CITY OF DETROIT
CITY ENGINEERING DIVISION - E.P.M.D.

IN CO-OPERATION WITH

MICHIGAN DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION

AND

FEDERAL HIGHWAY ADMINISTRATION

PLAN AND PROFILE OF PROPOSED

FEDERAL AID URBAN PROJECT NO. MICHIGAN M 2000(033)

CONTROL SECTION 82400 JOB NUMBER 10012A

B.P.R. DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
STREET	CITY	COUNTY	TWP	SHEET NO.	TOTAL SHEETS
	DETROIT	WAYNE		1	54

THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE DONE ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF STATE HIGHWAYS 1973 STANDARD SPECIFICATIONS AND SUPPLEMENTAL SPECIFICATIONS.

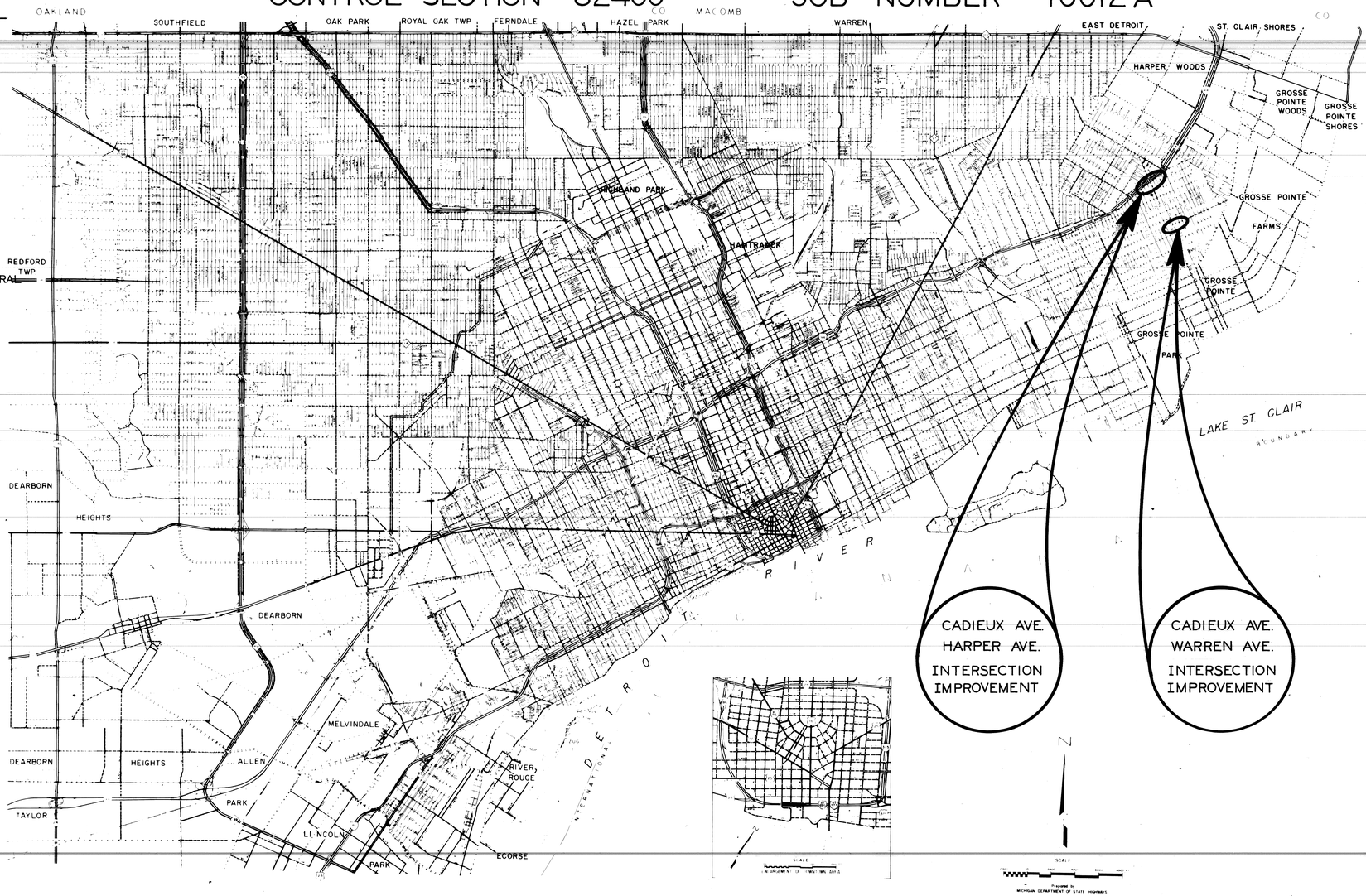
ADT TRAFFIC COUNT	PRESENT	FUTURE
CADIEUX	22,900	22,900
HARPER	15,700	15,700
CADIEUX	17,500	17,500
WARREN	18,500	18,500

INDEX TO SHEETS

1 TITLE SHEET
2 TYPICAL CROSS-SECTION
3 ALIGNMENT
4 REMOVALS
5 PLAN
6 PROFILES
7 UTILITIES
8 TYPICAL CROSS-SECTION
9-10 ALIGNMENTS
11-12 REMOVALS
13-14 PLANS
15 PROFILES
16-17 UTILITIES
18 DETAILED GRADES
19-23 SPECIAL STANDARDS AND SPECIAL DETAILS
24 QUANTITIES
25-26 P.L.D. LEGEND AND GENERAL INFORMATION
27 P.L.D. GENERAL PLAN
28 P.L.D. TRAFFIC SIGNAL
29 P.L.D. WIRING DIAGRAM
30 P.L.D. GENERAL PLAN
31 P.L.D. TRAFFIC SIGNAL
32-53 P.L.D. DETAILS
54 P.L.D. QUANTITIES

STANDARD PLANS

II	28F
II	29B
II	39C
II	40A
II	42A
II	43B
II	44A
IV	84B
VI	124B
VI	125C
E-4-A-10E	



ITEM Nº 226

CONTRACT FOR INTERSECTIONAL IMPROVEMENTS

LOCAL AUTHORITY APPROVAL
CITY OF DETROIT
CITY ENGINEERING DIVISION
ENVIRONMENTAL PROTECTION & MAINTENANCE DEPARTMENT

APPROVED BY J. J. Covert — ASSISTANT CITY ENGINEER — DATE 10-6-76

APPROVED BY [signature] — CITY ENGINEER — DATE 10-6-76

RECOMMENDED FOR APPROVAL

BY V. A. George Lott — F.A.U. ENGINEER — DATE 12/16/76

PLANS CHECKED BY Leigh A. Chizek — DATE 12/16/76

DEPARTMENT OF STATE HIGHWAYS APPROVAL
APPROVED FOR COMMISSION

BY [signature] — DEPUTY DIRECTOR—HIGHWAYS — DATE 12/14/76

PREPARED UNDER SUPERVISION OF

Allen E. Prager — REGISTERED PROFESSIONAL ENGINEER — REGISTRATION NO. 09261

CITY OF DETROIT
ORGANIZATION

DETROIT MICHIGAN
ADDRESS

STATE OF MICHIGAN — ALLEN E. PRAGER — ENGINEER NO. 09261 — REGISTERED PROFESSIONAL ENGINEER

(SEAL)

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

[redacted]

DISTRICT ENGINEER — DATE

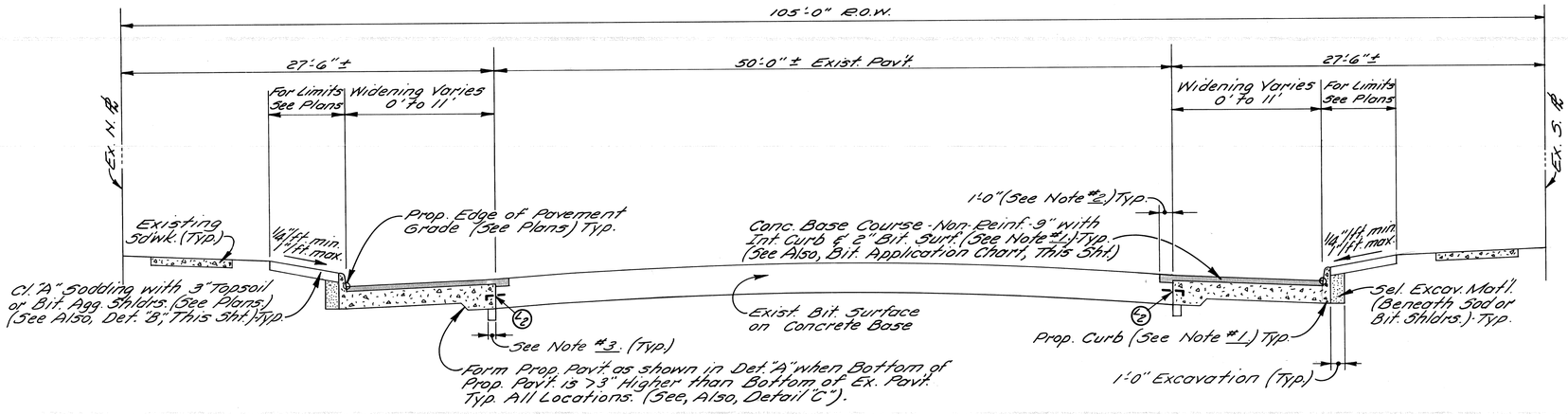
JOB Nº 10012A

C.S. 82400

FILE NO. USE NO. 350 STENCIL		STATE PROJECT	FEDERAL PROJECT	SHEET NO.

C-5517

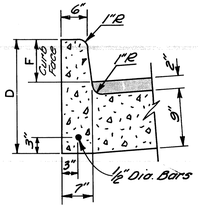
K&E 17 0153 12-73 3714E



WARREN AVE. - LOOKING EAST

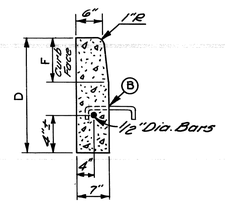
NO SCALE

CURB DIMENSIONS	
FACE F	DEPTH D
5"	16"
6"	17"
7"	18"



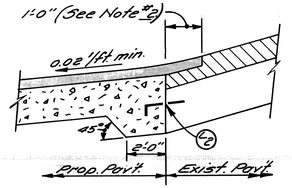
INTEGRAL CURB

NO SCALE



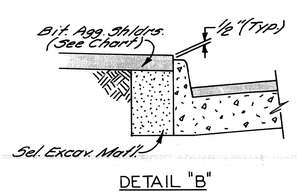
CONCRETE CURB DETAIL "X"

NO SCALE



DETAIL "A"

NO SCALE



DETAIL "B"

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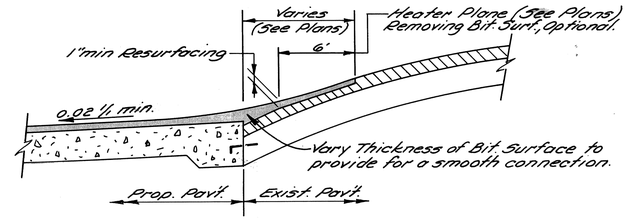

DETAIL "C"

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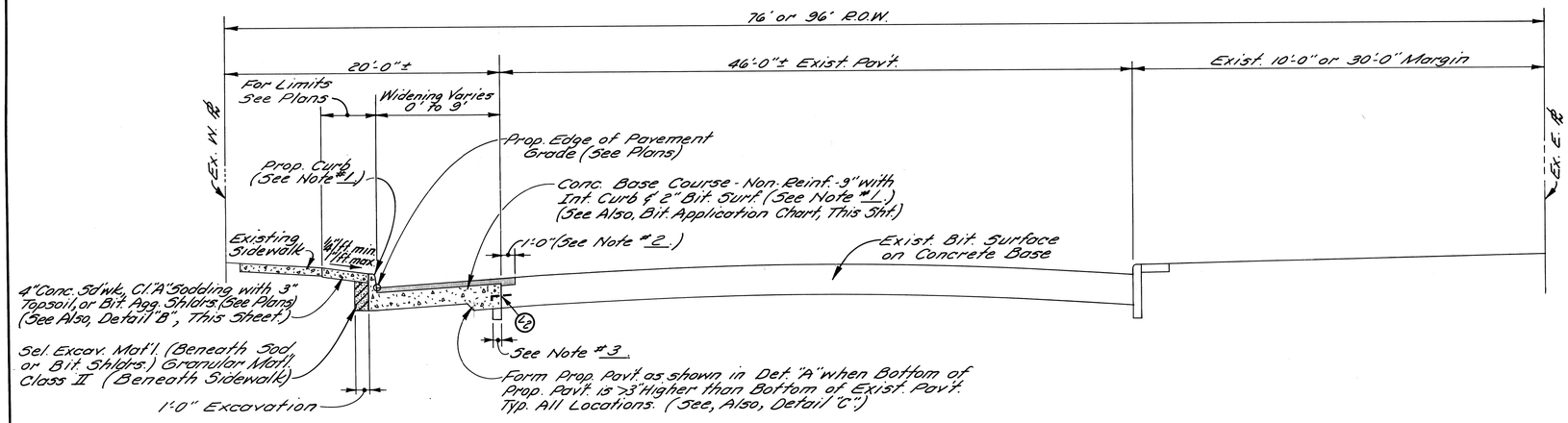


CADIEUX AVE. - CORNWALL TO FRANKFORT - LOOKING NORTH

NO SCALE

EARTHWORK LEGEND

Granular Mat'l. Class II (Incidental to Contract Costs)

Selected Excav. Mat'l. (Incidental to Contract Costs)

JOINT LEGEND

(2) or (2a) Longitudinal Bulkhead Construction Joint, according to M.D.S.H. Std. Dwg. II-39-C.

The following quantities are estimated for use throughout Warren-Cadieux at the discretion of the Engineer.

4" Concrete Sidewalk	576	Sq. Ft.
Removing Sidewalk	64	Sq. Yds.
Class "A" Sodding	96	Sq. Yds.
Topsoil Surface - 3"	96	Sq. Yds.
Bituminous Agg. Shldrs.	1.0	Tons
Subgrade Undercutting - Type II	64	Cu. Yds.
Conc. Pav't. - Non-Reinf. 8" (Driveway)	42	Sq. Yds.

Miscellaneous Quantities Warren-Cadieux

Maintaining Traffic	L.S.	
Type II Barricade (Drums) Lighted	81	Each
Drum Guide Rail	150	L.F.
Mobilization - Warren-Cadieux	L.S.	
Type III Barricades	4	Each

BITUMINOUS APPLICATION CHART

ITEM	RATE OF APPLICATION	ESTIMATED THICKNESS	ASPHALT PENETRATION
Bit. Conc. Leveling Course (25A)	110#/S.Y./In.	1 Inch	85 - 100
Bit. Conc. Wearing Course (31A) Type M	110#/S.Y.	1 Inch	85 - 100
Bit. Aggregate Shoulders	170#/S.Y.	1½ Inches	200 - 250
Bit. Conc. Leveling Course (25A)	160#/S.Y.	1½ Inches	85 - 100
Bit. Bond Coat - 0.10 Gal./S.Y. to rigid bases & 0.05 Gal./S.Y. Tack Coat bet. Bit. Layers			

Bit. Bond Coat RC 70 may be used in lieu of MS-2a & 55 lb on this project where thru traffic is detoured from the construction area. The contractor, however, is cautioned of the flammable characteristic of the material & shall take due precautions when using same.

GENERAL NOTES

1. The prop. curb shall be Int. Curb (See detail this sheet) with Conc. Curb Det. "X" as an alternate. If Conc. Curb Det. "X" is used, the new pav't. & curb must be constructed integrally where the pav't. widening is 1'-0" or less. Regardless of construction method the curb shall be paid for as concrete base course.
2. 1:0" Stripping & Resurfacing (2" Bit. Surf.) The Contractor shall saw cut (1 inch min. depth) a longitudinal line along the limit of the one ft. stripping. The sawing shall be approved by the Engineer (Incidental to Contract Costs.)
3. Fill Exist. Curb Void with Gran. Mat'l. Cl. II (Incidental)
4. Backfill, if req'd. under Prop. Sdwks. & Pav't. shall be Granular Mat'l. Cl. II (Incidental)
5. Use Detail "C" when it is necessary to heater plane & place bit. surf. on exist. pav't. in order to provide a smooth connection & a 0.02"/1 min. slope on the prop. pav't. widening.

REVISIONS LOCATED BY COORDINATES ON SHEET						
COOR'D	DESCRIPTION	DR'N	CK'D	APV'D	DATE	REFERENCE DRAWINGS

DESIGNED BY Com'ty

DRAWN BY MAB

TRACED BY

CHECKED BY Com'ty

APPROVED: Allen E. Pinson
ENGINEER OF EXPRESSWAYS

CITY OF DETROIT

CITY ENGINEERING DIVISION

E. P. M. D.

WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT

TYPICAL CROSS-SECTION

SHEET 2 OF 54 SHEETS

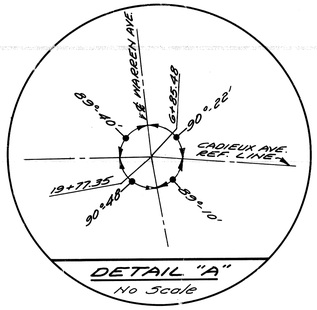
CONTRACT No. 10012A

DRWG No.

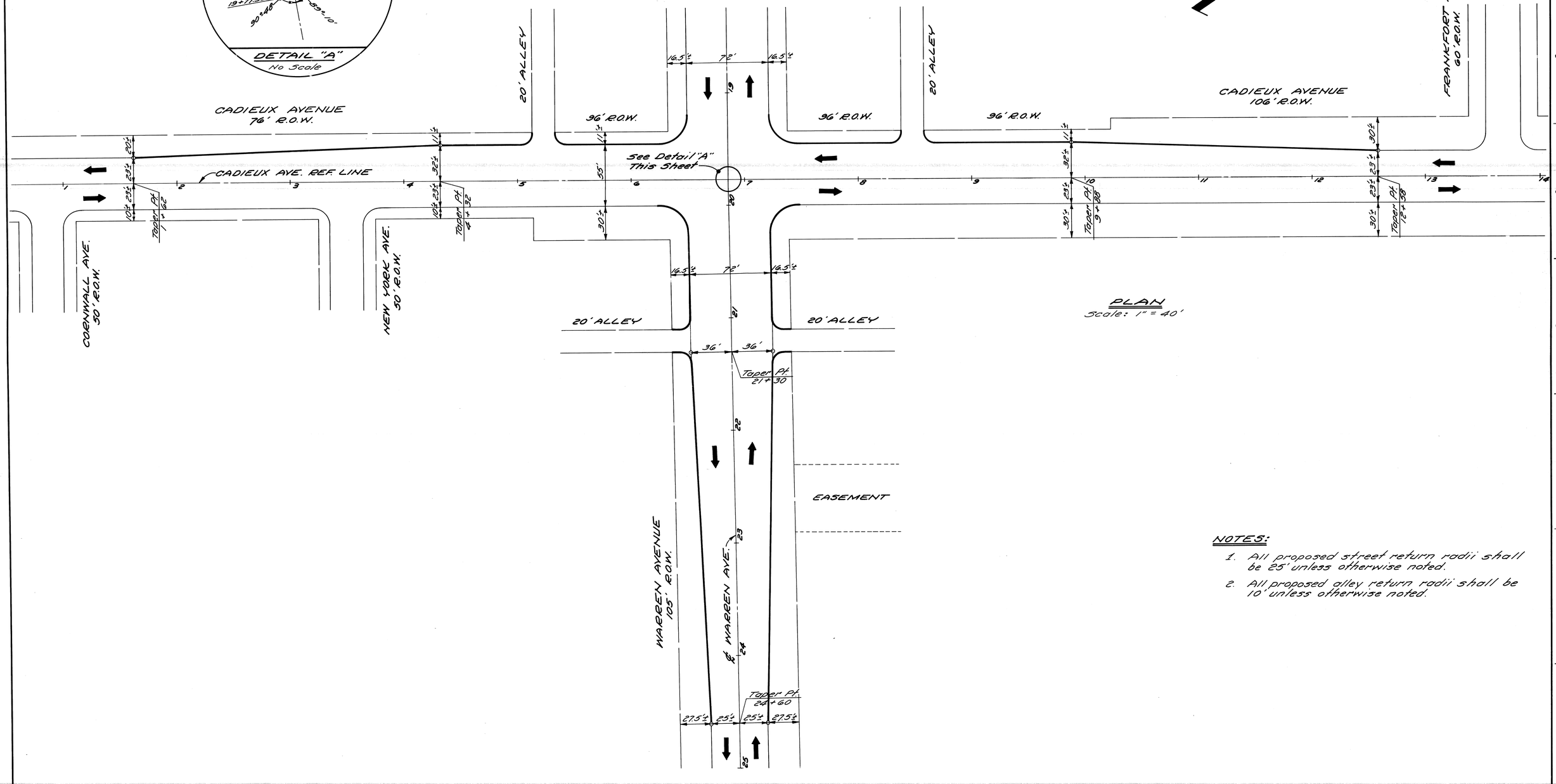
DATE 10-7-1976

C-5517

K&E 17 0153 12-73 57141



DETAIL "A"
No Scale



PLAN
Scale: 1" = 40'

NOTES:

1. All proposed street return radii shall be 25' unless otherwise noted.
2. All proposed alley return radii shall be 10' unless otherwise noted.

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE	REFERENCE DRAWINGS	
REVISIONS LOCATED BY COORDINATES ON SHEET						DESIGNED BY	
						DRAWN BY	MAP
						TRACED BY	
						CHECKED BY	E.B.P

APPROVED: Allen E. Pergue
ENGINEER OF EXPRESSWAYS

CITY OF DETROIT
CITY ENGINEERING DIVISION
E. P. M. D.

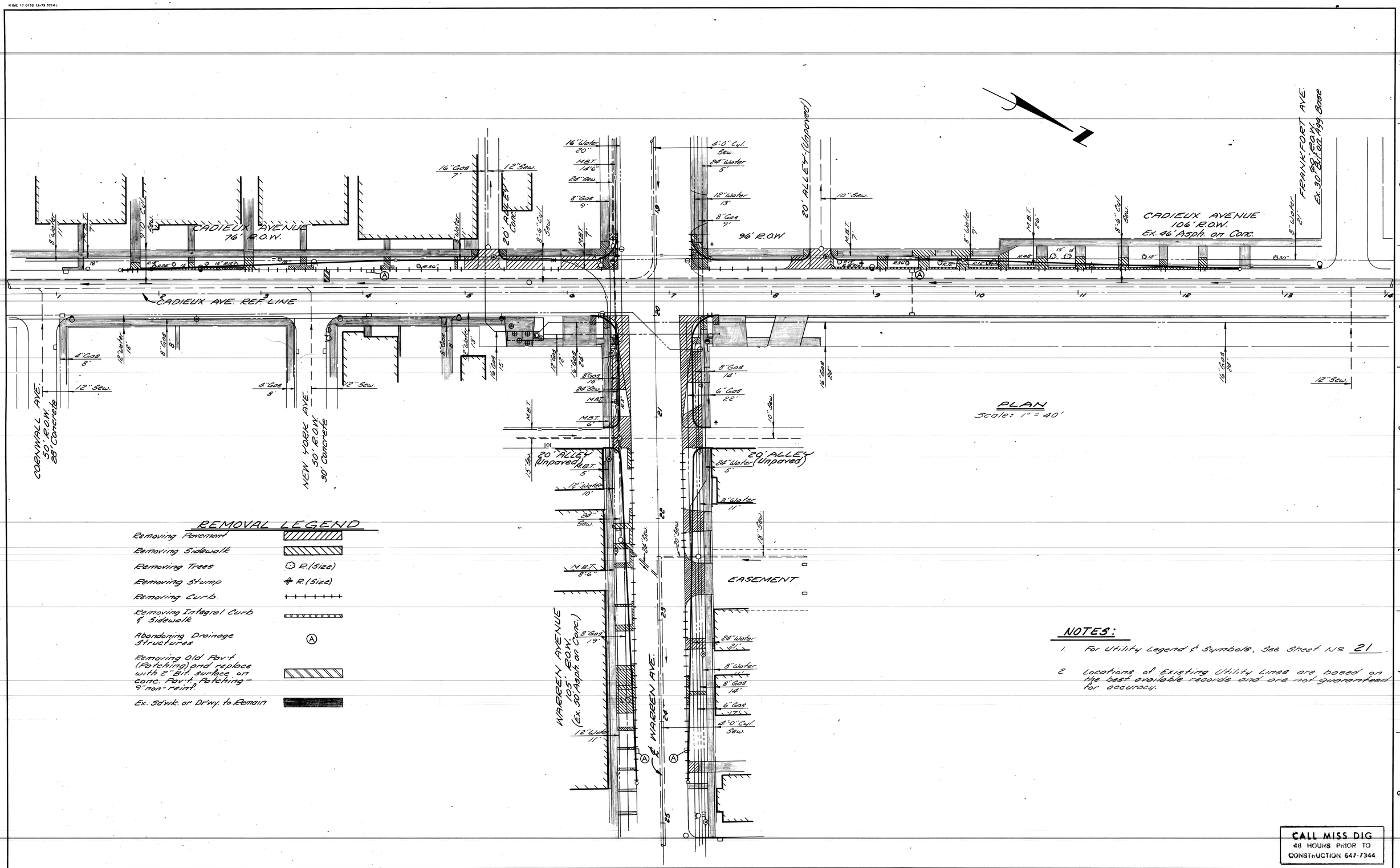
WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT

ALIGNMENT

SHEET 3 OF 54 SHEETS
CONTRACT No. 10012A
DRWG No.
DATE 10-7-76

C-5517

K&E 17 0153 12-73 5714



REMOVAL LEGEND

- Removing Pavement
- Removing Sidewalk
- Removing Trees — R. (Size)
- Removing Stump — R. (Size)
- Removing Curb
- Removing Integral Curb & Sidewalk
- Abandoning Drainage Structures — Ⓐ
- Removing Old Pav't (Patching) and replace with 2" Bit. surface on conc. Pav't. Patching - 9" non-reinf.
- Ex. Sdwk. or Dr'wy. to Remain

NOTES:

1. For Utility Legend & Symbols, See Sheet No. 21.
2. Locations of Existing Utility Lines are based on the best available records and are not guaranteed for accuracy.

CALL MISS DIG
48 HOURS PRIOR TO CONSTRUCTION 647-7344

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY	
DRAWN BY	M.S.
TRACED BY	
CHECKED BY	R.B.P.

APPROVED:
ENGINEER OF EXPRESSWAYS

CITY OF DETROIT
CITY ENGINEERING DIVISION
E.P.M.D.

WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT

REMOVALS

SHEET 4 OF 54 SHEETS
CONTRACT No. 10012A
DRWG No.
DATE 10-7-76

C-5517

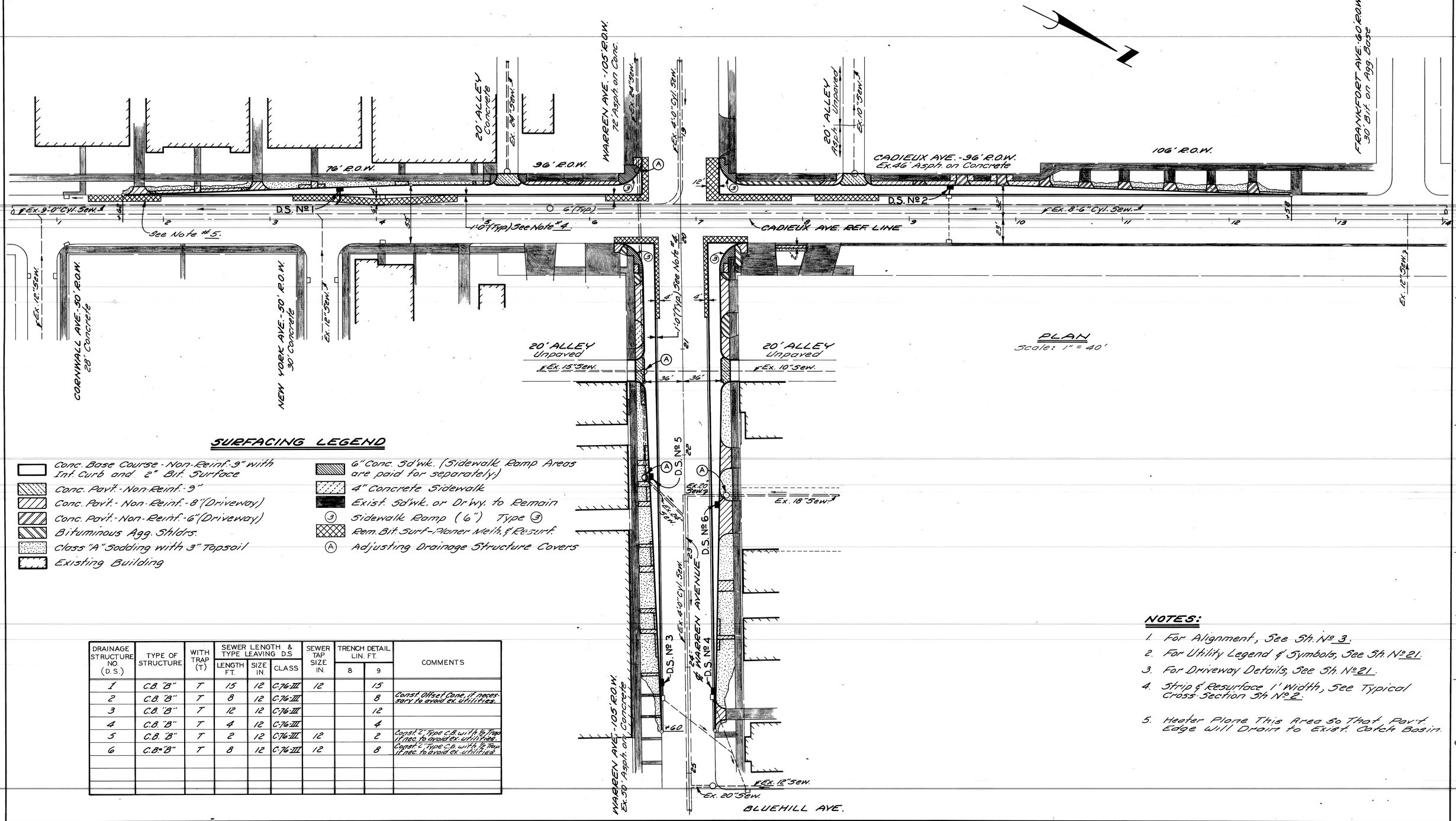
K&E 17 0153 12-73 3714±

P.B.M. # 70-252A - Elev. 110.189, N.E. Corner Warren Ave. & Outer Drive

C.B.M. Elev. 110.89 Arrow on Hydrant N.E. Corner New York Ave & Codieux Ave.

C.B.M. Elev. 111.12 West Bolt on Texaco Sign Base N.E. Corner Warren & Codieux.

C.B.M. Elev. 113.68 Arrow on Hydrant N.W. Corner Frankfort Ave. & Codieux Ave.



PLAN
Scale: 1" = 40'

SURFACING LEGEND

- Conc. Base Course - Non-Reinf. - 3" with Int. Curb and 2" Bit. Surface
- Conc. Pavt. - Non-Reinf. - 9"
- Conc. Pavt. - Non-Reinf. - 8" (Driveway)
- Conc. Pavt. - Non-Reinf. - 6" (Driveway)
- Bituminous Agg. Shldrs.
- Class "A" Sodding with 3" Topsoil
- Existing Building
- 6" Conc. Sd'wk. (Sidewalk Ramp Areas are paid for separately)
- 4" Concrete Sidewalk
- Exist. Sd'wk. or Dr'wy. to Remain
- (3) Sidewalk Ramp (6") Type (3)
- Rem. Bit. Surf. - Pioneer Meth. & Resurf.
- (A) Adjusting Drainage Structure Covers

DRAINAGE STRUCTURE NO. (D.S.)	TYPE OF STRUCTURE	WITH TRAP (T)	SEWER LENGTH & TYPE LEAVING D.S. LENGTH FT.	SIZE IN.	CLASS	SEWER TAP SIZE IN.	TRENCH DETAIL LIN. FT. 8	9	COMMENTS
1	C.B. "B"	T	15	12	C-76-III	12		15	
2	C.B. "B"	T	8	12	C-76-III			8	Const. Offset Conn. if necessary to avoid ex. utilities.
3	C.B. "B"	T	12	12	C-76-III			12	
4	C.B. "B"	T	4	12	C-76-III			4	
5	C.B. "B"	T	2	12	C-76-III	12		2	Const. 6" Type C.B. with ½ Trap if nec. to avoid ex. utilities.
6	C.B. "B"	T	8	12	C-76-III	12		8	Const. 6" Type C.B. with ½ Trap if nec. to avoid ex. utilities.

NOTES:

1. For Alignment, See Sh. No 3.
2. For Utility Legend & Symbols, See Sh. No 21.
3. For Driveway Details, See Sh. No 21.
4. Strip & Resurface 1' Width, See Typical Cross-Section Sh. No 2.
5. Heater Plane This Area So That Pav't. Edge Will Drain to Exist. Catch Basin.

REVISIONS LOCATED BY COORDINATES ON SHEET	COOR'D	DESCRIPTION	DR'N	CK'D	APV'D	DATE

REFERENCE DRAWINGS

DESIGNED BY
DRAWN BY MAP
TRACED BY
CHECKED BY R.A.C.

APPROVED:
ENGINEER OF EXPRESSWAYS

CITY OF DETROIT
CITY ENGINEERING DIVISION
E.P.M.D.

WARREN AVE. - CADIEUX AVE.
INTERSECTION - IMPROVEMENT
PLAN

SHEET 5 OF 54 SHEETS
CONTRACT No. 10012A
DRWG No.
DATE 10-7-76

C-5517

K&E 10 1153 3-72 448

FINAL R.O.W.

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

Heater Plane first 6' of exist. pav't. to meet prop. Edge of Pav't.

Ex. Ground @ Front Edge Ex. 8d'wk.

Ex. Ground at ℄

Use 7" Curb.

Ex. Ground @ Front Edge Ex. 5d'wk (13' off Ex. E.O.P.)

Ex. Ground @ Front Edge of Ex. Walk 23' off Ex. E.O.P.

Meet Ex. Pav't.

12" Strip & Resurf.

Curb Trans.

106.67 ± 30

Equivalent grade 102 ± 30

PVI 103.37 3+80

PVI 102.33 3+65

L.P. 102.26 3+65

Approx. Ex. Ground where noted above

PVI 107.79 3+05

Ex. Ground at Front 8d'wk

PVI 108.60 5+95

109.46 6+40

109.82 ± 7+27.5

PVI 109.14 7+55

L.P. 108.43 9+38.33

PVI 108.40 9+40

Approx. Ex. Ground where noted above

Jt. Elev.

+0.50%

Jt. Elev.

Jt. Elev.

109.95 ± 12+30

Meet Ex. Pav't.

Ex. W. Pav't. Edge

-2.00%

50' V.C.

-0.40%

30' V.C.

Prop. W. Edge of Pav't. Codieux Ave.

Ex. Pav't at prop. pav't edge

+0.35%

40' V.C.

-0.40%

30' V.C.

+0.40%

30' V.C.

+0.90%

+1.90%

40' V.C.

WARREN

Ex. C.B. (to be Abandoned)

D.S. #2

D.S. #1

4+00

5+00 20+00

6+00 21+00

7+00 22+00

8+00 23+00

11+00 26+00

Outlet & Inlet to be Determined in the field.

Trans. to Ex. Curb

5" Curb

+80

Meet Ex. Pav't.

Meet Ex. Pav't.

109.41 20+20

PVI 108.81 20+20

Ex. Pav't at Prop. Pav't Edge

Ex. Ground at ℄

-1.50%

40' V.C.

+48

Ex. Ground at Front of Ex. 5d'wk.

L.P. 107.38 24+28.33

PVI 107.33 24+30

107.49 24+30

-0.40%

40' V.C.

+0.80%

Ex. N. Pav't. Edge

BLUEHILL

CADIEUX

Prop. N. Edge of Pav't. Warren Ave.

Inlet 100.75 (match 08 flows)

Outlet 100.93

Ex. 9'-0" Cyl. Sewer

Ex. 3' MH

D.S. #6

D.S. #4

Ex. C.B. (to be Abandoned)

Outlet & Inlet to be Determined in the field.

Outlet & Inlet to be Determined in the field.

Meet Ex. Pav't.

7" Curb Trans.

5" Curb

Trans. to Ex. Curb

+80

Meet Ex. Pav't.

109.30 20+20

Ex. 6d. @ ℄

PVI 108.53 20+50

Ex. Pav't at Prop. Pav't Edge

-1.10%

30' V.C.

+20

Ex. Ground @ Front Edge Ex. 3d'wk.

-0.35%

L.P. 107.01 24+28.33

PVI 107.32 24+20

107.35 24+30

40' V.C.

+0.60%

Ex. S. Pav't. Edge

CADIEUX

Prop. S. Edge of Pav't. Warren Ave.

Ex. 3' MH

D.S. #5

D.S. #3

Ex. C.B. (to be Abandoned)

Outlet & Inlet to be Determined in the field.

Outlet & Inlet to be Determined in the field.

20+00 21+00 22+00 23+00 24+00 25+00 26+00

DESIGNED	
DRAWN	M.S.
CHECKED	R.B.P.

APPROVED: Allen E. Rogers
ENGINEER OF EXPRESSWAYS

CITY OF DETROIT

CITY ENGINEERING DIVISION
E. P. M. D.

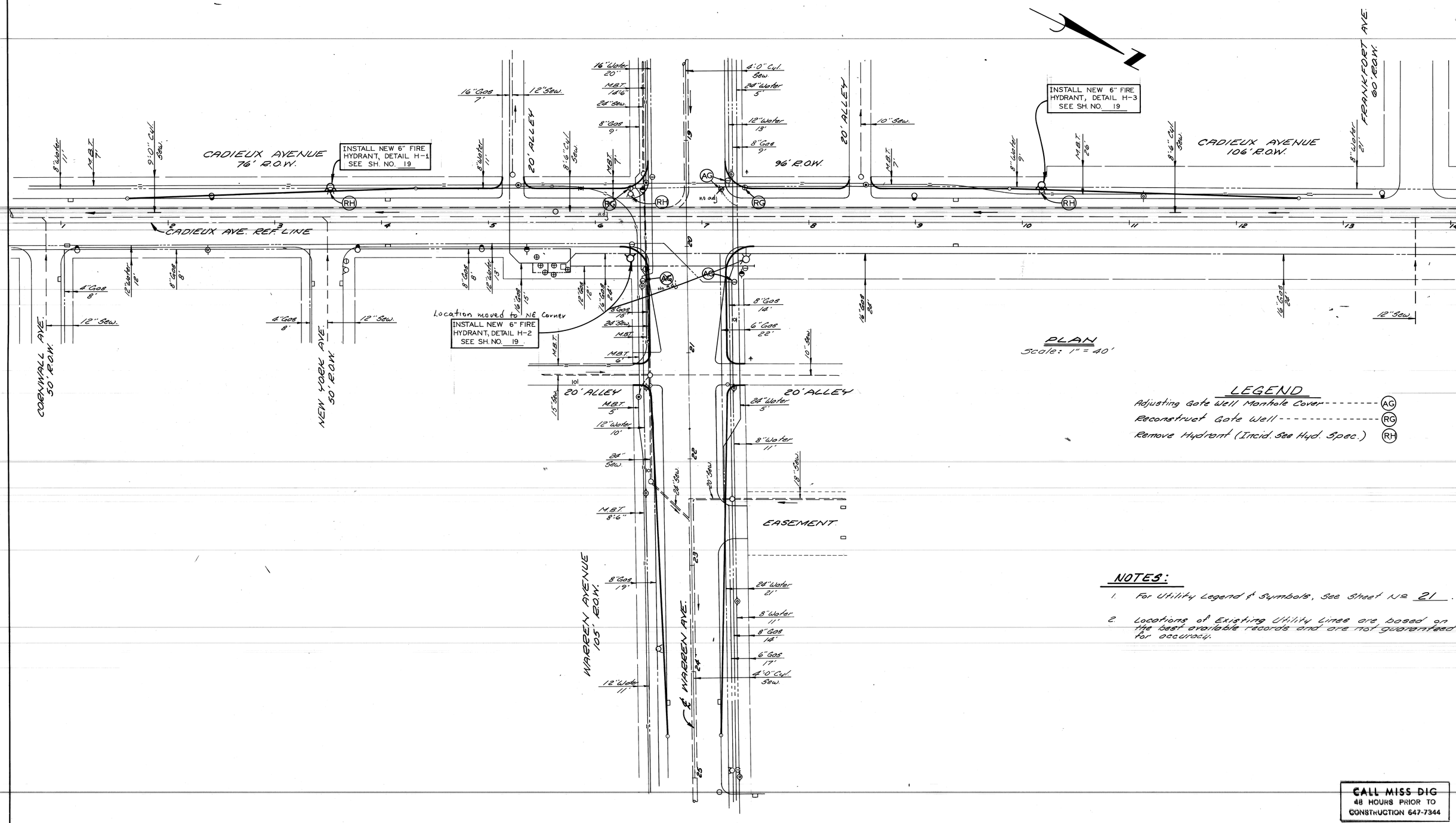
WARREN AVE. – CADIEUX AVE.
INTERSECTION IMPROVEMENT

PROFILES

PROFILES
Scale
Hor. 1"=40'
Vert. 1"=2'

SHEET 6 OF 54 SHEETS
JOB No. 10012A
DATE 10-7-76

C-5517



PLAN

Scale: 1" = 40'

LEGEND

Adjusting Gate Well Manhole Cover ---------- (AG)

Reconstruct Gate Well ---------- (RG)

Remove Hydrant (Incid. See Hyd. Spec.) (RH)

NOTES:

1. For Utility Legend & Symbols, See Sheet No 21.
2. Locations of Existing Utility Lines are based on the best available records and are not guaranteed for accuracy.

CALL MISS DIG
48 HOURS PRIOR TO
CONSTRUCTION 647-7344

REFERENCE DRAWINGS	DESIGNED BY		APPROVED: ENGINEER OF EXPRESSWAYS	CITY OF DETROIT	WARREN AVE. - CADIEUX AVE. INTERSECTION IMPROVEMENT
	DRAWN BY	M.S.		CITY ENGINEERING DIVISION	
	TRACED BY			E. P. M. D.	UTILITIES
	CHECKED BY	W.B.			

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE

REVISIONS LOCATED BY COORDINATES ON SHEET

SHEET 7 OF 54 SHEETS

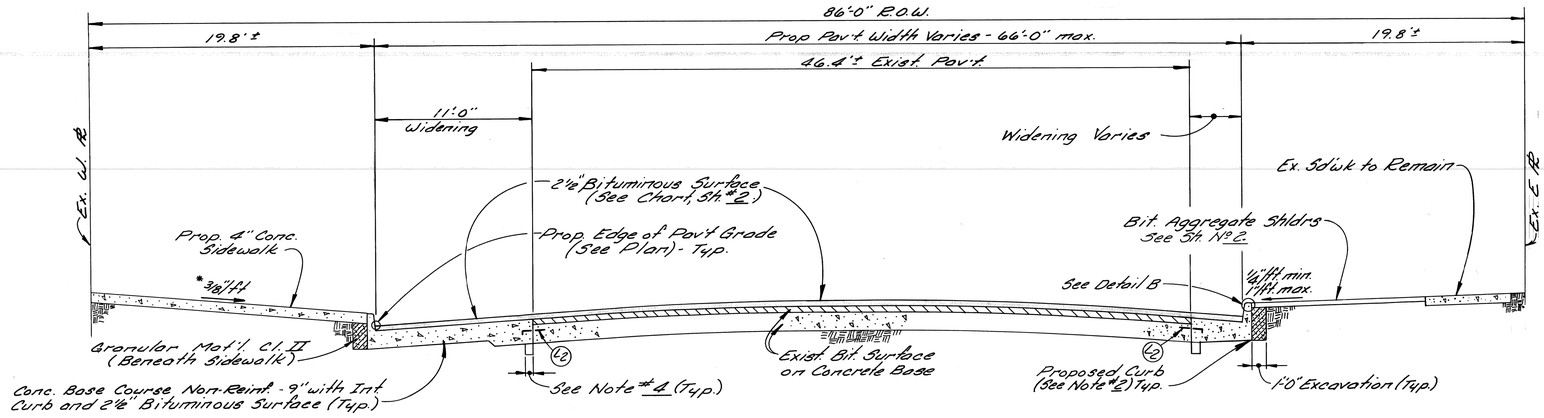
CONTRACT No. 10012A

DRWG No.

DATE 10-7-76

C-5517

K&E 17 0153 12-73 8714±



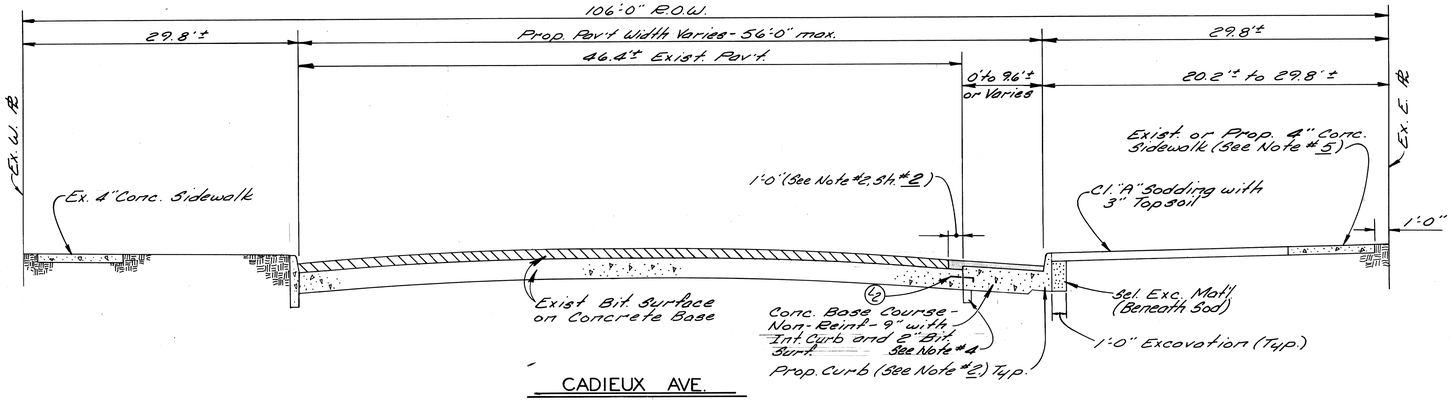
* Sidewalk slopes are to be 3/8"/1' unless the Engineer determines that a minimum slope of ¼"/1' or a maximum slope of 3/4"/1' must be used to meet Exist. Conditions.

CADIEUX AVE
TYPICAL WIDENING AND RESURFACING NORTH OF HARPER
NO SCALE

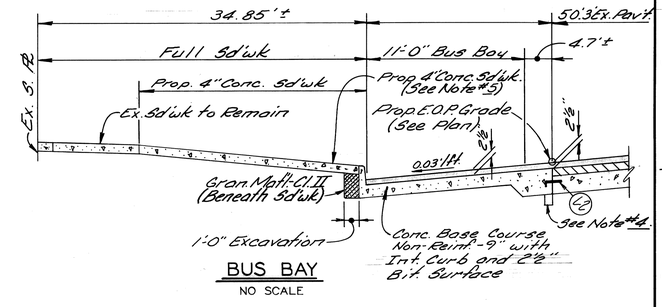
The following quantities are estimated for use throughout Harper - Cadieux @ the Discretion of the Engineer.

4" Concrete Sidewalk	504 Sq. Ft.
Removing Sidewalk	56 Sq. Yds.
Class "A" Sodding	50 Sq. Yds.
Topsoil Surface, 3"	50 Sq. Yds.
Subgrade Undercutting - Type II	96 Cu. Yds.
Bituminous Aggregate Shoulders	0.1 Tons
Conc. Pav't - Non-Reinf. 8" (Driveways)	67 Sq. Yds.

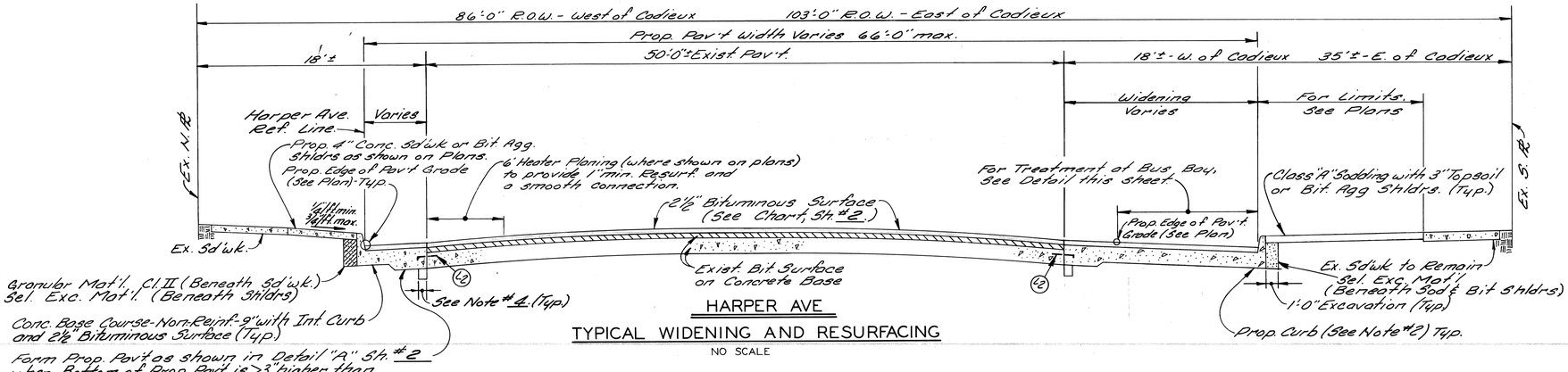
Miscellaneous Quantities Harper - Cadieux	
Maintaining Traffic	Lump Sum
Type II Barricade (Drums) Lighted	93 Each
Drum Guide Rail	325 Lin. Ft.
Mobilization - Harper Cadieux	Lump Sum
Type III Barricades	2 Each



CADIEUX AVE.
TYPICAL WIDENING AND RESURFACING SOUTH OF HARPER
NO SCALE



BUS BAY
NO SCALE



HARPER AVE
TYPICAL WIDENING AND RESURFACING
NO SCALE

GENERAL NOTES

1. For Earthwork and Joint Legends, See Sh. # 2.
2. The prop. curb shall be Int. Curb (See Detail Sh. # 2) with Conc. Curb Det. "X" as an alternate. If Conc. Curb Det. "X" is used, the new pav't. & curb must be constructed integrally where the pav't. widening is 1'-0" or less. Regardless of construction method the curb shall be paid for as concrete base course.
3. Place 4" Conc. Sd'wk. to face of bldg. where bldg. fronts on prop. line.
4. Fill existing curb void with Gran. Mat'l. Class II (Incidental)
5. Backfill if req'd. under prop. sd'wks. & pav't. shall be Granular Mat'l. Class II (Incidental to Contract Costs)

REVISIONS LOCATED BY COORDINATES ON SHEET	COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE

REFERENCE DRAWINGS

DESIGNED BY	Comly
DRAWN BY	Sveech
TRACED BY	
CHECKED BY	Comly

APPROVED: ENGINEER OF EXPRESSWAYS

CITY OF DETROIT
CITY ENGINEERING DIVISION
E. P. M. D.

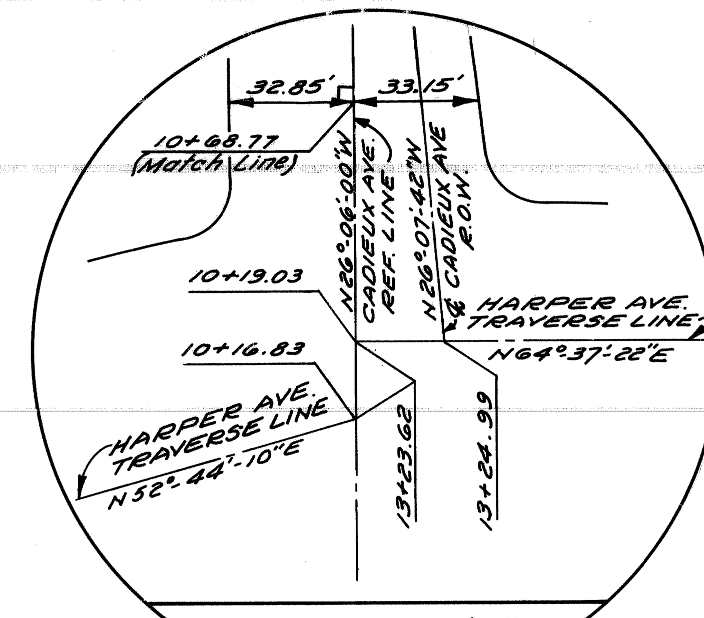
HARPER AVE. — CADIEUX AVE.
INTERSECTION IMPROVEMENT

TYPICAL CROSS-SECTIONS

SHEET 8 OF 54 SHEETS
CONTRACT No. 10012A
DRWG No.
DATE 10-7-76

C-5517

K&E 17 0153 12-73 5714±



DETAIL "A"
No Scale

HARPER AVE. CURVE DATA

Curve #1	Curve #2
Δ = 11°-53'-12"	Δ = 13°-43'-05"
D = 5°-25'-51"	D = 9°-32'-57.47"
R = 1055'	R = 600'
T = 109.83'	T = 72.17'
L = 218.87'	L = 143.66'
E = 5.70'	E = 4.33'
P.C. = 111+99.13	P.C. = 115+36.69
P.I. = 113+08.88	P.I. = 116+08.86
P.T. = 114+18.00	P.T. = 116+80.35

PLAN
Scale: 1" = 40'

NOTES:

1. All proposed street return radii shall be 20' unless otherwise noted.

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE

REVISIONS LOCATED BY COORDINATES ON SHEET

REFERENCE DRAWINGS

DESIGNED BY
DRAWN BY MAP
TRACED BY
CHECKED BY I.H.K.

APPROVED: Allen E. Pro[illegible]
ENGINEER OF EXPRESSWAYS

CITY OF DETROIT
CITY ENGINEERING DIVISION
E.P.M.D.

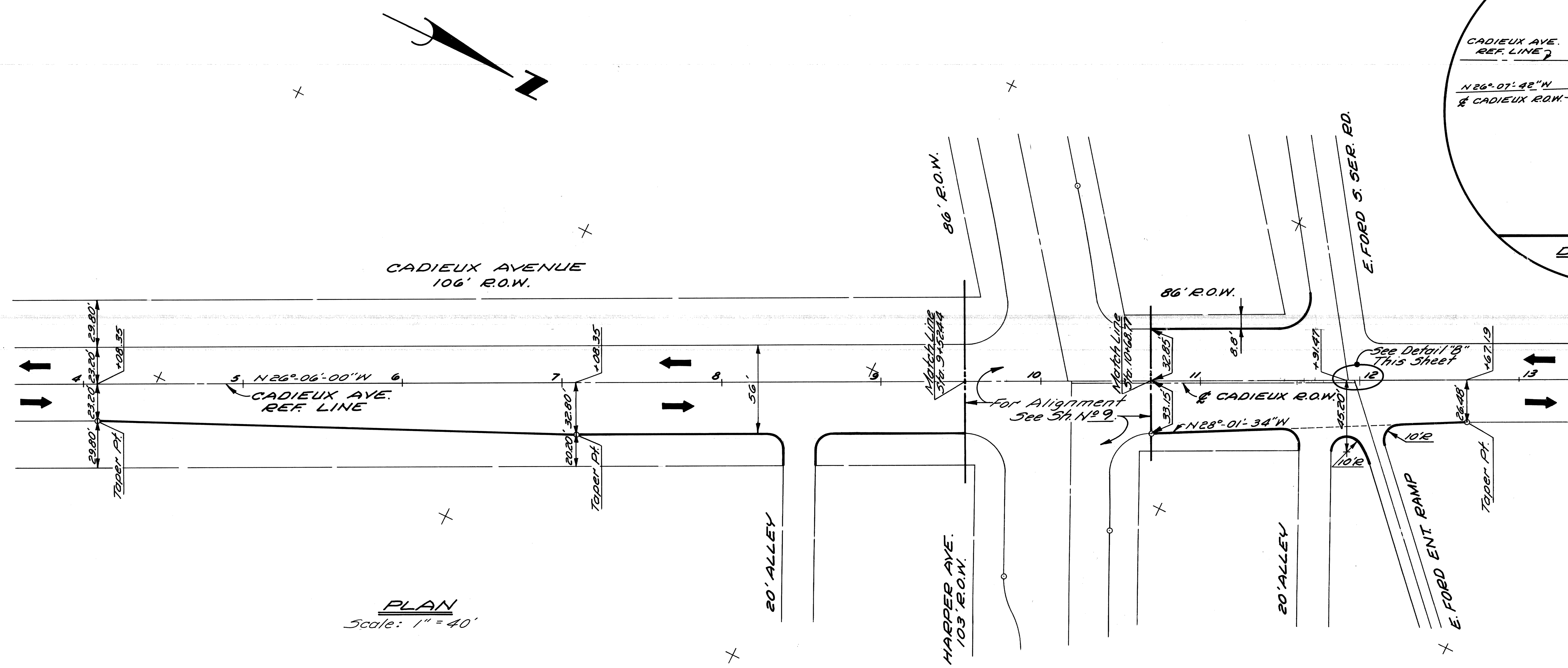
HARPER AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT

ALIGNMENT

SHEET 9 OF 54 SHEETS
CONTRACT No. 10012A
DRWG No.
DATE 10-7-76

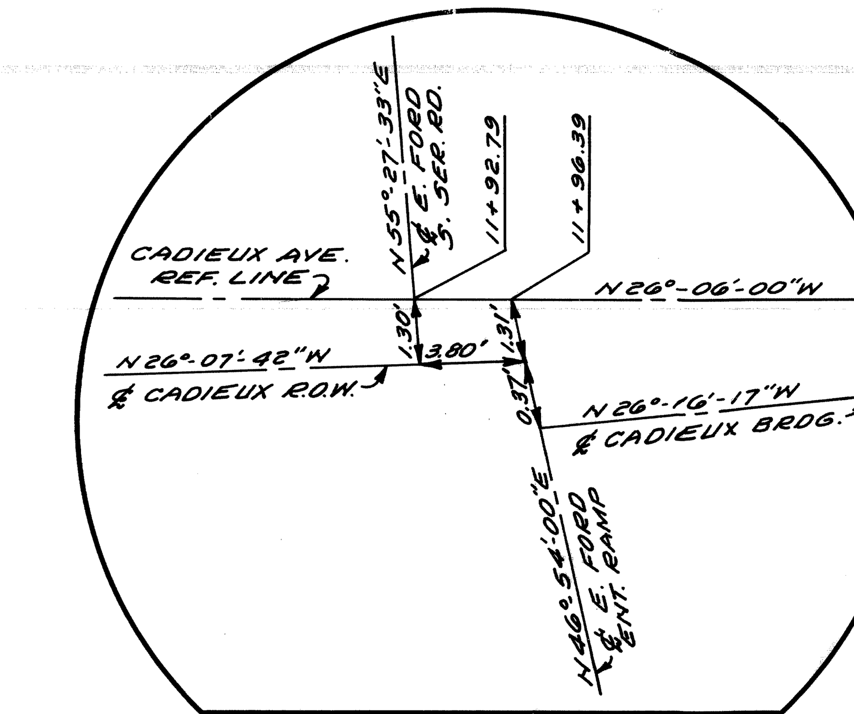
C-5517

K&E 17 0153 12-73 5714±



PLAN

Scale: 1" = 40'



DETAIL "B"

No Scale

NOTES:

1. All proposed street return radii shall be 20' unless otherwise noted.
2. All proposed alley return radii shall be 10' unless otherwise noted.

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE

REVISIONS LOCATED BY COORDINATES ON SHEET

REFERENCE DRAWINGS

DESIGNED BY	
DRAWN BY	M.A.P.
TRACED BY	
CHECKED BY	I.H.K.

APPROVED: Allen E. [signature]
ENGINEER OF EXPRESSWAYS

CITY OF DETROIT

CITY ENGINEERING DIVISION
E. P. M. D.

HARPER AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT

ALIGNMENT

SHEET 10 OF 54 SHEETS

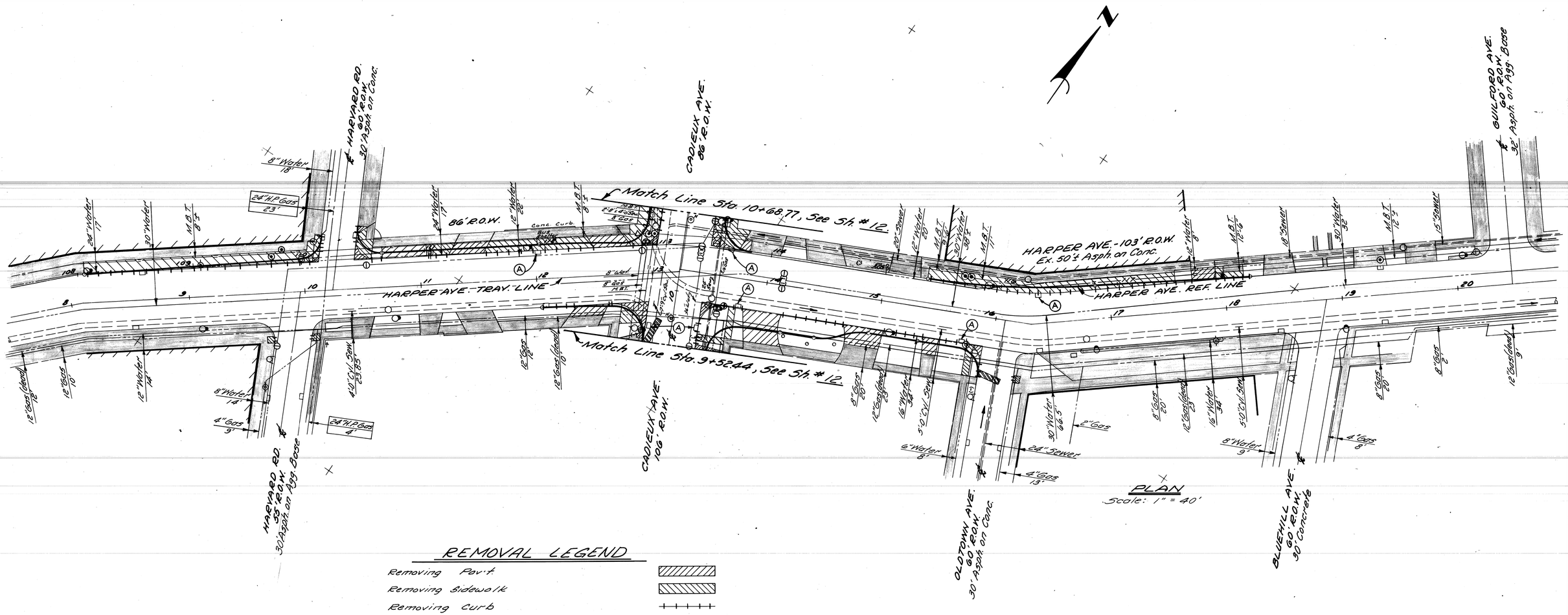
CONTRACT No. 10012A

DRWG No.

DATE 10-7-76

C-5517

K&E 17 0133 12-73 8714 E



PLAN
Scale: 1" = 40'

REMOVAL LEGEND

- Removing Pav't.
- Removing Sidewalk
- Removing Curb
- Exist. Sidewalk or Driveway to remain
- Abandoning Drainage Structures (A)
- Removing Old Pav't. (Patching) and replace with 2" Bituminous Surface on Conc. Pav't Patching 9" Nonreinf.

NOTES:

1. For Utility Legend & Symbols, See Sh. N° 21.
2. Locations of Exist. Utility Lines are based on best available records & are not guaranteed for accuracy.

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY	
DRAWN BY	M. S.
TRACED BY	
CHECKED BY	I. H. K.

APPROVED:
ENGINEER OF EXPRESSWAYS

CITY OF DETROIT
CITY ENGINEERING DIVISION
E. P. M. D.

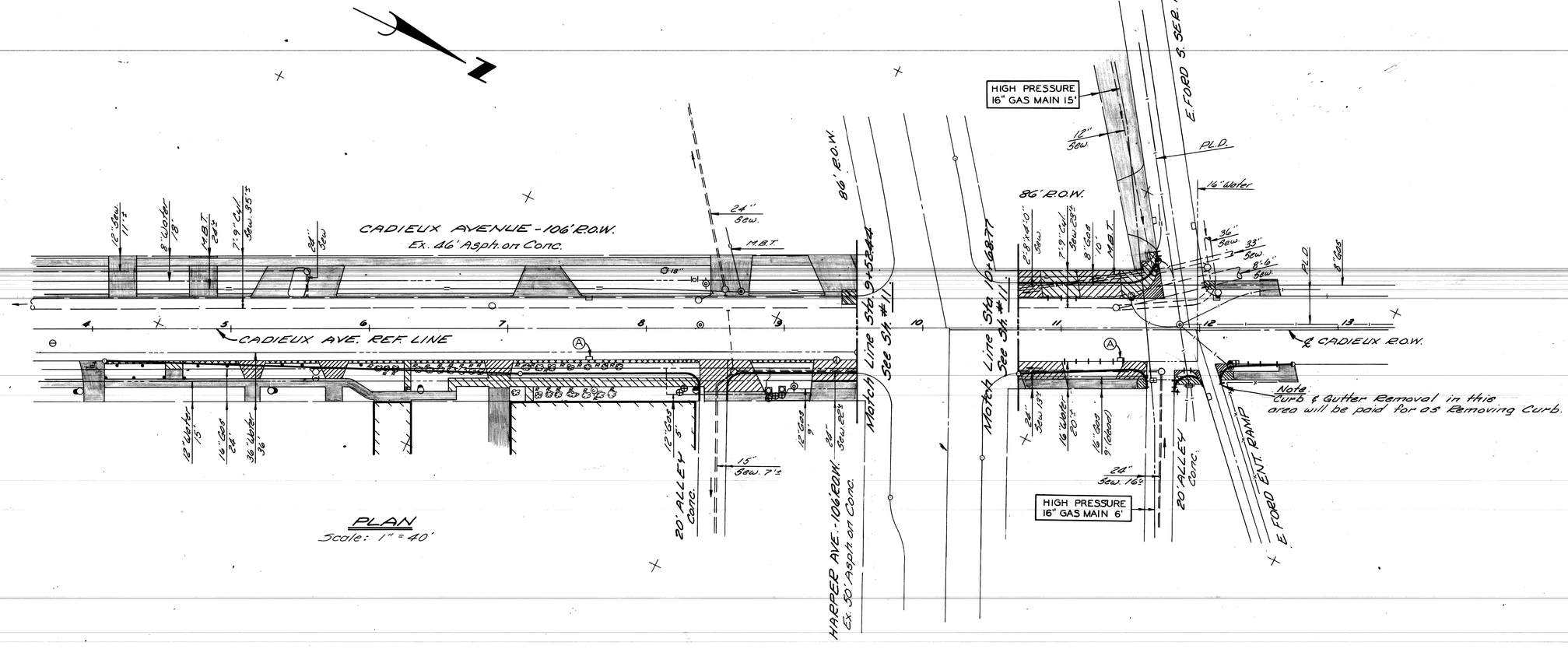
HARPER AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT

REMOVALS

SHEET 11 OF 54 SHEETS
CONTRACT No. 10012 A
DRWG No.
DATE 10-7-76

C-5517

K&E 17 0133 12-73 97143



PLAN
Scale: 1" = 40'

REMOVAL LEGEND

- Removing Pav't.
- Removing Sidewalk
- Removing Curb.
- Abandoning Drainage Structures (A)
- Removing Trees (Incid') R.
- Removing Integral Curb and Sidewalk
- Removing Old Pav't (Patching) & replace with 2" Bit Surface on Conc. Pav't patching - 9" Non-reinf.
- Removing Old Pav't (Patching) Replace with Conc. Pav't. Non. Reinf. - 8"
- Exist. Sidewalk or Driveway to Remain

NOTES:

1. For Utility Legend & Symbols, See Sheet No. 21.
2. Locations of Existing Utility Lines are based on the best available records and are not guaranteed for accuracy.

CALL MISS DIG
48 HOURS PRIOR TO
CONSTRUCTION 647-7344

COORD	DESCRIPTION	DR'N	CK'D	APV'D	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY
DRAWN BY M.S.
TRACED BY
CHECKED BY R.B.P.

APPROVED:
ENGINEER OF EXPRESSWAYS

CITY OF DETROIT
CITY ENGINEERING DIVISION
E.P.M.D.

HARPER AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT

REMOVALS

SHEET 12 OF 54 SHEETS
CONTRACT No. 10012A
DRWG No.
DATE 10-7-76

C5517

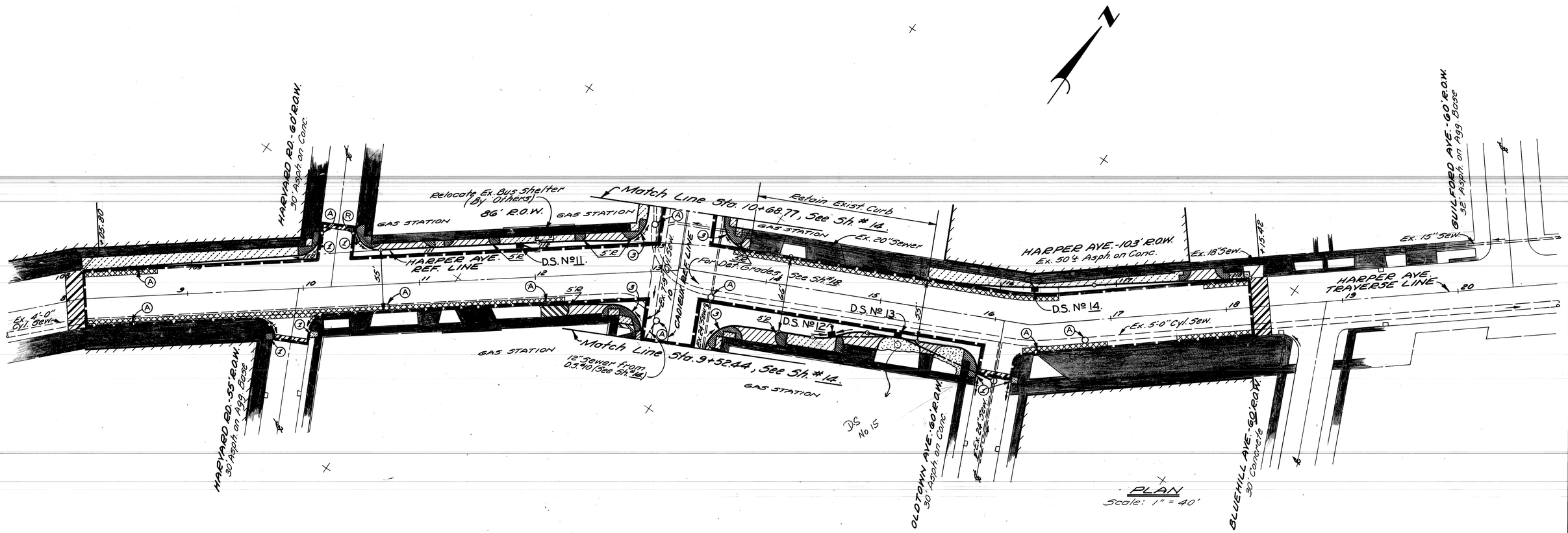
K&E 17 0193 12-73 9714±

P.B.M. # 106.-254, Eley. 111.513
N.E. Corner Linville & Cadieux.

C.B.M. Eley. 114.37 Arrow on Hydrant
S.W. Corner Harper Ave. & Cadieux Ave.

C.B.M. Eley. 114.06 Arrow on Hydrant
S.W. corner Harper Ave. & Oldtown Ave.

C.B.M. Eley. 114.11 Arrow on Hydrant
S.W. Corner Harper Ave. & Bluehill Ave.



PLAN
Scale: 1" = 40'

DRAINAGE STRUCTURE NO. (D.S.)	TYPE OF STRUCTURE	WITH TRAP (T)	SEWER LENGTH & TYPE LEAVING D.S. LENGTH (FT.)	SIZE (IN.)	CLASS	SEWER TAP SIZE (IN.)	TRENCH DETAIL (LIN. FT.) 8	9	COMMENTS
11	C.B. "B"	T	13	12	C-76-III			13	Connect to Ex. Outlet Sewer (Incidental)
12	C.B. "A"		56	12	C-76-III			56	
13	C.B. "B"	X	86	12	C-76-III	12	42	44	C.B.A-to D.S.-15
14	C.B. "B"	T	6	12	C-76-III	12		6	
15	C.B. B	T							With MH Cover

SURFACING LEGEND

- Conc. Base Course, Non-Reinf. 9" with Int. Curb and 2½" Bit. Surface
- Removing Bit. Surf. & Resurface
- Conc. Pavt.-Non-Reinf. 8" (Driveway)
- Conc. Pavt.-Non-Reinf. 6" (Driveway.)
- Bituminous Agg. Shldrs.
- Class "A" Sodding with 3" Topsoil
- Existing Building
- (R) Reconstruct Drainage Structures
- 6" Conc. Sd'wk. (Sidewalk Ramp Areas are paid for separately.)
- 4" Concrete Sidewalk
- Exist. Sd'wk. or Drwy. to Remain
- (2) or (3) Sd'wk. Ramps (4" or 6") Types (2) or (3)
- Rem. Bit. Surf.-Planer Meth. & Resurface
- (A) Adjusting Drainage Structure Covers
- 2½" Bituminous Surface on Exist. Pavt.

NOTES:

1. For Alignment, See Sh. No 9.
2. For Utility Legend & Symbols, See Sh. No 21.
3. For Driveway Details, See Sh. No 21.

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY
DRAWN BY MKP
TRACED BY
CHECKED BY I.H.K.

APPROVED:
ENGINEER OF EXPRESSWAYS

CITY OF DETROIT
CITY ENGINEERING DIVISION
E.P.M.D.

HARPER AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
PLAN

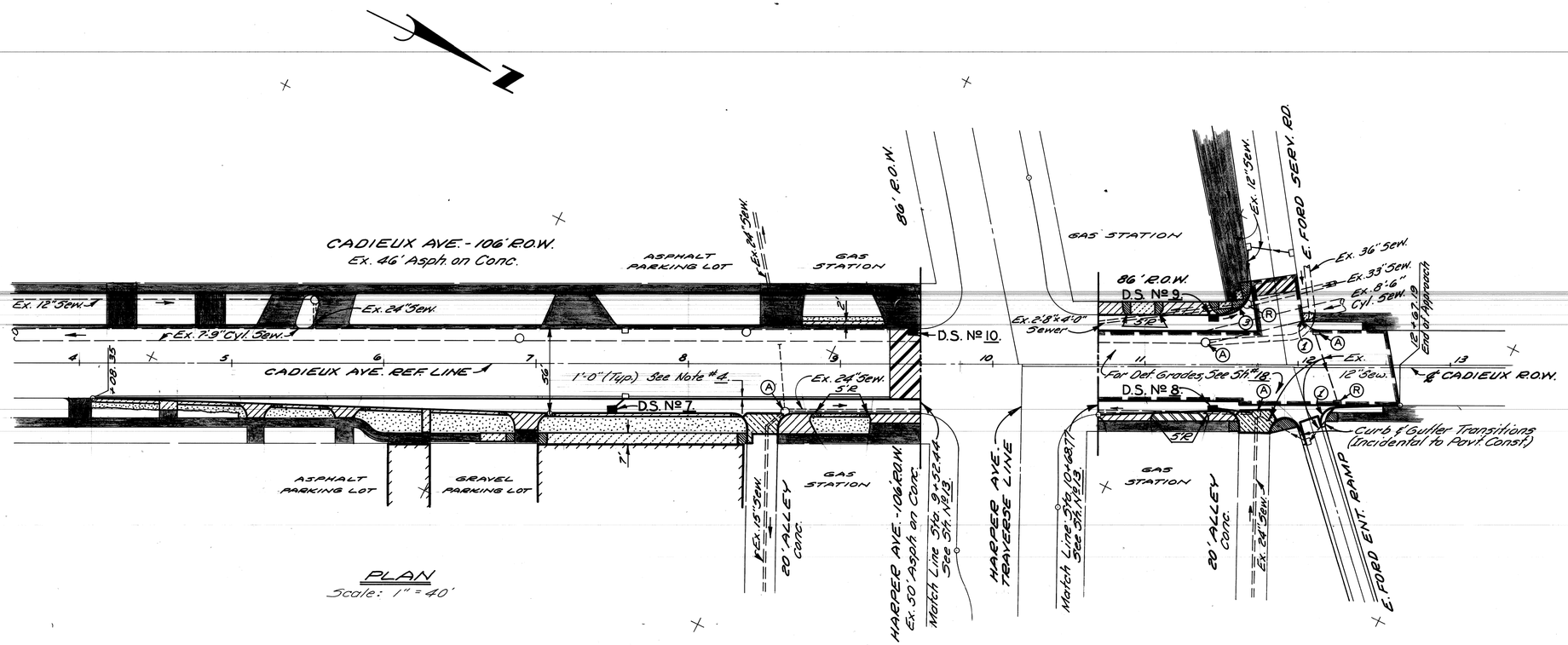
SHEET 13 OF 54 SHEETS
CONTRACT No. 10012A
DRWG No.
DATE 10-7-76

C-5517

K&E 17 0153 12-73 3714

P.B.M. #106-254 Elev. 111.513
N.E. Corner Linville & Cadieux

C.B.M. Elev. 114.37 Arrow on Hydrant
S.W. Corner Harper Ave. & Cadieux Ave.



PLAN
Scale: 1" = 40'

DRAINAGE STRUCTURE NO. (D.S.)	TYPE OF STRUCTURE	WITH TRAP (T)	SEWER LENGTH & TYPE LEAVING D.S. LENGTH (FT.)	SIZE (IN.)	CLASS	SEWER TAP SIZE (IN.)	TRENCH DETAIL (LIN. FT.) 8	9	COMMENTS
7	C.B. "B"	T	10	12	C-76-III			10	Connect to Ex. Outlet (Incidental)
8	C.B. "B"	T	22	12	C-76-III	12		22	
9	C.B. "L"	Const 1/2 Trap (Incid)	21	12	C-76-III	12		21	Const. C.B. "B" with Trap if this wont interfere with 6" Gas
10	C.B. "B"	T	23	12	C-76-III	12		23	

SURFACING LEGEND

- Conc. Base Course Non-Reinf. - 9" with Integral Curb and Bit. Surface.*
- Conc. Pavt. - Non-Reinf. - 9"
- Conc. Pavt. - Non-Reinf. - 8" (Driveway.)
- Conc. Pavt. - Non-Reinf. - 6" (Driveway.)
- Bituminous Agg. Shldrs.
- Class "A" Sodding with 3" Topsoil
- Existing Building
- 6" Conc. Sd'wk. (Sidewalk Ramp Areas are paid for separately.)
- 4" Concrete Sidewalk
- Exist. Sd'wk. or Dr'wy. to Remain
- (1) Sidewalk Ramp (6") Types (1) or (3)
- Remove Bit. Surface & Resurface
- (A) Adjust Drainage Structure Covers
- 2½" Bituminous Surface on Exist. Pav't.
- (R) Reconstruct Drainage Structures

* Use 2½" Bit. Surface (N. of Harper) & 2" Bit. Surface (S. of Harper)

NOTES:

1. For Alignment, See Sh. No 10.
2. For Utility Legend & Symbols, See Sh. No 21.
3. For Driveway Details, See Sh. No 21.
4. Strip & Resurface 1' Width, See Typical Cross-Section Sh. # 8.

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY
DRAWN BY MAP
TRACED BY
CHECKED BY R.A.C.

APPROVED: Allen E. Rogers
ENGINEER OF EXPRESSWAYS

CITY OF DETROIT
CITY ENGINEERING DIVISION
E. P. M. D.

HARPER AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT

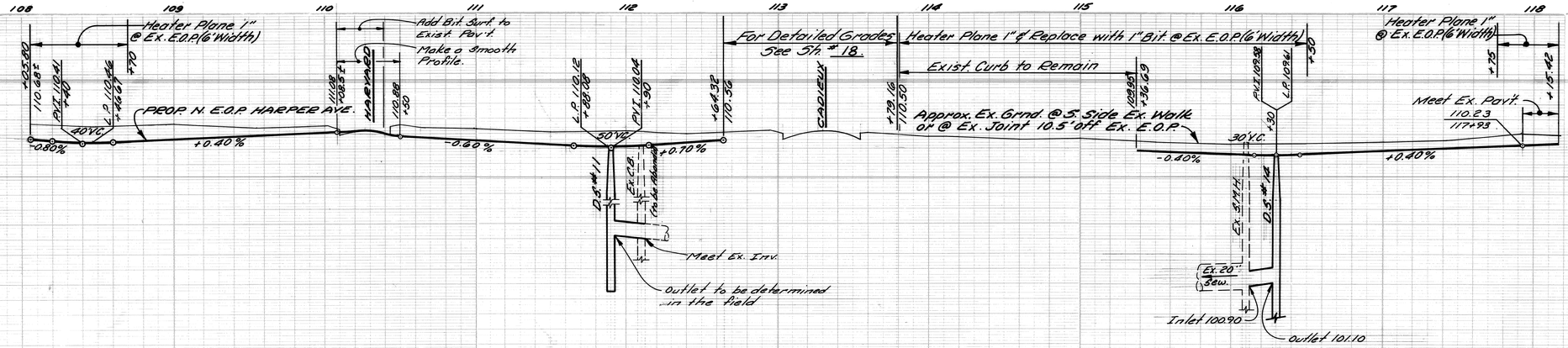
PLAN

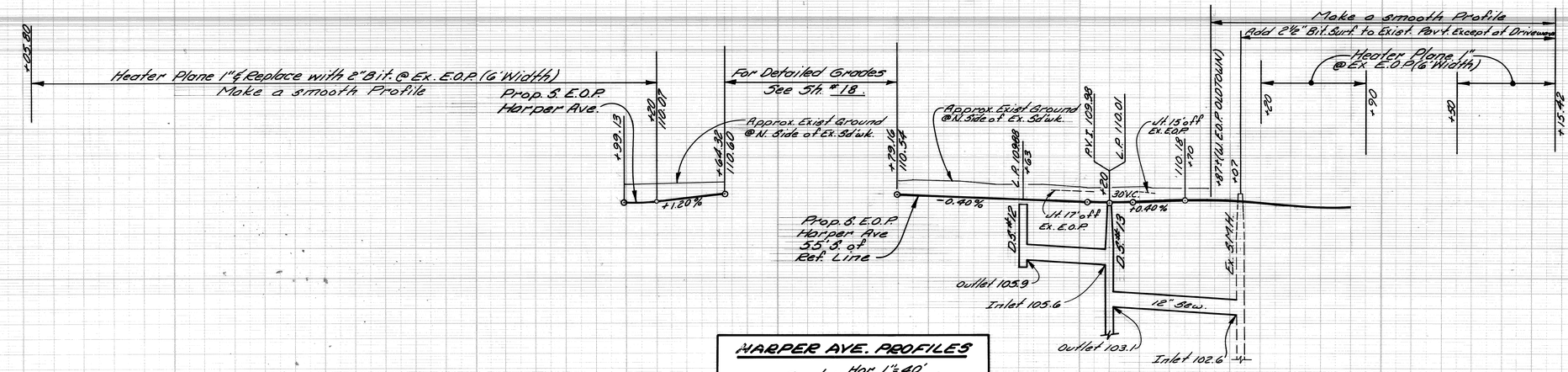
SHEET 14 OF 54 SHEETS
CONTRACT No. 10012A
DRWG No.
DATE 10-7-76

C-5517

K&E 10 1153 3-72 448

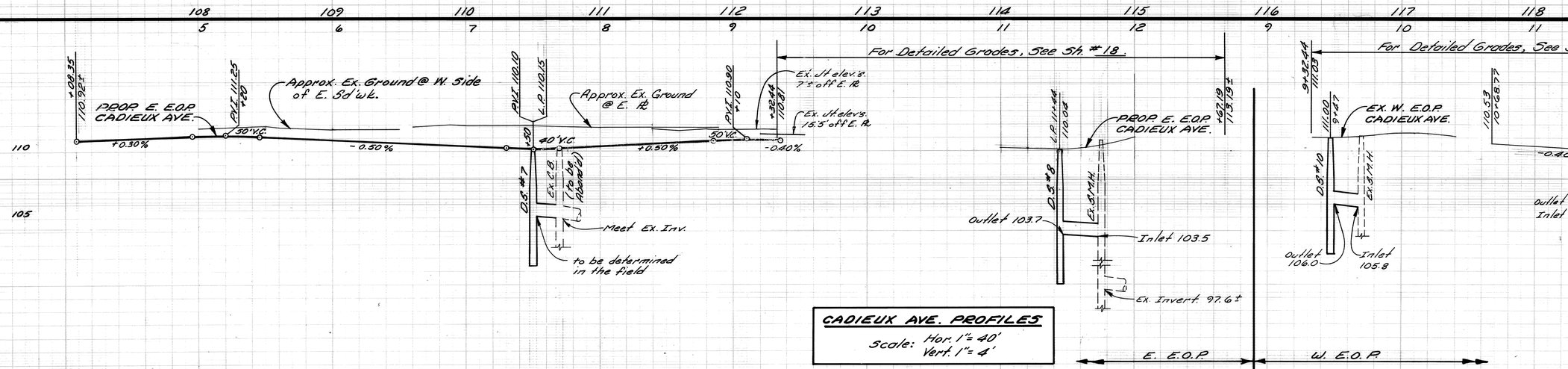
FINAL R.O.W.





HARPER AVE. PROFILES

Scale: Hor. 1" = 40'
Vert. 1" = 4'



CADIEUX AVE. PROFILES

Scale: Hor. 1" = 40'
Vert. 1" = 4'

DESIGNED		APPROVED	CITY OF DETROIT	HARPER AVE – CADIEUX AVE INTERSECTION IMPROVEMENT	SHEET 15 OF 54 SHEETS
DRAWN	M.A.P.	ENGINEER OF EXPRESSWAYS	CITY ENGINEERING DIVISION E. P. M. D.	PROFILES	JOB No. 10012A
CHECKED	I.H.K.				DATE 10-7-76

C-5517

K&E 17 0153 12-73 5714±

LEGEND

- Adjusting Water Shut-off ---------- (AW)
- Adjusting Gate Well Manhole Cover ---------- (AG)
- Reconstruct Gate Well ---------- (RG)
- Remove Hydrant, (Incid. See Hydrant Spec.) ---------- (RH)

NOTES:

1. For Utility Legend & Symbols, See Sh. No. 21.
2. Locations of Exist. Utility Lines are based on best available records & are not guaranteed for accuracy.

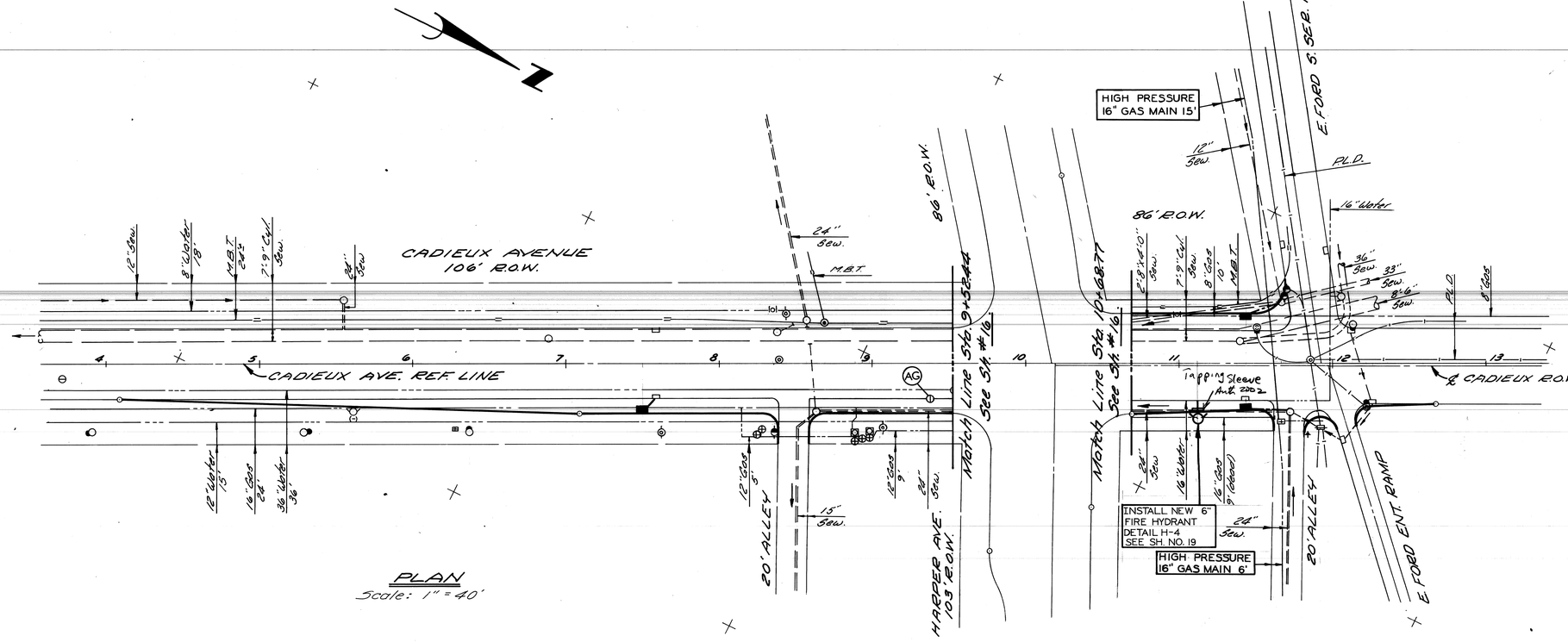
REFERENCE DRAWINGS	DESIGNED BY		APPROVED: (signature) ENGINEER OF EXPRESSWAYS	CITY OF DETROIT	HARPER AVE. - CADIEUX AVE. INTERSECTION IMPROVEMENT	SHEET 16 OF 54 SHEETS
	DRAWN BY	MAB		CITY ENGINEERING DIVISION		CONTRACT No. 10012A
	TRACED BY			E. P. M. D.	UTILITIES	DRWG No.
	CHECKED BY	W. B.				DATE 10-7-76

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE

REVISIONS LOCATED BY COORDINATES ON SHEET

1 2 3 4 5 6 7 8 9 10 11

C-5517



PLAN
Scale: 1" = 40'

LEGEND
Adjusting Gate well Manhole Cover (AG)

NOTES:

1. For Utility Legend & Symbols, See Sheet No. 21.
2. Locations of Existing Utility Lines are based on the best available records and are not guaranteed for accuracy.

CALL MISS DIG
48 HOURS PRIOR TO
CONSTRUCTION 647-7344

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE	REFERENCE DRAWINGS	
REVISIONS LOCATED BY COORDINATES ON SHEET							

DESIGNED BY
DRAWN BY M.S.
TRACED BY
CHECKED BY W.B.

APPROVED:
ENGINEER OF EXPRESSWAYS

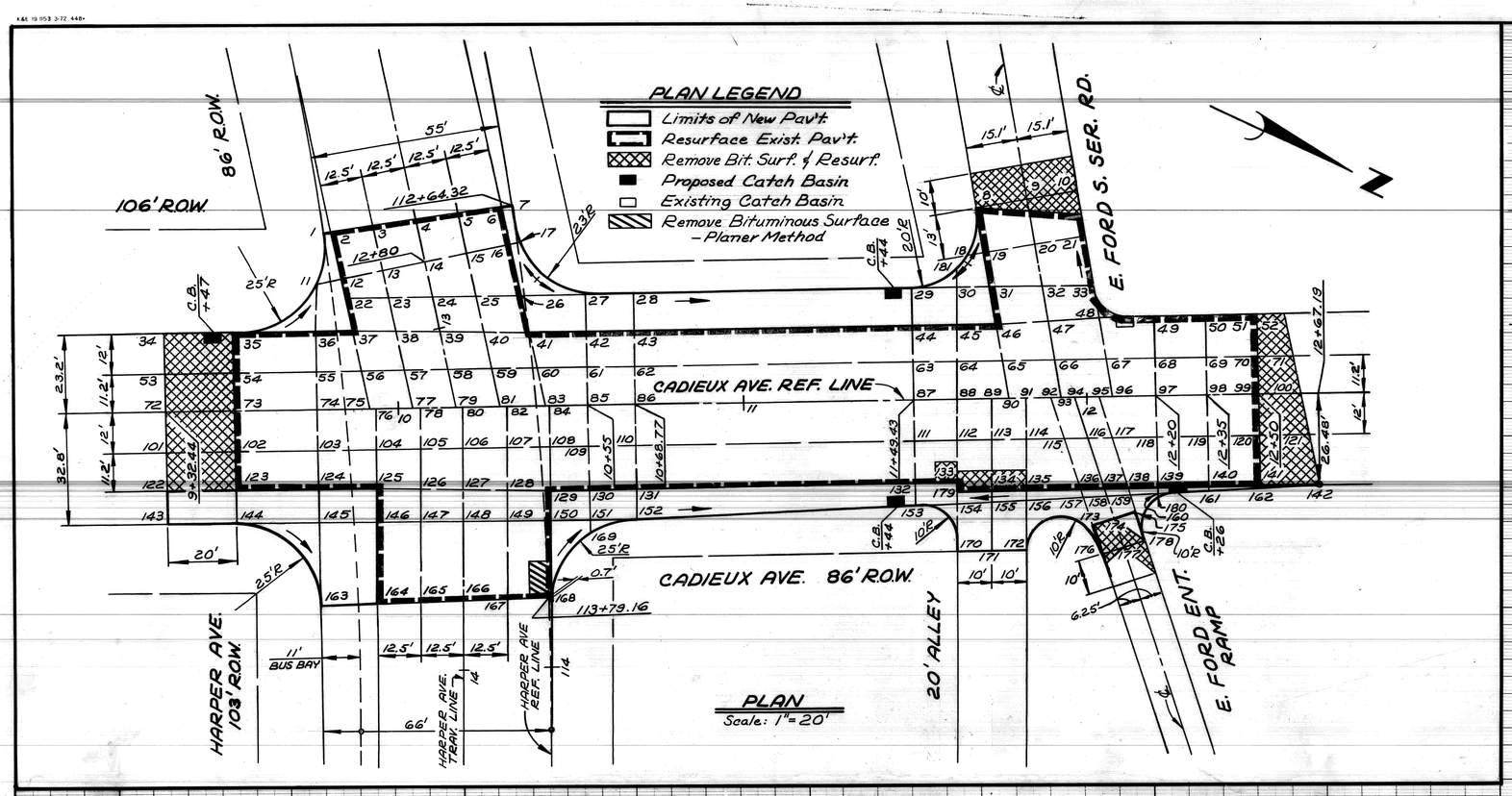
CITY OF DETROIT
CITY ENGINEERING DIVISION
E. P. M. D.

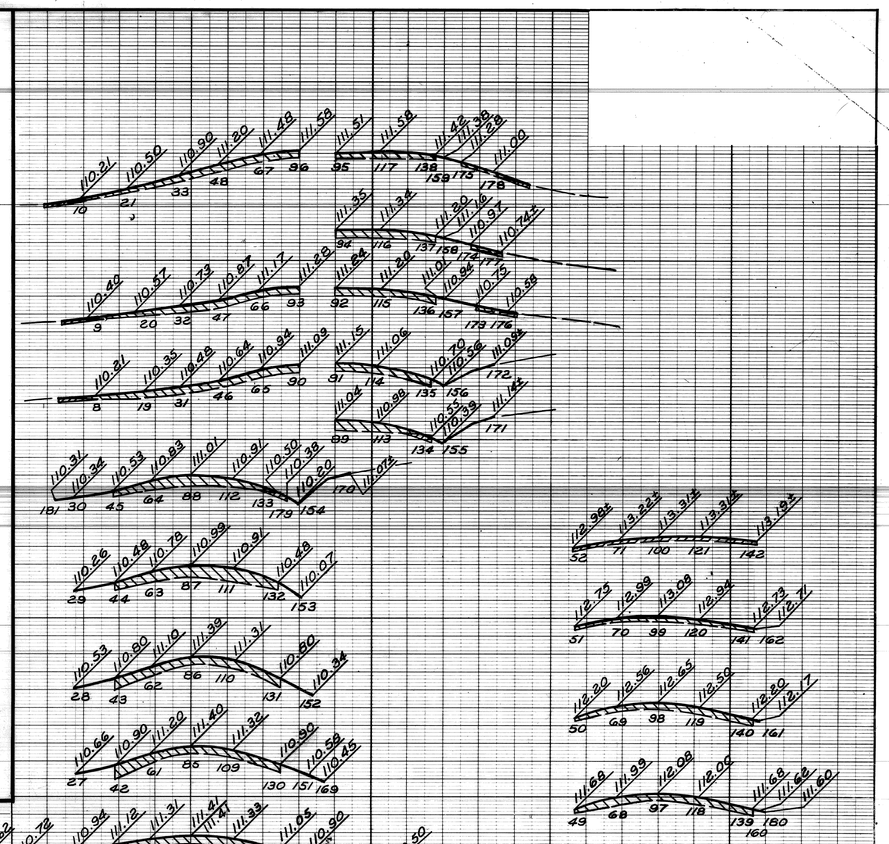
HARPER AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT

UTILITIES

SHEET 17 OF 54 SHEETS
CONTRACT No. 10012A
DRWG No.
DATE 10-7-76

C-5517





NOTE:
All profiles and cross-sections on this sheet are drawn true length.

PROFILES & CROSS-SECTIONS
Scale: Vert. 1"=2'
Hor. 1"=20'

REVISIONS	DRN	CKD	DESIGNED BY W. Bonus	APPROVED: Allen E. Prager, ENGINEER OF EXPRESSWAYS	CITY OF DETROIT
			DRAWN BY W. Bonus		CITY ENGINEERING DIVISION
			CHECKED BY R. Comly		E. P. M. D.

HARPER AVE. - CADIEUX AVE:
INTERSECTION IMPROVEMENT

DETAILED GRADES FOR CADIEUX AVE. AT HARPER AVE. & E. FORD SOUTH SERVICE ROAD

SHEET 18 OF 54 SHEETS
CONTRACT NO. 10012A
ASSIGN. NO.
DATE 10-7-76

C-5517

BRUNING 80731

GENERAL NOTES

Existing Water Mains, as shown, indicate approximate location only as shown by D.M.W.D. records and no guarantee is made as to completeness or accuracy.

The locations and elevations of existing utilities are shown in accordance with available data. The Contractor shall expose these utilities, where required, to determine actual locations.

Other utilities may be making alterations to their existing systems in the vicinity of the Water Main construction shown on the plans. These utilities should be consulted for the latest information regarding the location of their facilities.

A minimum clearance of one foot vertically and three and one half feet horizontally shall be maintained between the Water Main and other utilities, unless otherwise shown on the plans or approved by the Engineer. If a conflict is indicated between the Water Main and any other utility, that utility should be consulted.

The location of Fire Hydrants, as shown, are approximate. D.F.D. will give exact location of Proposed Fire Hydrants prior to installation.

"Ductile Iron Pipe in sizes 3" through 16" is permitted as a part of the Cast Iron Pipe Specifications."

CONSTRUCTION NOTES

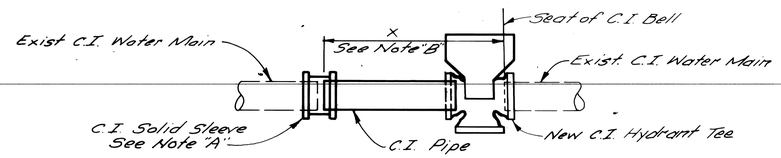
Encasements and Thrust Blocks shall be poured against undisturbed earth. Bottom 3" of Encasement may be poured separate from Encasement and used as a sub-footing.

All Encasements and Thrust Blocks shall terminate at the face of pipe bells.

Removal of abandoned Water Mains as required for clearance to construct the Proposed Water Mains is incidental to Water Main Construction.

Sheeting and bracing, where required, shall be installed by the Contractor as incidental to Water Main const.

Scheduling of the connections shall be governed by the "Sequence of Operations" and "Flushing and Chlorination" specifications which are included in the Water Main portion of the Proposal.



PLAN

DETAIL "A"

HYDRANT CONNECTION TO WATER MAIN

NO SCALE

NOTES FOR CONTRACTOR'S CONNECTIONS

Contractor shall cut and cap or plug existing Water Mains to remain in service where required in accordance with supplemental specifications.

4" C.I. Blow-off Assemblies, C.I. Plugs and Caps to be installed and/or removed by Contractor have not been shown.

Contractor shall install and later remove all temporary C.I. Plugs, Tees and Blow-off Assemblies.

Contractor shall furnish and install C.I. Pipe and Fittings necessary to complete the connections shown.

Contractor shall construct all Concrete Thrust Blocks and Gate Wells.

Contractor shall install all Temporary bracing for Water Main work.

It is not normally anticipated that bends requiring Thrust Blocks will be required for Connections unless otherwise shown.

NOTE "A"

Plugs and caps, temporary blow-offs, air valves, corporation stops, pipe jacks, solid sleeves, jointing material, bracing and blocking are incidental to water main construction and will not be paid for separately.

NOTE "B"

Limits shown for dimension "X" shall be used to measure laid length of pipe.

SCHEDULE OF HYDRANT INSTALLATION ON EXISTING MAINS
DETAILS H-1 THROUGH H-4 *

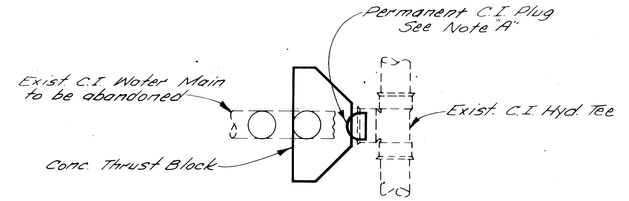
DETAIL Nº	FROM SHEET Nº	SIZE OF NEW OR EX. HYD. TEE	6" PIPE FROM HYDRANT TO EX. MAIN		DETAIL "A"			PROP. LOCATION	
			LENGTH	TRENCH DETAIL	PIPE SIZE	X	TRENCH DETAIL	STATION	DIST. OFF E.O.P.
H-1	7	Ex. 8"x6"	4'	12				3+52	5'
H-2	7	New 12"x6"	16'	12				6+32	12'
H-3	7	Ex. 8"x6"	4'	12	12"	6'	12	10+18	4'
H-4	17	New 16"x6"	12'	12	16"	6'	12	11+12	4'

Ⓐ 6" Gate Valve & Gate Box shall be furnished & installed with Hydrant

* Information herein is to be considered only as a guide. Final figures depend upon the exact location of the hydrant as determined by the Fire Department just prior to installation.

PAY ITEMS

ALL "A" DETAILS, "C" DETAILS, GATE BOXES, VALVES, TEES, EXCAVATION, BACKFILL, WATER MAIN PIPING AND CONNECTIONS TO WATER MAINS ARE INCIDENTAL TO THE INSTALLATION OF THE NEW FIRE HYDRANTS AND ARE, THEREFORE, INCLUDED IN THE PAY ITEM "6"-FIRE HYDRANT."



PLAN

DETAIL "C"

DETAIL OF ABANDONMENT OF
EXISTING HYDRANT CONNECTION TO WATER MAIN

NO SCALE

DESIGNED BY	I.H.K.	APPROVED: Allen E. Proger ENGINEER OF EXPRESSWAYS	CITY OF DETROIT CITY ENGINEERING DIVISION E.P.M.D.
DRAWN BY	Patito		
TRACED BY			
CHECKED BY	R.B.P.		

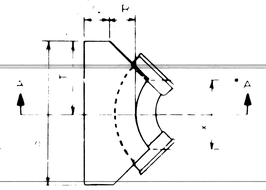
DESCRIPTION
REVISIONS LOCATED BY COORDINATES ON SHEET

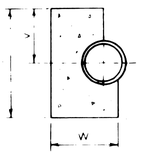
WARREN AVE. – CADIEUX AVE. & HARPER AVE. – CADIEUX AVE.
INTERSECTION IMPROVEMENTS

FIRE HYDRANTS
(CONTRACTOR'S CONNECTIONS)

SHEET 19 OF 54 SHEETS
PROJECT No. 10012A
ASSIGN No.
DATE 10-7-76

C-5517



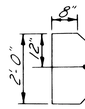


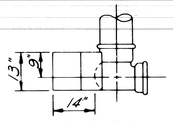
SCHEDULE OF THRUST BLOCK DIMENSIONS

BEND SIZE	CODE							
	Q	R	S	T	U	V	W	X
6"ϕ 8" 90°	0'9"	1'0"	3'4"	1'8"	2'6"	1'3"	1'11"	1'2"
12" 90°	0'9"	1'4"	5'6"	2'9"	3'0"	1'6"	2'4"	1'8"
16" 90°	1'0"	1'8"	6'0"	3'0"	5'0"	2'6"	3'0"	2'8"
6"ϕ 8" 45°	0'9"	1'0"	2'4"	1'2"	2'0"	1'0"	1'11"	1'4"
12" 45°	0'9"	1'4"	3'6"	1'9"	2'6"	1'3"	2'4"	1'4"
16" 45°	1'0"	1'8"	5'4"	2'8"	3'0"	1'6"	3'0"	2'6"
6"ϕ 8" & 12" 22½°	0'9"	1'0"	2'6"	1'3"	2'0"	1'0"	2'0"	1'4"
16" 22½°	1'0"	1'8"	3'4"	1'8"	2'6"	1'3"	3'0"	1'2"

DETAIL OF STANDARD THRUST BLOCKS FOR BENDS

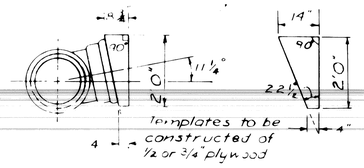
No Scale





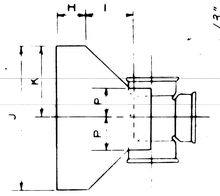
THRUST BLOCK FOR 6" HYDRANT

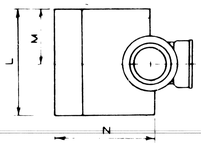
No Scale



TEMPLATE FOR SETTING TEES AT 11¼° x 22½° ANGLES

No Scale





SCHEDULE OF THRUST BLOCK DIMENSIONS

TEE SIZE	CODE							
	H	I	J	K	L	M	N	P
8"x8"	0'9"	1'0"	3'0"	1'6"	2'0"	1'0"	8" 2'3"	8" 0'6"
12"x8"							12" 2'5"	12" 0'8"
16"x8"							16" 2'9"	16" 0'6"
12"x12"	0'9"	1'4"	4'0"	2'0"	3'0"	1'6"	12" 2'9"	8" 0'8"
16"x12"							16" 3'1"	16" 0'8"
16"x16"	1'0"	1'8"	5'0"	2'6"	4'0"	2'0"	16" 3'8"	16" 0'11"

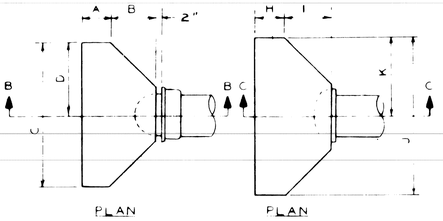
DETAIL OF STANDARD THRUST BLOCKS FOR TEES

No Scale

NOTES

The bearing face of all thrust blocks shall be poured against undisturbed earth

Thrust Blocks will be required on all Bends 6 inches in Diameter or larger and greater than 11¼°



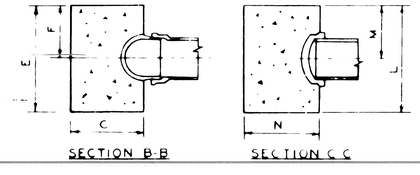
SCHEDULE OF THRUST BLOCK DIMENSIONS

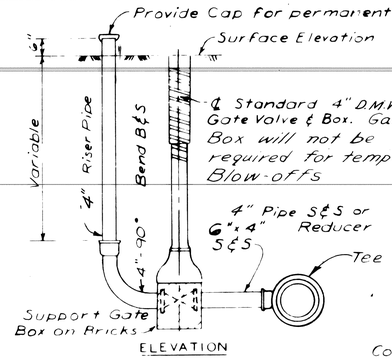
PLUG SIZE	CODE						
	A	B	C	D	E	F	
6"ϕ 8"	0'9"	1'2"	3'0"	1'6"	2'0"	1'0"	1'11"
12"	0'9"	1'4"	4'0"	2'0"	3'0"	1'6"	2'1"
16"	1'0"	1'8"	5'0"	2'6"	4'0"	2'0"	2'8"
CAP SIZE	CODE						
	H	I	J	K	L	M	N
8"ϕ 8"	0'9"	1'2"	3'0"	1'6"	2'0"	1'0"	1'11"
12"	0'9"	1'4"	4'0"	2'0"	3'0"	1'6"	2'1"
16"	1'0"	1'8"	5'0"	2'6"	4'0"	2'0"	2'8"

DETAIL OF STANDARD THRUST BLOCKS

FOR PLUGS & CAPS

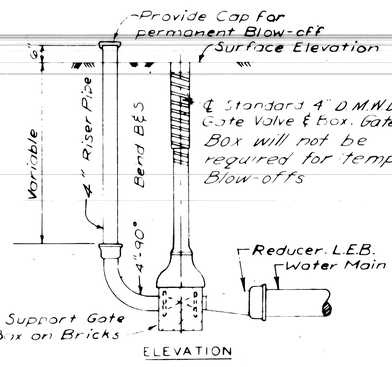
No Scale





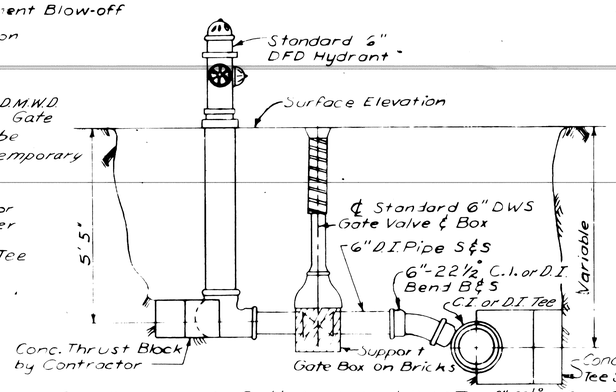
DETAIL OF 4" BLOW OFF

No Scale



DETAIL OF 4" BLOW-OFF

No Scale



From the new main the Contractor shall install the Tee, 6"22½° Bend B&S, 6" Pipe, 6"D.M.W.D. Gate Valve & Box, 6" Pipe, Concrete Thrust Blocks, and Hydrant.

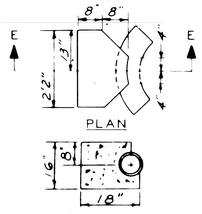
From any existing main the complete Hydrant installation shall be done by the Contractor.

Hydrants to be a minimum of 6' behind Curb, unless otherwise noted on the drawings

Dimensions given from the Curb are from Pavement Joint line which is at face of Curb.

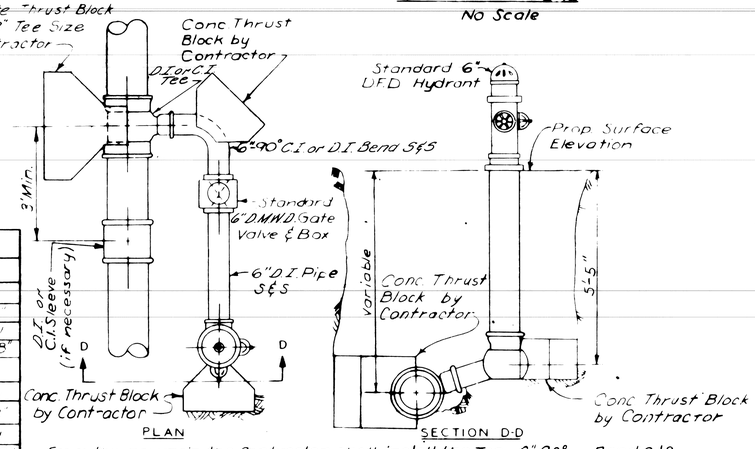
DETAIL OF 6" HYDRANT INSTALLATION

No Scale



THRUST BLOCK FOR 6" HYDRANT BEND

No Scale



From the new main the Contractor shall install the Tee, 6"90° Bend S&S, 6" Pipe, 6" D.M.W.D. Gate Valve & Box, 6" Pipe Concrete Thrust Blocks and Hydrant.

From any existing main the complete Hydrant installation shall be done by the Contractor.

Hydrants to be a minimum of 6' behind the Curb, unless otherwise shown on the drawings.

Dimensions given from Curb are from Pavement Joint line which is at face of Curb

DETAIL OF 6" HYDRANT INSTALLATION

No Scale

GENERAL NOTES

"Ductile Iron Pipe in sizes 3" through 16" is permitted as a part of the Cast Iron Pipe Specifications."

PROJECT NO. | ASSIGN No.

FIRE HYDRANT MISCELLANEOUS DETAILS

REVISIONS			
NO	DESCRIPTION	DATE	BY

ROAD BASS	RBP
DRAWN BY	MP
TRACED BY	
CHECKED BY	JC
SHEET	IN

CONT. Nº 10012 A

SHEET 20 OF 54 SHEETS

C-5517

COLOR	SYMBOL	DESCRIPTION
BLACK		PROPERTY AND LOT LINES
"		PROPOSED CURB LINES AND HEADERS AT RETURNS
"		EXISTING CURB LINES OR EDGE OF PAVEMENT
"		PROPOSED CURB OR PAVING ON INTERSECTING STREET
"		PROPOSED SEWER TO CATCH BASINS
"	12"CR. INV ELEV 15"CR.	EXISTING LATERAL SEWERS
"	4"VCP 21"CIP	EXISTING PUBLIC SEWERS
"		EXISTING GAS LINES
"		EXISTING WATER LINES
BLACK	CURB LINE / CURB LINE	ELEV OF SEWER INVERT PROPOSED C.B. M.H. & INLET SEWER
"	ELEV	EXISTING C.B. M.H. & INLET SEWERS
"		PROPOSED C.B. M.H. & INLET SEWERS ON INTERSECTING STREETS

SYMBOL	DESCRIPTION
	SEWER MANHOLE
	P.L.C. HANDHOLE (P) P.L.C. MANHOLE
	WATER MANHOLE OR GRATE
	GAS MANHOLE OR GRATE
(S)	WESTERN UNION MANHOLE
	MICHIGAN BELL MANHOLE
	EDISON STEAM MANHOLE
	EDISON ELECTRIC MANHOLE
	FIRE DEPT. MANHOLE
	POLICE DEPT. MANHOLE
	D.S.R. MANHOLE
	FIRE DEPT. STANDARD HYDRANT
	FIRE DEPT. HIGH PRESSURE HYDRANT
	FIRE DEPT. CALL BOX
	FIRE DEPT. HIGH PRESSURE MANHOLE
	POLICE DEPT. CALL BOX
	P.L.C. LIGHT POLE
	P.L.C. POLE
	TELEPHONE POLE
	EDISON POLE
	TRAFFIC CONTROL BOX

SYMBOL	DESCRIPTION
#	STREET SIGN POST
	CATCH BASIN
(W)	WATER METER
(-)	WATER SHUT OFF
(+)	GAS SHUT OFF
	GAS DRIP
	DRAIN OR VENT
	GUY POLE
	MAIL BOX
	AREAWAY OR COAL CHUTE
	FLAG POLE
	SPRINKLER BOX
	DEAD MANHOLE
	TREE
	P.L.C. & F.D. MANHOLE FILLED WITH SAND
	TRACK DRAIN
	TRAFFIC SIGN POST.
	TRAFFIC SIGNAL LIGHT
	TRAFFIC SIGNAL ON LIGHT POST
	D.S.R. DANGER PLATE.
	R.R. SIGNAL CONTROL BOX

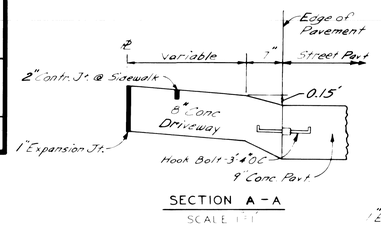
SYMBOL	DESCRIPTION
	DETROIT EDISON ELECTRIC CONDUIT.
	DETROIT EDISON STEAM CONDUIT.
	WESTERN UNION DUCTS
	MICHIGAN BELL TELEPHONE DUCTS
	P.L.C. CONDUITS
	DETROIT FIRE OR POLICE DEPT. CONDUITS (P.L.C. COMMUNICATIONS)

DESIGNED BY
DRAWN BY T. KANOW
TRACED BY T.K.
CHECKED BY M. Kawas

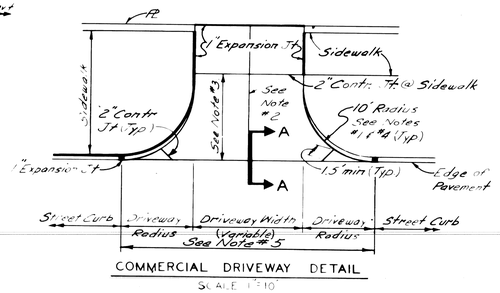
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF DESIGN
PAVING
DETAIL NO. 25

STANDARD SYMBOLS FOR UTILITIES

BUREAU
PAGE NO.
SCALE NO SCALE
DATE
DWG NO. C-902-A



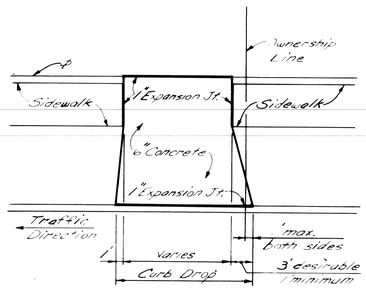
SECTION A-A
SCALE 1"=1'



COMMERCIAL DRIVEWAY DETAIL
SCALE 1"=10'

NOTES - COMMERCIAL DRIVEWAY

1. Transition edge of driveway from curb at the street to no curb at the end of the driveway radius.
2. Where driveway exceeds 15' in width, a contraction joint shall be placed longitudinally, along ℄.
3. When distance exceeds 15', a transverse contraction joint will be required.
4. Radius 10' unless otherwise directed by the Engineer, or as shown on plans.
5. All work and materials required to construct the driveway between the end of returns will be paid for as "Driveway" of the specified thickness.



RESIDENTIAL DRIVEWAY DETAIL
SCALE 1"=10'

DESIGNED BY
DRAWN BY J.R.D.
TRACED BY
CHECKED BY K.B.A.

APPROVED:
ENGINEER OF EXPRESSWAYS

CITY OF DETROIT
CITY ENGINEERING DIVISION
E.P.M.D.

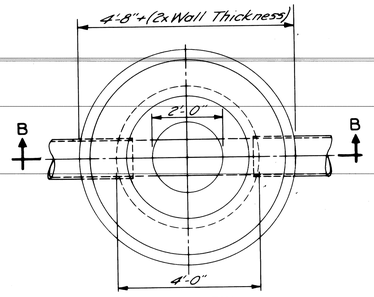
WARREN AVE. - CADIEUX AVE. & HARPER AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENTS

SPECIAL STANDARDS & SPECIAL DETAILS

SHEET 21 OF 54 SHEETS
CONTRACT No 10012A
ASSIGNMENT No. A.O
DATE 10-7-76

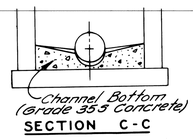
C-5517

K&E 17 0183 1-67•

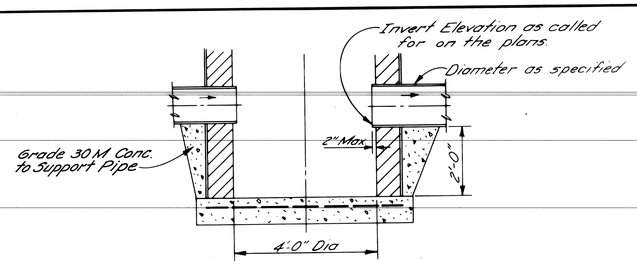


PLAN VIEW

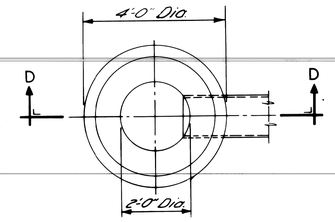
NOTE "A"
Wall thickness below a depth of 15 feet shall be 12 inches.



SECTION C-C

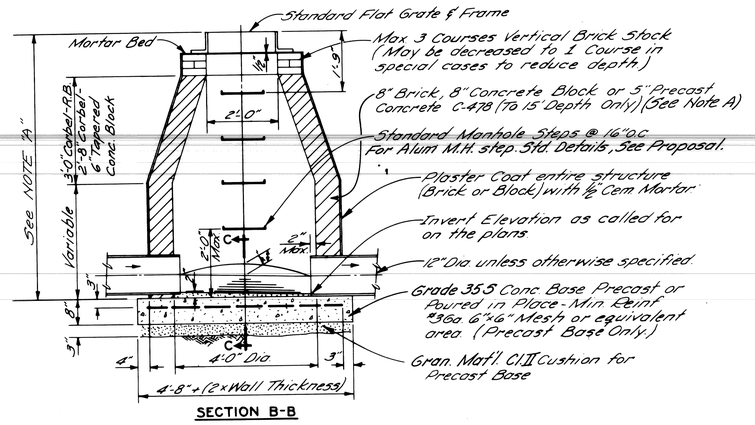


DETAIL OF SUMP FOR CATCH BASIN "B"
NO SCALE



PLAN VIEW

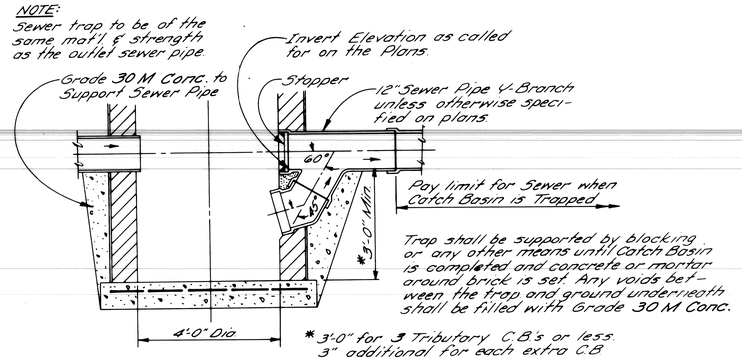
NOTE:
Catch Basin "A" will be used only when outletting to a Catch Basin "B"



SECTION B-B

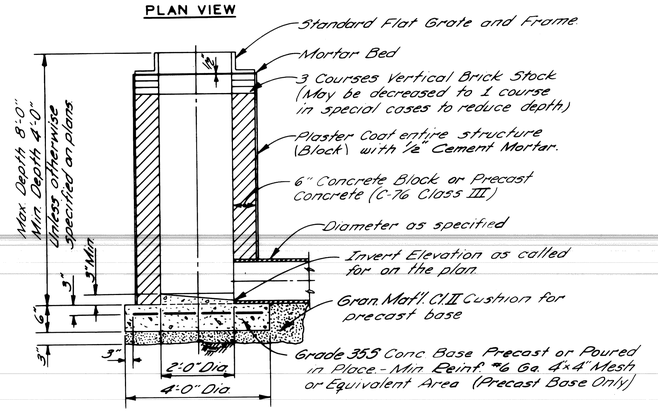
CATCH BASIN "B"
NO SCALE

NOTE:
Sewer trap to be of the same matl. & strength as the outlet sewer pipe.



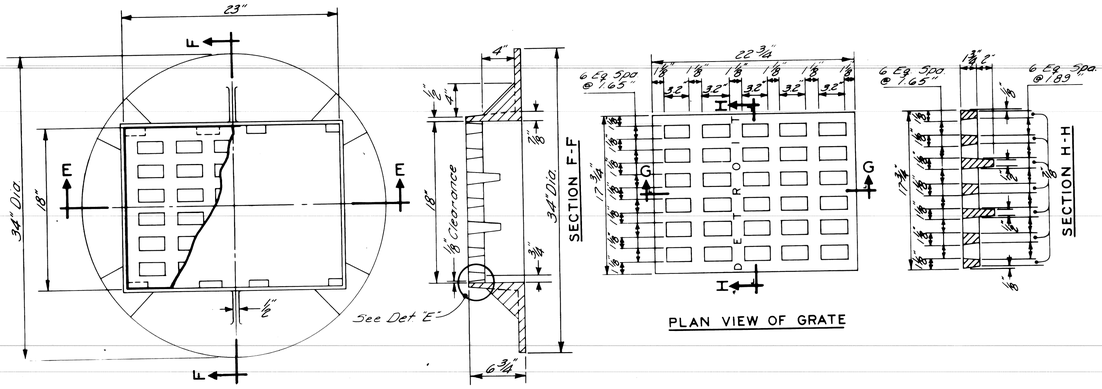
Trap shall be supported by blocking or any other means until Catch Basin is completed and concrete or mortar around brick is set. Any voids between the trap and ground underneath shall be filled with Grade 30 M Conc.

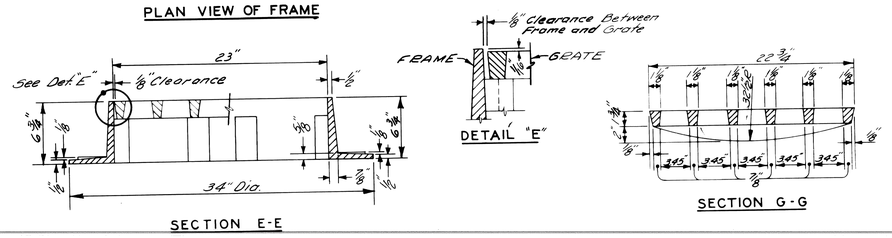
DETAIL OF TRAP FOR CATCH BASIN "B"
NO SCALE



SECTION D-D

CATCH BASIN "A"
NO SCALE





STANDARD FLAT GRATE AND FRAME
NO SCALE

GENERAL NOTES

1. The materials & workmanship shall be in accordance with the current Standard Specifications.
2. Center of Catch Basin shall be 20 inches from back of curb.
3. All sizes & flow lines of pipe, and elevations for top & bottom of structures shall be determined from the plans or construction requirements.
   The bell shall be removed from the first length of outlet pipe projecting through the wall of the structures.
   When any structure is constructed of precast concrete or concrete block, the top of the masonry shall be left sufficiently low to permit proper adjustment of cover to grade by the use of mortar or bricks as directed by the Engineer.
4. A Trap, as detailed on this sheet, shall be placed where called for in the outlet sewer line of Catch Basins "B".
   This trap shall be set into the masonry wall as shown on the detail.
   The space between the faces of the wall & the trap shall be completely filled with cement, mortar or concrete, so as to hold Trap securely in place.
   The Traps will be paid for separately at the Contract Unit Price each, which price shall include the extra catch basin construction required and for furnishing and installing the trap.
5. A plaster coat of mortar ½ inch in thickness shall be applied to the outer surface of the structure as shown. A ½ inch cement plaster coat shall be placed on the inside of all sumps.
6. Contractor shall verify elevations of existing utilities to enable construction to indicated elevations shown on drawings. If necessary, invert elevations shown on the drawings may be altered in the field to clear existing utilities. Such alterations, upward or downward, shall be at no change in contract price.
7. When precast concrete pipe sections are used for catch basins, either a section of the inlet and outlet pipes or an opening or eye for the inlet & outlet pipes shall be cast into the wall of the catch basin pipe when it is being manufactured. Eyes in precast pipe sections shall be furnished to accommodate a flexible joint connection such as Press-Wedge by Press Seal Gasket Corp or Res-Seal by Scales Mfg. Corp.
8. Pay limit for sewers shall be inside faces of structures unless otherwise noted.

DESCRIPTION	DRN.	CKD.	APVD.	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET				

REFERENCE DRAWINGS

DESIGNED BY	
DRAWN BY	M. POLITO
TRACED BY	
CHECKED BY	D. MILZ

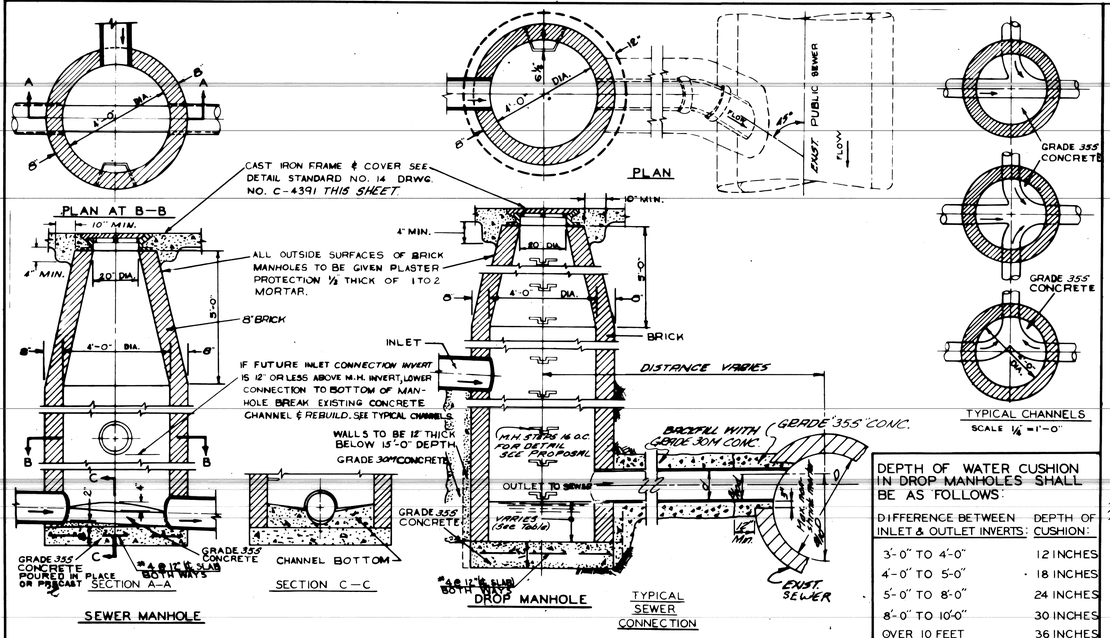
APPROVED:
John Erickson
ENGINEER OF STREETS
Allen E. Hagen
ENGINEER OF EXPRESSWAYS
W. R. Bonnwell
HEAD CIVIL ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION
E. P. M. D.

DETAILS OF STANDARD CATCH BASINS "A" & "B" AND FLAT GRATE & FRAME

SHEET 22 OF 54 SHEETS
CONTRACT No 10012A
ASSIGN. NO.
DATE 10-7-76

C-5517



DEPTH OF WATER CUSHION IN DROP MANHOLES SHALL BE AS FOLLOWS:

DIFFERENCE BETWEEN INLET & OUTLET INVERTS:	DEPTH OF CUSHION:
3'-0" TO 4'-0"	12 INCHES
4'-0" TO 5'-0"	18 INCHES
5'-0" TO 8'-0"	24 INCHES
8'-0" TO 10'-0"	30 INCHES
OVER 10 FEET	36 INCHES

DESIGNED BY	APPROVED BY
DRAWN BY J. Clark	ENGINEER OF STREETS
TRACED BY	ASST. CITY ENGINEER
CHECKED BY	CITY ENGINEER

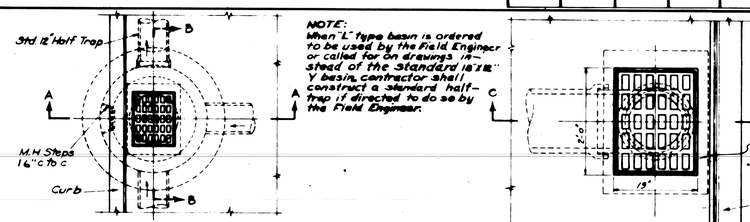
DETAILS OF STANDARD
SEWER & DROP MANHOLES

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS.
CITY ENGINEER'S OFFICE
BUREAU OF DESIGN

BOOK NO. ___ PG. ___ SCALE 3/8" = 1'-0" DATE: 8-27-66 DETAIL STANDARD NO. 10 DWG. NO. C-4387

1971 | 1970 | 1969 | 1968 | 1967

Revised M.H. Steps | J.C. | G.D. | N.K. | A.P.D. | 8-1-69
DESCRIPTION | DRWN | CKD | APPD | DATE
REVISIONS



DESIGNED BY	APPROVED
DRAWN BY J. Clark	ENGINEER OF STREETS
TRACED BY	ASST. CITY ENGINEER
CHECKED BY	CITY ENGINEER

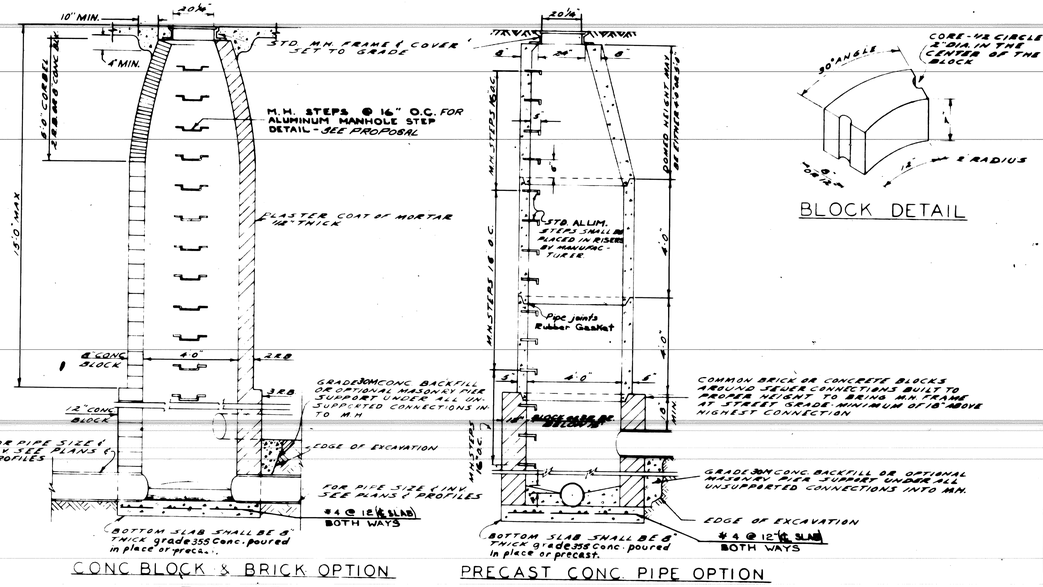
TYPICAL
SUMP MANHOLE & 'L' TYPE CATCH BASINS

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF DESIGN

BOOK NO. — PG. — SCALE AS SHOWN DATE MAR. 8, 1969 DETAIL STANDARD NO. 12 DWG. NO. C-4388

1971 | 1970 | 1969 | 1968 | 1967 | 1966 | 1965 | 1964 | 1963 | 1962 | 1961 | 1960

Revised M.H. Steps | J.C. | G.D. | N.K. | A.P.D. | 8-1-69
DESCRIPTION | DRWN | CKD | APPD | DATE
REVISIONS



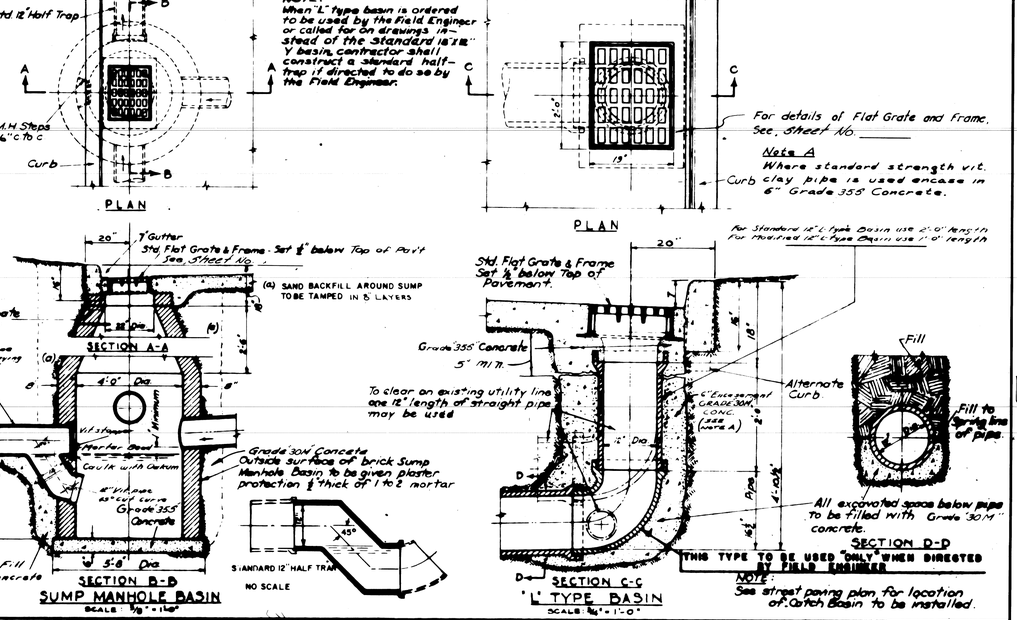
ALTERNATE MANHOLE CONSTRUCTION

DESIGNED BY	APPROVED
DRAWN BY T.P. NIRIANI	ENGINEER OF STREETS
TRACED BY	ASST. CITY ENGINEER
CHECKED BY K. Kawwas	CITY ENGINEER

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF DESIGN
Form C of D-346-SH-A DETAIL STANDARD NO. 18

STD. SEWER MANHOLES CONSTRUCTION ALTERNATES

BOOK NO. — PAGE NO. — SCALE NONE DATE 3-29-68 DWG. NO. C-4395A



DESIGNED BY	APPROVED
DRAWN G. Gjukan	ENGINEER OF STREETS
TRACED BY	ASST. CITY ENGINEER
CHECKED K. Kawwas	CITY ENGINEER

DETAILS OF STANDARD
- MANHOLE FRAME AND COVER -

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF DESIGN

BOOK NO. — SCALE: AS SHOWN DATE: OCTOBER 4, 1966 DETAIL STANDARD NO. 15 DWG. NO. C-4343

Deleted Detail From Cover | J.C. | G.D. | N.K. | A.P.D. | 10-4-66
DESCRIPTION | DRWN | CKD | APPD | DATE
REVISIONS

REFERENCE DRAWINGS	DESIGNED BY	APPROVED:
	DRAWN BY	
	TRACED BY	
	CHECKED BY	CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION
E.P.M.D.

WARREN AVE. - CADIEUX AVE. & HARPER AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENTS

SPECIAL DETAILS

SHEET 23 OF 54 SHEETS
CONTRACT No. 10012A
ASSIG.
DATE 10-7-76

DESCRIPTION | DRN | CKD | APVD | DATE
REVISIONS LOCATED BY COORDINATES ON SHEET

C-5517

QUANTITY SHEET – E

ITEMS	AS PER PLANS: CONTRACT TOTALS	UNITS	WARREN-CADIEUX QUANTITIES: TYPICAL CROSS-SECTIONS	REMOVALS	PLAN	UTILITIES	SUB-TOTALS (WARREN CADIEUX)	HARPER-CADIEUX QUANTITIES: SUB-TOTALS (HARPER CADIEUX)	TYPICAL CROSS-SECTIONS	REMOVALS (HARPER)	REMOVALS (CADIEUX)	PLAN (HARPER)	PLAN (CADIEUX)	UTILITIES (HARPER)	UTILITIES (CADIEUX)	FIRE HYDRANTS	AS CONSTRUCTED: CONTRACT TOTALS	UNITS	WARREN-CADIEUX QUANTITIES: TYPICAL CROSS-SECTIONS	REMOVALS	PLAN	UTILITIES	SUB-TOTALS (WARREN CADIEUX)	HARPER-CADIEUX QUANTITIES: SUB-TOTALS (HARPER CADIEUX)	TYPICAL CROSS-SECTIONS	REMOVALS (HARPER)	REMOVALS (CADIEUX)	PLAN (HARPER)	PLAN (CADIEUX)	UTILITIES (HARPER)	UTILITIES (CADIEUX)	FIRE HYDRANTS Auth. No.
Removing Trees 8 - 18 In. Dia.	5	Each		5			5										5	Each		5			5									
Removing Trees 19-36 In. Dia.	3	Each		3			3										2	Each		2			2									1007
Removing Trees 37 In. or Larger	1	Each		1			1										1	Each		1			1									
Removing Stumps 8-18 In. Dia.	1	Each		1			1										1	Each		1			1									
Removing Pavement	1742	Syd.		854			854	888		442	446						1952	Syd.		1015			1015	937		452	485					1007
Removing Curb	2033	Lft.		1041			1041	992		842	150						2045	Lft.		1010			1010	1035		845	190					1006
Removing Integral Curb and Sidewalk	802	Lft.		406			406	396			396						810	Lft.		399			399	411			411					1006
Removing Sidewalk	1732	Syd.	64	512			576	1156		852	304						1814	Syd.	64	552			616	1198		876	322					1007
Abandoning Drainage Structures	13	Each		4			4	9		7	2						13	Each		4			4	9		7	2					
Removing Old Pav't. (Patching)	29	Syd.		7			7	22		11	11						24	Syd.		8			8	16		8	8					1010
Removing Bituminous Surface	524	Syd.			171		171	353				217	136				529	Syd.			345		345	184				86	98			1008
Removing Bituminous Surface - Planer Method	1087	Syd.			456		456	631				631					885	Syd.			284		284	601				601				1008
Earth Excavation	1452	Cyd.			790		790	662				235	427				1428	Cyd.			792		792	636				226	410			1012
Subgrade Undercutting - Type II	160	Cyd.	64				64	96	96								18	Cyd.	18				18	0	0							1010
Concrete Pavement Patching - 9" nonreinf.	29	Syd.		7			7	22		11	11						24	Syd.		8			8	16		8	8					1010
Conc. Base Course-Non. Reinf. 9" with Integral Curb	2726	Syd.			1432		1432	1294				692	602				3185	Syd.			1610		1610	1575				718	857			1011
Conc. Base Course Grade 35 P-HE Nonreinf. - 9"	396	Syd.			206		206	190				70	120				99	Syd.			53		53	46				0	46			1011
Bituminous Conc. Leveling Course - 25A	853.8	Tons		0.4	119		119.4	734.4		0.6	0.3	586.5	147				894.4	Tons		0.4	169		169.4	725		0.7	0.3	578	146			1008
Bituminous Conc. Wearing Course - Type M	623.3	Tons		0.4	119		119.4	503.9		0.6	0.3	395	108				732.2	Tons		0.4	128.8		129.2	603		0.7	0.3	473	129			1008
Preparing Existing Pavement	12.8	Sta.						12.8				10.8	2				12.5	Sta.						12.5				10	2.5			1011
Adjust Water Shut-Off	5	Each						5						5			5	Each						5							5	
Conc. Pavement - Nonreinf. - 6 In.	44	Syd.			44		44										195	Syd.			195		195									1010
Conc. Pavement - Nonreinf. - 8 In.	470	Syd.	42		139		181	289	67			131	91				912	Syd.			364		364	548				398	150			1010
Conc. Pavement - Nonreinf. - 9 In.	85	Syd.			48		48	37					37				131	Syd.			107		107	24					24			1006
Conc. Pav't Grade 35 P-HE - Nonreinf. - 6 In.	44	Syd.			44		44										0	Syd.			0		0	0			0					1010
Conc. Pav't Grade 35 P-HE - Nonreinf. - 8 In.	361	Syd.			139		139	222				131	91				139	Syd.			99		99	40				0	40			1010
Conc. Pav't Grade 35 P-HE - Nonreinf. - 9 In.	85	Syd.			48		48	37					37				32	Syd.			0		0	32					32			1006
Expansion Anchored Lane Ties	4305	Lft.			2096		2096	2209				1326	883				4280	Lft.			2086		2086	2194				1317	877			1011
12" Sew. C-76-III Trench Detail B	42	Lft.						42				42					66	Lft.						66				66				1003
12" Sew. C-76-III Trench Detail 9	244	Lft.			49		49	195				119	76				266	Lft.			69		69	197				107	90			1010
12" Sew. Tap	8	Each			3		3	5				2	3				8	Each			3		3	5				2	3			
Catch Basin L	1	Each						1					1				6	Each			2		2	4				2	2			1007
Catch Basin A	1	Each						1				1					2	Each						2				2				1005
Catch Basin B	12	Each			6		6	6				3	3				7	Each			4		4	3				1	2			1007
Adjust Drainage Structure Covers	18	Each			4		4	14				10	4				19	Each			2		2	17				12	5			1011
Reconstruct Drainage Structure	3	Each						3				1	2				3	Each						3				1	2			
12" Sew. Trap	12	Each			6		6	6				3	3				7	Each			4		4	3				2	1			1012
4" Conc. Sidewalk	10448	S.F.	576		2783		3359	7089	504			4496	2089				9905	Sft.	550		2783		3333	6572	504			4337	1731			1011
6" Conc. Sidewalk	2653	S.F.			730		730	1923				1320	603				2179	Sft.			674		674	1505				1171	334			1012
Sidewalk Ramps - Type 1	384	S.F.						384				288	96				567	Sft.			262		262	305				220	85			1006
Sidewalk Ramps - Type 3	221	S.F.			98		98	123				98	25				358	Sft.			108		108	250				223	27			1006
Bituminous Aggregate Shoulders	13.3	Tons	1		6.8		7.8	5.5	0.7			2.8	2				27.1	Tons	1		11.8		12.8	14.3	1			8.2	5.1			1008
Type II Barricades (Drums) Lighted	174	Each	81				81	93	93								185	Each	104				104	81	81							1010
Type III Barricades	6	Each	4				4	2	2								6	Each	4				4	2	2							
Drum Guide Rail	475	L.F.	150				150	325	325								475	Lft.	150				150	325	325							
Class A Sodding	1506	Syd.	96		870		966	540	50			85	405				1302	Syd.	84		953		1037	265	25			41	199			R-14E
Topsoil Surface, 3 In.	1506	Syd.	96		870		966	540	50			85	405				1302	Syd.	84		953		1037	265	25			41	199			R-14E
Reconstruct Gatewall	3	Each				2	2	1						1			2	Each				1	1	1						1		1611
Adjust Gatewall Manhole Cover	18	Each				4	4	14						13	1		17	Each				3	3	14						13	1	1011
6" Fire Hydrant (Incl. 6" Gate Valve, Gate Box & Related Piping)	4	Each				3	3	1							1		4	Each				3	3	1							1	
Water (1,000 Gal. Units)	4	Units			2.5		2.5	1.5				0.3	1.2				0	Units					0	0								1012
Mobilization	Lump	Sum															Lump	Sum														
Maintaining Traffic	Lump	Sum															Lump	Sum														
ON THE JOB TRAINING	1	Each															0.5	Each														1012
EXTRAS																																
3-#2 O.H. LINES																	118	LFT					118									2001
Plugging Hydrant Outlet in 16" Waterline																	1	Each						1								2002
Removing Stumps 19" to 36" Dia.																	2	Each					2									2003

CHECKED
CONSTRUCTION
DATE 5/23/80

PLAN ESTIMATE BY _____ DATE _____ CHECKED BY W.B. DATE _____ DATE _____ DATA COMPLETED _____ PROJ. ENG. DATE _____ HISTORY CHECKED ENTERED ON PLANS BY _____ DATE 10-7-76

WARREN – CADIEUX & HARPER – CADIEUX INTERSECTION IMPROVEMENTS

QUANTITIES SHEET NO. 24 OF 54

CONT. № 10012A C-5517