

STORM DRAIN IMPROVEMENTS

WILTON ACRES

2nd Election District, Howard Co., Md.

HOWARD COUNTY

DEPARTMENT OF PUBLIC WORKS

Capital Project D-7-1048

Bid Price

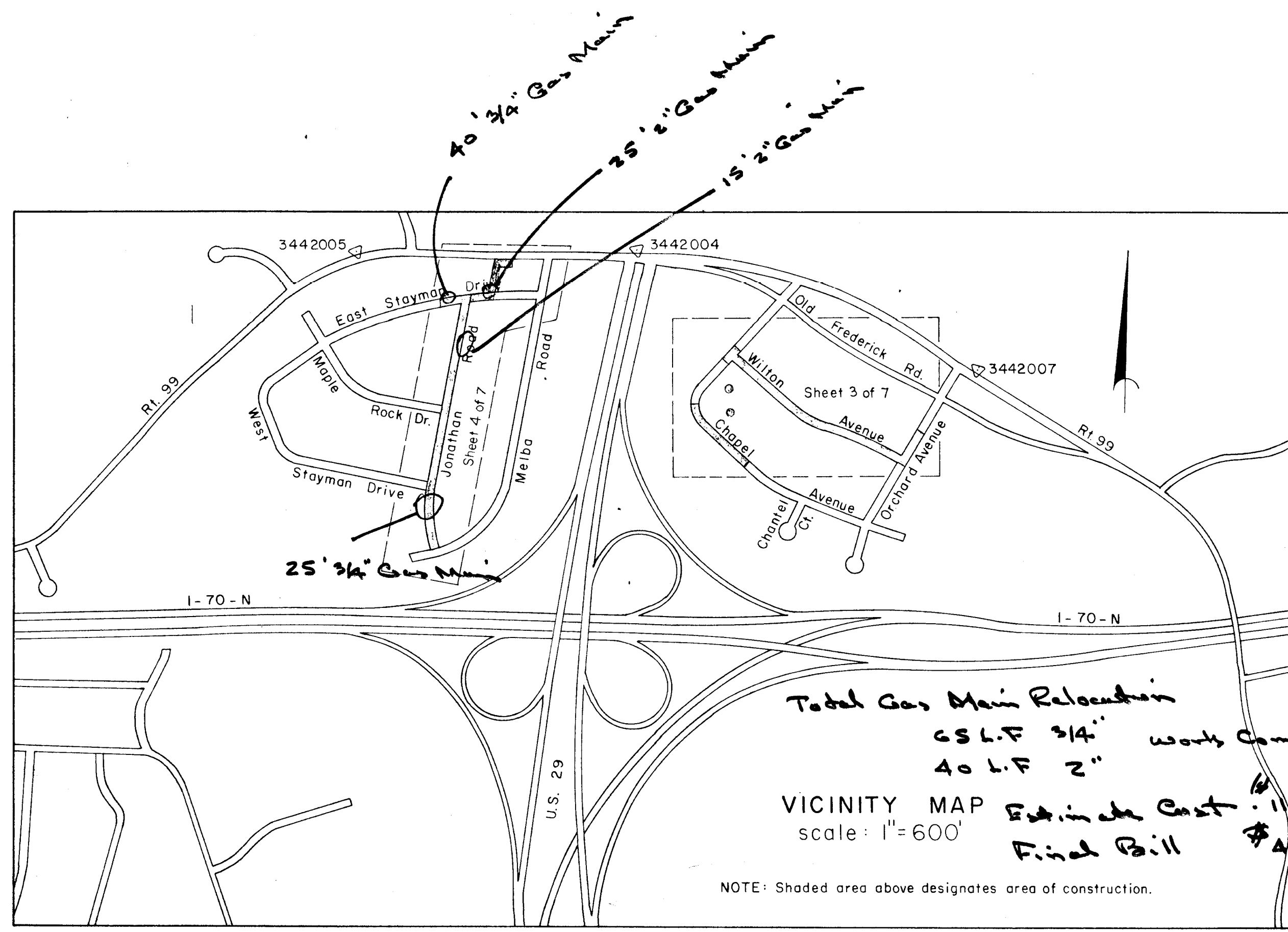
\$ 29,293¹¹ March 5, 1983
Includes 2400 L.F. 15" to 30" Storm Drains
24 Inlets
6 Manholes
Paving, etc.

By the Developer:
"I certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project."
Signature: William S. Riley Date: 12/3/82

By the Engineer:
"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."
Signature: Harlan E. Veenendaal Date: 4/20/81

Reviewed for Howard S.C.D. and meets Technical Requirements.
Signature: Ray R. ... Date: 7-23-81
U.S. Soil Conservation Service

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.
Signature: William S. Riley Date: 12/3/81
Howard S.C.D.



GENERAL NOTES :

- RIGHT OF WAY LINES SHOWN ON THESE PLANS ARE SHOWN FOR ASSISTANCE IN INTERPRETING THE PLANS. FOR ANY FEE RIGHT OF WAY AND EASEMENT INFORMATION, SEE RIGHT OF WAY PLATS.
- ENDWALLS ARE NOT TO BE CONSTRUCTED UNTIL GRADING IS COMPLETED. THE TYPES OF ENDWALLS ARE SUBJECT TO MODIFICATIONS.
- EXISTING PRIVATE DRIVEWAYS, FENCES, MAILBOXES, SIGNS AND SHRUBS DISTURBED BY THE WORK SHALL BE RECONSTRUCTED OR REPLACED.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- ALL SLOPES AND/OR DISTURBED AREAS SHALL RECEIVE 2" TOPSOIL, SEED AND MULCH EXCEPT WHERE OTHERWISE INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL INSTALL AND MAINTAIN ALL TEMPORARY SEDIMENT CONTROL MEASURES AS SHOWN ON THE DRAWINGS. HOWEVER, ANY SEDIMENT CONTROL MEASURES NOT SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS, BUT REQUIRED AS A RESULT OF THE CONTRACTORS EXCAVATIONS OR ACTIVITIES SHALL NOT BE CAUSE FOR EXTRA PAYMENT.
- LOCATION POINTS FOR INLETS, MANHOLES AND STRUCTURES:

ITEM	HORIZONTAL LOC.	VERTICAL LOC.
CURB TYPE INLETS	CENTER FACE OF CURB	TOP OF CURB
GRATE TYPE INLETS	CENTER OF GRATE	TOP OF GRATE
MANHOLES	CENTER OF COVER	TOP OF COVER
ENDWALLS	CENTER OF WALL	TOP OF WALL
- APPROXIMATE LOCATION OF EXISTING UTILITIES IS SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES A MINIMUM OF TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS IN VICINITY OF UTILITIES. COST SHALL BE INCLUDED IN THE PRICES BID FOR STORM DRAIN ITEMS.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN HEREON: MISS UTILITY (COLLECT) 1-559-0100 BALTIMORE GAS & ELECTRIC CO., UNDERGROUND ELECTRIC DISTRIBUTION ENGINEERING DAMAGE CONTROL 234-5691 BALTIMORE GAS & ELECTRIC CO., UNDERGROUND GAS DISTRIBUTION ENGINEERING 234-5533 CHESAPEAKE AND POTOMAC TELEPHONE CO. 725-9976 HOWARD CO. CONSTRUCTION INSPECTION/SURVEY DIVISION 992-2417 COLONIAL PIPELINE COMPANY 781-4641 HOWARD COUNTY BUREAU OF UTILITIES 992-2366
- STANDARD DETAILS FOR THIS CONTRACT SHALL BE THE HOWARD COUNTY STANDARD DETAILS AS SUPPLEMENTED BY THE MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD DETAILS.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER.
- TREES ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG THE LINE OF EXCAVATION AS DIRECTED BY THE ENGINEER. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR STORM DRAIN ITEMS.
- PLACE REGULATION "MEN WORKING" AND WARNING SIGNS AS REQUIRED TO COMPLY WITH MARYLAND STATE HIGHWAY ADMINISTRATION MANUAL OF TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS.
- TOP ELEVATIONS OF STRUCTURES SHALL BE ADJUSTED IN THE FIELD TO MEET EXISTING CONDITIONS AS DIRECTED BY THE ENGINEER.
- GRADING SHALL BE DONE IN SUCH A MANNER SO AS TO INSURE POSITIVE DRAINAGE TO THE PROPOSED INLET STRUCTURES.
- HORIZONTAL AND VERTICAL CONTROLS ARE BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM, STATIONS 3442004, 3442005 & 3442007.
- CLEARANCE BETWEEN EXISTING AND PROPOSED UTILITIES SHALL BE A MINIMUM OF SIX (6) INCHES. CLEARANCE BETWEEN ALL UTILITY POLES AND PROPOSED UTILITIES SHALL BE A MINIMUM OF 2'-0". COST OF BRACING AT POLES SHALL BE INCLUDED IN THE BID FOR STORM DRAIN ITEMS.
- INFORMATION RESULTING FROM SUBSURFACE SOIL INVESTIGATION IS TO BE USED AT THE CONTRACTORS RISK. THE COUNTY ASSUMES NO RESPONSIBILITY FOR THIS INFORMATION. SEE SECTION 5-07 OF THE SPECIAL PROVISIONS.
- FOR MATERIALS AND CONSTRUCTION METHODS USE HOWARD COUNTY STANDARD SPECIFICATIONS.
- WATER HOUSE CONNECTIONS TO BE ADJUSTED TO PROVIDE CLEARANCE FOR PROPOSED STORM DRAIN SYSTEMS, AS DIRECTED BY THE ENGINEER.
- POSITIVE DRAINAGE TO BE ACHIEVED AT ALL NEW STRUCTURES. EXISTING SWALES TO BE MODIFIED, WHERE NECESSARY, AS DIRECTED BY THE ENGINEER.
- HORIZONTAL LOCATION TIES HAVE BEEN COMPUTED FROM TRAVERSE SYSTEM AS SHOWN. THESE HORIZONTAL LOCATIONS MAY BE ADJUSTED IN THE FIELD WHERE REQUIRED TO MEET EXISTING CONDITIONS. (CURB LINE, EXISTING PIPE CONNECTION, ETC.) AS DIRECTED BY ENGINEER.
- DRIVEWAY PAVING RECONSTRUCTION WILL CONFORM TO HOWARD COUNTY STANDARD P-1 (HO. CO. ST'D. R-2.01)

NOTE: Shaded area above designates area of construction.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS: William S. Riley DATE: 12/3/82
CHIEF, BUREAU OF ENGINEERING: Harlan E. Veenendaal DATE: 4/20/81

CHIEF, ROADS, BRIDGES, & STORM DRAINAGE DIVISION: Elizabeth Anderson Colea DATE: 12/5/82

STORM DRAIN IMPROVEMENTS
WILTON ACRES
CAPITAL PROJECT D-7-1048
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

revisions		
no.	description	date

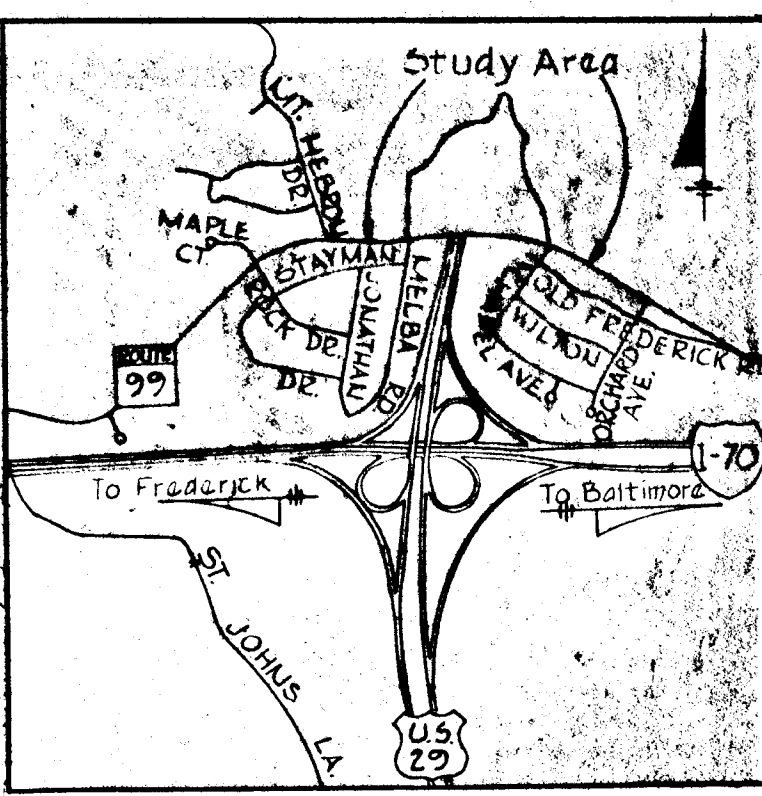
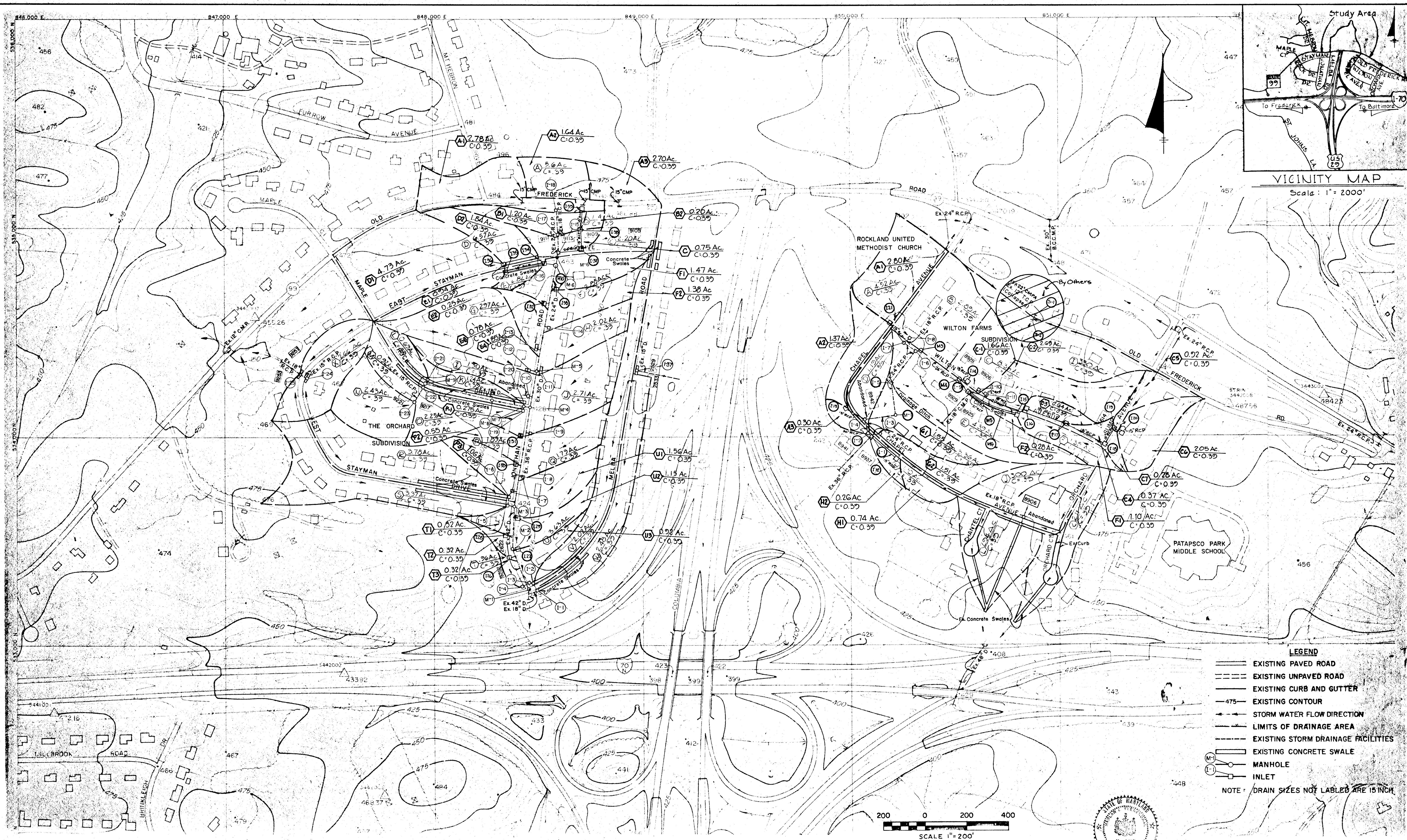
prepared by
rbra richard p. browne associates
professional design & planning consultants
suite 207 w/ds lake village green
columbia, maryland 21044
301/730-7950 596-3524

SCALE AS SHOWN

DRAWN MK	CHECKED JH
PROJ. NO. 4423	DATE 6-30-81
1	7
SHEET	OF

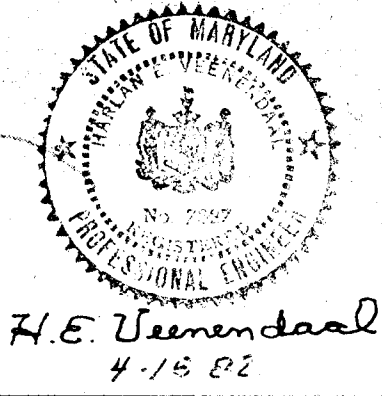
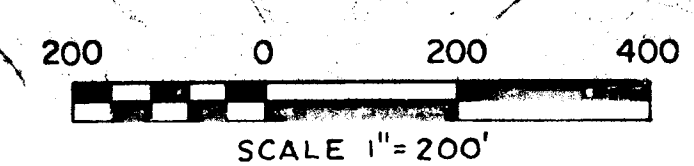
H.E. Veenendaal 4/20/81

CSGCAZC1



VICINITY MAP
Scale: 1" = 2000'

- LEGEND**
- EXISTING PAVED ROAD
 - - - EXISTING UNPAVED ROAD
 - EXISTING CURB AND GUTTER
 - 475- EXISTING CONTOUR
 - STORM WATER FLOW DIRECTION
 - LIMITS OF DRAINAGE AREA
 - EXISTING STORM DRAINAGE FACILITIES
 - EXISTING CONCRETE SWALE
 - MANHOLE
 - INLET
- NOTE: DRAIN SIZES NOT LABELED ARE 15 INCH



H.E. Ueendael
4-16-82

DEPARTMENT of PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS: *[Signature]* DATE: 12/3/82
CHIEF, BUREAU OF ENGINEERING: *[Signature]* DATE: 12/3/82

CHIEF, ROADS, BRIDGES, & STORM DRAINAGE DIVISION: *[Signature]* DATE: 12/3/82

STORM DRAIN IMPROVEMENTS
WILTON ACRES
CAPITAL PROJECT D-7-1048
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

no.	description	date
1	M-G, I-40, I-41	2-28-82
2	M-S, M-G Revised I-404 I-41 out	8-10-82

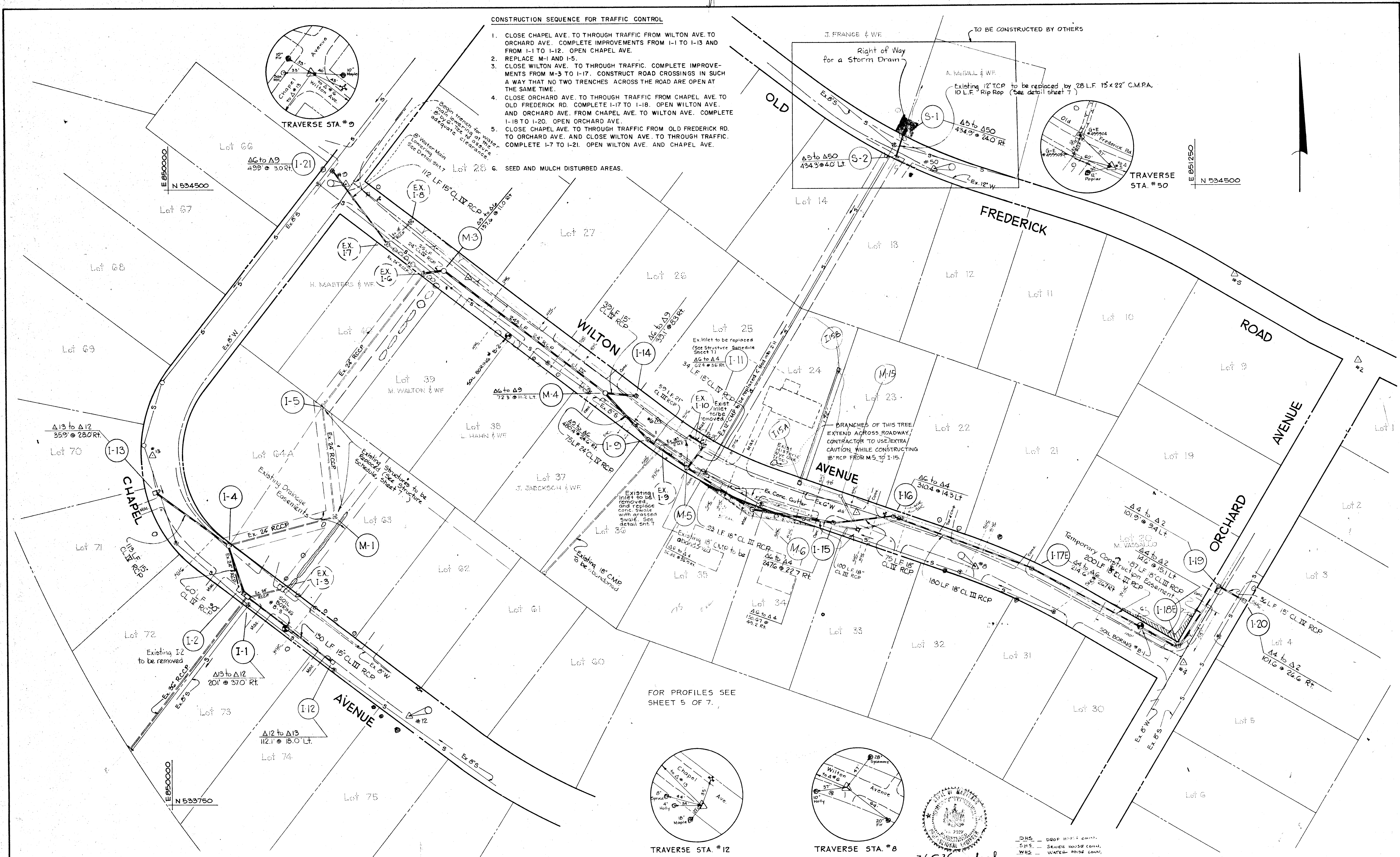
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columbia, maryland 21044
301/730-7950 596-3524

DRAINAGE AREA MAP

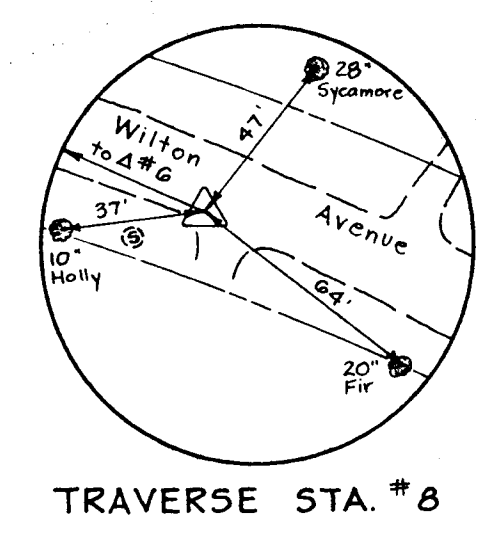
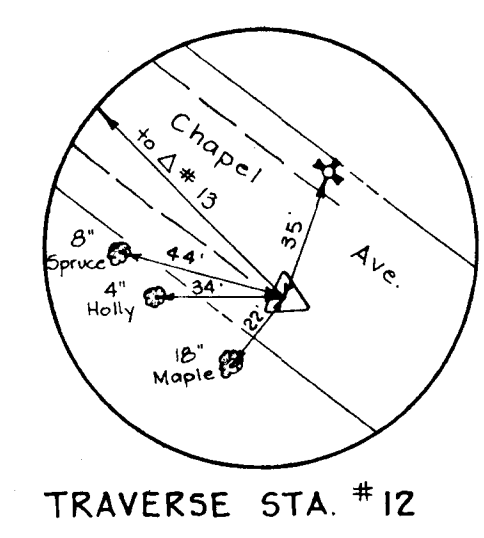
SCALE	1" = 200'
DRAWN	CHECKED
JH	PV
PROJ. NO.	DATE
4423	11-30-81
2	7
SHEET	OF

CONSTRUCTION SEQUENCE FOR TRAFFIC CONTROL

1. CLOSE CHAPEL AVE. TO THROUGH TRAFFIC FROM WILTON AVE. TO ORCHARD AVE. COMPLETE IMPROVEMENTS FROM I-1 TO I-13 AND FROM I-1 TO I-12. OPEN CHAPEL AVE.
2. REPLACE M-1 AND I-5.
3. CLOSE WILTON AVE. TO THROUGH TRAFFIC. COMPLETE IMPROVEMENTS FROM M-3 TO I-17. CONSTRUCT ROAD CROSSINGS IN SUCH A WAY THAT NO TWO TRENCHES ACROSS THE ROAD ARE OPEN AT THE SAME TIME.
4. CLOSE ORCHARD AVE. TO THROUGH TRAFFIC FROM CHAPEL AVE. TO OLD FREDERICK RD. COMPLETE I-17 TO I-18. OPEN WILTON AVE. AND ORCHARD AVE. FROM CHAPEL AVE. TO WILTON AVE. COMPLETE I-18 TO I-20. OPEN ORCHARD AVE.
5. CLOSE CHAPEL AVE. TO THROUGH TRAFFIC FROM OLD FREDERICK RD. TO ORCHARD AVE. AND CLOSE WILTON AVE. TO THROUGH TRAFFIC. COMPLETE I-7 TO I-21. OPEN WILTON AVE. AND CHAPEL AVE.
6. SEED AND MULCH DISTURBED AREAS.



FOR PROFILES SEE SHEET 5 OF 7.



DRS - DEEP HOUSE CORNER
 S.H.S. - SEWER HOUSE CORNER
 W.H.S. - WATER HOUSE CORNER

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE: 12/13/82
 CHIEF, BUREAU OF ENGINEERING

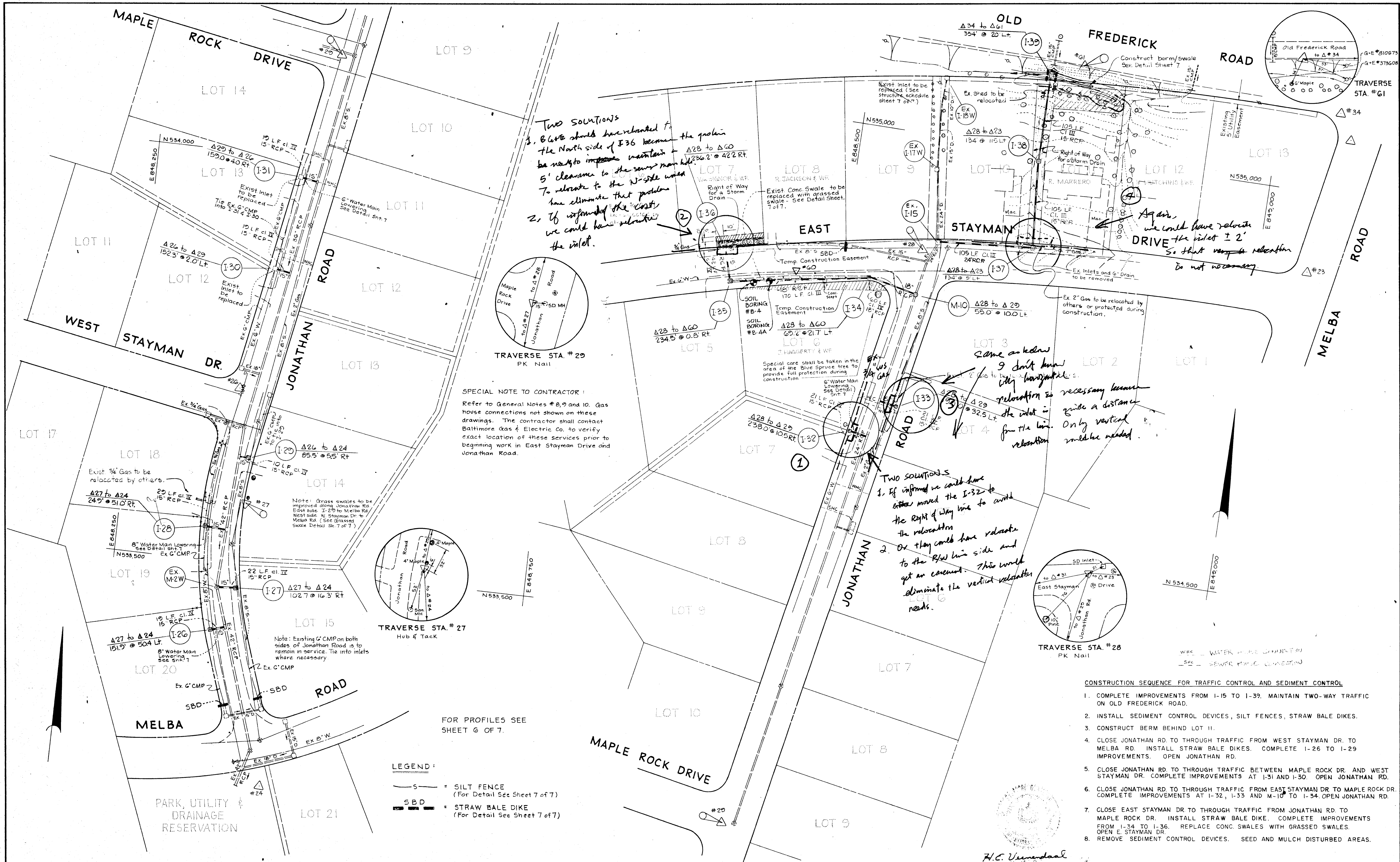
STORM DRAIN IMPROVEMENTS
WILTON ACRES
 CAPITAL PROJECT D-7-1048
 ELECTION DISTRICT NO.2
 HOWARD COUNTY, MARYLAND

no.	description	date
1	M-6, I-40, I-41	2-28-82
2	M-5, M-6 revised	8-10-82
3	S-1, S-2 by others	11-5-82

prepared by
irba richard p. browne associates
 professional design & planning consultants
 suite 207 wild lake village green
 columbia, maryland 21044
 301/730-7950 596-3524

PLAN

SCALE	1" = 50'
DRAWN	CHKD
MK	JH
PROJ. NO.	DATE
4423	6-30-81
3	7
SHEET	OF



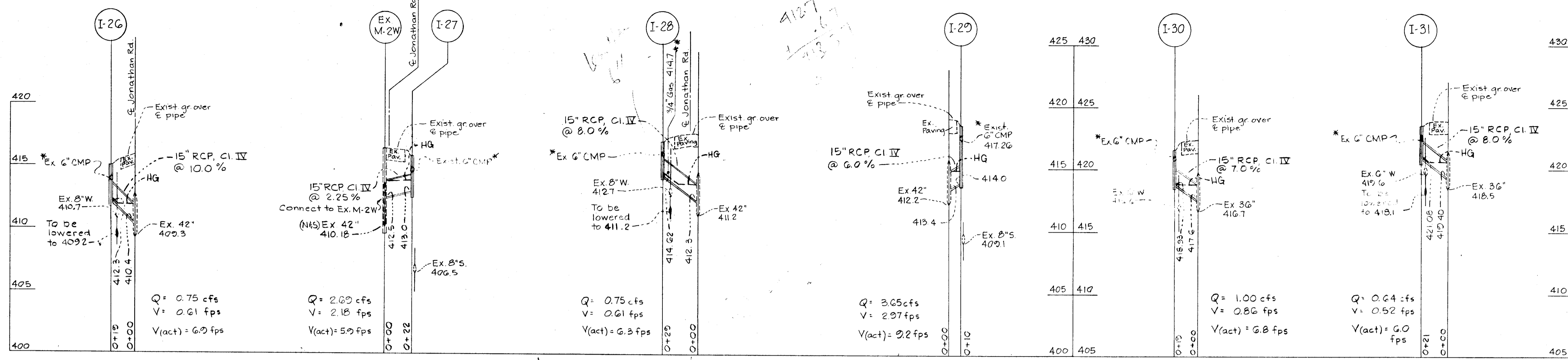
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE: 12/3/82
 CHIEF, BUREAU OF ENGINEERING

STORM DRAIN IMPROVEMENTS
 WILTON ACRES
 CAPITAL PROJECT D-7-1048
 ELECTION DISTRICT NO. 2
 HOWARD COUNTY, MARYLAND

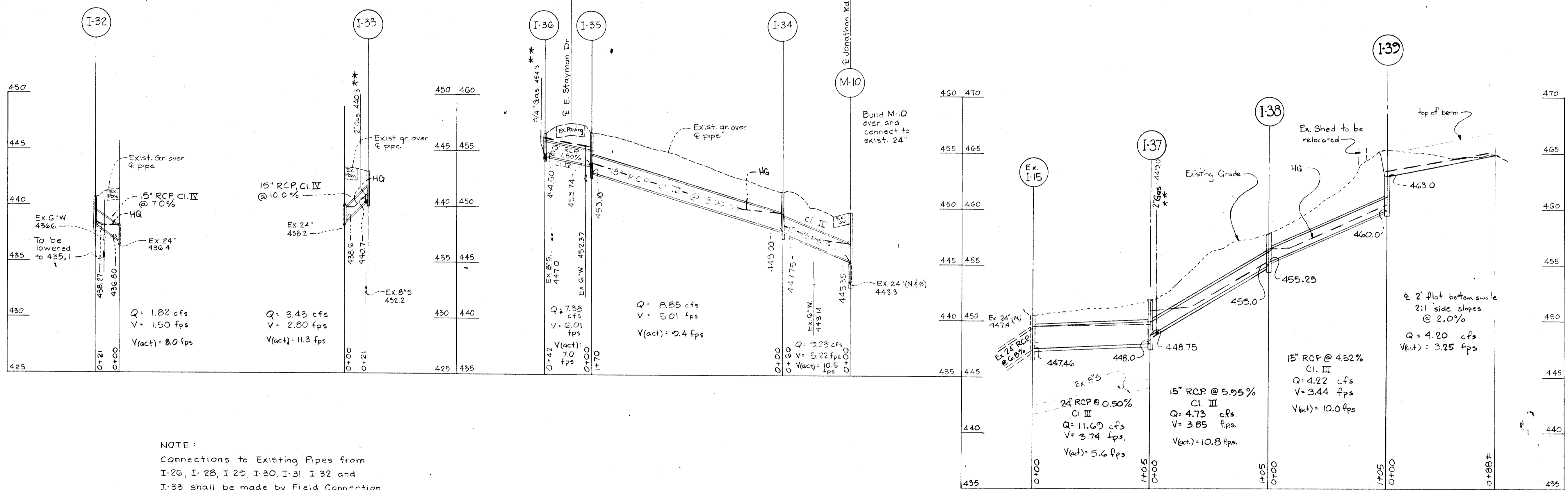
revisions
 no. description date
 1 water main lowering 8-11-82

prepared by
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 professional design & planning consultants
 suite 207 white icke village green
 columbia, maryland 21044
 301/730-7950 596-3524

SCALE 1" = 50'
 PLAN
 DRAWN MK CHECKED JH
 PROJ. NO. 4423 DATE 6-30-81
 SHEET 4 OF 7



* Note: Ex G' CMP on either side of Jonathan Road are to remain in service. To into apron side of inlets where directed by the engineer.
 ** Note: Ex. Gas to be relocated by others. Contractor should confirm completion of relocation before work begins.



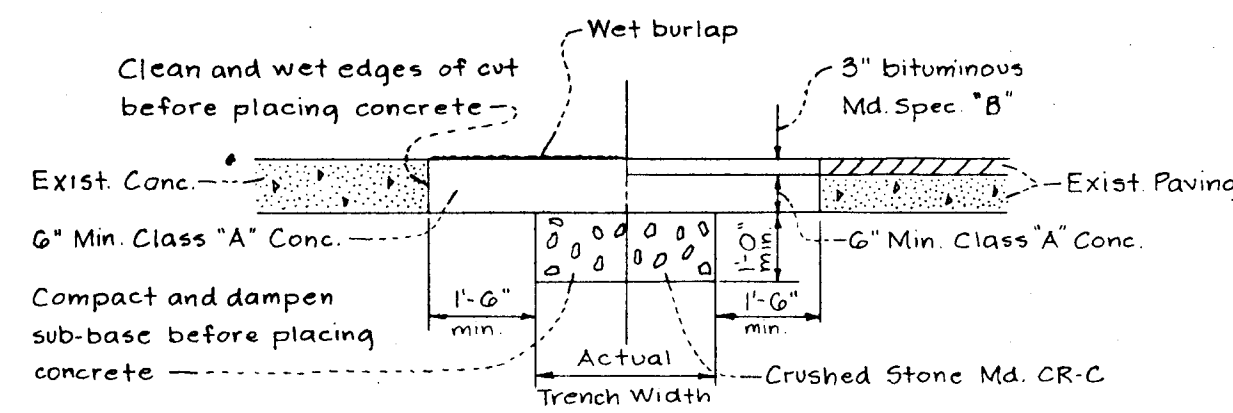
DEPARTMENT OF PUBLIC WORKS
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 DATE: 12/3/82
 CHIEF, BUREAU OF ENGINEERING

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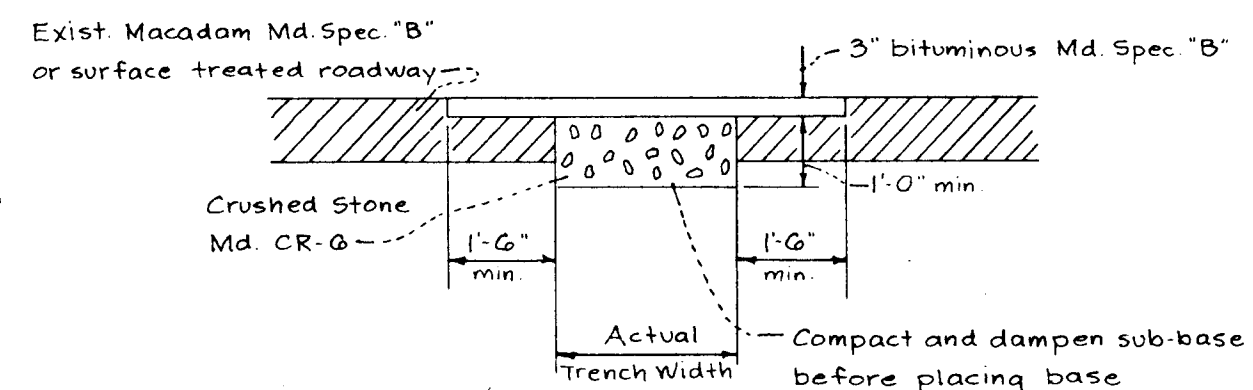
no.	description	date

prepared by
rbra richard p. browne associates
 professional design & planning consultants
 suite 207 wilde lake village green
 columbia, maryland 21044
 301/730-7950 596-3524

PROFILE		SCALE HORIZ. 1" = 50'
DRAWN MK	CHECKED JH	VERT. 1" = 5'
PROJ. NO. 4423	DATE 6-30-81	
6	7	
SHEET	OF	



CONCRETE ROADWAY & BITUMINOUS ROADS w CONC. BASE



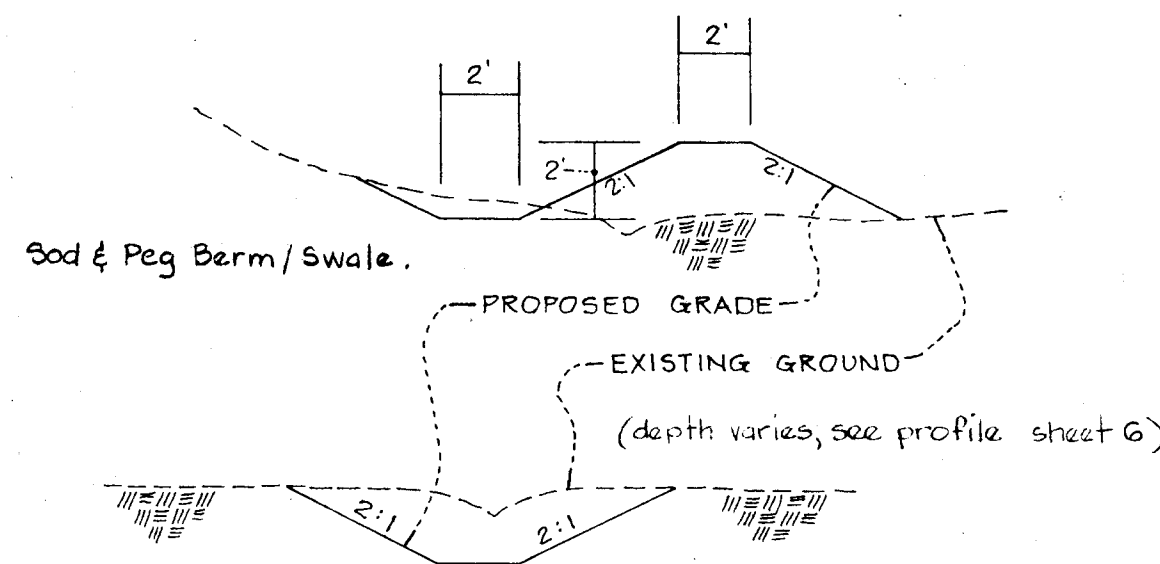
MACADAM OR SURFACED TREATED ROADWAY

Backfill in trench shall be thoroughly compacted by tamping or by some other approved method in 6" layers before patch is made.

No excavation or cave-ins will be permitted under existing surfaces and no belling of the trenches will be allowed. Sheeting or shoring will be used when so directed by the Engineer.

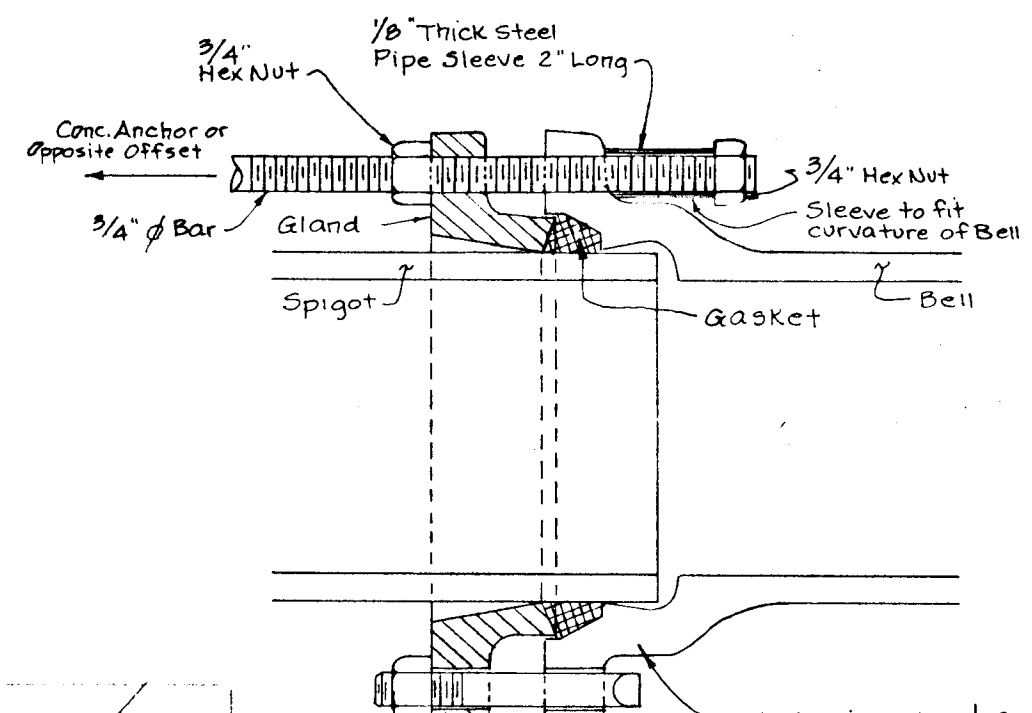
METHOD OF CUTTING AND REPAIRING OPENINGS IN EXISTING ROADWAYS

No Scale



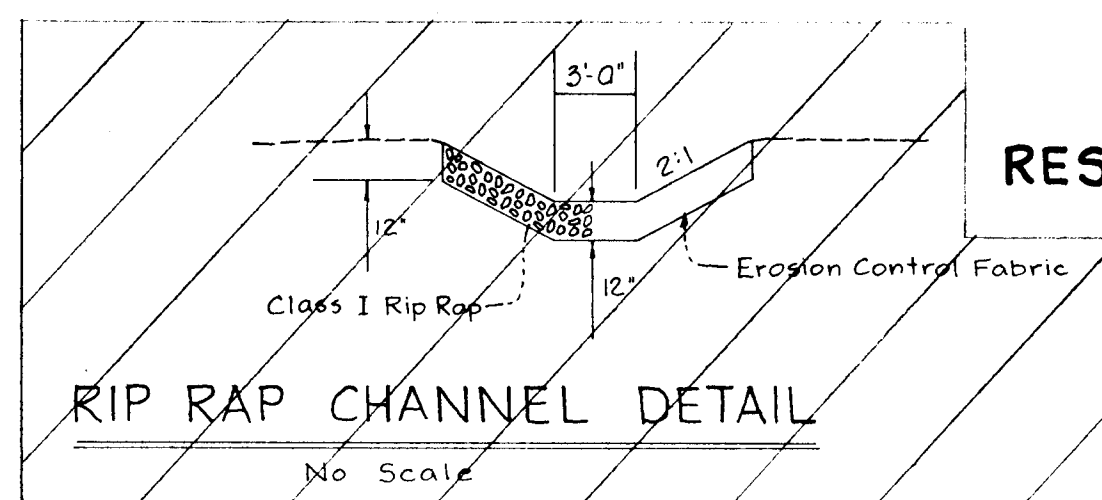
BERM / SWALE DETAIL

Scale: 1" = 5'



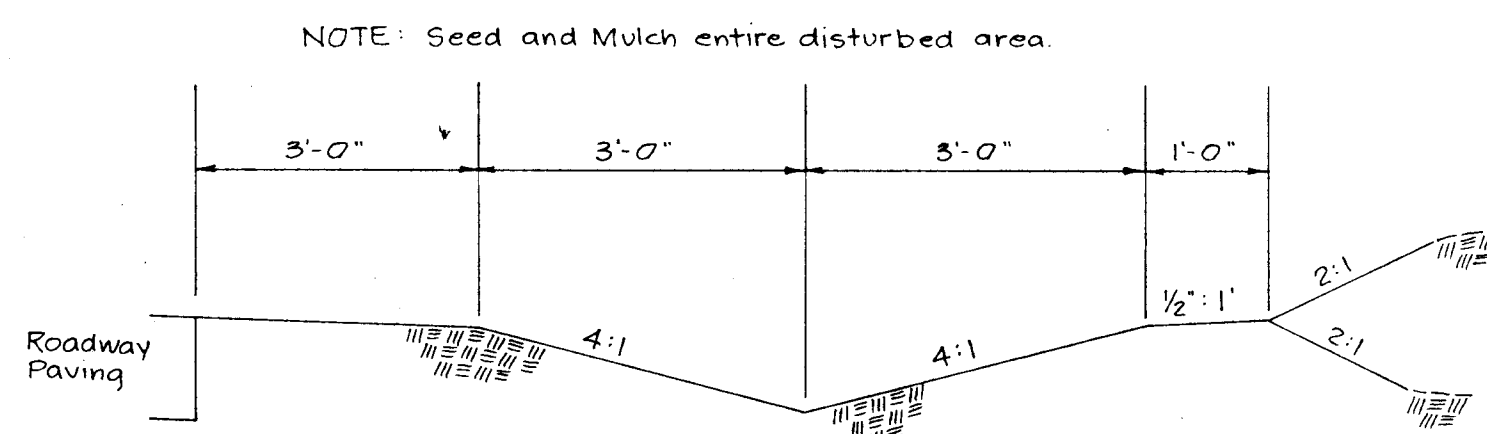
RESTRAINED JOINT DETAIL

NO SCALE



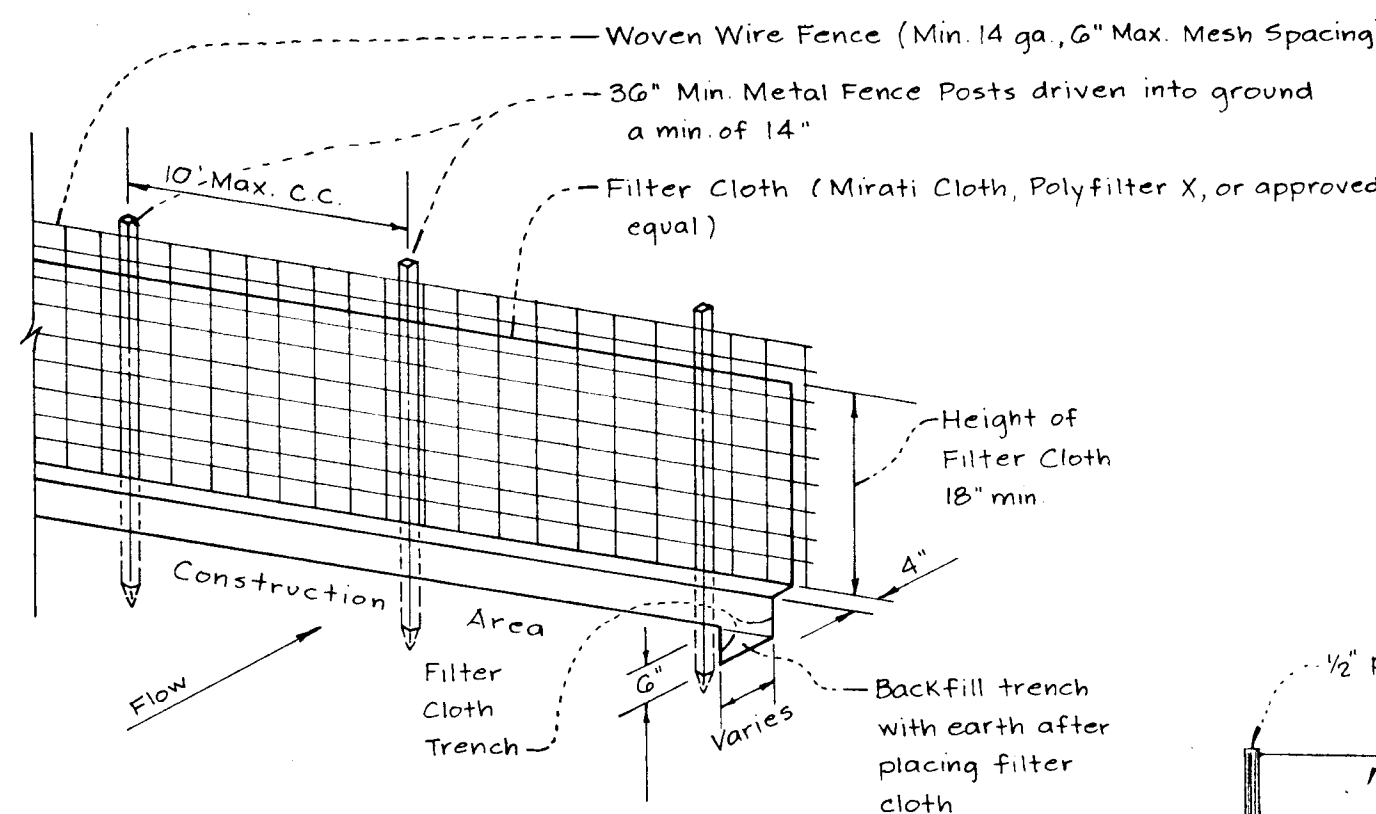
RIP RAP CHANNEL DETAIL

No Scale



ROADSIDE GRASS SWALE

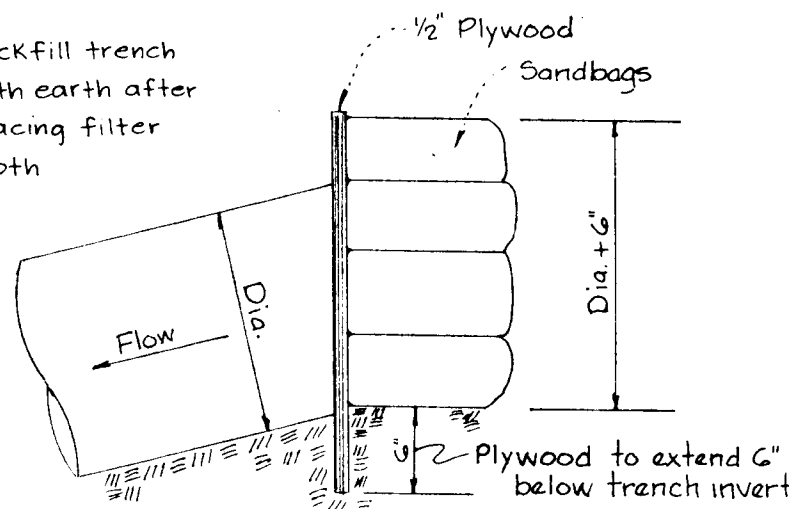
No Scale



SILT FENCE DETAIL

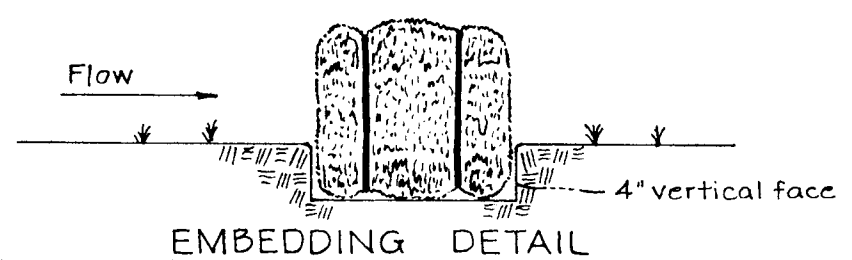
No Scale

NOTES:
1. Woven Wire Fence to be fastened securely to fence posts by use of wire ties.
2. Filter cloth to be fastened securely to woven wire fence by use of wire ties spaced every 24" x 24".

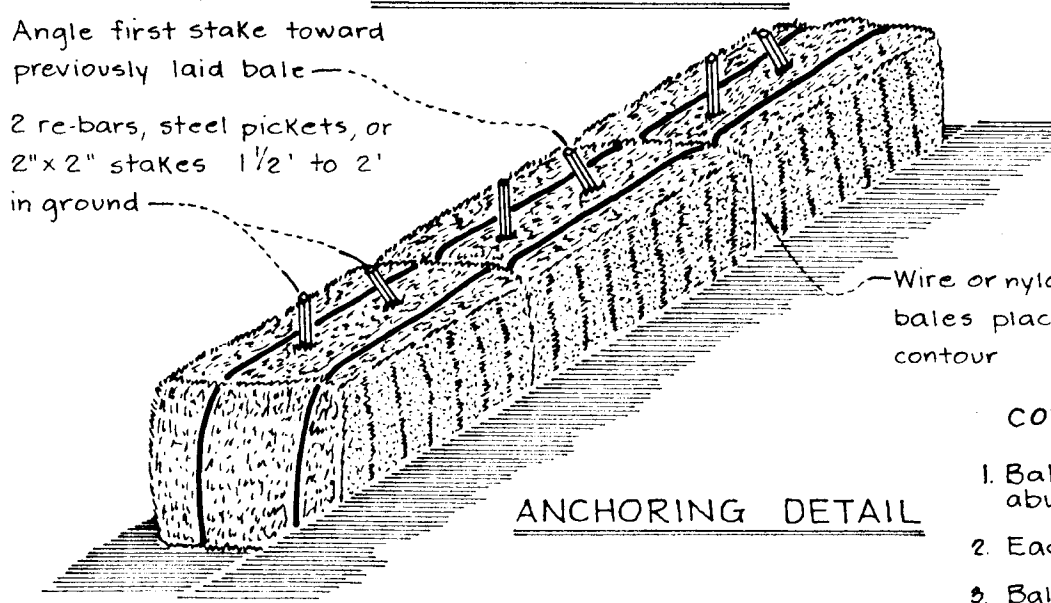


PIPE BLOCKING DETAIL

No Scale



EMBEDDING DETAIL



STRAW BALE DIKE

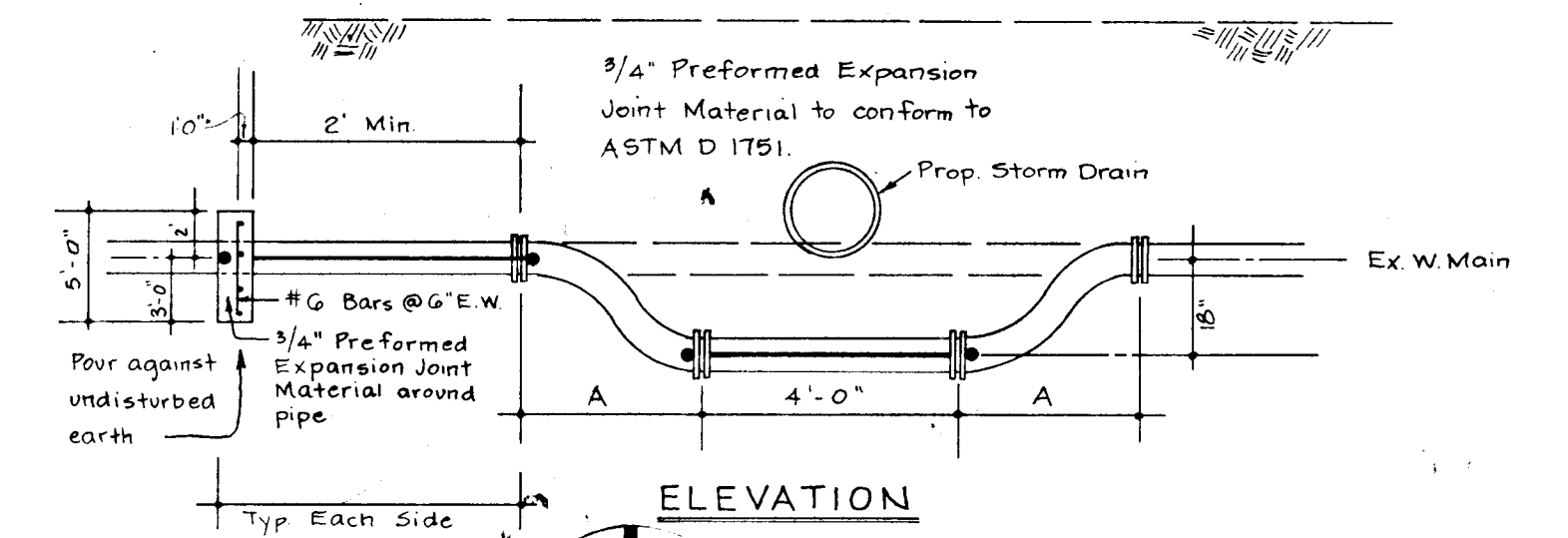
No Scale

CONSTRUCTION SPECIFICATIONS:

- Bales shall be placed in a row with ends tightly abutting the adjacent bales.
- Each bale shall be embedded in the soil a min. of 4".
- Bales shall be securely anchored in place by stakes or re-bars driven through the bales. The first stake in each bale shall be angled toward previously laid bale to force bales together.
- Inspection shall be frequent and repair or replacement shall be made promptly as needed.
- Bales shall be removed when they have served their usefulness so as not to block or impede storm flow or drainage.

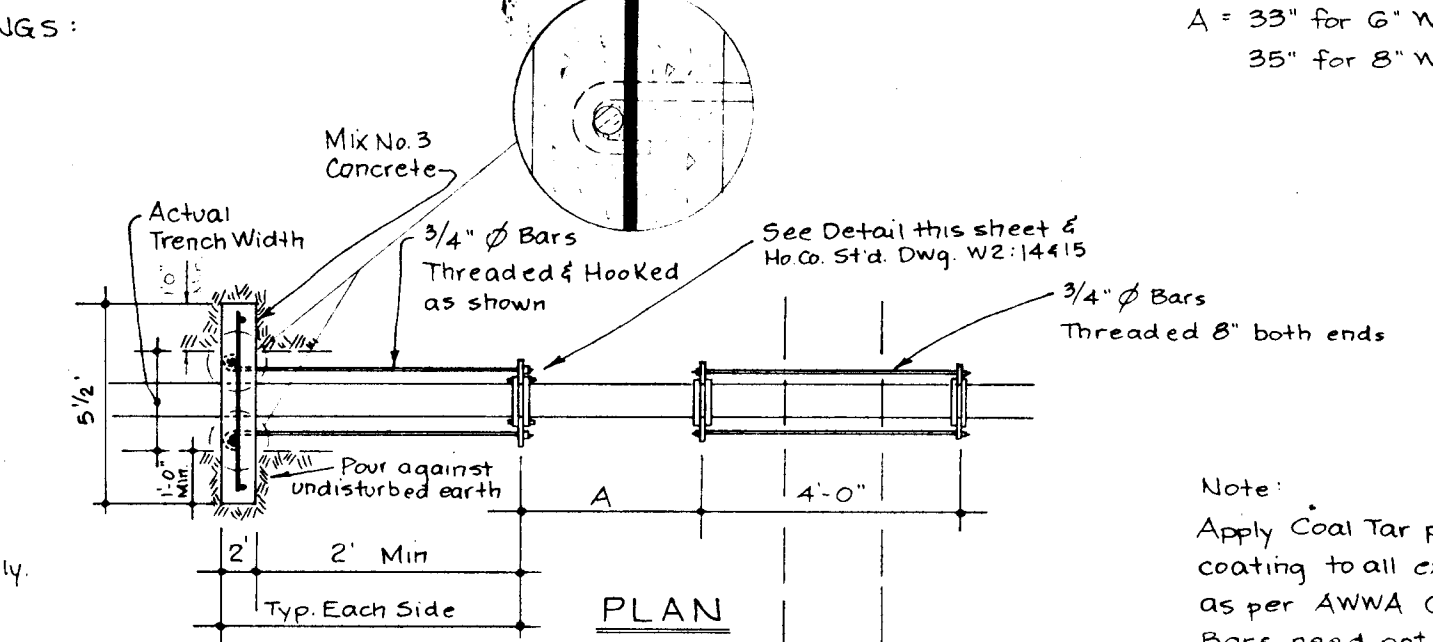
SEQUENCE OF CONSTRUCTION FOR WATER MAIN LOWERING:

- Water Main lowerings shall be completed prior to Storm Drain improvements.
- Notify proper agencies. (See General Notes #10)
- Excavate T shaped trenches either side of lowering to accommodate conc. collars & restraint bars.
- Construct anchor and restraining bars as shown.
- Cover trenches and provide appropriate barricades to assure public safety while concrete sets. Allow at least 72 hours for concrete to set.
- Backfill over concrete collars.
- Contractor is to notify Ho. Co. Bureau of Utilities at least 2 weeks prior to any water main lowering to arrange for valve closings.
- Public is to be notified by Contractor at least 72 hours prior to water main shut down.
- Shut down water, between the hours of 9am & 3pm only.
- Install offsets as shown.
- Restore water service.
- All construction shall be in accordance with Ho. Co. General requirements for water main construction, standard details and special provisions of the contract specifications.



ELEVATION

A = 33" for 6" W
35" for 8" W

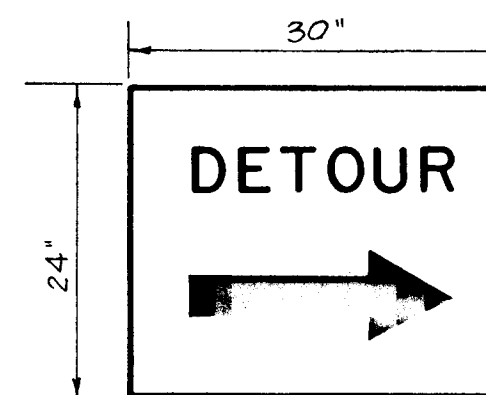


PLAN

Note:
Apply Coal Tar protective coating to all exposed steel as per AWWA C-203. Bars need not be threaded for entire length.

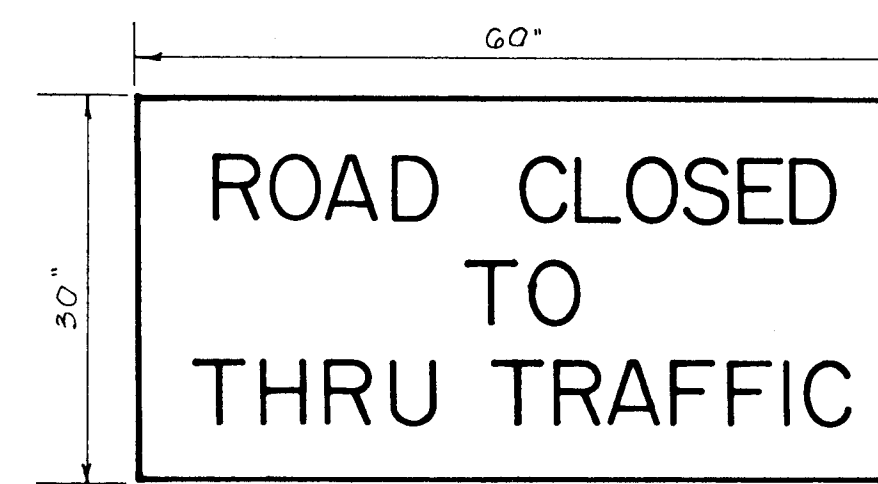
WATER MAIN LOWERING DETAIL

NO SCALE



M4-7 P & B-20

Md. State Manual of Uniform Traf. Control Devices

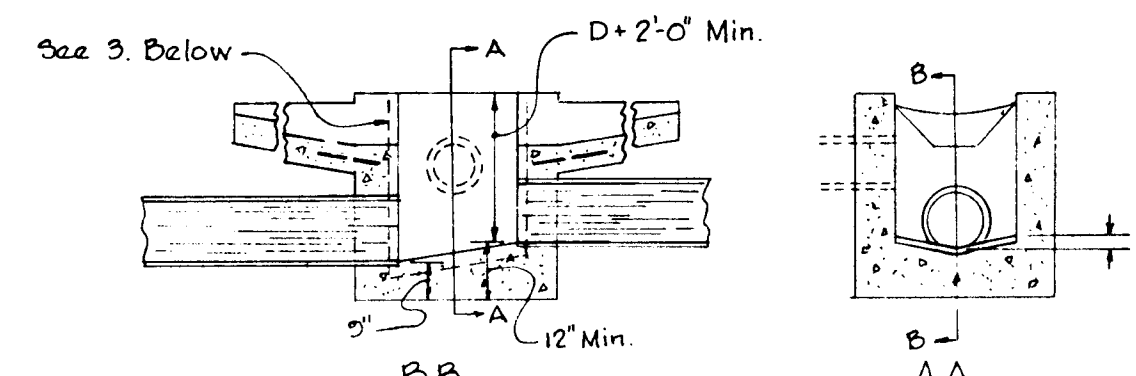


R11-4 P & B-16

Md. State Manual of Uniform Traf. Control Devices

TRAFFIC CONTROL SIGNS

(No Scale)



- All dimensions are the same as, Howard Co. Std. SD 412, except as noted.
- Use largest pipe diameter for L, W, & T.
- Use #5 Bars for Vertical reinforcement.

MODIFIED 'K' INLET DETAIL

(No Scale)

STRUCTURE SCHEDULE					
No.	TYPE	Top El.	Inv. In	Inv. Out	REMARKS
M-2	Existing	416.43	412.5	410.18	-
M-10	Shallow Precast MH	449.70	445.35	443.30	Ho. Co. Std. G 5.12
I-26	Type "K"	415.20	-	412.3	Ho. Co. Std. SD 4.12
I-27	"	415.90	-	413.0	"
I-28	"	417.40	-	414.62	"
I-29	"	418.60	-	414.0	"
I-30	"	421.60	-	418.93	"
I-31	"	423.70	-	421.08	"
I-32	"	440.30	-	438.27	"
I-33	"	443.30	-	440.7	"
I-34	"	451.65	445.00	447.75	"
I-35	"	456.75	453.74	453.10	"
I-36	"	457.00	-	454.50	"
I-37	"	452.00	445.07	443.07	"
I-38	Type "S"	457.80	455.25	455.00	" SD 4.12
I-39	Type "K"	450.00	-	460.00	" SD. 4.12
EX115	Existing	450.72	447.42	447.42	-
I-1	Type A-10	427.15	421.0	421.0	Ho. Co. Std. SD 4.02
I-4	Existing	427.0	422.25	422.25	"
I-5	Yard Inlet	437.27	435.51	435.51	Ho. Co. Std. SD 4.14
I-7	Existing	446.5	442.30	442.30	"
I-9	Type "K"	454.6	450.44	450.44	Ho. Co. Std. SD 4.12
I-11	"	452.45	-	452.13	"
I-12	Type A-5	432.65	-	429.0	Ho. Co. Std. SD 4.01
I-13	Type A-5	430.00	-	428.21	"
I-14	Type "K"	454.50	-	452.20	Ho. Co. Std. SD 4.12
I-15	"	464.30	459.02	456.77	"
I-16	"	461.20	460.75	460.15	"
I-17	"	473.60	468.23	467.35	"
I-18	"	477.70	473.33	473.63	"
I-19	"	478.25	475.60	474.75	"
I-20	"	478.45	-	475.36	"
I-21	Type "S"	449.90	-	446.36	Ho. Co. Std. SD 4.22
M-1	Shallow Precast	435.83	428.13	427.12	Ho. Co. Std. G 5.12
M-2	Existing	440.00	440.00	440.00	"
M-3	Shallow Precast MH	448.30	444.54	444.29	Ho. Co. Std. G 5.12
M-4	"	450.30	447.44	447.44	"
S-1	CMP End Sect	460.06	450.06	-	SRC Std. MD 371.01
S-2	" Type Endwell	461.56	-	459.56	SRC Std. MD 355.01
M-5	Shallow Precast MH	456.20	452.22	452.37	Ho. Co. Std. G 5.12
M-6	"	453.30	450.22	450.27	"

† Exist. structure to remain
* Exist. structure to be replaced w. Ho. Co. Std.
‡ See Modified K Inlet Detail this sheet

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE
CHIEF, BUREAU OF ENGINEERING DATE

Elizabeth Anderson Callea 12/3/82
CHIEF, ROADS, BRIDGES, & STORM DRAINAGE DIVISION

STORM DRAIN IMPROVEMENTS
WILTON ACRES
CAPITAL PROJECT D-7-1048
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

no.	description	date
1	M-G, I-40, I-41	2-28-82
2	M-G, M-5 revised	8-11-82
3	I-40 & I-41 out	8-25-82
4	Water Main Restraints	11-5-82
5	Add to Water Main Lowering sequence	

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DETAILS

SCALE	QS shown
DRAWN	CHECKED
MK	JH
PROJ. NO.	DATE
4423	G-30-81
7	7
SHEET	OF