

# Troy Hill Corporate Center

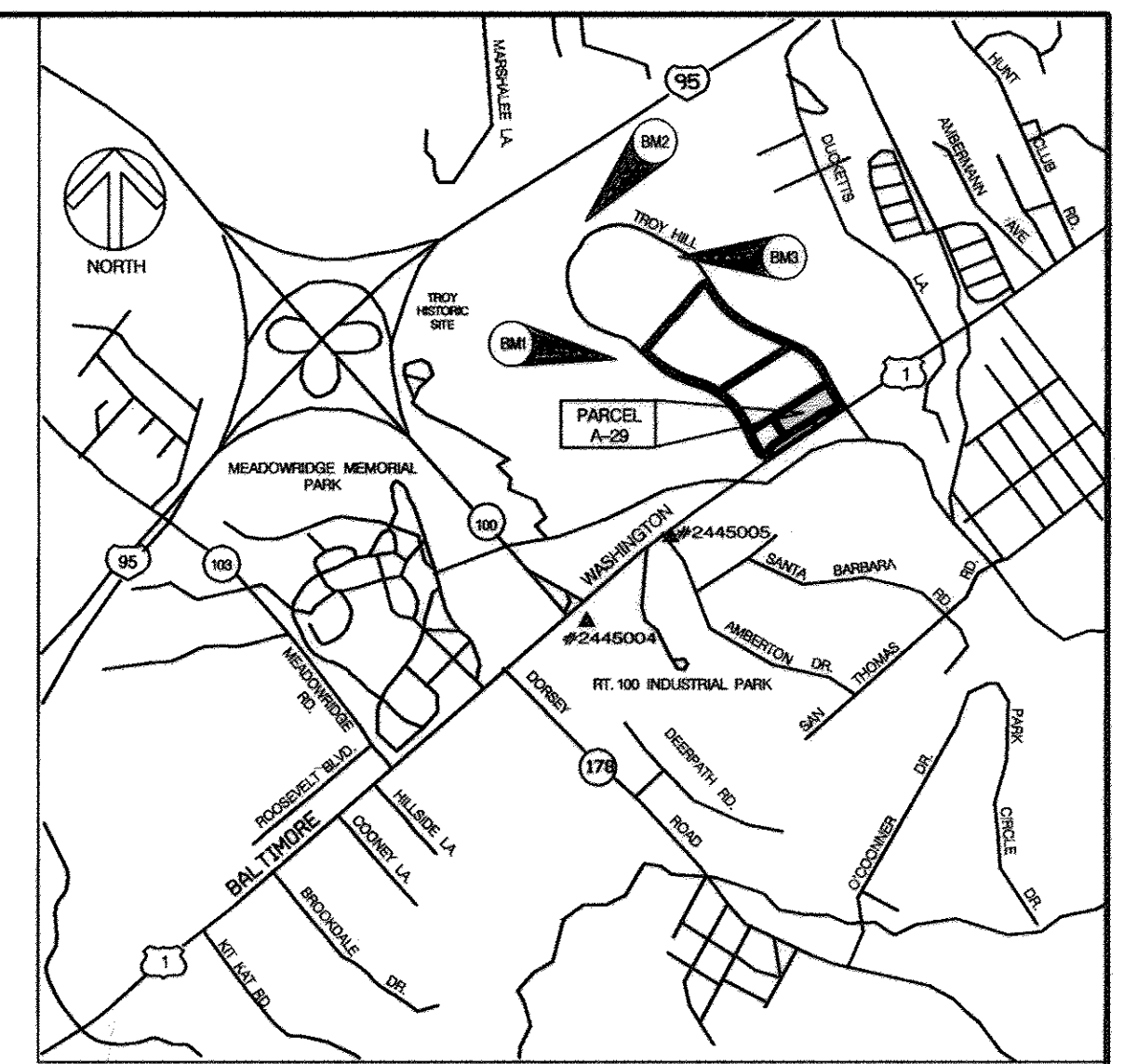
Parcel A-29

SDP 03-115

## 1st Election District Howard County, Maryland Tax Map No. 37

### General Notes

- ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATION IF APPLICABLE OR AS SPECIFIED.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE BASED SOLELY ON AVAILABLE RECORDS. CONTRACTOR SHALL VERIFY THE LOCATION OF ANY UTILITIES WHICH MAY BE IMPACTED BY THE WORK. MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTORS OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS TO VERIFY THEIR LOCATION AND ELEVATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF LOCATION OF UTILITIES IS OTHER THAN SHOWN.
- THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-2777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE AND SHALL CONTACT THE CONSTRUCTION INSPECTION DIVISION AT (410) 313-1890 AT LEAST 24 HOURS IN ADVANCE OF COMMENCEMENT OF WORK. ANY DAMAGE CAUSED BY THE CONTRACTOR TO EXISTING PUBLIC RIGHT-OF-WAY, EXISTING PAVING, EXISTING CURB AND GUTTER EXISTING UTILITIES, ETC. SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM A FIELD RUN SURVEY WITH A MAXIMUM OF 2' CONTOUR INTERVALS PREPARED BY LEO W. RADER, AUG. 2002.
- PUBLIC WATER AND SEWER PROVIDED BY CONTRACT NUMBER 14-3925-D
- ALL FILL AREAS SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED AND VERIFIED IN ACCORDANCE WITH AASHTO T-180, OR AS SPECIFIED BY GEOTECHNICAL ENGINEER.
- THERE ARE NO WETLANDS, FLOODPLAIN, OR STREAMS ON THIS SITE.
- OPERATING EXISTING VALVES, SWITCHES, SERVICES OR START UP OF NEW SERVICES SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE.
- TRENCH COMPACTION FOR STORM DRAINS WITHIN THE ROAD OR STREET RIGHT OF WAY LIMITS SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL IV, STD. NO. G-2.01.
- UNLESS OTHERWISE NOTED, DIMENSIONS FROM CURB ARE MEASURED FROM FACE.
- THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL WATER, SEWER AND DRAIN HOUSE CONNECTIONS WITH THE MECHANICAL DRAWINGS.
- THE CONTRACTOR SHALL MAINTAIN 2.0 FEET MINIMUM PROTECTIVE COVER OVER ALL UTILITIES DURING CONSTRUCTION.
- THERE ARE NO KNOWN CEMETERIES OR BURIAL GROUNDS ON THIS SITE. HOWEVER UPON DISCOVERY OF ANY EVIDENCE OF BURIAL OR GRAVES, THE DEVELOPER WILL BE SUBJECT TO SECTION 16.1305 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOP REGULATIONS.
- ALL SLOPES 3:1 OR GREATER EXCEPT THOSE ASSOCIATED WITH LANDSCAPE BERMINGS, SHALL BE MONITORED DURING PLACEMENT BY THE PROJECT GEOTECHNICAL ENGINEER.
- PAVING MARKINGS TO BE "TRAFFIC WHITE"
- CONTRACTOR SHALL MAINTAIN A MINIMUM 2 FOOT BENCH BEHIND CURB AND GUTTER IN FILL AREAS.
- ALL FIRE LINE PIPING SHALL MEET THE REQUIREMENTS OF THE NFPA PIPE SHALL BE UL LISTED, FM APPROVED AND MEET THE AWMA STANDARDS FOR FIRE PROTECTION USE. FITTINGS SHALL HAVE PRESSURE CLASS RATINGS COMPATIBLE WITH THE PIPE USED.
- THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 4 FEET OF COVER OVER THE PRIVATE WATER MAIN SHOWN HEREON UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL PROVIDE ALL CRUMPS OR VERTICAL BENDS NECESSARY TO MAINTAIN CLEARANCES WITH OTHER UTILITIES.
- THE CONTRACTOR SHALL INSPECT THE SITE TO DETERMINE IF ANY TREES, PAVING OR STRUCTURES ARE TO BE REMOVED, PRIOR TO PLACING A BID ON THOSE ITEMS. THE CONTRACTOR SHALL CLEAR THE CONSTRUCTION AREA OF ALL EXISTING TREES, PAVING, STRUCTURES, ETC., UNLESS NOTED ON PLAN.
- THE SUBJECT PROPERTY IS ZONED B-2.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF \$17,040.00
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNING SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLAN COORDINATE SYSTEM HOWARD COUNTY CONTROL STATIONS NOS. 2445004 AND 2445005 WERE USED FOR THIS PROJECT.
- ALL EXTERIOR LIGHTING SHALL COMPLY WITH ZONING REGULATIONS SECTION 134.
- NO CHANGE-IN-USE IS PERMITTED FROM THE LISTED USES AND AREA ASSIGNED TO EACH USE UNLESS SUFFICIENT PARKING IS PROVIDED AND DELINEATED ON THIS PLAN.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1890 AT LEAST (5) WORKING DAYS PRIOR TO START OF WORK.
- FOR WORK ZONE TRAFFIC CONTROL NOTES SEE STANDARD NO. MD-10-01
- ALL EXISTING PAVEMENT MARKINGS THAT ARE IN CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE REMOVED BY GRINDING.
- ALL PAVING TO BE STANDARD HOWARD COUNTY SECTION P-2.
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY "INTEGRATED TRANSPORTATION SOLUTIONS, DATE: SEPTEMBER 9, 2002."
- THIS PROJECT IS EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1202 OF HOWARD COUNTY CODE FOR FOREST CONSERVATION BECAUSE THE SITE RECEIVED PRELIMINARY APPROVAL AUGUST 9, 1991 - (P90-23) SEE SECTION 16.1202 (b)(1)(v).
- QUALITY MANAGEMENT IS PRIVATE AND IS PROVIDED IN THE PROPOSED SURFACE SAND FILTER. QUANTITY MANAGEMENT IS PRIVATE AND IS PROVIDED BY FIVE EXISTING STORMWATER MANAGEMENT PONDS WITHIN THE SUBDIVISION.



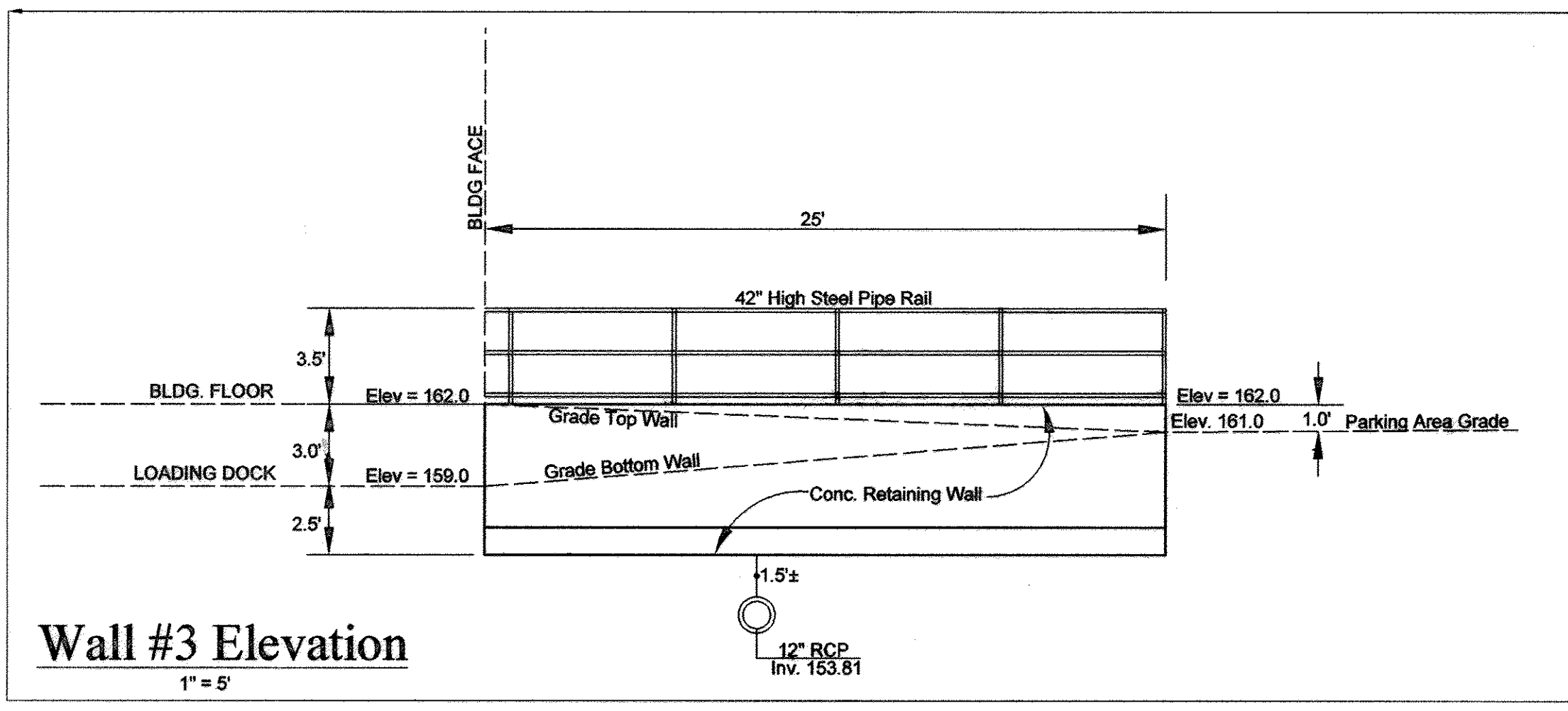
VICINITY MAP

SCALE: 1" = 2000'

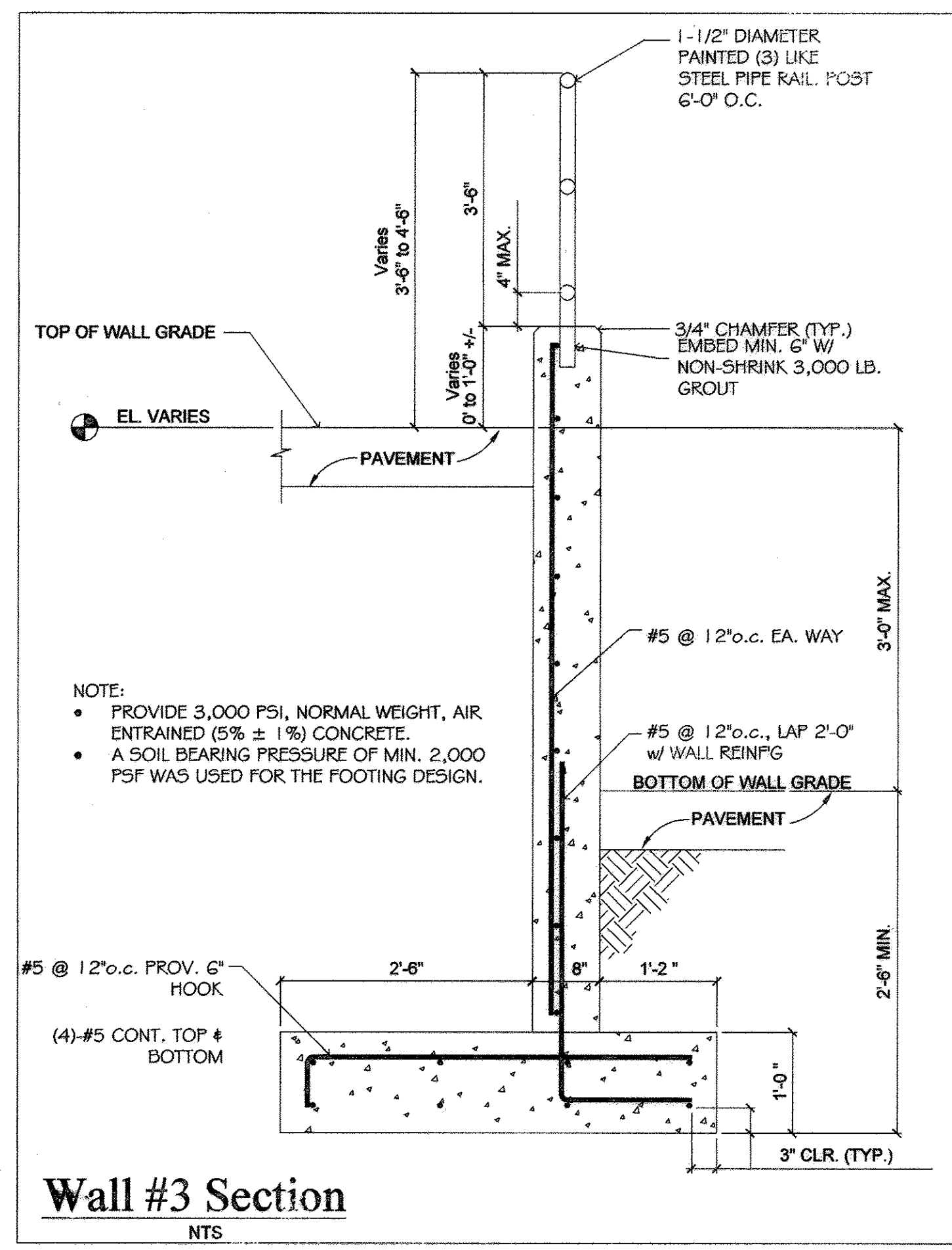
(COORDINATES BASED ON N.A.D. 27 AS PROJECTED BY HOWARD COUNTY GEOMETRIC CONTROL STATIONS #2445004 AND #2445005.)

### Site Analysis Data Chart

1. GENERAL SITE DATA	
CURRENT PLAT REFERENCE	14617 to 14619
PRESENT ZONING	B-2
APPLICABLE DPZ FILE REFERENCES:	SDP-99-149, SDP-99-113, SDP-99-143, SDP-99-169, SDP-98-103, F98169, F98103, P-90-23, GP-96-121, SDP 01-37, F-03-103
PROPOSED USE:	EMERGENCY VEHICLE SALES
NO. OF OCCUPANTS	N/A
PROPOSED WATER:	PUBLIC
PROPOSED SEWER:	PUBLIC
WATER AND SEWER CONTRACT NUMBER	14-3925-D (SDP-01-19)
2. AREA TABULATION	
TOTAL PROJECT AREA	4.2573 ACRES/185,291.17 SF
TOTAL DISTURBED AREA	3.90 AC
FLOOR AREA RATIO	30,000 SF GROSS FLOOR AREA/4.2573 ACRES = 0.16
BUILDING HEIGHT	24'
3. OPEN SPACE DATA: NA	
4. PARKING SPACE DATA	
PARKING REQUIRED: (14,400 S.F. SERVICE BAYS/15,600 S.F. SALES)	
15,600 S.F. @ 2' P.S./1000 S.F. = 32	
3 P.S. PER SERVICE BAY = 21	
TOTAL REQUIRED:	53 SPACES REQUIRED
TOTAL PROVIDED:	57 SPACES PROVIDED
TOTAL INCLUDES	
16 STANDARD SPACES @ 9' X 18', 2 SPACES @ 11' X 18', 5 SPACES @ 11' X 22'	
3 STANDARD HANDICAP SPACES @ 8' X 18' WITH 5' ACCESS AISLE	
1 VAN ACCESSIBLE HANDICAP SPACES @ 8' X 18' WITH 8' ACCESS AISLE	



SHEET INDEX	
NO.	SHEET TITLE
1	COVER SHEET & RETAINING WALL #3 DETAILS
2	SITE PLAN
3	NOTES AND DETAILS
4	STORMWATER MANAGEMENT DETAILS
5	STORM DRAIN, WATER & SEWER PROFILES
6	DRAINAGE AREA MAP
7	STORMWATER MANAGEMENT DRAINAGE AREA MAPS
8	SEDIMENT CONTROL PLAN
9	SEDIMENT CONTROL NOTES & DETAILS
10	LANDSCAPE PLAN
11	LANDSCAPE DETAILS AND NOTES
12	RETAINING WALL DETAILS



APPROVED: Department of Planning and Zoning

*[Signature]* 9/25/03  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 9/25/03  
 DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 9/26/03  
 DIRECTOR (A-29) DATE

ADDRESS CHART

PARCEL NO. STREET ADDRESS

A-29 7010 Troy Hill Drive

SUBDIVISION NAME SECTION NAME PARCEL #  
 Troy Hill Corporate Center N/A A-29

PLAT # BLOCK # ZONE ZONING MAP ELECT. DIST. CENSUS TRACT  
 16141 18 B-2 37 1 601202

WATER CODE A03 SEWER CODE 2152200

**Matis Warfield**  
 consulting engineers

contact: nick brader  
 10540 york road suite 1030  
 hunt valley maryland 21030  
 phone 410-883-7004  
 facsimile 410-883-1793  
 www.matiswarfield.com



Rev#2 - 12/2013 - Added Retaining Wall #3 Details for loading dock area.  
 Rev#1 - 9/17/2012 - Updated owner info, proposed use and parking calculations

OWNER/DEVELOPER  
**LAAKE ACQUISITION LLC**  
 c/o FESCO EMERGENCY SALES  
 6401 MACAW COURT  
 ELK RIDGE MD 21075  
 (410) 379-5353 x-29  
 Attn: Doug DeLawter

OWNER  
**Troy Hill Corporate Center I, LLC**  
 c/o Manekin Corporation  
 7061 Columbia Gateway Drive  
 Columbia, MD 21046  
 (410) 290-1488  
 Attn: Dave Meiners

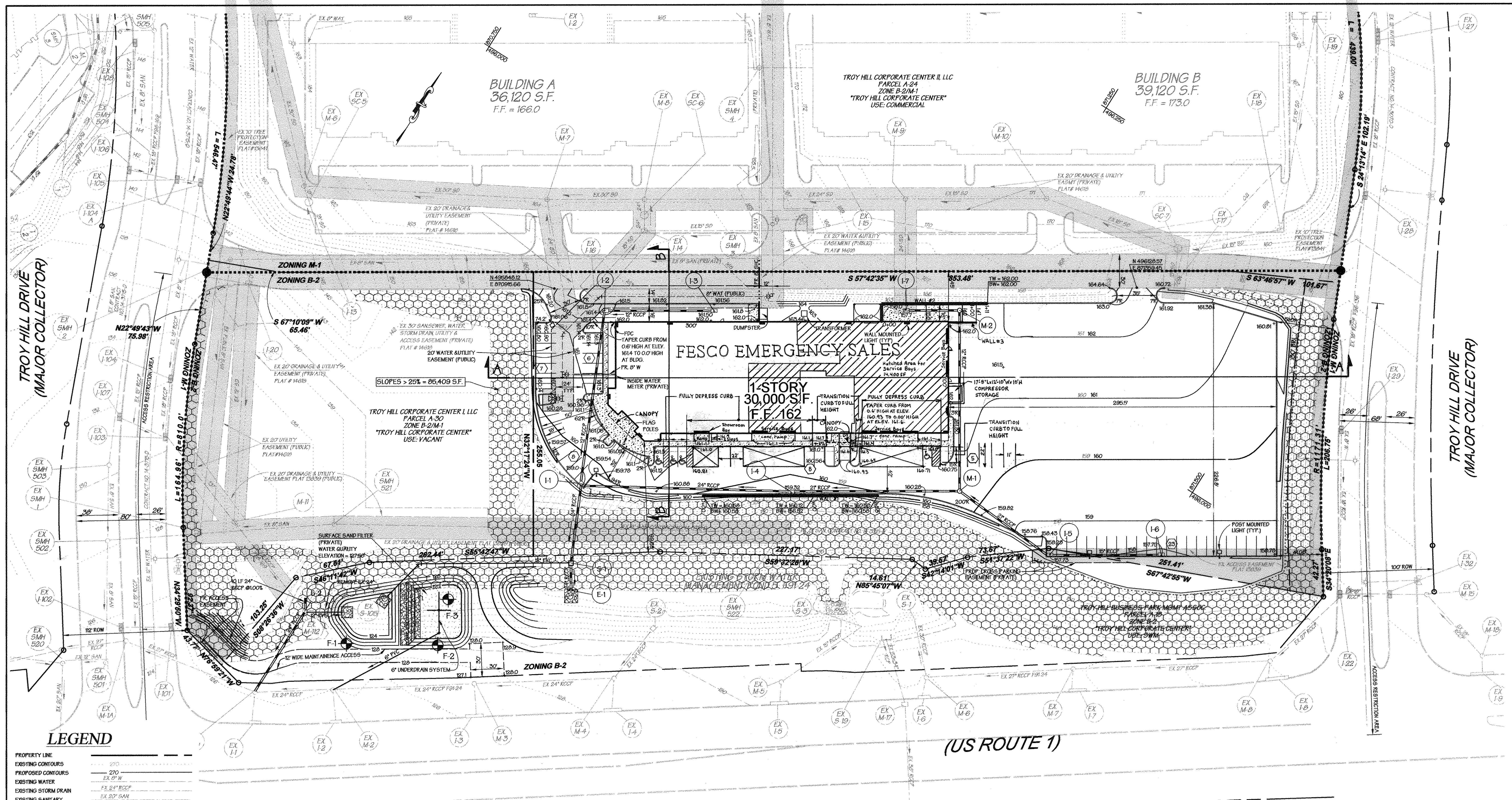
DEVELOPER  
**Harley Davidson of Maryland**  
 6339 Howard Lane  
 Elkridge MD 21075  
 (410) 796-1044  
 Attn: Katina Welner

Title Sheet  
**TROY HILL CORPORATE CENTER**  
 PARCEL A-29  
 TROY HILL DRIVE

Election District #1  
 Deed Ref: 5378/542  
 Tax Map 37, Parcel A-29  
 Scale: As Shown

Howard County, Maryland  
 August 28, 2003  
 Sheet 1 of 12





# BALTIMORE WASHINGTON BOULEVARD

SCALE: 1" = 40'

**LEGEND**

PROPERTY LINE	---
EXISTING CONTOURS	270
PROPOSED CONTOURS	270
EXISTING WATER	EX 2" W
EXISTING STORM DRAIN	EX 24" RCCP
EXISTING SANITARY	EX 20" SAN
PROPOSED STORM DRAIN	24" RCCP
PROPOSED SANITARY	8" S
PROPOSED WATER	8" W
EXISTING CURB AND GUTTER	---
PROPOSED CURB AND GUTTER	---
SOIL BORING	⊕
SLOPES > 25%	▨
SLOPES > 15% < 24.99%	▧
BUILDING MOUNTED LIGHTS	■
POST MOUNTED LIGHTS	⊙

**Matis Warfield**  
consulting engineers

contact: nick brader  
10540 York road suite m  
hunt valley, Maryland 21030  
phone 410-683-7004  
facsimile 410-683-1798  
www.matiswarfield.com



Rev#2 - 1/21/2013 - Added Retaining Wall #3 at loading dock area.  
Rev#1 - 9/17/2012 - Updated owner info and proposed use. Added compressor storage area, hatched service bay areas, added depressed curb along building and revised parking striping. Added concrete ramps to service bays.

OWNER/DEVELOPER  
**LAAKE ACQUISITION LLC**  
c/o FESCO EMERGENCY SALES  
6401 MACAW COURT  
ELKRIDGE MD 21075  
(410) 379-5353 x-29  
Attn: Doug DeLawter

OWNER  
**Troy Hill Corporate Center I, LLC**  
c/o Manekin Corporation  
7061 Columbia Gateway Drive  
Columbia, MD 21046  
(410) 290-1488  
Attn: Dave Meiners

DEVELOPER  
**Harley Davidson of Maryland**  
6339 Howard Lane  
Elkridge MD 21075  
(410) 796-1044  
Attn: Katina Welner

APPROVED: Department of Planning and Zoning

*Paul Damman* 9/23/03  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cindy Hamilla* 7/25/03  
DIVISION OF LAND DEVELOPMENT DATE

*Stephen Luff* 9/26/03  
DIRECTOR (Acting) DATE

**Site Plan**  
**TROY HILL CORPORATE CENTER**  
PARCEL A-29  
TROY HILL DRIVE

Election District #1  
Deed Ref: 5378/542  
Tax Map 37, Parcel A-29  
Scale: As Shown

Howard County, Maryland  
August 28, 2003  
Sheet 2 of 12

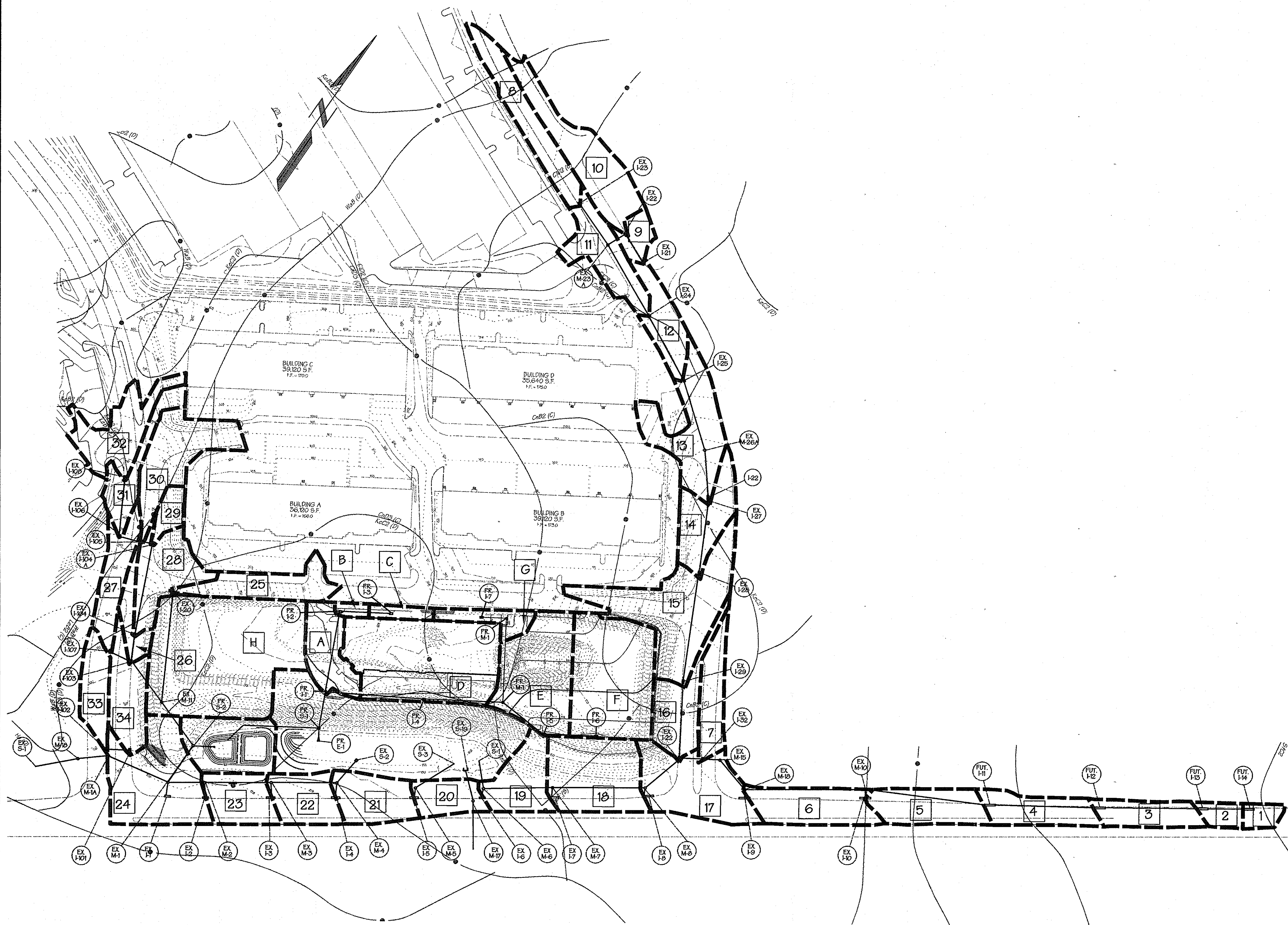












SCALE: 1" = 100'

PIPE SCHEDULE		
SIZE	TYPE	PIPE LENGTH-FEET
12"	RCCP CL IV	465'
15"	RCCP CL IV	101.0'
21"	RCCP CL IV	99.0'
21"	CL IV ASTM C76	152.0'
24"	RCCP CL IV	380.0'

AREA AND "C" FACTOR TABULATION			
SUBAREA	AREA	"C" FACTOR	IMPERVIOUS PERCENT
A	0.31	0.78	81%
B	0.04	0.60	50%
C	0.06	0.60	50%
D	1.00	0.86	94%
E	0.66	0.86	94%
F	0.83	0.88	96%
G	0.14	0.69	64%
H	1.44	0.81	85%

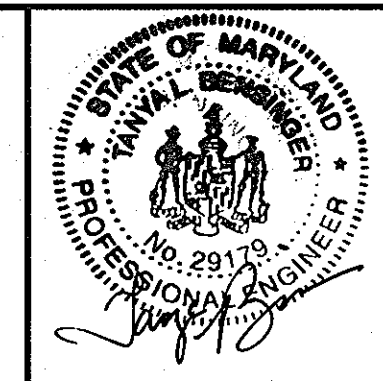
STRUCTURE SCHEDULE						
NO.	TYPE	INV. IN	INV. IN	INV. OUT	TOP ELEV.	REMARKS
I-1	HC STD. SD 4.34 DOUBLE "S" COMB. INLET	155.50	150.35	142.15	159.40	
I-2	HC STD. SD 4.22 TYPE "S" INLET	157.50		157.30	161.40	
I-3	HC STD. SD 4.22 TYPE "S" INLET			158.00	161.50	
I-4	HC STD. SD 4.34 DOUBLE "S" COMB. INLET	151.54		151.29	159.32	
I-5	HC STD. SD 4.34 DOUBLE "S" COMB. INLET	153.75		153.25	157.73	
I-6	HC STD. SD 4.34 DOUBLE "S" COMB. INLET			154.25	157.75	
I-7	HC STD. SD 4.22 TYPE "S" INLET			154.20	157.70	
M-1	HC STD. G 5.12 4" STD. PRECAST	153.05	152.75	152.30	160.34	
M-2	HC STD. G 5.12 4" STD. PRECAST	153.96		153.86	159.80	
E-1	MD STD. 354.01 TYPE "C" ENDWALL			123.00		
S-1	SEE DETAIL SHEET 4	127.75		124.22	132.00	
S-2	SEE DETAIL SHEET 4	125.23		125.03	135.00	

STORMWATER MANAGEMENT SUMMARY TABLE					
	Rev (c.t.)	WQv (c.t.)	WQv (c.t.)	Qp10 (cfs)	Qp100 (cfs)
DRAINAGE AREA	4.11 AC (WEST TROY HILL DR. + AREA H) & 3.04 AC (HARLEY) = 7.15 AC		954 AC.	NA	NA
REQUIRED	1745	13,960	24,739	NA	NA
PROVIDED	1745	14,066	38,520	NA	NA
LOCATION	2.5' STONE BELOW 6" UNDERDRAINS	SURFACE SAND FILTER	EX WQ FACILITY #5	NA	NA

\*\* THE TOTAL AREA BEING ROUTED THROUGH EXISTING WQ FACILITY #5 IS 11.58 AC. OF WHICH 3.04 AC. OF THE HARLEY SITE WATER QUALITY IS BEING PROVIDED IN THE SURFACE SAND FILTER. THE WATER QUALITY DISCHARGE FROM THE HARLEY SITE IS BEING DIVERTED INSIDE STRUCTURE S-1 AND DELIVERED TO THE SURFACE SAND FILTER VIA 10" PVC. THEREFORE, 11.58 - 3.04 = 8.54 ACRES OF WATER QUALITY IS BEING PROVIDED IN THE EXISTING FACILITY #5.

APPROVED: Department of Planning and Zoning  
*Chad Damman* 9/28/03  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*Conrad Hammit* 9/25/03  
 DIVISION OF LAND DEVELOPMENT DATE  
*Daryl J. Bell* 1/26/03  
 DIRECTOR DATE

**Matis Warfield**  
 consulting engineers  
 contact: nick brader  
 10540 york road suite m  
 hunt valley, maryland 21030  
 phone 410-683-7004  
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OWNER/DEVELOPER  
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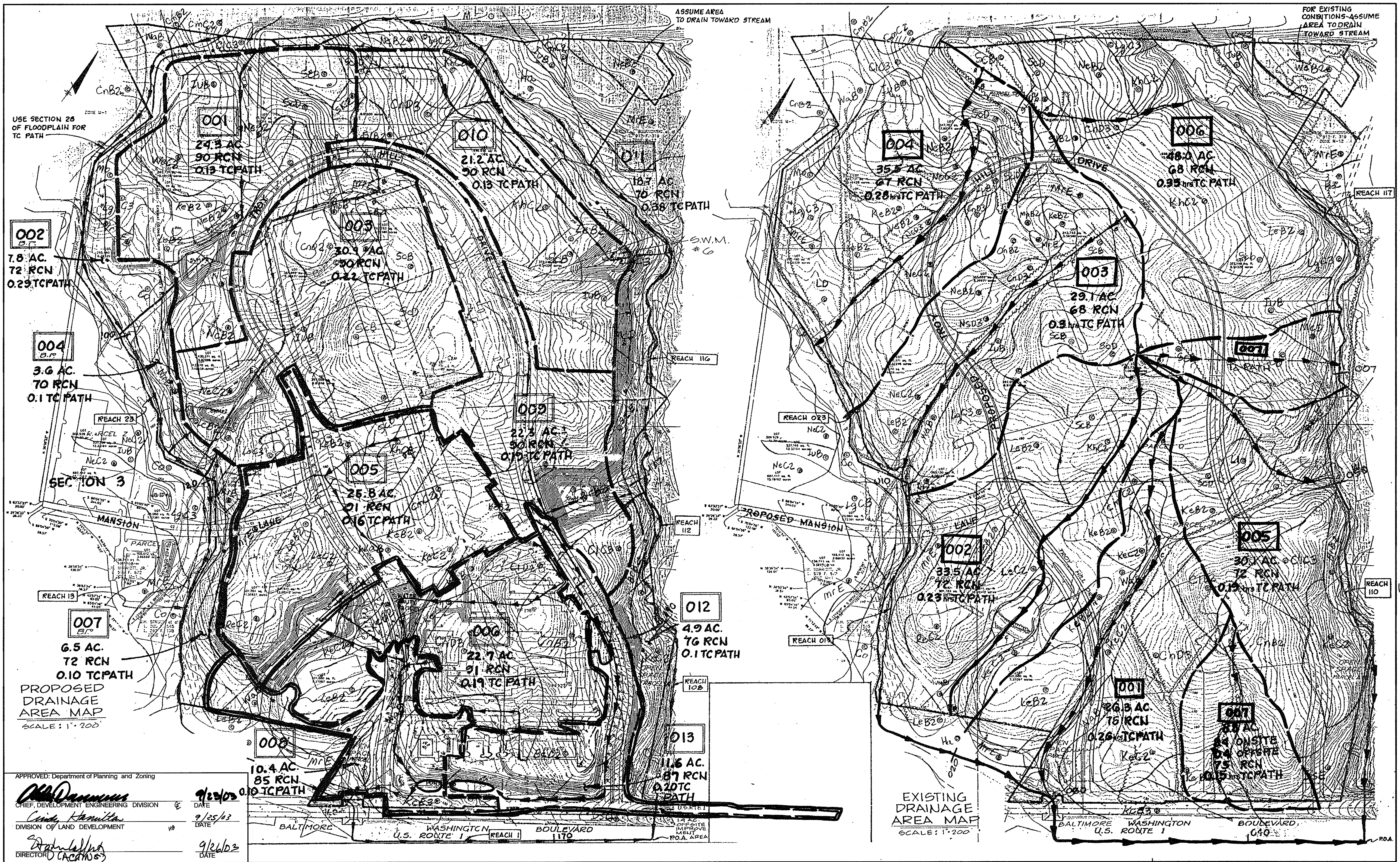
DEVELOPER  
 Harley Davidson of Maryland  
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 (410) 796-1044  
 Attn: Katina Welner

Drainage Area Map  
**TROY HILL CORPORATE CENTER**  
 PARCEL A-29  
 TROY HILL DRIVE

Election District #1  
 Deed Ref: 5378/542  
 Tax Map 37, Parcel A-29  
 Scale: As Shown

Howard County, Maryland  
 August 28, 2003  
 Sheet 6 of 12





APPROVED: Department of Planning and Zoning  
*Chris Hamilton*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 9/25/03  
*Chris Hamilton*  
 DIVISION OF LAND DEVELOPMENT  
 DATE: 9/25/03  
*David L. ...*  
 DIRECTOR (LACAMOS)  
 DATE: 9/26/03

**Matis Warfield**  
 consulting engineers  
 contact: nick brader  
 10540 york road suite m  
 hunt valley, maryland 21030  
 phone 410-688-3100  
 facsimile 410-688-1798  
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**NOTE**  
 THE DRAINAGE AREA MAP SHOWN WAS TAKEN FROM F-98-149 BY GEORGE W. STEPHENS & ASSOCIATES, APPROVED IN JANUARY OF 1999. ONLY PROPOSED DRAINAGE AREA BOUNDARIES FOR 002, 006, 008 AND 015 WERE REVISED TO REFLECT CURRENT/PROPOSED CONDITIONS.  
 Rev#1 - 9/12/2012 - Updated owner info.

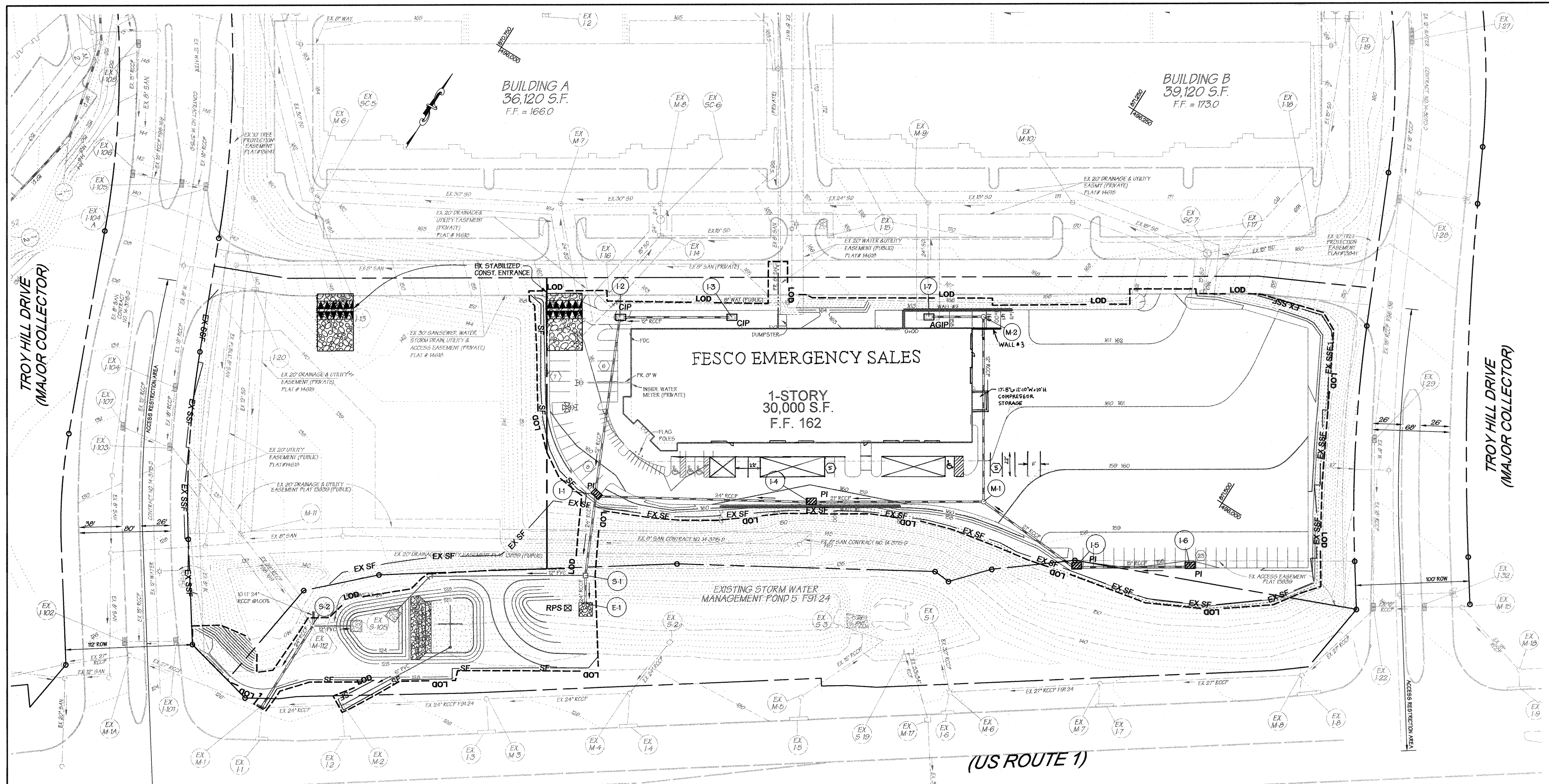
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 Attn: Katina Wehner

Stormwater Management Drainage Area Map  
**TROY HILL CORPORATE CENTER**  
 PARCEL A-29  
 TROY HILL DRIVE  
 Election District #1  
 Deed Ref: 5378/542  
 Tax Map 37, Parcel A-29  
 Scale: As Shown  
 Howard County, Maryland  
 August 28, 2003  
 Sheet 7 of 12





**LEGEND**

PROPERTY LINE	---
EXISTING CONTOURS	---
PROPOSED CONTOURS	---
EXISTING WATER	EX 8" W
EXISTING STORM DRAIN	EX 24" RCCP
EXISTING SANITARY	EX 20" SAN
PROPOSED STORM DRAIN	24" RCCP
PROPOSED SANITARY	20" W
PROPOSED WATER	8" W
EXISTING CURB AND GUTTER	---
PROPOSED CURB AND GUTTER	---
EXISTING SILT FENCE	EX SF
PROPOSED SILT FENCE	SF
SUPER SILT FENCE	SSF
LIMIT OF DISTURBANCE	LOD
REMOVABLE PUMPING STATION	RPS

**SEQUENCE OF CONSTRUCTION**

- NOTE: THE SITE HAS BEEN MASS GRADED TO SUBGRADE PER SDP 01-37.
- OBTAIN GRADING PERMIT.
  - NOTIFY THE HOWARD COUNTY DEPARTMENT OF PERMITS AND LICENSES 48 HOURS PRIOR TO BEGINNING WORK (2 DAYS)
  - INSTALL SILT FENCE, SUPER SILT FENCE AND BLOCK OPENING EX STRUCTURE S-2 (SEE DET. SHT. 9). MAINTAIN THE EXISTING SEDIMENT CONTROL DEVICES AS NOTED (1 DAY)
  - INSTALL STORM DRAINS TO STRUCTURE E-1 ONLY, BLOCK 10" OPENING IN S-1 AND PLUG INLETS I-1, I-4, I-5 & I-6 (SEE DETAIL SHEET 9). INSTALL UTILITIES & BEGIN BUILDING CONSTRUCTION (4 WEEKS)
  - FINE GRADE AREA NOT BEING PAVED AND STABILIZE (4 DAY)
  - UPON STABILIZATION OF THE SITE WITH ESTABLISHED VEGETATION AND STONE SUBBASE IN THE SIDEWALK AND PAVEMENT AREAS AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, INSTALL SURFACE SAND FILTER (ACCORDING TO THE DETAILS ON SHEET 4) AND 24" STORM DRAIN FROM EX. M-1 TO PR. S-2 (10 DAYS)
  - REMOVE EX STRUCTURE M-12 AND REPLACE WITH PR. S-2. REMOVE BLOCK FROM 10" OPENING IN PR. STRUCTURE S-1 (1 DAY)
  - INSTALL PAVEMENT AND SIDEWALKS FOR THE ENTIRE SITE (4 DAYS)
  - WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ANY REMAINING SEDIMENT CONTROL MEASURES AND STABILIZE (5 DAYS)
- \* THE CONTRACTOR IS RESPONSIBLE FOR CLEANING THE EXISTING SWM POND FOR ANY SEDIMENT ATTRIBUTED TO THIS PLAN.

**BALTIMORE WASHINGTON BOULEVARD**

SCALE: 1" = 40'

Rev#2 - 1/21/2013 - Added Retaining Wall #3 at loading dock area.  
Rev#1 - 9/12/2012 - Updated owner info and proposed use. Added compressor storage area, hatched service bay areas, added depressed curb along building and revised parking striping. Added concrete ramps to service bays.

OWNER/DEVELOPER  
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c/o FESCO EMERGENCY SALES  
6401 MACAW COURT  
ELKRIDGE MD 21075  
(410) 379-5353 x-29  
Attn: Doug DeLawter

Reviewed for the Howard Conservation District and meets technical requirements.  
*Jim Meyer* 9/11/03  
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.  
*John R. Robertson* 9/11/03  
APPROVED: HOWARD SOIL CONSERVATION DISTRICT

APPROVED: Department of Planning and Zoning  
*Jim Damman* 9/23/03  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Carole Hamilton* 9/25/03  
DIVISION OF LAND DEVELOPMENT DATE

*Stephen Balluff* 9/26/03  
DIRECTOR DATE

**Matis Warfield**  
consulting engineers  
contact: nick brader  
10540 York Road suite 21030  
hunt valley, maryland 21030  
phone 410-883-7004  
facsimile 410-883-1798  
www.matiswarfield.com

**ENGINEER CERTIFICATION:**  
I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.  
Engineer: *Tanya L. Bensinger* Date: 8/28/03  
Name: Tanya L. Bensinger PE # 29179

**DEVELOPER CERTIFICATION:**  
We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.  
Developer: *David E. Melchers* Date: 9/28/03  
Name: David E. Melchers

OWNER  
**Troy Hill Corporate Center I, LLC**  
c/o Manekin Corporation  
7061 Columbia Gateway Drive  
Columbia, MD 21046  
(410) 290-1488  
Attn: Dave Meiners

DEVELOPER  
**Harley Davidson of Maryland**  
6339 Howard Lane  
Elkridge MD 21075  
(410) 796-1044  
Attn: Katina Wehner

**Sediment Control Plan**  
**TROY HILL CORPORATE CENTER**  
PARCEL A-29  
TROY HILL DRIVE

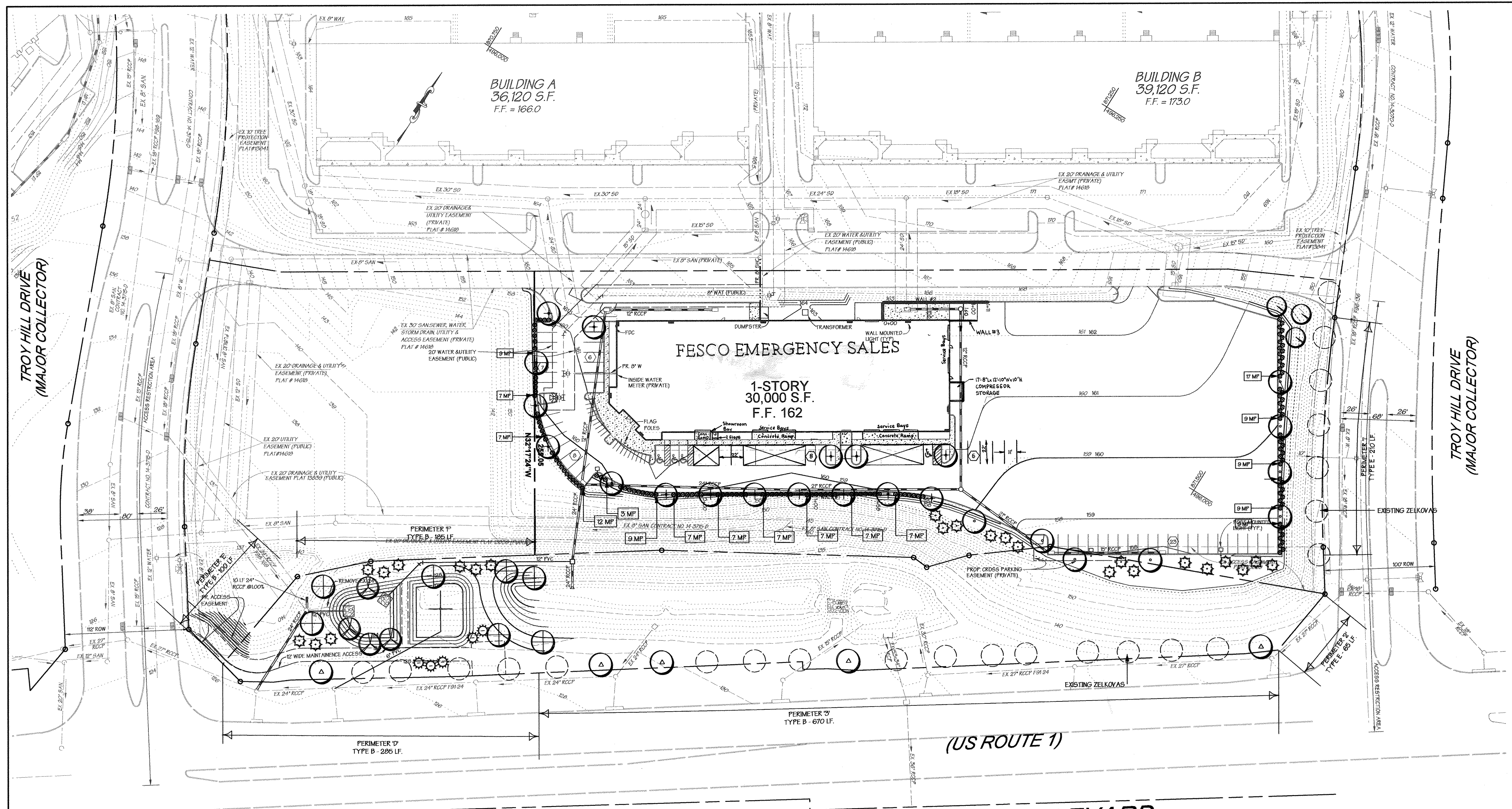
Election District #1  
Deed Ref: 5378/542  
Tax Map 37, Parcel A-29  
Scale: As Shown

Howard County, Maryland  
August 28, 2003  
Sheet 8 of 12









**BALTIMORE WASHINGTON BOULEVARD**  
(US ROUTE 1)

APPROVED: Department of Planning and Zoning

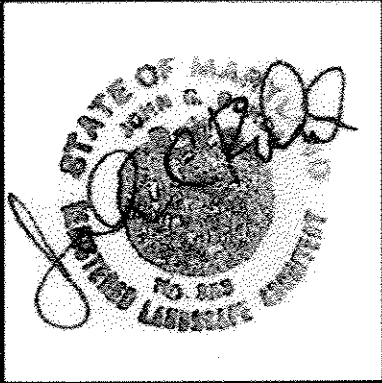
*[Signature]* 9/25/03  
CHIEF, DEVELOPMENT ENGINEERING DIVISION G DATE

*[Signature]* 9/24/03  
DIVISION OF LAND DEVELOPMENT HB DATE

*[Signature]* 9/26/03  
DIRECTOR (A-27) DATE

HUMAN & RHODE, INC.  
Landscape Architects  
512 Virginia Ave.  
Towson, Maryland 21286  
(410) 825-3885 Phone  
(410) 825-3887 Fax

**Matis Warfield**  
consulting engineers  
contact: nick brader  
10540 York road suite m  
hunt valley, maryland 21030  
phone 410-683-7904  
facsimile 410-683-1794  
www.matiswarfield.com



OWNER/DEVELOPER  
LAAKE ACQUISITION LLC  
c/o FESCO EMERGENCY SALES  
6401 MACAW COURT  
ELKRIDGE MD 21075  
(410) 379-5353 x-29  
Attn: Doug DeLawter

Rev#2 - 1/21/03 - Added Retaining Wall#3 at loading dock area.  
Rev#1 - 9/17/02 - Updated owner info and proposed use. Added compressor storage area, hatched service bay areas, added depressed curb along building and revised parking striping. Added concrete ramps to service bays.

OWNER  
Troy Hill Corporate Center I, LLC  
c/o Manekin Corporation  
7061 Columbia Gateway Drive  
Columbia, MD 21046  
(410) 290-1488  
Attn: Dave Meiners

DEVELOPER  
Harley Davidson of Maryland  
6339 Howard Lane  
Elkridge MD 21075  
(410) 796-1044  
Attn: Katina Wehner

Landscaping Plan  
**TROY HILL CORPORATE CENTER  
PARCEL A-29**  
TROY HILL DRIVE

Election District #1  
Deed Ref: 5378/542  
Tax Map 37, Parcel A-29  
Scale: As Shown

Howard County, Maryland  
August 28, 2003  
Sheet 10 of 12



SCHEDULE A  
PERIMETER LANDSCAPE EDGE

Category	Adjacent to Roadways		
	1	2	3
Perimeter Number	1	2	3
Landscape Type	E'	B'	B'
Linear Feet of Roadway Frontage/Perimeter	210 LF.	65 LF.	670 LF.
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	NO	NO	NO
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)	NO	NO	NO
Number of Plants Required			
Shade Trees	5	1	13
Evergreen Trees		2	17
Shrubs	53		
Number of Plants Provided			
Shade Trees	4		13
Evergreen Trees		2	11
Other Trees (2:1 substitution)	3	2	
Shrubs (10:1 substitution)	53		66
(Describe plant substitution credits below if needed)	2 PLANTING TREES = 1 SHADE TREE	2 EVERGREEN TREES = 1 SHADE TREE	66 SHRUBS = 6 EVERGREEN TREES

Comments: Perimeter edge #2 and #3 are a minimum of 100' from the parking lot edge. These perimeters were not considered as 'Adjacent' to the public roadway so a type 'B' buffer is provided.

SCHEDULE B  
PARKING LOT INTERNAL LANDSCAPING

Number of Parking Spaces	68 AUTO - 35 MOTORCYCLE
Number of Trees Required	5
Number of Trees Provided	5
Shade Trees	
Other Trees (2:1 substitution)	
Internal Islands Required	5
Internal Islands Provided (Min. 200 Sf.)	5

SCHEDULE D  
STORMWATER MANAGEMENT AREA LANDSCAPING

Linear Feet of Perimeter	570' Type 'B'
Number of Trees Required	
Shade Trees	11
Evergreen Trees	14
Credit for Existing Vegetation (No, Yes and %)	NO
Credit for Other Landscaping (No, Yes and %)	NO
Number of Trees Provided	
Shade Trees	11
Evergreen Trees	14
Other Trees (2:1 substitution)	

LANDSCAPE SURETY NOTE:

FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING

HAS BEEN POSTED AS PART OF THE DEVELOPER'S

AGREEMENT IN THE AMOUNT OF:

(35) SHADE TREES @ \$300 EACH =	\$10,500
(35) EVERGREEN TREES @ \$150 =	\$4,950
(53) SHRUBS @ \$30 EACH =	\$1,590
TOTAL:	\$17,040

SPECIFICATIONS FOR PLANTING

A. STANDARDS:

1. ALL PLANT MATERIAL, CONSTRUCTION METHODS AND MATERIAL PLACEMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF "AMERICAN STANDARD FOR NURSERY STOCK," AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC. THE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS."

2. ALL TREES SHALL BE DELIVERED TO THE SITE BALLED AND BURLAPPED. ALL SHRUBS SHALL BE BALLED AND BURLAPPED OR IN CONTAINERS. ALL GRASSES & PERENNIALS SHALL BE IN CONTAINERS.

B. MAINTENANCE:

1. AFTER THE PLANTING HAS BEEN APPROVED BY THE LANDSCAPE ARCHITECT AND THE OWNER, THE MAINTENANCE OF WATERING AND WEEDING OF SUCH PLANTS AND PLANTED AREAS SHALL BE PROVIDED BY THE OWNER. SINCE THE PLANTS ARE TO BE GUARANTEED BY THE CONTRACTOR, THE CONTRACTOR SHALL PERIODICALLY CHECK THE MAINTENANCE CONDUCTED BY THE OWNER. IF THE CONTRACTOR IS NOT SATISFIED WITH THE MAINTENANCE OF THE PLANTS, A WRITTEN REPORT, IN TRIPLICATE, STATING APPROPRIATE CHANGES SHALL BE GIVEN IMMEDIATELY TO THE LANDSCAPE ARCHITECT; TWO COPIES WILL BE FORWARDED TO THE OWNER. BEGIN MAINTENANCE IMMEDIATELY AFTER PLANTING.

2. MAINTAIN TREES UNTIL FINAL ACCEPTANCE, BUT IN NO CASE, LESS THAN 60 DAYS AFTER FINAL ACCEPTANCE OF PLANTING. MAINTAIN ALL PLANTS BY PRUNING, CULTIVATING AND WEEDING AS REQUIRED FOR HEALTHY GROWTH. RESTORE PLANTING SAUCERS, TIGHTEN AND REPAIR STAKE AND GUY SUPPORTS AND RESET TREES TO PROPER GRADES OR VERTICAL POSITION AS REQUIRED. RESTORE OR REPLACE DAMAGED WRAPPINGS. SPRAY AS REQUIRED TO KEEP ALL PLANTS FREE OF INSECTS AND DISEASE.

C. WATERING:

1. IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHALL BE PERFORMED DAILY OR AS OFTEN AS NECESSARY DURING THE FIRST WEEK AND IN SUFFICIENT QUANTITIES TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATERING SHALL NOT BE DONE DURING THE HEAT OF THE DAY. CONTRACTOR SHALL PROVIDE A SEPARATE LUMP SUM PRICE IN THE OVERALL LANDSCAPE BID FOR WATERING TO ALL NEW PLANTINGS DURING ONE GROWING SEASON.

D. EXCAVATION:

1. DEPTH AND WIDTH OF EXCAVATION FOR PLANTING OF ALL PLANTS SHALL BE TO TWICE THE DEPTH AND WIDTH OF ROOT BALL OR CONTAINER OF PLANT TO BE INSTALLED, EXCEPT AS NOTED ON DETAILS.

E. TOPSOIL, PLANTING MIX AND MULCH:

1. ALL TOPSOIL SHALL BE WELL GRADED LOAM OF GOOD UNIFORM QUALITY AND SHALL BE A NATURAL FERTILE SOIL FREE OF OBJECTS LARGER THAN ONE INCH IN ANY DIMENSION, AND FREE OF TOXIC SUBSTANCES, WEEDS AND ANY MATERIAL OR SUBSTANCES THAT MAY BE HARMFUL TO PLANT GROWTH. TOPSOIL SHALL CONTAIN AT LEAST 1/3 ORGANIC MATTER. IF SUFFICIENT TOPSOIL IS NOT AVAILABLE ON THE SITE TO MEET THE DEPTH AS SPECIFIED HEREIN, THE CONTRACTOR SHALL FURNISH ADDITIONAL TOPSOIL, PRIOR TO TOPSOIL DELIVERY. THE CONTRACTOR SHALL OBTAIN THE LANDSCAPE ARCHITECT'S APPROVAL OF THE SOURCE FROM WHICH TOPSOIL IS TO BE FURNISHED.

2. FOR PLANTING MIX, MIX THOROUGHLY 2/3 EXISTING SOIL AND 1/3 LEAF MULD OR EQUAL ORGANIC MATTER.

3. MULCH MATERIAL SHALL BE OF UNIFORM SIZE, FINE SHREDED PINEBARK HARDWOOD MULCH OR APPROVED EQUAL. MULCH SHALL BE A REDDISH-DARK BROWN COLOR AND SHALL BE LAID TO A UNIFORM MINIMUM DEPTH OF 2 INCHES. MULCH AREAS AROUND TREES AT THE RATE OF 1 OF DIAMETER PER OF TRUNK CALIPER.

F. SUBSTITUTIONS:

1. IF A PLANT IS FOUND NOT TO BE SUITABLE OR AVAILABLE, THE LANDSCAPE CONTRACTOR IS TO NOTIFY THE LANDSCAPE ARCHITECT BEFORE BIDDING. THE OWNER OR LANDSCAPE ARCHITECT WILL THEN SELECT A REASONABLE ALTERNATE OR INFORM ALL LANDSCAPE CONTRACTORS OF THE AVAILABILITY OF THE ORIGINAL PLANT.

G. PRUNING, CLEANUP, PROTECTION OF EXISTING MATERIALS AND RESTORATION:

1. THE CONTRACTOR SHALL PRUNE PLANT MATERIAL WITHIN TWO (2) DAYS OF INSTALLATION IN ACCORDANCE WITH THE DETAILS AND AS DIRECTED BY THE OWNER'S REPRESENTATIVE.

2. DURING COURSE OF PLANTING, EXCESS AND WASTE MATERIALS SHALL BE CONTINUOUSLY AND PROMPTLY REMOVED. LAWN AREAS KEPT CLEAR, AND ALL REASONABLE PRECAUTIONS TAKEN TO AVOID DAMAGE TO ANY EXISTING LAWNS, PAVING, ETC. NOT SCHEDULED FOR REMOVAL WHEN PLANTING IN AN AREA HAS BEEN COMPLETED, THE AREA SHALL BE CLEANED UP THOROUGHLY. DEBRIS, RUBBISH, SUBSOIL AND WASTE MATERIALS SHALL BE CLEANED UP AND REMOVED FROM THE PROPERTY. EXISTING GRASS AREAS WHICH HAVE BEEN INJURED BY THE WORK SHALL BE REGRADED AND SODED TO MATCH THE EXISTING LAWN. THE ENTIRE AREA SHALL BE NEAT AND CLEAN TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT.

3. CONTRACTOR SHALL, AT ALL TIMES, PROTECT ALL PLANTS AND LAWNS FROM DAMAGE. THE MOVING OF HEAVY EQUIPMENT OR MATERIAL OVER THE LAWN AREAS SHALL BE DONE ON PLANKS OR PORTCOONS.

4. THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL CONDITION ALL PAVEMENTS, SODED OR PLANTED AREAS, STRUCTURES OR SUBSTRUCTURES, NOT SCHEDULED FOR REMOVAL WHICH ARE DISTURBED BY THE CONTRACTOR DURING PLANTING OPERATIONS. SUCH RESTORATION SHALL BE IN A MANNER SATISFACTORY TO THE LANDSCAPE ARCHITECT AND AT NO ADDITIONAL COST TO THE OWNER.

H. FINAL INSPECTION AND GUARANTEE:

1. AFTER PLANTING IS COMPLETED (INCLUDING MULCHING AND CLEAN-UP) THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING TO REQUEST FINAL INSPECTION OF THE TOTAL PLANTING. THE LANDSCAPE ARCHITECT SHALL MAKE A FINAL INSPECTION VISIT AS SOON AS POSSIBLE. LANDSCAPE ARCHITECT SHALL NOTIFY THE LANDSCAPE CONTRACTOR, IN WRITING, WHEN ALL WORK IS SATISFACTORY COMPLETE. IF WORK IS NOT SATISFACTORY COMPLETE, THE LANDSCAPE ARCHITECT WILL NOTIFY THE LANDSCAPE CONTRACTOR, IN WRITING, AS TO THE DEFICIENCIES IN THE WORK AND THE NECESSARY CORRECTIVE MEASURES. THE LANDSCAPE CONTRACTOR WILL BE GIVEN A REASONABLE AMOUNT OF TIME TO CORRECT THE DEFICIENCIES, AND ANOTHER FINAL INSPECTION WILL BE SCHEDULED BY THE LANDSCAPE ARCHITECT.

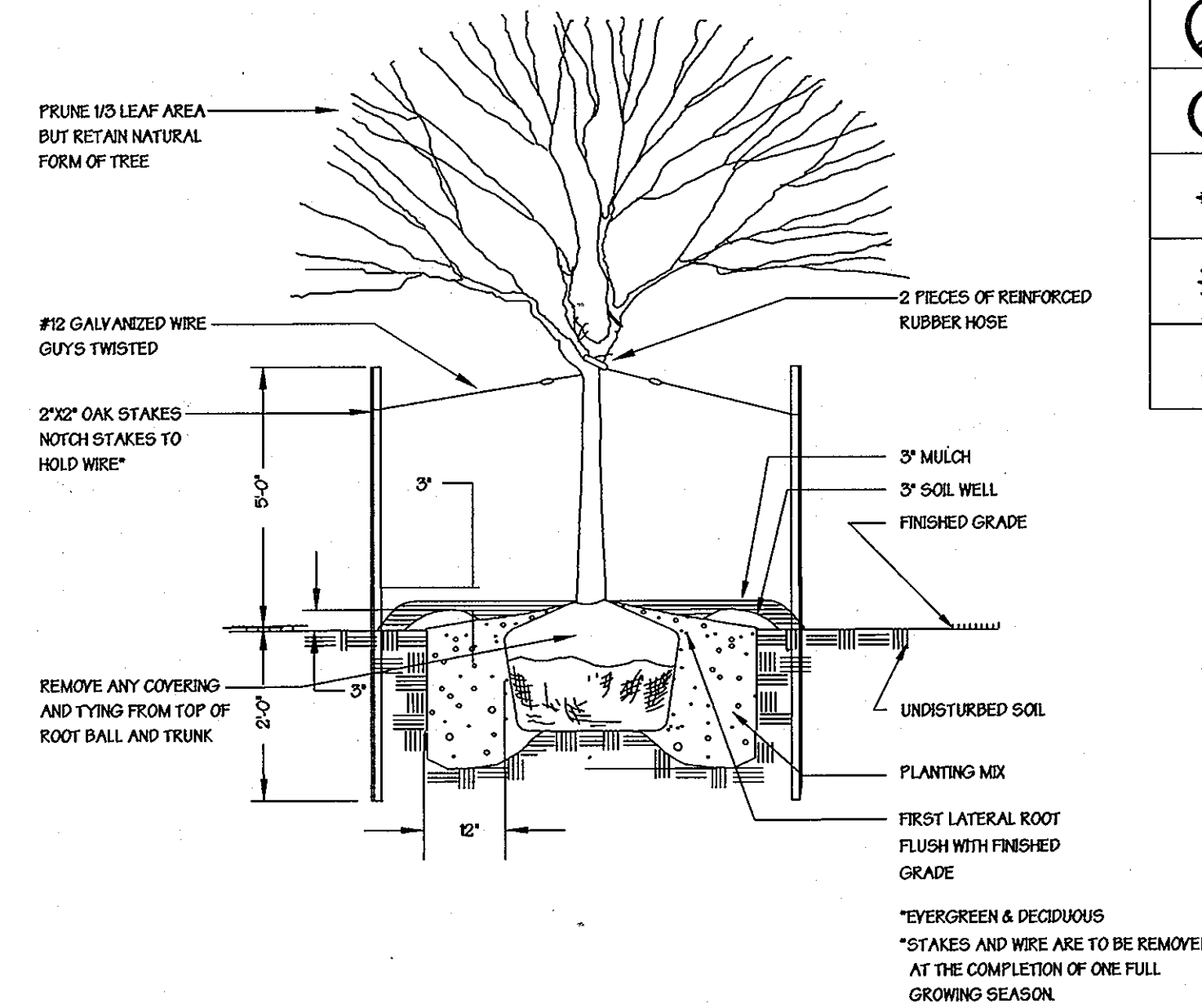
2. ALL PLANT MATERIAL AND LAWN AREAS SHALL BE GUARANTEED TO BE IN A VIGOROUS GROWING CONDITION ONE YEAR FROM THE DATE OF FINAL INSPECTION AND ACCEPTANCE. AT THE TERMINATION OF THIS PERIOD, THE CONTRACTOR SHALL HAVE COMPLETED THE PRECEDING MAINTENANCE SCHEDULE. ANY PLANTS INFECTED WITH DISEASE OR INSECTS WILL BE REMOVED OR TREATED. ALL DEAD OR UNACCEPTABLE PLANTS WILL BE REPLACED BY THE SAME PLANTS AND SIZES DESIGNATED ON THE PLANT LIST. THESE PLANTS SHALL BE PLANTED, MULCHED AND GUY AS SPECIFIED HEREIN AND WITHOUT EXTRA COMPENSATION TO THE CONTRACTOR. AT THE COMPLETION OF ALL SUCH WORK AND WITH THE APPROVAL OF THE LANDSCAPE ARCHITECT, THE CONTRACT WILL BE CONSIDERED COMPLETE.

GENERAL NOTES:

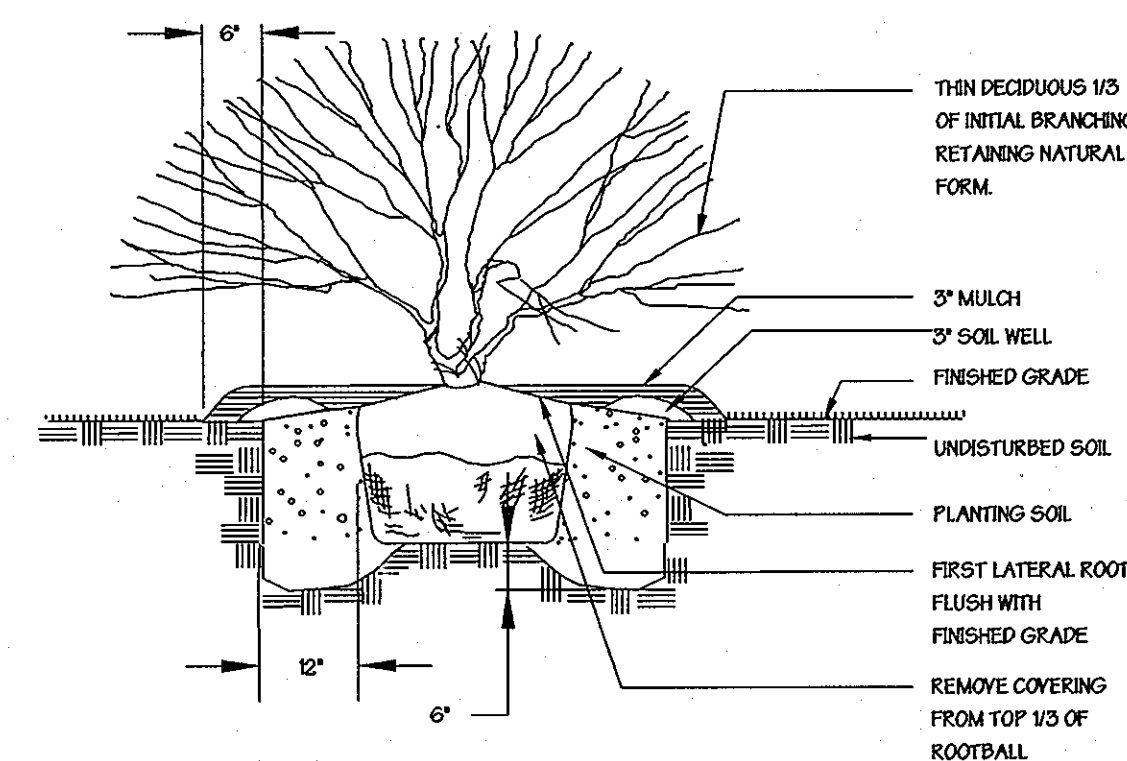
- Contractor is to notify Miss Utility a minimum of 72 hours prior to digging. Telephone: 1-800-257-7777
- The Landscape Architect is to be notified 48 hours before planting begins. The location of all plant material is to be approved in the field by the Landscape Architect.
- No tree or shrub planting pits are to be left open or unattended.
- Evergreen trees and shrubs are to be grouped into mulched beds. Beds are to be edged and the grass is to be removed prior to mulching.

PLANT LIST

KEY	QTY.	BOTANICAL NAME COMMON NAME	SIZE	COND.	REMARKS
⊕	16	ULMUS PARVIFOLIA 'ALLEE' ALLEE CHINESE ELM	2 1/2 - 3' CAL	B&B	
⊙	8	QUERCUS PALUSTRIS PIN OAK	2 1/2 - 3' CAL	B&B	
⊕	7	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2 1/2 - 3' CAL	B&B	
⊕	5	ZELCOVA SERRATA 'GREEN VASE' GREEN VASE ZELCOVA	2 1/2 - 3' CAL	B&B	
⊕	4	BETULA NIGRA 'HERITAGE' HERITAGE RIVER BIRCH	8 - 10' HT.	B&B	CLUMP FORM
⊕	3	AMELANCHIER X GRANDIFLORA AUTUMN BRILLIANCE SERVICEBERRY	8 - 10' HT.	B&B	CLUMP FORM
⊕	24	PINUS STROBUS EASTERN WHITE PINE	6 - 8' HT.	B&B	MIN 10' O.C.
⊕	5	PINUS THUNBERGIANA JAPANESE BLACK PINE	6 - 8' HT.	B&B	MIN 10' O.C.
⊕	142	MYRICA PENNSYLVANICA NORTHERN BAYBERRY	30 - 36' HT.	B&B	4' O.C.



PLANTING DETAIL FOR TREES\* - 1-4" CALIPER  
NOT TO SCALE



PLANTING DETAIL FOR EVERGREEN  
AND DECIDUOUS SHRUBS  
NOT TO SCALE

NOTE:

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

DEVELOPER'S / BUILDERS CERTIFICATE

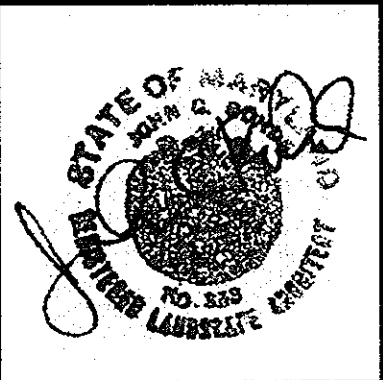
I / We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I / We further certify that upon completion, a Certification of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

David E. Meiners 8/28/03  
DEVELOPER/BUILDER DATE

HUMAN & ROHDE, INC.  
Landscape Architects  
512 Virginia Ave.  
Towson, Maryland 21286  
(410) 225-3885 Phone  
(410) 225-3887 Fax

APPROVED: Department of Planning and Zoning	
<i>[Signature]</i>	9/23/03
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>[Signature]</i>	9/25/03
DIVISION OF LAND DEVELOPMENT	DATE
<i>[Signature]</i>	9/26/03
DIRECTOR	DATE

**Matis Warfield**  
consulting engineers  
contact: nick brader  
10540 york road suite m  
hunt valley, maryland 21030  
phone 410-683-7004  
facsimile 410-683-1798  
www.matiswarfield.com



Rev#1 - 9/12/2012 - Updated owner info.

OWNER/DEVELOPER  
**LAAKE ACQUISITION LLC**  
c/o FESCO EMERGENCY SALES  
6401 MACAW COURT  
ELK RIDGE MD 21075  
(410) 379-5353 x-29  
Attn: Doug DeLawter

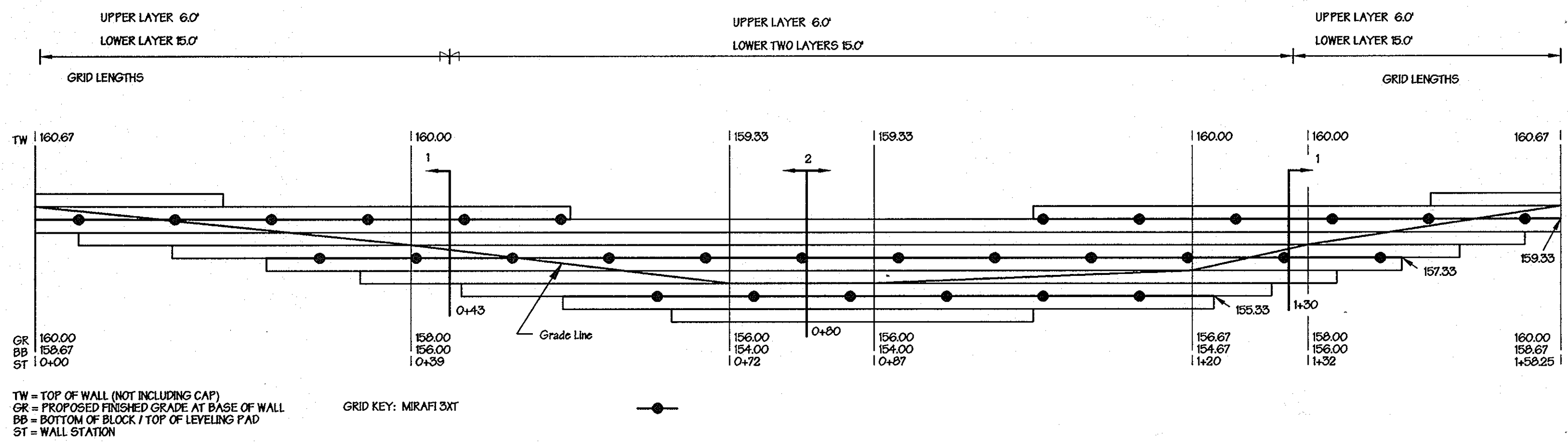
OWNER  
**Troy Hill Corporate Center I, LLC**  
c/o Manekin Corporation  
7061 Columbia Gateway Drive  
Columbia, MD 21046  
(410) 290-1488  
Attn: Dave Meiners

DEVELOPER  
**Harley Davidson of Maryland**  
6339 Howard Lane  
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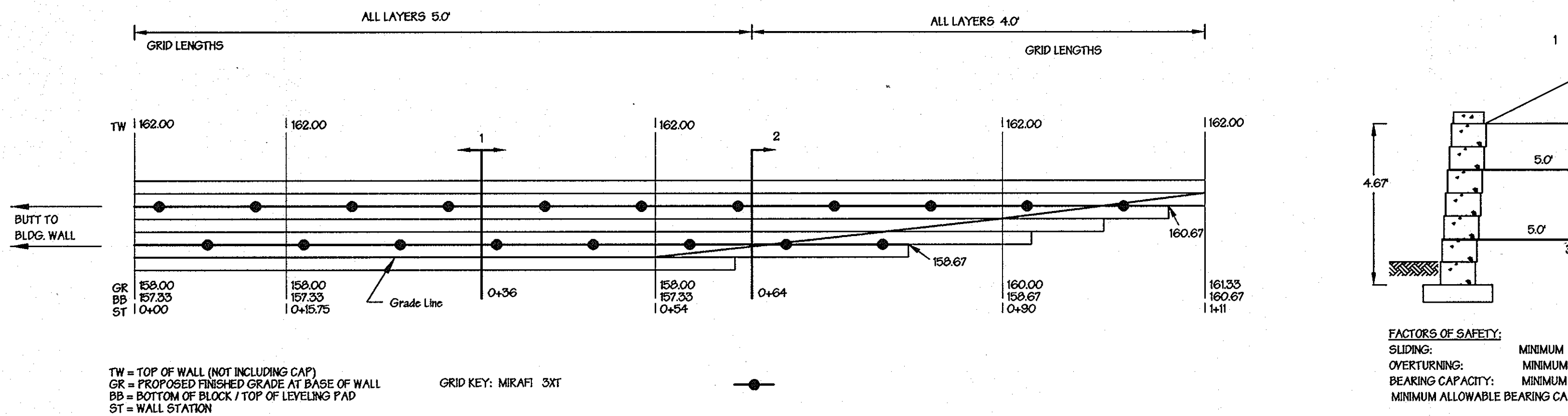
Landscape Plan  
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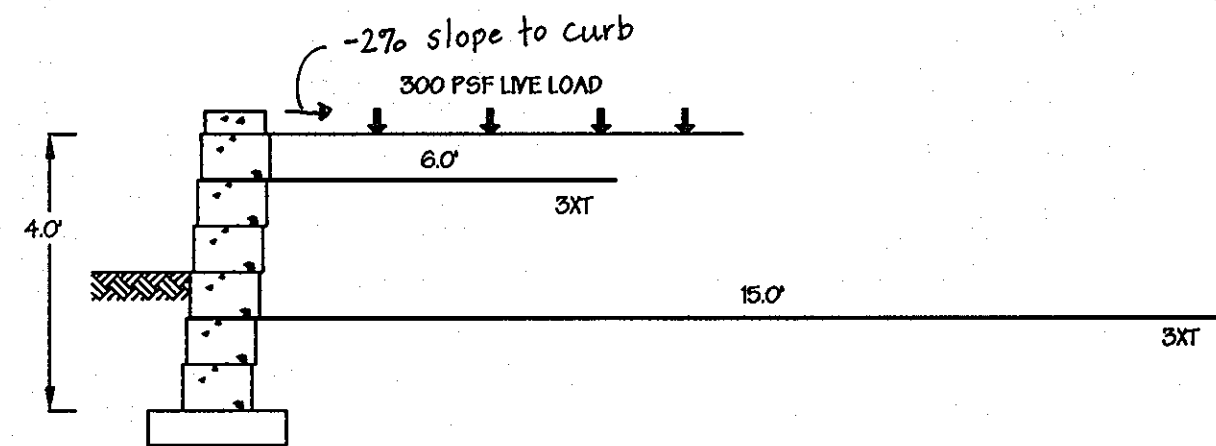
WALL #1 (S of proposed building)  
Scale: Horizontal: 1" = 10' Vertical: 1" = 5'



WALL #2 (N of proposed building)  
Scale: Horizontal: 1" = 10' Vertical: 1" = 5'

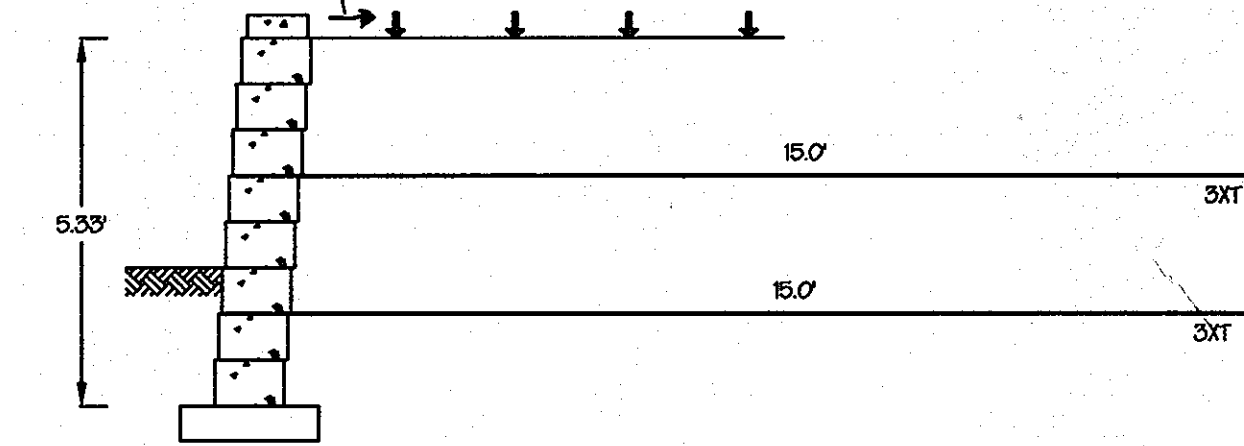


WALL #1, SECTION 1



FACTORS OF SAFETY:  
SLIDING: MINIMUM 1.5 ACTUAL 5.62  
OVERTURNING: MINIMUM 2.0 ACTUAL 47.61  
BEARING CAPACITY: MINIMUM 2.0 ACTUAL 26.13  
(Maximum Bearing Pressure: 741 PSF)

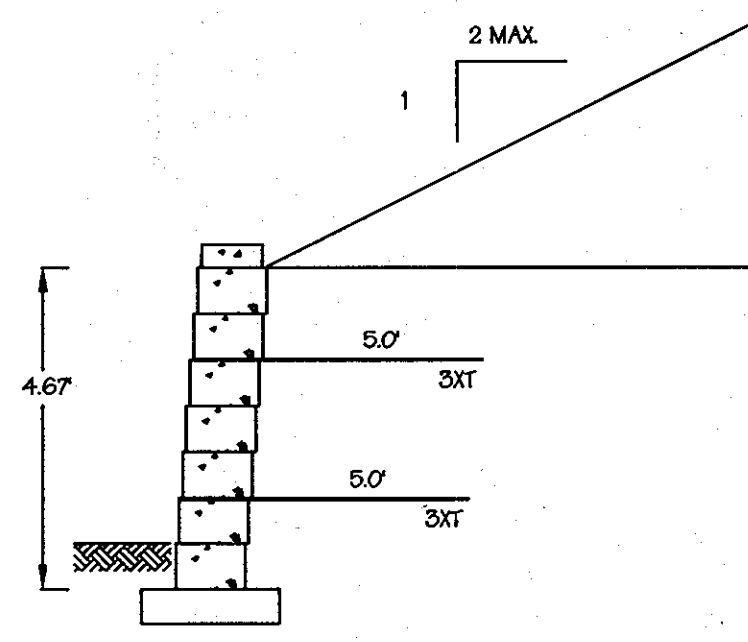
WALL #1, SECTION 2



FACTORS OF SAFETY:  
SLIDING: MINIMUM 1.5 ACTUAL 4.86  
OVERTURNING: MINIMUM 2.0 ACTUAL 31.93  
BEARING CAPACITY: MINIMUM 2.0 ACTUAL 21.58  
(Maximum Bearing Pressure: 897 PSF)

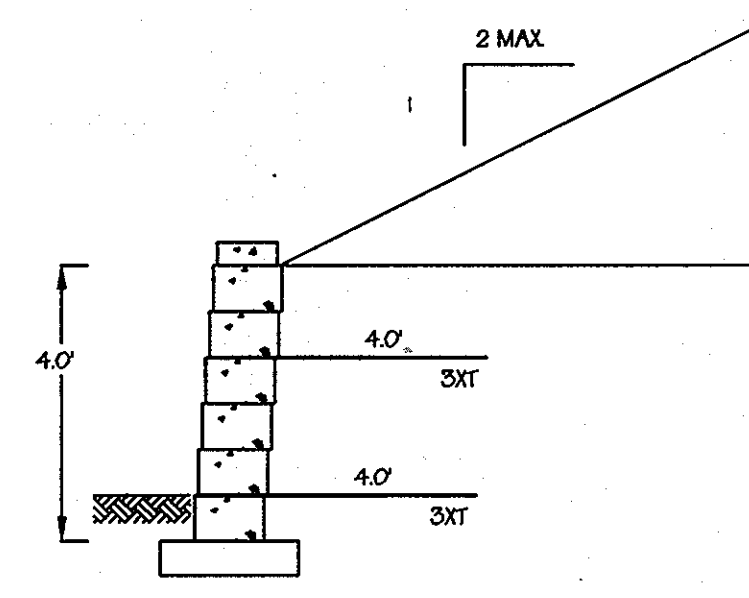
N.T.S.

WALL #2, SECTION 1



FACTORS OF SAFETY:  
SLIDING: MINIMUM 1.5 ACTUAL 1.79  
OVERTURNING: MINIMUM 2.0 ACTUAL 4.49  
BEARING CAPACITY: MINIMUM 2.0 ACTUAL 7.29  
MINIMUM ALLOWABLE BEARING CAPACITY 2,000 PSF

WALL #2, SECTION 2



FACTORS OF SAFETY:  
SLIDING: MINIMUM 1.5 ACTUAL 1.67  
OVERTURNING: MINIMUM 2.0 ACTUAL 4.12  
BEARING CAPACITY: MINIMUM 2.0 ACTUAL 7.04  
MINIMUM ALLOWABLE BEARING CAPACITY 2,000 PSF

N.T.S.

MATERIALS ESTIMATE:

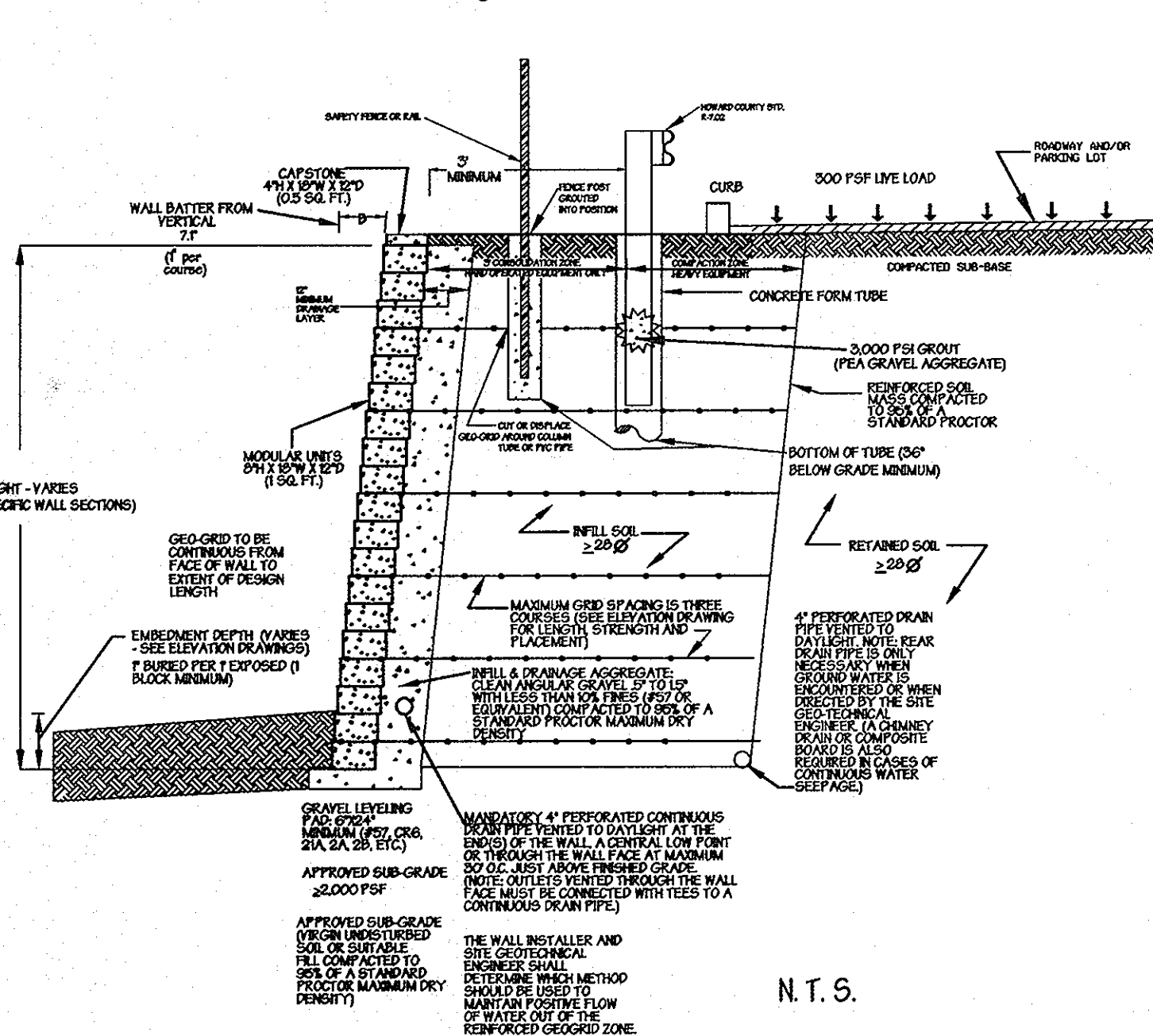
WALL	TOTAL SQ. FT.	10 S.F. BLOCK (0.5 S.F.) CAPS**	CRGS	PNS	GRID	CU YDS	LEVELING	FT. DRAIN	FT. WALL
1	757	680	114	0	1149	445	44	12	166
2	498	460	76	0	772	185	29	9	117
TOTALS	1255	1140	190	0	1921	630	73	21	282

\*Ryan & Associates is not responsible for extra or shortages based on this take-off. It is the contractor's responsibility to verify the accuracy of this design by reviewing the site grading plan for this project.  
\*\*Includes one extra cap per step down on top of the wall for double capping.  
NOTE: Totals include 2% extra for block and caps, 15% for grid and 5% for gravel.

- SOIL PARAMETERS:** Based on soil information obtained from The Robert B. Balter Company about this site, an internal angle of friction of 28 degrees was used in these designs. This was for a worst case ML (silt) soil type. The site soils consist mainly of ML and SM (silty sand). NOTE: CH (fat clay), CL (lean clay), MH (elastic silt) and OH/OL/PT (organic) soils are not acceptable for wall construction. If these unsuitable soils are encountered they shall be removed and replaced with soils that meet or exceed the design friction angle of 28 degrees. The site geotechnical engineer shall monitor this closely during the construction process. No cohesion was used in any of the calculations.
- BEARING CAPACITY:** The sub-grades must be tested prior to installation of the gravel leveling pads and have minimum allowable bearing capacities of 2,000 PSF. The sub-grades must be virgin (natural undisturbed soil) or fill compacted to 95% of a standard proctor maximum dry density. The actual highest bearing pressure exerted by these walls (including any slopes and surcharges above) are Wall #1 897 PSF and Wall #2 827 PSF. Any areas of the sub-grades that test below these maximum pressures will require undercutting or enlarged grid reinforced leveling pads.
- CONSTRUCTION OVERSIGHT:** The foundation soils must be examined by the site geotechnical engineer to assure that the actual foundation soil strength meets or exceeds that required in the "Bearing Capacity" section (item #2 above). The construction of these walls must be performed under the observation of a Maryland Registered Professional Engineer to ensure that they are built in accordance with the Ryan & Associates (RA) specifications.
- SLOPES & SURCHARGES:** The following loads were applied to the walls on this project. Wall #1: A 300 PSF live load surcharge for the proposed parking lot and vehicles. Wall #2: a 2:1 slope (NOTE: Section 1 was also modeled with a 120 PSF live load surcharge for the porch and pedestrians and all factors of safety are met.)
- SPECIFICATIONS:** Constructions and materials must conform to the "Ryan & Associates segmental retaining wall specifications and installations guidelines for Keystone."
- WALL BATTER:** A 7.1 degree batter (1" setback per block course) was used for Wall #1. A 0.5 degree batter (near vertical setback - front pin position) was used for Wall #2 because of the inside corner and because it comes off of a vertical building. The 0.5 degree batter may not be used for Wall #1 however the 7.1 degree batter may be used for Wall #2 if desired since it is more conservative. NOTE: during wall stake out the civil engineer/surveyor and wall installer should predetermine the amount of wall batter and move the walls forward as necessary if there are critical dimensions above the walls that must be met.
- EMBEDMENT:** Wall #1: 2 blocks increasing to 3 blocks from station 0+00 to 0+39, 3 blocks from 0+39 to 1+32 and 3 blocks decreasing to 2 blocks from 1+32 to 1+58. Wall #2: 1 block from station 0+00 to 0+54, 1 block increasing to 2 blocks from 0+54 to 0+90 and 2 blocks decreasing to 1 block from 1+11.
- GEORGRIDS:** Mini 3XT geogrid, which has a TDS Long Term Design Strength of 1,558, was used in these designs. All geogrid substitutions must have prior approval of RA.
- WALL PROFILES:** The elevation drawings were done to represent the grade changes necessary on the civil drawings and were done in even block course increments of 0.67' (8"). Minor field changes may be necessary by the wall installer. Lineal footage may be added or subtracted as needed if the wall's heights are equal to or less than the design heights. If the walls need to be raised in height, RA shall be notified and a new structural cross section must be provided before the wall installer proceeds. NOTE: the cap height of 0.33' (4") is not shown on the profile drawings, however its height may have been used in some cases to achieve the desired TW elevations.
- FACTORS OF SAFETY:** The following factors of safety have been met in these designs: Sliding 1.5, Overturning 2.0, Bearing Capacity 2.0, Grid Overstress 1.5, Grid Pullout 1.5 (from the soil and from the block) and Global Stability 1.3.
- BACK SLOPE - WALL #2:** Water management is critical behind Wall #2 since there is a back slope above the wall. If water is directed to the wall the top 6" of compacted fill over the reinforced zone must have impermeable soil (clay - such as CL, GC or SC) or an underlying geomembrane. A swale may be constructed (clay, concrete or asphalt) behind the wall to divert the water around the end(s) of the wall. This swale should have a minimum depth of 8" and a minimum 1-2% slope laterally from the high point to the ends of the wall. Or the slope may continue to the top of the wall and the water may be directed over it. In no case should the surface water be allowed to pond and saturate the reinforced geogrid zone or be introduced into the 12" drainage layer.
- BLOCK SYSTEM:** These designs are valid only for the Keystone Compac II system. Each segmental wall system has unique dimensions, connection devices and interacts differently with geogrids; therefore substitutions of other block types are not permitted.
- GLOBAL STABILITY:** A global stability analysis was performed for the Wall #1 since it rests on a front slope. The geogrids were lengthened until a factor of safety of 1.3 was met.

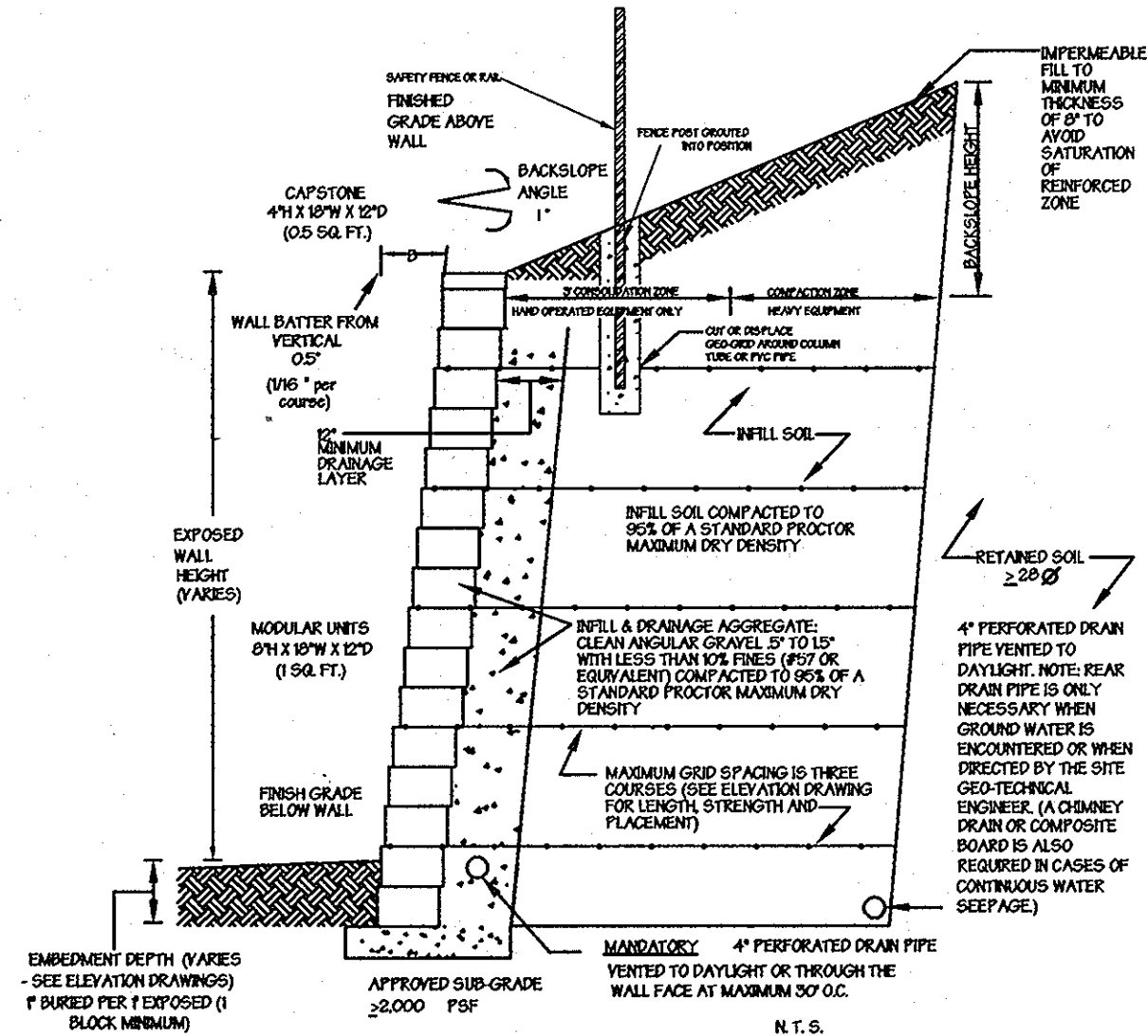
KEYSTONE COMPAC II  
TYPICAL WALL  
SECTION  
guard rail behind

KEYSTONE COMPAC II  
TYPICAL WALL  
SECTION



N.T.S.

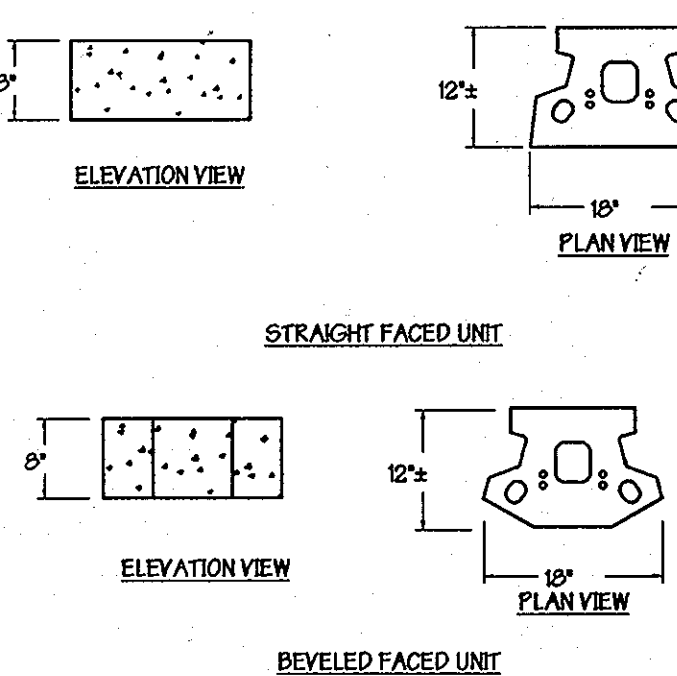
APPLIES TO WALL #1



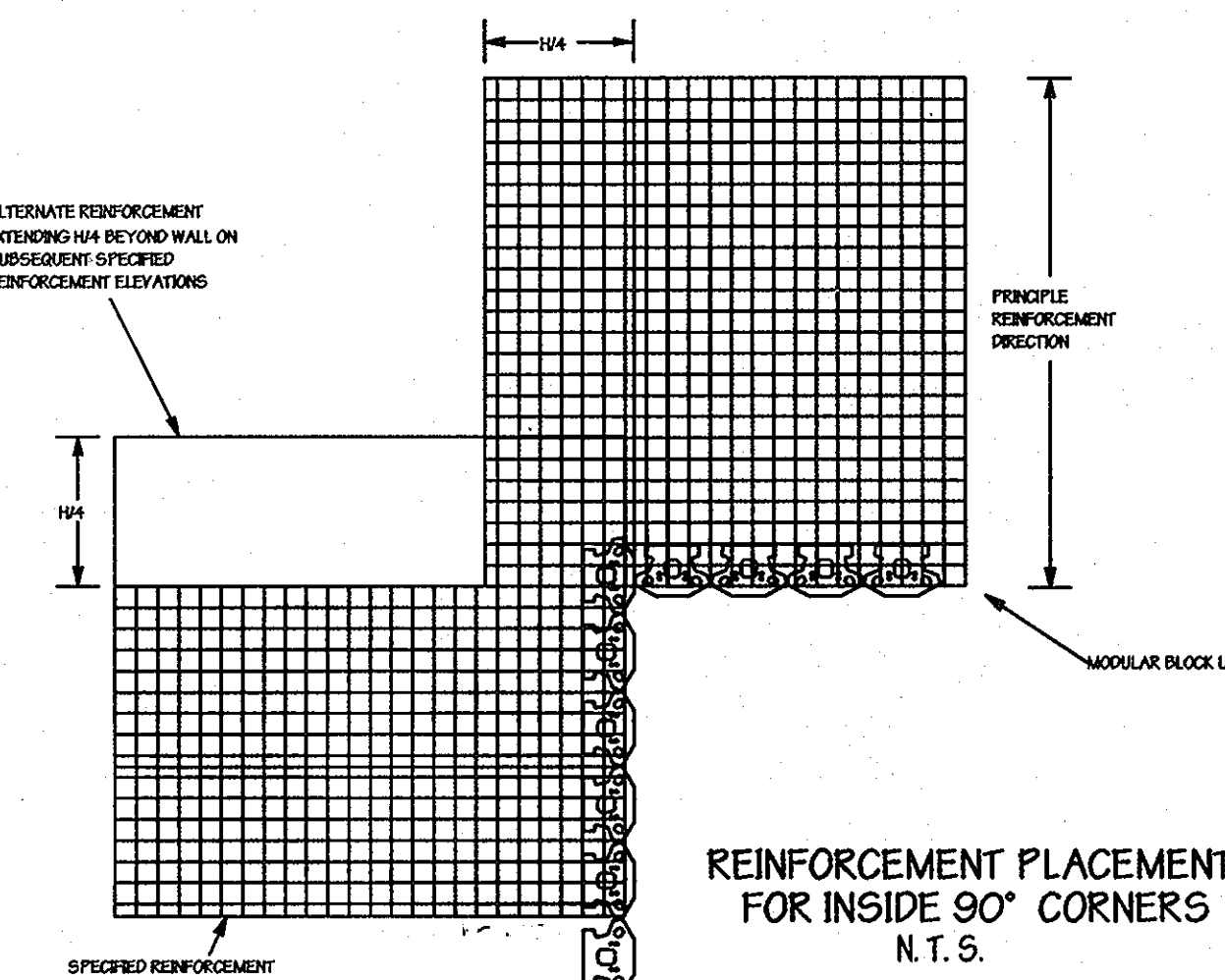
N.T.S.

APPLIES TO WALL #2

KEYSTONE COMPAC DIMENSIONS



- Notes:
- Retaining walls shall only be constructed under the observation of a Registered Professional Engineer and a (NICET, WACEL, or equivalent) certified soils technician.
  - The required bearing pressure beneath the footing of the wall shall be verified in the field by a certified soils technician. Testing documentation shall be provided to the Howard County Inspector prior to the start of construction. The required test procedure shall be the Dynamic Cone Penetrometer Test ASTM STP-395.
  - The suitability of the fill material shall be confirmed by the on-site site technician. Each eight inch lift must be compacted to 95% Standard Proctor Density and the testing report shall be made available to the Howard County Inspector upon completion of construction.



REINFORCEMENT PLACEMENT FOR INSIDE 90° CORNERS  
N.T.S.

APPLIES TO WALL #2

**Matis Warfield**  
consulting engineers  
contact: nick brader  
10640 york road suite m  
hunt valley, maryland 21030  
phone 410-281-0004  
facsimile 410-683-1798  
www.matiswarfield.com



Rev#1 - 9/12/2012 - Updated owner info.

OWNER/DEVELOPER  
**LAAKE ACQUISITION LLC**  
c/o FESCO EMERGENCY SALES  
6401 MACAW COURT  
ELKRIDGE MD 21075  
(410) 379-5353 x-29  
Attn: Doug DeLawter

OWNER  
**Troy Hill Corporate Center I, LLC**  
c/o Manekin Corporation  
7061 Columbia Gateway Drive  
Columbia, MD 21046  
(410) 290-1488  
Attn: Dave Meiners

DEVELOPER  
**Harley Davidson of Maryland**  
6339 Howard Lane  
Elkridge MD 21075  
(410) 796-1044  
Attn: Katina Welner

Retaining Wall Details  
**TROY HILL CORPORATE CENTER**  
PARCEL A-29  
TROY HILL DRIVE  
Election District #1  
Deed Ref: 5378/542  
Tax Map 37, Parcel A-29  
Scale: As Shown  
Howard County, Maryland  
August 28, 2003  
Sheet 12 of 12

APPROVED: Department of Planning and Zoning  
*[Signature]* 9/23/03  
CHIEF DEVELOPMENT ENGINEERING DIVISION DATE  
*[Signature]* 9/23/03  
DIVISION OF LAND DEVELOPMENT #5 DATE  
*[Signature]* 9/24/03  
DIRECTOR DATE