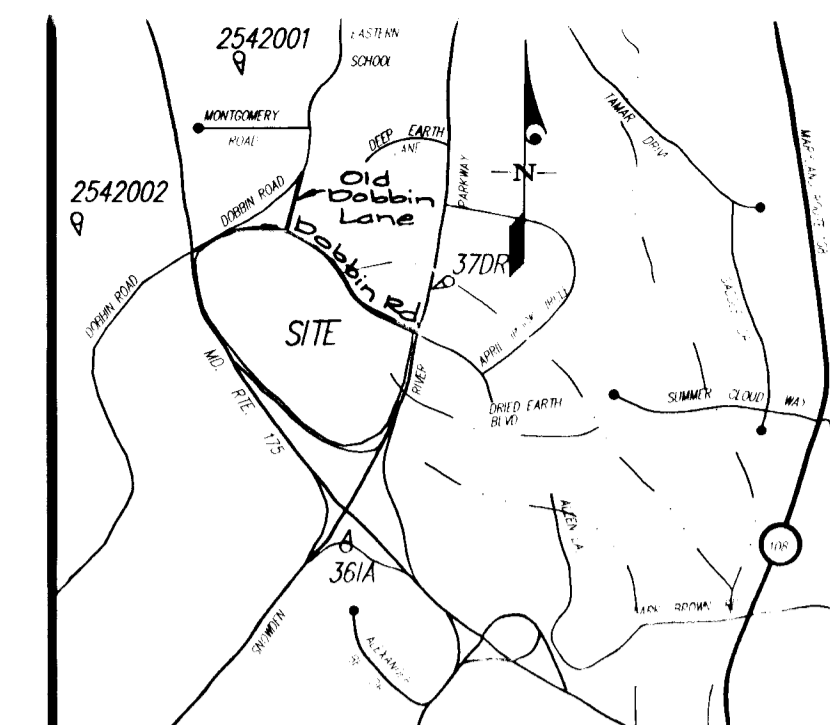


ROUTE 175 COMMERCIAL



VICINITY MAP
SCALE: 1"=2000'

CONSTRUCTION PLAN FOR Dobbin Road & Old Dobbin Lane

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/BUREAU OF CONSTRUCTION INSPECTION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST (5) FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THE PLANS.

| | |
|-----------------------------------|---------------------|
| MISS UTILITY | 1-800-257-7777 |
| BELL ATLANTIC COMPANY | 725-9976 |
| HOWARD COUNTY BUREAU OF UTILITIES | 313-4900 |
| AT&T CABLE LOCATION DIVISION | 393-3553 |
| BALTIMORE GAS & ELECTRIC CO. | 850-4620 & 787-9068 |
| STATE HIGHWAY ADMINISTRATION | 531-5533 |
- PROJECT BACKGROUND:

| | | | |
|------------------------------|--|------------|------------------|
| LOCATION: | TAX MAP 36 | PARCEL: 50 | ZONING: NEW TOWN |
| TOTAL TRACT AREA: | 71.83 AC | | |
| SECTION: 1 | AREA: 1 | | |
| NUMBER OF PROPOSED LOTS: | 3 | | |
| APPROVED AND DPZ REFERENCE#: | SP 95-94; FDP-95-226 WP 95-94; FDP 220-A-1 | | |
- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- TOPOGRAPHY SHOWN IS AT TWO FOOT CONTOUR INTERVALS AND WAS DETERMINED BY MAPS, INC. THE SURVEY WAS DONE USING AERIAL PHOTOGRAPHY.
- HORIZONTAL AND VERTICAL CONTROLS WERE ESTABLISHED USING HOWARD COUNTY CONTROL POINTS 37 DR AND 36 1A.
- LIGHT POLES AND FIXTURES FOR STREET LIGHTS SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY DESIGN MANUAL, VOLUME III, ROADS AND BRIDGES.
- WATER AND SEWER FOR THIS PROJECT IS PUBLIC AND WILL BE CONSTRUCTED UNDER CONTRACT NUMBER 24-3463-D. THE SYSTEM IS WITHIN THE METROPOLITAN DRAINAGE AREA.
- STORMWATER MANAGEMENT PROVIDED UNDER THESE PLANS.
- THE FLOODPLAIN STUDY WAS PREPARED BY CLARK FINEFROCK & SACKET, INC. IN SEPTEMBER OF 1994 AND APPROVED AS PART OF F-95-25.
- INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM BEST AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF THE MAINS BY DIGGING TEST PITS BY HAND AT ALL UTILITY CROSSINGS WELL IN ADVANCE OF CONSTRUCTION. ANY DISCREPANCIES MUST BE COMMUNICATED TO THE ENGINEER AT ONCE.
- ALL PIPE ELEVATIONS SHOWN ARE INVERTS.
- WP 95-94 WAS GRANTED ON JUNE 7, 1994 PERMITTING GRADING OR REMOVAL OF VEGETATIVE COVER WITHIN THE 25' WETLAND BUFFER AND 50' STREAM BUFFER (SECTIONS 16.116(a)(1) AND 16.116(a)(2)(i)).
- A PORTION OF THIS PLAN IS THE SUBJECT OF JURISDICTIONAL DETERMINATION OF WETLANDS AND PERMIT APPLICATIONS AS FOLLOWS:

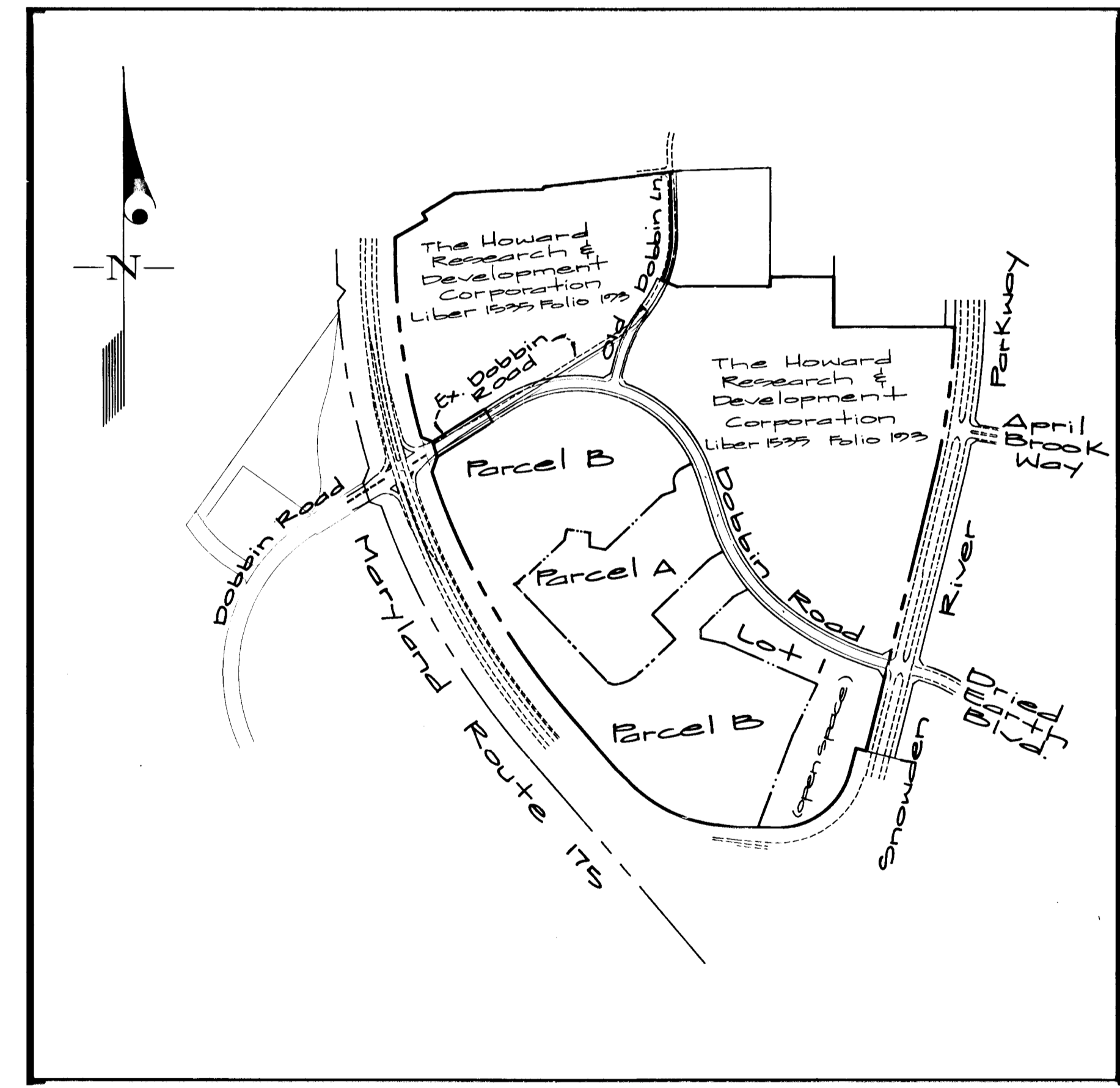
| |
|-------------------------|
| A: #95-NT-0531199567107 |
| B: |
- Provide temporary brick bulkheads for all storm drain stubs.

Legend

- Exist. Street Light
- Prop. Street Light
- Prop. Top of Curb Elevation
- Exist. Water Main
- Exist. Sewer Main
- Exist. Storm Drain
- Exist. Curb/Curb & Outer
- Exist. Paving
- Exist. Paving to be Removed
- Prop. Paving
- Natural Contour
- Exist. Contour
- Exist. Treeline
- Prop. Treeline
- Limit of Wetlands
- Limit of Wetlands/Stream Buffer
- Stream Buffer
- Wetland Buffer
- Proposed Contour

- #### Benchmark Description
- Station 2542001 (Concrete Monument)
Elev. 420.971 (For Vertical Control Only)
Station is Location on B.G.&E. Transmission Lines 100± S.W. of Dobbin Road
- #### Benchmark Description
- Station 2542002 (Concrete Monument)
Elev. 302.698 (For Vertical Control Only)
Station is Located 1000± West of Rte. 175 on Transmission Line @ G.E. Tower 17-E.
- #### Benchmark Description
- Station 37 DR (1/2" Rebar)
Station is Located 0.45± miles North of Rte. 175 and 40± East of the East curb of Snowden River Pkwy.
- #### Benchmark Description
- Station 36 1A (Concrete Monument)
Station is Located @ the southeast corner of the intersection of Snowden River Parkway and Rte. 175 3± From curb and 5.7± From guardrail end

- #### Sheet Index
- Cover Sheet
 - Maintenance of Traffic Plan.
 - Maintenance of Traffic Plan.
 - Dobbin Road Plan - Station 79+74.50 to 87+96.76
 - Dobbin Road Plan - Station 87+96.76 to 97+47.74
 - Dobbin Road Plan - Station 97+47.74 to 106+39.50
 - Dobbin Road Plan - Station 106+39.50 to 111+02.58
 - Old Dobbin Lane - Station 0+00 to 0+12.50
 - Road Plan Details and Typical Sections
 - Composite Grading & Sediment Control Plan.
 - Grading Plan - Pond No. 1 West
 - Grading Plan - Pond No. 1 East
 - Grading Plan - Pond No. 2
 - Grading Plan - Pond No's 3 and 4
 - Grading Plan - Adjacent to Park and Ride
 - Grading Plan - Stockpile/Berms
 - Stormwater Management Facilities Land 2 Profiles and Details.
 - Stormwater Management Facilities Pond 4 Profiles and Details.
 - Stormwater Management Facilities Release Structure Details
 - Stormwater Management Specifications & Details
 - Soil Boring Logs & Stormwater Management Details
 - Stormwater Management Planting Plans, Notes, and Schedules
 - Stormwater Management Planting Plans, Notes, and Schedule
 - Storm Drain Profiles - Pond No. 1
 - Storm Drain Profiles - Pond No. 2
 - Storm Drain Profiles - Pond No. 3
 - Storm Drain Profiles - Pond No. 4
 - Storm Drain Profiles - Miscellaneous
 - Sediment Control - Pond No. 1 West
 - Sediment Control - Pond No. 1 East
 - Sediment Control - Pond No. 2
 - Sediment Control - Ponds 3 and 4
 - Sediment Control - Adjacent to Park and Ride
 - Sediment Control - Stockpile/Berms
 - Sediment Control Details
 - Striping and Signage Plan
 - Striping and Signage Plan



KEY MAP
SCALE: 1" = 600'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 2-6-96

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Jim Summerville 2/13/96
Mike Damann 2/19/96

AS-BUILT

Clark

Cliff Sanderson
Professional Engineer
SHANBERGER & LANE
8726 TOWN & COUNTRY BLVD.
SUITE 104
ELICOTT CITY, MARYLAND 21043

1787

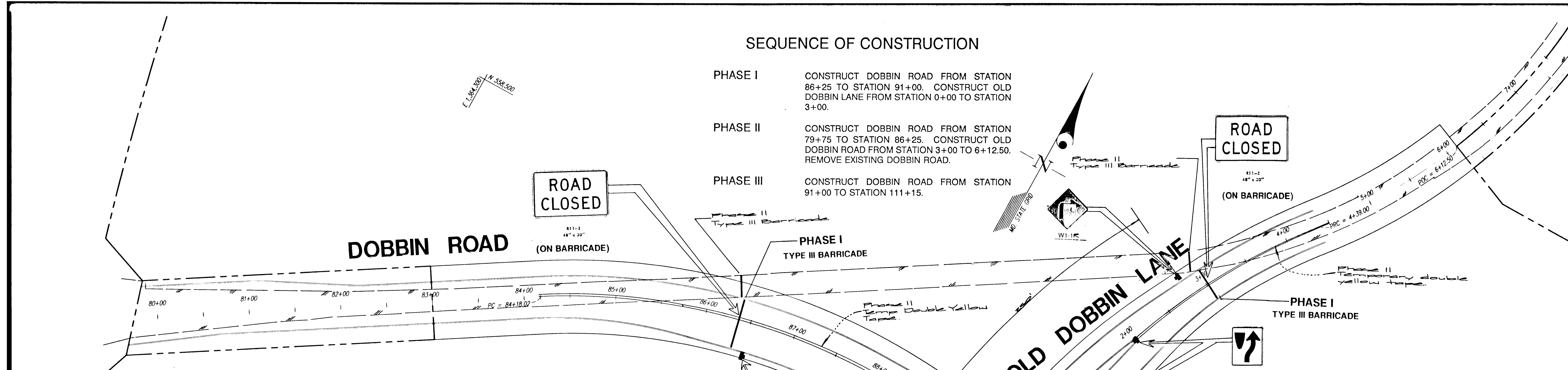
| | | | | | | | | |
|---|------|------|--------|--|--|-------------------|-----------------------|-----------------------------|
| GW GUTSCHICK LITTLE & WEBER, P.A. CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866 TEL: (301) 421-4024 NO. VA: (301) 989-2524 BAL: (410) 880-1220 FAX: (301) 421-4186 | DATE | BY | APP'R. | PREPARED FOR: THE HOWARD RESEARCH & DEVELOPMENT CORP. THE ROUSE BUILDING LITTLE PATUXENT PARKWAY COLUMBIA, MD. 21044 (410) 992-6027 | Cover Sheet Route 175 Commercial Section 1 Area 1 Phase 220 | SCALE 1"=50' | ZONING TOWN CENTER | G. L. W. FILE No. 95-003 |
| | DES. | DRN. | CHK. | 16th Election District Howard County, Maryland | DATE Sept, 1995 | TAX MAP No. 36 | SHEET 1 OF 37 | |

SEQUENCE OF CONSTRUCTION

PHASE I CONSTRUCT DOBBIN ROAD FROM STATION 86+25 TO STATION 91+00. CONSTRUCT OLD DOBBIN LANE FROM STATION 0+00 TO STATION 3+00.

PHASE II CONSTRUCT DOBBIN ROAD FROM STATION 79+75 TO STATION 86+25. CONSTRUCT OLD DOBBIN ROAD FROM STATION 3+00 TO 6+12.50. REMOVE EXISTING DOBBIN ROAD.

PHASE III CONSTRUCT DOBBIN ROAD FROM STATION 91+00 TO STATION 111+15.



TWO LANES, TWO-WAY
MULTI-LANE DIVIDED UNCONTROLLED CONVENTIONAL EXPRESSWAY/FREEWAY

- Flashing warning lights and/or flags may be used to call attention to early warning signs.
- Warning lights may be used to mark channelizing devices as needed.
- Channelizing devices are to be extended to a point where they are visible to approaching traffic. A full lane closure on two-lane, two-way roadways shall always be provided in advance of curves.
- Laser formula: $L = \frac{P}{S}$ for curves greater than (3) 40 mph for curves equal to or less than (3) 40 mph
Where: L = minimum length of taper
P = numerical value of vehicle speed
S = width of offset
- Maximum spacing between channelizing devices:
1. Taper = approximately equal to the speed limit.
2. Taper = twice the above taper value.
- Flood lights should be provided to mark flagger stations at night.
- Flaggers are not able to see each other, two-way radio communications shall be used.
- If inside work area is visible from one station, a single flagger may be used.
- Traffic markings no longer applicable shall be removed or obliterated as soon as practicable. Temporary markings shall be used as necessary.

Alternate traffic control plans may be prepared to the SMA District Office for approval in accordance with section 21-22 of the "2000" Standard Specifications for Construction and Materials, January 1982 and any revisions thereto.

For temporary traffic operations, a minimum number of traffic control devices (TCD's) may be used. This generally will consist of one sign per direction, flashing lights on the vehicle, a minimum number of channelizing devices, and flags or high level devices. Additional TCD's such as arrow panels, work lighting, etc., will be placed as soon as possible to present an array of a view which is consistent with the standard work zone traffic control devices.

(continued)

APPROVED: [Signature] [Title] MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION WORK ZONE TRAFFIC CONTROL, TYPICAL

GENERAL NOTES
STANDARD NO. MD-104.02

IMPORTANT - THE DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES

An arrow panel in the flashing arrow mode shall be used anytime there is a lane closure on a multi-lane highway. Arrow panels shall not be used along the lane closure roadway unless they display "ROAD" or "ROAD CLOSED" arrow.

Vehicles should not occupy or be stopped in a lane beyond a horizontal curve of a vertical curve (hill). Increase vehicle stopping area to be equal to the time to clear the curve as shown in the notes. The bottom of the signs mounted on portable supports shall be not less than one foot above the pavement elevation. All signs shall be installed in such a manner as to provide advance visibility of those signs and all other warning signs on the highway to the driver.

Variable signs should be used (shown in figure 21-22 of the notes). The bottom of the signs mounted on portable supports shall be not less than one foot above the pavement elevation. All signs shall be installed in such a manner as to provide advance visibility of those signs and all other warning signs on the highway to the driver.

In urban areas along streets where the prevailing speed is 25 MPH or less, use above minimum taper where the average daily traffic (ADT) is less than 1000 vehicles, the minimum size of 16" x 16" may be used.

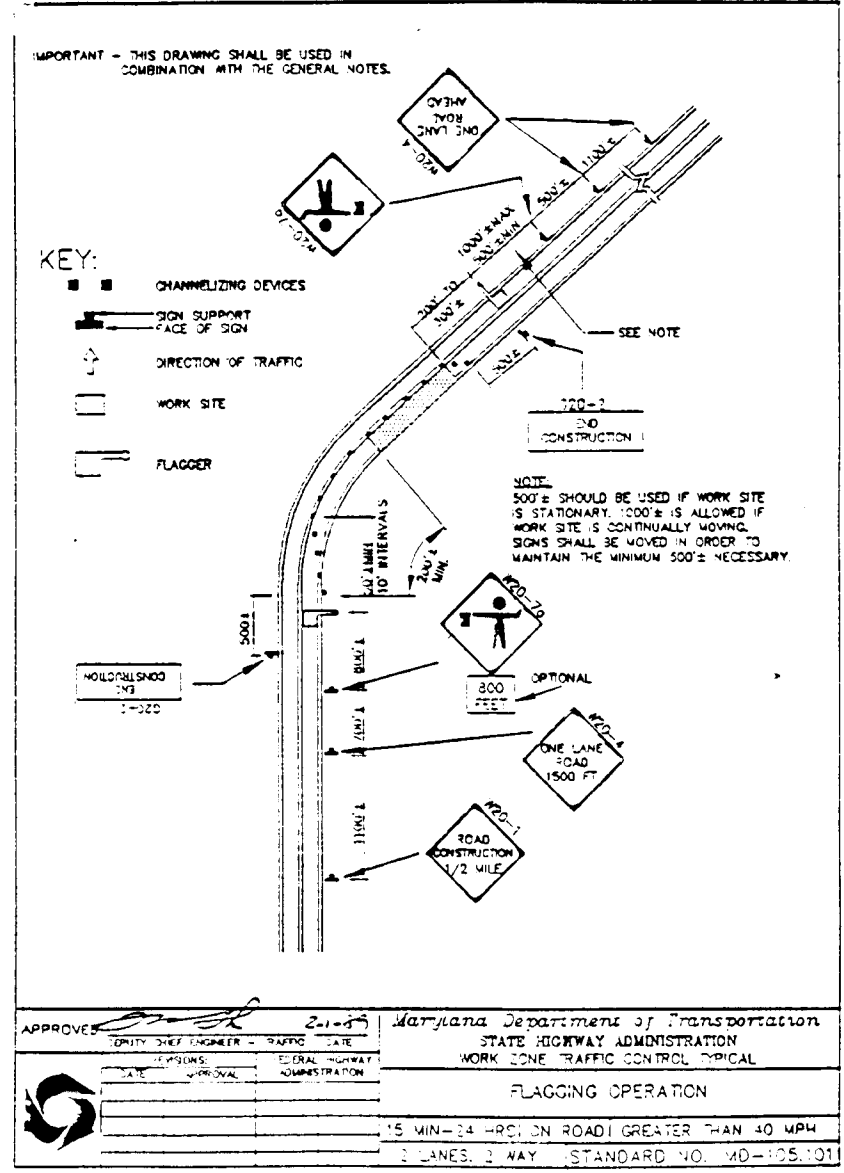
For utility operations, advance warning signs may utilize the word "AHEAD" in lieu of distance up to and including 1000 feet. If greater distances, such as 1/2 mile or 1 mile; however, the correct distance value is to be used on such warning signs. Also the "TRAFFIC WORK AHEAD" sign may be used in lieu of road construction, road work, or restricted work signs only.

No work operations which interfere with the flow of traffic may take place during the peak hours of 8:00 a.m. to 5:00 p.m., 7 days a week, unless written approval is received from the SMA District Engineer.

All signs, channelizing devices, etc., shall be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

APPROVED: [Signature] [Title] MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION WORK ZONE TRAFFIC CONTROL, TYPICAL

GENERAL NOTES
STANDARD NO. MD-104.02



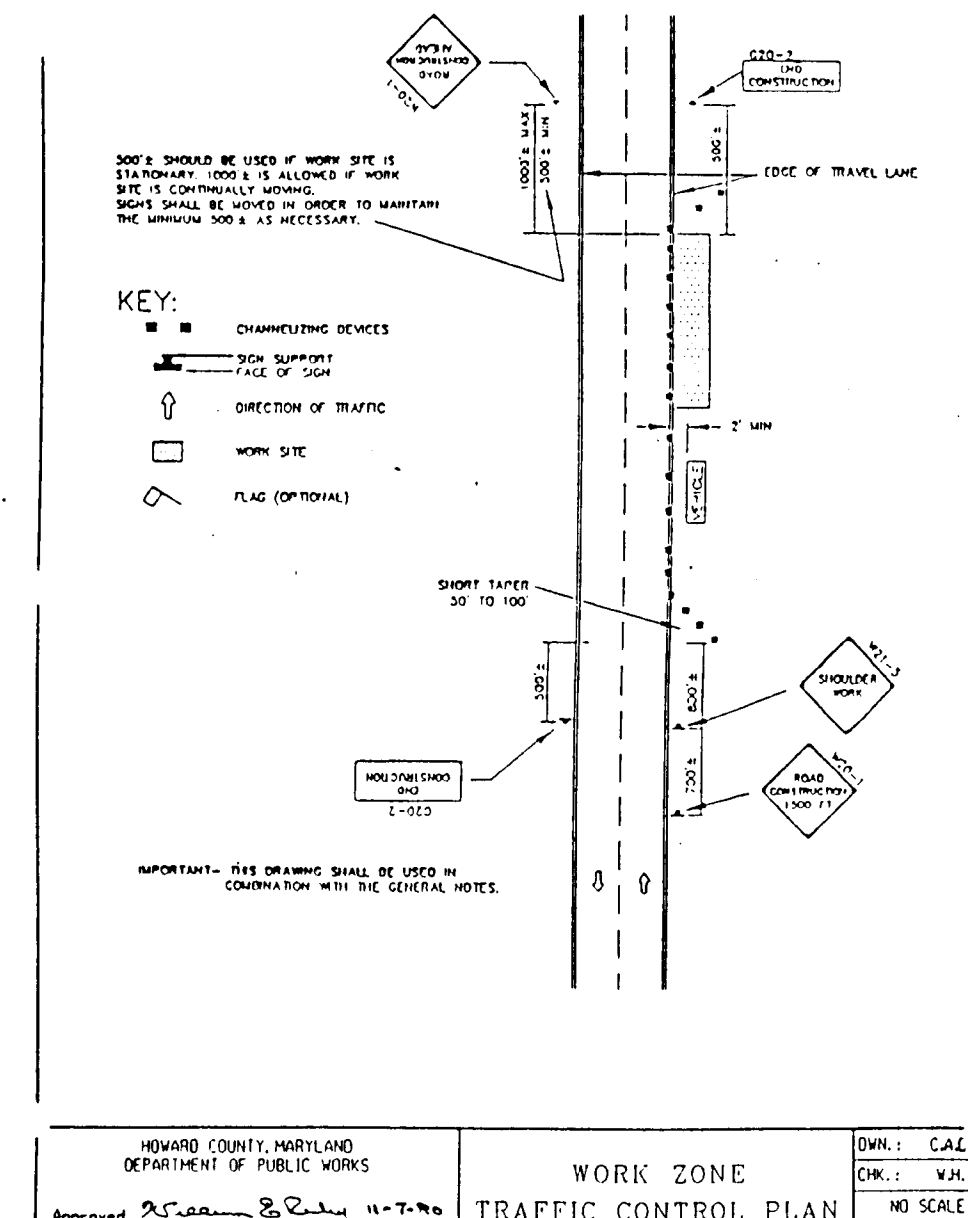
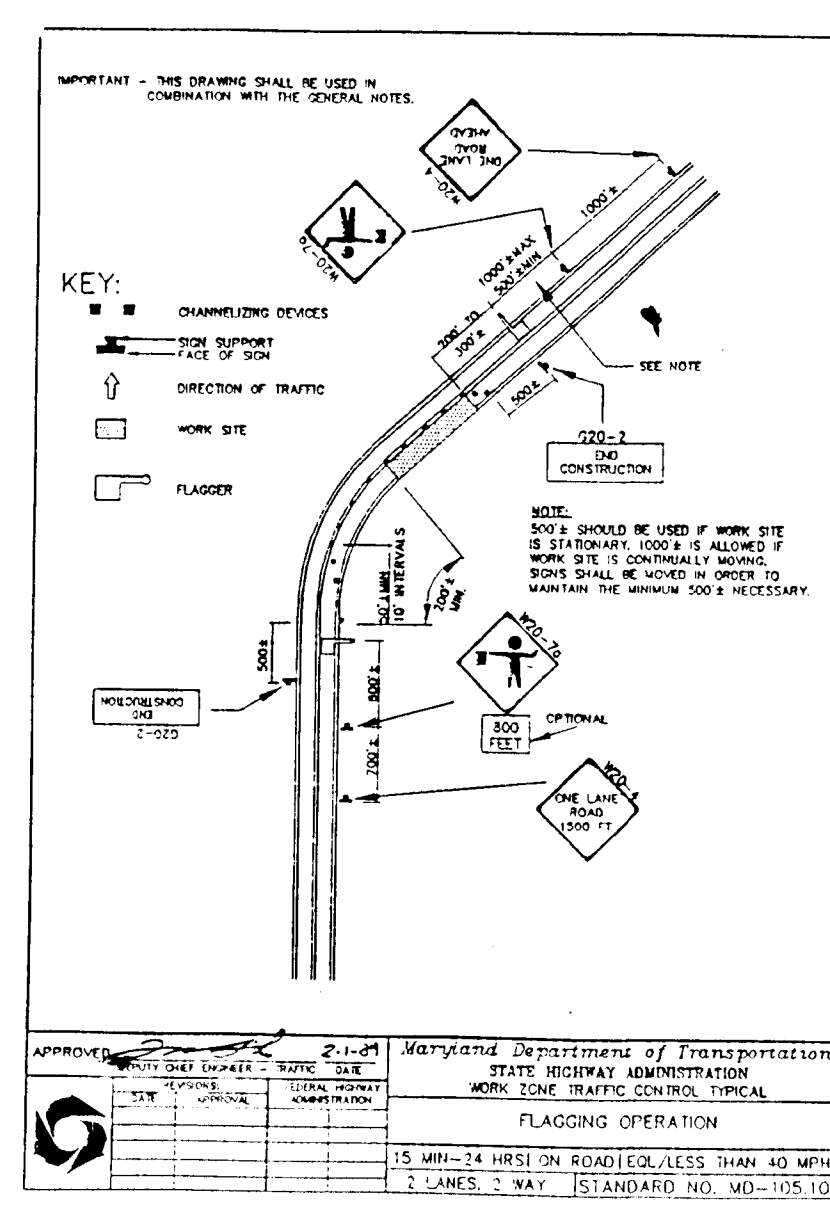
| VEHICLE SPEED | MINIMUM TAPER LENGTH (FEET) SEE EPSS SIZE | ADDITIONAL TAPER BY SPEED (FEET) SEE EPSS SIZE | MINIMUM NUMBER ADVISORY VARNISHES |
|---------------|---|--|-----------------------------------|
| 0 - 25 | 200 | 200 | 600 |
| 26 - 35 | 300 | 300 | 900 |
| 36 - 45 | 400 | 400 | 1200 |
| 46 - 55 | 500 | 500 | 1500 |
| 56 - 65 | 600 | 600 | 1800 |
| 66 - 75 | 700 | 700 | 2100 |
| 76 - 85 | 800 | 800 | 2400 |
| 86 - 95 | 900 | 900 | 2700 |
| 96 - 105 | 1000 | 1000 | 3000 |

SEE EPSS FOR FREELANDING TRAVEL SIGN WHICH EVER IS HIGHER

BELOW EXAMPLE: TWO LANES ONE WAY ROADWAY / SEVEN LANE IS 35 MPH / FREEWAY: SEVEN IS 50 MPH USE 40 MPH

APPROVED: [Signature] [Title] MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION WORK ZONE TRAFFIC CONTROL, TYPICAL

FLAGGING OPERATION
15 MIN. - 24 HRS. ON ROAD (LESS THAN 40 MPH)
2 LANES, 2-WAY [STANDARD NO. MD-104.02]



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 2-6-96
Chief, Bureau of Highways HS Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[Signature] 2/15/96
Chief, Division of Land Development and Research TC Date

[Signature] 2/19/96
Chief, Development Engineering Division MK Date

GFN GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4224 NO. VA: (301) 989-2524 BAL: (410) 880-1820 FAX: (301) 421-4186 DES. DRN. CHK.

| REVISION | DATE | BY | APP'R. |
|----------|------|----|--------|
| | | | |
| | | | |
| | | | |

PREPARED FOR:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD. 21044
(410)892-6027

TRAFFIC CONTROL PLAN
ROUTE 175 COMMERCIAL
SECTION 1 AREA 1 - PHASE 2/6

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE: 1"=50'
ZONING: TOWN CENTER
G. L. W. FILE NO.: 95003

DATE: DECEMBER 1995
TAX MAP No.: 36
SHEET: 2 OF 37

1787

[Signature]

F-96-41

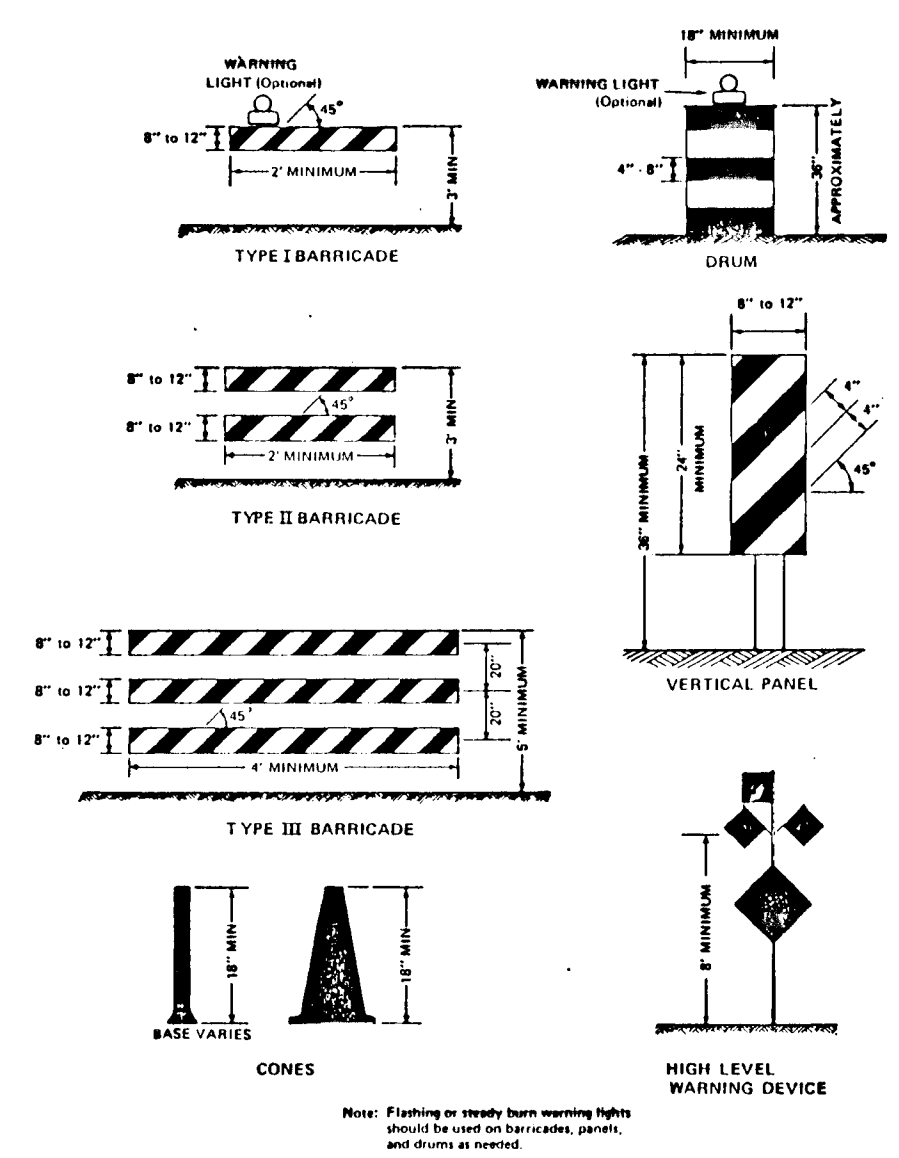
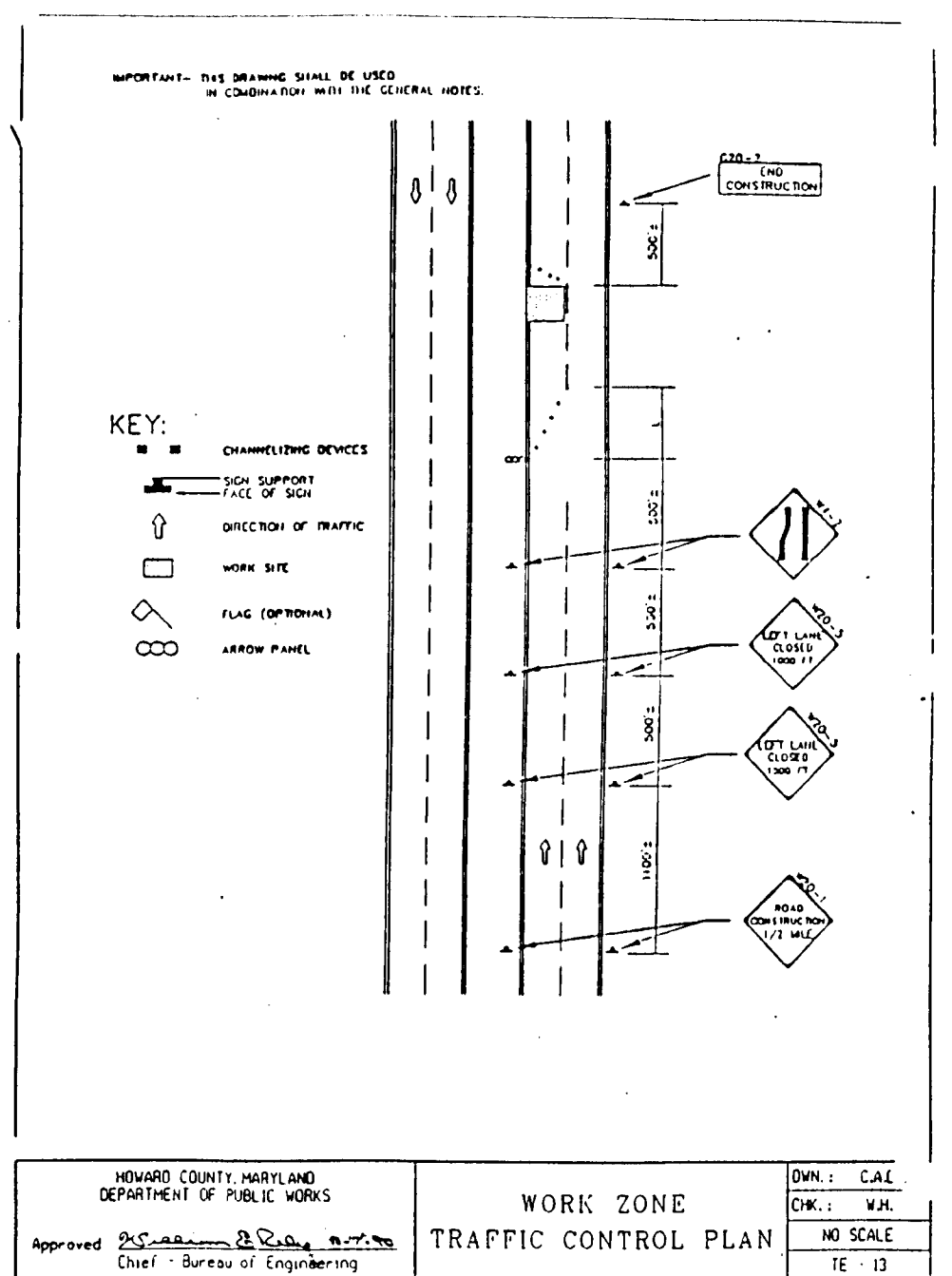
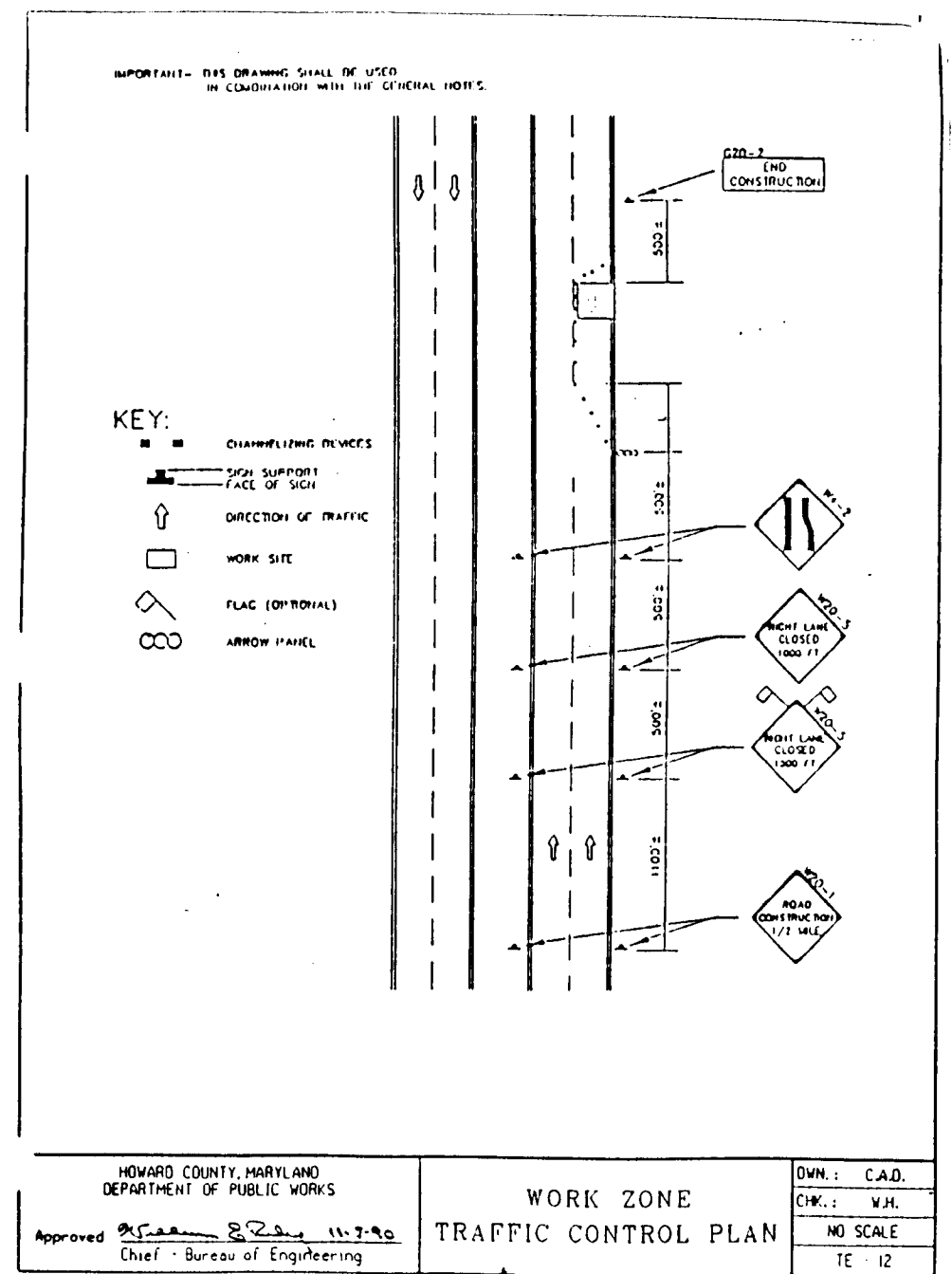
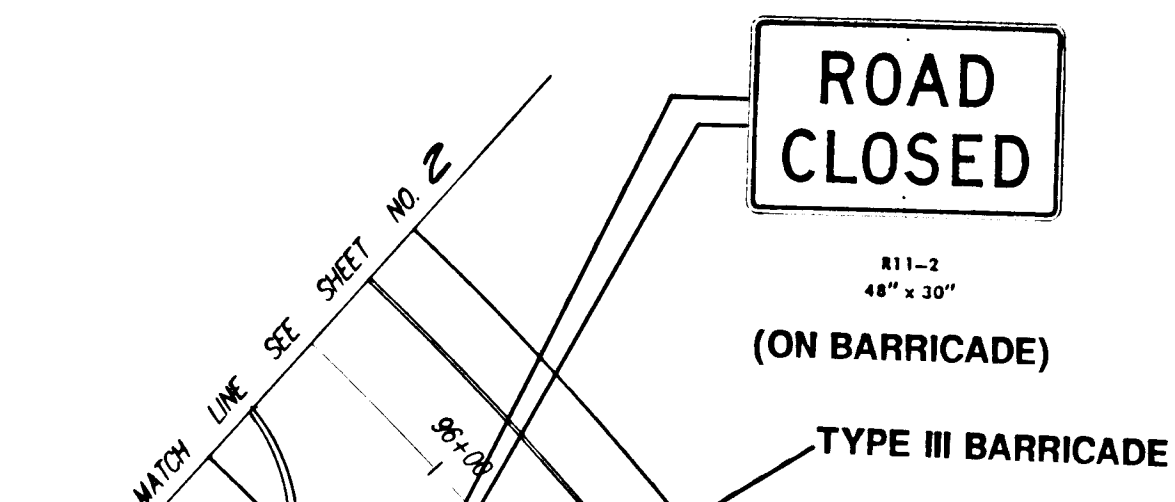
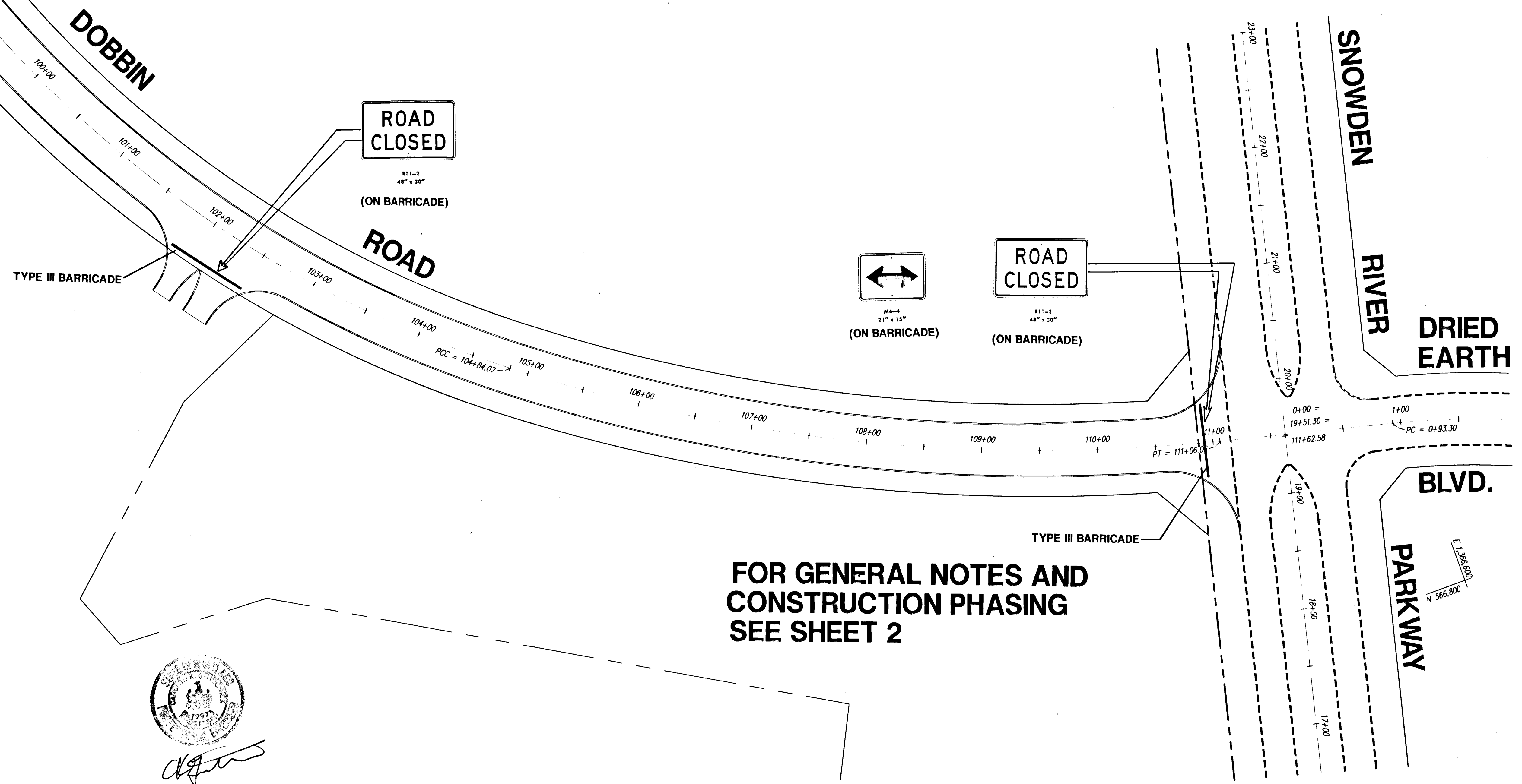
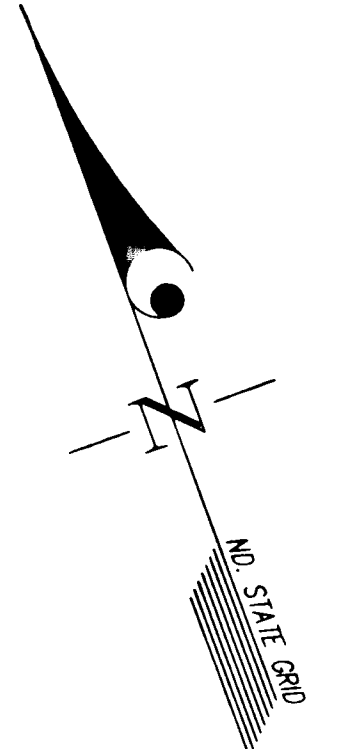


Figure 4-14. Channelizing devices and high level warning devices.

N 557,600
E 1,365,900



**FOR GENERAL NOTES AND
CONSTRUCTION PHASING
SEE SHEET 2**

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 2-6-96
Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Gina Jannone 2/15/96
Chief, Division of Land Development and Research Date

Mark Cummings TC 2/16/96
Chief, Development Engineering Division M.K. Date



Handwritten signature

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4024 NO. VA. (301) 989-2524 BALI: (410) 880-1820 FAX: (301) 421-4186 DES. DRN. CHK.

| DATE | REVISION | BY | APP'R. |
|------|----------|----|--------|
| | | | |
| | | | |
| | | | |

PREPARED FOR:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD. 21044
(410) 992-6027

TRAFFIC CONTROL PLAN
ROUTE 175 COMMERCIAL
SECTION 1 AREA 1 - PHASE 226
6TH ELECTION DISTRICT

| | | |
|-----------------------|-----------------------|----------------------------|
| SCALE 1"=50' | ZONING TOWN CENTER | G. L. W. FILE No. 95003 |
| DATE DECEMBER 1995 | TAX MAP No. 36 | SHEET 3 OF 37 |

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F-96-41

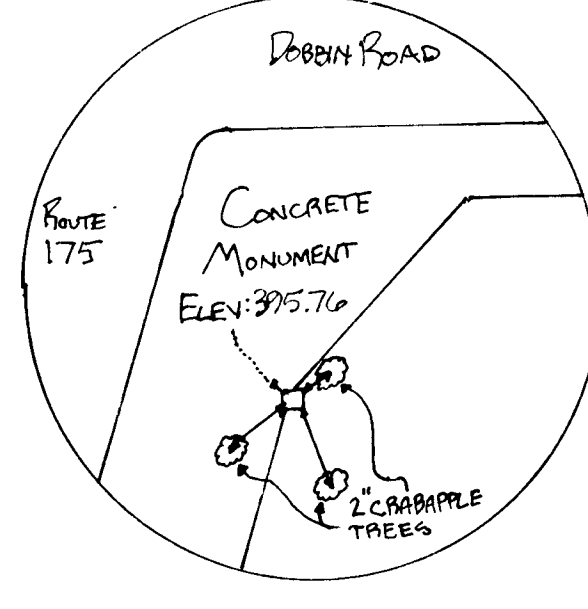
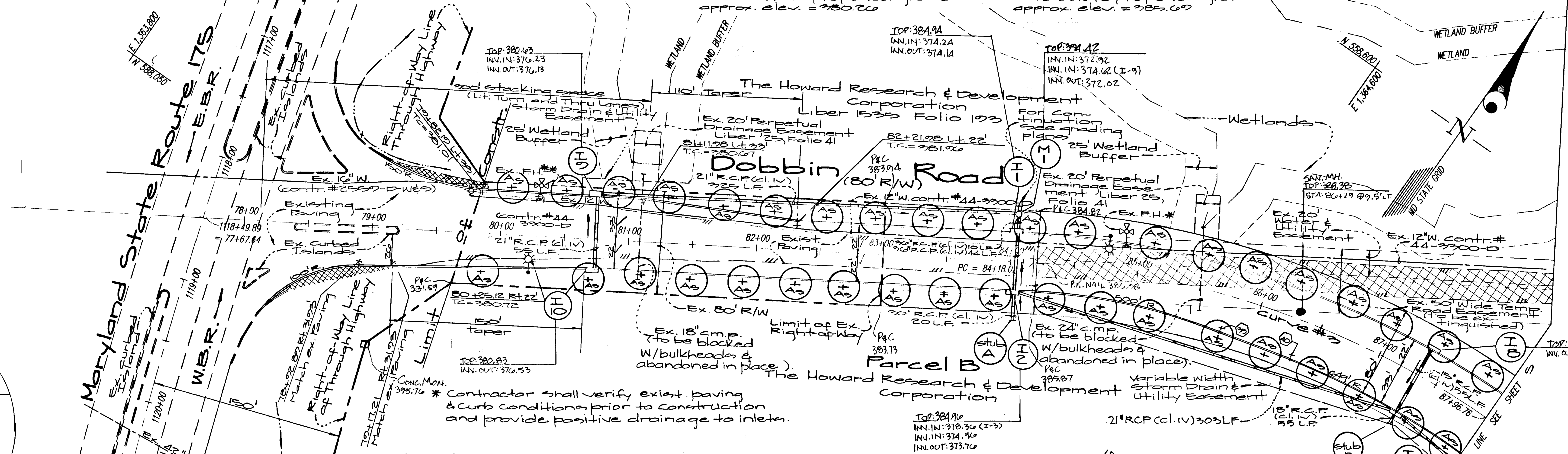
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Note: For Improvements to MD Rte. 175 see separate plans

** For adjustments to ex. F.H. see W&S contract 24-2409-D contractor to adjust exist. valve box to proposed grade approx. elev. = 280.20

* For adjustments to ex. F.H. see W&S contract 24-2409-D contractor to adjust exist. valve box to proposed grade approx. elev. = 285.69

| Curb Elevation Table | | | | |
|----------------------|----------|----------|-------------------|--------------|
| No. | Station | Offset | Top of Curb Elev. | Gutter Type |
| 39 | 83+74.00 | 30' R.L. | 287.50 | Catch (West) |
| 40 | 84+26.72 | 33' R.L. | 288.00 | " |



Storm Drain Structure Schedule

| No. | Type | Top Elev. | Iny (in) | Outy (in) | Location | Std. Detail |
|-----|------------|-----------|----------|-----------|--------------------|-------------------|
| M-1 | Manhole | 374.33 | 373.70 | 373.70 | 84+04-22' Lt. V | SD 5.12 |
| I-1 | A-10 Inlet | 384.94 | 374.30 | 374.30 | 84+04-22' Lt. V | SD 4.41 |
| I-2 | A-10 Inlet | 384.96 | 374.35 | 374.35 | 84+04-22' Rt. V | SD 4.41 |
| I-3 | A-10 Inlet | 391.23 | 384.31 | 384.31 | 87+13-33' Rt. V | MD SHA STD #37451 |
| I-4 | A-10 Inlet | 391.45 | 384.34 | 384.34 | 87+13-33' Lt. V | SD 4.41 |
| I-5 | A-10 Inlet | 380.23 | 376.33 | 376.33 | 80+72.21 33' Lt. V | SD 4.41 |
| I-6 | A-10 Inlet | 380.26 | 376.33 | 376.33 | 80+72.21 22' Rt. V | SD 4.41 |

see sheet 5 for continuation

STREET TREE SCHEDULE

| SYMBOL | NAME (BOTANICAL/COMMON) | SIZE | QUANTITY | REMARKS |
|--------|--|-------------|----------|--|
| As | Acer saccharum "Legacy" Legacy Sugar Maple | 2 1/2" cal. | 39 | D&B Full Heads Ret #4779 Note: street trees shall be placed a minimum of 5' from S.D. str.'s |

STREET LIGHT SCHEDULE

| LOCATION | LAMP TYPE | MOUNTING | POLE TYPE |
|---------------|----------------------------------|-----------------------------|---------------------|
| 80+21 Rt. 22' | 150-W HIGH PRESSURE SODIUM VAPOR | Postmount fixture (cut off) | 203 BRONZE Aluminum |
| 84+75 Lt. 22' | " | " | " |

CURVE DATA

| CURVE | P.C. STA. | P.C.C. STA. | P.T. STA. | RADIUS | ARC | TANGENT | CHORD | BEARING | DELTA |
|-------|-----------|-------------|-----------|----------|----------|---------|----------|-----------------|------------|
| 1 | 104+84.07 | 111+00.00 | 111+00.00 | 1500.00' | 621.98' | 315.53' | 617.54' | N. 64°09'02" E. | 23°45'29" |
| 2 | 78+70.70 | 104+84.07 | 104+84.07 | 1000.00' | 807.72' | 313.57' | 598.41' | N. 34°51'42" E. | 34°49'11" |
| 3 | 84+18.02 | - | 92+63.11 | 682.00' | 1245.09' | 882.44' | 1079.24' | N. 69°45'11" E. | 104°36'08" |

Approved: Department of Public Works
Andrew M. Cough 2-6-96
 Chief, Bureau of Highways

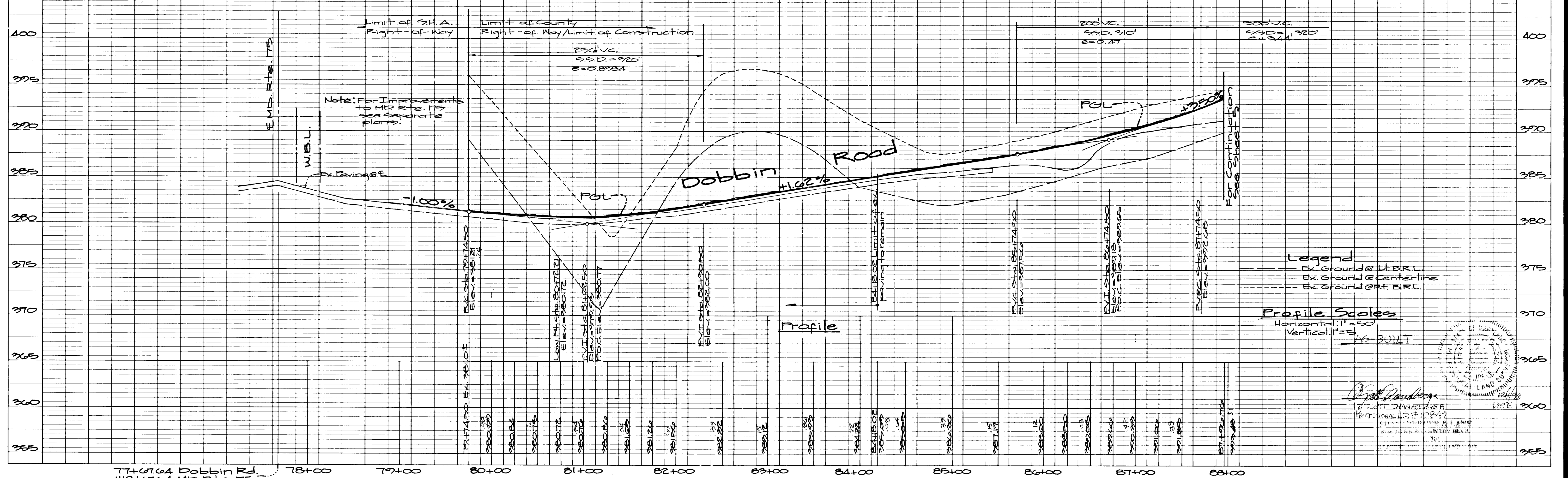
Approved: Department of Planning & Zoning
Jim Shumway 2/15/96
 Chief, Division of Land Development and Research
Chris Sumner 2/16/96
 Chief, Development Engineering

GW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
 TEL: (301) 421-4024 BALT.: (410) 880-1820 NO.VA. (301) 989-2524 FAX: (301) 421-4186

DESIGNED: **ROAD CONSTRUCTION PLANS**
 DRAWN: **DOBBIN ROAD**
 CAD/ **Route 175 Commercial**
 CHECKED: **6TH ELECTION DISTRICT**
 DATE: **HOWARD COUNTY, MARYLAND**
 Sept, 1995

OWNER: **THE HOWARD RESEARCH & DEVELOPMENT CORPORATION**
 THE ROUSE BUILDING
 10275 LITTLE PATENT PARKWAY
 COLUMBIA, MARYLAND 21044
 PHONE (410) 992-6027

SCALE: 1"=50'
 DRAWING: 4 OF 27
 ZONING: New Town
 JOB No.: 95003

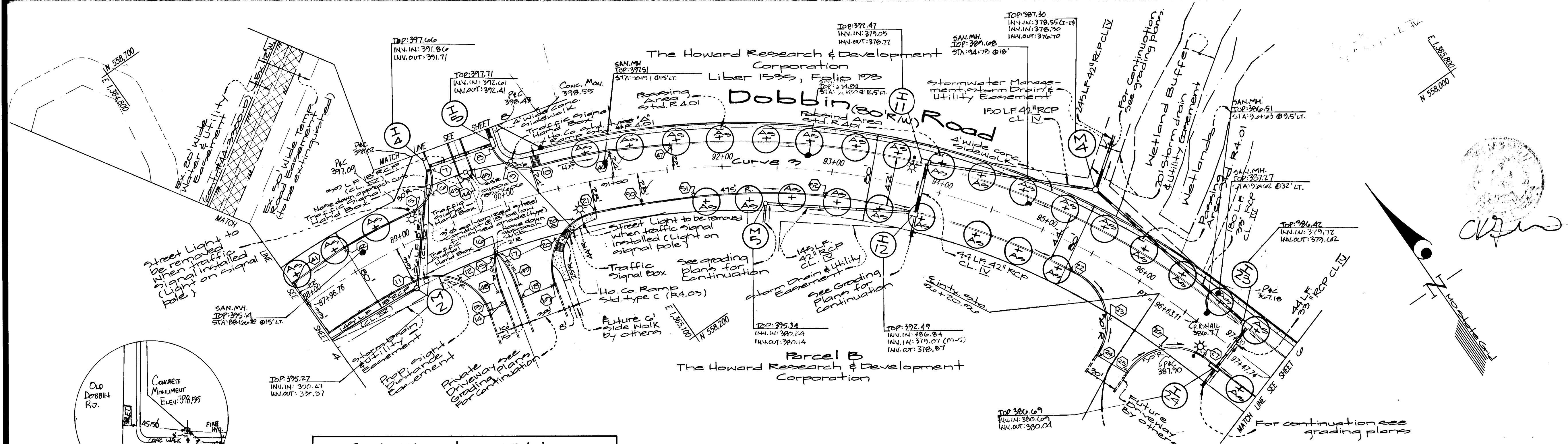


Legend
 --- Ex. Ground @ Lt. B.L.
 --- Ex. Ground @ Centerline
 --- Ex. Ground @ Rt. B.L.

Profile Scales
 Horizontal: 1"=50'
 Vertical: 1"=5'

AS-BUILT

Chris Sumner 2/16/96
 Chief, Development Engineering



| No. | Station | Offset | Top of Curb Elev. | Gutter Type |
|-----|----------|-----------|-------------------|-------------|
| 5 | 89+20.80 | 24' Lt. | 377.58 | catch (wet) |
| 6 | 89+40.27 | 32.24 Lt. | 377.98 | " |
| 7 | 89+48.05 | 52.18 Lt. | 377.98 | " |
| 8 | 90+09.47 | 52.18 Lt. | 377.98 | spill (dry) |
| 9 | 90+11.89 | 32.24 Lt. | 377.21 | " |
| 10 | 90+31.25 | 24' Lt. | 377.77 | " |
| 11 | 88+92.16 | 33' Rt. | 378.85 | catch (wet) |
| 12 | 89+92.54 | 48.75 Rt. | 378.05 | " |
| 13 | 89+49.11 | 87.06 Rt. | 377.40 | " |
| 14 | 89+07.70 | 87' Rt. | 377.70 | spill (dry) |
| 15 | 89+74.07 | 41.24 Rt. | 376.87 | " |
| 16 | 89+76.00 | 40' Rt. | 376.87 | " |
| 17 | 89+78.03 | 41.24 Rt. | 376.87 | catch (wet) |
| 18 | 89+84.41 | 84' Rt. | 377.84 | " |
| 19 | 90+22.24 | 83.45 Rt. | 377.34 | spill (dry) |
| 20 | 90+38.00 | 44.27 Rt. | 378.21 | " |
| 20A | 90+36.74 | 32.22 Rt. | 377.05 | " |
| 21 | 90+78.03 | 28' Rt. | 377.75 | catch (wet) |
| 22 | 90+48.16 | 22' Rt. | 388.46 | " |
| 23 | 90+87.44 | 31.42 Rt. | 388.00 | spill (dry) |
| 24 | 90+44.11 | 75' Rt. | 387.07 | " |
| 25 | 90+97.81 | 74.07 Rt. | 388.00 | catch (wet) |
| 26 | 90+99.99 | 37.07 Rt. | 387.70 | " |
| 27 | 90+90.49 | 22' Rt. | 386.74 | " |

| No. | Station | Offset | Top of Curb Elev. | Gutter Type |
|-----|----------|-----------|-------------------|-------------|
| 41 | 89+07.82 | 22' Lt. | 377.50 | catch (wet) |
| 42 | 88+50.95 | 24' Lt. | 375.07 | " |
| 43 | 89+08.90 | 38.54 Lt. | 377.21 | spill (dry) |
| 44 | 89+75.10 | 32' Lt. | 377.07 | " |
| 45 | 89+81.27 | 38.52 Lt. | 377.17 | " |
| 46 | 91+01.16 | 24' Lt. | 377.77 | catch (wet) |
| 47 | 91+54.23 | 22' Lt. | 377.42 | " |
| 48 | 89+07.70 | 67.75 Rt. | 377.90 | spill (dry) |
| 49 | 89+84.41 | 67.75 Rt. | 377.50 | catch (wet) |
| 50 | 91+22.00 | 28' Rt. | 377.57 | " |
| 51 | 91+71.25 | 26.33 Rt. | 377.13 | " |
| 52 | 92+90.77 | 22' Rt. | 374.72 | catch (wet) |

| No. | Type | Top Elev. | In (in) | In (out) | Location | Std. Detail |
|------|------------|-----------|---------|----------|--------------------|-------------|
| M-2 | Manhole | 395.27 | 30.00 | 30.00 | 88+23-29' Rt. V | G.S.12 |
| M-5 | Manhole | 395.34 | 30.00 | 30.00 | 92+40-52' Rt. | G.S.12 |
| I-4 | A-10 Inlet | 397.60 | 30.00 | 30.00 | 89+48.05-60.18 Lt. | S.D. 4.41 |
| I-5 | A-10 Inlet | 397.71 | 30.00 | 30.00 | 90+09.47-60.18 Rt. | S.D. 4.41 |
| I-23 | A-10 Inlet | 386.74 | 30.00 | 30.00 | 90+36.74-22' Lt. | S.D. 4.41 |
| I-24 | A-10 Inlet | 386.69 | 30.00 | 30.00 | 90+38.00-22' Rt. | S.D. 4.41 |
| I-12 | A-10 Inlet | 392.49 | 30.00 | 30.00 | 92+40-22' Rt. | S.D. 4.41 |
| I-11 | A-10 Inlet | 397.47 | 30.00 | 30.00 | 93+80-22' Lt. | S.D. 4.41 |
| M-4 | Manhole | 387.30 | 30.00 | 30.00 | 95+28-53' Lt. V | G.S.12 |

See Sheet 6 For Continuation

| SYMBOL | NAME (BOTANICAL/COMMON) | SIZE | QUANTITY | REMARKS |
|--|--|-----------------|----------|-----------------------------|
| As | Acer saccharum "Legacy" / Legacy Sugar Maple | 2 1/2" x 3 1/2" | 30 | B & B Full Heads Ret + 400' |
| Note: Street trees shall be placed a minimum of 5' from sidewalk | | | | |

| LOCATION | LAMP TYPE | MOUNTING | POLE TYPE |
|---------------|-------------------------------------|---------------------------|---------------------|
| 90+05 Rt. 24' | 150 Watt High Pressure Sodium Vapor | Pendant fixture (cut off) | 30' Bronze aluminum |
| 92+70 Lt. 26' | " | " | " |
| 89+18 Lt. 28' | 150 Watt High Pressure Sodium Vapor | Pendant fixture (cut off) | 30' Bronze aluminum |
| 90+80 Rt. 27' | " | " | " |

Approved: Department of Public Works
Richard M. ... 2-6-96
 Chief, Bureau of Highways

Approved: Department of Planning & Zoning
Anna ... 2/15/96
 Chief, Division of Land Development and Research

... 2/9/96
 Chief Development Engineering

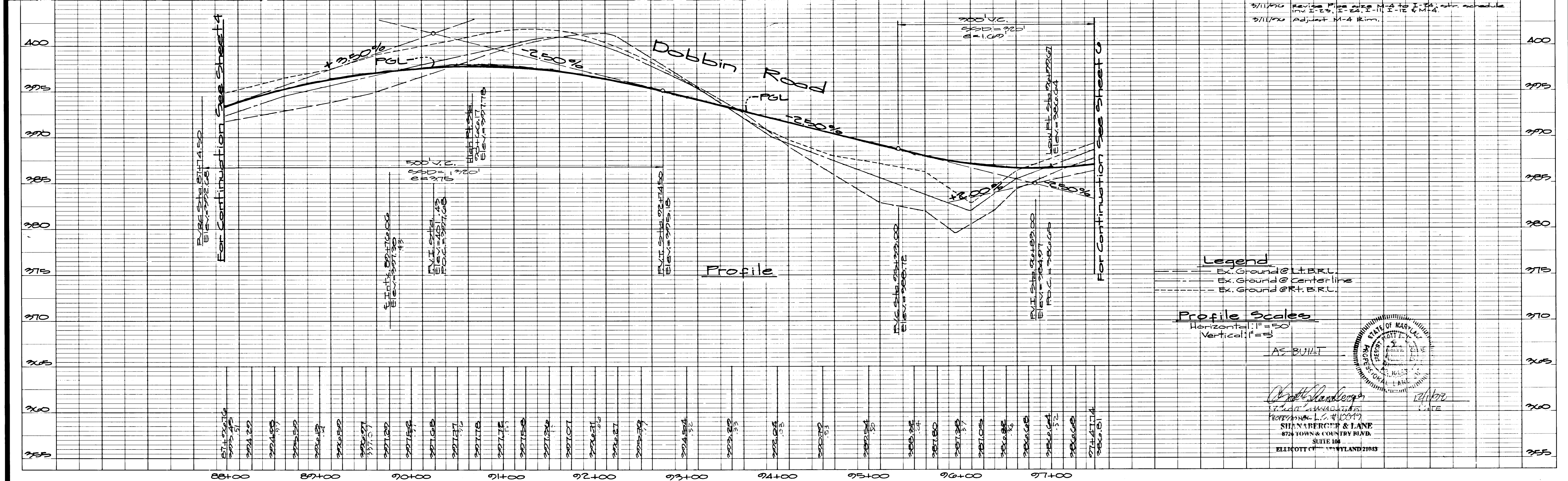
GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
 TEL: (301) 421-4024 BALT.: (410) 880-1820 NO.VA. (301) 989-2524 FAX: (301) 421-4186

DESIGNED: MJT
 DRAWN: CAD/
 CHECKED: mt.
 DATE: Sept, 1995

ROAD CONSTRUCTION PLANS
DOBBIN ROAD
 STATION 87+96.76 TO 97+47.74
Route 175 Commercial
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

OWNER:
 THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
 THE ROSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 PHONE (410) 292-6027

SCALE: 1"=50'
 DRAWING: 5 OF 37
 ZONING: New Town
 JOB No.: 95003



1787

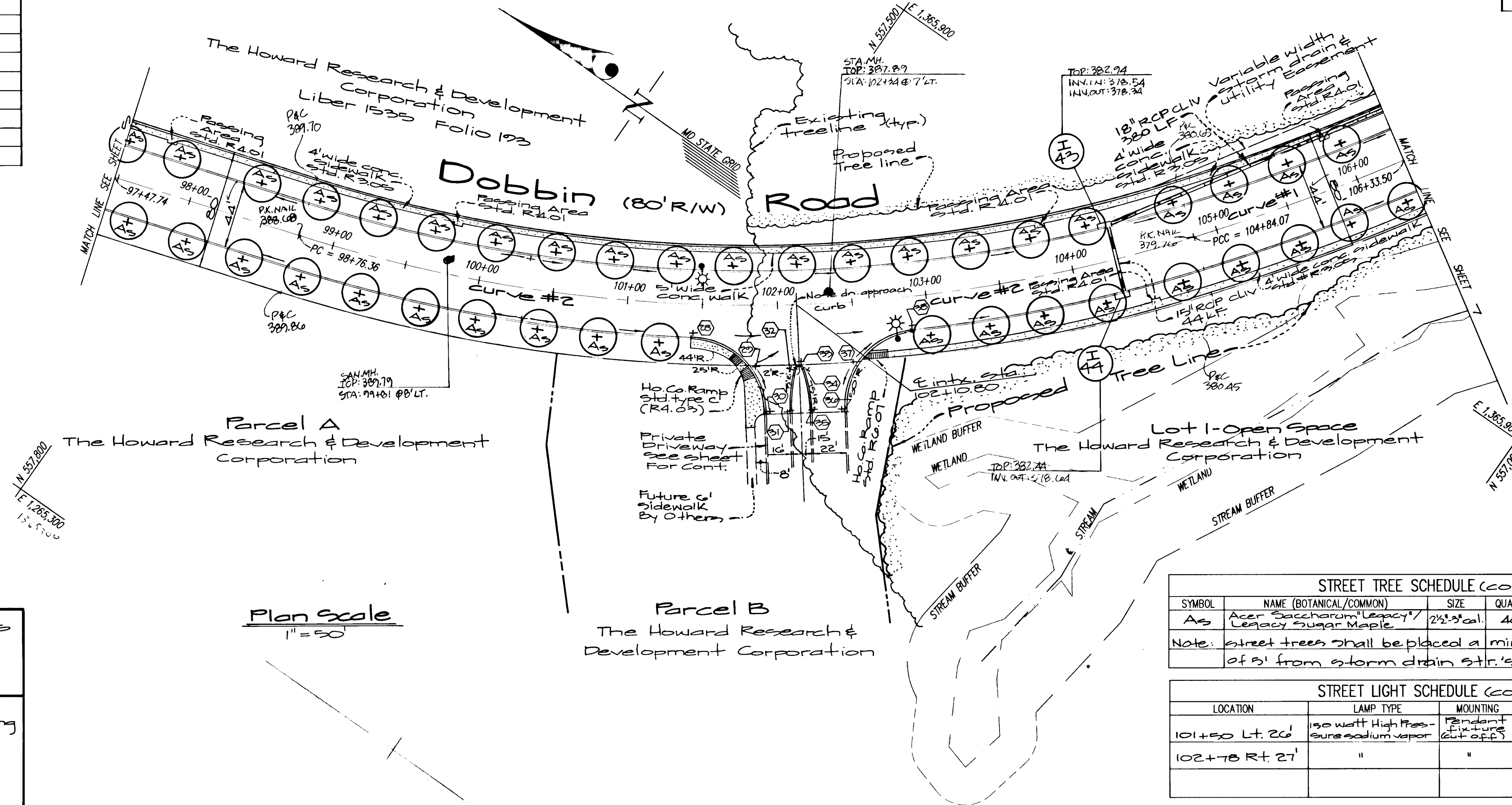
Curb Elevation Table

| No. | Station | Offset | Top of Curb Elev. | Gutter Type |
|-----|-----------|------------|-------------------|-------------|
| 28 | 101+42.13 | 22' Rt. | 389.47 | Spill (dry) |
| 29 | 101+75.13 | 20.01' Rt. | 389.40 | " |
| 30 | 101+88.83 | 09.74' Rt. | 388.98 | " |
| 31 | 102+03.70 | 09.82' Rt. | 388.74 | catch (wet) |
| 32 | 102+09.02 | 41.24' Rt. | " | " |
| 33 | 102+10.80 | 40.00' Rt. | 388.91 | Spill (dry) |
| 34 | 102+12.97 | 41.24' Rt. | " | " |
| 35 | 102+17.81 | 09.82' Rt. | 388.49 | " |
| 36 | 102+38.97 | 09.46' Rt. | 387.70 | catch (wet) |
| 37 | 102+52.18 | 25.92' Rt. | 388.01 | " |
| 38 | 102+52.09 | 22' Rt. | 388.89 | " |

Storm Drain Structure Schedule (Cont'd)

| No. | Type | Top Elev. | In (in) | Out (in) | Location | Std. Detail |
|-----|------------|-----------|---------|----------|----------------|-------------|
| E43 | A-10 Inlet | 387.44 | 378.56 | 378.39 | 104+28-22' Lt. | S.D. 4.1 |
| E44 | A-10 Inlet | 387.44 | 378.01 | 374.86 | 104+28-22' Rt. | S.D. 4.1 |

See Sheet 7 for Continuation



Approved: Department of Public Works
Andrew M. Daulton 2-6-96
 Chief, Bureau of Highways Date

Approved: Department of Planning & Zoning
Gina Surmanovic 2/15/96
 Chief, Division of Land Development & Research Date
Charles Surmanovic 2/14/96
 Chief, Development Engineering Division Date

Plan Scale
 1" = 50'

STREET TREE SCHEDULE (cont.)

| SYMBOL | NAME (BOTANICAL/COMMON) | SIZE | QUANTITY | REMARKS |
|--------|------------------------------------|-------------|----------|------------|
| AS | Acer saccharum / Sugar Maple | 2 1/2" cal. | 40 | Full Leads |
| AS | Liquidambar styraciflua / Sweetgum | 2 1/2" cal. | 40 | Full Leads |

Note: Street trees shall be placed a min. of 5' from storm drain str.'s

STREET LIGHT SCHEDULE (cont.)

| LOCATION | LAMP TYPE | MOUNTING | POLE TYPE |
|----------------|-------------------------------------|----------------------------|---------------------|
| 101+50 Lt. 26' | 150 watt High Pressure sodium vapor | Pendant Existing (cut off) | 30" Bronze aluminum |
| 102+78 Rt. 27' | " | " | " |

GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
 TEL: (301) 421-4024 BALT.: (410) 880-1820 NO.VA. (301) 989-2524 FAX: (301) 421-4186

DESIGNED: *MJT*
 DRAWN: *CAD/*
 CHECKED: *mt.*
 DATE: Sept. 1, 1995

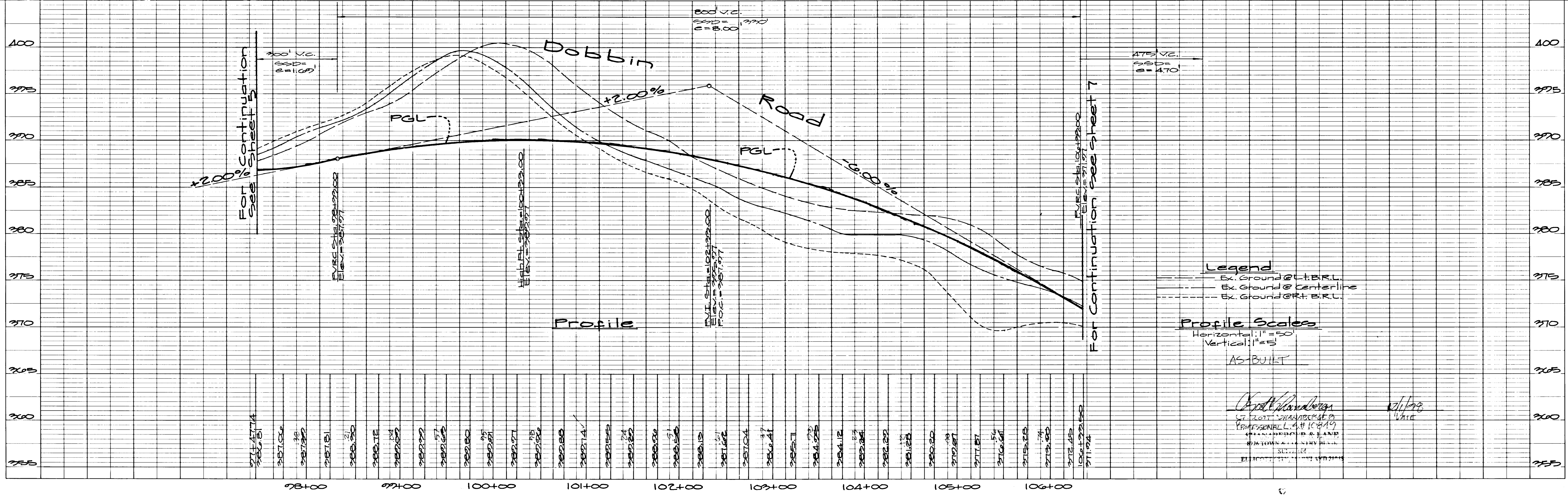
ROAD CONSTRUCTION PLANS
DOBBIN ROAD
 STATIONS 97+47.74 TO 106+33.50

Route 175 Commercial
 6th ELECTRON DISTRICT
 HOWARD COUNTY, MARYLAND

OWNER:
 THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
 THE HOUSE BUILDING
 10275 LITTLE PATENT PARKWAY
 COLUMBIA, MARYLAND 21044
 PHONE (410) 522-6027

SCALE: 1" = 50'
 DRAWING: Co of 37
 ZONING: New Town
 JOB No.: 95003

1787



Legend
 - - - - - Ex. Ground @ L&B.R.L.
 - - - - - Ex. Ground @ Centerline
 - - - - - Ex. Ground @ R.T. B.R.L.

Profile Scales
 Horizontal: 1" = 50'
 Vertical: 1" = 5'

AS BUILT

Charles Surmanovic
 ST. LOUIS, MISSOURI
 PROFESSIONAL LAND SURVEYOR
 LICENSE NO. 1049
 REGISTERED PROFESSIONAL LAND SURVEYOR
 STATE OF MARYLAND
 LICENSE NO. 1049
 DATE: 10/1/95

| No. | Station | Offset | Top of Curb Elev. | Gutter Type |
|-----|-----------|---------|-------------------|--------------|
| 1 | 110+74.22 | 24' Lt. | 361.51 | catch (West) |
| 2 | 111+03.51 | 23' Lt. | 362.07 | " |
| 3 | 111+04.17 | 23' Rt. | 362.17 | catch (West) |
| 4 | 110+76.17 | 22' Rt. | 361.53 | " |
| 62 | 109+32.33 | 22' Lt. | 361.71 | catch (West) |
| 63 | 109+88.30 | 24' Lt. | 361.27 | catch (West) |

| No. | Type | Top Elev. | Inlet (in) | Inlet (out) | Location | Std. Detail |
|------|------------|-----------|------------|-------------|---------------------------------------|--------------------|
| I-42 | A-15 Inlet | 362.85 | 359.34 | 359.34 | 108+25-22' Lt. | MD SHA Std #314.51 |
| I-45 | A-15 Inlet | 362.91 | 360.34 | 360.34 | 108+25-22' Rt. | " " " |
| I-40 | A-10 Inlet | 361.27 | 355.00 | 355.00 | 110+11.00-22' Rt. | S.D. 4.41 |
| I-41 | A-10 Inlet | 361.23 | 355.00 | 355.00 | 110+11.00-24' Lt. | S.D. 4.41 |
| I-48 | A-10 Inlet | 361.4 | 355.00 | 355.00 | 20+44.20-47' Lt. (Snowden River Pkwy) | S.D. 4.41 |

See Sht. B For Continuation

GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
 TEL: (301) 421-4024 BAL.: (410) 880-1820 NO.VA. (301) 989-2524 FAX: (301) 421-4186

ROAD CONSTRUCTION PLANS
DOBBIN ROAD
Route 175 Commercial
 STATIONS 106+33.50 TO 111+62.58
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

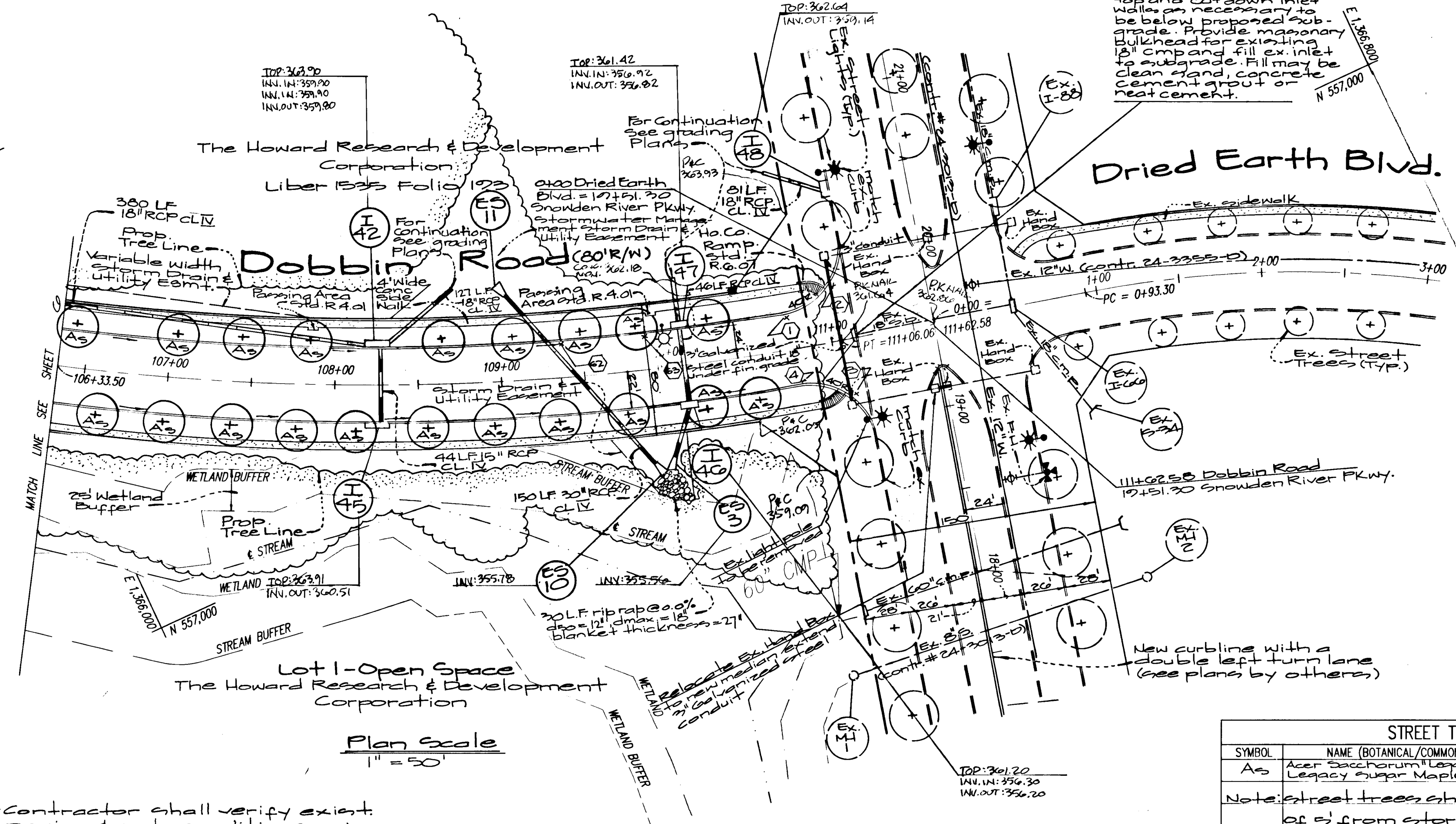
OWNER:
 THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATENT PARKWAY
 COLUMBIA, MARYLAND 21044
 PHONE (410) 992-6027

DESIGNED: **JWT** SCALE: 1"=50'
 DRAWN: **CAD/** DRAWING: 7 OF 37
 CHECKED: **rot.** ZONING: NEW TOWN
 DATE: Sept., 1995 JOB No.: 95003

| SYMBOL | NAME (BOTANICAL/COMMON) | SIZE | QUANTITY | REMARKS |
|--------|--|-------------|----------|-----------------------------|
| As | Acer saccharum "Legacy" / Legacy Sugar Maple | 2 1/2" cal. | 20 | Full heads B & B Full #4777 |

Note: street trees shall be placed a min. of 5' from storm drain extra's

| LOCATION | LAMP TYPE | MOUNTING | POLE TYPE |
|----------------|----------------------------------|---------------------------|--------------------|
| 110+00 Lt. 26' | 150-W HIGH PRESSURE SODIUM VAPOR | Fendant Fixture (cut off) | 30 BRONZE ALUMINUM |

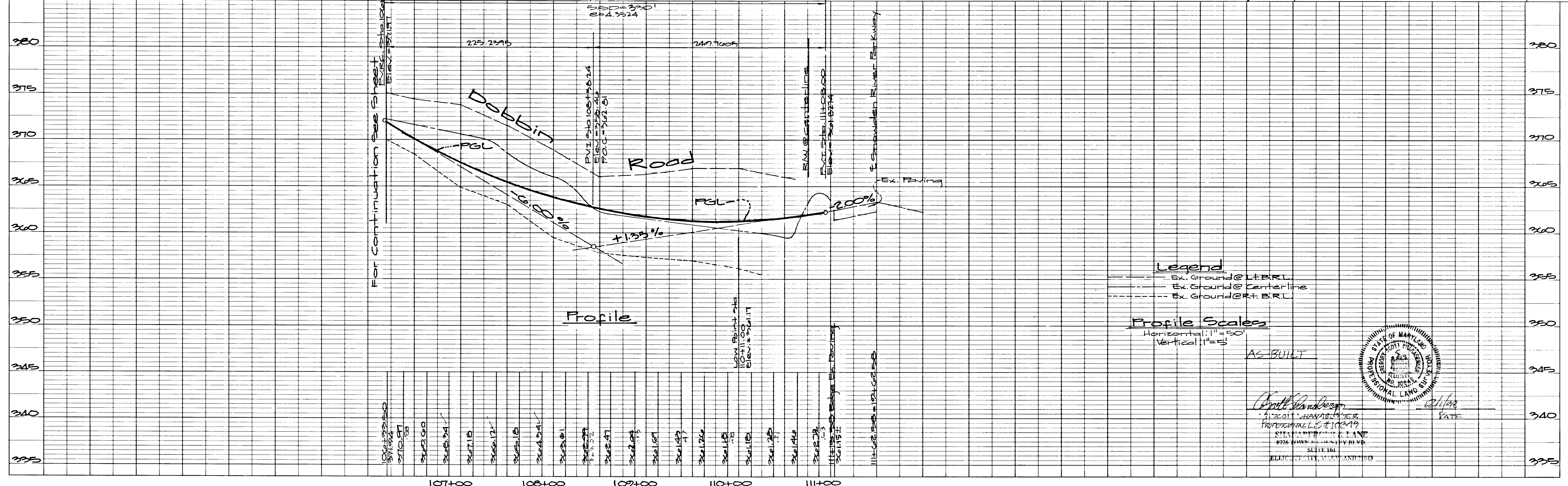


*Contractor shall verify exist. paving & curb conditions prior to construction and provide positive drainage to inlets.

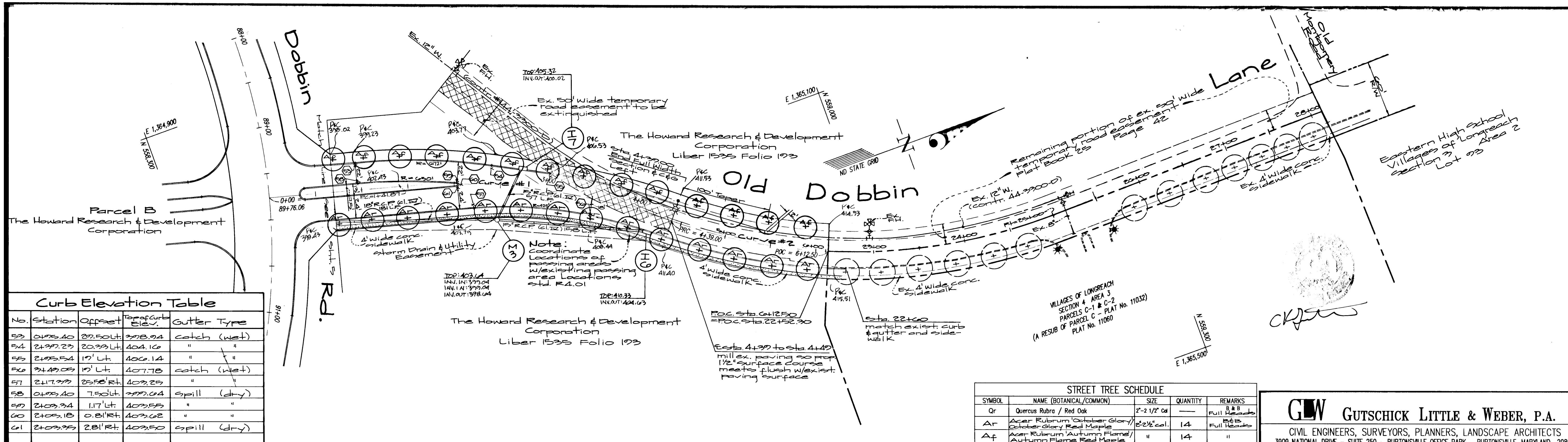
Approved: Department of Public Works
Andrew M. Decker 2/6/96
 Chief, Bureau of Highways Date

Approved: Department of Planning & Zoning
James J. Murray 2/15/96
 Chief, Division of Land Development & Research TC Date

Mark W. Murray 2/9/96
 Chief, Development Engineering Date



1787



Curb Elevation Table

| No. | Station | Offset | Top of Curb Elev. | Gutter Type |
|-----|---------|-----------|-------------------|-------------|
| 53 | 2+03.40 | 23.50 Lt. | 403.94 | catch (wet) |
| 54 | 2+37.23 | 20.33 Lt. | 404.16 | " |
| 55 | 2+53.54 | 19' Lt. | 406.14 | " |
| 56 | 3+49.05 | 19' Lt. | 407.78 | catch (wet) |
| 57 | 2+17.97 | 23.88 Rt. | 403.23 | " |
| 58 | 0+53.40 | 7.50 Lt. | 397.04 | spill (dry) |
| 59 | 2+03.34 | 1.17 Lt. | 403.55 | " |
| 60 | 2+03.18 | 0.81 Rt. | 403.62 | " |
| 61 | 2+03.35 | 2.81 Rt. | 403.50 | spill (dry) |

Approved: Department of Public Works
Stephen M. Daniels 2-6-96
 Chief, Bureau of Highways Date

Approved: Department of Planning & Zoning
Qina Hammami 2/15/96
 Chief, Division of Land Development & Research Date

Mark Williams 2/9/96
 Chief Development Engineering Division Date

Storm Drain Structure Schedule (Cont. d)

| No. | Type | Top Elev. | In (in) | Out (in) | Location | Std. Detail |
|-----|------------|-----------|---------|----------|------------------|-------------|
| M-3 | Manhole | 404.14 | 404.50 | 399.24 | 2+49 - 38' Rt. V | S.D. 3.12 |
| I-6 | A-10 Inlet | 403.32 | 403.08 | 404.77 | 2+17 - 18' Rt. V | S.D. 4.41 |
| E-7 | A-10 Inlet | 403.32 | 403.08 | 399.64 | 2+17 - 18' Lt. V | S.D. 4.41 |

STREET TREE SCHEDULE

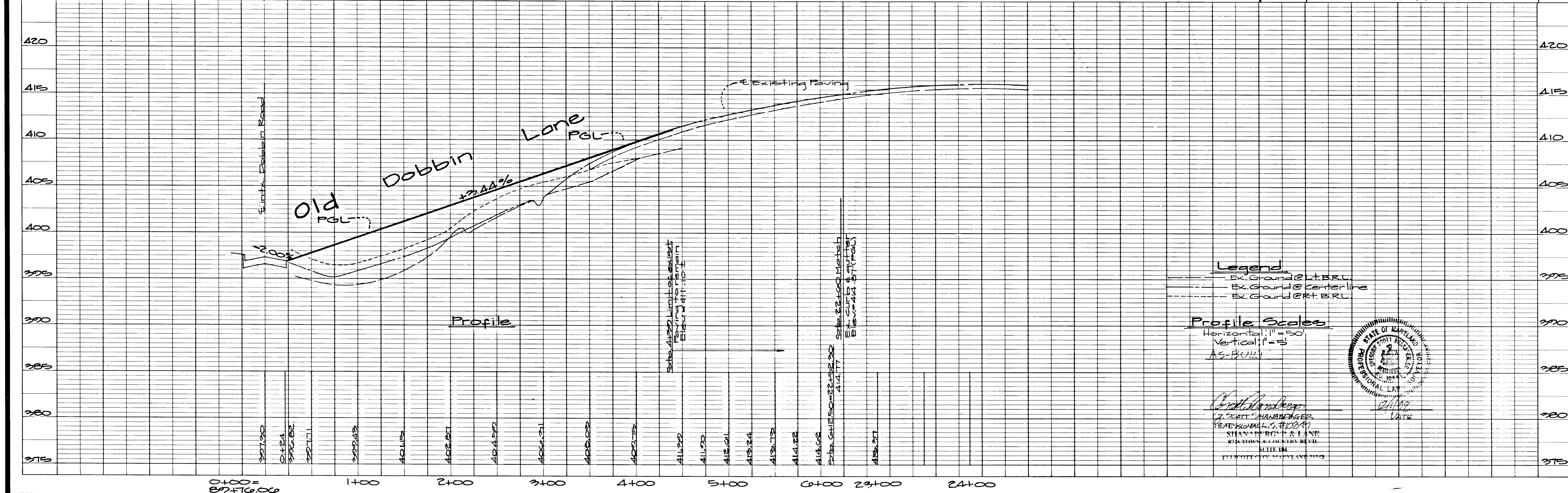
| SYMBOL | NAME (BOTANICAL/COMMON) | SIZE | QUANTITY | REMARKS |
|--------|---|---------------|----------|------------|
| Or | Quercus Rubra / Red Oak | 2"-2 1/2" Cal | — | Full Heads |
| Ar | Acer Rubrum / October Glory / October Glory Red Maple | 2 1/2" cal. | 14 | Full Heads |
| Af | Acer Rubrum / Autumn Flame / Autumn Flame Red Maple | " | 14 | " |

STREET LIGHT SCHEDULE

| LOCATION | LAMP TYPE | MOUNTING | POLE TYPE |
|--------------|----------------------------------|---------------------------|--------------------|
| 4+37 Lt. 23' | 150 W HIGH PRESSURE SODIUM VAPOR | Pendant Fixture (cut-off) | 30 BRONZE Aluminum |

¢ CURVE DATA

| CURVE | P.R.C. STA. | P.C. STA. | P.T. STA. | RADIUS | ARC | TANGENT | CHORD | BEARING | DELTA |
|-------|-------------|-----------|-----------|---------|---------|---------|---------|---------------|------------|
| 1 | 4+39.00 | 1+41.87 | | 700.00' | 297.13' | 150.83' | 249.90' | S 26°59'15" W | 247°12' |
| 2 | 4+39.00 | 23+00 | | 600.41' | 173°50' | 27.32' | 172.89' | N 23°52'15" E | 167°33'23" |



G.W. GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
 TEL: (301) 421-4024 BALT.: (410) 880-1820 NO.VA. (301) 989-2524 FAX: (301) 421-4186

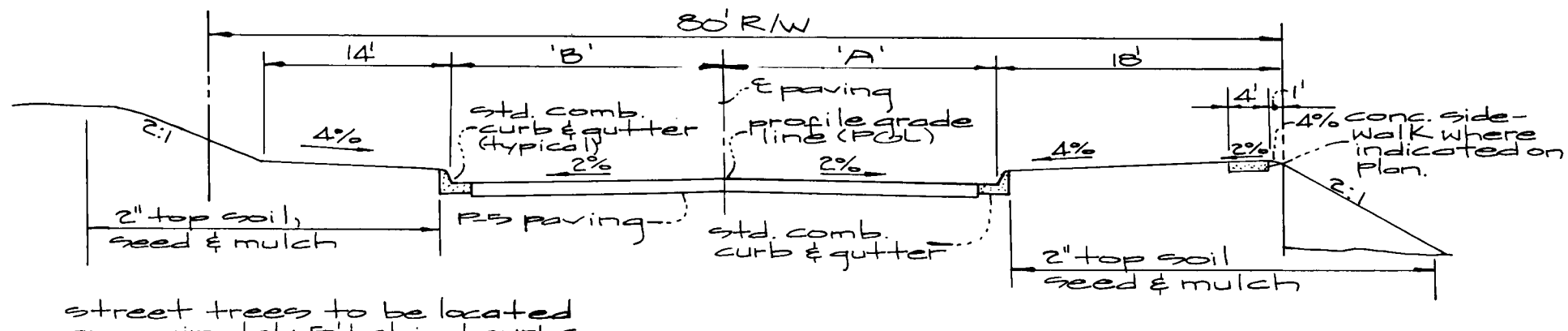
ROAD CONSTRUCTION PLANS
 Old Dobbin Lane
 STATIONS 0+00 TO 6+12.50
Route 175 Commercial
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

DESIGNED: MJT
 DRAWN: CAD/
 CHECKED: rot.
 DATE: Sept., 1995

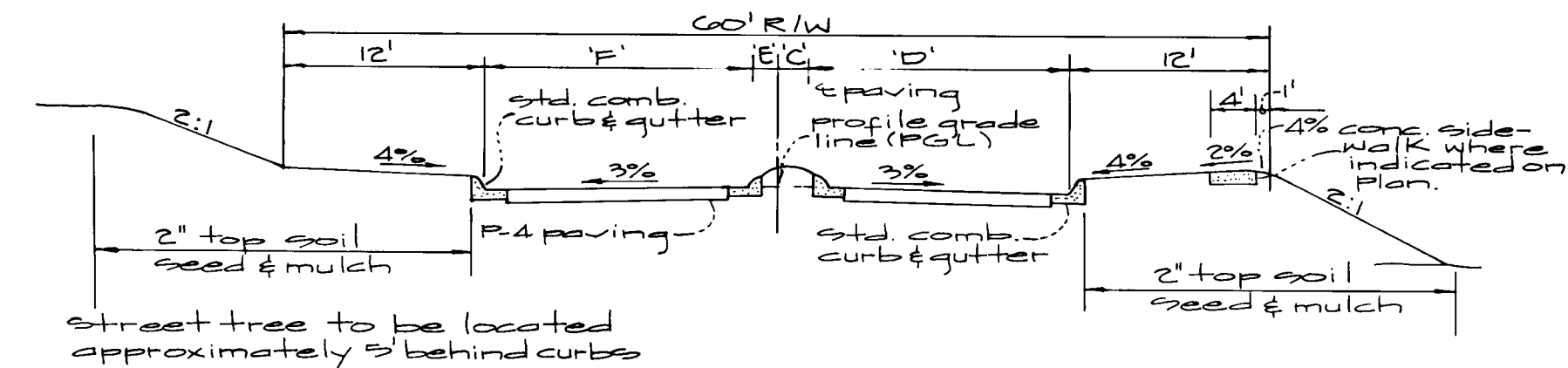
OWNER:
 THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 PHONE (410) 992-6027

SCALE: 1"=50'
 DRAWING: 80F37
 ZONING: New Town
 JOB No.: 95003

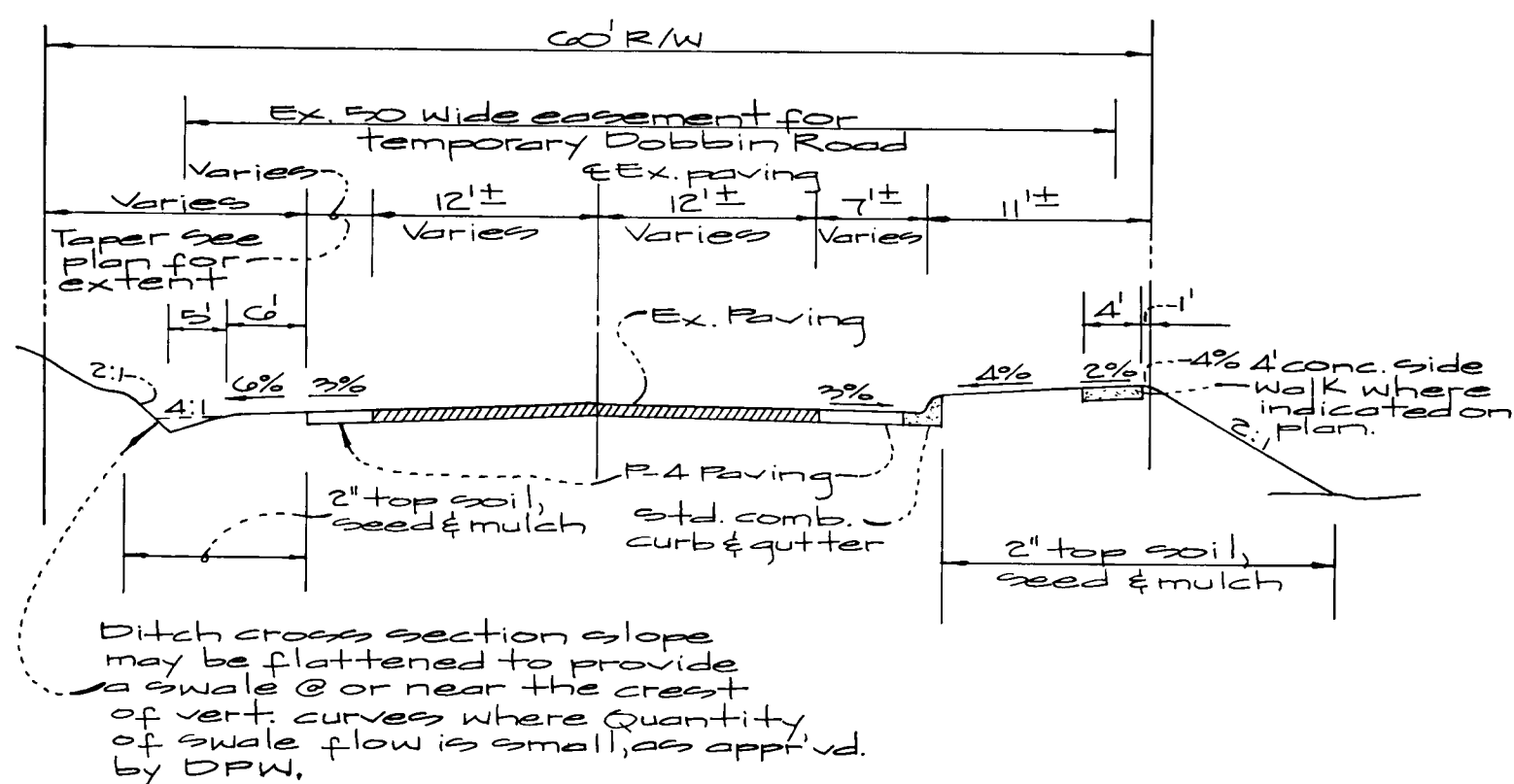
1787



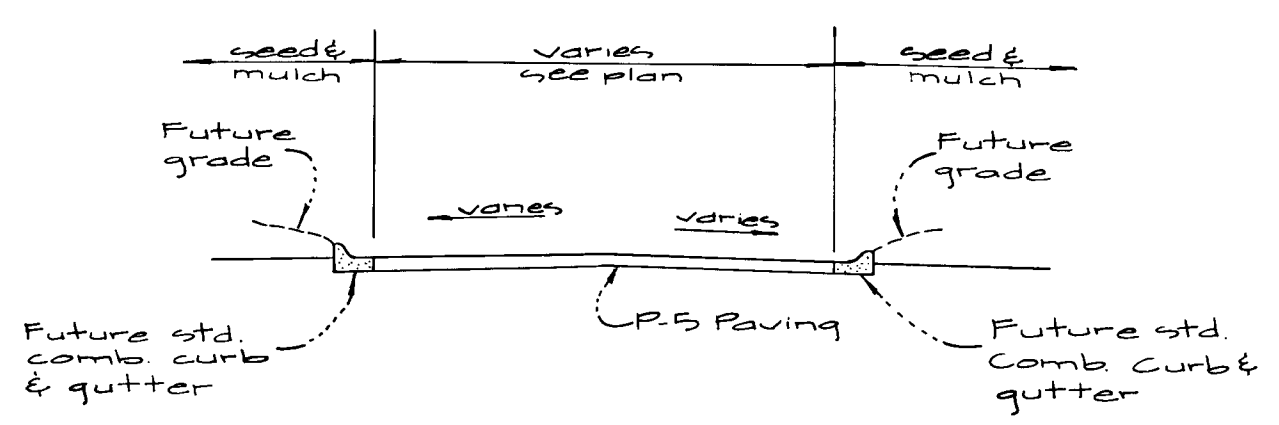
Major Collector (Dobbin Road)
(Station 84+18.02 to station 111+15.58)



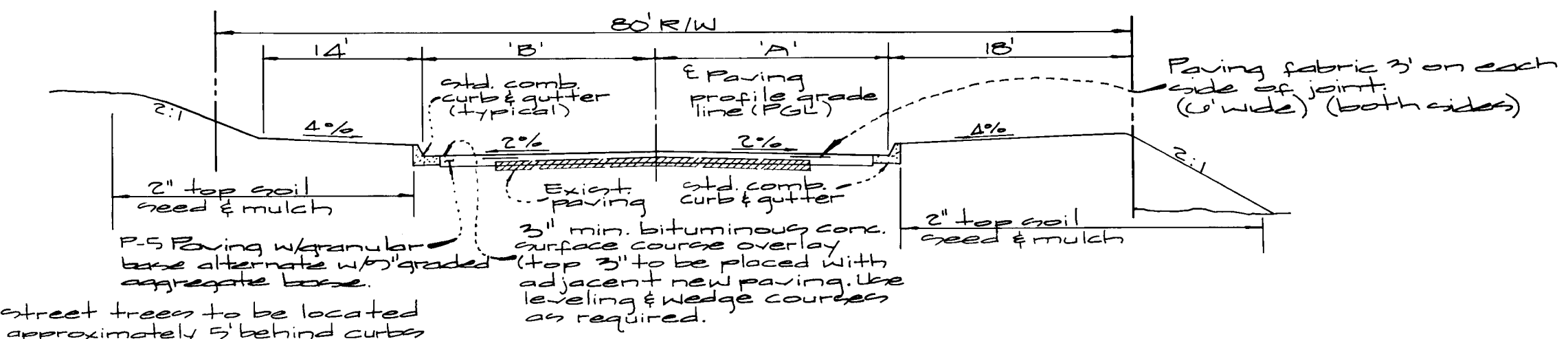
Minor Collector (Old Dobbin Lane)
(Sta. 0+00 to 4+10)



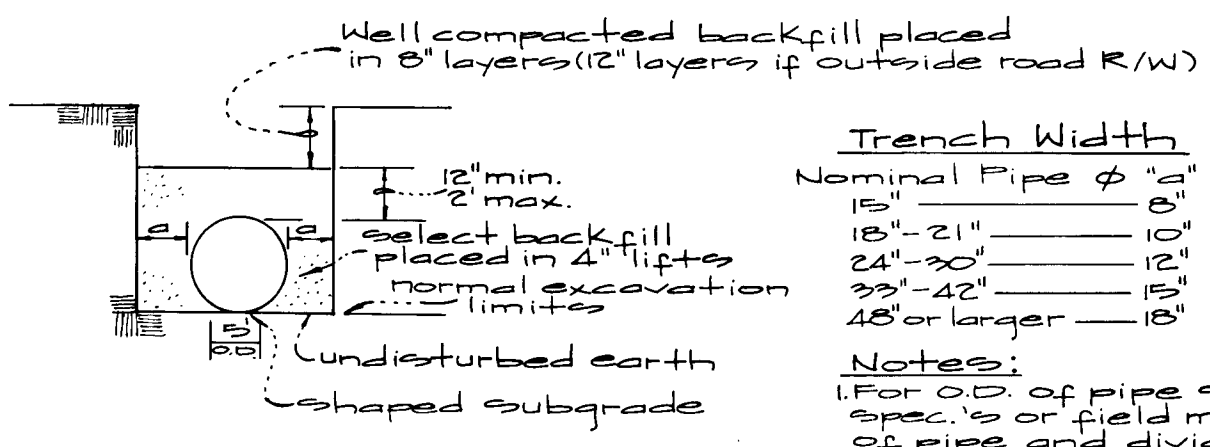
Minor Collector (Old Dobbin Lane)
(Sta. 4+10 to 6+12)



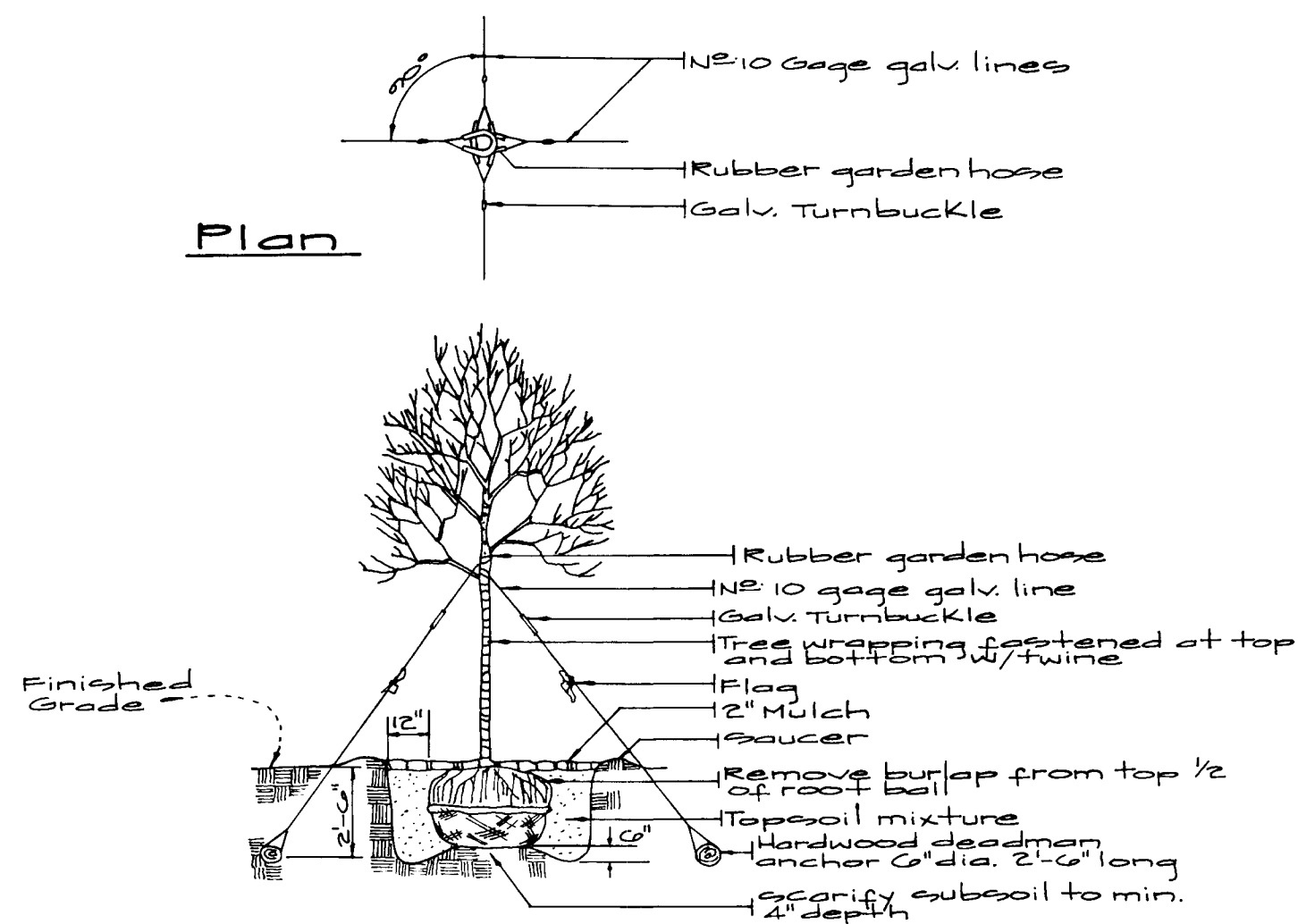
Loop Road (private)



Major Collector (Dobbin Road)
(Station 0+79.74.50 to station 84+18.02)



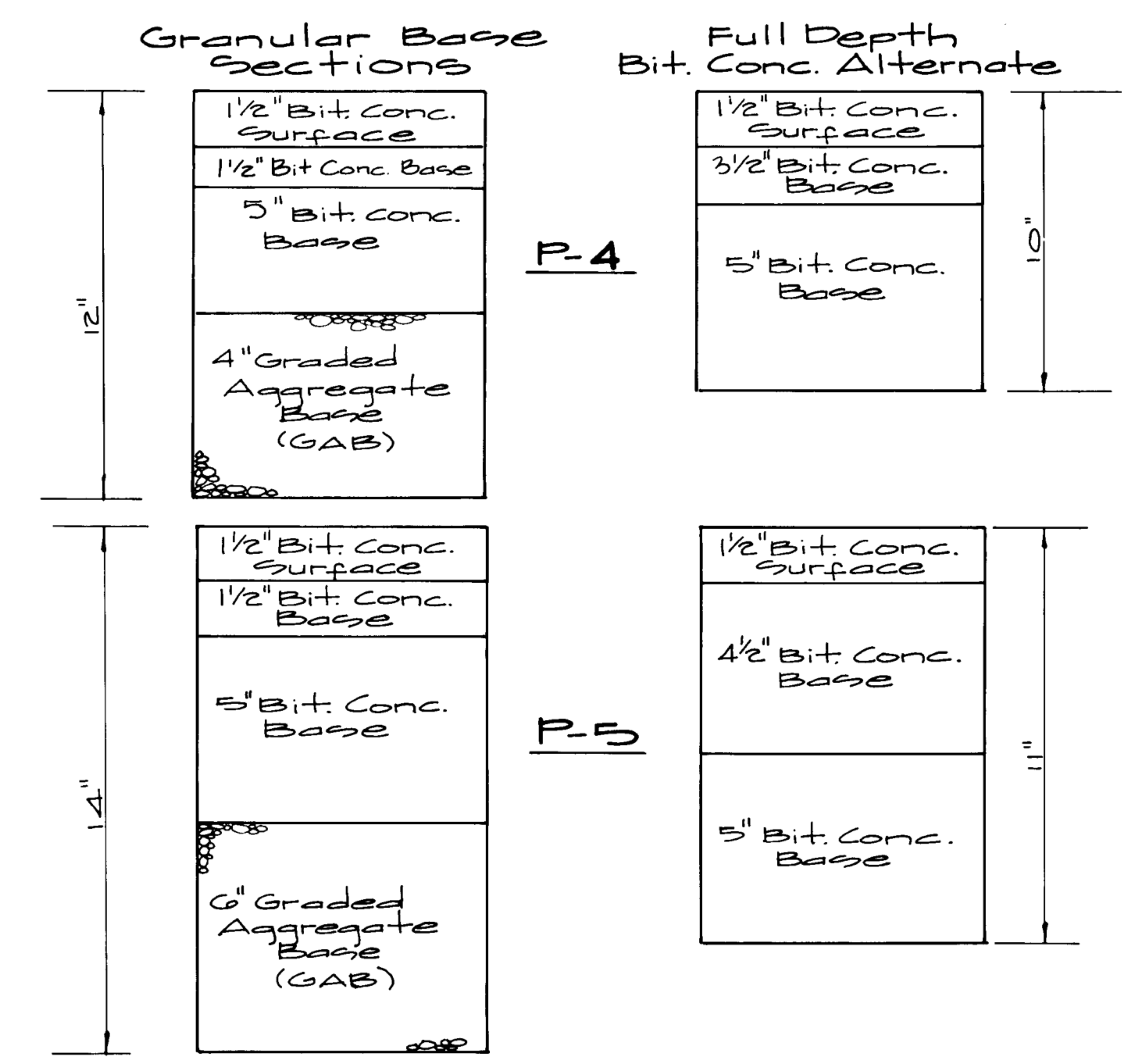
Trench Bedding Detail
No Scale



Typical Tree Guying Detail
No Scale

Note: Contractor shall verify location of underground utilities prior to digging. Final locations of trees may be adjusted slightly to accommodate field conditions. Planting procedures shall comply with 'Landscape Specifications for The Baltimore Washington Metropolitan Area'. Substitutions to the above species may be permitted, provided that the planting is in accordance with street tree and landscape requirements as specified in section 16.131 of The Howard County Subdivision Regulations.

Tree Planting Note:
Street trees shown are tentative and are to be used for bond purposes only. The final location and variety of trees may vary to accommodate field conditions and builder landscape program. Bond release is contingent upon Sect. 16.124 of The Howard County Code and Landscape Manual. Financial surety for the required 157 trees in the amount of \$15,000 shall be part of the Developers Agreement.



Paving Sections
No Scale

| Dobbin Road | | |
|----------------------------------|-------------------|-------------------|
| Station | 'A' | 'B' |
| Sta. 79+74.50 to Sta. 80+47.21 | Varies | 22' |
| Sta. 80+47.21 to Sta. 82+21.98 | 22' | Varies 22' to 24' |
| Sta. 82+21.98 to Sta. 84+07.00 | 22' | 22' |
| Sta. 84+07.00 to Sta. 86+36.72 | Varies 22' to 24' | 22' |
| Sta. 86+36.72 to Sta. 87+77.82 | 22' | 22' |
| Sta. 87+77.82 to Sta. 88+50.75 | 22' | Varies 22' to 24' |
| Sta. 88+50.75 to Sta. 88+72.16 | 22' | 24' |
| Sta. 88+72.16 to Sta. 90+76.02 | Varies 22' to 24' | 24' |
| Sta. 90+76.02 to Sta. 91+01.16 | 22' | 24' |
| Sta. 91+01.16 to Sta. 91+22.40 | 22' | Varies |
| Sta. 91+22.40 to Sta. 91+54.27 | Varies | Varies |
| Sta. 91+54.27 to Sta. 92+26.77 | 22' | 22' |
| Sta. 92+26.77 to Sta. 107+88.30 | 22' | Varies 22' to 24' |
| Sta. 107+88.30 to Sta. 111+42.58 | 22' | 24' |

| Old Dobbin Lane | | | | |
|------------------------------|-------|--------|--------|--------|
| Station | 'C' | 'D' | 'E' | 'F' |
| Sta. 0+38.5 to Sta. 0+75.40 | 5.5' | 24' | 7.5' | 22' |
| Sta. 0+75.40 to Sta. 0+41.87 | 5.5' | 24' | Varies | 22' |
| Sta. 0+41.87 to Sta. 2+03.34 | 2.81' | 24' | 117' | Varies |
| Sta. 2+03.34 to Sta. 2+75.54 | --- | Varies | --- | Varies |
| Sta. 2+75.54 to Sta. 3+43.05 | --- | Varies | --- | 17' |
| Sta. 3+43.05 to Sta. 4+37.00 | --- | 17' | --- | 17' |
| Sta. 4+37.00 to Sta. 5+37.00 | --- | 17' | --- | Varies |
| Sta. 5+37.00 to Sta. 22+00 | --- | 17' | --- | Varies |

1787

Approved: Howard County Dept. of Public Works
Richard M. Druett 2-6-96
Chief, Bureau of Highways
Approved: Howard County Department of Planning & Zoning
Quin Summery 2/15/96
Chief, Division of Land Development
Approved: *William R. C.* 2/16/96
Chief, Development Engineering M.R. Division

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20866
TELEPHONE (301)421-4074 NO VA (301)989-2574 BAL TO (301)860-1870 FAX (301)421-4186

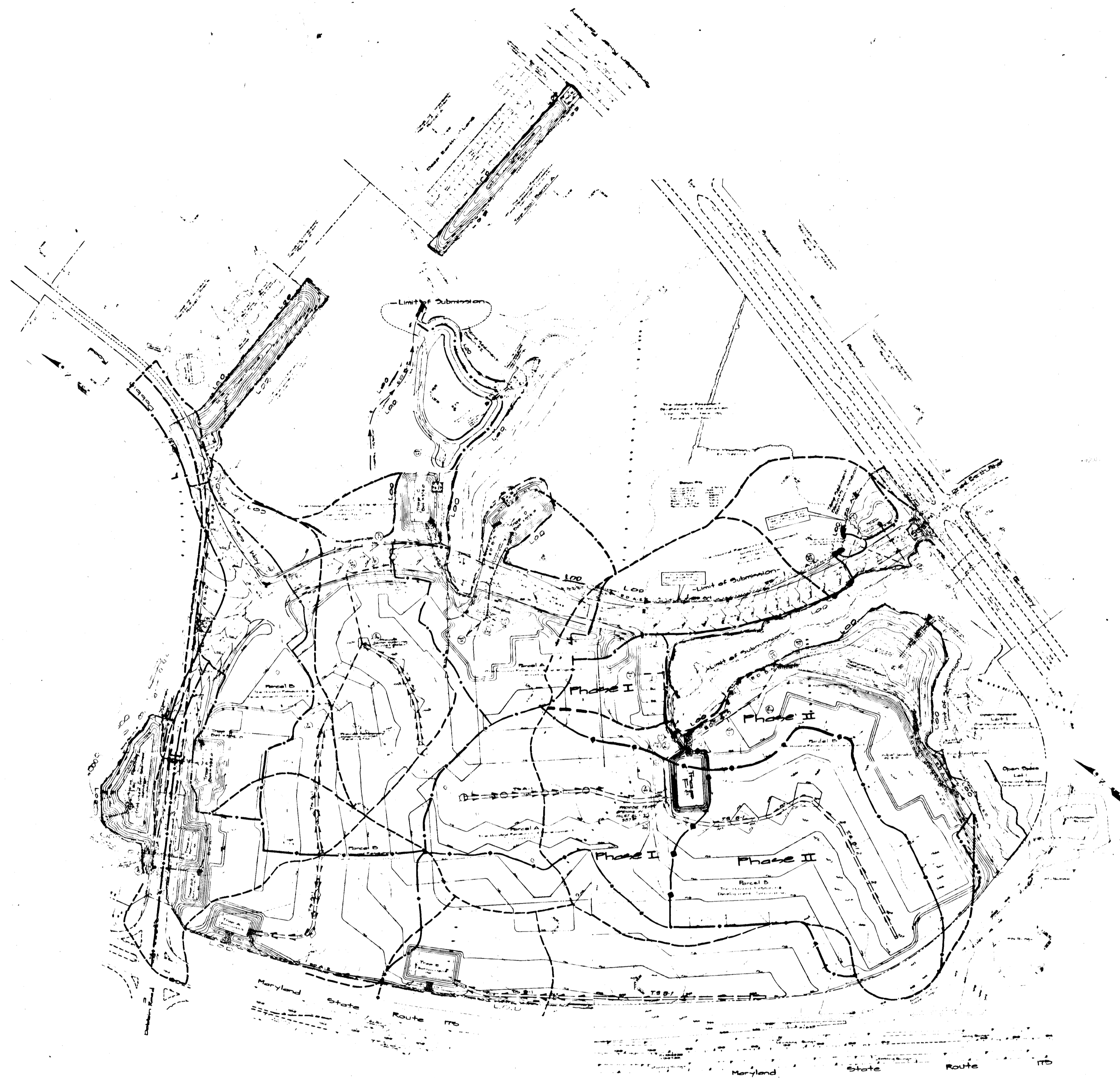
| DATE | REVISION | BY | APP'R. |
|------|----------|----|--------|
| | | | |
| | | | |
| | | | |

PREPARED FOR
The Howard Research & Development Corporation
The Rouse Building
10275 Little Patuxent Pkwy.
Columbia, Maryland 21044

Road Details & Typical Sections
Route 175 Commercial
Section 1 Area 1
Phase 22C
C0th Election District
Howard County, Maryland

| DES.: | SCALE | ZONING | G.L.W. FILE NO. |
|--------|------------|-------------|-----------------|
| W.S.J. | As Shown | NT | 95-003 |
| CHK.: | DATE | TAX MAP NO. | SHEET |
| W.S.J. | Sept. 1995 | 70 | 7 of 37 |

1787



Legend

- After Development Drainage Area Divide
- Before Development Drainage Area Divide
- Before/After Development Drainage Area Divide
- x-IPF-x Tree Protection Fence
- SF— Silt Fence
- SSF— Super Silt Fence
- E.D.— Proposed Earth Dike
- E.D.— Proposed Earth Dike for existing conditions
- T.S.— Proposed temporary swale for proposed conditions
- |—|— Inlet blanking
- |—|— curb cut (at inlet)
- |—|— Limit of Disturbance
- LOD Limit of Disturbance
- |—|— Stone Construction Entrance

For Conceptual Purposes only
For Detail see 50 scale Plans.



Approved: Howard County Dept of Public Works
Andrew M. Daniels 2-6-96
 Chief, Bureau of Highways NS Date

Approved: Howard County Dept of Planning & Zoning
[Signature] 2/9/96
 Chief, Development Engineering Div. MK Date

GW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD 20866
 TELEPHONE (301)421-4024 NO VA (301)989-2524 BALTO (301)880-1820 FAX (301)421-4186

| DATE | REVISION | BY | APP'R. |
|------|----------|----|--------|
| | | | |
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| | | | |

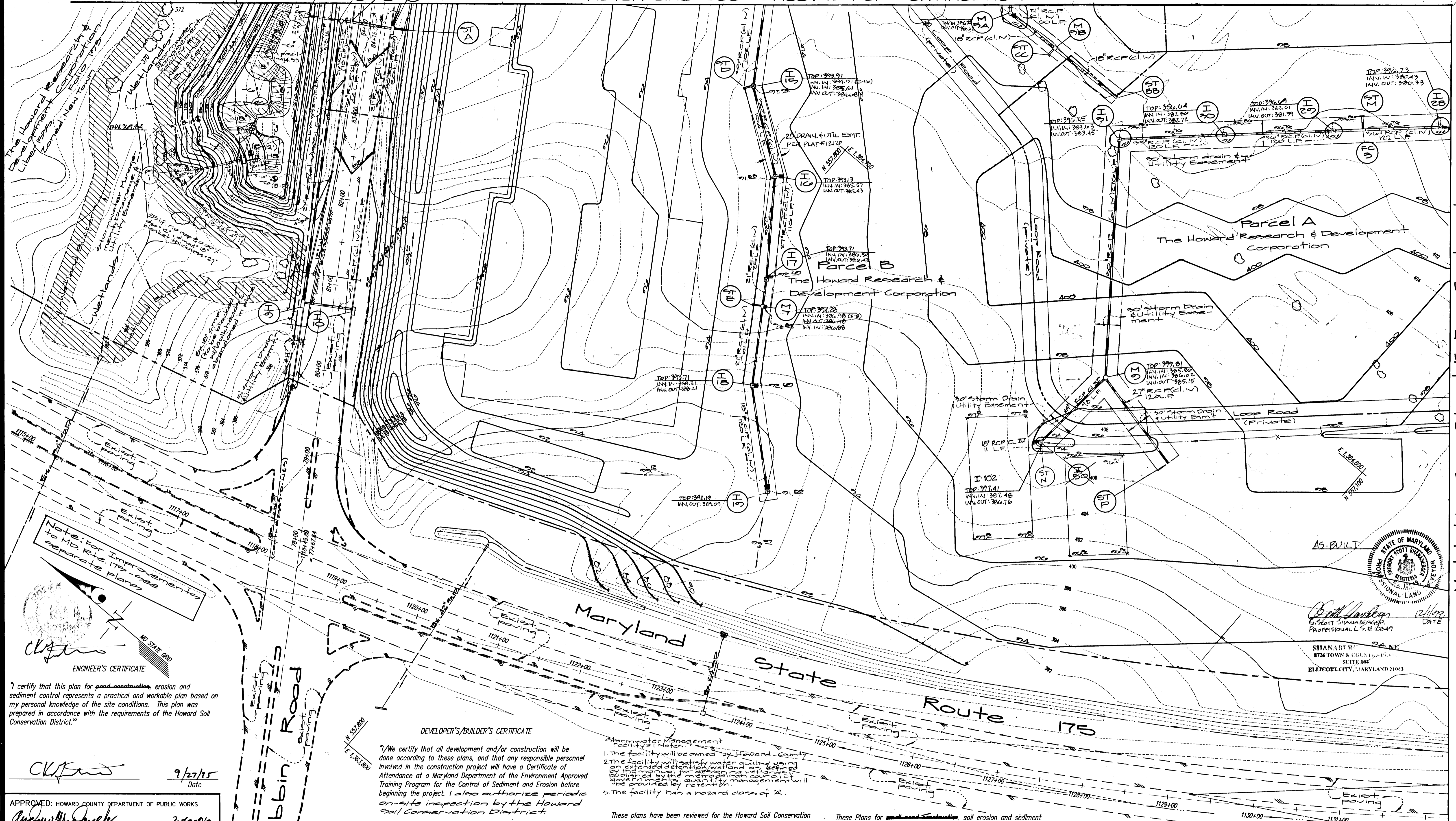
PREPARED FOR:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MD. 21044
 (410)992-6027

Composite Grading & Sediment Control Plan
Route 175 Commercial
 Section I Area I
 Phase 220
 6th Election District Howard County, Maryland

| | | | |
|-------|------------|-------------|-----------------|
| DES.: | SCALE | ZONING | G.L.W. FILE No. |
| DRN.: | 1" = 200' | NT | 95-003 |
| CHK.: | DATE | TAX MAP No. | SHEET |
| | Oct., 1995 | 36 | 10 of 37 |

F-96-41

Match Line See Sheet 12 For Continuation



Match Line see sheet 13 For Continuation

ENGINEER'S CERTIFICATE

I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District.

CKJ
Date: 9/27/95

DEVELOPER'S/BUILDER'S CERTIFICATE

I/we certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

William E. ...
Signature of Developer/Builder
Date: 9-27-95

Stormwater Management Facility Notes:

- The facility will be owned by Howard County.
- The facility will satisfy water quality using an extended detention wetland as defined in the manual for design and construction published by the Chesapeake Bay Program. The quantity management will be provided by retention.
- The facility has a hazard class of 2.

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for erosion, soil erosion and sediment control.

These Plans for pond construction soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Patricia Engle 1/31/96
Natural Resources Conservation Supervisor

John R. Roberts 1/31/96
Howard Soil Conservation District

NOTE: THIS PLAN APPROVED AS GP 96-45
NOTE: FOR POND CONSTRUCTION & SEDIMENT CONTROL. SEE ALSO GP 96-45

Note: For legend see sheet 1
Note: For sediment control see sheet 30

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. ... 2/6-96
Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Gina ... 2/15/96
Chief, Division of Land Development and Research

John ... 2/19/96
Chief, Development Engineering Division

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4024 NO. VA.: (301) 989-2524 BALT.: (410) 680-1820 FAX: (301) 421-4166 DES. DRN. CHK. NOT.

| DATE | REVISION | BY | APPR. |
|---------|-------------------------------------|-----|-------|
| 2/17/97 | Add M.S.B. revisions I-22 to M.S.A. | WBJ | |
| 8/19/96 | Relocate Stub N:P and Inlet 50 | MCP | |
| 4/11/96 | Add 30 Run I-22 to ST 8B | KLP | |
| 4/11/96 | Adjust low pt elev.'s | KLP | |

PREPARED FOR:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROYCE BUILDING
10275 LITTLE PATENT PARKWAY
COLUMBIA, MD. 21044
(410)992-8027

Grading Plan
Route 175 Commercial Section 1 Area
Phase 22c
Howard County, Maryland

| SCALE | ZONING | G. L. W. FILE No. |
|------------|-------------|-------------------|
| 1"=50' | NT | 95-003 |
| DATE | TAX MAP No. | SHEET |
| Sept, 1995 | 36 | 11 OF 37 |

1787

F-96-41

ENGINEER'S CERTIFICATE

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District."

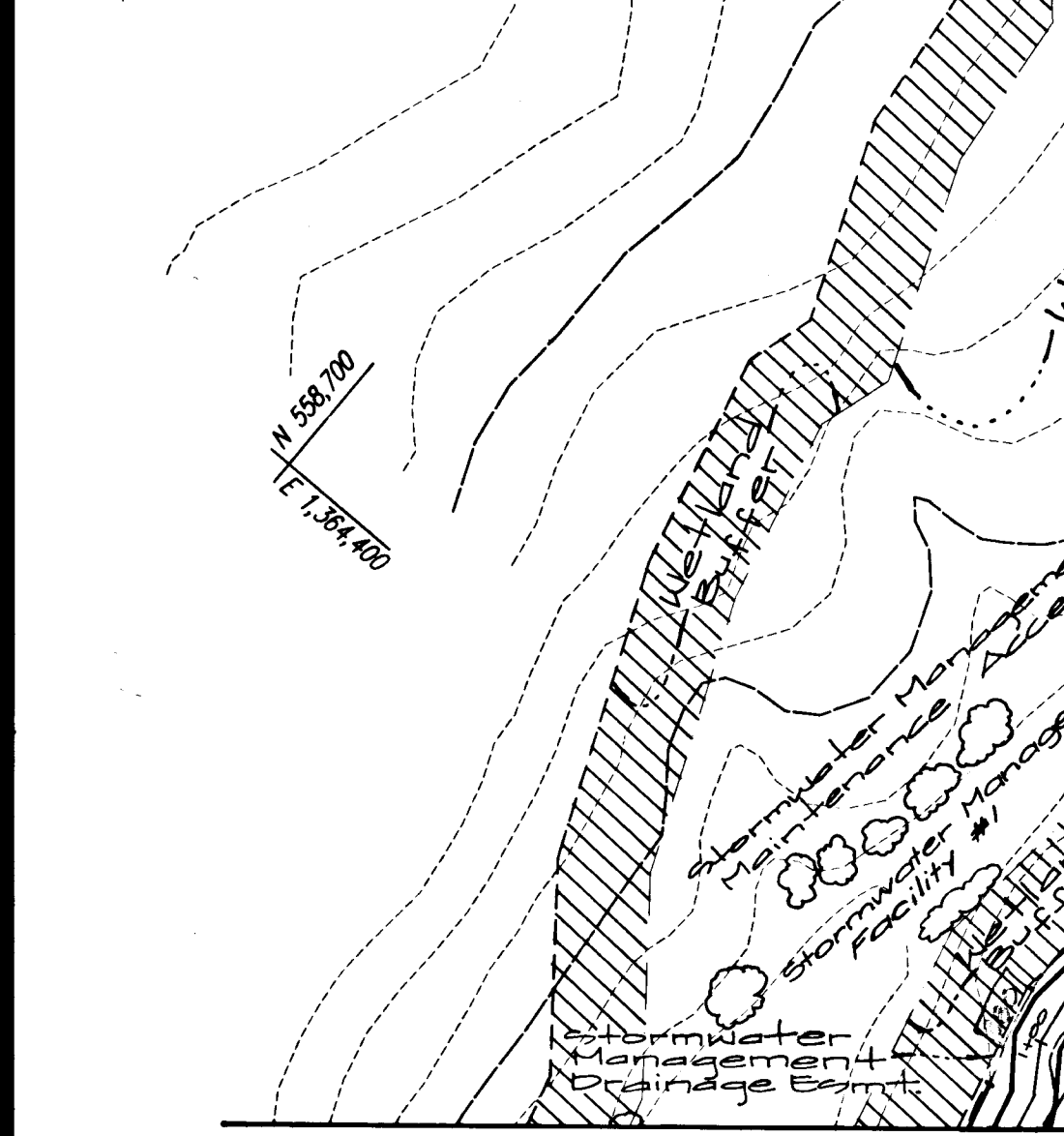
CK 9/27/95
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

"We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by Howard Soil Conservation District."

Albert 9-27-95
Signature of Developer/Builder Date

The Howard Research & Development Corporation
Liber 1535 Folio 193
Zoned: New Town



Match Line See Sheet 11 For Continuation

Match Line See Sheet 13 For Continuation

Match Line See Sheet 14 For Continuation

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard A. Dube 2-6-96
Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Jim Swannery 2/15/96
Chief, Division of Land Development and Research Date

Bill 2/19/96
Chief, Development Engineering Division M.K. Date

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

NOTE: THIS PLAN APPROVED AS GP 96-45
NOTE: FOR POND CONSTRUCTION & SEDIMENT CONTROL SEE ALSO GP 96-45

Note: For legend see sheet 1
Note: For sediment control see sheet 29

John R. Roberts 1/31/96
Howard Soil Conservation District Date

Patricia S. Prof... 1/31/96
Natural Resources Conservation Service Date

Shanabarger & Lane 12/1/96
Professional Land Surveyor Date

SHANABERGER & LANE
8726 TOWN & COUNTRY BLVD.
SUITE 104
ELLICOTT CITY, MARYLAND 21109

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4024 NO. VA.: (301) 989-2524 BALT.: (410) 880-1820 FAX: (301) 421-4186 DES. DRN. CHK. *rtj*

| DATE | REVISION | BY | APPR. |
|---------|---|-----|-------|
| 9-17-95 | Add I-25A, ST PD & I-22 | WBJ | |
| 4/12/96 | Revised Pipe sizes I-13 to I-22 & M-4 to ST J | KLP | |
| 4/11/96 | Relocate I-14 & add M-6 | KLP | |

PREPARED FOR:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATENT PARKWAY
COLUMBIA, MD 21044
(410) 992-6027

Grading Plan
Route 175 Commercial
Section 1 Area 1
Phase 22c
6th Election District
Howard County, Maryland

| SCALE | ZONING | G. L. W. FILE No. |
|-----------|-------------|-------------------|
| 1"=50' | NT | 95-003 |
| DATE | TAX MAP No. | SHEET |
| Sept 1995 | 36 | 12 OF 37 |

1787

ENGINEER'S CERTIFICATE

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. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District.

CKJ 9/27/95
Date

These Plans for erosion and sediment control meet the requirements of the Howard Soil Conservation District.

John P. Robertson 1/31/96
Howard Soil Conservation District Date

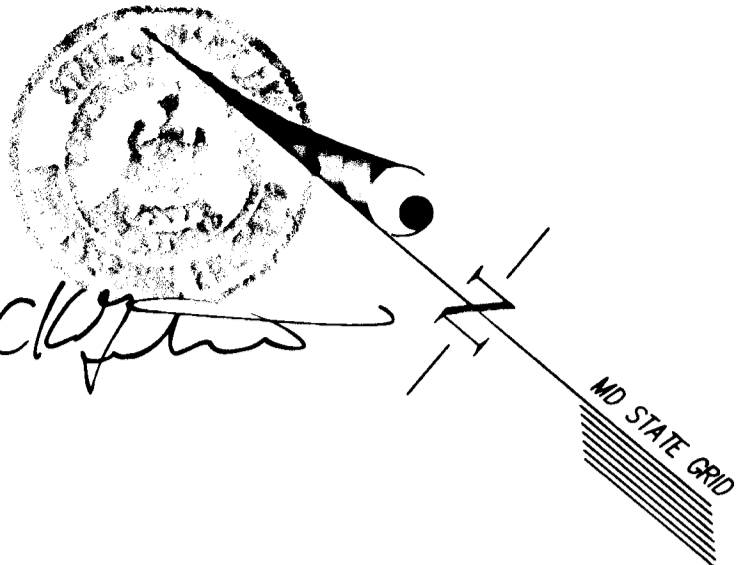
These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for erosion and sediment control.

Patricia Engler 1/31/96
Natural Resources Conservation District Date

DEVELOPER'S/BUILDER'S CERTIFICATE

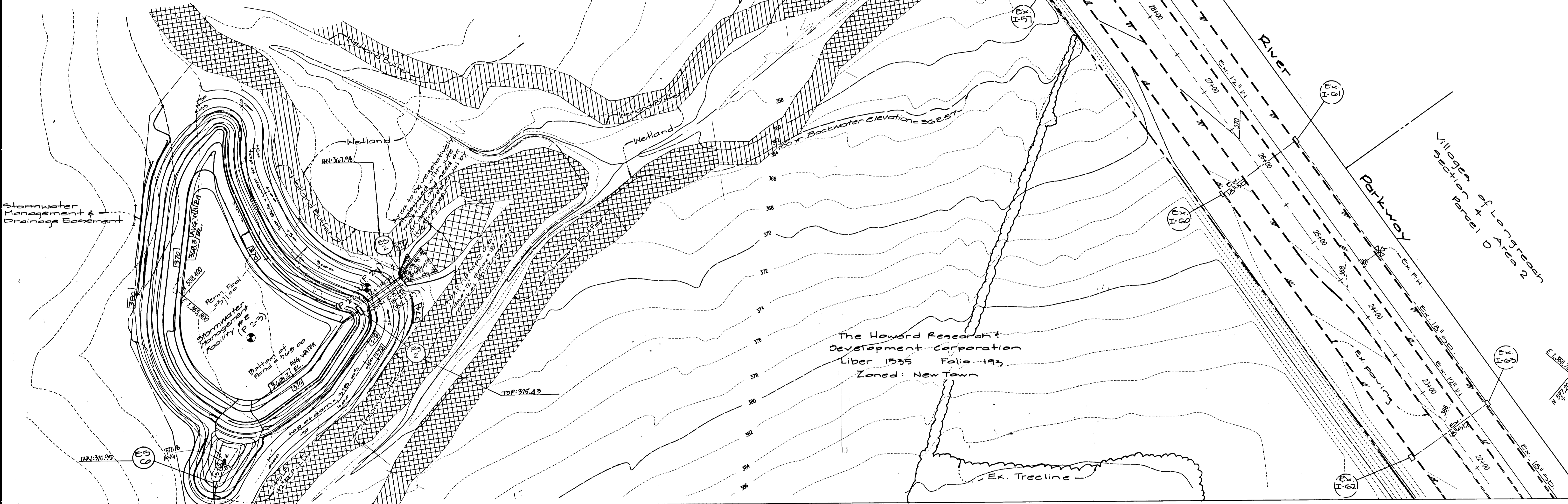
I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Alfred 9-27-95
Signature of Developer/Builder Date



The Howard Research & Development Corporation
Liber 1535 Folio 193
Zoned New Town

The Howard Research & Development Corporation
Liber 1535 Folio 193
Zoned: New Town



For Continuation See Sheet 12

For Continuation See Sheet 14

- Stormwater Management Facility Notes:
1. The facility will be owned by Howard County
 2. The facility will be a retention/ Detention Pond.
 3. The facility has a hazard class of 2C.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Deneke 2-6-96
Chief, Bureau of Highways Date

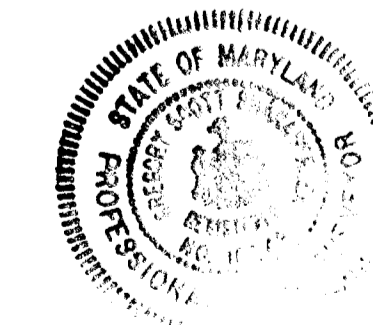
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Gina Surmann 2/15/96
Chief, Division of Land Development and Research Date

Alfred 2/9/96
Chief, Division of Engineering Date

Note: This Plan Approved as GP-96-45
Note: For Pond Construction & Sediment Control see also GP-96-45

Note: For Legend See Sheet 1
Note: For Sediment Control see Sheet 31

AS-BUILT



Shana Berger & Lane 12/1/98
DATE
SHANABERGER & LANE
8726 TOWN & COUNTRY BLVD.
SUITE 104
ELLCOTT CITY, MARYLAND 21043

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4024 NO. VA.: (301) 989-2524 BALT: (410) 880-1820 FAX: (301) 421-4186 DES. DRN. CHK.

| DATE | REVISION | BY | APP'R. |
|------|----------|----|--------|
| | | | |
| | | | |
| | | | |

PREPARED FOR:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD. 21044
(410) 992-6027

Grading Plan
Route 175 Commercial
Section: Areal
Phase 22G
Howard County, Maryland

| SCALE | ZONING | G. L. W. FILE No. |
|------------|-------------|-------------------|
| 1"=50' | NT | 95-003 |
| DATE | TAX MAP No. | SHEET |
| Sept, 1995 | 36 | 13 OF 37 |

1787

F-96-41

Match Line See Sheet 13 For Continuation

DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Anthony...
Signature of Developer/Builder
9-27-95
Date

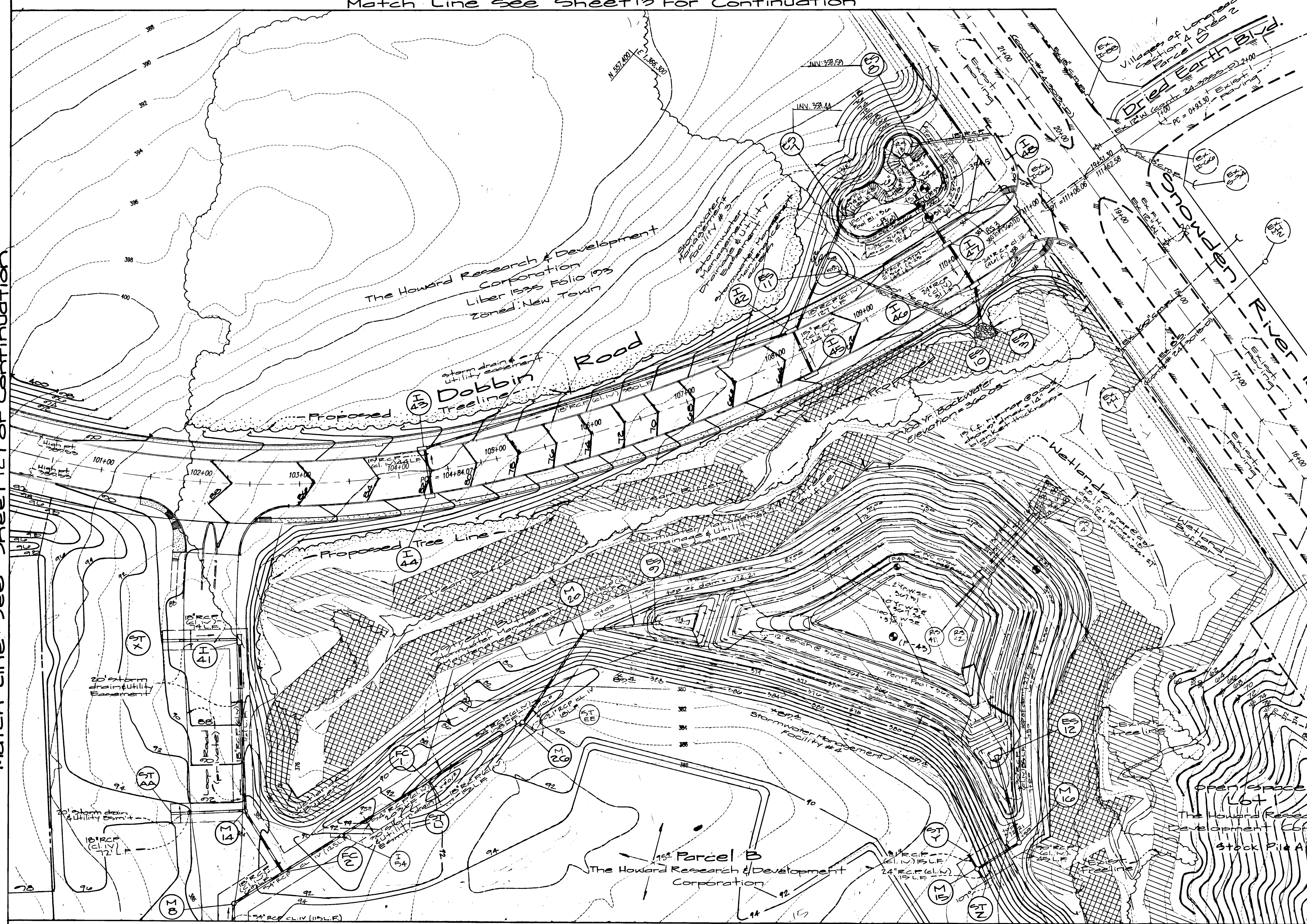
ENGINEER'S CERTIFICATE

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. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District.

Clayton...
Signature of Engineer
9-27-95
Date

The Howard Research & Development Corporation
Liber 1535 Folia 193
Zoned: New Town

Match Line See Sheet 12 For Continuation



Match Line See Sheet 15 For Continuation

NOTE: THIS PLAN APPROVED AS GP 96-45
NOTE: FOR POND CONSTRUCTION & SEDIMENT CONTROL, SEE ALSO GP 96-45

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for erosion and sediment control.

These Plans for erosion and sediment control meet the requirements of the Howard Soil Conservation District.

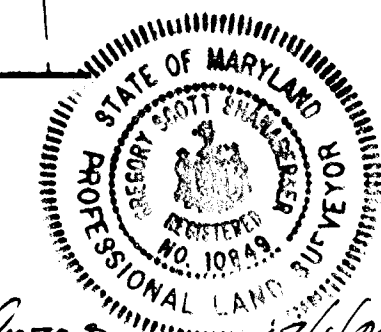
- Stormwater Management Facility #2 Notes
- The facility will be owned by Howard County.
 - The facility will be retention/detention pond.
 - The facility has a hazard class of "A".
- Facility #3 Notes
- The facility will be owned by Howard County.
 - The facility will apply water quality using a pocket wetland defined by the manual for determining wetland defined by the manual for determining government quality will be provided by retention.
 - The facility has a hazard class of "A".

Note: For legend see sheet 1

Note: For Sediment Control see sheet 32

AS-BUILT

Erin...
Signature of Professional Engineer
12/1/95
Date



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard...
Date: 2-6-96

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chia...
Date: 2/15/96
W.D....
Date: 2/19/96

Patricia Engler...
Date: 1/31/96
Natural Resources Conservation

John R. Roberts...
Date: 1/31/96
Howard Soil Conservation District

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4024 NO. VA.: (301) 989-2524 BALT: (410) 880-1820 FAX: (301) 421-4186

| DATE | REVISION | BY | APP'R. |
|---------|--|-----|--------|
| 1/19/96 | Revise I-20 to I-24, Add I-33, Revise Mass Grading | WDL | MCP |
| | | | |
| | | | |

PREPARED FOR:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATENT PARKWAY
COLUMBIA, MD 21044
(410) 992-6027

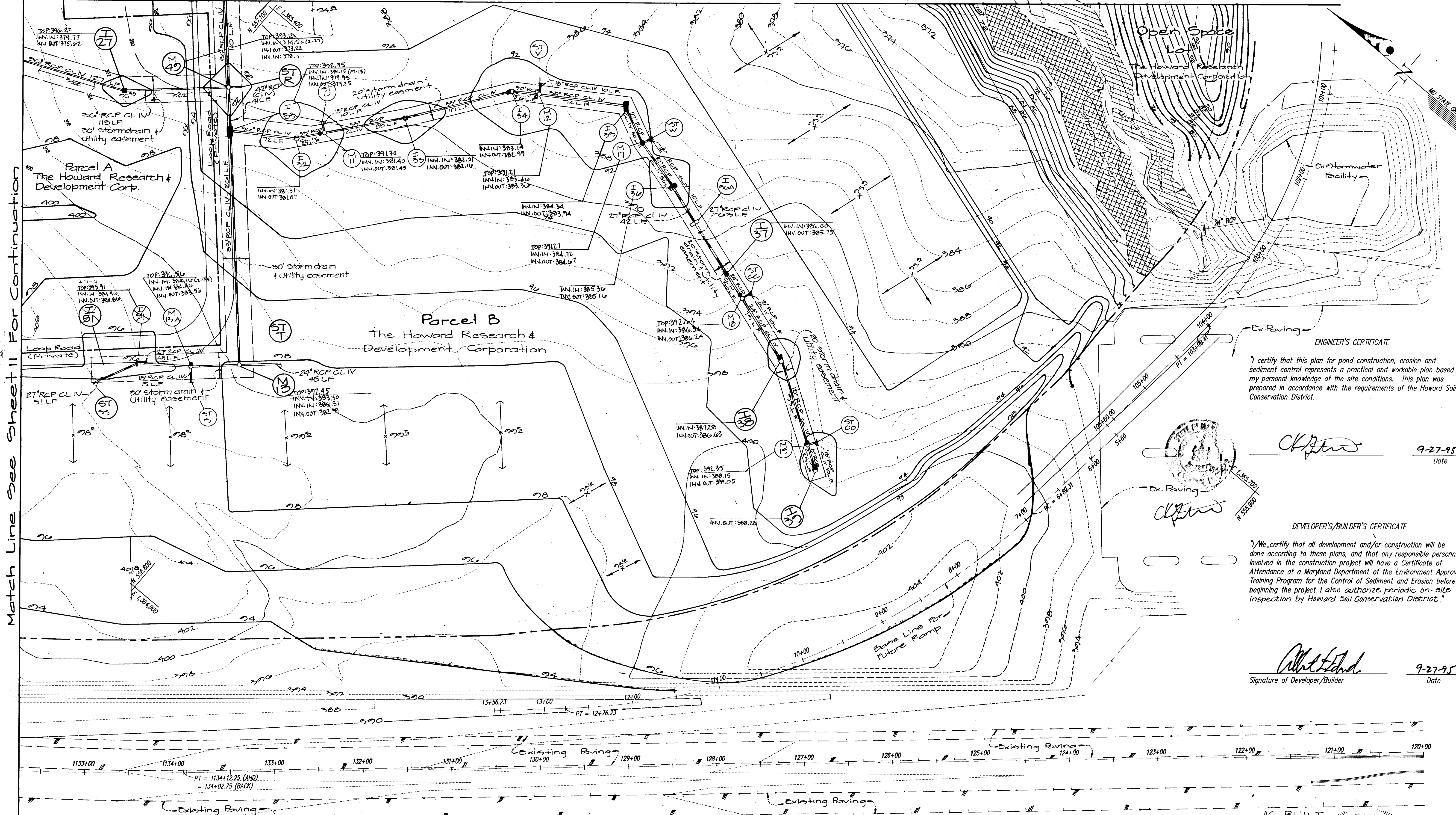
Grading Plan
Route 175 Commercial Section 1 Area 1
Phase 220
Cath Election District
Howard County, Maryland

| SCALE | ZONING | G. L. W. FILE NO. |
|------------|-------------|-------------------|
| 1"=50' | NT | 95-003 |
| DATE | TAX MAP No. | SHEET |
| Sept, 1995 | 36 | 14 OF 37 |

1787

Match Line See Sheet 14 For Continuation

Match Line See Sheet 11 For Continuation

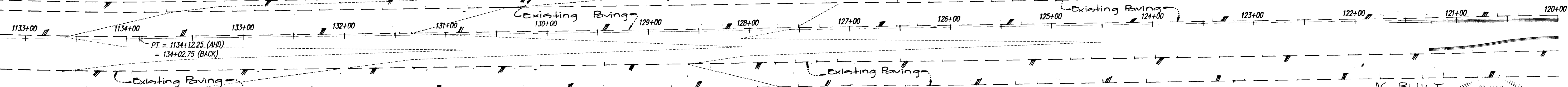


ENGINEER'S CERTIFICATE
 I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District.

Clifford
 9-27-95
 Date

DEVELOPER'S/BUILDER'S CERTIFICATE
 I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by Howard Soil Conservation District.

Albert Ford
 Signature of Developer/Builder
 9-27-95
 Date



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Decker
 Chief, Bureau of Highways
 2/6/96
 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Aim Summerville
 Chief, Division of Land Development and Research
 2/15/96
 Date

Chris DeMunn
 Chief, Division of Engineering Division M.K.
 2/9/96
 Date

These Plans for , soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
John P. Plutanski
 Howard Soil Conservation District
 1/31/96
 Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for , soil erosion and sediment control.
Patricia Engler
 Natural Resources Conservation Specialist
 1/31/96
 Date

NOTE: THIS PLAN APPROVED AS GP 96-45
 NOTE: FOR LEGEND SEE SHEET 1
 NOTE: FOR SEDIMENT CONTROL SEE SHEET 33
 NOTE: FOR SEDIMENT CONTROL & SEDIMENT CONTROL SEE ALSO GP 96-45

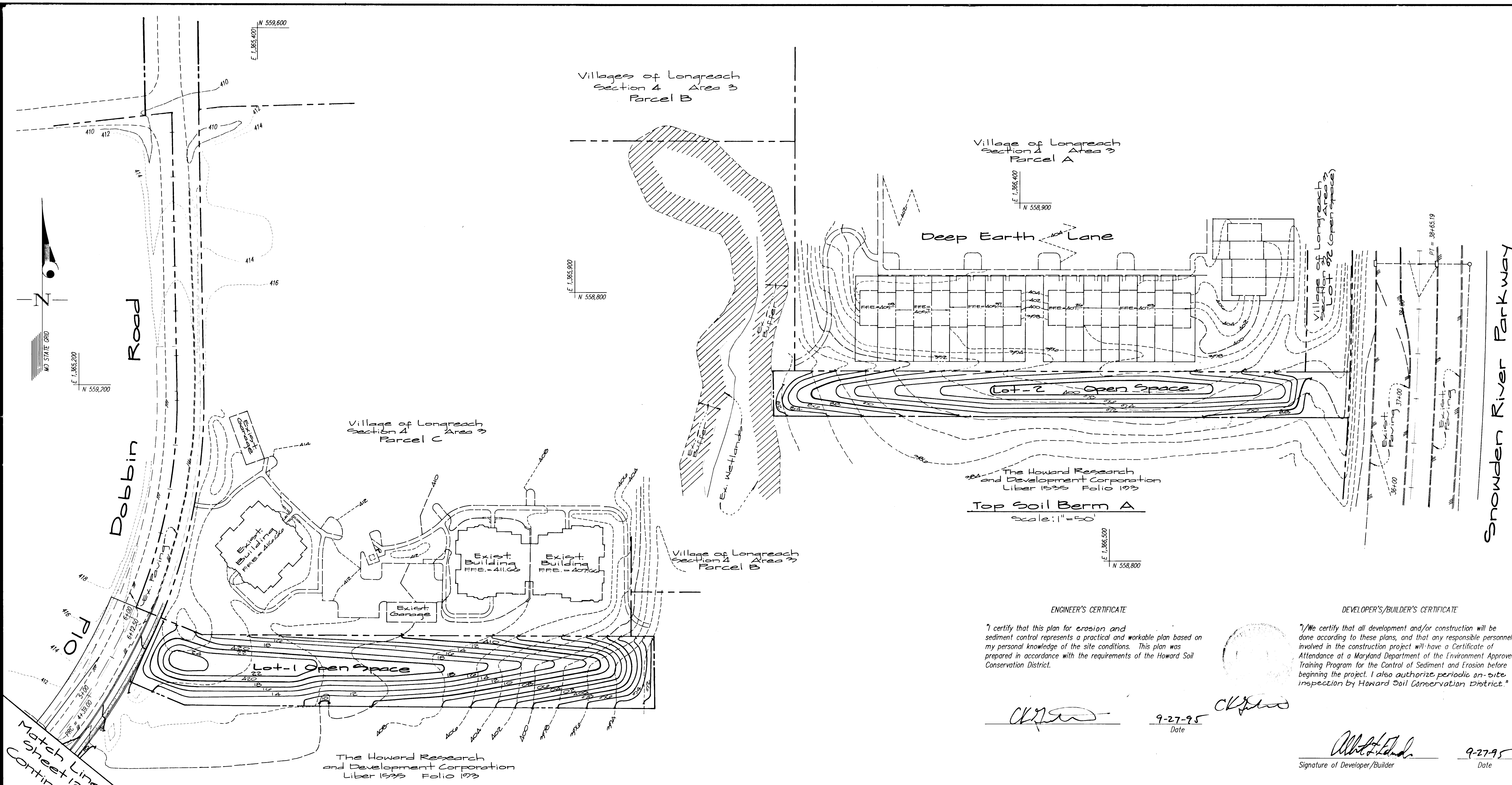
Scott Shanaberger
 PROFESSIONAL L.S.# 10289
 SHANABERGER & LANE
 8726 TOWN & COUNTRY BLVD.
 SUITE 104
 ELLICOTT CITY, MARYLAND 21103
 12/1/95
 DATE

1787

| | | | | | | | | |
|--|--|--|----------------------|--|----------------------|--|-----------------------------------|--|
| GW GUTSCHICK LITTLE & WEBER, P.A. CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866 TEL: (301) 421-4024 NO. VA.: (301) 989-2524 BALT.: (410) 880-1820 FAX: (301) 421-4186 | | PREPARED FOR: THE HOWARD RESEARCH & DEVELOPMENT CORP. THE ROUSE BUILDING 10275 LITTLE PATENT PARKWAY COLUMBIA, MD. 21044 (410) 992-6027 | | Grading Plan Route 175 Commercial Section 1 Area 1 Phase 220 Geth Election District Howard County, Maryland | | SCALE 1"=50' DATE Sept., 1995 | ZONING NT TAX MAP No. 36 | G. L. W. FILE No. 95-003 SHEET 15 OF 27 |
| REVISION DATE BY APP'R. | 1/10/96 Add inlet to A 1/19/96 Revise S.D. Run E-39 to E-41 (M-49) Mass Grading | WESJ MCF | DES. DRN. CHK. | DES. DRN. CHK. | DES. DRN. CHK. | DES. DRN. CHK. | DES. DRN. CHK. | |

F-96-91

1787



The Howard Research and Development Corporation
Liber 15335 Folio 193
Top Soil Berm A
Scale: 1"=50'

Top Soil Berm C-1
Scale: 1"=50'

ENGINEER'S CERTIFICATE

"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. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District.

John R. Phillips
Date: 9-27-95

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by Howard Soil Conservation District."

Albert H. Edwards
Signature of Developer/Builder Date: 9-27-95

NOTE: THIS PLAN APPROVED AS GP 96-45
NOTE: FOR POND CONSTRUCTION & SEDIMENT CONTROL, SEE ALSO GP 96-45

These Plans for soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

John R. Phillips
Howard Soil Conservation District Date: 1/31/96

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for soil erosion and sediment control.

Patricia Engle
Natural Resources Conservation Service Date: 1/31/96

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 2/6-96
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Jina Womany 2/15/96
Robert Dammann 2/9/96

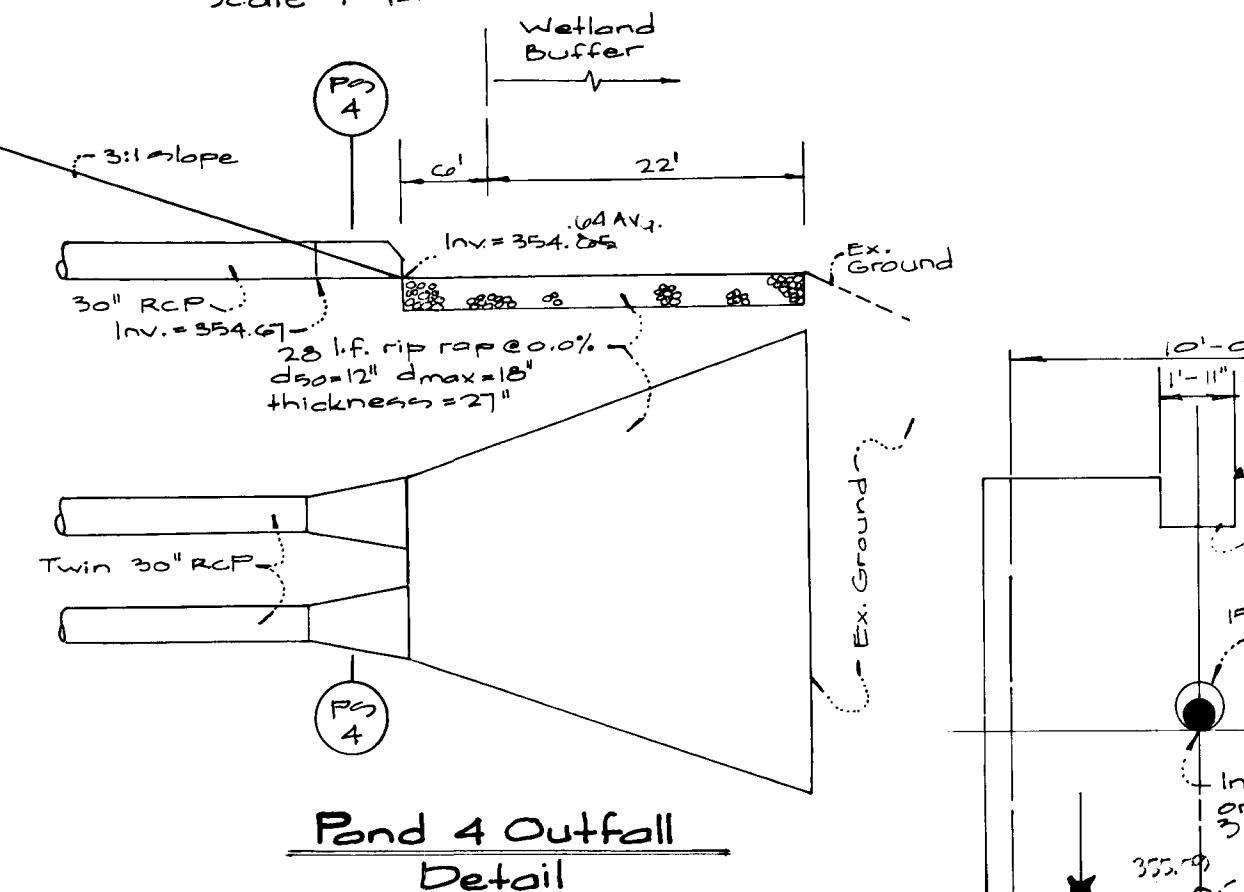
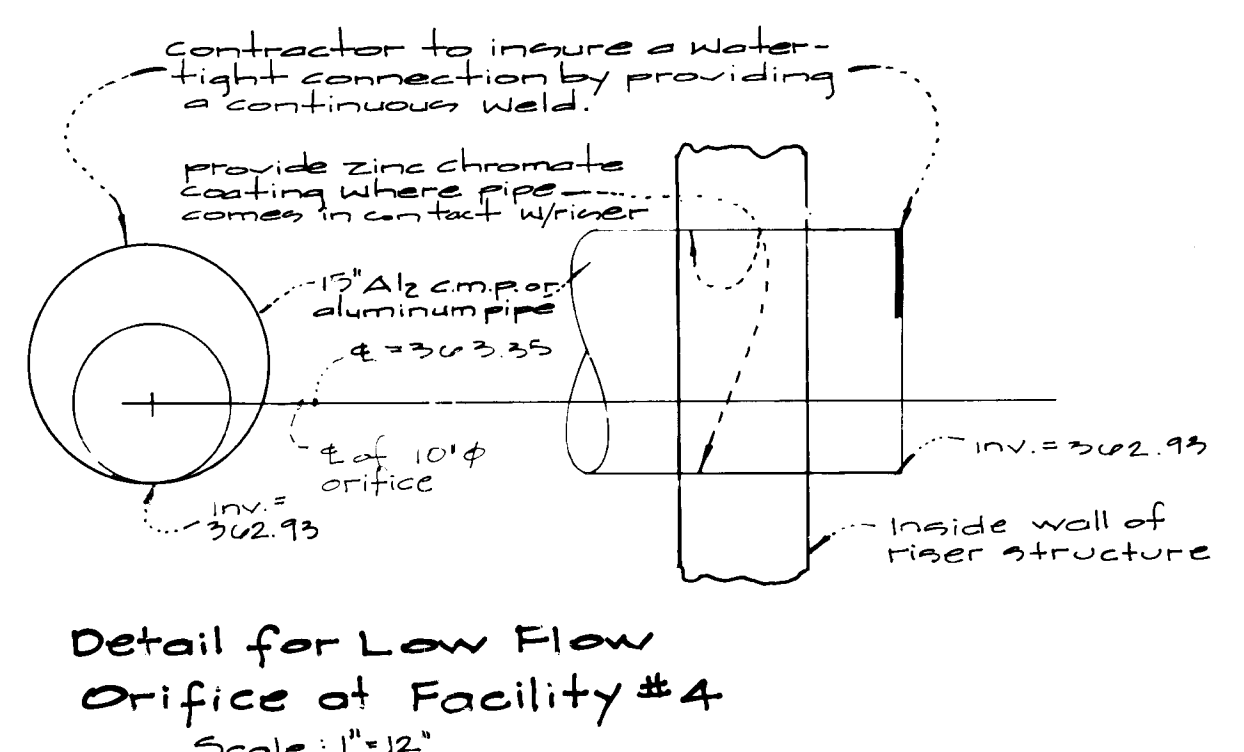
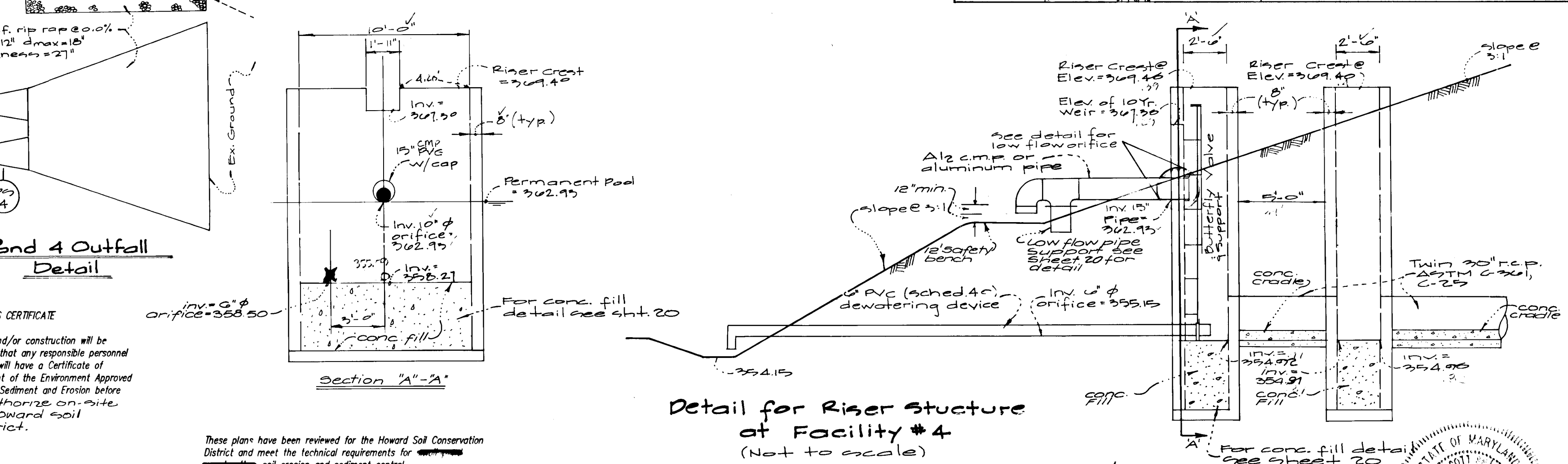
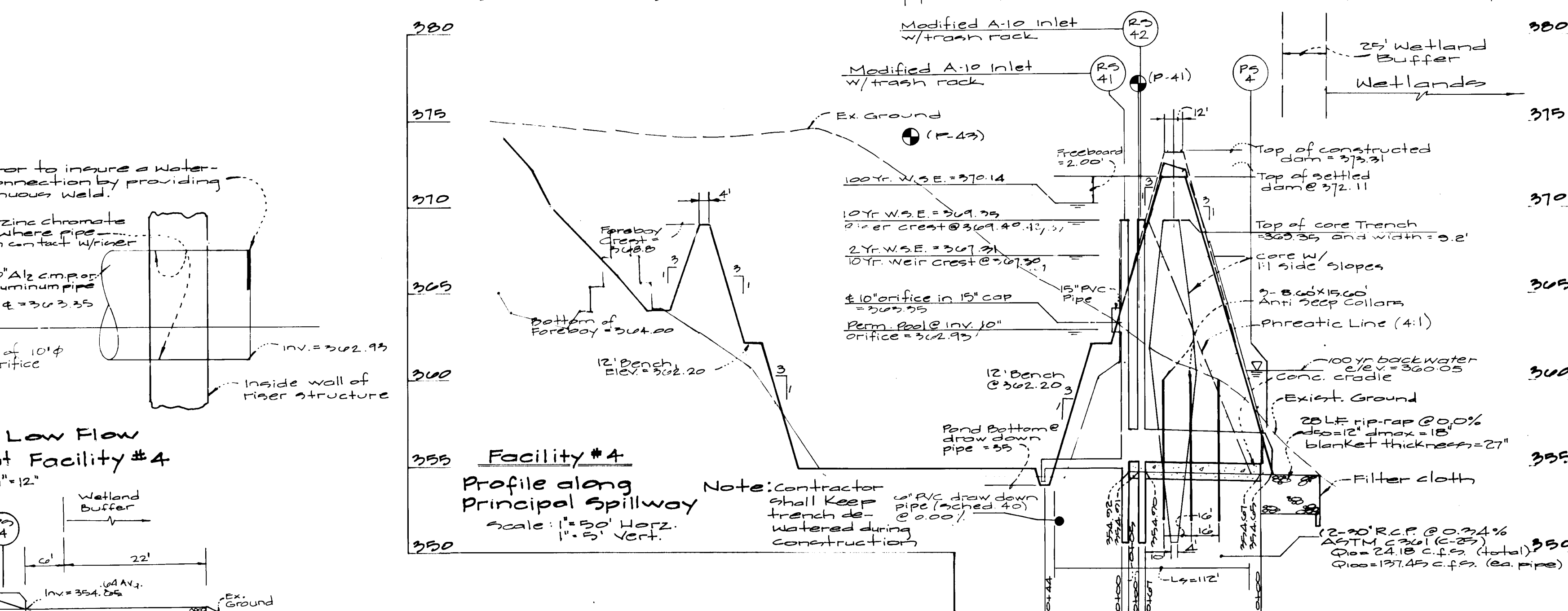
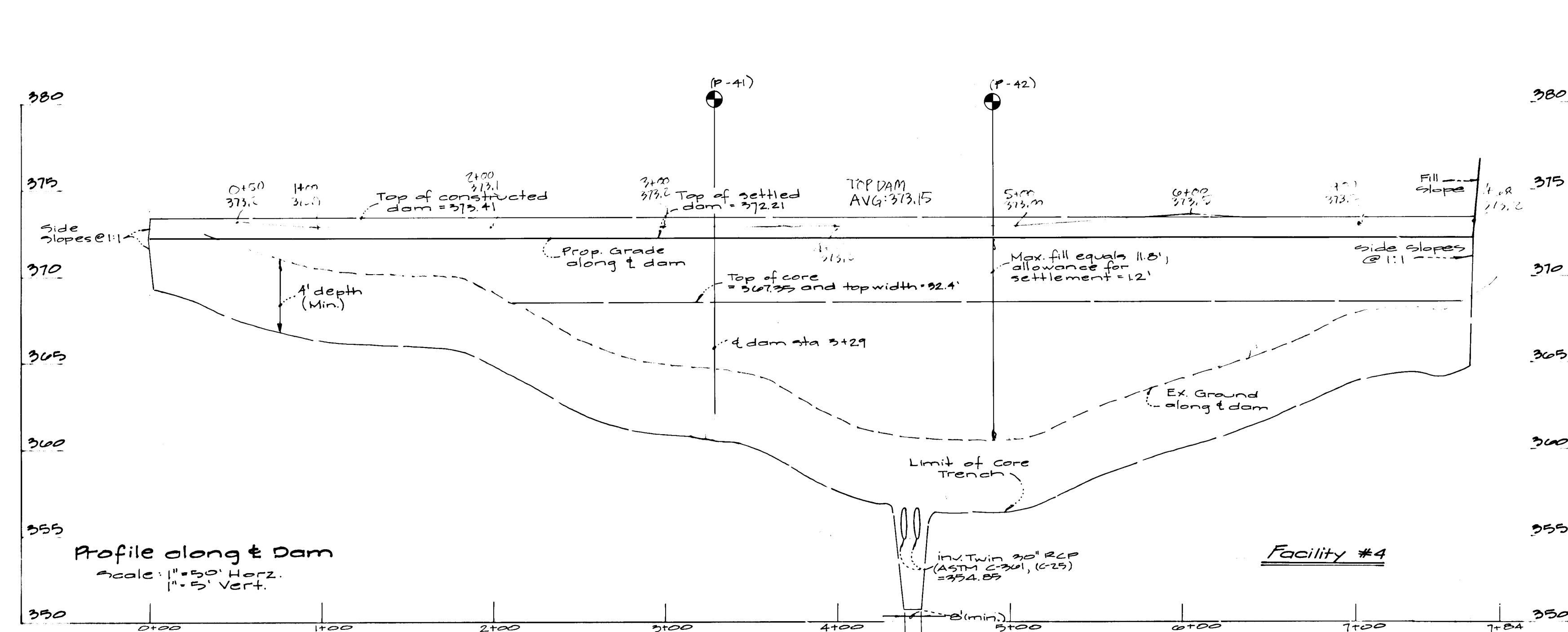
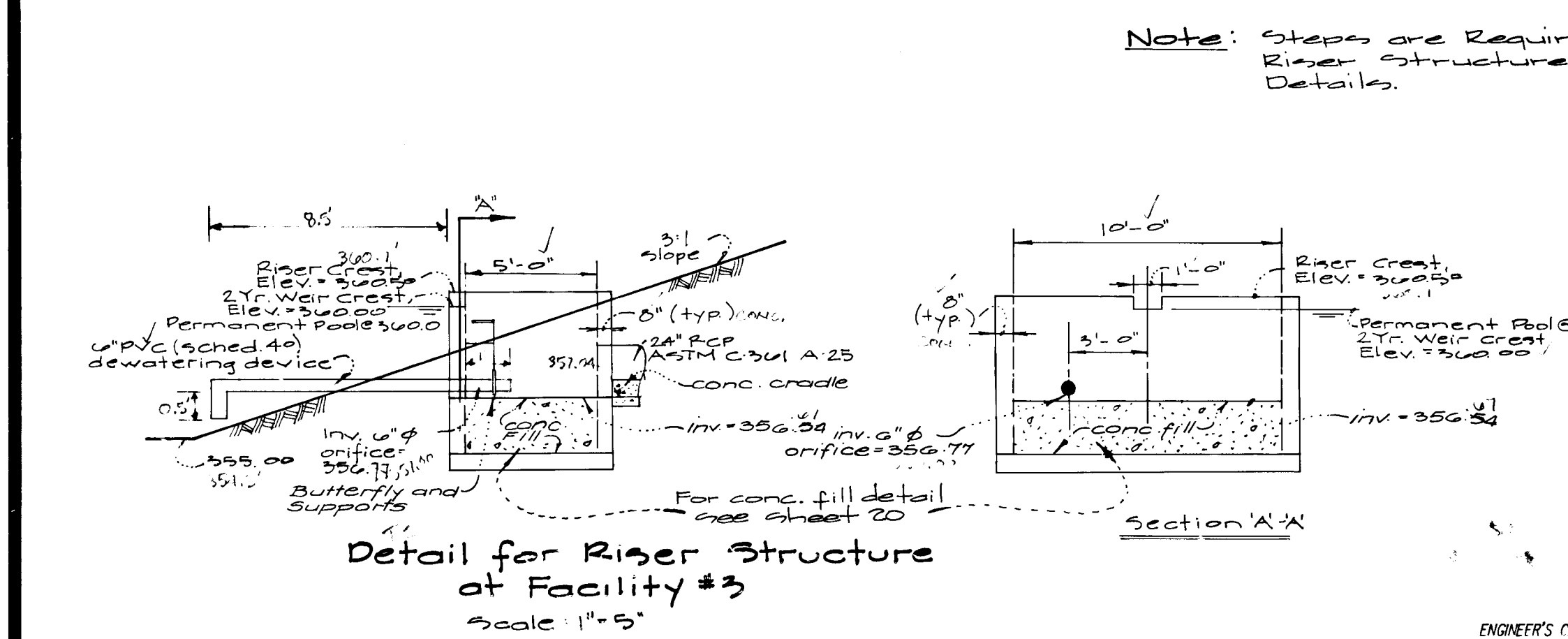
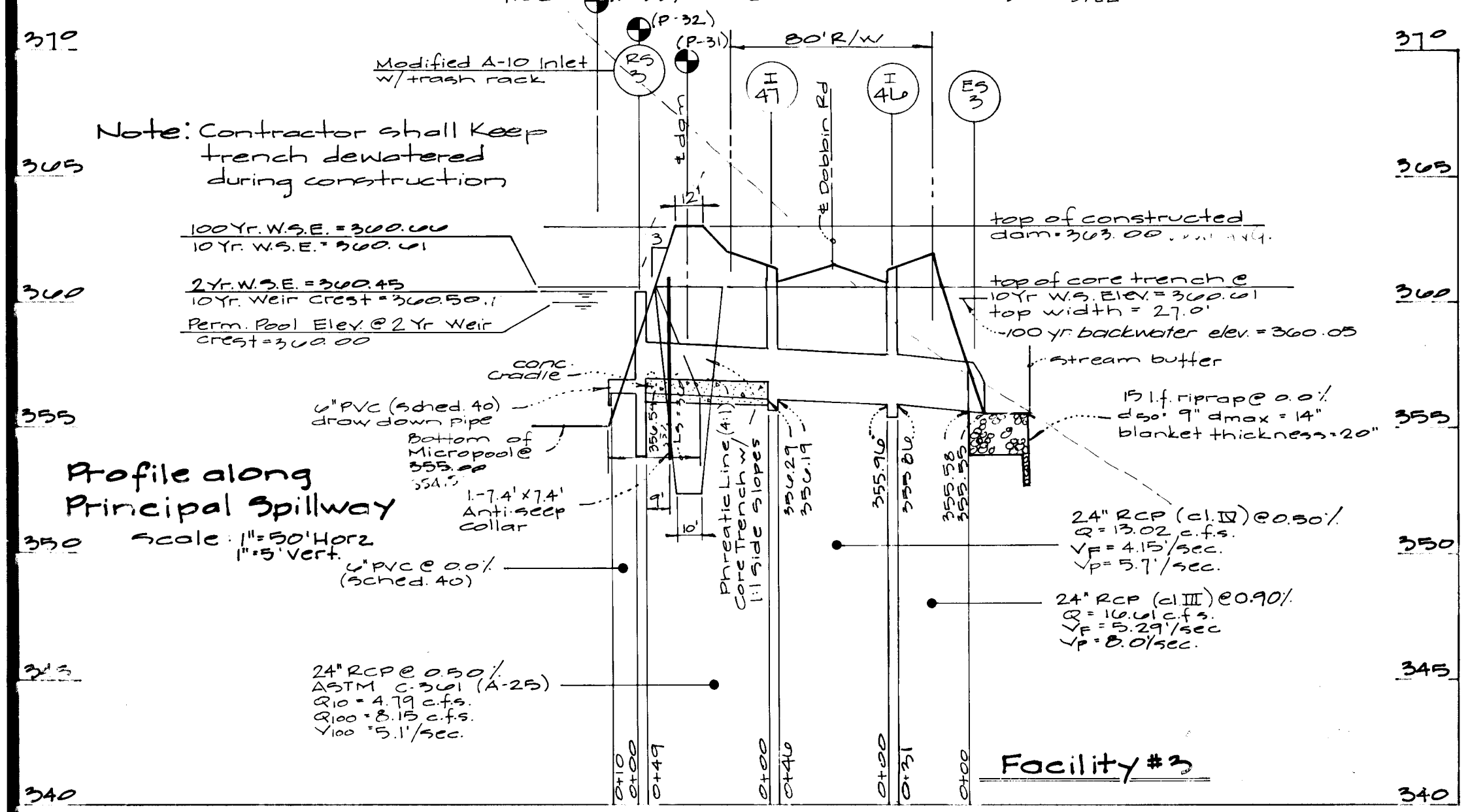
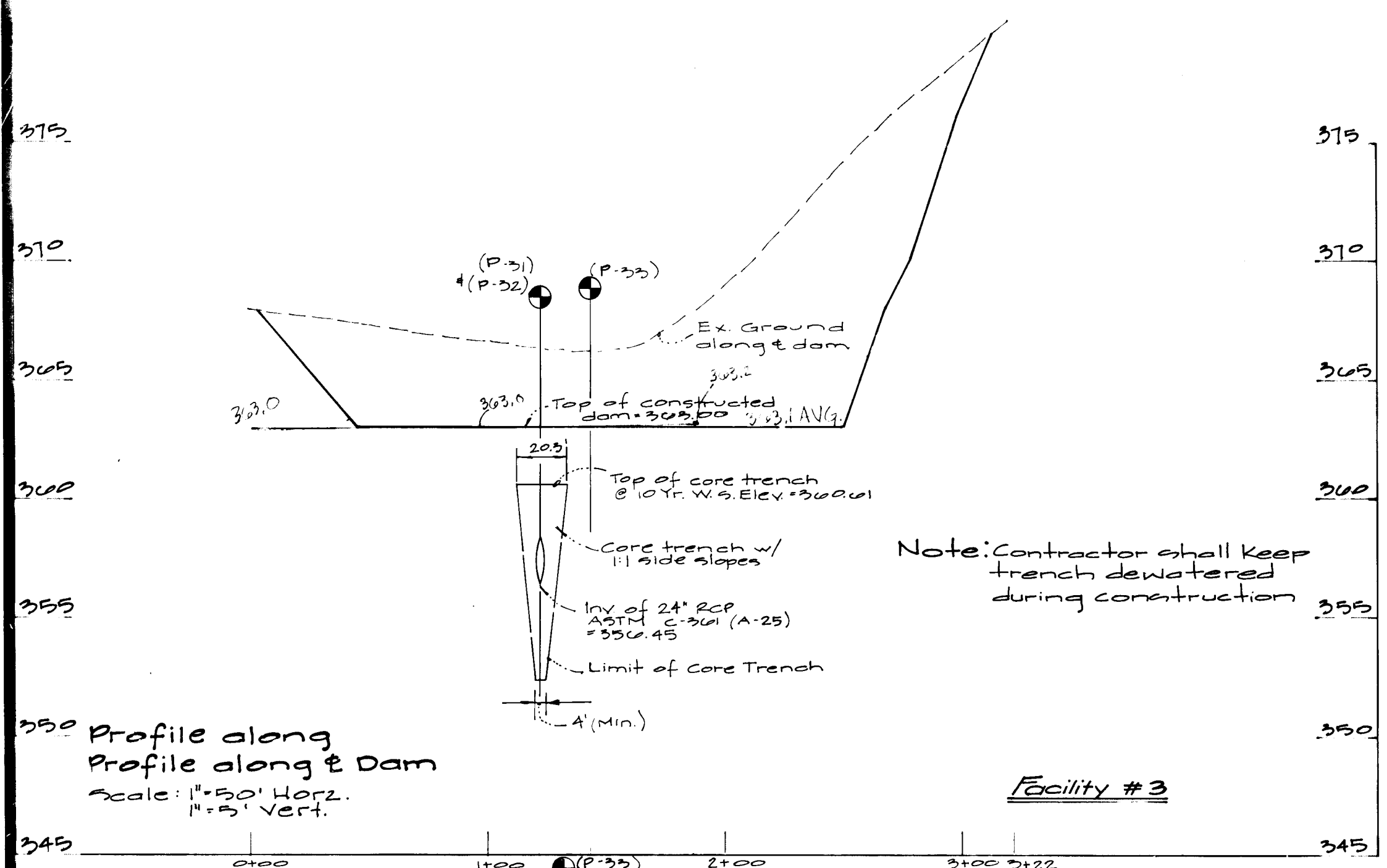
GW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4024 NO. VA: (301) 989-2524 BAL: (410) 880-1820 FAX: (301) 421-4186 DES. DRN. CHK. *njt*

| DATE | REVISION | BY | APP'R |
|------|----------|----|-------|
| | | | |
| | | | |
| | | | |

PREPARED FOR:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD. 21044
(410) 992-6027

Grading Plan
Route 175 Commercial
Section 1 Area 1
Phase 220
6th Election District Howard County, Maryland

| SCALE | ZONING | G. L. W. FILE No. |
|------------|-------------|-------------------|
| 1"=50' | NT | 95-003 |
| DATE | TAX MAP No. | SHEET |
| Sept. 1995 | 36 | 16 OF 37 |



Approved: Howard County Dept of Public Works
 Chief, Bureau of Highways
 Approved: Howard County Dept of Planning/Zoning
 Chief, Div. of Land Development & Research
 Chief, Development Engineering Division

ENGINEER'S CERTIFICATE
 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. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature: [Signature] Date: 9-27-95

DEVELOPER'S/BUILDER'S CERTIFICATE
 I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize on-site inspection by the Howard Soil Conservation District.
 Signature: [Signature] Date: 9-27-95

SHANABERGER & LANE
 8726 TOWN & COUNTRY BLVD.
 SUITE 104
 ELLICOTT CITY, MARYLAND 21103
 Date: 1/31/96

Note: This Plan Approved as GP 96-45. Note: For Pond Construction & Sediment Control see also GP 96-45.

GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD 20866
 TELEPHONE (301)421-4024 NO. VA. (301)989-2524 BALTO. (301)880-1820 FAX (301)421-4186

| DATE | REVISION | BY | APP'R. |
|------|----------|----|--------|
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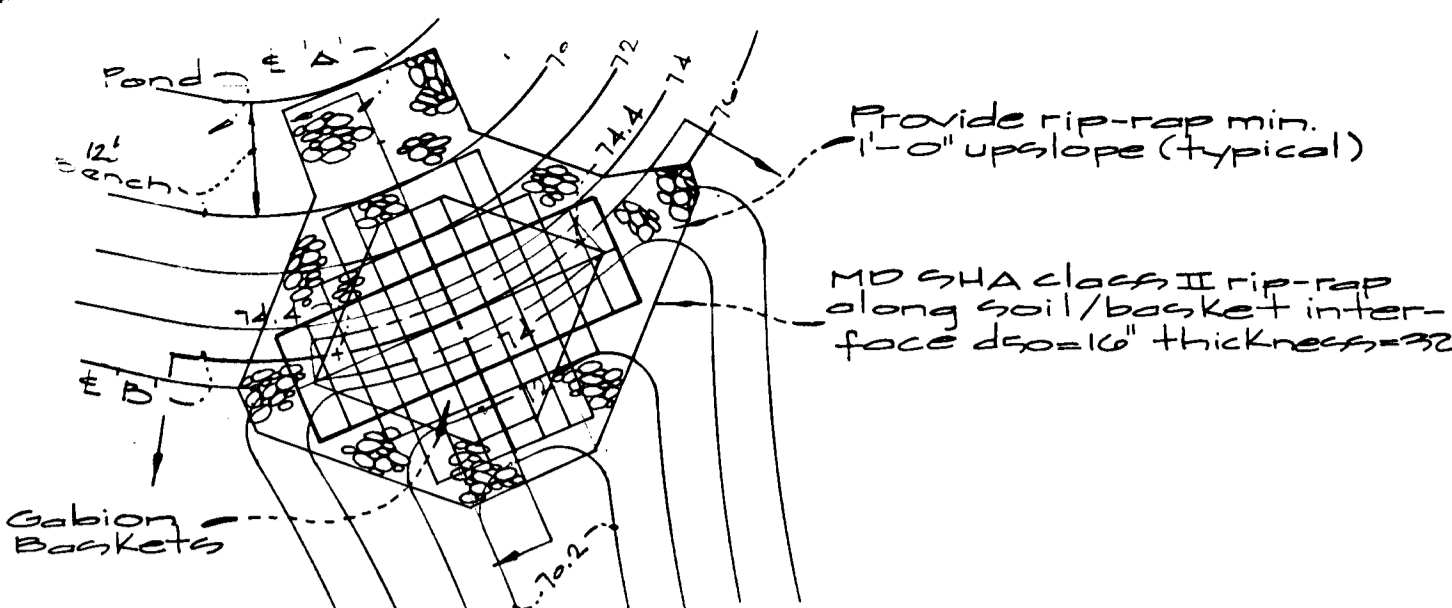
PREPARED FOR:
 The Howard Research and Development Corp
 The Rouse Building
 10275 Little Patuxent Parkway
 Columbia, Md 21044
 (410) 992-6027

Route 175 Commercial
 Section 1 Area 1
 Phase 22G
 6th Election District
 Howard County, Maryland

| DES. | SCALE | ZONING | G.L.W. FILE NO. |
|------|------------|-------------|-----------------|
| DEV | As Shown | NT | 95003 |
| DRN. | DATE | TAX MAP NO. | SHEET |
| MCF | Sept. 1995 | 30 | 18 of 37 |

1787

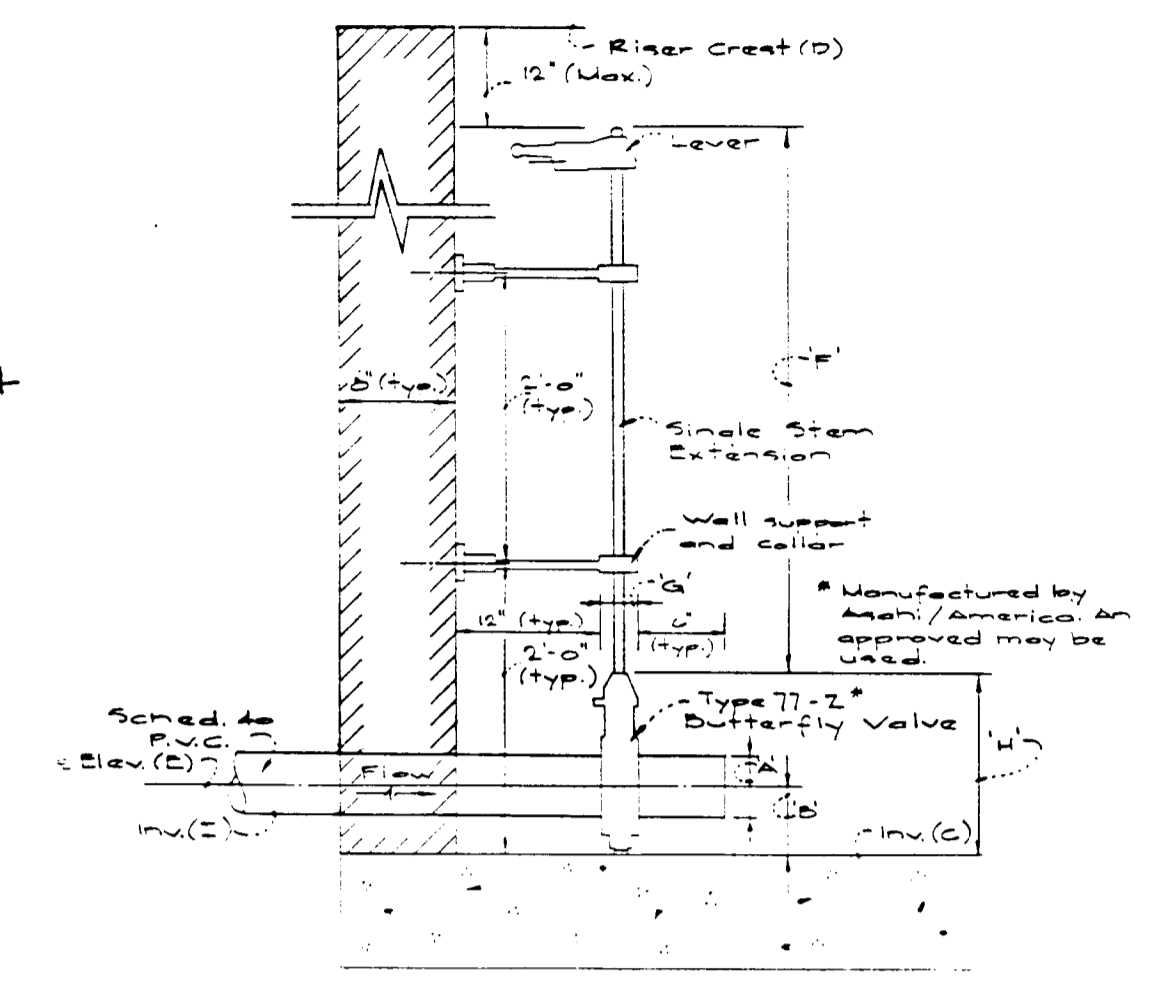
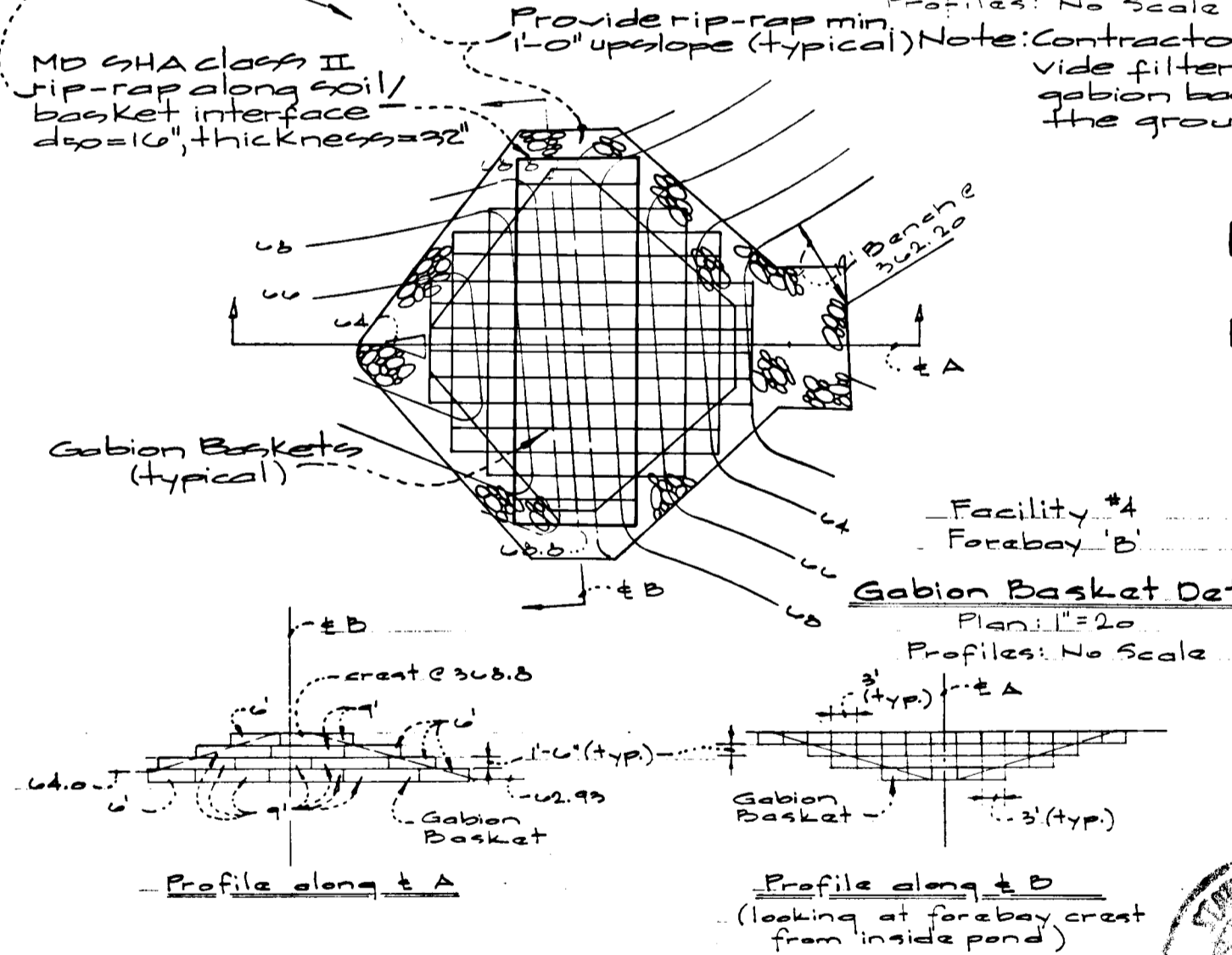
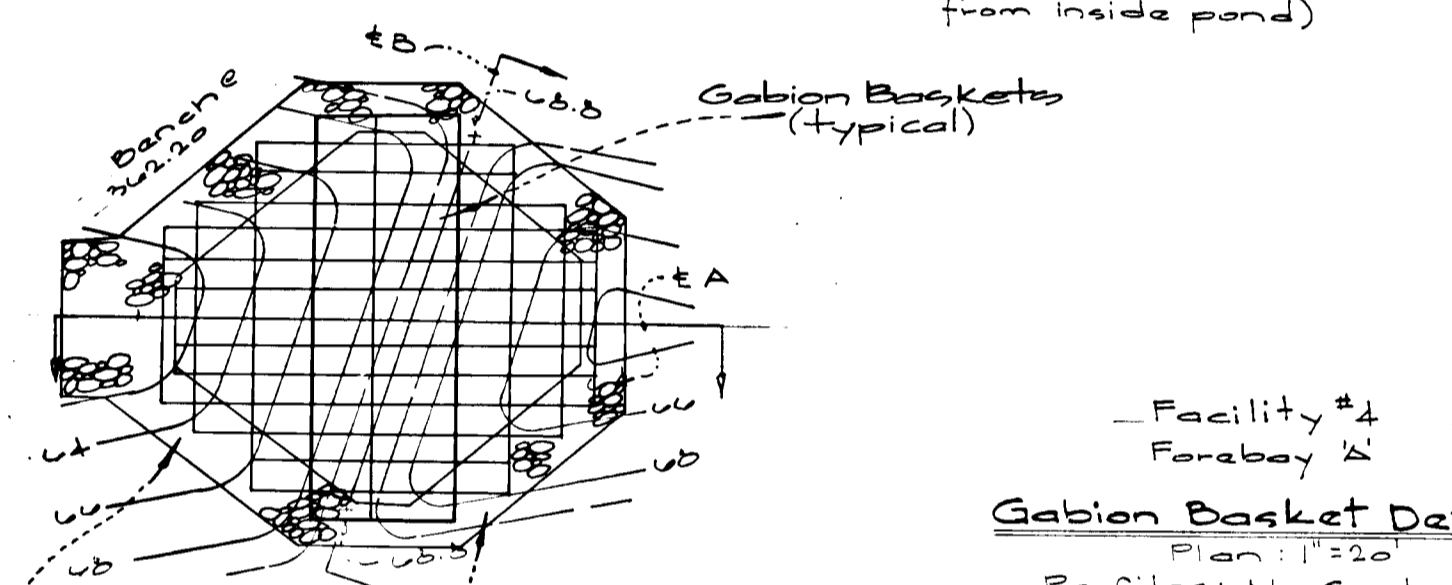
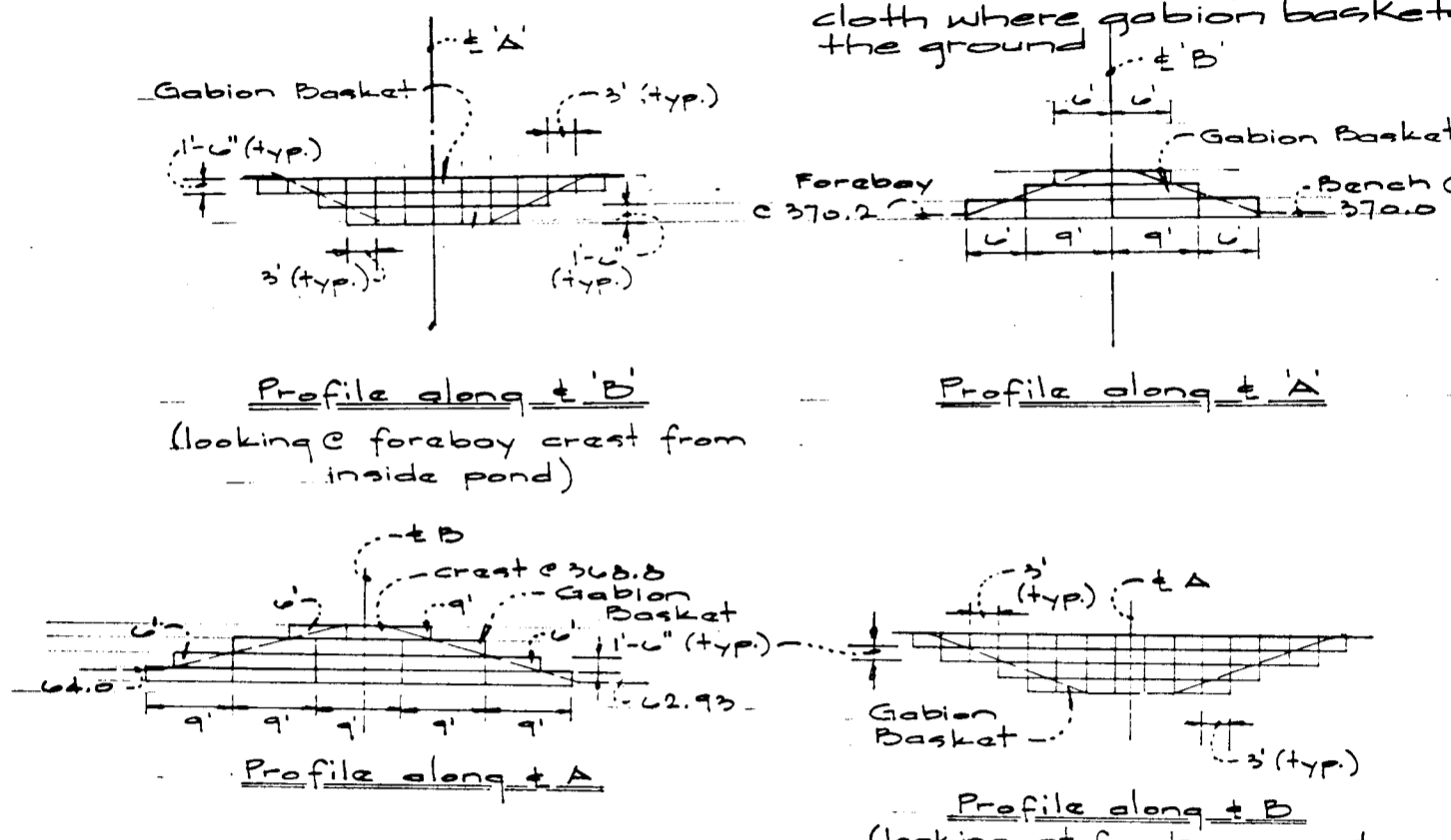




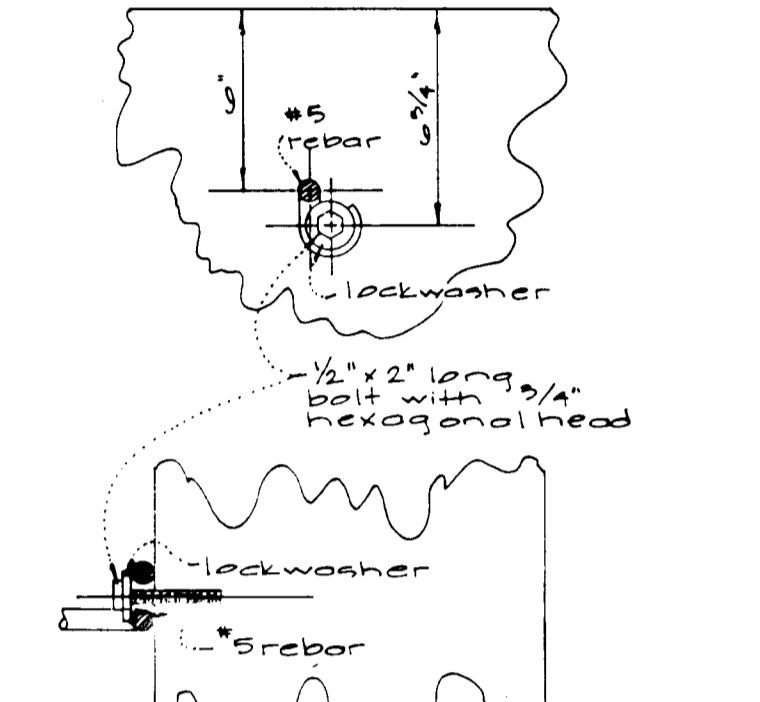
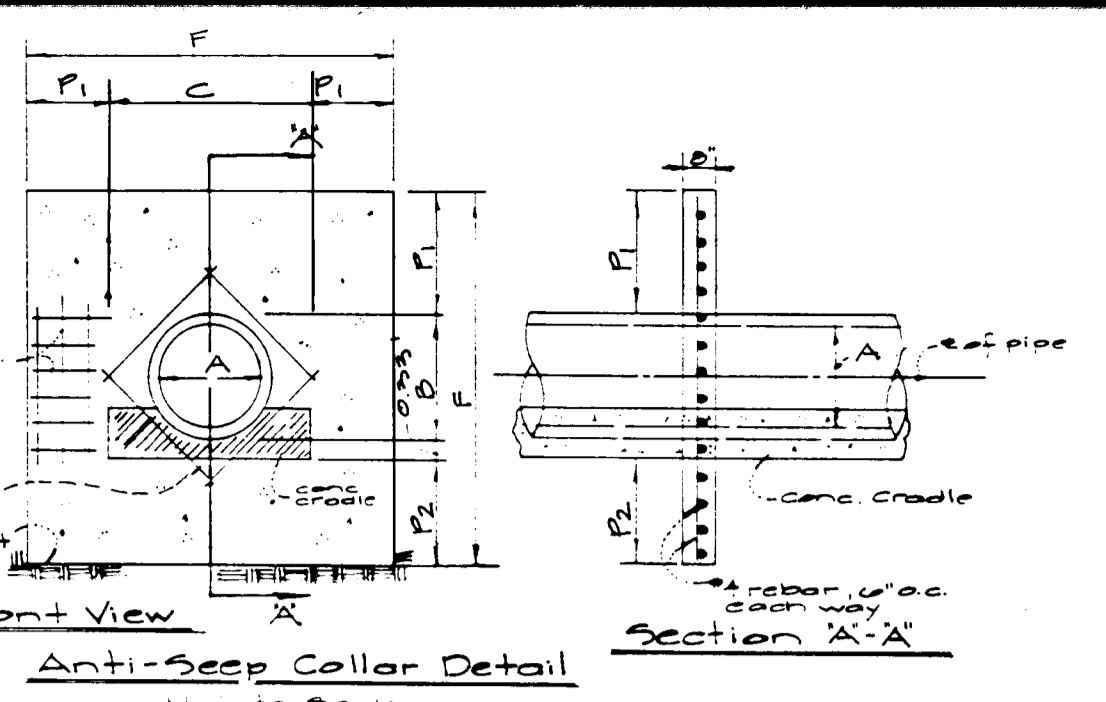
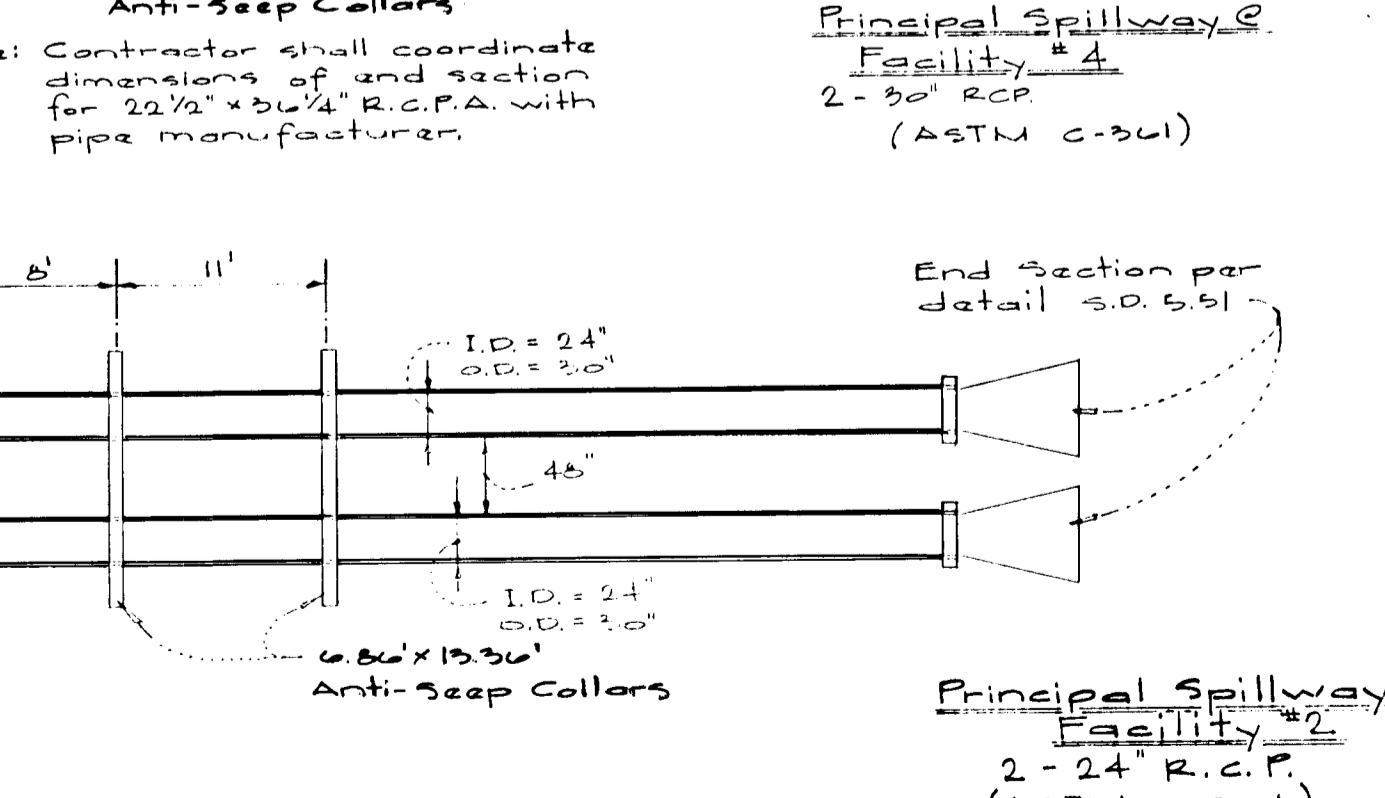
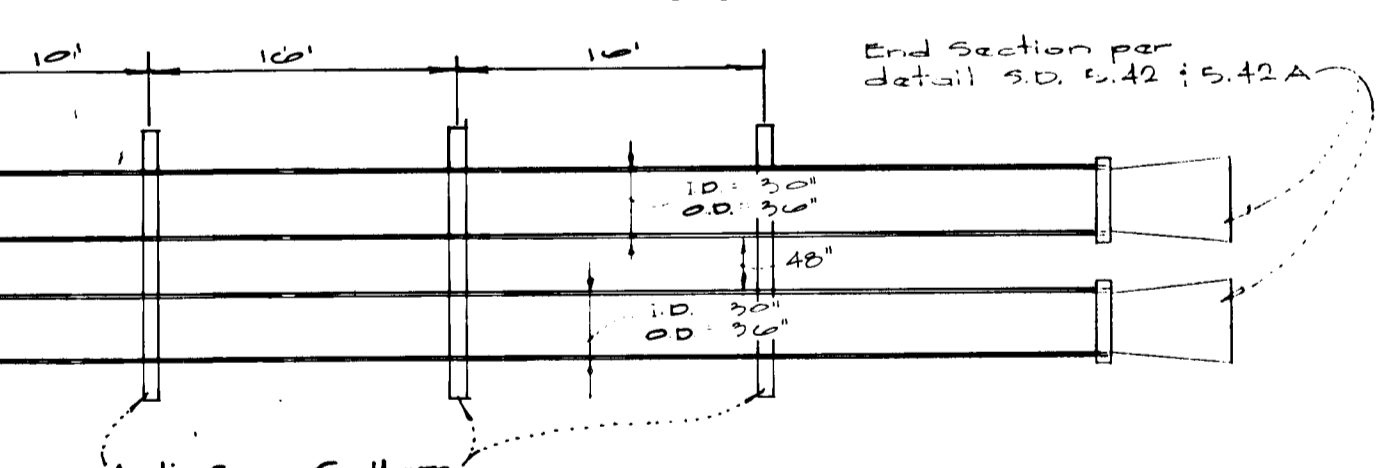
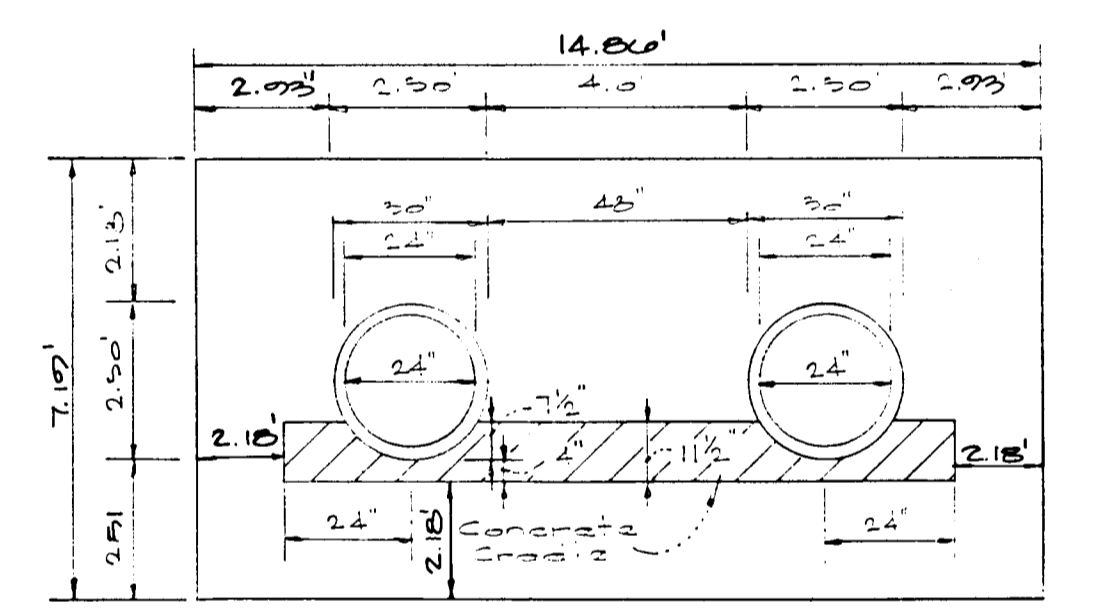
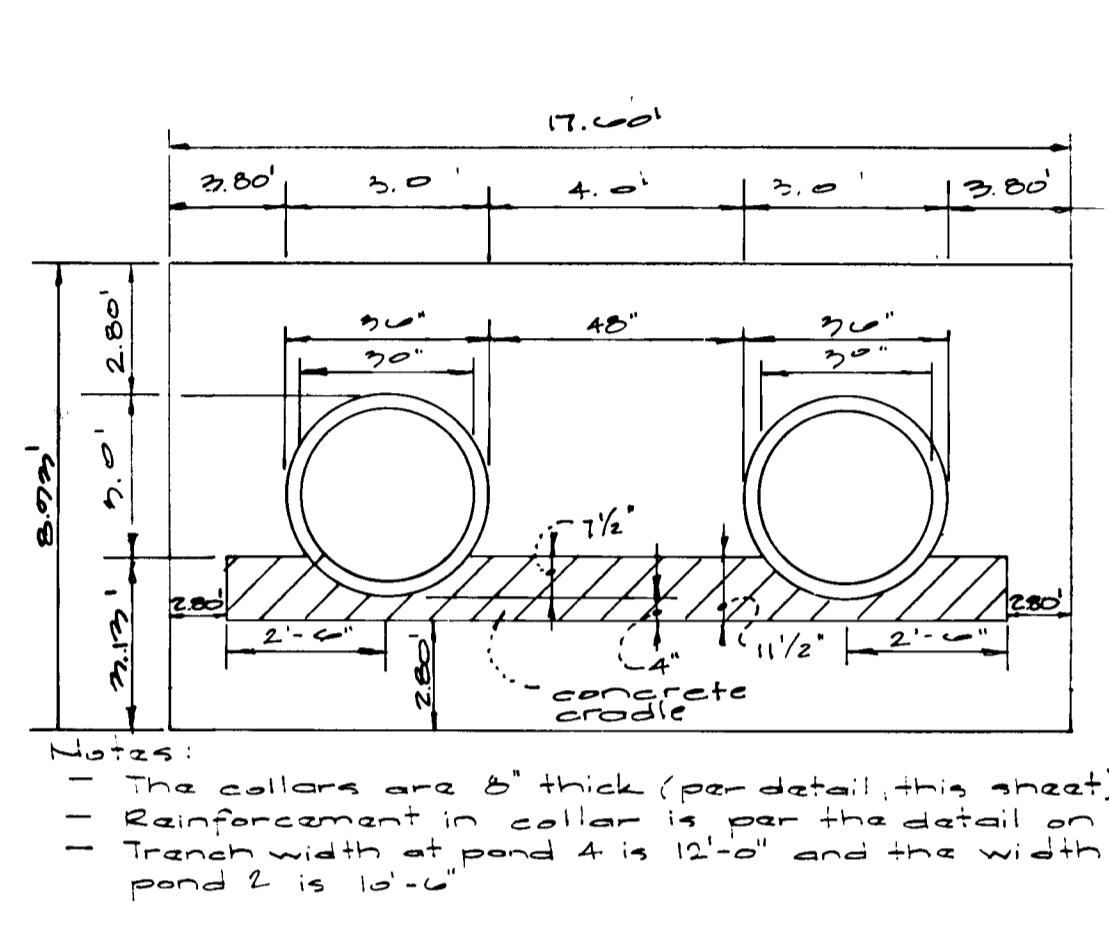
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|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 5'-7" | 3'-0" | 3'-0" | 3'-0" | 3'-0" | 3'-0" | 3'-0" | 3'-0" | 3'-0" |
| 2 | 5'-7" | 3'-0" | 3'-0" | 3'-0" | 3'-0" | 3'-0" | 3'-0" | 3'-0" | 3'-0" |
| 3 | 5'-7" | 3'-0" | 3'-0" | 3'-0" | 3'-0" | 3'-0" | 3'-0" | 3'-0" | 3'-0" |
| 4 | 5'-7" | 3'-0" | 3'-0" | 3'-0" | 3'-0" | 3'-0" | 3'-0" | 3'-0" | 3'-0" |

Facility #2 Gabion Basket Details

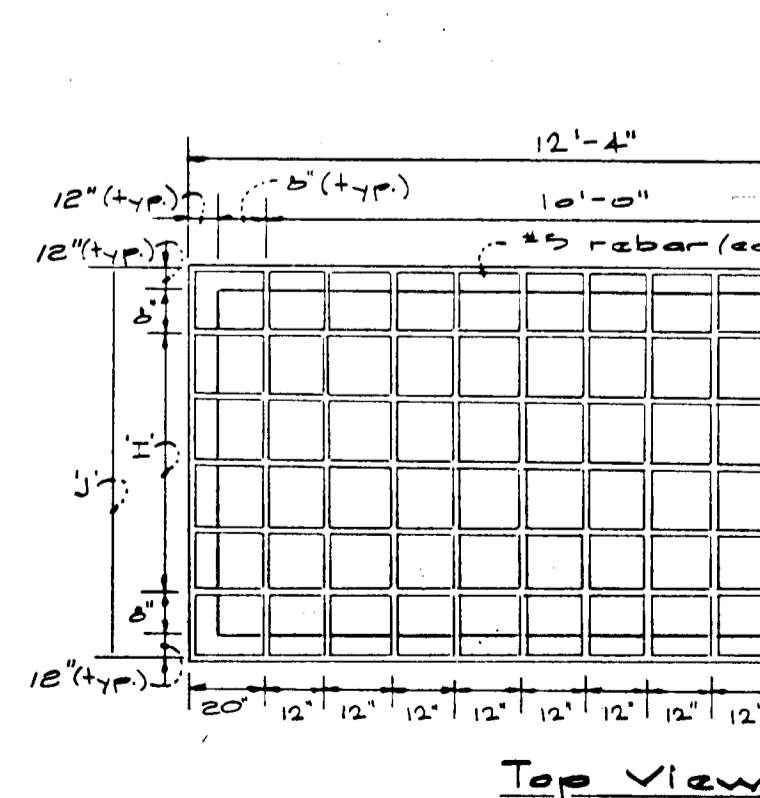
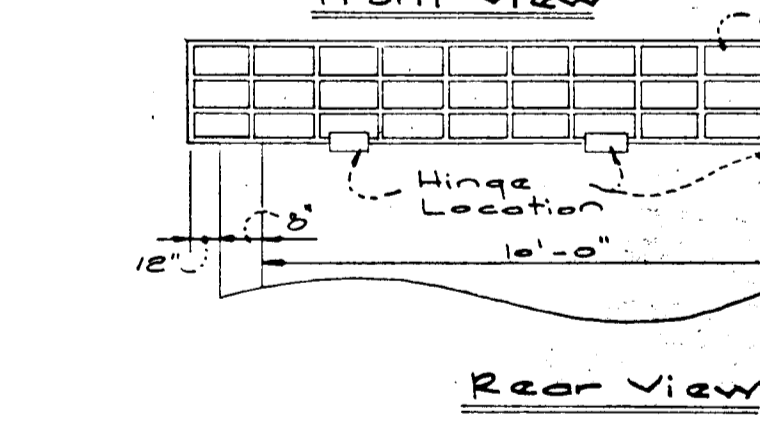
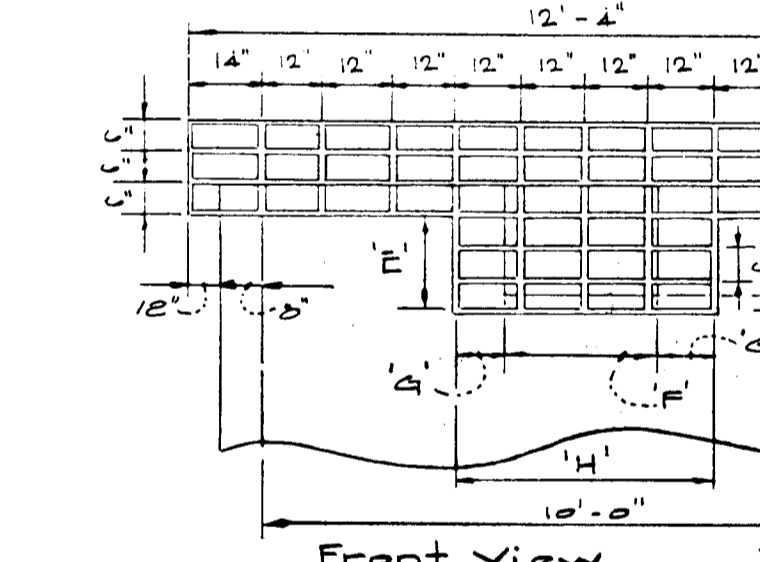
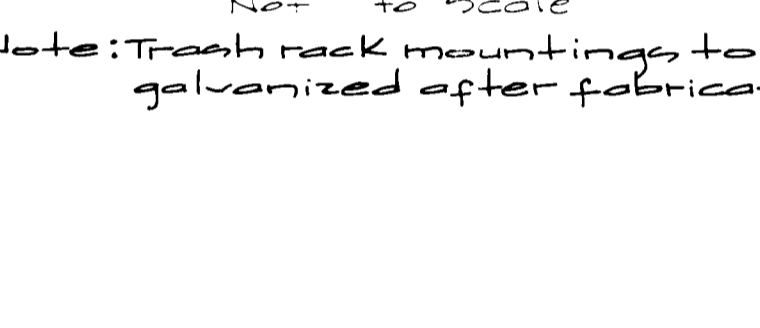
Plan: 1"=20'
 Profiles: No Scale
 Note: Contractor shall provide filter cloth where gabion baskets contact the ground



Anti-Seep Collar Detail for Twin 30" RCP (ASTM C-301) from facility #4



Detail for Securing Trash Rack



| Facility Number | A | B | C | D | E | F | G | H | I |
|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 1 | 2'-2" | 2'-7" | 5'-0" | 1'-0" | 0'-7" | 2'-3" | 2'-3" | 7'-0" | |
| 2 | See Pkt. 1 | See Pkt. 1 | See Pkt. 1 | See Pkt. 1 | See Pkt. 1 | See Pkt. 1 | See Pkt. 1 | See Pkt. 1 | See Pkt. 1 |
| 3 | 2'-5" | 2'-5" | 2'-5" | 2'-5" | 2'-5" | 2'-5" | 2'-5" | 2'-5" | 2'-5" |
| 4 | See Pkt. 1 | See Pkt. 1 | See Pkt. 1 | See Pkt. 1 | See Pkt. 1 | See Pkt. 1 | See Pkt. 1 | See Pkt. 1 | See Pkt. 1 |

- A - Inside diameter
- B - Outside diameter
- C - Trench width
- D - Concrete Grade Depth (Total)
- E - Depth of Pipe within cradle
- F - Projection of Collar (above pipe)
- G - Projection of Collar (below cradle)
- H - Total Depth & Length of Collar

| Item No. | RS 1 | RS 2 | RS 3 | RS 4 | RS 42 # |
|----------|----------|-----------|--------|-----------|---------|
| A | 370.35 | 375.30 | 300.50 | 309.40 | |
| B | 377.20 | 374.10 | 300.00 | 307.30 | |
| C | 1'-13/4" | 1'-4 3/4" | 6" | 2'-1 1/4" | |
| D | 4 1/4" | 7 1/4" | 6" | 4 3/4" | |
| E | 1'-0" | 2'-0" | 1'-0" | 2'-0" | |
| F | 2'-0" | 2'-0" | 1'-0" | 1'-11" | |
| G | 0" | 1'-0" | 6" | 1'-1/2" | |
| H | 4'-0" | 4'-0" | 2'-0" | 4'-0" | |
| I | 5'-0" | 4'-0" | 5'-0" | 2'-0" | 2'-0" |
| J | 8'-4" | 7'-4" | 8'-4" | 5'-10" | 5'-10" |
| K | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 1'-0" |
| L | 1'-0" | 1'-0" | 1'-0" | 1'-0" | 1'-0" |
| U | 1'-0" | 1'-2" | 1'-2" | 11" | 11" |

- A - River crest Elevation.
- B - 10 Year Weir Crest Elevation.
- C - Distance between River Crest & Elev. 'B'
- D - Distance of Trash Rack below Elev. 'B'
- E - Length of Trash Rack below River Crest.
- F - 10 Year Weir Length.
- G - Width of Trash Rack beyond 10 Year Weir.
- H - Width of Trash Rack for 10 Year Weir Crest.
- I - Inside Dimension of Release Structure
- J - Overall Dimension of Trash Rack
- K - Distance between bars
- L - "
- M - "

Note: This Plan Approved as GP-96-45
 Note: For Pond Construction & Sediment Control see also GP-96-45

These Plans for soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
 J.P. P... 1/31/96
 Howard Soil Conservation District

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for soil erosion and sediment control.
 Patricia S... 1/31/96
 U.S. Soil Conservation Service

DEVELOPER'S/BUILDER'S CERTIFICATE
 I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.
 Albert... 9-27-95
 Signature of Developer/Builder Date

Approved: Howard County Dept. of Public Works
 Andrew M. ... 2-6-96
 Chief, Bureau of Highways Date

Approved: Howard County Dept. of Planning & Zoning
 Gina ... 2/15/96
 Chief, Div. of Land Development & Research Date

Approved: Howard County Dept. of Planning & Zoning
 ... 2/19/96
 Chief, Development Engineering Div. Date

ENGINEER'S CERTIFICATE
 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. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District.
 CK... 9-27-95
 Signature of Engineer Date

GIW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD 20866
 TELEPHONE (301)421-4024 NO VA (301)989-2524 BALTO (301)880-1820 FAX (301)421-4186

| DATE | REVISION | BY | APP. |
|------|----------|----|------|
| | | | |
| | | | |

PREPARED FOR:
 The Howard Research & Development Corp.
 The Rouse Building
 10275 Little Patuxent Parkway
 Columbia, Maryland 21044

Stormwater Management Details
Route 175 Commercial
 Section 1 Area 1
 Phase 22C
 6th Election District
 Howard County, Maryland

| DES.: DEV | SCALE: As shown | ZONING: NT | GLW FILE NO.: 95003 |
|---|-----------------|-------------|---------------------|
| DRN.: MCF/DEV <td>DATE</td> <td>TAX MAP NO.</td> <td>SHEET</td> | DATE | TAX MAP NO. | SHEET |
| CHK.: DEV | Sept. 1995 | 30 | 10 of 37 |

1787

1-56-41

SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment and cut trench shall conform to Unified Soil Classification GC, SC, CH or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

Placement - Area on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated in to the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not be so wet that water can be squeezed out.

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within ± 2 % of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

- Materials** - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Steel pipes with polymer coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings or an approved equal may be used: Nexon, Plast-Cote, Bloc-Klad, and Beth-Gu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

Material - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges.

Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

- Coupling bands, anti-seep collars, and sections, etc., must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.**

- Connections** - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe & riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 24" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket, and a 12" wide huggy type band with O-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 24" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24".

Helically corrugated pipe shall have either continuously welded seams or have lock seams.

- Bedding** - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

- Backfilling** shall conform to "Structure Backfill".

- Other details** (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

- Materials** - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361.

- Bedding** - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.

- Laying pipe** - Bell and spigot pipe shall be placed with the bell and upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.

- Backfilling** shall conform to "Structure Backfill".

- Other details** (anti-seep collars, valves, etc.) shall be shown on the drawings.

Polyvinyl Chloride (PVC) Pipe - All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

- Materials** - PVC pipe shall be PVC - 1120 or PVC - 1220 conforming to ASTM D-1785 or ASTM D-2241.
- Joints and connections** to anti-seep collars shall be completely watertight.
- Bedding** - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
- Backfilling** shall conform to "Structure Backfill".
- Other details** (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standards Specifications for Construction and Materials, Section 608, Mix No. 3.

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standards Specifications for Construction and Materials, Section 905.

The rip rap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the rip rap will be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all rip rap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standards Specifications for Construction and Materials, Section 919.12.

Care of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Maryland Soil Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

GEOTECHNICAL RECOMMENDATIONS

Excerpts from Geotechnical Report by Robert B. Butler Company Dated May 26, 1995 (Revised June 27, 1995)

STORMWATER MANAGEMENT POND CONSTRUCTION

Since minor filling will be required to achieve final grades, the pond must be treated as an embankment pond. Prior to installation of the core trench and construction of the embankment, a stabilized work area should be prepared adjacent to the embankment area, to facilitate construction equipment, and to minimize disturbance to the surficial soils. Upon providing a stabilized work area, the following substrate preparations should be accomplished in the proposed embankment area:

- All organics, topsoil, and other surficially unsuitable soils should be removed.
- The substrate soils should be profiled with light weight equipment to form a relatively unyielding surface. Any excessively soft or yielding areas should be undercut and replaced with suitable on-site materials placed in accordance with the earthwork specifications.

Due to the presence of fine-grained or cohesive and weak surficial soils, as indicated by relatively low SPT results, the embankment should be constructed on a relatively unyielding surface. Any excessively soft or yielding areas should be undercut and replaced with suitable on-site materials placed in accordance with the earthwork specifications.

Based on our understanding of the Soil Conservation Service (SCS) criteria for stormwater management facilities, a cutoff trench of relatively impervious material is required at or upstream from the embankment. The cutoff trench should be deep enough to extend into a relatively impervious layer along or parallel to the centerline of the embankment. The cutoff trench shall consist of materials conforming to Unified Soil Classification SC, GC, CH or CL.

The depth of the trench is required to be a minimum of 4 feet. The bottom of the trench should be a minimum of 1 foot horizontal to vertical. Based on the subsurface data provided by the subsurface exploration program, most of the on-site materials do not comply with SCS soil classification criteria for core trench materials. Therefore, an off-site material may be required for core trench construction.

Based on the presence of relatively impervious silt and clay immediately below the existing ground surface over most of the SPT point sites, it is our judgment that a cutoff trench may not be required. However, the elimination of a cutoff trench must be approved by SCS and Howard County.

We presume that the materials to be used for embankment construction will be obtained from other areas of the site. Laboratory moisture-density relationship tests performed on bulk soil samples obtained from each pond indicate that the on-site soils are generally suitable for use as embankment backfill material, at the site. Any controlled fill must be placed in maximum 8-inch loose lifts and compacted to at least 95% of the maximum dry density, as determined by the standard Proctor (ASTM D 698).

Due to the relatively high moisture contents of the natural soils, manipulation and satisfactory compaction during placement is required. The moisture content of the soil should be maintained at or above the optimum moisture content of the soil samples, and such descriptions of the soil samples, and such descriptions of the on-site conditions, are related to the moisture-density relationships that are anticipated during construction. Such changes must be determined in the field by the soils technician during earthwork operations, and treated appropriately.

Any control structure which will be constructed in connection with the discharge of water may encounter groundwater (e.g. pond 2 and pond 4), as indicated by the subsurface data. De-watering of sumps and basins or other structures may be necessary during pond construction. Based on the weak/soft surficial soils displayed by the subsurface data, the volume control structure should be founded at least three feet below ground surface in natural materials exhibiting SPT results of at least 9 blows per foot of penetration, and be proportioned for a maximum allowable bearing capacity of 1.1 KSF. Because of the moisture sensitive nature of the founding materials, disturbance must be minimized to prevent significant loss of the in-situ bearing capacities.

The installed structure shall be constructed in accordance with the drawings. Since the discharge pipe must be installed to account for settlement of the founding soils under the weight of the embankment, we recommend that the pipe be constructed in 2' sections. The pipe shall be installed in the proposed concrete structure and shall be supported by the concrete structure. Following completion of the pond, the trench cut by the spillway should be excavated through the embankment to the adjacent embankment to eliminate any seepage through the embankment. In addition, we recommend that a flow pipe be installed to backfill the discharge pipe in accordance with recommendations of the Maryland Department of Transportation, State Highway Administration, Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Because of the occurrence of fine-grained and cohesive materials with varying amounts of fine sands, any cuts associated with utility excavations may require grading, slope flattening or other physical measures to prevent a slope failure. An examination of the applicable codes should be made by the appropriate contractor to ensure that adequate protection of the trench walls is provided.

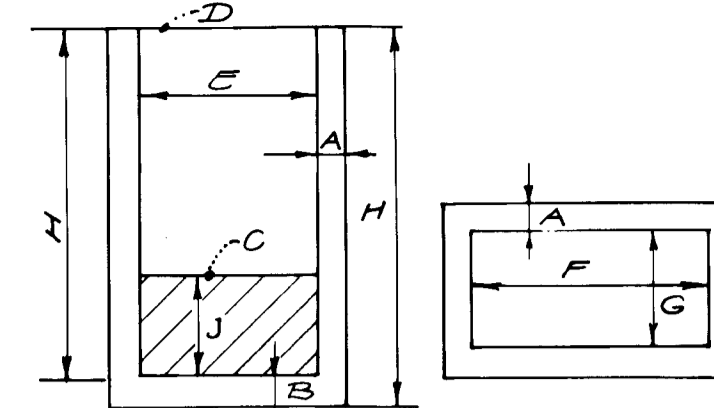
GENERAL COMMENTS
It should be realized that this preliminary geotechnical investigation presents an overall view of the underlying geology and soils, and provides preliminary discussions regarding foundation design and construction. Additional studies such as soil testing, pavement, and earthwork recommendations. Since the recommendations presented herein are preliminary in nature, the information and professional comments provided are insufficient for final design. Once the preliminary design is complete, we would be pleased to assist in the development of an appropriate supplemental geotechnical program for final design of specific projects.

If you should have any questions regarding any aspect of this study, please give us a call.

Most sincerely,
Silas C. Hohns
Senior Engineer

Robert B. Miller, P.E.
Chief Engineer
SCS/RRM:ct
12961ND.R

Excerpts from Geotechnical Report by Robert B. Butler Company Dated October 3, 1995



Concrete Fill Detail

Dimension for Concrete Fill Detail

| | ES1 | ES2 | ES3 | ES4 | ES42 |
|---|----------------|----------------|----------------|----------------|----------------|
| A | 8" | 8" | 8" | 8" | 8" |
| B | 8" | 8" | 8" | 8" | 8" |
| C | 370.33 | 367.77 | 358.54 | 354.92 | 354.92 |
| D | 378.35 | 375.50 | 366.50 | 362.40 | 362.40 |
| E | 10'-0" x 5'-0" | 10'-0" x 4'-0" | 10'-0" x 3'-0" | 10'-0" x 2'-0" | 10'-0" x 2'-0" |
| F | 10'-0" | 10'-0" | 10'-0" | 10'-0" | 10'-0" |
| G | 5'-0" | 4'-0" | 5'-0" | 2'-6" | 2'-6" |
| H | 13.02 | 11.73 | 9.96 | 18.48 | 18.50 |
| I | 13.63 | 12.40 | 6.63 | 19.15 | 19.17 |
| J | 50' | 40' | 20' | 40' | 4.0' |

- A Wall thickness
- B Slab thickness
- C Inv. of structure @ outfall pipe
- D Riser crest elev
- E Inside dimensions
- F " " " "
- G " " " "
- H Wall Height
- I Structure Height
- J Depth of conc Fill

We presume that some minor filling will be required to achieve final grades, and that pond #2 will be treated as an embankment pond. Prior to installation of the core trench and construction of the embankment, a stabilized work area should be prepared adjacent to the embankment area, to facilitate construction equipment, and to minimize disturbance to the surficial soils. Upon providing a stabilized work area, the following substrate preparations should be accomplished in the proposed embankment area:

- All organics, topsoil, and other surficially unsuitable soils should be removed.
- The substrate soils should be profiled with light weight equipment to form a relatively unyielding surface. Any excessively soft or yielding areas should be undercut and replaced with suitable on-site materials placed in accordance with project specifications.

Due to the presence of fine-grained or cohesive and weak surficial soils, as indicated by relatively low SPT results at points B1-C1 and B2-C2, some substrate leveling under heavy earthwork equipment must be expected. Consideration should be given to the utilization of lightweight, track, earthwork equipment and provisions for temporary de-watering during the construction operations to minimize disturbance to the shallow weak soils.

Based on our understanding of the Soil Conservation Service (SCS) criteria for stormwater management facilities, a cutoff trench of relatively impervious material is required at or upstream from the centerline of the embankment. The cutoff trench should be deep enough to extend into a relatively impervious layer along or parallel to the centerline of the embankment area, to facilitate construction equipment, and to minimize disturbance to the surficial soils. Upon providing a stabilized work area, the following substrate preparations should be accomplished in the proposed embankment area:

- All organics, topsoil, and other surficially unsuitable soils should be removed.
- The substrate soils should be profiled with light weight equipment to form a relatively unyielding surface. Any excessively soft or yielding areas should be undercut and replaced with suitable on-site materials placed in accordance with the earthwork specifications.

Due to the presence of fine-grained or cohesive and weak surficial soils, as indicated by relatively low SPT results, the embankment should be constructed on a relatively unyielding surface. Any excessively soft or yielding areas should be undercut and replaced with suitable on-site materials placed in accordance with the earthwork specifications.

Based on our understanding of the Soil Conservation Service (SCS) criteria for stormwater management facilities, a cutoff trench of relatively impervious material is required at or upstream from the centerline of the embankment. The cutoff trench should be deep enough to extend into a relatively impervious layer along or parallel to the centerline of the embankment. The cutoff trench shall consist of materials conforming to Unified Soil Classification SC, GC, CH or CL.

The depth of the trench is required to be a minimum of 4 feet. The bottom of the trench should be a minimum of 1 foot horizontal to vertical. Based on the subsurface data provided by the subsurface exploration program, most of the on-site materials do not comply with SCS soil classification criteria for core trench materials. Therefore, an off-site material may be required for core trench construction.

Based on the presence of relatively impervious silt and clay immediately below the existing ground surface over most of the SPT point sites, it is our judgment that a cutoff trench may not be required. However, the elimination of a cutoff trench must be approved by SCS and Howard County.

We presume that the materials to be used for embankment construction will be obtained from other areas of the site. Laboratory moisture-density relationship tests performed on bulk soil samples obtained from other areas of the site during our previous subsurface investigation indicate that the on-site soils are generally suitable for use as embankment backfill material at the site. Any controlled fill must be placed in maximum 8-inch loose lifts and compacted to at least 95% of the maximum dry density, as determined by the standard Proctor (ASTM D 698).

Due to the relatively high moisture contents of the natural soils, manipulation and/or aeration of the soils may be necessary to achieve satisfactory compaction during placement as controlled fill. The moisture content of the soil should be maintained at or above the optimum moisture content of the soil samples, and such descriptions (e.g. moist) are related to the moisture-density relationships that are anticipated during construction. Such changes must be determined in the field by the soils technician during earthwork operations, and treated appropriately.

Any control structure which will be constructed in connection with the discharge of water may encounter groundwater, as indicated by the subsurface data. De-watering of sumps and basins or other structures may be necessary during pond construction. Based on the weak/soft surficial soils displayed by the subsurface data, the volume control structure should be founded at least three feet below ground surface in natural materials exhibiting SPT results of at least 9 blows per foot of penetration, and be proportioned for a maximum allowable bearing capacity of 1.1 KSF. Because of the moisture sensitive nature of the founding materials, disturbance must be minimized to prevent significant loss of the in-situ bearing capacities.

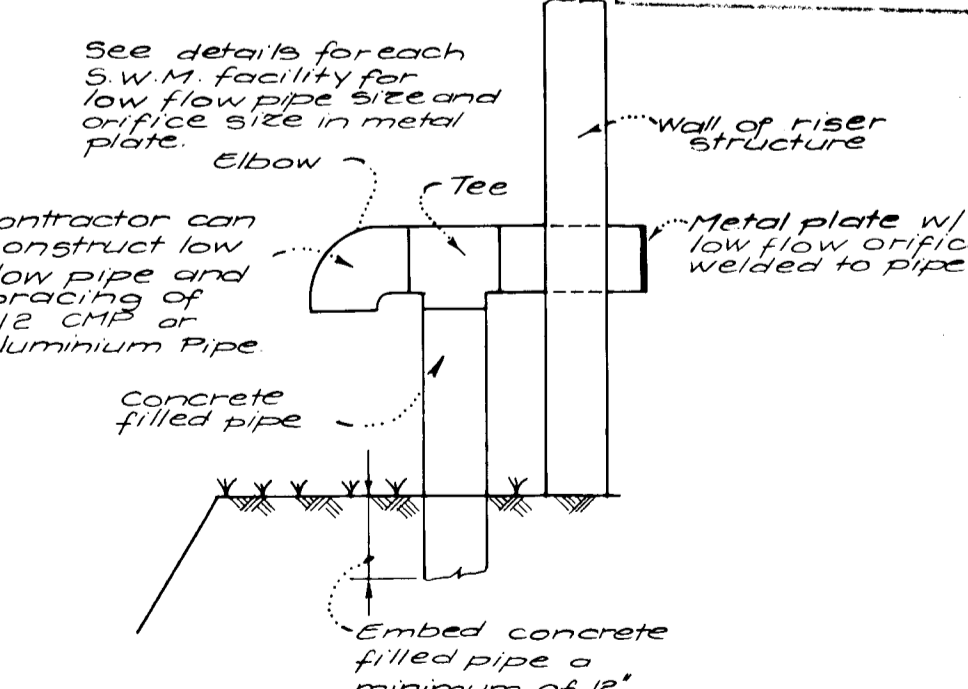
The installed structure shall be constructed in accordance with the drawings. Since the discharge pipe must be installed to account for settlement of the founding soils under the weight of the embankment, we recommend that the pipe be constructed in 2' sections. The pipe shall be installed in the proposed concrete structure and shall be supported by the concrete structure. Following completion of the pond, the trench cut by the spillway should be excavated through the embankment to the adjacent embankment to eliminate any seepage through the embankment. In addition, we recommend that a flow pipe be installed to backfill the discharge pipe in accordance with recommendations of the Maryland Department of Transportation, State Highway Administration, Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Riser Structure Schedule

| No | Type | Width | Std detail |
|------|------|-------|------------|
| ES1 | A-10 | 50' | SD 4.1 |
| ES2 | A-10 | 40' | SD 4.1 |
| ES3 | A-10 | 50' | SD 4.1 |
| ES41 | A-10 | 25' | SD 4.1 |
| ES42 | A-10 | 25' | SD 4.1 |

- Note: 1. All structures are precast and shall have watertight joints
- 2. Maximum 2' stub length as applicable
- 3. Top slab & gutter section are not used
- 4. Steps are required for all riser structures per std. details.

viewed for HOWARD S.C.D. Name: Robert B. Miller, P.E. Date: 1/31/96
Signature: [Signature] Title: Chief Engineer
USDA, NATURAL RESOURCES CONSV. SERVICE



Detail for Low Flow Office Bracing

Not to Scale

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 2/6/96
Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[Signature] 2/15/96
Chief, Division of Land Use and Research

[Signature] 2/9/96
Chief, Development Engineering Division



GEW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4024 NO. VA: (301) 989-2524 BAL: (410) 880-1820 FAX: (301) 421-4186 DES. DRN. CHK. DATE REVISION BY APP'R.

PREPARED FOR: Stormwater Management Specifications and Details
Howard Research & Development Corp
12776 Little Patuxent Parkway
Columbia, Maryland 21044
(410) 992-6027
Route 175 Commercial Section 1 Area 1 Phase 22a
Cath Election District
Howard County, Maryland

| SCALE | ZONING | G. L. W. FILE No. |
|--------------|-------------|-------------------|
| As shown | NT | 95-003 |
| DATE | TAX MAP No. | SHEET |
| OCTOBER 1995 | 36 | 20 of 37 |

| Elev | Soil Description | Strata Depth |
|-------|--|--------------|
| 373.6 | Surface | 0 |
| 373.4 | Topsoil | 0.25' |
| 371.6 | Brown moist micaceous silty clay, little mf sand, tr rock fragments (CLM) (loam) | 2.0' |
| 369.6 | Brown moist micaceous silt & clay, little mf sand (ML) (loam) | 4.0' |
| 361.6 | Greenish brown moist silt & clay, little fine sand (ML) (loam) | 12.0' |

Boring termination @ 12.0'

B2-1
(Facility #2)

| Elev | Soil Description | Strata Depth |
|-------|---|--------------|
| 373.7 | Surface | 0 |
| 373.4 | Topsoil | 0.25' |
| 369.7 | Brown moist clay & silt, some mf sand (CL) (loam) | 4.0' |
| 363.7 | Brown moist micaceous clayey silt, little mf sand (ML) (loam) | 10.0' |
| 361.7 | Orange moist silt & clay, little mf sand (ML) (loam) | 12.0' |

Boring termination @ 12.0'

B2-2
(Facility #2)

| Elev | Soil Description | Strata Depth |
|-------|--|--------------|
| 372.6 | Surface | 0 |
| 371.5 | Topsoil | 0.25' |
| 372.1 | Brown moist clay & silt, little cl sand, tr rock fragments (ML) (loam) | 4.5' |
| 361.6 | Green moist mf sand and silt (Decomposed Rock) (SM) (sandy loam) | 15.0' |
| 361.1 | Soil | 15.5' |

Boring termination @ 15.5'

B2-3
(Facility #2)

| Elev | Soil Description | Strata Depth |
|-------|--|--------------|
| 368.4 | Surface | 0 |
| 367.7 | Topsoil | 0.7' |
| 365.4 | Dark brown moist silt, some cl, tr clay, tr organic matter (ML) (silt loam) | 3.0' |
| 363.4 | Brown moist of sand, some silt, little gravel, tr clay (SM) (sandy loam) | 5.0' |
| 352.9 | Brown mottled moist silt, some mf sand, tr clay (Decomposed Rock) (ML) (silt loam) | 15.5' |

Boring termination @ 15.5'

P1-1
(Facility #3)

| Elev | Soil Description | Strata Depth |
|-------|--|--------------|
| 366.7 | Surface | 0 |
| 366.0 | Topsoil | 0.7' |
| 361.7 | Gray brown moist clayey silt, some fine sand, tr organic matter (ML) (silt loam) | 5.0' |
| 358.7 | Brown mottled moist clayey silt, some mf sand, tr gravel, tr mica (Decomposed Rock) (ML) (silt loam) | 8.0' |
| 351.2 | Brown moist of sand, some silt, tr clay, tr mica (SM) (sandy loam) | 15.5' |

Boring termination @ 15.5'

P1-3
(Facility #3)

| Elev | Soil Description | Strata Depth |
|-------|--|--------------|
| 378.9 | Surface | 0 |
| 378.4 | Topsoil | 0.9' |
| 375.9 | Brown moist clay & silt, some of sand, tr gravel, tr organic matter (CL) (clay loam) | 3.0' |
| 370.9 | Brown moist mf sand & silt, tr mica (Decomposed Rock) (SM) (loam) | 8.0' |
| 368.9 | Olive gray moist silt & fine sand, tr mica (Decomposed Rock) (ML) (loam) | 10.0' |

Boring termination @ 10.0'

P3-3
(Facility #1)

| Elev | Soil Description | Strata Depth |
|-------|---|--------------|
| 386.2 | Surface | 0 |
| 385.3 | Topsoil | 0.25' |
| 381.6 | Brown moist clay & silt, little cl sand, tr rock fragments (ML) (loam) | 4.6' |
| 378.6 | Brown green moist mf sand & silt, tr mica (SM) (sandy loam) | 7.6' |
| 369.2 | Green brown moist clayey silt & mf sand, tr rock fragments (Decomposed Rock) (ML) (loam) | 17.0' |
| 364.2 | Green moist of sand, little silt, little rock fragments (Decomposed Rock) (SM) (sandy loam) | 22.0' |
| 351.9 | Green moist clayey silt & mf sand, little rock fragments (Decomposed Rock) (ML) (loam) | 34.3' |

Boring termination @ 34.3'

B3-1
(Facility #1)

ENGINEER'S CERTIFICATE

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. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District.

Cliff 9-27-95
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Amel Edal 9-27-95
Signature of Developer/Builder Date

| Elev | Soil Description | Strata Depth |
|-------|--|--------------|
| 368.6 | Surface | 0 |
| 368.1 | Topsoil | 0.25' |
| 366.6 | Brown moist clay & silt, little mf sand, tr rock fragments (CL) (loam) | 2.0' |
| 364.6 | Brown moist micaceous clayey silt, some of sand (ML) (loam) | 4.0' |
| 358.6 | Tan brown moist clayey silt, some mf sand (ML) (loam) | 10.0' |
| 356.6 | Brown moist clayey silt, some of sand (ML) (loam) | 12.0' |

Boring termination @ 12.0'

B4-1
(Facility #4)

| Elev | Soil Description | Strata Depth |
|-------|--|--------------|
| 365.4 | Surface | 0 |
| 364.7 | Topsoil | 0.1' |
| 363.4 | Brown mottled moist clayey silt, some mf sand, tr organic matter, tr mica (ML) (silt loam) | 2.0' |
| 359.9 | Olive brown moist silt, some fine sand, tr clay (ML) (silt loam) | 5.5' |
| 357.4 | Olive brown moist silt and of sand, tr mica, tr clay (Decomposed Rock) (ML) (loam) | 8.0' |
| 355.4 | Orange brown moist of sand and silt, tr mica (Decomposed Rock) (SM) (loam) | 10.0' |

Boring termination @ 10.0'

P4-3
(Facility #4)

| Elev | Soil Description | Strata Depth |
|-------|--|--------------|
| 373.9 | Surface | 0 |
| 373.4 | Topsoil | 0.5' |
| 372.9 | Brown moist of sand & silt, tr mica, tr gravel (SM) (loam) | 4.0' |
| 372.9 | Brown mottled moist silt & mf sand, tr organic matter, tr mica (ML) (loam) | 6.0' |
| 369.9 | Green brown moist silt, some mf sand, tr mica (Decomposed Rock) (ML) (silt loam) | 10.0' |

Boring termination @ 10.0'

P3-4
(Facility #1)

| Elev | Soil Description | Strata Depth |
|-------|--|--------------|
| 369.9 | Surface | 0 |
| 368.9 | Topsoil | 0.4' |
| 366.8 | Brown mottled moist of sand and silt, tr clay, tr gravel (SM) (loam) | 2.5' |
| 361.8 | Gray brown moist of sand, some silt, little gravel (SM) (sandy loam) | 7.5' |
| 359.3 | Dark brown moist silt, some mf sand, tr clay (ML) (silt loam) | 10.0' |

Boring termination @ 10.0'

P4-2
(Facility #4)

Approved: Howard County Dept. of Public Works
Richard M. Rucker 2-6-96
Chief, Bureau of Highways Date

Approved: Howard County Department of Planning & Zoning
Uma J. Jarmany 2/15/96
Chief, Division of Land Development Date

Bill Cameron 2/6/96
Chief, Development Engineering Date



These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for ~~erosion and sediment control~~ soil erosion and sediment control.

Patricia Engler 1/31/96
Natural Resources Conservation Service Date

These Plans for ~~erosion and sediment control~~ soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

John R. Robertson 1/31/96
Howard Soil Conservation District Date

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS

3909 NATIONAL DRIVE, SUITE 230, BURTONSVILLE OFFICE PARK, BURTONSVILLE, MD 20866

TELEPHONE: (301) 444-4344, (410) 444-4344, (410) 444-4344, (410) 444-4344, (410) 444-4344

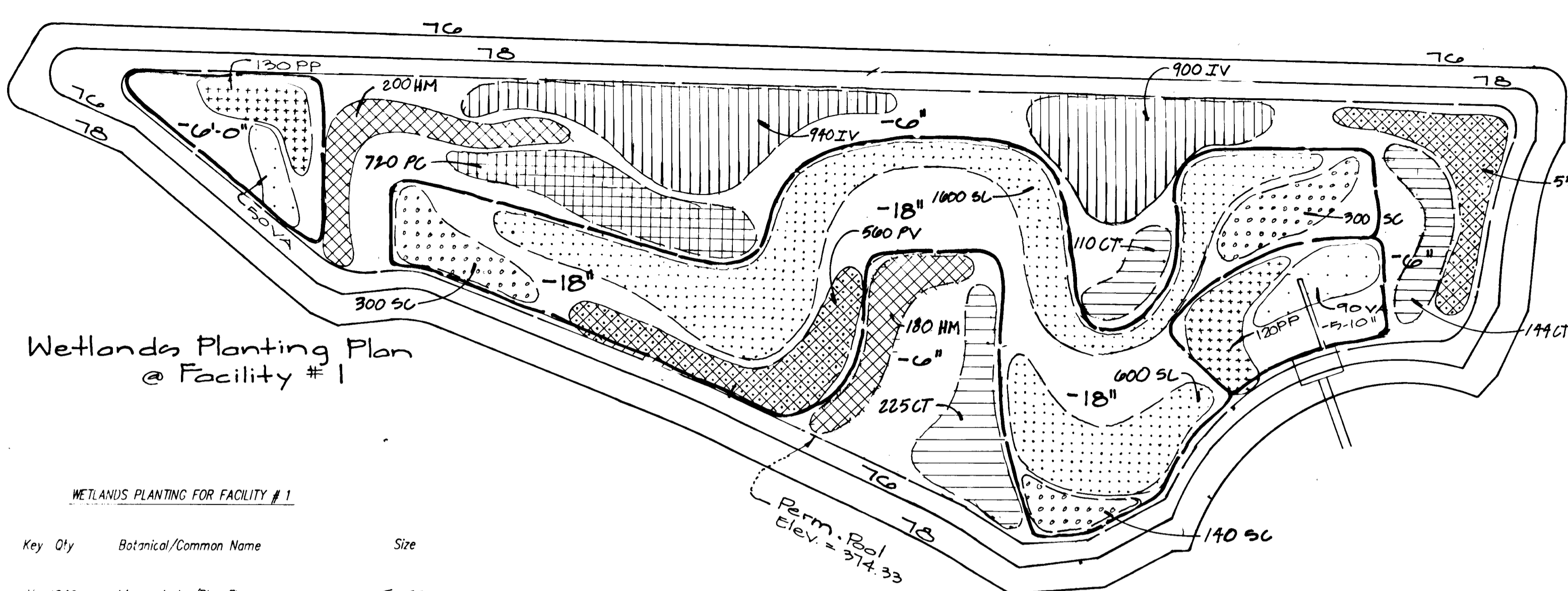
| DATE | REVISION | BY | APP'R. |
|------|----------|----|--------|
| | | | |

PREPARED FOR
The Howard Research & Development Corporation
The Rouse Building
10275 Little Patuxent Pkwy
Columbia, Maryland 21044

Soil Boring Logs and Stormwater Management Details
Route 175 Commercial Section 1 Area 1
Phase 226
6th Election District
Howard County, Maryland

| DES. | SCALE | DWNG. | GLW FILE NO. |
|-------------|--------------|-------------|--------------|
| | | NT | 95003 |
| DRN. C.V.T. | DATE | TAX MAP NO. | SHEET |
| | October 1995 | 36 | 21 of 37 |

F-96-41

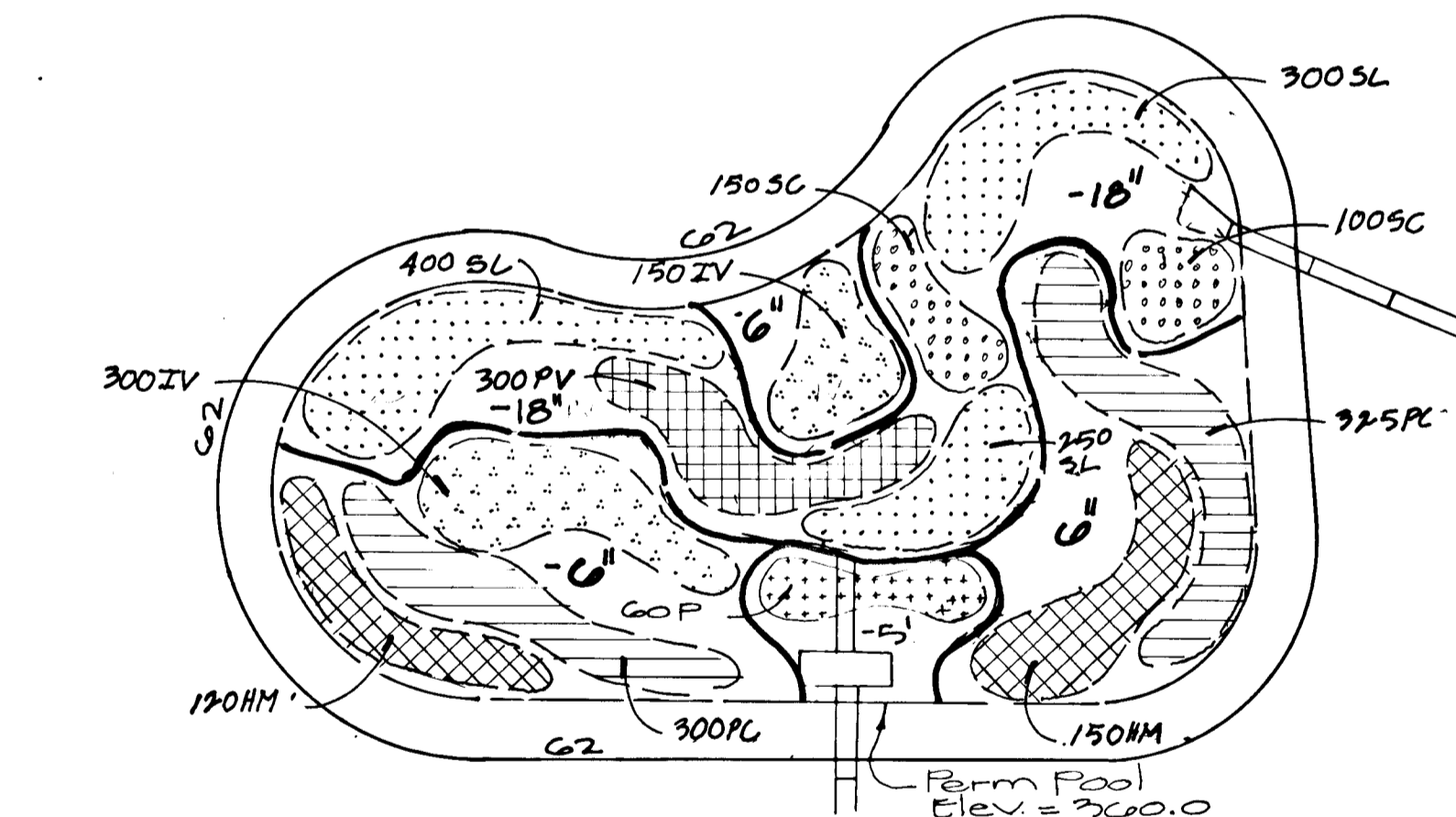


Wetlands Planting Plan @ Facility #1

WETLANDS PLANTING FOR FACILITY #1

| Key Qty | Botanical/Common Name | Size |
|---------|------------------------------------|-------------|
| IV 1840 | Iris versicolor/Blue Flag | TUBER |
| PV 1110 | Peltandra virginicum/Arrow Arum | TUBER |
| PC 720 | Pontederia cordata/Pickerelweed | TUBER |
| SL 2200 | Sagittaria latifolia/Duck Potato | TUBER |
| SC 740 | Saururus cernuus/Lizard's Tail | TUBER |
| CT 225 | Cyperus strigosus/Umbrella Sedge | 1 3/4" PLUG |
| HM 180 | Hibiscus moscheutos/Marsh Hibiscus | 1 3/4" PLUG |
| PP 220 | Potamogeton pectinatus/Pondweed | 1 Pl. |
| VA 140 | Valisneria spiralis/Wild Celery | 1 Pl. |

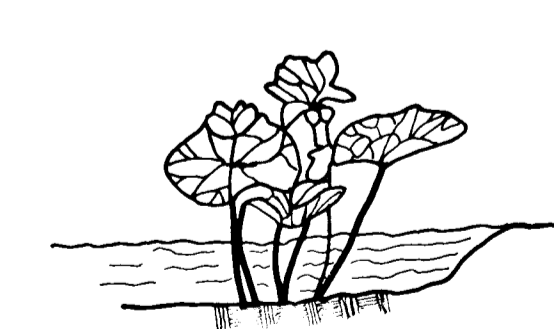
- Wetland Planting Notes
- Upon conversion of sediment control ponds to Stormwater Management Pond, and rough grading, the contractor shall remove any stones, debris, or construction material larger than two inches (?) in any dimension. The contractor shall then spread 4"-6" of topsoil on the entire basin of Ponds 1 and 3, and on the planting bench of Ponds 2 and 4. The topsoil for Ponds 1 and 3 shall be the wetland topsoil "saved" and stockpiled during mass grading. The ponds shall be flooded and left undisturbed for a period of 10 days. Drain prior to planting.
 - To install potted plants, make a hole in the topsoil layer wide and deep enough that after planting, the topsoil in the pot is at or slightly below the top of the topsoil planting area.
 - Peat pots must be tam in two or three places to allow for unrestricted root growth.
 - All pots other than peat pots are to be removed right before planting.
 - Bareroot plants shall be planted in holes wide enough to allow their existing roots to be spread in a natural manner radially from the root crown without bending or twisting.
 - One ounce of 18-6-25 slow release fertilizer shall be incorporated into soil for each plant at the time of planting.
 - Soil shall be saturated with water after planting. The pond should be slowly flooded by natural or artificial means to the outfall level.
 - The source of all aquatic and emergent plants shall be approved by the owner or landscape architect prior to ordering. These plants shall be grown in pots (container specified) or nursery growing beds (bare root specified) for a minimum of 12 months prior to installation and shall have been wet cultivated during the entire period.
 - All plant material shall be guaranteed for a period of one year after formal acceptance, and a 80% survival guarantee after 3 (three) years.
 - Remove litter and debris as required during the first growing season and at the beginning of the second growing season.
 - Wetland planting contractor shall submit resumè and references of previous planting experience to owner or landscape architect for approval prior to planting.



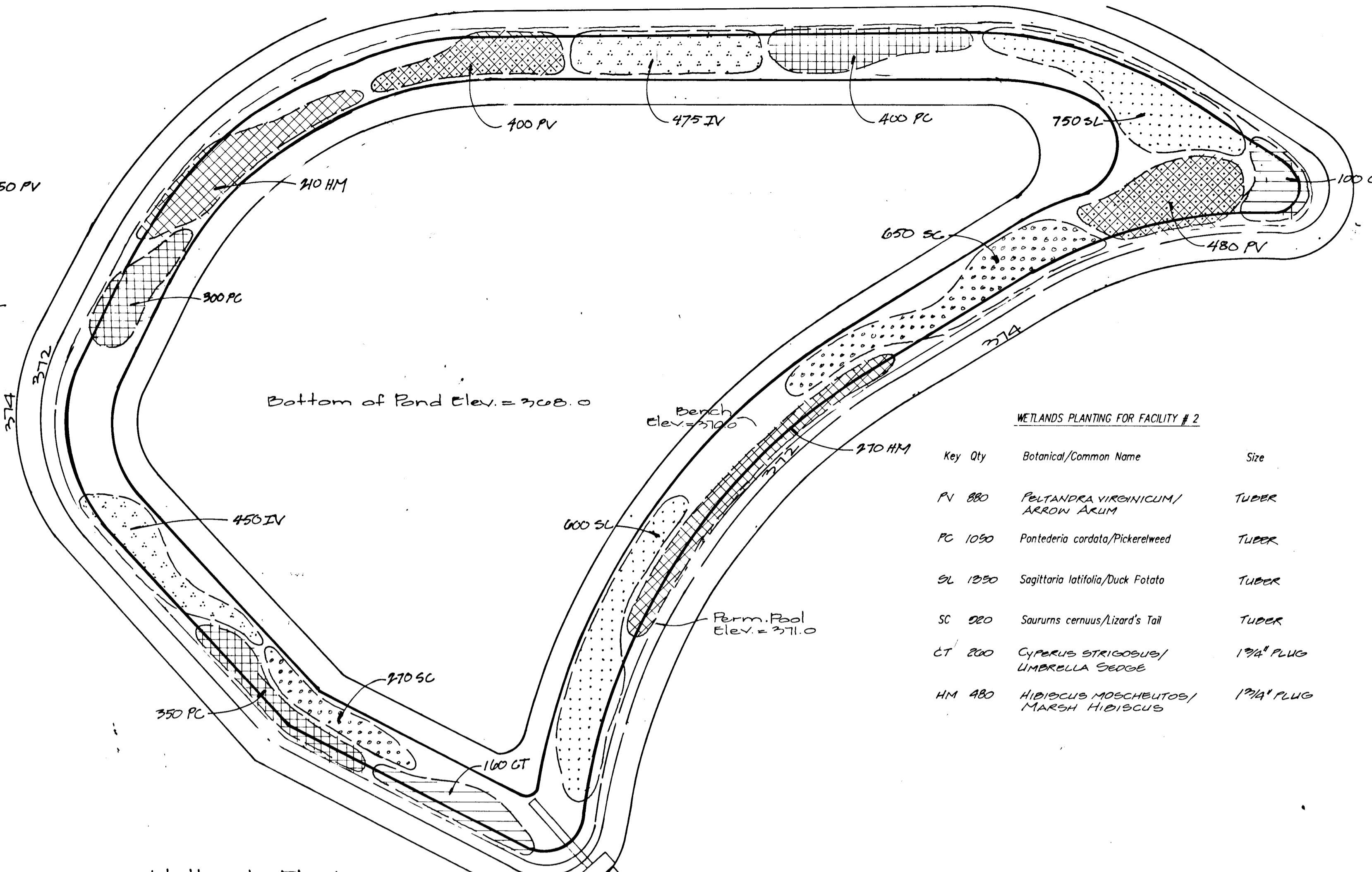
Wetlands Planting Plan @ Facility #3

WETLANDS PLANTING FOR FACILITY #3

| Key Qty | Botanical/Common Name | Size |
|---------|------------------------------------|-------------|
| IV 150 | Iris versicolor/Blue Flag | TUBER |
| PC 625 | Pontederia cordata/Pickerelweed | TUBER |
| PP 60 | Potamogeton pectinatus/Pondweed | 1 Pl. |
| SL 250 | Sagittaria latifolia/Duck Potato | TUBER |
| SC 250 | Saururus cernuus/Lizard's Tail | TUBER |
| PV 300 | Peltandra virginicum/Arrow Arum | TUBER |
| HM 270 | Hibiscus moscheutos/Marsh Hibiscus | 1 3/4" PLUG |



Aquatic Planting Detail



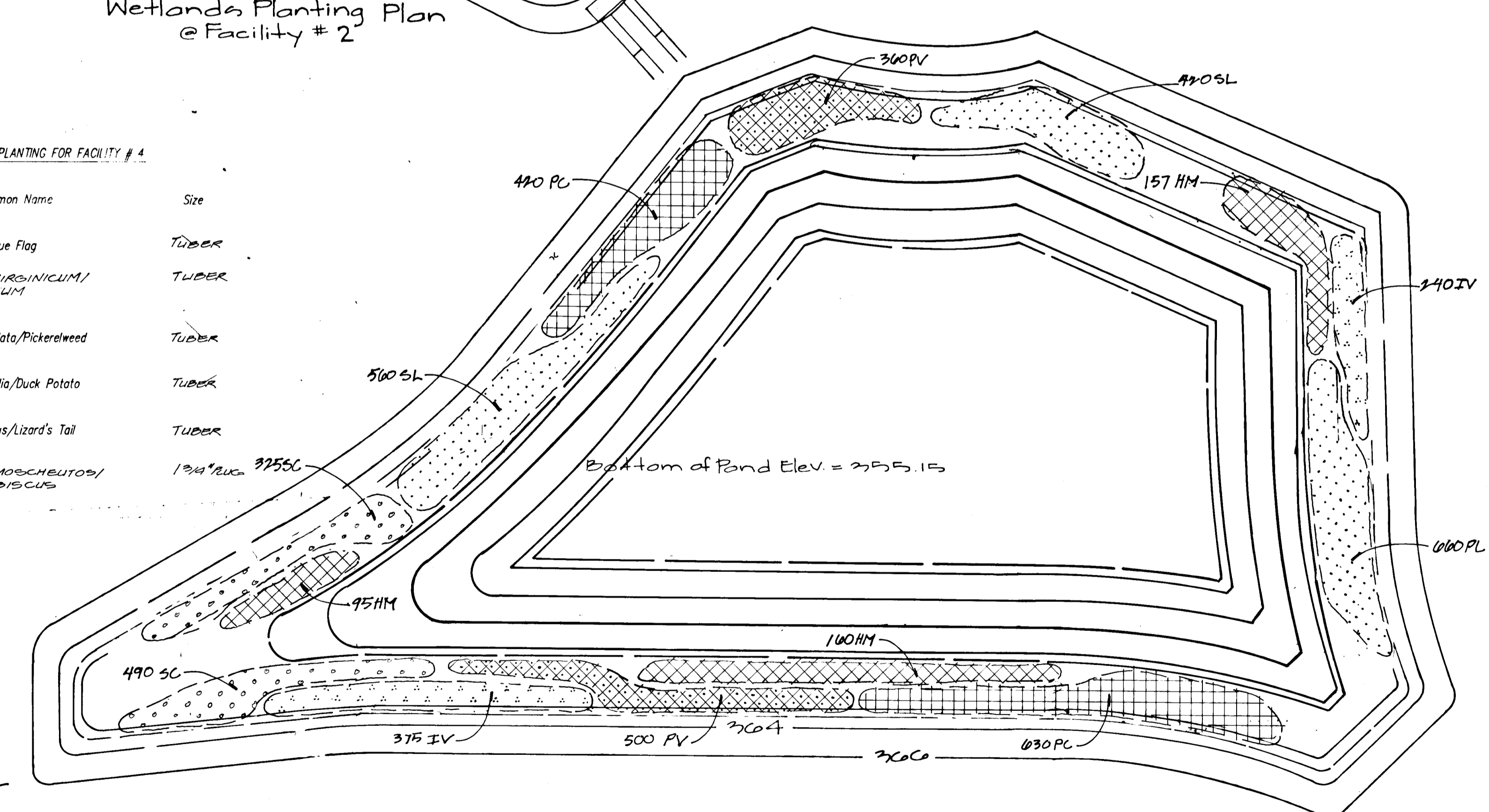
Wetlands Planting Plan @ Facility #2

WETLANDS PLANTING FOR FACILITY #2

| Key Qty | Botanical/Common Name | Size |
|---------|------------------------------------|-------------|
| PV 880 | Peltandra virginicum/Arrow Arum | TUBER |
| PC 1050 | Pontederia cordata/Pickerelweed | TUBER |
| SL 1250 | Sagittaria latifolia/Duck Potato | TUBER |
| SC 250 | Saururus cernuus/Lizard's Tail | TUBER |
| CT 200 | Cyperus strigosus/Umbrella Sedge | 1 3/4" PLUG |
| HM 480 | Hibiscus moscheutos/Marsh Hibiscus | 1 3/4" PLUG |

WETLANDS PLANTING FOR FACILITY #4

| Key Qty | Botanical/Common Name | Size |
|---------|------------------------------------|-------------|
| IV 215 | Iris versicolor/Blue Flag | TUBER |
| PV 800 | Peltandra virginicum/Arrow Arum | TUBER |
| PC 105 | Pontederia cordata/Pickerelweed | TUBER |
| SL 1640 | Sagittaria latifolia/Duck Potato | TUBER |
| SC 215 | Saururus cernuus/Lizard's Tail | TUBER |
| HM 412 | Hibiscus moscheutos/Marsh Hibiscus | 1 3/4" PLUG |



Wetlands Planting Plan @ Facility #4

Approved: Howard County Dept. of Public Works
Andrew M. Rowlett 2-6-96
 Chief, Bureau of Highways

Approved: Howard County Dept. of Planning/Zoning
Aina Strumman 2/15/96
 Chief, Division of Development & Research

Mark D. ... 2/9/96
 Chief, Engineering Div.



G.W. GUTSCHICK LITTLE & WEBER, P.A.
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 3909 NATIONAL DRIVE - SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20866
 TELEPHONE (301)421-4024 NO. VA. (1-800)989-2524 BALTO. (301)880-1820 FAX (301)421-4186

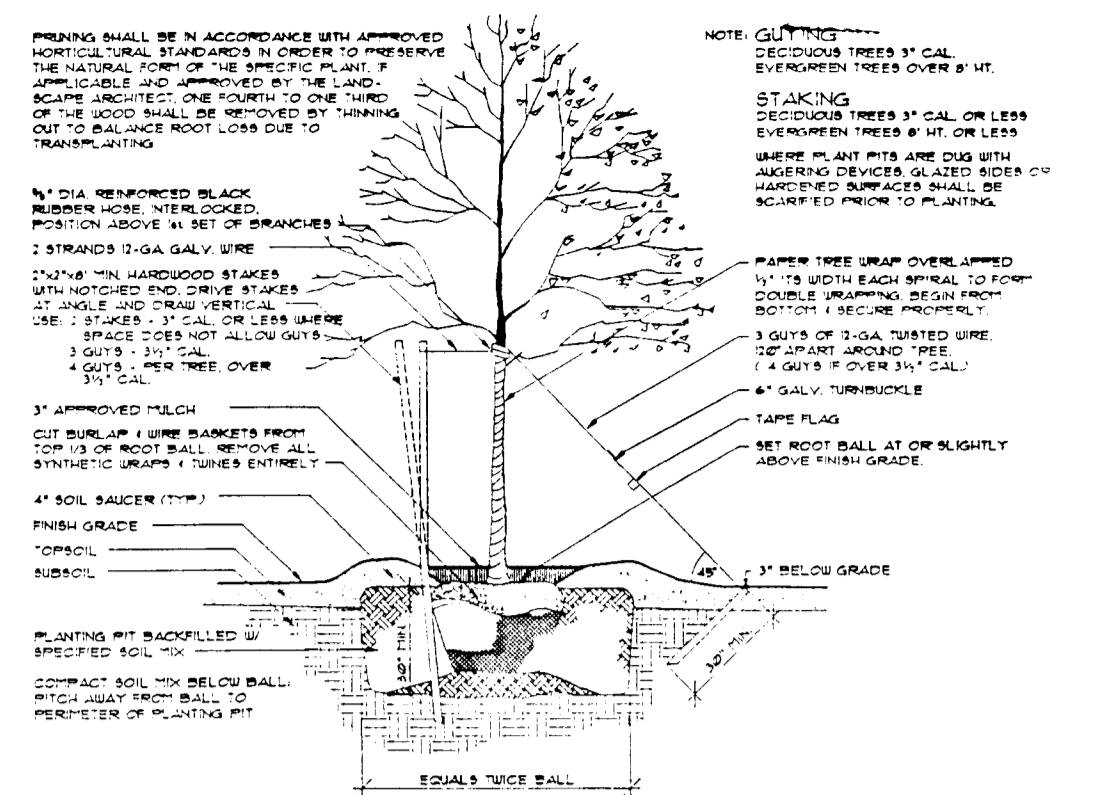
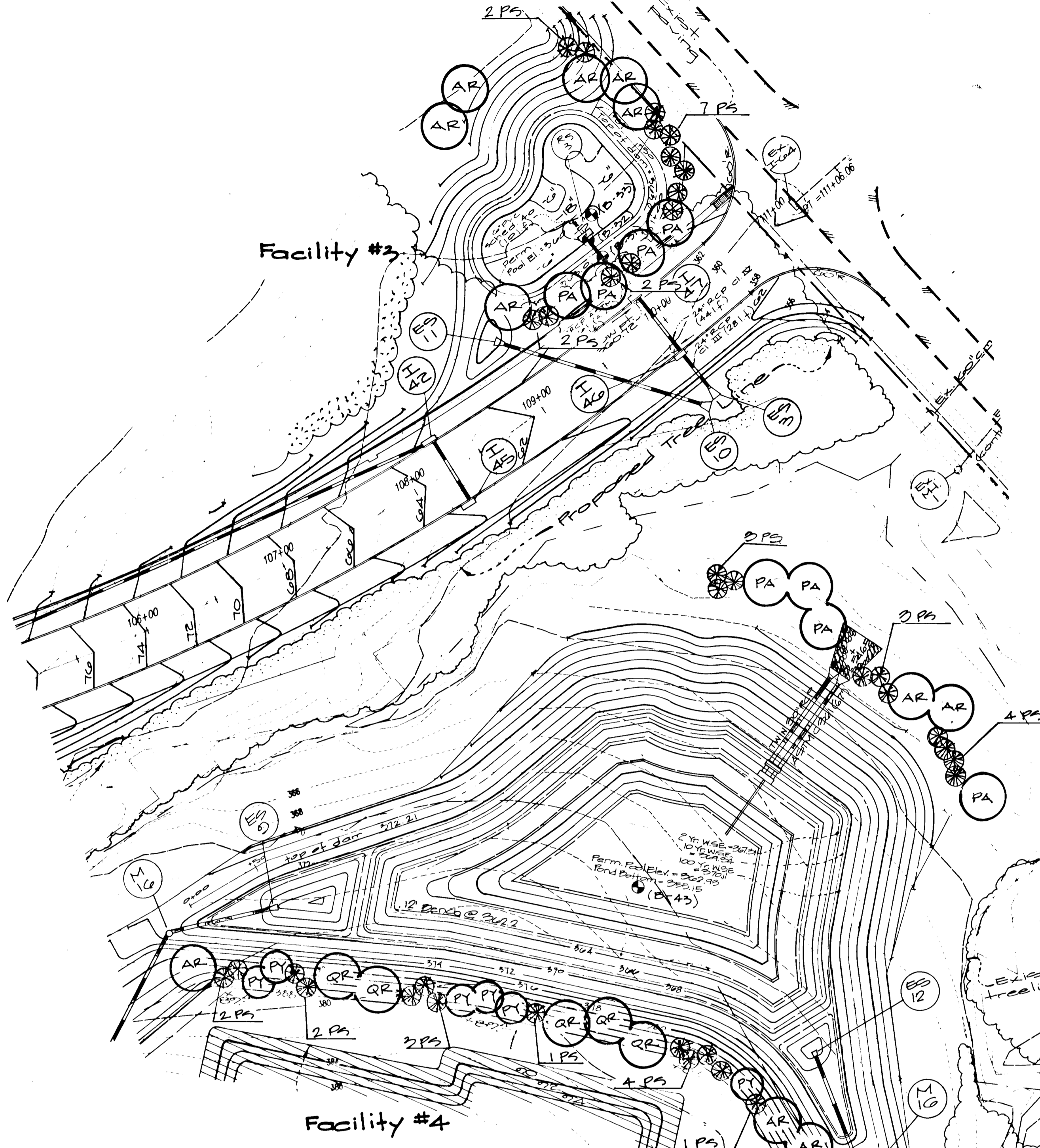
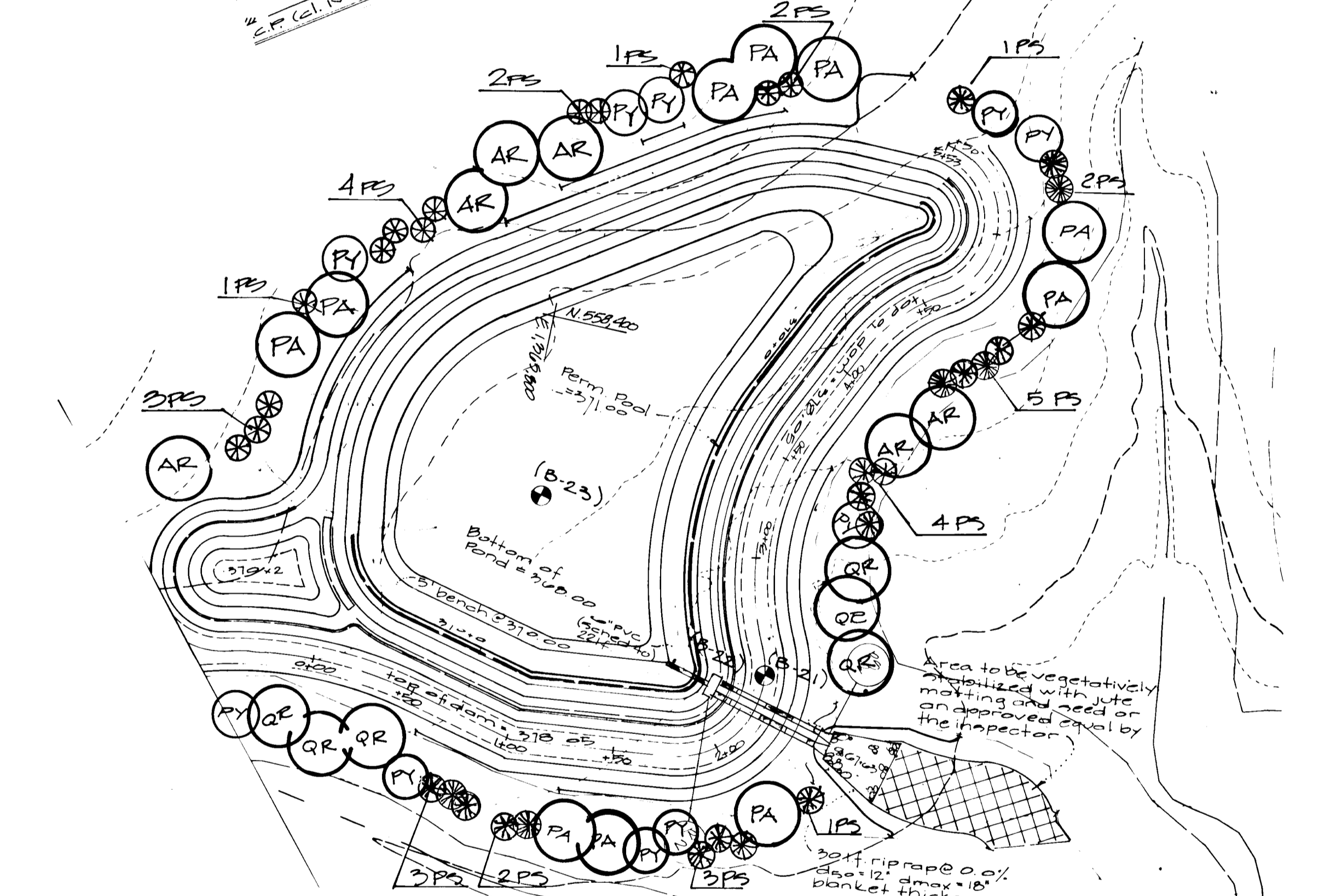
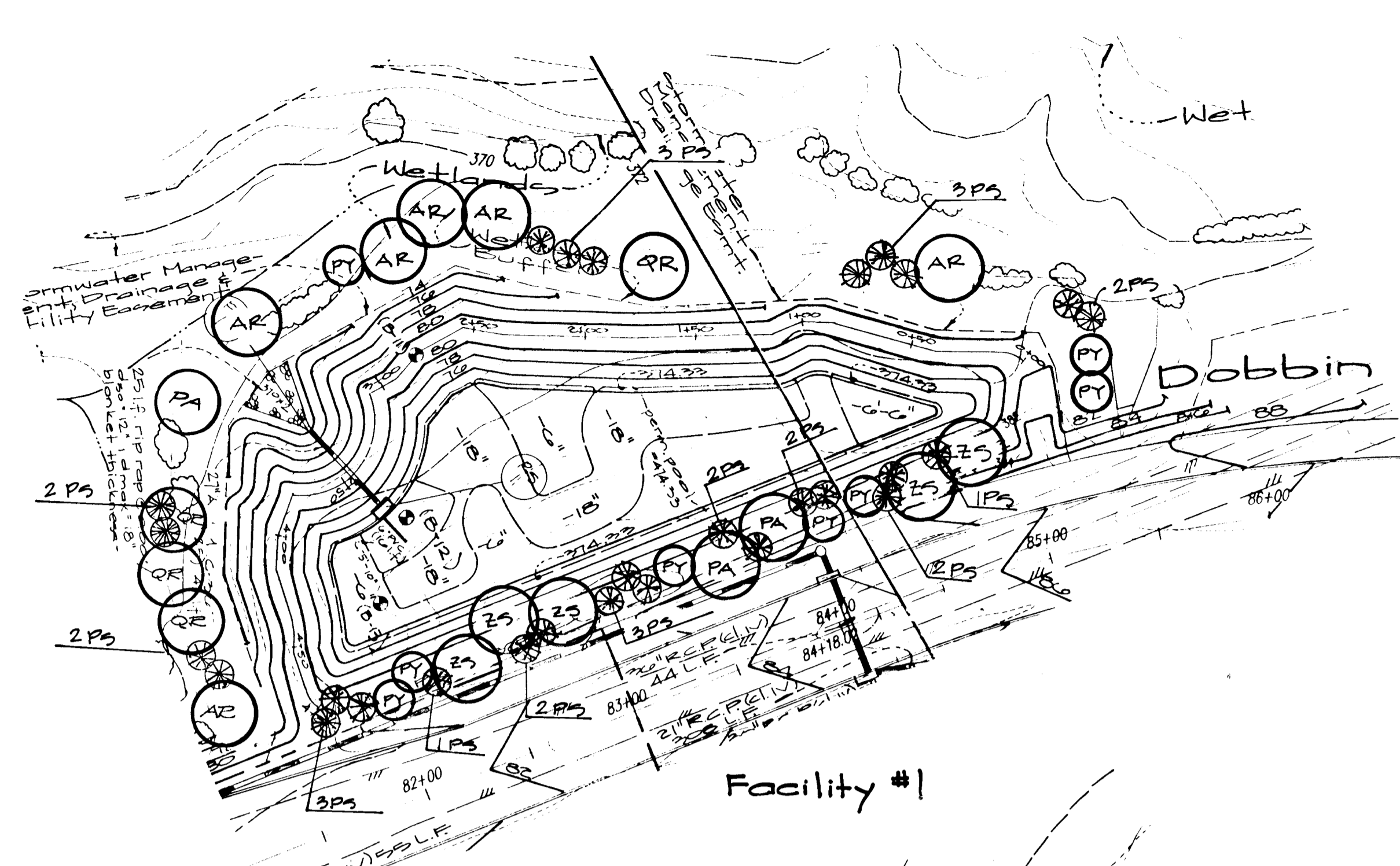
| DATE | REV. | PLANT MAT. | PER. | FIG. | PKGS. | BY | APP'R. |
|---------|------|------------|------|------|-------|-----|--------|
| 1-16-96 | | | | | | KAF | |

PREPARED FOR:
 The Howard Research & Development Corporation
 The Rouse Building
 10275 Little Bluxent Parkway
 Columbia, Md. 21044
 (410) 972-6027

Wetland Planting Plans, Notes & Details
Route 175 Commercial
 Section 1 Area 1
 Phase 22C
 6th Election District
 Howard County, Maryland

| DES. | SCALE | ZONING | G.L.W. FILE NO. |
|------|------------|-------------|-----------------|
| KAF | 1" = 20' | NT | 95003 |
| DRN. | DATE | TAX MAP NO. | SHEET |
| MCF | Sept. 1995 | 30 | 22 of 37 |
| CHK. | | | |

1787



- PLANTING NOTES**
- All plants provided by Contractor to be nursery grown and furnished in accordance with AAM "American Standards for Nursery Stock" ANSI Z60.1.
 - All trees to branch symmetrically around central leader. No forked leader stock will be accepted.
 - Plant material types may vary due to market availability at time of construction. Any substitutions and must be approved in writing by the owner or landscape architect.
 - The Contractor shall notify all utility companies five (5) days prior to beginning work.
 - Any damage to the existing utilities, buildings, paving curb and walls, and vegetation (not so designated for removal on these plans) shall be repaired to previous condition or replaced by the Contractor at his expense.
 - All areas disturbed during construction are to be seeded unless noted otherwise.
 - All oaks shall be planted during the spring planting season only.

PLANT LIST

| KEY | QTY. | BOTANICAL/COMMON NAME | SIZE | ROOT |
|-----|------|---|---------------|------|
| AR | 23 | Acer rubrum/"October Glory" October Glory Red Maple | 2 1/2-3" Cal. | B&B |
| PS | 98 | Pinus strobus/White Pine | 6-8" Ht. | B&B |
| PA | 21 | Plantanus x acerifolia "Bloodgood"/ Bloodgood London Plane | 2 1/2-3" Cal. | B&B |
| PY | 24 | Prunus x yedoensis/ Yoshino Cherry | 1 1/2-2" Cal. | B&B |
| QR | 15 | Quercus rubra/Red Oak | 2 1/2-3" Cal. | B&B |
| ZS | 5 | Zelkova serrata "Green vane"/ Green Vane Zelkova | 2 1/2-3" Cal. | B&B |

FACILITY # 1

STORMWATER MANAGEMENT AREA LANDSCAPING

| | |
|--|-----------|
| LINEAR FEET OF PERIMETER | 1120 L.F. |
| NUMBER OF TREES REQUIRED | |
| SHADE TREES | 22 TREES |
| EVERGREEN TREES | 28 TREES |
| CREDIT FOR EXISTING VEGETATION (NO, YES AND %) | NO |
| CREDIT FOR OTHER LANDSCAPING (NO, YES AND %) | NO |
| NUMBER OF TREES PROVIDED | |
| SHADE TREES | 18 TREES |
| EVERGREEN TREES | 28 TREES |
| OTHER TREES (2:1 SUBSTITUTION) | 8 TREES |

FACILITY # 2

STORMWATER MANAGEMENT AREA LANDSCAPING

| | |
|--|-----------|
| LINEAR FEET OF PERIMETER | 1370 L.F. |
| NUMBER OF TREES REQUIRED | |
| SHADE TREES | 1150 |
| EVERGREEN TREES | 1140 |
| CREDIT FOR EXISTING VEGETATION (NO, YES AND %) | NO |
| CREDIT FOR OTHER LANDSCAPING (NO, YES AND %) | NO |
| NUMBER OF TREES PROVIDED | |
| SHADE TREES | 22 TREES |
| EVERGREEN TREES | 24 TREES |
| OTHER TREES (2:1 SUBSTITUTION) | 10 TREES |

FACILITY # 3

STORMWATER MANAGEMENT AREA LANDSCAPING

| | |
|--|--------------|
| LINEAR FEET OF PERIMETER | 660 L.F. |
| NUMBER OF TREES REQUIRED | |
| SHADE TREES | 13 TREES |
| EVERGREEN TREES | 16 TREES |
| CREDIT FOR EXISTING VEGETATION (NO, YES AND %) | YES |
| CREDIT FOR OTHER LANDSCAPING (NO, YES AND %) | 140 L.F. 21% |
| NUMBER OF TREES PROVIDED | |
| SHADE TREES | 10 TREES |
| EVERGREEN TREES | 13 TREES |
| OTHER TREES (2:1 SUBSTITUTION) | |

FACILITY # 4

STORMWATER MANAGEMENT AREA LANDSCAPING

| | |
|--|--------------|
| LINEAR FEET OF PERIMETER | 1600 L.F. |
| NUMBER OF TREES REQUIRED | |
| SHADE TREES | 1150 |
| EVERGREEN TREES | 1140 |
| CREDIT FOR EXISTING VEGETATION (NO, YES AND %) | YES |
| CREDIT FOR OTHER LANDSCAPING (NO, YES AND %) | 670 L.F. 41% |
| NUMBER OF TREES PROVIDED | |
| SHADE TREES | 15 TREES |
| EVERGREEN TREES | 23 TREES |
| OTHER TREES (2:1 SUBSTITUTION) | 6 TREES |

Note: Maintain minimum of 20' between toe of slope for pond embankment and landscape woody plantings.

1787

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard M. Dancker 2-6-96
 Chief, Bureau of Highway
 Date: 2-6-96

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Alma Stummans 2/15/96
 Chief, Bureau of Planning and Research
 Date: 2/15/96

Alan Dawson 2/19/96
 Chief, Development Engineering Division
 Date: 2/19/96

GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20866
 TELEPHONE (301)421-4024 NO VA (301)989-2524 BAL TO (301)880-1820 FAX (301)421-4186

| DATE | REVISION | BY | APP. |
|------|----------|----|------|
| | | | |

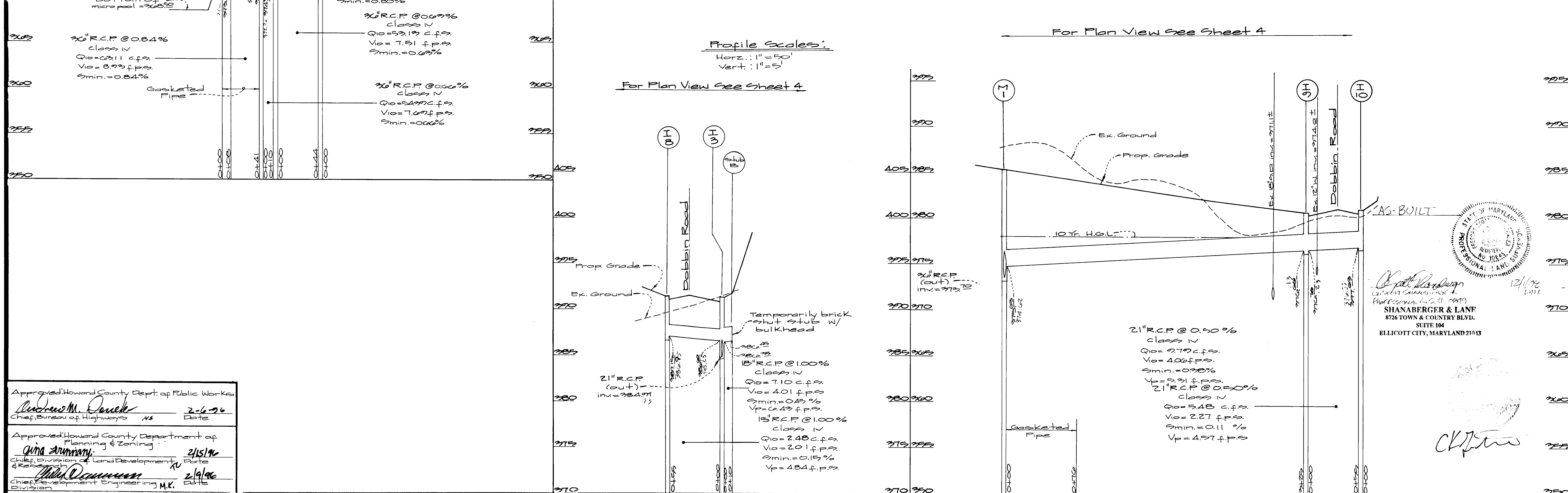
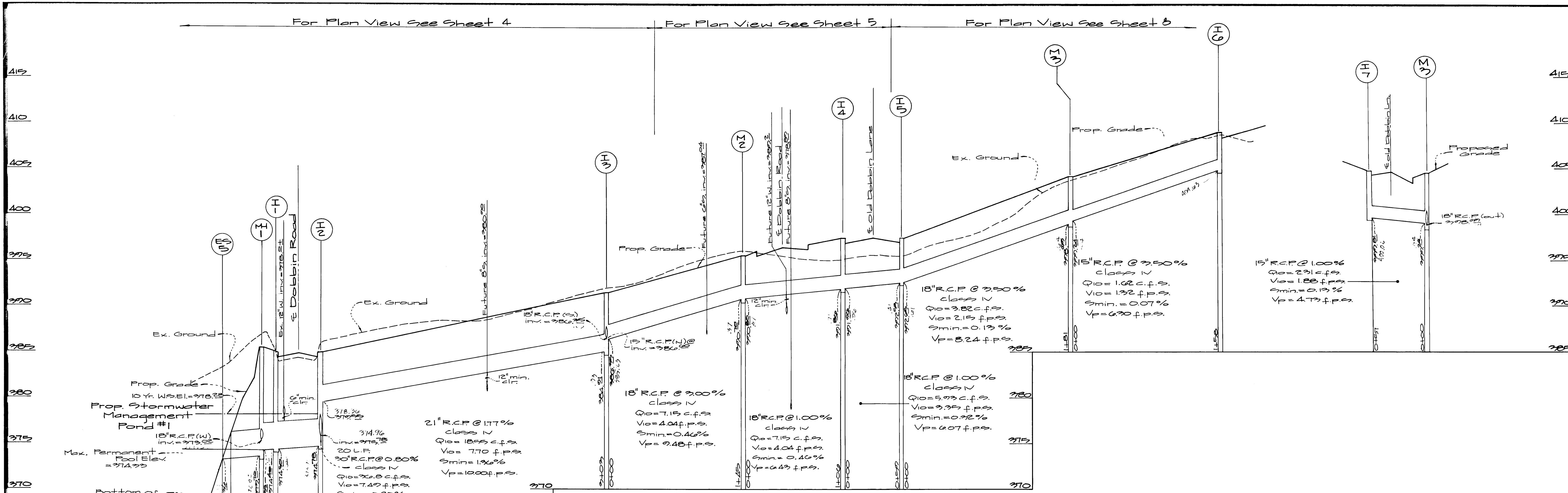
PREPARED FOR
 The Howard Research & Development Corporation
 The Rouse Building
 10275 Little Patuxent Parkway
 Columbia, Md. 21044
 (410) 72-0027

Landscape Plantings @ S.W.M. Facilities
 Route 175 Commercial
 Section 1 Areal
 Phase 224
 6th Election District
 Howard County, Maryland

| | | | |
|-----------|------------------|-----------------|------------------------|
| DES.: KAF | SCALE: 1"=30' | ZONING: NT | G.L.W. FILE NO.: 93003 |
| DRN.: MCF | DATE: Sept. 1995 | TAX MAP NO.: 30 | SHEET: 23 of 37 |
| CHK.: KAF | | | |

F-96-41

1787



Approved: Howard County Dept. of Public Works
Andrew M. Jensen 2-6-96
 Chief, Bureau of Highways

Approved: Howard County Department of Planning & Zoning
Quinn Summary 2/15/96
 Chief, Division of Land Development

Mike Damann 2/9/96
 Chief, Development Engineering M.K. Division

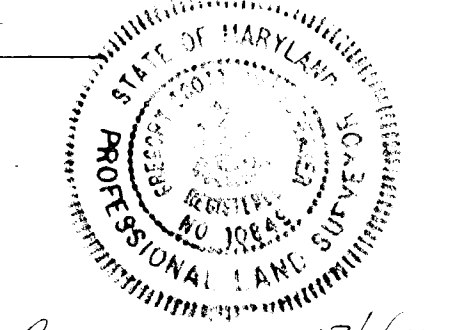
GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20866
 TELEPHONE (301)421-4024 NO VA (301)989-2524 BALTO (301)880-1820 FAX (301)421-4186

| DATE | REVISION | BY | APPR. |
|------|----------|----|-------|
| | | | |
| | | | |

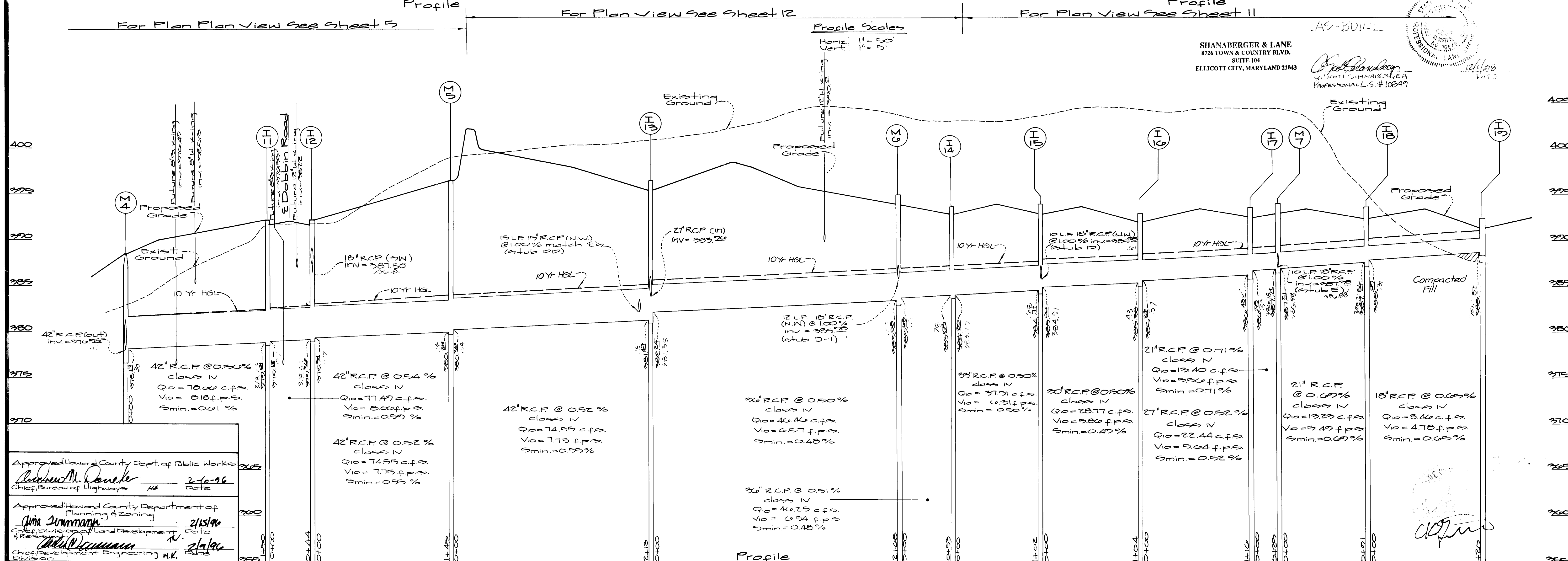
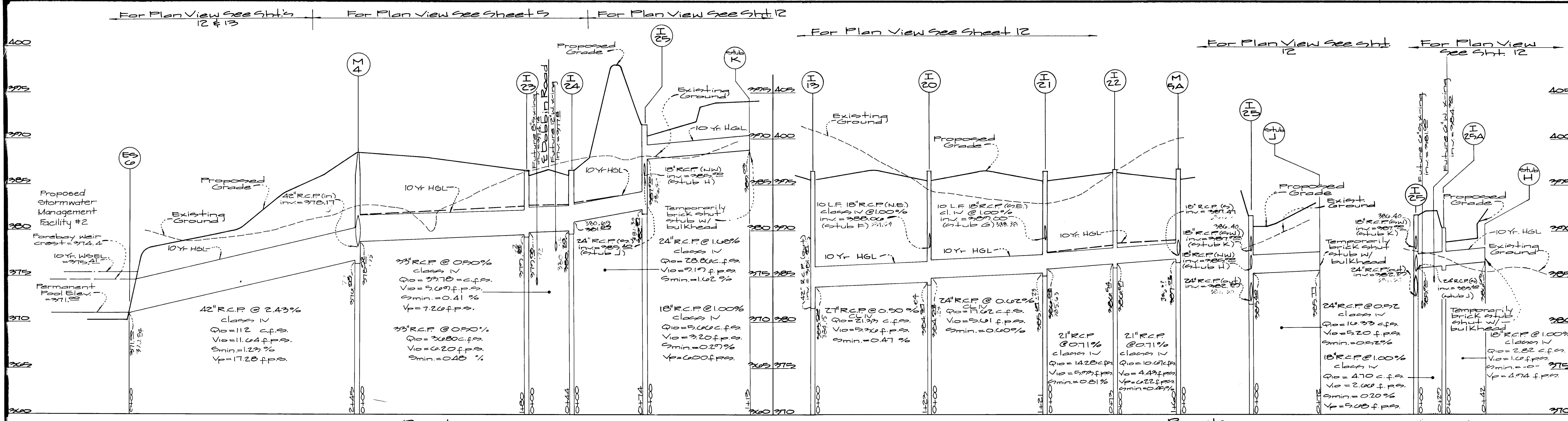
PREPARED FOR:
 The Howard Research & Development Corporation
 The Rouse Building
 10215 Little Patuxent Pkwy.
 Columbia, Maryland 21044

Storm Drain Profiles
Route 175 Commercial
Section 1 Area 1
Phase 220
 Ceth Election District

| DES. | SCALE | ZONING | U.L.M. FILE NO. |
|----------|------------|-------------|-----------------|
| AS SHOWN | AS SHOWN | NT | 95-003 |
| DRN. | DATE | TAX MAP NO. | SHEET |
| W.S.J. | Sept. 1995 | 20 | 24 of 37 |
| CHK. | | | |
| | | | |



Guth Little
 SHANABERGER & LANF
 8726 TOWN & COUNTRY BLVD.
 SUITE 104
 ELLICOTT CITY, MARYLAND 21113



Approved: Howard County Dept. of Public Works
Richard M. Daniels 2/10/96
 Chief, Bureau of Highways MS Date

Approved: Howard County Department of Planning & Zoning
Chris Summerville 2/15/96
 Chief, Division of Land Development, Date

Michael J. Summerville 2/16/96
 Chief, Development Engineering M.K. Date

GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD 20866
 TELEPHONE: (301)421-4024 NO. VA. (301)989-2524 BALTO. (301)880-1820 FAX (301)421-4186

| DATE | REVISION | BY | APP'R. |
|---------|---|-----|--------|
| 2/17/97 | Revise Profiles to add I-22, I-59, & I-25 A | WLD | |
| 4/11/97 | Relocate I-14 & Replace w/MI | KLP | |

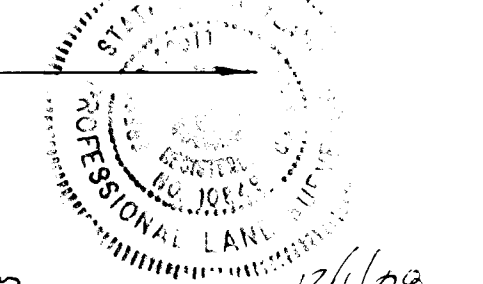
PREPARED FOR:
 The Howard Research & Development Corporation
 The Rouse Building
 10275 Little Patuxent Pkwy.
 Columbia, Maryland 21044

Storm Drain Profiles
Route 175 Commercial section 1 Area 1 Phase 220
 6th Election District
 Howard County, Maryland

| DES. | SCALE | ZONING | GLW FILE NO. |
|----------|------------|-------------|--------------|
| AS SHOWN | AS SHOWN | NT | 95-003 |
| DRN. | DATE | TAX MAP NO. | SHEET |
| W.S.J. | Sept. 1995 | 76 | 25 of 37 |
| CHK. | DATE | | |
| not | | | |

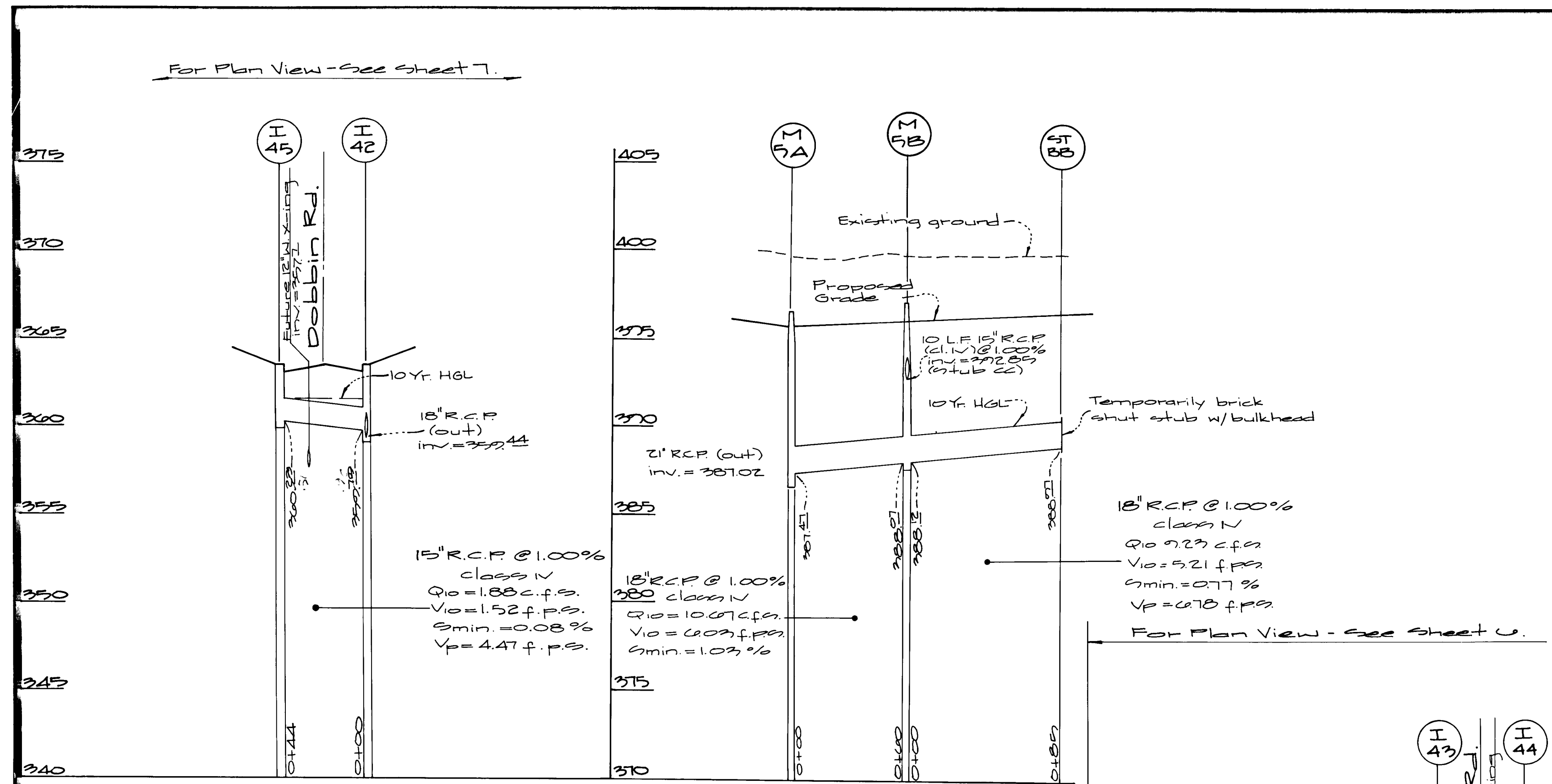
SHANABERGER & LANE
 8726 TOWN & COUNTRY BLVD.
 SUITE 104
 ELLICOTT CITY, MARYLAND 21043

Professional Engineer
Paul Blawie
 License No. 10849

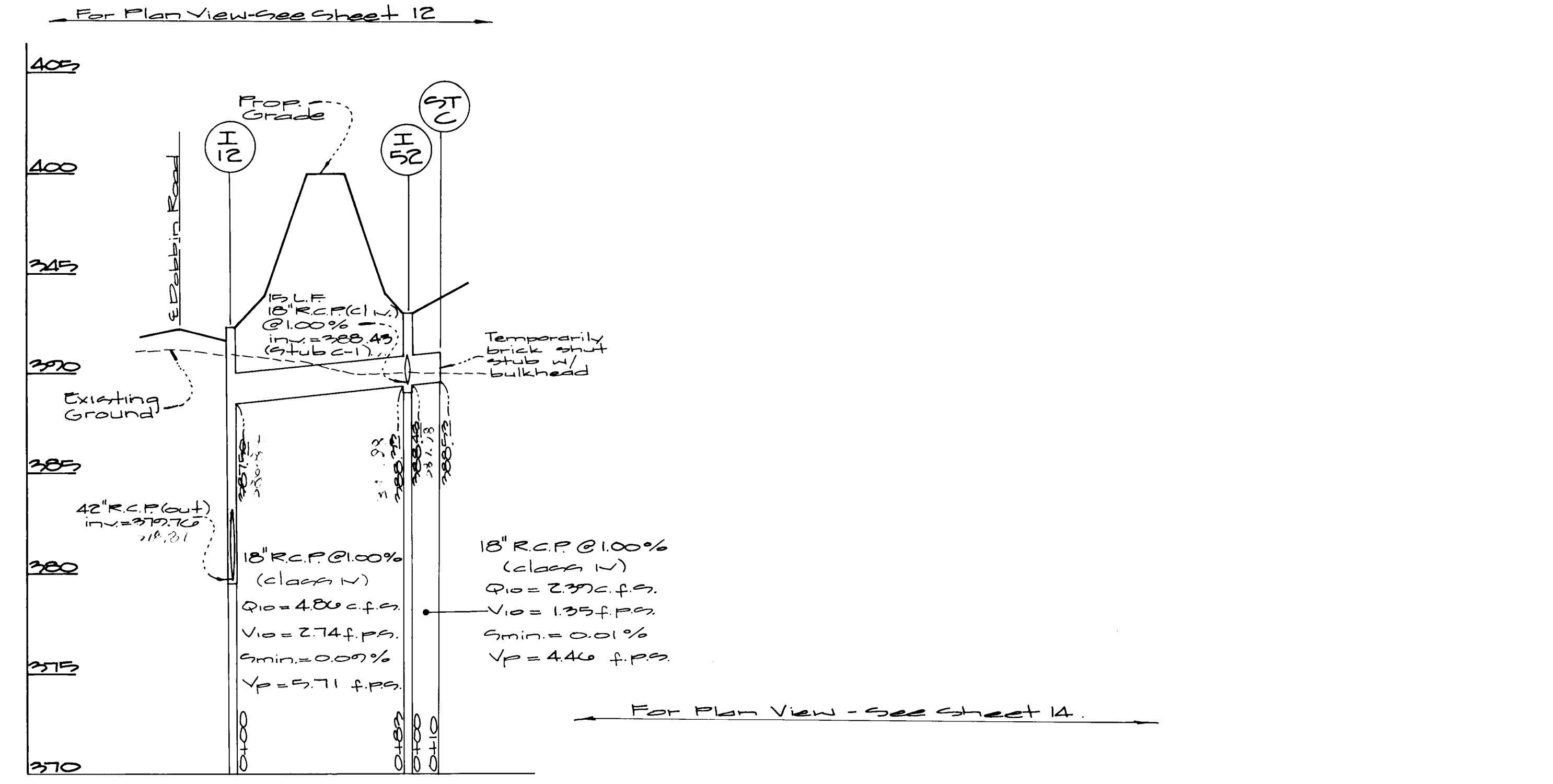


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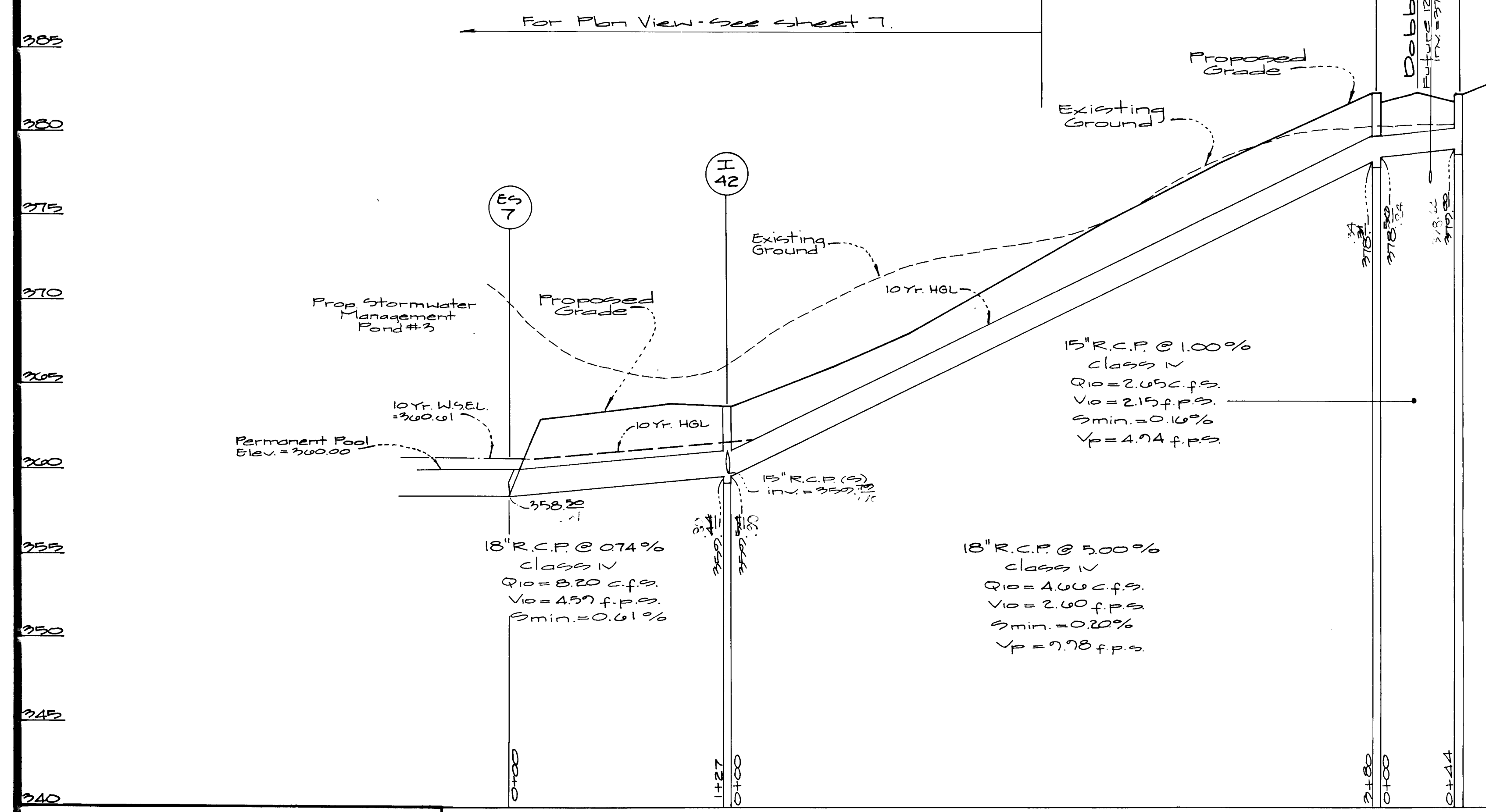


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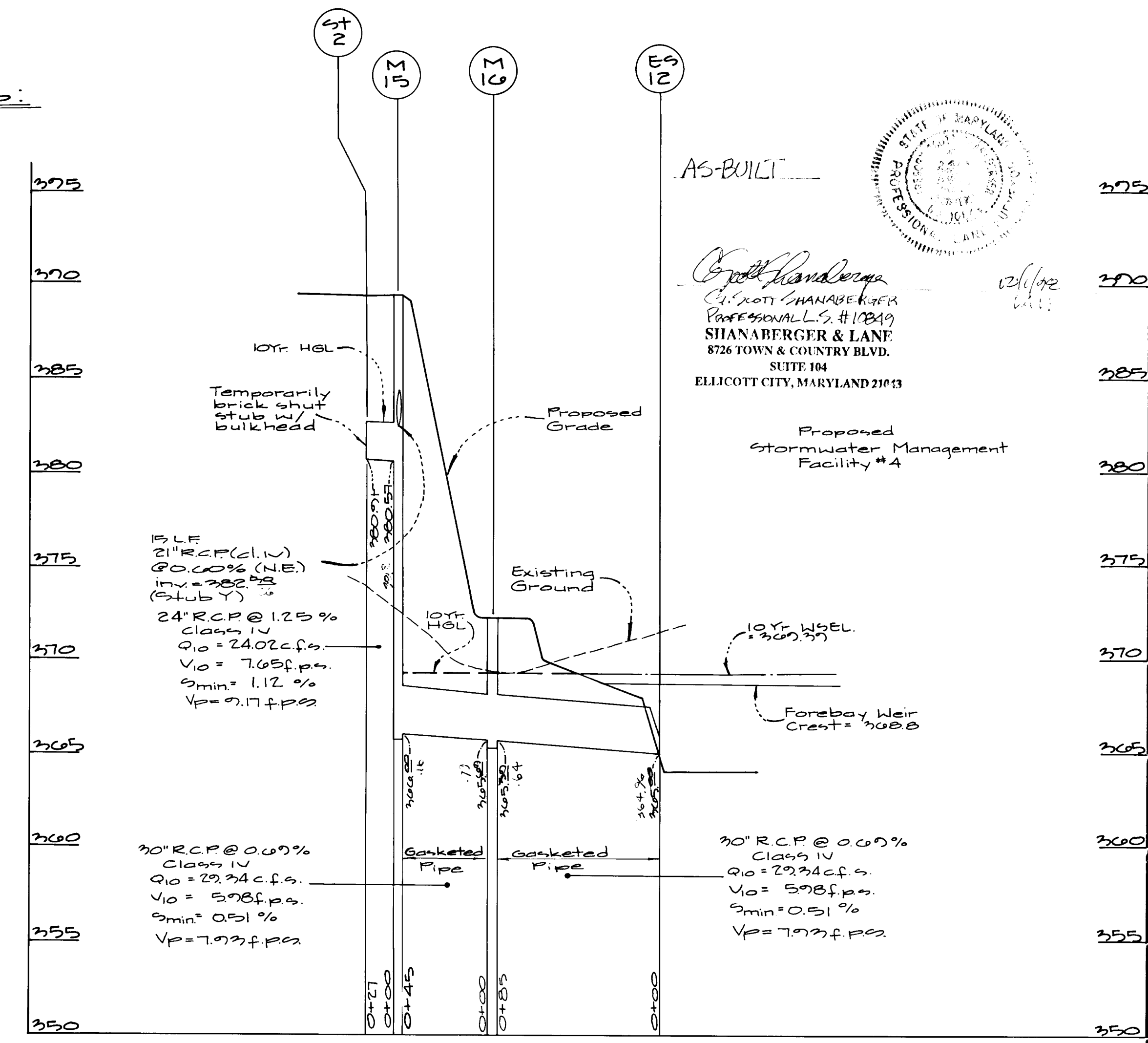


Profile

Profile Scales:
 Horiz. : 1" = 50'
 Vert. : 1" = 5'



Profile



Profile

Approved: Howard County Dept. of Public Works
Andrew M. Smith 2-6-96
 Chief, Bureau of Highways
 Approved: Howard County Department of Planning & Zoning
Jim Summery 2/15/96
 Chief, Division of Land Development & Research
Mark Summers 2/6/96
 Chief, Development Engineering M.K. Division

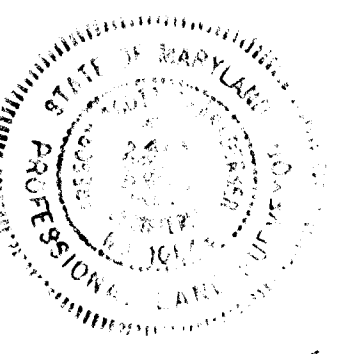
GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE · SUITE 250 · BURTONSVILLE OFFICE PARK · BURTONSVILLE, MD 20886
 TELEPHONE (301)421-4024 NO. VA. (301)989-2524 BALTO (301)880-1820 FAX (301)421-4186

| DATE | REVISION | BY | APP'R. |
|---------|--|------|--------|
| 7-31-97 | Revise stub 2 Profile & Pipe Data | WesJ | |
| 9-17-97 | Added M-5B to Profile | WesJ | |
| 4/11/98 | Correct stub c-1 inv. elev. str. I-52 | KLP | |
| 4/17/98 | Added profile I-22 to str. 5B; Revised hyd. info. I-12 to str. C | KLP | |

PREPARED FOR:
 The Howard Research & Development Corporation
 The Rouse Building
 10275 Little Patuxent Pkwy.
 Columbia, Maryland 21044

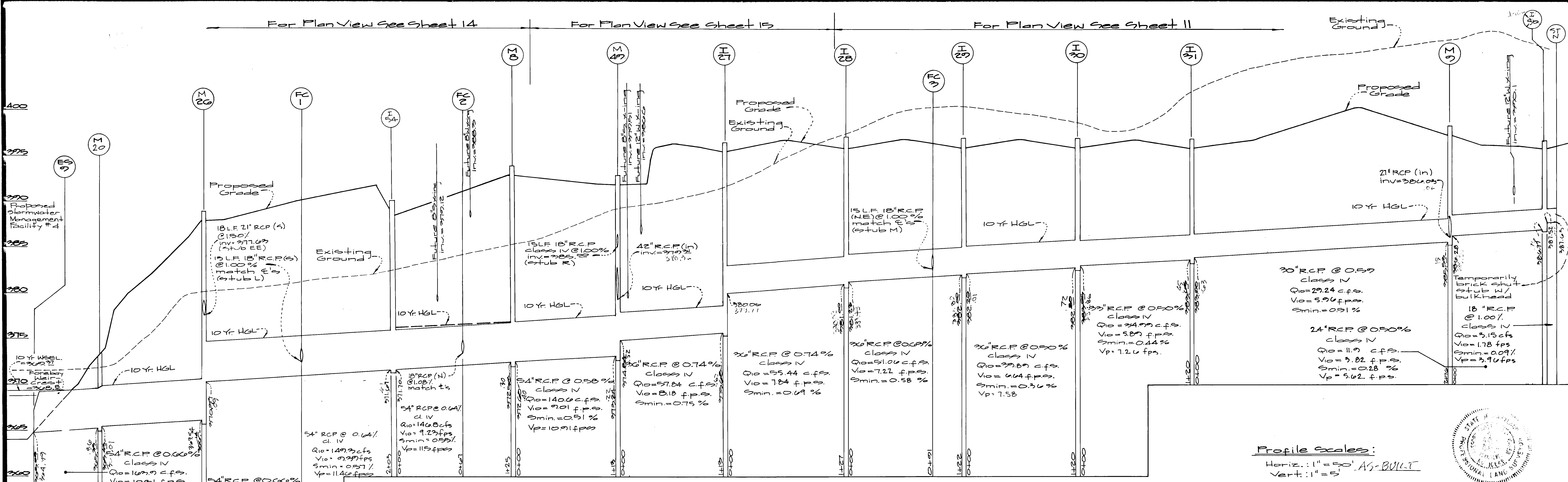
Storm Drain Profiles
Route 175 Commercial Section I Area I
 Phase 220
 6th Election District
 Howard County, Maryland

| | | | |
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| DRN: W.S.J. | DATE: Sept. 1995 | TAX MAP NO.: 20 | SHEET: 26 of 37 |
| CHK: rot. | | | |



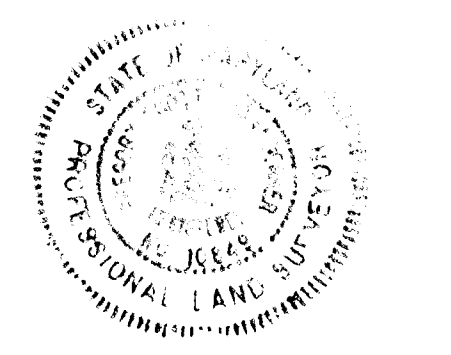
Robert Shanaberger
 CIVIL ENGINEER
 PROFESSIONAL No. #119349
 SHANABERGER & LANE
 8726 TOWN & COUNTRY BLVD.
 SUITE 104
 ELLICOTT CITY, MARYLAND 21043

Chris...

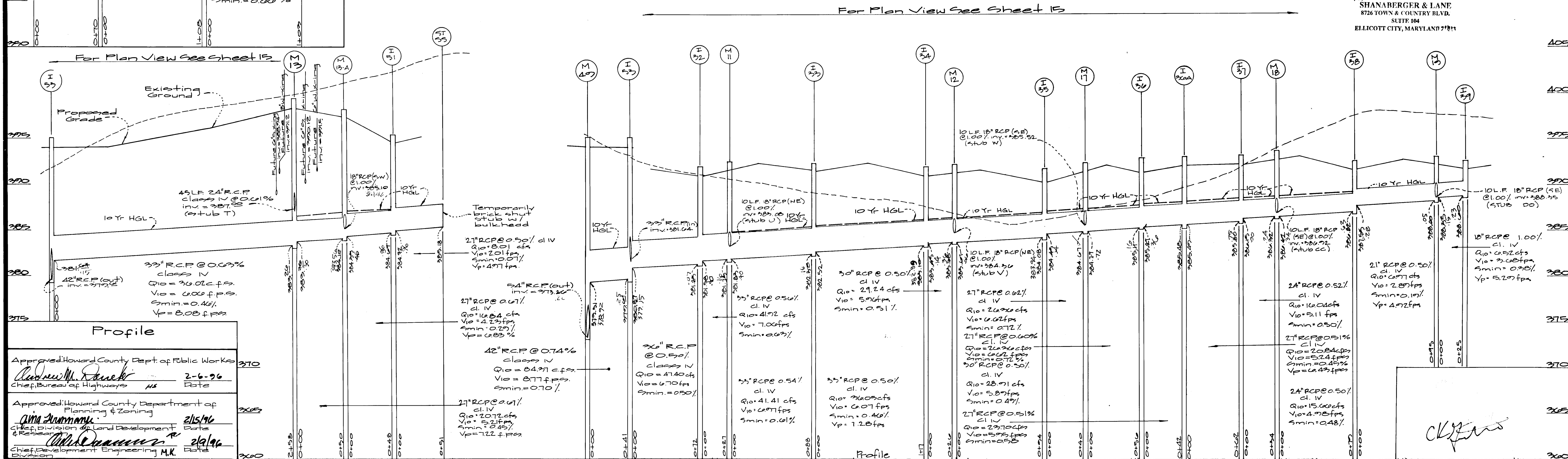


Profile

Profile Scales:
 Horiz.: 1" = 50' AS-BUILT
 Vert.: 1" = 5'



Shanaberger & Lane
 PROFESSIONAL ENGINEERS
 SHANABERGER & LANE
 8726 TOWN & COUNTRY BLVD.
 SUITE 104
 ELLICOTT CITY, MARYLAND 21111



Profile

Approved: Howard County Dept. of Public Works
Richard M. Duesch 2-6-96
 Chief, Bureau of Highways
 Approved: Howard County Department of Planning & Zoning
Anna A. ... 2/15/96
 Chief, Division of Land Development
 Approved: *...* 2/9/96
 Chief Development Engineering M.K.

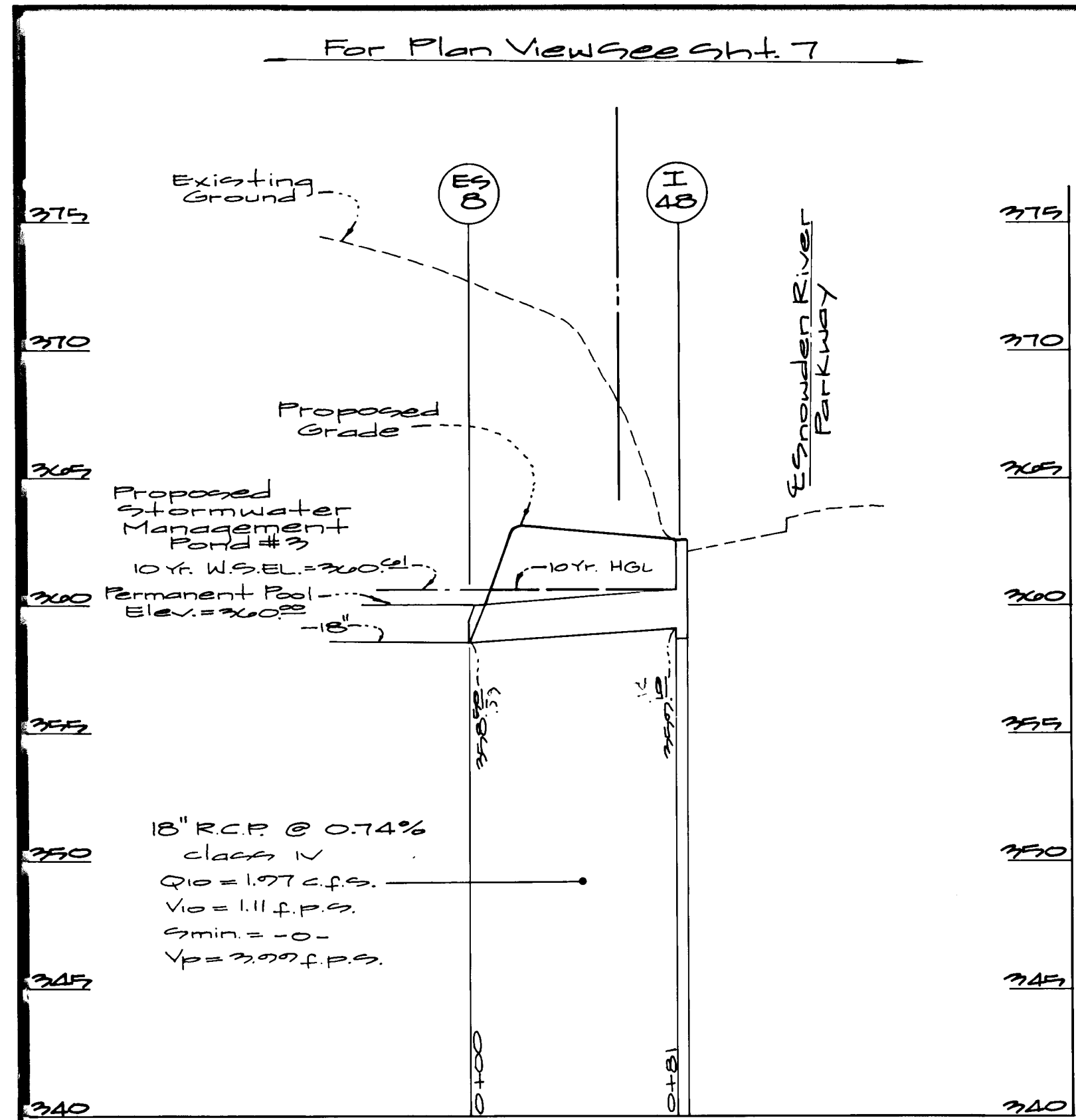
GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD 20886

PREPARED FOR:
 The Howard Research & Development Corporation
 The Rouse Building
 10275 Little Patuxent Pkwy.
 Columbia, Maryland 21044

Storm Drain Profiles
Route 175 Commercial
 Section 1 Area 1
 Phase 220
 Howard County, Maryland

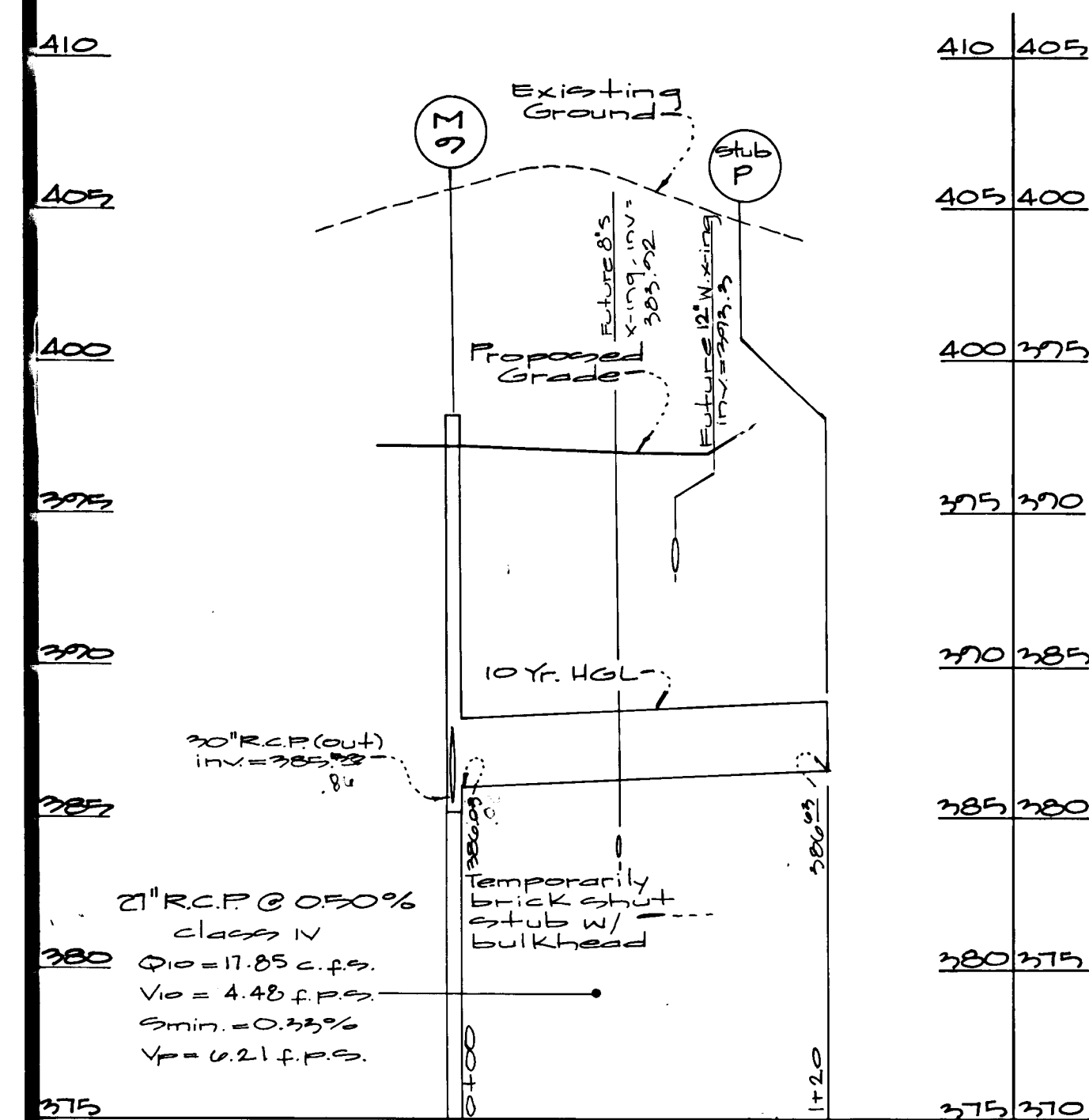
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| DRN.: | As Shown | NT | 95-009 |
| W.S.: | DATE | TAX MAP NO. | SHEET |
| CHK.: | Sept. 1995 | 70 | 27 of 37 |
| DT. | | | |

1787



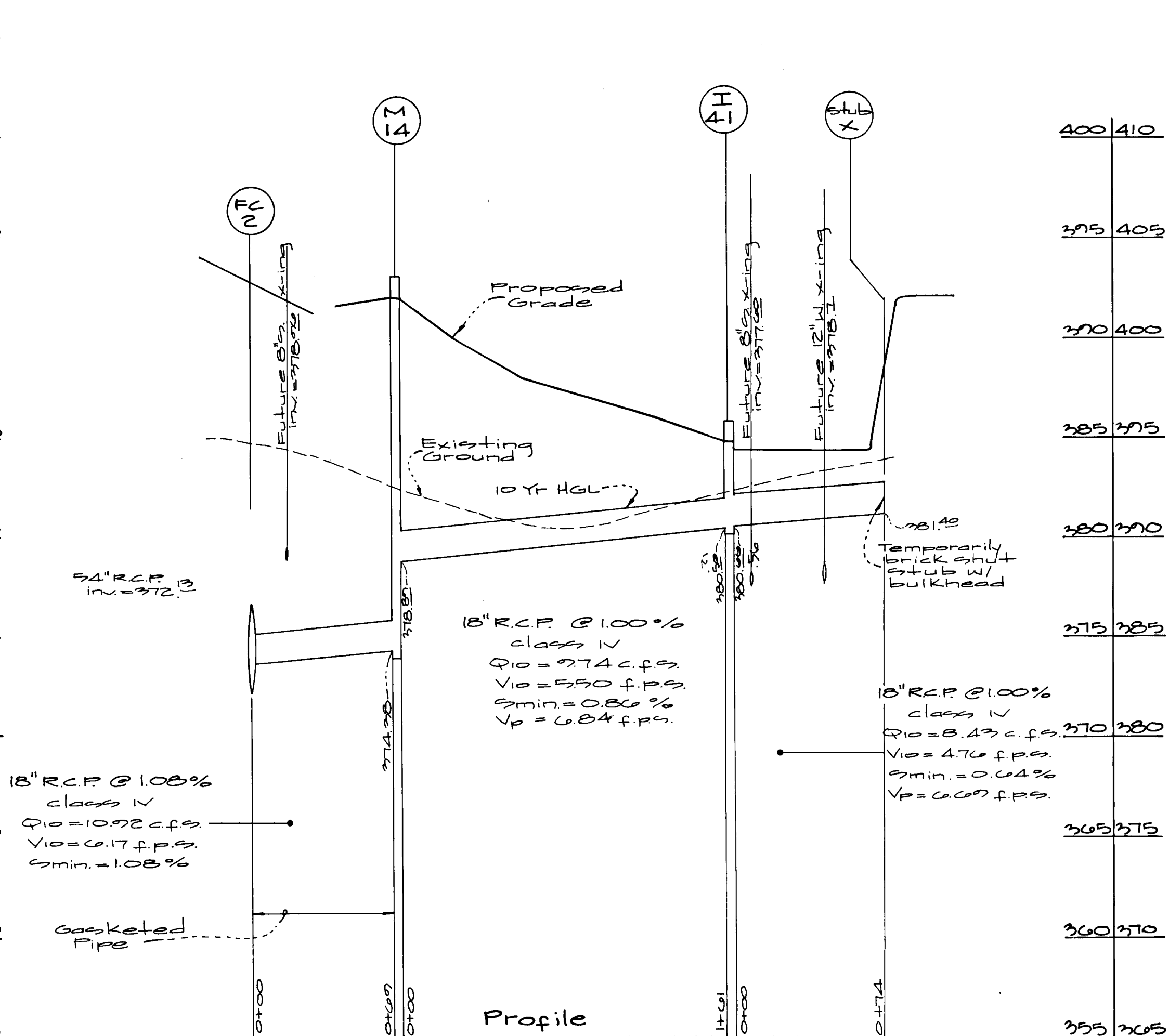
Profile

For Plan View See Sheet 11



Profile

For Plan View See Sheet 14



Profile

Storm Drain Structure Schedule (cont.)

| No. | Type | Top Elev. | Inv. in (highest) | Inv. out | Location | Std. Detail |
|-------|------------|-----------|-------------------|----------|----------|-------------------|
| I-24 | A-15 Inlet | 370.21 | 371.70 | 371.67 | See Plan | MOSHAST MD 374.62 |
| M-13A | Manhole | 368.34 | 368.10 | 364.10 | | G 5.13 |
| M-17 | | 373.24 | 365.52 | 364.67 | | G 5.13 |
| M-18 | | 373.38 | 366.72 | 366.32 | | G 5.12 |
| M-19 | | 372.75 | 368.33 | 368.00 | | G 5.12 |
| M-20 | | 372.20 | 365.43 | 365.33 | | G 5.03 |
| M-5A | | 378.46 | 381.47 | 387.02 | | G 5.12 |
| M-5B | | 377.17 | 388.12 | 388.07 | | G 5.12 |
| I-25A | A-10 Inlet | 370.21 | 380.24 | 380.17 | | G 5.41 |
| I-26A | | 377.50 | 385.47 | 385.40 | | " |

Storm Drain Structure Schedule

| No. | Type | Top Elev. | Inv. in (highest) | Inv. out | Location | Std. Detail |
|------|---------------------|-----------|-------------------|----------|----------|--------------------------|
| I-13 | Double 'S' Inlet | 370.01 | 380.76 | 381.47 | See Plan | S.D. 4.23 |
| I-14 | | 373.82 | 384.20 | 384.10 | | " |
| I-15 | | 373.74 | 383.00 | 384.71 | | " |
| I-16 | | 372.88 | 383.83 | 385.58 | | " |
| I-17 | | 373.67 | 386.73 | 386.43 | | " |
| I-18 | | 373.07 | 388.07 | 387.84 | | " |
| I-19 | | 372.20 | 388.07 | 388.87 | | " |
| I-20 | | 376.00 | 384.72 | 384.57 | | " |
| I-21 | | 376.95 | 386.02 | 385.67 | | " |
| I-22 | | 376.98 | 386.57 | 386.54 | | S.D. 4.23 |
| I-25 | A-10 Inlet | 370.17 | 387.00 | 388.23 | | S.D. 4.41 |
| I-26 | Manhole | 373.00 | 370.37 | 366.14 | | G 5.12 |
| I-27 | Double 'S' Inlet | 376.24 | 380.00 | 375.08 | | S.D. 4.23 |
| I-28 | | 376.70 | 381.23 | 381.00 | | " |
| I-29 | | 376.70 | 382.20 | 382.00 | | " |
| I-30 | | 376.70 | 383.07 | 382.80 | | " |
| I-31 | | 376.17 | 383.70 | 383.45 | | " |
| I-32 | | 371.06 | 381.58 | 381.23 | | " |
| I-33 | | 372.24 | 382.52 | 382.30 | | " |
| I-34 | | 371.77 | 383.45 | 383.10 | | S.D. 4.23 |
| I-35 | A-10 Inlet modified | 372.71 | 384.47 | 384.08 | | S.D. 4.41 |
| I-36 | A-10 Inlet modified | 372.82 | 385.17 | 385.11 | | S.D. 4.41 |
| I-37 | Double 'S' Inlet | 372.74 | 386.15 | 385.80 | | S.D. 4.23 |
| I-38 | | 372.18 | 387.37 | 386.82 | | S.D. 4.23 |
| I-39 | | 372.18 | 388.60 | 388.60 | | S.D. 4.23 |
| M-6 | Manhole | 375.02 | 383.83 | 383.58 | | G 5.13 |
| I-41 | A-5 Inlet | 380.43 | 380.64 | 380.50 | | S.D. 4.40 |
| M-49 | Manhole | 374.62 | 374.64 | 373.2 | | G 5.07 |
| I-50 | 'K' Inlet | 376.37 | 387.52 | 386.77 | | S.D. 4.36 double opening |
| I-51 | 'K' Inlet | 373.41 | 384.72 | 384.67 | | S.D. 4.36 double opening |
| M-4 | Manhole | 384.50 | 377.22 | 377.62 | | G 5.13 |
| M-7 | | 374.32 | 387.21 | 387.11 | | G 5.12 |
| M-8 | | 373.33 | 372.60 | 372.50 | | G 5.03 |
| M-9 | | 373.86 | 386.28 | 385.93 | | G 5.13 |
| I-53 | A-10 Inlet modified | 373.11 | 381.64 | 377.61 | | S.D. 4.41 |
| M-11 | Manhole | 372.54 | 383.08 | 381.73 | | G 5.13 |
| M-12 | | 372.16 | 384.34 | 383.58 | | G 5.12 |
| M-13 | | 377.40 | 383.76 | 383.26 | | G 5.13 |
| M-14 | | 371.68 | 378.87 | 374.38 | | G 5.12 |
| M-15 | | 370.40 | 382.50 | 380.57 | | G 5.12 |
| M-16 | | 372.20 | 384.00 | 383.57 | | G 5.12 |
| E-5 | End section | | 373.76 | | | S.D. 3.51/3.32 |
| E-6 | | | 371.00 | | | " |
| E-7 | | | 358.50 | | | " |
| E-8 | | | 358.50 | | | " |
| E-9 | | | 363.07 | | | " |
| E-10 | | | 355.95 | | | " |
| E-11 | | | 357.50 | | | " |
| E-12 | | | 369.00 | | | " |
| I-52 | Single 'S' Inlet | 376.50 | 388.43 | 388.33 | | S.D. 4.22 |

Note: 1. Recast alternatives are acceptable.
2. All inlets & manholes, except temporary inlets I-50 & I-51 have top of structure elevations, that reflect finished grades. (1' above grades indicated) therefore shall have temporary openings to drain sumps.

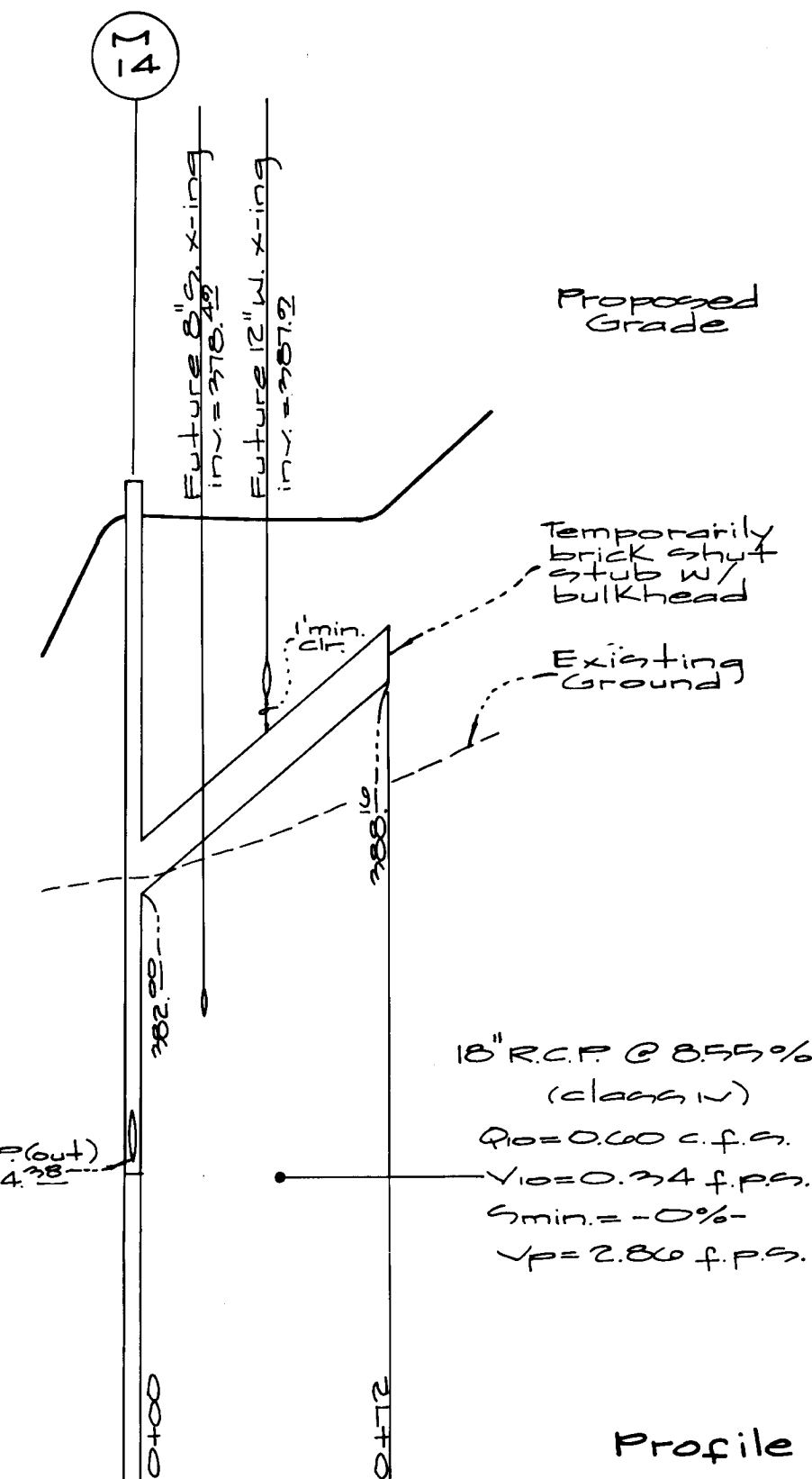
SEE PLAN

AS-BUILT

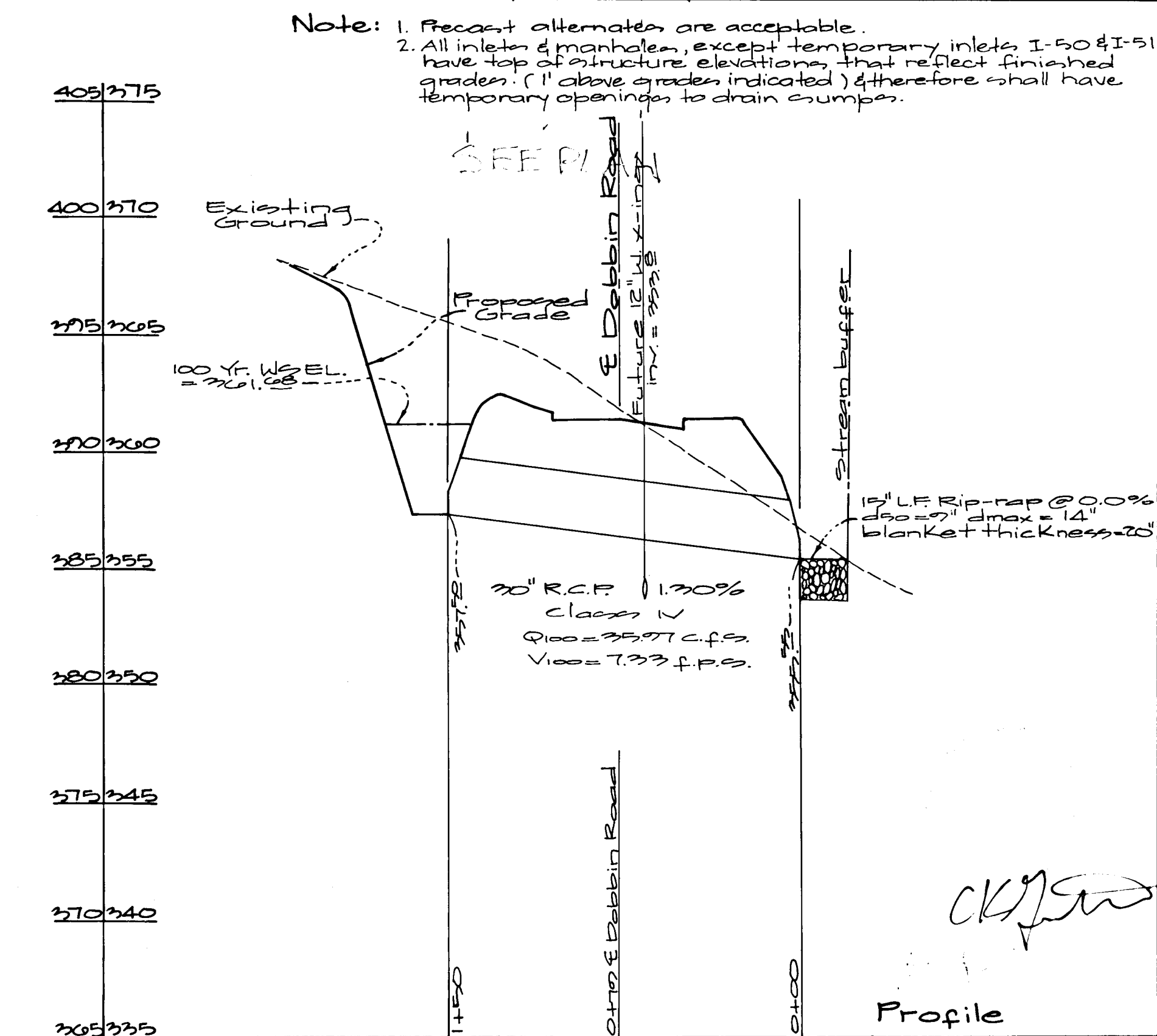


Scott Shanaberg
Professional Engineer
111007
SHANABERG & LANE
8726 TOWN & COUNTRY BLVD.
SUITE 104
ELlicott CITY, MARYLAND 21043

Profile Scale:
Horiz: 1" = 50'
Vert: 1" = 5'



Profile



Profile

Approved: Howard County Dept. of Public Works
Chief, Bureau of Highways
Date: 2-6-76

Approved: Howard County Department of Planning & Zoning
Date: 2/15/76

Approved: Chief, Division of Land Development & Rehabilitation
Date: 2/16/76

GIW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD 20866
TELEPHONE (301)421-4024 NO VA (301)989-2524 BALTO (301)880-1820 FAX (301)421-4186

PREPARED FOR:
The Howard Research & Development Corporation
The Rouse Building
10275 Little Patuxent Pkwy.
Columbia, Maryland 21044

| DATE | REVISION | BY | APP'R. |
|---------|--|-----|--------|
| 2-17-77 | Add inlets I-25A & I-26A. Revised times I-13, I-20, I-21, I-22, I-23 | Woj | |
| 2-17-77 | Revise structure schedule: I-13, I-20, I-22, M-5A & M-5B | Woj | |
| 2/17/76 | Revise str. schedule, revise profile 3+N to M-9, remove I-34 & I-33 | MCF | |
| 4/11/76 | Revise inco. for str. I-14 thru I-17, M-7, Add M-6, M-15, M-16 & E-12 info | KLP | |
| 4/12/76 | Revised inverts I-13, I-20, I-21, I-22 & I-23 | KLP | |

Storm Drain Profiles & Structure Schedule

Route 175 Commercial Section I Area I Phase 220
Howard County, Maryland

| | | | |
|----------------|------------------|-----------------|-------------------------|
| DES.: As Shown | SCALE: As Shown | ZONING: MTC | G.L.W. FILE NO.: 95-003 |
| DRN.: W.S.J. | DATE: Sept, 1975 | TAX MAP NO.: 30 | SHEET: 28 of 37 |
| CHK.: JOT | | | |

Match Line See Sheet 30 For Continuation

Basin #1
 Drainage Area = 1.00 Ac.
 Storage Req = 71,200 c.f.
 Storage Prov = 67,200 c.f.
 Clean out Elev. = 3712.24
 Top of Dam = 3810.1
 Bottom Elev. = 3710.0
 Riser Crest Elev. = 3710.25
 Permanent Pool = 3713.43

EXISTING Pipe Outlet Sediment Trap #A-1 (ST-1)
 Drainage Area = 2.4 Ac. (Ex)
 Storage Req = 8,040 c.f.
 Storage Provided = 13,000 c.f.
 Barrel = 12'
 Riser = 24'
 Trash Rack = 30'
 Storage Depth = 3'
 Cleanout Elev. = 3716.75
 Top of Dam Elev. = 3718.2
 Bottom Elev. = 3716.2
 Detail # B
 Limit of Wet Storage = 3717.5
 Limit of Storage = 3717.5

EXISTING Stone Outlet Sediment Trap A (ST-1)
 Drainage Area = 3.1 Ac. (Ex)
 Storage Required = 11,160 c.f.
 Storage Provided = 14,400 c.f.
 Weir Length = 12.5'
 Limit of Storage = 382.2
 Storage Depth = 3'
 Cleanout Elev. = 3802
 Top of Dam Elev. = 384.2
 Detail # B
 Bottom Elev. = 379.2
 Limit of Wet Storage = 379.00
 Weir Crest Elev. = 381.2

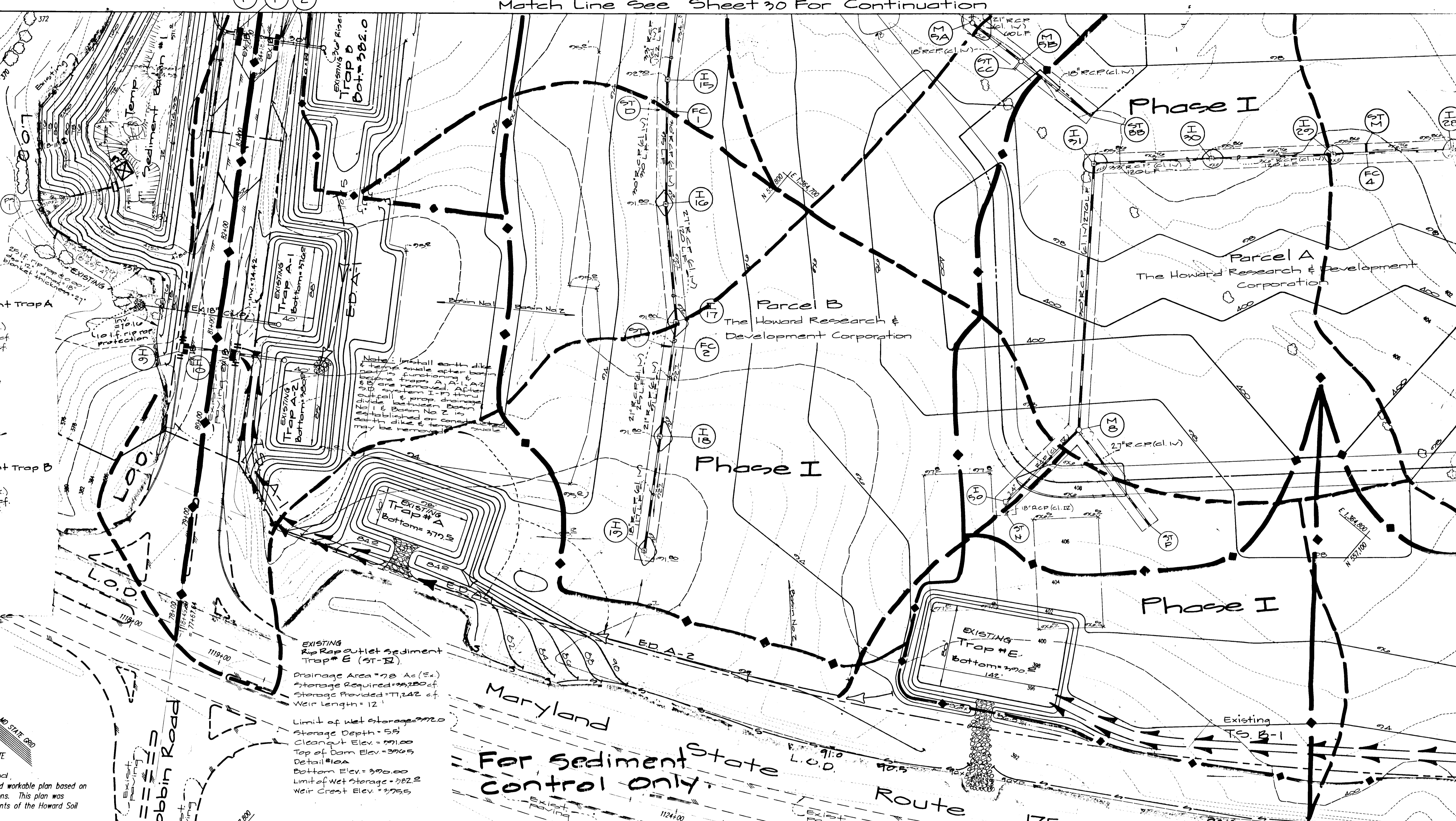
EXISTING Pipe Outlet Sediment Trap B (ST-1)
 Drainage Area = 7.20 Ac. (Ex)
 Storage Required = 25,120 c.f.
 Storage Provided = 31,124 c.f.
 Barrel = 30'
 Riser = 30'*
 Trash Rack = 34'
 Storage Depth = 6.5'
 Cleanout Elev. = 3832
 Top of Dam Elev. = 3885
 Bottom Elev. = 382.0
 Detail # B
 Limit of Wet Storage = 384.4
 Limit of Storage = 388.5
 *Provide G.L.E.C. certificate for items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

EXISTING Pipe Outlet Sediment Trap #E (ST-2)
 Drainage Area = 7.20 Ac. (Ex)
 Storage Required = 25,120 c.f.
 Storage Provided = 31,124 c.f.
 Barrel = 30'
 Riser = 30'*
 Trash Rack = 34'
 Storage Depth = 6.5'
 Cleanout Elev. = 3832
 Top of Dam Elev. = 3885
 Bottom Elev. = 382.0
 Detail # B
 Limit of Wet Storage = 384.4
 Limit of Storage = 388.5
 *Provide G.L.E.C. certificate for items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

EXISTING Stone Outlet Sediment Trap A (ST-1)
 Drainage Area = 3.1 Ac. (Ex)
 Storage Required = 11,160 c.f.
 Storage Provided = 14,400 c.f.
 Weir Length = 12.5'
 Limit of Storage = 382.2
 Storage Depth = 3'
 Cleanout Elev. = 3802
 Top of Dam Elev. = 384.2
 Detail # B
 Bottom Elev. = 379.2
 Limit of Wet Storage = 379.00
 Weir Crest Elev. = 381.2

EXISTING Pipe Outlet Sediment Trap #A-1 (ST-1)
 Drainage Area = 2.4 Ac. (Ex)
 Storage Req = 8,040 c.f.
 Storage Provided = 13,000 c.f.
 Barrel = 12'
 Riser = 24'
 Trash Rack = 30'
 Storage Depth = 3'
 Cleanout Elev. = 3716.75
 Top of Dam Elev. = 3718.2
 Bottom Elev. = 3716.2
 Detail # B
 Limit of Wet Storage = 3717.5
 Limit of Storage = 3717.5

EXISTING Pipe Outlet Sediment Trap #A-2 (ST-1)
 Drainage Area = 3.0 Ac. (Ex)
 Storage Req = 10,800 c.f.
 Storage Provided = 12,000 c.f.
 Barrel = 24'
 Riser = 24'
 Trash Rack = 30'
 Storage Depth = 3'
 Cleanout Elev. = 3807
 Top of Dam Elev. = 384.2
 Bottom Elev. = 382.2
 Detail # B
 Limit of Wet Storage = 382.2
 Limit of Storage = 382.2



ENGINEER'S CERTIFICATE
 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. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District.

DEVELOPER'S/BUILDER'S CERTIFICATE
 I/We certify that all development and/or construction will be done according to these

ENGINEER'S CERTIFICATE

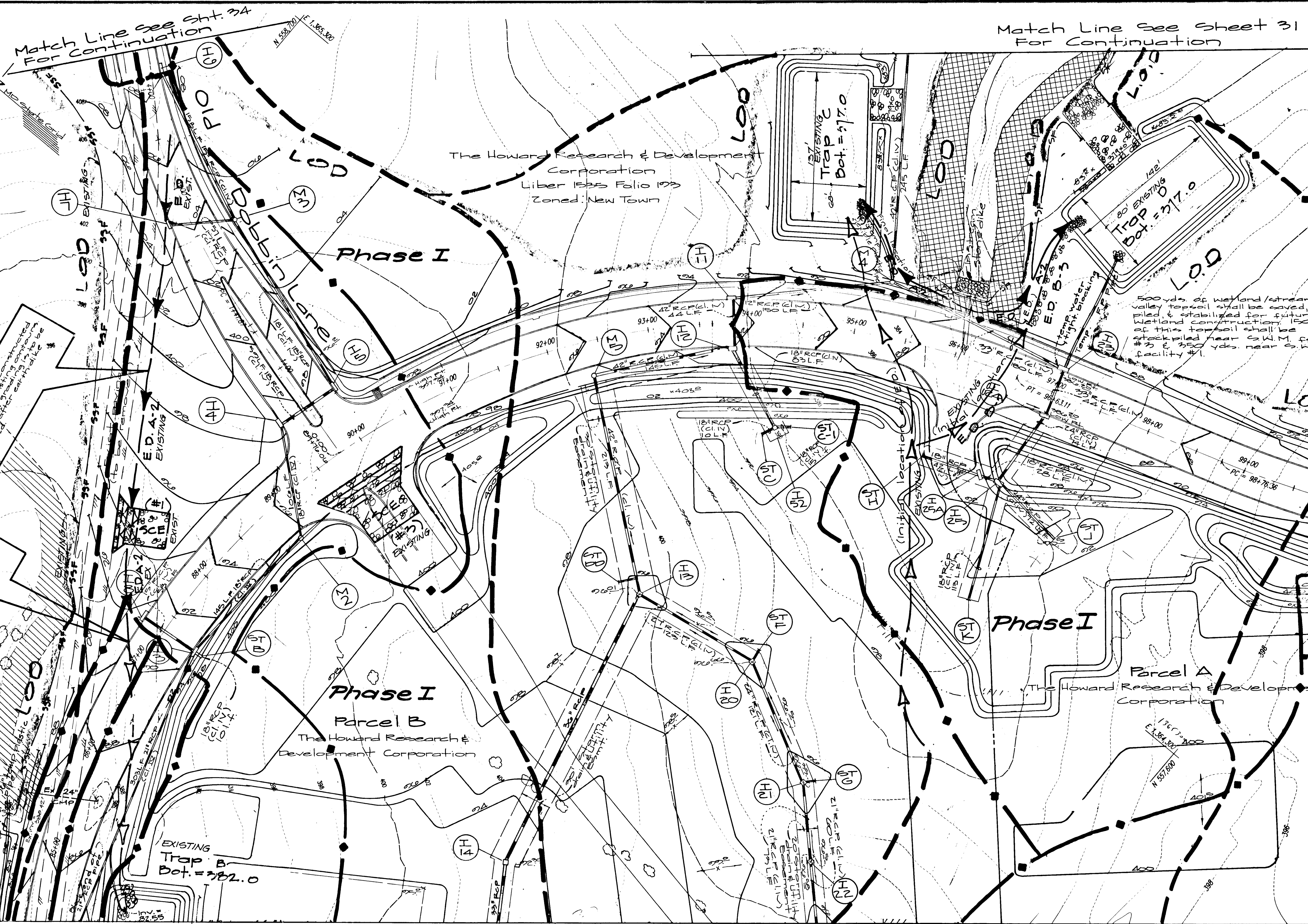
I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature: [Handwritten Signature] Date: 9-27-95

DEVELOPER'S/BUILDER'S CERTIFICATE

I/we certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Signature: [Handwritten Signature] Date: 9-27-95



Trap C Details:
EXISTING Stone Rip Rap Outlet Sediment Trap C ST-1Z
Drainage Area = 7.50 Ac. (Ex. & Prop.)
Storage Required = 27,000 c.f.
Storage Provided = 37,000 c.f.
Weir Length = 10'
Limit of Weir Storage = 379.00
Limit of Storage = 382.00
Storage Depth = 5'
Clean Out Elev. = 378.00
Top of Dam Elev. = 383.0
Detail # 10-A
Bottom Elev. = 377.2
Weir Crest Elev. = 382.00

Trap D Details:
EXISTING Stone Rip Rap Outlet Sediment Trap D ST-1Z
Drainage Area = 9.5 Ac. (Ex.)
Storage Required = 33,200 c.f.
Storage Provided = 77,242 c.f.
Weir Length = 12'
Bottom Elev. = 377.00
Limit of Storage = 379.0
Storage Depth = 5.5'
Cleanout Elev. = 378.00
Top of Dam Elev. = 383.5
Detail # 10-A
Limit of Weir Storage = 379.00
Weir Crest Elev. = 382.5

Match Line See Sheet 30 For Continuation

For Sediment Control Only.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Signature: [Handwritten Signature] Date: 2-6-96
Chief, Bureau of Highway

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Signature: [Handwritten Signature] Date: 2/15/96
Chief, Division of Land Development and Research

Signature: [Handwritten Signature] Date: 2/16/96
Chief, Development Engineering Division

These Plans for [redacted] soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
Signature: [Handwritten Signature] Date: 1/31/96
Howard Soil Conservation District

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for [redacted] soil erosion and sediment control.
Signature: [Handwritten Signature] Date: 1/31/96
Natural Resources Conservation Service

NOTE: THIS PLAN APPROVED AS GP 96-45
NOTE: FOR POND CONSTRUCTION & SEDIMENT CONTROL. SEE ALSO GP 96-45

- Legend**
- After Development Drainage Area Divide
 - - - Before Development Drainage Area Divide
 - - - Before & After Development Drainage Area Divide
 - x - x - x Tree Protection Fence
 - SF SF Silt Fence
 - SSS Super Silt Fence
 - E.D. — Proposed Earth Dike
 - Proposed Earth Dike for Existing Conditions
 - Inlet blocking
 - Curb cut (at inlet)
 - Limit of Disturbance L.O.D.
 - Stone construction Entrance

GFV GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 471-4074 NO. VA.: (301) 959-7574 BALI: (410) 880-1870 FAX: (301) 471-4186 DCS. DRN. CHK.

| NO. | DATE | REVISION | BY | APP'R. |
|---------|------|---|-----|--------|
| 2-17-97 | | Add I-25A, C, D, E & F-22 | WJW | |
| 2/15/96 | | Revised pipe sizes I-19 to I-22 & M-4 to ST-1; Added basin #1 | KLP | |

PREPARED FOR:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD. 21044
(410) 992-6027

Erosion & Sediment Control Plan
Route 175 Commercial Section 1 Area 1 Phase 220
Cath Election District Howard County, Maryland

| | | |
|------------------|-----------------|-----------------|
| SCALE: 1"=50' | ZONING: NT | GLR: 95-003 |
| DATE: Sept. 1995 | TAX MAP No.: 36 | Sheet: 23 of 27 |

1787

ENGINEER'S CERTIFICATE

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. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District.

CKJ 9-27-95
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project.

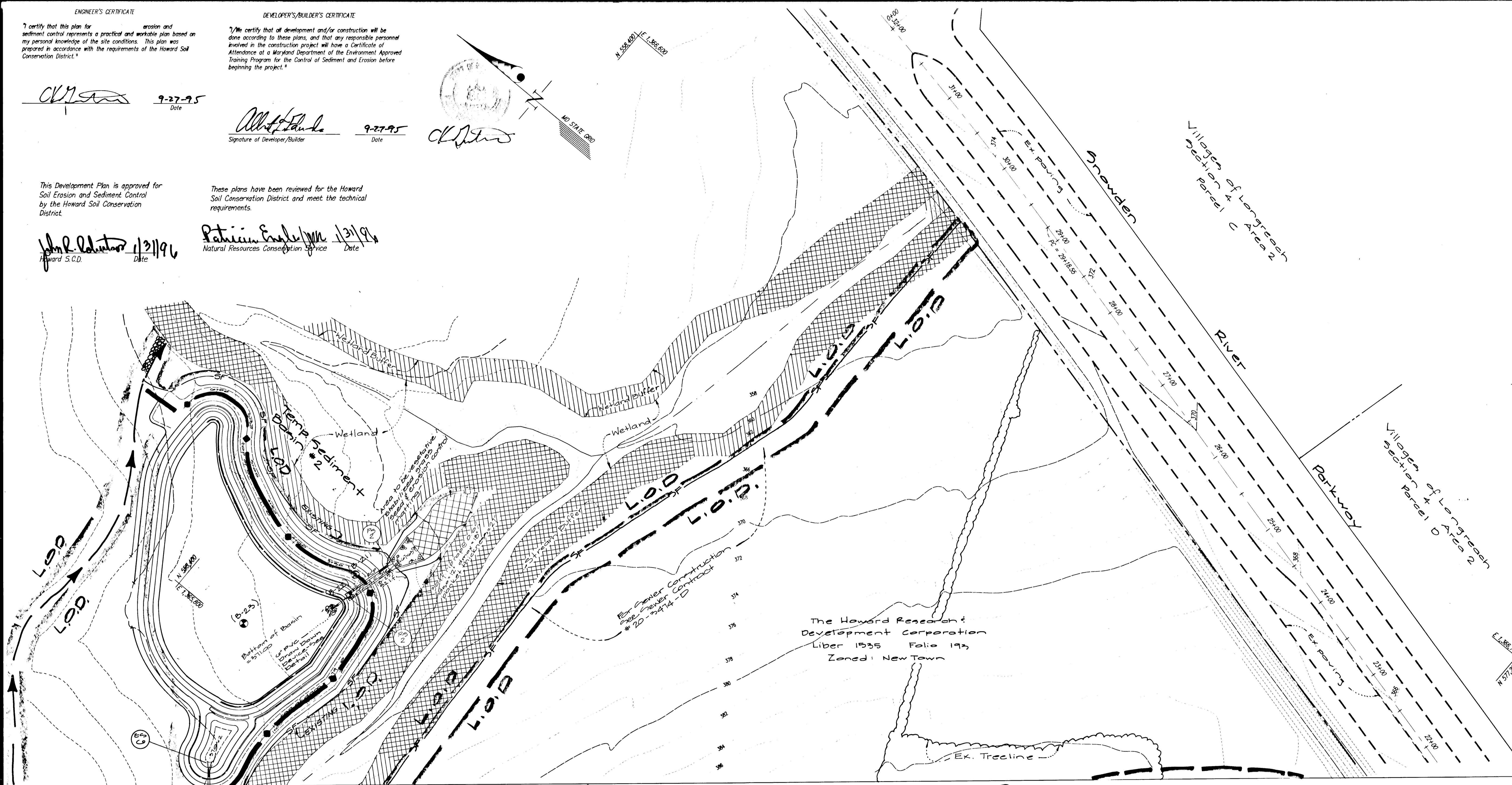
Albert Edwards 9-27-95
Signature of Developer/Builder Date

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

John R. Edmister 11/31/96
Howard S.C.D. Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.

Patricia Enloe 11/31/96
Natural Resources Conservation Service Date



For Continuation See Sheet 30

For Continuation See Sheet 32

Basin #2

| | |
|-------------------|--------------|
| Drainage Area | 21.70 Ac± |
| Storage Res. | 78,120 c.c. |
| Storage Prov. | 125,720 c.c. |
| Clean Out Elev. | 371.51 |
| Top of Dam | 370.00 |
| Bottom Elev. | 371.00 |
| Riser Crest Elev. | 374.10 |
| Permanent Pool | 372.00 |

FOR SEDIMENT CONTROL ONLY!

NOTE: THIS PLAN APPROVED AS GP 96-45
NOTE: FOR POND CONSTRUCTION & SEDIMENT CONTROL SEE ALSO GP 96-45

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 2-6-96
Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Mark M. ... 2/6/96
Chief, Division of Land Development and Research Date

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866

TEL: (301) 421-4024 NO. VA.: (301) 989-2524 BALT.: (410) 680-1870 FAX: (301) 421-4186 DES. GAH DRN. MCF CHK. GAH

| DATE | REVISION | BY | APP'R. |
|------|----------|----|--------|
| | | | |
| | | | |
| | | | |

PREPARED FOR:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATENT PARKWAY
COLUMBIA, MD. 21044
(410) 992-6027

Erosion & Sediment Control Plan

Route 175 Commercial
Section 1 Areal
Phase 226

with Election District

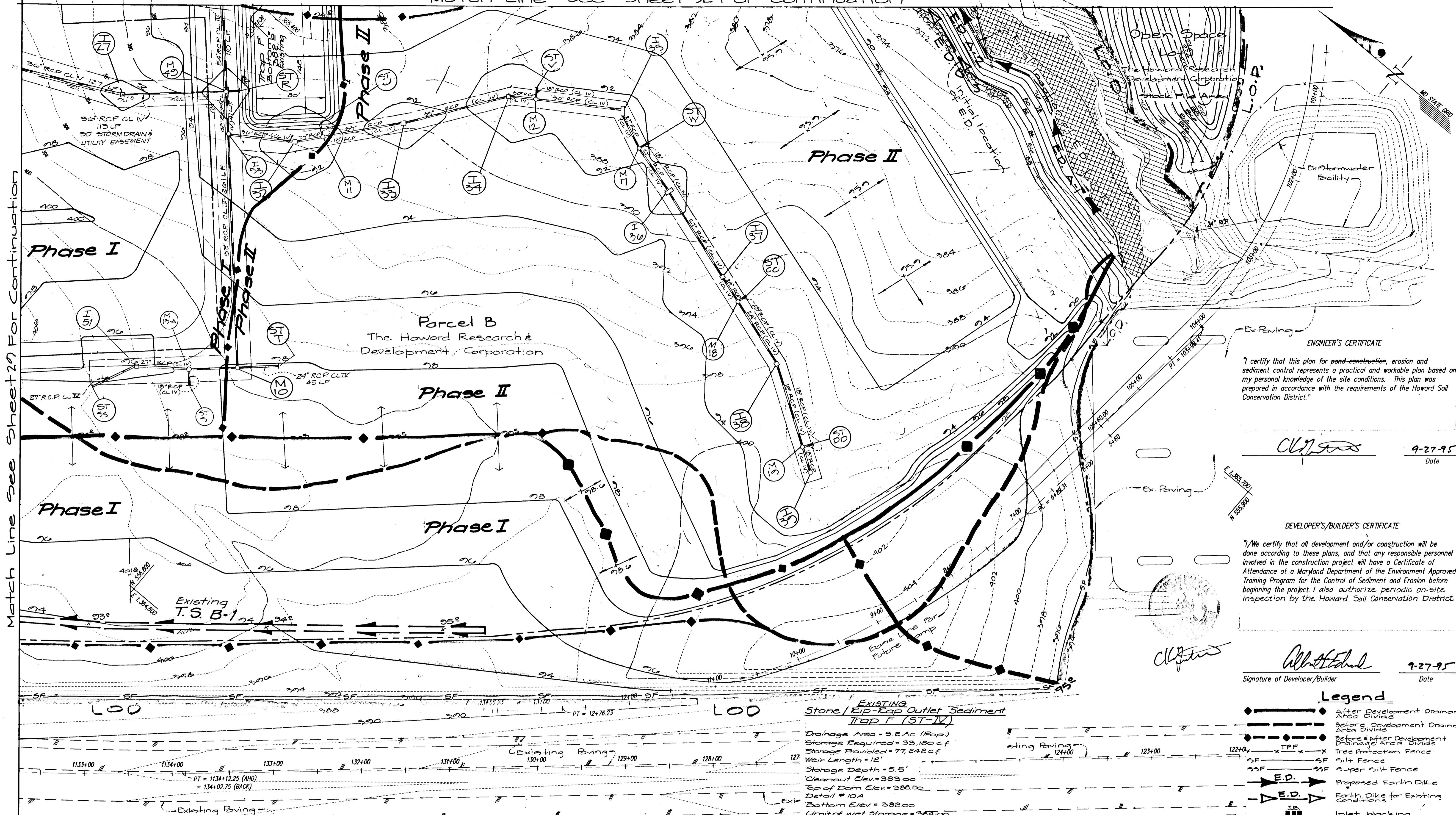
Howard County, Maryland

| | | |
|-------------------|-------------------|-----------------------------|
| SCALE 1"=50' | ZONING NT | G. L. W. FILE No. 95-003 |
| DATE Sept 1995 | TAX MAP No. 36 | SHEET 31 OF 37 |

1787

Match Line See Sheet 32 For Continuation

Match Line See Sheet 29 For Continuation



ENGINEER'S CERTIFICATE
 I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District.

Albert E. Schulz
 Date: 9-27-95

DEVELOPER'S/BUILDER'S CERTIFICATE
 I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Albert E. Schulz
 Signature of Developer/Builder Date: 9-27-95

- Legend**
- After Development Drainage Area Divide
 - - - Before Development Drainage Area Divide
 - - - Before & After Development Drainage Area Divide
 - x TPF x
 - SF Silt Fence
 - SF Super Silt Fence
 - E.D. — Proposed Earth Dike
 - E.D. — Earth Dike for Existing Conditions
 - Inlet blocking
 - curb cut (at inlets)
 - LOD — Limit of Disturbance
 - SCE — Stone Construction Entrance

EXISTING Stone/Rap Outlet Sediment Trap F (ST-IV)
 Drainage Area = 3.2 Ac (Rap)
 Storage Required = 33,180 cu ft
 Storage Provided = 77,242 cu ft
 Weir Length = 12'
 Storage Depth = 5.5'
 Cleanout Elev = 383.00
 Top of Dam Elev = 388.00
 Detail # 10A
 Bottom Elev = 382.00
 Limit of Wet Storage = 384.00
 Weir Crest Elev = 387.00

NOTE: THIS PLAN APPROVED AS GP 96-45
NOTE: FOR POND CONSTRUCTION & SEDIMENT CONTROL. SEE ALSO GP 96-45

For Sediment Control Only.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 2-6-96
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chris Summers 2/15/96
 Chief, Division of Land Development and Research Date

John R. Roberts 1/31/96
 Howard Soil Conservation District Date

Patricia Profeta 1/31/96
 Natural Resources Conservation Service Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
 TEL: (301) 421-4024 NO. VA. (301) 989-2524 BALT. (410) 880-1820 FAX: (301) 421-4186

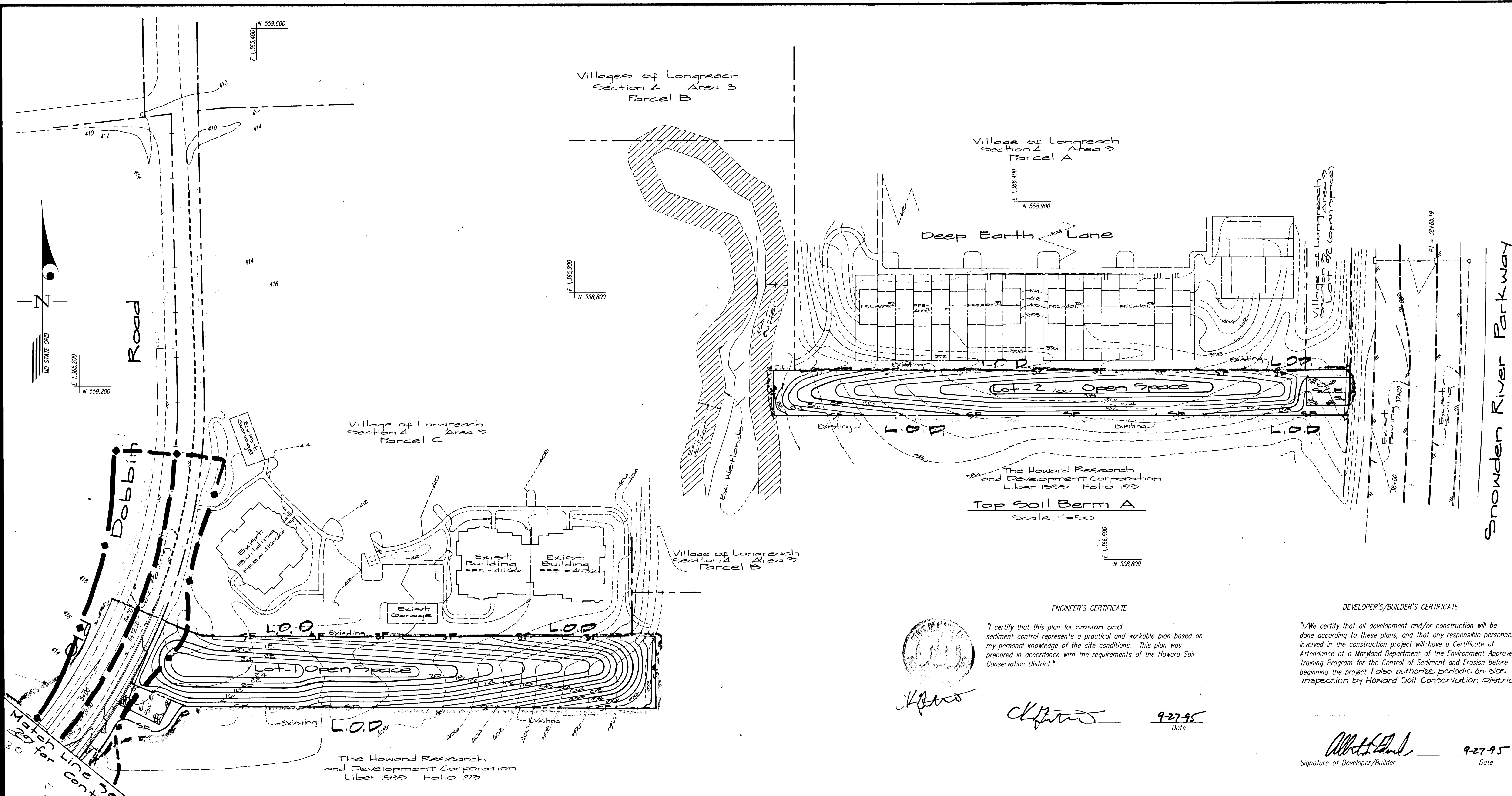
| | | | |
|---------|--|-----|-------|
| DATE | REVISION | BY | APP'N |
| 1/19/96 | REVISE grading, storm drains, S.C.E. @ East Corner | MCF | |

PREPARED FOR:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 THE ROUSE BUILDING
 10275 LITTLE PATENT PARKWAY
 COLUMBIA, MD. 21044
 (410) 992-8027

Erosion & Sediment Control Plan
Route 175 Commercial Section I Area I Phase 220
 6th Election District Howard County, Maryland

| | | |
|------------|-------------|-------------------|
| SCALE | ZONING | G. L. W. FILE NO. |
| 1"=50' | NT | 95-003 |
| DATE | TAX MAP NO. | SHEET |
| Sept. 1995 | # 36 | 33 OF 37 |

1787



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Denek 2/6/96

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Opia Stummery 2/15/96
Mike Pannunzio 2/3/96

GIW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
 TEL: (301) 421-4024 NO. VA.: (301) 989-2524 BALT: (410) 880-1820 FAX: (301) 421-4186 DES.GAW DRN.MCF CHK.GAW

| DATE | REVISION | BY | APP'R |
|------|----------|----|-------|
| | | | |
| | | | |

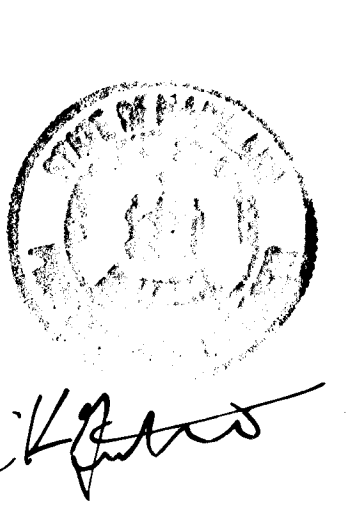
PREPARED FOR:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MD. 21044
 (410) 992-6027

Erosion & Sediment Control Plan
 Route 175 Commercial
 Section 1 Area 1
 Phase 22c
 6th Election District Howard County, Maryland

| SCALE | ZONING | G. L. W. FILE No. |
|------------|-------------|-------------------|
| 1"=50' | NT | 95-003 |
| DATE | TAX MAP No. | SHEET |
| Sept. 1995 | 36 | 34 OF 37 |

NOTE: THIS PLAN APPROVED AS GP 96-45
NOTE: FOR POND CONSTRUCTION & SEDIMENT CONTROL. SEE ALSO GP 96-45

Note: For Legend See Sheet 1
 Note: For Sediment Control See Sheet 30



ENGINEER'S CERTIFICATE
 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. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District.
[Signature] 9-27-95
 Date

DEVELOPER'S/BUILDER'S CERTIFICATE
 I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by Howard Soil Conservation District.
[Signature] 9-27-95
 Signature of Developer/Builder Date

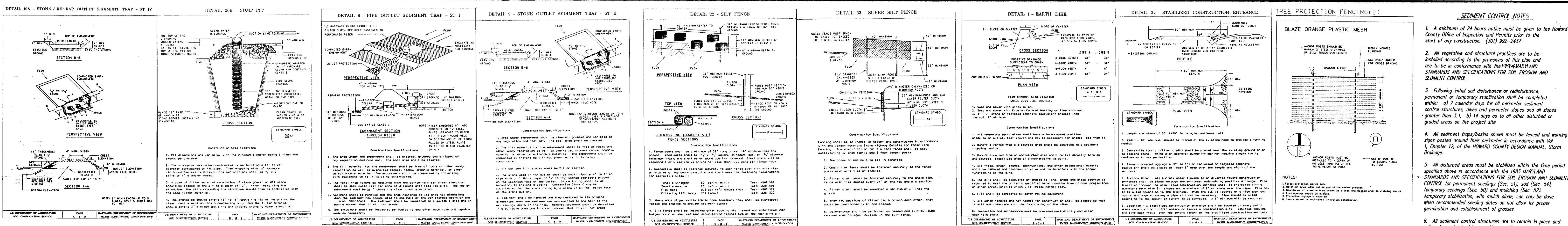
These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
John K. Poluto 1/31/96
 Howard Soil Conservation District Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
Patricia Engle 1/31/96
 Natural Resources Conservation Officer Date

For Sediment Control Only.

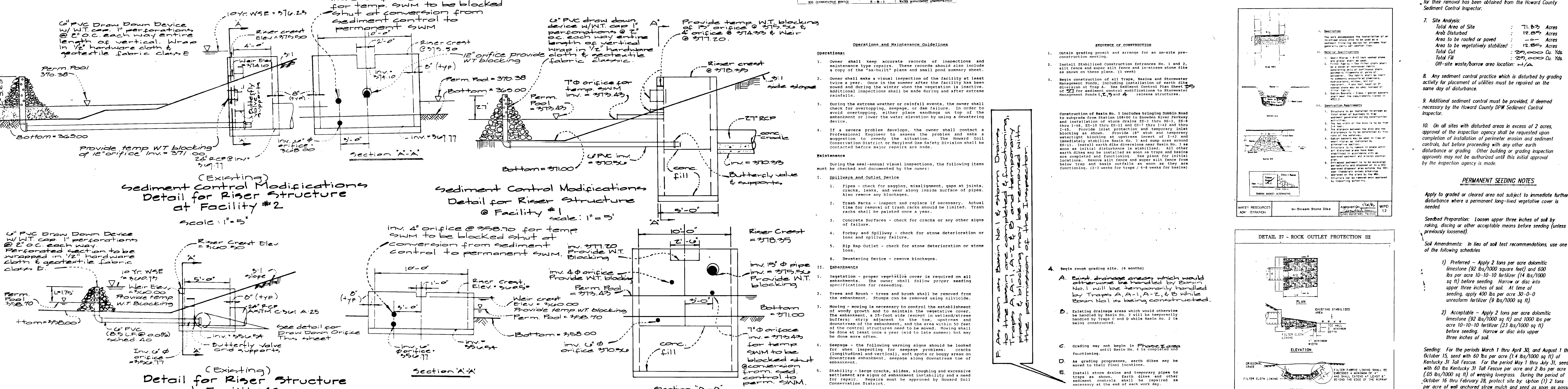
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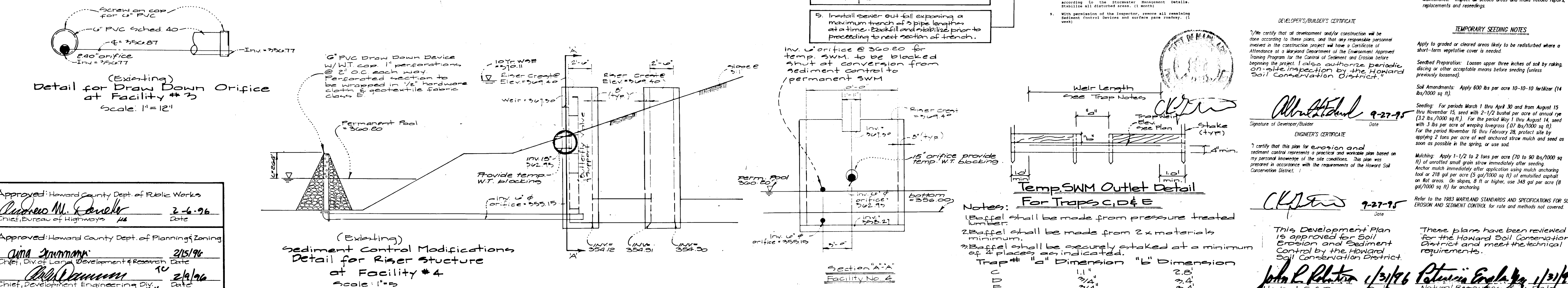
SEDIMENT CONTROL NOTES

- A minimum of 24 hours notice must be given to the Howard County Dept. of Inspection and Permits prior to the start of any construction. (301) 992-4477
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within 1 calendar day for all granular sediment control structures, dikes and perimeter slopes and all slopes greater than 3:1. 1/4 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 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) and (Sec. 54), temporary seedings (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone, can only be done when recommended seedings do not allow for proper growth and establishment of grass.
- All sediment control structures are to remain in place and are to be maintained in operative condition and permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:
 - Total Area of Site: 71.87 Acres
 - Area Disturbed: 12.87 Acres
 - Area to be seeded or paved: 1.00 Acres
 - Area to be vegetatively stabilized: 12.87 Acres
 - Total Cut: 20,000 Cu. Yds.
 - Total Fill: 20,000 Cu. Yds.
 - Off-site waste/borrow area: 1/2 Acre
- 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 control must be provided, if deemed necessary by the Howard County 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 control structures. If any disturbance occurs after the initial approval, the inspection agency shall be notified immediately. Additional sediment control structures may not be authorized until this initial approval by the inspection agency is made.



Note: These Plans Approved as GF 96-45

Note: For Pond Construction & Sediment Control See Sheet GF 96-45



Approved: Howard County Dept. of Public Works
Andrew M. Connerly 2-6-96
 Chief, Bureau of Highways

Approved: Howard County Dept. of Planning & Zoning
Anna Lamm 2/15/96
 Chief, Div. of Land Development & Research Data

John L. Blanton 2/4/96
 Chief, Development Engineering Div.

DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that the development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Howard County Department of the Government Approved Training Program for the Control of Sediment and Erosion before beginning the project. I/We also authorize periodic 30-day inspections by the Howard County Soil Conservation District.

John L. Blanton 9-27-95
 Signature of Developer/Builder

ENGINEER'S CERTIFICATE

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. The plan was prepared in accordance with the requirements of the Howard County Soil Conservation District.

John L. Blanton 9-27-95
 Signature of Engineer

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, disking or other acceptable means before seeding (unless previously loosened).

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:

- Preferred - Apply 2 tons per acre diammonium phosphate (92 lbs/1000 sq ft) and 600 lbs per acre of 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq ft).
- Acceptable - Apply 2 tons per acre diammonium phosphate (92 lbs/1000 sq ft) and 1000 lbs per acre of 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 Kentucky 31 Tall Fescue per acre and 2 lbs per acre (0.5 lbs/1000 sq ft) of seeding lossgrass. During the period of October 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. 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 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal/acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 3 feet or higher, use 348 gal/acre (8 gal/1000 sq ft) for anchoring.

Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseeding.

| | | | | | | |
|--|--|--|--|--------------------------------------|---|---|
| GW GUTSCHICK LITTLE & WEBER, P.A. CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD 20866 TELEPHONE (301)421-4024 NO VA (301)989-2524 BALTO (301)880-1820 FAX (301)421-4186 | | PREPARED FOR: The Howard Research & Development Co. The Rous Building 10215 Little Patuxent Pkwy. Columbia, Md 21044 (410) 992-6027 | 60th Election District Route 175 Commercial Section 1 Area 1 Phase 220 Howard County, Maryland | DES: GAH DRN: MCF/KLP CHK: GAH | SCALE: As Shown ZONING: NT DATE: Sept. 1995 TAX MAP No.: 30 SHEET: 35 of 37 | G.L.W. FILE No.: 95003 SHEET: 35 of 37 |
|--|--|--|--|--------------------------------------|---|---|

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PAVEMENT MARKING NOTES

- ALL PAVEMENT MARKINGS TO BE APPLIED USING "SETFAST PREMIUM ALKYD TRAFFIC PAINT" BY SHERWIN WILLIAMS OR APPROVED EQUAL.
- EXISTING PAVEMENT MARKINGS THAT ARE IN CONFLICT WITH THE PROPOSED PAVEMENT MARKINGS FOR THIS CONTRACT WILL BE REMOVED BY THE CONTRACTOR BY ANY METHOD WHICH IS APPROVED BY THE ENGINEER.
- EXACT LOCATION OF STOP LINES IS TO BE ESTABLISHED IN THE FIELD BY THE HOWARD COUNTY TRAFFIC DIVISION. CALL DIANE SCHWARZMAN AT 343-2430.

LEGEND

- (A) - PAVEMENT LINES - 4' X 10' WHITE SKIP
- (B) - PAVEMENT LINES - 4' X 2' WHITE MINI-SKIP
- (C) - PAVEMENT LINES - 4' WHITE SOLID
- (D) - PAVEMENT SYMBOL - LEFT TURN ARROW
- (E) - PAVEMENT SYMBOL - RIGHT TURN ARROW
- (F) - PAVEMENT SYMBOL - ONLY
- (G) - PAVEMENT LINES - 24' WHITE TRANSVERSE STOP LINE (SEE PAVEMENT MARKING NOTE #3)
- (H) - PAVEMENT LINES - 4' DOUBLE YELLOW SOLID
- (I) - PAVEMENT LINES - 4' YELLOW SOLID - TEMPORARY TAPE
- (J) - PAVEMENT SYMBOL - LEFT TURN AND THROUGH ARROW
- (K) - PAVEMENT SYMBOL - RIGHT TURN AND THROUGH ARROW
- (L) - PAVEMENT SYMBOL - THROUGH ARROW
- (M) - PAVEMENT LINES - 4' YELLOW SOLID
- PAVEMENT LINES - 24' WHITE SOLID SPACED 48" ON CENTER.

SIGNING NOTES

- SIGN ERECTED AT THE SIDE OF THE ROAD SHALL BE MOUNTED AT A HEIGHT OF AT LEAST 7 FEET MEASURED FROM THE BOTTOM OF THE SIGN TO THE NEAR EDGE OF THE PAVEMENT.
- ALL SIGNS TO BE MOUNTED ON 4"X4"X12" WOLMANIZED (PRESSURE TREATED), WOODEN POSTS.
- SIGNS SHALL BE 12" TO 18" FROM EDGE OF SIGN TO CURB LINE. STOP SIGNS SHALL BE LOCATED 15' BACK FROM INTERSECTING STREET CURB LINE OR AS DIRECTED BY HOWARD COUNTY TRAFFIC DIVISION.

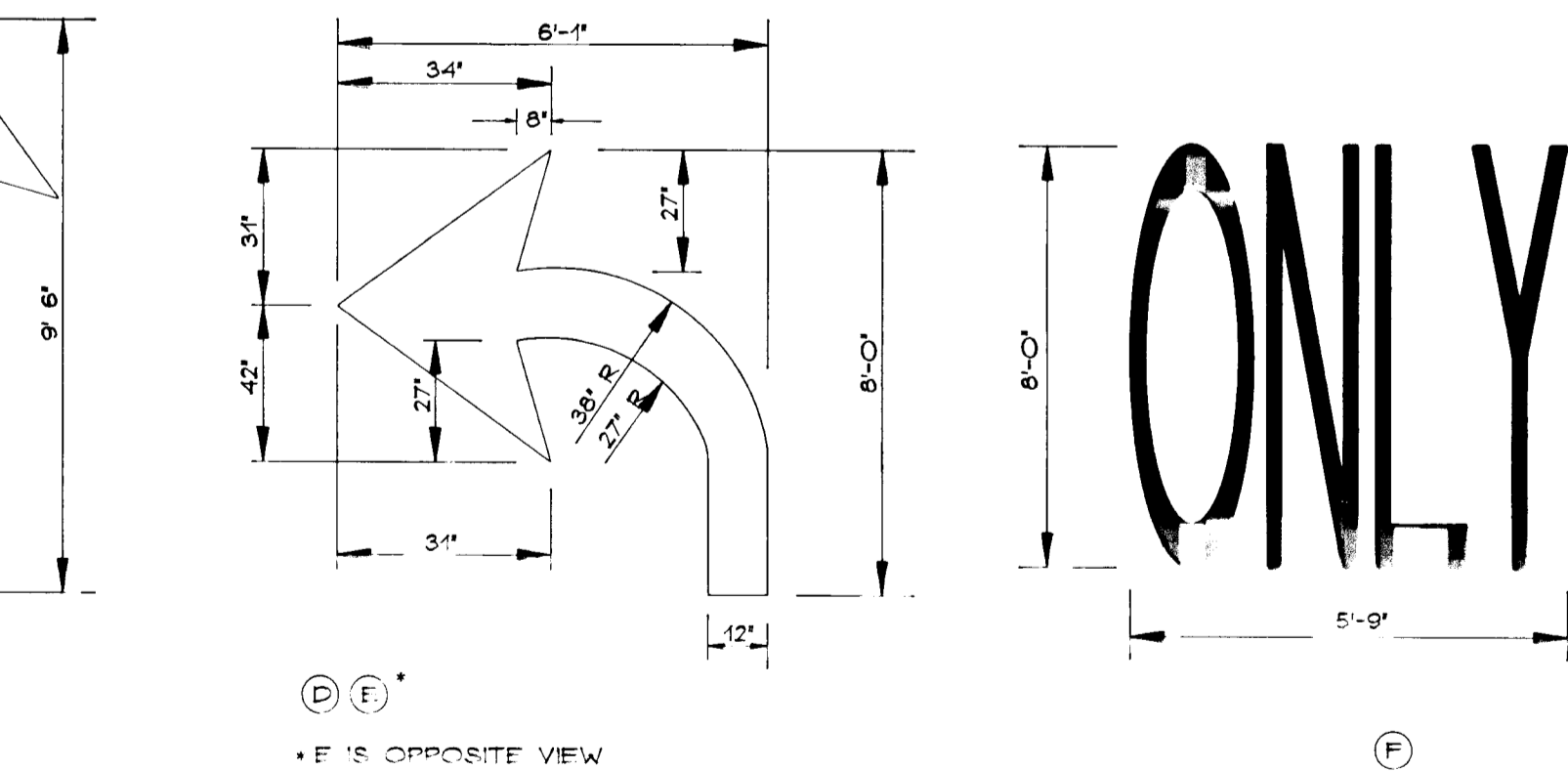
LEGEND

- (1) - EXISTING SIGN TO REMAIN
- (2) - EXISTING SIGN TO BE REMOVED AND SALVAGED
- (3) - EXISTING SIGN TO BE REMOVED AND RESET AT NEW LOCATION
- (4) - NEW SIGNS - SEE BELOW

TYPICAL SPACING LOGITUDINAL PAVEMENT LINES



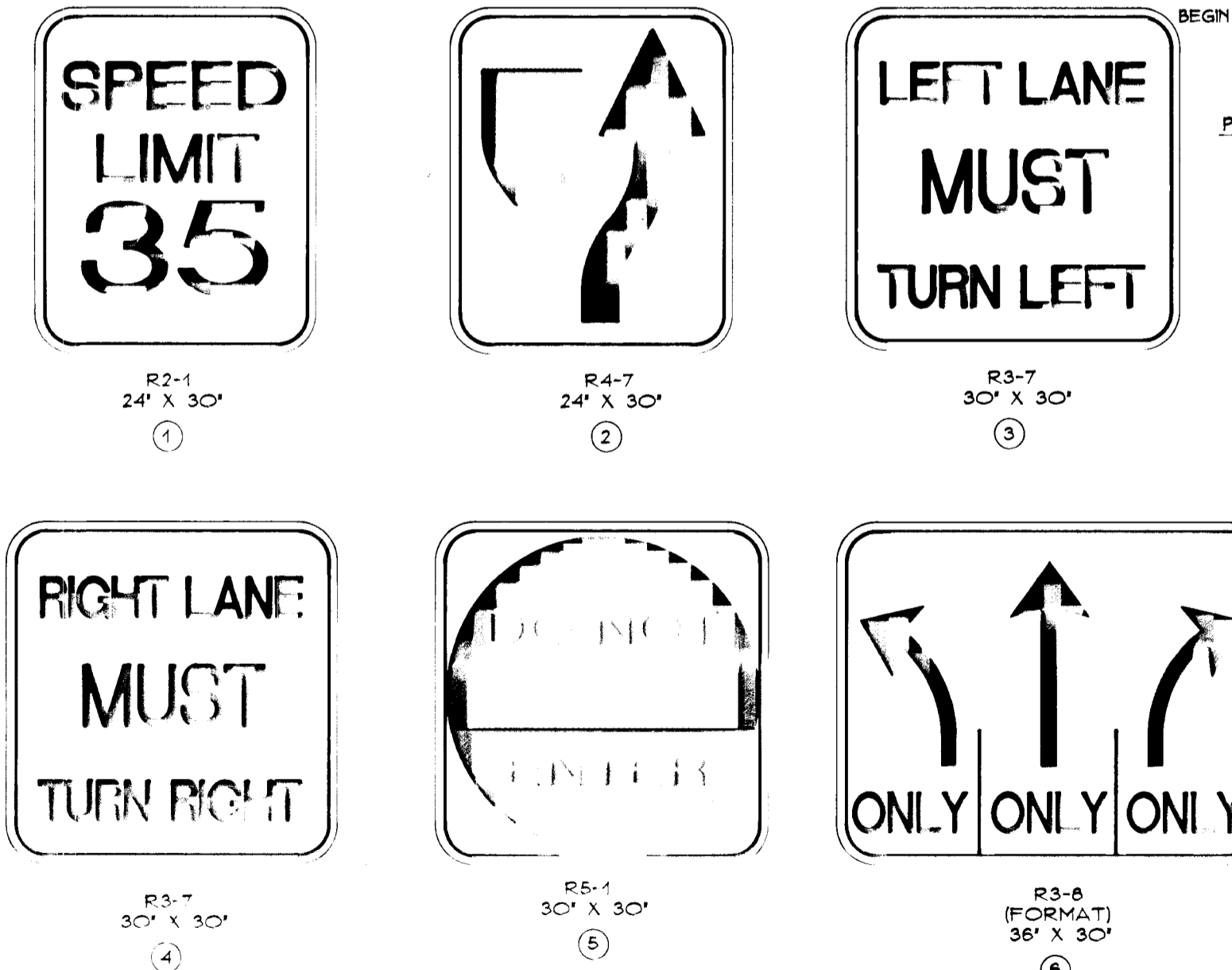
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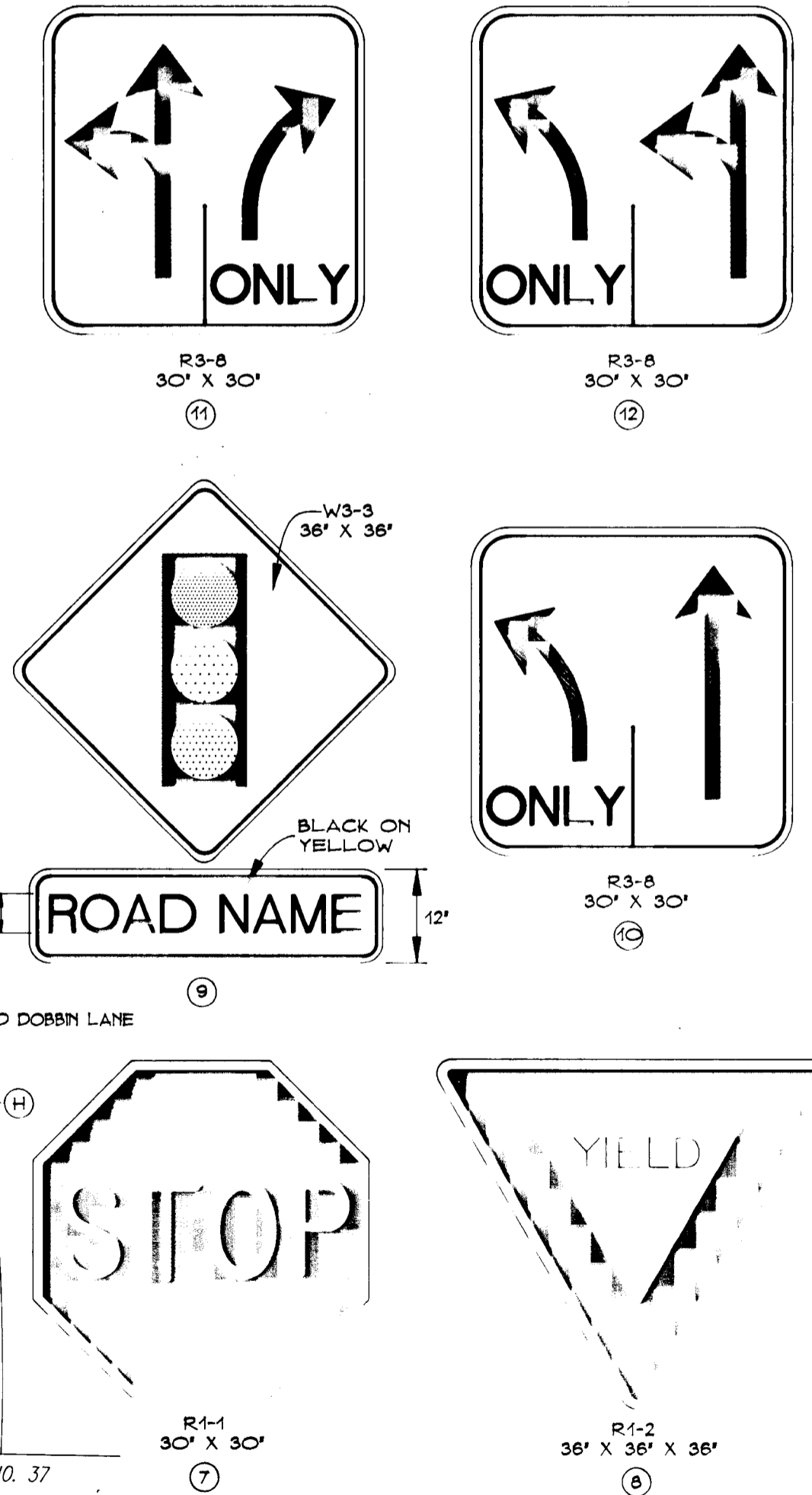
PAVEMENT SYMBOLS

NO SCALE

PAVEMENT MARKING DETAILS



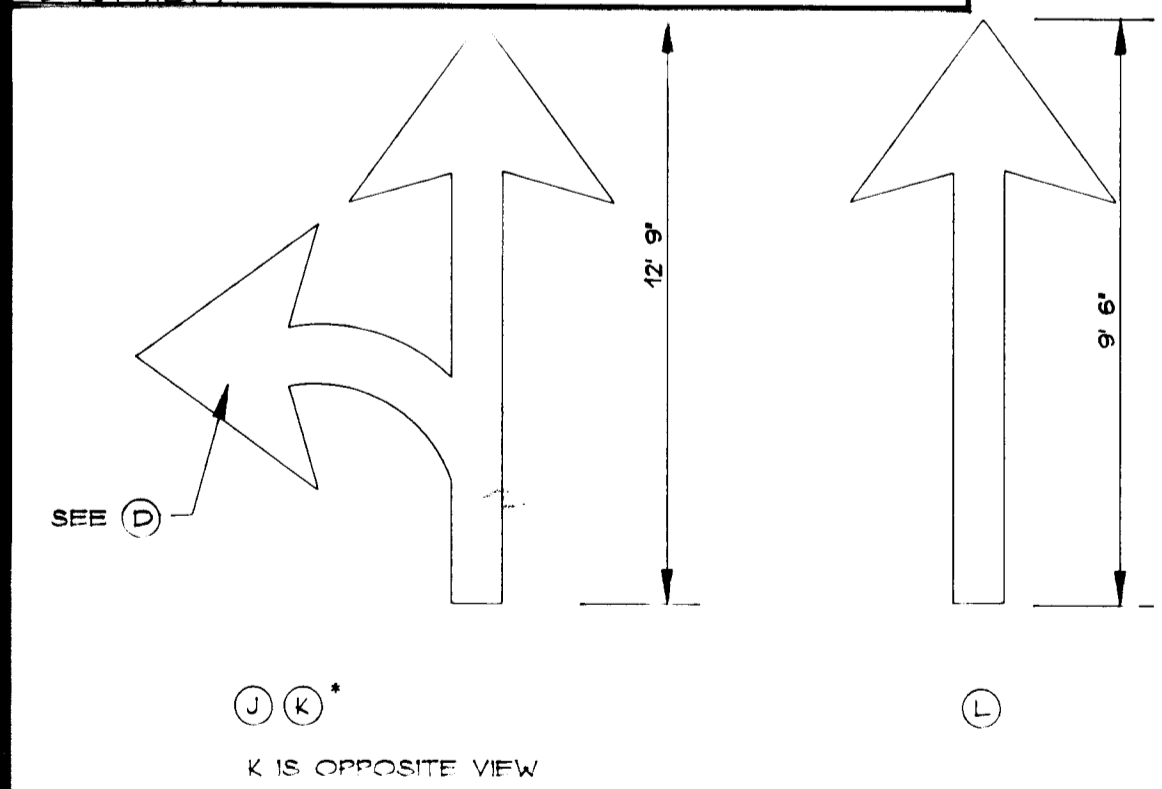
SIGNING DETAILS



Approved: Howard County Department of Public Works
Andrew M. A. Neale 2-6-96
 Chief, Bureau of Highways MS Date

Approved: Howard County Department of Planning & Zoning
Uma Summerville 2/15/96
 Chief, Division of Land Development and Planning MS Date

William Damann 2/9/96
 Chief, Development Engineering M.K. Date



Signing and Pavement Marking Prepared By:

PHOENIX ENGINEERING, INC.
 CONSULTING ENGINEERS
 813 MAIDEN CHOICE LANE, SUITE 300
 BALTIMORE, MARYLAND 21228
 (410) 247-8833 FAX 247-9397



1-19-96

G.W. GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONVILLE OFFICE PARK - BURTONVILLE, MARYLAND 20866
 TEL: (301) 421-4024 NO. VA: (301) 989-2524 BALT: (410) 880-1820 FAX: (301) 421-4186

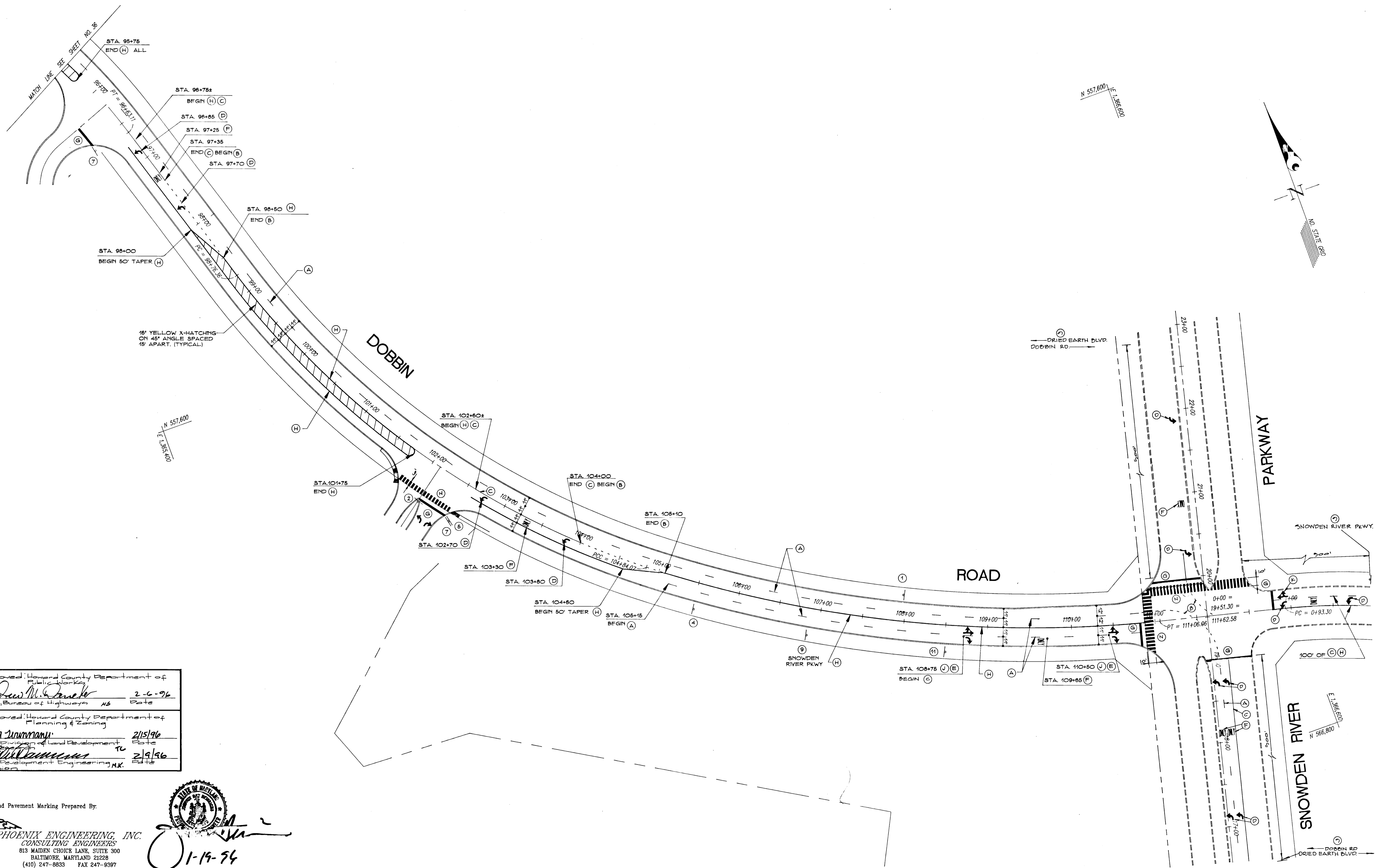
| | | |
|---------|---|----------|
| DATE | BY | CHK. |
| 8-19-96 | ADD STRIPING & CROSSWALKS PER H.C. 9-2-1-96 | REVISION |

PREPARED FOR:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MD. 21044
 (410) 992-6027

SIGNAGE & PAVEMENT MARKING PLAN
ROUTE 175 COMMERCIAL
 SECTION 1 AREA 1 - PHASE 226
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

| | | |
|---------------|-------------|-------------------|
| SCALE | ZONING | G. L. W. FILE NO. |
| 1"=50' | TOWN CENTER | 95003 |
| DATE | TAX MAP No. | SHEET |
| DECEMBER 1995 | 36 | 36 OF 37 |


1787



Approved: Howard County Department of Public Works
Andrew M. Deneke 2-6-96
 Chief, Bureau of Highways Date

Approved: Howard County Department of Planning & Zoning
Quinn J. Williams 2/15/96
 Chief, Division of Land Development and Planning Date

Mark J. Williams 2/19/96
 Chief, Development Engineering M.K. Date

Signing and Pavement Marking Prepared By:

PHOENIX ENGINEERING, INC.
 CONSULTING ENGINEERS
 813 MAIDEN CHOICE LANE, SUITE 300
 BALTIMORE, MARYLAND 21228
 (410) 247-8833 FAX 247-9397
 01-19-96

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GW GUTSCHICK LITTLE & WEBER, P.A.
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 TEL: (301) 421-4024 NO. VA.: (301) 989-2524 BAL: (410) 886-1820 FAX: (301) 421-4186

| DATE | REVISION | BY | APP'D. |
|----------|--|-----|--------|
| 01/19/96 | Add striping & crosswalks per Howard Co. 6-21-95 | MCF | |

PREPARED FOR:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MD. 21044
 (410) 992-6027

SIGNAGE & PAVEMENT MARKING PLAN
ROUTE 175 COMMERCIAL
 SECTION 1 AREA 1 - PHASE 226
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---------------|-------------|-------------------|
| 1"=50' | TOWN CENTER | 95003 |
| DATE | TAX MAP No. | SHEET |
| DECEMBER 1995 | 36 | 37 of 37 |

F-96-41