

LEGEND

- Proposed Building Setbacks
- - - Existing Contour
- - - Proposed Contour
- Field Located Wetlands
- - - Existing Sanitary Line
- - - Proposed Sanitary Line
- - - Existing Storm Drainage Line
- - - Proposed Storm Drainage Line
- - - Existing Water Line
- - - Proposed Water Line
- 25' Wetlands Buffer
- Proposed Fire Hydrant
- Proposed Catch Basin
- Existing Tree Line
- Proposed Dumpster and Dumpster Pad
- Transformer Pad
- Number of Parking Spaces in Aisle
- Wall - Mounted Site Lighting
- Limit of Paving

SITE DATA

| | REQUIRED | PROVIDED |
|---|--|----------------|
| BUILDING AREA | 75,432 S.F. | 75,432 S.F. |
| OFFICE (100) | 7,543 S.F. | 7,543 S.F. |
| MANUFACTURING (200) | 77,889 S.F. | 77,889 S.F. |
| STORAGE (400) | 44,250 S.F. | 44,250 S.F. |
| BUILDING HEIGHT | 50 max | 27' 6" |
| STAIRS | INTERNAL public R.O.W. | 50 min |
| FENCE and parking uses | 30 min | 30 min |
| OPEN SPACE | 200 min | 20 min |
| LANDSCAPING | 44,430 S.F. | 44,430 S.F. |
| Parking areas (50,000 S.F.) | 50 min | 50 min |
| 2,510 S.F. | 2,510 S.F. | 2,510 S.F. |
| PREFAB. steel R.O.W. landscape-buffer strip | 10 min width | 10 min width |
| PARKING SPACES | 7/10 employees | 1 per employee |
| Office (2,543 S.F.) | 21 spaces | 21 spaces |
| 50 Employees | The greater of 1,000 S.F. or 1/2 employees | 50 spaces |
| MANUFACTURING (77,889 S.F.) | 40 spaces | 40 spaces |
| 100 employees | 50 spaces | 50 spaces |
| STORAGE (44,250 S.F.) | The greater of 1,000 S.F. or 1/2 employees | 40 spaces |
| TOTAL | 117 spaces | 117 spaces |
| Undrapped | 6 spaces | 6 spaces |

VICINITY MAP SCALE 1" = 2000'

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

John Zarka 6/15/89
COUNTY HEALTH OFFICER DATE

APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS & PUBLIC ROADS
HOWARD CO. DEPT. OF PUBLIC WORKS

John Zarka 6/15/89
DIRECTOR DATE
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING

W. J. ... 6/26/89
PLANNING DIRECTOR DATE
CHIEF, OFFICE OF COMMUNITY PLANNING & LAND DEVELOPMENT DATE

BY THE DEVELOPER:
I, *W. J. ...* CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT MANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.
I ALSO AUTHORIZE THE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

BY THE ENGINEER:
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.

SIGNATURE OF ENGINEER DATE
REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS.
John ... 6/6/89
SOIL CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
Stephen P. ... 6/6/89
HOWARD S.C.D. DATE

3-31-89
LKS

BEFORE BEGINNING CONSTRUCTION, CONTACT MISS UTILITY AT 1-800-257-7177 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION

WP-89-21 F-88-101
F-86-104 VP-88-28

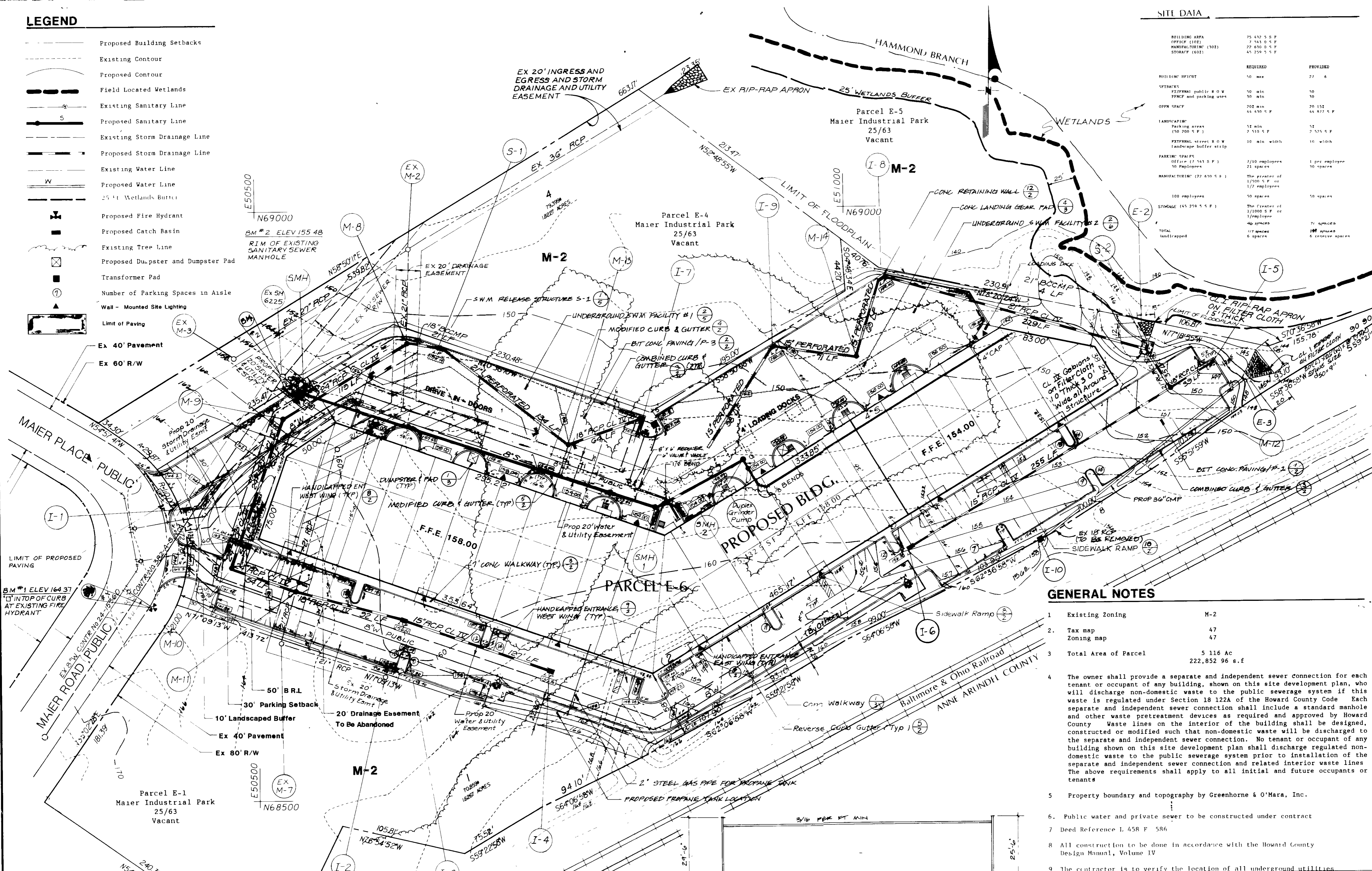
| ADDRESS CHART | SUBDIVISION NAME | SECT./AREA | LOT/PARCEL |
|---------------|------------------|------------|------------------|
| LOT NUMBER | STREET ADDRESS | | (REGUL. E-2-E-3) |
| PARCEL E-6 | 3010 MAIER ROAD | 23 M2 47 | 679 6063 |

| WATER CODE | SEWER CODE |
|------------|------------|
| C04 | 7099999 |

| SVS DESIGN | SCALE |
|-------------|----------|
| SVS DRAWN | 1" = 40' |
| RHM CHECKED | 1 OF 10 |
| OCT, 1988 | SHEET |
| DATE | JOB No |
| | FILE No |

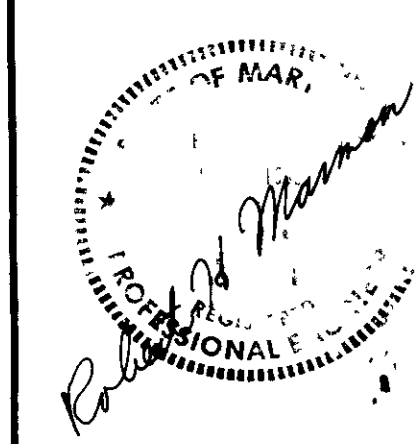
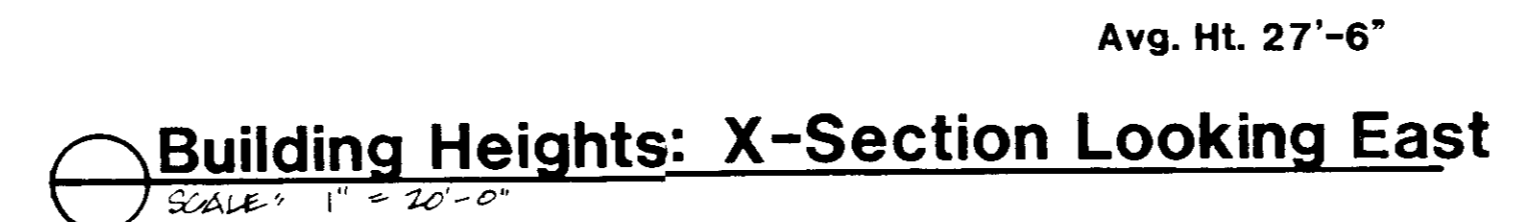
SITE DEVELOPMENT PLAN : BUILDING CONSTRUCTION
MAIER INDUSTRIAL PARK
Parcel E6

Zone M-2
6th ELECTION DISTRICT
Tax Map 47 Zoning Map 47
HOWARD CO., MARYLAND
SDP-89-81 B.1065-V



GENERAL NOTES

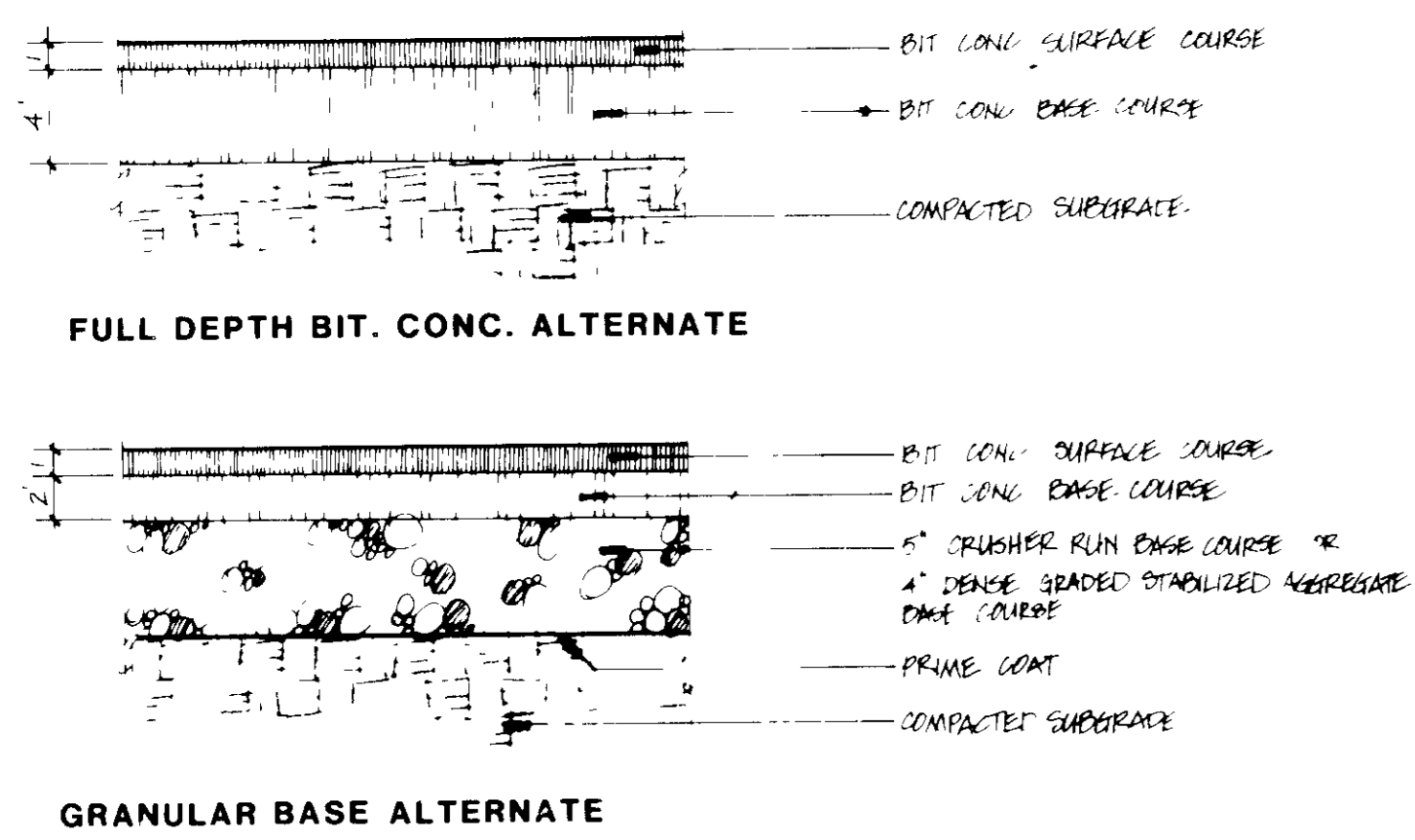
- Existing Zoning M-2
- Tax map 47
- Zoning map 47
- Total Area of Parcel 5.116 Ac
222,852.96 S.F.
- The owner shall provide a separate and independent sewer connection for each tenant or occupant of any building, shown on this site development plan, who will discharge non-domestic waste to the public sewerage system if this waste is regulated under Section 18.122A of the Howard County Code. Each separate and independent sewer connection shall include a standard manhole and other waste pretreatment devices as required and approved by Howard County. Waste lines on the interior of the building shall be designed, constructed or modified such that non-domestic waste will be discharged to the separate and independent sewer connection. No tenant or occupant of any building shown on this site development plan shall discharge regulated non-domestic waste to the public sewerage system prior to installation of the separate and independent sewer connection and related interior waste lines. The above requirements shall apply to all initial and future occupants or tenants.
- Property boundary and topography by Greenhorne & O'Mara, Inc.
- Public water and private sewer to be constructed under contract
- Deed Reference L 458 F 586
- All construction to be done in accordance with the Howard County Design Manual, Volume IV
- The contractor is to verify the location of all underground utilities prior to beginning work.



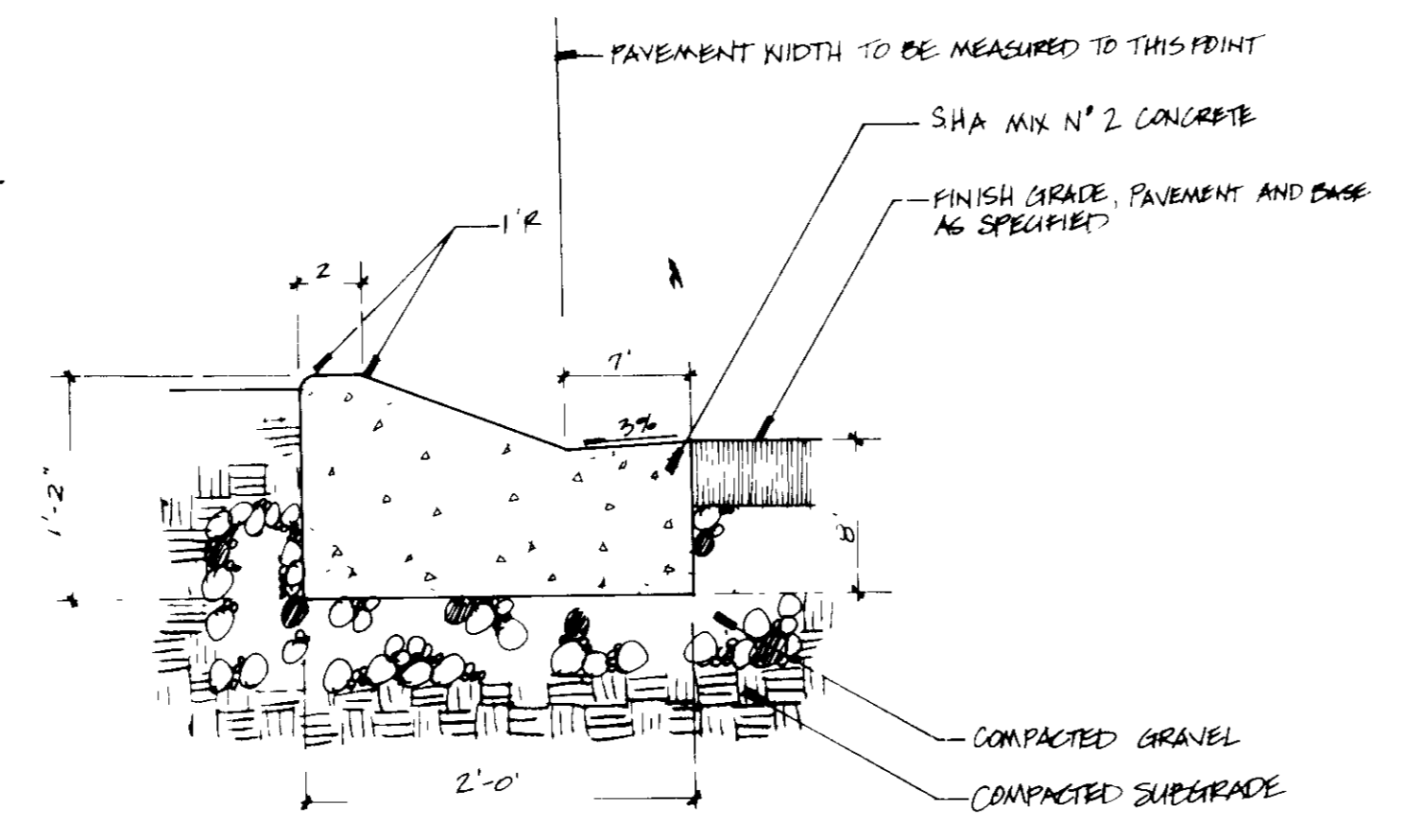
OWNER/DEVELOPER
RBA DEVELOPMENT COMPANY
6931 Arlington Road Suite 411
Bethesda, MD 20814
(301) 657-8899

| No | REVISION | DATE | BY |
|----|--|--------|------|
| 1 | REVISED PARCEL LOT NUMBER & SOUTH EAST CORNER & REVISION TO PARCEL TO OBTAIN OFFICIAL D.A. | 9/5/89 | 6/10 |

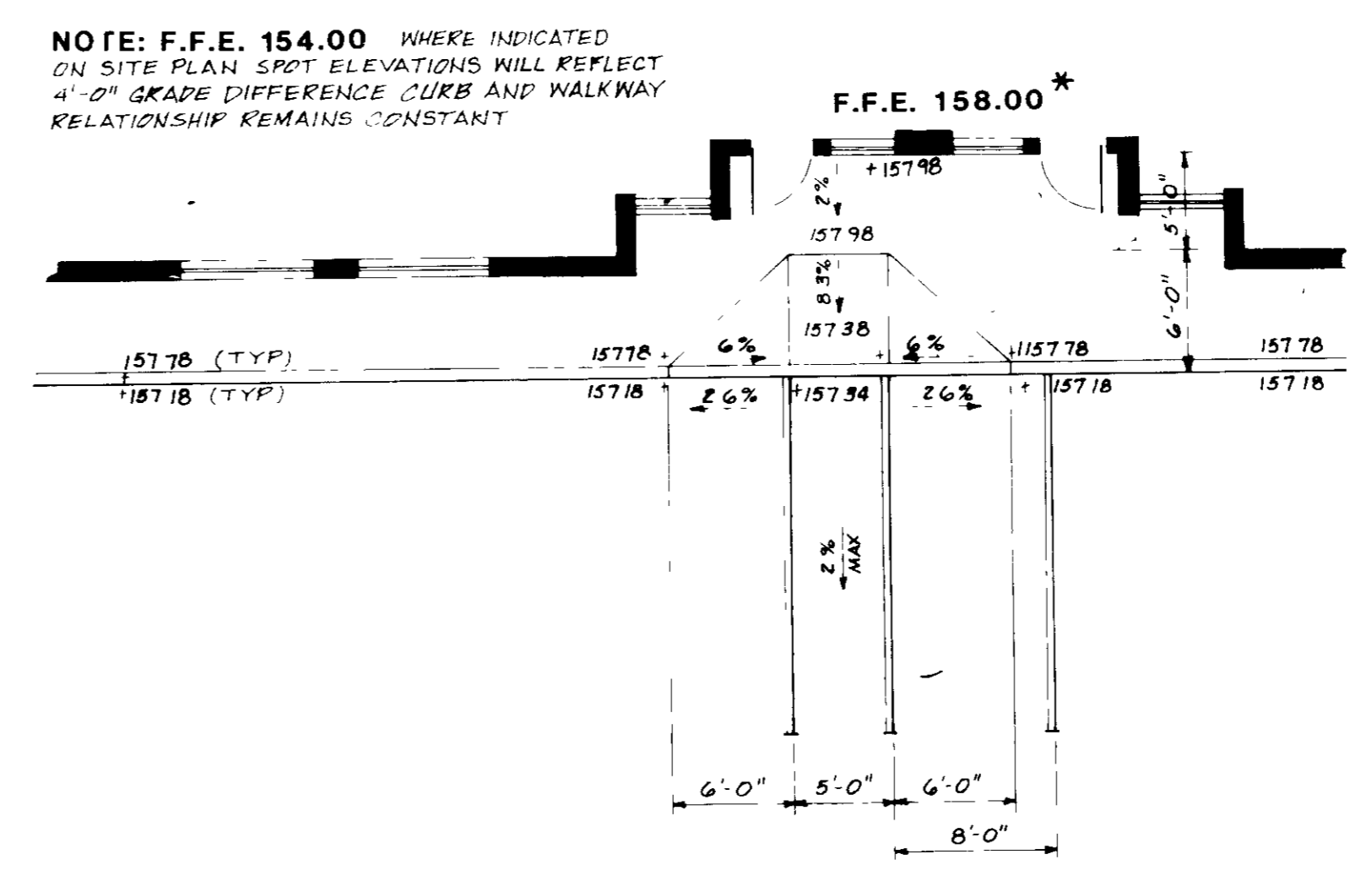
GREENHORNE & O'MARA, INC.
113 WEST ROAD, SUITE 208, BALTIMORE, MARYLAND 21204
(301) 296-4100
ANNAPOLIS MD • ATLANTA GA • AURORA CO • CULPEPER VA • EXPORT PA • FAIRFAX VA
GREENBELT MD • MANASSAS VA • MONROE MI • RALEIGH NC • ROCKVILLE MD • TAMPA FL



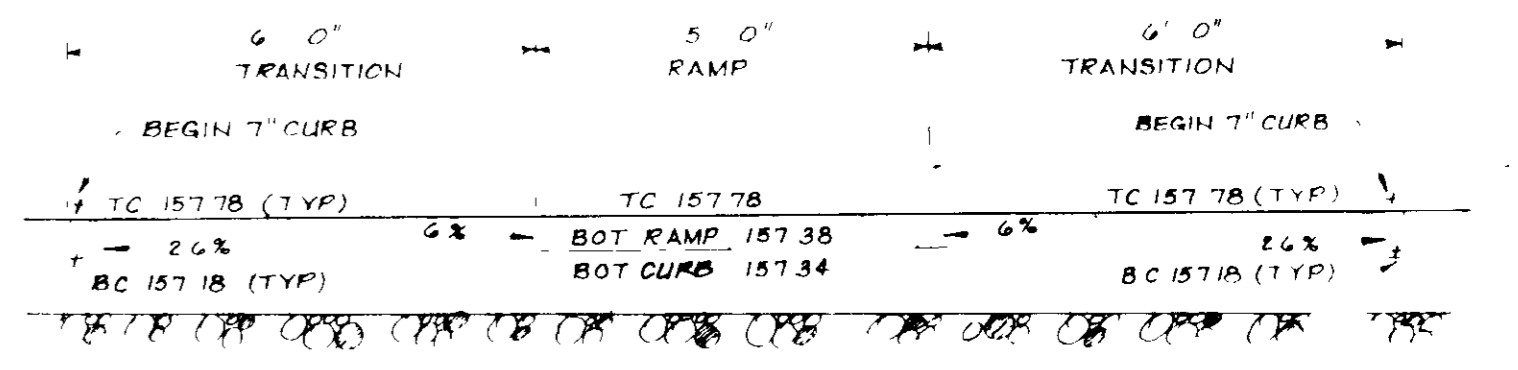
1 Paving Sections: P-1
SCALE: 1/2" = 1'-0"
PARKING AREAS



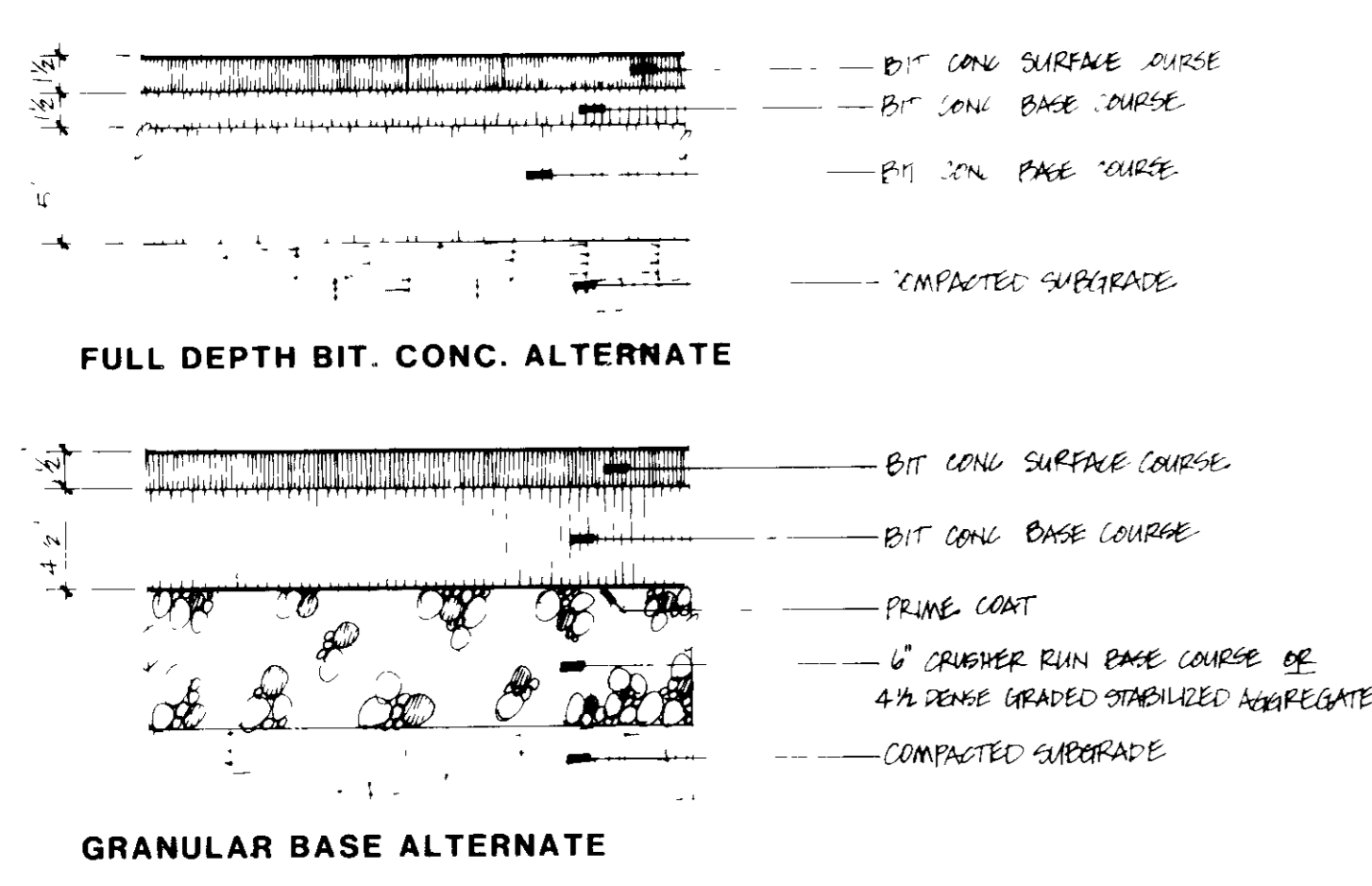
4 Modified Combination Curb and Gutter
SCALE: 1" = 1'-0"



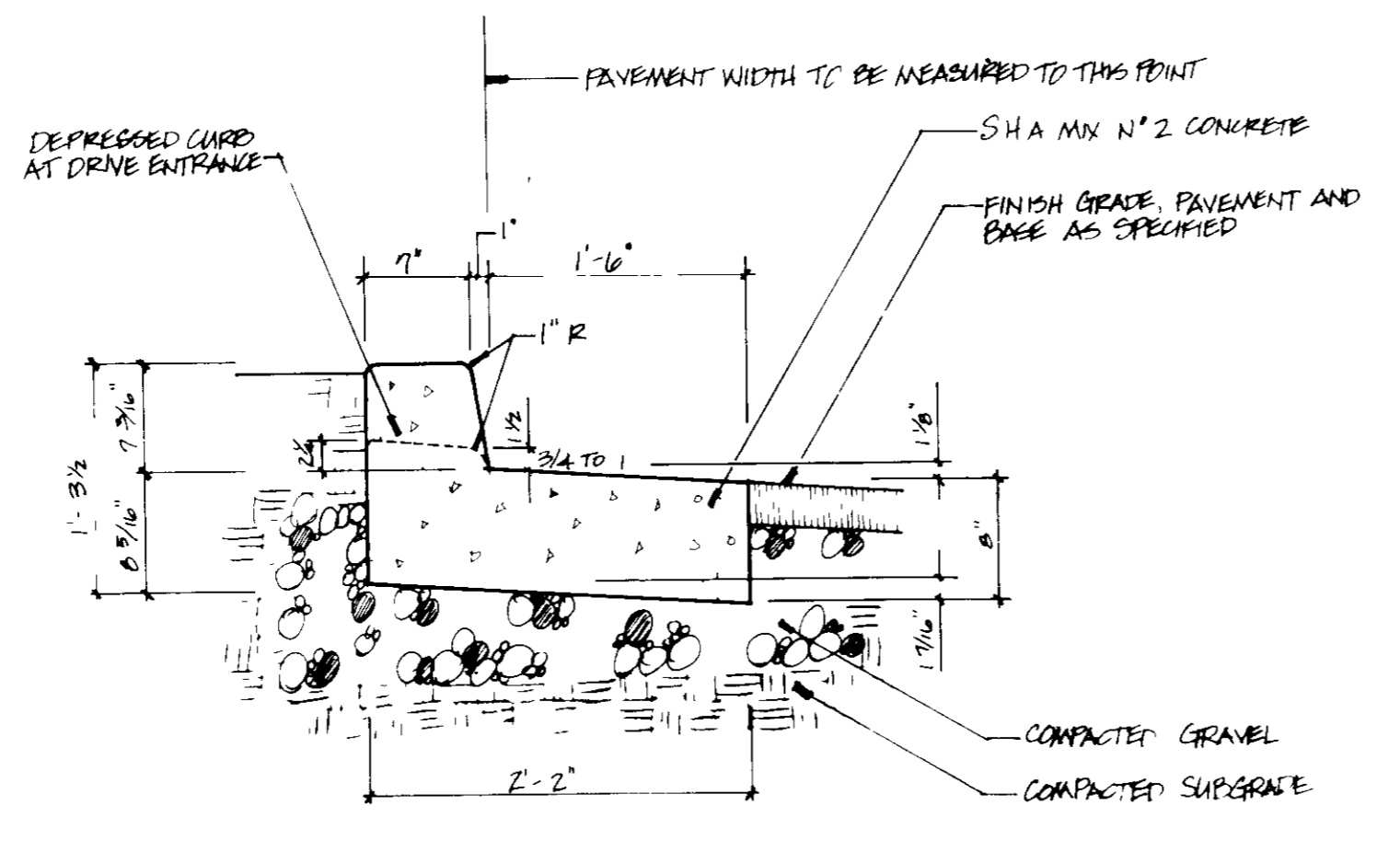
8 Sidewalk Ramp
SCALE: 3/8" = 1'-0"



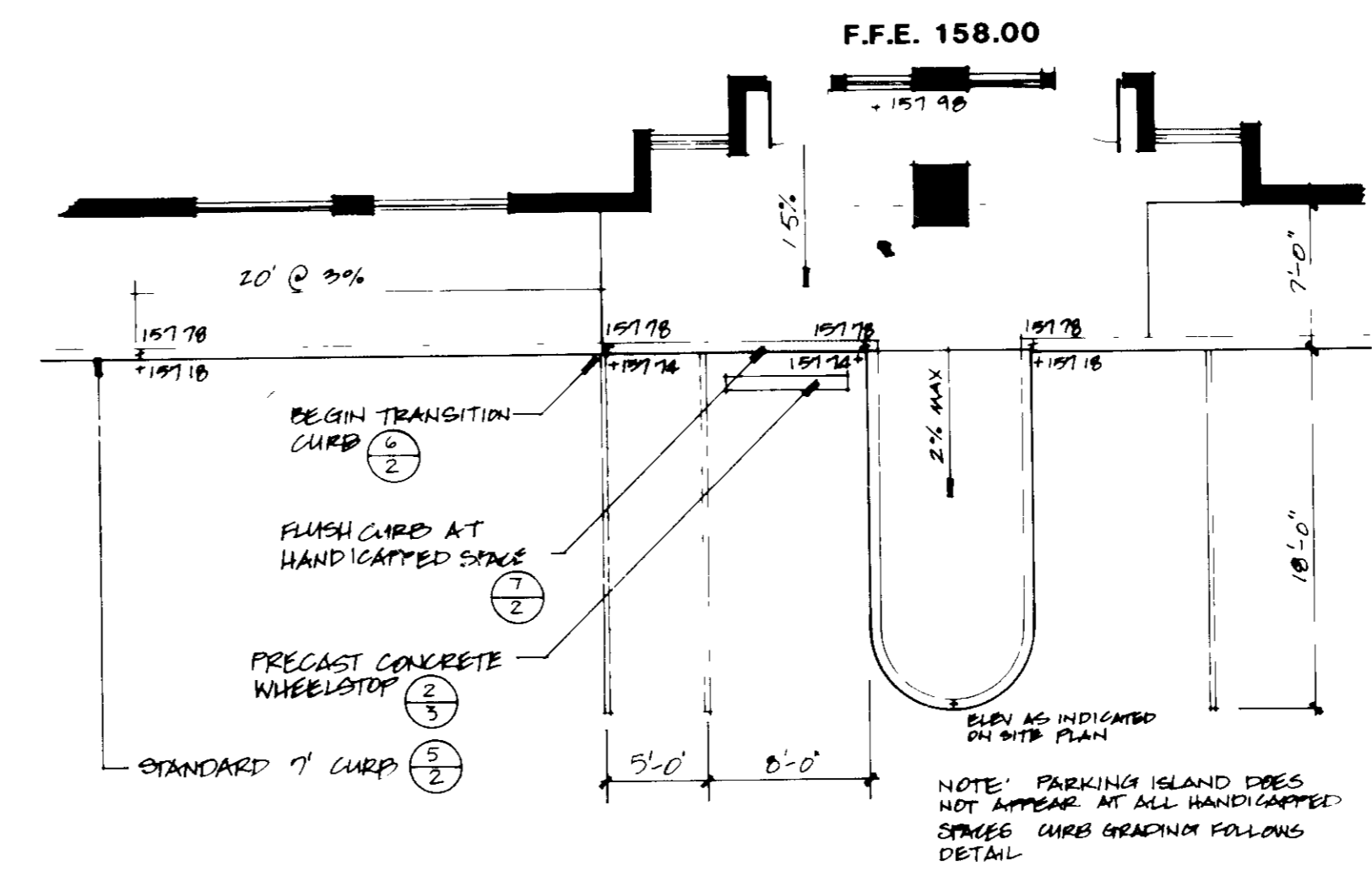
11 Sidewalk Ramp (elevation)



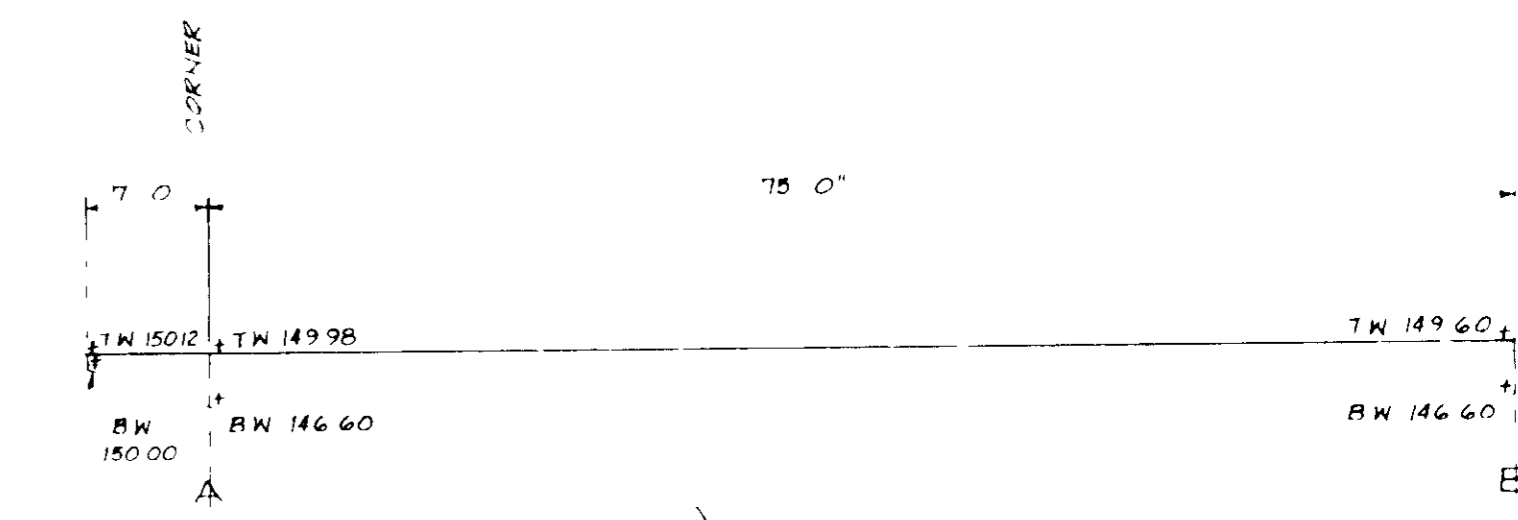
2 Paving Sections: P-3
SCALE: 1/2" = 1'-0"
LOADING, ACCESS DRIVES



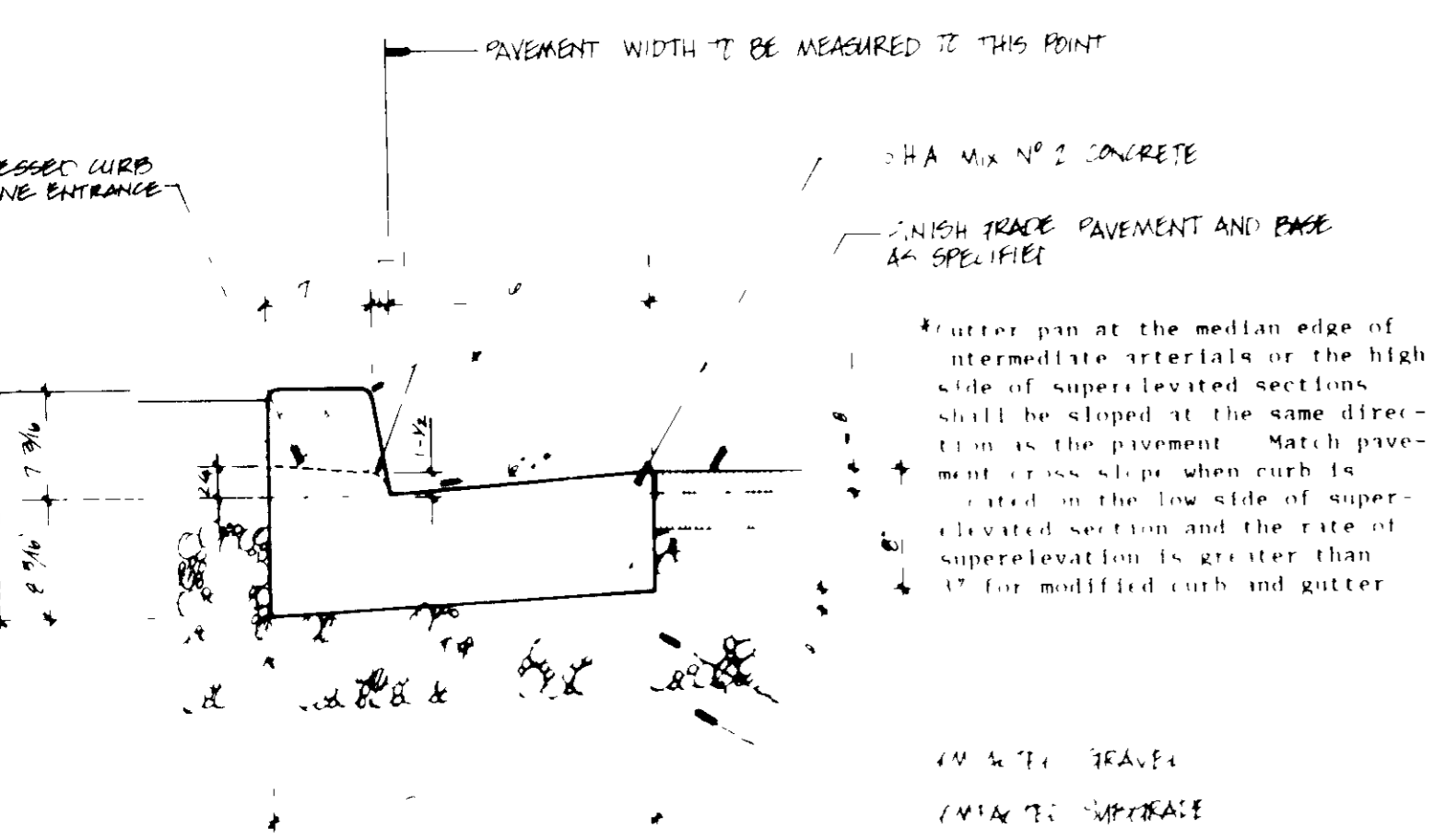
5 Reverse Curb and Gutter
SCALE: 1" = 1'-0"



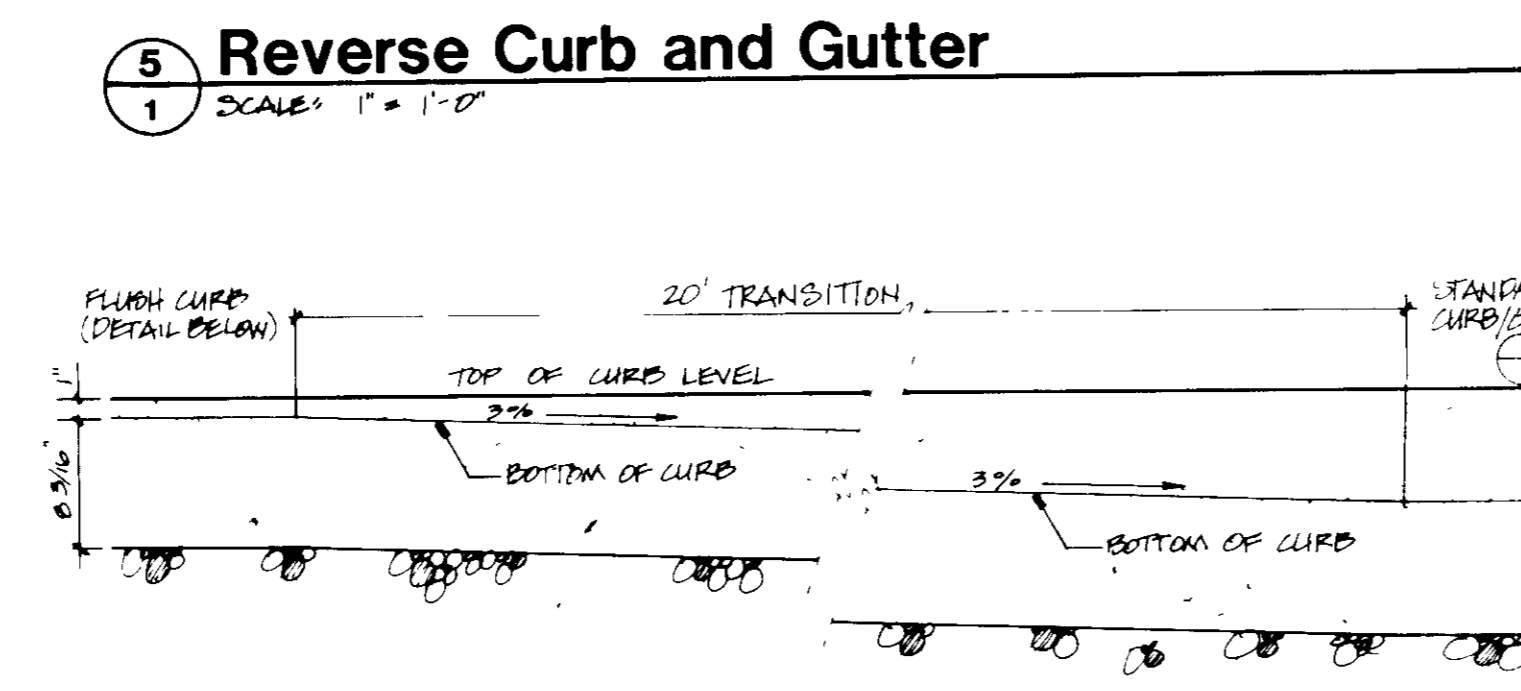
9 Grading at Handicapped Space WEST WING
SCALE: 1/8" = 1'-0"



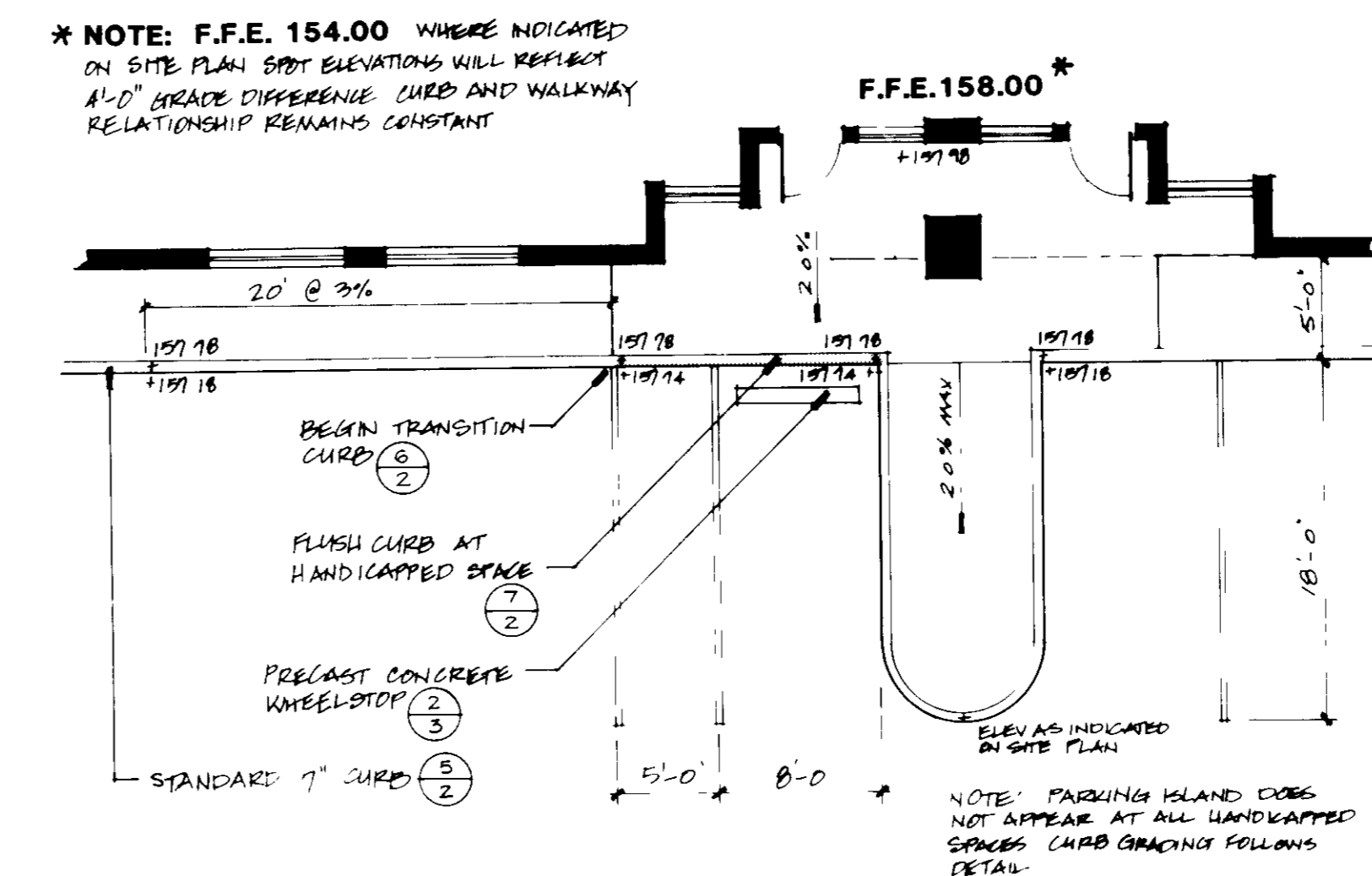
12 Concrete Retaining Wall



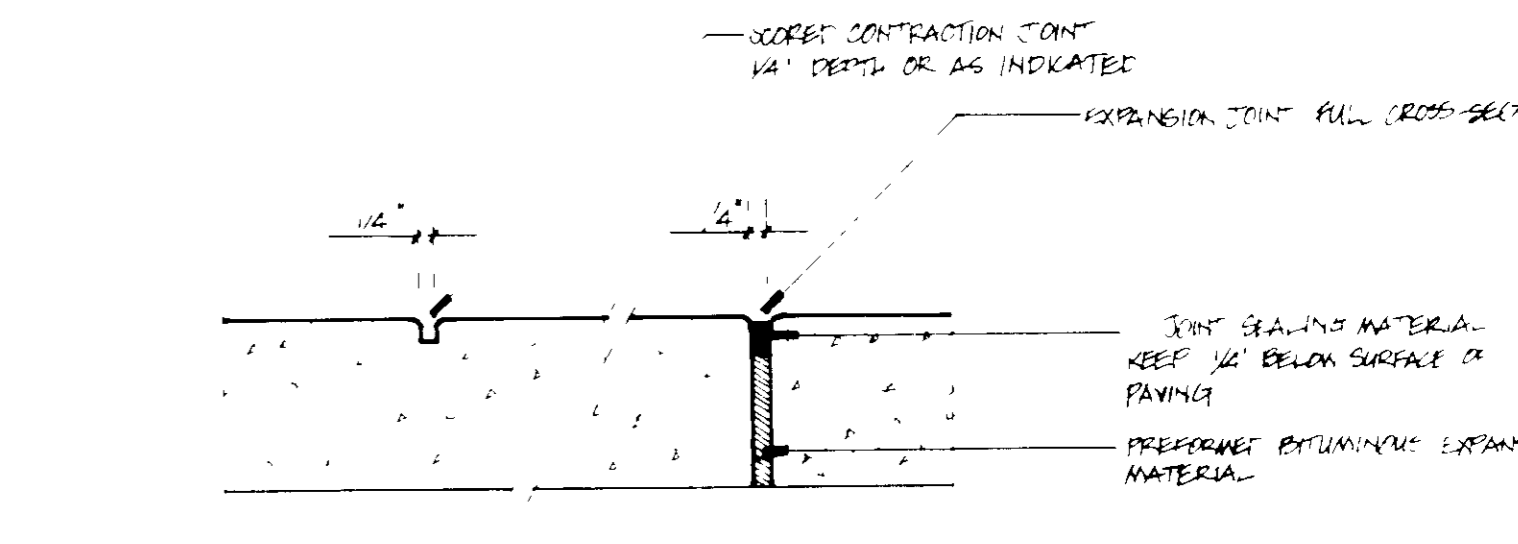
3 Combination Curb and Gutter
SCALE: 1" = 1'-0"



6 Transition Curb Elevation
SCALE: 1" = 1'-0"



10 Grading at Handicapped Space EAST WING
SCALE: 1/8" = 1'-0"



13 Expansion and Contraction Joints
SCALE: 1/2" = 1'-0"

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
APPROVED for Public Water, Public Sewerage, Storm Drainage Systems & Public Roads

Director _____ Date _____
Chief, Bureau of Engineering _____ Date _____

HOWARD COUNTY HEALTH DEPARTMENT
APPROVED for Public Water and Public Sewerage Systems

County Health Officer _____ Date 6-15-89

HOWARD COUNTY OFFICE OF PLANNING AND ZONING
APPROVED _____ Date 6-28-89
Chief, Division of Community Planning & Land Development _____ Date _____



3-31-89
LKS

OWNER/DEVELOPER
RBA DEVELOPMENT COMPANY
6931 Arlington Road Suite 411
Bethesda, MD 20814
(301) 657-8899

| NO. | REVISION | DATE | BY |
|-----|---|----------|-----|
| 1 | ADD SIDEWALK RAMP, RETAINING WALL, REVERSE CURB | 12/12/88 | LKS |

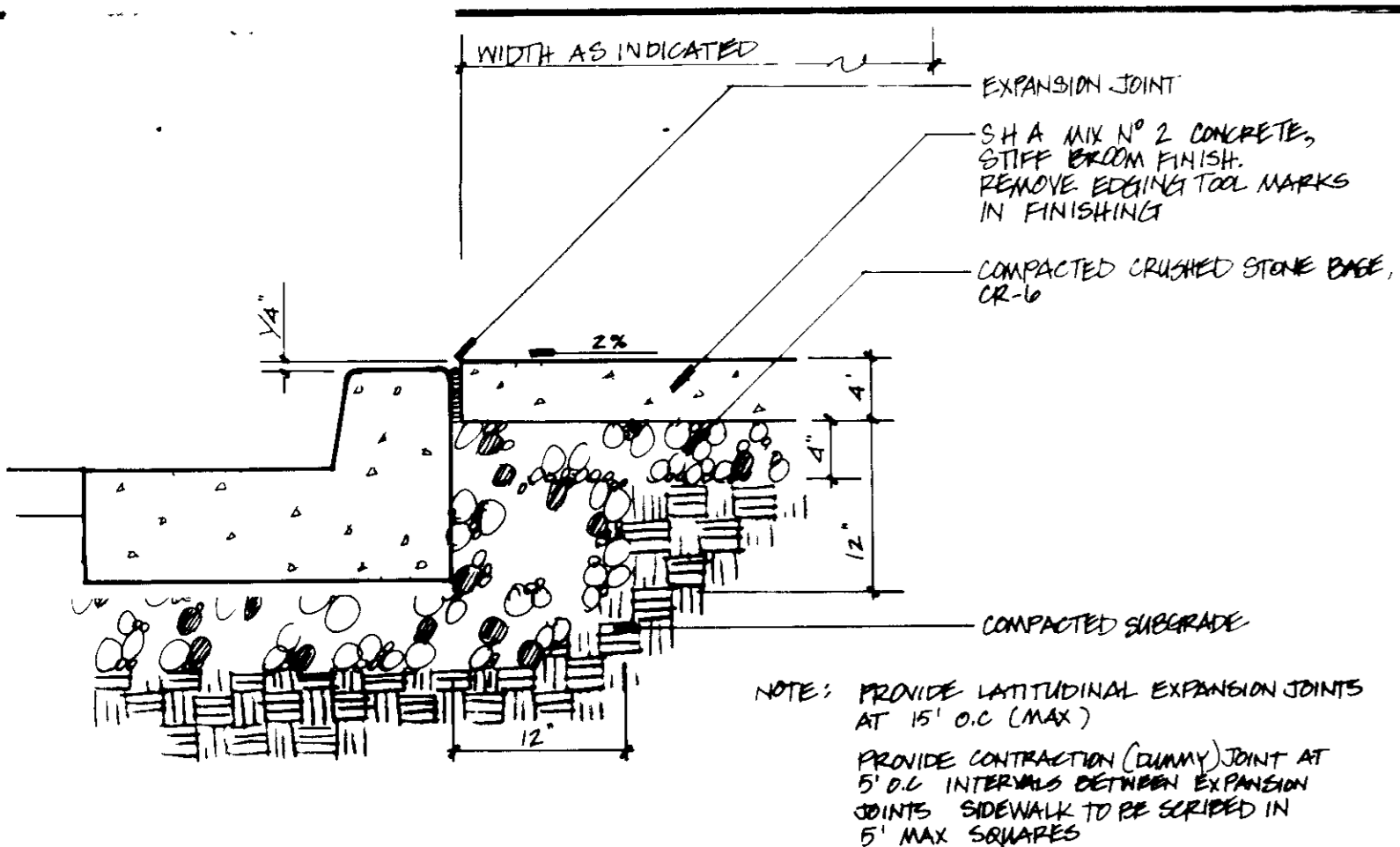
GREENHORNE & O'MARA, INC.
113 WEST ROAD SUITE 208 BALTIMORE MARYLAND 21204
(301) 296-4100

SITE DETAILS
MAIER INDUSTRIAL PARK
BUILDING CONSTRUCTION
Parcel E6
Tax Map 47 Zoning Map 47
HOWARD CO., MARYLAND

DATE: 3-31-89
JOB NO: 10
DRAWN BY: LKS

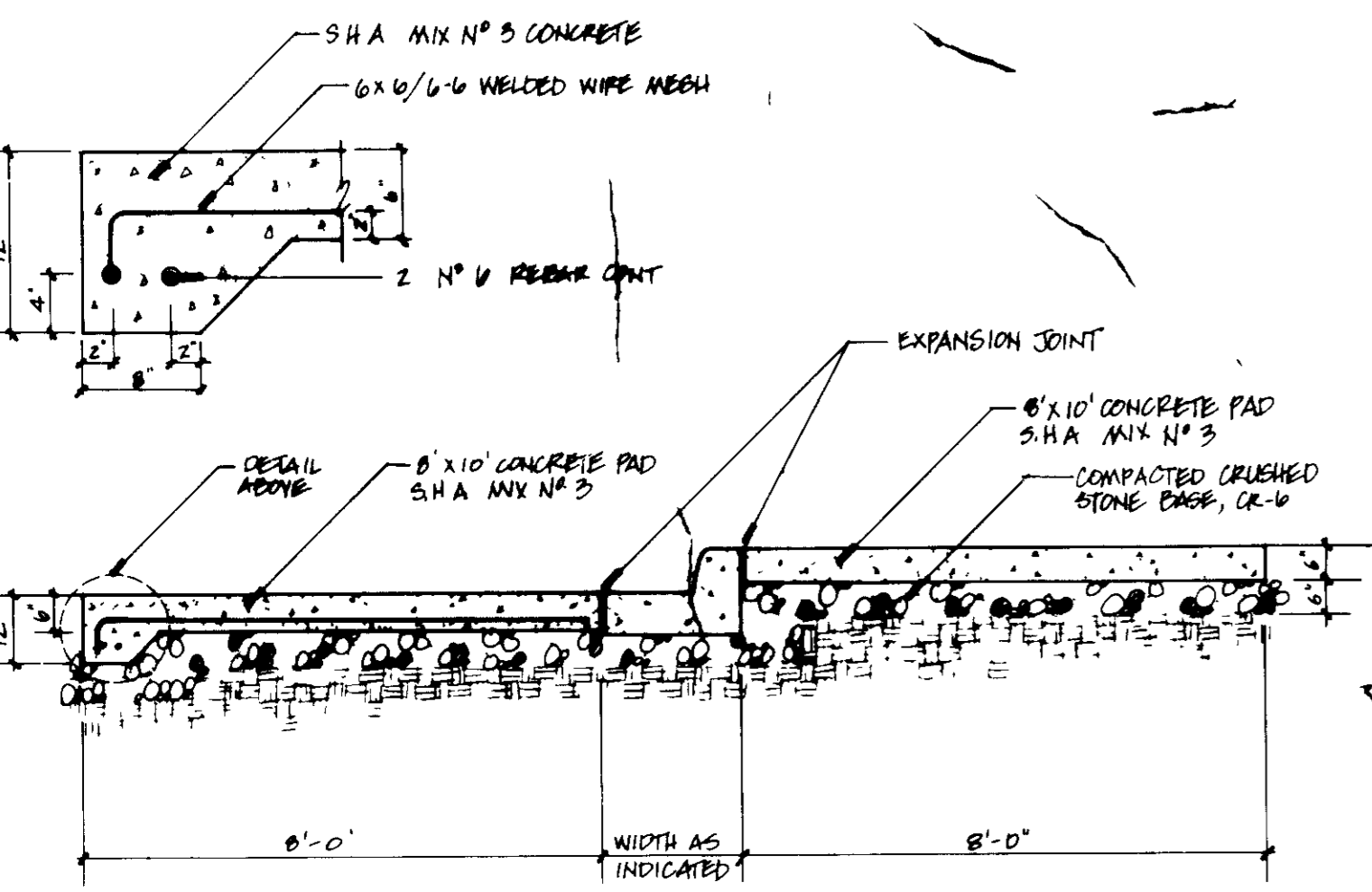
AS INDICATED
2 10

Zone M-2
6th ELECTION DISTRICT



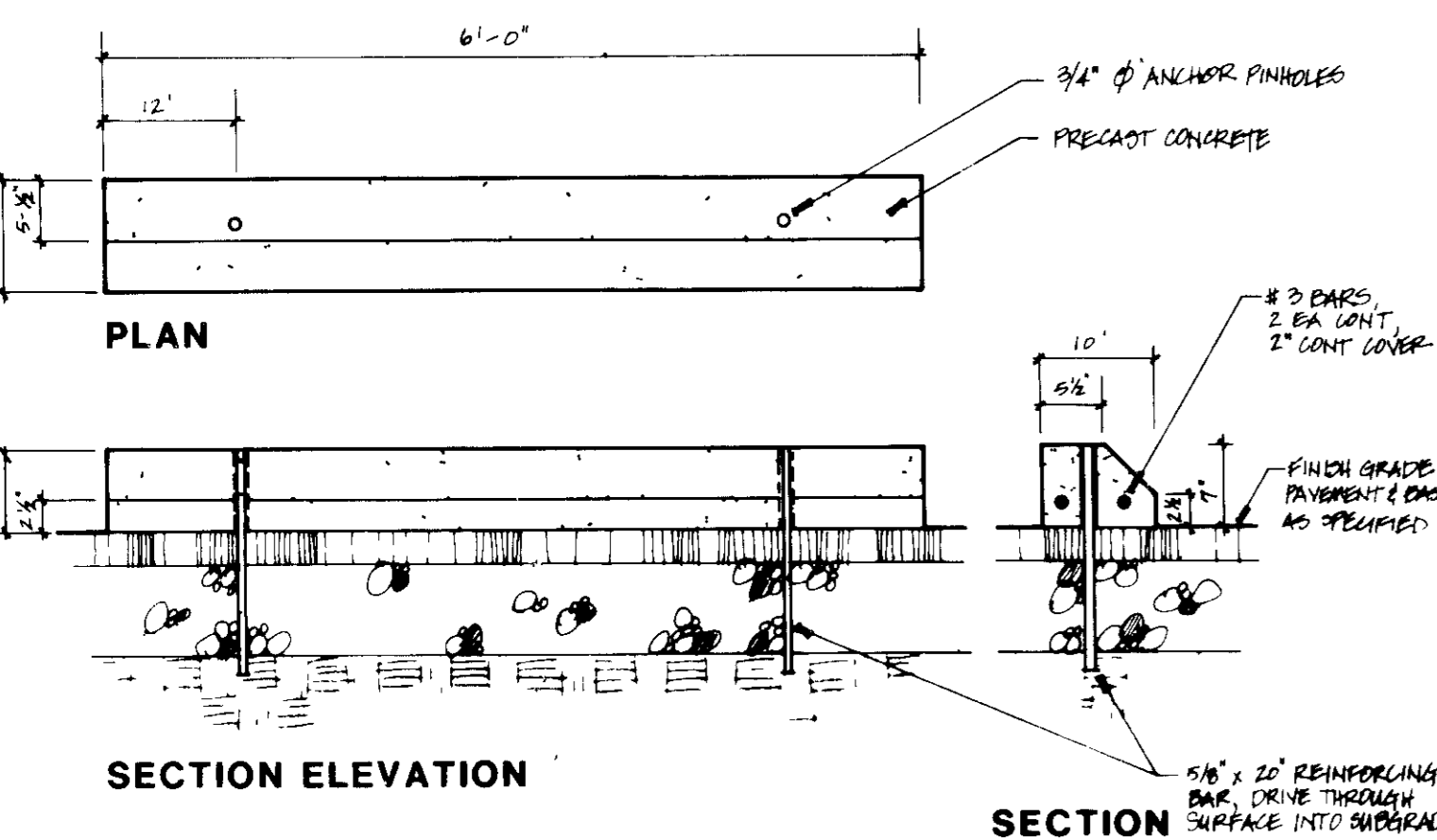
1 Concrete Walkway

SCALE: 1" = 1'-0"



2 Dumpster Pad

SCALE: 3/8" = 1'-0"



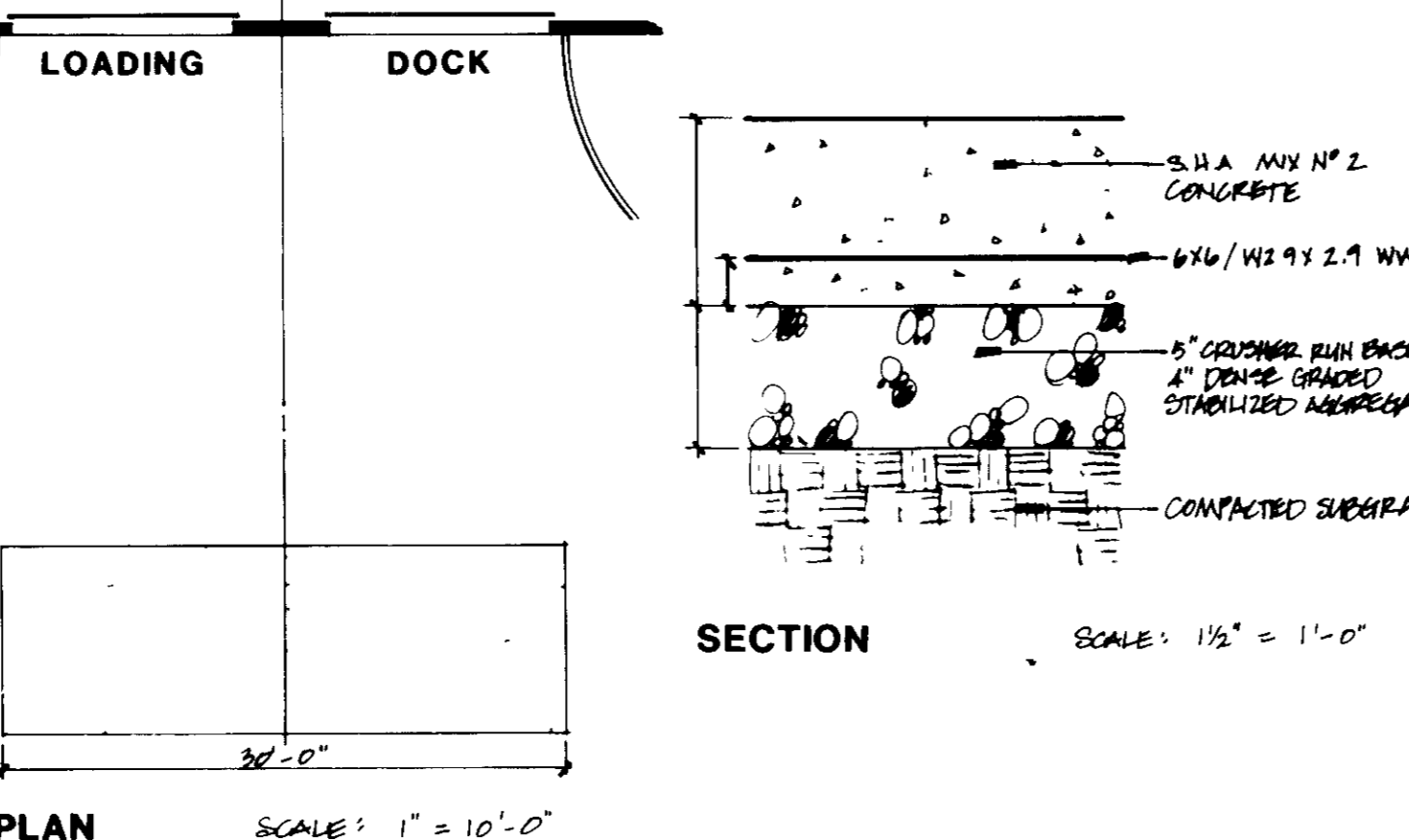
3 Precast Concrete Wheelstop

SCALE: 3/4" = 1'-0"

Planting Notes

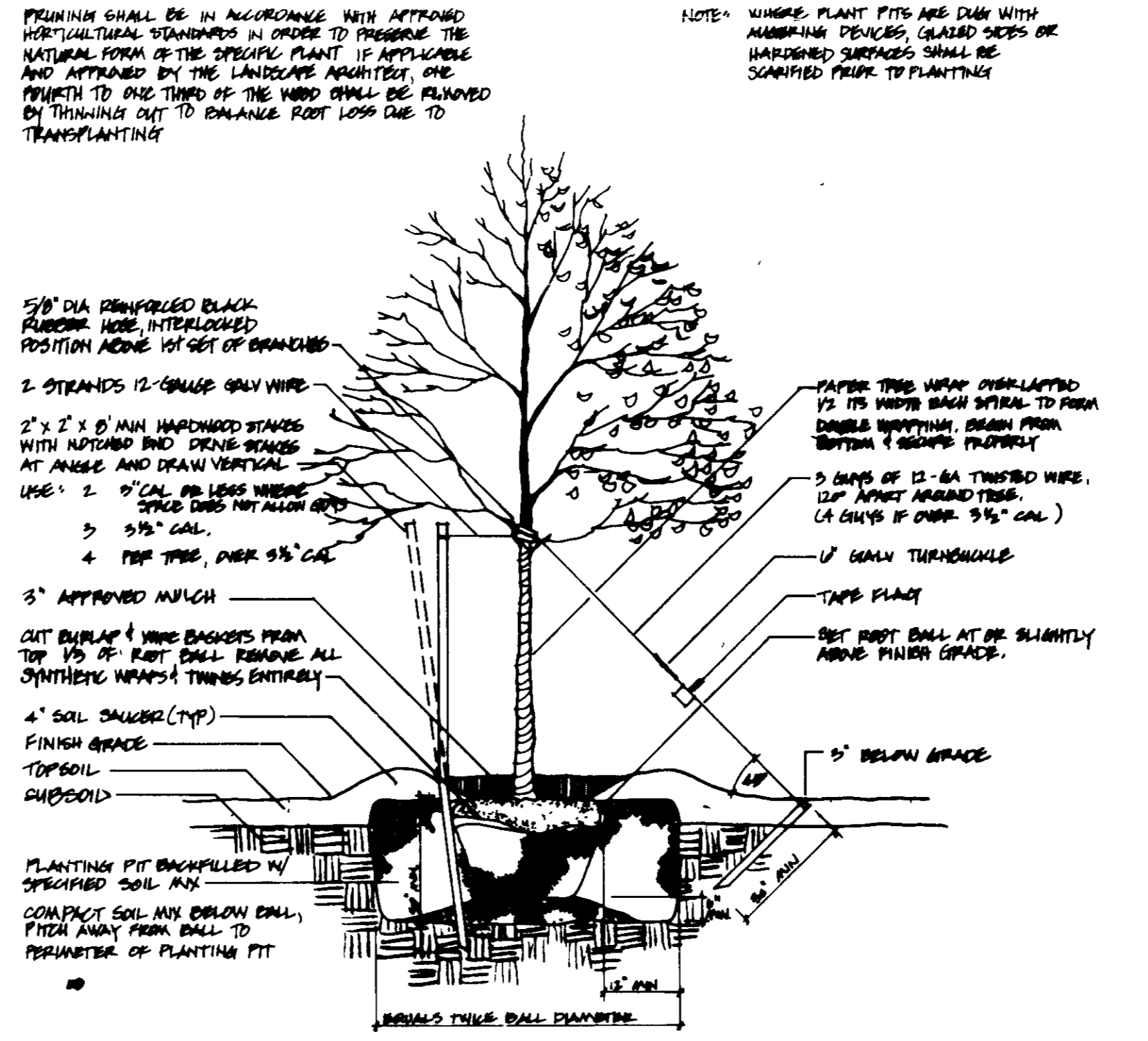
- Botanical names shall prevail over common names.
 - No plant substitutions shall be made without prior written approval of the Landscape Architect.
 - All plant material shall be nursery grown, no collected materials shall be accepted, unless specifically indicated.
 - Plants shall conform with the American Association of Nurserymen standards in all ways including dimensions.
 - All plants are to be approved and/or tagged by the Landscape Architect. The Landscape Architect has the right to reject any plant materials upon delivery to the project. Selection by the Landscape Architect does not waive the right of rejection.
 - All replacements shall be plants of the same kind and size as specified in the plant list, or as is necessary to match surviving plants of the same planting group. All costs shall be borne by the Landscape Contractor except for replacements resulting from loss or damage due to vandalism or acts of neglect on the part of others, physical damage by animals, vehicles, fire, etc., as may be determined by the Landscape Architect.
 - All plant materials shall be placed, or locations staked, on the site as shown on the planting plan prior to commencement of plant excavation for the Landscape Architect's approval. The Contractor must notify the Landscape Architect of all planting operations a minimum of 48 hours in advance.
 - All plant materials shall be balled and burlapped or container grown or as otherwise specified. No constructed balls shall be accepted. Remove synthetic 'burlap' and synthetic twines and ropes. Remove top 2/3 of metal baskets from root balls when the root ball has been positioned in the planting pit; provide support as necessary to protect the root ball from injury during this operation.
 - All plant materials are to be set with the top of root ball even with or slightly above the finished grade.
 - Planting soil shall consist of 5 parts topsoil (or excavated soil if approved by the Landscape Architect), one part sphagnum moss, one part dehydrated cow manure.
 - All plant beds except as specifically noted, are to be topped with a 3" layer of pine bark mulch. Sample to be approved.
 - Seed all disturbed areas. Grass seed shall be fresh, clean, new crop seed composed of the following varieties mixed in the proportions by weight shown and testing the minimum percentages of purity and germination:

| TYPE I | L BY WT. | TYPE II | L BY WT. |
|--------------------------------|----------|------------------|----------|
| Perennial Rye | 25% | F-31 Tall Fescue | 80% |
| Kentucky Bluegrass | 50% | Annual Ryegrass | 20% |
| (approved hybrid varieties) | | | |
| Creeping Red or Pennlaw Fescue | 25% | | |
 - Seeding of lawn areas shall be at the rate of at least 5 lbs. per 1000 square feet. All lawn areas shall be Type I seed mix unless otherwise designated.
 - All lawn areas shall be fertilized with a complete fertilizer, at least half of the nitrogen of which is derived from a natural organic source. It shall be of a 1:1:1 ratio in the spring using a minimum analysis of 10:10:10 and a 1:2:1 ratio in the fall using a minimum analysis of 5:10:5.
 - All lawn areas shall be mulched with salt hay or equal as approved by the Landscape Architect. Straw hay is not permitted.
 - Report any discrepancies to the Landscape Architect immediately for decision.
 - Maintenance shall begin immediately after each plant is planted, and shall continue until acceptance. Plants shall be watered, re-mulched, weeded, pruned, sprayed, fertilized, cultivated, and otherwise maintained and protected until acceptance of work. Settled plants shall be reset to a proper grade and position, planting seasons restored and dead material removed. Guys shall be tightened and repaired. Defective work shall be corrected as soon as possible after it becomes apparent, when weather and season permit. Upon completion of planting and prior to acceptance the Landscape Contractor shall remove from the site excess soil and debris and repair disturbed lawn areas and any other damage resulting from planting operations. Dangerous conditions shall be repaired immediately.
 - Upon completion of all landscaping operations, an inspection will be made to determine the acceptability of the job. At this time, a one year guarantee period shall begin, to be culminated by a final inspection. Immediately prior to final inspection, unless otherwise directed, the Contractor shall remove soil saucers, hose, guy wires, wrapping material and stakes. Only those materials found to be alive and in a vigorous, healthy condition at that time will be granted final acceptance. All other material shall be replaced at the Contractor's expense. A sum to cover potential replacements may be withheld if so desired by the owner. The Landscape Architect will be the sole judge of plant material acceptability.
- * Planting after Nov. 21 to be guaranteed thru 2nd spring's leafing.



4 Concrete Landing Gear Pad

SCALE AS INDICATED

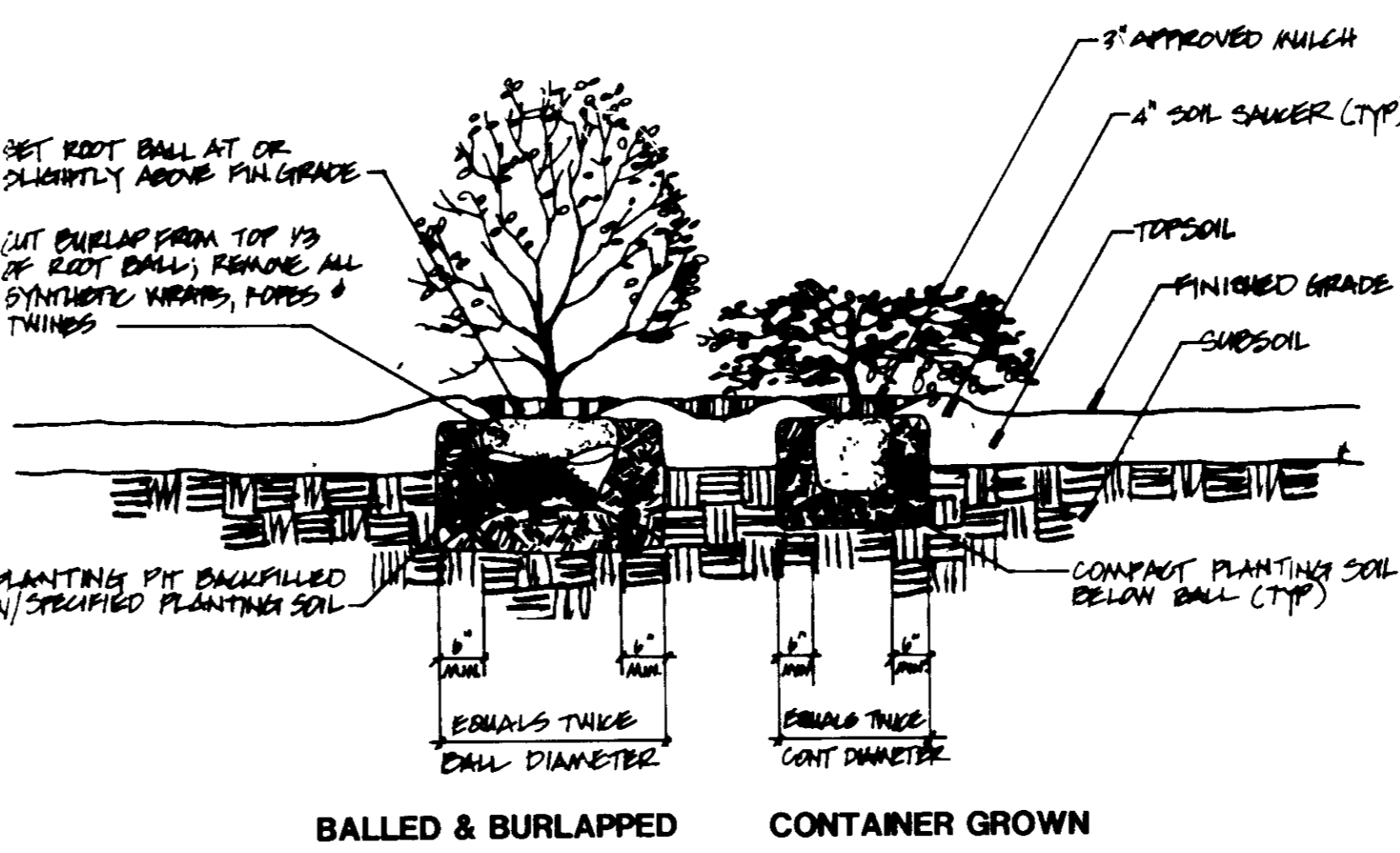


STAKING DECIDUOUS TREES 4" CAL. OR LESS
PERENNIAL TREES 6" HT. OR LESS

GUYING DECIDUOUS TREES OVER 3" CAL.
EVERGREEN TREES OVER 6" HT.

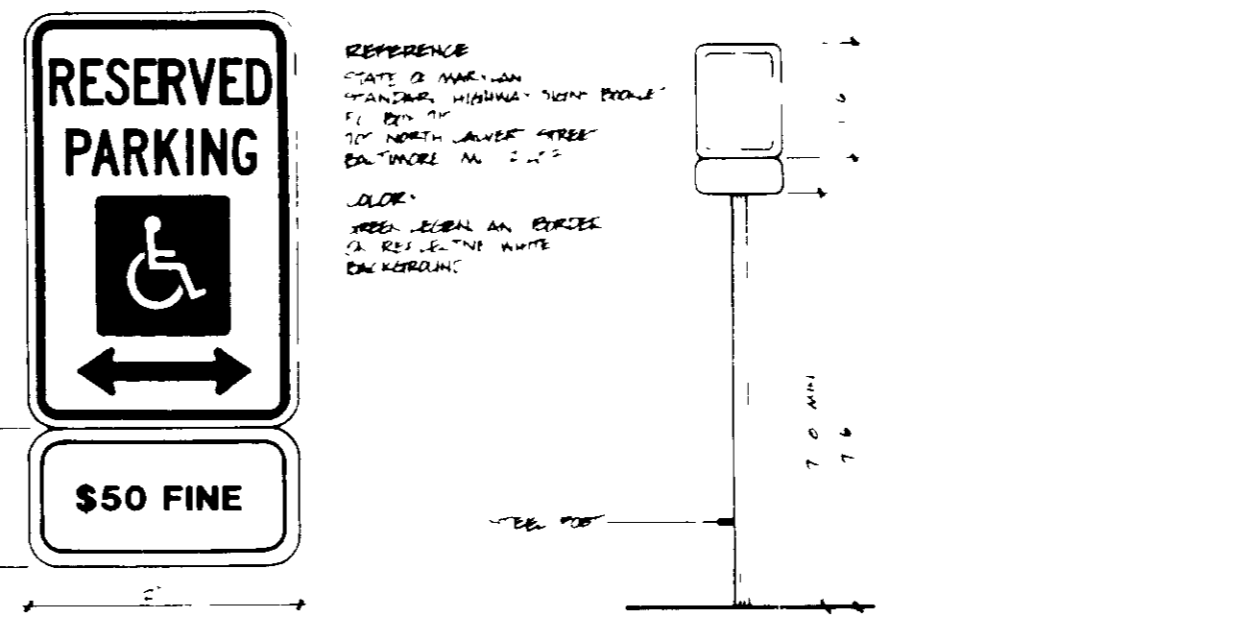
5 Tree Planting

SCALE: NO SCALE



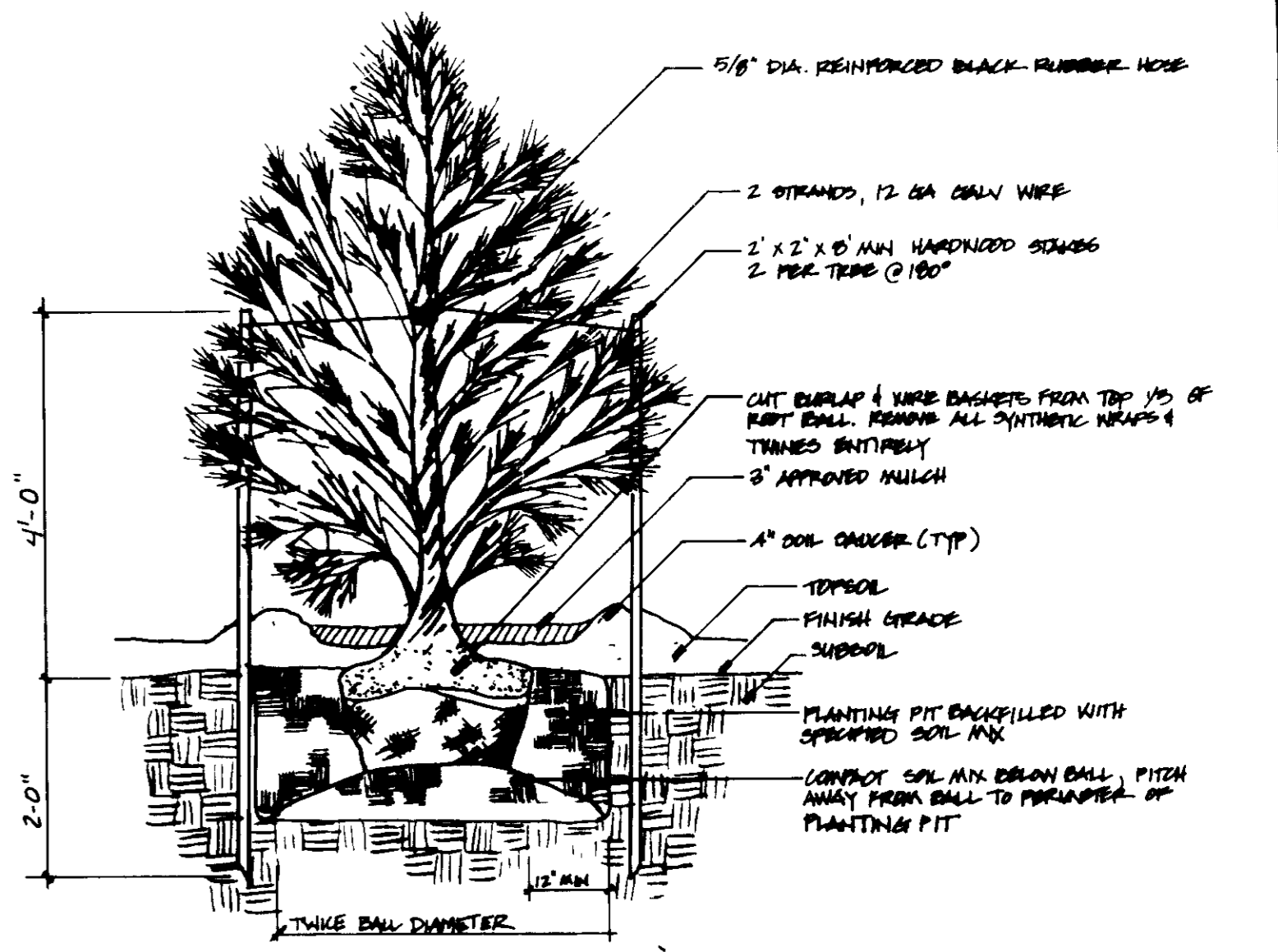
6 Shrub Planting

SCALE: NO SCALE



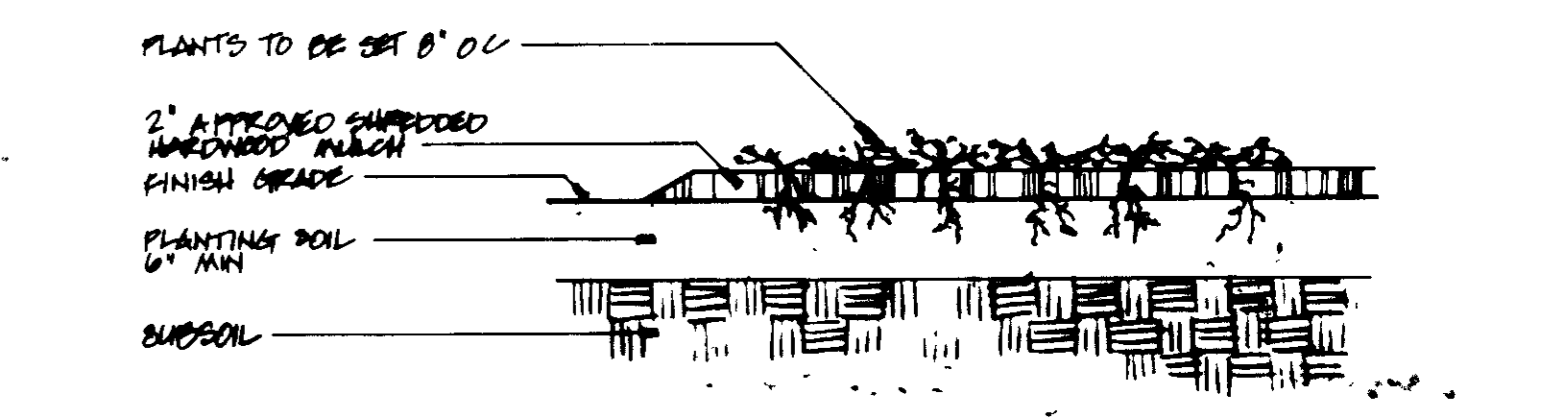
7 Handicapped Parking Sign

SCALE: NO SCALE



8 Evergreen Tree Detail

SCALE: NO SCALE



9 Groundcover Planting

SCALE: NO SCALE

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
APPROVED for Public Water, Public Sewerage, Storm Drainage Systems & Public Roads

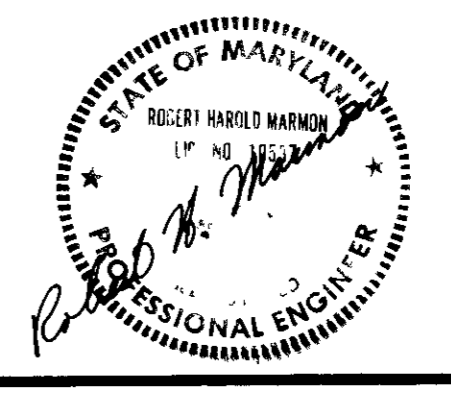
Director _____ Date _____
Chief, Bureau of Engineering _____ Date _____

HOWARD COUNTY HEALTH DEPARTMENT
APPROVED for Public Water and Public Sewerage Systems

County Health Officer _____ Date _____

HOWARD COUNTY OFFICE OF PLANNING AND ZONING
APPROVED

Planning Director _____ Date _____
Chief, Division of Community Planning & Land Development _____ Date _____



3-31-89
LKS

OWNER/DEVELOPER
RBA DEVELOPMENT COMPANY
6931 Arlington Road Suite 411
Bethesda, MD 20814
(301) 657-8899

| NO. | REVISION | DATE |
|-----|-------------------------------------|----------|
| 1 | ADD CONC. WALKWAY, NO SIGN, BENT BS | 12/12/88 |

GREENHORNE & O'MARA, INC.
113 WEST ROAD, SUITE 208, BALTIMORE, MARYLAND 21204
(301) 296-4100

ANNAPOLIS, MD • ATLANTA, GA • AURORA, CO • CULPEPER, VA • EXPIRT, PA • FAIRFAX, VA
GREENBELT, MD • MANASSAS, VA • MONROE, MI • RALEIGH, NC • ROCKVILLE, MD • TAMPA, FL

SITE DETAILS **PLANTING DETAILS**

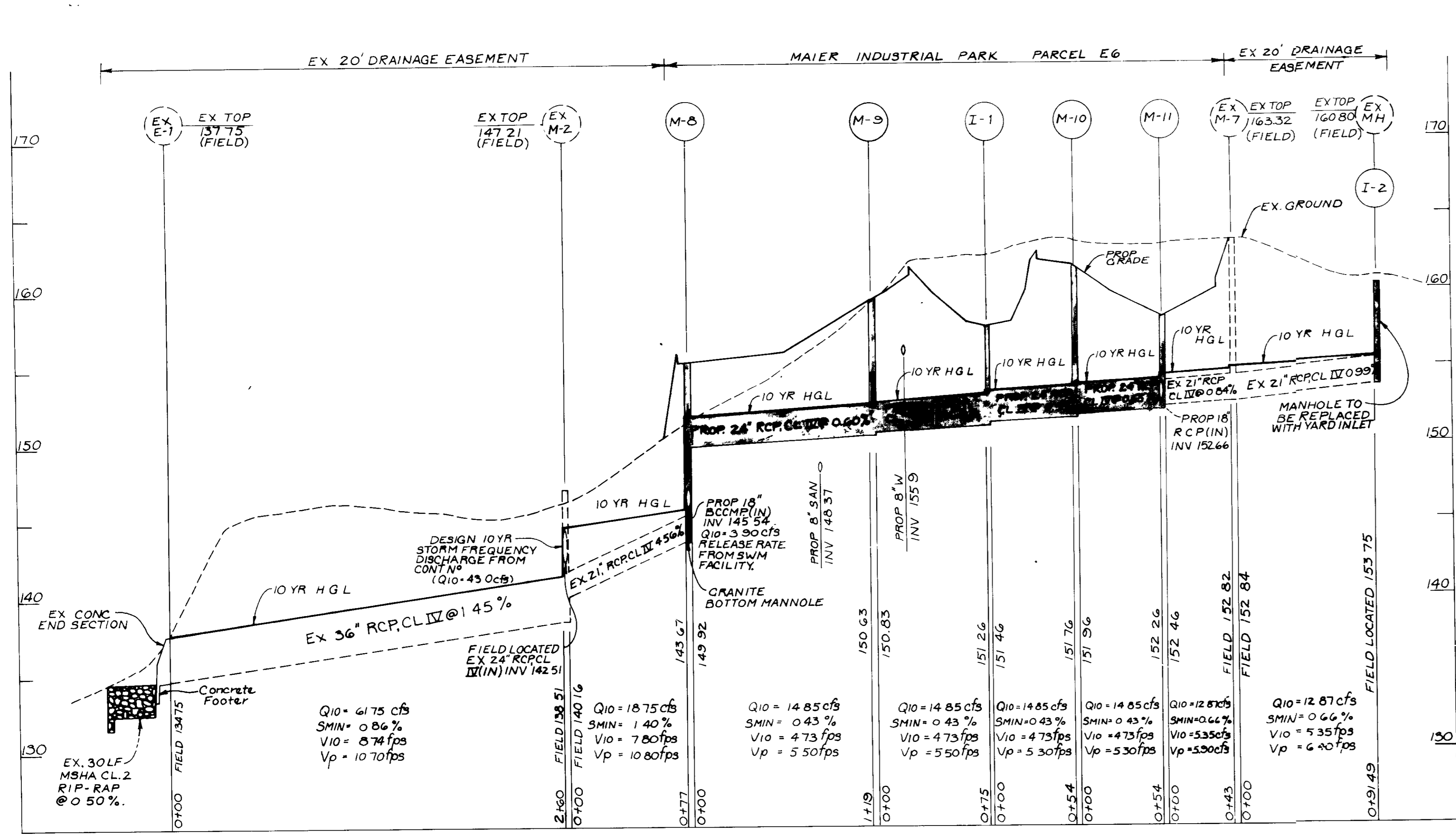
MAIER INDUSTRIAL PARK
BUILDING CONSTRUCTION
Parcel E8

Zone M-2
8th ELECTION DISTRICT

Tax Map 47 Zoning Map 47
HOWARD CO., MARYLAND

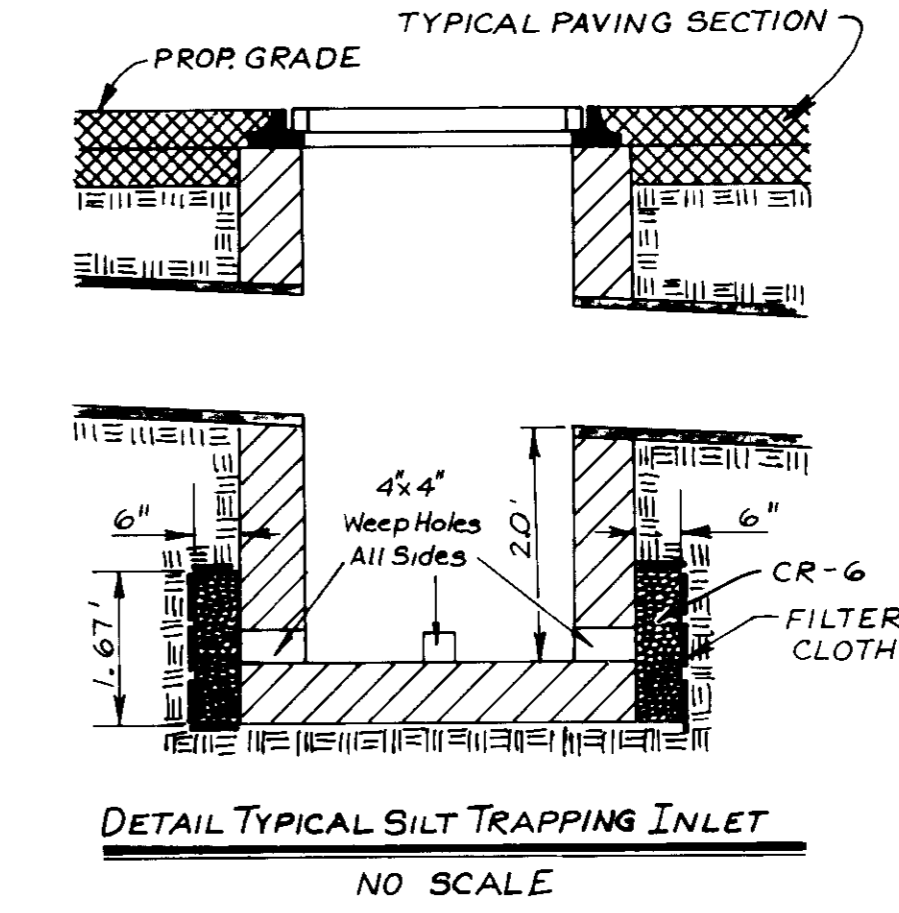
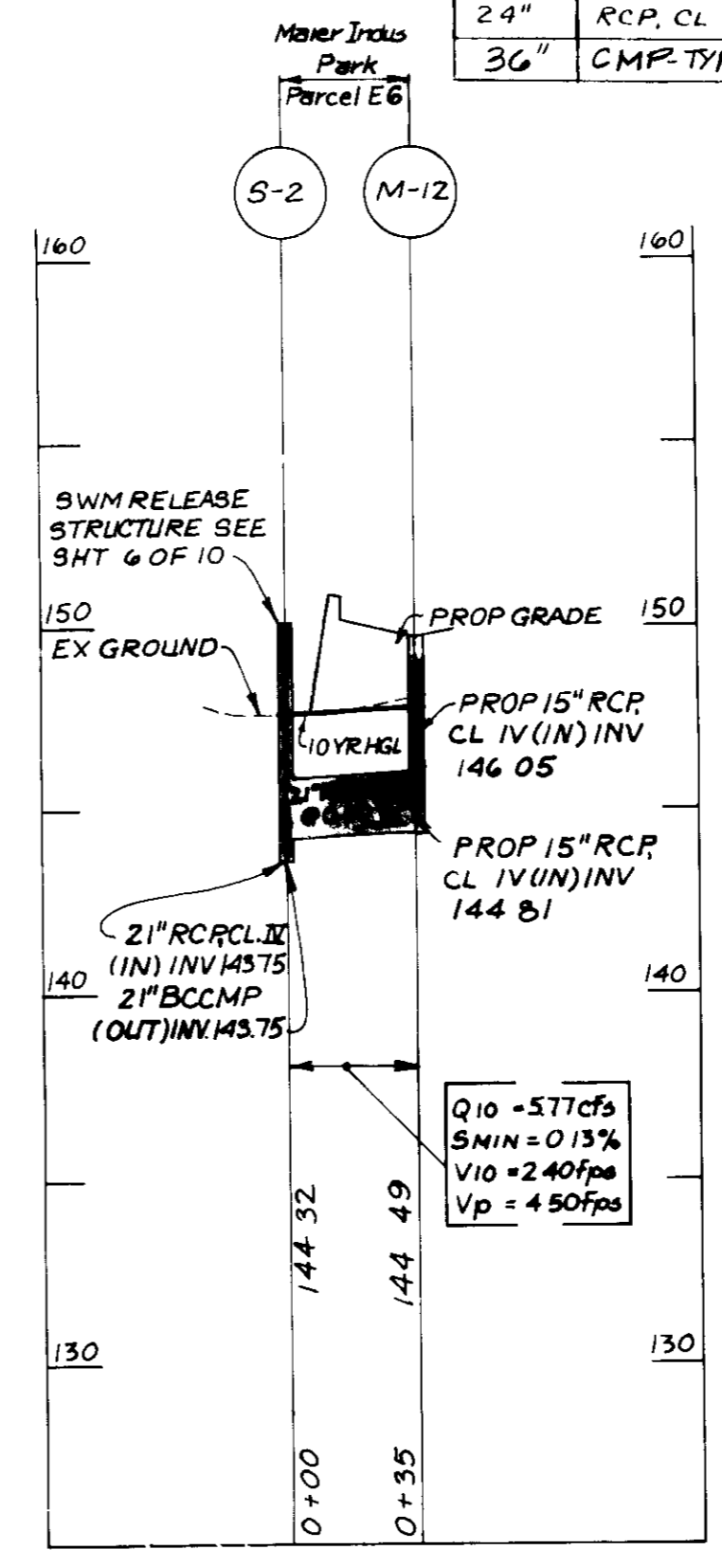
| | |
|---------|--------------------|
| DESIGN | SCALE AS INDICATED |
| DRAWN | 3 OF 10 |
| CHECKED | SHEET |
| DATE | JOB No |
| | FILE No |

SDP-89-81



| SIZE | TYPE | LENGTH |
|------|------------------------|--------|
| 15" | RCP, CL IV | 382 LF |
| 15" | BCCMP, 14GA PERFORATED | 238 LF |
| 18" | RCP, CL IV | 195 LF |
| 18" | BCCMP, 14GA | 21 LF |
| 21" | RCP, CL IV | 229 LF |
| 21" | BCCMP, 14GA | 4 LF |
| 21" | BCCMP, 14GA PERFORATED | 154 LF |
| 24" | RCP, CL IV | 302 LF |
| 36" | CMP, TYPE A | 224 LF |

| STRUCTURE SCHEDULE | | Inv. In | Inv. Out | Top Elev. | Remarks |
|--------------------|----------------------------------|---------|----------|-----------|---|
| I-1* | TYPE K INLET | 151.46 | 151.26 | 157.50 | HCDPW STD SD 4.12 |
| I-2 | TYPE K INLET | --- | 153.75 | 160.60 | HCDPW STD SD 4.12 |
| I-3 | DBL 'S' INLET | 153.37 | 153.12 | 156.51 | HCDPW STD SD 4.23 |
| I-4 | DBL 'S' INLET | --- | 154.00 | 157.00 | HCDPW STD SD 4.23 |
| I-5* | SINGLE 'S' INLET | --- | 145.00 | 148.50 | HCDPW STD SD 4.32 |
| I-6* | DBL 'S' INLET | --- | 147.33 | 154.90 | HCDPW STD SD 4.23 |
| I-7* | DEPRESSED DBL'S COMB INLET | --- | 149.50 | 153.60 | DEPRESSED BY MD STD 30002 HCDPW STD SD 4.34 |
| I-8 | DEPRESSED DBL'S COMB INLET | 144.92 | 144.90 | 149.60 | DEPRESSED BY MD STD 30002 HCDPW STD SD 4.34 |
| I-9 | DEPRESSED SINGLE 'S' COMB. INLET | 145.48 | 144.46 | 150.75 | DEPRESSED BY MD STD 30002 HCDPW STD SD 4.32 |
| M-8* | BRICK MH | 149.92 | 145.54 | 155.42 | HCDPW STD G 5.01 |
| M-9* | BRICK MH | 150.83 | 150.63 | 159.50 | HCDPW STD G 5.01 |
| M-10 | BRICK MH | 151.96 | 151.76 | 161.04 | HCDPW STD G 5.01 |
| M-11 | BRICK MH | 152.46 | 152.26 | 157.69 | HCDPW STD G 5.01 |
| M-12 | BRICK MH | 146.05 | 144.81 | 149.90 | HCDPW STD G 5.01 |
| M-13 | BRICK MH | 149.12 | 148.67 | 154.00 | HCDPW STD G 5.01 |
| M-14 | BRICK MH | 145.28 | 145.27 | 149.70 | HCDPW STD G 5.01 |
| S-1 | MODIFIED DBL 'S' COMB. INLET | 148.00 | 146.00 | 155.73 | DEPRESSED BY MD STD 30002 HCDPW STD SD 4.34 |
| S-2 | MODIFIED DBL 'S' INLET | 144.32 | 143.75 | 149.03 | HCDPW STD SD 4.23 |
| E-2 | METAL END SECTION | --- | 143.73 | 145.48 | HCDPW STD SD 5.61 |
| SMH-1 | SHALLOW BRICK MH | 149.88 | --- | 154.0 | HCDPW STD. G 5.05 |
| SMH-2 | SHALLOW BRICK MH | 150.49 | --- | 153.9 | HCDPW STD. G 5.05 |
| I-10 | SINGLE 'S' INLET | --- | 149.58 | 156.50 | HCDPW STD SD 4.22 |
| E-3 | METAL END SECTION | 145.10 | 145.00 | --- | HCDPW STD SD 5.61 |



APPROVED: FOR PUBLIC WATER & PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS & PUBLIC ROADS
 HOWARD CO. DEPT. OF PUBLIC WORKS

DIRECTOR: [Signature] DATE: 6-22-89

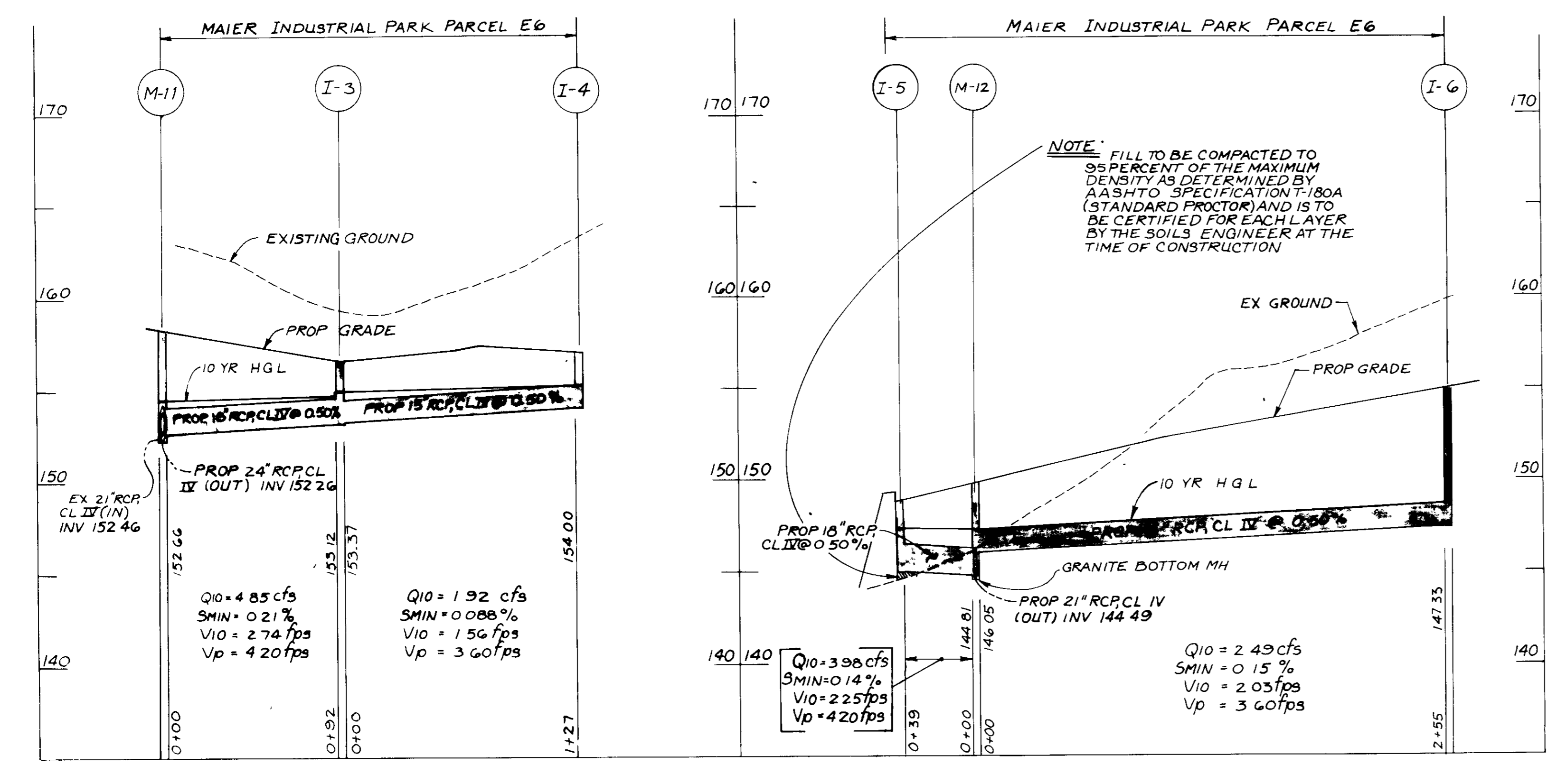
APPROVED: FOR PUBLIC WATER & PUBLIC SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER: [Signature] DATE: 6-15-89

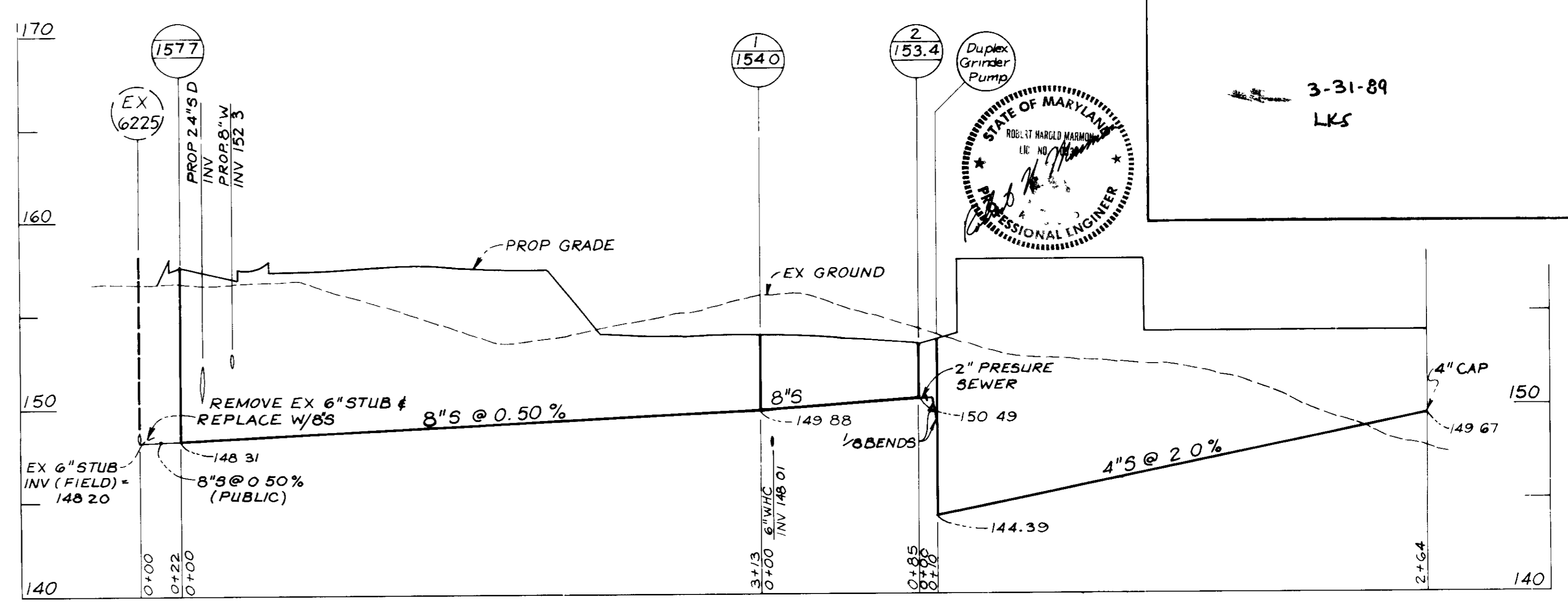
APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING

PLANNING DIRECTOR: [Signature] DATE: 6-22-89

CHIEF, DIV. OF COUNTY PLANNING & LAND DEVELOPMENT: [Signature] DATE: 6/22/89



NOTE: FOR PROFILE OF I-9, M-14, I-8, S-2 & E2 SEE SHEET 6 OF 10. FOR PROFILE OF M-8, S-1, M-13, & I-7 SEE SHEET 5 OF 10.



OWNER/DEVELOPER
RBA DEVELOPMENT COMPANY
 6931 Arlington Road Suite 411
 Bethesda, MD 20814
 (301) 657-8899

| No | REVISION | DATE | BY |
|----|--|--------|-----|
| 1 | REVISED DRAINAGE PLAN PER 3-3, 4-16, 5-1, 6, AND 7-10/89 | 9/5/89 | G/D |

ENGINEERS • ARCHITECTS • PLANNERS • SCIENTISTS • SURVEYORS • PHOTOGRAMMETRISTS
GREENHORNE & O'MARA, INC.
 113 WEST ROAD, SUITE 208, BALTIMORE, MARYLAND 21204
 (301) 296-4100
 ANNAPOLIS MD • ATLANTA GA • AURORA CO • CULPEPER VA • DULUTH GA • EXPORT PA • FAIRFAX VA • GREENBELT MD
 LEESBURG VA • MANASSAS VA • ORLANDO FL • RALEIGH NC • ROCKVILLE MD • TAMPA FL • WEST PALM BEACH FL

STORM DRAIN PROFILES
MAIER INDUSTRIAL PARK
BUILDING CONSTRUCTION
 Parcel E6

Zone M-2
 6th ELECTION DISTRICT

Tax Map 47 Zoning Map 47
 HOWARD CO., MARYLAND

MFF DESIGN SCALE VERT. 1"=5' HORIZ. 1"=50'

KRM DRAWN

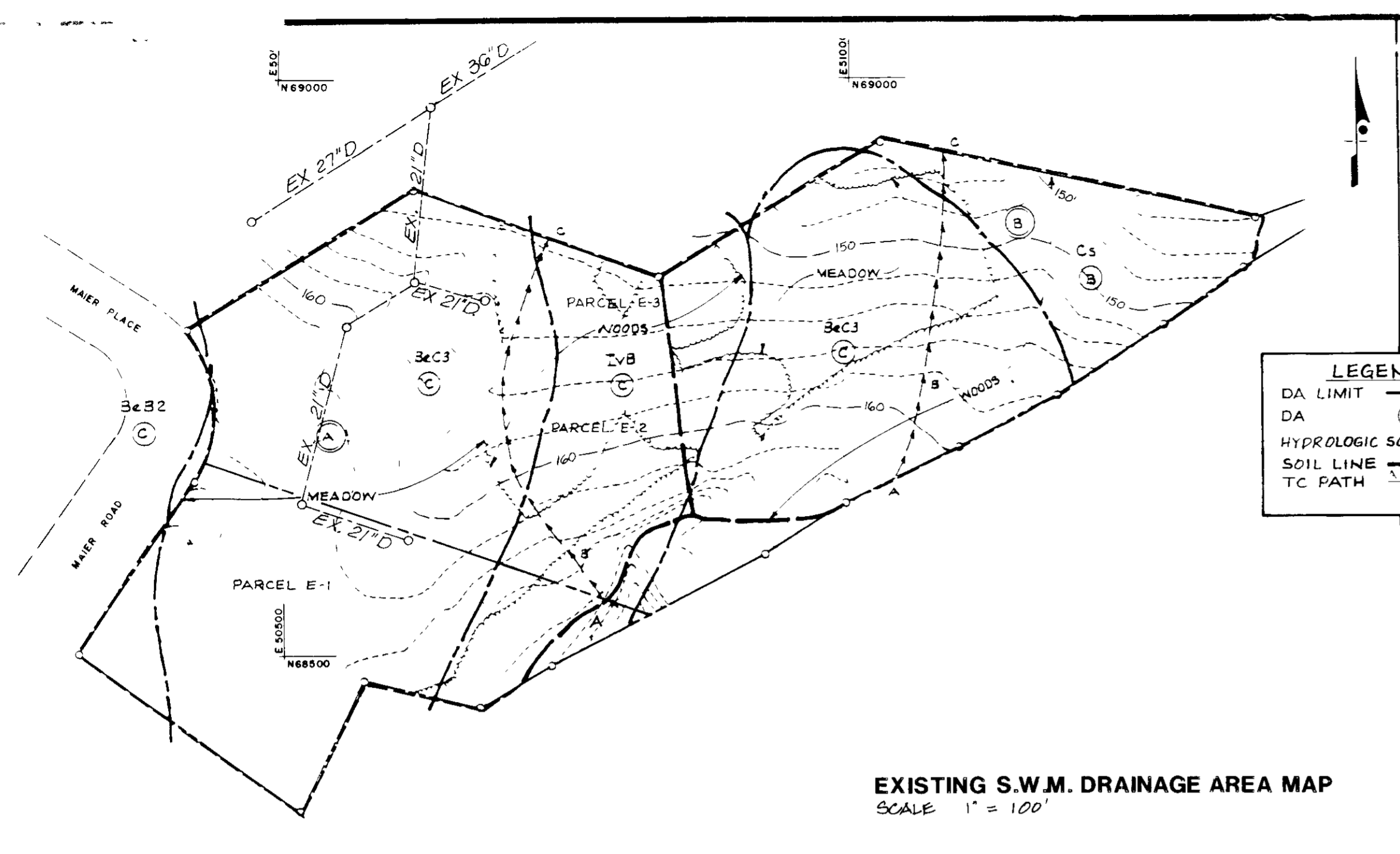
RBH CHECKED SHEET

OCT. 1988 DATE

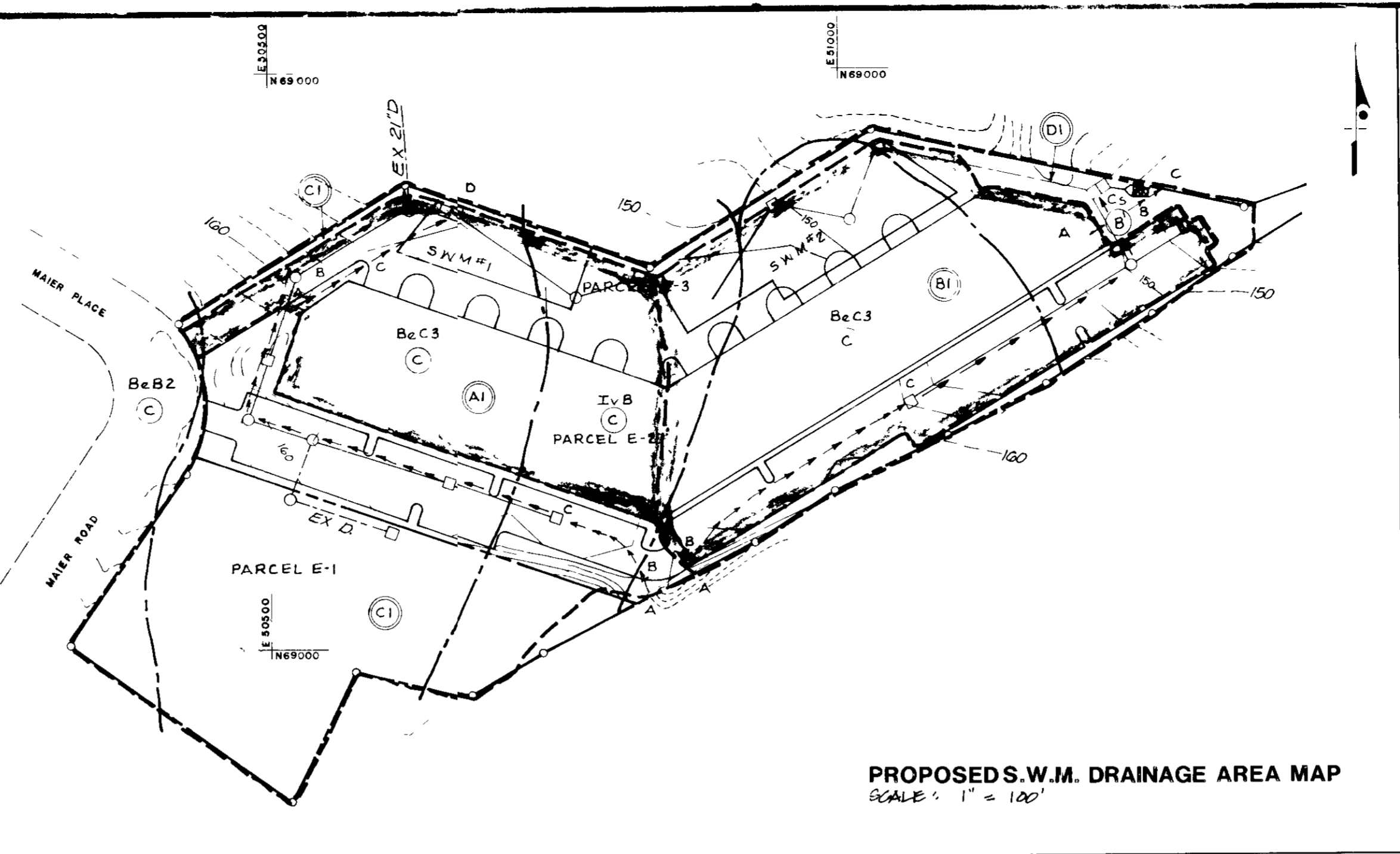
8-1065-V FILE No

4 OF 10

SDP-89-81



EXISTING S.W.M. DRAINAGE AREA MAP
SCALE: 1" = 100'



PROPOSED S.W.M. DRAINAGE AREA MAP
SCALE: 1" = 100'

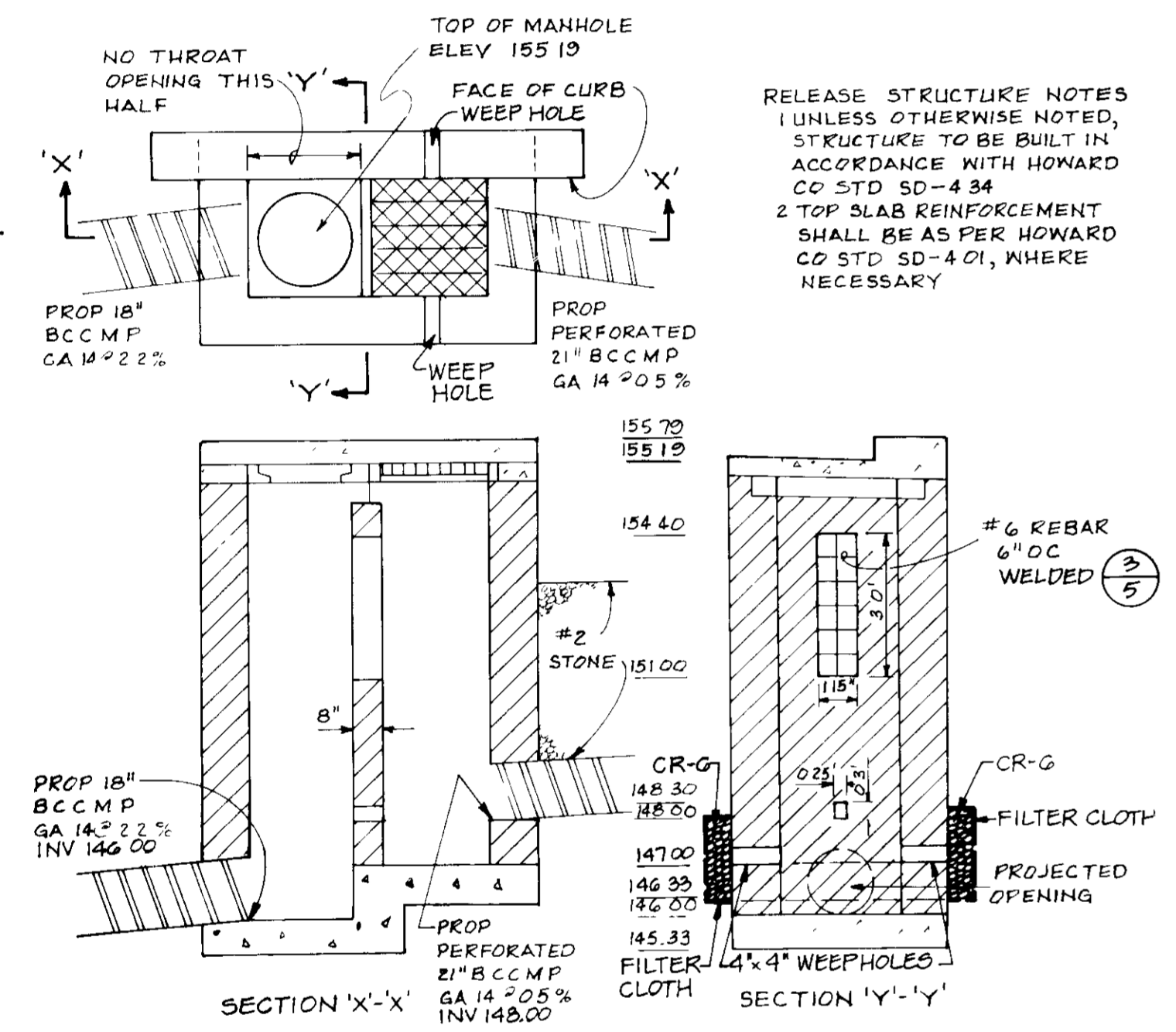
| FACILITY #1 STORM WATER MANAGEMENT DATA | |
|--|-----------------------------|
| EXISTING CONDITIONS: | PROPOSED CONDITIONS: |
| D A A - 4.00 Ac ± | Not Routed |
| R C N - 71 | D A A1-1.62 Ac ± |
| 2 Yr Storm - 5.17 C F S | D A C1-2.43 Ac ± |
| 10 Yr Storm - 13.12 C F S | R C N - 96 |
| 100 Yr Storm - 22.98 C F S | Composite Peak Flow |
| | 2 Yr Storm - 5.14 C F S |
| | 10 Yr Storm - 12.33 C F S |
| | 100 Yr Storm - 23.32 C F S |
| HYDROLOGIC CRITERIA: | |
| Required - 2 & 10 Yr Storm Water Management | |
| Provided - 2 & 10 Yr Storm Water Management | |
| Structure Classification - 'A' | |
| Underground stone storage | |
| Storage height product - 4.65 x 0.33 Ac - Ft = 1.53 Ac - Ft ² | |
| STORAGE REQUIREMENT: | |
| 2 Yr Storm - 7,528 C F @ elev 150.86 | |
| 10 Yr Storm - 14,846 C F @ elev 151.90 | |
| 100 Yr Storm - 13,238 C F @ elev 152.65 | |

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

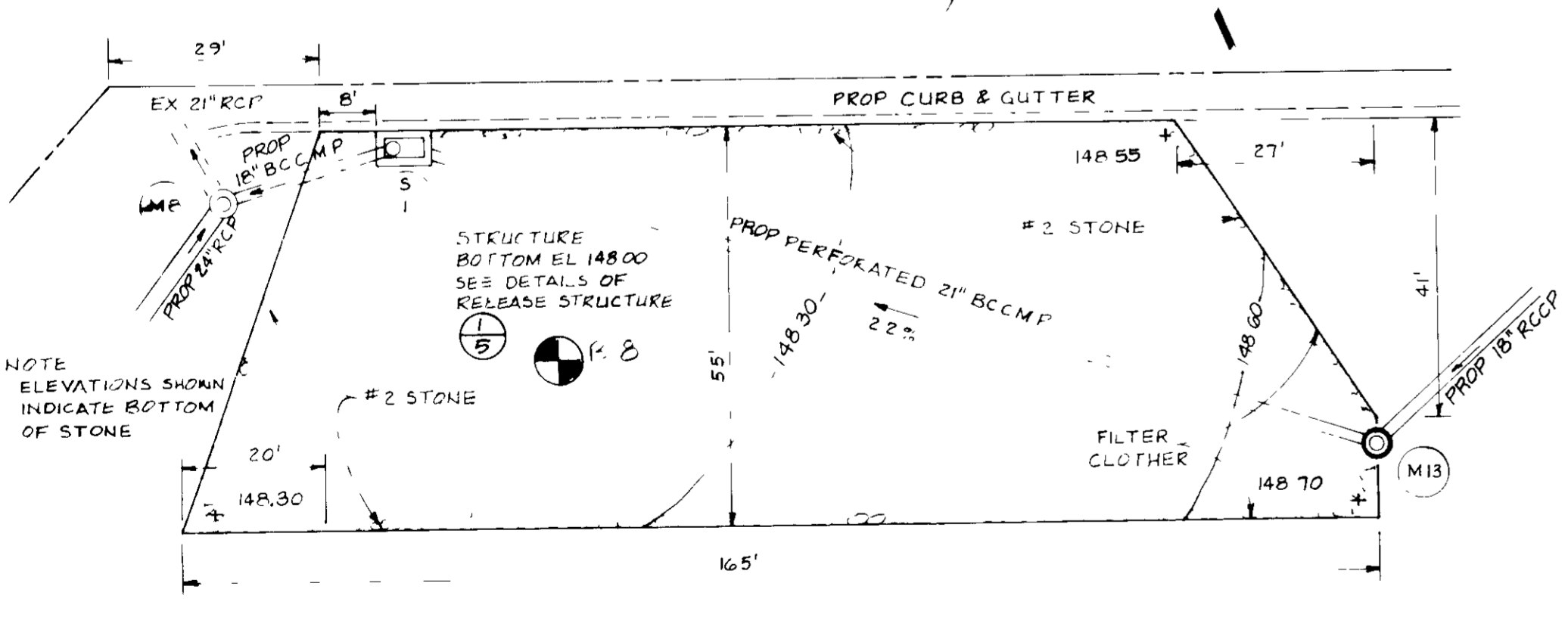
Joseph J. Ziegler 6-15-89
COUNTY HEALTH OFFICER DATE

APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE
STORM DRAINAGE SYSTEMS & PUBLIC ROADS
HOWARD CO. DEPT. OF PUBLIC WORKS

DIRECTOR: *John C. C. C.* DATE: 6-15-89
CHIEF, BUREAU OF ENGINEERING DATE



1 S.W.M. #1: Release Structure S-1
Modified Howard Co. Std. SD-4.34 NOT TO SCALE



2 Underground S.W.M. Facility #1
NOT TO SCALE

S.W.M. MAINTENANCE SCHEDULE

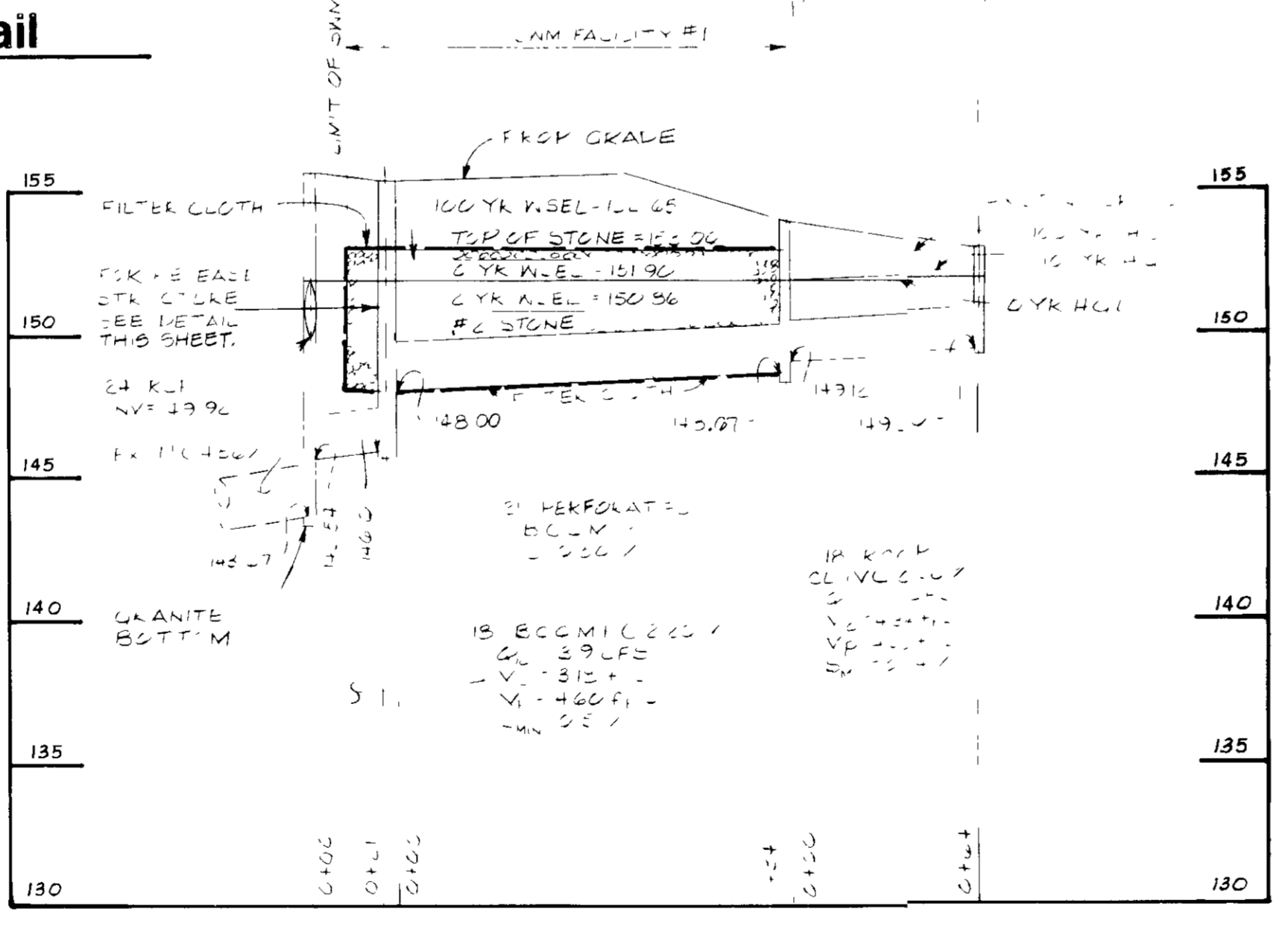
| MAINTENANCE ITEM | 1 | 2 | 3 | 4 |
|-----------------------|---|---|---|---|
| MAINTENANCE FREQUENCY | 6 | 5 | 6 | 6 |
| REPAIR DURATION | 7 | B | 7 | 7 |

- CLEAN OUT SILT
- CLEAN OUT TRASH
- CHECK WEIR CLOGGING
- CHECK STRUCTURAL INTEGRITY
- EVERY TWO WEEKS
- EVERY THREE MONTHS
- ONE WEEK MAXIMUM
- TWO DAYS

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

**CONSTRUCTION SPECIFICATIONS:
Underground Stone Storm Water Management**

- SITE PREPARATION**
 - AREAS DESIGNATED FOR BORROW AREAS AND STRUCTURAL WORKS SHALL BE CLEARED (GRASS AND STRIPES OF SOYBEANS) ALL TREES, UTILITY POLES AND OTHER OBSTRUCTIONS SHALL BE REMOVED. CHANNEL BANKS AND SHARP BENDS SHALL BE CROPPED TO NO STEEPER THAN 2:1.
 - AREAS TO BE COVERED BY STORM WATER MANAGEMENT DEVICES SHALL BE CLEARED OF ALL TREES, BRUSH, LOGS, STUMPS, BURNED AND OTHER OBSTRUCTIONAL MATERIAL.
 - EROSION CONTROL - APPLICABLE WITHIN 70' (UNPAVED) HORIZONTALLY FROM AN UNDERGROUND STONE STORAGE DEVICE.
- MATERIAL**
 - THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED SPECIFIED BORROW AREAS OR AREAS IT SHALL BE TESTED OR PROVED STONE, BURNED, COVERED STONES, STONES OR OTHER OBSTRUCTIONAL MATERIALS. FILL MATERIAL SHALL BE UNIFIED SOIL CLASSIFICATION SC OR CI.
 - FINISHMENT:
 - AREAS ON WHICH FILL IS TO BE PLACED SHALL BE COMPACTED PRIOR TO PLACING OF FILL. FILL MATERIAL SHALL BE PLACED IN 6" LAYER THICKNESS (EXCEPT CONNECTIONS LAYERS WHICH ARE TO BE CONTINUOUS OVER THE FULL LENGTH OF THE FILL) THE MOST BORROW BORROW MATERIAL SHALL BE PLACED PARALLEL FROM THE STORM DEVICE.
 - CONNECTIONS:
 - THE JOINTS OF THE BUILDING AND SEPARATING POINTS OVER THE FILL SHALL BE CONSTRUCTED TO THE SPECIFICATION T-39. FILL MATERIAL SHALL CONTAIN CERTIFIED BITUMINOUS SEALANT THAT THE REQUIRED DEGREE OF CONNECTION CAN BE OBTAINED WITH THE FUTURE USE.
 - WHERE A HEIGHT REQUIRED DENSITY IS SPECIFIED EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY AND IS TO BE CERTIFIED BY THE ENGINEER.
- STRUCTURAL BACKFILL**
 - BACKFILL MATERIAL SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADDITIONAL FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND CONNECTED BY SAND TAMPERS OR OTHER CONNECTION POINTS. THE MATERIAL USED TO FILL COMPLETELY ALL SPACE UNDER AND ADJACENT TO THE PIPE AT NO TIME DURING THE BACKFILLING OPERATION SHALL BE EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, HORIZONTAL, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE OPERATED OVER ANY PART OF A CONCRETE STRUCTURE OR THE UNDER TOP IS A CONSTRUCTED FILL OF THREE-FOUR INCHES OR GREATER OVER THE STRUCTURE OR PIPE.
- PIPE CONNECTIONS**
 - MATERIALS - ALL STEEL PIPE AND ITS APPURTENANCES SHALL BE GALVANIZED OR FULLY COATED WITH WATERPROOF CONNECTIONS. ANY BITUMINOUS COATING DAMAGED OR OBSERVED REMOVED SHALL BE REPLACED WITH COOL APPLIED BITUMINOUS COATING. STEEL PIPE WHICH IS IN THE STORM WATER MANAGEMENT FACILITY SHALL BE FULLY PROTECTED. PROTECTION SHALL BE A MINIMUM OF 1/4" IN DIAMETER AND NOT LESS THAN 1/4" IN THICKNESS PER SQUARE FOOT.
 - CONNECTIONS - ALL CONNECTIONS WITH PIPE MUST BE COMPLETELY WATERPROOF. WATERPROOF CONNECTIONS SHALL BE USED AT ALL JOINTS. ANTI SEEP COLLARS IF NECESSARY SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATERPROOF.
 - SPACING - PIPE SHALL BE FIRMLY AND UNIFORM SPACING THROUGHOUT THE ENTIRE LENGTH UNLESS OTHERWISE SPECIFIED. SPACING SHALL BE UNIFORM AND SHALL BE 12" UNLESS OTHERWISE SPECIFIED.
 - LAYING PIPE - THE PIPE SHALL BE PLACED WITH INSIDE CIRCUMFERENTIAL LAPS POINTING DOWNSTREAM AND WITH LONGITUDINAL LAPS AT THE TOP.
 - BACKFILLING - SHALL CONFORM TO STRUCTURAL BACKFILL AS SHOWN ABOVE.
 - PIPE - ALL PIPE SHALL MEET OR EXCEED THE FOLLOWING STANDARDS:
 - NO. 2 STONE
 - NO. 3 STONE
 - NO. 4 STONE
 - NO. 5 STONE
 - NO. 6 STONE
 - NO. 7 STONE
 - NO. 8 STONE
 - NO. 9 STONE
 - NO. 10 STONE
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 - NO. 97 STONE
 - NO. 98 STONE
 - NO. 99 STONE
 - NO. 100 STONE
- CONCRETE**
 - CONCRETE SHALL MEET MINIMUM REQUIREMENTS SET FORTH IN MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATION FOR MATERIALS, HIGHWAYS, BRIDGES AND INCIDENTAL STRUCTURES (PORTLAND CEMENT CONCRETE MIXTURES), MIX NO. 1. REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60, STEEL ANCHORS AND ANCHOR BARS SHALL BE ASTM A 36.
- FILTER CLOTH**
 - WEIGHT 100 OR EQUIVALENT SHALL BE USED.
- BARBERS**
 - BARBERS SHALL BE PVC COATED CI IV ON FILTER CLOTH AS REQUIRED.
- STABILIZATION**
 - ALL EXPOSED SURFACES AND BORROW AREAS SHALL BE CROPPED FOR PROPER DRAINAGE AND LEFT IN A STABLE CONDITION.
 - PROPOSED SURFACES NOT STABILIZED IN ACCORDANCE WITH THESE PLANS SHALL BE CROPPED, 1:1 SLOPE ESTABLISHED AND MULCHED IN ACCORDANCE WITH THE APPROVED VEGETATION PLAN.



4 S.W.M. #1: Profile
SCALE: HOR 1" = 50' VERT 1" = 5'

OWNER/DEVELOPER
RBA DEVELOPMENT COMPANY
6931 Arlington Road Suite 411
Bethesda, MD 20814
(301) 657-8899

| No | REVISION | DATE | BY |
|----|----------|------|----|
| | | | |
| | | | |
| | | | |
| | | | |

ENGINEERS • ARCHITECTS • PLANNERS • SCIENTISTS • SURVEYORS • PHOTOGRAMMETRISTS
GREENHORNE & O'MARA, INC.
113 WEST ROAD, SUITE 208, BALTIMORE, MARYLAND 21204
(301) 296-4100
ANNAPOLIS MD • ATLANTA GA • AURORA CO • CULPEPER VA • DULUTH GA • EXPORT PA • FAIRFAX VA • GREENBELT MD
LEESBURG VA • MANASSAS VA • ORLANDO FL • RALEIGH NC • ROCKVILLE MD • TAMPA FL • WEST PALM BEACH FL

STORMWATER MANAGEMENT DETAILS
for
MAIER INDUSTRIAL PARK
BUILDING CONSTRUCTION
Parcel E6

Zone M-2
6th ELECTION DISTRICT

Tax Map 47 Zoning Map 47
HOWARD CO., MARYLAND

| | |
|-----------|--------------------|
| CM DESIGN | SCALE AS INDICATED |
| DRAWN | 5 OF 10 |
| CHKD | SHEET |
| OCT. 1988 | DATE |
| JOB No | FILE No |

LEGEND

- Proposed Building Setbacks
- Existing Contour
- Proposed Contour
- Field Located Wetlands
- Existing Sanitary Line
- Proposed Sanitary Line
- Existing Storm Drainage Line
- Proposed Storm Drainage Line
- Existing Water Line
- Proposed Water Line
- Wetlands Buffer
- Proposed Fire Hydrant
- Proposed Catch Basin
- Existing Trap Line
- EXISTING DRAINAGE AREA DIVIDE
- PROPOSED DRAINAGE AREA DIVIDE

STONE OUTLET SEDIMENT TRAP #1

| | |
|-------------------------|----------------------|
| DRAINAGE AREA | 2.57 AC |
| STORAGE REQ'D | 4626 FT ³ |
| BOTTOM ELEVATION | 144.0 |
| CREST ELEVATION | 149.0 |
| CREST LENGTH | 11' |
| TOP OF EMBANKMENT ELEV. | 150.0 |
| AVG. BOTTOM DIMENSION | 29' X 24' |
| STORAGE DEPTH | 4' |
| APPROX STORAGE PROVIDED | 4736 FT ³ |
| WIDE SLOPES | 2:1 |
| CLEAN OUT ELEVATION | 146.0 |

STONE OUTLET SEDIMENT TRAP #4

| | |
|-------------------------|----------------------|
| DRAINAGE AREA | 1.93 AC |
| STORAGE REQ'D | 3402 FT ³ |
| BOTTOM ELEVATION | 137.0 |
| CREST ELEVATION | 142.0 |
| CREST LENGTH | 6' |
| TOP OF EMBANKMENT ELEV. | 143.0 |
| AVG. BOTTOM DIMENSION | 30' X 15' |
| STORAGE DEPTH | 4' |
| APPROX STORAGE PROVIDED | 3474 |
| SIDE SLOPES | 2:1 |
| CLEAN OUT ELEVATION | 139.0 |

STORM INLET SEDIMENT TRAP #2

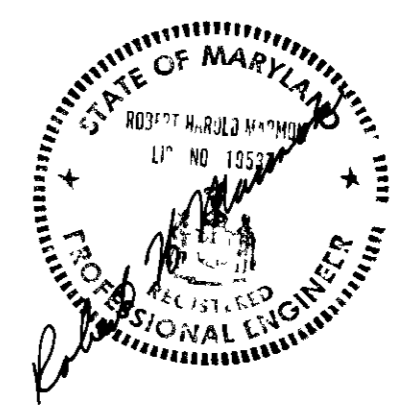
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|-------------------------|----------------------|
| DRAINAGE AREA | 1.27 AC |
| STORAGE REQ'D | 2280 FT ³ |
| BOTTOM ELEVATION | 155.78 |
| CREST ELEVATION | 156.78 |
| AVG. BOTTOM DIMENSION | 83' X 25' |
| STORAGE DEPTH | 1' |
| APPROX STORAGE PROVIDED | 2205 FT ³ |
| SIDE SLOPES | 2:1 |
| CLEAN OUT ELEVATION | 156.28 |

STONE OUTLET SEDIMENT TRAP #3

| | |
|-------------------------|----------------------|
| DRAINAGE AREA | 1.44 AC |
| STORAGE REQ'D | 2692 FT ³ |
| BOTTOM ELEVATION | 138.5 |
| CREST ELEVATION | 143.5 |
| CREST LENGTH | 6' |
| TOP OF EMBANKMENT ELEV. | 144.5 |
| AVG. BOTTOM DIMENSION | 18' X 18' |
| STORAGE DEPTH | 4' |
| APPROX STORAGE PROVIDED | 2704 FT ³ |
| SIDE SLOPES | 2:1 |
| CLEAN OUT ELEVATION | 140.5 |

- SEQUENCE OF CONSTRUCTION**
- Obtain grading permit
 - Notify the Howard County Department of Permits and Licenses Inspector 48 hours before beginning work
 - Clear and grub for sediment and erosion control measures only
 - Install stabilized construction entrance
 - Convert manhole in Parcel E-1 to an inlet and install dike along property line between Parcel E-1 and E-2
 - Install the remaining sediment and erosion control measures except for sediment trap no. 2
 - Construct storm drain pipe and structures from M-11 to M-8. Plug M-8 at the location where the 18" RCP will be connected
 - Remove part of existing 21" drain and structures as shown on the approved sediment and erosion control plan
 - Begin grading maintaining positive drainage to the sediment traps
 - Construct building foundation
 - Install all utilities except for those in existing sediment trap areas and the storm water management areas providing inlet plugging as noted on the approved sediment and erosion control plan
 - Install sediment trap no. 2
 - Final grade the site except for existing sediment trap and proposed storm water management areas
 - Install the subbase in paving areas and stabilize the remainder of the site, except for existing sediment trap and proposed storm water management areas
 - During a five day dry weather forecast, excavate the stormwater management areas, construct the release structures, install the storm drain (keeping them totally plugged), place filter cloth on the bottom and sides of the excavated areas, and fill with #2 stone. Place filter cloth on top of the gravel immediately after it is put in place to prevent sediment laden water from entering the gravel storage structures. Backfill with suitable material, install subbase and stabilize these areas. Make sure that during this operation no water or sediment enters the stormwater management areas
 - After obtaining permission from the sediment control inspector, install silt fence, remove the sediment from all the traps and refill with select compacted backfill. Remove the earth dikes. Upon removal of trap #1, install the storm drain in this area providing inlet plugging as shown on plan. Plug the one trap area and install the subbase in the paving areas and seed the remaining areas
 - Final topsoil placement
 - After the total site is stabilized, and with the permission of the sediment control inspector, remove the remaining sediment and erosion control devices.

*11A INSTALL STORM DRAIN FROM E-3 TO I-10, CONTRACTOR TO TAKE EXTREME PRECAUTIONS DURING INSTALLATION OF 36" STORM DRAIN TO I-10, INVERT ANY OFFSITE DRAINAGE FLOW AND REMOVE EX 18" RCP WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR



WP-89-21 F-80-101
F-86-104 VP-80-25

ADDRESS CHART
LOT NUMBER STREET ADDRESS

VICINITY MAP SCALE 1"=2000'

APPROVED
John Bogdan 6-15-89

APPROVED
[Signature]

APPROVED: HOWARD COUNTY OF PLANNING & ZONING
W.R.H. 6-28-89
PLANNING DIRECTOR
CHIEF DIV. OF COMMUNITY PLANNING AND DEVELOPMENT

BY THE DEVELOPER
[Signature] 5-3-89

BY THE ENGINEER
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.
Richard H. Mannon 5-2-89
SIGNATURE OF ENGINEER DATE

REVIEWED FOR HOWARD COUNTY S.C.D.
John H. Korman 6/6/89
DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Stephen R. Smith 6/6/89
DATE

3-31-89
LKS

ADDRESS CHART
SUBDIVISION NAME SECTION AREA LOT NUMBER
PLAT NO. OR BLOCK NO. ZONE TAX ZONE MAP ELEC. DIST. CENSUS TRACT
WATER CODE OTHER CODE

OWNER/DEVELOPER
RBA DEVELOPMENT COMPANY
6931 Arlington Road Suite 411
Bethesda, MD 20814
(301) 657-8899

| No. | REVISION | DATE | BY |
|-----|--|--------|-----|
| 1 | ADDED 240 TO EX 21 AND REVISED SETBACKS IN NORTH WEST CORNER | 9/6/89 | GHO |



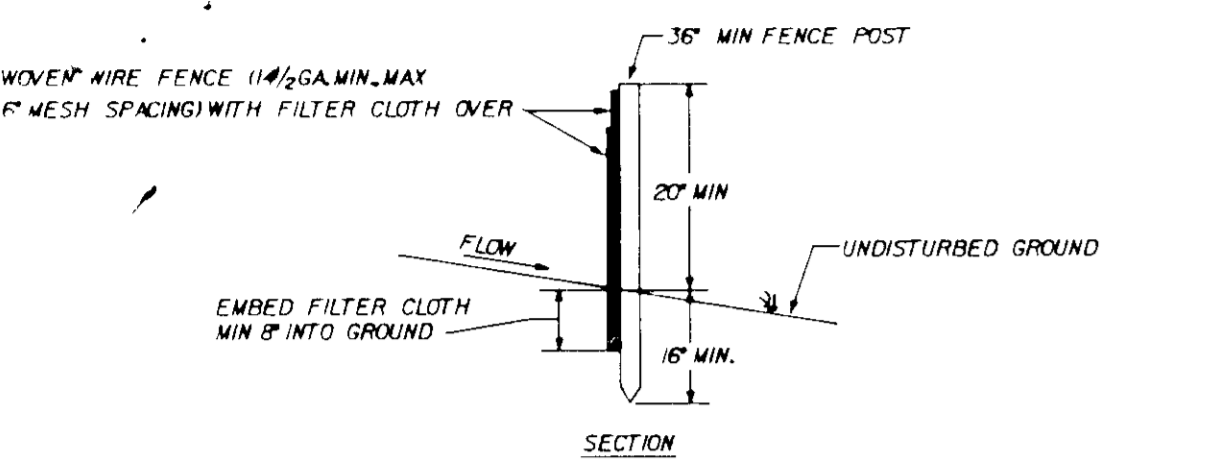
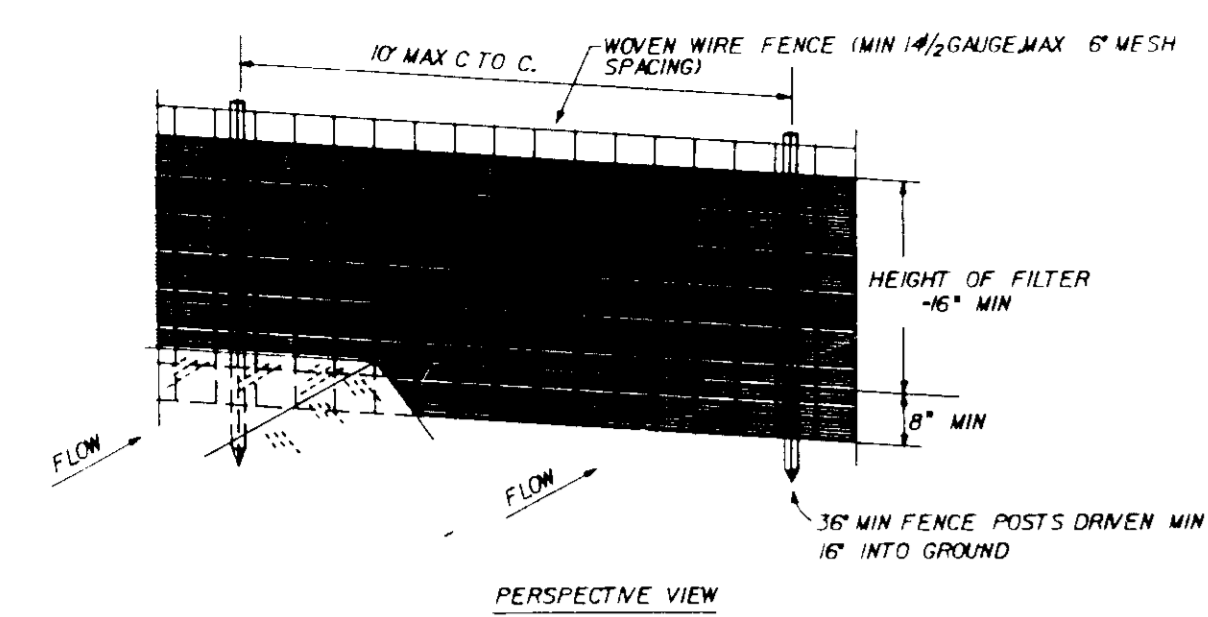
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GREENBELT MD • MANASSAS VA • MONROE MI • RALPH NC • ROCKVILLE VA

SEDIMENT CONTROL PLAN
MAIER INDUSTRIAL PARK
BUILDING CONSTRUCTION
Parcel E8
Zone M-2
6th ELECTION DISTRICT
Tax Map 47 Zoning Map 47
HOWARD CO., MARYLAND
OCT. 1988
DATE
JOB No
FILE No
JCH DESIGN
SCALE 1" = 40'
DRAWN
7 OF 10
CHECKED SHEET
B-1065-V

NOTES: Sediment Control

- A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction.
- All vegetation and structural practices are to be installed according to the provisions of this plan and are to be in conformance with 1983 Maryland standards and specifications for soil erosion and sediment control.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: A) 7 calendar days for all permanent sediment control structures, dikes, permanent slopes and all slopes greater than 3:1 B) 14 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 Howard County Design Manual, storm drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (sec. 51), 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 | 5.116 acres |
| Area disturbed | 5.930 acres |
| Area to be roofed or paved | 4.510 acres |
| Area to be vegetatively stabilized | 1.020 acres |
| Total cut | 16,041 cu. yds. |
| Total fill | 8,530 cu. yds. |
- 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 be authorized until this initial approval by the inspection agency is made.



MATERIALS

Post: steel, either T or U type, or 2" hardwood

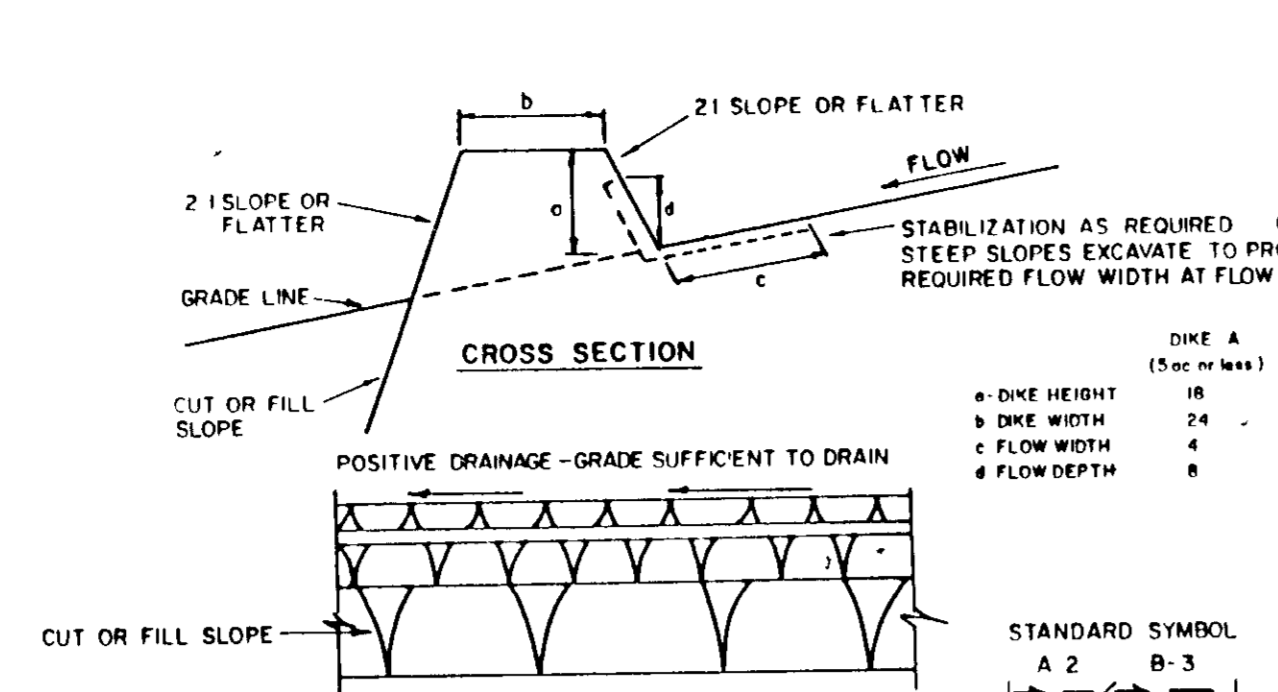
Fence: woven wire, 14 Ga. 6" max. mesh opening

Filter Cloth: Filter X, Mirafil 100X, Stabilinka T140N or approved equal

Prefabricated Unit: Geotab, Envirofence, or approved equal

- INSTALLATION**
- Woven wire fence to be fastened securely to fence posts with wire ties or staples
 - Filter cloth to fastened securely to woven wire fence with ties spaced every 24" at top and mid-section
 - When two sections of filter cloth adjoin each other they shall be overlapped by six inches and folded
 - Maintenance shall be performed as needed and material removed when "bulges" develop in the silt fence.

1 Silt Fence
NOT TO SCALE



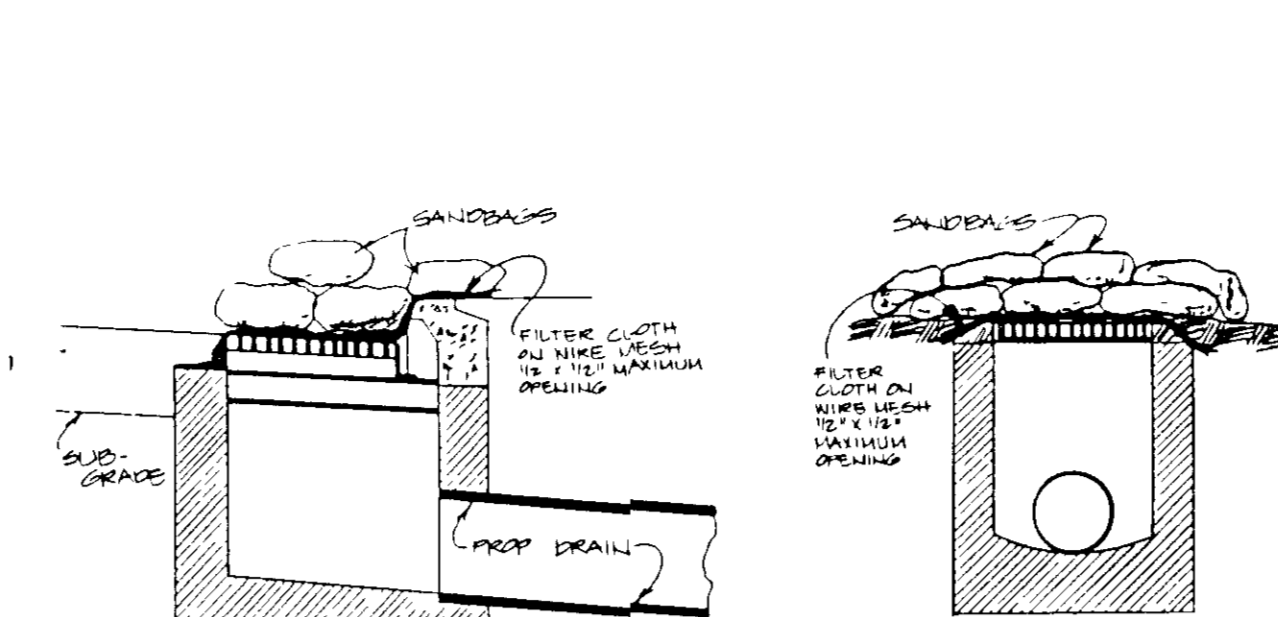
- All dikes shall be compacted by earth moving equipment.
- All dikes shall have positive drainage to an outlet.
- Top width may be wider and side slopes may be flatter, if desired, to facilitate crossing by construction traffic.
- Field location should be adjusted as needed to utilize a stabilized safe outlet.
- Earth dikes shall have an outlet that functions with a minimum of erosion. Runoff shall be conveyed to a sediment trapping device such as a sediment trap or sediment basin where either the dike channel or the drainage area above the dike are not adequately stabilized.
- Stabilization shall be (A) in accordance with standard specifications for seed and straw mulch or straw mulch if not in seeding season, (B) flow channel as per the chart below.

FLOW CHANNEL STABILIZATION

| TYPE OF TREATMENT | CHANNEL GRADE | DIKE A | DIKE B |
|-------------------|---------------|-----------------------------|------------------------------|
| 1 | 5-3.02 | Seed and straw mulch | Seed and straw mulch |
| 2 | 3-1.5.02 | Seed and straw mulch | Seed using jute, or 2" stone |
| 3 | 5.1-8.02 | Seed with jute, or 2" stone | Lined rip-rap 4-8" |
| 4 | 8.1-202 | Lined rip-rap 4-8" | Engineering design |

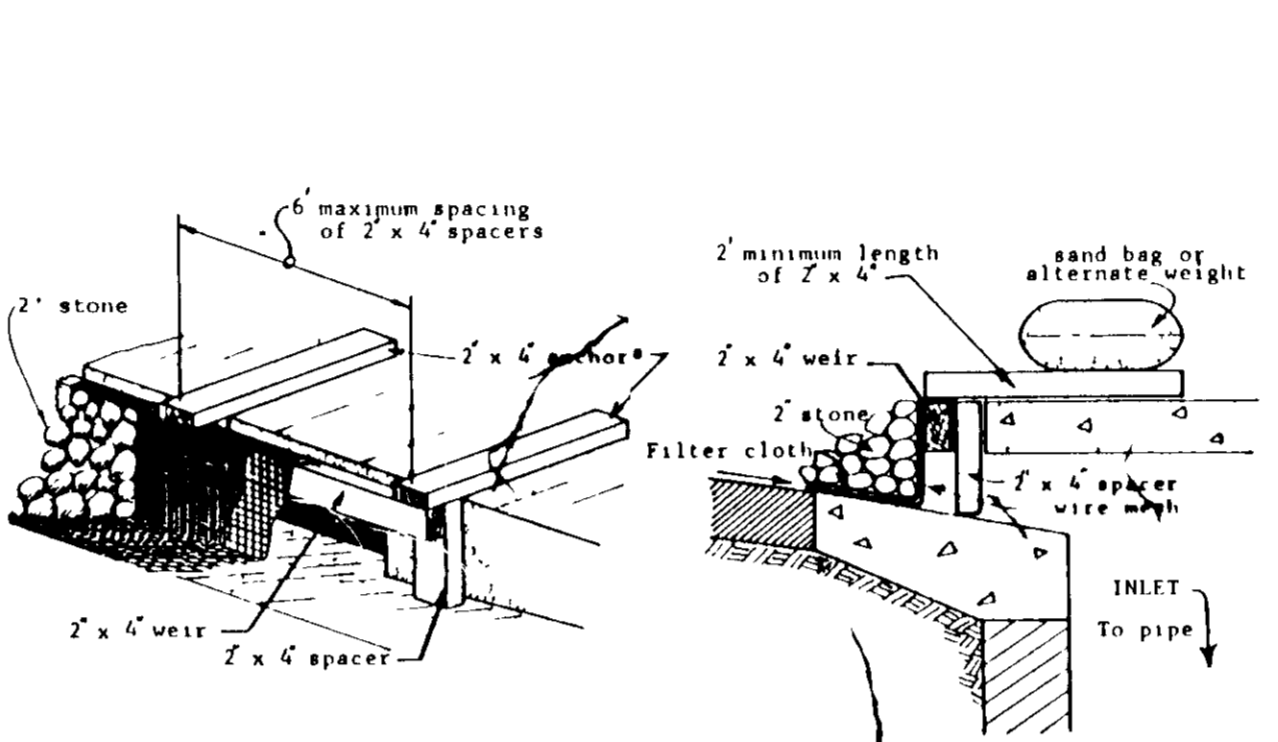
- Stone to be 2 inch stone, or recycled concrete equivalent, in a layer at least 3 inches in thickness and be pressed into the soil with construction equipment
 - Rip-rap to be 4-8 inches in a layer at least 8 inches thickness and pressed into the soil.
 - Approved equipments can be substituted for any of the above materials.
7. Periodic inspection and required maintenance must be provided after each rain event

3 Earth Dike
NOT TO SCALE

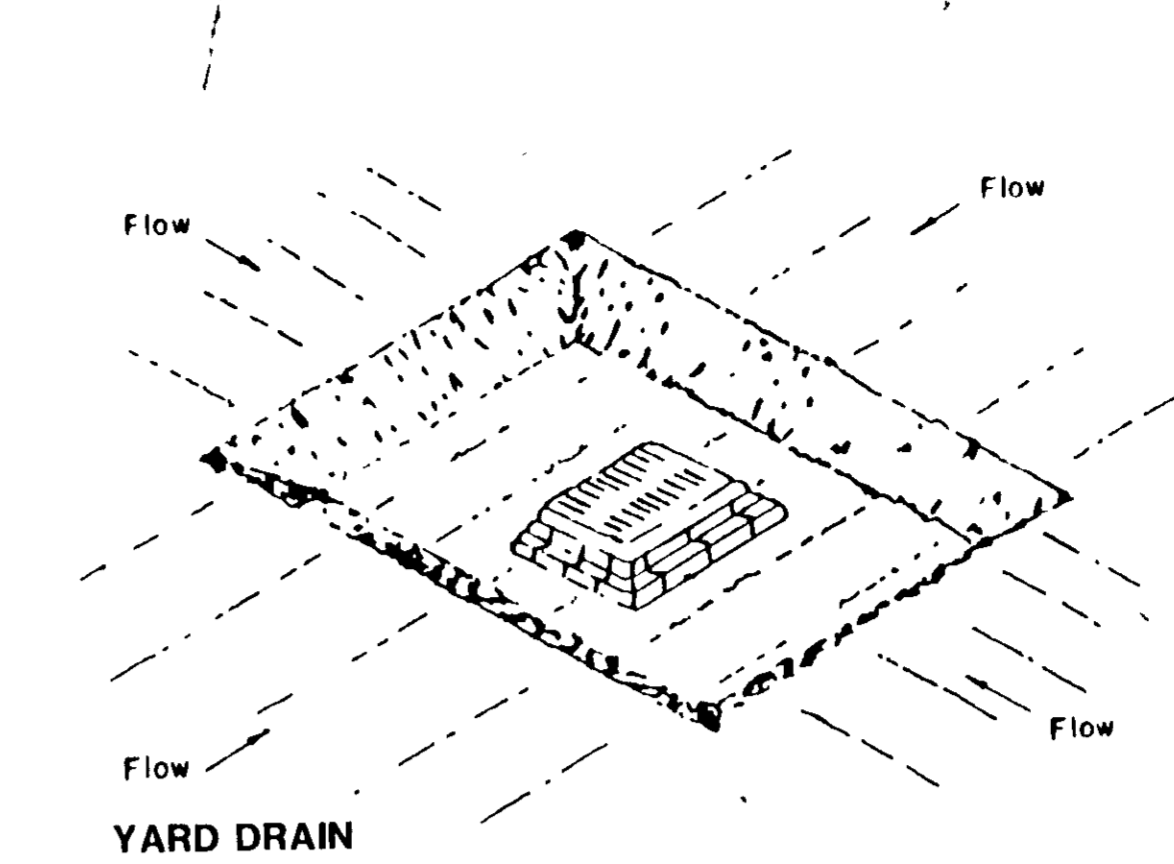


- Place wire mesh over inlet grate and throat opening, overlap 2 feet at all ends.
- Place a piece of approved filter cloth (40-85 sieve) of the same dimensions of the wire mesh over the wire mesh.
- Place sandbags over filter cloth and wire mesh. Sandbags should overlap and cover complete surface of the wire mesh.
- Inspect frequently to insure sandbags are secure and filter cloth is free of sediment. Replace filter cloth if clogged.

5 Inlet Plugging
NOT TO SCALE



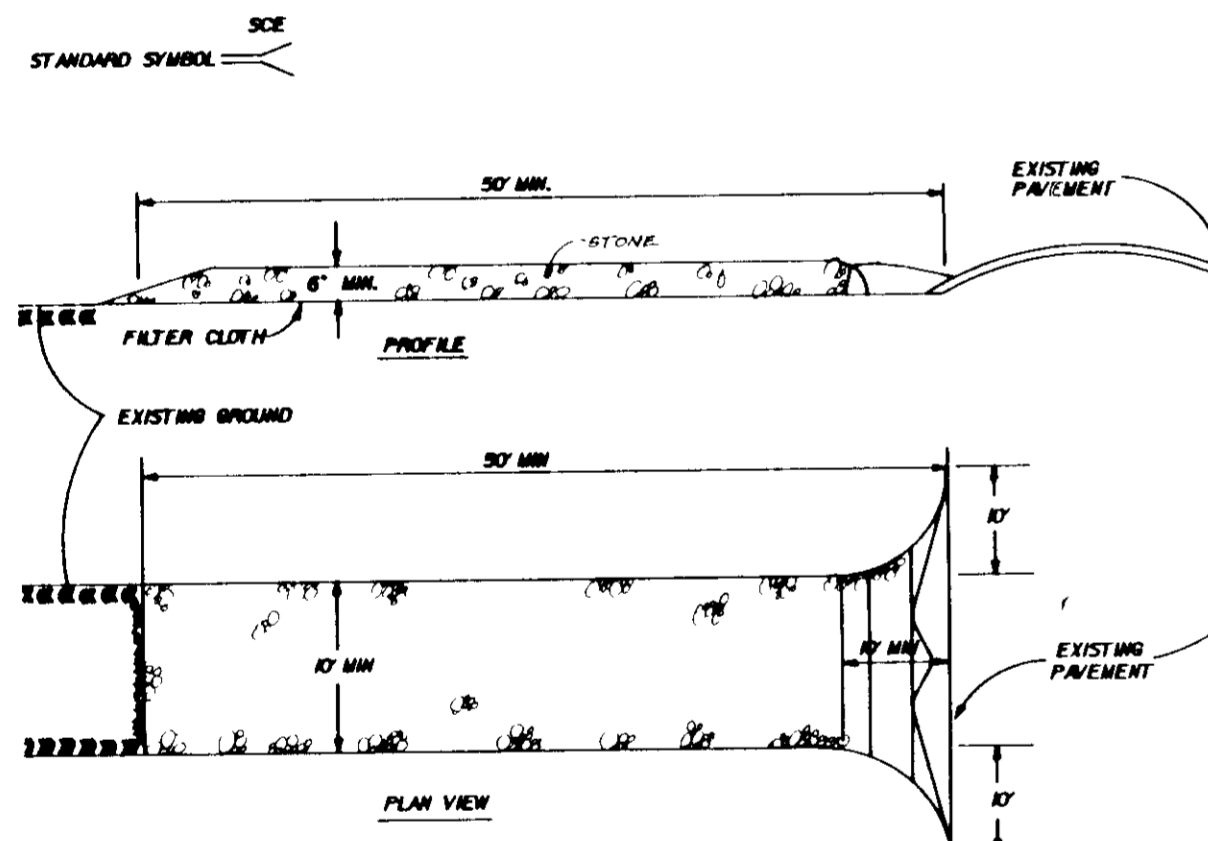
- MATERIALS**
- Wooden frame is to be constructed of 2" x 4" construction grade lumber.
 - Wire mesh must be of sufficient strength to support filter fabric, and stone for curb inlets, with water fully impounded against it.
 - Filter cloth must be of a type approved for this purpose; resistant to sunlight with a wire size 80S, 40-85, to allow sufficient passage of water and removal of sediment.
 - Stone is to be 2" in size and clean, since fines would clog the cloth.
- PROCEDURE**
- A swale, ditchline or yard inlet protection
 - Excavate completely around inlet to a depth of 18" below finish elevation.
 - Drive 2 x 4 post 1' into ground at four corners of inlet. Place nail strips between posts on ends of inlet. Assemble top portion of 2 x 4 framing over inlet. Top of frame (weir) must be 6" below edge of roadway adjacent to inlet.
 - Stretch wire mesh tightly around frame and fasten securely. Ends must meet at post.
 - Stretch filter cloth tightly over wire mesh, the cloth must extend from top of frame to 18" below inlet notch elev. Fasten securely to frame. Ends must meet at post, be overlapped and folded, then fastened down.
 - Backfill around inlet in compacted 6" layers until layer of earth is even with finish elevation on ends and top elevation on sides. If the inlet is not in a low point, construct a compacted earth dike in the ditchline below it. The top of this dike is to be at least 6" higher than the top of frame (weir).
 - This structure must be inspected frequently and the filter fabric replaced when clogged.
 - Curb Inlet Protection
 - Attach a continuous piece of wire mesh (30" min width by throat length plus 4") to the 2" x 4" weir (measuring throat length plus 2") as shown on the standard drawing.
 - Place a piece of approved filter cloth (40-85 sieve) of the same dimensions as the wire mesh over the wire mesh and securely attach to the 2" x 4" weir.
 - Securely nail the 2" x 4" weir to 9" long vertical spacers to be located between the weir and inlet face (max. 6" apart).
 - Place the assembly against the inlet throat and nail (minimum 2" lengths of 2" x 4" to the top of the weir at spacer locations. These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.
 - The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.
 - Form the wire mesh and filter cloth to the concrete gutter and against the face of curb on both sides of the inlet. Place clean 2" stone over the wire mesh and filter fabric in such a manner as to prevent water from entering the inlet under or around the filter cloth.
 - This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
 - Assure that the storm flow does not bypass inlet by installing temporary earth or asphalt dikes directing flow into inlet.



- Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
- The volume of sediment storage shall be 1800 cubic feet per acre of impervious drainage.
- The structure shall be inspected after each rain and repairs made as needed. Construction operations shall be carried out in such a manner that erosion and water pollution shall be minimized.
- The sediment trap shall be removed and the area stabilized when the constructed drainage area has been properly stabilized.
- All cut slopes shall be 1:1 or flatter.

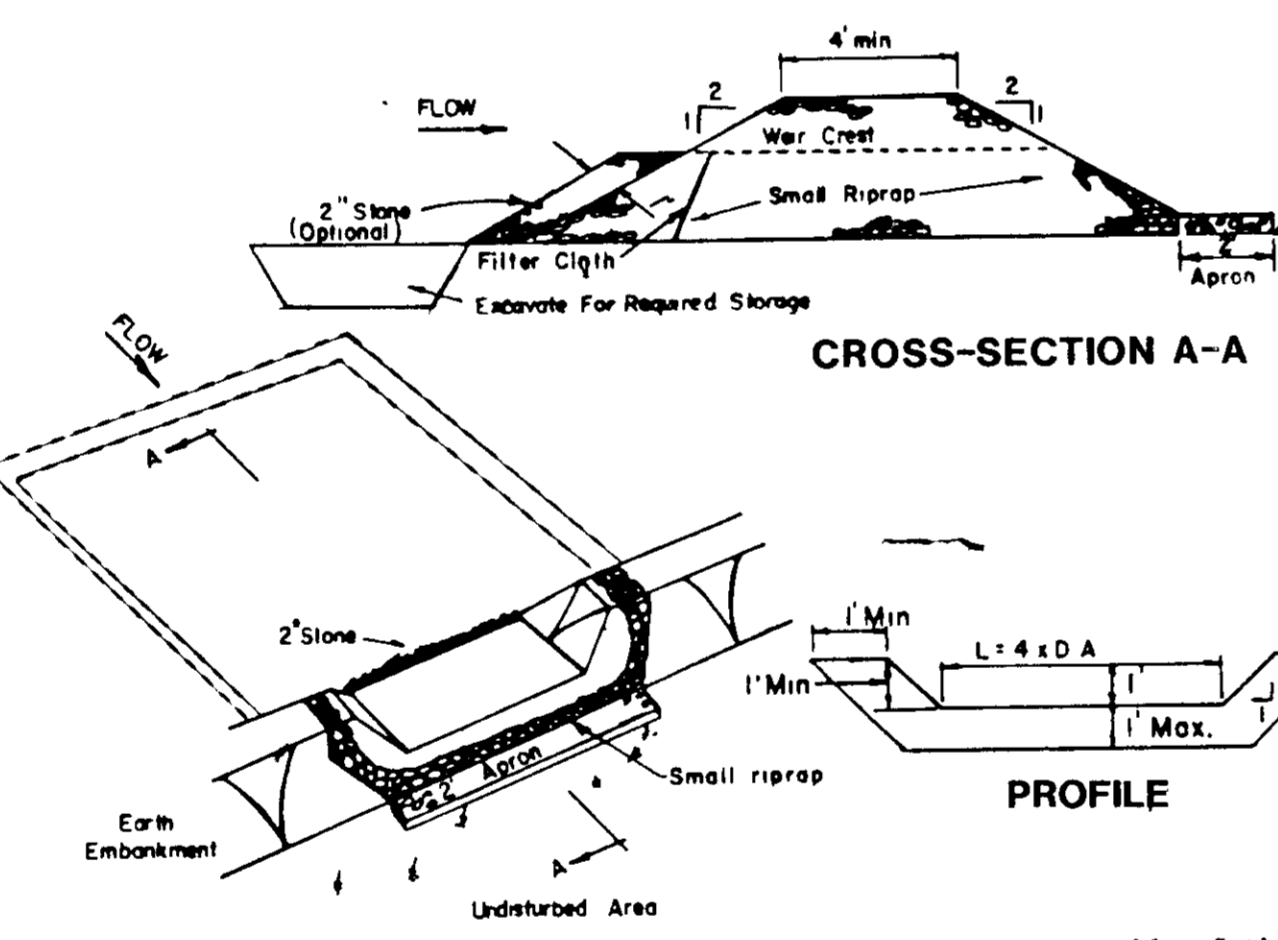
- CROSS-SECTION**
- Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
 - The volume of sediment storage shall be 1800 cubic feet per acre of impervious drainage.
 - The structure shall be inspected after each rain and repairs made as needed. Construction operations shall be carried out in such a manner that erosion and water pollution shall be minimized.
 - The sediment trap shall be removed and the area stabilized when the constructed drainage area has been properly stabilized.
 - All cut slopes shall be 1:1 or flatter.

7 Storm Inlet Sediment Trap
NOT TO SCALE



- Stone size - use 2" stone, or reclaimed or recycled concrete equivalent.
- Length - as required, but not less than 50 feet (except on a single residence lot where that minimum length would apply).
- Thickness not less than six (6) inches.
- Width - ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
- Filter cloth - will be placed over the entire area prior to placing of stone. Filter cloth will not be required on a single family residence lot.
- Surface water - all surface water flowing or diverted toward construction entrances shall be piped across the entrance.
- Maintenance - the entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-ways. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
- Washing - wheels shall be cleaned to remove sediment prior to entrance onto stabilized with stone which drains into an approved sediment trapping device.
- Periodic inspection and needed maintenance shall be provided after each rain.

2 Stabilized Construction Entrance
NOT TO SCALE



OPTION - A one foot layer of 2" stone may be placed on the upstream side of the riprap in place of the embedded filter cloth.

- CONSTRUCTION SPECIFICATIONS FOR ST-V**
- Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
 - The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
 - All cut and fill slopes shall be 2:1 or flatter.
 - The stone used in the outlet shall be small riprap 4"-8" along with a 1" thickness of 2" aggregate placed on the up-grade side on the small riprap embedded filter cloth in the riprap.
 - Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap.
 - The structure shall be inspected after each rain and repairs made as needed.
 - Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
 - The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

4 Stone Outlet Sediment Trap V
NOT TO SCALE

- MATERIALS**
- Wooden frame is to be constructed of 2" x 4" construction grade lumber.
 - Wire mesh must be of sufficient strength to support filter fabric, and stone for curb inlets, with water fully impounded against it.
 - Filter cloth must be of a type approved for this purpose; resistant to sunlight with a wire size 80S, 40-85, to allow sufficient passage of water and removal of sediment.
 - Stone is to be 2" in size and clean, since fines would clog the cloth.
- PROCEDURE**
- A swale, ditchline or yard inlet protection
 - Excavate completely around inlet to a depth of 18" below finish elevation.
 - Drive 2 x 4 post 1' into ground at four corners of inlet. Place nail strips between posts on ends of inlet. Assemble top portion of 2 x 4 framing over inlet. Top of frame (weir) must be 6" below edge of roadway adjacent to inlet.
 - Stretch wire mesh tightly around frame and fasten securely. Ends must meet at post.
 - Stretch filter cloth tightly over wire mesh, the cloth must extend from top of frame to 18" below inlet notch elev. Fasten securely to frame. Ends must meet at post, be overlapped and folded, then fastened down.
 - Backfill around inlet in compacted 6" layers until layer of earth is even with finish elevation on ends and top elevation on sides. If the inlet is not in a low point, construct a compacted earth dike in the ditchline below it. The top of this dike is to be at least 6" higher than the top of frame (weir).
 - This structure must be inspected frequently and the filter fabric replaced when clogged.
 - Curb Inlet Protection
 - Attach a continuous piece of wire mesh (30" min width by throat length plus 4") to the 2" x 4" weir (measuring throat length plus 2") as shown on the standard drawing.
 - Place a piece of approved filter cloth (40-85 sieve) of the same dimensions as the wire mesh over the wire mesh and securely attach to the 2" x 4" weir.
 - Securely nail the 2" x 4" weir to 9" long vertical spacers to be located between the weir and inlet face (max. 6" apart).
 - Place the assembly against the inlet throat and nail (minimum 2" lengths of 2" x 4" to the top of the weir at spacer locations. These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.
 - The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.
 - Form the wire mesh and filter cloth to the concrete gutter and against the face of curb on both sides of the inlet. Place clean 2" stone over the wire mesh and filter fabric in such a manner as to prevent water from entering the inlet under or around the filter cloth.
 - This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
 - Assure that the storm flow does not bypass inlet by installing temporary earth or asphalt dikes directing flow into inlet.

6 Curb Inlet Protection
NOT TO SCALE

Permanent Seeding

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed. Seedbed preparation - loosen upper three inches of soil by raking, discing or other acceptable means before seeding.

Soil amendments: in lieu of soil test recommendations, use one of the following schedules:

- Preferred - apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/100 sq. ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/100 sq. ft.) before seeding. Harrow or disc into upper three inches of soil.
- Acceptable - apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 per acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the periods March 1 thru April 30 and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre of weeping lovegrass. During the period of October 16 thru February 28, protect site by Option 1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring; Option 2) 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/100 sq ft) 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 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring. Maintenance: inspect all seeded areas and make needed repairs, replacements and reseedings.

Temporary Seeding

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

Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding.

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

Seeding: For the period March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushel per acre of annual ryegrass (3.2 lbs/1000 sq. ft.). For the period May 1 thru August 14, seed with 4 lbs per acre of weeping lovegrass (0.7 lbs/1000 sq. ft.) For the period November 16 thru February 28, protect site by apply 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq ft) of emulsified asphalt.

Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
APPROVED FOR Public Water, Public Sewerage, Storm Drainage Systems & Public Roads

Director: *[Signature]* Date: 6-23-89

Chief, Bureau of Engineering

HOWARD COUNTY HEALTH DEPARTMENT
APPROVED FOR Public Water and Public Sewerage Systems

County Health Officer: *[Signature]* Date: 6-15-89

HOWARD COUNTY OFFICE OF PLANNING AND ZONING
APPROVED

Planning Director: *[Signature]* Date: 6-28-89

Chief, Division of Community Planning & Land Development: *[Signature]* Date: 6/15/89

DEVELOPER: I/we certify that all development and construction will be done according to this plan and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the control of sediment and erosion before beginning the project.

Signature of Developer: *[Signature]* Date: 5-3-89

ENGINEER: 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 County Soil Conservation District.

Signature of Engineer: *[Signature]* Date: 5-2-89

U.S. SOIL CONSERVATION SERVICE: This plan has been reviewed for the Howard Soil Conservation District and all technical requirements.

Signature: *[Signature]* Date: 6/6/89

HOWARD COUNTY SOIL CONSERVATION DISTRICT: This development plan is approved for soil erosion and sediment control.

Signature: *[Signature]* Date: 4/18/89

OWNER/DEVELOPER

RBA DEVELOPMENT COMPANY

6931 Arlington Road Suite 411
Bethesda, MD 20814
(301) 657-8899

| No | REVISION | DATE | BY |
|----|----------|------|----|
| | | | |
| | | | |
| | | | |
| | | | |

ENGINEERS • ARCHITECTS • PLANNERS • SCIENTISTS • SURVEYORS • PHOTOGRAMMETRISTS

GREENHORNE & O'MARA, INC.

113 WEST ROAD, SUITE 208, BALTIMORE, MARYLAND 21204
(301) 296-4100

ANNAPOLIS MD • ATLANTA GA • AURORA CO • CUIPER VA • DULUTH GA • EXPORT PA • FAIRFAX VA • GREENBELT MD
LEESBURG VA • MANASSAS VA • ORLANDO FL • RALEIGH NC • ROCKVILLE MD • TAMPA FL • WEST PALM BEACH FL

SEDIMENT CONTROL: Details & Specs

MAIER INDUSTRIAL PARK
BUILDING CONSTRUCTION
Parcel E6

JH DESIGN SCALE AS INDICATED

98 DRAWN **8 OF 10**

FRM CHECKED SHEET

OCT., 1988

DATE JOB No. FILE No.

Zone M-2
6th ELECTION DISTRICT

Tax Map 47 Zoning Map 47
HOWARD CO., MARYLAND

SDP-89-81

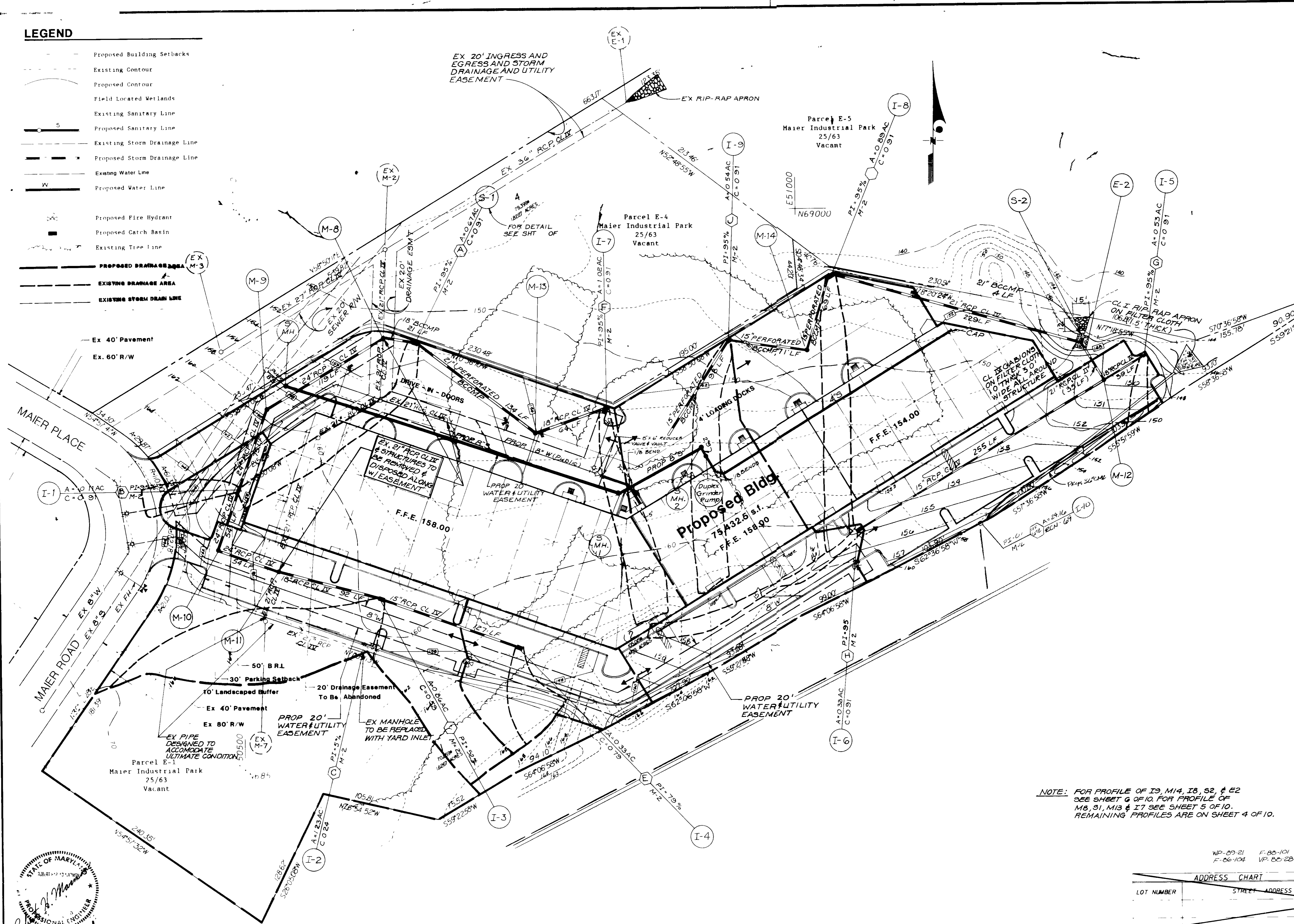
LEGEND

- Proposed Building Setbacks
- Existing Contour
- Proposed Contour
- Field Located Wetlands
- Existing Sanitary Line
- Proposed Sanitary Line
- Existing Storm Drainage Line
- Proposed Storm Drainage Line
- Existing Water Line
- Proposed Water Line
- Proposed Fire Hydrant
- Proposed Catch Basin
- Existing Tree Line

- PROPOSED DRAINAGE AREA
- EXISTING DRAINAGE AREA
- EXISTING STORM DRAIN LINE

- Ex 40' Pavement
- Ex 60' R/W

EX 20' INGRESS AND EGRESS AND STORM DRAINAGE AND UTILITY EASEMENT



VICINITY MAP

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

John Zign 6-11-89
COUNTY HEALTH OFFICER DATE

APPROVED: FOR PUBLIC WATER PUBLIC SEWERAGE STORM DRAINAGE SYSTEMS & PUBLIC ROADS
HOWARD CO. DEPT. OF PUBLIC WORKS

John Zign 6-13-89
DIRECTOR DATE
CHIEF, BUREAU OF ENGINEERING

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING

John Zign 6-22-89
PLANNING DIRECTOR DATE
John Zign 6/22/89
CHIEF, DIV. OF COMMUNITY PLANNING & LAND DEVELOPMENT

BY THE DEVELOPER:
I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT MANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.
I ALSO AUTHORIZE THE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

BY THE ENGINEER:
I CERTIFY THAT THIS PLAN FOR EROSION CONTROL IS BASED ON MY PERSONAL KNOWLEDGE OF THE SITE AND THE SOILS REPORT BY HOWARD SOIL CONSERVATION DISTRICT.

John M. Williams 6/4/89
HOWARD COUNTY ENGINEER

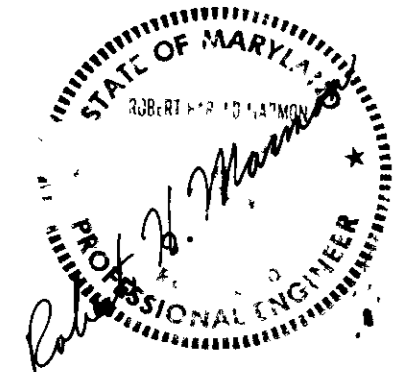
John M. Williams 4/4/89
HOWARD COUNTY ENGINEER

3-31-89
LKS

NOTE: FOR PROFILE OF I3, M14, I8, S2, & E2 SEE SHEET 6 OF 10. FOR PROFILE OF M8, S1, M13 & T7 SEE SHEET 5 OF 10. REMAINING PROFILES ARE ON SHEET 4 OF 10.

WP-09-21 F-80-101
F-06-104 VP-00-28

| | | | | | |
|---------------|----------------|-----------------------------------|--------------------------|------------|--|
| ADDRESS CHART | | SUBDIVISION NAME | | SECT./AREA | |
| LOT NUMBER | STREET ADDRESS | PLAT NO., OR L.P. BLOCK NO., ZONE | TAX/ZONE MAP ELEC. DIST. | CENSUS TR. | |
| WATER CODE | | SEWER CODE | | | |



OWNER/DEVELOPER
RBA DEVELOPMENT COMPANY
6931 Arlington Road Suite 411
Bethesda, MD 20814
(301) 657-8899

| No. | REVISION | DATE | BY |
|-----|---|--------|-----|
| 1 | REVISED PARKING LOT DIMENSIONS & SOUTHWEST CORNER | 7/4/89 | GFO |



GREENHORNE & O'MARA, INC.
113 WEST ROAD, SUITE 208, BALTIMORE, MARYLAND 21204
(301) 296-4100
ANNAPOLIS MD • ATLANTA GA • AURORA CO • CULPEPER VA • EXPORT PA • FAIRFAX VA
GREENBELT MD • MANASSAS VA • MONROE MI • RALEIGH NC • ROCKVILLE MD • TAMPA FL

DRAINAGE AREA MAP
MAIER INDUSTRIAL PARK
BUILDING CONSTRUCTION
Parcel E5
Zone M-2
6th ELECTION DISTRICT

| | | |
|-------------|----------|----------------|
| MFF DESIGN | SCALE | 9 OF 10 |
| KRM DRAWN | | |
| RHM CHECKED | SHEET | |
| DATE | FILE No. | |

DATE: OCT. 1988
JOB No. B-1065-V
FILE No. SDP-89-81

