



City of NAPOLEON, OHIO

255 RIVERVIEW AVENUE - (419) 592-4010
NAPOLEON, OHIO 43545-0151

September 25, 1990

Mayor
Steven Lankenau

Mr. Dennis Stelzer, Jr.
Clevite Elastomers
Route 424
Napoleon, Ohio 43545

Members of Council
James Hershberger, President
Terri A. Williams
John E. Church
Randy J. Bachman
Matthew G. Gloor
Robert G. Heft

Re: Clevite Elastomers Sewerage
Flow Discharge

City Manager
Terry Dunn

Dear Dennis:

As per our September 12, 1990 meeting, we have re-evaluated our flow handling capabilities in relationship to your anticipated discharge (140 gpm) to our sanitary sewer.

We have reviewed the hydraulic grade line and feel that the existing sanitary sewer will be of sufficient size and grade to handle the expected flow discharge.

Finance Director
Rupert W. Schweinhagen

Based on our calculations, your anticipated flow along with the hospital's flow (pump station and force main) shall constitute approximately half of the pipes (12") capacity.

Law Director
Michael J. Wesche

We have enclosed numerous plan sheets and informational data for your use.

At this time, we will be utilizing your water consumption as a basis, but it may be to your benefit to utilize a discharge metering setup in lieu of this.

Prosecuting Attorney
Thomas L. Bischoff

We appreciate your recent invitation to tour the plant and be assured that it helped both Mr. Noblit and the writer in getting a better handle on your intent.

If you have any questions, please call.

Respectfully,

Marc S. Gerken, P.E.
City Engineer

enclosure

cc: Don Engle
Joan Kaatz
Roger Noblit

MSG:skw

1400 E. Riverview
Ave

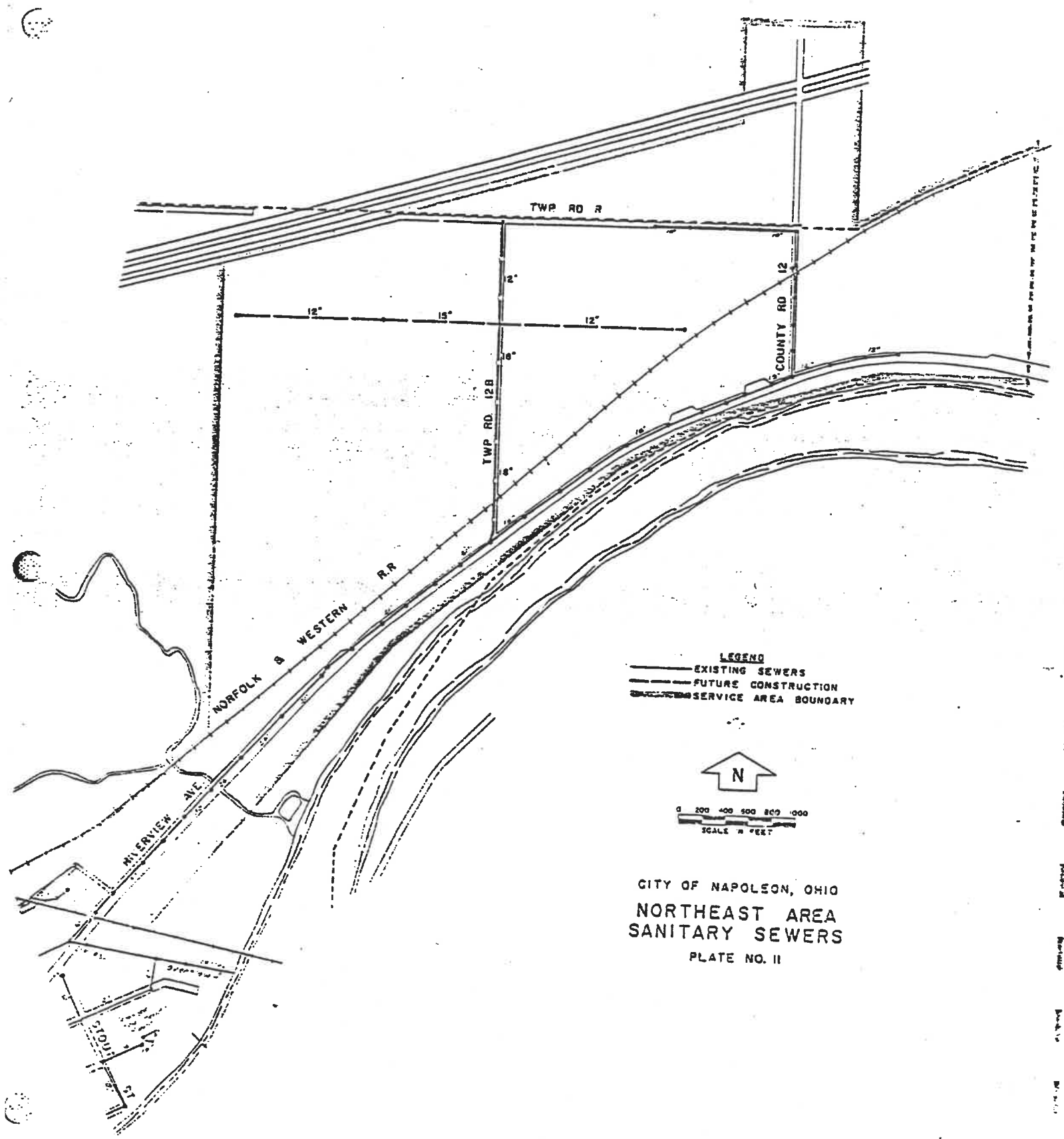
NORTHEAST SERVICE AREA

Storm sewerage in the northeast section of Napoleon is very limited. Plate No. 10 outlines the suggested points of discharge as areas develop within this drainage area.

No storm drainage facilities have been installed other than along Riverview Avenue, which provide local side ditch drainage over the hillside to the River. As development occurs in the industrial park, it is recommended that storm flow be discharged to the most convenient of the two available ravines. One ravine along the west outlets into Van Hyning Creek; the other is a small ravine that leads directly to the Maumee River, as shown on Plate No. 10.

Sanitary sewers in the northeast service area, as shown on Plate No. 11, are served by the Riverview interceptor constructed in 1964. The Riverview interceptor extends easterly in Riverview Avenue from the D. T. & I. tracks to Clevite-Harris and northerly in Township Road 12-A to Township Road R. A new sewer was recently installed in Township Road R from Township Road 12-A to the Imco Company. This westerly extension on Township Road R is as far as this line can be carried. Before any significant growth takes place on the north side of the Norfolk-Western Railroad tracks, it will be necessary to construct a sewer northerly in Township Road 12-B.

Additional service outside the corporation limits can be provided north and east of Township Roads R and 12-A. It seems likely that development will occur around the interchange of Township Road 12-A and U. S. 24. Approximately 80 acres of outside area can be served.



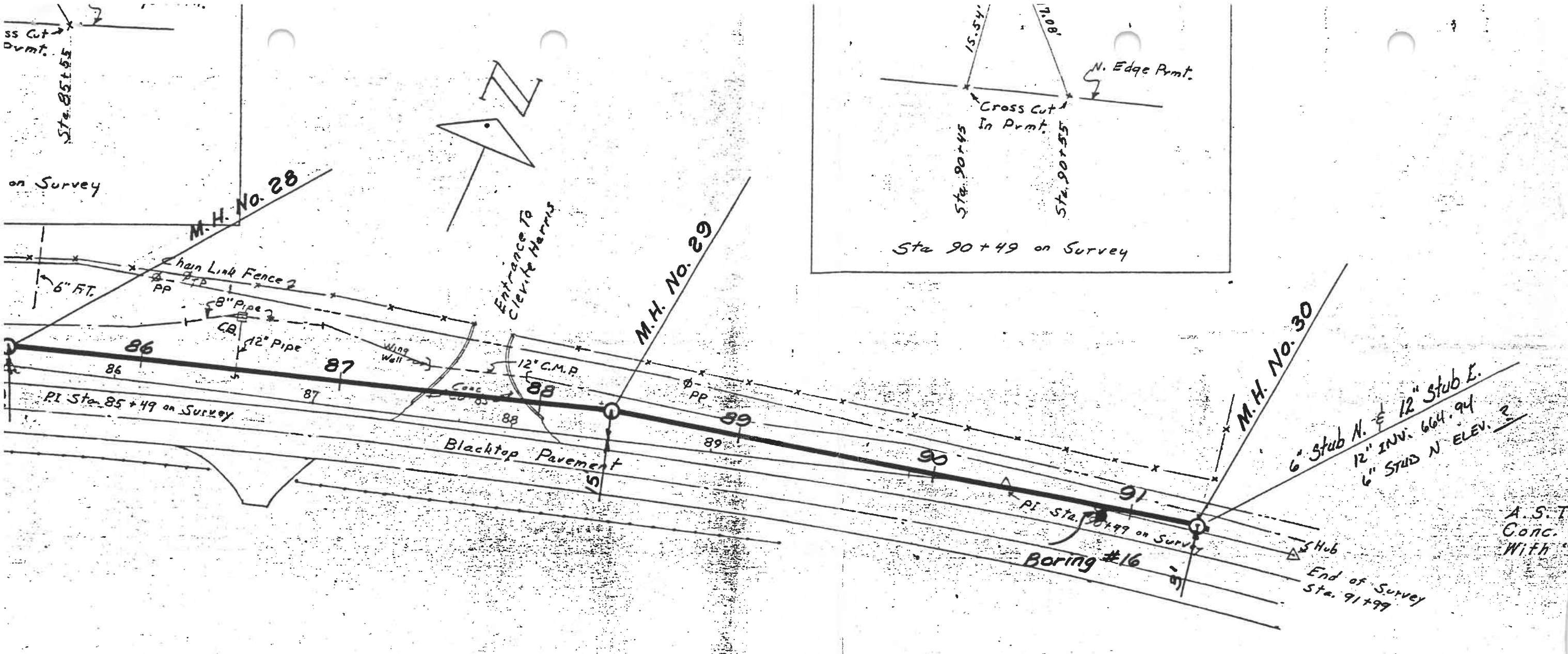
LEGEND
 ——— EXISTING SEWERS
 - - - FUTURE CONSTRUCTION
 - - - SERVICE AREA BOUNDARY



0 200 400 600 800 1000
 SCALE IN FEET

CITY OF NAPOLEON, OHIO
 NORTHEAST AREA
 SANITARY SEWERS
 PLATE NO. II

1000
 900
 800
 700
 600
 500
 400
 300
 200
 100
 0



PLAN

M.H. No. 28 Sewer Sta. 85+32
Opp. Survey Sta. 85+46.

M.H. No. 29 Sewer Sta. 88+35
Opp. Survey Sta. 88+47.79

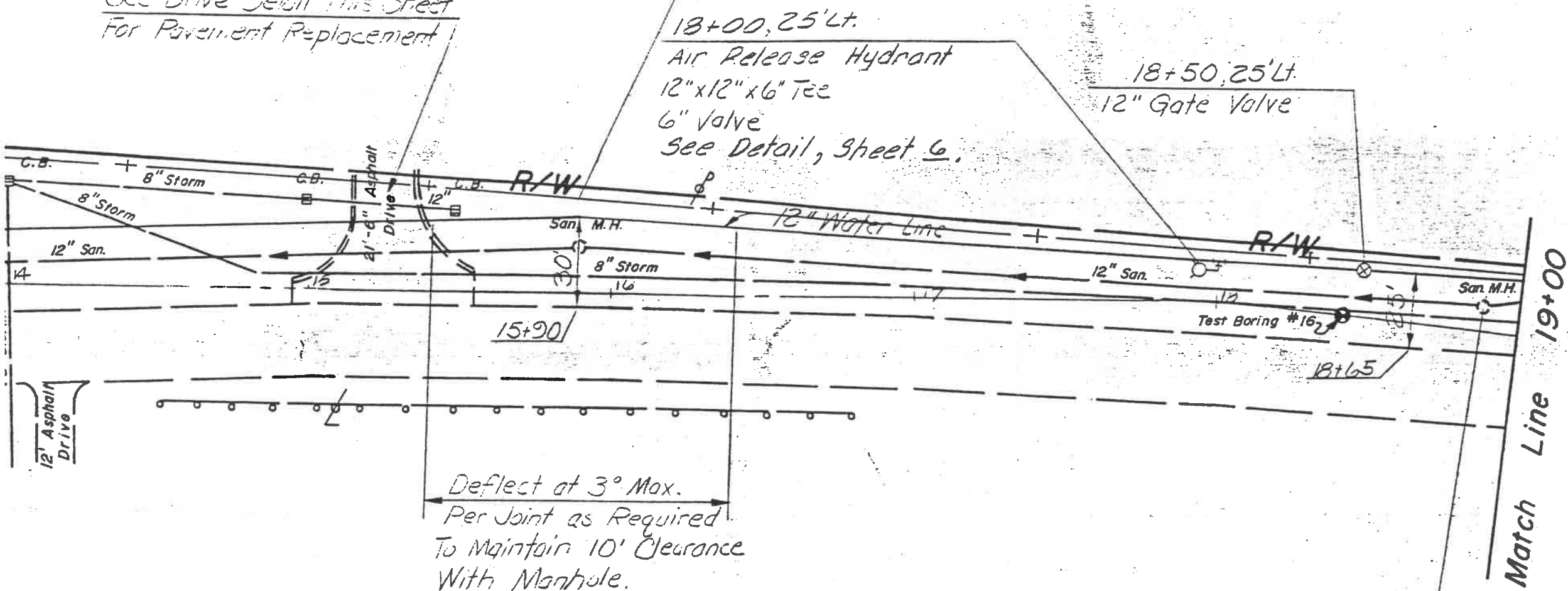
M.H. No. 30 Sewer Sta. 91+35
Opp. Survey Sta. 91+47.49

Note:
Contractor
Manhole B
In 4" (Min.)
In Lieu Of
Bases Sh.

BE CAREFUL WHEN WORKING IN VICINITY OF
 DAMAGING EXISTING TELEPHONE CABLES
 BY THE PHONE COMPANY BUT CANNOT
 LINE EXCAVATION SHALL BE AVOIDED WHERE
 PHONE COMPANY REPRESENTATIVE SHALL BE
 PRESENT DURING CONSTRUCTION.

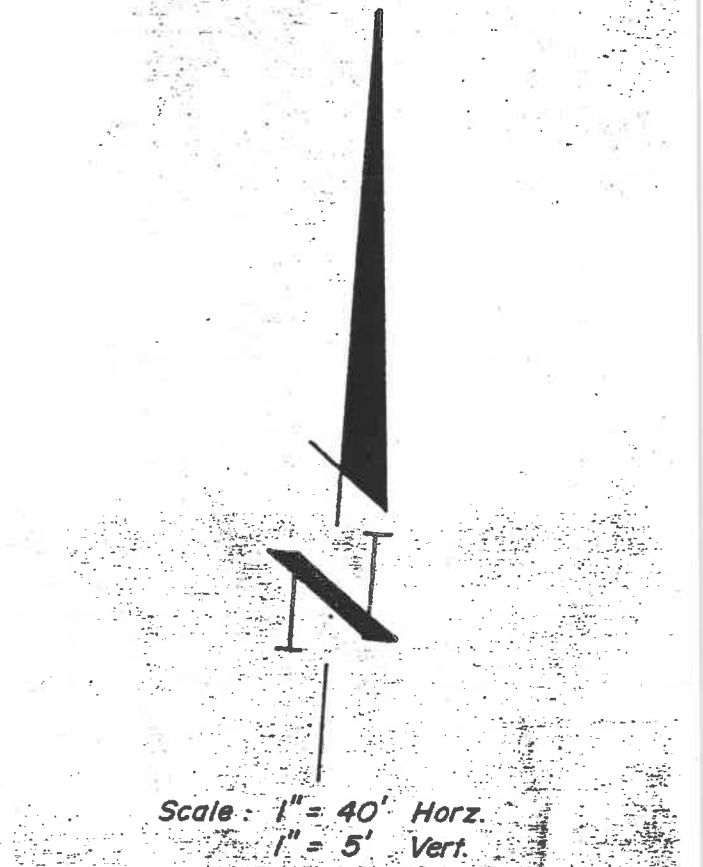
Existing Telephone Cable
 Shall Be Relocated During
 Construction. See Note,
 Sheet 2 of 6.

See Drive Detail This Sheet
 For Pavement Replacement



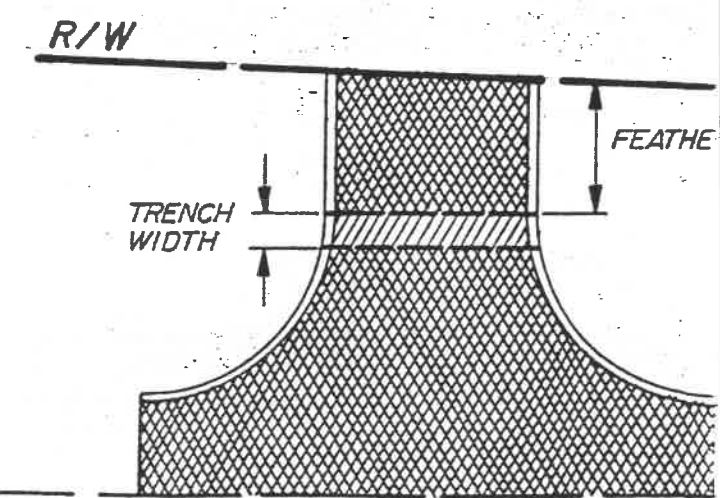
Deflect at 3° Max.
 Per Joint as Required
 To Maintain 10' Clearance
 With Manhole.

Route 424



Firm Moist Topsoil	0'-0" to 0'-4"
Firm Moist Brown Clay - Oxidized Streaks - Lenses Of Silt	3'-6"
Stiff Brown Oxidized Clay - Sand & Pebbles	5'-10"
Extremely Stiff Moist Brown Clay - Sand & Pebbles - Oxidized Streaks	

18+88.15 Lt.
 Existing San. M.H.
 Connect 6" F.M. East (665.83)
 Exist. 12" West (664.83)

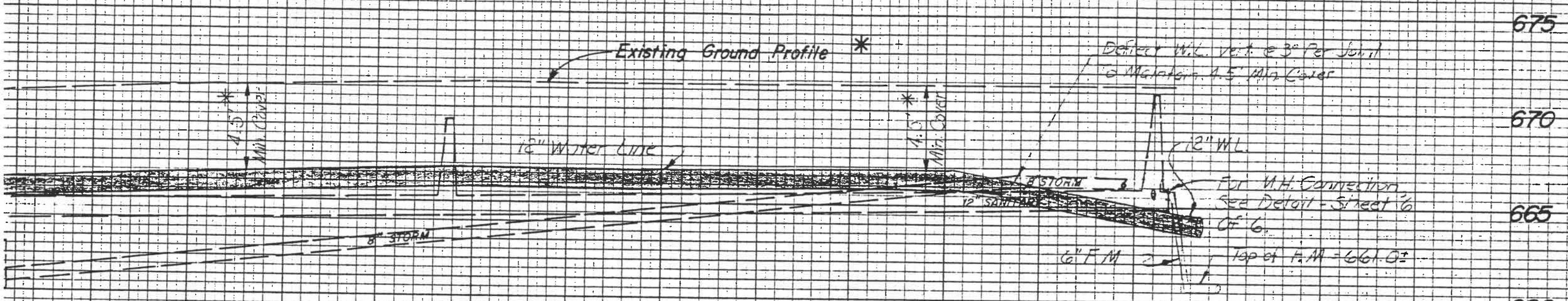


NOTE: FOR LENGTH OF TIME DRIVE
 MAY BE KEPT CLOSED, SEE
 SPECIFICATIONS - "TRAFFIC
 MAINTENANCE".

- GRANULAR BACKFILL SHALL BE 30% ACROSS DRIVE & 5' EITHER SIDE PAVEMENT REPLACEMENT SHALL BE 304, 408 PRIME COAT, 3" OF 404 & 407 TACK COAT AND 1" OF 404 R

ate And Where
 num Ground
 elevations, The
 d Cover Shall

4 15 16 17 18 19



675
670
665
660
655
650

12" WATER LINE AT REBARRED ARCHWAY WITH VALVE & G TEE

12" STORM, 12" GATE VALVE

12" WATER LINE EXISTING SER. M.M.
12" F.M. 6" F.M. EAST (ELEVATION 665.83)
12" W.P. WEST (ELEVATION 664.83)

12" WATER LINE AT REBARRED ARCHWAY WITH VALVE & G TEE

6" F.M.

For V.H. Connection See Detail - Street 16 of 6.
Top of H.M. = 661.02

Deflect W.L. vert. @ 3" Per Joint to Manholes 4.5' Min. Cover

4.5' *
Min. Cover

4.0' *
Min. Cover

12" Water Line

8" STORM

8" STORM

12" SANITARY

12" WL

Existing Ground Profile *

30" @ 0.06% flowing full = 9.84 cfs

24" @ 0.32% flowing full 12.72 cfs

21" @ 0.32% " "

Hogate East 21" @ 0.15% to Twp. Rd. 12-B flowing full 6.12 cfs

15" @ 0.18% to Twp Rd. 12 flowing full 3 cfs ±

12" @ 0.22% to East Side of Gained " " 1.63 cfs ±

140 G.P.M flow is equivalent to 1.311 cfs

Dell Andrew

Chuck

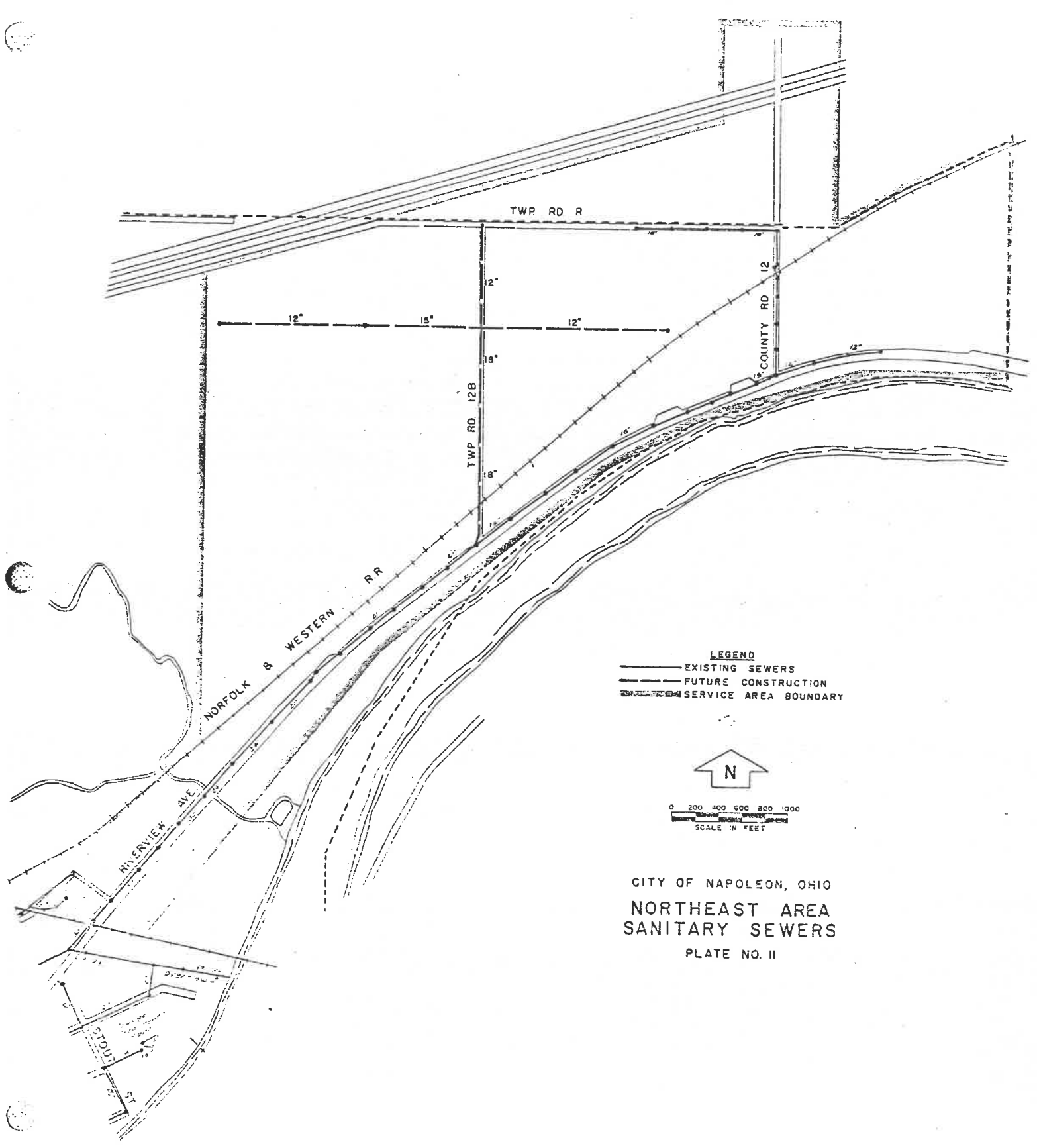
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0 200 400 600 800 1000
 SCALE IN FEET

CITY OF NAPOLEON, OHIO
 NORTHEAST AREA
 SANITARY SEWERS
 PLATE NO. II

Vertical text along the right edge of the page, likely a page number or reference code, including the number '11' at the top.

Flow IN SEWERS (FULL-PIPE) AT MINIMUM SLOPES

Diameter	Kutter's Formula V = 2 fps		Manning's Formula @ Kutter's Slope		Manning's Formula V = 2 fps	
	Slope	Discharge	Vel.	Discharge	Slope	Discharge
8"	* 0.40%	0.45 mgd	2.19 fps	0.49 mgd	0.33%	0.45 mgd
10"	* 0.28	0.70	2.12	0.75	0.25	0.70
12"	* 0.22	1.02	2.12	1.08	0.194	1.02
15"	* 0.15	1.59	2.04	1.61	0.144	1.59
18"	* 0.12	2.28	2.06	2.35	0.113	2.28
21"	* 0.10	3.10	2.08	3.23	0.092	3.10
24"	* 0.08	4.05	2.03	4.13	0.077	4.05
27"	* 0.067	5.18	—	—	0.067	5.18
30"	* 0.058	6.38	—	—	0.058	6.38
33"	0.050	(8.09) 7.66	—	—	0.050	(8.09) 7.66
36"	* 0.046	(9.51) 9.23	—	—	0.046	(9.51) 9.23
39"	0.040	(11.31) 10.72	—	—	0.040	(11.31) 10.72
42"	0.037	(13.27) 12.51	—	—	0.037	(13.27) 12.51
48"	# 0.032	(16.71) 16.60	—	—	0.032	(16.71) 16.60
54"	# 0.027	(21.52) 20.89	—	—	0.027	(21.52) 20.89
60"	0.023	(26.33) 25.53	—	—	0.023	(26.33) 25.53
66"	# 0.021	(32.44) 31.44	—	—	0.021	(32.44) 31.44
72"	0.018	(37.90) 36.72	—	—	0.018	(37.90) 36.72
78"	# 0.0165	(44.86) 43.50	—	—	0.0165	(44.86) 43.50
84"	# 0.0150	(52.17) 50.57	—	—	0.0150	(52.17) 50.57
90"	0.0135	(59.47) 57.63	—	—	0.0135	(59.47) 57.63

n = 0.013 * Minimum, per Ten-States (Kutter's n = 0.013)

Slope required for 2 fps for circular pipe increased by 0.001% for 48", 54", 66" & 0.0005% for 78", 84" to provide 2 fps for elliptical pipe. (—) Flow for elliptical pipe.

MARC

DETERMINING PARTIAL FLOW CONDITIONS IN CIRCULAR PIPE

Sewers, both sanitary and storm, are designed to carry a peak flow based on anticipated land development. The hydraulic capacity of sewers or culverts constructed of circular pipe flowing full under gravity conditions on a known slope is readily calculated from the Manning Formula. Most sewers, however, are designed to operate under partial flow conditions. Culverts operate under either inlet control or outlet control. The type of control under which a particular culvert operates is dependent upon all the

hydraulic factors present. Culverts operating under inlet control will always flow partially full while those operating under outlet control can flow full or partially full.

Determination of the depth and velocity of flow in pipe flowing partially full is therefore frequently necessary, therefore, a method for determining the values of the partial flow depth and velocity in circular pipe through the use of a series of partial flow curves which will eliminate tedious trial and error computations is required.

Table I. Values of $S_0^{1/2}$ in Manning's Formula

S	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
.000	.00000	.01000	.01414	.01732	.02000	.02236	.02449	.02646	.02828	.03000
.001	.03162	.03317	.03464	.03606	.03742	.03873	.04000	.04123	.04243	.04359
.002	.04472	.04583	.04690	.04796	.04899	.05000	.05099	.05196	.05292	.05385
.003	.05477	.05568	.05657	.05745	.05831	.05916	.06000	.06083	.06164	.06245
.004	.06325	.06403	.06481	.06557	.06633	.06708	.06782	.06856	.06928	.07000
.005	.07071	.07141	.07211	.07280	.07348	.07416	.07483	.07550	.07616	.07681
.006	.07746	.07810	.07874	.07937	.08000	.08062	.08124	.08185	.08246	.08307
.007	.08367	.08426	.08485	.08544	.08602	.08660	.08718	.08775	.08832	.08888
.008	.08944	.09000	.09055	.09110	.09165	.09220	.09274	.09327	.09381	.09434
.009	.09487	.09539	.09592	.09644	.09695	.09747	.09798	.09849	.09899	.09950
.010	.10000	.10050	.10100	.10149	.10198	.10247	.10296	.10344	.10392	.10440
.01	.1000	.1049	.1095	.1140	.1183	.1225	.1265	.1304	.1342	.1378
.02	.1414	.1449	.1483	.1517	.1549	.1581	.1612	.1643	.1673	.1703
.03	.1732	.1761	.1789	.1817	.1844	.1871	.1897	.1924	.1949	.1975
.04	.2000	.2025	.2049	.2074	.2098	.2121	.2145	.2168	.2191	.2214
.05	.2236	.2258	.2280	.2302	.2324	.2345	.2366	.2387	.2408	.2429
.06	.2449	.2470	.2490	.2510	.2530	.2550	.2569	.2588	.2608	.2627
.07	.2646	.2665	.2683	.2702	.2720	.2739	.2757	.2775	.2793	.2811
.08	.2828	.2846	.2864	.2881	.2898	.2915	.2933	.2950	.2966	.2983
.09	.3000	.3017	.3033	.3050	.3066	.3082	.3098	.3114	.3130	.3146
.10	.3162	.3178	.3194	.3209	.3225	.3240	.3256	.3271	.3286	.3302

PIPE HYDRAULICS

The most widely accepted formula for evaluating the hydraulic capacity of nonpressure pipe is the Manning Formula. This formula is:

$$Q = A \frac{1.486}{n} R^{2/3} S_0^{1/2} \quad (1)$$

where

Q = flow quantity, cubic feet per second

n = Manning's roughness coefficient

A = cross-sectional area of flow, square feet

R = hydraulic radius, feet

S_0 = slope, feet of vertical drop per foot of horizontal distance

Table I provides values of $S_0^{1/2}$. Table II lists the full flow cross-sectional area, A, hydraulic radius, R, and a constant, C_1 . For specific pipe size under full flow conditions, the first three terms of the right hand side of Manning's Formula are constant, $C_1 = A(1.486/n)R^{2/3}$. Values of C_1 are presented for the more commonly used values, 0.010, 0.011, 0.012, and 0.013 for the roughness coefficient, n, for smooth walled pipe, and 0.024, 0.027, and 0.033 for rough-walled corrugated pipe. Utilizing the appropriate value of $S_0^{1/2}$ from Table I and C_1 from Table II, the full flow quantity, Q, may be determined from Manning's Formula conveniently expressed as:

$$Q_F = C_1 S_0^{1/2} \quad (2)$$

Once the full flow quantity, Q_F , has been determined, the average velocity, V_F , for full flow conditions may be calculated from the basic hydraulic relationship:

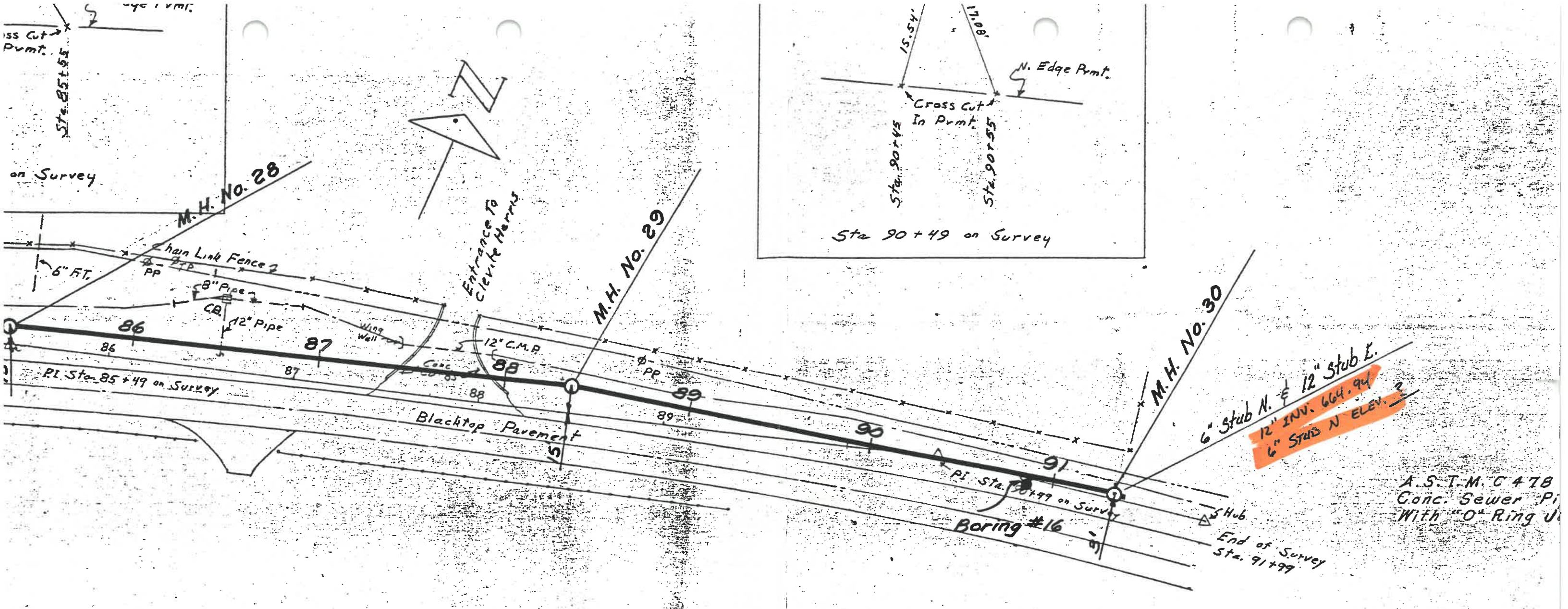
$$V_F = \frac{Q_F}{A_F} \quad (3)$$

where

Q_F = flow quantity, flowing full, cubic feet per second

V_F = the average velocity, flowing full, feet per second

A_F = cross-sectional area, flowing full, square feet



PLAN

M.H. No. 28 Sewer Sta. 85+32
Opp. Survey Sta. 85+46.

M.H. No. 29 Sewer Sta. 88+35
Opp. Survey Sta. 88+47.79

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Opp. Survey Sta. 91+47.49

6" Stub N. & 12" Stub E.
12" INV. 664.94
6" STUB N ELEV. ?

Note:
Contractor May Use
Manhole Base Slab
In 4" (Min.) Class "B"
In Lieu Of Poured I.
Bases Shown.

BE CAUTION WHEN WORKING IN VICIN OF
 DAMAGING EXISTING TELEPHONE CABLES
 ED BY THE PHONE COMPANY BUT CANNOT
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 S DURING CONSTRUCTION.

ARCHITECTS
 SURVEYORS

LESTER H. POGGEMEYER, PE., INC.
 121 E. WOOSTER ST. BOWLING GREEN, OHIO 43402 PH 419-352-7537
 355 W. MAIN ST. LEXINGTON, OHIO 44904 PH 419-884-2001

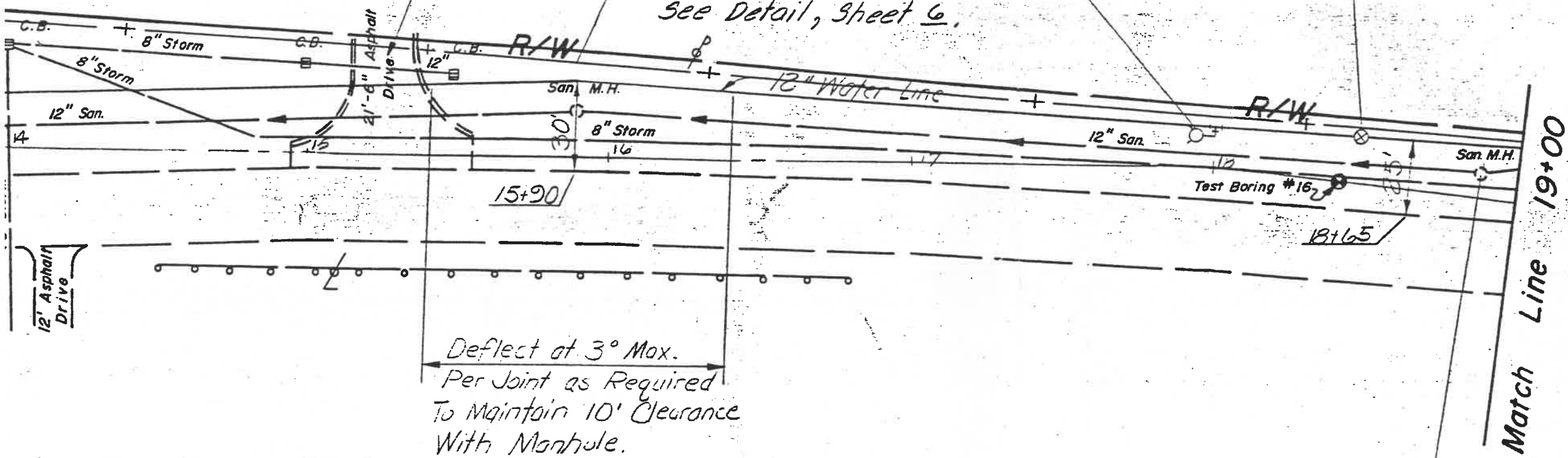
REVISIONS
 D.C. 3-15

Existing Telephone Cable
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 Sheet 2 of 6.

See Drive Detail This Street
 For Pavement Replacement

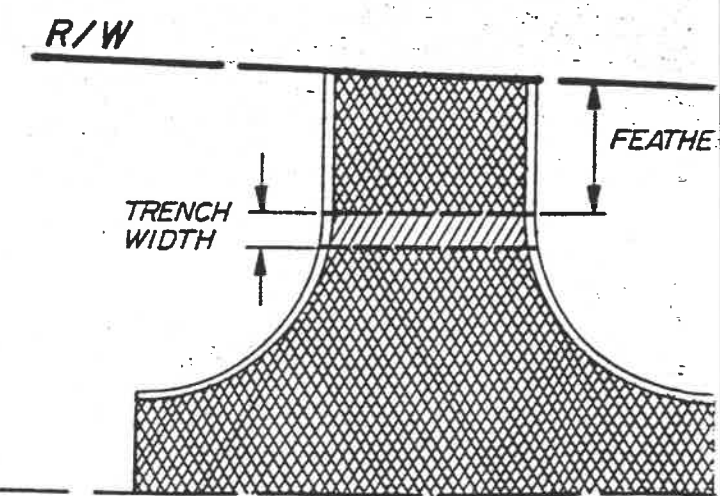
18+00, 25' Lt.
 Air Release Hydrant
 12" x 12" x 6" Tee
 6" Valve
 See Detail, Sheet 6.

18+50, 25' Lt.
 12" Gate Valve



Deflect at 3° Max.
 Per Joint as Required
 To Maintain 10' Clearance
 With Manhole.

Route 424



Scale: 1" = 40' Horz.
 1" = 5' Vert.

Firm Moist Topsoil	0'-0" to 0'-4"
Firm Moist Brown Clay - Oxidized Streaks - Lenses Of Silt	3'-6"
Stiff Brown Oxidized Clay - Sand & Pebbles	5'-10"
Extremely Stiff Moist Brown Clay - Sand & Pebbles - Oxidized Streaks	

18+88, 15' Lt.
 Existing San. M.H.
 Connect 6" F.M. East (665.83)
 Exist. 12" West (664.83)

NOTE: FOR LENGTH OF TIME DRIVE
 MAY BE KEPT CLOSED, SEE
 SPECIFICATIONS - "TRAFFIC
 MAINTENANCE".

GRANULAR BACKFILL SHALL BE 30"
 ACROSS DRIVE & 5' EITHER SIDE
 PAVEMENT REPLACEMENT SHALL BE
 304, 408 PRIME COAT, 3" OF 404 &

ate And Where
 num Ground
 vations, The
 d Cover Shall

PART I, A - FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from the following outfall: 2IC00002001. SEE PART II, OTHER REQUIREMENTS, for location of effluent sampling.

REPORTING Code	UNITS	PARAMETER	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
			Concentration Other Units(Specify)		Loading kg/day		Meas. Freq.	Sample Type
			30 day	Daily	30 day	Daily		
50050	MGD	Flow	-	-	-	-	Daily	Continuous
00310	mg/l	BOD ₅	15	30	-	-	1/Week	Grab
00530	mg/l	Total Suspended Solids	20	30	-	-	1/Week	Grab
00550	mg/l	Oil & Grease	10	20	-	-	1/Week	Grab
01051	ug/l	Total Lead	215	345	0.081	0.131	1/Week	Grab
01092	ug/l	Total Zinc	740	1000	0.28	0.38	1/Week	Grab
00665	mg/l	Total Phosphorus	3.0	6.0	1.1	2.2	1/Week	Grab
82090	ug/l	Total Toxic Organics	1060*	1060*	0.40*	0.40*	See Part II,E	

*This is a guideline-based limitation and is not an authorization to discharge toxic organic compounds at levels which cause or may cause water quality violations. The discharge of organic compounds at levels which cause or may cause water quality violations is prohibited.

- The pH (Reporting Code 00400) shall not be less than 6.5 S.U. nor greater than 9.0 S.U. and shall be monitored weekly by grab sample.
- Samples taken in compliance with monitoring requirements specified above shall be taken at Sampling Stations described in Part II, OTHER REQUIREMENTS.
- See PART II, OTHER REQUIREMENTS.

RECEIVED

MAY 15 1965

IMPERIAL CLEVITE
ELASTOMER PRODUCTS DIV.
NAPOLEON PLANT

CLEVITE MFG.

140,000 GPD

What is temp @ discharge

Newt. (Caustic)

3 mil / mo Wash usage

E.P.A. Bldg. all flow except parking & roof water

Const. 1991 (Jan.)

Parametr 1992 (Jan)

City will see constant flow

140 gpm = 1120 cfs

18.67 cubic feet / min \approx 1311 cfs.

CLEVITE *Elastomers*

August 16, 1990

Roger L. Noblit
Director of Water & Waste Water
City of Napoleon, Ohio
P.O. Box 151
255 W. Riverview Avenue
Napoleon, Ohio 43545

Dear Mr. Noblit:

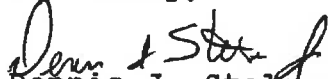
CLEVITE-Elastomers is applying to the City of Napoleon, Ohio, for permission to discharge industrial waste to the City's wastewater treatment facility. The discharge source is CLEVITE- Elastomers, Rt. 424 E. Napoleon, Ohio.

To accommodate certain guidelines and deadlines, CLEVITE has set the goal of completing the hook-up to the sanitary sewer by November 1, 1990. Per our meeting on July 25, 1990, several details are to be worked out including discharge parameter limits, formal state and city approval, monitoring programs, etc.; Therefore, we are respectfully requesting your immediate response. Please inform CLEVITE of the necessary actions for obtaining a permit from the city.

CLEVITE looks forward to this venture and wishes to extend our full cooperation and support. We will be happy to submit any necessary information and would like to establish a meeting time to ensure the proper proceedings for this project.

Please contact me at your first opportunity.

Sincerely;


Dennis J. Stelzer Jr

cc: Terry Dunn, City Manager