

U.S. ROUTE 40

WATER MAIN REPLACEMENT

CAPITAL PROJECT W-8164

CONTRACT NO. 44-3077

ITEM	QUANTITIES		TYPE MATERIAL	SUPPLIER
	ESKIMO.	AS BUILT		
24" WATER	427 L.F.	353 L.F.	STEEL	STUPP CORP. PO BOX 3658 BATON ROUGE, LA. 70821
24" GATE VALVE	1	1	RESILIENT WEDGE	GLOW VALVE CO.
12" GATE VALVE	1	2	RESILIENT WEDGE	MUELLER CO.
FIRE HYDRANT	1	1		MUELLER CO.
6" GATE VALVE	1	1		MUELLER CO.
8" GATE VALVE	1	1		MUELLER CO.

NOTE:
SEDIMENT CONTROL TO BE IMPLEMENTED IN ACCORDANCE WITH VOLUME 4, ARTICLE 15 OF THE HOWARD COUNTY DESIGN MANUAL AND THESE PLANS.

ENGINEER'S CERTIFICATION

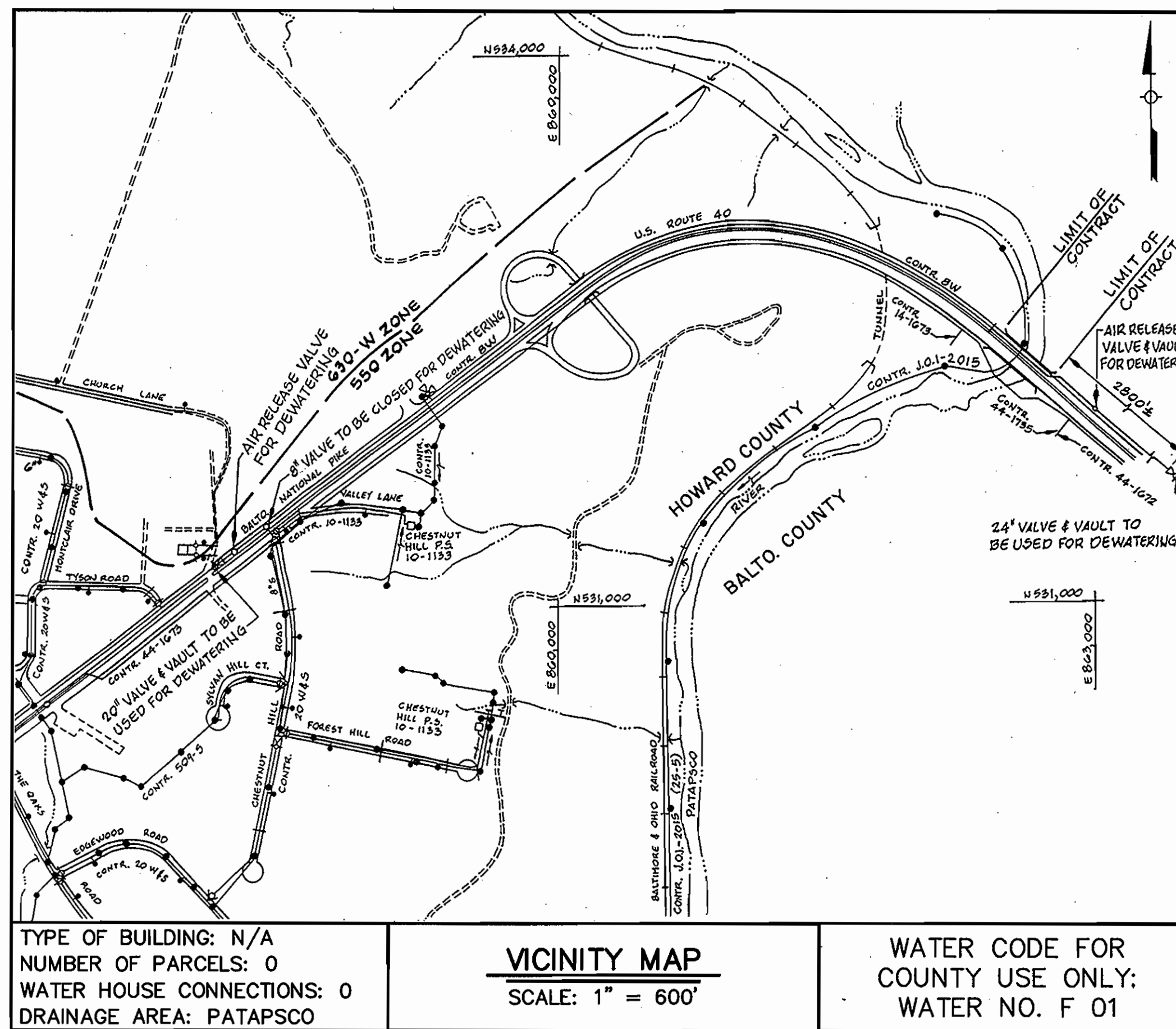
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

John Chaceaux DATE 11/24/97
WALLACE, MONTGOMERY & ASSOCIATES
110 WEST ROAD - SUITE 345
TOWSON, MARYLAND 21204
(410) 494-9093

DEVELOPER'S CERTIFICATION

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

Robert J. Jenson DATE 12/1/97
SIGNATURE OF DEVELOPER DATE
PRINT NAME BELOW SIGNATURE



TYPE OF BUILDING: N/A
NUMBER OF PARCELS: 0
WATER HOUSE CONNECTIONS: 0
DRAINAGE AREA: PATAPSCO

VICINITY MAP
SCALE: 1" = 600'

WATER CODE FOR COUNTY USE ONLY:
WATER NO. F 01

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PLAN AND PROFILE
3	PLAN AND SECTION
4	HANGERS, INSULATED COUPLING & EXPANSION JOINT
5	HANGER DETAILS
6	EXISTING METER VAULT - DEMOLITION PLAN
7	EXISTING METER VAULT - IMPROVEMENTS
8	TRAFFIC CONTROL PLAN
9	SEDIMENT CONTROL DETAILS
10	ELECTRIC PLANS AND DETAILS

AS-BUILT 3/2/99

GENERAL NOTES:

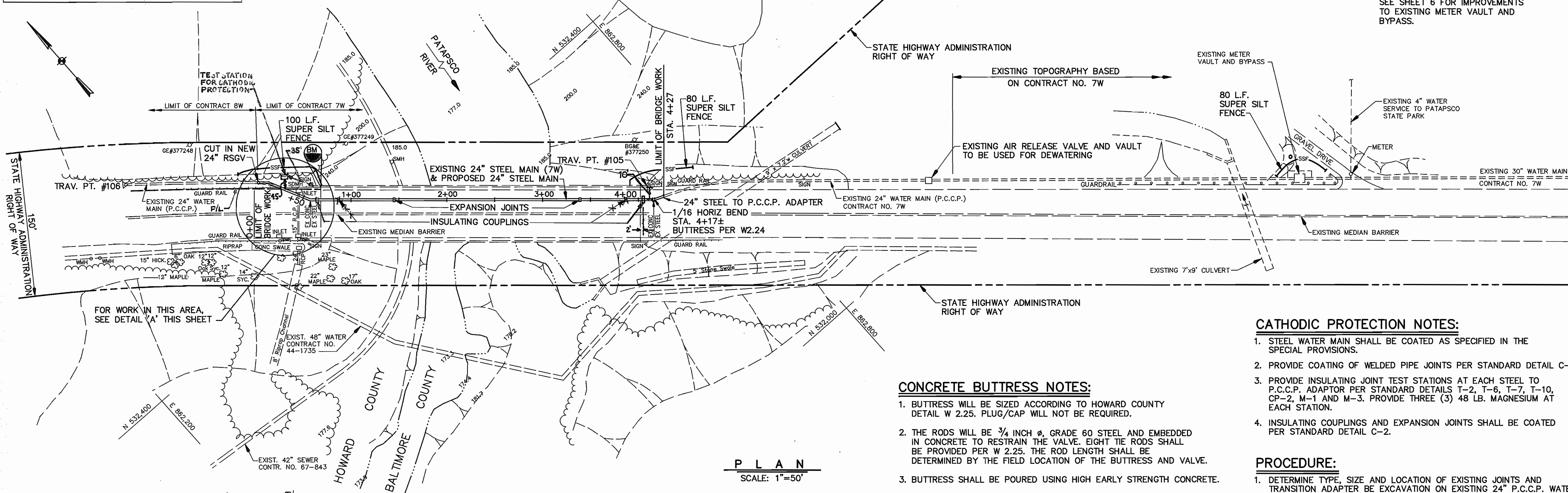
- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS, SERVICE AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- ALL HORIZONTAL CONTROLS BASED ON MARYLAND STATE COORDINATES.
- ALL VERTICAL CONTROLS BASED ON U.S.G.S. DATUM.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6".
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS, AND DETAILS FOR CONSTRUCTION. THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS ARE TO BE MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL [] AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION. ANY DAMAGE TO EXISTING FACILITIES DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
BUREAU OF UTILITIES, HOWARD COUNTY DEPT. OF PUBLIC WORKS 410-313-4900
BG & E 1-800-685-0123
BELL ATLANTIC 1-800-446-5266
STATE HIGHWAY ADMINISTRATION 410-531-5533
MISS UTILITY 1-800-257-7777
- TREE AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- TOPS OF ALL WATER MAINS TO HAVE A MIN. OF 3.5' COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE STRAPPED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS. SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1003 FROM THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM. CALL HOWARD COUNTY BUREAU OF UTILITIES AT 410-313-4900 AT LEAST FIVE WORKING DAYS PRIOR TO SCHEDULING.

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>Sam J. [Signature]</i> DATE 12/1/97 DIRECTOR OF PUBLIC WORKS</p> <p><i>Robert J. Jenson</i> DATE 12-1-97 CHIEF, BUREAU OF ENGINEERING</p> <p><i>James L. [Signature]</i> DATE 12-1-97 CHIEF, DIVISION OF WATER AND SEWER DESIGN</p>	<p>WALLACE, MONTGOMERY & ASSOCIATES CIVIL AND STRUCTURAL ENGINEERS 110 WEST ROAD - SUITE 345 - TOWSON, MARYLAND 21204</p>	<p>DES: J.J.S. DRN: D.E.D. CHK: J.C.W. DATE: 11/97</p>	<p>BY NO. REVISION DATE</p>	<p>TITLE SHEET</p> <p>600' SCALE MAP NO. - - - BLOCK NO. - - -</p>	<p>HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS U.S. ROUTE 40 WATER MAIN REPLACEMENT CONTRACT NO. 44-3077</p> <p>ELECTION DISTRICT: 5TH CAPITAL PROJECT W-8164</p>	<p>SCALE AS SHOWN</p> <p>SHEET 1 OF 10</p>
---	--	--	-----------------------------	---	---	--

BENCH MARK - BALTO. CO. 8055 ELEV. 248.01
X CUT @ CORNER OF CONCRETE WALK @
NORTHWEST CORNER OF BRIDGE.

STATE OF MARYLAND
DEPARTMENT OF FORESTS AND PARKS
PATAPSCO VALLEY STATE PARK

NOTE:
SEE SHEET 6 FOR IMPROVEMENTS
TO EXISTING METER VAULT AND
BYPASS.



PLAN
SCALE: 1"=50'

CONCRETE BUTTRESS NOTES:

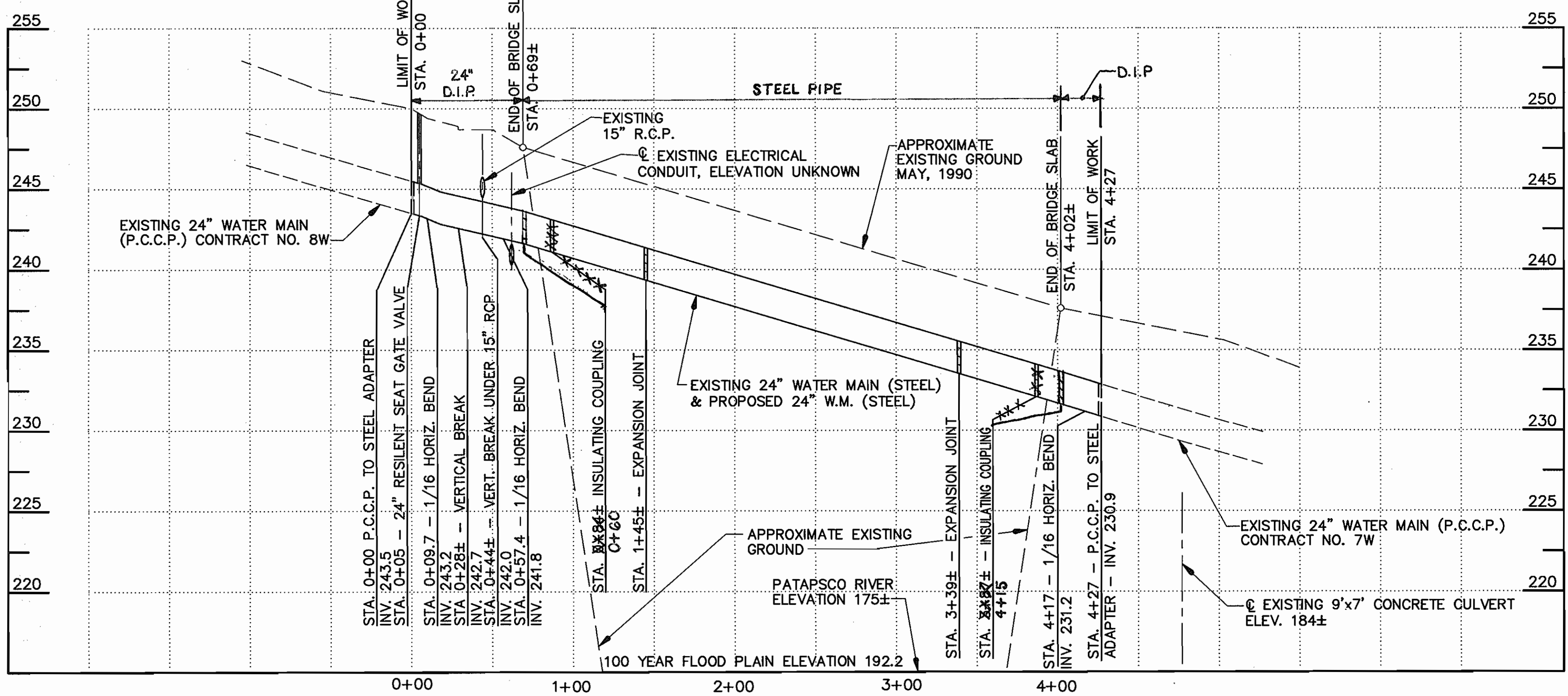
- BUTTRESS WILL BE SIZED ACCORDING TO HOWARD COUNTY DETAIL W 2.25. PLUG/CAP WILL NOT BE REQUIRED.
- THE RODS WILL BE 3/4 INCH Ø, GRADE 60 STEEL AND EMBEDDED IN CONCRETE TO RESTRAIN THE VALVE. EIGHT TIE RODS SHALL BE PROVIDED PER W 2.25. THE ROD LENGTH SHALL BE DETERMINED BY THE FIELD LOCATION OF THE BUTTRESS AND VALVE.
- BUTTRESS SHALL BE POURED USING HIGH EARLY STRENGTH CONCRETE.

CATHODIC PROTECTION NOTES:

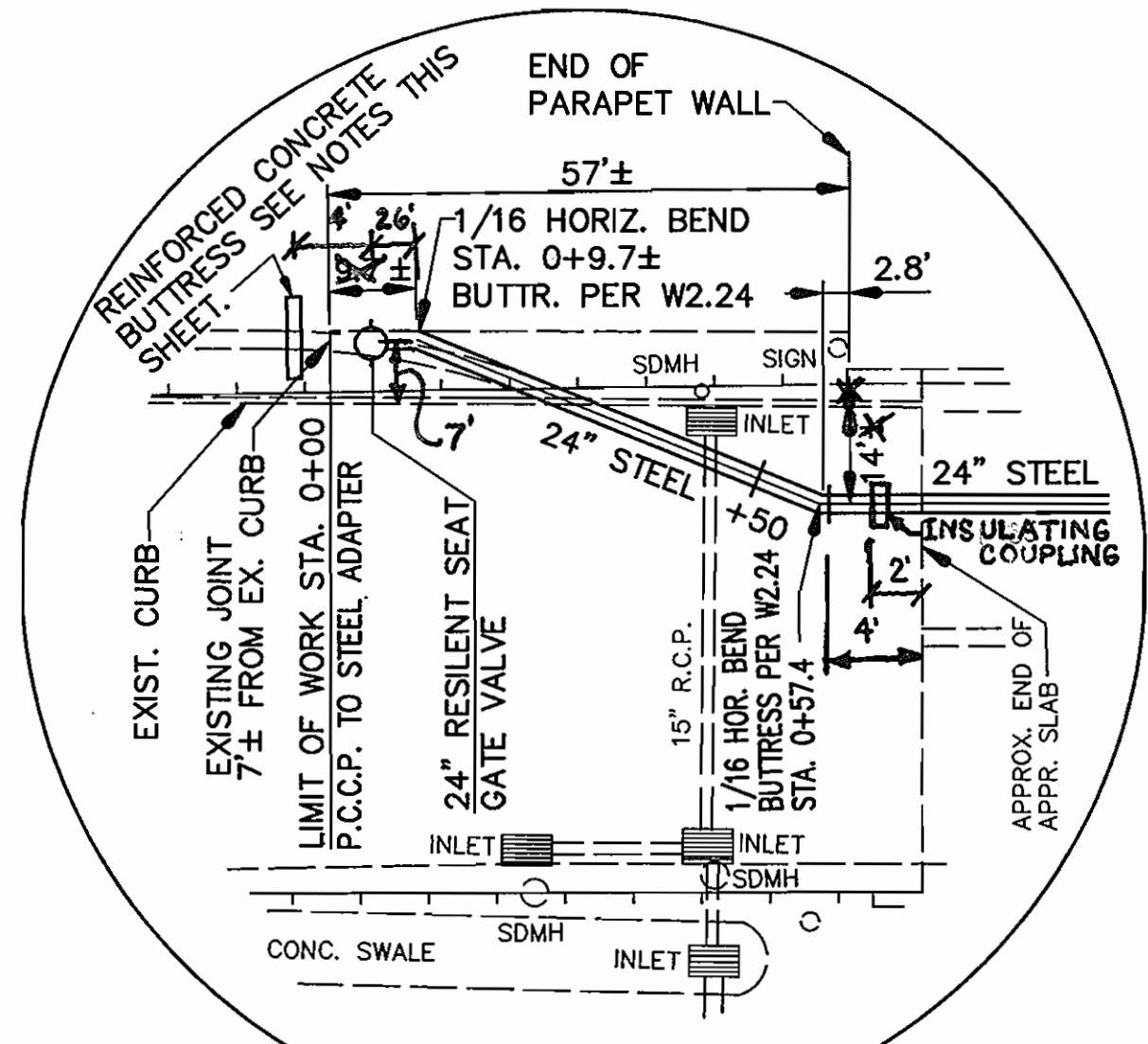
- STEEL WATER MAIN SHALL BE COATED AS SPECIFIED IN THE SPECIAL PROVISIONS.
- PROVIDE COATING OF WELDED PIPE JOINTS PER STANDARD DETAIL C-4.
- PROVIDE INSULATING JOINT TEST STATIONS AT EACH STEEL TO P.C.C.P. ADAPTOR PER STANDARD DETAILS T-2, T-6, T-7, T-10, CP-2, M-1 AND M-3. PROVIDE THREE (3) 48 LB. MAGNESIUM AT EACH STATION.
- INSULATING COUPLINGS AND EXPANSION JOINTS SHALL BE COATED PER STANDARD DETAIL C-2.

PROCEDURE:

- DETERMINE TYPE, SIZE AND LOCATION OF EXISTING JOINTS AND TRANSITION ADAPTER BE EXCAVATION ON EXISTING 24" P.C.C.P. WATER MAIN AT LIMITS OF BRIDGE WORK.
- CONNECT TEMPORARY 4" SERVICE LINE FROM EXISTING PATAPSCO STATE PARK METER TO EXISTING HYDRANT APPROXIMATELY 3,500 FEET EAST OF EXISTING METER VAULT.
- POUR CONCRETE BUTTRESS.
- CONTRACTOR SHALL DEMONSTRATE THAT ALL MATERIAL & EQUIPMENT ARE ON SITE PRIOR TO SHUT DOWN. PIPE SHALL BE PRE-ASSEMBLED.
- SCHEDULE CLOSING OF THE FOLLOWING VALVES AS SHOWN ON THE VICINITY MAP ON SHEET NO. 1 WITH THE BUREAU OF UTILITIES:
A. 20" VALVE WEST OF CHESTNUT HILL ROAD, CONTRACT 8W
B. 8" VALVE AT INTERSECTION OF CHESTNUT HILL ROAD AND U.S. ROUTE 40, CONTRACT 20 W&S
C. 24" VALVE APPROXIMATELY 2,800 FEET EAST OF EXISTING BRIDGE, CONTRACT 7W, COORDINATE WITH BALTIMORE CITY.
- DEWATER EXISTING 24" WATER MAIN.
- REMOVE SECTIONS OF EXISTING 24" WATER MAIN AS REQUIRED TO INSTALL NEW 24" P.C.C.P. TO STEEL ADAPTER, 24" STEEL WATER MAIN, 24" RESILIENT SEAT GATE VALVE, FITTINGS, BUTTRESS, TEMPORARY CAP AND BLOW OFF FROM STATION 0+00 TO STATION 0+08.50±. SCHEDULE OPENING OF VALVES 3A AND 3B.
- REFILL EXISTING 24" WATER MAIN FROM STATION 0+08.50 WEST INTO HOWARD COUNTY AND PUT INTO SERVICE.
- REMOVE EXISTING 24" WATER MAIN AND SUPPORTS AS REQUIRED BETWEEN THE LIMITS OF BRIDGE WORK.
- CONSTRUCT NEW 24" WATER MAIN AND SUPPORTS FROM STATION 0+10± TO STATION 4+20±, FILL, CHLORINATE, TEST, DEWATER AND FLUSH.
- REMOVE EXISTING 12" WATER MAIN AND BYPASS AT THE EXISTING METER VAULT.
- CONSTRUCT NEW 12" WATER MAIN AND BYPASS AND ELECTRICAL MODIFICATIONS TO THE EXISTING VALVE VAULT.
- COMPLETE CONSTRUCTION OF NEW 24" WATER MAIN FROM STATION 0+08.50± TO STATION 0+10±, STA. 4+20± TO 4+27± AND REFILL LINE TO PUT NEW WATER MAIN IN SERVICE.
- COMPLETE BACKFILL, CLEAN UP, SITE RESTORATION, ETC.



PROFILE
SCALE: 1"=50' HOR. & 1"=5' VERT.



DETAIL 'A'
SCALE: 1"=20'

AS-BUILT 3/2/99

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 12/1/97
Chief, Bureau of Engineering: *[Signature]* 12/1/97
Chief, Bureau of Utilities: *[Signature]* 12-1-97
Chief, Division of Water and Sewer Design: *[Signature]* 12-1-97

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD - SUITE 345 - TOWSON, MARYLAND 21284



DES: J.J.S.			
DRN: D.E.D.			
CHK: J.C.W.			
DATE: 11/97	BY NO.	REVISION	DATE

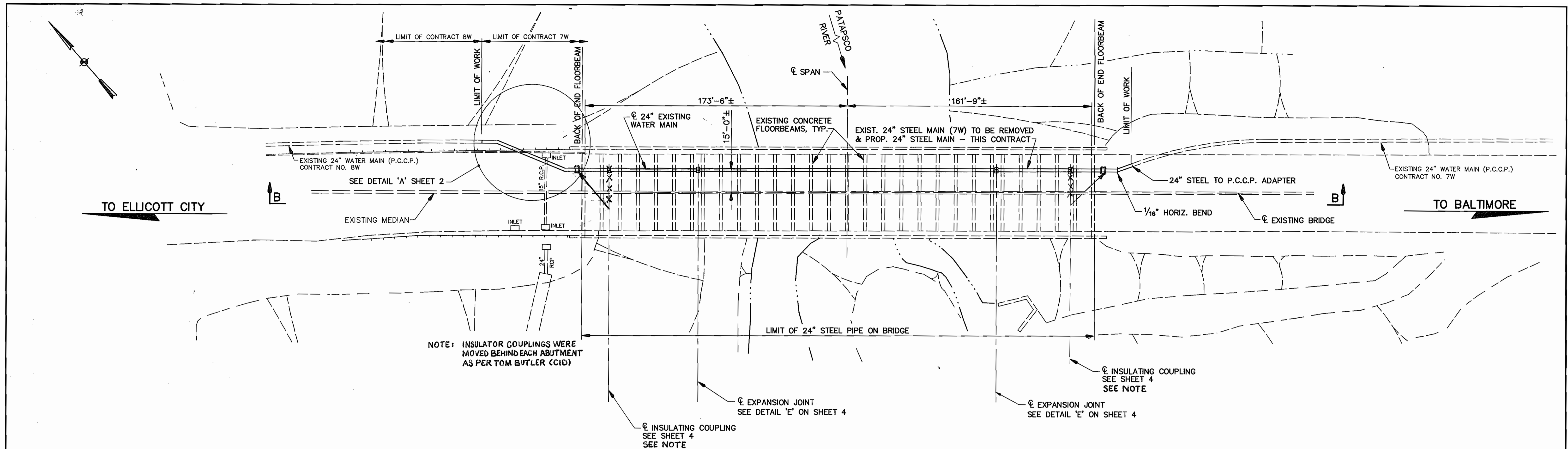
PLAN AND PROFILE OF
WATER MAIN REPLACEMENT

600' SCALE MAP NO. --- BLOCK NO. ---

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
U.S. ROUTE 40 WATER MAIN REPLACEMENT
CONTRACT NO. 44-3077

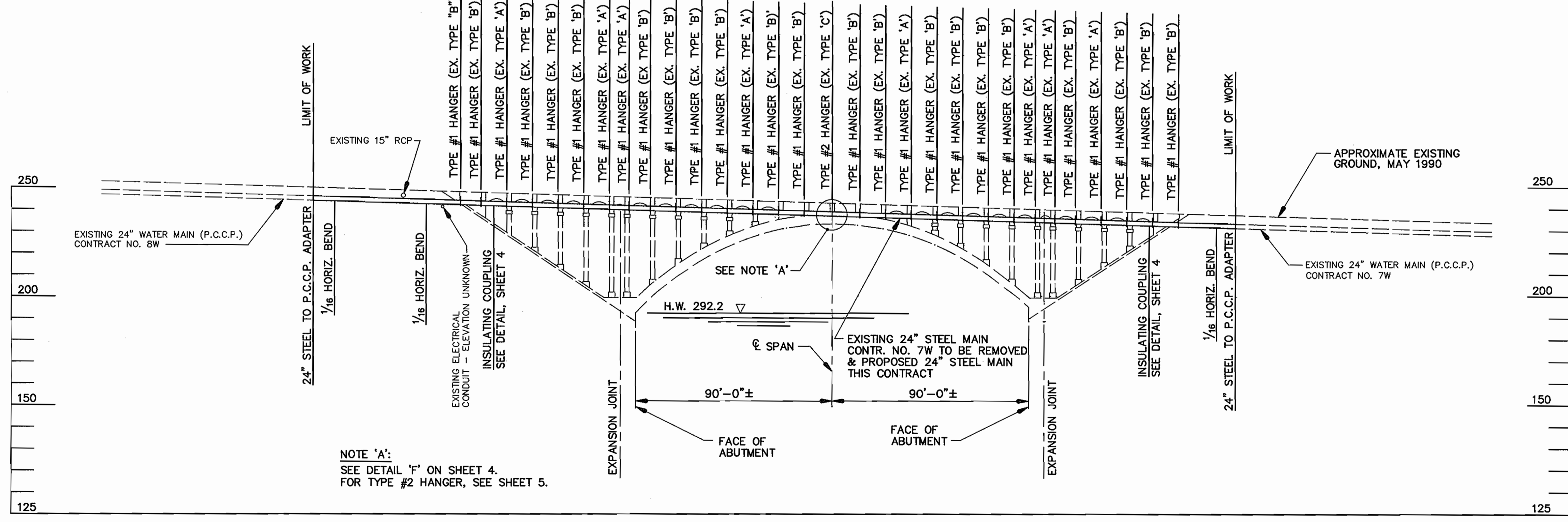
ELECTION DISTRICT: 5TH CAPITAL PROJECT W-8164

SCALE AS SHOWN
SHEET 2 OF 10



P L A N
SCALE: 1"=30'

NOTE:
FOR TYPE #1 HANGERS,
SEE DETAIL 'D' ON SHEET 5.



NOTE 'A':
SEE DETAIL 'F' ON SHEET 4.
FOR TYPE #2 HANGER, SEE SHEET 5.

SECTION B - B
SCALE: 1"=30'

AS-BUILT 3/2/99

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

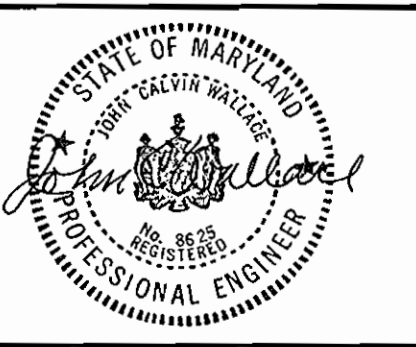
James J. Shuman 12-1-97
DIRECTOR OF PUBLIC WORKS DATE

Richard J. Sporn 12/1/97
CHIEF, BUREAU OF ENGINEERING DATE

Robert A. Benay 12-1-97
CHIEF, BUREAU OF UTILITIES DATE

Thomas P. Butler 12-1-97
CHIEF, DIVISION OF WATER AND SEWER DESIGN DATE

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD - SUITE 345 - TOWSON, MARYLAND 21204



DES: J.J.S.					
DRN: D.E.D.					
CHK: J.C.W.					
DATE: 11/97	BY	NO.	REVISION	DATE	

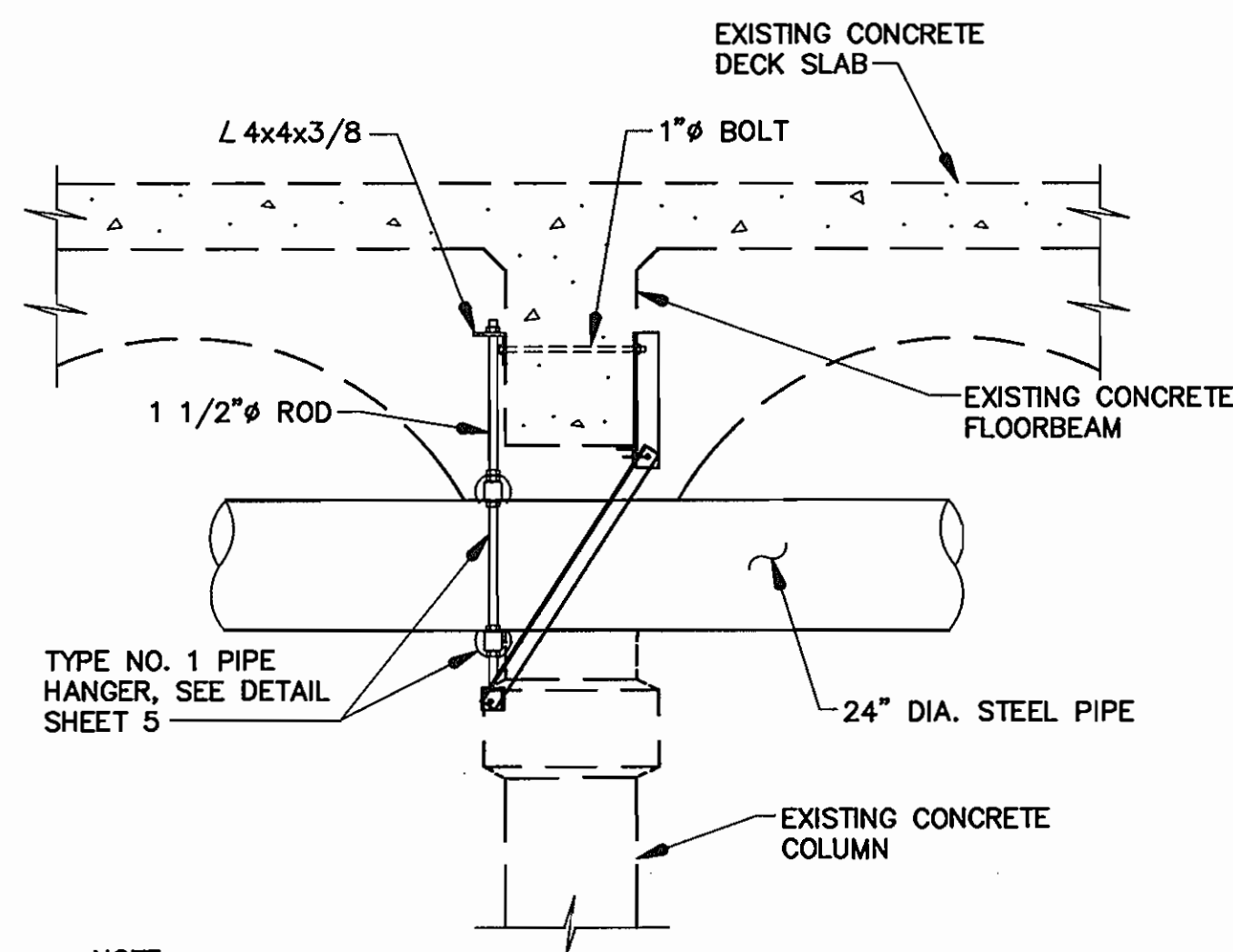
PLAN AND SECTION

600' SCALE MAP NO. --- BLOCK NO. ---

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
U.S. ROUTE 40 WATER MAIN REPLACEMENT
CONTRACT NO. 44-3077

ELECTION DISTRICT: 5TH CAPITAL PROJECT W-8164

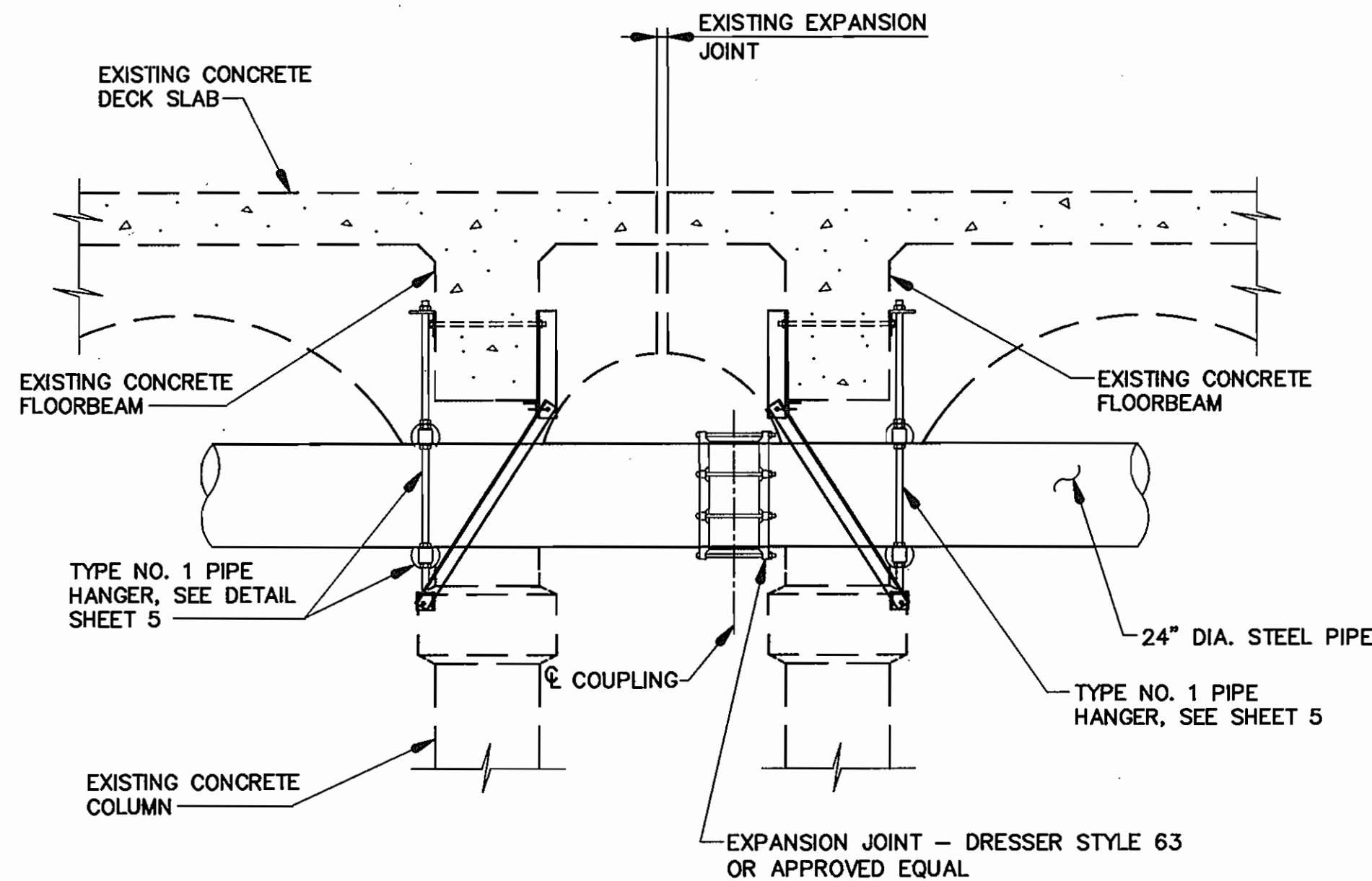
SCALE AS SHOWN
SHEET 3 OF 10



NOTE:
TYPE NO. 1 PIPE HANGERS
MAY BE PLACED ON EITHER
SIDE OF CONCRETE FLOORBEAM.

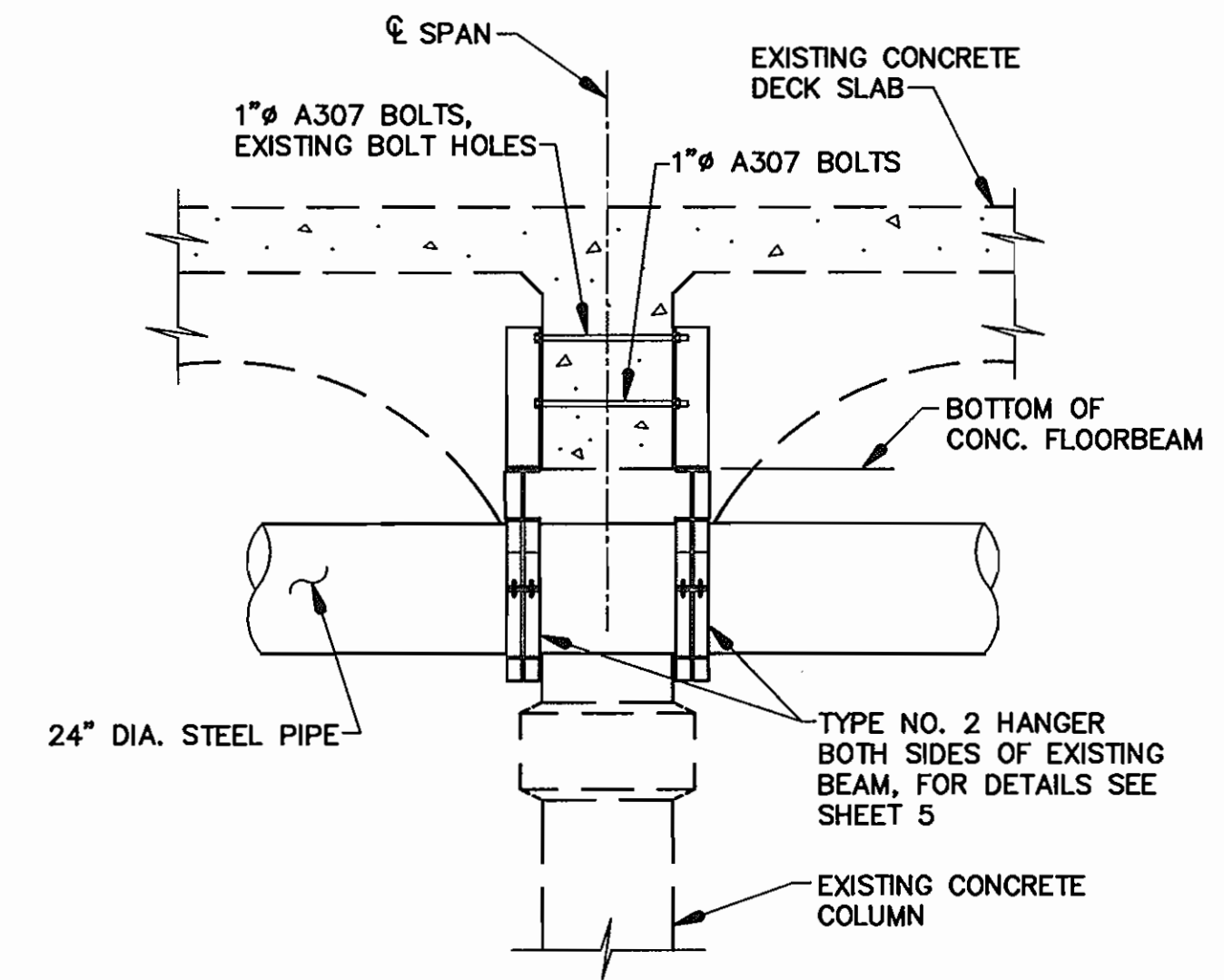
DETAIL 'D'

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



DETAIL 'E'

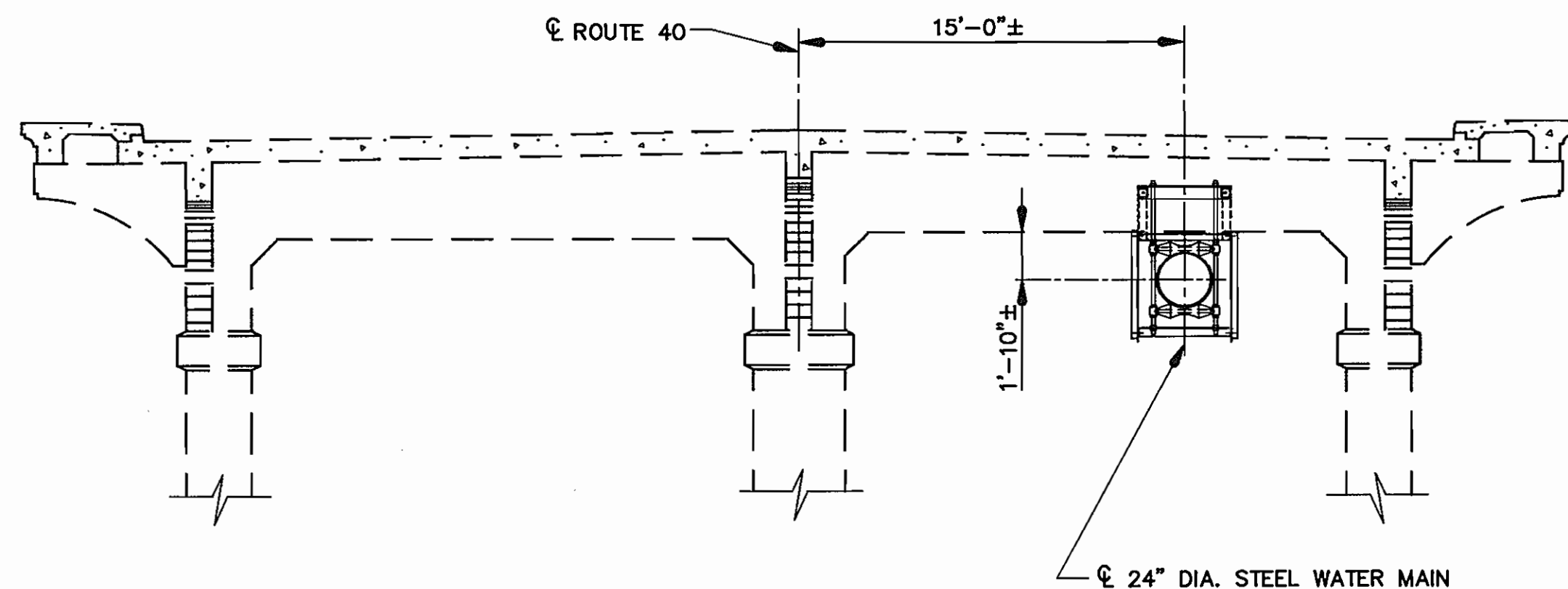
SCALE: 3/8"=1'-0"



DETAIL 'F'

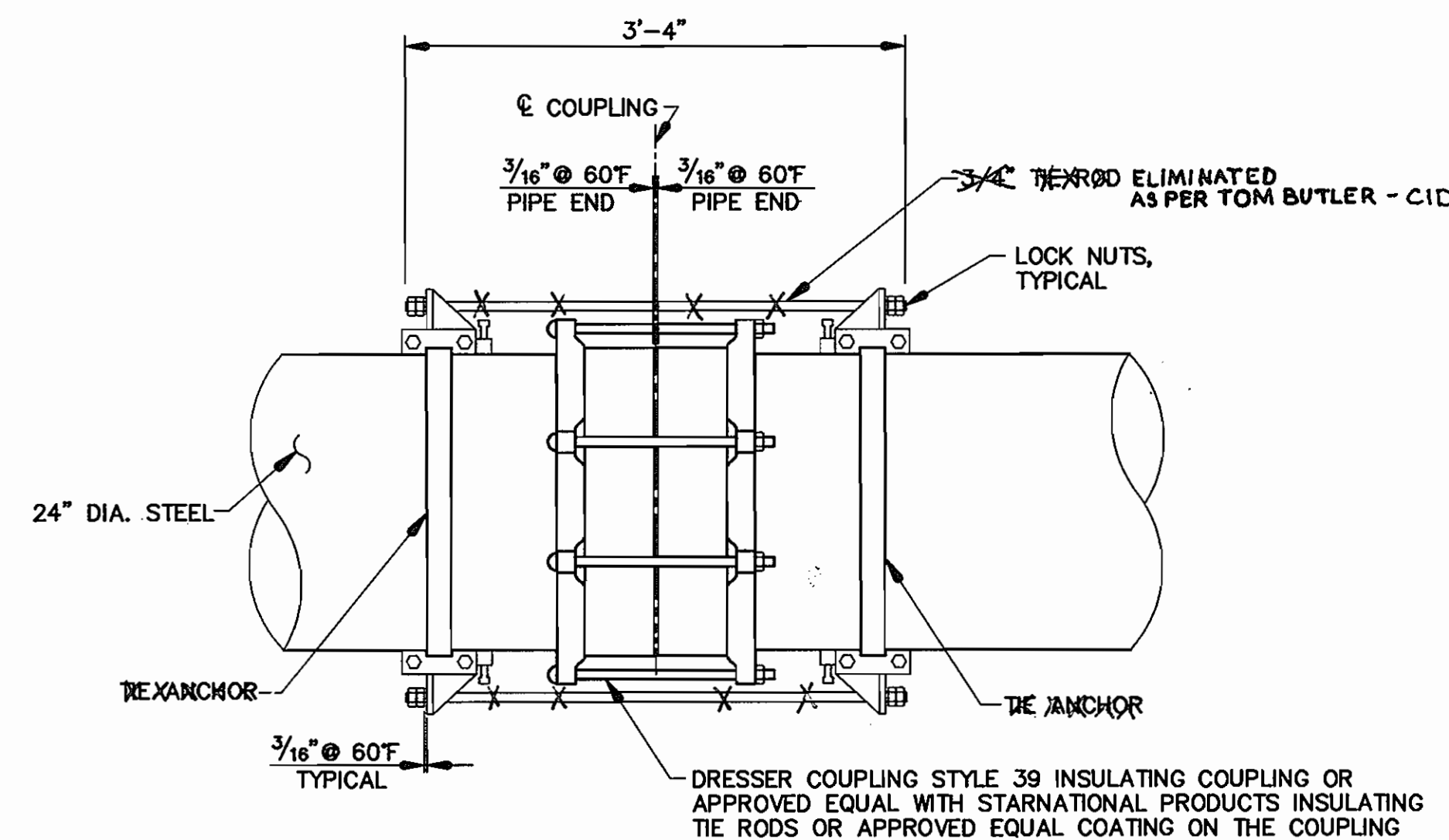
SCALE: 3/8"=1'-0"

NOTE:
CONTRACTOR TO VERIFY DIMENSIONS IN FIELD.



SECTION - THRU DECK

SCALE: 3/16"=1'-0"



NOTE:
TIE RODS, TIE ANCHORS AND TIE NUTS TO BE
FURNISHED HOT-DIPPED GALVANIZED, 8 - 3/4"
TIE RODS ARE REQUIRED.

TYPICAL INSULATING COUPLING

SCALE: 1"=1'-0"

AS-BUILT 3/2/99

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
12/1/97
12-1-97

WALLACE,
MONTGOMERY
& ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD - SUITE 345 - TOWSON, MARYLAND 21204

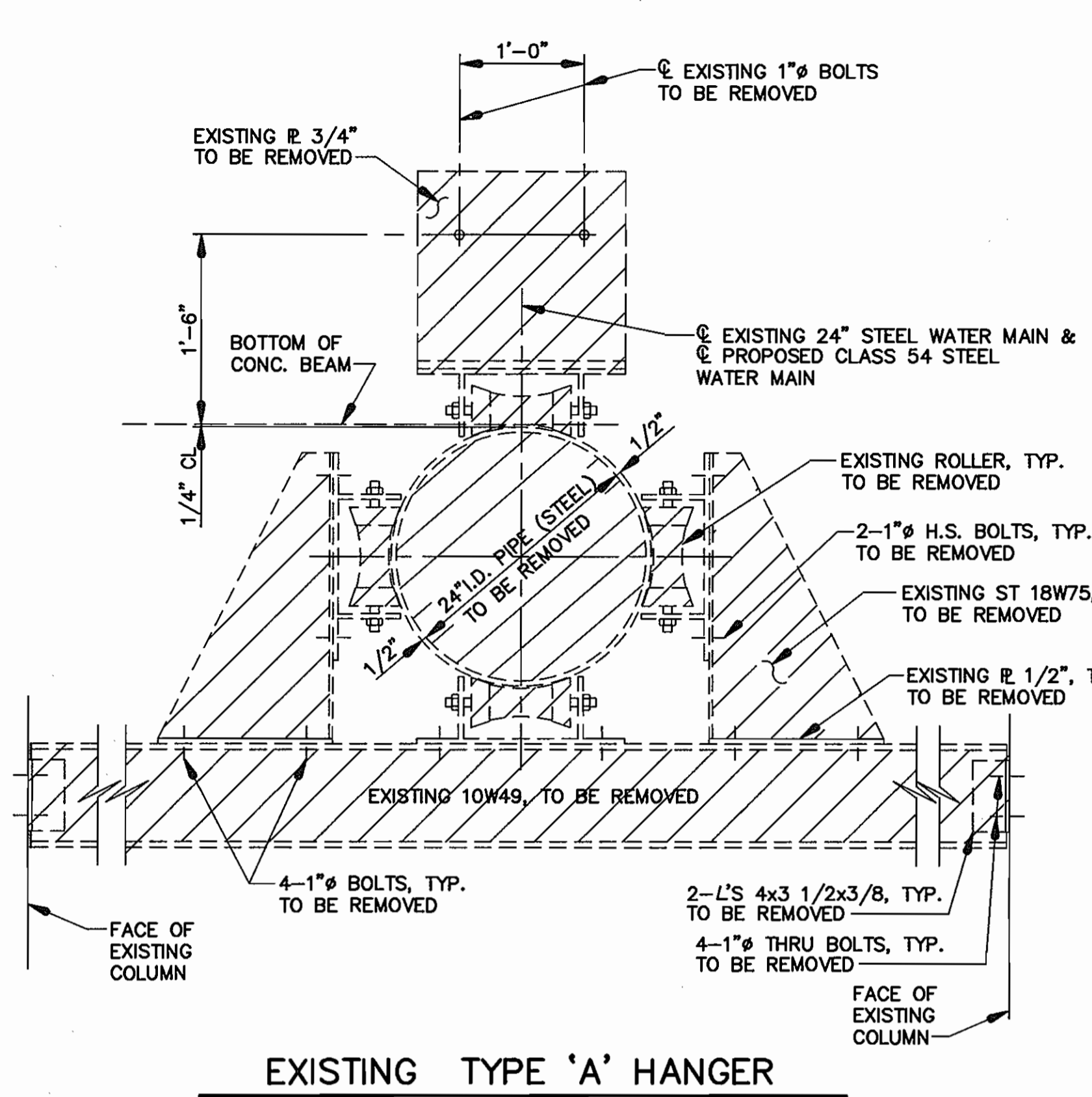


DES: J.J.S.			
DRN: D.E.D.			
CHK: J.C.W.			
DATE: 11/97	BY NO.	REVISION	DATE

HANGERS, INSULATING COUPLING
& EXPANSION JOINT

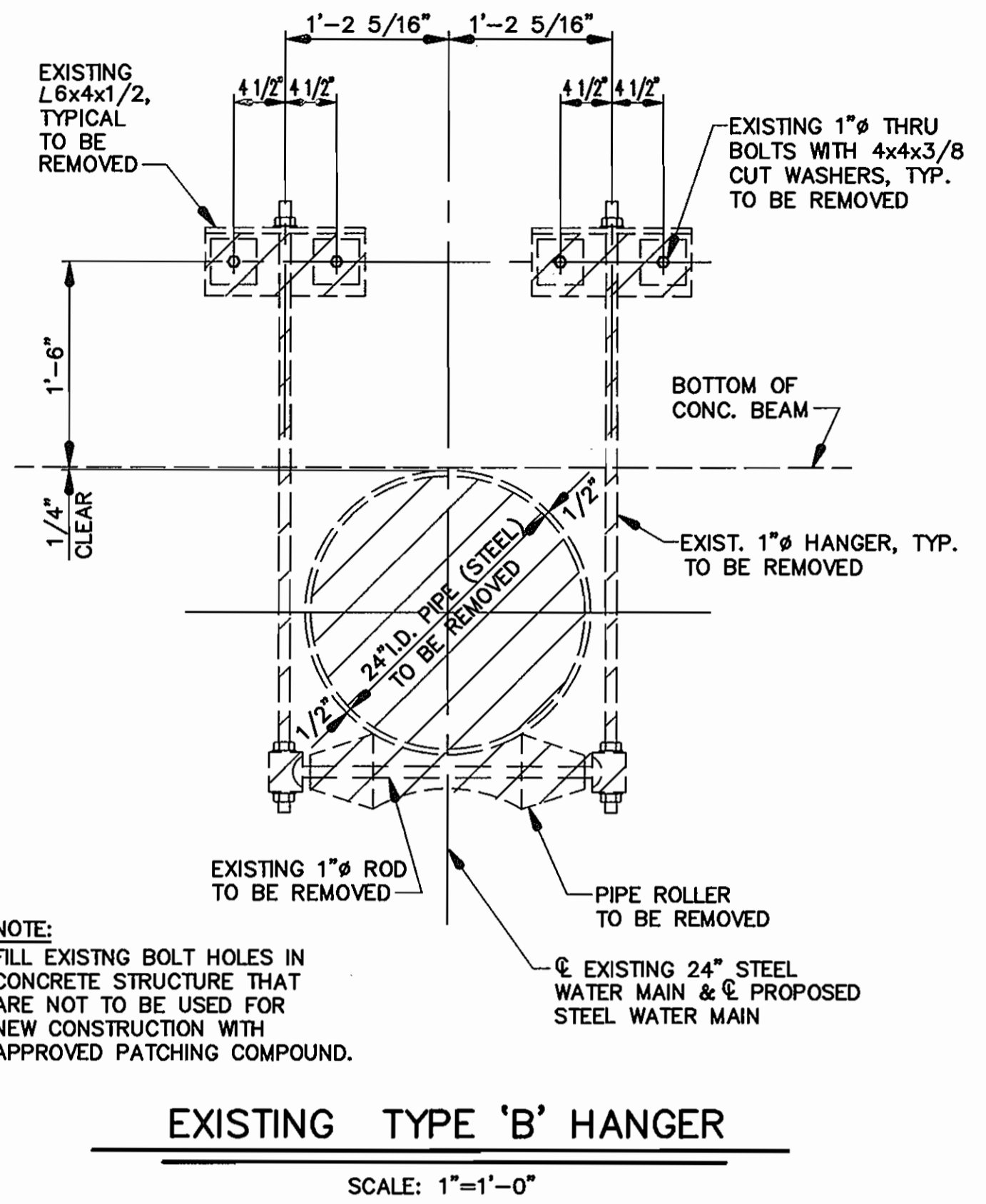
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
U.S. ROUTE 40 WATER MAIN REPLACEMENT
CONTRACT NO. 44-3077
ELECTION DISTRICT: 5TH
CAPITAL PROJECT W-8164

SCALE AS SHOWN
SHEET 4 OF 10



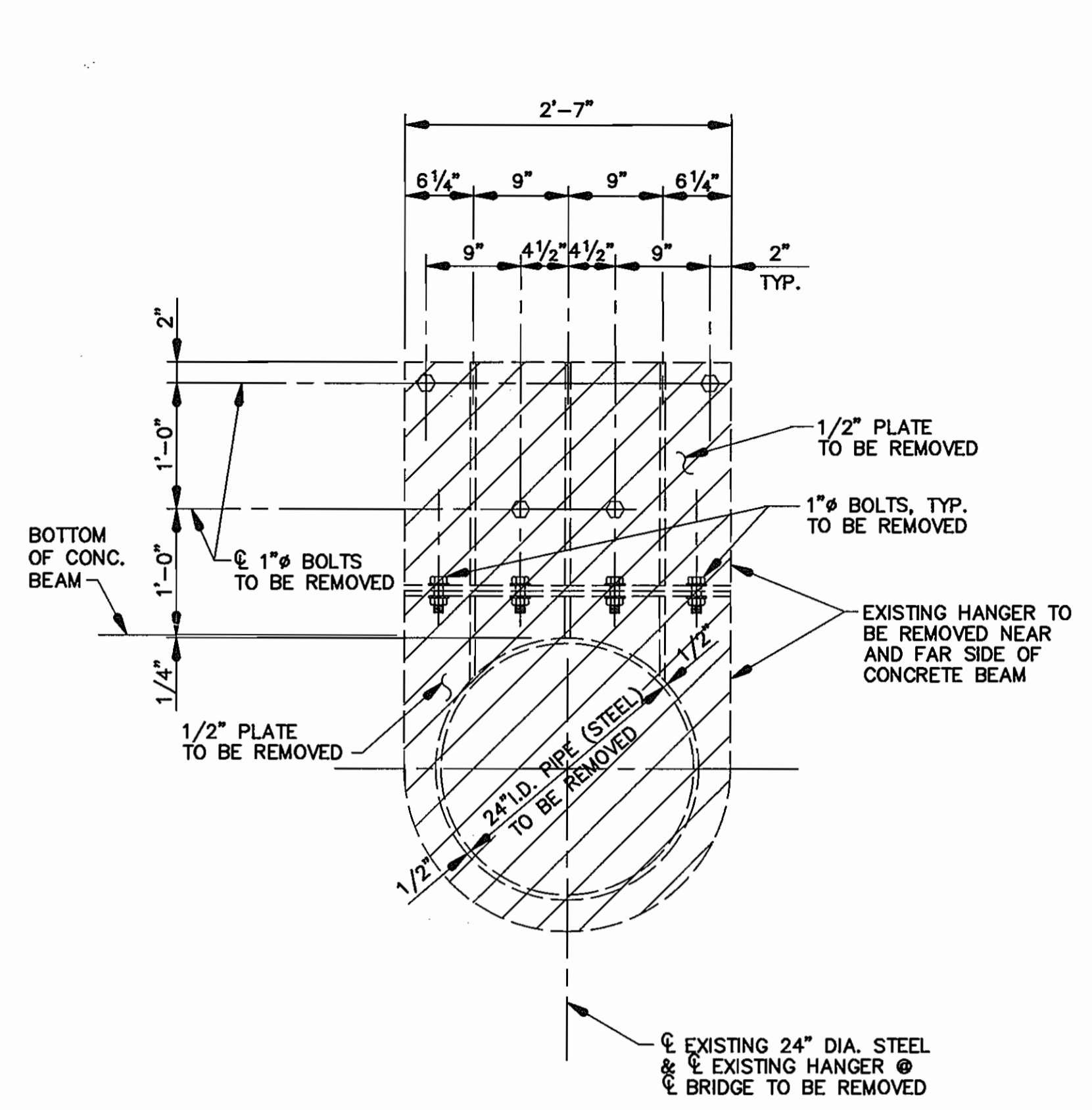
EXISTING TYPE 'A' HANGER

SCALE: 1"=1'-0"



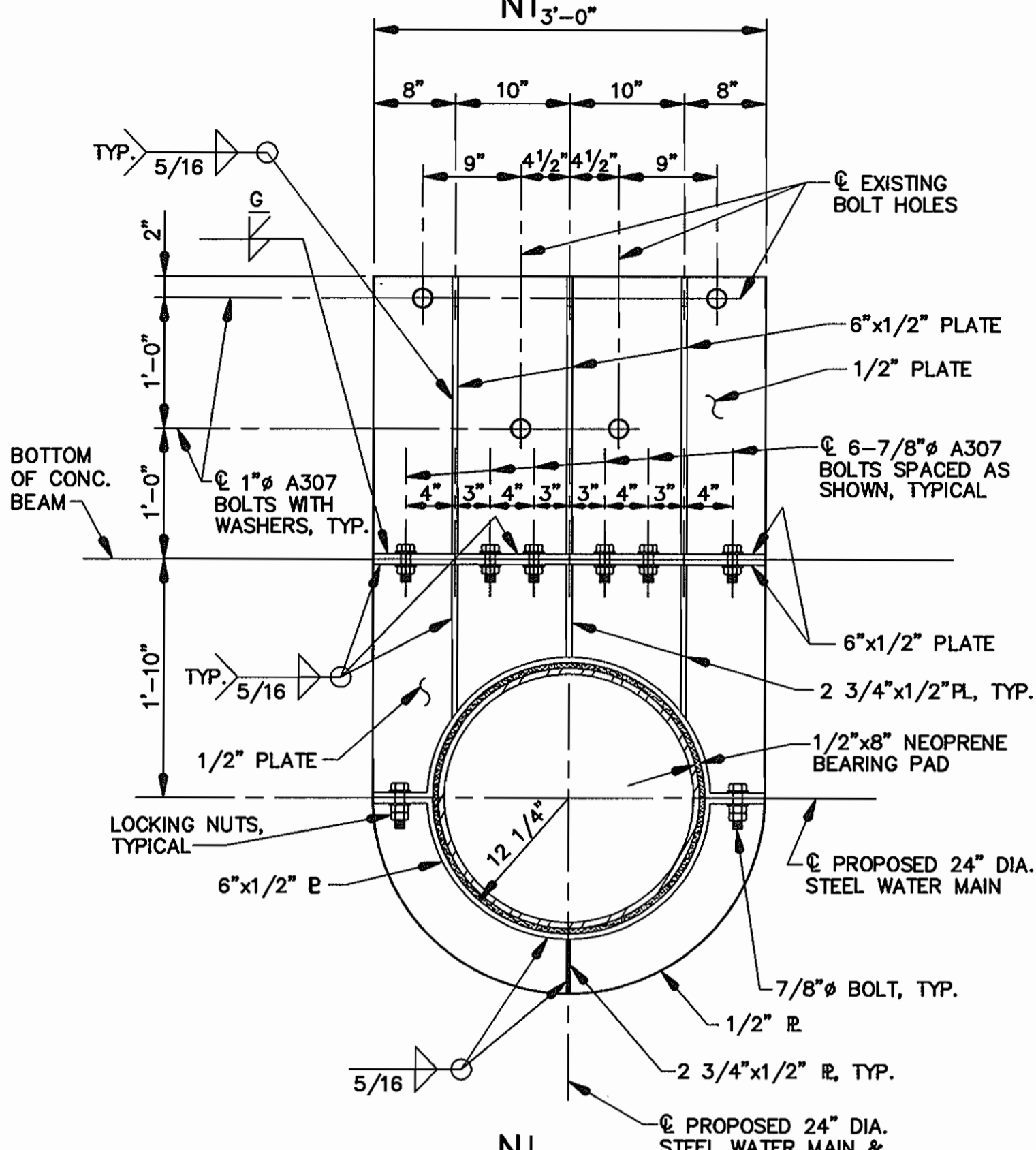
EXISTING TYPE 'B' HANGER

SCALE: 1"=1'-0"



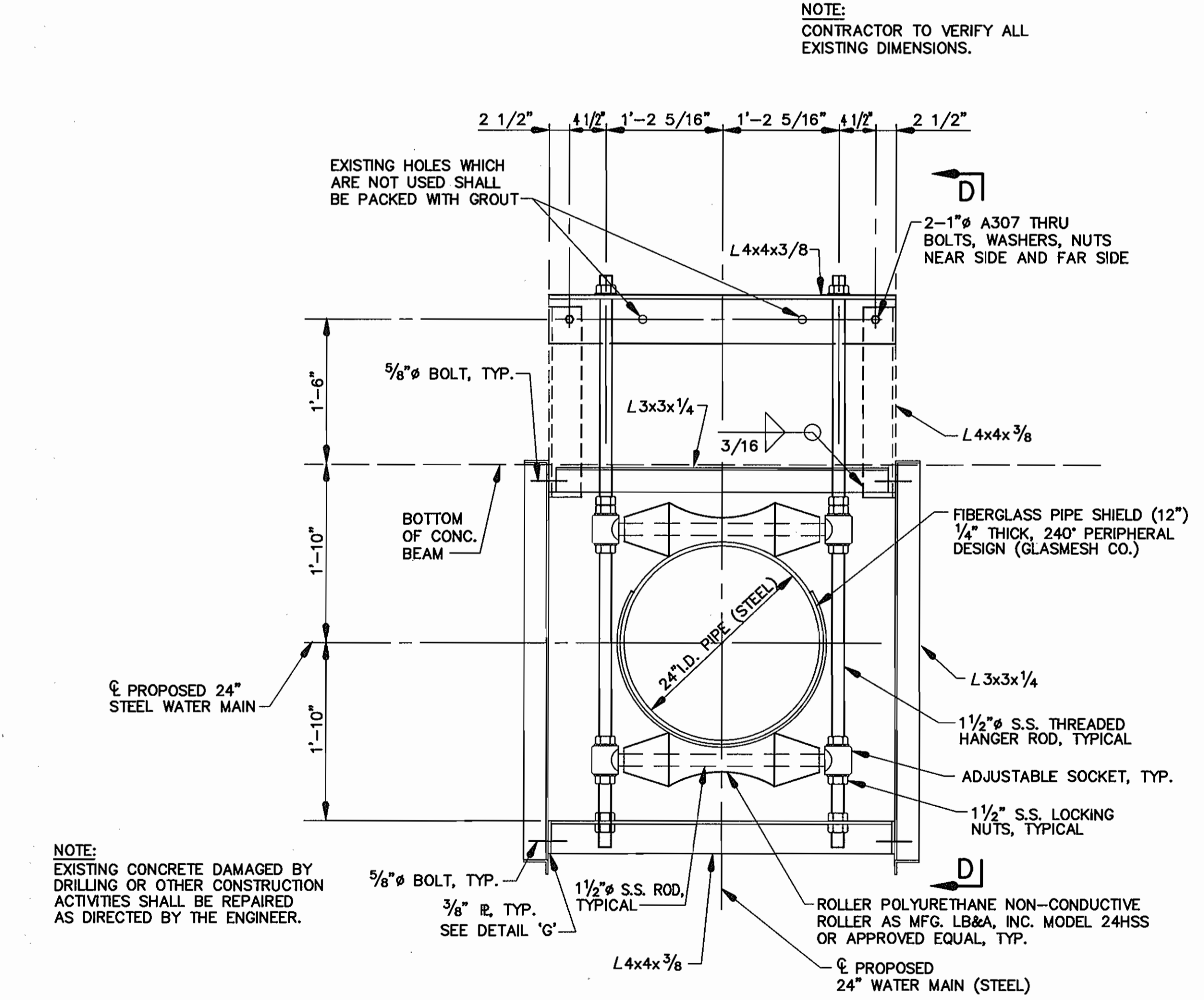
EXISTING TYPE 'C' HANGER @ CENTER OF BRIDGE

SCALE: 1"=1'-0"



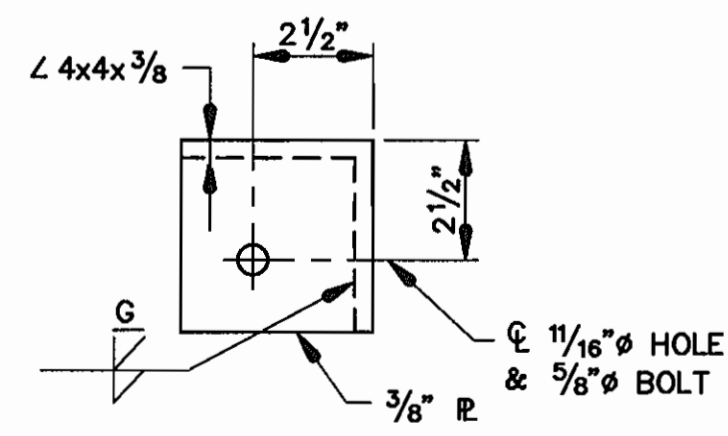
TYPE NO. 2 HANGER @ SPAN

SCALE: 1"=1'-0"



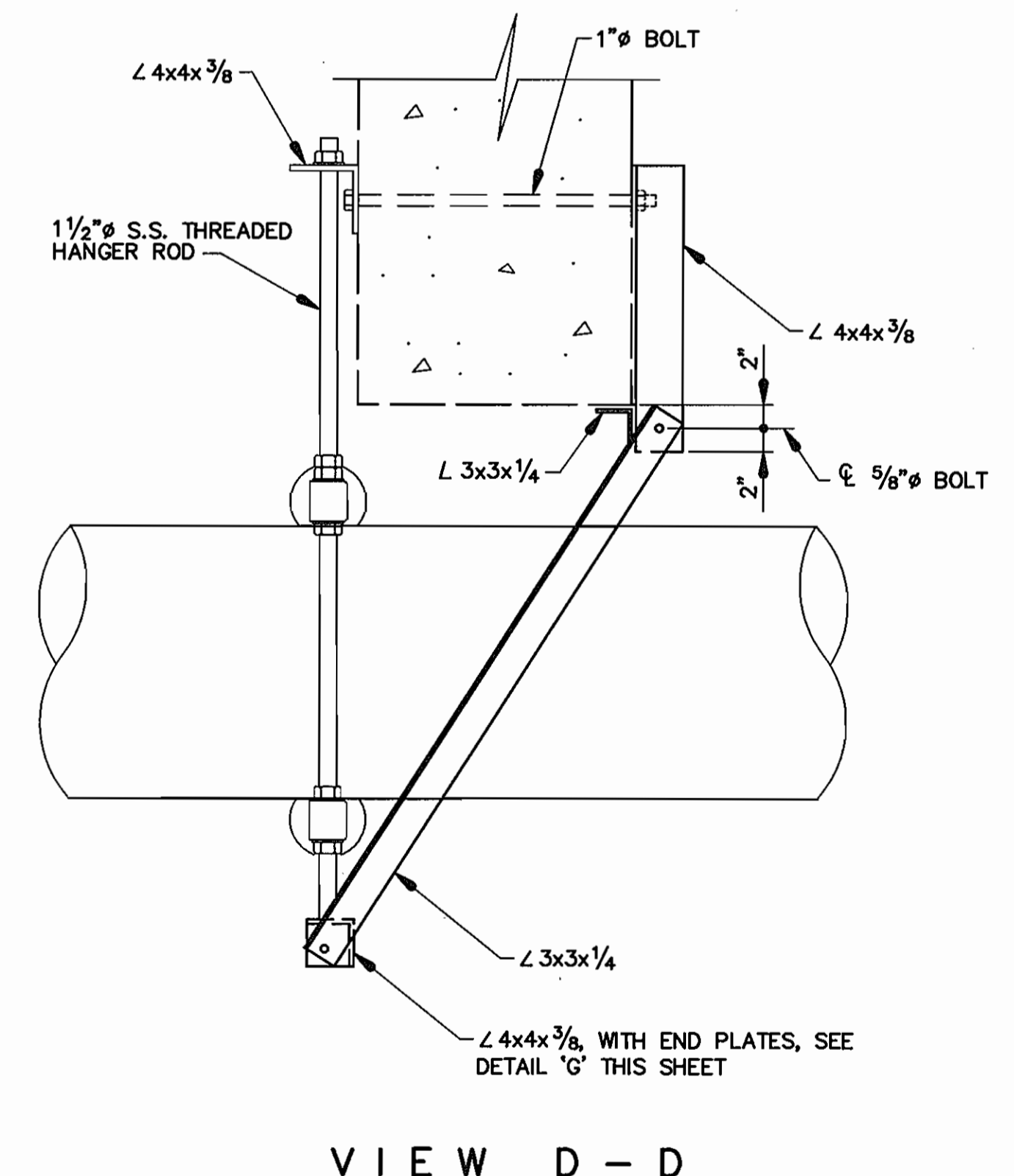
TYPE NO. 1 HANGER

SCALE: 1"=1'-0"



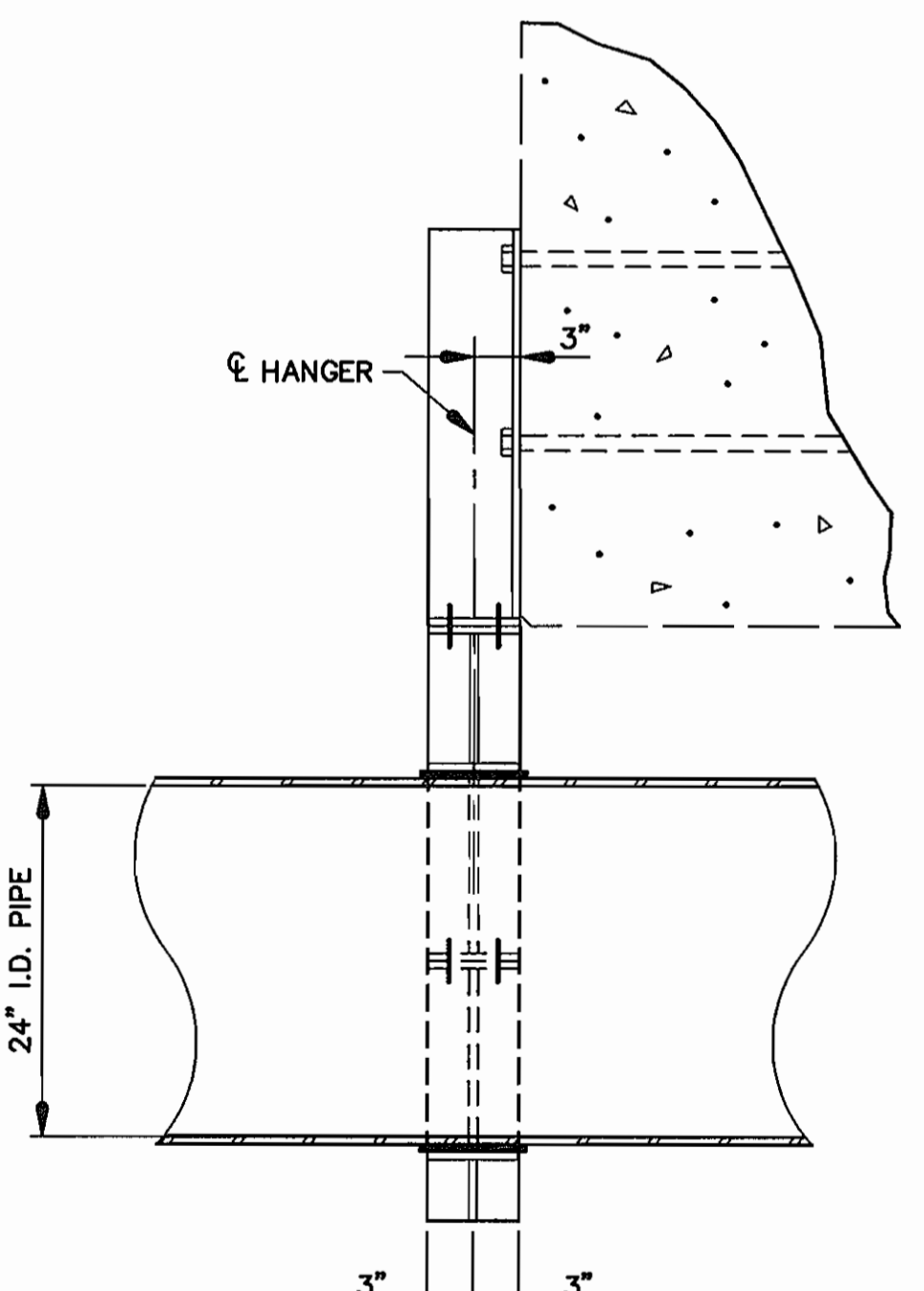
DETAIL 'G'

SCALE: 3"=1'-0"



VIEW D-D

SCALE: 1"=1'-0"



SECTION N-N

SCALE: 1"=1'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

12/1/97
12-1-97

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD - SUITE 345 - TOWSON, MARYLAND 21284



DES: J.J.S.			
DRN: D.E.D.			
CHK: J.C.W.			
DATE: 11/97	BY: NO.	REVISION	DATE

HANGER DETAILS

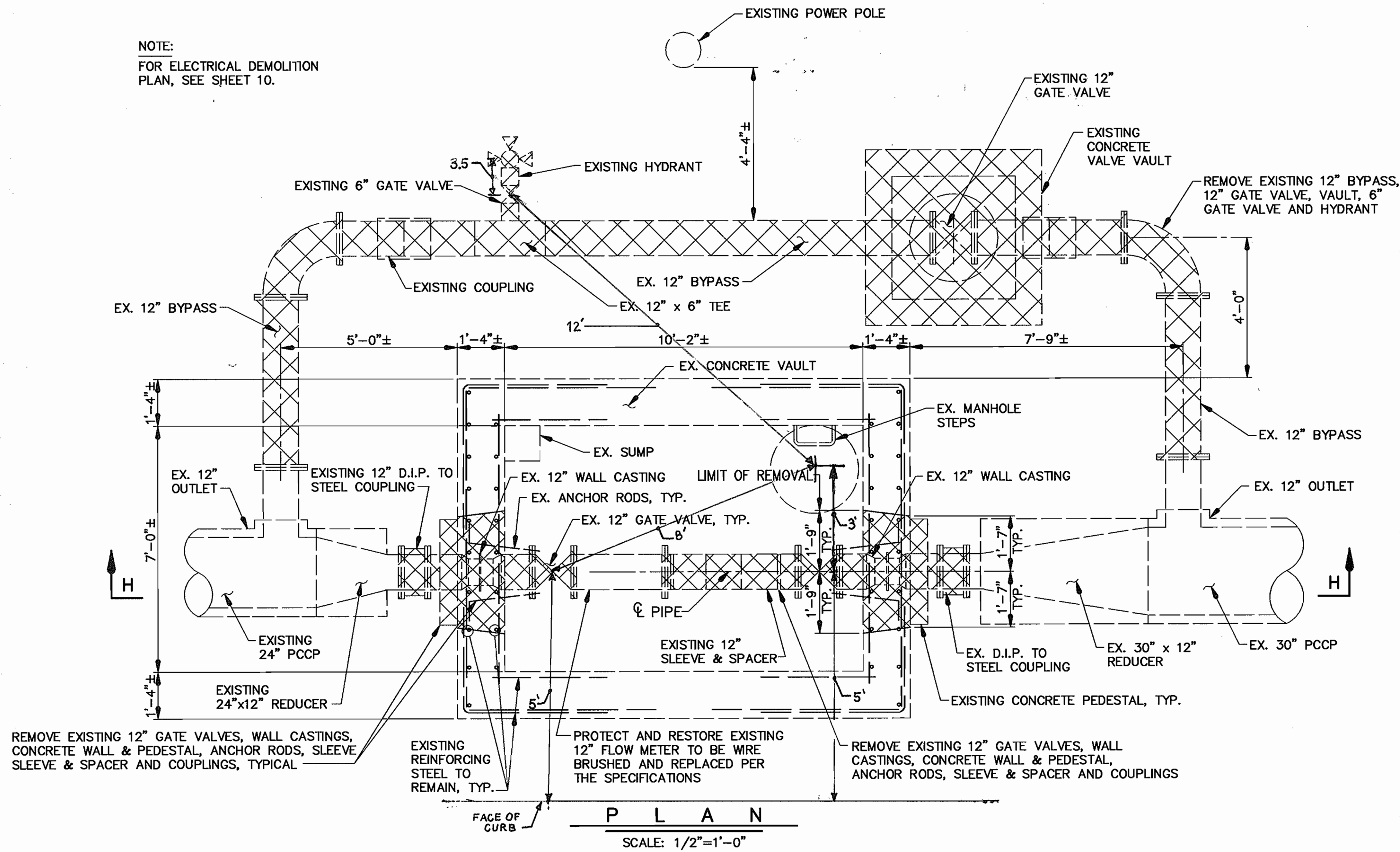
600' SCALE MAP NO. --- BLOCK NO. ---

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
U.S. ROUTE 40 WATER MAIN REPLACEMENT
CONTRACT NO. 44-3077

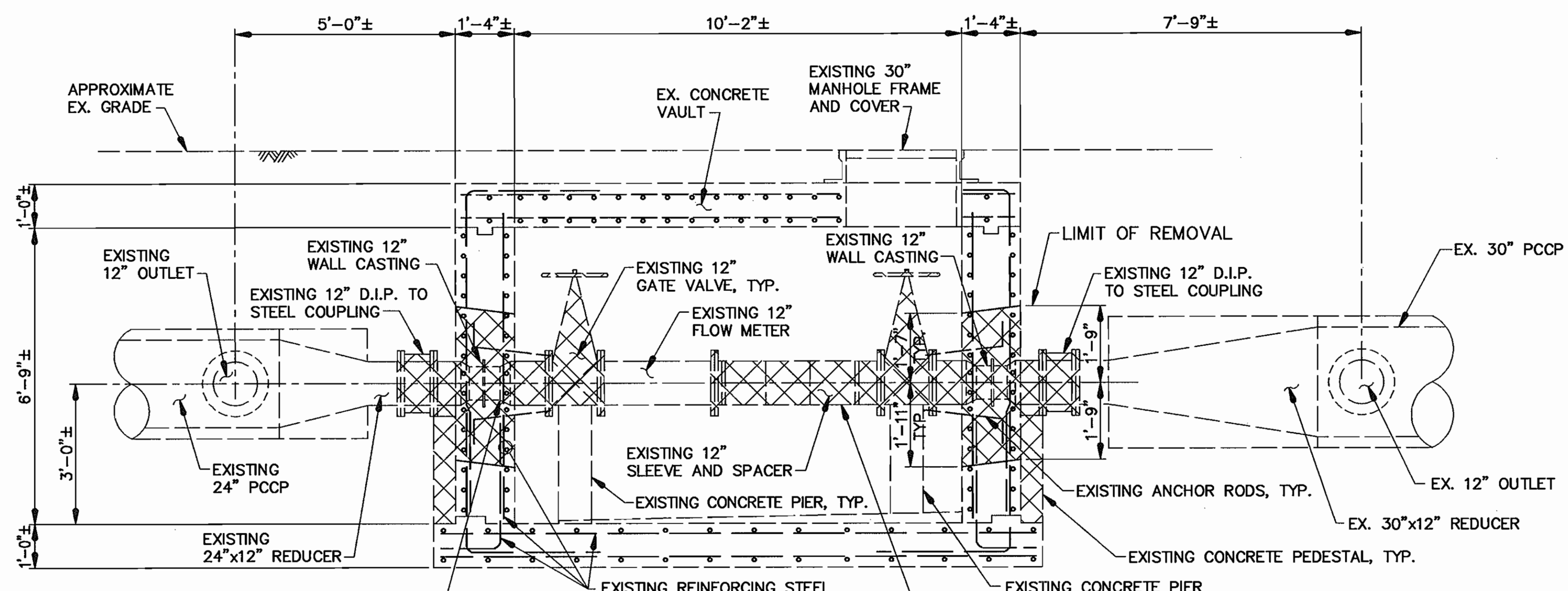
ELECTION DISTRICT: 5TH CAPITAL PROJECT W-8164

SCALE AS SHOWN
SHEET 5 OF 10

NOTE:
FOR ELECTRICAL DEMOLITION
PLAN, SEE SHEET 10.



P L A N
SCALE: 1/2"=1'-0"



SECTION H-H
SCALE: 1/2"=1'-0"

LEGEND

REMOVAL AS-BUILT 3/2/99

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James H. Deane 12-1-97
DIRECTOR OF PUBLIC WORKS

Robert J. Johnson 12-1-97
CHIEF, BUREAU OF ENGINEERING

Thomas J. Butcher 12-1-97
CHIEF, DIVISION OF WATER AND SEWER DESIGN

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
210 WEST ROAD - SUITE 345 - TOWSON, MARYLAND 21284



DES: J.J.S.			
DRN: D.E.D.			
CHK: J.C.W.			
DATE: 11/97			
BY	NO.	REVISION	DATE

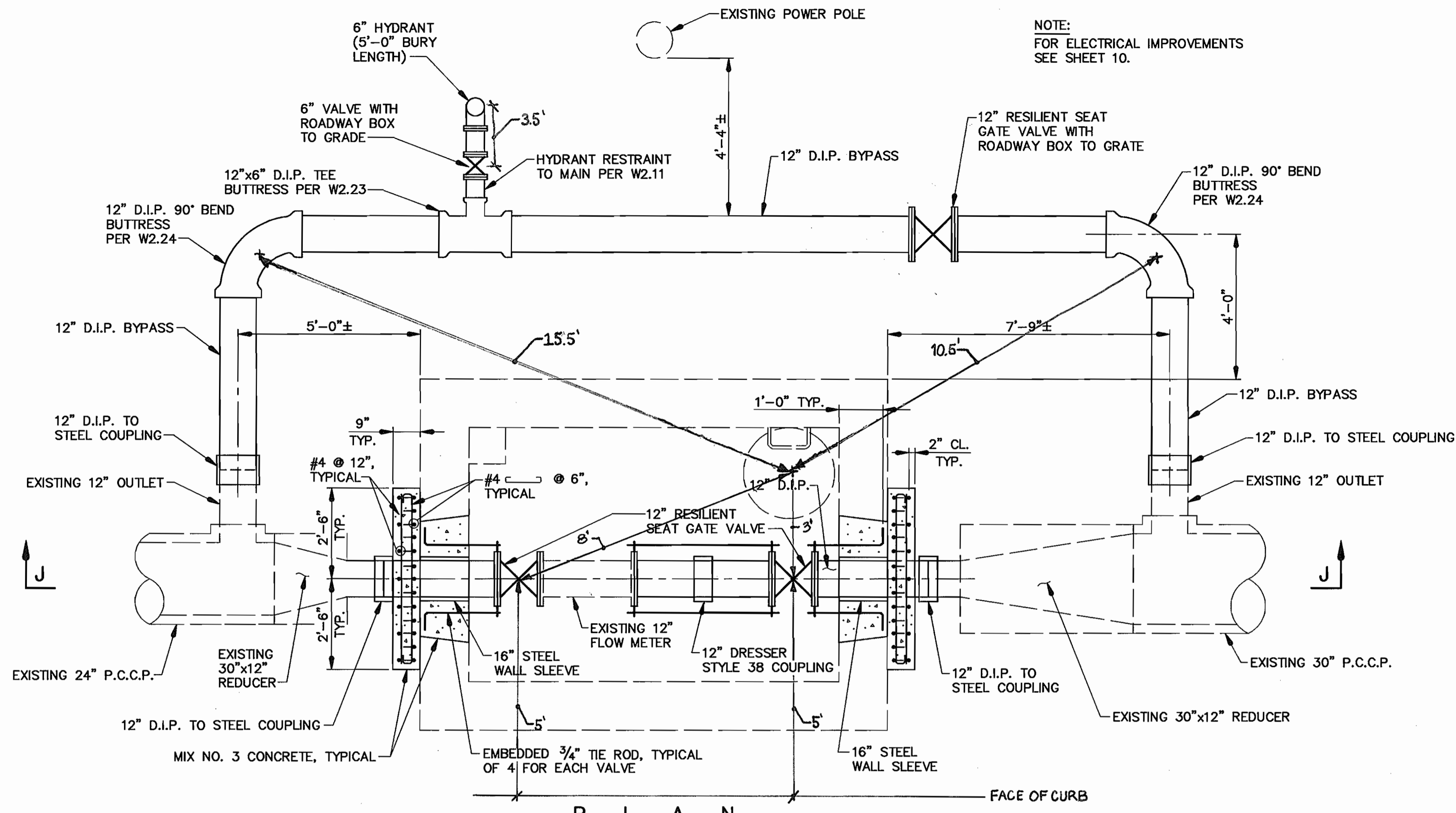
EXISTING METER VAULT DEMOLITION PLAN

600' SCALE MAP NO. -- BLOCK NO. --

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
U.S. ROUTE 40 WATER MAIN REPLACEMENT
CONTRACT NO. 44-3077

ELECTION DISTRICT: 5TH CAPITAL PROJECT W-8164

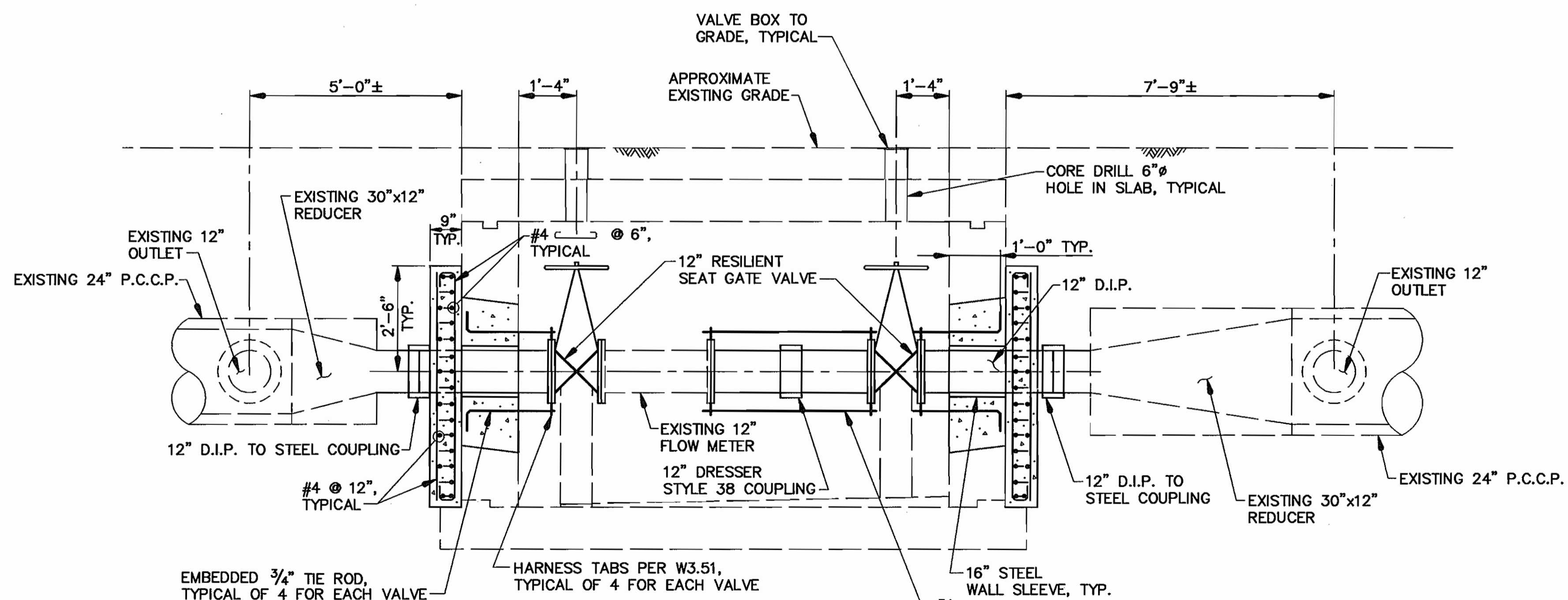
SCALE AS SHOWN
SHEET 6 OF 10



NOTE:
EXISTING VAULT REINFORCING STEEL
TO REMAIN BUT NOT SHOWN FOR CLARITY.

P L A N

SCALE: 1/2"=1'-0"



NOTE:
EXISTING VAULT REINFORCING STEEL
TO REMAIN BUT NOT SHOWN FOR CLARITY.

SECTION J-J

SCALE: 1/2"=1'-0"

AS-BUILT 3/21/99

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James P. ... 12/1/97
DIRECTOR OF PUBLIC WORKS DATE

Robert J. ... 12/1/97
CHIEF, BUREAU OF ENGINEERING DATE

Thomas P. ... 12-1-97
CHIEF, DIVISION OF WATER AND SEWER DESIGN DATE

WALLACE,
MONTGOMERY
& ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD - SUITE 345 - TOWSON, MARYLAND 21204



DES: J.J.S.					
DRN: D.E.D.					
CHK: J.C.W.					
DATE: 11/97	BY:	NO.:	REVISION:	DATE:	

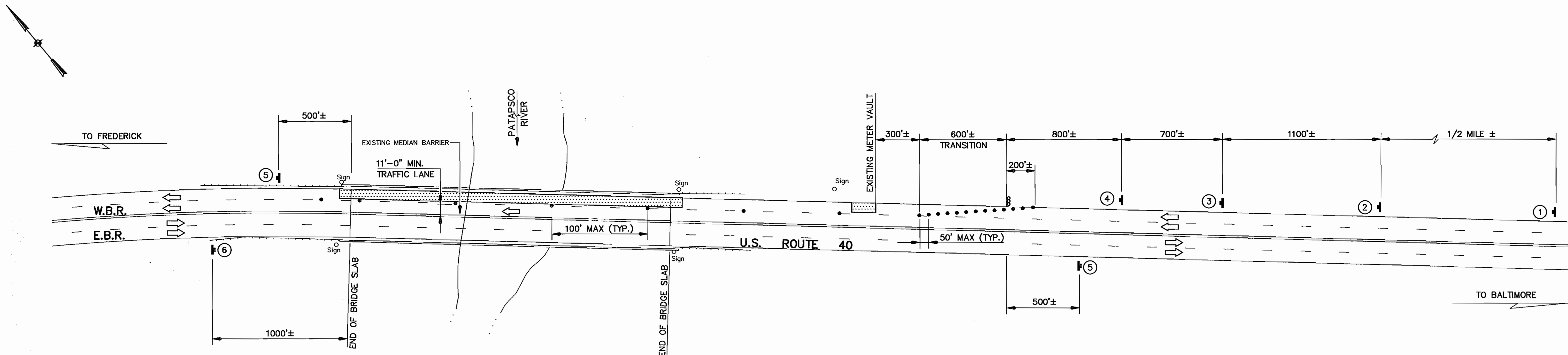
EXISTING METER VAULT
IMPROVEMENTS

600' SCALE MAP NO. -- -- BLOCK NO. -- --

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
U.S. ROUTE 40 WATER MAIN REPLACEMENT
CONTRACT NO. 44-3077

ELECTION DISTRICT: 5TH CAPITAL PROJECT W-8164

SCALE AS SHOWN
SHEET 7 OF 10



P L A N
NOT TO SCALE

SIGN SCHEDULE

SIGN NO.	DESCRIPTION	SIZE	REMARKS
①		W 20-1 48" x 48"	BLACK/ORANGE
②		W 20-1 48" x 48"	BLACK/ORANGE
③		W 20-5 48" x 48"	BLACK/ORANGE
④		W 4-2 36" x 36"	BLACK/ORANGE
⑤		G 20-2 60" x 24"	BLACK/ORANGE
⑥		W 20-1 48" x 48"	BLACK/ORANGE

NOTE:
THE CONTRACTOR SHALL REMOVE TRAFFIC CONTROL CHANNELIZING DEVICES, COVER SIGNS AND DEACTIVATE ARROW PANEL AT THE END OF EACH WORKING DAY AND SHALL REACTIVATE ALL MEASURES PRIOR TO THE START OF WORK ON THE FOLLOWING DAY.

LEGEND

- CHANNELIZING DEVICE
- SIGN SUPPORT
FACE OF SIGN
- WORK SITE
- ARROW PANEL
- FLAG
- TYPE 'B' HIGH INTENSITY
FLASHING WARNING LIGHT

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

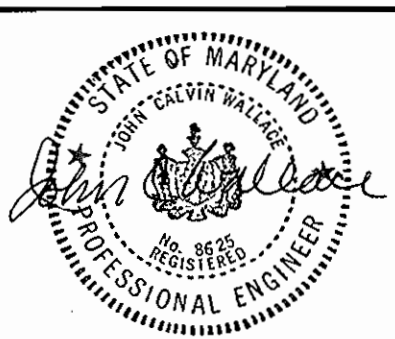
James J. Shaw 12/1/97
DIRECTOR OF PUBLIC WORKS DATE

Robert A. Benson 12-1-97
CHIEF, BUREAU OF UTILITIES DATE

Robert J. Syron 12/1/97
CHIEF, BUREAU OF ENGINEERING DATE

James E. Cutler 12-1-97
CHIEF, DIVISION OF WATER AND SEWER DESIGN DATE

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD - SUITE 345 - TOWSON, MARYLAND 21204



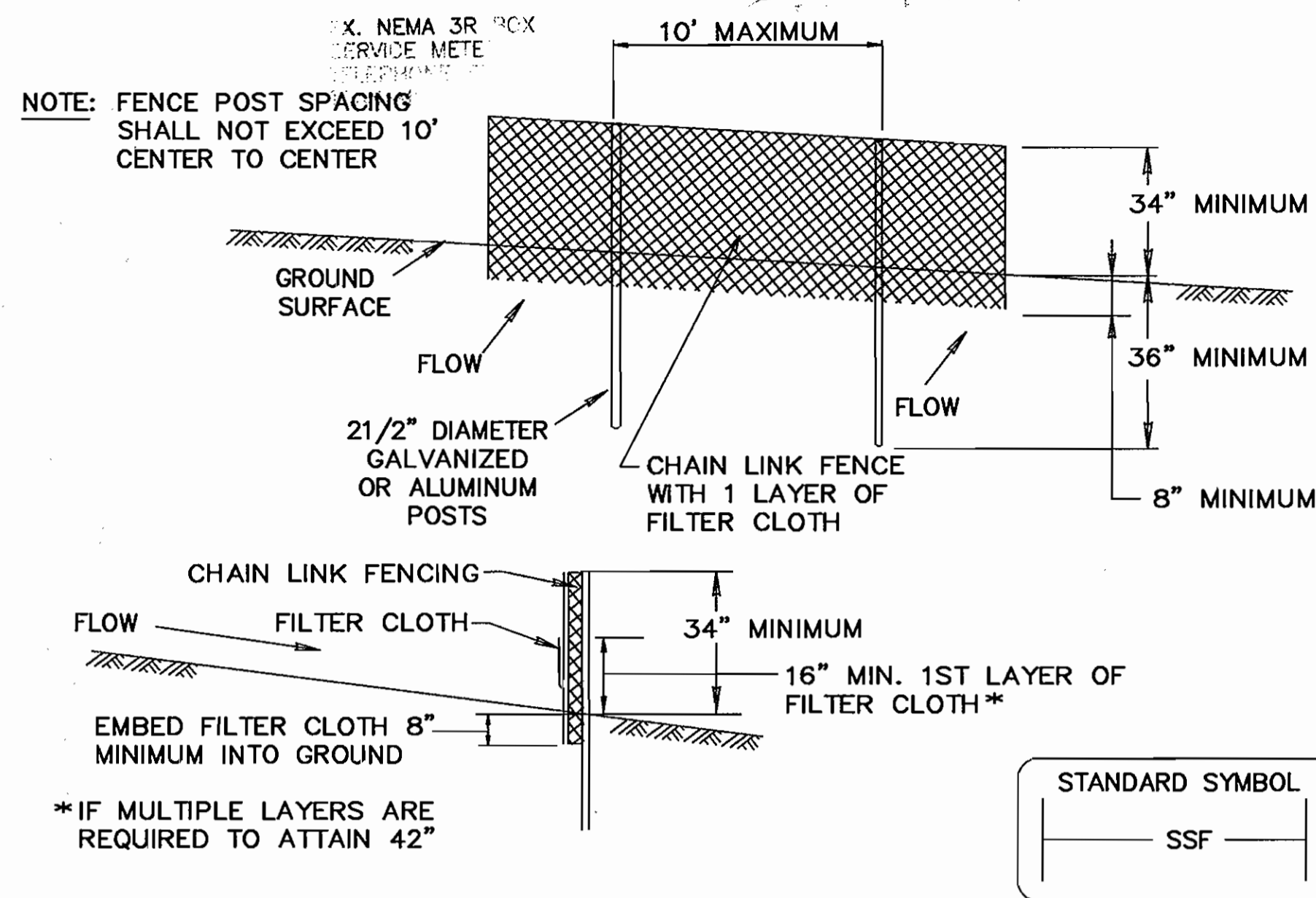
DES: J.J.S.			
DRN: D.E.D.			
CHK: J.C.W.			
DATE: 11/97			
BY NO.	REVISION	DATE	600' SCALE MAP NO. -- BLOCK NO. --

TRAFFIC CONTROL PLAN

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
U.S. ROUTE 40 WATER MAIN REPLACEMENT
CONTRACT NO. 44-3077

ELECTION DISTRICT: 5TH
CAPITAL PROJECT W-8164

SCALE AS SHOWN
SHEET 8 OF 10



CONSTRUCTION SPECIFICATIONS

- FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATION FOR A 6' FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 6' LENGTH POSTS.
- CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE.
- FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION.
- FILTER CLOTH SHALL BE EMBEDDED A MINIMUM OF 8" INTO THE GROUND.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES 50% OF FENCE HEIGHT
- FILTER CLOTH SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

TENSILE STRENGTH	50 LBS/IN (MIN.)	TEST: MSMT 509
TENSILE MODULUS	20 LBS/IN (MIN.)	TEST: MSMT 509
FLOW RATE	0.3 GAL/FT ² /MINUTE (MAX.)	TEST: MSMT 322
FILTERING EFFICIENCY	75% (MIN.)	TEST: MSMT 322

SUPER SILT FENCE

NOT TO SCALE

SEQUENCE OF CONSTRUCTION

SECURE GRADING PERMIT.

CONTACT HOWARD COUNTY BUREAU OF CONSTRUCTION INSPECTION DIVISION (313-1870) PRIOR TO STARTING DATE. (4 DAYS)

INSTALL EROSION AND SEDIMENT CONTROL DEVICES AS PER SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL VOL. IV. (1 DAY)

EXCAVATE AND INSTALL PROPOSED 24" WATER MAIN. (5 DAYS)
EXCAVATE AND INSTALL 12" WATER MAIN. (2 DAYS)

RESTORE EARTH TRENCHES TO THEIR ORIGINAL CONDITION AS PER HOWARD COUNTY STANDARDS. (SAME DAY)

UPON PERMISSION FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES. (1 DAY)

FINE GRADE ALL DISTURBED AREAS AND STABILIZE WITH PERMANENT SEEDING. (1 DAY)

TRAVERSE DESCRIPTION

POINT NO.	NORTH	EAST	BEARING	DISTANCE
#3444002	533114.86	859139.30		
114	533021.12	859335.43	S 64°-27'-11" E	217.37'
115	532209.52	859756.56	S 27°-25'-27" E	914.36'
#3444003	532168.94	859770.90		
107	532000.80	860013.70	S 19°-27'-59" E	43.03'
108	532249.28	860533.38	S 55°-17'-45" E	295.34'
109	531888.19	860708.88	N 64°-26'-45" E	576.04'
105	532230.11	862728.49	S 25°-55'-18" E	401.48'
106	532595.61	862320.76	N 80°-23'-28" E	2048.34'
110	533061.36	861317.60	N 48°-07'-34" W	547.57'
111	532935.79	860415.98	N 65°-05'-43" W	1106.00'
112	532526.31	859805.66	S 82°-04'-18" W	910.32'
113	533146.25	859424.34	S 56°-08'-30" W	734.96'
#3444002	533114.86	859139.30	N 31°-35'-42" W	727.82'
			S 83°-42'-59" W	286.76'

RESTORATION SCHEDULE

LOCATION	LENGTH	MATERIAL
24" WATER MAIN 0+00 TO 0+20±	20 L.F. ±	SEEDING
24" WATER MAIN 0+20± TO 0+69±	49 L.F. ±	SHA PAVING
24" WATER MAIN 4+02± TO 4+27±	25 L.F. ±	SHA PAVING
12" WATER MAIN VAULT BYPASS	45 L.F. ±	SEEDING

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION - LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS - APPLY 60 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.).

SEEDING - FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (0.07 LBS/1000 SQ. FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FT OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

REFER TO THE "1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- PREFERRED** - APPLY 2 TONS PER ACRES DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ. FT.)
- ACCEPTABLE** - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (0.05 LBS/1000 SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

MAINTENANCE - INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

STANDARD SEDIMENT CONTROL NOTES

- A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF INSPECTION AND PERMITS PRIOR THE START OF ANY CONSTRUCTION. (992-2437)
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE "1983 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE "1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
TOTAL AREA OF SITE 0.30 ACRES
AREA DISTURBED 0.10 ACRES
AREA TO BE ROOFED OR PAVED 0 ACRES
AREA TO BE VEGETATIVELY STABILIZED 0.10 ACRES
TOTAL CUT 0 CU. YDS.
TOTAL FILL 0 CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION TO BE DETERMINED
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY DPW SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 12/1/97
DIRECTOR OF PUBLIC WORKS

[Signature] 12/1/97
CHIEF, BUREAU OF ENGINEERING

[Signature] 12-1-97
CHIEF, BUREAU OF UTILITIES

[Signature] 12-1-97
CHIEF, DIVISION OF WATER AND SEWER DESIGN

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD - SUITE 345 - TOWSON, MARYLAND 21204

[Professional Seal]

STATE OF MARYLAND
PROFESSIONAL ENGINEER

[Professional Seal]

DES: J.J.S.				
DRN: D.E.D.				
CHK: J.C.W.				
DATE: 11/97				
BY NO.		REVISION		DATE

600' SCALE MAP NO.		BLOCK NO.	
--------------------	--	-----------	--

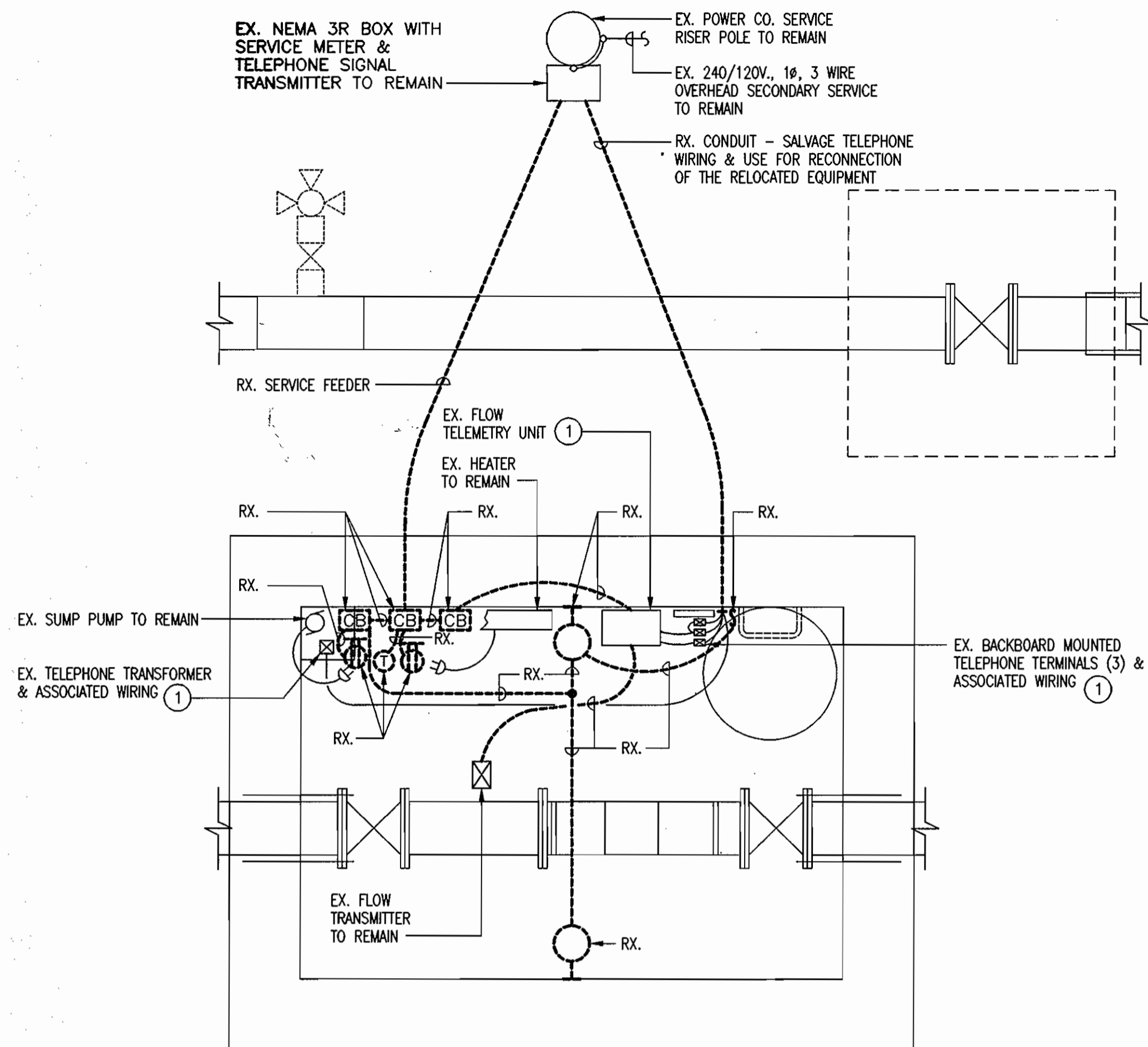
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
U.S. ROUTE 40 WATER MAIN REPLACEMENT
CONTRACT NO. 44-3077

ELECTION DISTRICT: 5TH
CAPITAL PROJECT W-8164

SCALE AS SHOWN
SHEET 9 OF 10

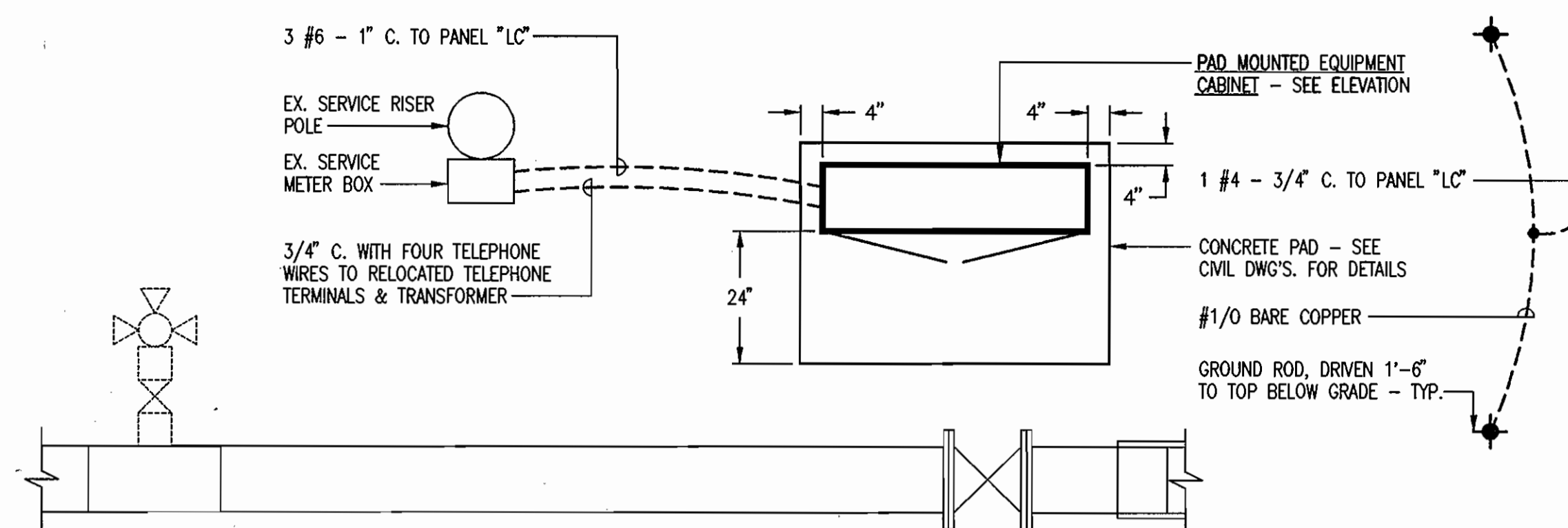
DRAWING NOTES:

- ① TO BE REMOVED & RELOCATED TO PROPOSED EQUIPMENT CABINET. RECONNECT EX. TELEPHONE/SIGNAL LINES INKIND.
- ② SEAL AROUND CONDUIT PASSAGE TO MAKE WEATHERPROOF.



PLAN - EXISTING CONDITIONS/DEMOLITION WORK

SCALE: 1/2" = 1'-0"

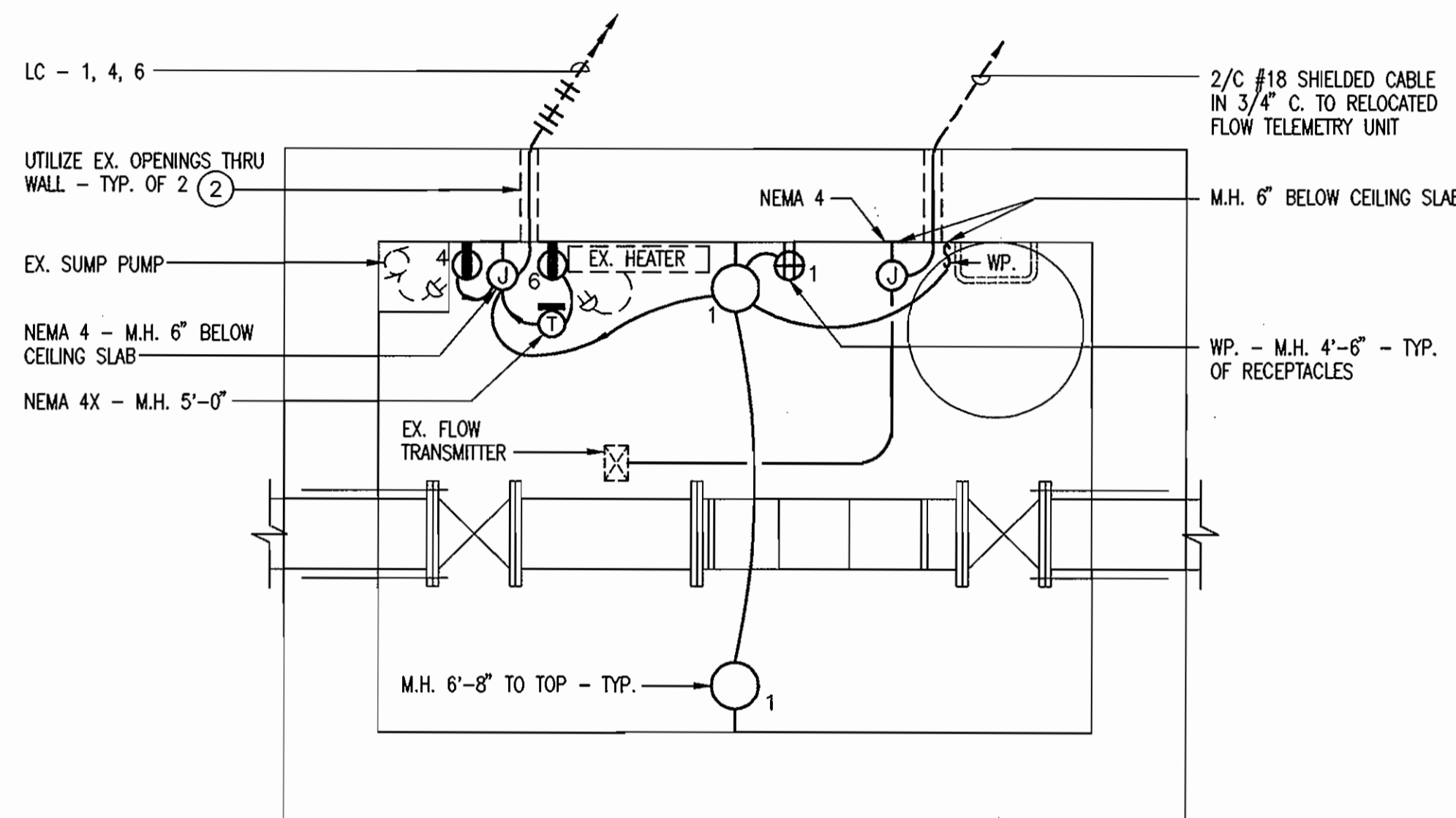


PLAN - NEW WORK

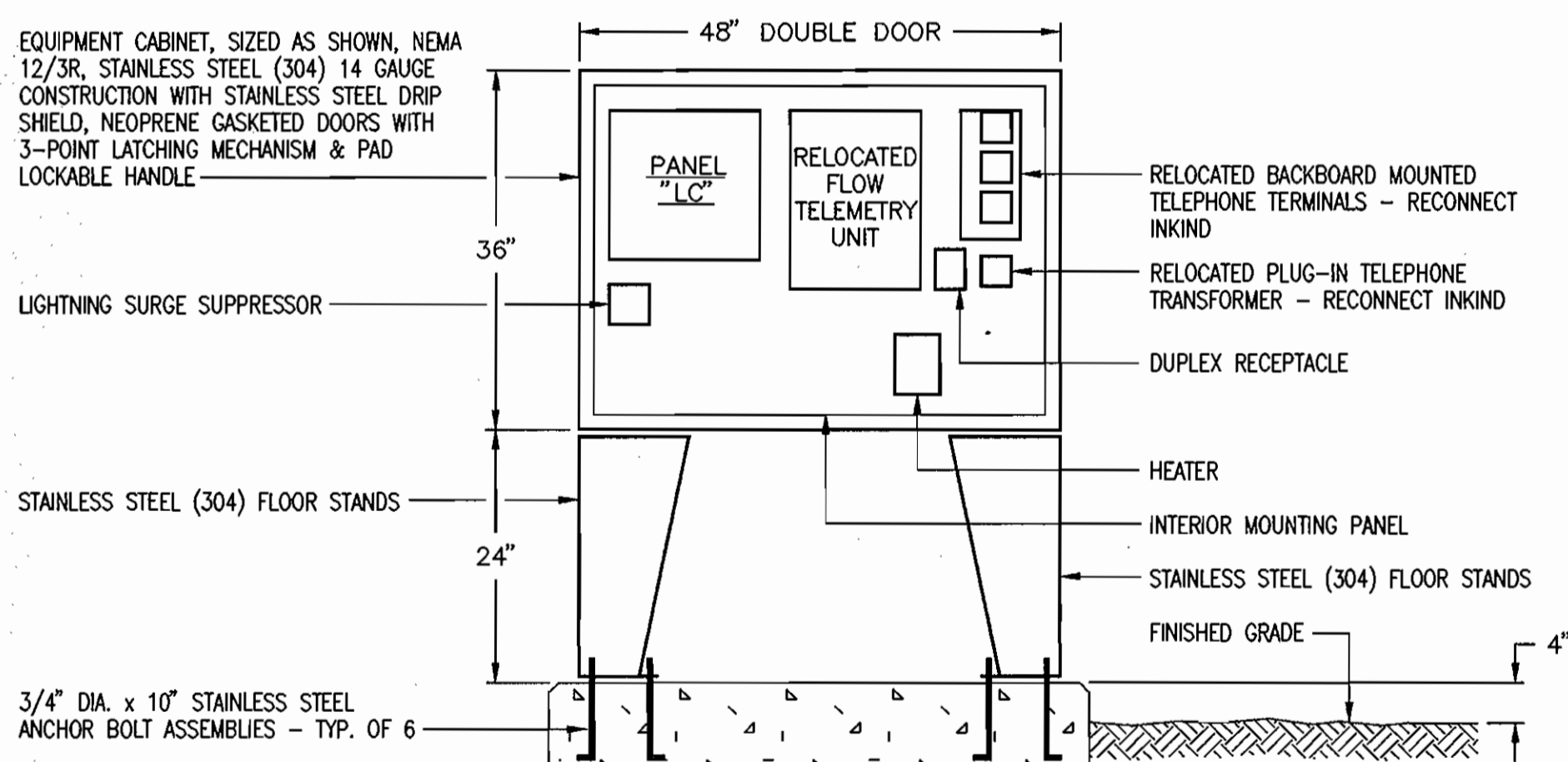
SCALE: 1/2" = 1'-0"

PANEL SCHEDULE : "LC" - 240/120V., 1 PHASE, 3 WIRE 100 A. BUS CAPACITY
60 A. MAIN BREAKER

CIRC. NO.	FOR	BREAKERS			CIRC. NO.	FOR	BREAKERS		
		FRM.	P	TRIP			FRM.	P	TRIP
1	VAULT LIGHT & RECEPT.	100	1	20	2	SURGE SUPPRESSOR	100	2	30
3	FLOW TELEMETRY UNIT	100	1	20	-	-	-	-	-
5	E.C. HEATER	100	1	20	4	VAULT SUMP PUMP	100	1	20
7	TELE. EQUIP. TRANSF.	100	1	20	6	VAULT HEATER	100	1	20
9	SPARE	100	1	20	8	SPACE W/BUS	-	1	-
11	SPACE W/BUS	-	1	-	10	SPACE W/BUS	-	1	-
-	-	-	-	-	-	-	-	-	-



ELECTRICAL SINGLE LINE DIAGRAM



FRONT ELEVATION OF EQUIPMENT CABINET

NO SCALE
DEPTH = 12"

(SHOWN WITH DOORS REMOVED)

ELECTRICAL LEGEND

ABBREVIATIONS:

- A. AMPS OR AMPERES.
- C. CONDUIT.
- ∅ PHASE.
- GND. GROUND.
- V. VOLTS OR VOLTAGE.
- EX. EXISTING.
- RX. REMOVE EXISTING.
- P. POLE OR POLES.
- J.B. JUNCTION BOX.
- WP. WEATHERPROOF.
- M.H. MOUNTING HEIGHT - TO CENTER UNLESS OTHERWISE INDICATED.

SYMBOLS:

- FIXTURE - INCANDESCENT - WALL MOUNTED.
- ⊞ SWITCH - 1P., 20A., 277/120 VOLT.
- ⊞, ⊞, ⊞ RECEPTACLE - 20A., 125V. - SIMPLEX, DUPLEX, GROUND FAULT INTERRUPTER.
- ⊞ THERMOSTAT
- ⊞ JUNCTION BOX
- ⊞ SPECIAL DEVICE OR EQUIPMENT AS NOTED.
- ▨ PANELBOARD.
- ⊞ CORD WITH PLUG.
- ⊞ CONDUIT-ON CEILING OR WALLS
- ⊞ CONDUIT-UNDERGROUND.
- ⊞ HOMERUN TO PANEL - NO. OF ARROWS INDICATES NO. OF CIRCUITS AND NO. OF CROSSLINES INDICATES NO. OF #12 CONDUCTORS.
- ⊞ ENCLOSED CIRCUIT BREAKER.
- ⊞ MOTOR.

Gipe Associates Inc.
Consulting Engineers
Baltimore, Maryland
Easton, Maryland
W.O.# 97074



THIS DRAWING & THE DESIGN & CONSTRUCTION FEATURES DISCLOSED ARE PROPRIETARY TO GIPE ASSOCIATES, INC. & SHALL NOT BE ALTERED OR REUSED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF GIPE ASSOCIATES, INC. COPYRIGHT © 1997.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James J. Shew 12/1/97
DIRECTOR OF PUBLIC WORKS
Robert J. Sisson 12/1/97
CHIEF, BUREAU OF ENGINEERING
Robert J. Sisson 12-1-97
CHIEF, BUREAU OF UTILITIES
Thomas G. Butler 12-1-97
CHIEF, DIVISION OF WATER AND SEWER DESIGN

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD - SUITE 345 - TOWSON, MARYLAND 21204

DES: D.K.J.			
DRN: J.J.S.			
CHK: D.K.J.			
DATE: 10/97			
BY	NO.	REVISION	DATE

ELECTRIC PLANS & DETAILS

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
U.S. ROUTE 40 WATER MAIN REPLACEMENT
CONTRACT NO. 44-3077

ELECTION DISTRICT: 5TH

CAPITAL PROJECT W-8164

SCALE AS SHOWN

SHEET 10 OF 10

DATE: 11/25/97