

- LEGEND**
- PROPERTY LINE
 - BUILDING RESTRICTION LINE
 - EASEMENTS
 - EXISTING GROUND
 - PROPOSED GRADE
 - EXISTING CURB & GUTTER
 - PROPOSED CURB & GUTTER
 - EXISTING WATER
 - PROPOSED WATER
 - EXISTING SANITARY SEWER
 - PROPOSED SANITARY SEWER
 - EXISTING STORM DRAINS
 - PROPOSED STORM DRAINS
 - PROPOSED HANDICAPPED PARKING
 - HANDICAPPED RAMP DETAIL
 - NUMBER OF PARKING SPACES
 - P2 CONVA. P3 BAYING
 - PROPOSED SIDEWALKS

SITE DATA

TOTAL AREA OF SITE: 709,990 S.F./16.16 AC.±
 EXISTING ZONING: M-1
 PROPERTY REFERENCE: PLAT # 0706 & 0707
 EXISTING USE: FACTORY
 PROPOSED USE: RESEARCH/DEVELOPMENT
 TOTAL FLOOR AREA: 221,446 SF
 PARKING REQUIRED: 696 P.S.
 PARKING PROVIDED: 714 P.S. (INCLUDED 18 HDCP.)
 FLOOR AREA RATION: 1.96 AC./16.16 AC.± = 12.15%
 % OPEN SPACE: 6.19 AC./16.16 AC.± = 38.06%
 % BUILDING COVERAGE/W/PAVING: 10.01 AC./16.16 AC.± = 61.84%
 AREA TO BE DISTURBED: 709,990 S.F./16.16 AC.±
 AREA TO BE VEGETATIVELY STABILIZED: 287,894 S.F./6.16 AC.±
 % BUILDING COVERAGE: 100% / 100% AC.± = 10.0%
 TOTAL AREA OF PARKING LOT: 284,447 S.F.± = 6.53 AC.±
 TOTAL AREA OF LANDSCAPED ISLANDS: 31075 S.F./0.71 AC.±
 PERCENTAGE OF LANDSCAPED ISLANDS & PARKING: 0.71 AC./6.53 AC.± = 10.87%

PARKING TABULATION

Parking Required:

Building A - Office 78596 s.f. - 393 emp. @ 7 p.s./10 emp. = 276 p.s.
Building B - Office 30300 s.f. - 152 emp. @ 7 p.s./10 emp. = 107 p.s.
Building C - Office 38500 s.f. - 193 emp. @ 7.5 p.s./10 emp. = 136 p.s.
Building D - Office 45250 s.f. - 227 emp. @ 7 p.s./10 emp. = 159 p.s.
Warehouse 8800 s.f. @ 1 p.s./500 s.f. = 18 p.s.
Total Parking Spaces for Building D = 177 p.s.
TOTAL PARKING SPACES REQUIRED = 696
TOTAL PARKING SPACES PROVIDED = 714

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT MEET THE REQUIREMENTS FOR SMALL BUILD CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

James M. Helm 12-9-86 DATE
 HOWARD SOIL CONSERVATION DISTRICT

THESE PLANS FOR SMALL BUILD CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HOWARD SOIL CONSERVATION DISTRICT.

Robert J. Johns 12-9-86 DATE
 HOWARD SOIL CONSERVATION DISTRICT

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT

John Brown 12-17-86 DATE
 COUNTY HEALTH DEPT

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

John M. Murchison 12-18-86 DATE
 ZONING ADMINISTRATION

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, STORM DRAINAGE SYSTEMS AND PUBLIC USES HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

John M. Murchison 12-18-86 DATE
 DEPARTMENT OF PUBLIC WORKS

ADDRESS SHEET

BUILDING #	STREET ADDRESS
A	0700 ALEXANDER BELL DRIVE
B	0704 ALEXANDER BELL DRIVE
C	0708 ALEXANDER BELL DRIVE
D	0716 ALEXANDER BELL DRIVE

SUBDIVISION NAME	FEET/ACRES	LANDSCAPED ISLANDS
COLUMBIA GATEWAY	709,990	31,075
Parcel C	221,446	28,447
Parcel D	284,447	6,530

APPROVED
 DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
 HOWARD COUNTY, MARYLAND
 DATE: 10-1-86
M. L. HUNN

GEORGE WILLIAM STEPHENS, JR. AND ASSOCIATES, INC.
 CIVIL ENGINEERS & LAND SURVEYORS
 303 ALLEGHENY AVENUE
 TOWSON, MARYLAND 21284
 (301) 825-8120

ENGINEER'S CERTIFICATE:
 I CERTIFY THAT THIS PLAN FOR CIVIL FACILITY CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE ADVISED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE CIVIL FACILITY WITHIN 30 DAYS OF COMPLETION.

ENGINEER: *George W. Stephens, Jr.*
 DATE: 8-21-86

THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 (301) 492-0233

CONTRACT PURCHASER
 MORGAN PARTNERSHIP
 40 MANEKIN CORPORATION
 10270 OLD COLUMBIA RD.
 COLUMBIA, MARYLAND 21040
 (301) 495-0707

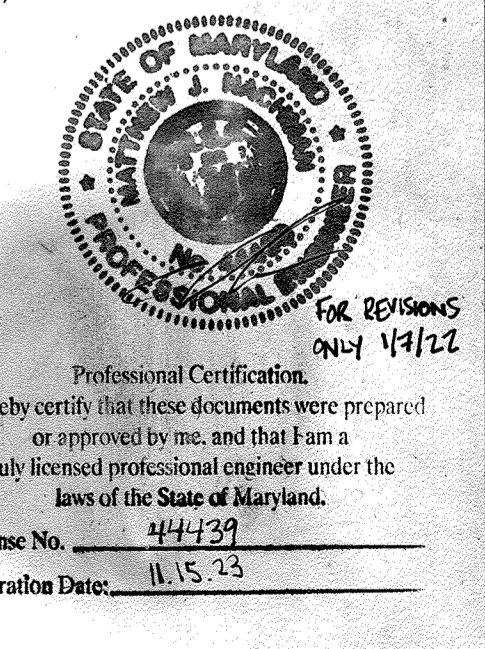
DEVELOPER'S CERTIFICATE:
 I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPT. OF NATURAL RESOURCES APPROVED PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION. I ALSO CERTIFY THAT I HAVE ADVISED THE HOWARD SOIL CONSERVATION DISTRICT OF THESE AUTHORIZED AGENTS AND AGREED NECESSARY DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE CIVIL FACILITY WITHIN 30 DAYS OF COMPLETION.

DEVELOPER: *Joseph H. Neuberger, Jr.*
 DATE: 8-21-86

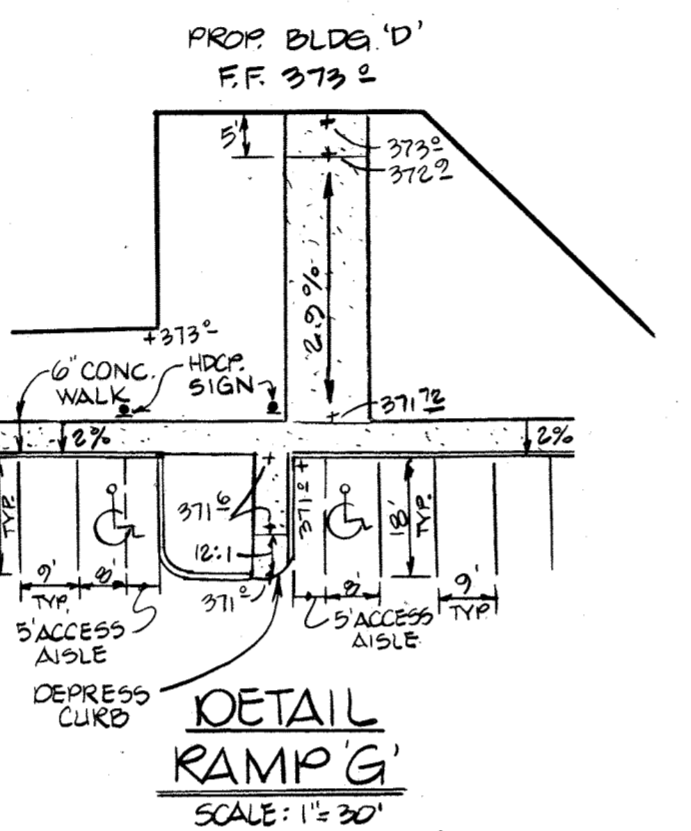
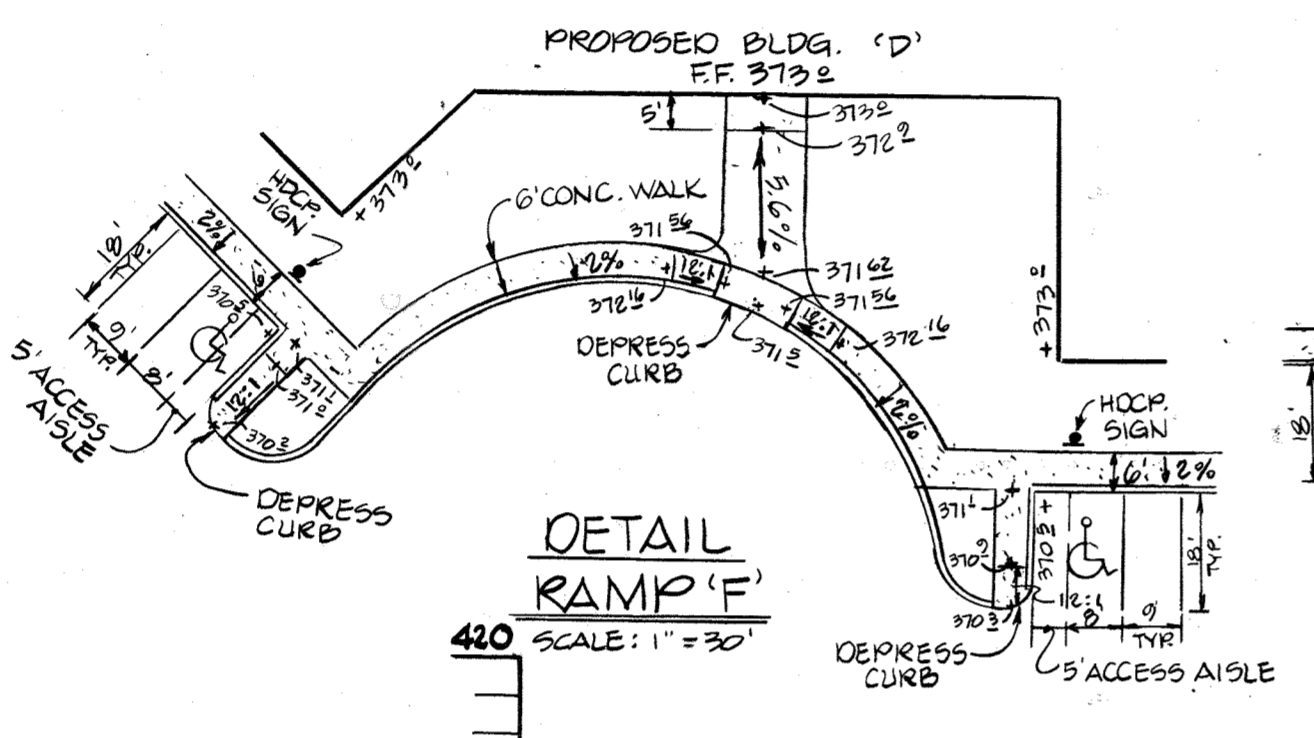
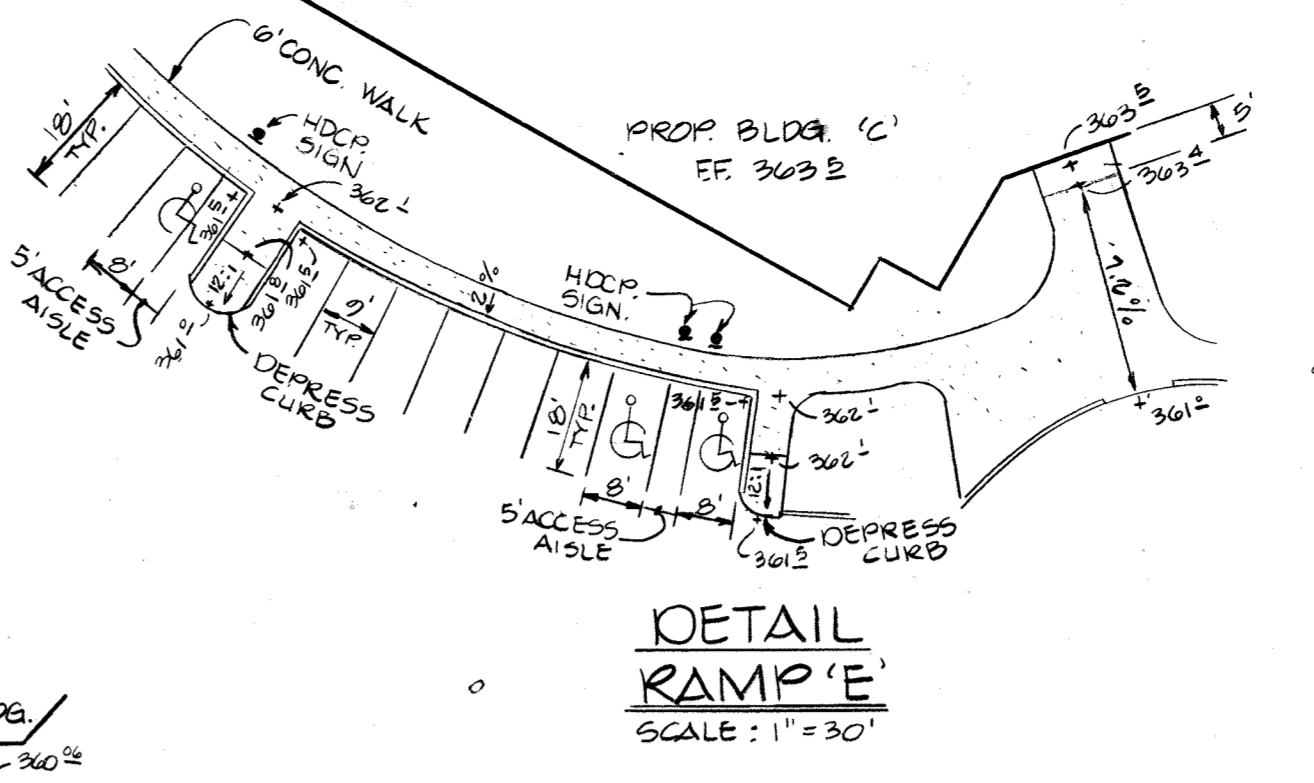
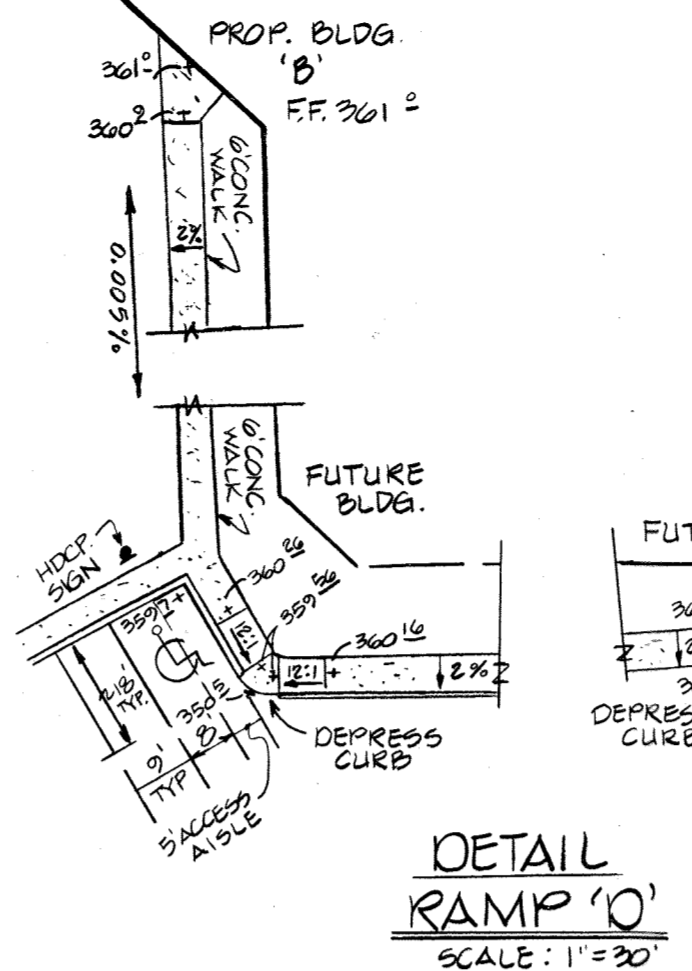
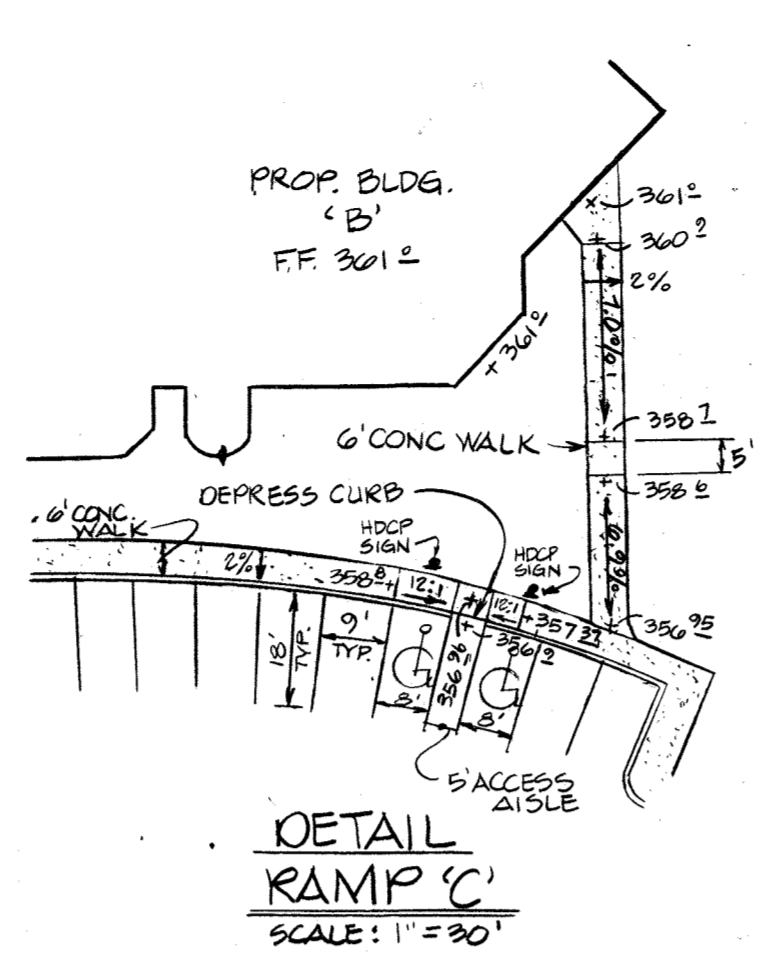
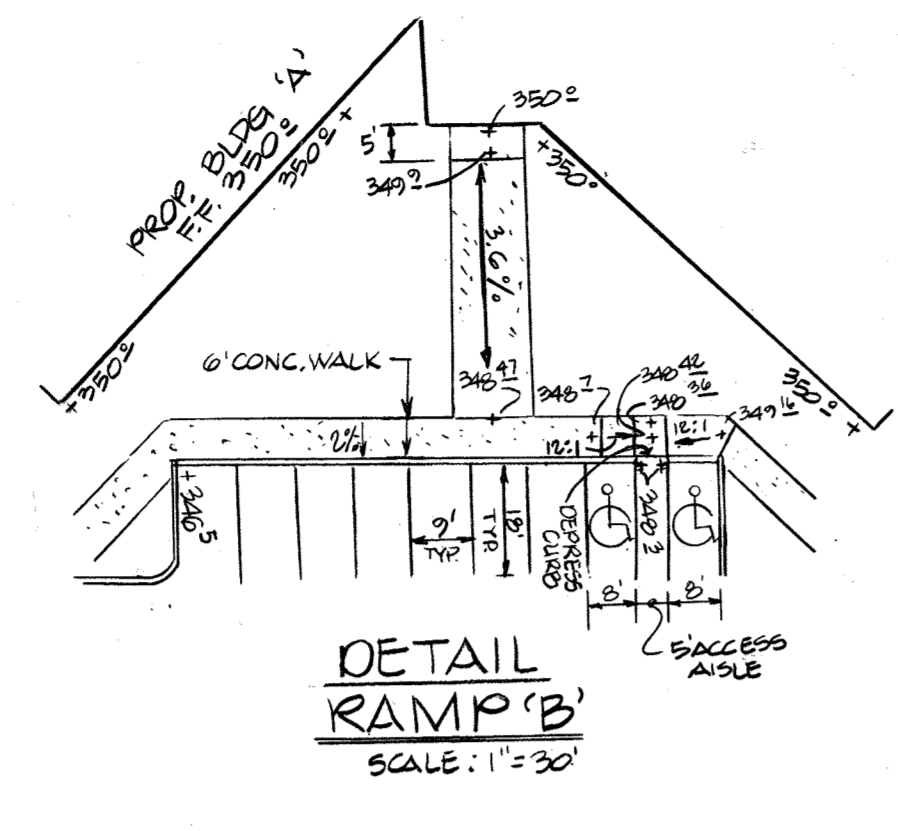
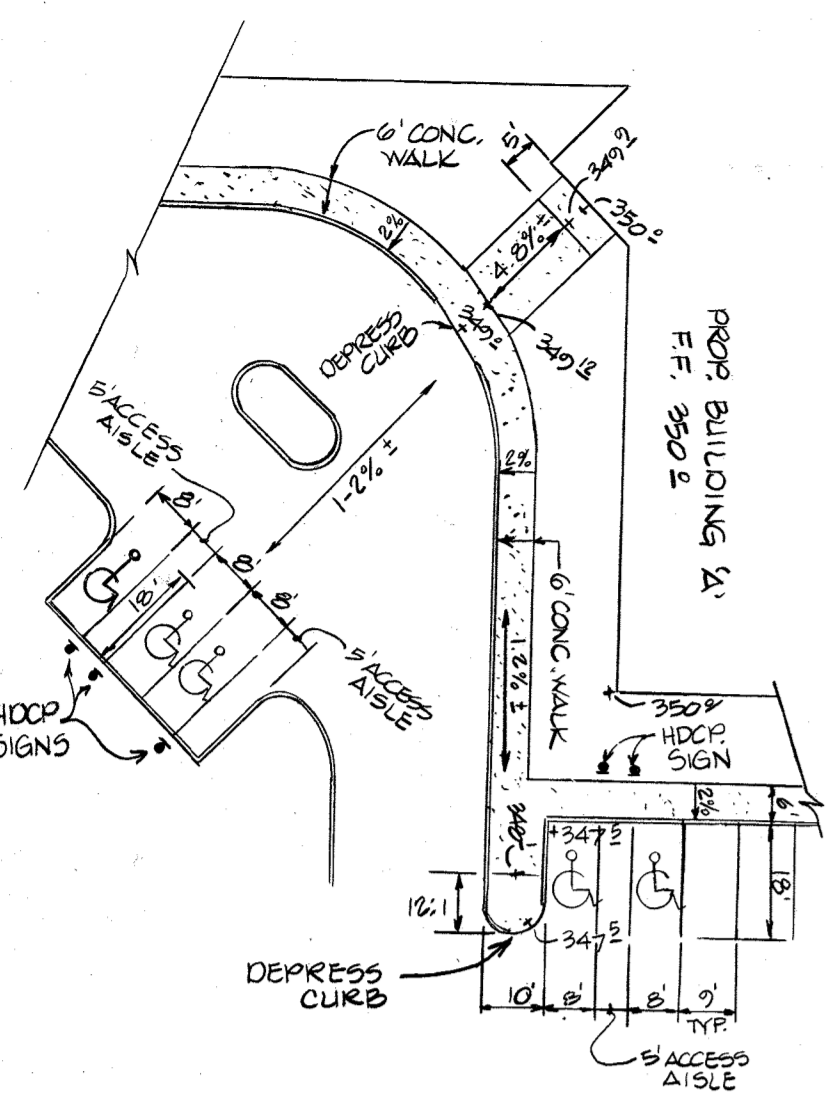
DESIGNED: O.B. ORRAN; D.L. J.O.B.
CHECKED: T.C. REVISIONS
 Revised for new street retaining wall 1/7/82

SITE & STORM WATER MANAGEMENT PLAN
 PROPOSED OFFICE FOR RESEARCH & DEVELOPMENT PARK
 COLUMBIA GATEWAY PARCEL 'C'
 TAX MAP # 42 & 43
 HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN
 PN: 00880

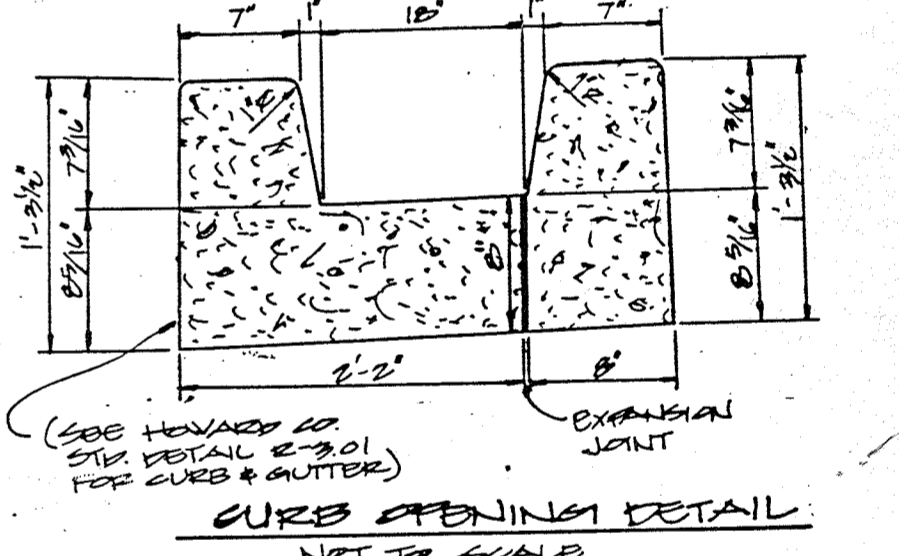
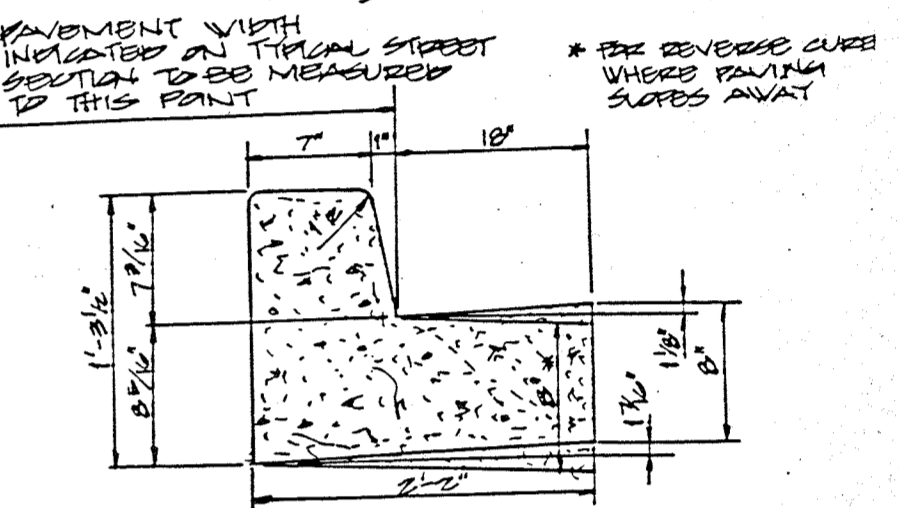
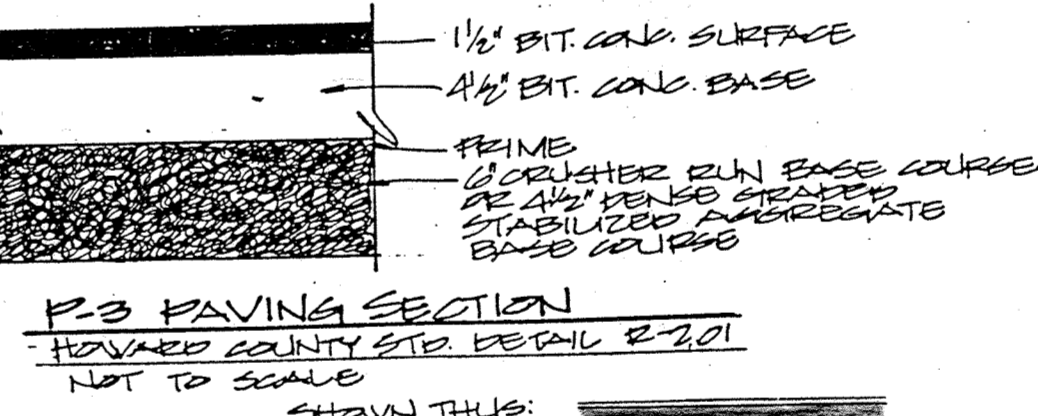
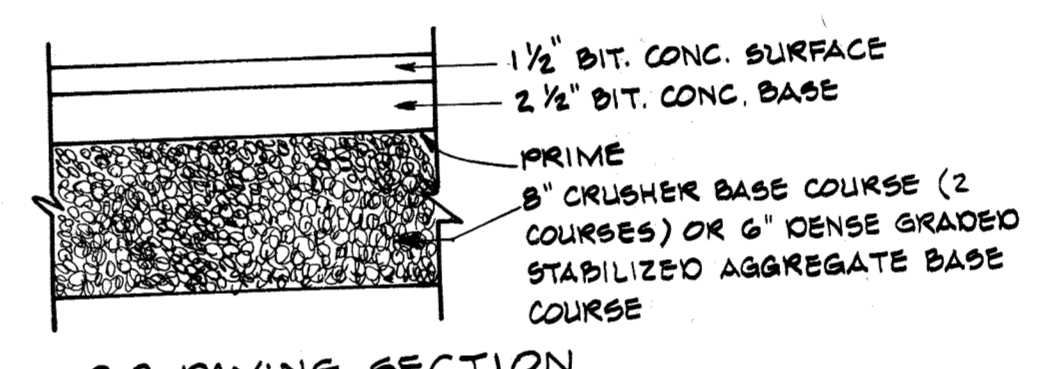
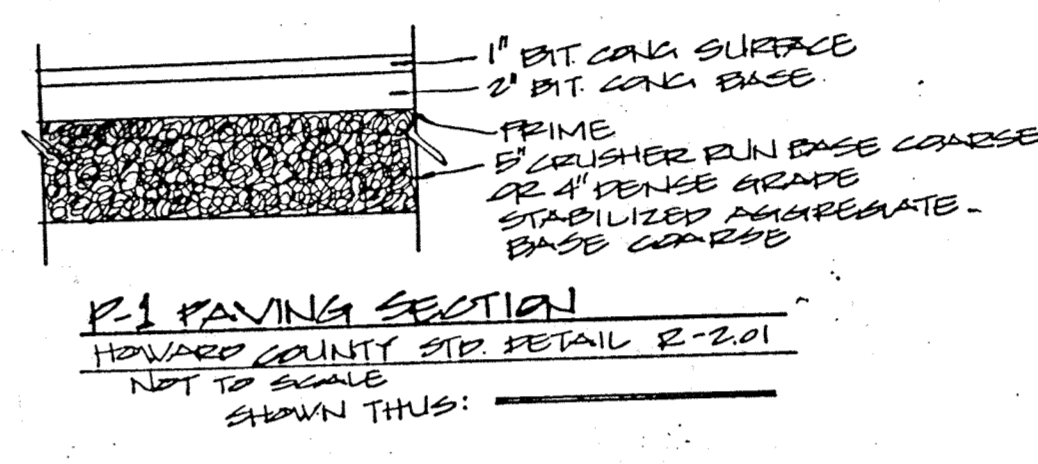
ELEVATION DISTRICT #6
 AUGUST 21, 1980
 SHEET 3 OF 17
SDP-87-49



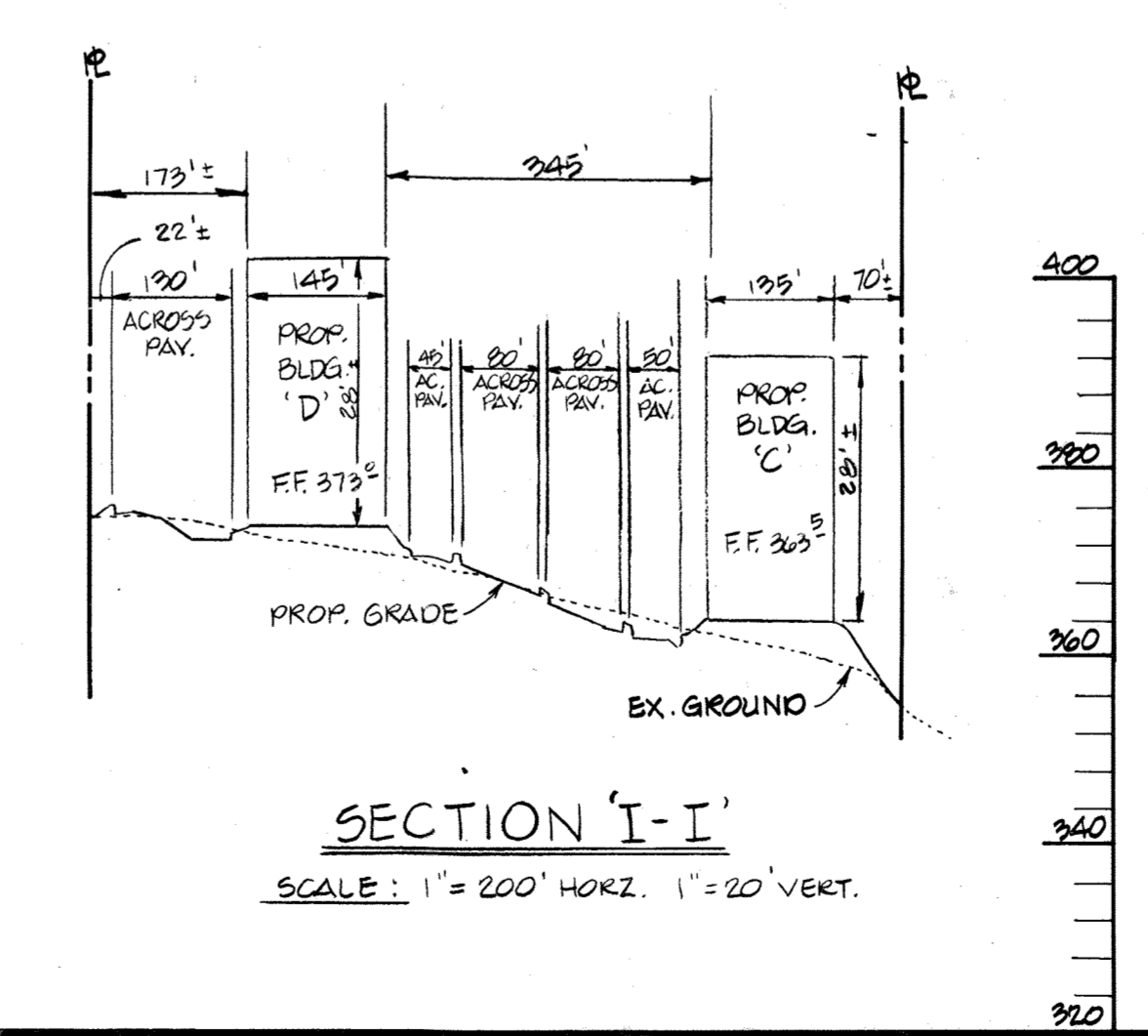
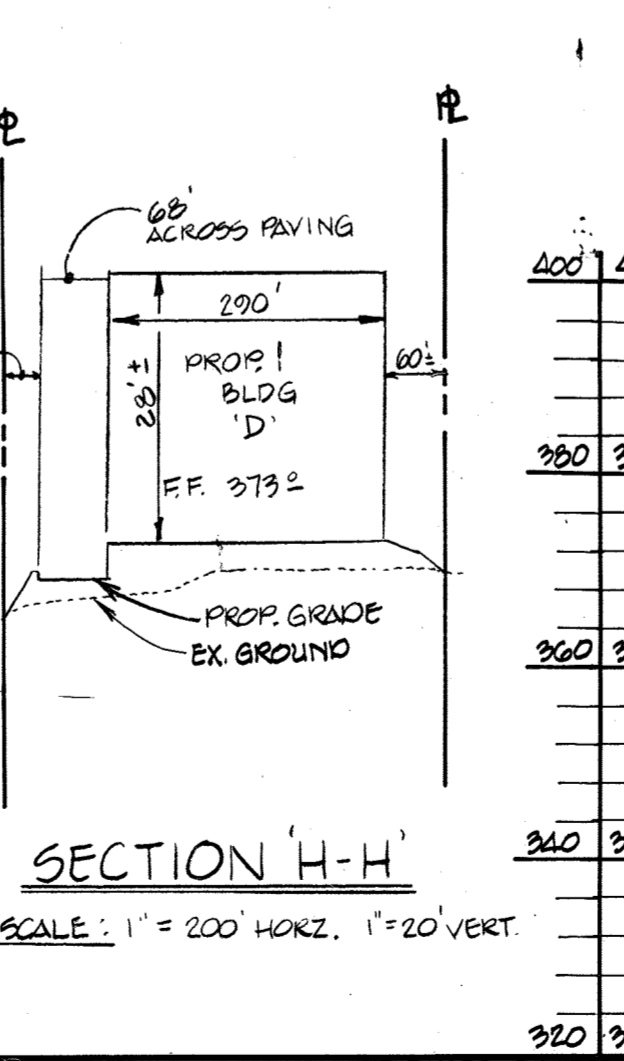
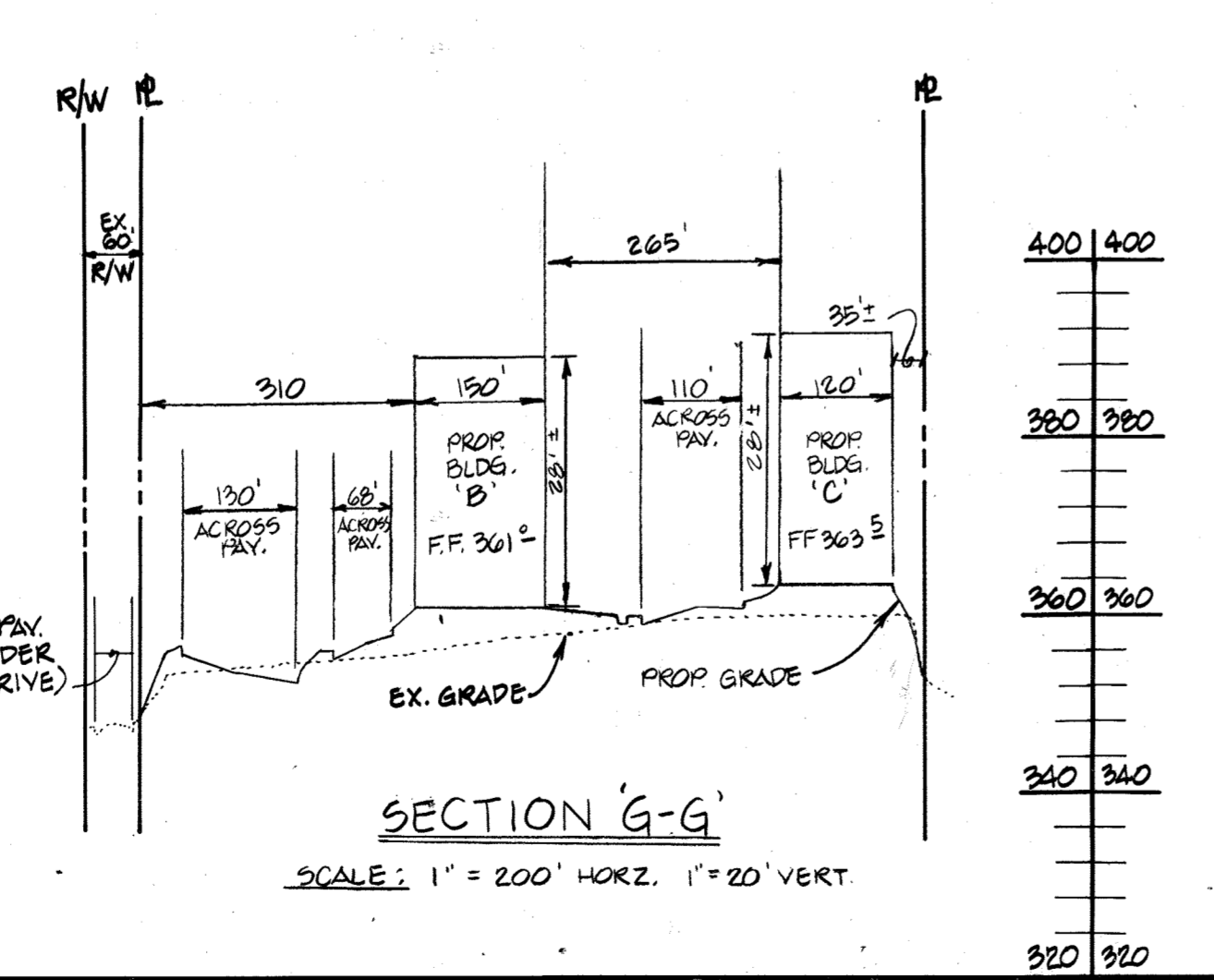
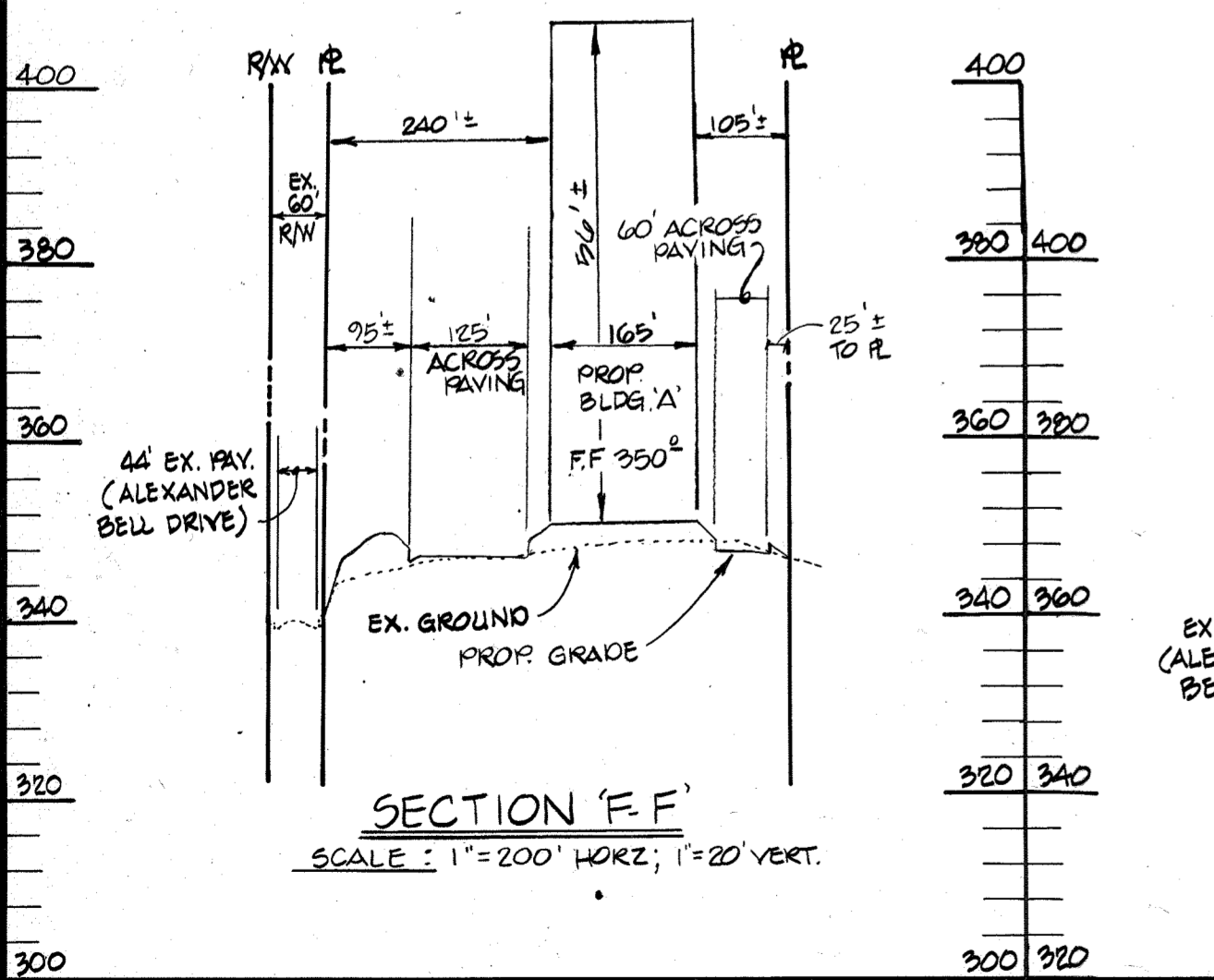
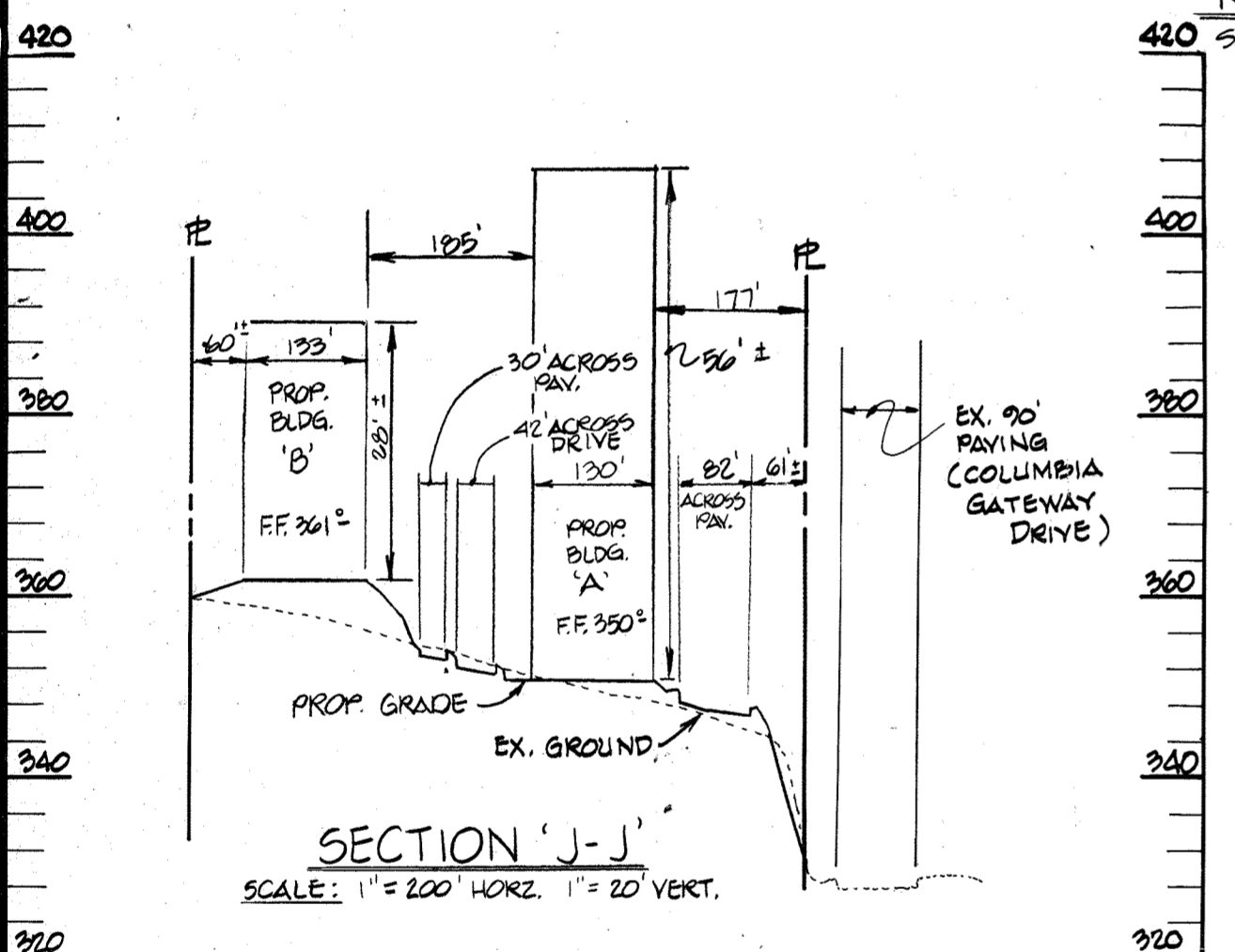
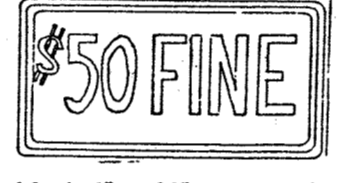
1. Maximum building height = 50'
2. All areas not being paved or receiving building coverage shall be stabilized in accordance with the plans approved by Howard Soil Conservation District.
3. Any damage to public-right-of-way and/or adjacent properties shall be repaired immediately at the contractor's expense.
4. The contractor shall maintain at least a 2" level bench behind all curb and gutter in fill areas.
5. The contractor shall verify all existing utilities to his own satisfaction before starting construction.
6. All slopes shall be 2:1 or flatter.
7. All work shall be done in accordance with Howard County Standard Specifications and Details for Construction, or as shown on these plans.
8. The contractor shall notify the CSP Telephone Co. and the Gas and Electric Company five days prior to starting work shown on these plans by calling "Miss Utility", call collect 1-859-0100.
9. For details of ramps and signs for the handicapped see the Maryland Building Code for the Handicapped and Aged and as shown hereon. See Sheet of .
10. The contractor shall maintain a minimum of 4' cover over all proposed water lines.
11. All rip-rap shall be placed on filter cloth.
12. The contractor or developer shall contact the Construction Inspection/Survey Division, 24 hours in advance of commencement of work at 932-7417 or 792-7272.
13. The contractor shall remove all existing paving, curb and gutter, etc. that may interfere with proposed construction.
14. All utilities installed shall receive full trench compaction.
15. All water main tees, bends, caps, etc. shall be buttressed in accordance with Howard County Design Requirements.
16. All sidewalks will be 6' wide (see architectural plans for details).
17. 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 this waste is regulated under Section 18.172A of the Howard County Code. 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 requirements shall apply to all initial and future occupants or tenants.



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



\$50 Fine Sign
Sign to utilize an aluminum blank 6" x 12" x 0.080 inch 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 or pedestrian traffic is not obstructed the bottom edge of sign shall be at least 6 feet but not more than 10 feet above ground.



THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

James M. Hahn 12-9-86 DATE
DISTRICT ENGINEER, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HOWARD SOIL CONSERVATION DISTRICT.

Robert J. Zichin 12-9-86 DATE
DISTRICT ENGINEER, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

PLAN NUMBER: _____

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD CO. HEALTH DEPARTMENT

John P. Brown 12-17-86 DATE
DISTRICT ENGINEER, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING ADMINISTRATION

James H. Hahn 12-18-86 DATE
DIRECTOR, PLANNING AND ZONING ADMINISTRATION

John W. Necker, Jr. 12-18-86 DATE
DISTRICT ENGINEER, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS AND PUBLIC USES HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

John F. Neuner 12-12-86 DATE
DISTRICT ENGINEER, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

James H. Hahn 12-12-86 DATE
DIRECTOR, PLANNING AND ZONING ADMINISTRATION

APPROVED
DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 10-1-86

GEORGE WILLIAM STEPHENS, JR. AND ASSOCIATES, INC.
CIVIL ENGINEERS & LAND SURVEYORS
303 ALLEGHENY AVENUE
TOWSON, MARYLAND 21204
(301) 825-8120

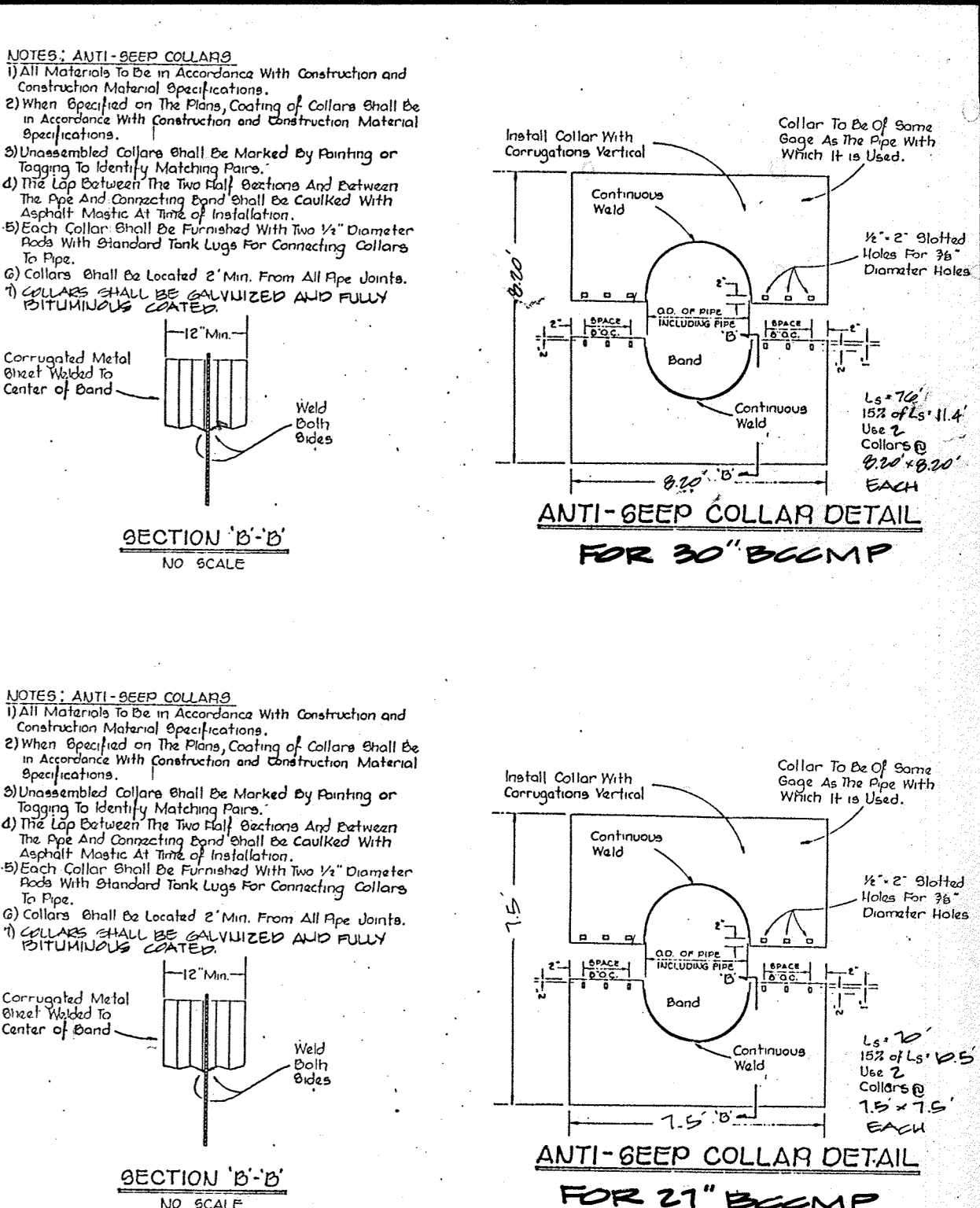
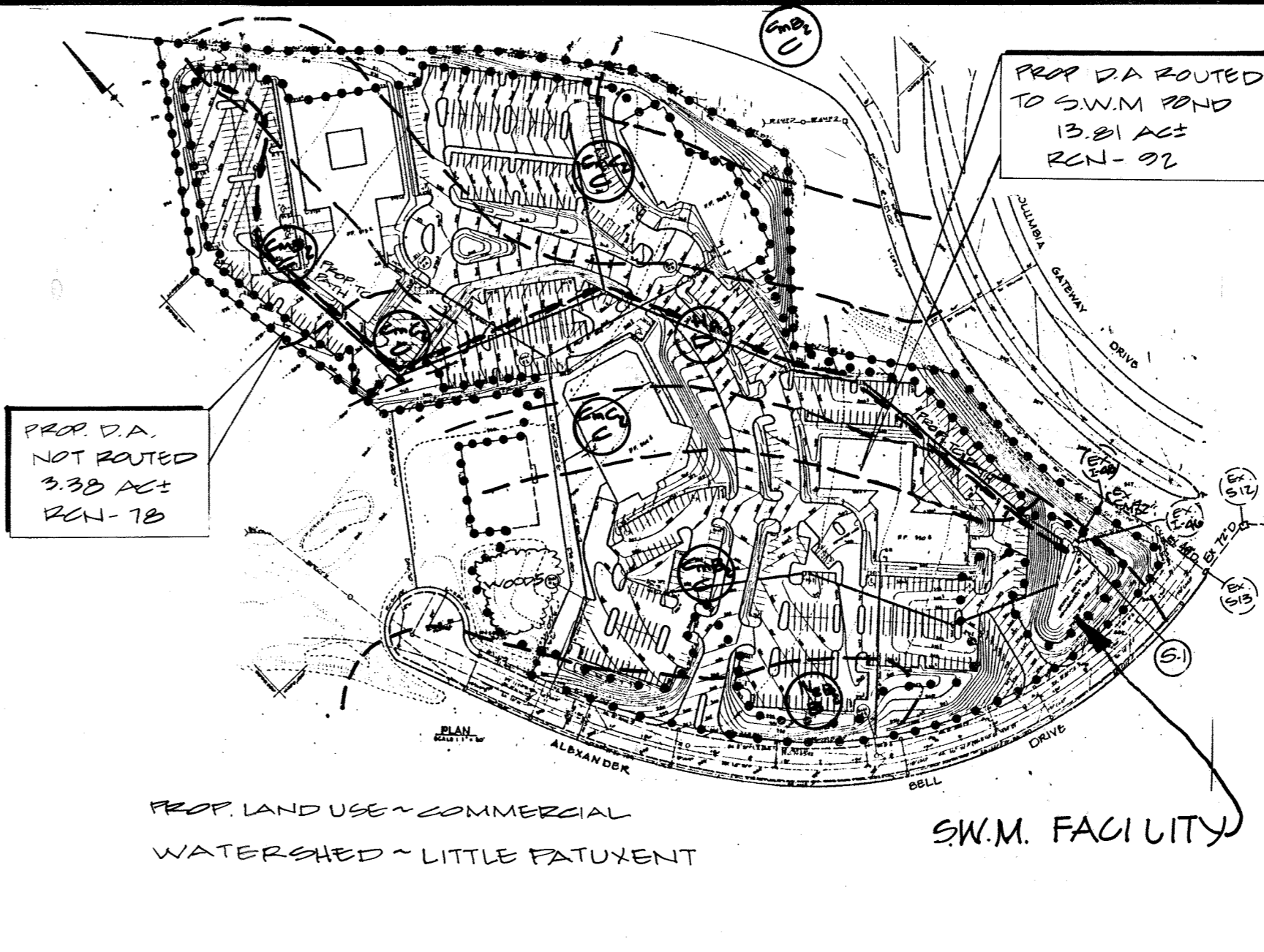
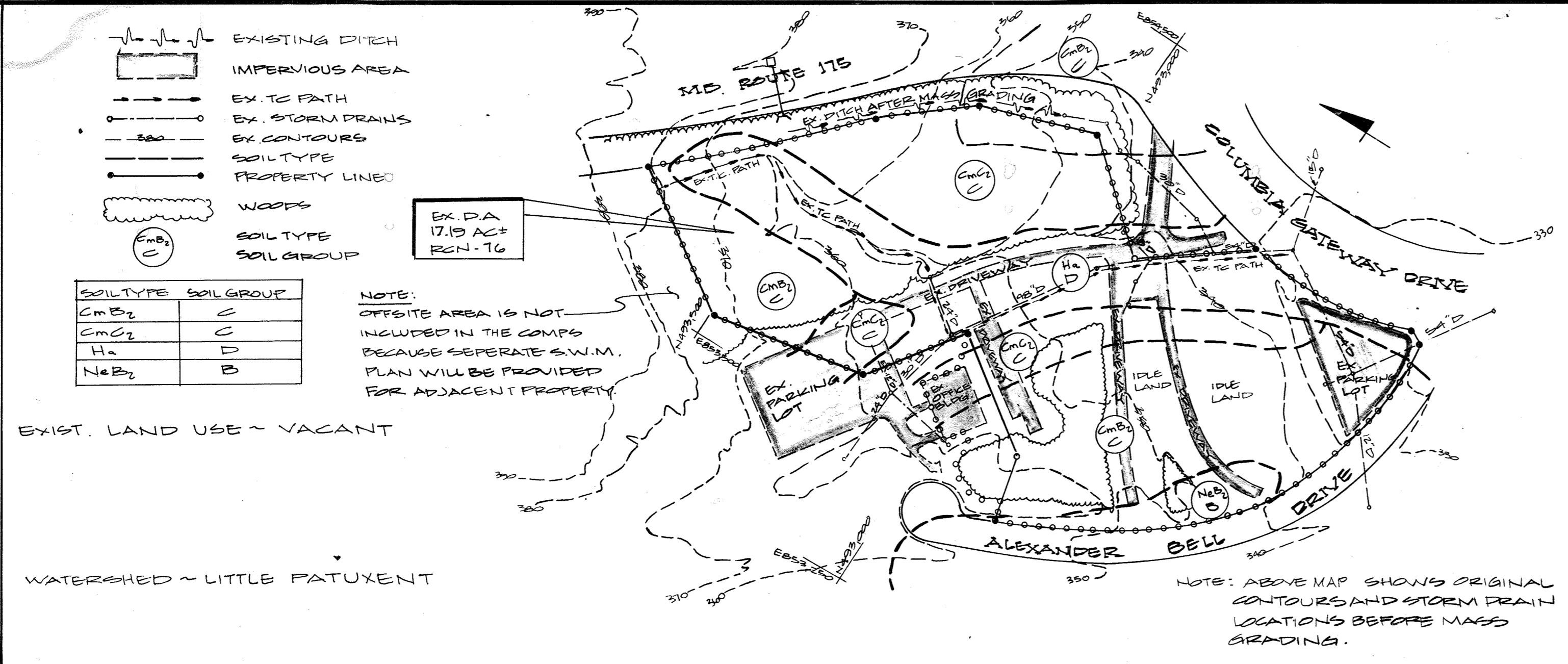
ENGINEER
Tapobrata Chakrabarti 8930 8-21-86
ENGINEER: TAPOBRATA CHAKRABARTI REG. NO. DATE

OWNER/DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
(301) 492-6033
CONTRACT PURCHASER
MOR & LITV PARTNERSHIP
60 MANERIN CORPORATION
10270 BULO COLUMBIA RD
COLUMBIA, MARYLAND 21046
(301) 495-6767

OWNER/DEVELOPER
John H. Necker, Jr.
SIGNATURE TITLE DATE
JOSEPH H. NECKER, JR. ASST. DIR. OF ENGR.

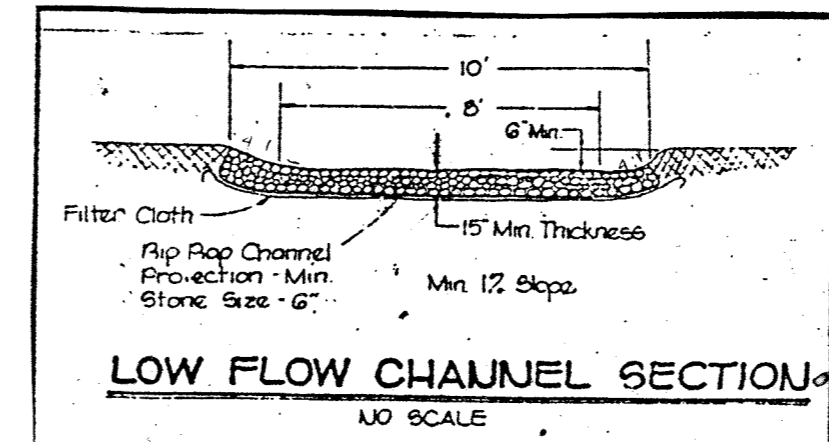
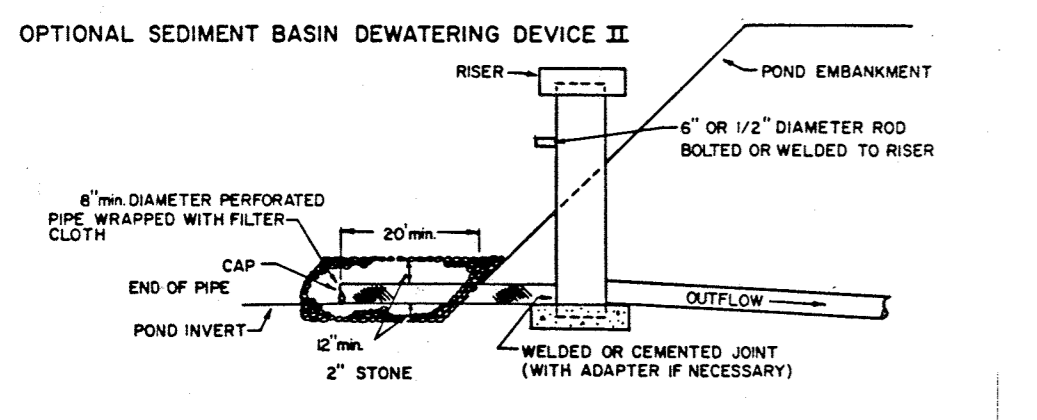
DESIGNED: K.B.I.D.B.
DRAWN: K.B.
CHECKED: T.C.
DATE: 8-21-86

PROFILES AND DETAILS
PROPOSED OFFICE FOR RESEARCH & DEVELOPMENT PARK
COLUMBIA GATEWAY
PARCEL 'C'
TAX MAP # 42 & 43
HOWARD COUNTY MARYLAND ELECTION DISTRICT # 6
SCALE: AS SHOWN AUGUST 21, 1986
P.N. 0280 SHEET 2 OF 10



EXISTING DRAINAGE AREA MAP FOR STORM WATER MANAGEMENT FACILITY SCALE 1" = 200'

PROPOSED DRAINAGE AREA MAP FOR STORM WATER MANAGEMENT FACILITY SCALE 1" = 200'



STORM WATER MANAGEMENT DATA

SOIL GROUP: "B", "C", "D"

EXISTING CONDITION:
 D.A. = 17.19 Ac.±
 RCN = 76
 2 Yr. Flow = 24.59 cfs
 10 Yr. Flow = 56.02 cfs
 100 Yr. Flow = 94.93 cfs

PROPOSED CONDITION:

A) Not Routed
 D.A. = 3.38 Ac.±
 RCN = 78
 2 Yr. Flow = 6.40 cfs
 10 Yr. Flow = 14.16 cfs
 100 Yr. Flow = 23.54 cfs

B) Routed
 S.W.M. Facility = Dry/Embarkment Pond
 D.A. = 13.81 Ac.±
 RCN = 92

BEFORE MANAGEMENT	AFTER MANAGEMENT (ROUTING)
2 Yr. Flow = 48.39 cfs	16.85 cfs (w.s. elev. @ 331.55)
10 Yr. Flow = 86.27 cfs	40.70 cfs (w.s. elev. @ 333.92)
100 Yr. Flow = 128.69 cfs	68.90 cfs (w.s. elev. @ 335.71)

ALLOWABLE RELEASES:
 For 2 Yr. Storm = 24.59 - 6.40 = 18.19 cfs
 For 10 Yr. Storm = 56.02 - 14.16 = 41.86 cfs
 For 100 Yr. Storm = 94.93 - 23.54 = 71.39 cfs

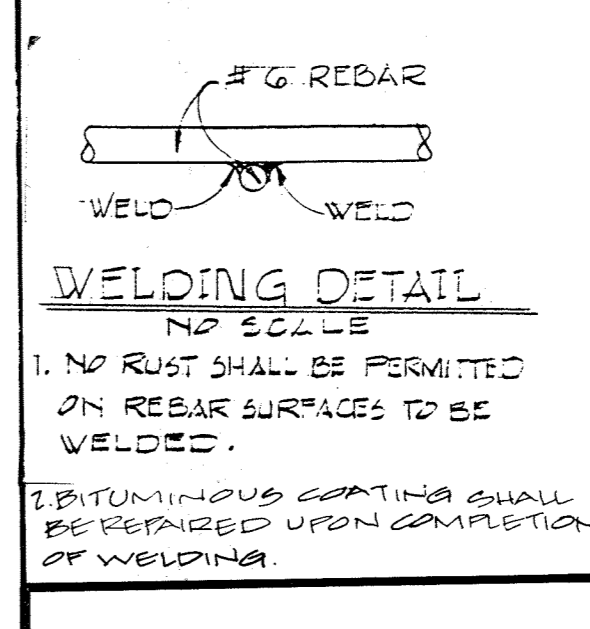
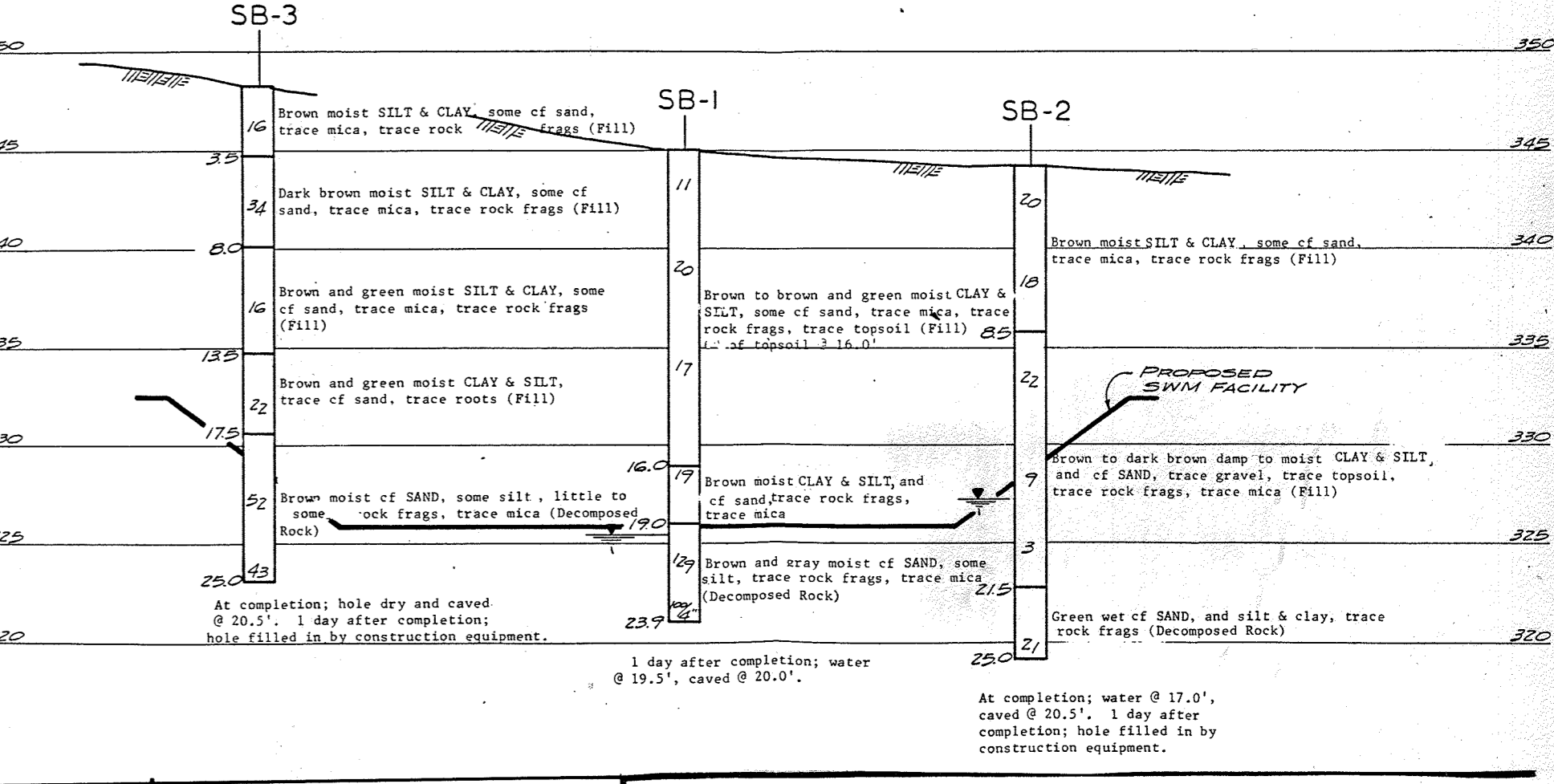
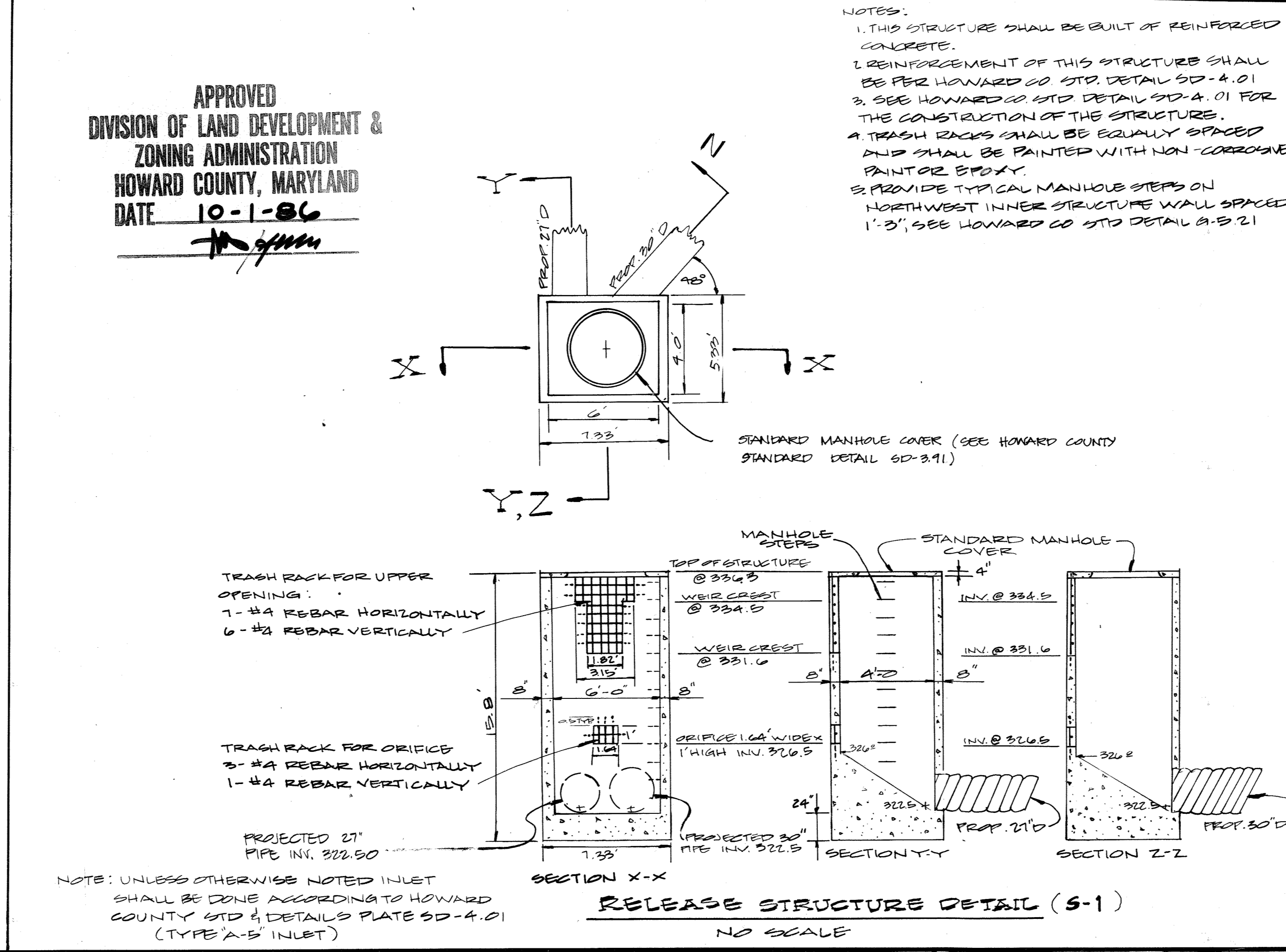
HYDROLOGIC CRITERIA:
 Required - 2 and 10 yr. storm water management
 Provided - 2, 10 and 100 yr. storm water management

Structure Classification - A
 Maximum Depth of Water - 9.21

Freeboard = 1.0'
 Storage Height Product - 1,650 Ac.Ft. X 9 Ft. = 14.85 Ac.Ft.²

STORAGE REQUIREMENT:

For 2 Yr. Storm -	26,900 c.f.
For 10 Yr. Storm -	48,500 c.f.
For 100 Yr. Storm -	68,700 c.f.



THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT MEET THE TECHNICAL REQUIREMENTS FOR SMALL BASIN CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

APPROVED: *James M. Tolson* 12-9-86
 U.S. SOIL CONSERVATION SERVICE DATE

THESE PLANS FOR SMALL BASIN CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: *Robert Ziem* 12-9-86
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: *James Byrum* 12-17-86
 HEALTH DEPT DATE

APPROVED: *James Byrum* 12-18-86
 PLANNING AND ZONING DEPT DATE

APPROVED: *James Byrum* 12-18-86
 PLANNING AND ZONING DEPT DATE

APPROVED: *Shirley Nunn* 12-12-86
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS DATE

APPROVED: *William S. Reilly* 12-12-86
 CHIEF BUREAU OF ENGINEERING DATE

GEORGE WILLIAM STEPHENS, JR. AND ASSOCIATES, INC.
 CIVIL ENGINEERS & LAND SURVEYORS
 303 ALLEGHENY AVENUE
 TOWSON, MARYLAND 21204
 (301) 825-8120

DEVELOPER'S CERTIFICATE:
 I CERTIFY THAT THIS PLAN FOR SW.M. FACILITY CONSTRUCTION, EXCESSIVE SOIL CONSERVATION DISTRICT, MEET THE TECHNICAL REQUIREMENTS FOR SMALL BASIN CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL. I AM AWARE OF THE REQUIREMENTS OF THIS DISTRICT AND THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE LITIGATED THIS DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE SW.M. FACILITY WITHIN 30 DAYS OF COMPLETION.

ENGINEER: *Yashvita Desai*
 TAPPOORATA CHAKRABARTI
 REG. NO: 8230 DATE: 8-21-86

OWNER/DEVELOPER
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 (301) 492-6033

GENERAL CONTRACTOR
 MORGAN S. ZILLY PARTNERSHIP
 50 MANERIN CORPORATION
 10275 OLD COLUMBIA RD.
 COLUMBIA, MARYLAND 21046
 (301) 495-6767

DEVELOPER'S CERTIFICATE:
 I CERTIFY THAT ALL CONSTRUCTION AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION OF THIS PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPT. OF NATURAL RESOURCES APPROVED PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION CONTROL MEASURES. I ALSO CERTIFY THAT ALL SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT OF THESE AUTHORIZED AGENTS AS ARE DEEMED NECESSARY, DERIVED FROM THIS PLAN WILL NOT BE WAVE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE SW.M. FACILITY WITHIN 30 DAYS OF COMPLETION.

DEVELOPER: *Joseph H. Necker, Jr.* DATE: 8-21-86
 JOSEPH H. NECKER, JR. ASST. DIR. OF ENGR.

DESIGNED: IRZ
 DRAWN: JLB
 CHECKED: MZ/TC

REVISIONS

PROFILES AND DETAILS

PROPOSED OFFICE FOR RESEARCH & DEVELOPMENT PARK
 COLUMBIA GATEWAY PARK
 PARCEL #
 TAX MAP #42-43

HOWARD COUNTY, MARYLAND ELECTION DISTRICT #6
 SCALE: AS SHOWN AUGUST 21, 1986
 P.N. 0280 SHEET 3 OF 10

5010 87-49

STORMWATER MANAGEMENT MAINTENANCE SCHEDULE

MAINTENANCE ITEM	1	2	3	4	5	6
MAINTENANCE FREQUENCY	8	7	8	7	8	7
REPAIR DURATION	2	10	2	10	2	10

- CLEAN OUT SILT
- CLEAN OUT TRASH
- CHECK WEIR CLOSING
- CHECK SLOPE STABILIZATION
- CUT GRASS
- CHECK STRUCTURAL INTEGRITY
- EVERY TWO WEEKS
- EVERY THREE MONTHS
- ONE WEEK MAXIMUM
- TWO DAYS

* ALL MAINTENANCE, INSPECTION AND REPAIR SHALL BE THE RESPONSIBILITY OF THE OWNER.

* INSPECT ALL ABOVE ITEMS AFTER EACH MAJOR RAINFALL AND REPAIR IF NECESSARY.

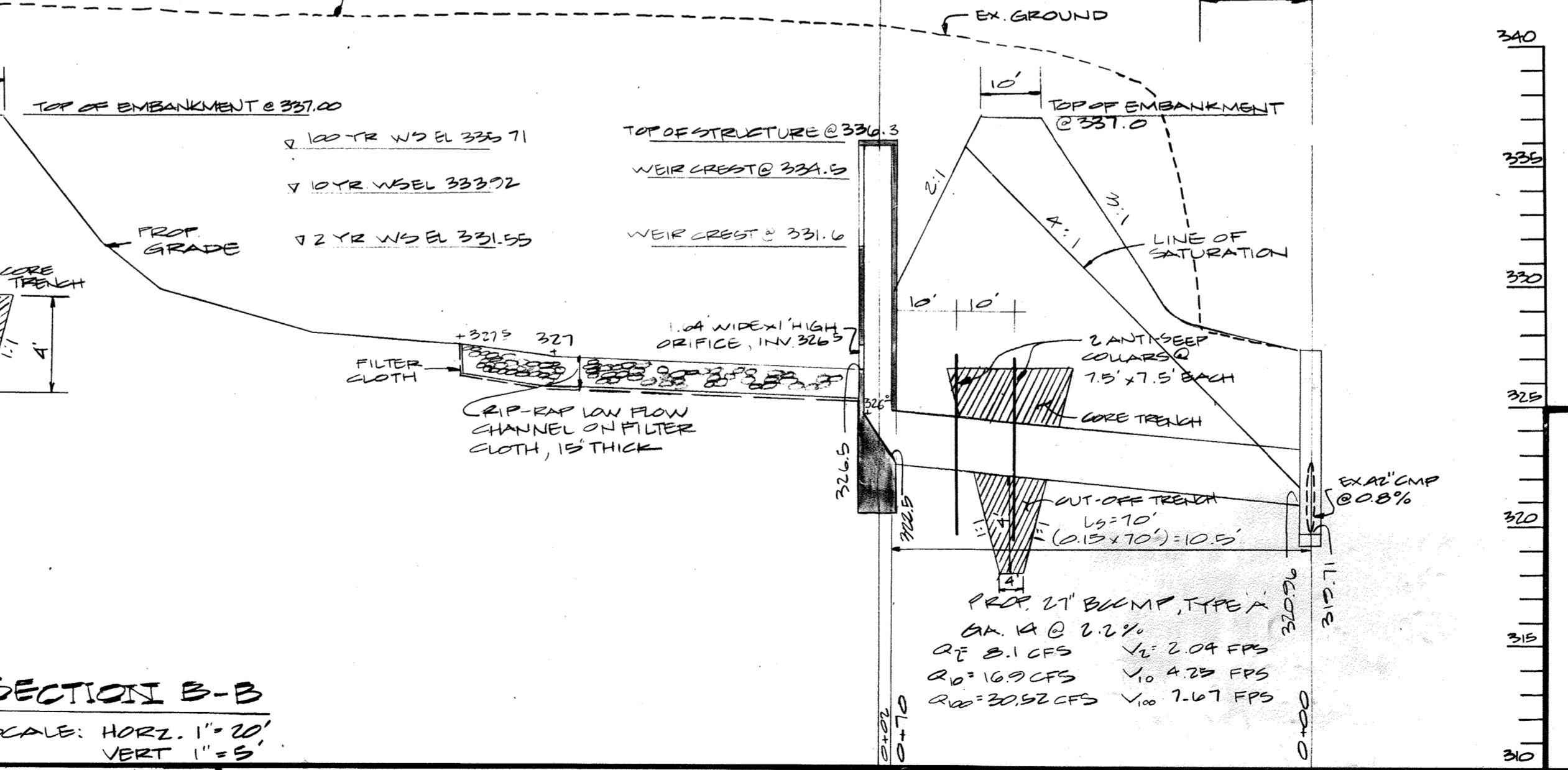
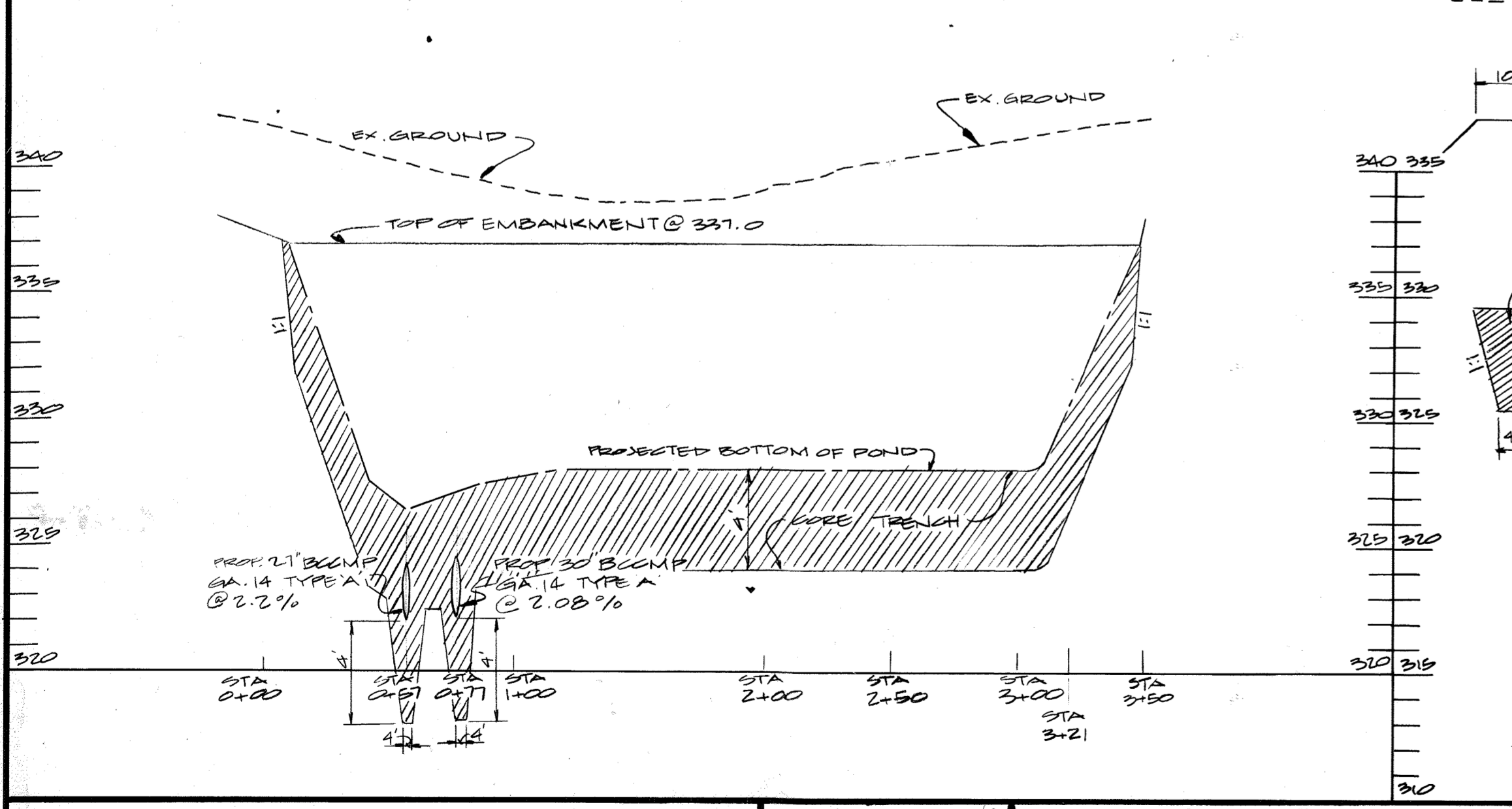
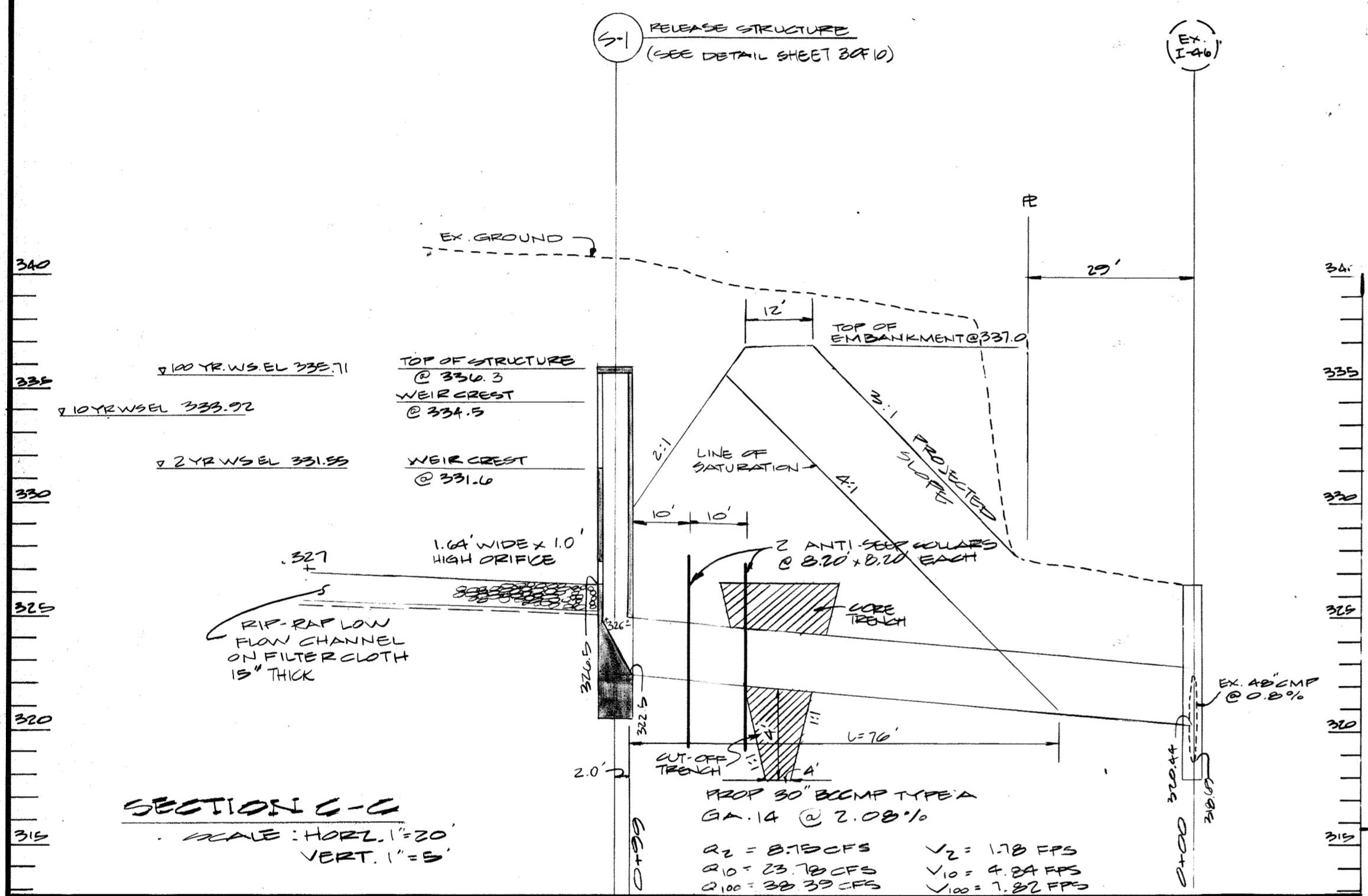
CONSTRUCTION SPECIFICATIONS

- SITE PREPARATION**
The fill area and borrow area shall be cleared and grubbed to remove all trees, vegetation, roots and other objectionable material. The topsoil from the embankment area and borrow area shall be removed and stockpiled. The topsoil shall be spread on the completed fill area.
- EARTH FILL**
 - FILL MATERIAL** shall be obtained from on-site under the supervision of a soils engineer. It shall be free from roots, stumps, wood rubbish, oversized stones frozen or other objectionable material. Fill areas shall be constructed to the elevation shown on the plan to allow for anticipated settlement. USE UNIFIED SOIL CLASSIFICATION, 50 OR CL.
 - PLACEMENT:** Areas on which fill will be placed shall be scarified prior to placement of fill. Fill materials shall be placed in layers 6" thick maximum (before compaction) and shall be continuous over the entire length of width. The most porous material shall be placed in areas not adjacent to ponded water.
 - 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 compacted to the specified density. Fill material shall contain sufficient moisture so that the required degree of compaction can be obtained with the equipment used. FILL MATERIAL SHALL BE COMPACTED TO 95% OF AASHTO DENSITY. CORE TRENCH shall be made of SC or CL material compacted to 95% of A.A.S.H.T.O. T-99 density.
- STRUCTURAL BACKFILL**
Backfill material shall be the type and quality specified for the adjoining fill material. The fill shall be placed in horizontal layers 4" thick maximum and compacted by hand tamping or manually directed power tampers or plate vibrators. At no time during backfilling operations shall driven equipment be allowed to operate any closer than four feet measured horizontally to any part of a structure. Under no circumstances shall the contractor drive equipment over any part of a concrete structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Materials shall fill completely all spaces under and adjacent to newly installed pipe.
- CONCRETE**
Concrete shall meet the minimum requirements set forth in the Maryland State Highway Administration "Specifications for Construction and Materials" January 1982 Section 918.06 - "Portland Cement Concrete Mixtures", Mix No. 3 Reinforcing steel shall be A.S.T.M. A 615, Grade 60.
- STABILIZATION**
The storm water management facility will be stabilized with "Permanent Slope Seeding" as follows:
After spreading 4" topsoil seed with a mixture of 30% inoculated crown vetch and 70% Kentucky 31 Tall Fescue applied at a rate of 60 lbs./Ac., 10-20-20 fertilizer shall be applied at a rate of 25 lbs./1000 square feet, lime at a rate of 92 lbs./1000 square feet, mulch area with unweathered small grain straw at a rate of 1.5 T/Ac., anchor with rapid curing asphalt (R.C.-70, R.C.-250 or R.C.-800) at a rate of 0.1 Gal. S.Y.
- PIPE CONDUITS**
 - Materials - (Steel Pipe)** - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-90 with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

- 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. Watertight coupling bands or flanges shall be used at all joints. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.
- 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.
- Laying pipe** - The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides.
- Backfilling** shall conform to structural backfill as shown above.
- Other details** (anti-seep collars, valves, etc.) shall be as shown on the drawings.

- FILTER CLOTH**
MIRAF 1405 or equivalent shall be used.
- SEDIMENT CONTROL**
Construction to be in accordance with "1983 Maryland Standards and Specifications For Soil Erosion and Sediment Control". In release structure install dewatering device by connecting 25 L.F. of 8" perforated underdrain to the low flow pipe. The 8" underdrain shall be wrapped in filter cloth and covered with minimum 12" thick #2 stone.

NOTE: (SPECIFIED DENSITY) SUITABLE MATERIAL SHALL BE USED FOR THE EMBANKMENT AND ROLLED TO A MINIMUM DEGREE OF COMPACTION OF 95% OF THE DRY UNIT WEIGHT AS DETERMINED BY A.A.S.H.T.O. T-99. CONSTRUCTION OF SWM POND SHALL BE PERFORMED UNDER STRICT SUPERVISION OF A SOILS ENGINEER.



APPROVED
DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 10-1-86

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

APPROVED: *[Signature]* 12-9-86
DIRECTOR, HOWARD SOIL CONSERVATION DISTRICT

APPROVED: *[Signature]* 12-9-86
DIRECTOR, HOWARD SOIL CONSERVATION DISTRICT

APPROVED: *[Signature]* 12-17-86
DIRECTOR, HOWARD COUNTY HEALTH DEPARTMENT

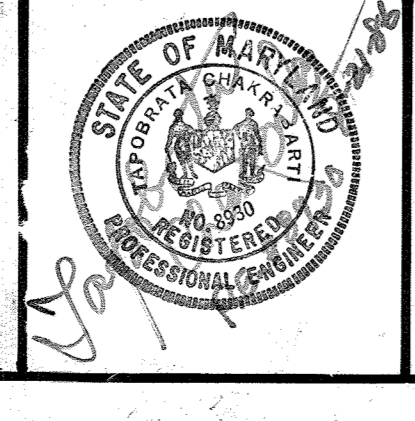
APPROVED: *[Signature]* 12-18-86
DIRECTOR, HOWARD COUNTY OFFICE OF PLANNING AND ZONING

APPROVED: *[Signature]* 12-18-86
DIRECTOR, HOWARD COUNTY OFFICE OF PLANNING AND ZONING

APPROVED: *[Signature]* 12-18-86
DIRECTOR, HOWARD COUNTY OFFICE OF PLANNING AND ZONING

APPROVED: *[Signature]* 12-18-86
DIRECTOR, HOWARD COUNTY OFFICE OF PLANNING AND ZONING

GEORGE WILLIAM STEPHENS, JR. AND ASSOCIATES, INC.
CIVIL ENGINEERS & LAND SURVEYORS
303 ALLEGHENY AVENUE
TOWSON, MARYLAND 21204
(301) 825-8120



ENGINEER'S CERTIFICATE:
I CERTIFY THAT THIS PLAN FOR SWM FACILITY CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE SWM FACILITY WITHIN 30 DAYS OF COMPLETION.

ENGINEER: *[Signature]*
DATE: 8-21-86

OWNER/DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10215 LITTLE PATRICK PARKWAY
COLUMBIA, MARYLAND 21044
(301) 492-0833

CONTRACT PURCHASER
MORZ L.L.P. PARTNERSHIP
40 MANEWIN CORPORATION
10270 OLD COLUMBIA RD.
COLUMBIA, MARYLAND 21046
(301) 495-6767

DESIGNER'S CERTIFICATE:
I CERTIFY THAT ALL CONSTRUCTION AND/OR CONSTRUCTION SHALL BE DONE ACCORDING TO THESE PLANS AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A CERT. OF NATURAL RESOURCES APPROVED PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT CONTROL. I ALSO CERTIFY THAT I HAVE REVIEWED ALL SITE INFORMATION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS REQUIRED NECESSARY. DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE SWM FACILITY WITHIN 30 DAYS OF COMPLETION.

DESIGNER: I.R.Z.
DRAWN: J.L.B.
CHECKED: I.R.Z./I.G.

REVISIONS

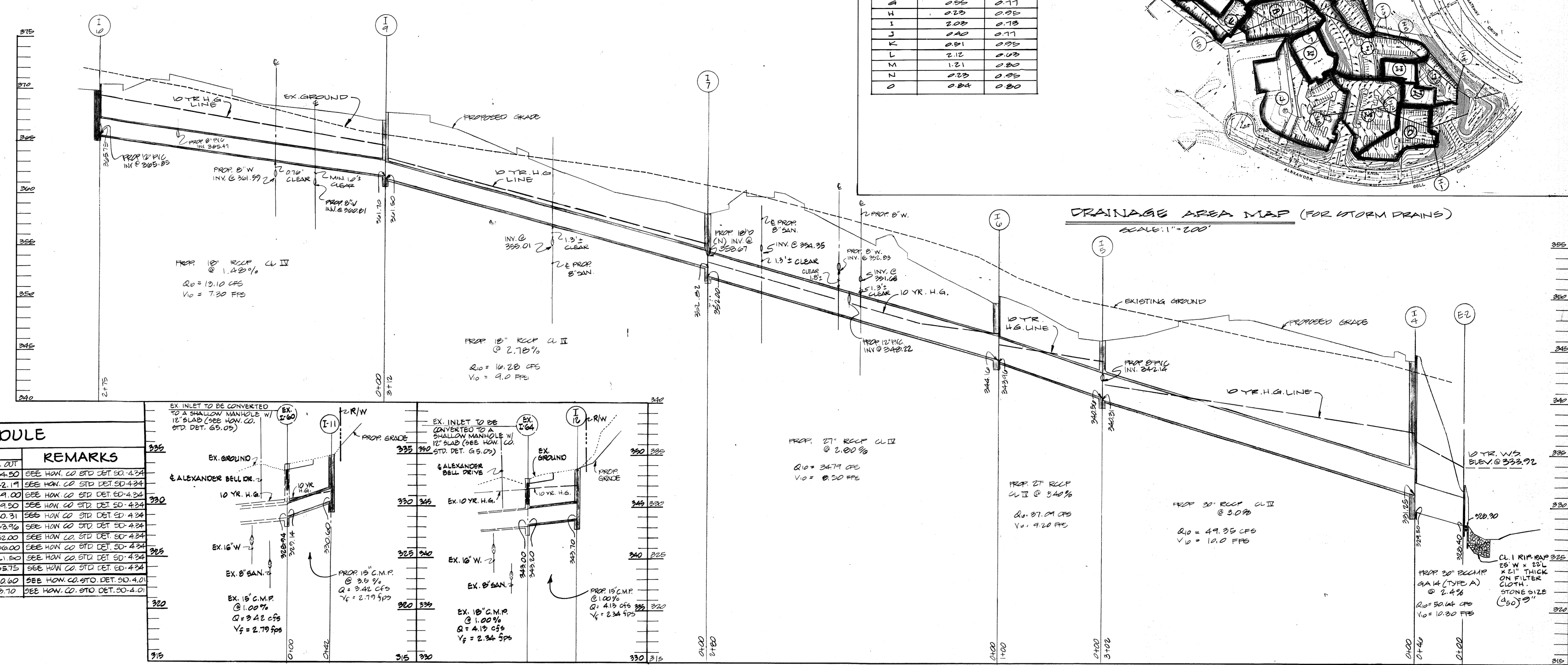
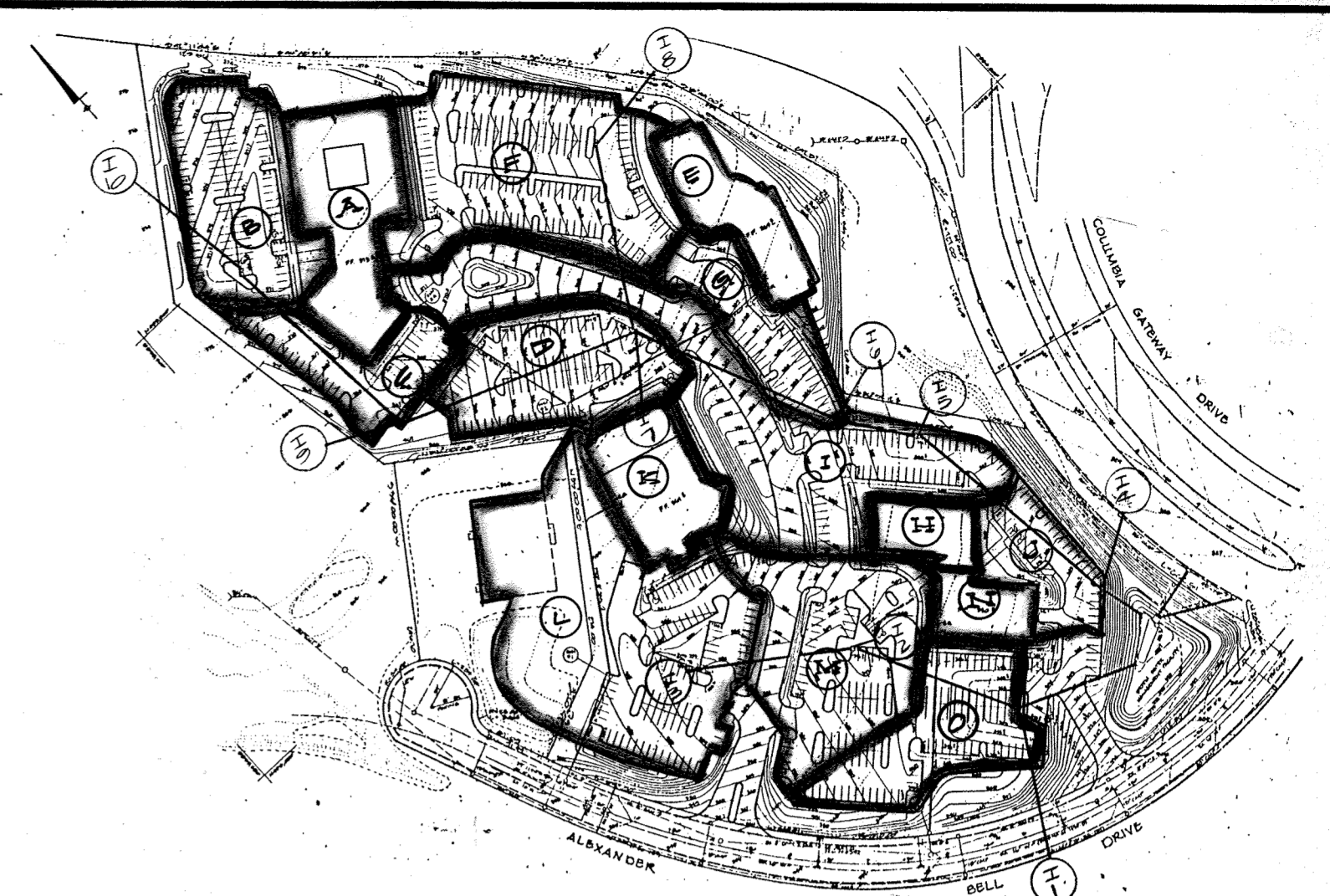
DATE: 8-21-86

SWM PROFILES & DETAILS
FOR
PROPOSED OFFICE FOR RESEARCH & DEVELOPMENT
PARK
COLUMBIA, MARYLAND
PARCEL 'C'
TAX MAP # 42443
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN

ELE. ON DISTRICT # 6
AUGUST 21, 1986
SHEET 4 OF 10

PN.05486 50P 87-49

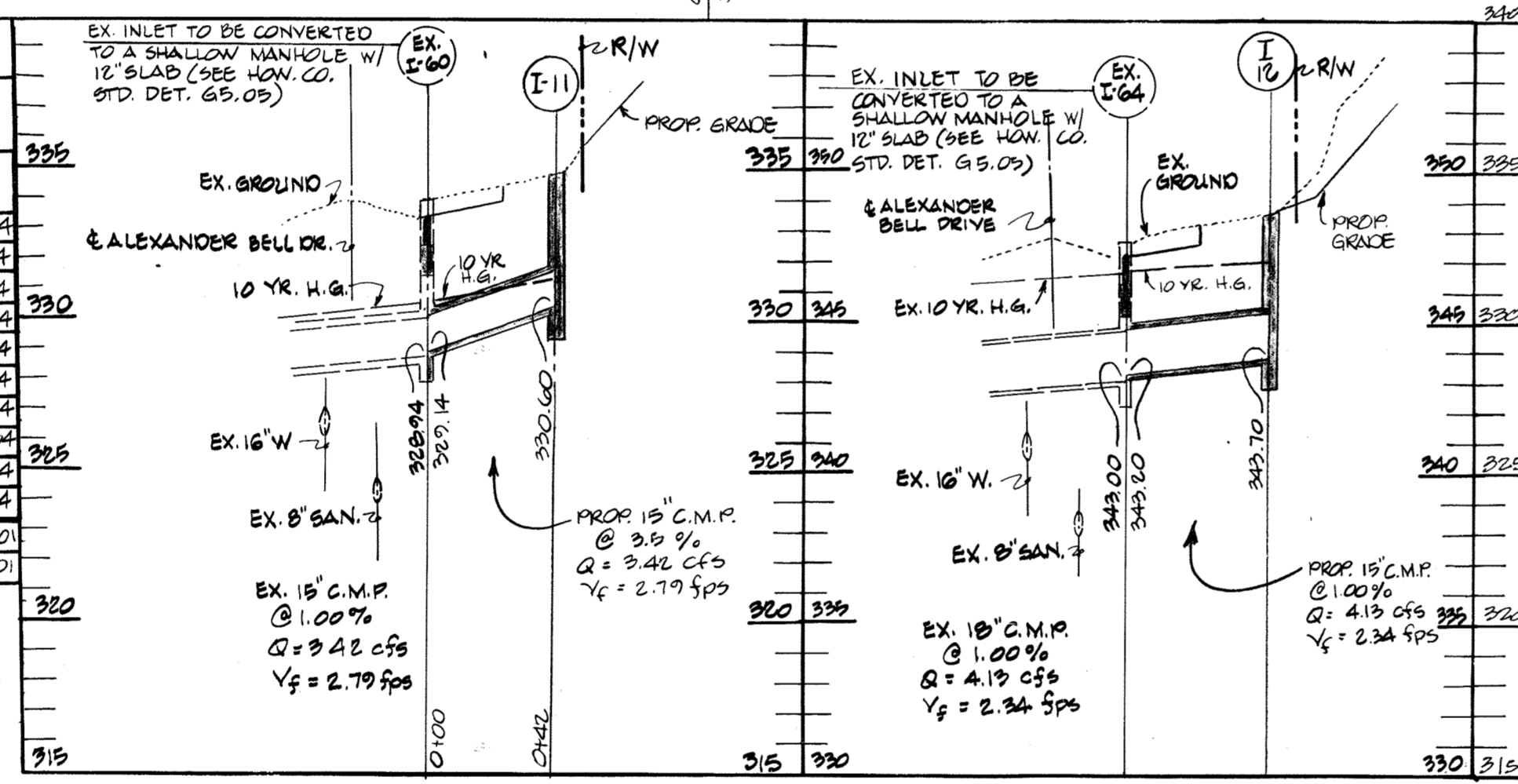
AREA	ACRES	'
A	0.18	0.85
B	0.97	0.85
C	0.53	0.85
D	0.24	0.70
E	0.46	0.95
F	1.58	0.81
G	0.55	0.77
H	0.23	0.95
I	2.03	0.78
J	0.20	0.77
K	0.81	0.85
L	2.12	0.85
M	1.21	0.80
N	0.23	0.85
O	0.84	0.80



INLET SCHEDULE

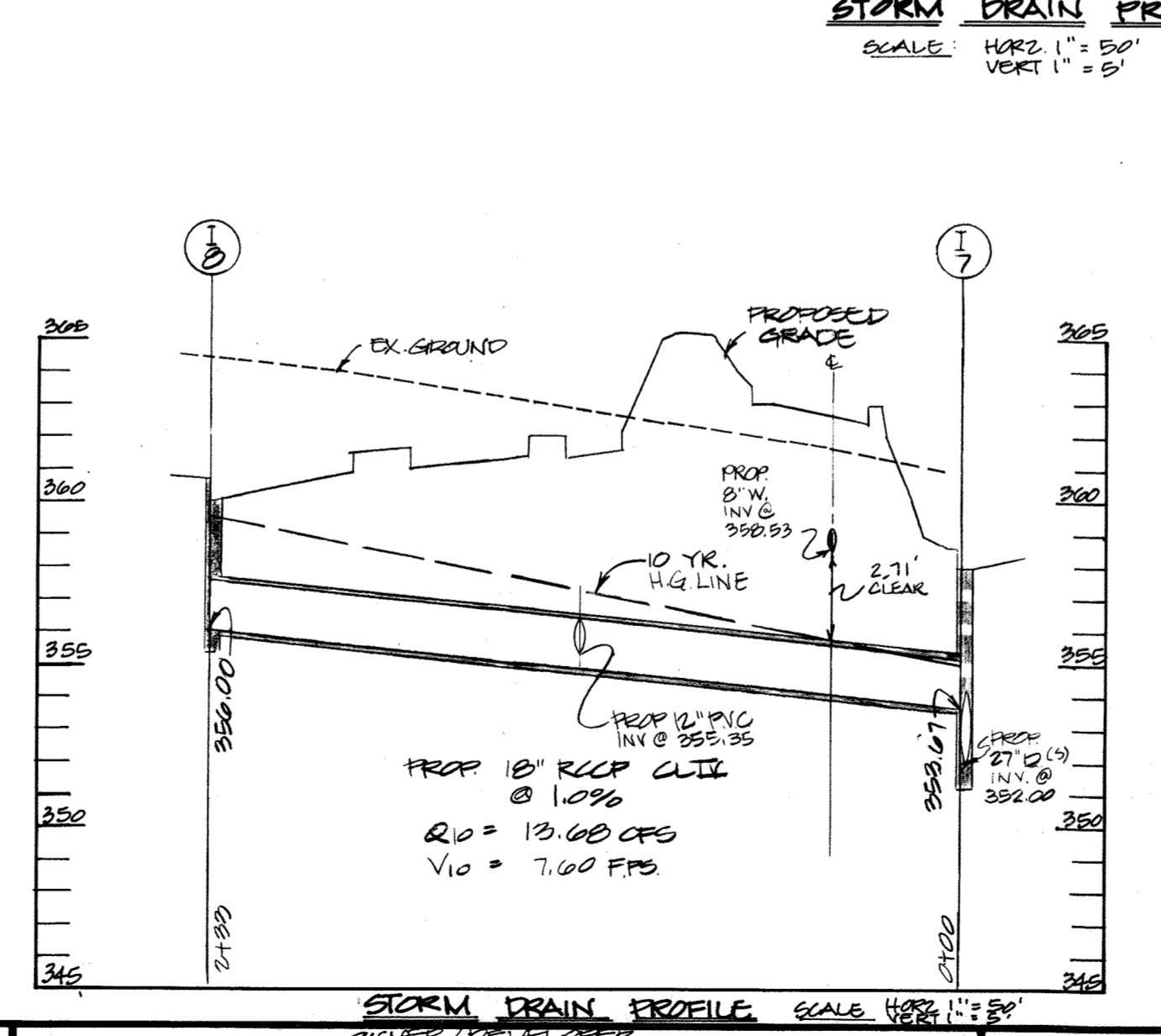
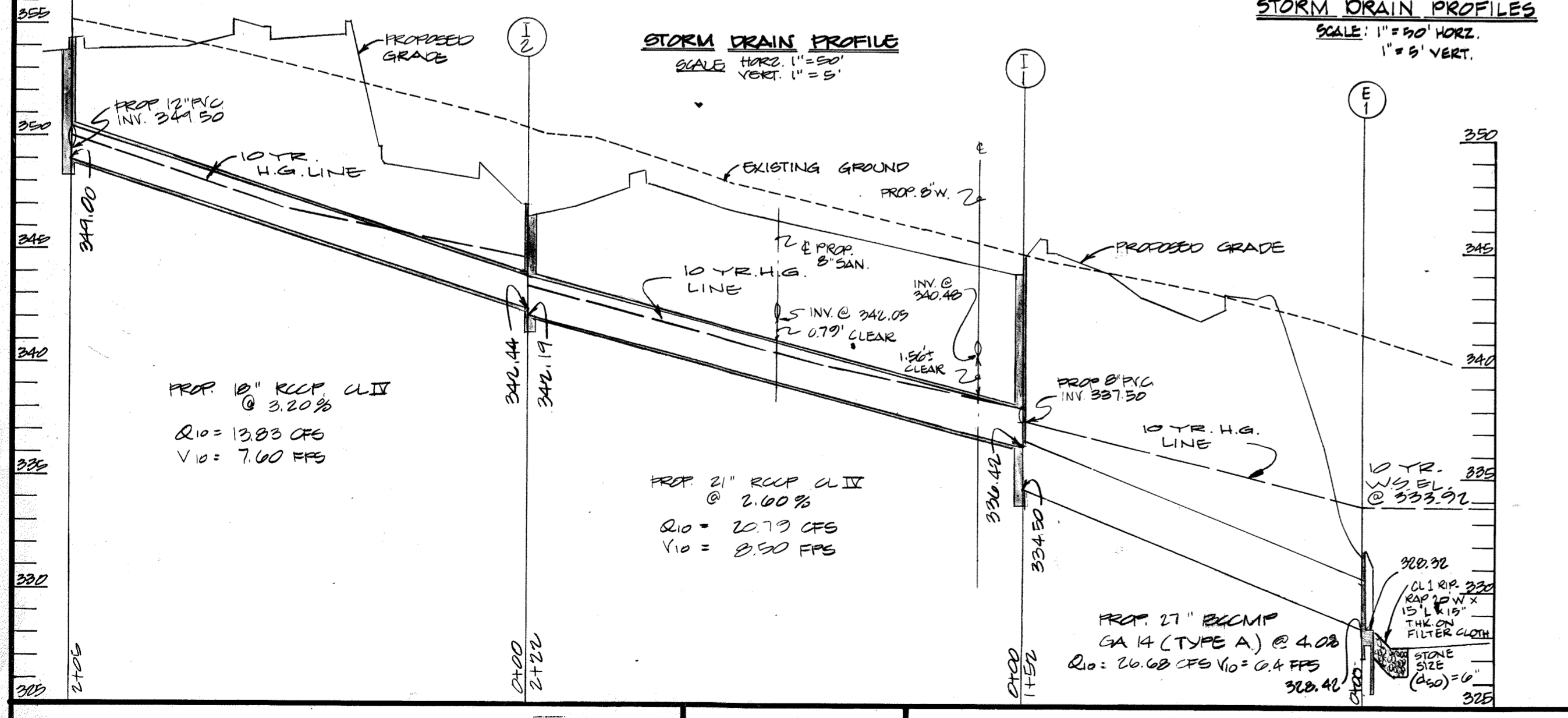
NO.	TYPE	ELEVATIONS			REMARKS
		# TOP	INV. IN	INV. OUT	
I-1	DBL 'S' COMB	344.00	336.42	334.50	SEE HOW. CO STD DET. 50-4.34
I-2	DBL 'S' COMB	346.50	342.44	342.19	SEE HOW. CO STD DET. 50-4.34
I-3	DBL 'S' COMB	353.00	349.00	349.00	SEE HOW. CO STD DET. 50-4.34
I-4	DBL 'S' COMB	344.00	331.25	329.50	SEE HOW. CO STD DET. 50-4.34
I-5	DBL 'S' COMB	346.00	340.50	340.31	SEE HOW. CO STD DET. 50-4.34
I-6	DBL 'S' COMB	349.50	344.16	343.96	SEE HOW. CO STD DET. 50-4.34
I-7	DBL 'S' COMB	358.00	352.84/352.00	352.00	SEE HOW. CO STD DET. 50-4.34
I-8	DBL 'S' COMB	360.00	350.00	350.00	SEE HOW. CO STD DET. 50-4.34
I-9	DBL 'S' COMB	367.00	361.70	361.50	SEE HOW. CO STD DET. 50-4.34
I-10	DBL 'S' COMB	369.75	365.75	365.75	SEE HOW. CO STD DET. 50-4.34
I-11	STD. A-B INLET	339.71**	332.60	332.60	SEE HOW. CO STD DET. 50-4.01
I-12	STD. A-B INLET	348.60**	349.70	349.70	SEE HOW. CO STD DET. 50-4.01

* TOP OF GRATE ELEVATION
** TOP OF SLAB ELEVATION



STORM DRAIN PROFILES

STORM DRAIN PROFILE



STRUCTURE SCHEDULE

NO.	TYPE	ELEVATION			REMARKS
		TOP	INV. IN	INV. OUT	
E-1	TYPE 'A' HEADWALL	328.42	328.32	328.32	SEE HOW. CO STD DET. 50-5.11
E-2	TYPE 'A' HEADWALL	328.40	328.30	328.30	SEE HOW. CO STD DET. 50-5.11

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD COUNTY CONSERVATION PROGRAM MEET THE TECHNICAL REQUIREMENTS FOR SMALL SCALE CONSTRUCTION, SOIL EROSION AND EARTHMENT CONTROL MEET THE REQUIREMENTS OF HOWARD COUNTY CONSERVATION DISTRICT.

APPROVED: *Joseph H. Necker, Jr.* DATE: 12-9-86
HOWARD COUNTY CONSERVATION DISTRICT

APPROVED: *Robert W. Ziemer* DATE: 12-17-86
HOWARD COUNTY DEPARTMENT OF PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

APPROVED: *James E. Brown* DATE: 12-18-86
HOWARD COUNTY OFFICE OF PLANNING AND ZONING ADMINISTRATION

APPROVED: *John M. Necker* DATE: 12-18-86
HOWARD COUNTY DEPARTMENT OF PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

APPROVED: *Joseph H. Necker, Jr.* DATE: 12-12-86
CHIEF BUREAU OF ENGINEERING

APPROVED
DIVISION OF LAND DEVELOPMENT &
ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 10-1-86

GEORGE WILLIAM STEPHENS, JR. AND ASSOCIATES, INC.
CIVIL ENGINEERS & LAND SURVEYORS
303 ALLEGHENY AVENUE
TOWSON, MARYLAND 21204
(301) 825-8120



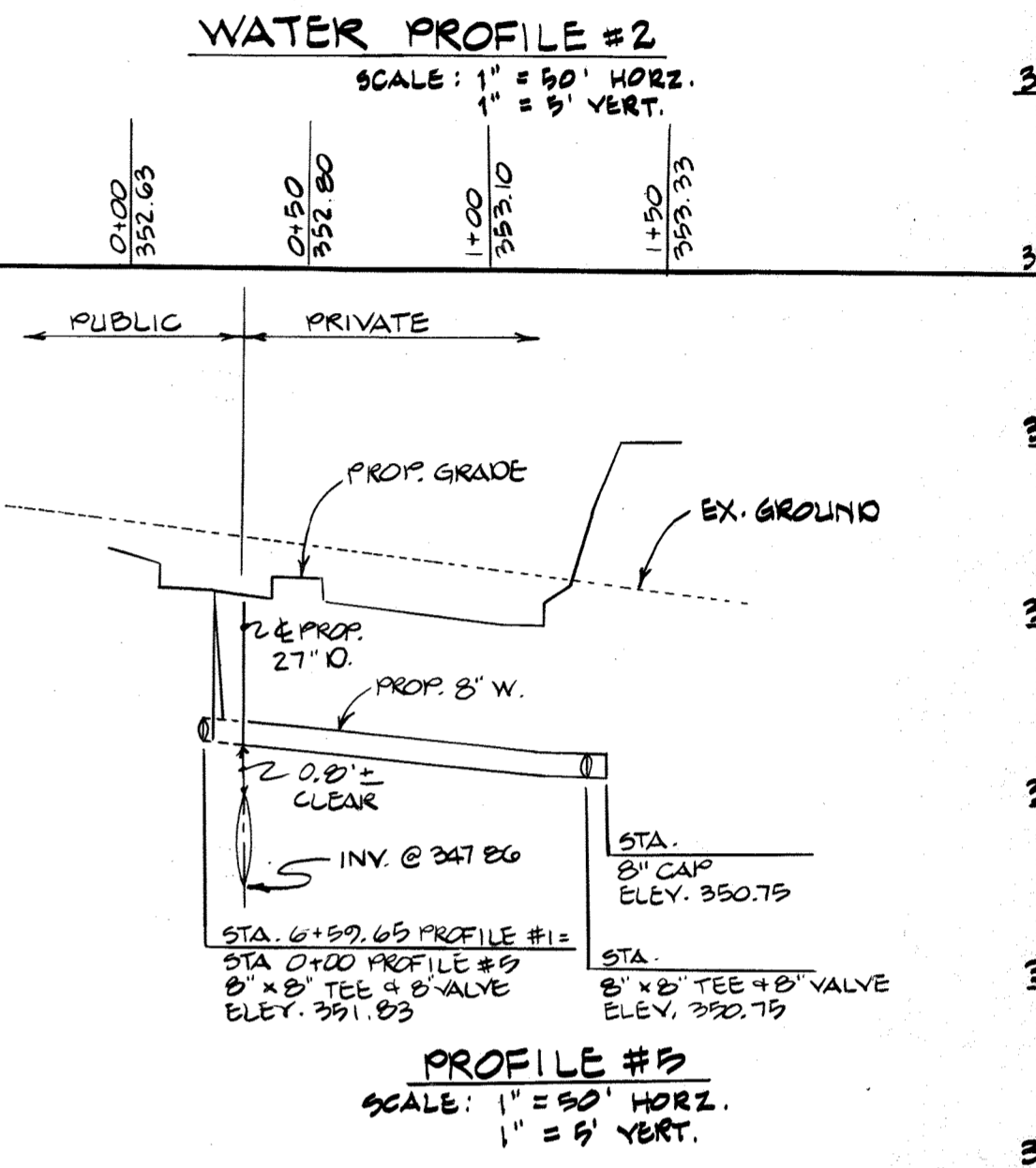
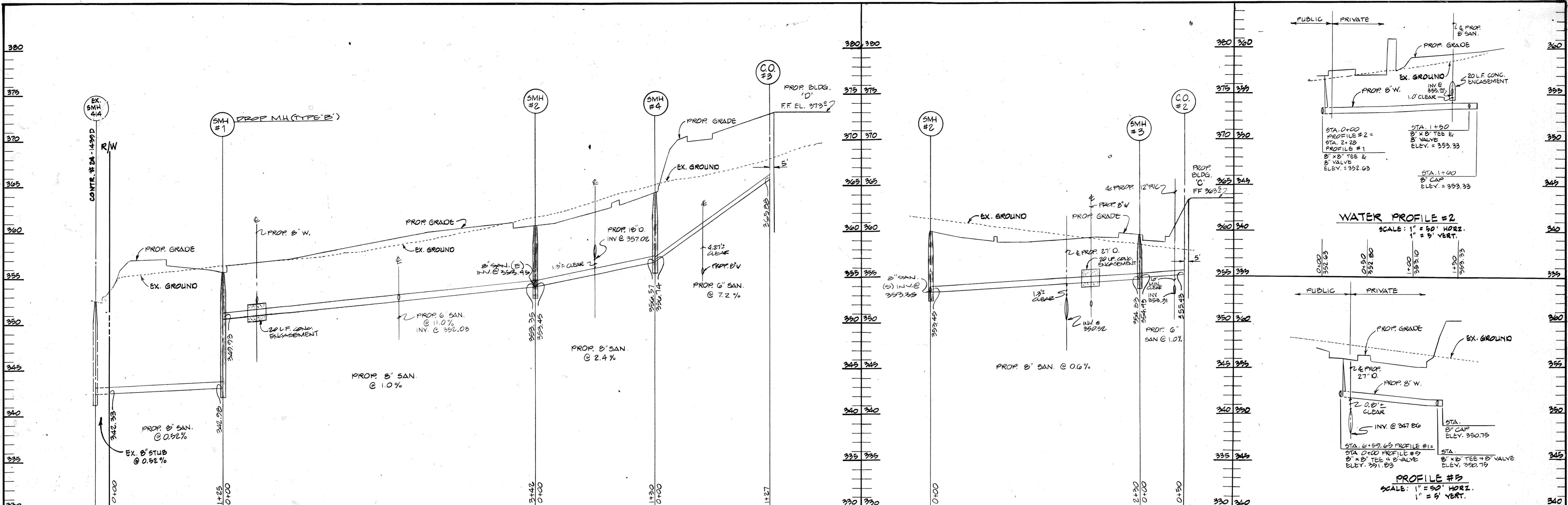
ENGINEER
Tapobrata Chakrabarti 8930 8-21-86
ENGINEER: TAPOBRATA CHAKRABARTI REG. NO. DATE

OWNER/DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND, 21044
(301) 492-6022
CONTRACT PURCHASER
MOR XLIV PARTNERSHIP
50 MARSHALL CORPORATION
10270 OLD COLUMBIA RD.
COLUMBIA, MARYLAND 21046
(301) 495-6707

OWNER/DEVELOPER
Joseph H. Necker, Jr.
SIGNATURE: J. H. NECKER, JR. TITLE: ASST. DIR. OF ENGR. DATE: 8-21-86

DESIGNED TO:
DRAWN BY:
CHECKED BY:
REVISIONS:

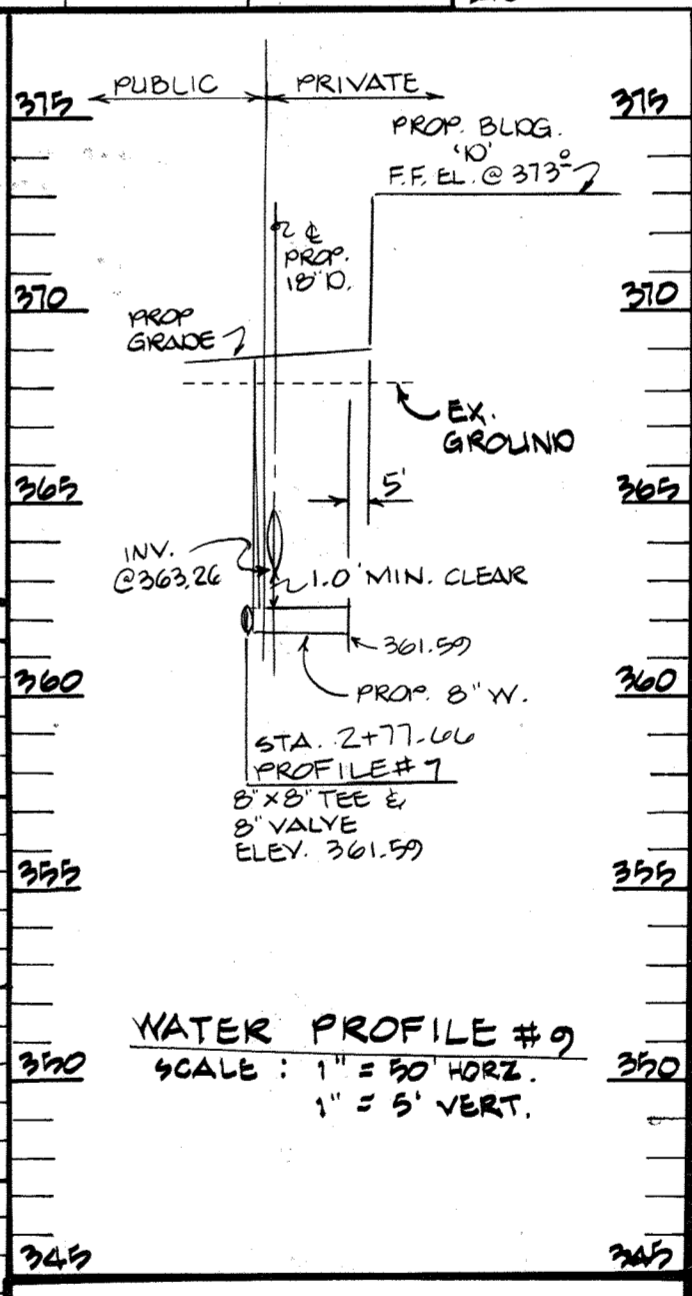
STORM DRAIN PROFILES AND DETAILS
PROPOSED OFFICE FOR RESEARCH & DEVELOPMENT
PARK
COLUMBIA, GATEWAY
PARCEL C
TAX MAP # 42443
HOWARD COUNTY, MARYLAND
ELECTION DISTRICT # 6
SCALE: AS SHOWN
P.N. 82880
SHEET 5 OF 10
50P 87-49



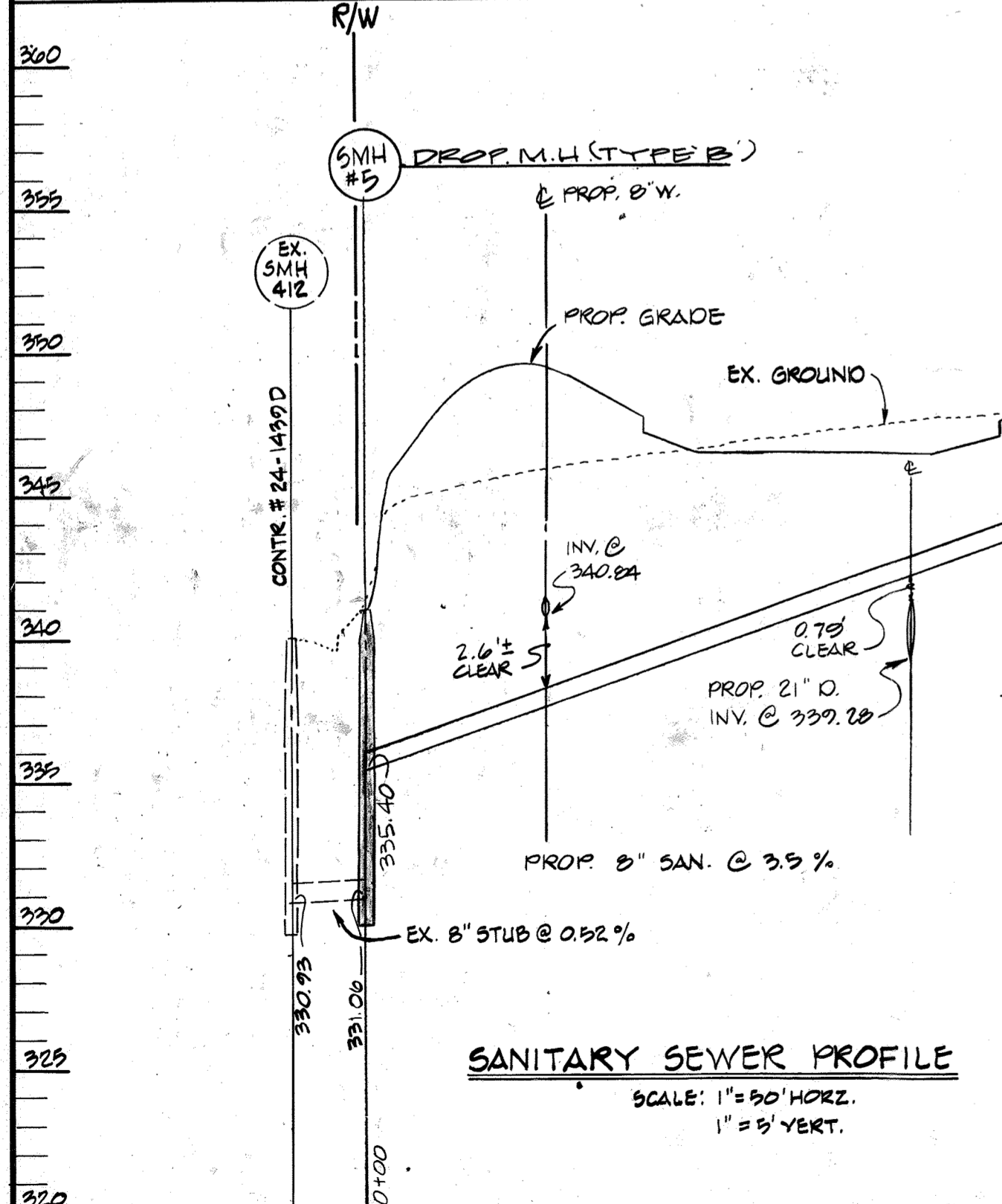
MANHOLE SCHEDULE

NO.	TYPE	ELEVATION			REMARKS
		TOP	INV. IN	INV. OUT	
MH 1	PROP. MH TYPE 'B'	355.70	349.93	342.92	HOW. CO. STD. DET. 51.32
MH 2	STD. BRICK MANHOLE	340.21	353.45	353.35	HOW. CO. STD. DET. G 9.01
MH 3	STD. BRICK MANHOLE	350.50	358.00	354.83	HOW. CO. STD. DET. G 9.01
MH 4	STD. BRICK MANHOLE	344.16	356.74	356.97	HOW. CO. STD. DET. G 9.01
MH 5	PROP. MH TYPE 'B'	341.00	339.40	331.00	HOW. CO. STD. DET. 51.32

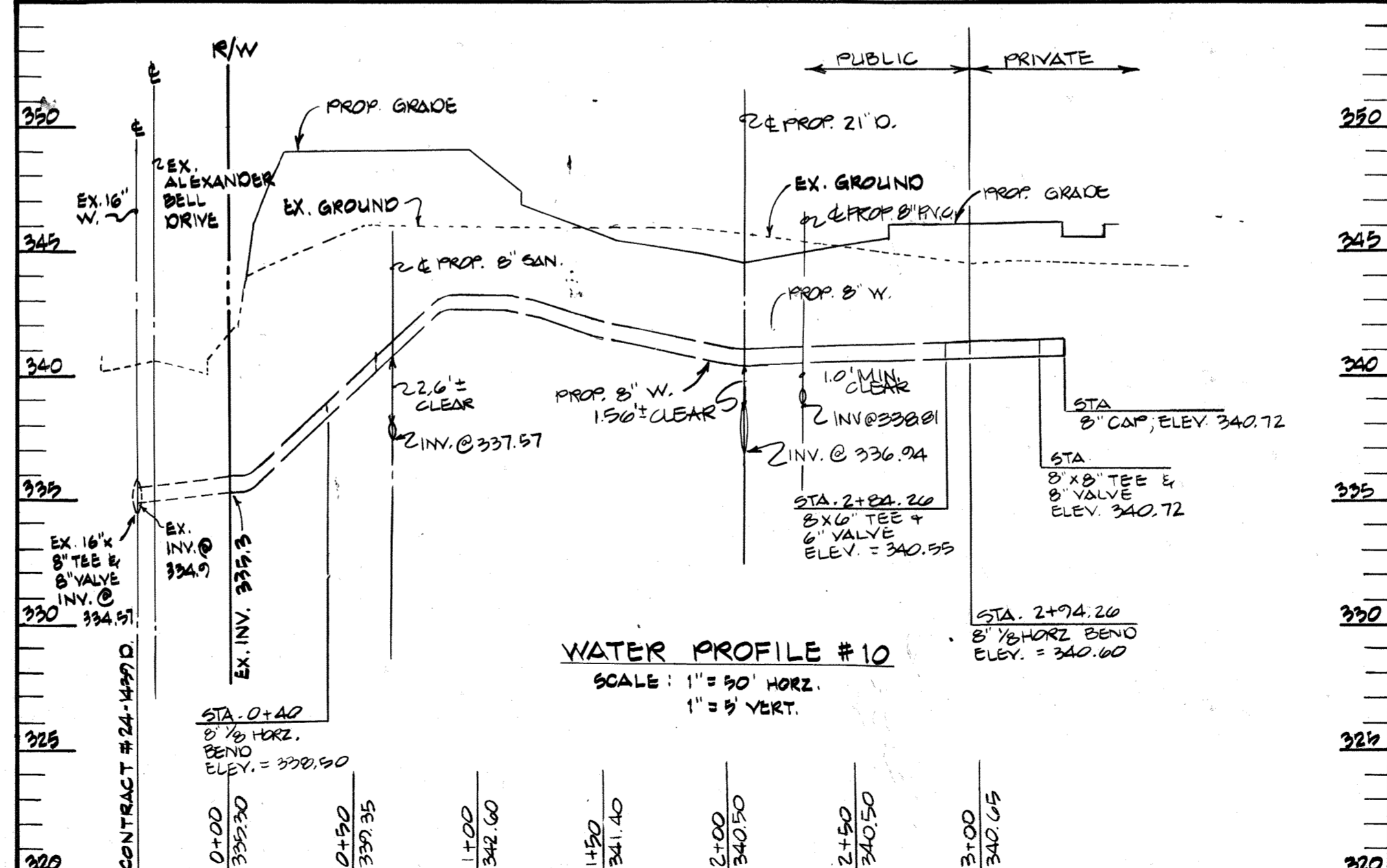
SANITARY SEWER PROFILE
SCALE: 1" = 30' HORIZ.; 1" = 5' VERT.



WATER PROFILE #9
SCALE: 1" = 30' HORIZ.; 1" = 5' VERT.



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



WATER PROFILE #10
SCALE: 1" = 30' HORIZ.; 1" = 5' VERT.

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT MEET THE TECHNICAL REQUIREMENTS FOR SMALL SCALE CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

Joseph H. Necker 12-9-86 DATE
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

THESE PLANS FOR SMALL SCALE CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Robert W. Ziehm DATE
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

PLAN NUMBER

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEM HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Joseph H. Necker 12-17-86 DATE
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Thomas J. Ramo 12-18-86 DATE
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED FOR LAND DEVELOPMENT AND ZONING ADMINISTRATION

Joseph H. Necker 12-18-86 DATE
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEM HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Joseph H. Necker 12-18-86 DATE
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF ENGINEER OF ENGINEERING

GEORGE WILLIAM STEPHENS, JR. AND ASSOCIATES, INC.
CIVIL ENGINEERS & LAND SURVEYORS
303 ALLEGHENY AVENUE
TOWSON, MARYLAND 21284
(301) 925-8120

ENGINEER

Robert Chakrabarti 8930 8-21-86
ENGINEER: TAPOBRATA CHAKRABARTI REG. NO. DATE

OWNER/DEVELOPER

THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
(301) 492-6033

CONTRACT PURCHASER
MOR XLIV PARTNERSHIP
90 MANEKIN CORPORATION
10270 OLD COLUMBIA RD.
COLUMBIA, MARYLAND 21046
(301) 495-6767

OWNER/DEVELOPER

Joseph H. Necker 8-21-86
SIGNATURE TITLE DATE

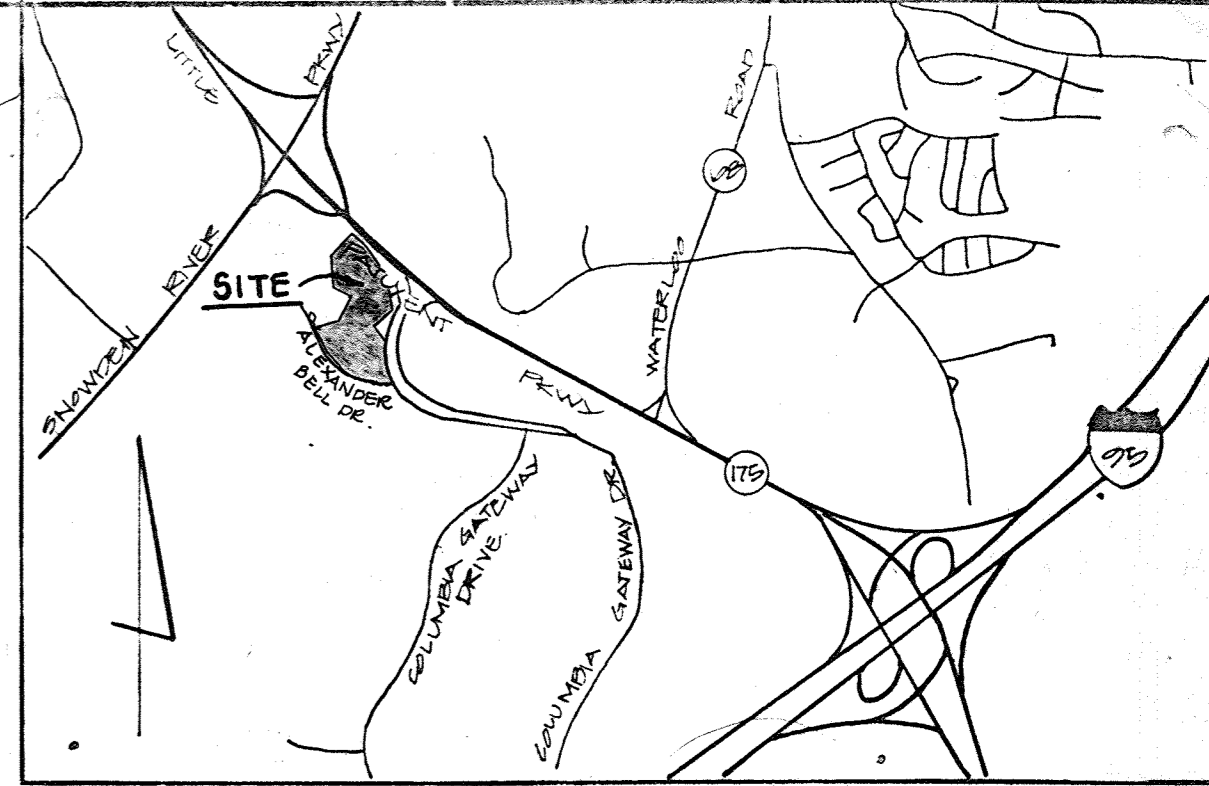
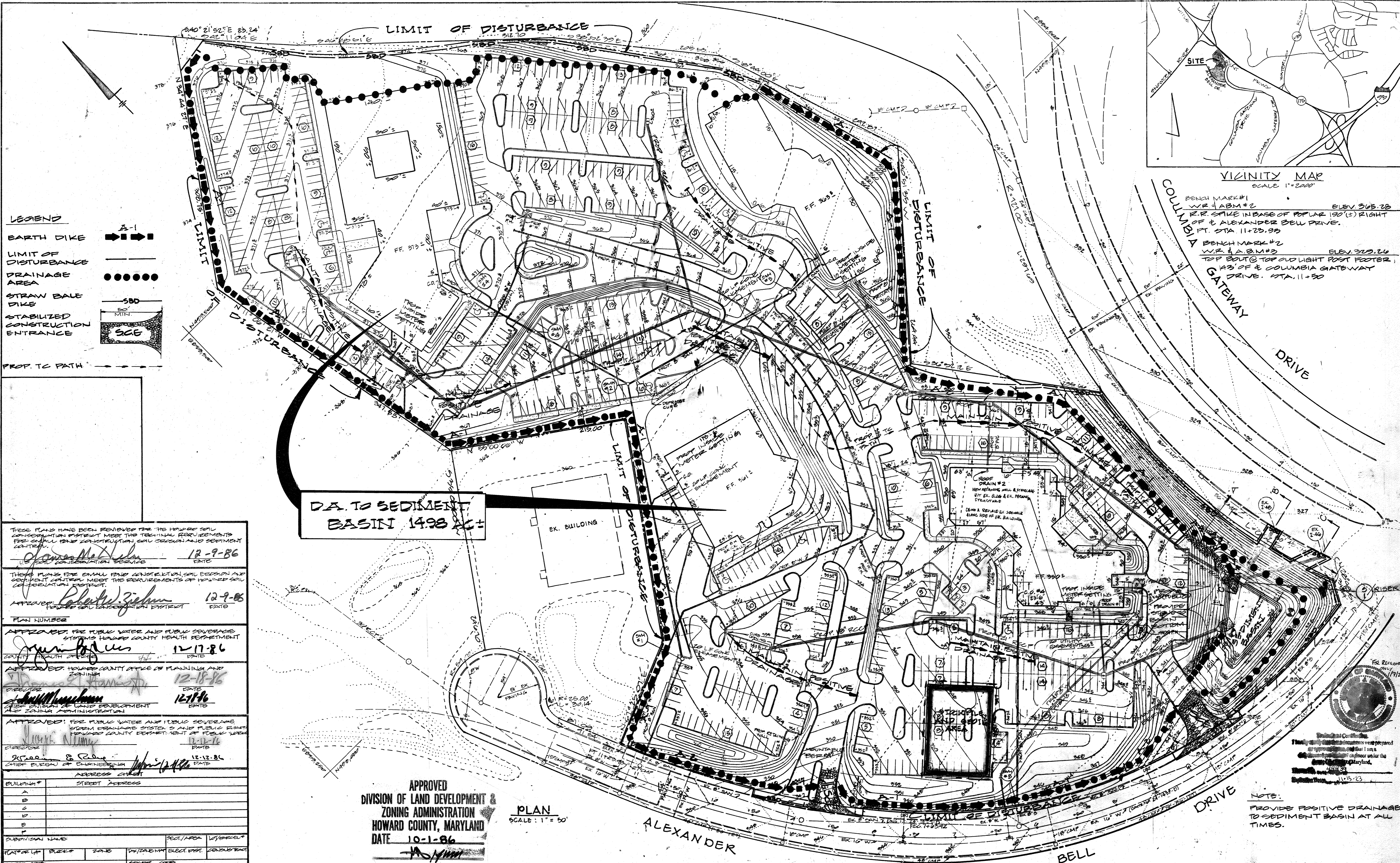
JOSEPH H. NECKER, JR. ASST. DIR. OF ENGG.

DESIGNED: N.B. K.B.
DRAWN: K.B.
CHECKED: T.C.
REVISIONS

PROFILES AND DETAILS

PROPOSED OFFICE FOR RESEARCH & DEVELOPMENT PARK
COLUMBIA GATEWAY
PARCEL 'C'
TAX MAP #42443
HOWARD COUNTY, MARYLAND ELECTION DISTRICT #6
SCALE: AS SHOWN AUGUST 21, 1986
P.N. 8930 SHEET 02 OF 10

50 OF 57-49



- LEGEND**
- EARTH DIKE
 - LIMIT OF DISTURBANCE
 - DRAINAGE AREA
 - STRAW BALE DIKE
 - STABILIZED CONSTRUCTION ENTRANCE
 - PROP. TO PATH

VICINITY MAP
SCALE 1" = 2000'

BENCH MARK #1
V.R. & B.M. #2
ELEV. 305.28
R.R. GIVE IN BASE OF POPLAR (S) RIGHT
OF & ALEXANDER BELL DRIVE.
ST. STA. 11+25.95

BENCH MARK #2
V.R. & B.M. #3
ELEV. 320.26
TOP BOUT @ TOP OLD LIGHT POST FOOTER
143' OF & COLUMBIA GATEWAY
DRIVE. STA. 11+50

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION SOIL EROSION AND SEDIMENT CONTROL.

APPROVED: *[Signature]* 12-9-86
DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: *[Signature]* 12-9-86
DATE

PLAN NUMBER

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: *[Signature]* 12-17-86
DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

APPROVED: *[Signature]* 12-18-86
DATE

APPROVED: *[Signature]* 12-18-86
DATE

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE FROM DRAINAGE SYSTEMS AND PUBLIC SEWER HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED: *[Signature]* 12-12-86
DATE

APPROVED: *[Signature]* 12-12-86
DATE

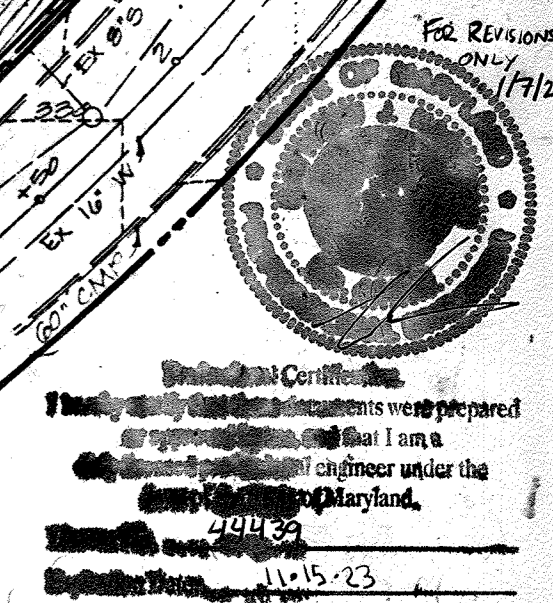
BUILDING #	STREET ADDRESS
A	
B	
C	
D	
E	
F	

SUBMITTAL NAME	DATE	REVISIONS

D.A. TO SEDIMENT BASIN 1498 AC+

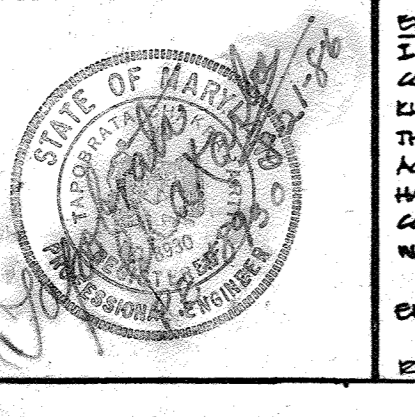
APPROVED
DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 10-1-86

PLAN SCALE: 1" = 50'



NOTE:
PROVIDE POSITIVE DRAINAGE TO SEDIMENT BASIN AT ALL TIMES.

GEORGE WILLIAM STEPHENS, JR. AND ASSOCIATES, INC.
CIVIL ENGINEERS & LAND SURVEYORS
303 ALLEGHENY AVENUE
TOWSON, MARYLAND 21204
(301) 825-8120



ENGINEER'S CERTIFICATE:
I CERTIFY THAT THIS PLAN FOR G.M. FACILITY CONSTRUCTION, EXISTING AND SEDIMENT CONTROL CONSTITUTES A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE G.M. FACILITY WITHIN 30 DAYS OF COMPLETION.

ENGINEER: *[Signature]*
DATE: 8-21-86

OWNER/DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
(301) 492-6033

CONTRACT MANAGER
MORRIS L. LIX PARTNERSHIP
90 MARFAC CORPORATION
10276 OLD COLUMBIA RD.
COLUMBIA, MARYLAND 21046
(301) 495-6767

DEVELOPER'S CERTIFICATE:
I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A CERT. OF NATURAL RESOURCES APPROVED PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION. I AM AUTHORIZED TO SIGN THESE PLANS AND I AM AN ENGINEER UNDER THE ENGINEERING PROFESSIONAL ACT OF MARYLAND.

DEVELOPER: *[Signature]* DATE: 8-21-86

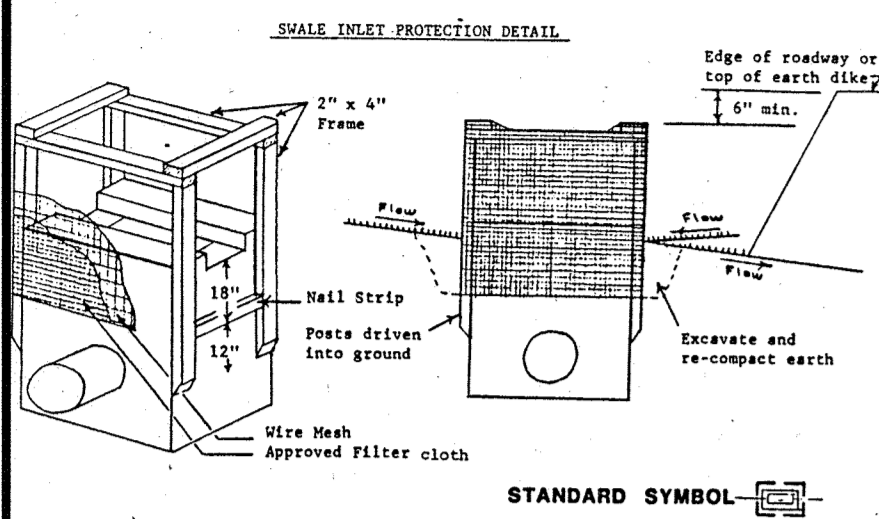
DESIGNED: JLB
DRAWN: JLB
CHECKED: JLB
REVISIONS:
1. REVISED TO SHOW STAIR WELLS
2. REVISED TO SHOW STAIR WELLS
3. REVISED TO SHOW STAIR WELLS

SEDIMENT & EROSION CONTROL PLAN
PROPOSED OFFICE FOR RESEARCH & DEVELOPMENT
PARK
COLUMBIA GATEWAY
PARCEL 10
TAX MAP # 42443
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
PN 02480

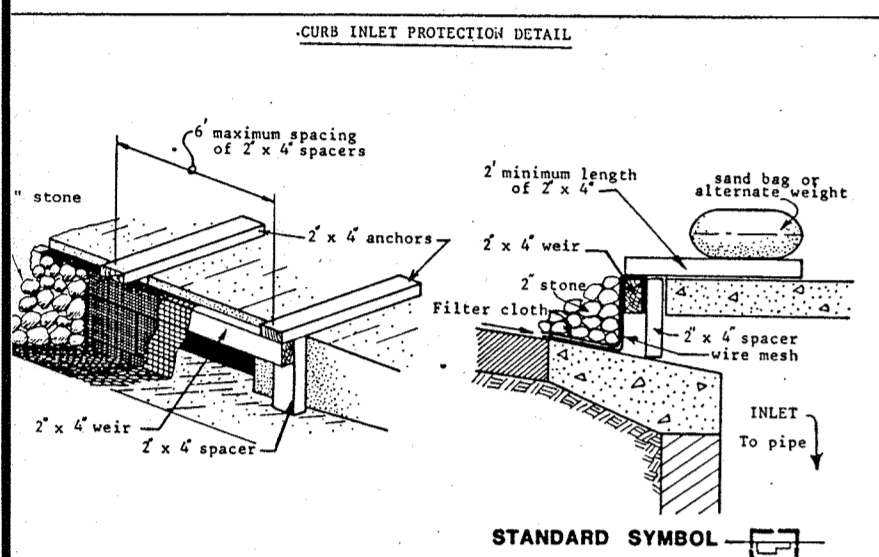
ELECTION DISTRICT #0
AUGUST 21, 1986
SHEET 7 OF 10
SDP-87-49

SEQUENCE OF CONSTRUCTION

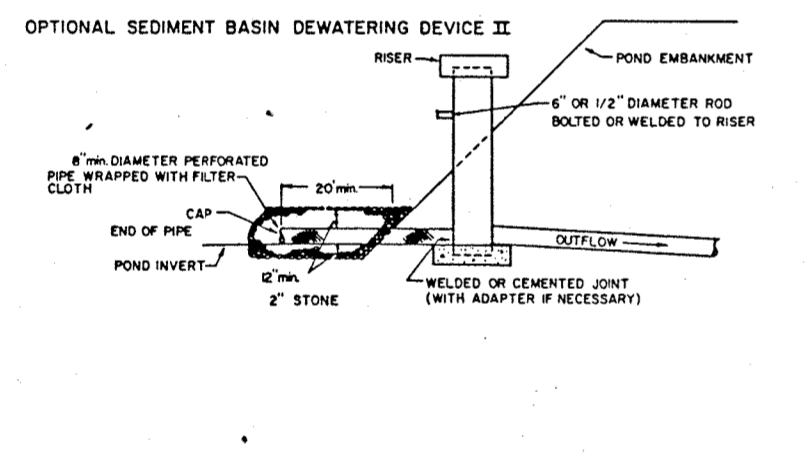
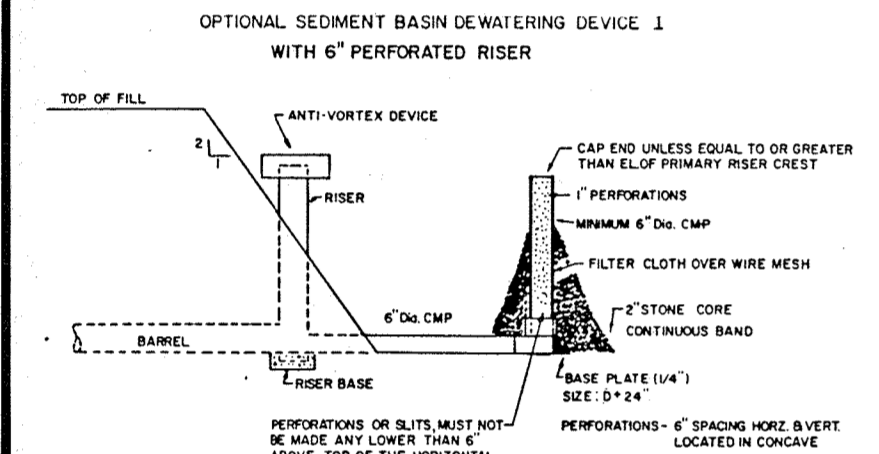
- 1. Notify Howard County, Department of Inspections, Permit Inspector 48 hours prior to beginning work. 2 Days
2. Clear and grub for sediment control measures only. 2 Days
3. Install stabilized construction entrances. 1 Day
4. Construct sediment basin (sediment basin shall be constructed per the construction specifications of storm water management ponds), per specifications as shown on sheet 3 of this initial construction. 10 Days
5. Install all earth dikes and straw bale dikes maintaining positive drainage to the sediment basins at all times. 2 Days
6. Begin major grading and adjust diversion dikes as work progresses maintaining positive drainage to the sediment basins at all times. 12 Days
7. Install storm drains and other utilities. Provide adequate protection for all inlets. 20 Days
8. Stabilize areas not receiving paving. 2 Days
9. Fine grade and install subbase material in parking and building areas. 14 Days
10. Fine grade any remaining areas and stabilize. 7 Days
11. After obtaining permission from the Sediment Control Inspector, clean out and convert the sediment basins to storm water management facilities. Make the necessary changes to the release structures according to the approved storm water management plans. 7 Days
12. After obtaining permission from the Sediment Control Inspector, remove the remaining sediment control devices and stabilize. 3 Days



STANDARD SYMBOL

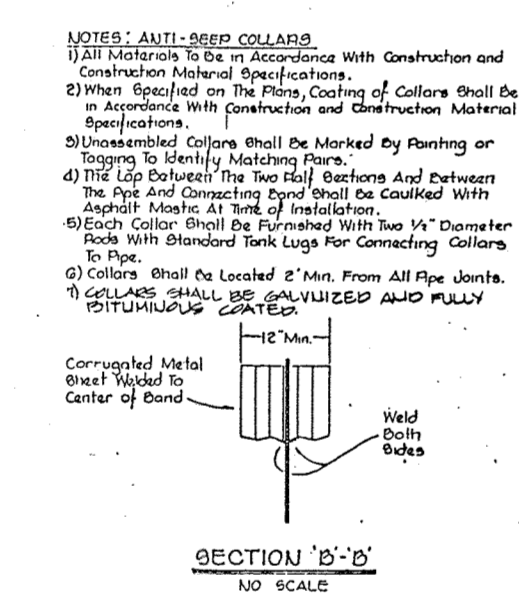


STANDARD SYMBOL

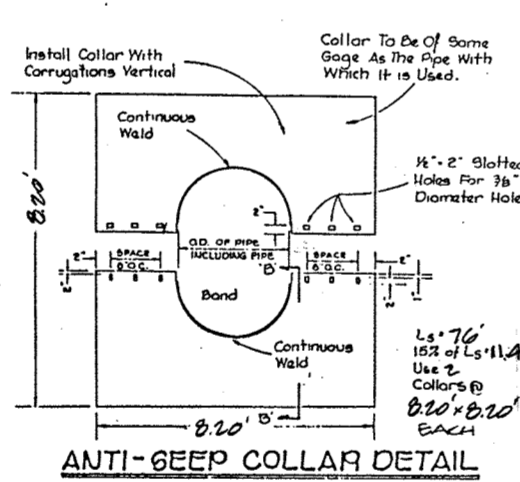


SEDIMENT CONTROL NOTES

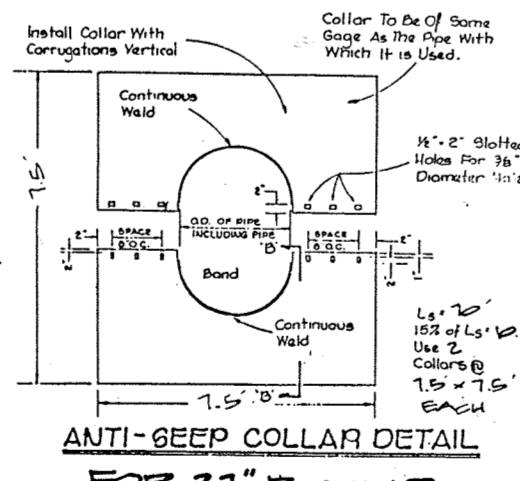
- 1) A minimum of 24 hours notice must be given to the Howard County Office of Inspections and Permits prior to the start of any construction (992-2437)
2) All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
3) Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4) All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 32, 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 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) and (Sec. 52), temporary seedings (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6) All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7) Site Analysis:
Total Area of Site: 16.16 acres
Area Disturbed: 16.16 acres
Area to be reseeded or paved: 46.21 acres
Area to be vegetatively stabilized: 16.16 acres
Total Cut: 25,727 Cu. Yds
Total Fill: 18,922 Cu. Yds
Offsite (Borrow Area) Location: TO AN AREA WITH AN APPROVED SEDIMENT CONTROL PLAN
8) Any sediment control structure which is disturbed by grading activity for placement of utilities must be reinstated on the same day of disturbance.
9) Additional sediment controls must be provided, if deemed necessary by the Howard County BMP sediment control inspector.



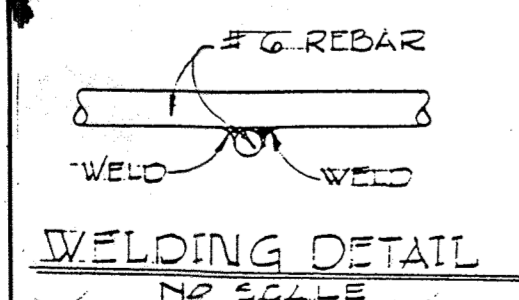
SECTION 'D-D' NO SCALE



ANTI-SLEEP COLLAR DETAIL FOR 30\"/>



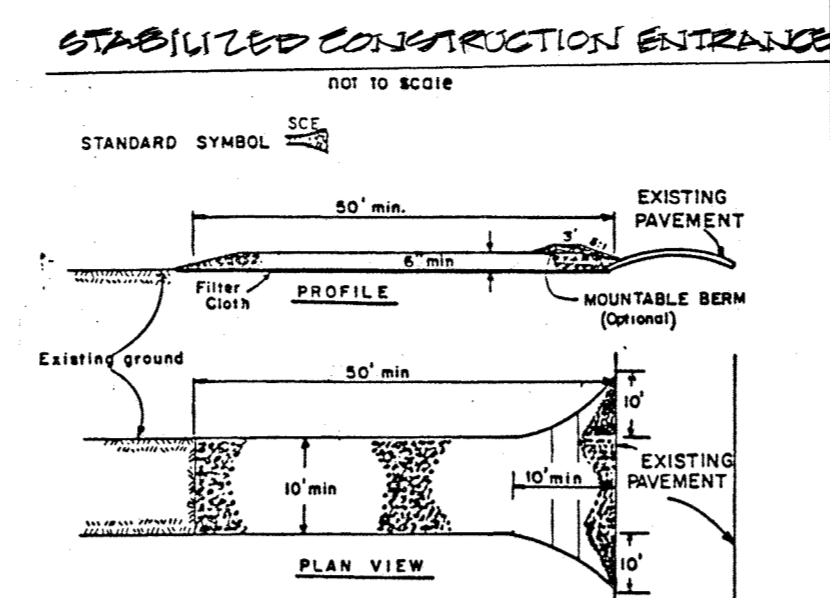
ANTI-SLEEP COLLAR DETAIL FOR 21\"/>



WELDING DETAIL NO SCALE

1. NO RUST SHALL BE PERMITTED ON REBAR SURFACES TO BE WELDED.

2. BITUMINOUS COATING SHALL BE APPLIED UPON COMPLETION OF WELDING.



CONSTRUCTION SPECIFICATIONS

- 1. Stone Size - Use 2\"/>
2. Depth - As required, but not less than 18 feet (except on a single residence lot where 12 feet minimum length would apply).
3. Thickness - 180\"/>
4. Width - Ten (10) foot minimum, but not less than the full width at points where increase of slope occurs.
5. Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residential lot.
6. Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slope will be permitted.
7. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
8. Warning - Signs shall be placed to remove sediment prior to entrance onto public rights-of-way. When warning is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. Periodic inspection and needed maintenance shall be provided after each rain.

PERMANENT SEEDING NOTES

Soil Preparation: Loosen upper 3 inches of soil by raking, disking or other acceptable means before seeding.
Soil Amendments: Use one of the following schedules:
1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq. ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 urea form fertilizer (8 lbs./1000 sq. ft.).
2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq. ft.) and 1000 lbs. per acre 10-10-10 fertilizer (23 lbs./1000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil.
Seeding - For the periods March 1 thru April 30, and August 1 thru October 15, seed with 80 lbs. per acre (1.4 lbs./1000 sq. ft.) of Kentucky 31 tall fescue. For the period May 1 thru July 31, seed with 80 lbs. Kentucky 31 tall fescue per acre and 2 lbs. per acre (.05 lbs./1000 sq. ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) Seed with 80 lbs./acre Kentucky 31 tall fescue and mulch with 2 tons/acre well anchored straw.
Mulching - Apply 18 to 2 tons per acre (70 to 90 lbs./1000 sq. ft.) of untreated small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons or 218 gal./1000 sq. ft. of emulsified asphalt on flat areas. On slopes, 4 ft. or higher, use 348 gallons per acre (8 gal./1000 sq. ft.) for anchoring.
Maintenance - Inspect all seeded areas and make needed repairs, replacements and reseeding.

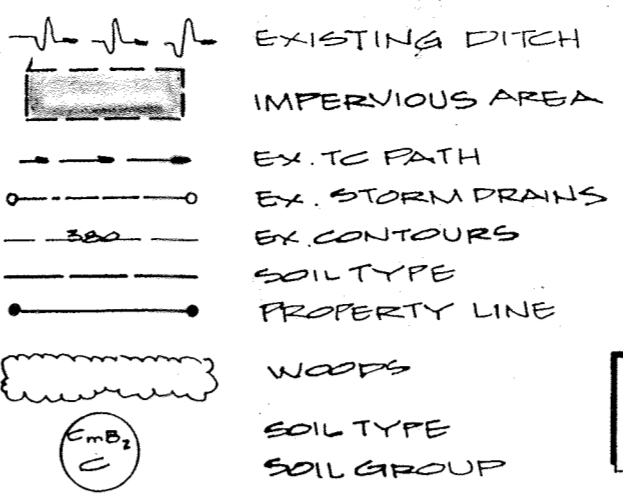
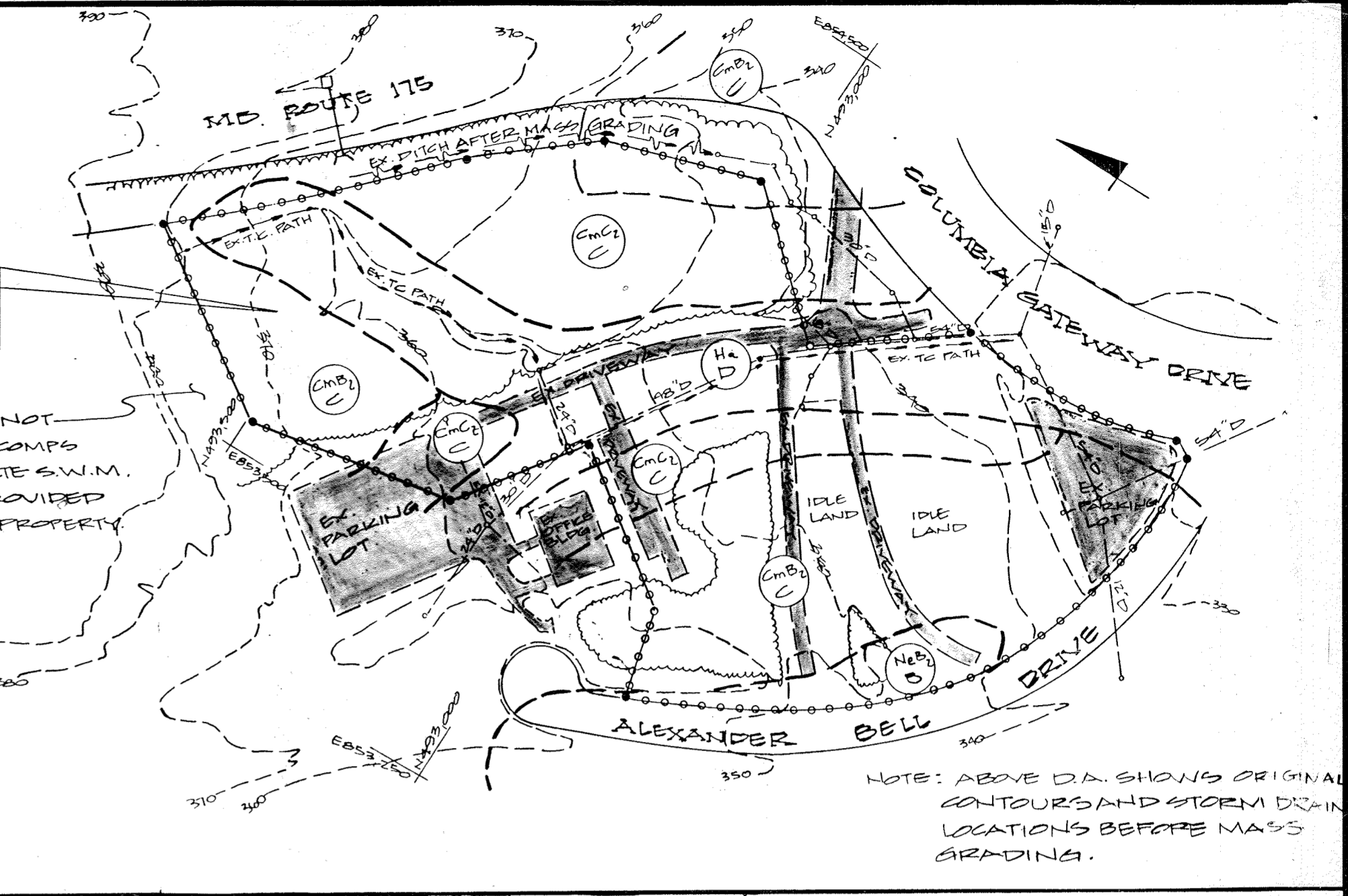


Table with 2 columns: SOIL TYPE and SOIL GROUP. Rows include CM2, CM3, H2, and N&B2.

NOTE: OFFSITE AREA IS NOT INCLUDED IN THE COMPS BECAUSE SEPARATE S.W.M. PLAN WILL BE PROVIDED FOR ADJACENT PROPERTY.

EXIST. LAND USE ~ VACANT

WATERSHED ~ LITTLE PATUXENT

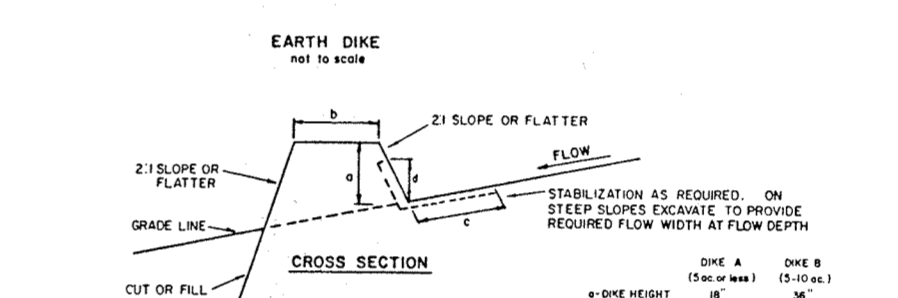


EXISTING DRAINAGE AREA MAP (FOR SEDIMENT & EROSION CONTROL PLAN)

SCALE: 1\"/>

TEMPORARY SEEDING NOTES

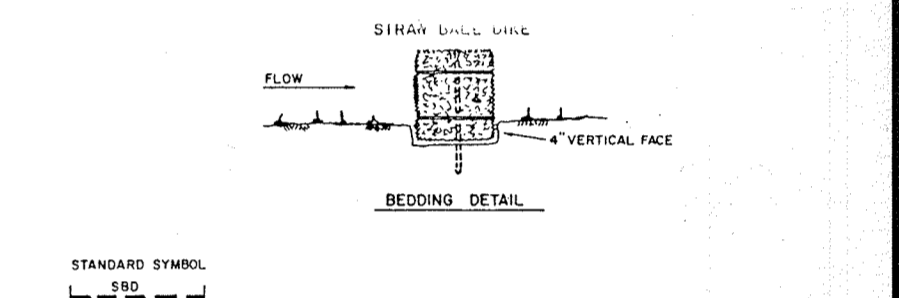
Soil Preparation: Loosen upper 3 inches of soil by raking, disking or other acceptable means before seeding.
Soil Amendments: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq. ft.).
Seeding: For periods March 1 thru April 30 and from August 15 thru Nov. 15, seed with 15 lbs. per acre of annual ryegrass (2.1 lbs./1000 sq. ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (.07 lbs./1000 sq. ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.
Mulching: Apply 18 to 2 tons per acre (70-90 lbs./1000 sq. ft.) of untreated small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. or 218 gal./1000 sq. ft. of emulsified asphalt on flat areas. On slopes, 4 ft. or higher, use 348 gal. per acre (8 gal./1000 sq. ft.) for anchoring.



CONSTRUCTION SPECIFICATIONS

Table with 2 columns: CHANNEL and DIKE. Rows include dimensions and materials for each.

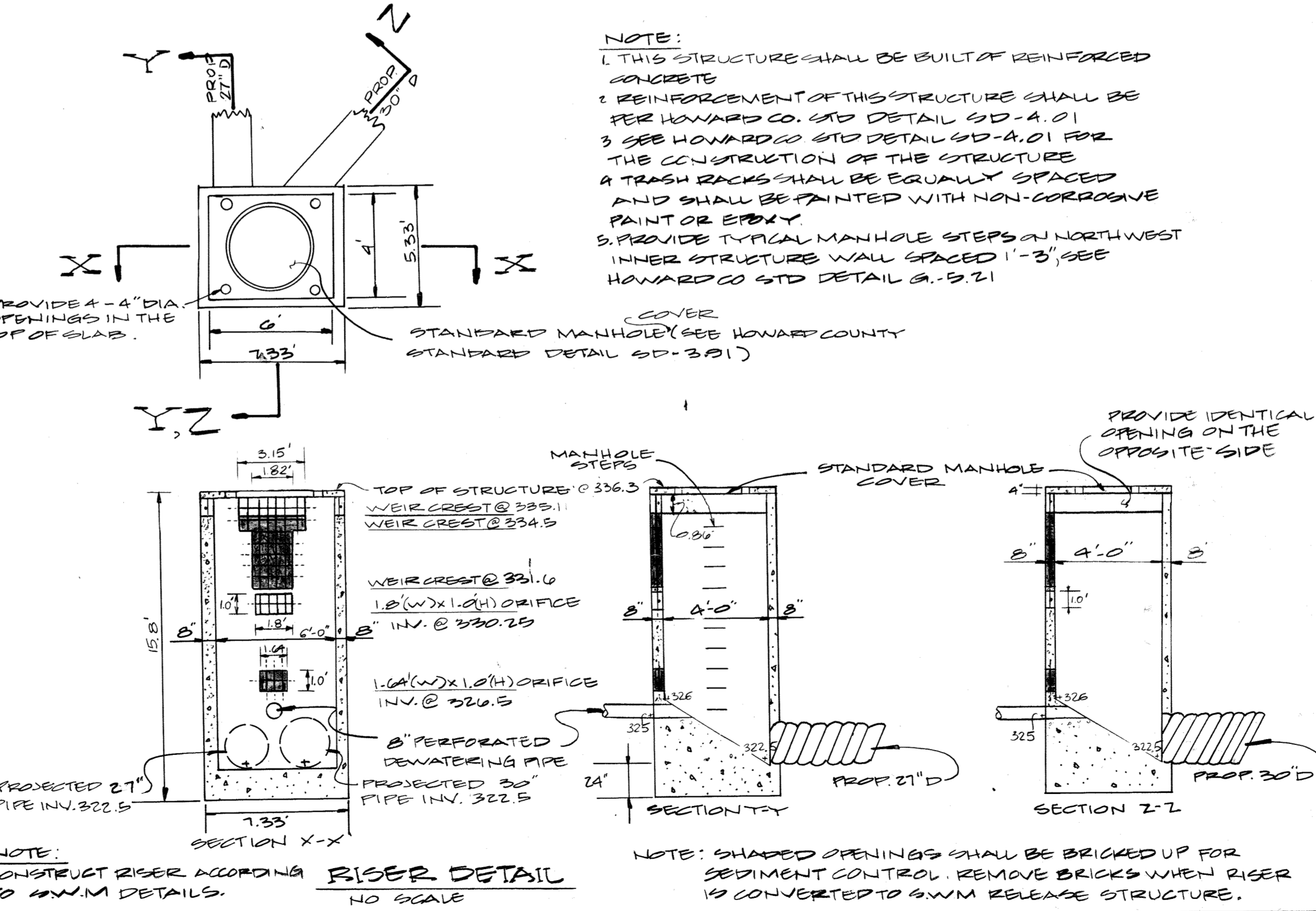
- 1. ALL DIKES SHALL BE CONSTRUCTED BY EARTHWORKING EQUIPMENT.
2. DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP SURFACE OF DIKES AND SLOPE SURFACES SHALL BE FLATTENED TO FACILITATE POSITIVE DRAINAGE TO THE OUTLET.
4. FIELD LOCATIONS SHOULD BE ACQUIRED AS NEAR AS POSSIBLE TO A STABILIZED SAFE OUTLET.
5. STRAW BALE DIKES SHALL BE CONSTRUCTED WITH A MINIMUM OF 5\"/>
6. STABILIZATION SHALL BE (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER COUNTY PLAN.
7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.



CONSTRUCTION SPECIFICATIONS

Table with 2 columns: CHANNEL and DIKE. Rows include dimensions and materials for each.

- 1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ADJUTING THE ADJACENT BALE.
2. EACH BALE SHALL BE PREPARED IN THE SOIL A MINIMUM OF (3) INCHES, AND PLACED SO THE BUNDLES ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN THROUGH THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALE TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INTERSTICES SHALL BE FILLING AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS AS NOT TO BLOCK OR IMPED FLOW OF DRAINAGE.



NOTE: SHAPED OPENINGS SHALL BE BRICKED UP FOR SEDIMENT CONTROL. REMOVE BRICKS WHEN RISER IS CONVERTED TO S.W.M. RELEASE STRUCTURE.

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEM HOWARD COUNTY HEALTH DEPARTMENT
APPROVED FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL
APPROVED FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEM HOWARD COUNTY HEALTH DEPARTMENT
APPROVED FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL
APPROVED FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL

GEORGE WILLIAM STEPHENS, JR. AND ASSOCIATES, INC. CIVIL ENGINEERS & LAND SURVEYORS. 303 ALLEGHENY AVENUE TOWSON, MARYLAND 21204 (301)825-8120

Professional Engineer seal for George William Stephens, Jr., State of Maryland, License No. 8930, dated 8/21/86.

THE HOWARD RESEARCH & DEVELOPMENT CORP. 10215 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND, 21044 (301) 492-6033

CONTRACT PURCHASER MOK XLIV PARTNERSHIP 96 MANEKIN CORPORATION 10210 OLD COLUMBIA RD COLUMBIA, MARYLAND 21046 (301) 495-6107

DESIGNED: IPE DRAWN: JLB CHECKED: WRA/E REVISIONS:
APPROVED: DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION HOWARD COUNTY, MARYLAND DATE 10-1-86

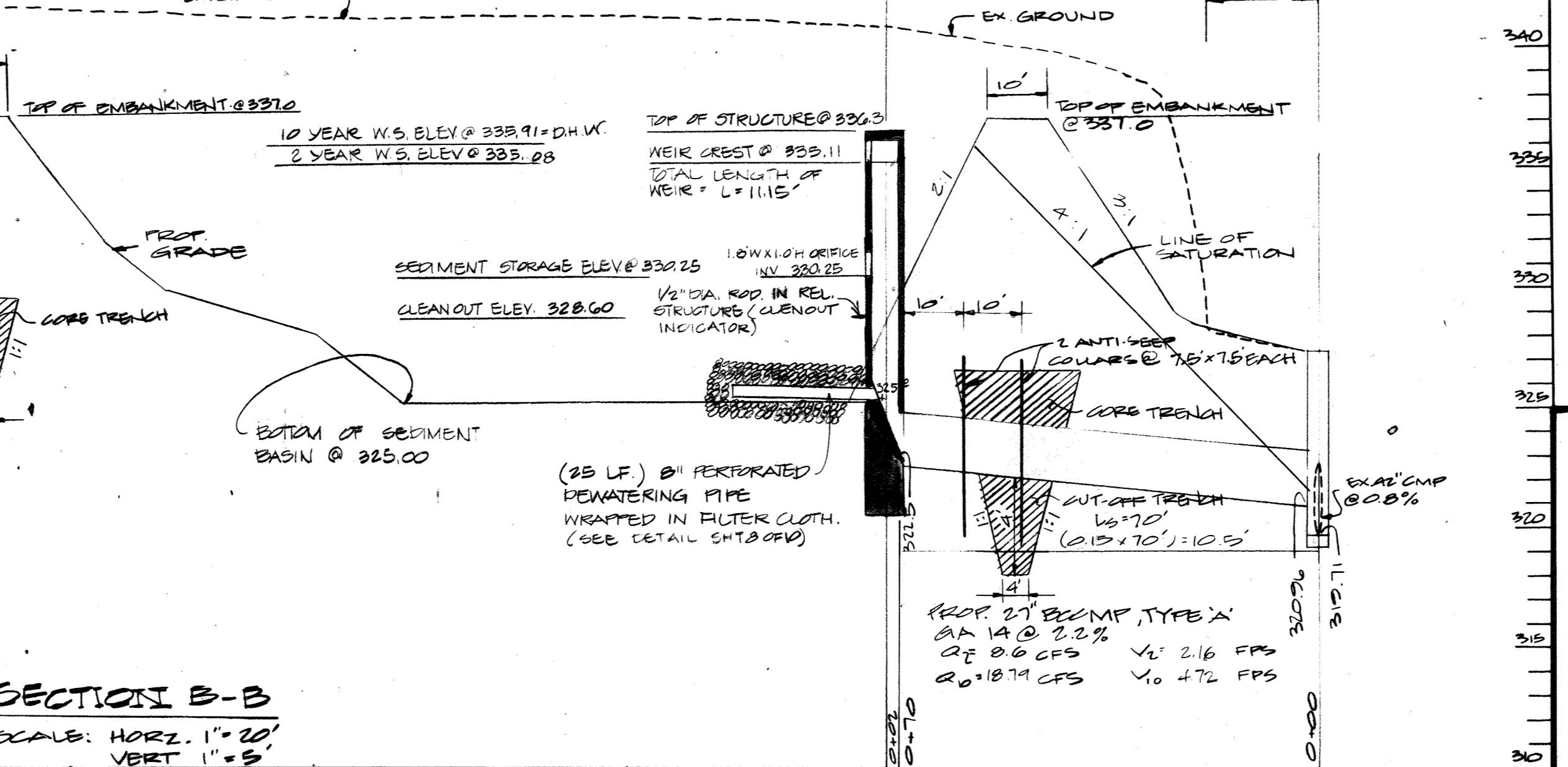
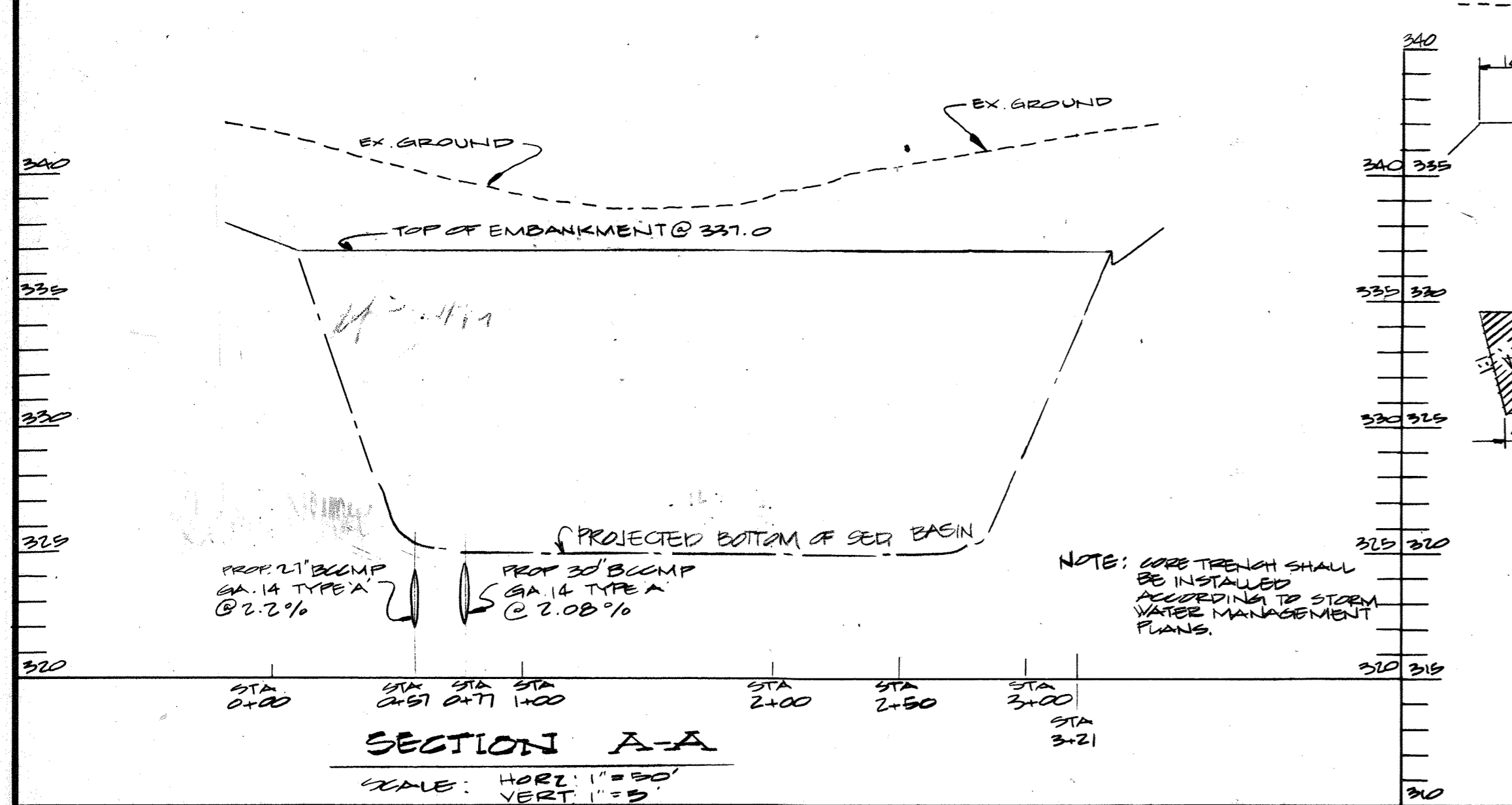
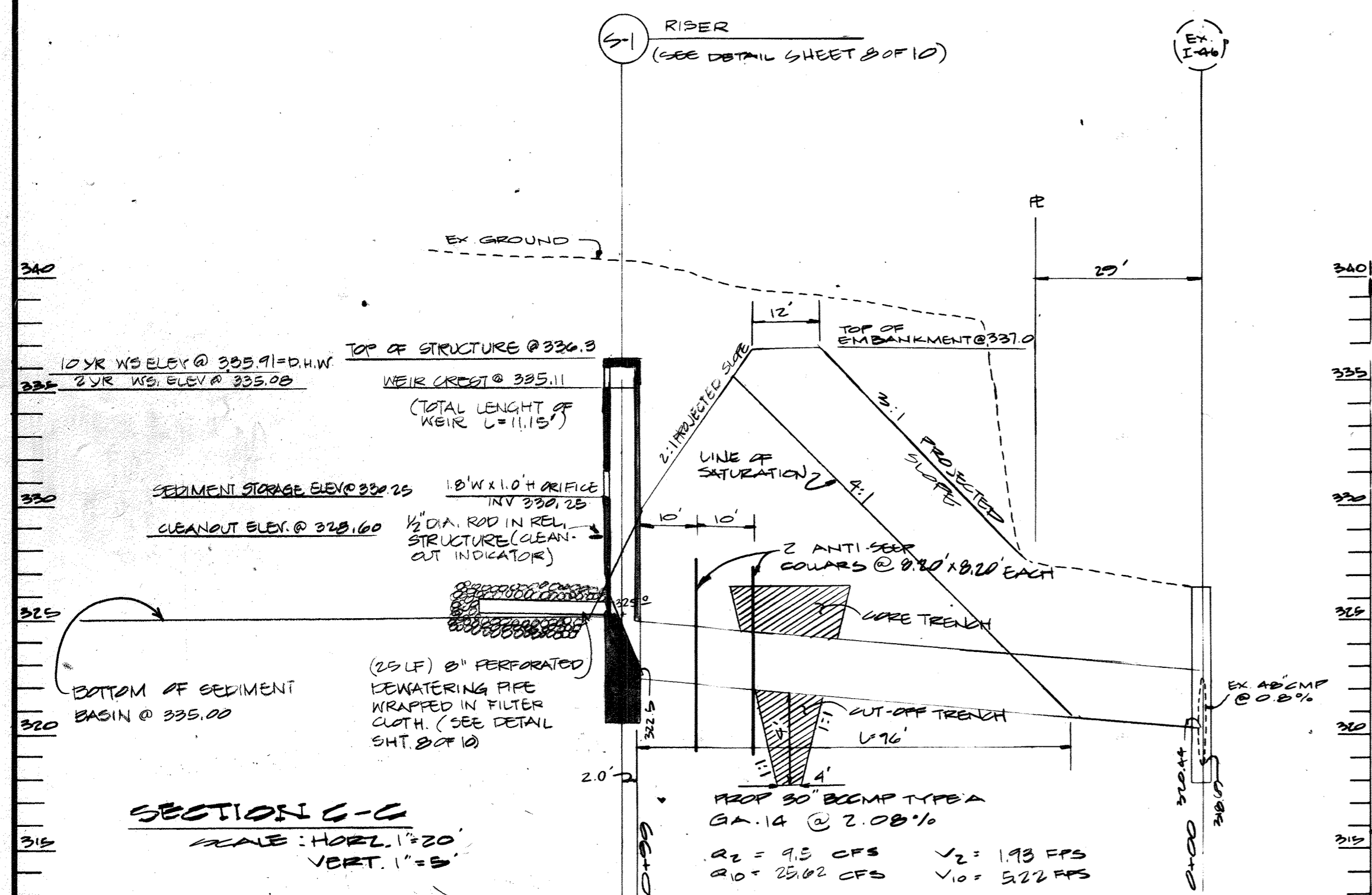
SEDIMENT AND EROSION CONTROL PROFILES & DETAILS
PROPOSED OFFICE FOR RESEARCH & DEVELOPMENT PARK COLUMBIA GATEWAY PARCEL 'C'
HAWARD COUNTY, MARYLAND SCALE: AS SHOWN P.N. 02420 TAX MAP # 42 & 43 ELECTION DISTRICT # 6 AUGUST 21, 1986 SHEET 8 OF 10 SDP 87-49

CONSTRUCTION SPECIFICATIONS

- I. SITE PREPARATION
The fill area and borrow area shall be cleared and grubbed to remove all trees, vegetation, roots and other objectionable material. The topsoil from the embankment area and borrow area shall be removed and stockpiled. The topsoil shall be spread on the completed fill area.
- II. EARTH FILL
 - A) FILL MATERIAL shall be obtained from on-site under the supervision of a soils engineer. It shall be free from roots, stumps, wood rubbish, oversized stones frozen or other objectionable material. Fill areas shall be constructed to the elevation shown on the plan to allow for anticipated settlement. USE UNIFIED SOIL CLASSIFICATION SC OR CL
 - B) PLACEMENT: Areas on which fill will be placed shall be scarified prior to placement of fill. Fill materials shall be placed in layers 6" thick maximum (before compaction) and shall be continuous over the entire length of fill. The most porous material shall be placed in areas not adjacent to ponded water.
 - C) 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 compacted to the specified density. Fill material shall contain sufficient moisture so that the required degree of compaction can be obtained with the equipment used. FILL MATERIAL SHALL BE COMPACTED TO 95% OF AASHTO T-99 DENSITY.
 - D) CORE TRENCH shall be made of SC or CL material compacted to 95% of A.A.S.H.T.O. T-99 density.
- III. STRUCTURAL BACKFILL
Backfill material shall be the type and quality specified for the adjoining fill material. The fill shall be placed in horizontal layers 4" thick maximum and compacted by hand tamping or manually directed power tampers or plate vibrators. At no time during backfilling operations shall driven equipment be allowed to operate any closer than four feet measured horizontally to any part of a structure. Under no circumstances shall the contractor drive equipment over any part of a concrete structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Materials shall fill completely all spaces under and adjacent to newly installed pipe.
- IV. CONCRETE
Concrete shall meet the minimum requirements set forth in the Maryland State Highway Administration "Specifications for Construction and Materials" January 1982 Section 918.06 - "Portland Cement Concrete Mixtures", Mix No. 3 Reinforcing steel shall be A.S.T.M. A 615, Grade 60.
- V. STABILIZATION
The storm water management facility will be stabilized with "Permanent Slope Seeding" as follows:
After spreading 4" topsoil seed with a mixture of 30% inoculated crown vetch and 70% Kentucky 31 Tall Fescue applied at a rate of 60 lbs./Ac., 10-20-20 fertilizer shall be applied at a rate of 25 lbs./1000 square feet, lime at a rate of 92 lbs./1000 square feet, mulch area with unweathered small grain straw at a rate of 1.5 T/Ac, anchor with rapid curing asphalt (R.C.-70, R.C.-250 or R.C.-800) at a rate of 0.1 Gal. S.V.
- VI. PIPE CONDUITS
 1. Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-90 with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

2. 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. Watertight coupling bands or flanges shall be used at all joints. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be 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. Laying pipe - The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides.
 5. Backfilling shall conform to structural backfill as shown above.
 6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.
- VII. FILTER CLOTH
MIRAF 1405 or equivalent shall be used.
 - VIII. SEDIMENT CONTROL
Construction to be in accordance with "1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control". In release structure install dewatering device by connecting 25 I.P.F. of 8" perforated underdrain to the low flow pipe. The 8" underdrain shall be wrapped in filter cloth and covered with minimum 12" thick #2 stone.

NOTE: (SPECIFIED DENSITY)
SUITABLE MATERIAL SHALL BE USED FOR THE EMBANKMENT AND ROLLED TO A MINIMUM DEGREE OF COMPACTION OF 95% OF THE DRY UNIT WEIGHT AS DETERMINED BY A.A.S.H.T.O. T-99. CONSTRUCTION OF SWM POND SHALL BE PERFORMED UNDER STRICT SUPERVISION OF A SOILS ENGINEER.



APPROVED
DIVISION OF LAND DEVELOPMENT &
ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 10-1-86

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

APPROVED: *James M. O'Neil* 12-9-86
U.S. SOIL CONSERVATION SERVICE DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: *Charles E. Ziehm* 12-9-86
HOWARD SOIL CONSERVATION DISTRICT DATE

PLAN NUMBER

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEM HOWARD COUNTY HEALTH DEPARTMENT.

APPROVED: *James Boyles* 12-17-86
HEALTH DEPARTMENT DATE

APPROVED HOWARD COUNTY OFFICE OF PLANNING AND ZONING.

APPROVED: *Thomas J. Kamig* 12-18-86
DATE

APPROVED: *Richard M. ...* 12-18-86
DATE

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEM SEWERAGE SYSTEMS AND PUBLIC WORKS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

APPROVED: *John K. ...* 12-18-86
DATE

APPROVED: *William S. ...* 12-18-86
DATE

GW'S
GEORGE WILLIAM STEPHENS, JR.
AND ASSOCIATES, INC.
CIVIL ENGINEERS & LAND SURVEYORS
303 ALLEGHENY AVENUE
TOWSON, MARYLAND 21284
(301) 825-8120

ENGINEER'S CERTIFICATE:
I CERTIFY THAT THIS PLAN FOR SWM FACILITY CONSTRUCTION, SEDIMENT CONTROL AND SEDIMENT CONTROL MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL AS SET FORTH IN THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE SWM FACILITY WITHIN 30 DAYS OF COMPLETION.

ENGINEER: *George W. Stephens, Jr.*
DATE: 8-21-86

OWNER/DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
(301) 992-6033

CONTRACT PURCHASER
MOR ILLI PARTNERSHIP
90 MANKIN CORPORATION
10270 2ND COLUMBIA RD.
COLUMBIA, MARYLAND 21046
(301) 992-6707

DESIGNER: IRZ
DRAWN: JLB
CHECKED: IRZ/KE

REVISIONS

DESIGNER'S CERTIFICATE:
I CERTIFY THAT ALL NECESSARY AND NECESSARY CONSTRUCTION WILL BE HELD ACCORDING TO THESE PLANS AND THE PLAN REQUIREMENTS PERSONNEL EMPLOYED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AS A PART OF NATURAL RESOURCES APPROVED PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE REMOVAL ALL-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS AND WHEN NECESSARY. DESIGNATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE SWM FACILITY WITHIN 30 DAYS OF COMPLETION.

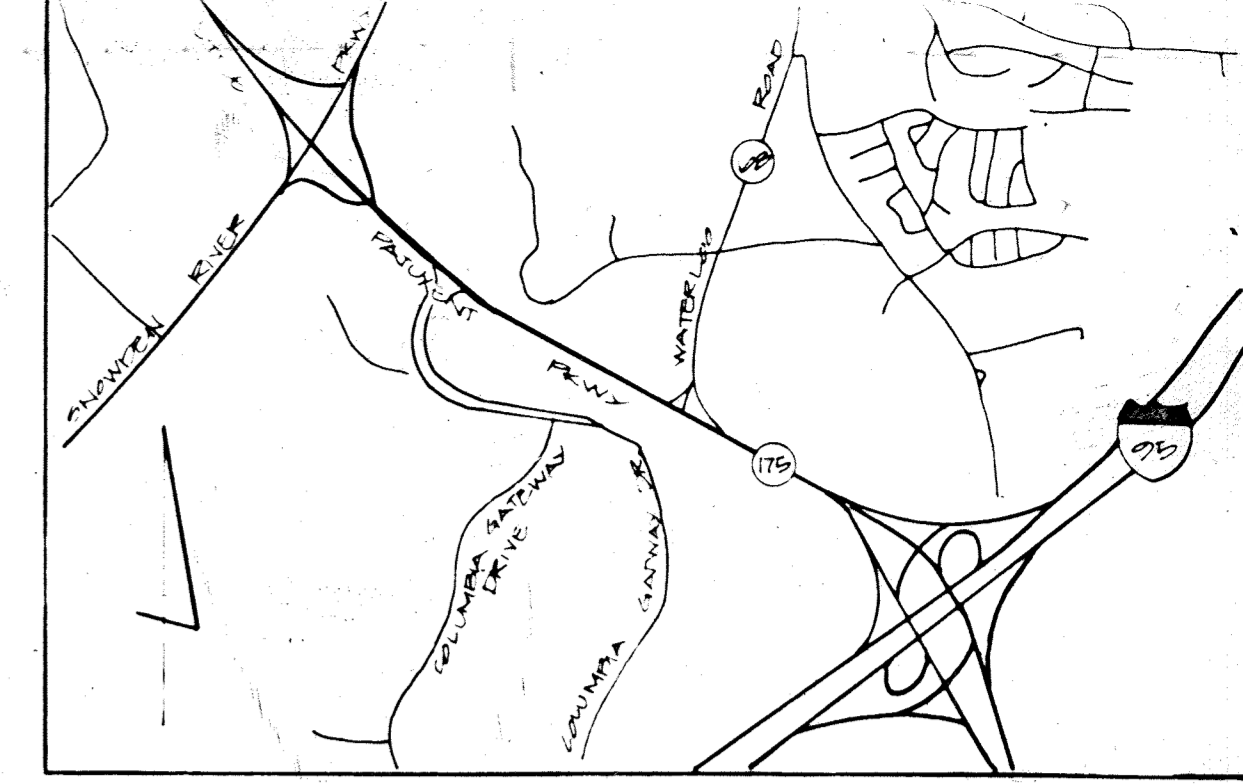
DESIGNER: *John H. Necker, Jr.*
DATE: 8-21-86

SEDIMENT & EROSION CONTROL PLAN
PROPOSED OFFICE FOR RESEARCH & DEVELOPMENT
PARK
COLUMBIA GATEWAY
PARCEL 'C'
TAX MAP # 42-4-43

HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
P.N. 02880

ELECTION DISTRICT #6
AUGUST 21, 1986
SHEET 2 OF 10

P.N. 02880 50P 87-49



VICINITY MAP
SCALE 1" = 200'



FOR REVISION ONLY 11/21/22
I hereby certify that this drawing was prepared or approved by me, Matthew C. Archer, a duly licensed professional landscape architect under the laws of the State of Maryland.
License No. 41439
Expiration Date: 11-15-23

APPROVED
DIVISION OF LAND DEVELOPMENT &
ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 10-1-86
[Signature]

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
[Signature] DATE 12-9-86
DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HEAVY SOIL CONSERVATION DISTRICT.
[Signature] DATE 12-9-86
DATE

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT
[Signature] DATE 11-17-86
DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
[Signature] DATE 12-18-86
DATE

APPROVED: DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
[Signature] DATE 12-18-86
DATE

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEM DRAINAGE SYSTEMS AND PUBLIC ROWS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] DATE 12-12-86
DATE

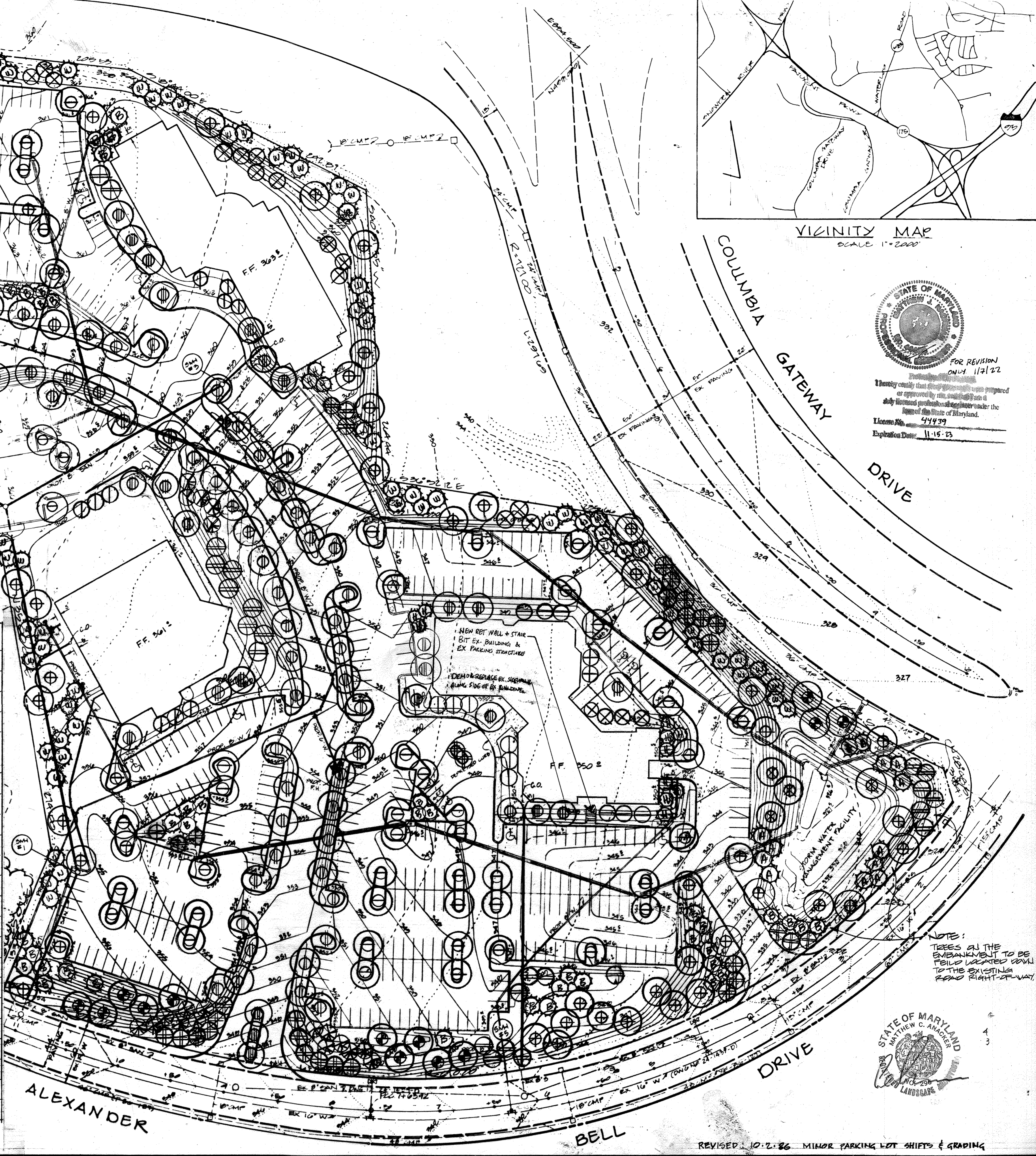
[Signature] DATE 12-18-86
DATE

ADDRESS SHEET
BUILDING #
STREET ADDRESS

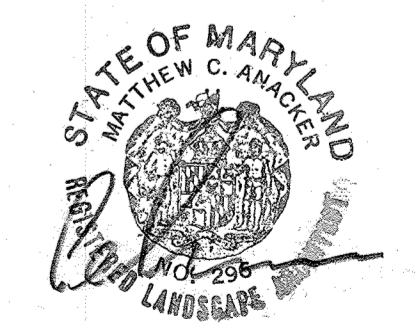
SUBDIVISION NAME
PLAT OF LOTS
WATER CURB
SEWER CURB

KEY	PLANT NAME	SIZE	QUANT	REMARKS
⊕	ZELKOVA 'VILLAGE GREEN'	2 1/2'-3' CAL 12-14' HT	69	B&B HEAVY
⊕	ACER RUBRUM 'RED SUNSET'		67	
⊕	ACER PLATANOIDES 'CRIMSON KING'		13	
⊕	FRAXINUS P.L. 'SUMMIT'		72	
⊕	SALIX BABILONICA		4	
⊕	GOPHORA JARDINICA 'REGENT'		36	
⊕	PRUNUS S. 'KVANZAN' KVANZAN CHERRY	2 1/2'-3' CAL 8'-10' HT	28	
⊕	PRUNUS YEDDENSIS YOSHINO CHERRY		28	
⊕	PYRUS CALLERIANA 'BRADFORD'		8	
⊕	CORNUS KOUSA KOUSA BERRYWOOD		6	
⊕	AMELANCHIER CANADENSIS SINGLE STEM		27	
⊕	CRATAEGUS PHAENOPYRUM WASH. HAWTHORN		20	
⊕	KOELREUTERIA PANICULATA GOLDEN RAIN T.		12	
⊕	PIHUS STROBUS WHITE PINE	6'-8' HT	109	
⊕	PIHUS THUNBERGI JAPANESE B. PINE		47	
⊕	PIHUS NIGRA AUSTRIAN PINE		13	
⊕	TSUGA CANADENSIS CANADIAN HEMLOCK		14	
⊕	CEDRUS DEODARA INDIAN CEDAR		23	

ALL PLANTING TO BE IN ACCORD WITH HED COLUMBIA SPECS.
CALL MISS UTILITY BEFORE DIGGING.



NOTE:
TREES AT THE ENDEAVOUR TO BE FIELD LOCATED DOWN TO THE EXISTING ROAD RIGHT-OF-WAY.



REVISOR: 10-2-86 MINOR PARKING LOT SHIFTS & GRADING

LANDSCAPE PLANTING PLAN
PROPOSED OFFICE FOR RESEARCH & DEVELOPMENT PARK
COLUMBIA GATEWAY
PARCEL C
TAX MAP # 42 & 43
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
PN 0280

ELC ORAL DISTRICT # 6
AUGUST 1980
SHEET 10283 OF 17
50P 07-49

GEORGE WILLIAM STEPHENS, JR.
AND ASSOCIATES, INC.
CIVIL ENGINEERS & LAND SURVEYORS
303 ALLEGHENY AVENUE
TOWSON, MARYLAND 21204
(301) 825-8120

ENGINEER'S CERTIFICATE:
I CERTIFY THAT THIS PLAN FOR SOIL CONSERVATION, EROSION AND SEDIMENT CONTROL, IS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT I HAVE LISTED THE REVISIONS THAT ARE REQUIRED BY THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED 'AS-BUILT' OF THE SOIL FACILITY WITHIN 30 DAYS OF COMPLETION.
ENGINEER:
DATE:

OWNER/DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10215 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
(301) 492-6022
CONTRACT PURCHASER
MR. J. L. PARTNERSHIP
90 MANKIN CORPORATION
10215 OLD COLUMBIA RD.
COLUMBIA, MARYLAND 21044
(301) 492-6101

DESIGNER'S CERTIFICATE:
I CERTIFY THAT ALL NECESSARY MEASUREMENTS WILL BE MADE ACCORDING TO THESE PLANS AND THAT ALL DIMENSIONS PERSONNEL SHOWN IN THE SURVEILLANCE REPORT WILL HAVE A CERTIFICATE OF ATTENDANCE AS A PART OF NATURAL RESOURCES APPROVED PLANS FOR THE GATEWAY OF ESPRIMO AND GARDEN BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERSONNEL AS-BUILT INSPECTOR BY THE HOWARD SOIL CONSERVATION DISTRICT OF THESE AUTHORIZED MEASUREMENTS AND ANY DIMENSIONS NECESSARY TO BE MADE FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED 'AS-BUILT' OF THE SOIL FACILITY WITHIN 30 DAYS OF COMPLETION.
[Signature] DATE: 8-2-86
JOSEPH H. NECKER, JR. ASST. DIR. OF ENGG.

REVISOR: 10-2-86
REVISED FOR NEW STATE/12/22
EXT. WALL INSTALLATION

RETAINING WALL REPLACEMENT PROJECT

AT
6700 ALEXANDER BELL DRIVE
COLUMBIA, MARYLAND

EXECUTION OF WORK

EXAMINATION

- Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

PREPARATION

- Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

CUTTING AND PATCHING

- Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- Provide temporary support of work to be cut.
- Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - Cut or drill from the exposed or finished side into concealed surfaces.
 - Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - Proceed with patching after construction operations requiring cutting are complete.
- Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 - Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 - Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 - Patch components in a manner that restores enclosure to a weather tight condition and ensures thermal and moisture integrity of building enclosure.
- Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

PROGRESS CLEANING

- Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
- Maintain Project site free of waste materials and debris.
- Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - Remove liquid spills promptly.
 - Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

SCOPE OF WORK

DEMOLITION

- Contractor shall be responsible for temporary shoring and stabilization of structural and architectural elements as demolition is performed at work areas and as project work proceeds. Submit signed and sealed shoring plan for excavation and formwork prior start of demolition and excavation.
- Demolition of the existing timber retaining wall structure along the interface with the parking garage.
- Remove and salvage existing railing system along the upper sidewalk along the length of the proposed retaining wall. Demolition of 2-foot-wide section at the edge of the sidewalk to convert the sidewalk from a 6 ft width to a 4 ft width as shown on the drawings. Legal disposal of demolished concrete.
- Perform excavation as required to install new segmental retaining wall, new concrete retaining wall, and new concrete stairs. Installation of engineered formwork for new cast-in-place retaining wall structures and stairs.
- Prepare all exposed metal surfaces of the railings in a manner that is consistent with the paint manufacturer's requirements for priming and painting of steel railings.
- Inform engineer after excavation and site preparation so soil testing can be performed.

SEGMENTAL RETAINING WALL

- Install new unreinforced concrete or crushed stone leveling pad at new segmental wall location.
- Place new Keystone Compac III Units, Geo Grid Reinforcing, and reinforced soil. See Drawings.
- Follow all Keystone guidelines and requirements during installation of the retaining wall system, reinforcing, and reinforced soil.

CAST-IN-PLACE CONCRETE

- Preparation and placement of new cast-in-place concrete retaining walls and staircase.
- Placement of new minimum $f_c=4,500$ psi 28-day compressive strength concrete, air entrained at $6\pm 1.5\%$ and reinforcing bars for new retaining wall footing, retaining wall and stairs.
- Tie-in new retaining wall structures with existing slabs and new segmental retaining wall.
- Apply a two coats of Henry CM100 to the backside of the CMU retaining wall after the concrete has cured.
- Provide drainage pipe, weeps and drainage board behind the retaining wall as per Drawings. Wall and stair areas shall be backfilled with well graded gravel and compacted after wall is constructed and concrete has reached a sufficient compressive strength as directed by engineer.
- Concrete slab and stair installation at the front of the retaining wall. See Drawings for reinforcing, configuration, and tie-ins. Provide compressible filler between the slabs and the retaining wall for expansion.
- Install urethane sealant (Sikallex 15 LM or approved equal) with primer around the perimeter of the cold joints and railing bases.

RAILINGS

- If required, repair salvaged deteriorated structural steel railing members and connections as directed by engineer. Any supplemental repairs to the steel railings shall be tracked and documented by contractor and submitted to engineer. Existing steel repairs shall be billed against the steel repair allowance.
- Installation of new handrails at new cast-in-place concrete stair as per submitted and approved shop drawings and calculations. Connect and weld new handrails to the existing reinstalled railing system at the sidewalk.

PAINTING

- Prime all exposed steel railings at the stairways and walkways with one (1) coat of KEM Bond primer and two (2) coats of Sherwin Williams Industrial Enamel.

SITE PLAN



SHEET INDEX

- C001 - COVER SHEET
- S001 - NEW RETAINING WALL PLAN & PROFILE
- S002 - RETAINING WALL SECTIONS
- S003 - RETAINING WALL DETAILS
- S004 - RETAINING WALL DETAILS
- S005 - CONCRETE STAIR DETAILS
- S006 - STAIR & RETAINING WALL PROFILE

PROJECT CODE ANALYSIS

APPLICABLE CODES:

INTERNATIONAL BUILDING CODE	2018 EDITION
INTERNATIONAL EXISTING BUILDING CODE	2018 EDITION
MARYLAND BUILDING PERFORMANCE STANDARDS	2018 EDITION

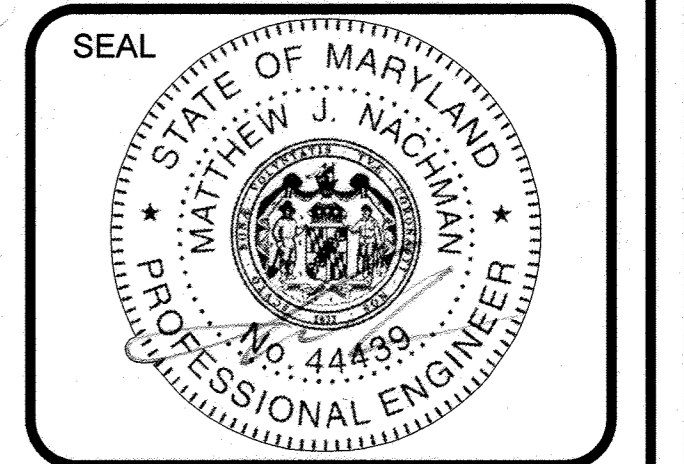
	EXISTING BUILDING	PROPOSED ALTERATION
IBC USE GROUP	B	NO CHANGE
CONSTRUCTION TYPE	IB	NO CHANGE
NUMBER OF STORIES ABOVE GRADE	4	NO CHANGE
HIGH RISE	N	NO CHANGE
COVERED MALL	N	NO CHANGE
FULLY SPRINKLERED	Y	NO CHANGE
FULLY MONITORED	Y	NO CHANGE
FLOOR AREA OF RENOVATION	0 SF	NO CHANGE

WARRANTIES

- The Contractor will supply the following warranties:
 - Three (3) year Contractor's material and labor warranty for the ALL of the work

General Notes

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44439, EXPIRATION DATE - 11/15/23."



REVISION FOR SITE DEVELOPMENT PLAN	1/18/22
No. Revision/Issue	Date

Firm Name and Address
CONSTRUCTION INSIGHT DC LLC
6184 GROVEDALE CT.
ALEXANDRIA, VA 22310
703-313-0456

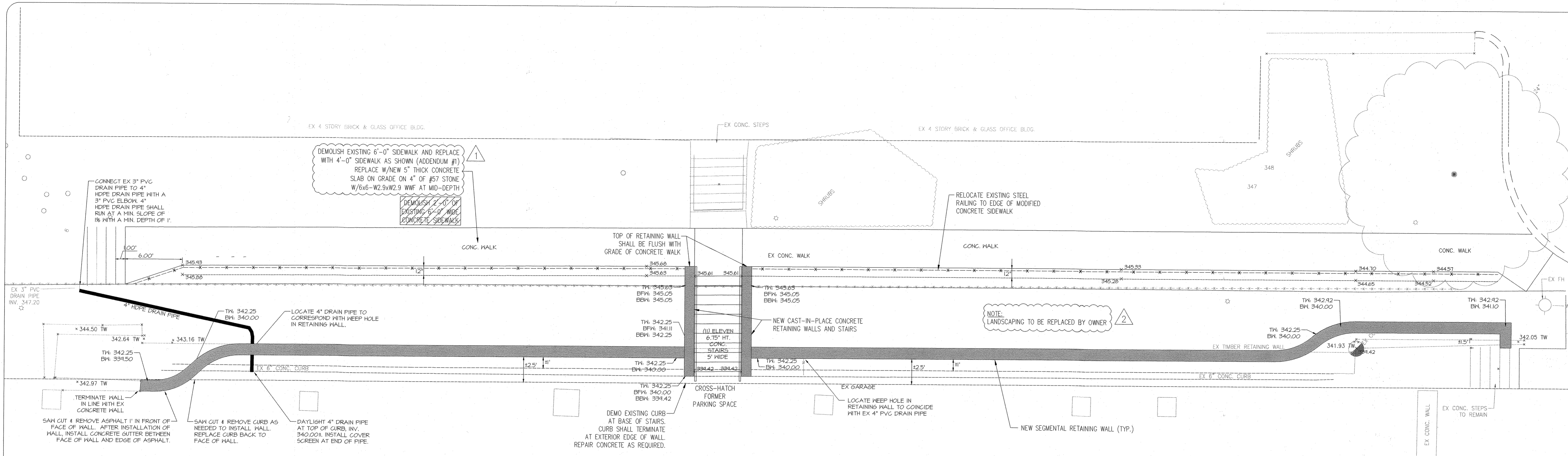
Project Name and Address
Retaining Wall Replacement Project
at 6700 Alexander Bell Drive
Columbia, Maryland
Columbia Gateway Parcel C
CI Project Number
C3369

Title	COVER SHEET
Date	9/16/21
Scale	NTS
Sheet	C001
	Sheet 11 of 17

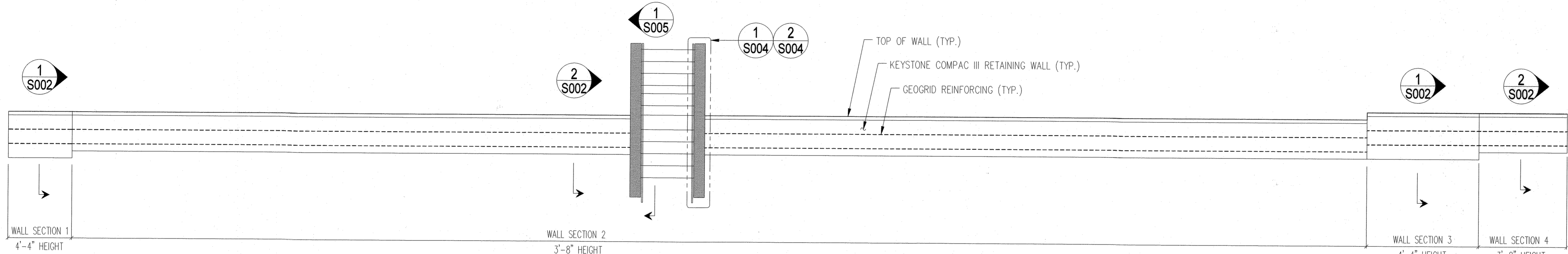
2-9-22
CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATE

2-14-22
CHIEF, DIVISION OF LAND DEVELOPMENT & DATE

2-15-22
DIRECTOR & DATE



1 RETAINING WALL LOCATION PLAN
 REF: SHEET 1 OF 1,
 DATED SEPTEMBER 22, 2020, PREPARED & PROVIDED
 BY MORRIS & RICHIE ASSOCIATES, INC. (MRA)



2 RETAINING WALL PROFILE
 REF:

STRUCTURAL NOTES

- Contractor shall verify dimensions and field conditions prior to commencement of work. Dimensions and layouts have been taken from the best available sources. Engineer is to be notified if dimensions and conditions are different than shown in the plans.
- Structural plans shall be used in conjunction with architectural and site plans.
- Contractor shall follow current published Keystone Century Wall specifications and installation instructions.
- Keystone concrete materials shall conform to ASTM C1372 and ASTM C140.
- Shear and reinforcement pin connectors shall be 1/2-inch (12 mm) diameter thermoset isophthalic polyester resin pultruded fiberglass reinforcement rods to provide connection between vertically and horizontally adjacent units and the geosynthetic reinforcement, with the following requirements:
 - Pins shall be 5/8" long and capped with a 3/4" diameter "shoulder".
 - Flexural Strength in accordance with ASTM D4476: 128,000 psi minimum;
 - Short Beam Shear in accordance with ASTM D4475: 6,400 psi minimum.
- Base leveling pad material shall have a minimum 6" thickness and extend 6" in front of the wall and 6" behind the wall and insure full contact with the base surface of the concrete units.
- Unit drainage fill shall consist of clean 1"(25 mm) minus crushed stone or crushed gravel meeting the following gradation tested in accordance with ASTM D-422:

Sieve Size	Percent Passing
1 inch (25 mm)	100
3/4 inch (19 mm)	75-100
No. 4 (4.75 mm)	0-10
No. 50 (300 um)	0-5

Drainage fill shall be placed within the cores of, between, and behind the units as indicated on the design drawings. Not less than 1.2 cubic foot, of drainage fill shall be used for each square foot of wall face unless otherwise specified.

STRUCTURAL NOTES (cont.)

- Reinforced backfill shall be free of debris and meet the following gradation tested in accordance with ASTM D-422:

Sieve Size	Percent Passing
2 inch (50 mm)	100
3/4 inch (19 mm)	100-75
No. 40 (425 um)	0-60
No. 200 (75 um)	0-35

Plasticity Index (PI) <15 and Liquid Limit <40 per ASTM D-4318.

The maximum aggregate size shall be limited to 3/4 inch (19 mm) unless installation damage tests have been performed to evaluate potential strength reductions to the geogrid design due to damage during construction.

Material can be site-excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the backfill or in the reinforced soil mass. Contractor shall submit reinforced fill sample and laboratory test results to the Geotechnical Engineer of Record for approval prior to the use of any proposed reinforced fill material.
- Geogrid material shall be Mirafi XT 3XT as approved by Keystone. Geogrid shall be installed with the highest strength direction perpendicular to the wall alignment. Geogrid shall be laid horizontally on compacted backfill and attached to the Keystone wall unit pins and within 1 inch of the face of the unit.

STRUCTURAL NOTES (cont.)

- Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches where hand operated compaction equipment is used, or 8-10 inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density.
- Drainage pipe shall be perforated or slotted PVC pipe manufactured in accordance with ASTM D-3034 or corrugated HDPE pipe manufactured in accordance with AASHTO M252.
- When required, geotextile filter fabric shall be a needle punched, nonwoven fabric that meets the requirements of AASHTO M288.
- Geotechnical Engineer of Record shall perform quality control testing to confirm soil and backfill types provided in design assumption and confirm minimum compaction requirements required by Keystone. Geotechnical Engineer of Record shall also evaluate existing undisturbed soil under the leveling pad to determine if it is adequate based on their initial geotechnical evaluation.
- Design assumes 1500 PSF soil bearing value, 120 pcf moist soil unit weight, and 28° soil friction angle, and 30 PSF surcharge at slope above the wall. Geotechnical Engineer of Record shall evaluate soils prior to commencement of work. Engineer of Record must be notified if conditions and soil properties do not satisfy these values.
- Retaining wall drainage and backfill shall satisfy site conditions, Engineer of Record requirements, and Keywall specifications.
- Contractor shall be responsible for excavation conditions including slope stabilization, sheeting, shoring, etc. as required for construction designed by a professional engineer licensed in the State of Maryland.

[Signature] 2-9-22
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE

[Signature] 2/15/22
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE

[Signature] 2-15-22
 DIRECTOR
 DATE

General Notes

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44439, EXPIRATION DATE 11/15/23."

SEAL
 STATE OF MARYLAND
 MATTHEW J. NACHMAN
 No. 44439
 PROFESSIONAL ENGINEER

2	REVISED FOR SITE DEVELOPMENT PLAN	1/18/22
1	ADDENDUM #1	7/13/21
No.	Revision/Issue	Date

Firm Name and Address
 CONSTRUCTION INSIGHT DC LLC
 6184 GROVEDALE CT.
 ALEXANDRIA, VA 22310
 703-313-0456

Project Name and Address
 Retaining Wall Replacement Project
 at 6700 Alexander Bell Drive
 Columbia, Maryland
 Columbia Gateway Parcel C

CI Project Number
 C3369

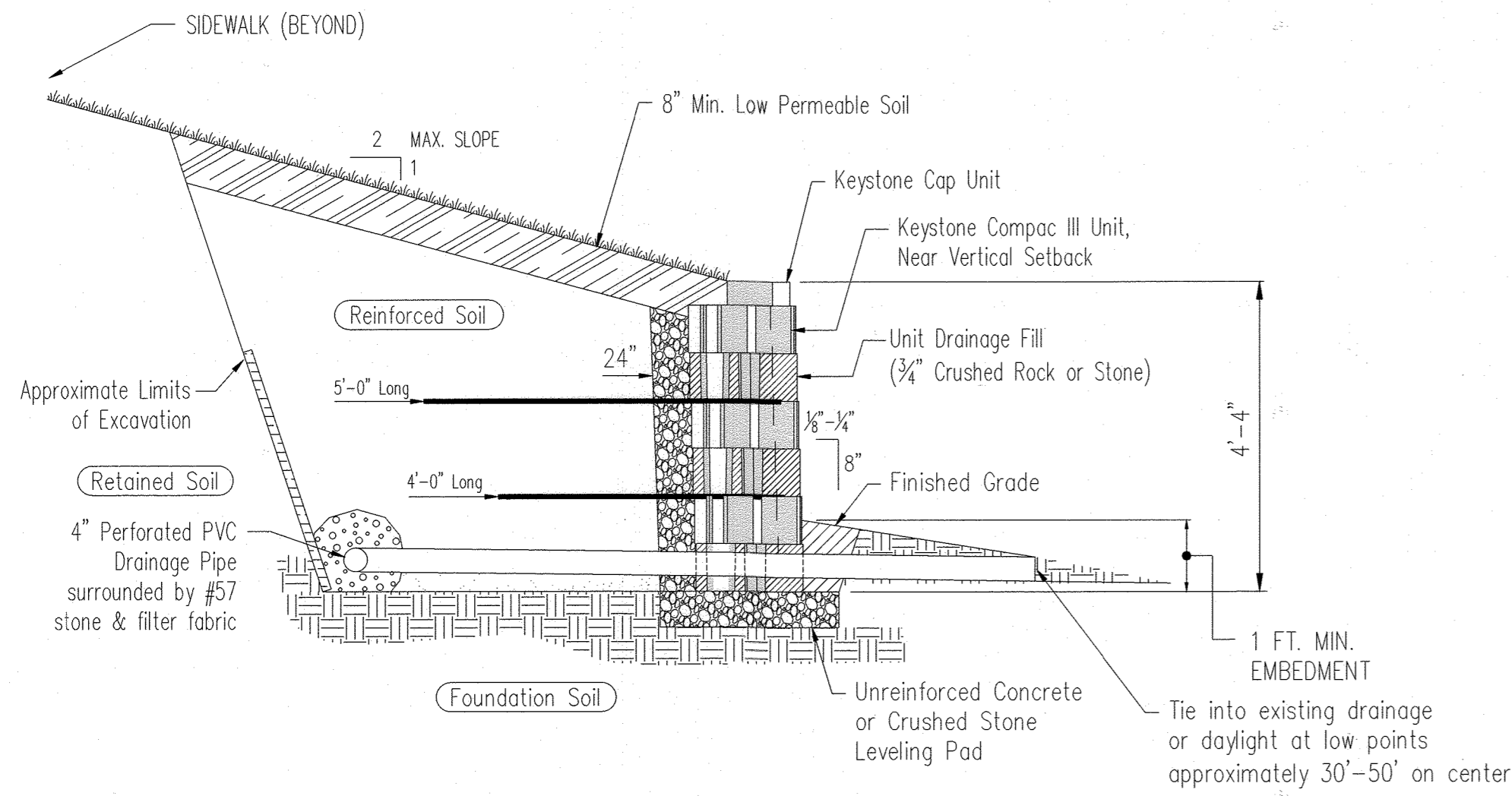
Title
 NEW RETAINING WALL
 PLAN & PROFILE

Date
 6/8/21

Scale
 3/16"=1'-0"

Sheet
 S001

Sheet 12 of 17

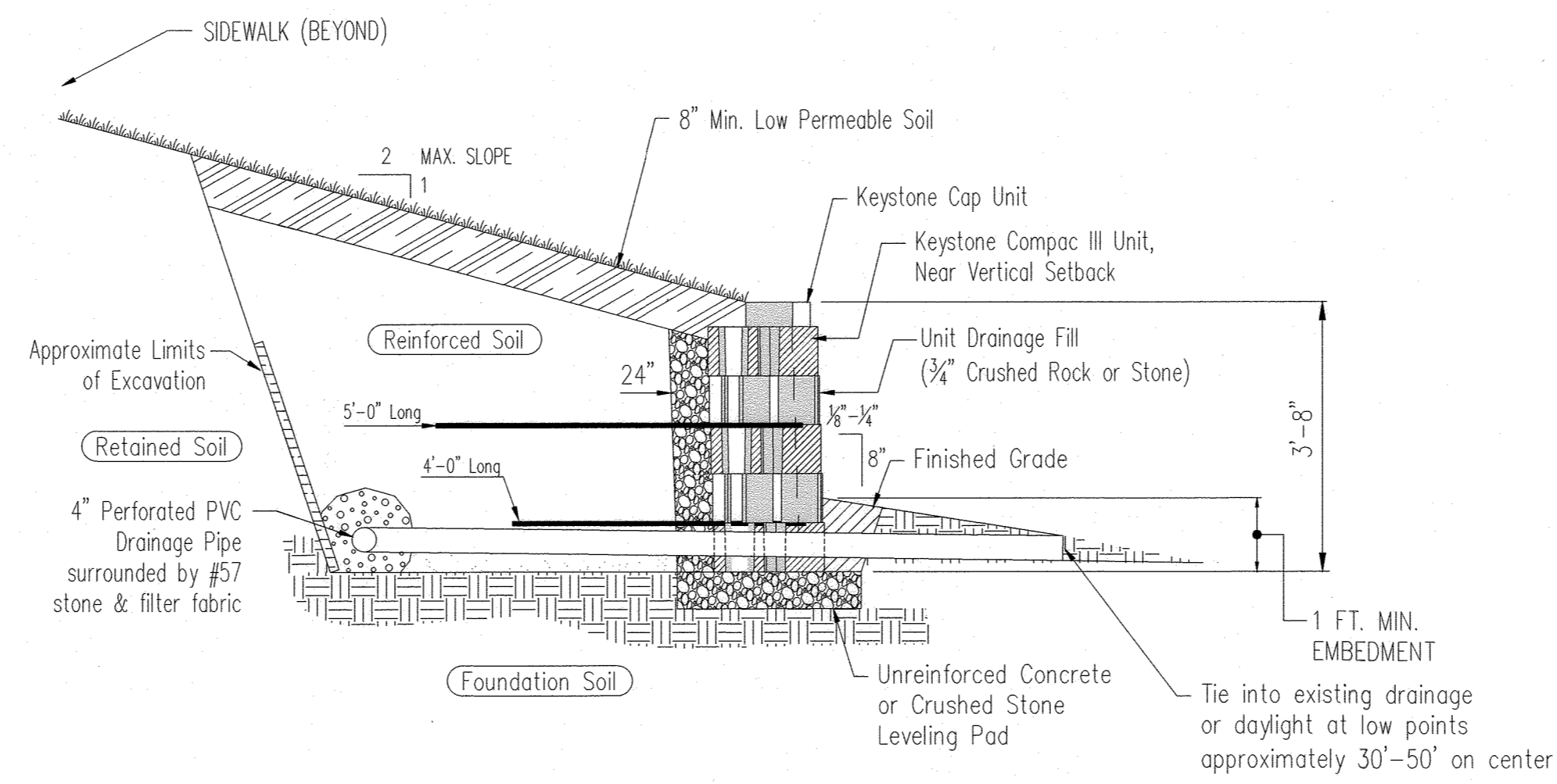


1 SECTION THRU NEW WALL AT WALL SECTIONS 1 & 3

REF: S002

Note:

When site conditions require, wrap drainage tile in $\frac{3}{4}$ " aggregate and filter fabric with drainage composite or aggregate back drain system, as directed by geotechnical engineer.





2 SECTION THRU NEW WALL AT WALL SECTIONS 2 & 4

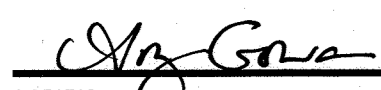
REF: S002

Note:

When site conditions require, wrap drainage tile in $\frac{3}{4}$ " aggregate and filter fabric with drainage composite or aggregate back drain system, as directed by geotechnical engineer.

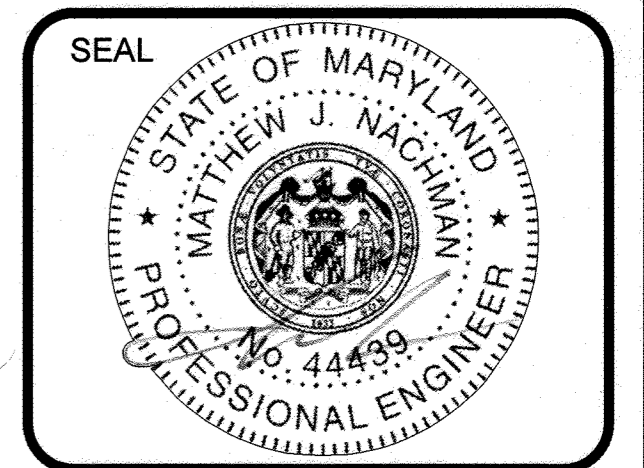
 2/9/22
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

 2/17/22
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

 2-15-22
 DIRECTOR DATE

General Notes

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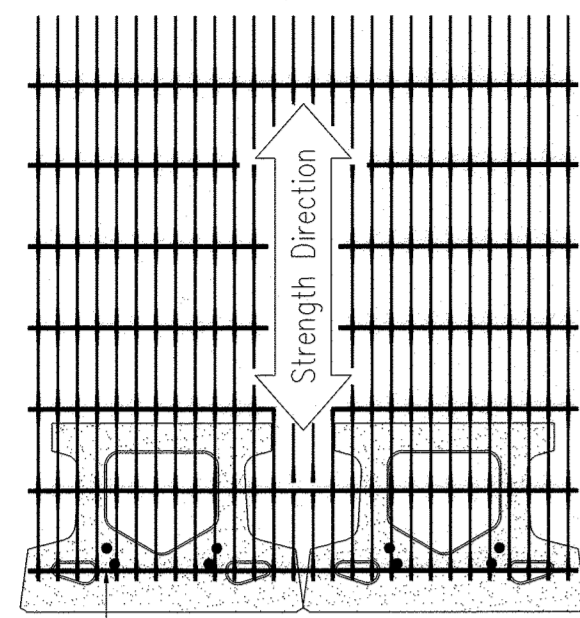


No.	REVISION FOR	1/18/22
	SITE DEVELOPMENT PLAN	Date
Revision/Issue		

Firm Name and Address
 CONSTRUCTION INSIGHT DC LLC
 6184 GROVEDALE CT.
 ALEXANDRIA, VA 22310
 703-313-0456

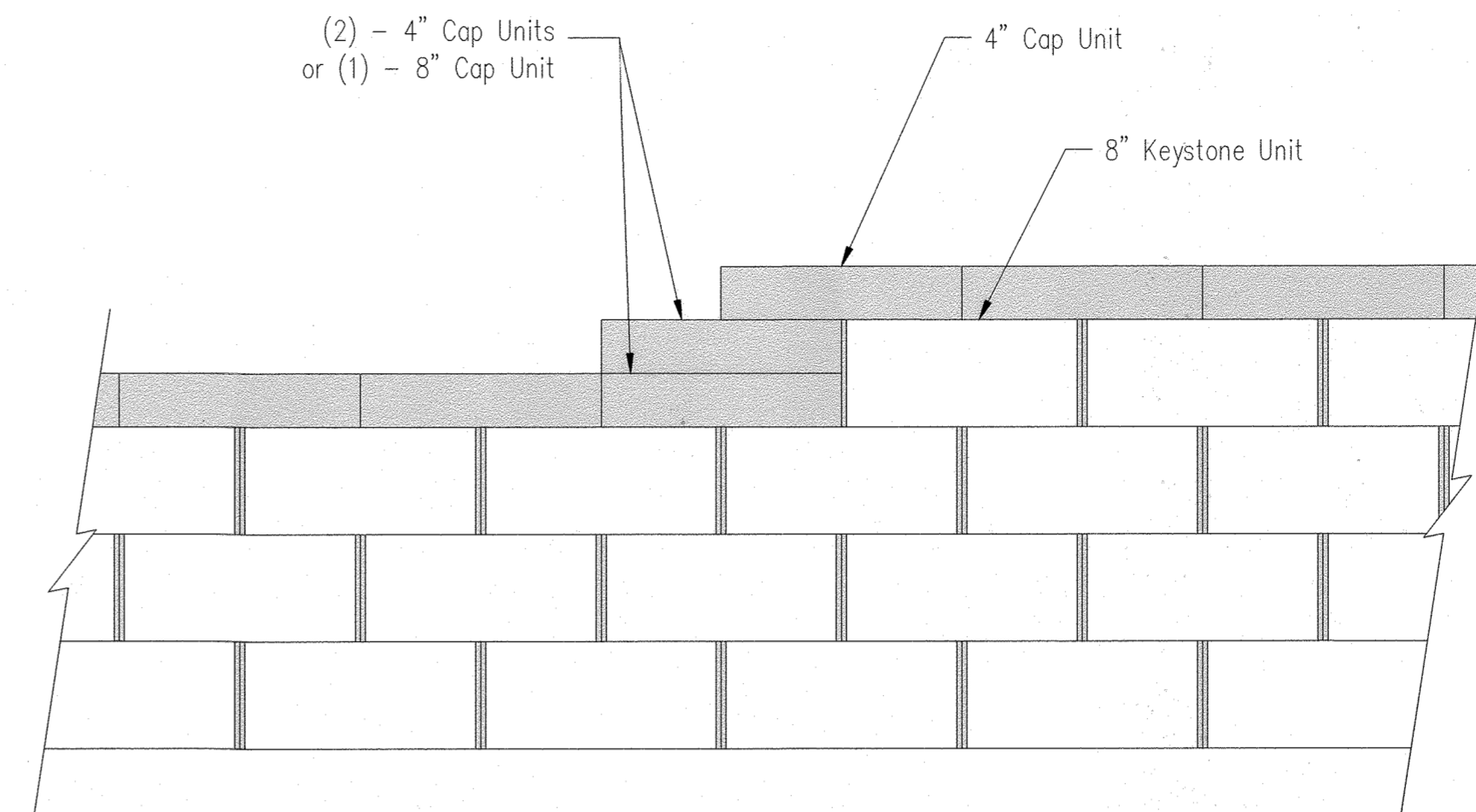
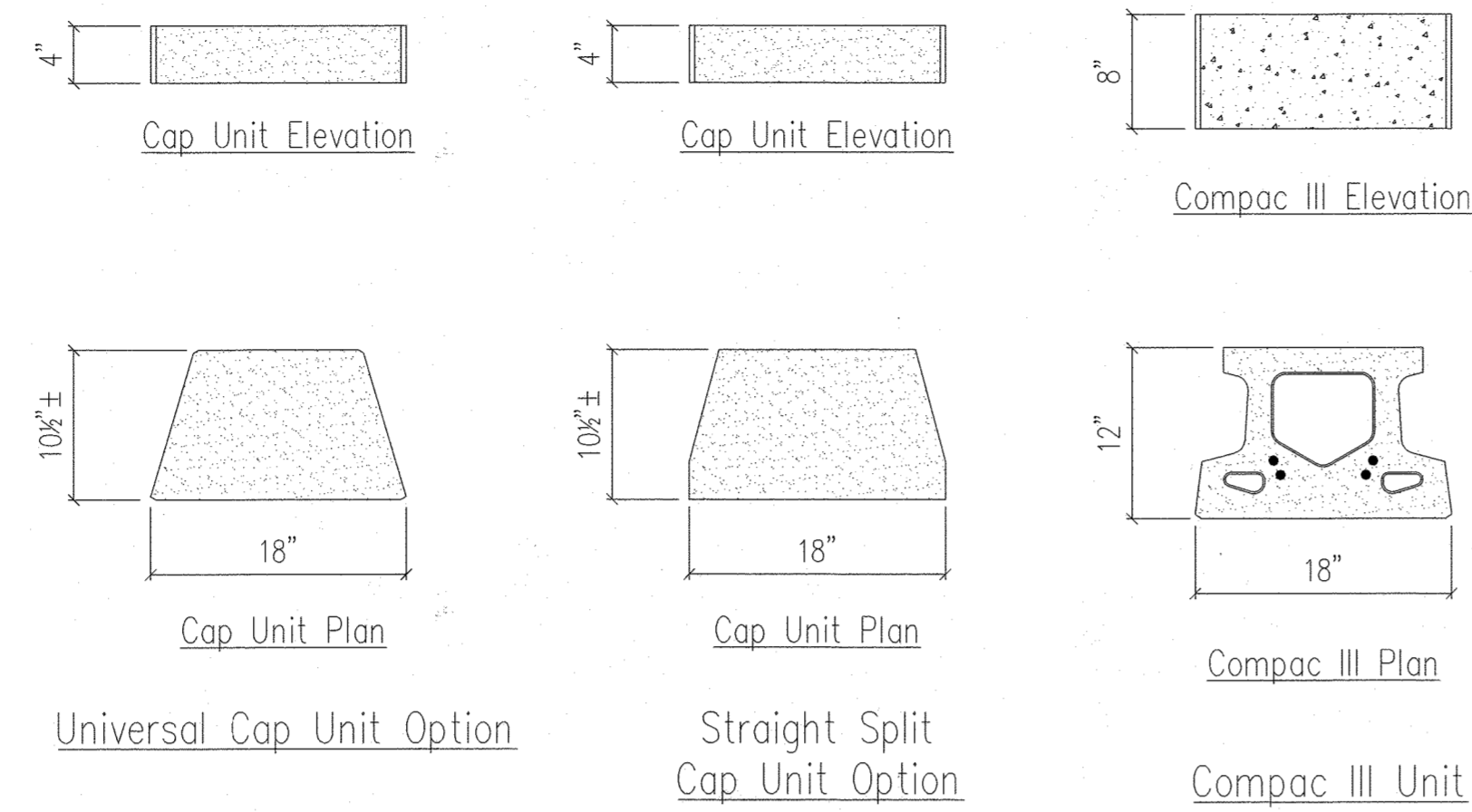
Project Name and Address
 Retaining Wall Replacement Project
 at 6700 Alexander Bell Drive
 Columbia, Maryland
 Columbia Gateway Parcel C
 CI Project Number
 C3369

Title RETAINING WALL SECTIONS	
Date 6/8/21	Sheet S002
Scale NTS	Sheet 13 of 17



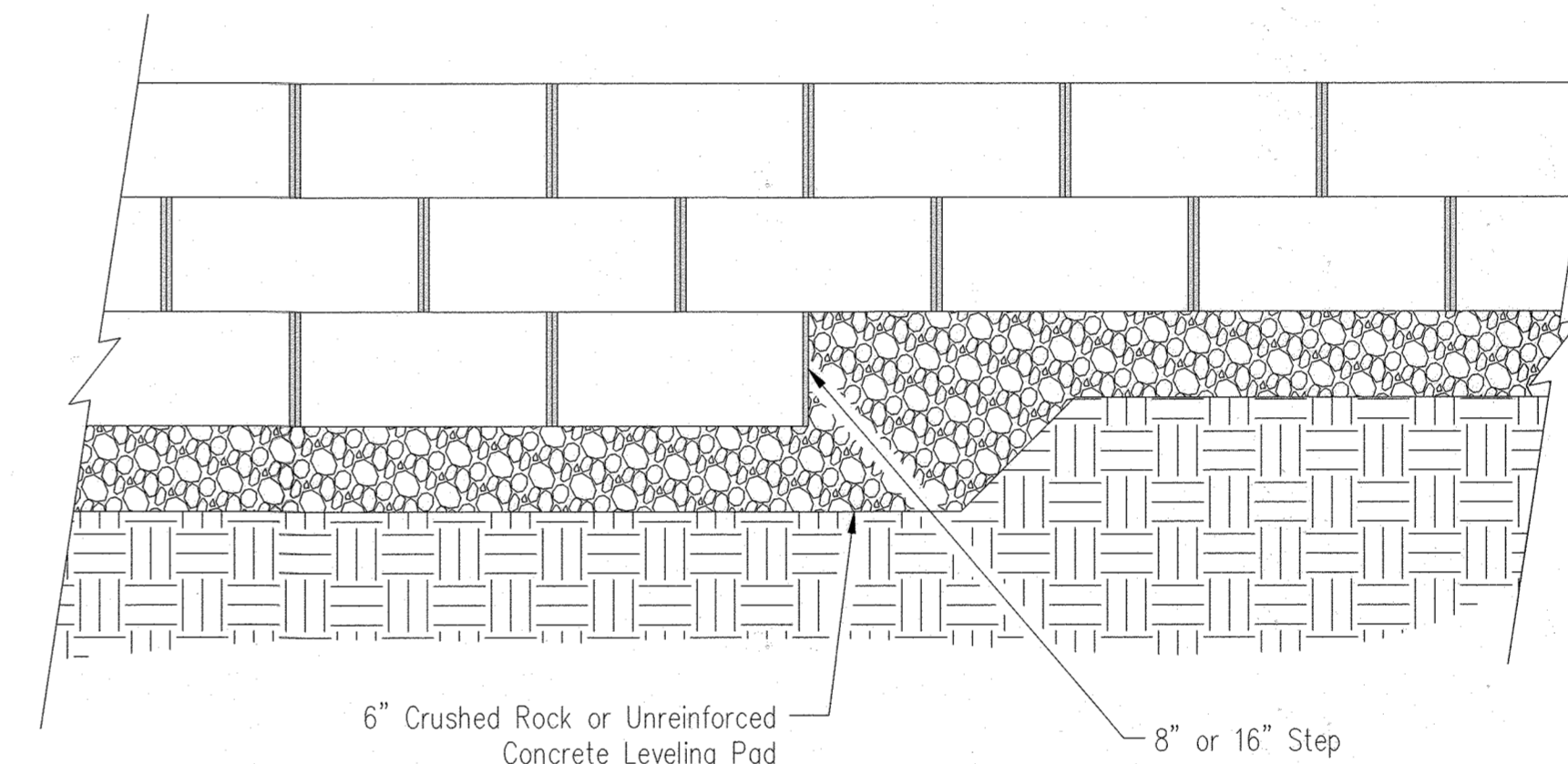
Geogrid is to be Placed on Level Backfill and Extended Over the Fiberglass Pins. Place Next Unit. Pull Grid Taut and Backfill. Stake as required.

Grid & Pin Connection



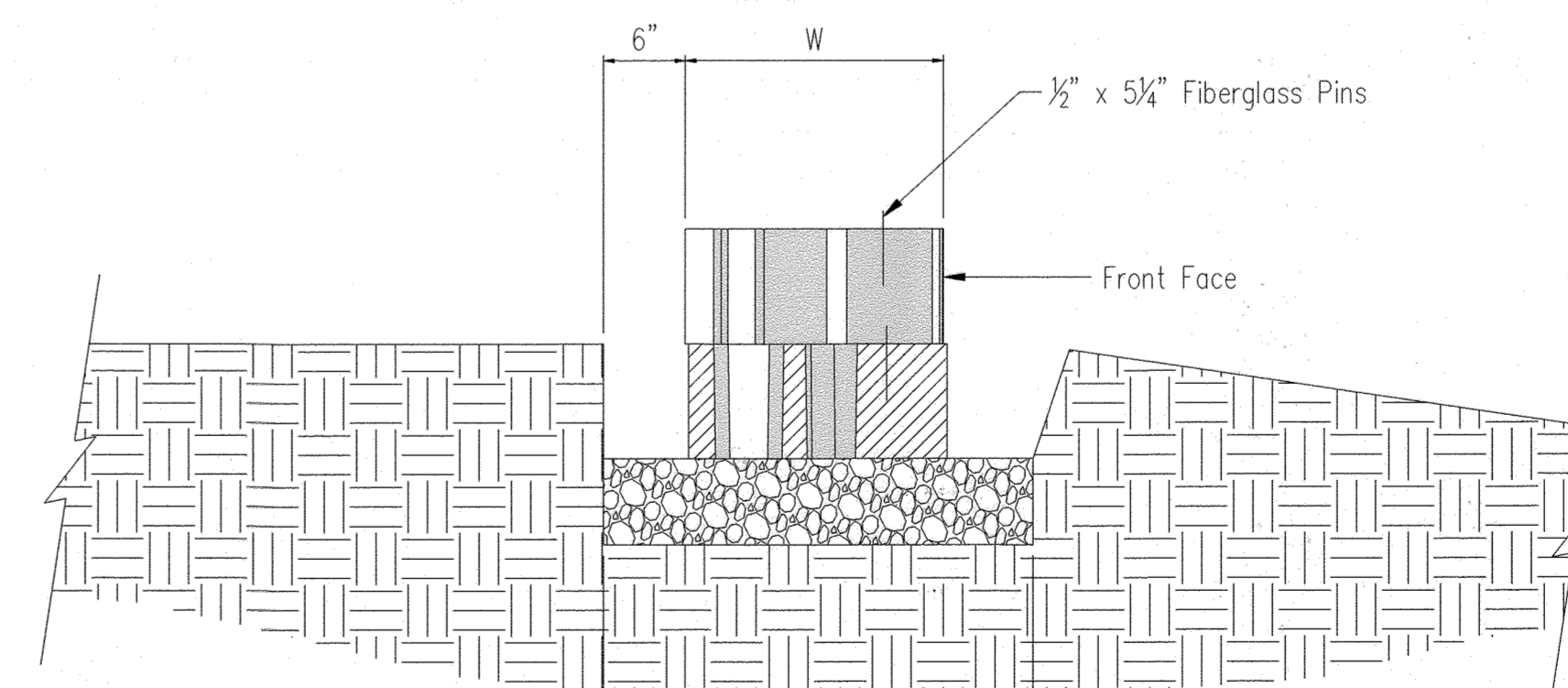
TOP OF WALL STEPS

Note:
1. Secure all cap units with Keystone Kapseal or equal.

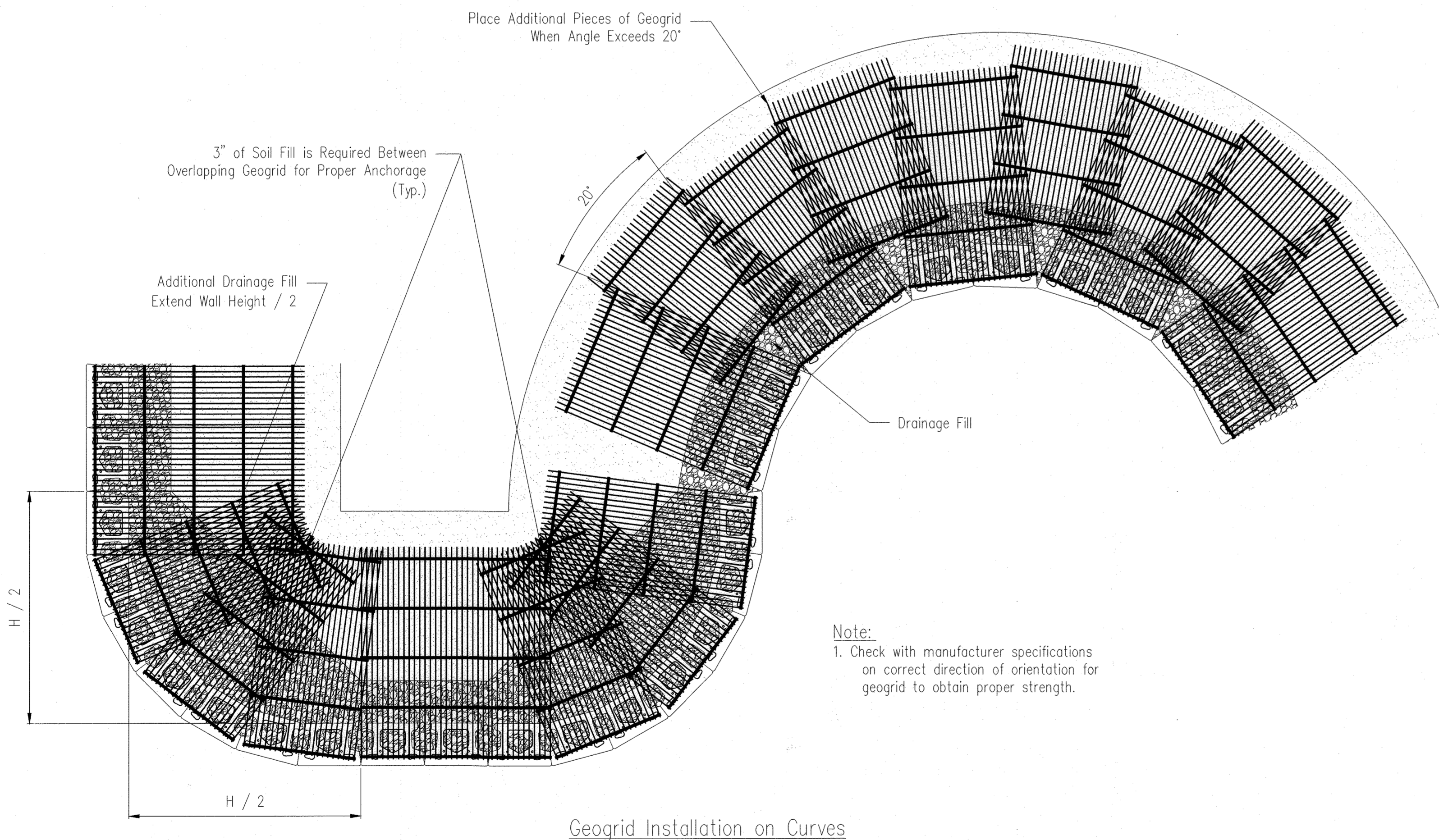


Elevation

Note:
1. The leveling pad is to be constructed of crushed stone or 2000 psi ± unreinforced concrete.



Section
LEVELING PAD DETAIL



Note:
1. Check with manufacturer specifications on correct direction of orientation for geogrid to obtain proper strength.

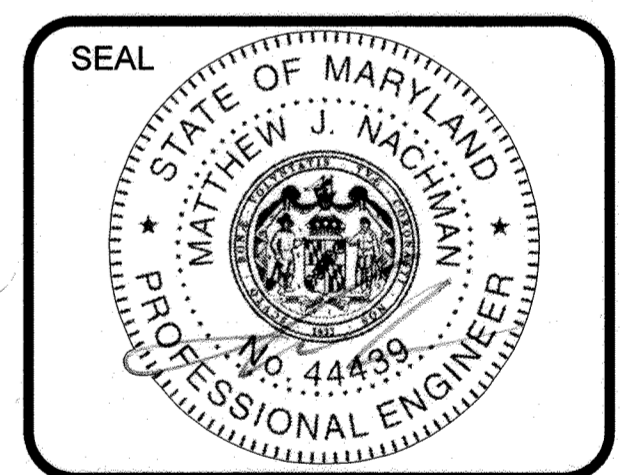
[Signature] 2-9-22
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 2/14/22
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 2-15-22
DIRECTOR DATE

General Notes

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44439, EXPIRATION DATE 11/15/23."

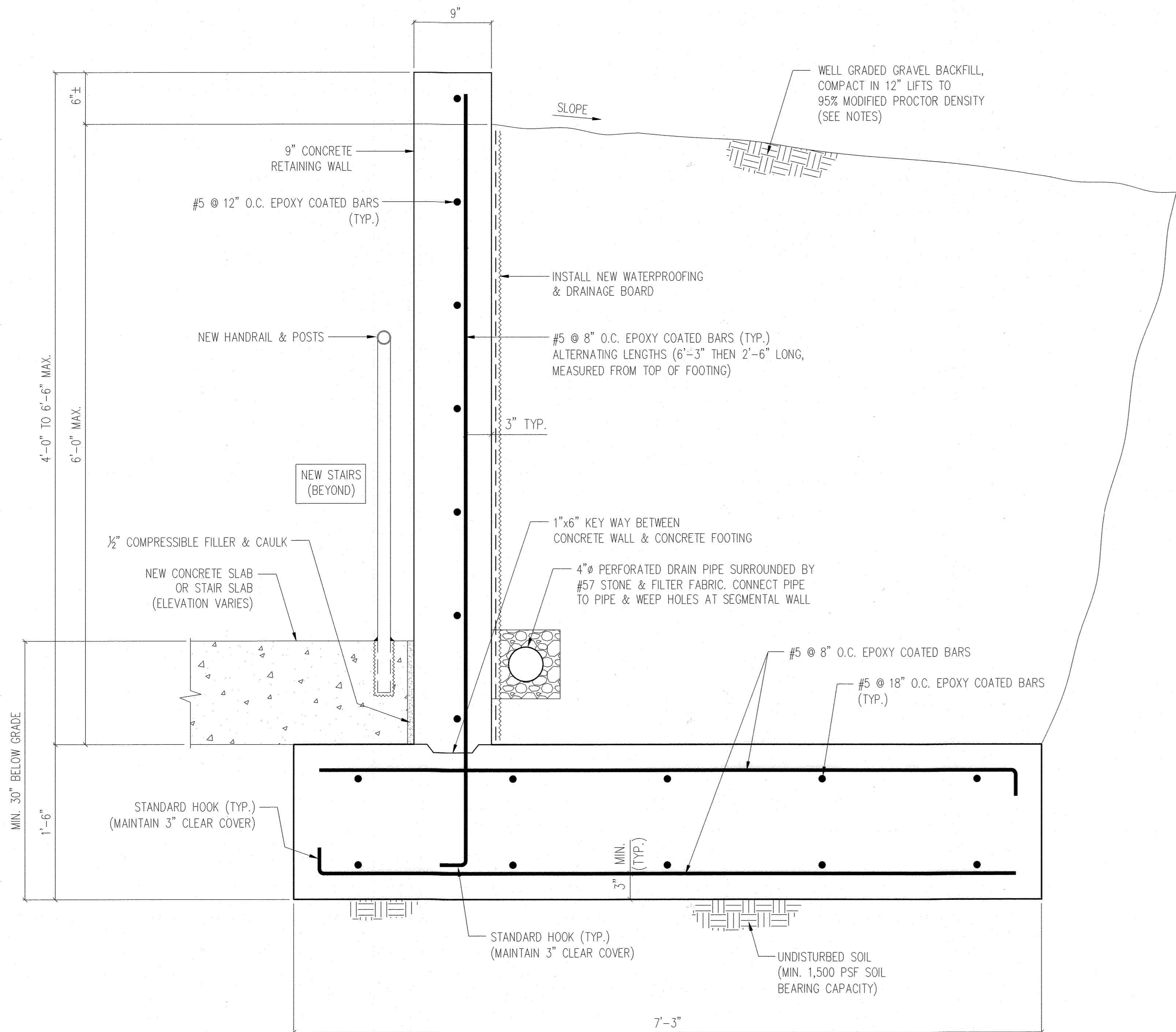


REVISION FOR SITE DEVELOPMENT PLAN	1/18/22
No. Revision/Issue	Date

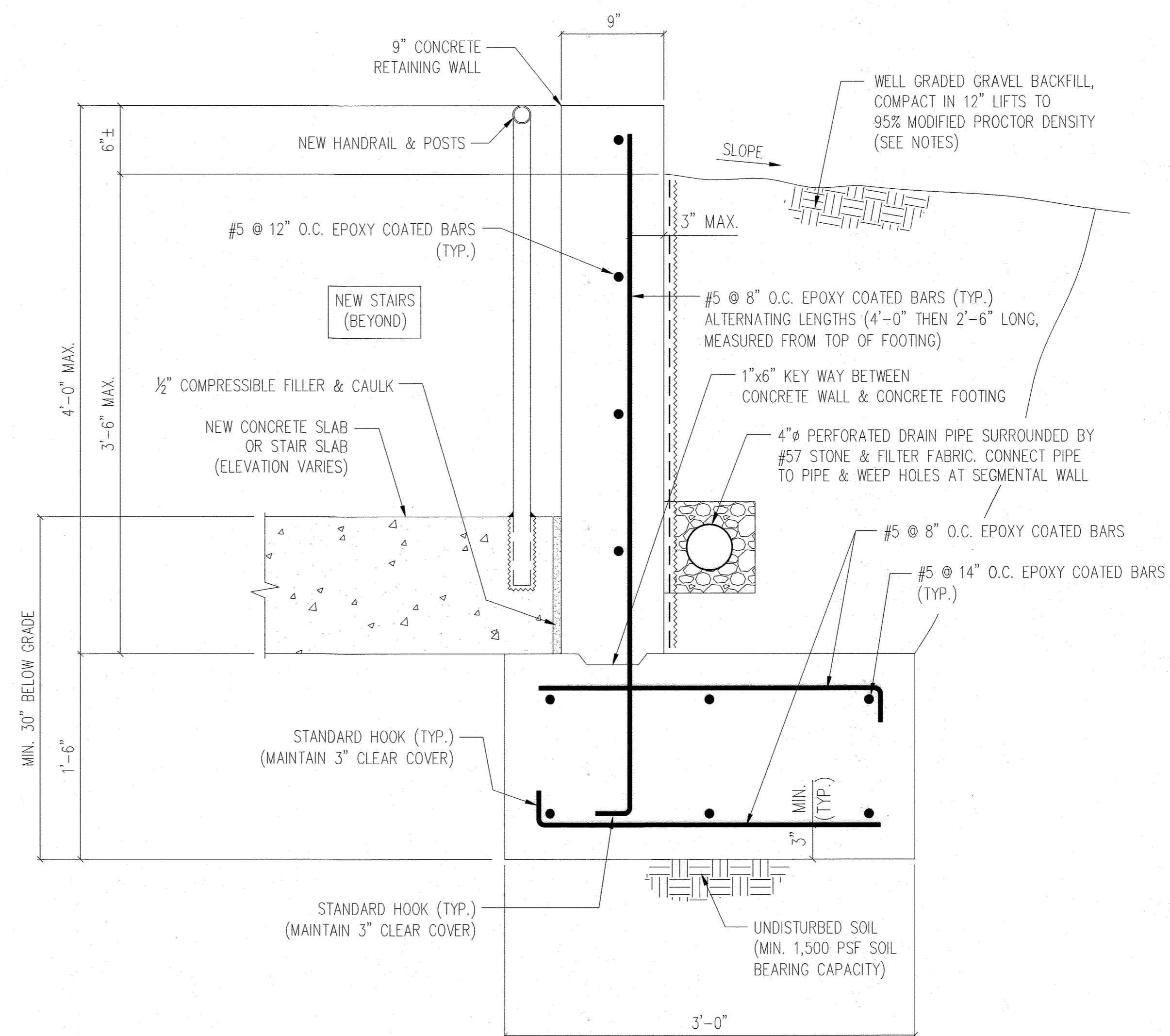
Firm Name and Address
CONSTRUCTION INSIGHT DC LLC
6184 GROVEDALE CT.
ALEXANDRIA, VA 22310
703-313-0456

Project Name and Address
Retaining Wall Replacement Project
at 6700 Alexander Bell Drive
Columbia, Maryland
Columbia Gateway Parcel C
CI Project Number
C3369

Title RETAINING WALL DETAILS	
Date 6/8/21	Sheet S003
Scale NTS	Sheet 14 of 17



1
S004 DETAIL - NEW CONCRETE RETAINING WALL (6 FOOT)
REF:



2
S004 DETAIL - NEW CONCRETE RETAINING WALL (4 FOOT)
REF:

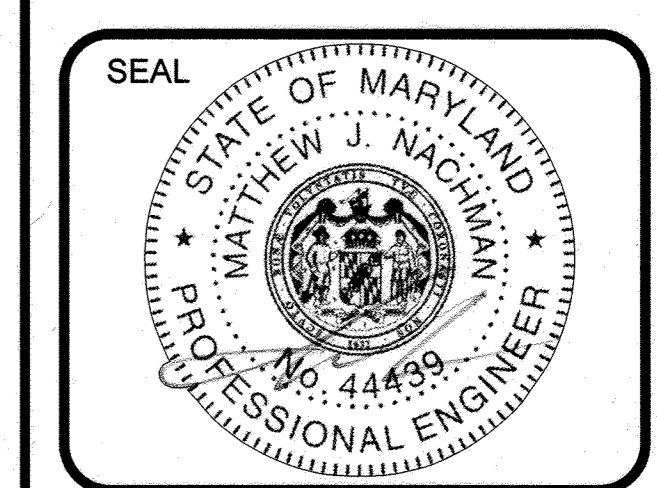
1
Chief, Development Engineering Division
2-9-22
DATE

Chief, Division of Land Development
2-15-22
DATE

Director
2-15-22
DATE

General Notes

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44439, EXPIRATION DATE 11/15/23."

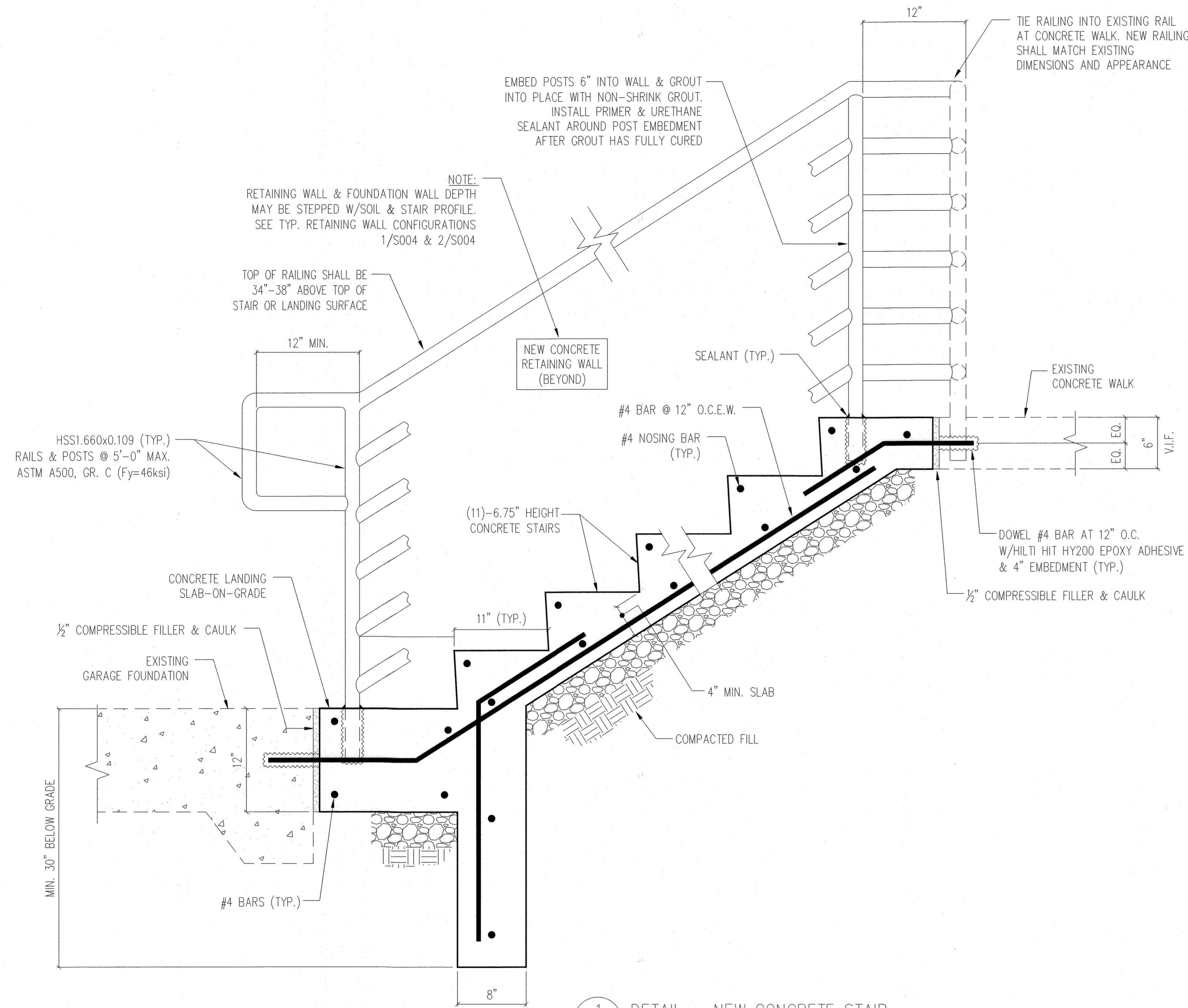


No.	Revision/Issue	Date
1	REVISED FOR SITE DEVELOPMENT PLAN	1/18/22


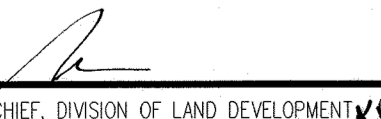
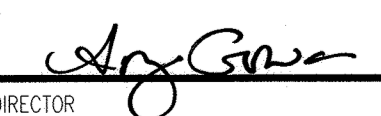
Firm Name and Address
CONSTRUCTION INSIGHT DC LLC
6184 GROVEDALE CT.
ALEXANDRIA, VA 22310
703-313-0456

Project Name and Address
Retaining Wall Replacement Project
at 6700 Alexander Bell Drive
Columbia, Maryland
Columbia Gateway Parcel C
CI Project Number
C3369

Title NEW CONCRETE RETAINING WALL DETAILS	
Date 6/8/21	Sheet S004
Scale NTS	Sheet 15 of 17



1
S005
REF: DETAIL - NEW CONCRETE STAIR

 2-9-22
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
 2/14/22
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
 2-15-22
 DIRECTOR DATE

DESIGN CRITERIA:
 CODE: INTERNATIONAL BUILDING CODE (IBC) 2018

LIVE LOADS:
 UNIFORM SURCHARGE GARAGE SNOW LOAD: 30 PSF

GENERAL NOTES:

- ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE CIVIL DRAWINGS AND REQUIREMENTS.
- CONTRACTOR SHALL VERIFY ACTUAL DIMENSIONS AND FIELD CONDITIONS PRIOR TO COMMENCEMENT OF WORK. DIMENSIONS AND LAYOUTS HAVE BEEN TAKEN FROM THE BEST AVAILABLE SOURCES. ENGINEER IS TO BE NOTIFIED IF FIELD DIMENSIONS AND CONDITIONS ARE DIFFERENT THAN SHOWN IN PLANS.
- ENGINEER IS TO BE NOTIFIED OF SCHEDULE AND WORK PROGRESS.
- CONTRACTOR SHALL DETERMINE APPROPRIATE ALLOWABLE CONSTRUCTION LOADS, SHORING REQUIREMENTS, EXCAVATION AND STABILITY REQUIREMENTS, INSTALLATION PROCEDURES, ETC.

FOUNDATIONS/SOIL:

- THE PRESUMED ALLOWABLE SOIL BEARING CAPACITY IS 1,500 PSF. ALLOWABLE SOIL BEARING CAPACITY IS TO BE VERIFIED BY A GEOTECHNICAL ENGINEER OR QUALIFIED SOILS TECHNICIAN.
- BOTTOMS OF ALL FOOTINGS TO BE A MINIMUM OF 30" BELOW FINISHED GRADE.
- BEARING STRATA IS TO BE ADEQUATELY DRAINED PRIOR TO CONCRETE PLACEMENT.
- ALL EXCAVATIONS ARE TO BE LOCATED AT A DISTANCE WHICH IS A MINIMUM 2:1 SLOPE (2 HORIZONTAL TO ONE VERTICAL) AWAY FROM EXISTING FOUNDATIONS.
- DO NOT PLACE CONCRETE OVER FROZEN SOIL.
- FOUNDATION WALLS HAVE BEEN DESIGNED USING THE FOLLOWING PROPERTIES:
- ACTIVE PRESSURE: 45PSF
- COEFFICIENT OF FRICTION: 0.25
- ALL BACKFILL SHALL BE ACCOMPLISHED USING MATERIAL CONSISTING OF BANK RUN GRAVEL, CRUSHED STONE AND/OR MATERIAL APPROVED BY THE GEOTECHNICAL ENGINEER, WITH OPTIMUM MOISTURE CONTENT FOR COMPACTING AND SHALL BE FREE OF ANY DEBRIS (SOIL TYPE SM, SP, SW, CC, CM, CP, OR CW PER ASTM-02487).

CONCRETE:

- ALL CONCRETE CONSTRUCTION INCLUDING DETAILING, FABRICATION, PLACEMENT OF REINFORCING, MIXING, HANDLING, PLACING, FINISHING, AND CURING SHALL CONFORM TO ACI-301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE", ACI-315 "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", AND ACI-318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY".
- CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE ACI 318 AND IBC.
- CONCRETE MIX DESIGN DATA TO CONFORM TO CHAPTER 5 OF ACI 318 FOR EACH TYPE AND STRENGTH OF CONCRETE SPECIFIED. MIX DESIGN DATA SHALL INCLUDE CONCRETE STRENGTH, SLUMP, AIR ENTRAINMENT, PROPOSED AGGREGATES, ADMIXTURES, POZZOLANS AND LAB TEST DATA.
- ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH AT 28-DAY OF $f'_c=4,500$ PSI, AIR-ENTRAINED AT $6.5\% \pm 1.5\%$.
- PROVIDE CONTROL JOINTS AS PER ACI RECOMMENDATIONS. PROVIDE STRIP OF WATERPROOFING MEMBRANE ON BACKSIDE OF JOINTS TO PREVENT SEEPAGE.
- DO NOT BACKFILL UNTIL CONCRETE HAS REACHED DESIGN STRENGTH.
- REINFORCING STEEL LAPS, SPLICES, TIES, AND HOOKS SHALL BE IN ACCORDANCE WITH ACI 318.
- CONCRETE MIX MATERIALS SHALL CONFORM TO THE FOLLOWING STANDARDS:
- PORTLAND CEMENT: ASTM C150
- FLY ASH CLASS C & F: ASTM C618
- FLY ASH SHALL BE LIMITED TO A MAXIMUM OF 20% OF TOTAL CEMENTITIOUS MATERIALS BY WEIGHT AND IS NOT TO BE USED IN COLD WEATHER/EXTERIOR APPLICATIONS.
- GROUND GRANULATED BLAST-FURNACE SLAG GRADE 100 & 120: ASTM C989
- SLAG SHALL BE LIMITED TO A MAXIMUM OF 50% OF TOTAL CEMENTITIOUS MATERIALS BY WEIGHT IN TYPICAL APPLICATIONS AND
- SLAG SHALL BE LIMITED TO A MAXIMUM OF 25% IN COLD WEATHER AND EXTERIOR APPLICATIONS.
- AIR-ENTRAINED ADMIXTURES: ASTM C260
- ALL ADDITIONAL ADMIXTURES: ASTM C494 AND ASTM C1017
- CONCRETE AGGREGATES SHALL BE NORMAL WEIGHT AND CONFORM TO ASTM C33. MAXIMUM AGGREGATE SIZE IS 3/4 IN.
- PROPORTION AND DESIGN MIXES TO RESULT IN CONCRETE SLUMP OF $3\frac{1}{2}$ IN. \pm 1 IN. AT THE POINT OF PLACEMENT. CONCRETE CONTAINING HIGH-RANGE WATER REDUCERS SHALL HAVE A SLUMP OF 4 IN. TO 8 IN.
- OWNER SHALL RETAIN THE SERVICES OF A QUALIFIED TESTING AGENCY TO PROVIDE CONCRETE TESTING. TESTING TO INCLUDE COMPRESSIVE STRENGTH TESTING, TEMPERATURE, SLUMP, AND AIR ENTRAINMENT.
- CONCRETE TEST SPECIMENS SHALL CONFORM TO ASTM C31/ C31M:
- COMPRESSION STRENGTH TESTING (ASTM C39/ C39M)
- LABORATORY CURE THREE (3) SETS OF THREE (3) STANDARD 4"x8" CYLINDERS FOR EACH COMPOSITE SAMPLE.
- COMPRESSION STRENGTH TESTING (ASTM C39/C39M)
- WALLS AND FOUNDATIONS
- TEST ONE SET OF LAB-CURED SPECIMENS AT 7 DAYS AND ONE (1) SET OF LABORATORY-CURED SPECIMENS AT 28 DAYS PER 150 CUBIC YARDS OF CONCRETE (OR 5,000SF OF SURFACE AREA).
- HOLD ONE SET OF LAB-CURED SPECIMENS IN RESERVE.

CONCRETE REINFORCEMENT:

- REINFORCING BARS #3 THROUGH #11 SHALL BE DEFORMED GRADE 60 AND IN ACCORDANCE WITH ASTM A-615.
- SUBMIT SHOP DRAWINGS FOR CONCRETE MIX DESIGN AND FOR REINFORCEMENT TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL. PREPARE SHOP DRAWINGS UNDER THE SUPERVISION OF A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE LOCAL JURISDICTION. DETAILING, FABRICATING, BENDING, AND PLACING REINFORCEMENT SHALL COMPLY WITH ACI 315 AND ACI DETAILING MANUAL SP-66, SHOWING BAR SCHEDULES, STIRRUP SPACING, BENT BAR DIAGRAMS, AND ARRANGEMENT OF CONCRETE REINFORCEMENT. BARS MARKED CONTINUOUS SHALL BE LAP SPLICED, IF NEEDED, IN ACCORDANCE WITH REQUIREMENTS FOR SPLICES AS DEFINED IN ACI 318, MINIMUM 50 BAR DIAMETERS, UNLESS INDICATED OTHERWISE.
- FABRICATE AND PROVIDE STANDARD REINFORCING STEEL SUPPORT ACCESSORIES IN CONFORMANCE WITH ACI MANUAL OF STANDARD PRACTICE FOR DETAIL CONCRETE STRUCTURES (ACI 315) AND ACI 318.
- PROVIDE STANDARD HOOKS UNLESS DETAILED OTHERWISE.

STRUCTURAL STEEL:

- STRUCTURAL STEEL DETAILS AND CONNECTIONS SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL (AISC).
- STRUCTURAL STEEL RAILINGS SHALL CONFORM TO HSS ROUND SECTIONS WITH ASTM A500 GR. C STEEL ($F_y=46$ KSI).
- ANY WELDING OF STRUCTURAL STEEL SHALL CONFORM TO AWS D1.1 AND AISC PREQUALIFIED WELDED JOINTS FOR SHOP AND FIELD WELDS. USE E70xx ELECTRODES FOR WELDS.

General Notes

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 44439, EXPIRATION DATE 11/15/23."

SEAL
 STATE OF MARYLAND
 MATTHEW J. NACHIMAW
 PROFESSIONAL ENGINEER
 No. 44439

REVISION FOR SITE DEVELOPMENT PLAN	1/18/22
No.	Revision/Issue Date

Firm Name and Address
 CONSTRUCTION INSIGHT DC LLC
 6184 GROVEDALE CT.
 ALEXANDRIA, VA 22310
 703-313-0456

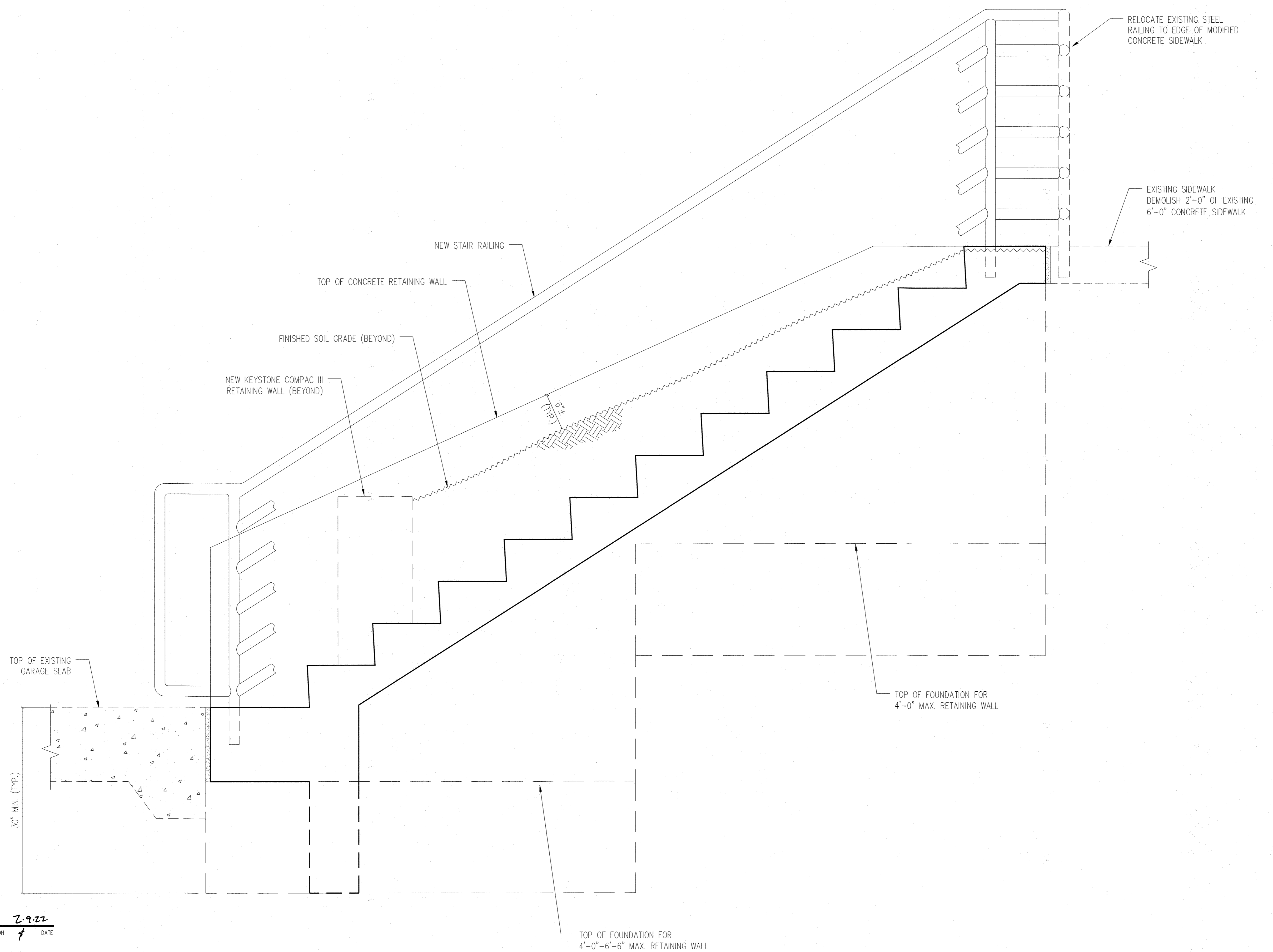
Project Name and Address
 Retaining Wall Replacement Project
 at 6700 Alexander Bell Drive
 Columbia, Maryland
 Columbia Gateway Parcel C

CI Project Number
 C3369

Title
 NEW CONCRETE STAIR DETAILS

Date 6/8/21	Sheet S005
Scale NTS	Sheet 16 of 17

SDP-87-049



RELOCATE EXISTING STEEL RAILING TO EDGE OF MODIFIED CONCRETE SIDEWALK

EXISTING SIDEWALK DEMOLISH 2'-0" OF EXISTING 6'-0" CONCRETE SIDEWALK

NEW STAIR RAILING

TOP OF CONCRETE RETAINING WALL

FINISHED SOIL GRADE (BEYOND)

NEW KEYSTONE COMPAC III RETAINING WALL (BEYOND)

TOP OF EXISTING GARAGE SLAB

30" MIN. (TYP.)

TOP OF FOUNDATION FOR 4'-0" MAX. RETAINING WALL

TOP OF FOUNDATION FOR 4'-0"-6" MAX. RETAINING WALL

[Signature] 2-9-22
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

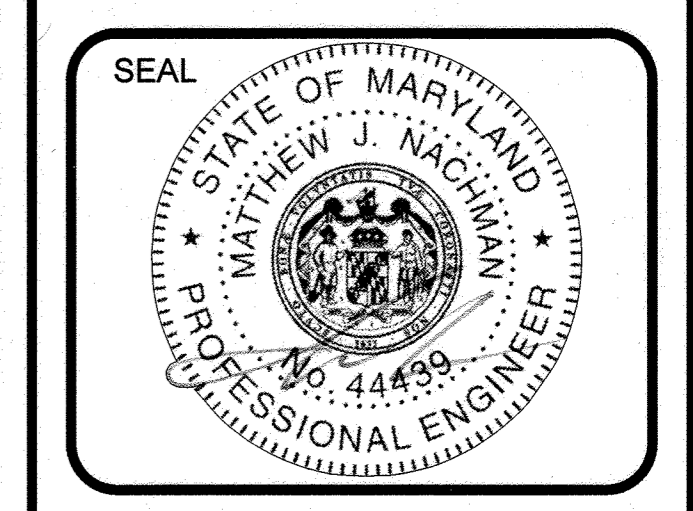
[Signature] 2/11/22
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 2-15-22
 DIRECTOR DATE

1 STAIR AND RETAINING WALL PROFILE
 S006 REF:

General Notes

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1	REVISED FOR SITE DEVELOPMENT PLAN	1/18/22
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Firm Name and Address
 CONSTRUCTION INSIGHT DC LLC
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 ALEXANDRIA, VA 22310
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Project Name and Address
 Retaining Wall Replacement Project
 at 6700 Alexander Bell Drive
 Columbia, Maryland
 Columbia Gateway Parcel C
 CI Project Number
 C3369

Title STAIR AND RETAINING WALL PROFILE	
Date 6/21/21	Sheet S006
Scale NTS	Sheet 17 of 17

SDP-87-049