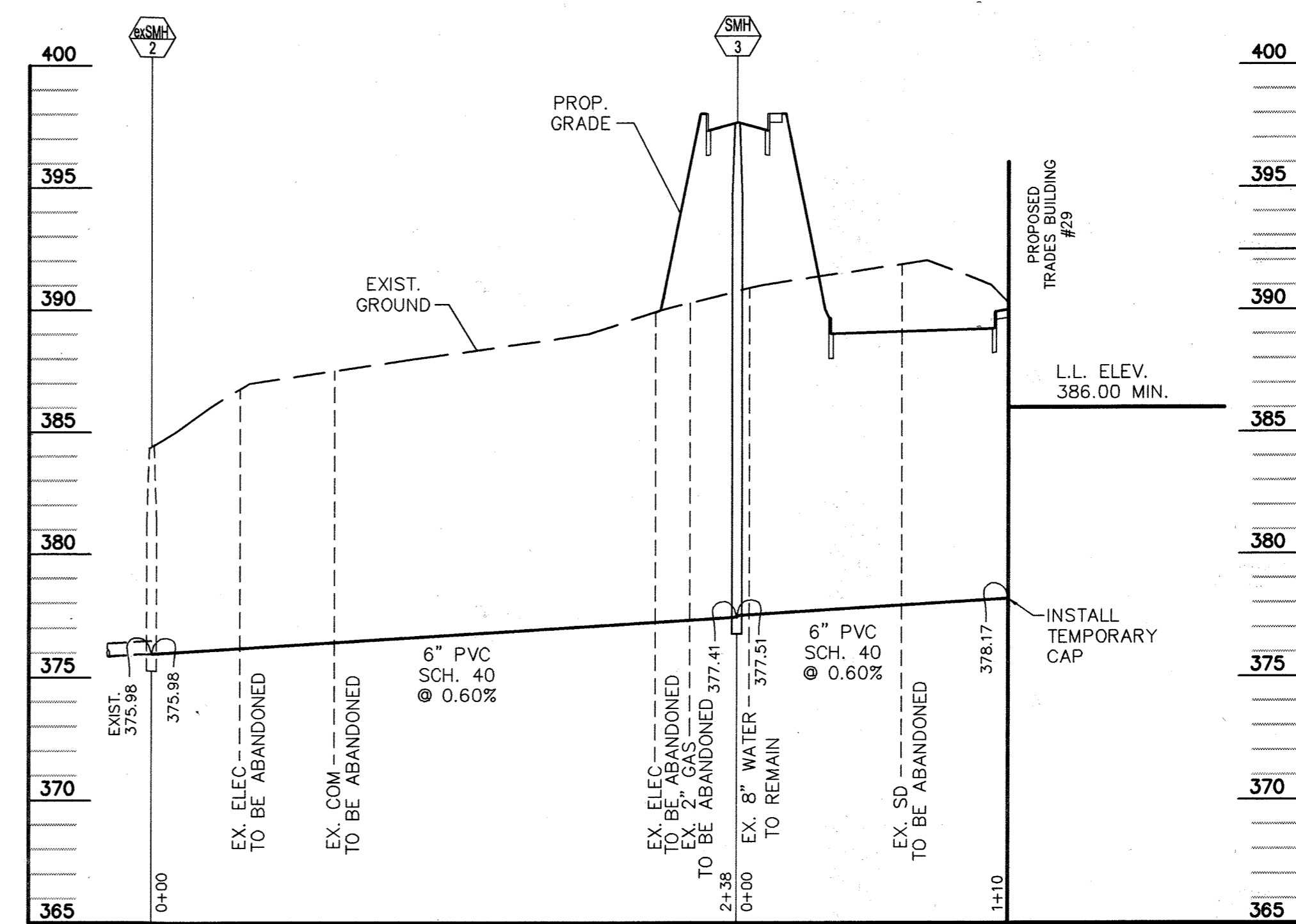
APPROVED: DEPARTMENT OF PLANNING AND ZONING

 SEAL APPLIES TO ADDENDUM #2 AND REV #4 ONLY

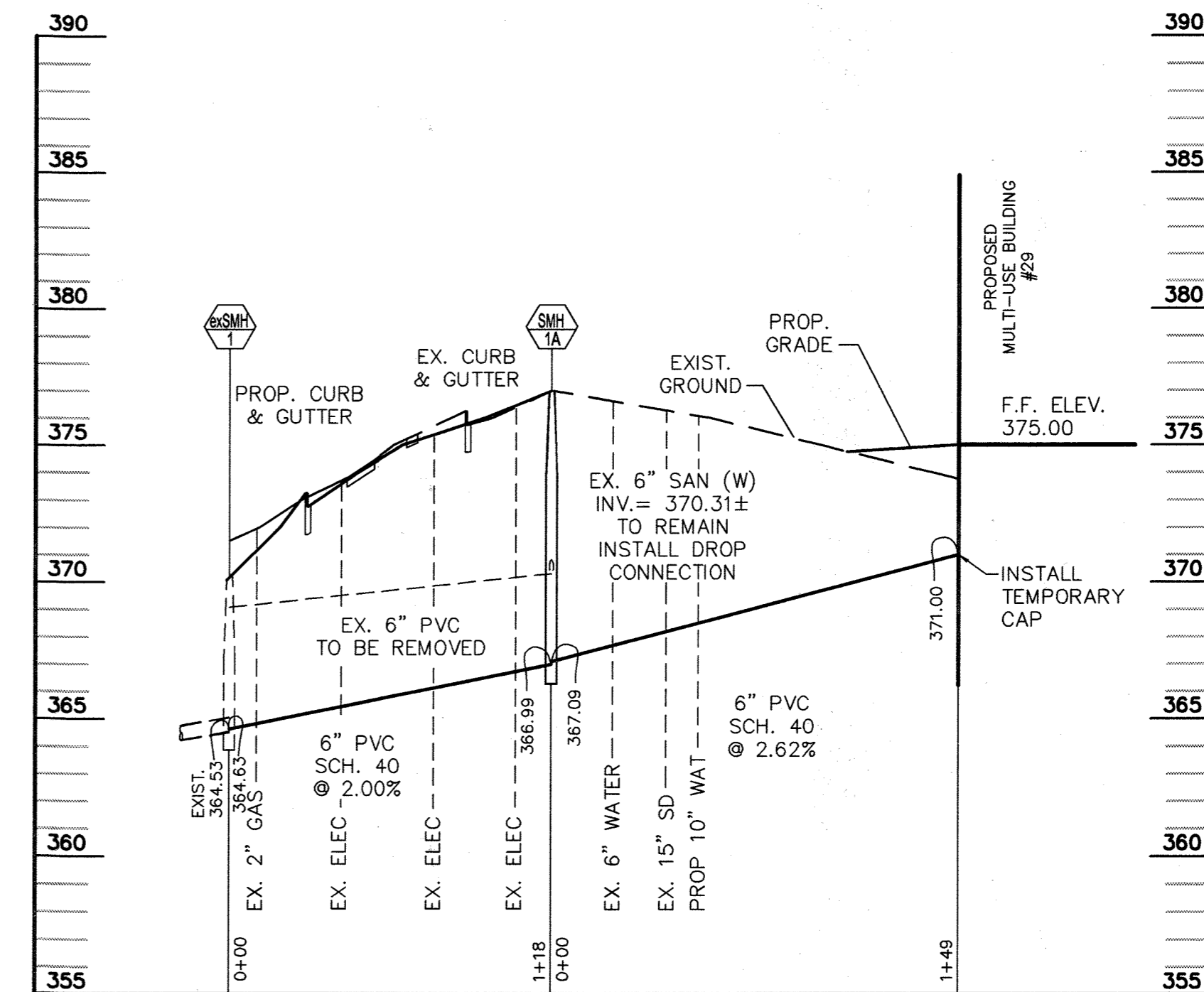
APPROVED:
 CHIEF-DEVELOPMENT ENGINEERING DIVISION MKK DATE 2/16/04
 CHIEF-DIVISION OF LAND DEVELOPMENT DATE 3/10/04
 DIRECTOR DATE 3/10/04

CONSTRUCTION GENERAL NOTES

1. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION 24 HOURS IN ADVANCE OF COMMENCEMENT OF WORK AT (410) 313 - 1880.
 2. ACCESS TO THE CONSTRUCTION AREA THROUGH THE SECURE PERIMETER (WITHIN THE FENCED ENCLOSURE) MUST BE ARRANGED IN ADVANCE BY CONTACTING MR. RUSTY OBER AT (443) 778 - 0167 AT LEAST 10 DAYS BEFORE THE START OF THE SCHEDULED WORK.
 3. SECURITY MUST BE MAINTAINED WITHIN THE SECURE/FENCED AREA OF THE APPLIED PHYSICS LABORATORY. ALL REQUIRED FENCE CONSTRUCTION AND RELOCATION SHALL BE BY THE CONTRACTOR WHO SHALL BE RESPONSIBLE TO COORDINATE WITH JHU-APL AS TO WHEN SUCH WORK IS REQUIRED. ALSO SEE SECURITY PHASING PLAN.
 4. THE CONTRACTOR SHALL MAINTAIN, REPAIR AND/OR REPLACE ANY EXISTING SEDIMENT CONTROL DEVICES ENCOUNTERED DURING THE COURSE OF CONSTRUCTION AND AS SHOWN ON THE SEDIMENT CONTROL PLAN. AT THE END OF EACH DAY, ALL SUCH DISTURBED DEVICES SHALL BE REPAIRED OR REPLACED BEFORE LEAVING THE WORK SITE. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL MEET CURRENT HOWARD COUNTY DEPARTMENT OF PERMITTING SERVICES STANDARDS AND DIRECTIVES.
 5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF HOWARD COUNTY AND MSHA STANDARD DETAILS AND SPECIFICATIONS FOR CONSTRUCTION AND HOWARD COUNTY PLUMBING CODE EXCEPT AS NOTED HEREON.
 6. THE EXISTING UTILITIES AND OBSTRUCTIONS SHOWN ARE FROM THE BEST AVAILABLE RECORDS AND SHALL BE VERIFIED BY THE CONTRACTOR OR THEIR SUBCONTRACTOR TO THEIR OWN SATISFACTION BEFORE STARTING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DIGGING TEST PITS, EMPLOYING ELECTRICAL DETECTION OR OTHER METHODS. MISS UTILITY IS NOT AVAILABLE ON SITE SINCE THIS IS PRIVATE PROPERTY. NEITHER THE OWNER NOR THE ENGINEER WARRANT OR GUARANTEES THE COMPLETENESS OR THE CORRECTNESS OF THE INFORMATION GIVEN.
 7. NECESSARY PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT EXISTING SERVICES AND MAINS AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE TO THEM DUE TO THEIR NEGLIGENCE SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTORS EXPENSE.
 8. ALL SITE UTILITIES ARE THE PROPERTY OF JHU-APL. JHU-APL WILL LOCATE HORIZONTALLY ALL ACTIVE UTILITIES FOR THE CONTRACTOR. ONLY JHU-APL PERSONNEL SHALL OPERATE EXISTING WATER VALVES OR NEW VALVES AFTER THEY HAVE BEEN PLACED INTO SERVICE. THE CONTRACTOR SHALL NOTIFY MR. RUSTY OBER AT (443) 778-0167 TO ARRANGE A SHUTDOWN AT LEAST FIVE DAYS PRIOR TO THE PROPOSED SHUTDOWN.
 9. THE CONTRACTOR SHALL TIE INTO THE EXISTING UTILITIES ONLY AFTER NORMAL WORKING HOURS AT JHU-APL. WORK MUST BE SCHEDULED ACCORDINGLY. NORMAL WORKING HOURS ARE 8:30 AM TO 5:00 PM, MONDAY THRU FRIDAY.
 10. UTILITIES TO BE ABANDONED AS WELL AS PREVIOUSLY ABANDONED LINES, CONDUITS, BURIED CABLES, HIGH VOLTAGE POLES, SMALL DIAMETER WATER LINES ETC. SHALL BE PLUGGED/SECURED AND REMOVED ONLY TO THE EXTENT NECESSARY TO COMPLETE THE WORK AND AS INDICATED ON THE DEMOLITION PLAN. CONTRACTOR SHALL SHAP ALL ENDS OF WATER PIPING TO REMAIN AS PER HOWARD COUNTY DPW STANDARD #W2.21 BUTTRESSES AND CAPS AND HORIZONTAL BENDS. CONTRACTOR SHALL PLUG THE ENDS OF ALL STORM AND SANITARY LINES TO REMAIN WITH MORTARED CONCRETE BLOCK OR POURED IN PLACE CONCRETE 6 INCHES THICK WITH #4 REBAR 12 INCHES ON CENTER EACH WAY. PLUG SHALL SEAL AND COVER THE ENTIRE OUTSIDE EDGE OF THE PIPE.
 11. UNLESS OTHERWISE NOTED PIPE ELEVATIONS FOR WATER MAINS REFER TO INVERT OF PIPE, AND SANITARY SEWER ELEVATIONS REFER TO INVERT.
 12. ALL WATER PIPES SHALL BE CLASS 52 DUCTILE, CEMENT LINED IRON PIPE WITH MANUFACTURERS POSITIVE RESTRAINT JOINT OR MECHANICAL JOINT WITH MEGALUGS. ALL PIPE JOINTS SHALL BE BONDED TO INSURE ELECTRICAL CONTINUITY AND COATED WITH RUST-INHIBITIVE PAINT. BONDING MAY BE ACCOMPLISHED EITHER WITH SHOP WELDED COPPER TERMINAL STRAPS AND COPPER JUMPER STRAPS WITH CORROSION RESISTANT BOLTS OR WITH COPPER EXOTHERMIC WELDED IN THE FIELD. ALL BONDING BETWEEN PIPE JOINTS FOR PIPE, FITTINGS, AND VALVES SHALL BE TESTED FOR ELECTRICAL CONTINUITY. EACH JOINT SHALL BE INSPECTED AND RESISTANCE TESTED PRIOR TO COATING AND BACKFILLING. NO RESISTANCE WILL BE PERMISSIBLE ACROSS ANY JOINT.
 13. UNLESS OTHERWISE NOTED, ALL SEWER PIPE SHALL BE P.V.C. SDR-35 (POLYVINYL CHLORIDE CONFORMING TO THE REQUIREMENTS OF A.S.T.M. SPECIFICATION D-3034, TYPE PSM. SEWER PIPES NOTED AS D.I.P. SHALL BE CLASS 52 DUCTILE IRON PIPE WITH TYTON JOINTS PER A.W.W.A. SPECIFICATION C-151.
 14. WATER VALVES SHALL OPEN LEFT - COUNTERCLOCKWISE. VALVES TO RESIDE IN TURF AREAS SHALL BE POST INDICATOR TYPE EXCEPT AS INDICATED ON THE DRAWINGS. VALVES TO BE INSTALLED IN PAVEMENT AREAS SHALL HAVE VALVE STEM EXTENSIONS AND VALVE POSITION INDICATORS INSTALLED. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR RETROFIT OF VALVES CURRENTLY IN TURF AREAS AND PROPOSED TO BE IN PAVEMENT AREAS AND VISA VERSA.
 15. CONCRETE BUTTRESSES OR ANCHORS ARE TO BE INSTALLED AT ALL WATER PIPE BENDS, CAPS AND TEES IN ACCORDANCE WITH THE LATEST VERSION OF HOWARD COUNTY STANDARD DETAILS AND SPECIFICATIONS FOR CONSTRUCTION. RESTRAINED JOINTS WILL BE UTILIZED IN AREAS WHERE FITTINGS ARE PLACED IN FILL.
 16. PRIOR TO INSTALLING WATER AND SEWER LINES EXISTING GRADES SHALL BE BROUGHT TO SUBGRADE.
 17. WHERE UTILITY PIPES ARE TO BE PLACED ON COMPACTED FILL, THE FOLLOWING SHALL APPLY:
 18. PRIOR TO PLACEMENT OF COMPACTED FILL, ANY SOFT OR OTHERWISE UNSUITABLE SOILS ENCOUNTERED AT OR BELOW THE PIPE INVERT SHALL BE UNDERCUT AND REMOVED FROM THE CONSTRUCTION AREA.
 19. ACCEPTABLE COMPACTED FILLS SHALL BE PLACED IN SIX-INCH THICK LOOSE LIFTS AND COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY DETERMINED BY A.S.H.T.O. METHOD T-180. COMPACTION TEST RESULTS BY AN INDEPENDENT TESTING LAB ARE TO BE SEALED BY A REGISTERED ENGINEER AND SUBMITTED TO THE OWNER.
 20. THE COMPACTED FILL SHALL BE BENCHED INTO THE EXISTING VIRGIN SLOPES WITH EACH LIFT PLACED TO ALLOW A SMOOTH TRANSITION FROM VIRGIN TO FILL SOILS.
 21. INSTALL WATER MAINS WITH A MINIMUM 3 FEET - 6 INCHES COVER UNLESS OTHERWISE NOTED. IN LIMITED AREAS (AS INDICATED ON THE DRAWING) WHERE MINIMUM COVER CANNOT BE OBTAINED, CONSTRUCTION SHALL FOLLOW THE DETAIL PROVIDED HEREON FOR INSULATING THE MAIN.
 22. THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL STORM DRAINS WITHIN 2 FEET OF EXTERIOR OF MANHOLES.
 23. CLEARANCE BETWEEN UTILITIES SHALL BE A MINIMUM OF 6 INCHES, EXCEPT BETWEEN WATER AND SEWER LINES WHERE IT SHOULD BE 12 INCHES MINIMUM. CLEAR POLES AND FOUNDATIONS BY 2 FEET MINIMUM, OR TUNNEL AS REQUIRED.
 24. FIRE HYDRANTS ARE TO BE PAINTED RED, HAVE 4.5" CONNECTION FACING THE STREET AND RISER PIPE PAINTED GLOSS BLACK. ALL OUTLET NOZZLES SHALL HAVE NATIONAL STANDARD FIRE HOSE COUPLING SCREW THREADS.
 25. ALL MANHOLES TO BE BITUMINOUS COATED ON THE EXTERIOR PER HOWARD COUNTY STANDARD SPECIFICATIONS.
 26. ALL SEWER MANHOLES IN UNPAVED AREAS SHALL HAVE WATERTIGHT FRAMES MARKED WITH A PERMANENT MARKER AND COVERS SHALL BE PAINTED SAFETY YELLOW.
 27. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HEIGHT ADJUSTMENT TO ALL EXISTING MANHOLES, CLEANOUTS, VALVE STEMS & COVERS, HYDRANTS, ETC. TO REMAIN IN ALL AREAS PROPOSED FOR GRADE ALTERATION IN ORDER TO HAVE THEM RESIDE AT THEIR STANDARD POSITION FOLLOWING FINAL GRADING OPERATIONS.
 28. TRENCH BACKFILL SHALL BE PERFORMED IN ACCORDANCE WITH HOWARD COUNTY SPECIFICATIONS. TRENCHING AND INSTALLATION OF NEW UTILITIES SHALL BE SCHEDULED SO THAT ALL TRENCHES WILL BE BACKFILLED BY THE END OF EACH WORK DAY. TRENCH AREAS SHALL BE MULCHED AND TEMPORARILY SEEDED IN NON-PAVED AREAS, AND TRAFFIC BEARING TEMPORARY SURFACE SHALL BE INSTALLED IN PAVED AREAS.
- DE
29. THE CONTRACTOR SHALL PERMANENTLY SEED AND STABILIZE ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED.
 30. ALL PROPOSED WATER MAINS SHALL BE PRESSURE TESTED, CHLORINATED AND FLUSHED ACCORDING TO HOWARD COUNTY STANDARD PROCEDURES BEFORE BEING PLACED INTO SERVICE. THE CONTRACTOR WILL DISCHARGE THE CHLORINATED FLUSH WATER INTO A FUNCTIONING SANITARY SEWER. MAXIMUM DISCHARGE RATE WILL BE 80 G.P.M.
 31. TRAFFIC ACCESS TO EXISTING FACILITIES SHALL BE MAINTAINED AT ALL TIMES. EXISTING PAVEMENTS (ROADWAY, SIDEWALKS, ETC.) REMOVED TO INSTALL PROPOSED UTILITIES SHALL BE REPLACED IN-KIND OR AS DETAILED ON THESE PLANS.
 32. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNER OF ANY DEVIATION FROM THESE PLANS PRIOR TO ANY CHANGE BEING MADE. ANY DEVIATION FROM THESE PLANS WITHOUT WRITTEN AUTHORIZATION BY THE OWNER WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
 33. SURFACED STREETS AND PARKING AREAS SHALL BE MAINTAINED IN A CLEAN CONDITION; MUD AND DUST FREE AT ALL TIMES. ADEQUATE MEANS SHALL BE PROVIDED TO CLEAN TRUCKS AND OTHER EQUIPMENT USING EXISTING SURFACED STREETS AND PARKING AREAS.
 34. THE CONTRACTOR SHALL MAKE EVERY ATTEMPT TO MINIMIZE DAMAGE DURING CONSTRUCTION TO EXISTING TREES IDENTIFIED TO REMAIN.
 35. THE CONTRACTOR SHALL TAKE PROPER PRECAUTIONS SO AS NOT TO DAMAGE EXISTING FACILITIES AND STRUCTURES TO REMAIN. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION OR BETTER UNLESS NOTED OTHERWISE.
 36. EXISTING SIGNS, GUARDRAILS, AND OTHER MINOR SITE FEATURES IN THE WAY OF PROPOSED CONSTRUCTION, WHETHER OR NOT SHOWN ON THESE PLANS, SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE OWNER.
 37. DUE TO THE PROXIMATELY OF LIVE UNDERGROUND UTILITIES, THE OWNER AND CENTURY ENGINEERING, INC. IS NOT RESPONSIBLE FOR ANY DAMAGE OR INJURY SUSTAINED DURING CONSTRUCTION BY ANY PERSON, VEHICLES OR EQUIPMENT USED ON OR ADJACENT TO THE SITE. THE CONTRACTOR IS RESPONSIBLE FOR THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES BY TEST PIT OR OTHER MEANS OF INVESTIGATION APPROVED BY THE OWNER BEFORE EXCAVATION STARTS.
 38. EXISTING UTILITY LOCATIONS SHOWN ON UTILITY PROFILES ARE TO ILLUSTRATE POSSIBLE UTILITY LOCATIONS. THE FOLLOWING DEPTHS WERE ASSUMED BUT NOT FIELD VERIFIED; WATER MAINS - 3.5 FEET COVER, GAS PIPE, ELECTRIC CONDUIT/DUCT AND TELECOM CONDUIT/DUCT - 1.5 FEET COVER. CONTRACTOR SHALL CONFIRM ACTUAL DEPTH AND PREPARE REVISED PROFILES IF REQUIRED BY CONFLICTS. ALL REVISIONS SHALL BE APPROVED BY THE OWNER BEFORE THE START OF CONSTRUCTION.
 39. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK THAT WOULD NORMALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PERFORM SUCH WORK.
 40. CONTRACTOR SHALL TRANSPORT EXCESS SUITABLE SOILS TO AN ONSITE LOCATION APPROVED BY HOWARD COUNTY AND ARE RESPONSIBLE FOR MAINTAINING THAT SPOILS SITE AT THEIR EXPENSE. UNSUITABLE EXCESS MATERIALS SHALL BE DISPOSED OF OFFSITE AT THE CONTRACTOR'S EXPENSE.
 41. THE FLOODPLAIN LIMITS FOR THIS PROJECT WERE TAKEN FROM HOWARD COUNTY STUDY.
 42. THE SDP PLAN AREA OF THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY IS NOT LOCATED IN THE 100 YEAR FLOOD PLAIN. THE LIMIT OF DISTURBANCE FOR THIS SITE PLAN AREA (43,560 ACRES) OF THE JOHNS HOPKINS APPLIED PHYSICS LABORATORY IS NOT FLOODPLAIN.
 43. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THIER BUFFERS AND FOREST CONSERVATION EASEMENT AREA.
 44. FOREST CONSERVATION OBLIGATION ADDRESSED WITH F-02-40.
 45. STORMWATER MANAGEMENT PONDS ARE PRIVATELY OWNED AND MAINTAINED.
 46. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. NO LANDSCAPE PLANTINGS ARE REQUIRED FOR THIS PLAN SINCE NO PROPOSED IMPROVEMENTS ARE ADJACENT TO PUBLIC ROAD OR ADJOINING PROPERTY.
D STA
 47. WHERE PROPOSED CURB MEETS EXISTING CURB (AND/OR CURB OF A DIFFERENT TYPE) IT SHALL BE CONSTRUCTED OR SHAPED TO MEET LINE, GRADE AND CROSS SECTION AS REQUIRED TO PROVIDE A SMOOTH TRANSITION, FREE OF PROJECTIONS OR OTHER IRREGULARITIES.



SANITARY PROFILE
TRADES BLDG TO exSMH-2
SCALE { HORIZ: 1" = 50'
VERT: 1" = 5'



SANITARY PROFILE
MULTI-USE BLDG TO exSMH-1
SCALE { HORIZ: 1" = 50'
VERT: 1" = 5'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

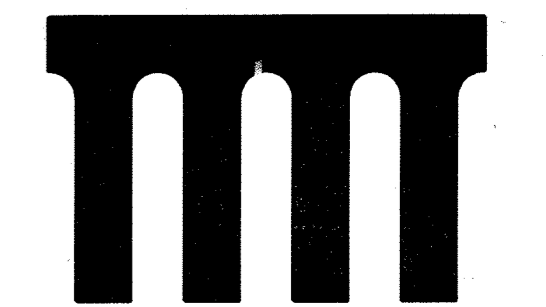
[Signature] 2/16/04 DATE
CHIEF-DEVELOPMENT ENGINEERING DIVISION MK

[Signature] 3/10/04 DATE
CHIEF-DIVISION OF LAND DEVELOPMENT HB

[Signature] 3/10/04 DATE
DIRECTOR



Amos Bailey Arnold
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3600 Clipper Mill Road, Suite 300
Baltimore, Maryland 21211
Phone: 410.235.9812 Fax: 410.235.3715



Century Engineering, Inc.
32 West Road Towson,
Maryland 21284
Voice (410) 823-8070
Fax (410) 823-2184

Project Title:

SERVICES AREA
COMPLEX
TRADES BLDG. - #29
MULTI-USE BLDG. - #35

JHU - AFL
11120 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20723-6299

Revisions:
ADDENDUM #1 - 01/09/04

Certification:

[Signature]
2/24/04
PROFESSIONAL ENGINEER

Issued for:

- REVIEW
- NOT FOR CONSTRUCTION
- BID
- CONSTRUCTION
- PERMIT
- 90% CD SUBMISSION

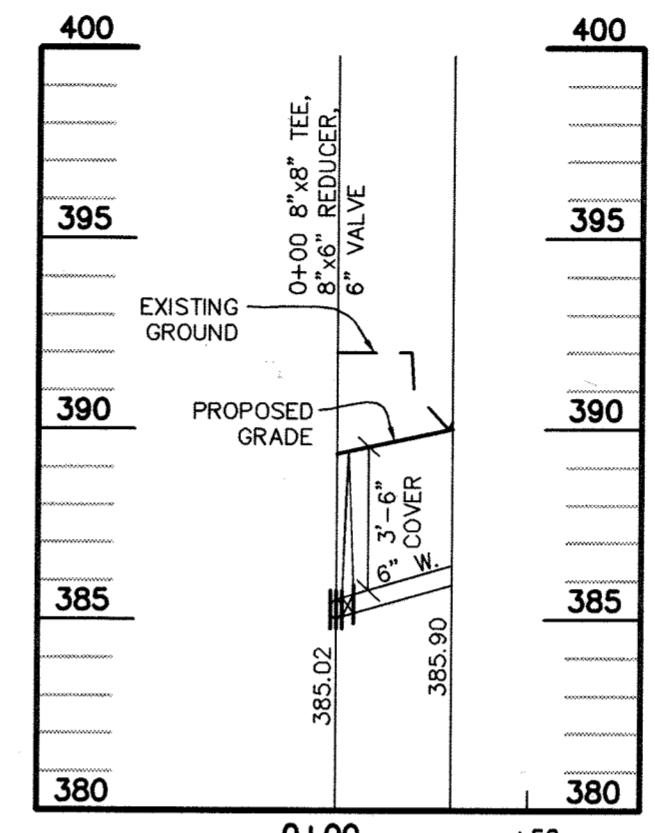
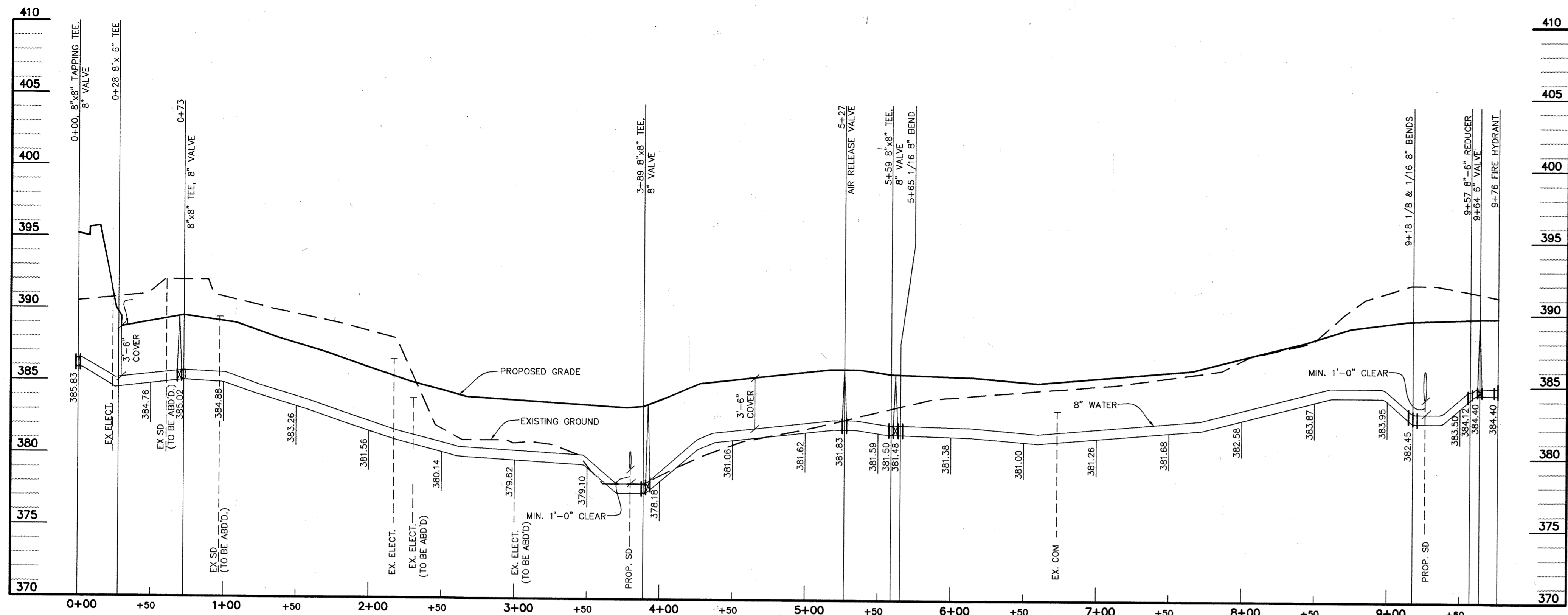
Drawing Title:

UTILITY PROFILES
AND NOTES

Project No.: Sheet No.:

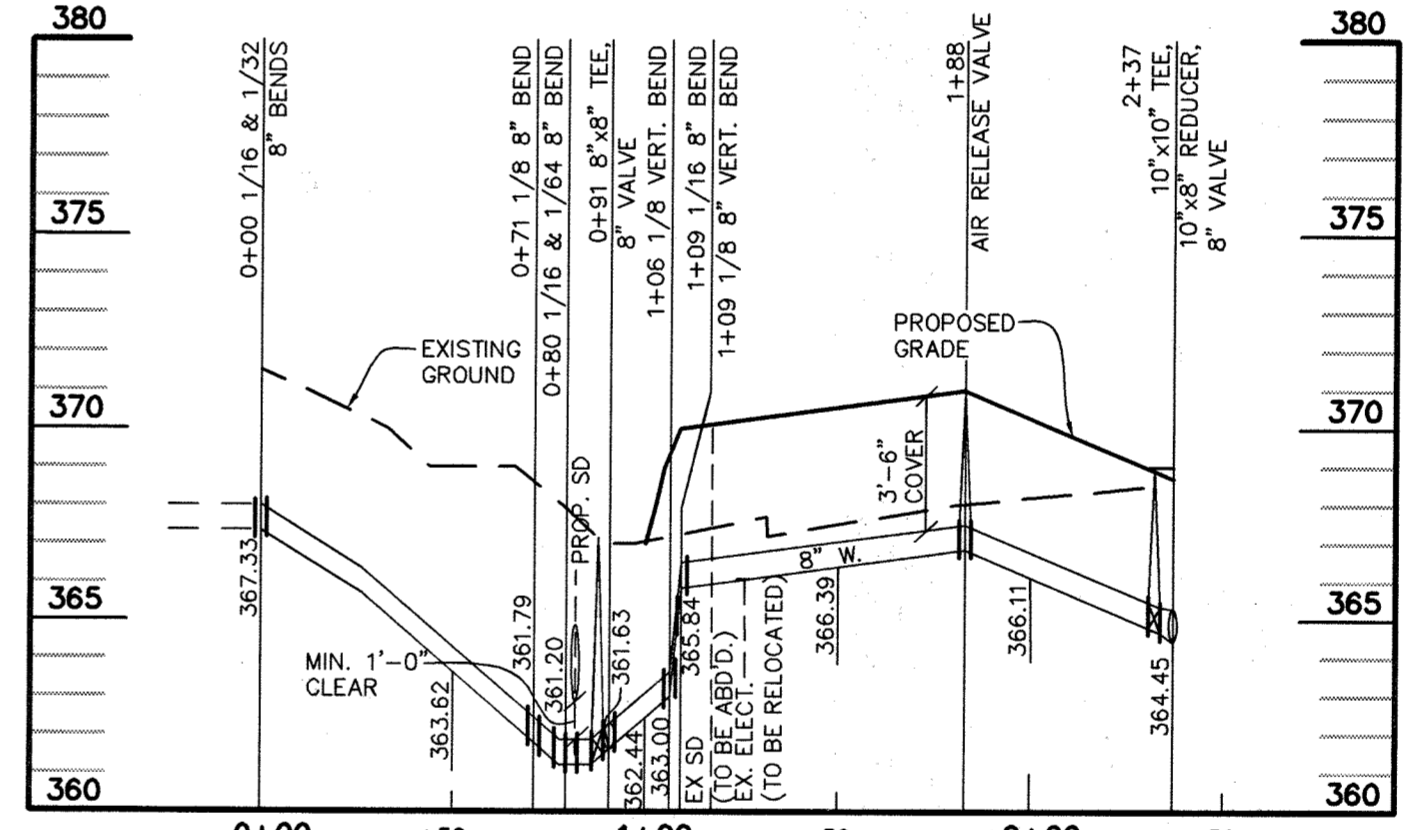
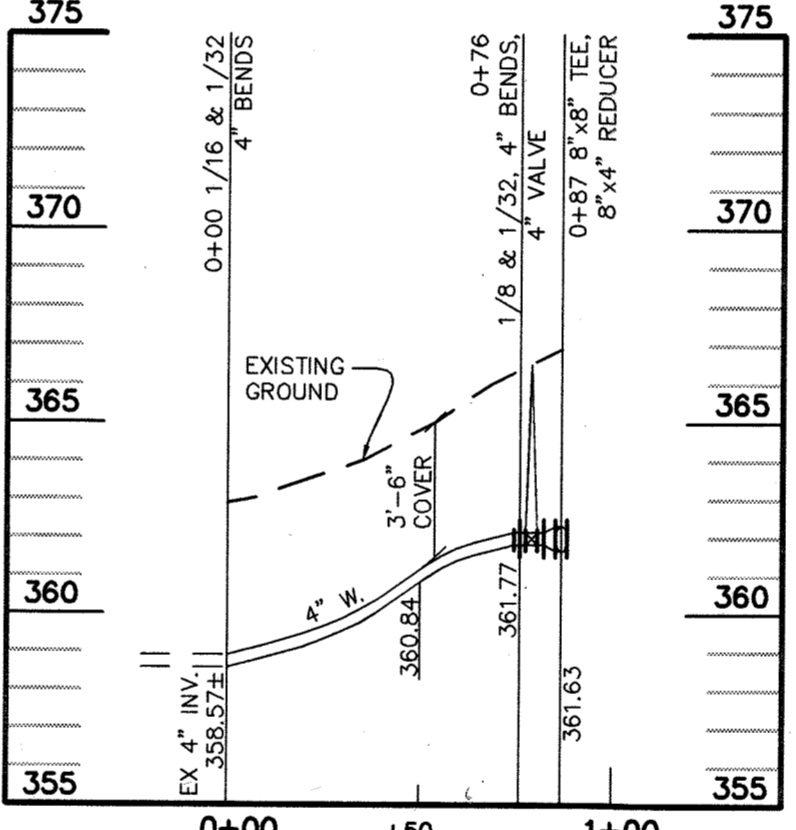
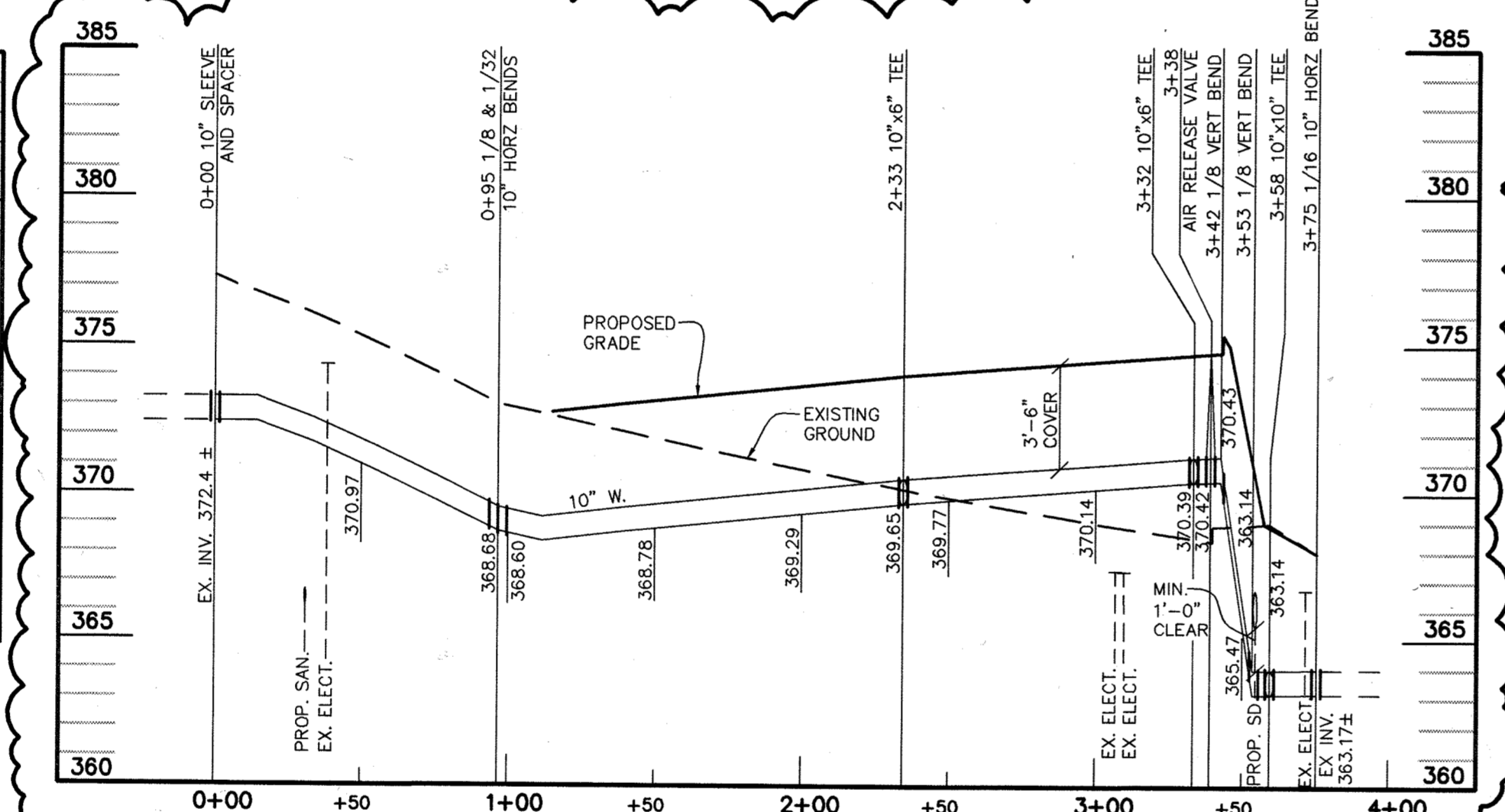
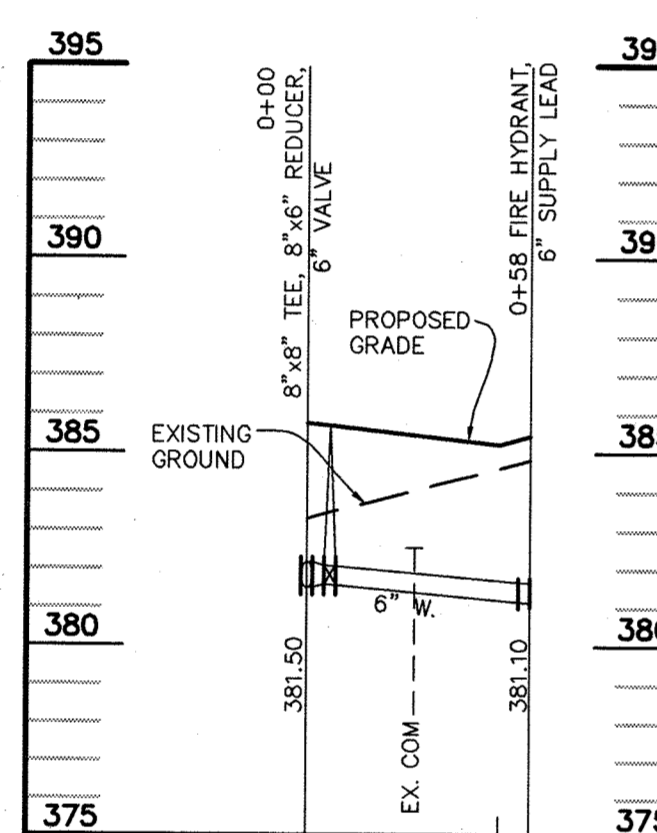
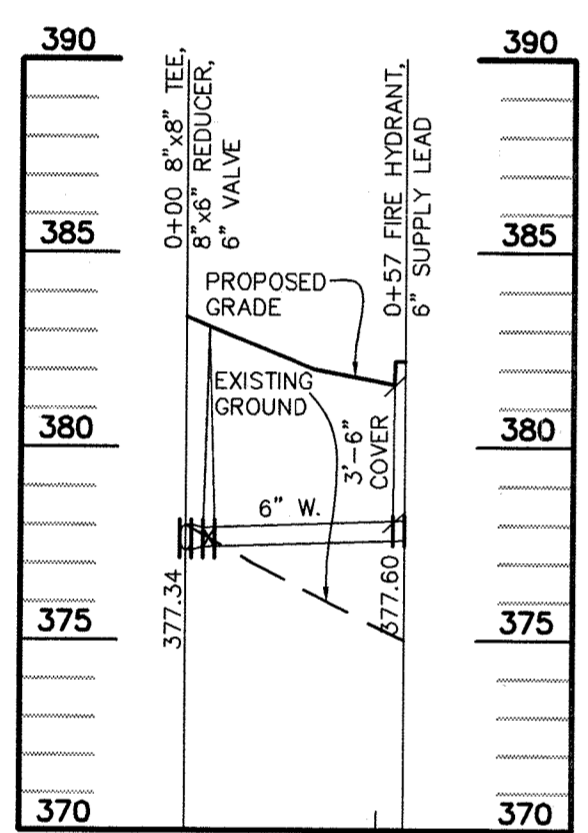
Scale: AS NOTED C-020

Date: 12-10-03 Sheet 20 of 31



WATER LINE PROFILE 1
SCALE (HORIZ: 1" = 50'
VERT: 1" = 5')

WATER LINE PROFILE 2
SCALE (HORIZ: 1" = 50'
VERT: 1" = 5')



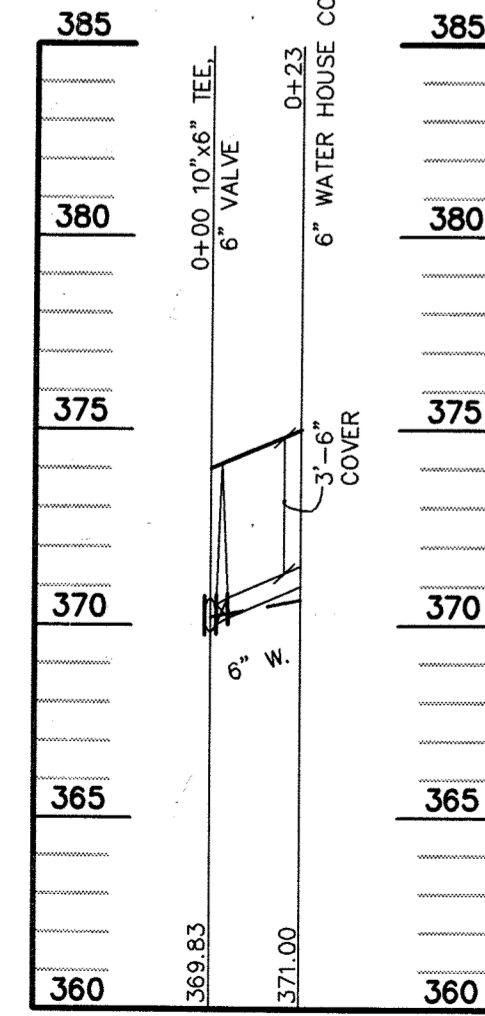
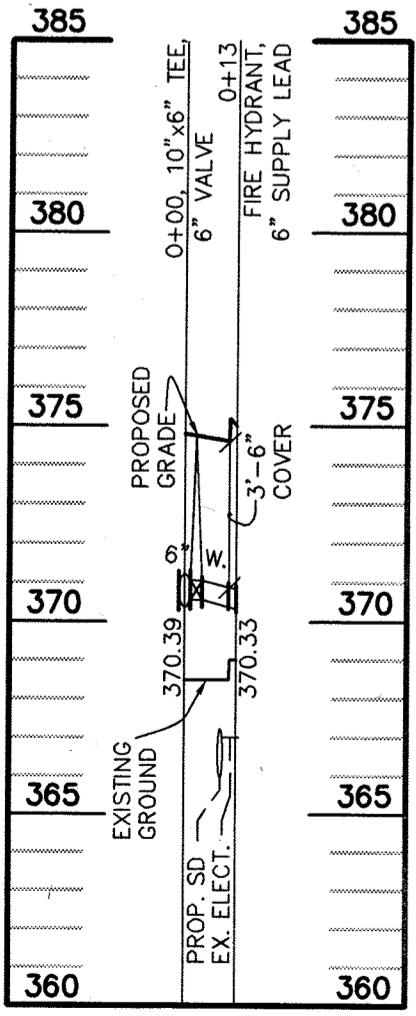
WATER LINE PROFILE 3
SCALE (HORIZ: 1" = 50'
VERT: 1" = 5')

WATER LINE PROFILE 4
SCALE (HORIZ: 1" = 50'
VERT: 1" = 5')

WATER LINE PROFILE 5
SCALE (HORIZ: 1" = 50'
VERT: 1" = 5')

WATER LINE PROFILE 6
SCALE (HORIZ: 1" = 50'
VERT: 1" = 5')

WATER LINE PROFILE 7
SCALE (HORIZ: 1" = 50'
VERT: 1" = 5')



WATER LINE PROFILE 8
SCALE (HORIZ: 1" = 50'
VERT: 1" = 5')

WATER LINE PROFILE 9
SCALE (HORIZ: 1" = 50'
VERT: 1" = 5')

aba
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Project Title:
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COMPLEX**
TRADES BLDG. - #29
MULTI-USE BLDG. - #35

JHU - APL
1100 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20723-6099

Revisions:
ADDENDUM #1 - 01/09/04

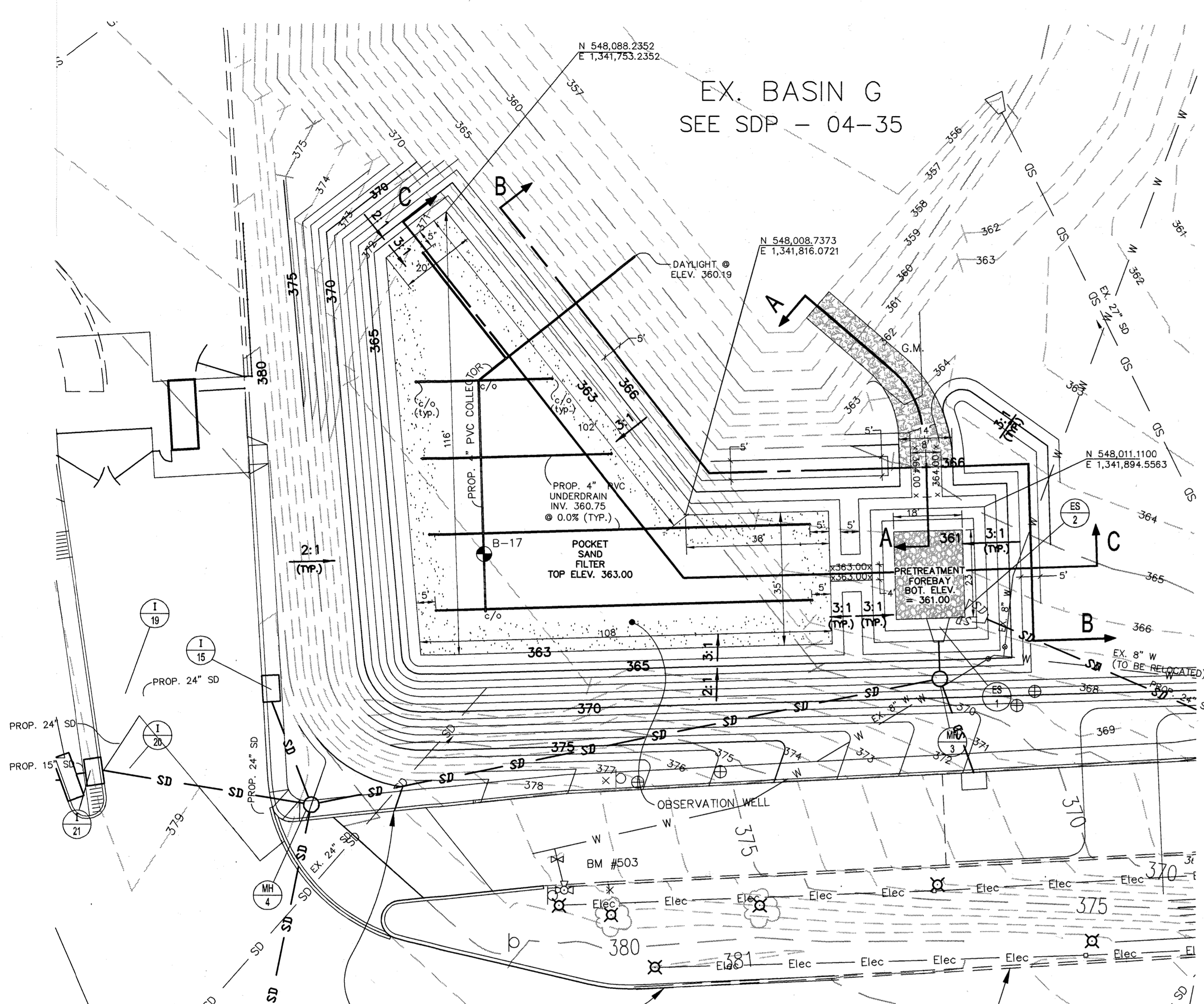
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Drawing Title:
UTILITY PROFILES
Project No.: Sheet No.:
Scale: AS NOTED **C-021**
Date: 12-10-03 Sheet 21 of 31

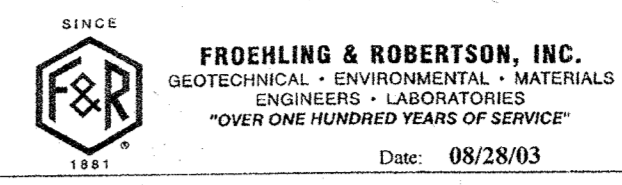
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF-DEVELOPMENT ENGINEERING DIVISION
CHIEF-DIVISION OF LAND DEVELOPMENT
DIRECTOR
DATE: 2/15/04
DATE: 2/14/04

SDP-04-76



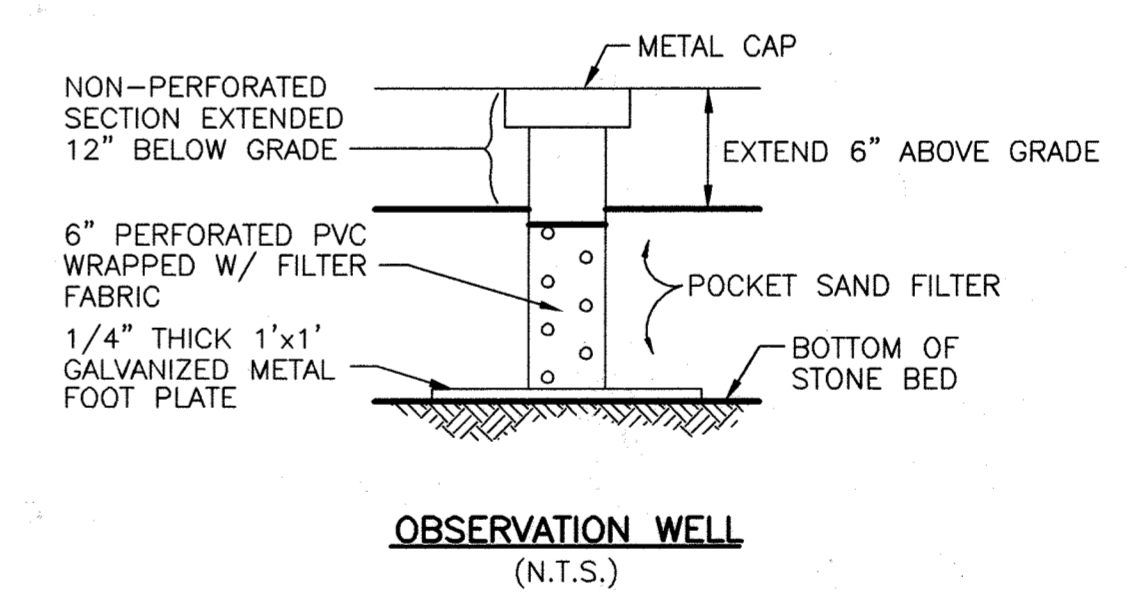
EX. BASIN G
SEE SDP - 04-35

BORING LOG



Report No.: E68-010G		Client: Century Engineering		Project: Johns Hopkins University - AFL, Laurel, MD		Location: 367 +/- 0	
Boring No.: B17 (1 of 1)		Start Date: 8/22/03	Completed: 8/22/03	Driller: N.Lazaro			
Type of Boring: HSA		Elev.: 367 +/- 0		Remarks:			
Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	Sample Blows (1-2-3)	Sample Depth (feet)	N Value (blows/ft)	REMARKS	
0.5	0.5	2" of Grass & Root material	1-2-3	0.0	5	No groundwater was encountered during or immediately after drilling.	
	1.5	Brown, moist, loose, clayey fine SAND with silt (SC-SM)-Residual soils.	2-3-5	1.5	8		
	2.0		1-3-4	3.5	7		
	3.5		1-3-4	4.0	10		
	4.0		4-4-6	5.5	8		
	6.0	Orange to gray, moist, loose to medium dense, silty fine to medium SAND with some mica (SM)-Residual soils.	1-3-5	6.0	8		
	7.5			7.5			
	8.0			8.0			
	9.5			9.5			
	13.5		3-3-3	13.5		0 hr. Cave-in at 13.2'	
	15.0	Boring terminated at 15.0'		15.0		o - estimated from a site topographical drawing.	

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N.

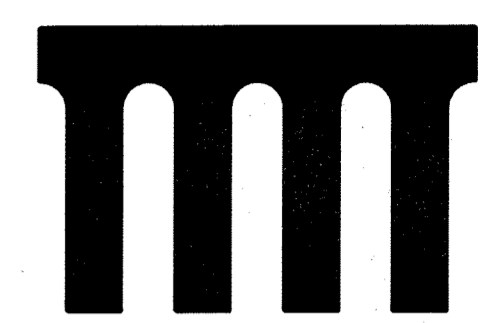


EMBANKMENT COMPACTION NOTE:
ALL EARTH FILL SHALL BE
COMPACTED TO 95% OF MAX.
DRY DENSITY AS DETERMINED
BY ASSHTO METHOD T-99
(STANDARD PROCTOR)

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] DATE: 2/16/04
 CHIEF-DEVELOPMENT ENGINEERING DIVISION
[Signature] DATE: 2/15/04
 CHIEF-DIVISION OF LAND DEVELOPMENT
[Signature] DATE: 2/14/04
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aba
ARCHITECTS

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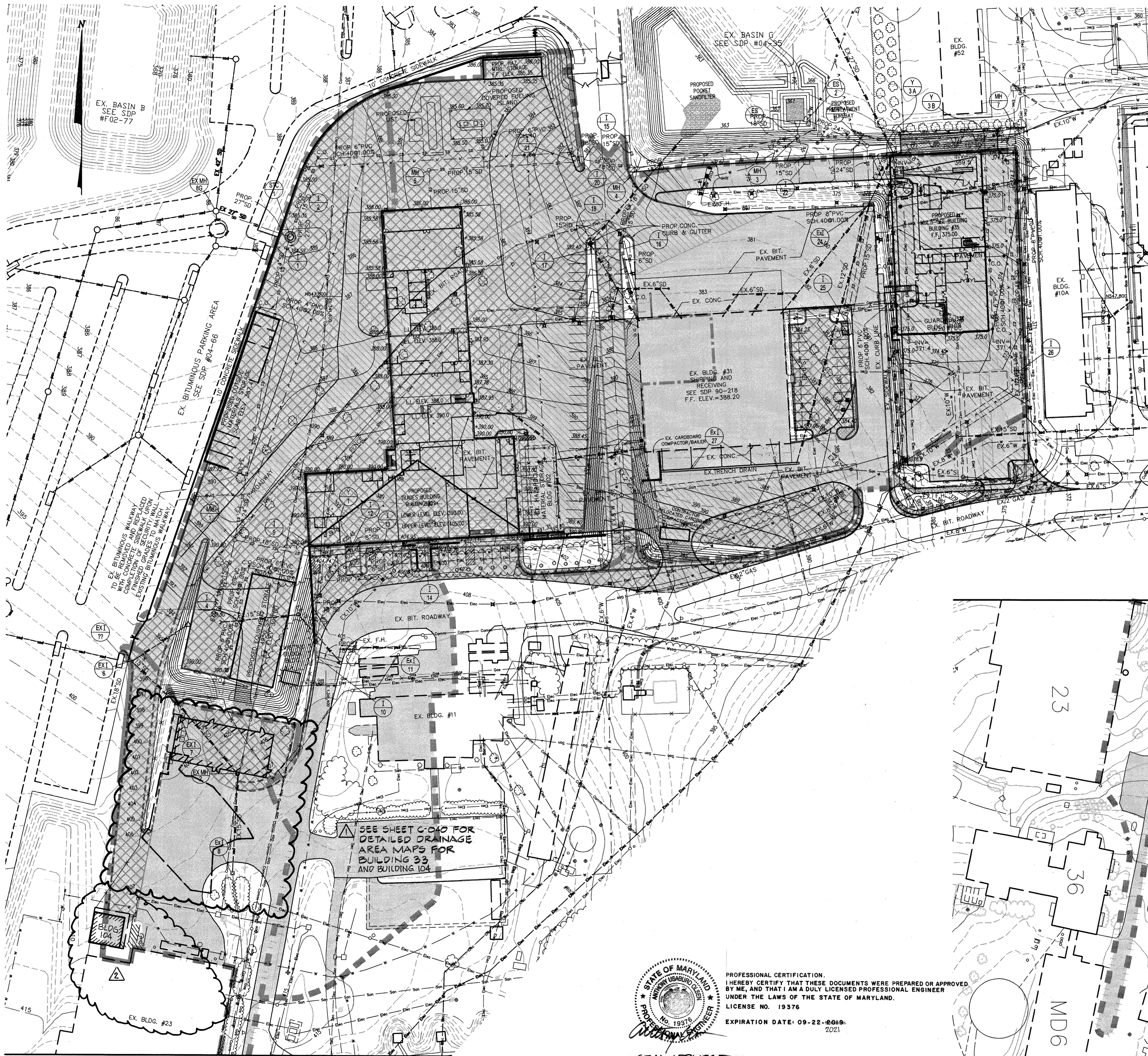
Revisions:

Certification:
[Signature]
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Drawing Title:
STORMWATER MANAGEMENT PLAN

Project No.: Sheet No.:
Scale: 1" = 20'
Date: 12-10-03
C-022
Sheet 22 of 31



- EXISTING IMPERVIOUS
- EXISTING IMPERVIOUS REMOVED
- EXISTING IMPERVIOUS, REDEVELOPED
- NEW IMPERVIOUS

DRAINAGE AREA TO SANDFILTER = 6.21 Ac.±	DRAINAGE AREA TO STORMCEPTOR 1 = 3.44 Ac.±	DRAINAGE AREA TO STORMCEPTOR VIA EX. INLET #6 (AMT) = 1.51 Ac.±
--	---	--

IMPERVIOUS AREA TO SAND FILTER		
EXISTING IMPERVIOUS	= 153,765 S.F.	= 3.53 Ac.±
REMOVED IMPERVIOUS	= 10,002 S.F.	= 0.23 Ac.±
REDEVELOPED IMPERVIOUS	= 77,897 S.F.	= 1.79 Ac.±
NEW IMPERVIOUS	= 100,036 S.F.	= 2.30 Ac.±

IMPERVIOUS AREA TO STORMCEPTOR 1		
EXISTING IMPERVIOUS	= 67,469 S.F.	= 1.09 Ac.±
REMOVED IMPERVIOUS	= 1,496 S.F.	= 0.031 Ac.±
REDEVELOPED IMPERVIOUS	= 16,186 S.F.	= 0.37 Ac.±
NEW IMPERVIOUS	= 72,135 S.F.	= 1.51 Ac.±

IMPERVIOUS AREA TO STORMCEPTOR VIA EX. INLET #6 (AMT)		
EXISTING IMPERVIOUS	= 13,631 S.F.	= 0.31 Ac.±
REMOVED IMPERVIOUS	= 71 S.F.	= 0.005 Ac.±
REDEVELOPED IMPERVIOUS	= 2,280 S.F.	= 0.05 Ac.±
NEW IMPERVIOUS	= 6,020 S.F.	= 0.31 Ac.±

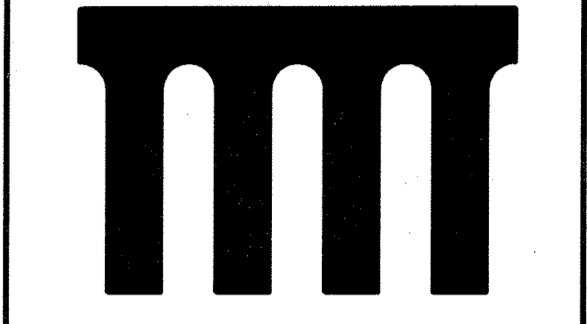
IMPERVIOUS AREA UNTREATED		
EXISTING IMPERVIOUS	= 7,383 S.F.	= 0.17 Ac.±
REMOVED IMPERVIOUS	= 508 S.F.	= 0.012 Ac.±
REDEVELOPED IMPERVIOUS	= 2,876 S.F.	= 0.066 Ac.±
NEW IMPERVIOUS	= 10,439 S.F.	= 0.24 Ac.±

DRAINAGE AREA TO FILTERRA: 0.16 AC.		NEW IMPERVIOUS
		EXISTING IMPERVIOUS, REMOVED

LIMIT OF DISTURBANCE	= 19,860 S.F.	= 0.46 AC.
EXISTING IMPERVIOUS	= 14,753 S.F.	= 0.34 AC.
REMOVED IMPERVIOUS	= 2,177 S.F.	= 0.05 AC.
REDEVELOPED IMPERVIOUS	= 12,345 S.F.	= 0.28 AC.
NEW IMPERVIOUS	= 231 S.F.	= 0.01 AC.
TOTAL IMPERVIOUS POST DEVELOPMENT	= 12,576 S.F.	= 0.29 AC.



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Project Title:
SERVICES AREA COMPLEX
TRADES BLDG. - #23
MULTI-USE BLDG. - #35

JHU - AFL
11020 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20723-6029

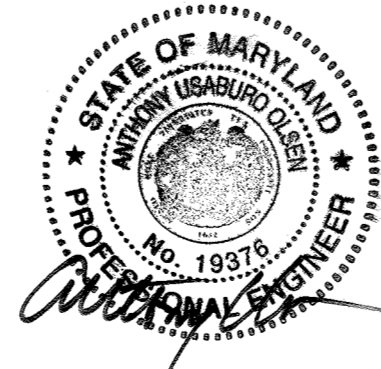
Revisions:
▲ ADDENDUM #2 4/2015
▲ ADDED BUILDING 104 1/2021

Certification:

Issued for:
 REVIEW NOT FOR CONSTRUCTION
 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
STORMWATER MANAGEMENT DRAINAGE AREA MAP

Project No.: **C-023** Sheet No.: **23 of 31**
Scale: 1" = 50'
Date: 12-10-03



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. 19376
EXPIRATION DATE: 09-22-2019-2021

SEAL APPLIES TO ADDENDUM #2 AND REV. #2 ONLY

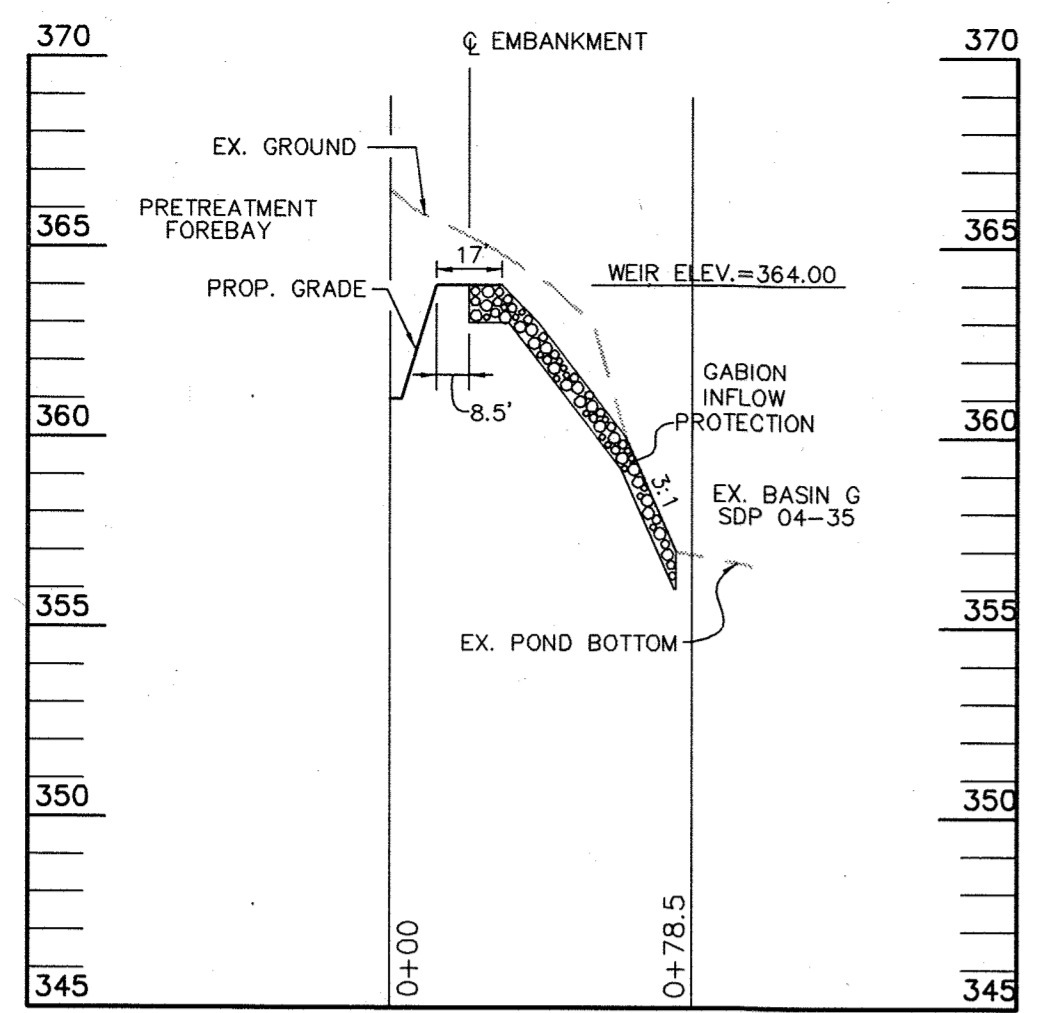
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF-DEVELOPMENT ENGINEERING DIVISION

CHIEF-DIVISION OF LAND DEVELOPMENT

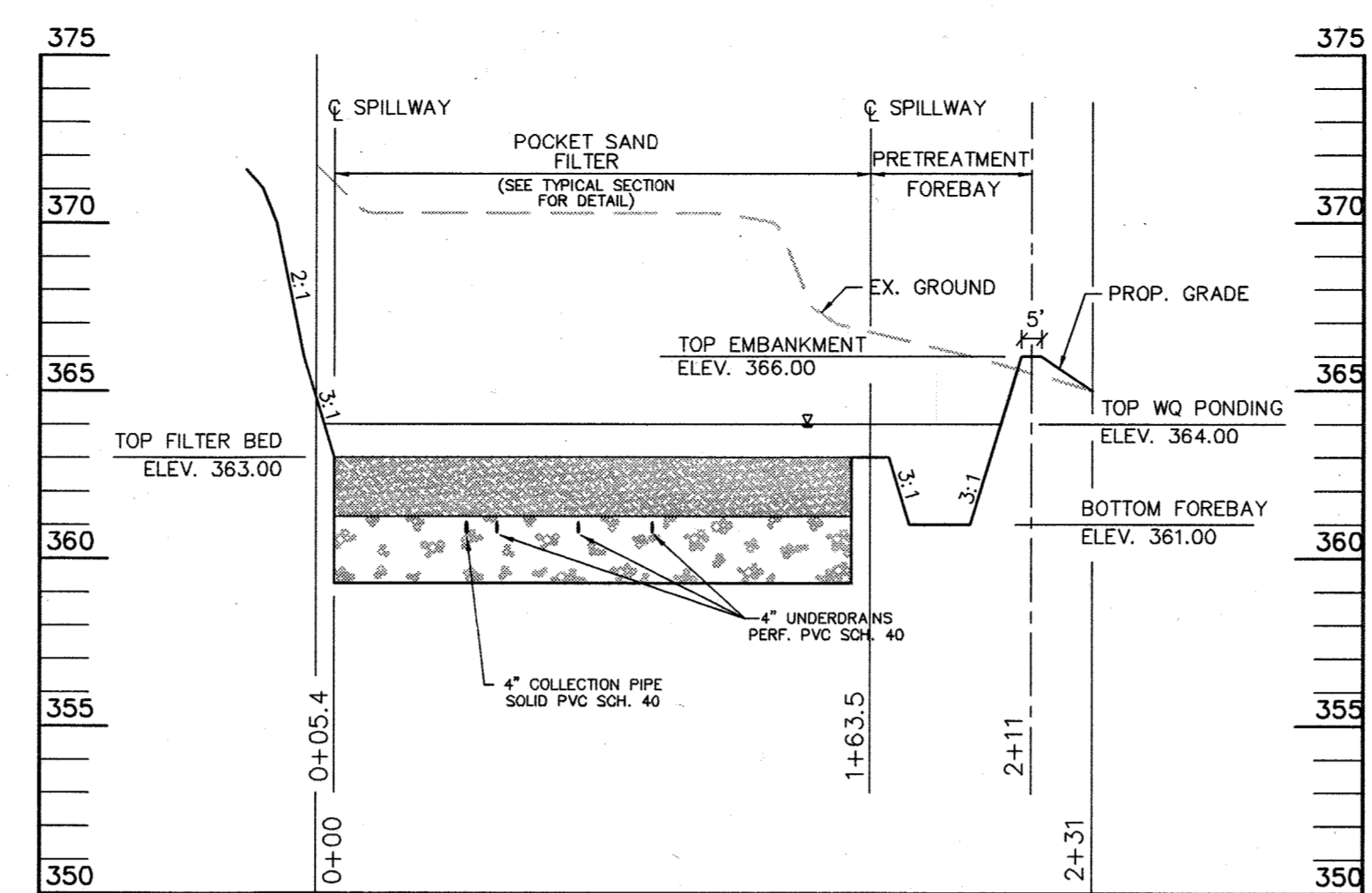
DIRECTOR

3/16/04 DATE
3/15/04 DATE
3/15/04 DATE



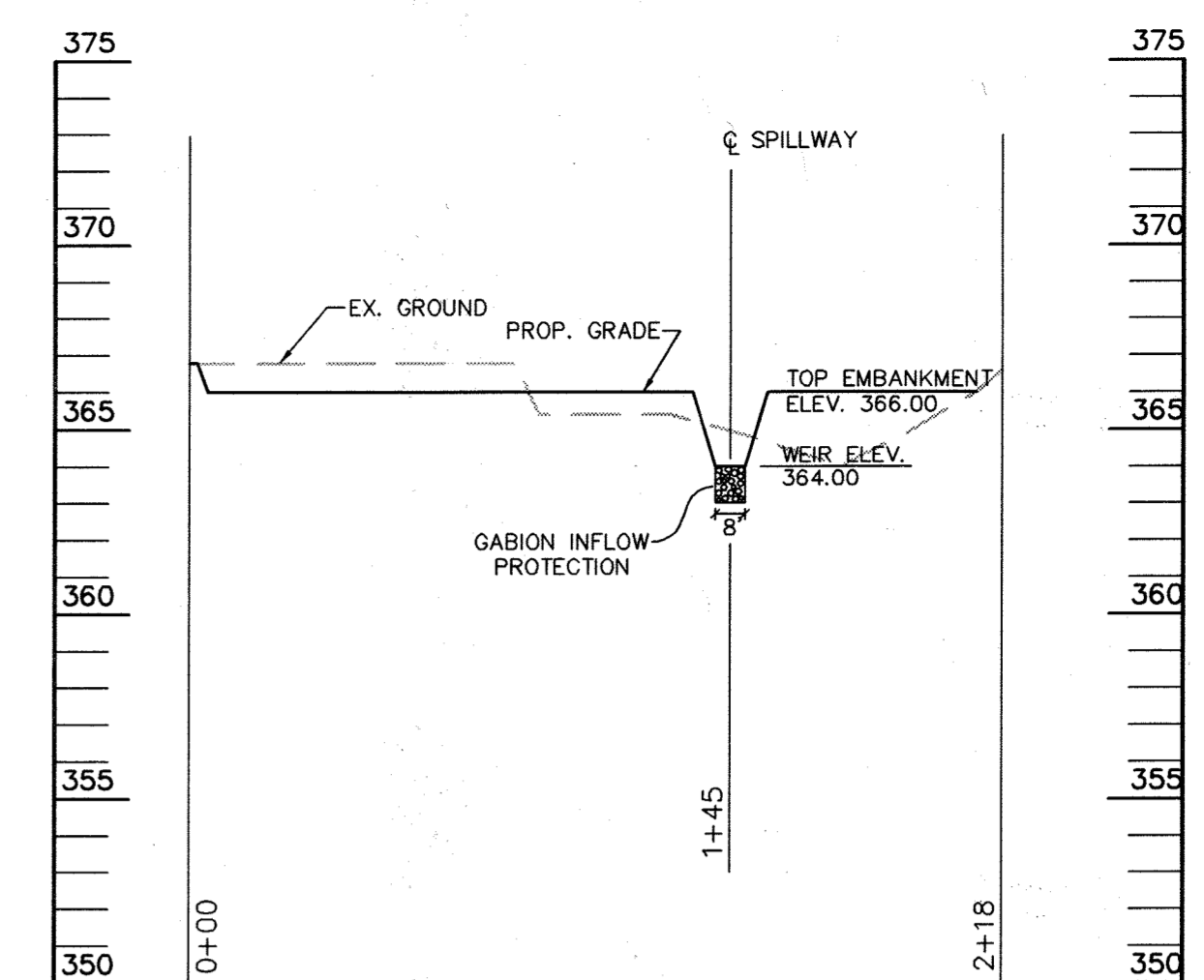
PROFILE A-A THROUGH
PRINCIPAL SPILLWAY

SCALE { VERT: 1" = 5'
HORIZ: 1" = 50'



PROFILE C-C THROUGH
POCKET SAND FILTER

SCALE { VERT: 1" = 5'
HORIZ: 1" = 50'



PROFILE B-B THROUGH
PERIMETER OF SAND FILTER

SCALE { VERT: 1" = 5'
HORIZ: 1" = 50'

STORMCEPTOR MAINTENANCE PROCEDURE

INSPECT AND MAINTAIN THE STORMCEPTOR FROM THE SURFACE, WITHOUT ENTRY INTO THE UNIT. PERFORM MAINTENANCE ONCE THE STORED VOLUME REACHES 15% OF THE STORMCEPTOR CAPACITY, OR IMMEDIATELY IN THE EVENT OF A SPILL.

MAINTENANCE INTERVALS VARY DEPENDING ON THE APPLICATION. THEREFORE, PERFORM INSPECTIONS QUARTERLY DURING THE FIRST YEAR OF INSTALLATION. THEREAFTER, PERFORM INSPECTIONS ON A SCHEDULE DERIVED FROM THE FIRST YEARS MAINTENANCE REQUIREMENTS.

REMOVE OIL AND SEDIMENT THROUGH THE 24-INCH DIAMETER OUTLET RISER PIPE. ALTERNATIVELY, YOU MAY REMOVE FLOATABLES AND HYDROCARBONS THROUGH THE 6-INCH OIL INSPECTION PORT. DISPOSE OF THE SEPARATOR CONTENTS AT A LOCATION APPROVED BY HOWARD COUNTY AND/OR MARYLAND DEPARTMENT OF THE ENVIRONMENT.

SANDFILTER MAINTENANCE PROCEDURE

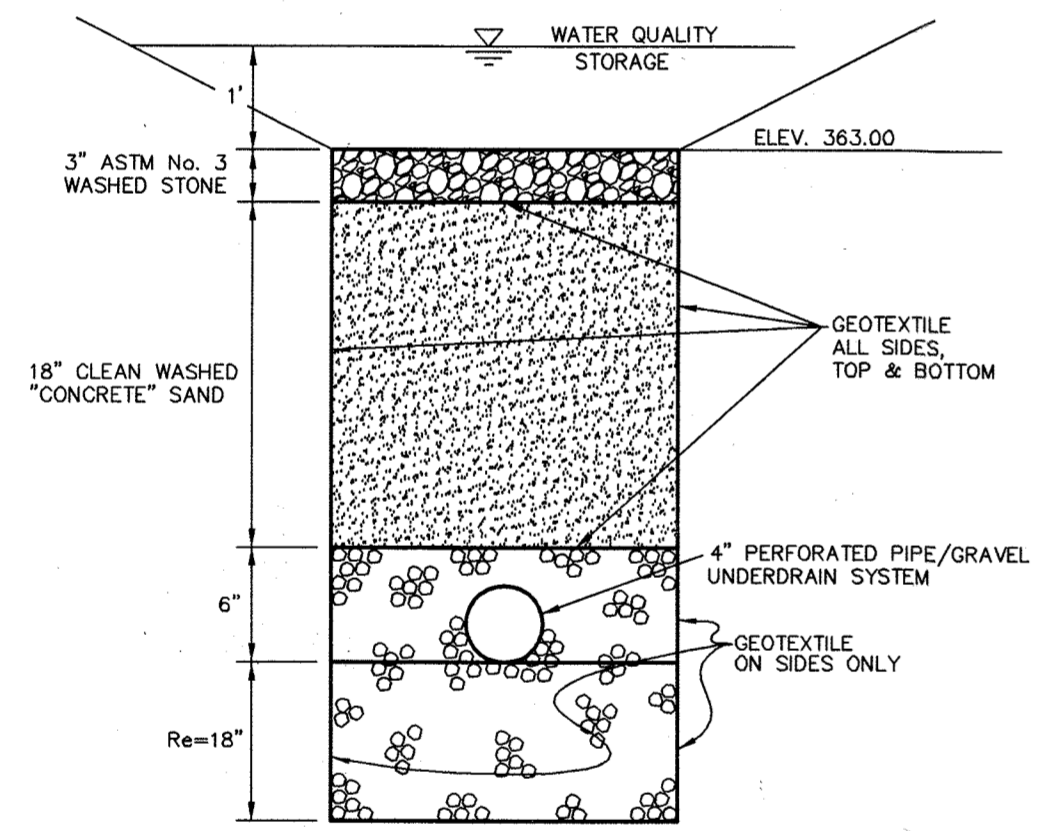
INSPECT THE SANDFILTER FROM THE SURFACE. THE PRETREATMENT FOREBAY SHALL BE CLEANED/REPAIRED WHEN DRAWDOWN TIMES WITHIN THE CHAMBER EXCEED 36 HOURS. TRASH AND DEBRIS SHALL BE REMOVED AS NECESSARY.

SEDIMENT SHOULD BE CLEANED OUT OF THE PRETREATMENT FOREBAY WHEN IT ACCUMULATES TO A DEPTH OF MORE THAN 6 INCHES. VEGETATION WITHIN THE PRETREATMENT FOREBAY SHALL BE LIMITED TO A HEIGHT OF 18 INCHES.

WHEN THE FILTERING CAPACITY OF THE SANDFILTER DIMINISHES SUBSTANTIALLY (E.G. WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 72 HOURS), THE TOP FEW INCHES OF DISCOLORED SAND MATERIAL SHALL BE REMOVED AND SHALL BE REPLACED WITH FRESH SAND MATERIAL PER THE MATERIAL SPECIFICATIONS. THE REMOVED SEDIMENTS SHOULD BE DISPOSED OF IN AN ACCEPTABLE MANNER (E.G. LANDFILL). SILT/SEDIMENT SHOULD BE REMOVED FROM THE FILTER BED WHEN THE ACCUMULATION EXCEEDS 1 INCH.

DIRECT MAINTENANCE ACCESS SHALL BE PROVIDED TO BOTH THE PRETREATMENT FOREBAY AND THE SANDFILTER FILTER BED.

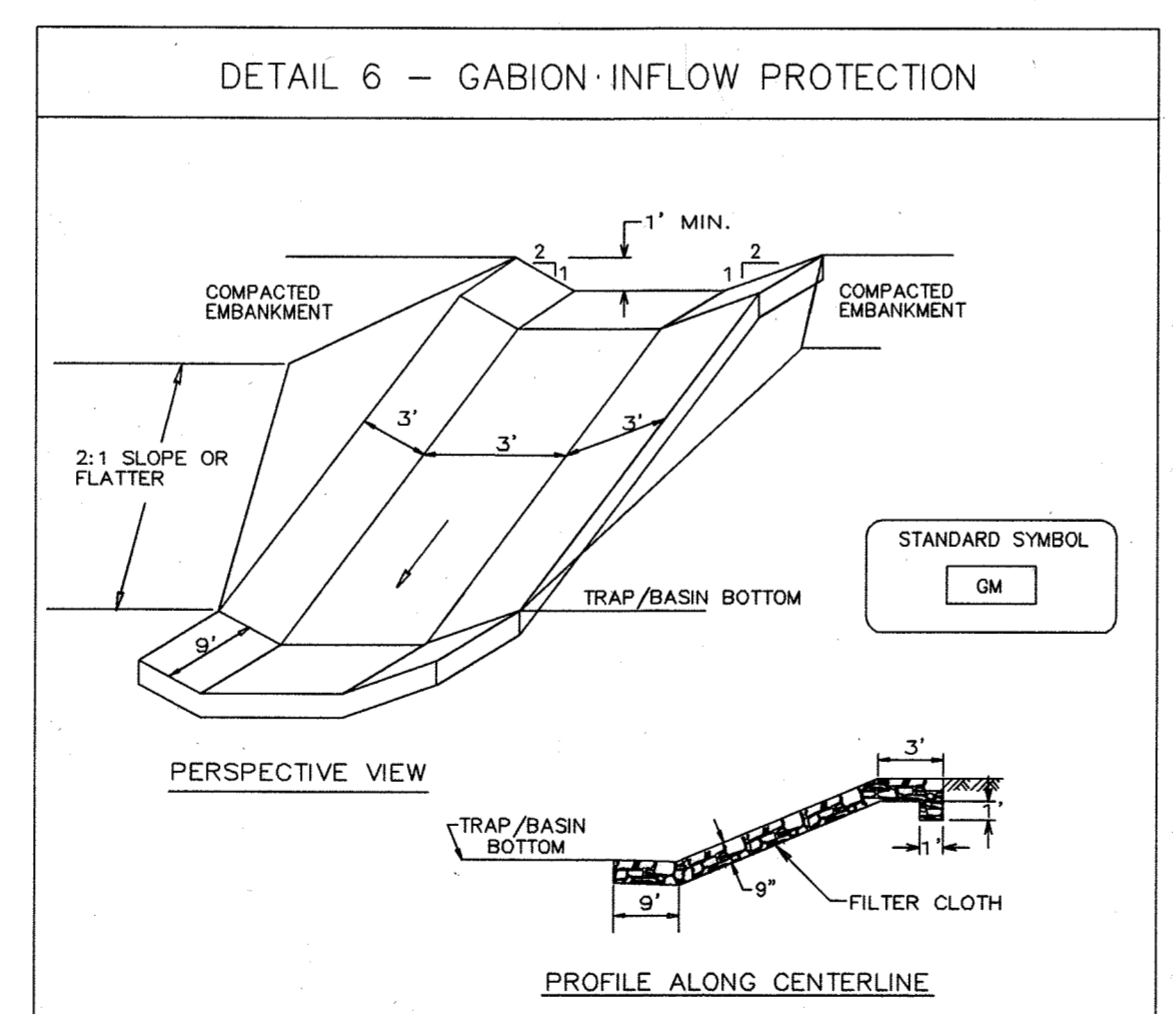
CONSTRUCTION AND MAINTENANCE OF THE SANDFILTER SHALL CONFORM TO THE MATERIAL SPECIFICATIONS OUTLINED HEREON.



POCKET SAND FILTER - TYPICAL SECTION
N.T.S.

SAND FILTER CONSTRUCTION NOTES

- ABSOLUTELY NO RUNOFF IS TO ENTER THE FILTER UNTIL ALL CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED.
- SURFACE OF FILTER BED IS TO BE LEVEL.



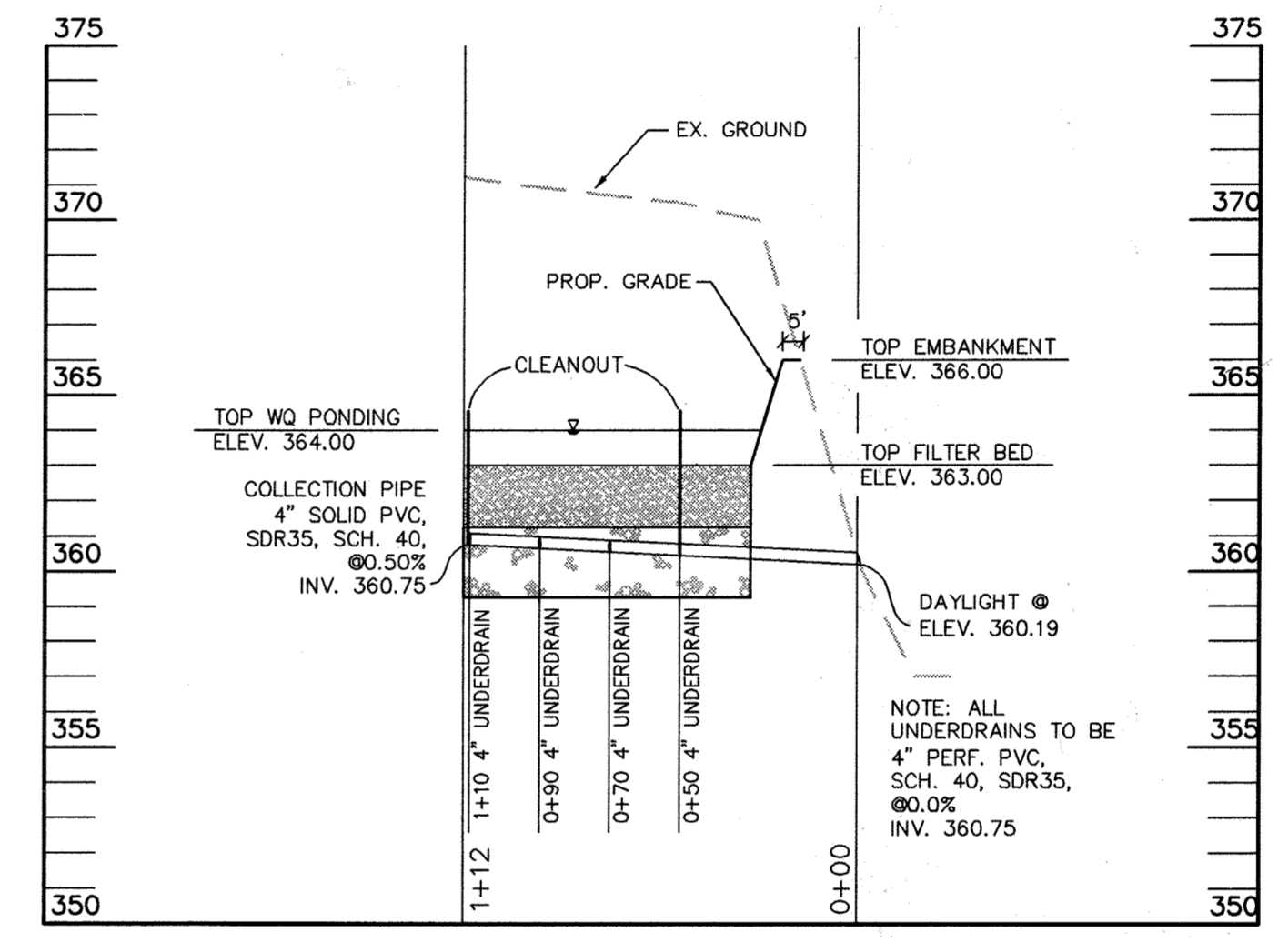
Construction Specifications

- Gabion inflow protection shall be constructed of 9' x 3' x 9' gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.
- Geotextile Class C shall be installed under all gabion baskets.
- The stone used to fill the gabion baskets shall be 4" - 7".
- Gabions shall be installed in accordance with manufacturers recommendations.
- Gabion inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 8-7-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

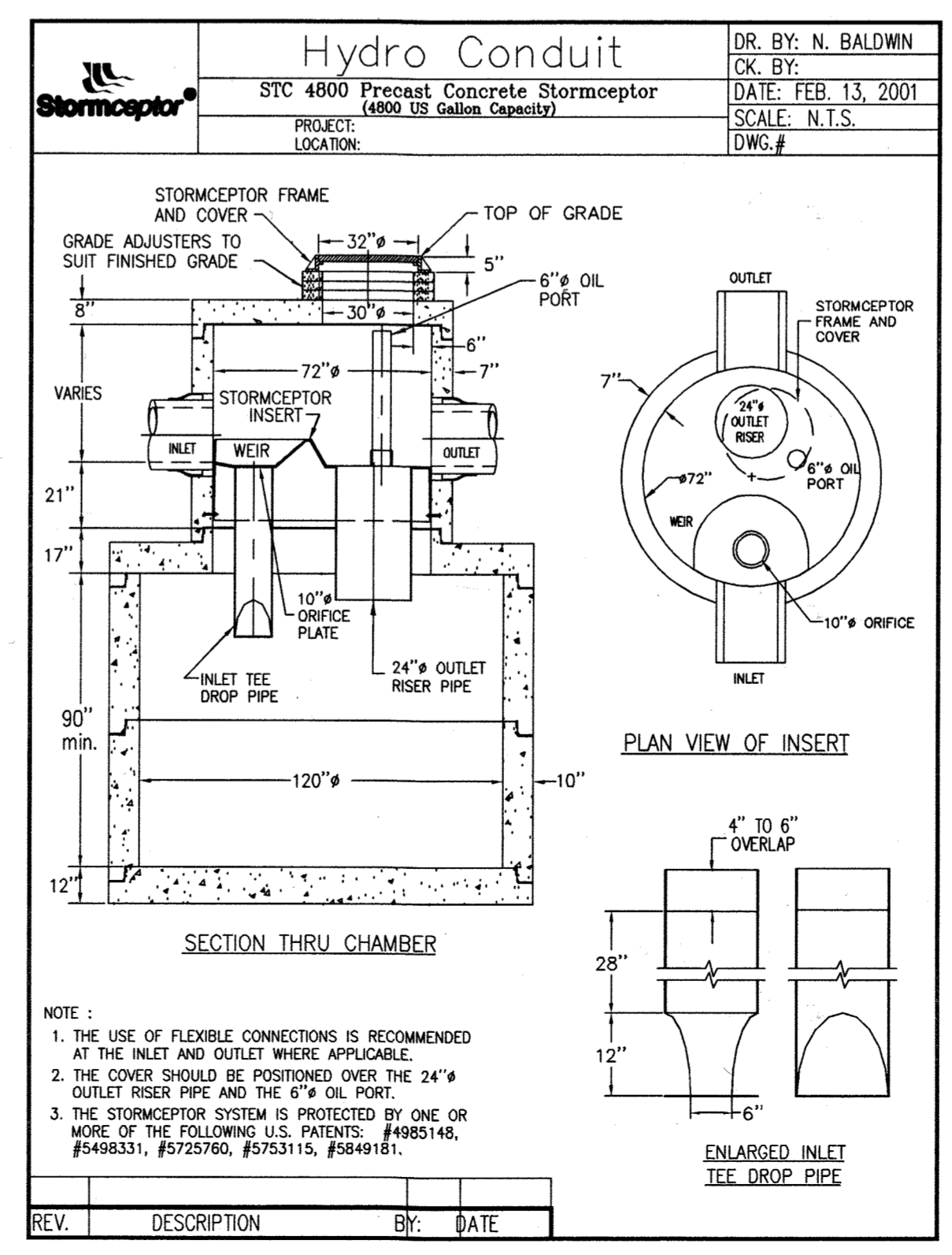
MATERIAL SPECIFICATIONS FOR POCKET SAND FILTERS

MATERIAL	SPECIFICATION/TEST METHOD	SIZE	NOTES
SAND	CLEAN AASHTO-M-6 OR ASTM-C-33 CONCRETE SAND	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND.
UNDERDRAIN GRAVEL	AASHTO-M-43	0.375" TO 0.75"	
GEOTEXTILE FABRIC	ASTM-D-4833 (PUNCTURE STRENGTH - 125 LB.) ASTM-D-4832 (TENSILE STRENGTH - 300 LB.)	0.08" THICK EQUIVALENT OPENING SIZE OF #80 SIEVE	MUST MAINTAIN 125 GPM PER SQ.FT. FLOW RATE. NOTE: A 4" PEA GRAVEL LAYER MAY BE SUBSTITUTED FOR GEOTEXTILES MEANT TO "SEPARATE" SAND FILTER LAYERS.
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO-M-278	4" - 6" RIGID SCHEDULE 40 PVC OR SDR35	3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW; MINIMUM OF 2" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES
COVER STONE	ASTM No. 3	1" - 2"	



PROFILE THROUGH
4" COLLECTOR PIPE

SCALE { VERT: 1" = 5'
HORIZ: 1" = 50'



APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 3/16/04 DATE
CHIEF-DEVELOPMENT ENGINEERING DIVISION
Cindy Hanata 3/16/04 DATE
DIRECTOR OF LAND DEVELOPMENT
Derek H. Cagle 3/16/04 DATE
DIRECTOR

Project Title:

SERVICES AREA COMPLEX
TRADES BLDG. - #29
MULTI-USE BLDG. - #35

JHU - AFL
11020 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20713-6099

Revisions:

Certification:

[Signature]
2/24/04

Issued for:

- REVIEW
- NOT FOR CONSTRUCTION
- BID
- CONSTRUCTION
- PERMIT
- 90% CD SUBMISSION

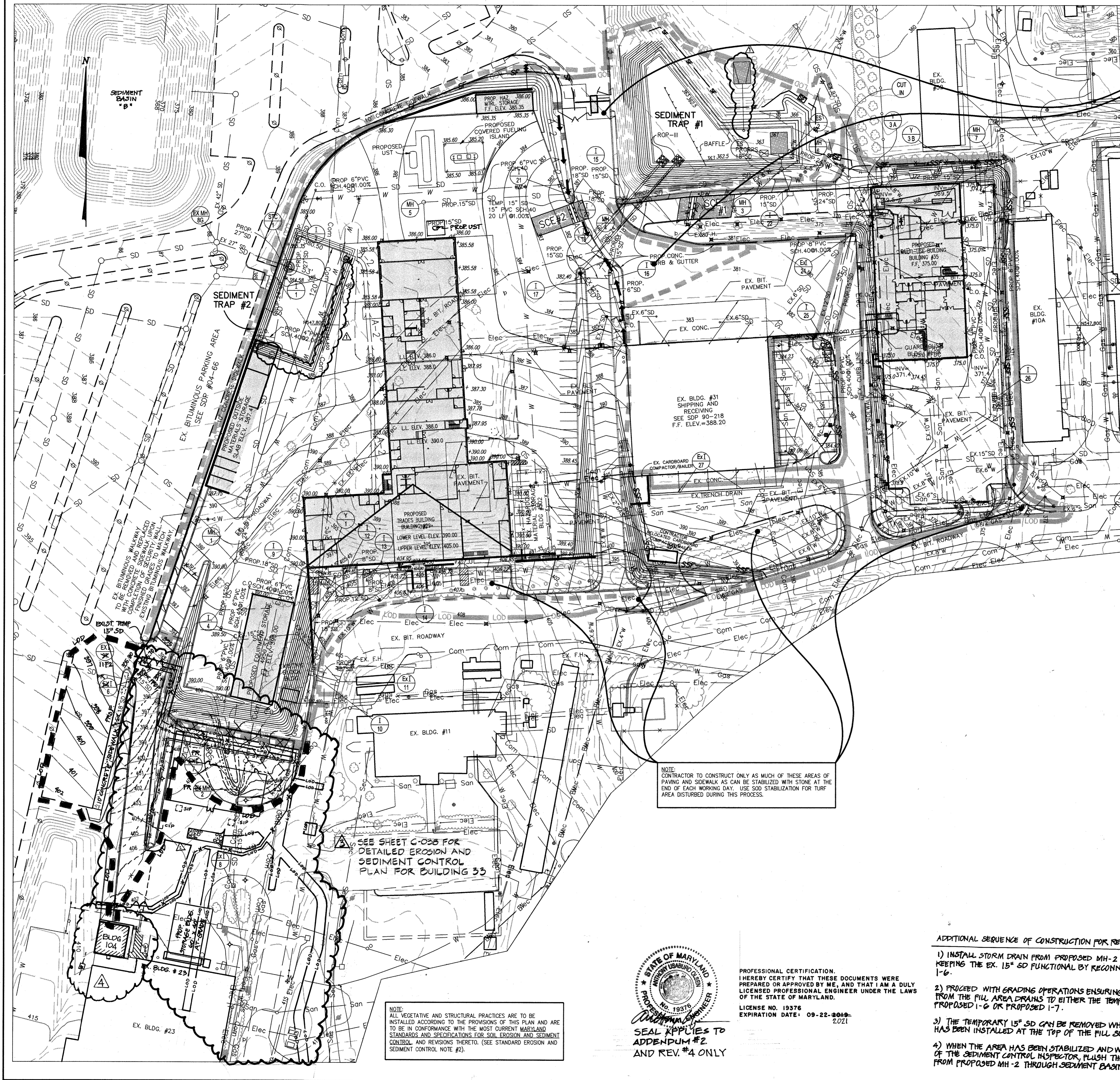
Drawing Title:
STORMWATER MANAGEMENT PROFILES AND DETAILS

Project No.: Sheet No.:

Scale: AS NOTED
Date: 12-10-03

C-024

Sheet 24 of 31



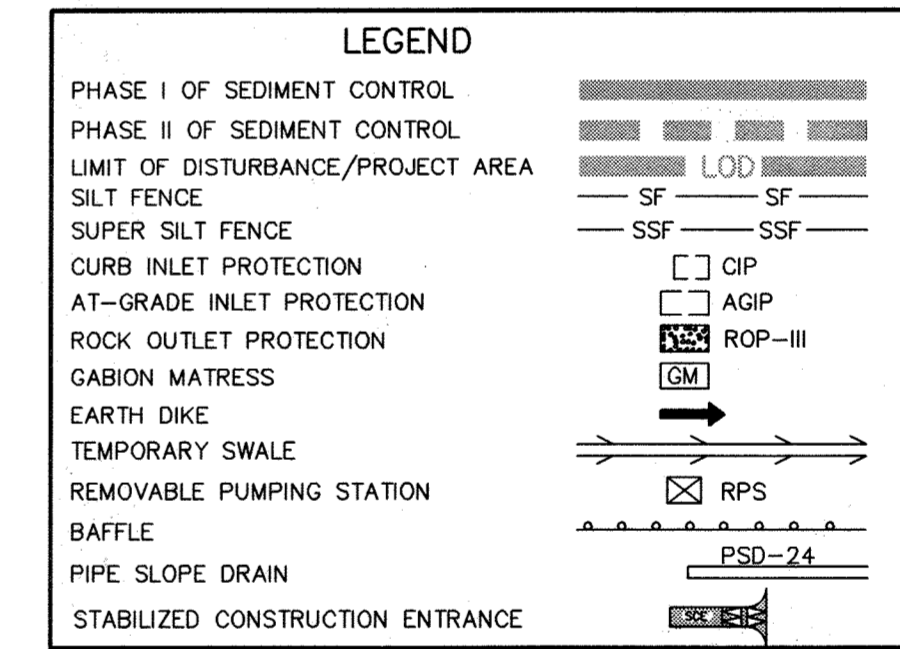
NOTE: CONTRACTOR TO CONSTRUCT ONLY AS MUCH OF THESE AREAS OF PAVING AND SIDEWALK AS CAN BE STABILIZED WITH STONE AT THE END OF EACH WORKING DAY. USE SOD STABILIZATION FOR TURF AREA DISTURBED DURING THIS PROCESS.

**TRAP No. 1 - ST-I
PIPE OUTLET TRAP**

EXISTING DRAINAGE AREA	= 4.94 Ac.
PROPOSED DRAINAGE AREA	= 3.93 Ac.
STORAGE REQUIRED	= 17,784 ft ³
STORAGE PROVIDED (PIPE RISER CREST)	= 21,824 ft ³
VOL. AT DEWATERING ELEV. (1,800 ft ³ /ac.)	= 11,226 ft ³
VOL. OF BASIN AT CLEANOUT (900 ft ³ /ac.)	= 4,213 ft ³
BOTTOM ELEVATION	= 362.50
WET STORAGE ZONE	= 362.50-363.75
PERMANENT POOL ELEVATION	= 363.75
DRY STORAGE ZONE	= 363.75-364.75
BASEIN DISCHARGE ELEV. (PIPE RISER CREST)	= 364.75
DISTANCE FROM PIPE RISER CREST TO PERMANENT POOL ELEVATION	= 1.0 ft.
BASEIN CLEANOUT ELEVATION	= 363.00
DISTANCE FROM PIPE RISER CREST TO CLEANOUT ELEVATION	= 1.75 ft.
TOP OF EMBANKMENT	= 366.00
EX. GROUND ELEV. @ EMBANKMENT	= 366.00±
TRASH RACK DIAMETER	= 42"
RISER DIAMETER	= 27"
BARREL DIAMETER	= 21"

**TRAP No. 2 - ST-I
PIPE OUTLET SEDIMENT TRAP**

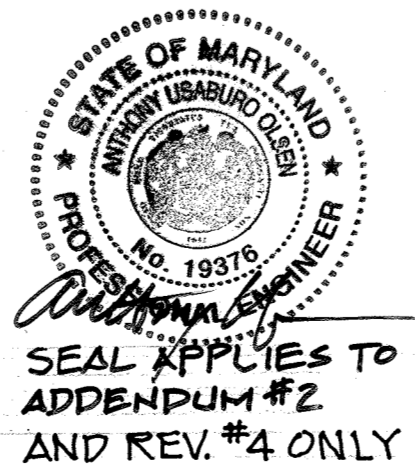
EXISTING DRAINAGE AREA	= 3.45 Ac.
PROPOSED DRAINAGE AREA	= 3.96 Ac.
STORAGE REQUIRED	= 14,256 ft ³
STORAGE PROVIDED (PIPE RISER CREST)	= 18,152 ft ³
VOL. AT DEWATERING ELEV. (1,800 ft ³ /ac.)	= 10,340 ft ³
VOL. OF BASIN AT CLEANOUT (900 ft ³ /ac.)	= 3,268 ft ³
BOTTOM ELEVATION	= 380.50
WET STORAGE ZONE	= 380.50-382.00
PERMANENT POOL ELEVATION	= 382.00
DRY STORAGE ZONE	= 382.00-383.00
BASEIN DISCHARGE ELEV. (RISER CREST)	= 383.00
DISTANCE FROM PIPE RISER CREST TO PERMANENT POOL ELEVATION	= 1.0 ft.
BASEIN CLEANOUT ELEVATION	= 381.00
DISTANCE FROM PIPE RISER CREST TO CLEANOUT ELEVATION	= 2.0 ft.
TOP OF EMBANKMENT	= 384.00
EX. GROUND ELEV. @ EMBANKMENT	= 384.00±
TRASH RACK DIAMETER	= 36"
RISER DIAMETER	= 24"
BARREL DIAMETER	= 21"



NOTE: CONTRACTOR TO CONSTRUCT ONLY AS MUCH OF THESE AREAS OF PAVING AND SIDEWALK AS CAN BE STABILIZED WITH STONE AT THE END OF EACH WORKING DAY. USE SOD STABILIZATION FOR TURF AREA DISTURBED DURING THIS PROCESS.

SEE SHEET C-025 FOR DETAILED EROSION AND SEDIMENT CONTROL PLAN FOR BUILDING 33

NOTE: 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. (SEE STANDARD EROSION AND SEDIMENT CONTROL NOTE #2).



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. 19376
EXPIRATION DATE: 09-22-2019

- ADDITIONAL SEQUENCE OF CONSTRUCTION FOR REDLINE REVISION:**
- 1) INSTALL STORM DRAIN FROM PROPOSED MH-2 TO EX. 11F2 KEEPING THE EX. 15" SD FUNCTIONAL BY RECONNECTING IT TO PROP. 1-6.
 - 2) PROCEED WITH GRADING OPERATIONS ENSURING ALL DRAINAGE FROM THE FILL AREA DRAINS TO EITHER THE TEMPORARY 15" SD, PROPOSED 1-6 OR PROPOSED 1-7.
 - 3) THE TEMPORARY 15" SD CAN BE REMOVED WHEN CURB & GUTTER HAS BEEN INSTALLED AT THE TOP OF THE FILL SLOPE.
 - 4) WHEN THE AREA HAS BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, PLUSH THE STORM DRAIN FROM PROPOSED MH-2 THROUGH SEDIMENT BASIN #B.

BY THE ENGINEER:
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.
Robert G. Bathurst
ROBERT G. BATHURST 2/24/04
SIGNATURE OF ENGINEER DATE

BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE 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.
James E. Loesch
JAMES E. LOESCH 3/2/04
SIGNATURE OF DEVELOPER DATE

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.
Jim Meyer
JIM MEYER 3/14/04
U.S. NATURAL RESOURCES CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS AS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
John K. Robertson
JOHN K. ROBERTSON 3/11/04
HOWARD S.C.D. DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Williamson
CHAD WILLIAMSON 3/16/04
CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE
Catherine
CATHERINE 3/18/04
CHIEF-DIVISION OF LAND DEVELOPMENT DATE
Derek D. Wright
DEREK D. WRIGHT 3/20/04
DIRECTOR DATE

aba ARCHITECTS
Amos Bailey Arnold + Associates, Inc.
3600 Clipper Mill Road, Suite 300
Baltimore, Maryland 21211
Phone: 410.235.9812 Fax: 410.235.3715

Century Engineering, Inc.
32 West Road Towson,
Maryland 21204
Voice (410) 823-6070
Fax (410) 823-2184

Project Title:
SERVICES AREA COMPLEX
TRADES BLDG. - '29
MULTI-USE BLDG. - '35

JHU - APL
1100 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20723-6099

- Revisions:
 ▲ ADDENDUM #1 - 01/09/04
 ▲ RED-LINED PLAN CHANGES 10/04/04
 ▲ ADDENDUM #2 2/4/2019
 ▲ ADDED BLDG. 104 1/2021

Certification:
Robert G. Bathurst
2/24/04

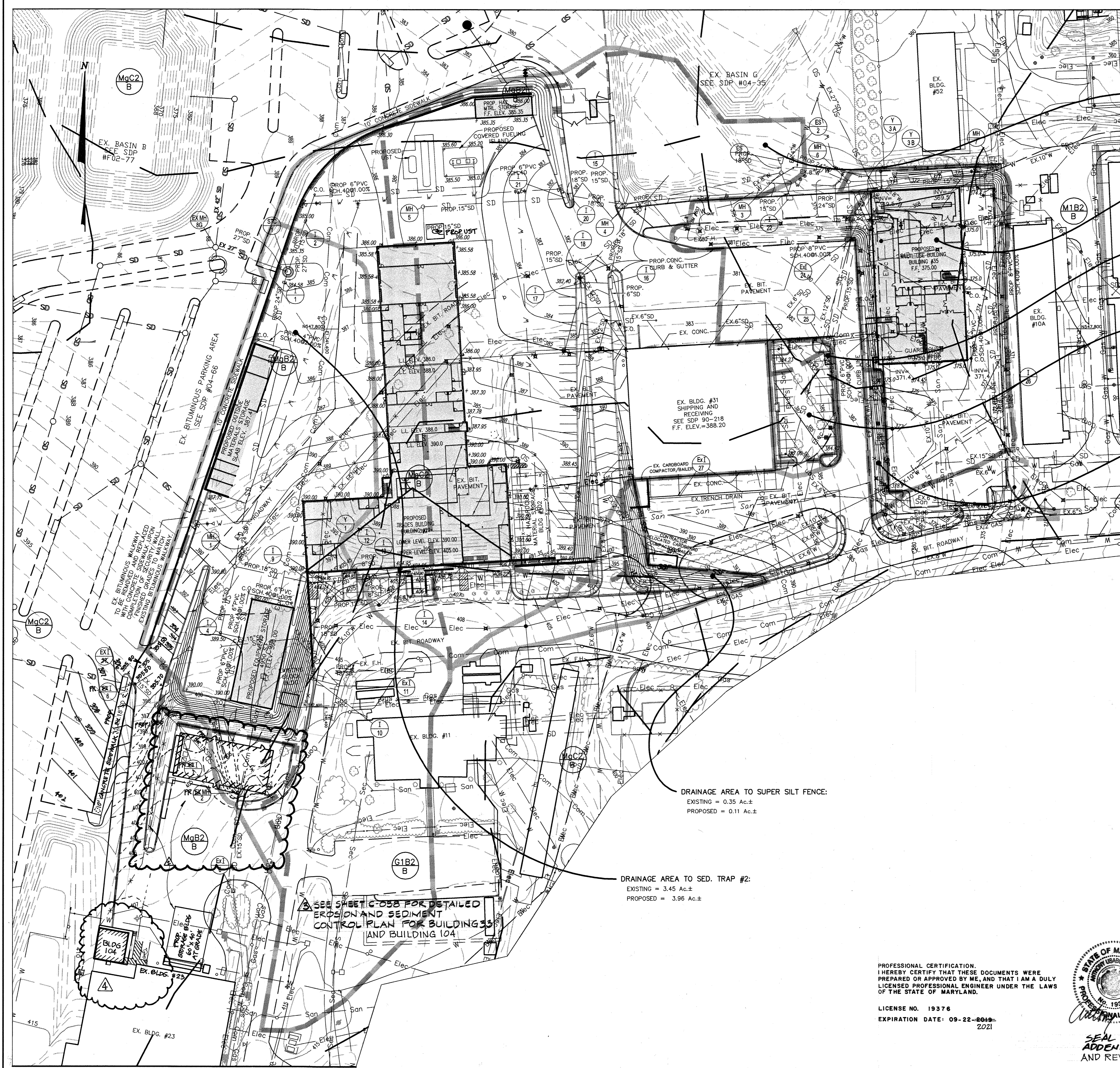
- Issued for:
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 PERMIT 90% CD SUBMISSION

Drawing Title:
EROSION & SEDIMENT CONTROL PLAN

Project No.: Sheet No.:
C-025

Scale:
1" = 50'

Date:
12-10-03 Sheet 25 of 31



DRAINAGE AREA TO SED. TRAP #1:
 EXISTING = 4.94 Ac.±
 PROPOSED = 3.93 Ac.±

DRAINAGE AREA TO SUPER SILT FENCE:
 EXISTING = 1.12 Ac.±
 PROPOSED = 1.12 Ac.±

DRAINAGE AREA TO CURB INLET PROTECTION:
 EXISTING = N/A
 PROPOSED = 0.15 Ac.±

DRAINAGE AREA TO SUPER SILT FENCE:
 EXISTING = 0.22 Ac.±
 PROPOSED = 0.05 Ac.±

DRAINAGE AREA TO SILT FENCE:
 EXISTING = 0.07 Ac.±
 PROPOSED = 0.07 Ac.±

DRAINAGE AREA TO SUPER SILT FENCE:
 EXISTING = 0.35 Ac.±
 PROPOSED = 0.11 Ac.±

DRAINAGE AREA TO SED. TRAP #2:
 EXISTING = 3.45 Ac.±
 PROPOSED = 3.96 Ac.±

SEE SHEET C-058 FOR DETAILED
 EROSION AND SEDIMENT
 CONTROL PLAN FOR BUILDING 33
 AND BUILDING 104

LEGEND

EXISTING DRAINAGE AREA	
PROPOSED DRAINAGE AREA	
LIMIT OF DISTURBANCE	
SILT FENCE	
SUPER SILT FENCE	
CURB INLET PROTECTION	
AT-GRADE INLET PROTECTION	
ROCK OUTLET PROTECTION	
GABION MATRESS	
EARTH DIKE	
TEMPORARY SWALE	
REMOVABLE PUMPING STATION	
BAFFLE	
PIPE SLOPE DRAIN	
STABILIZED CONSTRUCTION ENTRANCE	

BY THE ENGINEER:
 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.
 Robert G. Bathurst 2/24/04
 SIGNATURE OF ENGINEER DATE

BY THE DEVELOPER:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE 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.
 James E. Loesch 3/2/04
 SIGNATURE OF DEVELOPER DATE

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.
 Jim Meyer 3/14/04
 U.S. NATURAL RESOURCES CONSERVATION SERVICE DATE

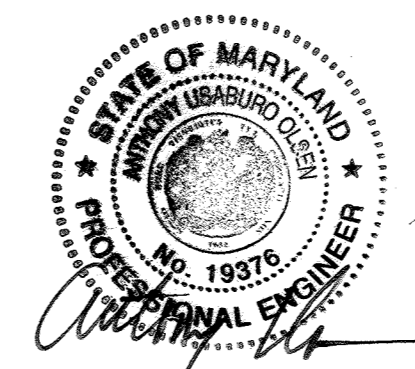
THIS DEVELOPMENT PLAN IS AS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 John R. Roberts 3/14/04
 HOWARD S.C.D. DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 2/16/04
 CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 3/15/04
 CHIEF-DIVISION OF LAND DEVELOPMENT DATE

[Signature] 3/16/04
 DIRECTOR 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.
 LICENSE NO. 19376
 EXPIRATION DATE: 09-22-2019-2021



SEAL APPLIES TO
 ADDENDUM #2
 AND REV. #4 ONLY

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mm
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 Fax (410) 823-2184

Project Title:
SERVICES AREA COMPLEX
 TRADES BLDG. - #29
 MULTI-USE BLDG. - #35
 JHU - APL
 11020 JOHN HOPKINS ROAD
 LAUREL, MARYLAND 20723-6009

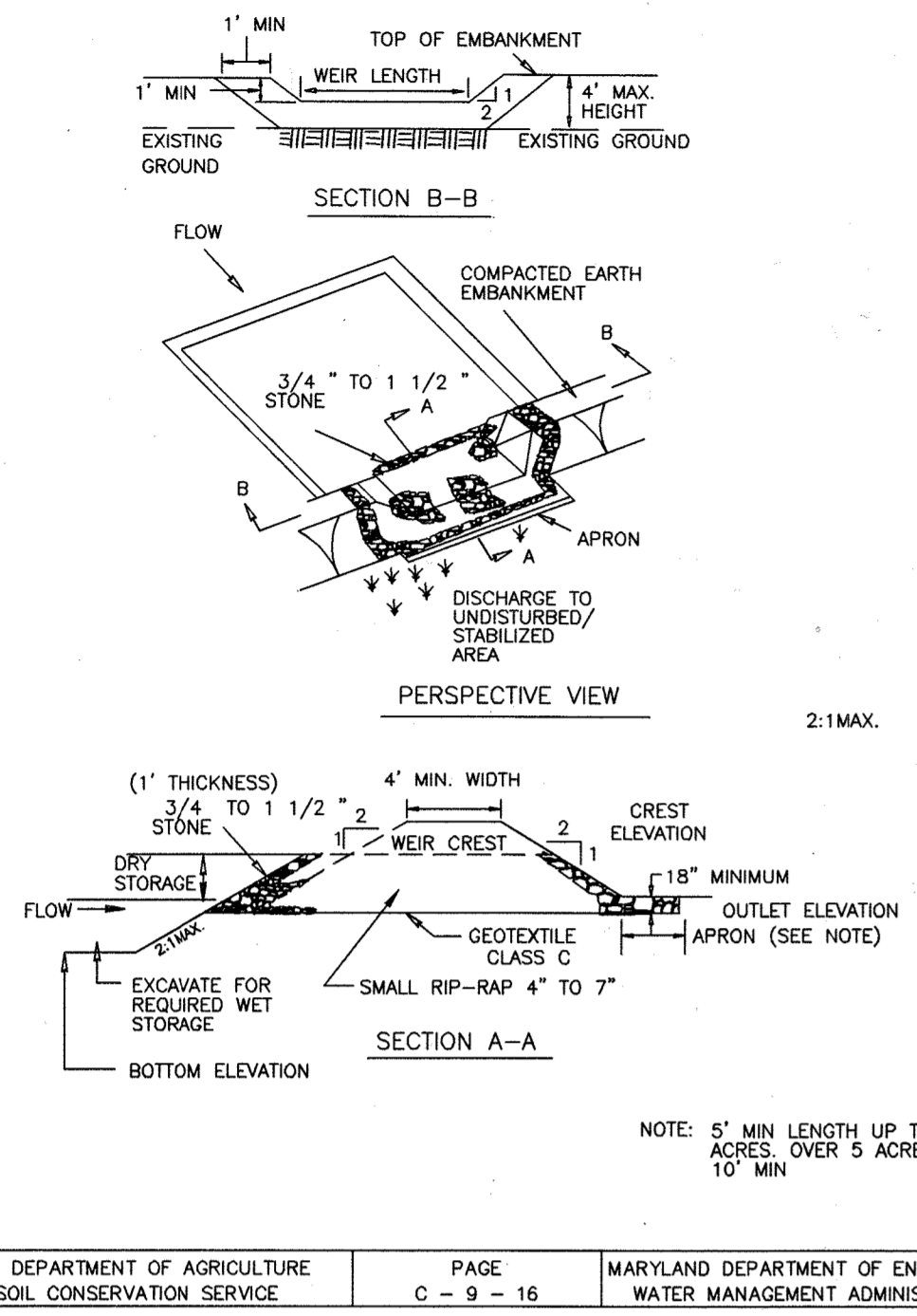
Revisions:
 Δ ADD.#1 - NO CHANGE THIS SHEET 01/09/04
 Δ RED LINE PLAN CHANGES 10/06/04
 Δ ADDENDUM #2 4/2019
 Δ ADDED BLDG.104 11/2021

Certification:
 [Signature]
 2/24/04

Issued for:
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 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
EROSION & SEDIMENT CONTROL DRAINAGE AREA MAP
 Project No.: Sheet No.:
 Scale: 1" = 50'
 Date: 12-10-03 Sheet 26 of 31
C-026

DETAIL 10A - STONE RIP-RAP OUTLET SEDIMENT TRAP - ST IV



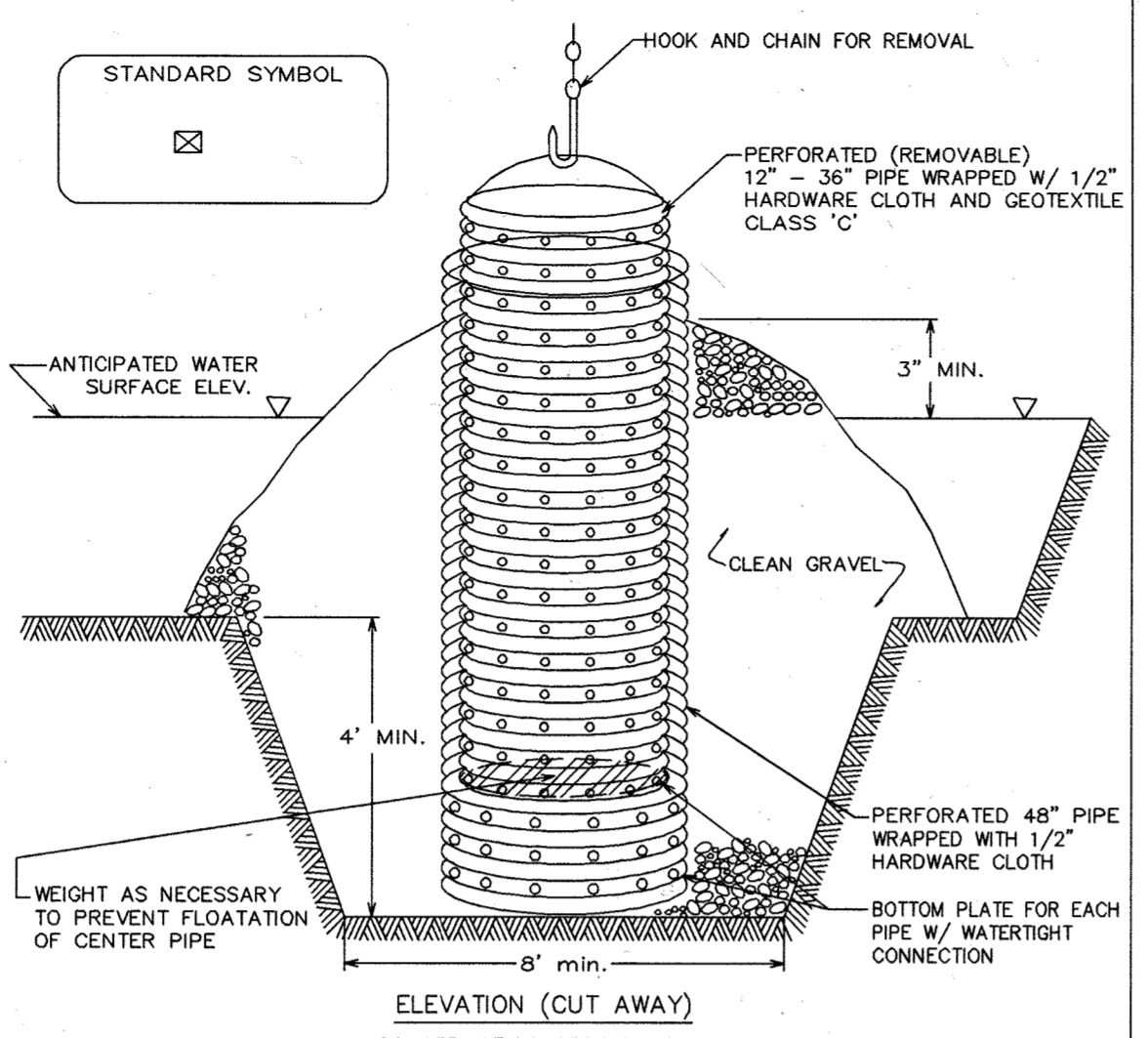
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE C-9-16 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

STONE RIP-RAP OUTLET SEDIMENT TRAP - ST IV

- CONSTRUCTION SPECIFICATIONS
1. THE AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT, THE POOL AREA SHALL BE CLEARED.
 2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. MAXIMUM HEIGHT OF EMBANKMENT SHALL BE 4', MEASURED AT CENTERLINE OF EMBANKMENT.
 3. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
 4. ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO TRAP MUST EQUAL OR EXCEED THE HEIGHT OF TRAP EMBANKMENT.
 5. STORAGE AREA PROVIDED SHALL BE FIGURED BY COMPUTING THE VOLUME MEASURED FROM TOP OF EXCAVATION. (FOR STORAGE REQUIREMENTS SEE TABLE 9).
 6. GEOTEXTILE CLASS C SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNEL PRIOR TO PLACEMENT OF STONE. SECTION OF FABRIC SHALL OVERLAP AT LEAST 1' WITH SECTION NEAREST THE ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST 6" INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
 7. 4" - 7" STONE SHALL BE USED TO CONSTRUCT THE WEIR AND 4" - 12" OR CLASS I RIP-RAP SHALL BE USED TO CONSTRUCT THE OUTLET CHANNEL.
 8. OUTLET - AN OUTLET SHALL INCLUDE A MEANS OF CONVEYING THE DISCHARGE IN AN EROSION FREE MANNER TO AN EXISTING STABLE CHANNEL. PROTECTION AGAINST SCOUR AT THE DISCHARGE POINT SHALL BE PROVIDED AS NECESSARY.
 9. OUTLET CHANNEL MUST HAVE POSITIVE DRAINAGE FROM THE TRAP.
 10. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 OF THE WET STORAGE DEPTH OF THE TRAP (900 CF/AC). REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
 11. THE STRUCTURE SHALL BE INSPECTED PERIODICALLY AFTER EACH RAIN AND REPAIRED AS NEEDED.
 12. CONSTRUCTION OF TRAPS SHALL BE CARRIED OUT IN SUCH A MANNER THAT SEDIMENT POLLUTION IS ABATED. ONCE CONSTRUCTED, THE TOP AND OUTSIDE FACE OF THE EMBANKMENT SHALL BE STABILIZED WITH SEED AND MULCH. POINTS OF CONCENTRATED INFLOW SHALL BE PROTECTED IN ACCORDANCE WITH GRADE STABILIZATION STRUCTURE CRITERIA. THE REMAINDER OF THE INTERIOR SLOPES SHOULD BE STABILIZED (ONE TIME) WITH SEED AND MULCH UPON TRAP COMPLETION AND MONITORED AND MAINTAINED EROSION FREE DURING THE LIFE OF THE TRAP.
 13. THE STRUCTURE SHALL BE DENATERED BY APPROVED METHODS, REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE C-9-16A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

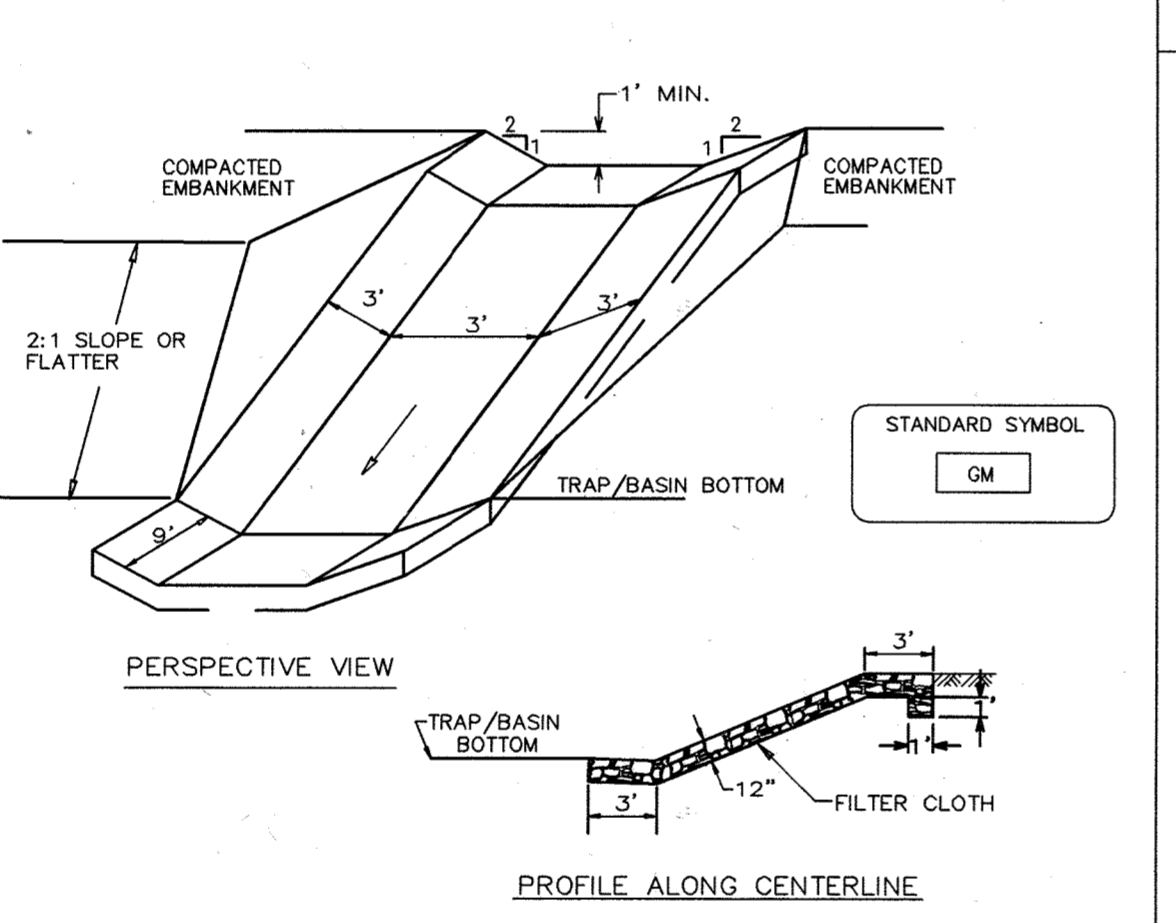
DETAIL 20A - REMOVABLE PUMPING STATION



- CONSTRUCTION SPECIFICATIONS
1. THE OUTER PIPE SHOULD BE 48" DIA. OR SMALLER IN ANY CASE BE AT LEAST 4" GREATER IN DIAMETER THAN THE CENTER PIPE. THE OUTER PIPE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH TO PREVENT BACKFILL MATERIAL FROM ENTERING THE PERFORATIONS.
 2. AFTER INSTALLING THE OUTER PIPE, BACKFILL AROUND OUTER PIPE WITH 2" AGGREGATE OR CLEAN GRAVEL.
 3. THE INSIDE STAND PIPE (CENTER PIPE) SHOULD BE CONSTRUCTED BY PERFORATING A CORRUGATED OR PVC PIPE BETWEEN 12" AND 36" IN DIAMETER. THE PERFORATIONS SHALL BE 1/2" X 8" SLITS OR 1" DIAMETER HOLES 6" ON CENTER. THE CENTER PIPE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH FIRST, THEN WRAPPED AGAIN WITH GEOTEXTILE CLASS C.
 4. THE CENTER PIPE SHOULD EXTEND 12" TO 18" ABOVE THE ANTICIPATED WATER SURFACE ELEVATION OR RISER CREST ELEVATION WHEN DEWATERING A BASIN.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE D-12-4 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

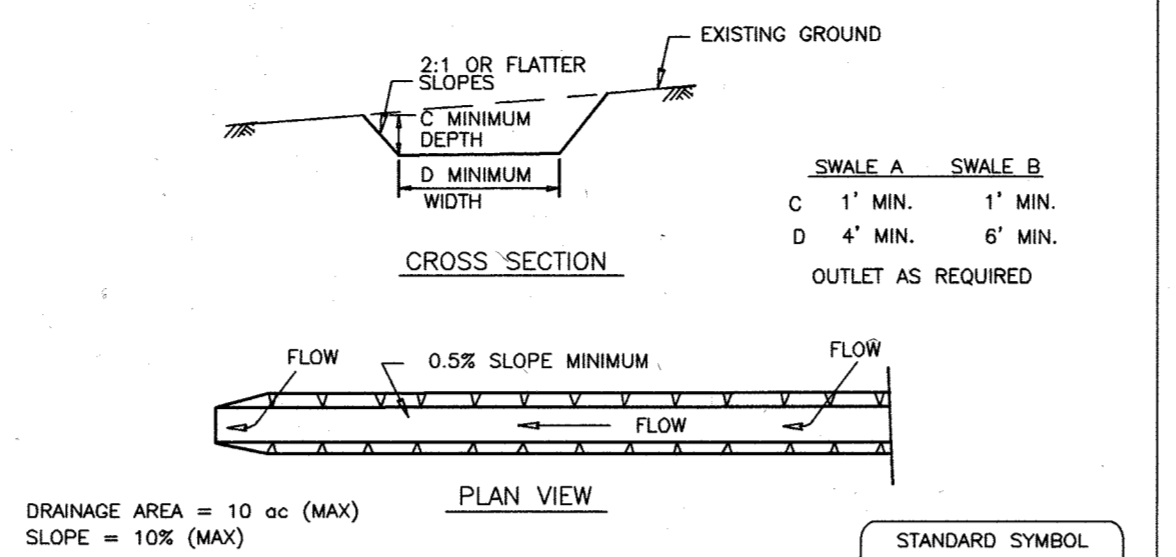
DETAIL 6 - GABION INFLOW PROTECTION



- CONSTRUCTION SPECIFICATIONS
1. Gabion inflow protection shall be constructed of 9' x 3' x 9" gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.
 2. Geotextile Class C shall be installed under all gabion baskets.
 3. The stone used to fill the gabion baskets shall be 4" - 7".
 4. Gabions shall be installed in accordance with manufacturers recommendations.
 5. Gabion Inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE B-7-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 2 - TEMPORARY SWALE

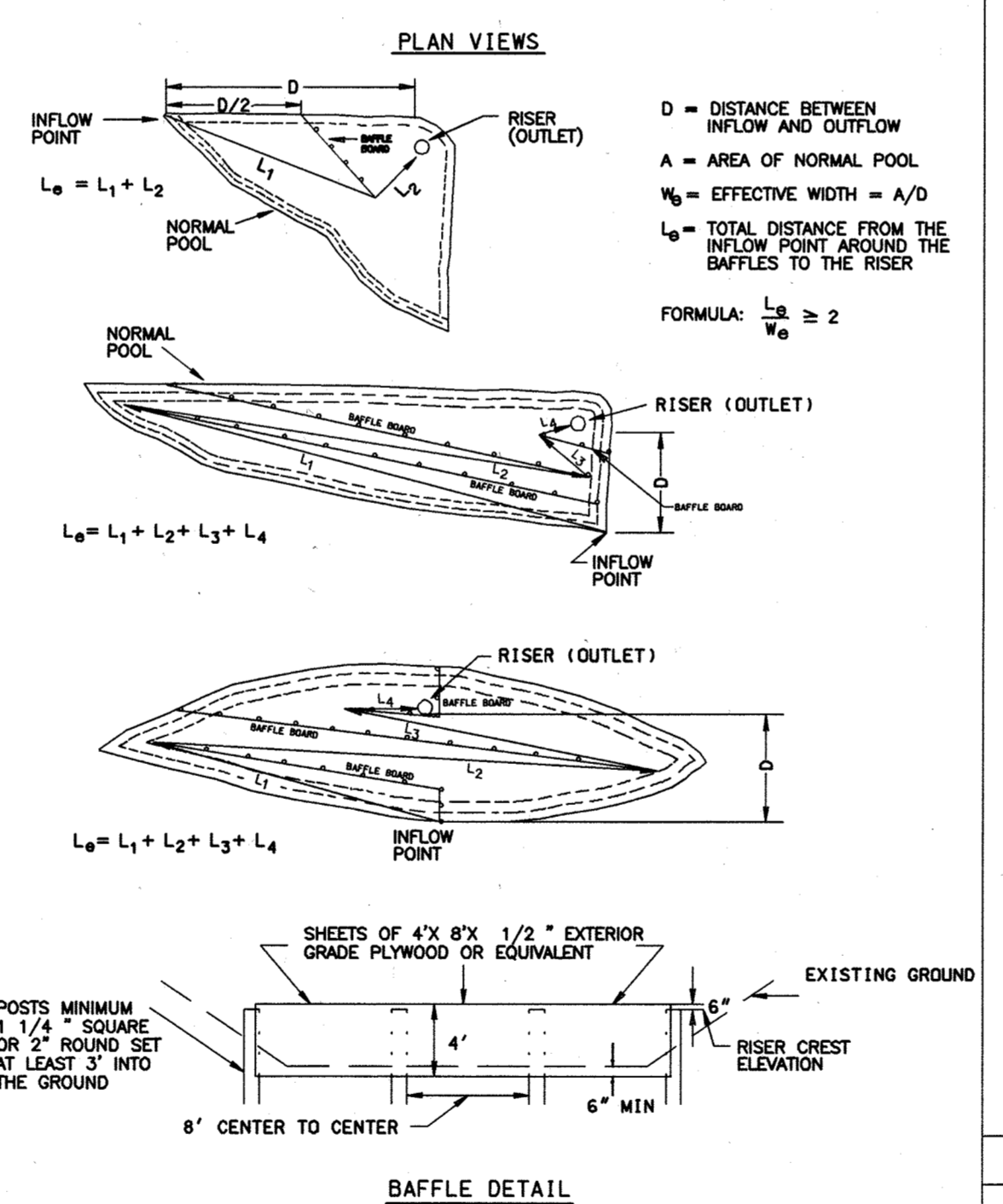


- CONSTRUCTION SPECIFICATIONS
1. Seed and cover with straw mulch.
 2. Seed and cover with Erosion Control Matting or line with sod.
 3. 4"-7" stone or recycled concrete equivalent pressed into soil in a minimum 7" layer.

1. All temporary swales shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed stabilized area at a non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of the swale.
5. The swale shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
6. Fill, if necessary, shall be compacted by earth moving equipment.
7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the swale.
8. Inspection and maintenance must be provided periodically and after each rain event.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE A-2-4 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 18 - SEDIMENT BASIN BAFFLES



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE C-10-28 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 4 - PIPE SLOPE DRAIN

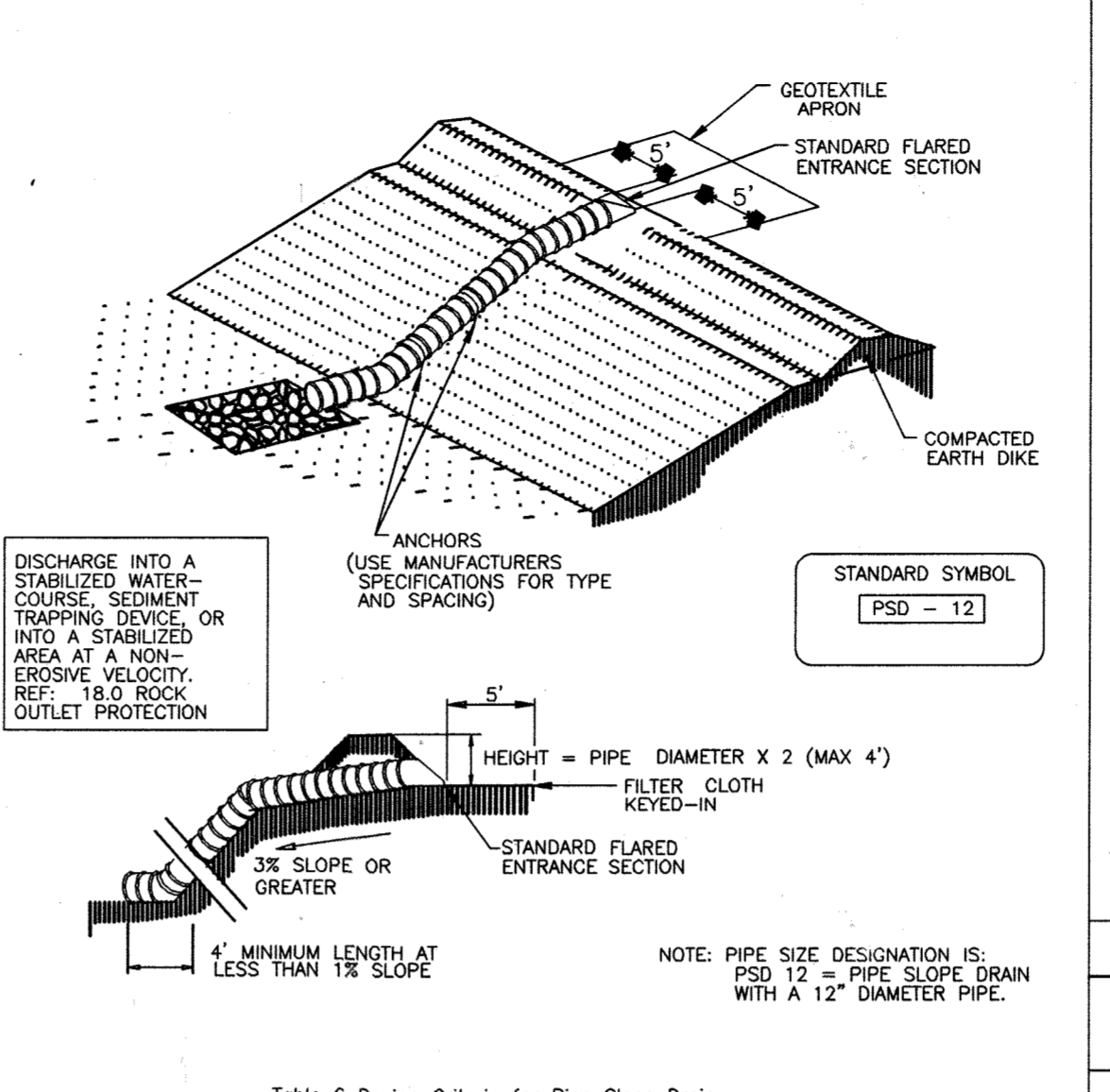


Table 6 Design Criteria for Pipe Slope Drain

Size	Pipe/Tubing Diameter (in)	Maximum Drainage Area (Acres)
PSD-12	12	0.5
PSD-18	18	1.5
PSD-21	21	2.5
PSD-24	24	3.5
PSD-24 (2)	24	5.0

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE B-5-4 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

PIPE SLOPE DRAIN

- CONSTRUCTION SPECIFICATIONS - PIPE SLOPE DRAIN
1. The Pipe Slope Drain (PSD) shall have a slope of 3 percent or steeper.
 2. The top of the earth dike over the inlet pipe shall be at least 2 times the pipe diameter measured at the invert of the pipe.
 3. Flexible tubing is preferred. However, corrugated metal pipe or equivalent PVC pipe can be used. All connections shall be watertight.
 4. A forced section shall be attached to the inlet end of the pipe with a watertight connection. Filter cloth shall be placed under the inlet of the pipe slope drain and shall extend out 5' from the inlet. The filter cloth shall be "keyed in" on all sides.
 5. The Pipe Slope Drain shall be securely anchored to the slope by staking at the grommets provided. Spacing for anchors shall be as provided by manufacturer's specification. In no case shall less than two (2) anchors be provided, equally spaced along the length of pipe. These details should be provided by pipe suppliers.
 6. The soil around and under the pipe and end section shall be hand tamped in 4 inch lifts to the top of the earth dike.
 7. All pipe connections shall be watertight.
 8. Whenever possible where a PSD drains an unstabilized area, it shall outlet into a sediment trap or basin. If this is not possible then the slope drain will discharge into a stable conveyance that leads to a sediment trap or basin. When discharging into a trap or basin the PSD shall discharge at the same elevation as the wet pool elevation. The discharge from the PSD must be as far away from the sediment control outlet as possible.
 9. When the drainage area is stabilized, the PSD shall discharge onto a stabilized area at a non-erosive velocity.
 10. Inspection and any required maintenance shall be performed periodically and after each rain event.
 11. The inlet must be kept open at all times.

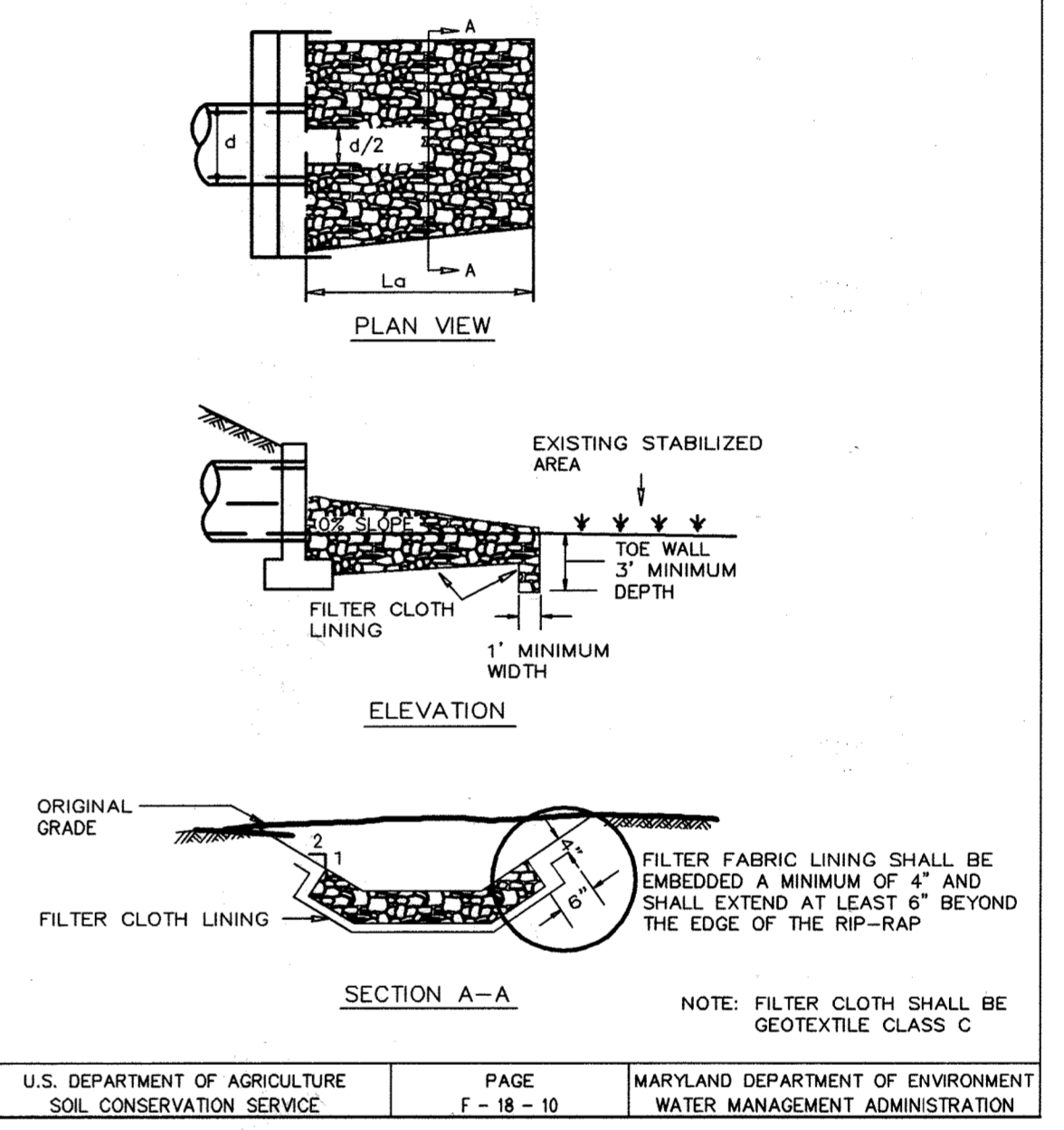
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE B-5-4A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

ROCK OUTLET PROTECTION III

- CONSTRUCTION SPECIFICATIONS
1. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
 2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
 3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps, whether for repairs or for joining two pieces of geotextile, shall be a minimum of one foot.
 4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
 5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high, then the flow will be forced out of the channel and scour adjacent to the stone will occur.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-19-10A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 27 - ROCK OUTLET PROTECTION III



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-18-10 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

BY THE ENGINEER:
 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.
 Robert C. Bathurst 2/24/04
 ROBERT C. BATHURST
 SIGNATURE OF ENGINEER DATE

BY THE DEVELOPER:
 I AM CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE 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.
 James E. Loesch 3/2/04
 JAMES E. LOESCH
 SIGNATURE OF DEVELOPER DATE

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.
 Jim Myers 3/10/04
 U.S. NATURAL RESOURCES CONSERVATION SERVICE DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 3/16/04
 CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 3/18/04
 CHIEF-DIVISION OF LAND DEVELOPMENT DATE

[Signature] 3/18/04
 DIRECTOR DATE

aba
 ARCHITECTS
 Amos Bailey Arnold
 + Associates, Inc.
 3600 Clipper Mill Road, Suite 300
 Baltimore, Maryland 21211
 Phone: 410.235.9812 Fax: 410.235.3715

Century Engineering, Inc.
 38 West Road Townon,
 Maryland 21204
 Voice (410) 823-8070
 Fax (410) 823-2184

Project Title:
SERVICES AREA COMPLEX
 TRADES BLDG. - #29
 MULTI-USE BLDG. - #35

JHU - AFL
 1100 JOHN HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099

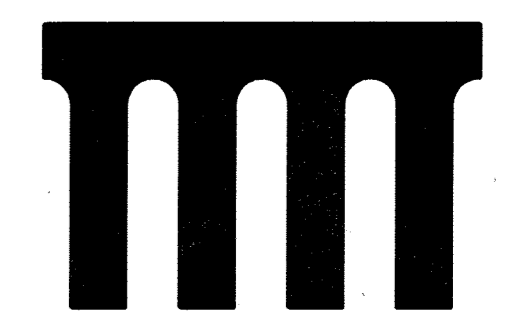
Revisions:

Certification:
 [Signature]

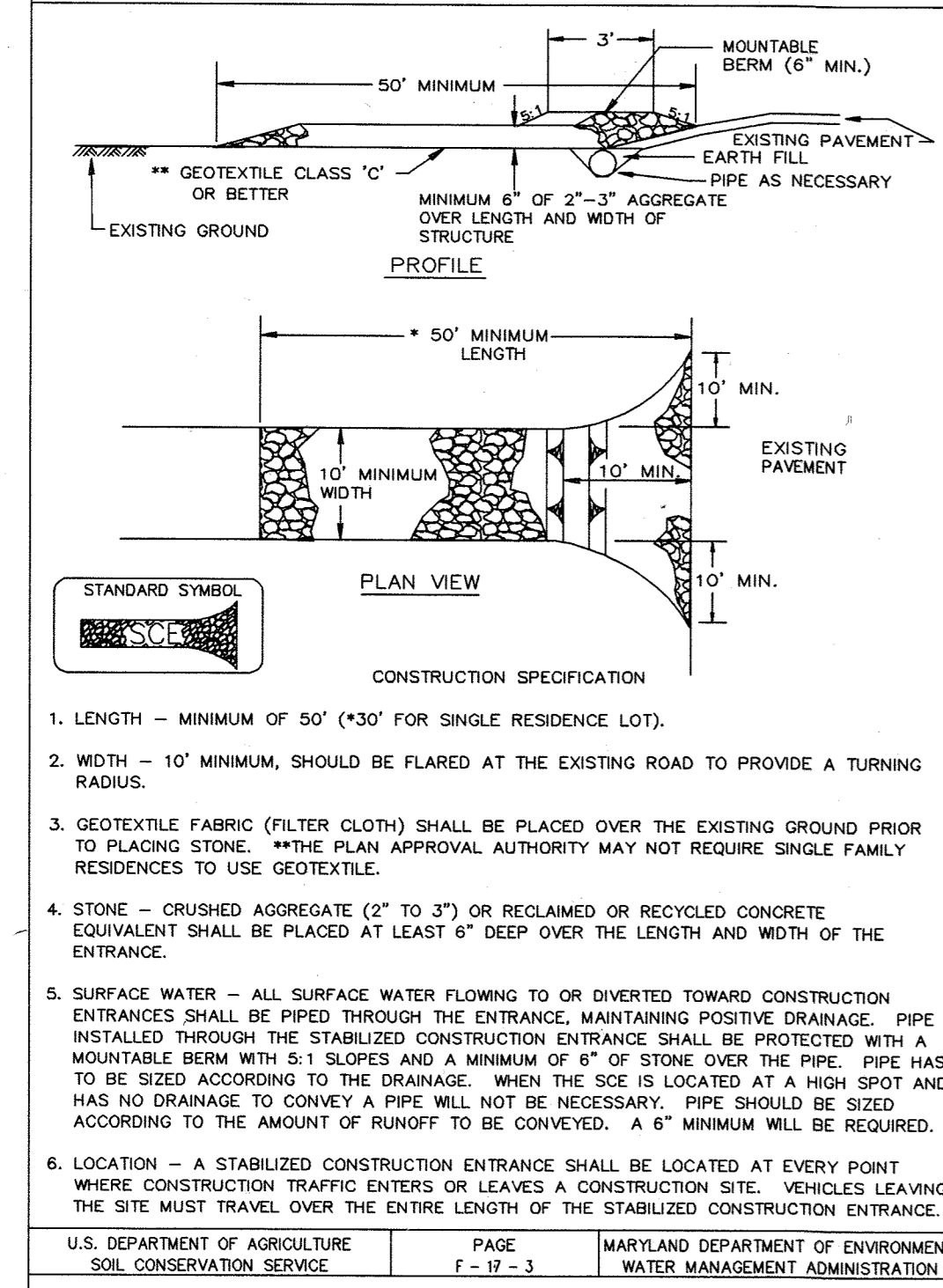
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 REVIEW NOT FOR CONSTRUCTION
 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
EROSION AND SEDIMENT CONTROL DETAILS

Project No.: Sheet No.:
 Scale: 1" = 50'
 Date: 12-10-03 Sheet 27 of 31

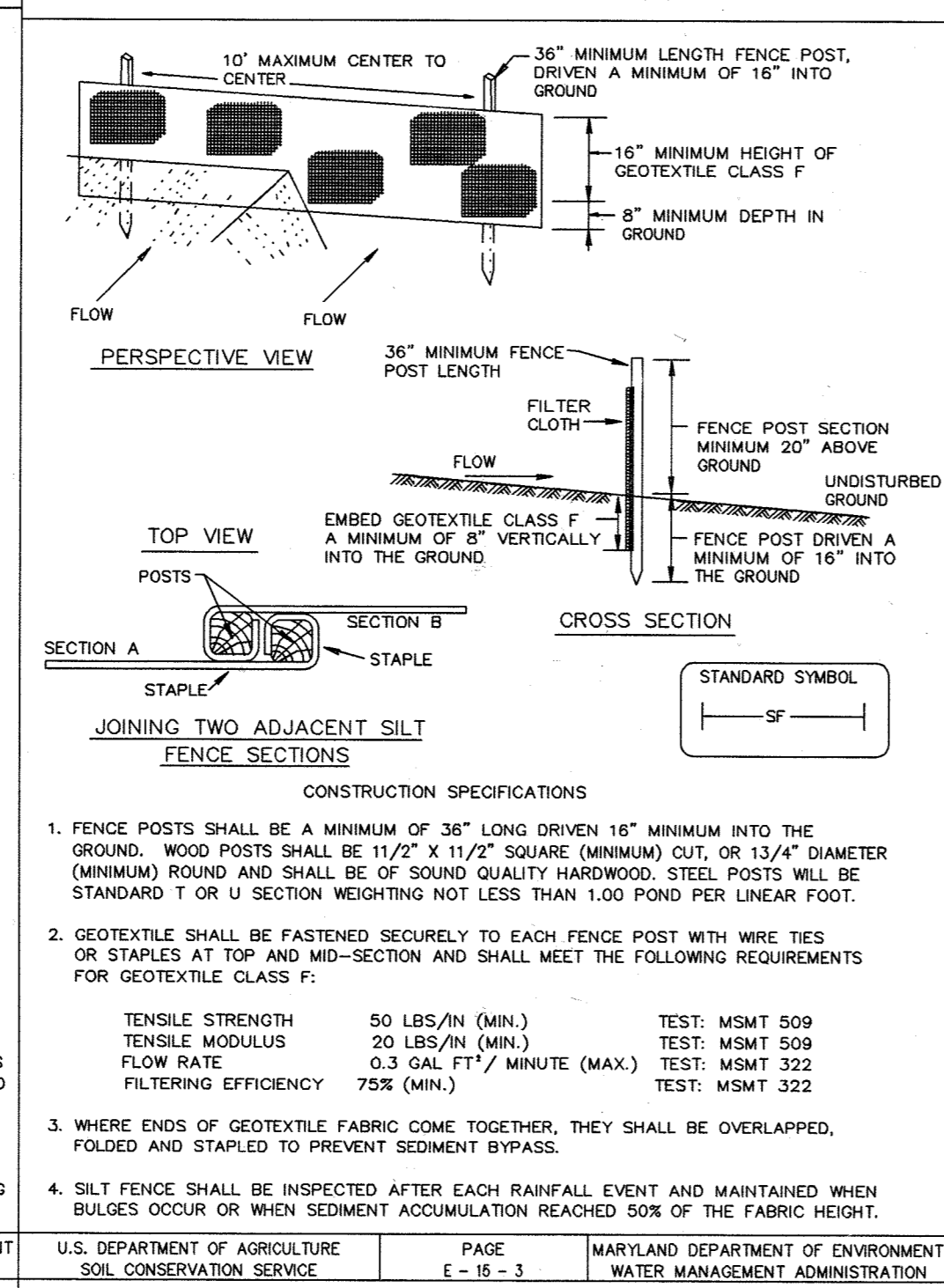


DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



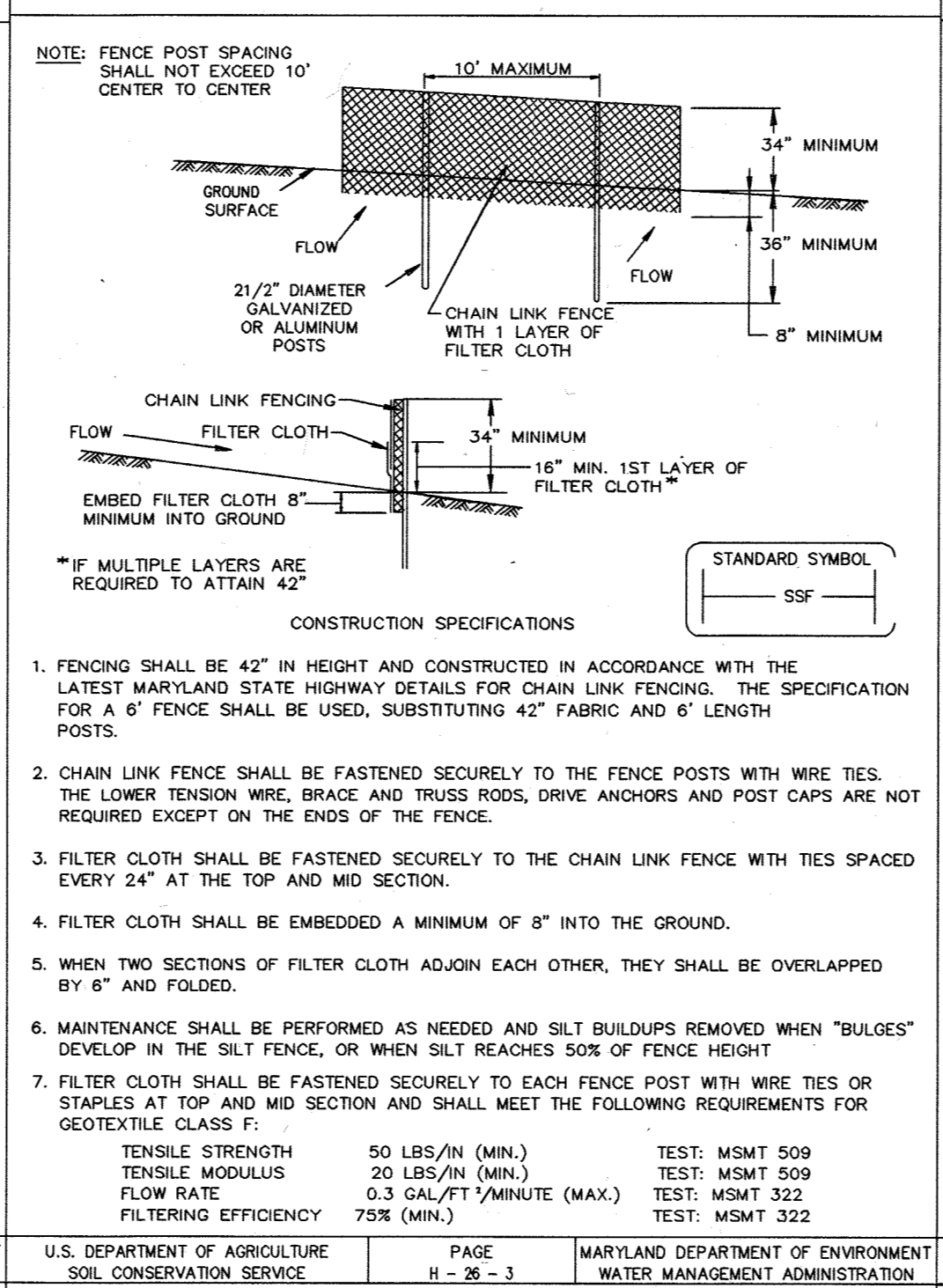
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F-17-3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DETAIL 22 - SILT FENCE



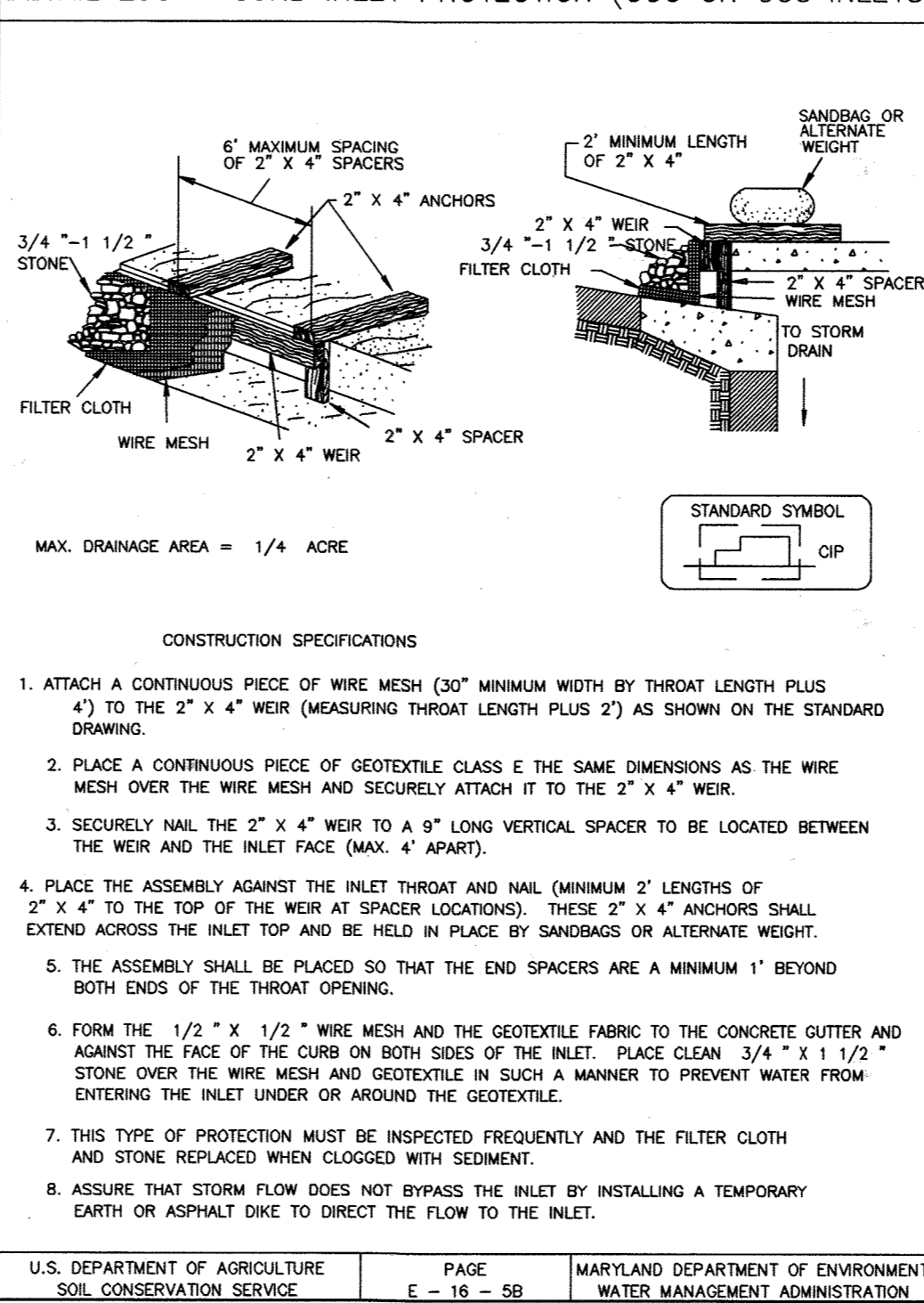
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E-15-3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DETAIL 33 - SUPER SILT FENCE



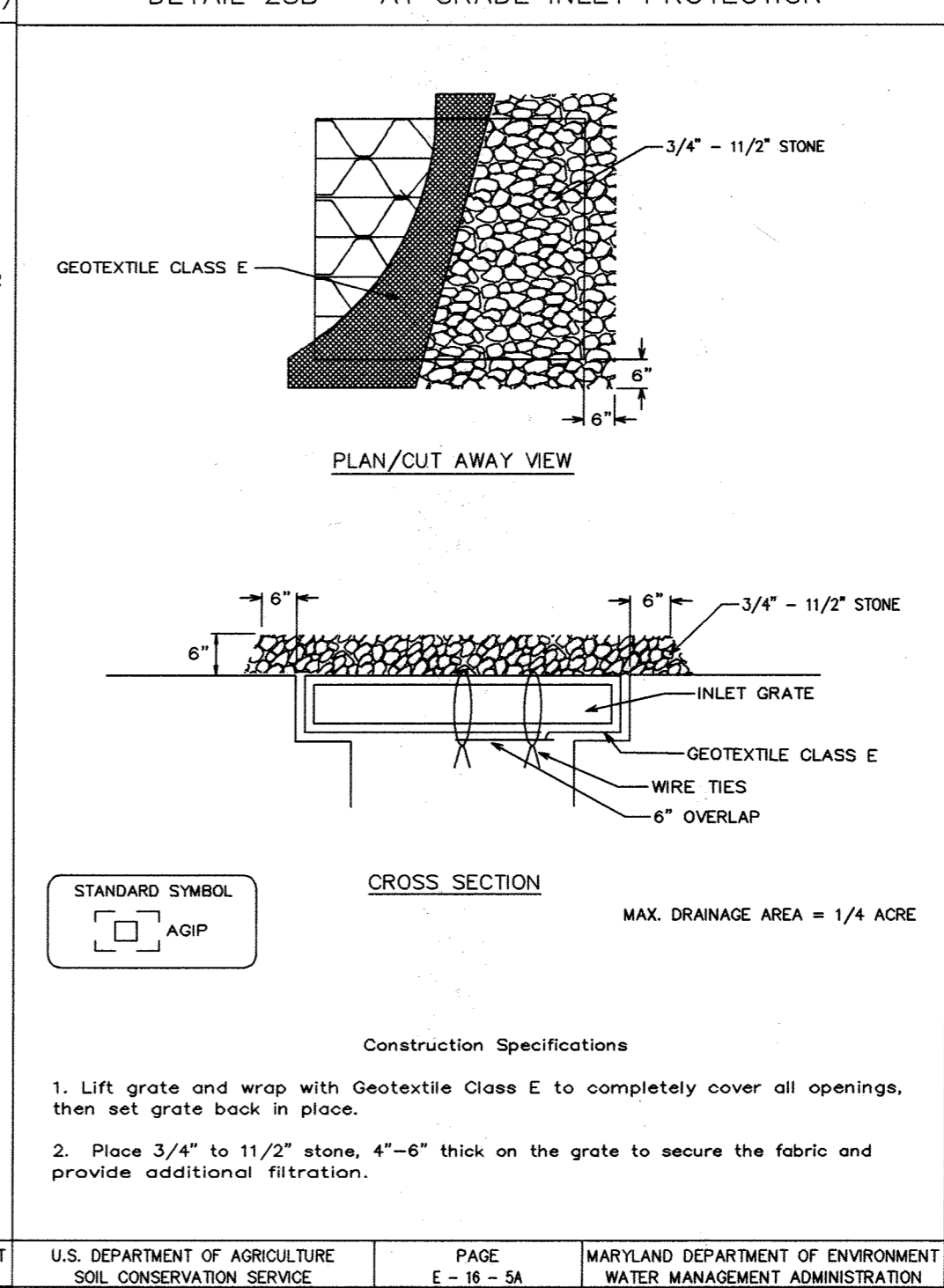
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H-26-3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DETAIL 23C - CURB INLET PROTECTION (COG OR COS INLETS)



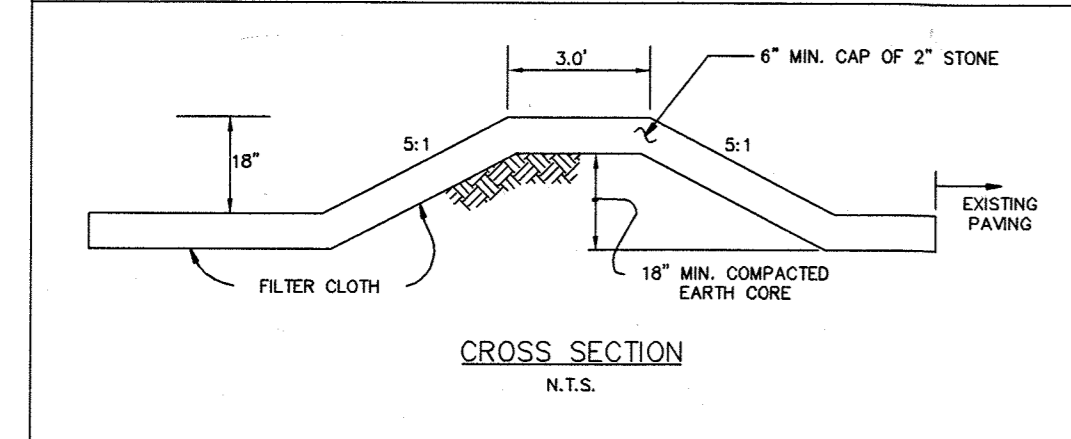
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E-16-5B	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DETAIL 23B - AT GRADE INLET PROTECTION

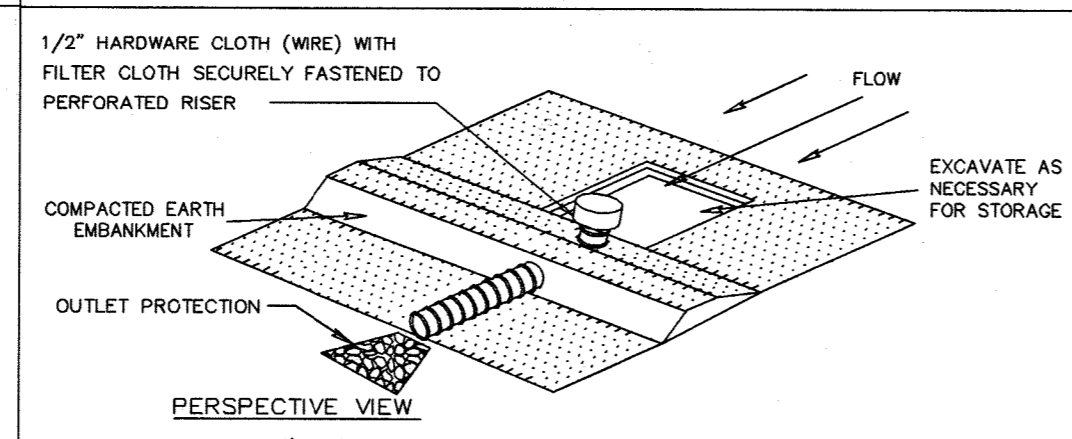


U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E-16-5A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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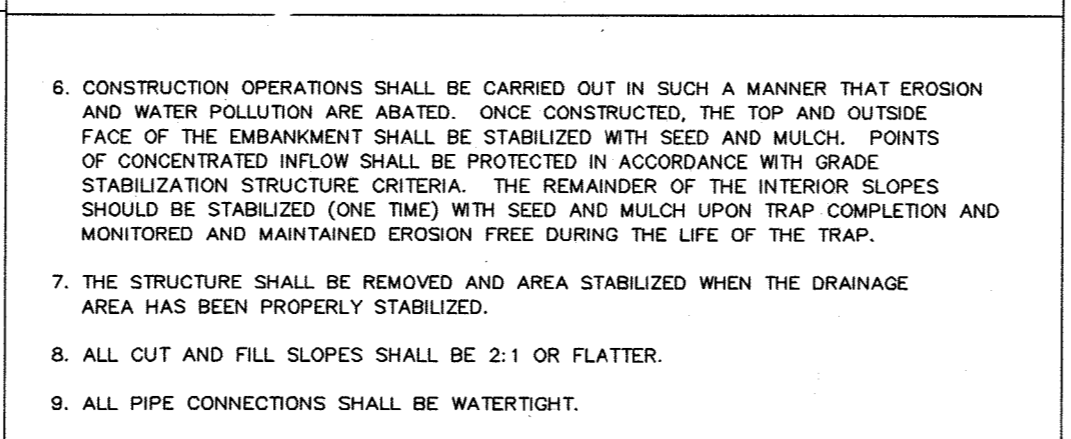
MOUNTABLE BERM DETAIL



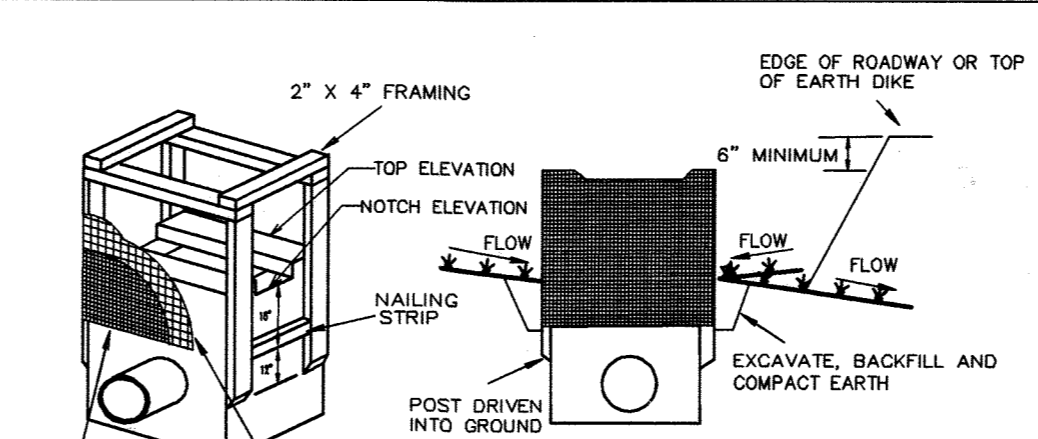
DETAIL 8 - PIPE OUTLET SEDIMENT TRAP - ST I



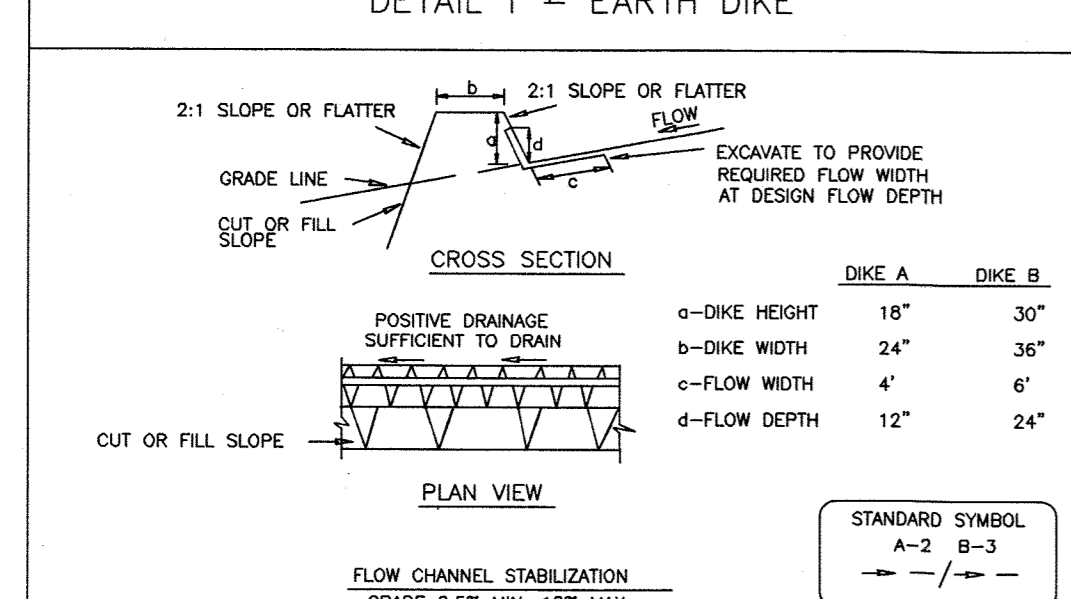
PIPE OUTLET SEDIMENT TRAP - ST I



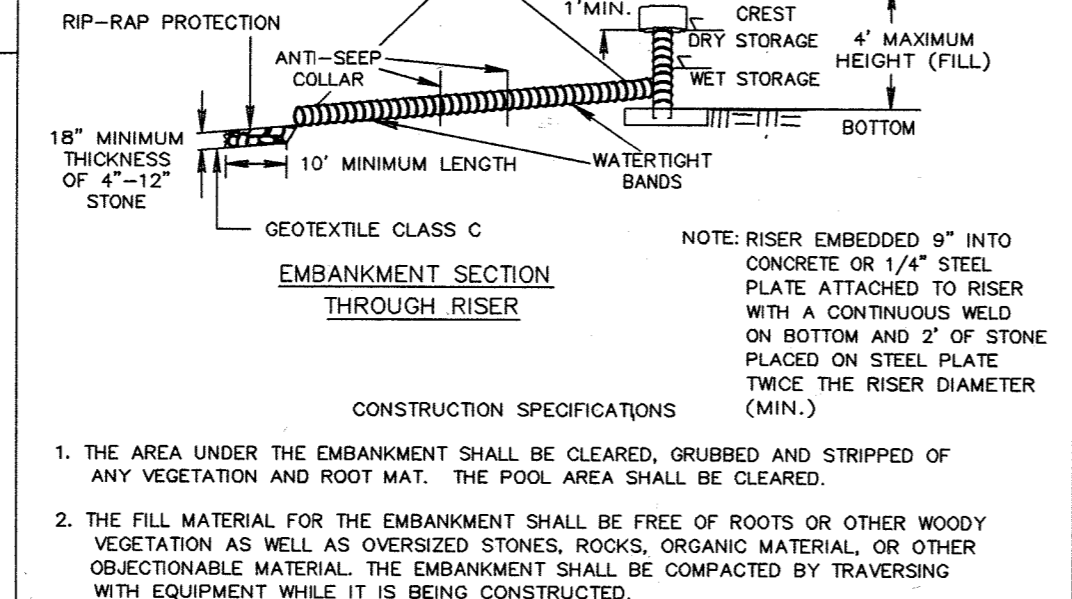
DETAIL 23A - STANDARD INLET PROTECTION



DETAIL 1 - EARTH DIKE



EMBAKMENT SECTION THROUGH RISER



CONSTRUCTION SPECIFICATIONS

- THE AREA UNDER THE EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
- THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVELING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
- THE TOTAL TRAP VOLUME AS MEASURED FROM THE BOTTOM TO RISER CREST ELEVATION SHALL BE 3500 CUBIC FEET PER ACRE OF DRAINAGE AREA (SEE TABLE 9). THE TOP OF EMBANKMENT MUST BE 25" ABOVE THE RISER CREST ELEVATION.
- SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF OF THE WET STORAGE DEPTH OF THE TRAP (ROOF/AC). THE SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
- THE STRUCTURE SHALL BE INSPECTED PERIODICALLY AND AFTER EACH RAIN AND REPAIRS MADE AS NECESSARY.

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CONSTRUCTION SPECIFICATIONS

- Excavate completely around the inlet to a depth of 18" below the notch elevation.
- Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadway where flooding and safety issues may arise.
- Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.
- Stretch the Geotextile Class E tightly over the wire mesh with the geotextile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.
- Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.
- If the inlet is not in a bump, construct a compacted earth dike across the ditch line directly below the top of the earth dike should be at least 6" higher than the top of the frame.
- The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E-16-5	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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BY THE ENGINEER:

"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."

Robert G. Bathurst
ROBERT G. BATHURST
SIGNATURE OF ENGINEER
DATE 2/24/04

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE 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."

James E. Loesch
JAMES E. LOESCH
SIGNATURE OF DEVELOPER
DATE 3/2/04

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.

Jim Mayura 3/11/04
U.S. NATURAL RESOURCES CONSERVATION SERVICE
DATE

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

John R. Robertson 3/11/04
HOWARD S.C.D.
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

William J. ... 3/16/04
CHIEF DEVELOPMENT ENGINEERING DIVISION
DATE

Carol ... 3/16/04
CHIEF-DIVISION OF LAND DEVELOPMENT
DATE

Dwight ... 3/16/04
DIRECTOR
DATE

Project Title:

SERVICES AREA
COMPLEX
TRADES BLDG. - #29
MULTI-USE BLDG. - #35

JHU - AFL
11020 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20713-6099

Revisions:

Certification:

Robert G. Bathurst
2/24/04

Issued for:
 REVIEW NOT FOR CONSTRUCTION
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 PERMIT 90% CD SUBMISSION

Drawing Title:
EROSION AND
SEDIMENT
CONTROL DETAILS

Project No.: Sheet No.:

Scale: 1" = 50'

Date: 12-10-03 Sheet 28 of 31

SDP-04-76

HOWARD SOIL CONSERVATION DISTRICT

STANDARD SEDIMENT CONTROL NOTES

- 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 (313-1855).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
- 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 steeper than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 7 of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding, sod, temporary seeding and mulching (Sec. G). Temporary stabilization with mulch alone shall only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:

Total Area of Site	=	10.7± Acres
Area Disturbed	=	10.7± Acres
Area to be roofed or paved	=	8.5 Acres
Area to be vegetatively stabilized	=	2.2 Acres
Total Cut	=	1,800 Cu. Yds.
Total Fill	=	27,600 Cu. Yds.
Offsite waste/borrow area location	=	N/A
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary, by the Howard County Sediment Control Inspector.
- On all sites 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.
- Trenches for the construction of utilities is limited to three pipe lengths or that which shall be backfilled and stabilized within one working day, whichever is shorter.

HOWARD SOIL CONSERVATION DISTRICT

PERMANENT SEEDING NOTES

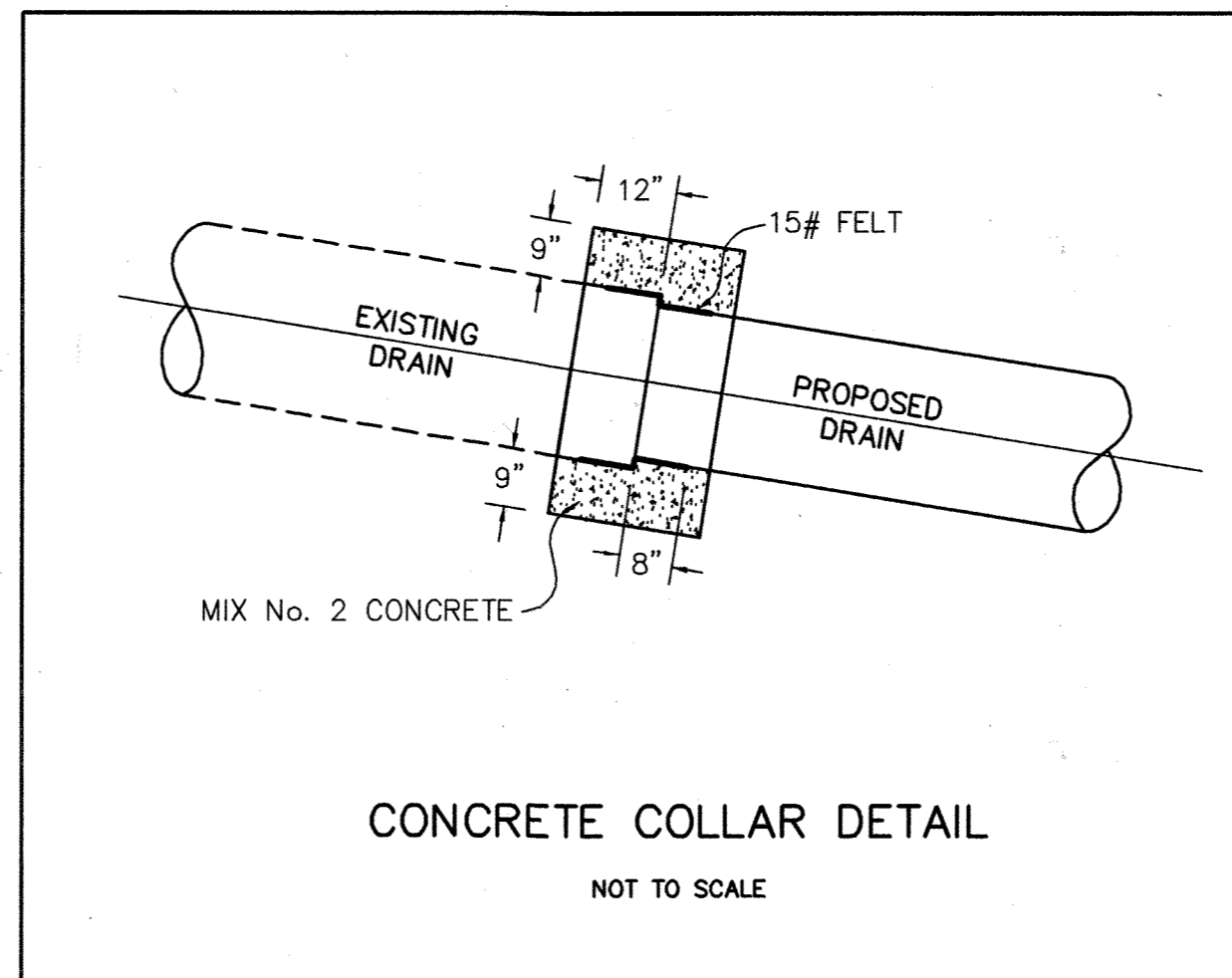
- Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
- Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.
- Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:
- Preferred - Apply 2 tons/acre dolomitic limestone (92,000 lbs/1000 sq. ft.) and 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs/acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq. ft.).
 - 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. Harrow or disk into upper three inches of soil.
- 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 - July 31, seed with 60 lbs/acre Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/1000 sq. ft.) of weeping lovegrass. During the period of October 16 - February 28, protect site by: Option 1 - Two tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option 2 - Use sod. Option 3 - Seed with 60 lbs/acre Kentucky 30 Tall Fescue and mulch with 2 tons/acre well anchored straw.
- Mulching - Apply 1 1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.
- Maintenance: Inspect all seeding areas and make needed repairs, replacements and reseeding.

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 means before seeding, if not previously loosened.
- Soil Amendments - Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).
- Seeding - For period March 1 - April 30 from August 15 - October 15, seed with 2 1/2 bushel per acre of annual ryegrass (3.2 lbs/1000 sq. ft.). For the period May 1 - August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 sq. ft.). For the period November 16 - February 28, protect site by applying 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.
- Mulching - Apply 1 1/2 tons/acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 ft. or higher, use 348 gal. per acre (8 gal/1000 sq. ft.) for anchoring.
- Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.

UTILITY NOTES

- CONTRACTOR SHOULD OPEN THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWNSLOPE) THE TRENCH.
- PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
- ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.



SEQUENCE OF CONSTRUCTION

TIMETABLE

- | | |
|--|---------|
| 1. OBTAIN GRADING PERMIT. | 1 WEEK |
| 2. NOTIFY RUSTY OBER AT THE APPLIED PHYSICS LABORATORY AT 443-778-0167 AT LEAST 10 DAYS PRIOR TO BEGINNING WORK. | 1 DAY |
| 3. NOTIFY THE HOWARD COUNTY DEPARTMENT OF PERMITS & LICENSES, GRADING AND SEDIMENT CONTROL, INSPECTIONS AT 410-313-1855, AT LEAST 48 HOURS PRIOR TO BEGINNING WORK. | 1 DAY |
| 4. CLEAR AND GRUB FOR PHASE I SEDIMENT AND EROSION CONTROL MEASURES ONLY. | 1 WEEK |
| 5. INSTALL PHASE I SEDIMENT CONTROL MEASURES AS FOLLOWS: | 3 DAYS |
| a. INSTALL SCE #1 AS SHOWN ON PLAN. INSTALL 15" SD ALIGNED WITH SCE #1. | 1 day |
| b. INSTALL TEMPORARY 24" SD DIVERSION FROM CUT-IN THRU M-6 AND PERMANENT STORM DRAIN FROM M-6 TO EX. I-24 AS SHOWN ON PLANS (EAST OF TRAP #1). INSTALL INLET PROTECTION ON INLETS I-22 & I-23. | 1 day |
| c. INSTALL S8F ALONG PERIMETER OF EX. PARKING LOT ADJACENT TO PROPOSED BLDG. #35 AS SHOWN ON PLAN. | 1/2 day |
| d. INSTALL S8F ALONG EDGE OF PROPOSED PARKING AREA EAST OF BUILDING #31. INSTALL AT GRADE INLET PROTECTION AROUND EXISTING TRENCH DRAIN SOUTH OF BUILDING #31. | 1/2 day |
| 6. NOTIFY THE HOWARD COUNTY DEPARTMENT OF PERMITS & LICENSES, GRADING AND SEDIMENT CONTROL, INSPECTIONS AT 410-313-1855 UPON COMPLETION OF INSTALLATION OF THE PHASE I SEDIMENT CONTROL DEVICES. | 1 DAY |
| 7. WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMAINDER OF SITE AS NECESSARY. SAW CUT EX. PAVEMENT AND GRADE FOR PROPOSED BUILDING. INSTALL RELOCATED 16" W. AND PROP. 15" SD FROM M-6 TO I-26. BLOCK FLOW FROM ENTERING I-26 AND MAINTAIN SHEET FLOW TO SSE. STABILIZE PARKING AREA WITH STONE WHEN GRADING IS COMPLETE AND BEGIN CONSTRUCTION OF BUILDING FOUNDATION. | 2 WEEKS |
| 8. CONSTRUCT PERMANENT ENTRANCE TO BLDG. #35. PROVIDE IMMEDIATE STONE STABILIZATION. | 1 WEEK |
| 9. UPON COMPLETION OF BUILDING SLAB AND STABILIZATION OF ADJACENT AREA, INSTALL CURB AND GUTTER, AND REMOVE INLET BLOCKING. | 1 WEEK |
| 10. GRADE PARKING LOT AREA EAST OF BLDG. #31, AND AREA SOUTH OF BLDG. #31. INSTALL STONE BASE, AND PAVE BOTH AREAS. | 1 WEEK |
| 11. INSTALL 15" SD FROM EX. I-24 TO PROP. I-25. EXCAVATE ONLY AS MUCH TRENCH AS CAN BE STABILIZED BY THE END OF THE WORK DAY, WORKING FROM DOWNSTREAM END UP. INSTALL CURB INLET PROTECTION AROUND I-25 WHEN COMPLETE. | 3 DAYS |
| 12. WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE PHASE I SEDIMENT CONTROLS, EXCEPT FOR SCE #1. | 1 DAY |
| 13. NOTIFY THE HOWARD COUNTY DEPARTMENT OF PERMITS & LICENSES, GRADING AND SEDIMENT CONTROL, INSPECTIONS AT 410-313-1855, AT LEAST 48 HOURS PRIOR TO BEGINNING PHASE II CONSTRUCTION. | 1 DAY |
| 14. CLEAR AND GRUB FOR PHASE II SEDIMENT AND EROSION CONTROL MEASURES ONLY. | 2 WEEKS |
| 15. INSTALL PHASE II SEDIMENT CONTROL MEASURES AS FOLLOWS: | 1 WEEK |
| a. INSTALL SILT FENCE AROUND PERIMETER OF SEDIMENT TRAP #1 AS SHOWN ON PLAN. EXCAVATE FOR AND INSTALL TRAP #1. | 1 week |
| b. INSTALL TWO (2) 24" PIPE SLOPE DRAINS, UNDER NORTH ENTRANCE TO SITE AS SHOWN ON PLANS. DRAINS TO DISCHARGE ON TO ROOF AND INTO SEDIMENT TRAP #1. | 1 week |
| c. INSTALL SCE #2 AS SHOWN ON PLAN. INSTALL TEMP. BERMS AND 15" SD BENEATH SCE #2. | 2 days |
| d. INSTALL S8F FOR SEDIMENT TRAP #3 AS SHOWN ON PLANS. EXCAVATE FOR AND INSTALL 12" BARREL FROM EXISTING INLET TO PIPE OUTLET OF TRAP #3, AS SHOWN ON PLANS. | 1 week |
| e. INSTALL PROP. 27" SD FROM EX. M-8 TO TEMP. RISER. EXCAVATE FOR AND INSTALL SEDIMENT TRAP #2 AS SHOWN ON PLAN. INSTALL TEMP. SWALL LEADING TO SED. TRAP #2, AND TEMP. BERM AROUND UPSLOPE PERIMETER OF SED. TRAP #2. | 1 week |
| 16. NOTIFY THE HOWARD COUNTY DEPARTMENT OF PERMITS & LICENSES, GRADING AND SEDIMENT CONTROL, INSPECTIONS, AT 410-313-1855 UPON COMPLETION INSTALLATION OF THE PHASE II SEDIMENT CONTROL DEVICES. | 1 DAY |
| 17. WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMAINDER OF SITE AS NECESSARY. | 2 WEEKS |
| 18. DIRECT WATER FROM EX. I-8 TO SED. TRAP #3 BY INSTALLING A PORTTOP 44" PERMANENT STORM DRAIN SYSTEM FROM M-6 TO I-6. DELIVER TO TRAP #3 AT APPROXIMATELY 35' OF PIPE. PIPE TO DISCHARGE INTO SED. TRAP #3. | 1 WEEK |
| 19. REGRADE SITE, BEGINNING WITH THE LOT ON THE NORTH SIDE OF EX. BLDG. #31, AND WORKING WITHIN THE LIMITS OF THE PHASE II WORK AREA. INSTALL DIVERSION DIKES AS NECESSARY TO DIRECT DIRTY RUNOFF FROM FILL STABILIZED SEDIMENT TRAP #3. | 3 WEEKS |
| 20. BEGIN CONSTRUCTION OF BUILDING AND UTILITY INSTALLATION. STORM DRAINS TO BE INSTALLED FROM DOWNSTREAM END UP TO ENSURE ALL INLETS ARE CAPABLE OF CONVEYING DIRTY WATER. FINE GRADE AREAS TO BE PAVED, INSTALL CURB AND GUTTER, AND PLACE STONE BASE. DELAY INSTALLATION OF INLETS I-1 AND I-2, AND STORMCEPTOR I AND APPROXIMATELY 130' OF PIPE. PIPES TO DISCHARGE INTO SED. TRAP #2 WHERE APPROPRIATE. | 3 WEEKS |
| 21. WHEN ALL UPSTREAM DRAINAGE AREAS ARE PERMANENTLY STABILIZED, AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, CONVERT TRAP #1 AND COMPLETE STORM DRAIN FROM EX. BLDG. #31 TO TRAP #1. STABILIZE AREAS TO BE PAVED WITH STONE BASE. | 1 WEEK |
| 22. WHEN ALL UPSTREAM DRAINAGE AREAS ARE PERMANENTLY STABILIZED, FLUSH SD SYSTEM FROM INLETS I-4, I-9, AND I-12 THRU I-4 THROUGH TRAP. CONVERT TRAP #2 AND COMPLETE SD INSTALLATION THROUGH TRAP. STABILIZE AREAS TO BE PAVED WITH STONE BASE. | 1 WEEK |
| 23. COMPLETE CONSTRUCTION OF BUILDINGS 29 AND 35, AND PAVE ALL REMAINING AREAS TO BE PAVED WITHIN THE LIMITS OF PHASE II. PERMANENTLY STABILIZE ALL OTHER AREAS. | 1 MONTH |
| 24. REMOVE PSD-24, STABILIZE, AND PAVE ENTRANCE. | 1 WEEK |
| 25. PERMANENTLY STABILIZE ALL REMAINING AREAS. | 1 WEEK |
| 26. WHEN UPSTREAM DRAINAGE AREA IS PERMANENTLY STABILIZED, AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, FLUSH UPSTREAM STORM DRAIN SYSTEM AND CLEAN OUT SEDIMENT TRAP #1. WITH A 5-DAY DRY FORECAST, EXCAVATE FOR AND INSTALL SAND FILTER. INSTALL 24" SD FROM ES-2 TO PROP. MH-6. REMOVE TEMPORARY 24" SD DIVERSION FROM MH-6. STABILIZE ALL AREAS DISTURBED BY THIS PROCESS. | 1 WEEK |
| 27. ONCE ALL AREAS HAVE BEEN STABILIZED, AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES, AND STABILIZE ANY AREAS DISTURBED BY THIS PROCESS. | 1 WEEK |



Amos Bailey Arnold + Associates, Inc.
3600 Clipper Mill Road, Suite 300
Baltimore, Maryland 21211
Phone: 410.235.9112 Fax: 410.235.3715



Century Engineering, Inc.
32 West Road Towson, Maryland 21284
Voice (410) 823-8070
Fax (410) 823-2184

Project Title:
SERVICES AREA COMPLEX
TRADES BLDG. - #29
MULTI-USE BLDG. - #35

JHU - AFL
1100 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20713-6099

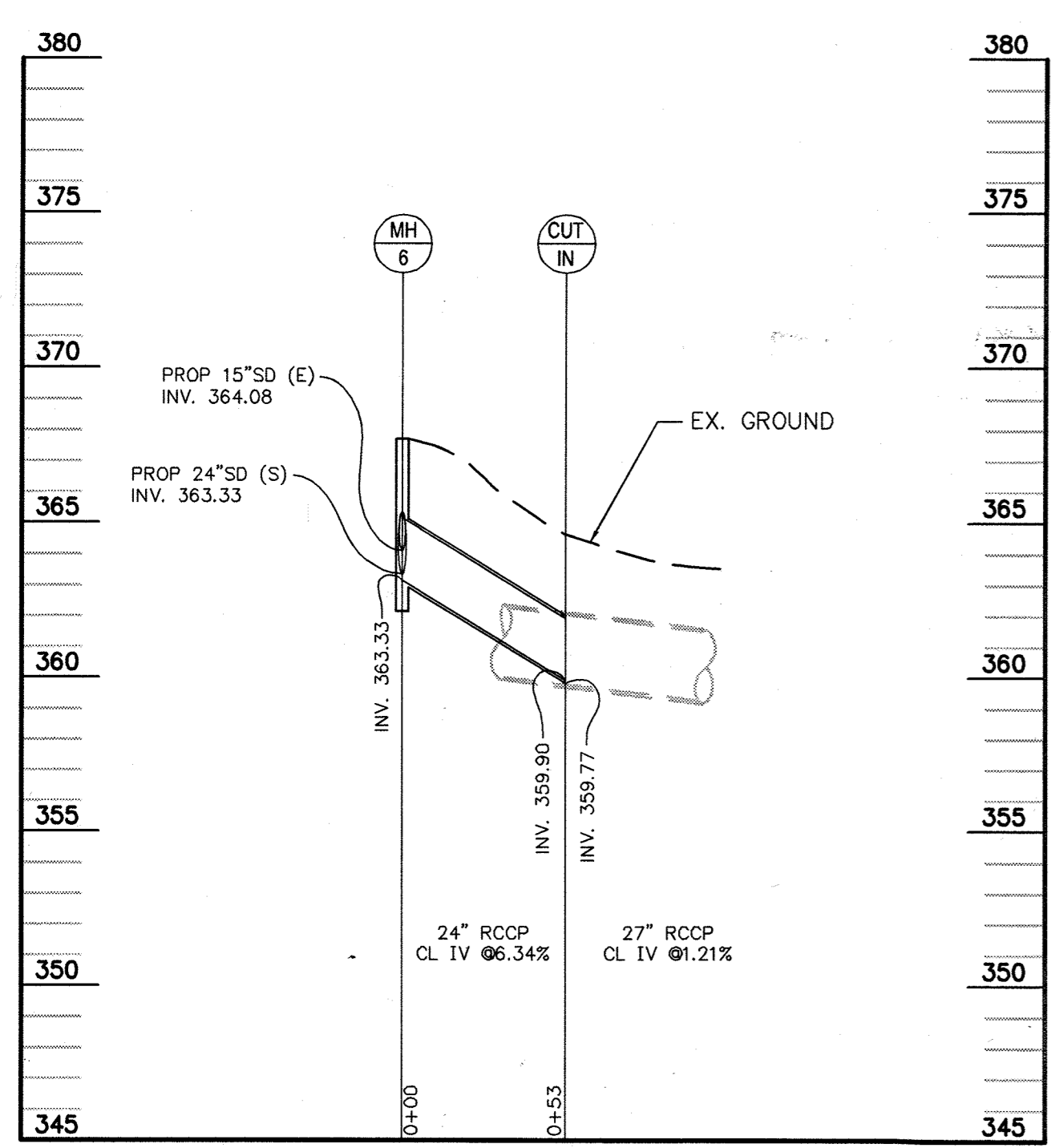
Revisions:

Certification:

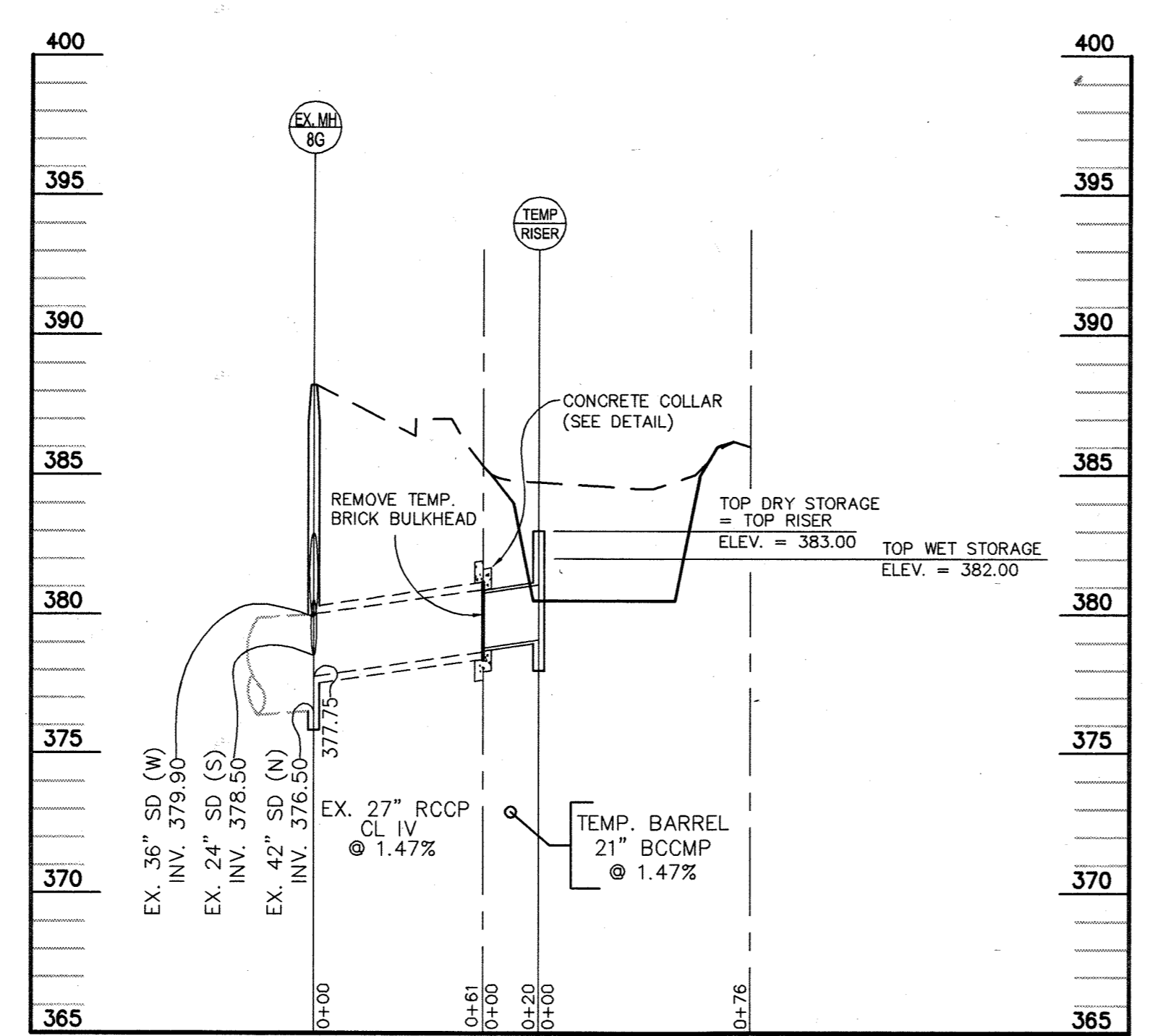
Issued for:
 REVIEW NOT FOR CONSTRUCTION
 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
EROSION AND SEDIMENT CONTROL NOTES AND SPECIFICATIONS

Project No.: Sheet No.:
Scale: 1" = 50'
Date: 12-10-03
C-029
Sheet 29 of 31



TEMPORARY STORM DRAIN PROFILE
PROP. MH-6 TO CUT-IN
SCALE { HORIZ: 1" = 50'
VERT: 1" = 5'



TEMPORARY RISER PROFILE
SEDIMENT TRAP #2
SCALE { HORIZ: 1" = 50'
VERT: 1" = 5'

BY THE ENGINEER:
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.

ROBERT G. BATHURST 2/24/04
SIGNATURE OF ENGINEER DATE

BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE 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.

JAMES E. LOESCH 3/2/04
SIGNATURE OF DEVELOPER DATE

REVIEWED FOR HOWARD S.C.D. & MEETS TECHNICAL REQUIREMENTS.

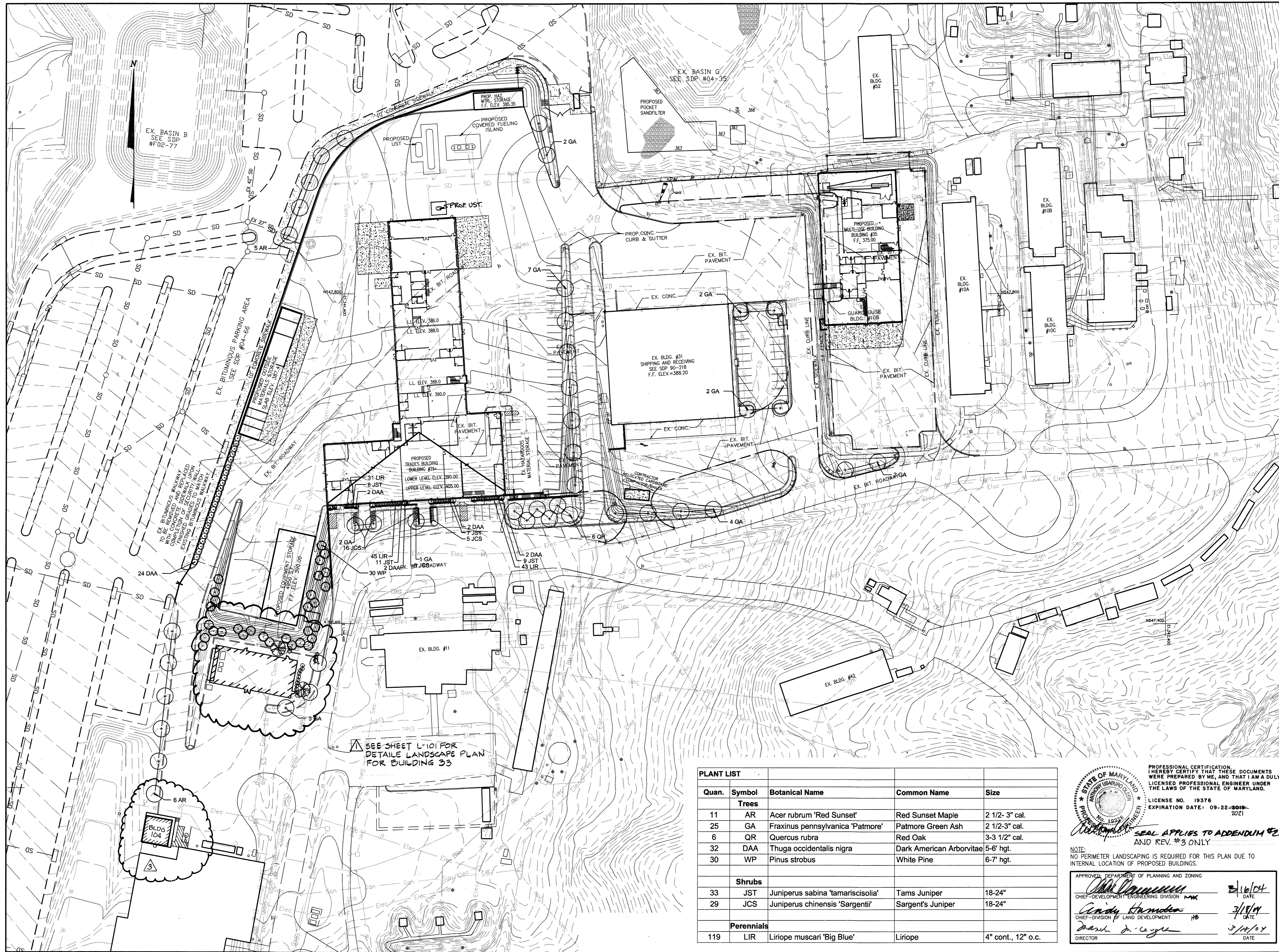
JOHN K. ROBERTS 3/10/04
HOWARD S.C.D. DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF DEVELOPMENT ENGINEERING DIVISION MKK 2/16/04 DATE

CHIEF DIVISION OF LAND DEVELOPMENT 3/18/04 DATE

DIRECTOR 3/14/04 DATE



SEE SHEET L-101 FOR
 DETAILED LANDSCAPE PLAN
 FOR BUILDING 33

Quan.	Symbol	Botanical Name	Common Name	Size
Trees				
11	AR	Acer rubrum 'Red Sunset'	Red Sunset Maple	2 1/2- 3" cal.
25	GA	Fraxinus pennsylvanica 'Patmore'	Patmore Green Ash	2 1/2-3" cal.
6	QR	Quercus rubra	Red Oak	3-3 1/2" cal.
32	DAA	Thuja occidentalis nigra	Dark American Arborvitae	5-6' hgt.
30	WP	Pinus strobus	White Pine	6-7' hgt.
Shrubs				
33	JST	Juniperus sabinia 'tamariscifolia'	Tams Juniper	18-24"
29	JCS	Juniperus chinensis 'Sargentii'	Sargent's Juniper	18-24"
Perennials				
119	LIR	Liriope muscari 'Big Blue'	Liriope	4" cont., 12" o.c.

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS
 WERE PREPARED BY ME, AND THAT I AM A DULY
 LICENSED PROFESSIONAL ENGINEER UNDER
 THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NO. 19376
 EXPIRATION DATE: 09-22-2019-2021
 SEAL APPLIES TO ADDENDUM #2
 AND REV. #3 ONLY

NOTE:
 NO PERIMETER LANDSCAPING IS REQUIRED FOR THIS PLAN DUE TO
 INTERNAL LOCATION OF PROPOSED BUILDINGS.

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

2/16/04
 DATE
 3/15/04
 DATE
 3/15/04
 DATE

aba
 ARCHITECTS
 Amos Bailey Arnold
 + Associates, Inc.
 3600 Clipper Mill Road, Suite 300
 Baltimore, Maryland 21211
 Phone: 410.235.9812 Fax: 410.235.3715

mm
 Century Engineering, Inc.
 32 West Road Townon,
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 Voice (410) 823-8070
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SLATER
 ASSOCIATES INC.
 Landscape Architecture • Planning • Land Planning
 5560 Stierrett Pl. Suite 302 • Columbia, MD 21045
 410.992.0001 • phone 410.992.0212 • fax
 slater@erols.com • www.slaterassoc.com

Project Title:
**SERVICES AREA
 COMPLEX**
 TRADES BLDG. - #29
 MULTI-USE BLDG. - #35

JHU - APL
 11120 JOHN HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099

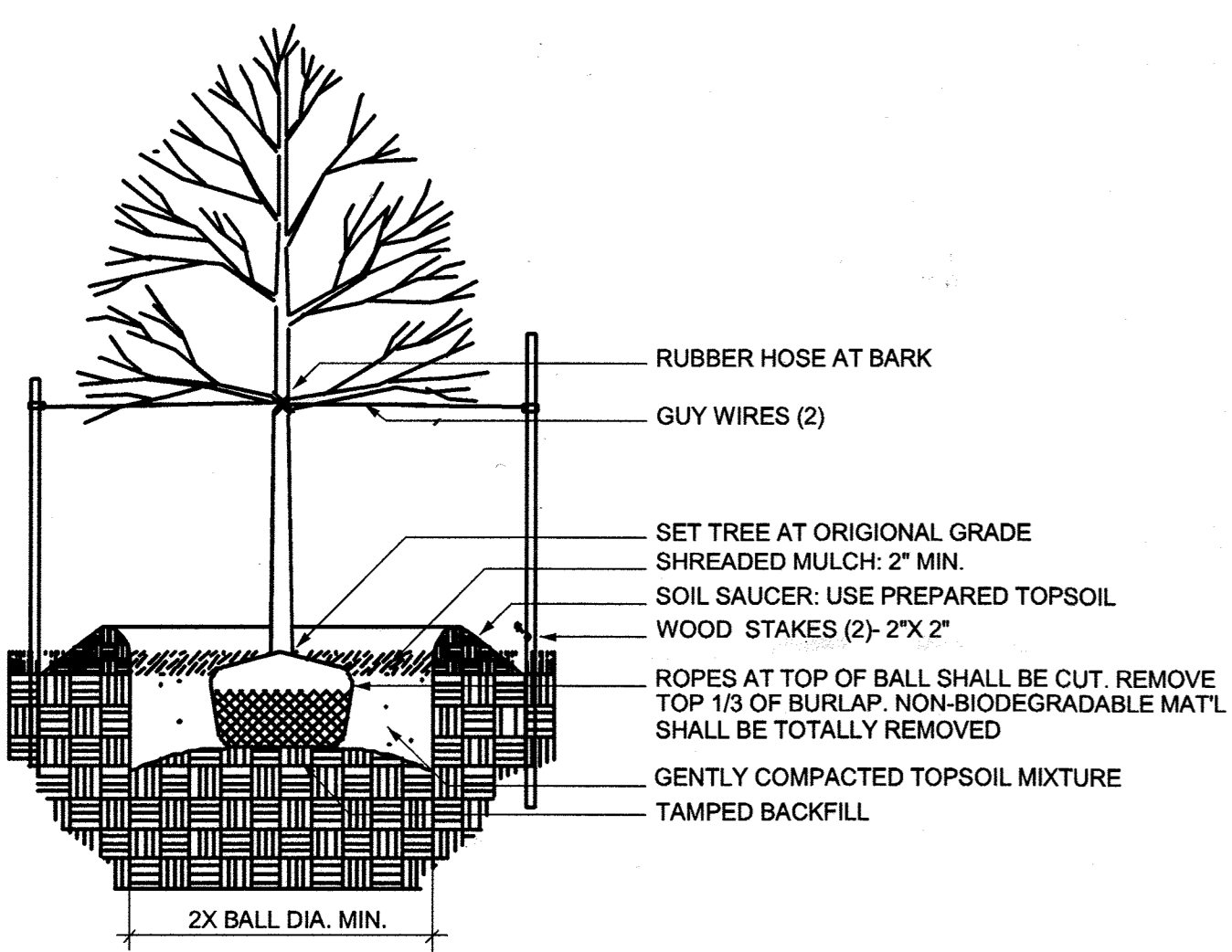
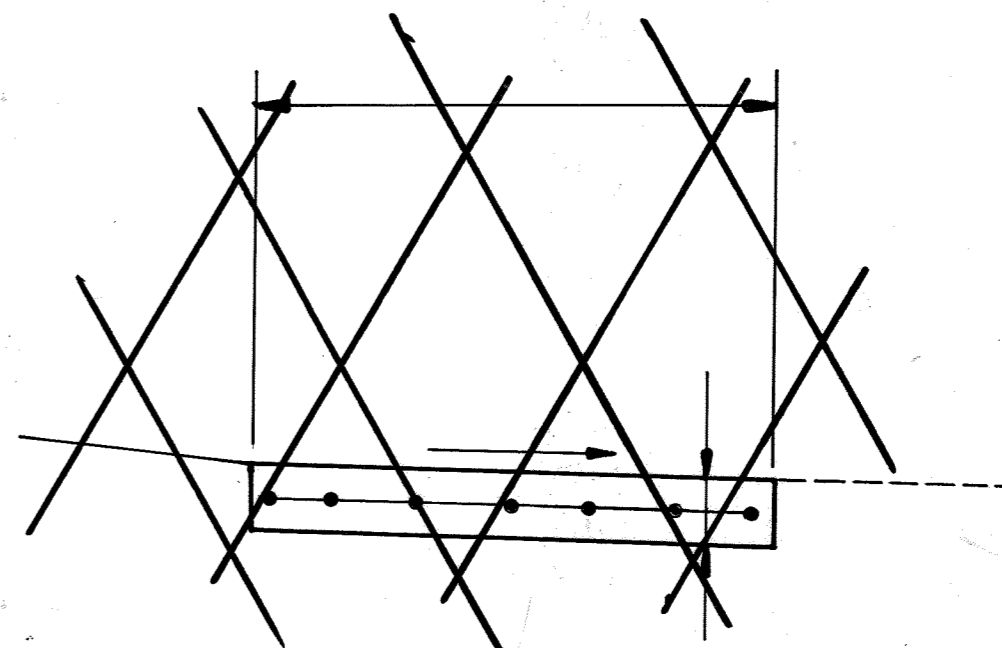
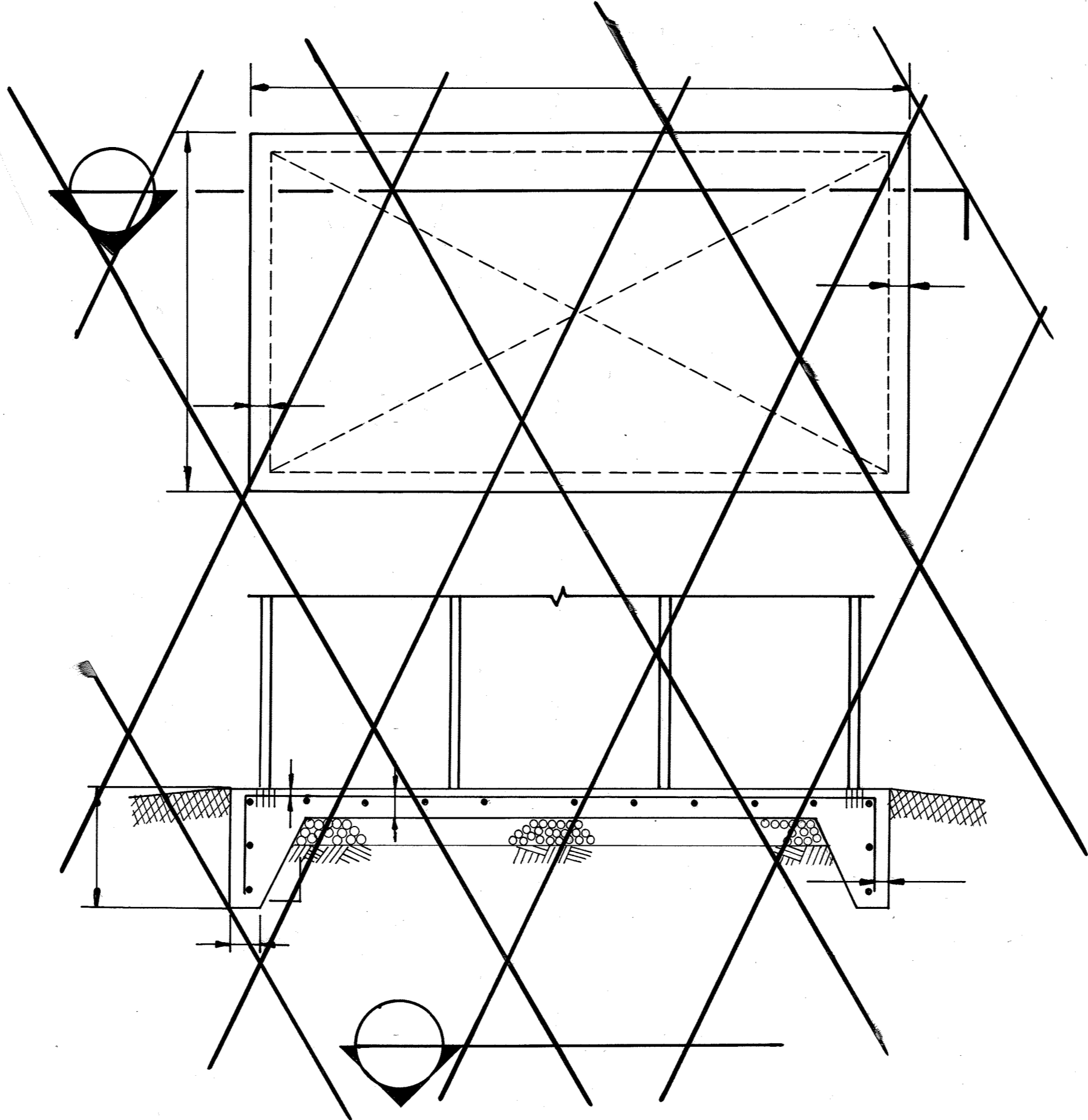
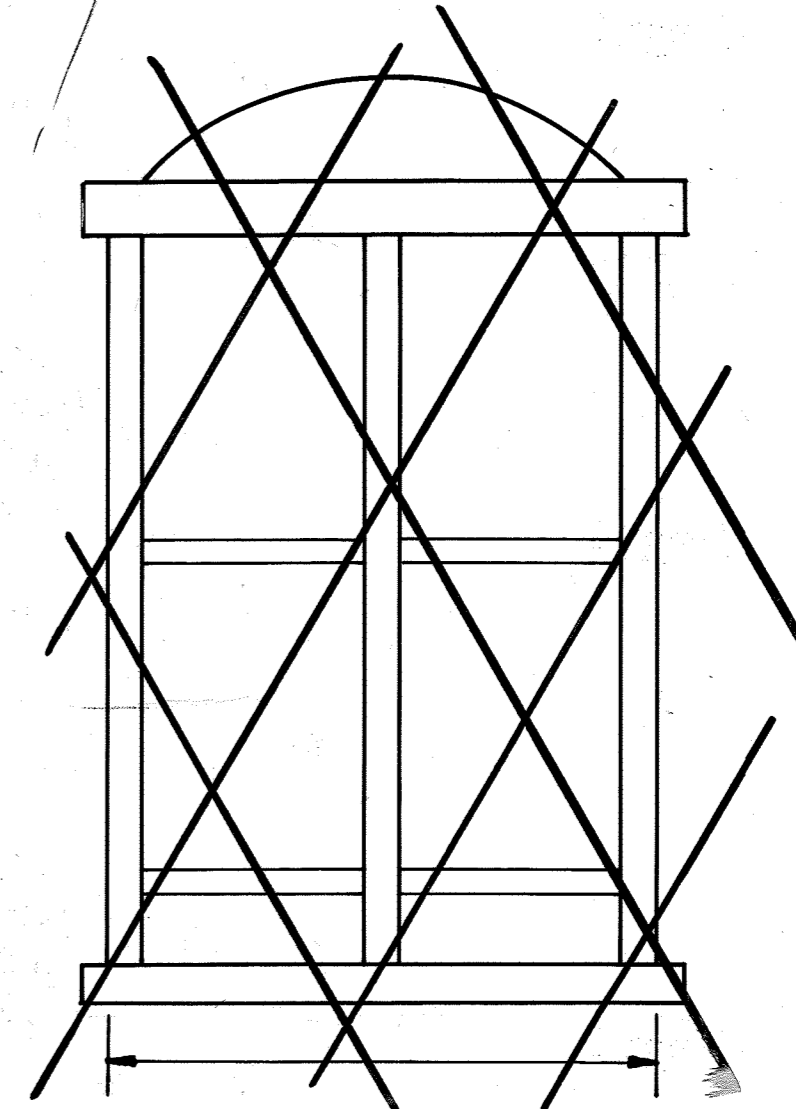
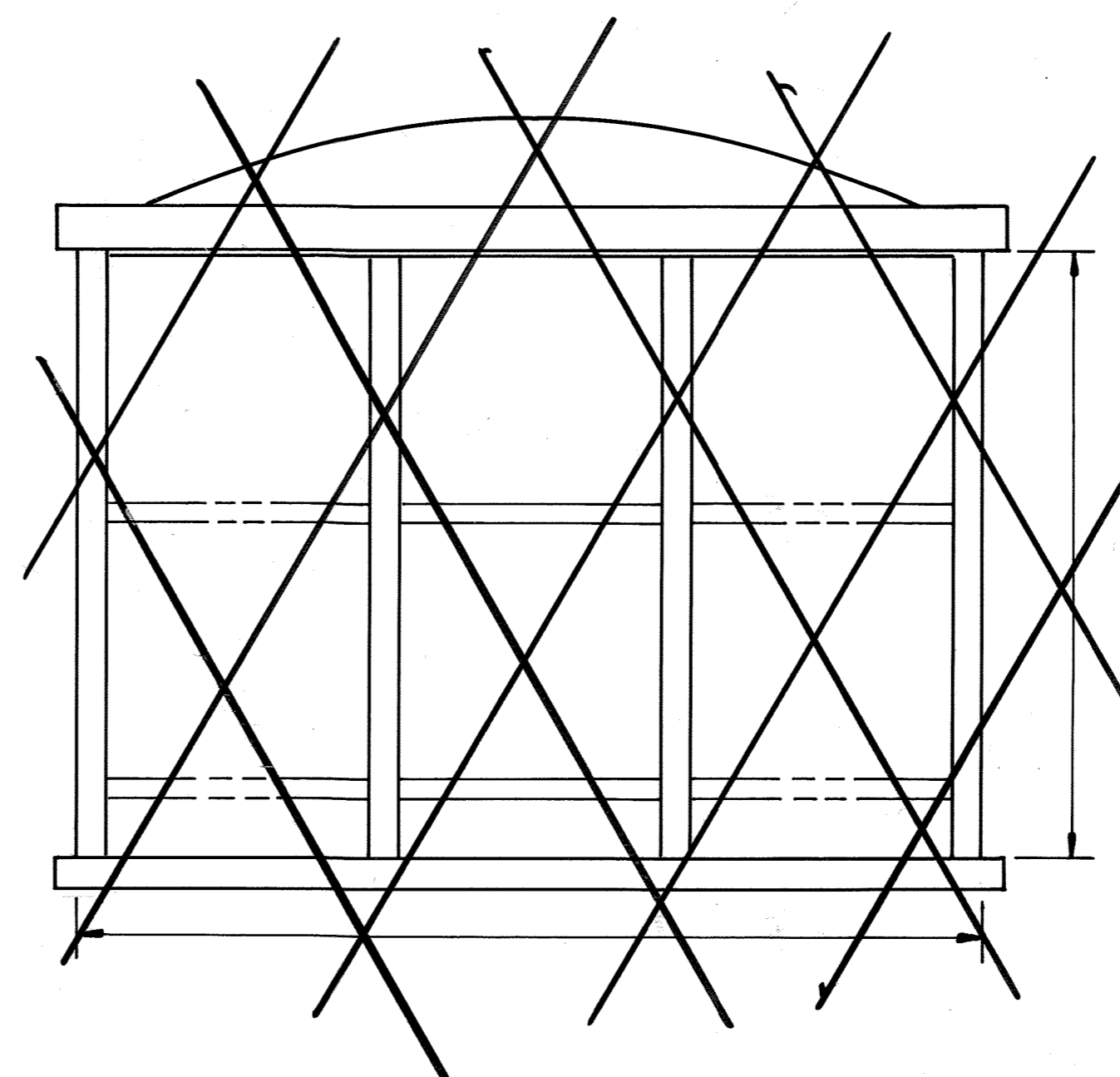
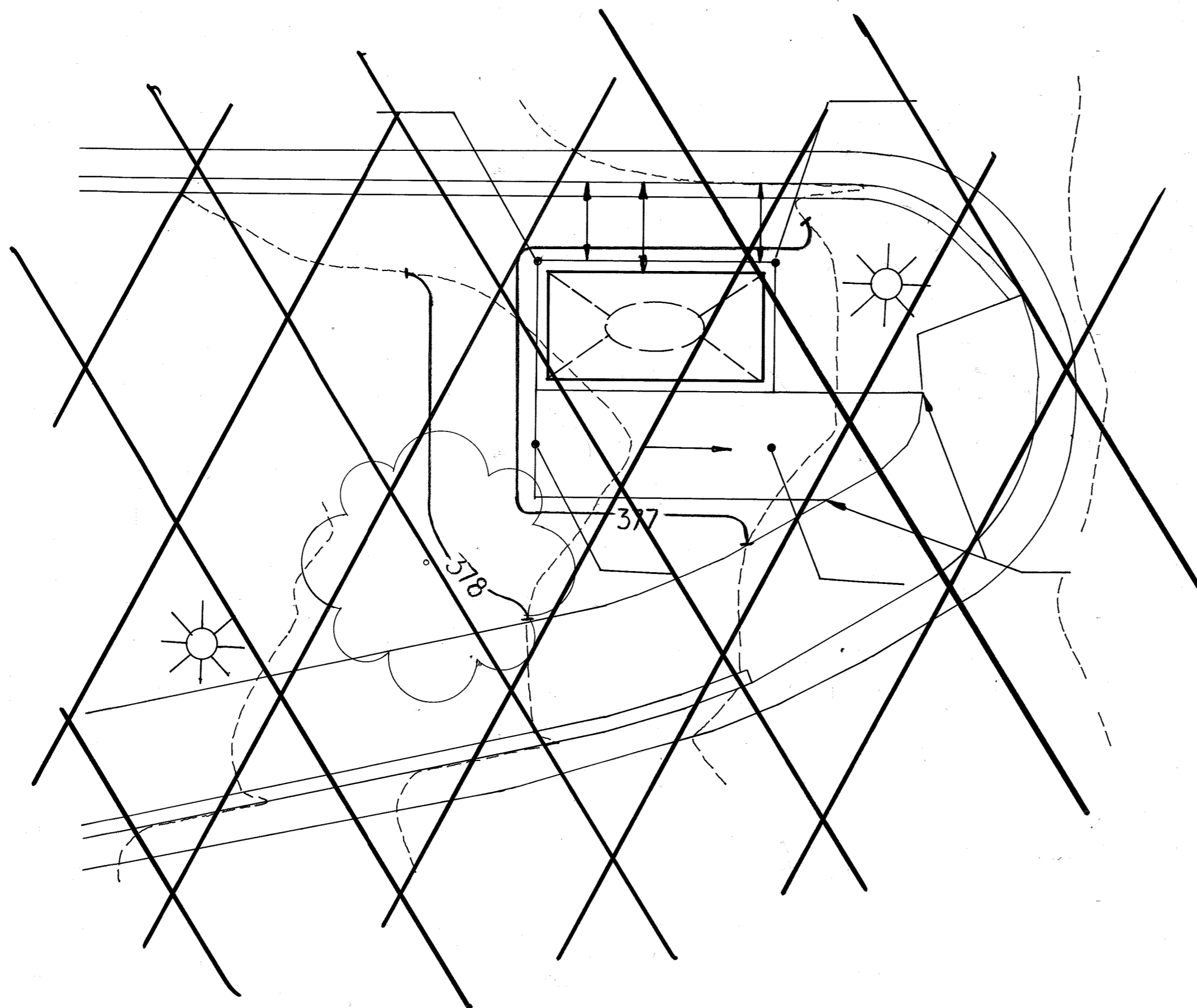
Revisions:
 Δ ADDENDUM # 2 4/2015
 Δ ADDED BLDG. 104 1/2021

Certification:

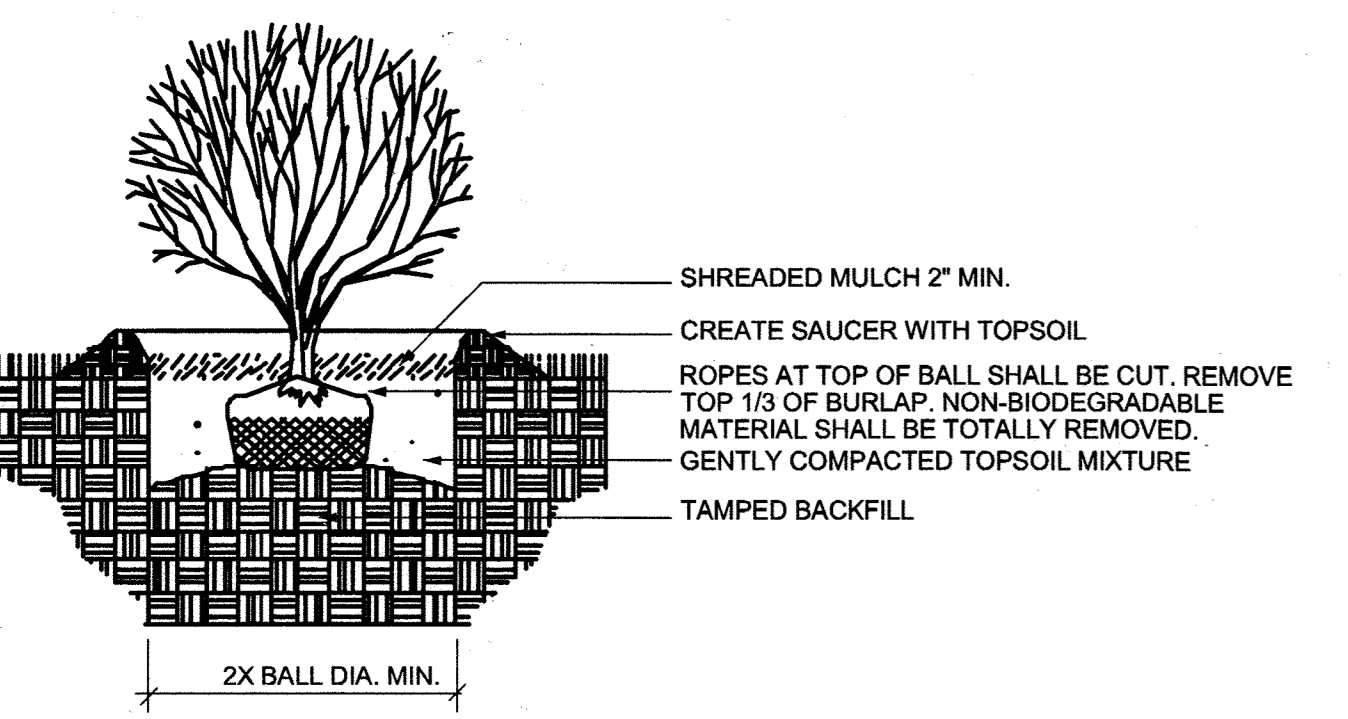
Issued for:
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 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
LANDSCAPE PLAN

Project No.: Sheet No.:
 Scale: 1" = 50'
 Date: 12-10-03 Sheet 30 of 31



A DECIDUOUS TREE PLANTING
not to scale



B SHRUB PLANTING
not to scale

Project Title:
SERVICES AREA COMPLEX
TRADES BLDG. - #29
MULTI-USE BLDG. - #35

JHU - AFL
11020 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20723-6099

Revisions:

Certification:

Robert J. [Signature]
2/24/04
SEAL

Issued for:
 REVIEW NOT FOR CONSTRUCTION
 BID CONSTRUCTION
 PERMIT 90% CD SUBMISSION

Drawing Title:
LANDSCAPE DETAILS


Project No.: Sheet No.:
Scale: 1" = 50'
Date: 12-10-03 Sheet 31 of 31

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 2/16/04
CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE
[Signature] 3/18/04
CHIEF-DIVISION OF LAND DEVELOPMENT DATE
[Signature] 3/18/04
DIRECTOR DATE

NOTE: REV 2 SHOWS THE REMOVAL OF A SECOND TREE ON THE CURVED ISLAND AND KEEPING THE SITE LIGHTS AND ELECTRIC SERVICE ON THE NORTH EDGE OF THE EXISTING PARKING LOT.

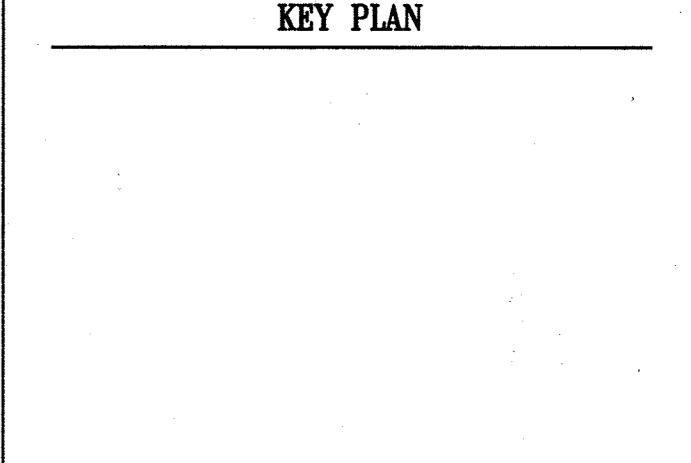
REVISIONS		
1	NEW SHEET	4/19
2	REMOVE TREES & KEEP LIGHTS	11/19

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099

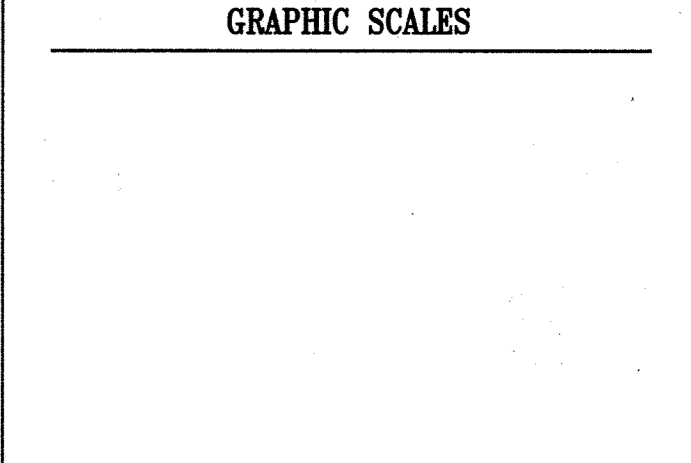


SERVICES AREA COMPLEX
 BLDGS 29, 35 AND 33

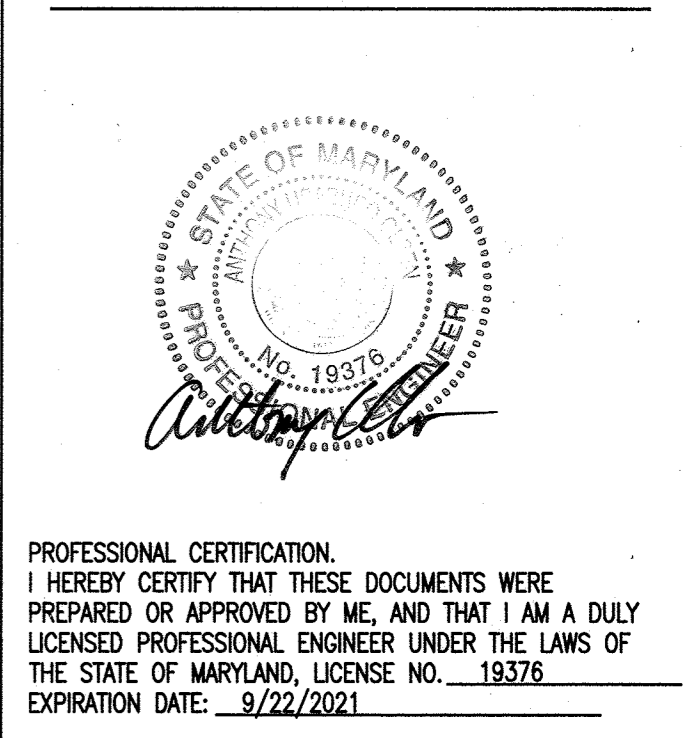
KEY PLAN



GRAPHIC SCALES



SIGNATURE

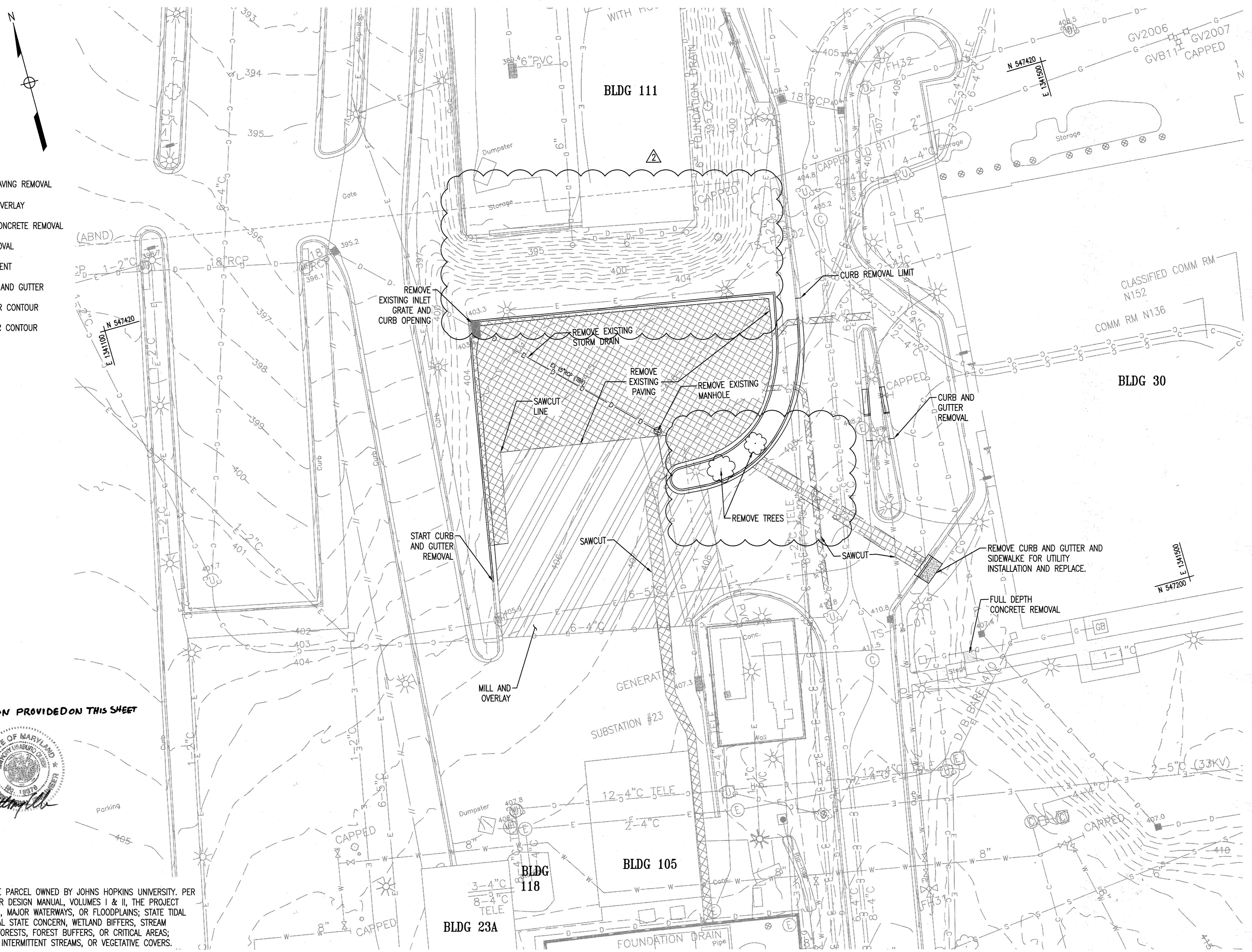


PROFESSIONAL CERTIFICATION:
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376.
 EXPIRATION DATE: 9/22/2021


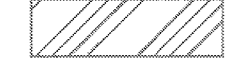
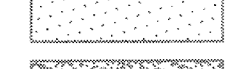
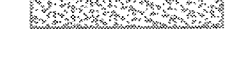

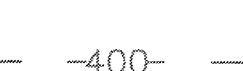


WRA
 Whitman, Reardon & Associates, LLP
 801 South Carolina Street, Baltimore, Maryland 21231

REVISED EXISTING CONDITIONS AND DEMOLITION PLAN
 Drawing No.
C-032

Scale: 1" = 20'
 Date: 4/30/2019 Sheet 32 of 47
 Des: RFS Drawn: RFS Check: JTD



LEGEND

-  FULL DEPTH PAVING REMOVAL
-  2" MILL AND OVERLAY
-  FULL DEPTH CONCRETE REMOVAL
-  SIDEWALK REMOVAL
-  SAWCUT PAVEMENT
-  REMOVE CURB AND GUTTER
-  -400- EXISTING MAJOR CONTOUR
-  -399- EXISTING MINOR CONTOUR


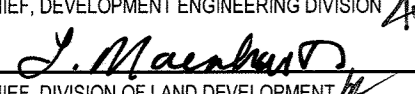

THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

ANTHONY U. OLSEN P.E.
 MD REG # 19376
 EXP. DATE 9/22/21

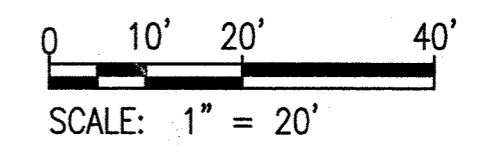


NOTE: THIS PROJECT SITE LIES WITHIN A 360.58 ACRE PARCEL OWNED BY JOHNS HOPKINS UNIVERSITY. PER TABLE 5.1 IN THE 2009 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II, THE PROJECT SITE IS NOT LOCATED NEAR FEDERAL WETLANDS, MAJOR WATERWAYS, OR FLOODPLAINS; STATE TIDAL AND NONTIDAL WETLANDS, WETLANDS OF SPECIAL STATE CONCERN, WETLAND BUFFERS, STREAM BUFFERS, PERENNIAL STREAMS, FLOODPLAINS, FORESTS, FOREST BUFFERS, OR CRITICAL AREAS; ENHANCED STREAM BUFFERS, SPRINGS, SEEPS, INTERMITTENT STREAMS, OR VEGETATIVE COVERS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

	12-12-19
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
	12-17-19
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
	12-18-19
DIRECTOR	DATE

PLAN VIEW
 SCALE: 1" = 20'



AS-BUILT

SDP-04-76

NOTE: REV 2 IS FOR MOVING THE AC CHILLER PADS TO THE EAST SIDE OF THE PROPOSE BUILDING AND ADDING THE STAIRS TO THE SOUTH SIDE OF BUILDING 33. THE ELEVATION VIEWS HAVE BEEN UPDATED TO REFLECT THE ADDITION OF THE STAIRS.

KEYNOTES	
KEYNOTE	DESCRIPTION
05.09	INTEGRATED METAL GUTTER
05.10	METAL DOWNSPOUT
07.01	STANDING SEAM METAL ROOF
07.04	STANDING SEAM PROFILE 2" INSULATED METAL WALL PANEL- SILVER "GALVALUME" COLOR (BY PEMB) (AIR BARRIER) (R-13 CI)
07.07	2" INSULATED METAL WALL PANEL, COLOR TBD (BY PEMB) (AIR BARRIER) (R-13 CI)
07.11	2" INSULATED METAL WALL PANEL, BLACK COLOR (BY PEMB) (AIR BARRIER) (R-13 CI)
07.14	METAL PANEL FASCIA
07.15	METAL PANEL FASCIA TO MATCH STANDING SEAM METAL PANEL PROFILE
07.16	METAL PANEL SOFFIT
07.26	HIGHSIDE FLASHING
08.05	ALUMINUM STOREFRONT DOOR AND SIDELITE
09.15	CERAMIC WALL BASE AS SCHEDULED
26.10	LIGHT FIXTURE
28.01	SECURITY CAMERA

REVISIONS		
1	NEW SHEET	4/19
2	MOVE CHILLER PADS	11/19

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099

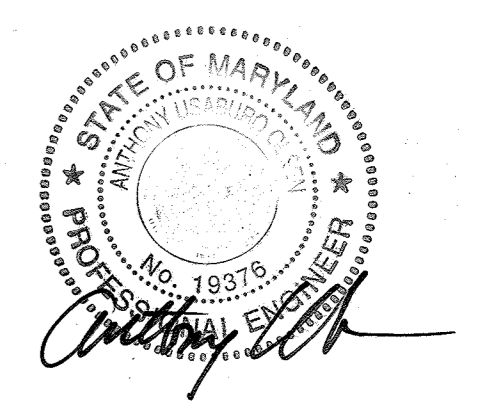


SERVICES AREA COMPLEX
 BLDGS 29, 35 AND 33

KEY PLAN

GRAPHIC SCALES

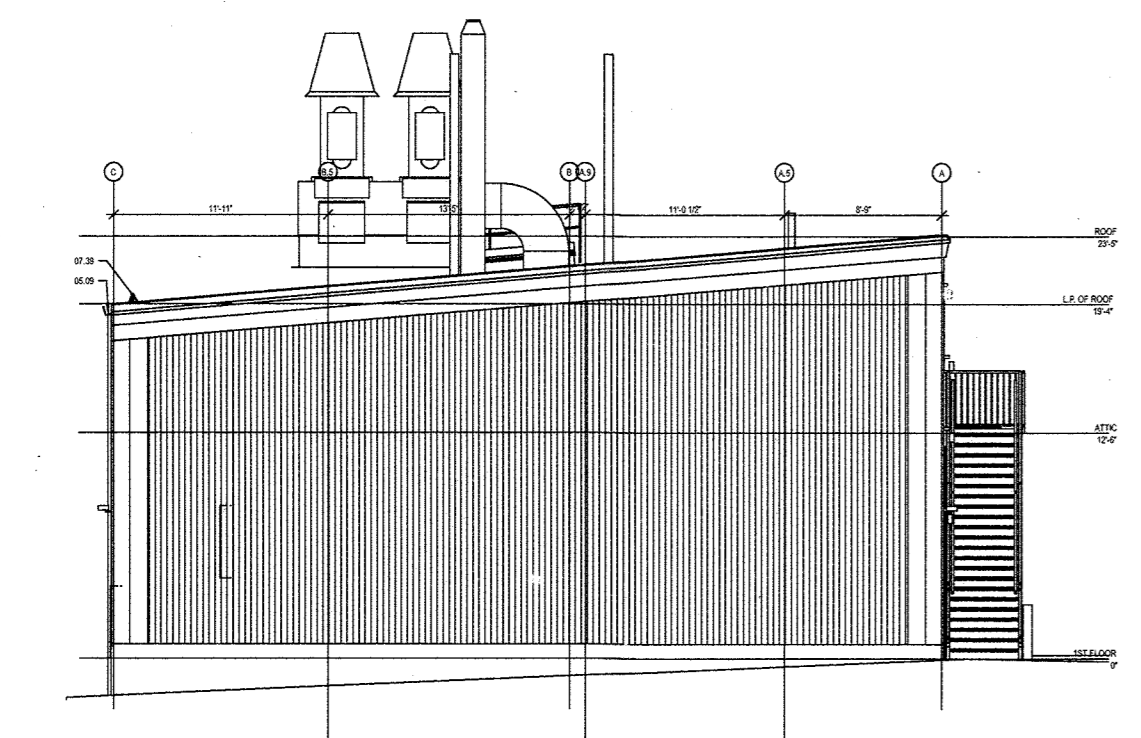
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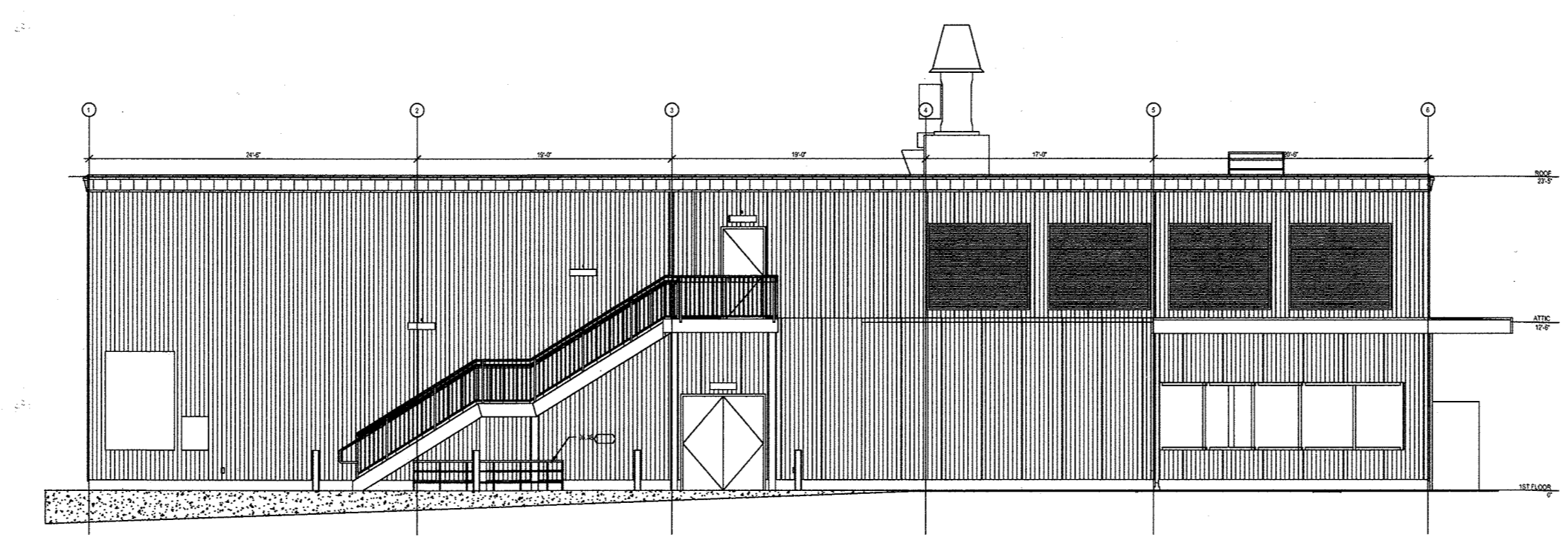
PROFESSIONAL CERTIFICATION:
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
 EXPIRATION DATE: 9/22/2021

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

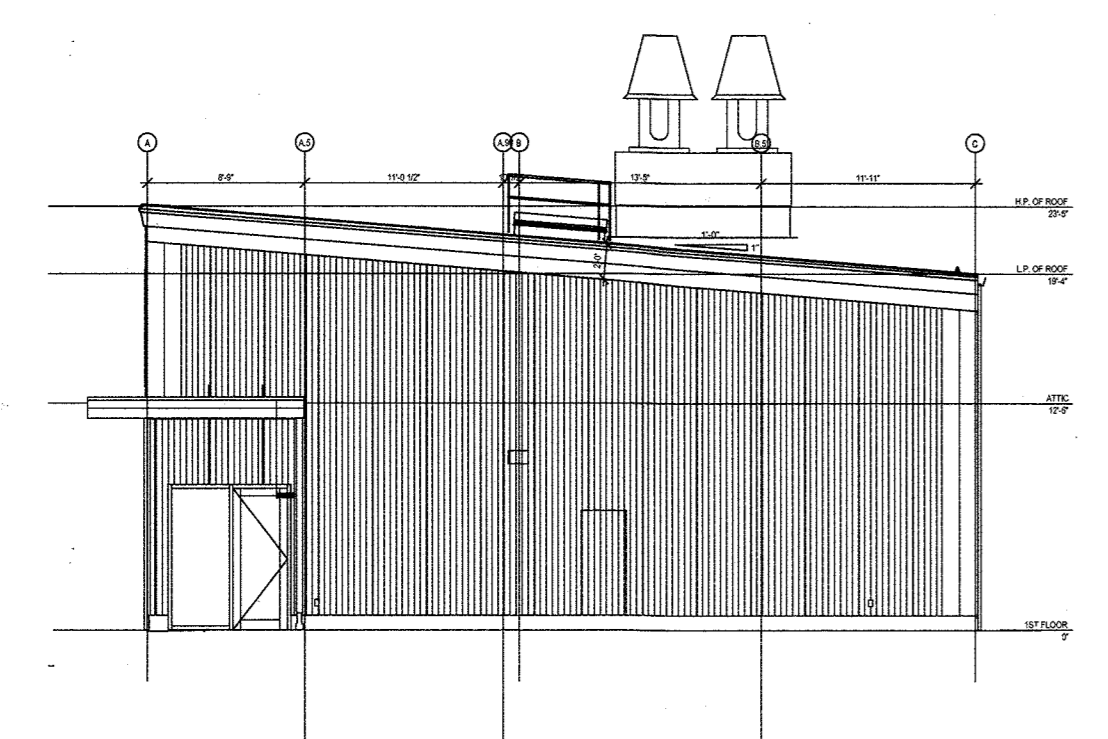
REVISED BUILDING 33 DIMENSIONS AND ELEVATIONS		
Drawing No.		
C-033		
Scale: 1" = 20'	Date: 4/30/2019	Sheet 33 of 47
Des: RFS	Drawn: RFS	Check: JTD



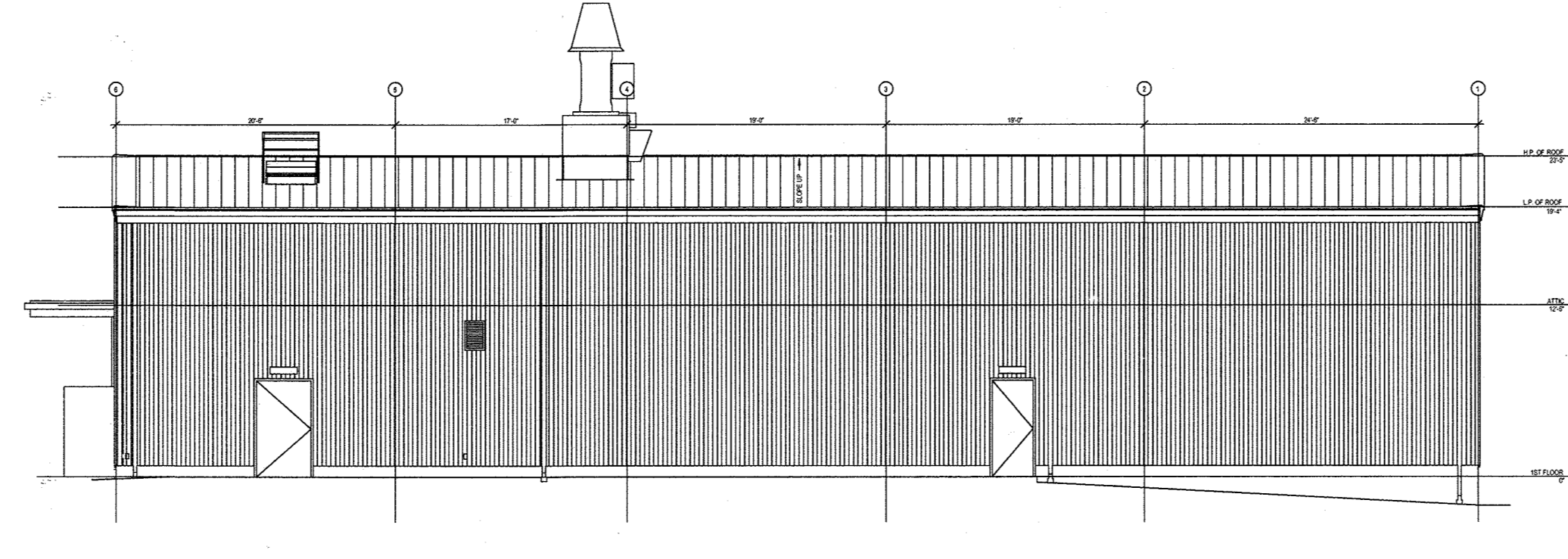
1 WEST ELEVATION
 SCALE: 1" = 10'



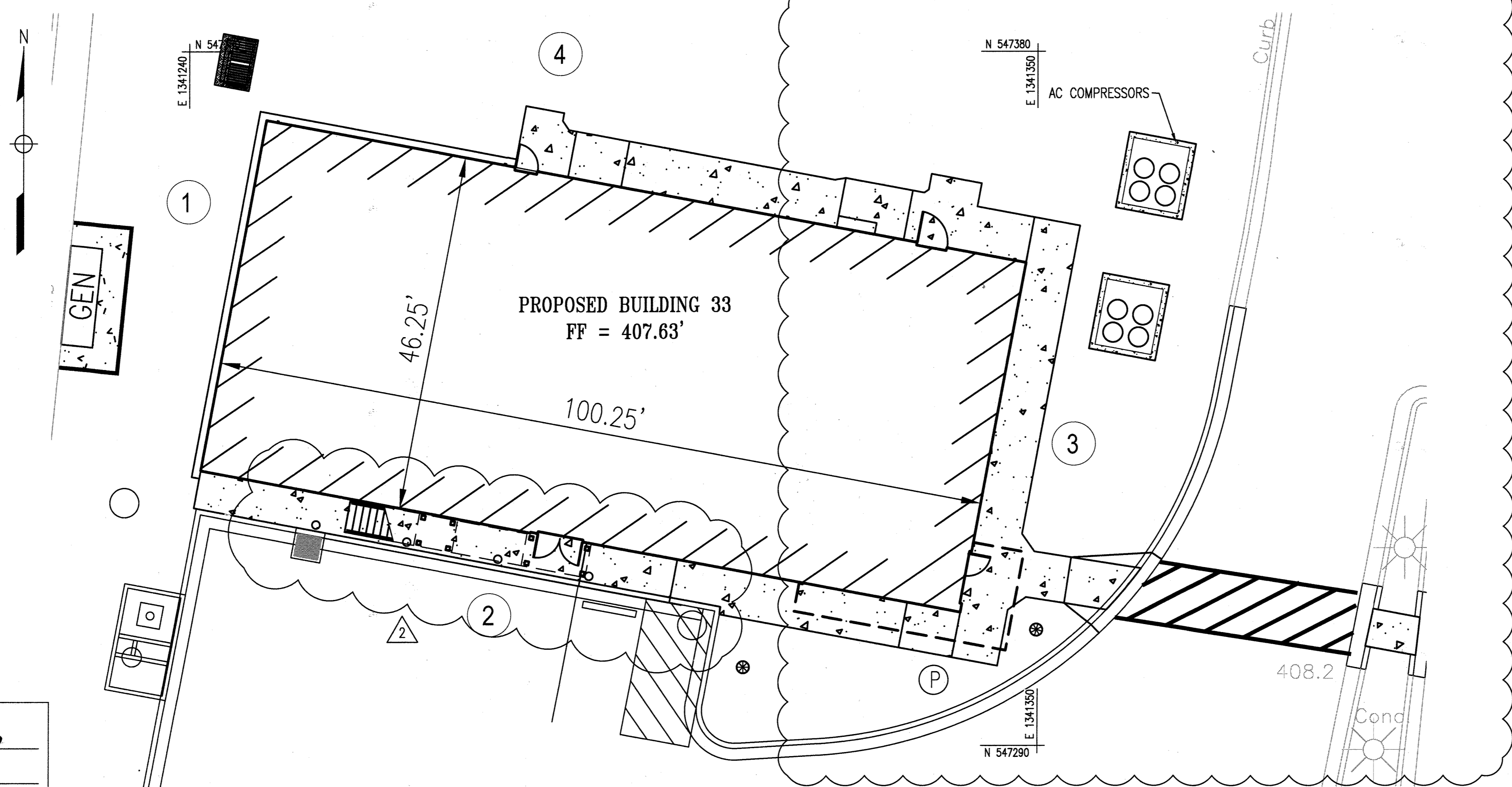
2 SOUTH ELEVATION
 SCALE: 1" = 10'



3 EAST ELEVATION
 SCALE: 1" = 10'

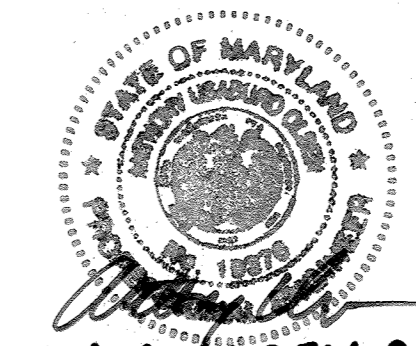


4 NORTH ELEVATION
 SCALE: 1" = 10'

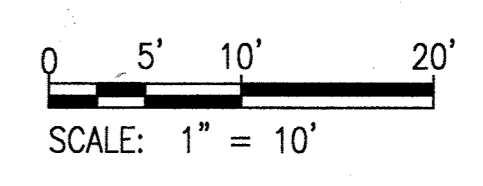


PLAN VIEW
 SCALE: 1" = 10'

THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET



ANTHONY U. OLSEN P.E.
 MD REG # 19376
 EXP DATE 9/22/21



APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>[Signature]</i>	DATE: 12-12-19
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE: 12-17-19
<i>[Signature]</i>	DATE: 12-18-19
DIRECTOR	DATE:

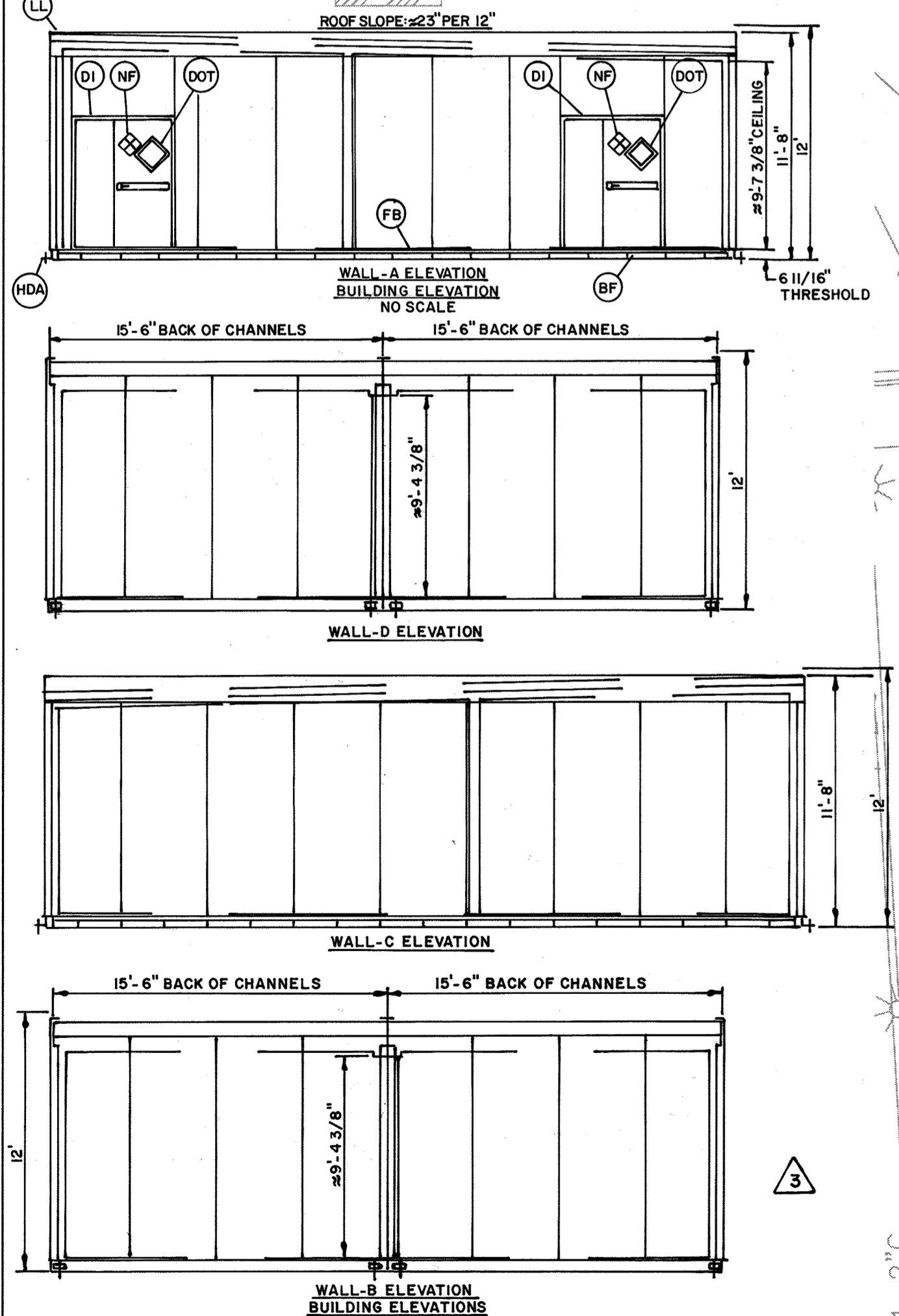
AS-BUILT

SDP-04-76

FILENAME: W:\6894-GEN-CARD\NET\LINE\48944830-GEN33

LEGEND

- | | | |
|----------|----------|--------------------------|
| EXISTING | PROPOSED | MAJOR CONTOUR |
| -435- | 410 | MINOR CONTOUR |
| -434- | 409 | PROPERTY LINE |
| | | TREE |
| | | CONCRETE CURB AND GUTTER |
| -X-X- | | FENCE |
| | | AIR CONDITIONING UNITS |
| | | PUMP STATION |
| | | STORM DRAIN INLET |
| | | CURB INLET |
| | | MANHOLE |
| | | STORM DRAIN PIPE |
| -W-W- | | WATER LINE |
| -G-G- | | GAS LINE |
| -UG- | | ELECTRIC LINE |
| -FM- | | FORCE MAIN |
| -C-C- | | COMM LINE |
| | | CONCRETE SIDEWALK |
| | | FULL DEPTH PAVING |
| | | MILL AND OVERLAY PAVING |

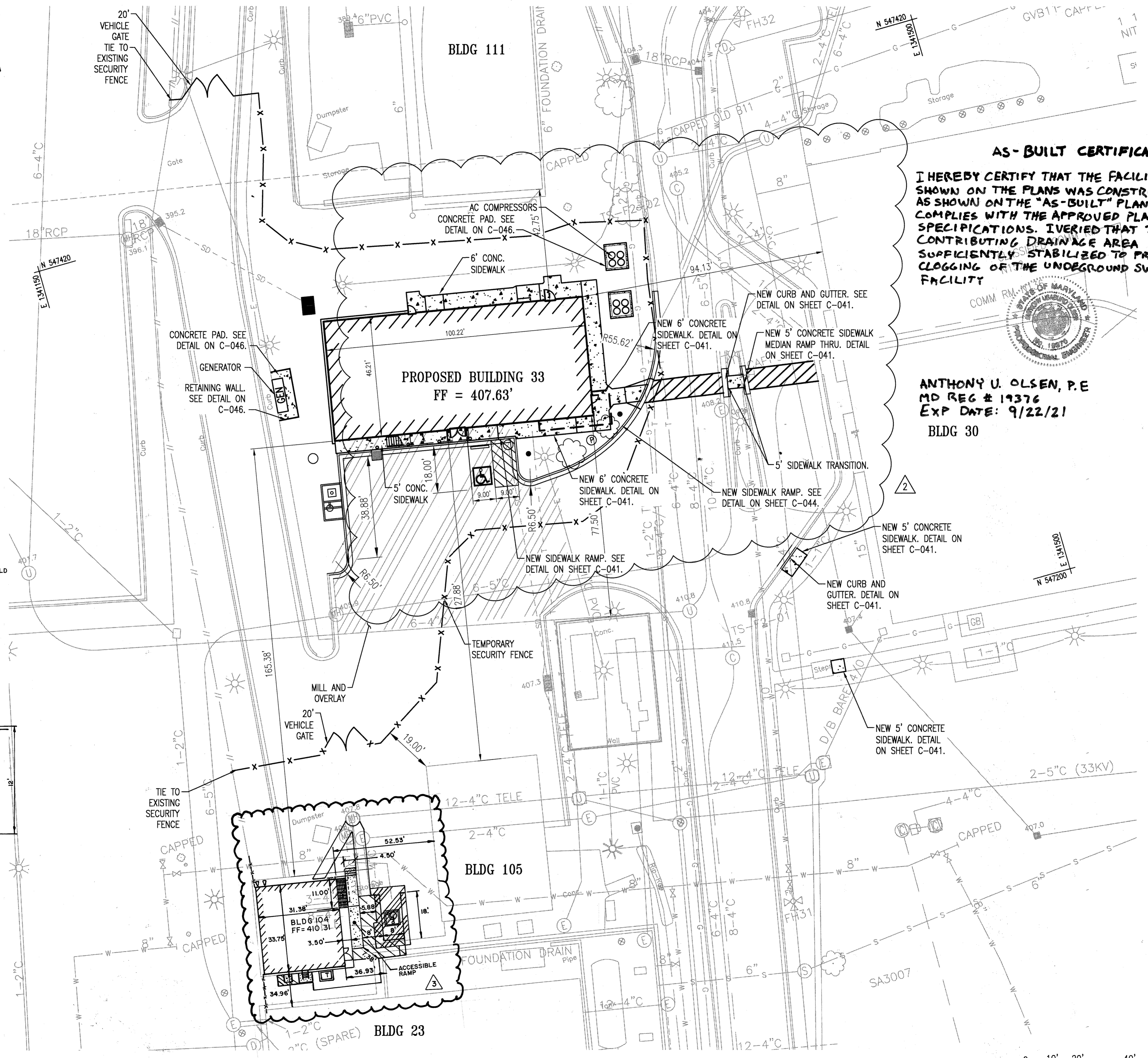


APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 12-12-19
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 12-17-19
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 12-18-19
 DIRECTOR



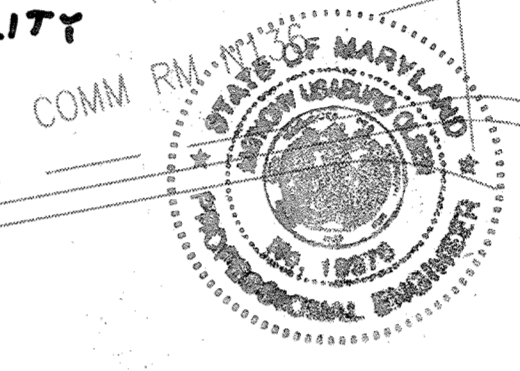
PLAN VIEW
 SCALE: 1" = 20'

NOTE: REV 2 IS FOR MOVING THE AC CHILLER PADS TO THE EAST SIDE OF THE PROPOSE BUILDING AND ADDING THE STAIRS TO THE SOUTH SIDE OF BUILDING 33. ADJUSTMENTS TO THE SIDEWALK AND UTILITIES TO ACCOMMODATE THE CHILLERS HAVE BEEN MADE.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLANS WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY

ANTHONY U. OLSEN, P.E
 MD REG # 19376
 EXP DATE: 9/22/21
 BLDG 30



REVISIONS		
1	NEW SHEET	4/19
2	MOVE CHILLER PADS	11/19
3	ADDED BLDG. 104	1/21

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099



SERVICES AREA COMPLEX
 BLDGS 29, 35 AND 33

KEY PLAN

GRAPHIC SCALES

SIGNATURE

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. 19376
 EXPIRATION DATE: 9/22/2021

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

REVISED SITE PLAN
 Drawing No.
C-034
 Scale: 1" = 20'
 Date: 4/30/2019 Sheet 34 of 47
 Des: RFS Drawn: RFS Check: JTD

AS-BUILT

SDP-04-76

NOTE: REV 2 IS FOR MOVING THE AC CHILLER PADS TO THE EAST SIDE OF THE PROPOSED BUILDING AND ADDING THE STAIRS TO THE SOUTH SIDE OF BUILDING 33. ADJUSTMENTS TO THE SIDEWALK, GRADING AND UTILITIES TO ACCOMMODATE THE CHILLERS HAVE BEEN MADE.

REVISIONS		
1	NEW SHEET	4/19
2	MOVE CHILLER PADS	11/19
3	ADDED BLDG. 104	1/21

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099

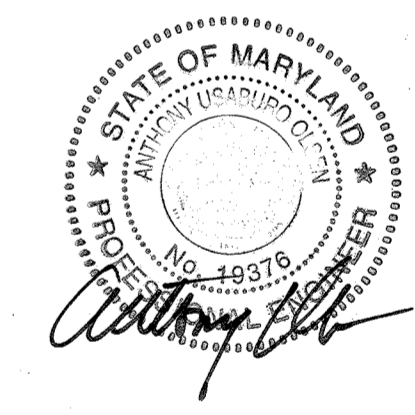


SERVICES AREA COMPLEX
 BLDGS 29, 35 AND 33

KEY PLAN

GRAPHIC SCALES

SIGNATURE



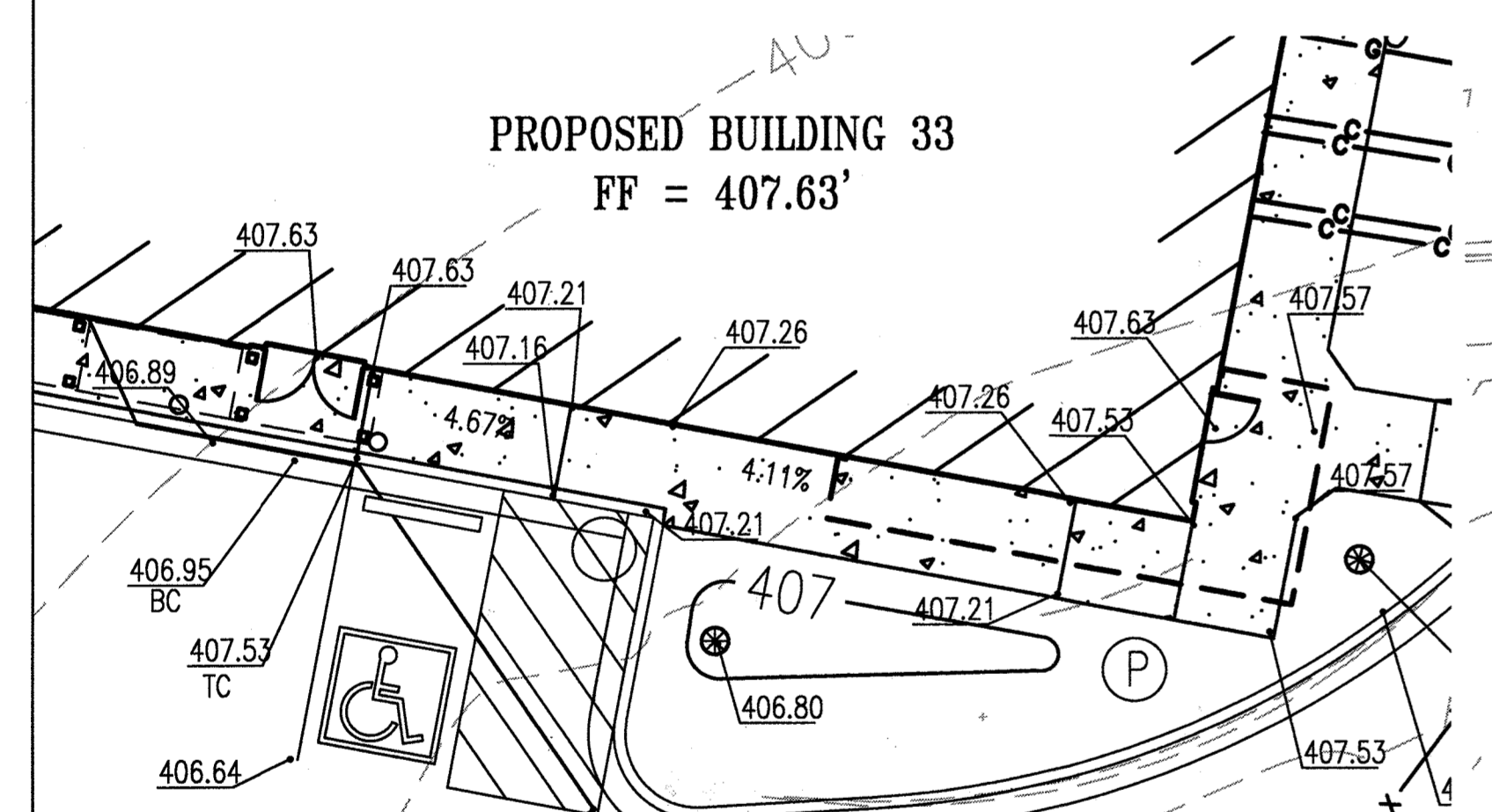
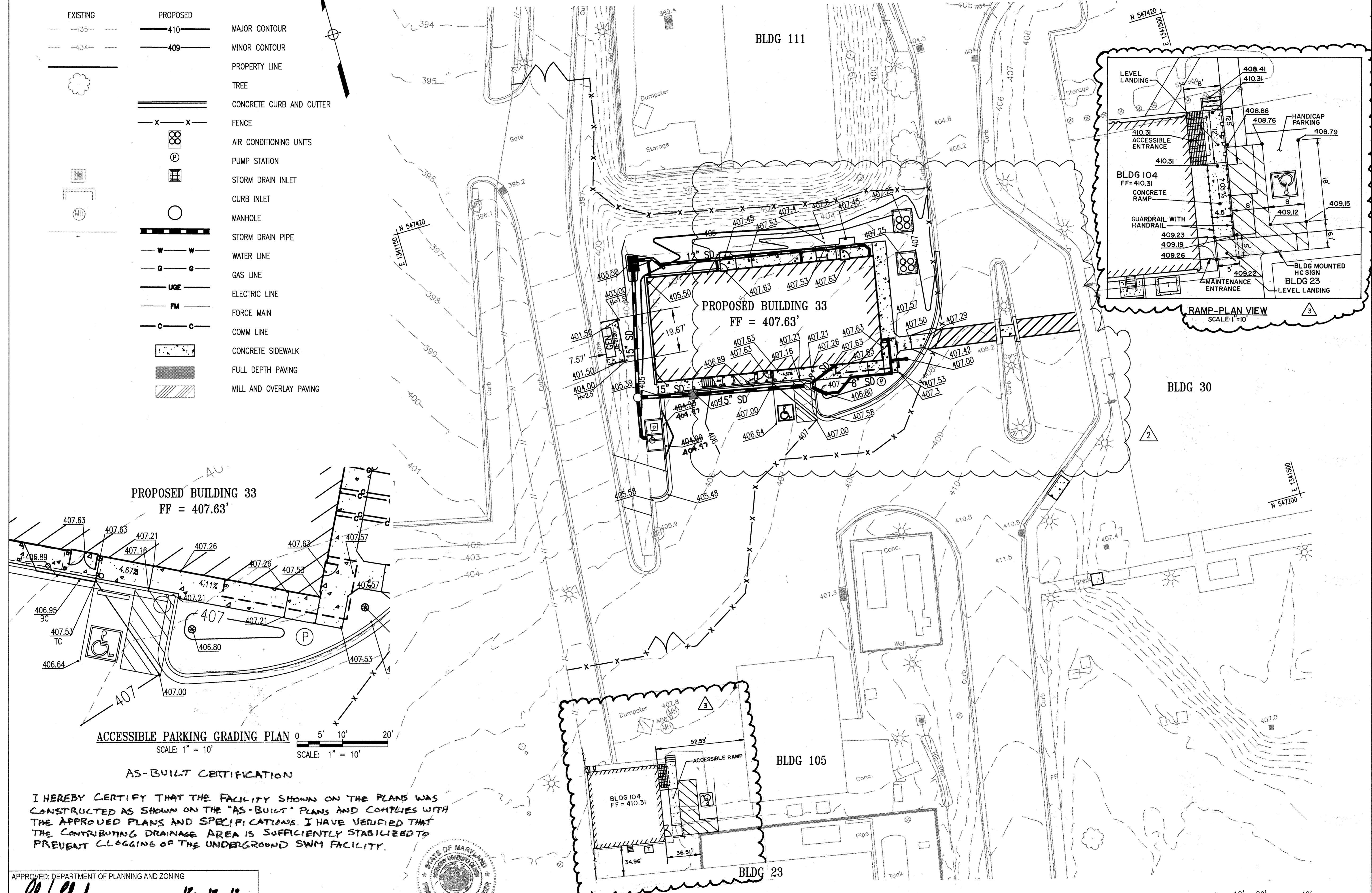
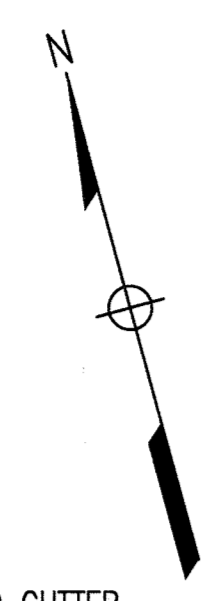
PROFESSIONAL CERTIFICATION.
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
 EXPIRATION DATE: 9/22/2021

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

REVISED GRADING PLAN
 Drawing No.
C-035
 Scale: 1" = 20'
 Date: 4/30/2019 Sheet 35 of 47
 Des: RFS Drawn: RFS Check: JTD

LEGEND

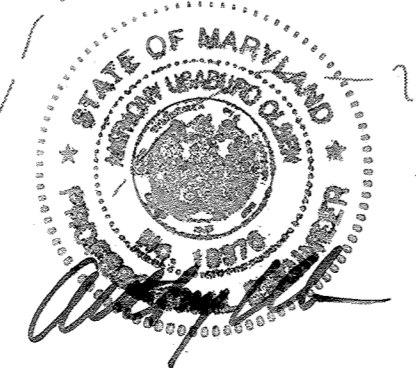
- | | | |
|----------|----------|--------------------------|
| EXISTING | PROPOSED | MAJOR CONTOUR |
| -435- | 410 | MINOR CONTOUR |
| -434- | 409 | PROPERTY LINE |
| | | TREE |
| | | CONCRETE CURB AND GUTTER |
| | X X | FENCE |
| | 88 | AIR CONDITIONING UNITS |
| | P | PUMP STATION |
| | □ | STORM DRAIN INLET |
| | ○ | CURB INLET |
| | ○ | MANHOLE |
| | — | STORM DRAIN PIPE |
| | W W | WATER LINE |
| | G G | GAS LINE |
| | UGE | ELECTRIC LINE |
| | FM | FORCE MAIN |
| | C C | COMM LINE |
| | □ | CONCRETE SIDEWALK |
| | ■ | FULL DEPTH PAVING |
| | ▨ | MILL AND OVERLAY PAVING |



ACCESSIBLE PARKING GRADING PLAN
 SCALE: 1" = 10'

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLANS WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.



ANTHONY OLSEN, P.E.
 MARYLAND REGISTRATION NO. 19376
 EXP. DATE: 9/22/21

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 12.12.19
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 12.17.19
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 12-18-19
 DIRECTOR

PLAN VIEW
 SCALE: 1" = 20'

0 10' 20' 40'
 SCALE: 1" = 20'

AS-BUILT


SDP-04-76

FILENAME: W:\6894-REV-CADD\NETLINE\6894-035.DWG

NOTE: REV 2 IS FOR MOVING THE AC CHILLER PADS TO THE EAST SIDE OF THE PROPOSE BUILDING AND ADDING THE STAIRS TO THE SOUTH SIDE OF BUILDING 33. ADJUSTMENTS TO THE SIDEWALK AND UTILITIES TO ACCOMMODATE THE CHILLERS HAVE BEEN MADE.

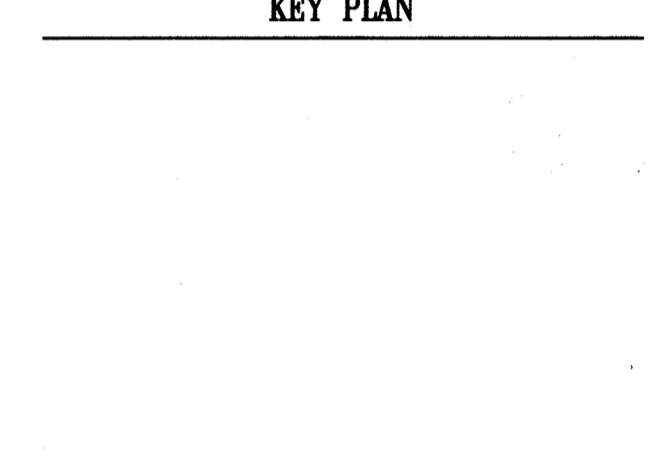
REVISIONS		
1	NEW SHEET	4/19
2	MOVE CHILLER PADS	11/19
3	ADDED BLDG. 104	1/21

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099

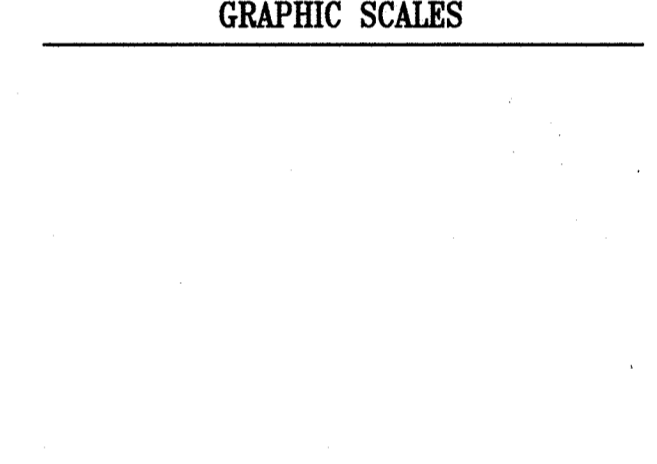


SERVICES AREA COMPLEX
 BLDGS 29, 35 AND 33

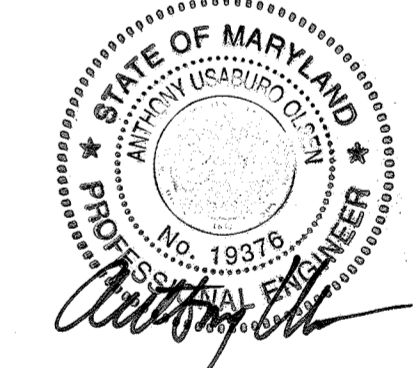
KEY PLAN



GRAPHIC SCALES



SIGNATURE



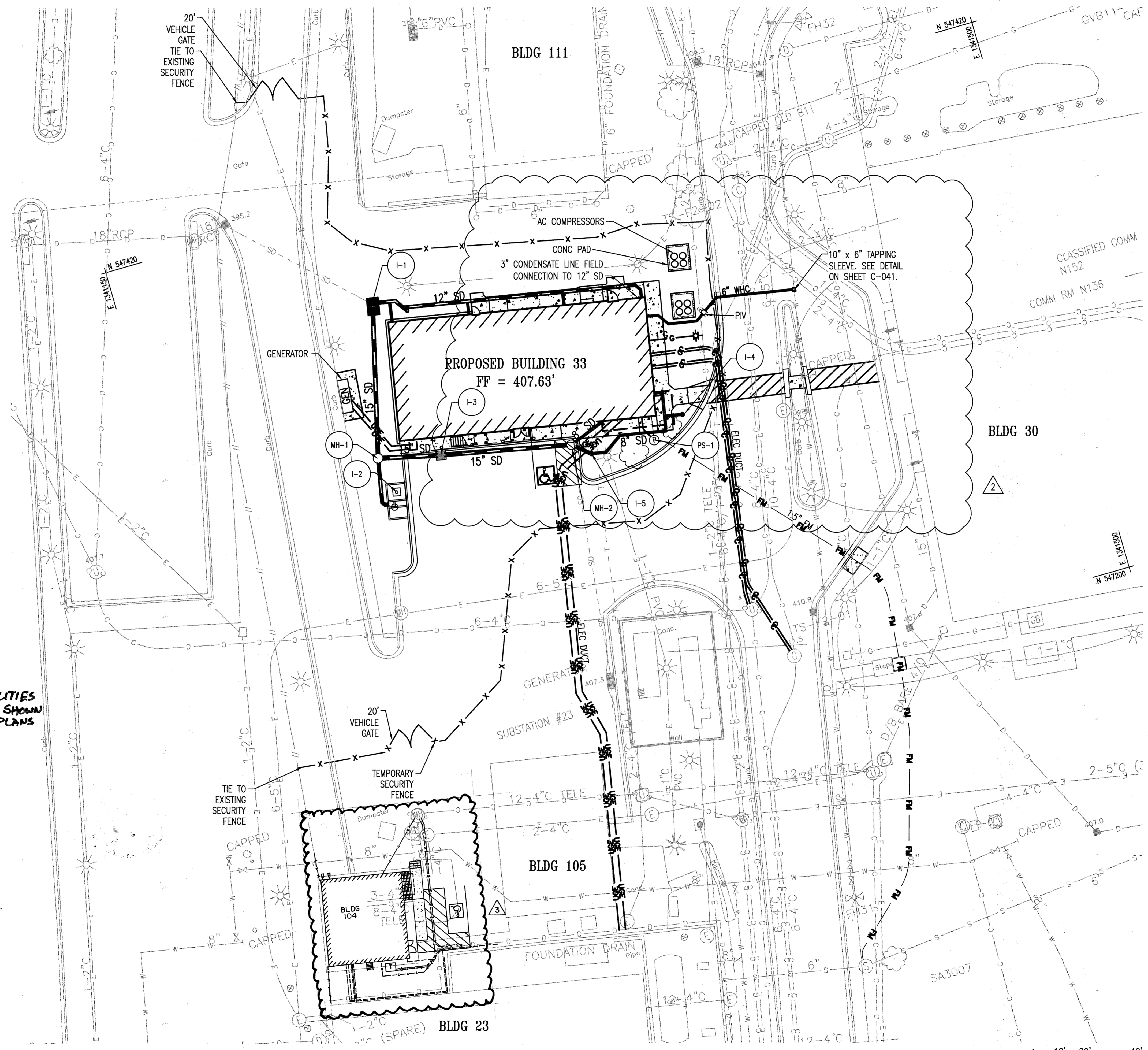
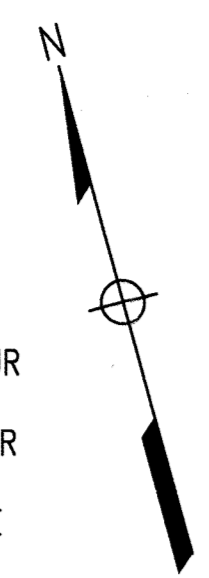
PROFESSIONAL CERTIFICATION:
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376.
 EXPIRATION DATE: 9/22/2021

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

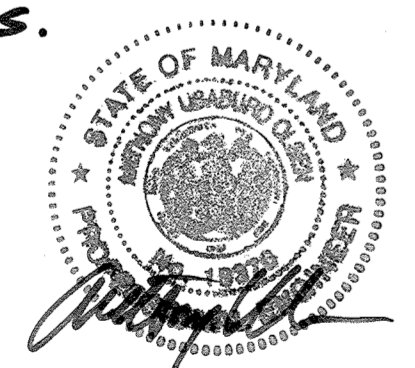
REVISED
UTILITY PLAN
 Drawing No.
C-036
 Scale: 1" = 20'
 Date: 4/30/2019 Sheet 36 of 47
 Des: RFS Drawn: RFS Check: JTD

LEGEND

EXISTING	PROPOSED	
-435-	410	MAJOR CONTOUR
-434-	409	MINOR CONTOUR
---	---	PROPERTY LINE
		TREE
		CONCRETE CURB AND GUTTER
		FENCE
		AIR CONDITIONING UNITS
		PUMP STATION
		STORM DRAIN INLET
		CURB INLET
		MANHOLE
		STORM DRAIN PIPE
		WATER LINE
		GAS LINE
		ELECTRIC LINE
		FORCE MAIN
		COMM LINE
		CONCRETE SIDEWALK
		FULL DEPTH PAVING
		MILL AND OVERLAY PAVING



I HEREBY CERTIFY BY MY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.



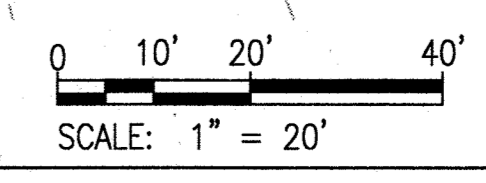
ANTHONY OLSEN, P.E.
 MD REG # 19376
 EXP DATE 9/22/21

- NOTES:
- SEE E SERIES DRAWINGS FOR DUCT BANK NUMBERS AND SIZES
 - SEE E SERIES DRAWINGS FOR GENERATOR INFORMATION
 - SEE SHEET C-037 FOR UTILITY PROFILES AND STRUCTURE SCHEDULES.
 - SEE SHEETS C-041 TO C-046 FOR UTILITY DETAILS
 - ALL DUCT BANK CROSSINGS WILL MAINTAIN A MINIMUM 18" VERTICAL CLEARANCE

NOTE: FOR SITE DETAILS SEE SHEETS C-043 THROUGH C-046.

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
	12.12.19
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
	12.17.19
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
	12-18-19
DIRECTOR	DATE

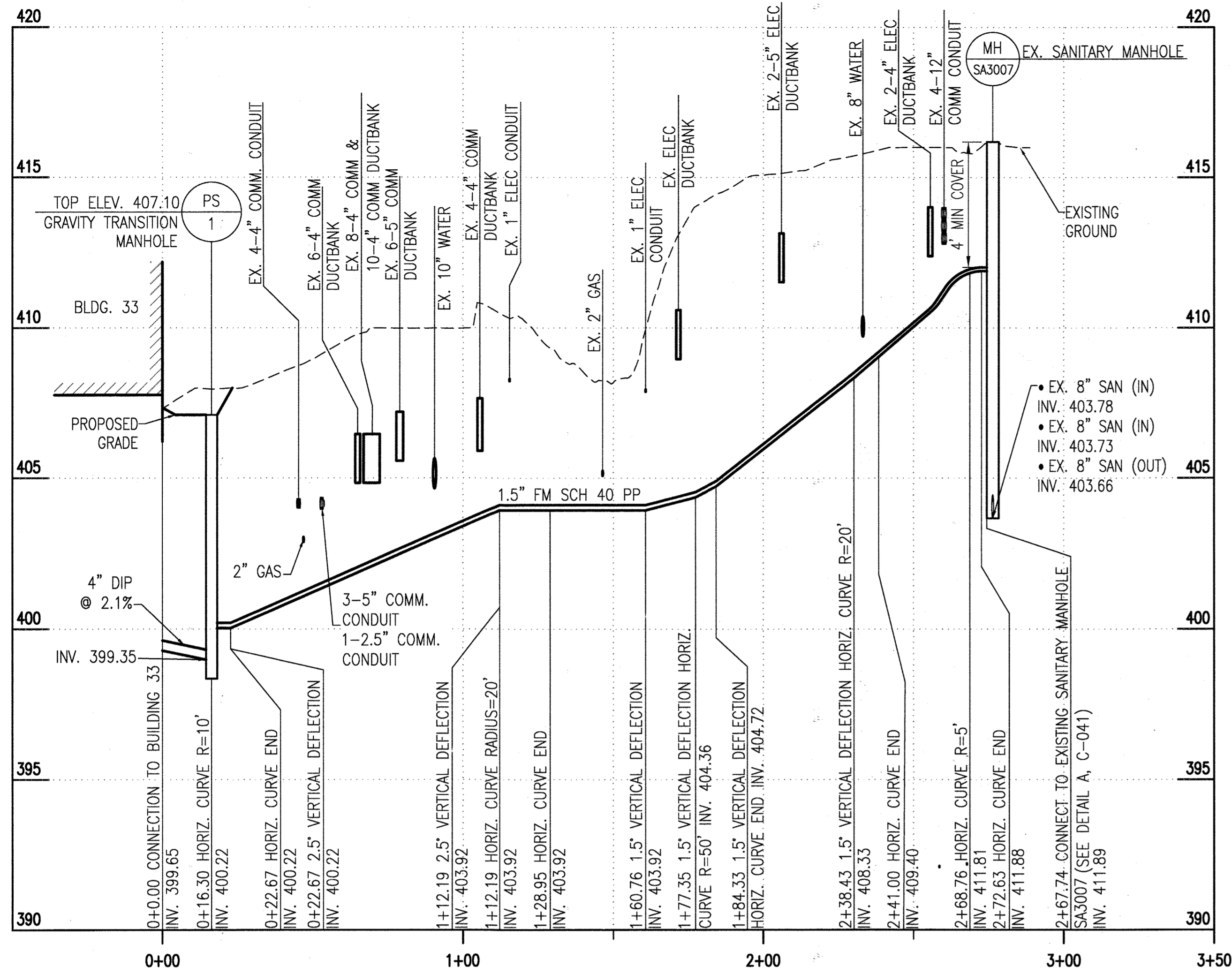
PLAN VIEW
 SCALE: 1" = 20'



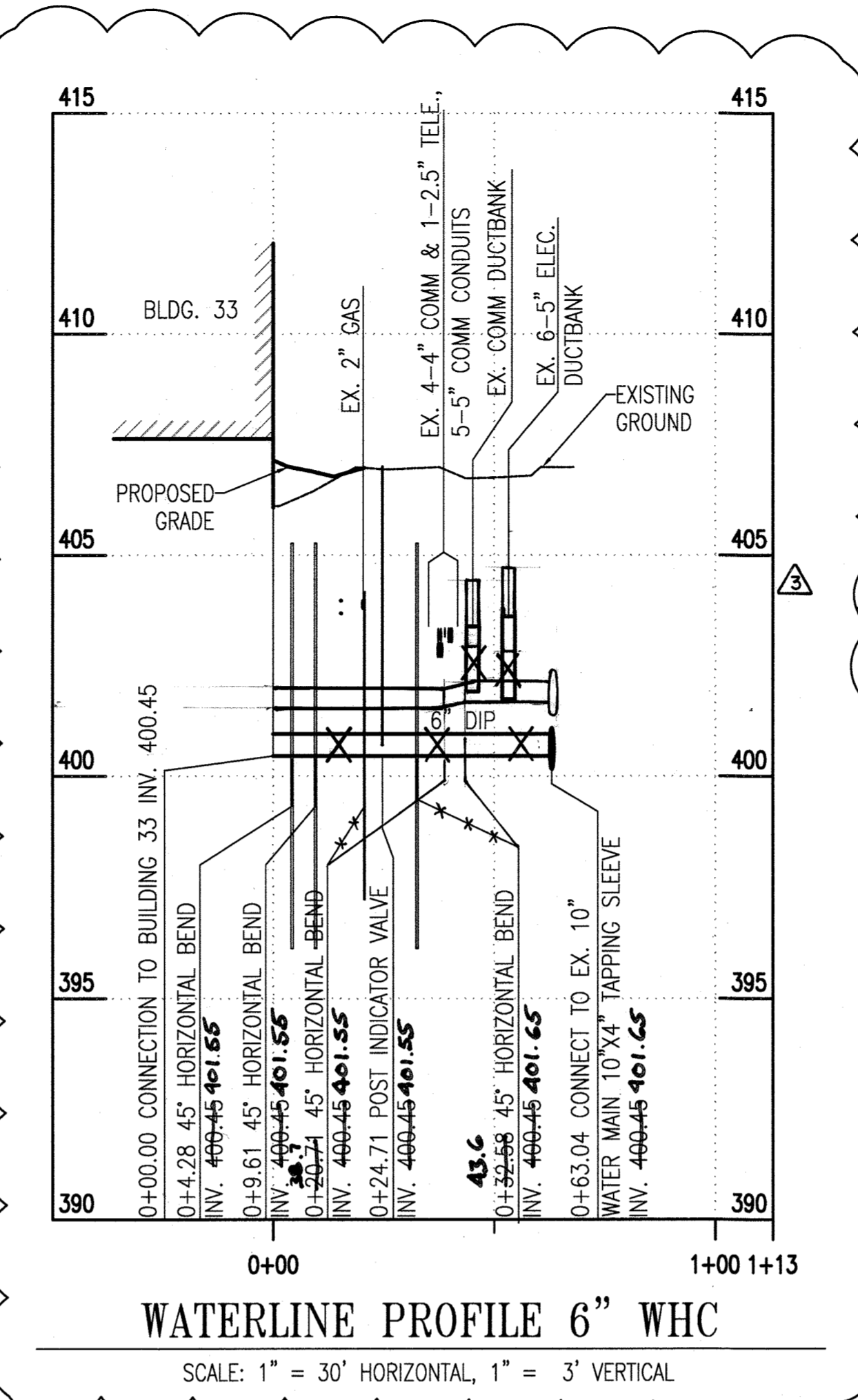
AS-BUILT

SDP-04-76

FILENAME: W:\RFS\AS-BUILT\SDP-04-76\SDP-04-76-036-036.dwg



SANITARY FORCE MAIN PROFILE TO SA3007



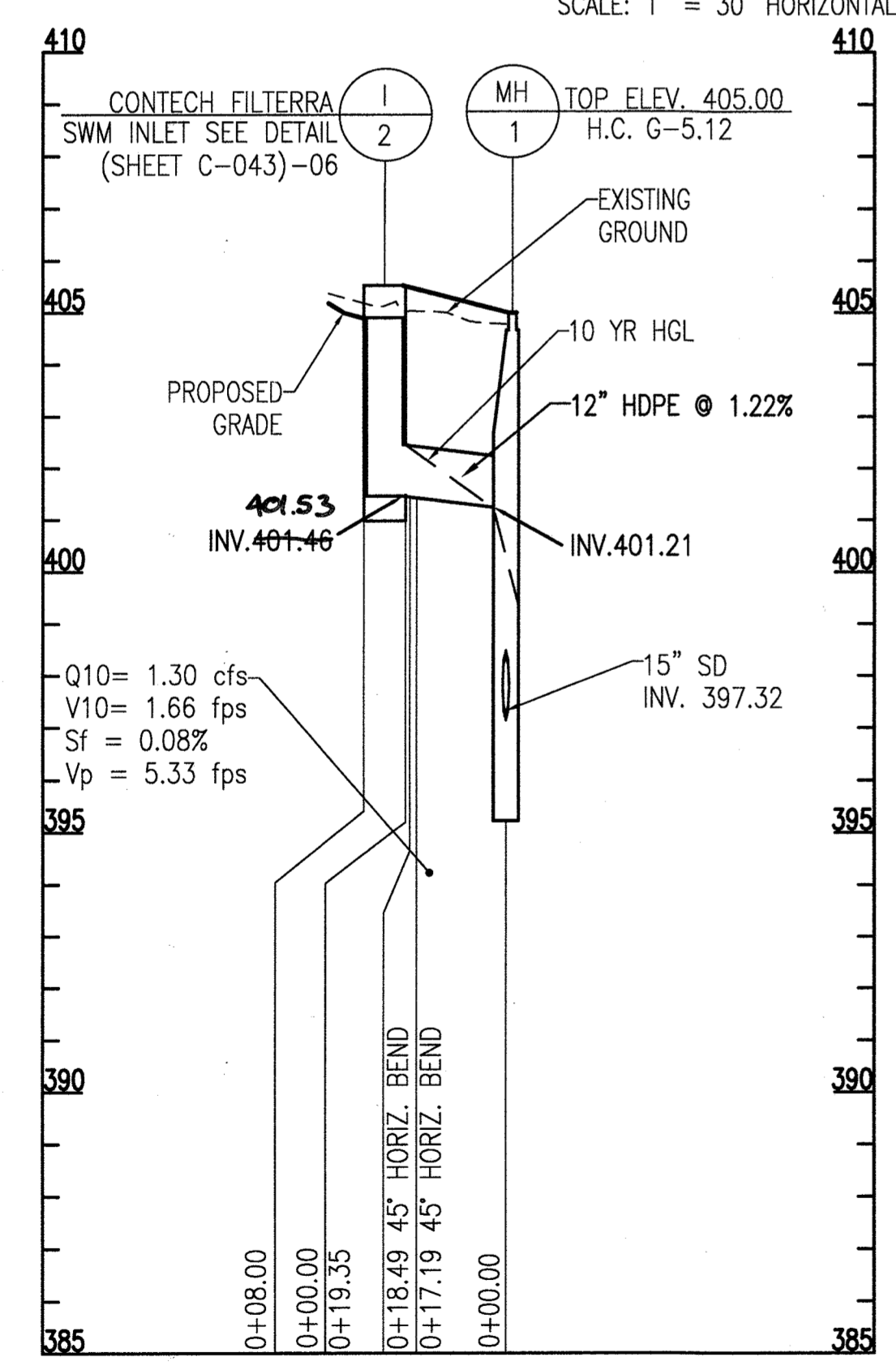
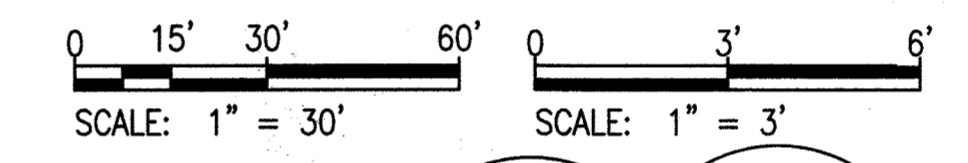
WATERLINE PROFILE 6" WHC

NOTE: REV 2 IS FOR REVISING PROFILES TO MATCH THE UTILITY REVISIONS DUE TO MOVING THE AC CHILLERS.

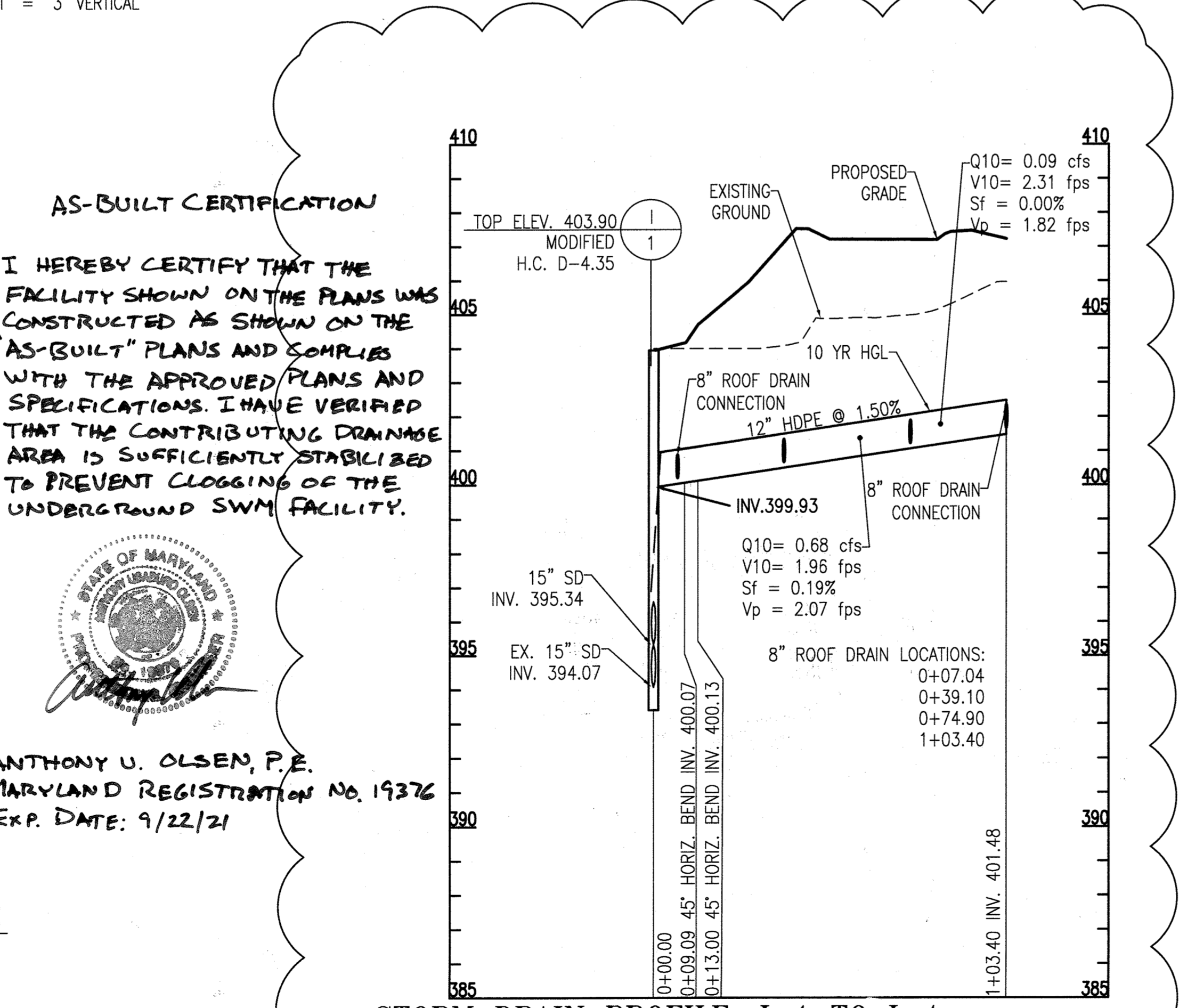
STORM DRAIN STRUCTURE SCHEDULE					
NO.	TYPE	STANDARD DETAIL	GATE/RIM ELEV.	NORTHING	EASTING
MH-1	4'-0" PRECAST MANHOLE	HO. CO. G-5.12	405.00	547321.54	1341231.60
MH-2	DOGHOUSE MANHOLE	HO. CO. G-5.14	407.16	547304.41	1341305.09
I-1	MODIFIED HO. CO. D-4.35 WR INLET	SEE SHEET C-043	403.90	547378.50	1341246.55
I-2	SWM FILTERRA INLET	SEE SHEET C-043	-	547305.12	1341234.08
I-3	TYPE 5	HO. CO. D-4.24	405.80	547316.05	1341255.53
I-4	18" DIA. NYLOPLAST DRAIN BASIN	SEE SHEET C-042	407.00	547338.16	1341358.07
I-5	18" DIA. NYLOPLAST DRAIN BASIN	SEE SHEET C-042	407.38	547300.18	1341311.81

SANITARY SEWER STRUCTURE SCHEDULE				
NO.	TYPE	DETAIL	NORTHING	EASTING
PS-1	GRAVITY TRANSITION MANHOLE	SEE SHEET C-044	547298.50	1341336.57

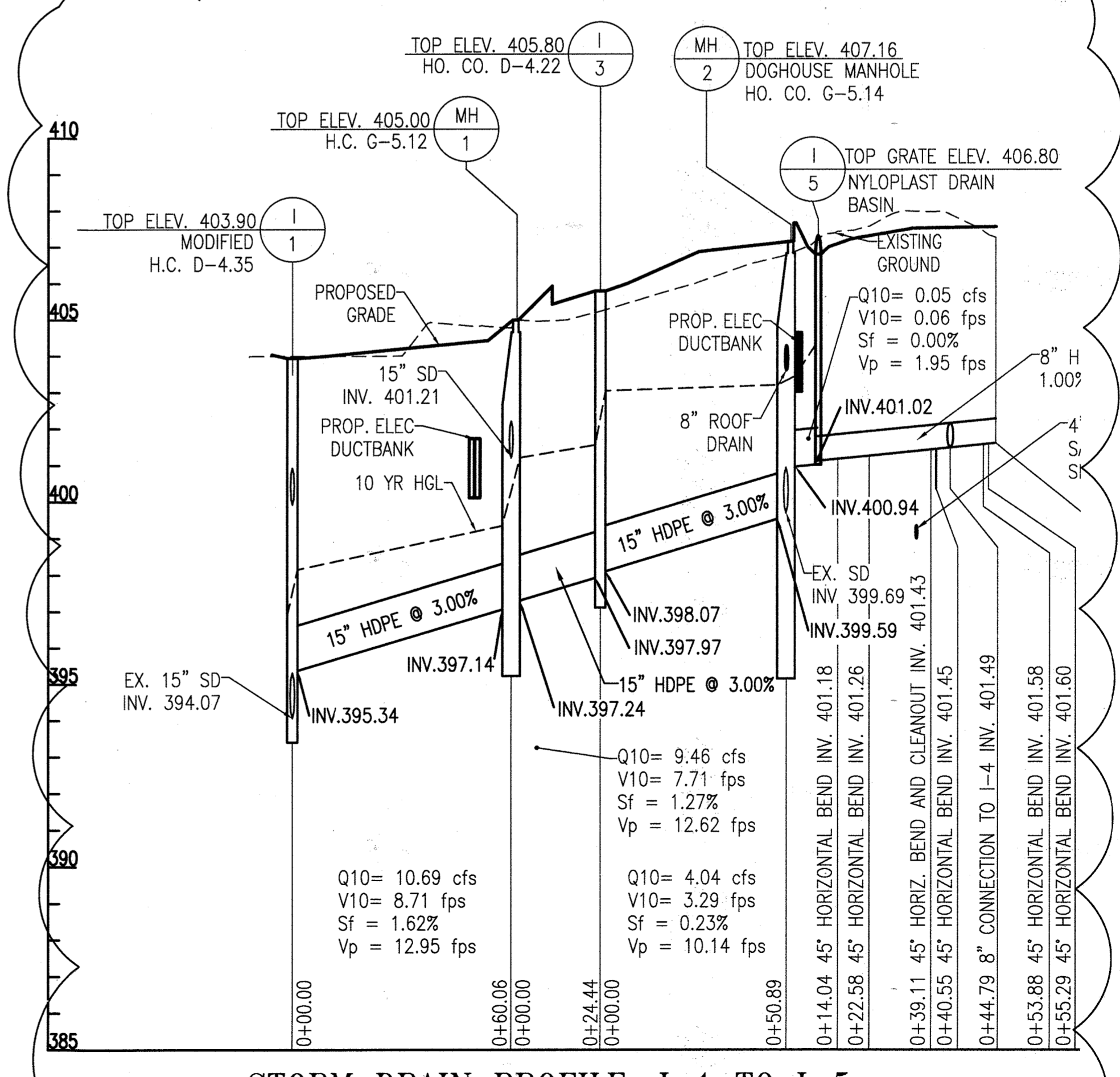
WATERLINE STRUCTURE SCHEDULE		
NO.	NORTHING	EASTING
POST INDICATOR VALVE	547345.14	1341369.05



STORM DRAIN PROFILE: MH-1 TO I-2



STORM DRAIN PROFILE: I-1 TO I-4



STORM DRAIN PROFILE: I-1 TO I-5

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLANS WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT CLOGGING OF THE UNDERGROUND SWM FACILITY.



ANTHONY U. OLSEN, P.E.
 MARYLAND REGISTRATION NO. 19376
 Exp. DATE: 9/22/21

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 12-12-19
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 12-17-19
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 12-18-19
 DIRECTOR

REVISIONS		
1	NEW SHEET	4/19
2	REVISE PROFILES	11/19
3	REVISED WHC PROFILE	8/2021

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099

SERVICES AREA COMPLEX
 BLDGS 29, 35 AND 33

KEY PLAN

GRAPHIC SCALES

SIGNATURE

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. 19376
 EXPIRATION DATE: 9/22/2021

Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

REVISED UTILITY PROFILES AND SCHEDULES

Drawing No.
C-037

Scale: 1" = 20'

Date: 4/30/2019 Sheet 37 of 47

Des: RFS Drawn: RFS Check: JTD

NOTE: REV 2 IS FOR MOVING THE AC CHILLER PADS TO THE EAST SIDE OF THE PROPOSED BUILDING AND ADDING THE STAIRS TO THE SOUTH SIDE OF BUILDING 33. ADJUSTMENTS TO THE SIDEWALK, GRADING, UTILITIES AND EROSION AND SEDIMENT CONTROL TO ACCOMMODATE THE CHILLERS HAVE BEEN MADE.

REVISIONS		
1	NEW SHEET	4/19
2	MOVE CHILLER PADS	11/19
3	ADDED BLDG. 104	1/21

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099

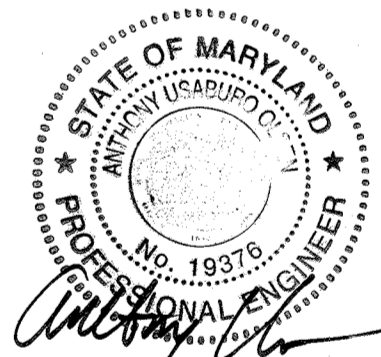


SERVICES AREA COMPLEX
 BLDGS 29, 35 AND 33

KEY PLAN

GRAPHIC SCALES

SIGNATURE



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 EXPIRATION DATE: 9/22/2021



Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

REVISED
 EROSION AND SEDIMENT
 CONTROL PLAN

Drawing No.

C-038

Scale: 1" = 20'

Date: 4/30/2019 Sheet 38 of 47

Des: RFS Drawn: RFS Check: JTD

AS-BUILT

SDP-04-76

LEGEND		
EXISTING	PROPOSED	
-4.35-	410	MAJOR CONTOUR
-4.34-	409	MINOR CONTOUR
---	---	PROPERTY LINE
(Tree symbol)	---	TREE
(Curb and gutter symbol)	---	CONCRETE CURB AND GUTTER
(Fence symbol)	-X-X-	FENCE
(Storm drain inlet symbol)	(Square symbol)	STORM DRAIN INLET
(Curb inlet symbol)	(Circle symbol)	CURB INLET
(Manhole symbol)	(Circle symbol)	MANHOLE
(Storm drain pipe symbol)	---	STORM DRAIN PIPE
(Water line symbol)	-W-W-	WATER LINE
(Gas line symbol)	-G-G-	GAS LINE
(Electric line symbol)	-U-E-	ELECTRIC LINE
(Force main symbol)	-FM-	FORCE MAIN
(Comm line symbol)	-C-C-	COMM LINE
(Concrete sidewalk symbol)	---	CONCRETE SIDEWALK
(Full depth paving symbol)	---	FULL DEPTH PAVING
(Mill and overlay paving symbol)	---	MILL AND OVERLAY PAVING
(Limit of disturbance symbol)	-LOD-	LIMIT OF DISTURBANCE
(Standard inlet protection symbol)	[SIP]	STANDARD INLET PROTECTION
(Curb inlet protection symbol)	[CIP]	CURB INLET PROTECTION
(Silt fence symbol)	-SF-	SILT FENCE
(Silt fence on pavement symbol)	-SFP-	SILT FENCE ON PAVEMENT
(Stabilized construction entrance symbol)	---	STABILIZED CONSTRUCTION ENTRANCE
(Same day stabilization symbol)	---	SAME DAY STABILIZATION

SEDIMENT AND EROSION CONTROL SHALL BE STRICTLY ENFORCED

SITE INFORMATION (NOT FOR BIDDING PURPOSES)

AREA TO BE DISTURBED (EARTHEN)	0.52 AC
AREA TO BE PAVED	0.18 AC
AREA TO BE STABILIZED	0.31 AC
TOTAL CUT	333 CY
TOTAL FILL	50 CY
OFF SITE WASTE/BORROW AREA LOCATION	TBD

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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.

Anthony U. Olsen 11/25/19
 SIGNATURE OF ENGINEER DATE
 ANTHONY U. OLSEN
 (PRINT NAME BELOW SIGNATURE)

DEVELOPER'S CERTIFICATION

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL 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.

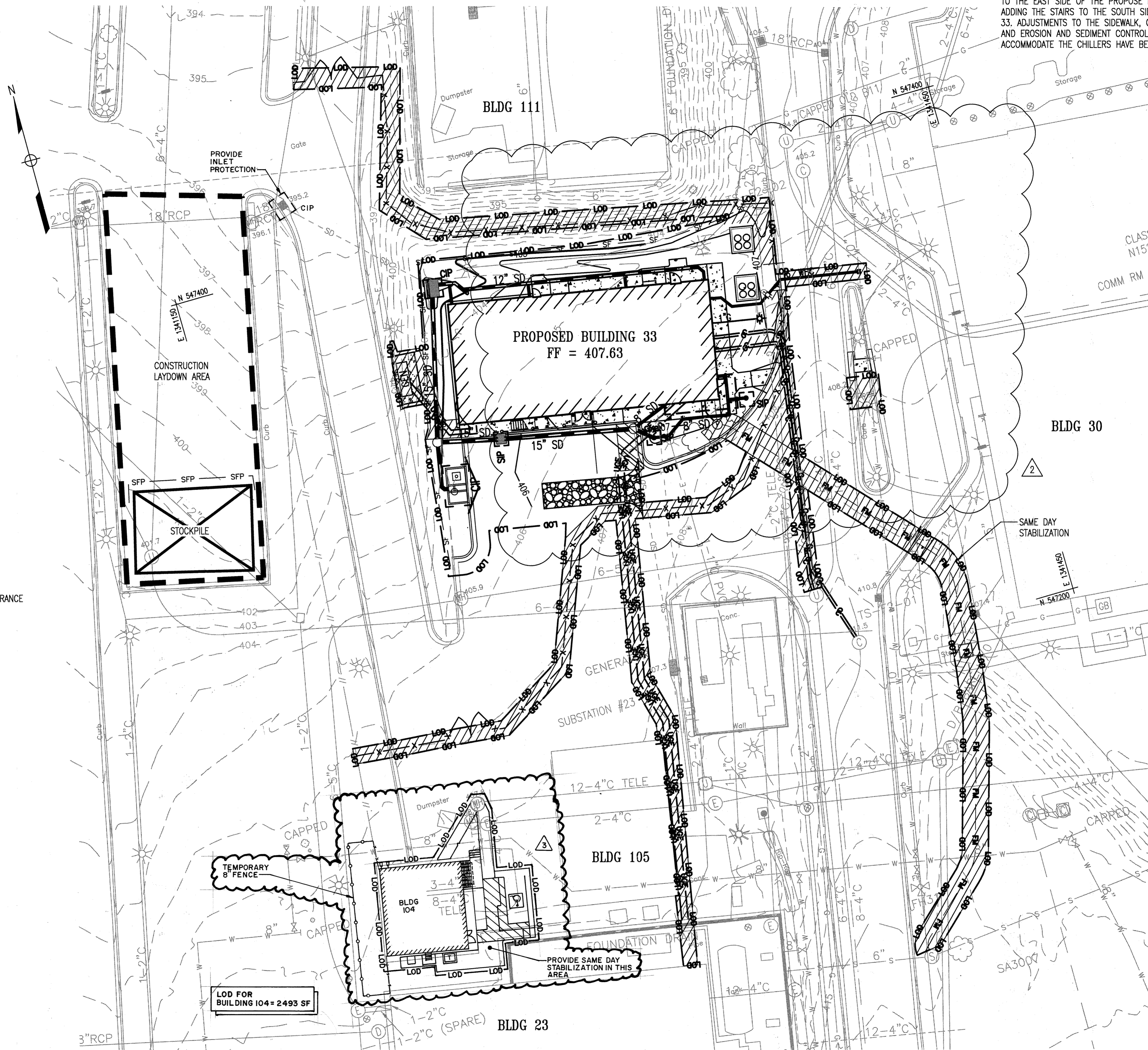
Phil Hark 22 Nov 2019
 SIGNATURE OF DEVELOPER DATE
 PHIL HARK
 (PRINT NAME BELOW SIGNATURE)

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Phil Hark 12.12.19
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Phil Hark 12.17.19
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Phil Hark 12-18-19
 DIRECTOR DATE

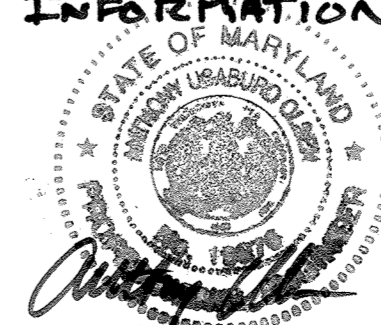


THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

PLAN VIEW
 SCALE: 1" = 20'

0 10' 20' 40'
 SCALE: 1" = 20'

ANTHONY U. OLSEN, P.E. MD REG# 19376 Exp DATE 9/22/21



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EROSION AND SEDIMENT CONTROL GENERAL NOTES

- THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF SEDIMENT AND EROSION CONTROL AS SET FORTH IN THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- EROSION AND SEDIMENT CONTROL FOR UTILITY CONSTRUCTION SHALL BE PROVIDED IN ACCORDANCE WITH APPROVED PLANS. ALL CONSTRUCTION SHALL ONLY BE FOR AREAS WITHIN THE DELINEATED LIMIT OF DISTURBANCE. CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK. WHEN SAME DAY STABILIZATION IS APPROVED:
 - EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.
 - TRENCHES FOR UTILITY INSTALLATION SHALL BE BACKFILLED, COMPACTED, AND STABILIZED AT THE END OF EACH WORKING DAY. NO MORE TRENCH SHALL BE OPENED THAN CAN BE COMPLETED THE SAME DAY.
- ALL WATER REMOVED FROM EXCAVATED AREAS SHALL BE PASSED THROUGH AN IWD APPROVED DRAINAGE PRACTICE OR PUMPED TO A SEDIMENT TRAP OR BASIN PRIOR TO DISCHARGE TO A FUNCTIONAL STORM DRAIN SYSTEM OR TO STABLE GROUND SURFACE.
- CONCRETE WALKWAY STRUCTURES SHALL BE USED WHEN CONCRETE TRUCKS, DRUMS, PUMPS, CHUTES, OR OTHER EQUIPMENT IS RISES OR CLEANED ON-SITE.
- CONSTRUCTION ACTIVITIES PRODUCING DUST SHALL IMPLEMENT CONTROL MEASURES TO AVOID THE SUSPENSION OF DUST PARTICLES AND/OR PREVENT DUST FROM BLOWING OFF-SITE OR TO AREAS WITHOUT TREATMENT.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
 - SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
- VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL REFER TO PROTECTIVE SPECIFICATIONS FOR TEMPORARY SEEDING, PERMANENT SEEDING, MULCHING, SODDING, AND GROUND COVERS.
- WHEN SEEDING, ALL DISTURBED AREAS WITH SLOPES FLATTER THAN 2:1 SHALL BE STABILIZED WITH 4 INCHES OF TOPSOIL, SEED, AND MULCH. ALL DISTURBED AREAS WITH SLOPES 2:1 OR STEEPER SHALL BE STABILIZED WITH MATING OVER 2 INCHES OF TOPSOIL AND SEED.
- ALL SEDIMENT BASINS, TRAP EMBANKMENTS AND SLOPES, PERIMETER DIKES, SWALES AND ALL DISTURBED SLOPES STEEPER OR EQUAL TO 3:1 SHALL BE STABILIZED WITH SEED AND ANCHORED STRAW MULCH. SODS OR OTHER APPROVED STABILIZATION MEASURES AS SOON AS POSSIBLE BUT NO LATER THAN THREE (3) CALENDAR DAYS AFTER ESTABLISHMENT. ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM SHALL BE MINIMIZED. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION.
- PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITH SEED AND AN APPROVED EROSION CONTROL MATING, SOD, RIP-RAP, OR OTHER APPROVED STABILIZATION MEASURES.
- FOR STOCKPILE SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) THE CONTRACTOR SHALL APPLY SEED AND ANCHORED STRAW MULCH, SOD OR OTHER APPROVED STABILIZATION MEASURES TO THE FACE OF THE STOCKPILE WITHIN THREE (3) CALENDAR DAYS OF ACTIVITY HAVING CEASED ON THE RESPECTIVE FACE. FOR SLOPES 3:1 OR FLATTER, THE CONTRACTOR SHALL APPLY STABILIZATION MEASURES TO THE FACE OF THE STOCKPILE WITHIN SEVEN (7) CALENDAR DAYS OF ACTIVITY HAVING CEASED ON THE RESPECTIVE FACE. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION.
- FOR FINISHED GRADING, THE CONTRACTOR SHALL PROVIDE ADEQUATE GRADIENTS TO PREVENT WATER FROM PONDING FOR MORE THAN TWENTY FOUR (24) HOURS AFTER THE END OF A RAINFALL EVENT. DRAINAGE COURSES AND SWALE FLOW AREAS MAY TAKE AS LONG AS FORTY-EIGHT (48) HOURS AFTER THE END OF A RAINFALL EVENT TO DRAIN. AREAS WHICH ARE HAVING STANDING WATER SHALL NOT BE REQUIRED TO MEET THIS REQUIREMENT.
- PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE CONTRACTOR SHALL STABILIZE AND HAVE ESTABLISHED PERMANENT STABILIZATION FOR ALL CONTRIBUTORY DISTURBED AREAS USING SOD OR AN APPROVED PERMANENT STABILIZATION WITH REQUIRED SOIL AMENDMENTS AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON WHERE THE SLOPE DOES NOT EXCEED 10% AND GRADING HAS BEEN COMPLETED TO PROMOTE SHEET FLOW DRAINAGE. AREAS BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED AS SOON AS POSSIBLE, BUT NOT LATER THAN THREE (3) CALENDAR DAYS AFTER ESTABLISHMENT FOR SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND SEVEN (7) CALENDAR DAYS FOR FLATTER SLOPES. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY, AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, TEMPORARY SEED AND ANCHORED STRAW MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE APPLIED BY MARCH 15 OR EARLIER IF GROUND AND WEATHER CONDITIONS ALLOW.
- TEMPORARY SEDIMENT CONTROL DEVICES SHALL BE REMOVED WITHIN THIRTY (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS. UPON REMOVAL OF SEDIMENT CONTROL DEVICES, THE AREA DISTURBED BY REMOVAL SHALL BE STABILIZED WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED, WITHIN 24 HOURS OR SAID REMOVAL STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO THE PERMANENT CONFIGURATION WITHIN THE TIME PERIOD AS SET FORTH IN THESE PLANS.
- OFF-SITE SLOPE OR BORROW AREAS APPROVAL SHALL BE GRANTED BY THE LOCAL AUTHORITIES. ALL WASTE AND BORROW AREAS OFF-SITE SHALL BE PROTECTED BY SEDIMENT CONTROL MEASURES AND STABILIZED.
- ALL CLEARING AND GRADING SHALL BE COMPLETED IN THE FOLLOWING SEQUENCE:
 - INITIAL CLEARING AND GRUBBING FOR THE INSTALLATION OF THE CONSTRUCTION ENTRANCE, PERIMETER CONTROLS, AND ANY REMAINING CONTROLS.
 - INSTALL STABILIZED CONSTRUCTION ENTRANCE, PERIMETER SILT FENCE, AND ANY OTHER SEDIMENT CONTROL.
 - CLEAR, GRUB, AND GRADE THE REMAINDER OF THE SITE AS SPECIFIED BY THE LIMITS OF DISTURBANCE SHOWN ON THE ATTACHED PLAN.
 - PROVIDE TEMPORARY STABILIZATION OF ANY AREA THAT WILL NOT BE ACTIVELY GRADED WITHIN 14 DAYS.
 - CONSTRUCT ANY STRUCTURES AND UTILITIES.
 - PROVIDE FINAL GRADING AND STABILIZATION ACCORDING TO THE SEEDING OR SODDING SPECIFICATIONS (MINIMUM STABILIZATION BY SEEDING AND MULCHING).
 - AFTER THE SITE HAS BEEN STABILIZED WITH ADEQUATE VEGETATION, AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL PRACTICES AND STABILIZER REMAINING DISTURBED AREAS.

STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

- PURPOSE: TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS. CONDITIONS WHERE PRACTICE APPLIES: EXPOSED SOIL WHERE GROUND COVER IS NEEDED FOR A PERIOD OF MONTHS OR LESS FOR LONGER DURATION OF TIME. PERMANENT STABILIZATION PRACTICES ARE REQUIRED.
- CRITERIA**
- SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDNESS ZONE (IN MANUAL), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
 - FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
 - WHEN STABILIZATION IS REQUIRED OUTSIDE OF THE SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.1.1.8 AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

SEED MIXTURE (FOR U.S.D.A. PLANT HARDNESS ZONE 7A)		SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)	LIME RATE
SPECIES	APPLICATION RATE (LB/AC)				
ANNUAL RYEGRASS	40	2/15 - 4/30 8/15 - 11/30	0.5 IN	436 LB/AC (10 LB/1000 SF)	2 TONS/AC (90 LB/1000 SF)
FORKAL MILLET	30	5/1-8/14	0.5 IN		

STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

- A. SEED MIXTURES**
- GENERAL USE
 - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 (IN THE MANUAL) FOR THE APPROPRIATE PLANT HARDNESS ZONE AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
 - ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD GUIDE, SECTION 342 - CRITICAL AREA PLANNING.
 - FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
 - FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (48-0-0) AT 3.5 LBS/1000 SF (150 LBS/ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION CONTINUED

- 2. TURFGRASS MIXTURES**
- AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
 - SELECT ONE OR MORE OF THE SPECIES OF MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
 - KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 LBS/1000 SQ. FT. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
 - KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RYD ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 LBS MIXTURE/1000 SQ. FT. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10% TO 35% TO THE TOTAL MIXTURE BY WEIGHT.
 - TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 65% TO 100%, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0% TO 5%. SEEDING RATE: 5 TO 8 LBS/1000 SQ. FT. ONE OR MORE CULTIVARS MAY BE BLENDED.
 - KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30% TO 40% AND CERTIFIED FINE FESCUE 60% TO 70%. SEEDING RATE: 1.5 LBS TO 3 LBS/1000 SQ. FT.
- NOTE: SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.
- c. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES**
- WESTERN MD:** MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)
- CENTRAL MD:** MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)
- SOUTHERN MD, EASTERN SHORE:** MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

TABLE B.2 PERMANENT SEEDING SUMMARY

SEED MIXTURE (FOR U.S.D.A. PLANT HARDNESS ZONE 7A)		SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)	LIME RATE
SPECIES	APPLICATION RATE (LB/AC)				
DEERTONGUE	20	2/15 - 4/30	1/4" - 1/2"	45 LB/AC (1.0 LB/1000 SF)	90 LB/AC (2.0 LB/1000 SF)
SHEEP FESCUE	20	5/1-5/31			
COMMON LEPESDEZA	20				

- SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (<2:1 GRADE OR FLATTER).
- GENERAL SPECIFICATIONS
- CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN OR INSPECTOR.
- SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS 1/4 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN EDGES WILL NOT BE ACCEPTABLE.
- STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
- SOD MUST NOT BE HARVESTED OR TRANSPORTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
- SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPORTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
- SOD INSTALLATION
 - DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
 - LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STACKEE LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
 - WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAKERING JOINTS, ROLL AND TAMP. PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
 - WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN 8 HOURS.
 - ALL SOD TO BE STAKED.
 - SOD MAINTENANCE
 - IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
 - AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
 - DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

ENGINEER'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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."

Anthony U. Olsen
 SIGNATURE OF ENGINEER
 (PRINT NAME BELOW SIGNATURE)

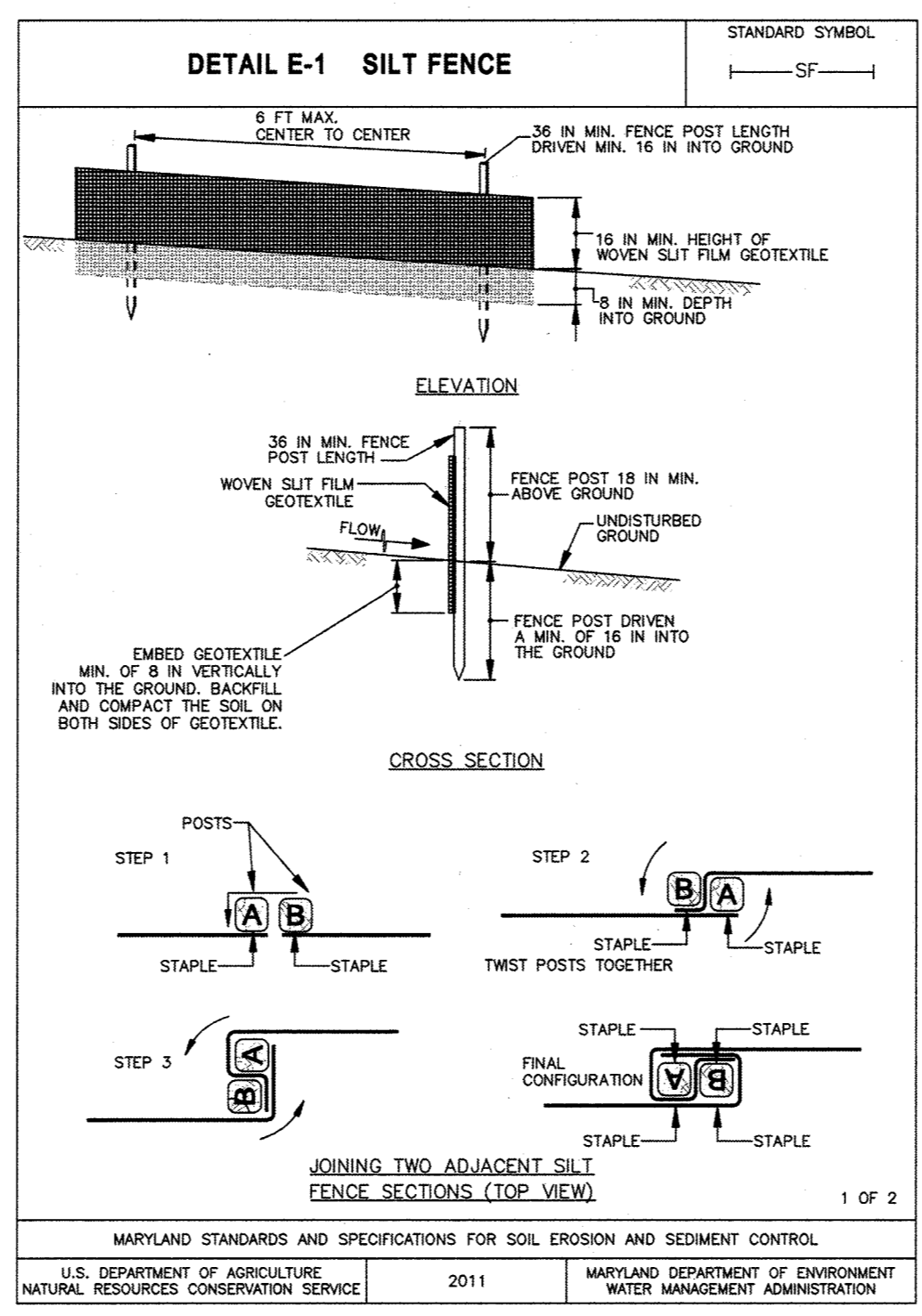
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DEVELOPER'S CERTIFICATION

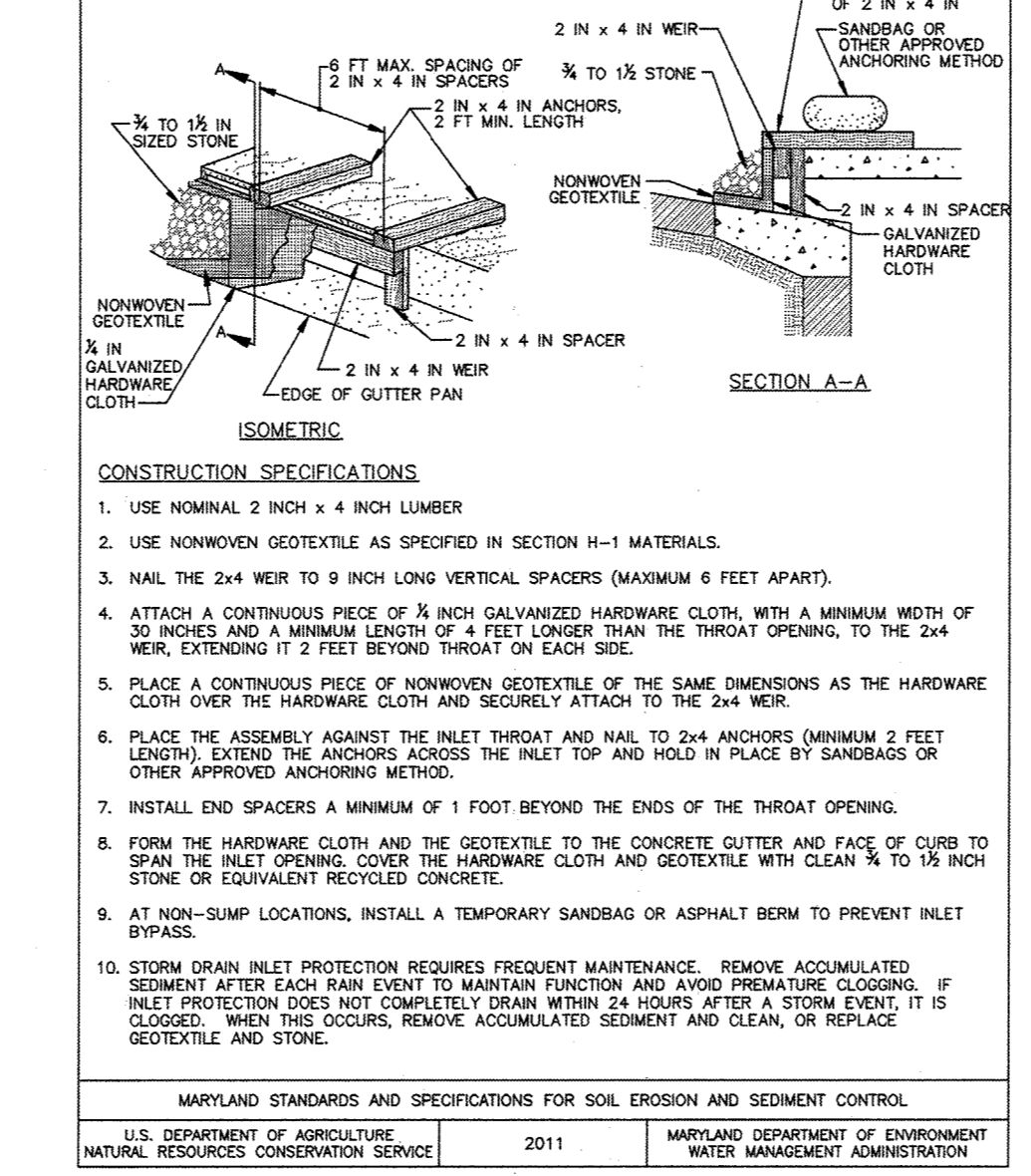
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Cheryl Hahn
 SIGNATURE OF DEVELOPER
 (PRINT NAME BELOW SIGNATURE)

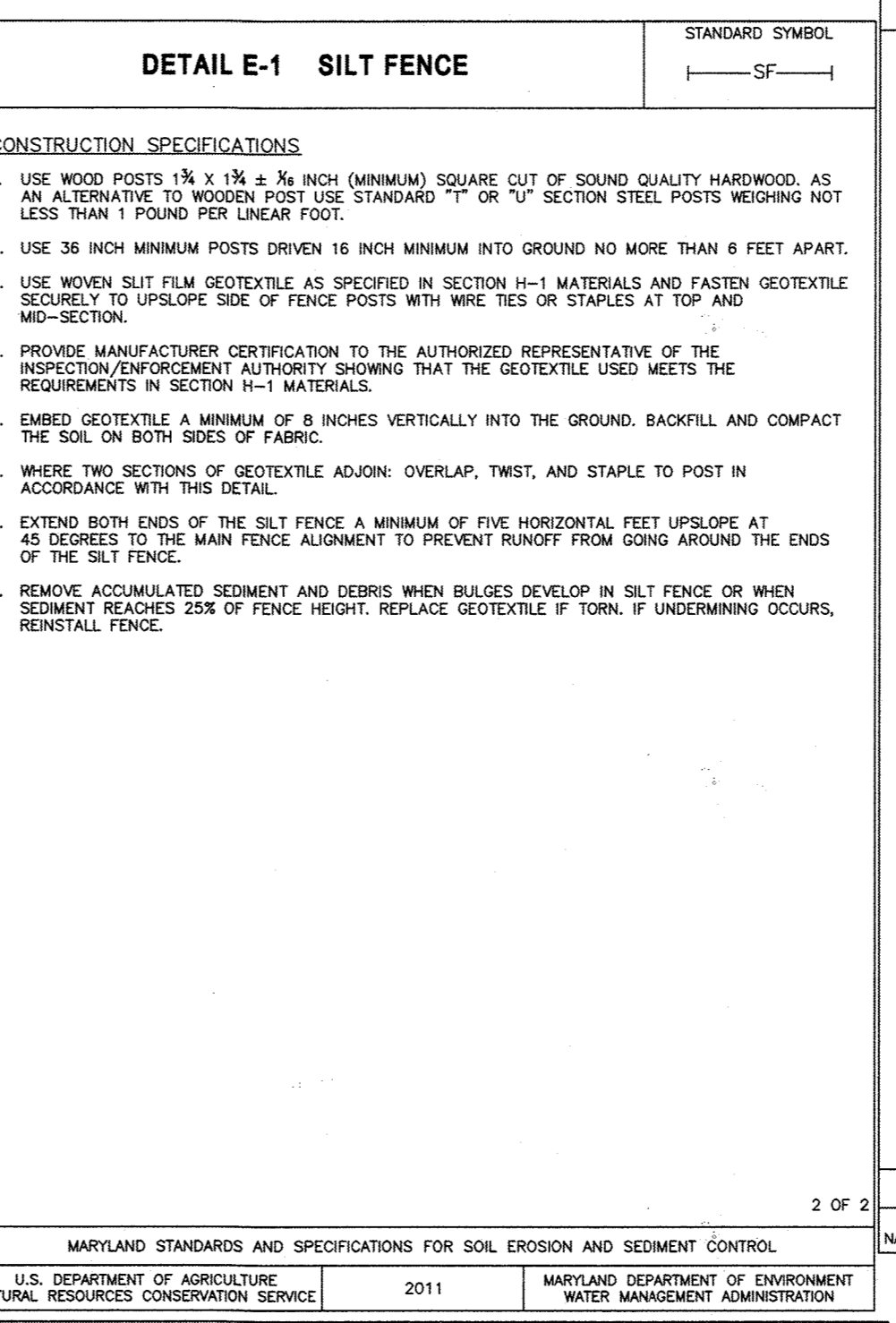
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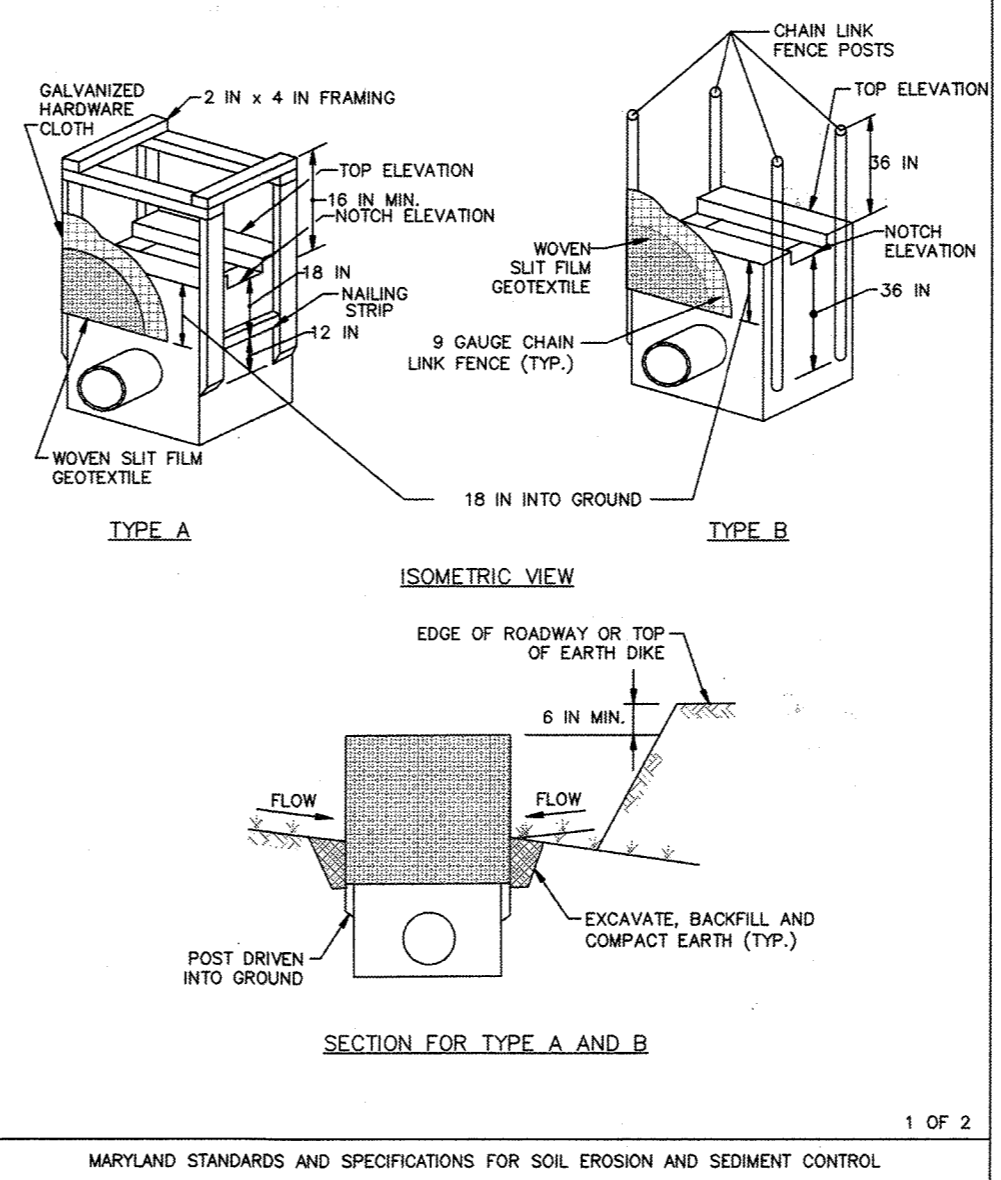
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE 2011
 MARYLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION



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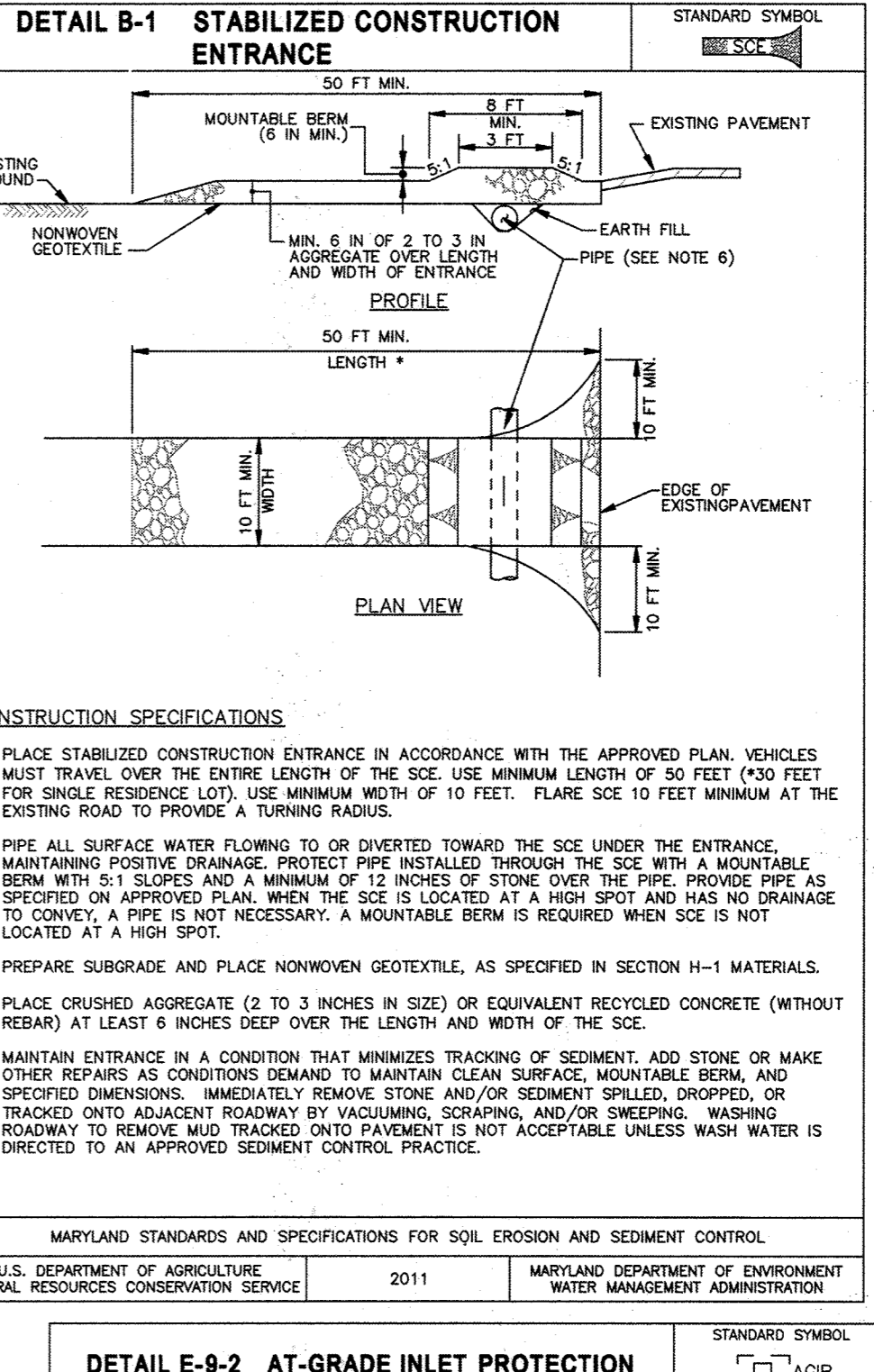
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BUILDING 33 SEQUENCE OF CONSTRUCTION

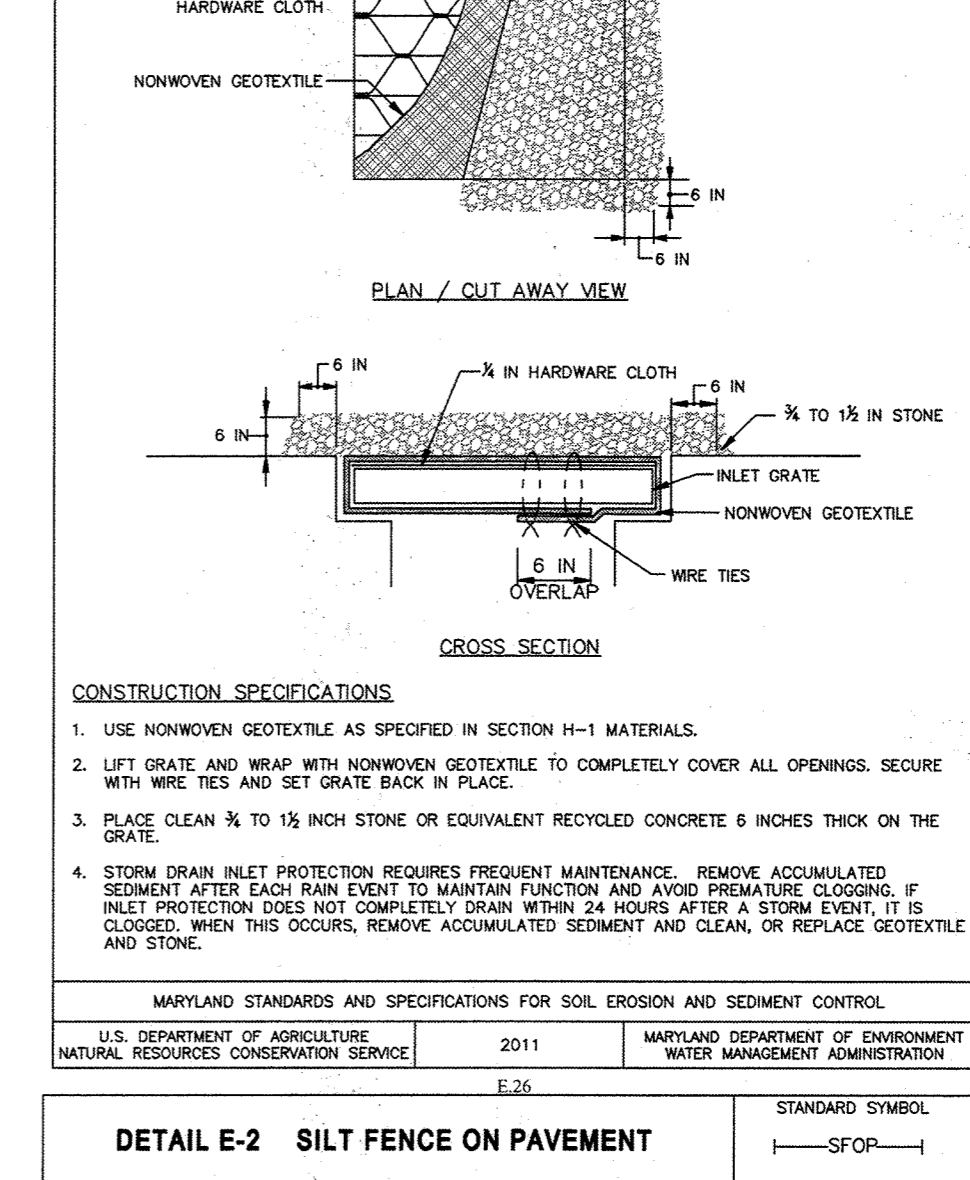
- OBTAIN A GRADING PERMIT AND ARRANGE FOR AN ON-SITE PRE-CONSTRUCTION MEETING WITH A HOWARD COUNTY SCD INSPECTOR (410-313-1880). (1 DAY)
- NOTIFY THE SEDIMENT CONTROL INSPECTION OFFICE 24 HOURS PRIOR TO CONSTRUCTION. (1 DAY)
- INSTALL PERIMETER CONTROLS INCLUDING SILT FENCE, STABILIZED CONSTRUCTION ENTRANCE AND INLET PROTECTION ON EXISTING INLETS. (2 DAYS)
- REMOVE EXISTING PAVING. REMOVE EXISTING CURB AND GUTTER WHERE NECESSARY TO INSTALL STORM DRAIN SYSTEM. (2 DAYS)
- PERFORM PRELIMINARY ROUGH GRADING FOR I-4, I-5, I-6 INSTALLATION. (2 DAYS)
- INSTALL STORM DRAIN SYSTEM. DO NOT INSTALL MH-2 DOGHOUSE UNTIL REMAINDER OF SYSTEM IS COMPLETE. REMOVE TOP OF I-1 AND REBUILD TO MATCH GRADE WITH YARD INLET. INSTALL ALL INLET PROTECTION TO INLETS AS THEY ARE COMPLETED. (1 WEEK)
- REMOVE REMAINDER OF CURB AND GUTTER, EXISTING STORM DRAIN, AND MANHOLE AS NOTED. BRICK UP MANHOLE AND INLET WHERE STORM DRAIN PIPE WAS REMOVED. (2 DAYS)
- INSTALL ALL UTILITIES. DURING INSTALLATION, ONLY EXCAVATE AMOUNT OF TRENCH TO ALLOW INSTALLATION AND BACKFILL WITHIN 1 WORK DAY. PLACE EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH AND IMMEDIATELY STABILIZE ALL DISTURBED AREAS AROUND TRENCH AT THE END OF EACH WORK DAY. (1 WEEK)
- POUR BUILDING FOOTERS AND SLAB, START BUILDING CONSTRUCTION. (1 WEEK)
- PERFORM REMAINING FINE GRADING. (1 WEEK)
- INSTALL ALL SIDEWALKS. (3 DAYS)
- INSTALL LANDSCAPING. (3 DAYS)
- REMOVE STABILIZED CONSTRUCTION ENTRANCE. (1 DAY)
- MILL AND OVERLAY AND INSTALL PAVEMENT STRIPING AND MARKINGS. (2 DAY)
- STABILIZE REMAINING AREA WITH PERMANENT SEEDING AND MULCHING. (1 DAY)
- FLUSH AND PUMP THE STORM DRAIN SYSTEM CLEAN. (1 DAY)
- UPON PERMANENT STABILIZATION OF ALL DISTURBED AREAS AND WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, REMOVE ANY REMAINING SEDIMENT CONTROL DEVICES.

THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

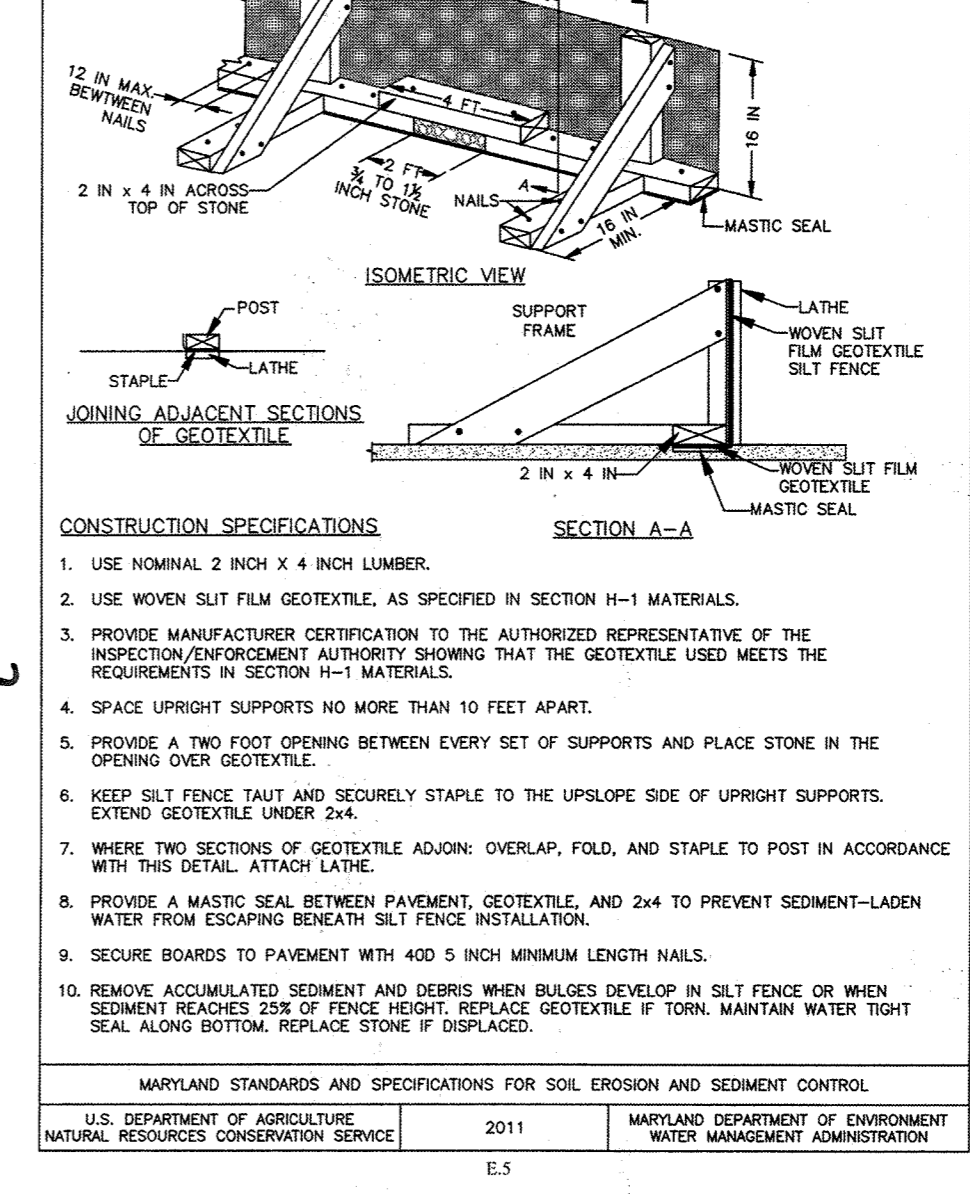
Anthony U. Olsen
 ANTHONY U. OLSEN, P.E.
 MD REG # 19376
 EXP DATE: 9/22/21



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE 2011
 MARYLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION



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 U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE 2011
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REVISIONS		
1	NEW SHEET	4/19

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-0099

SERVICES AREA COMPLEX
 BLDGS 29, 35 AND 33

KEY PLAN

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE 2011
 MARYLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION

GRAPHIC SCALES

SIGNATURE

Anthony U. Olsen
 STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 LICENSE NO. 19376
 EXPIRES 9/22/2019

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. 19376
 EXPIRATION DATE: 9/22/2019

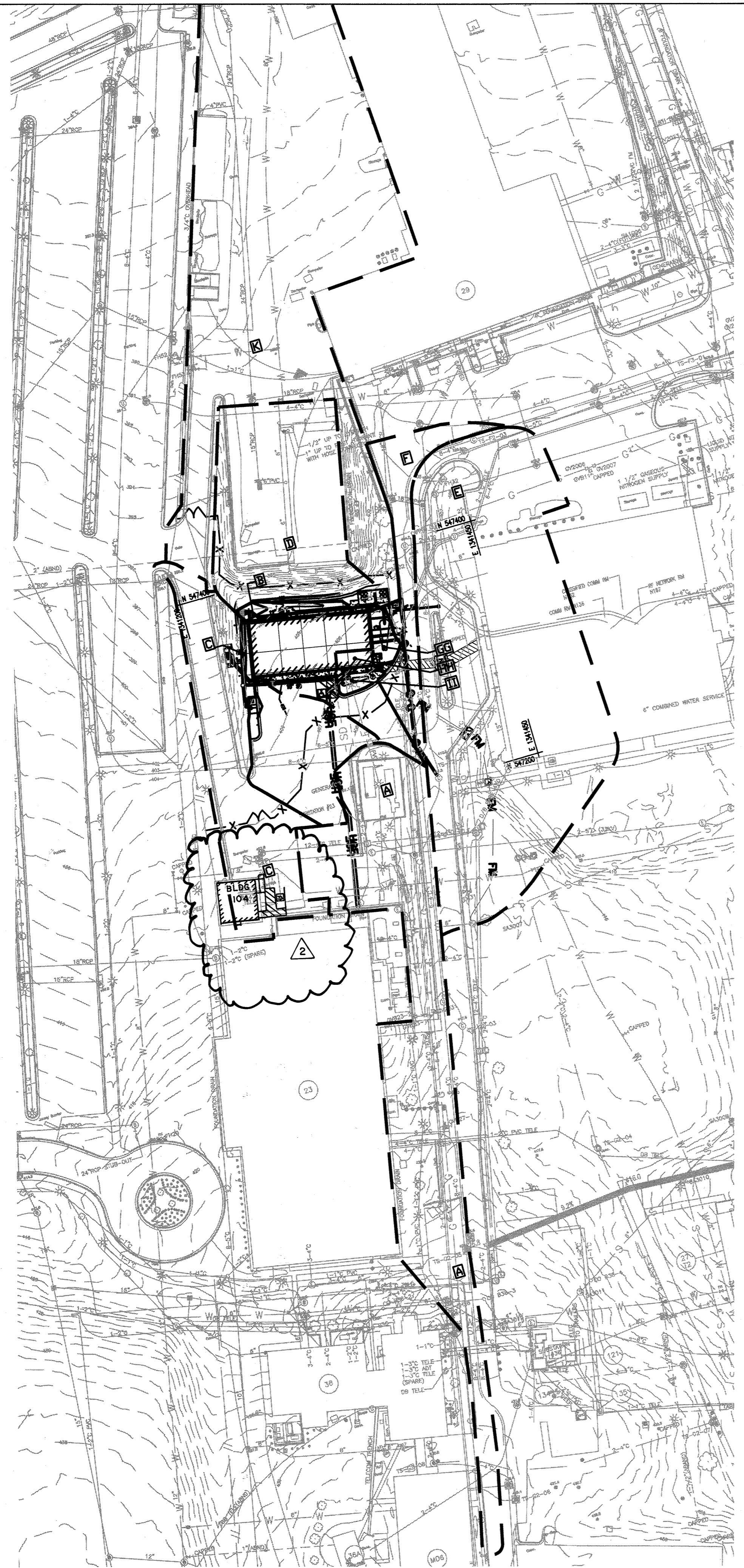
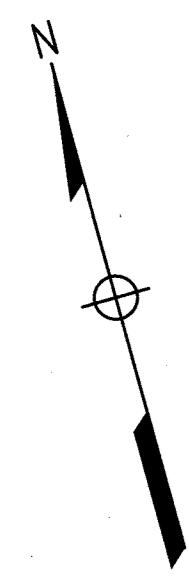
WRA
 Whitman, Requardt & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21223

EROSION AND SEDIMENT CONTROL DETAILS AND NOTES

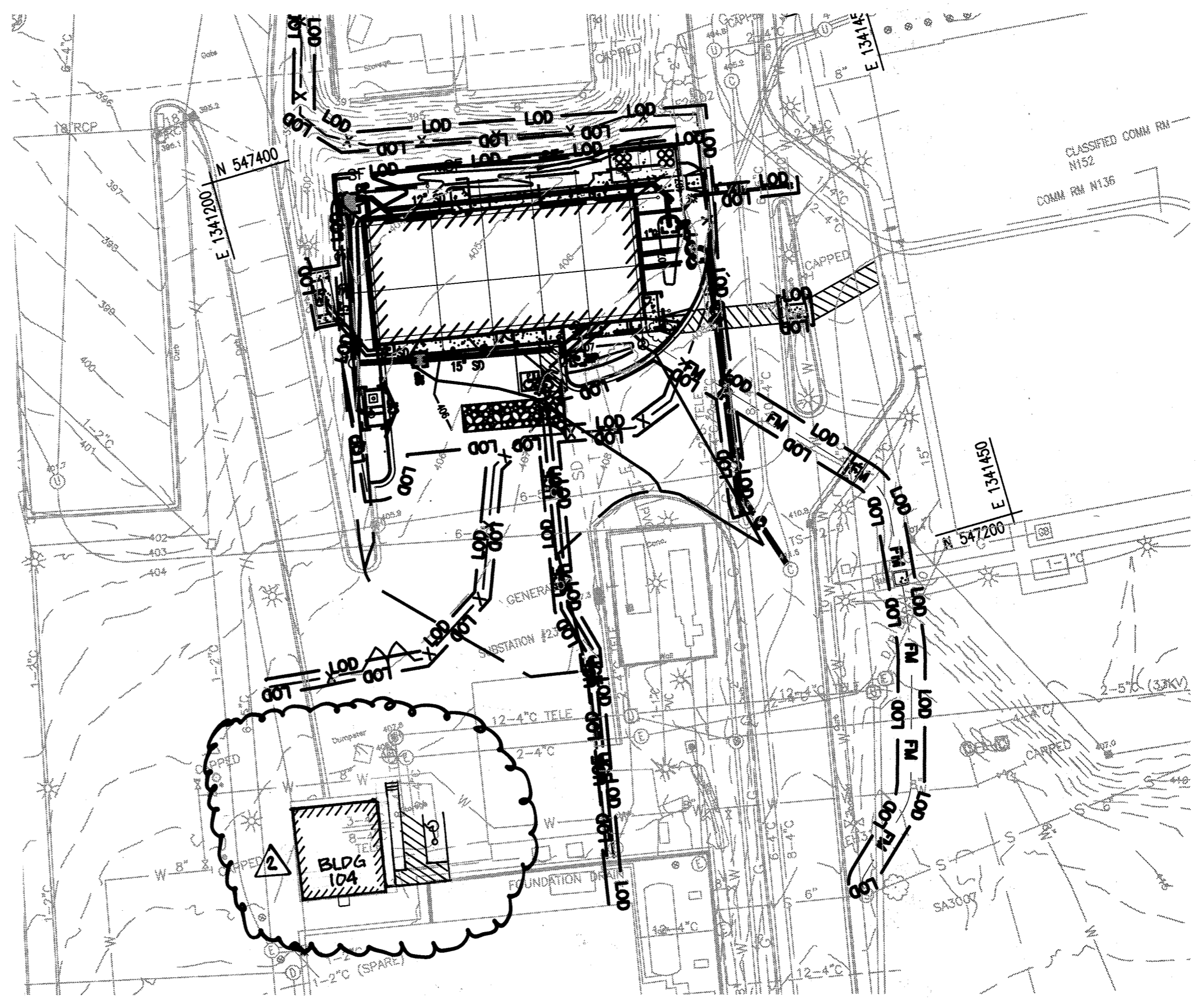
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C-039

Scale: 1" = 20'
 Date: 4/30/2019 Sheet 39 of 47
 Des: RFS Drawn: RFS Check: JTD

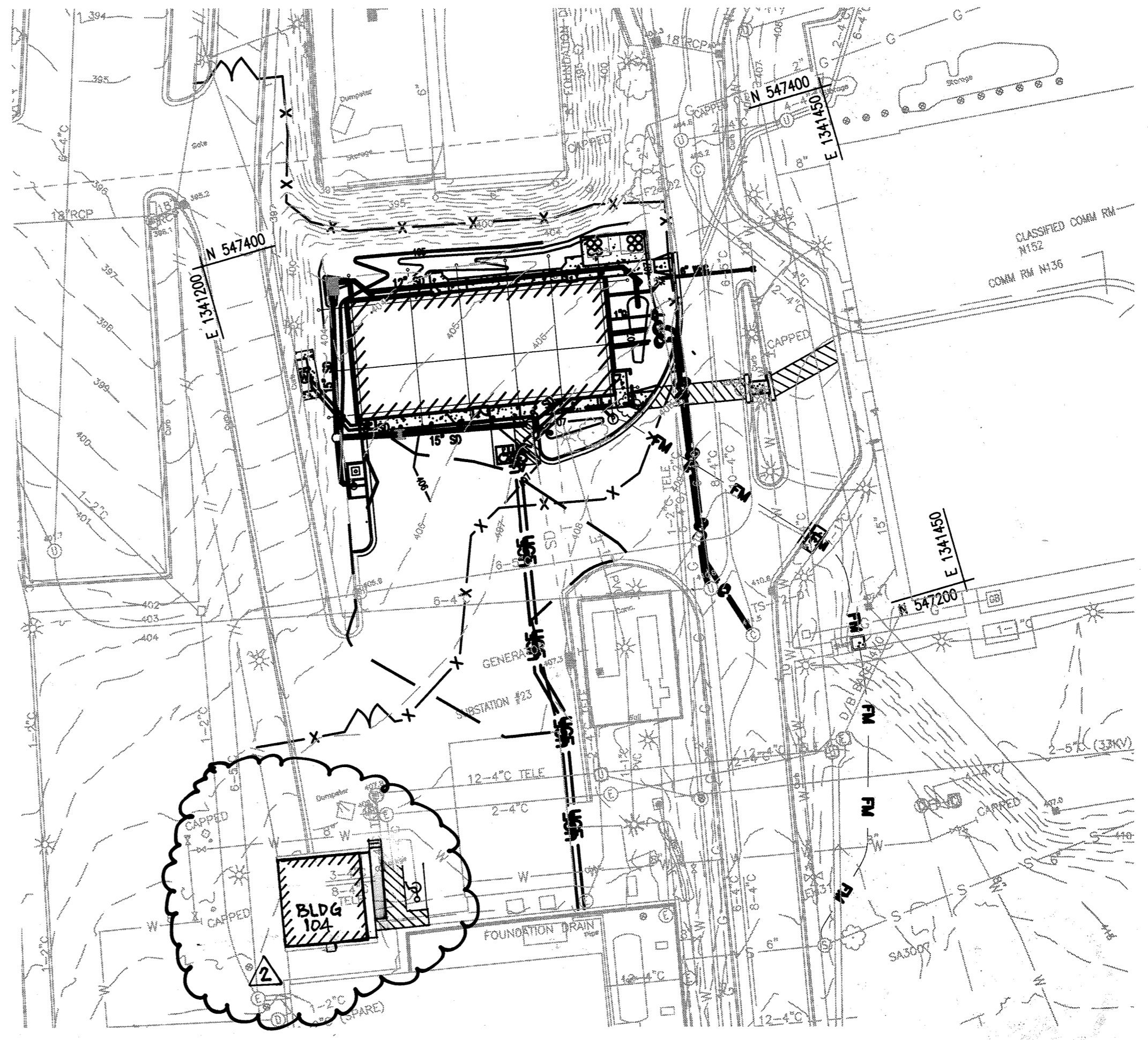
AS-BUILT
 SDP-04-76



EXISTING AND PROPOSED CONDITIONS DRAINAGE AREA MAP
 SCALE: 1" = 60'

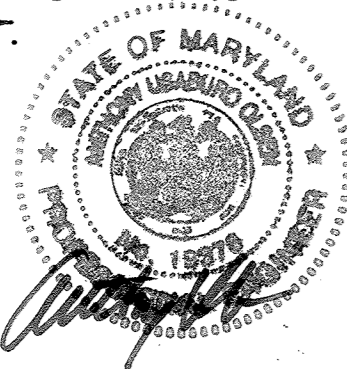


EROSION AND SEDIMENT CONTROL DRAINAGE AREA MAP
 SCALE: 1" = 40'



STORMWATER DRAINAGE AREA MAP
 SCALE: 1" = 40'

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



ANTHONY U. OLSEN, P.E.
 MD REG # 19376
 Exp DATE: 9/22/21

DRAINAGE AREA MAP SUMMARY TABLE

Drainage Area	Existing		Proposed		Impervious	
	SF	AC	SF	AC	SF	AC
A	31725.48	0.73	31725	0.73	B2071	20105 0.46
B	19853.89	0.46	1206	0.03	I-1	282 0.01
C	14538.28	0.33	15760	0.36		12932 0.30
D	18121.69	0.42	18100	0.42		13317 0.31
E	48953.18	1.12	48953	1.12		26955 0.62
F	6470.86	0.15	6858	0.16		6615 0.15
K	58292.72	1.34	58504	1.34		53802 1.24
EE	0	0.00	4067	0.09	Rooftop A	4067 0.09
FF	0	0.00	7827	0.180	I-2	7751 0.178
GG	0	0.00	853	0.02	I-4	23 0.00
HH	0	0.00	420	0.01	Rooftop B	420 0.01
II	0	0.00	635	0.01	I-5	166 0.00
JJ	0	0.00	3048	0.07	I-3	3048 0.07

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 7-26-19
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 8-9-19
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 8-9-19
 DIRECTOR

REVISIONS		
1	NEW SHEET	4/19
2	ADDED BLDG. 104	1/2021

THE JOHNS HOPKINS UNIVERSITY
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 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099

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KEY PLAN

GRAPHIC SCALES

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 EXPIRATION DATE: 9/22/2019

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 801 South Carolina Street, Baltimore, Maryland 21231

DRAINAGE AREA MAPS

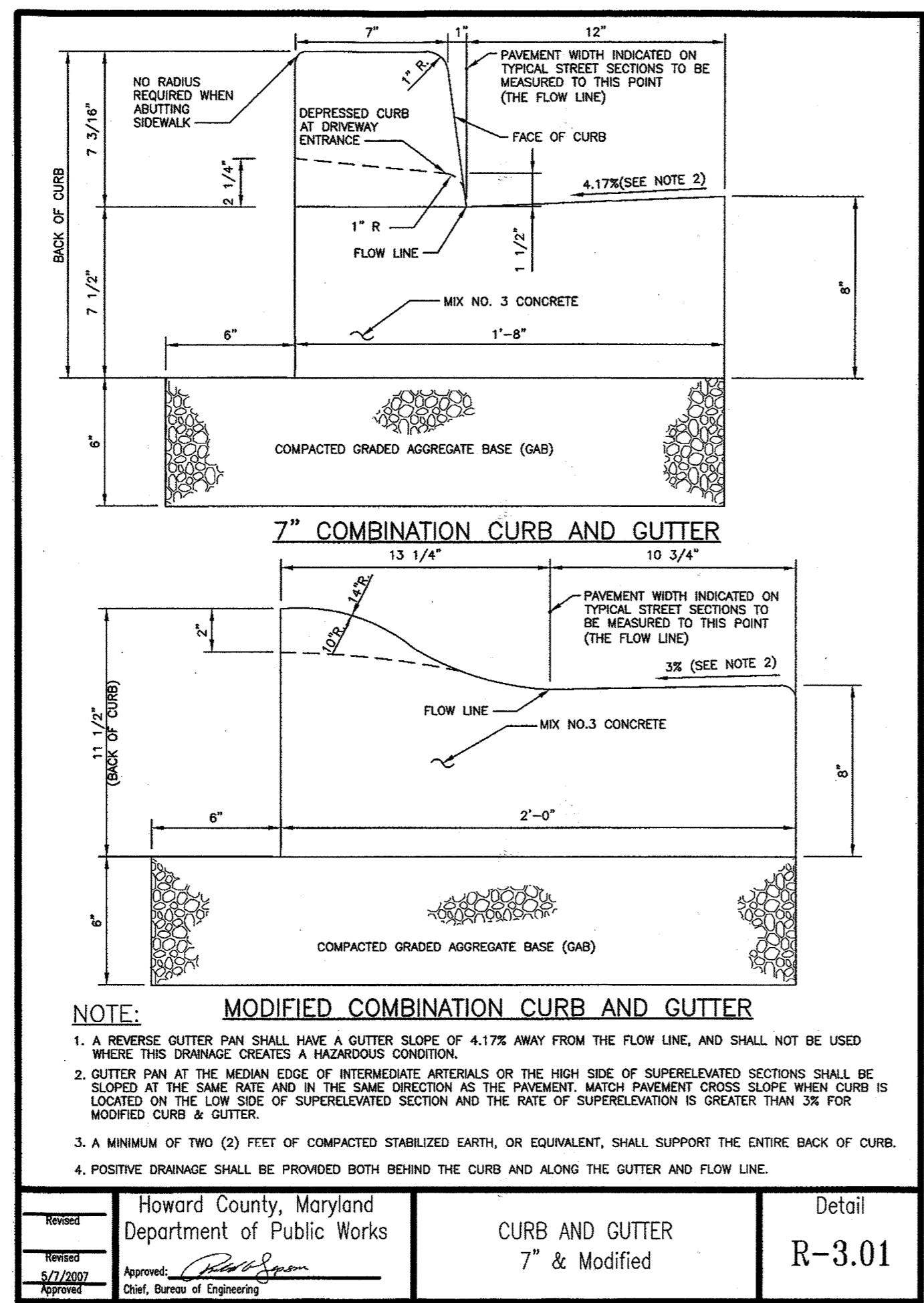
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C-040

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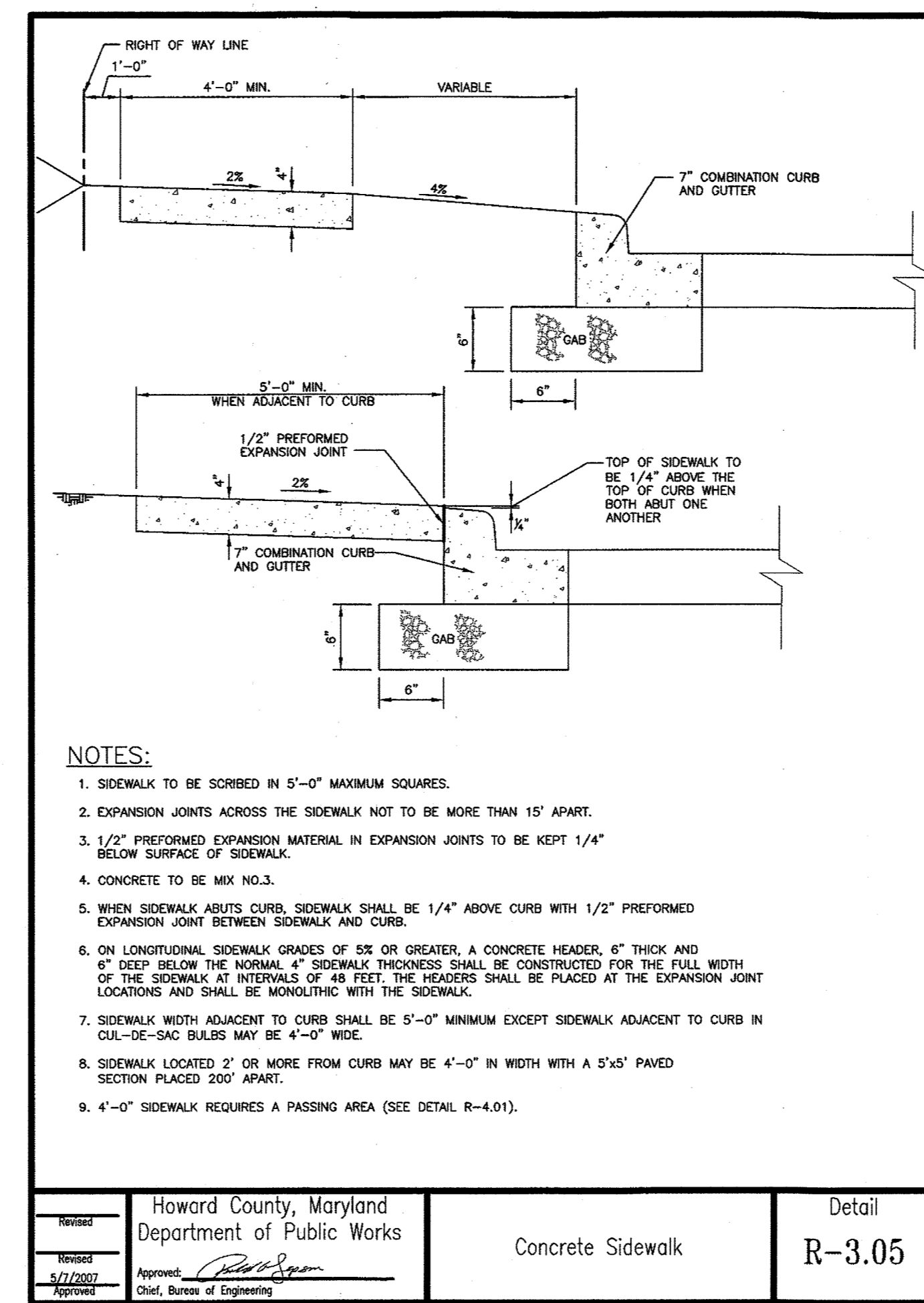
AS-BUILT

SDP-04-76

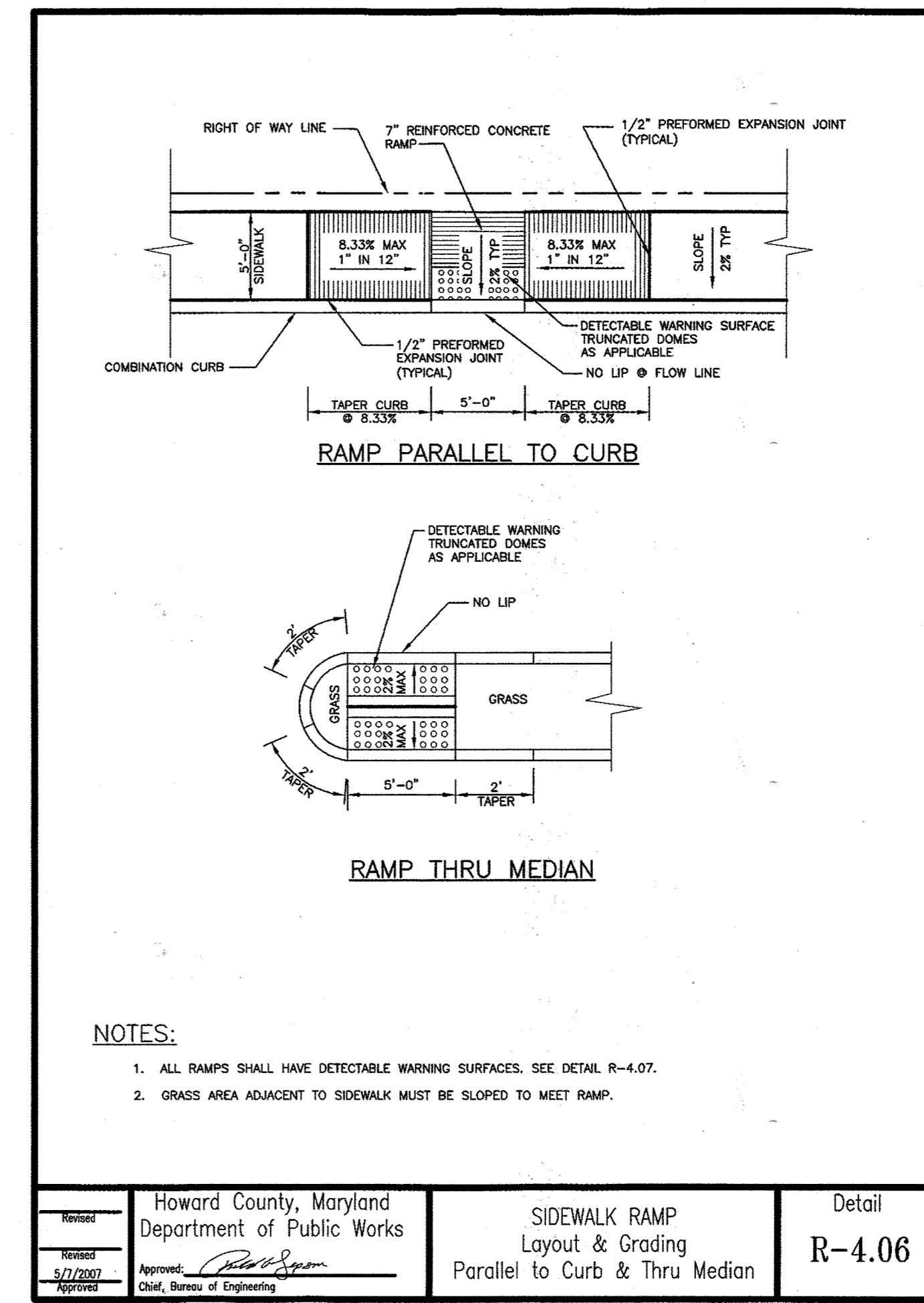
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Howard County, Maryland
 Department of Public Works
 Detail
7" & Modified
R-3.01



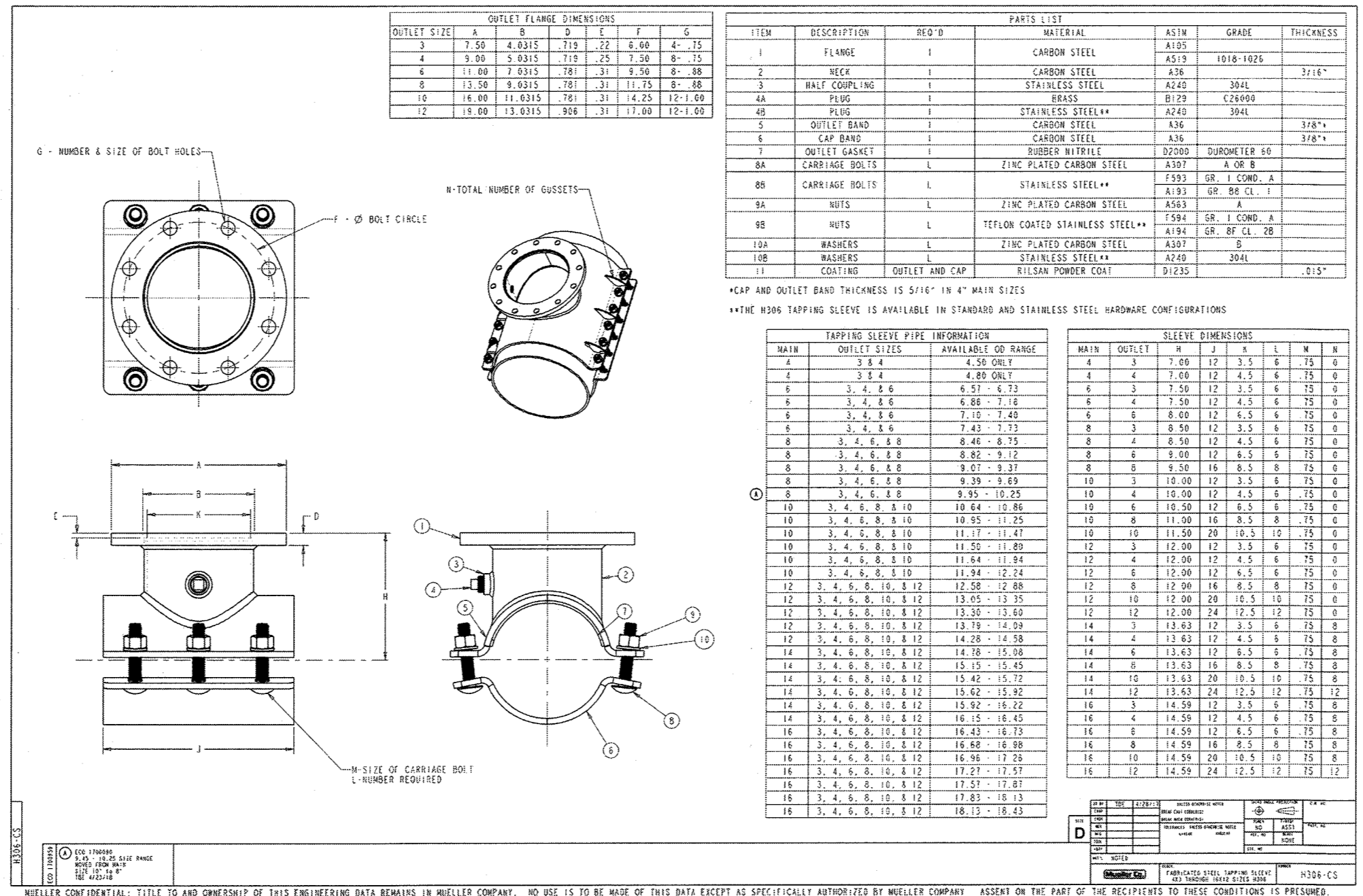
Howard County, Maryland
 Department of Public Works
 Detail
Concrete Sidewalk
R-3.05



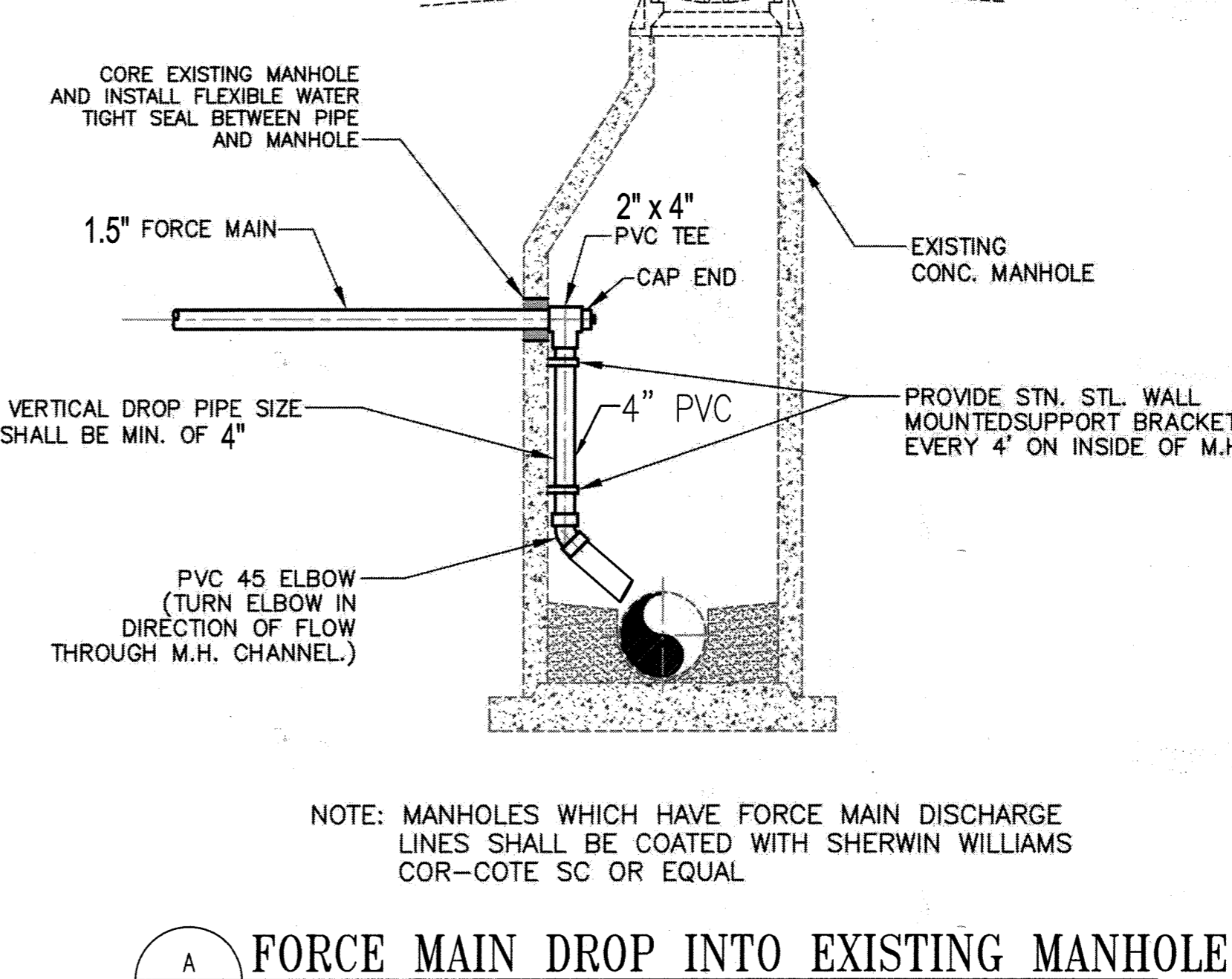
Howard County, Maryland
 Department of Public Works
 Detail
Sidewalk Ramp
Layout & Grading
Parallel to Curb & Thru Median
R-4.06

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)						
		3 TO <3	5 TO <7	2, 7	3 TO <5	5 TO <7	2, 7	
P-1	PARKING DRIVE ASPIES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY	HMA SUPERPAVE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE (NA)	NA	NA	NA	NA	NA	NA
		HMA SUPERPAVE BASE 19.0 MM PG 64-22, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.0	3.0	2.0
		GRADED AGGREGATE BASE (GAB)	8.5	7.0	5.0	4.0	4.0	4.0
P-2	PARKING DRIVE ASPIES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY	HMA SUPERPAVE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM PG 64-22, LEVEL 1 (ESAL)	1.0	1.0	1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE 19.0 MM PG 64-22, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.5	2.0	2.0
		GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0	4.0	4.0
P-3	PARKING DRIVE ASPIES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY	HMA SUPERPAVE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM PG 64-22, LEVEL 1 (ESAL)	1.0	1.0	1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE 19.0 MM PG 64-22, LEVEL 1 (ESAL)	3.0	3.0	3.0	4.5	3.0	2.0
		GRADED AGGREGATE BASE (GAB)	10.0	6.0	3.0	6.0	6.0	6.0
P-4	MINOR COLLECTORS: NON-RESIDENTIAL MAJOR COLLECTORS	HMA SUPERPAVE FINAL SURFACE 12.5 MM PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE INTERMEDIATE SURFACE 12.5 MM PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE BASE 19.0 MM PG 64-22, LEVEL 2 (LOW ESAL)	4.0	4.0	3.0	6.0	5.0	3.0
		GRADED AGGREGATE BASE (GAB)	13.0	7.0	4.0	6.0	6.0	6.0

Howard County, Maryland
 Department of Public Works
 Detail
PAVING SECTIONS
P-1 to P-4
R-2.01



Howard County, Maryland
 Department of Public Works
 Detail
TAPPING SLEEVE
P-1 to P-4
R-2.01



Howard County, Maryland
 Department of Public Works
 Detail
FORCE MAIN DROP INTO EXISTING MANHOLE
NOT TO SCALE
C-041

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 7-26-19
 8-9-19
 8-9-19

ANTHONY J. OLSEN, P.E.
 MD REG # 19376
 EXP. DATE: 4/22/21

AS-BUILT

REVISIONS		
1	NEW SHEET	4/19

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099

SERVICES AREA COMPLEX
 BLDGS 29, 35 AND 33

KEY PLAN

GRAPHIC SCALES

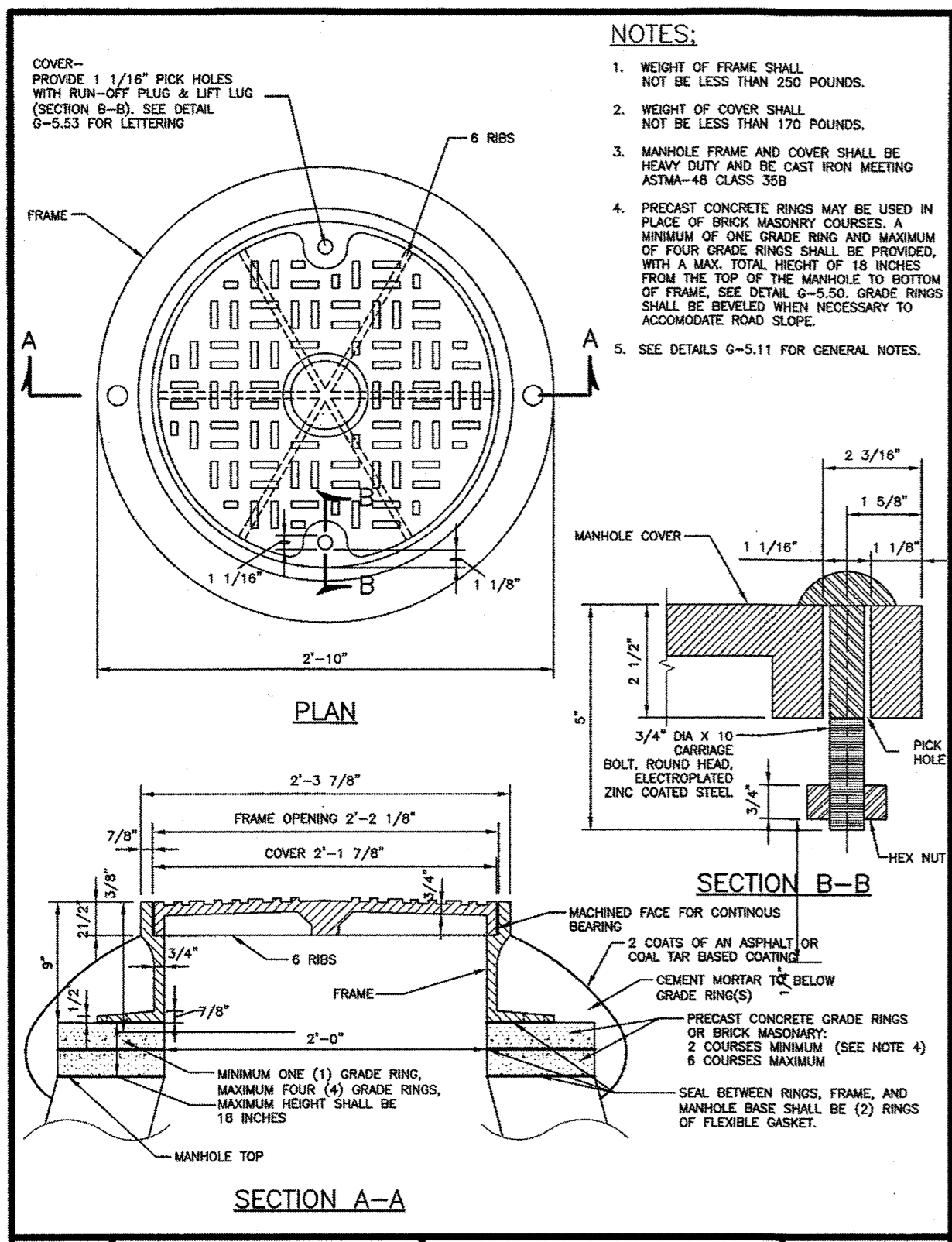
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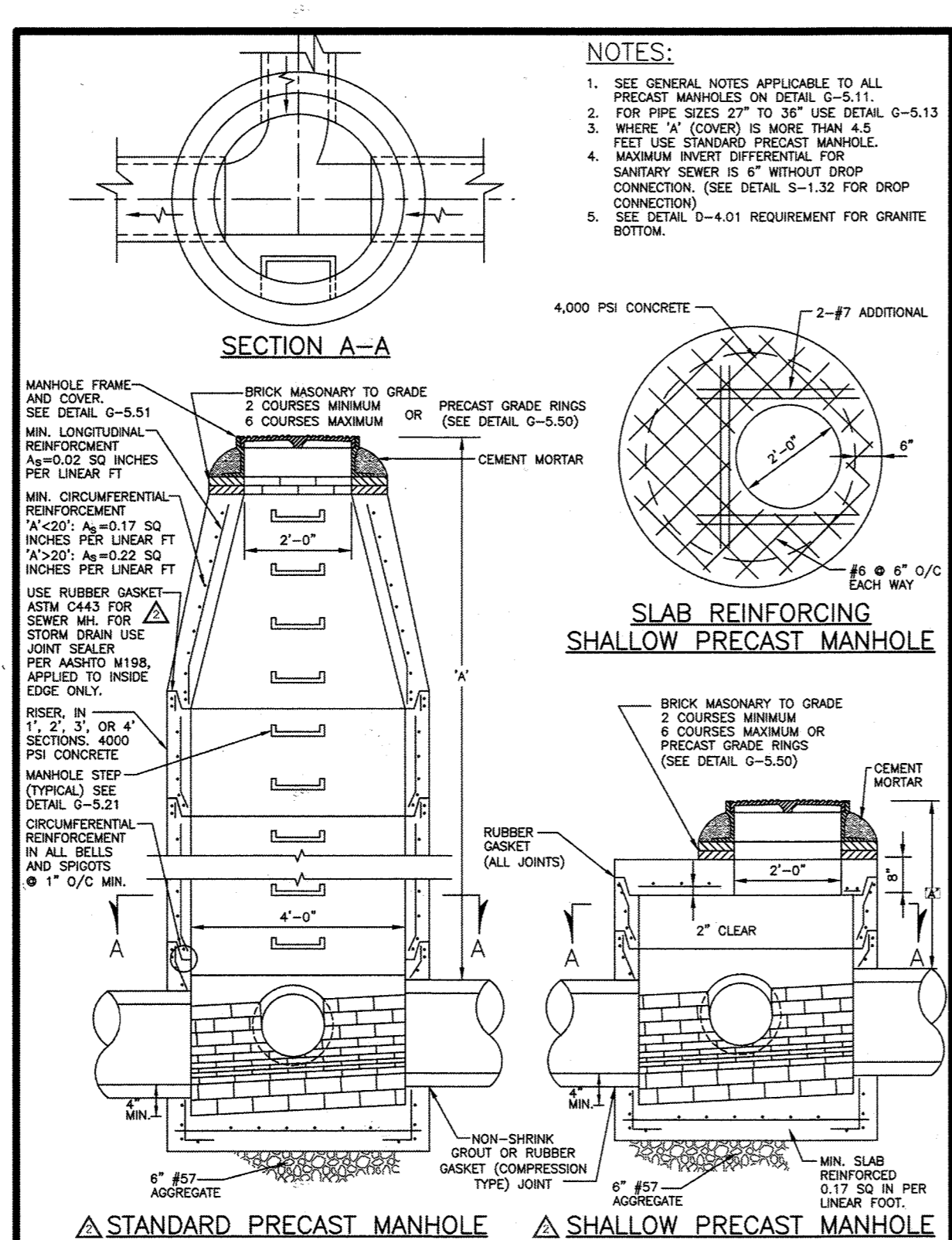
WRA
 Whitman, Reardon & Associates, LLP
 801 South Carolina Street, Baltimore, Maryland 21231

UTILITY NOTES AND DETAILS
 Drawing No.
C-041
 Scale: 1" = 20'
 Date: 4/30/2019 Sheet 41 of 47
 Des: RFS Drawn: RFS Check: JTD

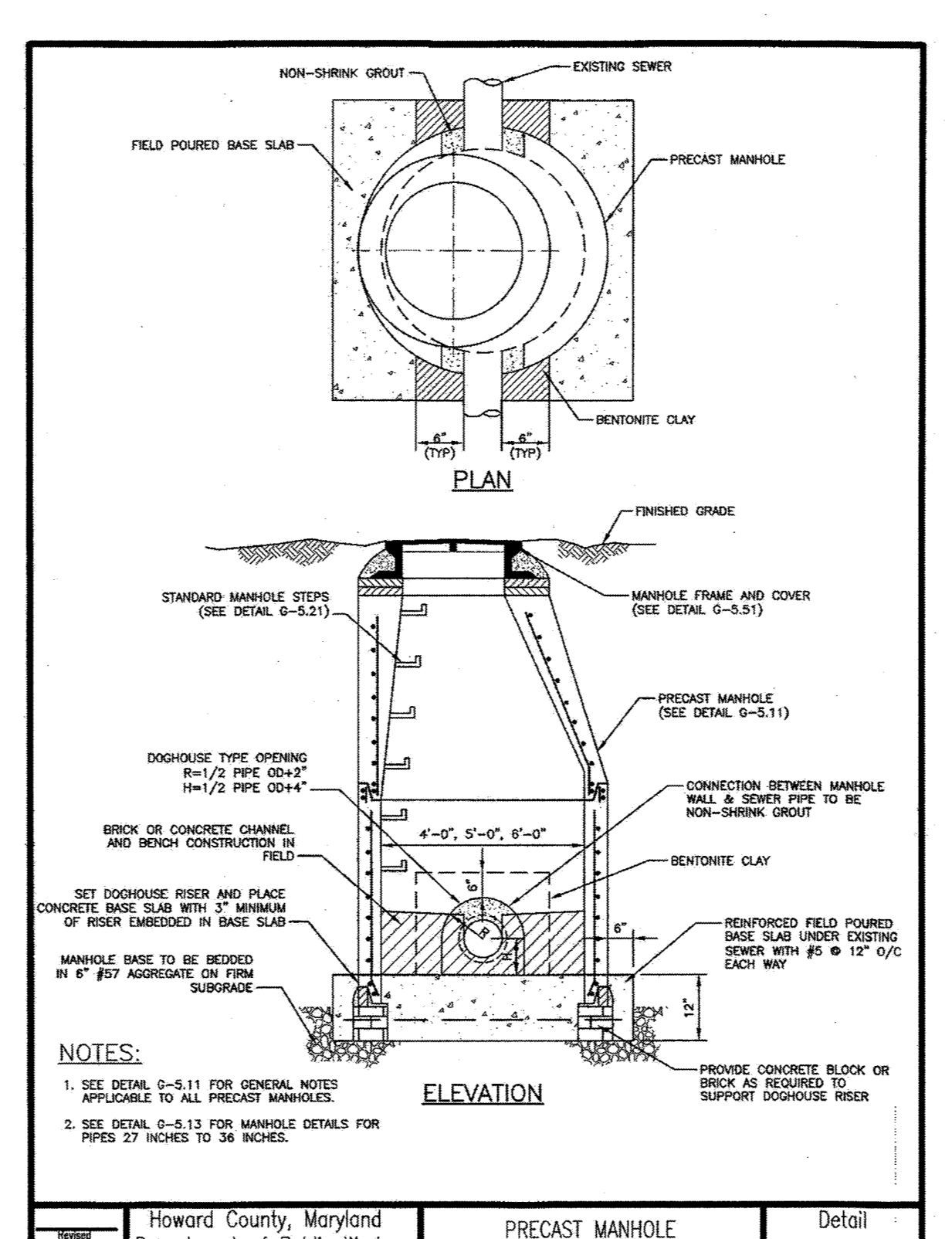
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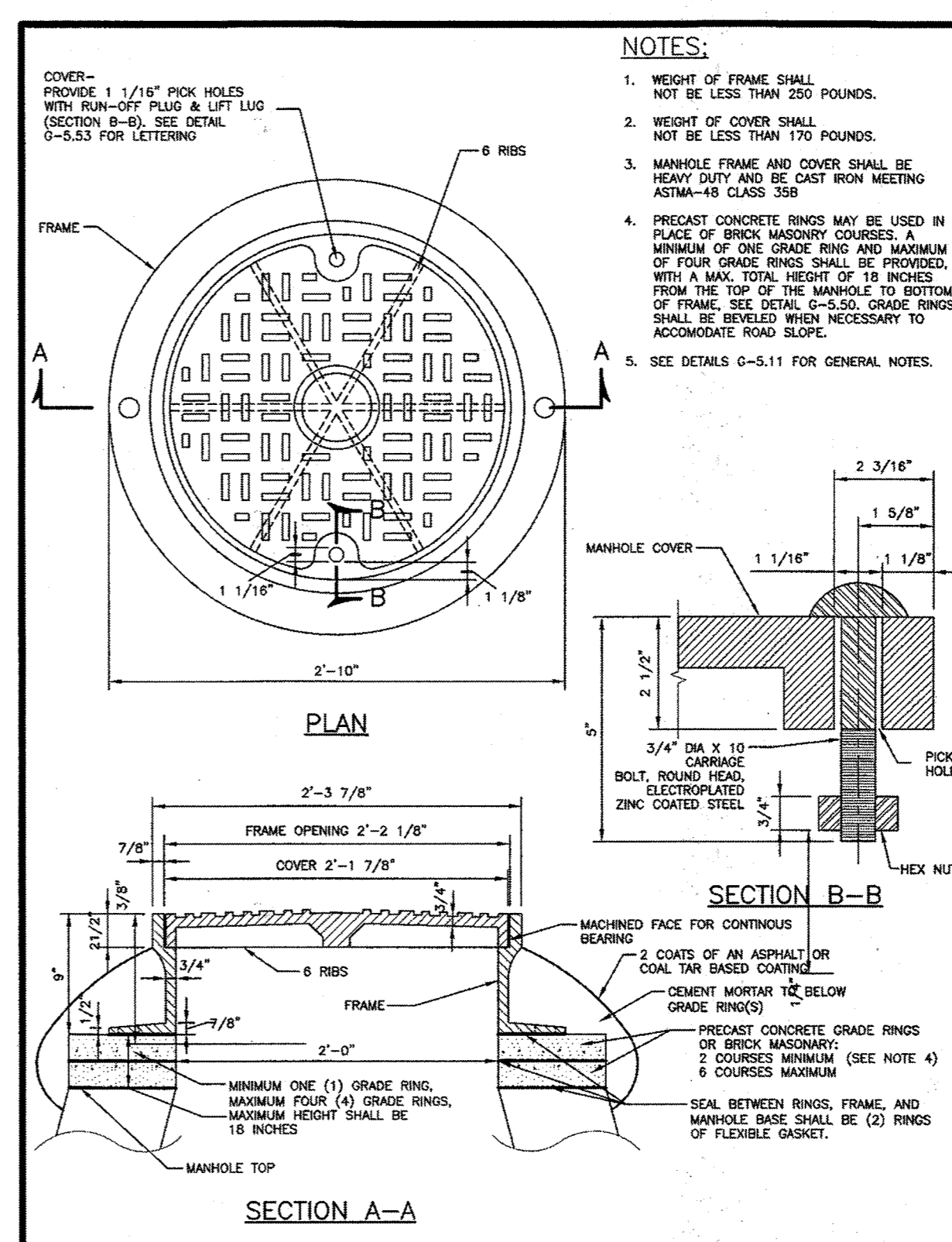
Howard County, Maryland Department of Public Works
Manhole Heavy Traffic Frame and Cover
Detail G-5.51



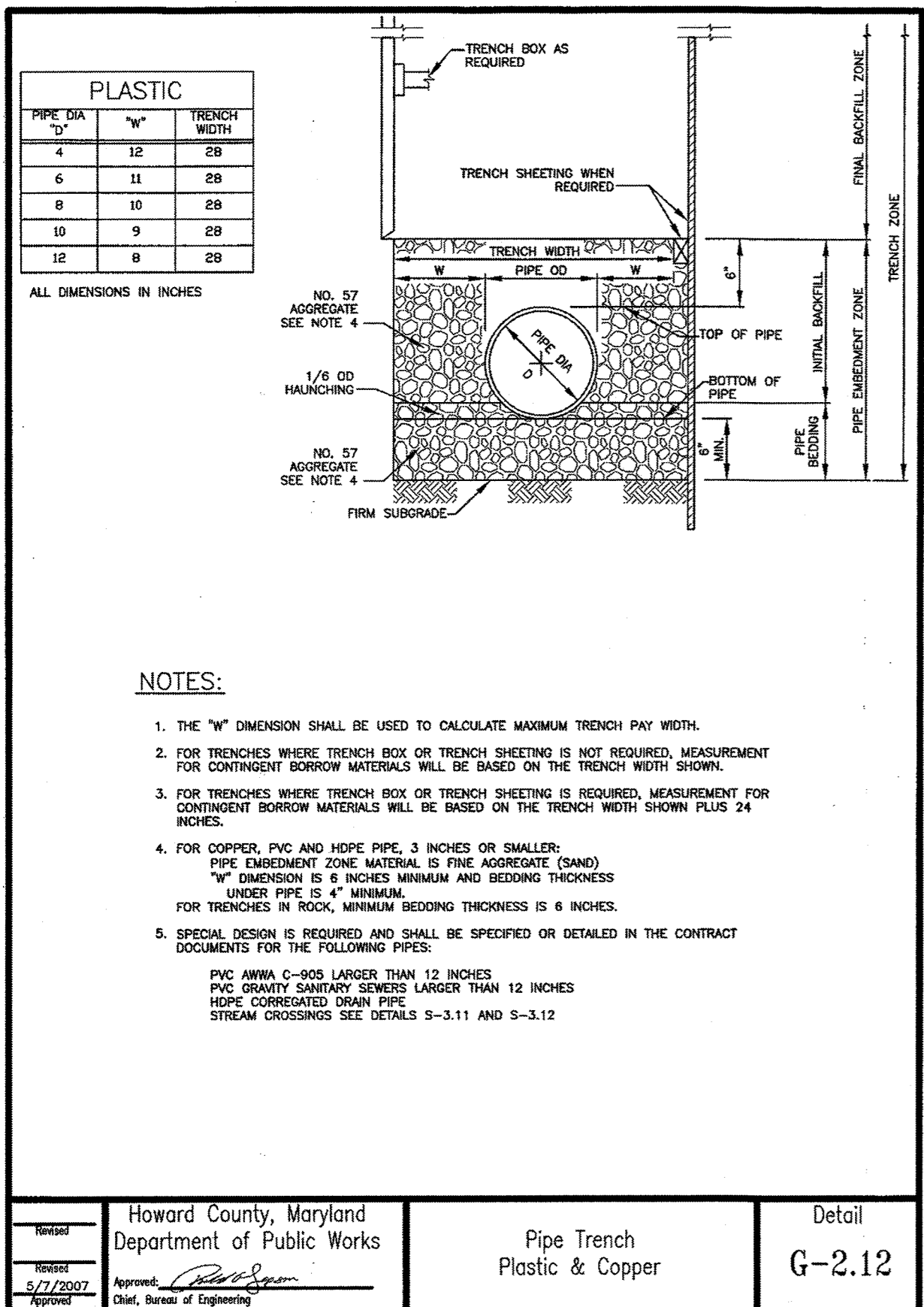
Howard County, Maryland Department of Public Works
PRECAST MANHOLE Standard and Shallow 4'-0" for 24" Pipe and smaller
Detail G-5.12



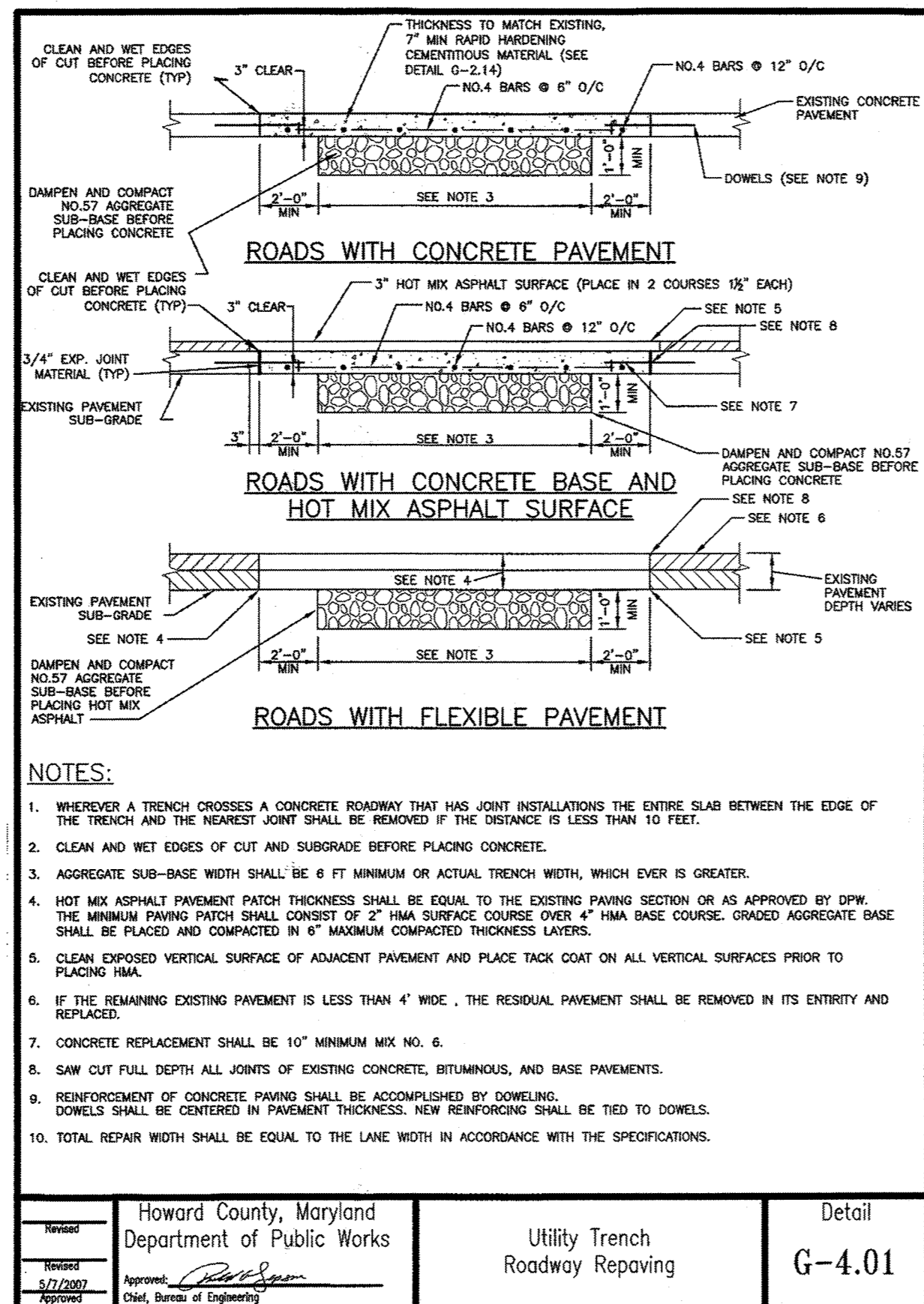
Howard County, Maryland Department of Public Works
PRECAST MANHOLE Doghouse Over Existing Sewer 24" Pipe and smaller
Detail G-5.14



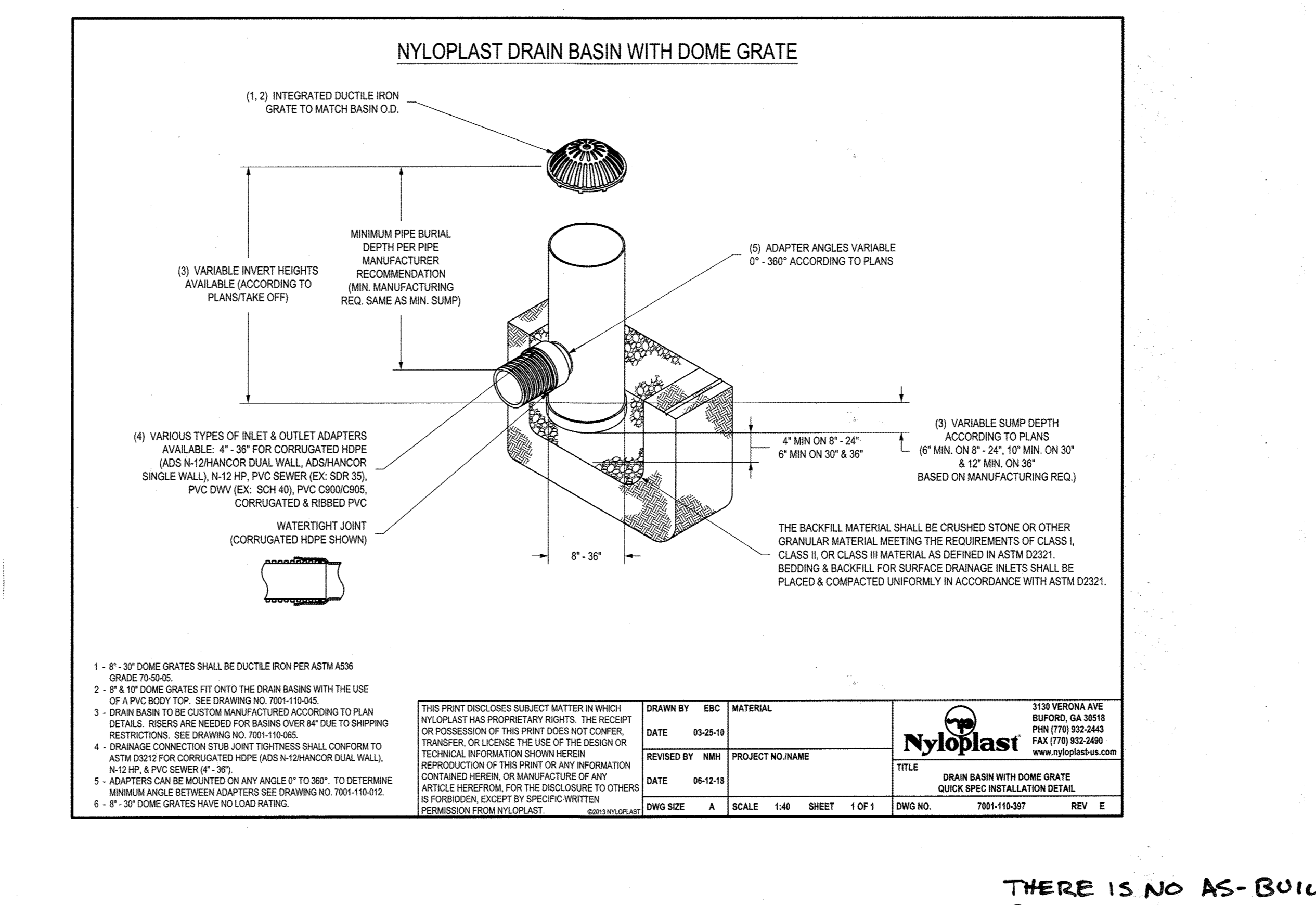
Howard County, Maryland Department of Public Works
Manhole Heavy Traffic Frame and Cover
Detail G-5.51



Howard County, Maryland Department of Public Works
Pipe Trench Plastic & Copper
Detail G-2.12



Howard County, Maryland Department of Public Works
Utility Trench Roadway Repaving
Detail G-4.01



Howard County, Maryland Department of Public Works
Utility Trench Roadway Repaving
Detail G-4.01

REVISIONS		
1	NEW SHEET	4/19

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APPLIED PHYSICS LABORATORY
JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723-6099

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BLDGs 29, 35 AND 33

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EXPIRATION DATE: 8/22/2019

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

UTILITY NOTES AND DETAILS

Drawing No. **C-042**

Scale: 1" = 20'

Date: 4/30/2019 Sheet 42 of 47

Des: RFS Drawn: RFS Check: JTD

ANTHONY U. OLSEN, P.E.
MD REG# 19376
EXP DATE: 8/22/21

AS-BUILT SDP-04-76

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Old Coleman 7.26.19
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Veronica Lewis 8.9.19
CHIEF, DIVISION OF LAND DEVELOPMENT

William J. Miller 8.9.19
DIRECTOR

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

REVISIONS		
1	NEW SHEET	4/19

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APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099

SERVICES AREA COMPLEX
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KEY PLAN

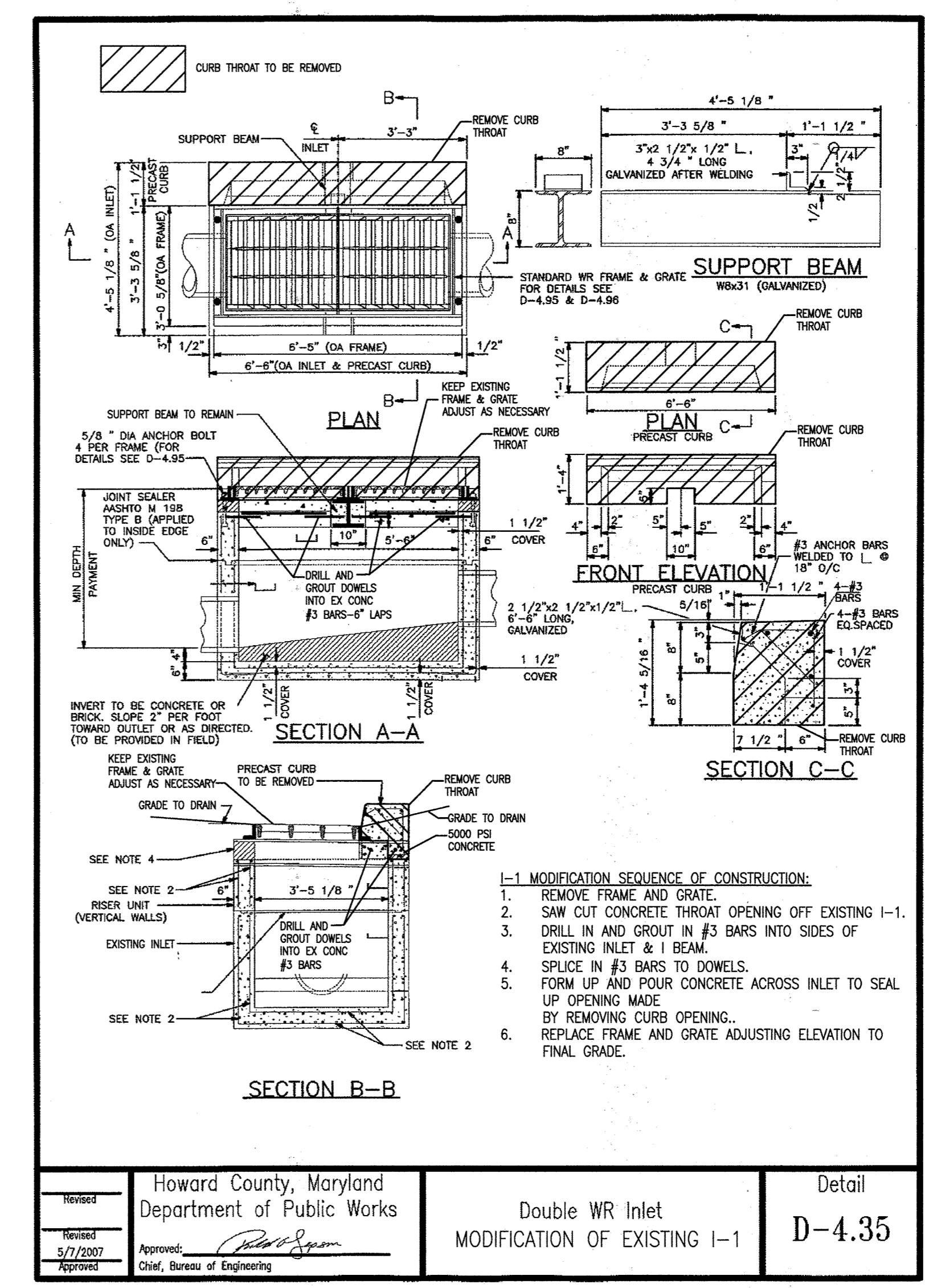
GRAPHIC SCALES

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 801 South Caroline Street, Baltimore, Maryland 21231

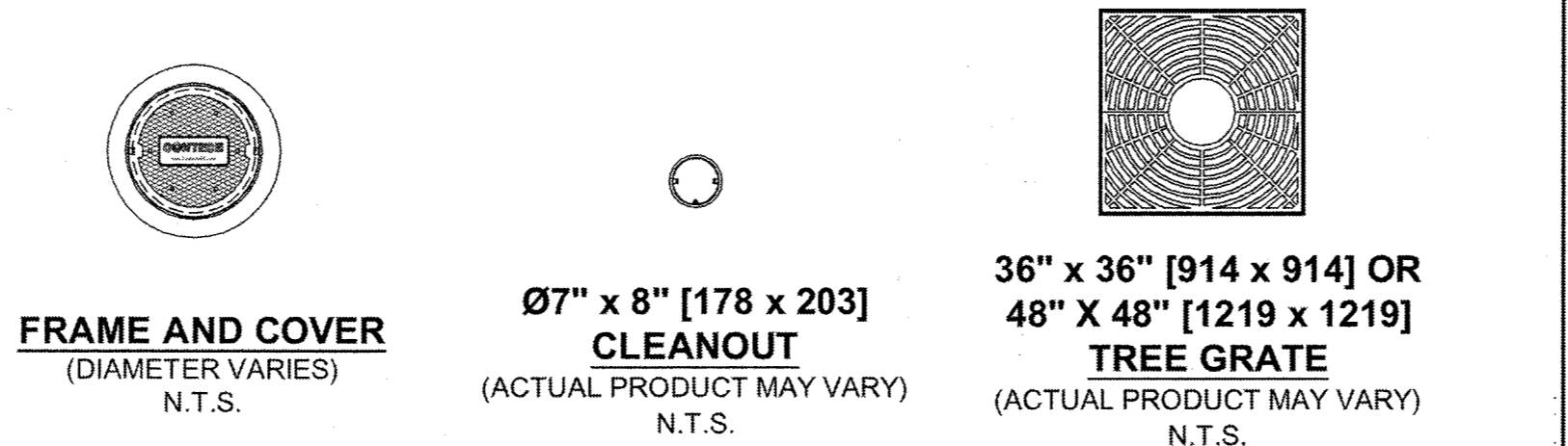
UTILITY DETAILS
 Drawing No.
C-043
 Scale: NOT TO SCALE
 Date: 4/30/2019 Sheet 43 of 47
 Des: RFS Drawn: RFS Check: JTD



Howard County, Maryland
 Department of Public Works
 Detail
 Double WR Inlet
 MODIFICATION OF EXISTING I-1
 D-4.35

FTSCPD STANDARD UNIT SIZES							
UNIT DESIGNATION	INSIDE VAULT DIMENSIONS	FILTERRA TREATMENT BAY DIMENSIONS	FILTERRA TREATMENT SURFACE AREA (SF)	STORAGE CAPACITY OF UNIT PRIOR TO FILTRATION (CF)	WOV TREATMENT EQUIVALENT	TREE GRATE SIZE	UNDERDRAIN PIPE DIAMETER
FTSCPD 6' x 4'	6' x 10'	6' x 4'	24	108	431	36" x 36"	4"
FTSCPD 6' x 6'	6' x 12'	6' x 6'	36	147	485	36" x 36"	4"
FTSCPD 7' x 6'	7' x 13'	7' x 6'	42	161	643	36" x 36"	4"
FTSCPD 8' x 6'	8' x 14'	8' x 6'	48	174	714	36" x 36"	4"
FTSCPD 8' x 8'	8' x 16'	8' x 8'	64	223	893	48" x 48"	6"
FTSCPD 10' x 8'	8' x 20'	8' x 10'	80	287	1,149	48" x 48"	6"
FTSCPD 11' x 8'	8' x 22'	8' x 11'	88	319	1,277	48" x 48"	6"

NOTE:
 1. REQUIRED MINIMUM FILTERRA TREATMENT SURFACE AREA IS 91 SF/20,000 SF OF TOTAL DRAINAGE AREA PER MDE APPROVAL.
 2. STORAGE CAPACITY ASSUMES NO STORAGE IN MULCH, MEDIA OR STONE.
 3. ALL INFORMATION IS BASED ON STANDARD 4'-5" RIM TO OUTLET DEPTH. CONTACT CONTECH FOR CUSTOM SIZING IF DEPTH DIFFERS. ACCEPTABLE DEPTH IS 3'-1 1/2" MINIMUM TO 5'-0" MAXIMUM RIM TO INVERT OUT.
 4. PLEASE CONTACT YOUR CONTECH REPRESENTATIVE FOR CUSTOM SIZING IF THE STANDARD UNITS DO NOT MEET SITE CONSTRAINTS.



FRAME AND COVER
 (DIAMETER VARIES)
 N.T.S.

07" x 8" [178 x 203] CLEANOUT
 (ACTUAL PRODUCT MAY VARY)
 N.T.S.

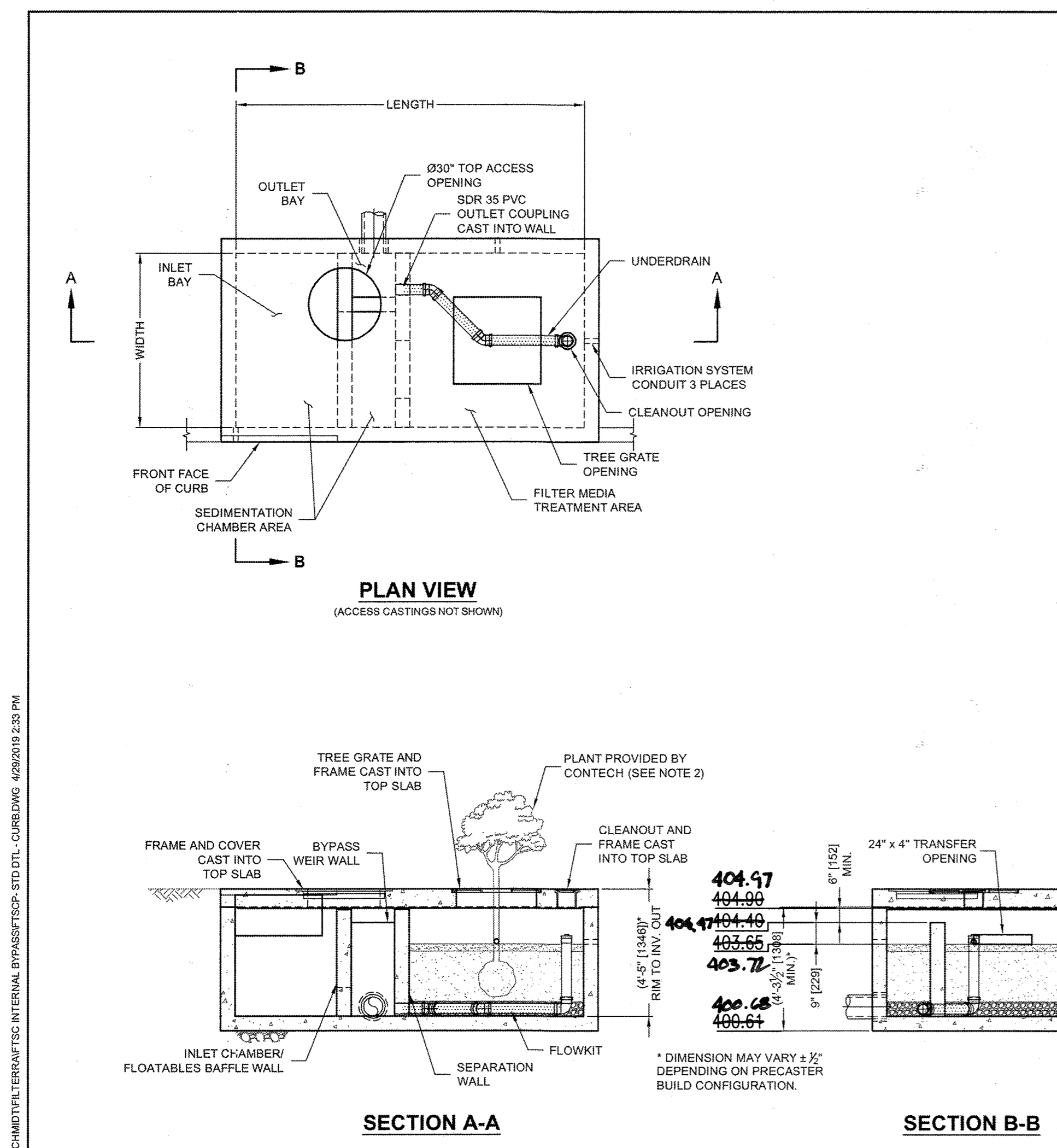
36" x 36" [914 x 914] OR 48" x 48" [1219 x 1219] TREE GRATE
 (ACTUAL PRODUCT MAY VARY)
 N.T.S.

GENERAL NOTES
 1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
 2. PLANT AND MULCH ARE SUPPLIED BY CONTECH AND DELIVERED AT TIME OF SYSTEM ACTIVATION. PLANT SELECTION SHALL BE DONE BY THE ENGINEER OF RECORD IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.
 3. DIMENSIONS MARKED WITH (1) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
 4. FOR SITE SPECIFIC DRAWINGS WITH DETAILED VAULT DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE. www.contechES.com
 5. FILTERRA WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
 6. STRUCTURE SHALL MEET PEDESTRIAN LIVE LOAD, ASSUMING EARTH COVER OF 0' AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
 7. FILTERRA STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-857, ASTM C-918, AND ACI-318 LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
 A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
 B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE FILTERRA VAULT, SPREADER BAR WITH SUFFICIENT CABLE IS REQUIRED FOR SAFETY AND REDUCTION OF DAMAGE TO CONCRETE STRUCTURE.
 C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL VAULT SECTIONS AND ASSEMBLE VAULT.
 D. CONTRACTOR TO PROVIDE, INSTALL AND GROUT INLET AND OUTLET PIPES.
 E. CONTRACTOR TO SUPPLY AND INSTALL INLET PROTECTION BAR IF REQUIRED BY LOCAL JURISDICTION.
 F. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT FILTERRA MEDIA BAY FROM CONSTRUCTION-RELATED EROSION RUNOFF.
 G. CONTECH IS RESPONSIBLE FOR ACTIVATION OF THE SYSTEM AND PLANTING OF THE PLANT THAT IS SPECIFIED. ACTIVATION ONLY OCCURS WHEN THE SITE IS FULLY STABILIZED, FINAL PAVEMENT INSTALLED AND SWEEP CLEAN OF CONSTRUCTION SEDIMENT.
 H. ALL FILTERRA UNITS MUST BE WATERED BY IRRIGATION LINES OR SPRINKLER SYSTEMS ON A REGULAR BASIS. EACH FILTERRA UNIT INCLUDES IRRIGATION HOLES FOR NEW OR EXISTING IRRIGATION LINES.

CONTECH ENGINEERED SOLUTIONS LLC
 www.contechES.com
 7037 Ridge Road Suite 350, Hanover, MD 21076
 866-740-3318 410-740-8490 410-740-8496 FAX

FILTERRA SEDIMENTATION CHAMBER PEAK DIVERSION
 STANDARD DETAIL
 MODEL: FTSCPDXXXX



SECTION A-A
 INLET CHAMBER/ FLOATABLES BAFFLE WALL
 SEPARATION WALL
 FLOWKIT

SECTION B-B
 CLEANOUT AND FRAME CAST INTO TOP SLAB
 BYPASS WEIR WALL
 24" x 4" TRANSFER OPENING
 CURB NOSING
 CURE INLET

OPERATION AND MAINTENANCE SCHEDULE FOR FILTERRA

- ROUTINE MAINTENANCE SHALL BE DONE BY THE MANUFACTURER FOR THE FIRST YEAR AFTER ACTIVATION, ONCE IN THE SPRING AND ONCE IN THE FALL. THIS INCLUDES TWO (2) VISITS, SCHEDULED BY THE OWNER, TO PERFORM DEBRIS REMOVAL, REPLACEMENT OF MULCH, AND PRUNING. ANY ADDITIONAL MAINTENANCE IN THE FIRST YEAR IS THE RESPONSIBILITY OF THE OWNER. AFTER THE FIRST YEAR, ALL MAINTENANCE SHALL BE DONE BY THE OWNER.
- THE OWNER SHALL PERFORM ROUTINE MAINTENANCE AND INSPECTION TWICE PER YEAR, ONCE IN THE SPRING AND ONCE IN THE FALL, AND SHALL CONSIST OF THE FOLLOWING:
 - REMOVAL OF DEBRIS AND MULCH LAYER.
 - INSPECT THE PLANT'S HEALTH FOR DISEASE AND INSECT INFESTATION AND REPLACE IF NECESSARY. PERFORM PRUNING AS NECESSARY TO ENCOURAGE GROWTH IN THE CORRECT DIRECTIONS AND REMOVE DEAD MATERIAL. ACCEPTABLE REPLACEMENT PLANTS ARE LIMITED TO THOSE SPECIFIED BY THE MANUFACTURER. INSTRUCTIONS CAN BE FOUND AT WWW.CONTECHES.COM.
 - IF NECESSARY, ADD ADDITIONAL FILTERRA ENGINEERED MEDIA SOIL USING THE APPROVED CONTRACT DRAWINGS AS REFERENCE FOR REQUIRED MEDIA DEPTH.
 - ADD THREE (3) INCHES OF DOUBLE SHREDDED MULCH EVENLY ACROSS THE ENTIRE UNIT.

CONTECH ENGINEERED SOLUTIONS
 Filterra® Standard Plan Notes
 Filterra®
 BioRetention Systems

- Construction & Installation**
- Each unit shall be constructed at the locations and elevations according to the sizes shown on the approved drawings. Any modifications to the elevation or location shall be at the direction of and approved by the Engineer.
 - If the Filterra® is stored before installation, the top slab must be placed on the box using the 2x4 wood provided, to prevent any contamination from the site. All internal fittings supplied (if any), must be left in place as per the delivery.
 - The unit shall be placed on a compacted sub-grade with a minimum 6-inch gravel base matching the final grade of the curb line in the area of the unit. The unit is to be placed such that the unit and top slab match the grade of the curb in the area of the unit. Compact undisturbed sub-grade materials to 95% of maximum density at +1-2% of optimum moisture. Unsuitable material below sub-grade shall be replaced to the site engineer's approval.
 - Outlet connections shall be aligned and sealed to meet the approved drawings with modifications necessary to meet site conditions and local regulations.
 - Once the unit is set, the internal wooden forms and protective mesh cover must be left intact. Remove only the temporary wooden shipping blocks between the box and top slab. The top lid should be sealed onto the box section before backfilling, using a nonshrink grout, butyl rubber or similar waterproof seal. The boards on top of the lid and boards sealed in the unit's throat must NOT be removed. The Supplier will remove these sections at the time of activation. Backfilling should be performed in a careful manner, bringing the appropriate fill material up in 6" lifts on all sides. Precast sections shall be set in a manner that will result in a watertight joint. In all instances, installation of Filterra® unit shall conform to ASTM specification C891 "Standard Practice for Installation of Underground Precast Utility Structures", unless directed otherwise in contract documents.
 - Curb and gutter construction (where present) shall ensure that the flow-line of the Filterra® units is at a greater elevation than the flow-line of the bypass structure or relief (drop inlet, curb cut or similar). Failure to comply with this guideline may cause failure and/or damage to the Filterra® environmental device.
 - Each Filterra® unit must receive adequate irrigation to ensure survival of the living system during periods of drier weather. This may be achieved through a piped system, gutter flow or through the tree grate.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 7-26-19
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 8-9-19
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 8-9-19
 DIRECTOR

AS-BUILT CERTIFICATION
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE PLANS WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND COMPLIES WITH THE APPROVED PLANS AND SPECIFICATIONS. I HAVE VERIFIED THAT THE CONTRIBUTING DRAINAGE AREA IS SUFFICIENTLY STABILIZED TO PREVENT LOGGING OF THE UNDERGROUND SWM FACILITY.

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 [Signature]
 MARYLAND REGISTRATION NO. 19376 EXPIRATION DATE: 9/22/21

AS-BUILT

FILED IN 4694-426 CURB/INLET/VEHICLE/VEHICLE/4694-426

REVISIONS		
1	NEW SHEET	4/19

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099



SERVICES AREA COMPLEX
 BLDGS 29, 35 AND 33

KEY PLAN

GRAPHIC SCALES

SIGNATURE



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. 19376
 EXPIRATION DATE: 9/22/2019

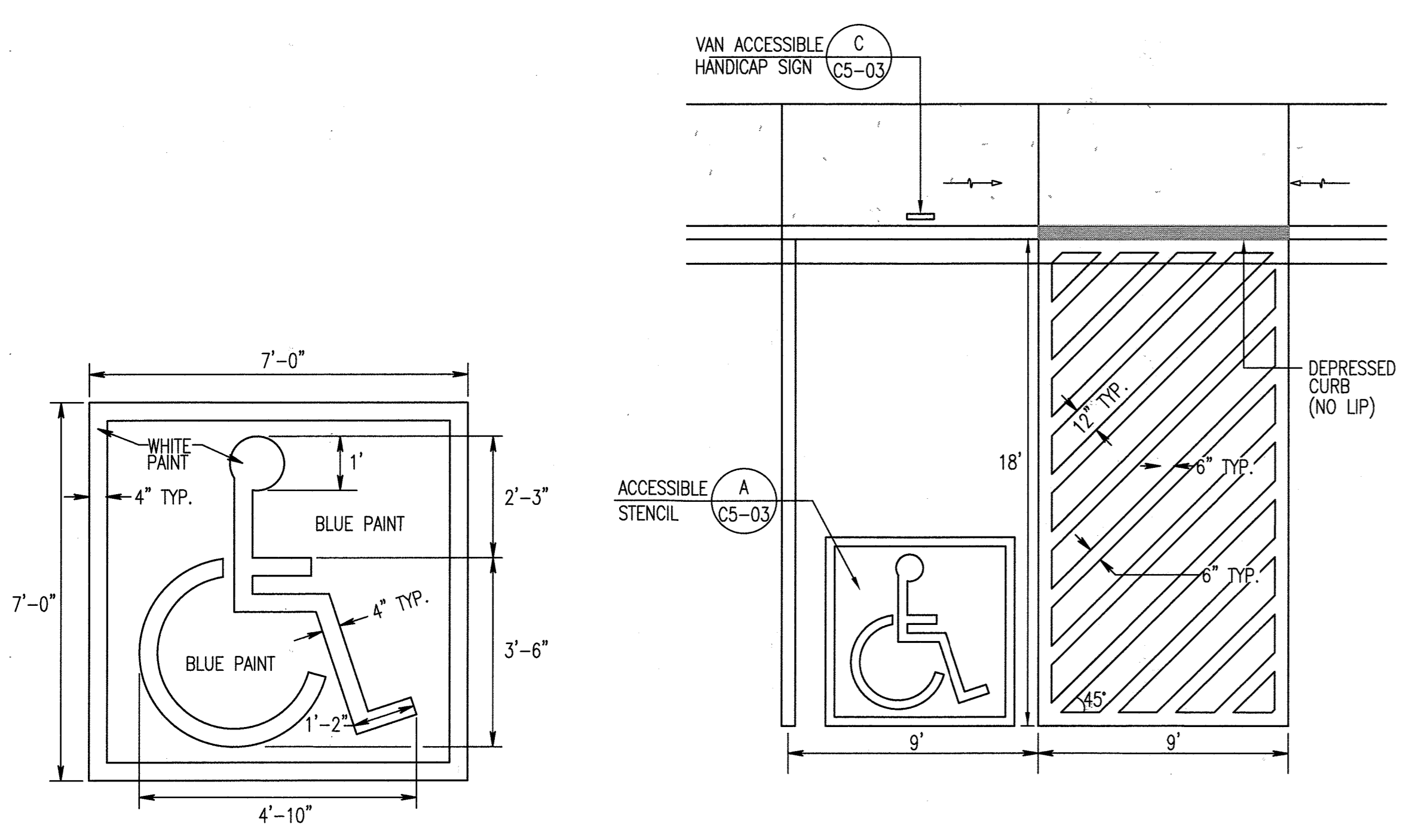
WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

SITE DETAILS

Drawing No.

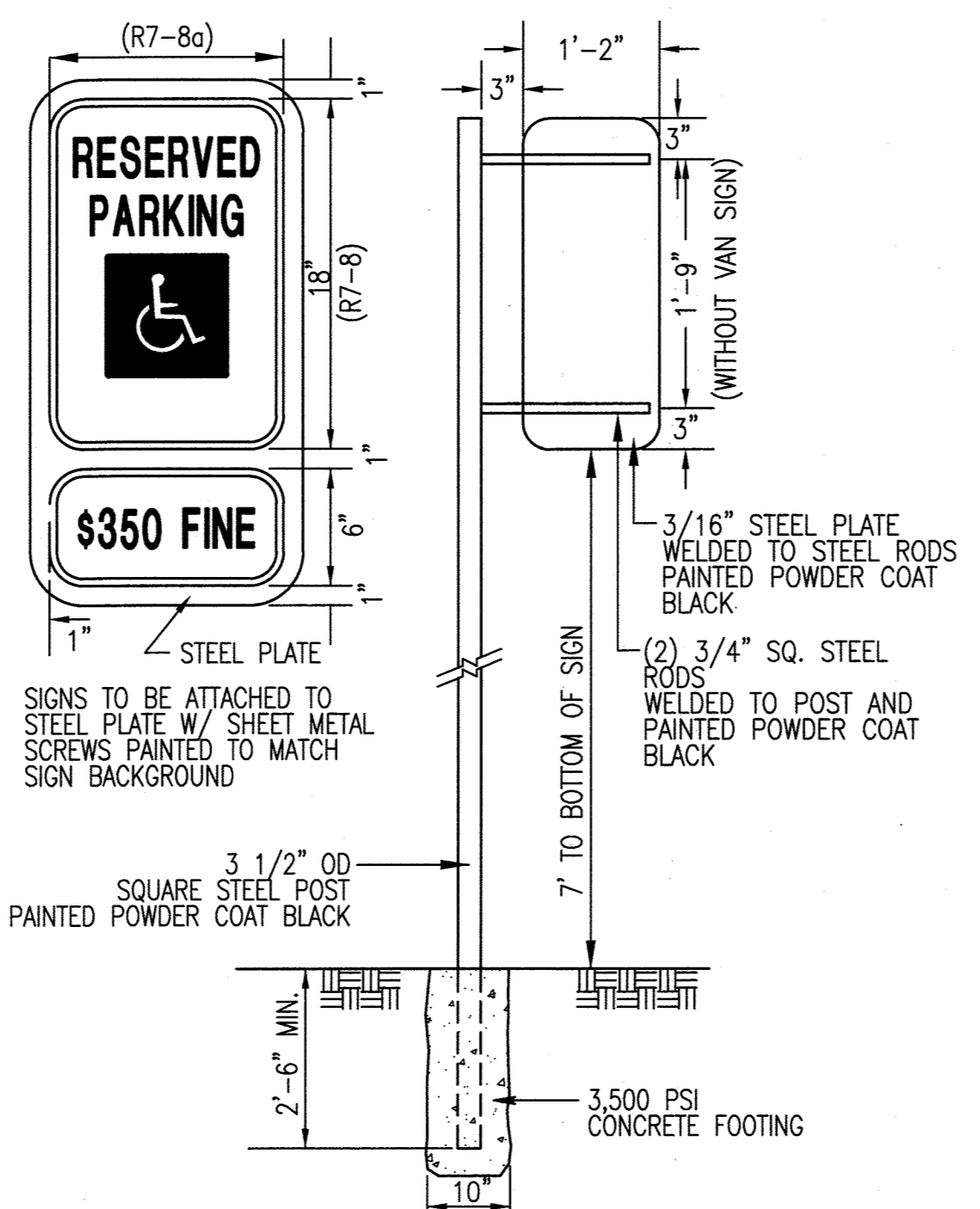
C-044

Scale: 1" = 20'
 Date: 4/30/2019 Sheet 44 of 47
 Des: RFS Drawn: RFS Check: JTD

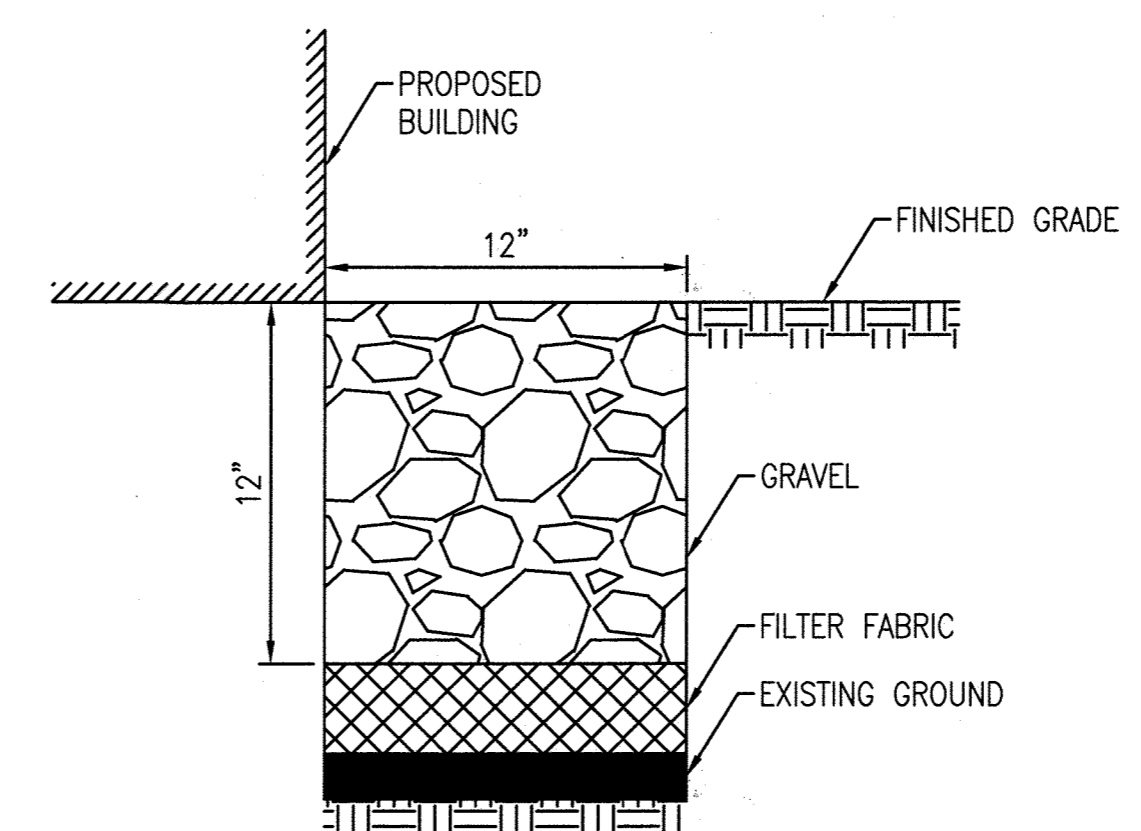


A ACCESSIBLE STENCIL
 C-044 NOT TO SCALE

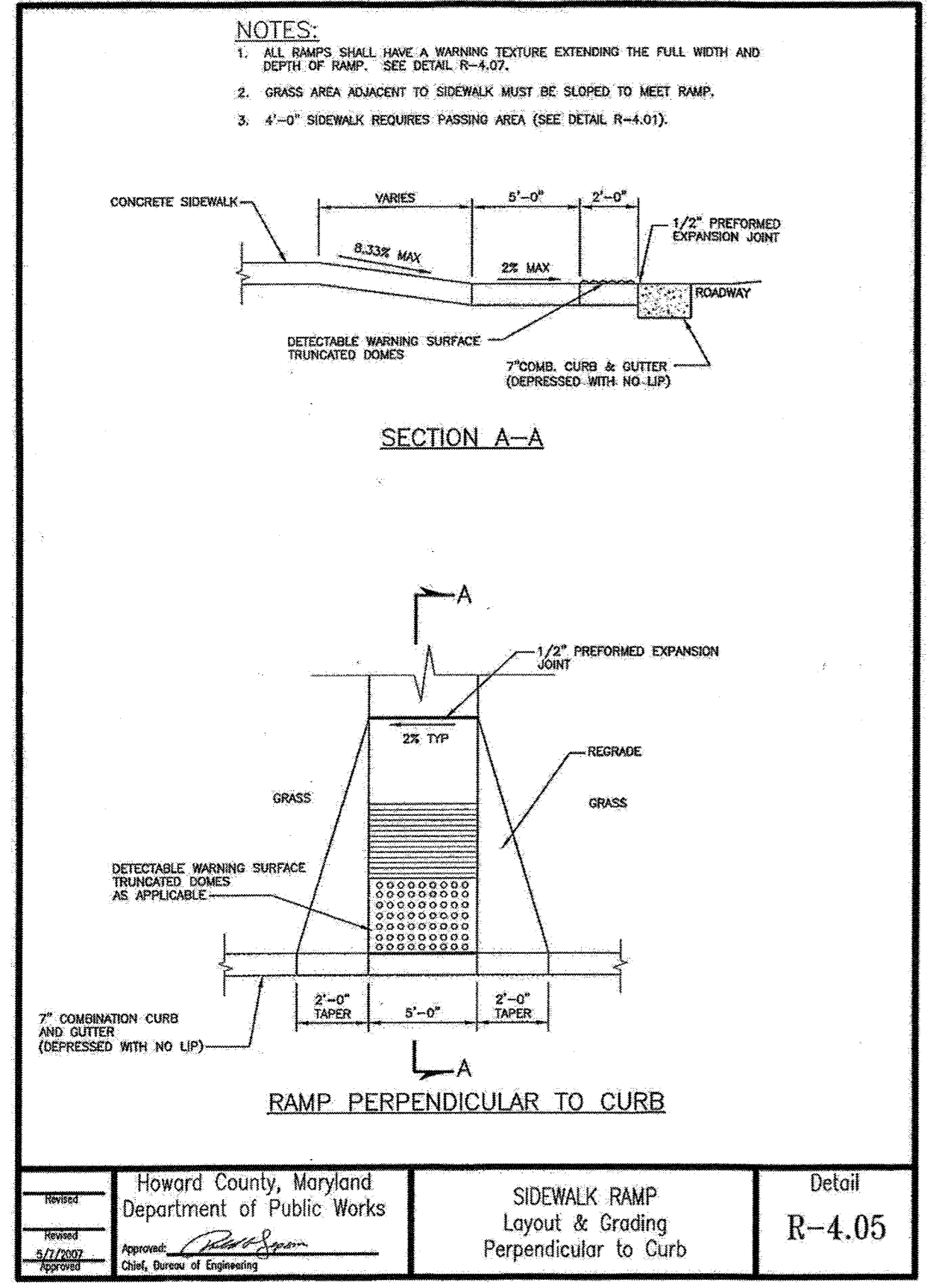
B HANDICAP PARKING LAYOUT
 C-044 NOT TO SCALE



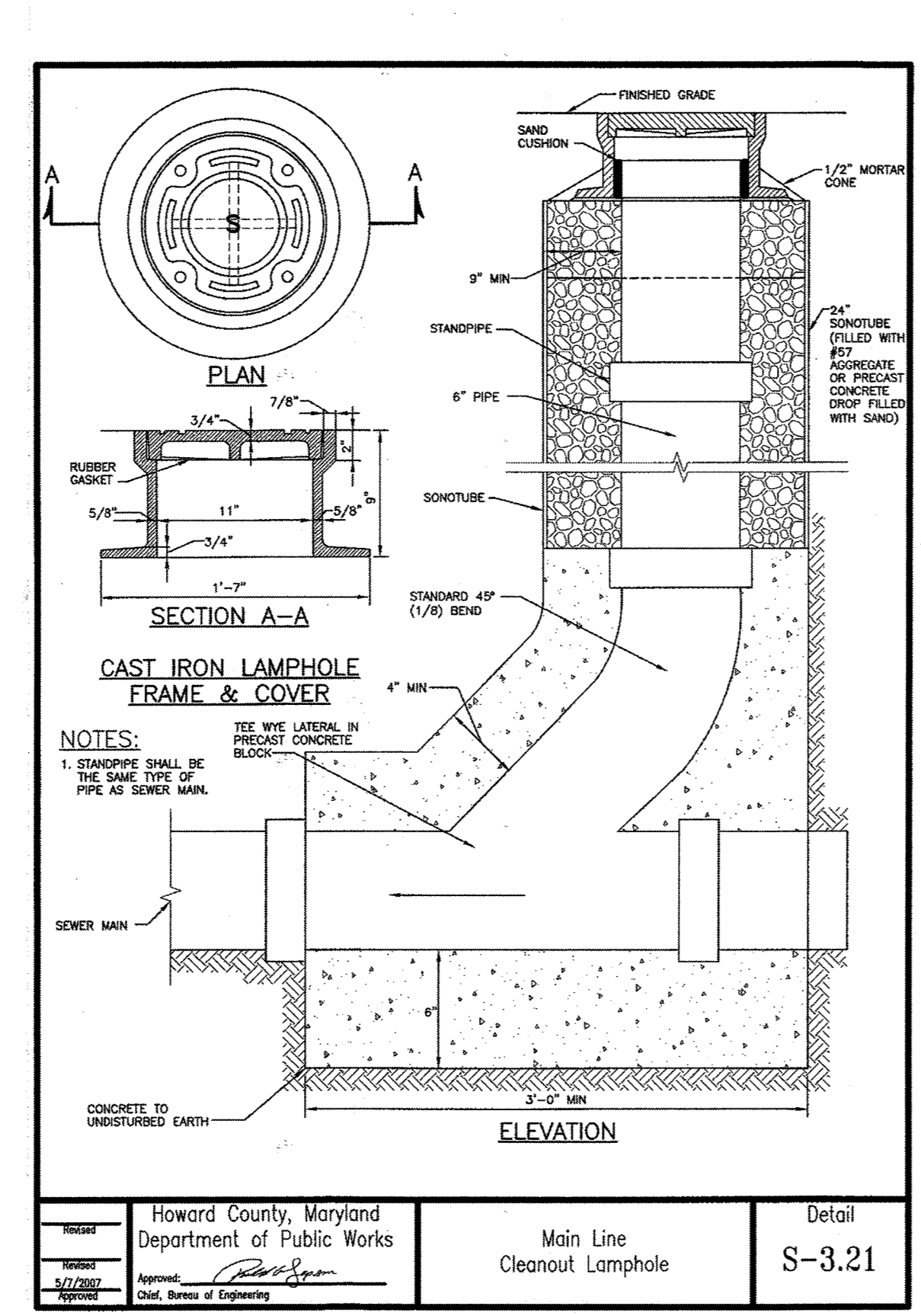
C HANDICAP PARKING SIGN
 C-044 NOT TO SCALE



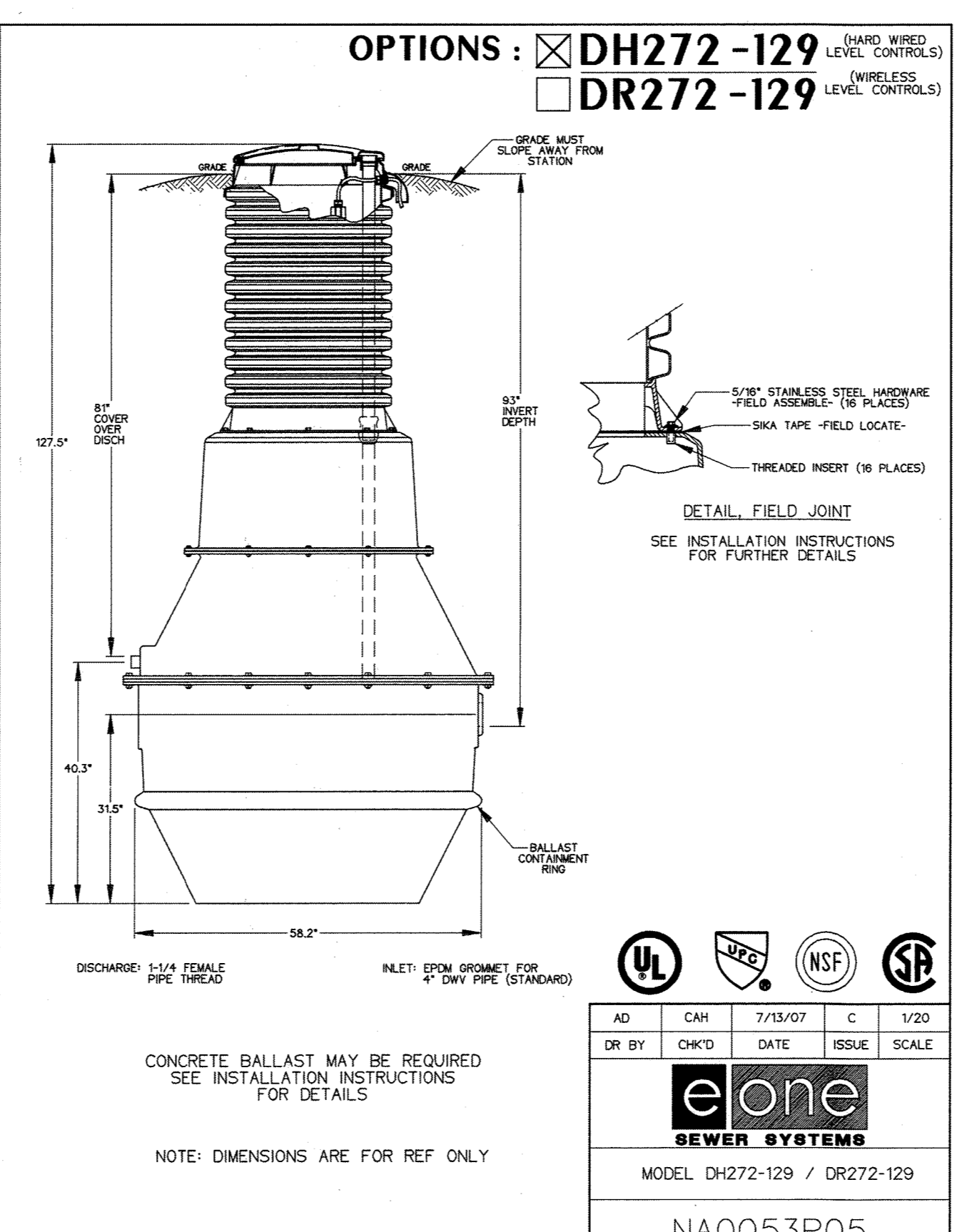
D GRAVEL STRIP SECTION
 C-044 NOT TO SCALE



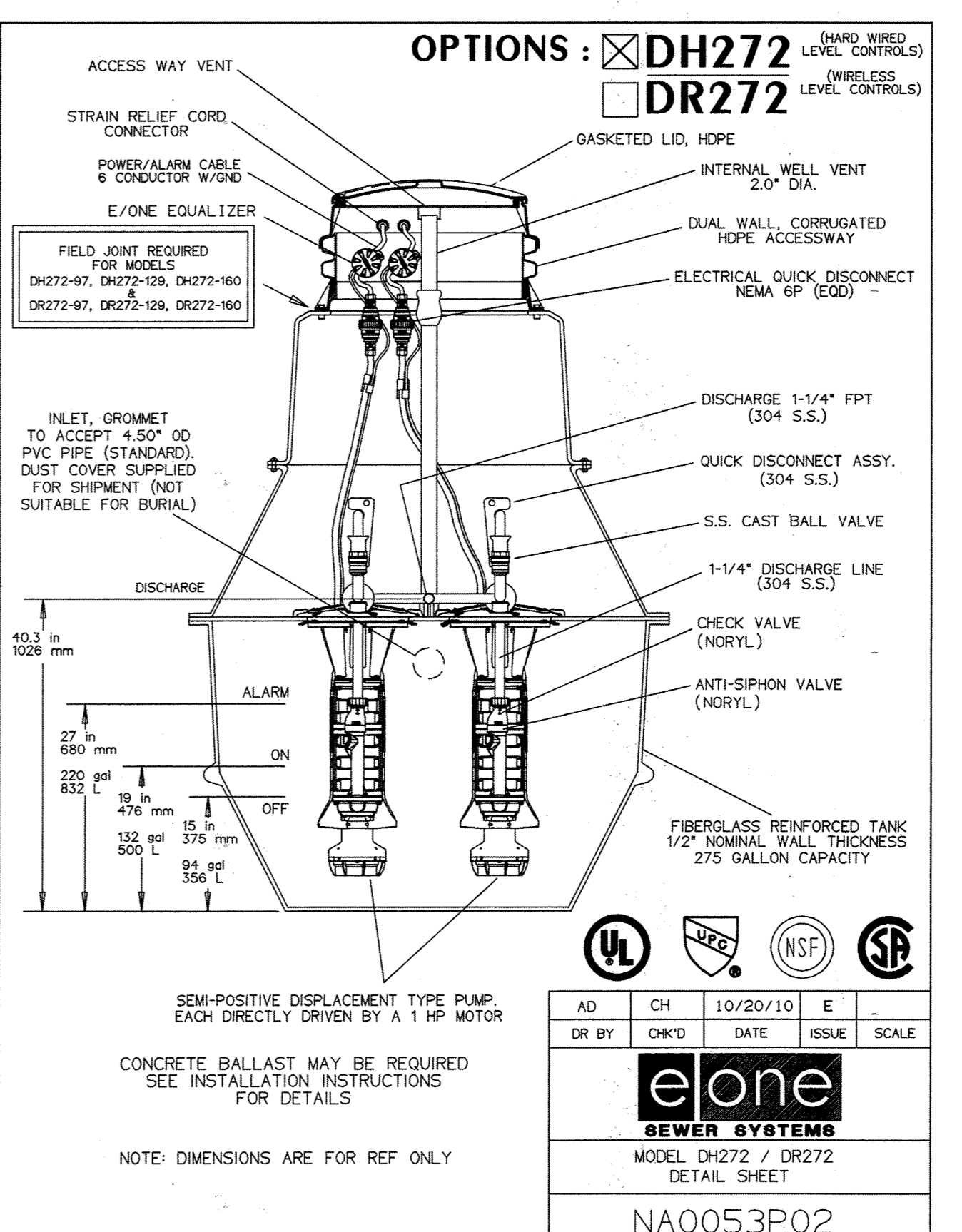
Howard County, Maryland
 Department of Public Works
 SIDERWALK RAMP
 Layout & Grading
 Perpendicular to Curb
 Detail
 R-4.05



Howard County, Maryland
 Department of Public Works
 Main Line
 Cleanout Lamphole
 Detail
 S-3.21



Options: DH272-129 (HARD WIRED LEVEL CONTROLS)
 DR272-129 (WIRELESS LEVEL CONTROLS)
 EONE SEWER SYSTEMS
 MODEL DH272-129 / DR272-129
 NA0053P05



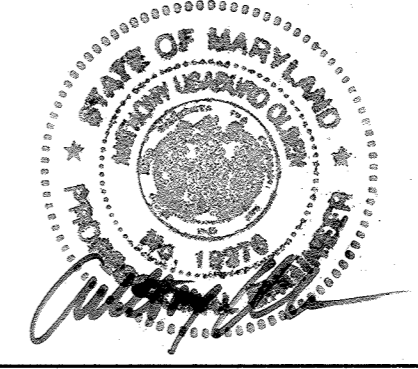
Options: DH272 (HARD WIRED LEVEL CONTROLS)
 DR272 (WIRELESS LEVEL CONTROLS)
 EONE SEWER SYSTEMS
 MODEL DH272 / DR272
 DETAIL SHEET
 NA0053P02

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

7-26-19
 8-9-19
 8-9-19

ANTHONY U. OLSEN, P.E.
 MDREG # 19376
 EXP DATE: 9/22/21




AS-BUILT

SDP-04-76

REVISIONS		
1	NEW SHEET	4/19

THE JOHNS
HOPKINS UNIVERSITY
**APPLIED PHYSICS
LABORATORY**
JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723-6099



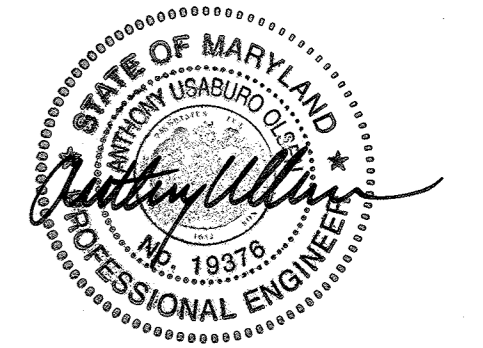
**SERVICES AREA COMPLEX
BLDGs 29, 35 AND 33**

KEY PLAN

GRAPHIC SCALES

SIGNATURE

SIGNATURE



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. 19376
EXPIRATION DATE: 9/22/2019

WRA
Whitman, Reardon & Associates, LLP
801 South Carolina Street, Baltimore, Maryland 21231

SITE DETAILS

Drawing No.
C-045

Scale: 1" = 20'

Date: 4/30/2019 Sheet 45 of 47

Des: RFS Drawn: RFS Check: JTD

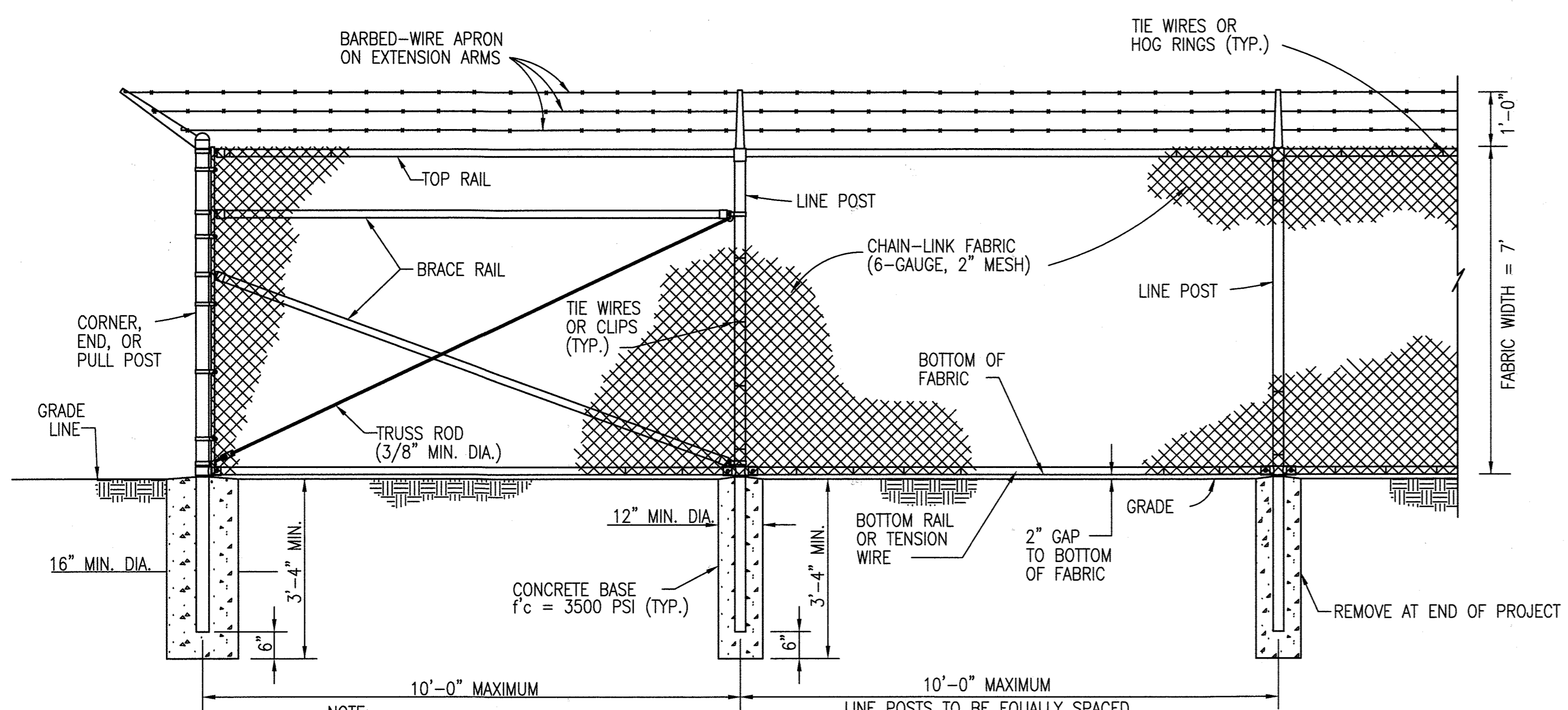
STEEL POST SCHEDULE	
USE AND SECTION	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)
	FABRIC WIDTH 84" TO 96"
CORNER, END & PULL POSTS TUBULAR - ROUND	2.875" O.D.
LINE POSTS TUBULAR - ROUND	2.875" O.D.
TOP, BOTTOM & BRACE RAILS TUBULAR - ROUND	1.66" O.D.

NOTES:

- DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPES OF FENCE SECTIONS AND METHODS OF INSTALLATION THAT COMPLY WITH THE SPECIFICATIONS.
- WIRE TIES, RAILS, POSTS, AND BRACES MUST BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK FABRIC MUST BE PLACED ON THE SIDE OPPOSITE THE SECURED AREA.
- BOTTOM RAIL MUST BE ATTACHED TO DOUBLE RAIL ENDS USING CARRIAGE BOLTS AS SHOWN.
- THIS PROJECT MAY NOT REQUIRE THE USE OF ALL DETAILS SHOWN ON THIS SHEET.
- THE FENCE FABRIC AND ACCESSORIES MUST BE BLACK VINYL COATED.
- BOTTOM OF FENCE FABRIC SHALL BE WITHIN TWO INCHES OF FIRM SOIL.
- ENSURE THAT FENCE FABRIC IS ATTACHED TO THE NON-SECURE SIDE OF THE FENCE AS INDICATED ON THE DRAWINGS.

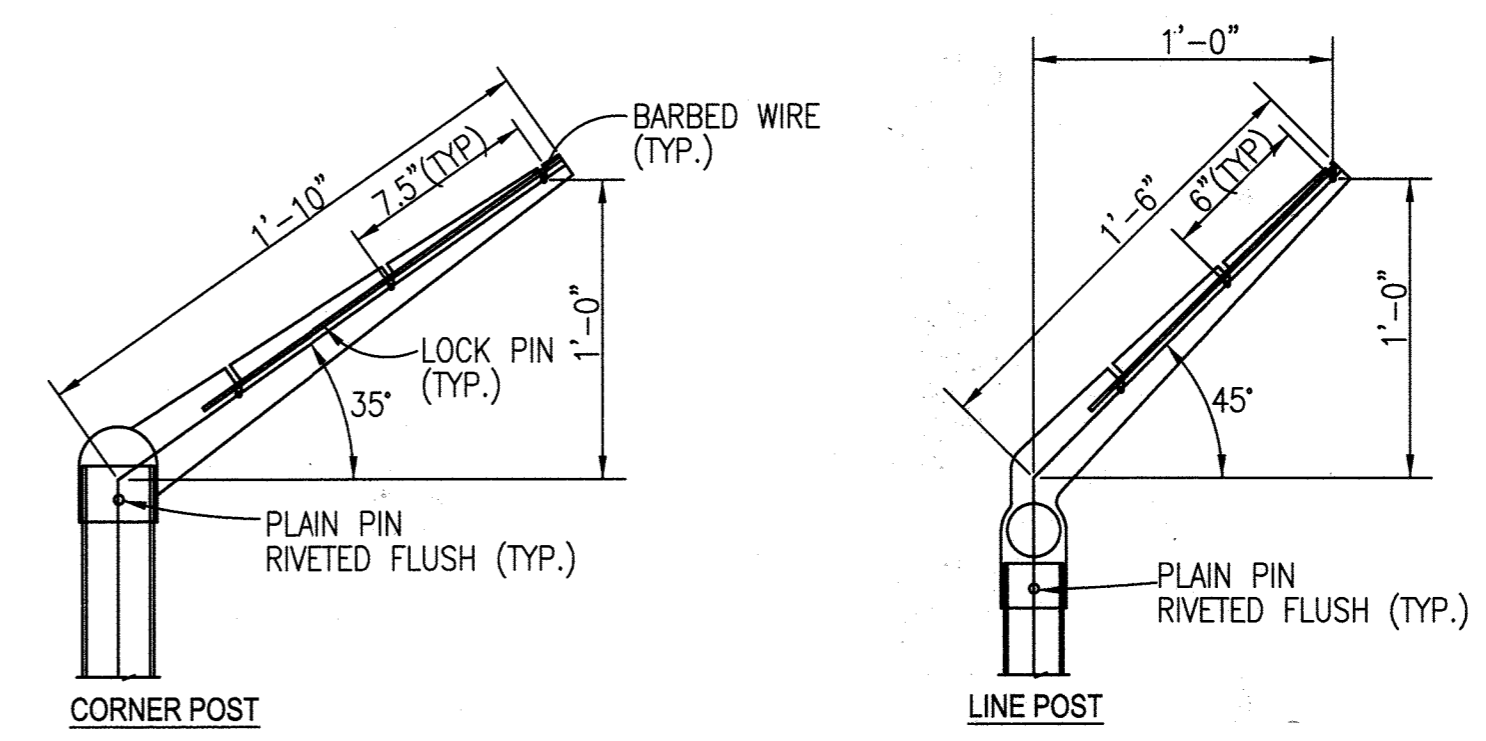
FENCE LEGEND:
TYPE FE7 - CHAIN-LINK FENCE W/BARBED-WIRE ON DOUBLE OUTRIGGER
TR - FENCE WITH TOP RAIL AND TENSION WIRE AT BOTTOM
TBR - FENCE WITH TOP AND BOTTOM RAILS
TWB - TENSION WIRE TOP AND BOTTOM
TWBR - FENCE WITH TOP TENSION WIRE AND BOTTOM RAIL

FINAL NUMBER IS FABRIC WIDTH IN INCHES.
FE7-TBR-84 - CHAIN-LINK SECURITY FENCE WITH BARBED-WIRE ON DOUBLE OUTRIGGER, TOP AND BOTTOM RAIL AND 84 INCH FABRIC WIDTH.

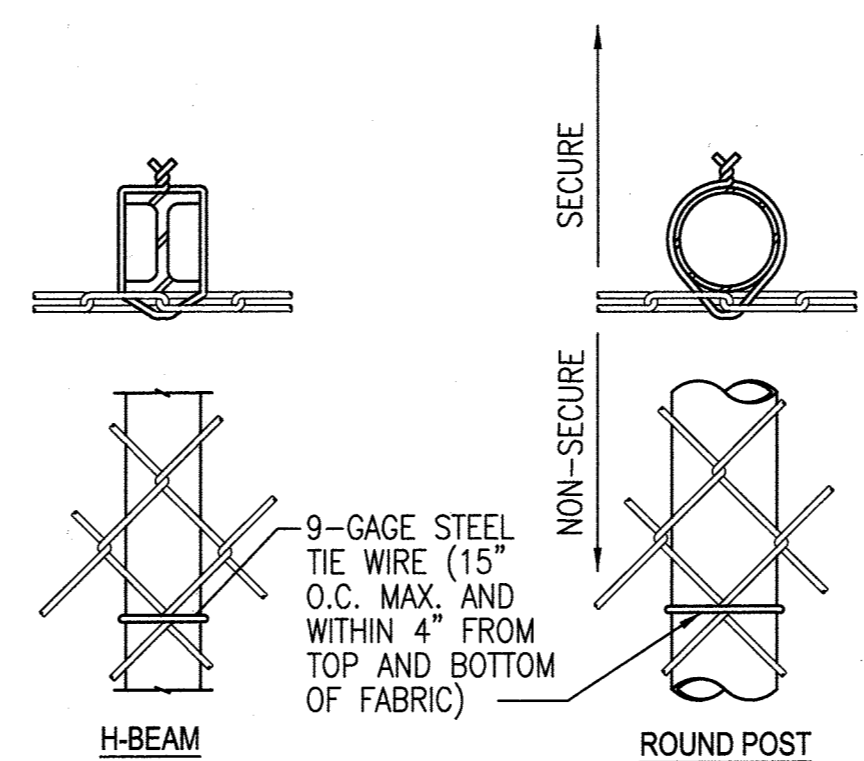
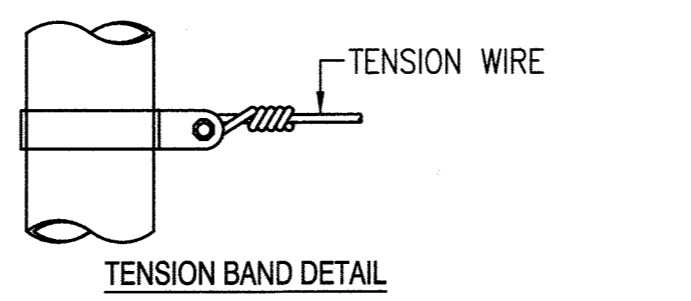
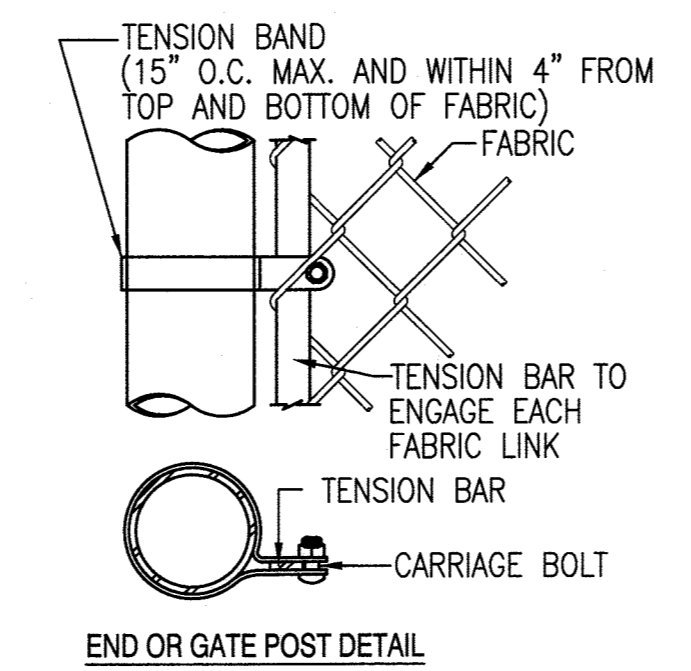
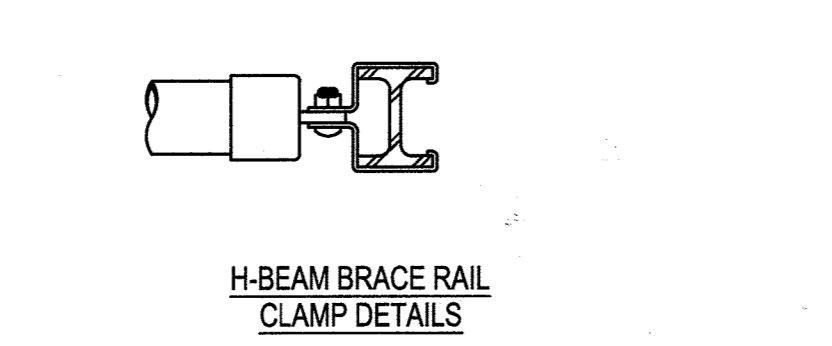
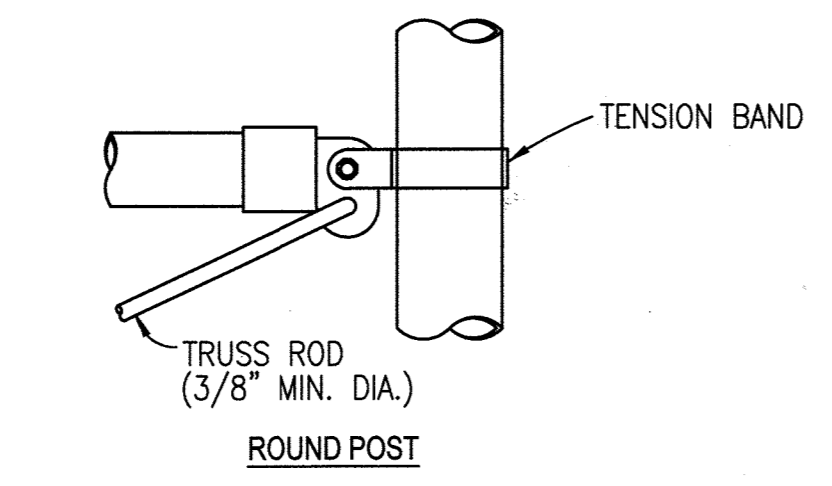
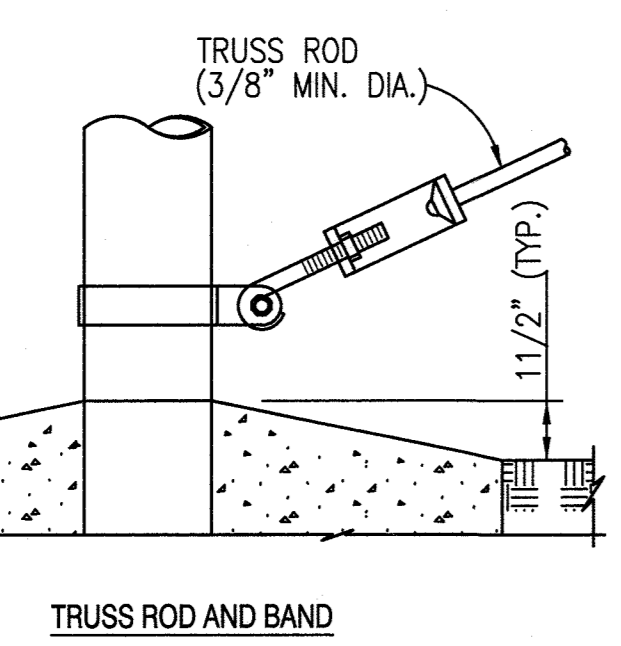
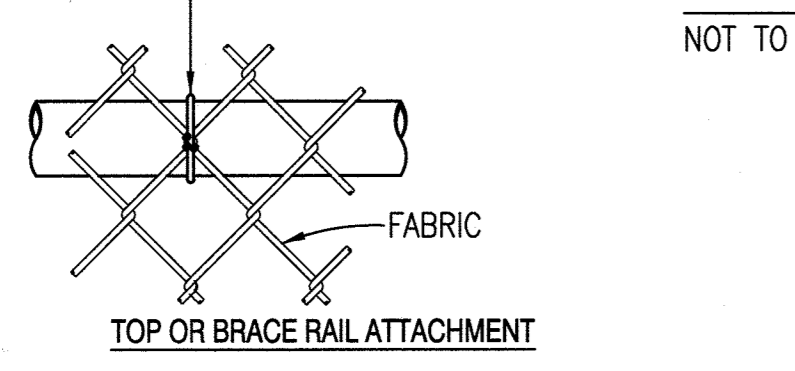
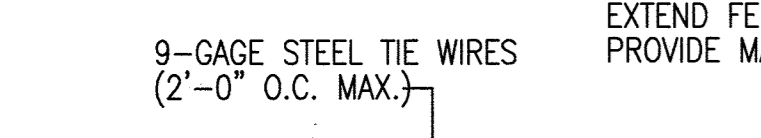


NOTE: EXTEND FENCE WHEN CROSSING SWALES AND OTHER DEPRESSIONS TO PROVIDE MAXIMUM 2" GAP.

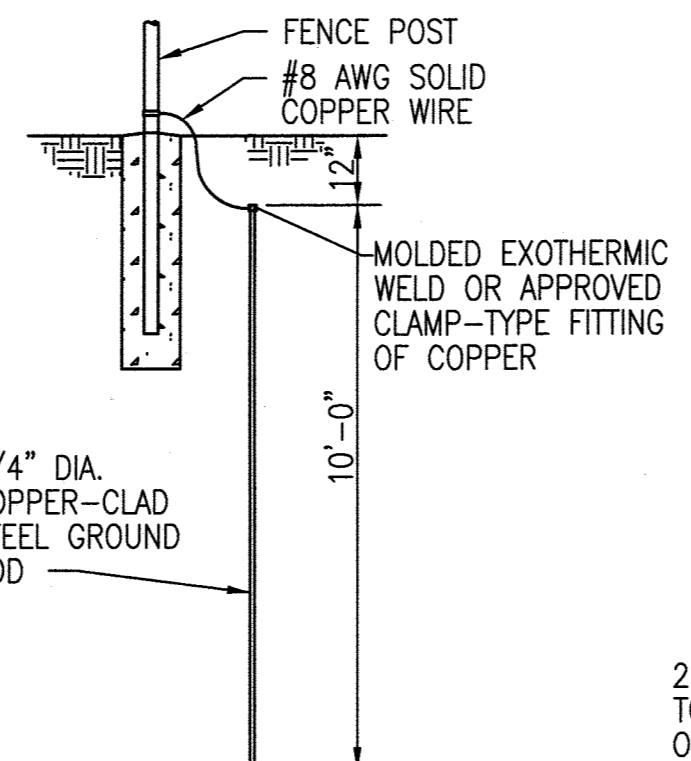
FE7-TBR-84 FENCE DETAIL
NOT TO SCALE



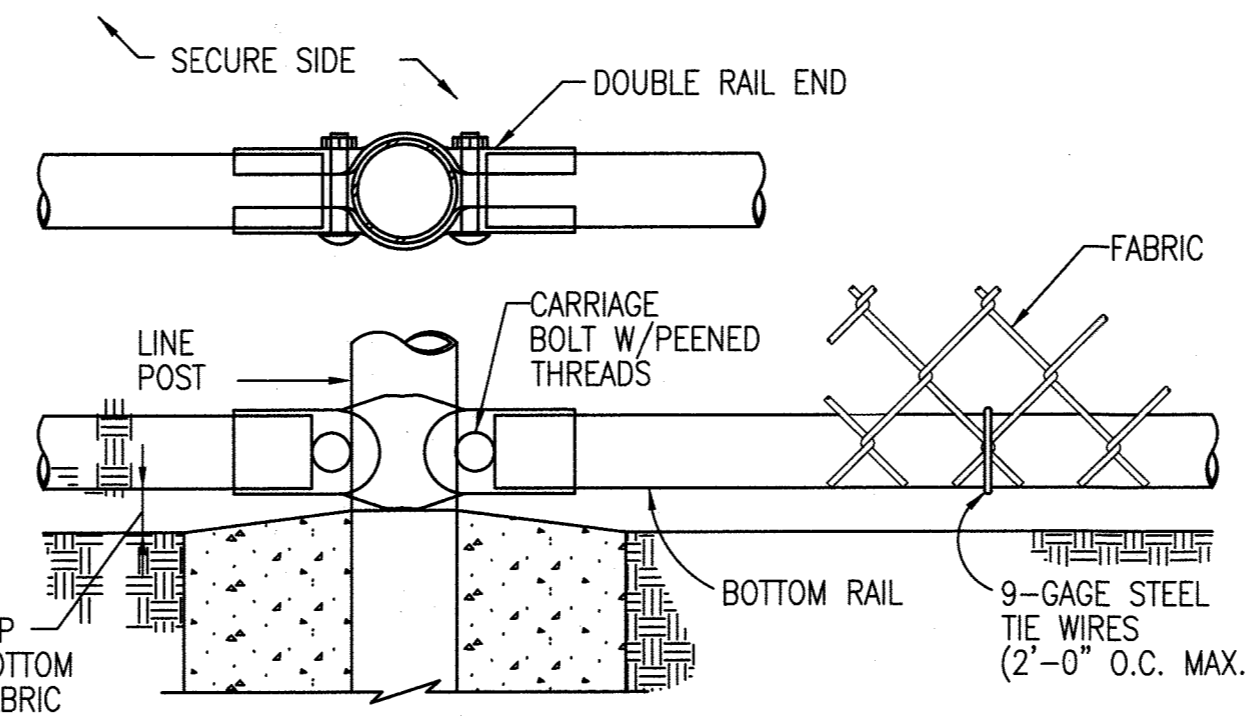
EXTENSION ARM DETAILS
NOT TO SCALE



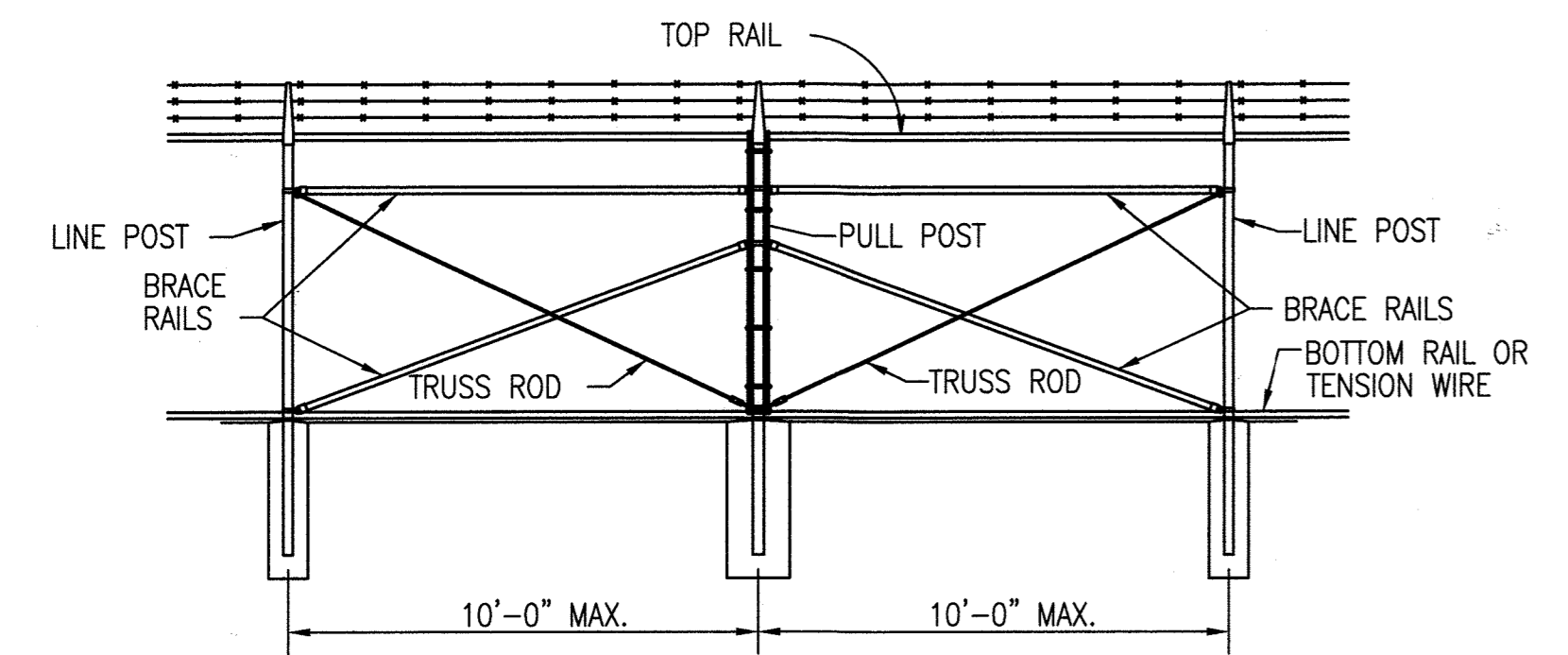
LINE POST ATTACHMENTS
NOT TO SCALE



GROUNDING DETAIL
NOT TO SCALE



BOTTOM RAIL DETAILS
NOT TO SCALE



BRACE PANEL DETAIL
NOT TO SCALE

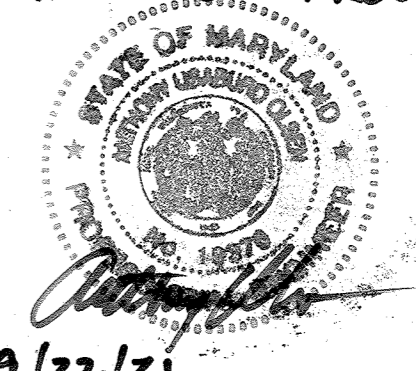
NOTE: PROVIDE BRACE PANEL WHENEVER STRAIGHT RUNS EXCEED 500 FEET.

8'-0" TALL CHAIN LINK FENCE (NON-CRASH RATED)
A C-045 NOT TO SCALE

CHAIN LINK VEHICULAR SWING GATE
B C-045 NOT TO SCALE

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

ANTHONY U. OLSEN, P.E.
MD REG # 19376, Exp DATE 9/22/21



APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief Development Engineering Division: *[Signature]* DATE: 7-26-19

Chief Division of Land Development: *[Signature]* DATE: 8-9-19

Director: *[Signature]* DATE: 8-9-19

AS-BUILT

SDP-04-76

PLANNING - IN 46594-6501-CADD/NETLINE/46594-6500-445.DWG

REVISIONS		
1	NEW SHEET	4/19

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099

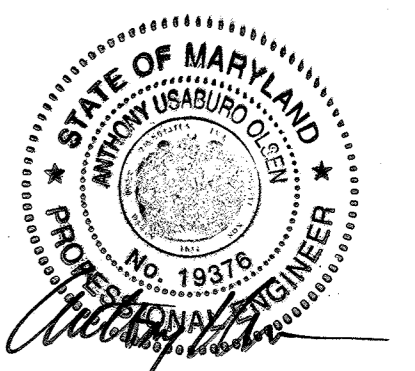


SERVICES AREA COMPLEX
 BLDGS 29, 35 AND 33

KEY PLAN

GRAPHIC SCALES

SIGNATURE



PROFESSIONAL CERTIFICATION.
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376
 EXPIRATION DATE: 9/22/2019



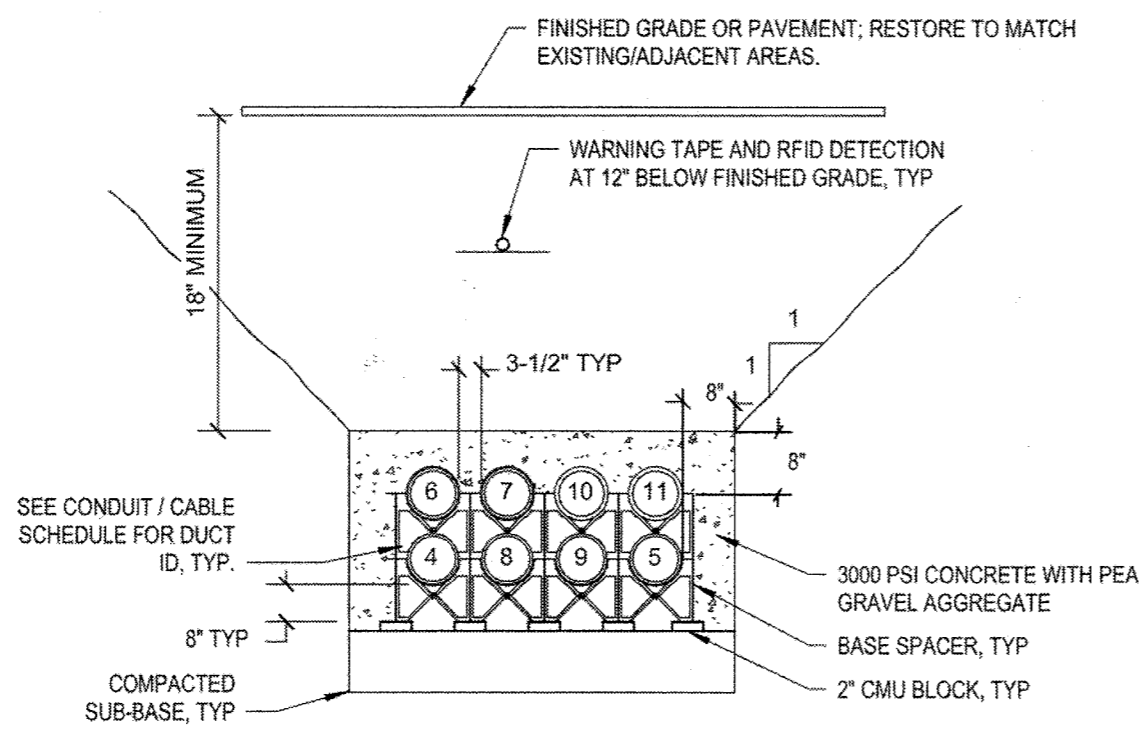
Whitman, Requardt & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

SITE DETAILS

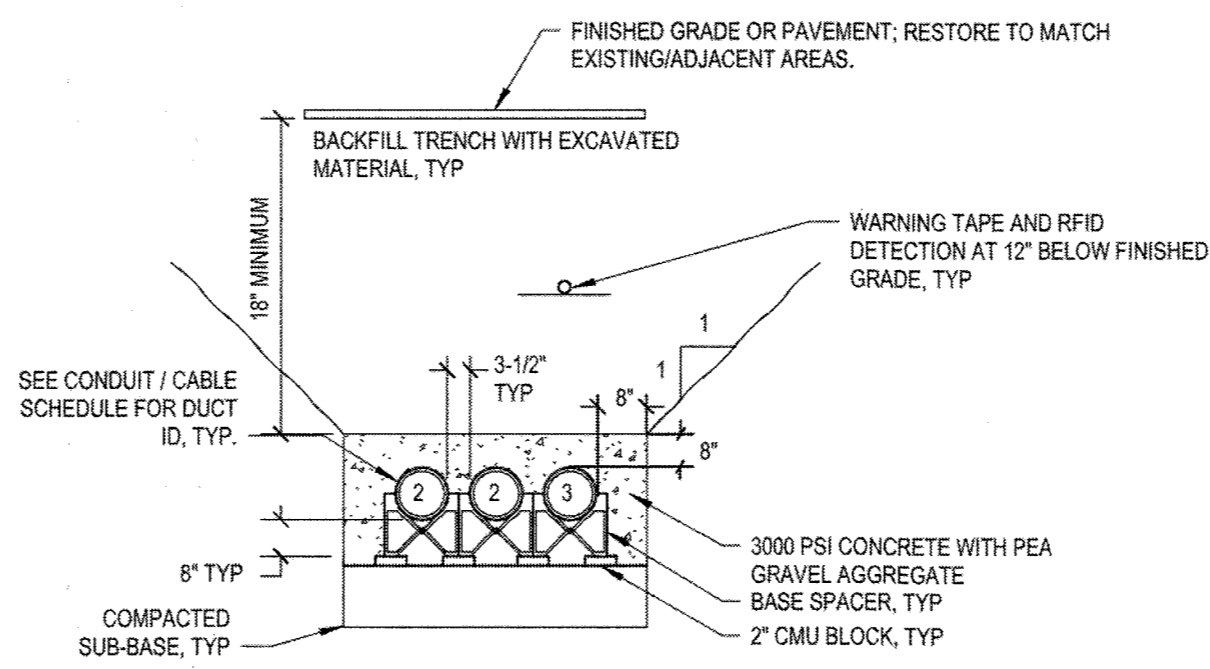
Drawing No.

C-046

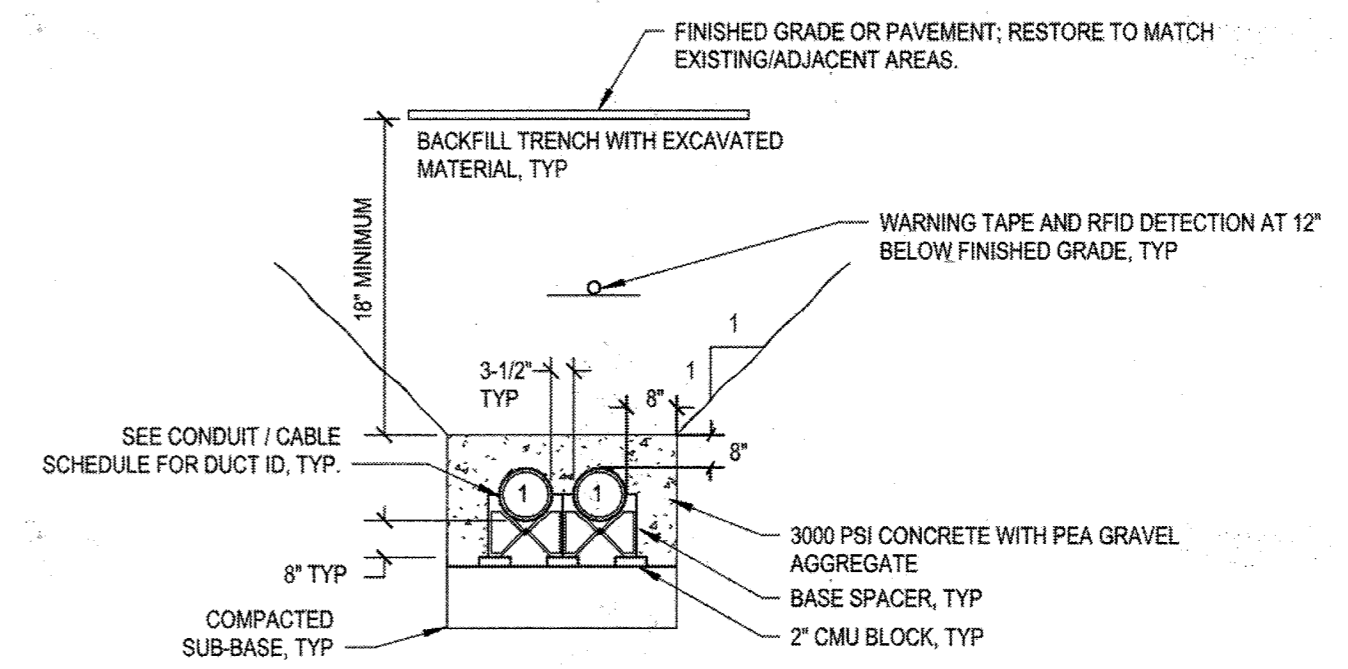
Scale: 1" = 20'
 Date: 4/30/2019 Sheet 46 of 47
 Des: RFS Drawn: RFS Check: JTD



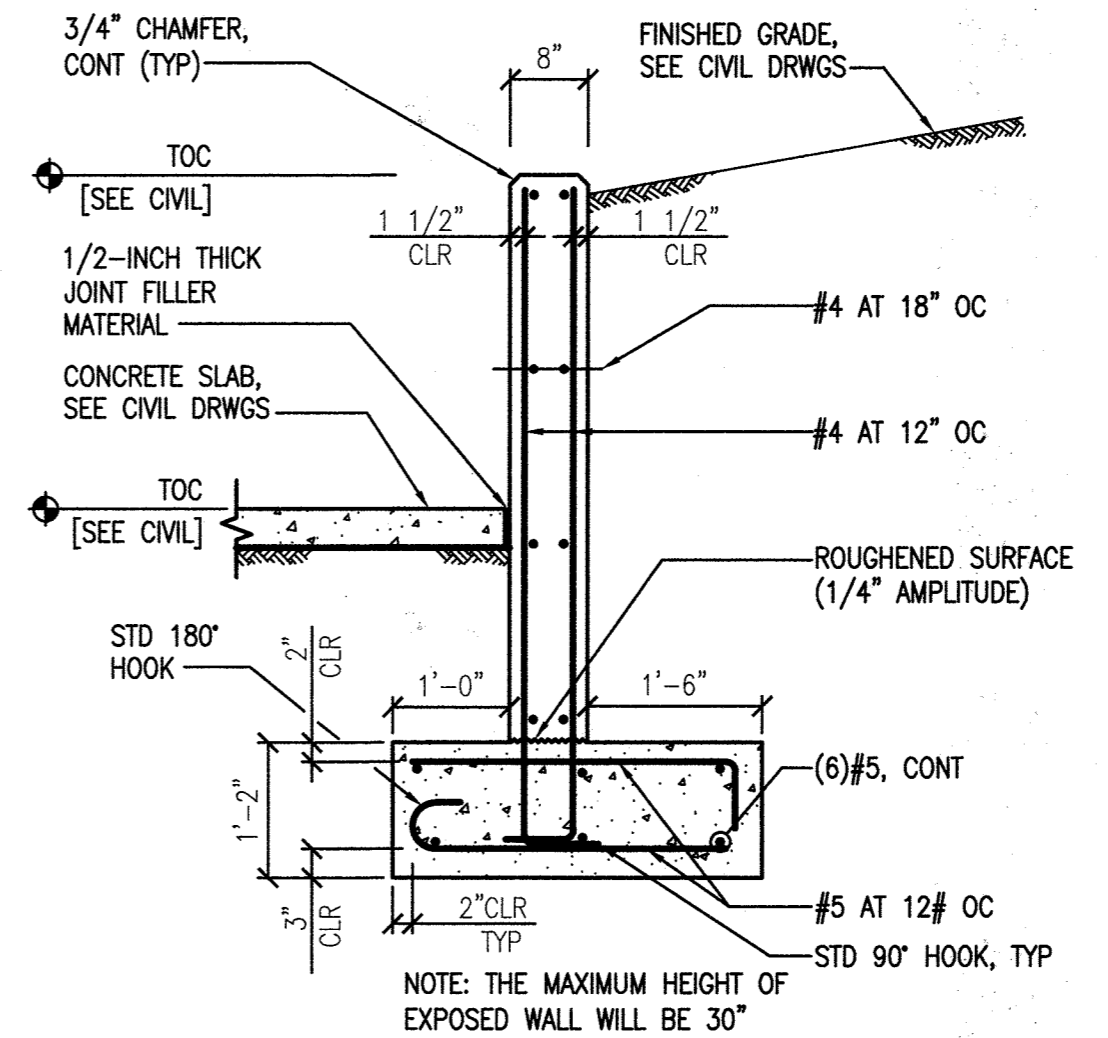
B DUCTBANK DETAIL - GENERATOR
 C-046 NOT TO SCALE



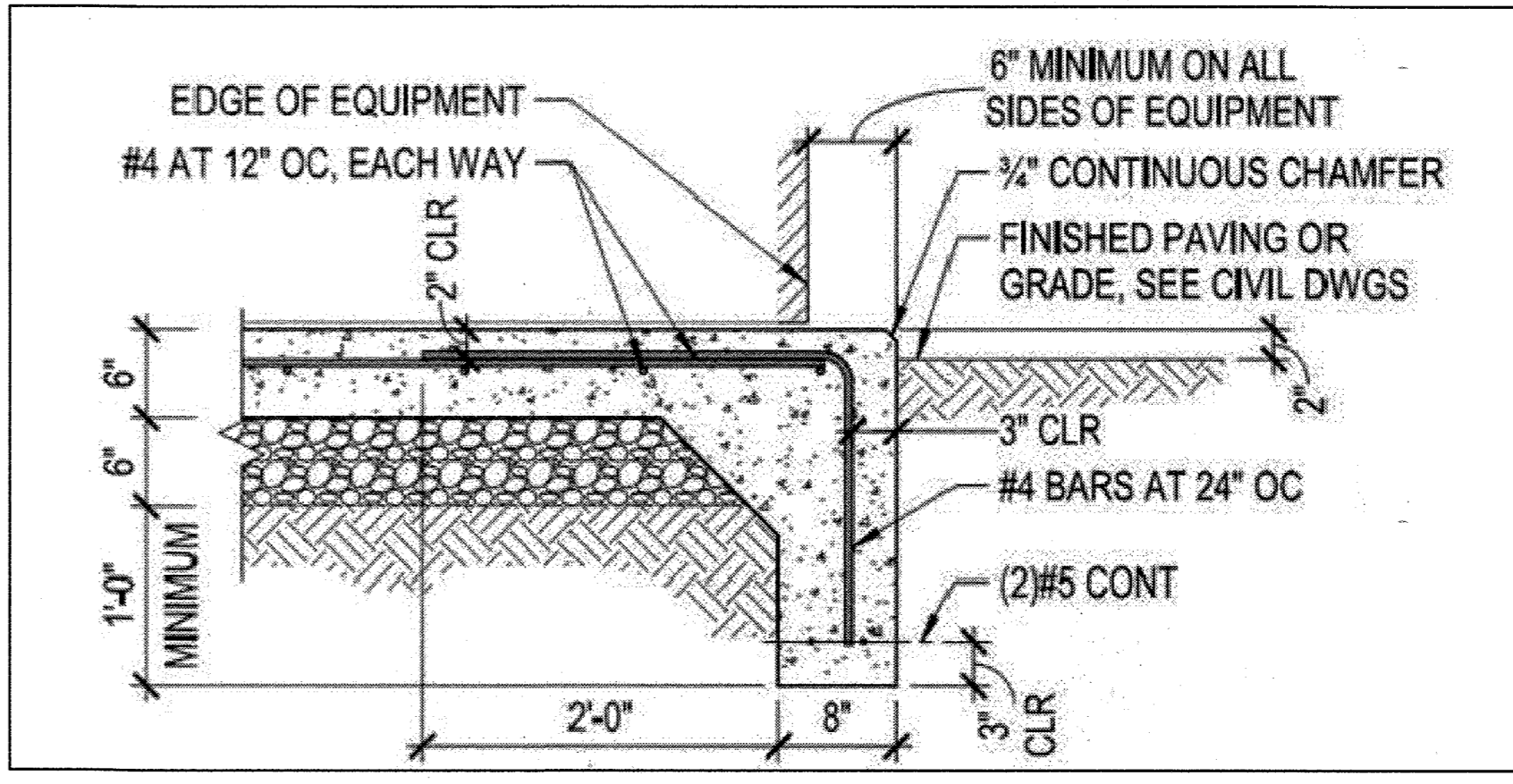
C DUCTBANK DETAIL - THREE-WAY MDP FEEDER
 C-046 NOT TO SCALE



D DUCTBANK DETAIL - TWO-WAY TELECOM
 C-046 NOT TO SCALE



G GENERATOR RETAINING WALL
 C-046 NOT TO SCALE



NOTE: AT GENERATOR PAD, PROVIDE 8" THICK PAD WITH #6 @ 12" OC, EACH WAY.

F GENERATOR/AC UNIT PAD
 C-046 NOT TO SCALE

THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET



ANTHONY J. OLSEN, P.E.
 MD REG # 19376, EXP. DATE: 9/22/21

AS-BUILT

SDP-04-76


APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Chad Clark</i>	7-26-19
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>Kent DeLorenzo</i>	8-9-19
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>William J. Flinn</i>	8-9-19
DIRECTOR	DATE

FILENAME: W:\4594-850\CADD\BDP\LINE\M46SDP-04-76.DWG

NOTE: REV 2 IS FOR THE MOVING OF THE AC CHILLER TO THE EAST SIDE OF THE PROPOSED BUILDING AND ADJUSTMENTS TO THE LANDSCAPING ON THE EAST SIDE OF THE SITE.

REVISIONS		
1	NEW SHEET	4/19
2	MOVE CHILLER PADS	11/19

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL, MARYLAND 20723-6099



**SERVICES AREA COMPLEX
 BLDGS 29, 35 AND 33**

KEY PLAN

GRAPHIC SCALES

SIGNATURE

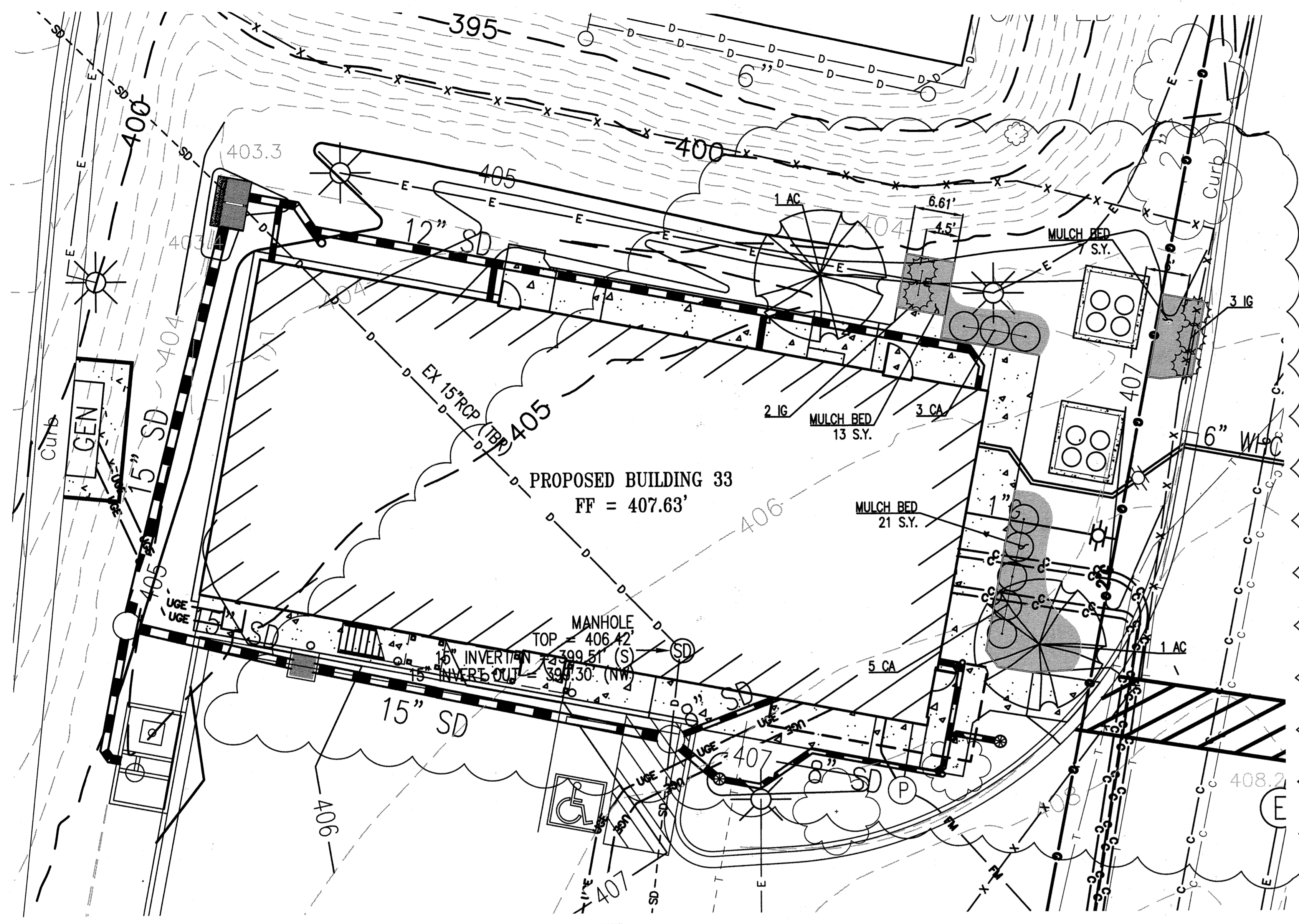


WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

REVISED
LANDSCAPE PLAN
 Drawing No.
L1-01
 Scale: 1" = 20'
 Date: 4/30/2019 Sheet 47 of 47
 Des: RFS Drawn: RFS Check: JTD

LANDSCAPE NOTES:

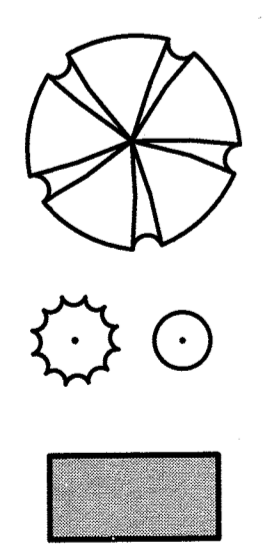
- THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR CONTACTING MISS UTILITY PRIOR TO BEGINNING CONSTRUCTION FOR LOCATION OF ALL UTILITY LINES. THE LANDSCAPE CONTRACTOR SHALL BE COGNIZANT OF PROPOSED UTILITY LOCATIONS AS SHOWN ON THE PLANS.
- ALL PLANTS SHALL BE EQUAL TO OR BETTER THAN THE REQUIREMENTS OF THE "AMERICAN STANDARD FOR NURSERY STOCK," LATEST EDITION, AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY, AND SHALL BE FIRST QUALITY, SOUND, VIGOROUS, WELL BRANCHED, AND WITH HEALTHY, WELL-FURNISHED ROOT SYSTEMS. THEY SHALL BE FREE OF DISEASE, INSECTS, PESTS AND MECHANICAL INJURIES.
- ALL PLANTS SHALL HAVE BEEN NURSERY GROWN AND SHALL HAVE BEEN GROWN UNDER THE SAME CLIMATIC CONDITIONS AS THE LOCATION OF THIS PROJECT FOR AT LEAST TWO YEARS BEFORE PLANTING. NEITHER HEELED IN PLANTS NOR PLANTS FROM COLD STORAGE WILL BE ACCEPTED.
- LANDSCAPE MAINTENANCE OBLIGATIONS SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS MANUAL AND THE HOWARD COUNTY LANDSCAPE MANUAL, ADOPTED JANUARY 4, 1993 AMENDED MARCH 2, 1998.
- THE LANDSCAPE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL WATERING DURING CONSTRUCTION AND DURING THE ONE YEAR MAINTENANCE PERIOD.
- FOR SEEDING REQUIREMENTS, SEE THE EROSION AND SEDIMENT CONTROL DETAIL SHEET.
- ALL PLANT MATERIALS, TOPSOIL, MULCH, FERTILIZERS, SOIL AMENITIES, PLANTING SUPPLIES AND METHODS SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL. REJECTED MATERIAL SHALL BE REMOVED FROM THE SITE WITHOUT DELAY.
- ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE FULL YEAR TO BE IN A HEALTHY GROWING CONDITION. PLANT MATERIALS WHICH DO NOT FULFILL THIS GUARANTEE SHALL BE REPLACED AT NO COST TO THE OWNER. REPLACEMENT SHALL BE GUARANTEED THROUGHOUT THE ORIGINAL GUARANTEE PERIOD. PLANTS THAT DIE WITHIN 30-60 DAYS SHALL BE REPLACED IMMEDIATELY.
- THE ONE YEAR GUARANTEE PERIOD SHALL BEGIN UPON THE OWNER'S APPROVAL OF THE PLANTING INSTALLATION. THE LANDSCAPE CONTRACTOR SHALL ALSO PROVIDE LANDSCAPE MAINTENANCE DURING THIS PERIOD.
- ALL SUBSTITUTIONS OF PLANT MATERIAL SHALL BE REQUESTED IN WRITING TO THE LANDSCAPE ARCHITECT AND APPROVED IN WRITING BY THE OWNER. FAILURE TO OBTAIN SUBSTITUTIONS IN WRITING MAY RESULT IN LIABILITY TO THE CONTRACTOR.
- ALL TREES OVER 6' IN HEIGHT MUST BE STAKED.
- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL.
- THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, 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.



PLAN VIEW
 SCALE: 1" = 10'

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.

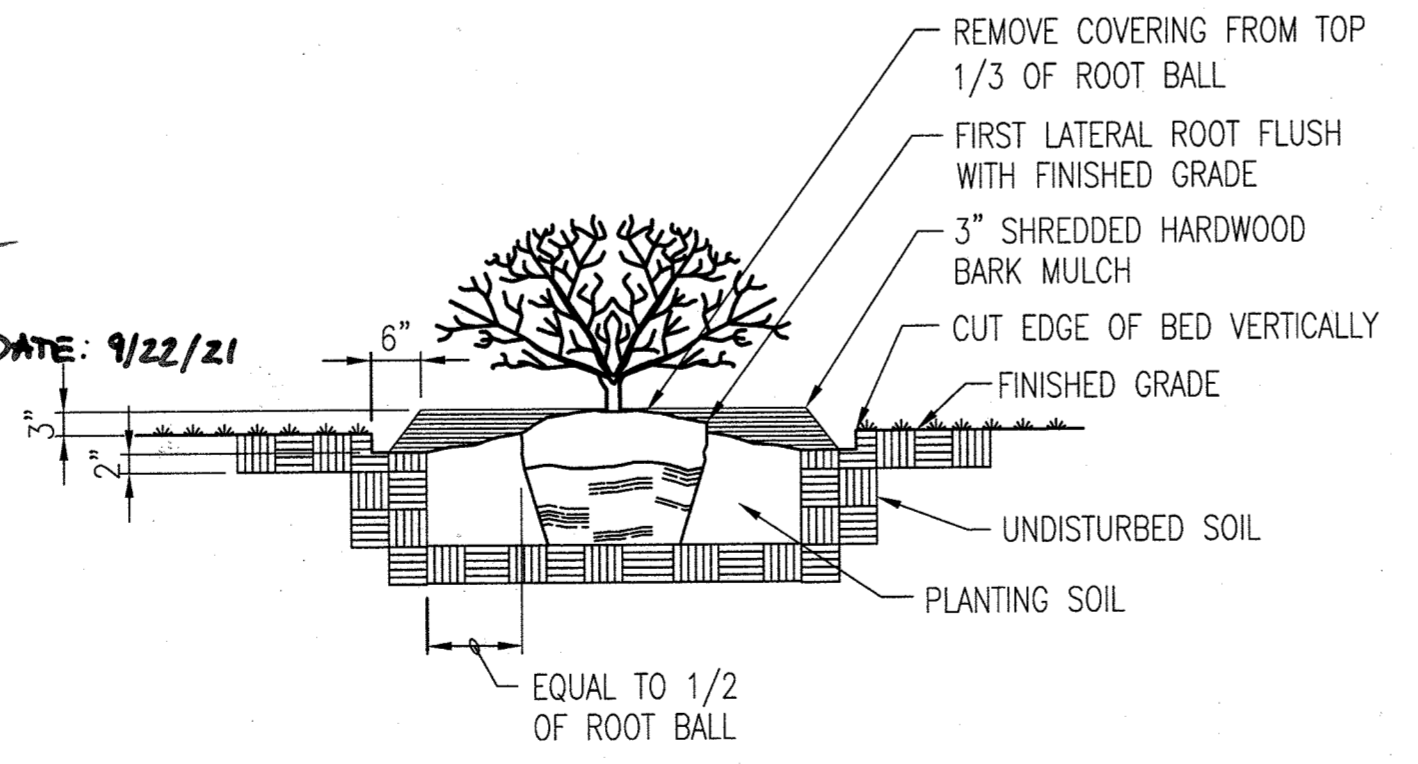
LEGEND



DECIDUOUS TREE
 EVERGREEN / DECIDUOUS SHRUBS
 PROPOSED MULCH BED

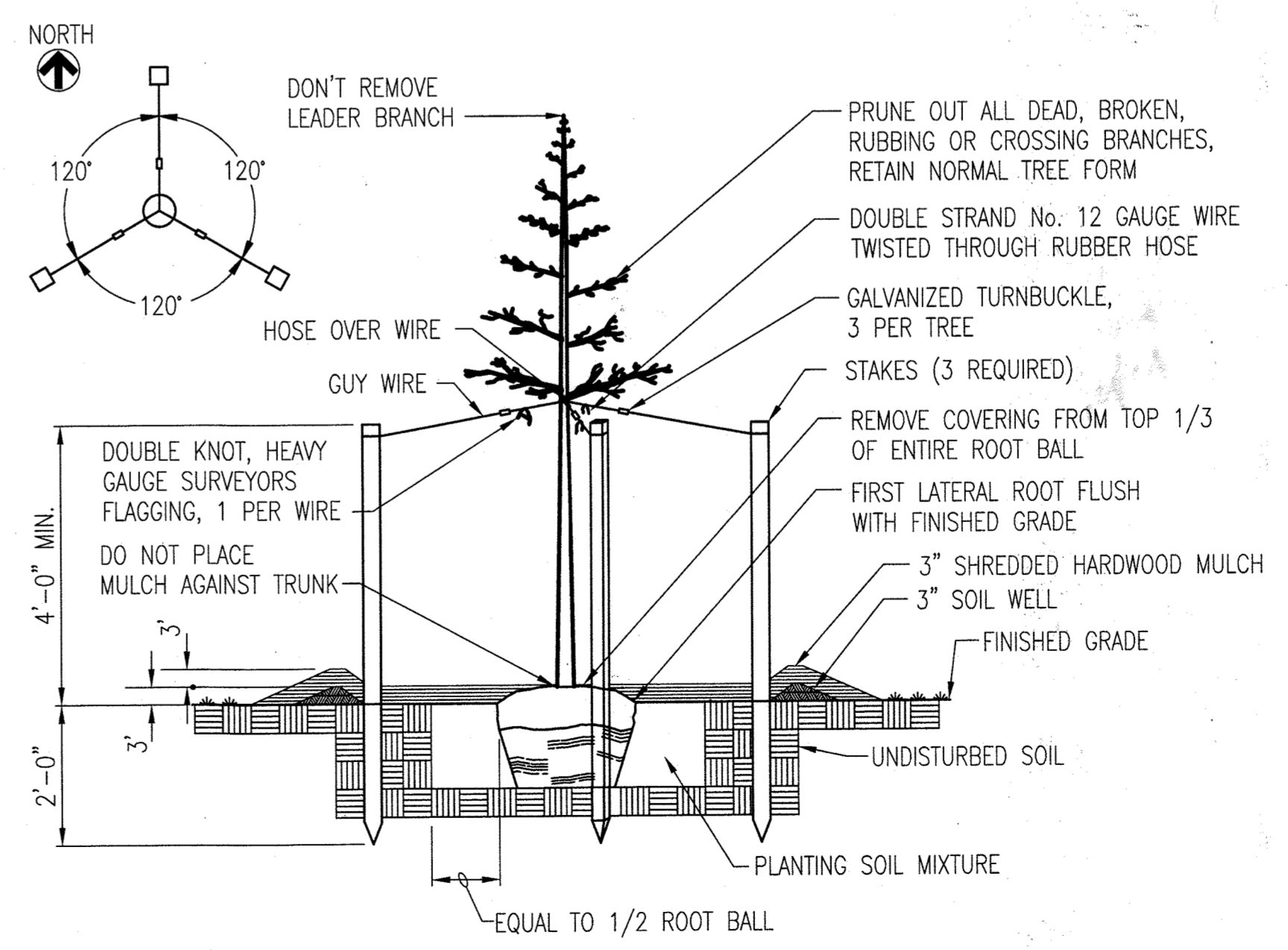


ANTHONY U. OLSEN, P.E.
 MARYLAND REGISTRATION NO. 19376 EXP. DATE: 9/22/21

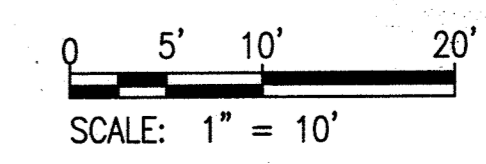


A PLANTING DETAIL - SHRUB
 L-01 NOT TO SCALE

LANDSCAPE PLANT SCHEDULE							
QUANTITY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	MATURE SIZE	MIN. SPACING
TREES							
2	AC	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	8'-10' HT.	B&B	HEIGHT: 20'-25' SPREAD: 10'-15'	AS SHOWN
SHRUBS							
8	CA	CLETHRA ALNIFOLIA 'SIXTEEN CANDLES'	SIXTEEN CANDLES SUMMERSWEET	30"-36" HT.	B&B	HEIGHT: 3'-4' SPREAD: 3'-4'	3.5' O.C.
5	IG	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	30"-36" HT.	B&B	HEIGHT: 3'-4' SPREAD: 3'-4'	3' O.C.



B PLANTING DETAIL - DECIDUOUS TREE
 L-01 NOT TO SCALE



APPROVED, DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *[Signature]* 12.12.19
 Chief, Division of Land Development: *[Signature]* 12.17.19
 Director: *[Signature]* 12-12-19

Developer's/Owner's Landscape 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 Landscape Manual. I/we further certify that upon 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.

[Signature]
 Developer's/Owner's Name

PLOT DATE: 11/22/2019 9:02:05 AM PAGE SETUP PLOT STYLE: WDA_BULKCTB.PAPER SIZE: ARCH D 36.00 X 36.00 INCHES
 FILENAME: \\V:\GPR4-REV\CAD\DWG\REV\LINE\489494811-DWG