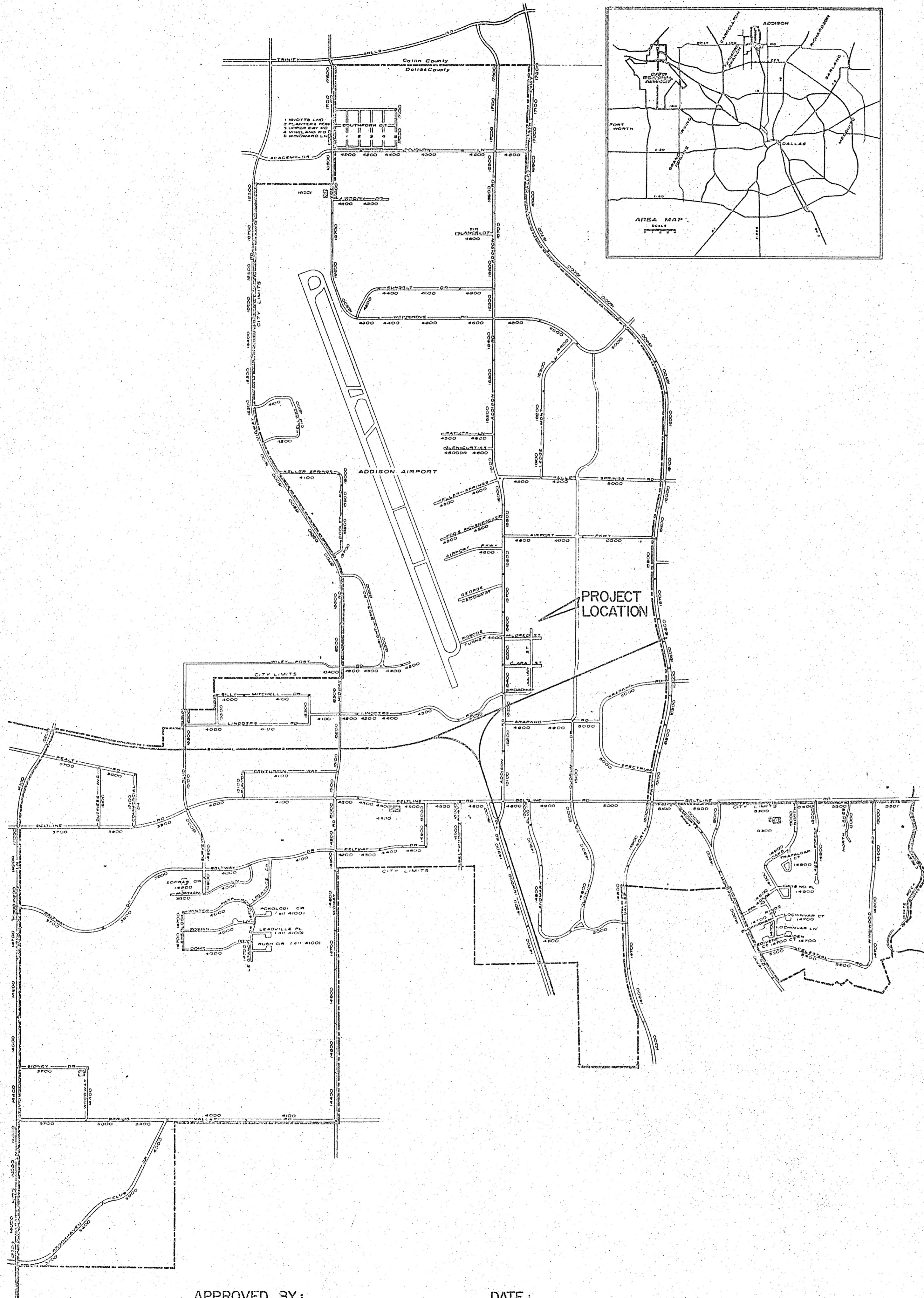


TOWN OF
ADDISON
DALLAS COUNTY, TEXAS

CONSTRUCTION PLANS FOR

24" WATERLINE RELOCATION



MAYOR:
D. LYNN SPRUILL

COUNCIL MEMBERS:
JOHN BRANCH
MARY DOLAN
JIM DUFFY
JOHN NOLAN
RILEY REINKER

CITY MANAGER:
RON WHITEHEAD

DIRECTOR OF STREETS:
ROBIN JONES

DIRECTOR OF UTILITIES:
DON PREECE

AS BUILT

APPROVED BY: _____ DATE: _____
D. LYNN SPRUILL, MAYOR



GINN, INC.
Consulting Engineers Dallas, Texas
JUNE, 1990

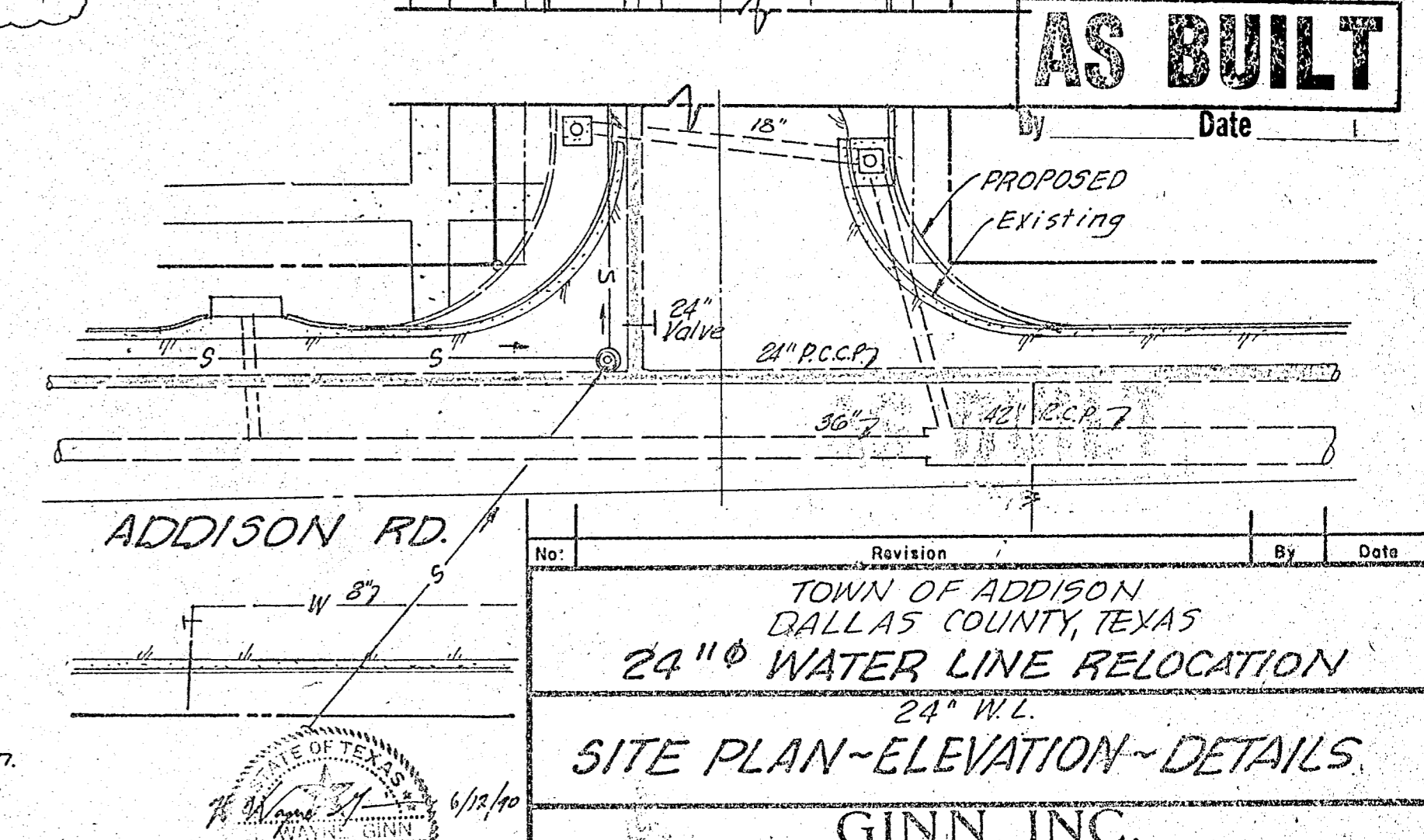
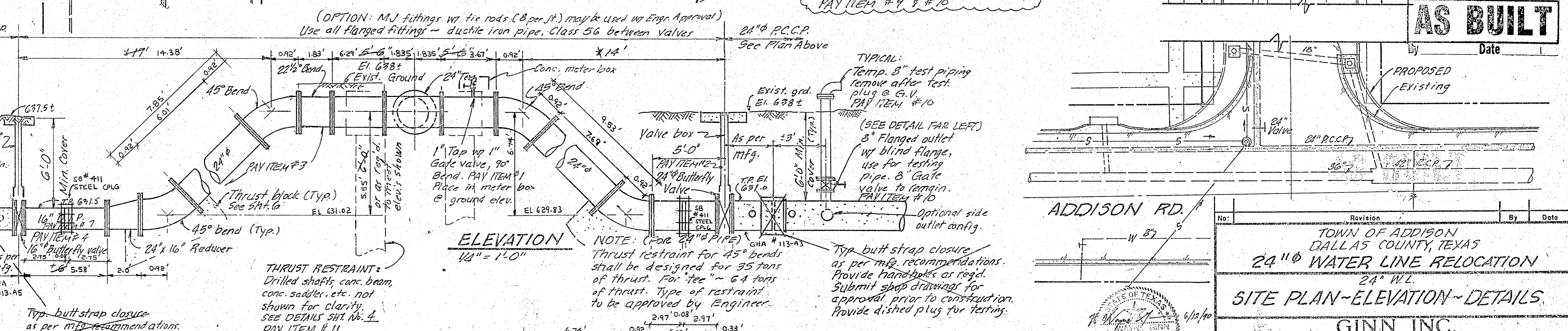
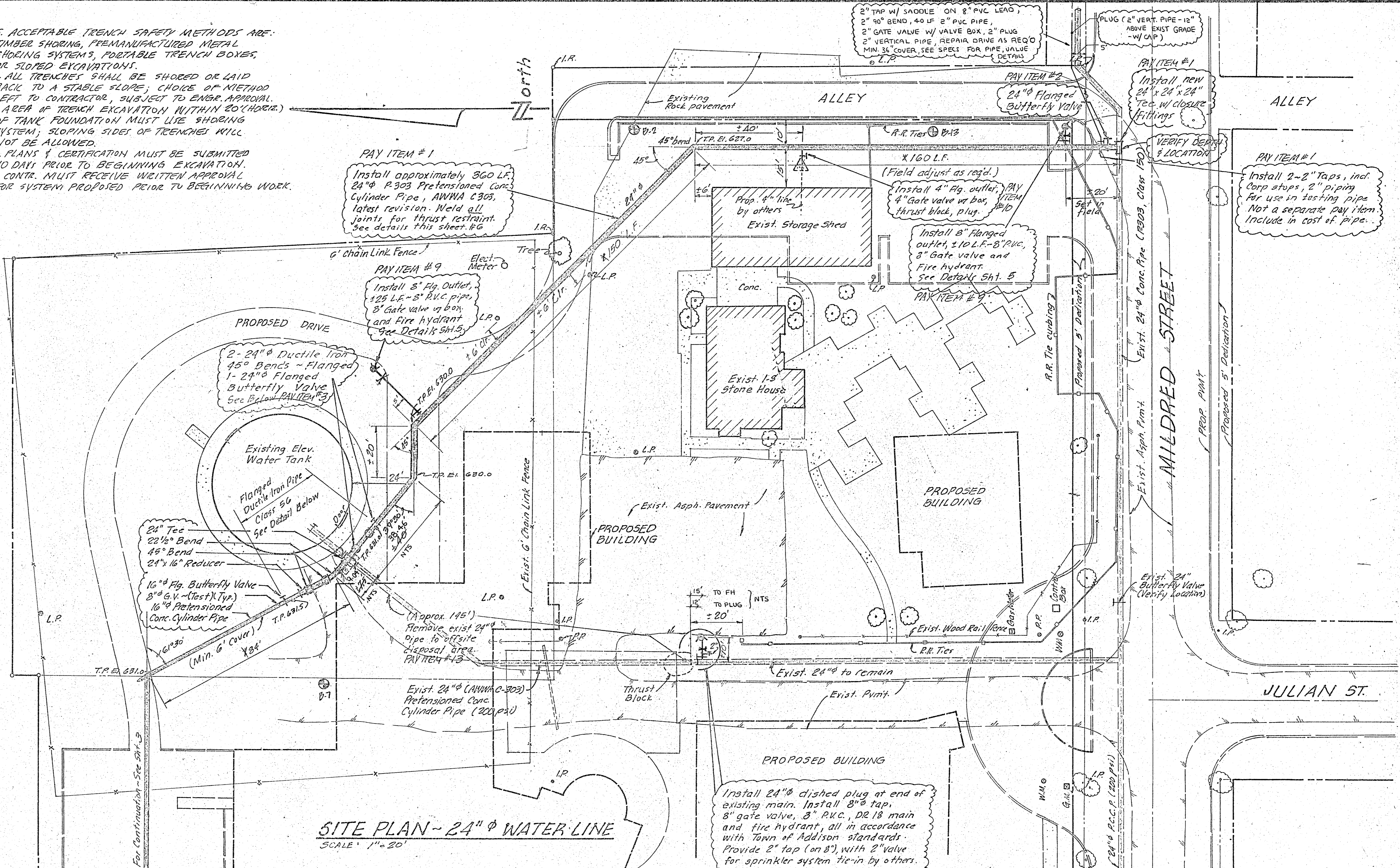
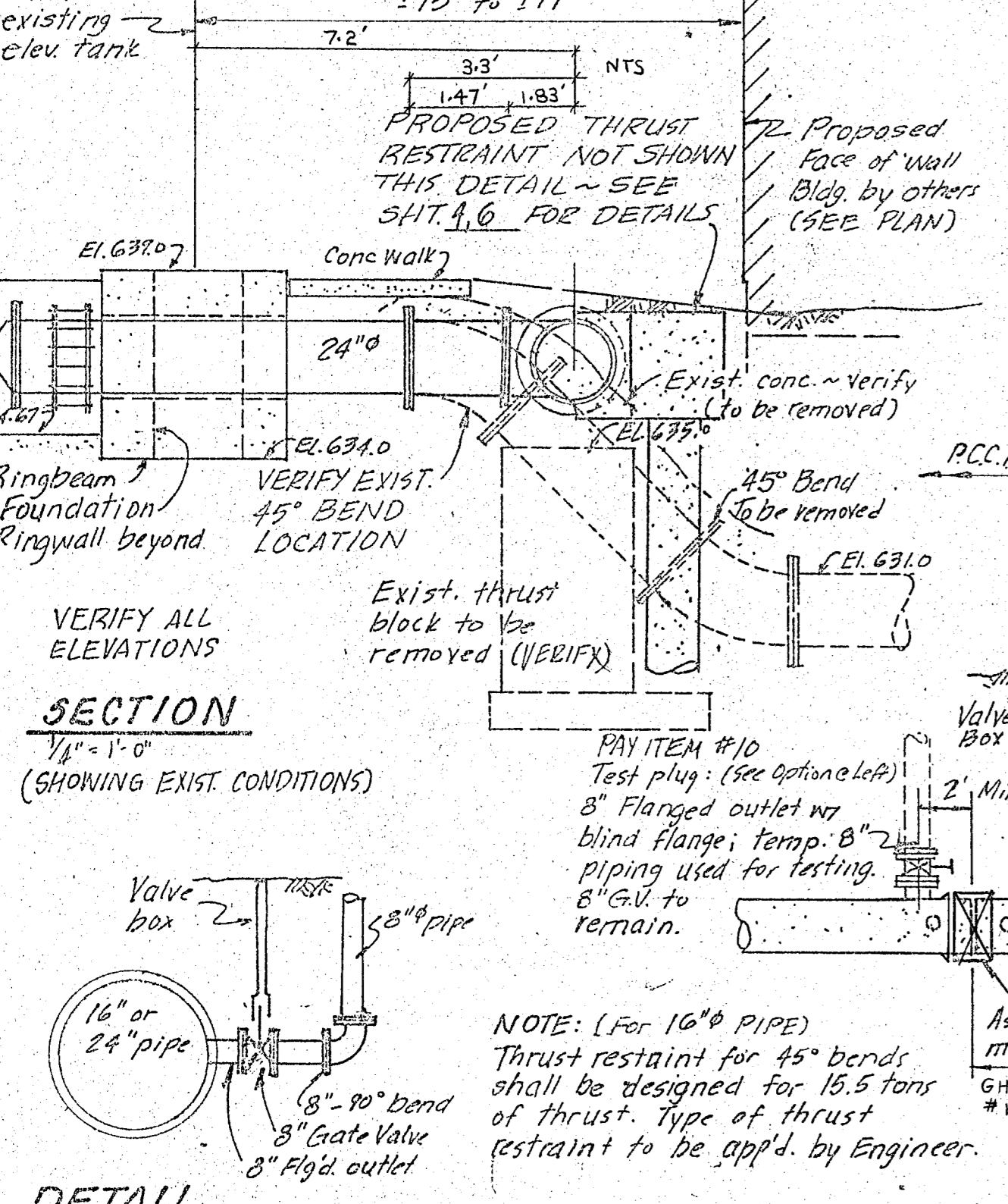
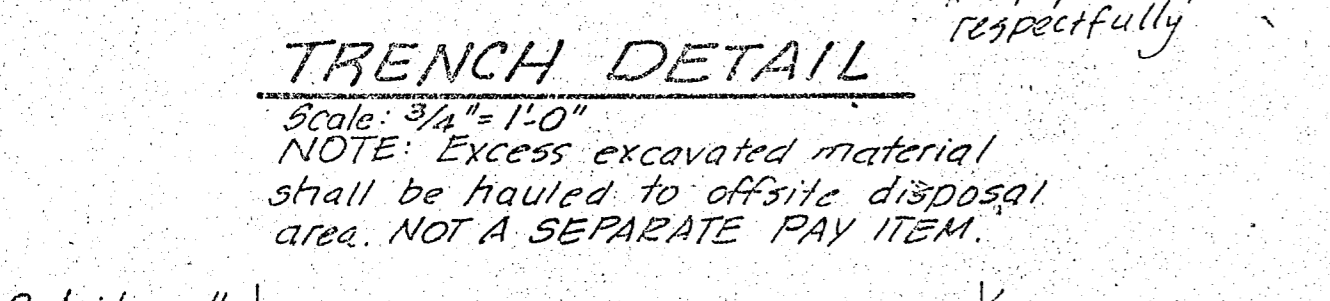
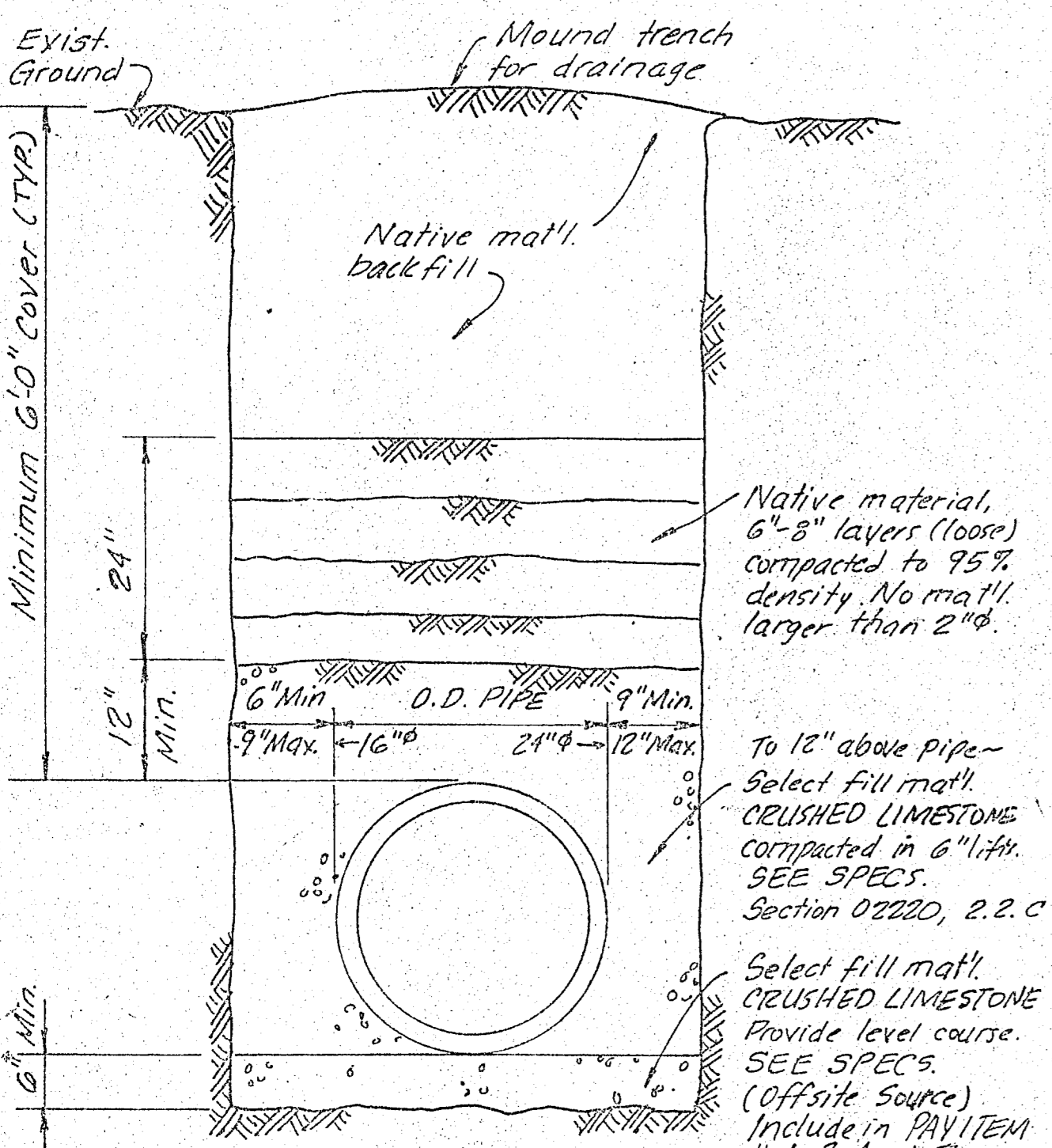
AS BUILT
By _____ Date _____

FF-1

GENERAL NOTES: TRENCH SAFETY (PAY ITEM #12)

1. CONTRACTOR SHALL PROVIDE & ASSUME FULL RESPONSIBILITY FOR THE DESIGN AND ADEQUACY OF TRENCH SAFETY TO FULLY COMPLETE THE CONSTRUCTION.
2. A COPY OF THE SUBSURFACE EXPLORATION IS PROVIDED IN APPENDIX OF SPECIFICATIONS.
3. TYPE OF TRENCH SAFETY USED SUBJECT TO APPROVAL BY ENGINEER. CONTRACTOR SHALL SUBMIT PLANS SHOWING DETAILS SUCH AS SPACING, CONFIGURATION, TYPES & GRADES OF MATERIALS, DIMENSIONS, STRESS ALLOWABLES, ETC. AND SEALED BY A REGISTERED P.E. IN THE STATE OF TEXAS. THE DESIGN LATERAL EARTH PRESSURE USED IN THE DESIGN SHALL BE STATED.
4. DESIGN CRITERIA: U.S. DEPT. OF LABOR, OSHA PUBLICATIONS OSHA 1926 AND 2226.

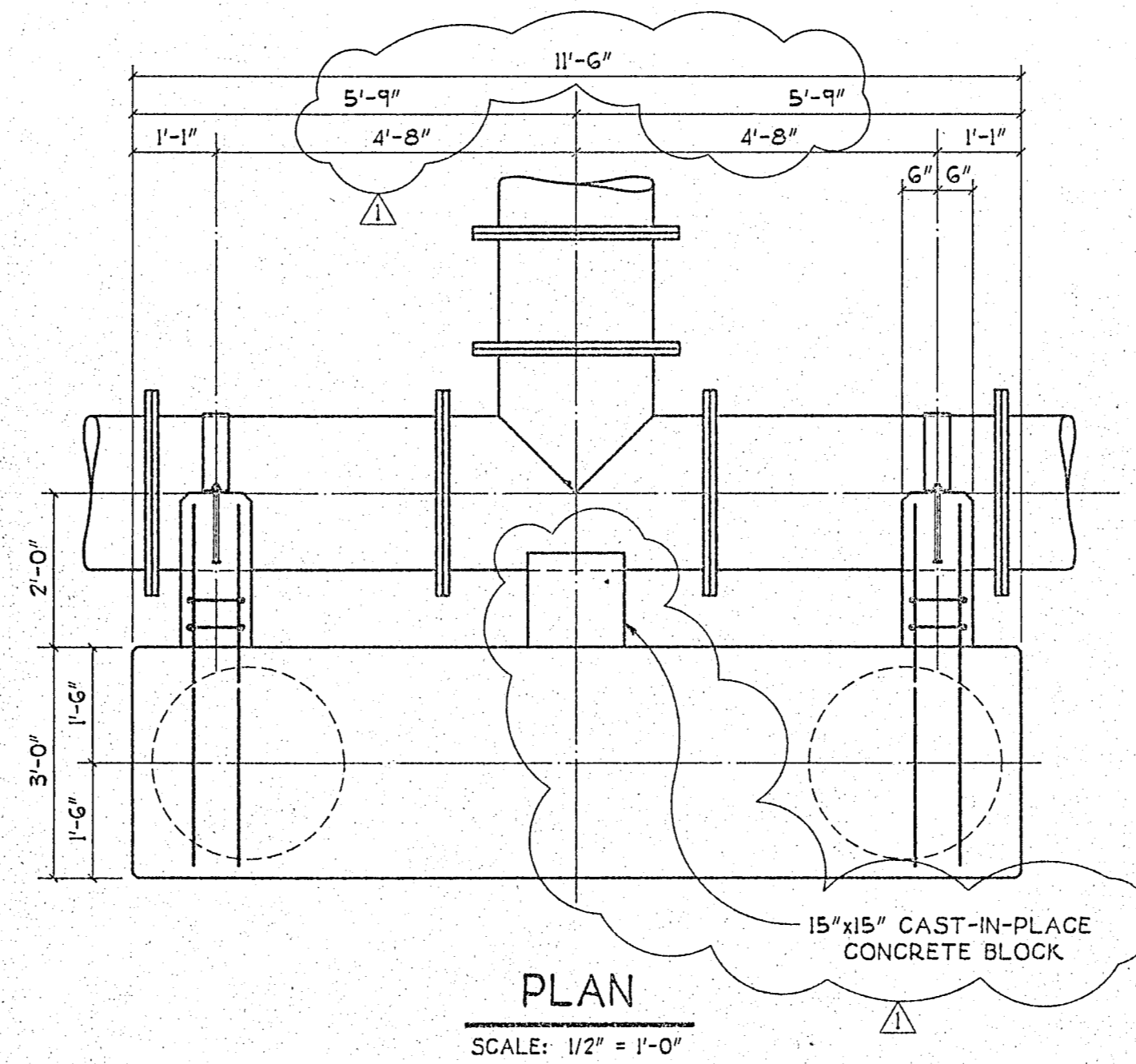
5. ACCEPTABLE TRENCH SAFETY METHODS ARE: TIMBER SHORING, PREFABRICATED METAL SHORING SYSTEMS, PORTABLE TRENCH BOXES, OR SLOPED EXCAVATIONS.
6. ALL TRENCHES SHALL BE SHORED OR LAID BACK TO A STABLE SLOPE; CHOICE OF METHOD LEFT TO CONTRACTOR, SUBJECT TO ENGR. APPROVAL.
7. AREA OF TRENCH EXCAVATION WITHIN 20' (HORIZ.) OF TANK FOUNDATION MUST USE SHORING SYSTEM; SLOPING SIDES OF TRENCHES WILL NOT BE ALLOWED.
8. PLANS & CERTIFICATION MUST BE SUBMITTED 10 DAYS PRIOR TO BEGINNING EXCAVATION.
9. CONTR. MUST RECEIVE WRITTEN APPROVAL FOR SYSTEM PROPOSED PRIOR TO BEGINNING WORK.



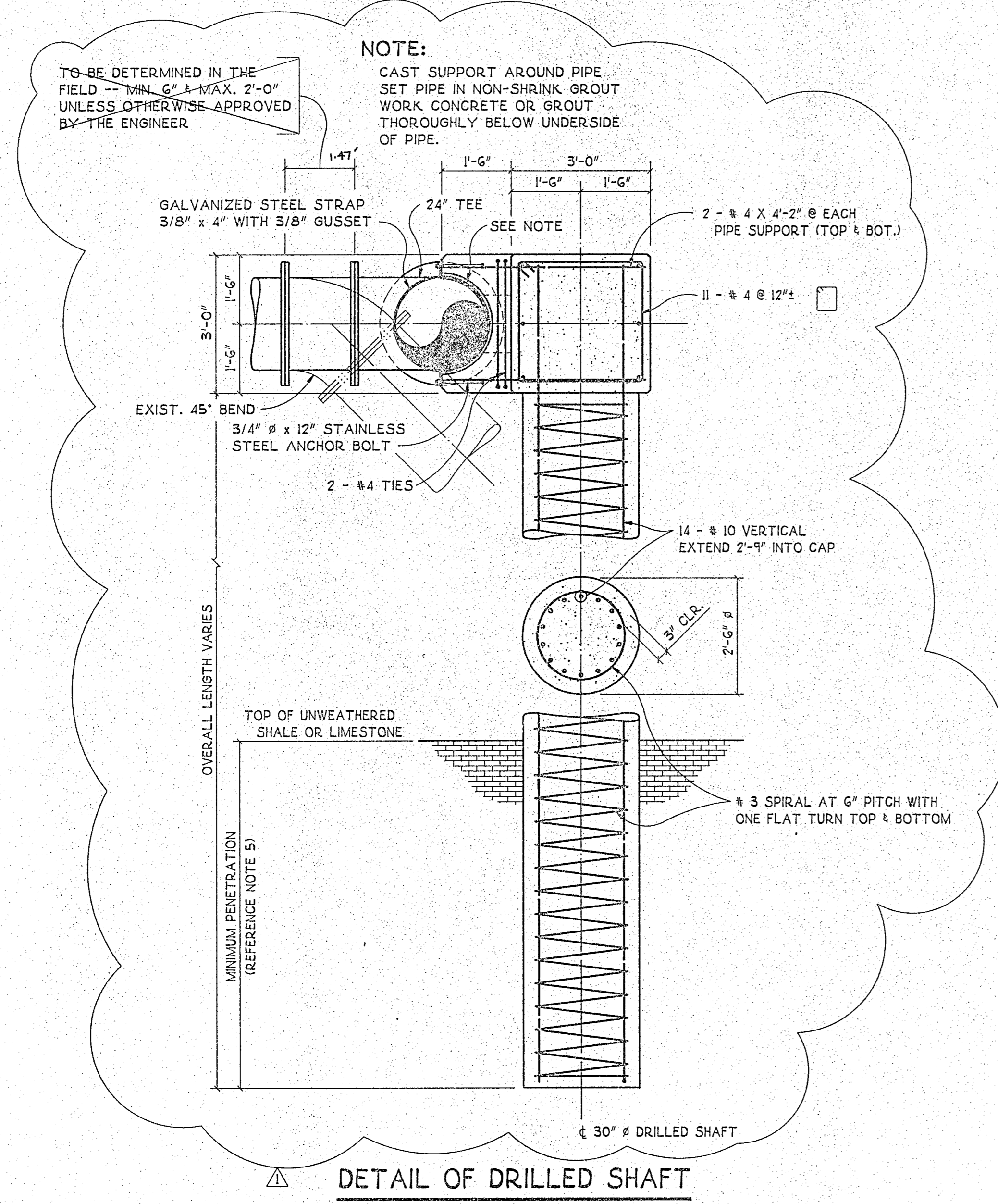
No.	Revision	By	Date

TOWN OF ADDISON
DALLAS COUNTY, TEXAS
24" φ WATER LINE RELOCATION
24" W.L.
SITE PLAN - ELEVATION - DETAILS

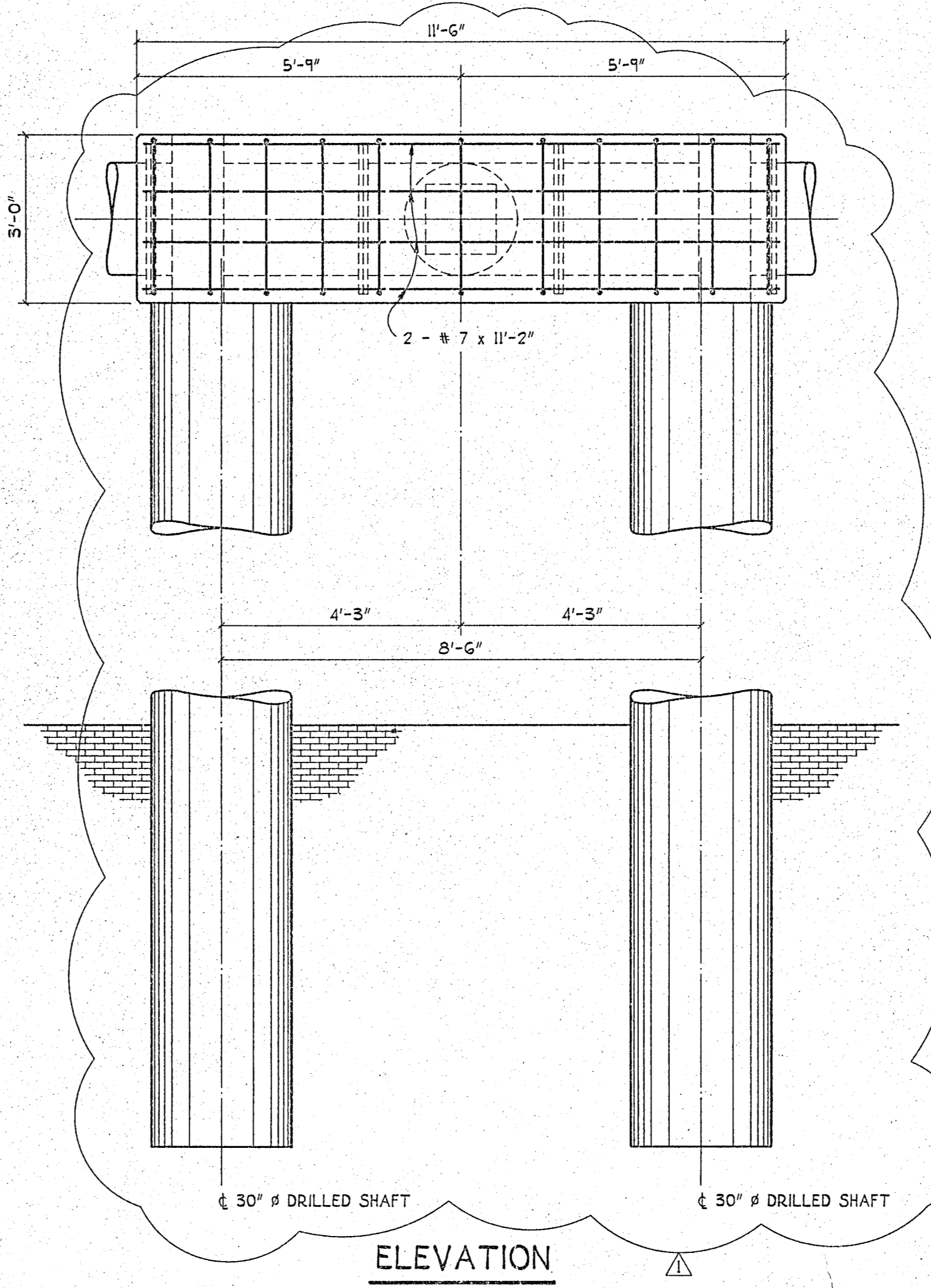
GINN, INC.
Consulting Engineers Dallas, Texas
Assigned - GF Drawn - GF Date - JUNE 1990 Job No. - 90442
Approved - HNG Checked - HNG Scale - As Shown Sheet 2 of 6



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



DETAIL OF DRILLED SHAFT
SCALE: 1/2" = 1'-0"



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

GENERAL NOTES:

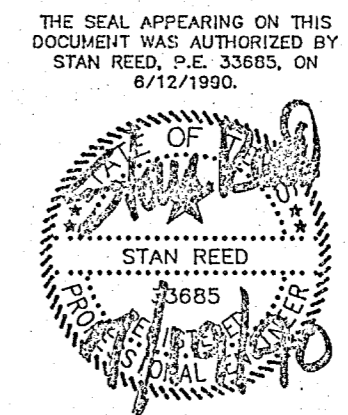
1. CONCRETE SHALL HAVE SAND AND GRAVEL OR CRUSHED STONE AGGREGATES, TYPE I PORTLAND CEMENT, AND A DESIGNATED COMPRESSIVE STRENGTH OF 4000 PSI IN 28 DAYS. NORMAL WEIGHT AGGREGATE SHALL CONFORM TO THE REQUIREMENTS OF ASTM C33.
2. CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4".
3. ALL CONCRETE REINFORCING BARS SHALL BE OF DOMESTIC MANUFACTURE AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615, GRADE 60. FIELD BENT DOWELS AND NO. 3 BARS WHEN USED AS STIRRUPS, SHALL CONFORM TO ASTM A615, GRADE 40.
4. CONCRETE SHALL BE PLACED IN PIER HOLES WITHIN 8 HOURS OF COMPLETION OF DRILLING. IF CONCRETE IS NOT PLACED WITHIN 8 HOURS, THEN THE PIER HOLE SHALL BE EXTENDED AN ADDITIONAL 8 FEET DOWNWARD. CASING OF THE PIER HOLES MAY BE REQUIRED BY FIELD CONDITIONS. EXTRA DEPTH AND CASING AT CONTRACTOR'S EXPENSE.
5. BOTTOM ELEVATIONS OF DRILLED SHAFTS ARE SHOWN FOR BIDDING PURPOSES ONLY. THE REQUIRED LENGTH FOR THE DRILLED SHAFTS SHALL BE BASED ON THE FOLLOWING CRITERIA:
 - (A) MINIMUM LENGTH BELOW BOTTOM OF GRADE BEAM SHALL BE 15'-0".
 - (B) MINIMUM PENETRATION INTO UNWEATHERED LIMESTONE SHALL BE 7'-6".
 THE REQUIRED LENGTH OF THE DRILLED SHAFTS SHALL BE THE LONGER LENGTH THAT CAN BE OBTAINED USING THE ABOVE LISTED CRITERIA. REQUIRED LENGTHS OF THE DRILLED SHAFTS SHALL BE DETERMINED DURING DRILLING OPERATIONS.

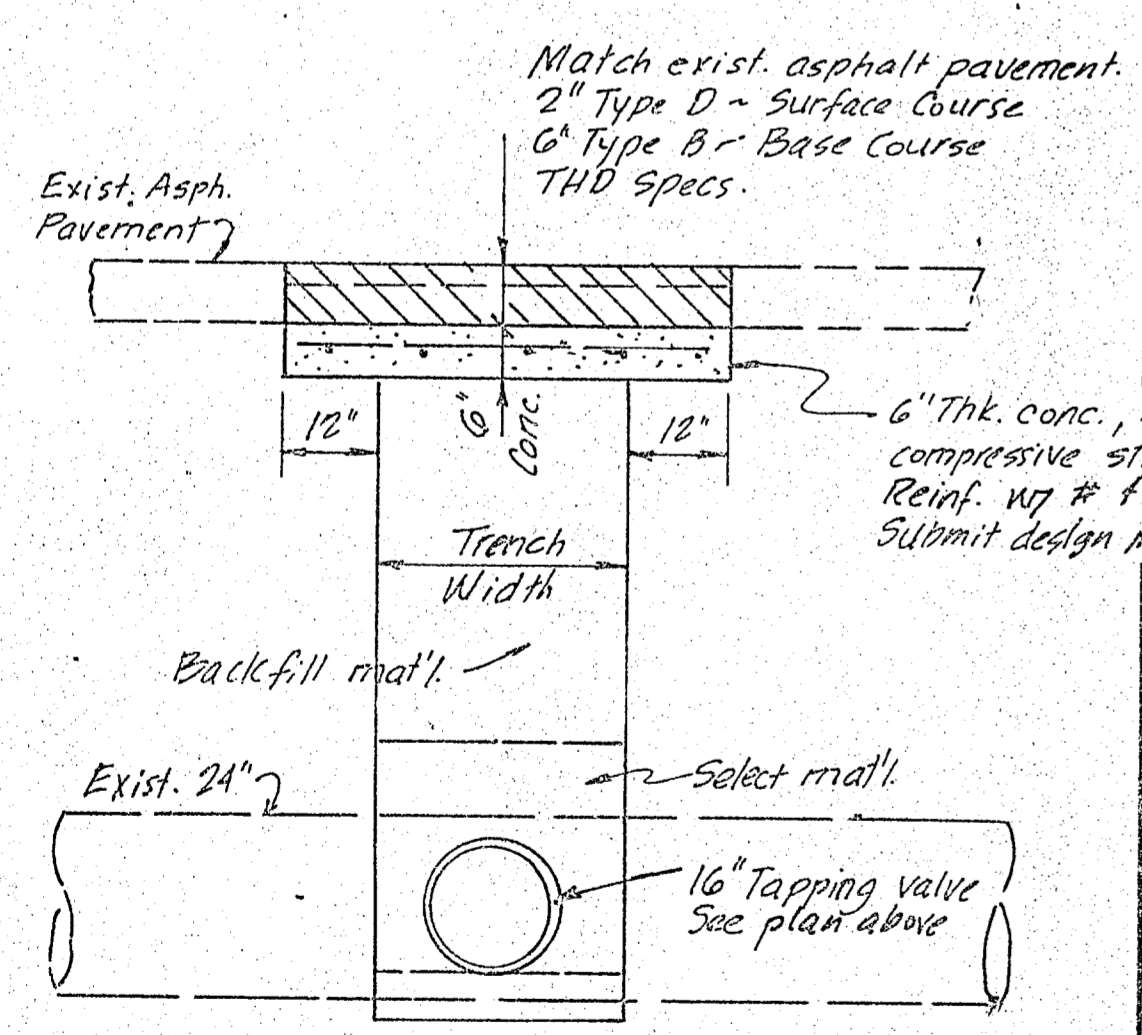
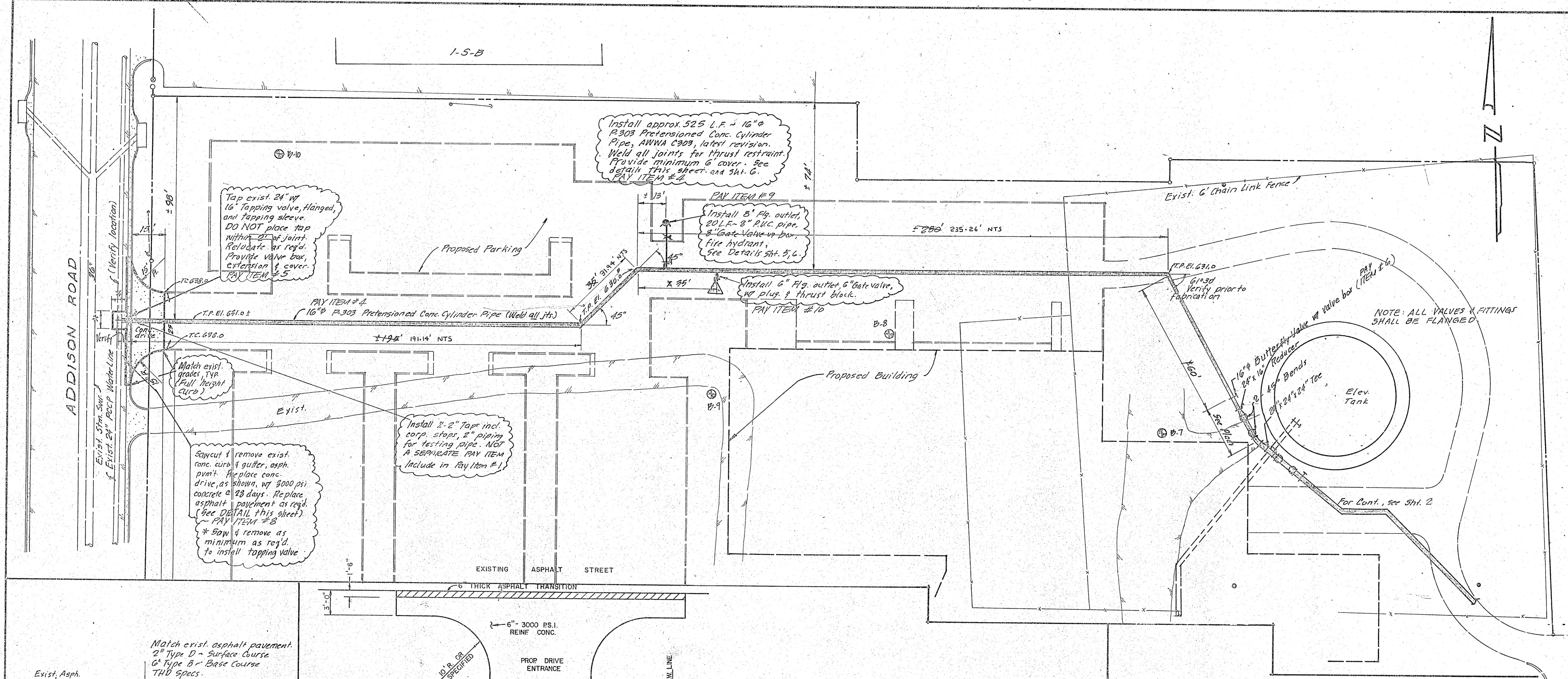
AS BUILT
Date _____

1 CHANGE DRILLED SHAFT SIZE & SPACING		S.C.R.	7/7/90
No.	Revision	By	Date
TOWN OF ADDISON DALLAS COUNTY, TEXAS			
24" W.L. WATER LINE RELOCATION			
24" W.L. THRUST RESTRAINT DETAILS			
GINN, INC.			
Consulting Engineers Dallas, Texas			
Designed - S.C.R.	Drawn - S.C.R.	Date - JUNE, 1990	Job No. - 90442
Approved -	Checked - S.C.R.	Scale - 1/2" = 1'-0"	Sheet 4 of 6

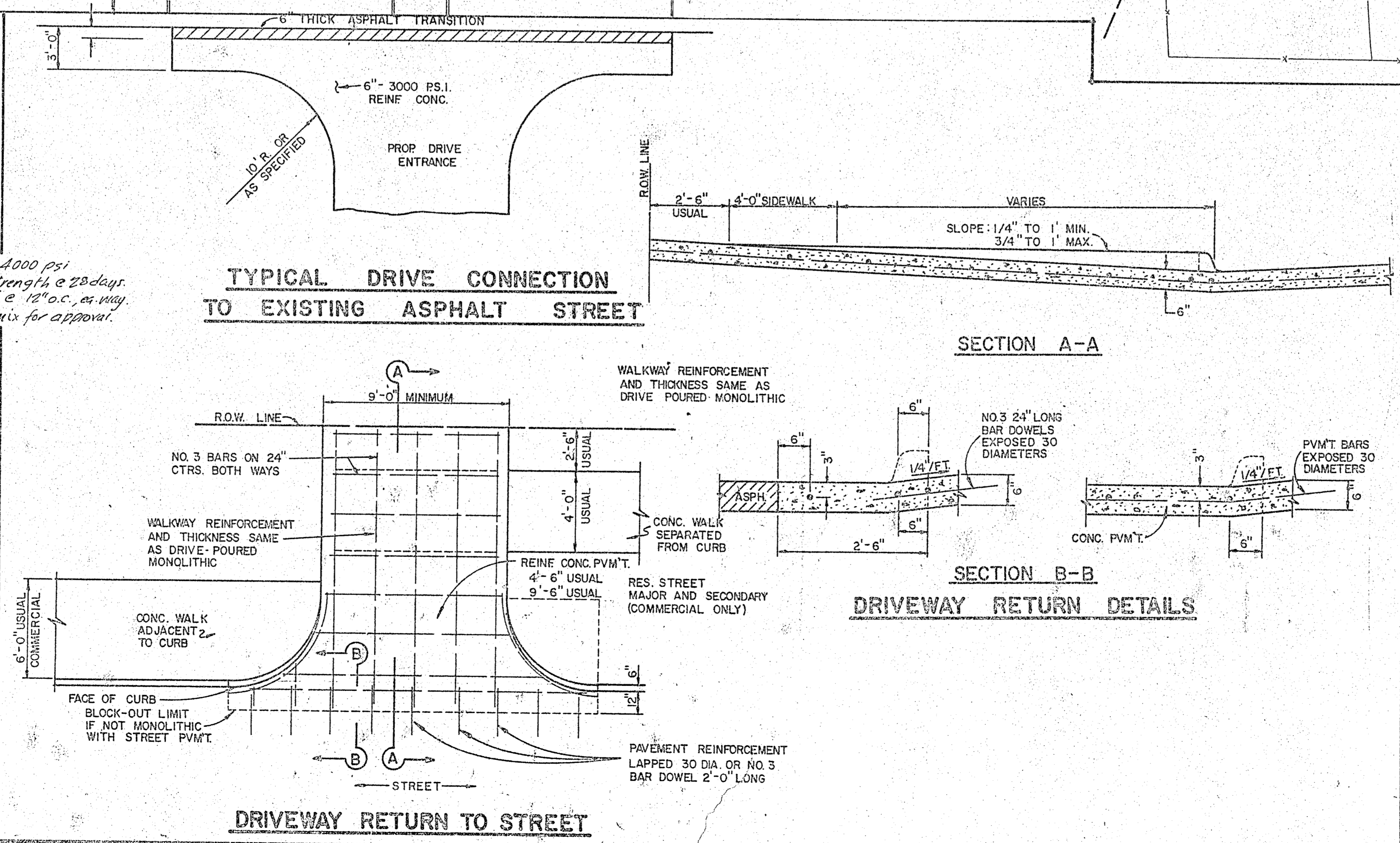
REEDCON
REEDCON, INC.
STRUCTURAL ENGINEERS

These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Reedcon, Inc.





TYPICAL DRIVE CONNECTION TO EXISTING ASPHALT STREET

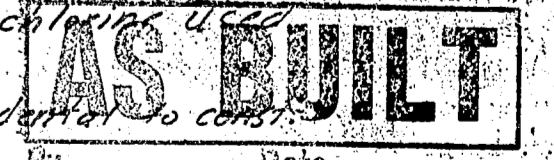


SUGGESTED SEQUENCE OF CONSTRUCTION:

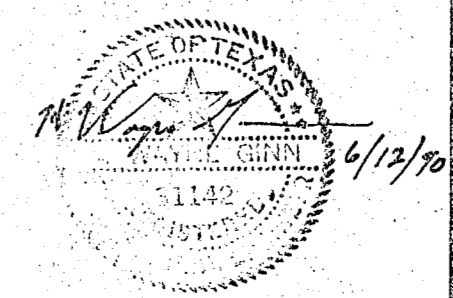
1. Construct 16" line from Addison Rd. to butterfly valve near tank.
 2. Construct 24" line from Mildred St. tie-in to butterfly valve near tank.
 3. Test and chlorinate both 16" and 24" line. Take samples.
 4. Construct, test and chlorinate 24" ductile line, between butterfly valves in vicinity of elevated tank, including drilled shafts for use in thrust restraint.
 5. Make tie-in to 24" pipe at elev. tank and 16"/24" lines also.
- ELEVATED TANK CAN NOT BE OUT OF SERVICE LONGER THAN 8 HOURS UNLESS OTHERWISE AUTHORIZED IN WRITING BY OWNER/ENGINEER.

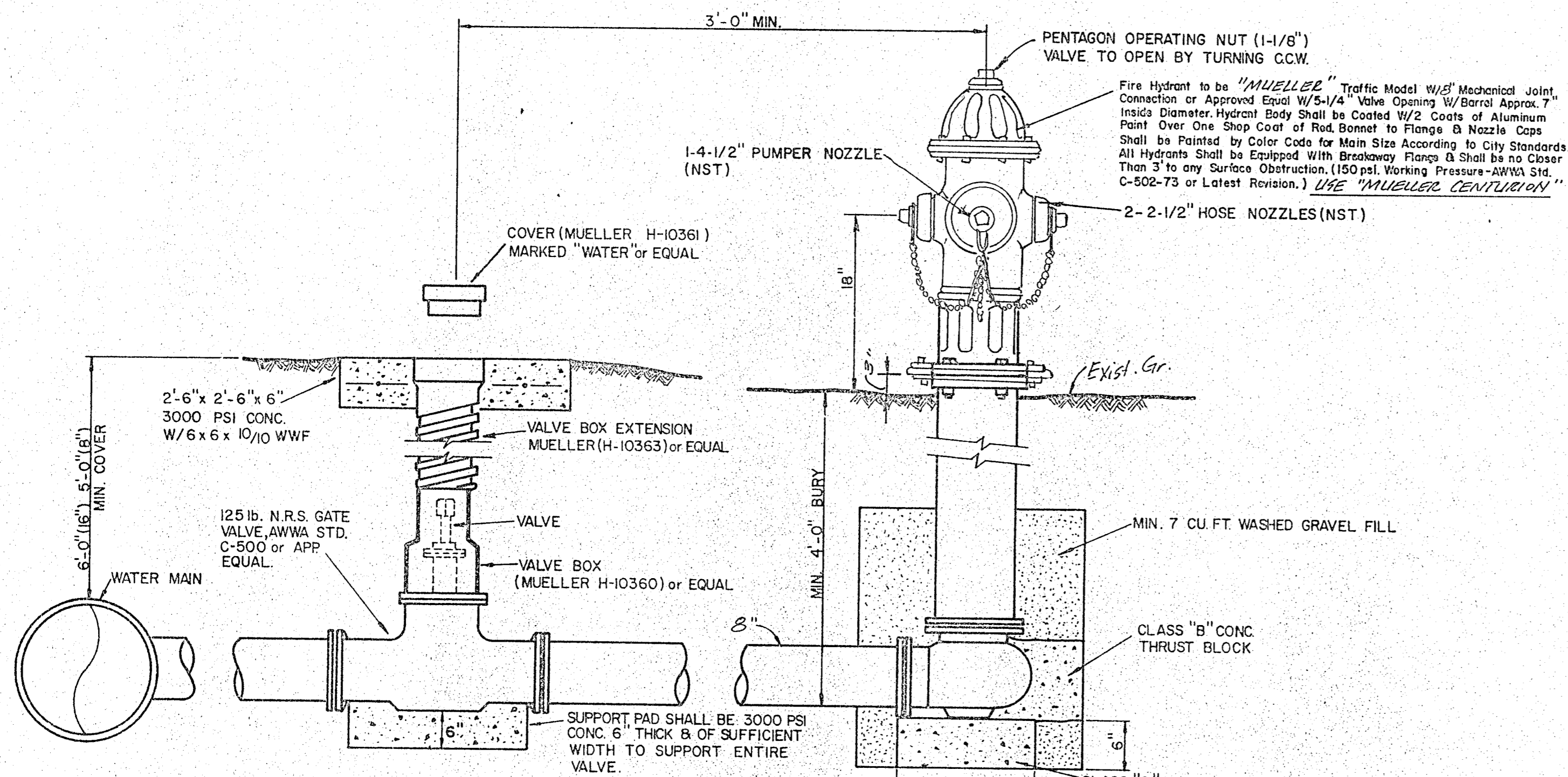
GENERAL NOTES:

1. Contractor shall keep tank electrical and telemetry in-service at all times. If required, telemetry shall be re-routed as needed, along new 24" line relocation. Include in PAY ITEM #13.
2. Thrust restraint for pipes shall be welded joints, concrete thrust blocks, or combination thereof, to resist thrust as shown.
3. Upon discharging "super chlorinated" water effluent after testing, contractor shall treat effluent in accordance with ANWWA standards. Amount of treatment dependent upon dilution of chlorinated water in testing/chlorination procedures.
4. TESTING of water-line NOT A SEPARATE PAY ITEM - incidental to construction.



No.	Revision	By	Date
TOWN OF ADDISON DALLAS COUNTY, TEXAS 24" WATER LINE RELOCATION 16" W. L.			
SITE PLAN - DETAILS			
GINN, INC. Consulting Engineers Dallas, Texas			
Designed - GF	Drawn - GF	Date - JUNE 1990	Job No. - 90442
Approved - WG	Checked - WG	Scale - AS SHOWN	Sheet 3 of 10



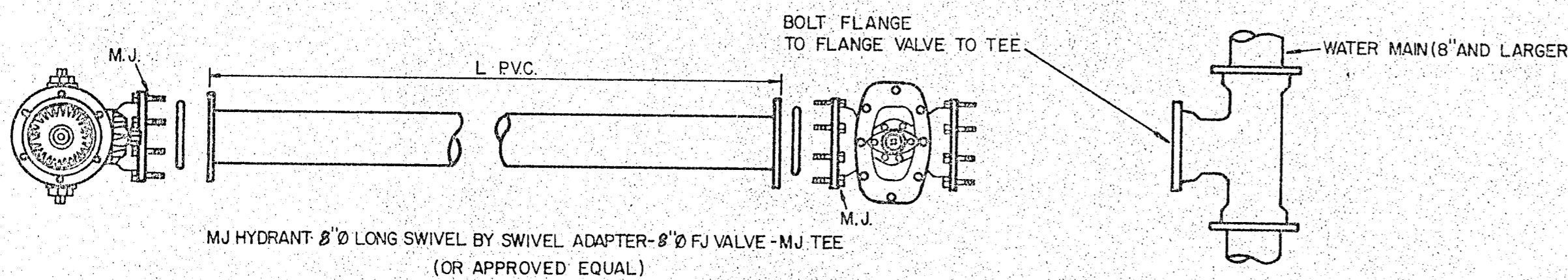


VALVE BOX DETAIL
(SEE PLANS FOR "MAIN SIZE")

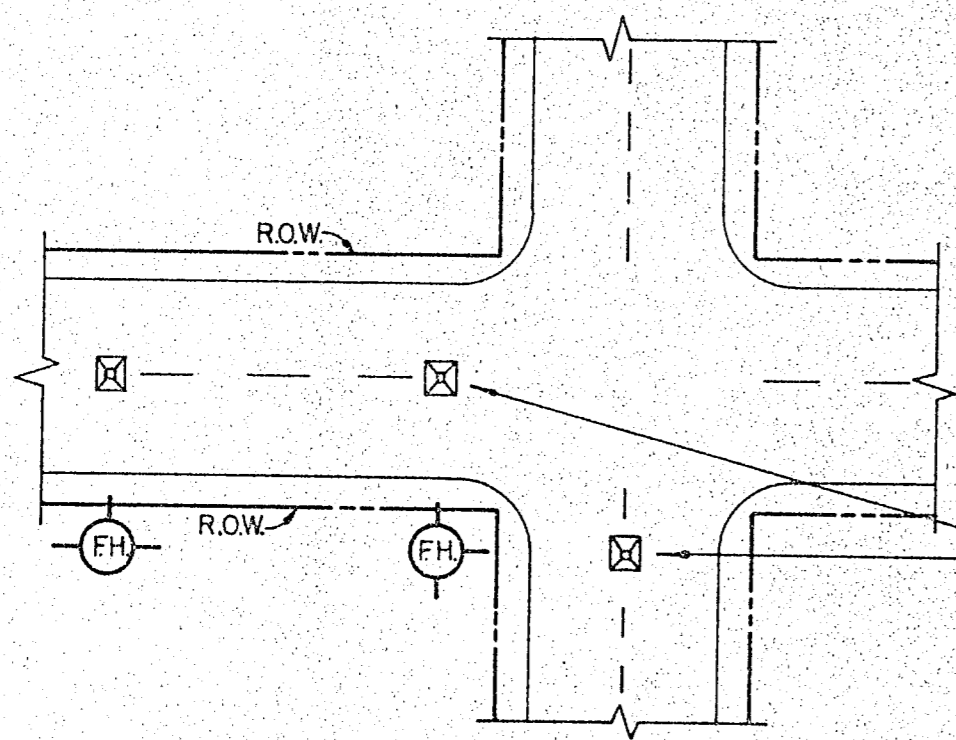
FIRE HYDRANT INSTALLATION
(INCLUDES 8" VALVE)
No Scale

GATE VALVES AND VALVE BOXES.

- GATE VALVES SHALL BE IRON BODY, BRONZE OR BRASS MOUNTED, NON-RISING STEM, PARALLEL SEAT TYPE VALVES SHALL BE OF EQUAL OR GREATER PRESSURE CLASS THAN THE PIPING IN WHICH THEY ARE TO BE INSTALLED.
- VALVE BOXES SHALL BE CAST IRON AND SHALL BE OF SUFFICIENT LENGTH AND DIAMETER TO OPERATE ALL VALVES BURIED IN THE GROUND. COVERS SHALL BE MARKED "WATER." THE BOXES SHALL REST ON THE VALVE AND BE ADJUSTED SO THAT THE COVER MAY BE SET FLUSH WITH THE FINISHED GRADE.

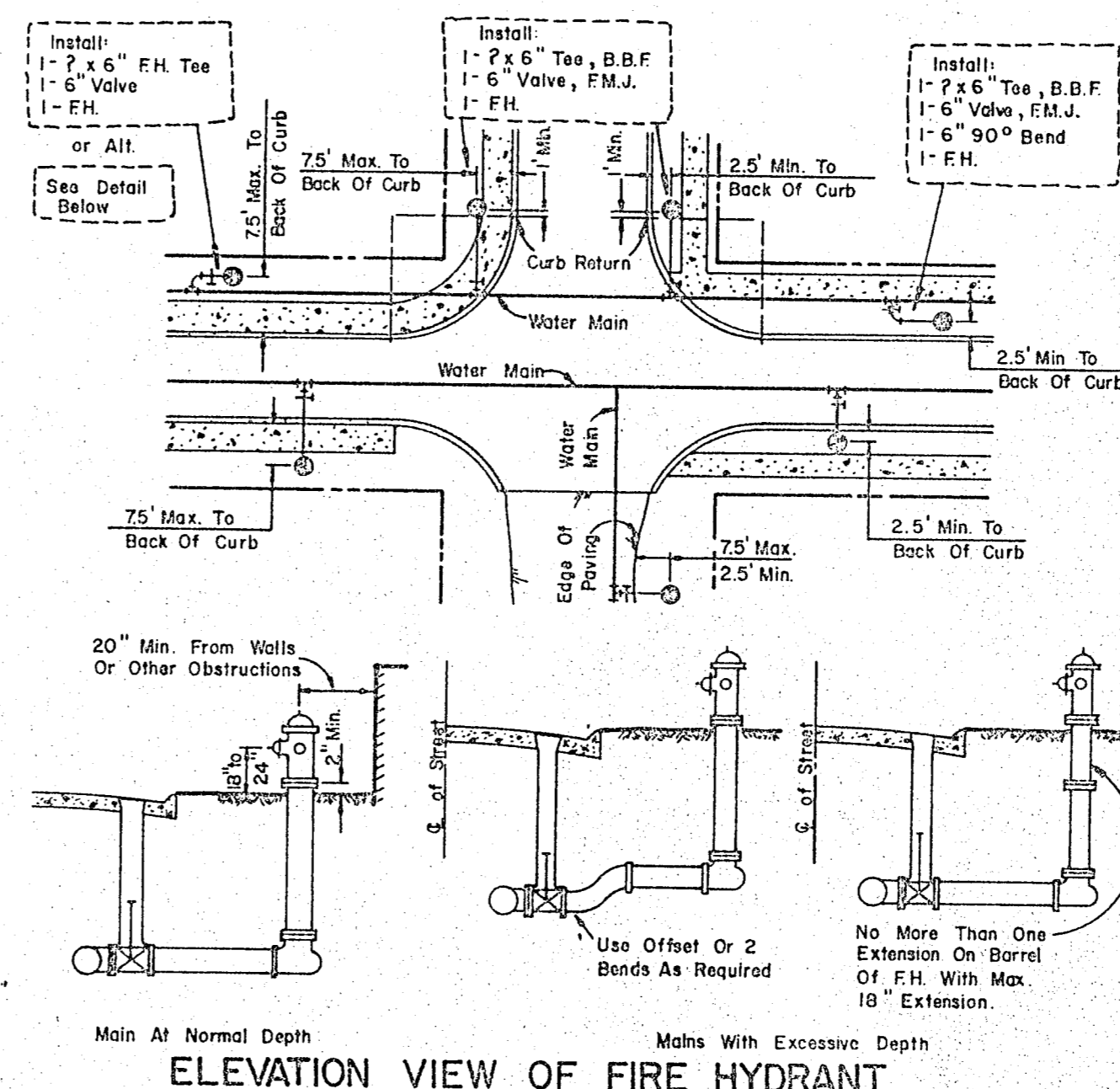


TYPICAL FIRE HYDRANT INSTALLATION



TYPICAL FIRE HYDRANT REFLECTOR INSTALLATION

A BLUE STIMONITE FIRE-LITE REFLECTOR (OR APPROVED EQUAL) TO BE PLACED IN THE CENTER OF STREET OPPOSITE FIRE HYDRANTS. THE INSTALLATION OF THIS REFLECTOR SHALL BE AS PRESCRIBED BY THE MANUFACTURER.

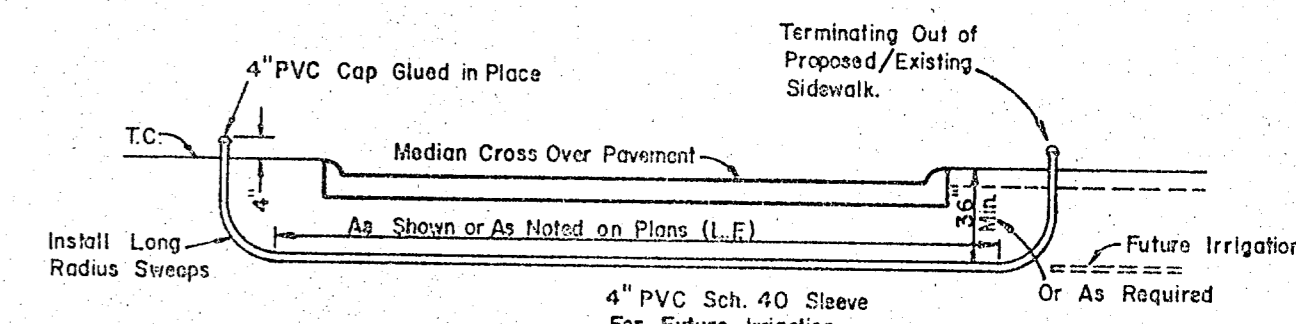


ELEVATION VIEW OF FIRE HYDRANT

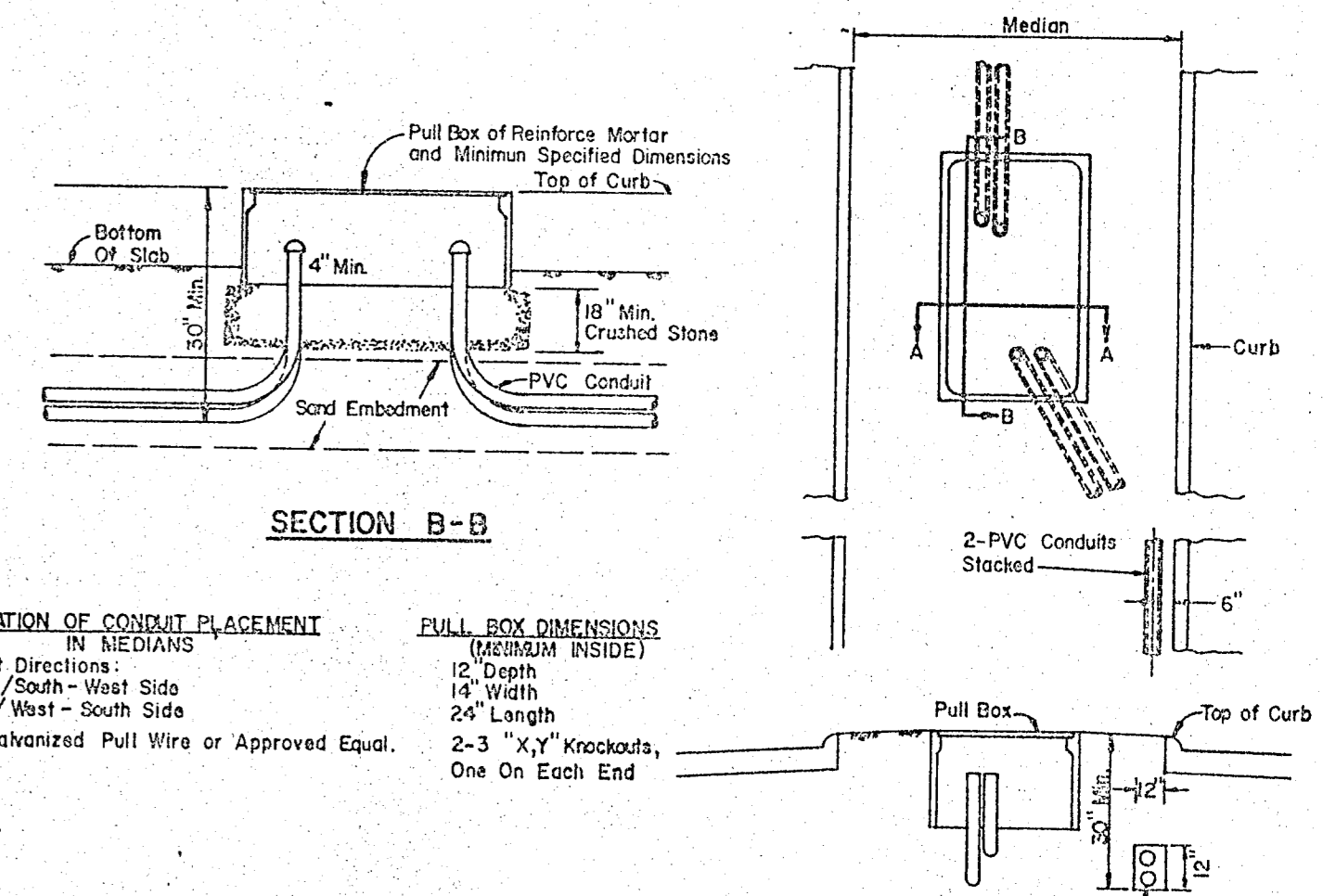
GENERAL NOTES

- C. of F.H. Barrel Shall Be Not Less Than 2.5' Or More Than 7.5' From Back Of Curb Or Edge Of Pavement.
- Do Not Set F.H. In An Existing Or Proposed Sidewalk, Unless Otherwise Noted.
- All F.H. Tees Shall Be M.J. With Anchoring On The Branch With M.J., M.J. 6" Valve.
- Set F.H. On The Lot Line Extended When Possible.
- On Private Contracts The Developer's Engineer Will State Location & Grade.
- Never Place F.H. Where Fire Truck Could Not Park Beside It.

When No Curb Or Gutter Exists, Set F.H. On Front Slope Of Ditch With C. of Nozzle Equal To The Crown Of The Road.



PVC SLEEVE FOR FUTURE IRRIGATION
N.I.C.



SECTION B-B

LOCATION OF CONCRETE PLACEMENT

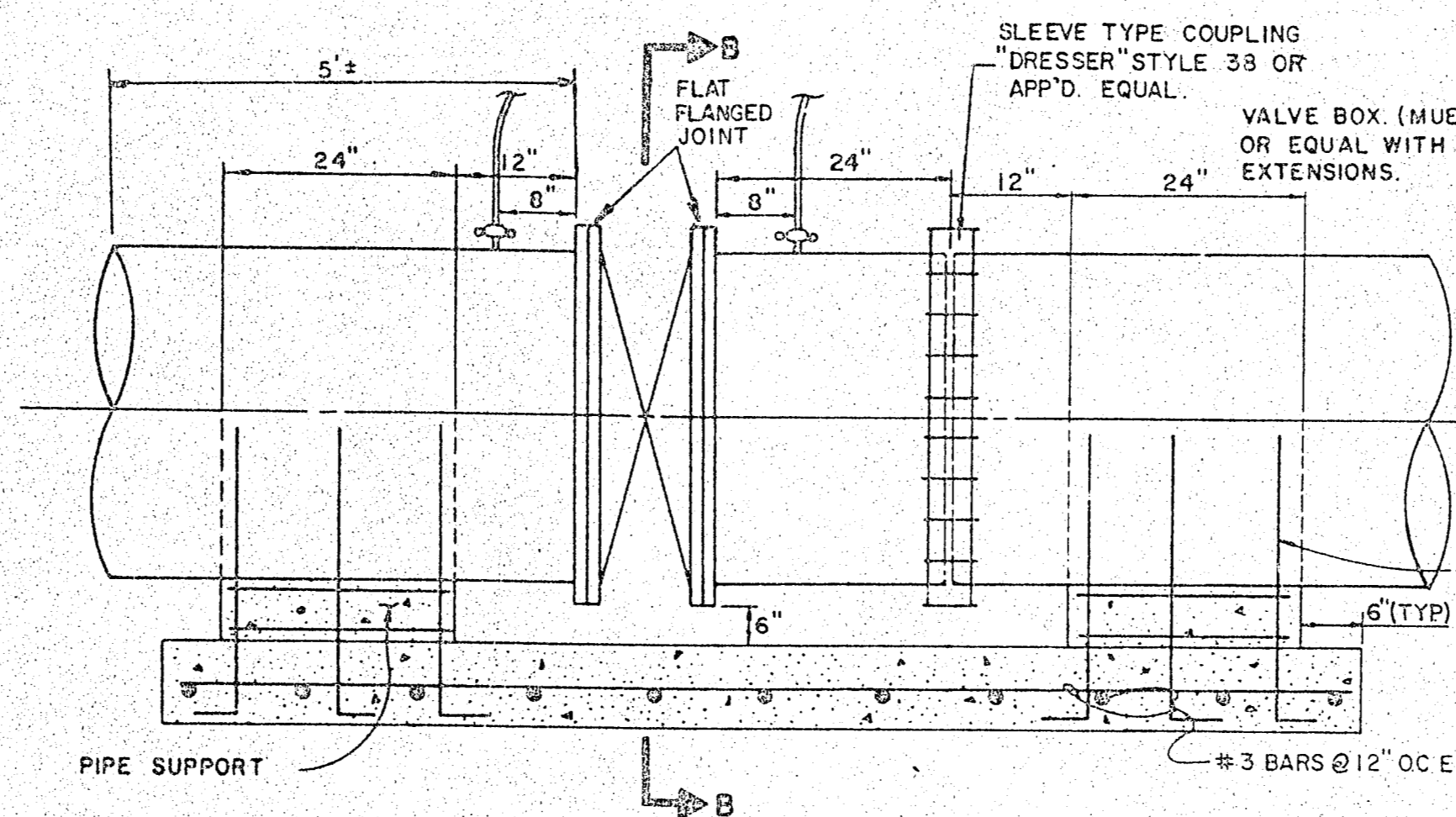
IN MEDIANS
Street Directions:
North/South - West Side
East/West - South Side
9 Galvanized Pull Wire or Approved Equal.

PULL BOX DIMENSIONS
(MINIMUM INSIDE)

12" Depth
18" Width
24" Length
2-3 "X" Knockouts,
One On Each End

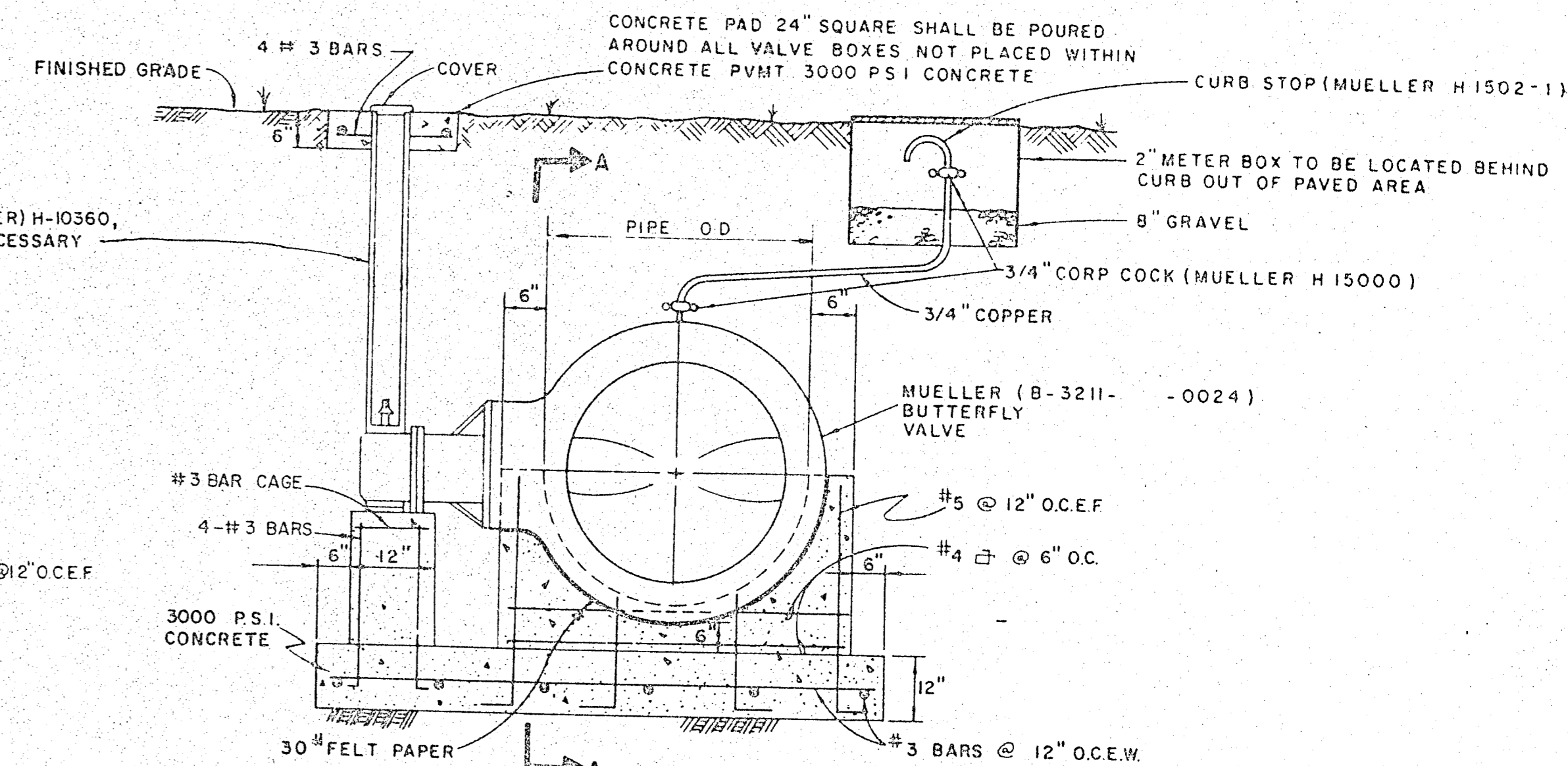
SECTION A-A
2-PVC Conduits See Plans For Size

PULL BOX & CONDUIT DETAIL
N.I.C.



SECTION A-A

BUTTERFLY VALVE DETAIL



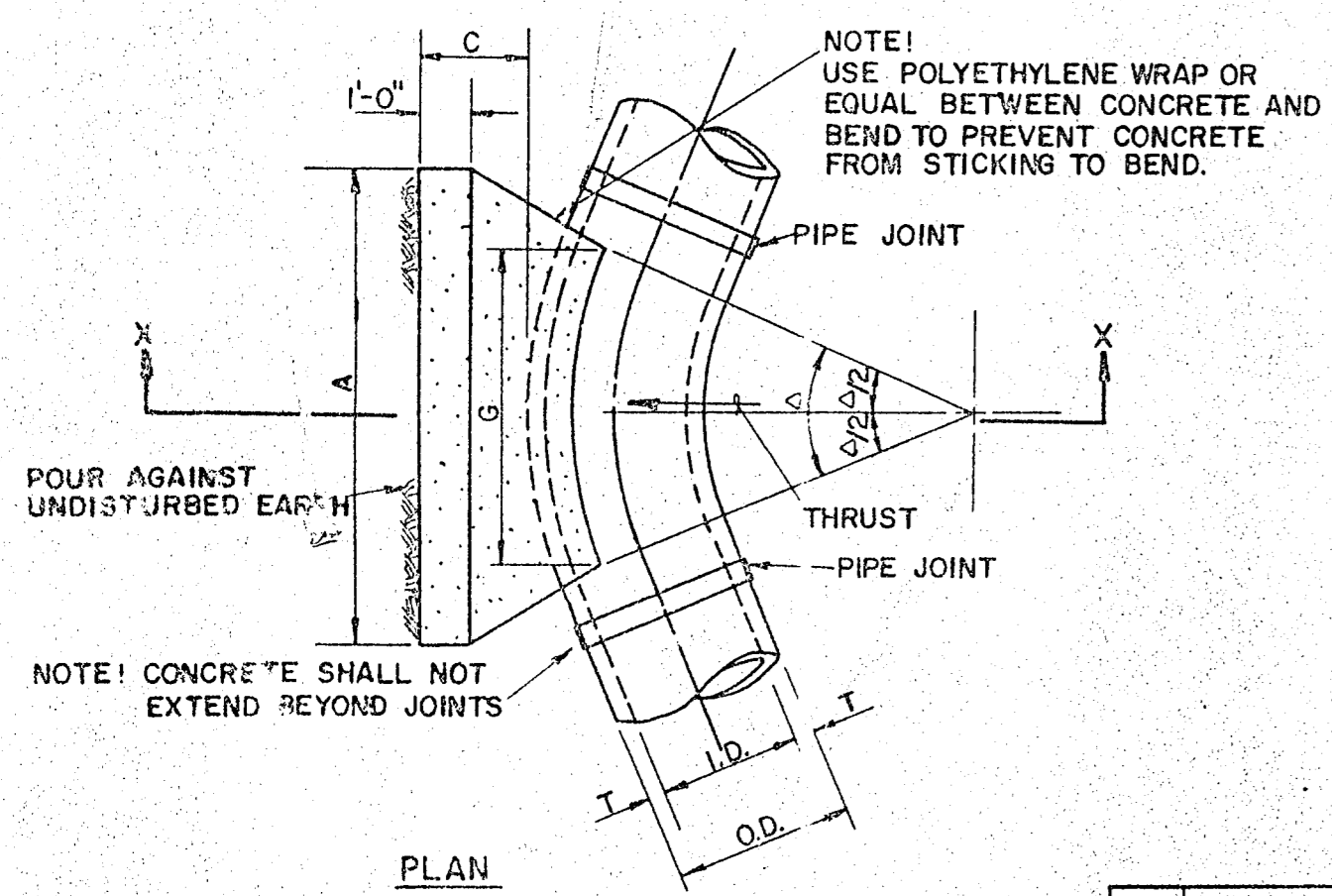
SECTION B-B

AS BUILT
By _____ Date _____

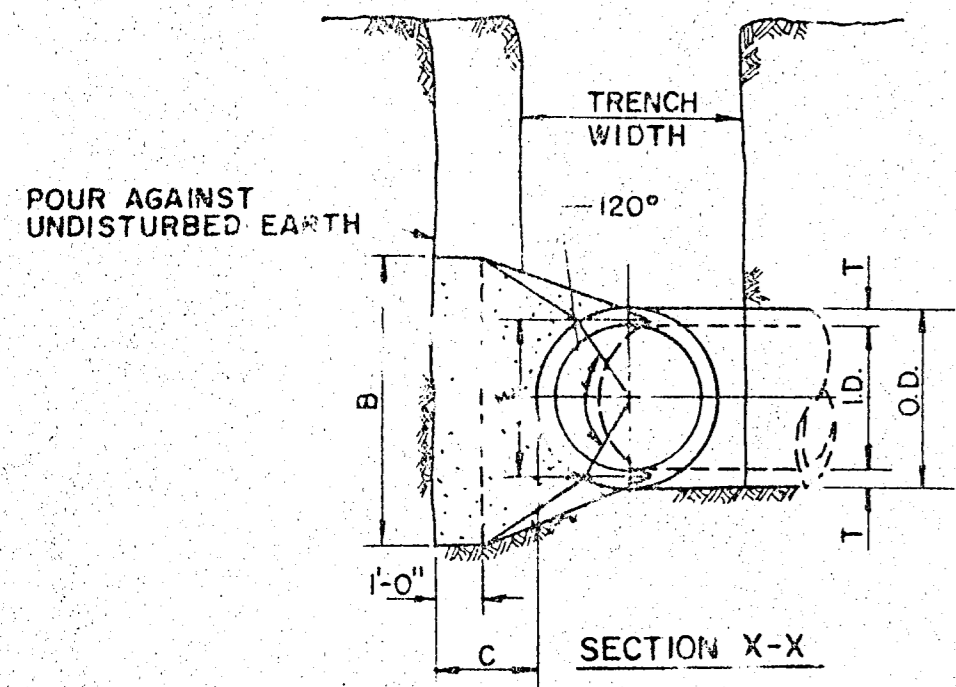
No.	Revision	By	Date
STANDARD CONSTRUCTION DETAILS			
WATER			
FIRE HYDRANTS, PULL BOXES AND VALVES			
GINN, INC.			
Consulting Engineers Dallas, Texas			
Designed -	Drawn -	Date - JUNE 1970	Job No. - 70442
Approved -	Checked -	Scale - NONE	Sheet 5 OF 6

A. W. Ginn 6/12/70

SDIG

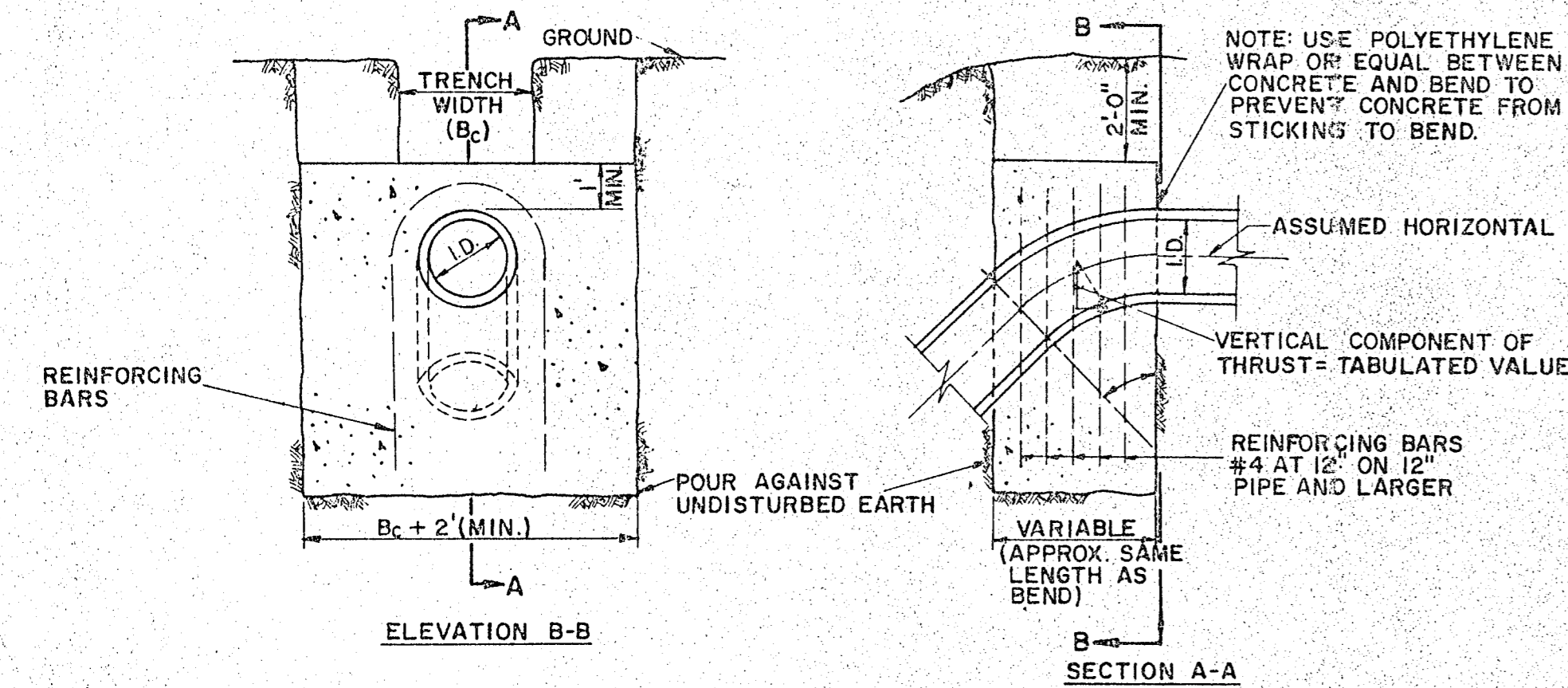


I.D. (IN.)	T (IN.)	C 11.25°		C 22.50°		E (FT.)
		FT.	FT.	FT.	FT.	
4.6, 8	0.4	1.5	1.5	1.5	0.9	
10, 12	0.5	1.5	1.5	1.5	1.2	
16, 18	0.6	1.5	1.5	1.5	1.6	
20	0.7	1.5	1.5	1.5	1.9	
24	0.9	1.5	1.5	1.5	2.1	
30	2.9	1.5	1.9	2.5		
36	4.5	1.3	2.3	3.3		
42	5.0	1.8	2.6	3.8		
48	5.5	2.0	3.0	4.3		
54	6.0	2.3	3.4	4.8		
60	6.5	2.5	3.8	5.3		
66	6.8	2.8	4.1	5.7		
72	7.5	3.0	4.5	6.3		
78	7.5	3.3	4.9	6.7		
84	8.0	3.5	5.3	7.2		
90	8.5	3.8	5.6	7.7		
96	9.0	4.0	6.0	8.2		



I.D. (IN.)	G (FT.)	Δ = 11.25°						Δ = 22.50°									
		EARTH			ROCK			EARTH			ROCK						
		THRUST TONS	A FT.	B FT.	VOL. C.Y.	A FT.	B FT.	VOL. C.Y.	THRUST TONS	A FT.	B FT.	VOL. C.Y.	A FT.	B FT.	VOL. C.Y.		
4.6, 8	0.4	1.0	1.0	1.5	0.1	1.0	1.0	0.1	4.6, 8	0.8	2.0	1.5	1.5	0.1	1.0	1.0	0.1
10, 12	0.6	2.2	1.5	1.5	0.1	1.0	1.5	0.1	10, 12	1.1	4.4	2.0	2.5	0.3	1.5	1.5	0.1
16, 18	0.8	5.0	2.0	2.5	0.3	1.5	2.0	0.2	16, 18	1.6	9.9	3.0	3.5	0.6	2.0	2.5	0.3
20	0.9	6.2	2.0	3.5	0.4	1.5	3.0	0.3	20	1.8	12.3	3.5	3.5	0.7	2.0	3.5	0.4
24	1.1	8.9	3.0	3.0	0.5	1.5	3.0	0.3	24	2.2	17.7	4.0	4.5	1.0	3.0	3.0	0.5
30	1.4	10.4	3.0	3.5	0.6	2.0	3.5	0.4	30	2.7	20.7	5.0	4.5	1.5	3.0	4.0	0.8
36	1.7	15.0	3.5	4.5	0.9	2.0	4.0	0.5	36	3.3	29.0	5.5	5.5	2.3	4.0	4.0	1.3
42	1.9	20.4	4.5	5.0	1.5	2.5	5.0	0.8	42	3.8	40.5	7.0	6.0	3.9	4.5	3.0	2.1
48	2.2	26.6	4.5	6.0	2.0	2.5	6.0	1.1	48	4.4	52.9	8.0	7.0	5.7	4.5	6.0	2.8
54	2.5	33.7	6.0	6.0	3.0	3.0	6.0	1.4	54	4.9	67.0	9.0	8.0	6.0	6.0	6.0	4.1
60	2.7	41.6	6.0	7.0	3.8	3.0	7.0	1.8	60	5.5	82.7	9.5	9.0	10.6	6.0	7.0	5.3
66	3.0	50.3	6.5	8.0	5.1	3.5	8.0	2.7	66	6.0	100.1	10.5	10.0	14.1	6.5	8.0	7.2
72	3.3	59.9	7.5	8.0	6.3	4.0	8.0	3.3	72	6.6	119.1	11.0	11.0	17.6	7.5	8.0	9.1
78	3.6	70.2	8.0	9.0	8.1	4.0	9.0	3.9	78	7.1	139.8	12.0	12.0	22.5	8.0	9.0	11.7
84	3.8	81.5	8.5	10.0	10.3	4.5	10.0	5.3	84	7.6	162.1	13.0	12.5	27.2	8.5	10.0	14.8
90	4.1	93.5	9.5	10.0	12.2	5.0	10.0	6.3	90	8.2	185.1	14.0	13.5	33.7	9.5	10.0	17.7
96	4.4	106.4	10.0	11.0	15.0	5.0	11.0	7.4	96	8.7	211.7	15.0	14.5	41.2	10.0	11.0	21.8

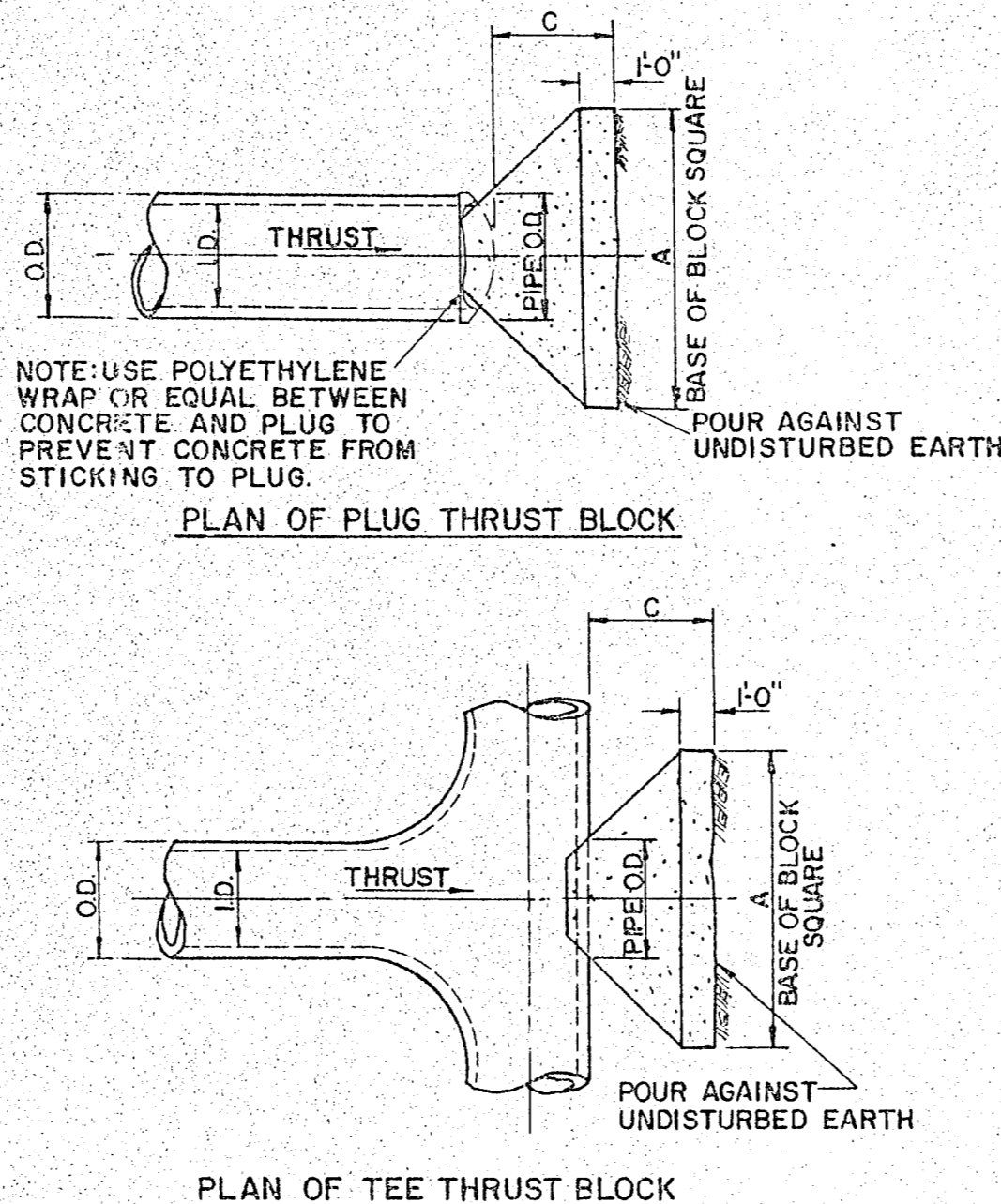
HORIZONTAL BEND THRUST BLOCK



I.D. (IN.)	THRUST TONS	VOL. C.Y.	11.25°		22.50°		30°		45°		67.50°		90°		I.D. (IN.)
			THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	
4.6, 8	1.0	0.5	2.0	1.0	2.5	1.3	3.6	1.8	4.6	2.3	5.0	2.5	4.6, 8		
10, 12	2.2	1.1	4.3	2.2	5.7	2.8	8.0	4.0	10.5	5.2	11.3	5.7	10, 12		
16, 18	5.0	2.5	9.7	4.9	12.7	6.4	18.0	9.0	23.5	11.8	24.5	12.7	16, 18		
20	6.1	3.1	12.0	6.0	15.7	7.9	22.2	11.1	29.2	14.6	31.9	15.7	20		
24	8.2	4.4	17.3	8.7	22.6	11.3	32.0	16.0	41.8	20.9	45.2	22.6	24		
30	10.5	5.2	20.3	10.1	26.5	13.3	37.5	18.0	49.0	24.8	53.1	25.5	30		
36	14.9	7.5	29.2	14.6	36.2	19.1	54.0	27.0	70.5	34.3	76.4	36.2	36		
42	20.3	10.1	39.8	19.9	52.0	26.0	73.5	36.7	96.0	48.0	104.0	52.0	42		
48	26.5	13.2	51.9	26.0	67.9	33.9	96.0	48.0	126.0	62.7	136.0	67.9	48		
54	33.5	16.8	65.7	32.9	85.9	42.9	122.0	60.7	159.0	79.4	172.0	85.9	54		
60	41.4	20.7	81.2	40.6	106.0	53.0	150.0	75.0	196.0	98.0	212.0	106.0	60		
66	50.1	25.0	99.2	49.1	128.0	64.2	182.0	90.7	237.0	119.0	257.0	128.0	66		
72	59.6	29.8	117.0	58.4	153.0	76.3	216.0	108.0	282.0	141.0	305.0	153.0	72		
78	69.9	35.0	137.0	68.6	179.0	90.0	254.0	127.0	331.0	166.0	358.0	179.0	78		
84	81.1	40.5	159.0	79.5	208.0	104.0	294.0	147.0	384.0	192.0	416.0	208.0	84		
90	93.1	46.5	183.0	91.3	239.0	119.0	337.0	169.0	441.0	221.0	477.0	239.0	90		
96	106.0	53.0	208.0	104.0	272.0	136.0	384.0	192.0	502.0	251.0	543.0	272.0	96		

GENERAL NOTES-FOR ALL THRUST BLOCKS
 1. All Calculations Are Based On Internal Pressure Of 200 P.S.I. For 24" I.D. Pipe And Smaller And 150 P.S.I. On 30" I.D. And Larger.
 2. Volumes Of Vertical Bend Thrust Blocks Are Net Volumes Of Concrete To Be Furnished. The Corresponding Weight Of The Concrete (Class F) Is Equal To Or Greater Than The Vertical Component Of Thrust On The Vertical Bend.
 3. Wall Thickness (T) Assumed Here For Estimating Purposes Only.
 4. Concrete For Blocking Shall Be Class B Concrete.
 5. Dimensions May Be Varied As Required By Field Conditions Where And As Directed By The Engineer. The Volume Of Concrete Blocking Shall Not Be Less Than Shown Here.

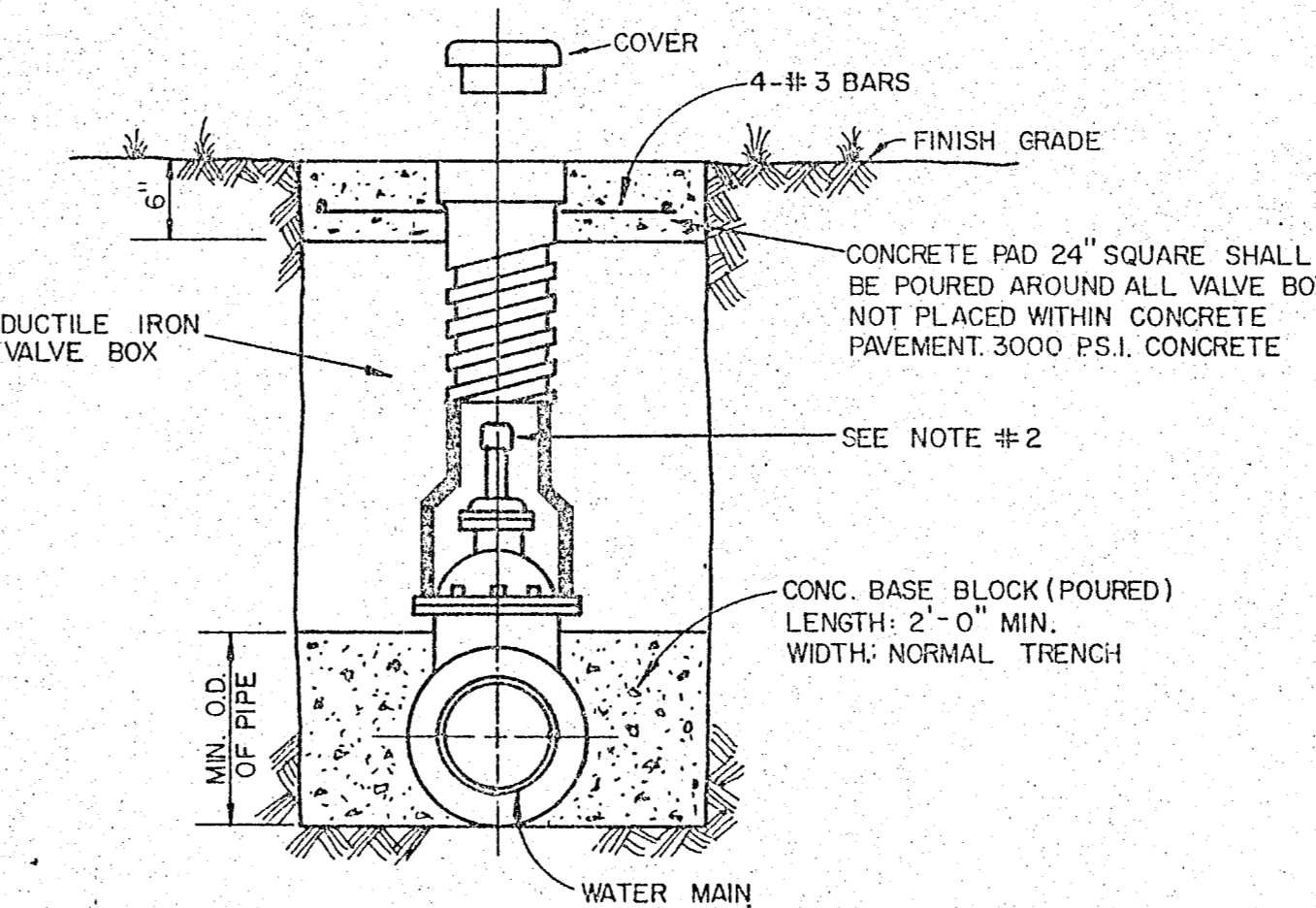
VERTICAL BEND THRUST BLOCK



I.D. (IN.)	THRUST TONS	EARTH		ROCK		
		C. FT.	A VOL. C.Y.	C. FT.	A VOL. C.Y.	
4.6, 8	5.1	1.5	2.5	0.3	2.0	0.2
10, 12	11.3	1.5	3.5	0.6	2.5	0.3
16, 18	25.5	2.0	5.5	1.6	4.0	0.9
20	31.5	2.0	6.0	1.9	4.0	0.9
24	45.2	2.5	7.0	3.1	5.0	1.7
30	53.0	3.0	7.5	4.1	5.5	2.4
36	76.3	4.0	9.0	7.3	6.5	4.2
42	104.0	4.5	10.5	11.0	7.5	6.2
48	136.0	5.0	12.0	15.6	8.5	8.7
54	172.0	5.5	13.5	21.4	9.5	11.9
60	212.0	6.0	15.0	28.4	10.5	15.7
66	257.0	6.5	16.5	36.8	11.5	20.5
72	305.0	7.5	17.5	47.2	12.5	27.2
78	358.0	8.0	19.0	58.9	13.5	33.7
84	416.0	8.5	20.5	72.3	14.5	41.2
90	477.0	9.0	22.0	87.7	15.5	49.7
96	543.0	9.5	23.5	104.8	16.5	61.0

PLUG & TEE THRUST BLOCK

I.D. (IN.)	G (FT.)	Δ = 30°						Δ = 45°									
		EARTH			ROCK			EARTH			ROCK						
		THRUST TONS	A FT.	B FT.	VOL. C.Y.	A FT.	B FT.	VOL. C.Y.	THRUST TONS	A FT.	B FT.	VOL. C.Y.	A FT.	B FT.	VOL. C.Y.		
4.6, 8	1.0	2.6	2.0	1.5	0.2	1.0	1.5	0.1	4.6, 8	1.5	3.9	2.0	2.0	0.2	1.5	1.5	0.1
10, 12	1.5	5.9	2.5	2.5	0.3	2.0	1.5	0.2	10, 12	2.2	6.7	3.5	2.5	0.3	2.0	2.5	0.3
16, 18	2.2	13.2	3.5	4.0	0.8	2.5	3.0	0.6	16, 18	3.2	19.5	4.5	4.5	1.2	3.0	3.5	0.6
20	2.4	16.3	4.5	4.0	1.0	3.0	3.0	0.5	20	3.6	24.1	5.5	4.5	1.5	3.5	3.5	0.7
24	2.9	23.4	6.0	4.0	1.4	3.5	3.5	0.7	24	4.3	34.6	8.0	4.5	2.3	4.5	4.0	1.1
30	3.6	27.5	5.5	5.0	1.9	3.5	4.0	0.9	30	5.4	40.6	9.5	5.0	3.2	5.5	4.0	1.6
36	4.4	30.5	7.0	6.0	3.4	4.5	4.5	1.0	36	6.5	50.5	10.0	6.0	5.3	6.5	4.5	2.6
42	5.1	33.0	8.0	7.0	5.1	5.5	5.0	2.5	42	7.5	59.6	11.5	7.0	8.1	8.0	5.0	4.2
48	5.8	35.5	9.0	8.0	7.4	6.0	6.0	3.7	48	8.6	68.4	13.0	8.0	11.9	9.0	6.0	6.3
54	6.5	38.0	10.0	9.0	10.3	7.0	6.5	5.3	54	9.7	77.5	15.0	9.0	17.1	10.5	6.5	8.9
60	7.3	40.0	11.0	10.0	13.9	7.5	7.5	7.3	60	10.7	86.2	16.5	10.0	23.1	11.0	7.5	12.0
66	8.0	42.5	12.5	11.0	18.9	8.5	8.0	9.6	66	11.8	95.6	18.0	11.0	30.1	12.0	8.5	16.2
72	8.7	45.2	13.5	12.0	24.0	9.0	9.0	12.3	72	12.9	105.9	19.5	12.0	38.6	14.0	9.5	20.7
78	9.4	48.6	14.5	13.0	30.0	10.0	9.5	15.8	78	13.9	117.5	21.5	13.0	49.8	14.5	9.5	25.9
84	10.1	52.3	15.5	14.0	37.1	10.5	10.5	19.5	84	15.0	130.4	23.0	14.0	61.2	15.5	10.5	32.6
90	10.9	56.1	16.5	15.0	45.0	11.5	11.0	23.9	90	16.1	144.5	24.5	15.0	74.5	17.5	10.5	39.6
96	11.6	60.2	18.0	16.0	53.5	12.5	11.5	28.9	96	17.1	159.6	26.0	16.0	89.5	18.5	11.5	48.3



NOTE:
 1. 2-12" R.S. GATE VALVES SHALL BE IN ACCORDANCE WITH AWWA STANDARD C-509-80 OR LATEST THEREOF ALL VALVES SHALL BE "MULLER" OR APPROVED EQUAL.
 2. A PERMANENTLY ATTACHED VALVE EXTENSION STEM SHALL BE REQUIRED FOR ANY VALVE THATS OPERATING NUT IS LOCATED IN EXCESS OF 4 FEET BELOW THE TOP OF VALVE BOX. THIS EXTENSION SHALL BE OF SUFFICIENT LENGTH TO INSURE THAT ITS TOP IS WITHIN 4" OF VALVE BOX LID. MANUFACTURED VALVE STACK DUCTILE IRON PIPE TO BE USED FOR EXTENSION GREATER THAN 4'-0" BELL END OF STACK TO BE FITTED OVER VALVE. VALVE AND VALVE STACK IS TO BE POLY WRAPPED.
 3. VALVES SHALL BE OF DUCTILE IRON W/RUBBER ENCAPSULATED DISK. BODY BOLTS SHALL BE STAINLESS STEEL OF SAME SIZE ON EACH VALVE.

TYPICAL VALVE SETTING AND BOX

NOTE:
 PROVIDE 1" MINIMUM THICKNESS CONCRETE OR CEMENT MORTAR COATING IN THE FIELD FOR THE PROTECTION OF ALL EXPOSED STEEL SUCH AS FLANGES, CAULKED-JOINTS, THREADED OUTLETS, CLOSURES, ETC. THE CEMENT MORTAR USED SHALL CONSIST OF ONE PART PORTLAND CEMENT TO TWO AND ONE-HALF PARTS OF FINE, SHARP (PLASTER) SAND. WHERE SHOWN, COATING IS TO BE REINFORCED WITH WIRE MESH.

