

# METRO FOODS

## ELLCOTT CITY

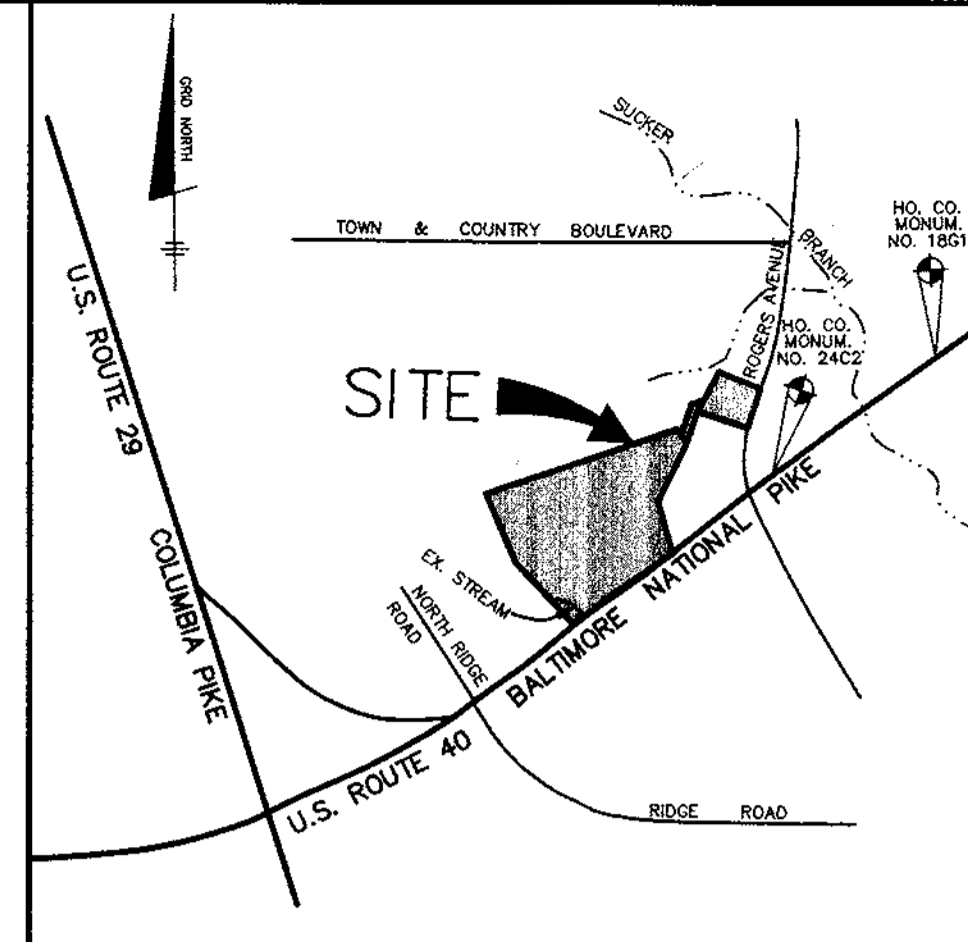
### 2nd ELECTION DISTRICT

### HOWARD COUNTY, MARYLAND

# SITE DEVELOPMENT PLAN

#### GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY, PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST (FIVE) 5 WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY MESS UTILITY AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
- THE CONTOURS SHOWN HEREON HAVE BEEN TAKEN FROM FIELD RUN TOPOGRAPHIC SURVEYS AT 2' INTERVAL. THE TOPOGRAPHY WAS PREPARED BY TSA GROUP, INC. DATED JULY, 1997 AND JANUARY, 1998, AND SUPPLEMENTED WITH THE TOPOGRAPHY AS SHOWN ON F-97-53 AND F-98-12.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENTS NOS. 1801 AND 24C2 WERE USED FOR THIS PROJECT.
- WATER AND SEWER FOR THIS SUBDIVISION IS PUBLIC. SEWER & WATER CONTRACT NO. IS #14-3622-D AND ITS DRAINAGE AREA IS THE PATAPSCO WATERSHED.
- STORMWATER MANAGEMENT WILL BE PROVIDED BY AN UNDERGROUND FACILITY FOR WATER QUANTITY CONTROL TO BE CONSTRUCTED UNDER THIS SDP. QUALITY CONTROL WILL BE PROVIDED BY BAYSAVER STORMWATER TREATMENT FACILITIES. THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED. STORMWATER QUALITY AND QUANTITY FOR EXECUTIVE CENTER ROAD AND A PORTION OF PARCEL "H" WERE ADDRESSED UNDER F-98-12.
- THERE ARE NO WETLANDS OR FLOODPLAIN WITHIN THE AREA OF THIS SUBMISSION.
- FOREST CONSERVATION PLAN WAS PERFORMED BY ECO-SCIENCE PROFESSIONALS, INC. DATED AUGUST 19, 1996 AND APPROVED UNDER P-97-02 FOR THE HOENES PROPERTY, PARCEL "H" - "K". A FOREST CONSERVATION PLAN WAS PERFORMED BY ECO-SCIENCE PROFESSIONALS, INC. DATED MARCH 4, 1998 FOR PARCEL 369 AND IS INCLUDED IN THIS SITE PLAN. A FEE-IN-LIEU PAYMENT HAS BEEN REQUESTED WITH THIS SUBMITTAL FOR PARCEL 369.
- A TRAFFIC STUDY HAS BEEN APPROVED UNDER S-95-01A, S-98-05 AND F-98-12.
- GEOTECHNICAL REPORT COMPILED BY HILLIS CARNES ENGINEERING ASSOCIATES.
- EXISTING UTILITIES WERE LOCATED BY RECORD DRAWINGS AND FIELD LOCATIONS.
- UNLESS NOTED AS "PRIVATE" ALL EASEMENTS ARE PUBLIC.
- THE FOREST CONSERVATION REQUIREMENTS FOR PARCELS "H" - "K" HAVE BEEN MET WITH PARTIAL FOREST RETENTION ON-SITE AND THE REMAINING FOREST CONSERVATION OBLIGATIONS SHALL BE MET BY PLANTING OFF-SITE AT RIDGE VIEW HUNT SUBDIVISION (F-97-120). THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. FOREST CONSERVATION ACT, FOREST CONSERVATION REQUIREMENTS FOR PARCEL 369 WILL BE MET WITH A FEE-IN-LIEU PAYMENT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT; FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- PREVIOUS DEPARTMENT OF PLANNING AND ZONING REFERENCE NUMBERS INCLUDE:  
S-95-01, S-95-01A, P-97-02, WP-95-84, F-96-91, F-98-12.
- CONTRACTOR SHALL ADJUST ALL UTILITIES AND RIM ELEVATIONS AS NEEDED TO MATCH THIS PLAN.
- PARKING LOT LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS SHOWN ON THESE PLANS. ALSO, THE OUTDOOR LIGHTING SHALL COMPLY WITH THE REQUIREMENTS OF ZONING SECTION 13.4.
- STORM DRAIN INLETS 1-3, 1-4, WQ #1 AND ASSOCIATED PIPING ARE TO BE PRIVATELY OWNED AND MAINTAINED AS STATED ON THE APPROVED ROAD CONSTRUCTION PLANS (F-98-12). ALL STORM DRAINS PROPOSED UNDER THESE PLANS ARE TO BE PRIVATELY OWNED AND MAINTAINED.
- ALL HANDICAP RAMP SHALL BE IN ACCORDANCE WITH HOWARD COUNTY STD. DETAIL R4.01 AND ALL CURRENT ADA REQUIREMENTS.
- PROPER ABANDONMENT OF WELL AND SEPTIC TO OCCUR WITHIN 90 DAYS OF SDP SIGNATURE SUBJECT TO HEALTH DEPARTMENT STANDARDS AND INSPECTIONS. THE EXISTING FOUNDATIONS ALONG ROGERS AVENUE WITHIN PARCEL 369 ARE TO BE INVESTIGATED AND ABANDONED AS NECESSARY.
- THE FOREST CONSERVATION OBLIGATION INCURRED BY THIS SUBDIVISION (1.2 ACRES OF AFFORESTATION) HAVE BEEN MET BY PAYMENT OF \$15,881.60 TO THE HOWARD COUNTY FOREST CONSERVATION FUND.
- THE PRIVATE ACCESS DRIVEWAY SHALL NOT SERVE AS THE PRIMARY OR ONLY MEANS OF ACCESS TO THE WILDER OR HOENES PROPERTIES. IT IS UNDERSTOOD BY THE TENANT AND LANDLORD THAT THE DRIVEWAY MAY CREATE A BY-PASS CONDITION AROUND THE ROGERS AVENUE/ROUTE 40 INTERSECTION. IN ADDITION, IT IS UNDERSTOOD THAT THE DRIVEWAY MAY ALSO PROVIDE A "SHORT-CUT" TO THE OTHER PROPERTIES IN THE AREA.



VICINITY MAP  
SCALE: 1" = 2000'

BENCH MARKS (NAD83)			
HO. CO. No. 1861 CONC. MONUMENT AT SURFACE, 4' N. OF MAC. SHOULDER OF RT. 40 WEST 18' W. OF YELLOW BUNKING SIGNAL N 589,984.9578 E 1,367,750.2376	ELEV. 408.542		
HO. CO. No. 24C2 CONC. MONUMENT AT SURFACE 5.5' S. OF LEFT TURN LANE OF RT. 40 WEST 14' E. OF EAST EDGE OF CROSSOVER TO RT. 99 S. N 588,648.3158 E 1,366,038.1347	ELEV. 354.930		

**SITE ANALYSIS DATA CHART**

- TOTAL PROJECT AREA: 8.98 Ac±
- AREA OF PLAN SUBMISSION: 8.98 Ac±
- LIMIT OF DISTURBANCE AREA: 8.23 Ac±
- PRESENT ZONING: B-2
- PROPOSED USES FOR SITE AND STRUCTURES: SUPERMARKET
- SQUARE FOOT AREA OF THE PROPOSED FOOD STORE IS 57,642 SF (PARKING REQUIRED IS 57642/1000 \* 5 = 288 P.S.)
- SQUARE FOOT AREA OF THE POTENTIAL FUTURE RETAIL IS 11,550 SF (PARKING REQUIRED IS 11550/1000 \* 5 = 58 P.S.)
- TOTAL SQUARE FOOT AREA OF THE FOOD STORE AND POTENTIAL FUTURE RETAIL IS 69,192 SF (PARKING REQUIRED IS 69192/1000 \* 5 = 346 P.S.)
- NUMBER OF PARKING SPACES REQUIRED BY HOWARD COUNTY ZONING REGULATIONS: 346
- NUMBER OF PARKING SPACES PROVIDED ON SITE: 347 (INCLUDING 6 HANDICAPPED PARKING SPACES)

- BUILDING COVERAGE OF SITE: 1.32 ACRES AND 15% OF GROSS AREA
- APPLICABLE OPZ FILE REFERENCES: S-95-01a, P-97-02, WP-95-84, F-98-91, F-98-12
- ANY OTHER INFORMATION WHICH MAY BE RELEVANT: N/A

ELLCOTT CITY WAL-MART  
PHASE 3  
PARCEL "G"  
PARCEL 370

PARCEL A-4  
HOENES PROPERTY  
PLAT NO. 11976  
P/O PARCEL 848  
PARCEL "F"

PARCEL 369  
ZONED B-2  
2.43± AC.

EXECUTIVE CENTER  
PARCEL "E"  
PLAT NO. 11976  
(F-97-53)  
ZONED B-2  
P/O PARCEL 848

PROPOSED METRO FOOD STORE BUILDING 'A'

POTENTIAL FUTURE RETAIL

EX. SERVICE SHOP

EXISTING SHOWROOM

EX. GAS STATION  
AMERICAN OIL COMPANY  
L.506/F.647  
ZONED B-2  
PARCEL 849

PARCEL "H"  
ZONED B-2  
6.55± AC.

PARCEL 854

WILLIAM RYAN, ET AL.  
L.963/F.70  
ZONED B-2

ALFRED J. SALISE  
L.444/F.472  
ZONED B-2

O'DONNELL HONDA, INC.  
L.1257/F.492  
ZONED B-2  
PARCEL 851

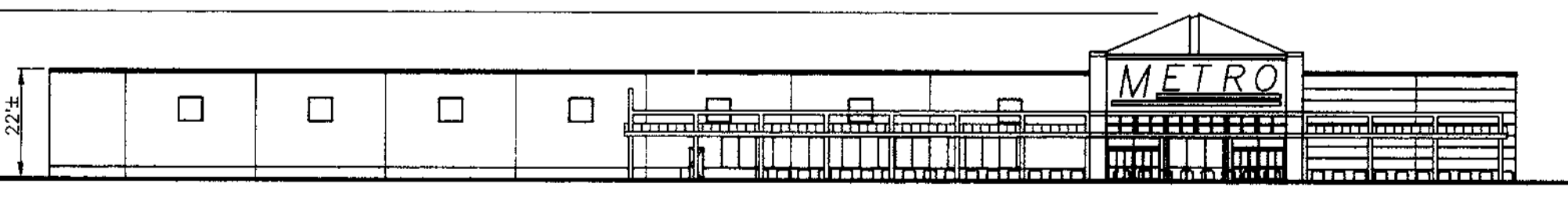
JOHN R. & BEVERLY OERTEL  
HUBBLE SUBDIVISION  
PARCEL 157  
ZONED B-2  
2805/0568

SHEET INDEX	
NO.	DESCRIPTION
1	COVER SHEET
2-3	SITE DEVELOPMENT AND LANDSCAPE PLAN
4-5*	SEDIMENT AND EROSION CONTROL PLAN
6	SEDIMENT AND EROSION NOTES AND DETAILS
7	STORM DRAINAGE AREA MAP
8	STORM DRAIN PROFILES AND DETAILS
9	STORMWATER MANAGEMENT NOTES AND DETAILS
10	WATER QUALITY NOTES & DETAILS AND GREASE INTERCEPTOR DETAIL
11	PRIVATE DRIVEWAY PROFILE, RETAINING WALL PLAN, PROFILE, NOTES AND DETAILS
12	FOREST CONSERVATION PLAN
* SHEET 5 INCLUDES SHC PROFILES	
13	WIRTH & DICE ROAD WIDENING PLAN

NO.	DATE	REVISION
1	6/29/98	REVISED PER COMMENTS DATED 6/10/98

TSA GROUP, INC.  
planning • architecture • engineering  
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • 410-465-0106

OWNER: LEONORA K. HOENES 15115 CARRS MILL ROAD WOODBINE, MARYLAND 21797 410-442-0411	PROJECT: HOENES PROPERTY, PARCEL H METRO FOODS ELLCOTT CITY S-95-01a, P-97-02, WP-95-84, F-96-91, F-98-12 LOCATION: TAX MAP 24 - BLOCK 6 - PARCEL 848 TAX MAP 17 - BLOCK 24 - PARCEL 881* (HOENES PROP.) TAX MAP 17 - BLOCK 24 - PARCEL 369 (PARCEL A-1)
DEVELOPER: HARRISON AND GRASS 20 ERFDOR ROAD SUITE 212 LEMOYNE, PA 17043 717-737-7800	TITLE: COVER SHEET
DATE: APR. 1998	PROJECT NO. 1079
Design: JMC	Draft: JMC
SCALE: AS SHOWN	DRAWING 1 OF 12



ELEVATION VIEW OF BUILDING 'A'  
SCALE: 1" = 30'

APPROVED: HOWARD COUNTY BUREAU OF ENVIRONMENTAL HEALTH  
Diane Motzky  
DATE: 6/22/98

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
Cindy Hamstra  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 6/15/99

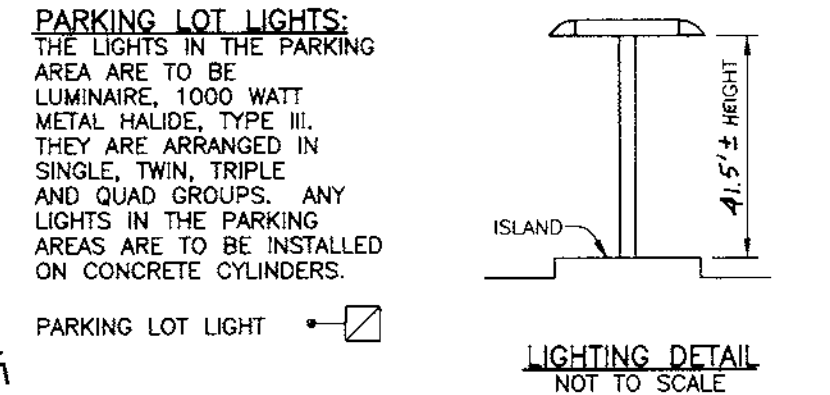
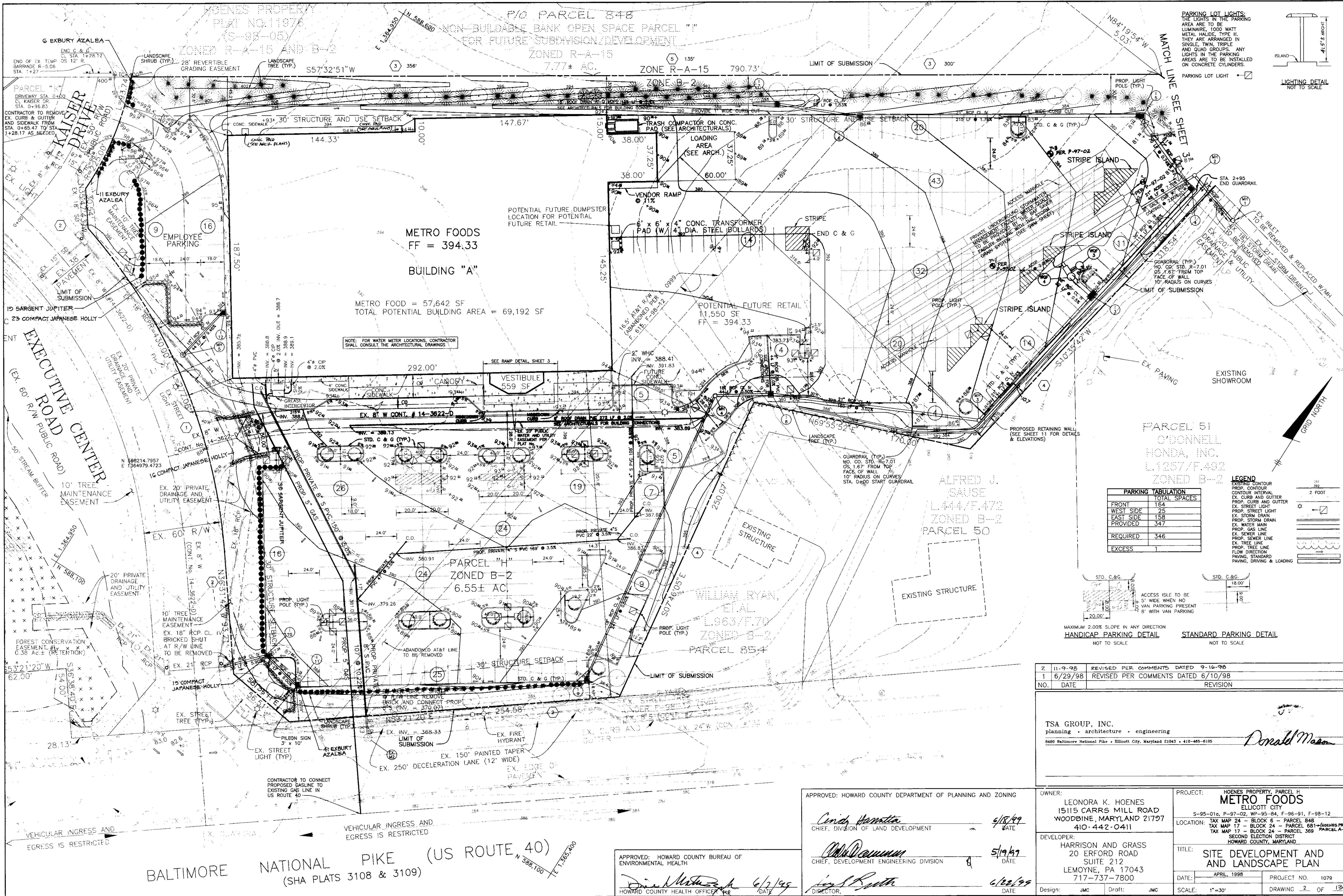
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
[Signature]  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 5/19/99

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
[Signature]  
DIRECTOR  
DATE: 6/22/99

ADDRESS CHART					
PARCEL NO.	STREET ADDRESS	BLDG. #	STREET ADDRESS	BLDG. #	STREET ADDRESS
8501	EXECUTIVE CENTER ROAD				

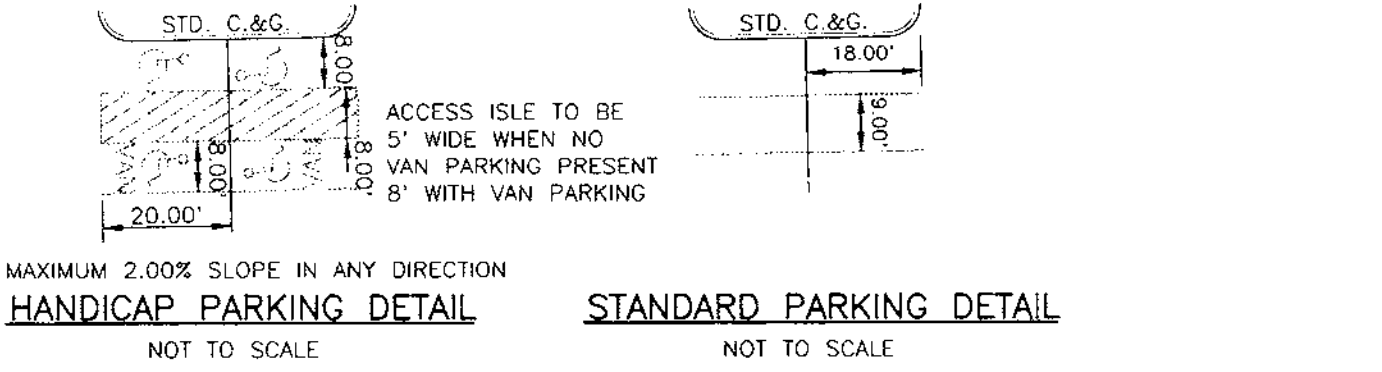
  

PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL#	PARCEL "H" (848)		
HOENES PROPERTY			PARCEL 369		
STATE PROPERTY					
PLAT No.	BLOCK No.	ZONE	TAX MAP	ELEC. DIST.	CENSUS
13760 #	6	B-2	24	2ND	6012.00
13761	24	B-2	17		
WATER CODE	SEWER CODE				
F03	1452800				



PARKING TABULATION	
	TOTAL SPACES
FRONT	164
WEST SIDE	25
EAST SIDE	158
PROVIDED	347
REQUIRED	346
EXCESS	1

- LEGEND**
- EXISTING CONTOUR
  - PROP. CONTOUR
  - CONTOUR INTERVAL
  - EX. CURB AND GUTTER
  - PROP. CURB AND GUTTER
  - EX. STREET LIGHT
  - PROP. STREET LIGHT
  - EX. STORM DRAIN
  - PROP. STORM DRAIN
  - EX. WATER MAIN
  - PROP. GAS LINE
  - EX. SEWER LINE
  - PROP. SEWER LINE
  - EX. TREE LINE
  - PROP. TREE LINE
  - FLOW DIRECTION
  - PAVING, STANDARD
  - PAVING, DRIVING & LOADING



2	11-9-98	REVISED PER COMMENTS DATED 9-16-98
1	6/29/98	REVISED PER COMMENTS DATED 6/10/98
NO.	DATE	REVISION

TSA GROUP, INC.  
 planning • architecture • engineering  
 5480 Baltimore National Pike • Elliott City, Maryland 21043 • 410-465-6105

*Donald Mason*

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Conch Hamatta* 4/18/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Mike Dammun* 5/19/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*David R. Smith* 6/22/99  
 DIRECTOR, DATE

APPROVED: HOWARD COUNTY BUREAU OF ENVIRONMENTAL HEALTH

*David M. Smith* 6/17/99  
 HOWARD COUNTY HEALTH OFFICER DATE

OWNER: LEONORA K. HOENES  
 15115 CARRS MILL ROAD  
 WOODBINE, MARYLAND 21797  
 410-442-0411

DEVELOPER: HARRISON AND GRASS  
 20 ERFORD ROAD  
 SUITE 212  
 LEMOYNE, PA 17043  
 717-737-7800

PROJECT: HOENES PROPERTY, PARCEL H  
**METRO FOODS**  
 ELLICOTT CITY  
 S-95-01a, P-97-02, WP-95-84, F-96-91, F-98-12  
 LOCATION: TAX MAP 24 - BLOCK 6 - PARCEL 848  
 TAX MAP 17 - BLOCK 24 - PARCEL 681 - BUSINESS PARK  
 TAX MAP 17 - BLOCK 24 - PARCEL 369 - PARCEL A-13  
 SECOND ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

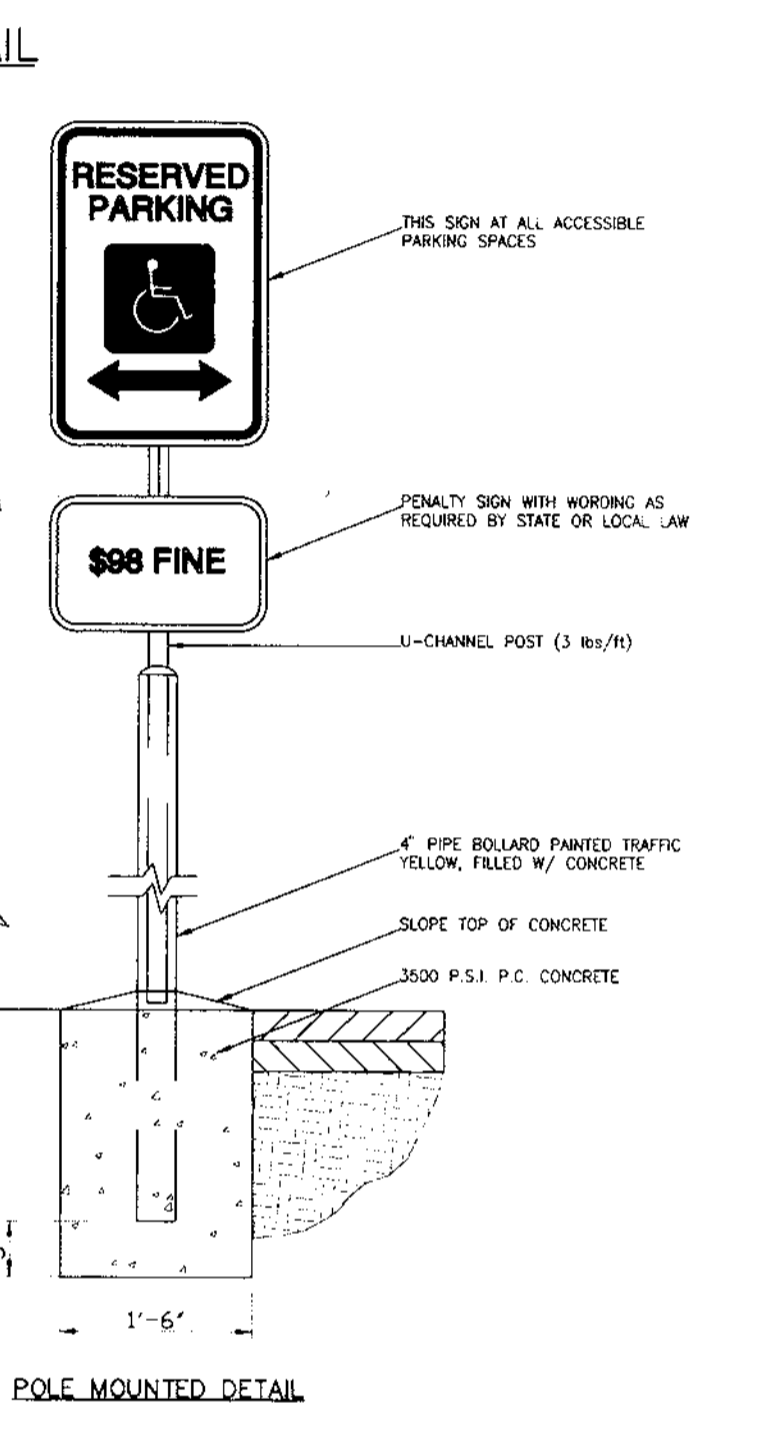
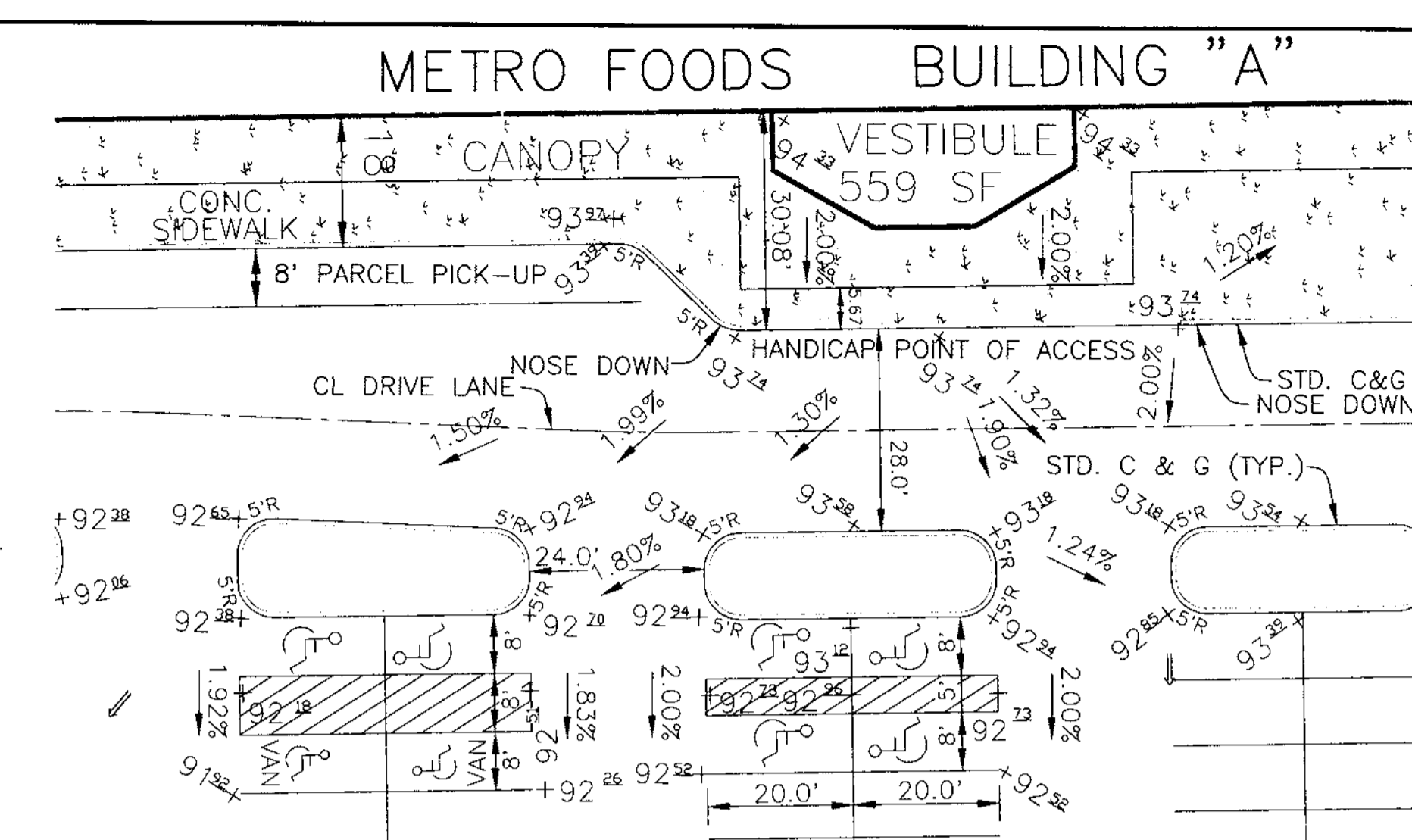
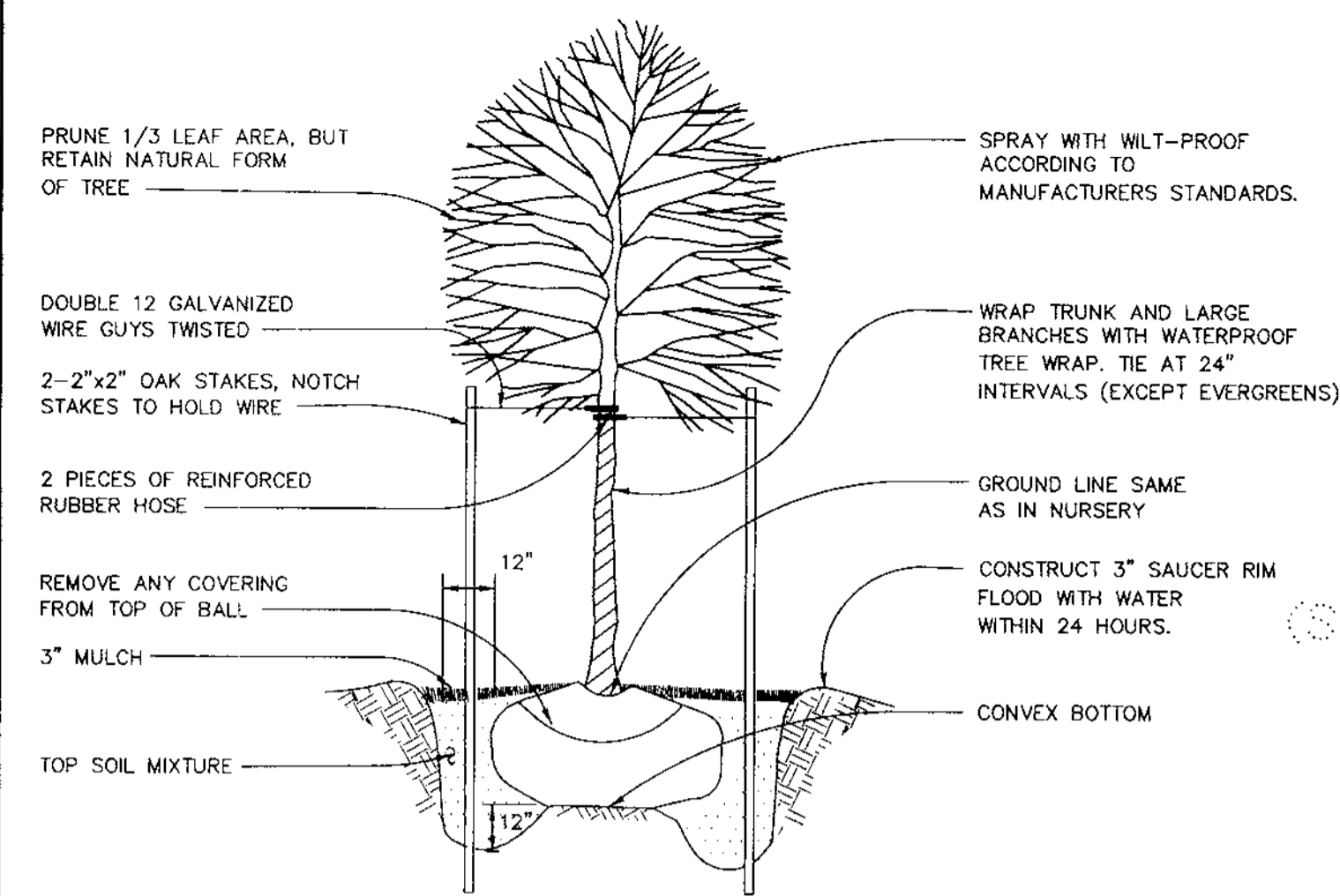
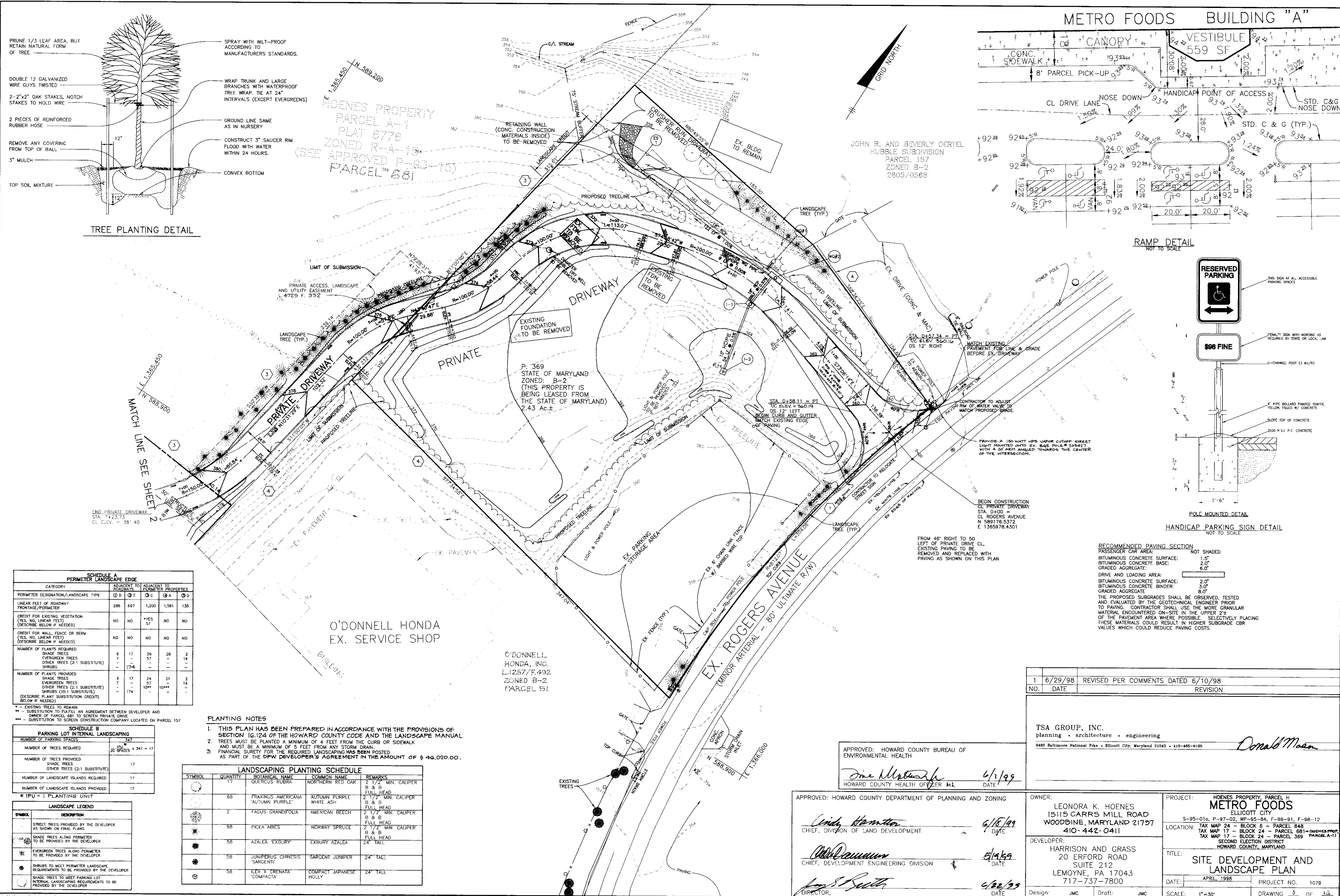
TITLE: **SITE DEVELOPMENT AND LANDSCAPE PLAN**

DATE: APRIL, 1998 PROJECT NO. 1079  
 SCALE: 1" = 30' DRAWING 2 OF 13  
 Design: JMC Draft: JMC

BALTIMORE NATIONAL PIKE (US ROUTE 40)  
 (SHA PLATS 3108 & 3109)

VEHICULAR INGRESS AND EGRESS IS RESTRICTED

VEHICULAR INGRESS AND EGRESS IS RESTRICTED



SCHEDULE A PERIMETER LANDSCAPE EDGE					
CATEGORY	ADJACENT TO ROADWAYS		ADJACENT TO PERIMETER PROPERTIES		
	Ⓚ	Ⓛ	Ⓚ	Ⓛ	Ⓛ
PERIMETER DESIGNATION/LANDSCAPE TYPE	286	697	1,200	1,561	135
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER					
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	*YES 57	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED					
SHADE TREES	6	17	29	28	2
EVERGREEN TREES	7	-	57	-	14
OTHER TREES (2:1 SUBSTITUTE)	-	-	-	-	-
SHRUBS	-	174	-	-	-
NUMBER OF PLANTS PROVIDED					
SHADE TREES	6	17	24	21	2
EVERGREEN TREES	7	-	57	-	14
OTHER TREES (2:1 SUBSTITUTE)	-	-	10**	-	-
SHRUBS (10:1 SUBSTITUTE)	-	174	-	-	-

\* - EXISTING TREES TO REMAIN  
 \*\* - SUBSTITUTION TO FULFILL AN AGREEMENT BETWEEN DEVELOPER AND OWNER OF PARCEL 681 TO SCREEN PRIVATE DRIVE  
 \*\*\* - SUBSTITUTION TO SCREEN CONSTRUCTION COMPANY LOCATED ON PARCEL 157

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
NUMBER OF PARKING SPACES	247
NUMBER OF TREES REQUIRED	150** + 347 + 17
NUMBER OF TREES PROVIDED	
SHADE TREES	17
OTHER TREES (2:1 SUBSTITUTE)	
NUMBER OF LANDSCAPE ISLANDS REQUIRED	17
NUMBER OF LANDSCAPE ISLANDS PROVIDED	17

LANDSCAPE LEGEND	
SYMBOL	DESCRIPTION
(Symbol)	STREET TREES PROVIDED BY THE DEVELOPER AS SHOWN ON FINAL PLANS
(Symbol)	SHADE TREES ALONG PERIMETER TO BE PROVIDED BY THE DEVELOPER
(Symbol)	EVERGREEN TREES ALONG PERIMETER TO BE PROVIDED BY THE DEVELOPER
(Symbol)	SHRUBS TO MEET PERIMETER LANDSCAPE REQUIREMENTS TO BE PROVIDED BY THE DEVELOPER
(Symbol)	SHADE TREES TO MEET PARKING LOT INTERNAL LANDSCAPING REQUIREMENTS TO BE PROVIDED BY THE DEVELOPER

**PLANTING NOTES**

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- TREES MUST BE PLANTED A MINIMUM OF 4 FEET FROM THE CURB OR SIDEWALK AND MUST BE A MINIMUM OF 5 FEET FROM ANY STORM DRAIN.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$ 46,020.00.

LANDSCAPING PLANTING SCHEDULE			
SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME
(Symbol)	17	QUERCUS RUBRA	NORTHERN RED OAK
(Symbol)	68	FRAXINUS AMERICANA 'AUTUMN PURPLE'	AUTUMN PURPLE WHITE ASH
(Symbol)	2	FAGUS GRANDIFOLIA	AMERICAN BEECH
(Symbol)	98	PRICEA ABIES	NORWAY SPRUCE
(Symbol)	58	AZALEA 'EXBURY'	EXBURY AZALEA
(Symbol)	58	JUNIPERUS CHINESIS 'SARGENTI'	SARGENT JUNIPER
(Symbol)	58	ILEX X ORENATA 'COMPACTA'	COMPACT JAPANESE HOLLY

RECOMMENDED PAVING SECTION		
PASSENGER CAR AREA:	NOT SHADED	
BITUMINOUS CONCRETE SURFACE:	1.5"	
BITUMINOUS CONCRETE BASE:	2.0"	
GRADED AGGREGATE:	6.0"	
DRIVE AND LOADING AREA:		
BITUMINOUS CONCRETE SURFACE:	2.0"	
BITUMINOUS CONCRETE BINDER:	3.0"	
GRADED AGGREGATE:	8.0"	

THE PROPOSED SUBGRADES SHALL BE OBSERVED, TESTED AND EVALUATED BY THE GEOTECHNICAL ENGINEER PRIOR TO PAVING. CONTRACTOR SHALL USE THE MORE GRANULAR MATERIAL ENCOUNTERED ON-SITE IN THE UPPER 2" OF THE PAVEMENT AREA WHERE POSSIBLE. SELECTIVELY PLACING THESE MATERIALS COULD RESULT IN HIGHER SUBGRADE CBR VALUES WHICH COULD REDUCE PAVING COSTS.

NO.	DATE	REVISION
1	6/29/98	REVISED PER COMMENTS DATED 6/10/98

TSA GROUP, INC.  
 planning • architecture • engineering  
 8460 Baltimore National Pike • Ellicott City, Maryland 21045 • 410-485-8100  
*Donald Mason*

APPROVED: HOWARD COUNTY BUREAU OF ENVIRONMENTAL HEALTH  
*Jim M... 6/1/99*

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*... 6/18/99*  
*... 6/19/99*  
*... 6/22/99*

OWNER: LEONORA K. HOENES  
 15115 CARRS MILL ROAD  
 WOODBINE, MARYLAND 21797  
 410-442-0411

DEVELOPER: HARRISON AND GRASS  
 20 ERFORD ROAD  
 SUITE 212  
 LEMOYNE, PA 17043  
 717-737-7800

PROJECT: HOENES PROPERTY, PARCEL H  
**METRO FOODS**  
 ELLICOTT CITY  
 S-95-01a, P-97-02, WP-95-84, F-98-91, F-98-12

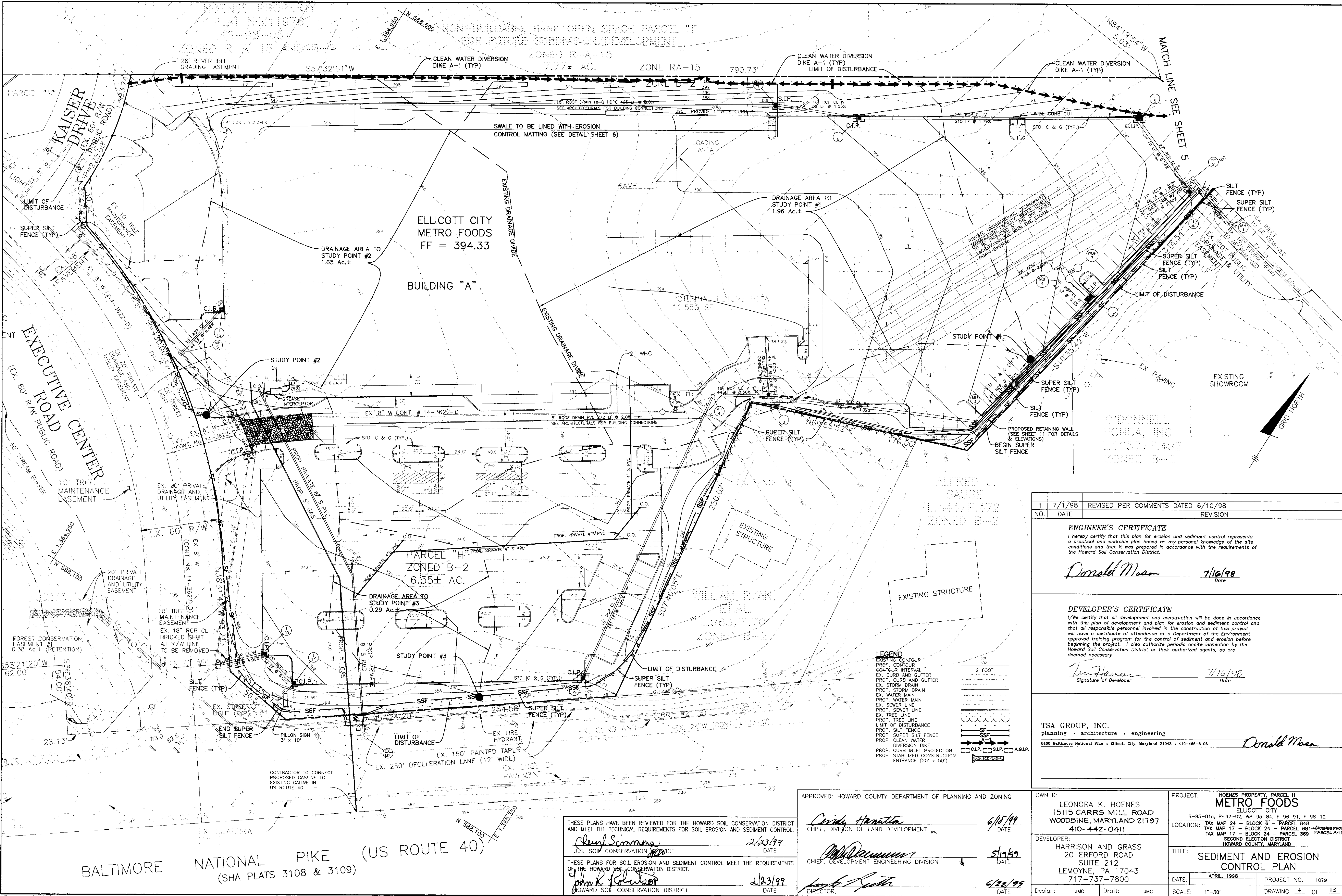
LOCATION: TAX MAP 24 - BLOCK 6 - PARCEL 848  
 TAX MAP 17 - BLOCK 24 - PARCEL 681 - HOENES PROP.  
 TAX MAP 17 - BLOCK 24 - PARCEL 369 - PARCEL A-17

TITLE: SITE DEVELOPMENT AND LANDSCAPE PLAN

DATE: APRIL, 1998 PROJECT NO. 1079

SCALE: 1"=30' DRAWING 3 OF 13

Design: JMC Draft: JMC



1	7/1/98	REVISED PER COMMENTS DATED 6/10/98
NO.	DATE	REVISION

**ENGINEER'S CERTIFICATE**  
 I hereby 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.

*Donald Mason* 7/16/98  
 Date

**DEVELOPER'S CERTIFICATE**  
 I/We certify that all development and construction will be done in accordance with this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction of this 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 onsite inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.

*Tim Hansen* 7/16/98  
 Signature of Developer Date

**TSA GROUP, INC.**  
 planning • architecture • engineering  
 8480 Baltimore National Pike • Ellicott City, Maryland 21043 • 410-665-6105

*Donald Mason*

- LEGEND**
- EXISTING CONTOUR
  - PROP. CONTOUR
  - CONTOUR INTERVAL
  - EX. CURB AND GUTTER
  - PROP. CURB AND GUTTER
  - EX. STORM DRAIN
  - PROP. STORM DRAIN
  - EX. WATER MAIN
  - PROP. WATER MAIN
  - EX. SEWER LINE
  - PROP. SEWER LINE
  - EX. TREE LINE
  - PROP. TREE LINE
  - LIMIT OF DISTURBANCE
  - PROP. SILT FENCE
  - PROP. SUPER SILT FENCE
  - PROP. CLEAN WATER DIVERSION DIKE
  - PROP. CURB INLET PROTECTION
  - PROP. STABILIZED CONSTRUCTION ENTRANCE (20' x 50')

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

*Clayton Simmons* 2/23/99  
 U.S. SOIL CONSERVATION SERVICE DATE

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

*John K. Roberts* 2/23/99  
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Cindy Hamilton* 6/16/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*John DeLuca* 5/17/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*John K. Roberts* 6/22/99  
 DIRECTOR DATE

OWNER:  
 LEONORA K. HOENES  
 15115 CARRS MILL ROAD  
 WOODBINE, MARYLAND 21797  
 410-442-0411

DEVELOPER:  
 HARRISON AND GRASS  
 20 ERFORD ROAD  
 SUITE 212  
 LEMOYNE, PA 17043  
 717-737-7800

PROJECT:  
 HOENES PROPERTY, PARCEL H  
**METRO FOODS**  
 ELLICOTT CITY  
 S-95-01a, P-97-02, WP-95-84, F-96-91, F-98-12  
 LOCATION: TAX MAP 24 - BLOCK 6 - PARCEL 848  
 TAX MAP 17 - BLOCK 24 - PARCEL 881 - HOENES PROP.  
 TAX MAP 17 - BLOCK 24 - PARCEL 369 - PARCEL A-1)  
 SECOND ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

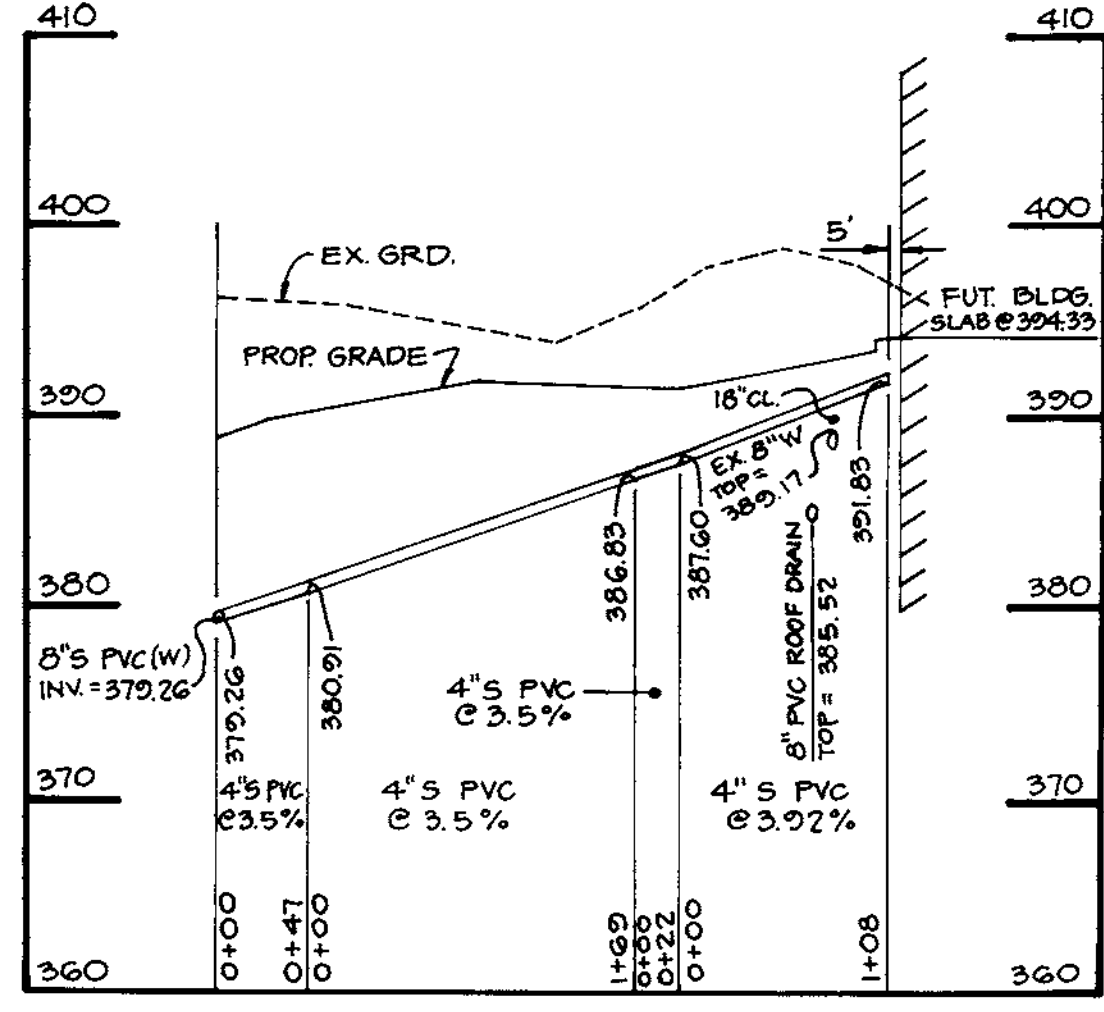
TITLE:  
**SEDIMENT AND EROSION CONTROL PLAN**

DATE: APRIL, 1998 PROJECT NO. 1079  
 Design: JMC Draft: JMC SCALE: 1"=30' DRAWING 4 OF 13

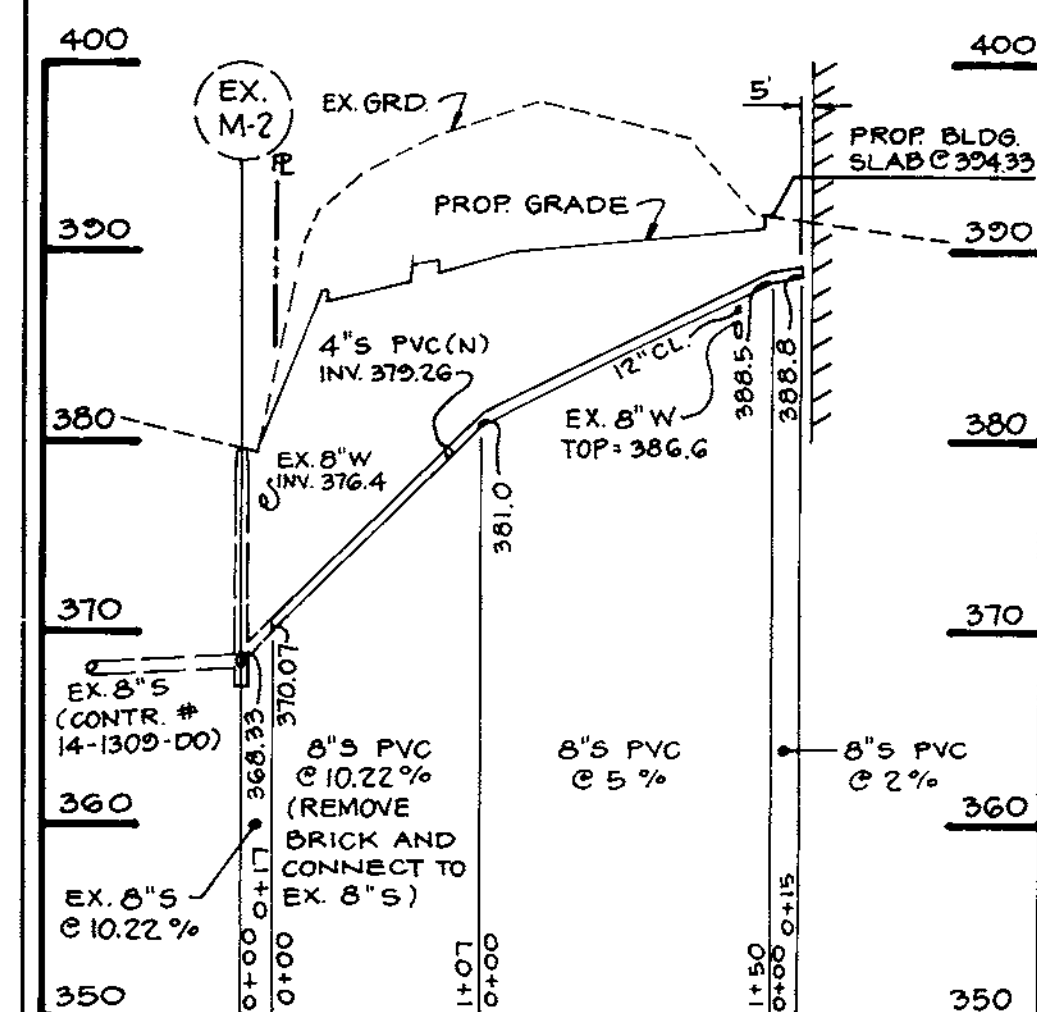
BALTIMORE NATIONAL PIKE (US ROUTE 40)  
 (SHA PLATS 3108 & 3109)

HOENES PROPERTY  
 PARCEL A-1  
 PLAT 6776  
 ZONED R-4-15  
 (SEE APPROVED P-93-15)

JOHN R. AND BEVERLY CERTEL  
 HUBBLE SUBDIVISION  
 PARCEL 157  
 ZONED B-2  
 2805/0568



SHC PROFILE TO FUTURE RETAIL BLDG.  
 SCALE: HOR. : 1" = 100'  
 VERT. : 1" = 10'



SHC PROFILE TO METRO FOOD  
 SCALE: HOR. : 1" = 100'  
 VERT. : 1" = 10'

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

*Cheryl Simmons* 2/23/99 DATE  
 U.S. SOIL CONSERVATION SERVICE

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

*John M. [Signature]* 2/23/99 DATE  
 HOWARD SOIL CONSERVATION DISTRICT

**STORM INLET SEDIMENT TRAP ST-III (#1)**

DRAINAGE AREA = 1.23 AC.  
 STORAGE REQ'D (3600 CF/AC.) = 4608 CF  
 STORAGE PROVIDED:  
 - WET STORAGE = 2304 CF (EL. 361.5 TO EL. 362.25)  
 - DRY STORAGE = 2304 CF (EL. 362.25 TO EL. 363.0)  
 EMBANKMENT ELEV. = 364.0  
 STORAGE DEPTH BELOW OUTLET = 1.5'  
 BOTTOM ELEV. = 361.5  
 CLEANOUT ELEV. = 362.25  
 SIDE SLOPES = 1:1  
 TOP GRATE (OUTLET) ELEV. = 363.0  
 BOTTOM DIMENSIONS = 30' x 34'  
 EMBANKMENT WIDTH = 4'

NO.	DATE	REVISION
1	7/1/98	REVISED PER COMMENTS DATED 6/10/98

**ENGINEER'S CERTIFICATE**  
 I hereby 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.

*Donald Mean* 7/16/98  
 Date

**DEVELOPER'S CERTIFICATE**  
 I/We certify that all development and construction will be done in accordance with this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction of this 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 onsite inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.

*Tim [Signature]* 7/16/98  
 Signature of Developer Date

**TSA GROUP, INC.**  
 planning • architecture • engineering  
 5460 Baltimore National Pike • Ellicott City, Maryland 21043 • 410-465-0105

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Cindy Hamilton* 6/18/99 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*John [Signature]* 5/16/99 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Paul [Signature]* 6/22/99 DATE  
 DIRECTOR

OWNER:  
 LEONORA K. HOENES  
 15115 CARRS MILL ROAD  
 WOODBINE, MARYLAND 21797  
 410-442-0411

DEVELOPER:  
 HARRISON AND GRASS  
 20 ERFORD ROAD  
 SUITE 212  
 LEMOYNE, PA 17043  
 717-737-7800

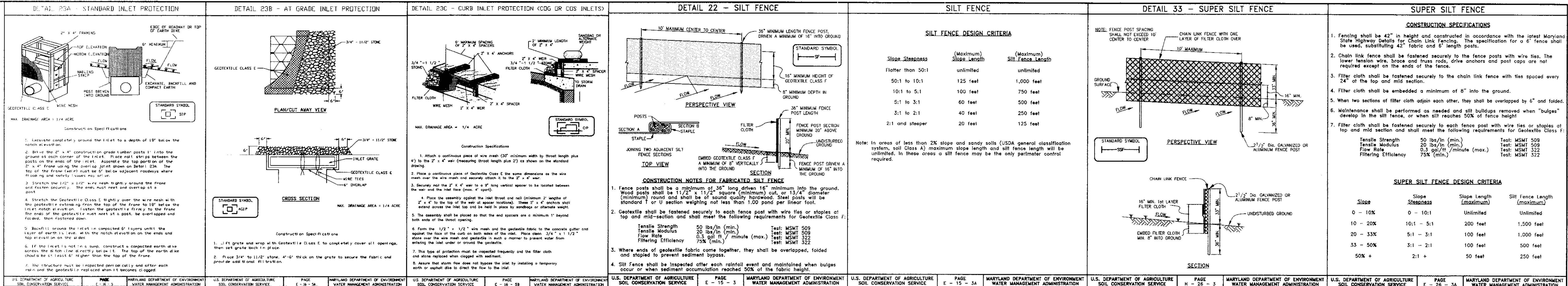
PROJECT:  
 HOENES PROPERTY, PARCEL H  
**METRO FOODS**  
 ELLICOTT CITY  
 S-95-01a, P-97-02, WP-95-84, F-96-91, F-98-12

LOCATION:  
 TAX MAP 24 - BLOCK 6 - PARCEL 848  
 TAX MAP 17 - BLOCK 24 - PARCEL 681 - HOENES PROP.  
 TAX MAP 17 - BLOCK 24 - PARCEL 369 (PARCEL A-1)  
 SECOND ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

TITLE:  
**SHC PROFILES AND EROSION CONTROL PLAN**

DATE: APRIL, 1998 PROJECT NO. 1079  
 SCALE: 1" = 30' DRAWING 5 OF 13

Design: JMC Draft: JMC



**PERMANENT SEEDING NOTES**

Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

**Seeded Preparation:** Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. (If not previously loosened)

**Soil Amendments:** In lieu of soil test recommendations, use on the following schedules.

- 1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sf).
- 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil.

**SEDIMENT CONTROL NOTES**

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections and Permits, Sediment Control Division prior to the start of any construction (313-1855).
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current "Maryland Standards and Specifications for Soil Erosion and Sediment Control", and revisions thereto.
3. Following initial soil disturbances or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 calendar days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the "Howard County Design Manual, Storm Drainage".
5. All disturbed areas must be stabilized within the time period specified above in accordance with the "1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control" for Permanent Seedings (Sec. 51) Sod (Sec. 54), Temporary Seeding (Sec. 50) and Mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:  
Total Area of Site: 8,98± acres  
Area to be Disturbed: 8.23± acre  
Area to be roofed or paved: 5.57± acre  
Area to be vegetatively stabilized: 2.66± acre  
Total Cut: 26,831 C.Y.  
Total Fill: 19,108 C.Y.  
Offsite Waste/Borrow Area Location: \*

**TEMPORARY SEEDING NOTES**

Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.

**Seeded Preparation:** Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. (If not previously loosened)

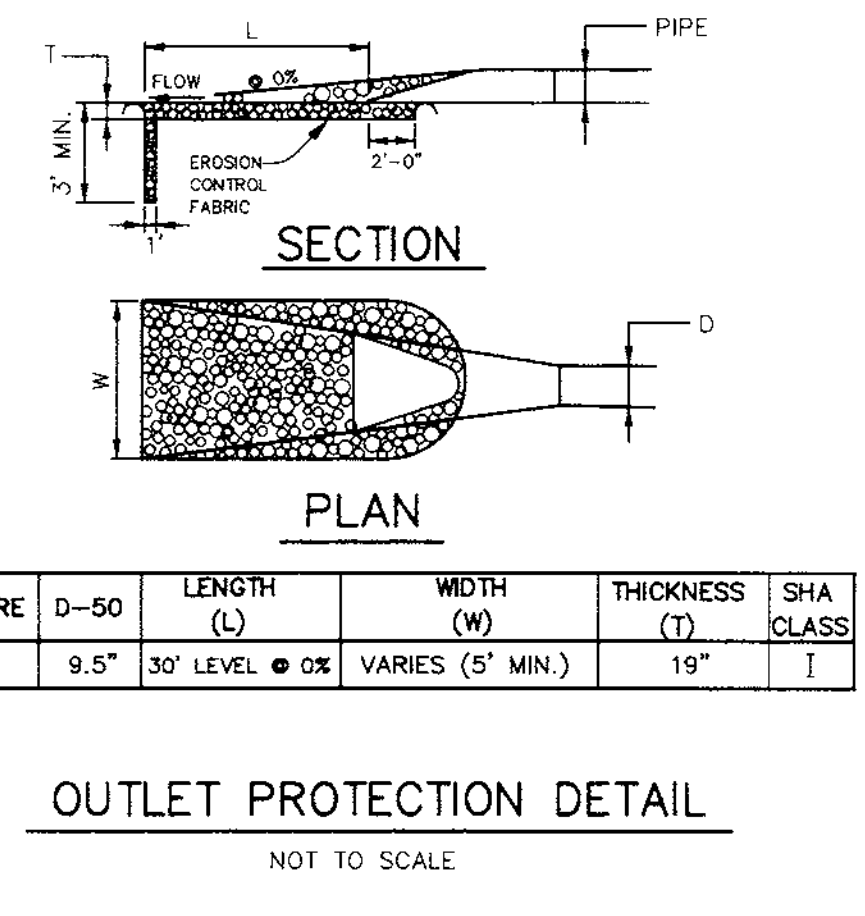
**Soil Amendments:** Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf).

**Seeding:** For periods March 1 through April 30 and August 1 through October 15, seed with 60 lbs per acre (1.4 lbs/1000 sf) of Kentucky 31 Tall Fescue. For the period May 1 through July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (0.05 lbs/1000 sf) of Weeping Lovegrass. During the period of October 16 through February 28, protect site by Option 1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option 2) use sod. Option 3) seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

**Mulching:** Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sf) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sf) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sf) for anchoring.

**SEQUENCE OF CONSTRUCTION**

DAY 1	OBTAIN GRADING PERMIT
DAY 2-3	CLEAR & GRUB FOR SEDIMENT CONTROL DEVICES, INSTALL STABILIZED CONSTRUCTION ENTRANCES, SILT FENCE, SUPER SILT FENCE AND CLEANWATER DIVERSIONS
DAY 4-7	INSTALL S.O.S.T. #1 (INCLUDING 1/2" AND PERMANENT AND TEMPORARY 1/2" HI-Q HOPE TO THE RIP-RAP OUTLET)
DAY 8-12	CLEAR & GRUB REMAINDER OF SITE. CONTRACTOR TO CONTACT THE HEALTH DEPARTMENT FOR PROPER ABANDONMENT OF WELL & SEPTIC SYSTEM PRIOR TO HOUSE DEMOLITION
DAY 13-20	BUILD KEYSTONE RETAINING WALL (SEE SHEET 11 FOR WALL CONSTRUCTION SEQUENCE OF CONSTRUCTION). INSTALL STORM DRAIN FROM (14 TO 13) AND FROM (13 TO 14) AS SHOWN AND WITH THE WALL CONSTRUCTION DUE TO POTENTIAL CONFLICT WITH THE WALLS GROUDED
DAY 21	INSTALL SUPER SILT FENCE ALONG TOP OF WALL AS SHOWN AND STABILIZE SLOPE BELOW WALL
DAY 22-31	MASS GRADE SITE
DAY 32-36	COMMENCE WITH PARKING LOT, PRIVATE DRIVE & BUILDING PAD GRADING
DAY 37-41	WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, INSTALL STORM DRAIN FROM (11 TO 8)-1. REMOVE S.O.S.T. #1 AND TEMPORARY FENCE, AND STABILIZE S.H. PARCEL IN ACCORDANCE WITH TEMPORARY SEEDING NOTES
DAY 42-51	INSTALL REMAINDER OF STORM DRAIN, SWM FACILITY AND OTHER UTILITIES
DAY 52-54	INSTALL CURB & GUTTER
DAY 55-56	INSTALL PAVING FOR PRIVATE DRIVE AND PARKING LOT
DAY 57-71	FINAL GRADE REMAINDER OF SITE AND PERMANENTLY STABILIZE
DAY 72-77	INSTALL REQUIRED LANDSCAPING AS SPECIFIED ON PLAN
DAY 78-80	UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE REMAINING SEDIMENT CONTROL DEVICES AND PERMANENTLY STABILIZE
	BEGIN CONSTRUCTION OF BUILDING (APPROXIMATELY 6 MONTHS)

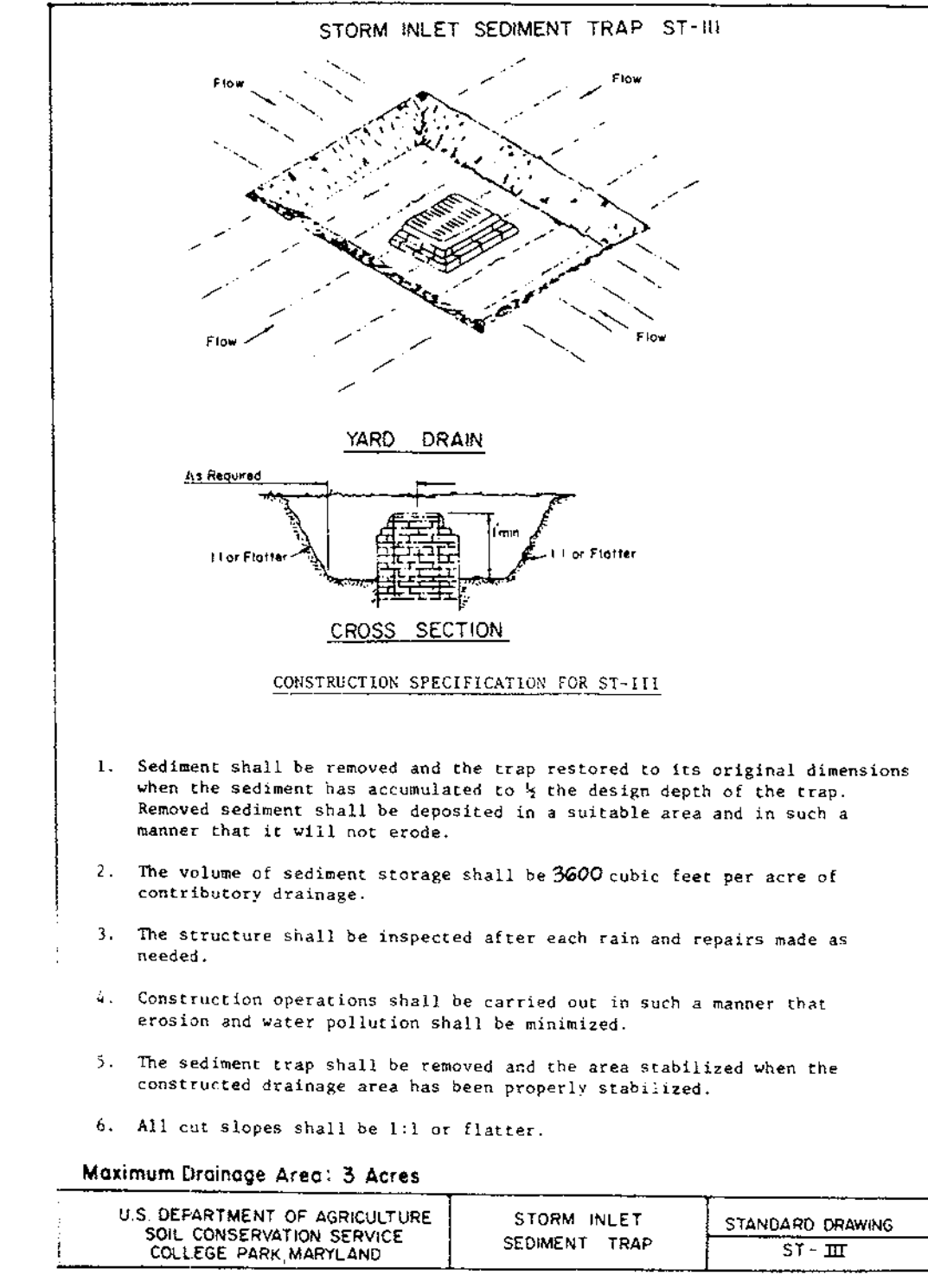


APPROVED: THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

*John F. Roberts* 2/23/99 DATE

APPROVED: REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

*Chief Simmons* 2/23/99 DATE



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Chris Kamata* 6/15/99 DATE

*John D. ...* 5/19/99 DATE

*John D. ...* 4/20/99 DATE

OWNER: LEONORA K. HOENES, 15115 CARRS MILL ROAD, WOODBINE, MARYLAND 21797, 410-442-0411

DEVELOPER: HARRISON AND GRASS, 20 ERFDOR ROAD, SUITE 212, LEMOYNE, PA 17043, 717-737-7800

PROJECT: HOENES PROPERTY, PARCEL H METRO FOODS, ELLICOTT CITY, S-95-01a, P-97-02, W-95-04-B4, F-96-01, F-98-12

LOCATION: TAX MAP 24 - BLOCK 6 - PARCEL 848, TAX MAP 17 - BLOCK 24 - PARCEL 681 (HOENES PROP), TAX MAP 17 - BLOCK 24 - PARCEL 369 (PARCEL A-11)

TITLE: SEDIMENT AND EROSION CONTROL NOTES AND DETAILS

DATE: APRIL, 1998 PROJECT NO. 1079

SCALE: AS SHOWN DRAWING 6 OF 13

Design: JMC Draft: JMC

1 7/1/98 REVISED PER COMMENTS DATED 6/10/98

NO. DATE REVISION

**ENGINEER'S CERTIFICATE**

I hereby 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.

*Donald Mason* 2/10/99 DATE

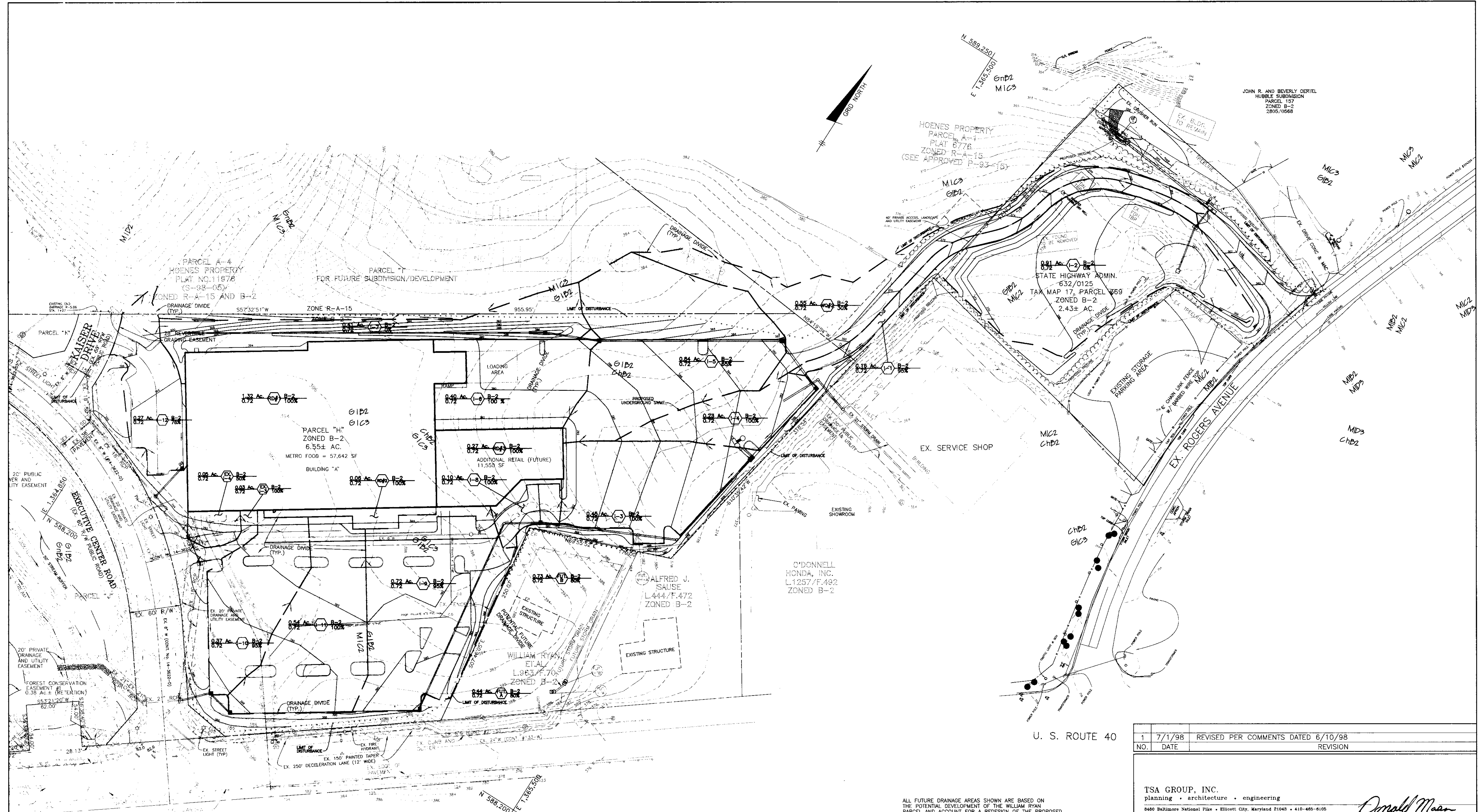
**DEVELOPER'S CERTIFICATE**

I/We certify that all development and construction will be done in accordance with this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction of this 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 onsite inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.

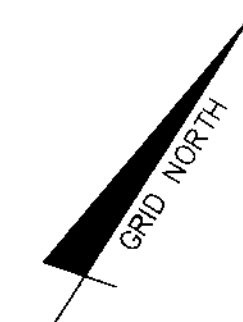
*Tom ...* 2/10/99 DATE

**TSA GROUP, INC.**  
planning • architecture • engineering  
9480 Baltimore National Pike • Ellicott City, Maryland 21045 • 410-468-6105

*Donald Mason*



JOHN R. AND BEVERLY CORTIEL  
HUBBLE SUBDIVISION  
PARCEL 157  
ZONED B-2  
2806/0568



NO.	DATE	REVISION
1	7/1/98	REVISED PER COMMENTS DATED 6/10/98

TSA GROUP, INC.  
planning • architecture • engineering  
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • 410-465-6105

*Donald Mason*

ALL FUTURE DRAINAGE AREAS SHOWN ARE BASED ON THE POTENTIAL DEVELOPMENT OF THE WILLIAM RYAN PARCEL AND ACCOUNT FOR A REDESIGN OF THE PROPOSED PARKING LOT AND THE ASSOCIATED GRADING, CURB AND GUTTER. THE FUTURE DRAINAGE AREAS OVERLAP THE PROPOSED DRAINAGE AREAS IN SOME AREAS.

**LEGEND**

← 61B2  
M1C3  
PROPOSED STORM DRAIN DRAINAGE DIVIDE  
SOIL GROUP DIVISION  
FUTURE DRAINAGE DIVIDE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Cindy Hamilton*  
CHIEF, DIVISION OF LAND DEVELOPMENT  
6/15/99  
DATE

*John P. ...*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
5/15/99  
DATE

*Paul ...*  
DIRECTOR  
6/22/99  
DATE

OWNER:  
LEONORA K. HOENES  
15115 CARRS MILL ROAD  
WOODBINE, MARYLAND 21707  
410-442-0411

DEVELOPER:  
HARRISON AND GRASS  
20 ERFORD ROAD  
SUITE 212  
LEMOYNE, PA 17043  
717-737-7800

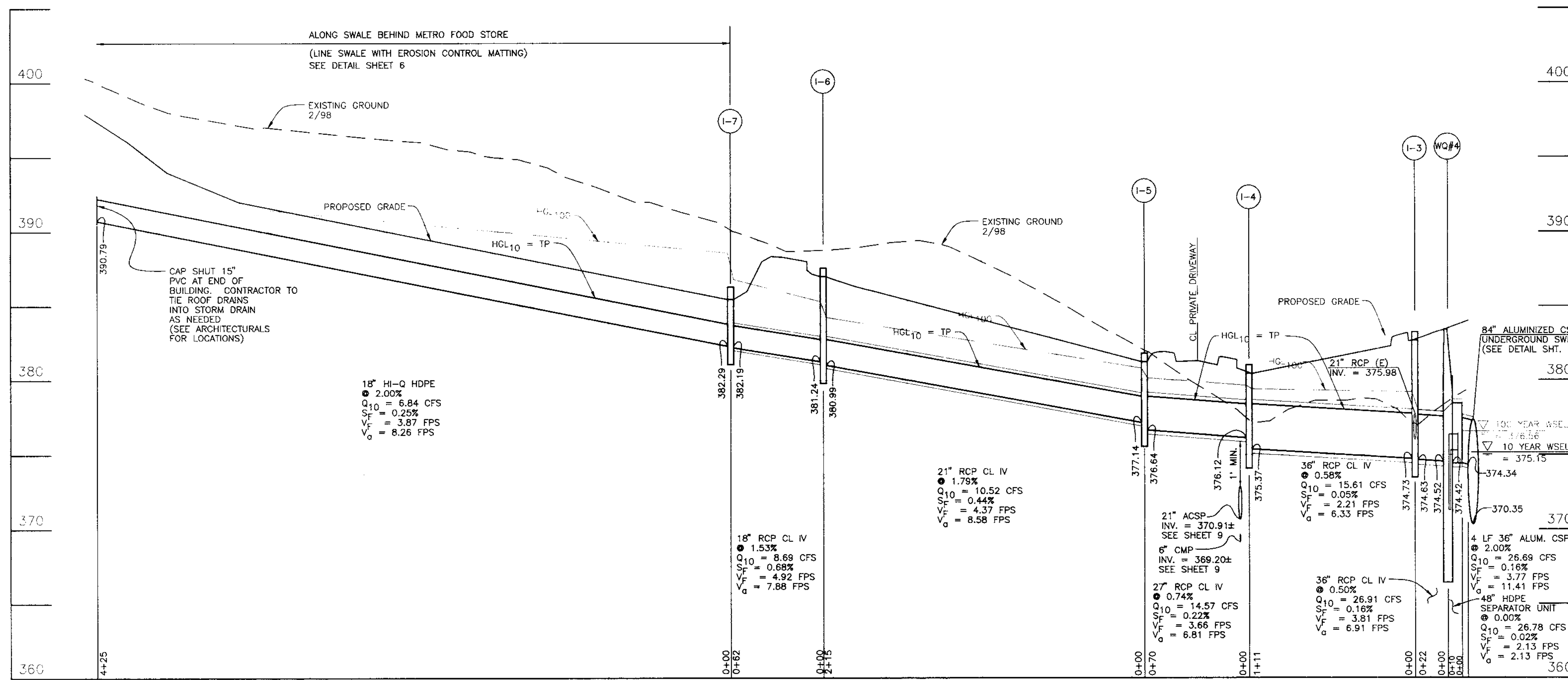
PROJECT:  
HOENES PROPERTY, PARCEL H  
METRO FOODS  
ELLCOTT CITY  
S-95-01a, P-97-02, WP-95-84, F-96-91, F-96-12

LOCATION:  
TAX MAP 24 - BLOCK 6 - PARCEL 848  
TAX MAP 17 - BLOCK 24 - PARCEL 681 - HOENES PROP.  
TAX MAP 17 - BLOCK 24 - PARCEL 369 - PARCEL A-13  
SECOND ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

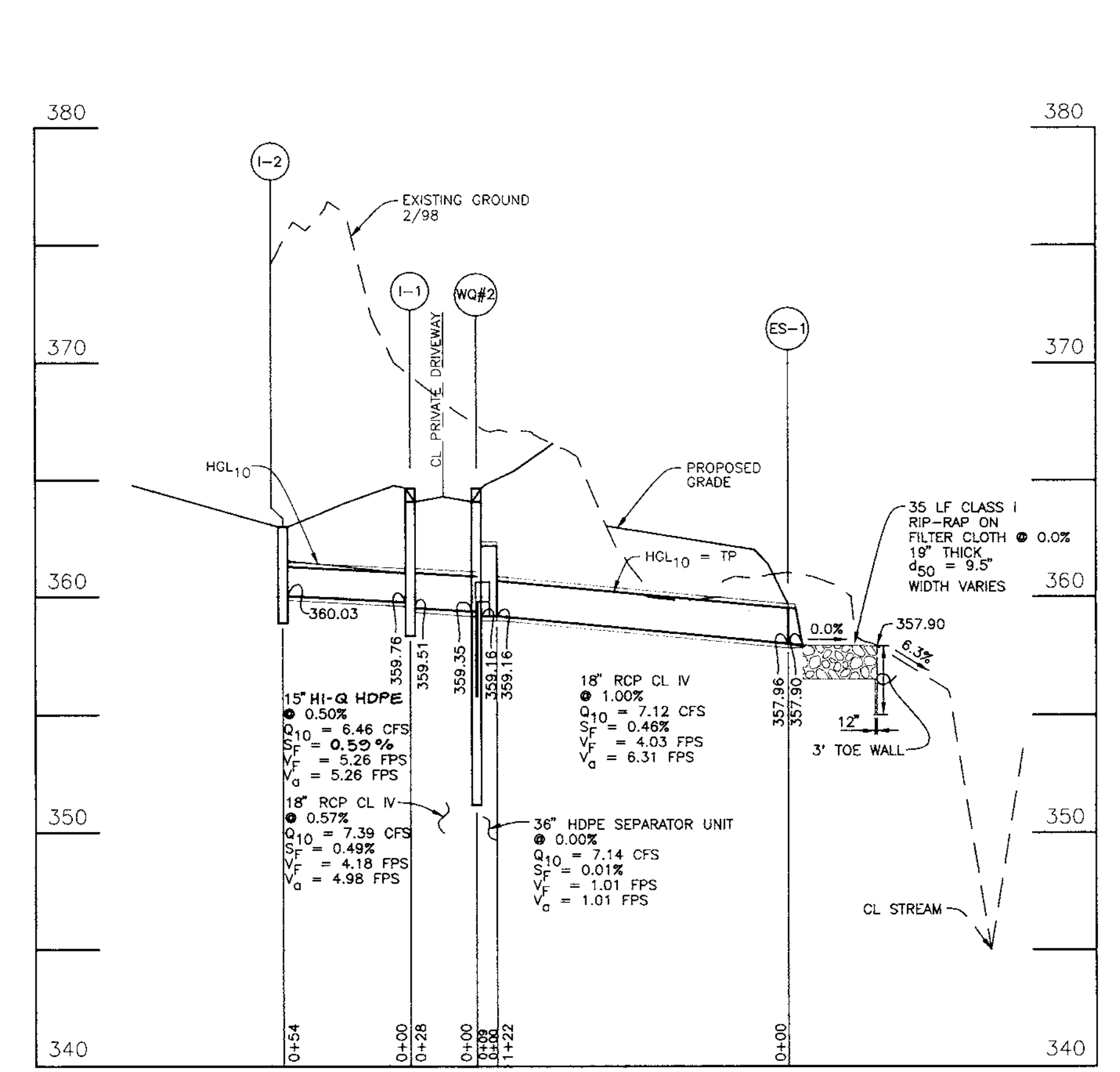
TITLE:  
STORM DRAINAGE AREA MAP

DATE: APRIL, 1998 PROJECT NO. 1079  
SCALE: 1"=50' DRAWING 7 OF 13

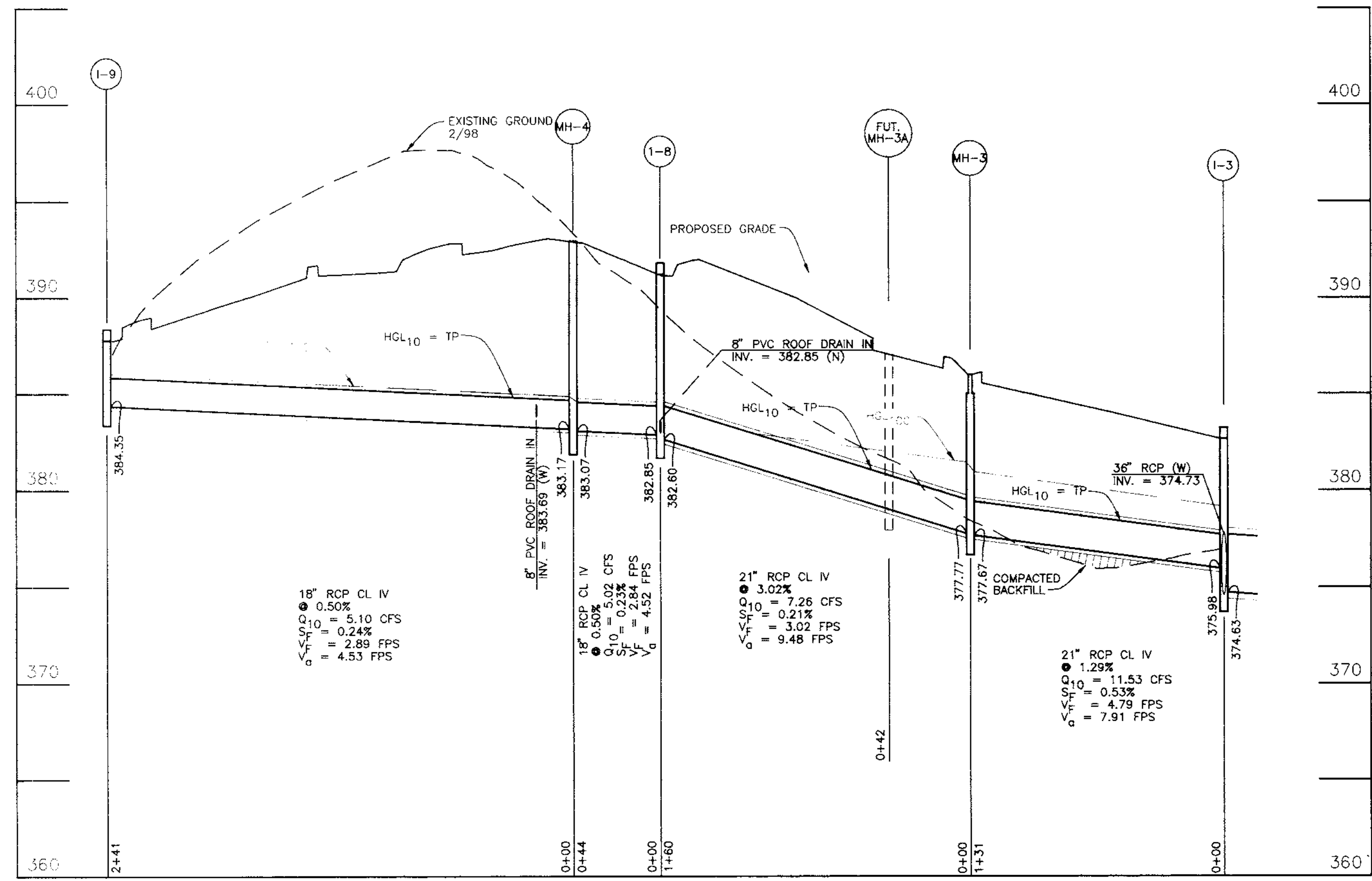
Design: JMC Draft: JMC



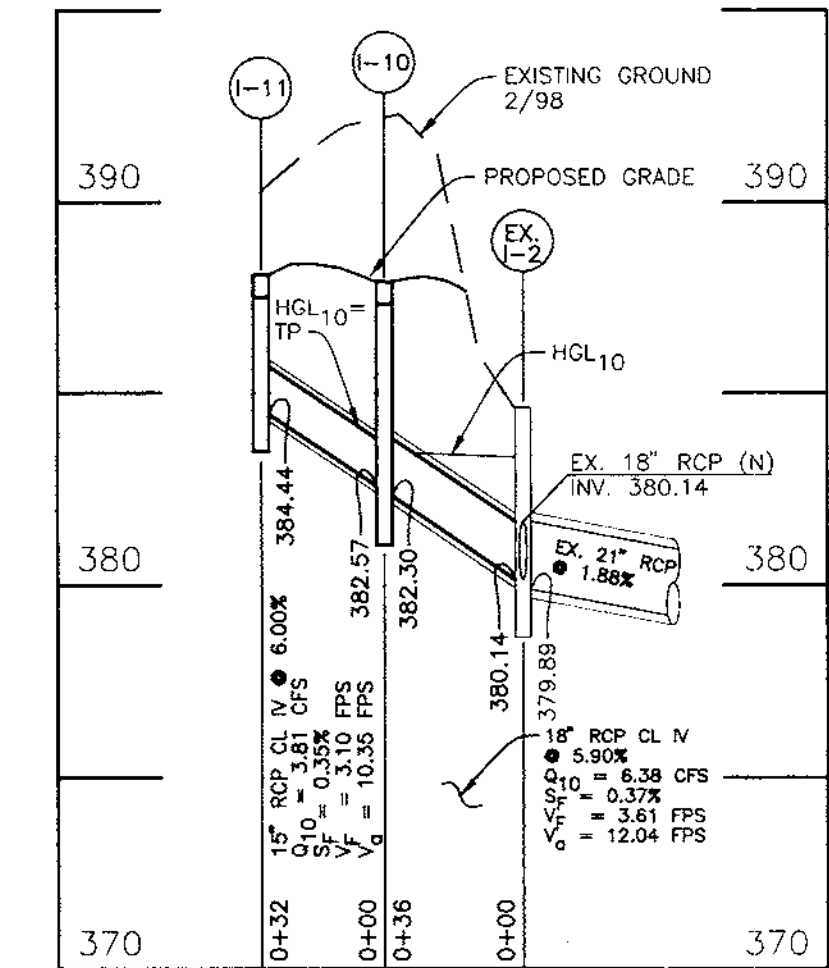
**STORM DRAIN PROFILE  
EAST SIDE PARKING LOT**  
SCALE: HORIZ. 1" = 50'  
VERT. 1" = 5'



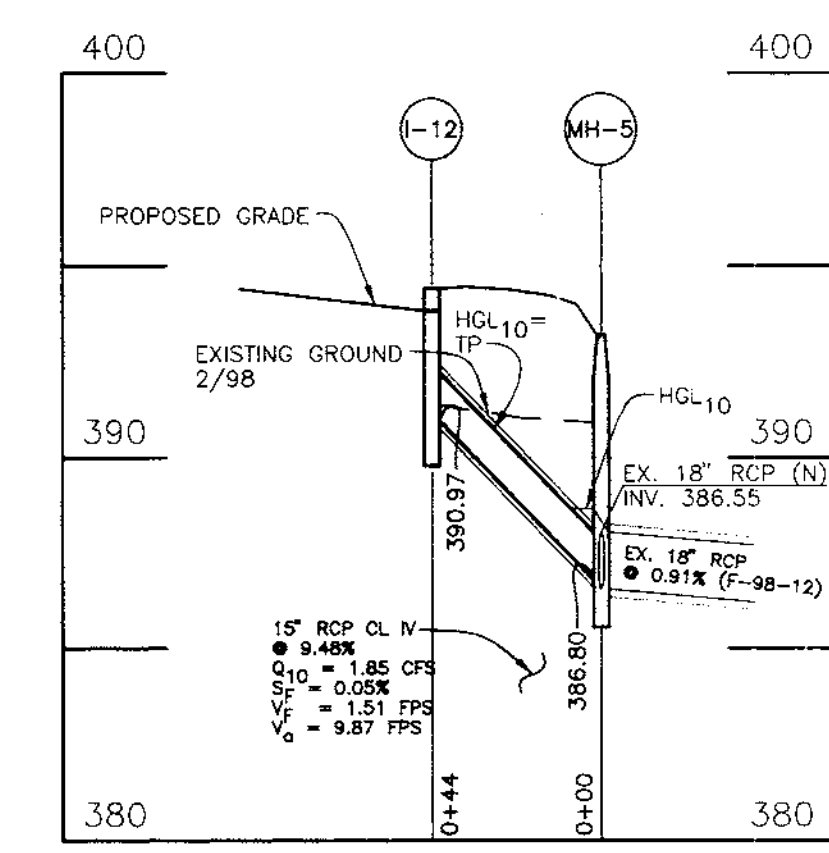
**STORM DRAIN PROFILE  
PRIVATE DRIVEWAY**  
SCALE: HORIZ. 1" = 50'  
VERT. 1" = 5'



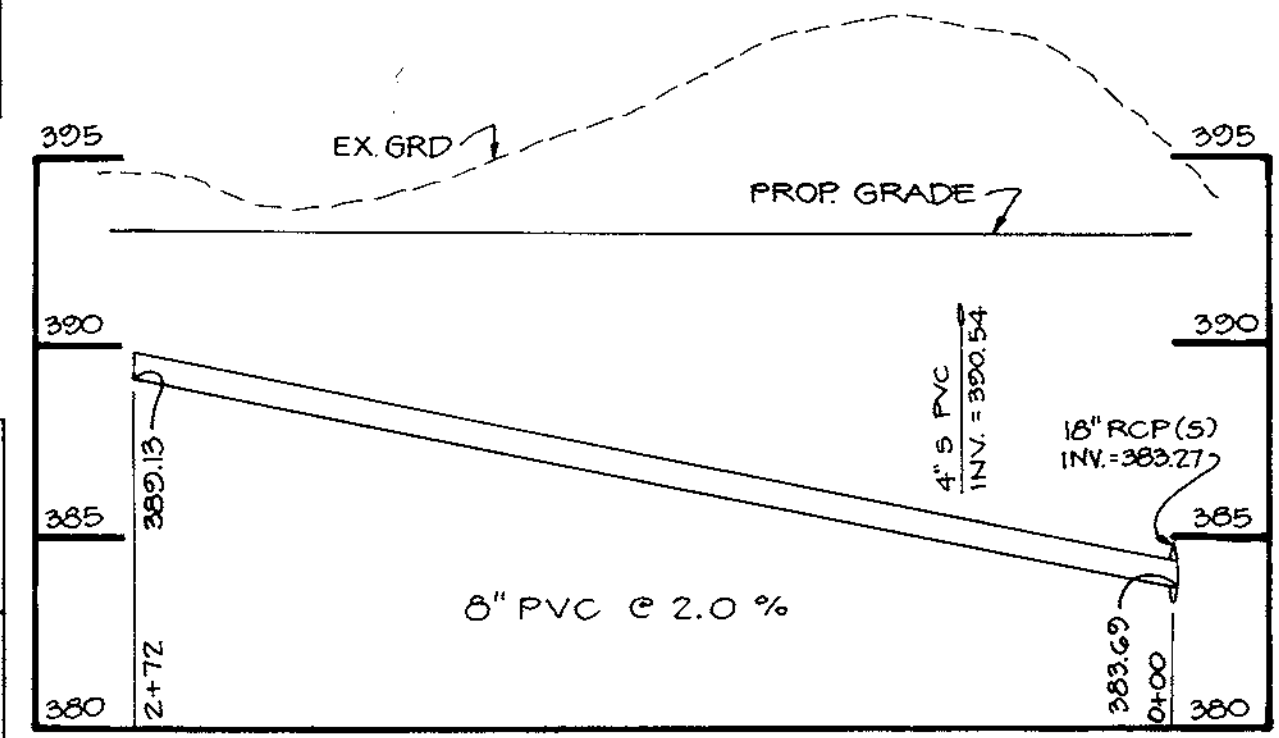
**STORM DRAIN PROFILE  
SOUTH SIDE OF PARKING LOTS**  
SCALE: HORIZ. 1" = 50'  
VERT. 1" = 5'



**STORM DRAIN PROFILE  
FRONT PARKING LOT**  
SCALE: HORIZ. 1" = 50'  
VERT. 1" = 5'



**STORM DRAIN PROFILE  
WEST SIDE PARKING LOT**  
SCALE: HORIZ. 1" = 50'  
VERT. 1" = 5'



**ROOF DRAIN PROFILE**  
SCALE: HORIZ. 1" = 50'  
VERT. 1" = 5'

STR. No.	STA.	LOCATION	TOP ELEV.	INV. IN	INV. OUT	TYPE	Ho. Co. STD.	REMARKS
-1	1+75.08	OFFSET 12.0 L	364.88	359.78	359.51	A-5 3'-4" WIDE	SD-4.40	
-2	N 589154.8126	E 1365519.1708	363.00	359.78	360.03	DOUBLE S	SD-4.23	GRATE FLUSH W/FINISH GRD.
-3	N 589599.5651	E 1365514.8139	383.29	374.73	374.63	S COMB. DOUBLE	SD-4.34	
-4	N 589610.1758	E 1365535.4948	381.04	376.12	375.37	S COMB.	SD-4.32	
-5	N 589837.9488	E 1365470.4422	381.80	377.14	376.64	S COMB.	SD-4.32	
-6	N 589728.5211	E 1365298.3638	387.57	381.24	380.99	S COMB.	SD-4.32	
-7	N 589896.1685	E 1365231.7202	386.45	382.29	382.19	TD	SD-4.11	OPEN ON 2 SIDES
-8	N 589927.2812	E 1365346.7285	381.72	382.85	382.85	S COMB.	SD-4.32	
-9	N 589240.5983	E 1365344.0820	388.32	384.35	384.35	S COMB.	SD-4.32	
-10	N 589126.1612	E 1365125.0982	387.95	382.57	382.30	S COMB.	SD-4.32	
-11	N 589117.9501	E 1365159.5697	388.13	384.44	384.44	S COMB.	SD-4.32	
-12	N 589330.3247	E 1364956.7195	394.44	390.97	390.97	S COMB.	SD-4.32	
MH-1	N 589806.4783	E 1365574.3158	365.70	360.98	360.76	MANHOLE	G-5.12	REPLACE EX. INLET (SWM)
MH-2	N 589820.2841	E 1365530.7149	381.22	369.04	370.30	MANHOLE	G-5.12	SWM OUTFALL
MH-3	N 589571.9230	E 1365291.6510	386.00	377.77	377.67	MANHOLE	G-5.12	
MH-4	N 589479.3605	E 1365309.9068	392.87	383.17	383.07	MANHOLE	G-5.12	
MH-5	N 589287.0567	E 1364947.1402	394.00	386.80	386.55	MANHOLE	G-5.12	
WQ#1	N 589247.4156	E 1365805.8007	367.00	359.35	359.16	SK (MANHOLE)	G-5.12	BAY SAVER (SEE DETAIL)
WQ#2	STA: 1+72.70	OFFSET 12.0 R	384.77	359.35	359.16	SK (A-10 6" WIDE)	SD-4.02	BAY SAVER (SEE DETAIL)
WQ#3	N 589714.3056	E 1365633.3349	383.49	383.49	383.49	SK (MANHOLE)	G-5.12	BAY SAVER (SEE DETAIL)
WQ#4	N 589703.5815	E 1365492.3220	383.49	374.52	374.42	SK (MANHOLE)	G-5.12	BAY SAVER (SEE DETAIL)
ES-1	N 589250.9111	E 1365682.7306	-	357.96	357.90	END SECTION	SD-5.52	

NOTE: ALL INLET TOP ELEVATIONS AND COORDINATES ARE AT THE TOP FACE OF CURB IN THE MIDDLE OF THE INLET.

ALL STORM DRAINS SHALL BE PRIVATELY OWNED AND MAINTAINED

1	7/3/98	REVISED PER COMMENTS DATED 6/10/98
NO.	DATE	REVISION

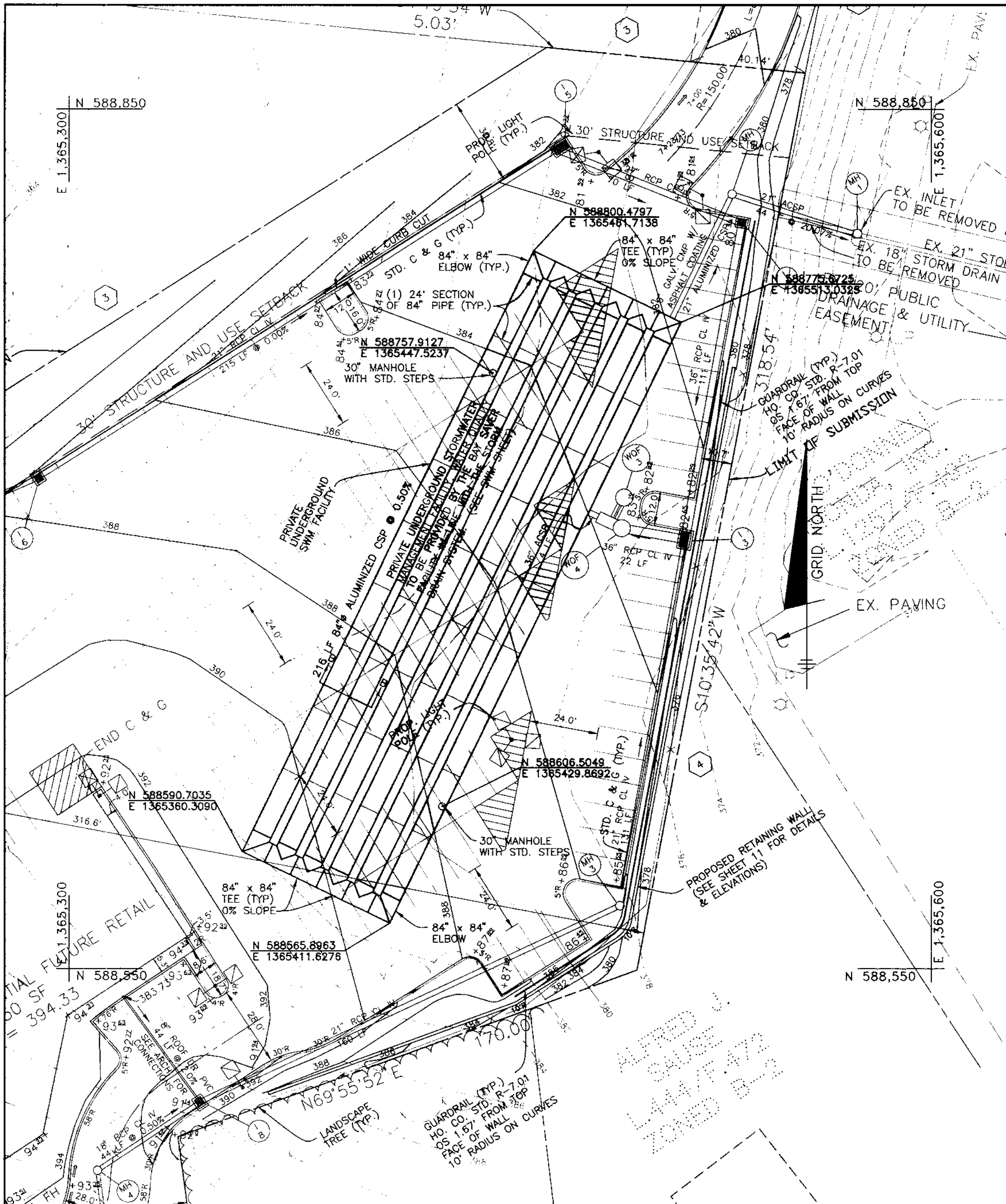
TSA GROUP, INC.  
planning • architecture • engineering  
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • 410-665-6105  
*Donald Moran*

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Cindy Hamilton* 6/18/99  
CHIEF, DIVISION OF LAND DEVELOPMENT  
*John DeWitt* 5/19/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
*Joseph Butler* 6/22/99  
DIRECTOR

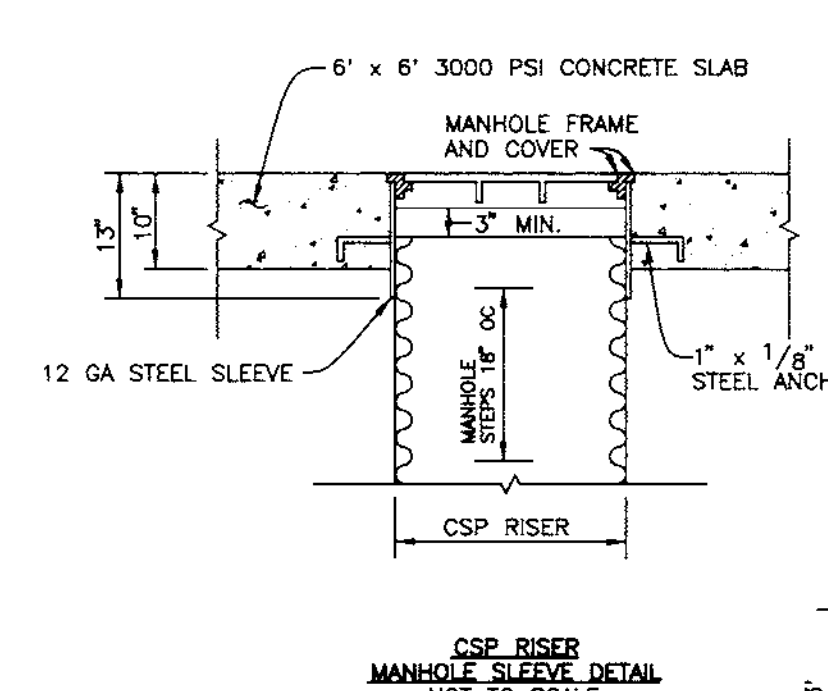
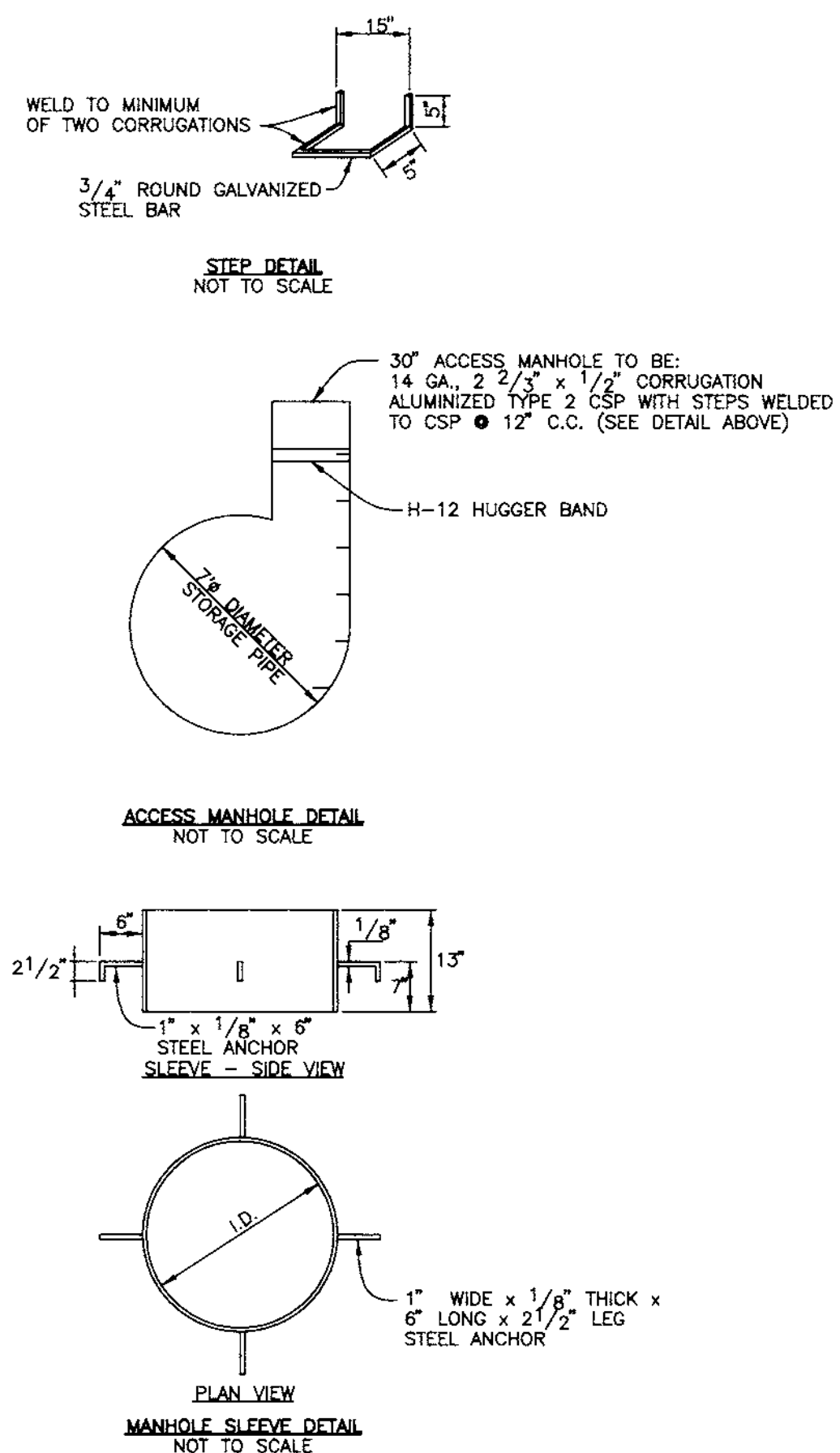
OWNER: LEONORA K. HOENES  
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WOODBINE, MARYLAND 21797  
410-442-0411  
DEVELOPER: HARRISON AND GRASS  
20 ERFORD ROAD  
SUITE 212  
LEMOYNE, PA 17043  
717-737-7800

PROJECT: HOENES PROPERTY, PARCEL H  
METRO FOODS  
ELICOTT CITY  
S-95-01a, P-97-02, WP-95-84, F-96-91, F-98-12  
LOCATION: TAX MAP 24 - BLOCK 6 - PARCEL 848  
TAX MAP 17 - BLOCK 24 - PARCEL 681 - (BUSINESS PROP.)  
TAX MAP 17 - BLOCK 24 - PARCEL 369 - (PARCEL A-17)  
SECOND ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
TITLE: STORM DRAIN PROFILES  
DATE: APRIL, 1998 PROJECT NO. 1079  
SCALE: AS SHOWN DRAWING 8 OF 13

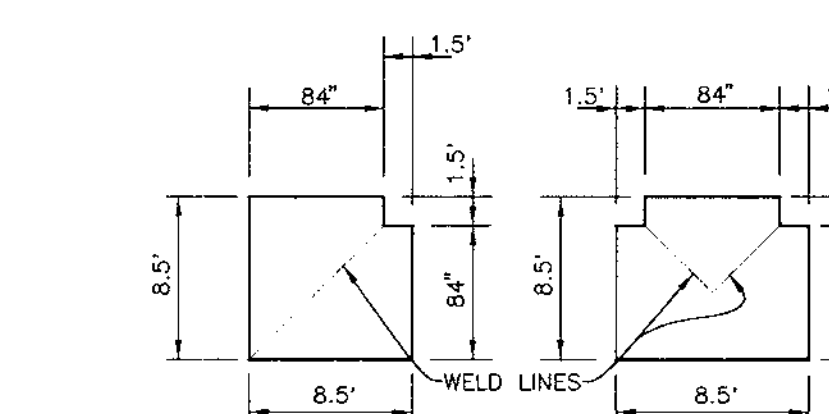




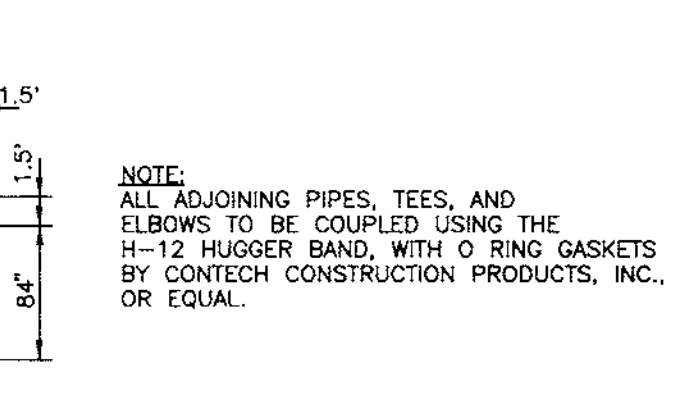
PRIVATE UNDERGROUND SWM PLAN VIEW  
SCALE: 1" = 30'



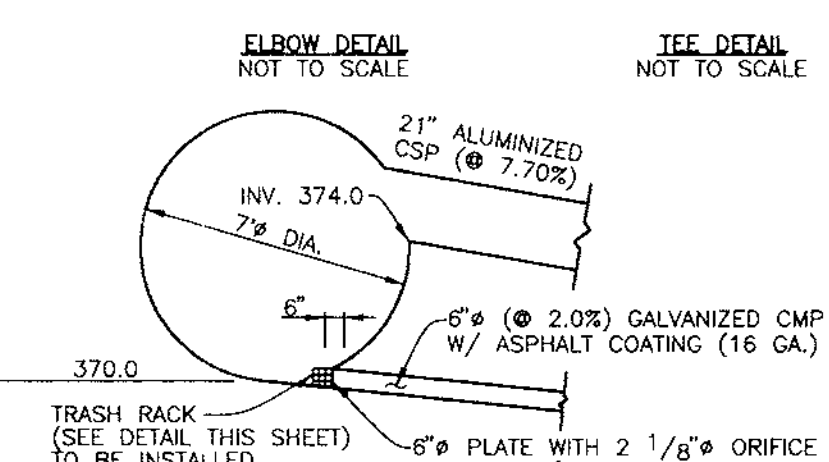
MANHOLE SLEEVE DETAIL  
NOT TO SCALE



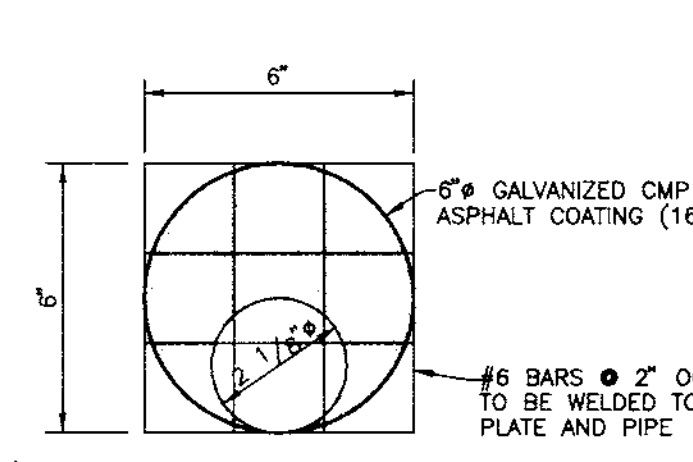
ELBOW DETAIL  
NOT TO SCALE



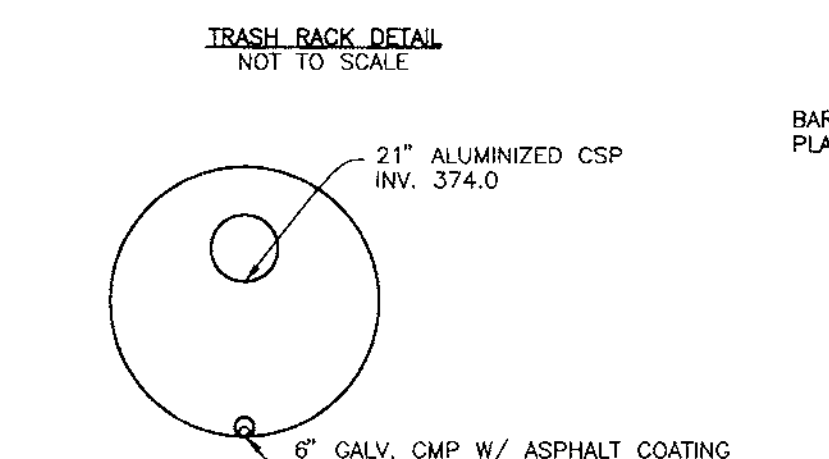
TEE DETAIL  
NOT TO SCALE



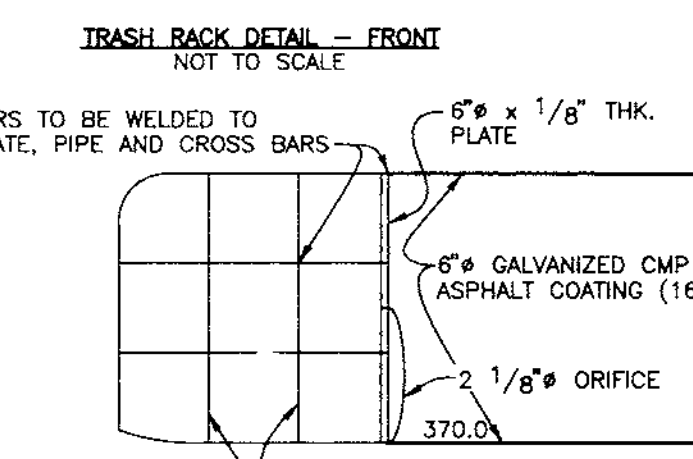
TRASH RACK DETAIL  
NOT TO SCALE



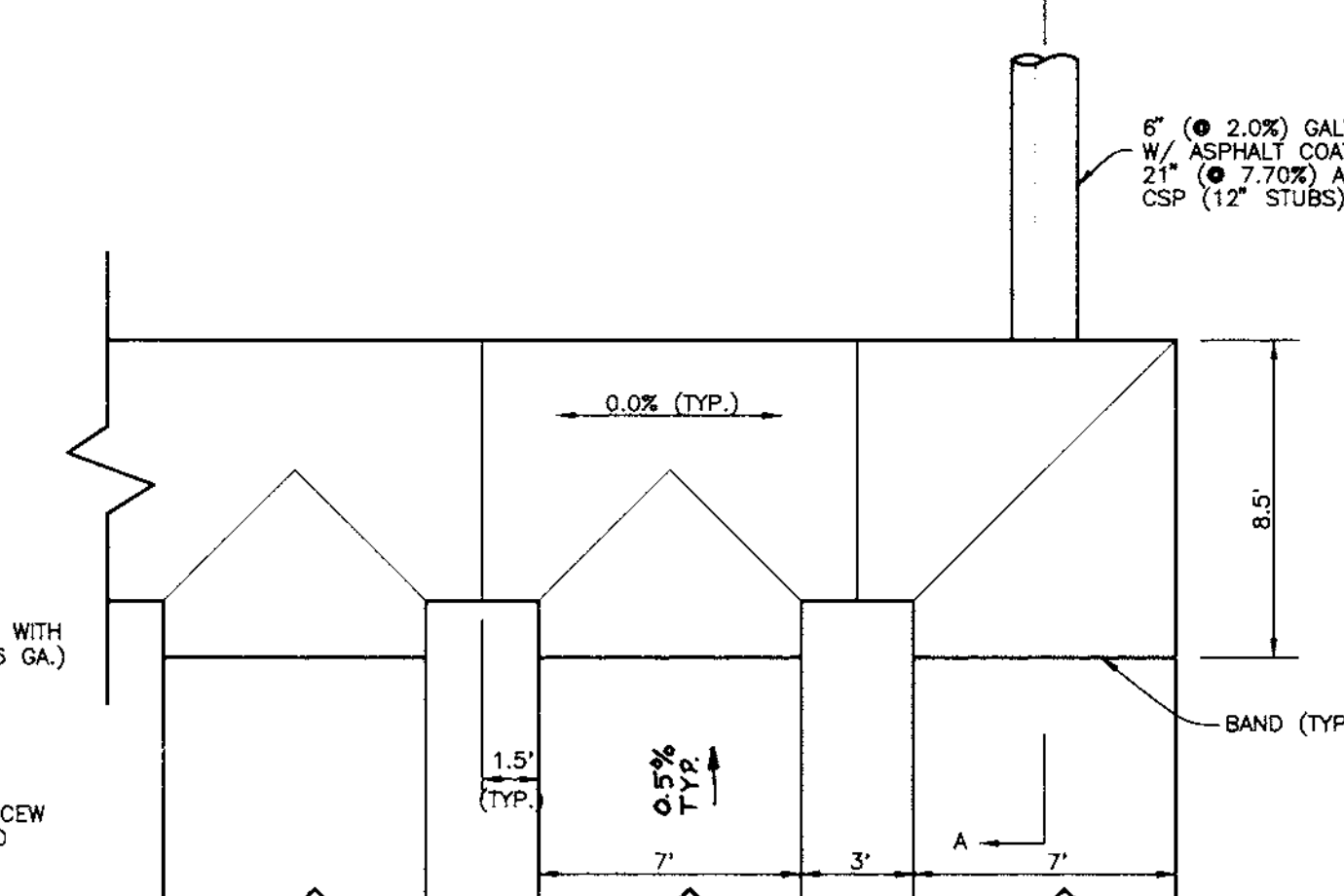
TRASH RACK DETAIL - FRONT  
NOT TO SCALE



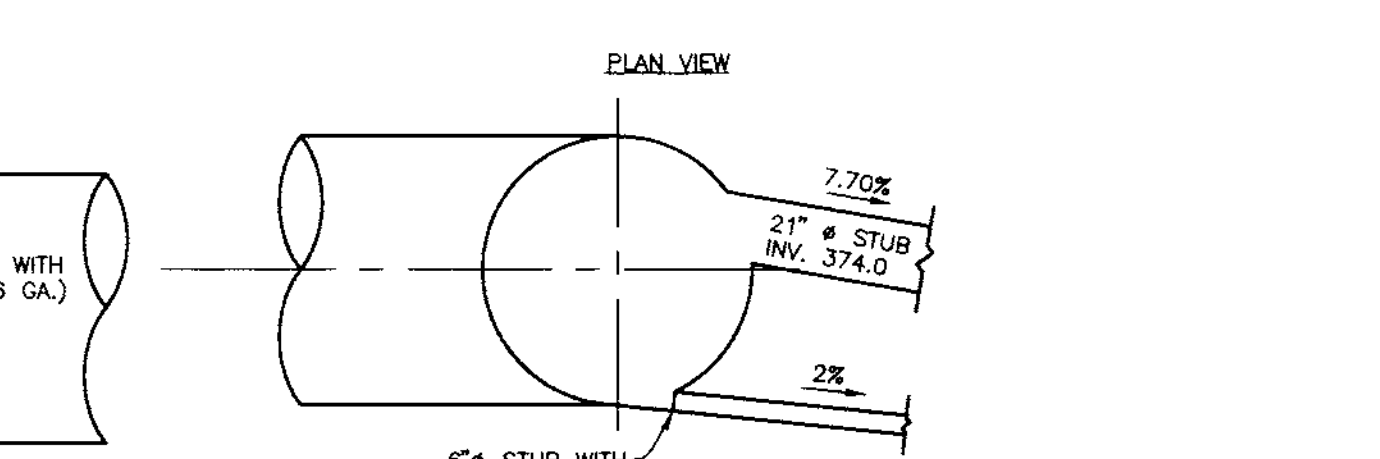
SWM CONTROL DETAIL  
NOT TO SCALE



TRASH RACK DETAIL - SIDE  
NOT TO SCALE



MANIFOLD DETAIL  
NOT TO SCALE

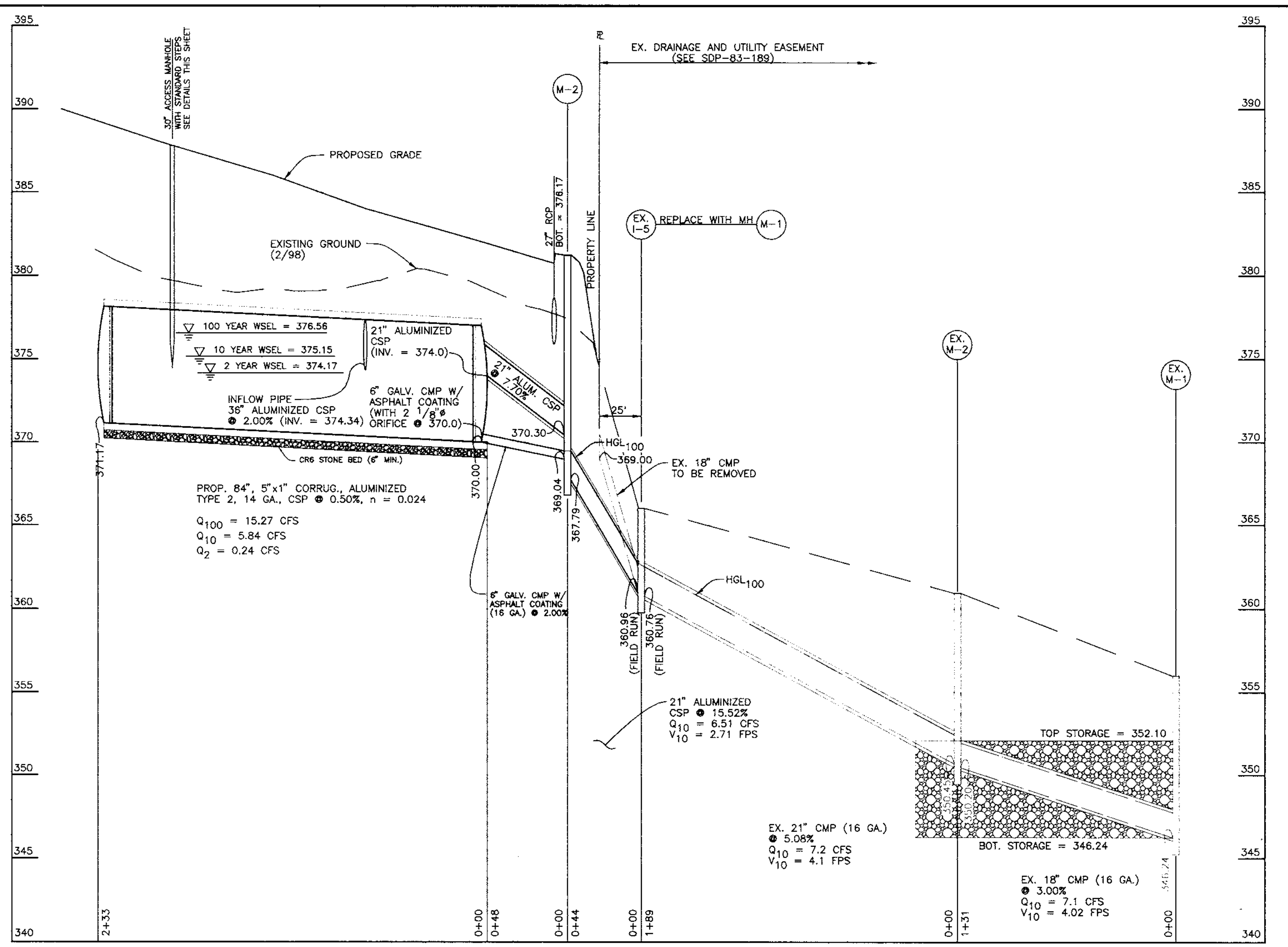


MANIFOLD DETAIL  
NOT TO SCALE

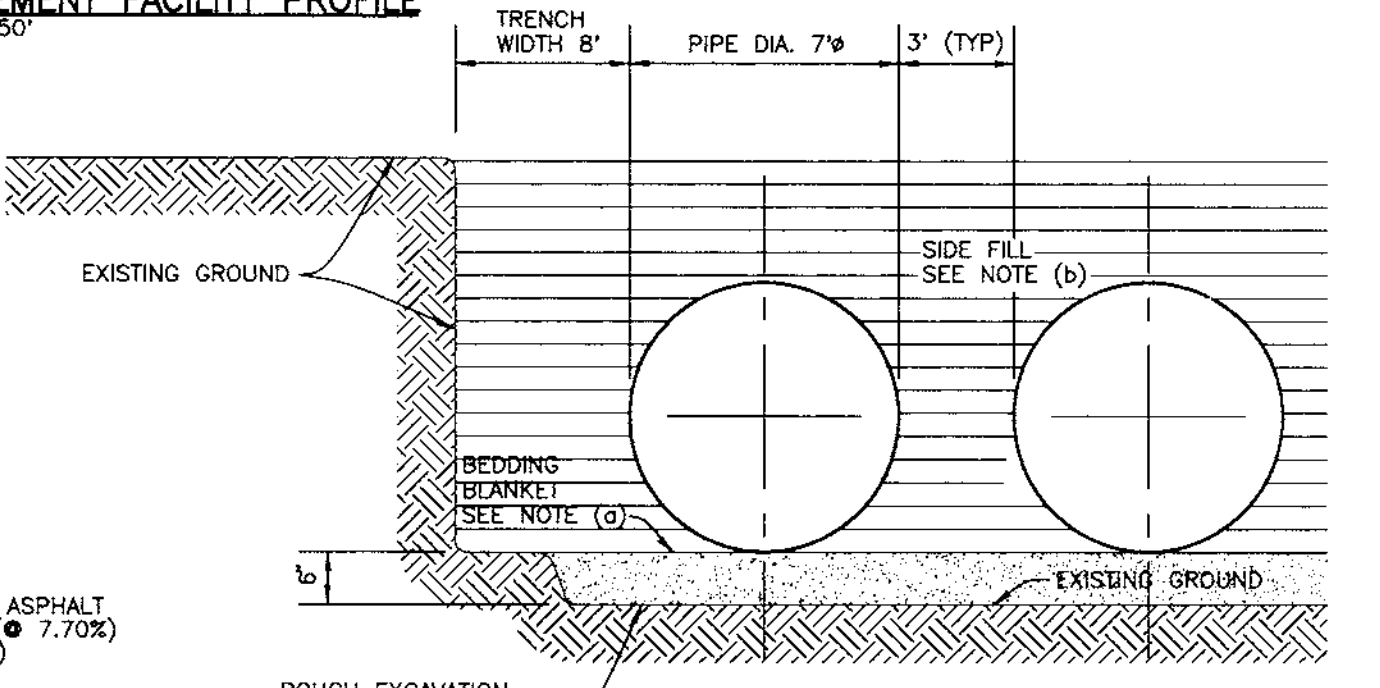
**OPERATION AND MAINTENANCE SCHEDULE**  
**STORMWATER MANAGEMENT FACILITY**  
1. THE STORMWATER MANAGEMENT FACILITY OWNER(S) AND ANY HEIRS, SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR SAFETY OF THE FACILITY AND CONTINUED OPERATION, SURVEILLANCE INSPECTION AND MAINTENANCE THEREOF. THE OWNERS SHALL EMPLOY A QUALIFIED ENGINEER TO MAKE YEARLY INSPECTIONS OF THE UNDERGROUND SYSTEM AND RECOMMEND REPAIRS AS DEEMED NECESSARY.

**CONSTRUCTION SPECIFICATIONS**  
**A. BEDDING**  
1. THE BED SHALL BE PLACED TO UNIFORM GRADE AND LINE TO ENSURE GOOD VERTICAL ALIGNMENT AND TO AVOID EXCESSIVE STRESSES AT PIPE JOINTS. THE BEDDING SHALL BE FREE OF ROCK FORMATIONS, PROTRUDING STONES, FROZEN LUMPS, ROOTS, AND OTHER FOREIGN MATERIAL. THE BEDDING FOUNDATION MUST BE A STABLE, WELL GRADED GRANULAR MATERIAL. ANY MATERIAL THAT HAS INADEQUATE BEARING CAPACITY MUST BE REMOVED AND REPLACED WITH A COMPACTED SELECT FILL APPROVED BY THE GEOTECHNICAL ENGINEER.  
**B. BACKFILL**  
1. THE FILL MATERIAL SHALL BE FREE OF ROCKS, FROZEN LUMPS, AND FOREIGN MATTER THAT COULD CAUSE HARD SPOTS IN BACKFILL OR THAT COULD DECOMPOSE AND CREATE VOIDS.  
2. BACKFILL MATERIAL SHALL BE A WELL GRADED GRANULAR MATERIAL.  
3. HIGHLY PLASTIC SILTS, HIGHLY PLASTIC CLAYS, ORGANIC SILTS, ORGANIC CLAYS, AND PEATS SHALL NOT BE USED AS BACKFILL MATERIAL.  
4. BACKFILL SHALL BE PLACED SYMMETRICALLY ON EACH SIDE OF THE STRUCTURE IN SIX-INCH TO EIGHT-INCH LOOSE LAYERS TO ONE FOOT ABOVE THE TOP OF THE PIPE. EACH LAYER IS TO BE COMPACTED TO THE SPECIFIED DENSITY (MINIMUM 90%) BEFORE PLACING THE NEXT LAYER. REFERENCE ASTM A788.  
**C. PIPE**  
1. THE PIPE FABRICATOR SHALL PROVIDE SPECIFICATIONS OF ALL MATERIALS (BASED ON HS25 LOADING).  
2. SHOP DRAWINGS ARE TO BE PROVIDED BY FABRICATOR. APPROVAL BY ENGINEER IS REQUIRED PRIOR TO CONSTRUCTION.  
3. CONTRACTOR IS REQUIRED TO COORDINATE APPROVAL OF SHOP DRAWINGS AND SPECIFICATIONS AND SHALL BE OBLIGATED FOR ANY COST THEREOF.

SWM SUMMARY TABLE				
STORM FREQUENCY (YRS.)	PRE-DEVELOPMENT RUNOFF (cfs)	POST-DEVELOPMENT RUNOFF (cfs)	WSEL (FT.)	STORAGE (AC.-FT.)
1	3.73	3.73	374.17	0.647
10	12.92	7.94	375.15	0.868
100	25.44	21.88	376.56	1.136



UNDERGROUND STORMWATER MANAGEMENT FACILITY PROFILE  
SCALE: HORIZ. 1" = 50'  
VERT. 1" = 5'



SECTION B-B  
BEDDING AND BACKFILL DETAIL  
N.T.S.

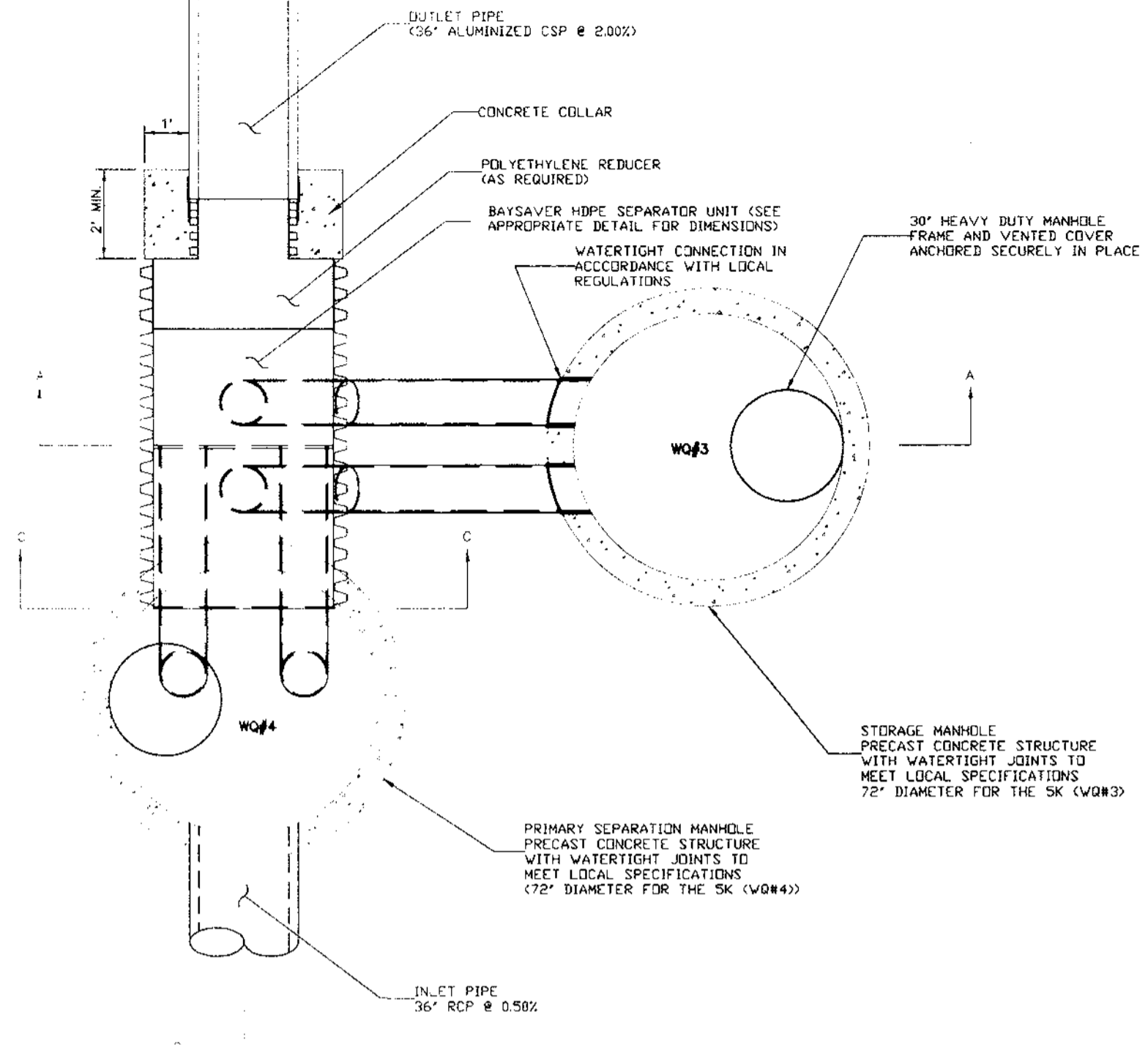
TSA GROUP, INC.  
planning • architecture • engineering  
8460 Baltimore National Pike • Ellicott City, Maryland 21043 • 410-465-8105  
*Donald Moran*

NO.	DATE	REVISION
1	7/2/98	REVISED PER COMMENTS DATED 6/10/98

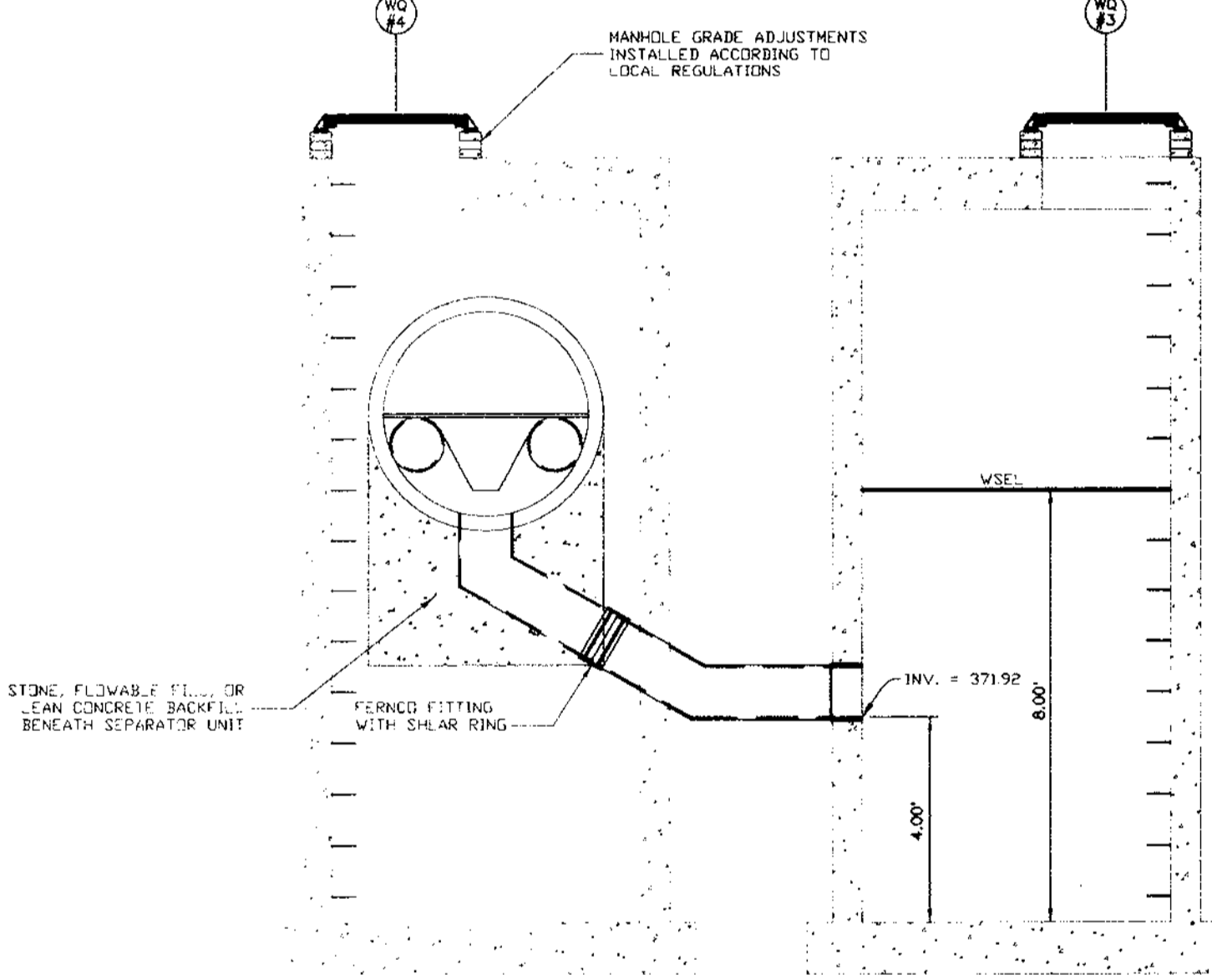
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*David Butler* DIRECTOR, DATE 6/22/99  
*Cindy Hamilton* CHIEF, DIVISION OF LAND DEVELOPMENT, DATE 6/15/99  
*Donald Moran* CHIEF, DEVELOPMENT ENGINEERING DIVISION, DATE 5/19/99

OWNER: LEONORA K. HOENES 15115 CARRS MILL ROAD WOODBINE, MARYLAND 21797 410-442-0411	PROJECT: HOENES PROPERTY, PARCEL H METRO FOODS ELLCOTT CITY S-95-01a, P-97-02, WP-95-84, F-96-91, F-98-12 LOCATION: TAX MAP 24 - BLOCK 6 - PARCEL 848 TAX MAP 17 - BLOCK 24 - PARCEL 361 (HOENES PROP.) TAX MAP 17 - BLOCK 24 - PARCEL 369 (PARCEL A-1) SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DEVELOPER: HARRISON AND GRASS 20 ERFORD ROAD SUITE 212 LEMOYNE, PA 17043 717-737-7800	TITLE: STORMWATER MANAGEMENT NOTES AND DETAILS
DATE: APRIL, 1998	PROJECT NO. 1079
Design: MLV	Draft: JMC
SCALE: AS SHOWN	DRAWING 9 OF 13

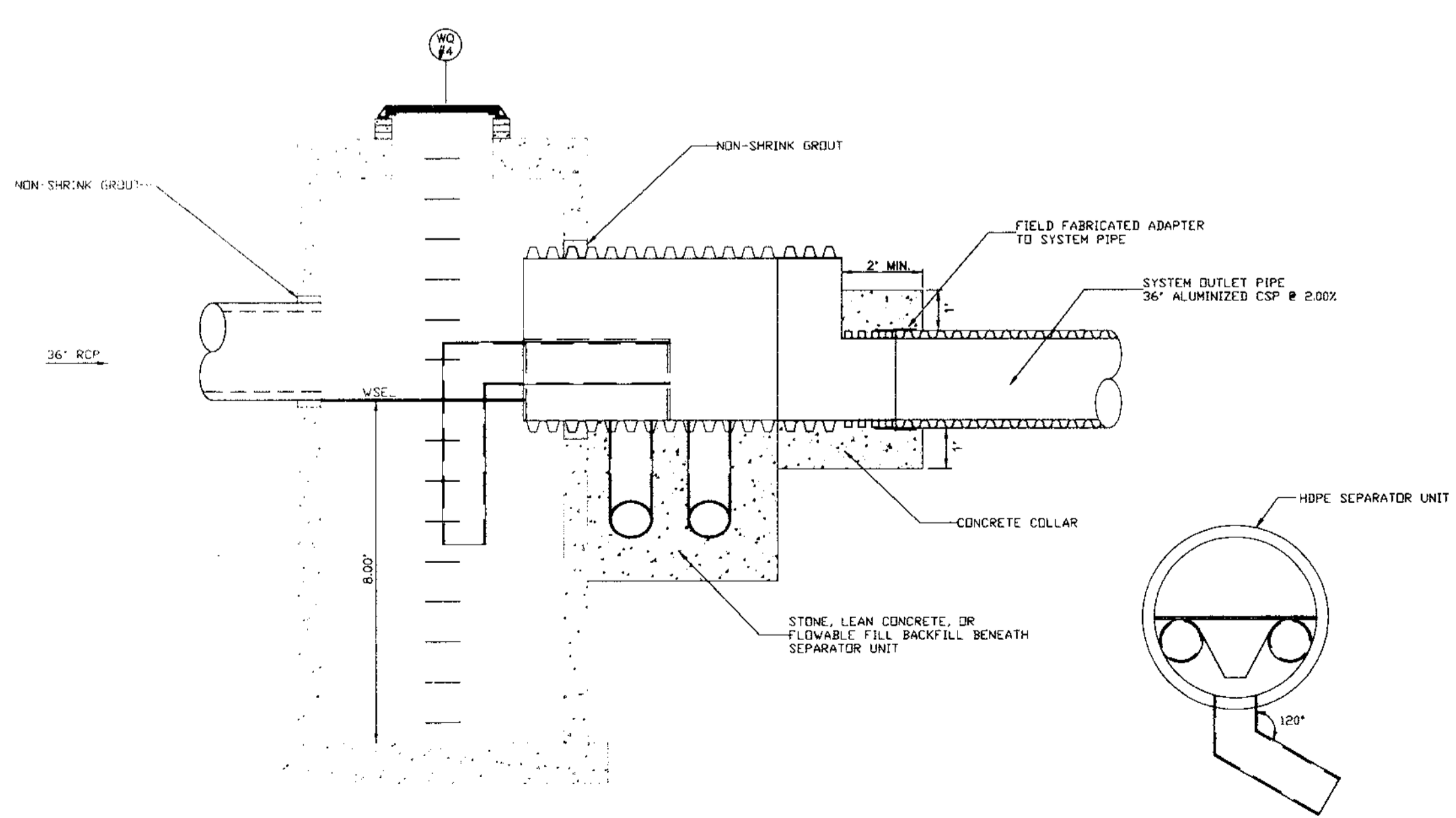
**WQF #3 AND 4 (5K BAYSAVER UNIT)  
PRIVATELY OWNED AND MAINTAINED**



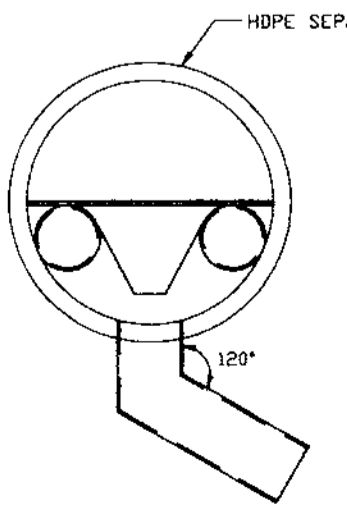
**PLAN VIEW WQF #3 AND #4  
NOT TO SCALE**



**SECTION A-A  
NOT TO SCALE**

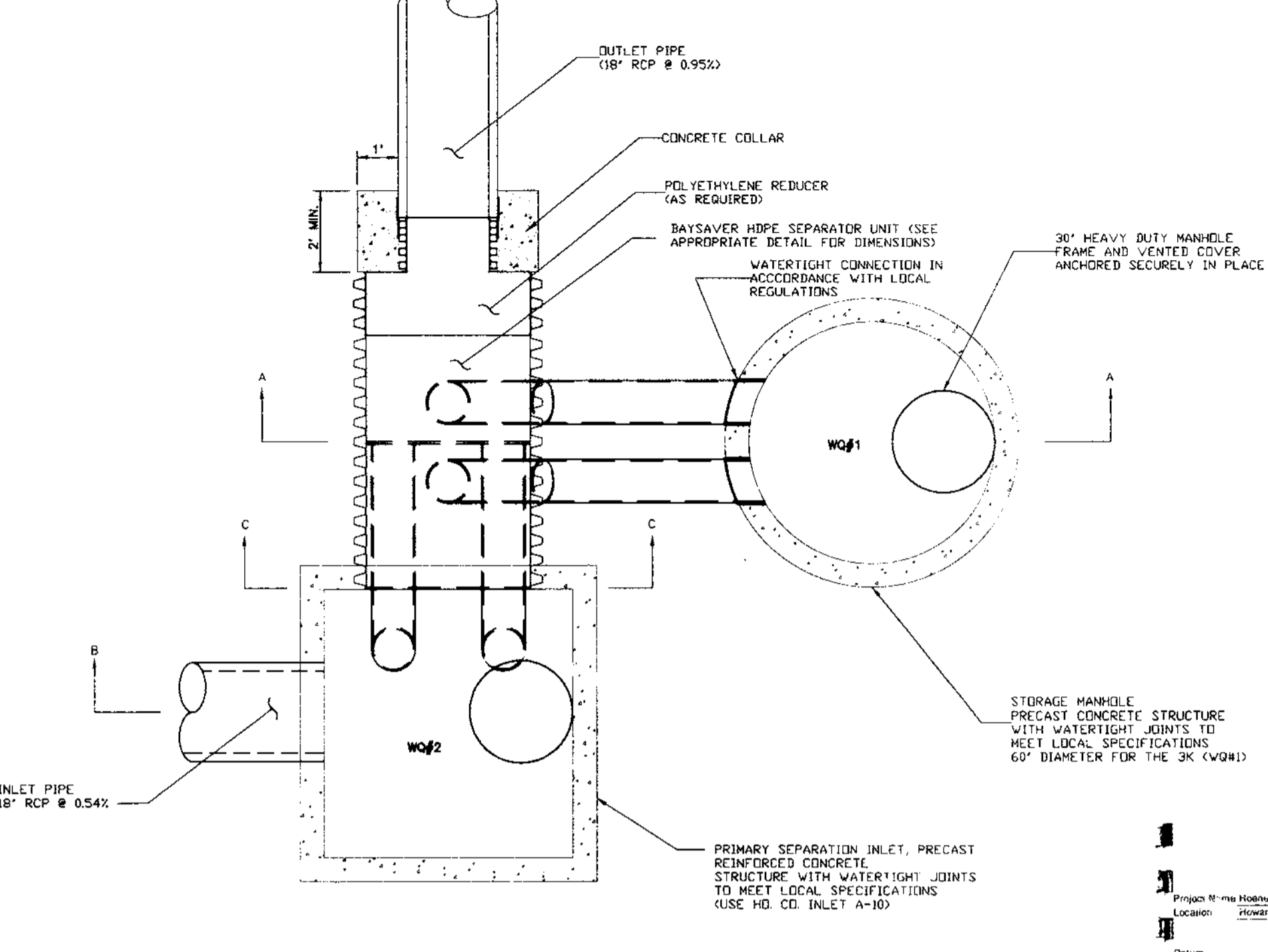


**SECTION B-B  
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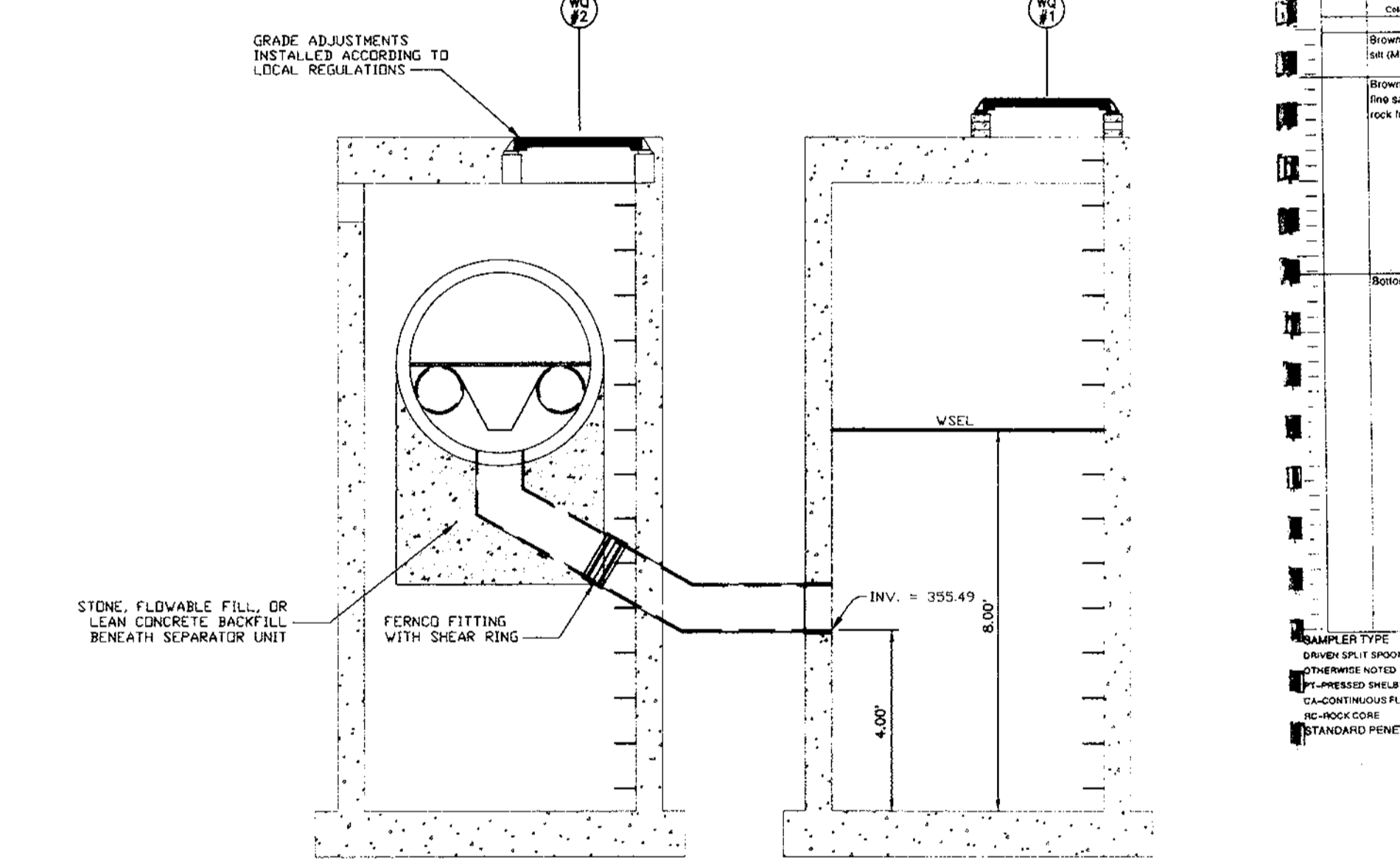


**SECTION C-C  
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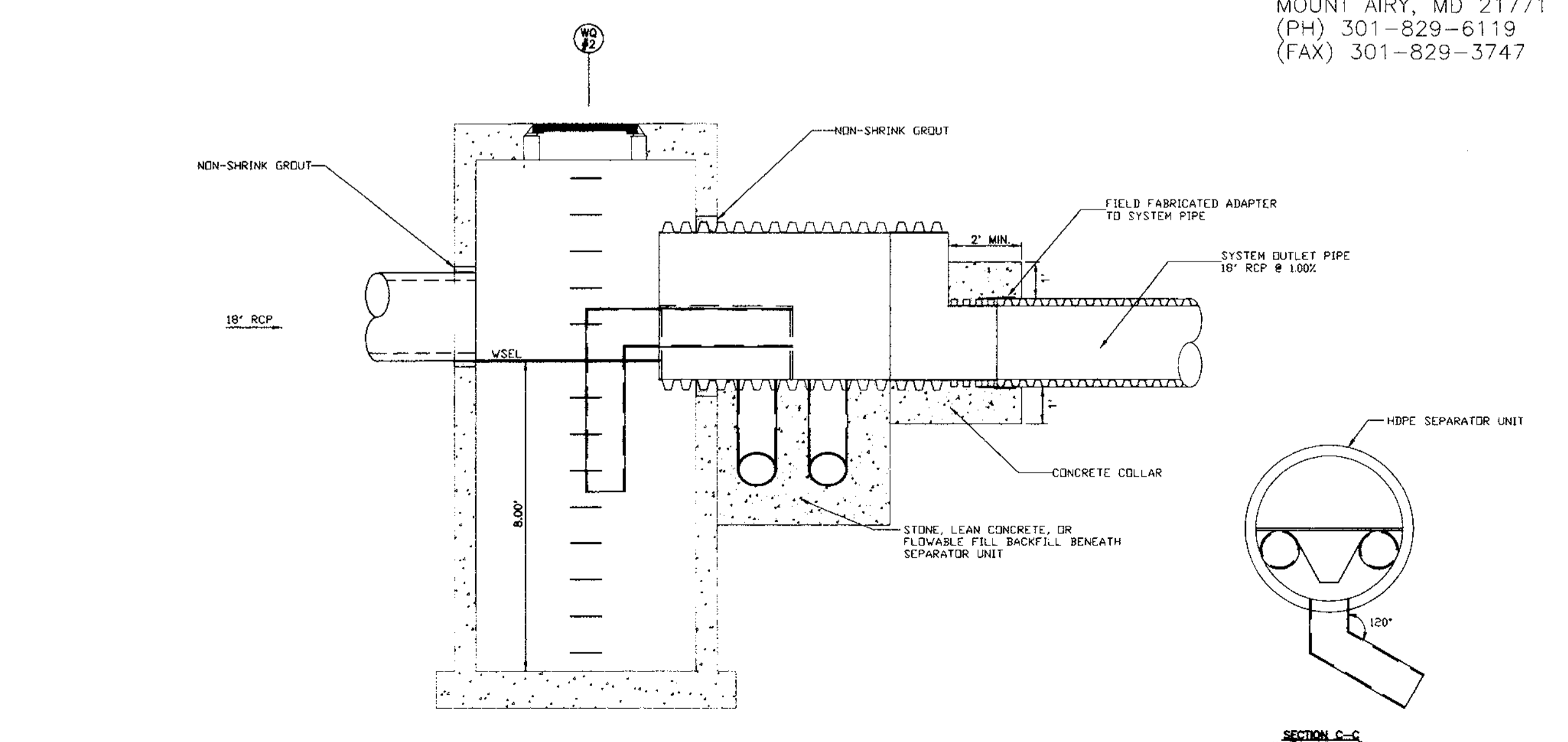
**WQF #1 AND 2 (3K BAYSAVER UNIT)  
PRIVATELY OWNED AND MAINTAINED**



**PLAN VIEW WQF #1 AND #2  
NOT TO SCALE**



**SECTION A-A  
NOT TO SCALE**



**SECTION B-B  
NOT TO SCALE**

HILLIS - GARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: 10115 DEER MOUNTAIN RD, MOUNT AIRY, MD 21771  
Location: Howard County, MD

Client: TSA GROUP, INC.  
Date Started: 02/27/98  
Job #: 98105A

ELEV.	SOIL DESCRIPTION	TESTS	DEPTH	SAMPLE	GROUND WATER DEPTH	BORING METHOD	NOTES
11.5	Bluish gray micaceous silty clay (see notes)	U-100	0.0	U-100	PT	1\"/>	

STANDARD PENETRATION TEST - BORINGS 1\"/>

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STANDARD PENETRATION TEST - BORINGS 1\"/>

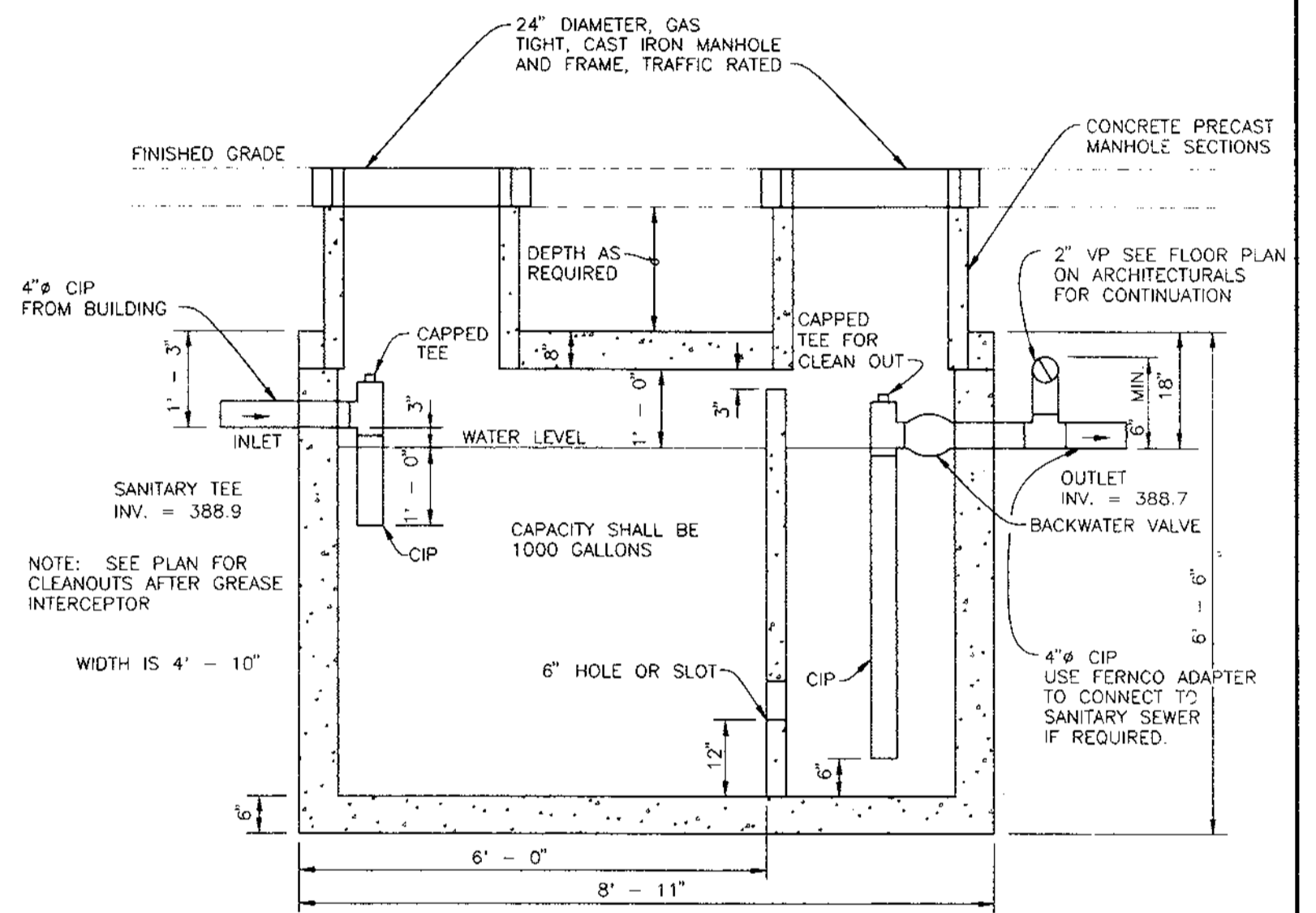
**BAYSAVER, INC.**  
1010 DEER HOLLOW DR.  
MOUNT AIRY, MD 21771  
(PH) 301-829-6119  
(FAX) 301-829-3747

- BAYSAVER INSTALLATION INSTRUCTIONS**
- EXCAVATION MUST PROVIDE ADEQUATE SPACE TO CONNECT INLET AND OUTLET PIPES TO SEPARATOR MANHOLE AND BAYSAVER UNIT. INSTALL PRECAST DROP STRUCTURES ON SOLID GROUND AS VERIFIED BY A GEOTECHNICAL ENGINEER.
  - VERIFY THE SUBGRADE ELEVATION AGAINST THE MANHOLE DIMENSIONS AND CONNECTING STORM DRAIN INVERTS.
  - MAKING SURE THE BASES ARE LEVEL AND THE STORAGE MANHOLE OPENINGS ARE ALIGNED WITH THE SEPARATOR UNIT, INSTALL PRIMARY AND STORAGE MANHOLES. INSTALL RUBBER GASKETS ON BASE UNITS AND COAT WITH LUBRICATING GREASE. INSTALL ADDITIONAL MANHOLE SECTIONS AS REQUIRED.
  - BACKFILL BASE SECTIONS OF MANHOLES TO INVERT OF STORAGE MANHOLE CONNECTING PIPES. USING APPROVED BACKFILL MATERIAL, BACKFILL AND COMPACT IN 8 INCH LIFTS. BACKFILL AND COMPACTION SHOULD BE MONITORED BY A GEOTECHNICAL ENGINEER.
  - INSTALL BAYSAVER SEPARATOR UNIT AND CONNECTING PIPES. SEAL ALL CONNECTING JOINTS AND INSTALL SEPARATOR UNIT STORM DRAIN JOINT COLLAR. CUT EXCESS LENGTH OFF CONNECTING PIPES INSIDE STORAGE MANHOLE.
  - BACKFILL SEPARATOR UNIT AND MANHOLES. AREAS NOT ACCESSIBLE TO COMPACTION EQUIPMENT MUST BE BACKFILLED WITH LEAN CONCRETE OR FLOWABLE FILL.
  - INSTALL AND SET MANHOLE COVER GRADE ADJUSTMENTS AS NECESSARY.
  - INSTALL AND SET MANHOLE FRAME AND COVER UNITS.

- GENERAL CONSTRUCTION NOTES**
- ALL WORK MUST BE DONE WITH REGARD FOR THE SAFETY OF THE CONSTRUCTION CREW.
  - ALL WORK AND MATERIALS MUST COMPLY WITH APPLICABLE STATE AND LOCAL REGULATIONS.
  - CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ANY UNDERGROUND UTILITIES BEFORE EXCAVATION BEGINS.

- BAYSAVER MAINTENANCE**
- BAYSAVER SYSTEMS MUST BE INSPECTED ANNUALLY AND MAINTAINED AS NEEDED. INSPECTION IS MADE BY CHECKING THE DEPTH OF SEDIMENT IN EACH MANHOLE WITH A GRADE STICK OR SIMILAR DEVICE. MAINTENANCE IS REQUIRED WHEN THE SEDIMENT DEPTH IN EITHER MANHOLE EXCEEDS 2 FEET.

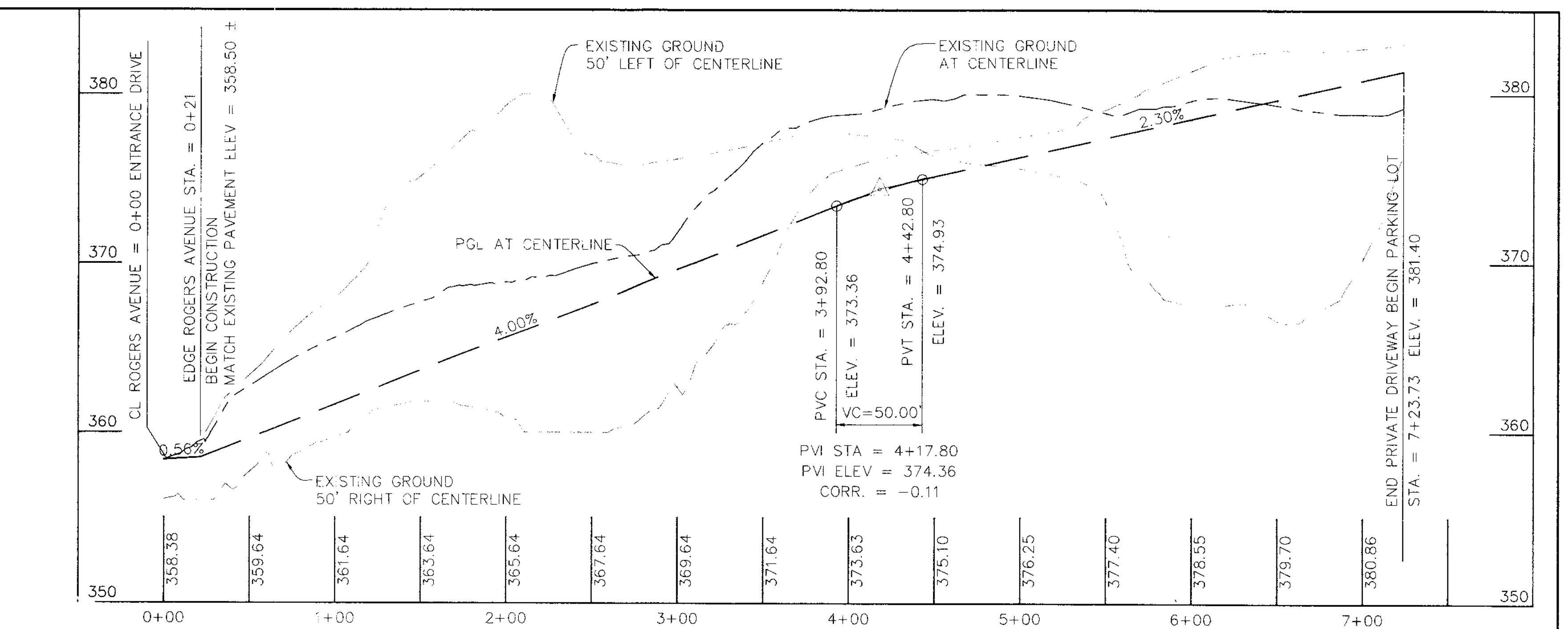
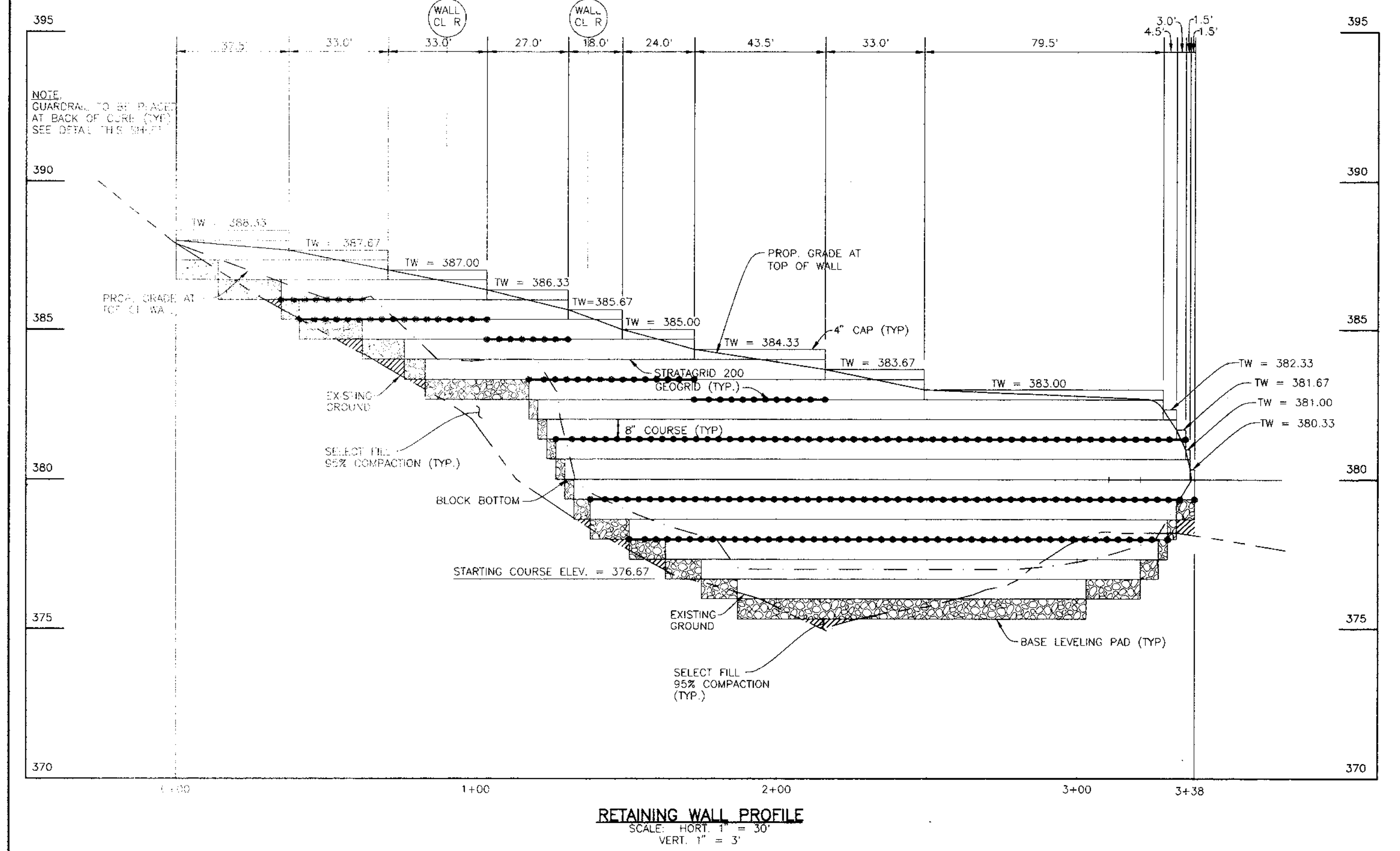
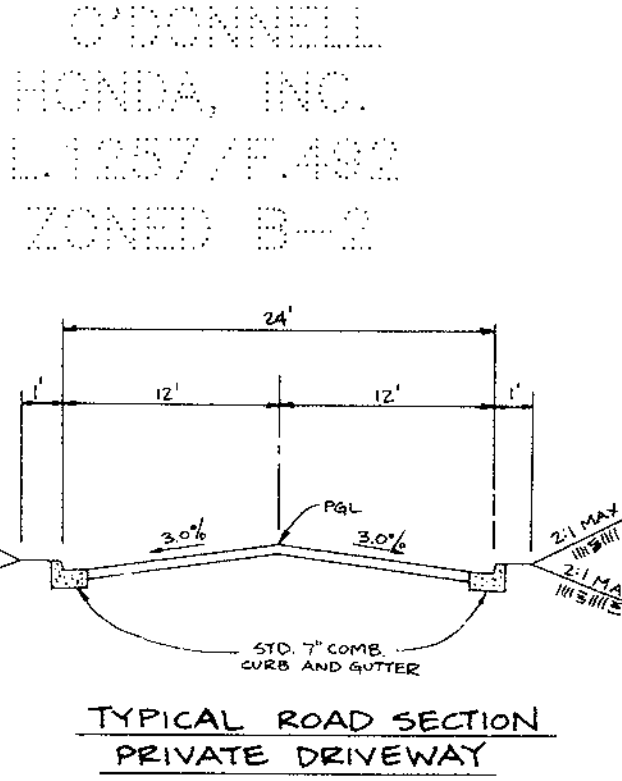
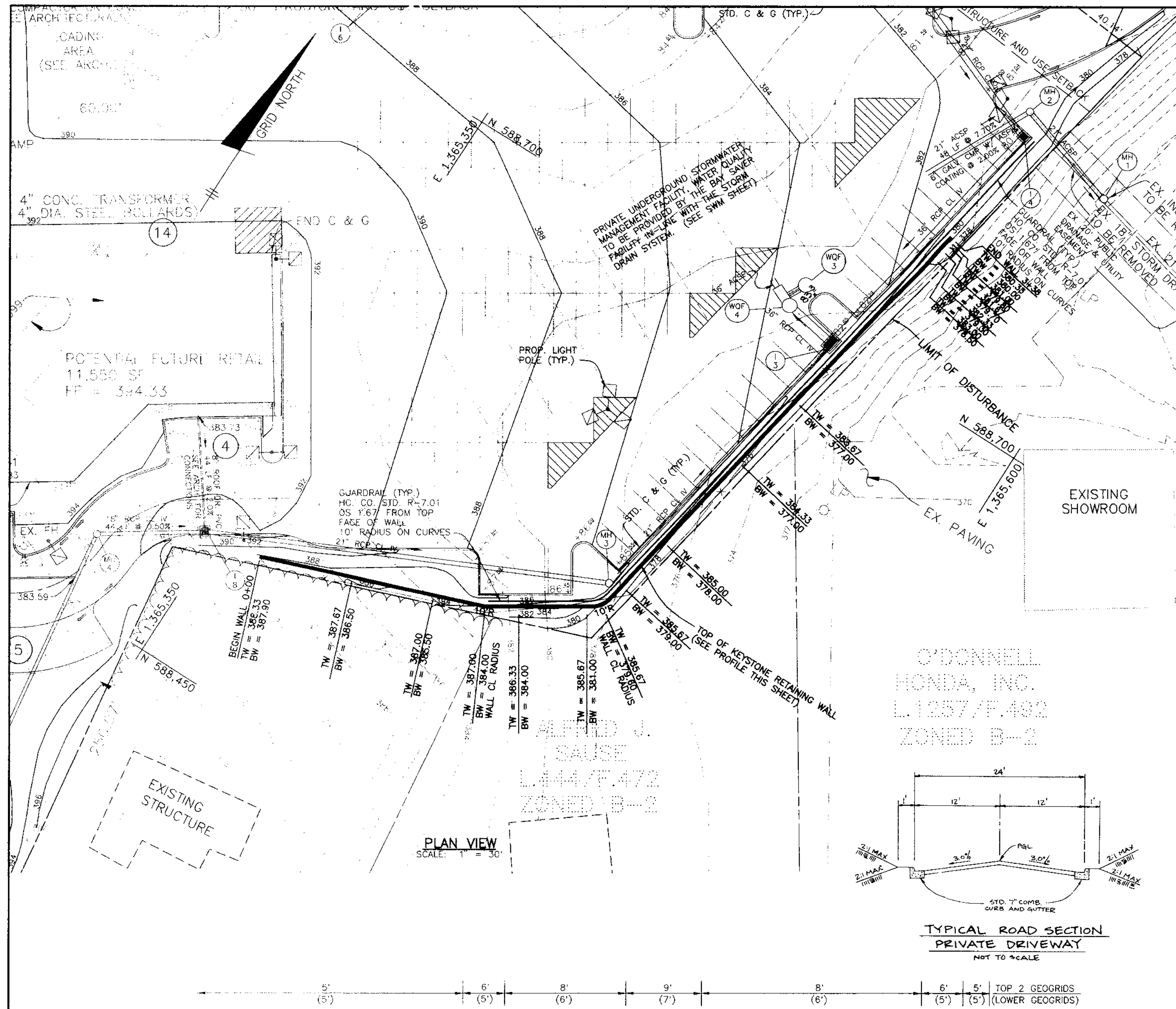
- MAINTENANCE CONSISTS OF THE FOLLOWING:**
- PRIMARY MANHOLE**
    - PUMP THE CLEAN WATER FROM THE CENTER OF THE MANHOLE DIRECTLY TO THE SYSTEM OUTFALL UNTIL THE WATER LEVEL FALLS TO 1 FOOT ABOVE THE SEDIMENT LAYER.
    - REMOVE THE SETTLED SEDIMENT AND REMAINING WATER BY VACUUM TRUCK.
    - CLEAN THE MANHOLE WALLS AND FLUSH OUT THE MANHOLE USING A HIGH PRESSURE HOSE AND REMOVE FLUSHING WATER BY VACUUM TRUCK. MAKE CERTAIN MANHOLE IS CLEAN.
  - STORAGE MANHOLE**
    - REMOVE THE TOP 12 INCHES OF OIL, DEBRIS, AND WATER BY VACUUM TRUCK.
    - PUMP THE CLEAN WATER FROM THE CENTER OF THE MANHOLE DIRECTLY TO THE SYSTEM OUTFALL UNTIL THE WATER LEVEL FALLS TO 1 FOOT ABOVE THE SEDIMENT LAYER.
    - REMOVE THE SETTLED SEDIMENT AND REMAINING WATER BY VACUUM TRUCK.
    - REMOVE THE MANHOLE WALLS AND FLUSH OUT THE MANHOLE USING A HIGH PRESSURE HOSE AND REMOVE FLUSHING WATER BY VACUUM TRUCK. MAKE CERTAIN MANHOLE IS CLEAN.
- CONTAMINATED MATERIAL REMOVED FROM THE MANHOLES MUST BE DISPOSED OF RESPONSIBLY AND LEGALLY BY THE OPERATOR OF THE VACUUM TRUCK.



**GREASE INTERCEPTOR  
NOT TO SCALE**

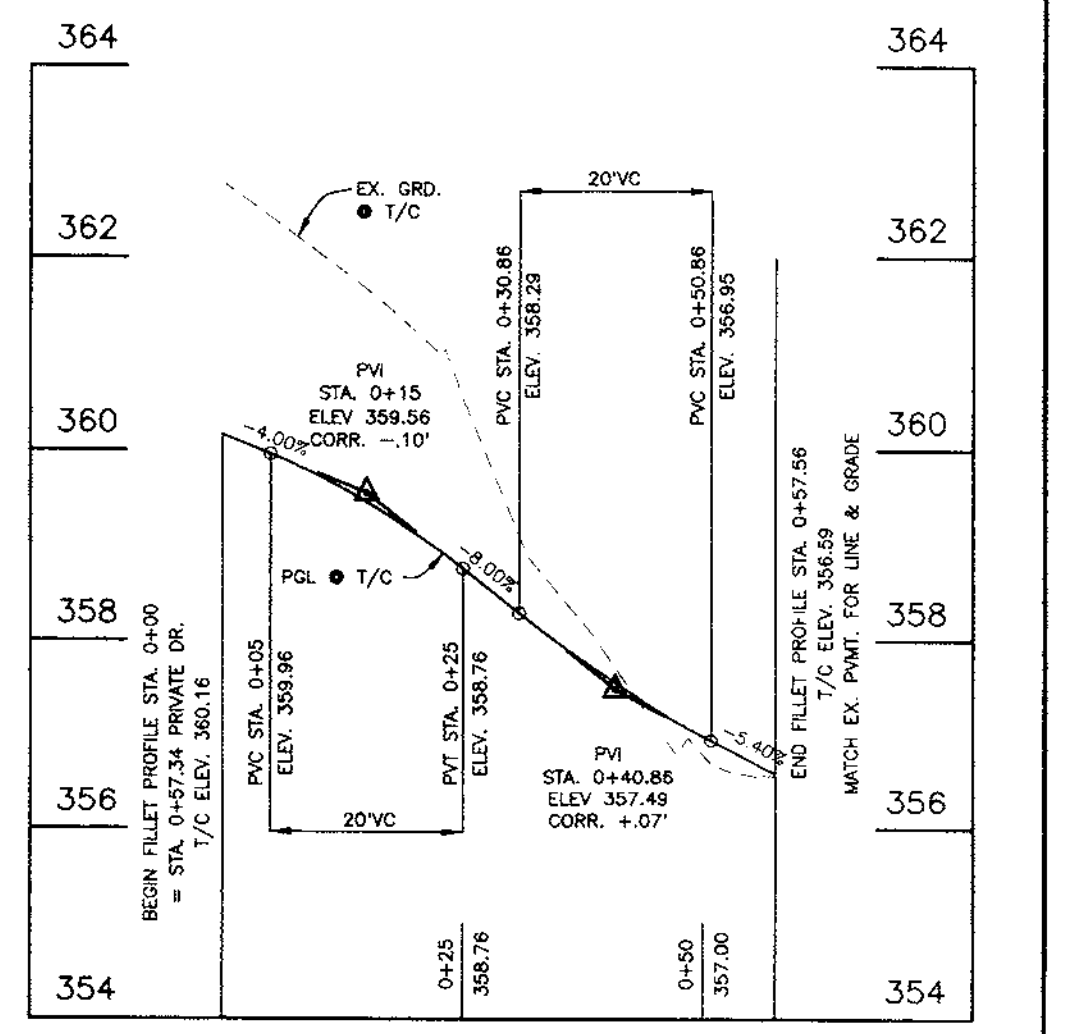
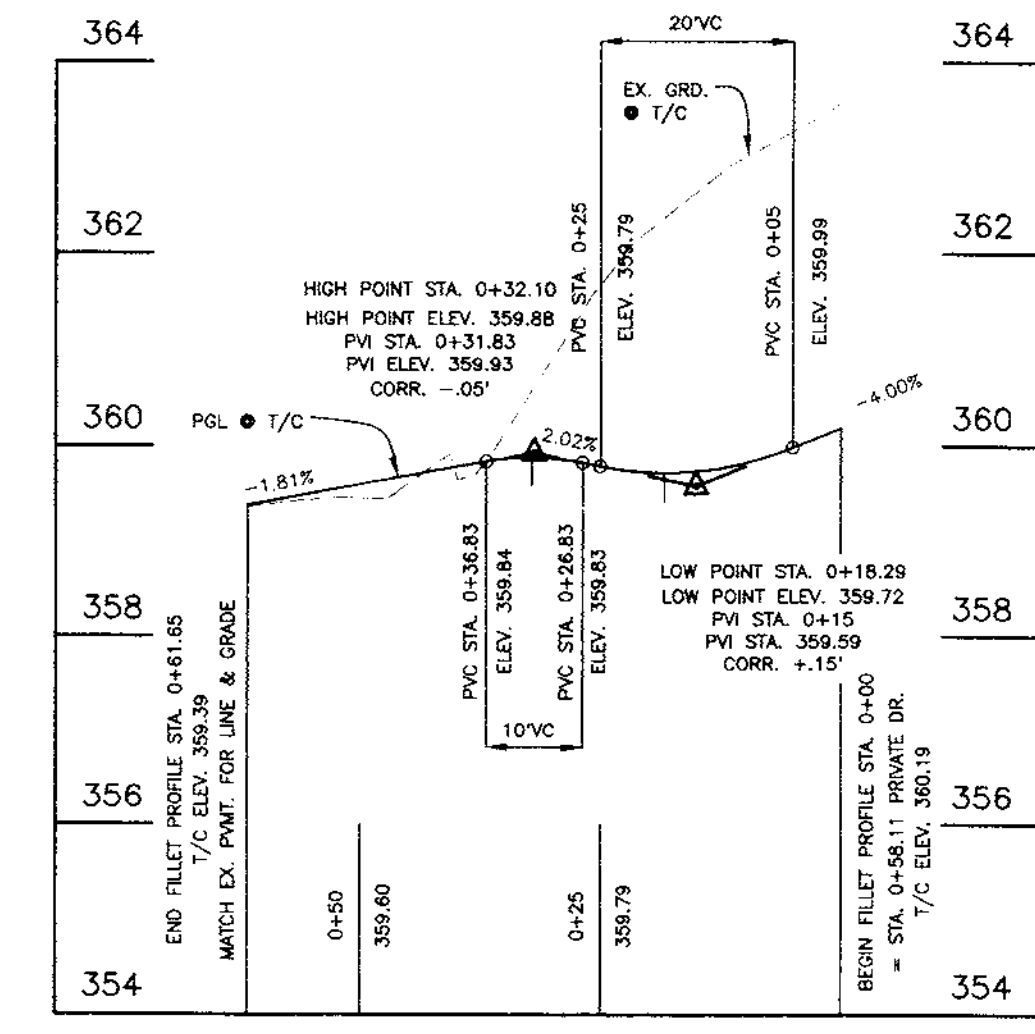
1	7/2/98	REVISED PER COMMENTS DATED 6/10/98
NO.	DATE	REVISION
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING		
<i>Joseph Smith</i> DIRECTOR,		6/23/98 DATE
<i>Cinda Hamblen</i> CHIEF, DIVISION OF LAND DEVELOPMENT		6/18/98 DATE
<i>Donald Mason</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION		5/1/98 DATE
TSA GROUP, INC. planning • architecture • engineering 8460 Baltimore National Pike • Ellicott City, Maryland 21043 • 410-485-8105		

OWNER: LEONORA K. HOENES 15115 GARRS MILL ROAD WOODBINE, MARYLAND 21797 410-442-0411	PROJECT: HOENES PROPERTY, PARCEL H <b>METRO FOODS</b> ELICOTT CITY S-95-01a, P-97-02, WP-95-84, F-96-91, F-98-12 LOCATION: TAX MAP 24 - BLOCK 6 - PARCEL 848 TAX MAP 17 - BLOCK 24 - PARCEL 681 - (HOENES PROP.) TAX MAP 17 - BLOCK 24 - PARCEL 369 - PARCEL A-1) SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND.
DEVELOPER: HARRISON AND GRASS 20 ERFORD ROAD SUITE 212 LEMOYNE, PA 17043 717-737-7800	TITLE: <b>WATER QUALITY NOTES &amp; DETAILS AND GREASE INTERCEPTOR DETAIL</b> DATE: APRIL, 1998 PROJECT NO. 1079
Design: MLV Draft: JMC	SCALE: AS SHOWN DRAWING 10 OF 12

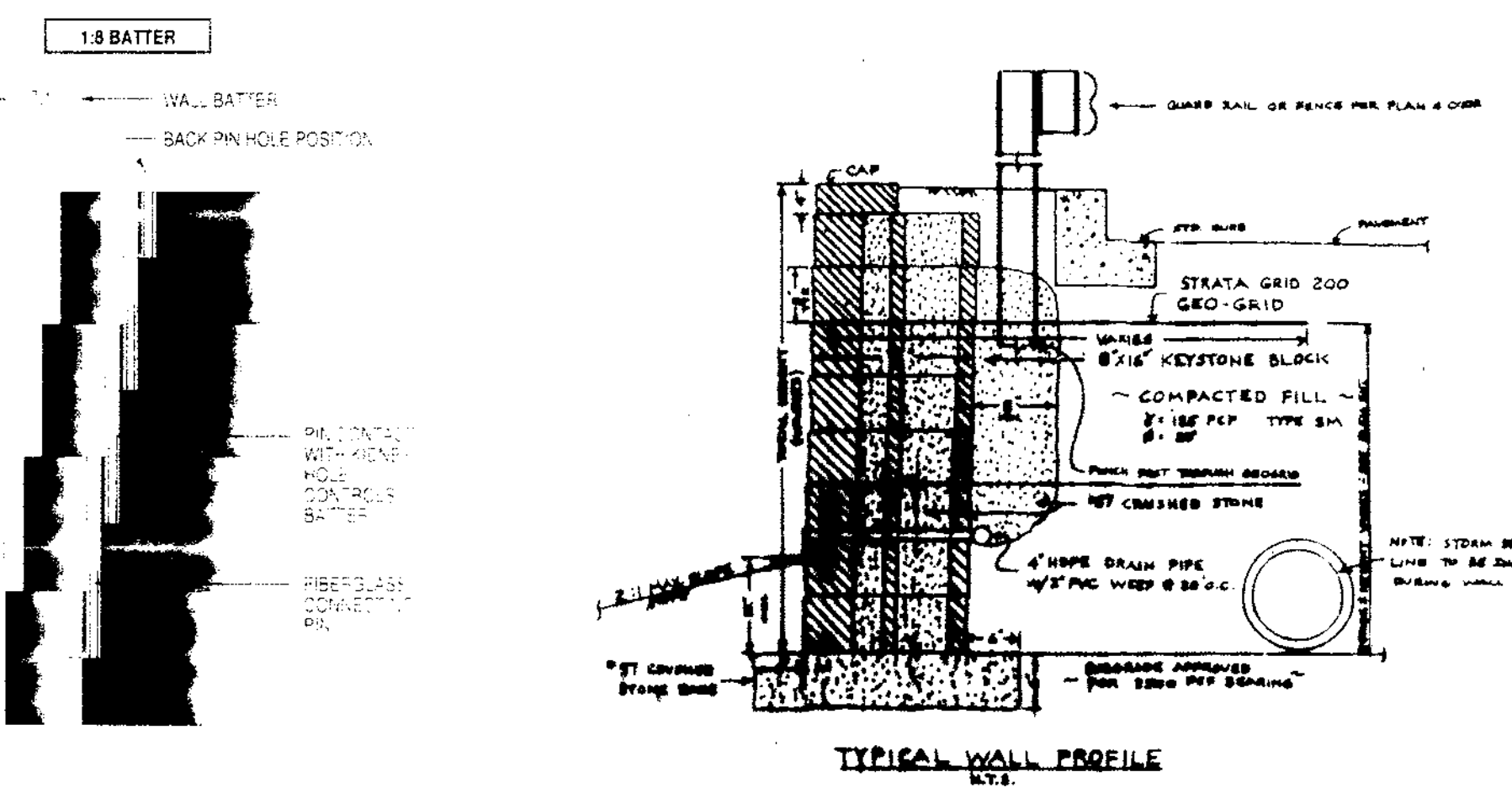


Station	Elevation	Notes
0+00	358.38	
1+00	359.64	
2+00	363.64	
3+00	365.64	
4+00	367.64	
5+00	371.64	
6+00	373.63	
7+00	375.10	
8+00	376.25	
9+00	377.40	
10+00	378.55	
11+00	379.70	
12+00	380.86	
13+00	380.86	

PRIVATE ENTRANCE DRIVE OFF ROGERS AVENUE  
SCALE: HORT. 1" = 50'  
VERT. 1" = 5'



FILLET PROFILE @ SOUTHSIDE OF INTERSECTION  
SCALE: 1"=20' HORIZ., 1"=2' VERT.  
FILLET PROFILE @ NORTHSIDE OF INTERSECTION  
SCALE: 1"=20' HORIZ., 1"=2' VERT.



- SEQUENCE OF CONSTRUCTION FOR KEYSTONE RETAINING WALL\*
- 1.) REMOVE ALL SURFACE VEGETATION AND DEBRIS
  - 2.) EXCAVATE BASE TRENCH TO ALLOW FOR THE BASE LEVELING PAD AND FIRST COURSE OF KEYSTONE UNIT.
  - 3.) PLACE AND COMPACT BASE LEVELING PAD.
  - 4.) SET AND ALIGN BASE COURSE.
  - 5.) INSERT FIBERGLASS CONNECTING PINS.
  - 6.) PLACE UNIT/DRAINAGE MATERIAL. DRAINAGE MATERIAL SHALL BE NUMBER 57 CRUSHED STONE OR AS DIRECTED BY THE KEYSTONE MANUFACTURER. DO NOT OPERATE COMPACTION EQUIPMENT DIRECTLY OVER THE KEYSTONE UNIT. INSTALL GEOGRID REINFORCEMENT AT INTERVALS INDICATED ON WALL DETAIL.
  - 7.) BACKFILL AND COMPACT ALL SOILS PLACED BETWEEN THE UNIT/DRAINAGE MATERIAL AND THE RETAINING BACKFILL.
  - 8.) SWEEP TOP OF UNITS CLEAN PRIOR TO PLACEMENT OF THE NEXT COURSE.
  - 9.) INSTALL ADDITIONAL COURSES OF KEYSTONE UNIT AS INDICATED IN ABOVE STEPS 5-9.
  - 10.) INSTALL GUARDRAIL PER HOWARD COUNTY STANDARDS.
  - 11.) POSITION AND INSTALL CAP UNITS.
  - 12.) FINISH GRADING.
- \* BETCO BLOCK PRODUCTS, INC. (1-800-486-2312) IS THE LEGAL REPRESENTATIVE FOR THIS PRODUCT. DEVELOPER SHALL CONTACT BETCO FOR A LIST OF QUALIFIED CONTRACTORS TO INSTALL THE KEYSTONE RETAINING WALL SYSTEM.
- NOTE: STORM DRAIN PIPE ADJACENT TO WALL SHALL BE INSTALLED DURING WALL CONSTRUCTION.

NOTES:

1. THE PROPOSED CONSTRUCTION OF THE RETAINING WALL SHALL BE PERFORMED UNDER THE OBSERVATION OF A MARYLAND REGISTERED PROFESSIONAL ENGINEER.
2. THE BEARING CAPACITY OF THE SOIL MUST BE VERIFIED IN THE FIELD BEFORE WALL CONSTRUCTION.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Frank R. Butler* DIRECTOR, DATE: 6/12/99

*Cindy Hamilton* CHIEF, DIVISION OF LAND DEVELOPMENT, DATE: 6/18/99

*Donald M. Mason* CHIEF, DEVELOPMENT ENGINEERING DIVISION, DATE: 5/19/99

NO.	DATE	REVISION
2.	11-9-98	REVISED PER COMMENTS DATED 9-16-98
1	7/2/98	REVISED PER COMMENTS DATED 6/10/98

OWNER: LEONORA K. HOENES  
15115 CARRS MILL ROAD  
WOODBINE, MARYLAND 21797  
410-442-0411

DEVELOPER: HARRISON AND GRASS  
20 ERFORD ROAD  
SUITE 212  
LEMOYNE, PA 17043  
717-737-7800

PROJECT: HOENES PROPERTY, PARCEL H  
METRO FOODS  
ELICOTT CITY  
S-95-01a, P-97-02, WP-95-84, F-98-91, F-98-12

LOCATION: TAX MAP 24 - BLOCK 6 - PARCEL 848  
TAX MAP 17 - BLOCK 24 - PARCEL 681  
(HOENES PROPERTY PARCEL A-1)  
TAX MAP 17 - BLOCK 24 - PARCEL 369  
SECOND ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE: PRIVATE DRIVEWAY PROFILE;  
RETAINING WALL PLAN, PROFILE,  
NOTES AND DETAILS

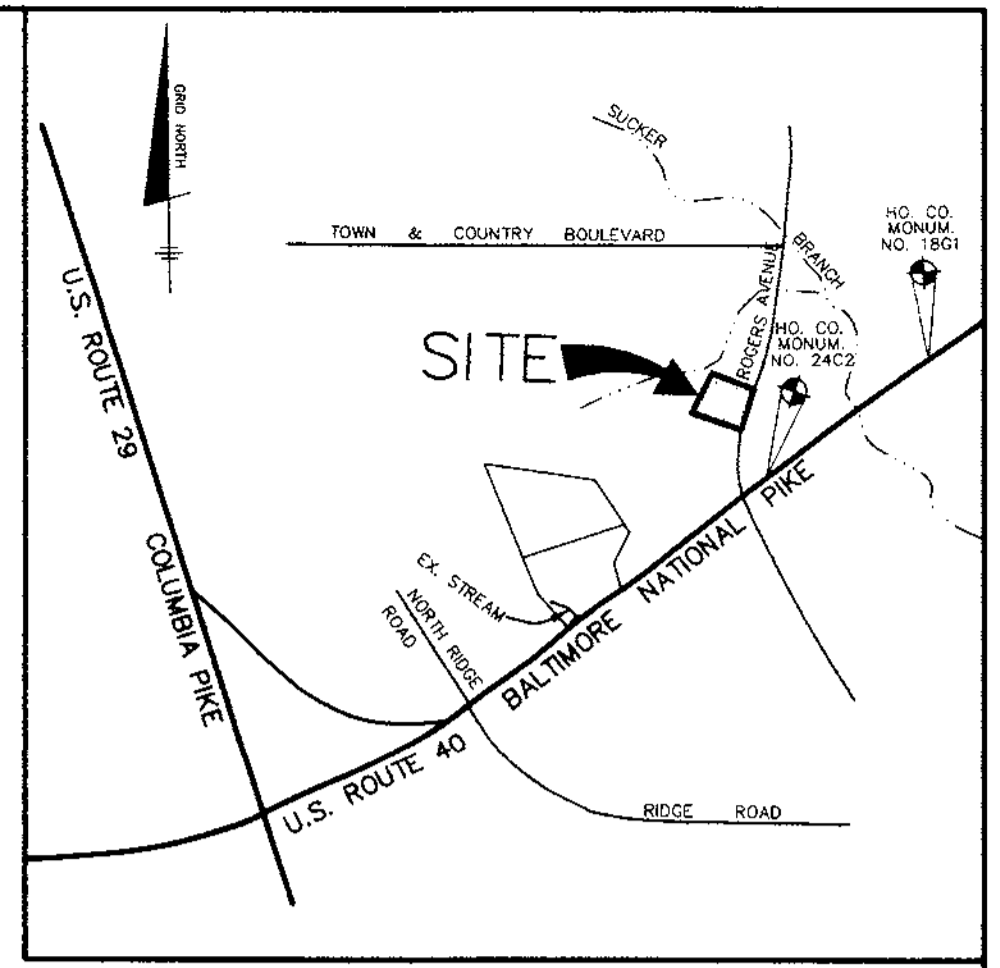
DATE: APRIL, 1998 PROJECT NO. 1079

Design: MLV Draft: JMC SCALE: AS SHOWN DRAWING 11 OF 13

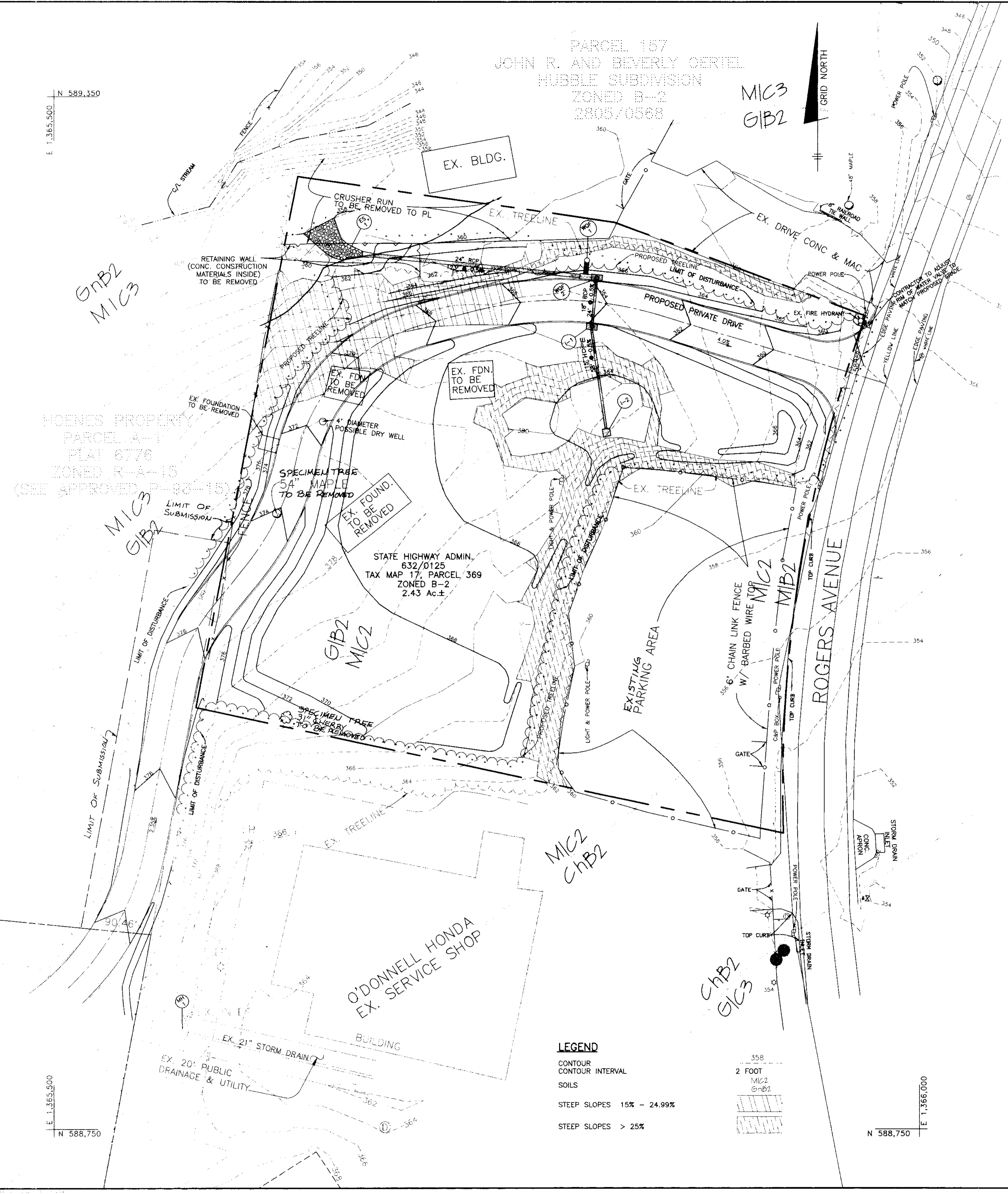
PARCEL 157  
 JOHN R. AND BEVERLY OERTEL  
 HUBBLE SUBDIVISION  
 ZONED B-2  
 2805/0568

MIC3  
 GIB2

FOREST DATA	
	Acres
Gross Area:	2.7
Net Tract Area (NTA):	2.7
Existing Forest (NTA):	1.8
Afforestation Threshold:	0.4
Reforestation Threshold:	0.4
Forest to be Cleared (NTA):	1.8
Forest to be Retained Within FCE:	0.0
Reforestation Required:	1.2
Reforestation Proposed:	0.0
Outstanding Obligation:	1.2
Fee-in-lieu Cost:	\$15,681.60



VICINITY MAP  
 SCALE: 1" = 2000'



FCP NOTES

- The project has a total reforestation obligation of 1.2 acres. No onsite or offsite forestation areas are available, therefore the applicant has requested that payment into the fee-in-lieu fund be accepted to meet the Forest Conservation Act Requirements. Payment into the fund must be made prior to the release of the grading permit for the site.
- Trees to be retained outside the proposed Limit of Disturbance (LOD) shall be protected by standard techniques required by the County to delineate the approved LOD on the project site.

NOTE:  
 THIS SHEET TO BE USED  
 FOR FOREST CONSERVATION  
 PURPOSES ONLY.

Eco-Science  
 Professionals, Inc.  
 CONSULTING ECOLOGISTS

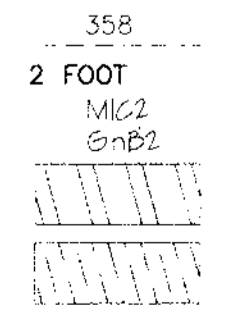
MD DNR Qualified Professional  
 USACSI Wetland Delineator  
 Certification # WD0993MD061004412  
 John T. Canales

NO.	DATE	REVISION
1	7/13/98	REVISED PER COMMENTS.

TSA GROUP, INC.  
 planning • architecture • engineering  
 8400 Baltimore National Pike • Ellicott City, Maryland 21043 • 410-445-6105

Donald Moen

LEGEND  
 CONTOUR  
 CONTOUR INTERVAL  
 SOILS  
 STEEP SLOPES 15% - 24.99%  
 STEEP SLOPES > 25%



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Cindy Hamilton  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 6/18/99

Chief Development Engineer  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 6/19/99

Director  
 DIRECTOR  
 DATE: 6/22/99

OWNER:  
 LEONORA K. HOENES  
 15115 CARRS MILL ROAD  
 WOODBINE, MARYLAND 21797  
 410-442-0411

DEVELOPER:  
 HARRISON AND GRASS  
 20 ERFORD ROAD  
 SUITE 212  
 LEMOYNE, PA 17043  
 717-737-7800

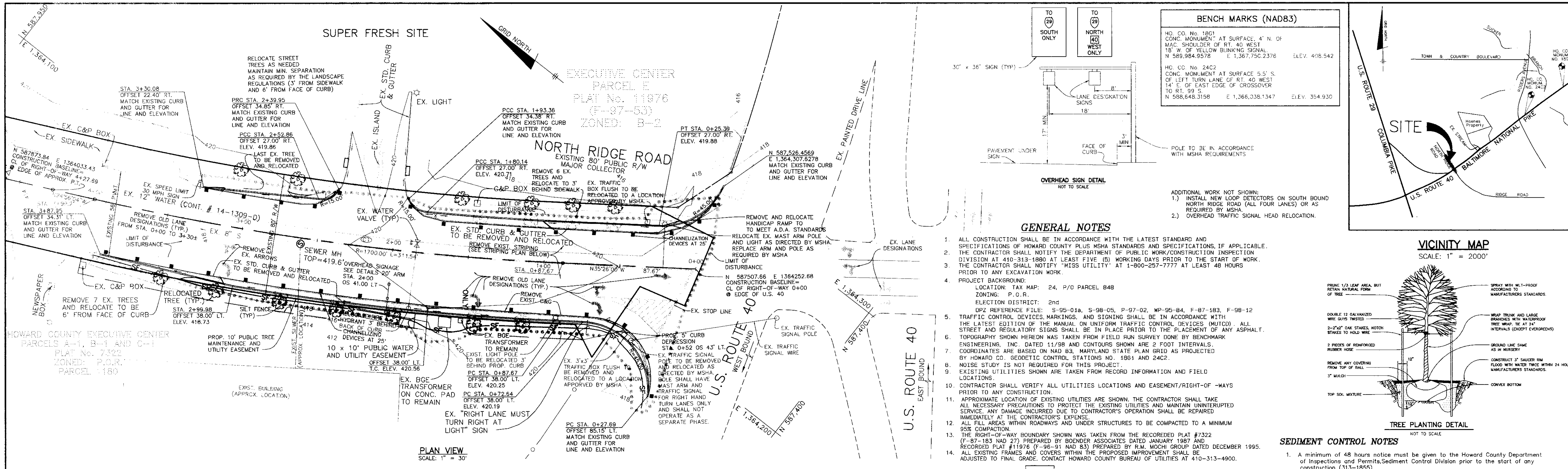
PROJECT: METRO FOODS  
 ELlicott CITY  
 S-95-01a, P-97-02, WP-95-84, F-96-91, F-98-12

LOCATION: TAX MAP 17 - BLOCK 24 - PARCEL 369  
 SECOND ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

TITLE: HOENES PROPERTY  
 FOREST CONSERVATION PLAN

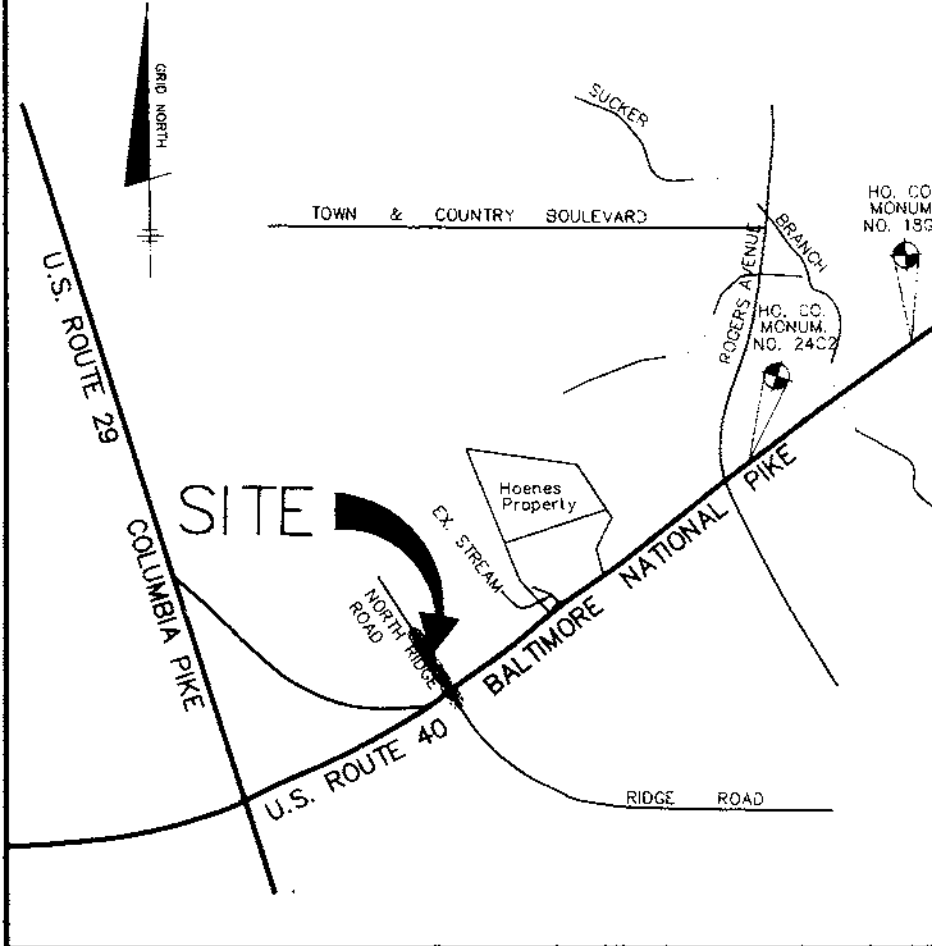
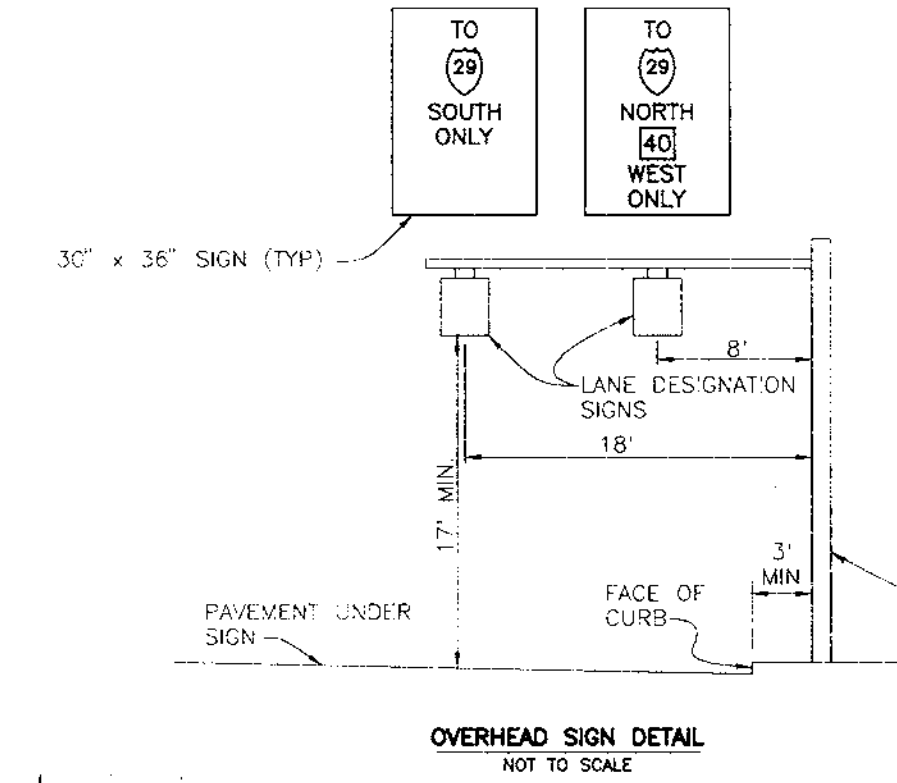
DATE: MAR. 1998 PROJECT NO. 1079  
 SCALE: 1"=30' DRAWING 12 OF 13

Design: JMC Draft: JMC



**BENCH MARKS (NAD83)**

HO. CO. No. 1861 CONC. MONUMENT AT SURFACE 4' N. OF MAC. SHOULDER OF RT. 40 WEST 18' W. OF YELLOW BLINKING SIGNAL N 589,964.9578 E 1,367,750.2376 ELEV. 408.542
HO. CO. No. 24C2 CONC. MONUMENT AT SURFACE 5.5' S. OF LEFT TURN LANE OF RT. 40 WEST 14' E. OF EAST EDGE OF CROSSOVER TO RT. 99 S. N 986,648.3158 E 1,366,038.1347 ELEV. 354.930



**GENERAL NOTES**

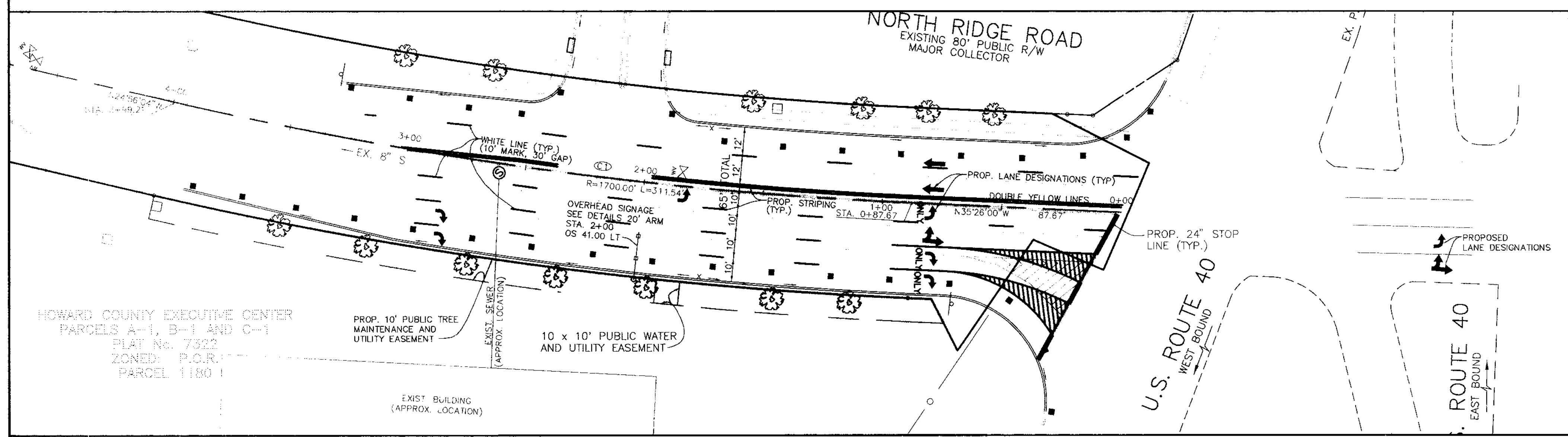
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARD AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/CONSTRUCTION INSPECTION DIVISION AT 410-319-1890 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- PROJECT BACKGROUND:  
LOCATION: TAX MAP: 24, P/O PARCEL 848  
ZONING: P. O. R.  
ELECTION DISTRICT: 2d  
DPZ REFERENCE FILE: S-95-01a, S-98-05, P-97-02, WP-95-84, F-87-183, F-98-12
- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- TOPOGRAPHY SHOWN HEREON WAS TAKEN FROM FIELD SURVEY DONE BY BENCHMARK ENGINEERING, INC. DATED 1/7/98 AND CONTOURS SHOWN ARE 2 FOOT INTERVALS.
- COORDINATES ARE BASED ON NAD 83, MARYLAND STATE PLAN GRID AS PROJECTED BY HOWARD CO. GEODETIC CONTROL STATIONS NO. 1861 AND 24C2.
- NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- EXISTING UTILITIES SHOWN ARE TAKEN FROM RECORD INFORMATION AND FIELD LOCATIONS.
- CONTRACTOR SHALL VERIFY ALL UTILITIES LOCATIONS AND EASEMENT/RIGHT-OF-WAYS PRIOR TO ANY CONSTRUCTION.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM 95% COMPACTION.
- THE RIGHT-OF-WAY BOUNDARY SHOWN WAS TAKEN FROM THE RECORDED PLAT #7322 (F-87-183 NAD 27) PREPARED BY BOENDER ASSOCIATES DATED JANUARY 1987 AND RECORDED PLAT #1915 (F-96-91 NAD 83) PREPARED BY R.M. MOORE GROUP DATED DECEMBER 1995.
- ALL EXISTING FRAMES AND COVERS WITHIN THE PROPOSED IMPROVEMENT SHALL BE ADJUSTED TO FINAL GRADE. CONTACT HOWARD COUNTY BUREAU OF UTILITIES AT 410-313-4900.

**SEDIMENT CONTROL NOTES**

- A minimum of 48 hours notice must be given to the Howard County Department of Inspections and Permits, Sediment Control Division prior to the start of any construction (313-1855).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current "Maryland Standards and Specifications for Soil Erosion and Sediment Control", and revisions thereto.
- Following initial soil disturbances or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 calendar days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the "Howard County Design Manual, Storm Drainage".
- All disturbed areas must be stabilized within the time period specified above in accordance with the "1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control" for Permanent Seedings (Sec. 51) Sod (Sec. 54), Temporary Seeding (Sec. 50) and Mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:  
Total Area of Site: 0.12± acres  
Area to be Disturbed: 0.12± acres  
Area to be roofed or paved: 0.06± acres  
Total Cut: 377 C.Y.  
Total Fill: 0 C.Y.  
Offsite Waste/Borrow Area Location: \*
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment controls must be provided, if deemed necessary by the Howard County DPW Sediment Control Inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- Trenches for the construction of utilities is limited to three pipe lengths or that which can be back filled and stabilized within one working day, whichever is shorter.
- Quantities and estimates shown are for sediment control purposes only. Contractor shall prepare his/her own quantity estimates to his/her satisfaction.  
\* It is the responsibility of the contractor to identify the spoil/borrow site and notify and gain approval from the sediment control inspector of the site and its grading permit number at the time of construction.

**PERMANENT SEEDING NOTES**

- Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
- Seeding Preparation:** Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. (If not previously loosened).  
**Soil Amendments:** In lieu of soil test recommendations, use on the following schedules:  
1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 800 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sf).  
2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil.
- Seeding:** For the periods March 1 through April 30 and August 1 through October 15, seed with 60 lbs per acre (1.4 lbs/1000 sf) of Kentucky 31 Tall Fescue. For the period May 1 through July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (0.05 lbs/1000 sf) of Weeping Lovegrass. During the period of October 16 through February 28, protect site by Option 1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option 2) use sod. Option 3) seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.
- Mulching:** Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sf) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 216 gallons per acre (5 gal/1000 sf) of emulsified asphalt on flat areas. On slopes 8:1 or higher, use 345 gallons per acre (8 gal/1000 sf) for anchoring.
- Maintenance:** Inspect all seeded areas and make needed repairs, replacements and reseedings.



**APPROVED:** THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

*John K. Robinson* 5/26/99  
HOWARD SOIL CONSERVATION DISTRICT

**APPROVED:** REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

*Cheryl Simmons* 5/26/99  
NATURAL RESOURCES CONSERVATION SERVICE

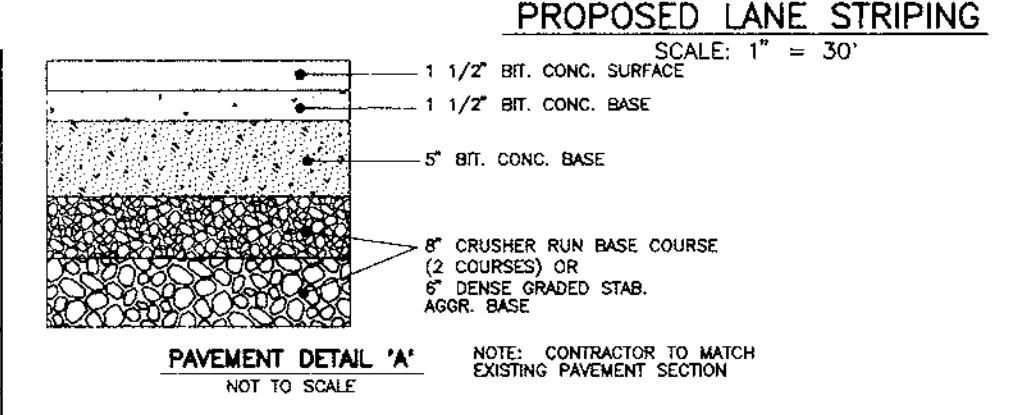
**APPROVED:** HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

*Paul J. Smith* 6/22/99  
DIRECTOR

**APPROVED:**

*Cindy Hamilton* 9/15/99  
CHIEF, DIVISION OF LAND DEVELOPMENT

*Jim Harrison* 5/19/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION



**ENGINEER'S CERTIFICATE**

I hereby 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.

*Christina N. Palocz* 1/1/99  
Date

**DEVELOPER'S CERTIFICATE**

I/We certify that all development and construction will be done in accordance with this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction of this 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 onsite inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.

*Jim Harrison* 1/1/99  
Signature of Developer Date

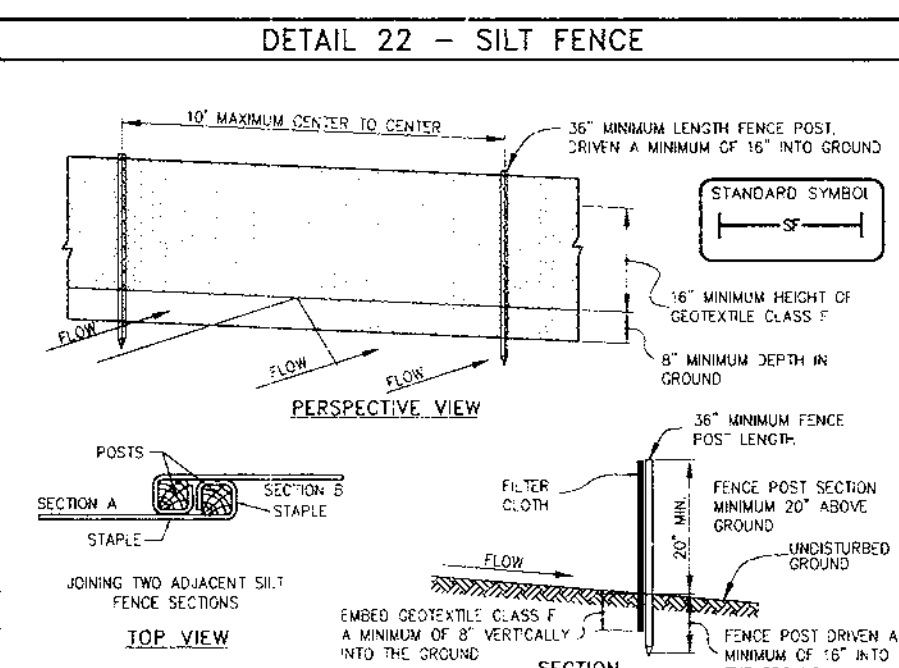
**SEQUENCE OF CONSTRUCTION**

DAY 1	OBTAIN GRADING PERMIT.
DAY 2	INSTALL SILT FENCE AND CHANNELIZING DEVICES.
DAY 3	MOVE ALL UTILITIES THAT NEED TO BE RELOCATED.
DAY 4	RELOCATE STREET TREES IN ACCORDANCE WITH THE LANDSCAPE MANUAL.
DAY 5	REMOVE CURBS AND GUTTER.
DAY 6	REPLACE PAVING ACCORDING TO PAVING SECTION USED.
DAY 7	TO CONSTRUCT ORIGINAL ROAD.
DAY 8	REMOVE EXISTING LANE DESIGNATIONS AND REPLACE AS SHOWN ON THE PROPOSED LANE STRIPING PLAN UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL DEVICES. PERMANENTLY STABILIZE AS REQUESTED.

**CURVE DATA TABLE**

CURVE No.	RADIUS	LENGTH	TANGENT	CHORD	DELTA	BEARING
C1	1700.00'	311.54'	156.21'	311.11'	103.000°	N30°10'58" W

**TYPICAL SECTION - NORTH RIDGE ROAD**



**SILT FENCE DESIGN CRITERIA**

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

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

**CONSTRUCTION NOTES FOR FABRICATED SILT FENCE**

- Fence posts shall be a minimum of 3/4" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 1/4" diameter (minimum) round and shall be of sound quality hardwood. Metal posts will be standard T or U section weighing not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples of top and mid-section and shall meet the following requirements for Geotextile Class F:  
Tensile Strength: 50 lbs/in (min) Test: MSMT 509  
Tensile Modulus: 20 lbs/in (min) Test: MSMT 509  
Filter Ratio: 0.5 gal H<sub>2</sub>O / minute (max) Test: MSMT 522  
Flow Rate: 75% (min) Test: MSMT 522
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

**BENCHMARK ENGINEERING, INC.**  
ENGINEERS • LAND SURVEYORS • PLANNERS

8480 BA THORNE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043  
PHONE: 410-485-6105 FAX: 410-485-6644

**PROJECT:** HOENES PROPERTY  
A RESUBDIVISION OF HOENES PROPERTY, PARCEL A-4  
S95-01a, P-97-02, WP-95-84, F-96-91, F-98-12

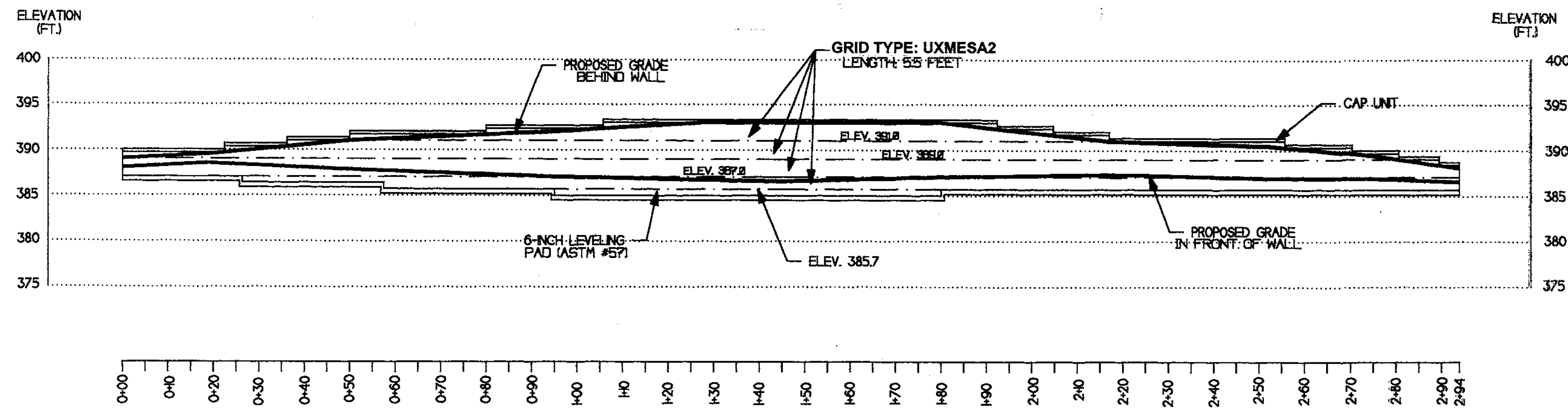
**LOCATION:** TAX MAP 24 - PART OF PARCEL 848  
15115 KARRS MILL ROAD  
WOODBINE, MARYLAND 21797  
410-442-0411

**TITLE:** ROAD WIDENING, TRAFFIC CONTROL AND SEDIMENT & EROSION CONTROL PLAN

**DATE:** SEPTEMBER, 1998 **PROJECT NO. 1007**

**SCALE:** 1" = 30' **DRAWING 13 OF 13**

DES: JMC/DBT DRAFT: JMC/DBT CHECK: CAM



RETAINING WALL PROFILE  
SCALE: HORIZ. 1"=20'  
VERT. 1"=10'

ARBY'S FAST FOOD RESTAURANT  
SEGMENTAL RETAINING WALL SPECIFICATIONS

PART 1 GENERAL

- 1.1 Work includes furnishing and installing Modular Block retaining wall units to the lines and grades designated on the construction drawings and as specified herein.
- 1.2 REFERENCE STANDARDS
  - A. ASTM C90-75 (1981 rev.) - Hollow Load Bearing Masonry Units
  - B. ASTM C140-75 (1981 rev.) - Sampling and Testing Concrete Masonry Units
  - C. ASTM C145-75 (1981 rev.) - Solid Load Bearing Concrete Masonry Units
- 1.3 DELIVERY, STORAGE AND HANDLING
  - A. Contractor should check the materials upon delivery to assure that proper materials have been received.
  - B. Contractor should prevent excessive mud, wet cement, epoxy, and like materials which may stiff themselves, from coming in contact with the materials.
  - C. Contractor should protect the materials from damage. Damaged material should not be incorporated into the reinforced retaining wall.

PART 2 RETAINING WALL

- 2.1 MATERIALS
  - A. Concrete Units
    1. Masonry units should be Mesa Standard Retaining Wall Units as indicated on the drawings.
    2. Concrete wall units should have a minimum 28 day compressive strength of 3000 psi, in accordance with ASTM C-90. The concrete should have adequate freeze/thaw protection with a maximum moisture absorption of 6 to 8 percent.
    3. Exterior dimensions may vary. Units are required to have a minimum of one square foot of face area each.
    4. Units should have angled sides and capable of attaining concave and convex alignment curves in accordance with manufacturer's recommendations.
    5. Units should be interlocked with Mesa's FS20 Standard Connector.
    6. Units should be interlocked as to provide a maximum of 1/128-inch of setback per block.
  - B. Base Material
    1. Material for footing should consist of compacted free-draining coarse aggregates meeting the requirements of ASTM #57 Crushed Stone (see 2.2, C-2 below). A minimum of 6 inches deep and 24 inches wide compacted base is required. The base materials should be approved by a Maryland Registered Professional Engineer.
  - C. Reinforced Backfill
    1. Reinforced backfill soils behind the wall must be "select fill" meeting the requirements of AASHTO A-2-4 or more granular and have a friction angle of at least 30 degrees. The material should be non-plastic. The materials should be compacted and be approved by a Maryland Registered Professional Engineer.
- 2.2 RETAINING WALL INSTALLATION
  - A. Excavation
    1. The owners contractor should excavate to the lines and grades shown on the construction drawings. Under no circumstances should the excavation lines and grades be exceeded, except with owner's approval. The contractor should protect the excavation from sloughing by placing a membrane over the face of the excavation.
    2. Foundation Soil Preparation
      1. Foundation soil should be excavated as required for footing dimensions shown on the construction drawings, or as directed by the Engineer.
      2. Foundation soil should be examined by the Engineer to assure that the actual foundation soil strength meets or exceeds assumed design strength. Soils not meeting required strength should be removed and replaced with controlled, compacted material.
      3. Over-excavated areas should be filled with select material and compacted to 92 percent of maximum dry density in accordance with ASTM D-1557.
      4. Sealing capacity for natural and controlled, compacted fill soils should be at least 2000 psi for retaining wall.
  - B. Foundation Soil Preparation
    1. Foundation soil should be excavated as required for footing dimensions shown on the construction drawings, or as directed by the Engineer.
    2. Foundation soil should be examined by the Engineer to assure that the actual foundation soil strength meets or exceeds assumed design strength. Soils not meeting required strength should be removed and replaced with controlled, compacted material.
    3. Over-excavated areas should be filled with select material and compacted to 92 percent of maximum dry density in accordance with ASTM D-1557.
    4. Sealing capacity for natural and controlled, compacted fill soils should be at least 2000 psi for retaining wall.
  - C. Drainage
    - A. Drainage fill should be placed behind the wall to the limits shown. The drainage fill should be at least 12 inches thick. The drainage fill should be AASHTO #57 stone wrapped in a geotextile fabric (Meft 140N or equivalent).
    - B. Positive drainage should be maintained during and after construction. Soils within the reinforced zone that become wet during construction should be dried to optimum moisture or removed.

PART 2 MATERIALS

- 2.1 DEFINITIONS
  - A. Geogrid is a high density polyethylene grid, specifically fabricated for use as a soil reinforcement.
  - B. Concrete retaining wall units are as detailed on the drawings and are specified under PART 2-2.1-A Concrete Units.
  - C. Backfill is the soil which is used as fill for the reinforced soil mass.
  - D. Foundation soil is the in-situ soil or compacted fill at foundation level.
- 2.2 PRODUCTS
  - A. Geogrid should be UXMESA2 or equivalent as approved by GTA. The geogrid should have a long term allowable capacity of 557 lb/ft. for UXMESA2 in accordance with Geosynthetic Research Institute (GRI) guidelines.

PART 3 EXECUTION

- 3.1 FOUNDATION SOIL PREPARATION
  - A. The wall excavation should be excavated as shown on the drawings.
  - B. Foundation soil should be proof-rolled prior to fill and geogrid placement.
  - C. Foundation soil should be excavated to the lines and grades as shown or as directed by the Engineer.
  - D. Foundation soil must be examined by the Engineer to assure that the actual foundation soil strength meets or exceeds assumed design strength.
  - E. Over-excavated areas should be filled with compacted granular material.
- 3.2 GEOGRID INSTALLATION FOR RETAINING WALLS
  - A. The geogrid soil reinforcement should be laid horizontally on compacted backfill, connected to the concrete wall units. Hook grid over the Mesa connector, pull taut, and anchor before backfill is placed on the geogrid.
  - B. Back in the geogrid at the wall unit connections should be removed in a manner, and to such a degree, as approved by the Engineer.
  - C. Geogrid should be laid at the proper elevation and orientation as shown on the construction drawings or as directed by the Engineer.
  - D. Correct orientation (roll direction) of the geogrid should be verified by the Contractor. Geogrid should be secured in place with staples, pins, sand bags, or backfill as required by fill properties, fill placement procedures, or weather conditions, or as directed by the Engineer.
  - E. Overlaps
    1. Uniaxial geogrid does not need to be overlapped in the across the roll direction, except to contain the fill at the slope face when wrap-around facing is used. Uniaxial grid should be overlapped a minimum of 48 inches in the roll direction, or as directed by the engineer.
    2. A layer of soil a minimum of 4 inches in thickness should be spread between uniaxial geogrid layers in the area to be overlapped, or as directed.

C. Base Footing

1. The leveling pad footing should be placed as shown on the construction drawings with a minimum thickness of 6 inches. The leveling pad material should consist of crushed stone meeting the gradation requirements for ASTM #57 crushed stone or as approved by a registered professional geotechnical engineer.
2. Leveling pad footing materials should be installed upon undisturbed in-situ soils or controlled, compacted backfill.
3. Material should be compacted so as to provide a level hand surface on which to place the first course of units. Compaction should be with mechanical plate compactors to 92% of Modified Proctor (ASTM D-1557).
4. Footing should be prepared to insure complete contact of retaining wall unit with base. Gaps should not be allowed.

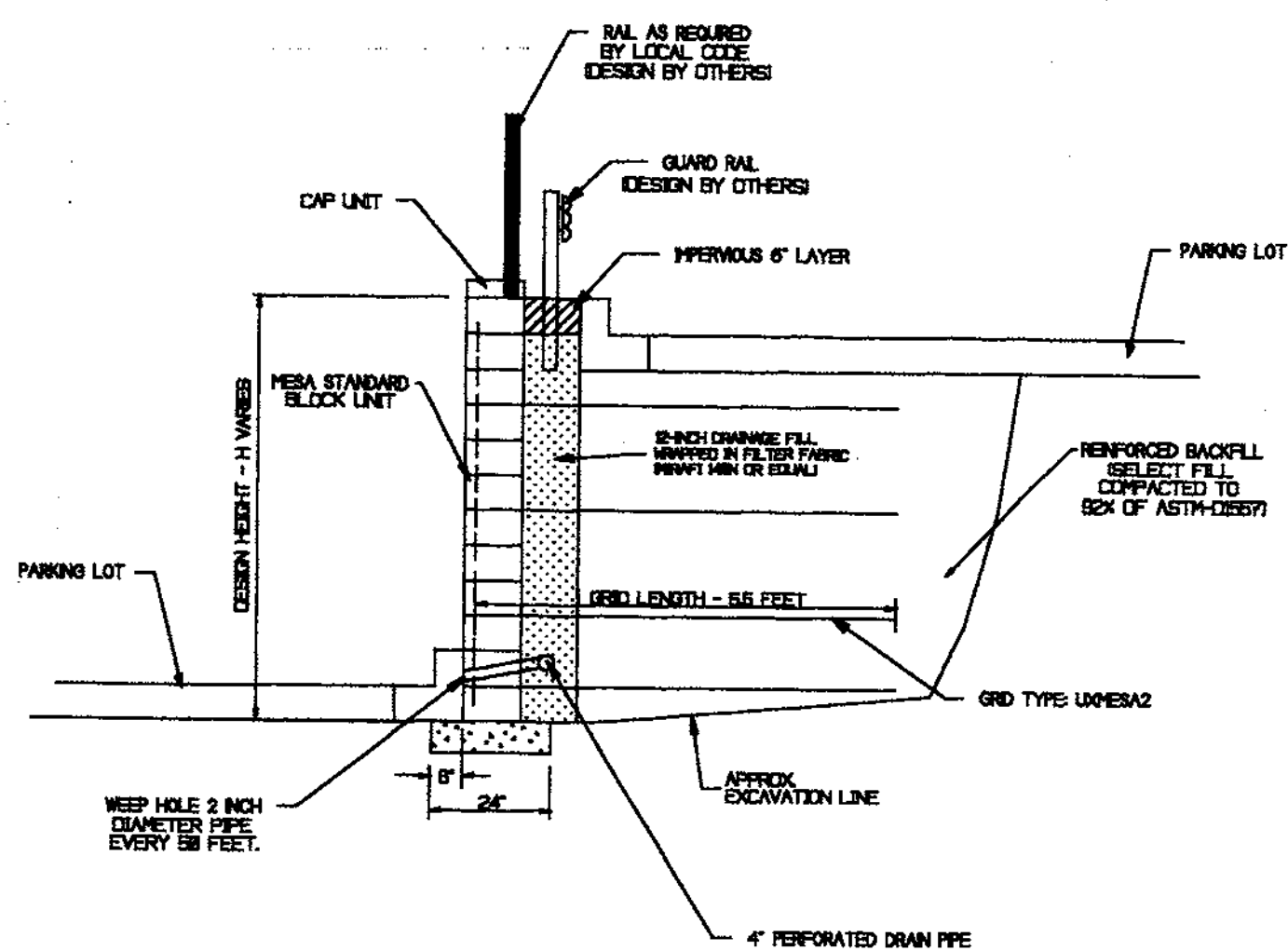
GENERAL NOTES

- PART I CONSTRUCTION CERTIFICATION
- A. The required leveling pad subgrade bearing capacity should be certified by a Maryland Registered Professional Geotechnical Engineer prior to footing placement.
  - B. Construction of retaining wall should be performed under the observations of a Maryland Registered Professional Engineer. Confirmation testing should be performed to verify material engineering properties. Upon completion of the work, the engineer should submit a signed and sealed report stating that the retaining wall was constructed in accordance with the plans, specifications, and accepted modifications (if applicable).

PART II DESIGN CRITERIA

- A. Required bearing capacity is 2000 psf.
- B. Design  $\phi = 30^\circ$
- C. Design unit weight = 120 pcf.
- D. Retaining wall was not designed to resist hydrostatic pressure.
- E. The design surcharge on the slope is 250 psf.

8/27/99



TYPICAL REINFORCED SECTION  
ARBY'S RETAINING WALL  
SCALE: NONE

GEOGRID WALL REINFORCEMENT

PART I GENERAL

- 1.1 Work includes furnishing and installing geogrid reinforcement, wall fill, and backfill to the lines and grades designated on the construction drawings. Also included is the furnishing and installing all appurtenant materials required for construction of the geogrid reinforced soil retaining wall as shown on the construction drawings.
- 1.2 REFERENCE STANDARDS
  - A. ASTM D 638 - Test Method for Tensile Properties of Plastic
  - B. ASTM D 1248 - Specification of Polyethylene Plastics Molding and Extrusion Materials
  - C. ASTM D 4218 - Test Method for Carbon Black Content in Polyethylene Compounds by the Muffle Furnace Technique
  - D. ASTM D 1785 - Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 20, 40, 80 and 120
- 1.3 DELIVERY STORAGE AND HANDLING
  - A. GEOGRID
    1. Contractor should check the geogrid upon delivery to assure that the proper material has been received.
    2. Geogrids should be stored above -20 degrees F.
    3. Contractor should prevent excessive mud, wet cement, epoxy and like materials which may stiff themselves to the grid-work, from coming in contact with the geogrid.
    4. Maximum geogrid spacing should be 2.67 feet.



\* SEAL No. 15303  
FOR SEGMENTAL  
RETAINING WALL  
DESIGN ONLY

RETAINING WALL STRUCTURAL NOTES

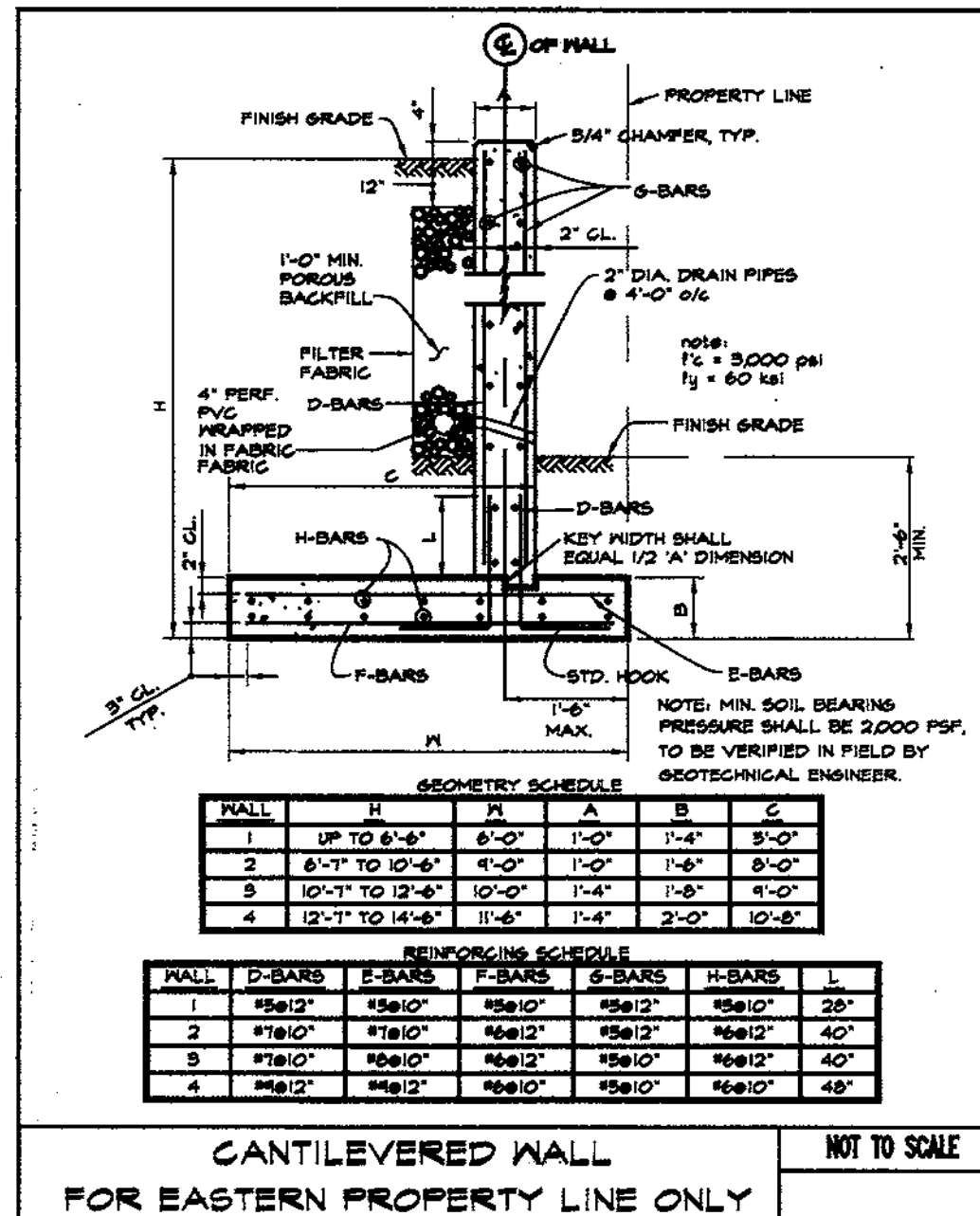
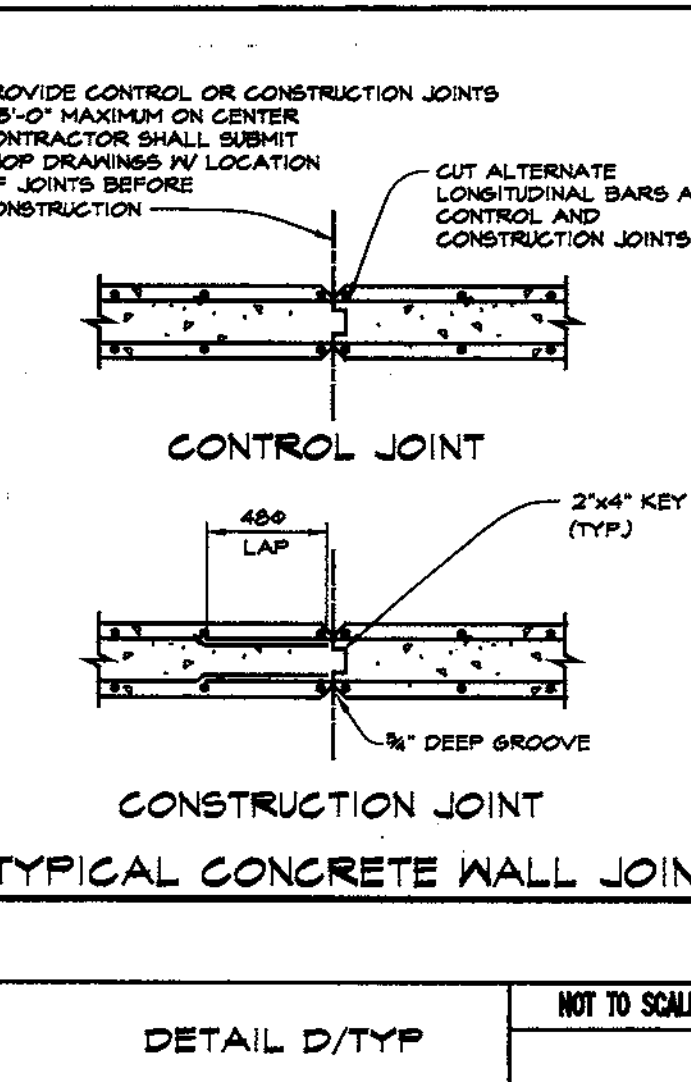
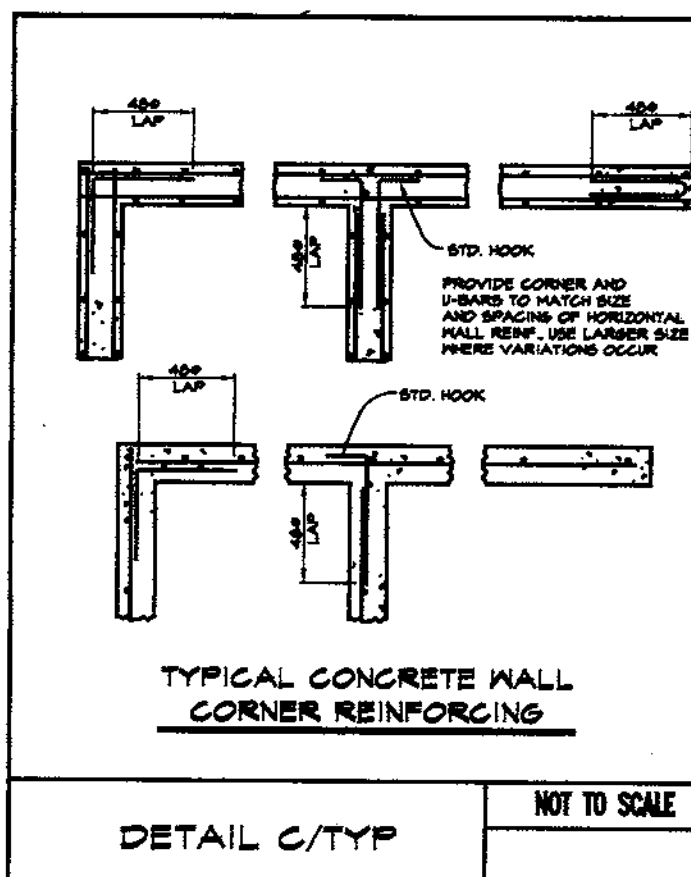
I. RETAINING WALLS

- A. FOOTINGS FOR ALL RETAINING WALLS HAVE BEEN DESIGNED FOR AN ASSUMED NET ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF. THE ALLOWABLE SOIL BEARING PRESSURE SHALL BE FIELD VERIFIED BY A REGISTERED GEOTECHNICAL ENGINEER AND APPROVED PRIOR TO PLACING FOOTINGS. SHOULD THE ACTUAL SOIL BEARING PRESSURE BE LESS THAN 2000 PSF, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.
- B. RETAINING WALLS HAVE BEEN DESIGNED WITH BACKFILL MATERIAL HAVING THE FOLLOWING CHARACTERISTICS:
  - $K_a = 120$  PCF
  - $C_u = 33$
  - COHESION = 0
 IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO INSURE THE BACK FILL MATERIAL MEETS THESE CHARACTERISTICS.
- C. RETAINING WALLS HAVE BEEN DESIGNED FOR THE FOLLOWING MINIMUM FACTORS OF SAFETY:
  - SLIDING 1.5
  - OVERTURNING 2.0
- D. CONSTRUCTION OF ALL RETAINING WALLS SHALL BE PERFORMED UNDER THE SUPERVISION OF A REGISTERED GEOTECHNICAL ENGINEER.
- E. CONTROL JOINTS SHALL BE PLACED IN WALLS TO FORM PANELS WITH A LENGTH TO HEIGHT RATIO OF 2.5 OR LESS. THE MAXIMUM PANEL LENGTH SHALL NOT EXCEED 25'. ADDITIONAL JOINTS SHALL BE PLACED WHERE ABRUPT CHANGES IN WALL OCCUR.

2. CAST IN PLACE CONCRETE

- A. ALL CONCRETE CONSTRUCTION SHALL CONFORM TO THE "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301)"; AND TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318)".
- B. IN ADDITION TO THE ABOVE, ALL CONCRETE WORK SHALL CONFORM TO THE FOLLOWING:
  1. RECOMMENDED PRACTICE FOR HOT WEATHER CONCRETING (ACI 305).
  2. RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING (ACI 306).
  3. RECOMMENDED PRACTICE FOR CONCRETE FORMWORK (ACI 347).
- C. ALL CONCRETE EXPOSED TO PUBLIC VIEW SHALL CONFORM TO THE REQUIREMENTS FOR ARCHITECTURAL CONCRETE CONTAINED IN ACI 301.
- D. ALL CONCRETE, UNLESS NOTED OTHERWISE, SHALL BE STONE AGGREGATE CONCRETE HAVING A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI. ALL CONCRETE EXPOSED TO WEATHER SHALL HAVE AN AIR ENTRAINMENT OF 4.5%  $\pm$  1.5% UNLESS OTHERWISE NOTED. NO ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL BE PERMITTED. MAXIMUM AGGREGATE SIZE SHALL BE 1", AND MAXIMUM SLUMP SHALL BE 4". 3" FOR SLABS ON GRADE. ALL CONCRETE, EXCEPT FOOTINGS, SHALL CONTAIN A WATER REDUCING ADMIXTURE. PORTLAND CEMENT SHALL CONFORM TO ASTM C 150 AND NORMAL WEIGHT AGGREGATES SHALL CONFORM TO ASTM C 33.

- E. ALL REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO ASTM A 615 GRADE 60. ALL WELDED WIRE FABRIC (W.W.F.) SHALL CONFORM TO ASTM A 185. LAP ALL REINFORCING BARS A MINIMUM OF 36 BAR DIAMETERS AND ALL W.W.F. A MINIMUM OF TWO FULL GRIDS, UNLESS OTHERWISE INDICATED.
- F. ALL REINFORCING SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH THE CRSI "MANUAL OF STANDARD PRACTICE", ACI 315' DETAILS AND DETAILS OF CONCRETE REINFORCEMENT", ACI SP 66 "DETAILING MANUAL".
- G. ALL CONCRETE SHALL BE SAMPLED AND TESTED BY THE TESTING AGENCY IN ACCORDANCE WITH ACI 318. THE CONTRACTOR SHALL NOTIFY THE TESTING AGENCY 48 HOURS PRIOR TO THE PLACING OF ANY CONCRETE.
- H. THE CONCRETE STRUCTURE SHALL NOT SUPPORT THE DESIGN LIVE LOAD FOR A MINIMUM OF 28 DAYS AND ALL SHORING AND RESHORING REQUIRED TO SUPPORT THE CONCRETE STRUCTURE DURING CONSTRUCTION SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR. SHOP DRAWINGS, SIGNED AND SEALED BY A REGISTERED ENGINEER IN THE STATE OF MARYLAND, SHALL BE SUBMITTED FOR REVIEW. SHOP DRAWINGS SHALL INDICATE THE TYPE, EXTENT, SIZE, AND LOCATION OF ALL SHORING AND RESHORING AS WELL AS THE SEQUENCE OF CONSTRUCTION.



REINFORCING SCHEDULE	
WALL	REINFORCING SCHEDULE
1	UP TO 6'-4" 6-2" 1'-4" 8-2" 8-2"
2	6'-4" TO 10'-4" 6-2" 1'-4" 1'-4" 8-2" 8-2"
3	10'-4" TO 12'-8" 10-2" 1'-4" 1'-4" 8-2" 4-2"
4	12'-8" TO 14'-8" 11-6" 1'-4" 1'-4" 2'-0" 10-6"

\* SEAL No. 22538  
FOR CONCRETE  
RETAINING WALL  
DESIGN ONLY

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Clayton R. ...* 8/27/99  
CHIEF, DIVISION OF LAND DEVELOPMENT

*Mark J. ...* 8/27/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Mark J. ...* 8/27/99  
DIRECTOR, Planning

OWNER:  
LEONORA K. HOENES  
1515 CARRS MILL ROAD  
WOODBINE, MARYLAND 21797  
410-442-0411

DEVELOPER:  
HARRISON AND GRASS  
20 ERFORD ROAD  
SUITE 212  
LEMOYNE, PA 17043  
717-737-7800

DATE	REVISIONS	JOB NO: 10219.02
8/31/99	REVISED SITE PLAN (WITH ADDITION OF THIS SHEET)	SCALE: AS SHOWN
		DATE: 8/21/1999
		DRAWN BY: JR/LC
		DESIGN BY: JR/LC
		REVIEW BY: ML/KC
		SHEET: 14 OF 14