

W-8051  
 skt 1 of 29 (See oversize file also for skts. 11-29)

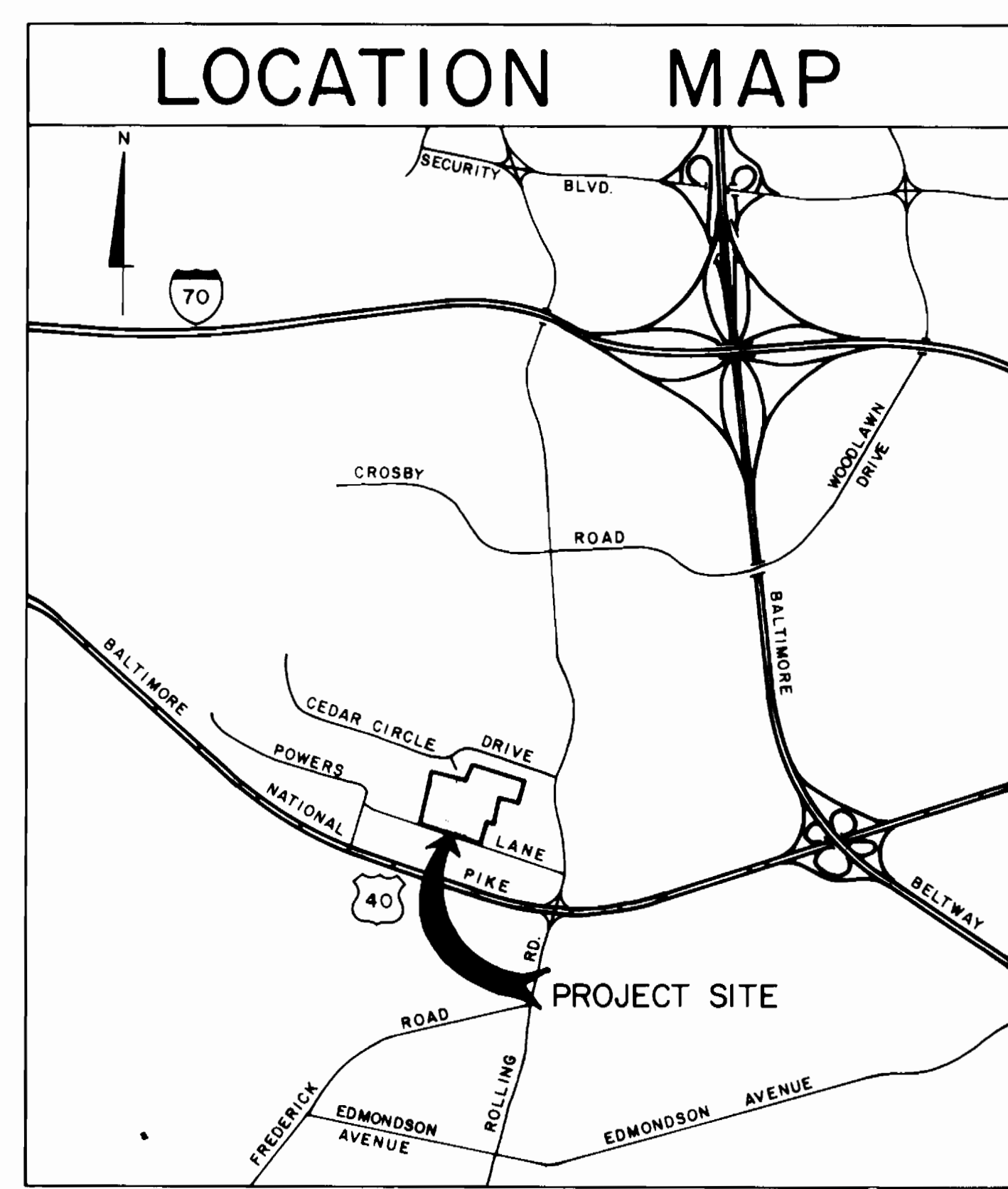
Catonsville Reservoir  
 3385

# BALTIMORE COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING CATONSVILLE RESERVOIR

CONTRACT NO. 91012 WXO

HOWARD COUNTY CONTRACT NO. 44-3385

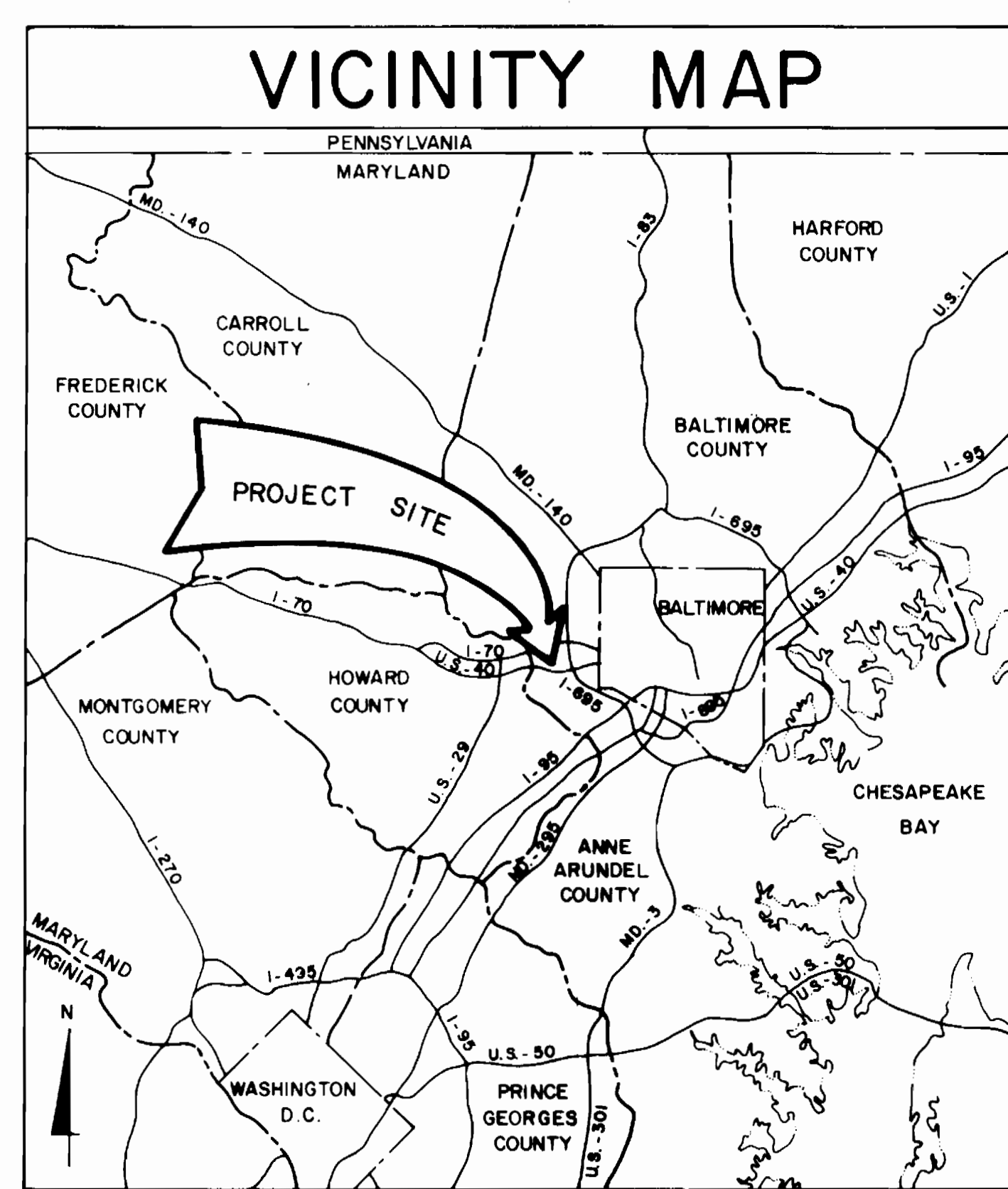
CAPITAL PROJECT NO. W-8051



SCALE: 1" = 2000'

SHEET NO.	TITLE
1	LOCATION MAP, INDEX OF DRAWINGS, VICINITY MAP
2	GENERAL NOTES, DESIGN CRITERIA, LEGEND, HORIZONTAL AND VERTICAL CONTROL
3	KEY MAP
4	SEDIMENT CONTROL AND GRADING PLAN
5	SEDIMENT CONTROL AND GRADING PLAN
6	SEDIMENT CONTROL AND GRADING PLAN
7	SEDIMENT CONTROL AND GRADING PLAN
8	SEDIMENT CONTROL AND GRADING PLAN
9	SEDIMENT CONTROL DETAILS AND NOTES
10	SITE PLAN
11	SITE PLAN
12	STAKEOUT INFORMATION AND DETAIL
13	PIPELINE PROFILES
14	PIPELINE PROFILES
15	PIPELINE PROFILES
16	CIVIL-DETAILS
17	STRUCTURAL-LEVEL TRANSMITTER VAULT PLANS AND SECTION
18	STORMWATER MANAGEMENT DRAINAGE AREA MAPS
19	STORMWATER MANAGEMENT PLAN AND VICINITY MAP
20	STORMWATER MANAGEMENT PROFILES AND BORING LOGS
21	STORMWATER MANAGEMENT PROFILES AND BORING LOGS
22	STORMWATER MANAGEMENT DETAILS AND NOTES
23	TANK EXCAVATION PLAN AND SECTIONS
24	TANK FLOOR PLAN, TANK ELEVATION AND DETAILS
25	TANK SECTION, DETAILS AND GENERAL NOTES
26	PRECAST PANELS AND PERMANENT MANHOLE DETAILS
27	ROOF PLAN AND INSIDE LADDER DETAILS
28	PIPING DETAILS
29	OUTSIDE LADDER DETAILS

APPENDIX: SEE INDEX OF PRELOAD WORKING DRAWINGS (88903-1 THRU 17 AND SK-1)



SCALE: 1" = 8 MILES

DESIGNED: T.E.S.		KCI/PII JOINT VENTURE		BUREAU OF ENGINEERING		DEPARTMENT OF PUBLIC WORKS		LEVEL BK.		KEY SHEET		SCALE		BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING	
DRAWN: J.M.G.		ENGINEER J.H. BOURDON		REVIEWED: RUB		APPROVED: [Signature]		APPROVED: [Signature]		H-NE		PLAN: AS SHOWN		C.W.O. 47080	
CHECKED: T.L.Z.		DATE: 12/11/90 LIC. NO. 3466		DATE: 12/10/90		DATE: 12/17/90		DATE: 12/17/90		4-SW 27 & 28		PROFILE: HOR. VERT.		CATONSVILLE RESERVOIR	
		DATE: 12/17/90		DATE: 12/17/90		DATE: 12/17/90		DATE: 12-18-90						LOCATION MAP, INDEX OF DRAWINGS, VICINITY MAP	

JOB ORDER NO.	3-5-3
SHEET	02 OF 29
DIST. NO.	90-1955

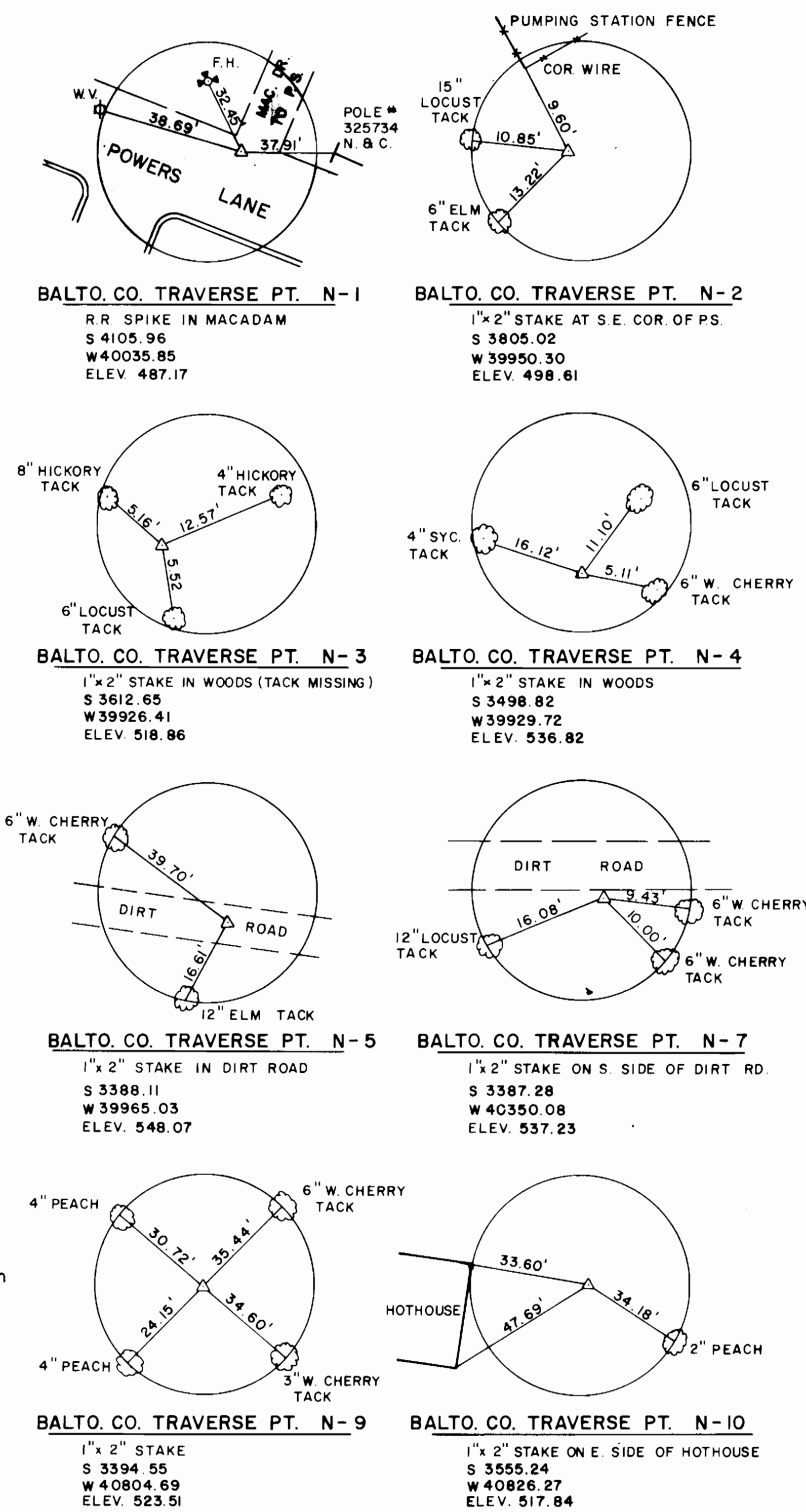
BALTIMORE COUNTY TYPE NUMBER



# GENERAL NOTES

- Contractor Shall Contact "MISS UTILITY" 1-800-257-7777 To Locate Existing Underground Utilities Before Beginning Any Work On This Project.
- Horizontal And Vertical Controls Are Based Upon Baltimore County Datum. See This Drawing For Location Of Control Points And Bench Marks.
- All Construction, Materials, Workmanship And Testing, Shall Conform To The Baltimore County Department Of Public Works Standard Specifications And Details For Construction (Latest Edition). These Standardized Documents Are A Part Of These Contract Documents As If Fully Set Forth Herein. In Case Of Conflict Between These Contract Documents And The Standardized Documents. These Contract Documents Shall Prevail.
- Sediment Control Provisions Shall Be Maintained In An Approved Manner As Directed By The Sediment Control Inspector And Until Such Time As Removal Is Authorized And Site Restoration Work Is Completed.
- The Approximate Location, Size And Usage Of Existing Underground Utilities, Services And Facilities Are Shown For Convenience Only To Establish Reasonable Working Limits. These Locations Have Been Taken From Existing Record Drawings Of The County. Neither The County Nor The Engineer Warrant Or Guarantee The Accuracy Of Such Information. The Contractor Must Verify Such Information To His Satisfaction By Means Of Test Pits And Field Measurements Prior To Ordering Materials Or Starting Work.
- Where Test Pits, Connections, Relocations And/Or Extensions Of Existing Underground, Surface Or Overhead Utilities, Services And Facilities Are To Be Made, The Contractor Shall, In Writing, And At Least Five Working Days In Advance Of Performing Such Work, Notify The Engineer Of His Proposed Schedule And Construction Methodology. No Work Shall Be Permitted On Existing Utilities, Services And Facilities Until A Specific Notice To Proceed Has Been Authorized In Writing.
- The Contractor Shall Take All Necessary Precautions To Protect All Existing Services, Pipelines And Utilities, And Any Damage To Them Due To His Negligence Shall Be Repaired Immediately To The Satisfaction Of The County At The Contractor's Expense.
- The Contractor Is Hereby Advised That All Work Performed Under This Contract Must Be Planned And Completely Coordinated With The Baltimore County Bureau Of Construction Inspection Before Proceeding With Any Work.
- Pipe Elevations Shown On These Drawings Refer To Inverts Unless Otherwise Noted.
- All Pipes Shall Be Laid On A Uniform Grade Between Invert Elevations As Shown On The Plans.
- Where Existing Roadways Are Cut For Installation Of Utilities, Paving Repairs Shall Be Made In Accordance With Standard Detail R-38.
- All Pipelines Are To Be Tested In Accordance With The Contract Documents.
- Sections & Elevation Cuts Are Indicated By . The Arrow Indicates Direction Of View. The Top Letter Identifies The Section Or Elevation. The Bottom Left Number Indicates The Sheet On Which The Section Is First Cut. The Bottom Right Number Indicates The Sheet On Which The Section Or Elevation Is Shown.
- Valve Vault Details For 42" Effluent And 36" Influent Shall Be In Accordance With Baltimore City Standard Details BC 836.01 And BC 836.04.
- Buttress Details For 6" Service Water And 12" Drains Shall Be In Accordance With Baltimore County Standard Details W-4 And W-5.
- Valve Vault Details For 6" Service Water Shall Be In Accordance With Baltimore County Standard Details W-13 And W-14.
- Valve Vault Details For 12" Drains Shall Be In Accordance With Baltimore County Standard W-16 For 16" Valves.
- All Fittings Shall Be Installed With Appropriate Anchorages Or Buttress. For Details See Sheet No. 16.
- All Pipelines Shall Have A Minimum Cover Of 4'-0" And Shall Maintain 1'-0" Clearance At All Utility Crossings Unless Otherwise Shown.

# HORIZONTAL CONTROL



# VERTICAL CONTROL

BM. 15216 ELEV. 489.25  
 Railroad Spike In Pole No. 501702 North Side Of Powers Lane Near Pole No. 15549.

BM. N-5A ELEV. 547.11  
 Railroad Spike Vertically In North Side Of 12" Elm Tree 16 Feet South Of Balto. Co. Traverse Point N-5.

BM. N-9A ELEV. 507.79  
 Southeast Corner Of Concrete Pad For Air Conditioner On East Side Of Block Building 180 Feet ± Northwest Of Balto. Co. Traverse Point N-9.

# LEGEND

NATURAL FEATURES	UTILITIES
Woods, Undergrowth And Brush	<b>EXISTING WORK</b>
Tree - Deciduous	Sanitary Sewer
Tree - Evergreen	Sanitary Sewer Manhole
	Storm Drains, Misc. Culverts
	Storm Drain Manhole
	Inlet Grating Type
	Inlet, Curb And Grating Type
	Water Mains
	Water Main Valve Vault
	Water Meter Box
	Water Valve, Tee, And Cross
	Water Reducer, Y Branch And Bend
	Water Fire Hydrant
	Conduits (Electric And Telephone)
	<b>PROPOSED WORK</b>
	Pipe Lines
	Storm Drain Manhole
	Storm Drain Inlet And Catch Basins
	Water Valve, Tee And Cross
	Water Reducer, Y Branch And Bend
	Water Blow-Off, And Air Release, And Fire Hydrant
	<b>MISCELLANEOUS</b>
	Fences, Wire, Barb & Smooth
	Poles: G And E No. 1000 Or C And P No. 1000 Or Street Light
	Excavation Or Cut
	Embankment Or Fill
	Contour Lines
	Corrugated Metal Pipe
	Reinforced Concrete Culvert Pipe
	Prestressed Concrete Cylinder Pipe
	Cast Iron Pipe
	Cast Iron Soil Pipe (Extra Strength)
	Ductile Iron Pipe
	<b>ARCHITECTURAL &amp; STRUCTURAL SYMBOLS</b>
	Concrete
	Metal
	Wood
	Rip-Rap
	Earth

## ROADS AND STREETS

**PLAN**

Existing Curb  
 Proposed Curb  
 Walks  
 Edge Macadam Or Concrete Road  
 Edge Dirt Or Gravel Road  
 Existing Right-Of-Way Line  
 Existing Property Line  
 Centerline Of Existing R/W Or Road  
 Centerline Of Proposed R/W Or Road  
 Transit Line

**Horizontal Curves:**  
 Point Of Curvature  
 Point Of Tangent  
 Point Of Intersection  
 Point Of Reverse Curvature  
 Point Of Compound Curvature

**PROFILE**  
 Established Top Road Grade  
 Centerline Of Existing Road

**Vertical Curves:**  
 Point Of Vertical Curve  
 Point Of Vertical Tangent  
 Point Of Vertical Intersection  
 Point On Curve  
 Point Of Vertical Reverse Curve  
 Point Of Vertical Compound Curve

## SURVEYORS SYMBOLS

Bench Mark  
 Traverse Hub  
 Iron Property Pipe  
 Property & Boundary Stones  
 Existing Roads & Streets R/W  
 Existing R/W's

# DESIGN CRITERIA

Design Year\*: 1998  
 Volume: 20 MG  
 Diameter: 312 Ft.  
 SWD: 35 Ft.  
 Overflow Elevation: 567.4  
 Base Elevation: 532.4  
 Max. Influent Flow: 30.2 MGD\*\*  
 Max. Effluent Flow: 46.2 MGD\*\*

\* When Second Reservoir Is Proposed For Construction  
 \*\*Projections For Year 2025

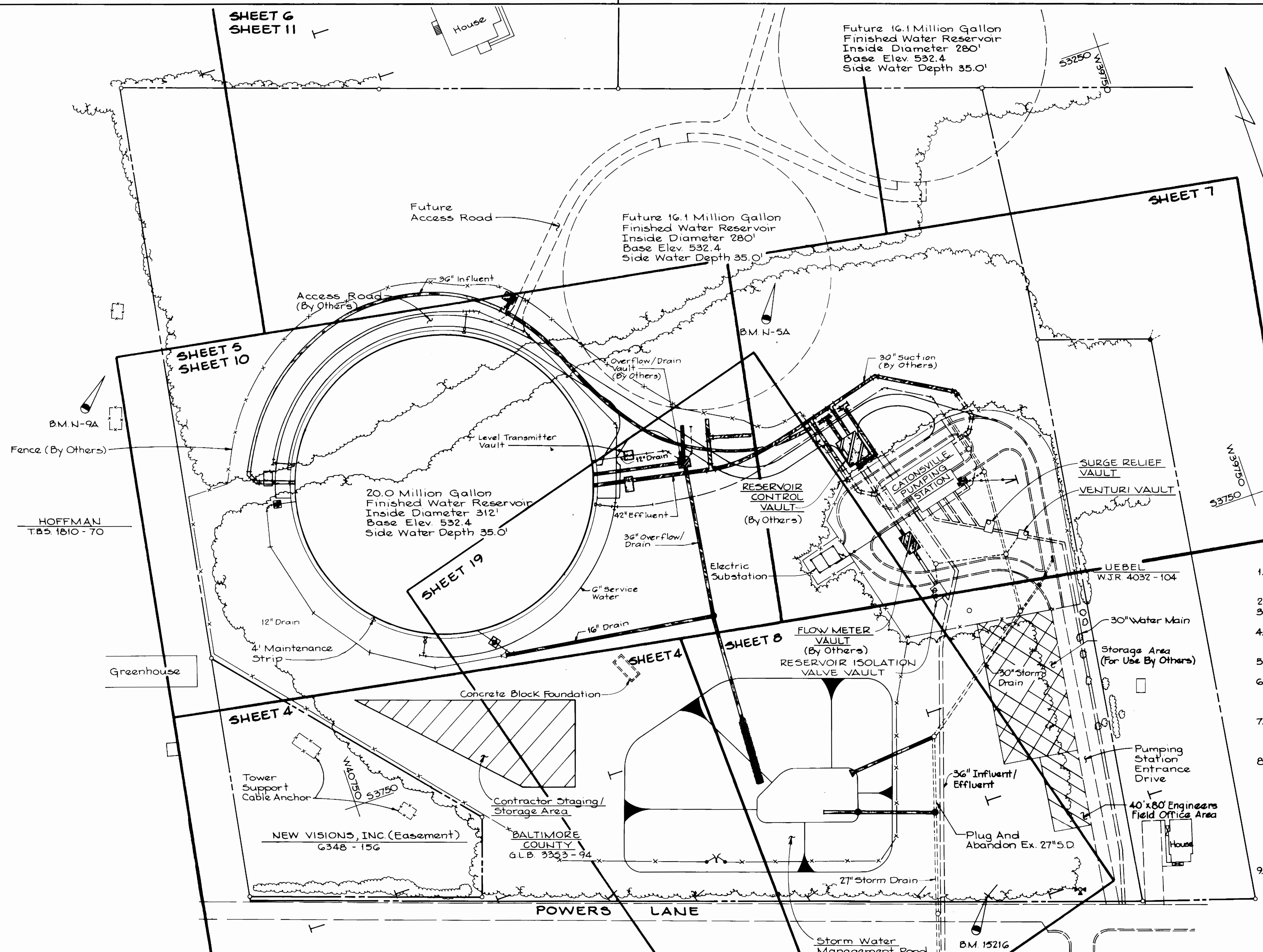
# GENERAL NOTES (Continued From This Sheet)

- In The Vicinity Of Proposed Stone Outlet Sediment Trap ST.V No. 4 Contractor Shall Test Pit And Locate End Of Existing 30" P.C.C.P. Contractor Shall Adjust Location Of Trap Accordingly To Provide A Minimum Of 4'-0" Of Cover Over Top Of Pipe And To Permit Construction Of 30" Main By Others Without Disturbing Subject Trap.
- Contractor Must Notify Baltimore County Bureau Of Construction Inspection 96 Hours Prior To Operation Of Any Valves Or Connection To Existing Pipelines. Baltimore County Or Is Duly Appointed Inspectors Will Notify Baltimore City Bureau Of Water And Waste Water Of All Valve Operations And Connections.
- Access To Catonsville Pumping Station Must Be Maintained At All Times. Any Work In Or Across Existing Access Drive Shall Require Notifying Baltimore County Bureau Of Construction Inspection 96 Hours Prior To Commencing Work.
- Current OSHA Standards Shall Govern All Excavations.

DESIGNED T.E.S.	KCI/PII JOINT VENTURE	BUREAU OF ENGINEERING	HIGHWAYS	STRUCTURES	STORM DRAINS	WATER	SEWER	FIELD ENGINEER	BUREAU OF ENGINEERING	DEPARTMENT OF PUBLIC WORKS	LEVEL BK.	KEY SHEET	SCALE	BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING	JOB ORDER NO.
DRAWN J.M.G.	ENGINEER J.H. BOURDON	REVIEWED RCB	JWA	RPC	CW	P.Y.R.	ASB	APPROVED Paul Johnson	APPROVED Jon J. Miller	DATE 12/18/90	DETAIL BK.	POSITION SHEET	PLAN	GENERAL NOTES, DESIGN CRITERIA, LEGEND, HORIZONTAL & VERTICAL CONTROL	HO. CO. CONT. NO. 44-3385
CHECKED T.L.Z.	DATE 12/11/90 LIC. NO. 3466	DATE 12/10/90	12/17/90	12/17/90	12/17/90	12/17/90	12-17-90	DATE 12-18-90	DATE 12/18/90	DATE 12/18/90	4 SW 27 & 28	DATE	REVISION	BY	HO. CO. C.P. NO. W-8051
															3-5-3
															SHEET 2 OF 29
															90-1956
															FILE 3
															BALTIMORE COUNTY TYPE NUMBER 1 MICROFILMED

3385





- NOTES:**
1. Sheets 4, 5, 6, 7 and 8 are Sediment Control and Grading Plans.
  2. Sheets 10 & 11 are Site Plans.
  3. Sheet 19 is The Storm Water Management Plan.
  4. Indicates Large Diameter Piping and Structures By Others.
  5. Indicates Small Diameter Piping By Others.
  6. Contractors Office Shall Be Located Within The Contractors Staging / Storage Area.
  7. Baltimore County Engineers Field Office Shall Be Provided And Installed In The Designated Area.
  8. The Contractor Shall Not Perform Any Work Or Permit Vehicular Traffic, Equipment Or Personnel Within The Confines Of The Existing Catonsville Pumping Station Fence, Except As Necessary To Satisfactorily Perform Rough Grading And Install Sediment Control Devices.
  9. The Contractors Work Shall Be Strictly Confined To Within The Limits Of Disturbance, Except As Required To Install And Maintain The Engineers Field Office And To Provide Temporary Utility Connections.

3385

CITY OF BALTIMORE												
4-6-1994 DIRECTOR DEPT. OF PUBLIC WORKS				12/19/94 CHIEF, UTILITY ENG. DIVISION BUR. OF WATER AND WASTEWATER								
DATE	RIGHT OF WAY	REF.	ROAD PERMIT AND GRADES	P. W. A. DIR NO.	CONTRACT NO.	REVISED AS PER RECORD PRINT						
			PERMIT REQUESTED	421	91012 WYO	J.O.	DRAFTSMAN	DATE				
			PERMIT NUMBER			RECORD DRAWING		11/23/93				
			PROFILE NUMBER									
DESIGNED	KCI/PII JOINT VENTURE	BUREAU OF ENGINEERING	HIGHWAYS	STRUCTURES	STORM DRAINS	WATER	SEWER	FIELD ENGINEER	BUREAU OF ENGINEERING	DEPARTMENT OF PUBLIC WORKS	LEVEL BK.	KEY SHEET
DRAWN	J.M.G.	ENGINEER J.H. BOURDON	REVIEWED	RCB	JWA	RAC	CW	P.Y.R.	A.S.E.	APPROVED	4 SW 27 8 28	H-NE
CHECKED	J.L.Z.	DATE 12/11/90 LIC. NO. 3466	DATE	12/10/90	12/17/90	12/17/90	12/17/90	12/17/90	12.17.90	DATE 12-18-90		POSITION SHEET
												4 SW 27 8 28

HO. CO. CONT. NO. 44-3385  
HO. CO. C.P. NO. W-8051

C.W.O. 47080

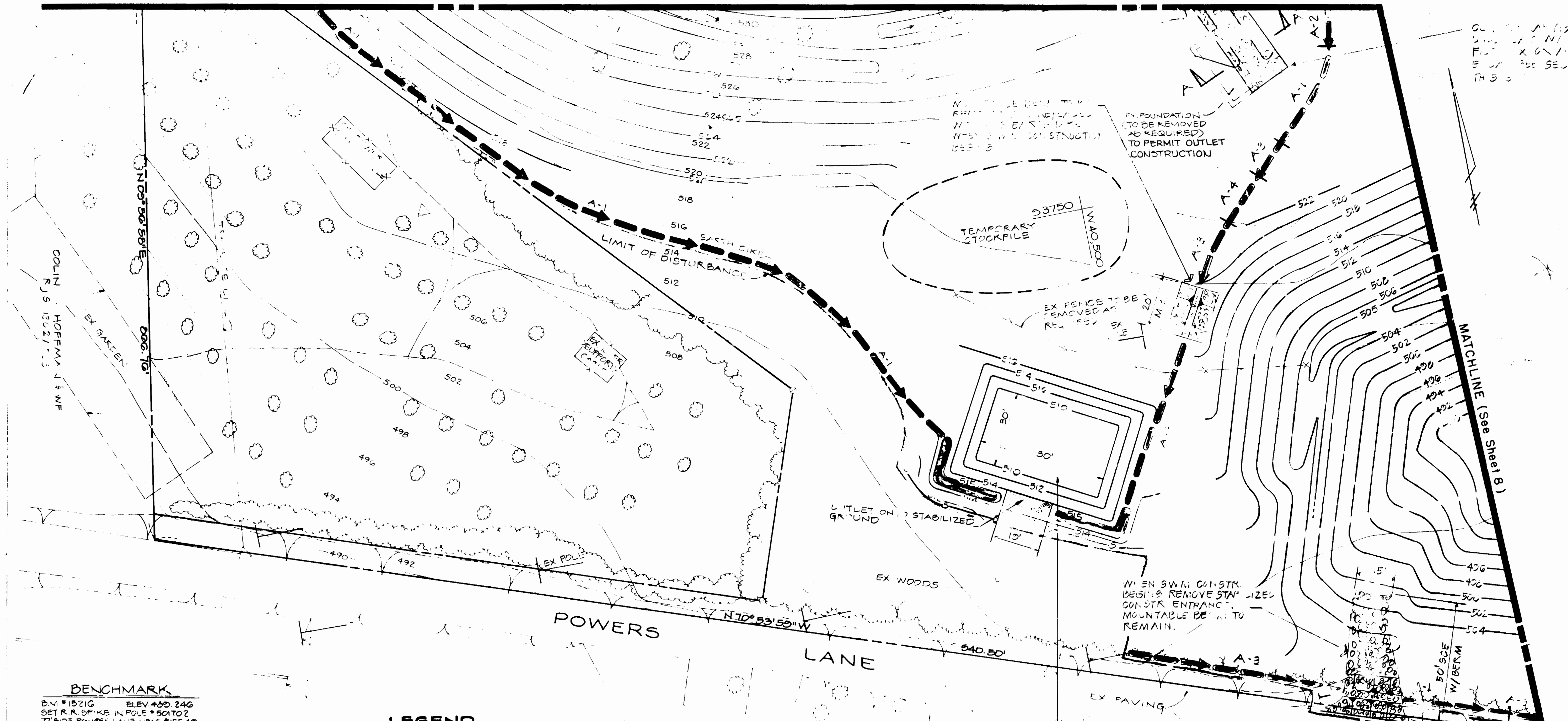
BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING  
CATONSVILLE RESERVOIR  
KEY MAP

JOB ORDER NO.	3-5-3
SHEET NO.	3 OF 29
DWG. NO.	90-1957
FILE NO.	3
MICROFILMED	

BALTIMORE COUNTY TYPE NUMBER 1



CLINICAL UNDERLAY W/ PLY FILTER X OR APPROVED EQUAL



MATCHLINE (See Sheet 8)

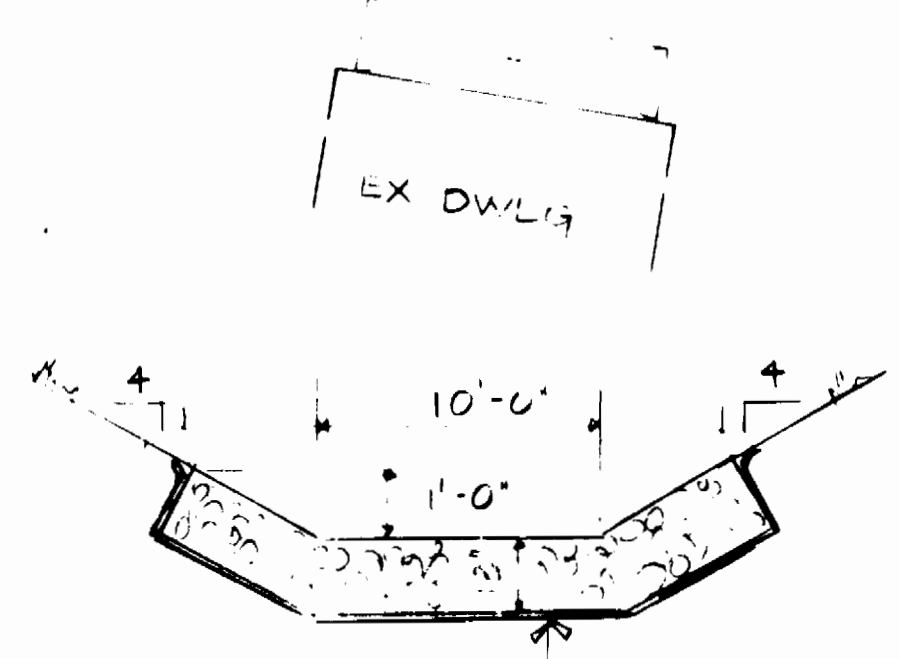
**BENCHMARK**  
 BM #15210 ELEV. 400.246  
 SET R.R. SPIKE IN POLE #50102  
 77' S OF POWERS LANE NEAR #15548



**VICINITY MAP**  
 SCALE: 1" = 2000'

**LEGEND**

- EX. GROUND
  - PROP. GROUND
  - LIMIT OF DISTURBANCE
  - STABILIZED CONSTRUCTION ENTRANCE
  - EARTH DIKE
  - SILT FENCE
  - STONE OUTLET STRUCTURE
  - MOUNTABLE BERM
  - ULTIMATE GRADING
- LIMIT OF DISTURBANCE = 407,320 SF = 9.4 AC.



**SECTION "A-A"**  
**RIPRAP OUTLET DETAIL**  
 NO SCALE

**STONE OUTLET SEDIMENT TRAP ST 1 #1**

DRAINAGE AREA*	4.54 AC.
STORAGE REQ'D*	2072 C.F.
STORAGE SHOWN*	9072 C.F.
STONE WEIR CREST ELEV.*	514.0
EXIST GROUND WEIR*	513.0
BOTTOM ELEV.*	510.0
BOTTOM DIM.*	20' x 50'
CLEANOUT ELEV.*	512.0
EMBANKMENT ELEV.*	513.0
OUTLET LENGTH*	10'
SIDE SLOPES*	2:1

3385

CITY OF BALTIMORE

DESIGNED: R.H. KCI/PII JOINT VENTURE  
 DRAWN: O.D. ENGINEER  
 CHECKED: R.U. DATE: 12/18/90

REVIEWED: RLB, JWA, RAC, CWT, AYE, ASE, SAUL HADSON  
 DATE: 12/18/90, 12/17/90, 12/17/90, 12/17/90, 12/17/90, 12/18/90

PERMIT REQUESTED: 424  
 PERMIT NUMBER: 91012 WXO  
 PROJECT NUMBER: RECORD DRAWING 11/23/93

BUREAU OF ENGINEERING

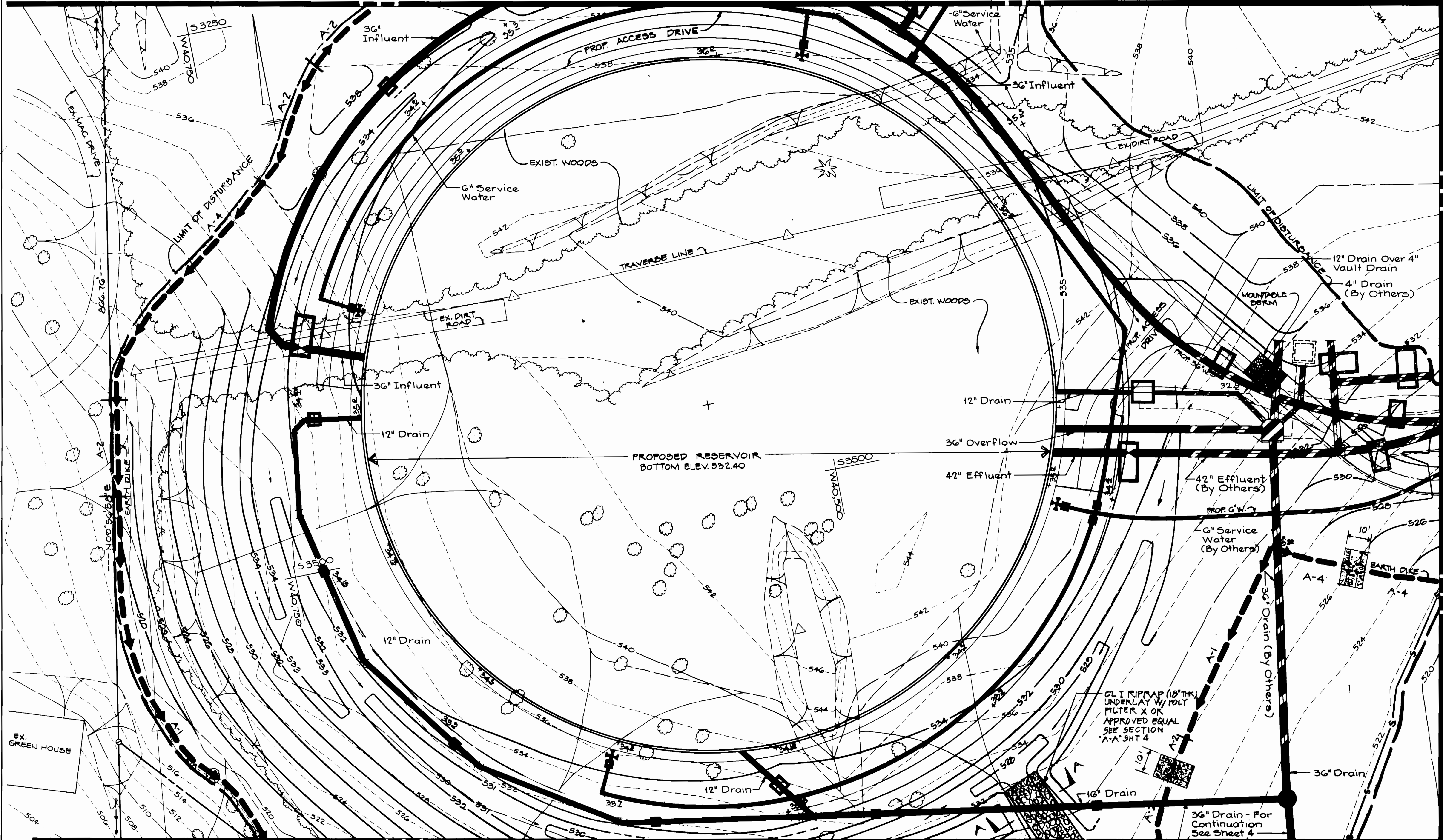
HO. CO. CONT. NO. 44-3385  
 HO. CO. C.P. NO. W-8051

C.W.O. 47080  
 BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING  
**CATONVILLE RESERVOIR**  
 SEDIMENT CONTROL AND GRADING PLAN  
 SUBDIVISION CATONVILLE

JOB ORDER NO.	3-5-3
SHEET	4 OF 29
DWG. NO.	90-1958
FILE	3



MATCHLINE ( See Sheet 6 )



MATCHLINE ( See Sheet 4 )

MATCHLINE ( See Sheet 7 )

MATCHLINE ( See Sheet 8 )

3385

CITY OF BALTIMORE		1/1/91		1/1/91	
DIRECTOR		DATE		CHIEF, UTILITY ENG. DIVISION	
DEPT. OF PUBLIC WORKS		DATE		BUR. OF WATER AND WASTEWATER	
DATE	RIGHT OF WAY	REF	ROAD PERMIT AND GRADES	P. W. A. DIR. NO.	CONTRACT NO.
			PERMIT REQUESTED	424	91012 WXO
			PERMIT NUMBER		
			GRADE ESTABLISHED		
			PROFILE NUMBER		
DESIGNED	KCI/PII JOINT VENTURE	BUREAU OF ENGINEERING	HIGHWAYS	STRUCTURES	STORM
DRAWN	ENGINEER	REVIEWED	RCB	JWA	RAC
CHECKED	DATE	DATE	12/19/90	12/17/90	12/17/90
			12/17/90	12/17/90	12/17/90

REVISED AS PER RECORD PRINT		
J.O.	DRAFTSMAN	DATE
		11/23/93
RECORD DRAWING		

BUREAU OF ENGINEERING		DEPARTMENT OF PUBLIC WORKS	
APPROVED	APPROVED	DATE	DATE
		12-18-90	12/18/90

D.E.P.R.M.  
APPROVED FOR SEDIMENT CONTROL  
*[Signature]*  
1/19/90  
1/19/90

SOIL CONSERVATION  
APPROVED FOR SEDIMENT CONTROL  
*[Signature]*  
8-90  
1-18-90

HO. CO. CONT. NO. 44-3385  
HO. CO. C.P. NO. W-8051

- 1) ONLY THAT SECTION OF TRENCH SHALL BE OPENED WHICH CAN BE BACKFILLED AND STABILIZED IN ONE WORKING DAY.
- 2) WHEN EXCAVATING FOR UTILITIES, ALL SPOIL MATERIAL SHALL BE PLACED ON UPHILL SIDE OF TRENCH.
- 3) ANY SEDIMENT CONTROL DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.

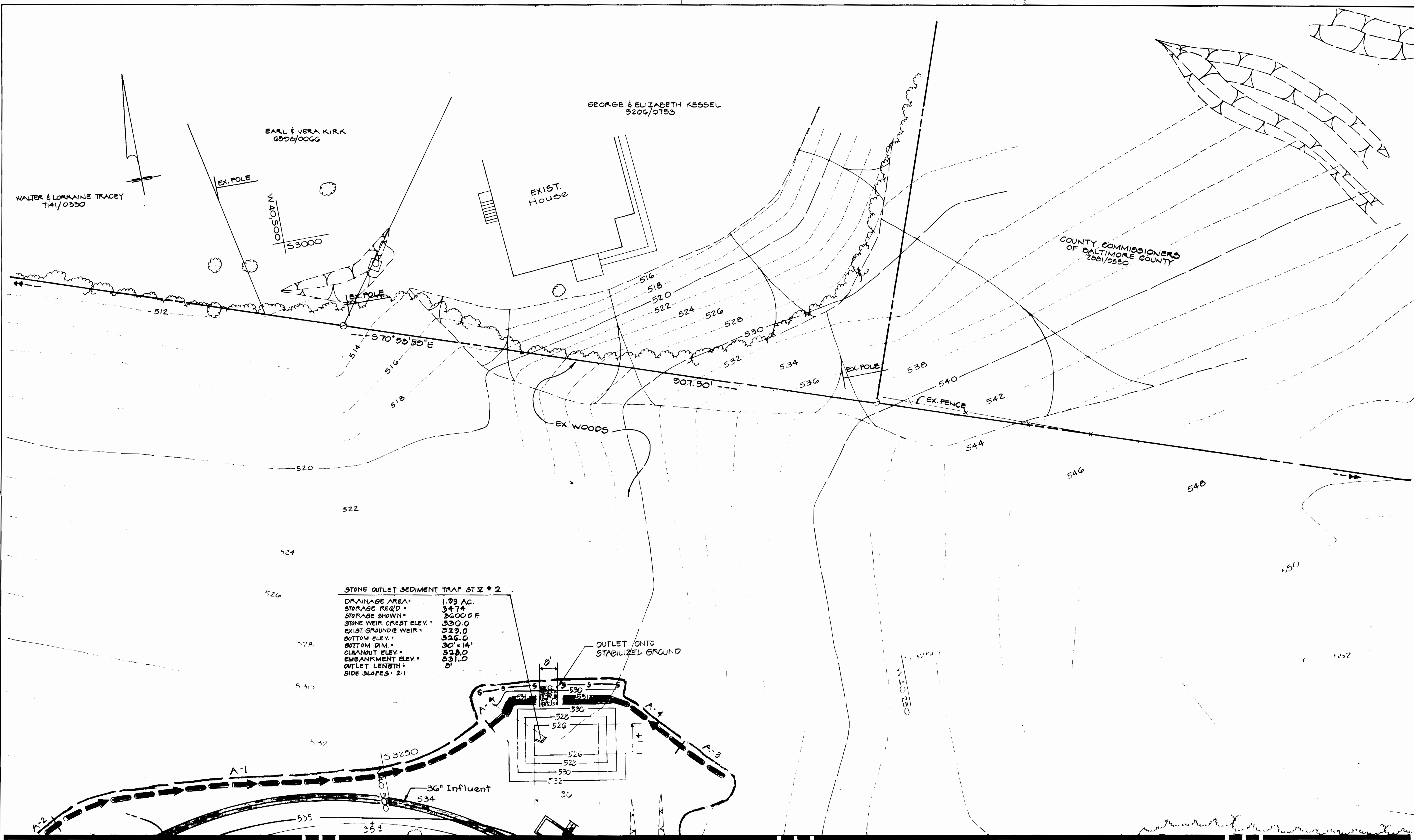
JOB ORDER NO.	3-5-3
SHEET	5 OF 29
DWS. NO.	90-1959
FILE	5

SCALE	PLAN: 1" = 20'	PROFILE: HOR. ---	VERT. ---
LEVEL BK.	KEY SHEET	DETAIL BK.	POSITION SHEET
	H-NE		4SW 27 & 28
DATE	REVISION	BY	

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING		
CATONSVILLE RESERVOIR		
SEDIMENT CONTROL AND GRADING PLAN		
SUBDIVISION	CATONSVILLE	EL. DISTRICT NO. 1
BALTIMORE COUNTY TYPE NUMBER 1		

MICROFILMED





STONE OUTLET SEDIMENT TRAP ST. V # 2

DRAINAGE AREA	1.93 AC.
STORAGE REQ'D	3474
STORAGE SHOWN	3600 CF
STONE WEIR CREST ELEV.	530.0
EXIST. GROUND WEIR	529.0
BOTTOM ELEV.	526.0
BOTTOM DIM.	30' x 14'
CLEARANCE ELEV.	531.0
EMBANKMENT ELEV.	531.0
OUTLET LENGTH	0
SIDE SLOPES	2:1

MATCHLINE ( See Sheet 5 )

3385

CITY OF BALTIMORE DIRECTOR: <i>[Signature]</i> DATE: 1/4/94 DEPT. OF PUBLIC WORKS										D.E.P.R.M. APPROVED FOR SEDIMENT CONTROL <i>[Signature]</i> DATE: 1/19/90					APPROVED FOR SEDIMENT CONTROL <i>[Signature]</i>				
DESIGNED: R.H.	KCI/PII JOINT VENTURE	BUREAU OF ENGINEERING	HIGHWAYS	STRUCTURES	STORM DRAINAGE	WATER	SEWER	TRAFFIC	UTILITIES	BUREAU OF ENGINEERING	DEPARTMENT OF PUBLIC WORKS	LEVEL BK.	KEY SHEET	SCALE	BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING	JOB ORDER NO.			
DRAWN: O.C.	ENGINEER: <i>[Signature]</i>	REVIEWED: RCB	JWA	RDC	CW	P.V.R.	ASE	APPROVED: <i>[Signature]</i>	DATE: 12-18-90	RECORD DRAWING	11/23/93	474	91012 WXO	H-NE	1" = 20'	3-5-3			
CHECKED: R.U.	DATE: 8/8/88	LIC NO: 19568	DATE: 12/19/90	12/17/90	12/17/90	12/17/90	12/17/90	DATE: 12-18-90	DATE: 12-18-90	4 SW 27 & 28	DATE: 12-18-90	REVISION	BY	PROFILE VERT.	SEDIMENT CONTROL AND GRADING PLAN	SHEET 6 OF 29			
BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING SUBDIVISION CATONSVILLE EL. DISTRICT NO. 1 BALTIMORE COUNTY TYPE NUMBER 1															HO. CO. CONT. NO. 44-3385 HO. CO. C.P. NO. W-8051 C.W.O. 47080	FILE: 3 MICROFILMED			

Owner's/Developer's Certification:  
 I/We hereby certify that any clearing, grading, construction and/or development will be done pursuant to this plan and that any responsible personnel involved in this construction project will have a Certificate of Attendance at a Department of Natural Resources approved training program for the control of sediment and erosion before beginning the project. I/We also certify that the site will be inspected at the end of each working day, and that any needed maintenance will be completed so as to insure that all sediment control practices are left in operational condition. I/We authorize the right of entry for periodic on-site evaluation by the Baltimore County Soil Conservation District Board of Supervisors or their authorized agents.

*Gene L. Neff*  
 Signature Owner/Developer Title Date

*Gene L. Neff*  
 Print Name Title For Use of PUB. WORKS

Consultant's Certification:  
 I certify that this plan of erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site, and that this plan was prepared in accordance with the requirements of the Baltimore County Department of Environmental Protection and Resource Management and the current State of Maryland Specifications for Soil Erosion and Sediment Control. I have reviewed this erosion and sediment control plan with the owner/developer.

*Richard Umbarger*  
 Signature Date  
 Print Name Title License Number

**SEQUENCE OF OPERATIONS**

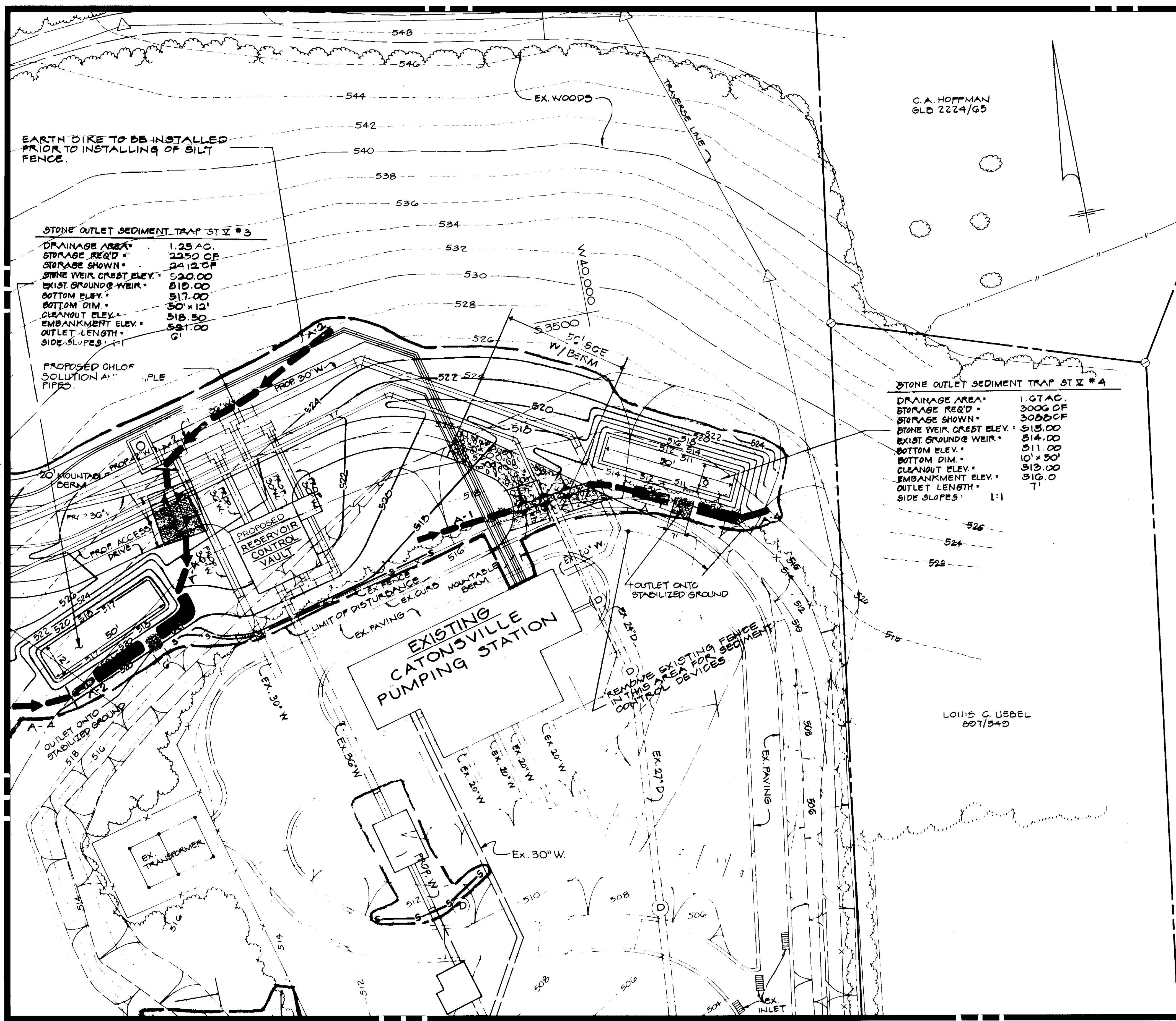
1. NOTIFY BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT, SEDIMENT CONTROL DIVISION (887-3228), AT LEAST 48 HOURS PRIOR TO BEGINNING WORK.
2. CLEAR AND GROUND FOR EROSION CONTROL MEASURES AND DEVICES ONLY.
3. INSTALL EROSION AND EROSION CONTROL MEASURES AND DEVICES EXCEPT AS NOTED (SEE BELOW IN SEQUENCE NOTE 8).
4. NOTIFY BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT, SEDIMENT CONTROL DIVISION, UPON COMPLETION OF SAID INSTALLATION.
5. WITH THE APPROVAL OF BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT AND THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GROUND REMAINDER OF SITE.
6. CLEAR AND GROUND REMAINDER OF SITE, STOCKPILE TOPSOIL WHERE NECESSARY.
7. REMOVE GRASS SITE (EXCEPT S.W.M. AREA).
8. INSTALL SHED PITS AS REQUIRED IN AREA OF RESERVOIR EXCAVATION.
9. BUILDING CONSTRUCTION PHASE: ACCESS DRIVE, RESERVOIR, AND UTILITIES.
10. CONSTRUCTION STORM WATER MANAGEMENT FACILITY.
11. AS SOON AS PROPOSED GRADING AND CONSTRUCTION IS COMPLETED, ALL DISTURBED AREAS TO BE STABILIZED.
12. REMOVE TRAP # 5 WITH THE PERMISSION OF SEDIMENT CONTROL INSPECTOR.
13. ULTIMATE GRADING TO BE COMPLETED AND STABILIZED SAME DAY, AS SHOWN ON SHEET 'D'.
14. WHEN ALL DISTURBED AREAS HAVE BEEN STABILIZED BY PAVING AND WALKS, OR BY METHODS DESCRIBED IN "STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL," ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR.
15. STABILIZE ANY AREAS DISTURBED BY THIS PROCESS.

Owner's/Developer's Certification - Air Quality:

I acknowledge that I am responsible under the Code of Maryland Regulations (16.06.03) to prevent particulate matter from becoming airborne due to grading, land clearing, excavation, construction or other related activities. I have received a copy of "Guidelines to the Air Pollution Regulations for Controlling Excessive Air Dusts on Activity Sites" which includes a copy of COMAR 16.06.03. I will contact the Bureau of Air Quality, Field Services Section (494-3775) at least three days prior to beginning work.

*Gene L. Neff*  
 Signature of Owner/Developer Title Date

*Gene L. Neff*  
 Print Name Director of Public Works



**STONE OUTLET SEDIMENT TRAP ST #3**  
 DRAINAGE AREA: 1.25 AC.  
 STORAGE REQ'D: 2250 CF  
 STORAGE SHOWN: 2412 CF  
 STONE WEIR CREST ELEV.: 520.00  
 EXIST. GROUND @ WEIR: 510.00  
 BOTTOM ELEV.: 517.00  
 BOTTOM DIM.: 30' x 12'  
 CLEANOUT ELEV.: 518.50  
 EMBANKMENT ELEV.: 521.00  
 OUTLET LENGTH: 6'  
 SIDE SLOPES: 4:1

**STONE OUTLET SEDIMENT TRAP ST #4**  
 DRAINAGE AREA: 1.67 AC.  
 STORAGE REQ'D: 3006 CF  
 STORAGE SHOWN: 3006 CF  
 STONE WEIR CREST ELEV.: 515.00  
 EXIST. GROUND @ WEIR: 514.00  
 BOTTOM ELEV.: 511.00  
 BOTTOM DIM.: 10' x 50'  
 CLEANOUT ELEV.: 513.00  
 EMBANKMENT ELEV.: 516.0  
 OUTLET LENGTH: 7'  
 SIDE SLOPES: 1:1

D.E.P.R.M.  
 APPROVED FOR SEDIMENT CONTROL  
*[Signature]* 1/19/96  
 DATE

SOIL CONSERVATION  
 APPROVED FOR SEDIMENT CONTROL  
*[Signature]*  
 DATE

3385

CITY OF BALTIMORE		DIRECTOR: <i>[Signature]</i> DATE: 11/13/91		DEPT. OF PUBLIC WORKS	
DATE	RIGHT OF WAY	REI	PERMIT REQUESTED	CONTRACT NO.	RECORD DRAWING
			PERMIT NUMBER	91012 WYO	11/23/93
			GRADE ESTABLISHED		
			PROFILE NUMBER		
DESIGNED: R.H.	ENGINEER: <i>[Signature]</i>	REVIEWED: <i>[Signature]</i>	DATE: 12/16/90	DATE: 12/17/90	DATE: 12/17/90
DRAWN: C.C.	DATE: 12/16/90	DATE: 12/17/90	DATE: 12/17/90	DATE: 12/17/90	DATE: 12/16/90
SCALE: 1" = 20'	BUREAU OF ENGINEERING		DEPARTMENT OF PUBLIC WORKS		LEVEL BK
PLAN: 1" = 20'	KEY SHEET: H-NE		RECORD DRAWING: 11/23/93		POSITION SHEET
PROFILE: 1" = 20'	APPROVED: <i>[Signature]</i>		DATE: 12-16-90		4 SW 27 & 28
	DATE: 12-16-90		DATE: 12-16-90		DATE: REVISION: BY:
BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING			CATONSVILLE RESERVOIR		
SUBDIVISION CATONSVILLE			EL. DISTRICT NO. 1		
BALTIMORE COUNTY TYPE NUMBER 1			MICROFILMED		
HO. CO. CONT. NO. 44-3385			JOB ORDER NO. 3-5-3		
HO. CO. C.P. NO. W-8051			SHEET 7 OF 29		
C.W.O. 47080			DWG. NO. 90-1961		
			FILE: 3		









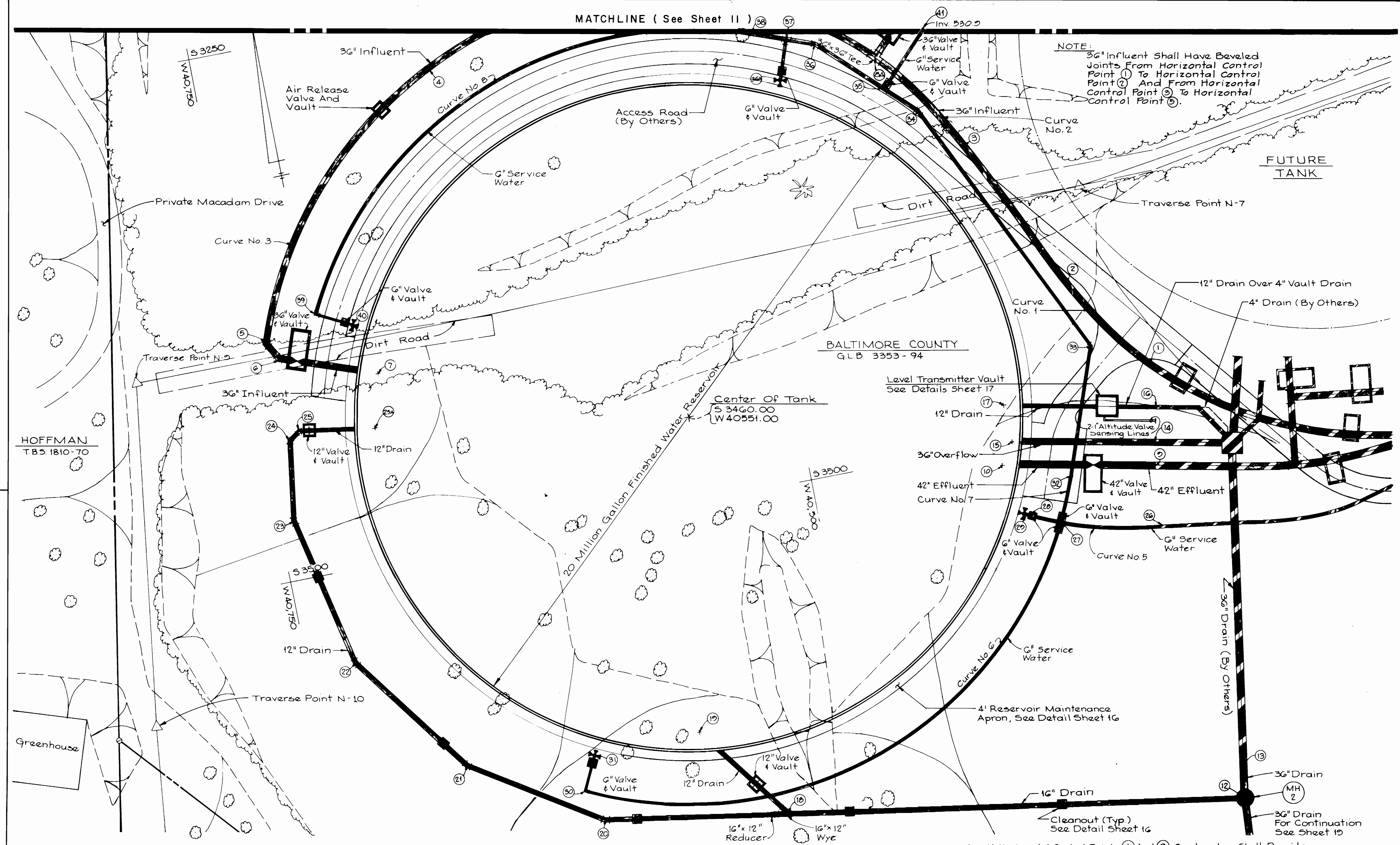


sheet 11-29 see Oversize file

slt. 10

3385

MATCHLINE ( See Sheet 11 )



NOTE:  
36" Influent Shall Have Beveled Joints From Horizontal Control Point ① To Horizontal Control Point ② And From Horizontal Control Point ③ To Horizontal Control Point ⑤.

BALTIMORE COUNTY  
G.L.B. 3353-94

Center Of Tank  
S 3460.00  
W 40551.00

**NOTES:** ( See Sheet 11 Also For Continuation Of Notes )

- All Piping Shown Thus To Be Constructed By Others.
- ⑩ - Indicates Point Number Of Horizontal Control Point. See Stakeout Information Sheet 12 For Corresponding Station, Coordinates And Description.
- For Sediment Control And Grading Plan See Sheet 5.

4. At Horizontal Control Points ① And ⑨ Contractor Shall Provide And Install A Test Bulkhead And Test And Disinfect Pipe. After Disinfection Is Completed And Approved, Contractor Shall Leave Bulkhead In Place For Future Connection By Others. The Contractor May Be Directed By The Engineer To Provide A Closure Piece To Connect The Pipes To Existing Pipes By Others As A Contingent Item. See Specifications.

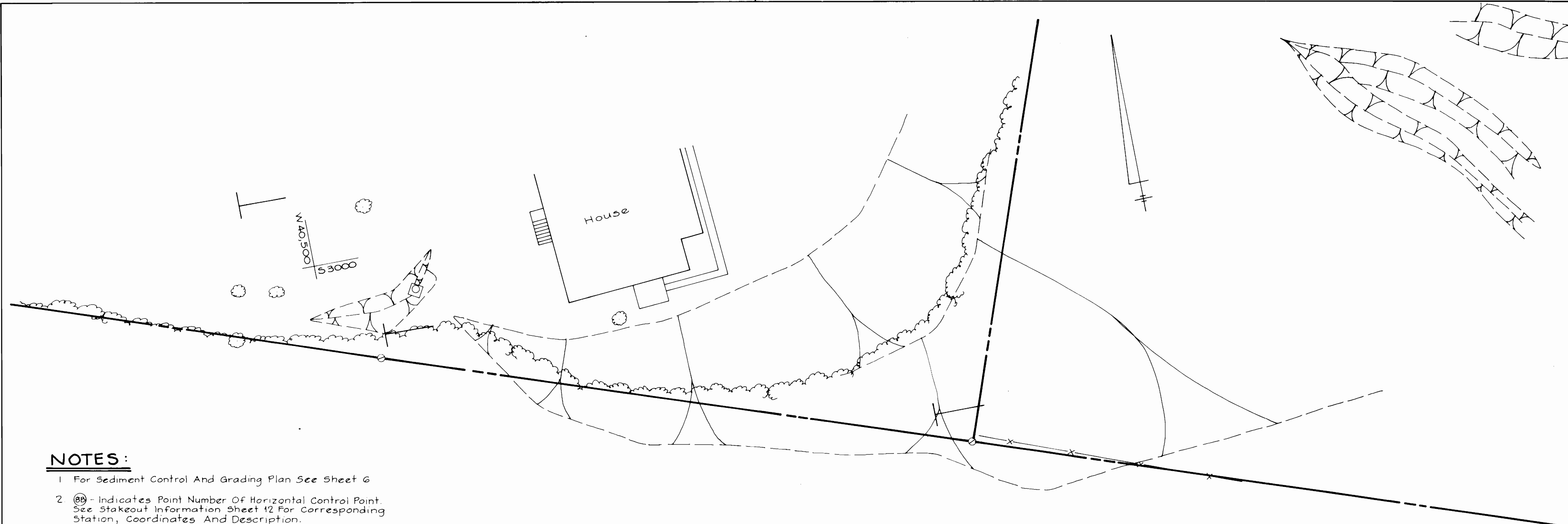
CITY OF BALTIMORE															
DIRECTOR DEPT. OF PUBLIC WORKS				DATE 11/1/91				DATE 12/17/90				DIVISION BUREAU OF WATER AND WASTEWATER			
DATE	RIGHT OF WAY	REF.	ROAD PERMIT AND GRADES			P. W. A. DIR. NO.	CONTRACT NO.	REVISED AS PER RECORD PRINT							
			PERMIT REQUESTED			24	91012 WXO	J.O.	DRAFTSMAN	DATE					
			PERMIT NUMBER					RECORD DRAWING	11/23/93						
			GRADE ESTABLISHED												
			PROFILE NUMBER												
DESIGNED	J.C.I./P.I.I. JOINT VENTURE	BUREAU OF ENGINEERING	HIGHWAYS	STRUCTURES	STORM DRAINS	WATER	SEWER	FIELD ENGINEER	BUREAU OF ENGINEERING	DEPARTMENT OF PUBLIC WORKS	LEVEL BK.	KEY SHEET			
DRAWN	J.M.G.	ENGINEER	J.H. BOURDON	REVIEWED	RCB	JWA	RAC	CW	PXR	ASE	APPROVED	Paul Johnson			
CHECKED	I.L.Z.	DATE	12/11/90	LIC. NO.	3466	DATE	12/10/90	DATE	12/17/90	DATE	12/17/90	DATE			

HO. CO. CONT. NO. 44-3385	HO. CO. C.P. NO. W-8051	C.W.O. 47080	JOB ORDER NO.
BALTIMORE COUNTY	DEPARTMENT OF PUBLIC WORKS	BUREAU OF ENGINEERING	3-5-3
CATONVILLE RESERVOIR SITE PLAN			SHEET 10 OF 29
SUBDIVISION CATONVILLE			DWG. NO.
EL. DISTRICT NO. 1			90-1964
BALTIMORE COUNTY TYPE NUMBER 1			FILE: 3

MICROFILM



\* Store shts  
11-29 in  
OVERSIZE  
file



**NOTES:**

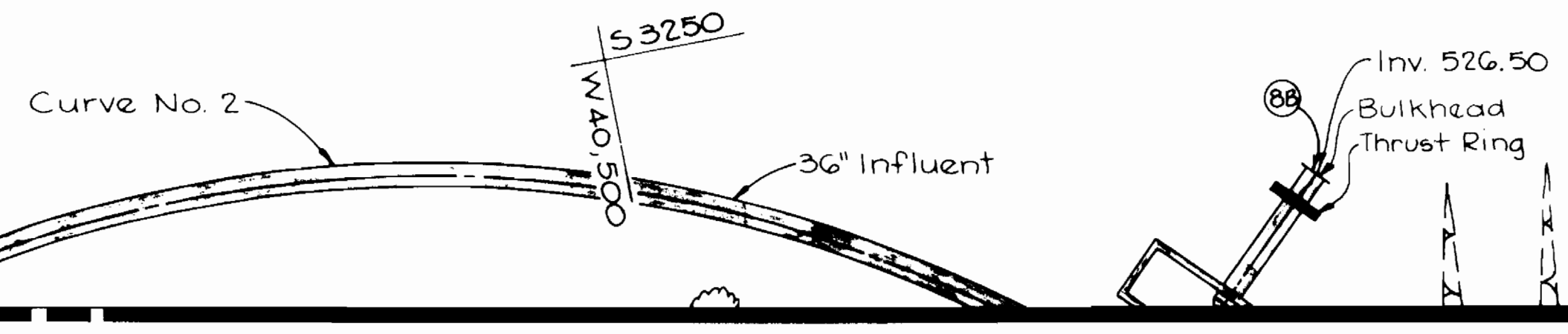
1. For Sediment Control And Grading Plan See Sheet 6
2. (BB) - Indicates Point Number Of Horizontal Control Point. See Stakeout Information Sheet 12 For Corresponding Station, Coordinates And Description.
3. For Thrust Ring And Bulkhead Detail See Sheet 16.

BALTIMORE COUNTY  
GLB 3353-94

**NOTES: (CONT. FROM SHEET 10)**

5. At Horizontal Control Points (13), (14), (16) And (26) Contractor Shall Provide And Install Cap And Test Pipe. After Pipe Testing Is Completed And Approved, Contractor Shall Connect The New Pipe To Existing Pipe By Others. If The Pipe By Others Is Not In Place Contractor Shall Test Pipe And Leave Cap In Place For Future Connection By Others. For 6" Service Water The Pipeline Shall Also Be Disinfected Prior To Connection To Existing Main Or Final Approval Is Given.
6. The 2' Altitude Valve Sensing Lines Shall Be Installed, Tested And Disinfected. After Pipes Are Approved, Contractor Shall Connect To Existing 1" Pipes By Others. If Existing Pipes Are Not In Place, Contractor Shall Cap Pipes Adjacent To Point (16) For Future Connections By Others.
7. All Pipes Entering Or Exiting The Reservoir Shall Be Pressure Tested Starting At The Isolation Valve Beyond The Limits Of The Tank Foundation. Under No Circumstance Shall Any Portion Of Pipe Within Or Under The Tank Structure Be Pressure Tested, Except As Described In The Specifications.
8. Fire Hydrant Settings Shall Conform To Baltimore County Standard Detail W-3A.
9. The Contractor Shall Provide A Labelled Stake Over The End Of Each Pipeline That Is Not Connected To An Existing Pipeline By Others. Stake Shall Be 1" x 2" With A Min. Embedment Of 18" And Project A Minimum Of 12" Above Grade.
10. Air Release Valve And Vault Shall Be In Accordance With Baltimore County Standard Detail W-8.
11. Buttress Dimensions For 16" x 12" Wye Shall Be The Same As A 12" Tee.
12. The 6" Service Water Shall Be Constructed Of Maximum 18'-0" Lengths Of Pipe.
13. All Drain Lines From The Reservoir To The Respective Isolation Valve Shall Be Disinfected.

53250  
W 40,500



MATCHLINE ( See Sheet 10 )

3385

CITY OF BALTIMORE												DESIGNED T.E.S.		KCI/PII JOINT VENTURE		BUREAU OF ENGINEERING		HIGHWAYS		STRUCTURES		STORM DRAINS		WATER		SEWER		FIELD ENGINEER		BUREAU OF ENGINEERING		DEPARTMENT OF PUBLIC WORKS		LEVEL BK.		KEY SHEET		SCALE		BALTIMORE COUNTY		DEPARTMENT OF PUBLIC WORKS		BUREAU OF ENGINEERING		JOB ORDER NO.	
DIRECTOR DATE				CHIEF, UTILITY ENG. DIVISION DATE				PERMIT REQUESTED		PERMIT NUMBER		GRADE ESTABLISHED		PROFILE NUMBER		P.W.A. DIR. NO.		CONTRACT NO.		REVISED AS PER RECORD PRINT		J.O.		DRAFTSMAN		DATE		RECORD DRAWING		11/23/93		PLAN: 1" = 20'		SHEET 11 OF 29		DWG. NO.		90-1965		FILE: 3							
DATE		RIGHT OF WAY		REF.		ROAD PERMIT AND GRADES		424		91012 WXO		J.O.		DRAFTSMAN		DATE		RECORD DRAWING		11/23/93		DATE		REVISION		BY		PROFILE		HOR. VERT.		SUBDIVISION CATONSVILLE		EL. DISTRICT NO. 1		BALTIMORE COUNTY TYPE NUMBER 1		MICROFILMED									
DRAWN J.M.G.		ENGINEER J.H. BOURDON		REVIEWED		ALL JWA RAC CW P.Y.R. ASE		APPROVED Paul Anderson		APPROVED		DIRECTOR		DATE 12-18-90		DATE		REVISION		BY		PROFILE		HOR. VERT.		SUBDIVISION CATONSVILLE		EL. DISTRICT NO. 1		BALTIMORE COUNTY TYPE NUMBER 1		MICROFILMED															

HO. CO. CONT. NO. 44-3385  
HO. CO. C.P. NO. W-8051  
C.W.O. 47080

CATONSVILLE RESERVOIR  
SITE PLAN



PIPELINE STAKEOUT  
36" INFLUENT

POINT	STATION	SOUTH COORDINATE	WEST COORDINATE	DESCRIPTION
1	0+00	3479.03	40331.69	BEGIN 36" PCCP P.C. CURVE NO. 1
2	0+57.53	3432.09	40364.53	P.T. CURVE NO. 1
3	1+38.65	3359.08	40399.87	P.C. CURVE NO. 2
4	4+21.39	3275.48	40640.31	P.C.C. CURVE NO. 2 & 3
5	5+74.79	3387.19	40739.62	36"-45° ELBOW P.T. CURVE NO. 3
6	5+84.80	3396.20	40735.25	36"-45° ELBOW
7	6+31.79	3411.57	40690.85	36"-90° VERT. ELBOW & RESERVOIR INFLUENT
8A	1+98.89 = 0+00	3310.22	40434.61	INTERSECTION 36" TEE
8B	0+39.75	3282.11	40406.50	36" BULKHEAD

CURVE DATA

CURVE NO. 1	CURVE NO. 2	CURVE NO. 3
$\Delta = 18^{\circ} 18' 46''$	$\Delta = 90^{\circ} 00' 00''$	$\Delta = 45^{\circ} 04' 21''$
R = 180.00'	R = 180.00'	R = 195.00'
L = 57.53'	L = 282.74'	L = 153.40'
T = 29.01'	T = 180.00'	T = 80.92'
E = 2.32'	E = 74.59'	E = 16.12'

PIPELINE STAKEOUT  
36" OVERFLOW AND 36", 18" & 12" DRAINS

POINT	SOUTH COORDINATE	WEST COORDINATE	DESCRIPTION
11*	3794.85	40336.25	36" END SECTION *
12	3686.12	40328.42	MANHOLE 2
13	3672.30	40326.21	END 36" RCCP
14	3514.11	40338.55	END 36" D.I.P.
15	3500.70	40404.54	36"-90° VERT. ELBOW & RESERVOIR OVERFLOW
16	3497.71	40334.72	END 12" DRAIN, END 4" DRAIN
17	3483.45	40404.87	12"-90° VERT. ELBOW & RESERVOIR DRAIN NO. 1
18	3651.96	40541.29	P.I. 16" x 12" WYE
19	3606.13	40574.45	12"-90° VERT. ELBOW & RESERVOIR DRAIN NO. 2
20	3638.69	40623.99	12"-22 1/2° ELBOW
21	3601.15	40684.98	12"-22 1/2° ELBOW
22	3543.13	40726.95	12"-22 1/2° ELBOW
23	3473.46	40743.52	12"-22 1/2° ELBOW
24	3434.17	40737.22	12"-45° ELBOW
25	3430.85	40732.63	12"-45° ELBOW
25A	3436.55	40697.13	12"-90° VERT. ELBOW & RESERVOIR DRAIN NO. 3

\* - Location Shown On Stormwater Management Drawing Sheet 19

PIPELINE STAKEOUT  
6" SERVICE WATER

POINT	STATION	SOUTH COORDINATE	WEST COORDINATE	DESCRIPTION
26	0+00	3553.05	40347.20	BEGIN 6" W, P.C. CURVE NO. 5
27	0+42.91 = 0+00	3542.18	40388.61	6"x6" CROSS P.C. CURVES NO. 6 & 7
28	0+58.74	3535.74	40403.07	P.T. CURVE NO. 5
29	0+60.93	3534.76	40405.03	HYDRANT
30	2+84.65	3622.94	40632.08	6"-90° ELBOW, P.T. CURVE NO. 6
31	3+02.65	3606.83	40624.06	HYDRANT
32	0+24.36	3519.77	40379.10	P.T. CURVE NO. 7
33	0+85.61	3461.92	40358.98	6"-45° ELBOW
34	2+21.29	3339.79	40418.09	6"-22 1/2° ELBOW
35	2+41.53 = 0+00	3325.58	40432.50	6"x6" TEE
36	2+79.01 = 0+00	3299.25	40459.18	6"-22 1/2° ELBOW
36A	0+19.31	3313.17	40477.94	HYDRANT
37	2+92.16 = 0+00	3294.93	40471.60	6"x6" TEE
38	3+12.94	3288.10	40491.23	P.C. CURVE NO. 8
39	5+75.69	3378.92	40713.94	6"-90° ELBOW, P.T. CURVE NO. 8
40	5+93.69	3386.94	40697.83	HYDRANT
41	0+33.84	3301.49	40408.73	6" CAP & BUTTRESS

CURVE DATA

CURVE NO. 5	CURVE NO. 6	CURVE NO. 7
$\Delta = 18^{\circ} 29' 30''$	$\Delta = 89^{\circ} 36' 46''$	$\Delta = 07^{\circ} 40' 11''$
R = 182.00'	R = 182.00'	R = 182.00'
L = 58.74'	L = 284.65'	L = 24.36'
T = 29.63'	T = 180.77'	T = 12.20'
E = 2.40'	E = 74.52'	E = 0.41'

CURVE NO. 8
$\Delta = 82^{\circ} 43' 05''$
R = 182.00'
L = 262.75'
T = 160.22'
E = 60.48'

PIPELINE STAKEOUT  
42" EFFLUENT

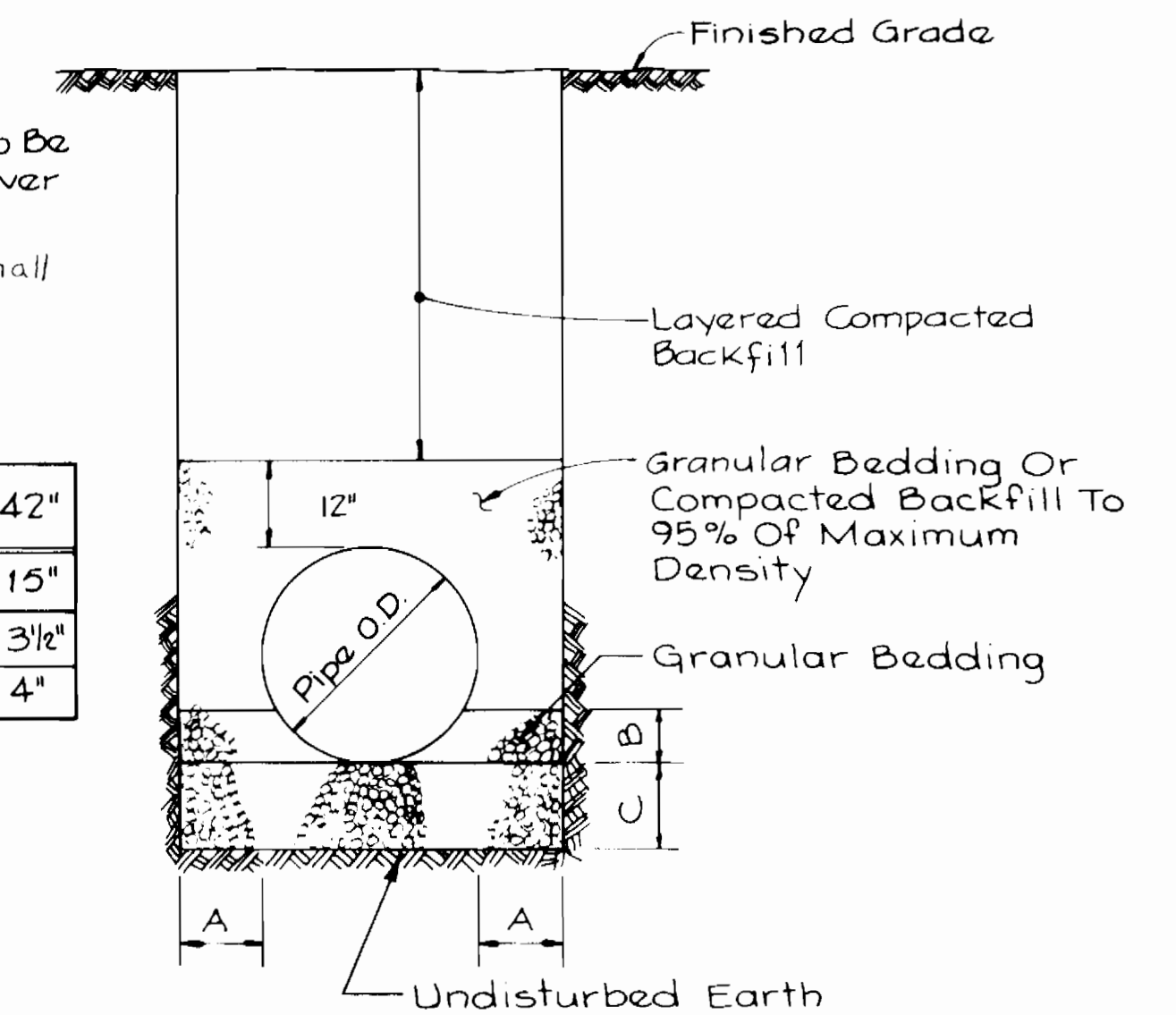
POINT	STATION	SOUTH COORDINATE	WEST COORDINATE	DESCRIPTION
9	0+00	3523.36	40340.71	BEGIN 42" PCCP
10	0+72	3508.43	40411.15	42"-90° VERT. ELBOW & RESERVOIR EFFLUENT

Note: The Contractor Shall Verify Lay Lengths And Stations  
Prior To Submission Of Lay Schedule.

NOTES:

1. Metallic Detection Tape To Be Placed 18" Below Grade Over All Pipelines.
2. Minimum Trench Width Shall Be 3'-0"

Pipe Size	4"	6"	12"	18"	30"	36"	42"
A	*	*	9"	12"	12"	15"	
B	1"	1"	1 1/2"	2 1/2"	3"	3 1/2"	
C	3"	3"	3"	4"	4"	4"	



TYPICAL TRENCH DETAIL

No Scale

3385

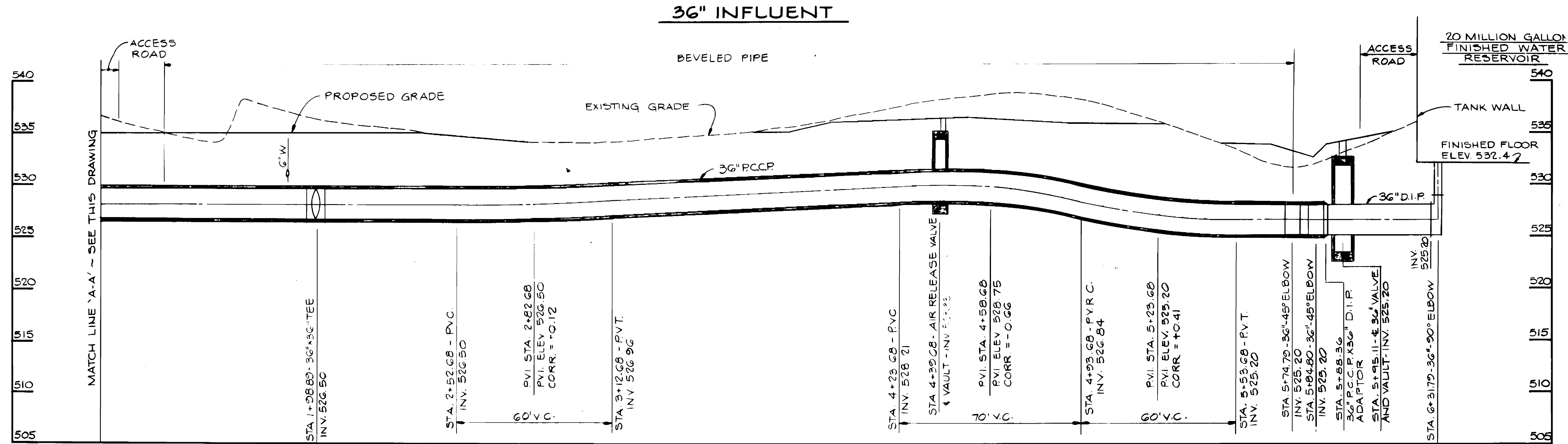
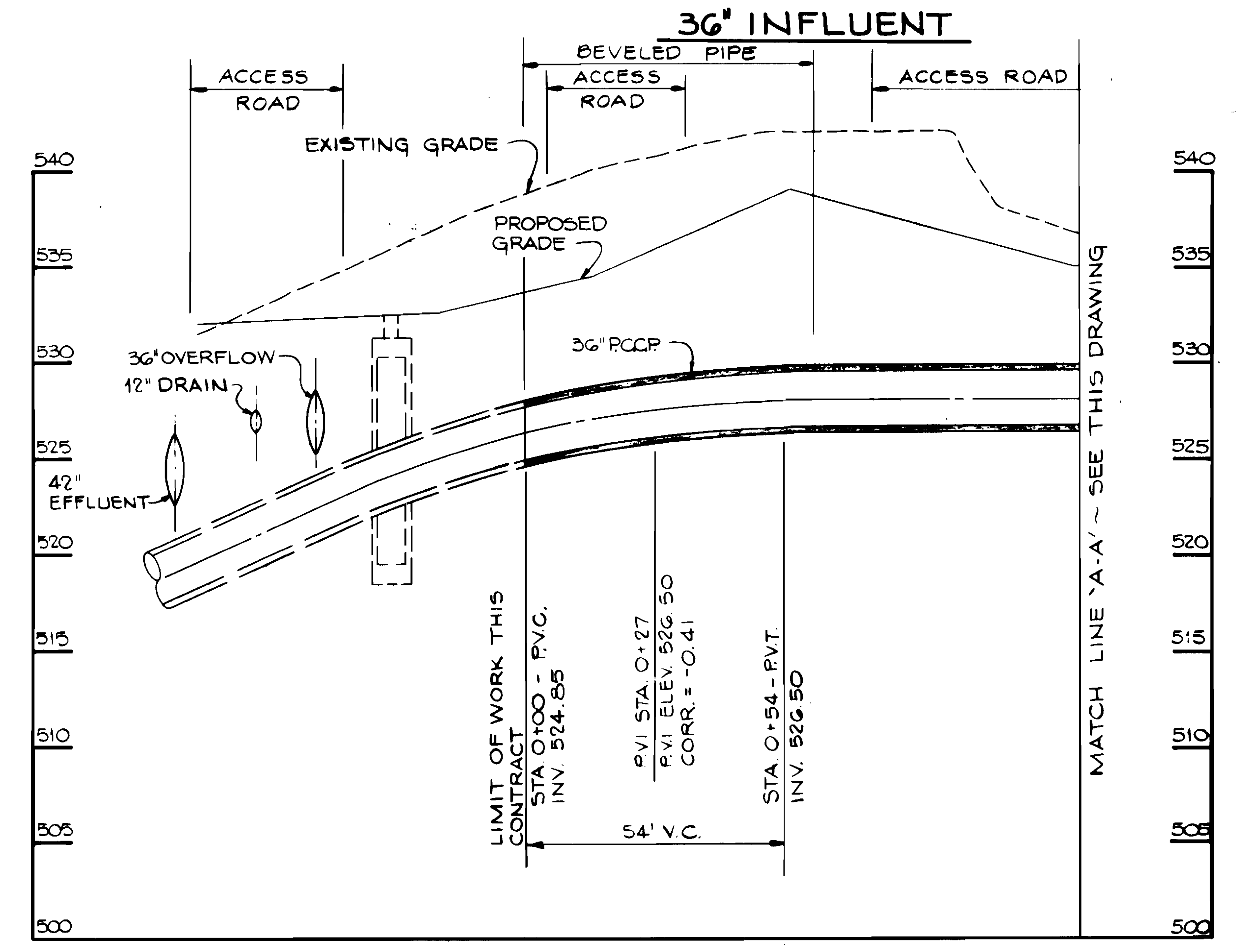
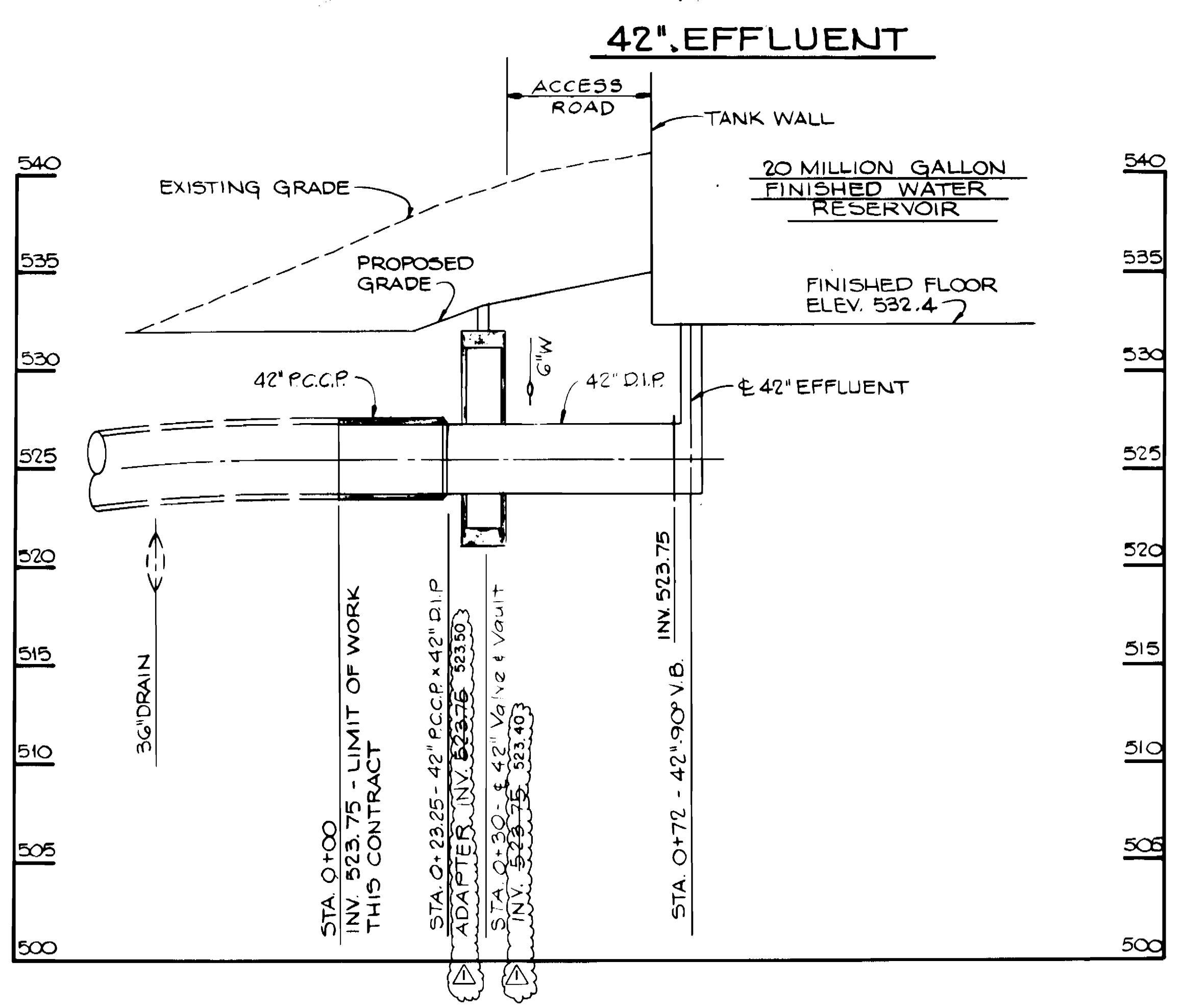
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DIRECTOR				DATE				CHIEF, UTILITY ENGR. DIVISION				DATE											
DEPT. OF PUBLIC WORKS				HIGHWAYS				STRUCTURES				SEWER DRAINS											
DATE				RIGHT OF WAY				REF.				ROAD PERMIT AND GRADES											
PERMIT REQUESTED				PERMIT NUMBER				GRADE ESTABLISHED				PROFILE NUMBER											
424				P. W. A. DIR. NO.				CONTRACT NO.				REVISED AS PER RECORD PRINT											
J.O.				DRAFTSMAN				DATE				RECORD DRAWING											
11/23/93																							
DESIGNED: T.E.S.												BUREAU OF ENGINEERING											
DRAWN: J.M.G.												DEPARTMENT OF PUBLIC WORKS											
CHECKED: T.E.S.												LEVEL BK											
DATE: 12/14/90 LIC. NO. 3466												KEY SHEET											
DATE: 12/14/90												H-NE											
DATE: 12/17/90												PLAN											
DATE: 12/17/90												DETAIL BK											
DATE: 12/17/90												POSITION SHEET											
DATE: 12/17/90												4 SW 27 & 28											
DATE: 12/18/90												DATE											
DATE: 12/18/90												REVISION											
DATE: 12/18/90												BY											
DATE: 12/18/90												PROFILE											
DATE: 12/18/90												HOR.											
DATE: 12/18/90												VERT.											

HO. CO. CONT. NO. 44-3385  
HO. CO. C.P. NO. W-8051  
CWO 47080

JOB ORDER NO.	3-5-3
SHEET	12 OF 29
DWG. NO.	90-1566
FILE:	3

BALTIMORE COUNTY		DEPARTMENT OF PUBLIC WORKS		BUREAU OF ENGINEERING	
CATONVILLE RESERVOIR					
STAKEOUT INFORMATION AND DETAIL					
SUBDIVISION CATONVILLE		EL. DISTRICT NO. 1			
BALTIMORE COUNTY TYPE NUMBER 1					





- NOTES:**
1. For Plan Location And Information Regarding Connection Of Pipeline To Work By Others, See Sheets 10 & 11.
  2. Existing Grade Is Per Baltimore County Survey (1986).
  3. Air Release Valve Vault Shall Be In Accordance With Baltimore County Standard Detail W-8.
  4. Access Road Will Be Constructed By Others.

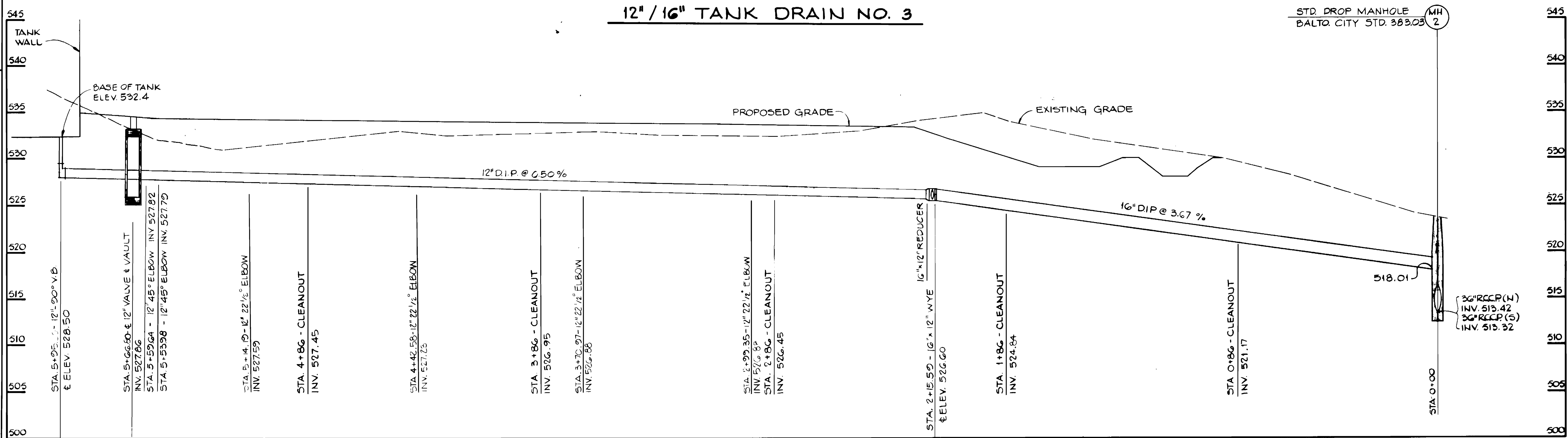
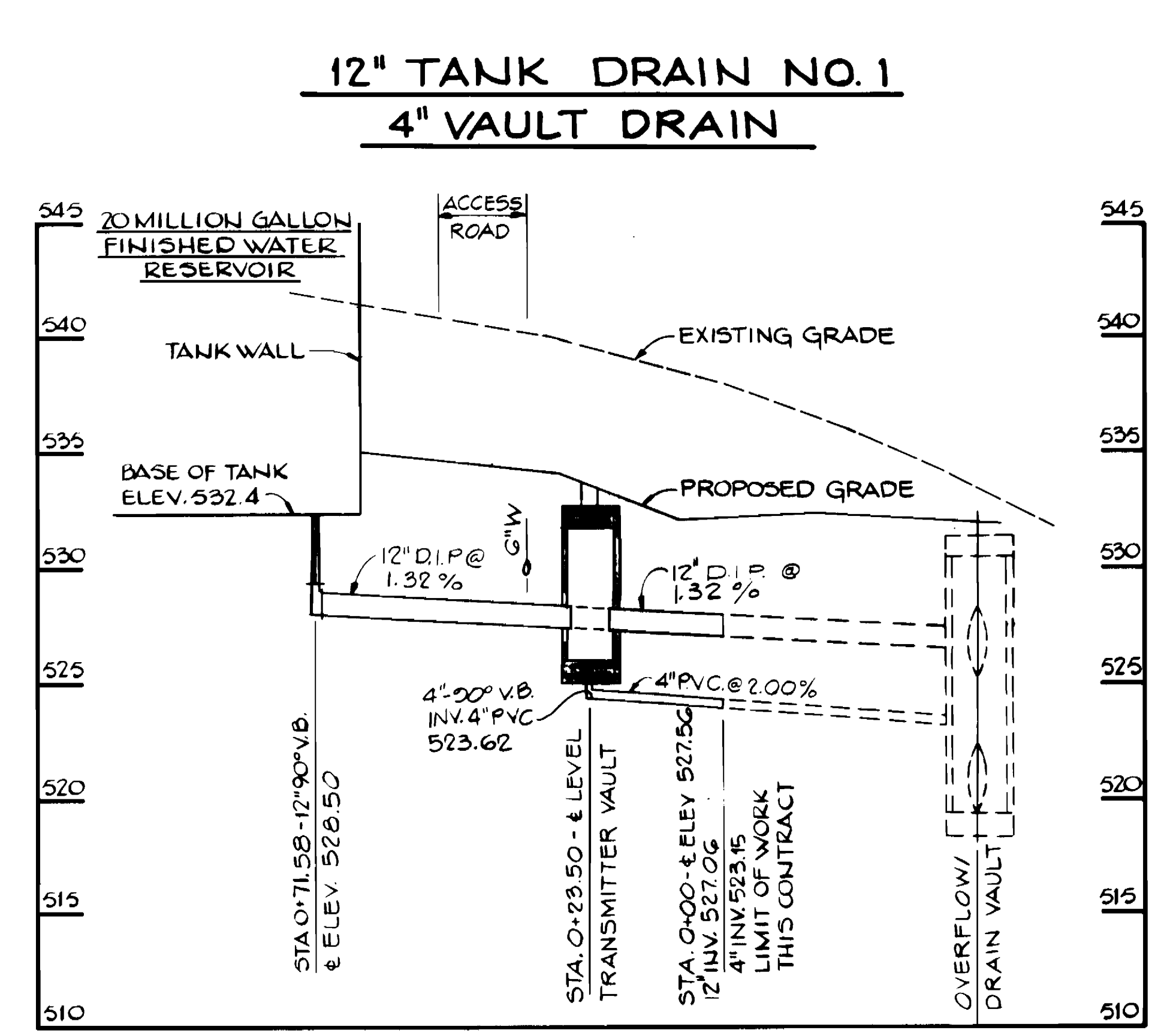
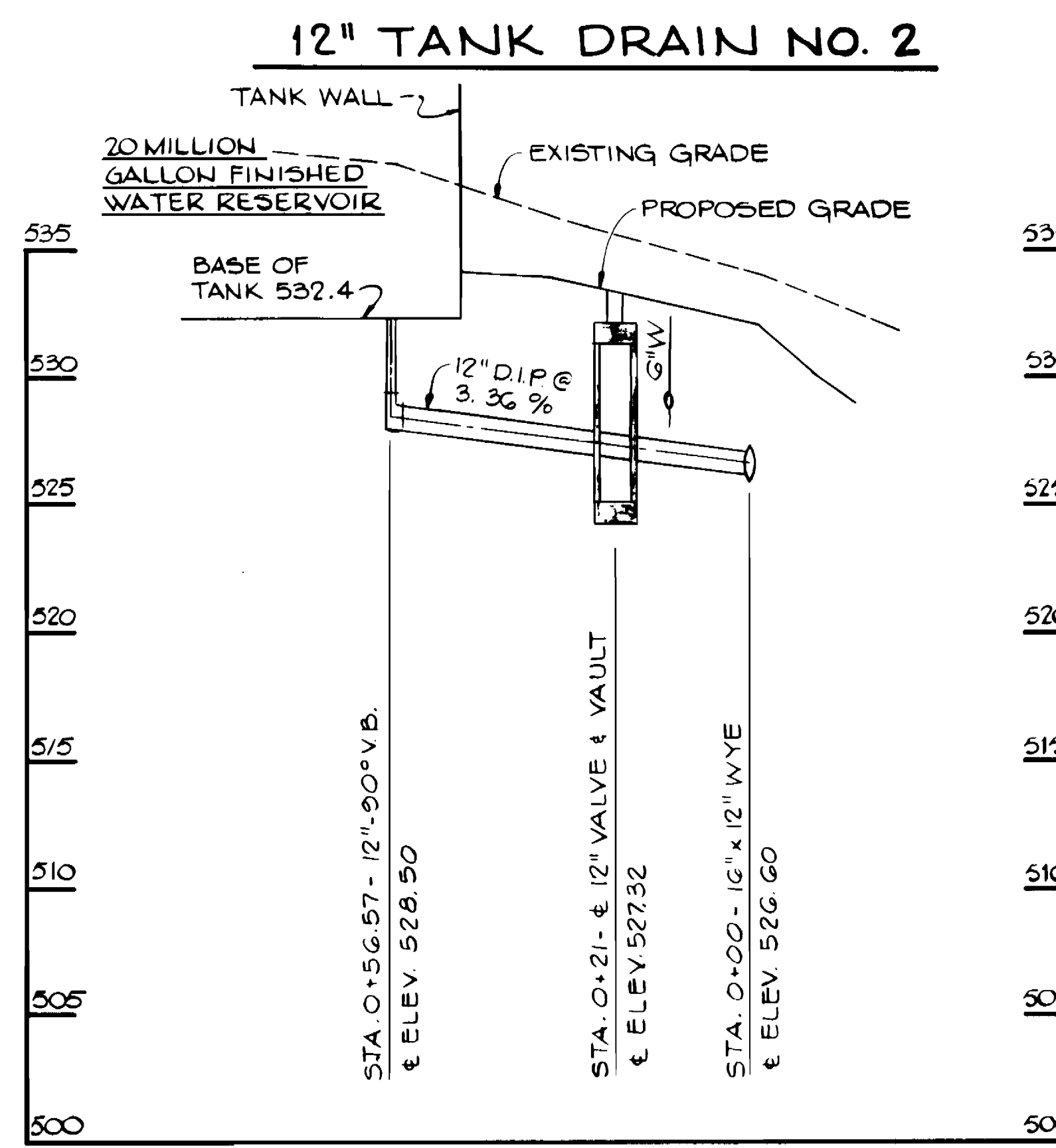
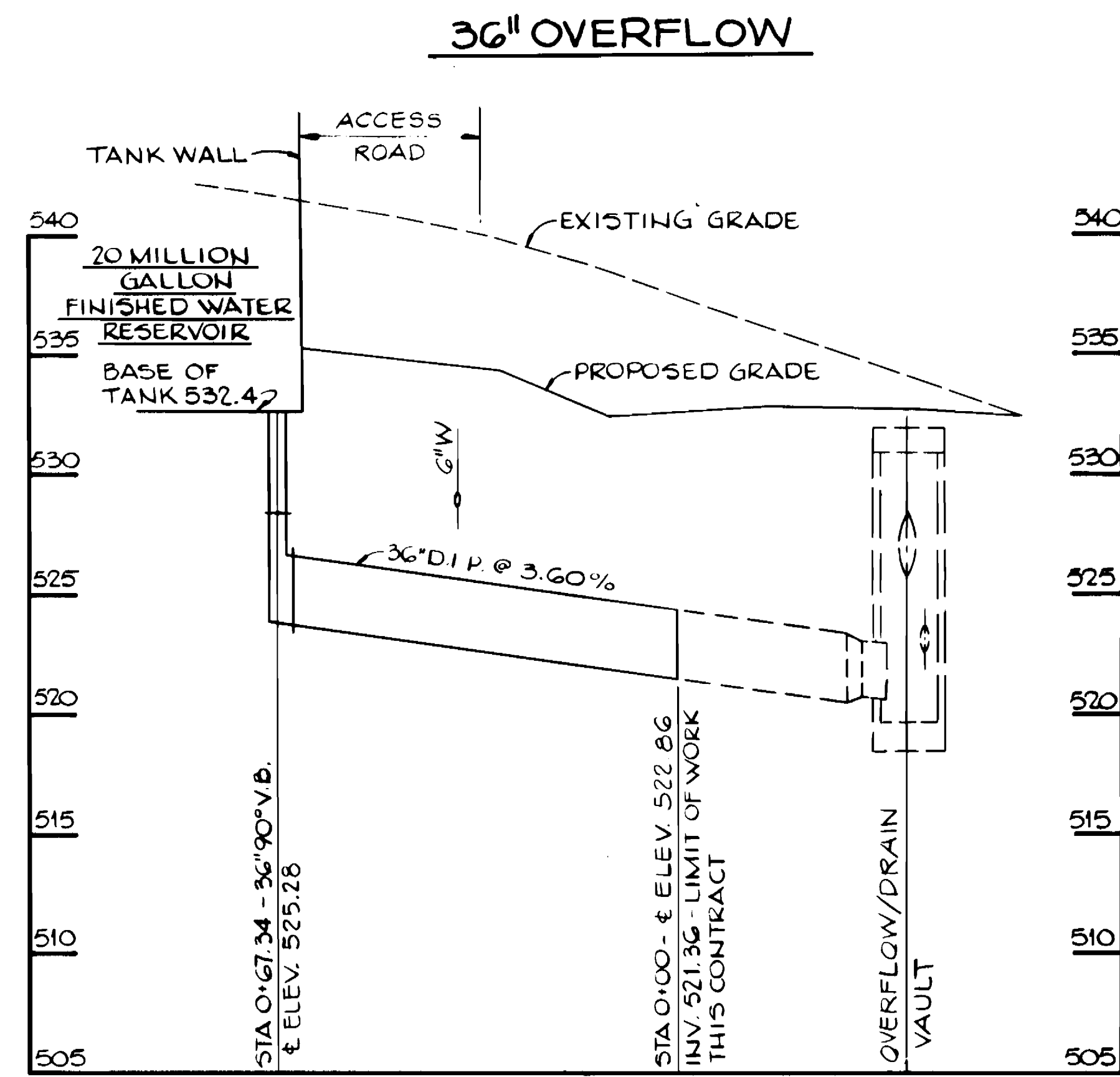
HO. CO. CONT. NO. 44-3385  
 HO. CO. C.P. NO. W-8051  
 C.W.O. 47080

3385

CITY OF BALTIMORE												DESIGNED T.E.S. KCI/PII JOINT VENTURE		BUREAU OF ENGINEERING		DEPARTMENT OF PUBLIC WORKS		LEVEL BK.		KEY SHEET		SCALE		BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING		JOB ORDER NO. 3-5-3	
DIRECTOR: <i>[Signature]</i> DATE: 11/19/90 CHIEF UTILITY ENG. DIVISION: <i>[Signature]</i> DATE: 12/17/90 DEPT. OF PUBLIC WORKS BUR. OF WATER AND WASTEWATER				ROAD PERMIT AND GRADES		P. W. A. DIR. NO. 424		CONTRACT NO. 91012 WXO		REVISED AS PER RECORD PRINT		DATE: 11/23/93		PLAN: 4 SW 27 & 28		SUBDIVISION CATONSVILLE		SHEET 13 OF 28									
DATE: 12/11/90		DATE: 12/17/90		DATE: 12/17/90		DATE: 12/17/90		DATE: 12/17/90		DATE: 12/17/90		DATE: 12/17/90		DATE: 12/17/90		DATE: 12/17/90		DATE: 12/17/90									
ENGINEER: J.H. BOURDON		REVIEWED: RCB		JWA		RAK		CUT		P.Y.R.		ASE		APPROVED: <i>[Signature]</i>		APPROVED: <i>[Signature]</i>		DATE: 12/18/90									
CHECKED: T.L.Z.		DATE: 12/11/90		DATE: 12/17/90		DATE: 12/17/90		DATE: 12/17/90		DATE: 12/17/90		DATE: 12/17/90		DATE: 12/17/90		DATE: 12/17/90		DATE: 12/17/90									

JOB ORDER NO.	3-5-3
SHEET NO.	13 OF 28
DRAWING NO.	90-1967
FILE NO.	9
BALTIMORE COUNTY TYPE NUMBER	1





**NOTES:**

- For Plan Location And Information Regarding Connection Of Pipeline To Work By Others, See Sheets 10 & 11.
- Existing Grade Is Per Baltimore County Survey (1986).
- For Level Transmitter Vault Details See Sheet 17.
- Contractor Shall Provide And Install A Flap Valve At The Terminus Of The 16" Drain At MH. 2.

HO. CO. CONT. NO. 44-3385  
 HO. CO. C.P. NO. W-8051  
 C.W.O. 47080

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING  
**CATONVILLE RESERVOIR**  
 PIPELINE PROFILES  
 SUBDIVISION CATONVILLE

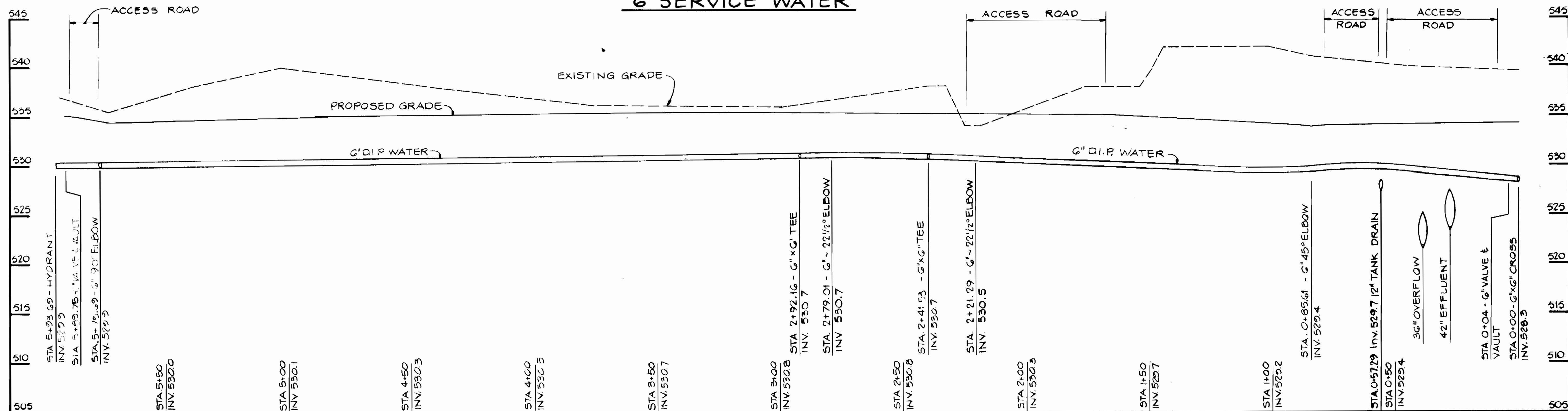
JOB ORDER NO. **3-5-3**  
 SHEET **14** OF **28**  
**90-1968**  
 BALTIMORE COUNTY TYPE NUMBER **1**

CITY OF BALTIMORE														
DIRECTOR: <i>[Signature]</i> DATE: <i>12/19/93</i> DEPT. OF PUBLIC WORKS				CHIEF, UTILITY ENG. DIVISION: <i>[Signature]</i> DATE: <i>12/21/93</i> BUR. OF WATER AND WASTEWATER										
DATE	RIGHT OF WAY	REF.	ROAD PERMIT AND GRADES	P. W. A. DIR. NO.	CONTRACT NO.	REVISED AS PER RECORD PRINT								
			PERMIT REQUESTED	424	9'012 WYO	J.O.	DRAFTSMAN	DATE						
			GRADE ESTABLISHED			RECORD DRAWING		11/23/93						
			PROFILE NUMBER											
DESIGNED T.E.S.	KCI/PII JOINT VENTURE	BUREAU OF ENGINEERING	HIGHWAYS	STRUCTURES	STORM DRAIN	WATER	SEWER	FIELD ENGINEER	BUREAU OF ENGINEERING	DEPARTMENT OF PUBLIC WORKS	LEVEL BK.	KEY SHEET	SCALE	BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING
DRAWN J.M.G.	ENGINEER J. H. BOURDON	REVIEWED	ROB	JWA	RAE	CW	P.R.	ASE	APPROVED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DETAIL BK.	H - NE	PLAN:	CATONVILLE RESERVOIR PIPELINE PROFILES
CHECKED T.L.Z.	DATE 12/11/90 LIC. NO. 3466	DATE	12/16/90	12/17/90	12/17/90	12/17/90	12/17/90	12/17/90	DATE 12-18-90	DATE 12/18/90		4-SW 27 & 28	PROFILE: HOR. 1"=20' VERT. 1"=5'	SUBDIVISION CATONVILLE

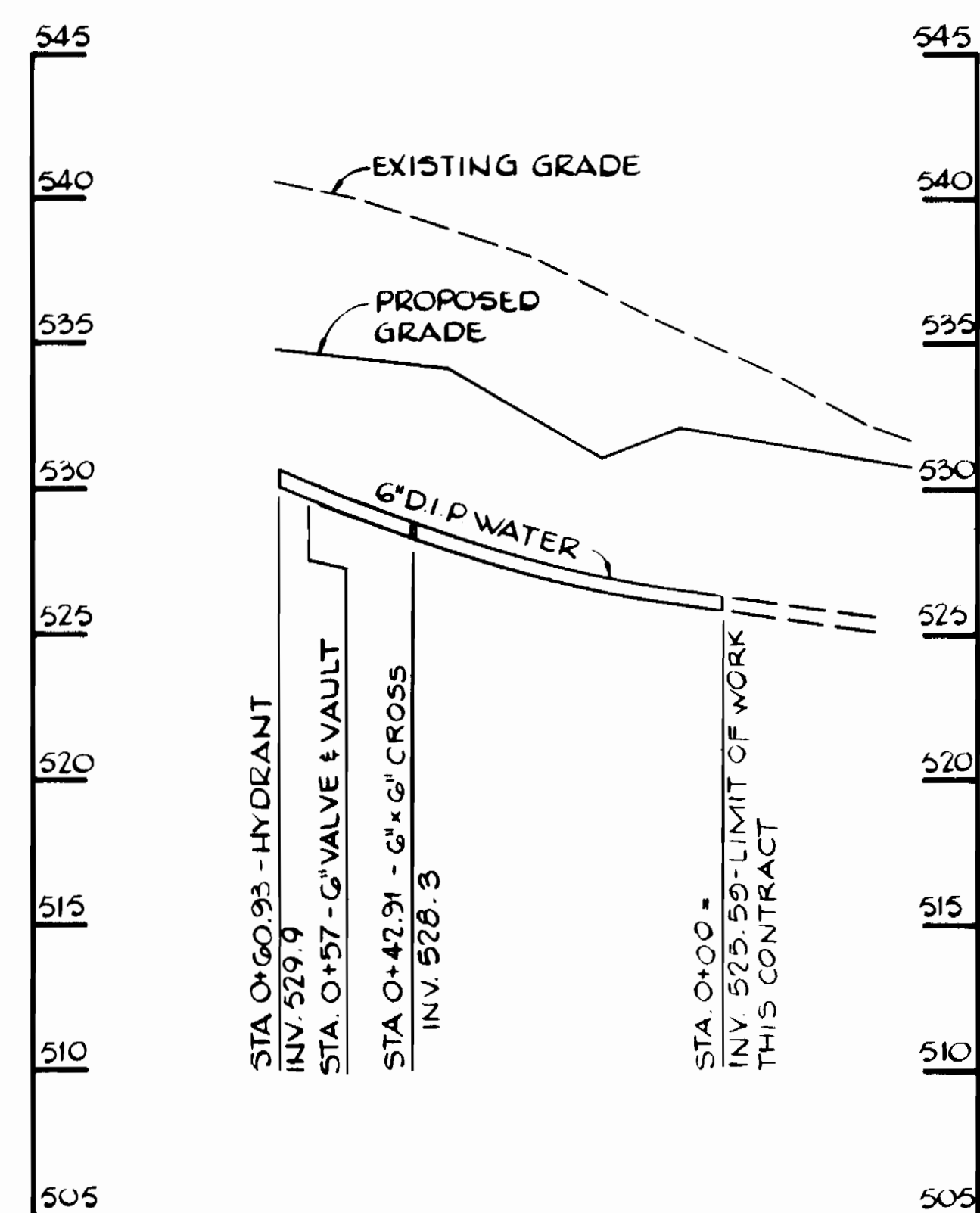
3385



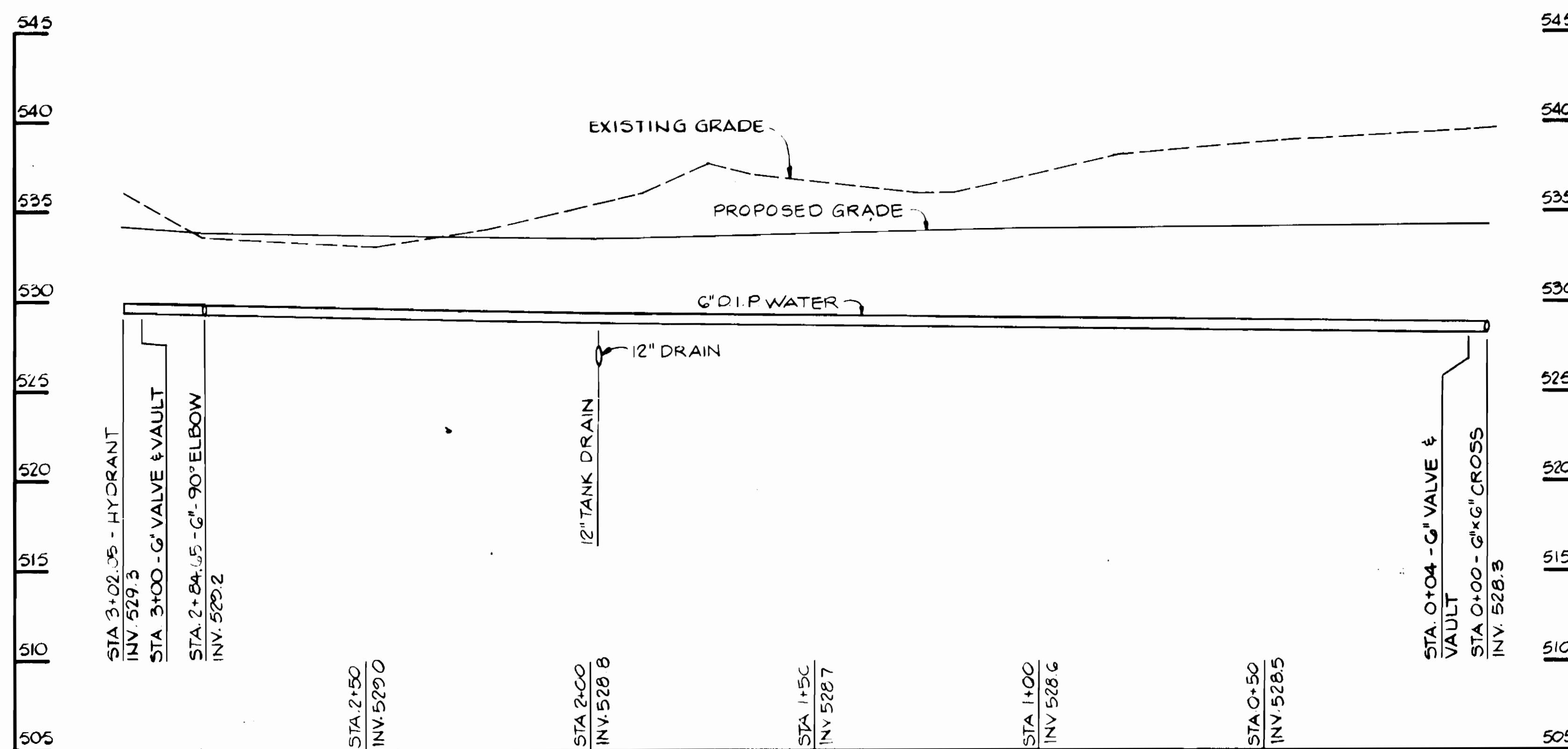
6" SERVICE WATER



6" SERVICE WATER



6" SERVICE WATER



NOTES:

1. For Plan Location And Information Regarding Connection Of Pipeline To Work By Others, See Sheets 18 & 11.
2. Existing Grade Is Per Baltimore County Survey (1986).
3. Fire Hydrant Setting Shall Conform To Baltimore County Standard Detail W-3A.

3385

CITY OF BALTIMORE													
Director: <i>L.B. 1/9</i> DATE: <i>11/19/91</i>				Chief, Utility Eng. Division: <i>Jerry Liden</i> DATE: <i>11/23/91</i>									
DEPT. OF PUBLIC WORKS				BUR. OF WATER AND WASTEWATER									
DATE	RIGHT OF WAY	REF.	ROAD PERMIT AND GRADES			P. W. A. DIR. NO.	CONTRACT NO.	REVISED AS PER RECORD PRINT					
			PERMIT REQUESTED			424	91012 WYO	J.O.	DRAFTSMAN	DATE			
			PERMIT NUMBER					RECORD DRAWING		11/23/93			
			GRADE ESTABLISHED										
			PROFILE NUMBER										
DESIGNED T.E.S.	KCI/PII JOINT VENTURE	BUREAU OF ENGINEERING	HIGHWAYS	STRUCTURES	STORM DRAINAGE	WATER	SEWER	FIELD ENGINEER	BUREAU OF ENGINEERING			DEPARTMENT OF PUBLIC WORKS	
DRAWN T.W.A.	ENGINEER J.H. BOURDON	REVIEWED	CBBS	JWA	RAC	CU	PXR	ASE	APPROVED	DATE	12-18-90	APPROVED	DATE
CHECKED T.L.Z.	DATE 12/11/90	UC. NO. 3466	DATE	12/18/90	12/17/90	12/17/90	12/17/90	12/17/90	DATE	12/18/90		DATE	12/18/90

HO. CO. CONT. NO. 44-3385

HO. CO. C.P. NO. W-8051

C.W.O. 47080

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING

CATONVILLE RESERVOIR PIPELINE PROFILES

EL. DISTRICT NO. 1

BALTIMORE COUNTY TYPE NUMBER 1

JOB ORDER NO.

3-5-3

SHEET 15 OF 29

DATE

90-1969

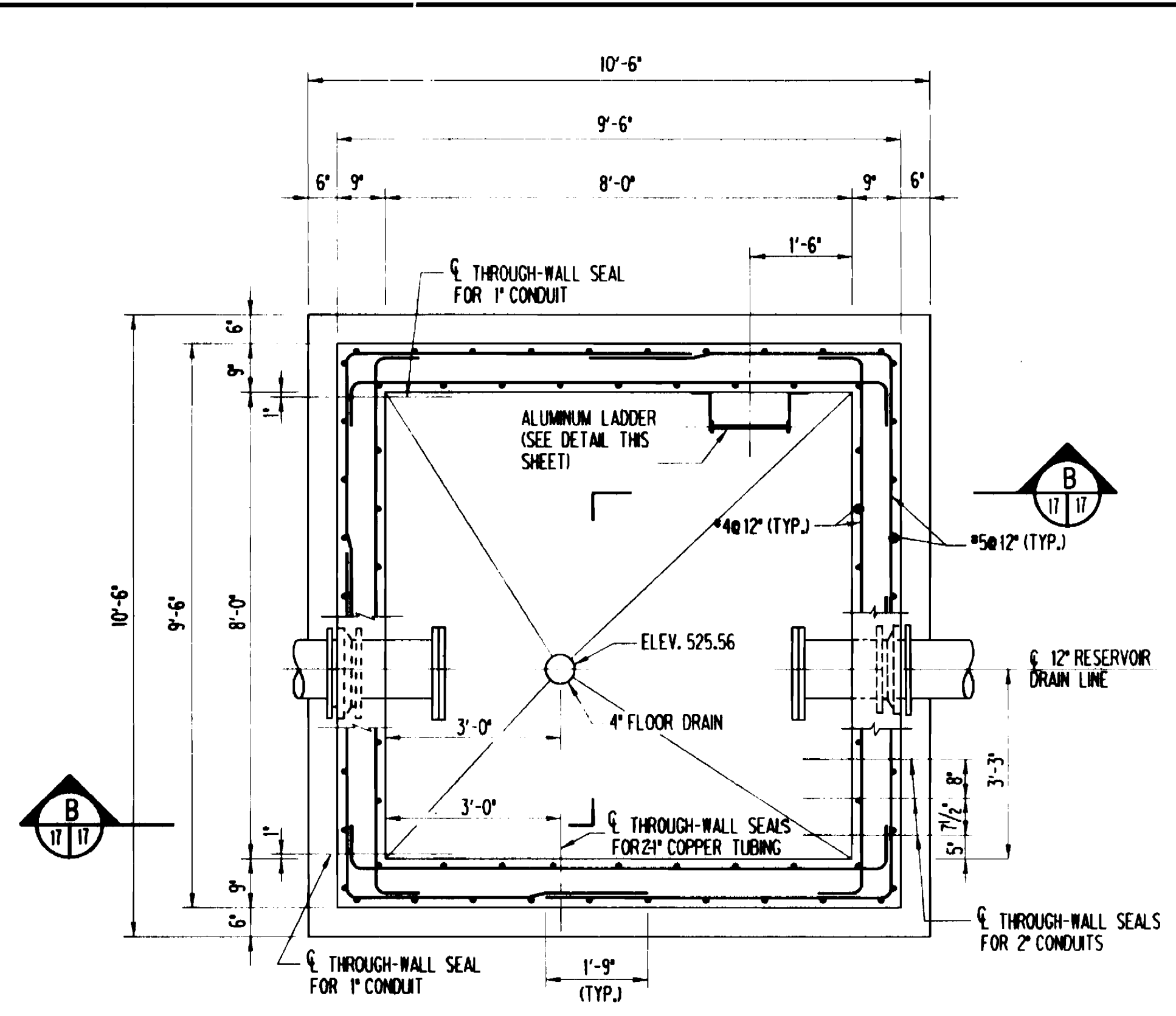
FILE

MICROFILMED

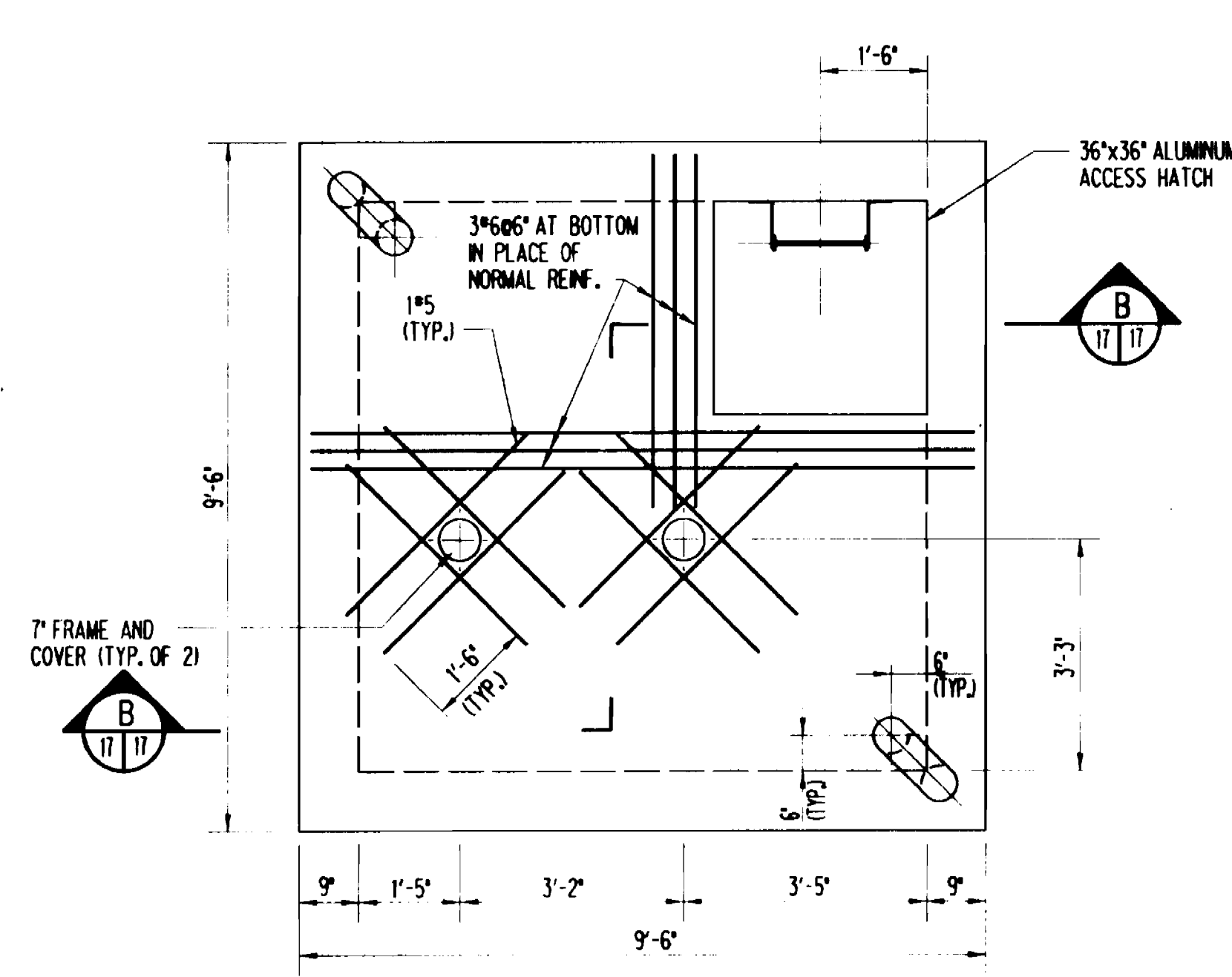




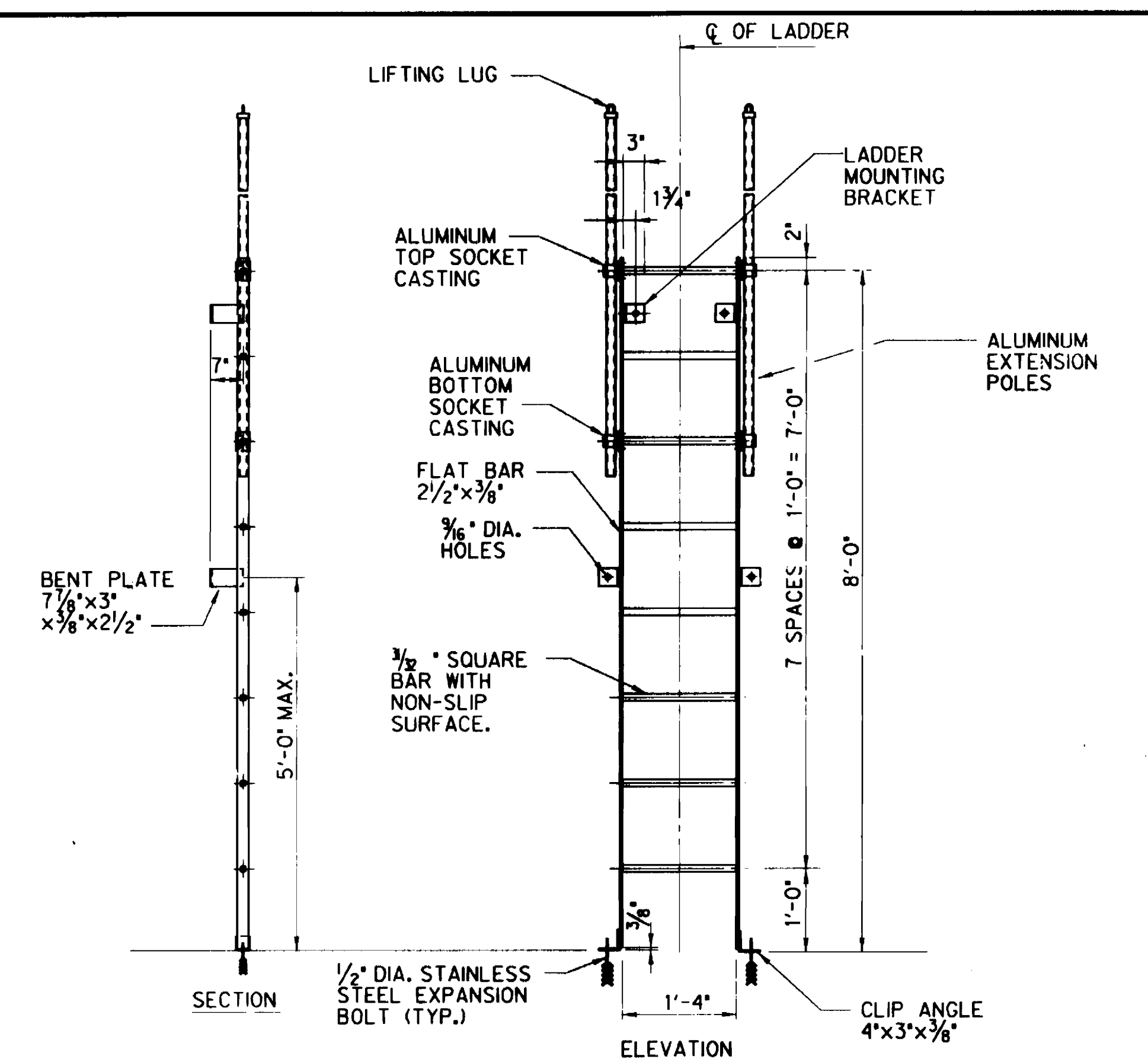




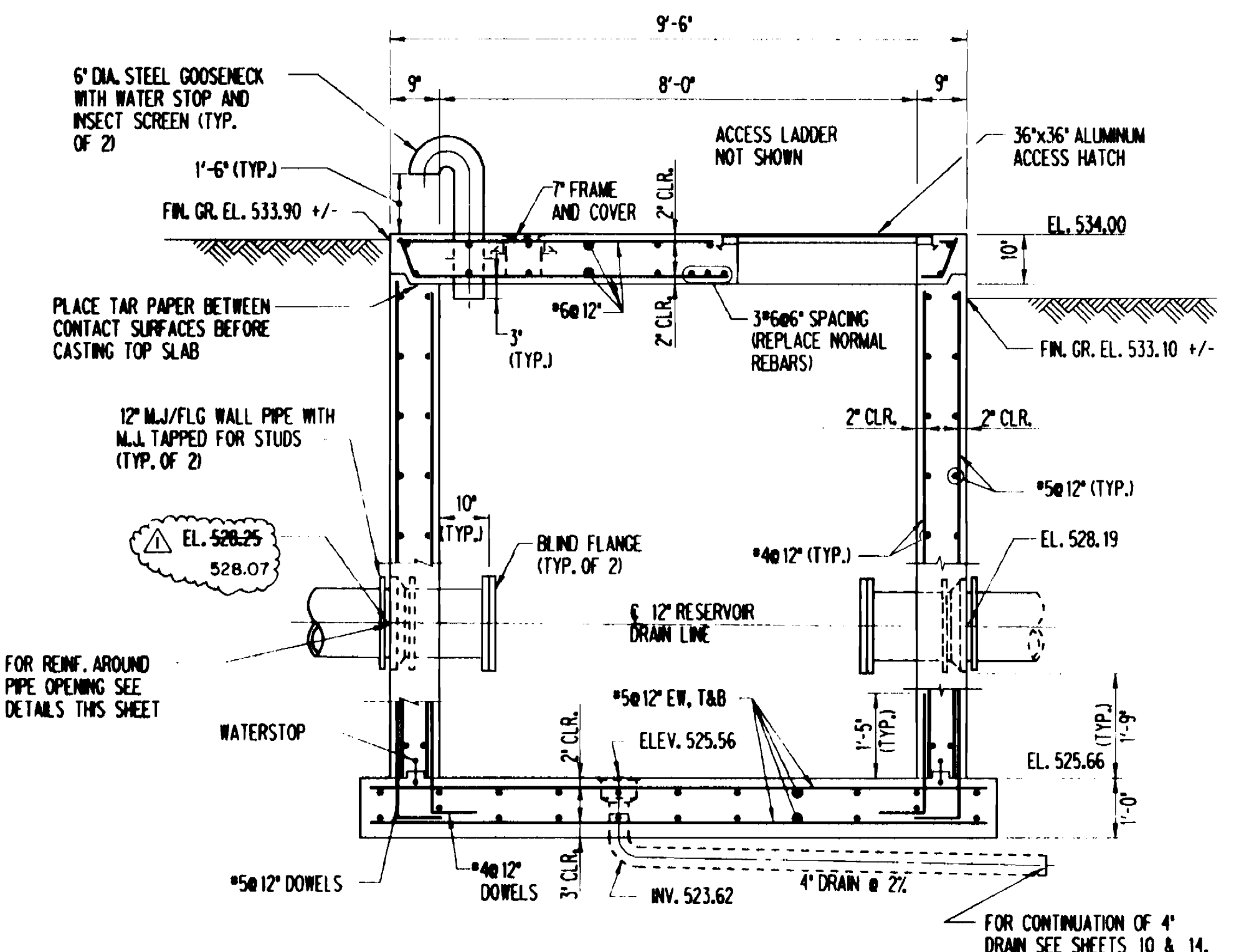
LEVEL TRANSMITTER VAULT PLAN  
SCALE: 1/2"=1'-0"



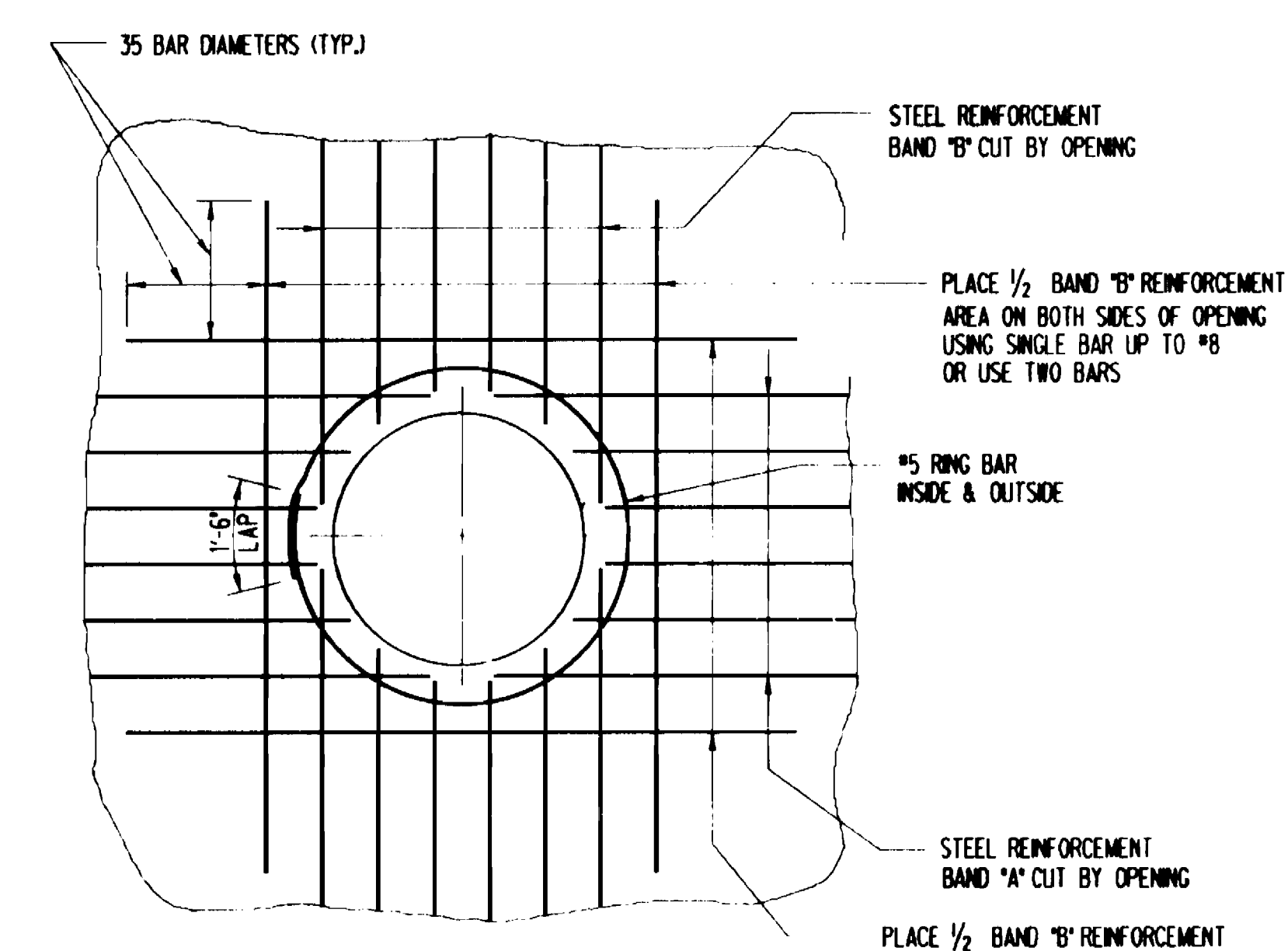
LEVEL TRANSMITTER VAULT PLAN AT TOP OF SLAB  
SCALE: 1/2"=1'-0"



ALUMINUM LADDER  
NOT TO SCALE



LEVEL TRANSMITTER VAULT SECTION B  
SCALE: 1/2"=1'-0"



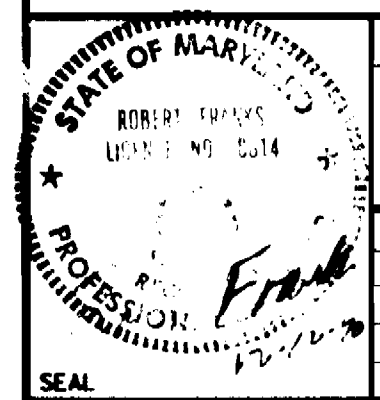
TYPICAL REINFORCEMENT DETAIL AROUND PIPE OPENING IN WALL  
NOT TO SCALE

GENERAL NOTES

- CODE: THE BOCA BASIC NATIONAL BUILDING CODE - 1987.
- DESIGN LOADS:
  - DEAD LOAD - ACTUAL DEAD LOAD
  - LIVE LOAD - EQUIPMENT CONCENTRATED LOADS AS SHOWN IN PLAN
  - TRUCK LOAD - H15-44
  - SNOW LOAD - 30 P.S.F.
  - SOIL BEARING PRESSURE - 2,000 P.S.F.
- EXCAVATION AND BACKFILL:
  - BACKFILL IN 6" LAYERS WITH HAND TAMPING OR 8" LAYERS WITH MACHINE TAMPING TO A DENSITY OF 95 PERCENT OF MAXIMUM ACCORDING TO AASHTO T-180.
- CONCRETE:
  - A. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST A.C.I. SPECIFICATIONS.
  - B. ALL STRUCTURAL CONCRETE SHALL HAVE COMPRESSIVE STRENGTH OF 3,500 PSI IN 28-DAY TEST.
  - C. REINFORCING STEEL SHALL CONFORM TO A.S.T.M. DESIGNATION A-615, GRADE 60.
  - D. REINFORCING BARS SHALL BE LAPPED A MINIMUM OF 40 BAR DIAMETERS WHEN SPLICED EXCEPT AS NOTED.
  - E. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4" x 3/4" UNLESS OTHERWISE NOTED.
  - F. ALL PIPE SLEEVES, CONDUITS, FLOOR BOXES, FRAMES, ETC. SHALL BE PLACED BEFORE CONCRETE IS POURED.
- FOR LOCATION OF LEVEL TRANSMITTER VAULT SEE SHEET 10.
- CONTRACTOR SHALL CAST THROUGH-WALL SEALS IN PLACE WHERE SHOWN THROUGH-WALL SEALS SHALL BE PROPERLY SIZED TO PERMIT INSTALLING AND SEALING INDICATED CONDUIT AND TUBING SIZE. ALL THROUGH-WALL SEALS SHALL BE INSTALLED TO PROVIDE AN INVERT ELEVATION OF 530.40 FOR THE INDICATED CONDUIT AND TUBING.
- CONTRACTOR SHALL CAP ALL ENDS OF THROUGH-WALL SEAL FOR 1" AND 2" CONDUIT TO PERMIT FUTURE INSTALLATION BY OTHERS.
- CONTRACTOR SHALL EXTEND 1" COPPER TUBING 6" INSIDE OF VAULT WALL AND CAP FOR FUTURE CONNECTION BY OTHERS.
- FLOOR SHALL SLOPE @ 1/4" PER FOOT TOWARD DRAIN.
- WALL SLEEVES FIELD GROUTED INTO PRECAST VAULT.

HO. CO. CONT. NO. 44-3385  
HO. CO. C.P. NO. W-8051  
C.W.O. 47080

JOB ORDER NO.  
**3-5-3**

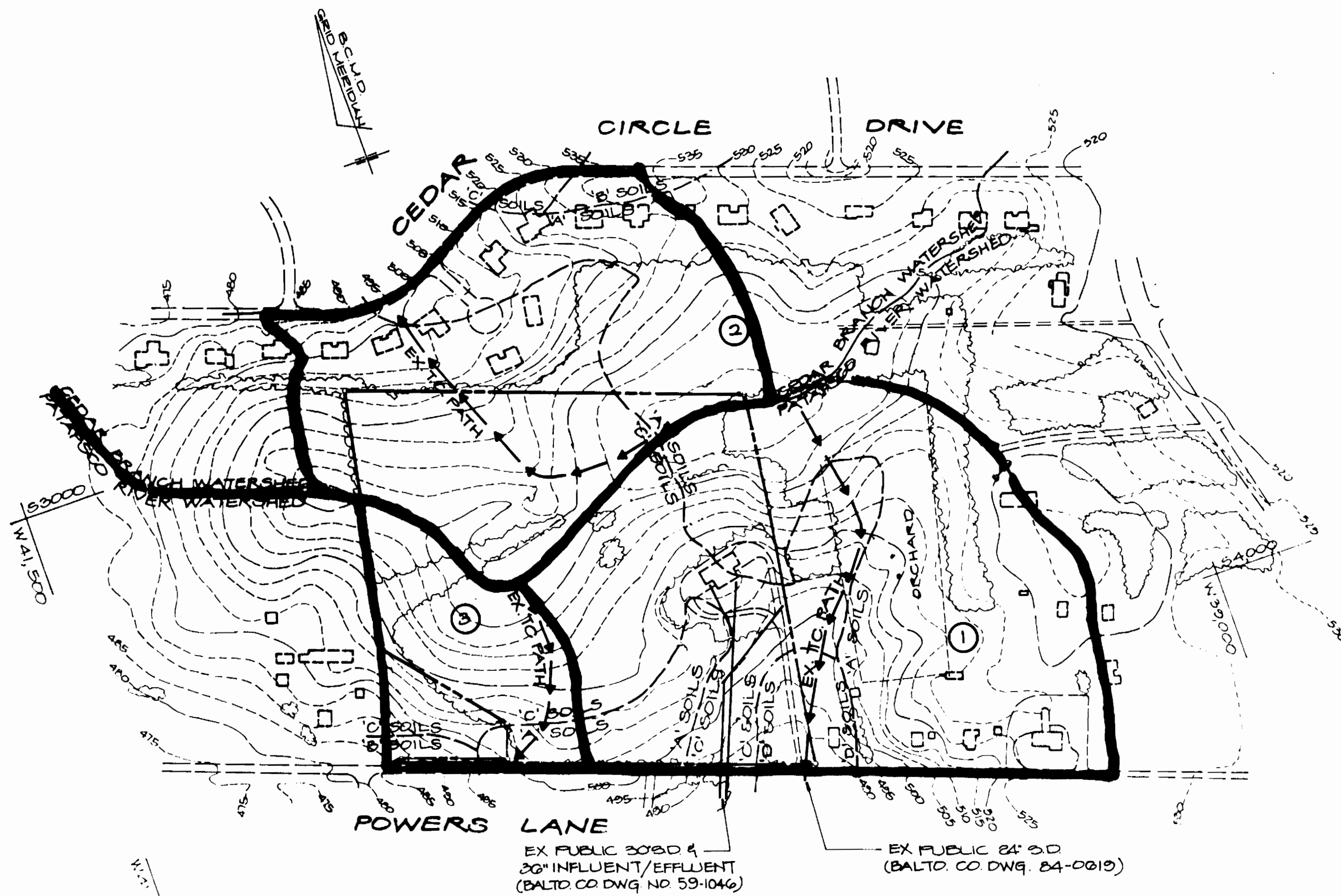


CITY OF BALTIMORE		DIRECTOR		DATE		CHIEF, UTILITY ENG. DIVISION		DATE	
DEPT. OF PUBLIC WORKS		ROAD PERMIT AND GRADES		P. W. A. DRL. NO.		CONTRACT NO.		REVISED AS PER RECORD PRINT	
DATE	RIGHT OF WAY	REF.	PERMIT REQUESTED	424	91012 WXO	J.O.	DRAFTSMAN	DATE	
			PERMIT NUMBER			RECORD DRAWING		11/23/93	
			GRADE ESTABLISHED						
			PROFILE NUMBER						

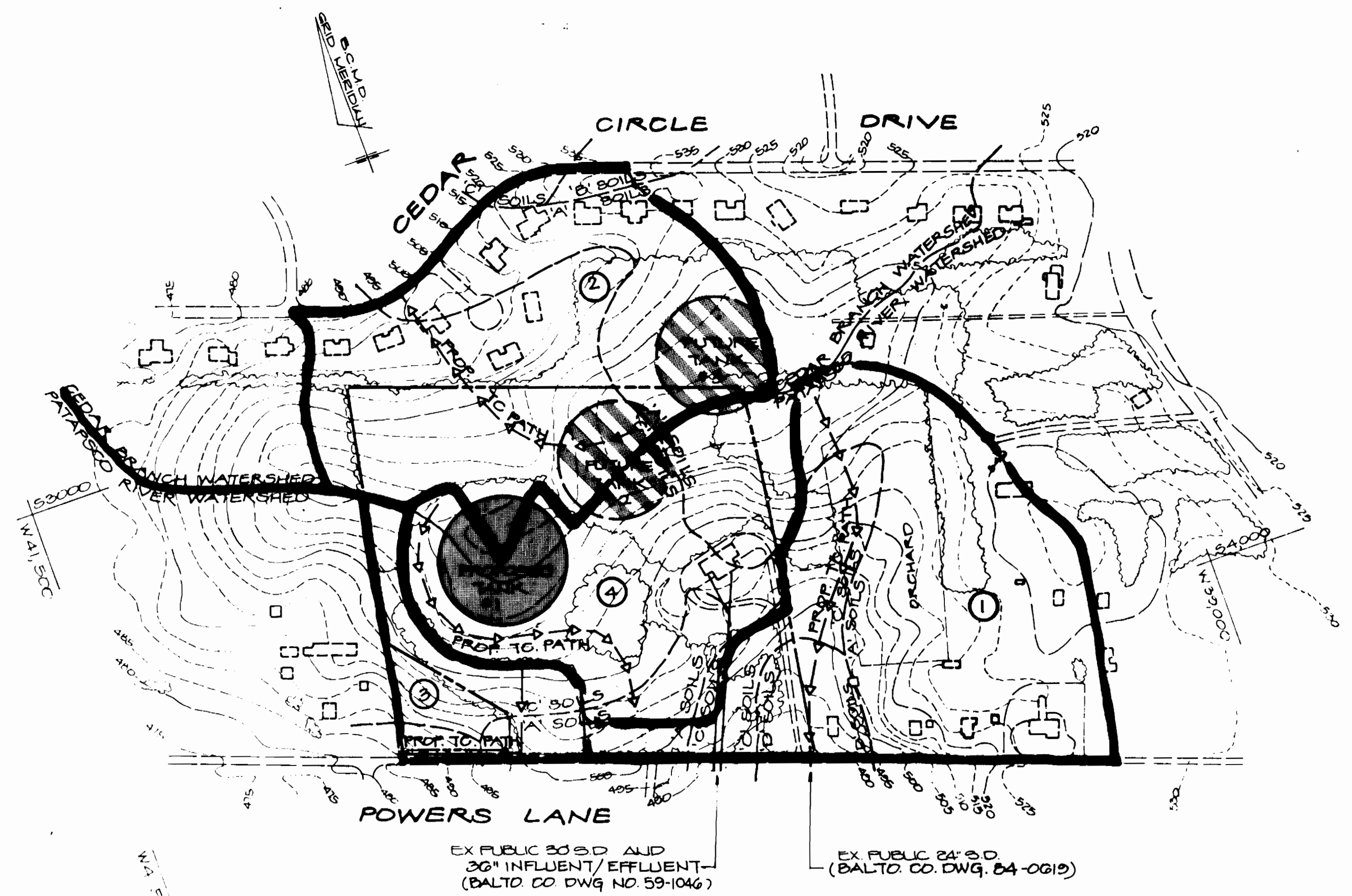
DESIGNED	J.P.J.	KIC/PII JOINT VENTURE	REVIEWED	LLB	JWA	RJK	CUW	P.Y.R.	ASE	BUREAU OF ENGINEERING	DEPARTMENT OF PUBLIC WORKS	LEVEL BK.	KEY SHEET	SCALE	BALTIMORE COUNTY	DEPARTMENT OF PUBLIC WORKS	BUREAU OF ENGINEERING	SHEET 17 OF 29	
DRAWN	A.S.C.	ENGINEER R. FRANKS	DATE	12/10/90	12/17/90	12/17/90	12/17/90	12/17/90	12/17/90	APPROVED	APPROVED	DETAIL BK.	H-NE	PLAN AS SHOWN	CATONVILLE RESERVOIR			DRG. NO.	
CHECKED	T.S.A.	DATE	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	DATE	DATE	4 SW 27, 28	DATE	REVISION	BY	STRUCTURAL-LEVEL TRANSMITTER VAULT PLANS AND SECTION			90-1971
															SUBDIVISION CATONVILLE			EL. DISTRICT NO. 1	FILE 3
															BALTIMORE COUNTY TYPE NUMBER 1			MICROFILMED	

3385





**EXISTING CONDITIONS  
DRAINAGE AREA MAP**  
SCALE: 1"=200'



**PROPOSED CONDITIONS  
DRAINAGE AREA MAP**  
SCALE: 1"=200'

**LEGEND**

- DRAINAGE AREA 3
- DRAINAGE AREA LIMITS
- SOILS TYPE
- EX. T.C. PATH
- PROP. T.C. PATH
- TREE LINE
- PROPERTY LINE
- EX. CONTOURS

**SOILS TYPE**

SOIL NAME	SOIL GROUP
JOPPA	A
SARAPRAS	B
CHILLON - MESHAMINT	C
MESHAMINT	C
LEBORE	D
WATCHUNG	D

SUBJECT SITE IS IN THE CEDAR BRANCH AND PATAPSCO RIVER WATERSHEDS.

APPROVED FOR RECORD PRINT  
DATE 3-15-90  
BY G.A. Hirsch  
BALTO. CO. DEPT. OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT

APPROVED FOR STORM WATER MANAGEMENT  
DATE 3-15-90  
BY G.A. Hirsch  
BALTO. CO. DEPT. OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT

APPROVED FOR RECORD PRINT  
DATE 3-15-90  
BY G.A. Hirsch  
BALTO. CO. DEPT. OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT

CITY OF BALTIMORE												
DIRECTOR DEPT. OF PUBLIC WORKS DATE 11/11/90 BY <i>[Signature]</i>				CHIEF, UTILITY ENG. DIVISION SUR. OF WATER AND WASTEWATER DATE 11/11/90 BY <i>[Signature]</i>								
DATE	RIGHT OF WAY	REF.	ROAD PERMIT AND GRADES	P. W. A. DIR NO.	CONTRACT NO.	REVISED AS PER RECORD PRINT						
			PERMIT REQUESTED	424	91012 WXO	J.O.	DRAFTSMAN	DATE	RECORD DRAWING	11/23/93		
			PERMIT NUMBER									
			GRADE ESTABLISHED									
			PROFILE NUMBER									
DESIGNED	C.D.C.	BUREAU OF ENGINEERING	HIGHWAYS	STRUCTURES	STORM DRAINS	WATER	SEWER	FIELD ENGINEER	BUREAU OF ENGINEERING	DEPARTMENT OF PUBLIC WORKS	LEVEL BK.	KEY SHEET
DRAWN	C.H.C.	ENGINEER	REVIEWED	JWA	R.A.C.	C.O.	P.I.R.	ASE	APPROVED	APPROVED	DETAIL BK.	POSITION SHEET
CHECKED	M.S.R.	DATE	12/18/90	12/17/90	12/17/90	12/17/90	12/17/90	12.17.90	DATE	DATE	4 SW 27 & 28	H-NE

HO. CO. CONT. NO. 44-3385  
HO. CO. C.P. NO. W-8051  
C.W.O. 47080

JOB ORDER NO.	3-5-3
SHEET	18 OF 29
DWG. NO.	90-1972
FILE	4

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING  
**CATONSVILLE RESERVOIR**  
STORMWATER MANAGEMENT DRAINAGE AREA MAPS  
SUBDIVISION CATONSVILLE

3385

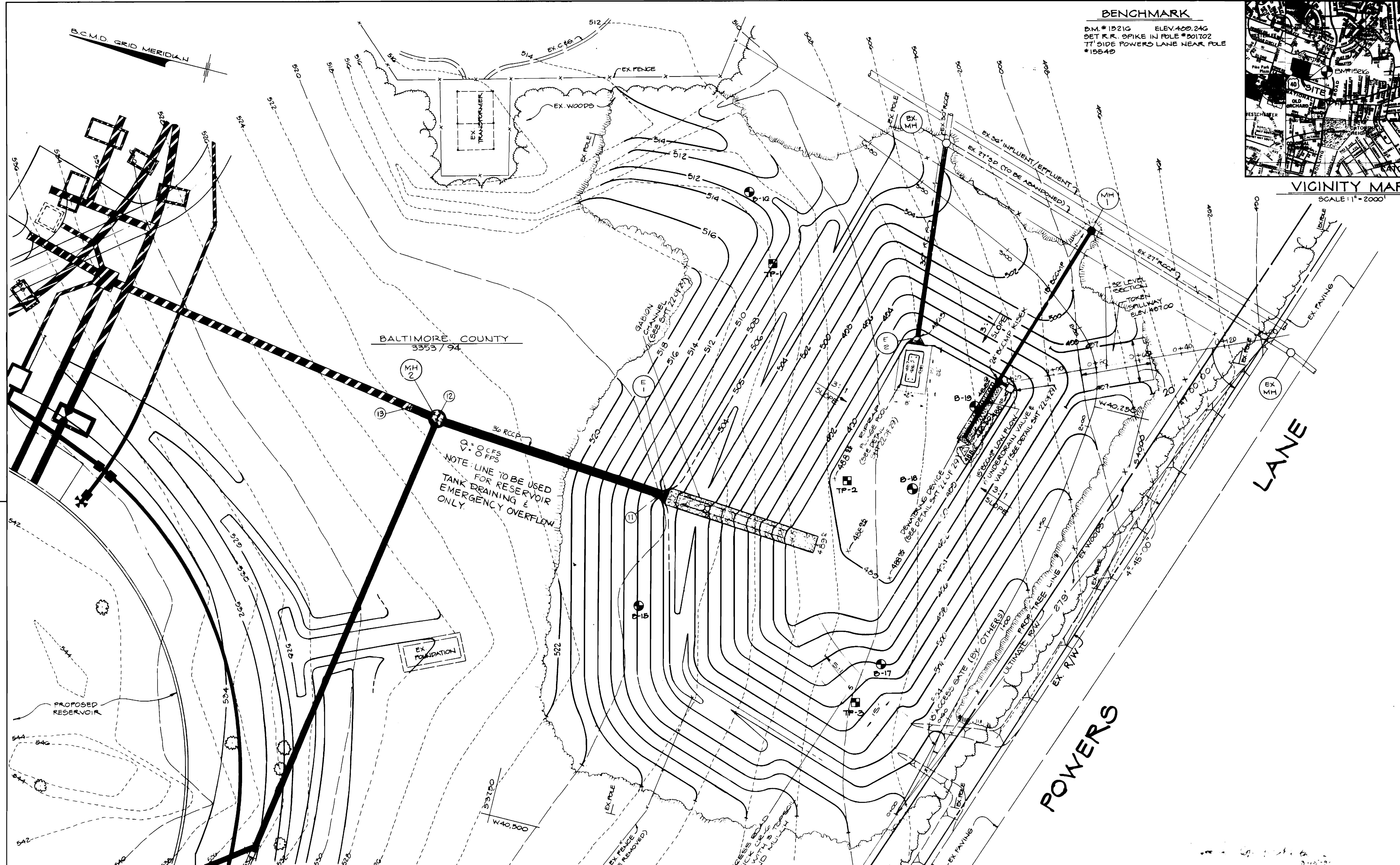
REFILMED



**BENCHMARK**  
 B.M. # 15216 ELEV. 400.246  
 SET R.K. SPIKE IN POLE # 001702  
 77' SIDE POWERS LANE NEAR POLE  
 # 15540



**VICINITY MAP**  
 SCALE: 1" = 2000'



NOTE: LINE TO BE USED  
 FOR RESERVOIR  
 TANK DRAINING &  
 EMERGENCY OVERFLOW  
 ONLY.

3385

CITY OF BALTIMORE DIRECTOR: <i>[Signature]</i> DATE: 1/14 CHIEF, UTILITY ENG. DIVISION: <i>[Signature]</i> DATE: <i>[Signature]</i> DEPT. OF PUBLIC WORKS BUR. OF WATER AND WASTEWATER										ROAD PERMIT AND GRADES P. W. A. DIR NO. 424 CONTRACT NO. 01012 WXO		REVISED AS PER RECORD PRINT J.O. DRAFTSMAN DATE RECORD DRAWING 11/23/93			
DESIGNED: C.D.Q.	BUREAU OF ENGINEERING	HIGHWAYS	STRUCTURES	STORM DRAINS	WATER	SEWER	FIELD ENGINEER	BUREAU OF ENGINEERING	DEPARTMENT OF PUBLIC WORKS	LEVEL BK.	KEY SHEET	SCALE	BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING <b>CATONSVILLE RESERVOIR</b> STORMWATER MANAGEMENT PLAN AND VICINITY MAP SUBDIVISION CATONSVILLE EL. DISTRICT NO. 1		JOB ORDER NO. <b>3-5-3</b>
DRAWN: J.V.K.	ENGINEER: <i>[Signature]</i>	REVIEWED: RLB	JWA	RAC	CW	P.Y.R.	ASE	APPROVED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>	DETAIL BK.	POSITION SHEET	PLAN: 1" = 20'	SHEET <b>19</b> OF <b>29</b> DWG. NO. <b>90-1973</b>		
CHECKED: M.S.R.	DATE: 12/10/90	DATE: 12/17/90	DATE: 12/17/90	DATE: 12/17/90	DATE: 12/17/90	DATE: 12/17/90	DATE: 12/17/90	DATE: 12-18-90	DATE: 12-18-90	DATE	REVISION	BY	FILE: 4 BALTIMORE COUNTY TYPE NUMBER 1		











**STORM WATER MANAGEMENT  
POND CONSTRUCTION SPECIFICATIONS**

- SITE PREPARATION**  
AREAS DESIGNED FOR BORROW AREAS, EMBANKMENT AND STRUCTURAL WORKS SHALL BE CLEARED OF ALL WEEDS, STUMPED OR TOPPED, ALL TREES, VEGETATION, ROOTS AND OTHER OBSTRUCTIVE MATERIALS SHALL BE REMOVED.  
AREAS TO BE COVERED BY THE POND OR RESERVOIR SHALL BE CLEARED OF ALL WEEDS, STUMPED OR TOPPED, ALL TREES, VEGETATION, ROOTS AND OTHER OBSTRUCTIVE MATERIALS SHALL BE REMOVED.  
ALL CLEARED AND GRUBBED MATERIAL SHALL BE DEPOSITED OUTSIDE THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE.
  - CONNECTIONS** - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATER-TIGHT. THE STRAIN PIPE OR BARREL CONNECTION TO THE REBAR SHALL BE WELDED ALL AROUND WHEN THE PIPE AND REBAR ARE METAL. WATER-TIGHT COUPLING BANDS OR FLANGES SHALL BE USED AT ALL JOINTS. METAL-TO-METAL COUPLING BANDS SHALL BE COMPLETELY WATER-TIGHT. IMPLE BANDS ARE NOT CONSIDERED TO BE WATER-TIGHT.
  - WEEDING** - THE POND SHALL BE FINISHED AND WEEDING BEGINS THROUGHOUT ITS ENTIRE LENGTH, WHERE ROCK OR SOFT SPONGE OR OTHER LIGHTWEIGHT SOIL ENDOCRANTS ARE USED. SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.
  - LAYING PIPE** - THE PIPE SHALL BE PLACED WITH PROPER DIRECTIONAL LAP JOINTS DOWNSTREAM AND WITH THE LONGITUDINAL LAPS AT THE SLOES.
  - BACKFILLING** SHALL CONFORM TO STRUCTURAL BACKFILL AS SHOWN ABOVE.
  - OTHER DETAILS** (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.
- V. CONCRETE**  
CONCRETE MUST MEET MINIMUM REQUIREMENTS SET FORTH BY THE MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS SECTION 118 PORTLAND CEMENT CONCRETE MIXTURES, M.S. 118.3. REINFORCING STEEL MUST BE ASTM A615, GRADE 60, STEEL ANGLES AND ANCHOR BARS MUST BE ASTM A36.
- VI. STABILIZATION**  
ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A STABLE CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND CHANNELS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MOWING IF REQUIRED IN ACCORDANCE WITH THE VEGETATIVE TREATMENT SPECIFICATIONS ON A36 SHOWN ON THE ACCOMPANYING DRAWINGS.
- VI. 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 SHALL BE STRICTLY ENFORCED. POLLUTION ABATEMENT SHALL BE ASSURED THROUGHOUT THE CONSTRUCTION PERIOD.
- VI. FENCING AND GATE (12-18" HIGH)**  
CONSTRUCT FENCING IN ACCORDANCE WITH THE STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS SECTION 118.3. FENCING SHALL BE 4-6 FEET HIGH AND 4 FEET WIDE. FENCING SHALL BE CONSTRUCTED OF GALVANIZED STEEL PIPE OR GALVANIZED STEEL PIPE AND SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MOWING IF REQUIRED IN ACCORDANCE WITH THE VEGETATIVE TREATMENT SPECIFICATIONS ON A36 SHOWN ON THE ACCOMPANYING DRAWINGS.
- VI. FILTER CLOTH**  
FILTER CLOTH SHALL BE 100% 100% DUCTILE TYPAR #3341 OR APPROVED EQUAL. SEE BALTO. CO. STD. 20-25-4.
- X. SANDS**  
ALL GABIONS SHALL BE CLASS II PVC COATED.
- XI. PLASTIC**  
ALL PVC PLASTIC MATERIALS SHALL CONFORM TO ASTM D-1785.

**GENERAL NOTES**

- UTILITIES AND TOPOGRAPHICAL FEATURES SHOWN ON THESE PLANS ARE ONLY FOR THE CONVENIENCE OF THE USER AND THE USER'S RESPONSIBILITY TO VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES AND TOPOGRAPHICAL FEATURES. THE USER SHALL VERIFY ALL SUCH INFORMATION TO HIS OWN SATISFACTION.
- AS-BUILT PLANS & CERTIFICATION ARE REQUIRED FOR THE STORM WATER MANAGEMENT FACILITY. THESE MUST BE SUBMITTED TO THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT, SEDIMENT CONTROL DIVISION, 100 BALTIMORE COUNTY CENTER, BALTIMORE, MD 21201. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND CERTIFICATIONS FROM THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT.
- IN ORDER TO PREPARE THE REQUIRED AS-BUILT PLANS & CERTIFICATION, THE USER SHALL NOTIFY THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT, SEDIMENT CONTROL DIVISION, AT LEAST FIVE (5) BUSINESS DAYS PRIOR TO STARTING ANY WORK SHOWN ON THESE PLANS.
- THESE STORM WATER MANAGEMENT DRAWINGS ARE APPROVED UNDER BAL. CO. STD. 20-25-4.
- AS-BUILT PLANS & CERTIFICATION ARE REQUIRED FOR THE STORM WATER MANAGEMENT FACILITY. THESE MUST BE SUBMITTED TO THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT, SEDIMENT CONTROL DIVISION, 100 BALTIMORE COUNTY CENTER, BALTIMORE, MD 21201. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND CERTIFICATIONS FROM THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT.
- THE STORM WATER MANAGEMENT POND IS TO BE AN EXCAVATED POND. DRAINAGE AREA: N/A.
- THE STORM WATER MANAGEMENT POND IS TO BE MAINTAINED BY BALTIMORE COUNTY.

**PERMANENT SEEDING NOTES**

- ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS:
- SEEDING PREPARATION**  
LOOSED UPPER THREE INCHES OF SOIL BY BARRING, DISCO OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.
- SEED AMENDMENTS**  
APPLY TWO TONS PER ACRE SOLUBLE LIME (TYPE S) OR 100 LBS PER ACRE OF 20-20-20 FERTILIZER (IN LBS/LA/1000 SQ. FT.) AT THE TIME OF SEEDING. APPLY 100 LBS PER ACRE OF 20-20-20 FERTILIZER (IN LBS/LA/1000 SQ. FT.) AT THE TIME OF SEEDING.
- SEEDING**  
FOR THE PERIODS JANUARY 1 THROUGH APRIL 30 AND AUGUST 1 THROUGH OCTOBER 31, SEED WITH 80 LBS PER ACRE OF 20-20-20 FERTILIZER (IN LBS/LA/1000 SQ. FT.) AND 31 TALL FESCUE AND 3 LBS PER ACRE OF 400 LBS PER ACRE OF 20-20-20 FERTILIZER (IN LBS/LA/1000 SQ. FT.) AT THE TIME OF SEEDING.
- SEEDING**  
FOR THE PERIODS APRIL 1 THROUGH APRIL 30 AND AUGUST 1 THROUGH OCTOBER 31, SEED WITH 80 LBS PER ACRE OF 20-20-20 FERTILIZER (IN LBS/LA/1000 SQ. FT.) AND 31 TALL FESCUE AND 3 LBS PER ACRE OF 400 LBS PER ACRE OF 20-20-20 FERTILIZER (IN LBS/LA/1000 SQ. FT.) AT THE TIME OF SEEDING.
- SEEDING**  
FOR THE PERIODS APRIL 1 THROUGH APRIL 30 AND AUGUST 1 THROUGH OCTOBER 31, SEED WITH 80 LBS PER ACRE OF 20-20-20 FERTILIZER (IN LBS/LA/1000 SQ. FT.) AND 31 TALL FESCUE AND 3 LBS PER ACRE OF 400 LBS PER ACRE OF 20-20-20 FERTILIZER (IN LBS/LA/1000 SQ. FT.) AT THE TIME OF SEEDING.
- SEEDING**  
FOR THE PERIODS APRIL 1 THROUGH APRIL 30 AND AUGUST 1 THROUGH OCTOBER 31, SEED WITH 80 LBS PER ACRE OF 20-20-20 FERTILIZER (IN LBS/LA/1000 SQ. FT.) AND 31 TALL FESCUE AND 3 LBS PER ACRE OF 400 LBS PER ACRE OF 20-20-20 FERTILIZER (IN LBS/LA/1000 SQ. FT.) AT THE TIME OF SEEDING.

**DEVELOPER'S/LANDOWNER'S CERTIFICATION**

I, Gene L. Naff, Director, DO hereby certify that the FACILITY SHOWN ON THESE PLANS WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

DATE: 11/23/93

**ENGINEER'S CERTIFICATION**

I, Gene L. Naff, Director, DO hereby certify that the FACILITY SHOWN ON THESE PLANS WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

DATE: 11/23/93

**CONTRACTOR'S NOTE**

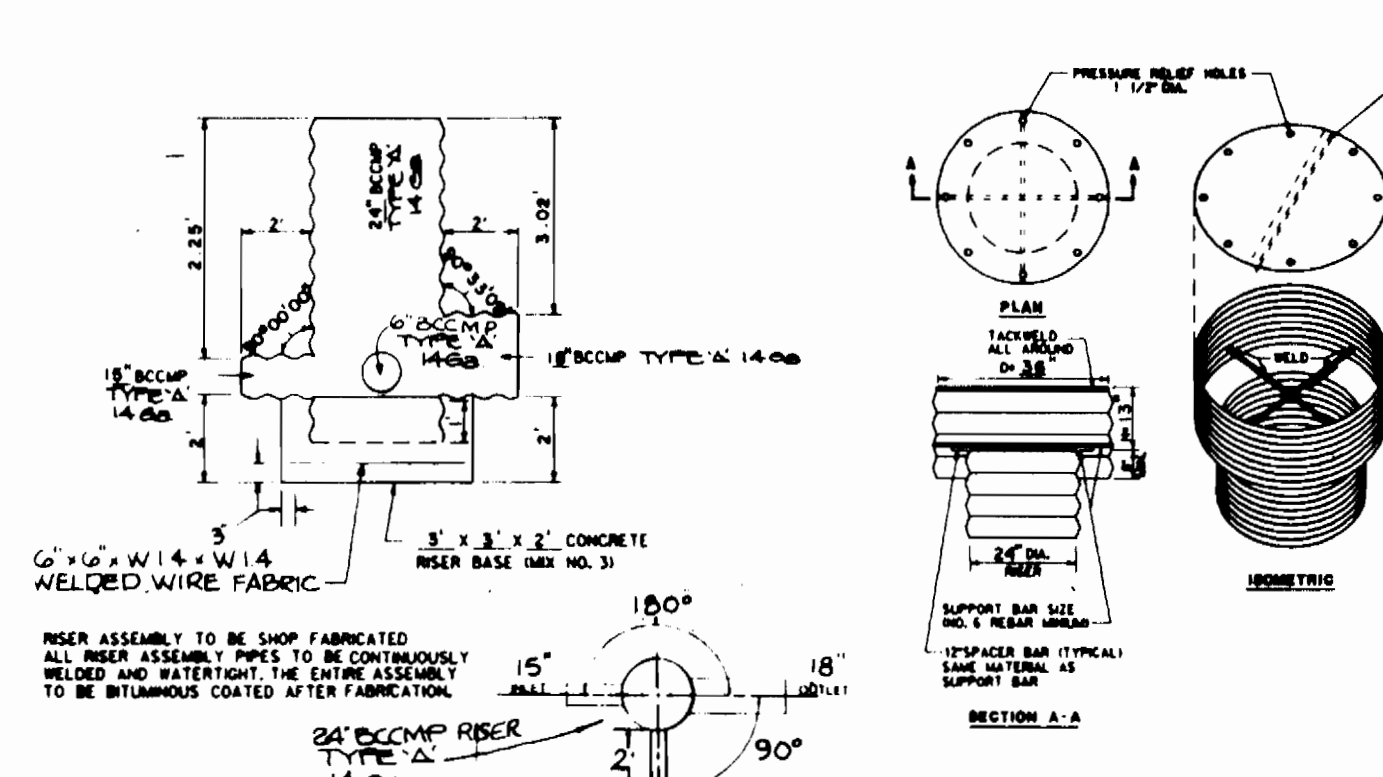
THE CONTRACTOR SHALL VERIFY THAT THE FACILITY SHOWN ON THESE PLANS WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

DATE: 11/23/93

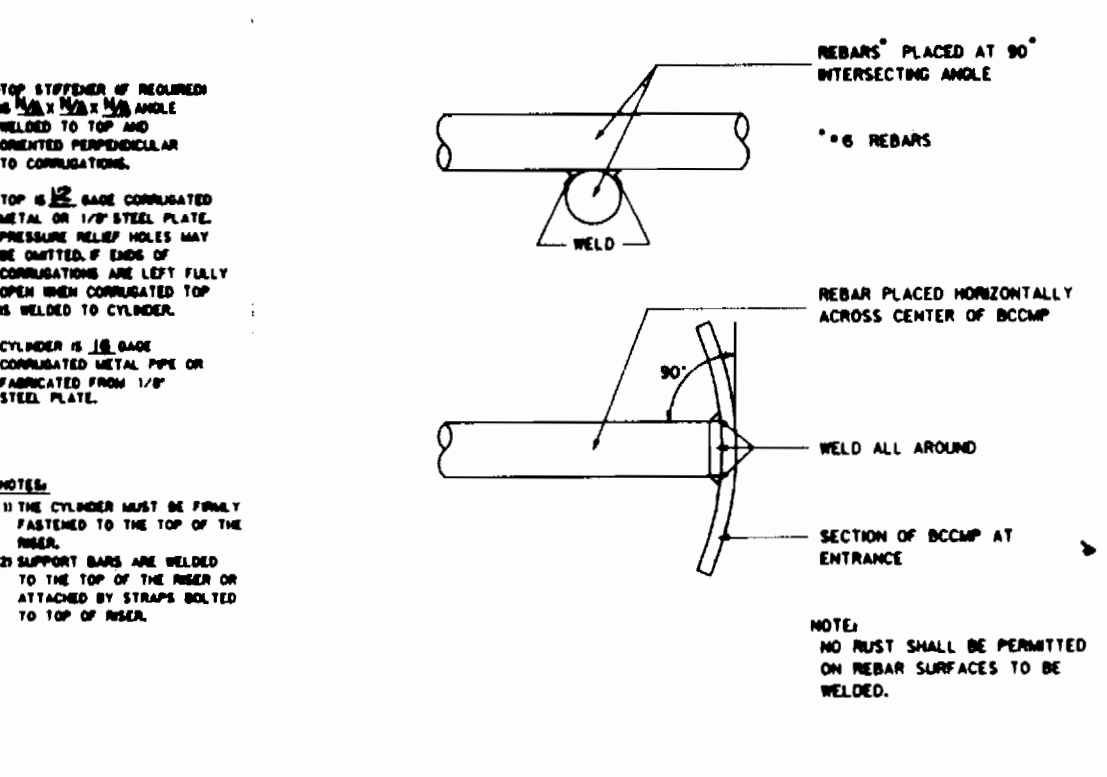
**ENGINEER'S CERTIFICATION**

I, Gene L. Naff, Director, DO hereby certify that the FACILITY SHOWN ON THESE PLANS WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

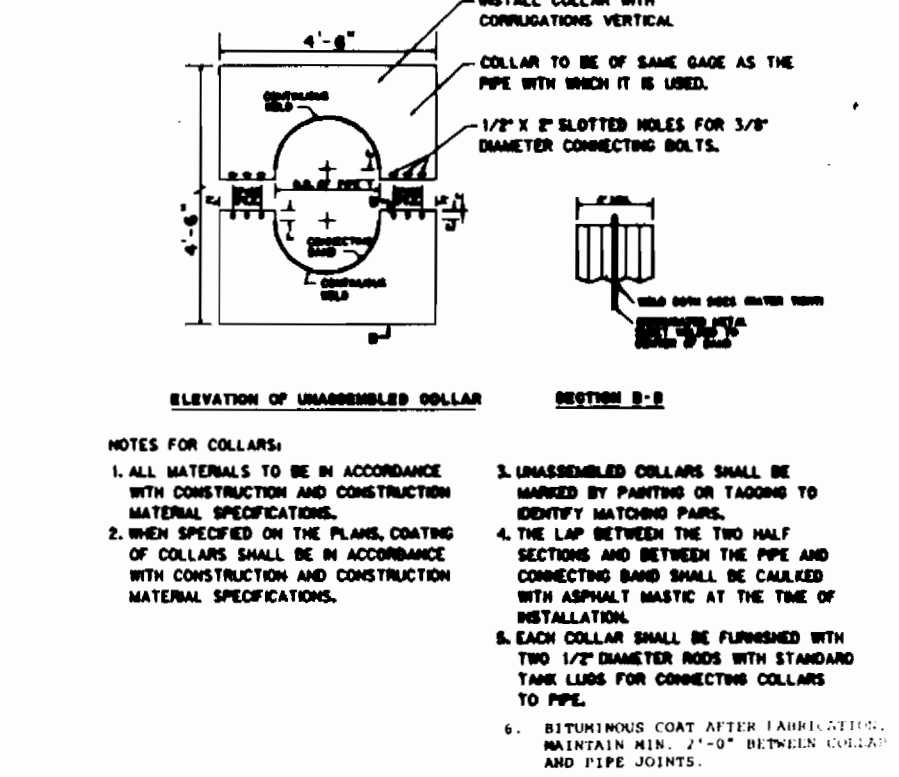
DATE: 11/23/93



**RISER ASSEMBLY DETAIL**  
NO SCALE



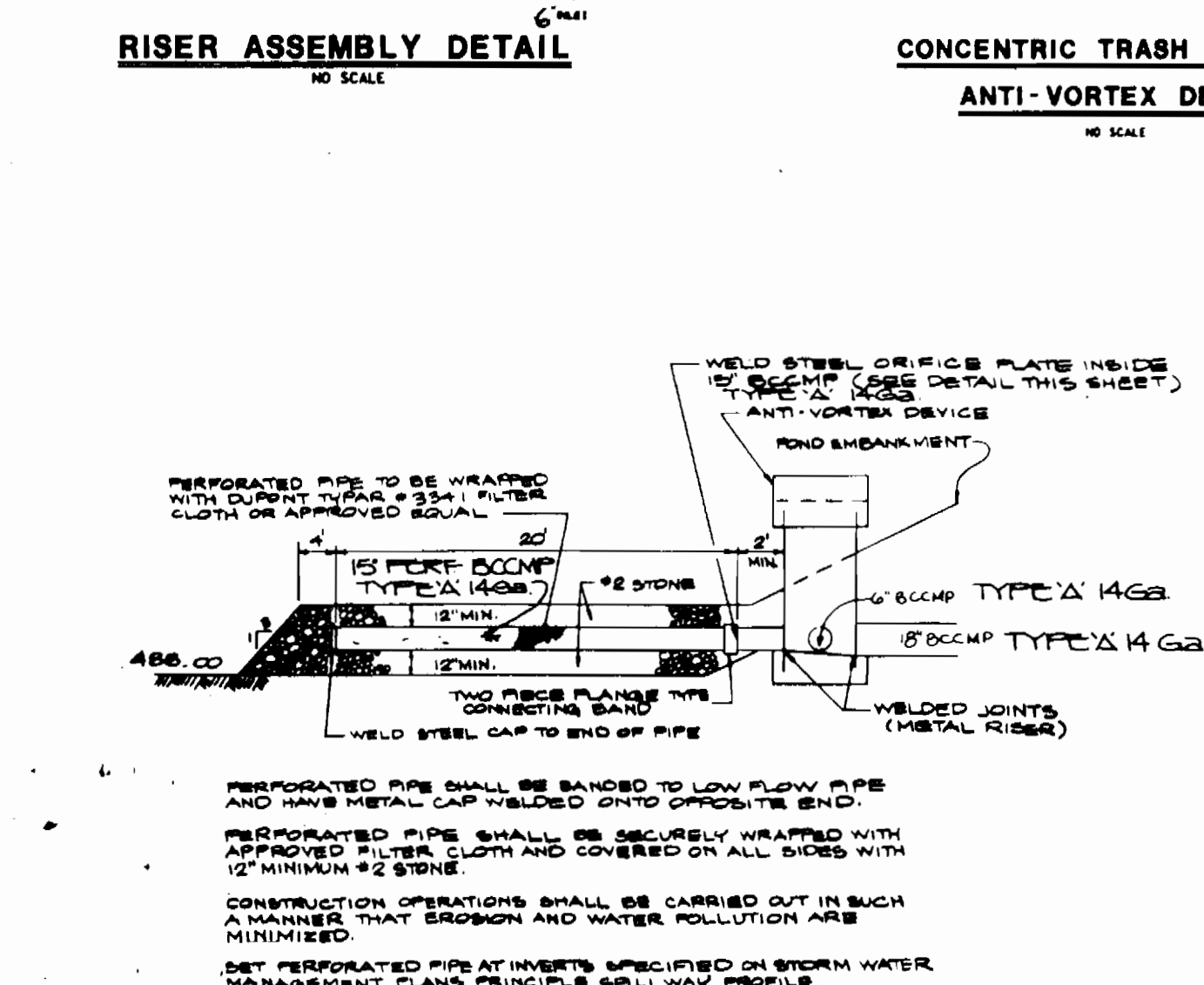
**CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE**  
NO SCALE



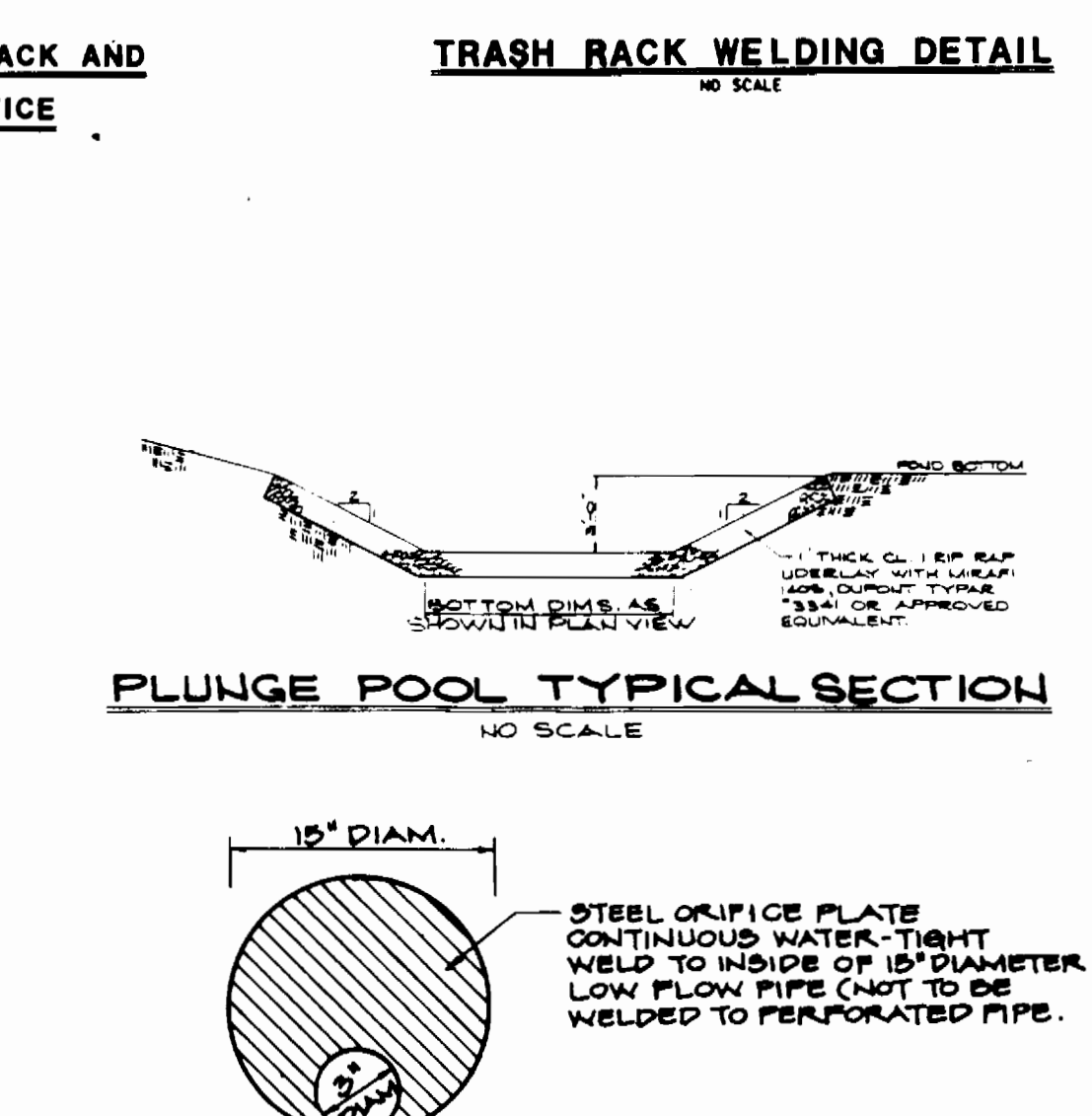
**TRASH RACK WELDING DETAIL**  
NO SCALE



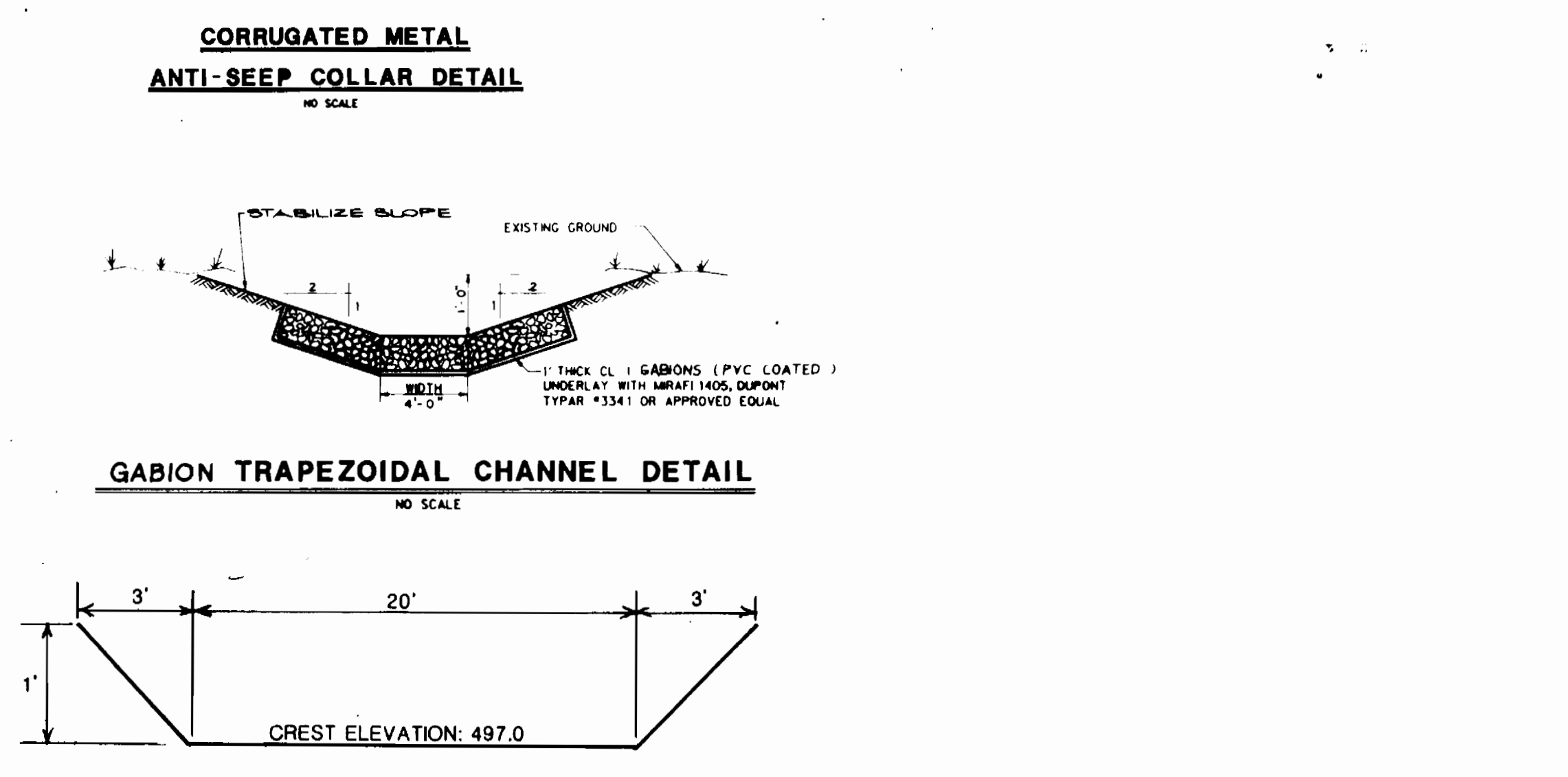
**CORRUGATED METAL ANTI-SEEP COLLAR DETAIL**  
NO SCALE



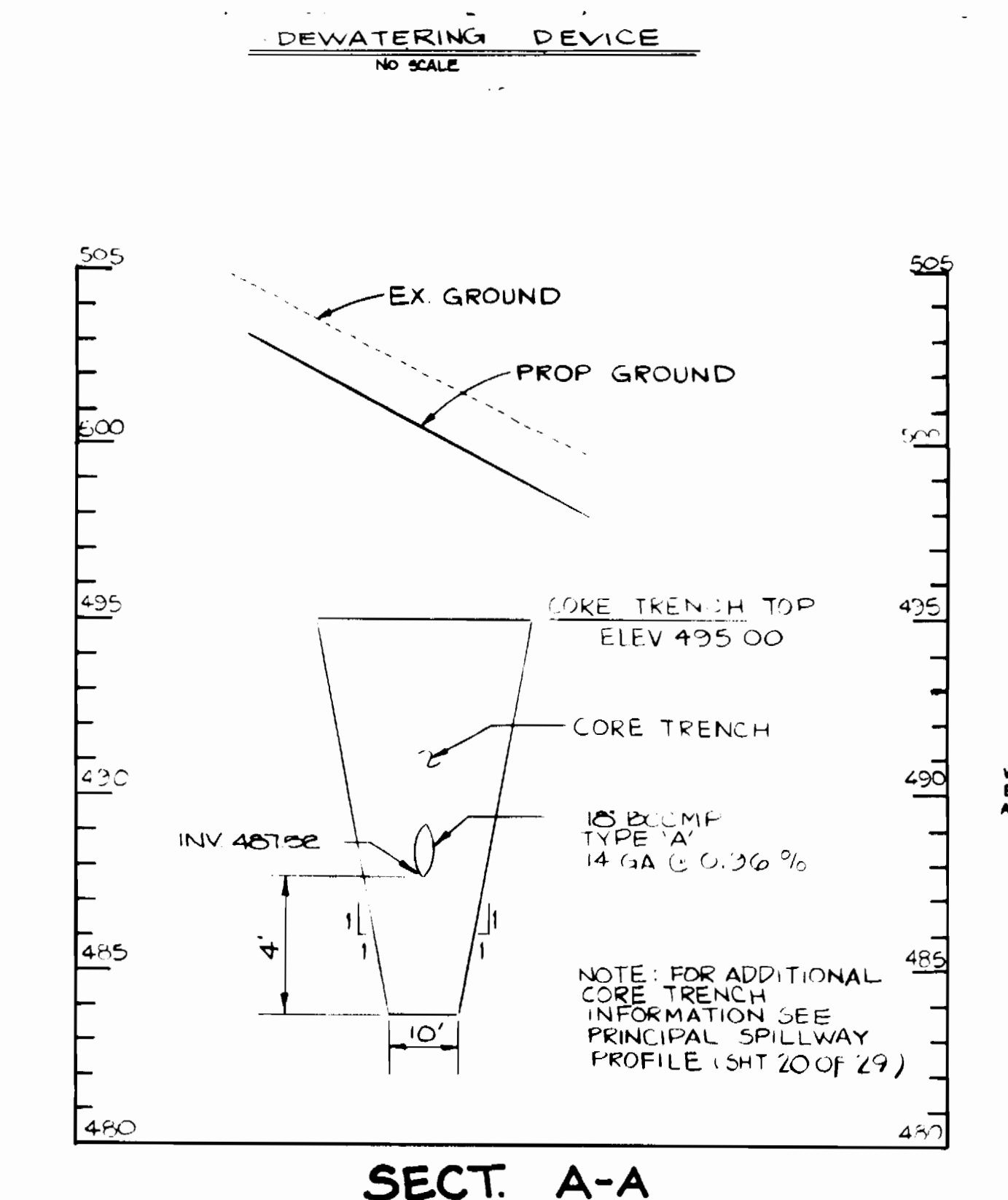
**DEWATERING DEVICE**  
NO SCALE



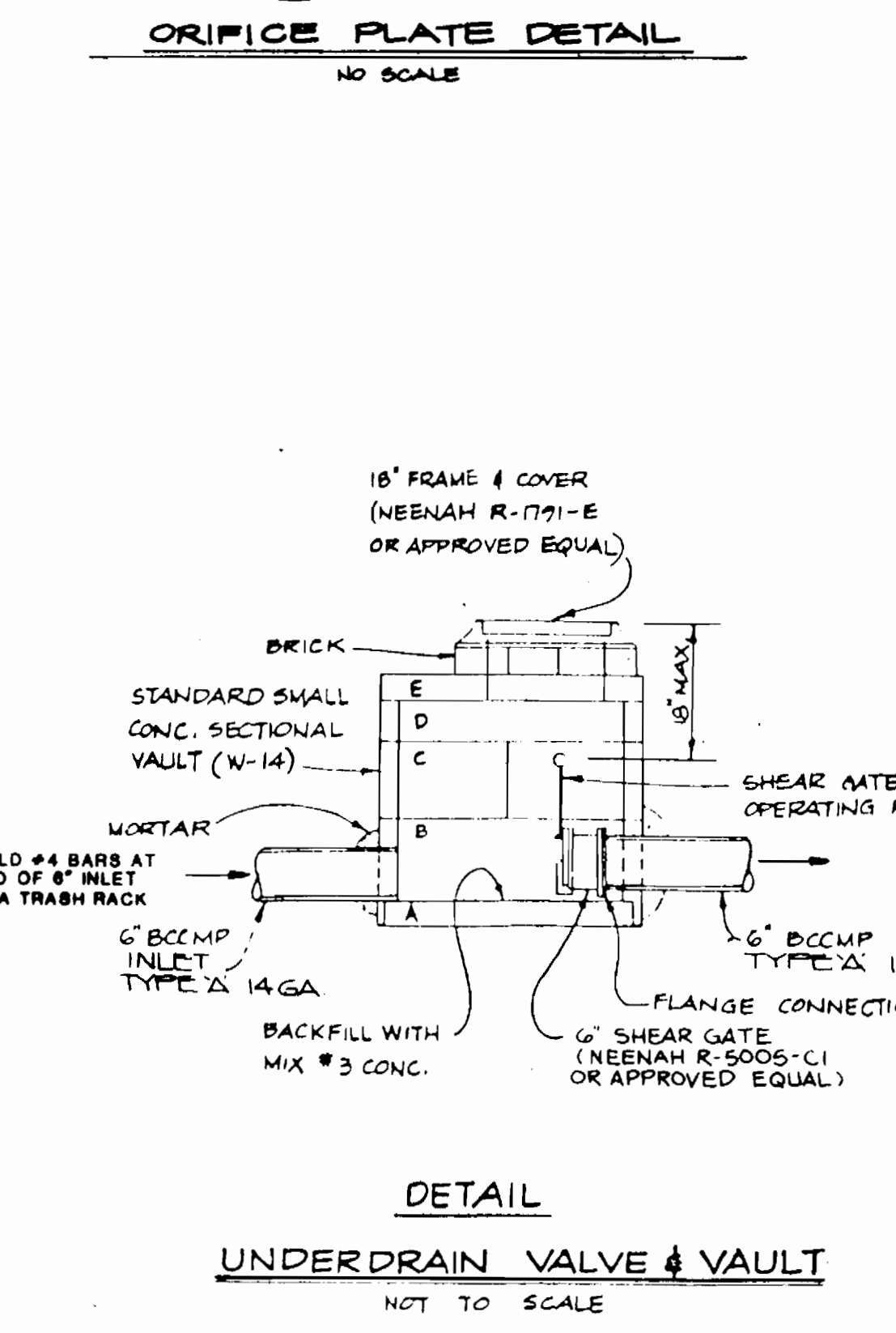
**PLUNGE POOL TYPICAL SECTION**  
NO SCALE



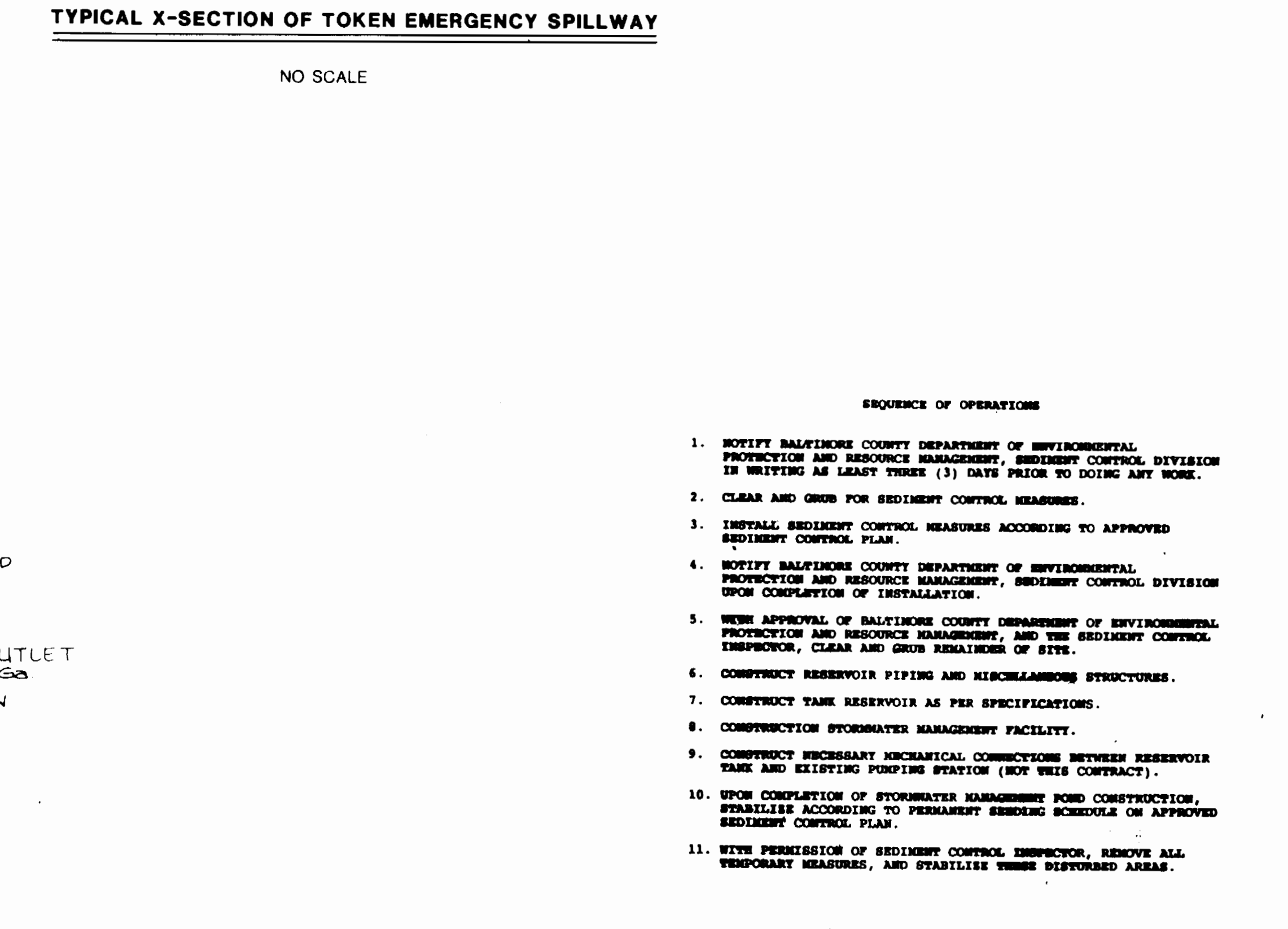
**TYPICAL X-SECTION OF TOKEN EMERGENCY SPILLWAY**  
NO SCALE



**SECT. A-A**  
SCALE: HORIZ. 1" = 20'  
VERT. 1" = 4'



**ORIFICE PLATE DETAIL**  
NO SCALE



**DETAIL UNDERDRAIN VALVE & VAULT**  
NOT TO SCALE

**SEQUENCE OF OPERATIONS**

- NOTIFY BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT, SEDIMENT CONTROL DIVISION IN WRITING AS LEAST THREE (3) DAYS PRIOR TO DOING ANY WORK.
- CLEAR AND GRUB FOR SEDIMENT CONTROL MEASURES.
- INSTALL SEDIMENT CONTROL MEASURES ACCORDING TO APPROVED SEDIMENT CONTROL PLAN.
- NOTIFY BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT, SEDIMENT CONTROL DIVISION UPON COMPLETION OF INSTALLATION.
- WITH APPROVAL OF BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT, AND THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMAINDER OF SITE.
- CONTRACT RESERVOIR PIPING AND MISCELLANEOUS STRUCTURES.
- CONSTRUCT TANK RESERVOIR AS PER SPECIFICATIONS.
- CONSTRUCTION STORMWATER MANAGEMENT FACILITY.
- CONSTRUCT NECESSARY MECHANICAL CONNECTIONS BETWEEN RESERVOIR TANK AND EXISTING PUMPING STATION (NOT THIS CONTRACT).
- UPON COMPLETION OF STORMWATER MANAGEMENT POND CONSTRUCTION, FURNISH ACCORDING TO PERMANENT SEEDING SCHEDULE ON APPROVED SEDIMENT CONTROL PLAN.
- WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR, REMOVE ALL TEMPORARY MEASURES, AND STABILIZE THESE RESTORED AREAS.

**DESIGN SUMMARY**

DESIGN YEAR	ALLOWABLE RELEASE RATE	FACILITY FLOW	FACILITY DEMAND	WATER SURFACE ELEVATION	STORAGE VOLUME (AC FT.)
2 YEAR	0.88 CFS	7.57 CFS	0.32 CFS	491.05	0.30
10 YEAR	0.81 CFS	21.31 CFS	2.88 CFS	492.8	0.70
100 YEAR	21.08 CFS	38.08 CFS	13.14 CFS	494.12	1.10

STRUCTURE CLASSIFICATION: 'A'  
STORAGE - HEIGHT PRODUCT: 18.82  
WATERHEAD AREA TO FACILITY (ACRES): 0.84  
LEVEL OF MANAGEMENT PROVIDED BY FACILITY: 2, 10, 100 YR.  
TYPE: EXCAVATED, DRY & INFILTRATION

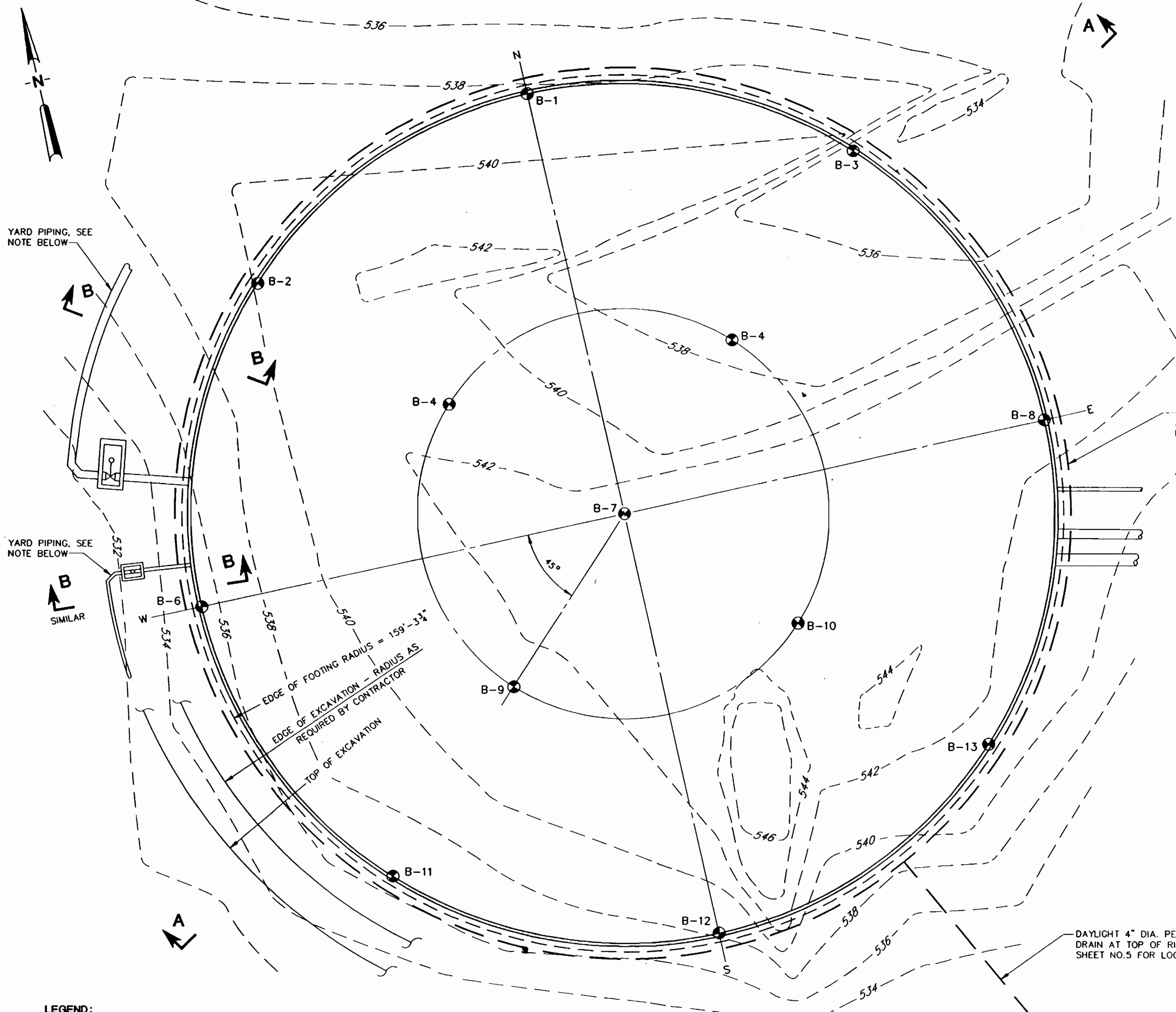
HO. CO. CONT. NO. 44-3385  
HO. CO. C.P. NO. W-8051

CITY OF BALTIMORE		DEPT. OF PUBLIC WORKS		BUREAU OF ENGINEERING		DEPARTMENT OF PUBLIC WORKS	
DATE	RIGHT OF WAY	REF.	ROAD PERMIT AND GRADES	P. W. A. DIR. NO.	CONTRACT NO.	REVISED AS PER RECORD PRINT	
			PERMIT REQUESTED.	424	91012 WXO	J.O. DRAFTSMAN	DATE
			PERMIT NUMBER.			RECORD DRAWING	11/23/93
			GRADE ESTABLISHED.				
			PROFILE NUMBER.				
DESIGNED	C.D.Q.	BUREAU OF ENGINEERING	HIGHWAYS	STRUCTURES	STORM DRAINS	WATER	SEWER
DRAWN	C.H.G.	ENGINEER	REVIEWED	R.C.B.	J.W.A.	R.D.C.	C.W.
CHECKED	M.S.R.	DATE	12/10/90	12/17/90	12/17/90	12/17/90	12/17/90

3385

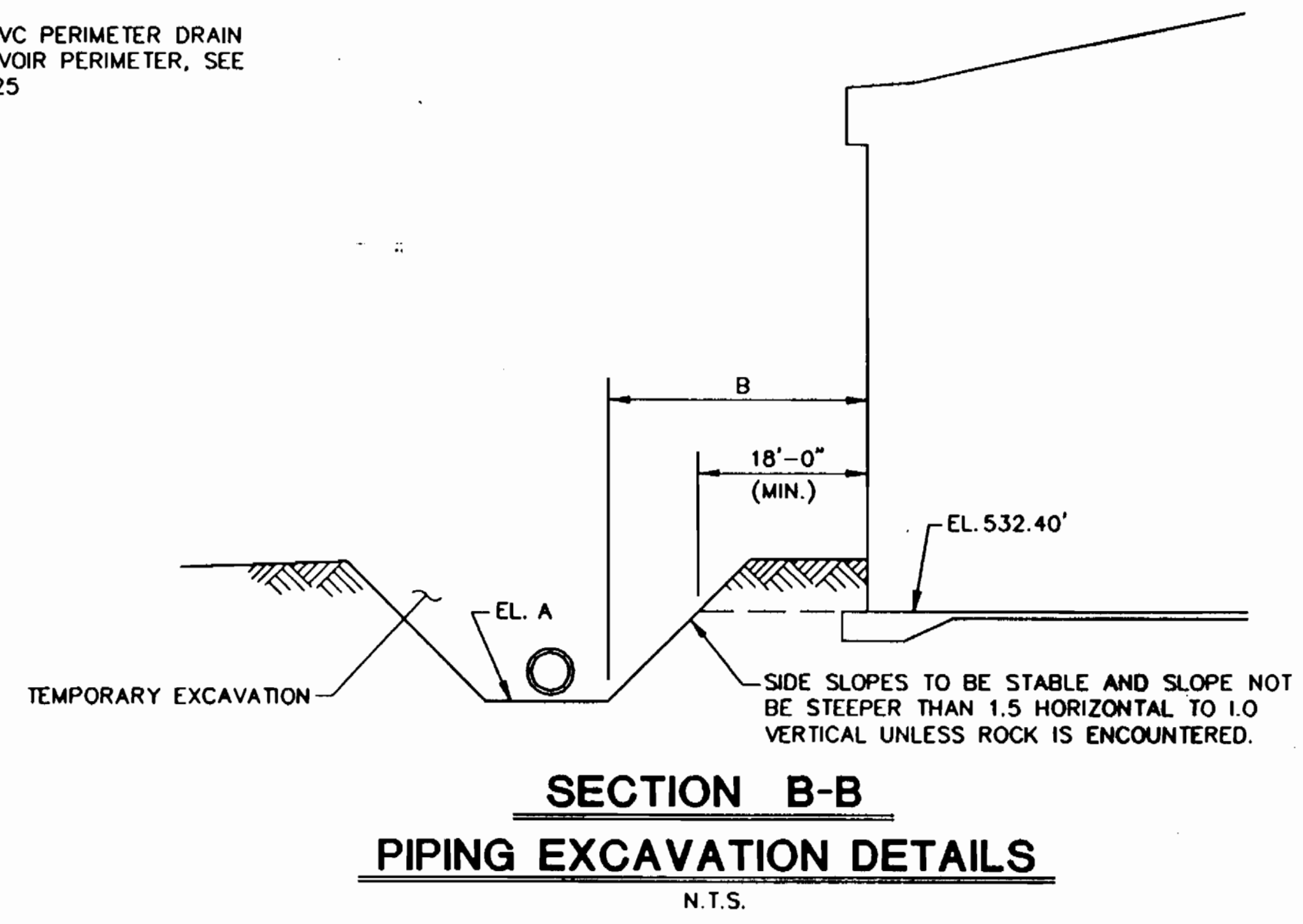
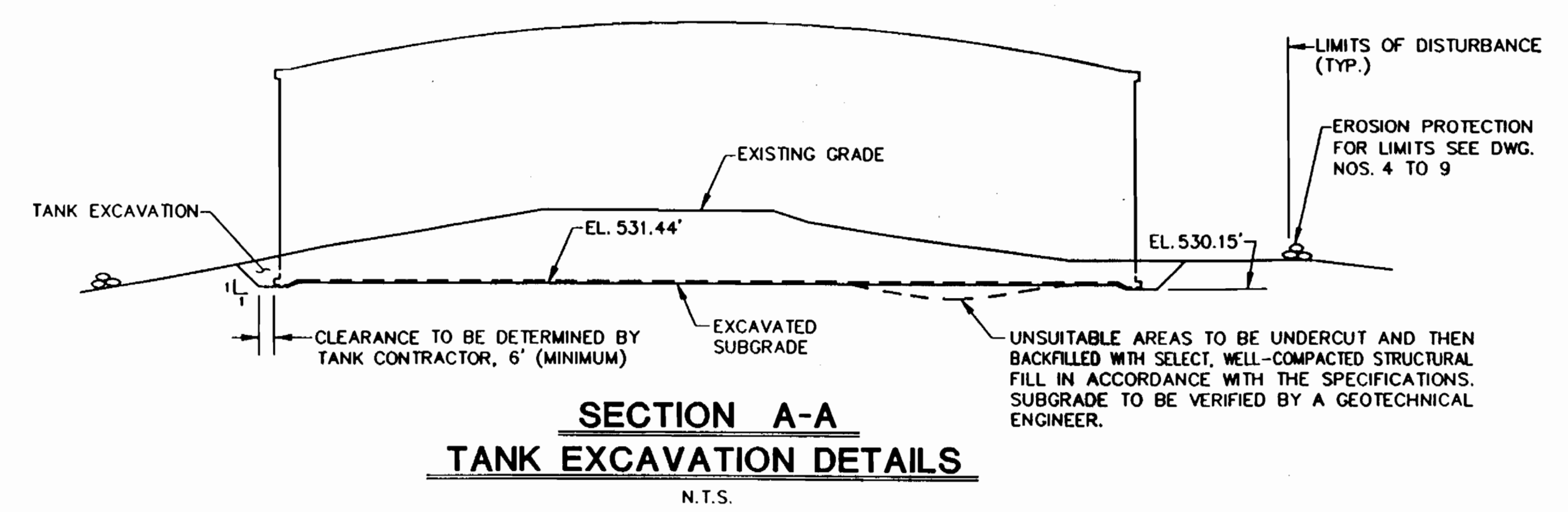
**JOB ORDER NO.**  
3-5-3  
**SHEET** 22 OF 29  
**DWG. NO.**  
90-1976  
**FILE:** 4



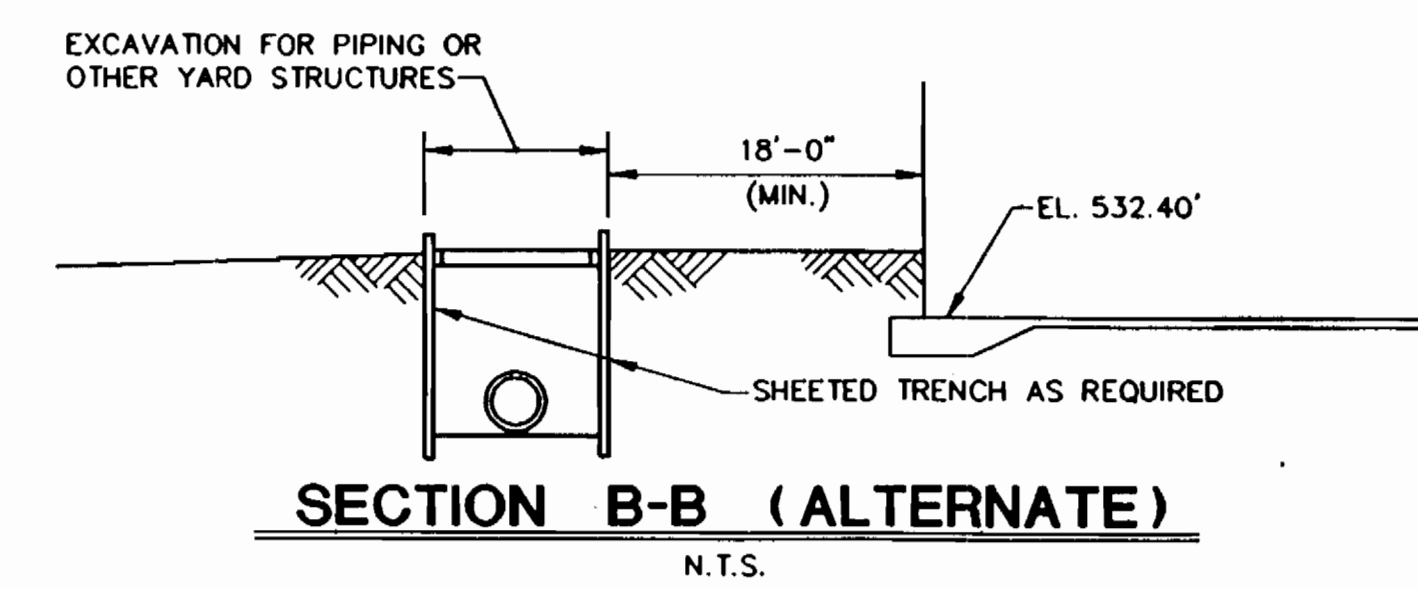


**TANK EXCAVATION PLAN**  
N.T.S.

- NOTES:**
- FOR FULL EXTENT OF YARD PIPING AND OTHER STRUCTURES TO BE DONE UNDER THIS CONTRACT SEE DWG. NO.10.
  - FOR BORING LOGS SEE CONTRACT SPECIFICATIONS.
  - OBSERVATION WELLS HAVE BEEN INSTALLED IN BORINGS B-1, B-6, B-8 AND B-12. WELLS SHALL BE PERMANENTLY CAPPED IN ACCORDANCE WITH CONTRACT SPECIFICATIONS.



- NOTES:**
- EXCAVATION AND BACKFILLING NEAR TANK FOR INSTALLATION, MAINTENANCE OR REPAIR PURPOSES SHALL NOT BEGIN UNLESS TANK IS COMPLETELY EMPTY. DO NOT INTRODUCE WATER IN TANK UNTIL THE PIPE OR OTHER STRUCTURES HAS BEEN COMPLETELY BACKFILLED AND THE BACKFILL PROPERLY COMPACTED.
  - MINIMUM DIMENSION B = 18' + 1.5 x (532.40 - ELEVATION A).
  - SHEETING SHALL BE REQUIRED WHENEVER MINIMUM DIMENSION B IS NOT PROVIDED.



**LEGEND:**  
⊙ BORING

										<b>CITY OF BALTIMORE</b> DIRECTOR: <i>Nicholas A. Legatos</i> DATE: 11/19/91 CHIEF, UTILITY ENG. DIVISION BUREAU OF WATER AND WASTEWATER: <i>Jerry K. Miller</i> DATE: 11/21/91 SEE APPENDIX FOR RECORD DRAWINGS									
DESIGNED	KC/PJI JOINT VENTURE	BUREAU OF ENGINEERING	HIGHWAYS	STRUCTURES	STORM DRAINS	WATER	SEWER	FIELD ENGINEER	BUREAU OF ENGINEERING	DEPARTMENT OF PUBLIC WORKS	LEVEL BK.	KEY SHEET	SCALE	BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING	JOB ORDER NO.				
DRAWN	ENGINEER NICHOLAS A. LEGATOS	REVIEWED	CCS	JWA	RAE	CW	P.Y.R.	ASE	APPROVED <i>Paul Hudson</i>	APPROVED <i>[Signature]</i>	DETAIL BK.	H-NE	PLAN:	BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING	3-5-3				
CHECKED	DATE 12/11/90 LIC. NO. 9604	DATE	12/12/90	12/17/90	12/17/90	12/17/90	12/17/90	12.17.90	DATE 12.18.90	DATE	45W27,28	PROFILE: HOR. VERT.	TANK EXCAVATION PLAN AND SECTIONS	SHEET 23 OF 29					
HO. CO. CONT. NO. 44-3385 HO. CO. C.P. NO. W-8051 C.W.O. 47080										DWG. NO. <b>90-1977</b> FILE: 5 BALTIMORE COUNTY TYPE NUMBER 1									

3385

MICROFILMED





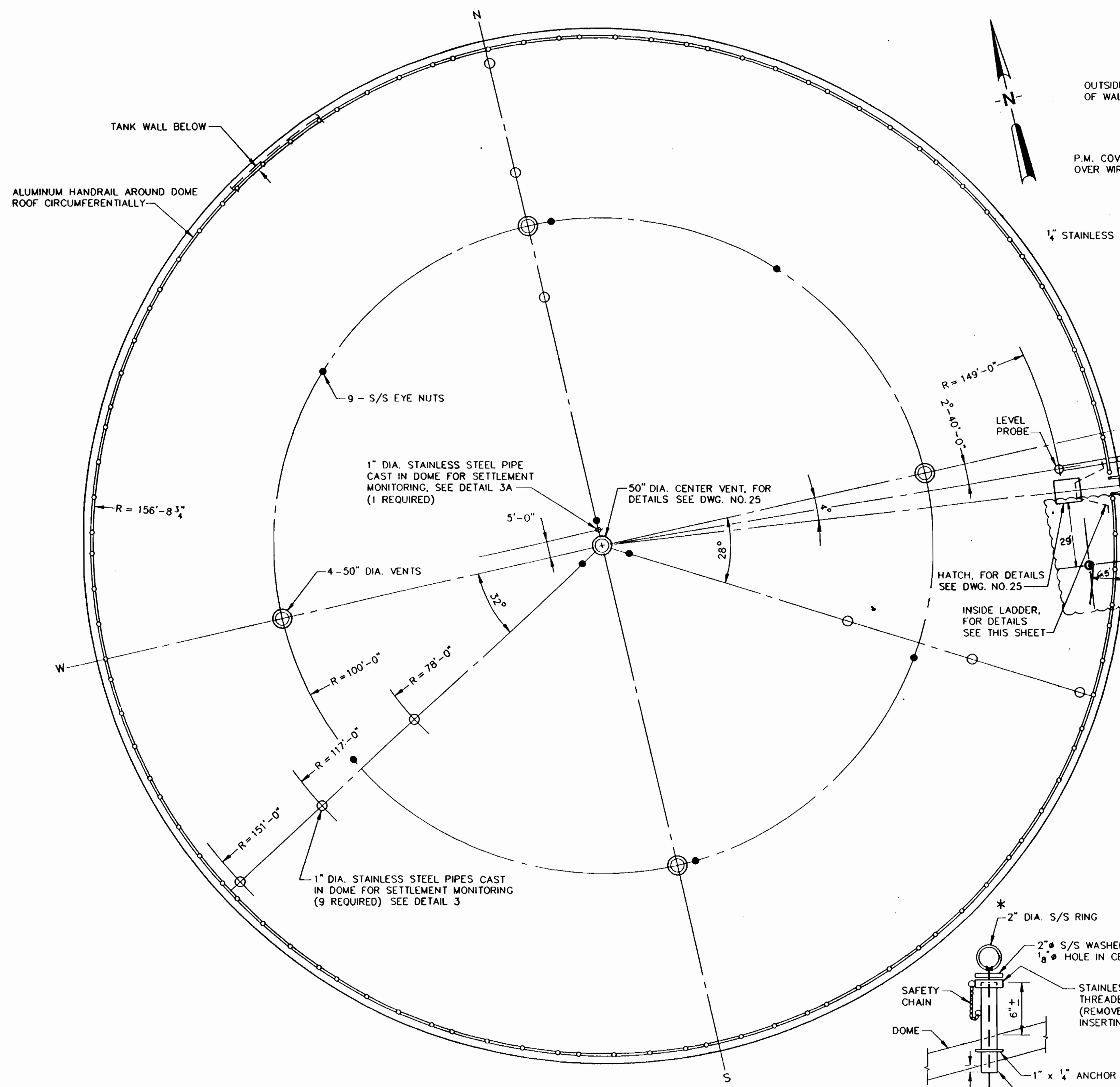




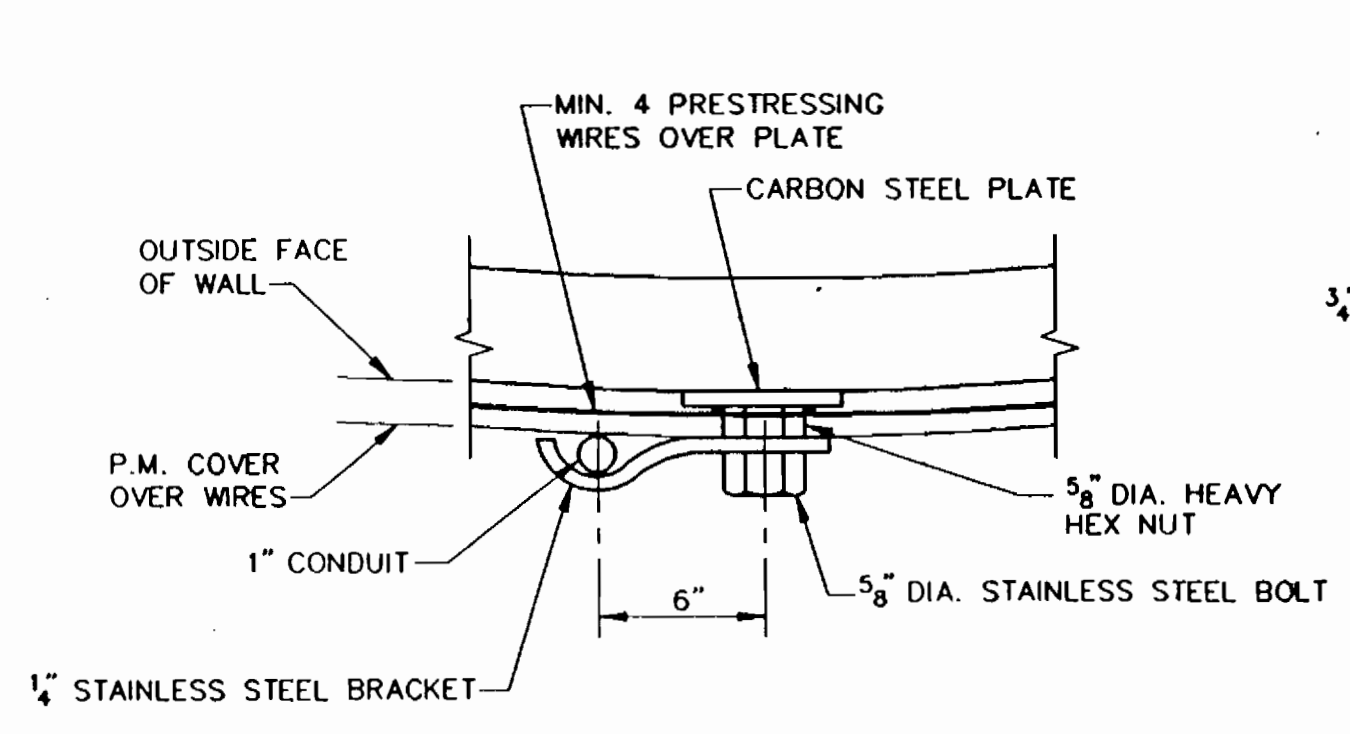






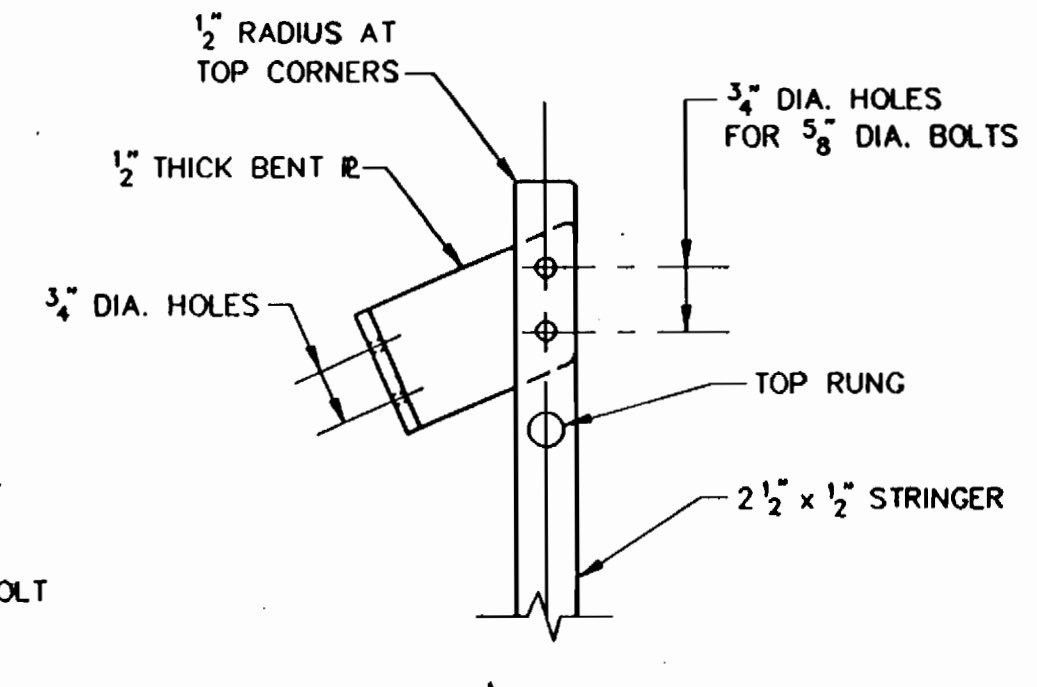


**TANK ROOF PLAN**  
N.T.S.

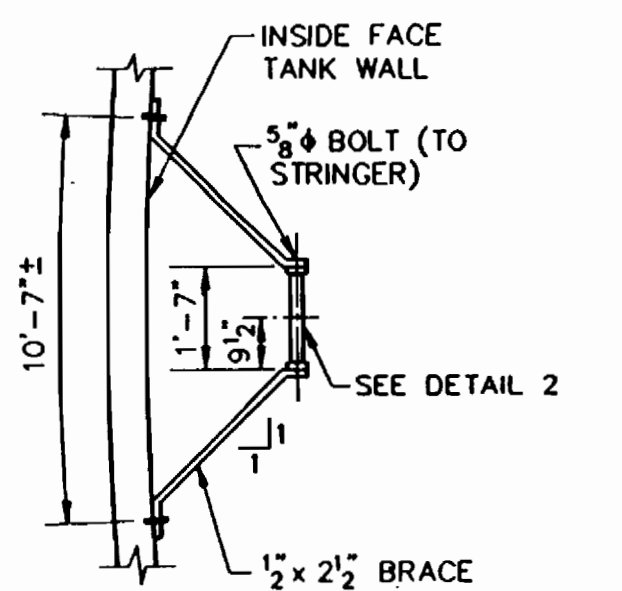


**CONDUIT BRACE DETAIL**

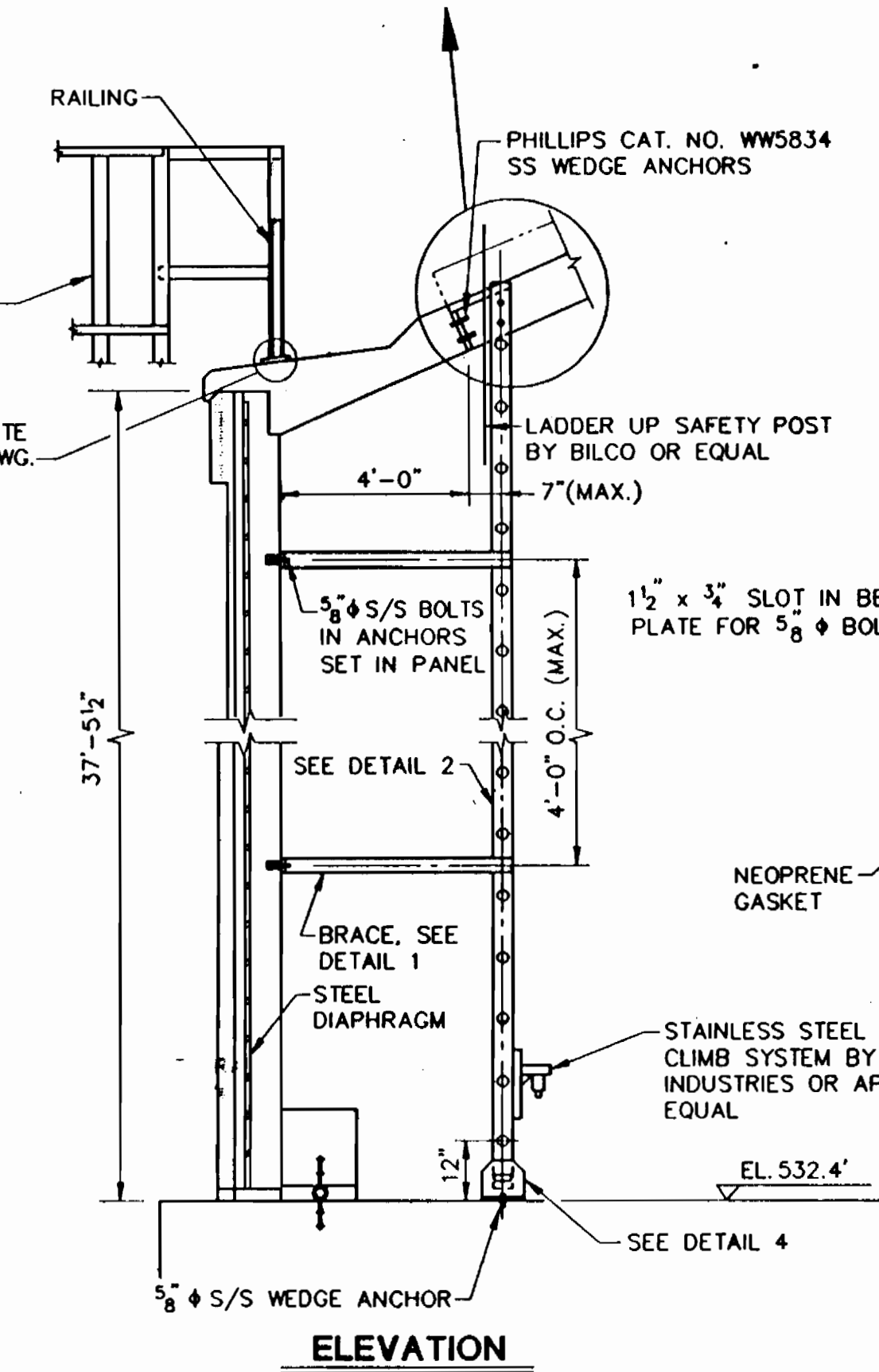
NOTES:  
1. BRACES TO BE AT 4'-0" O.C. SPACING (MAX.).  
2. FOR ATTACHMENT TO DOME USE EXPANSION BOLTS TO SECURE THE STAINLESS STEEL BRACKETS.



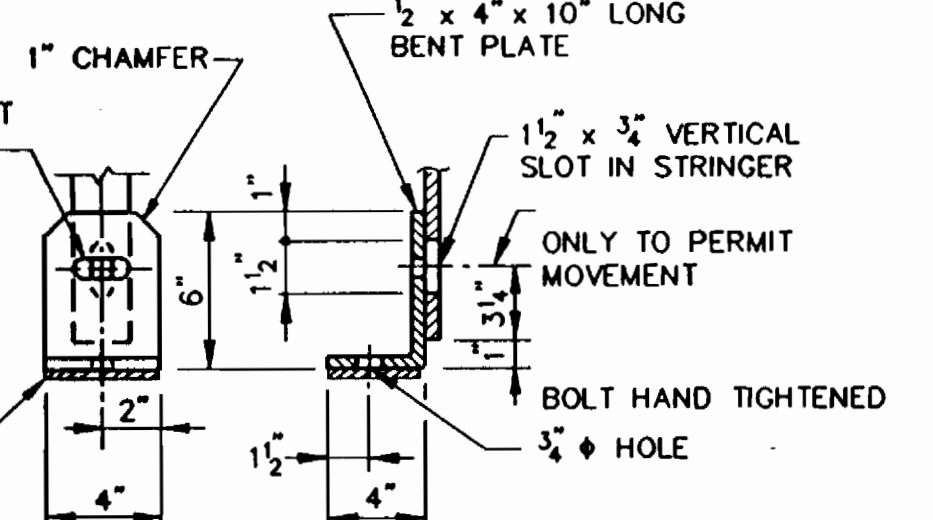
**DETAIL 1**



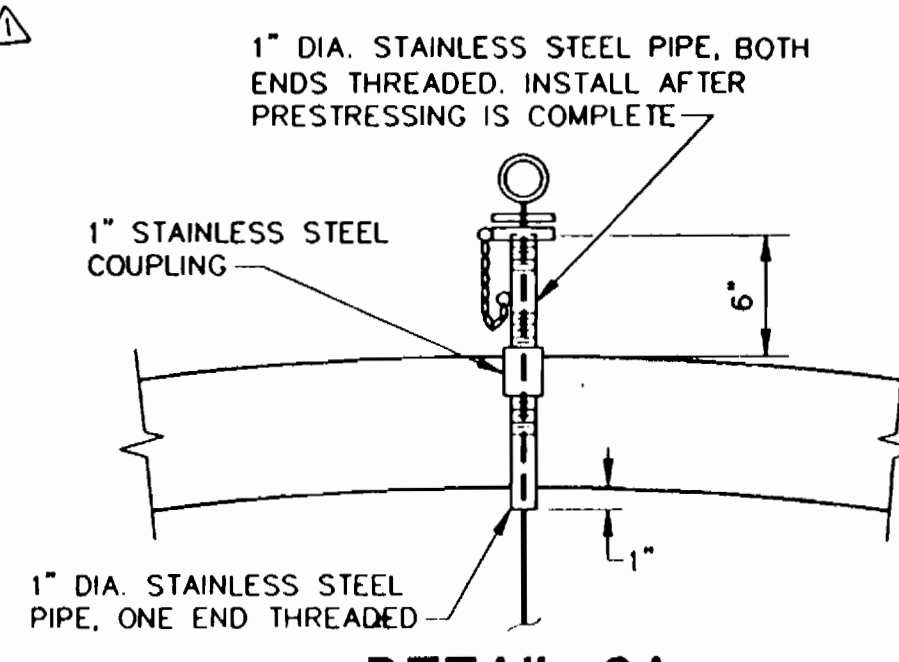
**DETAIL 2**



**ELEVATION**



**DETAIL 4**  
(2 THUS)

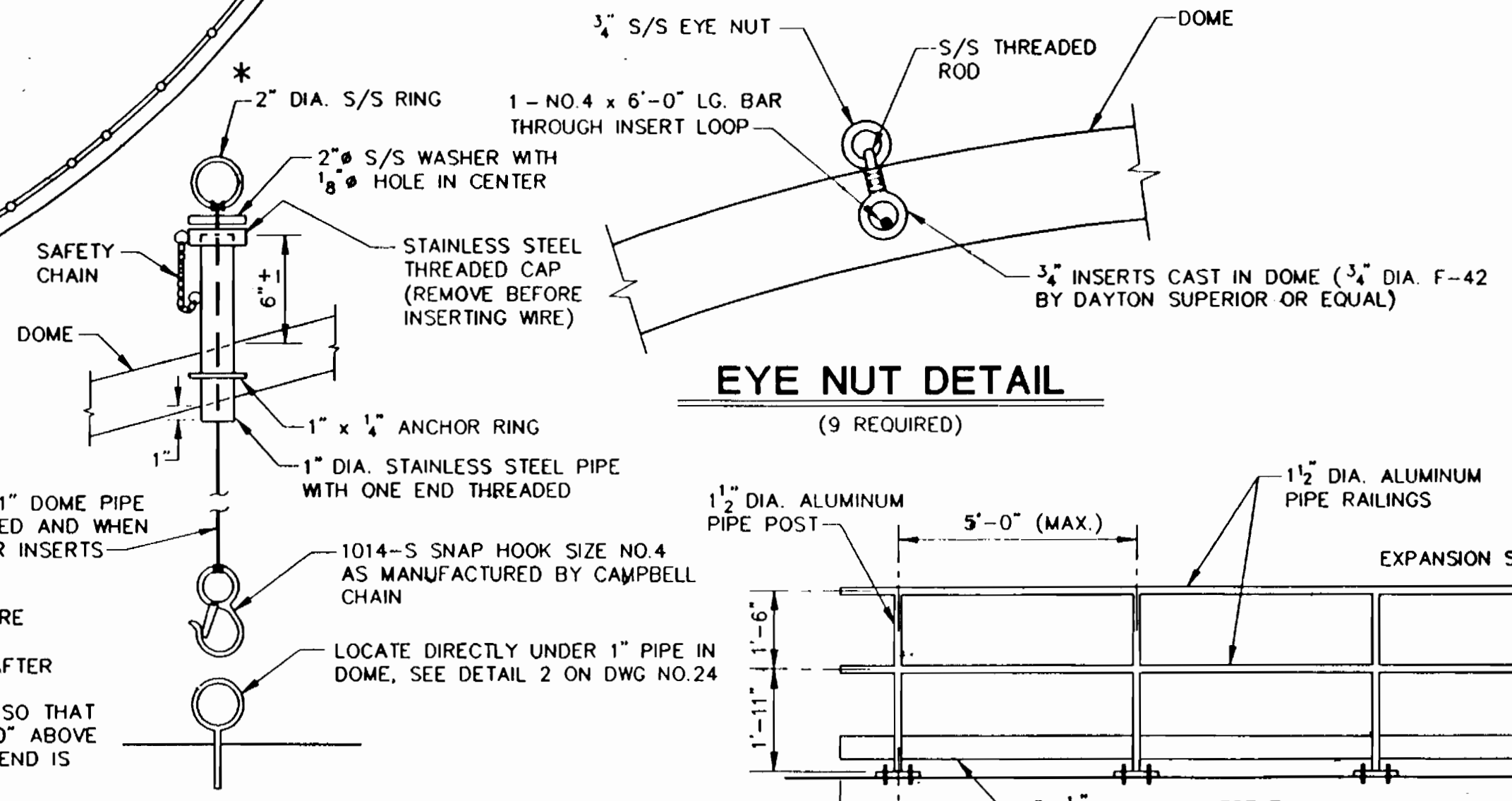


**DETAIL 3A**

(FOR INFORMATION NOT SHOWN SEE DETAIL 3)

**INSIDE LADDER DETAILS**

MATERIAL: ALUMINUM 6061-T6 UNLESS NOTED OTHERWISE (HARDWARE - STAINLESS STEEL)

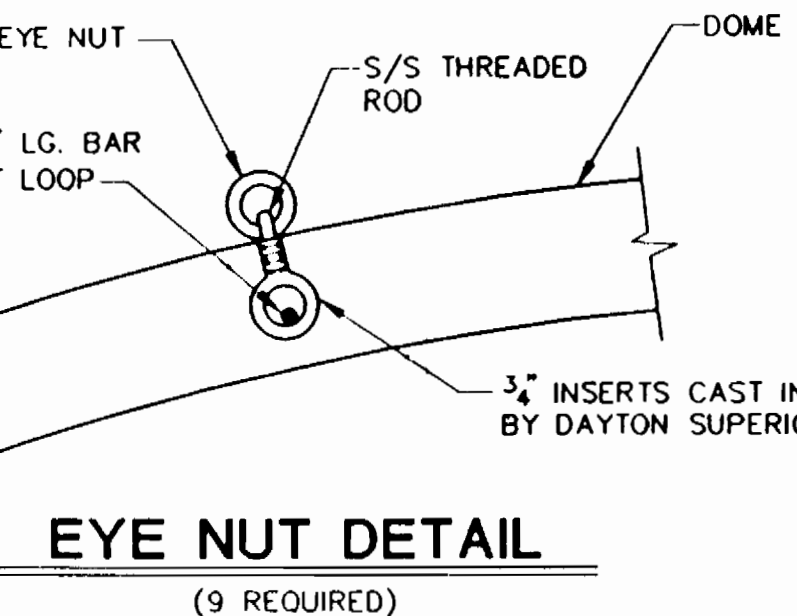


**DETAIL 3**  
**FLOOR SETTLEMENT MONITORING ASSEMBLY**

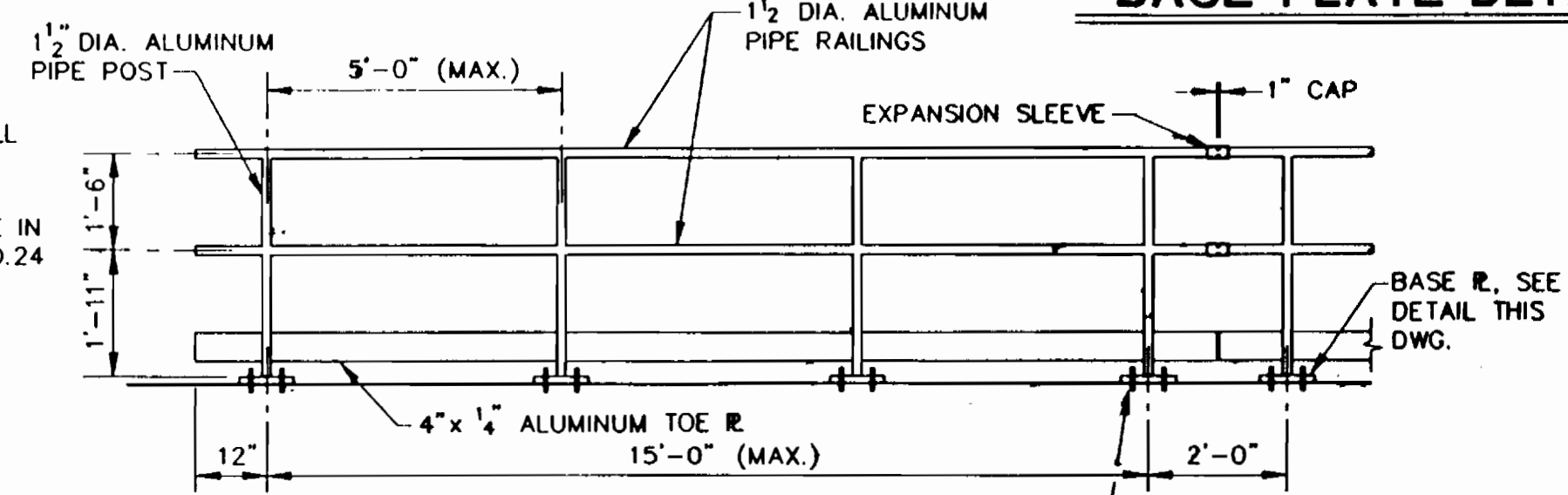
S/S WIRE, INSERT THRU 1" DOME PIPE AFTER DOME IS COMPLETED AND WHEN READY TO INSTALL FLOOR INSERTS

\* TIE S/S WIRE TO 2" RING BEFORE PASSING WIRE THRU DOME PIPE  
TIE S/S WIRE TO SNAP HOOK AFTER PASSING WIRE THRU DOME PIPE  
ALLOW ENOUGH SLACK IN WIRE SO THAT IT CAN PROJECT AT LEAST 2'-0" ABOVE 1" PIPE IN DOME WHILE LOWER END IS ATTACHED TO FLOOR BOLT

LOCATE DIRECTLY UNDER 1" PIPE IN DOME, SEE DETAIL 2 ON DWG NO.24

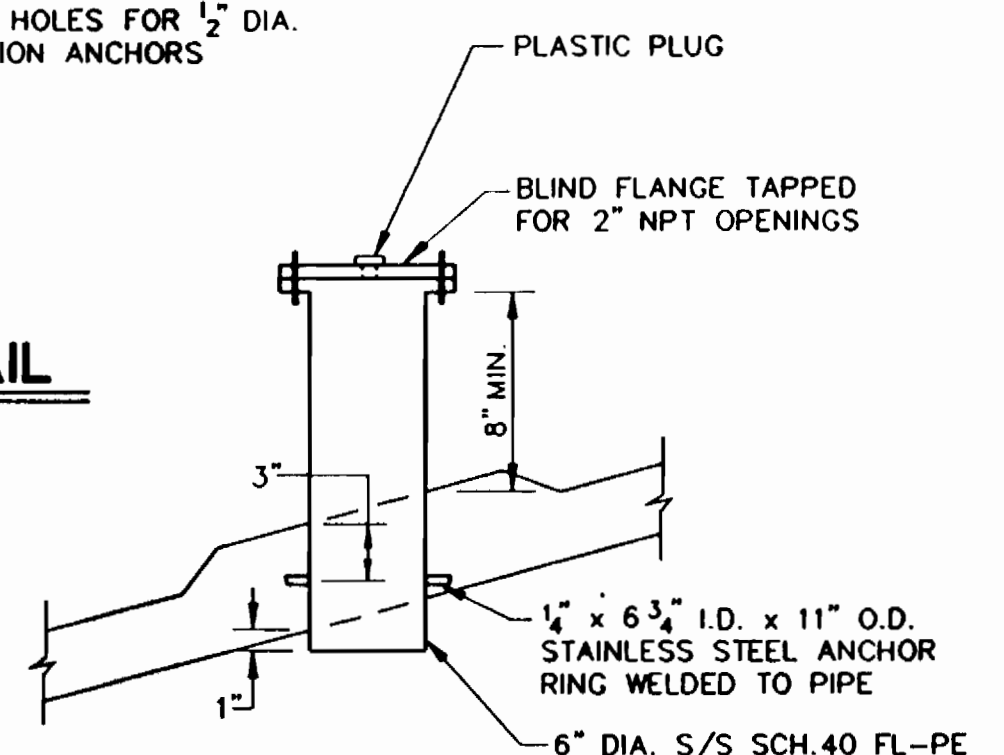


**EYE NUT DETAIL**  
(9 REQUIRED)



**RAILING SECTION DETAIL**

**BASE PLATE DETAIL**



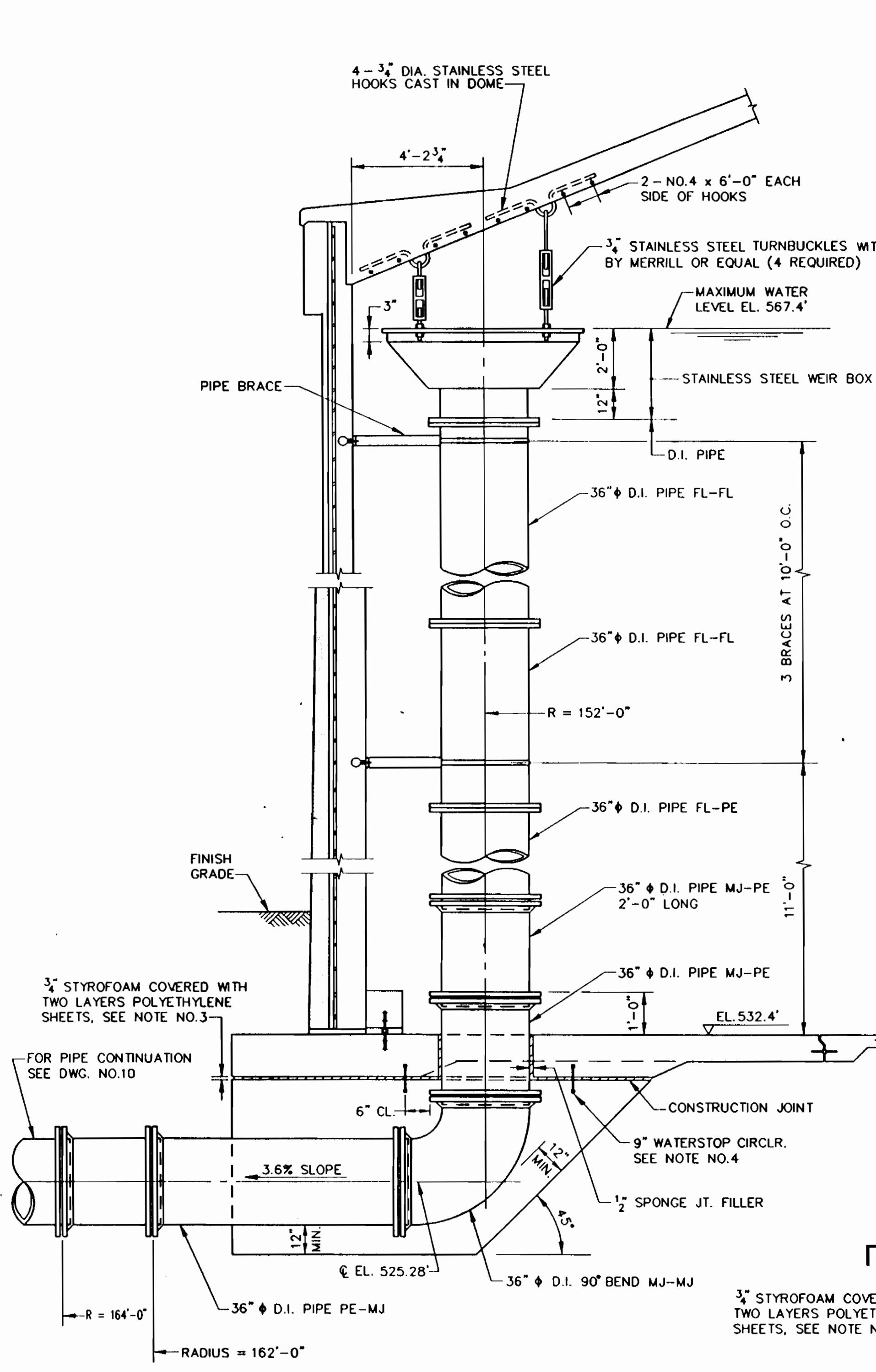
**LEVEL PROBE DETAIL**

										<b>CITY OF BALTIMORE</b> DEPT. OF PUBLIC WORKS DIRECTOR: [Signature] DATE: 11/19/90 CHIEF, UTILITY ENGR. DIVISION BUREAU OF WATER AND WASTEWATER: [Signature] DATE: 11/23/93									
DESIGNED	KC/P/JI JOINT VENTURE	BUREAU OF ENGINEERING	DEPARTMENT OF PUBLIC WORKS	LEVEL BK.	KEY SHEET	SCALE	BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING	SHEET 27 OF 29	HO. CO. CONT. NO. 44-3385 HO. CO. C.P. NO. W-8051 C.W.O. 47080		JOB ORDER NO.	3-5-3							
DRAWN	ENGINEER NICHOLAS A. LEGATOS	REVIEWED	RLB	JWA	RAC	CW	P.Y.R.	ASE	APPROVED	[Signature]	APPROVED	[Signature]							
CHECKED	DATE 12/11/90 LIC. NO. 9604	DATE	12/19/90	12/17/90	12/17/90	12/17/90	12/17/90	12-17-90	DATE	12-18-90	DATE	12-18-90							
PERMIT REQUESTED: [ ] PERMIT NUMBER: [ ] GRADE ESTABLISHED: [ ] PROFILE NUMBER: [ ]										P. W. A. DR. NO. 424 CONTRACT NO. 91012 WXO J.O. [ ] DRAFTSMAN [ ] DATE [ ] RECORD DRAWING 11/23/93 SEE APPENDIX FOR RECORD DRAWINGS									
HIGHWAYS [ ] STRUCTURES [ ] STORM DRAINS [ ] WATER [ ] SEWER [ ] FIELD DITCHES [ ]										BUREAU OF ENGINEERING DEPARTMENT OF PUBLIC WORKS LEVEL BK. [ ] KEY SHEET [ ] DETAIL BK. [ ] POSITION SHEET [ ] DATE [ ] REVISION [ ] BY [ ]									
PLANNING [ ] DESIGN [ ] CONSTRUCTION [ ]										BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING <b>CATONSVILLE RESERVOIR</b> <b>ROOF PLAN AND INSIDE LADDER DETAILS</b> EL. DISTRICT NO. 1									

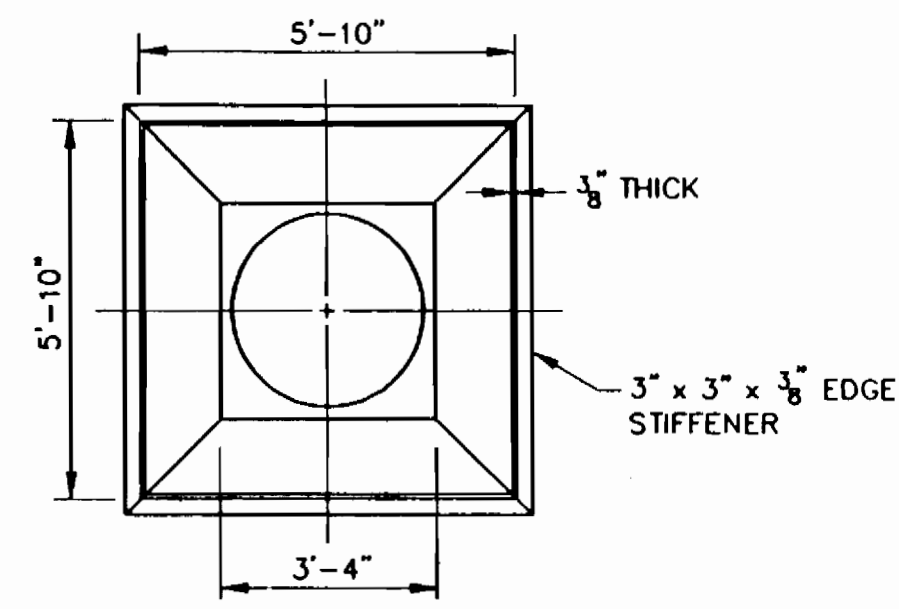
3385

MICROFILMED

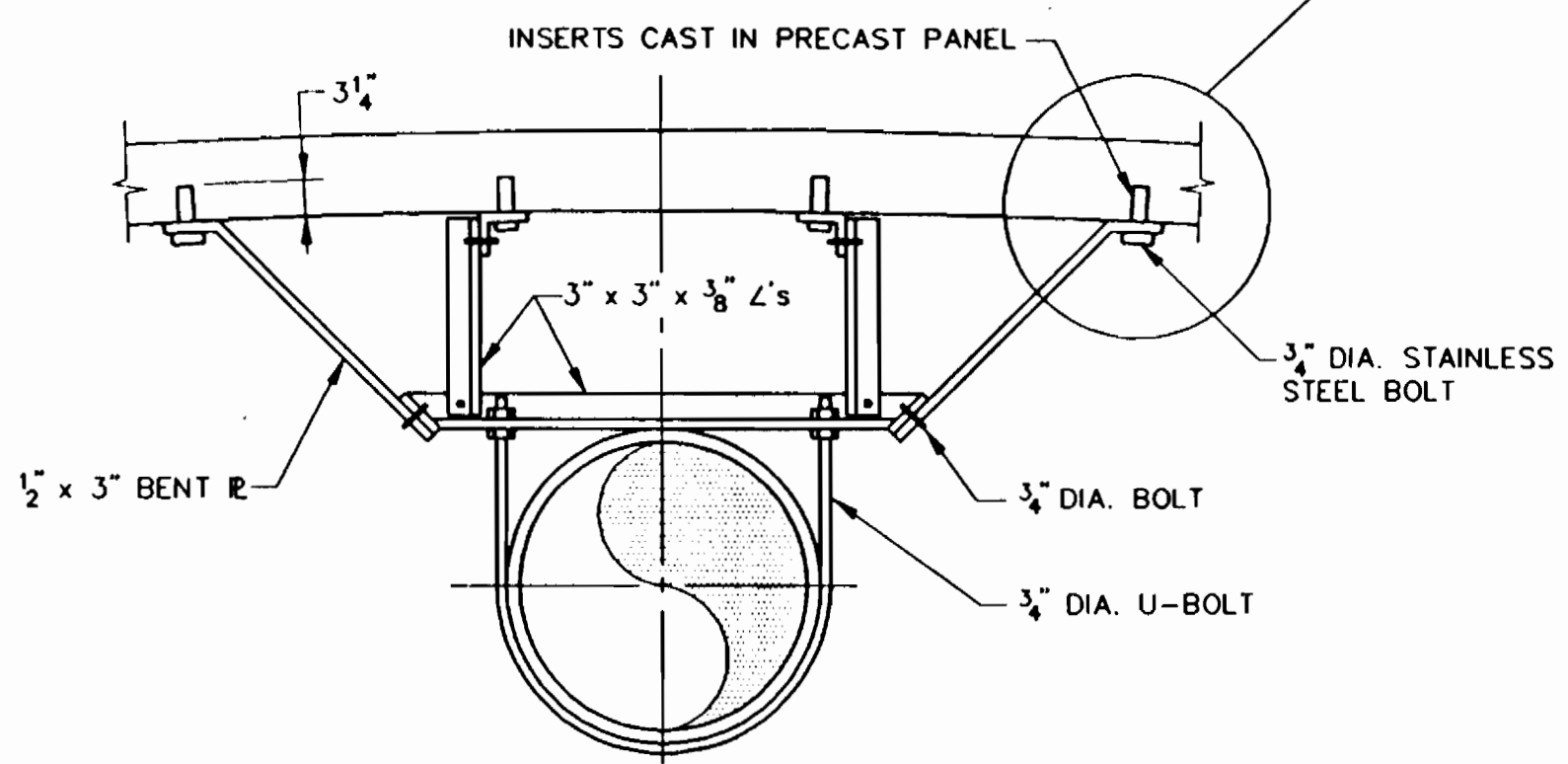




**OVERFLOW PIPE DETAIL**  
N.T.S.

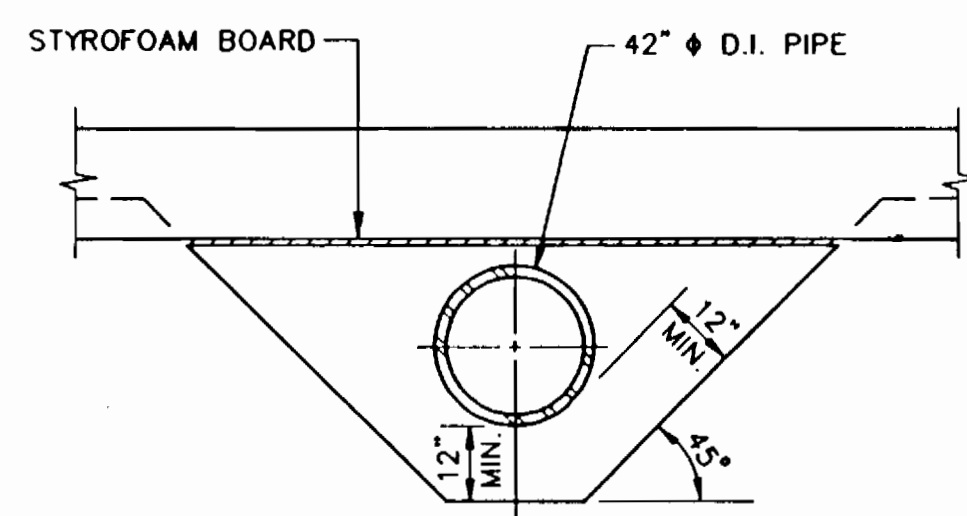


**WEIR BOX PLAN**  
N.T.S.

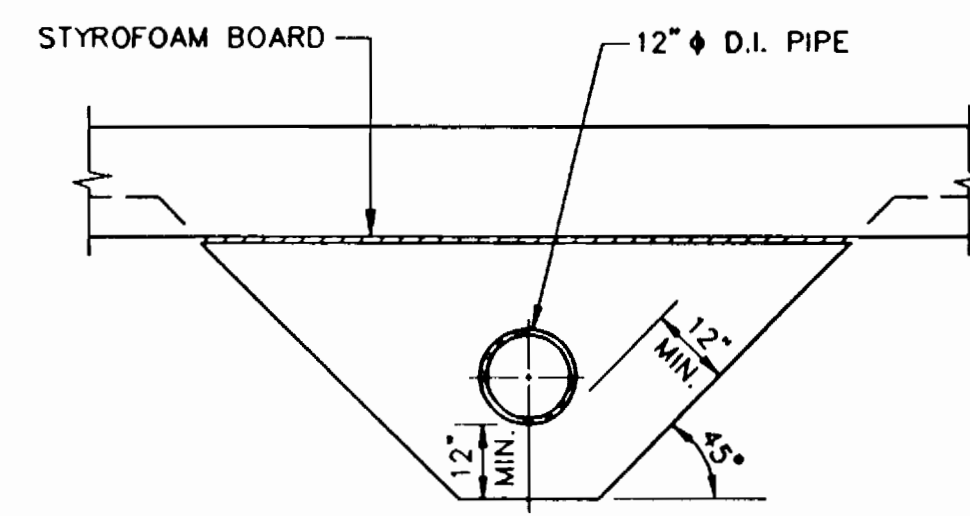


**PIPE BRACE DETAIL**  
N.T.S.

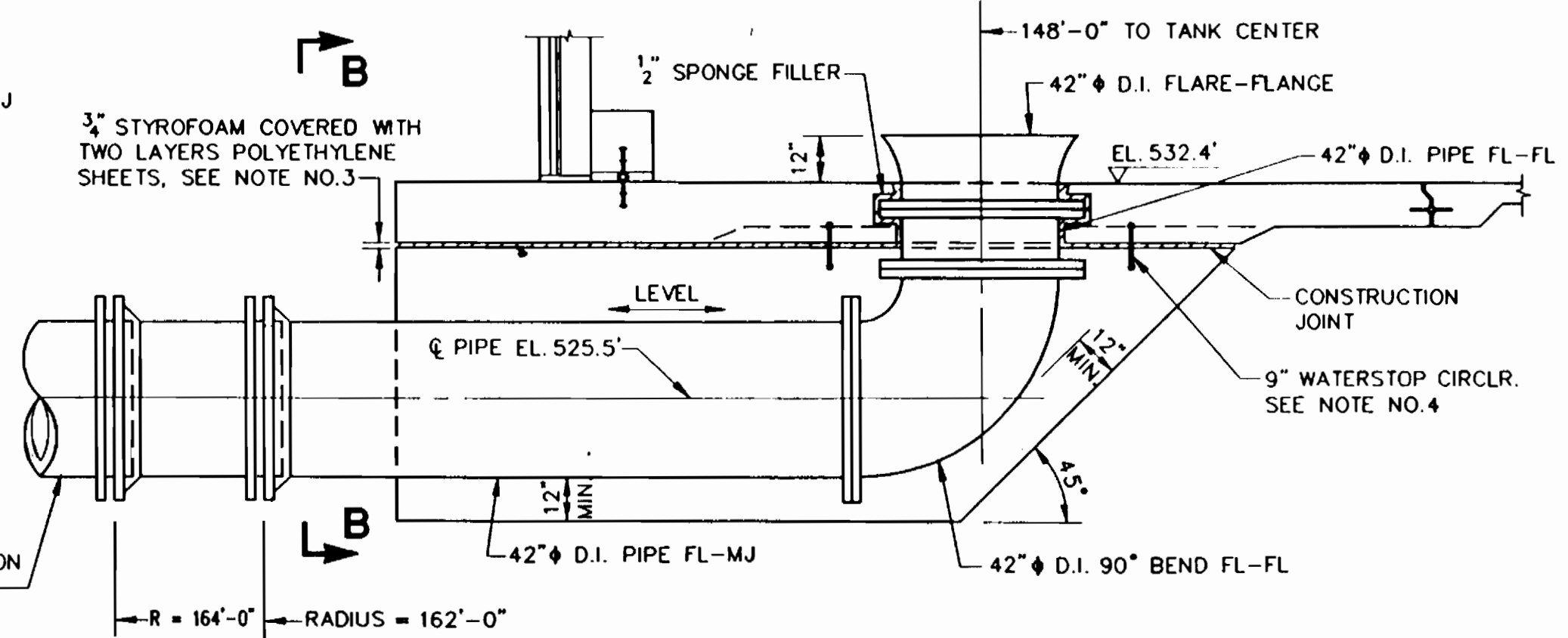
BRACE MATERIAL: STEEL (A36) GALVANIZED AFTER FABRICATION  
 HARDWARE: STAINLESS STEEL



**VIEW B-B**  
N.T.S.

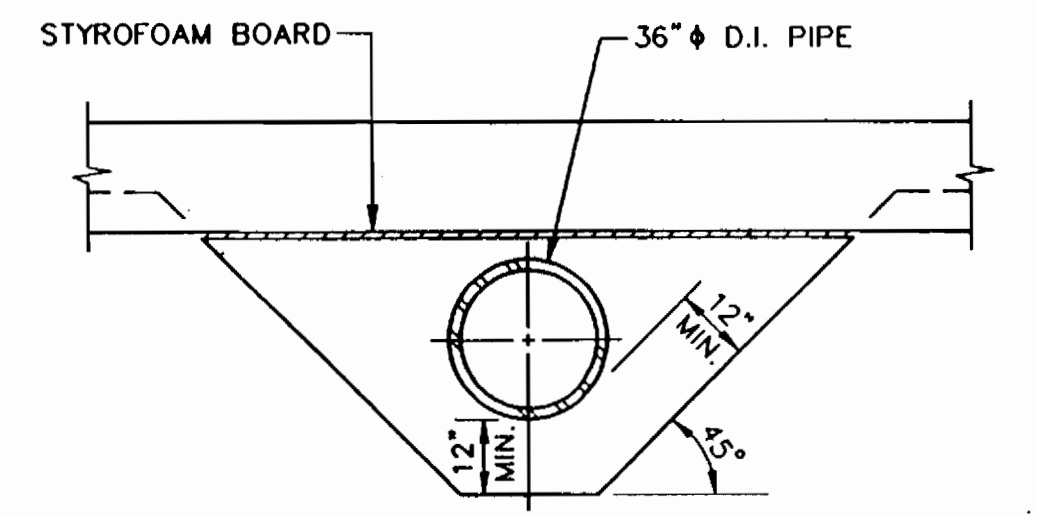


**VIEW C-C**  
N.T.S.

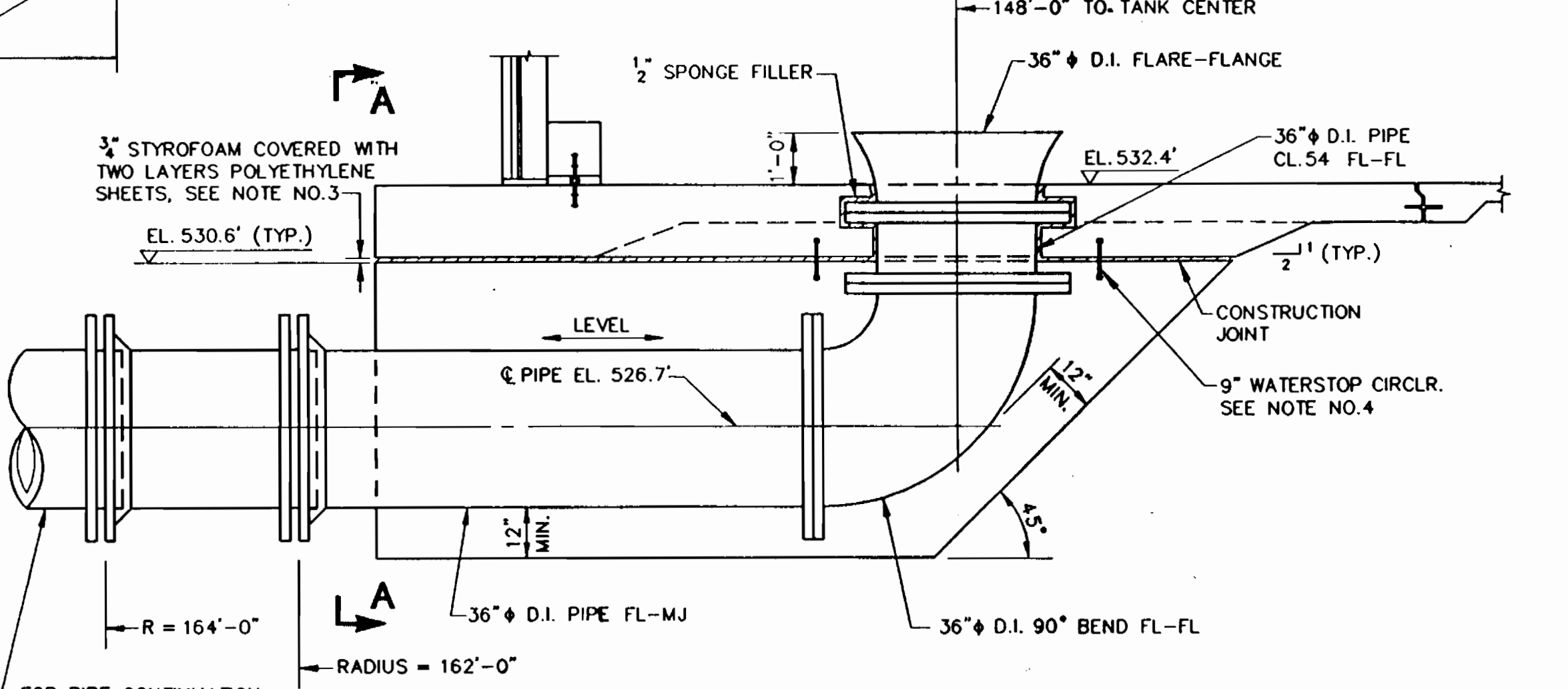


**EFFLUENT PIPE DETAIL**  
N.T.S.

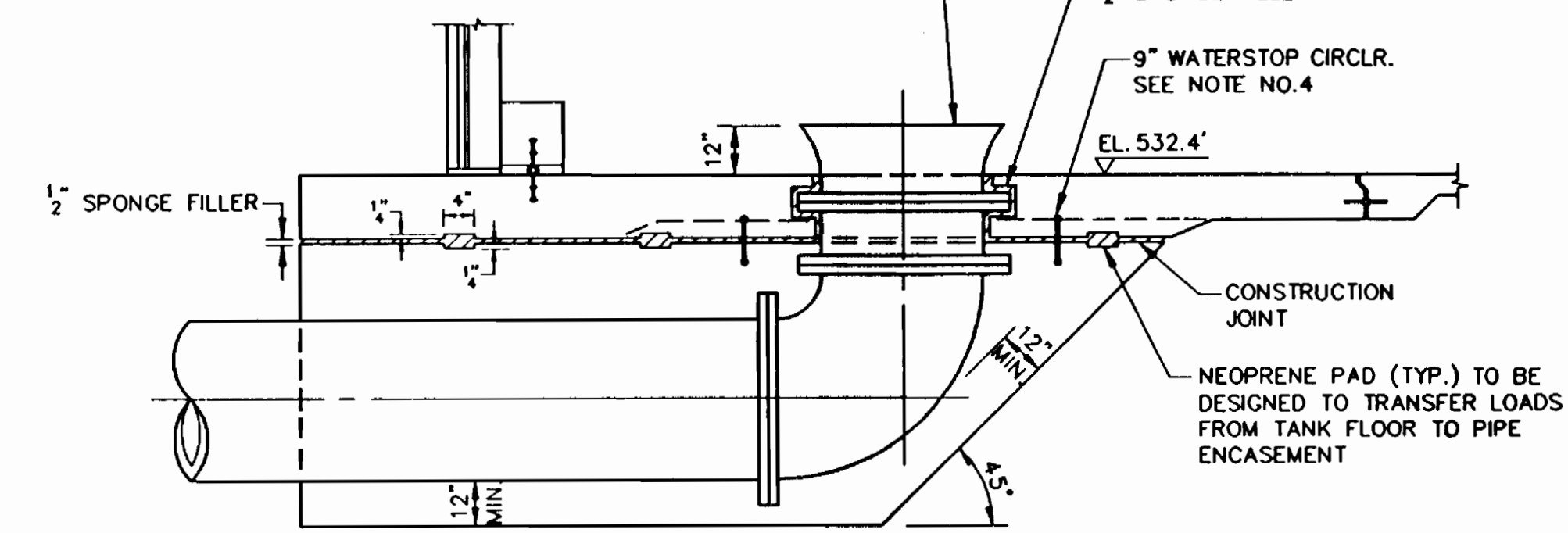
NOTES:  
 1) ALL FLANGED JOINTS TO HAVE 1/8" FULL FACE GASKETS.  
 2) PIPE THICKNESS AND COATINGS TO BE PER SPECIFICATIONS.  
 3) 3/4" STYROFOAM BOARD AT EL. 530.6' TO BE COVERED WITH (2) LAYERS OF 8 MIL THICK POLYETHYLENE SHEETS. ENSURE THAT SURFACE BETWEEN POLY SHEETS IS CLEAN AND FREE OF DIRT, DEBRIS OR OTHER OBSTRUCTIONS. STYROFOAM TO BE TYPE "HIGH LOAD" HL 40 AS MANUF. BY DOW CHEMICAL, HAVING A MINIMUM COMPRESSIVE STRENGTH OF 40 PSI (PER ASTM-D 1621).  
 4) FOOTING REINFORCEMENT IN WAY OF PIPE WATERSTOP MUST CLEAR TOP OF WATERSTOP BY 2" MIN.



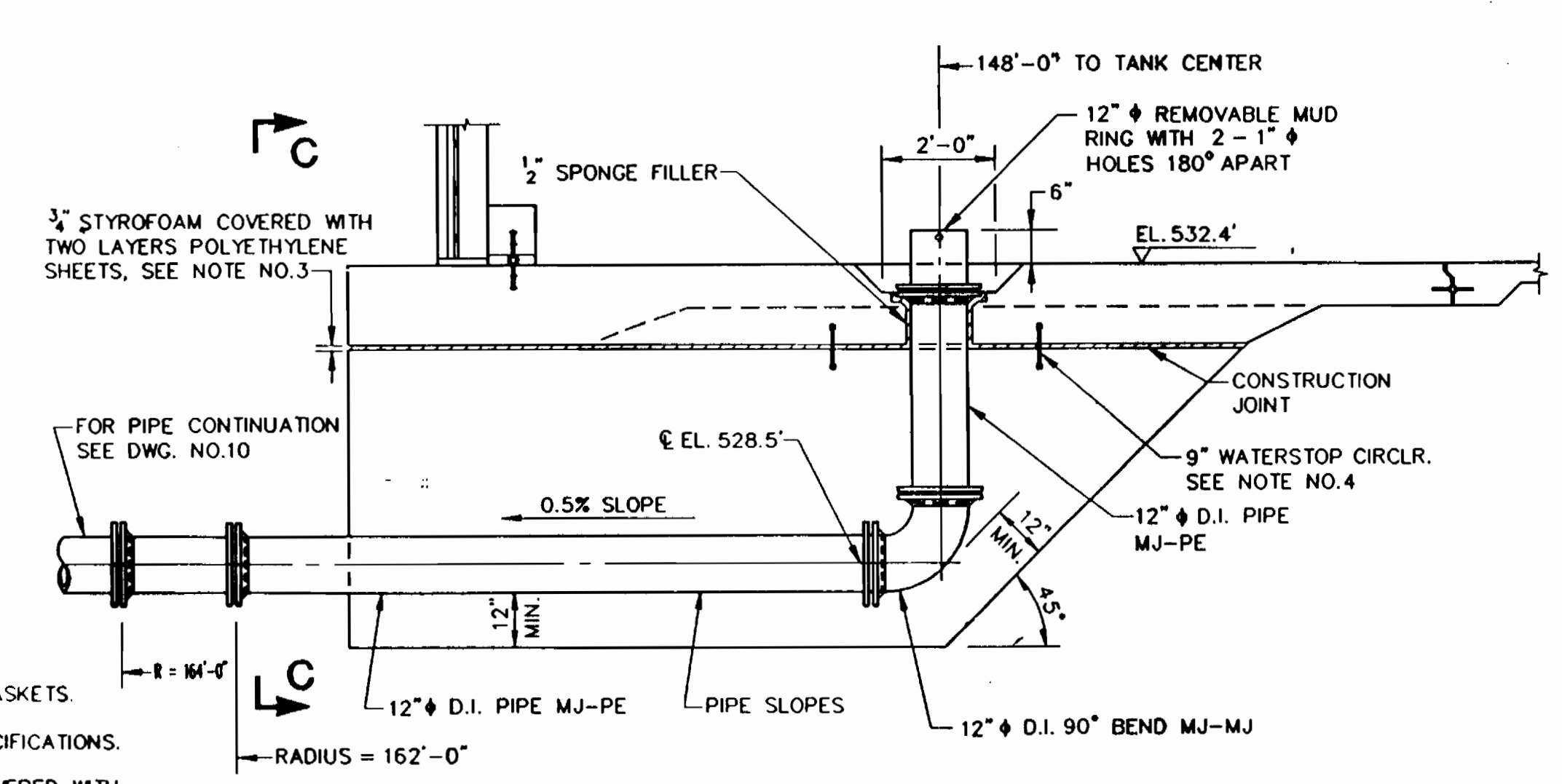
**VIEW A-A**  
N.T.S.



**INFLUENT PIPE DETAIL**  
N.T.S.



**ALTERNATE DETAIL FOR PIPE ENCASMENT**



**DRAIN PIPE DETAIL**  
N.T.S.

(3 REQUIRED)

		<b>CITY OF BALTIMORE</b> DIRECTOR: <i>Nicholas A. Legatos</i> DATE: <i>12/17/90</i> DEPT. OF PUBLIC WORKS CHIEF, UTILITY ENGR. DIVISION BUR. OF WATER AND WASTEWATER DATE: <i>12/17/90</i>	
DESIGNED	KC/PII JOINT VENTURE	BUREAU OF ENGINEERING	DEPARTMENT OF PUBLIC WORKS
DRAWN	ENGINEER NICHOLAS A. LEGATOS	APPROVED	APPROVED
CHECKED	DATE 12/11/90 LIC. NO. 9604	DATE 12-15-90	DATE

DATE	RIGHT OF WAY	REF.	ROAD PERMITS AND GRADES	P. W. A. DR. NO.	CONTRACT NO.	REVISED AS PER RECORD PRINT
			PERMIT REQUESTED	424	91012 WYO	J.O. DRAFTSMAN DATE
			PERMIT NUMBER			RECORD DRAWING 11/23/93
			GRADE ESTABLISHED			SEE APPENDIX FOR RECORD DRAWINGS
			PROFILE NUMBER			

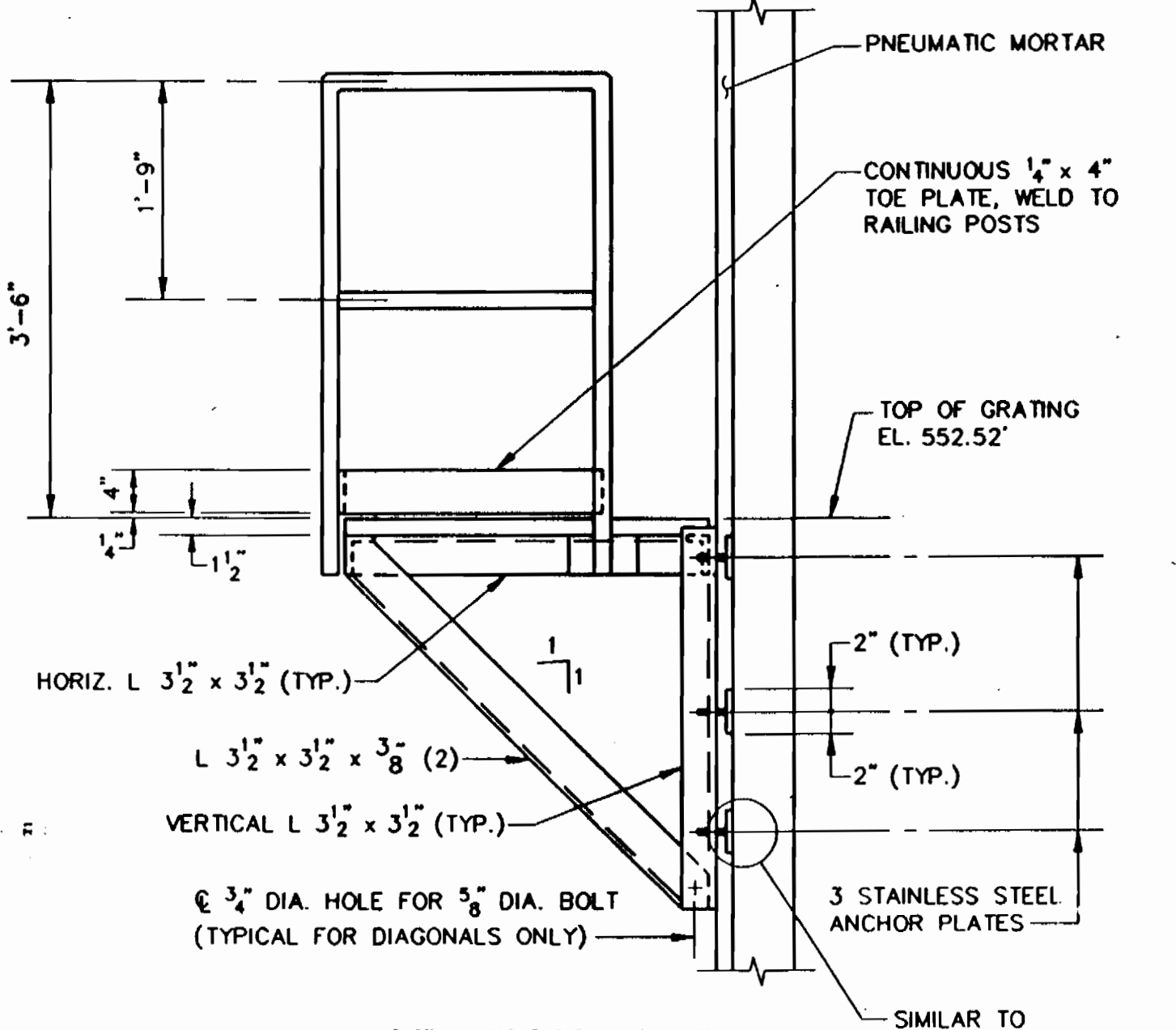
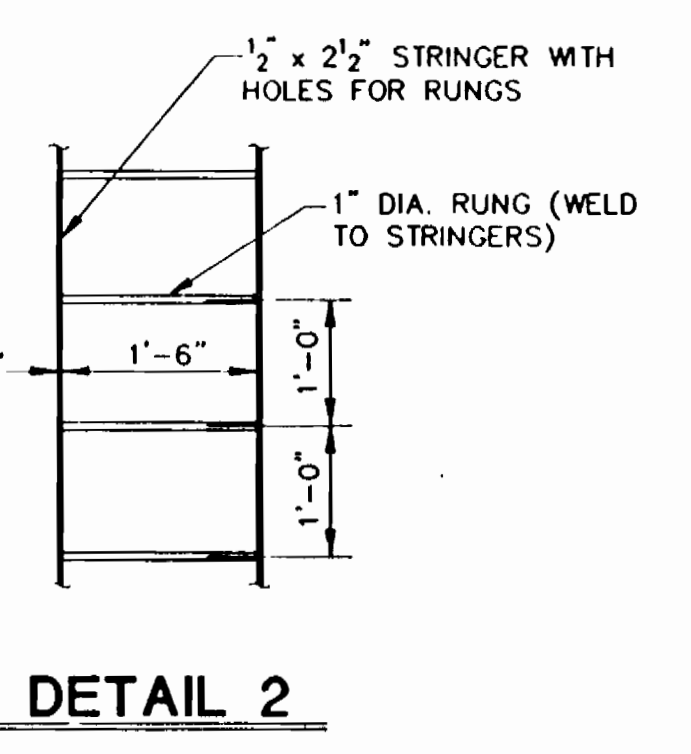
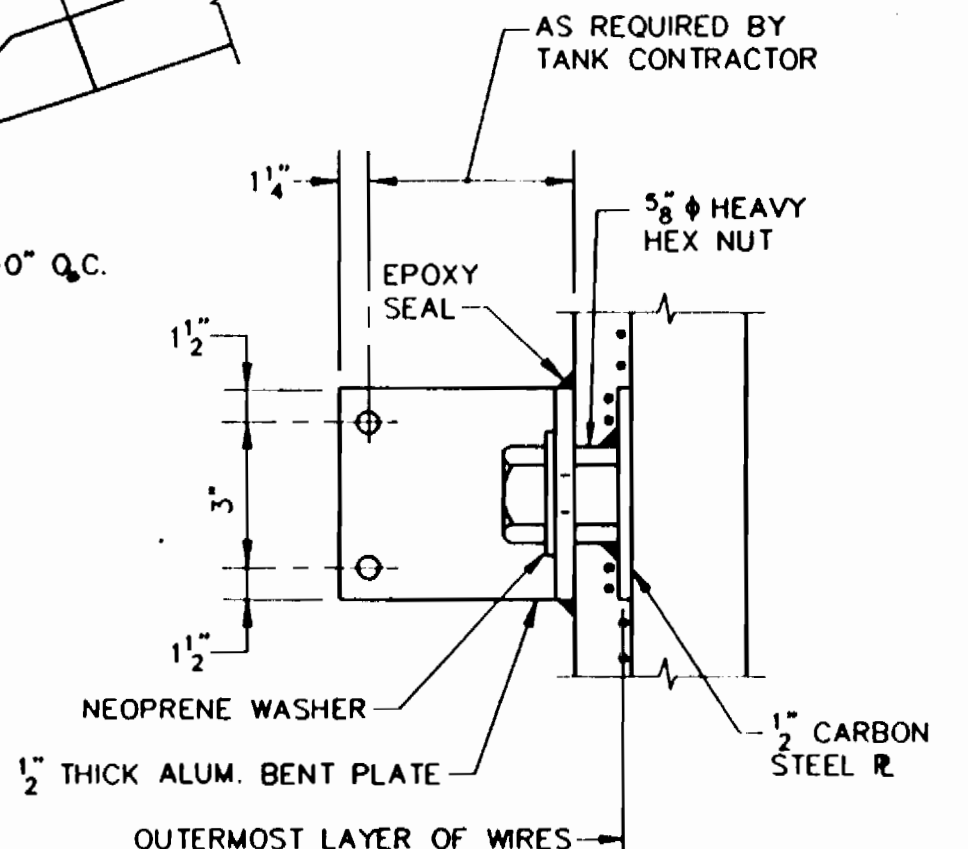
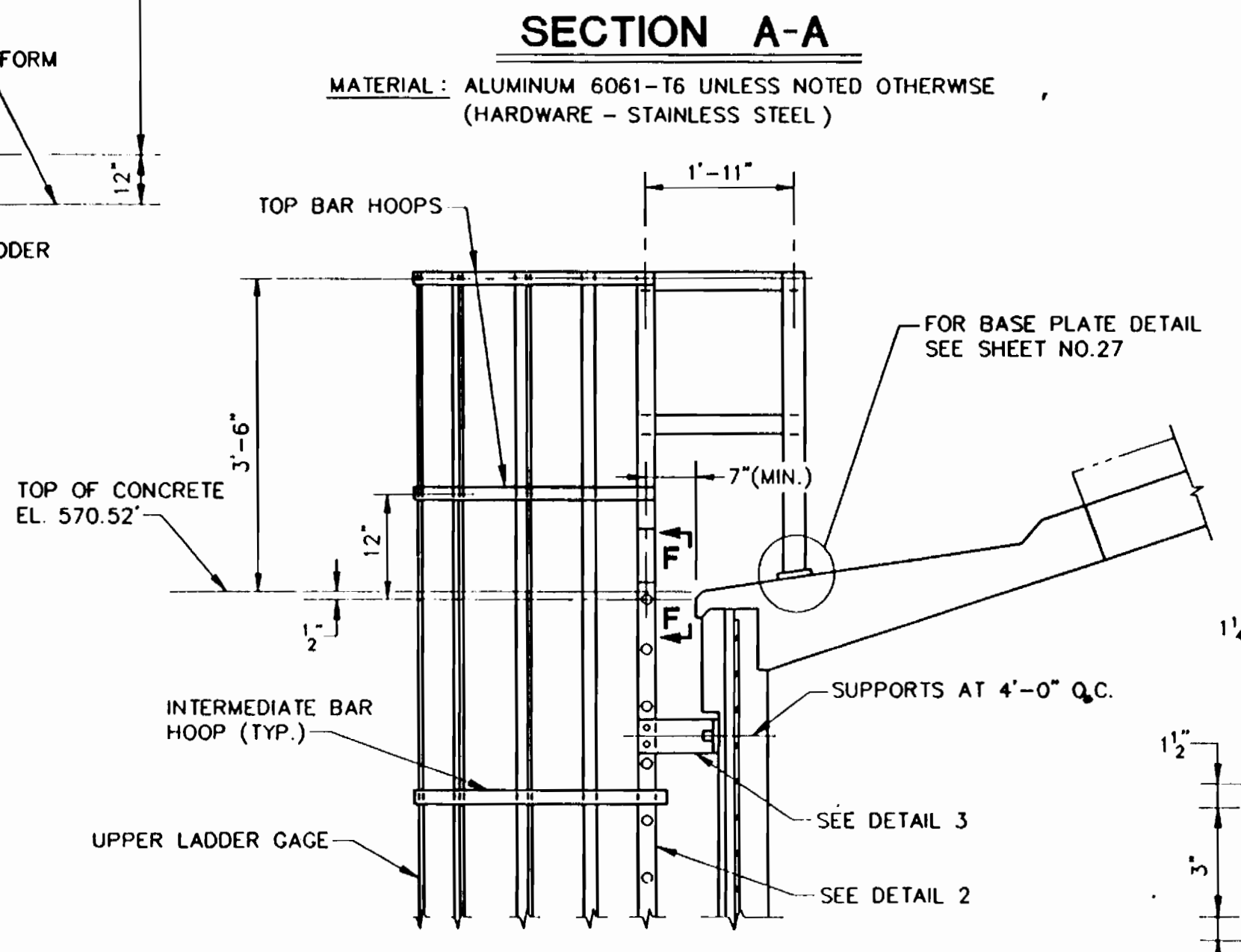
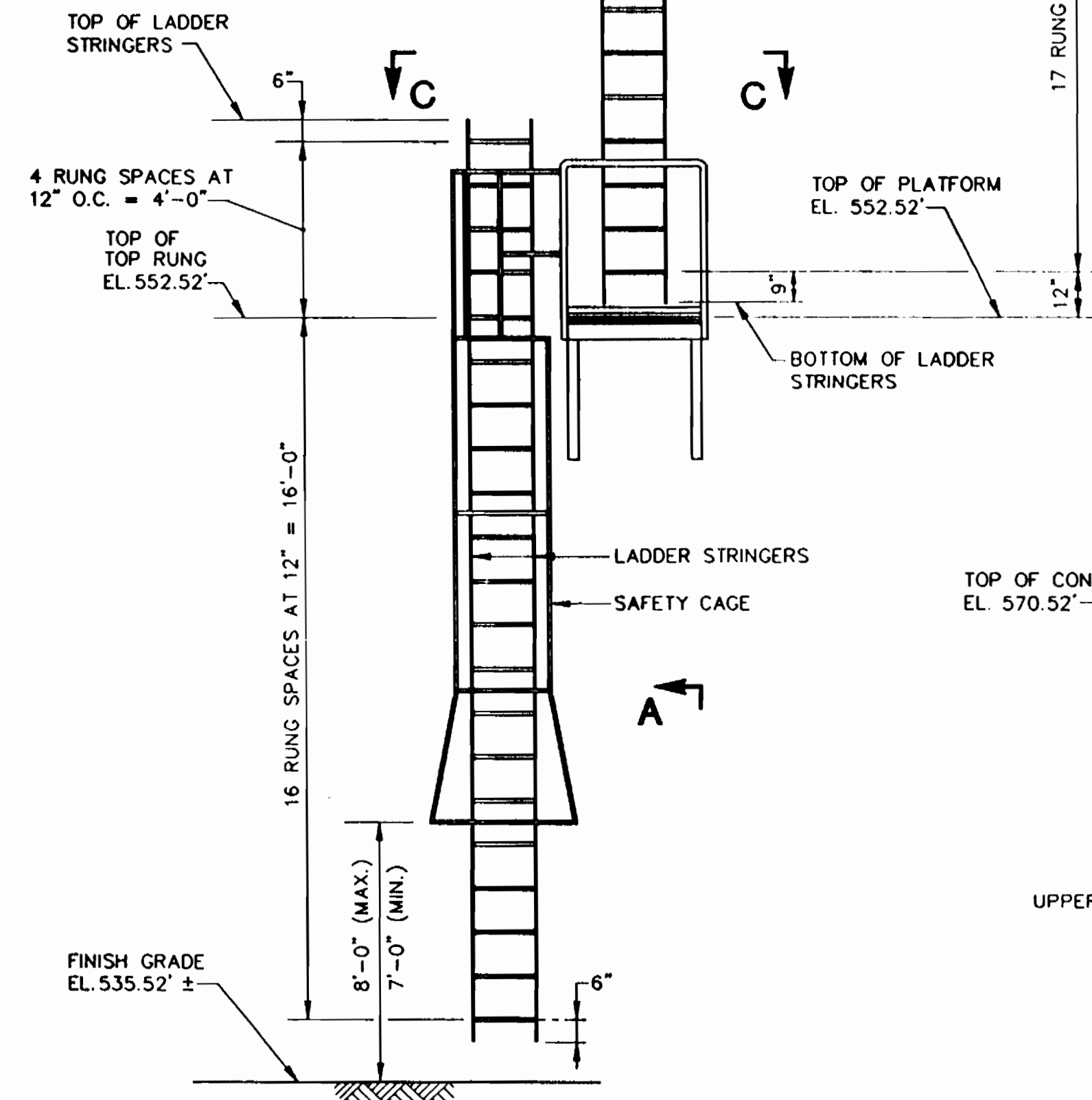
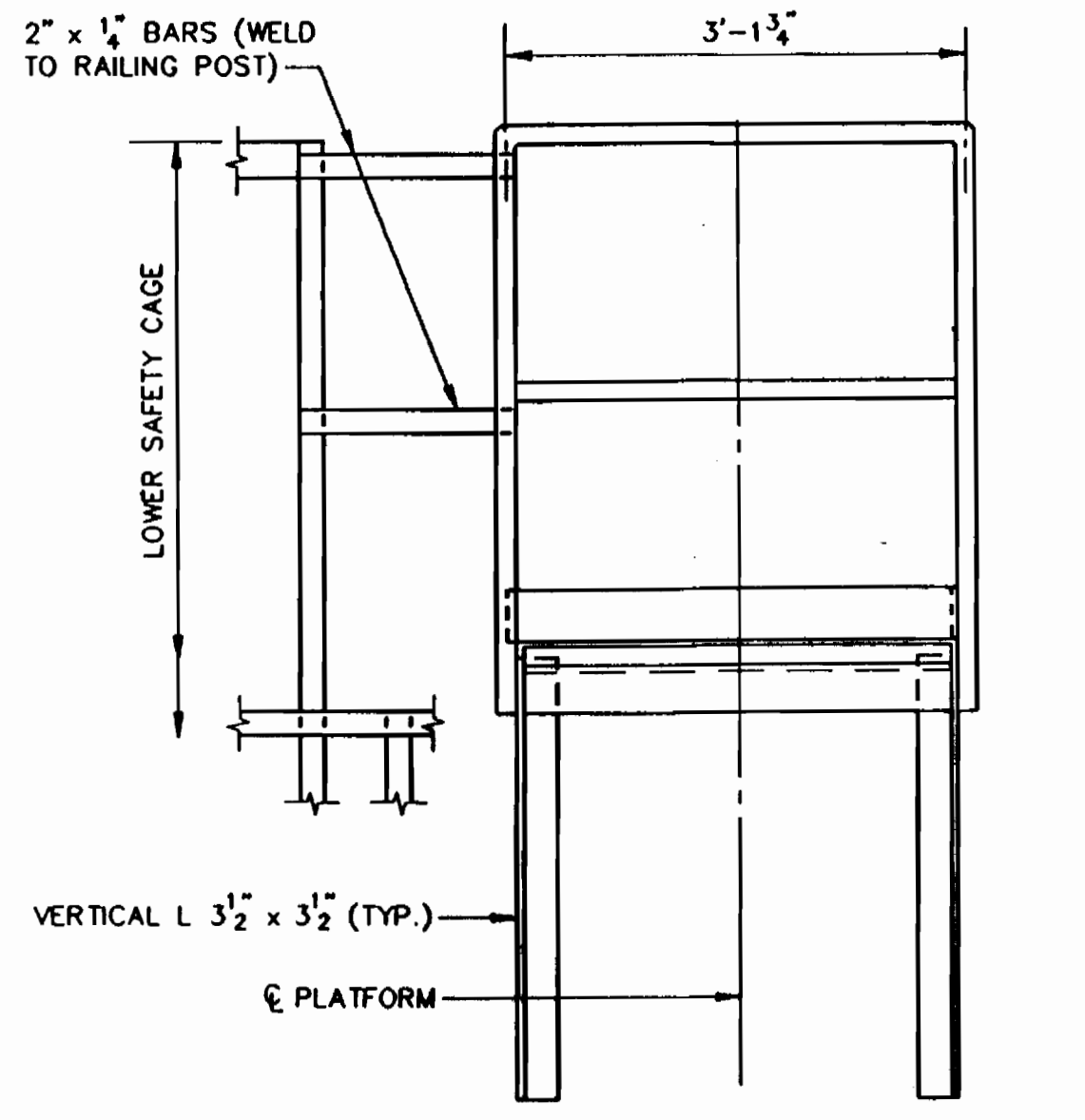
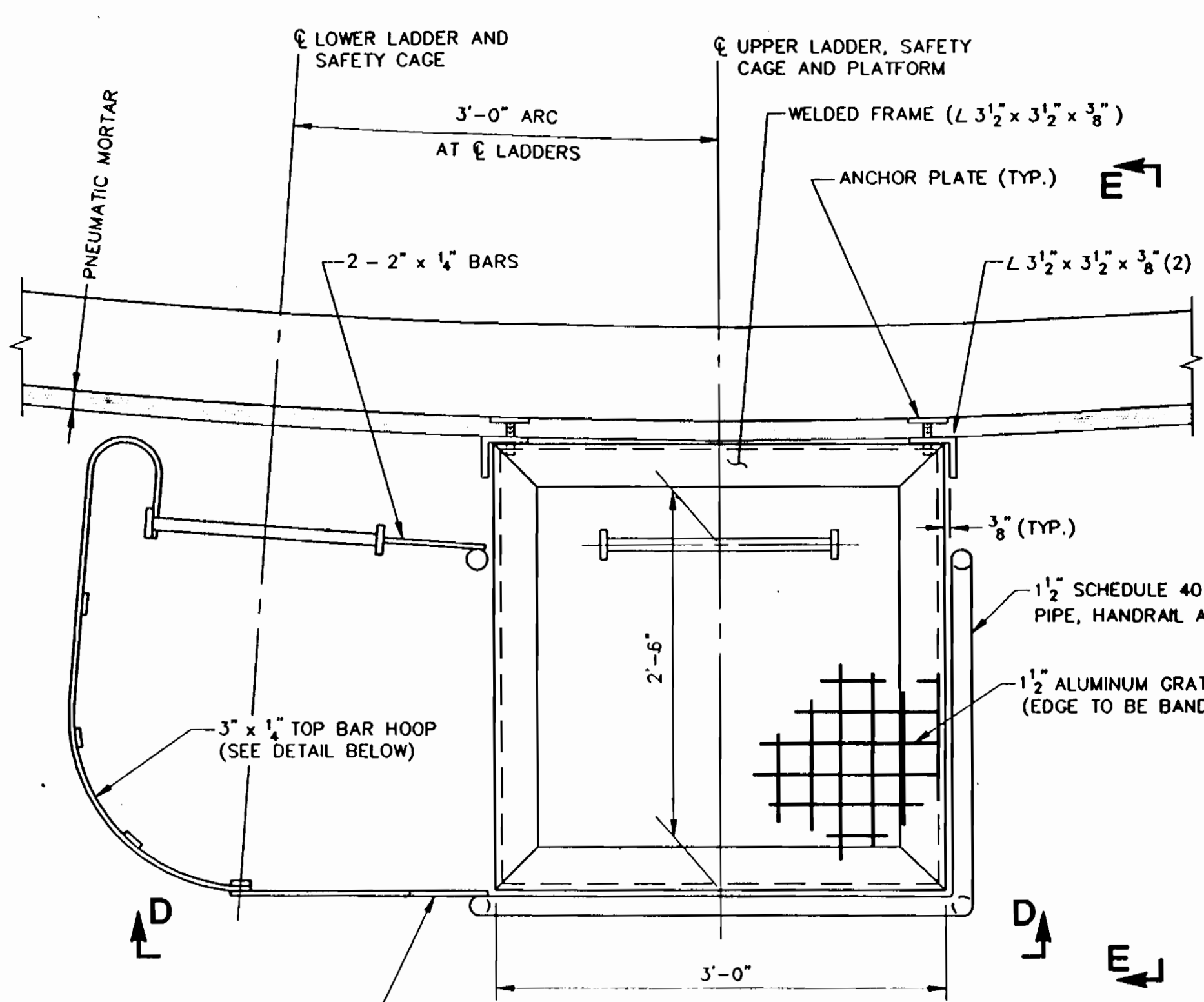
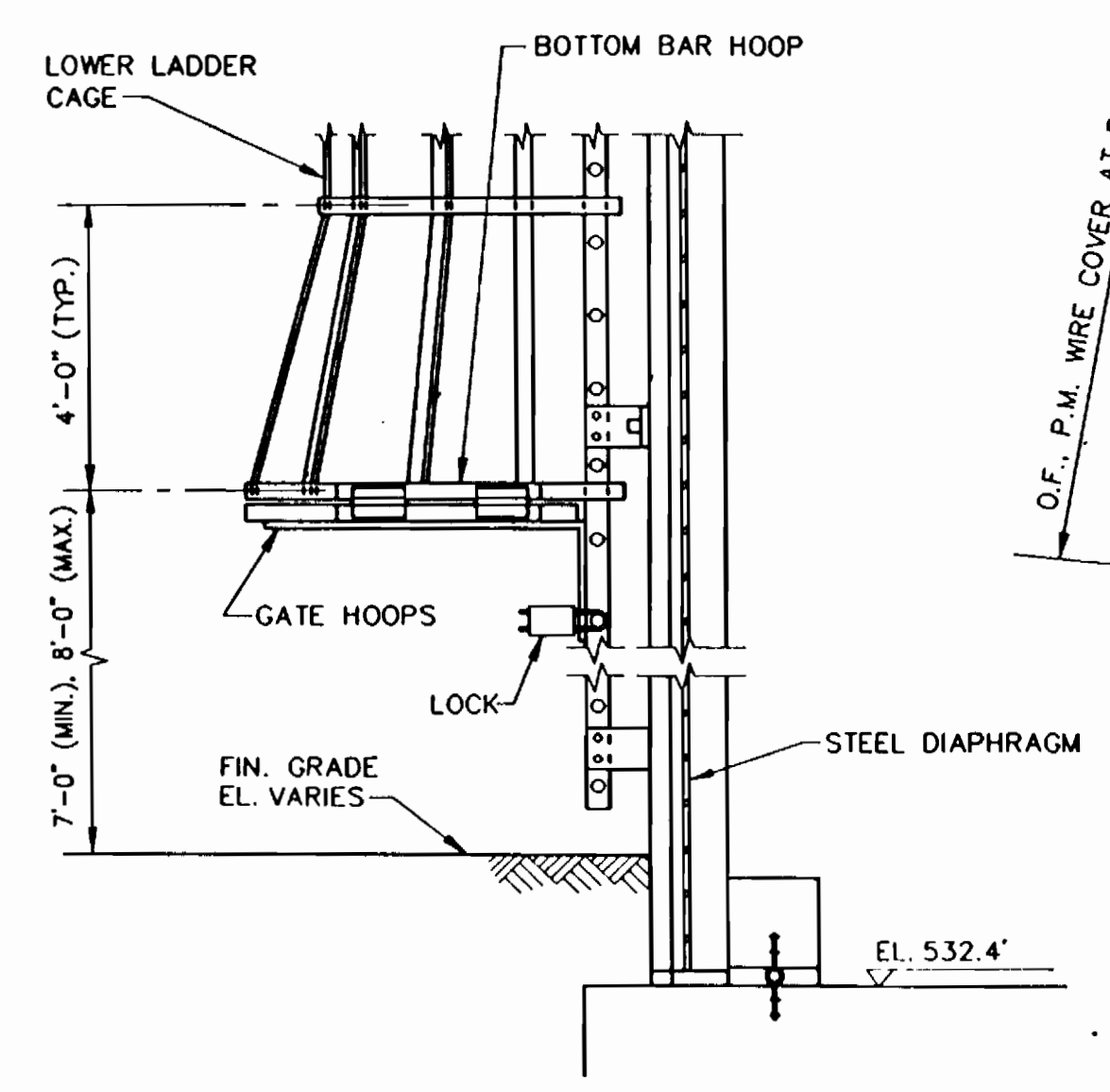
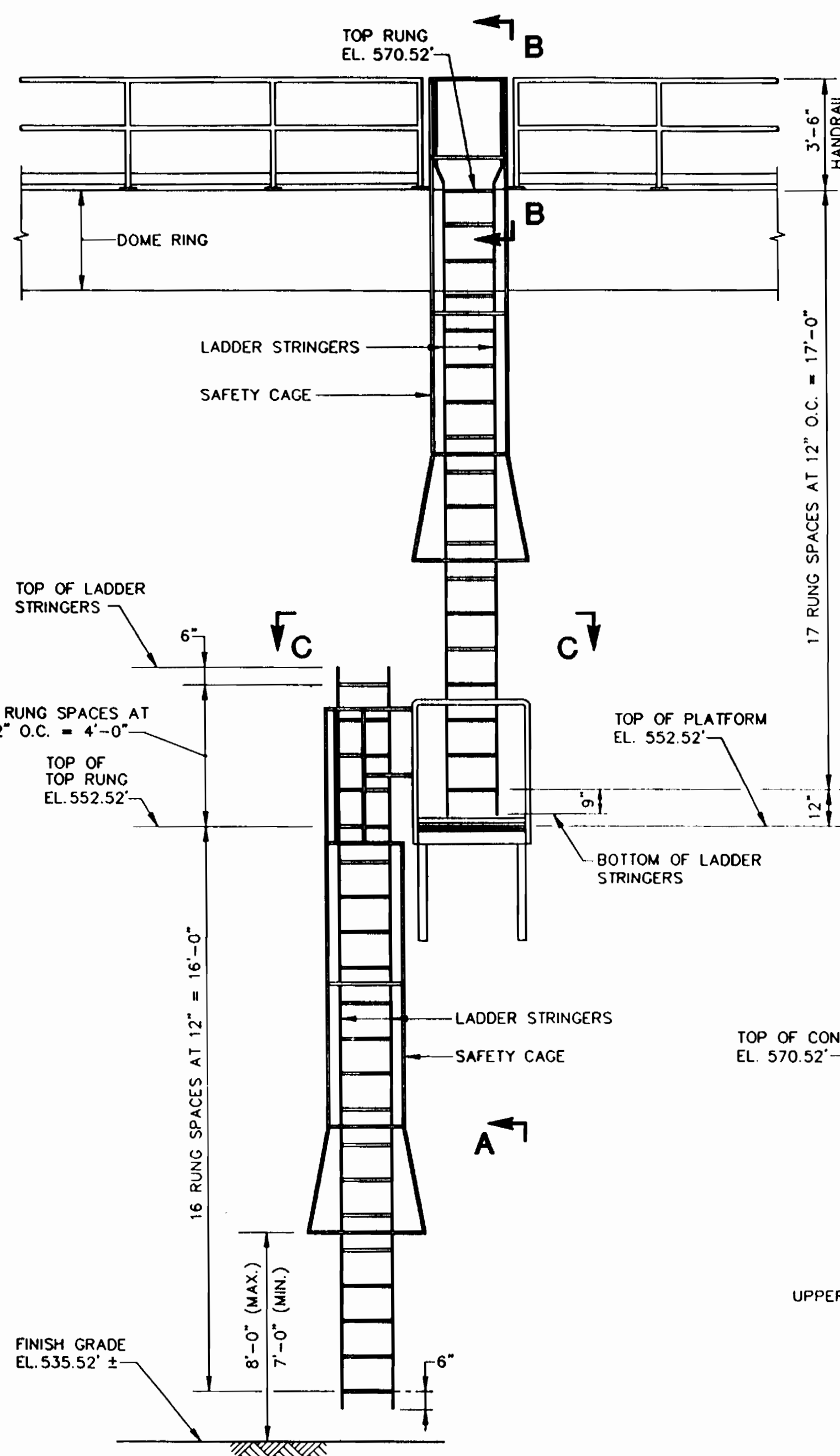
LEVEL BK.	KEY SHEET	SCALE	BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING
DETAIL BK.	POSITION SHEET	PLAN:	CATONVILLE RESERVOIR PIPING DETAILS
DATE	REVISION	PROFILE:	SUBDIVISION: CATONVILLE EL. DISTRICT NO. 1

HO. CO. CONT NO. 44-3385  
 HO. CO. C.P. NO. W-8051  
 C.W.O. 47080

JOB ORDER NO.	3-5-3
SHEET 28 OF 29	
DWG. NO.	90-1082
FILE:	MICROFILMED

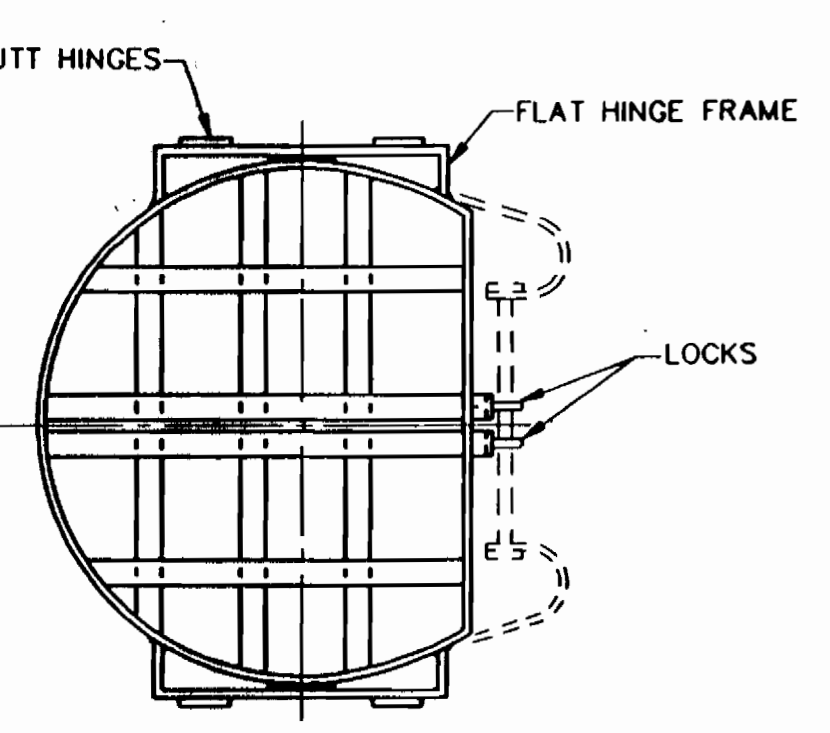
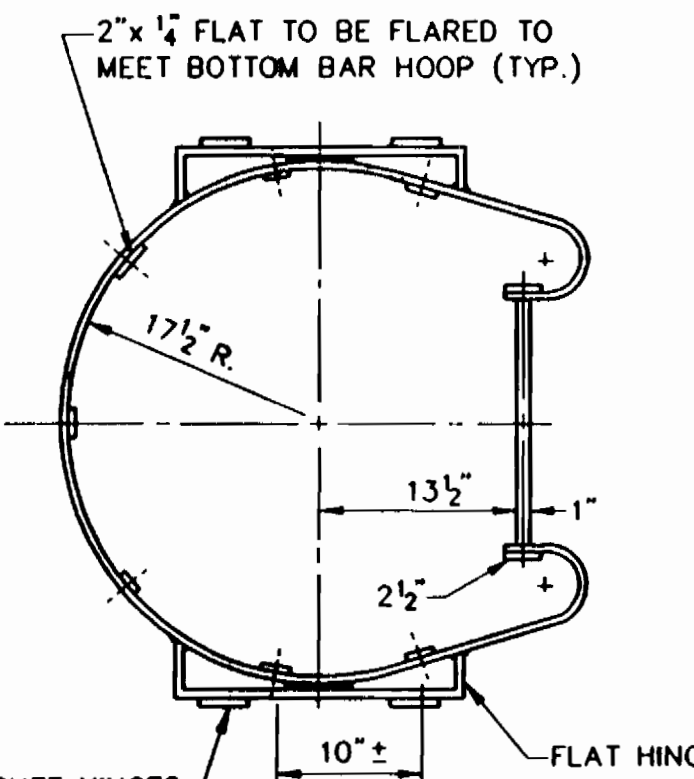
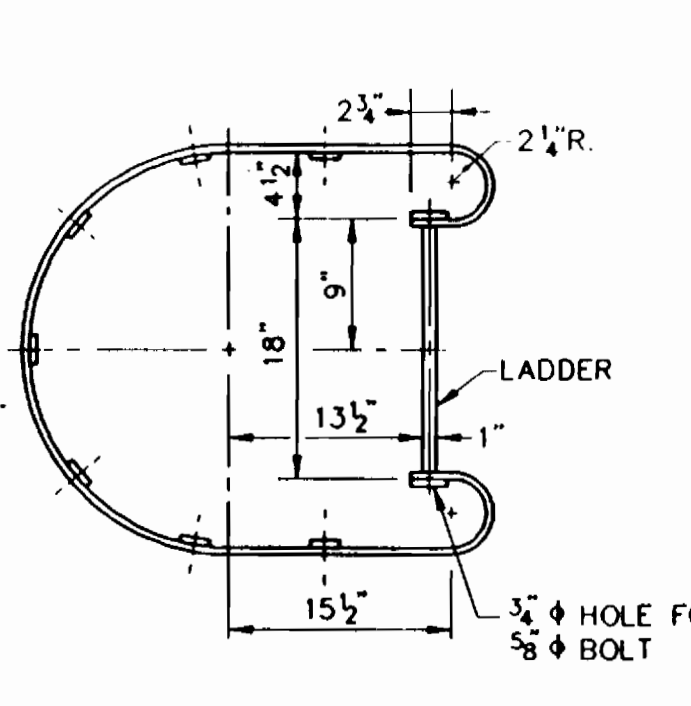
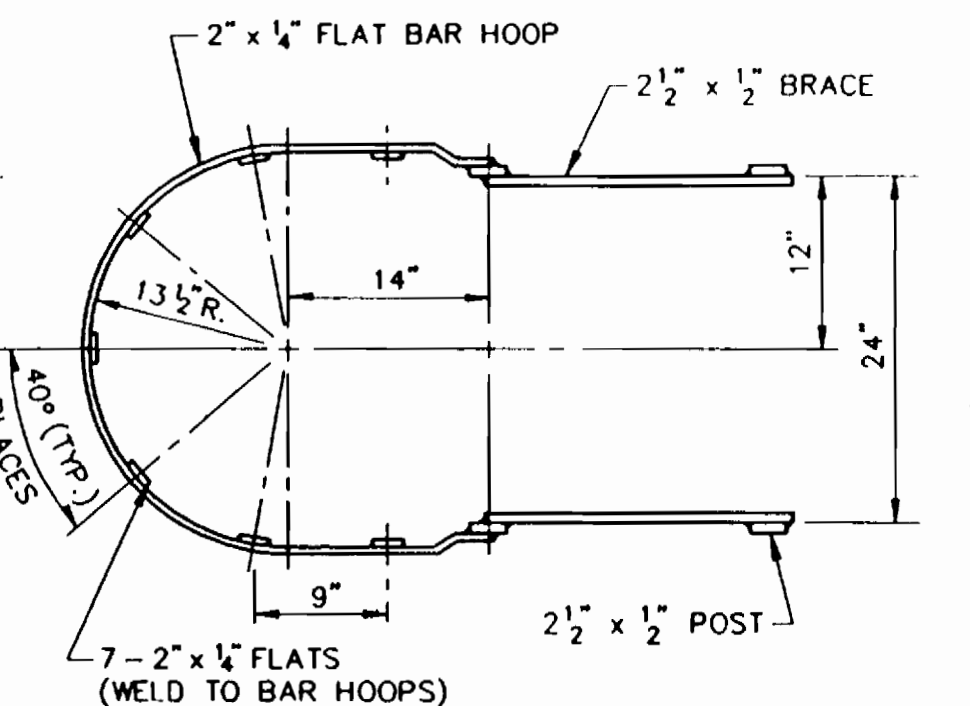
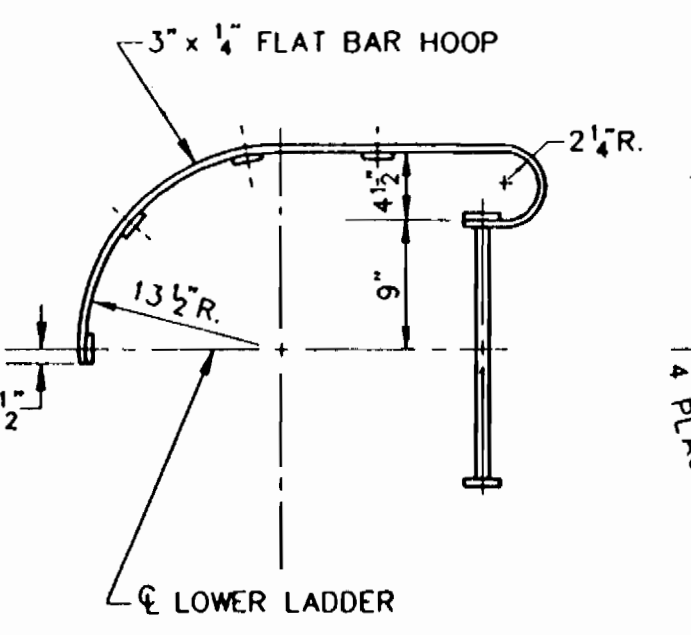
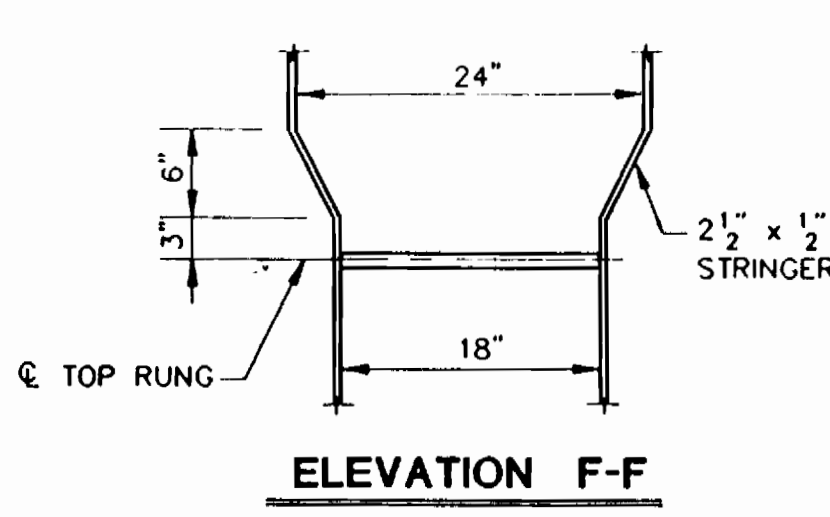
5835





**OUTSIDE LADDER ELEVATION**

MATERIAL: ALUMINUM 6061-T6 UNLESS NOTED OTHERWISE (ANCHOR PLATES AND HARDWARE TO BE STAINLESS STEEL)  
ALUMINUM & STAINLESS STEEL TO BE SEPARATED WITH NEOPRENE WASHERS  
NOTE: PLATFORM TO BE DESIGNED FOR LIVE LOAD OF 100 P.S.F.



		<b>CITY OF BALTIMORE</b> DEPT. OF PUBLIC WORKS DATE 11/19/91 CHIEF, UTILITY ENGR. DIVISION BUREAU OF WATER AND WASTEWATER DATE 11/23/93									
DESIGNED	KC/PII JOINT VENTURE	REVIEWED	NLB	JWA	RAC	CW	P.Y.R.	A.S.E.	APPROVED	DATE 12-18-90	
DRAWN	ENGINEER NICHOLAS A. LEGATOS	DATE	12/10/90	12/17/90	12/17/90	12/17/90	12/17/90	12/17/90	DATE	12-18-90	
CHECKED	DATE 12/11/90 LIC. NO. 9604	DATE	12/10/90	12/17/90	12/17/90	12/17/90	12/17/90	12/17/90	DATE	12-18-90	
PERMIT REQUESTED PERMIT NUMBER GRADE ESTABLISHED PROFILE NUMBER		ROAD PERMITS AND GRADES P. W. A. DIR. NO. 424 CONTRACT NO. 91012 WXO		REVISED AS PER RECORD PRINT J.O. DRAFTSMAN DATE RECORD DRAWING 11/23/93		SEE APPENDIX FOR RECORD DRAWINGS		BUREAU OF ENGINEERING DEPARTMENT OF PUBLIC WORKS LEVEL BK. H-NE POSITION SHEET 4.5W 27, 28		BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING CATONSVILLE RESERVOIR OUTSIDE LADDER DETAILS SUBDIVISION: CATONSVILLE	
JOB ORDER NO. 3-5-3 SHEET 29 OF 29 DWG. NO. 90-1983 FILE: 3		HO. CO. CONT. NO. 44-3385 HO. CO. C.P. NO. W-8051 C.W.O. 47080		CATONSVILLE RESERVOIR OUTSIDE LADDER DETAILS BL. DISTRICT NO. 1		SCALE: PLAN: PROFILE: HOR. VERT.		DATE REVISION BY		APPROVED: [Signature] DIRECTOR	

3385