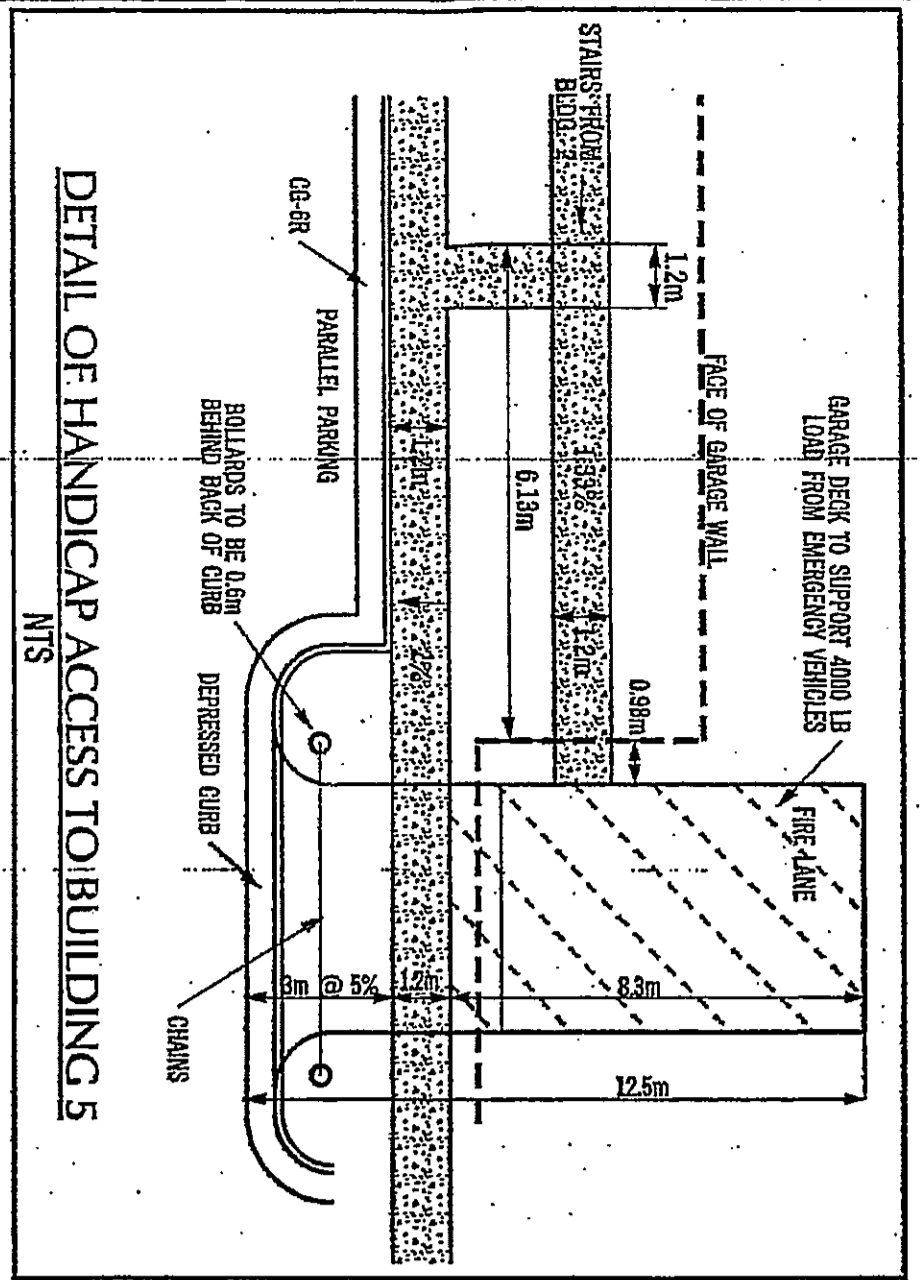


N/F REEF PERFORMANCE PARTNERSHIP III B.L.P.
 TAX MAP: 44-5-1(91)-B
 USE: OFFICE SPACE
PARCEL B

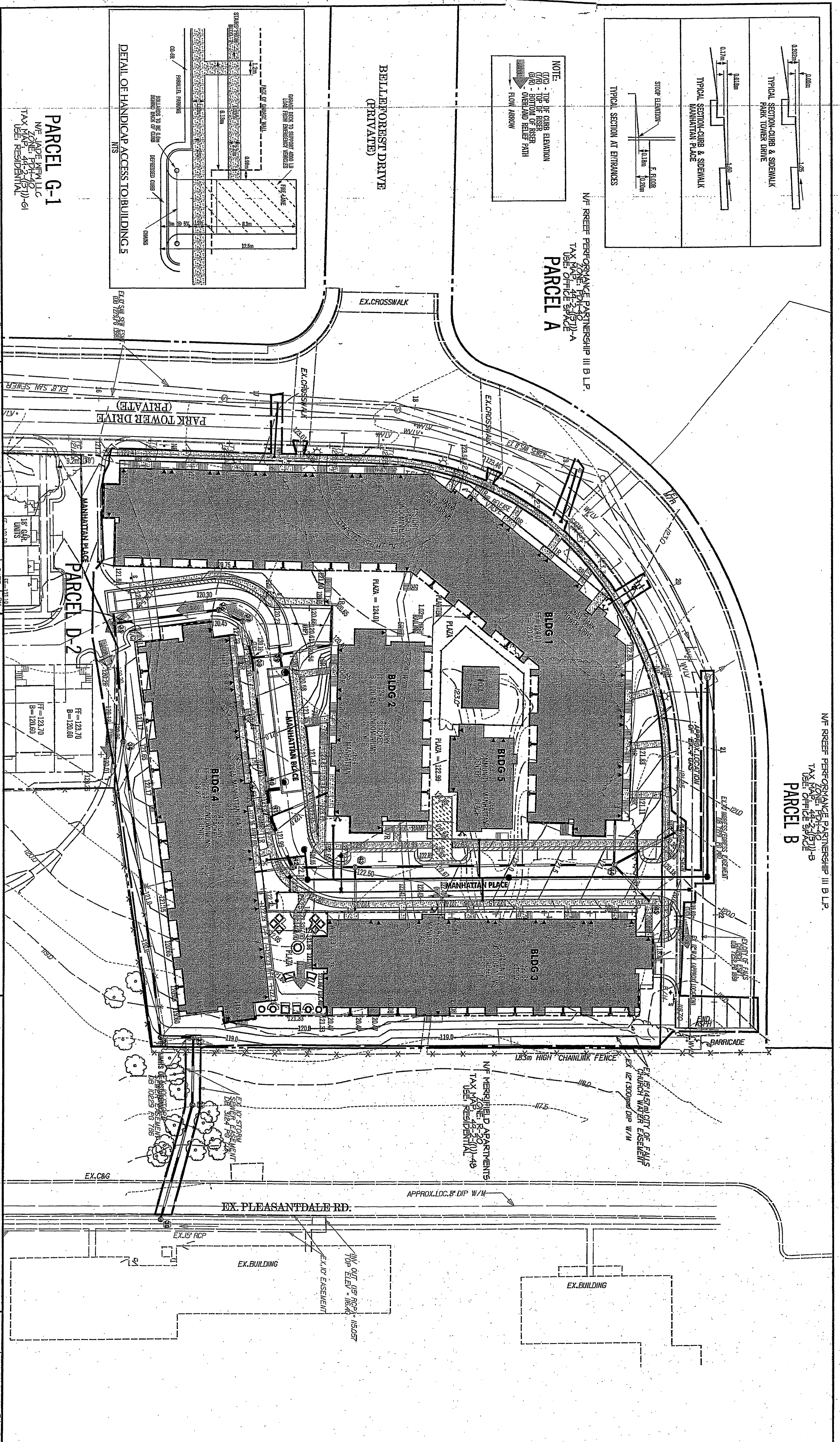


NOTE:
 (T) - TOP OF CURB ELEVATION
 (R) - TOP OF RISER
 (B) - BOTTOM OF RISER
 (O) - OVERLAND RAINFALL PATH
 FLOW ARROW

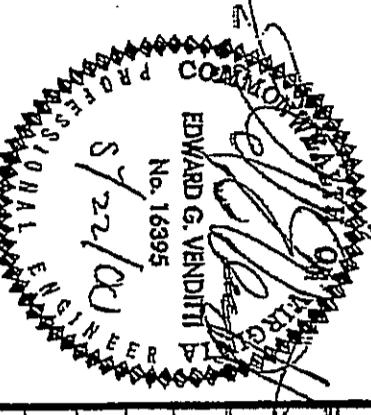
N/F REEF PERFORMANCE PARTNERSHIP III B.L.P.
 TAX MAP: 44-5-1(91)-A
 USE: OFFICE SPACE
PARCEL A



PARCEL G-1
 N/F MADE MEN LLC
 ZONE: PD-1(87)-e1
 TAX MAP: 44-2-1(87)-e1
 USE: RESIDENTIAL



No.	REVISION	DATE	BY
1	REVISED PER ESI COMMENT	9/10/99	CEH

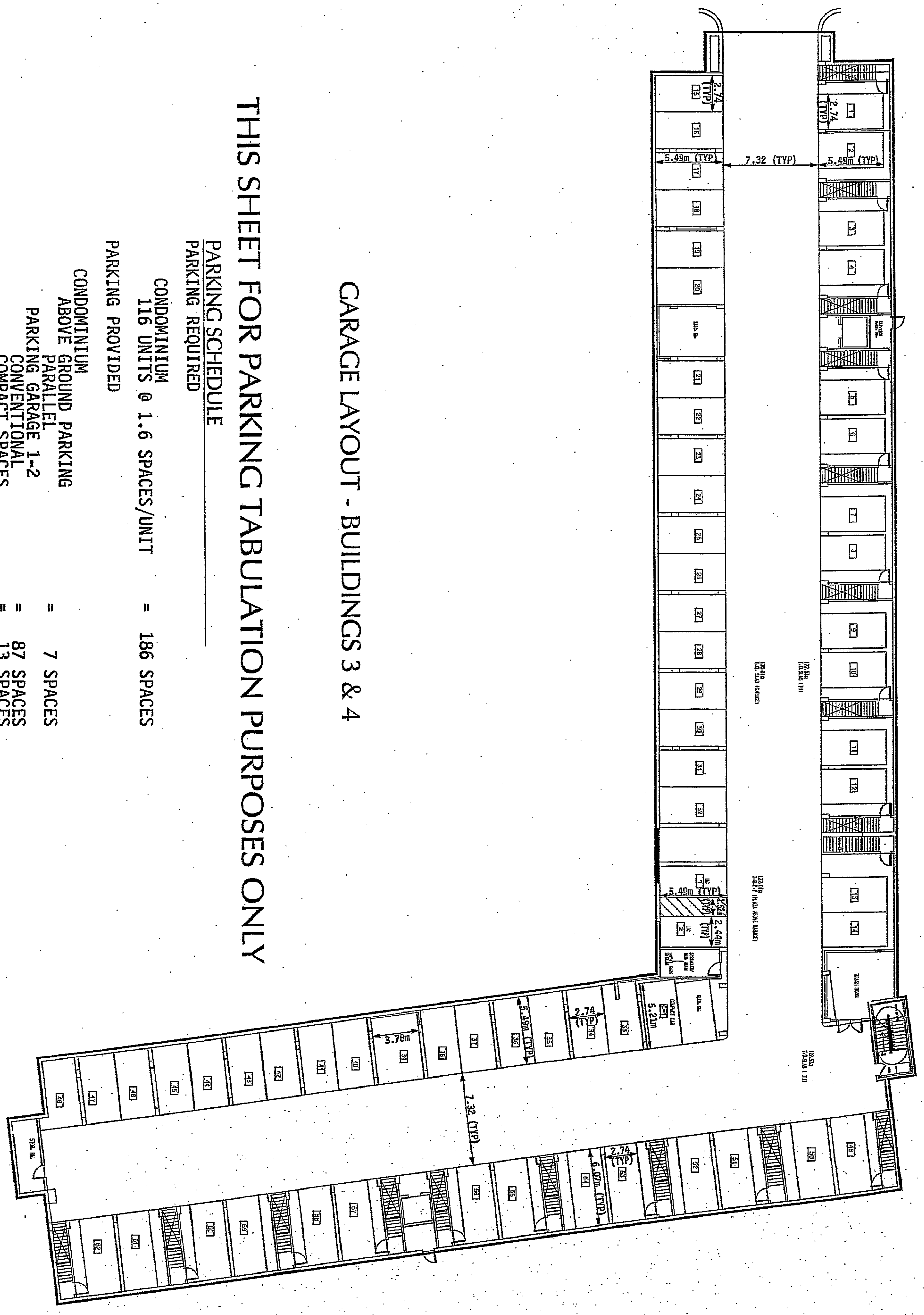


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GRADING PLAN
METRO PLACE AT DUNN LORING
 PARCEL I (PREVIOUSLY PARCEL C-1)
 PROVIDENCE DISTRICT
 FAIRFAX COUNTY, VIRGINIA

SUBMIT	SCALE 1:300	CI=0.5m
DESIGN		
SIM		
DRANN		
CHECKED	4	OF 35
DATE	5/00	
PROJ No.	5169ADE	PT-805
FILE No.		

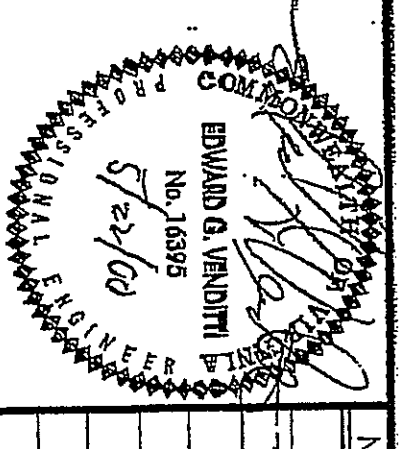


GARAGE LAYOUT - BUILDINGS 3 & 4

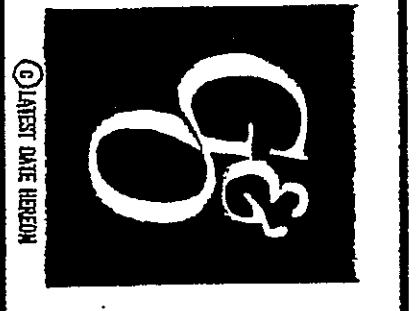
THIS SHEET FOR PARKING TABULATION PURPOSES ONLY

PARKING SCHEDULE

PARKING REQUIRED		
CONDOMINIUM	116 UNITS @ 1.6 SPACES/UNIT	= 186 SPACES
PARKING PROVIDED		
CONDOMINIUM		
ABOVE GROUND PARKING		
PARALLEL		
PARKING GARAGE 1-2		
CONVENTIONAL		
COMPACT SPACES		
VAN ACCESSIBLE		
HANDICAPPED		
PARKING GARAGE 3-4		
CONVENTIONAL		
COMPACT SPACES		
HANDICAPPED		
PARK TOWER DRIVE		
CONVENTIONAL		
PARALLEL		
TOTAL PARKING		= 190 SPACES



No.	REVISION	DATE	BY



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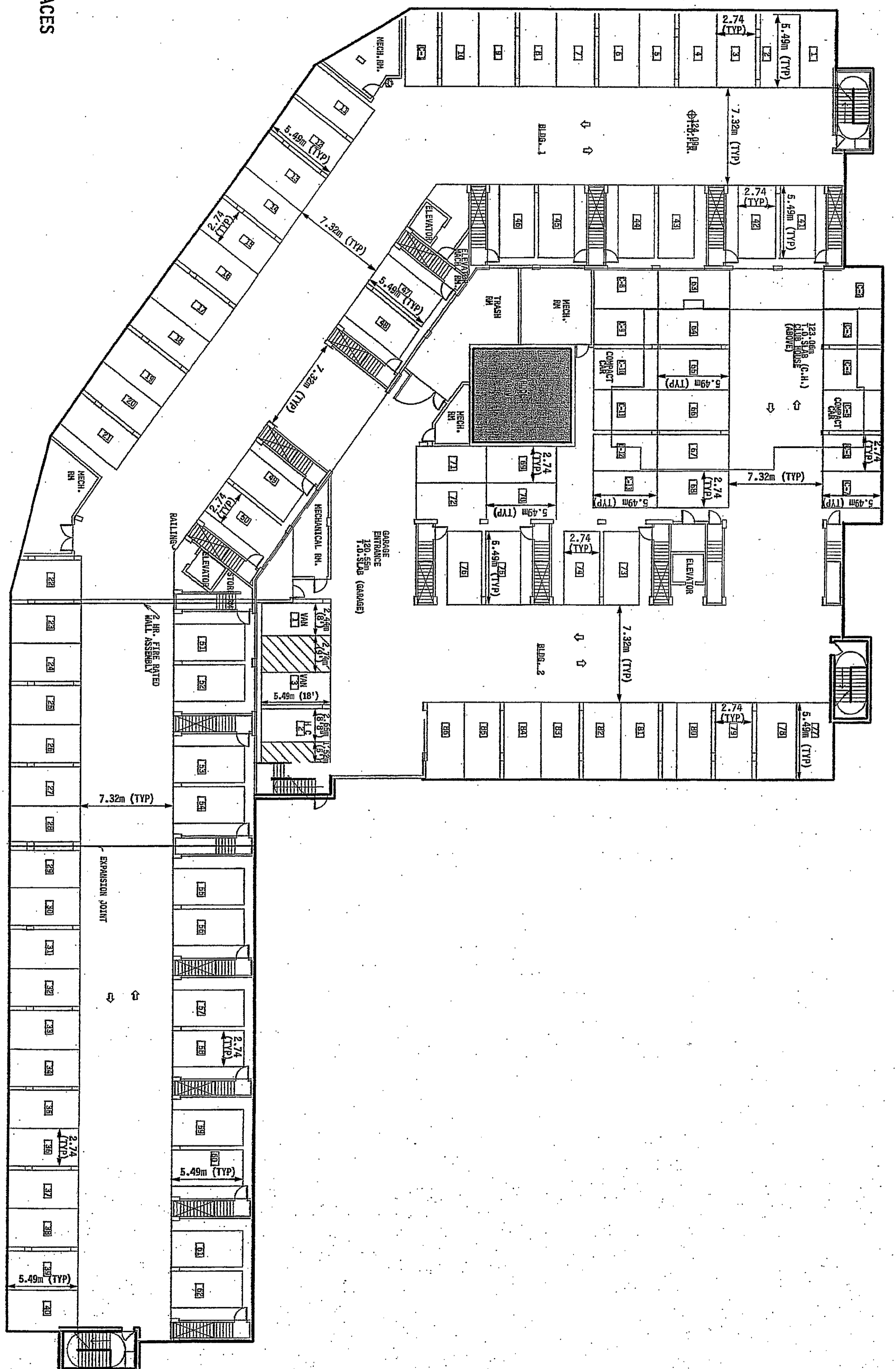
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 MECHANICSBURG, PA • BALDICH, INC • ROCKVILLE, MD • TAMPA, FL • WEST PALM BEACH, FL

GARAGE LAYOUT PLAN

METRO PLACE AT DUNN LORING
 PARCEL 1 (PREVIOUSLY PARCEL C-1)

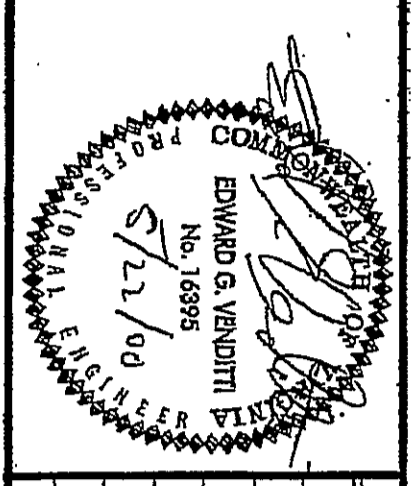
PROVIDENCE DISTRICT
 FAIRFAX COUNTY, VIRGINIA

DESIGN	SCALE	NTS
SJM		
DRAWN		
MP	5	OF 35
CHECKED	SHEET	
1/00	5169/ADDE	PP-805
DATE	PROJ. No.	FILE No.

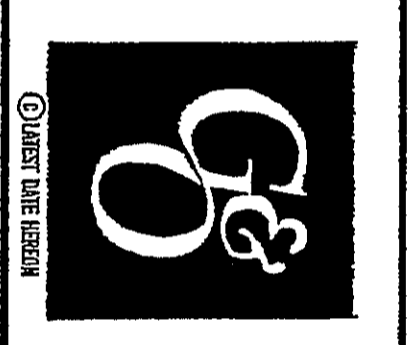


PARKING SCHEDULE	
PARKING REQUIRED	
CONDOMINIUM	116 UNITS @ 1.6 SPACES/UNIT = 186 SPACES
PARKING PROVIDED	
CONDOMINIUM ABOVE GROUND PARKING	
PARALLEL	= 7 SPACES
PARKING GARAGE 1-2 CONVENTIONAL	= 87 SPACES
COMPACT SPACES	= 13 SPACES
VAN ACCESSIBLE	= 2 SPACES
HANDICAPPED	= 1 SPACE
PARKING GARAGE 3-4 CONVENTIONAL	= 62 SPACES
COMPACT SPACES	= 1 SPACE
HANDICAPPED	= 2 SPACES
PARK TOWER DRIVE CONVENTIONAL	= 6 SPACES
PARALLEL	= 9 SPACES
TOTAL PARKING	= 190 SPACES

GARAGE LAYOUT - BUILDINGS 1 & 2 & COMMUNITY CENTER
THIS SHEET FOR PARKING TABULATION PURPOSES ONLY



No.	REVISION	DATE	BY

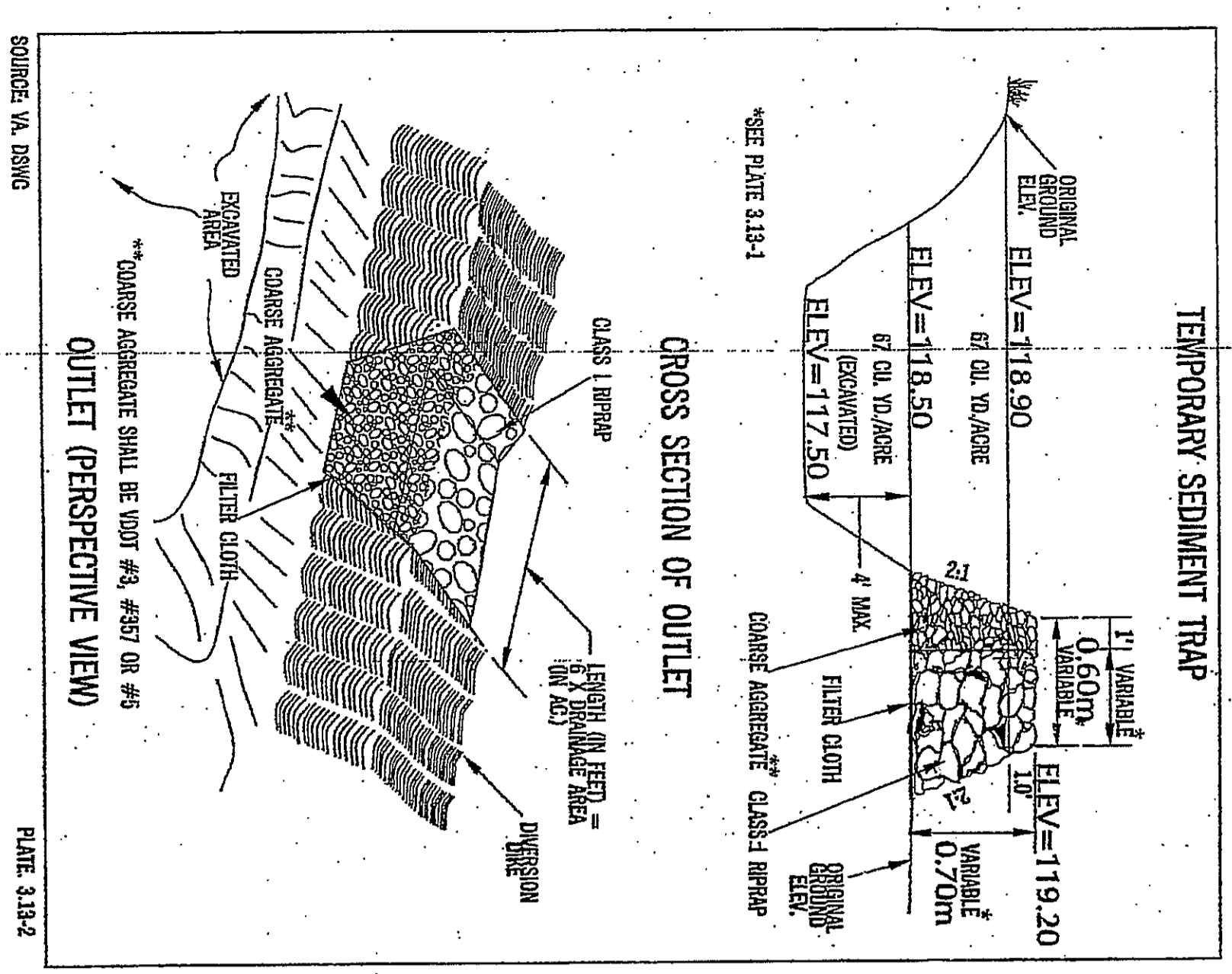


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CARAGE LAYOUT PLAN
METRO PLACE AT DUNN LORING
 PARCEL L (PREVIOUSLY PARCEL C-1)
 PROVIDENCE DISTRICT
 FAIRFAX COUNTY, VIRGINIA

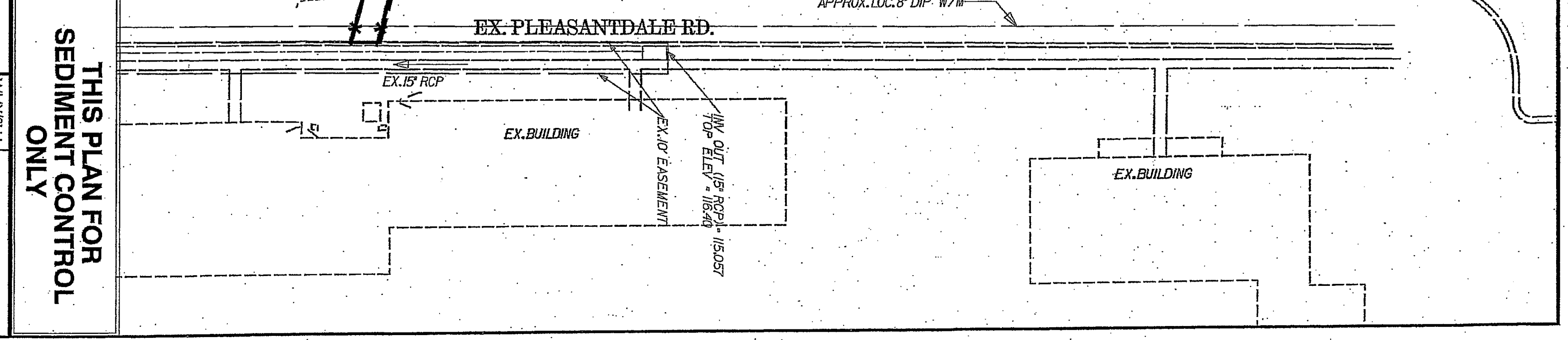
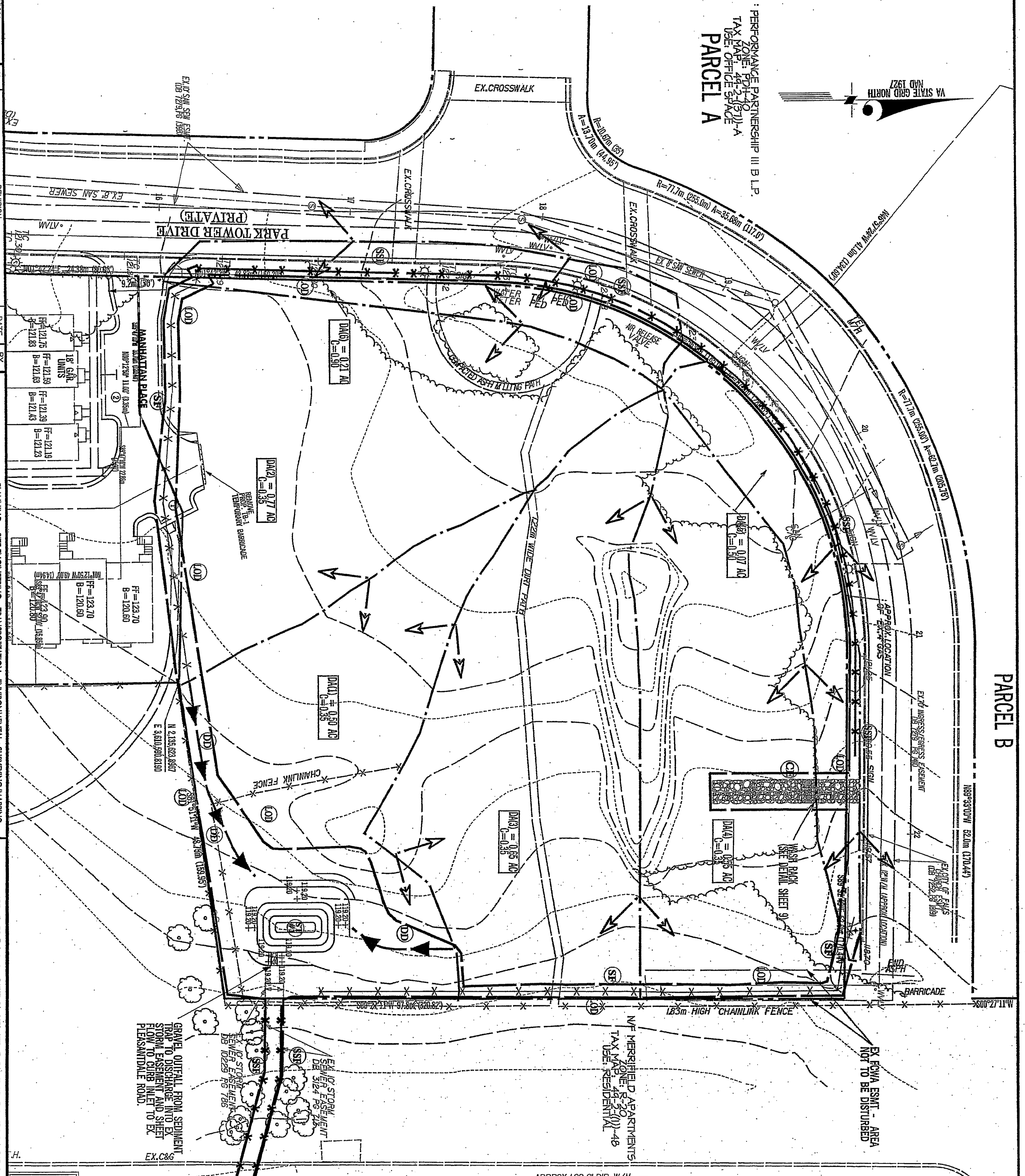
DESIGN	SCALE	NTS
SJAM SLAM DRAWN	6 OF	35
MP CHECKED	SHEET	PR-405
T/00 DATE	PROJ No.	FILE No.

- LEGEND**
- (SB) SILT FENCE
 - (S) SUPER SILT FENCE
 - (L) LIMIT OF DISTURBANCE
 - (IP) INLET PROTECTION
 - (CIP) CONSTRUCTED INLET PROTECTION
 - (D) DIVERSION DIKE



SEDIMENT TRAP SCHEDULE

TRAP NO.	AREA (sq. ft.)	DEPTH (ft.)	LENGTH (ft.)	WIDTH (ft.)	GRANULAR MATERIAL (cu. yd.)
1	5123	2.0	25.0	8.0	1.0
2	5123	2.0	25.0	8.0	1.0
3	5123	2.0	25.0	8.0	1.0
4	5123	2.0	25.0	8.0	1.0
5	5123	2.0	25.0	8.0	1.0
6	5123	2.0	25.0	8.0	1.0
7	5123	2.0	25.0	8.0	1.0
8	5123	2.0	25.0	8.0	1.0
9	5123	2.0	25.0	8.0	1.0
10	5123	2.0	25.0	8.0	1.0



**THIS PLAN FOR
SEDIMENT CONTROL
ONLY**



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**EROSION & SEDIMENT CONTROL PHASE I
METRO PLACE AT DUNN LORING
PARCEL I (PREVIOUSLY PARCEL C-1)**

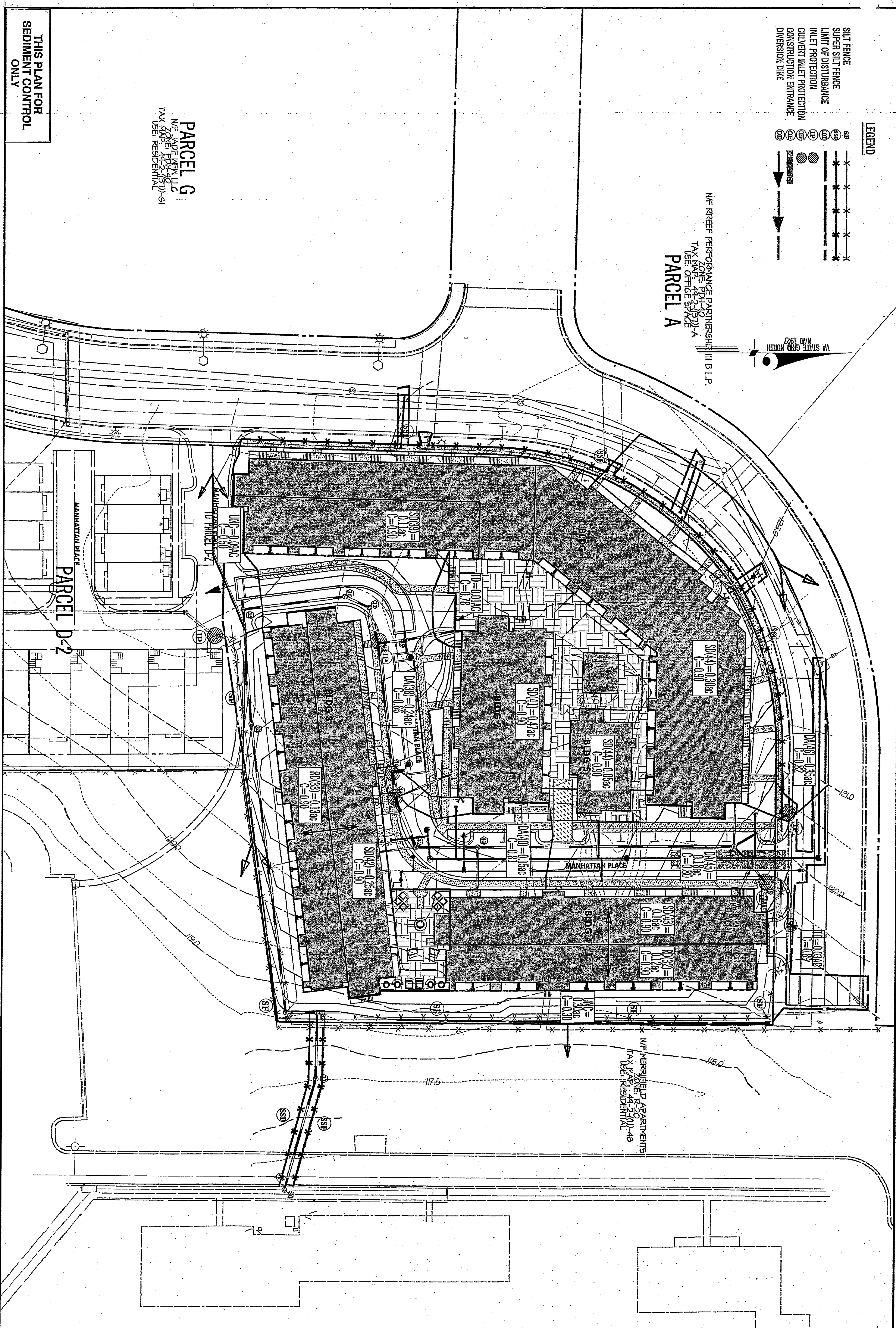
WVA/SH/SH DESIGN	SCALE	1:300
S/MA DRAWN	7	OF 35
BB CHECKED	SHEET	5169/AD
4/00 DATE	PROJ. NO.	PR-805
	FILE NO.	

- LEGEND**
- SF SILT FENCE
 - Super Silt Fence
 - Limit of Disturbance
 - Inlet Protection
 - Culvert Inlet Protection
 - Construction Entrance
 - Diversion Dike

N/F RREEF PERFORMANCE PARTNERSHIP III B L.P.
 ZONE PDH-10
 TAX MAP 44-2-15(1)-A
 USE: OFFICE SPACE
PARCEL A

N/F MADEIRA PARTNERSHIP
 ZONE PDH-10
 TAX MAP 44-2-15(1)-61
 USE: RESIDENTIAL
PARCEL G

**THIS PLAN FOR
 SEDIMENT CONTROL
 ONLY**



No.	REVISION	DATE	BY

SILH MP
 SLH MP
 DESIGN DRAWN
 SCALE 1:300
 DATE 7/99
 IT/GB/ADP PA-805
 SHEET 8 OF 35

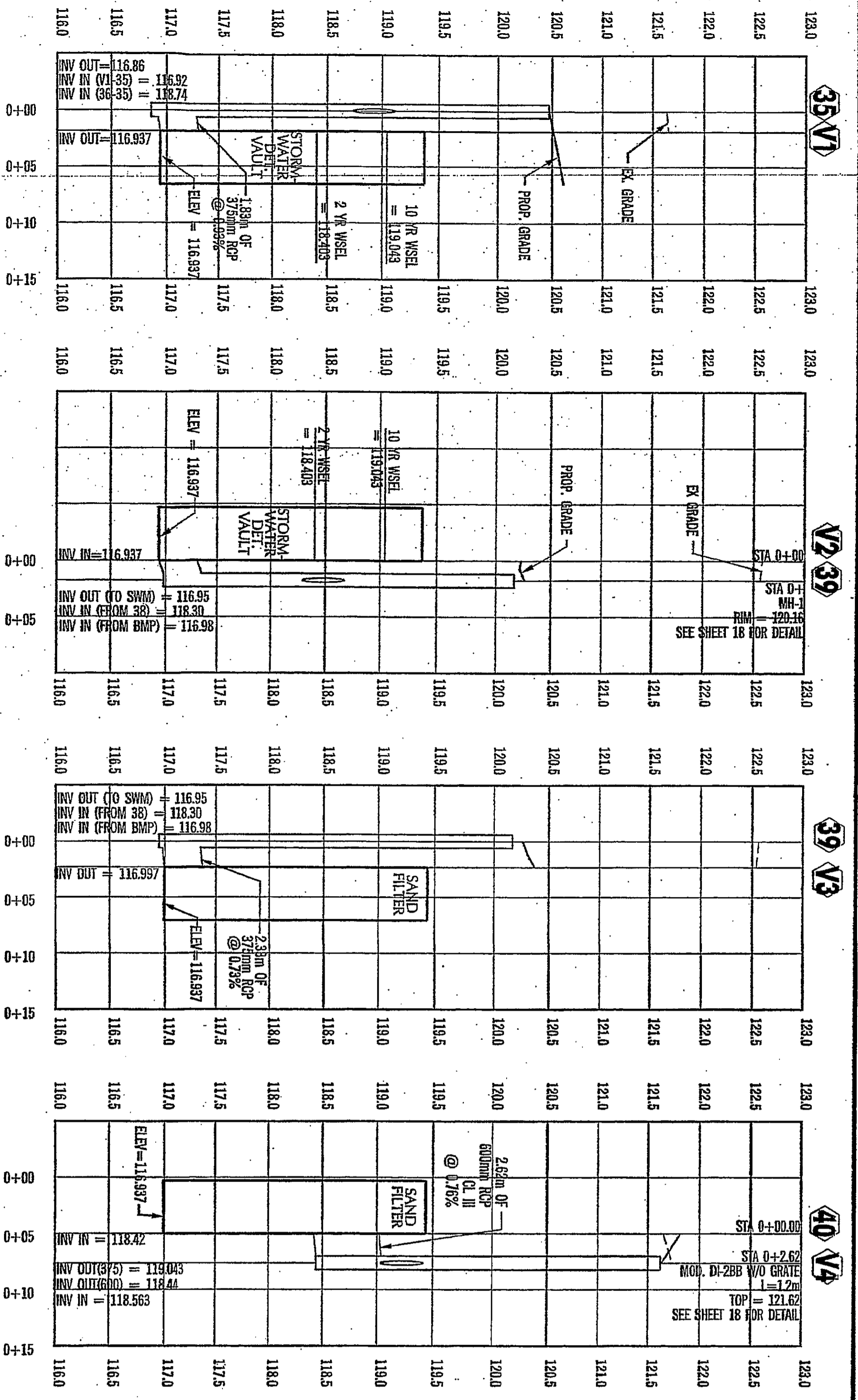


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EROSION & SEDIMENT CONTROL PHASE II
METRO PLACE AT DUNN LORING
 PARCEL L (PREVIOUSLY PARCEL C-1)

PROVIDENCE DISTRICT
 FAIRFAX COUNTY, VIRGINIA

EDWARD G. VANDERT
 CIVIL ENGINEER
 No. 527100



ALL STORM SEWER SHOWN ON THIS PAGE TO BE PRIVATELY MAINTAINED

No.	REVISION	DATE	BY

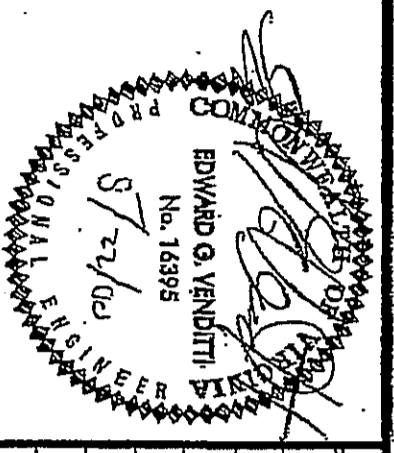


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PRIVATE STORM SEWER PROFILES
METROPLACE AT DUNN LORING
 PARCEL L (PREVIOUSLY PARCEL C-1)
 PROVIDENCE DISTRICT
 FAIRFAX COUNTY, VIRGINIA

DATE: 5/00
 CHECKED: ECV
 DESIGN: SIM
 DRAWN: DRANN
 SHEET: 13A OF 35
 SCALE: 1:30 HORIZ, 1:30 VERT
 PROJ. No.: 51691ADE
 FILE No.: PP-805



ADEQUATE OUTFALL NARRATIVE

UNDER EXISTING CONDITIONS THE 10-YEAR UNCONTROLLED FLOW (8.53 CFS) FROM THE UNDEVELOPED PROPOSED SITE FLOWS TO PLEASANTDALE DRIVE AND TO MERRIFIELD APARTMENTS WHERE IT IS Routed through the storm sewer system. THE PROPOSED DEVELOPMENT WILL INCREASE THE FLOW TO 14.40 CFS. THE PROPOSED DEVELOPMENT WILL INCREASE THE FLOW FROM EX 33 TO STRUCTURE EX 32 TO 5.00 CFS. THE PROPOSED DEVELOPMENT WILL INCREASE THE FLOW FROM EX 33 THROUGH A PIPE WITH A CAPACITY OF 18.76 CFS.

WITH THE DEVELOPMENT OF THIS PROPERTY A BMP VAULT AND AN UNDERGROUND SWM SYSTEM IS PROPOSED (SEE SHEET 15 FOR NARRATIVE AND COMPUTATIONS). MOST OF THE FLOW FROM THIS SITE IS ROUTED THROUGH THESE FACILITIES. THE REMAINING UNCONTROLLED FLOW CAN BE DIVIDED INTO OVERLAND FLOW (A TOTAL OF 0.98 CFS) AND ROOF DRAIN (CONNECTED TO THE PROPOSED MANHOLE 32). THE ROUTED FLOW FROM THE SWM VAULT IS 5 CFS (SEE SWM ROUTING ON SHEET 16). THE COMBINED TOTAL DEVELOPED FLOW FROM THIS SITE TO EX 33 IS 7.66 CFS. THIS FLOW IS LESS THAN THE EXISTING FLOW TO MANHOLE EX 35 AND THE PIPE SYSTEM.

WE ANALYZED THE 10-YEAR FLOWS AND THE CAPACITIES OF THREE DOWNSTREAM PIPE SECTIONS FROM STRUCTURE EX 33 (SEE DRISTE STORM SEWER OUTFALL COMPUTATION POST DEVELOPED CONDITIONS) AND FOUND THE FLOWS TO BE AS FOLLOWS:

POST DEVELOPED CONDITIONS

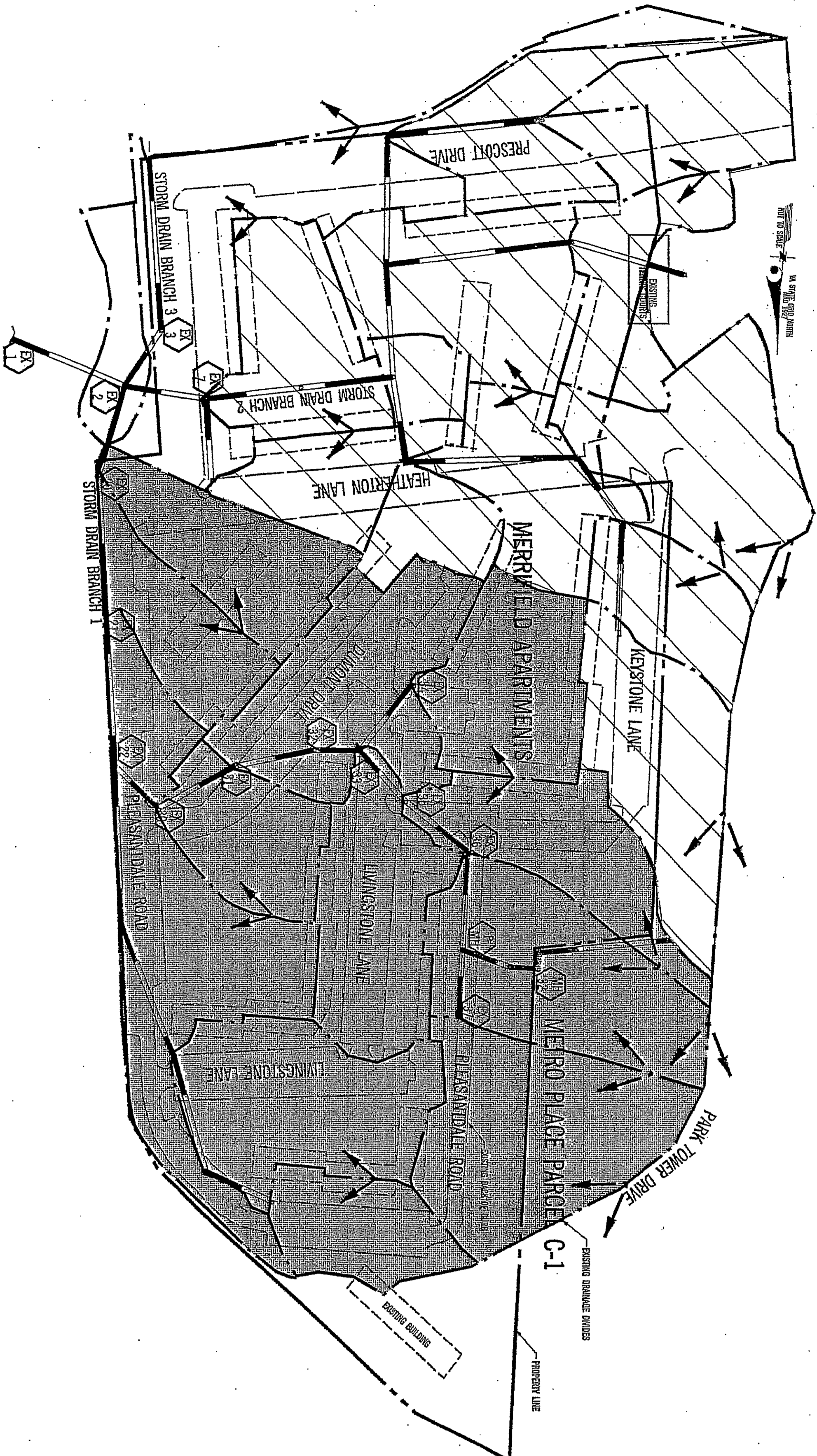
MERRIFIELD APARTMENTS
FAIRFAX, VIRGINIA

Job No. 6169
Date: 10-May-00

DESIGN STORM: 10 YR STORM
I(T=50) = 7.27
I(T=10) = 0.913

FROM POINT	TO POINT	AREA ACRES	RUNOFF COEFF.	CA	CA	TIME OF TRAVEL MIN	RAIN FALL INCH	RUNOFF COEFF.	INVERT ELEVATION	INVERT ELEVATION	LENGTH FT	DIAMETER IN	CAPACITY CFS	VELOCITY FT/SEC	FLOW TIME MIN
EX 33	EX 32	1.21	0.67	0.81	3.71	5.45	7.15	25.10	359.87	355.11	61	6.00	18.40	14.40	0.07
EX 32	EX 31	0.00	0.00	0.00	0.00	5.82	7.13	26.03	358.03	352.83	111	1.80	27	42.89	10.74

OUTFALL MAP
NOT TO SCALE



OFFSITE STORM SEWER OUTFALL COMPUTATION

PREDEVELOPED CONDITIONS

MERRIFIELD APARTMENTS
FAIRFAX, VIRGINIA

Job No. 6169
Date: 10-May-00

DESIGN STORM: 10 YR STORM
I(T=50) = 7.27
I(T=10) = 0.913

FROM POINT	TO POINT	AREA ACRES	RUNOFF COEFF.	CA	CA	TIME OF TRAVEL MIN	RAIN FALL INCH	RUNOFF COEFF.	INVERT ELEVATION	INVERT ELEVATION	LENGTH FT	DIAMETER IN	CAPACITY CFS	VELOCITY FT/SEC	FLOW TIME MIN
EX 33	EX 32	1.21	0.67	0.81	3.71	5.45	7.15	25.10	359.87	355.11	61	6.00	18.40	14.40	0.07
EX 32	EX 31	0.00	0.00	0.00	0.00	5.82	7.13	26.03	358.03	352.83	111	1.80	27	42.89	10.74

FROM POINT	TO POINT	AREA ACRES	RUNOFF COEFF.	CA	CA	TIME OF TRAVEL MIN	RAIN FALL INCH	RUNOFF COEFF.	INVERT ELEVATION	INVERT ELEVATION	LENGTH FT	DIAMETER IN	CAPACITY CFS	VELOCITY FT/SEC	FLOW TIME MIN
EX 37	PROP MAN 30	0.70	0.55	0.39	0.39	5.00	7.27	2.84	376.52	376.52	84	1.80	8.08	6.89	0.24
PROP MAN 30	EX 36	0.26	0.80	0.23	0.23	5.00	7.27	1.67	376.51	373.87	133	1.80	16	6.89	0.34
EX 36	EX 35	0.45	0.50	0.23	0.85	5.21	7.21	11.13	372.71	367.74	104	4.80	15	14.37	11.71
EX 35	EX 33	1.00	0.57	0.67	1.42	6.36	7.18	15.20	367.22	360.28	88	8.30	15	16.29	10.8
EX 34	EX 33	1.10	0.44	0.48	0.48	5.00	7.27	3.49							
EX 33	EX 32	1.21	0.67	0.81	3.71	5.45	7.15	25.10	359.87	355.11	61	6.00	18.40	14.40	0.07
EX 32	EX 31	0.00	0.00	0.00	0.00	5.82	7.13	26.03	358.03	352.83	111	1.80	27	42.89	10.74

STORM SEWER DESIGN COMPUTATIONS

FROM POINT	TO POINT	AREA ACRES	RUNOFF COEFF.	CA	CA	TIME OF TRAVEL MIN	RAIN FALL INCH	RUNOFF COEFF.	INVERT ELEVATION	INVERT ELEVATION	LENGTH FT	DIAMETER IN	CAPACITY CFS	VELOCITY FT/SEC	FLOW TIME MIN
EX 37	PROP MAN 30	0.70	0.55	0.39	0.39	5.00	7.27	2.84	376.52	376.52	84	1.80	8.08	6.89	0.24
PROP MAN 30	EX 36	0.26	0.80	0.23	0.23	5.00	7.27	1.67	376.51	373.87	133	1.80	16	6.89	0.34
EX 36	EX 35	0.45	0.50	0.23	0.85	5.21	7.21	11.13	372.71	367.74	104	4.80	15	14.37	11.71
EX 35	EX 33	1.00	0.57	0.67	1.42	6.36	7.18	15.20	367.22	360.28	88	8.30	15	16.29	10.8
EX 34	EX 33	1.10	0.44	0.48	0.48	5.00	7.27	3.49							
EX 33	EX 32	1.21	0.67	0.81	3.71	5.45	7.15	25.10	359.87	355.11	61	6.00	18.40	14.40	0.07
EX 32	EX 31	0.00	0.00	0.00	0.00	5.82	7.13	26.03	358.03	352.83	111	1.80	27	42.89	10.74

HYDRAULIC GRADE LINE COMPUTATIONS

Structure	Surface Elev. (ft)	Outlet Water Surface Elev. (ft)	Structure Invert (ft)	Structure Length (ft)	Structure Slope	Structure Capacity (cfs)	Structure Velocity (ft/sec)	Structure Time (min)
EX 37	388.13	388.13	376.52	84	0.0001	8.08	6.89	0.24
PROP MAN 30	380.15	380.15	376.52	133	0.0001	16	6.89	0.34
EX 36	380.15	380.15	373.87	104	0.0001	15	14.37	11.71
EX 35	380.15	380.15	367.74	88	0.0001	15	16.29	10.8
EX 34	380.15	380.15	360.28	88	0.0001	15	16.29	10.8
EX 33	380.15	380.15	355.11	61	0.0001	18	26.45	14.40
EX 32	380.15	380.15	352.83	111	0.0001	27	42.89	10.74

STORM WATER INLET COMPUTATIONS

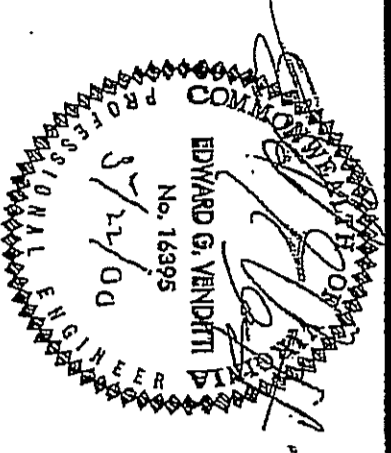
NUMBER	TYPE	LENGTH (ft)	STATION	DIAMETER (in)	C	CA	CA	TIME OF TRAVEL (min)	RAIN FALL (in)	RUNOFF COEFF.	INVERT ELEVATION (ft)	INVERT ELEVATION (ft)	LENGTH (ft)	DIAMETER (in)	CAPACITY (cfs)	VELOCITY (ft/sec)	FLOW TIME (min)
30	DRAINAGE	124	124	0.65	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40	DRAINAGE	4	124	0.65	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41	DRAINAGE	4	124	0.65	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
42	DRAINAGE	4	124	0.65	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
43	DRAINAGE	4	124	0.65	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44	DRAINAGE	4	124	0.65	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	DRAINAGE	4	124	0.65	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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MECHANICSBURG, PA • RALEIGH, NC • ROCKVILLE, MD • TAMPA, FL • WEST PALM BEACH, FL

Greenhome & O'Mara, Inc.
11211 WAILES MILL ROAD
FAIRFAX, VIRGINIA 22030
(703)385-9800

METRO PLACE AT DUNN LORING
PARCEL C-1 (PREVIOUSLY PARCEL C-1)

DESIGN: CEH
DRAWN: MP
CHECKED: MP
DATE: 6/99
SCALE: AS NOTED
SHEET: 14 OF 35
PROJ. NO.: 5169JADE
FILE NO.: PP-605



NO.	REVISION	DATE	BY



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PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

DATE: 6/99
SHEET: 14 OF 35
PROJ. NO.: 5169JADE
FILE NO.: PP-605

BMP Facility Design Calculations

Plan Name: METRO PLACE - PARCEL C-1
 Plan Number: 51691ADE
 Date: Feb. 29, 2000
 Engineer: CEH/MJP

I. Water Quality Narrative
 The facility will be privately owned and maintained.

II. Watershed Information

Part 1: List all of the Subareas and C-Factors used in the BMP Calculations

Subarea Designation and Description	C-Factor	Acres
A1 ON-SITE TREATED	(1) 0.84	(3) 1.65
A2 OFF-SITE TREATED	0.90	0.21
A3 ON-SITE NOT TREATED	0.63	1.00

NOTE: National formula "C" factors are taken from the general zoning values listed in Appendix 4-1 or 4-2 depending on the location of the BMP facility (Fairfax County Public Facilities Manual Chapter 46-19 or Prince William County Design and Construction Standards Manual Exhibit 1).

Part 2: Compute the Weighted Average "C" Factor for the Site

Area of the site	(a) 2.65	Acres
(b) Subarea Designation	(2)	(3)
A1 ON-SITE TREATED	X	1.65
A2 OFF-SITE TREATED	X	0.21
A3 ON-SITE NOT TREATED	X	1.00
(c) Weighted average "C" factor	(b) Total = 2.02	(b)/(a) = (c) 0.76

Part 3: Compute the Total Phosphorus Removal for the Site

Subarea BMP Designation	Removal Eff. (%)	Area Ratio	C-Factor	Product
A1 SAND FILTER	60	1.65	0.76	0.72
A2 SAND FILTER	60	0.21	0.76	0.16
A3 SAND FILTER	60	1.00	0.76	0.63
(a) Total				1.51

Part 4: Determine Compliance with Phosphorus Removal Requirements

- (a) Select Requirement (a) 40
- Water Supply Agency District (Cocoonan Watershed) = 50% (Fairfax County and Prince William County)
 - Chesapeake Bay Preservation Area (New Development) = 40% (Fairfax County)
 - Chesapeake Bay Preservation Area (Redevelopment) = 50% (Prince William County)
- (b) If Line 3(a) 48.26 > Line 4(a) 40, then Phosphorus removal requirement is satisfied.

WORKSHEET 1: COMPUTATIONS FOR SAND FILTER BMP

Part 1: Compute Post-Development Site Imperviousness Area (I_s):

Structure	56,375	ft ²
Driveway	1,488	ft ²
Paved Area	1,488	ft ²
Other	1,488	ft ²
Total	60,839	ft ²

Part 2: Compute Water Quality Volume to be Treated:
 WQV = 1.05 I_s = 1.05 x 60,839 = 63,881 ft³

WORKSHEET 2: IDENTIFY CRITICAL SITE PARAMETERS

Storm sewer invert at proposed connection point = 0.00 ft
 Length of outflow line (BMP) = 100 ft
 Slope of outflow line = 0.01 ft/ft
 Site Plan surface elevation at BMP location = 0.55 ft
 Inflow invert to BMP from drainage system plan = 0.00 ft
 Pile splitter weir or bypass pipe invert (usually set at maximum BMP ponding depth) = 0.00 ft
 BMP outflow possible by gravity = YES

WORKSHEET 3: COMPUTATIONS FOR DEBRIS SAND FILTER

Part 1: Compute Minimum Area of Filter (A_m) and Sediment Pool (A_s):

a) If 2h > 2.67 ft, use the formula:
 $A_m = A_s = 5451.4 (q + h)$
 $= 5451.4 (2.08 + 1)$
 $= 314.81$ ft²

b) If 2h < 2.67 ft, use the formula:
 $A_m = A_s = 181.6 (4.1h + 0.9)$
 $= 181.6 (4.1(2.08) + 0.9)$
 $= 314.81$ ft²

WORKSHEET 4: COMPUTATIONS FOR DEBRIS SAND FILTER

Part 1: Compute Storage Above Filter and Sediment Pool (V_s):

 $V_s = 2h(A_m + A_s) = 2(2.08)(314.81 + 314.81) = 6,192$ ft³

WORKSHEET 5: COMPUTE STORAGE DEFICIT (V_d)

V_d = V_s - V_q = 6,192 - 3,420 = 2,772 ft³

WORKSHEET 6: COMPUTE NET VOLUME TO BE STORED

V_{st} = WQV - V_s - V_d = 63,881 - 6,192 - 2,772 = 54,917 ft³

WORKSHEET 7: COMPUTE STORAGE IN FILTER VOIDS (V_f)

V_f = A_f x d_f x 0.4 = 395.94 x 1.5 x 0.4 = 237.56 ft³

WORKSHEET 8: COMPUTE FLOW THROUGH FILTER DURING FILLING PERIOD (V₁)

V₁ = 0.0833 x 395.94 x (1.5 + 3.91) / 1.5 = 119.00 ft³

WORKSHEET 9: COMPUTE NET VOLUME TO BE STORED

V_{st} = WQV - V_s - V_d - V_f - V₁ = 63,881 - 6,192 - 2,772 - 237.56 - 119.00 = 3,420 ft³

WORKSHEET 10: COMPUTE STORAGE ABOVE FILTER AND SEDIMENT POOL (V_s)

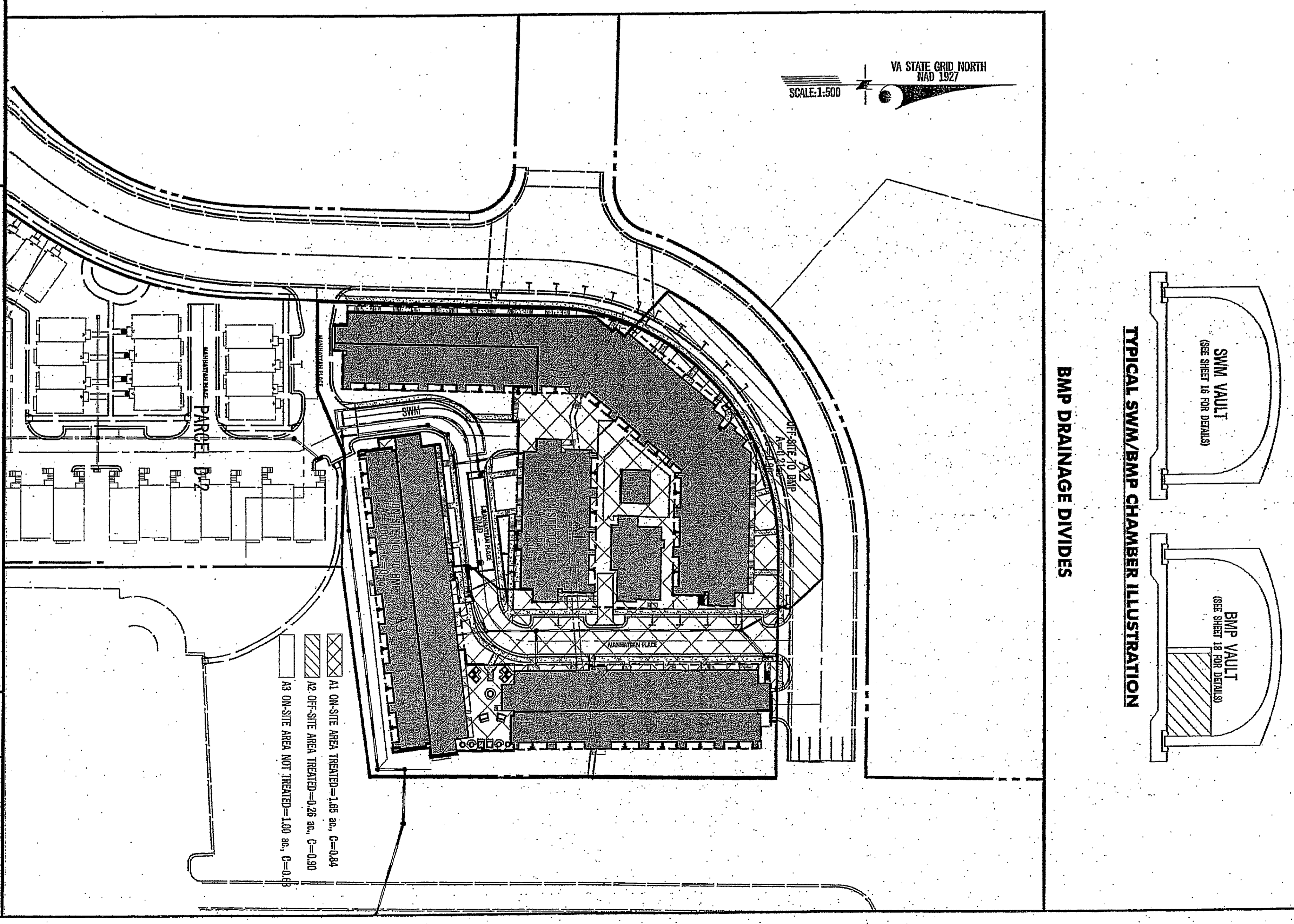
V_s = 2h(A_m + A_s) = 2(2.08)(314.81 + 314.81) = 6,192 ft³

WORKSHEET 11: COMPUTE STORAGE DEFICIT (V_d)

V_d = V_s - V_q = 6,192 - 3,420 = 2,772 ft³

WORKSHEET 12: COMPUTE NET VOLUME TO BE STORED

V_{st} = WQV - V_s - V_d - V_f - V₁ = 63,881 - 6,192 - 2,772 - 237.56 - 119.00 = 3,420 ft³



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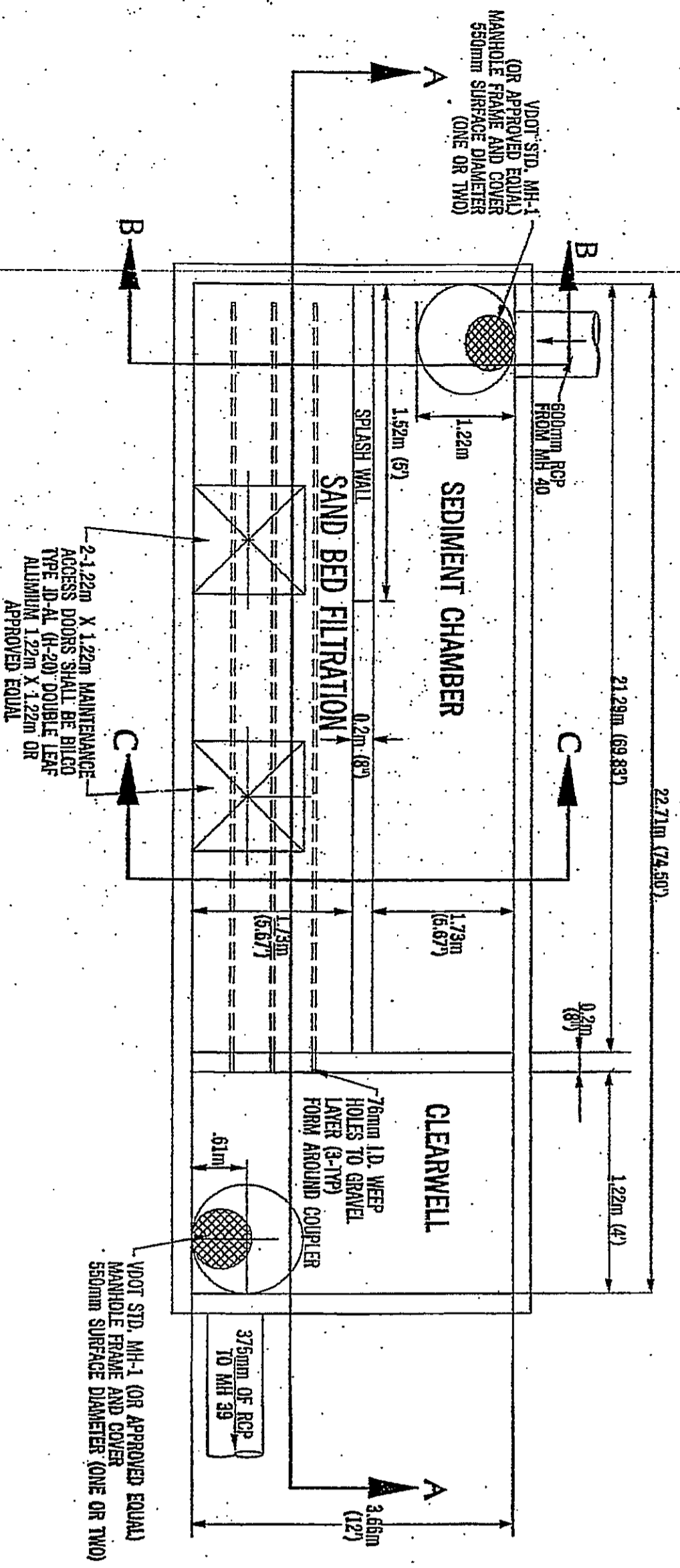
ANNAPOLIS, MD • ATLANTA, GA • FAIRFAX, VA • FREDERICKSBURG, VA • GREENSBET, MD
 MECHANICSBURG, PA • RALEIGH, NC • ROCKVILLE, MD • TAMPA, FL • WEST PALM BEACH, FL

ROUNDSVILLE DISTRICT
 FAIRFAX COUNTY, VIRGINIA

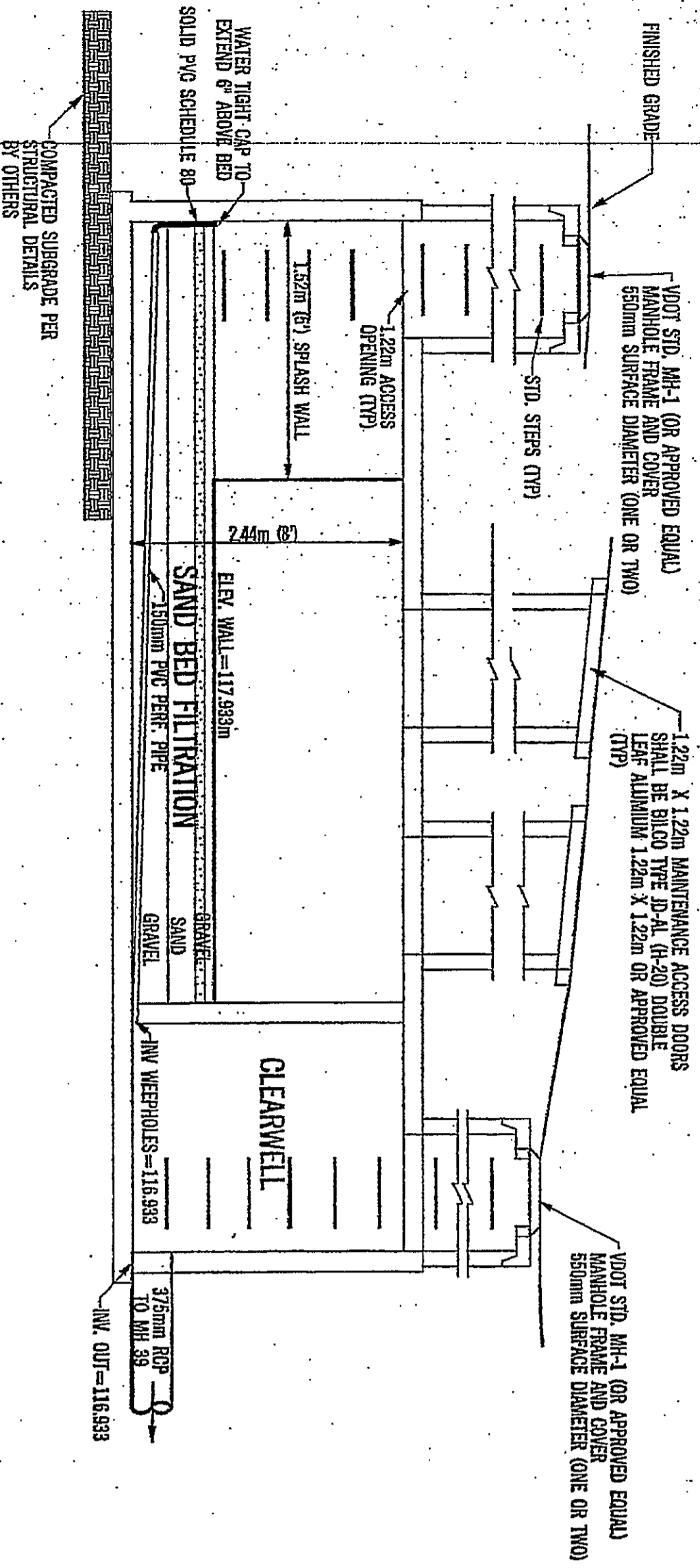
BEST MANAGEMENT PRACTICES CALCULATIONS
METRO PLACE AT DUNN LORING
 PARCEL C-1 (PREVIOUSLY PARCEL C-1)

DESIGN SCALE: 1:500
 CHECKED: MJP
 DRAWN: MJP
 DATE: 2/00
 SHEET: 17 OF 35
 PROJ. NO.: 51691ADE
 FILE NO.: PP-005

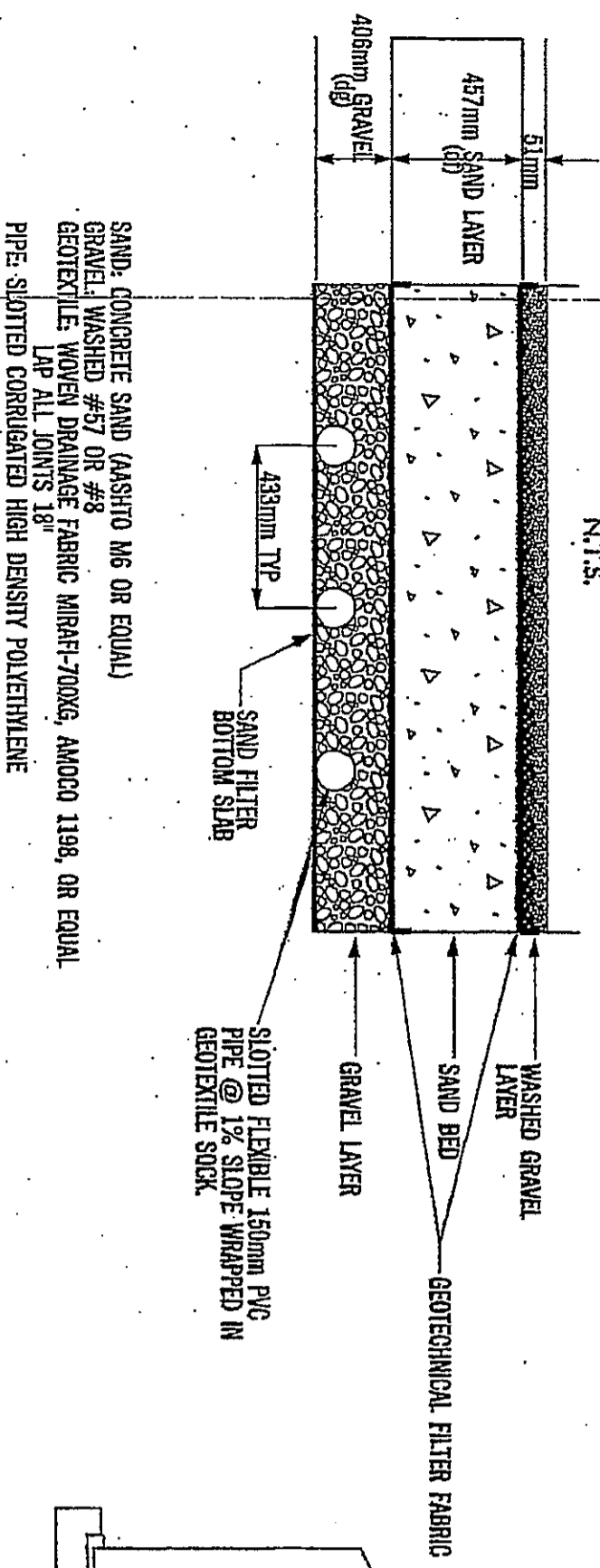
SAND FILTER DETAIL - PLAN VIEW
N.T.S.



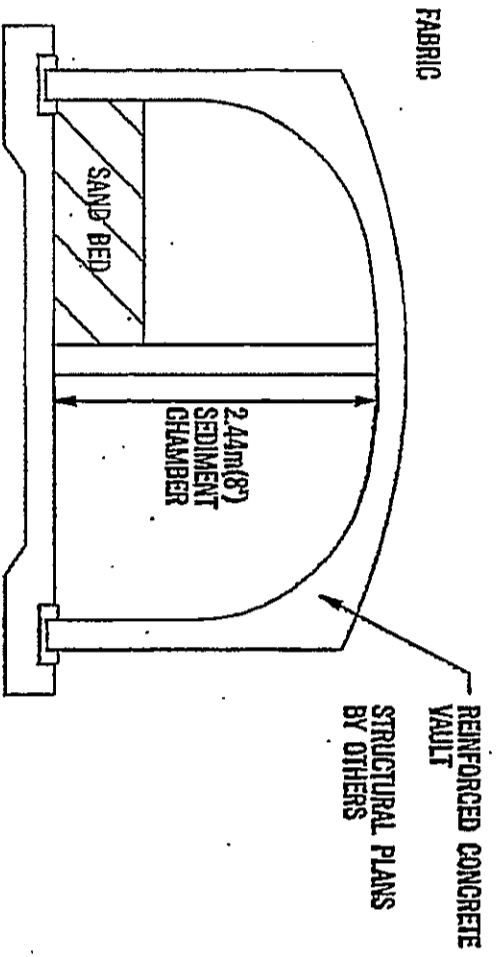
SAND FILTER DETAIL - SECTION A-A
N.T.S.



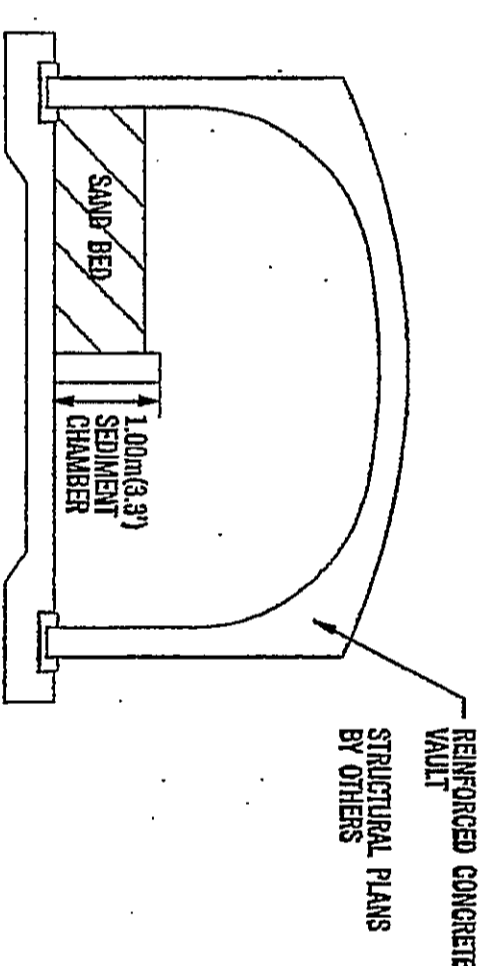
SAND BED FILTRATION PROFILE
N.T.S.



SECTION B-B
N.T.S.

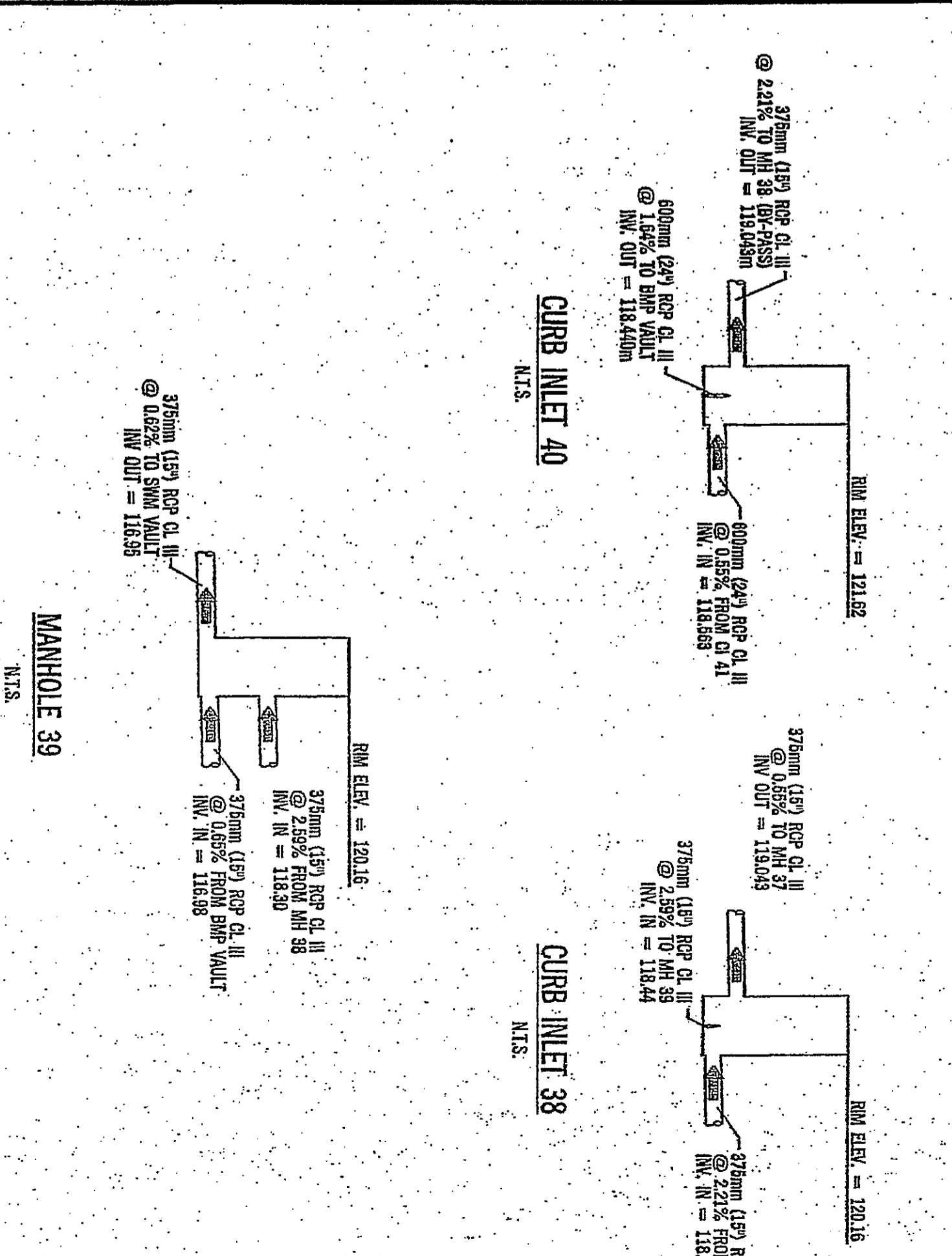


SECTION C-C
N.T.S.



- NOTE:**
1. VAULT SHALL BE WATER TIGHT, ALL INSIDE AND OUTSIDE SEAMS OR JOINTS SHALL BE SEALED WITH AN ELASTOMERIC SEALANT.
 2. SHIP DRAWINGS SIGNED BY A VA. PROFESSIONAL ENGINEER ARE REQUIRED.

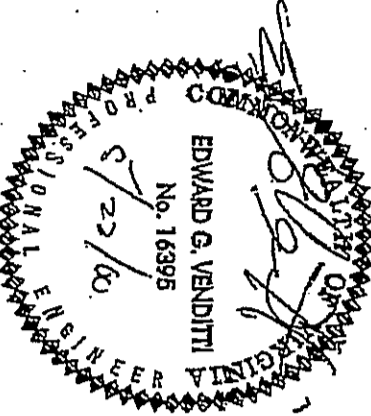
SCHEMATIC STORM STRUCTURE ELEVATION DETAILS
N.T.S.



SAND FILTER CONSTRUCTION SPECIFICATIONS
(O.C. and Delaware Filtrix)

- The site erosion and sediment control plan must be configured to permit construction of the filter system while maintaining erosion and sediment control.
- No runoff is to enter the sand filtration system prior to completion of all construction and site revegetation. Construction shall be planned and executed to prevent the filter system. Silt and construction runoff enter the filter system prior to site to vegetation all contaminated materials must be removed and replaced with new clean materials.
- The top of the sand filter must be completely level. No grade is allowable.
- Access manholes to the filtration system shall conform to Fairfax County standards.
- After completion of the filter shell but before placement of the filter layers, entrance to the structure shall be plugged and the shell completely filled with water to demonstrate water tightness. Should the structure fail this test, it shall be made watertight and successfully retested prior to placement of the filter layers.
- SAND FILTER MAINTENANCE SPECIFICATIONS**
(O.C. and Delaware Filtrix)
1. Sand filter(s) and appurtenances shall be maintained in good working condition acceptable to the County.
 2. The sand filter(s) and appurtenances shall be privately owned and maintained.
 3. The Landowner shall enter into an agreement with a responsible third party to clean the sand filter(s) in accordance with the following specifications:
 - a) The water level in the filter chamber shall be monitored by the owner on a quarterly basis and after every large storm for the first year after completion of construction. A log shall be maintained of the results indicating the rate of the deviating after each storm and the water depth for each observation. Once County staff indicates that satisfactory performance of the structure has been demonstrated, the monitoring schedule can be reduced to a semiannual basis.
 - b) The sand filter(s) shall be inspected semiannually by a representative of the owner and the contractor.
 - c) The sediment chamber must be jumped out after each semiannual inspection. If the chamber contains an oil stain, it should be removed by a firm specializing in oil recovery and recycling. The remaining material may then be removed by vacuum pump and disposed of in an appropriate facility. After each cleaning, refill the filter chamber to depth of the test with clean water to establish the water seal.
 - d) When the filter will no longer draw down within the required 40 hour period, the top layer of filter cloth and heaviest gravel must be removed and replaced with new materials conforming to the most current specifications. Any disjuncted or sediment contaminated sand shall also be removed and replaced with new material meeting the most current specifications.
 - e) Monitoring manholes, flumes, and other facilities shall be kept clean and ready for use.
 4. The Landowner shall maintain a copy of a valid current agreement on file with DEM at all times.
 5. The qualifications of the maintenance operator are subject to review and approval by DEM.
 6. Sand filter maintenance records shall be kept on-site and shall be made available to County officials upon request.

No.	REVISION	DATE	BY



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MECHANICSBURG, VA • RALEIGH, NC • ROCKVILLE, MD • TAMPA, FL • WEST PALM BEACH, FL

BMP/SAND FILTER DETAILS & SPECIFICATIONS

METRO PLACE AT DUNN LORING
PARCELL (PREVIOUSLY PARCELL C-1)

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

DESIGN SCALE AS NOTED

DATE 8/99

CHECKED MP

SHEET 51691ADCE

FILE NO. PP-805

18 OF 35

FIRE LANE DESIGNATIONS

UNDER SECTION 7313.0 OF THE FAIRFAX COUNTY FIRE PREVENTION CODE, THE FIRE PREVENTION DIVISION IS AUTHORIZED TO DESIGNATE FIRE LANES ON PUBLIC STREETS AND ON PRIVATE PROPERTY WHERE NECESSARY. THIS IS TO PREVENT PARKING IN FRONT OF OR ADJACENT TO FIRE HYDRANTS AND TO PROVIDE ACCESS FOR FIRE FIGHTING EQUIPMENT. MARKINGS AND SIGNS ARE TO BE PROVIDED BY OWNER OR AGENT OF THE PROPERTY INVOLVED. PARKING OR OTHERWISE OBSTRUCTING SUCH AREAS IS PROHIBITED.

IN ENFORCEMENT OF THIS SECTION, POLICY WILL BE AS FOLLOWS:

- I. HYDRANTS
 - A. PARKING IS PROHIBITED WITHIN 4.6 M OF A FIRE HYDRANT LOCATED ALONG THE CURB LINE OR EDGE OF ANY PUBLIC OR PRIVATE ROADWAY. NO SPECIAL CURB MARKING IS REQUIRED FOR ENFORCEMENT.
 - B. FIRE HYDRANTS INSTALLED IN PARKING LOTS ARE TO BE LOCATED WITHIN A FIRE LANE. CURB AND/OR ROADWAY MARKING IS REQUIRED IN ACCORDANCE WITH SECTIONS III AND IV BELOW.
- II. FIRE LANES
 - A. FIRE LANES SHALL BE INSTALLED WHERE REQUIRED BY THE OFFICE OF THE FIRE MARSHAL. FIRE LANES SHALL BE MARKED WITH BOTH SIGN AND CURB DELINEATION PER SECTION II AND IV BELOW. PARKING AND TRAFFIC FLOW PATTERNS SHALL BE REQUIRED AS FOLLOWS:

STANDARD REQUIREMENTS

STREET WIDTH CURB TO CURB	ONE-WAY TRAFFIC	TWO-WAY TRAFFIC
7.2m to 8.7m	PARALLEL PARKING ON ONE SIDE AS DECIDED BY THE FIRE MARSHAL	NO PARALLEL PARKING ON EITHER SIDE OF STREET
9m to 10.5m	PARALLEL PARKING ALLOWED ON BOTH SIDES OF THE STREET	PARALLEL PARKING ON ONE SIDE AS DECIDED BY THE FIRE MARSHAL
10.5m or greater	PARALLEL PARKING ALLOWED ON BOTH SIDES OF THE STREET	PARALLEL PARKING ALLOWED ON BOTH SIDES OF THE STREET

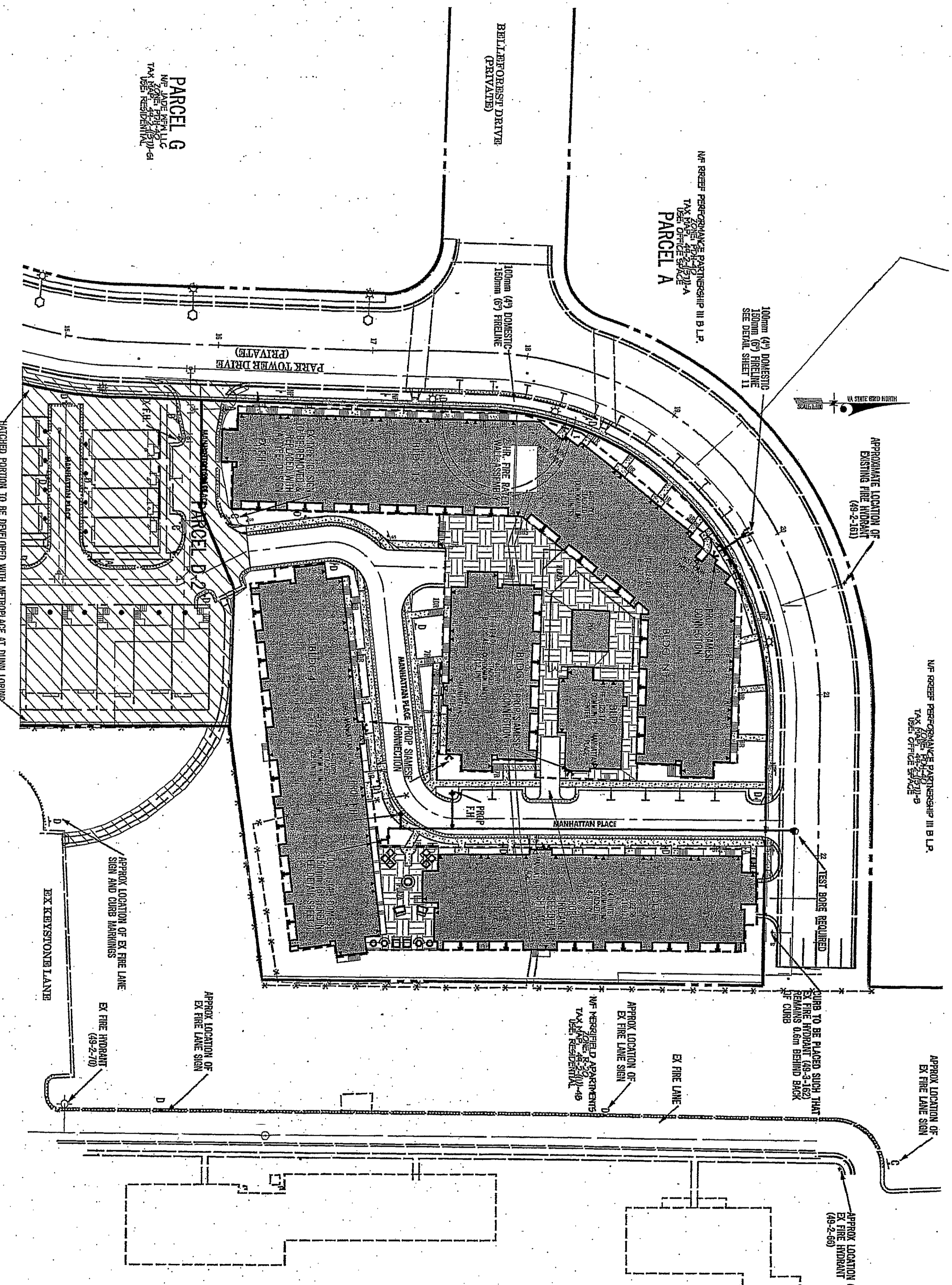
III. SIGN SPECIFICATIONS

- A. METAL CONSTRUCTION, 12" X 18"
- B. RED LETTERS ON REFLECTIVE WHITE BACKGROUND WITH 1/2" RED TRIM STRIP AROUND ENTIRE OUTER EDGE OF SIGN.
- C. LETTERING ON SIGN TO BE: "NO PARKING OR STANDING FIRE LANE"
- D. LETTERING SIZE TO BE AS FOLLOWS: "NO PARKING" AND "STANDING" 50mm, OR " " IS 25mm, "FIRE LANE" IS 50mm AND THE ARROW WITH THE SOLID SHAFT IS 25mm X 150mm WITH THE SOLID HEAD 38mm WIDE AND 50mm DEEP.
- E. SIGNS ARE TO BE MOUNTED 2.1m FROM THE GROUND TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE OFFICE OF THE FIRE MARSHAL.
- F. POSTS FOR SIGNS, WHEN REQUIRED, SHALL BE METAL AND SECURELY MOUNTED, UNLESS WRITTEN PERMISSION FOR ALTERNATIVES IS OBTAINED PRIOR TO INSTALLATION FROM THE OFFICE OF THE FIRE MARSHAL. SIGNS SHOULD BE SPACED AS ON APPROVED PLANS. IN LONG STRETCHES, THE MAXIMUM DISTANCE BETWEEN SIGNS IS 21m.
- G. OTHER SPECIAL SIGNS AS APPROVED BY THE OFFICE OF THE FIRE MARSHAL.

IV. CURB DESIGNATION

- A. ALL CURBS OR PAVED SPACES DESIGNATED AS FIRE LANES SHALL BE INDICATED BY YELLOW PAINT AS APPROVED BY THE OFFICE OF THE FIRE MARSHAL. IN AREAS WITHOUT CURBING, A 150mm WIDE YELLOW STRIKE SHALL BE APPLIED TO THE EDGE OF THE PAVEMENT. PAINT SHALL BE HIGHWAY TRAFFIC GRADE.

FIRE LANE NOTE:
 FIRE MARSHAL FIELD INSPECTION NECESSARY FOR FINAL APPROVAL OF FIRE LANES. FIRE LANES MUST HAVE FINAL APPROVAL PRIOR TO REQUEST FOR OCCUPANCY.
 OWNER SHALL NOTIFY FAIRFAX COUNTY FIRE PREVENTION DIVISION 30 DAYS PRIOR TO INSTALLATION. 400 CHAM BRIDGE ROAD, MANASSAS, VA 20108. 571-251-3300. 3RD FLOOR. FIRE LANES HAVE BEEN INSTALLED.



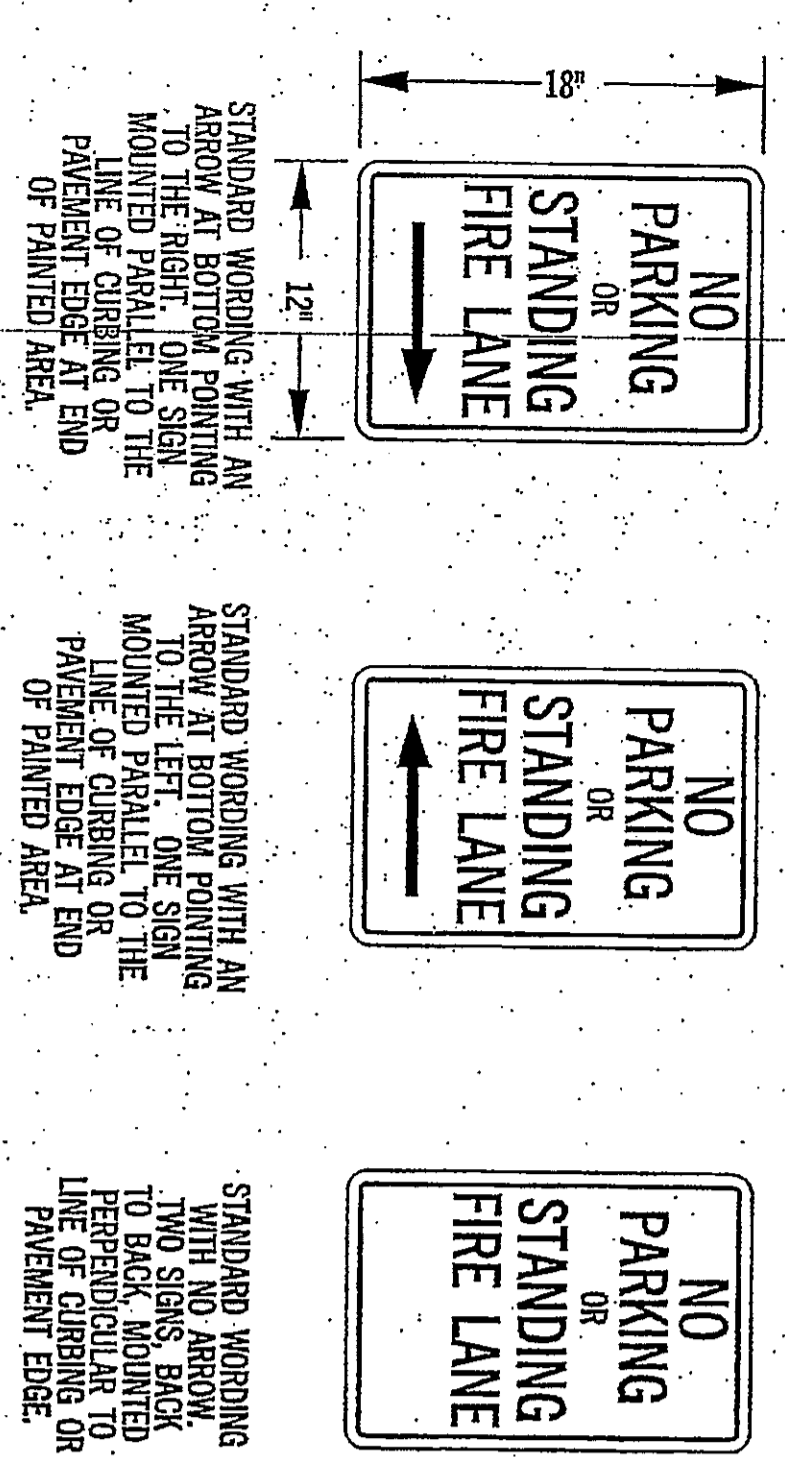
BUILDING INFORMATION

BUILDING	1S	1N	2	3	4	5
TYPE OF CONSTRUCTION	SA	SA	SA	SA	SA	SA
USE GROUP	R2	R2	R2	R2	R2	R2
ACTUAL BUILDING HEIGHT	57.4'	54.3'	55.4'	53.4'	55.4'	55.4'
BUILDING FOOTPRINT AREA	17,471 sq ft	16,549 sq ft	16,459 sq ft	16,201 sq ft	16,934 sq ft	16,710 sq ft
BUILDING GROSS FLOOR AREA	13,926 sq ft	10,102 sq ft	6,225 sq ft	12,934 sq ft	13,934 sq ft	13,934 sq ft
NET IIR SEPARATION UNITS	52,494 sq ft	40,908 sq ft	24,900 sq ft	48,128 sq ft	51,736 sq ft	51,736 sq ft
UNITS	12	12	12	24	28	N/A
BASE FLOOR	124.01	124.01	124.01	122.53	122.53	123.17
BASE	105.5	105.5	105.5	118.87	118.87	120.48
SPRINKLED	YES	YES	YES	YES	YES	YES

FIRE HYDRANT INFORMATION

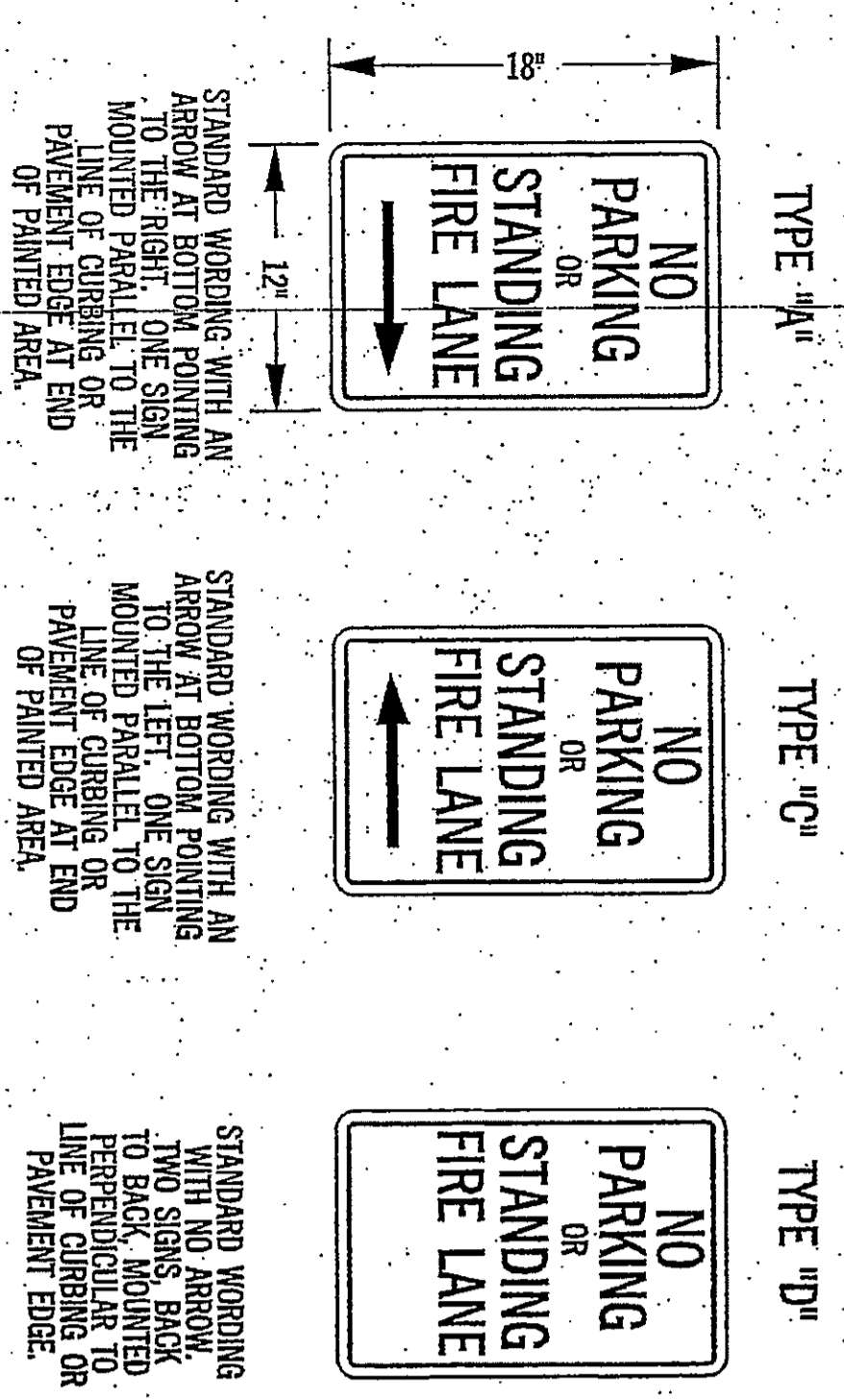
HYDRANT NUMBER	48-2-16	48-2-17	48-2-18	48-2-19	48-2-20
TYPE	1	1	1	1	1
SIZE	4.5"	4.5"	4.5"	4.5"	4.5"
RESIDUAL PRESSURE	48 PSI	48 PSI	48 PSI	48 PSI	48 PSI
FLOW	1,100 GPM	1,100 GPM	1,100 GPM	1,100 GPM	1,100 GPM
FLOW @ 20'	1,100 GPM	1,100 GPM	1,100 GPM	1,100 GPM	1,100 GPM

INFORMATION IS AS OBTAINED FROM THE CITY OF FALLS CHURCH WATER AUTHORITY



BUILDING	1	2	3	4	5
TYPE OF CONSTRUCTION	1S	1B	5A	5A	5B
USE GROUP	R2	R2	R2	R2	R2
NO. STORIES	4	4	4	4	4
ACTUAL BUILDING HEIGHT	17.4m	16.6m	16.6m	16.6m	16.6m
BUILDING FOOTPRINT AREA	13602 SF	10162 SF	6228 SF	13934 SF	5133 SF
BUILDING GROSS FLOOR AREA	52208 SF	9444 SF	578 SF	1201 SF	1202 SF
BUILDING SEPARATION WALLS	4983 m	2721 m	4128 SF	5128 SF	2173 SF
INLET SEPARATION WALLS	82	13	24	28	N/A
FIRST FLOOR	124.01	124.01	124.01	122.53	123.47
GARAGE	129.45	129.48	129.45	118.87	129.48
SPRINKLERED	1S3	1S3	1S3	1S3	1S3

FIRE HYDRANT INFORMATION	
HYDRANT NUMBER	48-2-61
DATE	JUNE 1997
STREET ADDRESS	1100m (67) FREEDLE
STREET PRESSURE	88 PSI
HYDRANT ELEVATION	4.88m
HYDRANT TYPE	1100 GAL MIN 150 PSI
HYDRANT SIZE	4 IN
HYDRANT MATERIAL	CAST IRON
HYDRANT COLOR	RED
HYDRANT MARKING	1100 GAL MIN 150 PSI
HYDRANT LOCATION	1100m (67) FREEDLE
HYDRANT OWNER	CITY OF FALLS CHURCH WATER AUTHORITY



FIRE LANE SIGN DETAILS
NOT TO SCALE

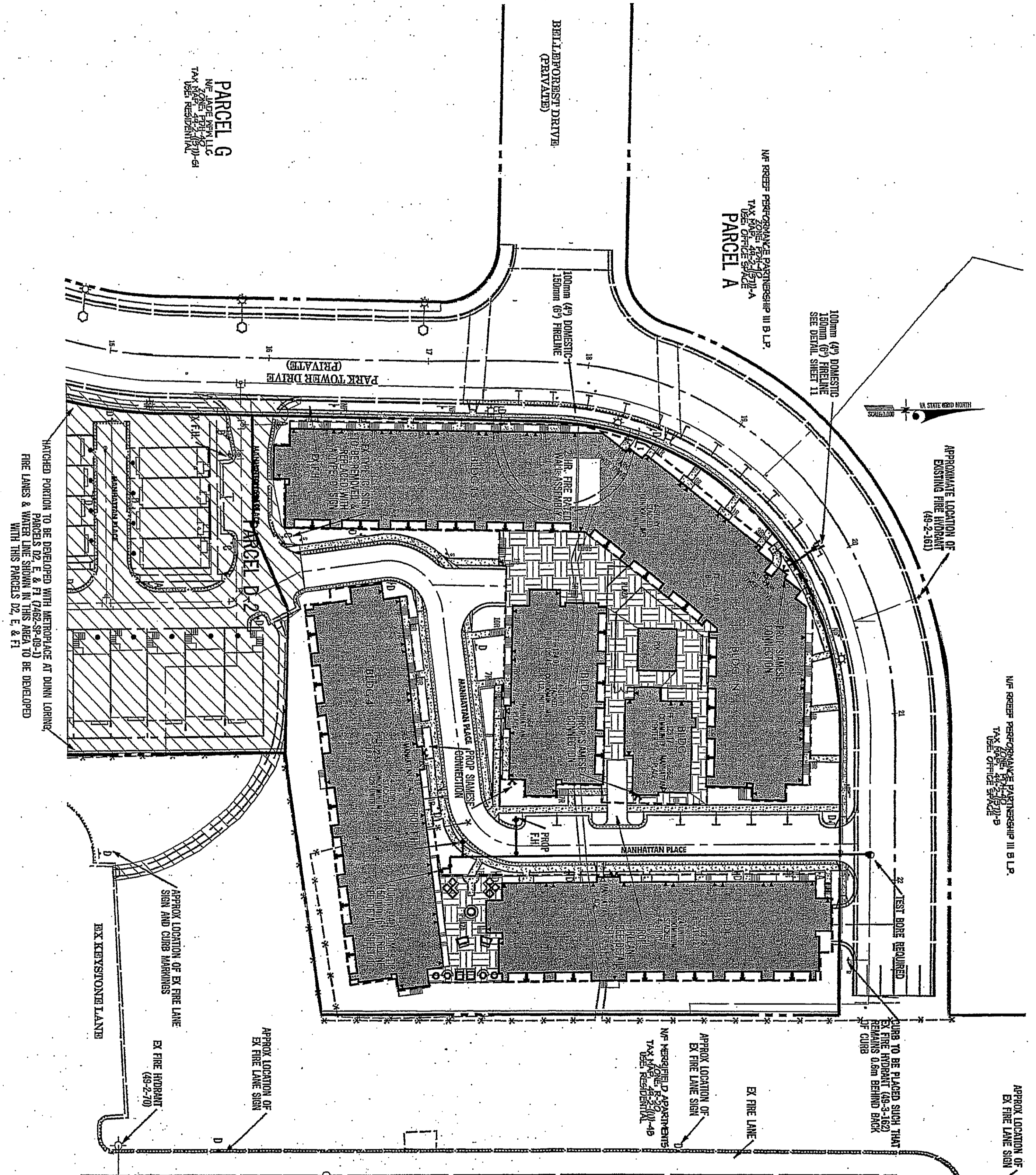
STANDARD WORDING WITH AN ARROW AT BOTTOM POINTING TO THE RIGHT. ONE SIGN MOUNTED PARALLEL TO THE LINE OF CURBING OR PAVEMENT EDGE AT END OF PAINTED AREA.

STANDARD WORDING WITH AN ARROW AT BOTTOM POINTING TO THE LEFT. ONE SIGN MOUNTED PARALLEL TO THE LINE OF CURBING OR PAVEMENT EDGE AT END OF PAINTED AREA.

STANDARD WORDING WITH NO ARROW. TWO SIGNS BACK TO BACK, MOUNTED PARALLEL TO THE LINE OF CURBING OR PAVEMENT EDGE.

KEY:

- PAINTED CURB (YELLOW)
- A TYPE 'A' SIGN (DIRECTIONAL ARROW POINTING TO THE RIGHT)
- C TYPE 'C' SIGN (DIRECTIONAL ARROW POINTING TO THE LEFT)
- D TYPE 'D' SIGN (DOUBLE FACE SIGN-REQUIRED BETWEEN 'A' & 'C')



FIRE LANE DESIGNATIONS

UNDER SECTION 831.9 OF THE FAIRFAX COUNTY FIRE PREVENTION CODE THE FIRE PREVENTION DIVISION IS AUTHORIZED TO DESIGNATE FIRE LINES ON PUBLIC STREETS AND ON PRIVATE PROPERTY WHERE NECESSARY. THIS IS TO PREVENT PARKING IN FRONT OF OR CLOSEST TO FIRE HYDRANTS AND TO PROVIDE ACCESS FOR FIRE FIGHTING EQUIPMENT. MARKINGS AND SIGNS ARE TO BE PROVIDED BY OWNER OR AGENT OF THE PROPERTY INVOLVED. PARKING OR OTHERWISE OBSTRUCTING SUCH AREAS IS PROHIBITED.

IN ENFORCEMENT OF THIS SECTION, POLICY WILL BE AS FOLLOWS:

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- B. FIRE HYDRANTS INSTALLED IN PARKING LOTS ARE TO BE LOCATED WITHIN A FIRE LANE. CURB AND/OR ROADWAY MARKING IS REQUIRED IN ACCORDANCE WITH SECTIONS III AND IV BELOW.

II. FIRE LANES

A. FIRE LANES SHALL BE INSTALLED WHERE REQUIRED BY THE OFFICE OF THE FIRE MARSHAL. FIRE LANES SHALL BE MARKED WITH BOTH SIGN AND CURB DELINEATION PER SECTION III AND IV BELOW. PARKING AND TRAFFIC FLOW PATTERNS SHALL BE REQUIRED AS FOLLOWS:

STREET WIDTH	ONE-WAY TRAFFIC	TWO-WAY TRAFFIC
CURB TO CURB	NO PARALLEL PARKING ON ONE SIDE AS DECIDED BY THE FIRE MARSHAL	NO PARALLEL PARKING ON EITHER SIDE OF STREET
7.2m to 8.2m	PARALLEL PARKING ON ONE SIDE OF THE STREET	PARALLEL PARKING ON ONE SIDE OF THE STREET
9m to 10.2m	PARALLEL PARKING ALLOWED ON BOTH SIDES OF THE STREET	PARALLEL PARKING ALLOWED ON BOTH SIDES OF THE STREET
10.2m or greater	PARALLEL PARKING ALLOWED ON BOTH SIDES OF THE STREET	PARALLEL PARKING ALLOWED ON BOTH SIDES OF THE STREET

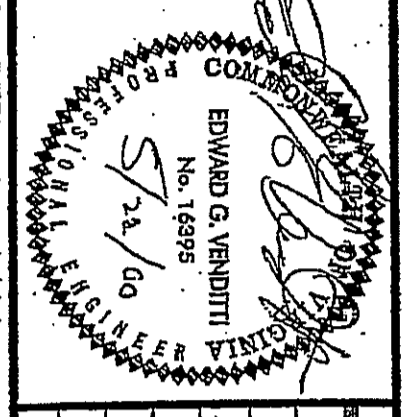
STANDARD REQUIREMENTS

- A. METAL CONSTRUCTION 12" X 18"
- B. RED LETTERS ON REFLECTIVE WHITE BACKGROUND WITH 4% RED TINT STRIP AROUND ENTIRE OUTER EDGE OF SIGN.
- C. LETTERING ON SIGN TO BE: "NO PARKING OR STANDING FIRE LANE"
- D. LETTERING SIZE TO BE AS FOLLOWS: "NO PARKING" AND "STANDING" 30mm, OR " " IS 25mm, "FIRE LANE" IS 38mm AND THE ARROW WITH THE SOLID SHAFT IS 25mm X 150mm WITH THE SOLID HEAD 38mm WIDE AND 50mm DEEP.
- E. SIGNS ARE TO BE MOUNTED 21m FROM THE GROUND TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE OFFICE OF THE FIRE MARSHAL.
- F. POSTS FOR SIGNS, WHEN REQUIRED, SHALL BE METAL AND SECURELY ANCHORED, UNLESS WRITTEN PERMISSION FOR ALTERNATIVES IS OBTAINED PRIOR TO INSTALLATION FROM THE OFFICE OF THE FIRE MARSHAL. SIGNS SHOULD BE SPACED AS ON APPROVED PLANS. IN LONG STRETCHES, THE MAXIMUM DISTANCE BETWEEN SIGNS IS 21m.
- G. OTHER SPECIAL SIGNS AS APPROVED BY THE OFFICE OF THE FIRE MARSHAL.

III. CURB DESIGNATION

A. ALL CURBS OR PAVED SPACES DESIGNATED AS FIRE LANES SHALL BE MARKED BY YELLOW PAINT AS APPROVED BY THE OFFICE OF THE FIRE MARSHAL. IN AREAS WITHOUT CURBING, A 150mm WIDE YELLOW STRIPE SHALL BE APPLIED TO THE EDGE OF THE PAVEMENT. PAINT SHALL BE HIGHWAY TRAFFIC GRADE.

FIRE LANE NOTE:
THE FIRE MARSHAL FIELD INSPECTOR HAS REVIEWED THE FIRE LANE MARKING AND SIGNS AND APPROVAL FROM THE FIRE MARSHAL IS REQUIRED FOR THE COVENANT. OWNER SHALL NOTIFY FAIRFAX COUNTY FIRE PREVENTION DIVISION, FIRE LANE SECTION, 4400 GAIN BRIDGE ROAD, MASSIE BUILDING, 2ND FLOOR, THE LANE HAS BEEN INSTALLED.



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(703) 385-9800

METRO PLACE AT DUNN LORING
PARCEL C-1 (PREVIOUSLY PARCEL C-1)

DESIGN	SLM	SCALE	1:500
DRAWN	EGV	SHEET	20 OF 35
CHECKED	EGV	SHEET	PP-805
DATE	7/99	PROJ. NO.	5169/AD
		FILE NO.	

**GEOTECHNICAL REQUIREMENTS
METROPLACE AT DUNN LORING
PARCELS C1, D2 AND E
PSI Project No. 463-95057**

SUBSOIL CONDITIONS

Approximately one inch to six inches of topsoil was encountered at fourteen (14) test boring locations, and 2 feet to 11.5 feet of man-made fill was encountered at three (3) of the twenty-seven (27) test boring locations (test borings TB-1B, TB-4 and B-5). The topsoil and/or the man-made fill are underlain by two (2) virgin soil strata, which are essentially the result of the in-place weathering of the underlying parent rock (metaceous schist). The man-made fill and the two virgin soil strata are briefly described hereunder:

STRATUM I - MAN-MADE FILL

As stated above, approximately 2 feet to 11.5 feet of man-made fill was encountered at test borings TB-1B, TB-4 and B-5. The fill generally consists of brown, red brown and yellow brown, silty clay and medium to highly plastic silty clay with trace of sand, organics and gravel, and medium to highly plastic clayey gravel (USCS Designations: ML, CL, CH, GC). Varying percentages of mica was encountered within the fill. The upper 4 inches to 5 inches of the fill at test borings TB-1B and TB-4 were classified as topsoil. The Standard Penetration Test (SPT) "N" values within the fill were significantly from 4 blows per foot (bpf) to 19 bpf. Because of the nature of the encountered fill and the significant variance in its strength characteristics, the fill was classified as uncontrolled.

STRATUM II

Stratum II was encountered at twenty-five (25) of the twenty-seven (27) test boring locations underlying the man-made fill or the topsoil, and extended to depths ranging from 2 feet to 13.5 feet below the existing surface grades. This stratum generally consists of brown, yellow brown and red brown, micaceous silty, silty clay and medium to high plasticity silty clay with trace to little sand, and micaceous sandy silt (USCS Designations: ML, CL, and CH). Traces of organics were observed at localized areas within this stratum.

The stratum generally was medium stiff to very stiff with the SPT "N" values ranging from 5 bpf to 27 bpf. However, localized soft areas were encountered in the upper layers of this stratum with "N" values ranging from 3 bpf and 4 bpf. In addition, an "N" value of 50 blows for 2 inches of penetration was recorded in test boring TB-1, possibly due to encountering a boulder. Refusal was encountered at 3.2 feet below the existing surface grade at test boring TB-1 and it was offset approximately 23 feet to the east of its original location and retested.

STRATUM III - SAPROLITE OR SCHIST

Stratum III was encountered at all twenty-seven (27) test boring locations underlying Stratum I or II, and extended to the depths explored. This stratum generally consists of brown, yellow brown, red brown, and light gray micaceous silt with little sand, sandy silt and silty sand (USCS Designations: ML, SM), with varying percentages of quartz fragments at different elevations. The stratum generally was stiff/loose to hard/very dense with the SPT "N" values ranging from 9 bpf to 73 bpf. However, very dense layers with "N" values of 50 blows for 4 inches of penetration and 2 inches of penetration were recorded in test boring B-11.

GROUNDWATER CONDITIONS

All the test borings were found dry during, at completion and 24 hours after completion of the drilling operations.

SITE PREPARATION AND EARTHWORK (BUILDING PADS, STREETS AND PARKING AREAS)

The following requirements shall govern the earthwork that may be involved to attain the planned grades within the footprint areas of building pads, streets and parking areas.

- Areas to support the building pads and pavements shall be stripped of trees and vegetation, topsoil and organics. The depth of this excavation is expected to be approximately 25 mm (1 inch) to 150 mm (6 inches), and may differ at the other unexplored areas on the site.
- Additional undercut shall be anticipated in areas where or moderately to highly plastic soils are encountered near the existing surface grades; to remove tree mats of mature trees or to remove existing fills.
- Following the stripping and excavation of all unsuitable materials, grading operations may proceed. Prior to fill placement, the site shall be observed by a geotechnical engineer for proper stripping and preparation for receiving the fill.

The subgrades exposed after stripping shall be protected in the presence of the geotechnical engineer or his representative with at least two (2) passes of a loaded dump truck with a minimum axle load of 10 tons to identify any soft/loose pockets. Any observed loose/soft pockets shall be excavated to suitable-bearing subgrade and replaced with fill satisfying the controlled fill requirements detailed later.

The excavations for underground garages shall be made with adequate side slopes to allow for their stability on short-term basis. However, if soft and saturated soils are encountered, adequate protective measures such as bracing or shoring shall be taken to safeguard the work crew. Additionally, we anticipate that sheeting and shoring will be required for the areas closer to Park Tower Drive along the northwestern garage wall of Building No. 1.

Fill placement within the building pads shall extend laterally beyond the building limits a minimum distance of 5 feet or depth of fill, whichever is greater. The building pads shall be prepared to an elevation 200 mm (8 inches) below the floor slab-on-grade. The footings shall be excavated after the building areas have been properly prepared.

Material satisfactory for controlled fill shall include clean soil or bankrun sand and gravel (GW, GM, and SM), but exclude highly plastic clays (MH, CH).

CL and ML materials may be used subject to the following limitations:

Maximum Dry Density (PCF)	≥105
Liquid Limit (%)	≤40
Plasticity Index	≤20

GC and SC material is suitable for use in engineered fill provided that the liquid limit and plasticity index of the finer fraction of the material satisfy the above requirements. The fill materials shall be free from topsoil, organics and rock fragments having a major dimension greater than 3 inches.

The on-site soils of Strata I and II, except layers of moderately to highly plastic soils (LL > 40 and PI > 20), are suitable for use in controlled structural fills, subject to moisture adjustments. The material to be backfilled against the below-grade walls shall, however, be limited to the saprolite soils of Stratum II classified as ML, SM or more granular with LL ≤ 40 and PI ≤ 15.

Fill placement shall be in maximum 200-mm (8-inch) thick, loose, horizontal lifts compacted uniformly with the proper equipment.

Fill required to support the footings, slab-on-grade and pavement areas shall be compacted to at least ninety-five percent (95%) of the maximum dry density as established by ASTM D-698 test method.

The VTM-1 method shall govern the compaction for the streets, roadways and other paved areas to be handed over to VDOT for future maintenance.

The requirements for the degree of compaction shall conform to the current VDOT Specifications and the current Fairfax County Public Facilities Manual, as indicated below:

Aggregate Subbase/Base Course	90 to 100 percent*
Subgrade	100 percent
The entire thickness of fill up to 6 inches below the subgrade elevations	95 percent

*As per Section 309.05 of the current VDOT Road and Bridge Specifications.
The moisture content of the subgrade soils shall be maintained within plus or minus two (±2) percentage points of the optimum moisture content.

The earthwork shall be performed under the supervision of and to the satisfaction of a geotechnical engineer.

FOUNDATIONS

SHALLOW FOUNDATIONS

Shallow foundations (continuous and spread footings) are considered adequate for the support of the proposed building. The footings shall be supported on the undisturbed virgin soils of Strata I and/or II, or on controlled structural fill. When the embedment depth of footing subgrade is less than 4 feet below the adjacent exterior finished grade, the footings can not be supported on a moderately to highly plastic soils (LL > 40 and PI > 20). In such a case, these soils have to be excavated to a minimum of 4 feet below the lowest adjacent exterior finished grade and replaced with approved controlled fill. Alternatively, the footings can be lowered to a minimum of four (4) feet below the lowest adjacent exterior finished grade and supported on these soils.

Continuous footings that are partially located in fill and partially in undisturbed soil formation, shall be designed as grade beams, 5 feet on either side of the transition. The column footings, in similar circumstances, shall be extended into the underlying virgin soil.

The footings may be sized and designed on the basis of allowable bearing pressures indicated below, subject to the observations and approval of soil conditions at the bottom of footing excavations for suitable soil bearing by a geotechnical engineer.

SOIL CONDITIONS AT SUBGRADE	ALLOWABLE BEARING PRESSURE (psf)	MINIMUM WIDTH OF FOOTINGS (INCHES)
Controlled Structural Fill		
Isolated Footings	2,500	30
Continuous Footings	2,500	16
Virgin Undisturbed Soils (Strata I and II)	3,000	30
Isolated Footings	3,000	16
Continuous Footings	3,000	16

DEPTH OF FOOTINGS

The embedment depth of all footings shall be governed by the minimum depth requirements for protection against frost heave in accordance with the BOCA National Building Code. The depth of frost in Northern Virginia is approximately 24 to 30 inches. The footings shall be embedded at least 30 inches below the lowest adjacent exterior finished grade.

DESIGN PARAMETERS FOR BELOW-GRADE WALLS AND RETAINING WALLS

Several retaining walls are proposed on Parcel C at the following locations:

- Along the western half of the south side of Building 4
- At the northeastern corner of Building No. 4
- At the southeastern corner of Building No. 3
- Between the northeastern and southeastern corners of Buildings No. 3 and No. 4, respectively.

In addition, the perimeter walls for the buildings/underground parking structures shall be designed as retaining walls. At this time, we do not have information regarding the type of retaining walls. The maximum toe pressure for below-grade walls shall not exceed the maximum allowable pressure for virgin soils or controlled structural fill presented in "Shallow Foundations". The walls shall be backfilled with the soils of Stratum II classified as ML, SM or more granular soils with maximum liquid limit and plasticity index of 40 and 15, respectively. Clayey soils such as CL, CH, GC and SC shall not be used to backfill below-grade walls and retaining walls.

The walls shall be designed by the project structural engineer based on the parameters presented in the table below:

PROPERTY	SANDY SILT (ML)	SILT SAND OR SAND (SM, SW, SP)	STIFF CLAY (CL, CH)
Internal Friction Angle (degrees)	28	32	38
Moist Unit Weight (pcf)	125	130	140
Equivalent Fluid Pressure Active Condition (pcf)	60	45	35

The above design requirements assume that sufficient drainage measures are incorporated into the design for retaining walls as well as below-grade walls. Drainage measures for the below-grade walls are presented in "Damp Proofing/Water Proofing". Detailed drainage measures for the retaining walls can be provided upon request once information is available regarding their type and design details.

Surcharge loads from the proposed buildings, parking areas and construction equipment shall be taken into account when designing the walls.

The wall backfill that will support the pavement areas shall be compacted to at least ninety-five percent (95%) of the maximum dry density as established by ASTM D-698 test method. The wall backfill in non-structural areas shall be compacted to at least 85 percent (85%) of the maximum dry density. The material shall be placed in maximum 8-inch thick, loose, horizontal lifts compacted uniformly with small vibratory rollers. Heavy equipment shall not be allowed to operate in the vicinity of the walls (minimum 5 feet lateral distance from the walls) to avoid causing any damage to the walls.

The concrete to be used in the below-grade walls will have a minimum 28-day strength of 3,000 pounds per square inch (psi), or as designed by the project structural engineer. Four (4) cylinders shall be fabricated for each concrete pour to monitor the quality of concrete for the walls. More detailed requirements regarding the construction of the retaining walls can be provided, if necessary, once detailed information regarding their design is available.

The design of the below-grade and retaining walls satisfying the above requirements shall be submitted to the Fairfax County Planning Division for their approval, prior to actual construction.

DESIGN OF UNDERGROUND STORMWATER MANAGEMENT VAULT

The structural design of the underground stormwater management vaults (box culverts) shall be provided by a specialty contractor in accordance with ASHTO and ASTM standards. The design will be based on HS-20 and A1-T1 (ASHTO 3.7.6). The design of the vaults shall be verified by the designer based upon the existing local conditions of the site and the soil parameters provided above.

The maximum pressure below the underground vault shall not exceed the maximum allowable pressure for virgin soils or controlled structural fill presented in "Shallow Foundations". The vaults shall be backfilled with the soils of Stratum II classified as ML and SM with maximum liquid limit and plasticity index of 40 and 15, respectively.

DAMP PROOFING/WATER PROOFING

The following requirements shall govern the effective damp proofing/water proofing of the below-grade structures (underground garages) and installation of perimeter drainage. The drains shall discharge into a sump at an appropriate location or be tied into the stormwater drainage system. The location and outlets from the perimeter drains shall be shown on the plan.

Exterior faces of all below-grade walls located in A and/or B soils shall be coated with a heavy coating of bituminous material and covered with 6-mil thick plastic sheet. Alternatively, the exterior face(s) of the wall shall be treated with DECO-20-a penetrating concrete sealer, a product of Dean Enterprises, Inc. and approved by Fairfax County as a water proofing agent or an equivalent product.

Bleeder pipes (50 mm (2 inches) in diameter) shall be installed in the upper half of the exterior wall footings.

Approximately 450 mm (18 inches) of VDOT No. 57 stone shall be placed along the outer perimeter of the footings and at the bleeder pipes to provide lateral drainage to the inlet point of bleeder pipes. The gravel filter shall be completely wrapped with a non-woven geotextile fabric (GOS #70 Stone, Gradient Ratio 2 or less), to minimize the potential for migration of fines into the filter.

The subgrade of the floor slab shall be sloped to uniformly slope towards the interior under-floor tile drain, tied into a sump with a heavy-duty electric pump. The tile drains shall have at least 50 mm (2 inches) of gravel bedding. The water shall be pumped into the stormwater structures at appropriate elevations or shall be discharged into the drainage swales.

The walls shall be backfilled with specific non-expansive material for which they have been designed. Plastic soils, classified as CL, CH, MH, SC and GC, as per the Unified Soil Classification System, shall not be used as backfill.

Five-grained soils, excluding plastic silts and clays (MH and CH soils), shall be placed in the top 300 mm to 450 mm (12 to 18 inches) in the grass areas, as a "cap" to reduce infiltration of surface run-off into the backfill. Furthermore, the "cap" shall be graded to slope away from the houses.

Yard slopes within the first 3 m (10 feet) of the building shall be a minimum of five percent (5%) to minimize the potential for ponding and to reduce seepage of water in the backfill.

The area around the building shall be graded with slopes no flatter than three percent (3%) to reduce the potential for wet yards.

The roof drains must discharge beyond the limits of excavations for below-grade walls.

FLOOR AND GARAGE SLABS

The following requirements shall govern the placement of the floor and garage slab-on-grade.

Floor and garage slab excavations shall be propped and prepared as described under "Site Preparation and Earthwork".

Moderately to highly plastic soils (LL > 40 and PI > 20), if encountered at and below the subgrade elevations of the slab-on-grade, shall be excavated to a minimum depth of 600 mm (2 feet) and replaced with approved fill material.

A free-draining granular blanket of crushed stone or gravel shall be placed under the slab for lateral drainage and as a capillary barrier. The thickness of this blanket shall be at least 100 mm (4 inches).

A 6-mil thick impermeable plastic membrane (vapor barrier) shall be placed directly under the concrete slab and over the granular material.

The entire slab area shall be reinforced with a welded wire fabric.

The column points and peripheral walls shall be isolated from the slab to minimize the possibility of the slab cracking due to relative displacement.

Adequate control joints shall be provided with adequate shear reinforcement.

The slab shall be designed on the basis of modulus of subgrade reaction "k", of not more than 150 psi/inch.



No.	REVISION	DATE	BY



Greenhome & O'Mara, Inc.
11211 WAPLES MILL ROAD
FAIRFAX, VIRGINIA 22030
(703)385-9800

**METROPLACE AT DUNN LORING
PARCEL C1**

DESIGN SCALE	AS SHOWN
SLT DRAWN	23 OF 35
CHECKED	5/16/98
DATE	PP-805
SHEET	FILE No.

UTILITY TRENCHES AND MANHOLES

The excavations for the utility trenches shall be made with 1H:1V or flatter side slopes in accordance with applicable OSHA excavation standards detailed in 29 CFR, Part 1926 and shall be adequately protected against sudden cave-in or sloughing by using steel trench boxes.

The backfill in the utility trenches shall conform to the requirements of the Fairfax County, Department of Environmental Management Memorandum dated January 23, 1990, in addition to the requirements for Site Preparation and Earthwork.

UNDERDRAINAGE FOR SIDEWALKS

The provision of underdrains below the sidewalk shall be governed by the current Fairfax County Public Facility Manual. Tests for plasticity index and grain-size distribution shall be conducted on representative subgrade samples to establish the need for underdrainage along the sidewalks, in sections where the gradient is 3 percent or steeper.

PAVEMENT

Moderately to highly plastic soils (PI > 10 and PI > 20), if encountered at or below the subgrade elevation of the streets and roadways, shall be removed to a minimum of 600 mm (2 feet) below the street subgrade(s) and replaced with approved fill material under controlled conditions.

The soil subgrade in the paved areas, including sidewalks, curb and gutters, and driveway aprons, shall be compacted to at least ninety-five percent (95%) of the maximum dry density as determined by VTM-1 test method up to 150 mm (6 inches) below the planned subgrade elevations for controlled fills. The upper 150 mm (6 inches) of the subgrade for natural soils as well as controlled fills shall be compacted to one hundred percent (100%) of these values. The moisture content of the subgrade soils shall be within plus or minus two (±2) percentage points of the optimum moisture content.

The subgrade shall be tested for laboratory C.B.R. under soaked conditions in accordance with VDOT requirements. The design of the pavement elements shall then be made on the basis of these data.

Underdrains may have to be installed behind the curb and gutters if perched water conditions are encountered along their alignment. This will be decided after the mass-grading is completed.

DEMOLITION OF OLD STRUCTURES

Any existing structures, including footings, slabs, basement walls, driveways, drainfields and septic tanks, etc., shall be removed from all building pads and pavement areas, including at least 3 feet off-sites from any building or pavement. All soils underfoot below the planned grades shall be replaced with engineered fill. It is our experience that debris-laden fills are usually encountered in the vicinity of existing structures. All existing fills shall be removed to suitable-bearing native subgrade and replaced with approved structural fill.

Any water well(s) shall be abandoned and sealed as per the Fairfax County and State Health Department regulations.

Any demolition of existing building(s) and other structures shall be carried out under the supervision of the Geotechnical Engineer of Record.

RESPONSIBILITY OF DEVELOPER

According to Fairfax County Codes, review and approval of plans, specifications, and reports by the County with or without recommendations by the Geotechnical Review Board, shall in no way relieve the developer of the responsibility for the design, construction and performance of the structures and pavement on the project and damage to surrounding properties.

In Federal Register, Volume 54, No. 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, Part 1926, Subpart P". This document was issued to better allow for the safety of workers entering trenches or excavations. It is mandated by this federal regulation that excavations, whether they be utility trenches, basement excavations or footing excavations, be constructed in accordance with the new OSHA guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed, the owner and the Contractor could be liable for substantial penalties.

The Contractor is solely responsible for designing and constructing stable, temporary excavations and shall shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The Contractor's "responsible person", as defined in 29 CFR, Part 1926, shall ensure the soil exposed in the excavations as part of the Contractor's safety procedures. In no case shall slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in all local, state, and federal safety regulations.

We are providing this information solely as a service to our client. PSI does not assume responsibility for construction site safety or the Contractor's or other parties' compliance with local, state, and federal safety or other regulations.

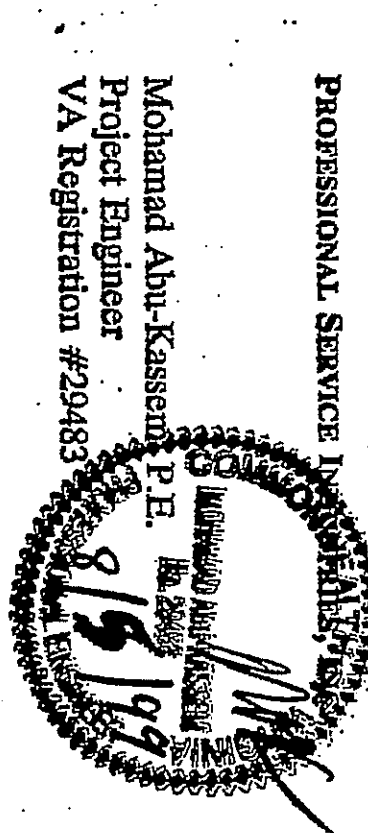
CONSTRUCTION OBSERVATIONS

Fairfax County Public Facilities Manual requires that:

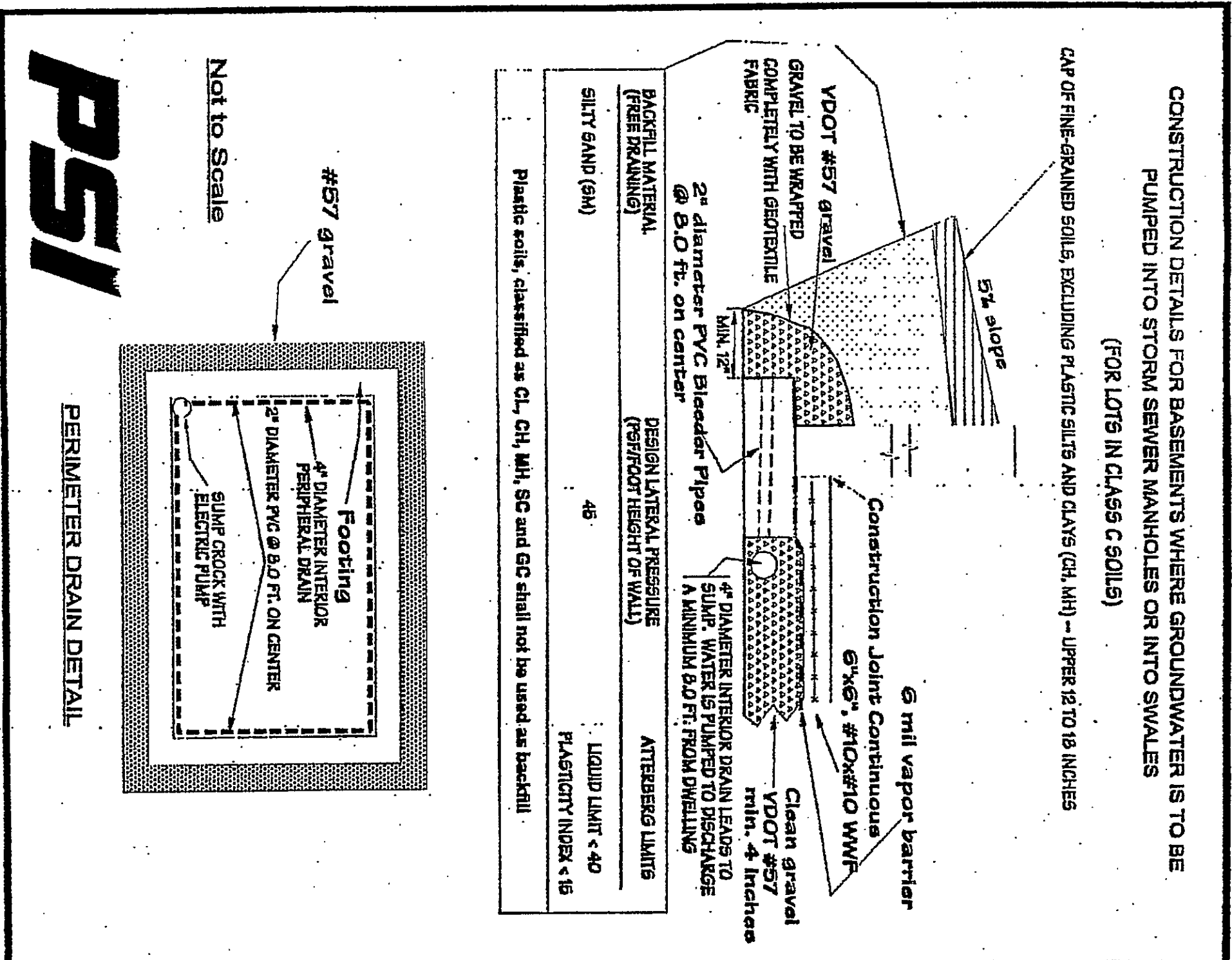
- All construction involving problem soil shall be performed under the full-time observation of the Geotechnical Engineer of Record.

The Geotechnical Engineer of Record shall furnish a written opinion to the County as to whether or not the work has been performed in accordance with the approved plans and his recommendations for work in the vicinity of the units to be occupied prior to the issuance of residential use permits.

Professional Service Industries, Inc. (PSI) have reviewed the plans and certify that they have been prepared in accordance with the recommendations made in the geotechnical report dated June 17, 1999.



PROFESSIONAL SERVICE INDUSTRIES, INC.
 PROFESSIONAL ENGINEER
 Mohamed Abu-Kassem, P.E.
 Project Engineer
 VA Registration #29483

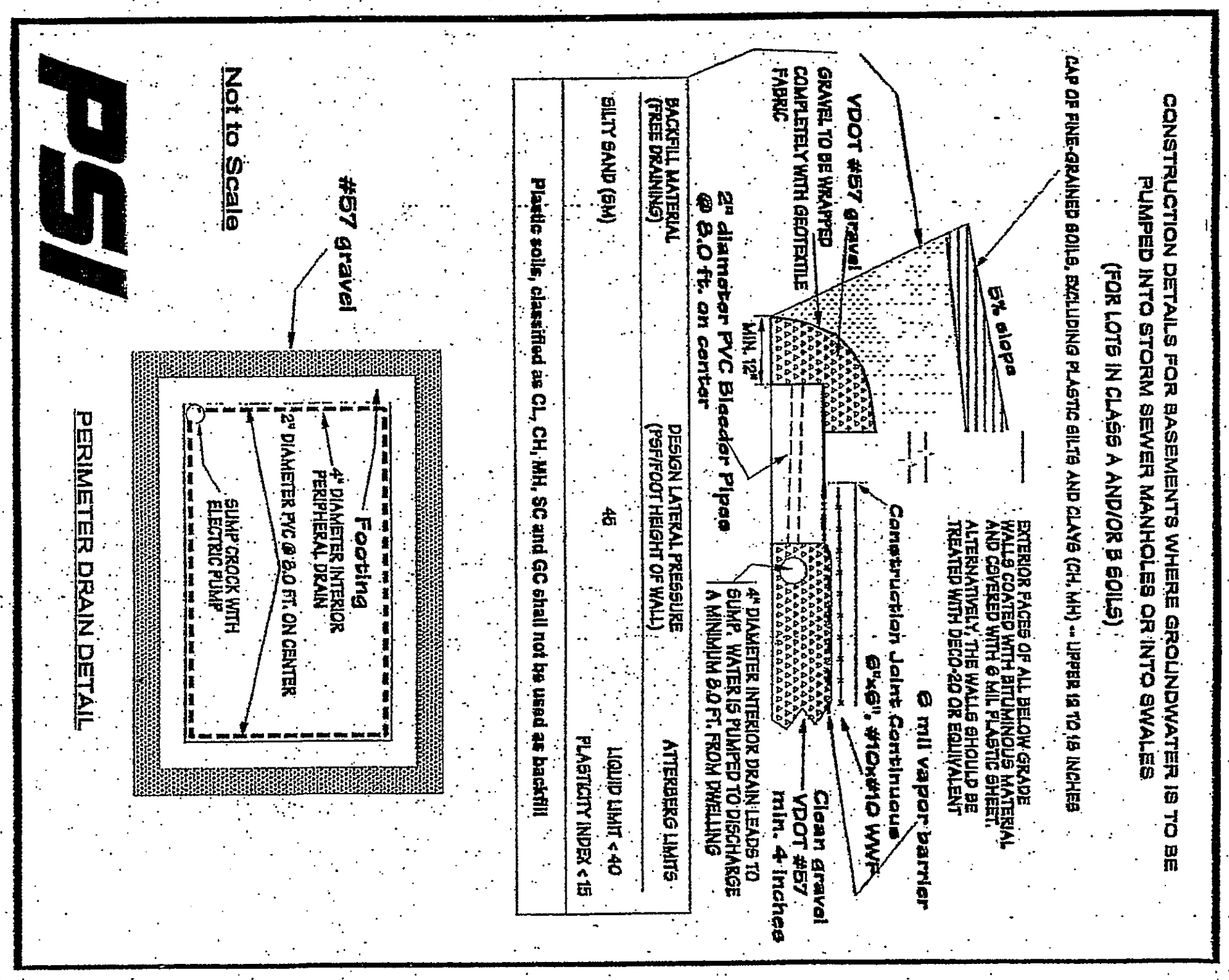


**SUMMARY OF LABORATORY TEST RESULTS
 METRO PLACE AT DUNN LORING, PARCELS C, D2, AND E
 PSI PROJECT NO.: 463-95057**

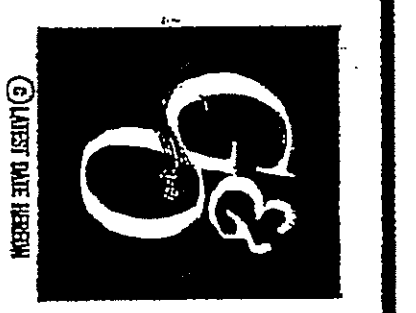
TEST LOCATION	STRATUM I (FILL)	STRATUM II	STRATUM III
SAMPLE INTERVAL (FEET)	TB-4 2.5-4	TB-3 0-1.5	TB-2 2.5-4
USCS CLASSIFICATION	GC	ML	ML
AASHTO CLASSIFICATION	A-7.5(6)	A-6(10)	A-7.5(18)
NATURAL MOISTURE CONTENT (%)	18.2	20.8	24.9
PERCENT PASSING #200 SIEVE (%)	44.3	88.0	99.4
LIQUID LIMIT (%)	58	36	44
PLASTICITY INDEX	30	25	32
PLASTICITY INDEX	28	11	12
MAXIMUM DRY DENSITY PER VTM-1 (PCF)	--	--	--
OPTIMUM MOISTURE CONTENT (%)	--	--	--

**SUMMARY OF LABORATORY TEST RESULTS (PREVIOUS STUDY)
 METRO PLACE AT DUNN LORING, PARCELS C, D2, AND E
 PSI PROJECT NO.: 463-95057**

TEST LOCATION	STRATUM I			STRATUM II			STRATUM III		
	B-2	B-10	B-18	B-19	B-9	B-14	B-16	B-21	
SAMPLE INTERVAL (FEET)	0-8	0-1.5	2.5-4	2.5-4	5-5.5	0-8	13.5-15	0-12	
USCS CLASSIFICATION	ML	CL	ML	SC	ML	ML	ML	ML	
AASHTO CLASSIFICATION	A-4(10)	A-7.5(1.5)	A-7.5(1.4)	A-7.5(5.8)	A-4(10)	A-4(10)	A-4(10)	A-4(10)	
NATURAL MOISTURE CONTENT (%)	18.8	24.3	17.7	15.9	21.1	18.5	35.8	23.7	
PERCENT PASSING #200 SIEVE (%)	58.1	82.4	61.5	47.8	93.5	82.0	94.4	71.5	
LIQUID LIMIT (%)	NP	46	48	44	NP	NP	NP	NP	
PLASTICITY INDEX	NP	26	28	25	NP	NP	NP	NP	
MAXIMUM DRY DENSITY PER VTM-1 (PCF)	NP	109.1	21	19	NP	NP	NP	104.1	
OPTIMUM MOISTURE CONTENT (%)	18.5	--	--	--	22.8	--	--	20.6	



No.	REVISION	DATE	BY



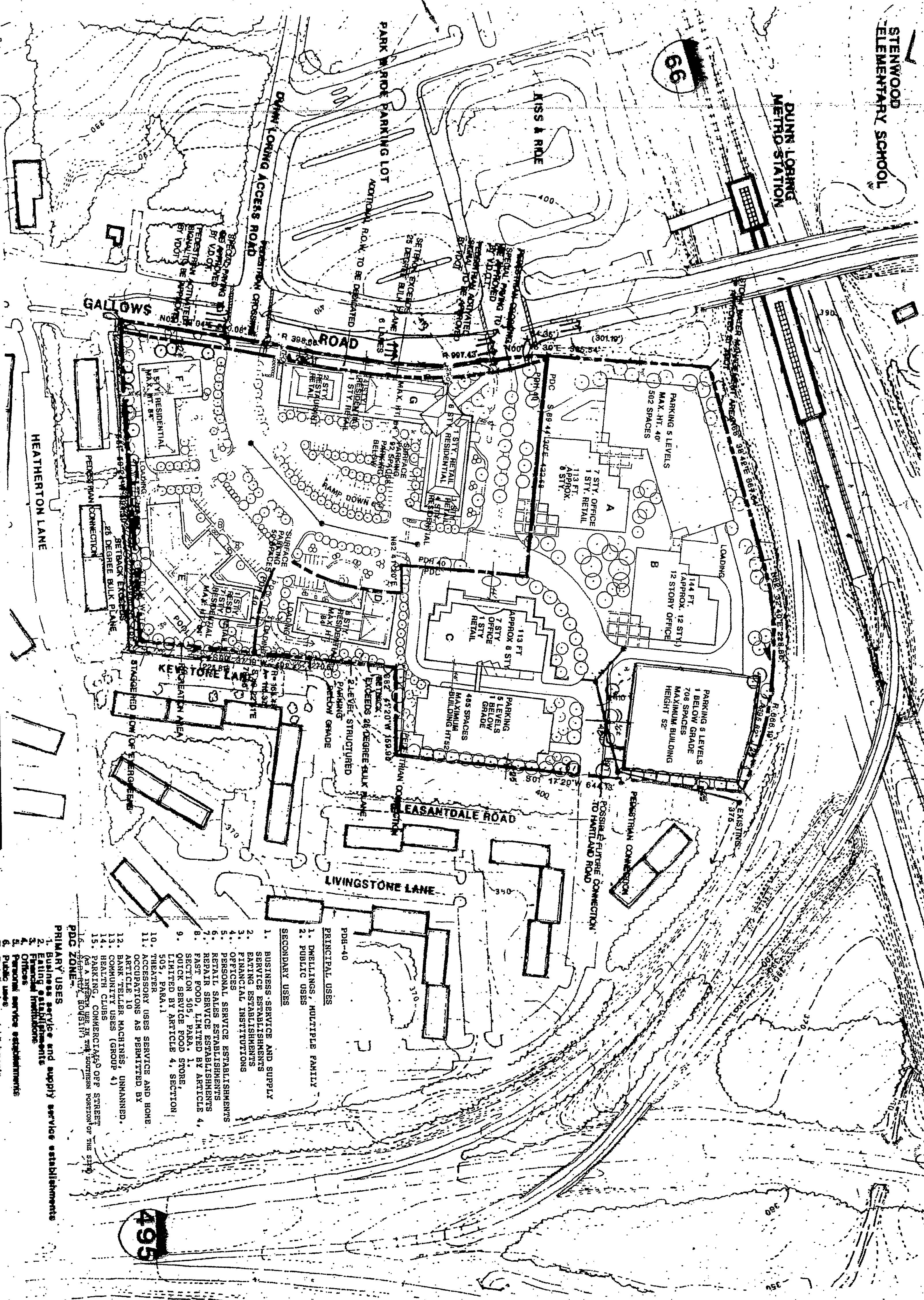
PLANNING • SITE ENGINEERING • TRANSPORTATION • ENVIRONMENTAL SURVEILLANCE/MAPPING
Greenhome & O'Mara, Inc.
 11211 WAPLES MILL ROAD
 FAIRFAX VIRGINIA 22030
 (703) 385-9800

GEOTECHNICAL REQUIREMENTS - PARCELS C1, D2 & E
METRO PLACE AT DUNN LORING
 PARCEL C1

DESIGN	SCALE	AS SHOWN
SJH		
CHECKED	SHEET	24 OF 35
8/99	PROJ. NO.	PP-805
	FILE NO.	

STENWOOD
ELEMENTARY SCHOOL

DUNN LORING
METRO STATION



MetroPlace at DUNN LORING

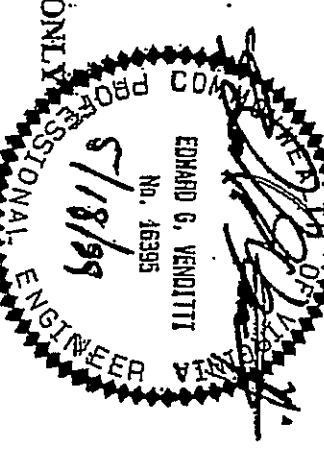
NV COMMERCIAL, INC.
DEVELOPER
McLean, Virginia

HELLMUTH, OBATA & KASSABAUM, P.C.
ARCHITECTURE, PLANNING
Washington D.C.

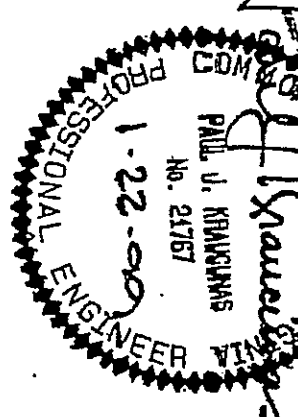
Fairfax County, Virginia

**METROPLACE AT
DUNN LORING**
PARCEL C-1 (PROPOSED PARCEL I)

CDP/DPD
DATE: 1/99
SHEET
FILE NO. PP-805



FOR INFORMATION ONLY



FINAL DEVELOPMENT PLAN AMENDMENT
BARTON-ASCHMAN ASSOCIATES, INC.
TRAFFIC ENGINEERING
Washington D.C.

DEWBERRY & DAVIS, INC.
CIVIL ENGINEERING
Fairfax, Virginia

- PRINCIPAL USES**
1. BUSINESS, SERVICE AND SUPPLY
 2. FINANCIAL INSTITUTIONS
 3. FINANCIAL INSTITUTIONS
 4. OFFICES
 5. PERSONAL SERVICE ESTABLISHMENTS
 6. RETAIL SALES ESTABLISHMENTS
 7. RESTAURANTS
 8. SECTION 505, PARA. 1
 9. QUICK SERVICE FOOD STORE, LIMITED BY ARTICLE 4, SECTION 505, PARA. 1
 10. THEATER USES SERVICE AND HOME OCCUPATIONS AS PERMITTED BY ARTICLE 10
 11. BANK TELLER MACHINES, UNMANNED.
 12. COMMUNITY USES (GROUP 4)
 13. PARKING COMMERCIAL OFF STREET
 14. (SEE ARTICLE 4, SECTION 505, PARA. 1)
 15. (SEE ARTICLE 4, SECTION 505, PARA. 1)
 16. (SEE ARTICLE 4, SECTION 505, PARA. 1)
- SECONDARY USES**
1. BUSINESS SERVICE AND SUPPLY SERVICE ESTABLISHMENTS
 2. FINANCIAL INSTITUTIONS
 3. FINANCIAL INSTITUTIONS
 4. OFFICES
 5. PERSONAL SERVICE ESTABLISHMENTS
 6. RETAIL SALES ESTABLISHMENTS
 7. RESTAURANTS
 8. SECTION 505, PARA. 1
 9. QUICK SERVICE FOOD STORE, LIMITED BY ARTICLE 4, SECTION 505, PARA. 1
 10. THEATER USES SERVICE AND HOME OCCUPATIONS AS PERMITTED BY ARTICLE 10
 11. BANK TELLER MACHINES, UNMANNED.
 12. COMMUNITY USES (GROUP 4)
 13. PARKING COMMERCIAL OFF STREET
 14. (SEE ARTICLE 4, SECTION 505, PARA. 1)
 15. (SEE ARTICLE 4, SECTION 505, PARA. 1)
 16. (SEE ARTICLE 4, SECTION 505, PARA. 1)

- SECUNDARY USES**
1. Accessory service uses and home occupations as permitted by Article 10
 2. Bank teller machines unattended
 3. Community uses (Group 4)
 4. Commercial parking (as an interim use in the southern portion of the site)
 5. Dwelling
 6. Health Clubs
 7. Elderly Housing

SITE DATA

Application No. **FD-129-2**

APPROVED DEVELOPMENT PLAN
(DP) (GP) (FP)
SEE MODIFIED CONDITIONS

Date of (DP) (GP) (FP) approval **July 23, 1990**

TOTAL GARAGES **3,000**

OFFICE **1,100**

RESIDENTIAL **1,100**

COMMUNITY CENTER **2,000**

TOTAL OFF = 1,114,000

Total number of dwelling units shall not exceed 400 (see 1989 Ordinance)

USE	AREA (SQ FT)	PROVIDED	REQUIREMENT
A. OFFICE	1,100,000	211	2
B. OFFICE	1,100,000	211	2
C. OFFICE	1,100,000	211	2
D. OFFICE	1,100,000	211	2
E. OFFICE	1,100,000	211	2
F. OFFICE	1,100,000	211	2
G. OFFICE	1,100,000	211	2
H. OFFICE	1,100,000	211	2
I. OFFICE	1,100,000	211	2
J. OFFICE	1,100,000	211	2
K. OFFICE	1,100,000	211	2
L. OFFICE	1,100,000	211	2
M. OFFICE	1,100,000	211	2
N. OFFICE	1,100,000	211	2
O. OFFICE	1,100,000	211	2
P. OFFICE	1,100,000	211	2
Q. OFFICE	1,100,000	211	2
R. OFFICE	1,100,000	211	2
S. OFFICE	1,100,000	211	2
T. OFFICE	1,100,000	211	2
U. OFFICE	1,100,000	211	2
V. OFFICE	1,100,000	211	2
W. OFFICE	1,100,000	211	2
X. OFFICE	1,100,000	211	2
Y. OFFICE	1,100,000	211	2
Z. OFFICE	1,100,000	211	2

ANY ADDITIONAL RIGHT OF WAY DEDICATIONS ALONG GALLOWS ROAD WILL NOT NECESSITATE THE RELOCATION OF BUILDINGS DUE TO INSUFFICIENT SETBACKS. BOUNDARY AND TOPOGRAPHY INFORMATION IS BY OTHERS. H.O.K. ASSUMES NO RESPONSIBILITY FOR ANY INACCURACIES RELATED THERETO.

MODIFICATION OF THE BARRIER STANDARD IS REQUESTED IN ACCORDANCE WITH ARTICLE 13-111, PARAGRAPH 2.3.5.18 AND 12.

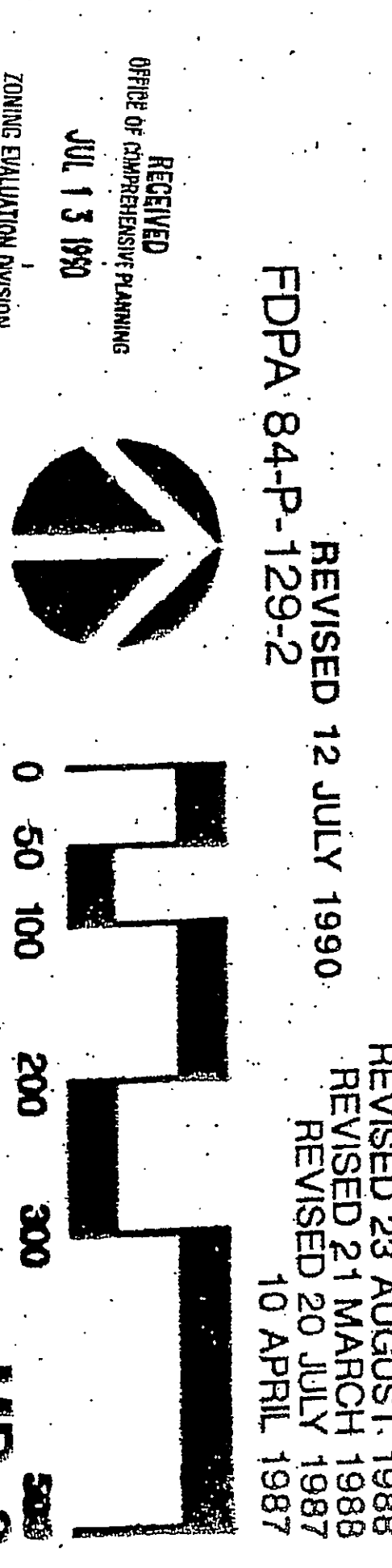
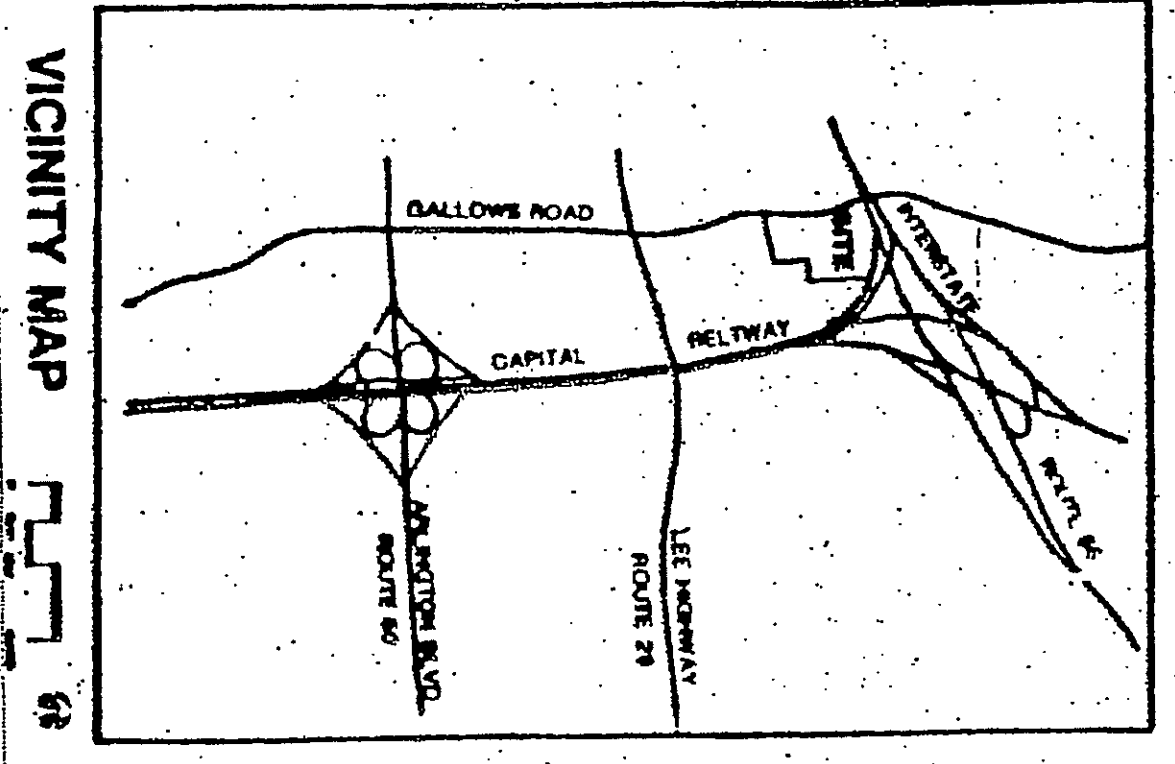
THE PROPERTY DELINEATED ON THIS PLAN IS LOCATED ON ASSESSMENT MAP NO. 49-2-142,443, 44, 45, 46A, 46B, 46C, 46D, AND 49-2-1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 AND 19 (NEW MAP NO. 49-2 (127) PARCELS A, B, C, D, E, G AND H) INFORMATION SHOW HEREON WAS TAKEN FROM EXISTING RECORDS.

SAINTARY SEWER INVERT ELEVATION

DEPTH	INVERT ELEVATION
7	396.5
12	395
15.5	394.5
17	392.5
17	391
17	405
7	400
21	380

WAVIER OF MAXIMUM LENGTH OF PRIVATE STREET IS REQUESTED PURSUANT TO ARTICLE 15-203, PARAGRAPH 3.

REVISED 12 JULY 1990
REVISED 23 AUGUST 1988
REVISED 21 MARCH 1988
REVISED 20 JULY 1987
REVISED 10 APRIL 1987



RECEIVED
OFFICE OF COMMUNITY PLANNING
JUL 13 1990

MP-3

METRO PLACE AT DUNN LORING

PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

PCA 84-P-129-5 / FDPA 84-P-129-4

CONCEPTUAL / FINAL DEVELOPMENT PLAN AMENDMENT

NOTES:

1. THE PROPERTY THAT IS THE SUBJECT OF THE CONCEPTUAL DEVELOPMENT PLAN AMENDMENT (CONCEPTUAL DEVELOPMENT PLAN AMENDMENT) IS IDENTIFIED ON THE FAIRFAX COUNTY ZONING MAP AS 49-2 (97) C1, 2, 2, F, AND F1.
2. THE BOUNDARY INFORMATION SHOWN HEREON IS FROM EXISTING RECORDS AND IS NOT TO BE CONSIDERED AS A GUARANTEE OF THE BOUNDARY INFORMATION.
3. THE TOPOGRAPHY SHOWN HEREON IS AT A CONTOUR INTERVAL OF 10 METERS FROM A FIELD RUN SURVEY BY GREENHORNE & O'MARA, INC.
4. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) REQUIREMENTS FOR THE DEVELOPMENT OF THIS SITE WILL BE PROVIDED ON SITE IN PROPOSED UNDERGROUND FACILITIES AS SHOWN ON THE GRAPHIC UNLESS WAIVED TO THE EXISTING OFFSITE REGIONAL SWM LAKE AT FAIRFAX PARK RESERVOIR, SUBJECT TO THE UPGRADE OF AN OFFSITE STORM DRAIN OUTFALL AND THE EXISTENCE OF A BARRER WAYER LOCATED TO THE WEST AND AN INTERSTATE HIGHWAY LOCATED TO THE NORTH OF FINAL ENGINEERING AND DESIGN.
5. THE LANDSCAPED OPEN SPACE AREAS REPRESENTED ON THE GRAPHIC ARE PRELIMINARY AND SUBJECT TO MINOR MODIFICATION AT THE TIME OF FINAL ENGINEERING AND DESIGN. LANDSCAPING AND TREE COVER WILL BE PROVIDED IN ACCORDANCE WITH THE APPLICABLE REGULATIONS OF ARTICLE 12.
6. IN ACCORDANCE WITH PAR 4 OF SECT 16-403 OF THE ZONING ORDINANCE, MINOR MODIFICATIONS TO THE 5255, 5260, 5265, 5270, 5275, 5280, 5285, 5290, 5295, 5300, 5305, 5310, 5315, 5320, 5325, 5330, 5335, 5340, 5345, 5350, 5355, 5360, 5365, 5370, 5375, 5380, 5385, 5390, 5395, 5400, 5405, 5410, 5415, 5420, 5425, 5430, 5435, 5440, 5445, 5450, 5455, 5460, 5465, 5470, 5475, 5480, 5485, 5490, 5495, 5500, 5505, 5510, 5515, 5520, 5525, 5530, 5535, 5540, 5545, 5550, 5555, 5560, 5565, 5570, 5575, 5580, 5585, 5590, 5595, 5600, 5605, 5610, 5615, 5620, 5625, 5630, 5635, 5640, 5645, 5650, 5655, 5660, 5665, 5670, 5675, 5680, 5685, 5690, 5695, 5700, 5705, 5710, 5715, 5720, 5725, 5730, 5735, 5740, 5745, 5750, 5755, 5760, 5765, 5770, 5775, 5780, 5785, 5790, 5795, 5800, 5805, 5810, 5815, 5820, 5825, 5830, 5835, 5840, 5845, 5850, 5855, 5860, 5865, 5870, 5875, 5880, 5885, 5890, 5895, 5900, 5905, 5910, 5915, 5920, 5925, 5930, 5935, 5940, 5945, 5950, 5955, 5960, 5965, 5970, 5975, 5980, 5985, 5990, 5995, 6000, 6005, 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7. IT IS TO BE UNDERSTOOD THAT ADDITIONAL SITE FEATURES SUCH AS CANALS, TRENDS, SITE FURNITURE, SIGNS, PLANTINGS, FENCES, GATES AND/OR WALLS NOT REPRESENTED HEREON MAY BE PROVIDED. IT IS TO BE FURTHER UNDERSTOOD THAT ARCHITECTURAL FEATURES SUCH AS BALCONIES AND STAIRWELLS MAY ALSO BE PROVIDED.
8. APPROXIMATE DWELLING UNITS WILL BE PROVIDED IN ACCORDANCE WITH ARTICLE 16-403 OF THE ZONING ORDINANCE. THE NUMBER OF ADULTS TO BE PROVIDED WILL BE ADJUSTED BASED UPON THE ACTUAL NUMBER OF UNITS PROVIDED.
9. AT A MINIMUM, PARKING WILL BE PROVIDED IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE 10 OF THE ZONING ORDINANCE. THE APPLICANT RESERVES THE RIGHT TO PROVIDE MORE THAN THE MINIMUM REQUIRED IN THE TABULATION AS LONG AS THE AMOUNT OF OPEN SPACE REPRESENTED PER PERIPHERAL LOT LINES ARE NOT DIMINISHED.
10. THE NUMBER AND LOCATION OF ACCESSIBLE PARKING SPACES AND LOADING SPACES TO BE PROVIDED WILL BE DETERMINED AT THE TIME OF THE PLAN SUBMISSION IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE 11 OF THE ZONING ORDINANCE.
11. PUBLIC IMPROVEMENTS HAVE BEEN WAIVED IN ACCORDANCE WITH THE PROVISIONS FOR METRO PLACE AT DUNN LORING PCA 84-P-129-4, PCA 84-P-129-3, AND PCA 84-P-129-2.
12. LANDSCAPING COLLECTORS AND A COMMUNITY CENTER WILL BE PROVIDED AS SPECIAL AMENITIES FOR THE PROPOSED DEVELOPMENT.

13. THERE ARE NO PUBLIC FACILITIES PROPOSED.
14. THE ENTIRE SITE IS SUBJECT TO CLEARING AND GRADING.
15. THERE IS NO FLOODPLAIN DESIGNATED BY THE FEDERAL INSURANCE ADMINISTRATION, UNITED STATES GEOLOGICAL SURVEY OR FAIRFAX COUNTY OR ANY ENVIRONMENTAL DESIGN OR CONSTRUCTION CHANGES CAUSED BY INCLINATIONS IN THE BOUNDARY INFORMATION.
16. THERE ARE NO AREAS THAT HAVE SCENIC ASSETS OR NATURAL FEATURES DESERVING OF PROTECTION OR PRESERVATION ON THE SITE.
17. THERE ARE NO UTILITY RESERVES LOCATED ON THE SUBJECT PROPERTY THAT WOULD BE AFFECTED BY THE PROPOSED DEVELOPMENT.
18. SANITARY SEWER AND WATER ARE CURRENTLY AVAILABLE AND WILL BE EXTENDED TO THE SUBJECT PROPERTY AS SHOWN ON THE GRAPHIC.
19. THERE ARE EXISTING MULTIPLE FAMILY DWELLING UNITS LOCATED TO THE EAST OF THE SUBJECT PROPERTY. THE PROPOSED DEVELOPMENT WILL NOT BE LOCATED TO THE WEST AND AN INTERSTATE HIGHWAY LOCATED TO THE NORTH OF THE DEVELOPMENT. THE PROPOSED MULTIPLE FAMILY AND SINGLE FAMILY ATTACHED DWELLING UNITS WILL NOT POSE ANY ADVERSE EFFECTS ON ADJACENT OR NEIGHBORING PROPERTIES.
20. THE PROPOSED DEVELOPMENT IS LOCATED WITHIN THE MERGED COMMUNITY LORING TRANSIT STATION AREA TRACT BY MERGED SUBURBAN CENTER OF AREA 1 OF THE COMPREHENSIVE PLAN. THE COMPREHENSIVE PLAN RECOMMENDS MIXED-USE WITH A MAXIMUM FLOOR AREA RATIO FOR ALL USES, INCLUDING RESIDENTIAL OF 4.4. THE PROPOSED DEVELOPMENT IS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE COMPREHENSIVE PLAN.
21. SUBJECT TO MARKET CONDITIONS, IT IS CURRENTLY ANTICIPATED THAT CONSTRUCTION OF THE PROPOSED DEVELOPMENT WILL COMMENCE AS SOON AS ALL NECESSARY COUNTY APPROVALS AND PERMITS ARE OBTAINED.
22. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO GRAVES LOCATED ON THE SUBJECT PROPERTY.
23. TO THE BEST OF OUR KNOWLEDGE, NO HAZARDOUS AND TOXIC SUBSTANCES AS SET FORTH IN TITLE 40, CODE OF FEDERAL REGULATIONS OF PARTS 116.4, 302.4 AND 355. HAZARDOUS WASTE AS SET FORTH IN THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY HAZARDOUS WASTE MANAGEMENT REGULATIONS; AND OR PETROLEUM PRODUCTS AS DEFINED IN TITLE 40, CODE OF FEDERAL REGULATIONS PART 280 WILL BE GENERATED, UTILIZED, STORED, TREATED OR DISPOSED OF ON THE SUBJECT PROPERTY INCLUDING ANY EXISTING OR PROPOSED STORAGE TANKS OR CONTAINERS AND THEIR CONTENTS.
24. A STATEMENT WHICH COMPARES THE DIMENSION OF THE SUBJECT PROPERTY, AND THE NATURE OF THE APPLICANT'S INTEREST IN THE SAME IS PROVIDED IN A SEPARATE ASSOCIATED DOCUMENT.
25. THERE IS AN EXISTING SIDEWALK ALONG CALLOWS ROAD AS REQUIRED BY THE ADOPTED COMPREHENSIVE PLAN.
26. THE OPEN SPACE SHALL CONSTITUTE THE ENTIRE PLAN RELATIVE TO THE POINTS OF ACCESS. THE TOTAL GROSS FLOOR AREA, NUMBER OF DWELLING UNITS, AND BUILDINGS.

27. THE LOCATION AND ARRANGEMENT OF THE STRUCTURES RESTRICTED IN THE LAND USE AND DEVELOPMENT PLAN SHALL BE MODIFIED AND A CORRECTION MAY OR MAY NOT BE REQUIRED.
28. THE DEVELOPER SHALL HAVE THE OPTION TO REQUEST AN FPA FOR THE ENTIRE PLAN OR PORTIONS THEREOF IN ACCORDANCE WITH THE PROVISIONS SET FORTH IN SECT. 16-402 OF THE ZONING ORDINANCE.
29. INFORMATION ON THE SOIL TYPES LOCATED ON THE SUBJECT PROPERTY IS NOT AVAILABLE IN THE FAIRFAX COUNTY SOILS MAPS REVISION TO JANUARY 1, 1990. THE INFORMATION HAS BEEN REQUESTED AND WILL BE PROVIDED AT A LATER DATE.
30. TO THE BEST OF OUR KNOWLEDGE THE PROPOSED DEVELOPMENT OF THE SUBJECT PROPERTY CONFORMS TO ALL CURRENT APPLICABLE LAND DEVELOPMENT ORDINANCES, REGULATIONS AND ADOPTED STANDARDS.
31. A WAIVER IS REQUESTED TO ELIMINATE THE REQUIREMENT FOR PROVIDING LOADING SPACES AS REQUIRED PER ARTICLE 11-203.

EXISTING ZONING	APPROVED GROSS FLOOR AREA	APPROVED TOTAL NUMBER OF UNITS	APPROVED OPEN SPACE
PDH-40	17,066 AC	990,321 SF	397 AC
PDH-40 AND PDC	1,279 AC	1,279 SF	1,279 AC
TOTAL	18,345 AC	991,600 SF	408 AC

EXISTING ZONING	APPROVED GROSS FLOOR AREA	APPROVED TOTAL NUMBER OF UNITS	APPROVED OPEN SPACE
PDH-40	17,066 AC	990,321 SF	397 AC
PDH-40 AND PDC	1,279 AC	1,279 SF	1,279 AC
TOTAL	18,345 AC	991,600 SF	408 AC

PROPOSED ZONING	PROPOSED GROSS FLOOR AREA	PROPOSED TOTAL NUMBER OF UNITS	PROPOSED OPEN SPACE
PDH-40	17,066 AC	990,321 SF	397 AC
PDH-40 AND PDC	1,279 AC	1,279 SF	1,279 AC
TOTAL	18,345 AC	991,600 SF	408 AC

THE ISSARD ARCHITECTURAL GROUP Inc.
 8230 OLD COURTHOUSE ROAD, SUITE 422
 VIENNA, VIRGINIA 22182
 APPLICANT: **JADE-DUNN LORING METRO, L.L.C.**

Greenhorne & O'Mara, Inc.
 11211 WAPLES MILL ROAD
 FAIRFAX, VIRGINIA 22030
 (703) 385-9800
 ANNAPOLIS, MD • ATLANTA, GA • FAIRFAX, VA • FREDERICKSBURG, VA • GREENBELT, MD
 MECHANICSBURG, PA • RALEIGH, NC • ROCKVILLE, MD • TAMPA, FL • WEST PALM BEACH, FL

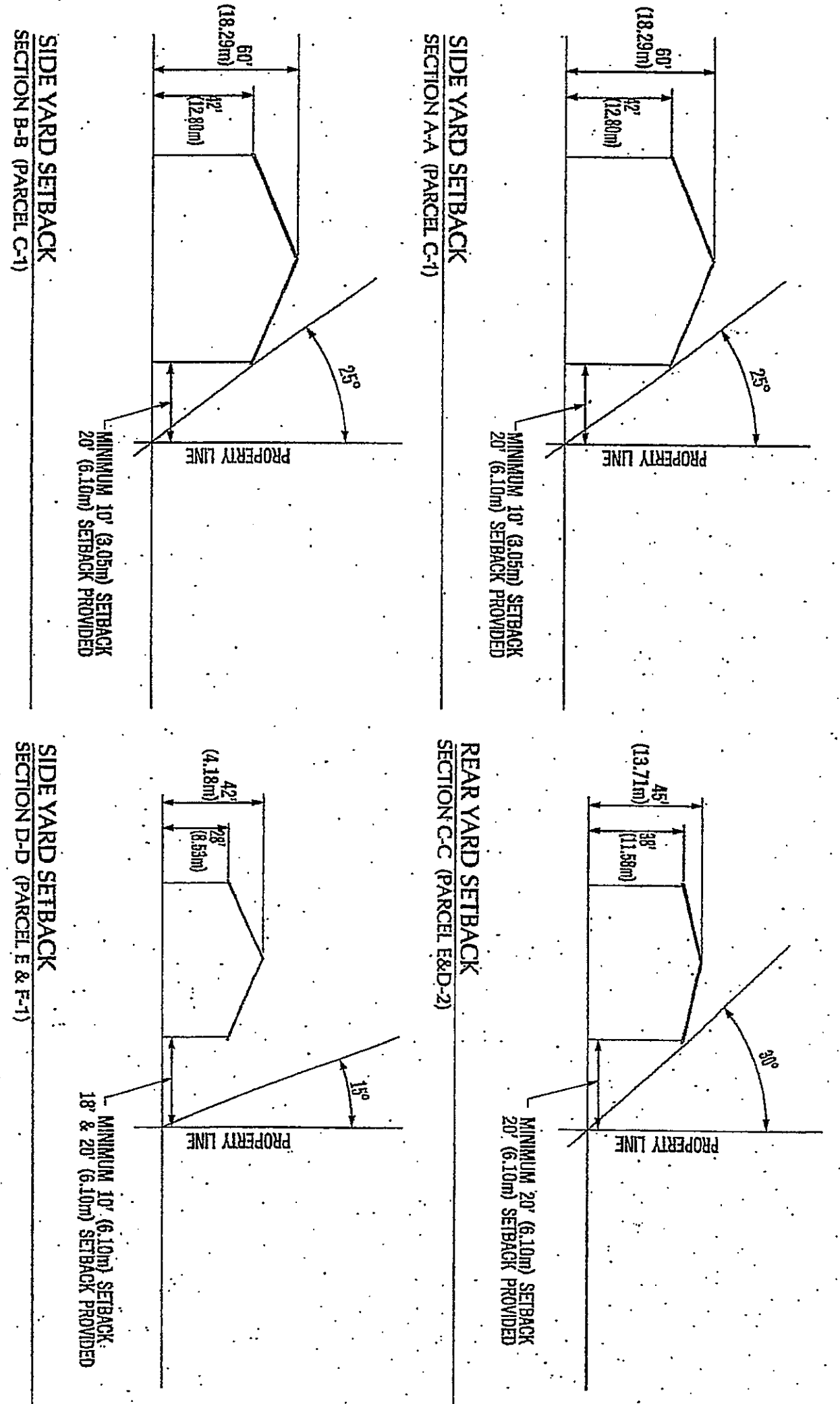
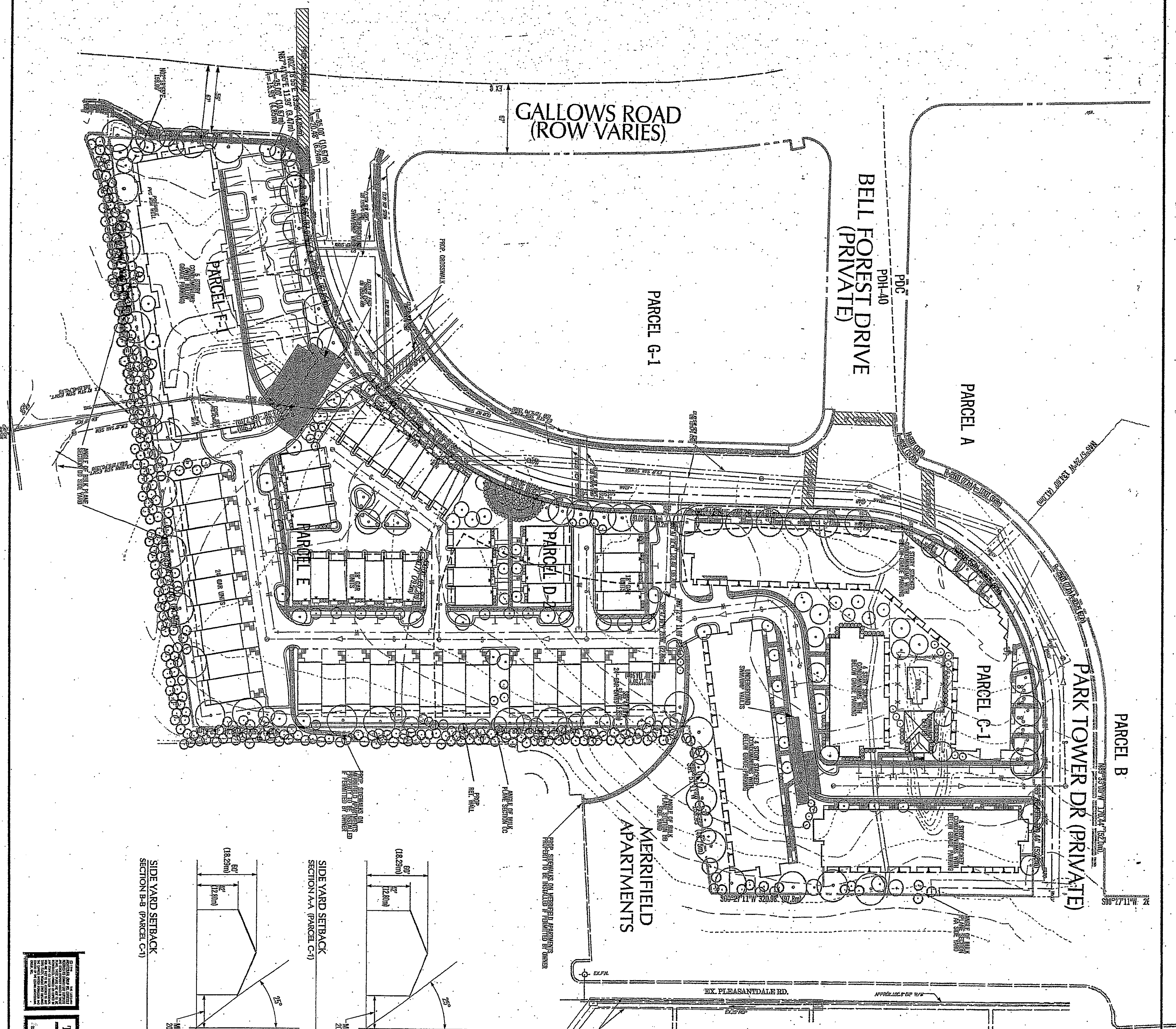
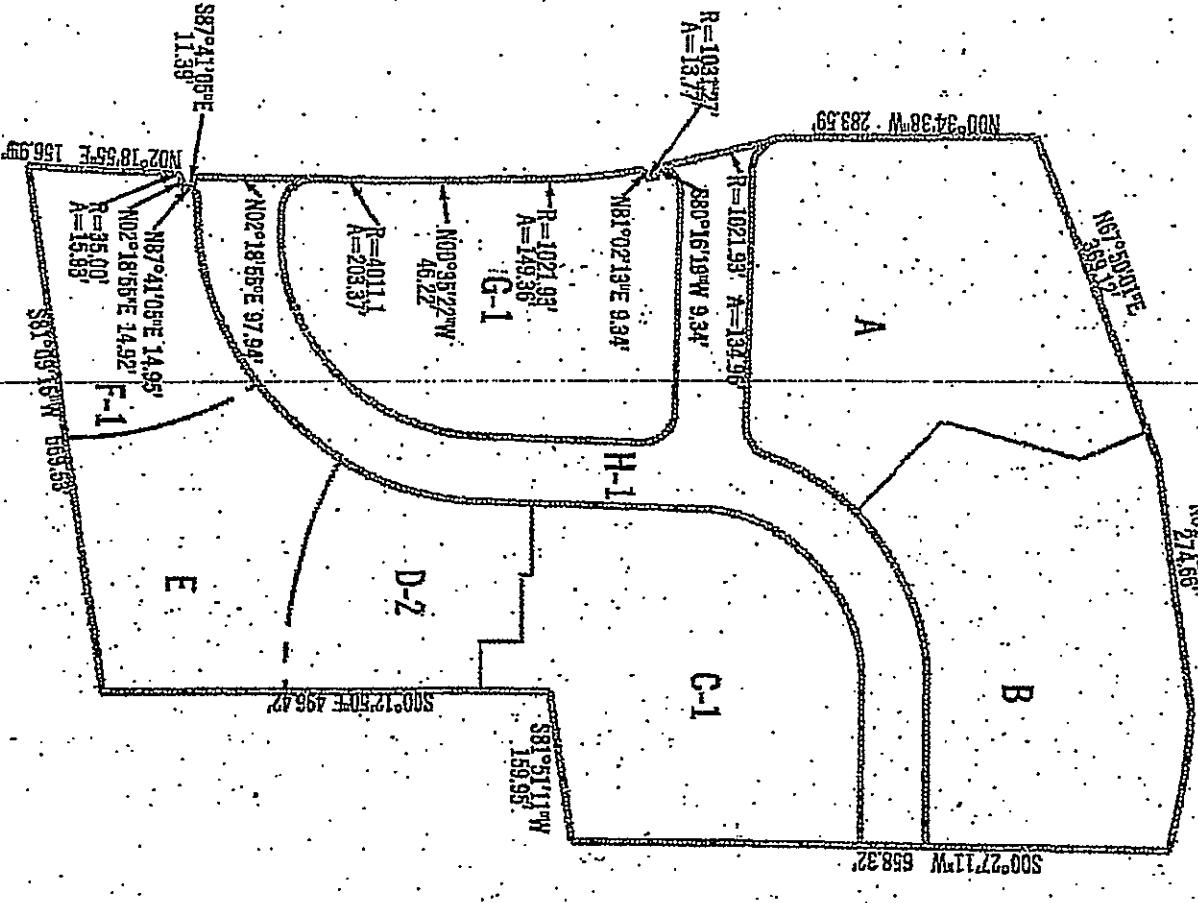
CONCEPTUAL / FINAL DEVELOPMENT PLAN AMENDMENT
METRO PLACE AT DUNN LORING
 PARCELS C1, D2, E & F1
 PROVIDENCE DISTRICT
 FAIRFAX COUNTY, VIRGINIA

SHEET INDEX:
 1. COVER SHEET
 2. SOCIAL DEVELOPMENT PLAN
 3. TYPICAL BUILDING ELEVATIONS
 4. TYPICAL BUILDING ELEVATIONS

REVISION: 31 OF 35
 DATE: 1/7/99
 BY: [Signature]

SCALE: 1" = 50'
TRUE NORTH

BOUNDARY & PARCEL INFORMATION:
SCALE: 1" = 200'



- LEGEND:**
- SPLICED SITE BOUNDARY AND PROPERTY LINES
 - PROPOSED EMERALD TREE
 - PROPOSED ORNAMENTAL TREE
 - PROPOSED MEDIUM SIZED DECIDUOUS TREE
 - PROPOSED LARGE DECIDUOUS TREE
 - EXISTING VEGETATION
 - PROPOSED SANITARY SEWER
 - EXISTING SANITARY SEWER & EASEMENT
 - PROPOSED STORM SEWER
 - EXISTING STORM SEWER & EASEMENT
 - PROPOSED WATERLINE
 - EXISTING WATERLINE & EASEMENT
 - PROPOSED SIDEWALK
 - EXISTING SIDEWALK
 - PROPOSED LOCATION OF UNDERGROUND SIGN FACILITY

THE LESSARD ARCHITECTURAL GROUP
INC.

Professional Engineer
No. 1-7-99

No.	REVISION	DATE	BY

PLANNING • SITE ENGINEERING • TRANSPORTATION • ENVIRONMENTAL • SURVEYING/MAPPING

Greenhorne & O'Mara, Inc.
11211 WAPLES MILL ROAD
FAIRFAX, VIRGINIA 22030
(703)385-9800

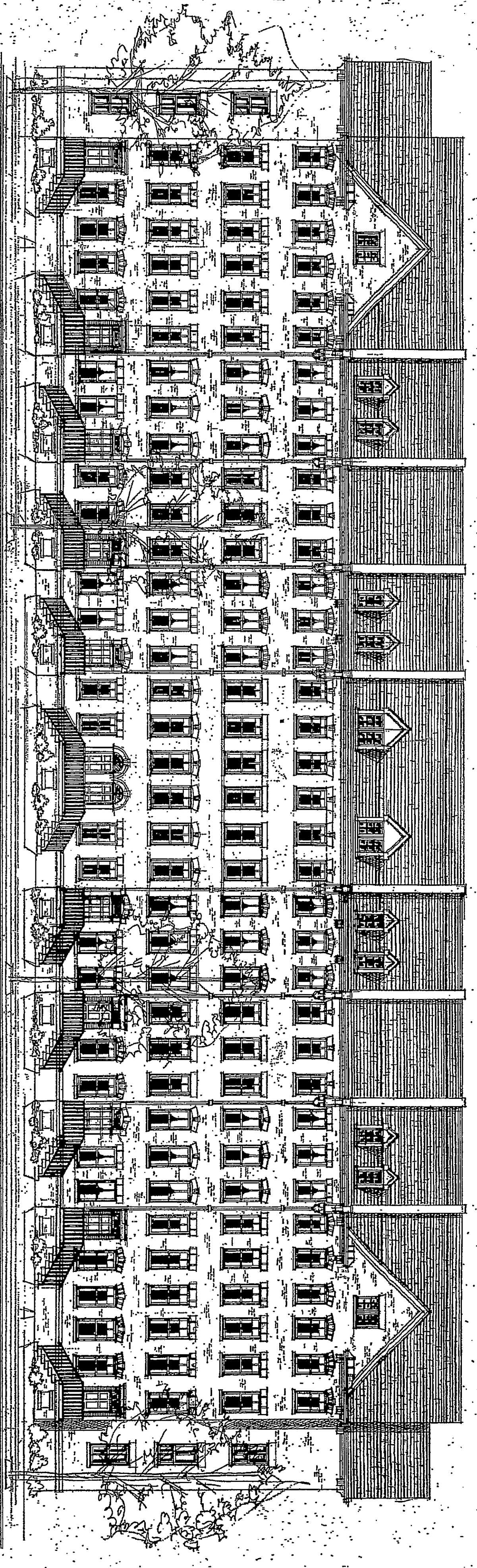
ANNAPOLIS, MD • ATLANTA, GA • FAIRFAX, VA • FREDERICKSBURG, VA • GREENBELT, MD
MECHANICSBURG, PA • RALEIGH, NC • ROCKVILLE, MD • TAMPA, FL • WEST PALM BEACH, FL

CONCEPTUAL / FINAL DEVELOPMENT PLAN AMENDMENT

METRO PLACE AT DUNN LORING
PARCELS C-1, D-2, E & F-1

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

32 of 35



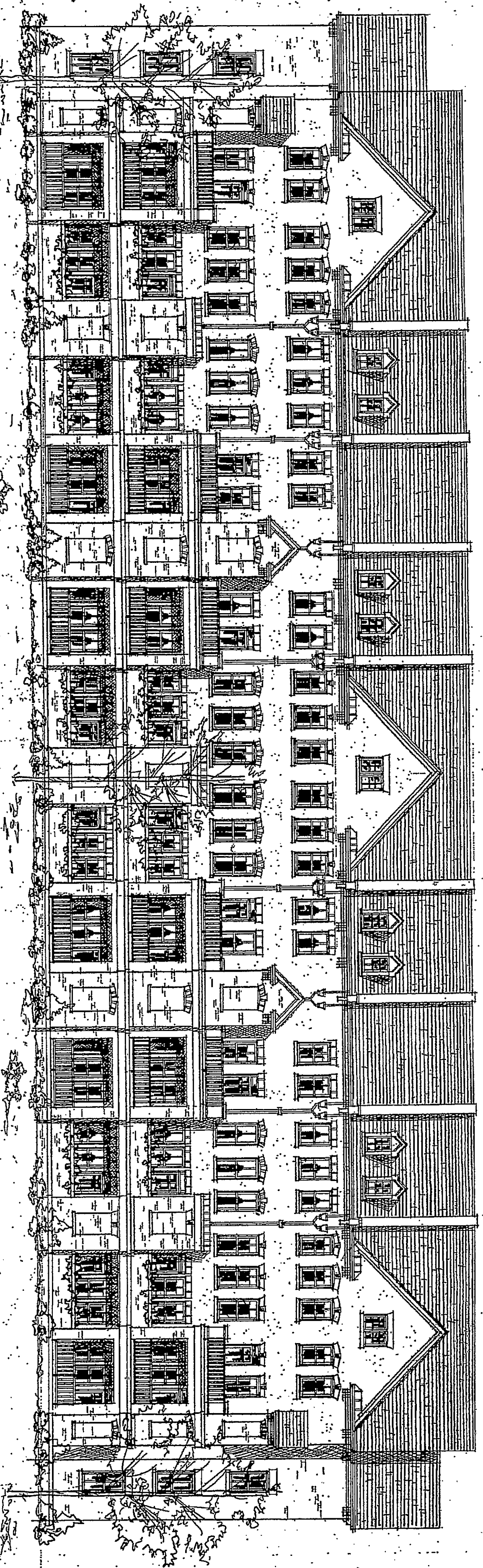
PARCEL C-1
FRONT ELEVATION

METRO PLACE
AT DUNN LORING METRO
FAIRFAX, VIRGINIA

JADE DEVELOPMENT

THE LINDSEY ARCHITECTURAL GROUP, INC.
2207 WOODBURN AVENUE, SUITE 200
FAIRFAX, VIRGINIA 22031
TEL: (703) 385-9800
WWW.LINDSEYARCHITECT.COM

SCALE: 1/8"=1'-0"



PARCEL C-1
REAR ELEVATION

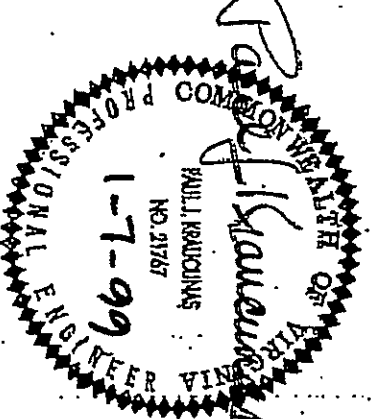
METRO PLACE
AT DUNN LORING METRO
FAIRFAX, VIRGINIA

JADE DEVELOPMENT

THE LINDSEY ARCHITECTURAL GROUP, INC.
2207 WOODBURN AVENUE, SUITE 200
FAIRFAX, VIRGINIA 22031
TEL: (703) 385-9800
WWW.LINDSEYARCHITECT.COM

SCALE: 1/8"=1'-0"

FOR INFORMATION ONLY



33 of 35
SHEET

No.	REVISION	DATE	BY

PLANNING • SITE ENGINEERING • TRANSPORTATION • ENVIRONMENTAL • SURVEYING/MAPPING

Greenhorne & O'Mara, Inc.
11211 WAPLES MILL ROAD
FAIRFAX, VIRGINIA 22030
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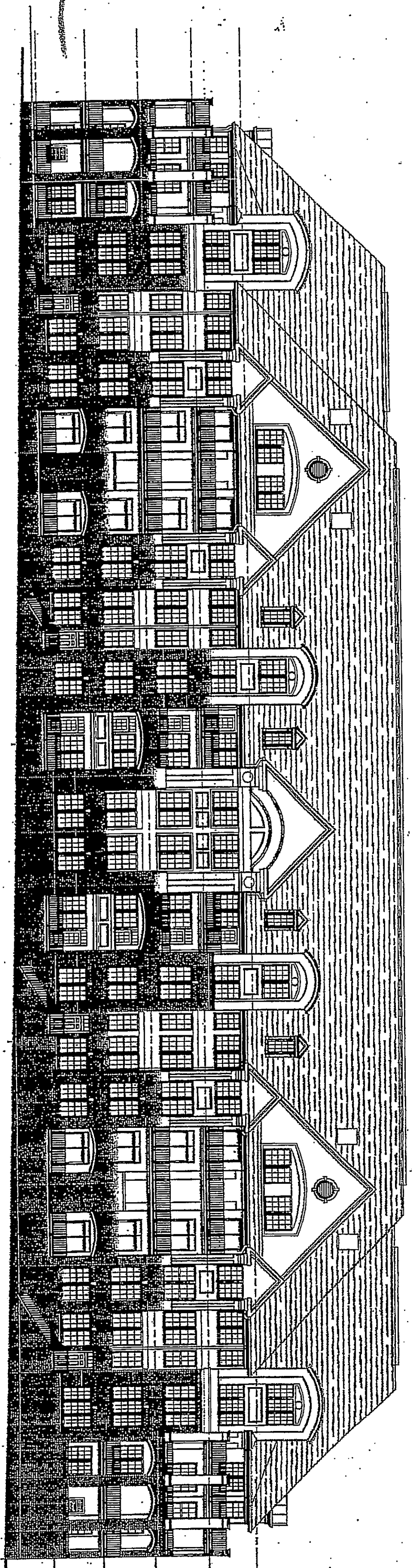
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MECHANICSBURG, PA • RALEIGH, NC • ROCKVILLE, MD • TAMPA, FL • WEST PALM BEACH, FL

CONCEPTUAL / FINAL DEVELOPMENT PLAN AMENDMENT

METRO PLACE AT DUNN LORING
PARCELS C-1, D-2, E & F-1

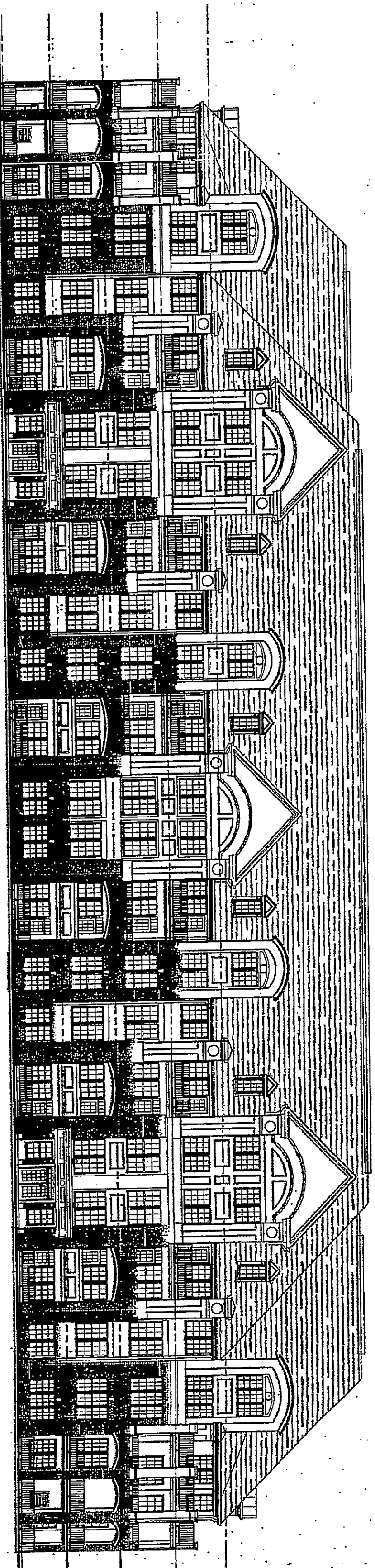
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

DATE: 01/20/05 09:23:03 AM C:\proj\16\MetroLg\PRF-07\FULL-TEST.PRF TEL: (703) 385-9800 FAX: (703) 385-9800



THE WESTBRIAR PARCEL F-1
AT DUNN LORING METRO
FAIRFAX, VIRGINIA

BUILDING REAR ELEVATION



THE WESTBRIAR PARCEL F-1
AT DUNN LORING METRO
FAIRFAX, VIRGINIA

BUILDING FRONT ELEVATION

THE LISSARD ARCHITECTURAL GROUP
INC.

1-7-94



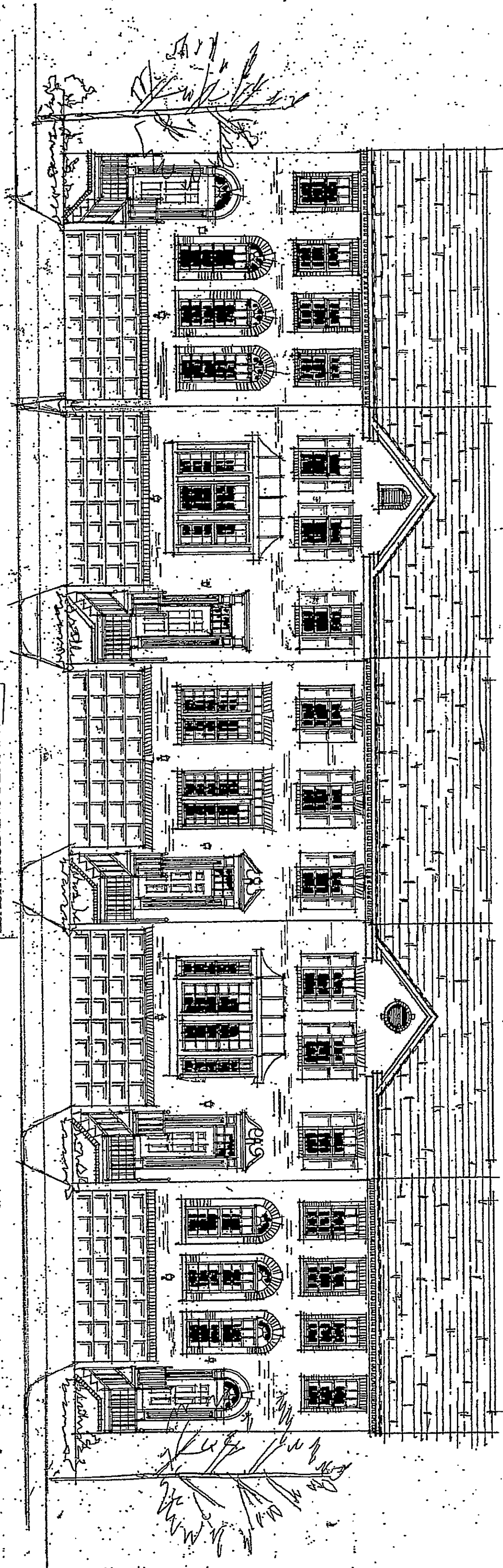
FOR INFORMATION ONLY

NO.	REVISION	DATE	BY

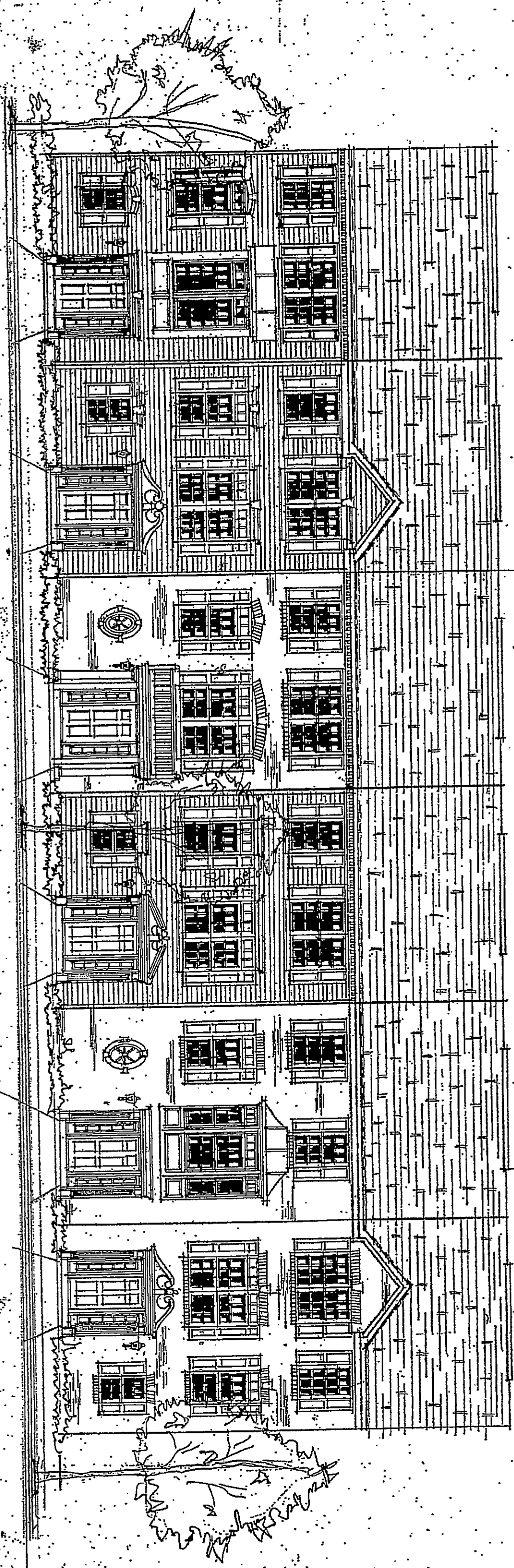


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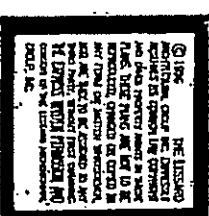
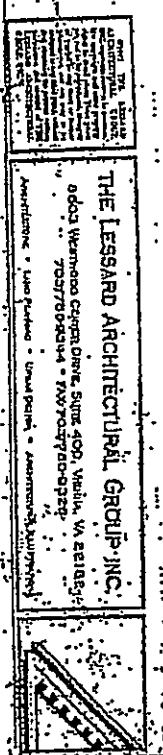
CONCEPTUAL / FINAL DEVELOPMENT PLAN AMENDMENT
METRO PLACE AT DUNN LORING
 PARCELS C-1, D-2, E & F-1
 PROVIDENCE DISTRICT
 FAIRFAX COUNTY, VIRGINIA



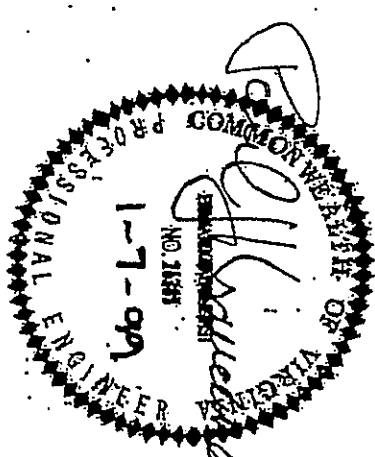
24 FRONT LOAD TOWNHOUSE
FAIRFAX, VIRGINIA



25 REAR LOAD TOWNHOUSE
METRO PLACE PARCEL D-2 & E
AT DUNN LORING METRO
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CONCEPTUAL / FINAL DEVELOPMENT PLAN AMENDMENT
METRO PLACE AT DUNN LORING
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35 of 35
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