Construction Notes & General Notes

1. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST 24 HOURS PRIOR TO STARTING ANY OF THE WORK SHOWN HEREON.
2. ALL AREAS NOT BEING PAVED OR RECEIVING BUILDING COVERAGE SHALL BE STABILIZED IN ACCORDANCE WITH THE PLANS APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT.
3. 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.
4. CONTRACTOR SHALL MEET ALL EXISTING IMPROVEMENTS SMOOTHLY FOR LINE, GRADE AND FINISH.
5. 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.
6. 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.
7. 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.
8. 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.
9. CONTRACTOR SHALL PROTECT ALL EXISTING TREES OUTSIDE THE LIMIT OF DISTURBANCE AT ALL TIMES DURING CONSTRUCTION.
10. 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.
11. THE CONTRACTOR SHALL CLEAR THE PROJECT SITE OF ALL TREES, PAVING, STRUCTURES, ETC. WITHIN THE CONSTRUCTION AREA UNLESS OTHERWISE NOTED ON THE PLAN.
12. 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.
13. 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).
14. MAXIMUM SLOPE SHALL BE 2 HORIZONTALLY TO 1 VERTICALLY.
15. CONTRACTOR SHALL PLACE 4" MINIMUM TOPSOIL IN LANDSCAPE AREAS.
16. CONTRACTOR SHALL PLACE A WITNESS POST AT THE TERMINUS OF ALL UTILITY STUBS.
17. CONTRACTOR SHALL PROVIDE A MINIMUM OF 1 FOOT OF PROTECTIVE FILL OVER STORM DRAIN PIPES DURING CONSTRUCTION.
18. 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.
19. 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.
20. 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.
21. WHERE FILL IS PROPOSED WITH IN THE ROAD RIGHT-OF-WAY, THE FILL SHALL BE A MINIMUM OF TWO (2) FEET BELOW THE FINAL ROAD SUBGRADE.
22. ALL LIGHTING TO COMPLY WITH ZONING REGULATION SPECIFICATIONS SECTION 134 OUTDOOR LIGHTING.
23. ALL STORM DRAINS TO BE RCCP OR HDPE UNLESS OTERWISE NOTED.
24. 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.
25. THERE ARE NO CEMETERIES OR BURIAL GROUND LOCATED ON THIS SITE.
26. 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.
27. PREVIOUS FILES RELATED TO THIS PROPERTY ARE F 86-65, F 00-177.
28. 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.
29. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
30. THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY GEORGE W. STEPHENS JR. & ASSOC. DATED 1/21/02 TO 1/25/02.
31. 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 NO'S. 48G4 AND 48GB WERE USED FOR THIS PROJECT.
32. WATER IS PRIVATE.
33. SEWER IS PRIVATE.
34. 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.
35. THERE ARE NO FLOODPLAINS ON THIS SITE.
36. THERE ARE NO WETLANDS ON THIS SITE AS CERTIFIED BY ECO-SCIENCE PROFESSIONALS, INC.
37. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY TRAFFIC CONCEPTS DATED MAY 09, 2002 AND WAS APPROVED JULY 2002.
38. 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.
39. 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

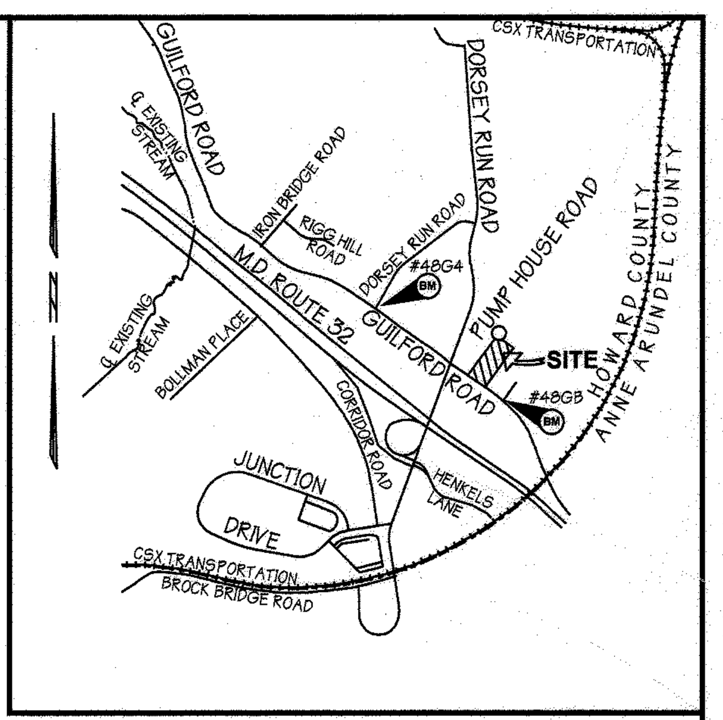
1. TOTAL AREA PARCEL 'A-4' = 120,478.248 SQ.FT. OR 2.7658 AC. +/-
2. EXISTING ZONING = M-2
3. PROPERTY REFERENCE = LIBER 6037 FOLIO 0296
4. EXISTING USE = VACANT
5. PROPOSED USE = TWO NEW OFFICE AND WAREHOUSE BUILDINGS
6. BUILDING COVERAGE = 33,000 SQ. FT. OR 0.76 AC.
7. % OF BUILDING COVERAGE = 27.39%
8. FLOOR AREA = 33,000 S.F. OR 0.76 AC.
9. FLOOR AREA RATIO = 27.39%
10. AREA TO BE PAVED PLUS BUILDING AREA = 80,929 SQ. FT. OR 1.85 AC.
11. OPEN SPACE = 0.00
12. TOTAL AREA OF PARKING LOT = 45,779 SQ. FT. OR 1.05 AC.
13. % OF PARKING LOT COVERAGE= 37.99 %
14. NUMBER OF PARKING SPACES REQUIRED = 55
15. NUMBER OF PARKING SPACES PROVIDED = 74 INCLUDING 4 HANDICAPPED
16. AREA TO BE DISTURBED= 117,612 SQ. FT. OR 2.70 AC.
17. 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

(2) TOTAL BUILDING AREA
BULIDING 'A' (2)
40% OFFICE /MEZZANINE = 7644 SQ. FT.
60% WAREHOUSE = 11,465 SQ. FT.
TOTAL = 19,109 SQ. FT.

BUILDING 'B'
40% OFFICE = 6000 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 (2)
60% WAREHOUSE= 11,465 SQ. FT. @ 0.5 SPACES/1,000 = 6 SPACES (2)

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)

(3) REVISED PARKING, PROVIDED COUNT TO 72 SPACES PER ADDING RAMP TO REAR OF BUILDING 'B.' BY G.W. S. DATED 10/24/03

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

STATE OF MARYLAND — PROFESSIONAL ENGINEER — REGISTERED No. 11005
7/1/02

NOTE:
The owner shall provide a separate and independent sewer connection for each tenant or occupant 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
(2) ADDED MEZZANINE LEVEL TO BLDG.'A' REVISED BLDG. SQUARE FOOTAGE AND PARKING TABULATION ACCORDINGLY BY GWS DATED 7/14/03

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 /ZONE MAP	ELECT. DIST.	CENSUS TRACT
15557, 14442		M-2	48	6	6064

WATER CODE B-02 | SEWER CODE 4020000

Cover Sheet

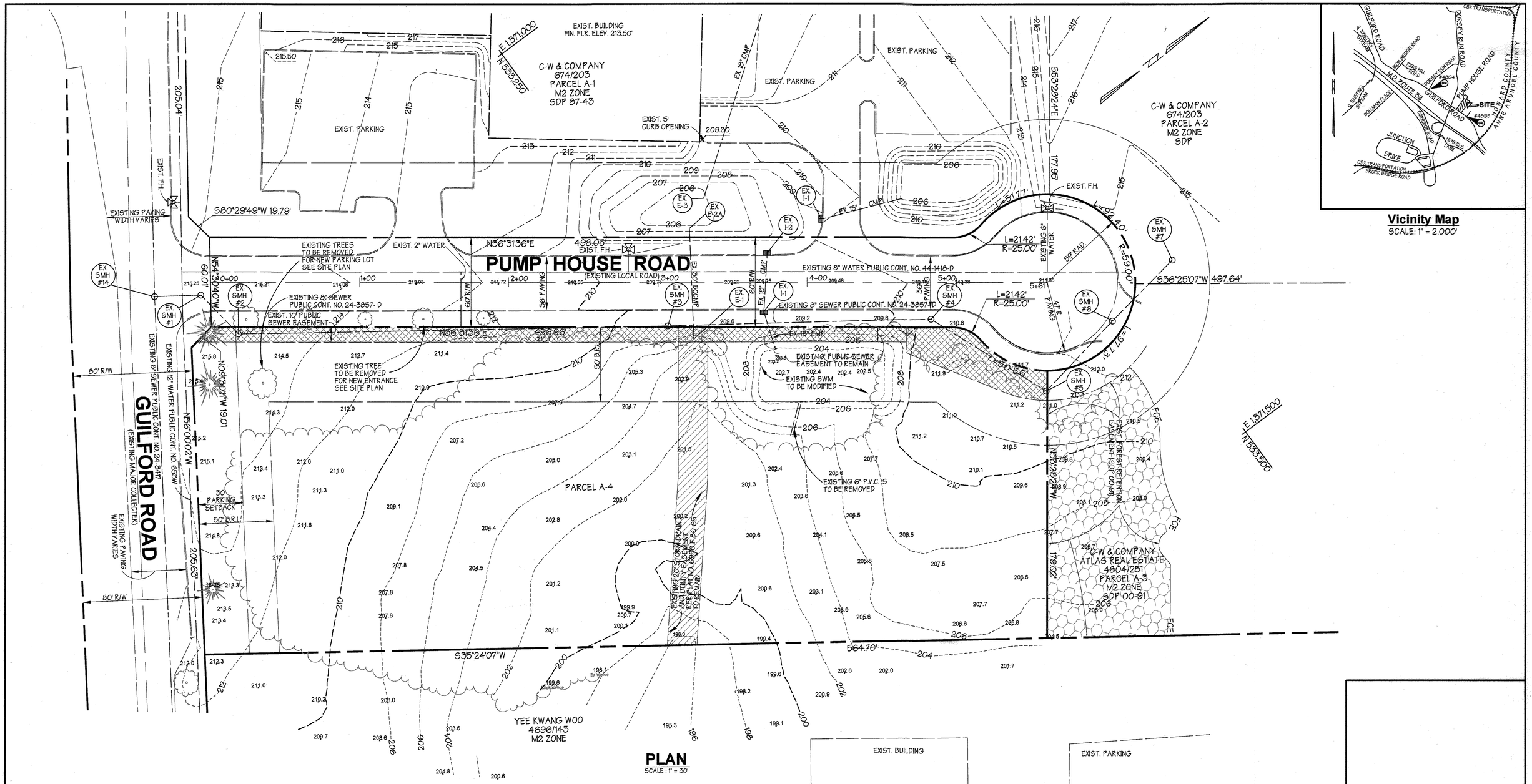
C - W & COMPANY
PARCEL A-4

ELECTION DISTRICT : 6th
HOWARD CO., MARYLAND SHT. 1 OF 14 DATE : JANUARY 21, 2002
SDP 02 - 091
SCALE : As Shown

AS BUILT - DEC. 21. 2004

SDP 02 - 091

P/N : 9852 File Name : 9852coversheet.s01



PLAN
SCALE : 1" = 30'

Vicinity Map
SCALE: 1" = 2,000'

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

STATE OF MARYLAND — GEORGE WILLIAM STEPHENS, JR. — No. 11005 — REGISTERED PROFESSIONAL ENGINEER — 7/1/02

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 #: 15557, 14442	BLOCK #:	ZONE: M-2	TAX MAP: 48 / ZONE	ELECT. DIST.: 6	CENSUS TRACT: 6064
WATER CODE: B-02			SEWER CODE: 4020000		

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

Existing Conditions Plan
C - W & COMPANY PARCEL A-4

ELECTION DISTRICT : 6th
HOWARD CO., MARYLAND

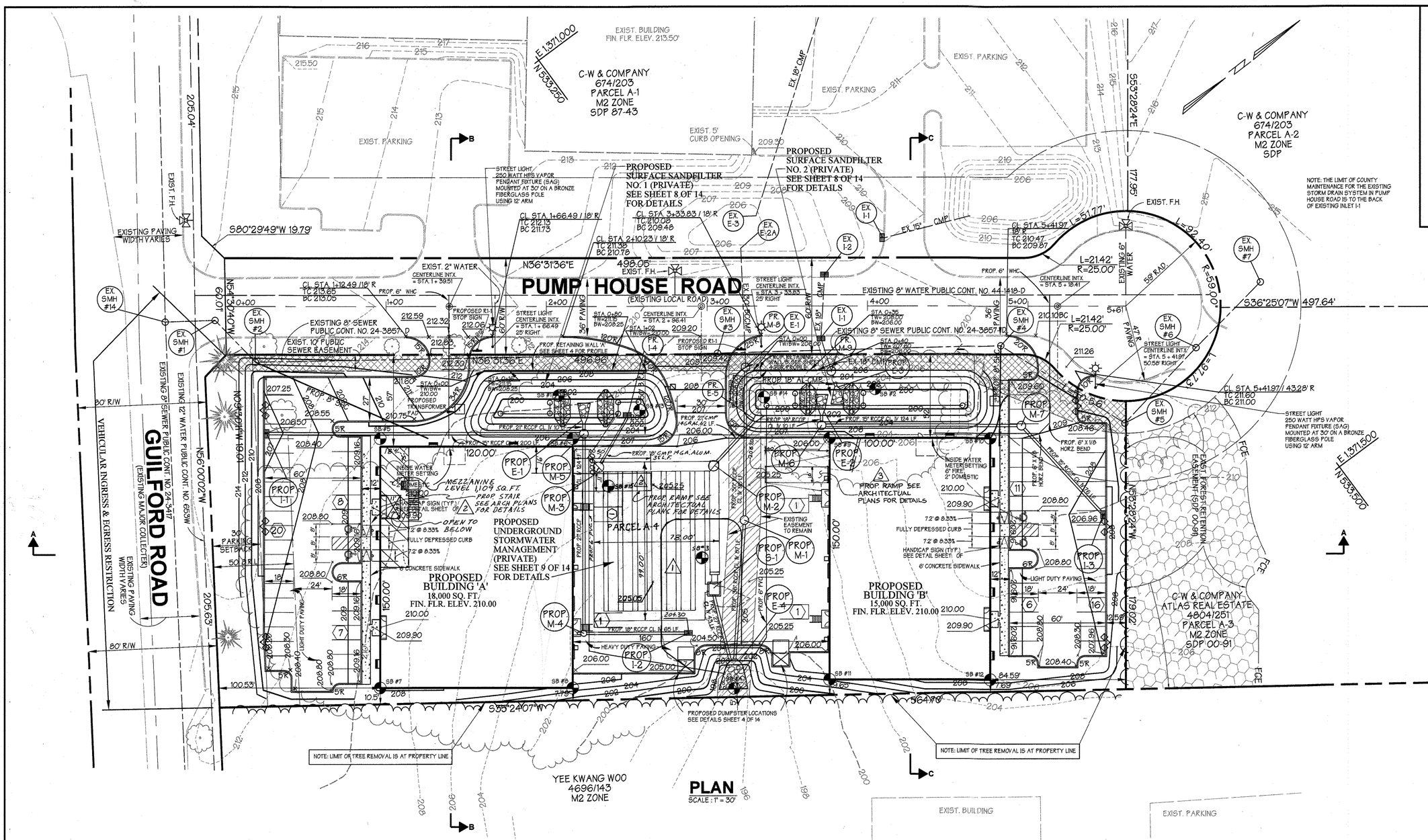
2 OF 14

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

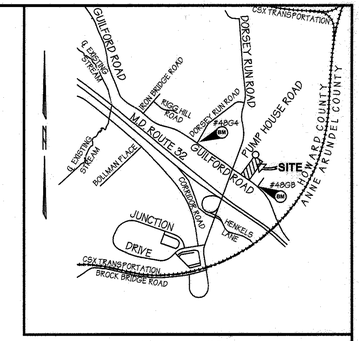
AS BUILT 12.21.2004

SDP 02 - 091

F/N : 9852



PLAN
SCALE : 1" = 30'



Vicinity Map
SCALE: 1" = 2,000'

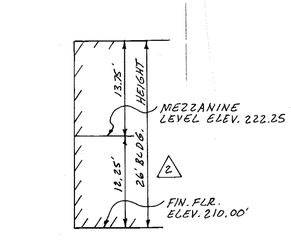
Lighting Legend

- 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. #VR3-III-250-MH-480-2-90-DBM
  POLE: SQUARE STRIGHT STEEL 22'-6" HIGH ON 2'-6"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. #VR3-III-250-MH-480-DBM
  POLE: SQUARE STRIGHT STEEL 22'-6" HIGH ON 2'-6"CONCRETE BASE, DARK BRONZE POLYESTER POWER COAT FINISH.
- T — TRANSFORMER LOCATION
- 250W METAL HALIDE WALL MOUNTED CUT-OFF FIXTURE, HORIZONTAL LAMP, ALUMINUM HOUSING, HINGED ALUMINUM DOOR, CLEAR TEMPERED GLASS LENS, ONE PIECE SPECULAR REFLECTOR POLYESTER POWER COAT FINISH DARK BRONZE. HUBBLE CAT. #MH3-025H-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. #SPKM250MH-WM-BRZ

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

Legend

- Ex. 2' Contours
- Ex. 10' Contours
- Prop. 2' Contours (222)
- Prop. 10' Contours (220)
- 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 (LIGHT DUTY PAVING)
- Prop. Parking Count (16)
- Prop. Handicapped Parking Space
- Existing Public Sewer Easement
- Existing Easement to Remain



MEZZANINE HEIGHT PROFILE
BUILDING 'A'
N.T.S.

3 ADDED RAMP TO REAR OF BUILDING 'B' AND REMOVED ONE PARKING SPACE. BY GWS. DATED 10/24/03

2 ADDED MEZZANE LEVEL AND RAMP AT REAR OF BUILDING 'A' BY GWS DATED 7/14/03

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

STATE OF MARYLAND — JOHN BARRY STEPHENS — No. 11005 — REGISTERED PROFESSIONAL ENGINEER — 7/1/02

ADDRESS CHART	
PARCEL NO.	STREET ADDRESS
A-4	10900 PUMP HOUSE ROAD BUILDING 'A'
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SUBDIVISION NAME	SECTION NAME	PARCEL #
C - W & Company	N/A	A-4

PLAT #	BLOCK #	ZONE	TAX MAP	ELECT. DIST.	CENSUS TRACT
15557, 14442		M-2	48	6	6064

WATER CODE B-02 SEWER CODE 4020000

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 SWM LAYOUT AND PIPE SIZE BY G.W.S. DATED 02/10/03

Site Plan
C - W & COMPANY PARCEL A-4

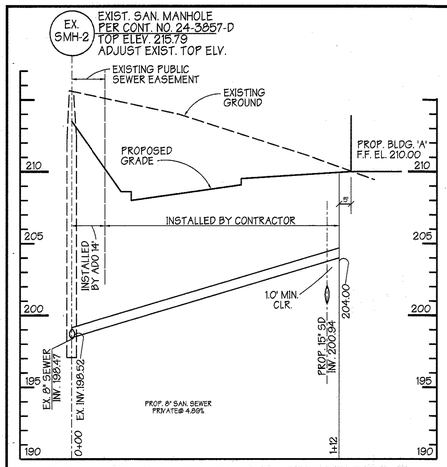
ELECTION DISTRICT : 6th
HOWARD CO., MARYLAND

SDP 02 - 091
SCALE : As Shown
3 OF 14
DATE : JANUARY 21, 2002

AS BUILT 12.21.2004

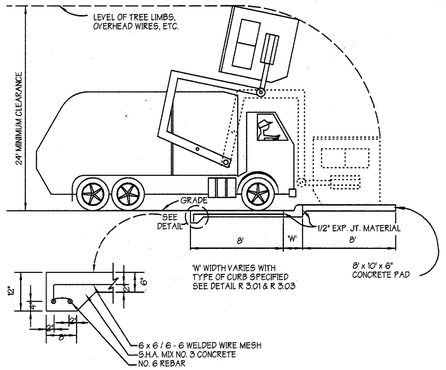
SDP 02 - 091

P/N : 9852



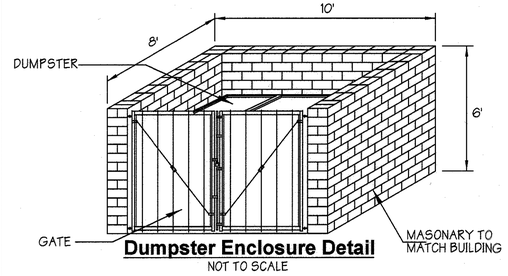
PRIVATE SANITARY SEWER PROFILE

SCALE: HORZ. 1" = 30'
VERT. 1" = 5'



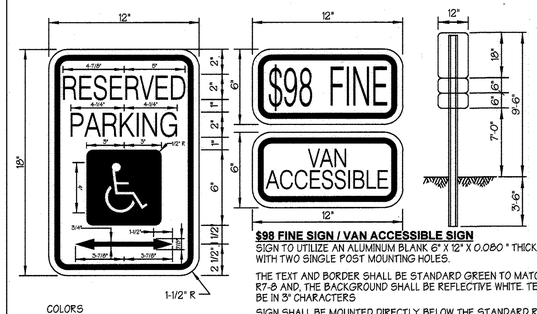
SOLID WASTE SERVICE PAD

NOT TO SCALE



Dumpster Enclosure Detail

NOT TO SCALE



COLORS
GREEN - LEGEND AND BORDER
WHITE - SYMBOL ON BLUE BACKGROUND
WHITE - BACKGROUND

$98 FINE SIGN / VAN ACCESSIBLE SIGN

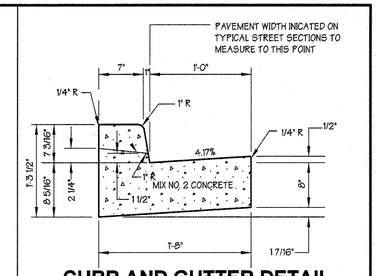
SIGN TO UTILIZE AN ALUMINUM BLANK 6" X 12" X 0.080" THICK WITH TWO SINGLE POST MOUNTING HOLES.

THE TEXT AND BORDER SHALL BE STANDARD GREEN TO MATCH THAT ON R7-8 AND, THE BACKGROUND SHALL BE REFLECTIVE WHITE. TEXT SHALL BE IN 3" CHARACTERS

SIGN SHALL BE MOUNTED DIRECTLY BELOW THE STANDARD R7-8 RESERVED PARKING FOR HANDICAPPED SIGN. ITS BOTTOM EDGE SHALL BE NO LESS THAN 7 FEET ABOVE GROUND. IF THE SIGN IS PLACED AGAINST A BUILDING, STRUCTURE, OR OTHER LOCATION WHERE VEHICLE OF PEDESTRIAN TRAFFIC IS NOT OBSTRUCTED THE BOTOM EDGE OF THE SIGN SHALL BE AT LEAST 6 FEET BUT NOT MORE THAN 10 FEET ABOVE GROUND

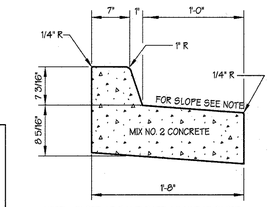
HANDICAPPED SIGN DETAIL

NOT TO SCALE



CURB AND GUTTER DETAIL

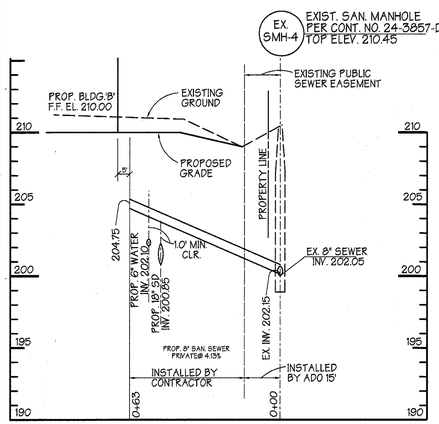
NOT TO SCALE
SEE HO. CO. STD. DTL. R-3.01



NOTE: SLOPE AT SAME RATE AS LINEAR SLOPE ACCROSS PAVING

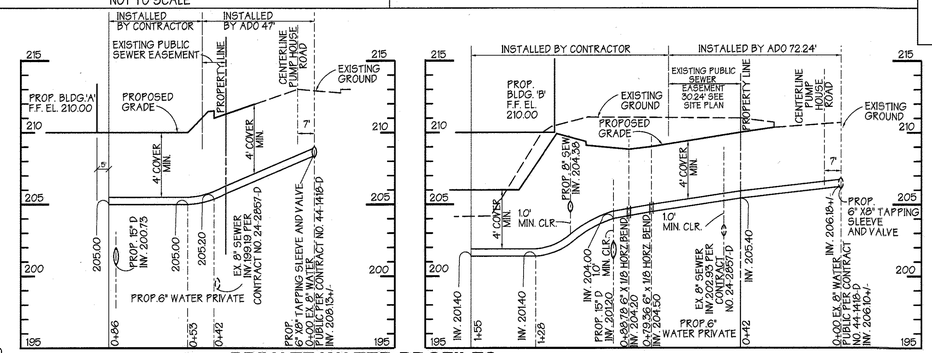
REVERSE SLOPE CURB AND GUTTER

NOT TO SCALE



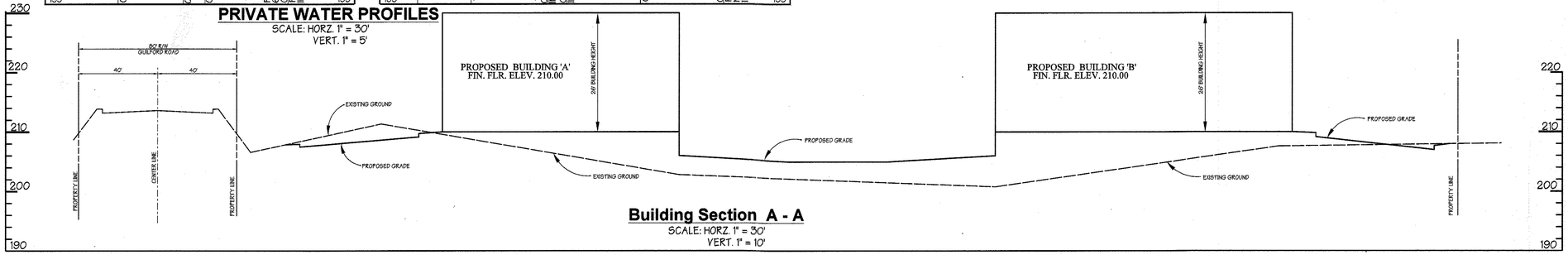
PRIVATE SANITARY SEWER PROFILE

SCALE: HORZ. 1" = 30'
VERT. 1" = 5'



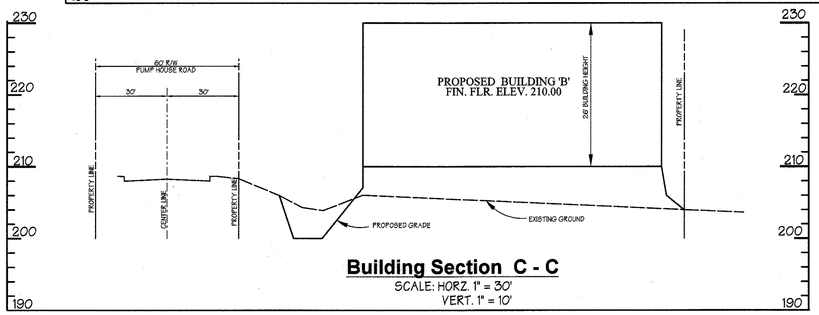
PRIVATE WATER PROFILES

SCALE: HORZ. 1" = 30'
VERT. 1" = 5'



Building Section A - A

SCALE: HORZ. 1" = 30'
VERT. 1" = 10'



Building Section C - C

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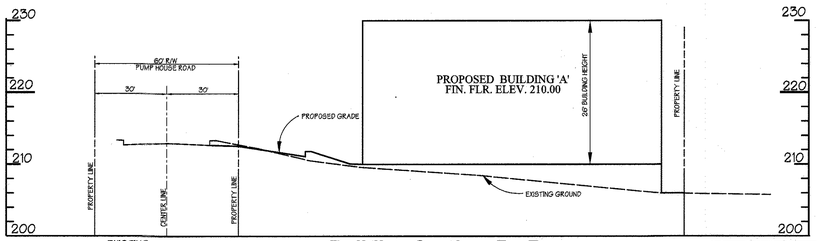

Building Section B - B

SCALE: HORZ. 1" = 30'
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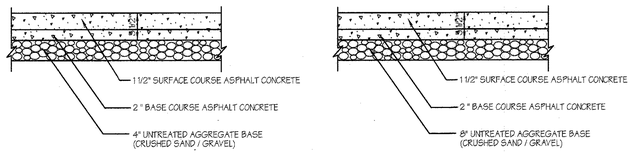


LIGHT DUTY PAVING
P-1 Pavement Section

NOT TO SCALE

HEAVY DUTY PAVING
P-3 Pavement Section

NOT TO SCALE

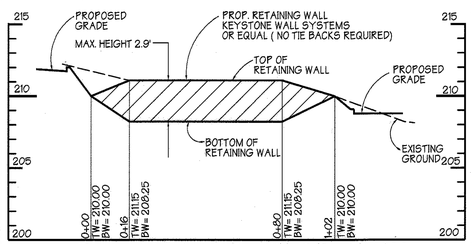
APPROVED: Howard County Department of Planning and Zoning

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10/30/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 11/7/02
DIRECTOR	DATE 11/7/02

PREPARED BY:

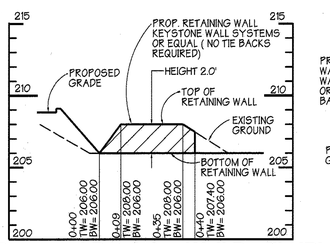
GEORGE W. STEPHENS, JR. AND ASSOCIATES, INC.
Civil Engineers and Land Surveyors
1020 Cromwell Bridge Road
Towson, Maryland 21286
(410) 825-8120

STATE OF MARYLAND — JOHN ARTHUR WEBER — No. 11001 — REGISTERED PROFESSIONAL ENGINEER — 7/1/02



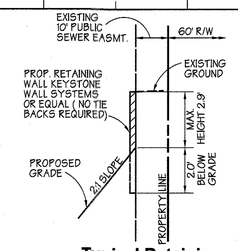
Proposed Retaining Wall Profile 'A'

SCALE: HORZ. 1" = 30' VERT. 1" = 5'



Proposed Retaining Wall Profile 'B'

SCALE: HORZ. 1" = 30' VERT. 1" = 5'



Typical Retaining Wall Section

NOT TO SCALE

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	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 # / 15567, 14442	BLOCK #	ZONE M-2	TAX MAP / ZONE 4B	ELECT. DIST. 6	CENSUS TRACT 6064
WATER CODE B-02	SEWER CODE 4020000			

Site Plan Details

C - W & COMPANY PARCEL A-4

ELECTION DISTRICT : 6th
HOWARD CO., MARYLAND

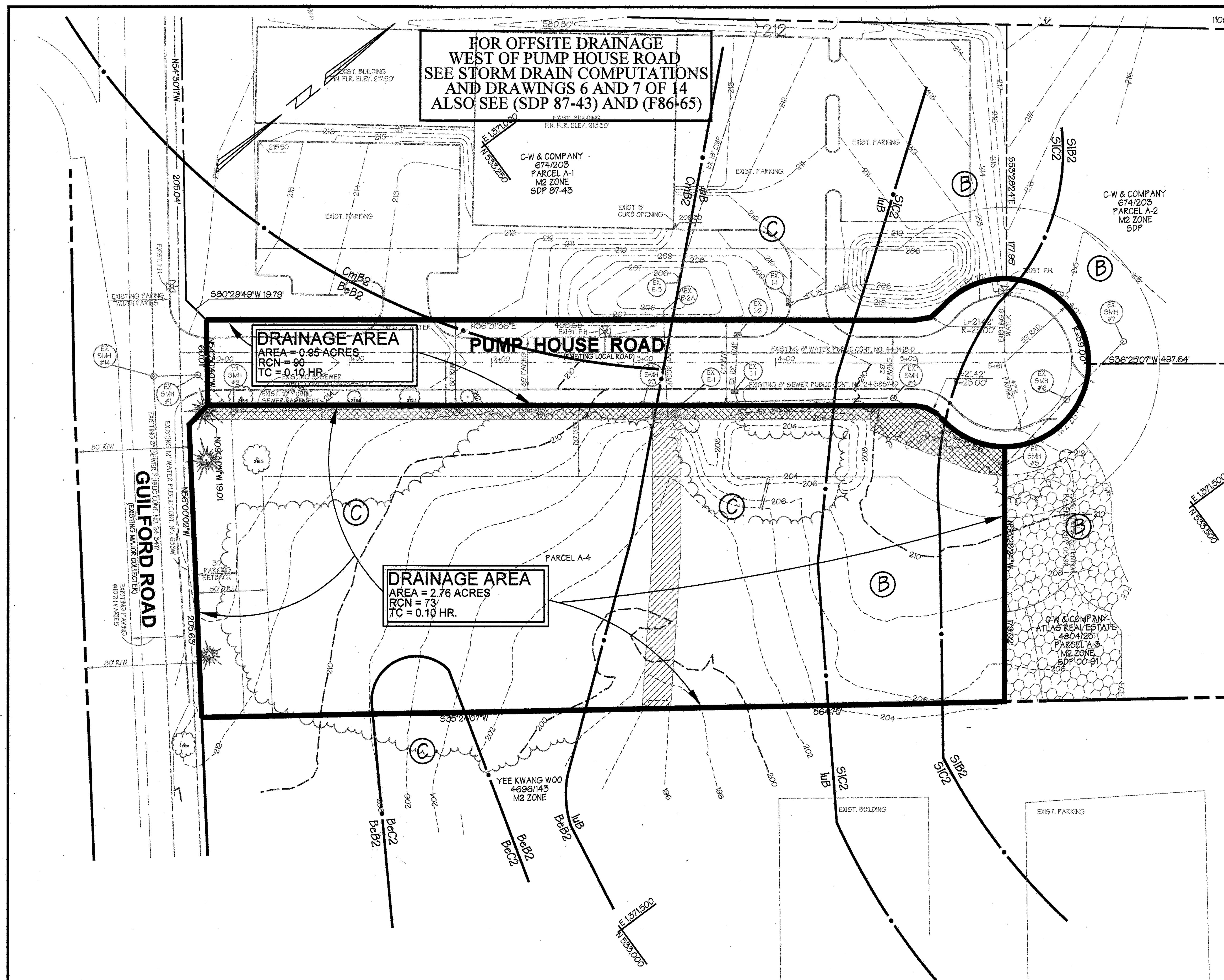
4 OF 14

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

AS BUILT 12. 21. 2004

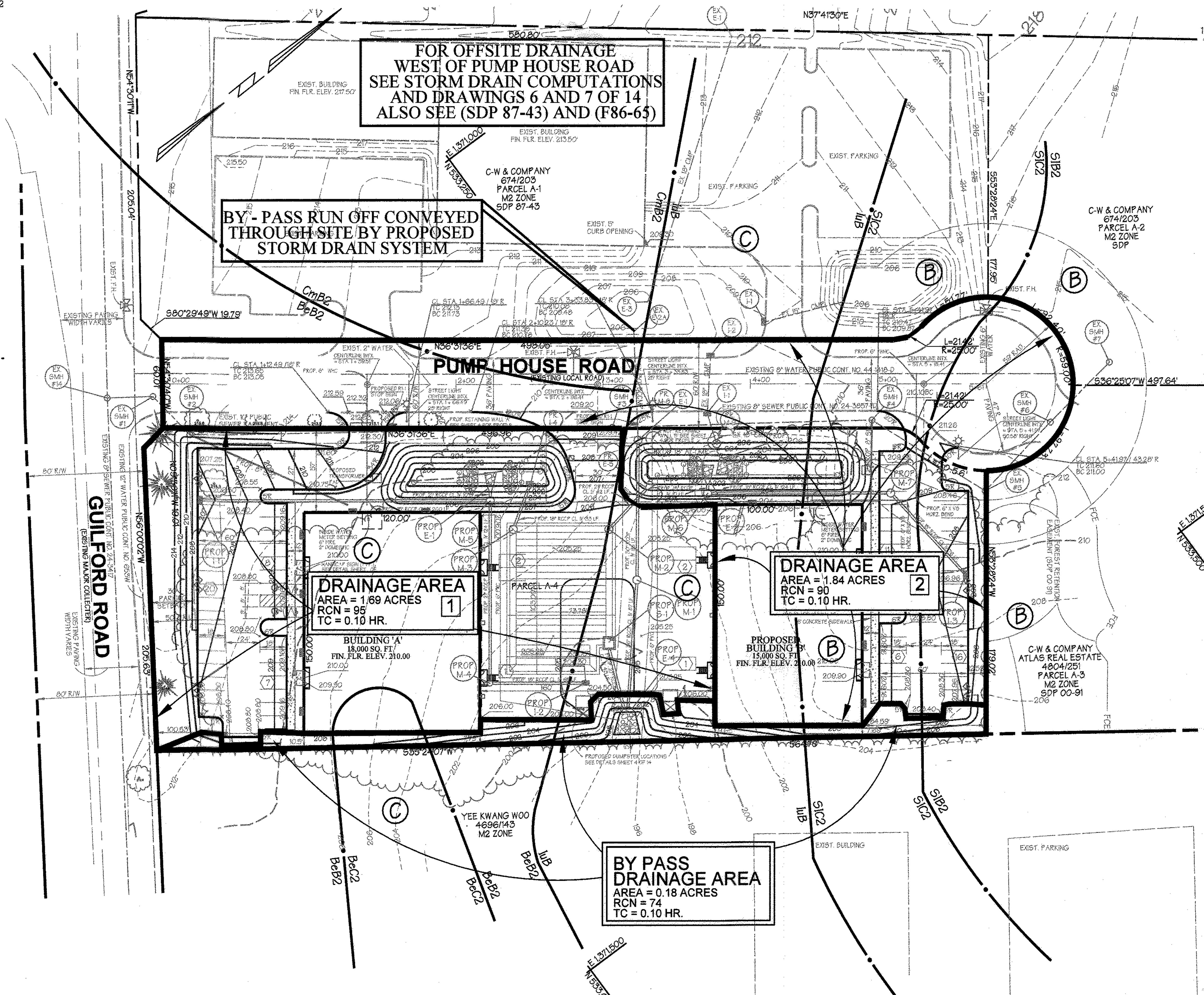
SDP 02 - 091

P/N : 9862



Existing Drainage Area Map

SCALE: 1"= 50'



Proposed Drainage Area Map

SCALE: 1"= 50'

LEGEND

SOILS

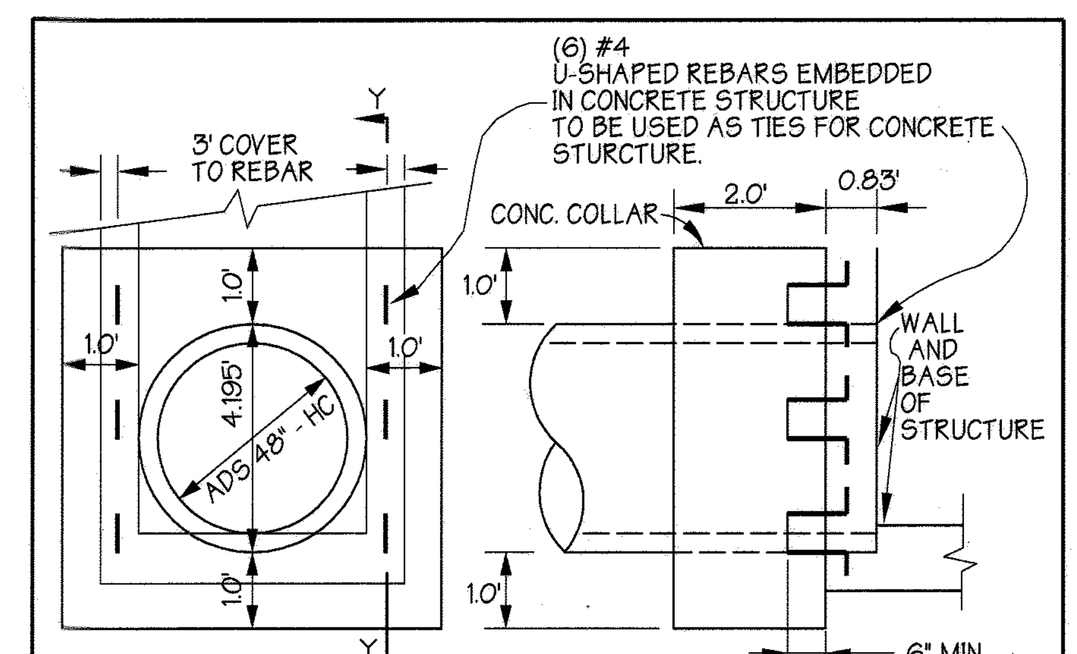
DRAINAGE AREA LINES

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	luka	Loam
SIC2	B	Sassafras	Loam
SIB2	B	Sassafras	Loam



Concrete Collar Detail

NOT TO SCALE

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

7/1/02

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	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 /ZONE MAP	ELECT. DIST.	CENSUS TRACT
15557, 14442		M-2	48	6	6064

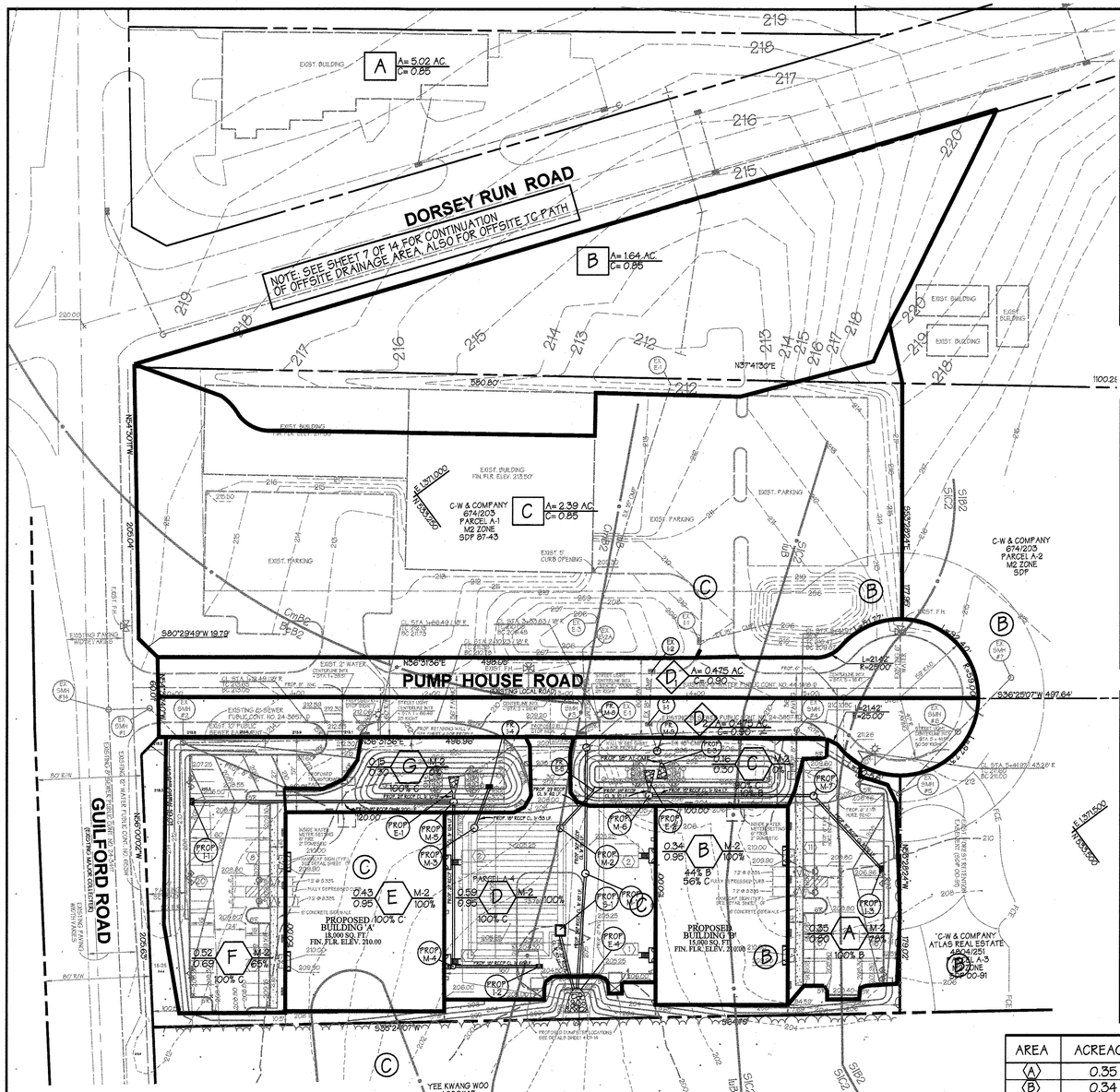
WATER CODE B-02 — SEWER CODE 4020000

Existing Proposed Drainage Area Maps

C - W & COMPANY
PARCEL A-4

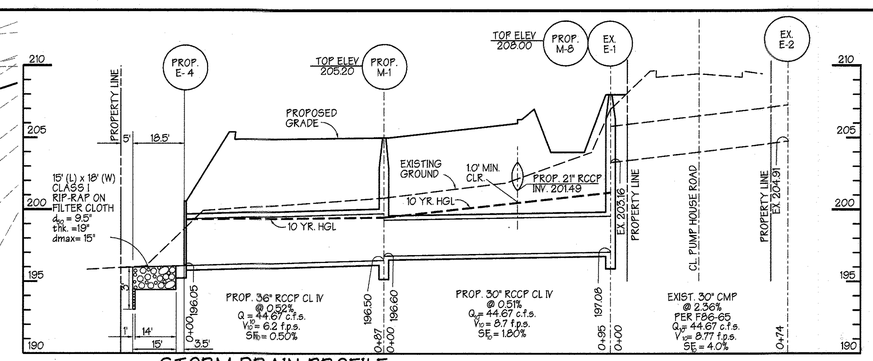
ELECTION DISTRICT : 6th
HOWARD CO., MARYLAND
5 OF 14
SDP 02 - 091
SCALE : As Shown
DATE : JANUARY 21, 2002

AS BUILT 12.21.2004 SDP 02 - 091 P/N : 9852



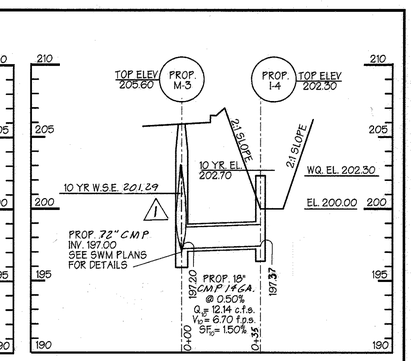
Drainage Area Map

SCALE: 1" = 50'

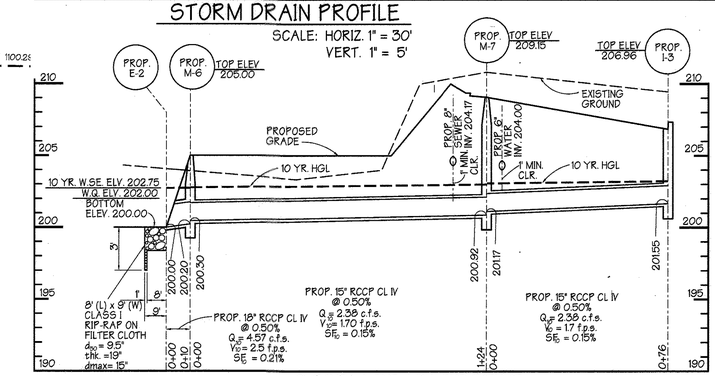


STORM DRAIN PROFILE

SCALE: HORIZ. 1" = 30'
VERT. 1" = 5'



NOTE: FOR OUTLET PROTECTION DETAIL SEE SHEET 10 SEDIMENT CONTROL DETAIL SHEET



STORM DRAIN PROFILE

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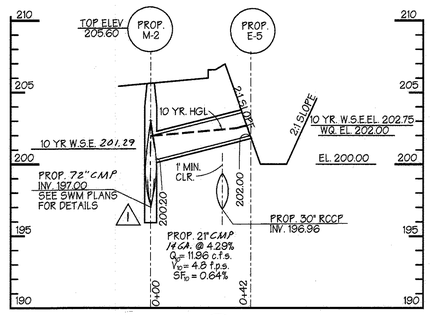
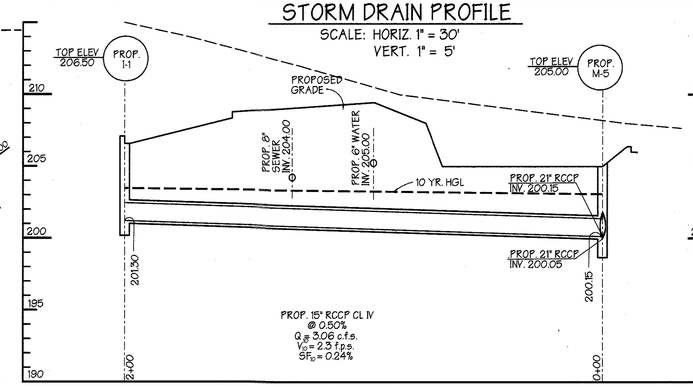
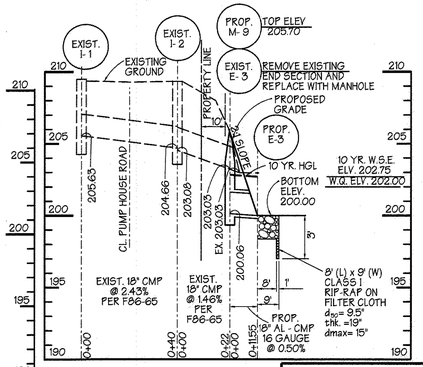
VERT. 1" = 5'



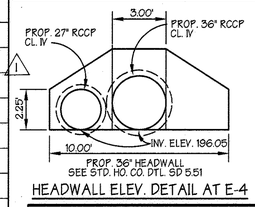


STORM DRAIN PROFILE

SCALE: HORIZ. 1" = 30'
VERT. 1" = 5'



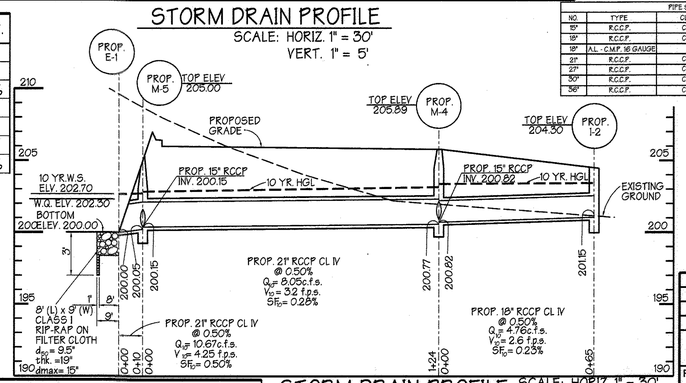
AREA	ACREAGE	'C'	% IMP.
A	0.35	0.80	78%
B	0.34	0.95	100%
C	0.16	0.30	0.00%
D	0.59	0.95	100%
E	0.43	0.95	100%
F	0.52	0.69	65%
G	0.15	0.30	0.00%



HEADWALL ELEV. DETAIL AT E-4

STORM DRAIN PROFILE

SCALE: HORIZ. 1" = 30'
VERT. 1" = 5'



STORM DRAIN PROFILE

SCALE: HORIZ. 1" = 30'
VERT. 1" = 5'

PIPE SCHEDULE			
NO.	TYPE	CLASS	TOTAL LENGTH
15"	R.C.C.P.	CL - IV	400'
18"	R.C.C.P.	CL - IV	108'
18"	AL - C.M.P. 16 GAUGE		18'
21"	R.C.C.P.	CL - IV	178'
27"	R.C.C.P.	CL - IV	43'
30"	R.C.C.P.	CL - IV	96'
36"	R.C.C.P.	CL - IV	87'

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 ⚠1	14 GA. ALUMINITIZED MANHOLE	205.60	200.20	197.00	36"@14GA. ACCESS MANHOLE W/LADDER SEE SWM DETAILS
M-3	14 GA. ALUMINITIZED MANHOLE	205.60	197.20	197.00	36"@14GA. ACCESS MANHOLE W/LADDER SEE SWM DETAILS
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	21" 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	21" CONC. END SECTION	—	202.00	—	SD-5.51

INLET SCHEDULE

NO.	TYPE	TOP ELEV.	INV. IN	INV. OUT	Qc.f.s.	HO. CO. DTL.
I-1	DOUBLE 'S' 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 'S' COMB	206.96*	—	201.55	2.38**	SD-4.32
I-4	DOUBLE TYPE 'S'	202.30*	—	197.37	0.43**	SD-4.23

* TOP GRATE ELEVATION ** 10 YR.

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

STATE OF MARYLAND — GEORGE W. STEPHENS, JR. No. 11002 — REGISTERED PROFESSIONAL ENGINEER — 7/1/02

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

DESIGNED BY: F.R.C.
DRAWN BY: K.E.
CHECKED BY: F.R.C.
REVISIONS
⚠1 REVISED UNDERGROUND SWM LAYOUT AND PIPE SIZES. REVISED STORMDRAIN PROFILE AT M-2 & M-9, AND STRUCTURE SCHEDULE ACCORDINGLY. BY G.W.S. DATED 01/10/03

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
15553 14442		M-2	48	6	6064

WATER CODE B-02 SEWER CODE 4020000

Drainage Area Map & Stormdrain Profiles

C - W & COMPANY PARCEL A-4

ELECTION DISTRICT : 6th
HOWARD CO., MARYLAND

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

AS BUILT 12.21.2004 SDP 02 - 091

F/N : 9862

21.0 STANDARD AND SPECIFICATIONS

FOR

TOPSOIL
Definition

Placement of topsoil over a prepare 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 have 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 that 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 Surve published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

II. Topsoil Specifications - Soil to be used a topsoil must meet the following:

1. 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 contrasting textured subsoils 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, nutsedge, 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. Lime shall be distributed uniformly over designated areas a nd worked into the soil in conjunction with tillage operations as described in the following procedures.

I For sites having disturbed areas under 5 acres:

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

III For sites having disturbed areas over 5 acres:

I. 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 contents of topsoil shall be not less than 1.5 percent by weight.

c. Topsoil have soluble salt contents greater than 500 parts per million shall not be used.

d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

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

II. Place topsoil (if required) and apply soil amendments as specified in 20.0 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 s, 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, albeit 4"-8" higher in elevation.

III. Topsoil shall be uniformly distributed in a 4"-8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. 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 t hat may otherwise be detrimental to proper grading and seedbed preparation.

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

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 supplied 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.

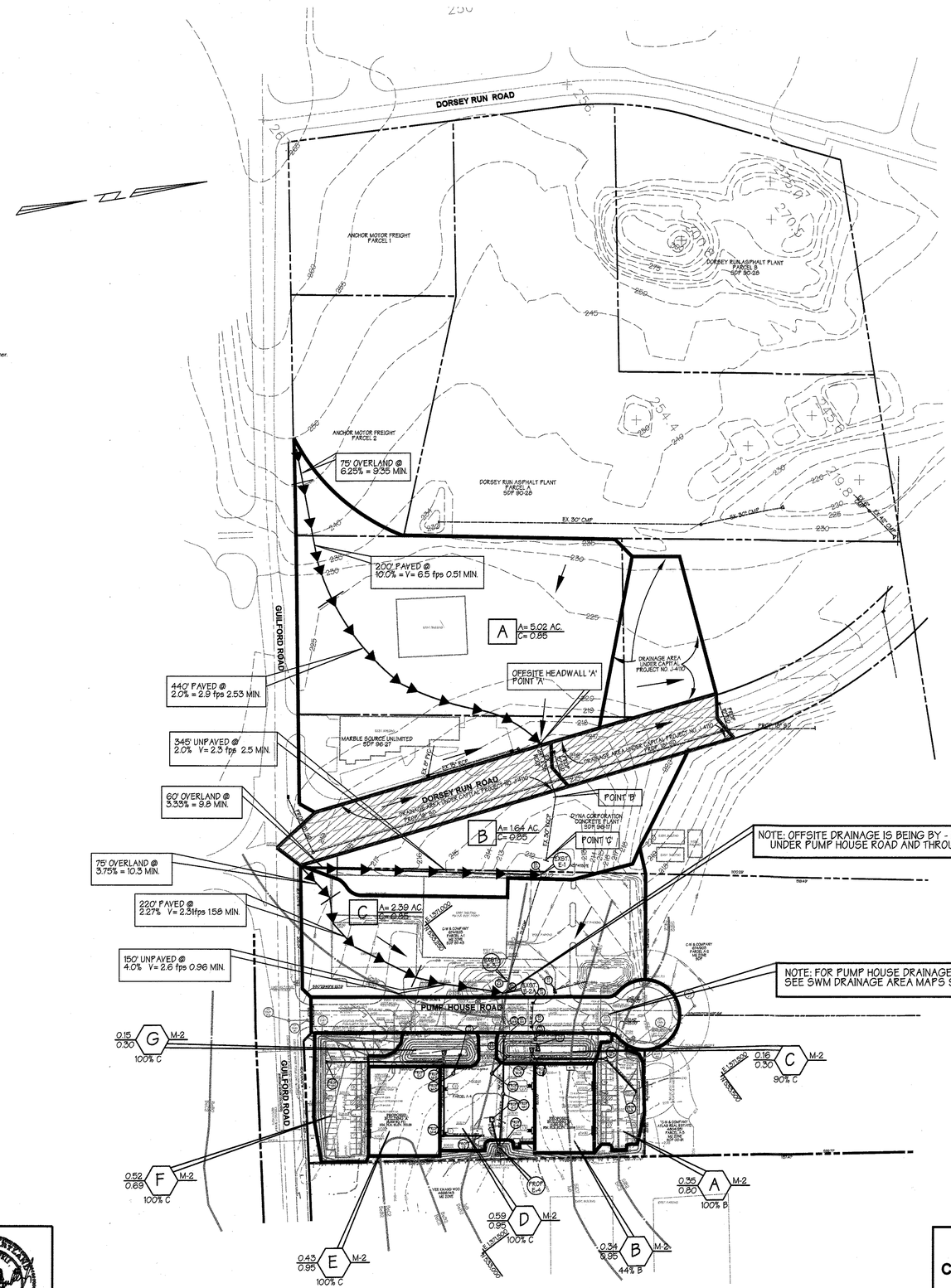
b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.

c. Composted sludge shall be applied as a rate of 1 ton/1,000 square feet.

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

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

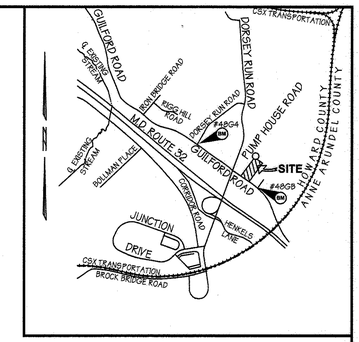
G-21-3
1994



Offsite Drainage Area Map

SCALE: 1"= 100'

NOTE: FOR ONSITE DRAINAGE AREAS SEE 50 SCALE SHEET 6 OF 14



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

STATE OF MARYLAND — No. 11005 — REGISTERED PROFESSIONAL ENGINEER — 7/1/02

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 # 15557, 14442	BLOCK #	ZONE M-2	TAX /ZONE MAP 46	ELECT. DIST. 6	CENSUS TRACT 6064
WATER CODE B-02		SEWER CODE 4020000			

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

Offsite Drainage Area Map

C - W & COMPANY PARCEL A-4

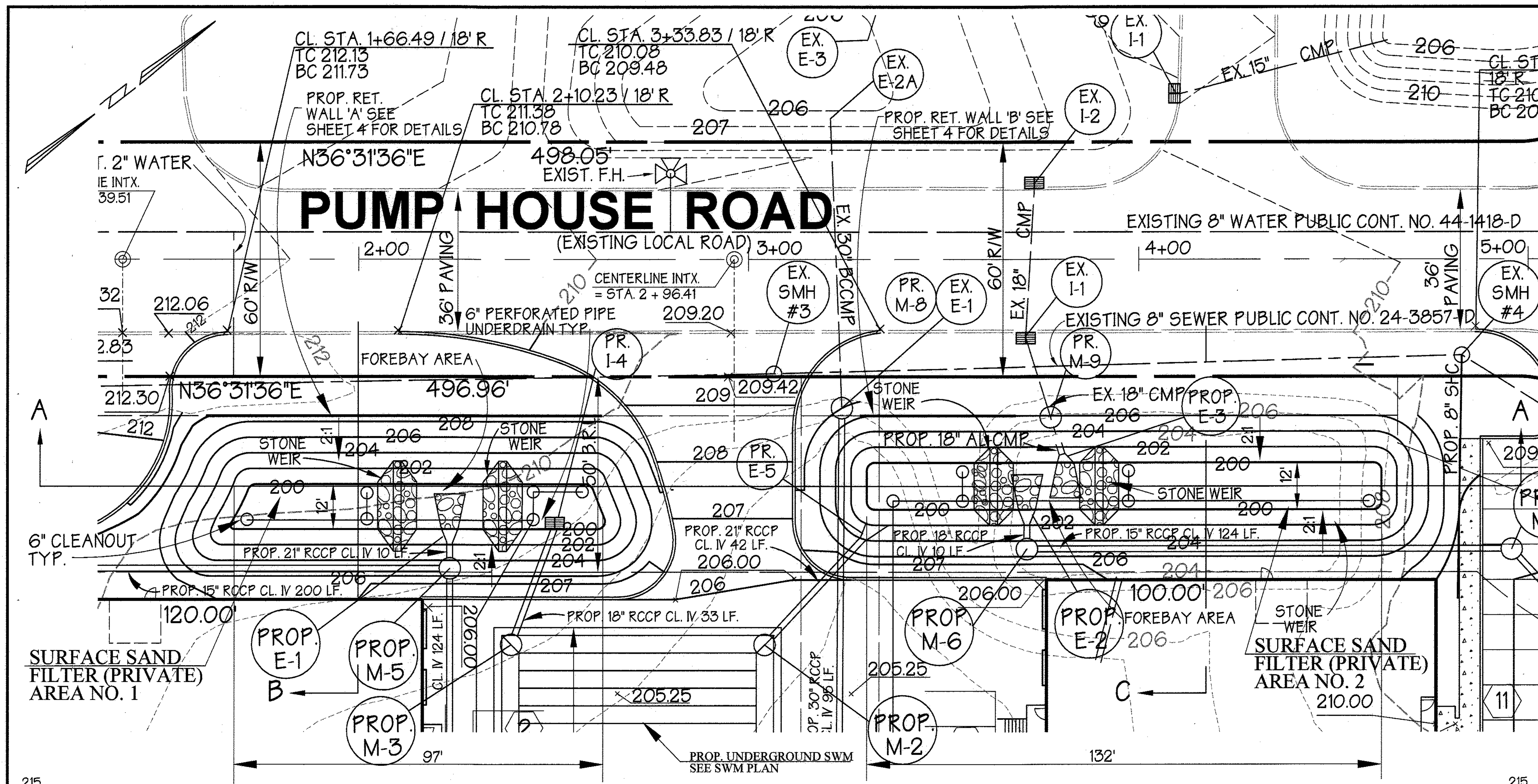
ELECTION DISTRICT : 6th
HOWARD CO., MARYLAND

7 OF 14

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

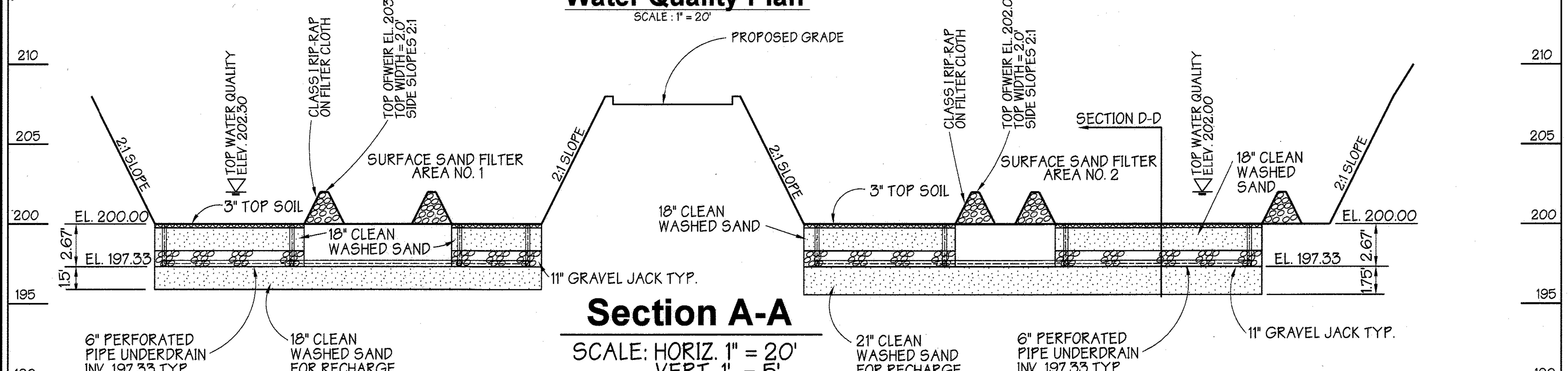
AS BUILT 12.21.2004 SDP 02 - 091

F/N : 9862



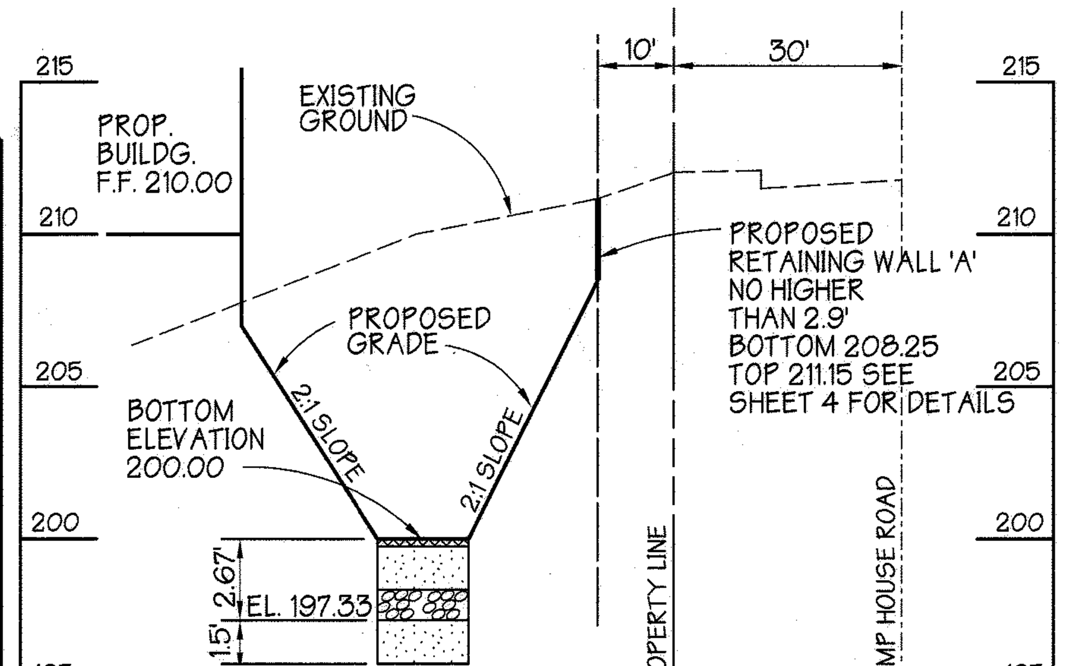
Water Quality Plan

SCALE : 1" = 20'



Section A-A

SCALE: HORIZ. 1" = 20'
VERT. 1' = 5'



Section B-B

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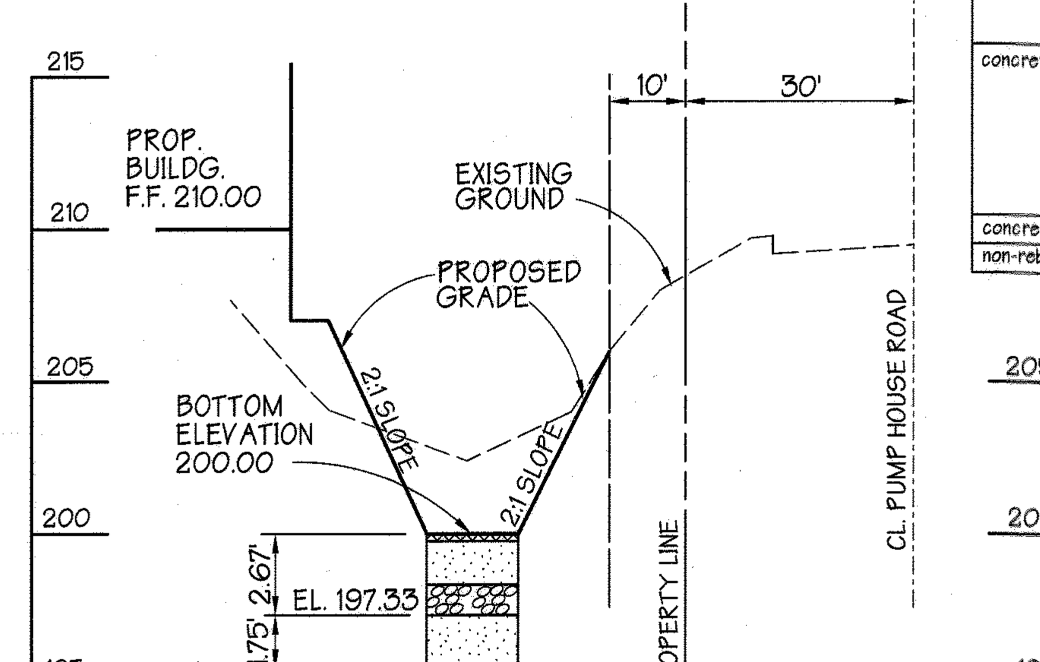
VERT. 1' = 5'



Section C-C

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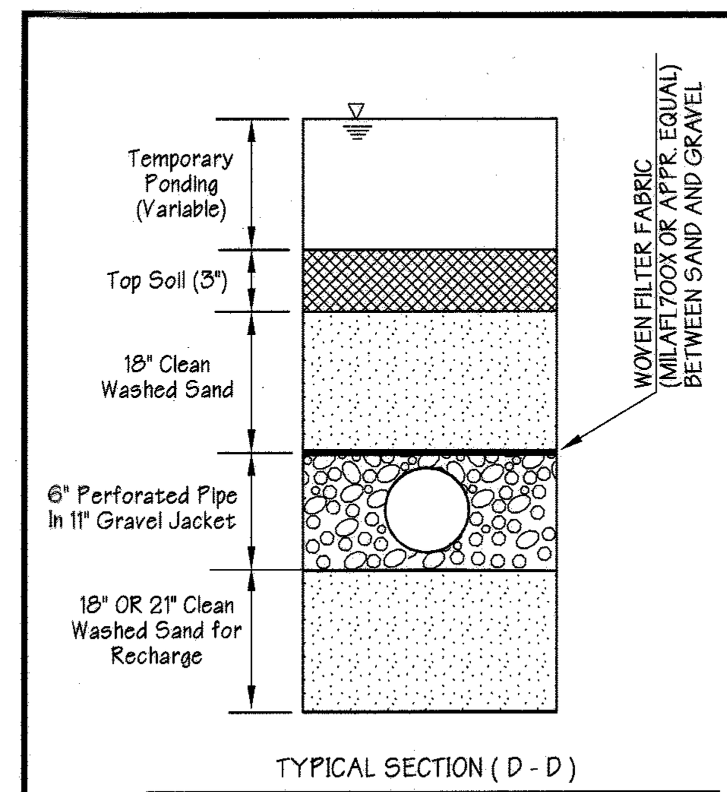
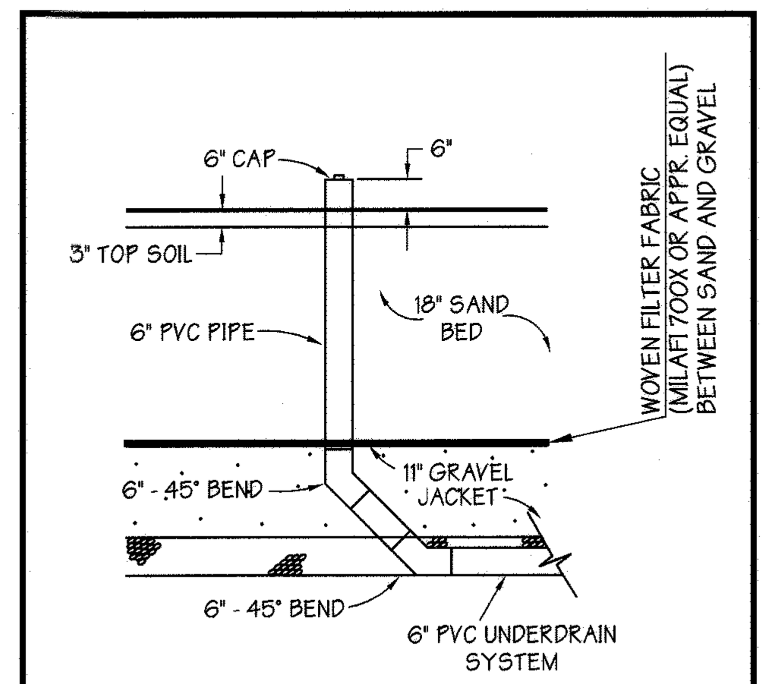
VERT. 1' = 5'



TYPICAL SECTION (D - D)

ABOVE GROUND SAND FILTER

NOT TO SCALE



6" CLEANOUT DETAIL

NOT TO SCALE

3.4.6 Filtering Maintenance Criteria

The sediment chamber outlet devices shall be cleaned/repaired when drawdown times within the chamber exceed 36 hours. Trash and debris shall be removed as necessary.

Sediment should be cleaned out of the 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.

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 shall be replaced with fresh material. The removed sediments should be disposed in an acceptable manner (e.g., landfill). Silt/sediment should be removed from the filter bed when the accumulation exceeds one inch.

Organic filters (F-4) or surface sand filters (F-1) that have a grass 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 bioretention facilities (F-6) (stone diaphragm). Dead or diseased plan 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 bioretention 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 within sensitive groundwater aquifers, and filters designed to serve urban hot spots are to be tested for water tightness prior to placement of filter media. Entrances and exits should be plugged and the system completely filled with water to demonstrate water tightness. Water tightness means no leakage for a period of 8 hours.

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

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.

"Pocket" sand filters (and residential bioretention 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 bioretention area 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 bioretention 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, Mugwort, Nutsedge, Poison Ivy, Canadian Thistle, Tearthumb, or other, noxious weeds.

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

pH range	5.2 - 7.0
organic matter	1.5 - 4%
magnesium	35 lb./ac.
phosphorus P205	75 lb./ac.
potassium K20	85 lb./ac.
soluble salts	not to exceed 500 ppm

All bioretention 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 textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture 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 bioretention area and the required backfill. When possible, use excavation hoes to remove original soil. If bioretention areas are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf 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 anstorage volumes and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to refracture the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the required sand layer. Pump any ponded water before preparing (rototilling) base.

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

When back filling the bioretention facility, place soil in lifts 12" or greater. Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention material with light equipment such as a compact loader or a 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. Pine mulch and wood chips will float and move to the perimeter of the bioretention 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 1/8th 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 diamenter of the planting pit 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 bed 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 tilled 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 bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal Only add fertilizer if wood chips or mulch is used to amend the soil. Rototill area fertilizer at a rate of 2 pounds per 1000 square feet.

Underdrains

Underdrains to be placed on a 3'-0" 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 pipe 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 diaphrams 12" wide, minimum, and 24" deep minimum.

Pervious berms to be a sand/gravel mix. See bioretention planting media specifications; add 20% gravel; reduce clay component accordingly. Berms to have overflow weirs with 6 inch minimum head.

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

Miscellaneous

The bioretention facility 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 carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.
Peat			The material must be reed-sedge hemic 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-4833 (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 geotextiles meant to "separate" sand filter layers.
Impermeable liner (if required)	ASTM-D-4833 (puncture ASTM-D-4122 (tensile strength 1,100 lbs., elongation 200%) ASTM-D-624 (Tear resistance 150 lbs./in) ASTM-D-471 (water adsorption: +8 to -2 % mass)		
underdrain piping	F 758, Type PS 28 or ASSSHTO-M-278	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)	MHSA Standard and Spec, Section 902 - Mix No. 3; f'c = 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 350.R/89; 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

1. 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.
2. 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.
3. DEBRIS AND LITTER NEXT TO THE OUTLET PIPES SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
4. 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
5. 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.
6. 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.

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

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 M-2	TAX /ZONE MAP 48	ELECT. DIST. 6	CENSUS TRACT 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 — Date 7/01/02

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 all responsible personel involved in the construction project will have a certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspections by the Howard soil Conservation District."

Signature of Developer — 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

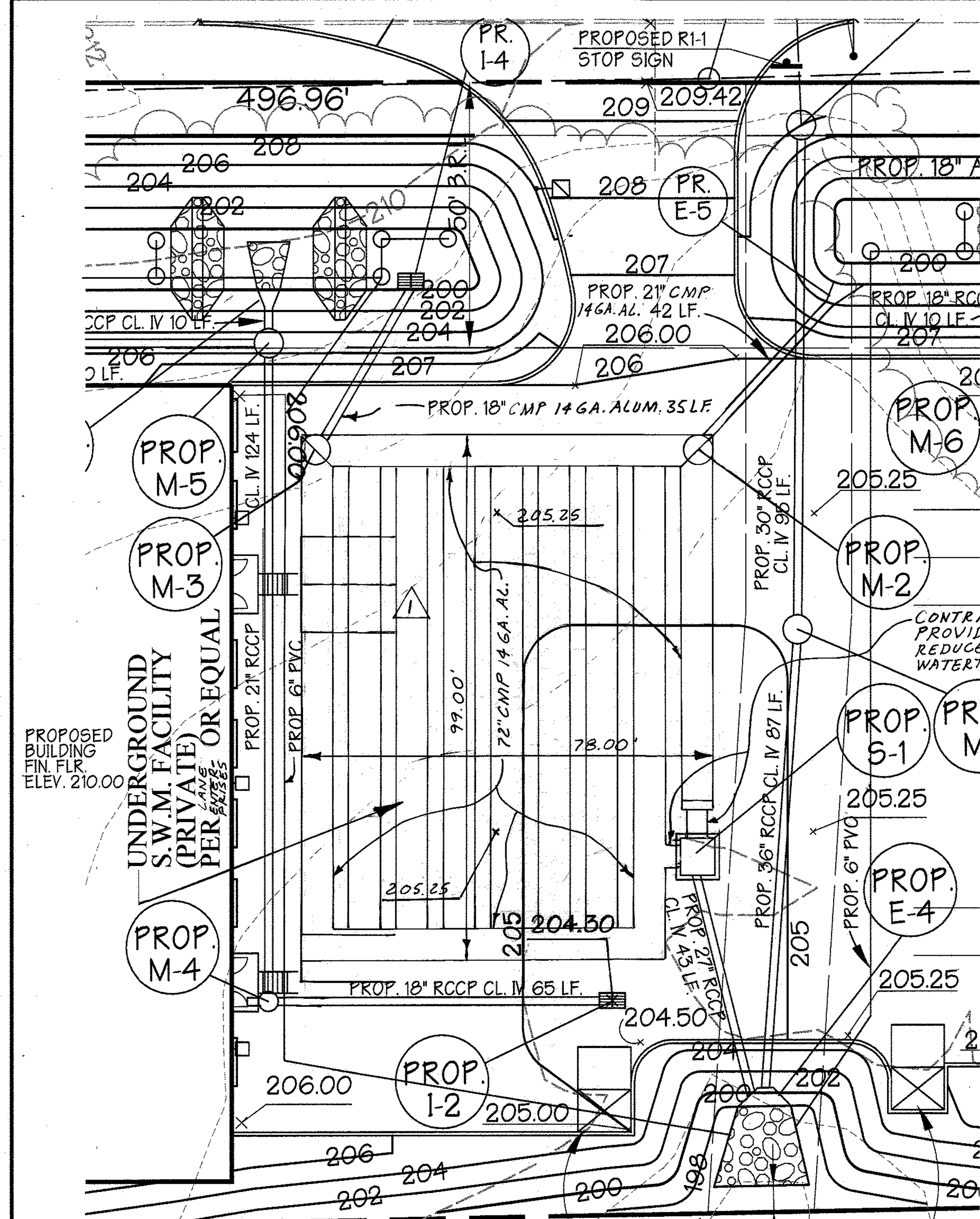
C - W & COMPANY PARCEL A-4

SDP 02 - 091
SCALE : As Shown
ELECTION DISTRICT : 6th
HOWARD CO., MARYLAND
8 OF 14
DATE : JANUARY 21, 2002

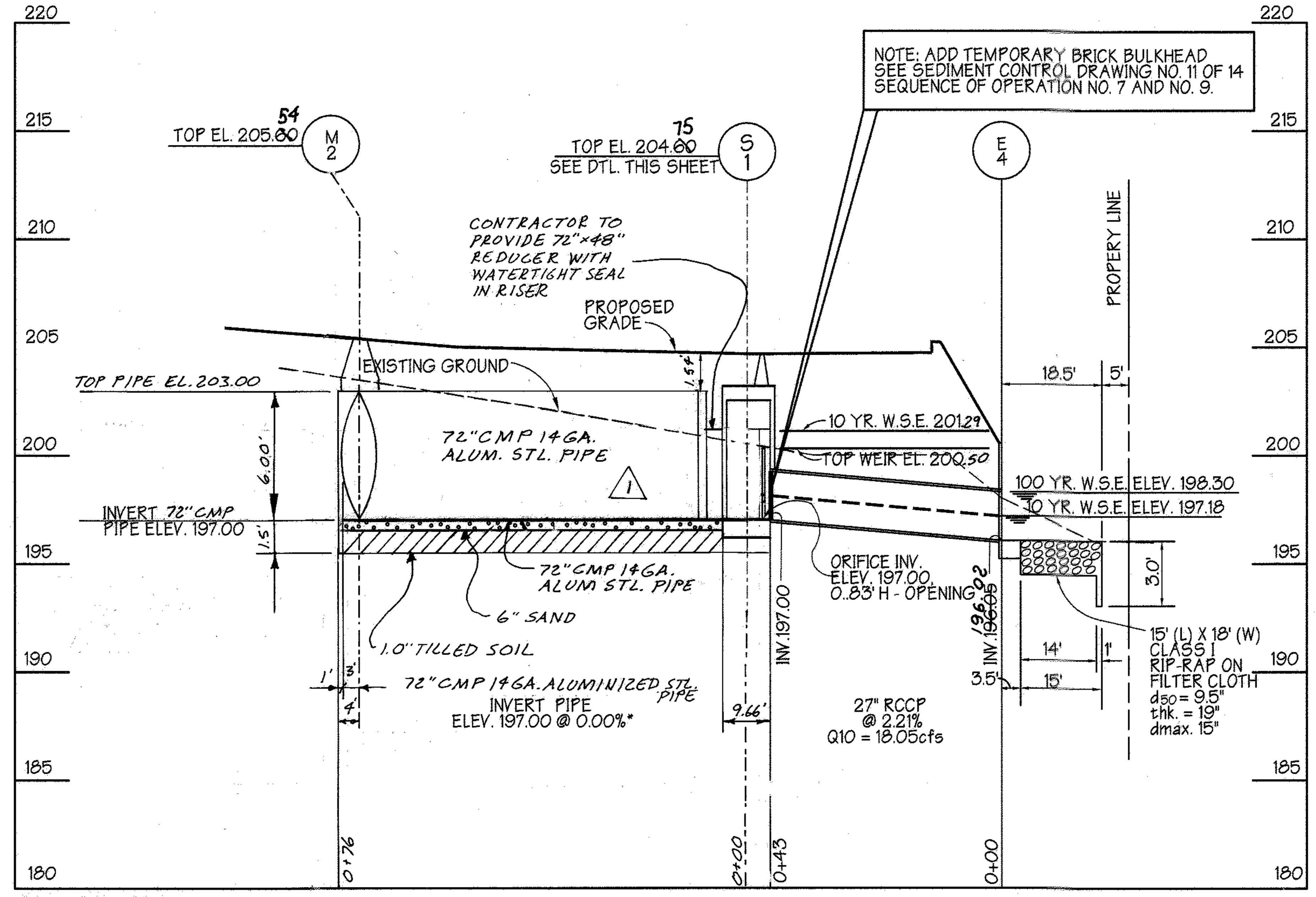
AS BUILT 12.21.2004

SDP 02 - 091

P/N : 9852

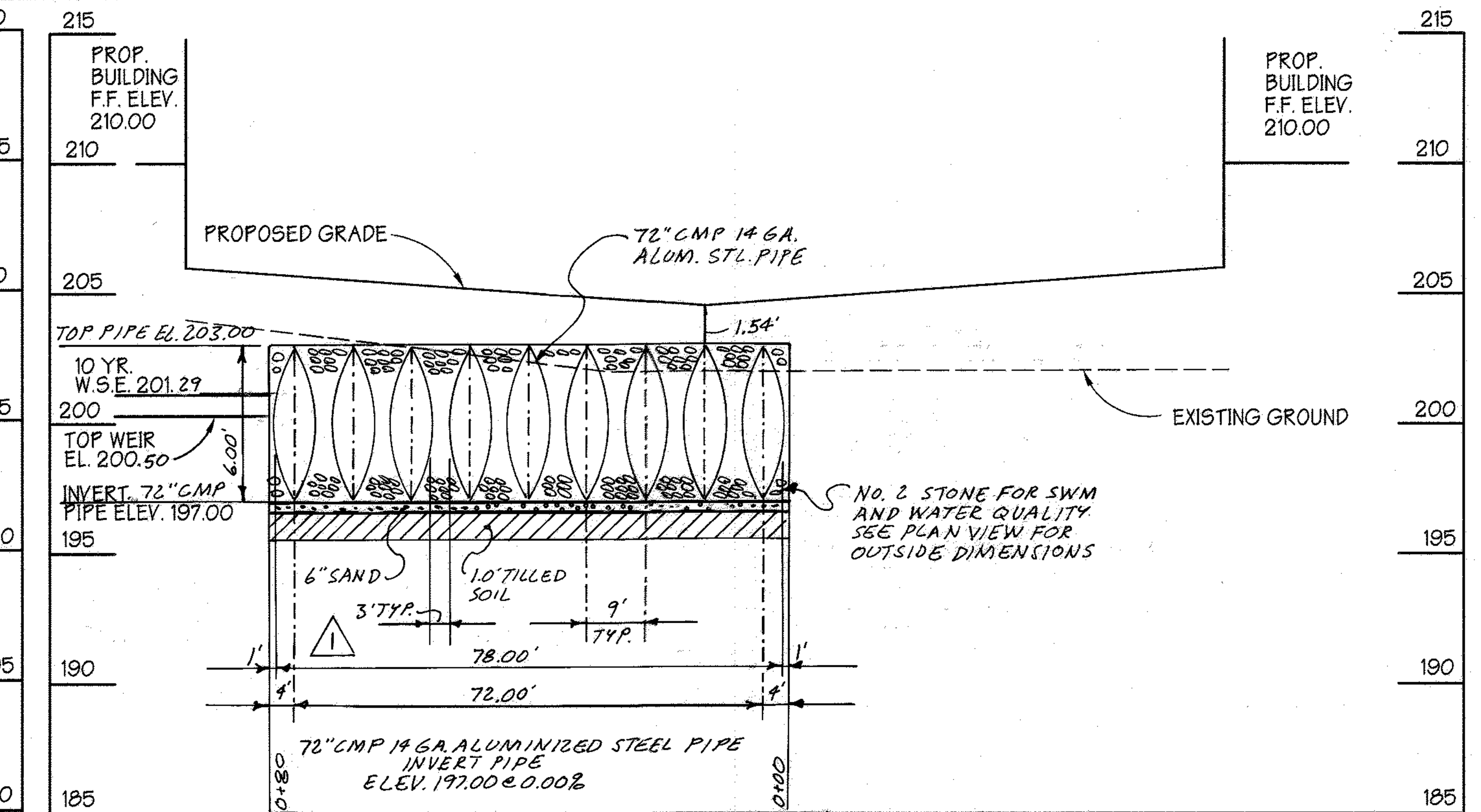


PLAN
SCALE : 1" = 20'



PROFILE - PRINCIPAL SPILLWAY

SCALE: HORIZ. 1" = 20'
VERT. 1' = 5'

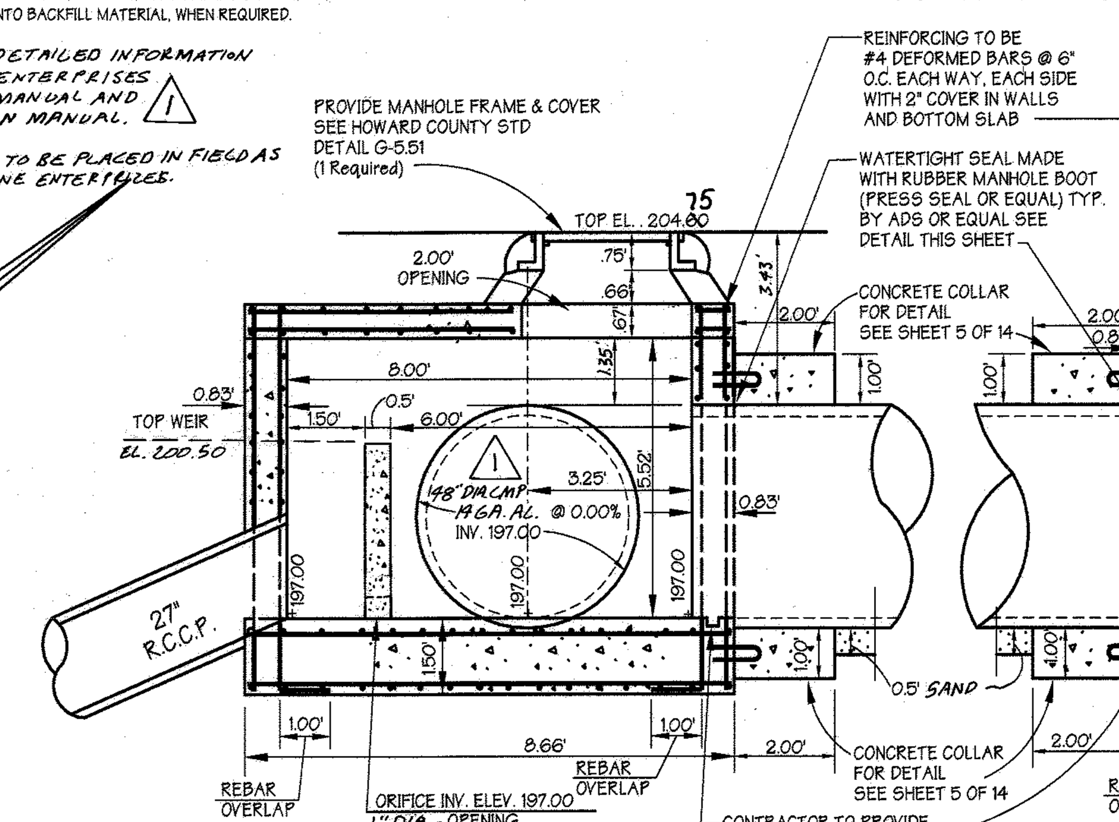


PROFILE - SWM POND

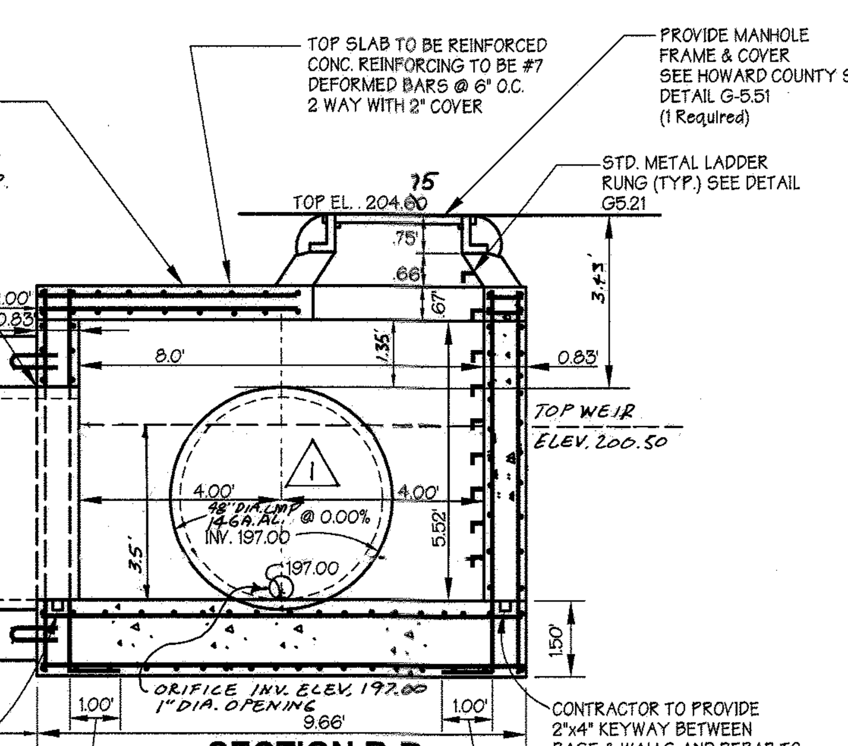
SCALE: HORIZ. 1" = 20'
VERT. 1' = 5'

UNDERGROUND STORMWATER MANAGEMENT NOTES

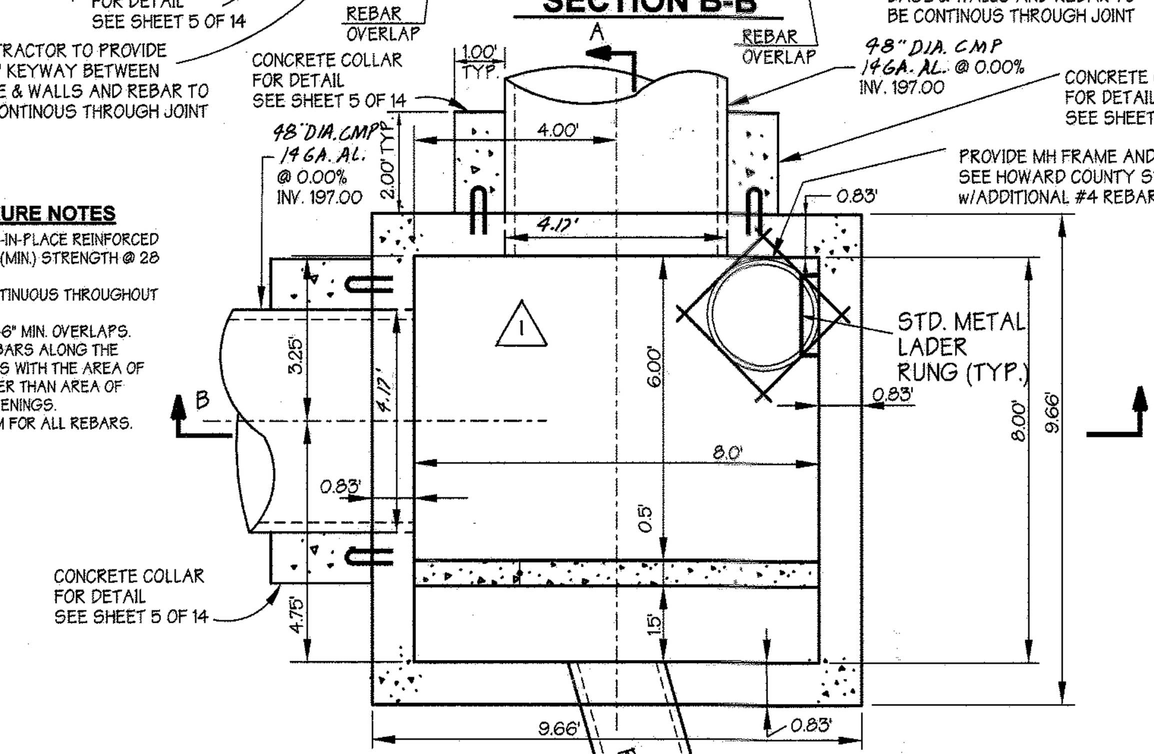
1. DETENSION SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOR MORE DETAILED INFORMATION SEE LANE ENTERPRISES TECHNICAL MANUAL AND INSTALLATION MANUAL. (1)
4. MANHOLES TO BE PLACED IN FIELD AS REQUIRED BY LANE ENTERPRIZES.



SECTION A-A



SECTION B-B



STRUCTURE S-1
SCALE: 1" = 3'

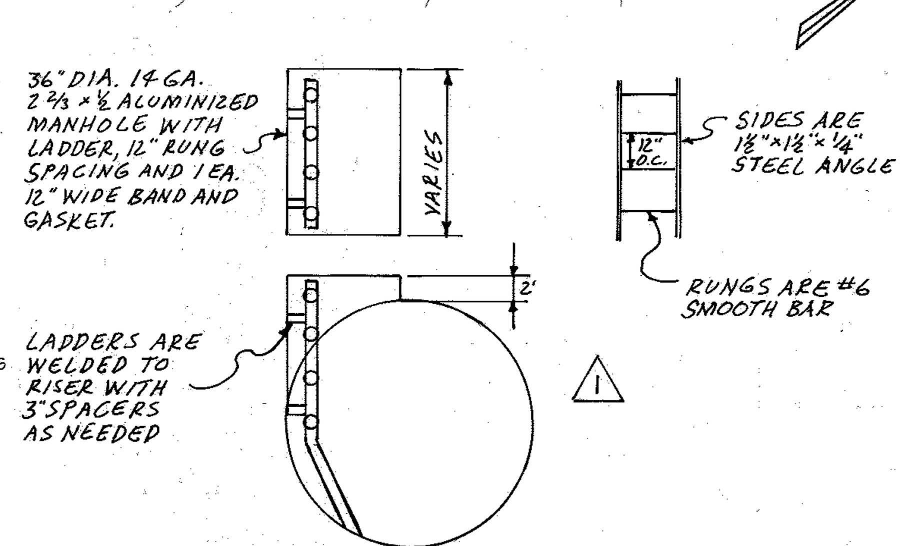
NOTE: SWM POND
ALL PIPE 14 GA. ALUMINIZED STEEL.
ALL PIPE IS 5"×1" CORRUGATIONS.
ALL PIPE IS SOLID AND WELDS ARE CONTINUOUS. (1)
BANDS SHALL BE 12" WIDE W/ 1 EA. 12' WIDE.
SLEEVE GASKET AND 2 EA. SILO ROD CONNECTORS.

CONTROL STRUCTURE NOTES

1. STRUCTURE SHALL BE CAST-IN-PLACE REINFORCED CONCRETE WITH 3,500 P.S.I. (MIN.) STRENGTH @ 28 DAYS.
2. ALL REINFORCING TO BE CONTINUOUS THROUGHOUT STRUCTURE.
3. ALL REINFORCING TO HAVE 1'-6" MIN. OVERLAPS.
4. PROVIDE ADDITIONAL #4 REBARS ALONG THE PERIMETER OF ALL OPENINGS WITH THE AREA OF STEEL EQUAL TO OR GREATER THAN AREA OF STEEL 'REMOVED' DUE TO OPENINGS.
5. TWO (2) INCH COVER MINIMUM FOR ALL REBARS.

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

1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE UNDERGROUND FACILITY IS FUNCTIONING PROPERLY.
2. VISIBLE SIGNS OF EROSION IN THE POND SHALL BE REPAIRED AS SOON AS IT IS NOTICED NON-ROUTINE MAINTENANCE
5. 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.
6. 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.



MANHOLE 2 AND 3 DETAIL
N.T.S.

Pond Specifications

POND SUMMARY							
DESIGN STORM	EXISTING SITE RELEASE RATE (CFS)	FACILITY INFLOW (CFS) (POND)	BYPASS DISCHARGE (CFS)	FACILITY DISCHARGE (CFS) (POND)	WATER SURFACE ELEVALTION (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) = 1.26 AC. FT ^{2}
WATERSHED AREA TO THE POND	3.53 Ac
HEIGHT TO EMERGENCY SPILLWAY	N/A
NORMAL SURFACE AREA	N/A
PRINCIPLE SPILLWAY CAPACITY	18.05 C.F.S.
EMERGENCY SPILLWAY CAPACITY	N/A
POND TYPE	UNDERGROUND DETENTION
FREEBOARD — PROVIDED	1.5' FROM 100 YR. W.S.E.
IMPERVIOUS AREA (AREA SERVED)	See Stormwater Management Report
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 PATUXENT

CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

SITE PREPARATION

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

EARTH FILL

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within ± 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

STRUCTURE BACKFILL

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi; 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

PIPE CONDUITS

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criterial shall apply for corrugulated metal pipe:

1. Materials - (Polymer Coated steel pipe) ⊕ Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

Materials - (Aluminum Coated Steel Pipe) ⊕ This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Simple bands are not considered to be watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24 inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, pre-punched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lap type band with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of ½ inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joints with 3/8 inch closed cell gaskets the full width of the flange is also acceptable.

Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill".

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding / cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

3. Laying pipe - Bell and spigot shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Plastic Pipe - The following criteria shall apply for plastic pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4"-10" pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.

2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

CONCRETE

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

ROCK RIPRAP

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

CARE OF WATER DURING CONSTRUCTION

All work on permanent structures shall be carried out in areas fee from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be pumped.

STABILIZATION

All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

EROSION AND SEDIMENT CONTROL

Construction operations will be carried our in such a manner that erosion will be controlled and water and air pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.
GABIONS

Gabions shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 312 and must be Cl. IV, PVC coated.

OUTFALL PROTECTION

Subgrade for riprap or gabion outfalls shall be prepared to the required line and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the specified grading limits when installed in the riprap or gabion. All stone shall be delivered and placed in a manner that will insure the stone in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another, with the smaller rocks filling the voids between the larger rocks. Stone for outfalls may be placed by equipment. Riprap or gabion outlets shall be constructed to full course thickness in one operation and in such a manner as to avoid any displacement of underlying materials. The contractor shall avoid damage to the filter blanket or cloth during placement of riprap. Hand placement shall be required as needed to prevent damage to the permanent works. Filter cloth shall be placed under all riprap and gabions.

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

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/ZONE MAP	ELECT. DIST.	CENSUS TRACT
15557, 14442		M-2	48	6	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 — Date 7/01/02

Print Name JAMES A. MARKLE JR. — PE # 11005

7/1/02

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 personel involved in the construction project will have a certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspections by the Howard soil Conservation District."

Signature of Developer — 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
(1) REVISED UNDERGROUND SWM LAYOUT & PIPE SIZE, REVISED PROFILES & STRUCTURE DETAIL & REVISED POND SPECIFICATIONS ACCORDINGLY BY G.W.S. DATED 02/10/03

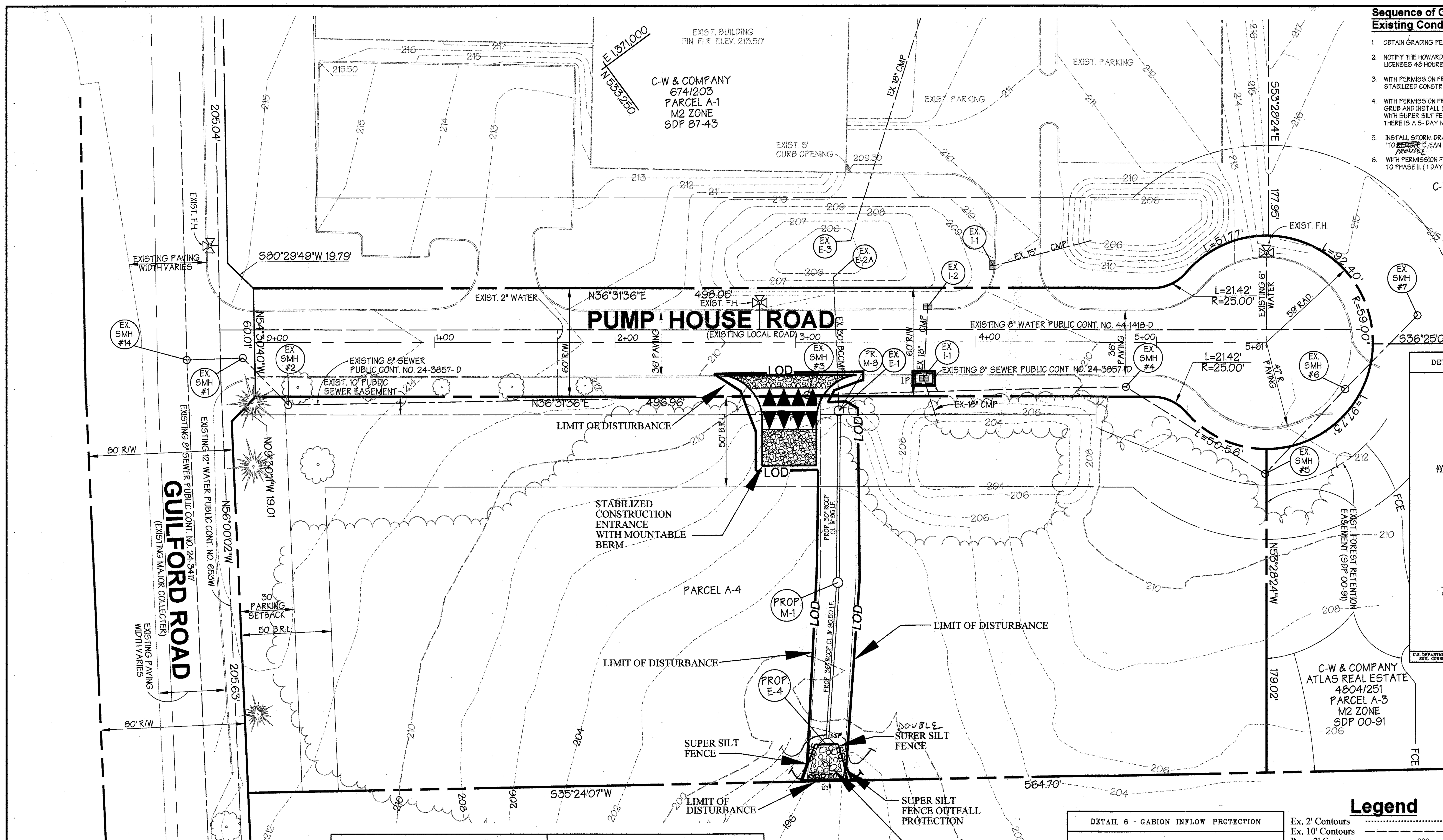
Underground Stormwater Management Plan & Details

C - W & COMPANY PARCEL A-4

ELECTION DISTRICT : 6th
HOWARD CO., MARYLAND
SDP 02 - 091
SCALE : As Shown
DATE : JANUARY 21, 2002

AS BUILT 12.21.2004 SDP 02 - 091

P/N : 9852

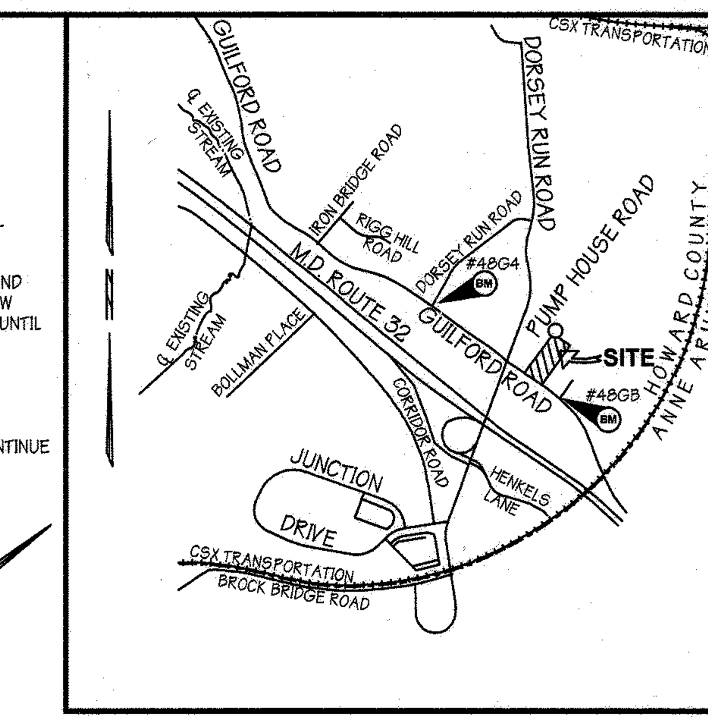


PLAN
SCALE: 1" = 30'

15' (L) x 18' (W)
CLASS I
RIP-RAP ON
FILTER CLOTH
d_{50}= 9.5"
thk. =19"
dmax= 15"
FOR STORMDRAIN
PROFILE SEE SHEET
6 OF 14 ALSO SEE
ROCK OUTLET
PROTECTION I
DETAIL THIS SHEET

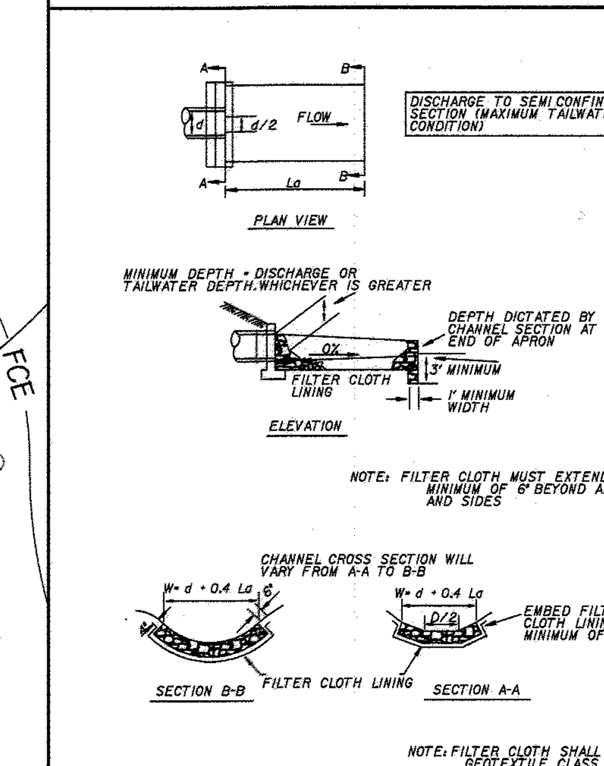
Sequence of Operation
Existing Conditions Phase 1

1. OBTAIN GRADING PERMIT. (1 DAY)
2. NOTIFY THE HOWARD COUNTY DEPARTMENT OF PERMITS AND LICENSES 48 HOURS BEFORE BEGINNING WORK. (1 DAY)
3. WITH PERMISSION FROM SEDIMENT CONTROL INSPECTION, INSTALL STABILIZED CONSTRUCTION ENTRANCE. (2 DAYS)
4. 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)
5. INSTALL STORM DRAIN FROM E-4 TO M-1 TO M-8 (EX. E-1). "TO ~~REMOVE~~ PROVIDE CLEAN WATER BY PASS." (4 DAYS)
6. WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR CONTINUE TO PHASE II. (1 DAY)



Vicinity Map
SCALE: 1" = 2,000'

DETAIL 25 - ROCK OUTLET PROTECTION I



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 18 - 8	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

ROCK OUTLET PROTECTION I

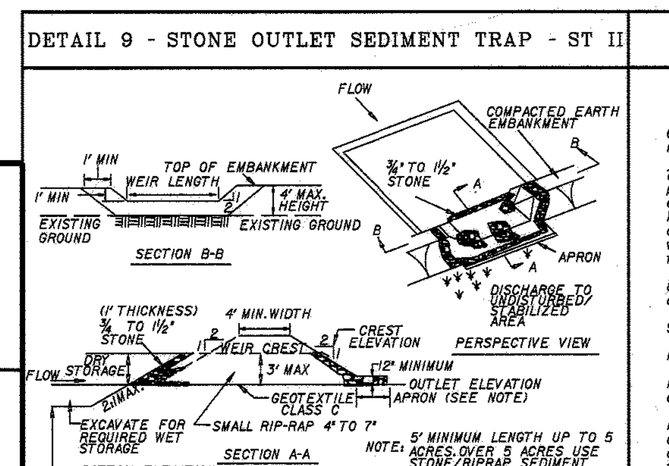
Construction Specifications

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 18 - 8A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

NOTE: FOR TOP SOIL SPECIFICATIONS SEE SHEET 7 OF 14

DETAIL 9 - STONE OUTLET SEDIMENT TRAP - ST II



Construction Specifications

1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
2. The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
3. All cut and fill slopes shall be 2:1 or flatter.
4. The stone used in the outlet shall be small rip-rap 4" to 7" in size with a 1' thick layer of 3/4" to 1 1/2" washed aggregate placed on the upstream face of the outlet. Stone facing shall be as necessary to prevent clogging. Geotextile Class C may be substituted for the stone facing by placing it on the inside face of the stone outlet.
5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

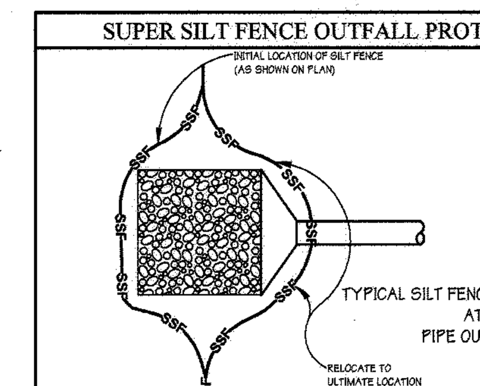
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 9 - 10	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

STONE OUTLET SEDIMENT TRAP - ST II

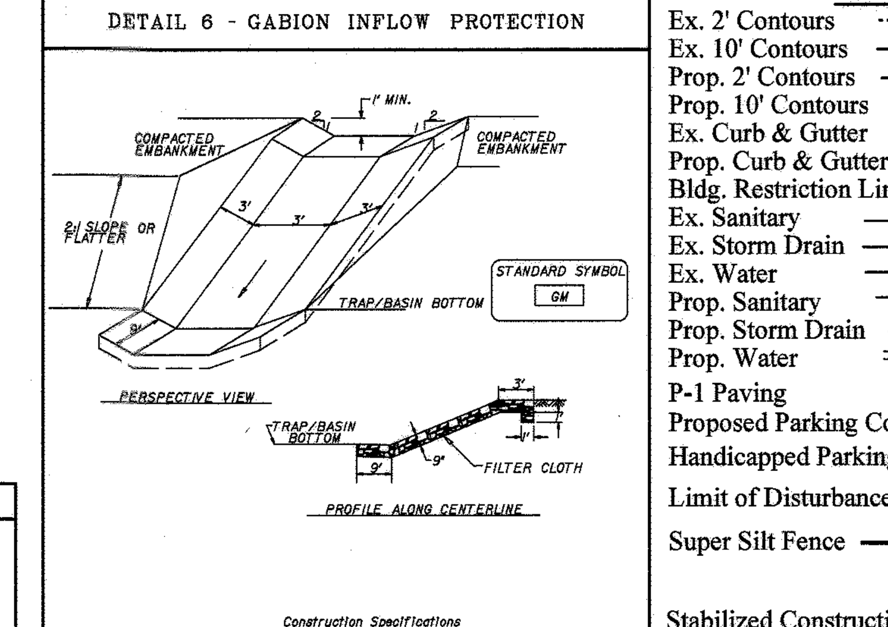
6. The structure shall be inspected periodically and after each rain and repairs made as needed.
7. Construction of traps shall be carried out in such a manner that sediment pollution is abated. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. Points of concentration inflow shall be protected in accordance with Grade Stabilization Structure criteria. The remainder of the interior slopes should be stabilized (one time) with seed and mulch upon trap completion and monitored and maintained erosion free during the life of the trap.
8. The structure shall be dewatered by approved methods, removed and the area stabilized when the drainage area has been properly stabilized.
9. Refer to Section D for specifications concerning trap dewatering.
10. Minimum trap depth shall be measured from the weir elevation.
11. The elevation of the top of any dike directing water into the trap must equal or exceed the elevation of the trap embankment.
12. Geotextile Class C shall be placed over the bottom and sides of the outlet channel prior to the placement of stone. Sections of filter cloth must overlap at least 1' with the section nearest the entrance placed on top. The filter cloth shall be embedded at least 6" into existing ground at the entrance of the outlet channel.
13. Outlet - An outlet shall be provided, including a means of conveying the discharge in an erosion free manner to an existing stable channel.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 9 - 10	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SUPER SILT FENCE OUTFALL PROTECTION



DETAIL 6 - GABION INFLOW PROTECTION



Construction Specifications

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

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

Legend

- Ex. 2' Contours
- Ex. 10' Contours
- Prop. 2' Contours — 222
- Prop. 10' Contours — 220
- 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 — P-1 PAVING
- Proposed Parking Count — 16
- Handicapped Parking Space
- Limit of Disturbance — LOD
- Super Silt Fence — SSF
- Stabilized Construction Entrance With Mountable Berm — S.C.E.
- Inlet Protection — I.P.

PHASE I EXISTING CONDITIONS
LIMIT OF DISTURBANCE :
7405 SQ. FT. OR 0.17 ACRES

Reviewed for Howard SCD and meets Technical Requirements

Jim Myers / CB — 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

10/24/02
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: Howard County Department of Planning and Zoning

10/30/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

11/7/02
CHIEF, DIVISION OF LAND DEVELOPMENT S.B. — DATE

11/7/02
DIRECTOR — DATE

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 M-2	TAX /ZONE MAP 48	ELECT. DIST. 6	CENSUS TRACT 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

STATE OF MARYLAND — JAMES ADRIAN MARKLE, JR. — No. 11005 — REGISTERED PROFESSIONAL ENGINEER — 7/1/02

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 — Date 7/01/02
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 all responsible personel involved in the construction project will have a certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspections by the Howard soil Conservation District."

Signature of Developer — 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

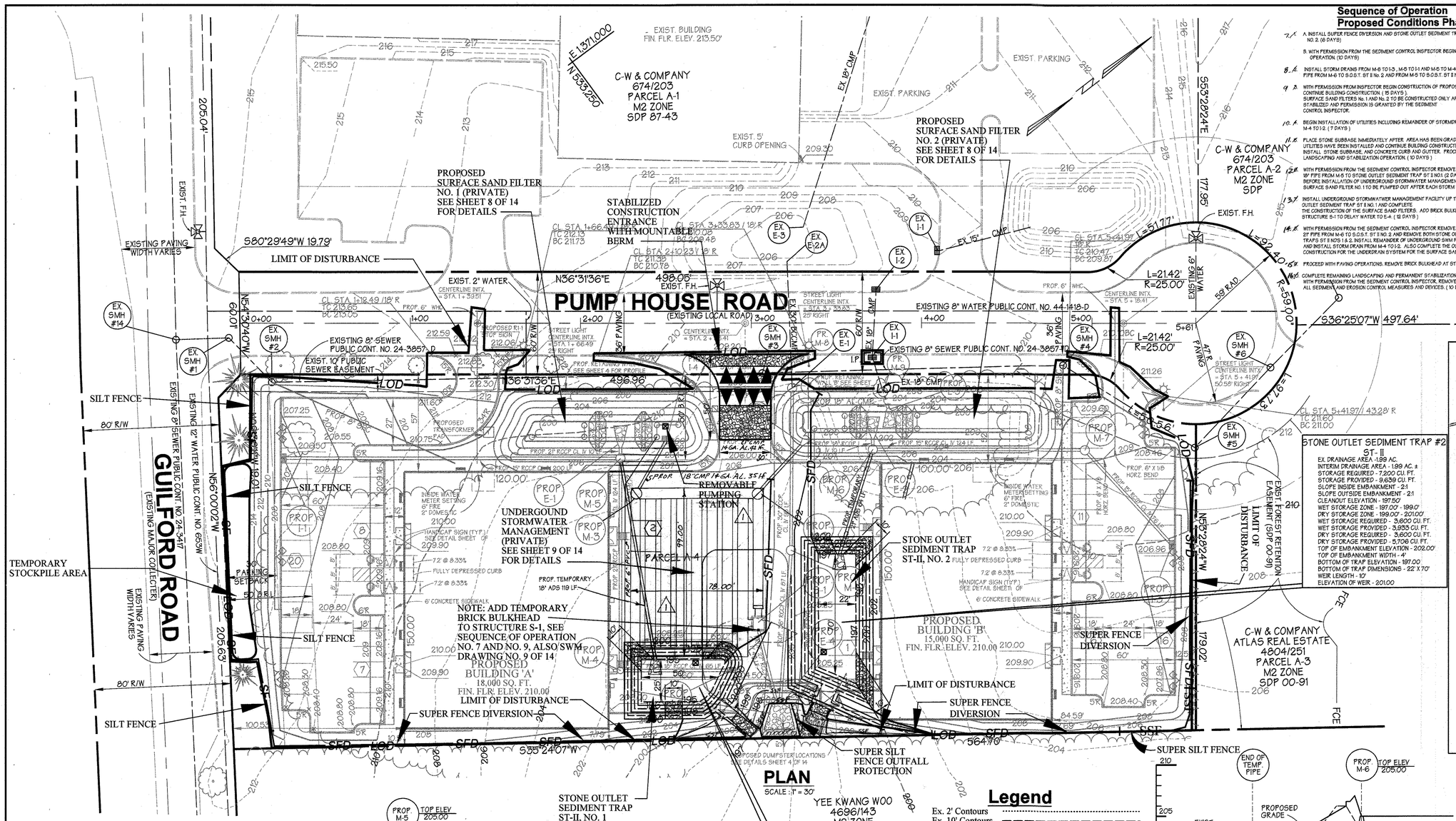
DESIGNED BY: P.R.C.
DRAWN BY: K.E.
CHECKED BY: P.R.C.
REVISIONS

Erosion and Sediment Control Plan
Existing Conditions Phase I
C - W & COMPANY
PARCEL A-4

ELECTION DISTRICT : 6th
HOWARD CO., MARYLAND
SDP 02 - 091
SCALE : As Shown
DATE : JANUARY 21, 2002

AS BUILT 12.21.2004 SDP 02 - 091

P/N : 9852

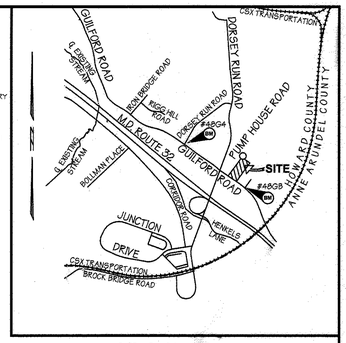


PLAN

SCALE : 1" = 30'

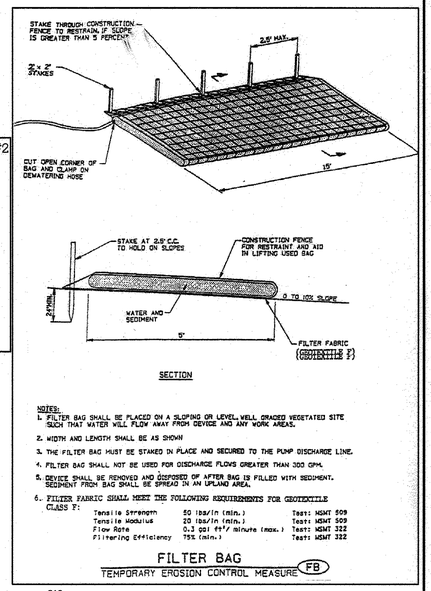
Sequence of Operation
Proposed Conditions Phase II

7. A. INSTALL SUPER FENCE DIVERSION AND STONE OUTLET SEDIMENT TRAPS NO. 1 AND NO. 2. (6 DAYS)
   B. WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR BEGIN GRADING OPERATION. (10 DAYS)
8. A. INSTALL STORM DRAINS FROM M-8 TO I-3 , M-5 TO I-1 AND M-6 TO M-4. INSTALL TEMPORARY PIPE FROM M-6 TO S.O.S.T. ST II No. 2 AND FROM M-5 TO S.O.S.T. ST II No. 1. (4 DAYS)
9. B. 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.
10. A. BEGIN INSTALLATION OF UTILITIES INCLUDING REMAINDER OF STORMDRAINS EXCEPT FROM M-4 TO I-2. (7 DAYS)
11. B. 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)
12. A. WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR REMOVE TEMPORARY 18" PIPE FROM M-5 TO STONE OUTLET SEDIMENT TRAP ST II NO1 (2 DAYS) BEFORE INSTALLATION OF UNDERGROUND STORMWATER MANAGEMENT. SURFACE SAND FILTER NO. 1 TO BE PUMPED OUT AFTER EACH STORM EVENT.
13. A. INSTALL UNDERGROUND STORMWATER MANAGEMENT FACILITY UP TO STONE OUTLET SEDIMENT TRAP ST II NO. 1 AND COMPLETE THE CONSTRUCTION OF THE SURFACE SAND FILTERS. ADD BRICK BULKHEAD AT STRUCTURE S-1 TO DELAY WATER TO E-4. (12 DAYS)
14. A. WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR REMOVE TEMPORARY 21" PIPE FROM M-6 TO S.O.S.T. ST II NO. 2 AND REMOVE BOTH STONE OUTLET SEDIMENT TRAPS ST II NOS 1 & 2. INSTALL REMAINDER OF UNDERGROUND SWM FACILITY AND INSTALL STORM DRAIN FROM M-4 TO I-2. ALSO COMPLETE THE OUTFALL PIPE CONSTRUCTION FOR THE UNDERDRAIN SYSTEM FOR THE SURFACE SAND FILTERS (4 DAYS)
15. PROCEED WITH PAVING OPERATIONS. REMOVE BRICK BULKHEAD AT STUCTURE S-1(10 DAYS)
16. A. COMPLETE REMAINING LANDSCAPING AND PERMANENT STABILIZATION. WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES AND DEVICES. (10 DAYS)



Vicinity Map

SCALE: 1" = 2,000'



NOTES:
1. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
2. WIDTH AND LENGTH SHALL BE AS SHOWN
3. THE FILTER BAG MUST BE STAKED IN PLACE AND SECURED TO THE PUMP DISCHARGE LINE.
4. FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
5. DEVICE SHALL BE REMOVED AND DISPOSED OF AFTER BAG IS FILLED WITH SEDIMENT. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA.
6. FILTER FABRIC SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft²/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

FILTER BAG

TEMPORARY EROSION CONTROL MEASURE FB

STONE OUTLET SEDIMENT TRAP #2
ST- II

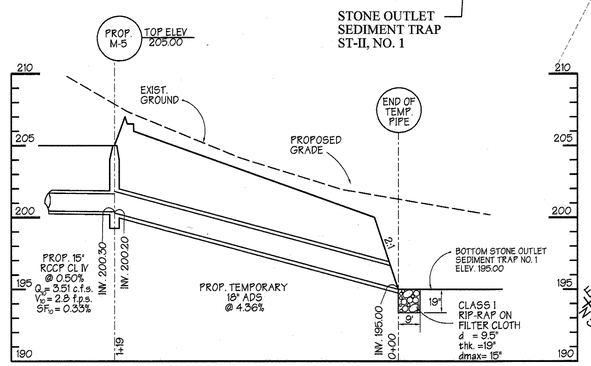
EX. DRAINAGE AREA - 1.89 AC.
INTERIM DRAINAGE AREA - 1.89 AC. ±
STORAGE REQUIRED - 7,200 CU. FT.
STORAGE PROVIDED - 9,639 CU. FT.
SLOPE INSIDE EMBANKMENT - 2:1
SLOPE OUTSIDE EMBANKMENT - 2:1
CLEANOUT ELEVATION - 197.50'
WET STORAGE ZONE - 197.00' - 199.0'
DRY STORAGE ZONE - 199.00' - 201.00'
WET STORAGE REQUIRED - 3,600 CU. FT.
WET STORAGE PROVIDED - 3,933 CU. FT.
DRY STORAGE REQUIRED - 3,600 CU. FT.
DRY STORAGE PROVIDED - 5,706 CU. FT.
TOP OF EMBANKMENT ELEVATION - 202.00'
TOP OF EMBANKMENT WIDTH - 4'
BOTTOM OF TRAP ELEVATION - 197.00
BOTTOM OF TRAP DIMENSIONS - 22' X 70'
WEIR LENGTH - 10'
ELEVATION OF WEIR - 201.00

STONE OUTLET SEDIMENT TRAP #1
ST- II

EX. DRAINAGE AREA 1.15 AC.
INTERIM. DRAINAGE AREA - 1.63 AC. ±
STORAGE REQUIRED - 5,868 CU. FT.
STORAGE PROVIDED - 6,883.5 CU. FT.
SLOPE INSIDE EMBANKMENT - 2:1
SLOPE OUTSIDE EMBANKMENT - 2:1
CLEANOUT ELEVATION - 195.50'
WET STORAGE ZONE - 195.00' - 197.10'
DRY STORAGE ZONE - 197.10' - 199.00'
WET STORAGE REQUIRED - 2,934 CU. FT.
WET STORAGE PROVIDED - 2,934 CU. FT.
DRY STORAGE REQUIRED - 2,934 CU. FT.
DRY STORAGE PROVIDED - 3,949.50 CU. FT.
TOP OF EMBANKMENT ELEVATION - 200.00'
TOP OF EMBANKMENT WIDTH - 4'
BOTTOM OF TRAP ELEVATION - 195.00
BOTTOM OF TRAP DIMENSIONS - 25' X 50'
WEIR LENGTH - 6'
ELEVATION OF WEIR - 199.00

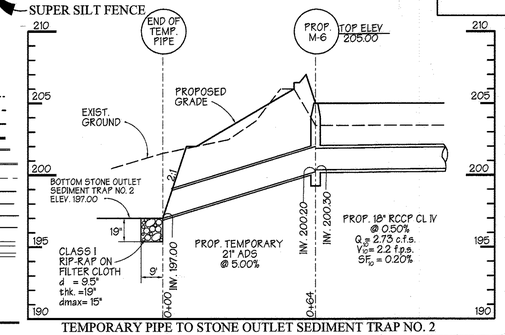
Legend

Ex. 2' Contours	
Ex. 10' Contours	
Prop. 2' Contours	222
Prop. 10' Contours	220
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	P-1 PAVING
Proposed Parking Count	16
Handicapped Parking Space	
Limit of Disturbance	LOD
Silt Fence	SF
Super Silt Fence	SSF
Super Fence Diversion	SFD
Stabilized Construction Entrance With Mountable Berm	S.C.E.
Inlet Protection	I. P.



TEMPORARY PIPE TO STONE OUTLET SEDIMENT TRAP NO. 1

SCALE: HORZ. 1" = 30'
VERT.= 1" = 5'



TEMPORARY PIPE TO STONE OUTLET SEDIMENT TRAP NO. 2

SCALE: HORZ. 1" = 30'
VERT.= 1" = 5'

PHASE II PROPOSED CONDITIONS
LIMIT OF DISTURBANCE / SUBMITTAL:
117,612 SQ. FT. OR 2.70 ACRES

Reviewed for Howard SCD and meets Technical Requirements

USDA-NATURAL RESOURCES CONSERVATION SERVICE — DATE 10/24/02

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 10/24/02

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

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 M-2	TAX MAP / ZONE 48	ELECT. DIST. 6	CENSUS TRACT 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

STATE OF MARYLAND — JAMES A. MARKLE JR. — No. 11005 — REGISTERED PROFESSIONAL ENGINEER — 7/1/02

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 — Date 7/01/02
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 all responsible personel involved in the construction project will have a certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspections by the Howard soil Conservation District."

Signature of Developer — 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
1 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

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

AS BUILT 12.21.2004

SDP 02 - 091

F/N : 9862

Stabilization Specifications

Section I - Vegetative Stabilization Methods and Materials

A. Site Preparation

I. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.

II. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.

III. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.

B. Soil Amendments (Fertilizer and Lime Specifications)

I. 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 may also be used for chemical analysis.

II. 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. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.

III. 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.

Iv. Incorporate lime and fertilizer into the top 3 - 5" of soil by disking or other suitable means.

v. Soil Amendments : Use only one of the following schedules

I. 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. As time of seeding, apply 400 lbs. per acre 50-0-0 uniform fertilizer (9.1 lbs / 100 s.f.).

II. Acceptable - Apply 2 tons per acre dolomitic limestone (92lbs. / 1000 s.f.) and 1000 lbs. per acre 10-10-10 fertilizer (23 lbs. / 1000 s.f.) before seeding, harrow or disc upper three inches of soil.

C. Seedbed Preparation

I. Temporary Seeding

a. Seedbed preparation shall consist of loosening soil to a depth of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on 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 leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.

b. Apply fertilizer and lime as prescribed on the plans.

c. Incorporate lime and fertilizer into the top 3 - 5" of soil by disking or other suitable means.

II. Permanent Seeding

a. Minimum soil conditions required for permanent vegetative establishment:

1. Soil pH shall be between 6.0 and 7.0.
2. Soluble salts shall be less than 500 parts per million (ppm).
3. The soil shall contain less than 40% clay but enough fine grained material (> 30% silt plus clay) to provide the capacity to hold a moderate amounts of moisture. An exception is if lovegrass or serecia lespedeza is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
4. Soil shall contain 1.5% minimum organic matter by weight.
5. Soil must contain sufficient pore space to permit adequate root penetration.
6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.

b. 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 slots to prevent topsoil from sliding down a slope.

c. Apply soil amendments as per soil test or as included on the plans.

d. Mix soil amendments into the top 3 - 5" of topsoil by disking 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 seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment so roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer 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. Seedbed loosening may not be necessary on newly disturbed areas.

D. Seed Specifications

i. 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.

ii. Inoculant - The inoculant for treating legume seed 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 fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. NOTE: It is very important to keep inoculants as cool as possible until used. Temperatures above 75 - 80 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.

E. Methods of Seeding

i. Hydroseeding. Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, or a cultipacker seeder.

a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen: maximum of 100 lbs. per acre total soluble nitrogen; P205 (phosphorus): 200 lbs./ac.; K20 (potassium): 200 lbs./ac.

b. Lime - use only ground agricultural limestone, (Up to 3 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 burns or hydrated lime when hydroseeding.

c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

II. Dry Seeding: This includes use of conventional drop or broadcast spreaders.

a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 26 or 28. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.

b. where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

III. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.

b. 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)

I. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.

II. Wood Cellulose Fiber Mulch (WCFM)

a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.

b. 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 uniformly spread slurry.

c. WCFM, including dye, shall contain no germination or growth inhibiting factors.

d. 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 percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.

e. WCFM material shall contain no elements or compounds at concentration levels that will be phyto-toxic.

f. WCFM mulch can withstand 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 1.6% maximum and water holding capacity of 90% minimum.

NOTE: ONLY STERILE 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.

I. If grading is completed outside of the seeding season, mulch alone shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.

II. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied so a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.

III. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 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.

H. 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:

I. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.

II. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

III. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and on the crests of banks. The remainder of areas should appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Aqro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used as rates recommended by the manufacturer to anchor mulch.

Iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' 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

I. select one or more off the species or mixtures listed in Table 25 for the appropriate Plant Hardiness 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 site Summary is not put on 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 342 - Critical Area Planting. For special lawn maintainance areas, see Sections IV Sod and V Turfgrass.

II. For sites having disturbed areas over 5 acres, she rates shownon thie table shall be deleted and the rates recommended by the testing agency shall be written in.

III. For areas recieving low maintenance, apply ureaform fertilizer (46-0-0) at 3-1/2 lbs/1000 sq. ft. (150 lbs/ac), in addition to the above soil ammendments shown in the table below, to be performed as 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

I. select one or more off the species or mixtures listed in Table 25 for the appropriate Plant Hardiness 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 put on 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 342 - Critical Area Planting. For special lawn maintainance areas, see Sections IV Sod and V Turfgrass.

II. For sites having disturbed areas over 5 acres, she rates shownon thie table shall be deleted and the rates recommended by the testing agency shall be written in.

III. For areas recieving low maintenance, apply ureaform fertilizer (46-0-0) at 3-1/2 lbs/1000 sq. ft. (150 lbs/ac), in addition to the above soil ammendments shown in the table below, to be performed as the time of seeding

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

A. General specifications

I. Class of turfgrass sod shall be Maryland or Virginia State Certified or Approval. Sod labels shall be made available to the job foreman and inspector.

II. Sod shall be machine cut at 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.

III. 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.

Iv. Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.

v. Sod shall be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period shall be approved by an agronomist or soil scientist prior to its installation.

vi. Site Preparation : Fertilizer and Lime application rates will be determined by soil tests. Under unusual circumstances where there is insufficient time for a complete soil test, fertilizer and lime may be applied in amounts shown under vi-b, below.

a. Prior to sodding, the surface will be cleared of all trash, debris, and of all roots,rubrush, wire, grade stakes and other objects that would interfere with planting, fertilizing, or maintenance operations.

b. Where soil is acid or composted of heavy clays, ground limestone will be spread at the rate of 2 tons per acre(100 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.

c. All areas recieving sod will be uniformly fine graded. Hard packed earth will be scarified prior to placement of sod.

B. Sod Installation

I. During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall be lightly irrigated immediately prior to laying the sod.

II. The first row of sod shall be laid 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 overlapped and that all joints are butted tight in order to prevent voids which would cause drying of the roots.

III. Wherever 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 roots and the underlying soil surface.

Iv. 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

I. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of 4". Watering should be done during the heat of the day to prevent wilting.

II. After the first week, sod watering is required as necessary to maintain adequate moisture content.

III. 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 3" unless otherwise specified.

Section IV - Turfgrass Establishment

Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance. Areas to receive seed shall be tilled by disking 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 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

I. Kentucky Bluegrass - Fall sun mixture - For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and eastern shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 15 to 2.0 pounds/1000 square feet. A minimum of three bluegrass cultivars should be chosen ranging from a minimum of 10% to a maximum of 35% of the mixture by weight.

II. Kentucky Bluegrass/Perennial 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 Perennial Ryegrass Cultivars/ 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 35% of the mixture by weight.

III. Tall Fescue/Kentucky Bluegrass - Full sun mixture - For use in droughs prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; certified Tall Fescue Cultivars 95 - 100%, certified Kentucky Bluegrass Cultivars 0 - 5%. Seeding rate 5 to 8 lb./1000 square feet. One or more cultivars may be blended.

Iv. Kentucky Bluegrass/Fine Fescue - Shade Mixture - For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; certified Kentucky Bluegrass Cultivars 50 - 40% and certified Fine Fescue and 60 - 70%. Seeding rate: 11/2 - 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 35% of the mixture by weight.

NOTE: Turfgrass varieties should be selected from those listed in the most current University of Maryland Publication, Agronomy Mimeo #77, "Turfgrass Cultivar Recommendations for Maryland".

B. Ideal times of seeding

Western MD: March 15-June 1, August 1-October 1 (Hardiness Zones - 5b, 6a)

Central MD: March 1-May 15, August 15-October 15 (Hardiness Zones - 6b)

Southern MD, Eastern Shore: March 1-May 15, August 15-October 15 (Hardiness Zones - 7a, 7b)

C. Irrigation

If soil moisture is deficient, supply new seedings 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 seedings 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.

I. Once the vegetation is established, the site shall have 95% groundcover to be considered adequately stabilized.

II. If the stand provides less than 40% ground coverage, reestablish following original lime, fertilizer, seedbed preparation and seeding recommendations.

III. If the stand provides between 40% and 94% ground coverage, overseeding and fertilizing using half of the rates originally applied may be necessary.

Iv. 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. 171.

Sediment Control Notes

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1850).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" AND REVISIONS THERETO
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
   A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1,
   B) 14 DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1 CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING AND MULCHING (SEE G). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:
   N 90.8AC/AC
   (2.0 LB/1000 S.F.) P205 175 LB/AC (4.0 LB/1000 S.F.) K20 175 LB/AC (4.0 LB/1000 S.F.) 2 TONS/AC (100 LB/1000 S.F.)
   NOTE:
   FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES THE RATES SHOWN ABOVE FOR PERMANENT SEEDING SHALL BE DELETED AND THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY SHALL BE USED. SOIL TESTING SHALL BE PERFORMED AT THE TIME OF FINE GRADING AND THE RESULTS SHALL BE FURNISHED TO THE SEDIMENT CONTROL INSPECTOR.
8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE FIFE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

Reviewed for Howard SCD and meets Technical Requirements

USDA-NATURAL RESOURCES CONSERVATION SERVICE — DATE 10/29/02

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 10/29/02

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.
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 — Date 7/01/02

Print Name JAMES A. MARKLE JR. — PE # 11005

7/1/02

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 personel involved in the construction project will have a certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspections by the Howard soil Conservation District."

Signature of Developer — Date 7/01/02

Print Name DAN HAZARD

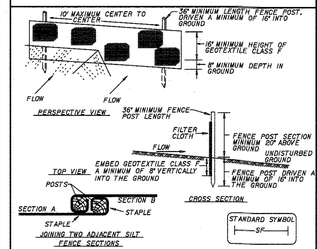
OWNER / DEVELOPER

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

AS BUILT 12.21.2004

DETAIL 22 - SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 16" x 16" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.) Test: MSMT 509
Tensile Modulus	20 lbs/in (min.) Test: MSMT 509
Flow Rate	0.3 gal/ft/ minute (max) Test: MSMT 322
Filtering Efficiency	75% (min.) Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

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

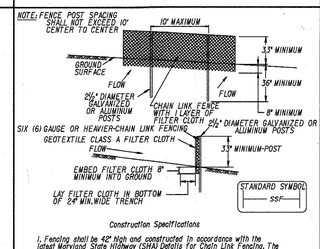
SILT FENCE

Silt Fence Design Criteria

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

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

DETAIL 33 - SUPER SILT FENCE



Construction Specifications

1. Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway (SHA) Details for chain link fencing. The specification for a 6-ft fence shall be used substituting 42" fabric and 6-ft length posts.
2. The posts do not need to be set in concrete.
3. Chain link fence shall be fastened securely to the fence posts with wire ties or staples. The lower tension wire, braces or truss rods, drive anchors and post caps are not required except on the ends of the fence. The chain link fence shall be six (6) gauge or heavier.
4. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
5. Filter cloth shall be embedded a minimum of 8" into the ground.
6. When two sections of geotextile fabric adjoin each other, they shall be overlapped by 6" and folded.
7. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of the fence height.

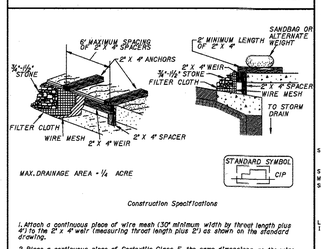
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | MODIFIED | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SUPER SILT FENCE

Design Criteria

Slope	Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
0 - 10%	0 - 10:1	unlimited	unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

CURB INLET PROTECTION (COG OR COS INLETS)

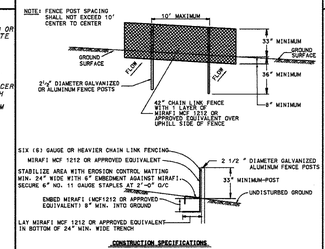


Construction Specifications

1. Attach a continuous piece of wire mesh (30" minimum width by three length plus 4") to the 2" x 4" weir (measuring throat length plus 2") as shown on the standard drawing.
2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.
3. Securely nail the 2" x 4" weir to a 9' long vertical spacer to be located between the weir and the inlet face (max. 4' apart).
4. Place the assembled the inlet throat and nail (minimum 2" lengths of 2" x 4") to the top of the weir (2 spacer locations). These 2" x 4" members shall extend across the inlet top and be held in place by sandbags or alternate weight.
5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.
6. Form the 1/2" x 1/2" wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4" to 1 1/2" stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.
7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
8. Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE E - 16 - GB | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

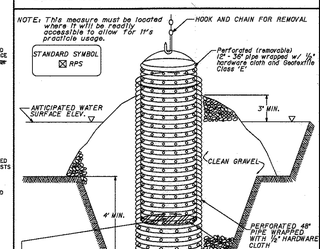
SUPER FENCE DIVERSION



CONSTRUCTION SPECIFICATIONS

1. Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway (SHA) Details for chain link fencing. The specification for a 6-ft fence shall be used substituting 42" fabric and 6-ft length posts.
2. The posts do not need to be set in concrete.
3. Chain link fence shall be fastened securely to the fence posts with wire ties or staples. The lower tension wire, braces or truss rods, drive anchors and post caps are not required except on the ends of the fence. The chain link fencing shall be six (6) gauge or heavier.
4. MIRAFI MCF 1212 or approved equivalent shall be fastened securely to the chain link fence with ties spaced every 24-inches at the top and mid section. MIRAFI MCF 1212 or approved equivalent shall be embedded a minimum of 8" into the ground.
5. When two sections of MIRAFI MCF 1212 or approved equivalent cloth each other, they shall be overlapped by 6-inches and folded.
6. Maintenance shall be performed as needed.
7. Maintenance flow slope 10:0%
8. Maximum drainage area 5 acres.

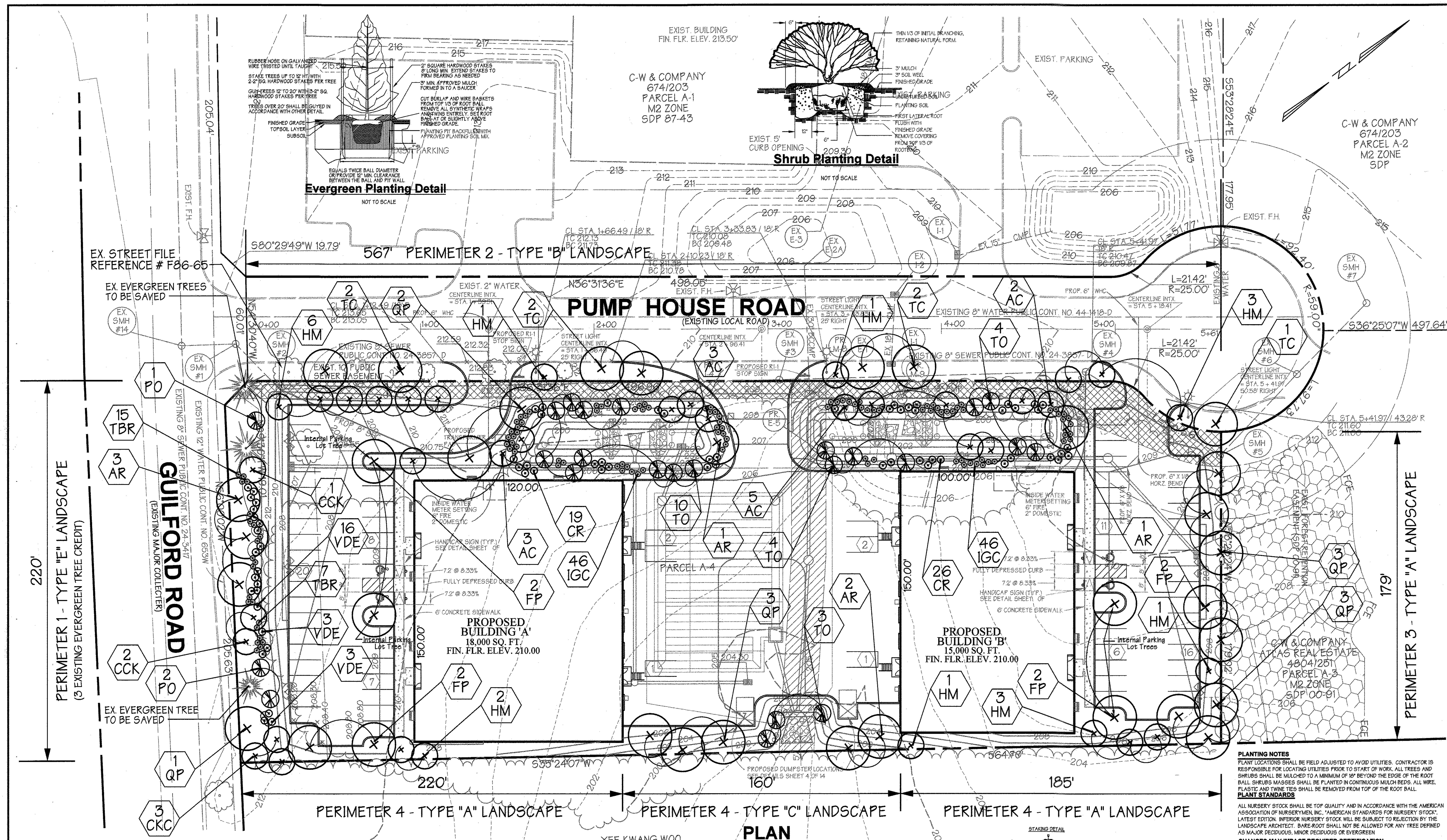
DETAIL 20A - REMOVABLE PUMPING STATION



1. The outer pipe should be 48" dia or shall in any case be at least 4" greater than the inner pipe. The inner pipe shall be wrapped with 1/4" hardware cloth to prevent backfill material from entering the perforations.
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
3. The inside pipe (dewater pipe) should be constructed by perforating a corrugated or smooth plastic pipe with 1" diameter holes. The perforated pipe should be wrapped with 1/4" hardware cloth first, then wrapped again with Geotextile Class E.
4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

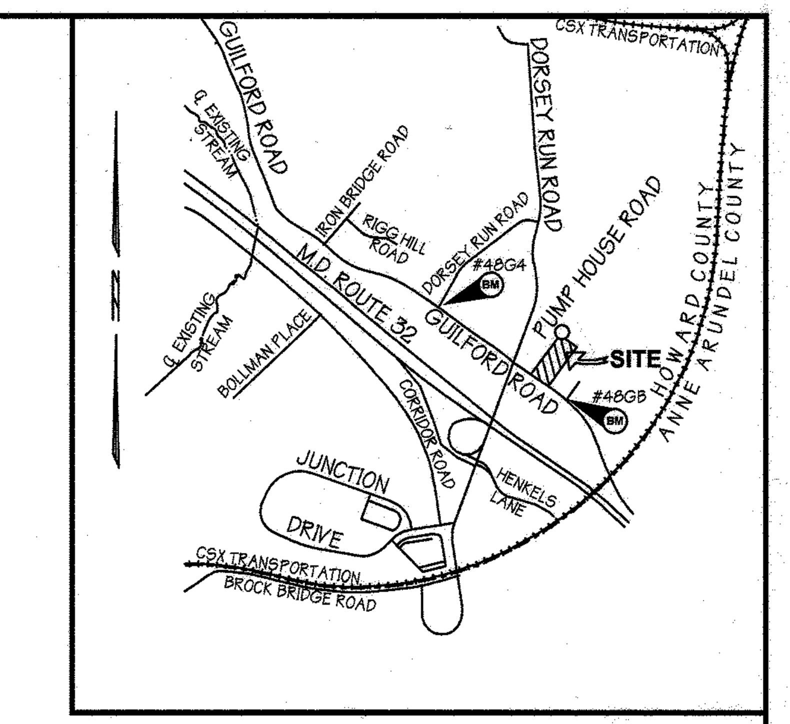
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE D - 18 - E | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



PLAN

SCALE : 1" = 30'



Vicinity Map

SCALE: 1" = 2,000'

Legend

- Ex. 2' Contours
- Ex. 10' Contours
- Prop. 2' Contours (222)
- Prop. 10' Contours (220)
- 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 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I / WE FURTHER CERTIFY THAT UPON COMPLETION A CERTIFICATION OF LANDSCAPE INSATALLATION, ACCOMPAINED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTEDTO THE DEPARTMENT OF PLANNING AND ZONING.

[signature] NAME — 7/01/02 DATE

DAN HAZARD
PRINT NAME

PLANT SCHEDULE

KEY	QUANT.	BOTANICAL NAME / COMMON NAME	SIZE / COND.	SPACING	REMARKS
SHADE TREES					
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
MINOR TREES / EVERGREENS					
PO	3	Picea omorika / Serbian Spruce	6 - 8' B&B	As Shown	Heavy
TO	21	Thuja occidentalis 'Nigra' / Americam Arborvitae 'Nigra	6 - 8' B&B	As Shown	Heavy
HM	18	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
SHRUBS					
TBR	22	Taxus baccata 'Repandens' / Spreading English Yew	24 - 30" spd. B&B	As Shown	Heavy
CR	45	Cornus racemosa / Grey Dogwood	4 - 5' B&B	As Shown	Heavy
IGC	92	Ilex glabra compacta / Compact Inkberry	30 - 36" B&B	As Shown	Heavy
VDE	22	Viburnum dilatatum 'Erie' / 'Erie' Linden Viburnum	4 - 5' B&B	As Shown	Heavy

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

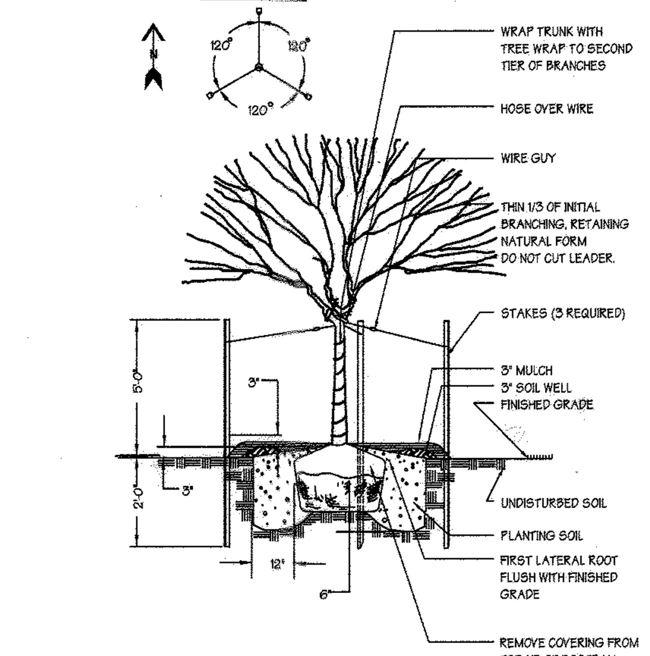
	ROADWAYS		PERIMETER PROPERTIES	
Landscape Type	B	E	A	C
Linear Feet of Perimeter 1	0	220	0	0
Linear Feet of Perimeter 2	567	0	0	0
Linear Feet of Perimeter 3	0	0	179	0
Linear Feet of Perimeter 4	0	0	405	160
Credit for existing Vegetation, (Yes, No Linear Feet)	NO	3 Evergreens	NO	NO
Credit for Wall, Fence, or Berm (Yes, No, Linear Feet)	NO	NO	NO	NO
Number of Plants Required Shade Trees Evergreen Trees Shrubs	 11 14 0	 6 0 40*	 10 0 0	 4 8 0
Number of Plants Provided Shade Trees Evergreen Trees Other Trees (2:1 sub.) Shrubs (10:1 sub.)	 4 8 16 0	 4 3 6 44	 10 0 7 0	 5 3 0 0

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 "E" IN LIEU OF THE 4 ADDITIONAL EVERGREEN TREES REQUIRED FOR PERIMETER "B".
PERIMETER 1: 3 EVERGREEN TREES AND 1 OTHER TREE SUBSTITUTED FOR 2 SHADE TREES.
PERIMETERS 3 & 4: 1 SHADE TREE SUBSTITUTED FOR 2 EVERGREEN TREES. 3 OTHER TREES TO BE PLANTED ALONG PERIMETER "A" IN LIEU OF THE 3 ADDITIONAL EVERGREEN TREES REQUIRED FOR PERIMETER "C".

SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

Linear Feet of Perimeters	625'
Number of Trees Required Shade Trees Evergreen Trees	 13 16
Credit for Existing Vegetation (No, Yes and %)	NO
Credit for Other Landscaping (No, Yes and %)	NO
Number of Trees Provided Shade Trees Evergreen Trees Other Trees (2:1 substitution) Shrubs (10:1 substitution)	 0 12 4 137

NOTES: PLANT SUBSTITUTIONS - FOUR ORNAMENTAL TREES SUBSTITUTED FOR FOUR EVERGREEN TREES AND 130 SHRUBS SUBSTITUTED FOR 13 SHADE TREES



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 BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

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 18" BEYOND THE EDGE OF THE ROOT BALL. SHRUBS MASSES 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. INFERIOR 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 APPROVED LANDSCAPE PLAN 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.

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPE IN THE AMOUNT OF $24,780.00 IS A PART OF THE DEVELOPER'S AGREEMENT.

PLANTS PROVIDED CALCULATIONS

SHADE TREES	34	@ 300.00	=	10,200.00
EVERGREEN TREES	24	@ 150.00	=	3,600.00
MINOR TREES	37	@ 150.00	=	5,550.00
SHRUBS	181	@ 30.00	=	5,430.00
			TOTAL =	$24,780.00

APPROVED: Howard County Department of Planning and Zoning

[signature] CHIEF, DEVELOPMENT ENGINEERING DIVISION — 10/30/02 DATE
[signature] CHIEF, DIVISION OF LAND DEVELOPMENT — 11/7/02 DATE
[signature] DIRECTOR — 11/7/02 DATE

PREPARED BY:

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

[Seal: STATE OF MARYLAND — DAVID LLOYD ... LANDSCAPE ARCHITECT] [signature]

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	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 /ZONE MAP	ELECT. DIST.	CENSUS TRACT
15557, 14442		M-2	48	6	6064

WATER CODE B-02 — SEWER CODE 4020000

Landscape Plan

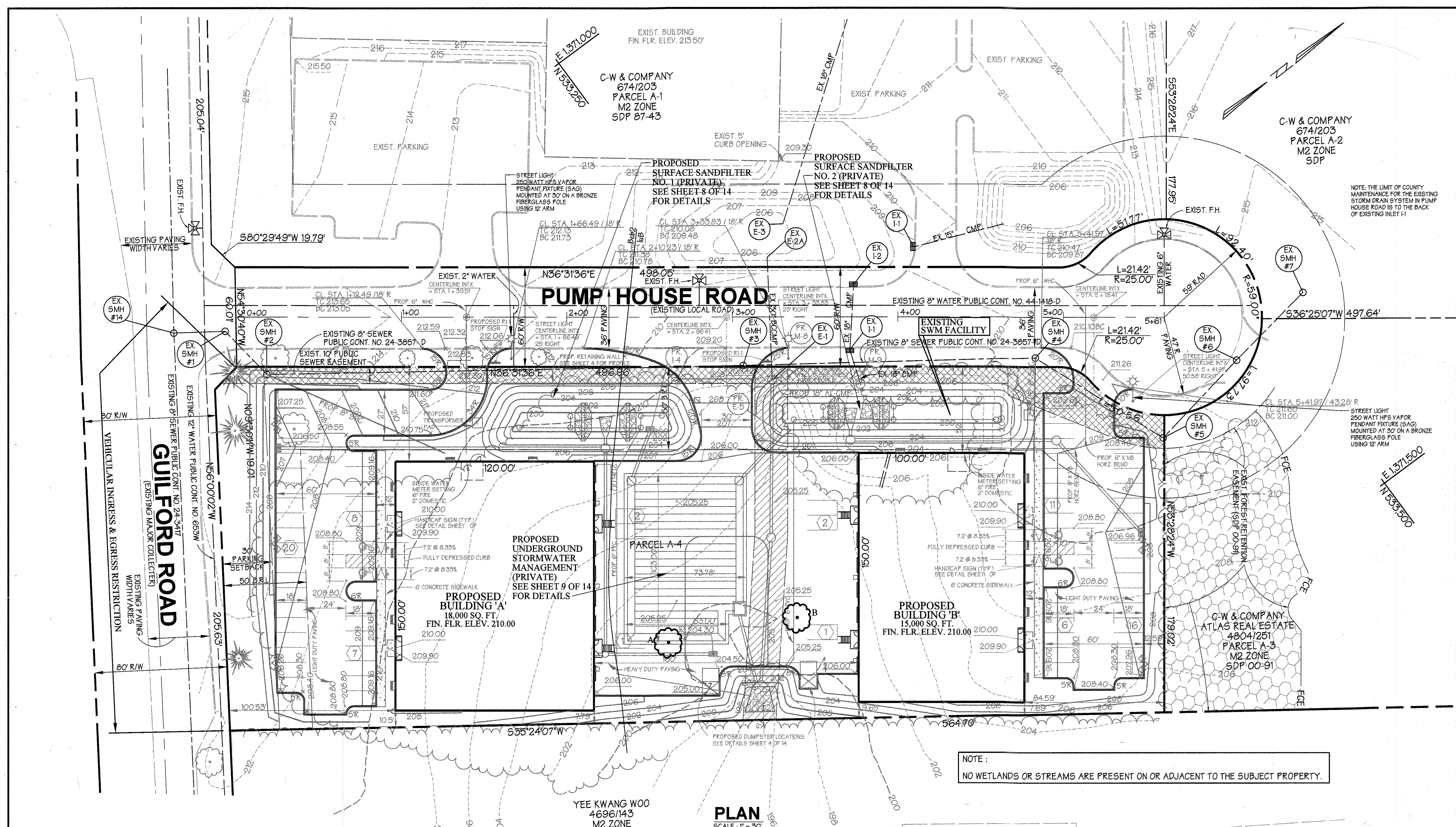
C - W & COMPANY PARCEL A-4

ELECTION DISTRICT : 6th
HOWARD CO., MARYLAND
13 OF 14
SDP 02 - 091
SCALE : As Shown
DATE : JANUARY 21, 2002

AS BUILT 12.21.2004

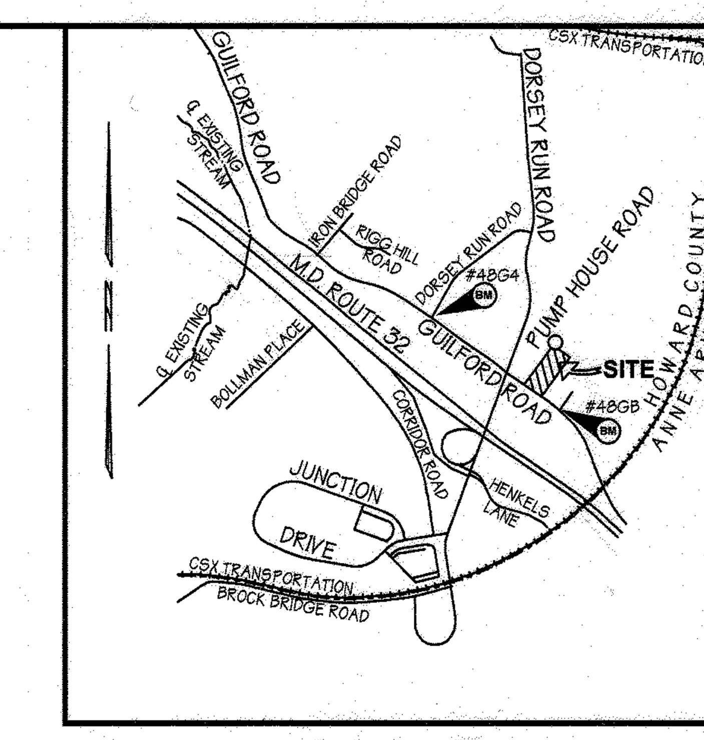
SDP 02 - 091

P/N : 9852 FILE NAME: 9852landscape.s01



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

PLAN
SCALE : 1" = 30'



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

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

Legend

- EXITING CONTOURS
- EXISTING FOREST LIMITS
- A OR B — SPECIMEN TREES - TO BE CLEARED

FOREST STAND DATA

KEY	COMMUNITY TYPE	ACREAGE (NTA)	DOMINANT VEGETATION	GENERAL CONDITION	PRIORITY ACREAGE
F 1	SUCCESSIONAL	2.1	Pinus virginiana, Acer rubrum, Liriodendron tulipifera, Prunus serotina, Smilax sp., Rosa multiflora	FAIR	0

SEE ACCOMPANYING REPORT FOR COMPLETE STAND DESCRIPTIONS

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 :
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P.O. Box 5006 Glen Arm, MD 21057 (410) 592-6752

MD DNR Qualified Professional
USACOE Wetlands Delineator
Certification # WDCP93MD0610044B2
John P. Canoles 7/1/02

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	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 /ZONE MAP	ELECT. DIST.	CENSUS TRACT
15557, 14442		M-2	48	6	6064

WATER CODE B-02 — SEWER CODE 4020000

Forest Stand Delineation & Forest Conservation Plan
C - W & COMPANY PARCEL A-4

ELECTION DISTRICT : 6th
HOWARD CO., MARYLAND
SDP 02 - 091
SCALE : As Shown

DATE : JANUARY 21, 2002

AS BUILT 12.21.2004
SDP 02 - 091
P/N : 9852