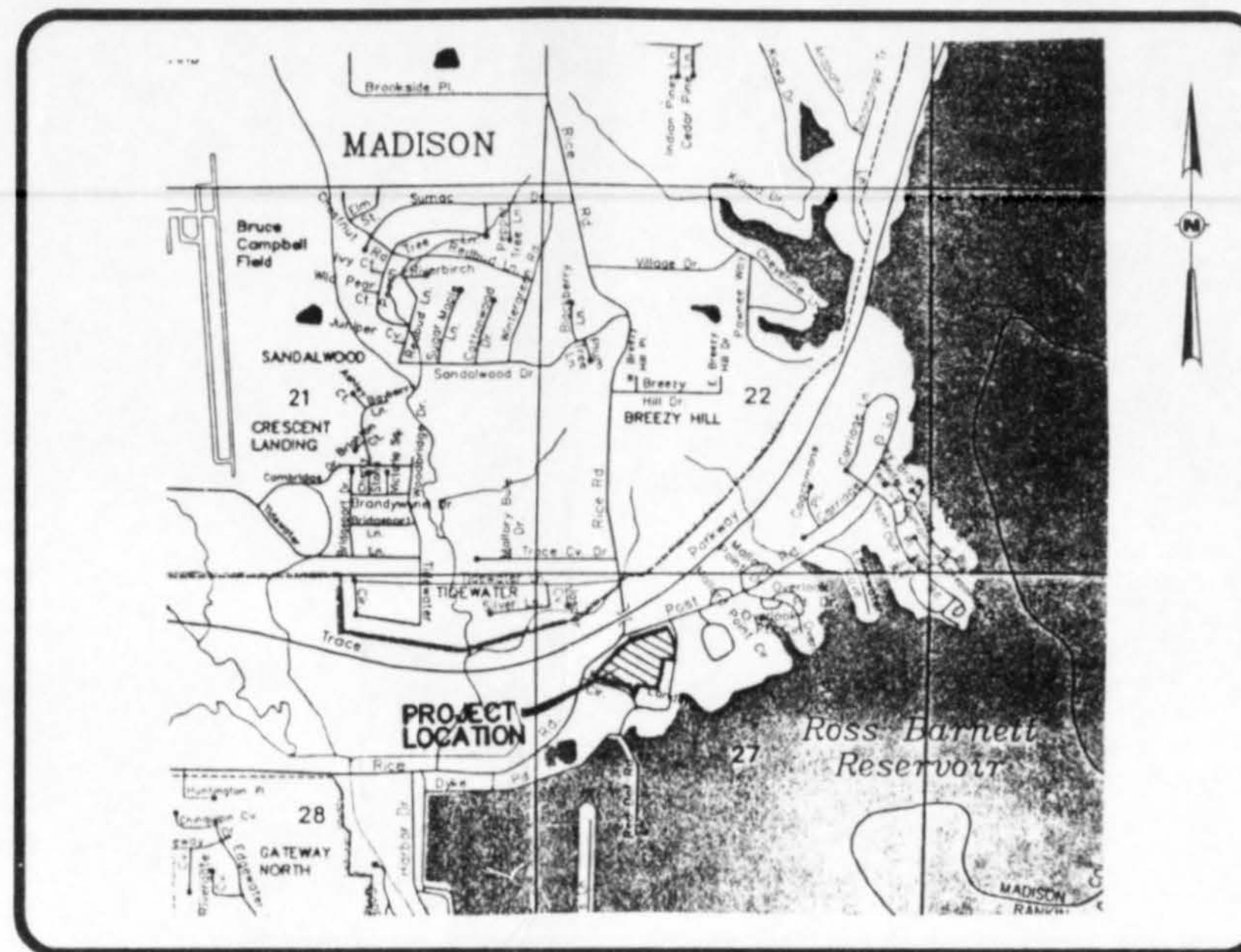


CONSTRUCTION PLANS FOR HARBORTOWNE



DRAWING INDEX

- 1 - COVER SHEET
- 2 - GEOMETRIC LAYOUT
- 3 - WATER AND SEWER LAYOUT
- 4 - DRAINAGE AND GRADING LAYOUT
- 5 - EROSION, SEDIMENT AND STORM WATER CONTROL PLAN
- 6 - PLAN AND PROFILE - STREET "A" / DRAIN LINE "C"
- 7 - PLAN AND PROFILE - STREETS "B" AND "C" / SANITARY SEWER LINE "C"
- 8 - PLAN AND PROFILE - STREETS "D", "E" AND "F"
- 9 - PLAN AND PROFILE - SANITARY SEWER LINES "A" AND "B"
- 10 - PLAN AND PROFILE - DRAIN LINES "A" AND "B"
- 11 - STANDARD DETAILS
- 12 - STANDARD DETAILS
- 13 - STANDARD DETAILS
- 14 - STANDARD DETAILS
- 15 - STANDARD DETAILS

APPROVED 3/23/98
W. J. ...
 DIVISION OF WATER SUPPLY
 OFFICE OF ENVIRONMENTAL HEALTH
 MISSISSIPPI STATE DEPARTMENT OF HEALTH

13808
 APPR



H D LANG AND ASSOCIATES, INC.

POST OFFICE BOX 16085

JACKSON, MISSISSIPPI 39236

601-362-4886

CLIENT

HARBORTOWNE, L.L.C.
 P.O. BOX 328
 MADISON, MISSISSIPPI 39130-0328
 (601) 856-0009

LOCATION

SITUATED IN THE
 NW 1/4 OF THE NW 1/4, THE NE 1/4 OF THE NW 1/4, THE
 SW 1/4 OF THE NW 1/4 AND THE SE 1/4 OF THE NW 1/4 OF
 SECTION 27, T 7 N - R 3 E,
 MADISON COUNTY, MISSISSIPPI

DATE

REVISION

BY

DRAWN BY: D.L.M.

DATE: 2-12-98

SCALE:

BOOK:

PAGE:

PROJECT NO.: 97-173

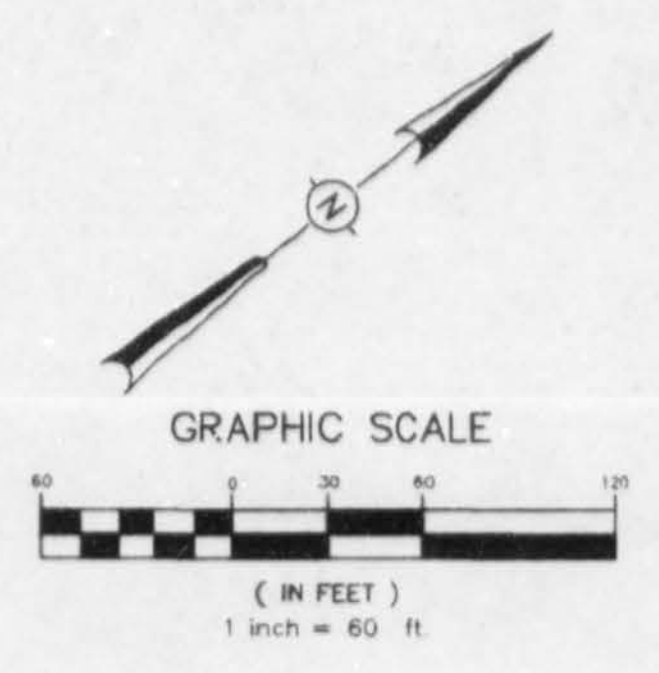
SHEET

1

CENTERLINE CURVE DATA

① Δ = 171°18'1"	② Δ = 50°56'13"	③ Δ = 80°00'00"
R = 45.83687'	R = 57.29583'	R = 25.48308'
L = 179.00'	L = 100.00'	L = 60.00'
P = 17.22'	P = 28.85'	P = 12.20'
④ Δ = 127°4'14"	⑤ Δ = 132°2'51"	⑥ Δ = 31°15'40"
R = 6.80308'	R = 15.64167'	R = 40.31444'
L = 60.88'	L = 26.30'	L = 14.12'
P = 142.80'	P = 25.52'	P = 17.54'
⑦ Δ = 11.67'	⑧ Δ = 42.87'	⑨ Δ = 26.76'

- CENTERLINE INTERSECTIONS**
- STA 34+00.00 STREET "A" = STA 1+00.00 STREET "B"
 - STA 34+90.45 STREET "A" = STA 1+00.00 STREET "C"
 - STA 34+88.51 STREET "A" = STA 1+00.00 STREET "D"
 - STA 1+51.18 STREET "A" = STA 1+00.00 STREET "E"
 - STA 21+28.31 STREET "A" = STA 1+00.00 STREET "F"



BOUNDARY CURVE DATA

Δ = 40°35'25"
R = 11.32839'
L = 200.00'
P = 187.07'

BOUNDARY CURVE DATA

Δ = 39°06'50"
R = 18.34528'
L = 200.00'
P = 172.24'

NOTE: DIMENSIONS ALONG CURVES ARE CHORD DISTANCES.

H D LANG AND ASSOCIATES, INC.
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 601-362-4886

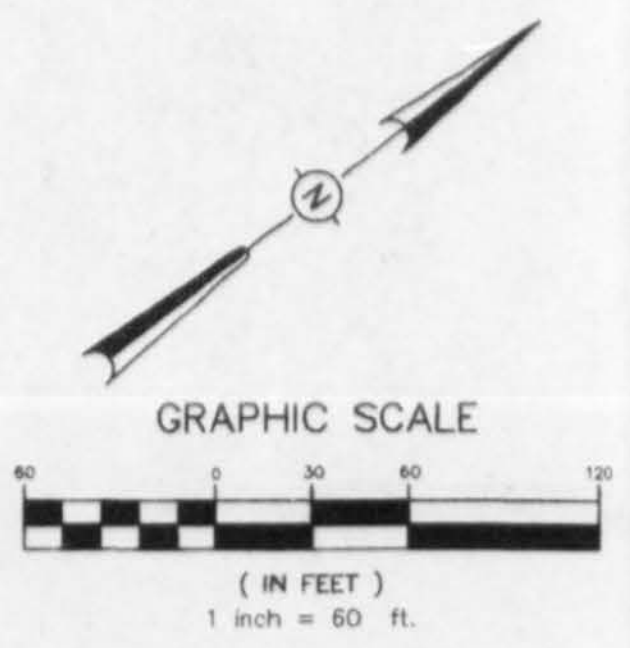
PROJECT	DESCRIPTION	DATE	REVISION	BY
HARBORTOWNE	GEOMETRIC LAYOUT			

DRAWN BY: D.L.M.
DATE: 01-25-98
SCALE: 1" = 60'
BOOK: PAGE:
PROJECT NO.: 97-173

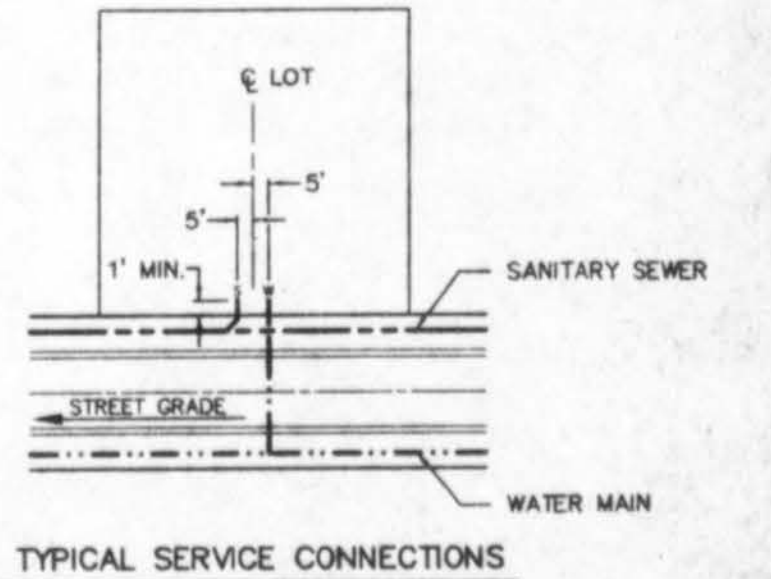


CENTERLINE CURVE DATA

① Δ = 171°18'	② Δ = 50°56'12"	③ Δ = 80°00'00"
R = 45.53667'	R = 37.33582'	R = 25.45306'
L = 145.00'	L = 100.00'	L = 80.00'
T = 18.02'	T = 27.83'	T = 20.00'
④ Δ = 12°34'14"	⑤ Δ = 135°22'51"	⑥ Δ = 311°14'40"
R = 6.80306'	R = 15.54187'	R = 40.31444'
L = 142.00'	L = 266.30'	L = 143.17'
T = 71.69'	T = 42.97'	T = 39.78'



- CENTERLINE INTERSECTIONS**
- STA. 34+00.00 STREET "A" - STA. 1+00.00 STREET "B"
 - STA. 3+80.45 STREET "A" - STA. 1+00.00 STREET "C"
 - STA. 5+68.51 STREET "A" - STA. 1+00.00 STREET "D"
 - STA. 7+51.16 STREET "A" - STA. 1+00.00 STREET "E"
 - STA. 8+28.21 STREET "A" - STA. 1+00.00 STREET "F"

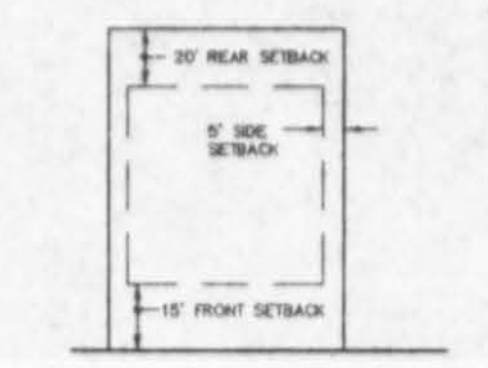
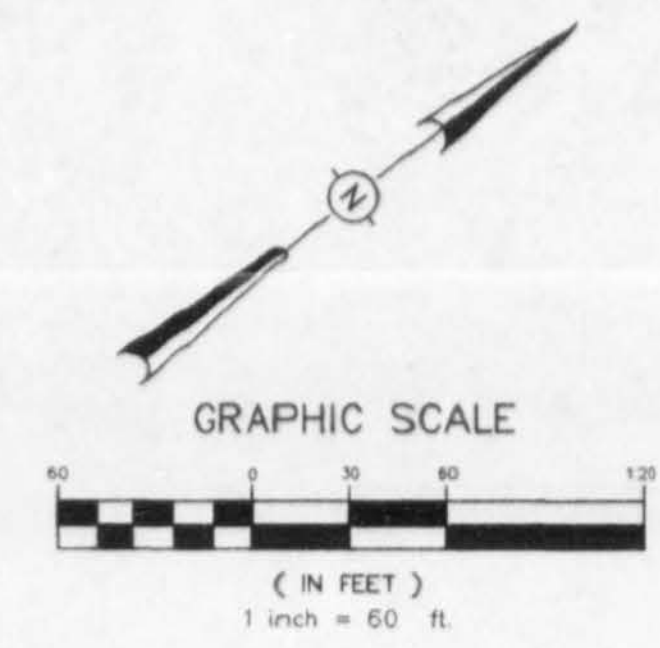


NOTE:
THE CONTRACTOR SHALL PROVIDE A 3/4" WATER SERVICE AND A 6" SANITARY SEWER SERVICE TO EACH LOT AS DIRECTED BY THE ENGINEER.

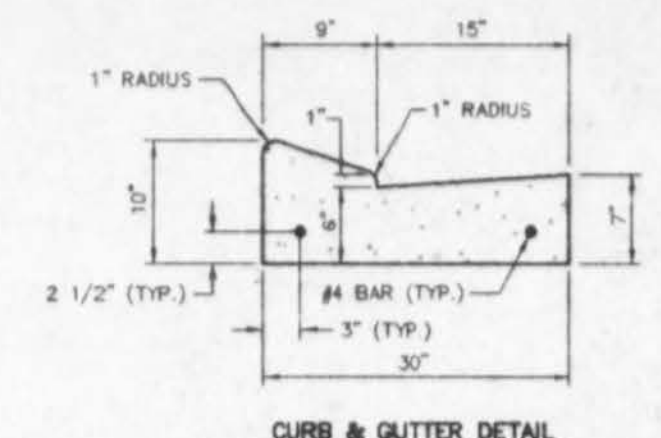
DRAWING NO. MAD-SW

H D LANG AND ASSOCIATES, INC.
POST OFFICE BOX 16085 JACKSON, MISSISSIPPI 39236
601-362-4886

PROJECT	DESCRIPTION	DATE	REVISION	BY	DRAWN BY: D.L.M.
HARBORTOWNE	WATER AND SEWER LAYOUT				DATE: 2-12-98
					SCALE: 1" = 60'
					BOOK: PAGE:
					PROJECT NO.: 97-173



TYPICAL LOT DETAIL



CURB & GUTTER DETAIL

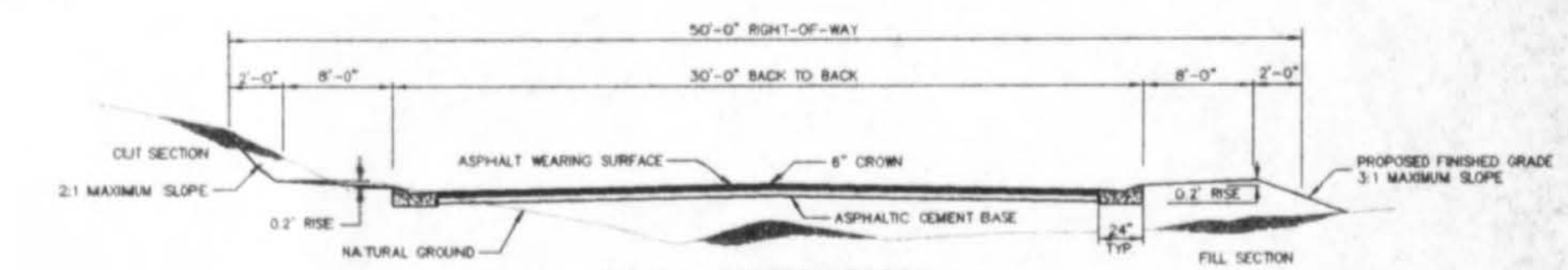
- NOTES:
- 1/2" EXPANSION JOINT REQUIRED AT 30' INTERVALS, WITH (2) 3/4" DOWEL BARS, 15' LONG REQUIRED AT ALL EXPANSION JOINTS. THEY SHALL BE HELD IN PLACE BY APPROVED CHAIRS OR SUPPORTS, AND 1/2" EXPANSION MATERIALS.
 - 1/4" CONTRACTION JOINT REQUIRED AT 10' INTERVALS.
 - ALL CURB & GUTTER AND DRIVEWAYS TO BE CONSTRUCTED OF 1:2:4 MIX CONCRETE.

CENTERLINE CURVE DATA

① Δ = 17°18'16"	② Δ = 52°56'13"	③ Δ = 80°00'00"
D = 45.83667'	D = 57.29563'	D = 55.49306'
R = 153.00'	R = 100.00'	R = 50.00'
L = 11.71'	L = 48.90'	L = 21.50'
T = 19.02'	T = 47.83'	T = 20.00'
④ Δ = 12°24'14"	⑤ Δ = 13°22'51"	⑥ Δ = 31°15'40"
D = 8.80000'	D = 15.84167'	D = 30.34444'
R = 830.88'	R = 56.30'	R = 145.32'
L = 14.69'	L = 42.97'	L = 39.78'

CENTERLINE INTERSECTIONS

- (1) STA 3+03.00 STREET "A" = STA 1+00.00 STREET "B"
- (2) STA 3+49.45 STREET "A" = STA 1+00.00 STREET "C"
- (3) STA 4+66.51 STREET "A" = STA 1+00.00 STREET "D"
- (4) STA 7+51.58 STREET "A" = STA 1+00.00 STREET "E"
- (5) STA 8+28.51 STREET "A" = STA 1+00.00 STREET "F"



TYPICAL STREET SECTION

ALTERNATE NO. 1: 1 1/2" WEARING SURFACE WITH 5" ASPHALTIC CEMENT BASE
 ALTERNATE NO. 2: 1 1/2" WEARING SURFACE WITH 5" ASPHALTIC CEMENT BASE & 6" SOIL TREATMENT (LIME)

- NOTES:
1. THIS SUBDIVISION LIES WITHIN THE LIMITS ESTABLISHED FOR ZONE "X" (NO SHADING) ACCORDING TO FIRM MAP NUMBER 280338 0065 B EFFECTIVE JANUARY 19, 1996.

H D LANG AND ASSOCIATES, INC.
 POST OFFICE BOX 16085 JACKSON, MISSISSIPPI 39236
 601-362-4886

PROJECT: **HARBORTOWNE**
 DESCRIPTION: **DRAINAGE AND GRADING LAYOUT**

DATE	REVISION	BY	DRAWN BY: D.L.M.
			DATE: 2-12-98
			SCALE: 1" = 60'
			BOOK: PAGE:
			PROJECT NO.: 97-173

SYMBOLS FOR EROSION AND SEDIMENT CONTROL PRACTICES

TEMPORARY PRACTICES

- CHECK DAM
- CONSTRUCTION ENTRANCE / EXIT
- DIVERSION
- DUST CONTROL
- SEDIMENT BASIN
- SILT FENCE
- STORM DRAIN INLET PROTECTION (SILT FENCE, STRAW BALE)
- STRAW BALE BARRIER

PERMANENT PRACTICES

- BUFFER ZONE
- DETENTION BASIN
- DIVERSION
- GRADE STAB. STRUCTURE
- GRASSED WATERWAY
- LAND GRADING
- LEVEL GRADING
- LINED WATERWAY OR OUTLET
- PARKING LOT STORAGE
- PAVED FLUME
- ROCK OUTLET PROTECTION
- STORMWATER RETENTION BASIN

VEGETATIVE PRACTICES

- MULCHING
- PERMANENT SEEDING
- SODDING
- TEMPORARY SEEDING
- TOPSOILING
- TREE PRESERVATION AND PROTECTION
- TREES, SHRUBS, VINES AND GROUND COVER
- VEGETATIVE DUNE STABILIZATION

COMPOSITE PRACTICES

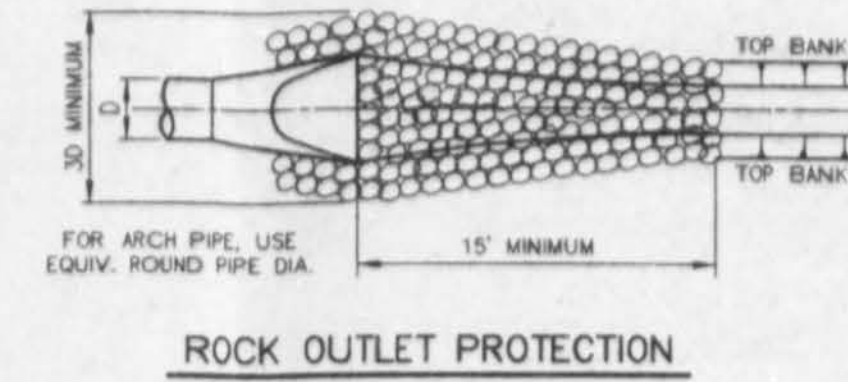
- VEGETATIVE STREAMBANK STAB.
- STRUCTURAL STREAMBANK STAB.
- RIPRAP

PLANNED EROSION, SEDIMENT AND STORMWATER CONTROL PRACTICES

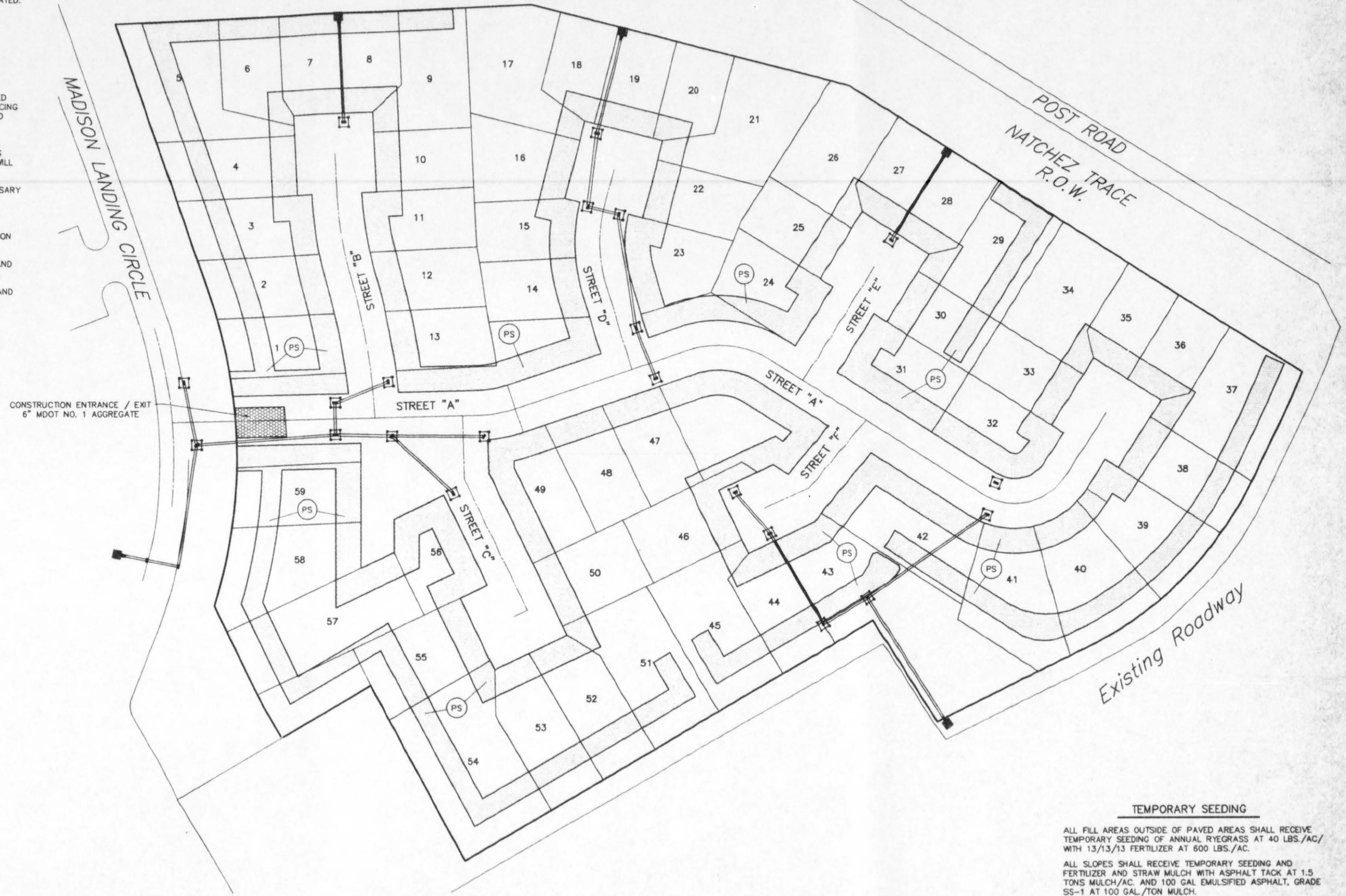
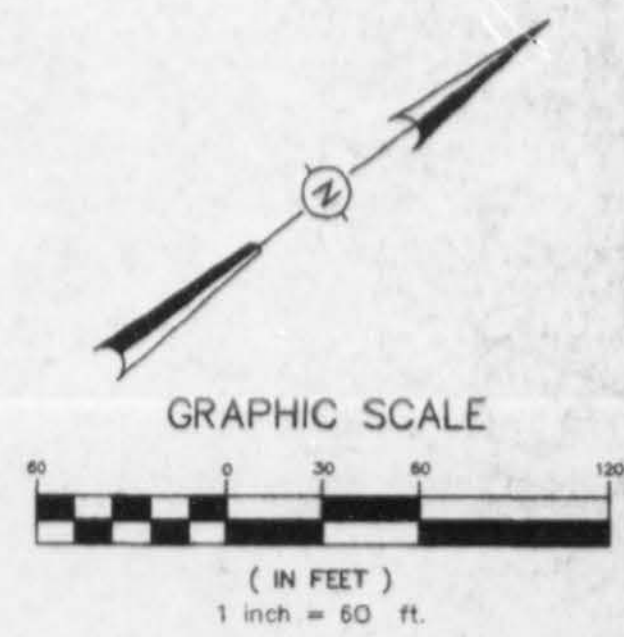
- 1. STORM DRAIN INLET PROTECTION.**
TEMPORARY HAY BALE AND SILT FENCE COMBINATIONS WILL BE INSTALLED AT ALL CURB INLET AND GRATE INLET LOCATIONS.
- 2. LAND GRADING**
EXCESS EXCAVATION FROM THE STREET RIGHTS OF WAY WILL BE PLACED ON THE LOTS OF LOWEST ELEVATION. ALL FILL MATERIALS WILL BE COMPACTED AND SLOPES WILL NOT EXCEED 3:1. ALL AREAS WILL RECEIVE SEEDING FOR STABILIZATION OF THE FILL MATERIAL UNTIL PERMANENT VEGETATION IS ESTABLISHED AFTER THE CONSTRUCTION OF THE INDIVIDUAL HOUSES.
- 3. ROCK OUTLET PROTECTION**
A RIPRAP APRON WILL BE LOCATED AT THE OUTLET OF ALL CULVERTS TO PREVENT SCOUR.
- 4. PERMANENT SEEDING**
ALL DISTURBED AREAS WILL BE PERMANENTLY SEEDED AND MULCHED ONCE FINAL GRADE IS ESTABLISHED. THE LAND GRADING AREAS PREVIOUSLY MENTIONED WILL RECEIVE TEMPORARY SEEDING AS STATED.

MAINTENANCE PLAN

- SHORT TERM**
1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
 2. SEDIMENT WILL BE REMOVED FROM THE INLET PROTECTION DEVICES WHEN IT REACHES A MAXIMUM OF 6 INCHES DEEP. THE DEVICE WILL BE REPLACED AS NECESSARY TO MAINTAIN A BARRIER.
 3. ALL SEEDED AREAS WILL BE FERTILIZED AND RESEEDED AS NECESSARY TO MAINTAIN A DENSE VEGETATIVE COVER.
- LONG TERM**
1. ALL VEGETATED AREAS WILL BE MAINTAINED IN ADEQUATE CONDITION TO PROVIDE PROPER GROUND COVER.
 2. AREAS WHERE VEGETATION IS LOST WILL BE FERTILIZED, SEEDED AND MAINTAINED AS NECESSARY TO RESTORE PROPER GROUND COVER.
 3. STRUCTURAL MEASURES WILL BE EXAMINED AT LEAST ANNUALLY AND MAINTENANCE PERFORMED AS NEEDED.



ROCK OUTLET PROTECTION



TEMPORARY SEEDING
ALL FILL AREAS OUTSIDE OF PAVED AREAS SHALL RECEIVE TEMPORARY SEEDING OF ANNUAL RYEGRASS AT 40 LBS./AC. WITH 13/13/13 FERTILIZER AT 600 LBS./AC.
ALL SLOPES SHALL RECEIVE TEMPORARY SEEDING AND FERTILIZER AND STRAW MULCH WITH ASPHALT TACK AT 1.5 TONS MULCH/AC. AND 100 GAL EMULSIFIED ASPHALT, GRADE SS-1 AT 100 GAL./TON MULCH.

PERMANENT SEEDING
PERMANENT SEEDING OF BERMUDA GRASS AT 15 LBS./AC. WITH 13/13/13 FERTILIZER AT 600 LBS./AC.

DRAWING NO. HDL-EC

H D LANG AND ASSOCIATES, INC.

POST OFFICE BOX 16085

JACKSON, MISSISSIPPI 39236

601-362-4886

PROJECT

HARBORTOWNE

DESCRIPTION

EROSION, SEDIMENT AND STORMWATER CONTROL PLAN

DATE

REVISION

BY

DRAWN BY: D.L.M.

DATE: 2-12-98

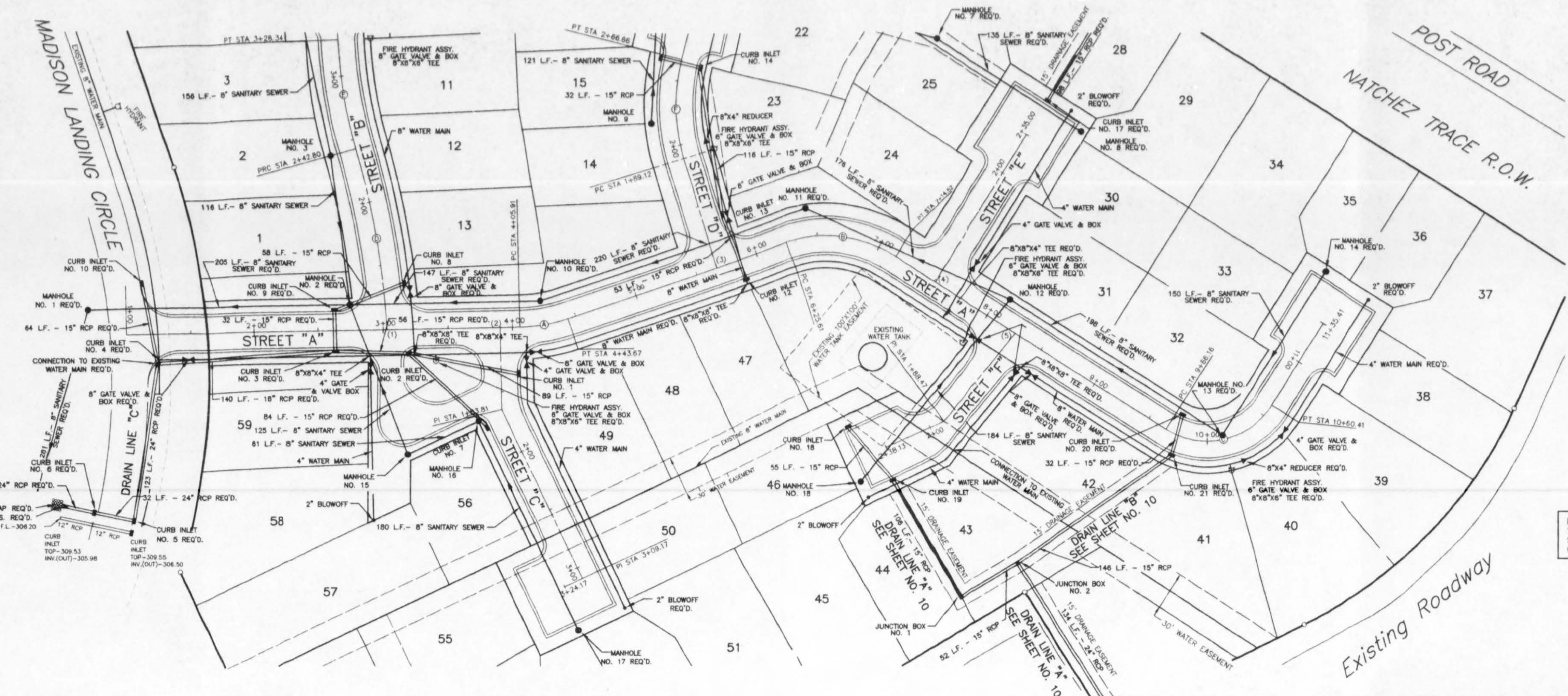
SCALE: 1" = 60'

BOOK: PAGE:

PROJECT NO.: 97-173

SHEET

5



CENTERLINE CURVE DATA

① Δ = 17°18'18"	② Δ = 50°56'13"	③ Δ = 90°00'00"
D = 45.83667'	D = 57.29583'	D = 95.49306'
R = 125.00'	R = 100.00'	R = 60.00'
L = 37.75'	L = 48.30'	L = 34.20'
T = 19.02'	T = 47.63'	T = 60.00'

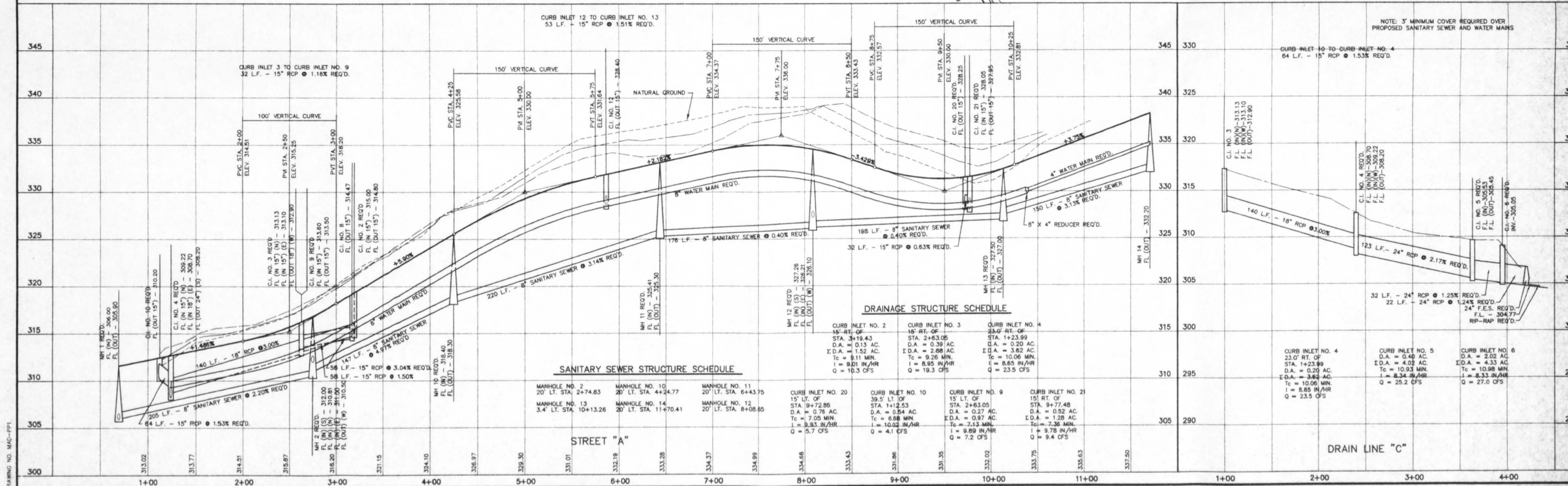
④ Δ = 12°34'14"	⑤ Δ = 13°22'51"	⑥ Δ = 31°15'44"
D = 8.80306'	D = 15.64167'	D = 40.31444'
R = 650.365'	R = 566.307'	R = 142.12'
L = 142.80'	L = 85.55'	L = 77.54'
T = 71.69'	T = 42.97'	T = 39.76'

- CENTERLINE INTERSECTIONS**
- STA. 3+03.00 STREET "A" = STA. 1+00.00 STREET "B"
 - STA. 3+40.45 STREET "A" = STA. 1+00.00 STREET "C"
 - STA. 5+66.51 STREET "A" = STA. 1+00.00 STREET "D"
 - STA. 7+51.16 STREET "A" = STA. 1+00.00 STREET "E"
 - STA. 8+26.21 STREET "A" = STA. 1+00.00 STREET "F"

NOTE: THE CONTRACTOR SHALL PROVIDE A 3/4" WATER SERVICE AND A 6" SANITARY SEWER SERVICE TO EACH LOT AS DIRECTED BY THE ENGINEER. (SEE "TYPICAL SERVICE CONNECTIONS" DETAIL - SHEET NO. 3)

EXISTING GROUND - CENTERLINE
 EXISTING GROUND - 25' LEFT
 EXISTING GROUND - 25' RIGHT

NOTE: CURB RETURN RADI - R=20.0' (BACK OF CURB)



SANITARY SEWER STRUCTURE SCHEDULE

MANHOLE NO. 2 20' LT. STA. 2+74.83	MANHOLE NO. 10 20' LT. STA. 4+24.77	MANHOLE NO. 11 20' LT. STA. 6+43.75
MANHOLE NO. 13 3.4' LT. STA. 10+13.26	MANHOLE NO. 14 20' LT. STA. 11+70.41	MANHOLE NO. 12 20' LT. STA. 8+08.85

DRAINAGE STRUCTURE SCHEDULE

CURB INLET NO. 2 15' RT. OF STA. 3+19.43 D.A. = 0.13 AC. I.D.A. = 1.52 AC. Tc = 9.11 MIN. Q = 10.06 MGD	CURB INLET NO. 3 15' RT. OF STA. 2+63.05 D.A. = 0.39 AC. I.D.A. = 2.88 AC. Tc = 9.26 MIN. Q = 19.3 CFS	CURB INLET NO. 4 23.0' RT. OF STA. 1+23.99 D.A. = 0.20 AC. I.D.A. = 3.62 AC. Tc = 10.06 MIN. Q = 8.65 MGD
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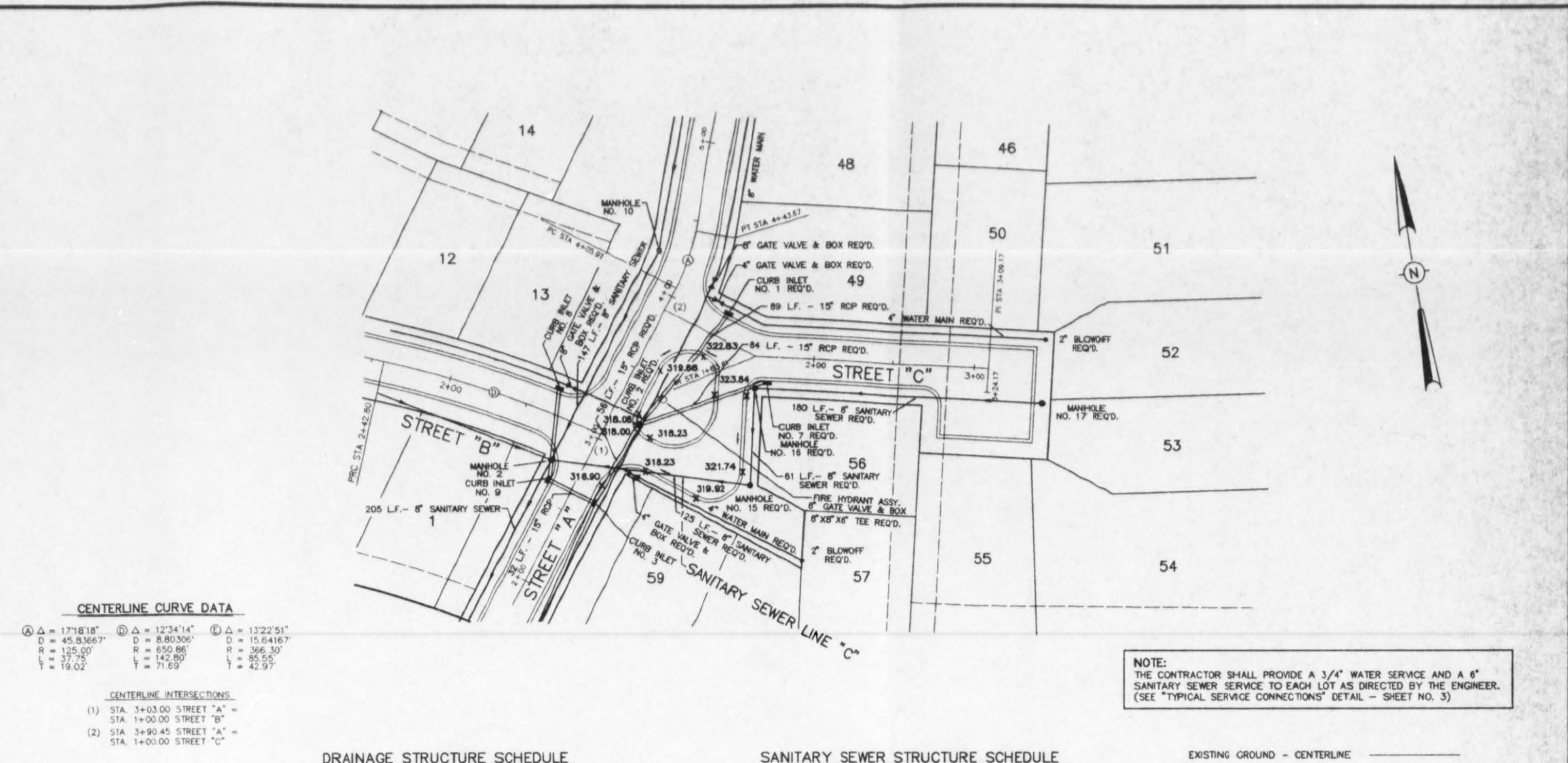
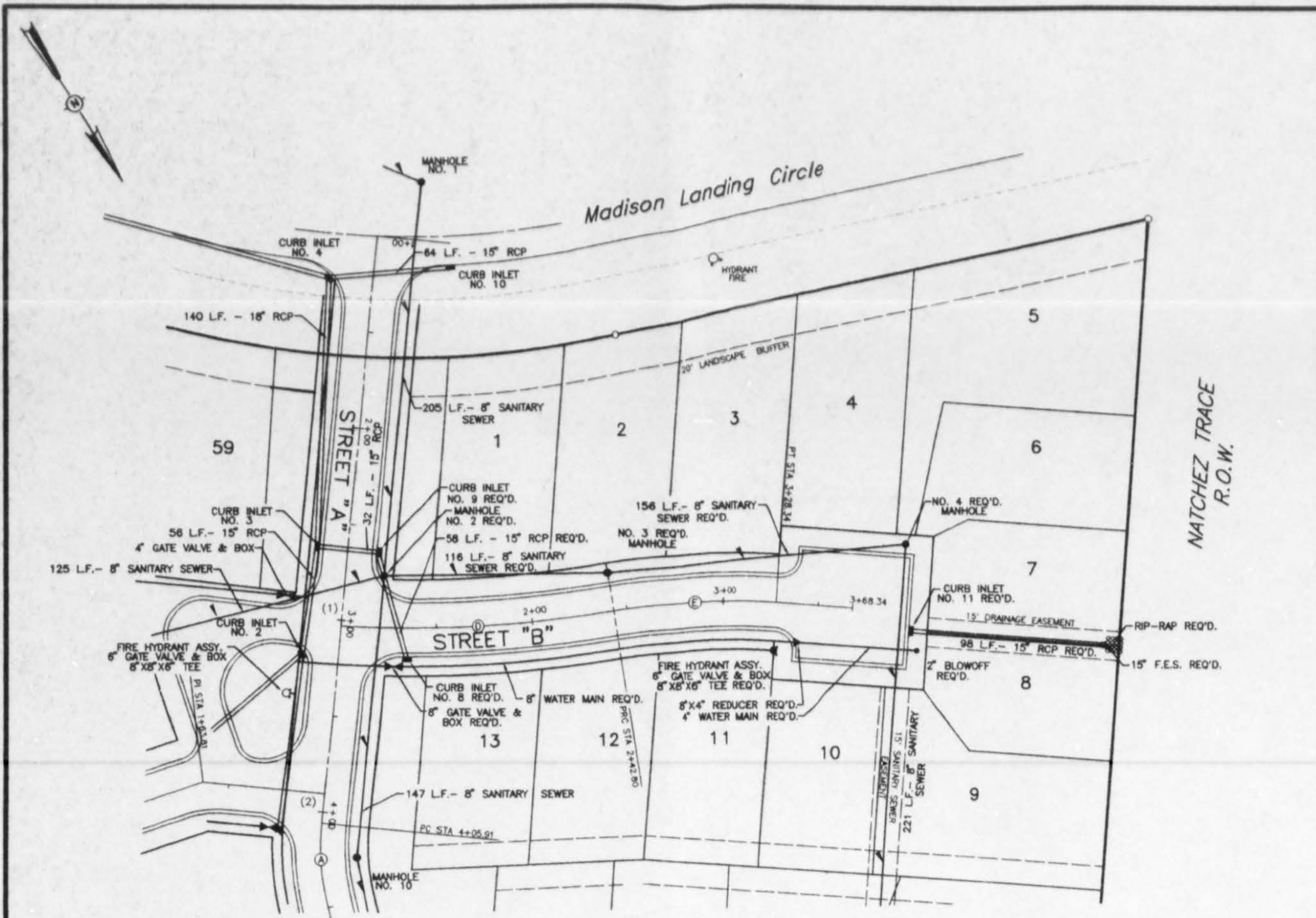
CURB INLET NO. 4
23.0' RT. OF STA. 1+23.99
D.A. = 0.20 AC.
I.D.A. = 3.62 AC.
Tc = 10.06 MIN.
Q = 8.65 MGD

CURB INLET NO. 5
D.A. = 0.40 AC.
I.D.A. = 4.02 AC.
Tc = 10.93 MIN.
Q = 8.33 MGD

CURB INLET NO. 6
D.A. = 2.02 AC.
I.D.A. = 4.33 AC.
Tc = 10.98 MIN.
Q = 27.0 CFS

NOTE: 3' MINIMUM COVER REQUIRED OVER PROPOSED SANITARY SEWER AND WATER MAINS

STATION	1+00	2+00	3+00	4+00	5+00	6+00	7+00	8+00	9+00	10+00	11+00	12+00	13+00	14+00	15+00	16+00	17+00	18+00	19+00	20+00	21+00	22+00	23+00	24+00	25+00	26+00	27+00	28+00	29+00	30+00	31+00	32+00	33+00	34+00	35+00	36+00	37+00	38+00	39+00	40+00																																																																																																																																																																																																																			
ELEVATION	313.02	313.77	314.51	315.27	316.00	316.70	317.38	318.03	318.65	319.24	319.80	320.33	320.83	321.30	321.74	322.15	322.53	322.88	323.20	323.49	323.75	323.98	324.18	324.35	324.49	324.60	324.68	324.73	324.76	324.77	324.76	324.72	324.65	324.55	324.42	324.26	324.07	323.85	323.60	323.32	323.01	322.68	322.32	321.93	321.51	321.06	320.58	320.07	319.53	318.96	318.36	317.73	317.07	316.37	315.63	314.86	314.06	313.22	312.35	311.45	310.52	309.56	308.57	307.55	306.50	305.42	304.31	303.18	302.03	300.86	299.66	298.43	297.17	295.88	294.56	293.21	291.83	290.42	288.99	287.53	286.04	284.52	282.97	281.40	279.81	278.20	276.57	274.92	273.25	271.56	269.85	268.12	266.37	264.60	262.81	261.00	259.17	257.32	255.45	253.56	251.65	249.72	247.77	245.80	243.81	241.80	239.77	237.72	235.65	233.56	231.45	229.32	227.17	225.00	222.81	220.60	218.37	216.12	213.85	211.56	209.25	206.92	204.57	202.20	199.81	197.40	194.97	192.52	190.05	187.56	185.05	182.52	180.00	177.45	174.88	172.29	169.68	167.05	164.40	161.73	159.04	156.33	153.60	150.85	148.08	145.29	142.48	139.65	136.80	133.93	131.04	128.13	125.20	122.25	119.28	116.29	113.28	110.25	107.20	104.13	101.04	97.93	94.80	91.65	88.48	85.29	82.08	78.85	75.60	72.33	69.04	65.73	62.40	59.05	55.68	52.29	48.88	45.45	42.00	38.53	35.04	31.53	28.00	24.45	20.88	17.29	13.68	10.05	6.40	2.73	-0.96	-3.60	-6.20	-8.77	-11.30	-13.80	-16.27	-18.70	-21.10	-23.47	-25.80	-28.10	-30.37	-32.60	-34.80	-36.97	-39.10	-41.20	-43.27	-45.30	-47.30	-49.27	-51.20	-53.10	-54.97	-56.80	-58.60	-60.37	-62.10	-63.80	-65.47	-67.10	-68.70	-70.27	-71.80	-73.30	-74.77	-76.20	-77.60	-78.97	-80.30	-81.60	-82.87	-84.10	-85.30	-86.47	-87.60	-88.70	-89.77	-90.80	-91.80	-92.77	-93.70	-94.60	-95.47	-96.30	-97.10	-97.87	-98.60	-99.30	-100.00



CENTERLINE CURVE DATA

① Δ = 177°18'18"	② Δ = 123°14'14"	③ Δ = 132°21'51"
PC = 125.50'	PC = 150.86'	PC = 366.50'
PT = 277.75'	PT = 371.69'	PT = 42.97'
Δ = 45.83667'	Δ = 8.80306'	Δ = 15.64167'
R = 150.86'	R = 152.2 AC	R = 366.50'
T = 19.02'	T = 71.69'	T = 42.97'

- CENTERLINE INTERSECTIONS**
- (1) STA. 3+03.00 STREET "A" = STA. 1+00.00 STREET "B"
 - (2) STA. 3+90.45 STREET "A" = STA. 1+00.00 STREET "C"

DRAINAGE STRUCTURE SCHEDULE

CURB INLET NO. 8 15' RT. OF STA. 1+34.78 D.A. = 0.70 AC. Tc = 6.66 MIN. I = 10.13 IN/HR Q = 5.3 CFS	CURB INLET NO. 11 10.2' RT. OF STA. 3+99.59 D.A. = 0.69 AC. Tc = 8.25 MIN. I = 9.37 IN/HR Q = 4.6 CFS
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SANITARY SEWER STRUCTURE SCHEDULE

MANHOLE NO. 2 20' LT. STA. 2+74.83	MANHOLE NO. 3 20' LT. STA. 2+42.80	MANHOLE NO. 4 35' LT. STA. 3+93.34
---------------------------------------	---------------------------------------	---------------------------------------

DRAINAGE STRUCTURE SCHEDULE

CURB INLET NO. 1 15' RT. OF STA. 1+36.30 D.A. = 1.13 AC. I.D.A. = AC. Tc = 8.82 MIN. I = 9.13 IN/HR Q = 7.7 CFS	CURB INLET NO. 2 15' RT. OF STA. 3+19.43 D.A. = 0.13 AC. I.D.A. = 1.52 AC. Tc = 9.11 MIN. I = 9.01 IN/HR Q = 10.3 CFS	CURB INLET NO. 7 15' RT. OF STA. 1+71.67 D.A. = 0.26 AC. Tc = 8.52 MIN. I = 9.25 IN/HR Q = 1.8 CFS
--	--	--

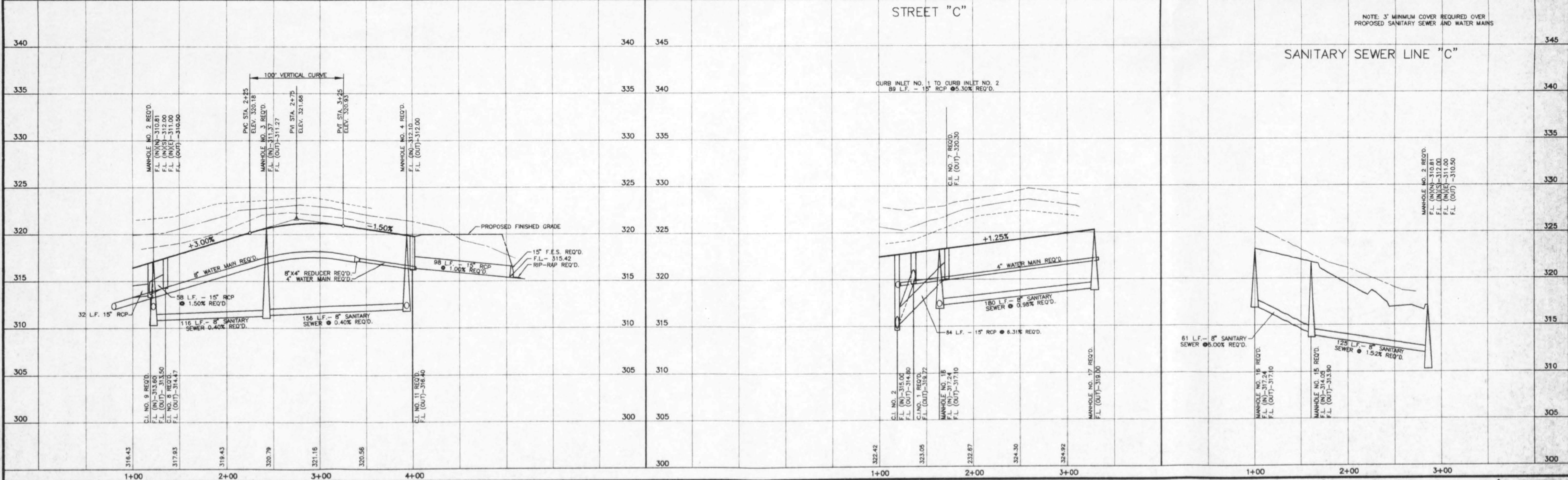
SANITARY SEWER STRUCTURE SCHEDULE

MANHOLE NO. 16 20' RT. STA. 1+64.17	MANHOLE NO. 17 35' LT. STA. 3+29.17
--	--

NOTE:
THE CONTRACTOR SHALL PROVIDE A 3/4" WATER SERVICE AND A 6" SANITARY SEWER SERVICE TO EACH LOT AS DIRECTED BY THE ENGINEER. (SEE "TYPICAL SERVICE CONNECTIONS" DETAIL - SHEET NO. 3)

EXISTING GROUND - CENTERLINE
EXISTING GROUND - 25' LEFT
EXISTING GROUND - 25' RIGHT

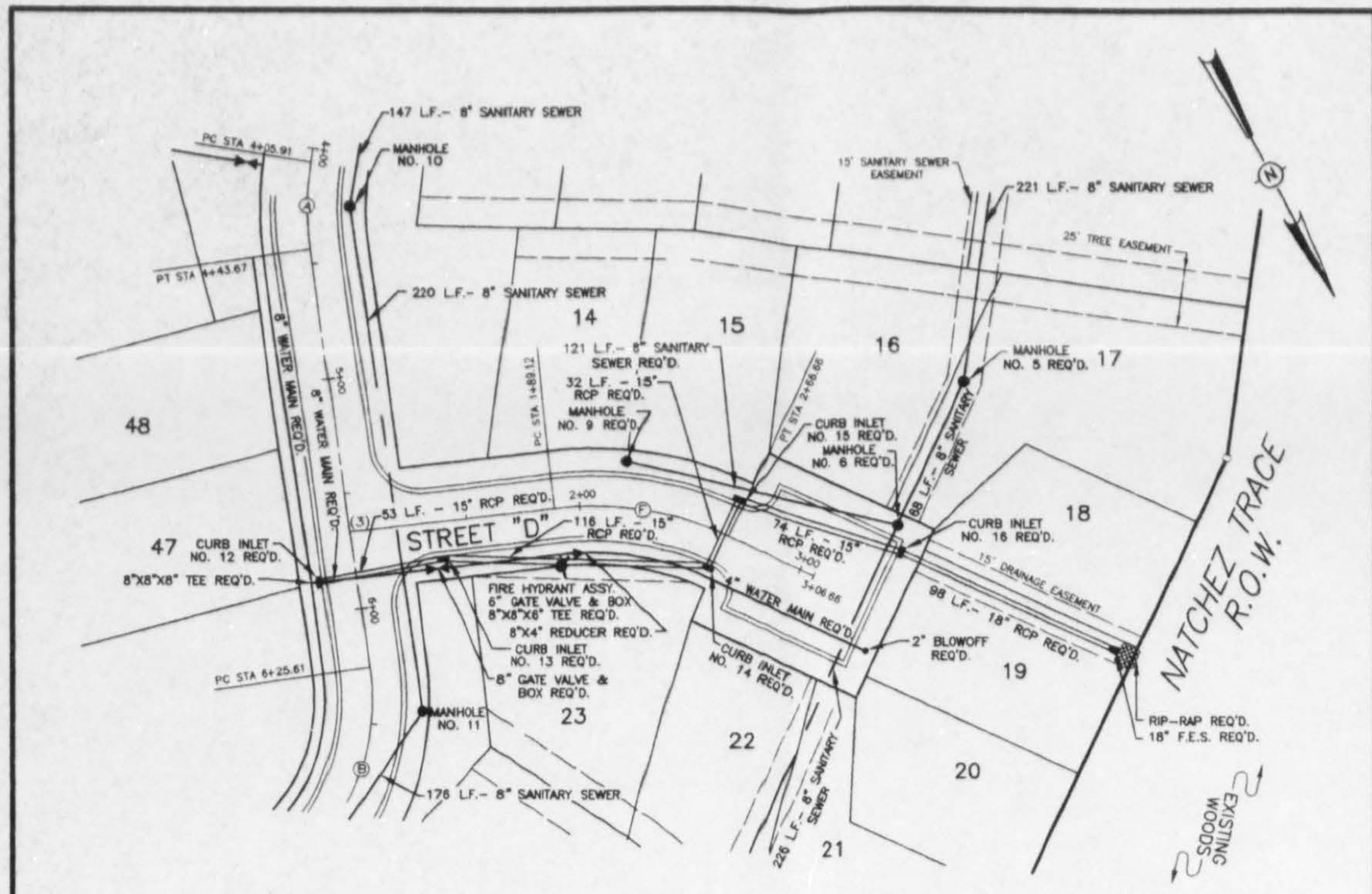
NOTE: CURB RETURN RADII - R=20.0' (BACK OF CURB)



H D LANG AND ASSOCIATES, INC.
POST OFFICE BOX 16085 JACKSON, MISSISSIPPI 39236
601-362-4888

PROJECT: HARBORTOWNE
DESCRIPTION: PLAN AND PROFILE STREETS "B" AND "C" / SANITARY SEWER LINE "C"

DATE	REVISION	BY	DRAWN BY: D.L.M.	SHEET
			DATE: 1-17-98	7
			HORIZ.: 1"=50' / VERT.: 1"=5'	
			BOOK: PAGE:	
			PROJECT NO.: 97-173	



DRAINAGE STRUCTURE SCHEDULE

CURB INLET NO. 12 15' RT. OF STA. 5+86.18 D.A. = 0.27 AC. Tc = 6.68 MIN. I = 10.12 IN/HR Q = 2.0 CFS	CURB INLET NO. 13 15' RT. OF STA. 1+38.52 D.A. = 0.18 AC. Tc = 7.31 MIN. I = 9.00 IN/HR Q = 3.3 CFS	CURB INLET NO. 14 15' RT. OF STA. 2+84.13 D.A. = 0.34 AC. Tc = 8.33 MIN. I = 9.33 IN/HR Q = 5.5 CFS
CURB INLET NO. 15 15' RT. OF STA. 2+84.13 D.A. = 0.19 AC. Tc = 8.64 MIN. I = 9.20 IN/HR Q = 6.8 CFS	CURB INLET NO. 16 25' RT. OF STA. 3+37.91 D.A. = 0.41 AC. Tc = 8.96 MIN. I = 9.07 IN/HR Q = 9.5 CFS	

SANITARY SEWER STRUCTURE SCHEDULE

MANHOLE NO. 6 35' LT. STA. 3+31.66	MANHOLE NO. 9 20' LT. STA. 2+18.56
---------------------------------------	---------------------------------------

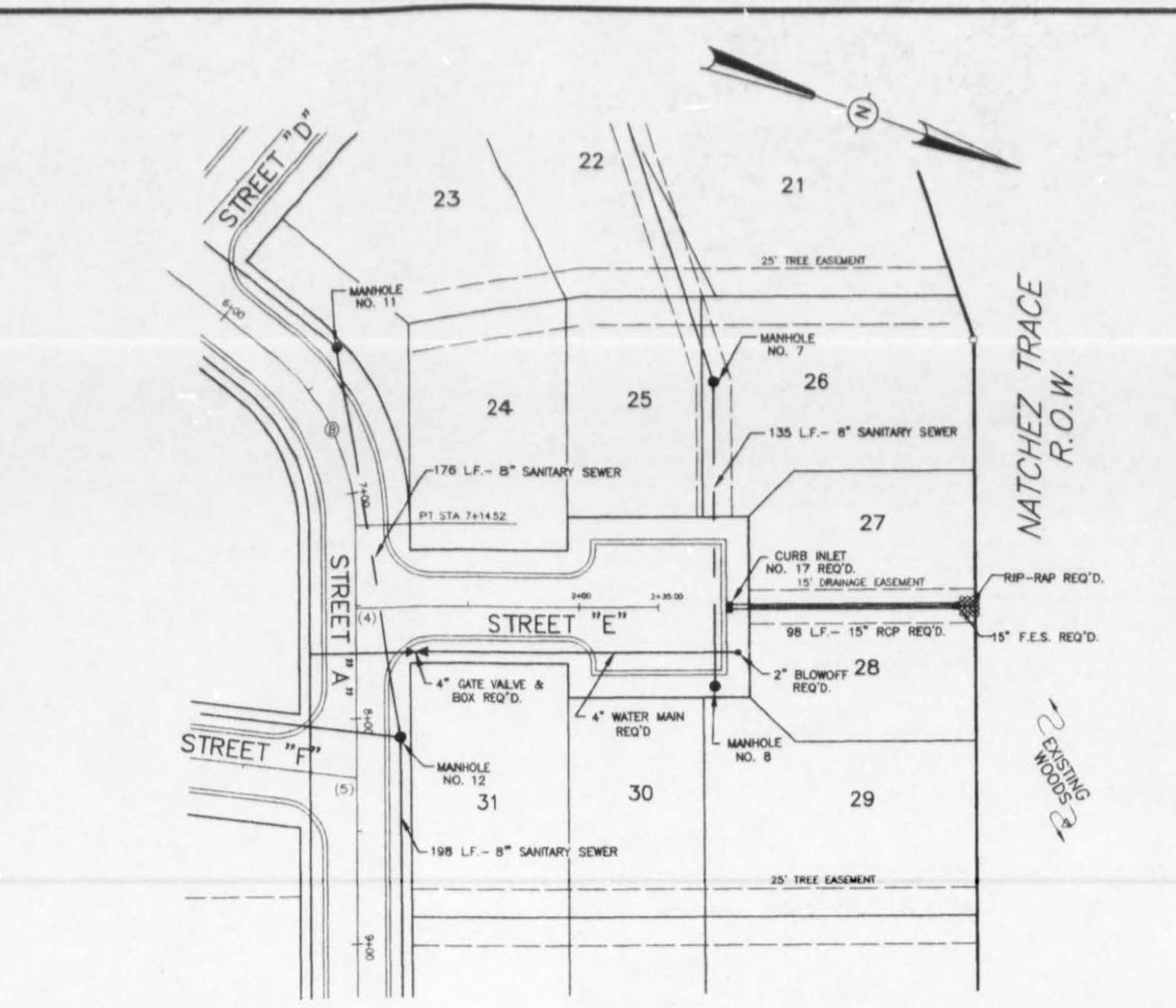
CENTERLINE INTERSECTIONS

(3) STA. 5+66.51 STREET "A" = STA. 1+00.00 STREET "D"

CENTERLINE CURVE DATA

Δ = 50°56'13"	Δ = 13°22'51"
D = 57.29583'	D = 15.64167'
R = 100.00'	R = 86.30'
L = 88.90'	L = 85.55'
T = 47.63'	T = 42.97'

STREET "D"



DRAINAGE STRUCTURE SCHEDULE

CURB INLET NO. 17 ON CENTERLINE STA. 2+65.00 D.A. = 0.70 AC. Tc = 5.83 MIN. I = 10.59 IN/HR Q = 5.6 CFS

SANITARY SEWER STRUCTURE SCHEDULE

MANHOLE NO. 8 35' RT. STA. 2+60.00

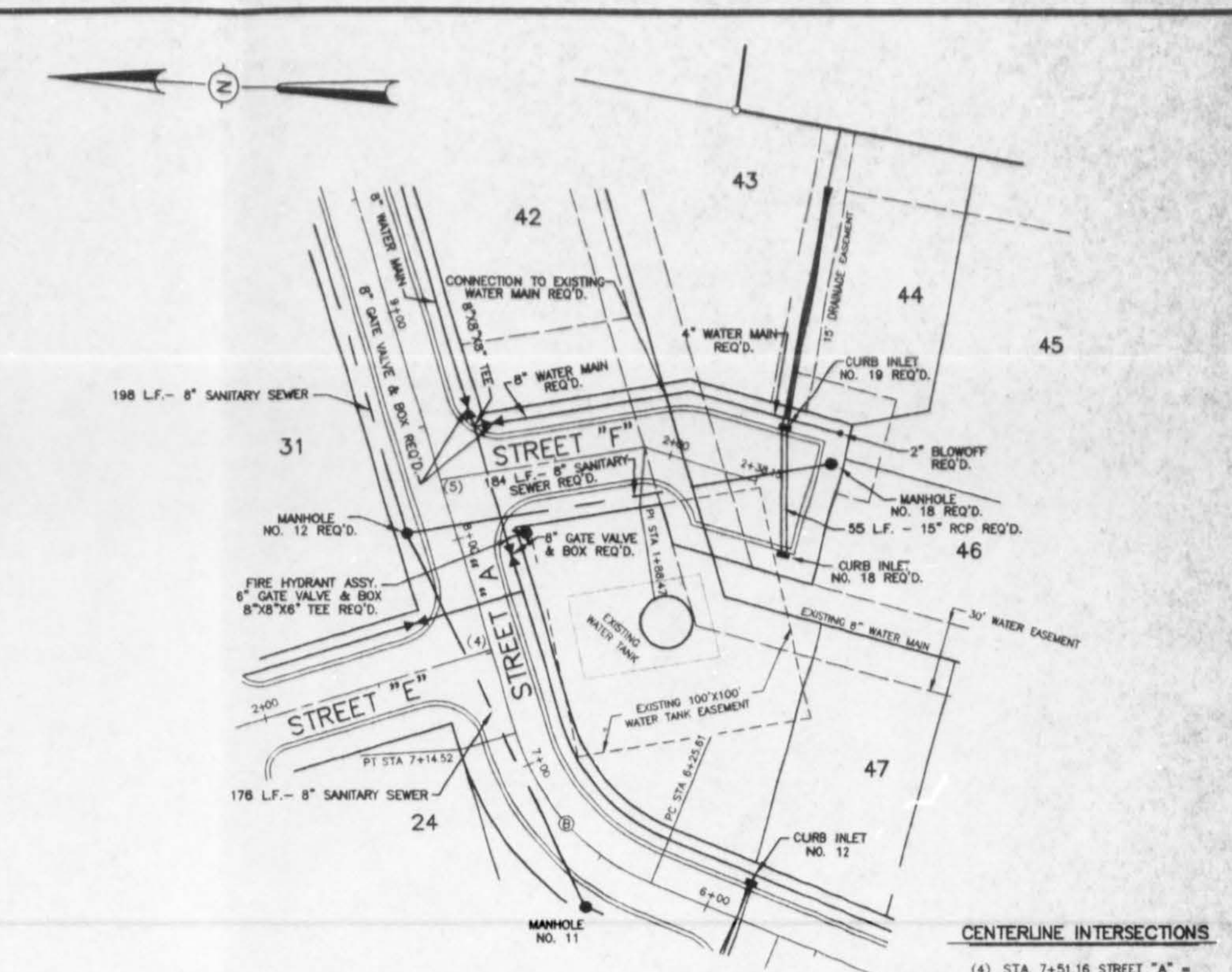
CENTERLINE INTERSECTIONS

(4) STA. 7+51.16 STREET "A" = STA. 1+00.00 STREET "E"
(5) STA. 8+26.21 STREET "A" = STA. 1+00.00 STREET "E"

CENTERLINE CURVE DATA

Δ = 50°56'13"	Δ = 57°29'58"
D = 57.29583'	D = 100.00'
R = 100.00'	R = 86.30'
L = 88.90'	L = 85.55'
T = 47.63'	T = 42.97'

STREET "E"



DRAINAGE STRUCTURE SCHEDULE

CURB INLET NO. 18 25.2' RT. OF STA. 2+58.55 D.A. = 0.28 AC. Tc = 8.73 MIN. I = 9.16 IN/HR Q = 1.9 CFS

SANITARY SEWER STRUCTURE SCHEDULE

MANHOLE NO. 12 20' LT. STA. 8+08.65	MANHOLE NO. 18 16.5' LT. STA. 2+65.94
--	--

CENTERLINE INTERSECTIONS

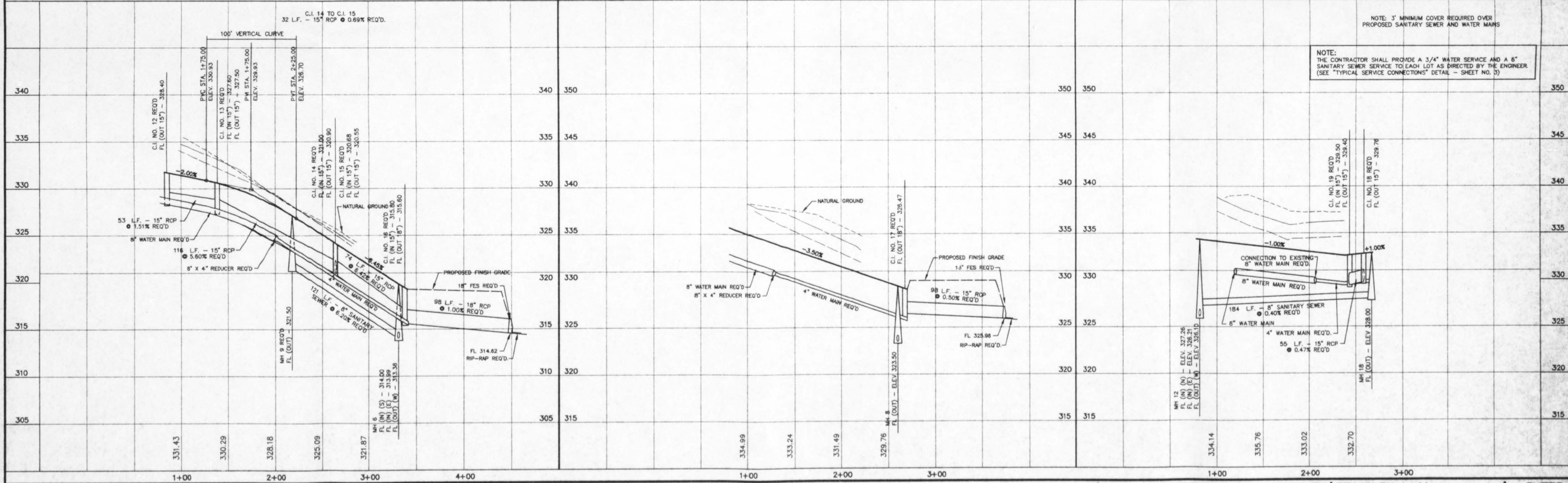
(4) STA. 7+51.16 STREET "A" = STA. 1+00.00 STREET "E"
(5) STA. 8+26.21 STREET "A" = STA. 1+00.00 STREET "E"

CENTERLINE CURVE DATA

Δ = 50°56'13"	Δ = 57°29'58"
D = 57.29583'	D = 100.00'
R = 100.00'	R = 86.30'
L = 88.90'	L = 85.55'
T = 47.63'	T = 42.97'

EXISTING GROUND - CENTERLINE
EXISTING GROUND - 25' LEFT
EXISTING GROUND - 25' RIGHT
NOTE: CURB RETURN RADI - R=20.0' (BACK OF CURB)

STREET "F"



NOTE: THE CONTRACTOR SHALL PROVIDE A 3/4" WATER SERVICE AND A 6" SANITARY SEWER SERVICE TO EACH LOT AS DIRECTED BY THE ENGINEER. (SEE "TYPICAL SERVICE CONNECTIONS" DETAIL - SHEET NO. 3)

H D LANG AND ASSOCIATES, INC.

POST OFFICE BOX 16085 JACKSON, MISSISSIPPI 39236

601-362-4886

PROJECT

HARBORTOWNE

DESCRIPTION

PLAN AND PROFILE
STREETS "D", "E" AND "F"

DATE

REVISION

BY

DRAWN BY: L.L.M.

DATE: 2-12-98

HORIZ.: 1"=50' / VERT.: 1"=5'

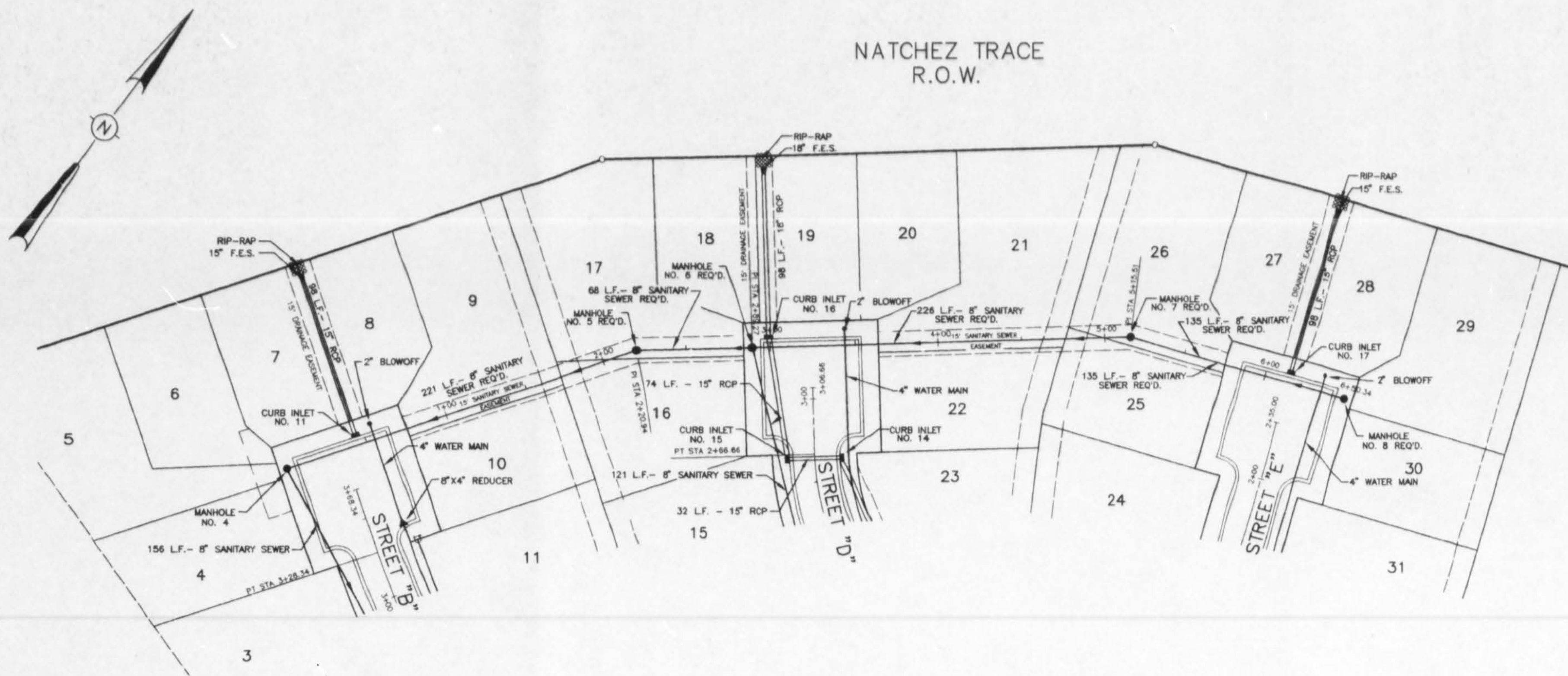
BOOK: PAGE:

PROJECT NO.: 97-173

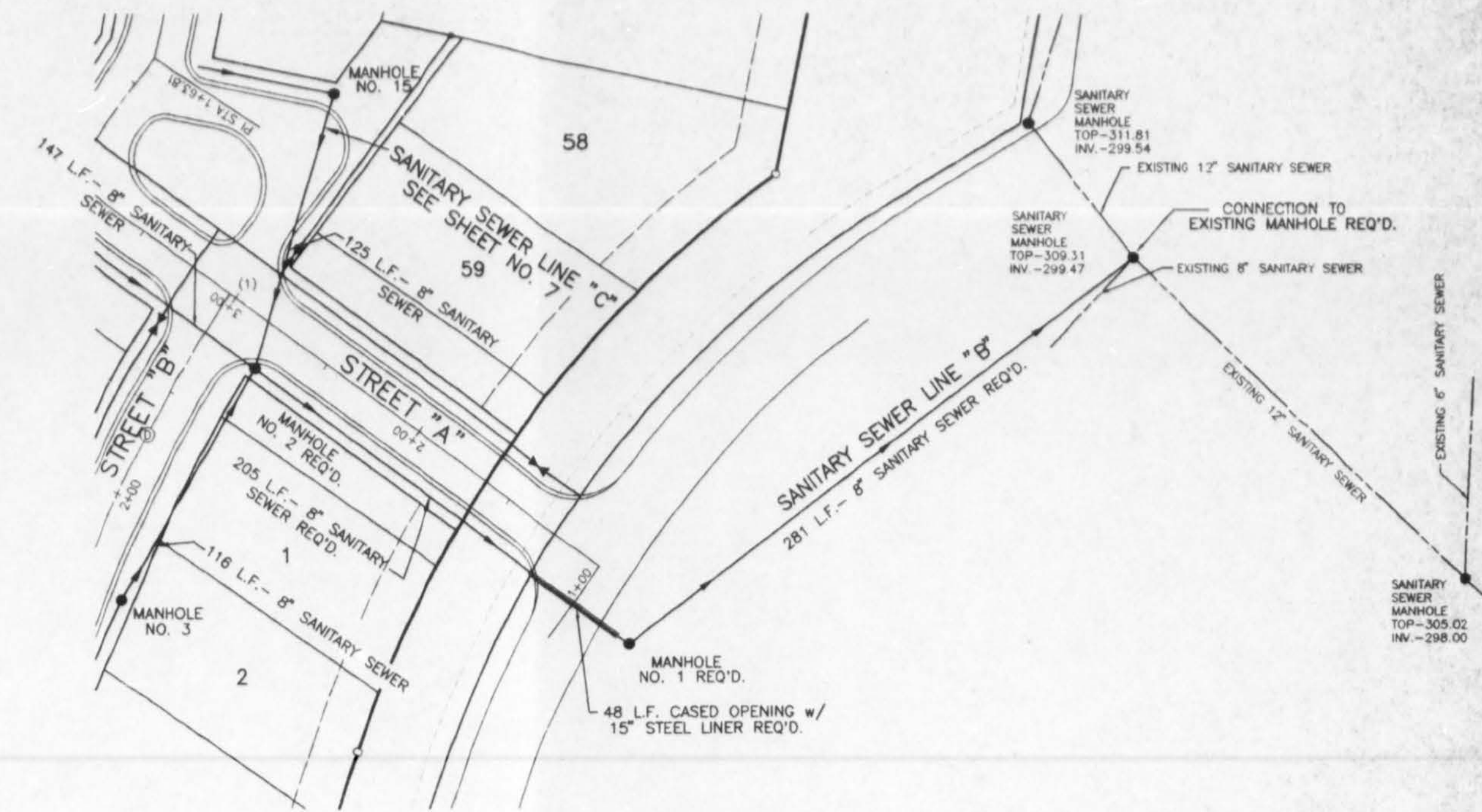
SHEET

8

NATCHEZ TRACE
R.O.W.



SANITARY SEWER LINE "A"



SANITARY SEWER LINE "B"

CENTERLINE CURVE DATA

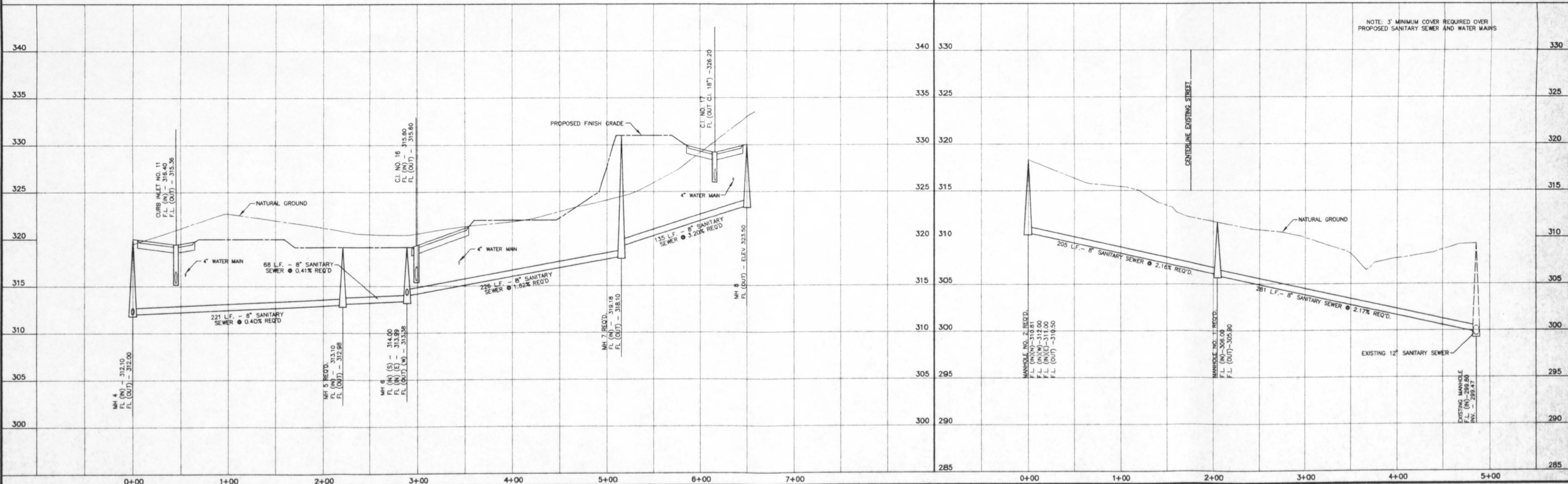
① Δ = 123°14'
D = 883.505'
R = 550.86'
L = 142.80'
T = 71.59'

CENTERLINE INTERSECTIONS

(1) STA 3+03.00 STREET "A" =
STA 1+00.00 STREET "B"

EXISTING GROUND - CENTERLINE
EXISTING GROUND - 25' LEFT
EXISTING GROUND - 25' RIGHT

NOTE: CURB RETURN RADII - R=20.0' (BACK OF CURB)

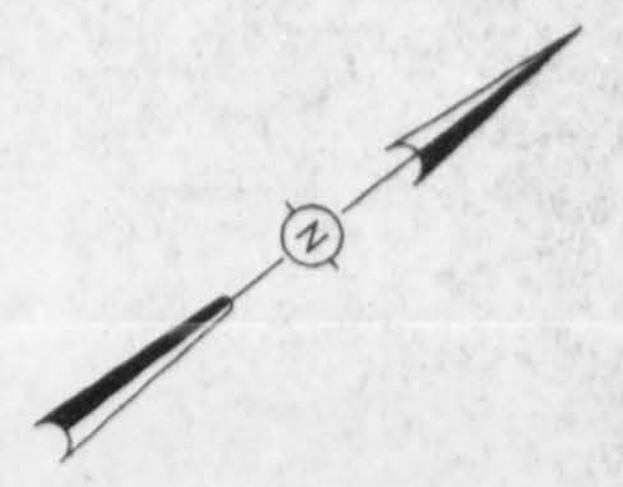
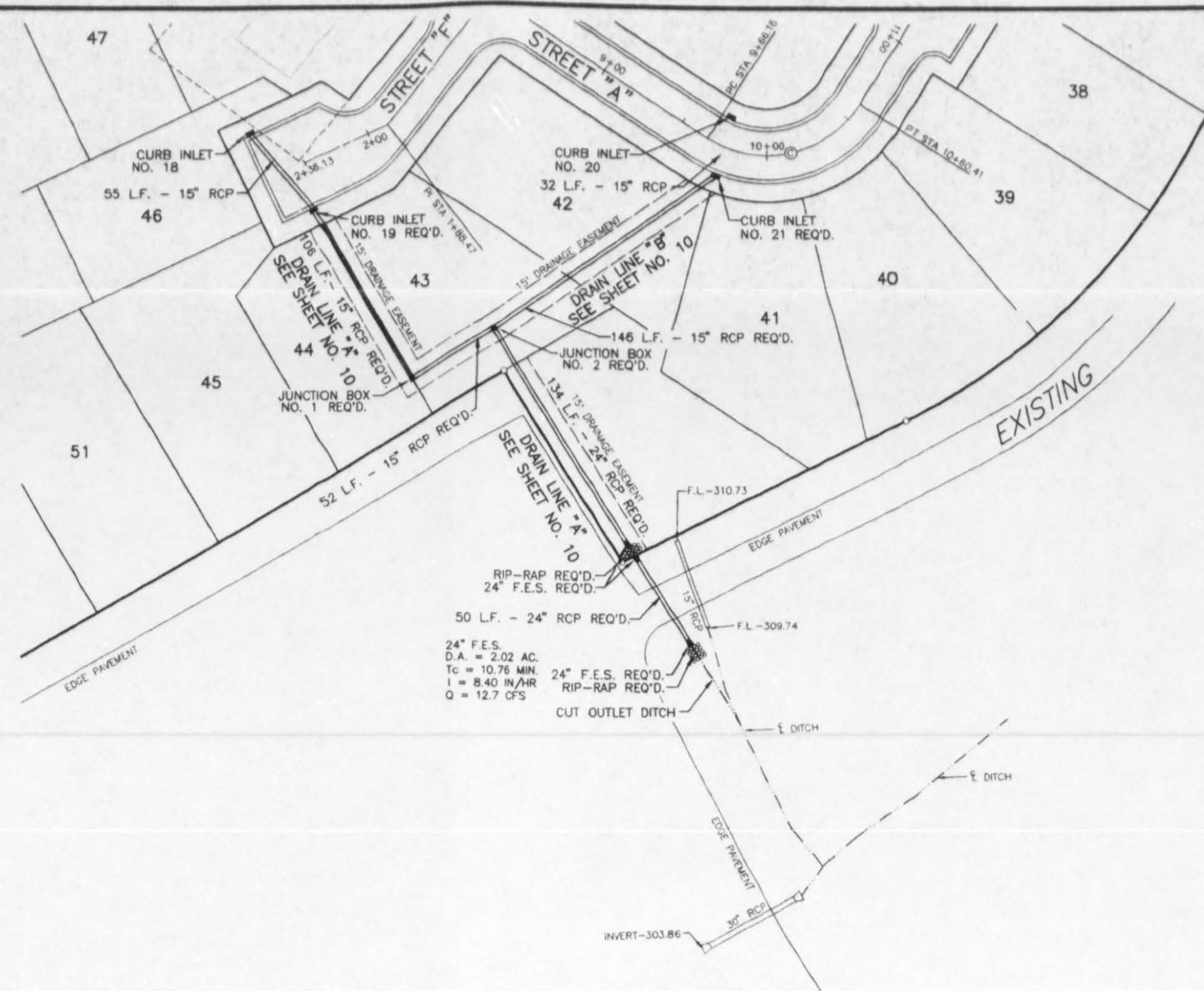


NOTE: 3' MINIMUM COVER REQUIRED OVER
PROPOSED SANITARY SEWER AND WATER MAINS

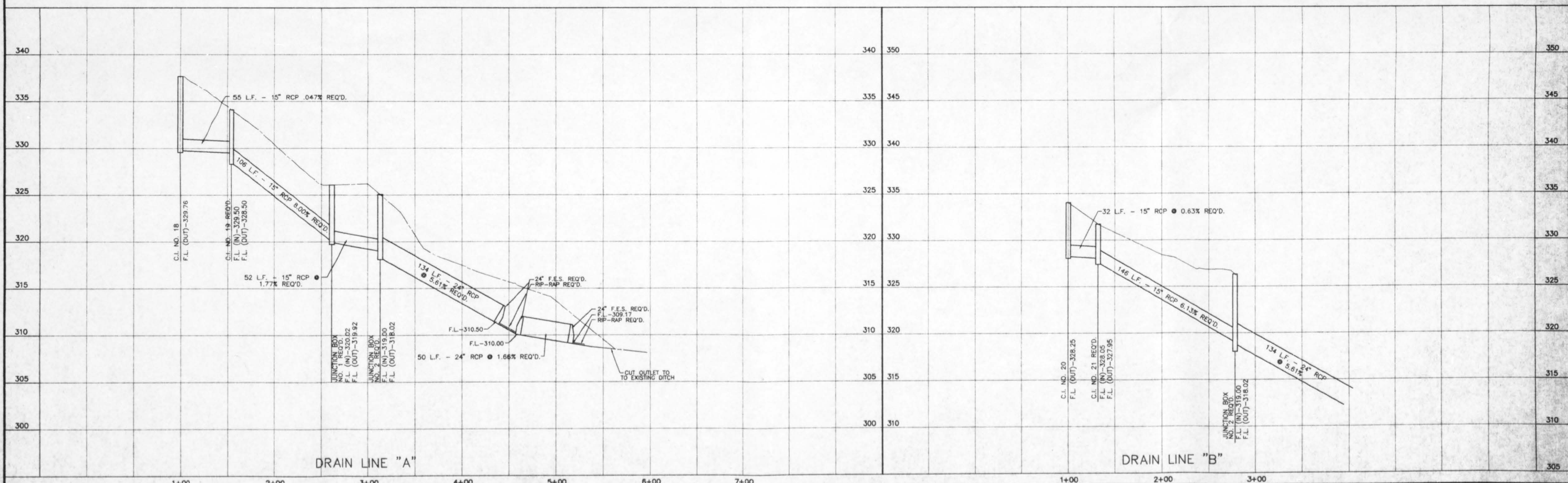
DRAWING NO. MAD-PP4

DRAINAGE STRUCTURE SCHEDULE

CURB INLET NO. 18 25.2' RT. OF STA. 2+56.55 D.A. = 0.28 AC. Tc = 8.75 MIN. I = 9.16 IN/HR Q = 1.9 CFS	CURB INLET NO. 19 24.2' LT. OF STA. 2+43.71 D.A. = 0.30 AC. I.D.A. = 0.58 AC. Tc = 8.75 MIN. I = 9.16 IN/HR Q = 4.0 CFS	CURB INLET NO. 20 15' LT. OF STA. 9+72.86 D.A. = 0.76 AC. Tc = 7.05 MIN. I = 9.93 IN/HR Q = 5.7 CFS	CURB INLET NO. 21 15' RT. OF STA. 9+77.48 D.A. = 0.52 AC. I.D.A. = 1.28 AC. Tc = 7.36 MIN. I = 9.78 IN/HR Q = 9.4 CFS
JUNCTION BOX NO. 1 D.A. = 0.22 AC. I.D.A. = 0.60 AC. Tc = 8.8 MIN. I = 9.14 IN/HR Q = 5.5 CFS	JUNCTION BOX NO. 2 D.A. = 0.23 AC. I.D.A. = 1.03 AC. Tc = 8.9 MIN. I = 9.09 IN/HR Q = 7.0 CFS		



EXISTING GROUND - CENTERLINE
 EXISTING GROUND - 25' LEFT
 EXISTING GROUND - 25' RIGHT
 NOTE: CURB RETURN RADII - R=20.0' (BACK OF CURB)



DRAWING NO. 1440-PPS

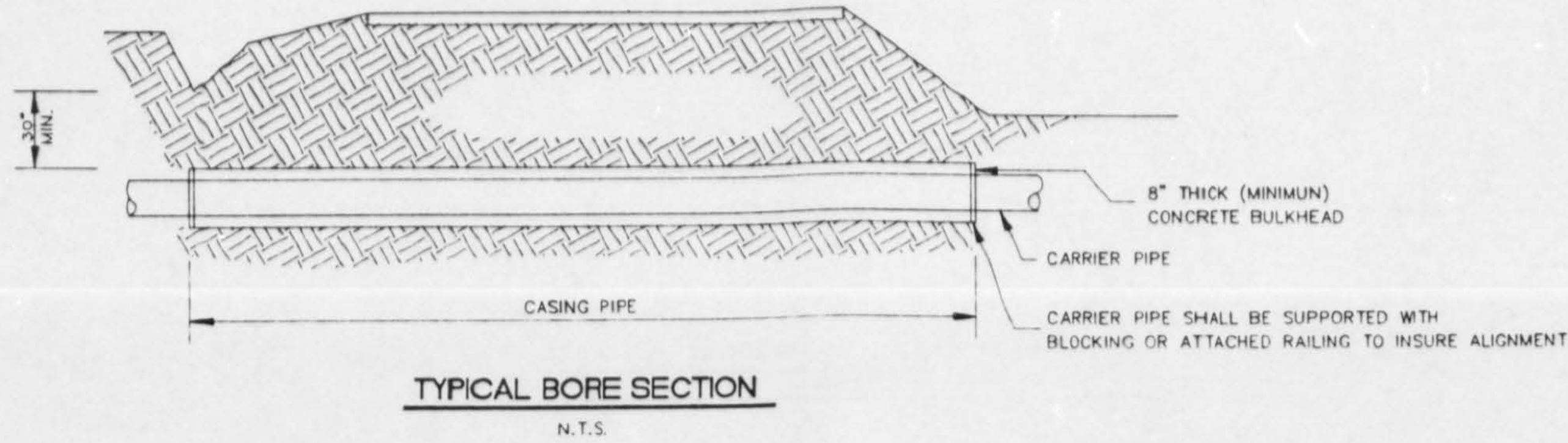
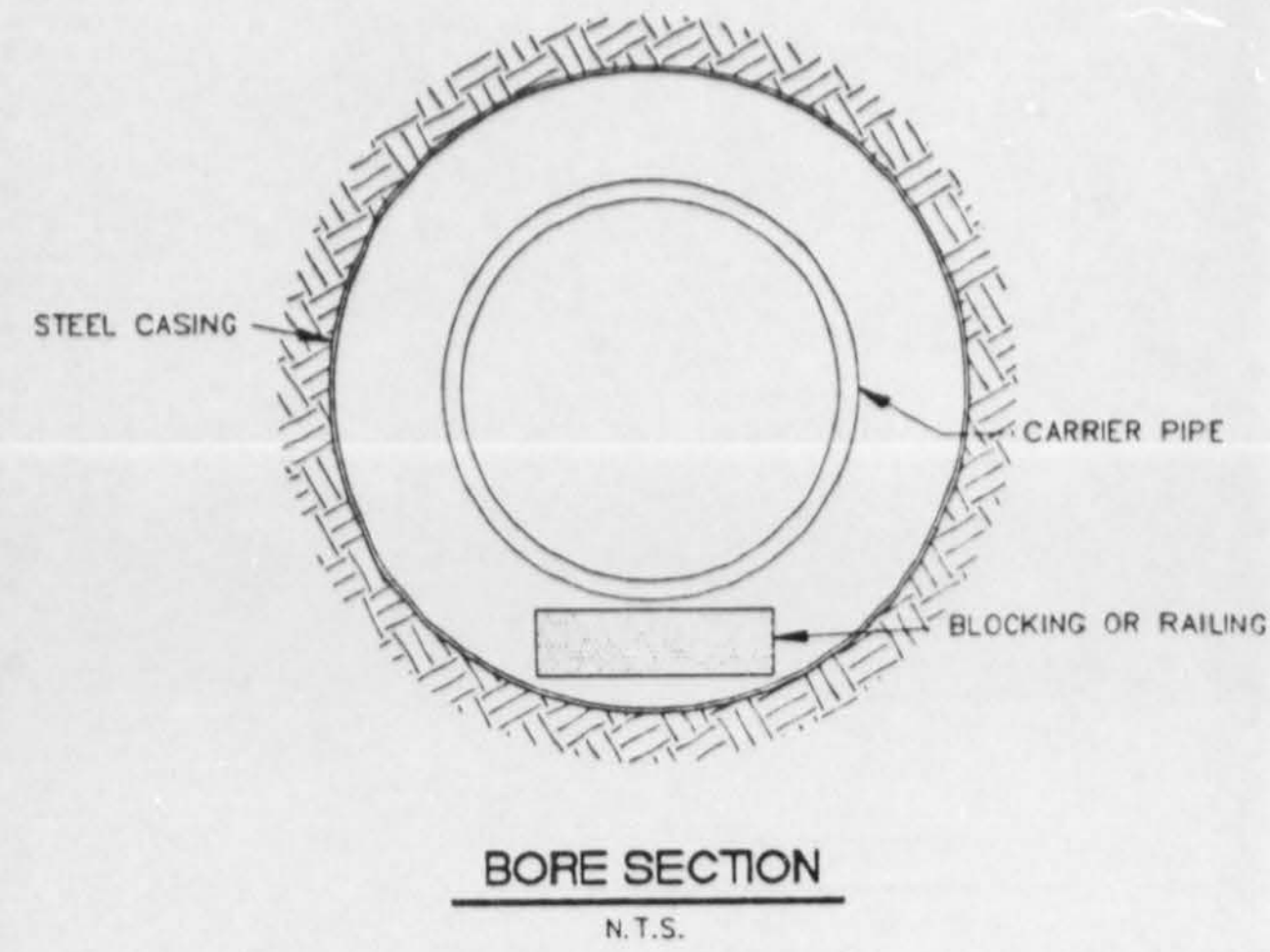
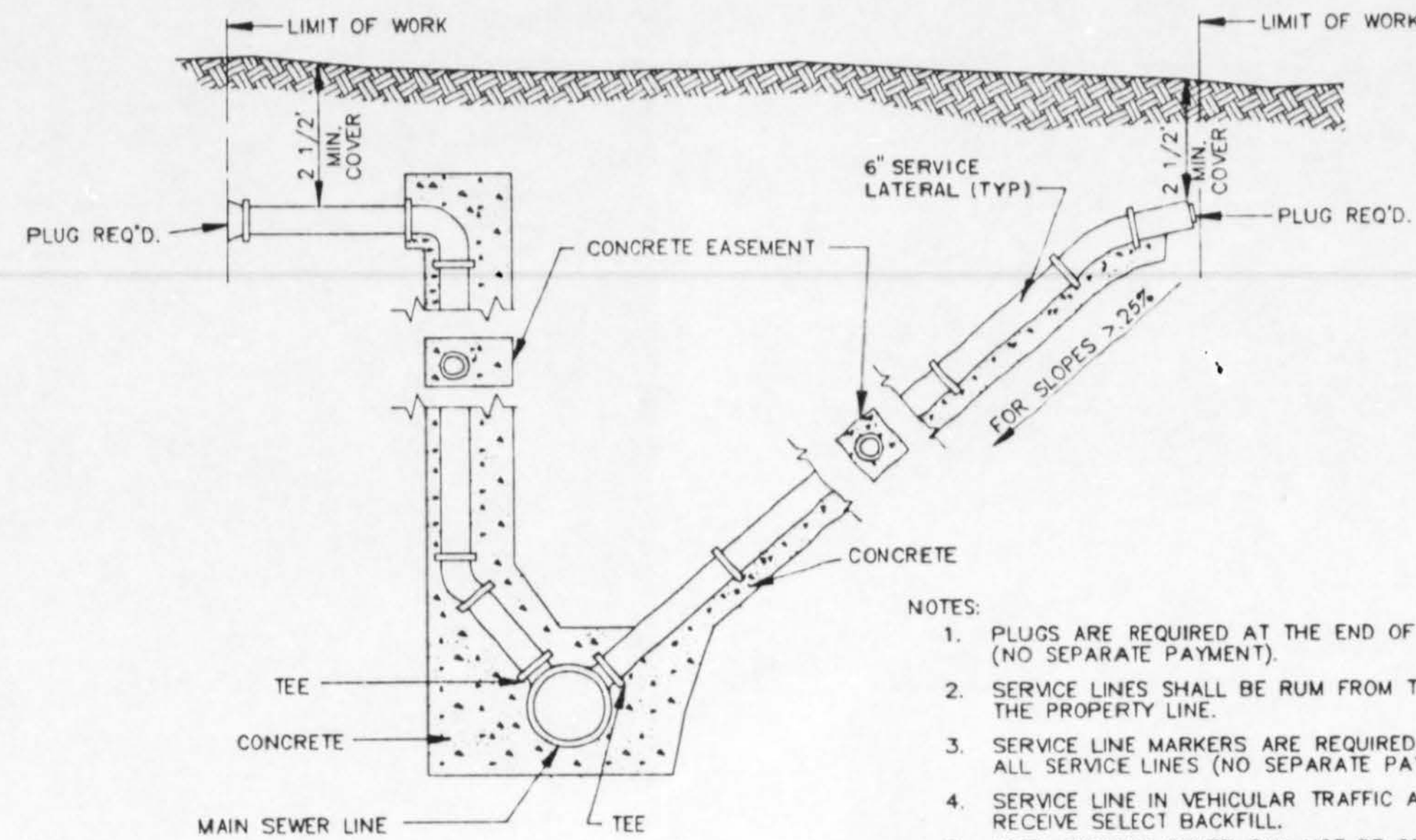


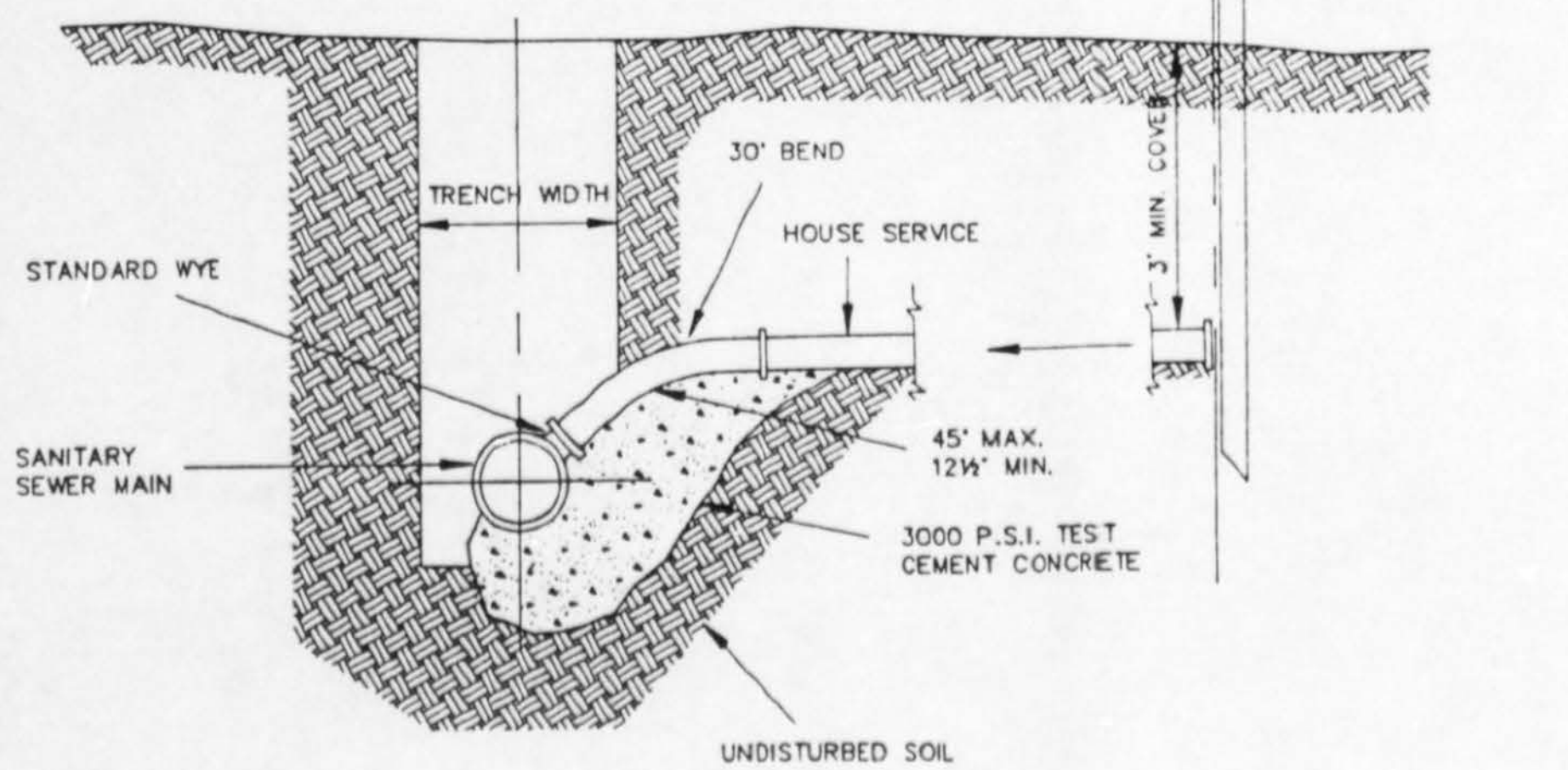
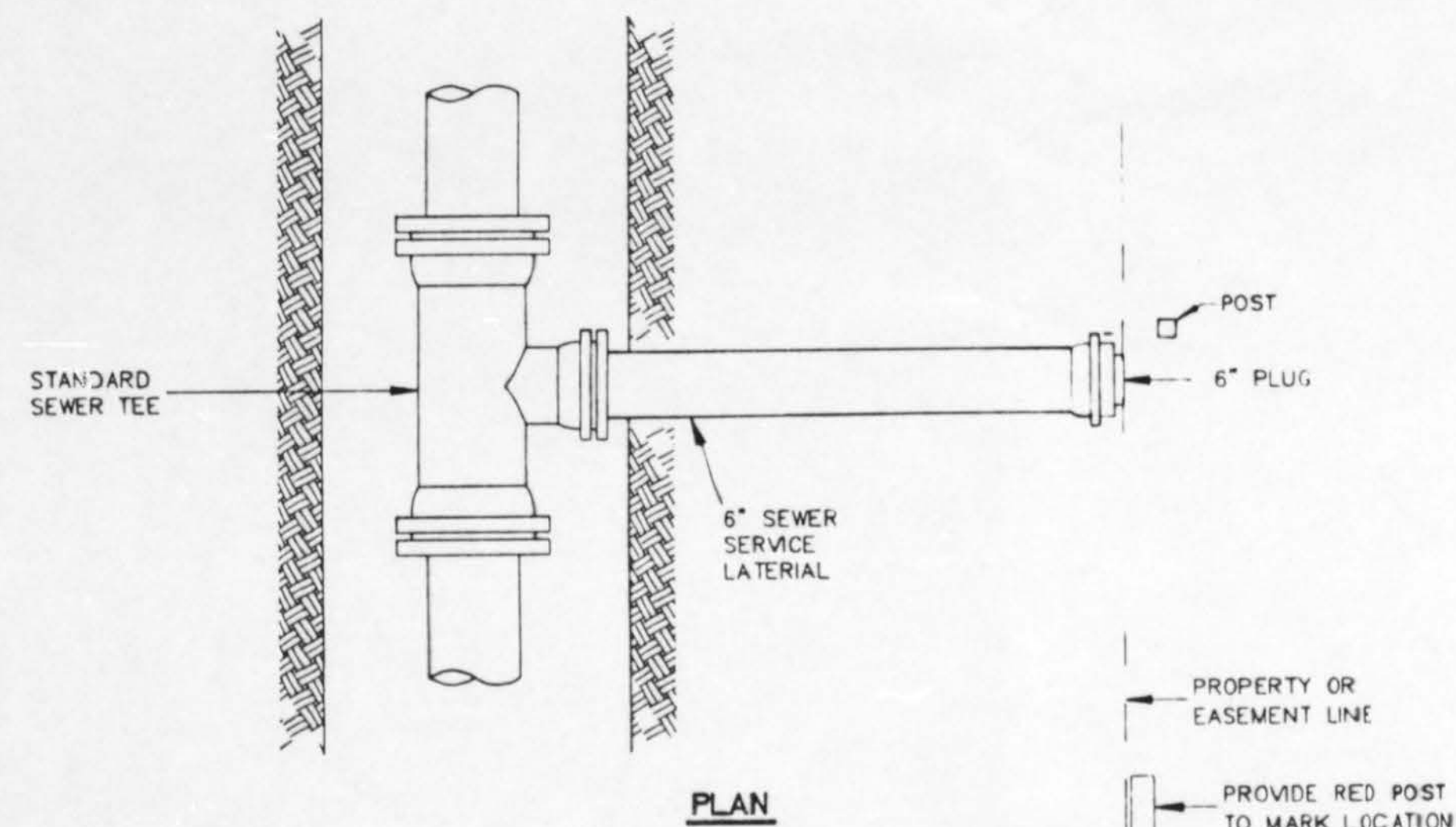
TABLE II
GOVERNING DIMENSIONS FOR MANHOLES

PIPE SIZE	ANGLE	BASE DIAMETER **	"R" *
8" THRU 12"	0° TO 90°	4'	1'-6"
15"	0° TO 60°	4'	1'-10"
15"	60° TO 90°	4'	1'-10"
18"	0° TO 60°	4'	2'-3"
18"	60° TO 90°	4'	1'-10"
21"	0° TO 60°	4'	2'-7"
21"	60° TO 90°	5'	2'-4"
24"	0° TO 45°	4'	3'-0"
24"	45° TO 90°	5'	2'-3"
30"	0° TO 60°	5'	3'-9"
30"	60° TO 90°	6'	2'-8"
36"	0° TO 60°	6'	4'-6"
36"	60° TO 90°	7'	3'-11"
42"	0° TO 60°	7'	5'-3"
42"	60° TO 90°	8'	4'-7"
48"	0° TO 60°	8'	6'-0"
48"	60° TO 90°	9'	5'-3"

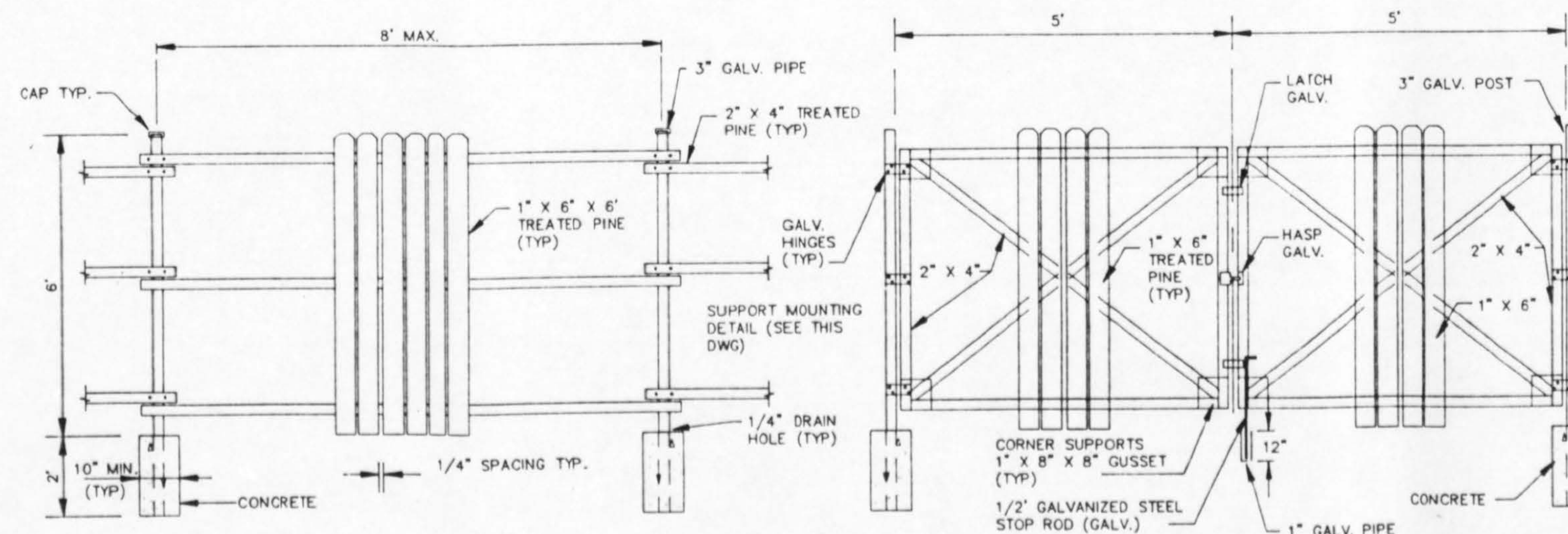
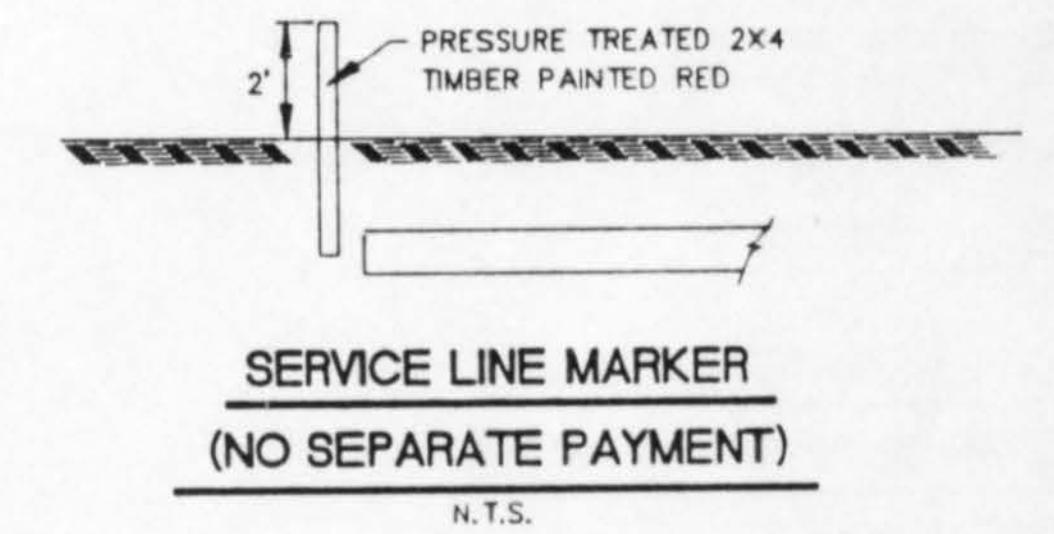
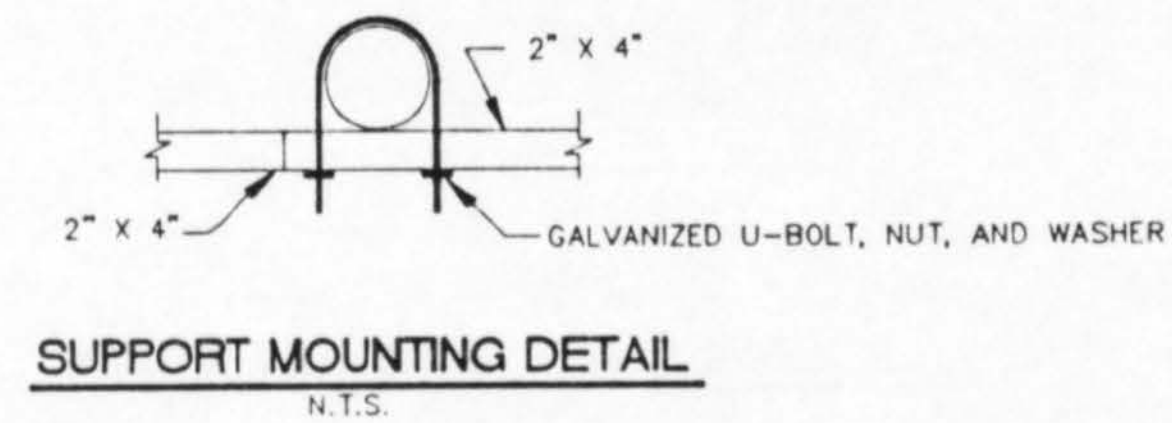
* SEE SECTIONAL PLAN, STANDARD MANHOLE
** PRECAST MANHOLE



- NOTES:
1. PLUGS ARE REQUIRED AT THE END OF ALL SERVICE LINES (NO SEPARATE PAYMENT).
 2. SERVICE LINES SHALL BE RUM FROM THE SEWER LINES TO THE PROPERTY LINE.
 3. SERVICE LINE MARKERS ARE REQUIRED AT THE END OF ALL SERVICE LINES (NO SEPARATE PAYMENT).
 4. SERVICE LINE IN VEHICULAR TRAFFIC AREA SHALL RECEIVE SELECT BACKFILL.
 5. WHEN MINIMUM COVER CAN NOT BE OBTAINED DUCTILE IRON PIPE SHALL BE USED.



SEWER SERVICE CONNECTION
N.T.S.



FENCE DETAIL
N.T.S.

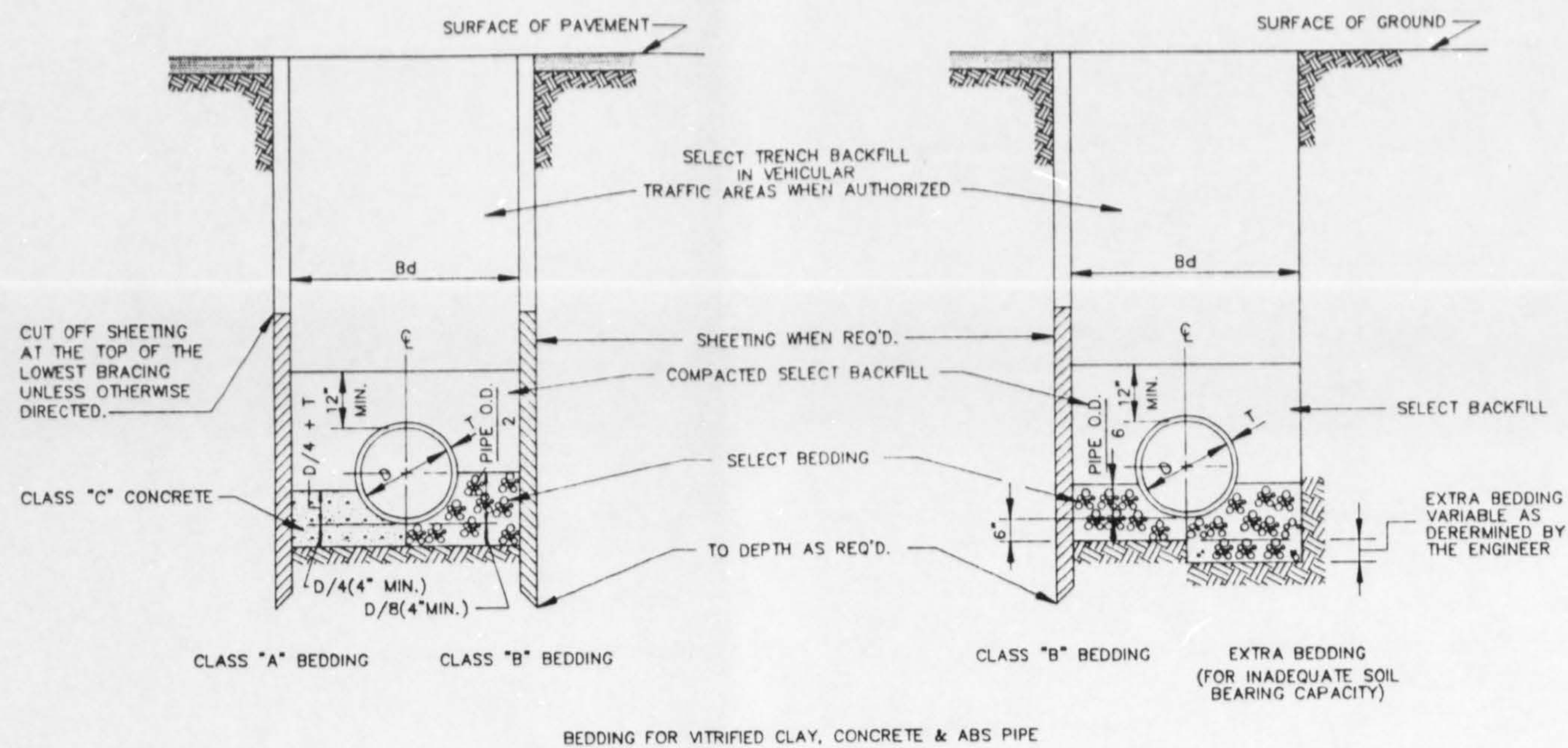
GATE DETAIL
N.T.S.

CITY OF RIDGELAND, MS.

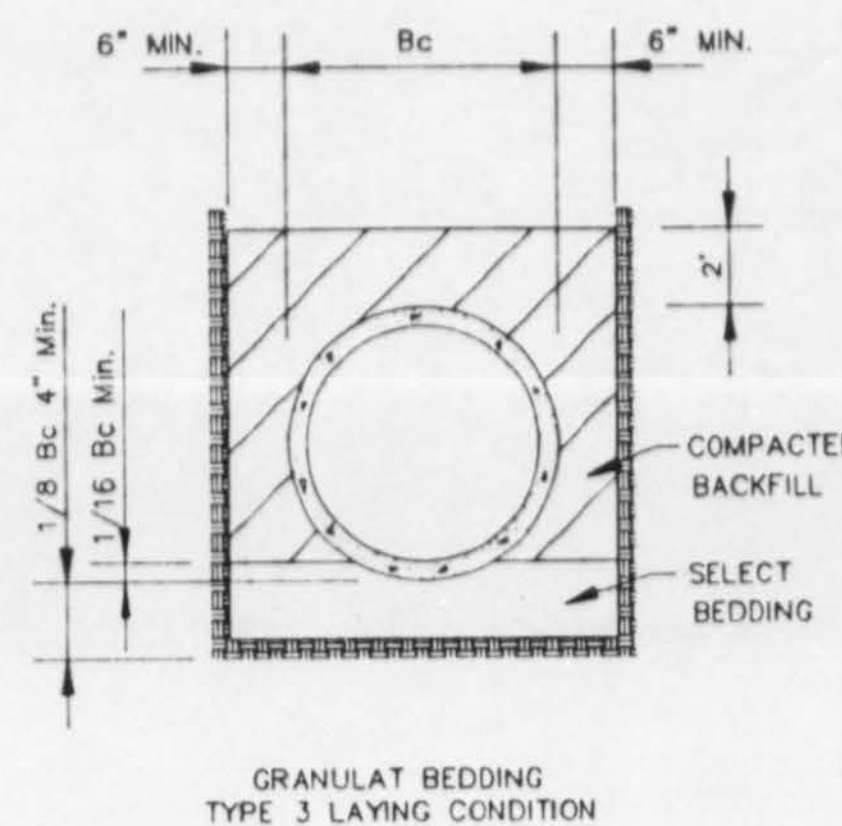
STANDARD DETAILS

DSGN: _____ DRAWING NO. _____
 DRWN: _____ OF _____
 CHKD: _____
 SCALE: _____

THE CITY OF
RIDGELAND



TYPICAL TRENCH DETAILS (FORCE MAIN)



CLASS "A" BEDDING
 MATERIAL SHALL BE CLASS "C" CONCRETE CRADLES. THE PIPE SHALL BE LAID ON CONCRETE SADDLES CONSTRUCTED TO PROVIDE VERTICAL AND LATERAL SUPPORT FOR THE PIPE WHILE THE CRADLE IS BEING PLACED. PIPE SUPPORTS OF WOOD BLOCKS, LOOSE BRICK, ETC., WILL NOT BE PERMITTED. THE CRADLE SHALL BE POURED AFTER THE JOINTS HAVE BEEN MADE, CARE BEING TAKEN TO PREVENT MOVEMENT OF THE PIPE. WHENEVER THE CONTRACTOR PLACES CONCRETE OUTSIDE THE DIMENSIONS SHOWN ON THE DRAWINGS, THE COST OF SUCH CONCRETE WILL BE AT THE CONTRACTOR'S EXPENSE.

CLASS "B" BEDDING
 MATERIAL SHALL BE SELECT BEDDING AS SPECIFIED. MATERIAL SHALL BE CAREFULLY PLACED AND THOROUGHLY COMPACTED BY TAMPING.

CLASS "C" BEDDING (STANDARD BEDDING)
 MATERIAL SHALL BE THE SAME AS FOR CLASS "B" BEDDING AND SHALL BE PLACED AS SHOWN BY STANDARD DETAILS FOR THE TYPE OF PIPE USED.

TABLE "A"
 PIPE SIZING

CARRIER PIPE (INCHES)	CASING PIPE	
	DIA. (INCHES)	STEEL PIPE WALL THICK.
8	16	1/4"
10	20	5/16"
12	24	3/8"
14 & 16	30	1/2"
18	36	1/2"
24	36	1/2"
30	54	1/2"
36	54	1/2"
42	66	SEE TABLE "B"
48	72	-
54	78	-
60	84	-
66	96	-
72	108	-
84	120	-
96	144	-

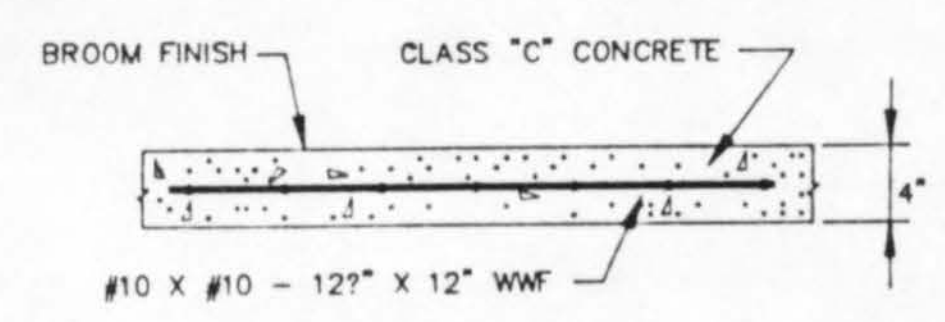
TABLE "B"
 GAGES OF LINER PLATE FOR CONTINUOUS LOAD-CARRYING STRUCTURES

NOMINAL DIA. (INCHES)	HEIGHT OF COVER (FEET)									
	2-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50
48	12	12	12	12	12	12	12	12	12	10
54	12	12	12	12	12	12	12	12	10	8
60	12	12	12	12	12	12	12	12	8	7
66	12	12	12	12	12	10	8	8	5	5
72	12	12	12	12	12	10	8	7	5	5
78	12	12	12	12	10	8	7	5	5	5
84	12	12	12	10	10	8	5	5	5	5
96	12	10	10	10	10	8	5	5	5	5
108	10	10	10	10	8	7	5	5	5	5
120	10	10	10	8	8	7	5	5	3	3
144	8	8	8	8	5	5	3	1	1	1

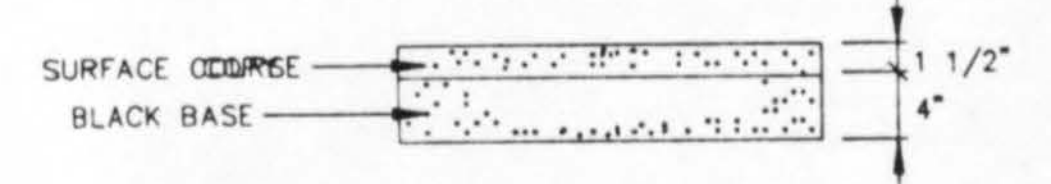
MIN. THICKNESS FOR LINER PLATE CASING IN RAILROAD CROSSING-10 GAGE

CASING PIPE

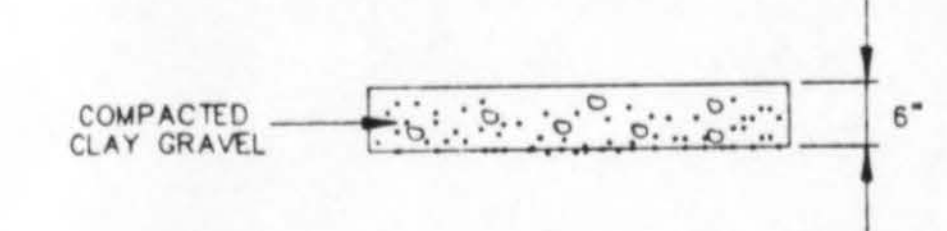
SIZE AND THICKNESS OF PIPE FOR RAILROAD & HIGHWAY CROSSING



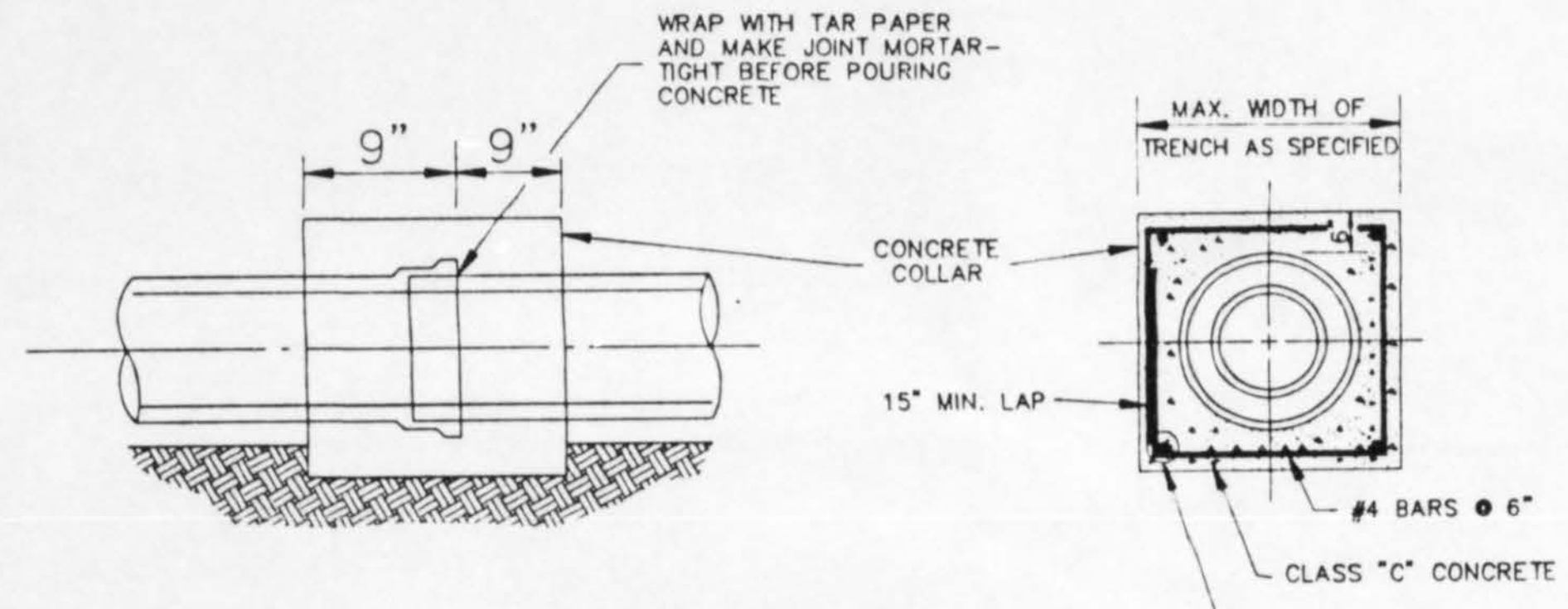
TYPICAL CONC. DRIVEWAY AND SIDEWALK REPAIR



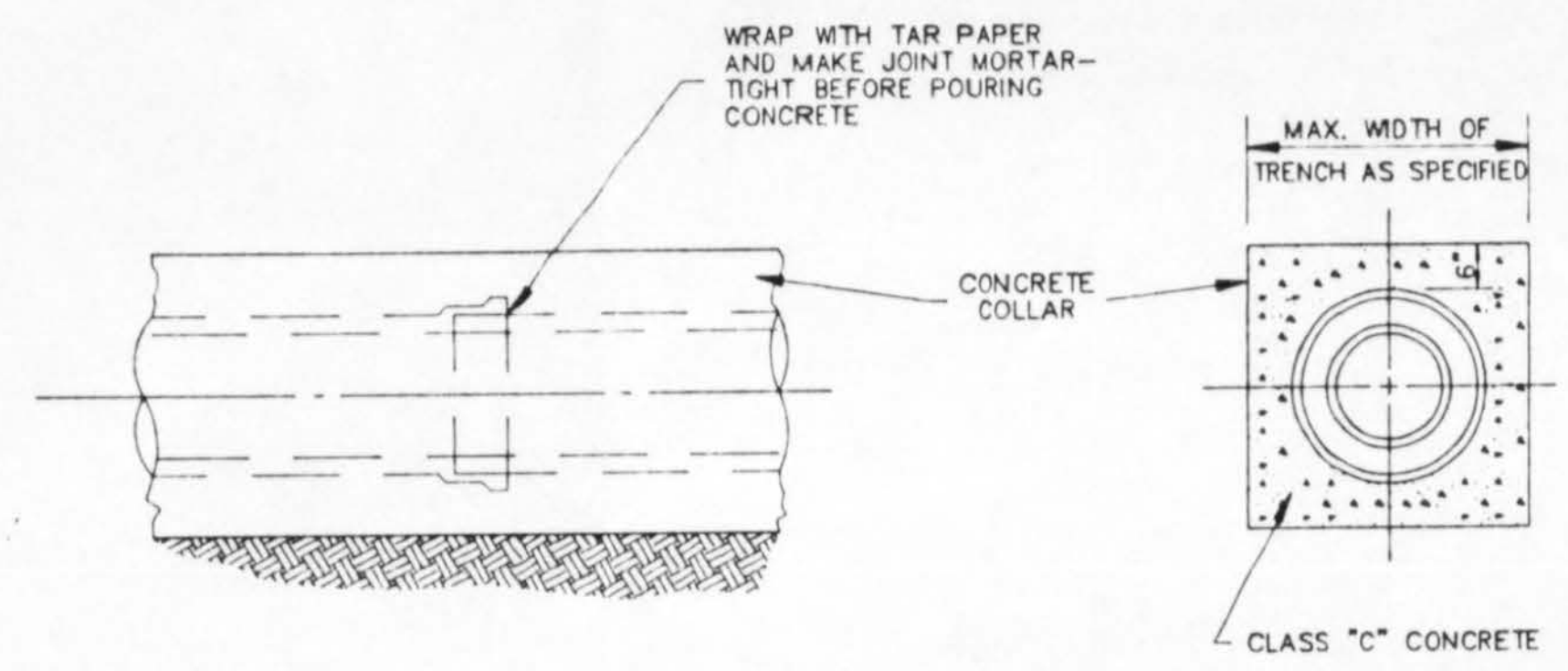
TYPICAL ASPHALT DRIVEWAY REPAIR



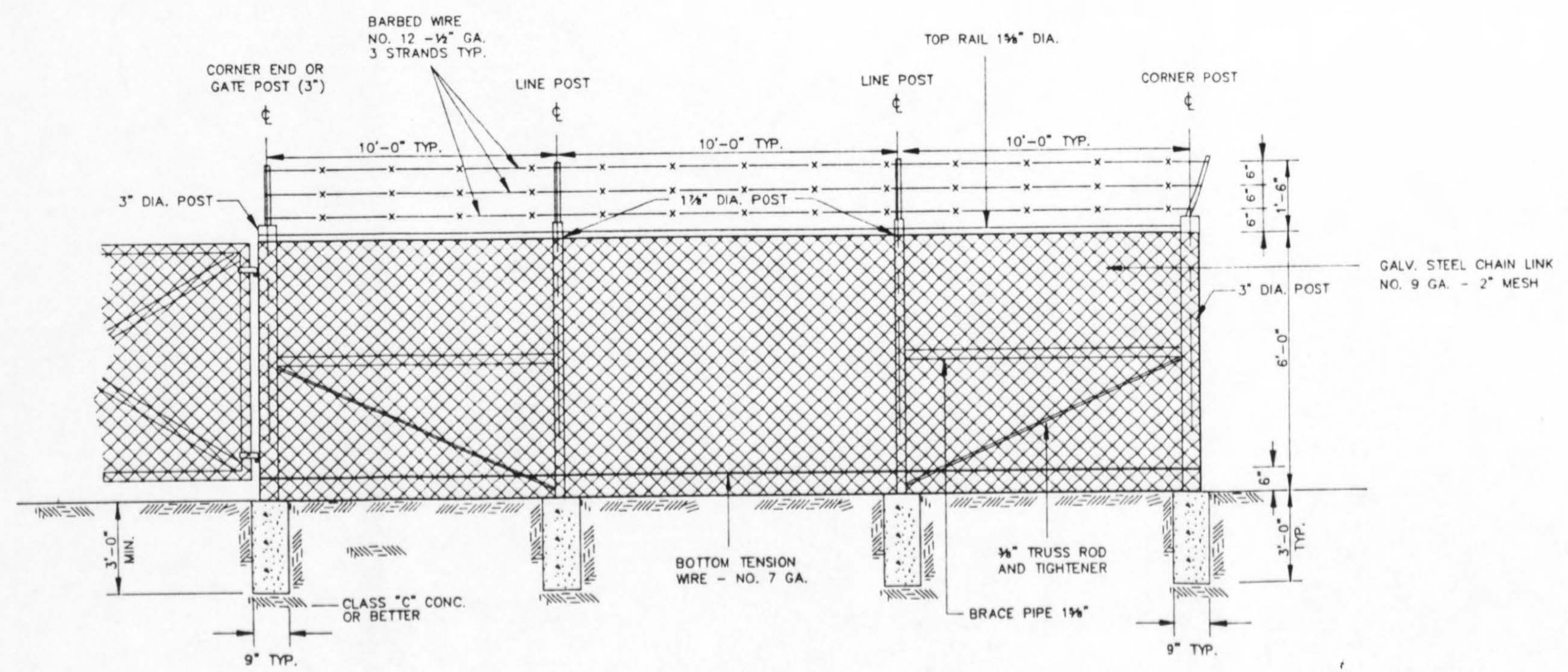
TYPICAL GRAVEL DRIVEWAY REPAIR



TYPICAL DETAIL OF CONCRETE COLLAR
 N.T.S.



TYPICAL DETAIL OF CONCRETE ENCASEMENT
 N.T.S.

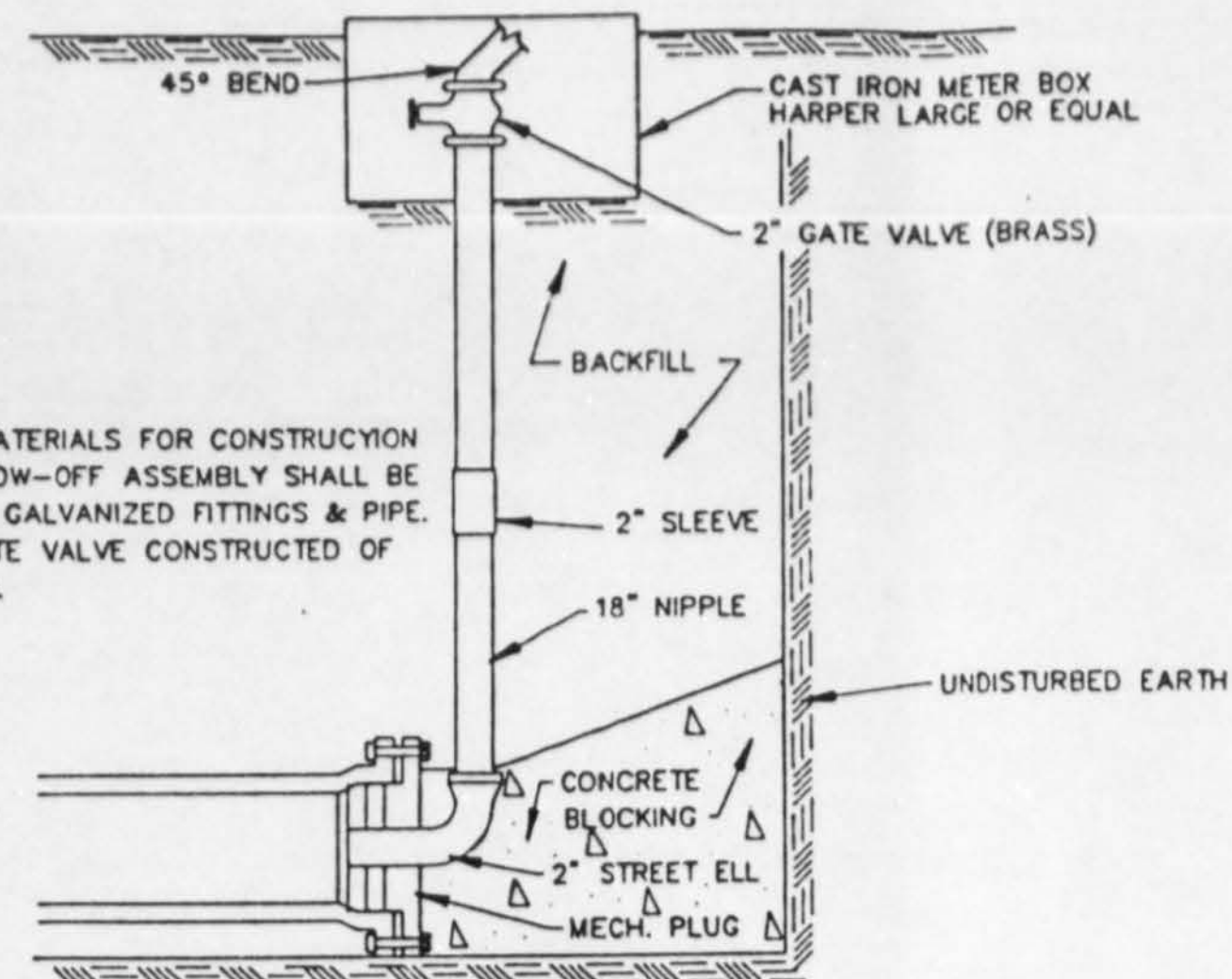


CHAIN LINK FENCE DETAIL
 N.T.S.

CITY OF RIDGELAND, MS.

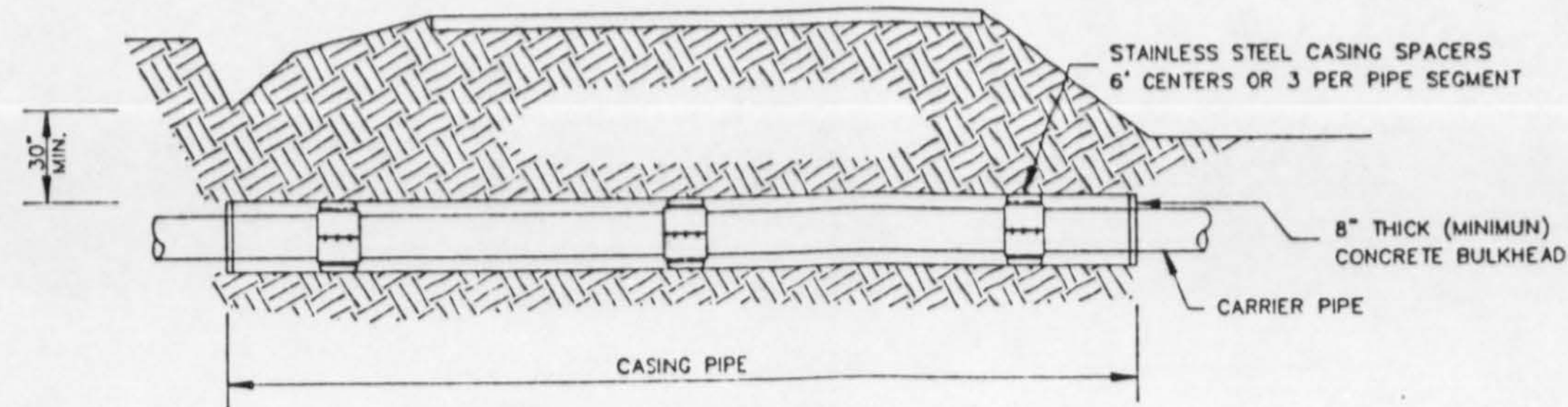
STANDARD DETAILS

DSGN:			DRAWING NO.
DRWN:			OF
CHKD:			
SCALE:			

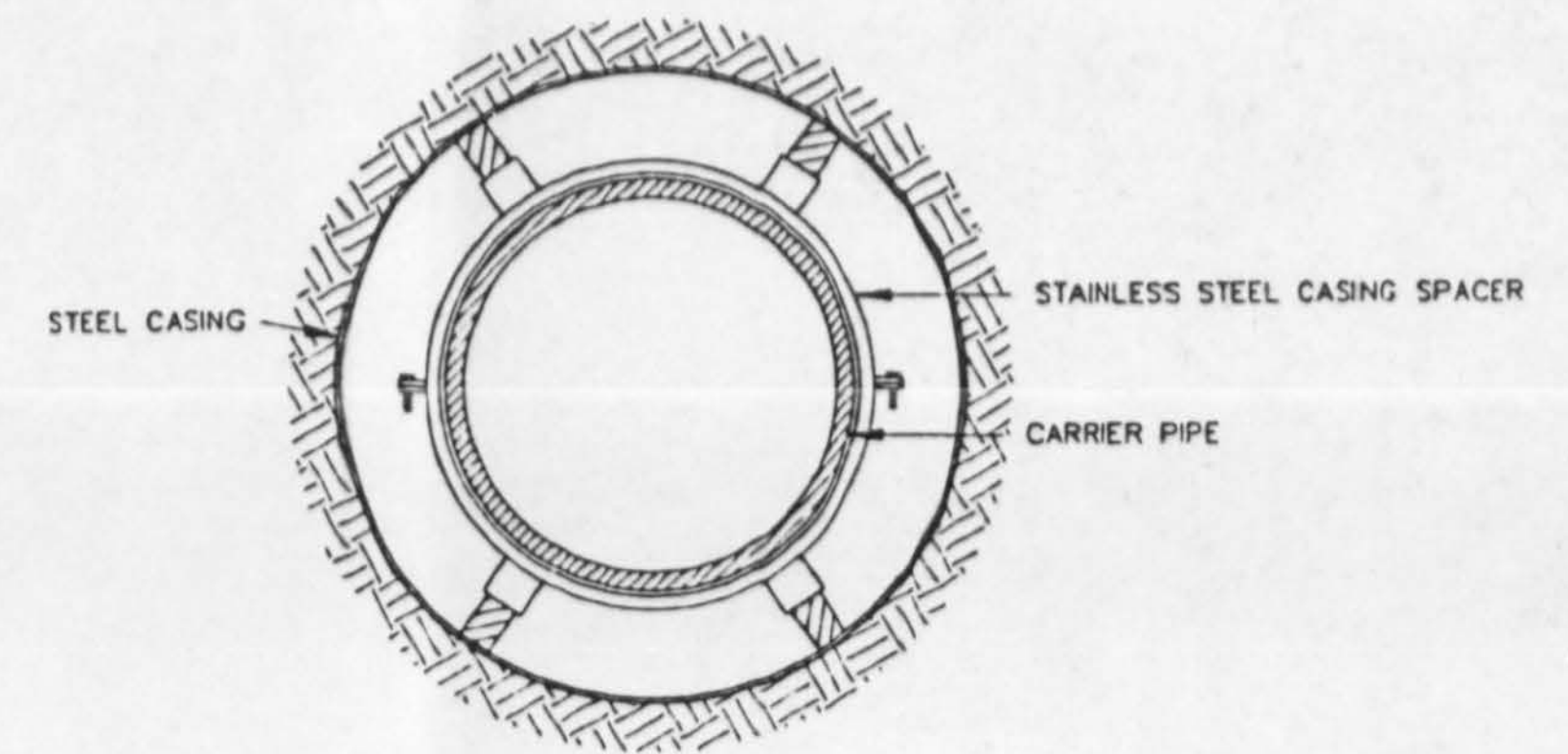


NOTE:
ALL MATERIALS FOR CONSTRUCTION OF BLOW-OFF ASSEMBLY SHALL BE OF 2" GALVANIZED FITTINGS & PIPE. 2" GATE VALVE CONSTRUCTED OF BRASS.

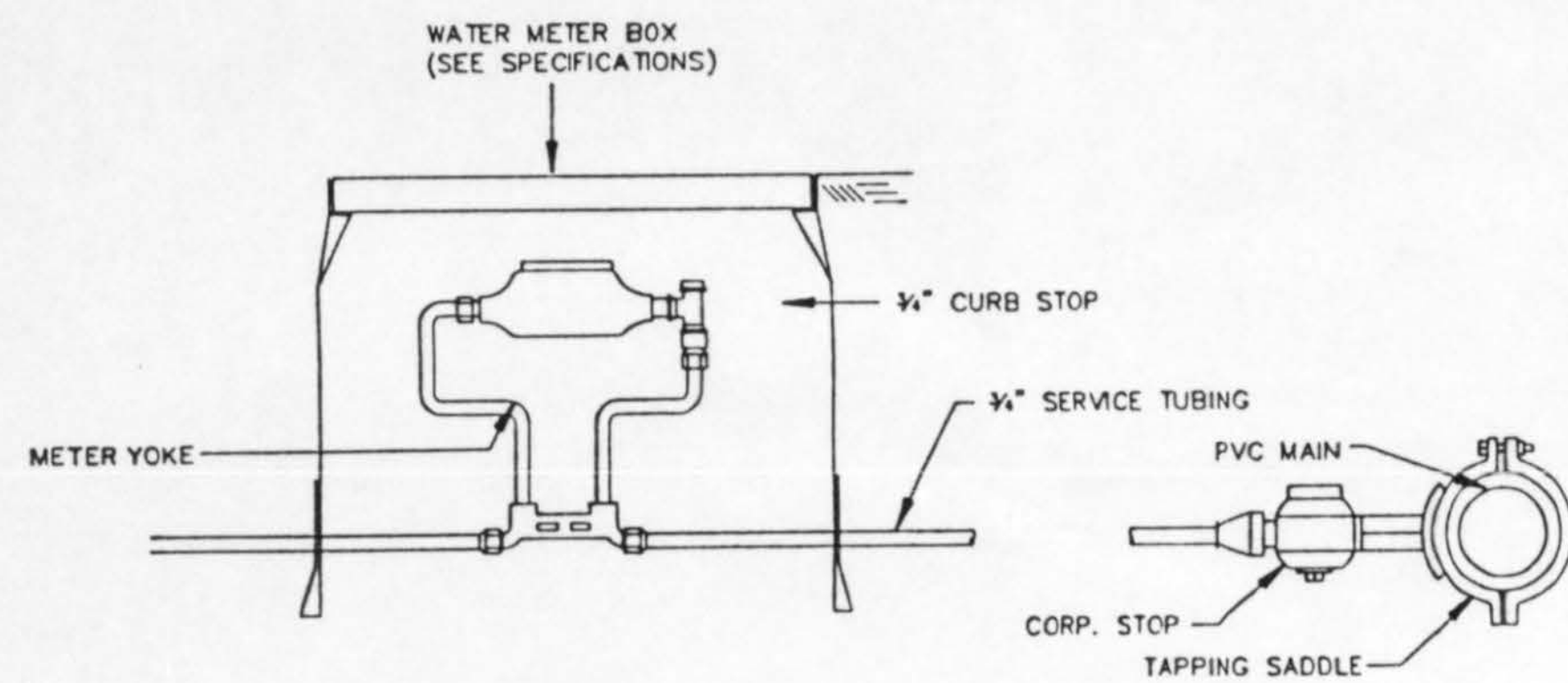
TYPICAL BLOW-OFF ASSEMBLY
N.T.S.



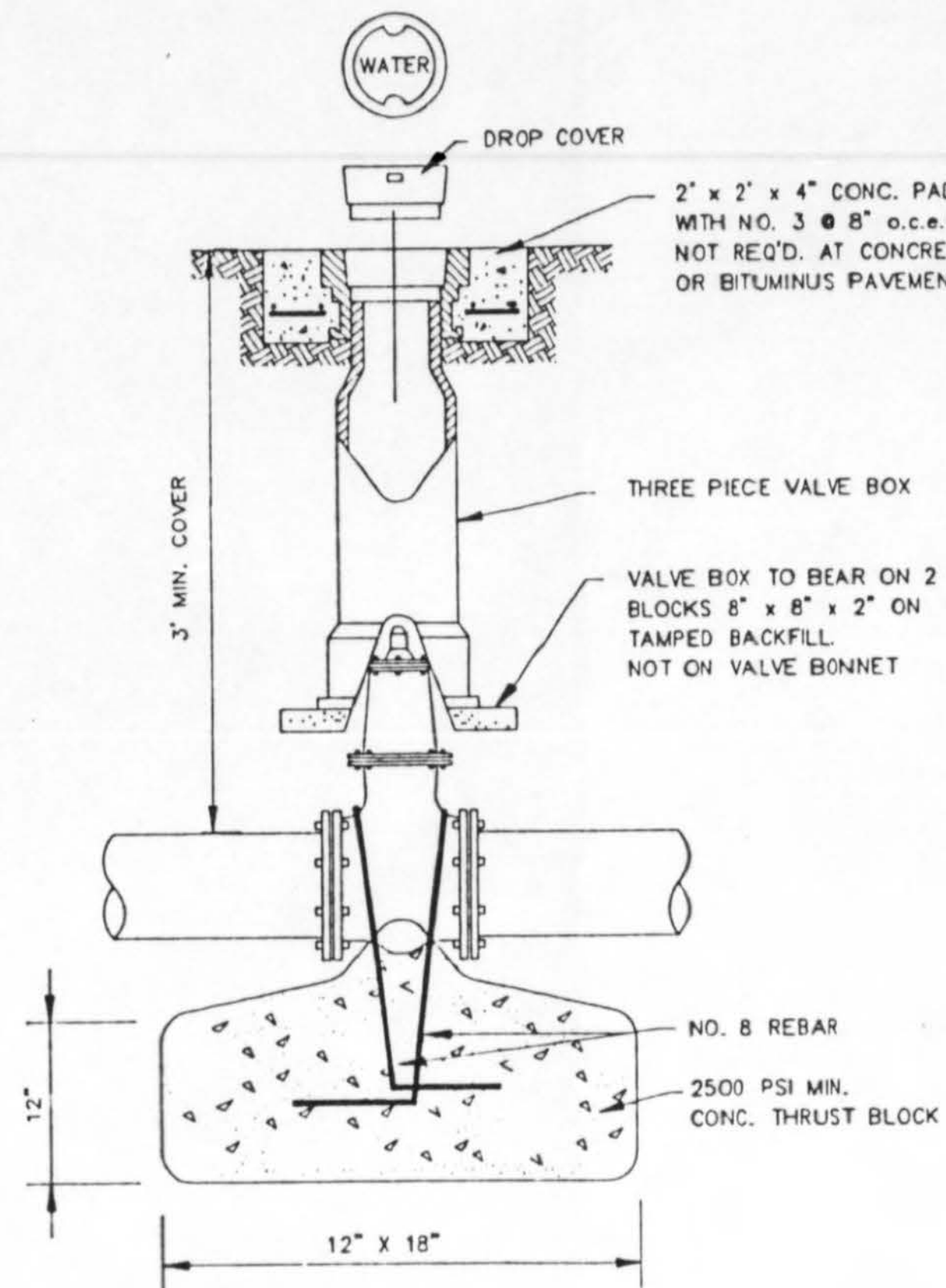
TYPICAL BORE SECTION
N.T.S.



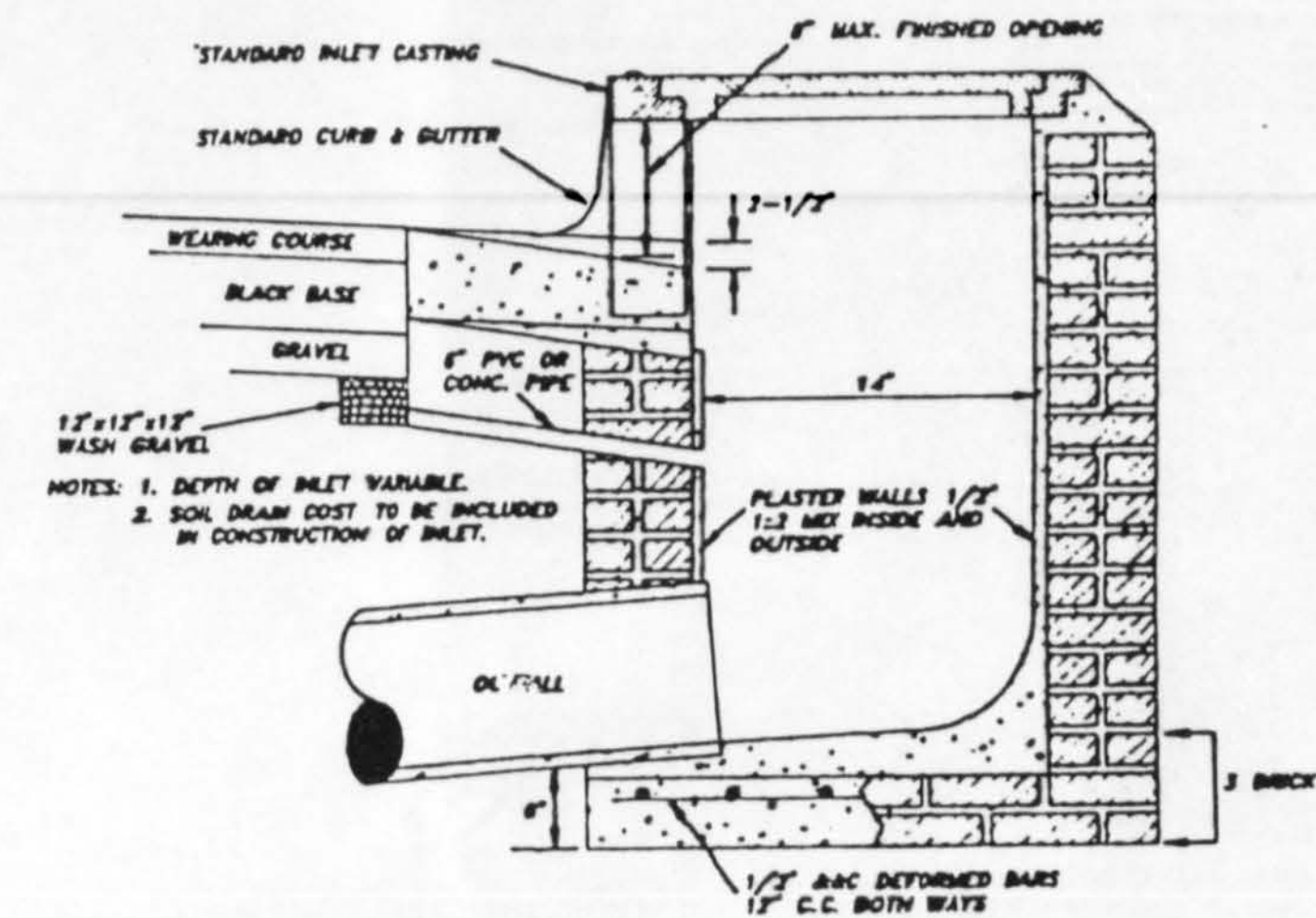
BORE SECTION
N.T.S.



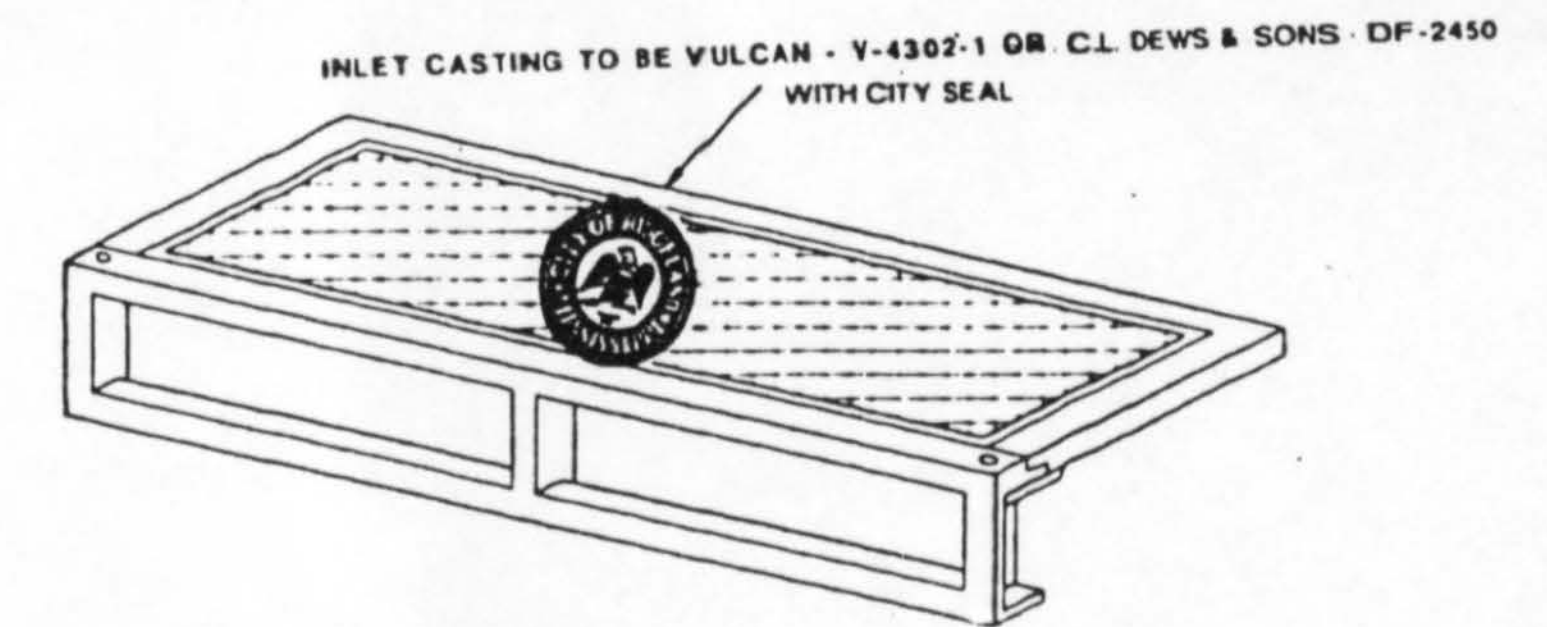
TYPICAL 3/4" WATER SERVICE
N.T.S.



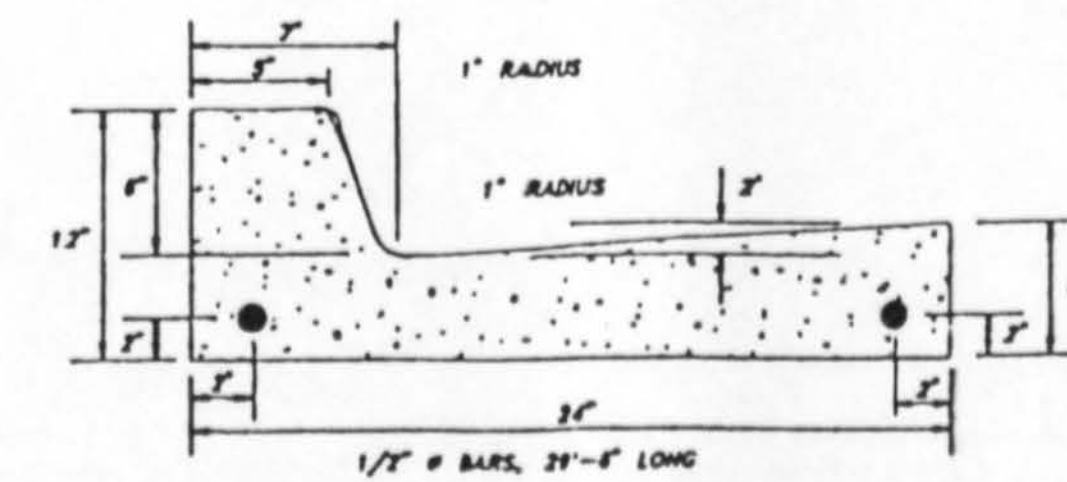
GATE VALVE DETAIL
N.T.S.



SECTION OF STANDARD CURB INLET



STANDARD CURB INLET CASTING



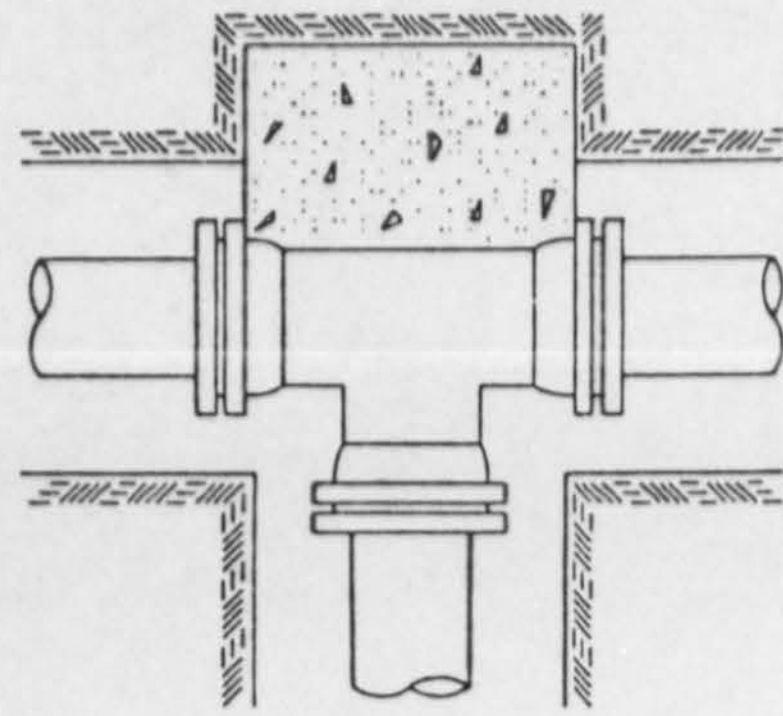
NOTES: 1. ALL CURBS, GUTTERS & DRIVEWAYS TO BE CONSTRUCTED OF 3000 LB. CONCRETE.
2. 3 - 1/2" DOWEL BARS, 15" LONG REQ'D. AT EXPANSION JOINTS. THEY SHALL BE HELD IN PLACE BY APPROVED CHAIRS OR SUPPORTS AND 1/2" EXPANSION MATERIALS.

STANDARD CURB & GUTTER

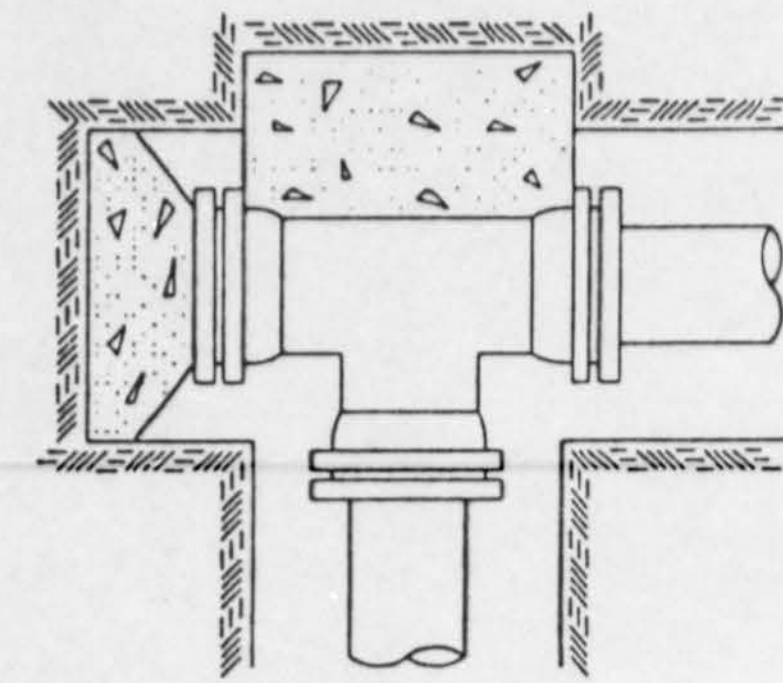
CITY OF RIDGELAND, MS.

STANDARD DETAILS

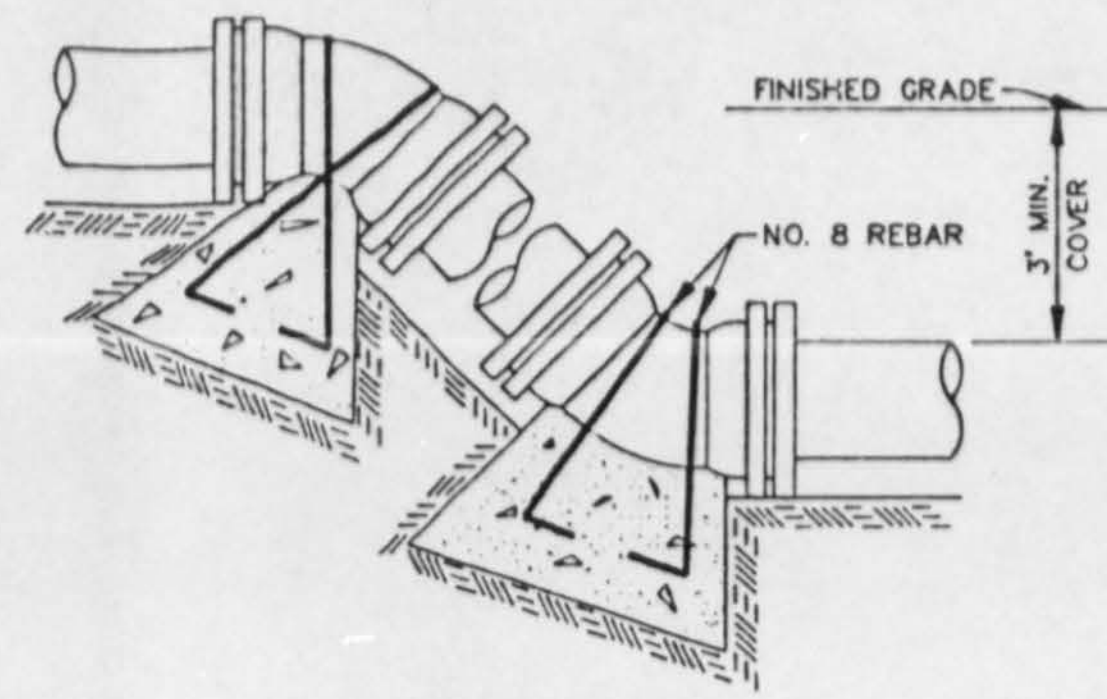
DSGN			DRAWING NO.
DRWN			OF
CHKD			
SCALE			



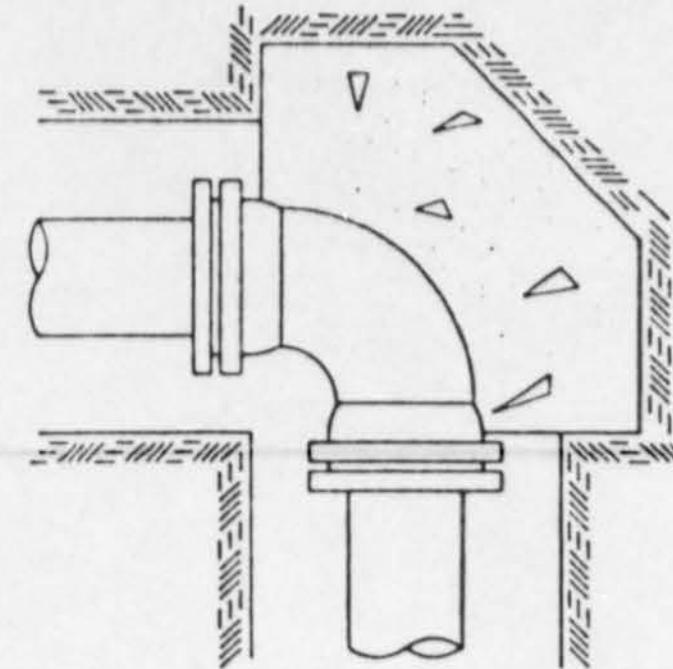
TEE



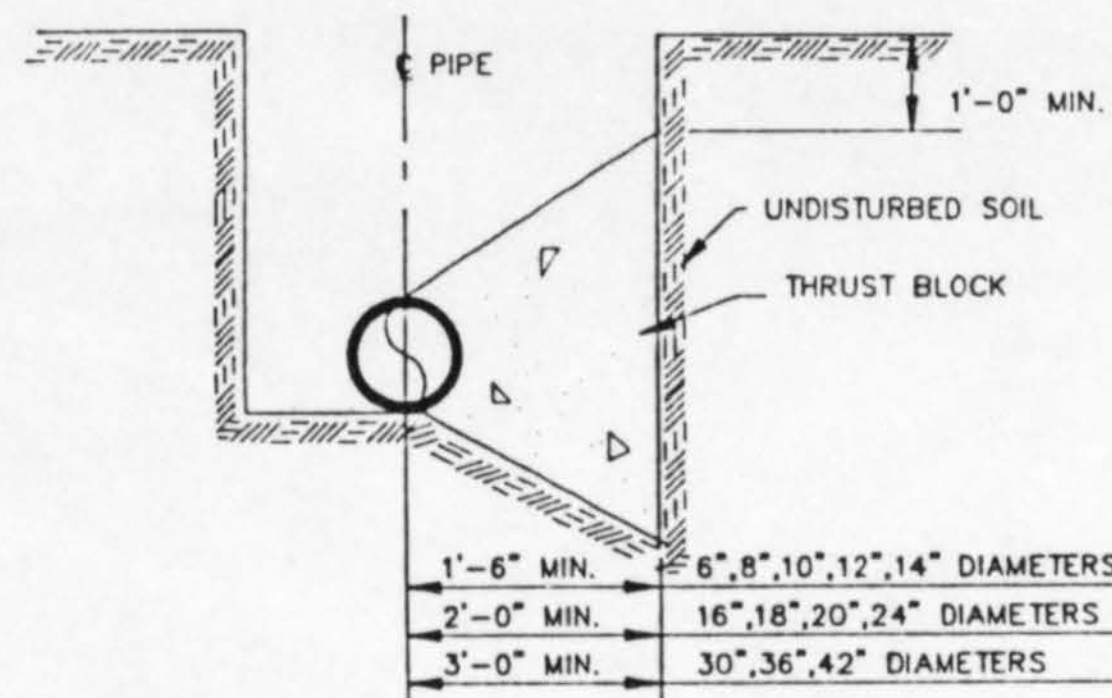
PLUGGED TEE



VERTICAL BENDS



90° BEND



TYPICAL CROSS SECTION

TYPICAL THRUST BLOCKING IN WATER MAINS AND SEWAGE FORCE MAINS

N.T.S.
NOTE: ALL THRUST BLOCKS 2,500 PSI CONCRETE AGAINST UNDISTURBED EARTH

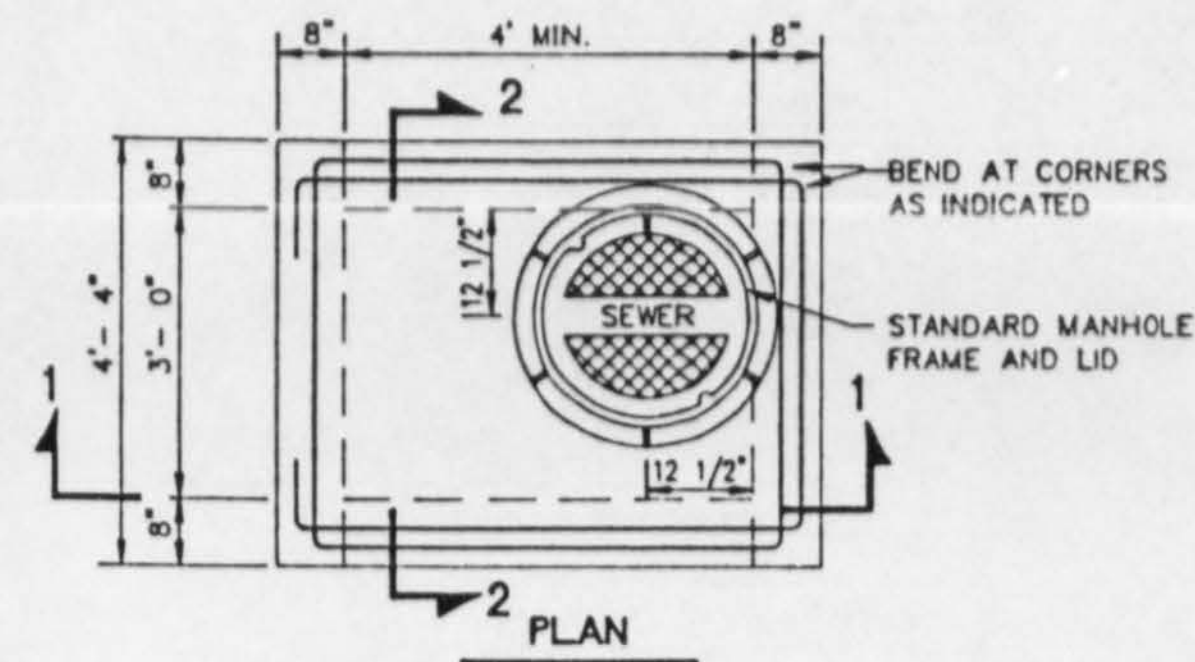
BEARING AREA IN SQ. FT.

NOMINAL PIPE DIAMETER (IN)	VERTICAL BENDS					NOMINAL PIPE DIAMETER (IN)	VERTICAL BENDS				
	DEAD-END OR TEE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND		DEAD-END OR TEE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
6	2.5	3.0	2.0	2.0	2.0	6	—	—	26.0(1.0)	14.0(.5)	7.0(.3)
8	4.0	6.0	3.0	2.0	2.0	8	—	—	45.0(1.7)	25.0(.9)	13.0(.5)
10	6.0	9.0	5.0	2.5	2.0	10	—	—	68.0(2.5)	37.0(1.4)	19.0(.7)
12	9.0	11.0	6.0	3.5	2.0	12	—	—	97.0(3.6)	52.0(1.9)	27.0(1.0)
14	12.0	18.0	9.0	5.0	2.5	14	—	—	130(4.8)	70.0(2.6)	36.0(1.3)
16	16.0	22.5	12.0	6.0	3.0	16	—	—	168(6.2)	91.0(3.4)	46.0(1.7)
18	20.0	28.0	15.0	8.0	4.0	18	—	—	211(7.8)	114(4.2)	58.0(2.2)
20	24.5	34.0	19.0	10.0	5.0	20	—	—	259(9.6)	140(5.2)	72.0(2.6)
24	35.0	49.0	27.0	14.0	7.0	24	—	—	370(13.7)	200(7.4)	102(3.8)
30	54.0	76.0	41.0	21.0	10.0	30	—	—	568(21.1)	308(11.4)	156(5.8)
36	77.0	108.0	59.0	30.0	15.0	36	—	—	814(30.1)	440(16.3)	225(8.3)
42	104.0	146.0	79.0	40.0	20.0	42	—	—	1100(40.7)	595(22.0)	303(11.2)

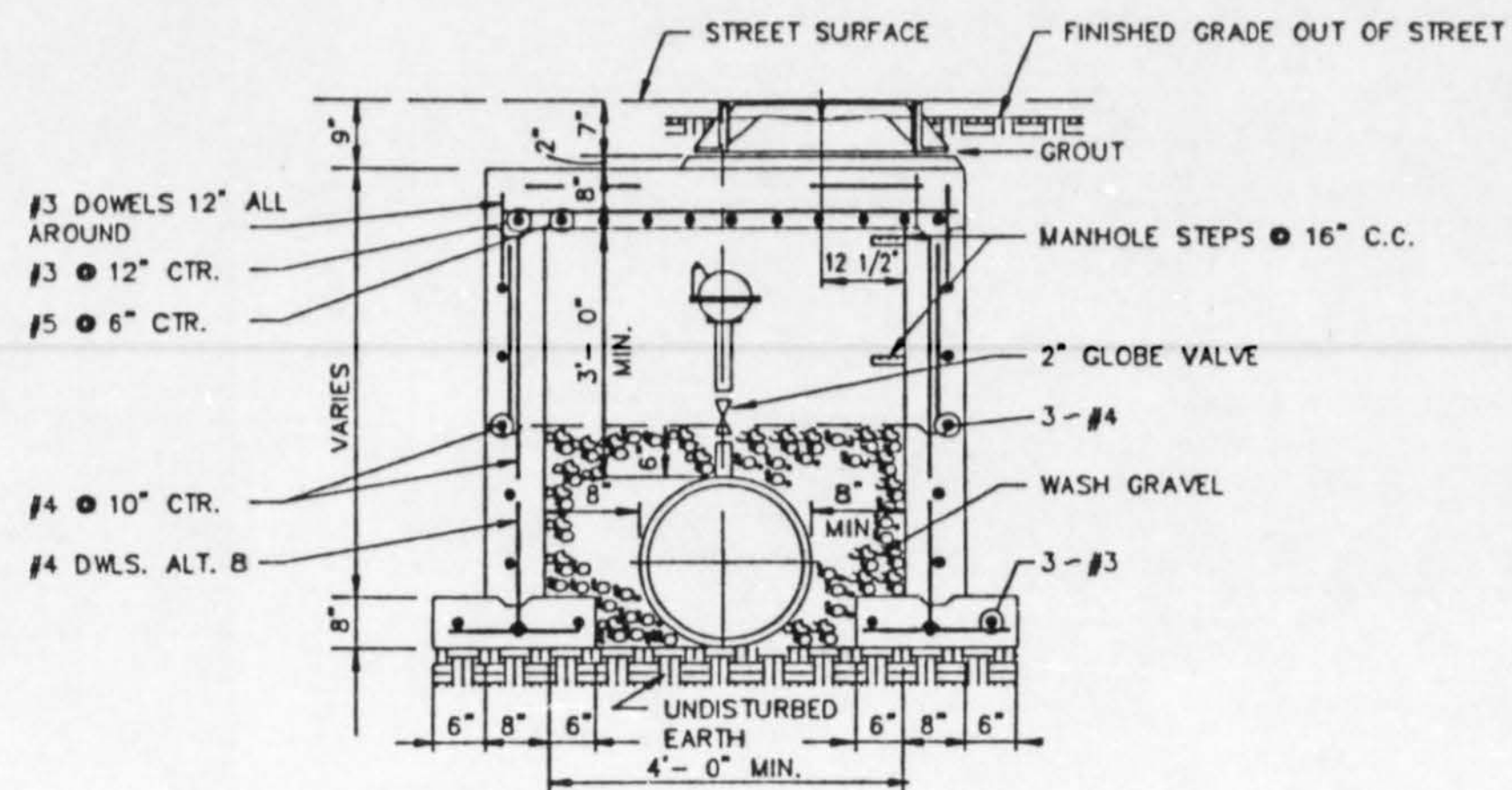
VOLUME OF BLOCKS INCLUDING SOIL LOAD CU. FT. (CU. YDS.)

NOTE: ABOVE VALUES CALCULATED USING P=100 AND ALLOWANCE. SOIL BRG. = 1500 PSF. FOR DIFFERENT P, MULTIPLY ABOVE VALUES BY P/100. FOR DIFFERENT SOIL BRG, MULTIPLY ABOVE VALUES BY 1500/S.B.

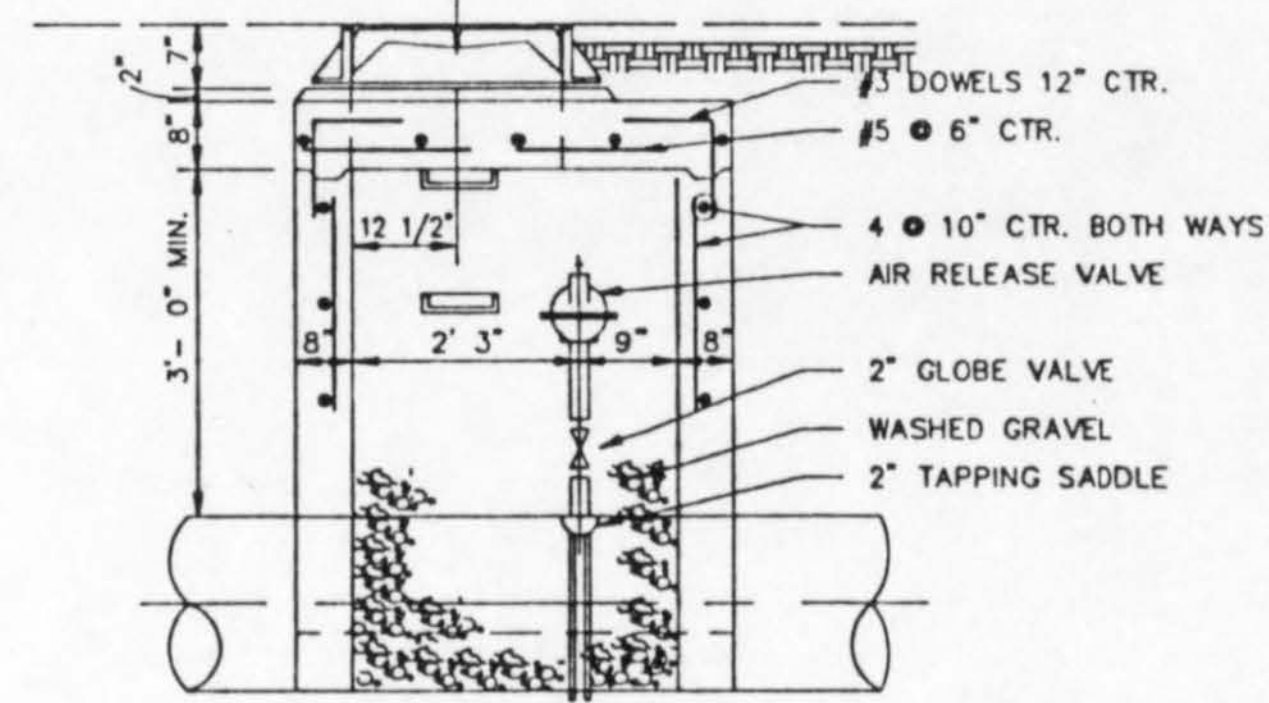
NOTE: ABOVE VALUES REPRESENT THE VOLUME OF BLOCKS INCLUDING SOIL LOAD IN CU.FT. (CU.YDS.) THE VALUES WERE CALCULATED USING A P=100 PSI AND A S.F.=1.5. FOR DIFFERENT P, MULTIPLY VALUES BY P/100.



PLAN



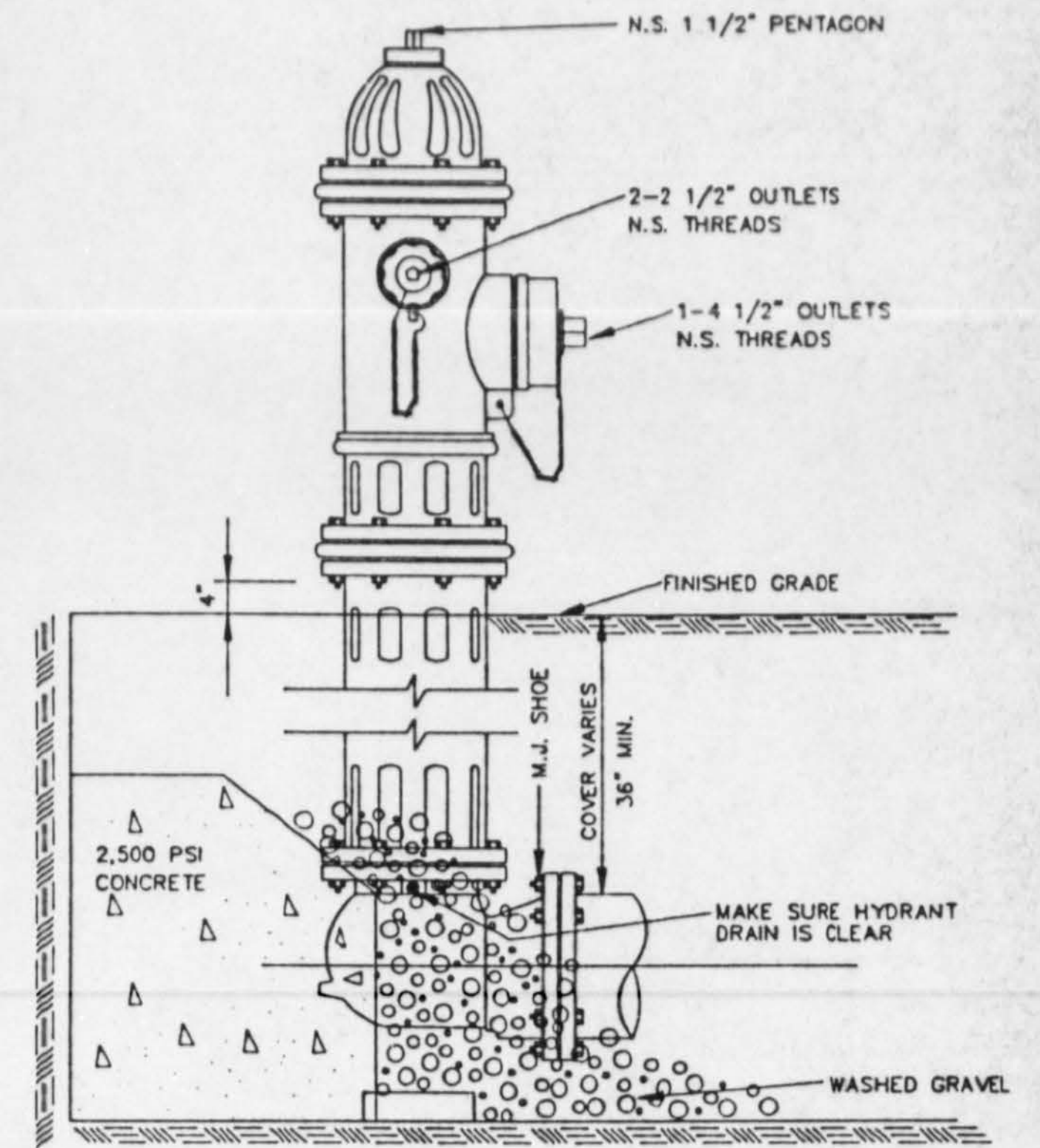
SECTION 1-1



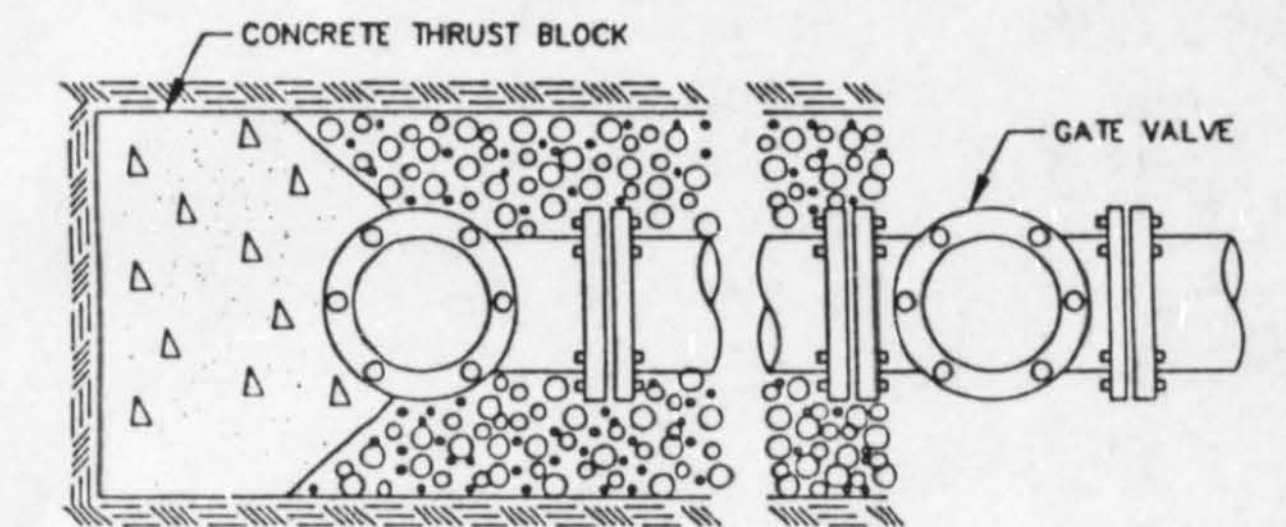
SECTION 2-2

TYPICAL AIR OR AIR VACUUM RELEASE VALVE INSTALLATION WITH MANHOLE

NOT TO SCALE



ELEVATION

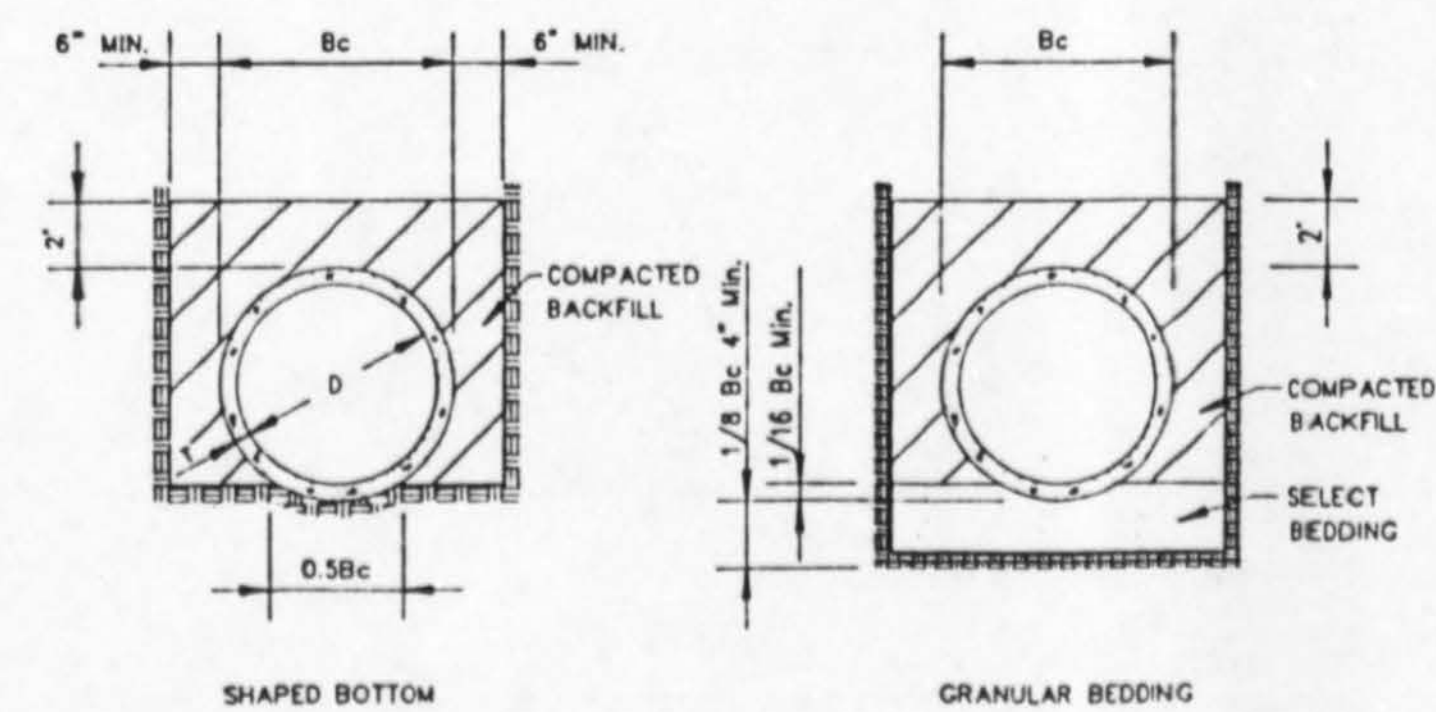


PLAN

TYPICAL FIRE HYDRANT INSTALLATION

NOTE: GATE VALVES WILL BE REQUIRED ON ALL FIRE HYDRANT LEGS. N.T.S.

ANCHOR COUPLINGS REQ'D.



CLASS C

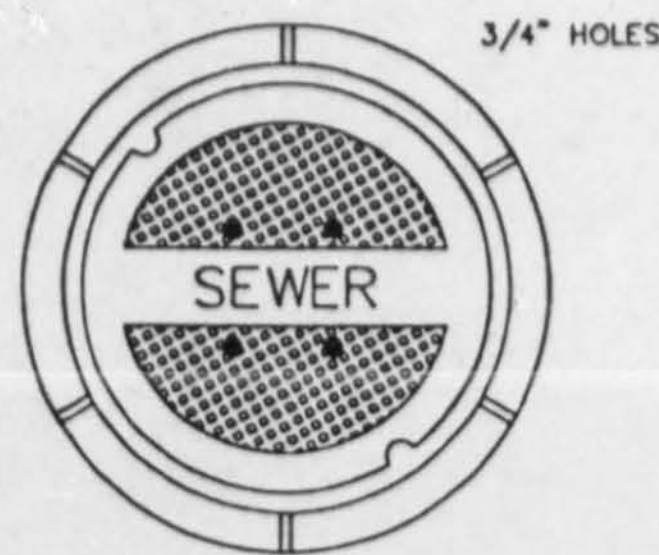
TYPICAL TRENCH DETAILS

N.T.S.

CITY OF RIDGELAND, MS.

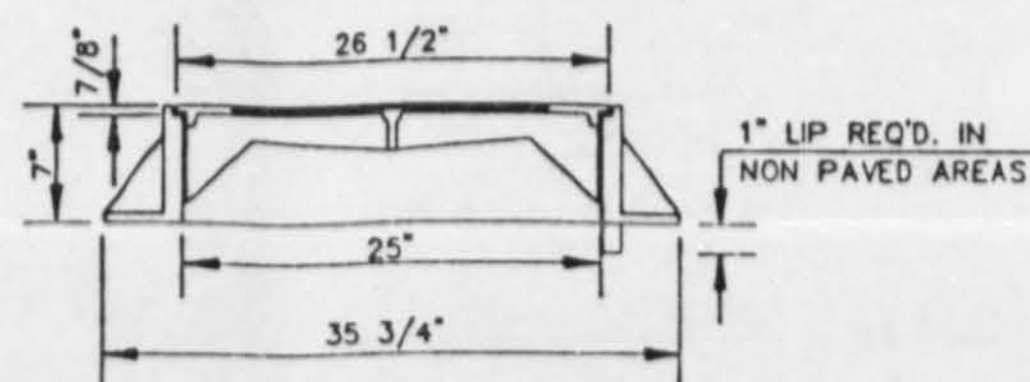
STANDARD DETAILS

DSGN:			DRAWING NO.
DRWN:			
CHKD:			
SCALE:			

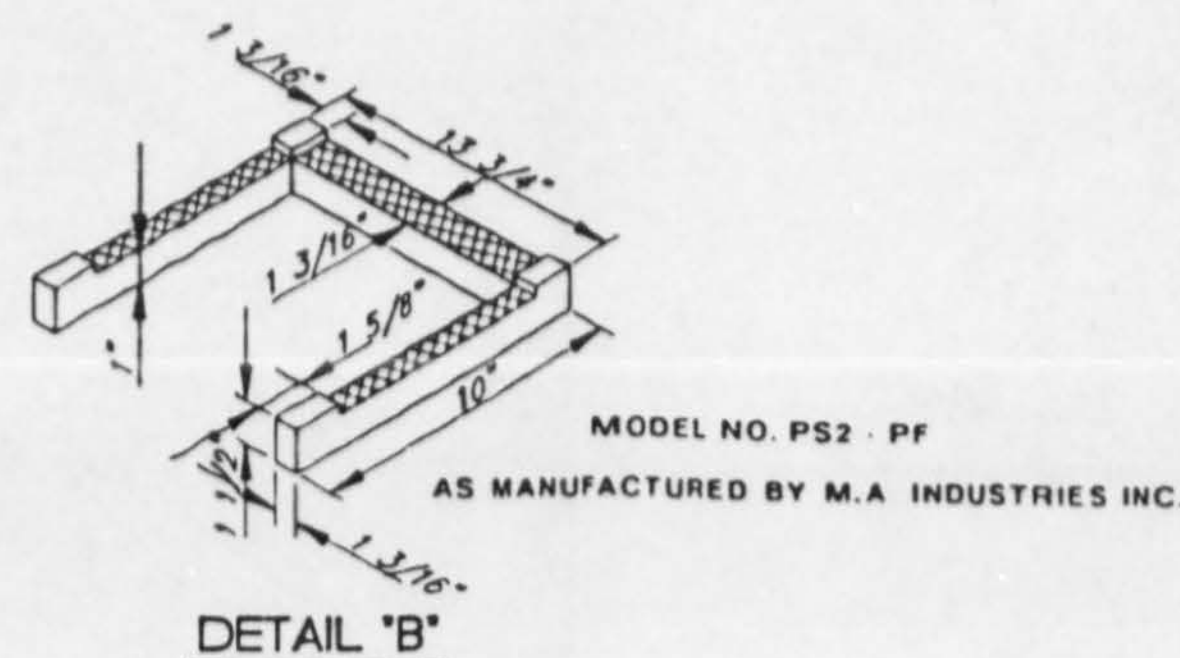


TOP PLAN OF COVER

FRAME & COVER WEIGHT 420 LBS.



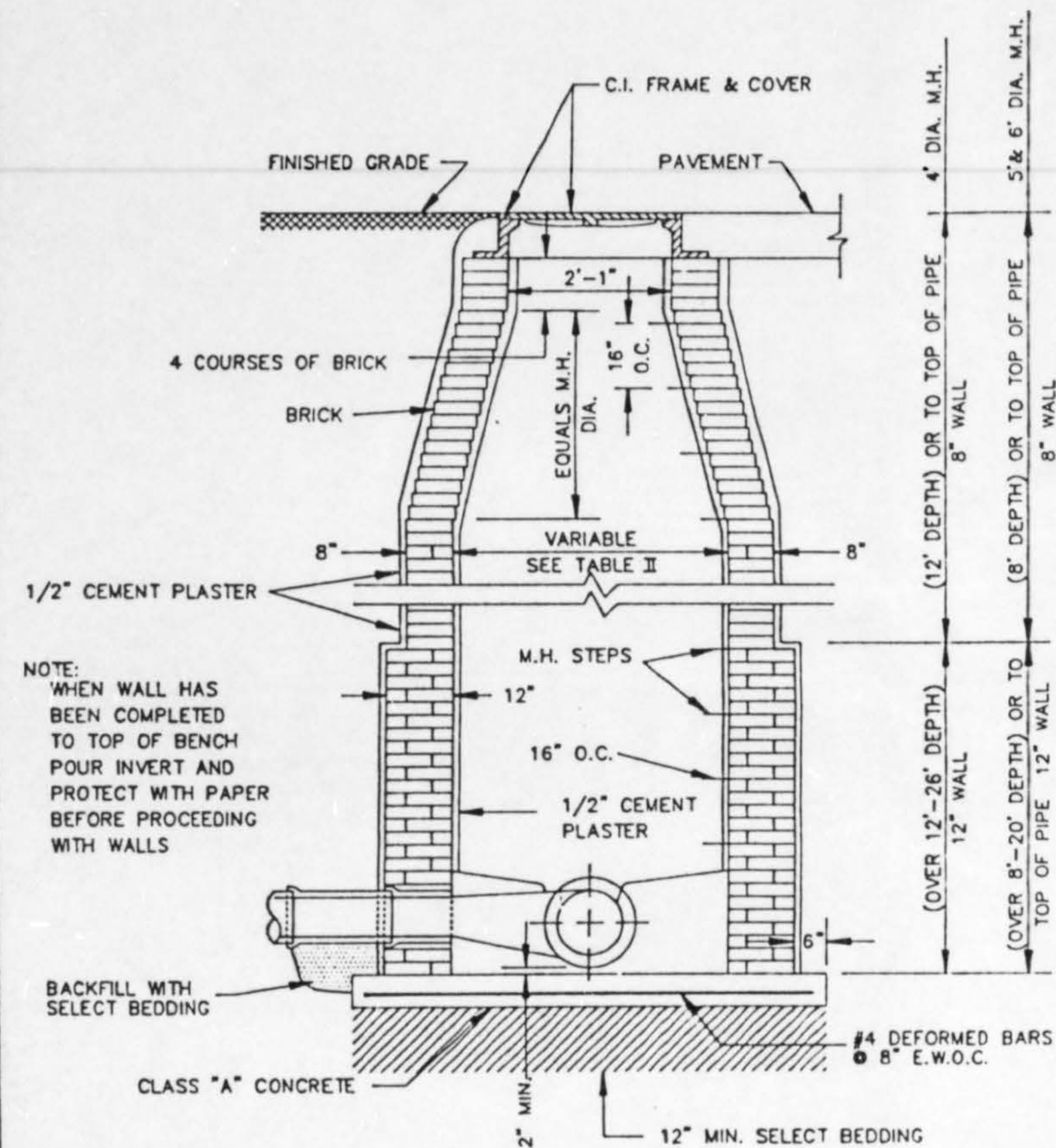
SECTION



DETAIL "B"

STANDARD MANHOLE FRAME AND COVER

N.T.S.

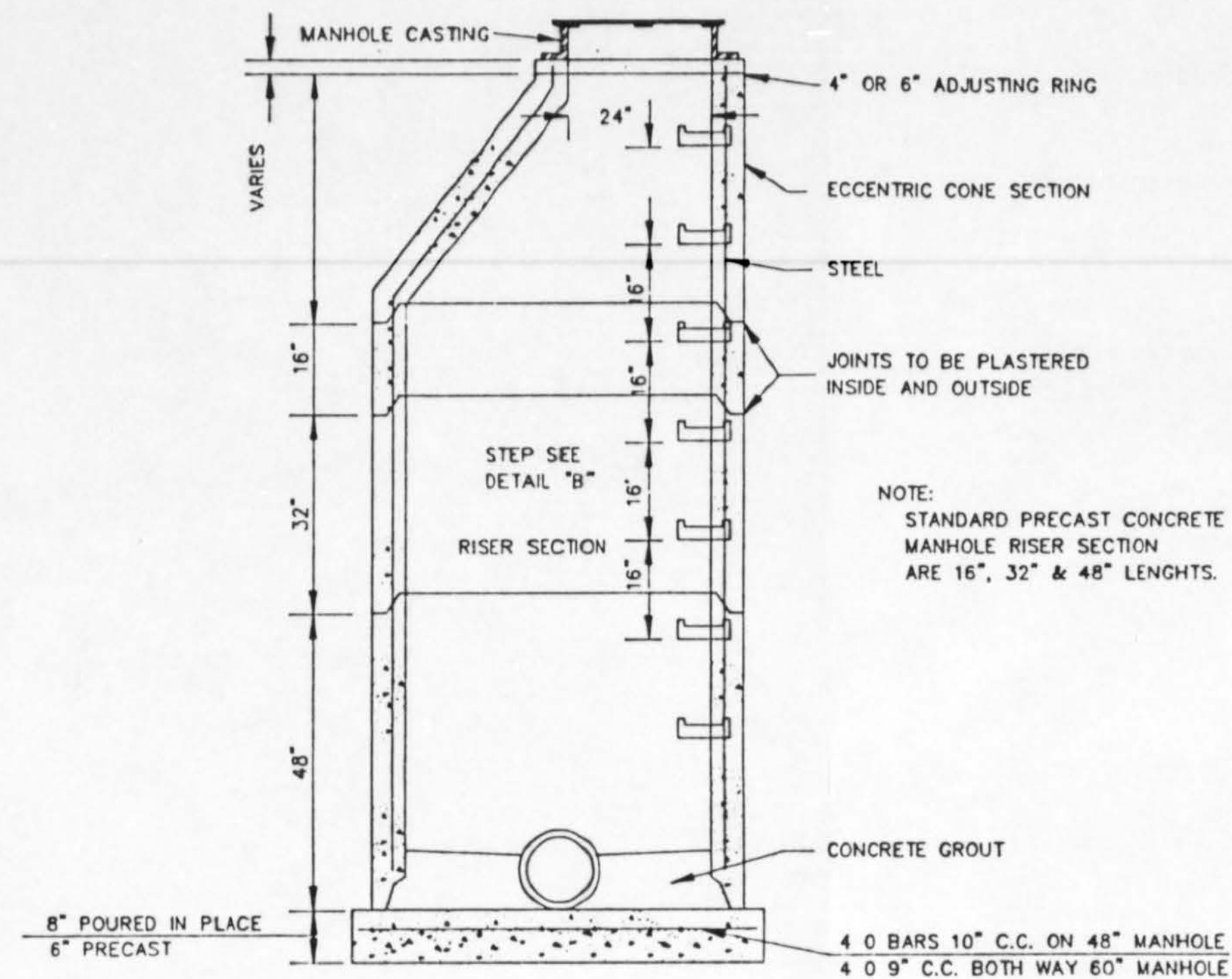
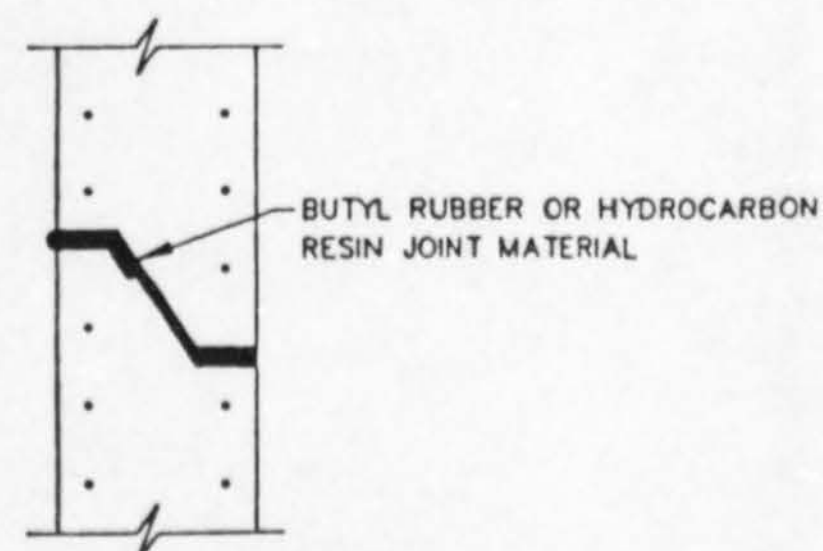


STANDARD BRICK MANHOLE

N.T.S.

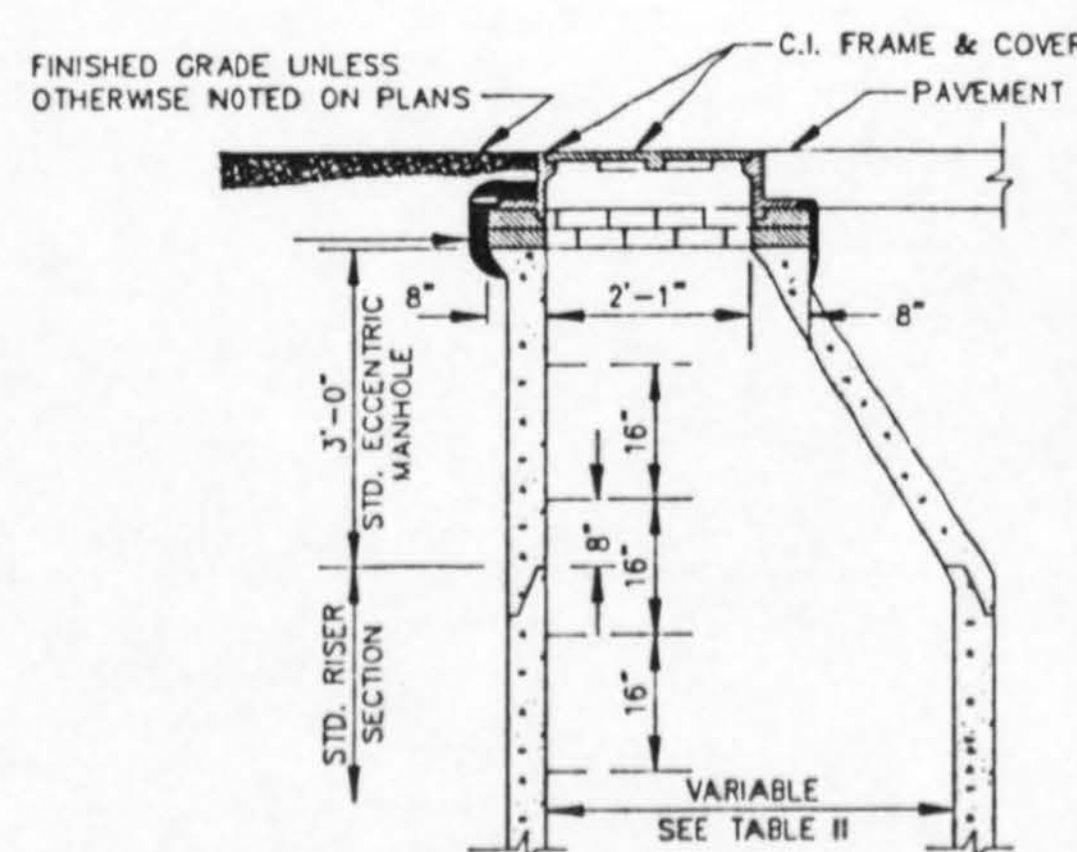
TYPICAL PRECAST CONCRETE MANHOLE JOINT DETAIL

N.T.S.



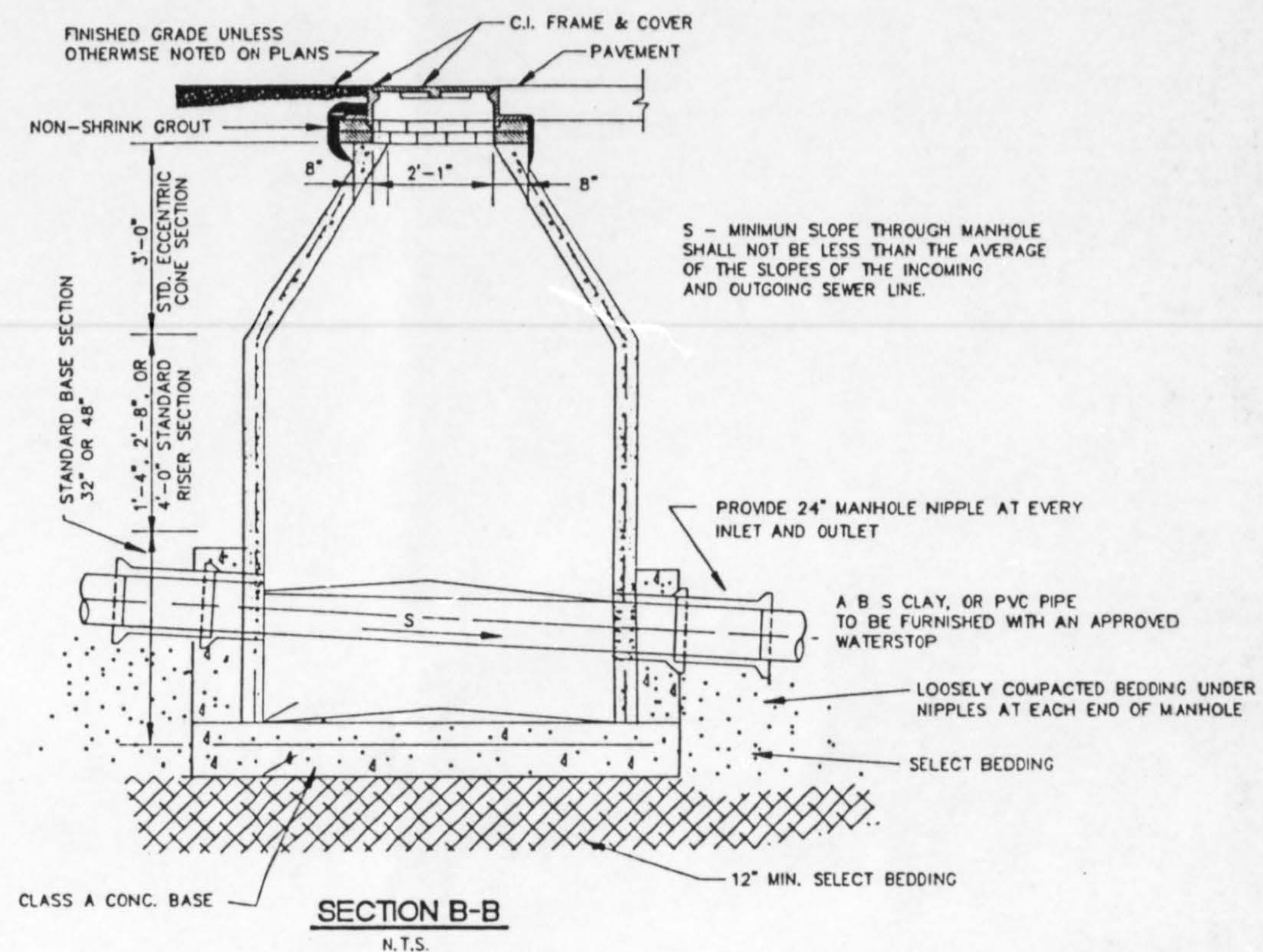
SECTION OF PRECAST CONCRETE MANHOLE

N.T.S.



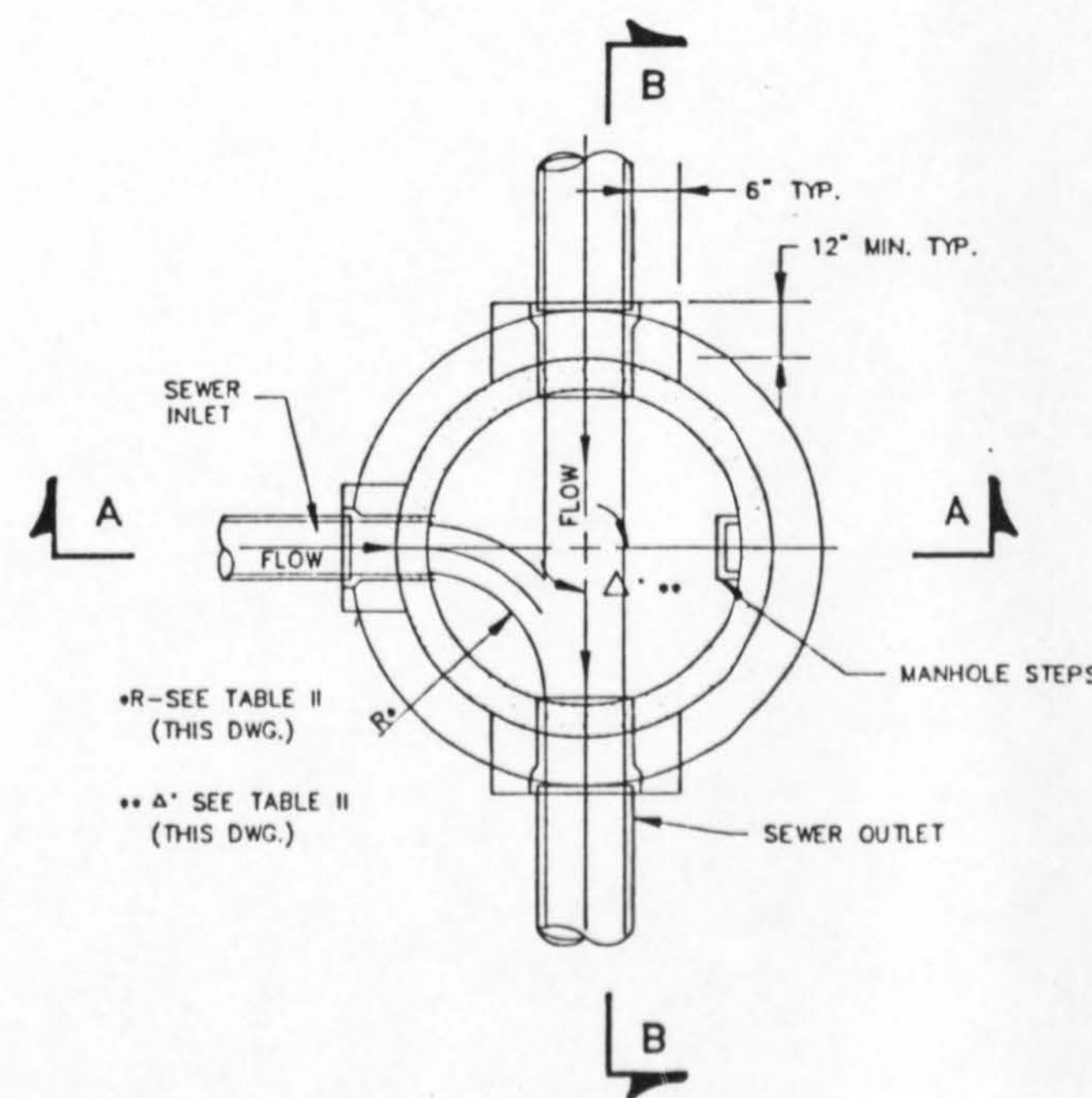
STANDARD ECCENTRIC CONE FOR ALL DIAMETER MANHOLES

N.T.S.



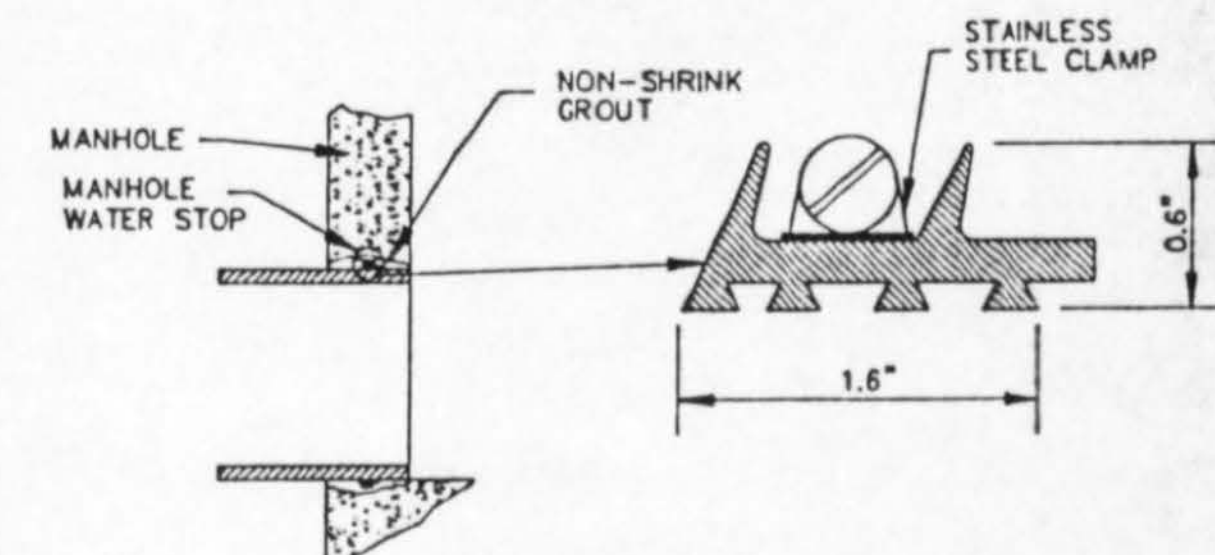
SECTION B-B

N.T.S.



SECTIONAL PLAN STANDARD MANHOLE

N.T.S.



TYPICAL MANHOLE WATER STOP

FOR ABS, CLAY OR PVC PIPE

EXISTING AND "STRADDLE" MANHOLES
N.T.S.

CITY OF RIDGELAND, MS.

STANDARD DETAILS

DSGN			DRAWING NO.
DRAWN			OF
CHKD.			
SCALE			