

**Construction Notes & General Notes**

- THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS CONSTRUCTION INSPECTION DIVISION AT 410-913-1800 AT LEAST 24 HOURS PRIOR TO STARTING ANY OF THE WORK SHOWN HEREON.
- ALL AREAS NOT BEING PAVED OR RECEIVING BUILDING COVERAGE SHALL BE STABILIZED IN ACCORDANCE WITH THE PLANS APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT.
- THE CONTRACTOR SHALL NOTE THAT IN CASE OF DISCREPANCY BETWEEN ANY SCALED DIMENSIONS AND THE FIGURED DIMENSIONS SHOWN ON THESE PLANS, THE FIGURED DIMENSIONS SHALL GOVERN.
- CONTRACTOR SHALL MEET ALL EXISTING IMPROVEMENTS SMOOTHLY FOR LINE, GRADE AND FINISH.
- ALL WORK SHOWN ON THESE PLANS SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS AND OF THE MARYLAND STATE HIGHWAY ADMINISTRATION AND THE HOWARD COUNTY PLUMBING CODE, UNLESS OTHERWISE NOTED.
- IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NORMALLY BE REQUIRED TO COMPLETE THIS PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO PERFORM SUCH WORK. THE COST OF SUCH WORK SHALL BE INCLUDED IN THE BASE BID.
- THE CONTRACTOR SHALL INSPECT THE SITE TO DETERMINE IF ANY TREES, PAVING, ETC. ARE TO BE REMOVED PRIOR TO PLACING A BID ON SUCH ITEMS.
- THE LOCATIONS OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY AND ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE LOCATIONS ARE TAKEN FROM LOCATIONS. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 A MINIMUM OF 5 WORKING DAYS PRIOR TO DIGGING. THE CONTRACTOR SHALL CONFIRM TO HIS OWN SATISFACTION THE LOCATION OF ALL UTILITIES PRIOR TO ANY EXCAVATION OR PLACEMENT OF MATERIALS. IF ANY CONFLICT IS FOUND BETWEEN UNDERGROUND UTILITIES AND THE PROPOSED LOCATION OF ANY CONSTRUCTION, THE CONTRACTOR SHALL CONTACT G. W. STEPHENS AND THE OWNER OF THE UTILITY IMMEDIATELY. ANY DAMAGE OR DISRUPTION OF SERVICE SHALL BE AT THE EXPENSE OF THE CONTRACTOR. RELOCATION OF ANY EXISTING UTILITIES, IF NECESSARY, SHALL BE AT THE EXPENSE OF THE OWNER. THE CONTRACTOR SHALL COORDINATE RELOCATION OF THESE FACILITIES, IF NECESSARY.
- CONTRACTOR SHALL PROTECT ALL EXISTING TREES OUTSIDE THE LIMIT OF DISTURBANCE AT ALL TIMES DURING CONSTRUCTION.
- CONTRACTOR SHALL PROTECT ALL EXISTING IMPROVEMENTS NOT SCHEDULED FOR REMOVAL OR DEMOLITION. COST OF REPAIR TO EXISTING IMPROVEMENTS SHALL BE INCLUDED IN THE BASE BID. ALL EXISTING SITE FEATURES NOT BEING RETAINED SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED LOCATION. ANY DAMAGE TO OFFSITE ROADS, RIGHTS OF WAY, OR ADJACENT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT THE EXPENSE OF THE CONTRACTOR.
- THE CONTRACTOR SHALL CLEAR THE PROJECT SITE OF ALL TREES, PAVING, STRUCTURES, ETC. WITHIN THE CONSTRUCTION AREA UNLESS OTHERWISE NOTED ON THE PLAN.
- ONLY SUITABLE MATERIAL SHALL BE USED AS FILL AND ALL FILL SHALL BE PLACED AND COMPACTED AS SPECIFIED IN THE SOILS REPORT PREPARED FOR THIS SITE OR AS RECOMMENDED BY THE EXCEPTING THOSE ASSOCIATED WITH LANDSCAPE BERMING. ALL GRADING UNDER PROPOSED PAVING, AND ALL FILL AND COMPACTION SHALL BE APPROVED BY A GEOTECHNICAL ENGINEER.
- CONTRACTOR SHALL PROVIDE MINIMUM 4 FOOT BENCH AT EDGE OF PAVING IN FILL AREAS. MAXIMUM SLOPE OF BENCH SHALL BE 4% (1/4 IN PER FOOT).
- MAXIMUM SLOPE SHALL BE 2 HORIZONTALLY TO 1 VERTICALLY.
- CONTRACTOR SHALL PLACE 4" MINIMUM TOPSOIL IN LANDSCAPE AREAS.
- CONTRACTOR SHALL PLACE A WITNESS POST AT THE TERMINUS OF ALL UTILITY STUBS.
- CONTRACTOR SHALL PROVIDE A MINIMUM OF 1 FOOT OF PROTECTIVE FILL OVER STORM DRAIN PIPES DURING CONSTRUCTION.
- ALL TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNAGE SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES." ALL STREET AND REGULATORY SIGNS SHALL BE INSTALLED PRIOR TO INSTALLATION OF FINISHED PAVING.
- THE CONTRACTOR SHALL REPLACE ANY EXISTING BITUMINOUS PAVING OR SUB-BASE WHICH IS DAMAGED OR REMOVED DURING CONSTRUCTION. ALL EXCAVATED AREAS SHALL BE BACKFILLED AND IN ACCORDANCE WITH THE SOILS REPORT AND/OR AS DIRECTED BY GEOTECHNICAL ENGINEER. ANY AREAS TO BE PAVED WHICH EXHIBIT UNSTABLE SUBGRADE CONDITIONS SHALL BE EXCAVATED TO BEARING SOIL, REFILLED AND COMPACTED.
- IN AN AREA WHERE EXCAVATION IS NEEDED WITHIN THE ROAD RIGHT-OF-WAY, EXCAVATION MUST BE MADE WITHIN ONE (1) FOOT OF THE FINAL SUBGRADE.
- WHERE FILL IS PROPOSED WITHIN THE ROAD RIGHT-OF-WAY, THE FILL SHALL BE A MINIMUM OF TWO (2) FEET BELOW THE FINAL ROAD SUBGRADE.
- ALL LIGHTING TO COMPLY WITH ZONING REGULATION SPECIFICATIONS SECTION 134 OUTDOOR LIGHTING.
- ALL STORM DRAINS TO BE RCP OR HDPE UNLESS OTHERWISE NOTED.
- STORMWATER MANAGEMENT IS PROPOSED WITH TWO SURFACE SAND FILTERS AND UNDERGROUND STORMWATER MANAGEMENT, WHICH ARE PRIVATE FACILITIES AND OWNED AND MAINTAINED BY CAPITAL INVESTMENT PROPERTIES, LLC (PROPERTY OWNER). THE EXISTING SWM FACILITY ON SITE PER F86-65 WILL BE INCORPORATED INTO THE TWO PROPOSED SAND FILTERS AND UNDERGROUND FACILITY. THE EXISTING SWM EASEMENT IS BEING ABANDONED WITH AN AMENDED PLAT TO ABANDON EASEMENT.
- THERE ARE NO CEMETERIES OR BURIAL GROUND LOCATED ON THIS SITE.
- THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY PAYMENT OF THE FEE - IN - LIEU.
- PREVIOUS FILES RELATED TO THIS PROPERTY ARE F 86-65, F 00-177.
- THIS PLAN SHALL BE SUBJECT TO COMPLIANCE WITH THE FIFTH EDITION OF THE HOWARD COUNTY SUBDIVISION REGULATIONS AND THE AMENDED ZONING REGULATIONS, COUNCIL BILL 50-2001.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY GEORGE W. STEPHENS, JR. & ASSOC. DATED 12/10/02 TO 12/5/02.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 48G4 AND 48G8 WERE USED FOR THIS PROJECT.
- WATER IS PRIVATE.
- SEWER IS PRIVATE.
- EXISTING UTILITIES ARE BASED ON FIELD RUN SURVEY AND HOWARD COUNTY DRAWINGS. WATER CONT. NO. 44-1418-D, SEWER CONT. NO. 24-3857-D AND STORM DRAINS CONT. NO. F 86-65.
- THERE ARE NO FLOODPLAINS ON THIS SITE.
- THERE ARE NO WETLANDS ON THIS SITE AS CERTIFIED BY ECO-SCIENCE PROFESSIONALS, INC.
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY TRAFFIC CONCEPTS DATED MAY 09, 2002 AND WAS APPROVED JULY 2002.
- IN THE EVENT THAT THE SITE SPECIFIC CONDITIONS IDENTIFIED FOR THIS PROJECT ARE ANY WAY ALTERED WITH REGARD TO THE PERCENTAGE OF SPACE DEDICATED FOR OFFICE AND WAREHOUSE USE, THE DEPARTMENT OF PLANNING AND ZONING RESERVES THE RIGHT TO REQUIRE ADDITIONAL PARKING SPACES FOR THIS SITE.
- IN ACCORDANCE WITH HOWARD COUNTY ZONING REGULATIONS SECTION 133.C.3 ADDITIONAL PARKING SPACES ARE REQUIRED FOR PARKING OF VEHICLES OWNED BY OR USED IN BUSINESS. THERE WILL NOT BE ANY FLEET VEHICLES PARKED ON THIS SITE.

**Site Data**

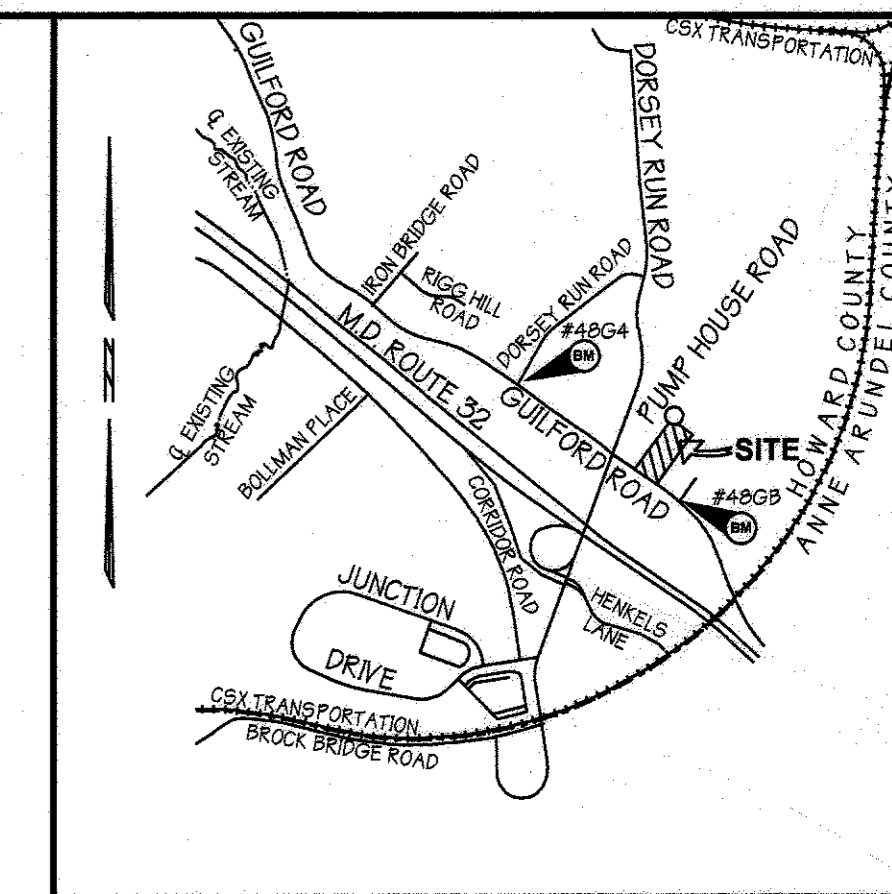
- TOTAL AREA PARCEL 'A-4' = 120,478.248 SQ. FT. OR 2.7658 AC. +/-
- EXISTING ZONING = M-2
- PROPERTY REFERENCE = LIBER 6037 FOLIO 0296
- EXISTING USE = VACANT
- PROPOSED USE = TWO NEW OFFICE AND WAREHOUSE BUILDINGS
- BUILDING COVERAGE = 33,000 SQ. FT. OR 0.76 AC.
- % OF BUILDING COVERAGE = 27.39%
- FLOOR AREA = 33,000 S.F. OR 0.76 AC.
- FLOOR AREA RATIO = 27.39%
- AREA TO BE PAVED PLUS BUILDING AREA = 80,929 SQ. FT. OR 1.85 AC.
- OPEN SPACE = 0.00
- TOTAL AREA OF PARKING LOT = 45,779 SQ. FT. OR 1.05 AC.
- % OF PARKING LOT COVERAGE = 37.99 %
- NUMBER OF PARKING SPACES REQUIRED = 55
- NUMBER OF PARKING SPACES PROVIDED = 74 INCLUDING 4 HANDICAPPED
- AREA TO BE DISTURBED = 117,612 SQ. FT. OR 2.70 AC.
- AREA TO BE VEGETATIVELY STABILIZED = 39,639.6 SQ. FT. OR 0.91 AC.

**BENCHMARKS**

NOTE: HORIZONTAL AND VERTICAL DATUMS BASED ON (NAD 83) MARYLAND STATE COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS.

**BM #48G4 ELEVATION 228.58 NAD 83**  
BRASS OR ALUMINUM DISK SET ON TOP CONCRETE COLUMN  
N 532,530.28 E 1,370,623.78

**BM #48GB ELEVATION 206.63 NAD 83**  
BRASS OR ALUMINUM DISK SET ON TOP CONCRETE COLUMN  
N 531,519.241 E 1,371,653.84



**Vicinity Map**  
SCALE: 1" = 2,000'

**Site Development Plans**

for

**C - W & Company**

**Parcel A - 4**

**Howard County, Maryland**

**SDP 02 - 091**

**Index of Sheets**

- SHEET NO. 1 - COVER SHEET
- SHEET NO. 2 - EXISTING CONDITIONS PLAN
- SHEET NO. 3 - SITE PLAN
- SHEET NO. 4 - SITE PLAN DETAILS
- SHEET NO. 5 - EXISTING AND PROPOSED DRAINAGE AREA MAPS
- SHEET NO. 6 - DRAINAGE AREA MAP AND STORM DRAIN PROFILES
- SHEET NO. 7 - OFFSITE DRAINAGE AREA MAP
- SHEET NO. 8 - WATER QUALITY PLAN & DETAILS
- SHEET NO. 9 - UNDERGROUND STORMWATER MANAGEMENT PLAN & DETAILS
- SHEET NO. 10 - SEDIMENT EROSION CONTROL PLAN EXISTING CONDITIONS PHASE I
- SHEET NO. 11 - SEDIMENT EROSION CONTROL PLAN PROPOSED CONDITIONS PHASE II
- SHEET NO. 12 - SEDIMENT EROSION CONTROL NOTES & DETAILS
- SHEET NO. 13 - LANDSCAPE PLAN & DETAILS
- SHEET NO. 14 - FOREST CONSERVATION PLAN

**Parking Tabulation**

TOTAL BUILDING AREA  
BUILDING 'A'  
40% OFFICE/MEZZANINE = 7,644 SQ. FT.  
60% WAREHOUSE = 11,465 SQ. FT.  
TOTAL = 19,109 SQ. FT.

BUILDING 'B'  
40% OFFICE = 6,000 SQ. FT.  
60% WAREHOUSE = 9,000 SQ. FT.  
TOTAL = 15,000 SQ. FT.

**PARKING REQUIRED:**

BUILDING 'A'  
40% OFFICE/MEZZANINE = 7,644 SQ. FT. @ 3.3 SPACES/1,000 = 25 SPACES  
60% WAREHOUSE = 11,465 SQ. FT. @ 0.5 SPACES/1,000 = 6 SPACES

BUILDING 'B'  
40% OFFICE = 6,000 SQ. FT. @ 3.3 SPACES/1,000 = 20 SPACES  
60% WAREHOUSE = 9,000 SQ. FT. @ 0.5 SPACES/1,000 = 5 SPACES

TOTAL REQUIRED = 56 SPACES

PARKING PROVIDED = 72 SPACES (INCLUDES 4 HANDICAPPED)

APPROVED: Howard County Department of Planning and Zoning

*Michael J. ...* 10/30/02  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

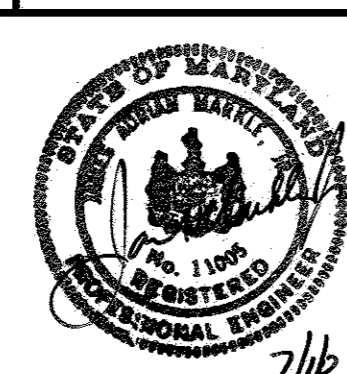
*Andy ...* 11/7/02  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*James ...* 11/7/02  
DIRECTOR DATE

PREPARED BY:

**GEORGE W. STEPHENS, JR. AND ASSOCIATES, INC.**  
Civil Engineers and Land Surveyors

1020 Cromwell Bridge Road  
Towson, Maryland 21286  
(410) 825-8120



NOTE:  
The owner shall provide a separate and independent sewer connection for each tenant or occupants of any building shown on this site development plan who will discharge non-domestic waste to the public sewerage system if each separate and independent sewer connection shall include a standard manhole and other waste pretreatment devices as required and approved by Howard County. Waste lines on the interior of the building shall be designed, constructed or modified such that non-domestic waste will be discharged to the separate and independent sewer connection. No tenant or occupant of any building shown on this site development plan shall discharge regulated non-domestic waste to the public sewerage system prior to installation of the separate and independent sewer connection and related interior waste lines. The above statement shall apply to all initial and future occupants or tenants.

OWNER / DEVELOPER  
**CAPITAL INVESTMENT PROPERTIES, LLC**  
7175 A OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046  
410-309-9848

DESIGNED BY: P.R.C.  
DRAWN BY: K.E.  
CHECKED BY: P.R.C.

REVISIONS  
A ADDED MEZZANINE LEVEL TO BLDG. 'A'  
REVISED BLDG. SQUARE FOOTAGE AND PARKING TABULATION ACCORDINGLY BY GWS DATED 7/14/03

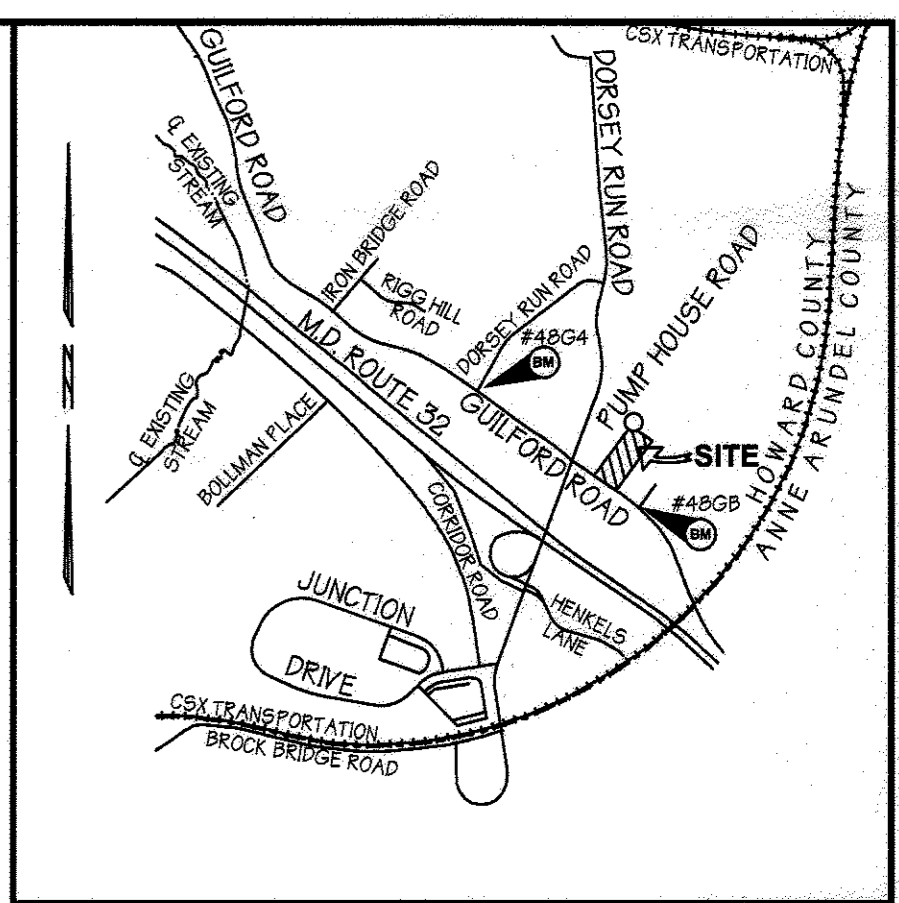
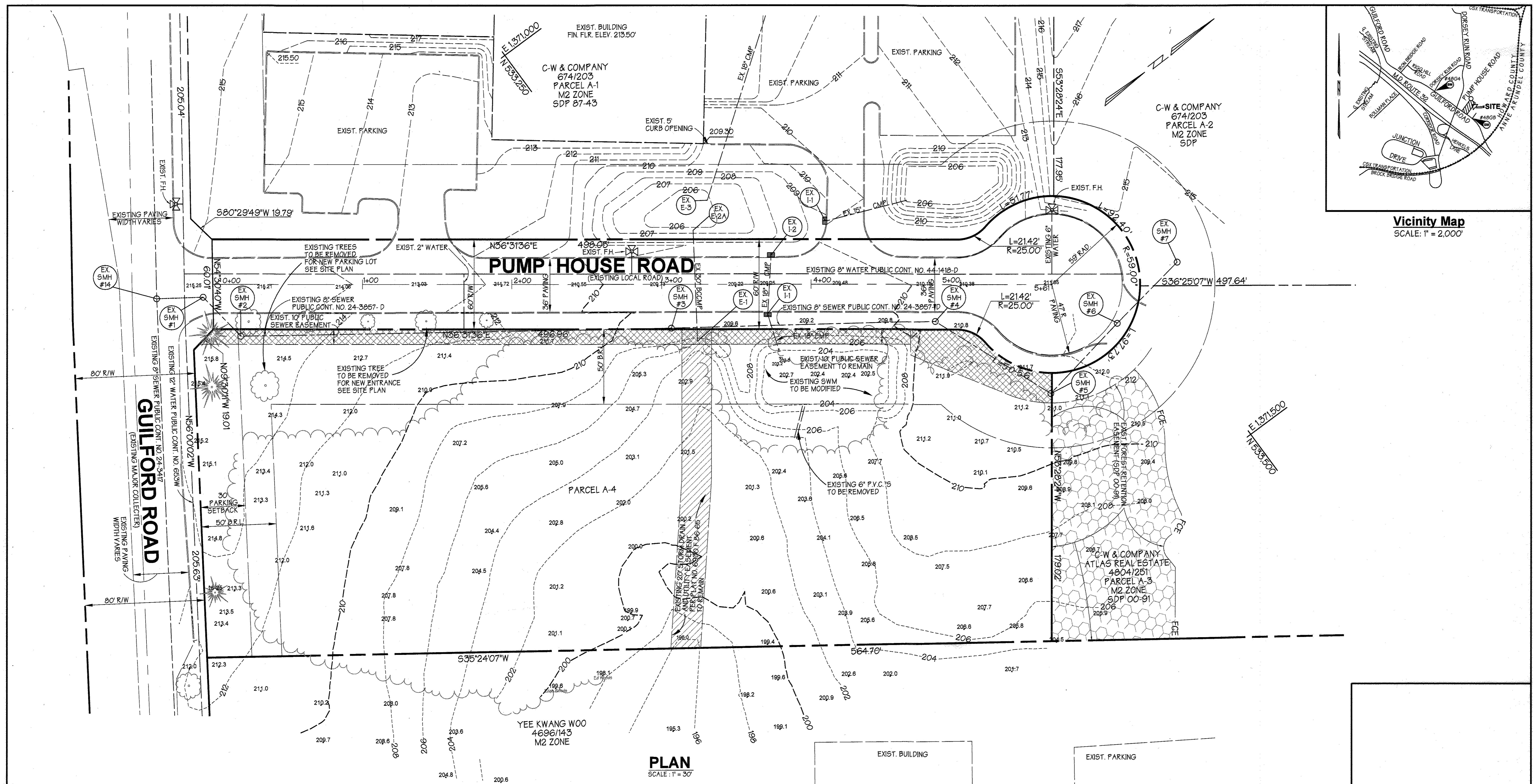
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PARCEL NO.	STREET ADDRESS				
A-4	10300 PUMP HOUSE ROAD BUILDING 'A'				
A-4	10310 PUMP HOUSE ROAD BUILDING 'B'				
SUBDIVISION NAME	SECTION NAME				
C - W & Company	N/A				
PLAT #	BLOCK #	ZONE	MAP	ELECT. DIST.	CENSUS TRACT
#15557	14442	M-2	48	6	6064
WATER CODE		SEWER CODE			
B-02		4020000			

**Cover Sheet**

**C - W & COMPANY**  
**PARCEL A-4**

ELECTION DISTRICT: 6<sup>th</sup>  
HOWARD CO., MARYLAND SHT. 1 OF 14 DATE: JANUARY 21, 2002

SDP 02 - 091  
SCALE: As Shown

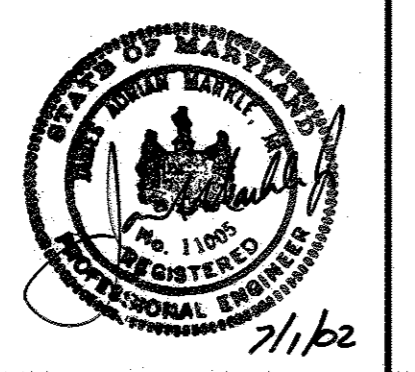


**Vicinity Map**  
SCALE: 1" = 2,000'

**PLAN**  
SCALE: 1" = 30'

APPROVED: Howard County Department of Planning and Zoning  
 Chief, Development Engineering Division: *[Signature]* 10/30/02  
 Chief, Division of Land Development: *[Signature]* 11/7/02  
 Director: *[Signature]* 11/7/02

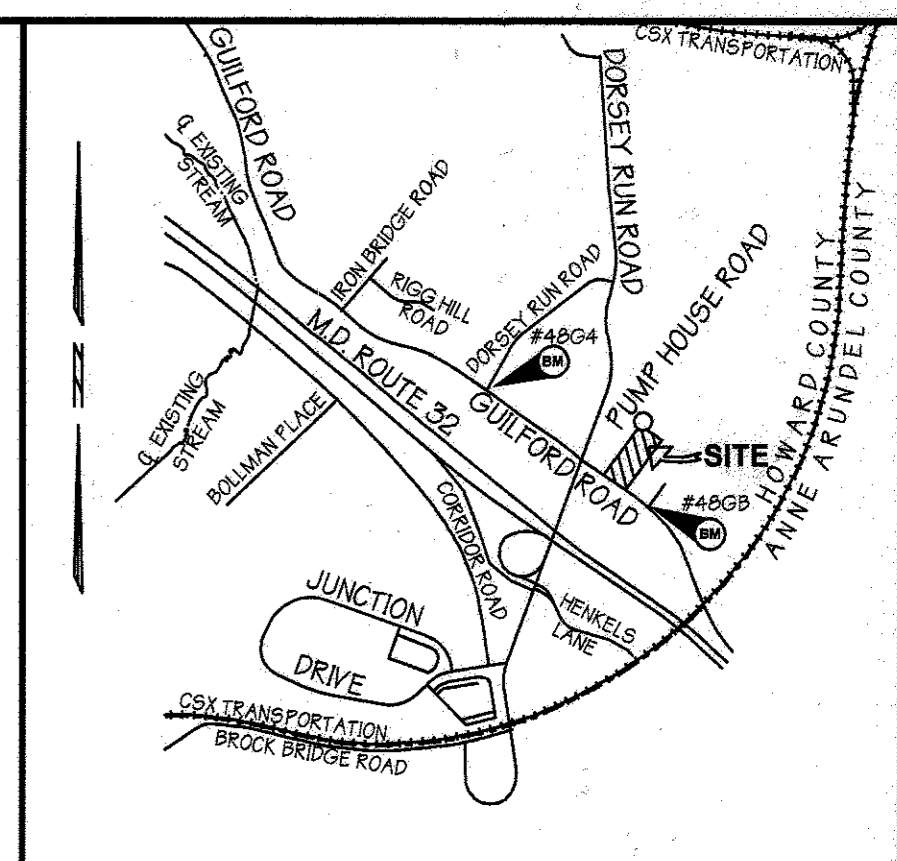
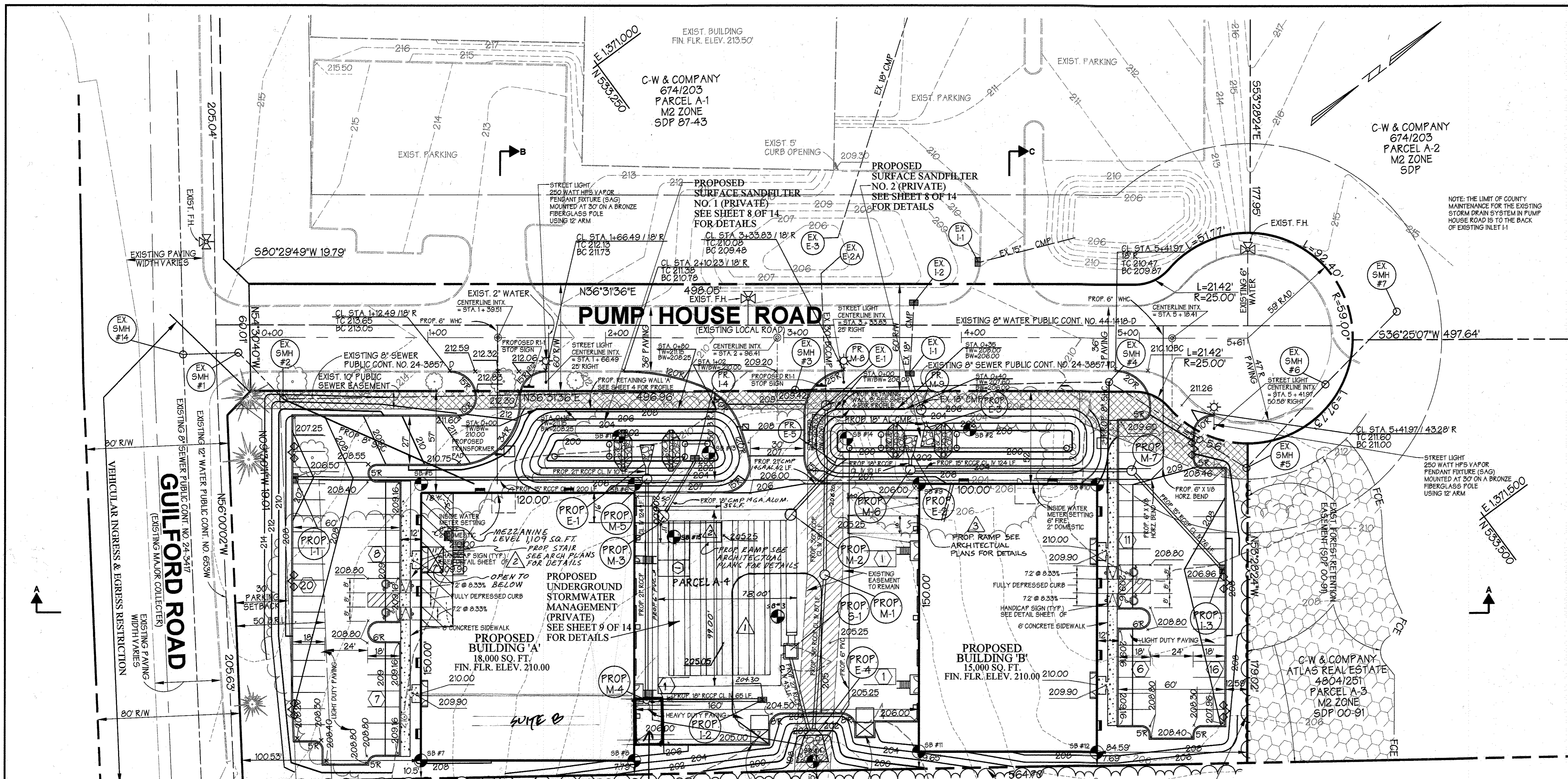
PREPARED BY:  
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 Civil Engineers and Land Surveyors  
 1020 Cromwell Bridge Road  
 Towson, Maryland 21286  
 (410) 825-8120



OWNER / DEVELOPER  
**CAPITAL INVESTMENT PROPERTIES, LLC**  
 7175 A OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046  
 410-309-9848

ADDRESS CHART					
PARCEL NO.	STREET ADDRESS				
A-4	10800 PUMP HOUSE ROAD BUILDING 'A'				
A-4	10810 PUMP HOUSE ROAD BUILDING 'B'				
SUBDIVISION NAME	SECTION NAME	PARCEL #			
C - W & Company	N/A	A-4			
PLAT # 15557	BLOCK # 14442	ZONE M-2	TAX MAP 48	ELECT. DIST. 6	CENSUS TRACT 6064
WATER CODE B-02			SEWER CODE 402000		

**Existing Conditions Plan**  
**C - W & COMPANY**  
**PARCEL A-4**  
 ELECTION DISTRICT: 6<sup>th</sup>  
 HOWARD CO., MARYLAND 2 OF 14  
 SDP 02 - 091  
 DATE: JANUARY 21, 2002  
 SCALE: As Shown  
 SDP 02 - 091  
 PIN: 9982

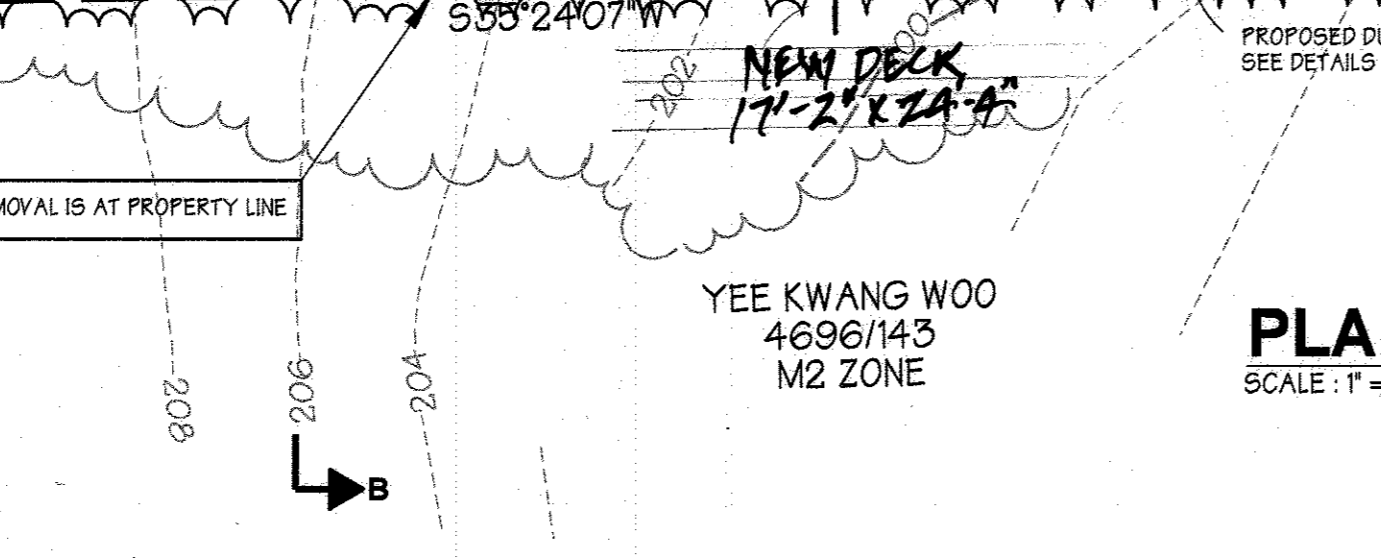
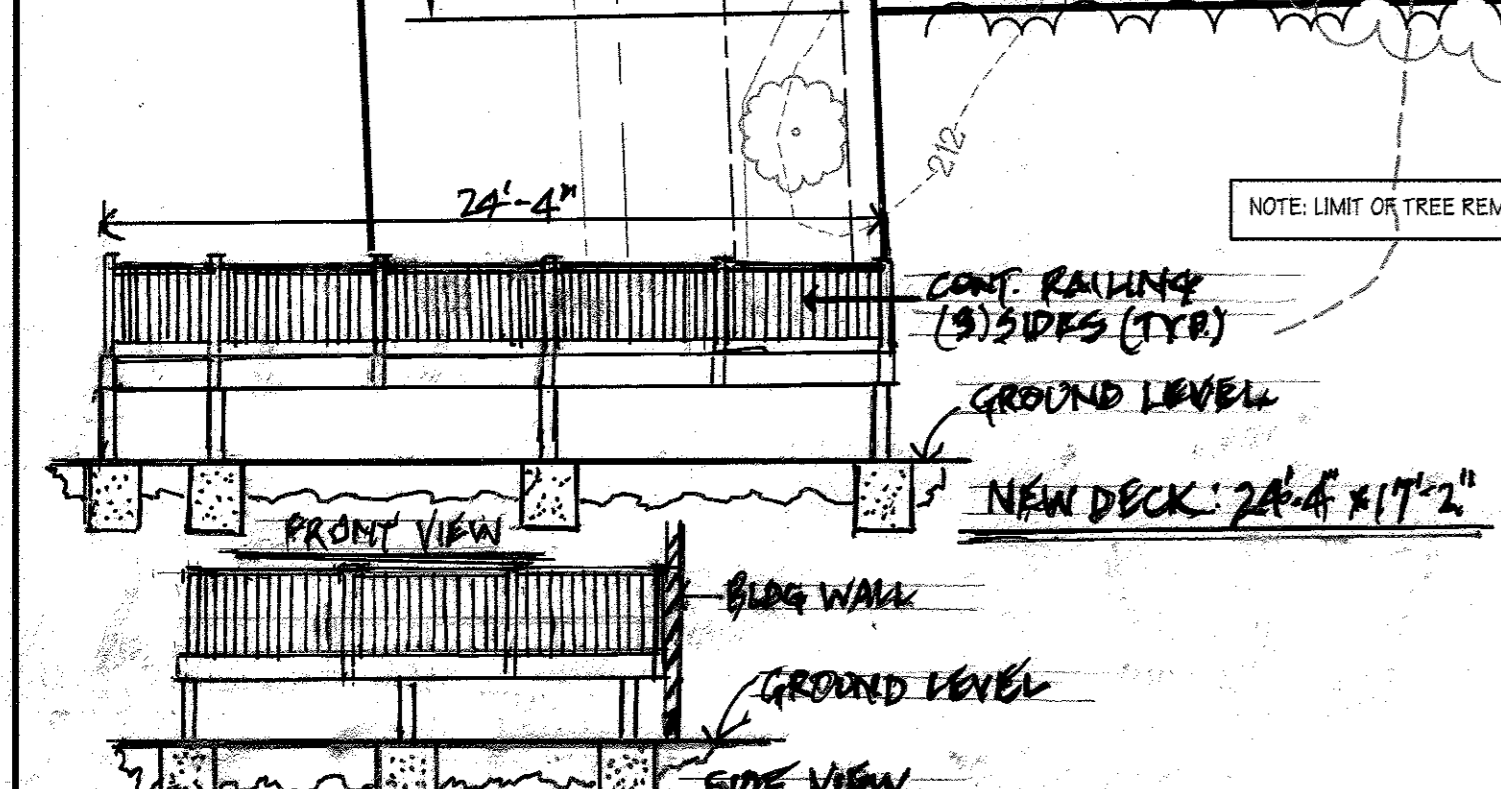


**Vicinity Map**  
SCALE: 1" = 2,000'

**Lighting Legend**

- ◆ 250W DOUBLE HEAD METAL HALIDE SITE LIGHTING POLE FIXTURE, HORIZONTAL LAMP, ALUMINUM HOUSING, HINGED ALUMINUM DOOR, CLEAR TEMPERED GLASS LENS, ONE PIECE SPECULAR REFLECTOR POLYESTER POWER COAT FINISH DARK BRONZE, US ARCHITECTURAL LIGHTING CAT. #YRS-III-250-MH-480-2-90-DBM
- POLE: SQUARE STRIGHT STEEL 22'-6" HIGH ON 2'-0" CONCRETE BASE, DARK BRONZE POLYESTER POWER COAT FINISH.
- 250W DOUBLE HEAD METAL HALIDE SITE LIGHTING POLE FIXTURE, HORIZONTAL LAMP, ALUMINUM HOUSING, HINGED ALUMINUM DOOR, CLEAR TEMPERED GLASS LENS, ONE PIECE SPECULAR REFLECTOR POLYESTER POWER COAT FINISH DARK BRONZE, US ARCHITECTURAL LIGHTING CAT. #YRS-III-250-MH-480-2-90-DBM
- POLE: SQUARE STRIGHT STEEL 22'-6" HIGH ON 2'-0" CONCRETE BASE, DARK BRONZE POLYESTER POWER COAT FINISH.
- TRANSFORMER LOCATION
- 250W METAL HALIDE WALL MOUNTED POLE FIXTURE, HORIZONTAL LAMP, ALUMINUM HOUSING, HINGED ALUMINUM DOOR, CLEAR TEMPERED GLASS LENS, ONE PIECE SPECULAR REFLECTOR POLYESTER POWER COAT FINISH DARK BRONZE, HUBBLE CAT. #MHS-025H-268
- SURFACE MTD. 250 W METAL HALIDE DIE-CAST ALUM. HOUSING, WALL PACK, CLEAR IMPACT RESISTANCE BORO SILICATE PRISMATIC GLASS LENS, BRONZE FINISH AND PHOTO CONTROL, VISIONAIRE CAT. #SPK250MH-WH-BRZ

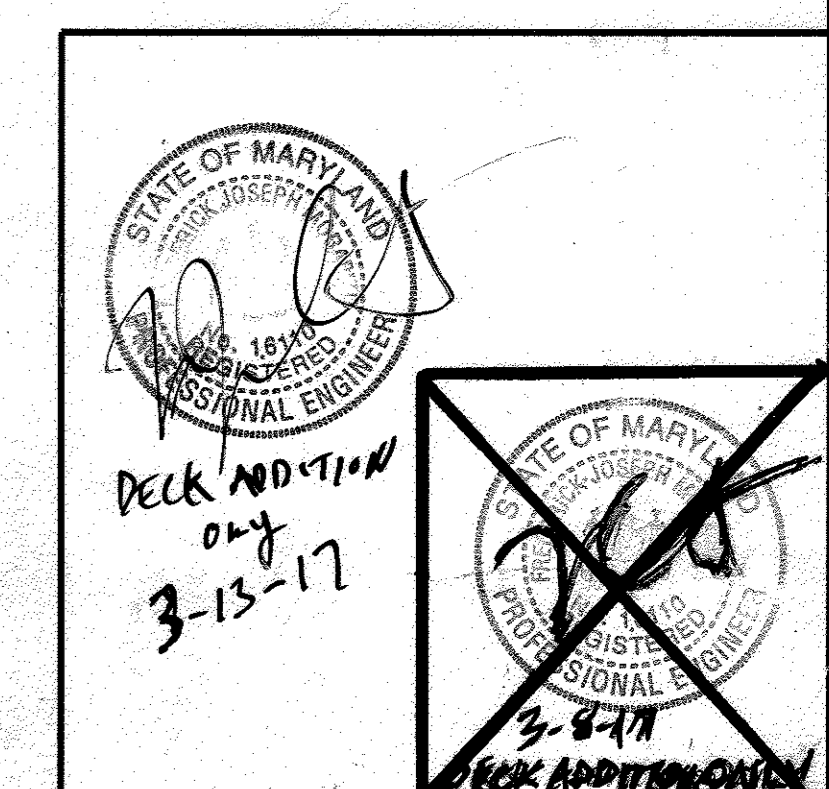
NOTE: ALL EXTERIOR LIGHTING SHALL CONFORM TO ZONING REGULATIONS, SECTION 134



**Legend**

Ex. 2' Contours	-----
Ex. 10' Contours	-----
Prop. 2' Contours	-----
Prop. 10' Contours	-----
Ex. Curb & Gutter	-----
Prop. Curb & Gutter	-----
Bldg. Restriction Line	-----
Ex. Sanitary	-----
Ex. Storm Drain	-----
Ex. Water	-----
Prop. Sanitary	-----
Prop. Storm Drain	-----
Prop. Water	-----
Prop. Sidewalk	-----
Paving	-----
Prop. Parking Count	-----
Prop. Handicapped Parking Space	-----
Existing Public Sewer Easement	-----
Existing Easement to Remain	-----

**PROFESSIONAL CERTIFICATION**  
I HEREBY DECLARE THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENCED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
EXP. DATE 07/18/19 LIC. #16110  
DECK ADDITION ONLY FSM.



ADDED NEW OUTDOOR DECK AT BLDG A SUITE B BY MORAN CONSULTANTS PC DATED 3/13/2017  
DECK PURPOSE: AS AN AMENITY FOR EMPLOYEE USE FOR PDBMARK ONLY

APPROVED: Howard County Department of Planning and Zoning  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
CHIEF, DIVISION OF LAND DEVELOPMENT

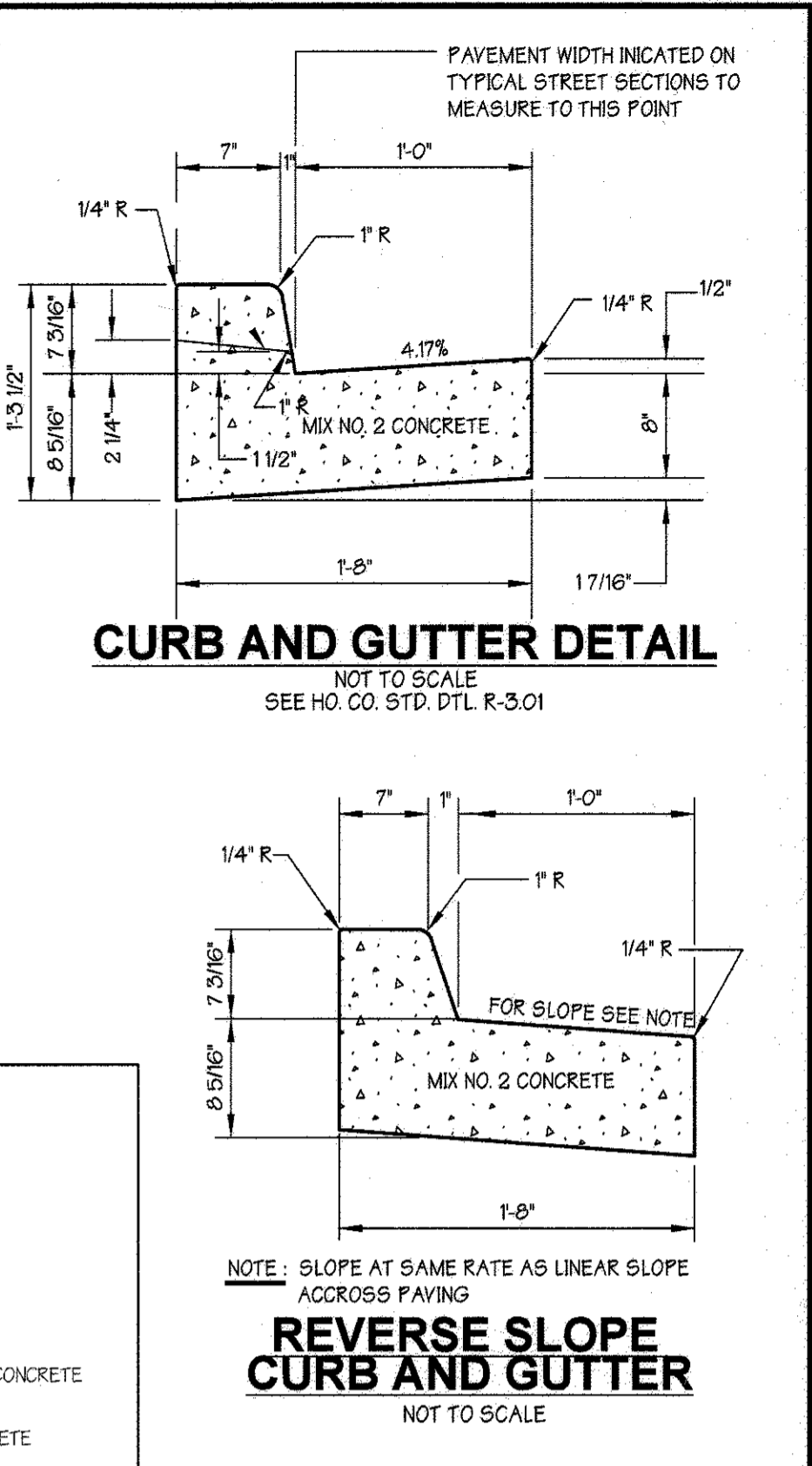
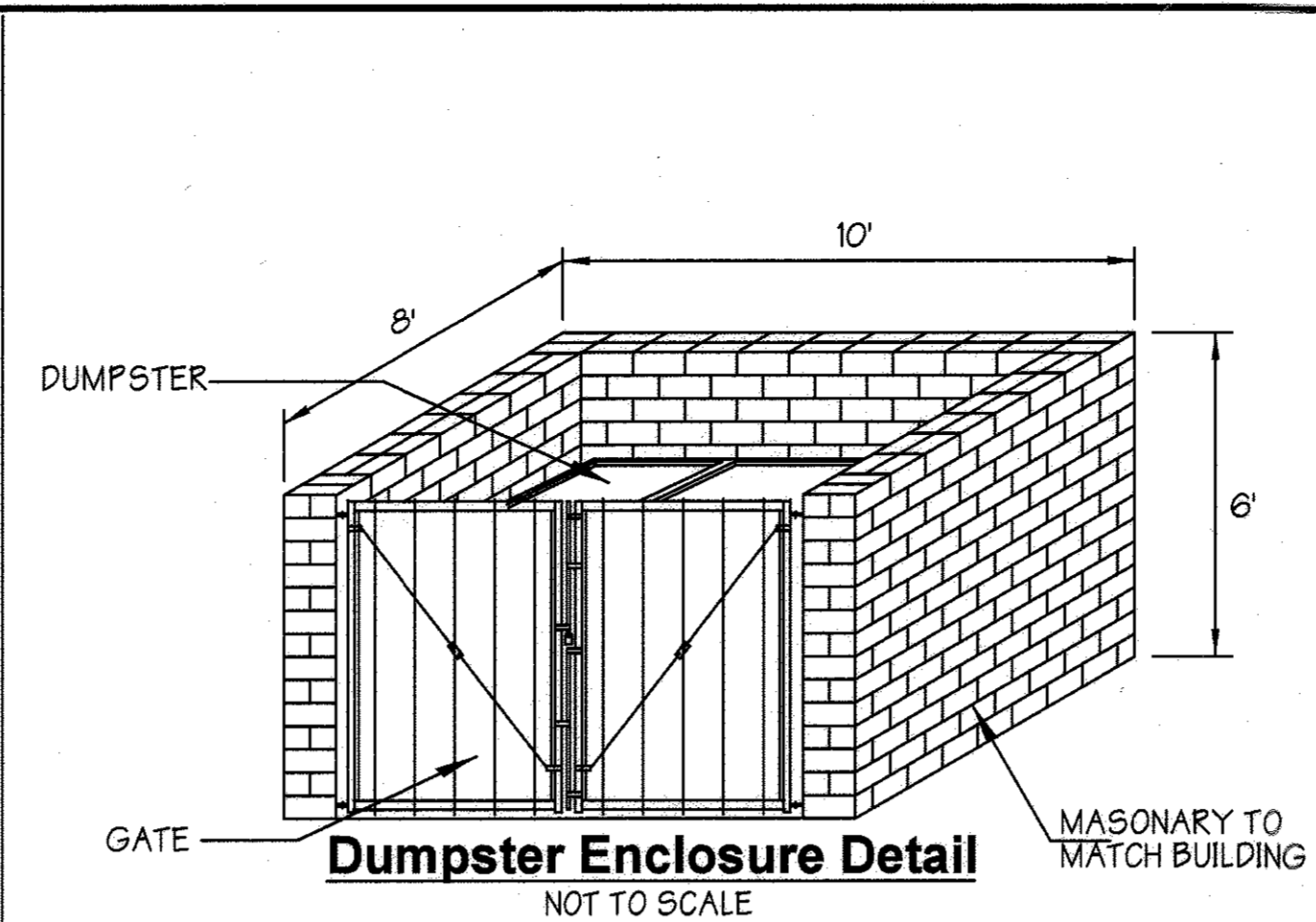
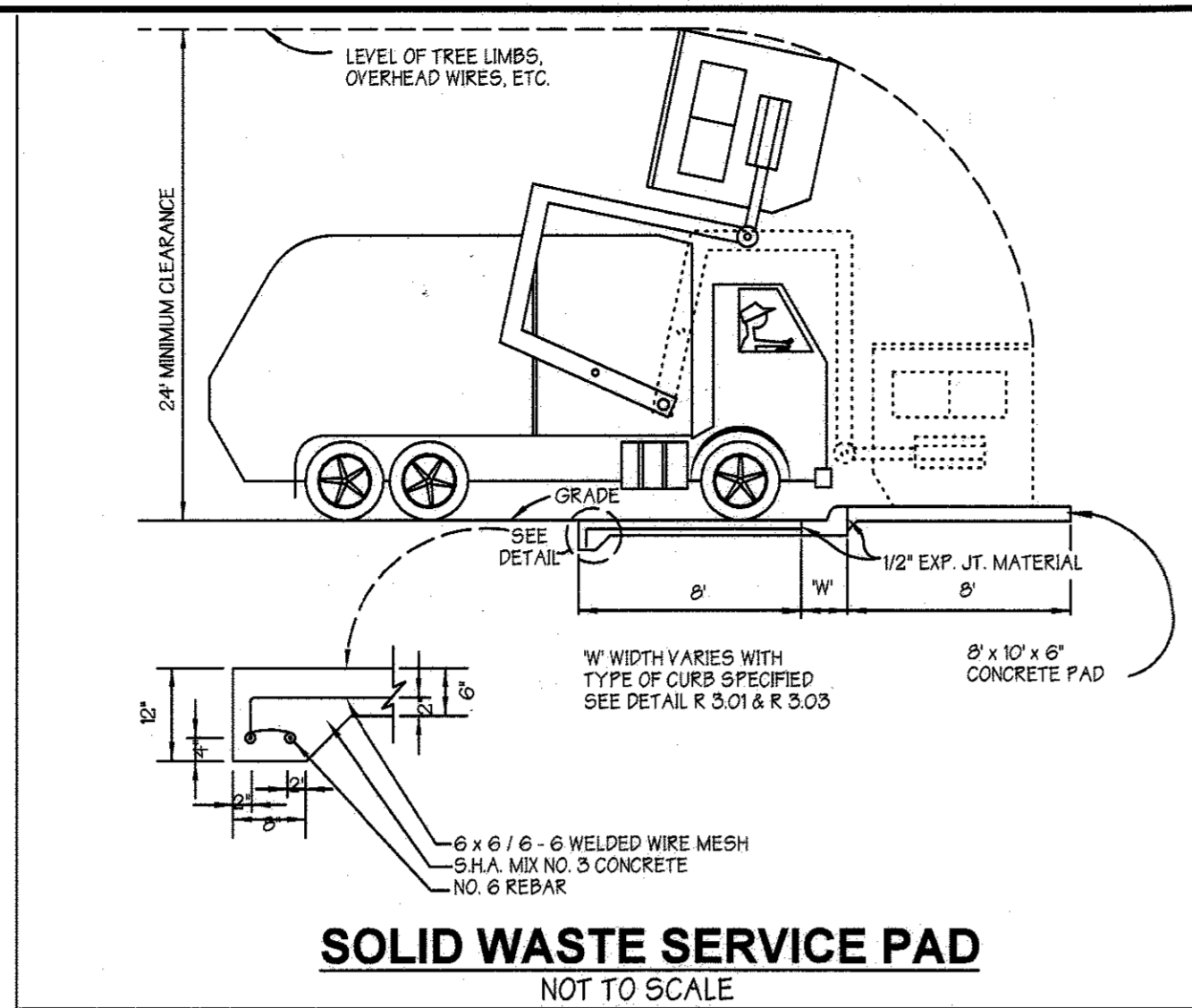
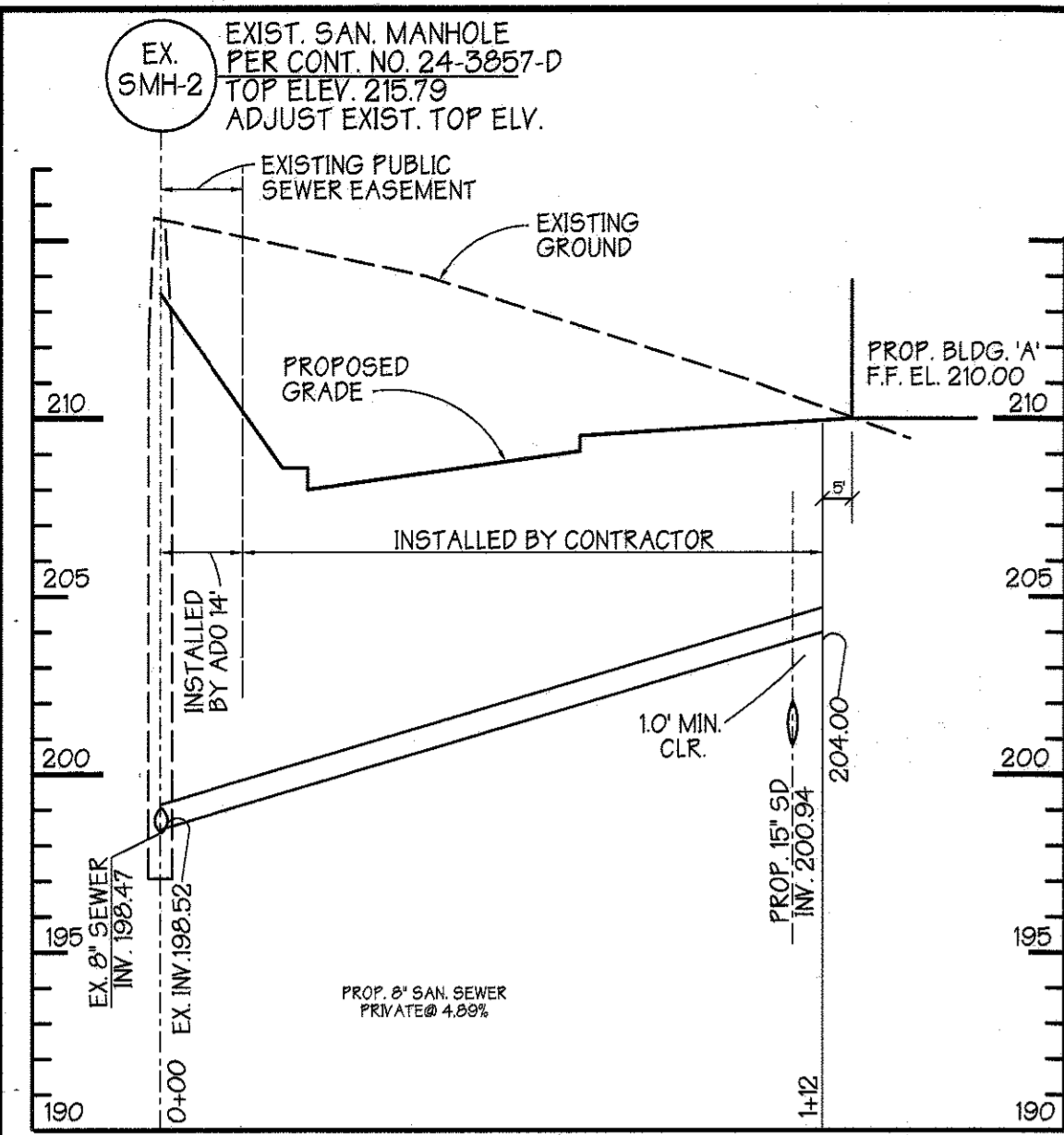
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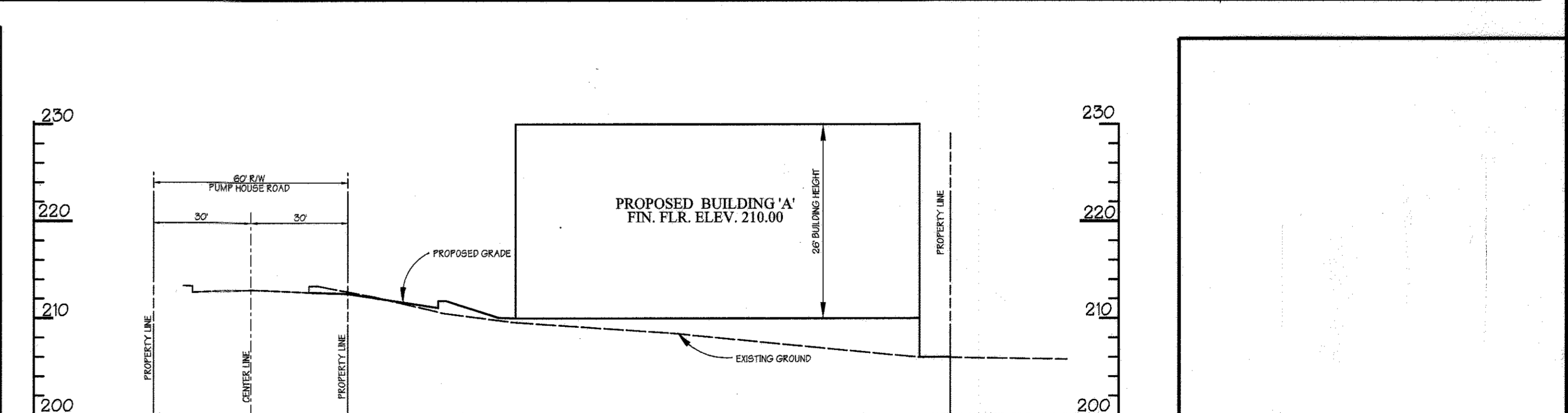
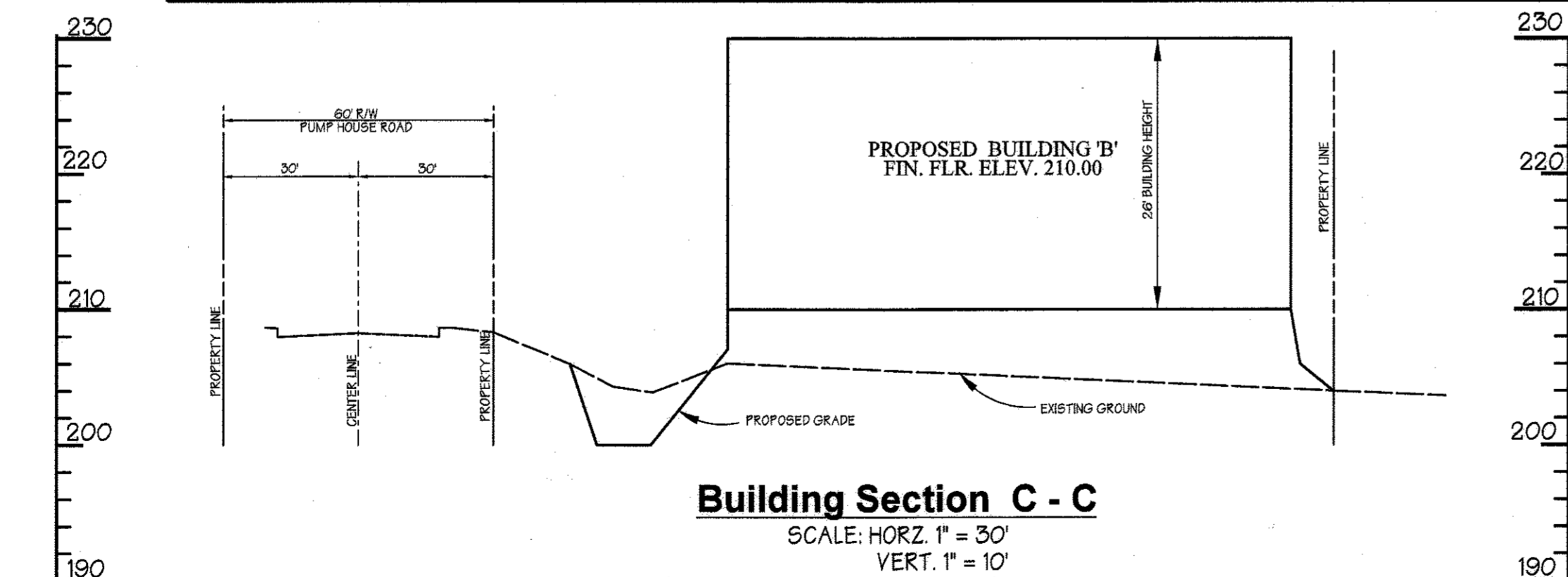
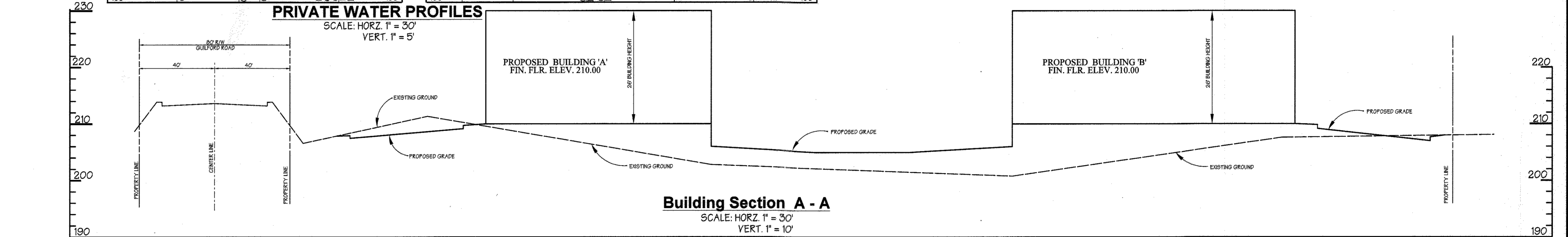
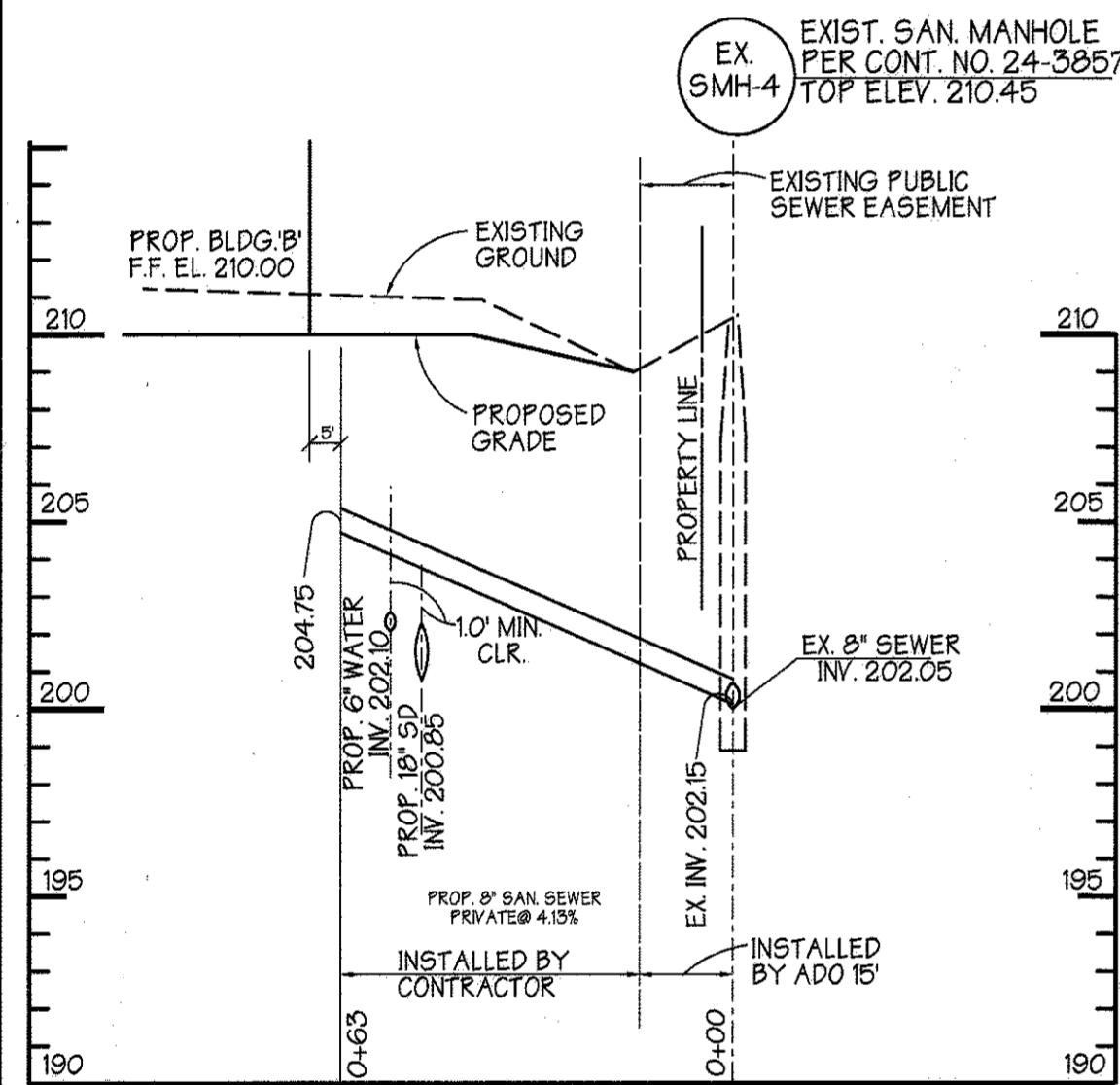
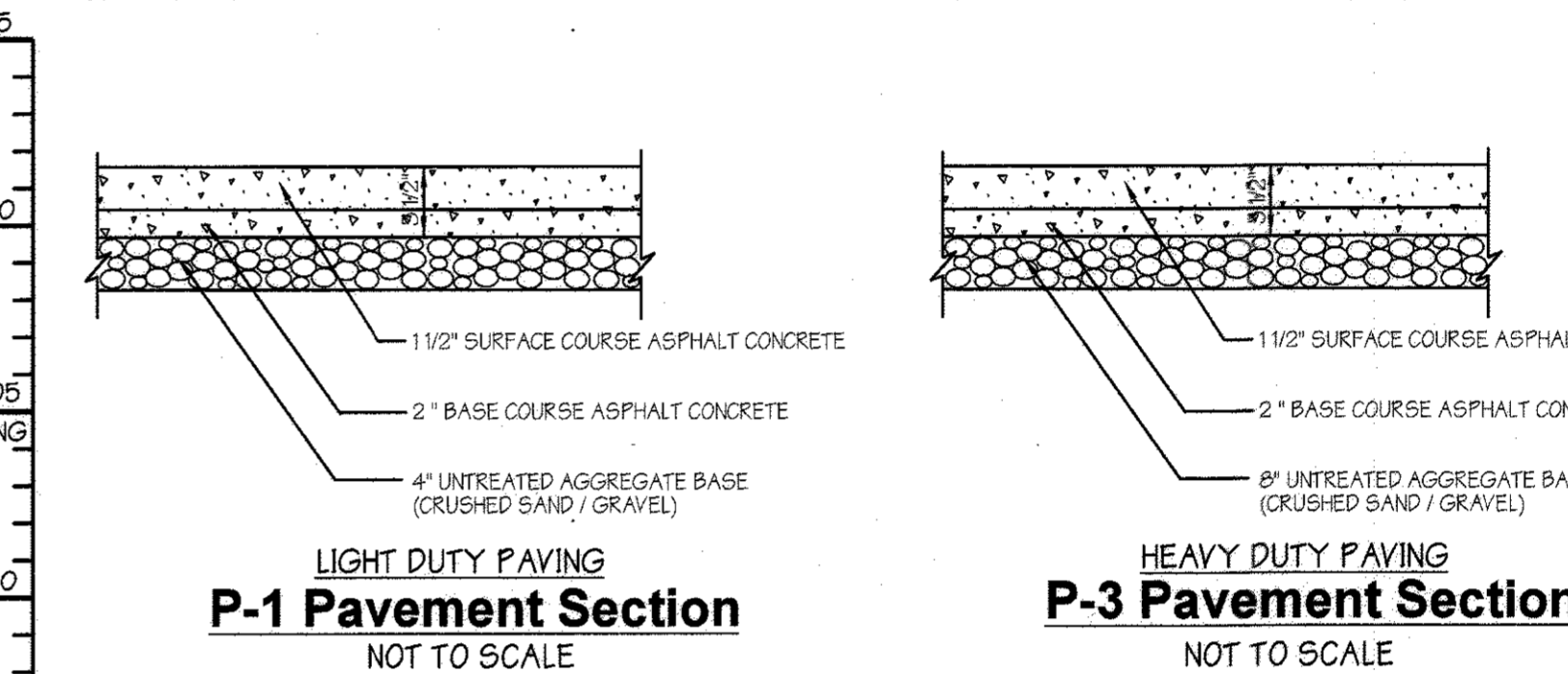
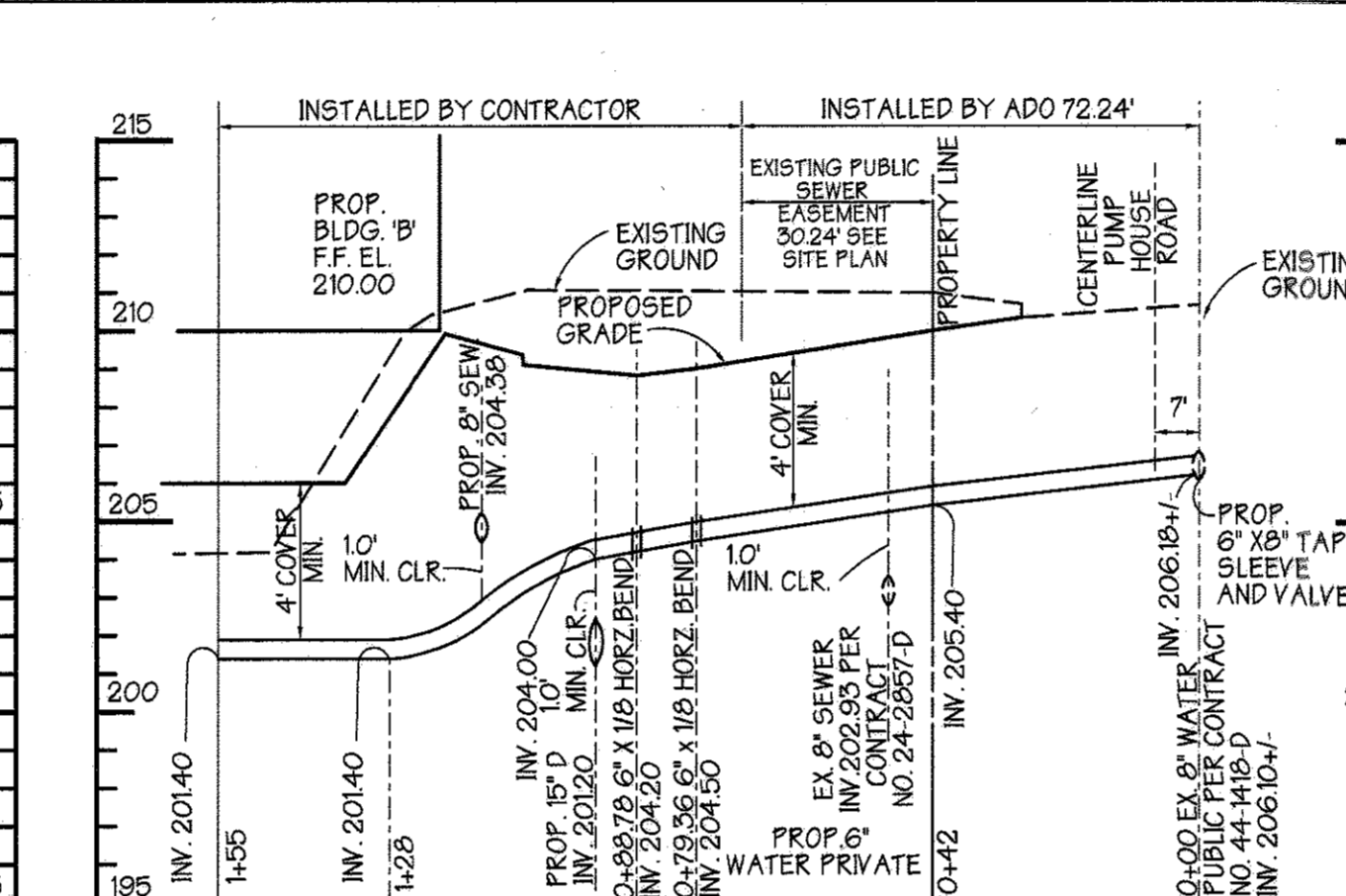
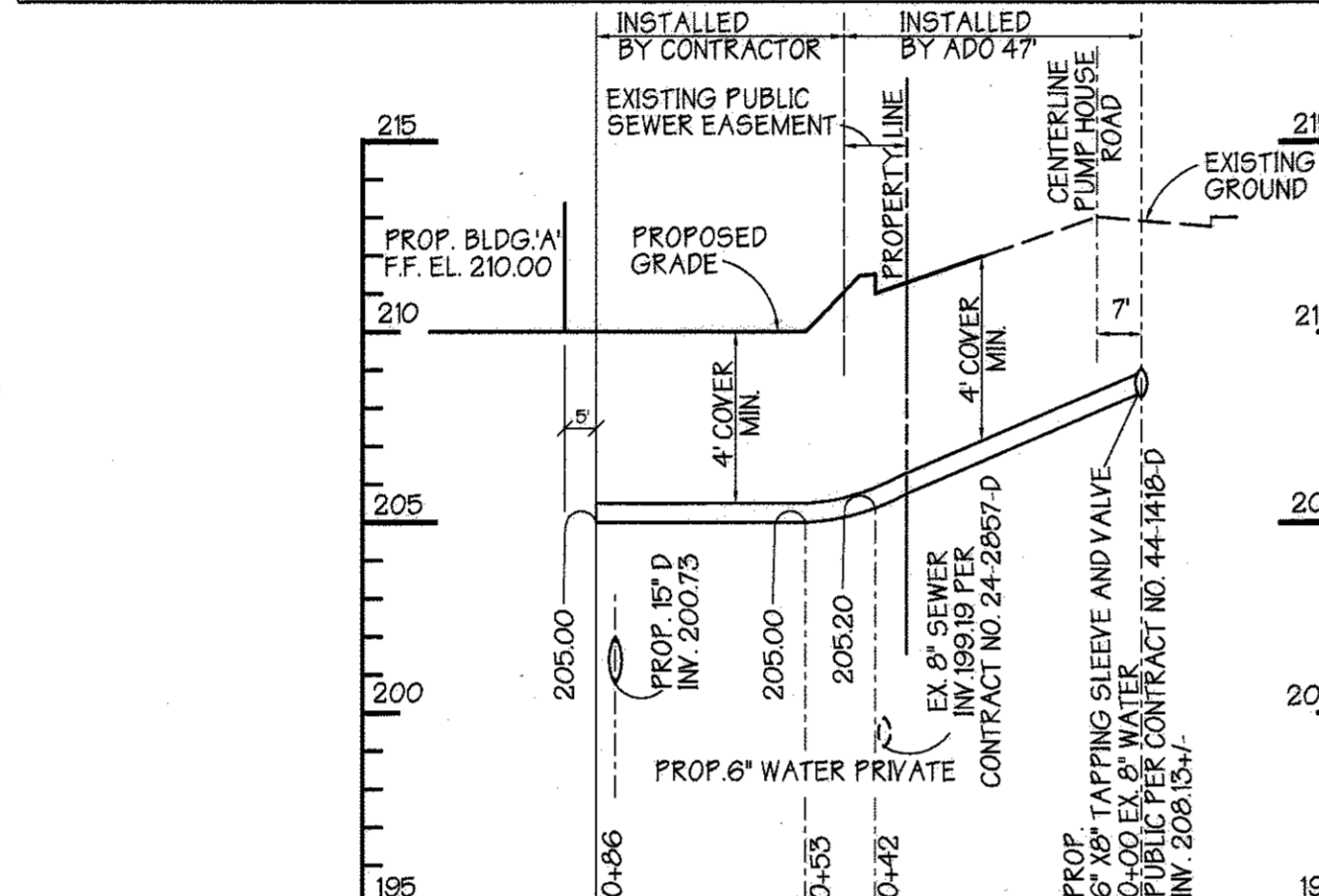
OWNER / DEVELOPER: **CAPITAL INVESTMENT PROPERTIES, LLC**  
7175 A OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046  
410-309-9848

ADDRESS CHART					
PARCEL NO.	STREET ADDRESS				
A-4	10900 PUMP HOUSE ROAD BUILDING 'A'				
A-4	10910 PUMP HOUSE ROAD BUILDING 'B'				
SUBDIVISION NAME					
C - W & Company					
SECTION NAME					
N/A					
PARCEL #					
A-4					
PLAT #	BLOCK #	ZONE	ZONING MAP	ELECT. DIST.	CENSUS TRACT
15557	14442	M-2	4B	6	6064
WATER CODE		SEWER CODE			
B-02		4020000			

**Site Plan**  
**C - W & COMPANY**  
**PARCEL A-4**  
ELECTION DISTRICT: 6<sup>th</sup>  
HOWARD CO., MARYLAND  
3 OF 14  
DATE: JANUARY 21, 2002  
SDP 02 - 091  
SCALE: As Shown  
DATE: JANUARY 21, 2002  
P/N: 9962



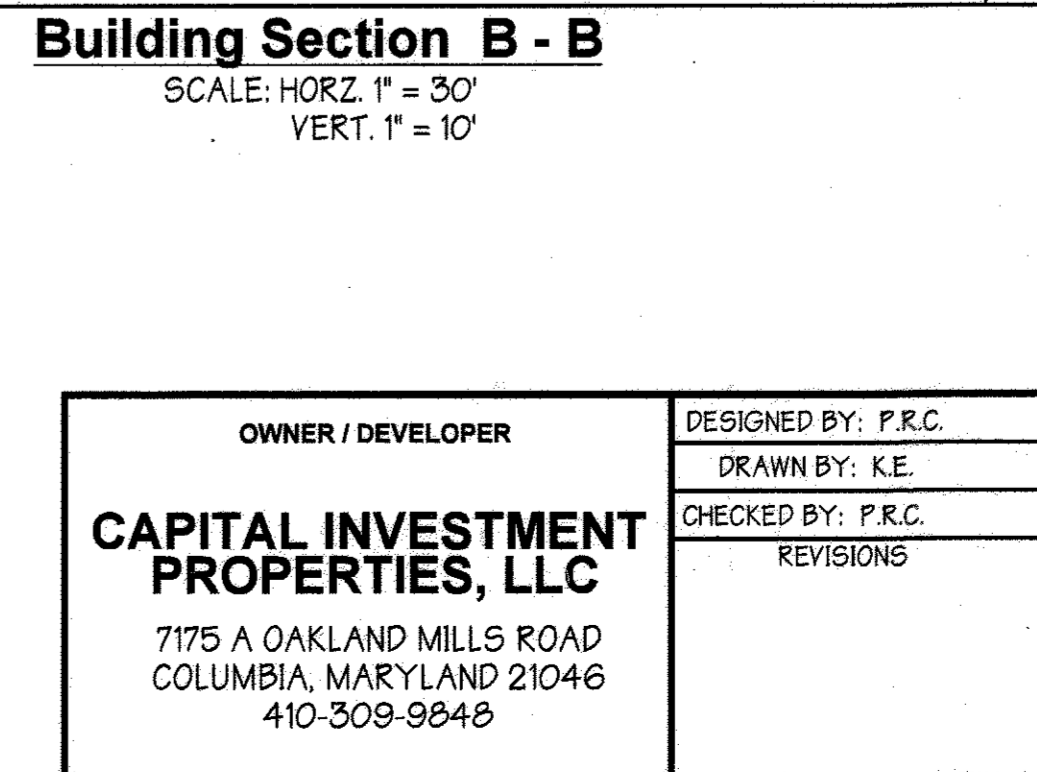
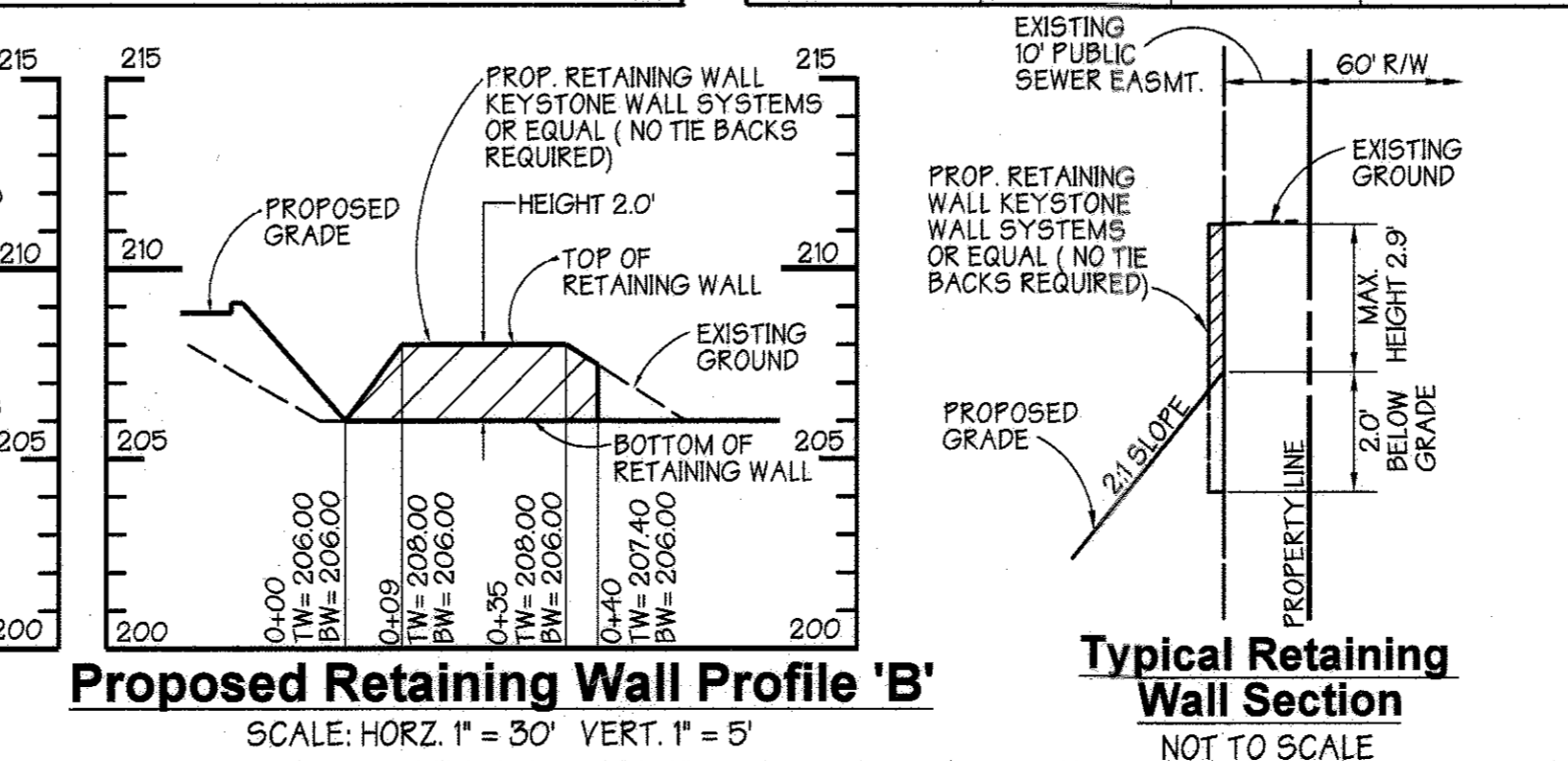
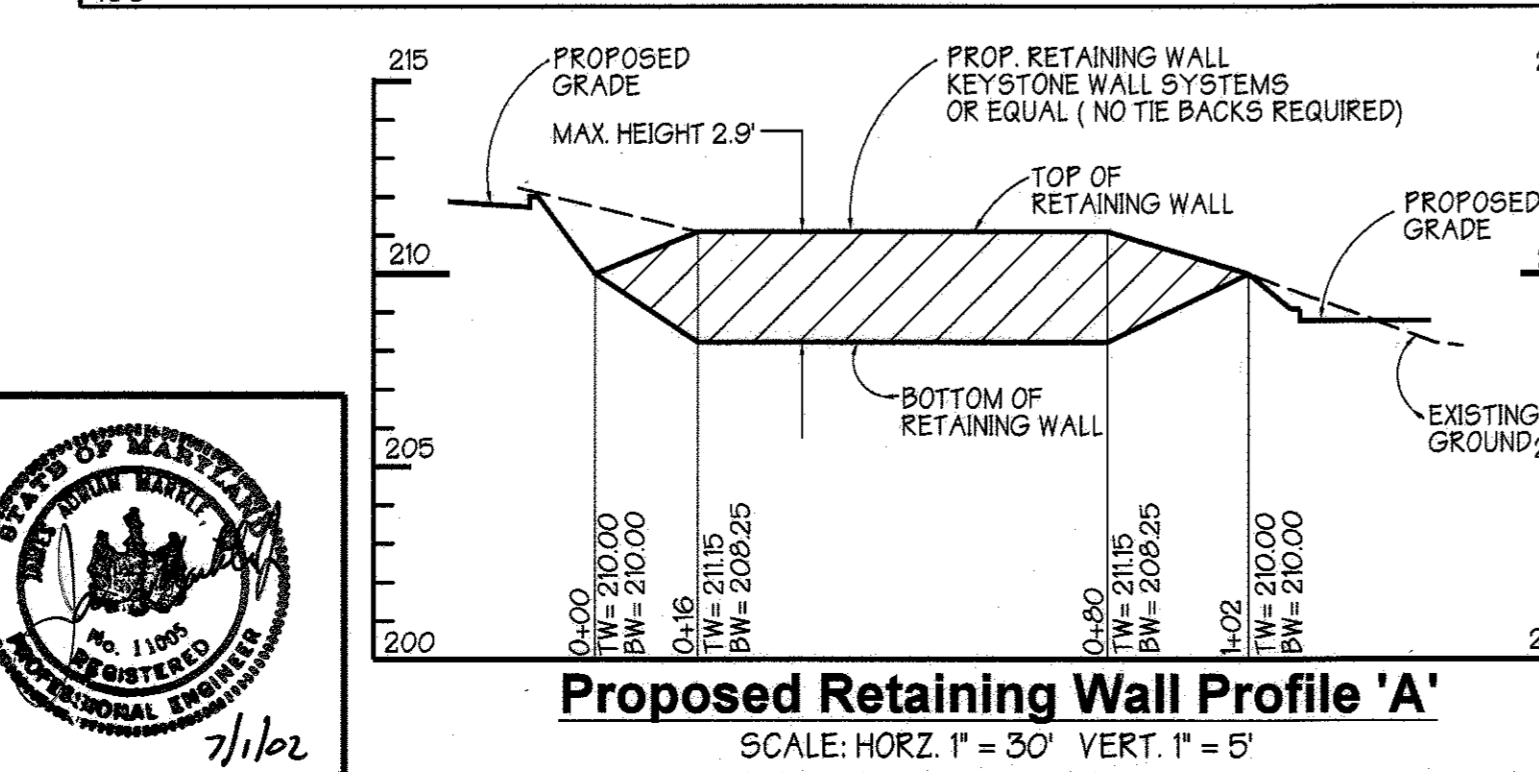
**PRIVATE SANITARY SEWER PROFILE**  
SCALE: HORIZ. 1" = 30'  
VERT. 1" = 5'



APPROVED: Howard County Department of Planning and Zoning  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DIRECTOR

DATE: 10/30/02  
 DATE: 11/7/02  
 DATE: 11/7/02

PREPARED BY:  
**GEORGE W. STEPHENS, JR. AND ASSOCIATES, INC.**  
 Civil Engineers and Land Surveyors  
 1020 Cromwell Bridge Road  
 Towson, Maryland 21286  
 (410) 825-8120

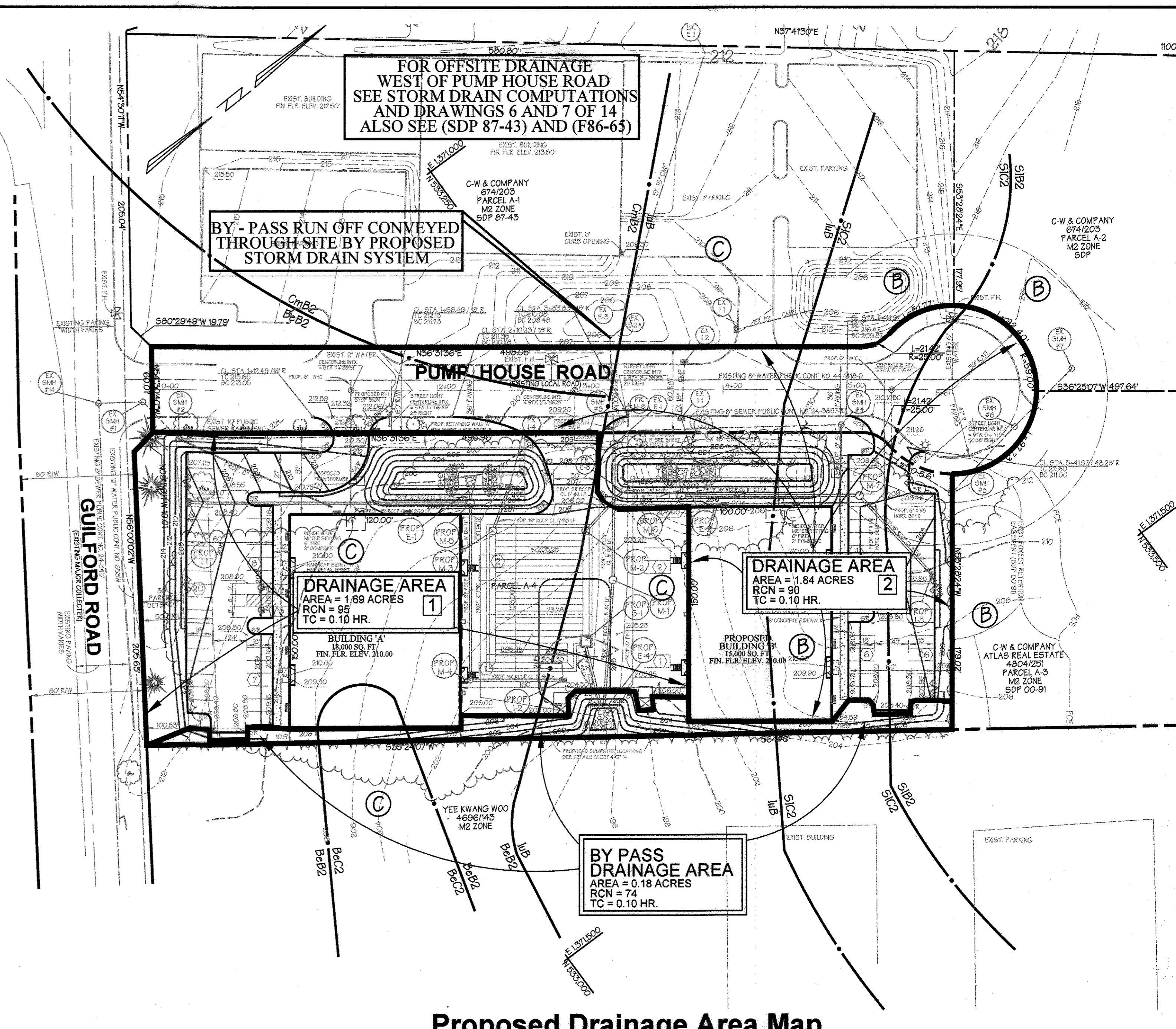
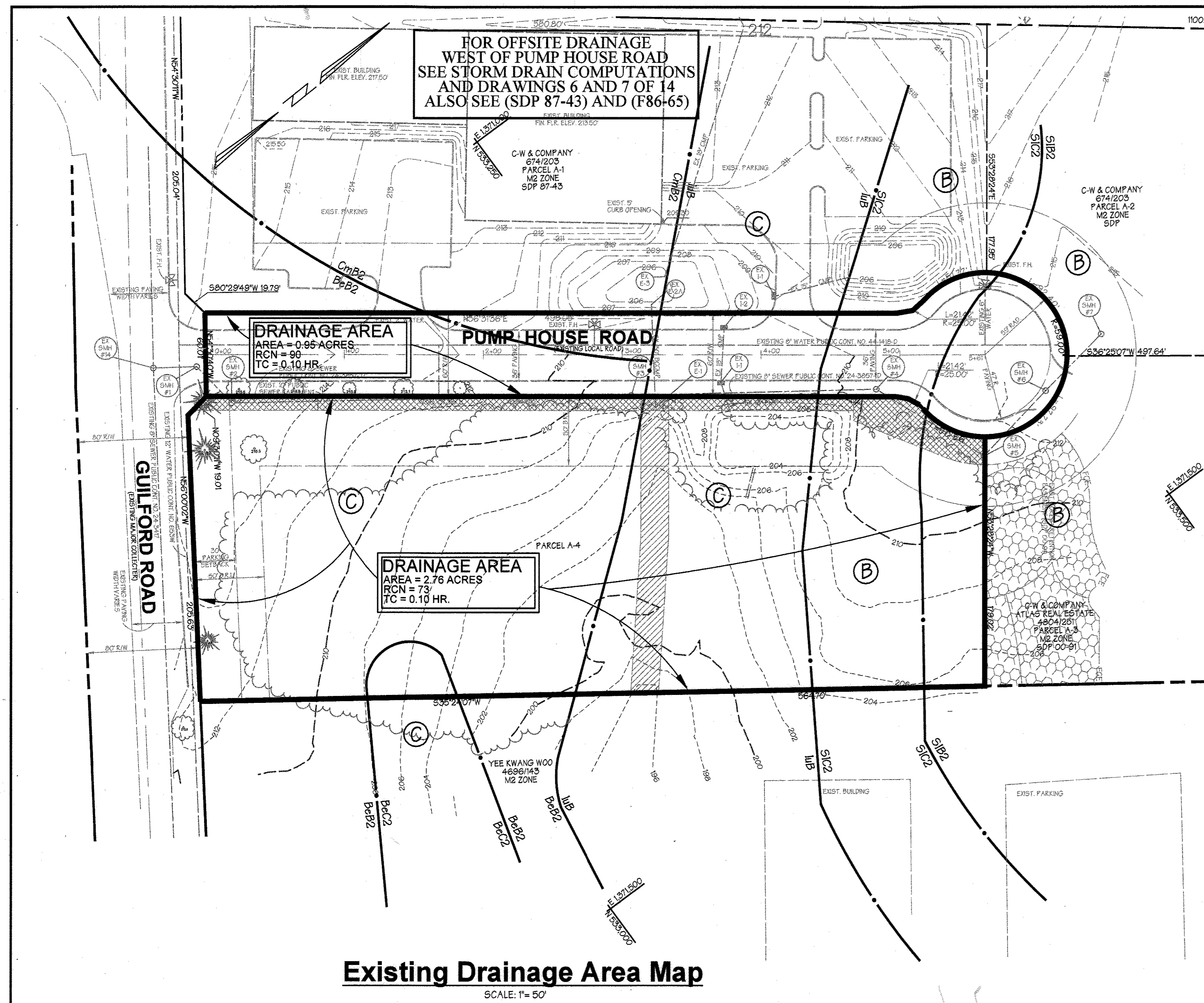


ADDRESS CHART					
PARCEL NO.	STREET ADDRESS				
A-4	10900 PUMP HOUSE ROAD BUILDING 'A'				
A-4	10910 PUMP HOUSE ROAD BUILDING 'B'				
SUBDIVISION NAME	SECTION NAME		PARCEL #		
C - W & Company	N/A		A-4		
PLAT # 15567, 14442	BLOCK #	ZONE	TAX MAP	ELECT. DIST.	CENSUS TRACT
	M-2		4B	6	6064
WATER CODE 9-02	SEWER CODE 4020000				

**Site Plan Details**  
**C - W & COMPANY**  
**PARCEL A-4**

ELECTION DISTRICT: 6<sup>th</sup>  
 HOWARD CO., MARYLAND 4 OF 14 DATE: JANUARY 21, 2002

SDP 02 - 091  
 SCALE: As Shown  
 P/N: 8952

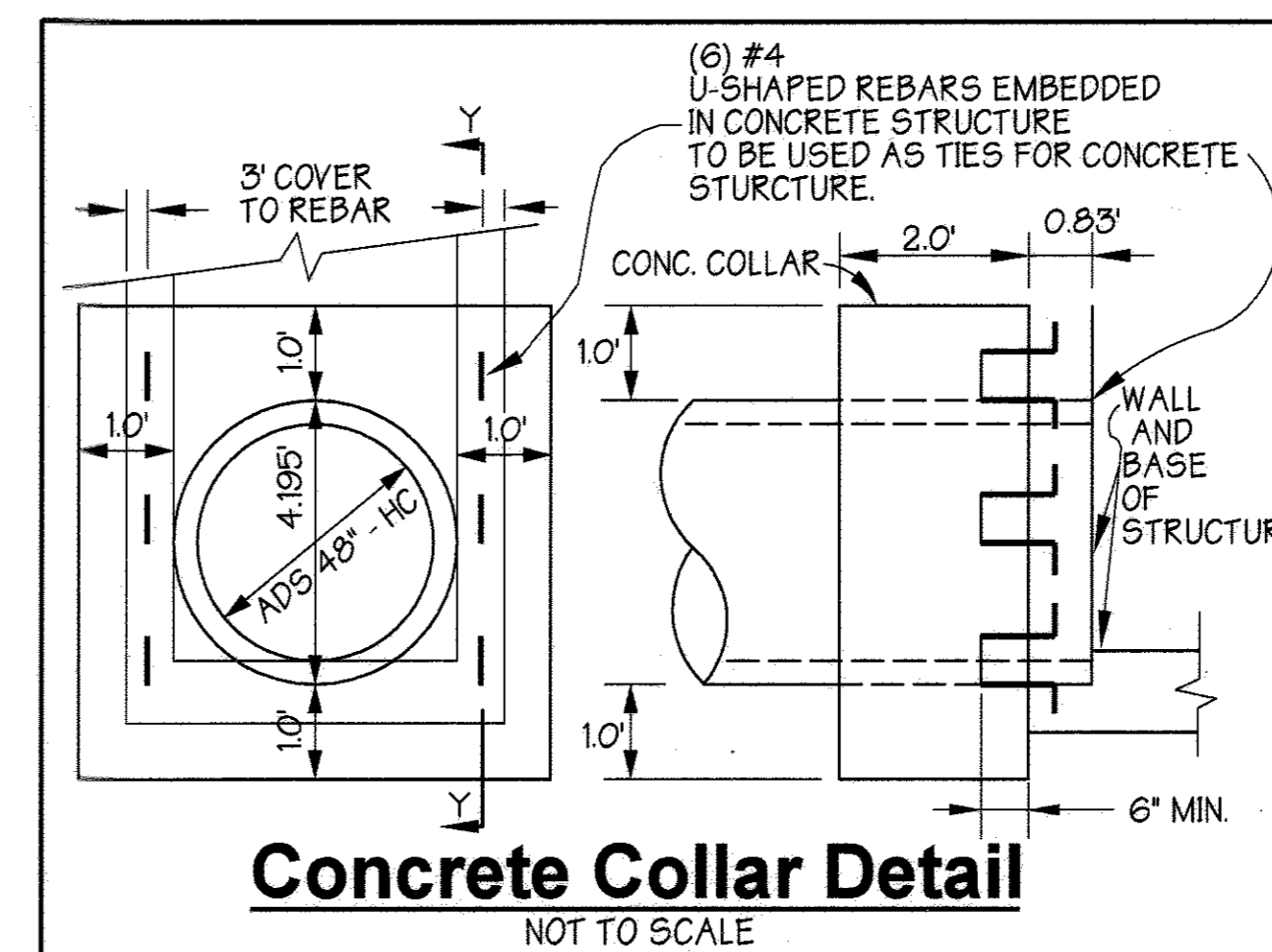


**LEGEND**

- SOILS
- DRAINAGE AREA LINES
- Soil Group **C**
- Soil Symbol **NeB2**

**SOILS CHART**

Soil Symbol	Soil Group	Soil Name	Soil Classification
BeB2	C	Beltsville	Silt Loam
BeC2	C	Beltsville	Silt Loam
luB	C	Iuka	Loam
SIC2	B	Sassafras	Loam
SIB2	B	Sassafras	Loam



Reviewed for Howard SCD and meets Technical Requirements

USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District

HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: Howard County Department of Planning and Zoning

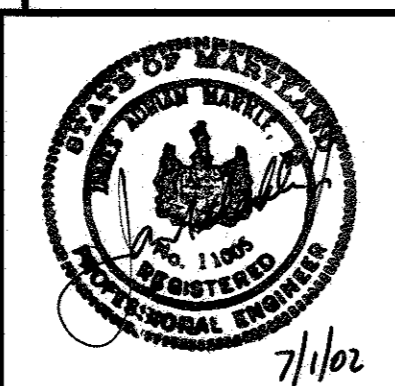
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 10/15/02

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 11/7/02

DIRECTOR DATE 11/7/02

PREPARED BY:

**GEORGE W. STEPHENS, JR. AND ASSOCIATES, INC.**  
Civil Engineers and Land Surveyors  
1020 Cromwell Bridge Road  
Towson, Maryland 21286  
(410) 825-8120



OWNER / DEVELOPER  
**CAPITAL INVESTMENT PROPERTIES, LLC**  
7175 A OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046  
410-309-9848

DESIGNED BY: P.R.C.  
DRAWN BY: K.E.  
CHECKED BY: P.R.C.  
REVISIONS

**ADDRESS CHART**

PARCEL NO.	STREET ADDRESS
A-4	10500 PUMP HOUSE ROAD BUILDING 'A'
A-4	10910 PUMP HOUSE ROAD BUILDING 'B'

SUBDIVISION NAME	SECTION NAME	PARCEL #
C - W & Company	N/A	A-4

PLAT #	BLOCK #	ZONE	MAP	ELECT. DIST.	CENSUS TRACT
#15657	14442	M-2	48	6	6064

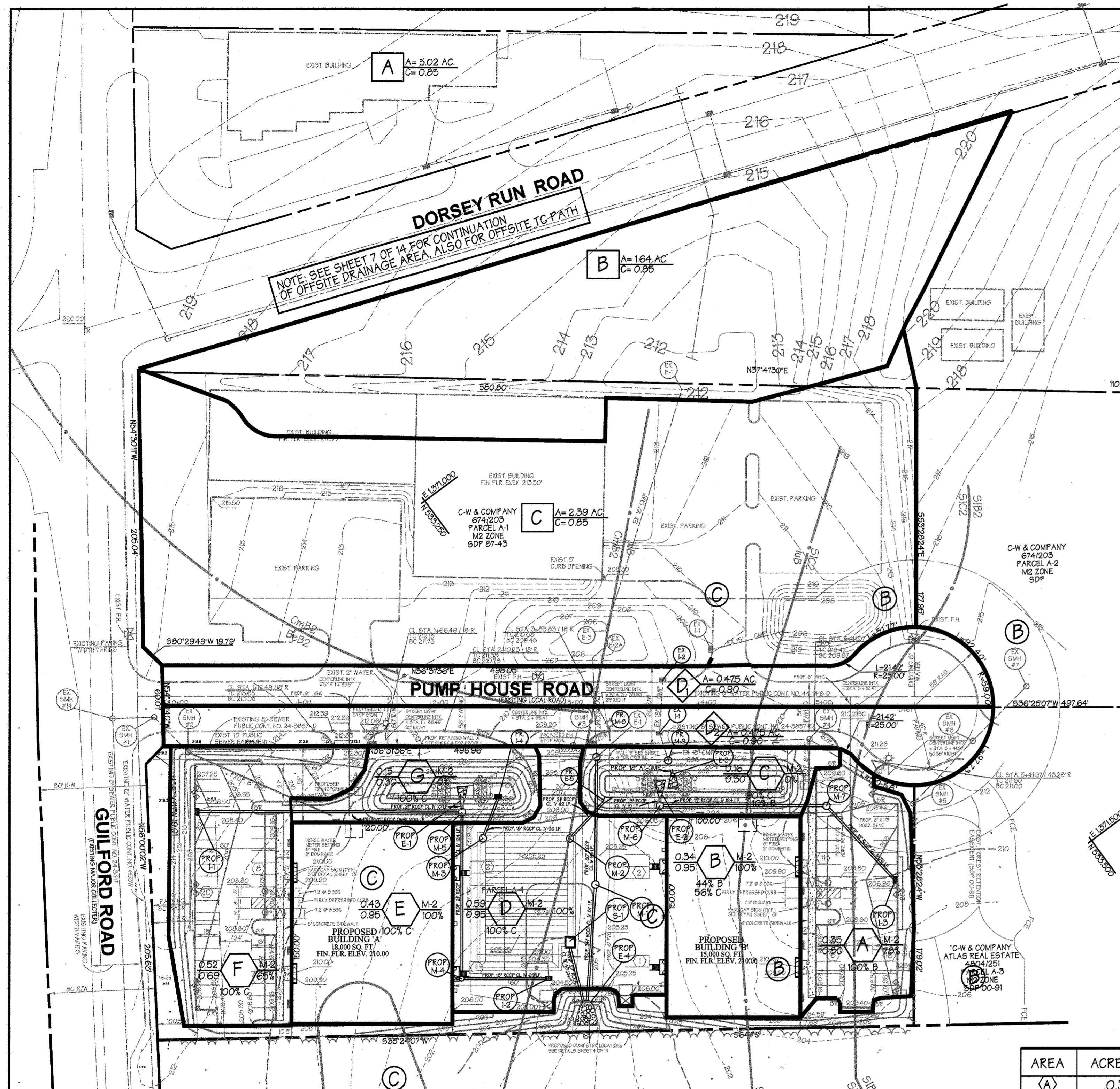
WATER CODE B-02 SEWER CODE 4020000

**Existing Proposed Drainage Area Maps**

**C - W & COMPANY PARCEL A-4**

ELECTION DISTRICT: 6<sup>th</sup>  
HOWARD CO., MARYLAND 5 OF 14 DATE: JANUARY 21, 2002

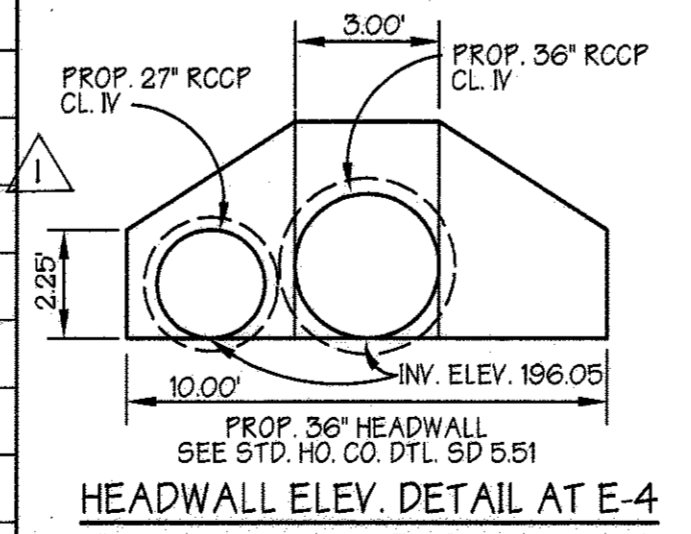
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PIN: 9852



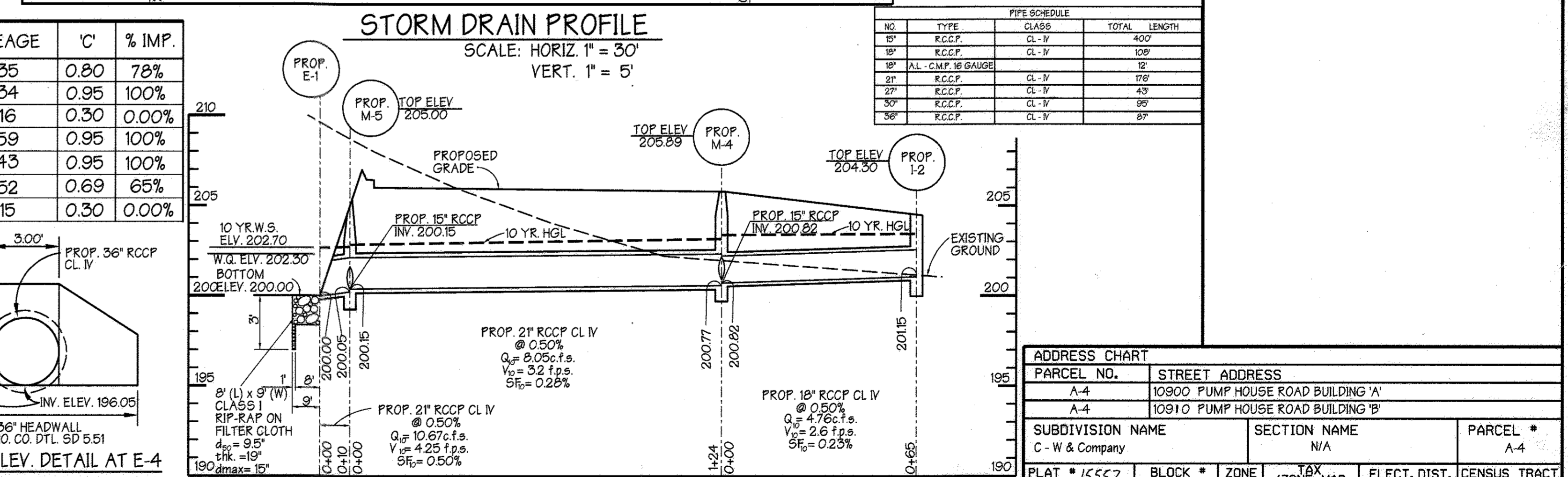
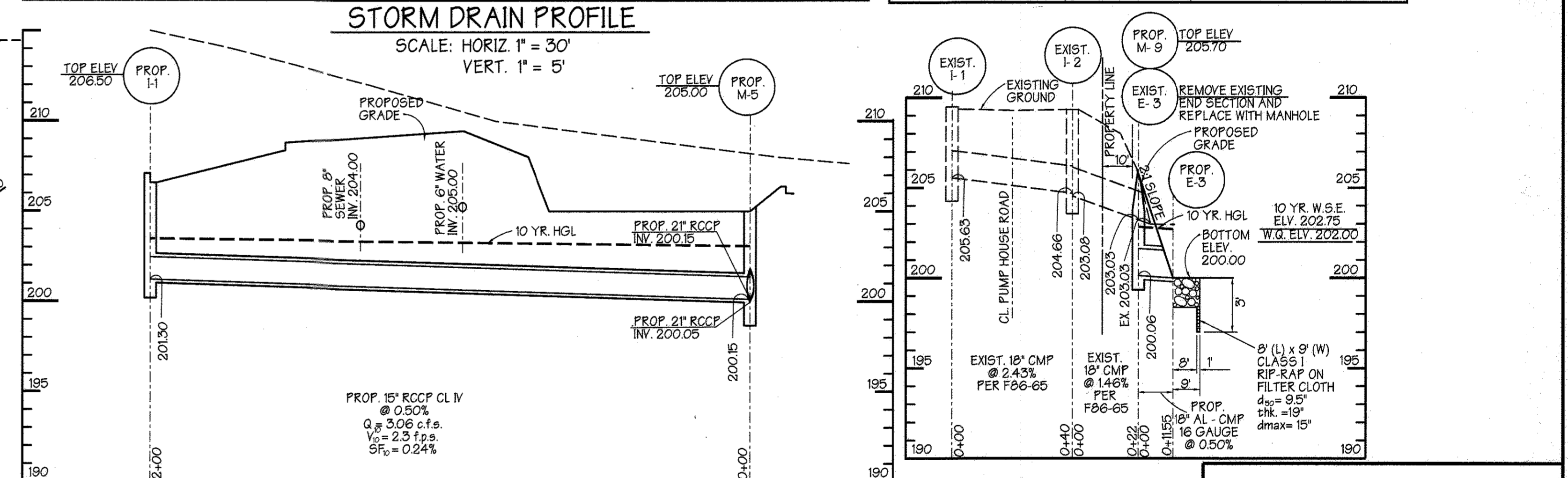
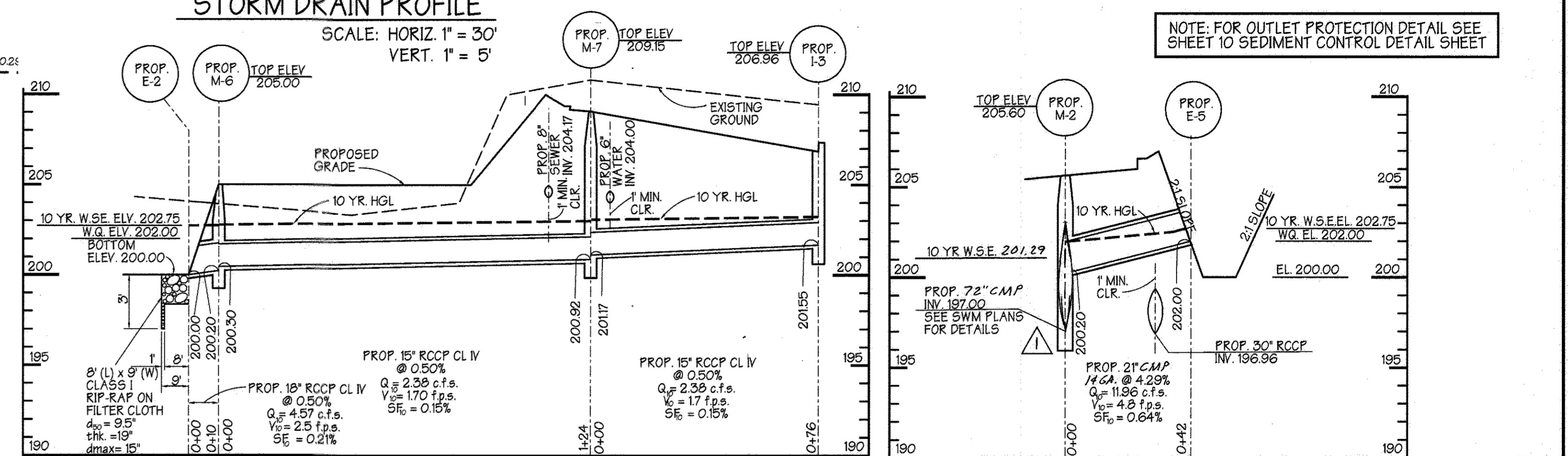
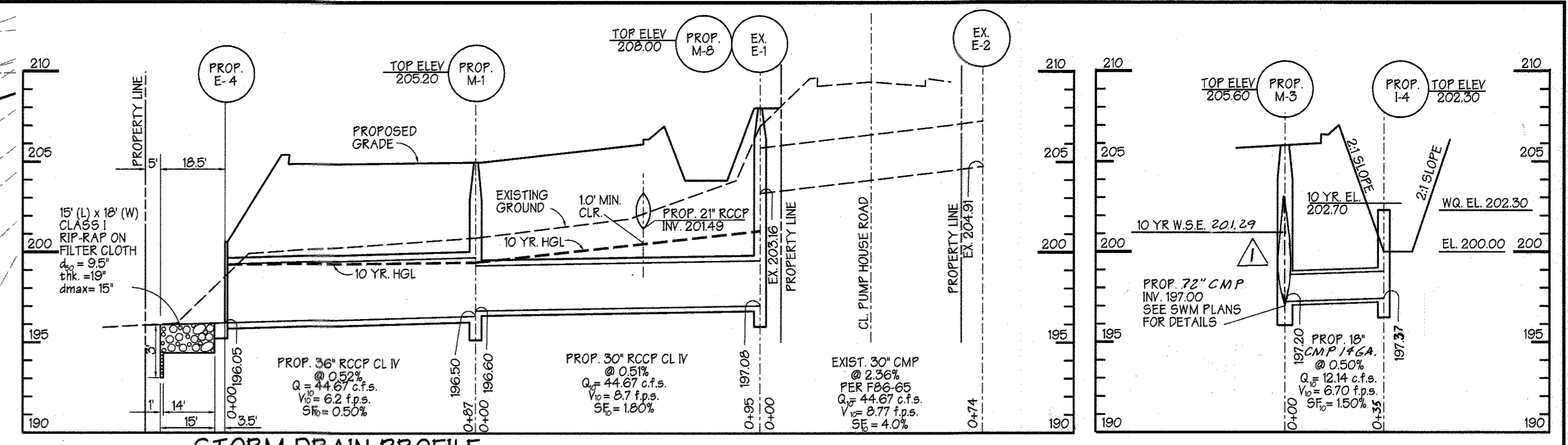
**Drainage Area Map**  
SCALE: 1" = 50'

AREA	ACREAGE	'C'	% IMP.
(A)	0.35	0.80	78%
(B)	0.34	0.95	100%
(C)	0.16	0.30	0.00%
(D)	0.59	0.95	100%
(E)	0.43	0.95	100%
(F)	0.52	0.69	65%
(G)	0.15	0.30	0.00%

STRUCTURE SCHEDULE					
NO.	TYPE	TOP ELEV.	INV. IN.	INV. OUT.	HO. CO. DTL.
M-1	STD. PRECAST MANHOLE	205.20	196.60	196.50	G-5.13
M-2	ALUMINIZED MANHOLE	205.60	200.20	197.00	
M-3	ALUMINIZED MANHOLE	205.60	197.20	197.00	
M-4	SHALLOW PRECAST	205.89	200.82	200.77	G-5.12
M-5	SHALLOW PRECAST	205.00	200.15	200.05	G-5.12
M-6	SHALLOW PRECAST	205.00	200.30	200.20	G-5.12
M-7	STD. PRECAST MANHOLE	209.15	201.17	200.92	G-5.12
M-8	STD. PRECAST MANHOLE	208.00	203.16 EX	197.08	G-5.13
M-9	SHALLOW PRECAST	205.70	203.03	200.06	G-5.12
E-1	2" CONC. END SECTION			200.00	SD-5.51
E-2	18" CONC. END SECTION			200.00	SD-5.51
E-3	18" CMP END SECTION			200.00	SD-5.61
E-4	TYPE 'A' HEADWALL	200.00		196.05	SD-5.11
E-5	2" CONC. END SECTION			202.00	SD-5.51



INLET SCHEDULE					
NO.	TYPE	TOP ELEV.	INV. IN.	INV. OUT.	HO. CO. DTL.
I-1	DOUBLE 18" COMB	206.50'		201.07	3.76" SD-4.32
I-2	DOUBLE TYPE 'S'	204.30'		201.15	4.76" SD-4.23
I-3	DOUBLE 20" COMB	206.96'		201.55	2.38" SD-4.32
I-4	DOUBLE TYPE 'S'	202.30'		197.37	0.43" SD-4.23



PIPE SCHEDULE			
NO.	TYPE	CLASS	TOTAL LENGTH
15"	RCCP	CL-IV	400'
30"	RCCP	CL-IV	100'
18"	AL. CHFB	16 GAUGE	10'
24"	RCCP	CL-IV	10'
27"	RCCP	CL-IV	43'
30"	RCCP	CL-IV	30'
36"	RCCP	CL-IV	37'

ADDRESS CHART					
PARCEL NO.	STREET ADDRESS				
A-4	10800 PUMP HOUSE ROAD BUILDING 'A'				
A-4	10810 PUMP HOUSE ROAD BUILDING 'B'				
SUBDIVISION NAME		SECTION NAME		PARCEL #	
C - W & Company		N/A		A-4	
PLAT #	BLOCK #	ZONE	TAX MAP	ELECT. DIST.	CENSUS TRACT
14442	14442	M-2	42	6	6064
WATER CODE B-02			SEWER CODE 4020000		

**Drainage Area Map & Stormdrain Profiles**

**C - W & COMPANY**  
PARCEL A-4

ELECTION DISTRICT: 6<sup>th</sup> HOWARD CO., MARYLAND 6 OF 14 DATE: JANUARY 21, 2002

SDP 02 - 091 SCALE: As Shown

APPROVED: Howard County Department of Planning and Zoning

CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* 10/30/02 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* 1/7/02 DATE

DIRECTOR *[Signature]* 1/7/02 DATE

PREPARED BY:

**GEORGE W. STEPHENS, JR. AND ASSOCIATES, INC.**  
Civil Engineers and Land Surveyors  
1020 Cromwell Bridge Road  
Towson, Maryland 21286  
(410) 825-8120

**GWS**

STATE OF MARYLAND PROFESSIONAL ENGINEER 71102

OWNER / DEVELOPER

**CAPITAL INVESTMENT PROPERTIES, LLC**  
7175 A OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046  
410-309-9848

DESIGNED BY: P.R.C.  
DRAWN BY: K.E.  
CHECKED BY: P.R.C.

REVISIONS:  
1. REVISED UNDERGROUND SWIMLAP AND PIPE SIZES.  
2. REVISED STORMDRAIN PROFILE AT M-1 AND M-2 AND STRUCTURE SCHEDULE ACCORDINGLY BY G.W.S. DATED 05/10/03

210 STANDARD AND SPECIFICATIONS

FOR  
TOPSOIL  
Definition  
Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.  
Purpose  
To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.  
Conditions Where Practice Applies

- I. This practice is limited to areas having 2:1 or flatter slopes where:
  - a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
  - b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
  - c. The original soil to be vegetated contains material toxic to plant growth.
  - d. The soil is so acidic that treatment with limestone is not feasible.
- II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

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

- II. Topsoil Specifications - Soil to be used as a topsoil must meet the following:
  - I. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of concrete, broken asphalt and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
  - II. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutgrass, poison ivy, thistle, or others as specified.
  - III. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Limestone shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
- III. For sites having disturbed areas under 5 acres:
  - I. Place topsoil (if required) and apply soil amendments as specified in 200 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
  - II. For sites having disturbed areas over 5 acres:
    - a. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following: a pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
    - b. Organic content of topsoil shall be not less than 15 percent by weight.
    - c. Topsoil have soluble salt content greater than 500 parts per million shall not be used.
    - d. No soil or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min) to permit degradation of the toxic materials.

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

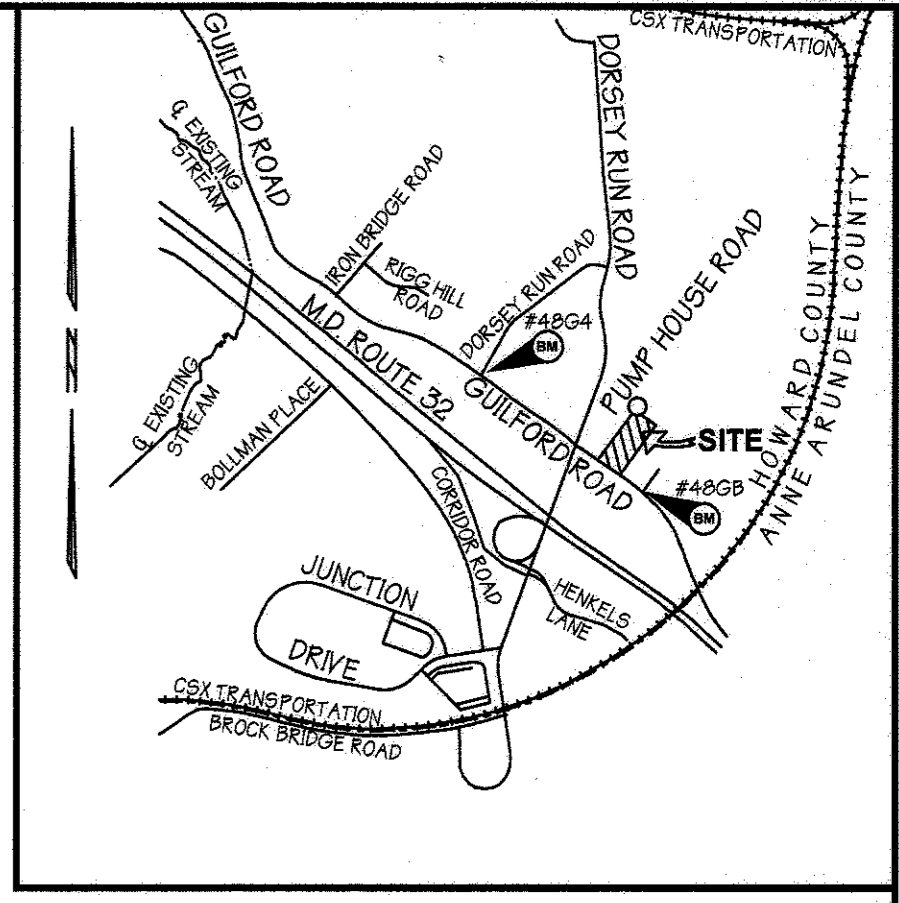
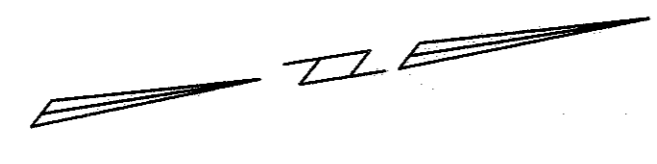
- IV. Place topsoil (if required) and apply soil amendments as specified in 200 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- V. Topsoil Application
  - I. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structure, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
  - II. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, 4"-6" higher in elevation.
  - III. Topsoil shall be uniformly distributed in a 4"-6" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
  - IV. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

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

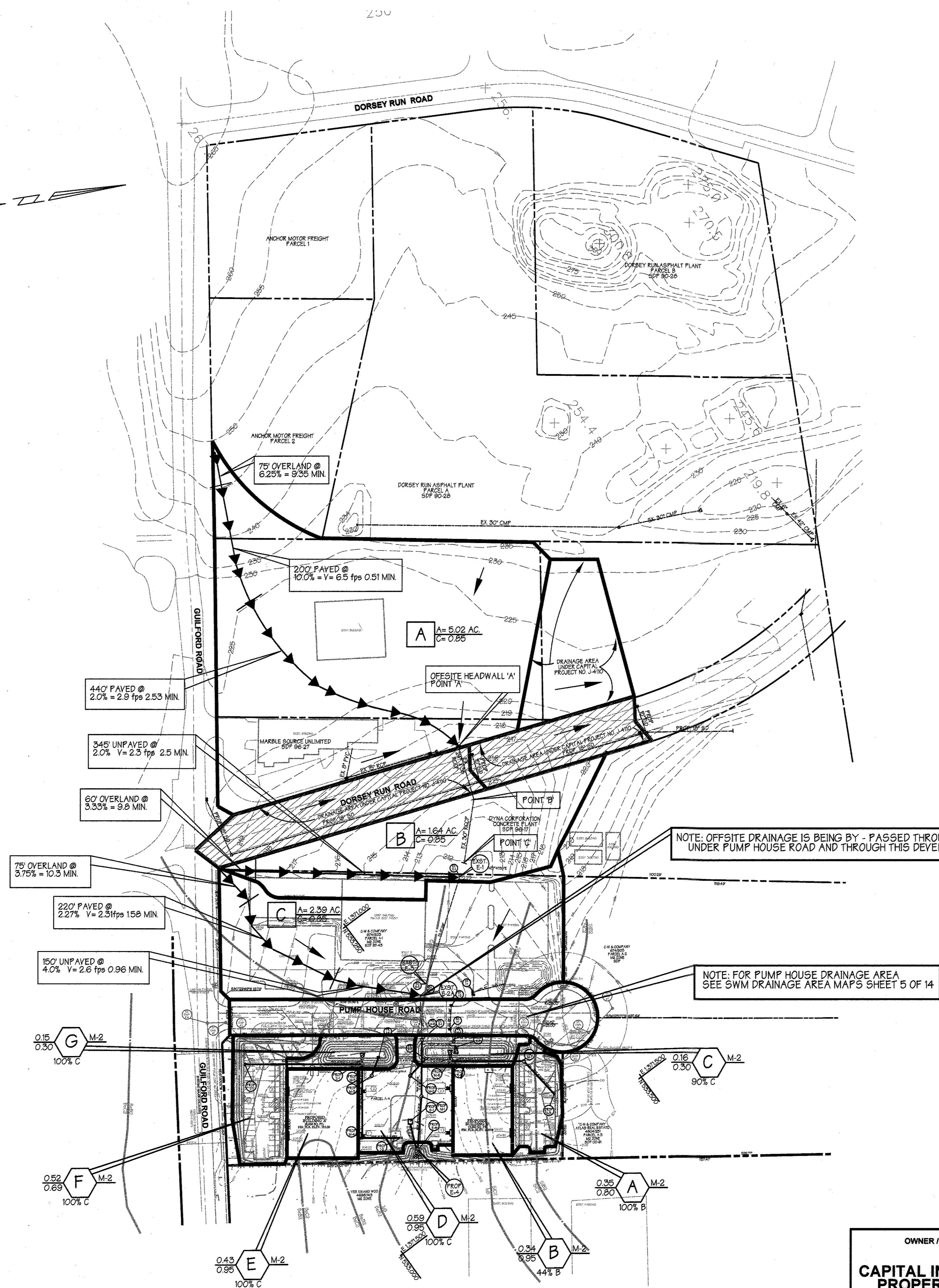
- I. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
  - a. Composted sludge shall be applied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
  - b. Composted sludge shall contain at least 1 percent nitrogen, 15 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
  - c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
  - II. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guidelines Specifications, Soil Preparation and Sodding, MDVA, Pub. #1 Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institute, Revised 1973.

G-21-13  
1994



Vicinity Map  
SCALE: 1" = 2,000'



Drainage Area Map Legend

- DRAINAGE AREA BOUNDARY ————
- OFFSITE DRAINAGE AREA E A= 0.33 AC.  
C= 0.69
- ONSITE DRAINAGE AREA 0.35  
0.80 A M-2  
100% B
- TC PATH ————>>>
- DIRECTION OF FLOW ————>

Reviewed for Howard SCD and meets Technical Requirements

USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District

HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: Howard County Department of Planning and Zoning

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 10/30/02

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 11/7/02

DIRECTOR DATE 11/7/02

PREPARED BY:

**GEORGE W. STEPHENS, JR. AND ASSOCIATES, INC.**  
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1020 Cromwell Bridge Road  
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(410) 825-8120

OWNER / DEVELOPER

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7175 A OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046  
410-309-9848

DESIGNED BY: P.R.C.  
DRAWN BY: K.E.  
CHECKED BY: P.R.C.  
REVISIONS

ADDRESS CHART					
PARCEL NO.	STREET ADDRESS				
A-4	10800 PUMP HOUSE ROAD BUILDING 'A'				
A-4	10910 PUMP HOUSE ROAD BUILDING 'B'				
SUBDIVISION NAME	SECTION NAME	PARCEL #			
C - W & Company	N/A	A-4			
PLAT # 15,557, 14442	BLOCK #	ZONE M-2	TAX MAP # 28	ELECT. DIST. 6	CENSUS TRACT 6064
WATER CODE B-02		SEWER CODE 4020000			

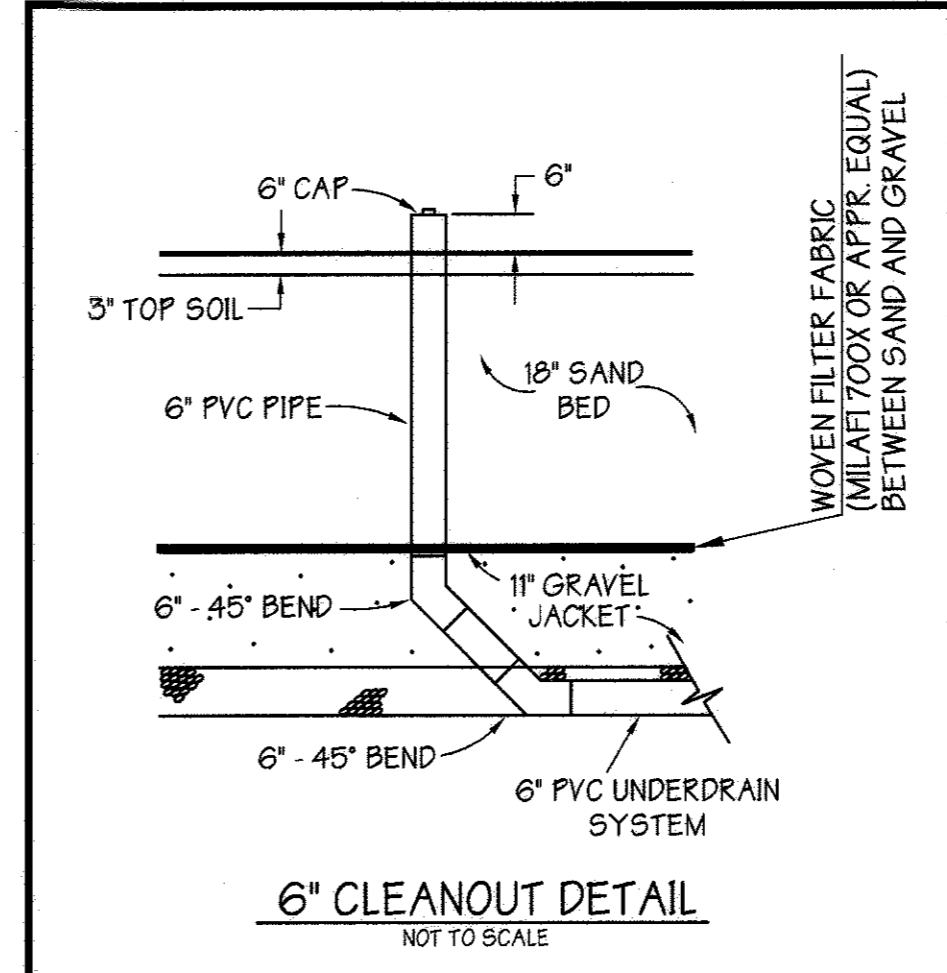
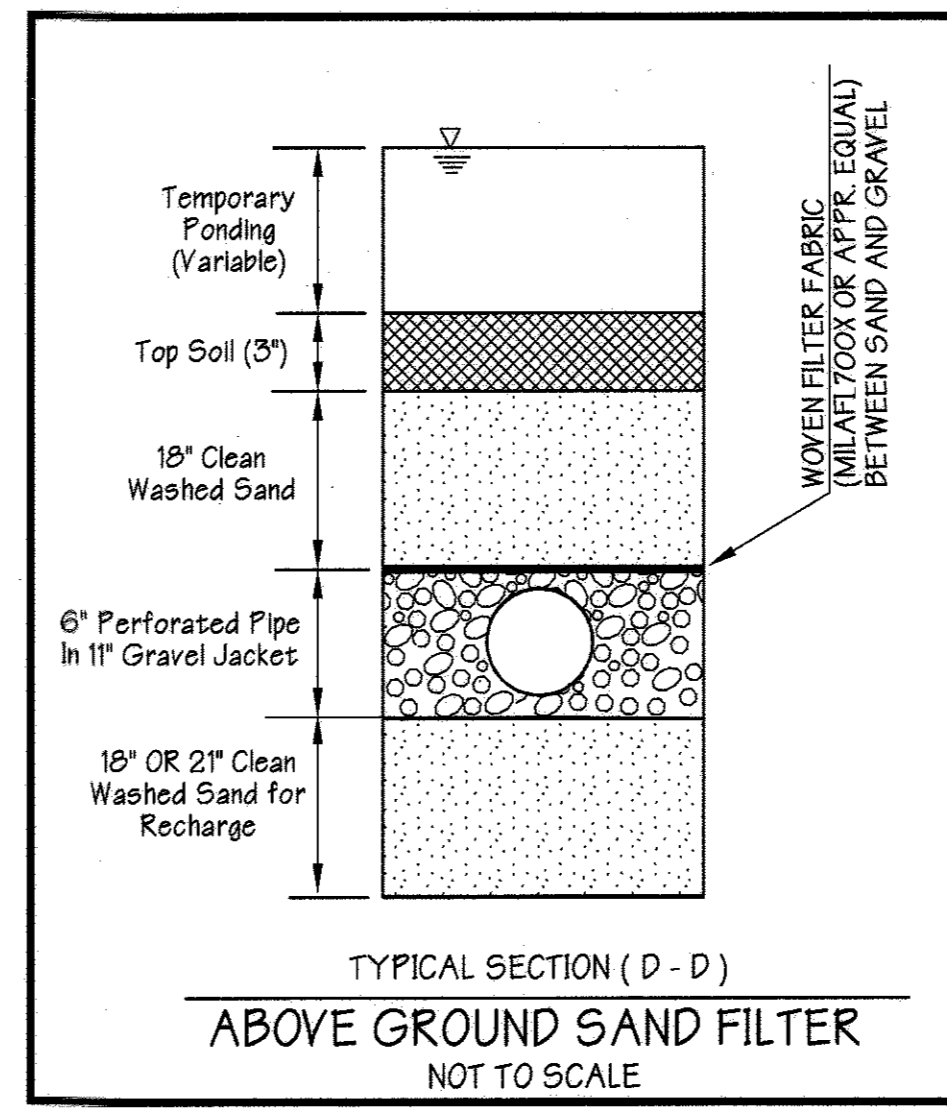
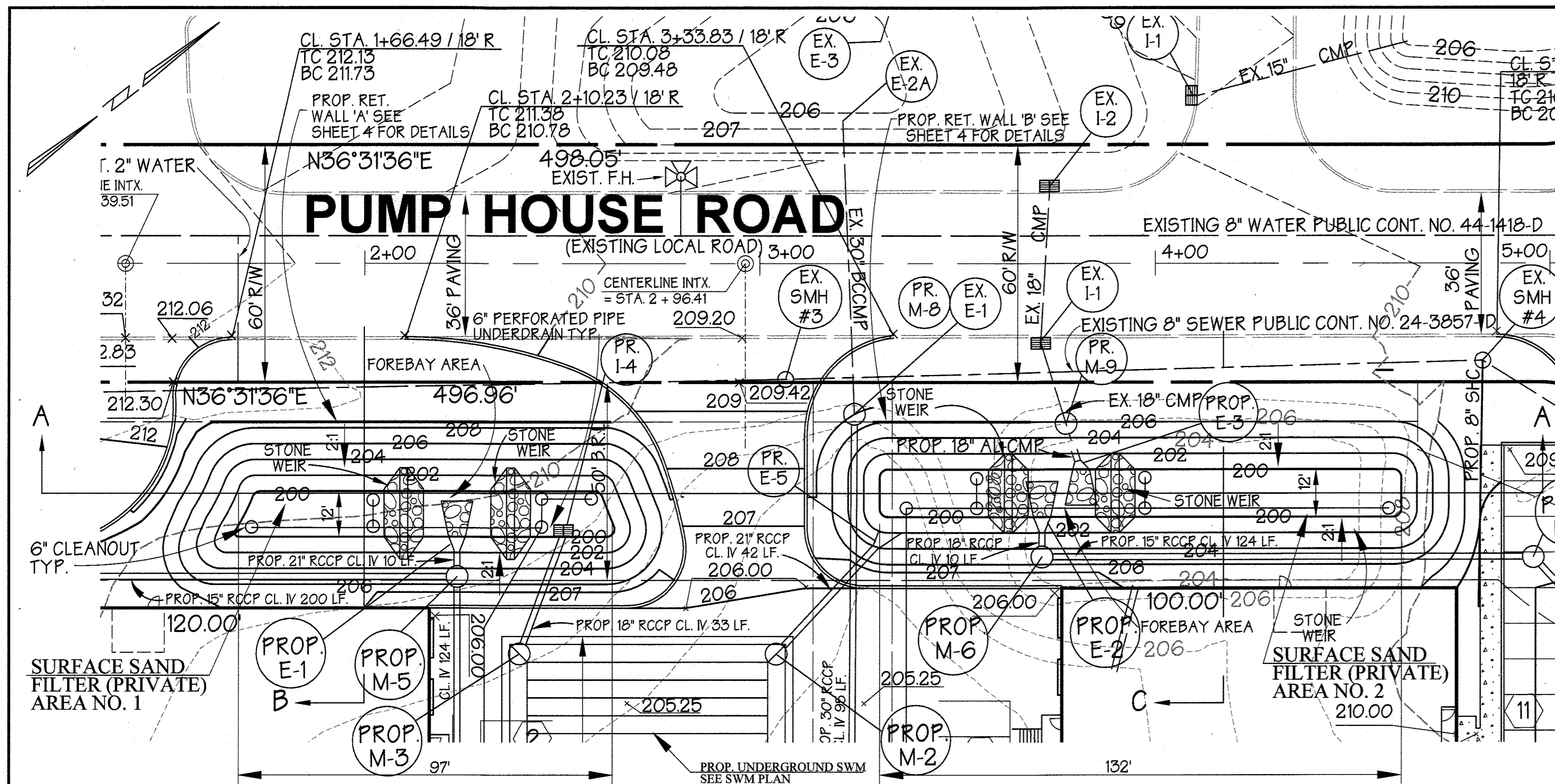
**Offsite Drainage Area Map**

**C - W & COMPANY PARCEL A-4**

ELECTION DISTRICT : 6<sup>th</sup> HOWARD CO., MARYLAND 7 OF 14 DATE : JANUARY 21, 2002

SDP 02 - 091  
SCALE : As Shown  
DATE : JANUARY 21, 2002

Offsite Drainage Area Map  
SCALE: 1" = 100'



**3.4.0 Filtering Maintenance Criteria**

The sediment chamber outlet devices shall be cleaned/repaired within drawdown times within the chamber exceed 26 hours. Trash and debris shall be removed as necessary.

Sediments should be cleaned out of the sedimentation chamber when it accumulates to a depth of more than six inches. Vegetation within the sedimentation chamber should be limited to a height of 18 inches or less. When the filtering capacity of the filter 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 material shall be removed and replaced with fresh material. The removed sediments should be disposed in an acceptable manner (e.g., landfill). Sediments should be removed from the filter bed when the accumulation exceeds one inch.

Organic filters (F-4) or surface sand filters (F-3) that have a green cover should be mowed a minimum of 3 times per growing season to maintain maximum grass heights less than 12 inches.

A drop of at least six inches shall be provided at the inlet of filtration facilities (F-6) (stone alignment). Dead or diseased plant material shall be replaced. Areas devoid of mulch should be re-mulched on an annual basis.

Direct maintenance access shall be provided to the pretreatment area and the filter bed.

Construction of sand filters and forebay areas shall conform to the specifications outlined in Appendix B.3.

**B.3.A. Sand Filter Specifications**

1. Material Specifications for Sand Filters

The allowable materials for sand filter construction are detailed in Table B.3.1.

2. Sand Filter Testing Specifications

Underground sand filters, facilities with sensitive groundwater aquifers, and filters designed to serve urban lots shall be tested for water tightness prior to placement of filter media. Entrances and exits shall be plugged and the system completely filled with water to demonstrate water tightness. Water tightness means no leakage for a period of 48 hours.

All overflow wells, multiple orifices and flow distribution slots are to be field-tested to verify adequate distribution of flow.

3. Sand Filter Construction Specifications

Provide sufficient maintenance access (i.e., 12-foot-wide road with legally recorded easement). Vegetated access slopes are to be a maximum of 10%; gravel slopes to 15%; paved slopes to 25%.

Absolutely no runoff is to enter the filter until all contributing drainage areas have been stabilized.

Surface or filter bed is to be level.

All underground sand filters should be clearly delineated with signs so that they may be located when maintenance is due.

Surface sand filters may be planted with appropriate grasses; see Appendix A.

"Fastest" sand filters (and residential filtration facilities treating areas larger than an acre) shall be sized with a stone "window" that covers approximately 10% of the filter area. This "window" shall be filled pea gravel (3/4 inch stone).

**Material Specifications**

The allowable materials to be used in filtration areas are detailed in Table B.3.2.

**Planting Soil**

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the filtration area that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, Mugo grass, Nutsedge, Poison Ivy, Canadian Thistle, Toothwort, or other, noxious weeds.

The planting soil shall be tested and shall meet the following criteria:

pH range	5.2 - 7.0
organic matter	15 - 4%
magnesium	35 lb/ac
phosphorus P205	75 lb/ac
potassium K2O	80 lb/ac
soluble salts	not to exceed 900 ppm

All filtration areas shall have a minimum of one test. Each test shall consist of both the standard soil test for pH, Phosphorus, and potassium and additional tests of organic matter, and soluble salts. A seasonal analysis is required from the site established topsoil. If topsoil is imported, then a seasonal analysis shall be performed for each location where the top soil was excavated.

Since different labs calibrate their testing equipment differently, all testing results shall come from the same testing facility.

Should the pH fall out of the acceptable range, it may be modified (higher with lime or lower) with iron sulfate plus sulfur.

**Compaction**

It is very important to minimize compaction of both the base of the filtration area and the required backfill. When possible, use excavation holes to remove original soil. If filtration areas are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with surf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high pressure tires will cause excessive compaction resulting in reduced infiltration rates and storage volumes and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the filtration facility before backfilling the required sand layer. Pump any ponded water before preparing (rocking) base.

When back filling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rock the sand/topsoil to create a granulation zone. Backfill the remainder of the topsoil to final grade.

When back filling the filtration facility, place soil in lifts 10" or greater. Do not use heavy equipment within the filtration basin. Heavy equipment can be used around the perimeter of the basin to supply soil and sand. Grade filtration material with light equipment such as a compact loader or dozer/loader with marsh tracks.

**Plant Material**

Plant material should conform to the American Standard Nursery Stock, published by the American Association of Nurserymen, and should be selected from certified, reputable nurseries.

**Plant Installation**

Shredded hardwood mulch is the only accepted mulch. Fine mulch and wood chips will float and move to the perimeter of the filtration area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

The plant root ball should be planted so 1/3rd of the ball is above the final grade surface. Root stock of the plant material shall be kept moist during transport and on-site storage. Planting pits shall follow LCA planting guidelines. The diameter of the planting pits shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground level cover after installation.

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed shall be filled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the filtration structure is to improve water quality. Adding fertilizers, defecates, or as a minimum, impedes this goal. Only add fertilizer if wood chips or mulch is used to amend site soil. Roskill area fertilizer at a rate of 2 pounds per 1000 square feet.

**Underdrains**

Underdrains to be placed on a 3/4" wide section of filter cloth. Pipe is placed next, followed by the gravel bedding. The ends of underdrain pipes not terminating in an observation well shall be capped.

The main collector pipes for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

**Filter Strips**

Construct pea gravel diaphragms 12" wide, minimum, and 24" deep minimum.

For more terms to be a sand/gravel mix. See filtration planting media specifications; add 20% gravel; reduce clay component accordingly. Berms to have overtop flows with 6 inch minimum head.

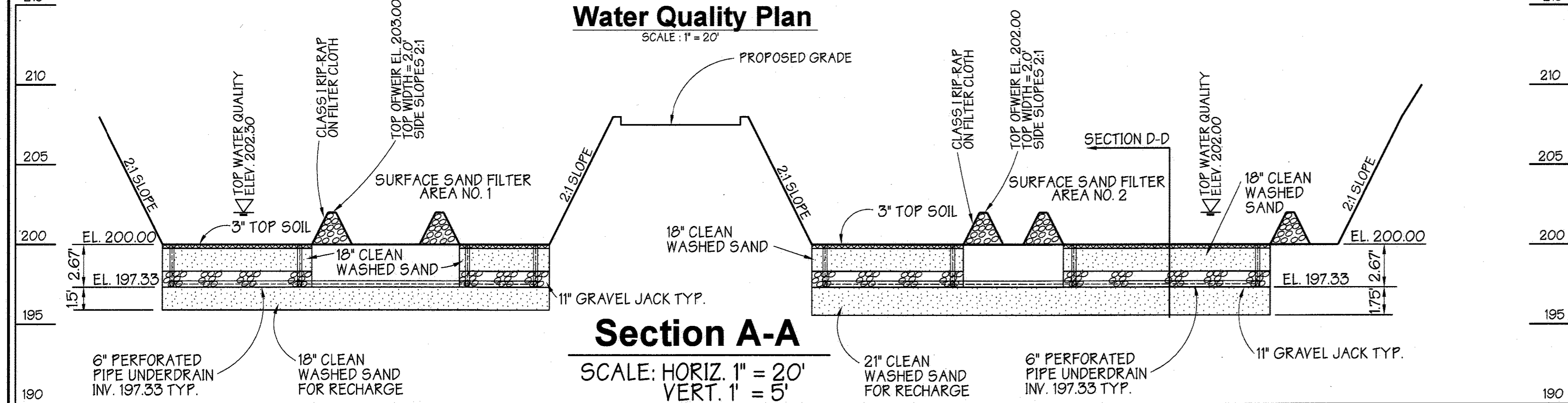
Slope range to be 2% minimum to 6% maximum.

**Miscellaneous**

The filtration facility may not be constructed until all contributing drainage area has been stabilized.

**Materials Specifications for Sand Filters**

PARAMETER	SPECIFICATION	SIZE	NOTES
Sand	AASHTO M-6 or ASTM C-33 33 concrete sand	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone #10 are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock dusts" can be used for sand.
Peat			The material must be reed-sedge hemi peat, shredded, uncompacted, uniform, and clean.
Leaf Compost		n/a	
Underdrain Gravel	AASHTO M-43	0.35" TO 0.75"	
Geotextile Fabric (if required)	ASTM-D-4933 (puncture strength - 125 lbs) ASTM-D-4632 (tensile strength - 300 lbs)	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 geotextile meant to "separate" sand filter layers.
Impermeable liner (if required)	ASTM-D-4933 (puncture strength - 100 lbs, elongation 200%) ASTM-D-624 (Tear resistance 150 lb/in) ASTM-D-471 (water adsorption: +9 to 2 3/4 mass)		
underdrain piping	F 750, Type PS 28 or AASHTO-M-276	4" - 6" rigid schedule 40 PVC or SDR35	3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes
concrete (cast in place)	MHS-A Standard and Spec, Section 902 - Mix No. 3, fc = 3500 psi, normal weight, air-entrained; re-enforcing to meet ASTM 615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350R/BS; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
concrete (pre-cast)	per pre-cast manufacturer	n/a	SEE ABOVE NOTE
non-rebar steel	ASTM A-36	n/a	structural steel to be hot-dipped galvanized ASTM A-123



**OPERATION AND MAINTENANCE SCHEDULE OF PRIVATELY OWNED AND MAINTAINED SURFACE SAND FILTERS #1 AND #2**

- FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE SURFACE SAND FILTERS ARE FUNCTIONING PROPERLY.
- TOP AND SIDE SLOPES SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
- DEBRIS AND LITTER NEXT TO THE OUTLET PIPES SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
- VISIBLE SIGNS OF EROSION IN THE SURFACE SAND FILTERS AS WELL AS RIP-RAP OUTLET SHALL BE REPAIRED AS SOON AS IT IS NOTICED. NON-ROUTINE MAINTENANCE
- STRUCTURAL COMPONENTS OF THE SURFACE SAND FILTERS SUCH AS THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
- SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE. WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

**ADDRESS CHART**

PARCEL NO.	STREET ADDRESS
A-4	10900 PUMP HOUSE ROAD BUILDING 'A'
A-4	10910 PUMP HOUSE ROAD BUILDING 'B'

SUBDIVISION NAME	SECTION NAME	PARCEL #
C - W & Company	N/A	A-4

PLAT #	BLOCK #	ZONE	TAX MAP #	ELECT. DIST.	CENSUS TRACT
14442		M-2	42		6064

WATER CODE B-02 SEWER CODE 4020000

Reviewed for Howard SCD and meets Technical Requirements

USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District

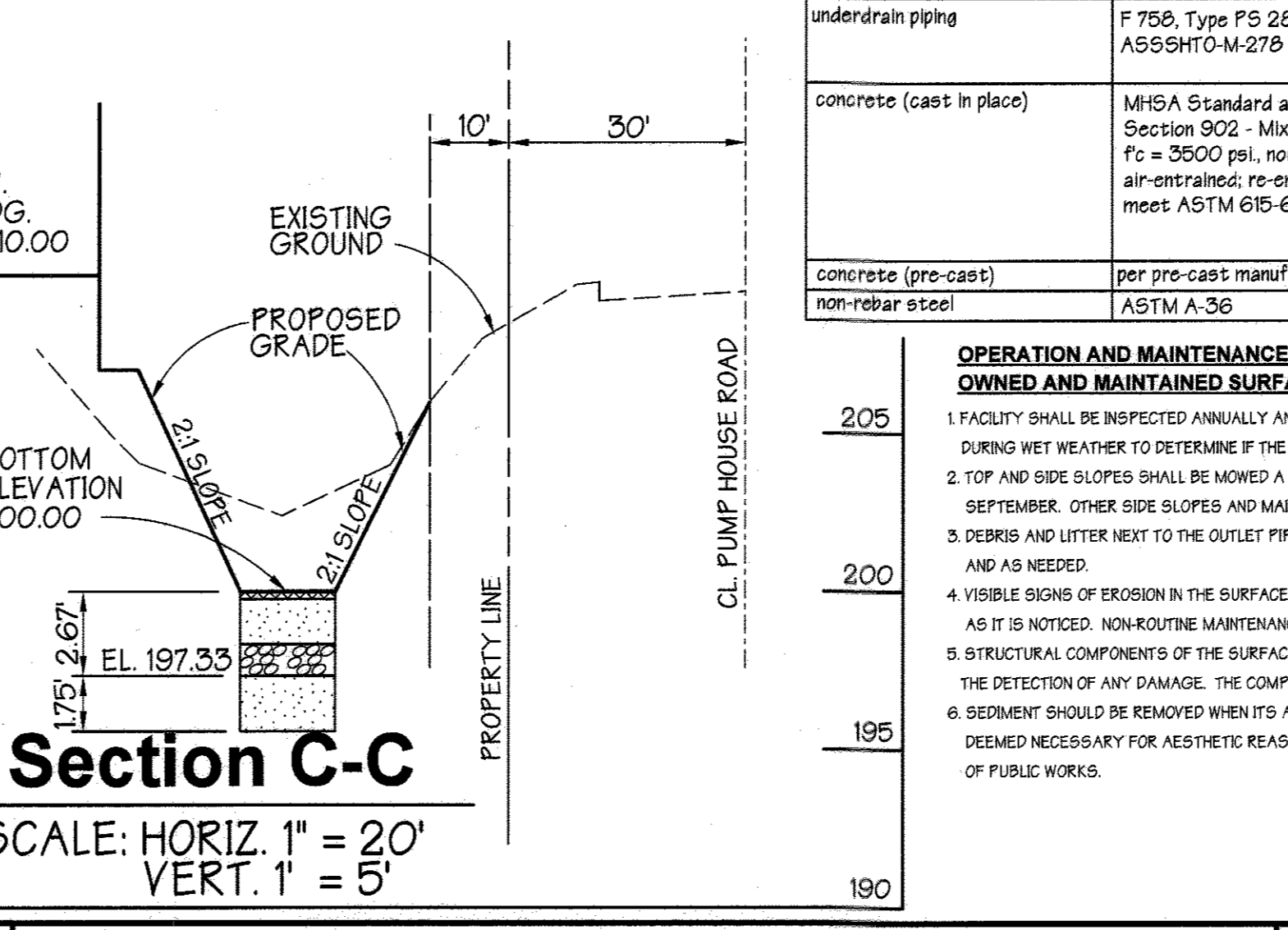
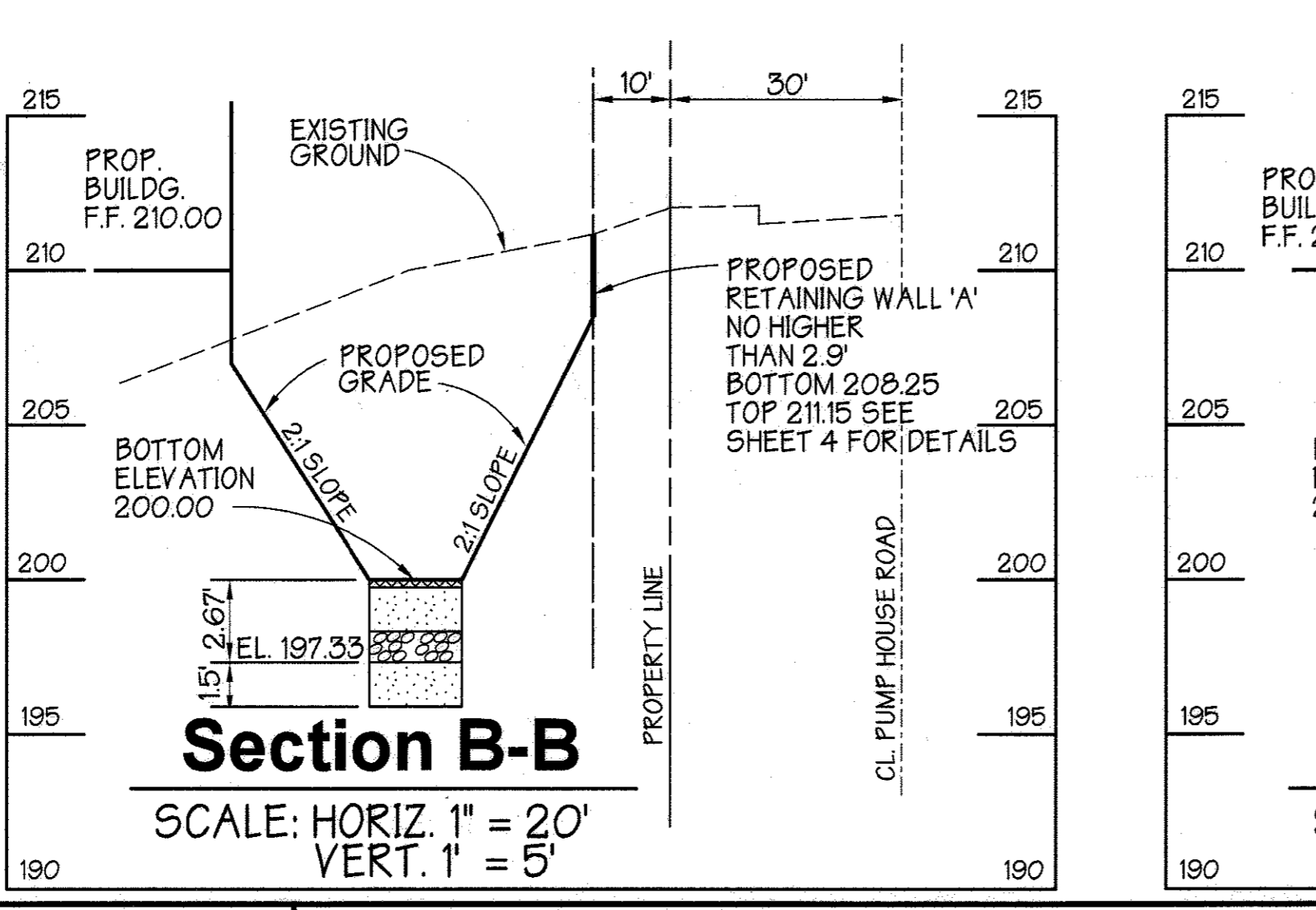
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: Howard County Department of Planning and Zoning

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 10/30/02

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 11/2/02

DATE 11/7/02



PREPARED BY:

**GEORGE W. STEPHENS, JR. AND ASSOCIATES, INC.**  
Civil Engineers and Land Surveyors  
1020 Cromwell Bridge Road  
Towson, Maryland 21286  
(410) 825-8120

**ENGINEER CERTIFICATION:**

I 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.

Signature of Engineer: *James A. Markus Jr.* Date: 7/01/02  
Print Name: JAMES A. MARKUS JR. PE # 11005

**DEVELOPER CERTIFICATION:**

I/We certify that all development and/or construction will be done according to this plan for sediment and erosion control, and that all responsible parties involved in the construction project will have a certificate of Attendance of 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 inspections by the Howard Soil Conservation District.

Signature of Developer: *Dan Hazard* Date: 7/01/02  
Print Name: DAN HAZARD

**OWNER / DEVELOPER**

**CAPITAL INVESTMENT PROPERTIES, LLC**  
7175 A OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046  
410-309-9848

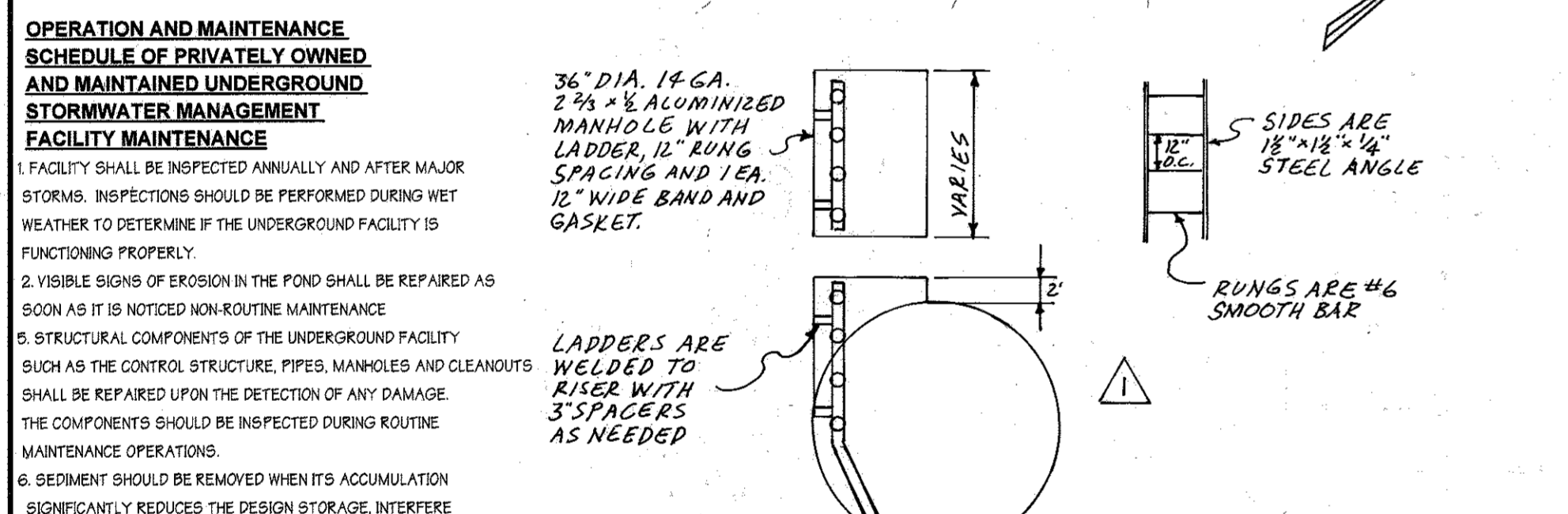
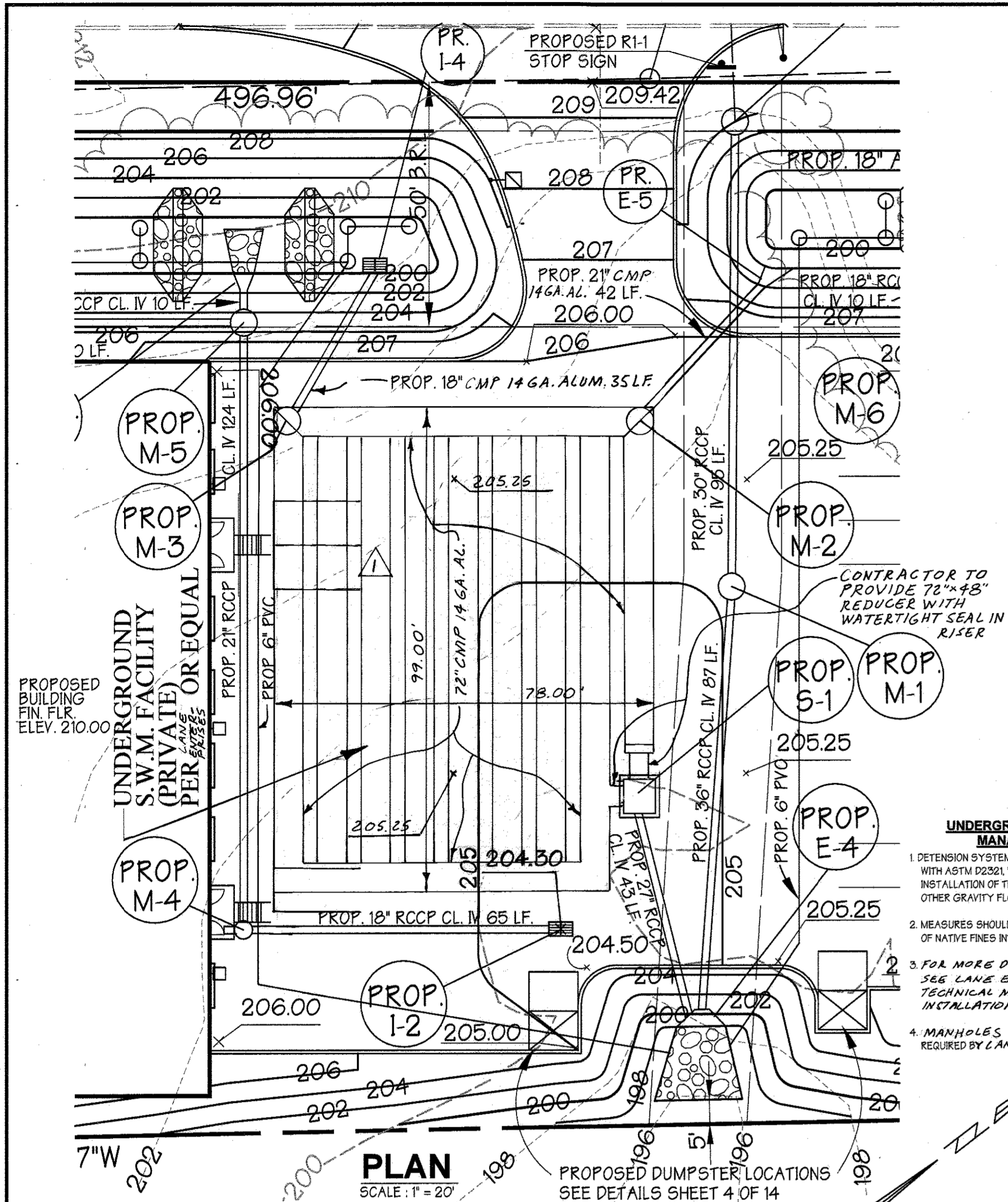
**DESIGNED BY: P.R.C.**  
**DRAWN BY: K.E.**  
**CHECKED BY: P.R.C.**  
REVISIONS

**Water Quality Plan and Details**  
**C - W & COMPANY**  
**PARCEL A-4**

ELECTION DISTRICT: 6th  
HOWARD CO., MARYLAND 8 OF 14 DATE: JANUARY 21, 2002

SDP 02 - 091  
SCALE: As Shown  
DATE: JANUARY 21, 2002





**OPERATION AND MAINTENANCE SCHEDULE OF PRIVATELY OWNED AND MAINTAINED UNDERGROUND STORMWATER MANAGEMENT FACILITY MAINTENANCE**

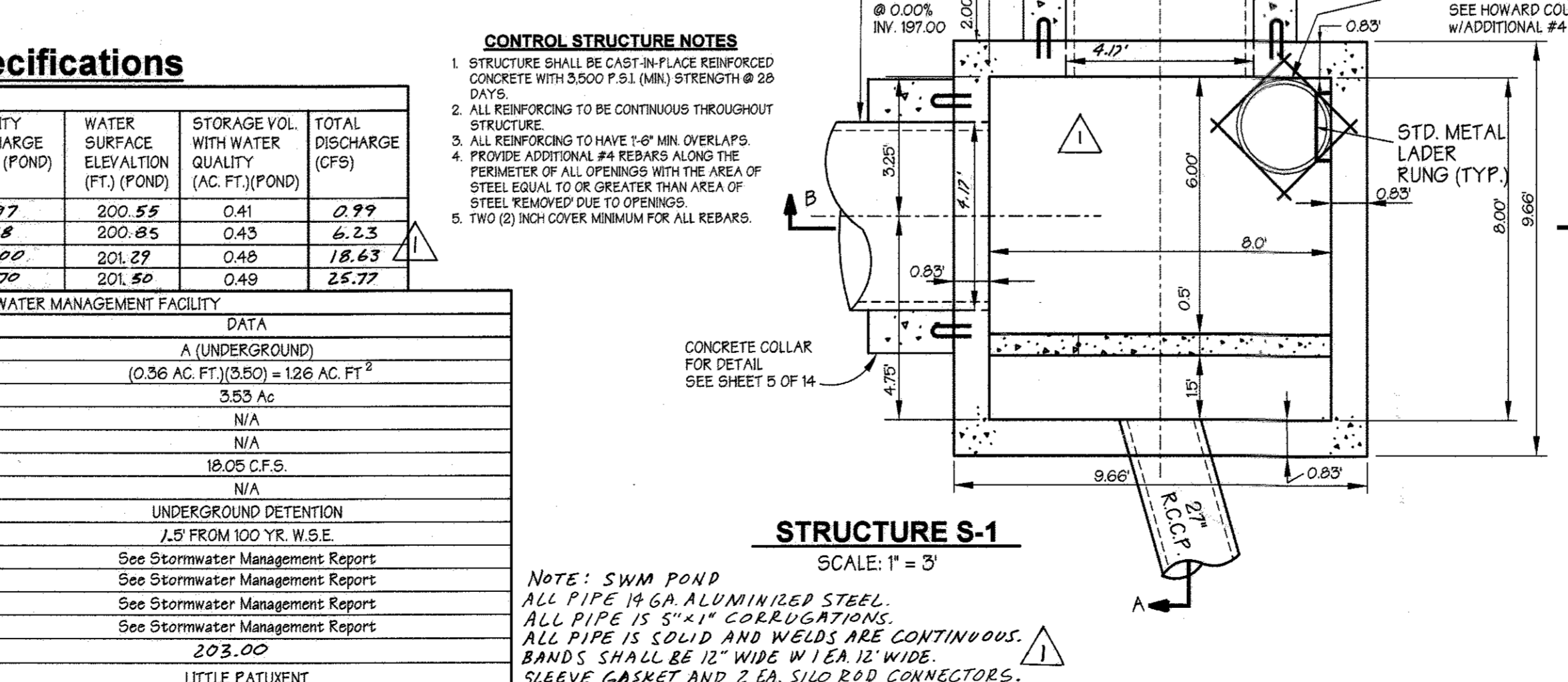
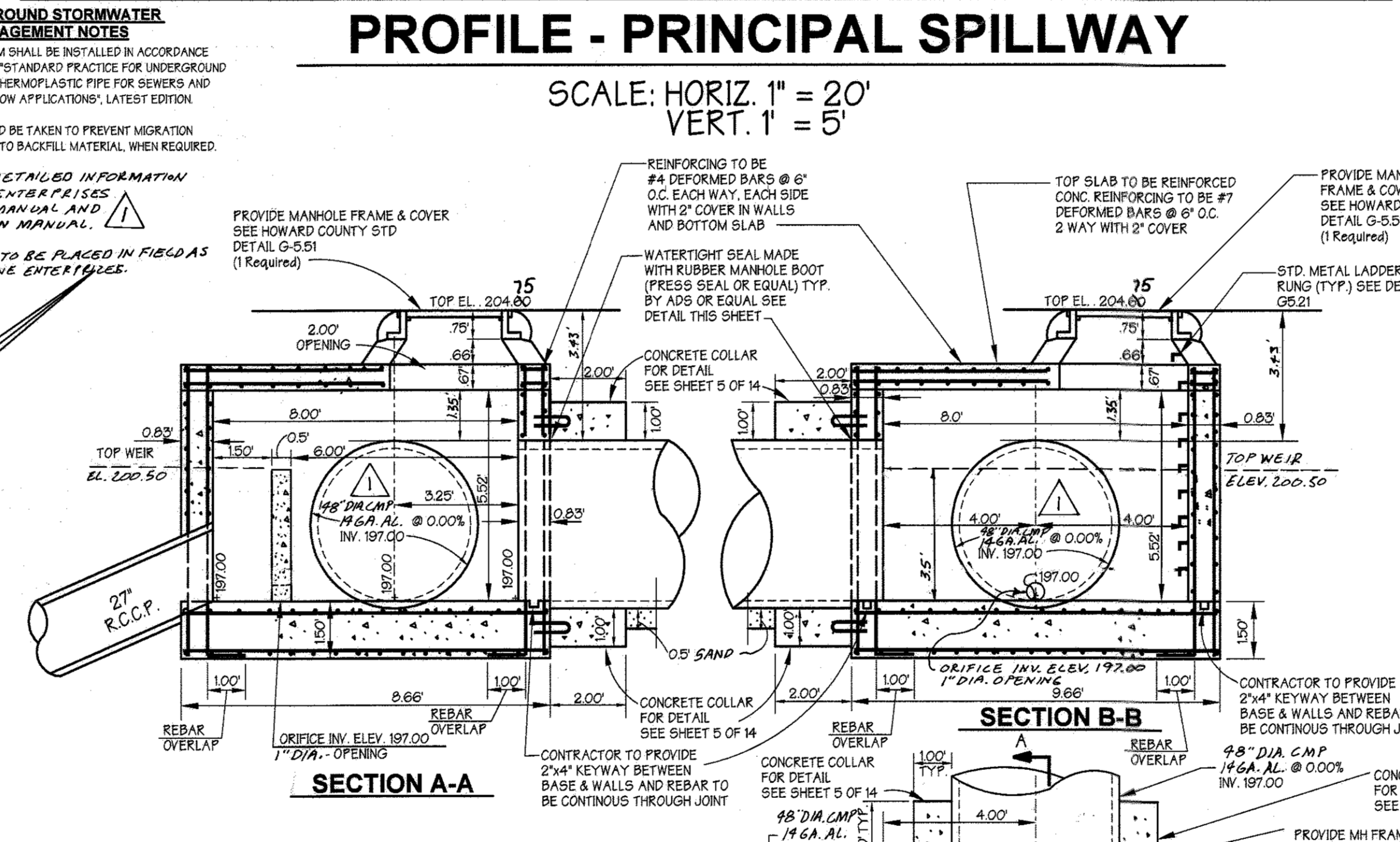
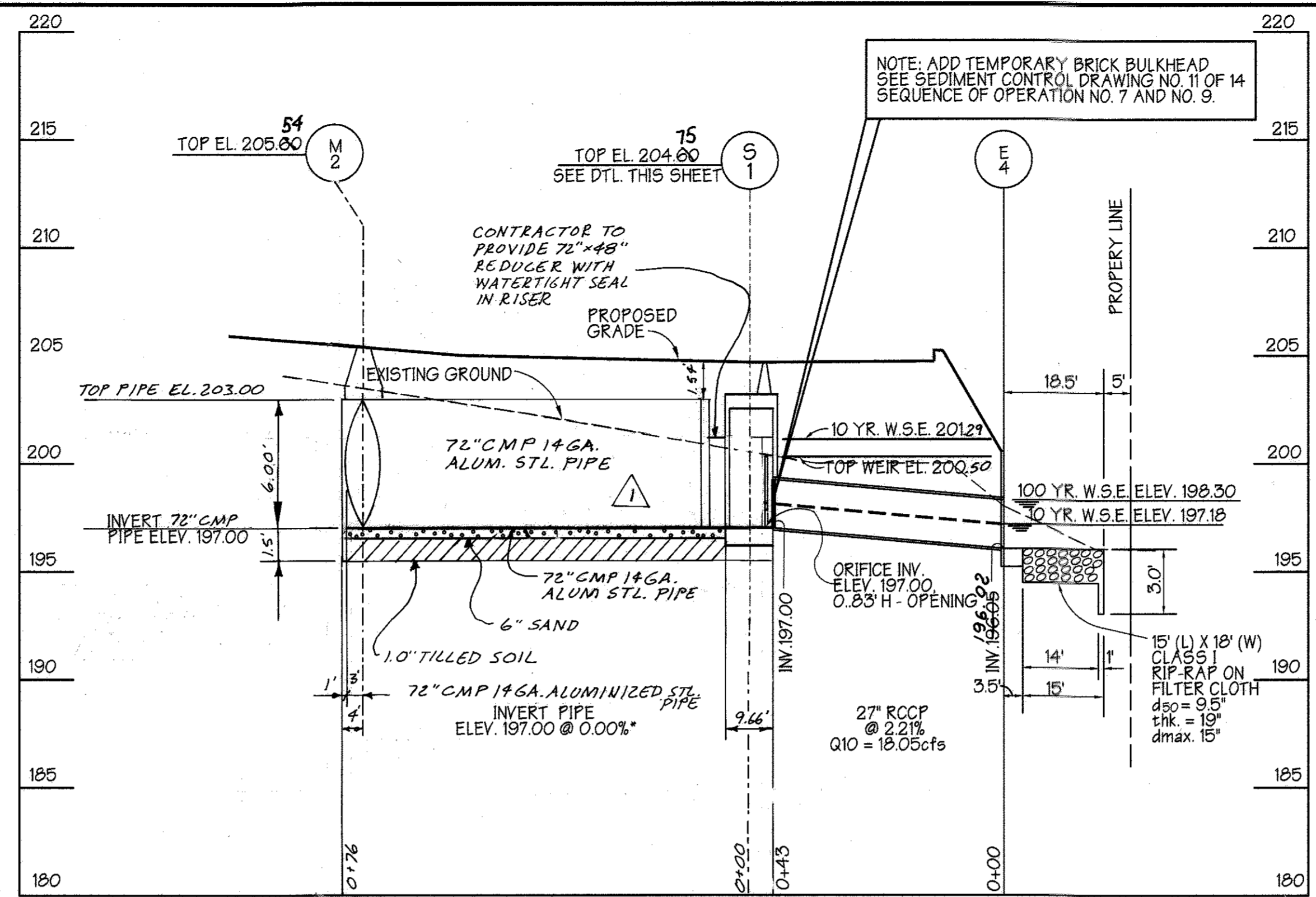
- FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WEATHER TO DETERMINE IF THE UNDERGROUND FACILITY IS FUNCTIONING PROPERLY.
- VISIBLE SIGNS OF EROSION IN THE POND SHALL BE REPAIRED AS SOON AS IT IS NOTICED NON-ROUTINE MAINTENANCE.
- STRUCTURAL COMPONENTS OF THE UNDERGROUND FACILITY SUCH AS THE CONTROL STRUCTURE, PIPES, MANHOLES AND CLEANOUTS SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
- SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERE WITH THE FUNCTION OF THE CONTROL STRUCTURE, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

**Reviewed for Howard SCD and meets Technical Requirements**

DESIGN STORM	EXISTING SITE RELEASE RATE (CFS)	FACILITY INFLOW (CFS) (POND)	BYPASS DISCHARGE (CFS)	FACILITY DISCHARGE (CFS) (POND)	WATER SURFACE ELEVATION (FT) (POND)	STORAGE VOL. WITH WATER QUALITY (AC. FT.) (POND)	TOTAL DISCHARGE (CFS)
1 YR	3.31	8.93	0.17	0.97	200.55	0.41	0.99
2 YR	5.33	11.43	0.27	6.18	200.85	0.43	6.23
10 YR	12.72	19.25	0.64	18.00	201.29	0.48	18.63
100 YR	21.65	27.78	1.07	24.70	201.50	0.49	25.77

**POND SPECIFICATIONS FOR STORMWATER MANAGEMENT FACILITY**

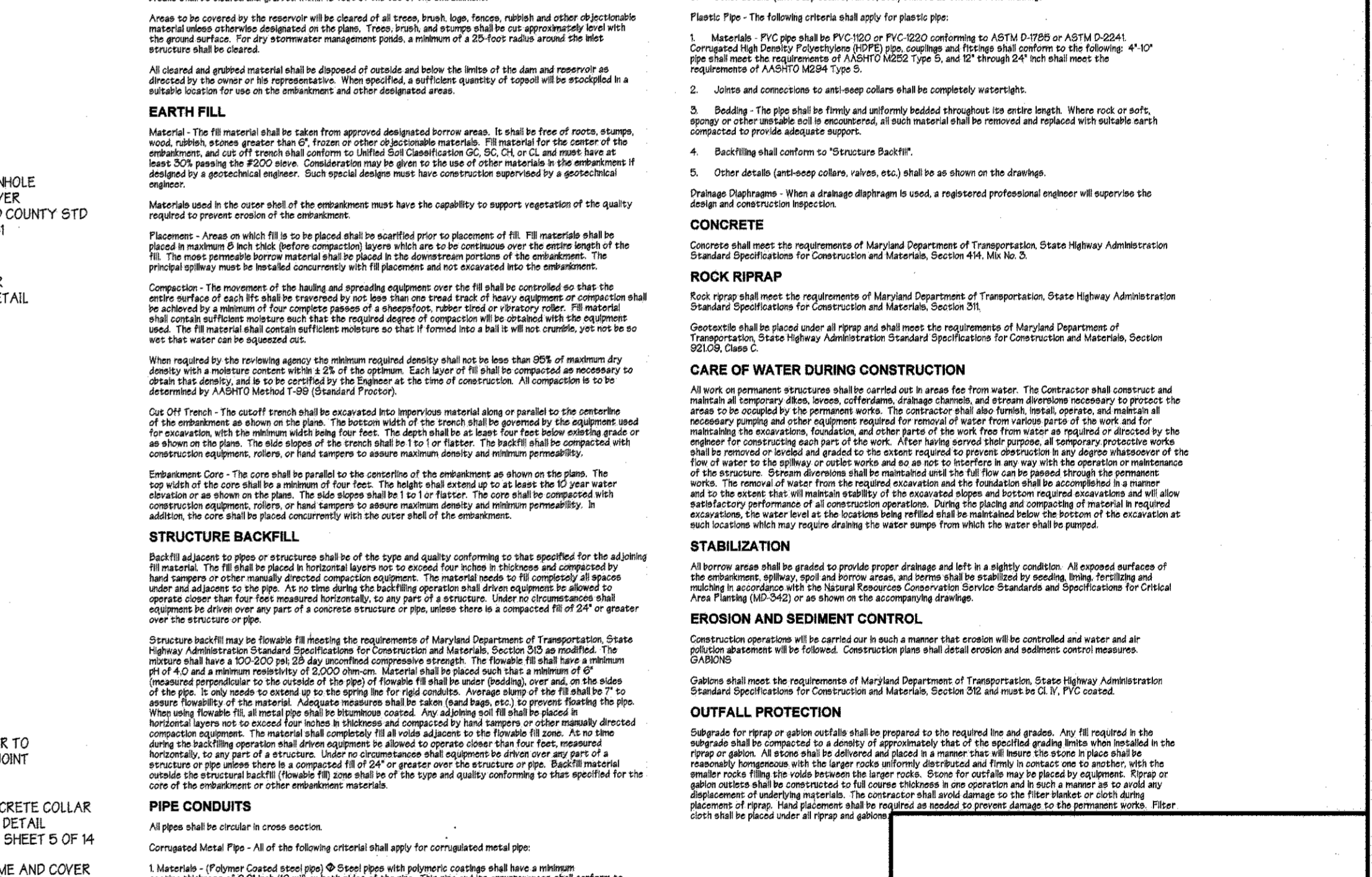
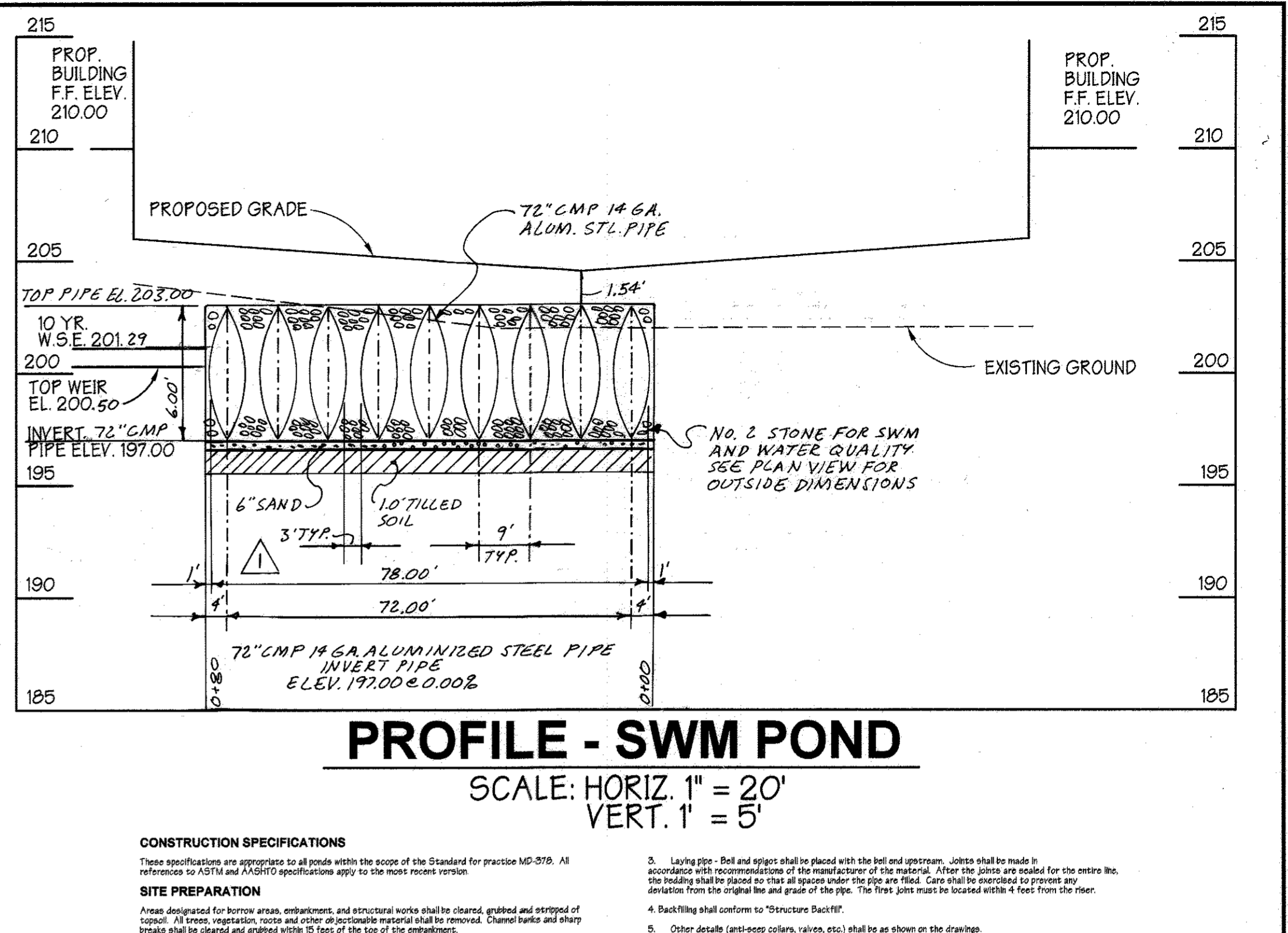
DESCRIPTION	DATA
STRUCTURE CLASSIFICATION	A (UNDERGROUND)
STORAGE X HEIGHT PRODUCT	(0.36 AC. FT.) (3.50) = 126 AC. FT. <sup>3</sup>
WATERSHED AREA TO THE POND	3.53 AC.
HEIGHT TO EMERGENCY SPILLWAY	N/A
NORMAL SURFACE AREA	N/A
PRINCIPLE SPILLWAY CAPACITY	18.05 CFS.
EMERGENCY SPILLWAY CAPACITY	N/A
POND TYPE	UNDERGROUND DETENTION
FREEDBOARD	PROVIDED
INFERRIORS AREA (AREA SERVED)	1.57 FROM 100 YR. W.S.E.
WATER QUALITY STORAGE REQUIRED	See Stormwater Management Report
WATER QUALITY STORAGE PROVIDED	See Stormwater Management Report
WATER QUALITY	See Stormwater Management Report
TOP OF POND	203.00
WATERSHED	LITTLE PATUENT



**CONTROL STRUCTURE NOTES**

- STRUCTURE SHALL BE CAST-IN-PLACE REINFORCED CONCRETE WITH 3500 P.S.I. (MIN.) STRENGTH @ 28 DAYS.
- ALL REINFORCING TO BE CONTINUOUS THROUGHOUT STRUCTURE.
- ALL REINFORCING TO HAVE 1/4\"/>

**NOTE: SWM POND**  
 ALL PIPE 14 GA. ALUMINIZED STEEL.  
 ALL PIPE IS 5\"/>



**ADDRESS CHART**

PARCEL NO.	STREET ADDRESS	PARCEL #
A-4	10900 PUMP HOUSE ROAD BUILDING 'A'	A-4
A-4	10910 PUMP HOUSE ROAD BUILDING 'B'	A-4

**DESIGNED BY: P.R.C.**  
**DRAWN BY: K.E.**  
**CHECKED BY: P.R.C.**

**OWNER / DEVELOPER**  
**CAPITAL INVESTMENT PROPERTIES, LLC**  
 7175 A OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046  
 410-309-9848

**DESIGNED BY: P.R.C.**  
**DRAWN BY: K.E.**  
**CHECKED BY: P.R.C.**

**REVISIONS**

NO.	REVISION	DATE
1	REVISED UNDERGROUND SWM LAUNCH PIPE SIZES	02/10/03
2	REVISED PROFILES & SPECIFICATIONS	02/10/03
3	REVISED POND SPECIFICATIONS	02/10/03
4	REVISED POND SPECIFICATIONS	02/10/03

**Underground Stormwater Management Plan & Details**  
**C - W & COMPANY**  
**PARCEL A-4**

ELECTION DISTRICT: 6<sup>th</sup>  
 HOWARD CO., MARYLAND 9 OF 14 DATE: JANUARY 21, 2002

SDP 02 - 091  
 SCALE: As Shown  
 DATE: JANUARY 21, 2002

15 BUILT 12.21.2004 SDP 02 - 091 P/N: 9952

**GEORGE W. STEPHENS, JR. AND ASSOCIATES, INC.**  
 Civil Engineers and Land Surveyors  
 1020 Cromwell Bridge Road  
 Towson, Maryland 21286  
 (410) 825-8120

**ENGINEER CERTIFICATION:**

I 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.

Signature of Engineer: *James A. Markle Jr.* Date: 7/6/02  
 Print Name: JAMES A. MARKLE JR. PE # 11005

**DEVELOPER CERTIFICATION:**

I/We certify that all development and/or construction will be done according to this plan for sediment and erosion control, and that I/we are responsible for the construction project will have a certificate of Attendance of a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I do authorize periodic on-site inspections by the Howard Soil Conservation District.

Signature of Developer: *Dan Hazard* Date: 7/6/02  
 Print Name: DAN HAZARD

**OWNER / DEVELOPER**  
**CAPITAL INVESTMENT PROPERTIES, LLC**  
 7175 A OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046  
 410-309-9848

**DESIGNED BY: P.R.C.**  
**DRAWN BY: K.E.**  
**CHECKED BY: P.R.C.**

**REVISIONS**

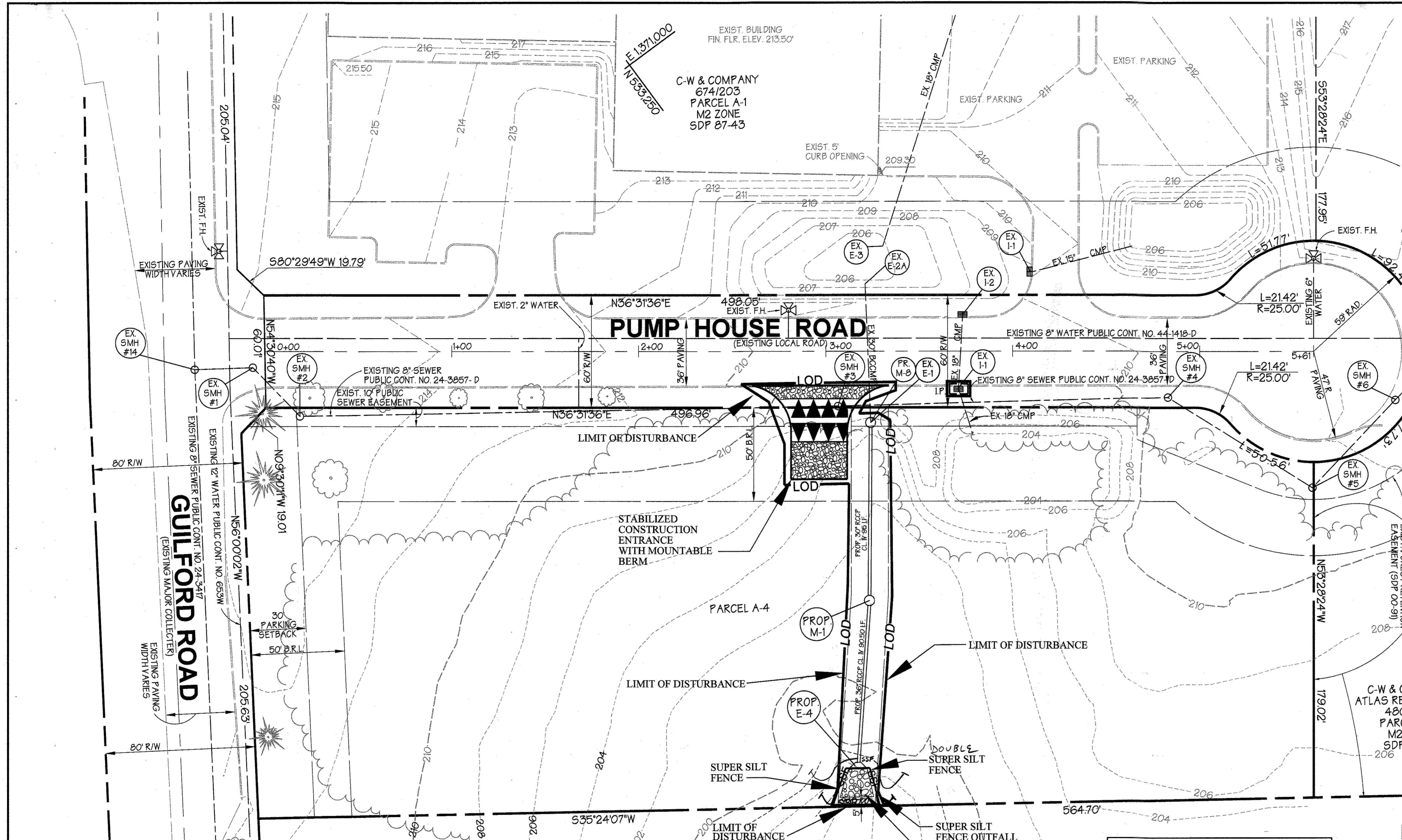
NO.	REVISION	DATE
1	REVISED UNDERGROUND SWM LAUNCH PIPE SIZES	02/10/03
2	REVISED PROFILES & SPECIFICATIONS	02/10/03
3	REVISED POND SPECIFICATIONS	02/10/03
4	REVISED POND SPECIFICATIONS	02/10/03

**Underground Stormwater Management Plan & Details**  
**C - W & COMPANY**  
**PARCEL A-4**

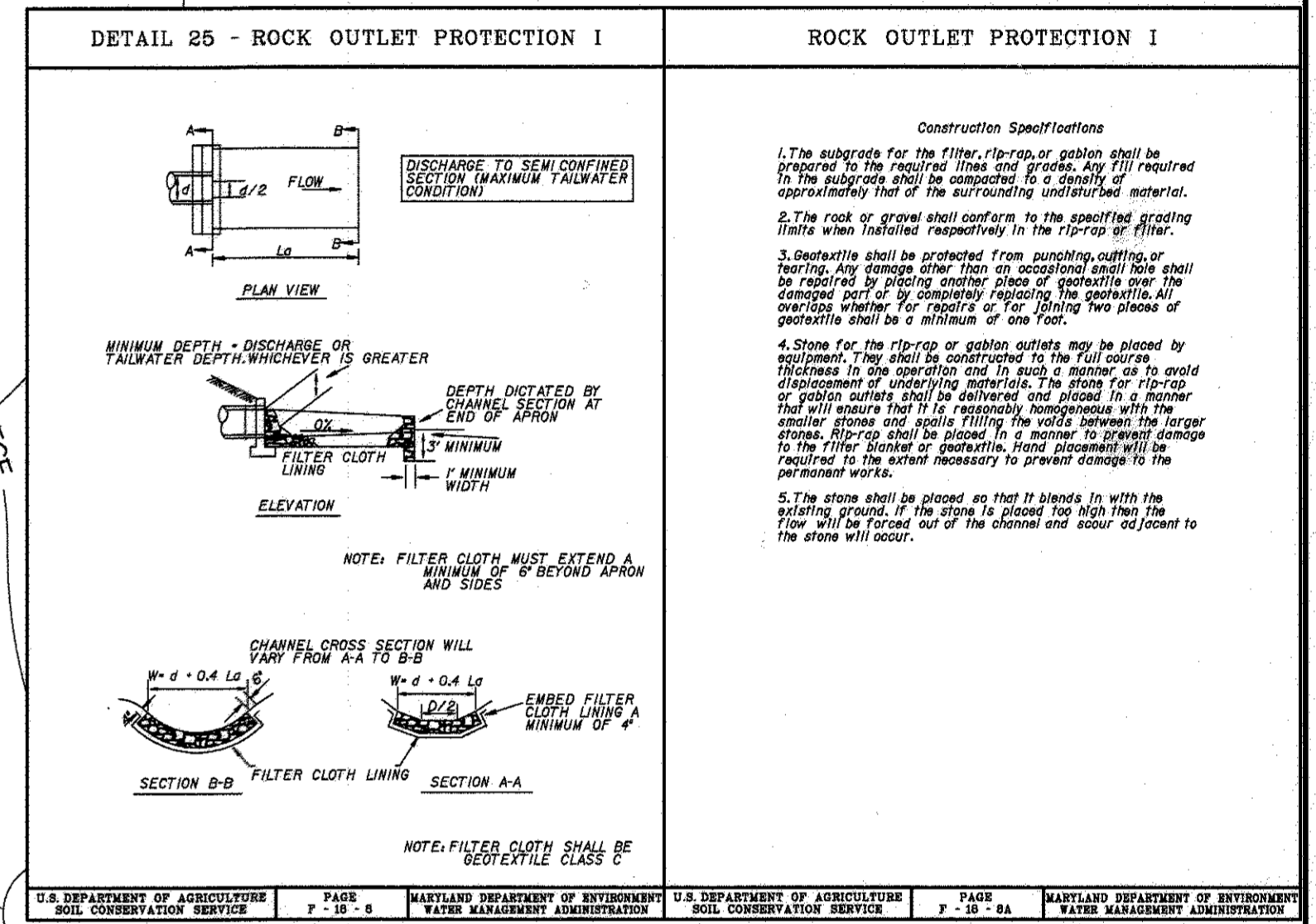
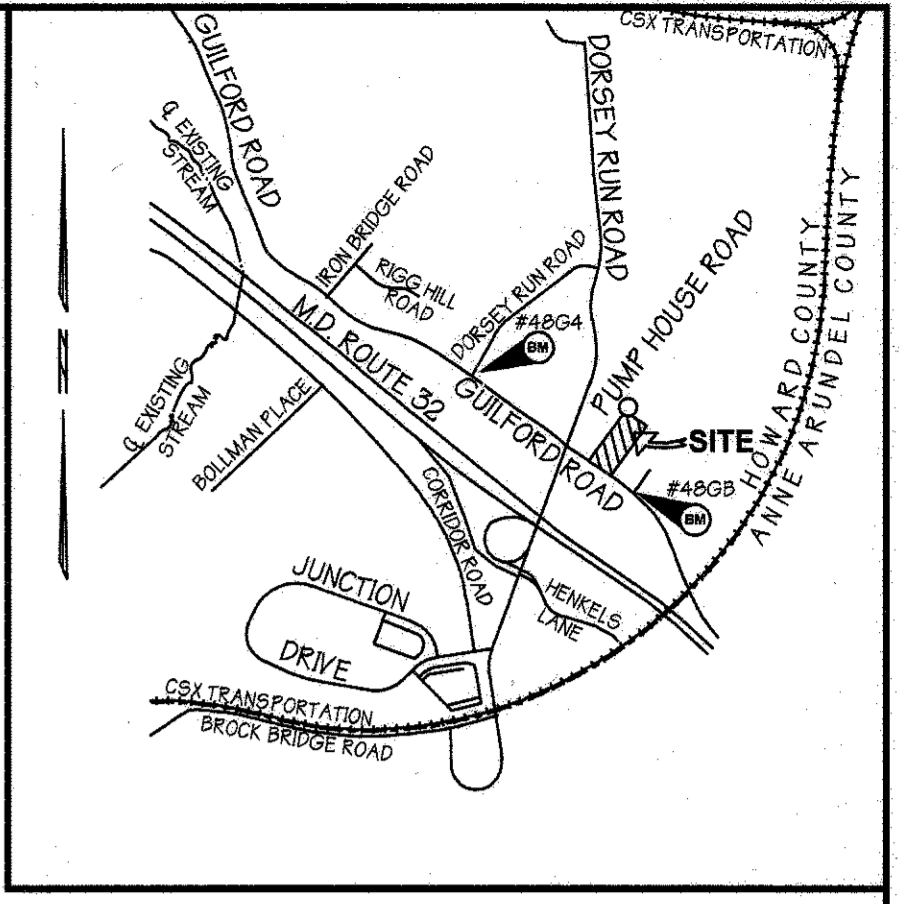
ELECTION DISTRICT: 6<sup>th</sup>  
 HOWARD CO., MARYLAND 9 OF 14 DATE: JANUARY 21, 2002

SDP 02 - 091  
 SCALE: As Shown  
 DATE: JANUARY 21, 2002

15 BUILT 12.21.2004 SDP 02 - 091 P/N: 9952



- ### Sequence of Operation Existing Conditions Phase 1
- OBTAIN GRADING PERMIT. (1 DAY)
  - NOTIFY THE HOWARD COUNTY DEPARTMENT OF PERMITS AND LICENSES 48 HOURS BEFORE BEGINNING WORK. (1 DAY)
  - WITH PERMISSION FROM SEDIMENT CONTROL INSPECTOR INSTALL STABILIZED CONSTRUCTION ENTRANCE. (2 DAYS)
  - WITH PERMISSION FROM SEDIMENT CONTROL INSPECTOR CLEAR AND GRUB AND INSTALL SUPER SILT FENCE. BLOCKING OF WATER FLOW WITH SUPER SILT FENCE ACROSS E-4 LOCATION MAY NOT OCCUR UNTIL THERE IS A 5-DAY NO PRECIPITATION FORECAST. (5 DAYS)
  - INSTALL STORM DRAIN FROM E-4 TO M-1 TO M-2 (EX. E-1) TO EXIST. CLEAN WATER BY PASSES. (4 DAYS)
  - WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR CONTINUE TO PHASE II. (1 DAY)

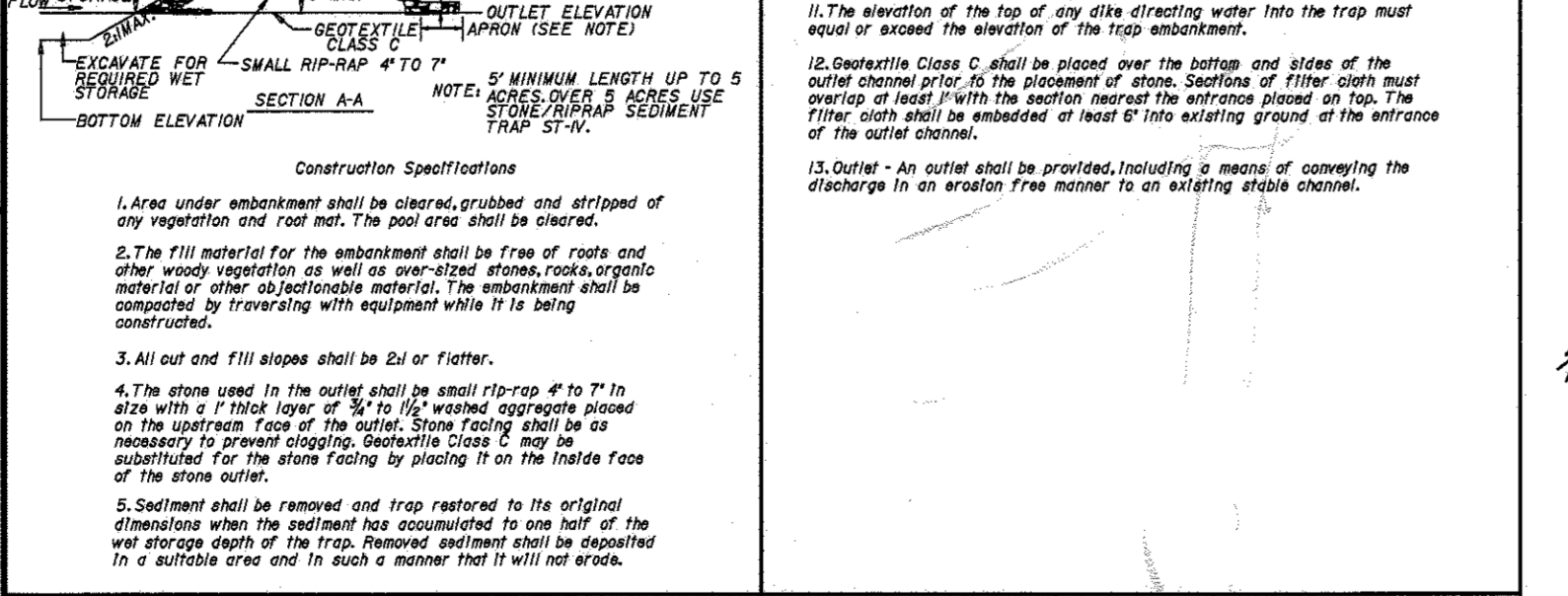
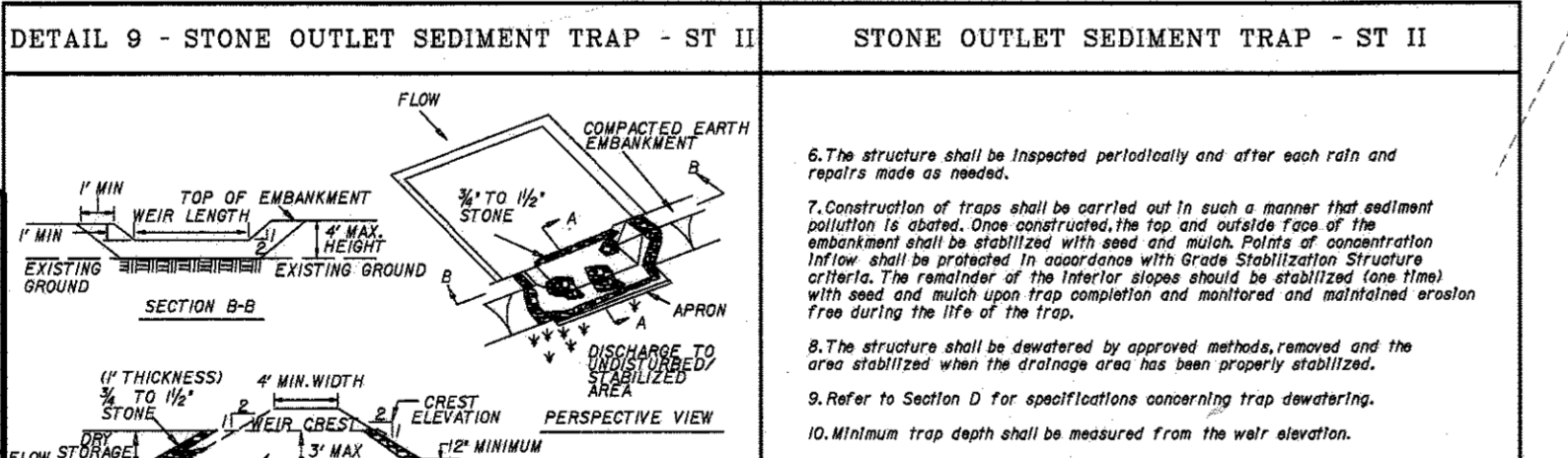
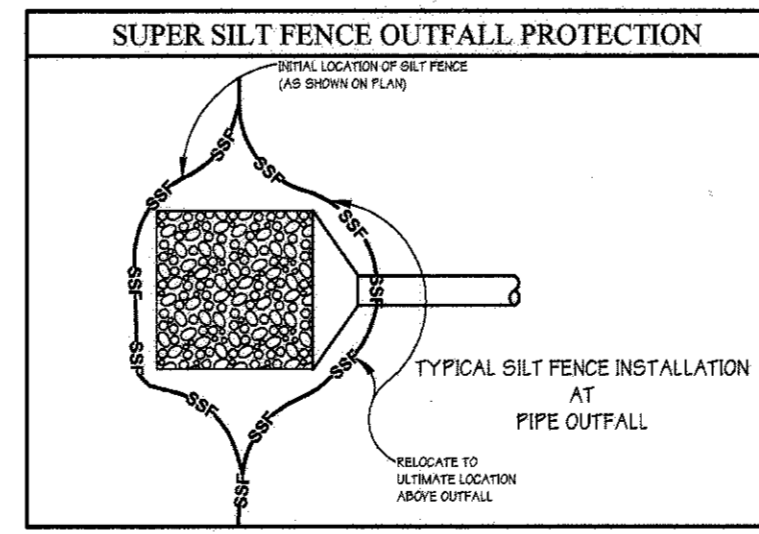
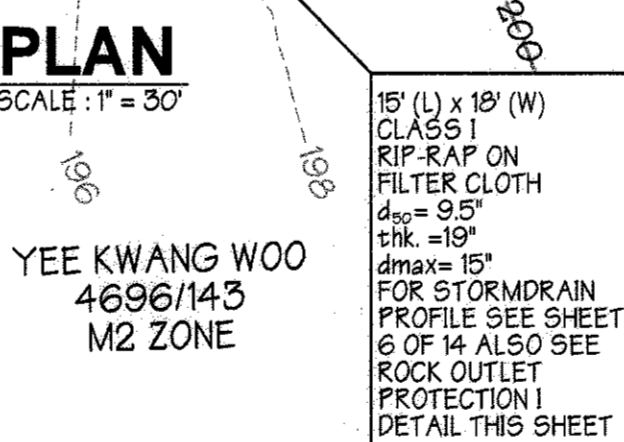
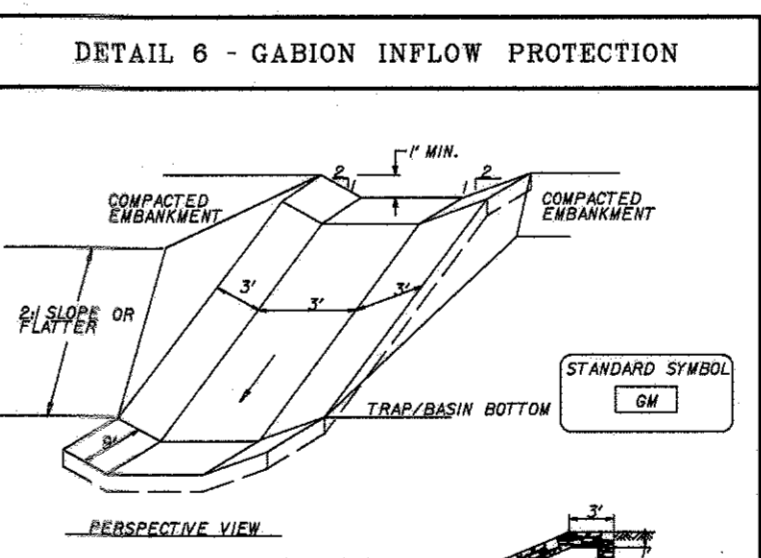


U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE 7 - 10 - 6	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE 7 - 10 - 6	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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NOTE: FOR TOP SOIL SPECIFICATIONS SEE SHEET 7 OF 14

### Legend

- Ex. 2' Contours
- Ex. 10' Contours
- Prop. 2' Contours
- Prop. 10' Contours
- Ex. Curb & Gutter
- Prop. Curb & Gutter
- Bldg. Restriction Line
- Ex. Sanitary
- Ex. Storm Drain
- Ex. Water
- Prop. Sanitary
- Prop. Storm Drain
- Prop. Water
- P-1 Paving
- Proposed Parking Count
- Handicapped Parking Space
- Limit of Disturbance
- Super Silt Fence
- Stabilized Construction Entrance With Mountable Berm
- Inlet Protection



Reviewed for Howard SCD and meets Technical Requirements

*Jim Myers* 10/24/02  
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District

*John Smith* 10/24/02  
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: Howard County Department of Planning and Zoning

*Chris Proulx* 10/30/02  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Linda Hamada* 11/7/02  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Paul Roth* 11/7/02  
DIRECTOR DATE

ENGINEER CERTIFICATION:

I 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.

Signature of Engineer: *James A. Markle Jr.* Date: 7/6/02  
Print Name: JAMES A. MARKLE JR. PE # 11005

DEVELOPER CERTIFICATION:

I certify that all development and/or construction will be done according to this plan for sediment and erosion control, and that all responsible persons involved in the construction project will have a certificate of attendance of 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 inspections by the Howard Soil Conservation District.

Signature of Developer: *Dan Hazard* Date: 7/6/02  
Print Name: DAN HAZARD

OWNER / DEVELOPER

**CAPITAL INVESTMENT PROPERTIES, LLC**

7175 AN OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046  
410-309-9848

ADDRESS CHART					
PARCEL NO.	STREET ADDRESS				
A-4	10900 PUMP HOUSE ROAD BUILDING 'A'				
A-4	10910 PUMP HOUSE ROAD BUILDING 'B'				
SUBDIVISION NAME	SECTION NAME	PARCEL #			
C - W & Company	N/A	A-4			
PLAT # 15557, 14442	BLOCK #	ZONE	TAX MAP	ELECT. DIST.	CENSUS TRACT
	M-2	4B	4B	6	6064
WATER CODE B-02	SEWER CODE 4020000				

**Erosion and Sediment Control Plan Existing Conditions Phase I**

**C - W & COMPANY**

**PARCEL A-4**

ELECTION DISTRICT: 6th  
HOWARD CO., MARYLAND 10 OF 14 DATE: JANUARY 21, 2002

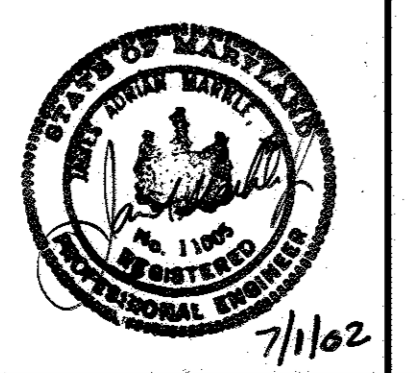
SDP 02 - 091  
SCALE: As Shown  
DATE: JANUARY 21, 2002

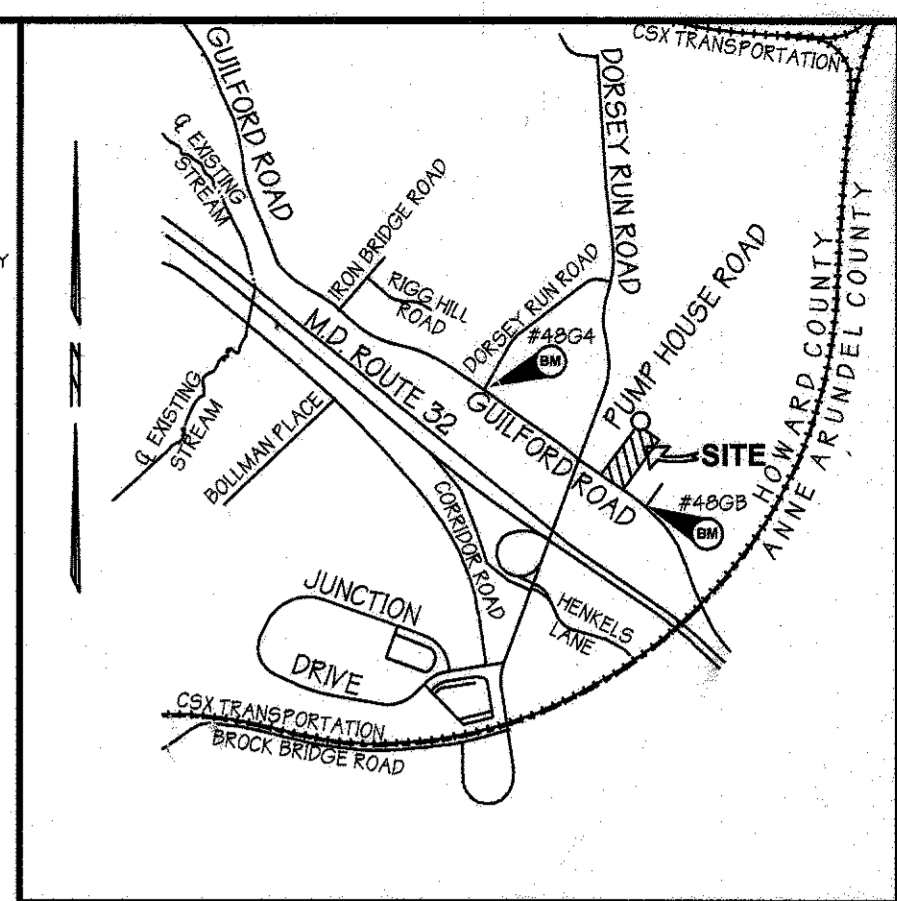
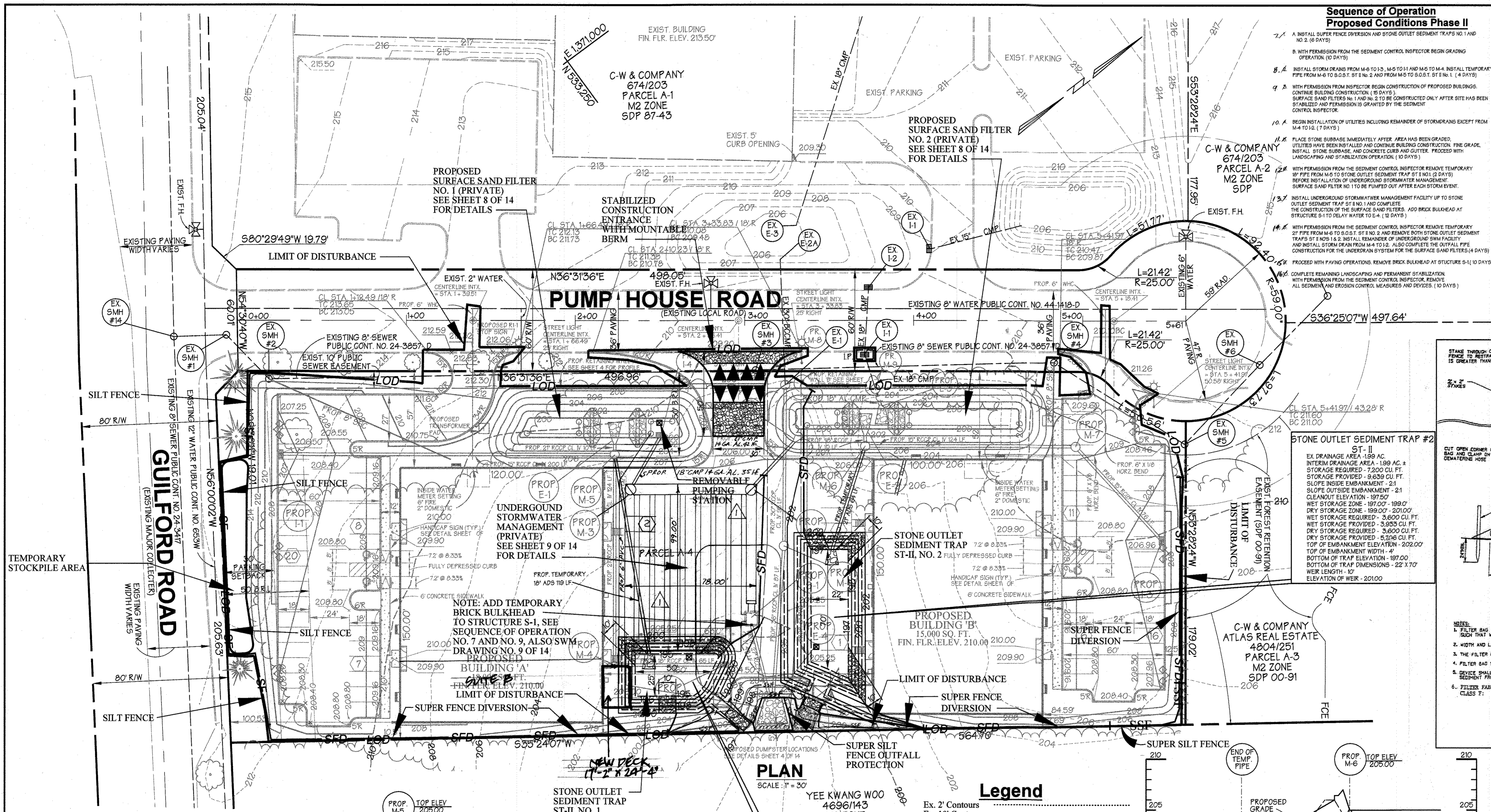
PREPARED BY:

**GEORGE W. STEPHENS, JR. AND ASSOCIATES, INC.**

Civil Engineers and Land Surveyors

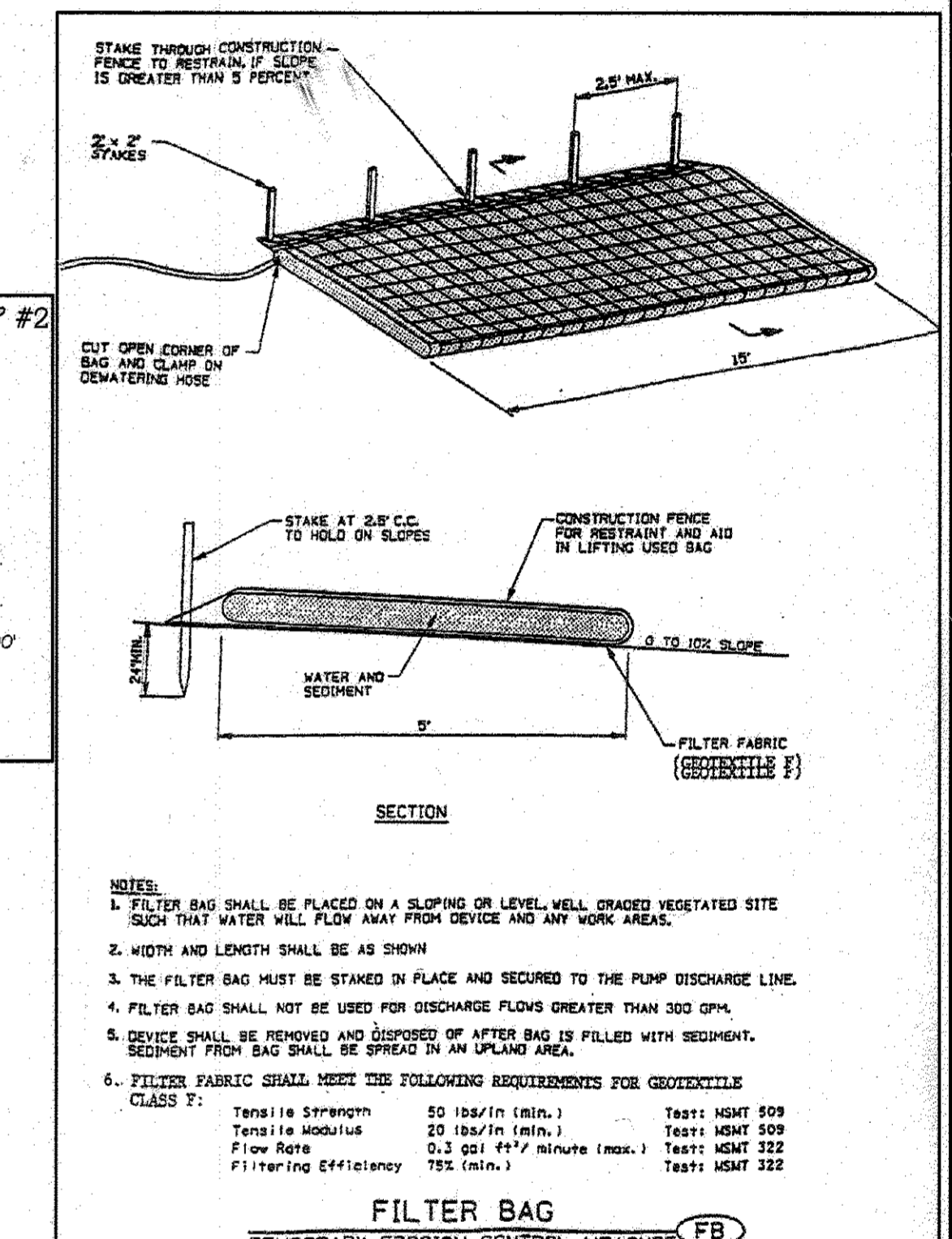
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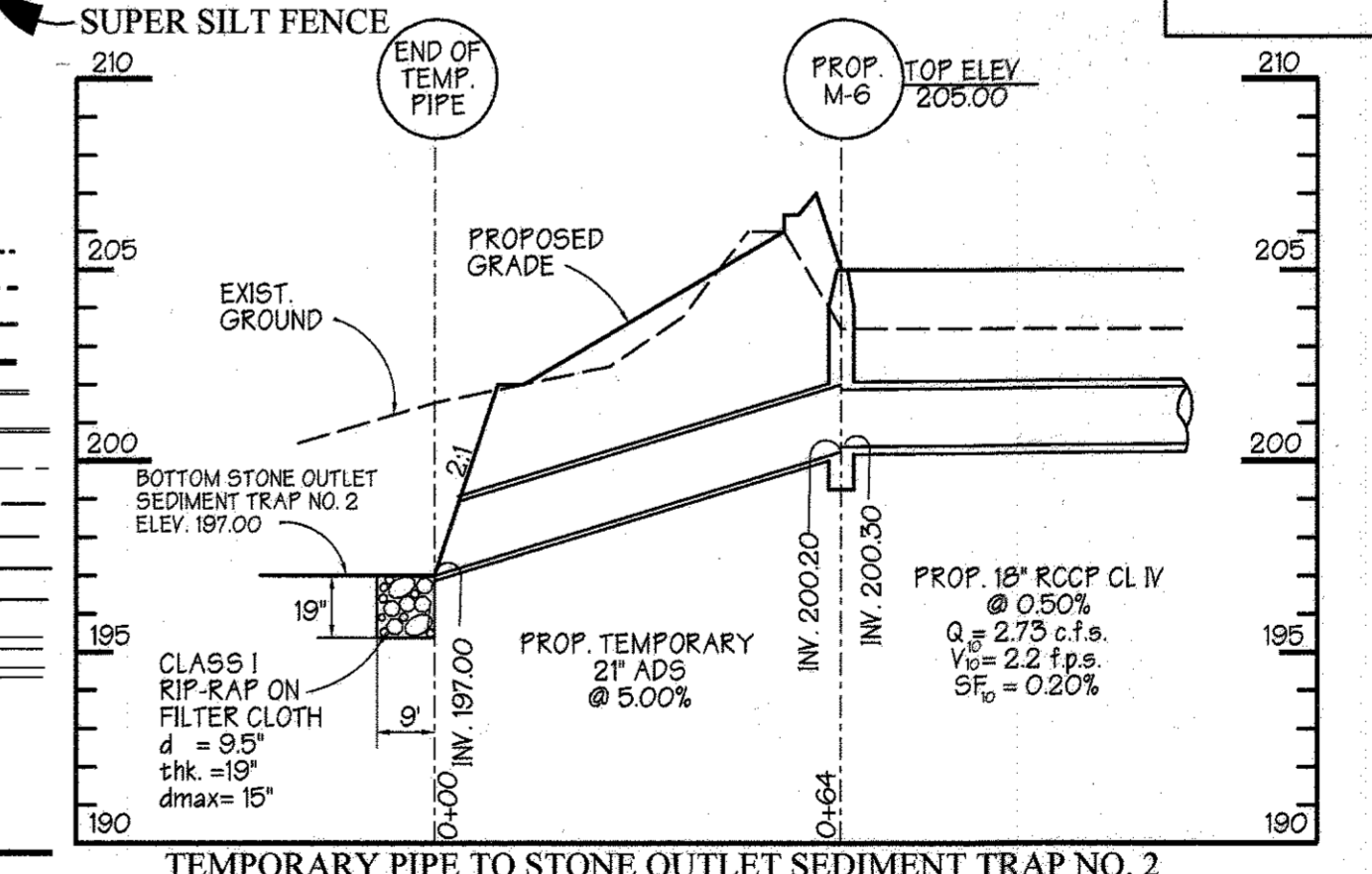
Vicinity Map  
SCALE: 1" = 2,000'

- ### Sequence of Operation Proposed Conditions Phase II
- INSTALL SUPER FENCE DIVERSION AND STONE OUTLET SEDIMENT TRAPS NO. 1 AND NO. 2 (6 DAYS)
  - WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR BEGIN GRADING OPERATION (10 DAYS)
  - INSTALL STORM DRAINS FROM M-6 TO M-13, M-2 TO M-11 AND M-5 TO M-4. INSTALL TEMPORARY PIPE FROM M-6 TO S.O.S.T. ST. NO. 2 AND FROM M-5 TO S.O.S.T. ST. NO. 1 (4 DAYS)
  - WITH PERMISSION FROM INSPECTOR BEGIN CONSTRUCTION OF PROPOSED BUILDINGS. CONTINUE BUILDING CONSTRUCTION (15 DAYS). SURFACE SAND FILTERS NO. 1 AND NO. 2 TO BE CONSTRUCTED ONLY AFTER SITE HAS BEEN STABILIZED AND PERMISSION IS GRANTED BY THE SEDIMENT CONTROL INSPECTOR.
  - BEGIN INSTALLATION OF UTILITIES INCLUDING REMAINDER OF STORMDRAINS EXCEPT FROM M-4 TO M-12 (7 DAYS)
  - PLACE STONE SUBBASE IMMEDIATELY AFTER AREA HAS BEEN GRADED. UTILITIES HAVE BEEN INSTALLED AND CONTINUE BUILDING CONSTRUCTION. FINE GRADE, INSTALL STONE SUBBASE AND CONCRETE CURB AND GUTTER. PROCEED WITH LANDSCAPING AND STABILIZATION OPERATION (10 DAYS)
  - WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR REMOVE TEMPORARY PIPE FROM M-5 TO STONE OUTLET SEDIMENT TRAP ST. NO. 1 (2 DAYS) BEFORE INSTALLATION OF UNDERGROUND STORMWATER MANAGEMENT SURFACE SAND FILTER NO. 1 TO BE FORWARDED OUT AFTER EACH STORM EVENT.
  - INSTALL UNDERGROUND STORMWATER MANAGEMENT FACILITY UP TO STONE OUTLET SEDIMENT TRAP ST. NO. 1 AND COMPLETE THE CONSTRUCTION OF THE SURFACE SAND FILTERS. ADD BRICK BULKHEAD AT STRUCTURE NO. 1 TO DELAY WATER TO 1-4 (12 DAYS)
  - WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR REMOVE TEMPORARY PIPE FROM M-6 TO S.O.S.T. ST. NO. 2 AND REMOVE BOTH STONE OUTLET SEDIMENT TRAPS ST. NO. 1 & 2. INSTALL REMAINDER OF UNDERGROUND SWM FACILITY AND INSTALL STORM DRAIN FROM M-4 TO M-12. ALSO COMPLETE THE OUTLET PIPE CONSTRUCTION FOR THE UNDERDRAIN SYSTEM FOR THE SURFACE SAND FILTERS (4 DAYS)
  - PROCEED WITH PAVING OPERATIONS. REMOVE BRICK BULKHEAD AT STRUCTURE S-1 (10 DAYS)
  - COMPLETE REMAINING LANDSCAPING AND PERMANENT STABILIZATION WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR. REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES AND DEVICES (10 DAYS)



PLAN  
SCALE: 1" = 30'

- ### Legend
- Ex. 2' Contours
  - Ex. 10' Contours
  - Prop. 2' Contours
  - Prop. 10' Contours
  - Ex. Curb & Gutter
  - Prop. Curb & Gutter
  - Bldg. Restriction Line
  - Ex. Sanitary
  - Ex. Storm Drain
  - Ex. Water
  - Prop. Sanitary
  - Prop. Storm Drain
  - Prop. Water
  - P-1 Paving
  - Proposed Parking Count
  - Handicapped Parking Space
  - Limit of Disturbance
  - Silt Fence
  - Super Silt Fence
  - Super Fence Diversion
  - Stabilized Construction Entrance With Mountable Berm
  - Inlet Protection



Reviewed for Howard SCD and meets Technical Requirements

*[Signature]* 10/24/02  
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District

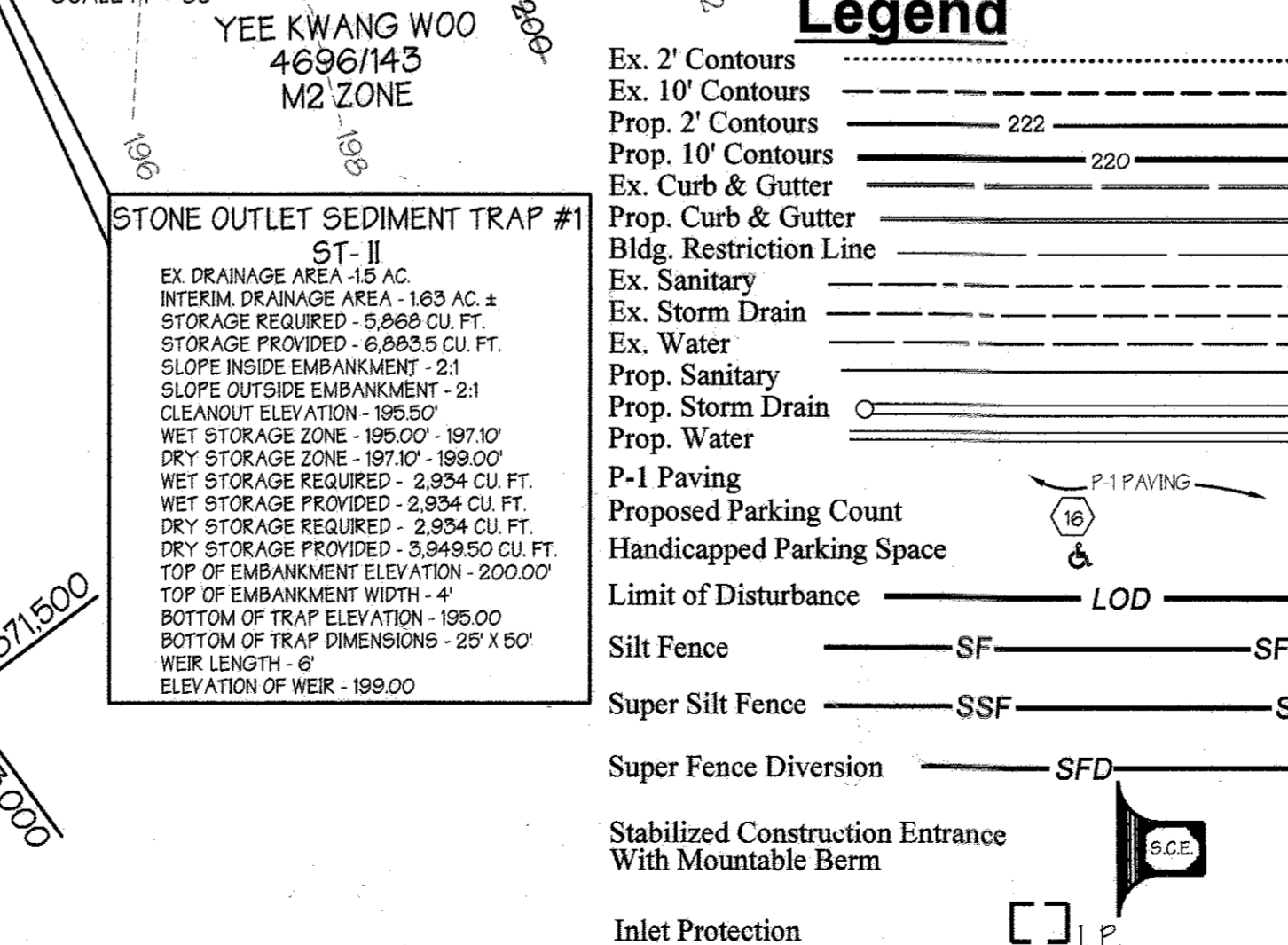
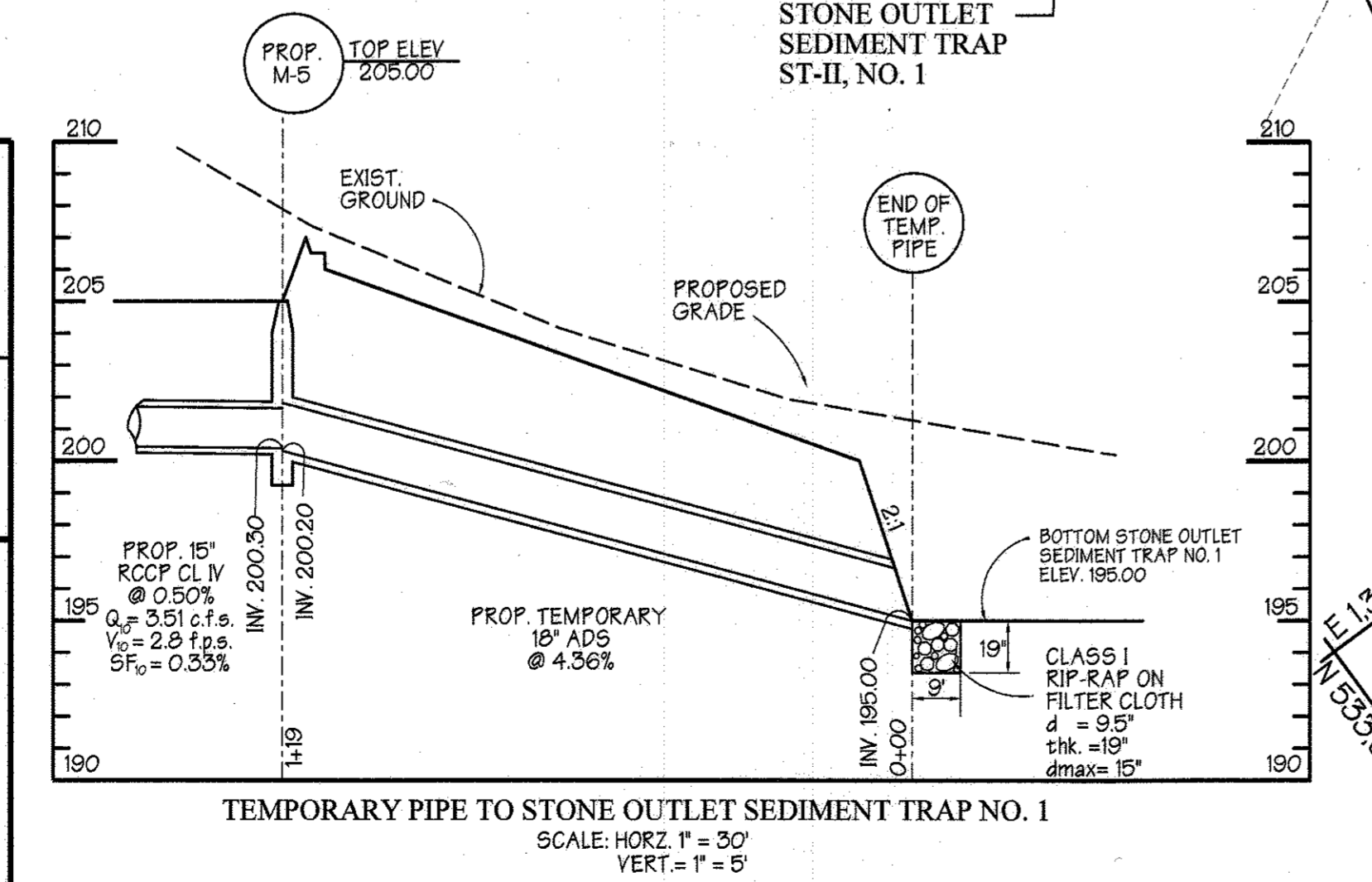
*[Signature]* 10/24/02  
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: Howard County Department of Planning and Zoning

*[Signature]* 10/30/02  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 11/7/02  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 11/7/02  
DIRECTOR DATE



PARCEL NO.	STREET ADDRESS
A-4	10900 PUMP HOUSE ROAD BUILDING 'A'
A-4	10910 PUMP HOUSE ROAD BUILDING 'B'

SUBDIVISION NAME	SECTION NAME	PARCEL #
C - W & Company	N/A	A-4

PLAT #	BLOCK #	ZONE	TAX MAP	ELECT. DIST.	CENSUS TRACT
#1557, 14442		M-2	4B		6064

WATER CODE B-02  
SEWER CODE 4020000

PREPARED BY:

**GEORGE W. STEPHENS, JR. AND ASSOCIATES, INC.**  
Civil Engineers and Land Surveyors  
1020 Cromwell Bridge Road  
Towson, Maryland 21286  
(410) 825-8120

ENGINEER CERTIFICATION:

I 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.

Signature of Engineer: *[Signature]* Date: 7/10/02  
Print Name: JAMES A. MARLE JR. PE # 11005

DEVELOPER CERTIFICATION:

I/We certify that all development and/or construction will be done according to this plan 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/We also authorize periodic on-site inspections by the Howard Soil Conservation District.

Signature of Developer: *[Signature]* Date: 7/10/02  
Print Name: DAN HAZARD

OWNER / DEVELOPER

**CAPITAL INVESTMENT PROPERTIES, LLC**  
7175 A OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046  
410-309-9848

DESIGNED BY: P.R.C.  
DRAWN BY: K.E.  
CHECKED BY: P.R.C.  
REVISIONS:  
REVISED UNDERGROUND SWM LAYOUT AND PIPE SIZE BY GWS DATED 02/10/03

**Erosion and Sediment Control Plan  
Proposed Conditions Phase II  
C - W & COMPANY  
PARCEL A-4**

ELECTION DISTRICT: 6th  
HOWARD CO., MARYLAND 11 OF 14 DATE: JANUARY 21, 2002

SDP 02 - 091  
SCALE: As Shown  
P/N: 9852

# Stabilization Specifications

## Section I - Vegetative Stabilization Methods and Materials

- A. Site Preparation**
  - Installation and sediment control structures (either temporary or permanent) such as diversion, grade stabilization structures, berms, waterways, or sediment control basins.
  - Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
  - Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed areas over 5 acres.
- B. Soil Amendments (Fertilizer and Lime Specifications)**
  - Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples may be taken for engineering purposes also used for chemical analysis.
  - Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizer shall be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warranty of the producer.
  - Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98% - 100% will pass through a #20 mesh sieve.
  - Incorporate lime and fertilizer into the top 3" - 5" of soil by disk or other suitable means.
- C. Soil Amendments - Use only one of the following schedules**
  - Preferred** - Apply 2 tons per acre dolomitic limestone (92 lbs. / 100 s.f.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs. / 100 s.f.) before seeding, harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 uniform fertilizer (98 lbs. / 100 s.f.).
  - Acceptable** - Apply 2 tons per acre dolomitic limestone (92 lbs. / 100 s.f.) and 1000 lbs. per acre 10-10-10 fertilizer (23 lbs. / 100 s.f.) before seeding, harrow or disc into upper three inches of soil.

## C. Seeded Preparation

- I. Temporary Seeding**
  - Seeded preparation shall consist of loosening soil to a depth of suitable agricultural or construction equipment, such as disc harrow or ripper, or other suitable construction equipment. After the soil is loosened it should not be rolled or dragged smooth but left in the roughened condition. Sloped areas (greater than 3:1) should not be tracked along the surface in an irregular condition with ridges running parallel to the contour of the slope.
  - Apply fertilizer and lime as prescribed on the plans.
  - Incorporate lime and fertilizer into the top 3" - 5" of soil by disk or other suitable means.
- II. Permanent Seeding**
  - Minimum soil conditions required for permanent vegetative establishment:
    - Soil pH shall be between 6.0 and 7.0.
    - Soil salinity shall be less than 500 parts per million (ppm).
    - The soil shall contain less than 40% clay but enough of the graded material (> 30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if loess or loess-like loess is to be planted, then a sandy soil (< 30% silt plus clay) would be acceptable.
    - Soil shall contain 15% minimum organic matter by weight.
    - Soil must contain sufficient pore space to permit adequate root penetration.
    - If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
  - Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3" - 5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check dams to prevent topsoil from sliding down a slope.
  - Apply soil amendments as per soil test or as included on the plans.
  - All soil amendments into the top 3" - 5" of topsoil by disk or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Where site conditions will not permit normal seeded preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a cable leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1" - 3" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.

## D. Seed Specifications

- All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material in this job.
- Inoculant** - Inoculants for treating legume seeds in the seed mixture shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add inoculant as directed on package. Use four times the recommended rate when hydroseeding. NOTE: It is very important to keep inoculants cool as possible until used. Temperature above 75° - 90 degrees F. can weaken bacteria and make inoculant less effective.
- NOTE: SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED.**
- Methods of Seeding**
  - Hydroseeding: Apply seed uniformly with hydroseeder (injury includes seed and fertilizer), broadcast or drop seeder, or a silt packer seeder.
    - If fertilizer is being applied as the time of seeding, the application rates amount will not exceed the following: nitrogen maximum of 100 lbs. per acre total soluble nitrogen (PSN) (phosphorus); 200 lbs./ac.; K2O (potassium); 200 lbs./ac.
    - Lime - use only ground agricultural limestone. (Up to 2 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.

- Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
- Dr. Dry Seeding** - This includes use of conventional drop or broadcast spreaders.
  - Seed spread dry shall be incorporated into the subsoil as the tires tread on the Temporary or Permanent Seeding Summary or Table 25 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
  - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
- Drill or Outdragger Seeding** - Mechanized seeders that apply and cover seed with soil.
  - Outdragger seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
  - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

- F. Mulch Specifications (In order of preference)**
  - Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably bright in color, and shall not be muddy, moldy, caked, decayed, or excessively dry and shall be free of noxious weed seeds as determined by the Maryland Seed Law.
  - Wood Cellulose Fiber Mulch (WCFM)
    - WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
    - WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniform spread layer.
    - WCFM, including dye, shall contain no germination or growth inhibiting factors.
  - WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and penetration properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
  - WCFM material shall contain no elements or compounds at concentration levels that will be phytotoxic.

- WCFM material shall conform to the following physical requirements: fiber length to approximately 10 mm, diameter approximately 1 mm, pH range of 4.0 to 8.5, ash content of 16% maximum and water holding capacity of 90% minimum.

## NOTE: ONLY STRAW MULCH SHOULD BE USED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

- G. Mulching Seeded Areas** - Mulch shall be applied to all seeded areas immediately after seeding.
  - If grading is completed outside of the seeding season, mulch alone shall be applied as prescribed in the section and material until the seeding season resumes and seeding can be performed in accordance with these specifications.
    - When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If any mulching tool is to be used, the rate should be increased to 2.5 tons/acre.
    - Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
  - Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch. Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
    - Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
    - Application of liquid binders should be avoided at the edges where wind catches mulch, such as in valleys and on the crests of berms. The remainder of area should appear uniform after binder application. Liquid binders shall be applied at a rate of 1/2 gallon per 100 square feet. Binders shall be applied on or after approved plastic may be used at rates recommended by the manufacturer to anchor mulch.
  - Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 10' feet wide and 300 to 3000 feet long.

## Section II - Temporary Seeding

- Vegetation** - annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.
- A. Seed Mixtures - Permanent Seeding**
  - Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardness Zone (from Figure 5) and enter them in Permanent Seeding Summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 26. If this Summary is not part of the construction plans and completed, then Table 25 must be put on the plans. Additional planting specifications for exceptional sites such as shorelines, streambanks, dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-SCS Technical Field Office Guide, Section 542 - Critical Area Planning. For special lawn maintenance areas, see Sections IV Seed and V Turfgrass.
  - For sites having disturbed areas over 5 acres, the rates shown in this table shall be deleted and the rates recommended by the testing agency shall be written in.
  - For areas receiving low maintenance, apply urea-form fertilizer (46-0-0) at 3-1/2 lbs/1000 sq. ft. (50 lbs/ac), in addition to the above soil amendments shown in the table below, to be performed at the time of seeding.

## Section III - Permanent Seeding

- Seeding grass and legumes to establish ground cover for a minimum period of one year on disturbed areas generally receiving low maintenance.
  - A. Seed Mixtures - Permanent Seeding**
    - Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardness Zone (from Figure 5) and enter them in Permanent Seeding Summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 26. If this Summary is not part of the construction plans and completed, then Table 25 must be put on the plans. Additional planting specifications for exceptional sites such as shorelines, streambanks, dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-SCS Technical Field Office Guide, Section 542 - Critical Area Planning. For special lawn maintenance areas, see Sections IV Seed and V Turfgrass.
    - For sites having disturbed areas over 5 acres, the rates shown in this table shall be deleted and the rates recommended by the testing agency shall be written in.
    - For areas receiving low maintenance, apply urea-form fertilizer (46-0-0) at 3-1/2 lbs/1000 sq. ft. (50 lbs/ac), in addition to the above soil amendments shown in the table below, to be performed at the time of seeding.

## Section IV - Sod: To provide quick cover on disturbed areas (2:1 grade or steeper).

- A. General specifications**
  - Class of turfgrass sod shall be Maryland or Virginia State Certified or Approved. Sod labels shall be made available to the job foreman and inspector.
  - Sod shall be machine cut to a uniform soil thickness of 3/4" plus or minus 1/4", at the time of cutting. Measurements for thickness shall exclude top growth and thatch. Individual pieces of sod shall be cut to the suppliers width and length. Maximum allowable deviation from standard widths and lengths shall be 5 percent. Broken pads and torn or uneven ends will not be acceptable.
  - Standard size sections of sod shall 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 shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
    - Sod shall be harvested, delivered, and installed within a period of 36 hours. Sod not transported within this period shall be approved by an agronomist or soil scientist prior to its installation.

- Site Preparation** - Fertilizer and Lime application rates will be determined by soil test. Under unusual circumstances where there is insufficient time for a complete soil test, fertilizer and lime may be applied in amounts shown under this below.
  - Prior to seeding, the surface will be cleared of all trash, debris, and of all roots, brush, wire, grade stakes and other objects that would interfere with planting, fertilizing, or maintenance operations.
  - Where soil is acid or composed of heavy clay, ground limestone will be spread at the rate of 2 tons per acre (900 lbs. / 1000 s.f.) in all soils 1000 lbs. per acre (25 lbs. / 1000 s.f.) of 10-10-10 fertilizer or equivalent will be uniformly applied and mixed into the top three inches of soil with the required time.
  - All areas receiving sod will be uniformly fine graded. Hard packed earth will be scarified prior to placement of sod.

- B. Sod Installation**
  - During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall be lightly irrigated immediately prior to laying the sod.
  - The first row of sod shall be laid in a straight line in a straight line with subsequent rows placed parallel to and tightly wedged against each other. Lateral joints shall be staggered to promote more uniform growth and strength. Ensure that sod is not stretched or overwheeled and that all joints are butted tight in order to prevent voids which would cause drying of the roots.
  - Whenever possible, sod shall be laid with the long edges parallel to the contour and with staggering joints. Sod shall be rolled and tamped, pegged or otherwise secured to prevent slippage on slopes and to ensure solid contact between sod rows and the underlying soil surface.
  - Sod shall be watered immediately following rolling or tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. The operations of laying, tamping and irrigating for any piece of sod shall be completed within eight hours.

- C. Sod Maintenance**
  - In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and at sufficient quantities to maintain moist soil to a depth of 4". Watering should be done during the heat of the day to prevent wilting.
  - After the first week, sod watering is required as necessary to maintain adequate moisture content.
  - The first mowing of sod should not be attempted until the sod is firmly rooted. No more than 1/3 of the grass leaf shall be removed by the initial cutting or subsequent cuttings. Grass height shall be maintained between 2" and 2 1/2 inches otherwise specified.

## Section IV - Turfgrass Establishment

Areas where turfgrass may be desired include lawns, playgrounds, and commercial areas which will receive a medium to high level of maintenance. Areas to receive seed shall be filled by disk or other approved methods to a depth of 2 to 4 inches, leveled and raked to prepare a proper seedbed. Stones and debris over 1/2 inches in diameter shall be removed. The resulting seedbed shall be in such condition that future mowing of grasses will pose no difficulty.

## NOTE: 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.

- A. Turfgrass Mixtures**
  - 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 Seeding Rate: 15 to 20 pounds/1000 square feet. A minimum of three bluegrass cultivars should be chosen ranging from a minimum of 10% to a maximum of 30% of the mixture by weight.
  - Kentucky Bluegrass/Fernoxal Rye** - Full sun mixture - For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Fernoxal Ryegrass Cultivar/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture/1000 square feet. A minimum of 3 Kentucky Bluegrass Cultivars must be chosen, with each cultivar ranging from 10% to 20% of the mixture by weight.
  - Kentucky Bluegrass/Perennial Rye** - Full sun mixture - For use in drought-prone areas and/or for areas receiving low to medium maintenance. Full sun to medium shade. Recommended mixture includes: certified Tall Fescue Cultivar 90% - 100%, certified Kentucky Bluegrass Cultivars 0 - 5%. Seeding rate 5 to 8 lb/1000 square feet. 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 areas. Mixture includes: certified Kentucky Bluegrass Cultivars 30 - 40% and certified Fine Fescue and 60 - 70%. Seeding rate 1 1/2 - 3 lbs/1000 square feet. A minimum of 3 Kentucky Bluegrass cultivars must be chosen, with each cultivar ranging from a minimum of 10% to a maximum of 30% of the mixture by weight.

NOTE: Turfgrass varieties should be selected from the most current University of Maryland Publication, Agronomy Series #71, "Turfgrass Cultivar Recommendations for Maryland".

- B. Ideal times of seeding**
  - Western MD: March 15-June 1, August 1-October 1 (Hardness Zones - 9b, 6a)
  - Central MD: March 1-May 15, August 15-October 15 (Hardness Zones - 8b)
  - Southern MD, Eastern Shore: March 1-May 15, August 15-October 15 (Hardness Zones - 7a, 7b)

- C. Irrigation**
  - If soil moisture is deficient, supply new seedlings with adequate water for plant growth (1/2" - 1" every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

- D. Repairs and Maintenance**
  - Inspect all seeded areas for failures and make necessary repairs, replacements, and reseedings within the planting season.
  - Once the vegetation is established, the site shall have 95% groundcover to be considered adequately stabilized.
  - If the stand provides less than 40% ground coverage, reestablish following original lime, fertilizer, seedbed preparation and seeding recommendations.
  - If the stand provides between 40% and 94% ground coverage, overseeding and fertilizing with half of the rates originally applied may be necessary.
  - Maintenance fertilizer rates for permanent seedings are shown in Table 24. For lawns and other medium to high maintenance turfgrass areas, refer to the University of Maryland publication "Lawn Care in Maryland" Bulletin No. 71.

### Table 24 - Materials Specifications

#### Table 27: Geotextile Fabrics

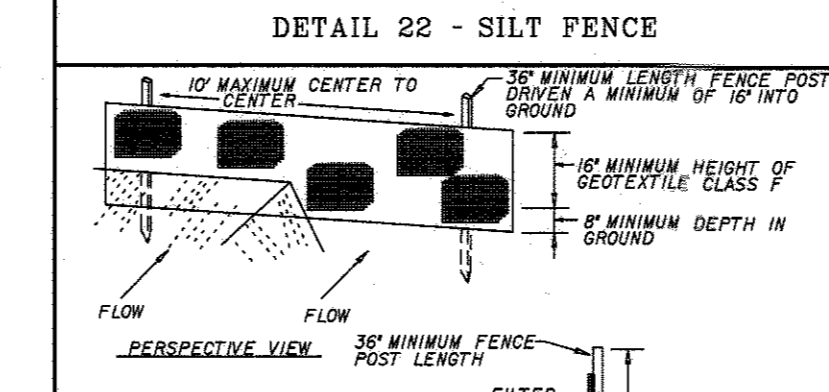
CLASS	APPARENT OPENING SIZE (MM MAX)	GRAB TENILE STRENGTH (LB MIN)	BURST STRENGTH (PSI MIN)
A	0.30**	250	500
B	0.60	200	320
C	0.30	200	320
D	0.60	90	145
E	0.30	80	145
F (SILT FENCE)	0.40-0.80*	90	190

\* US Std. Sieve CW-0225 \*\* 0.50 MM MAX FOR SUPER SILT FENCE

The properties shall be determined in accordance with the following procedures:  
- Apparent opening size: MSMT 323  
- Grab tensile strength: ASTM D 1682: 4 x 8" specimen, 1/2" clamp, 12" min. strain rate in both principal directions of geotextile fabric.  
- Burst strength: ASTM D 3766

## Sediment Control Notes

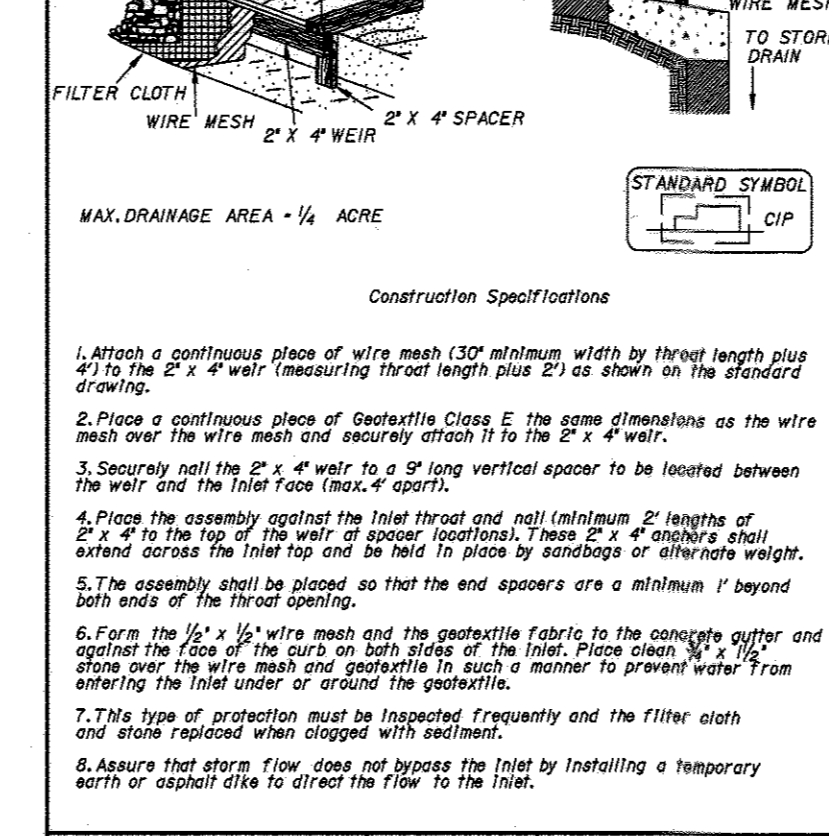
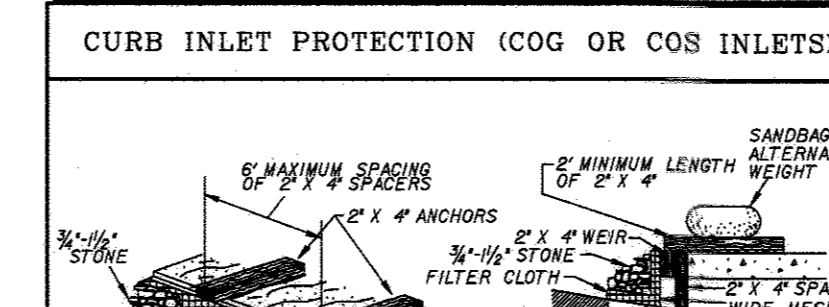
- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (SOS-880).
- ALL EROSION AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE "1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" AND REVISIONS THERETO
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-OBSTRUCTION, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
  - 7 CALENDAR DAYS FOR ALL PERMETER SEDIMENT CONTROL STRUCTURES, Dikes, Trenches, Slopes AND ALL SLOPES GREATER THAN 3:1
  - 14 DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE
- ALL SEDIMENT TRAP/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERMETER IN ACCORDANCE WITH VOL. 1 CHAPTER 12 OF THE HOWARD COUNTY DESIGN MANUAL, SLOPE DRAINAGE.
- ALL PERMITS ARE TO BE OBTAINED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE "1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" AND REVISIONS THERETO.
- TEMPORARY SEEDING AND MULCHING (SEE SECTION V) SHALL BE COMPLETED WITHIN 14 DAYS OF THE DATE THAT THE MULCH ALONE SHALL BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO BE MAINTAINED IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- NOTE:
  - AREA TO BE VEGETATIVELY STABILIZED: 0.10 ACRES
  - AREA TO BE ROUGHED OR FAVED: 185 ACRES
  - AREA TO BE VEGETATIVELY STABILIZED: 0.10 ACRES
  - TOTAL CUT: 5400 CY
  - TOTAL FILL: 1900 CY (INCLUDES 10% COMPACTION)
  - AREA TO BE VEGETATIVELY STABILIZED: 0.10 ACRES
  - TOTAL CUT: 5400 CY
  - TOTAL FILL: 1900 CY (INCLUDES 10% COMPACTION)
- 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 FEET LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.



### SILT FENCE

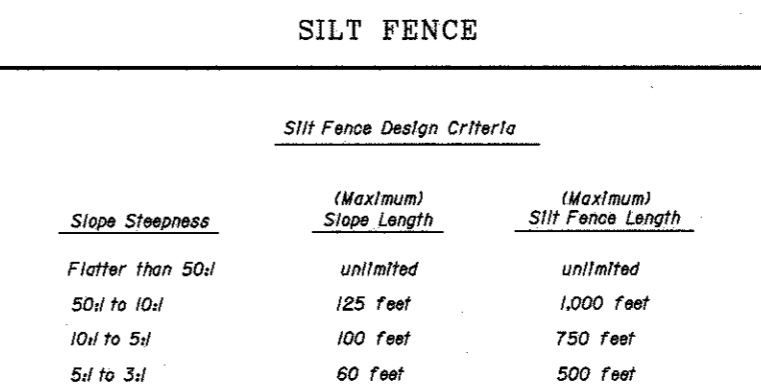
Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 Feet	1000 Feet
10:1 to 5:1	100 Feet	750 Feet
5:1 to 3:1	60 Feet	500 Feet
3:1 to 2:1	40 Feet	250 Feet
2:1 and steeper	20 Feet	125 Feet

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



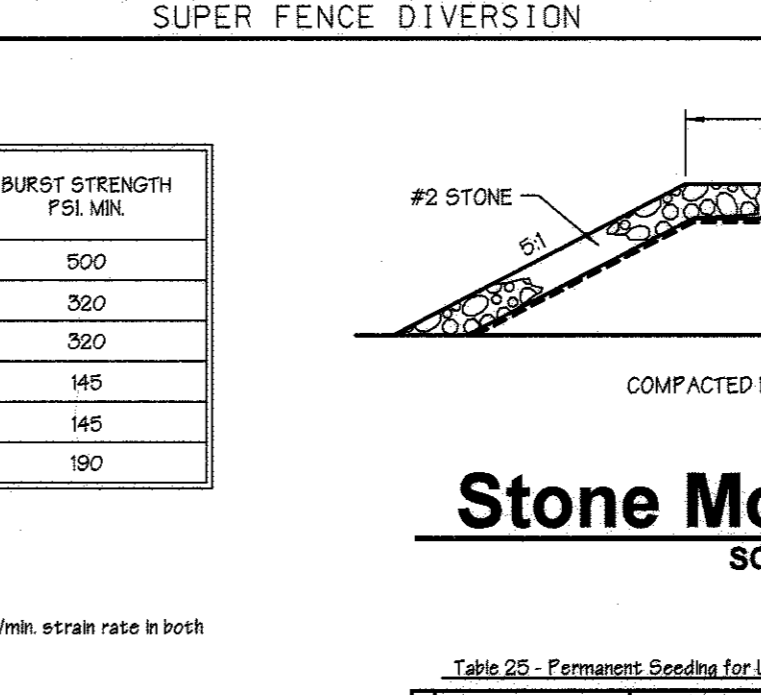
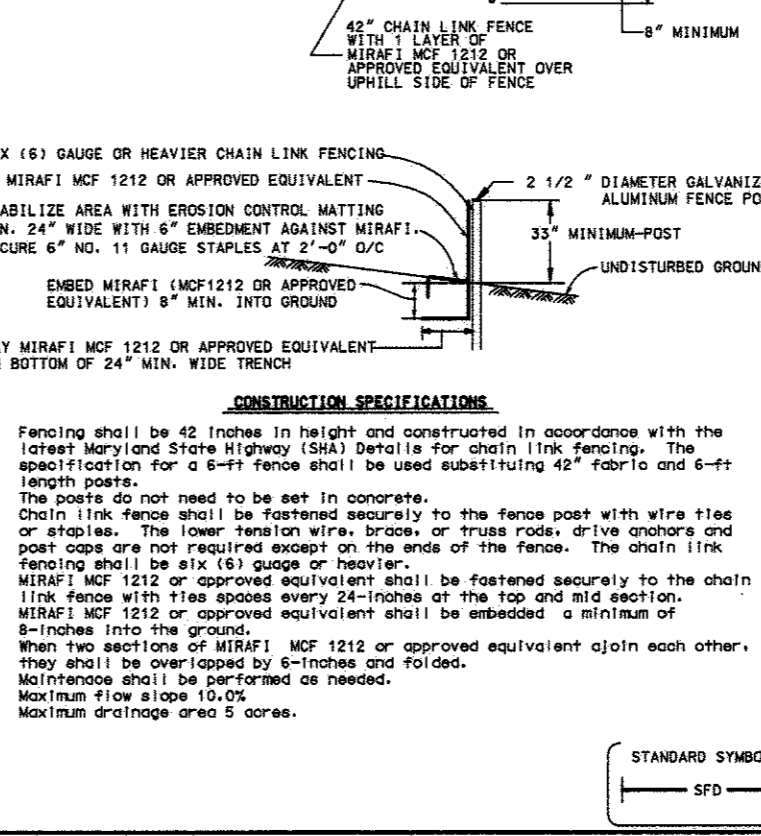
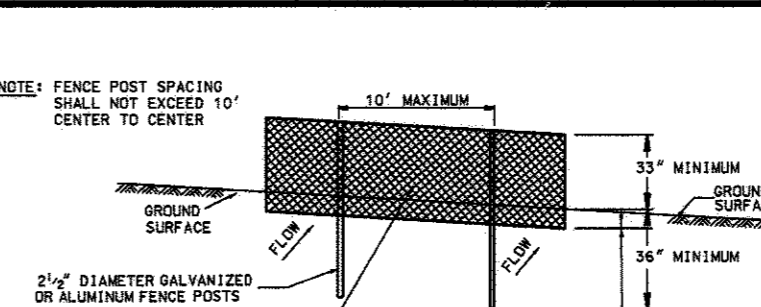
### Table 25 - Permanent Seeding for Low Maintenance Areas

PLANTING ZONE	PLANTING DATE	RECOMMENDED PLANTING DATES	SEEDING RATES		SEEDING RATES	
			PER ACRE	PER 1000 SQ. FT.	PER ACRE	PER 1000 SQ. FT.
1	10-20-20	10-20-20	100	100	100	100
2	10-20-20	10-20-20	100	100	100	100
3	10-20-20	10-20-20	100	100	100	100
4	10-20-20	10-20-20	100	100	100	100
5	10-20-20	10-20-20	100	100	100	100
6	10-20-20	10-20-20	100	100	100	100
7	10-20-20	10-20-20	100	100	100	100
8	10-20-20	10-20-20	100	100	100	100
9	10-20-20	10-20-20	100	100	100	100
10	10-20-20	10-20-20	100	100	100	100



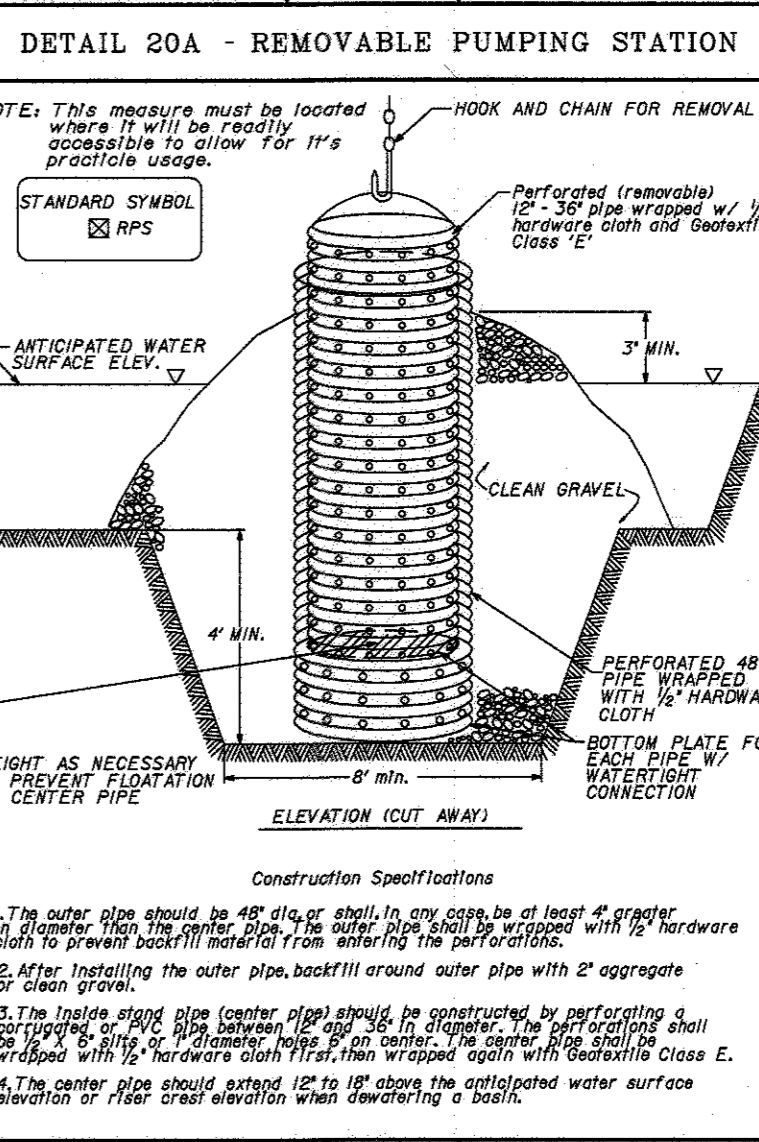
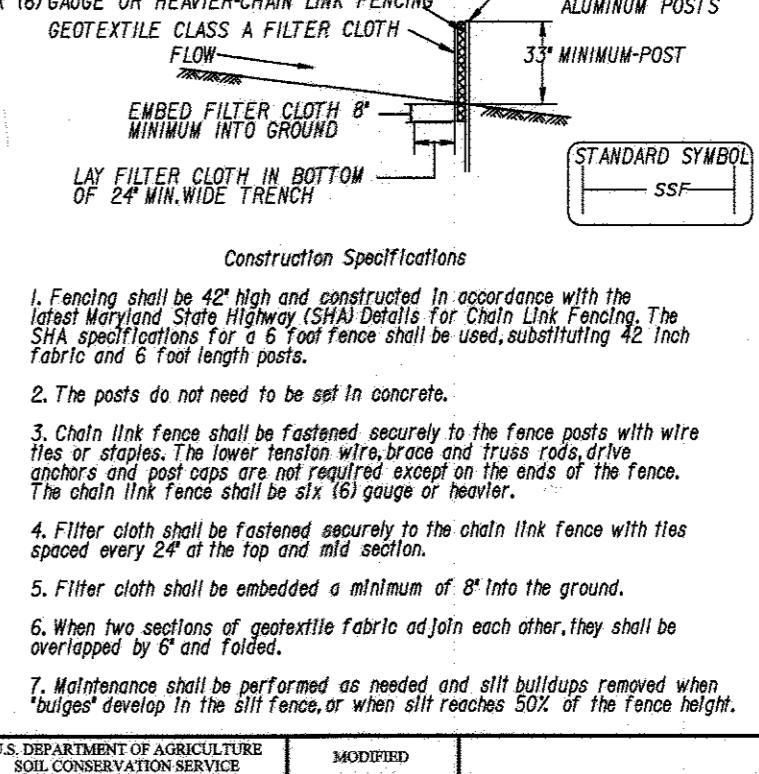
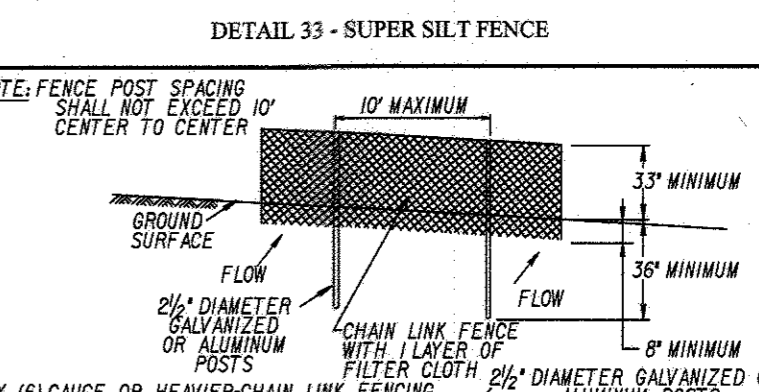
### SUPER SILT FENCE

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
0 - 10%	unlimited	unlimited
10 - 33%	104 - 54	200 Feet
20 - 33%	54 - 31	100 Feet
33 - 50%	31 - 21	100 Feet
50% +	21 - 1	50 Feet



### Table 26 - Temporary Seeding Rates, Depths, and Dates

SPECIES	MINIMUM SEEDING RATE PER ACRE	LBS. PER 1000 SQ. FT.	PLANTING DATE	PLANTING DATES		PLANTING DATES	
				10-20-20	10-20-20	10-20-20	10-20-20
GRASS ONLY	2.5	2.5	10-20-20	X	X	X	X
BARLEY	2.5	2.5	10-20-20	X	X	X	X
RYE	2.5	2.5	10-20-20	X	X	X	X
SWALEY OR RYE GRASS	80	80	10-20-20	X	X	X	X
HYDRIC LYONIA	4	4	10-20-20	X	X	X	X
ANNUAL RYEGRASS	50	50	10-20-20	X	X	X	X
MILLET	90	90	10-20-20	X	X	X	X



### Table 26 - Temporary Seeding Rates, Depths, and Dates

SPECIES	MINIMUM SEEDING RATE PER ACRE	LBS. PER 1000 SQ. FT.	PLANTING DATE	PLANTING DATES		PLANTING DATES	
				10-20-20	10-20-20	10-20-20	10-20-20
GRASS ONLY	2.5	2.5	10-20-20	X	X	X	X
BARLEY	2.5	2.5	10-20-20	X	X	X	X
RYE	2.5	2.5	10-20-20	X	X	X	X
SWALEY OR RYE GRASS	80	80	10-20-20	X	X	X	X
HYDRIC LYONIA	4	4	10-20-20	X	X	X	X
ANNUAL RYEGRASS	50	50	10-20-20	X	X	X	X
MILLET	90	90	10-20-20	X	X	X	X

### Fertilizer Rates

Fertilizer Rate (lb/1000)	Lime Rate (lb/1000)
600 (lb/1000)	2000 (lb/1000)
1000 (lb/1000)	3000 (lb/1000)

### Permanent Seeding

Fertilizer Rate (lb/1000)	Lime Rate (lb/1000)
100 (lb/1000)	3000 (lb/1000)
200 (lb/1000)	3000 (lb/1000)
300 (lb/1000)	3000 (lb/1000)

### ADDRESS CHART

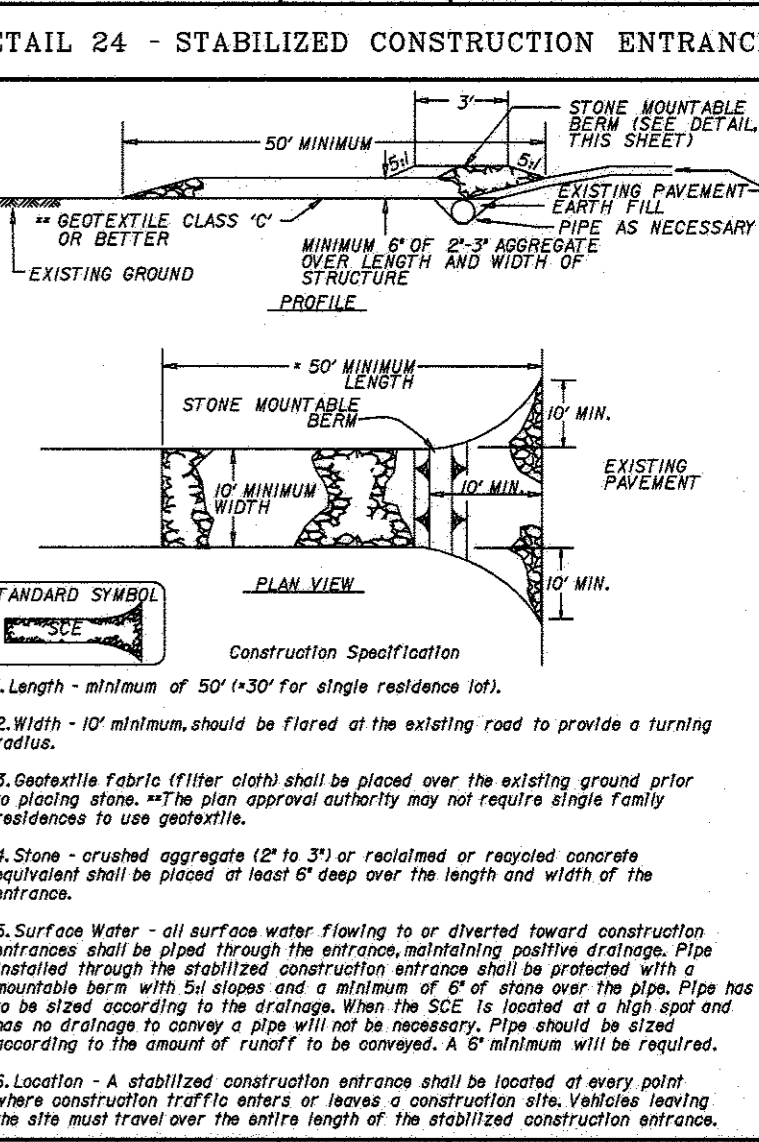
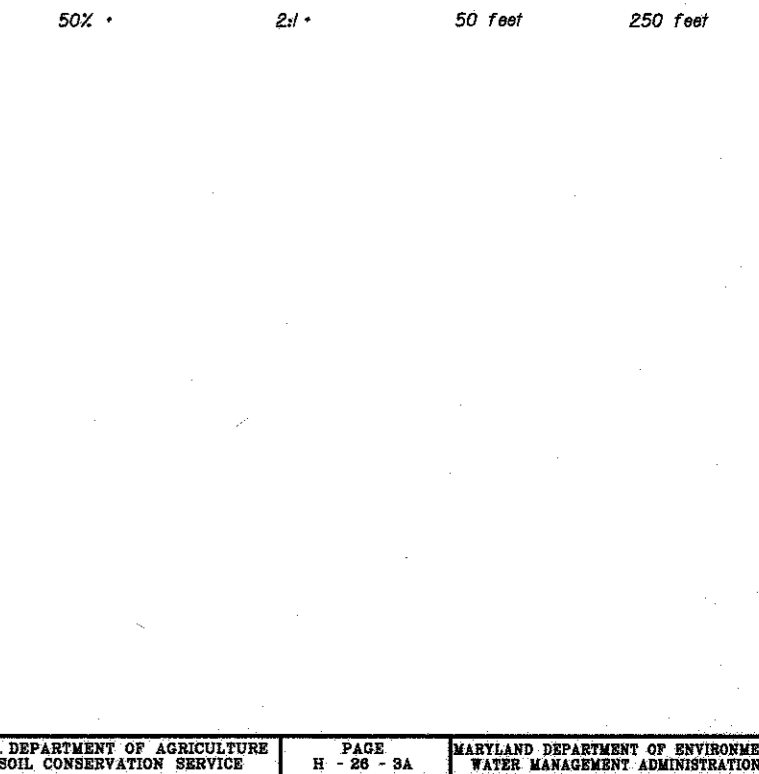
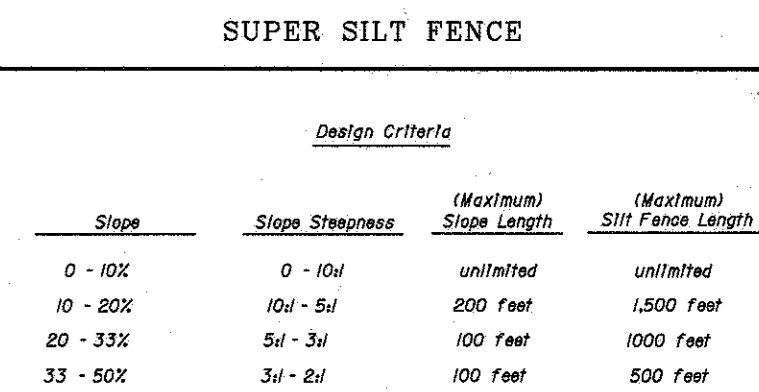
PARCEL NO.	STREET ADDRESS
A-4	10900 PUMP HOUSE ROAD BUILDING 'A'
A-4	10910 PUMP HOUSE ROAD BUILDING 'B'

### SUBDIVISION NAME

SECTION NAME	PARCEL
C - W & Company	N/A
	A-4

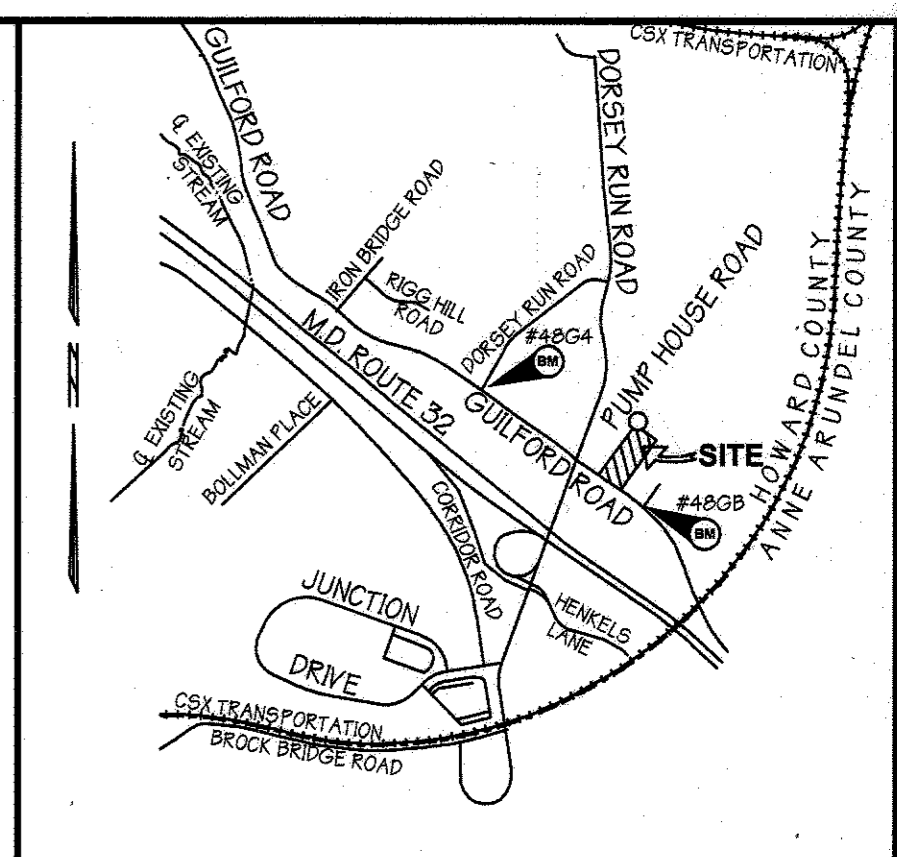
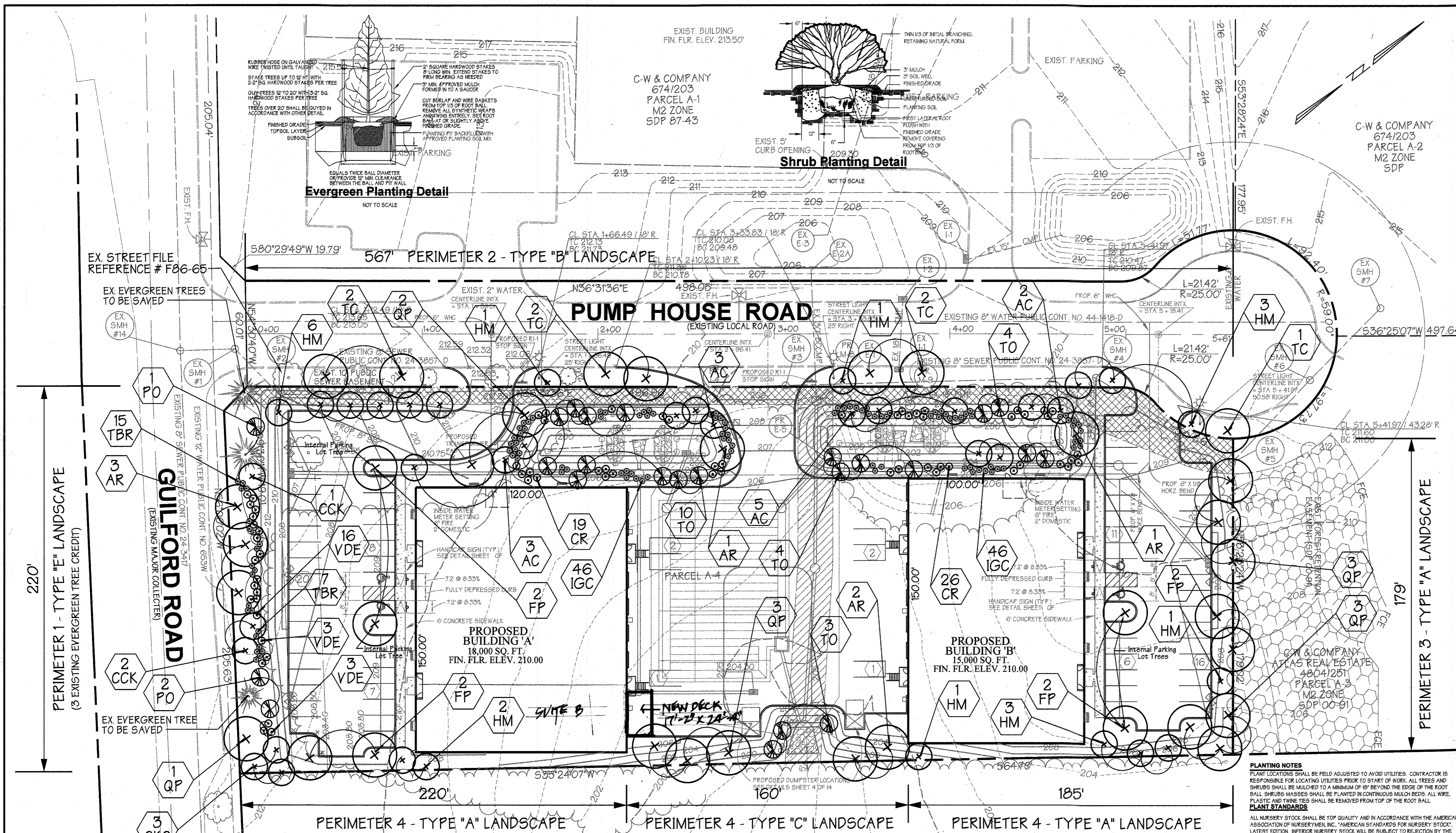
### PLAT # 15557, BLOCK # 14442, ZONE M-2, TAX MAP # 6, ELECT. DIST. 6, CENSUS TRACT # 6064

### WATER CODE B-02, SEWER CODE 4820000



### Table 26 - Temporary Seeding Rates, Depths, and Dates

SPECIES	MINIMUM SEEDING RATE PER ACRE	LBS. PER 1000 SQ. FT.	PLANTING DATE	PLANTING DATES		PLANTING DATES	
				10-20-20	10-20-20	10-20-20	10-20-20
GRASS ONLY	2.5	2.5	10-20-20	X	X	X	X
BARLEY	2.5	2.5	10-20-20	X	X	X	X
RYE	2.5	2.5	10-20-20	X	X	X	X
SWALEY OR RYE GRASS	80	80	10-20-20	X	X	X	X
HYDRIC LYONIA	4	4	10-20-20	X	X	X	X
ANNUAL RYEGRASS	50	50	10-20-20	X	X	X	X
MILLET	90	90	10-20-20	X	X	X	X



Vicinity Map  
SCALE: 1" = 2,000'

**Legend**

- Ex. 2' Contours
- Ex. 10' Contours
- Prop. 2' Contours
- Prop. 10' Contours
- Ex. Curb & Gutter
- Prop. Curb & Gutter
- Bldg. Restriction Line
- Ex. Sanitary
- Ex. Storm Drain
- Ex. Water
- Prop. Sanitary
- Prop. Storm Drain
- Prop. Water

**Plant Legend**

- EXISTING TREE
- PROPOSED MAJOR DECIDUOUS TREE
- PROPOSED MINOR DECIDUOUS TREE
- PROPOSED EVERGREEN TREE
- PROPOSED SHRUBS
- PROPOSED PERENNIALS
- EXISTING TREE TO BE SAVED

**DEVELOPER'S / BUILDER'S CERTIFICATION**

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.024 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION A CERTIFICATE OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

*Dan Hazard*  
NAME: DAN HAZARD  
DATE: 7/11/02

*DAN HAZARD*  
PRINT NAME

**PLANTING NOTES**  
PLANT LOCATIONS SHALL BE FIELD ADJUSTED TO AVOID UTILITIES. CONTRACTOR IS RESPONSIBLE FOR LOCATING UTILITIES PRIOR TO START OF WORK. ALL TREES AND SHRUBS SHALL BE MULCHED TO A MINIMUM OF 3" BEYOND THE EDGE OF THE ROOT BALL. SHRUBS MASSINGS SHALL BE PLANTED IN CONTINUOUS MULCH BEDS. ALL WIRE, PLASTIC AND TWINE TIES SHALL BE REMOVED FROM TOP OF THE ROOT BALL.

**PLANT STANDARDS**  
ALL NURSERY STOCK SHALL BE TOP QUALITY AND IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF NURSERYMEN INC. "AMERICAN STANDARDS FOR NURSERY STOCK". LATEST EDITION. INTERIOR NURSERY STOCK WILL BE SUBJECT TO REJECTION BY THE LANDSCAPE ARCHITECT. BARE ROOT SHALL NOT BE ALLOWED FOR ANY TREE DEFINED AS MAJOR DECIDUOUS, MINOR DECIDUOUS OR EVERGREEN.

**CHANGES MAY IMPACT REQUIRED CERTIFICATION**  
PLANT TYPES (DECIDUOUS TREES, EVERGREEN, ETC.), QUANTITIES, SPACING, LOCATION, AND SPECIES SHOWN ON THE AFFORSAID LANDSCAPE PLANS ARE BASED ON REQUIREMENTS STATED IN THE LATEST HOWARD COUNTY LANDSCAPE MANUAL. ANY CHANGE IN THESE ITEMS MAY AFFECT THE REQUIRED APPROVAL AND CERTIFICATION OF THE INSTALLED PLANTING. OWNER IS REQUIRED TO ARRANGE AND PAY FOR CERTIFICATION BY LANDSCAPE ARCHITECT.

**LANDSCAPE SPECIFICATIONS**  
LANDSCAPE SPECIFICATION SHALL CONFORM TO LCA LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREA, INCLUDING PLANTING PROCEDURES AND SOIL PREPARATION FOR SHRUBS AND PERENNIAL BEDS. A ONE-YEAR WARRANTY PERIOD SHALL BE REQUIRED. MAINTENANCE REQUIRED TO HONOR THE ONE-YEAR WARRANTY SHALL BE PERFORMED AS PART OF THIS CONTRACT.

**SPECIAL PROVISIONS TO LCA STANDARD SPECIFICATIONS**  
CONTRACTOR IS ENCOURAGED TO PERFORM SOIL TESTING. TEST RESULTS SHALL BE SUBMITTED 30 DAYS BEFORE PLANTING. FAILURE TO PERFORM TESTING WILL NOT VOID GUARANTEE PROVISIONS.

CONTRACTOR SHALL REVIEW AND TEST SUBSOIL DRAINAGE CHARACTERISTICS 30 DAYS PRIOR TO PLANTING AND NOTIFY OWNER UNACCEPTABLE CONDITIONS.

NO EXCEPTIONS TO THE GUARANTEE PROVISIONS ARE ALLOWED UNLESS AGREED TO IN WRITING PRIOR TO PLANTING.

ADDRESS CHART	
PARCEL NO.	STREET ADDRESS
A-4	10900 PUMP HOUSE ROAD BUILDING 'A'
A-4	10910 PUMP HOUSE ROAD BUILDING 'B'
SUBDIVISION NAME	SECTION NAME
C - W & Company	N/A
PLAT # 5557	BLOCK # 1442
ZONE M-2	TAX MAP 6
WATER CODE B-02	ELECT. DIST. 6
	CENSUS TRACT 6064
	SEWER CODE 4020000

**Landscape Plan**  
**C - W & COMPANY**  
**PARCEL A-4**  
ELECTION DISTRICT: 6th  
HOWARD CO., MARYLAND 13 OF 14  
SDP 02 - 091  
SCALE: As Shown  
DATE: JANUARY 21, 2002

**PLAN**  
SCALE: 1" = 30'

**SCHEDULE B**  
**PARKING LOT INTERNAL LANDSCAPING**

Number of Parking Spaces	74
Number of Islands Required	4
Number of Trees Required	4
Number of Islands Provided	4
Number of Shade Trees Provided	4

**SCHEDULE A**  
**PERIMETER LANDSCAPE EDGE**

Landscape Type	ROADWAYS		PERIMETER PROPERTIES	
	B	E	A	C
Linear Feet of Perimeter 1	0	220	0	0
Linear Feet of Perimeter 2	567	0	0	0
Linear Feet of Perimeter 3	0	0	179	0
Linear Feet of Perimeter 4	0	0	405	160

**CREDIT FOR EXISTING VEGETATION**

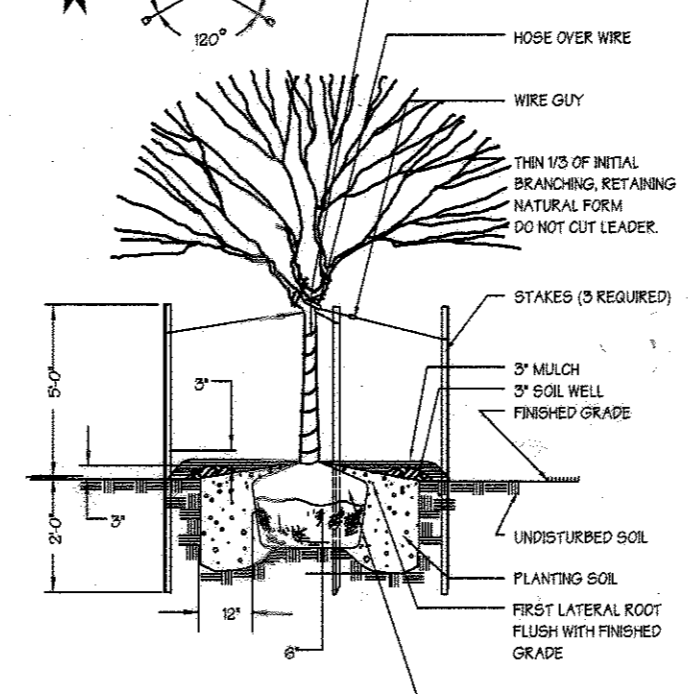
Number of Plants	NO	NO	NO	NO
Number of Trees	NO	NO	NO	NO
Number of Shrubs	NO	NO	NO	NO

**STORMWATER MANAGEMENT AREA LANDSCAPING**

Linear Feet of Perimeters	622'
Number of Trees Required	13
Number of Shrubs Required	16
Credits for Existing Vegetation (No. Yes and %)	NO
Credits for Other Landscaping (No. Yes and %)	NO
Number of Trees Provided	0
Number of Shrubs Provided	12
Shrubs (10% substitution)	137

NOTES: \* 3 EXISTING EVERGREENS TO BE CREDITED FOR 15 SHRUBS.  
PERIMETER PLANT SUBSTITUTIONS (SCHEDULE A):  
PERIMETER 2: 14 OTHER TREES SUBSTITUTED FOR 7 SHADE TREES AND 2 OTHER TREES SUBSTITUTED FOR 2 EVERGREEN TREES. FOUR OTHER TREES TO BE PLANTED ALONG PERIMETER 2 IN LIEU OF THE 4 ADDITIONAL EVERGREEN TREES REQUIRED FOR PERIMETER 2.  
PERIMETER 3: 5 EVERGREEN TREES AND 1 OTHER TREE SUBSTITUTED FOR 2 SHADE TREES.  
PERIMETER 4: 1 SHADE TREE SUBSTITUTED FOR 2 EVERGREEN TREES. 3 OTHER TREES TO BE PLANTED ALONG PERIMETER 4 IN LIEU OF THE 3 ADDITIONAL EVERGREEN TREES REQUIRED FOR PERIMETER 4.

**Tree Planting Detail**  
NOT TO SCALE



**STREET TREE REQUIREMENT**

Pump House Road  
360 Linear Feet Without Existing Street Trees  
9 Additional Street Trees Required  
7 Major Trees and 4 Minor Trees Proposed

NOTE: THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BIRDS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

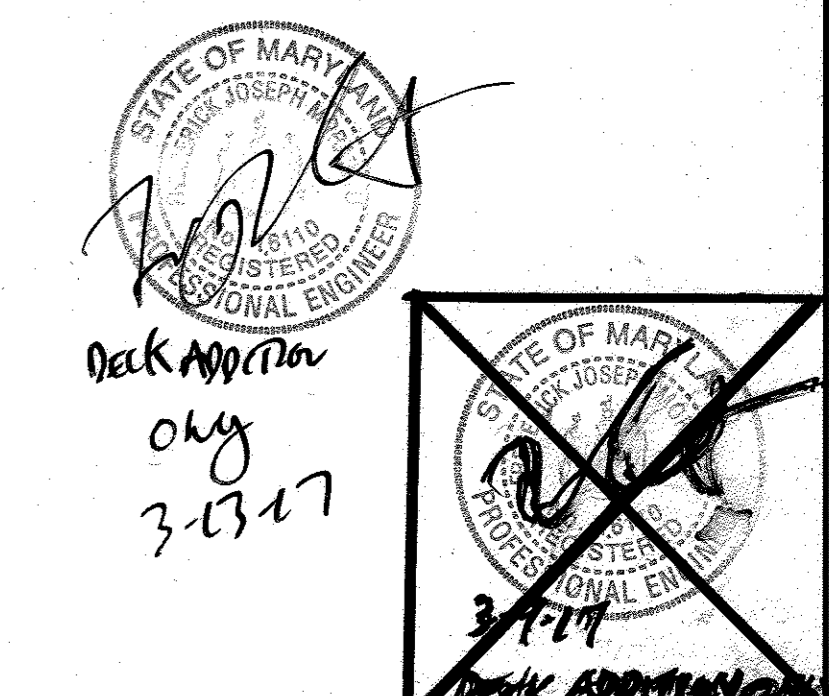
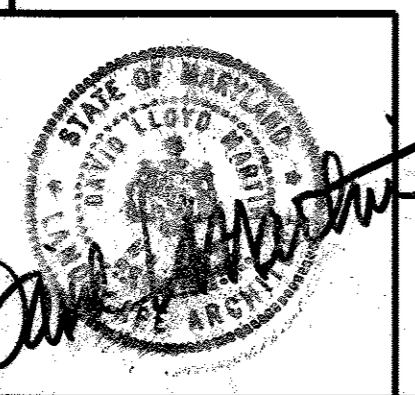
**PLANT SCHEDULE**

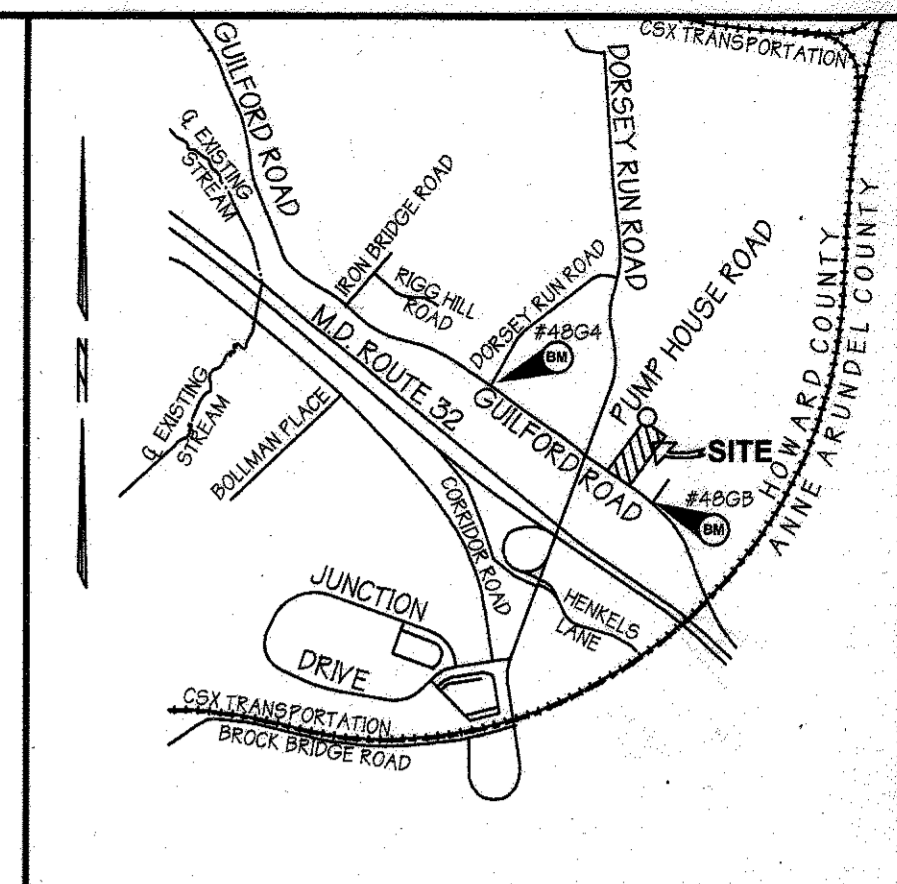
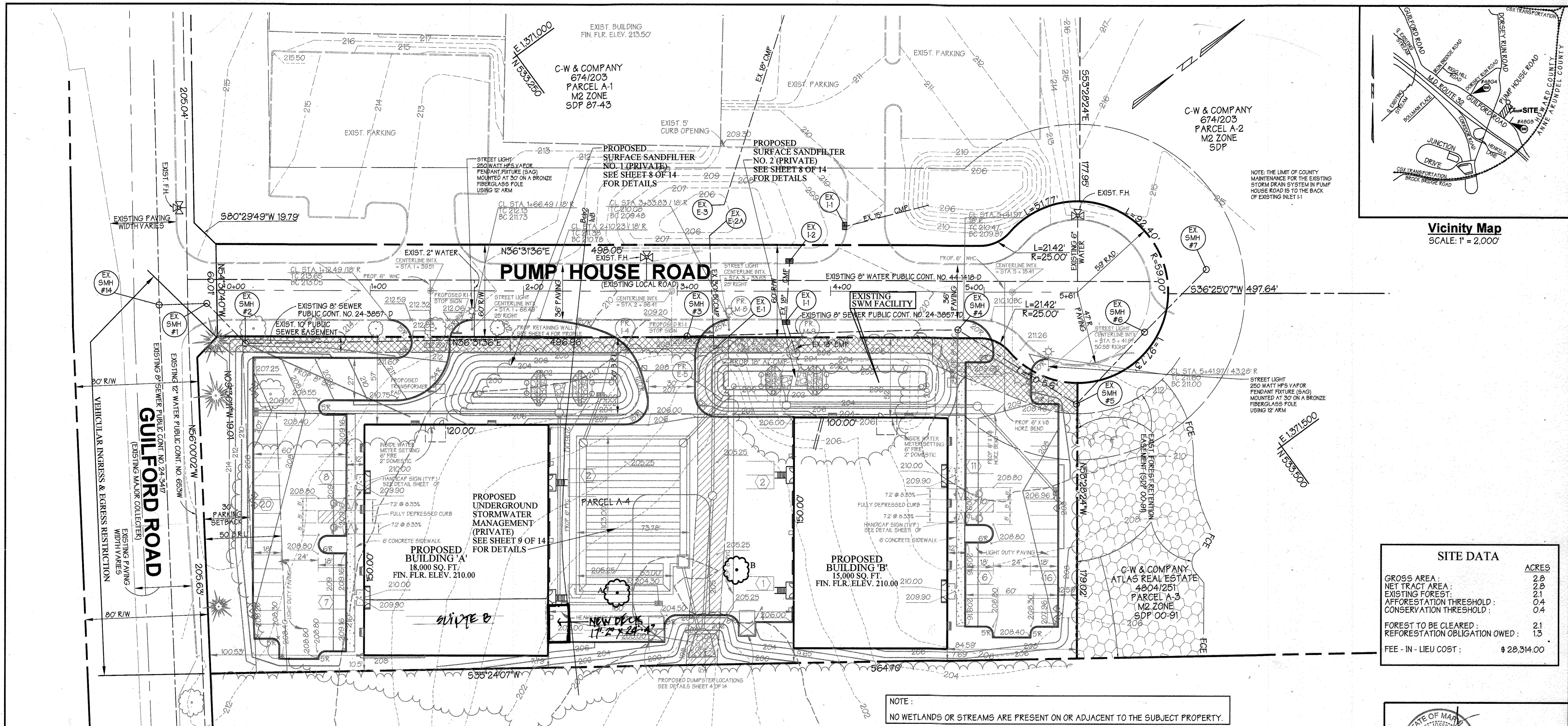
KEY	QUANT	BOTANICAL NAME / COMMON NAME	SIZE / COND.	SPACING	REMARKS
<b>SHADE TREES</b>					
QP	12	Quercus palustris / Pin Oak	2 1/2 - 3' B&B	As Shown	Full Crown
FP	8	Fraxinus pennsylvanica / Patmore / Patmore Green Ash	2 1/2 - 3' B&B	As Shown	Full Crown
AR	7	Acer rubrum / Red Sunset / Red Sunset Maple	2 1/2 - 3' B&B	As Shown	Full Crown
TC	7	Tilia cordata / Little Leaf Linden	2 1/2 - 3' B&B	As Shown	Full Crown
<b>MINOR TREES / EVERGREENS</b>					
FO	3	Phlox amurensis / Bethan Spruce	6 - 8' B&B	As Shown	Heavy
TO	21	Thuja occidentalis / Nigra / American Arborvitae Nigra	6 - 8' B&B	As Shown	Heavy
HM	19	Acer campestre / Hedge Maple	1 3/4 - 2' B&B	As Shown	Full Crown
AC	13	Amelanchier canadensis / Serviceberry	6 - 8' B&B	Multi-Stem	Full
CKC	6	Cornus chinensis / Kousa / Kousa Dogwood	1 3/4 - 2' B&B	As Shown	Full Crown
<b>SHRUBS</b>					
TBR	22	Taxus baccata 'Repandens' / Spreading English Yew	24 - 30" spd. B&B	As Shown	Heavy
CR	45	Cornus racemosa / Grey Dogwood	4 - 6' B&B	As Shown	Heavy
IGC	92	Ilex glabra compacta / Compact Inkberry	30 - 36" B&B	As Shown	Heavy
VDE	22	Viburnum distictum / Erie / Erie Linden Viburnum	4 - 6' B&B	As Shown	Heavy

NOTES: \* 3 EXISTING EVERGREENS TO BE CREDITED FOR 15 SHRUBS.  
PERIMETER PLANT SUBSTITUTIONS (SCHEDULE A):  
PERIMETER 2: 14 OTHER TREES SUBSTITUTED FOR 7 SHADE TREES AND 2 OTHER TREES SUBSTITUTED FOR 2 EVERGREEN TREES. FOUR OTHER TREES TO BE PLANTED ALONG PERIMETER 2 IN LIEU OF THE 4 ADDITIONAL EVERGREEN TREES REQUIRED FOR PERIMETER 2.  
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APPROVED: Howard County Department of Planning and Zoning  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 10/30/02  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 11/7/02

PREPARED BY:  
**GEORGE W. STEPHENS, JR.**  
**AND ASSOCIATES, INC.**  
Civil Engineers and Land Surveyors  
1020 Cromwell Bridge Road  
Towson, Maryland 21286  
(410) 825-8120





Vicinity Map  
SCALE: 1" = 2,000'

**SITE DATA**

	ACRES
GROSS AREA:	2.8
NET TRACT AREA:	2.8
EXISTING FOREST:	2.1
AFFORESTATION THRESHOLD:	0.4
CONSERVATION THRESHOLD:	0.4
FOREST TO BE CLEARED:	2.1
REFORESTATION OBLIGATION OWED:	1.3
FEE-IN-LIEU COST:	\$ 28,314.00

NOTE:  
NO WETLANDS OR STREAMS ARE PRESENT ON OR ADJACENT TO THE SUBJECT PROPERTY.

PLAN  
SCALE: 1" = 30'

- NOTES:
1. NO RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED ON THE PROPERTY.
  2. SOIL LOCATIONS APPROXIMATED FROM HOWARD COUNTY SOIL SURVEY.
  3. SURROUNDING LAND USE IS COMMERCIAL AND INDUSTRIAL.
  4. ALL FOREST ON THE SITE IS WITHIN STAND F-1.

**SPECIMEN TREES**

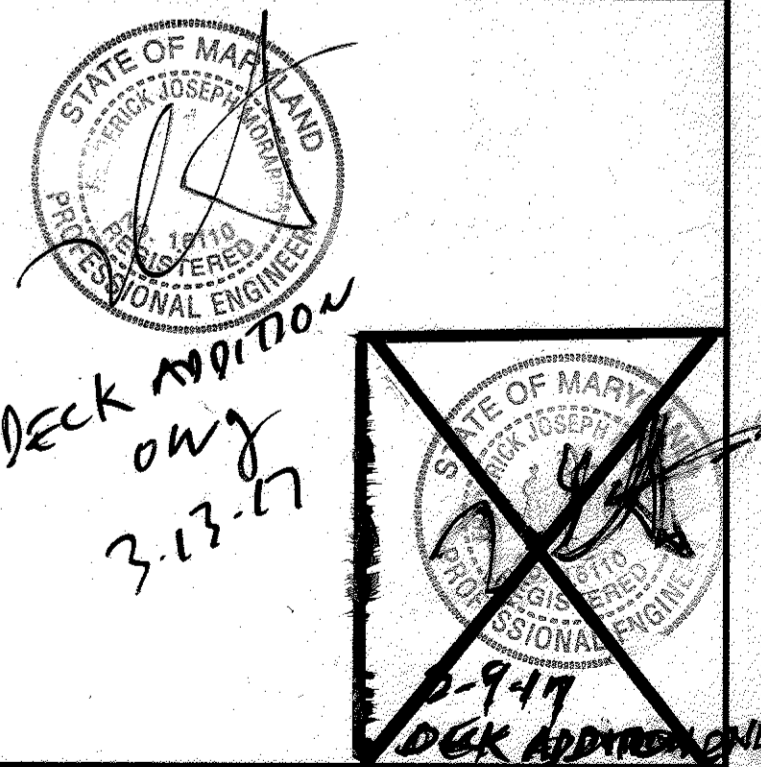
KEY	DESCRIPTION
A	TULIP POPLAR, 32" DBH - GOOD CONDITION THOUGH CROWN SPREAD IS FAIR
B	TULIP POPLAR, 34" DBH - GOOD CONDITION

**FOREST STAND DATA**

KEY	COMMUNITY TYPE	ACREAGE (NTA)	DOMINANT VEGETATION	GENERAL CONDITION	PRIORITY ACREAGE
F1	SUCCESIONAL	2.1	Pinus virginiana, Acer rubrum, Liriodendron tulipifera, Prunus serotina, Smilax sp., Rosa multiflora	FAIR	0

SEE ACCOMPANYING REPORT FOR COMPLETE STAND DESCRIPTIONS

- Legend**
- EXISTING CONTOURS
  - EXISTING FOREST LIMITS
  - A OR B SPECIMEN TREES - TO BE CLEARED



APPROVED: Howard County Department of Planning and Zoning  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DIRECTOR

PREPARED BY:  
**GEORGE W. STEPHENS, JR. AND ASSOCIATES, INC.**  
 Civil Engineers and Land Surveyors  
 1020 Cromwell Bridge Road  
 Towson, Maryland 21286  
 (410) 825-8120

**Eco-Science Professionals, Inc.**  
 CONSULTING ECOLOGISTS  
 P.O. Box 5006 Glen Azm, MD 21057 (410) 592-6752

MD DNR Qualified Professional  
 USACOE Wetlands Delineator  
 Certification # WDCE93MD0610044B2  
 John P. Canoles

OWNER / DEVELOPER  
**CAPITAL INVESTMENT PROPERTIES, LLC**  
 7175 A OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046  
 410-309-9848

DESIGNED BY: P.R.C.  
 DRAWN BY: K.E.  
 CHECKED BY: P.R.C.  
 REVISIONS  
 APPROVED NEW DECK AT BUILDING A SITE BY HOWARD COUNTY DATE: 03/18/17

**Forest Stand Delineation & Forest Conservation Plan**  
**C - W & COMPANY**  
**PARCEL A-4**  
 ELECTION DISTRICT: 6th HOWARD CO., MARYLAND  
 14 OF 14 DATE: JANUARY 21, 2002  
 SDP 02 - 091  
 SCALE: As Shown  
 P/N: 8952