

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			1	54
STREET	CITY	COUNTY	TWP	SHEET NO.	TOTAL SHEETS
	DETROIT	WAYNE		1	54

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

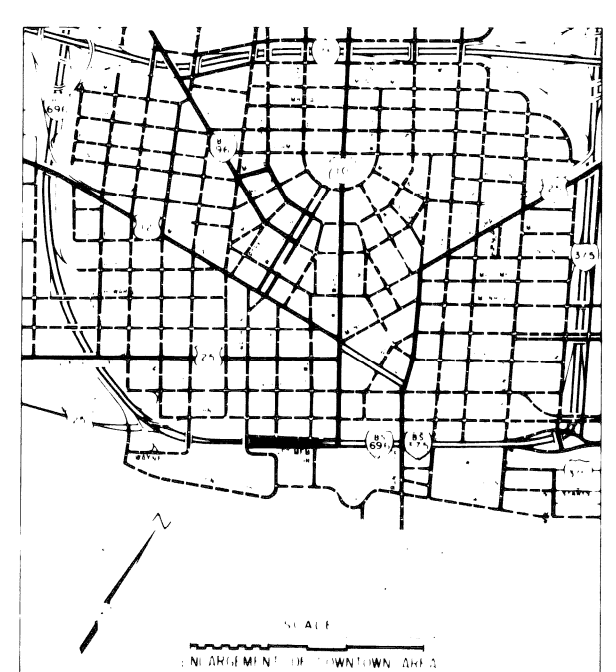
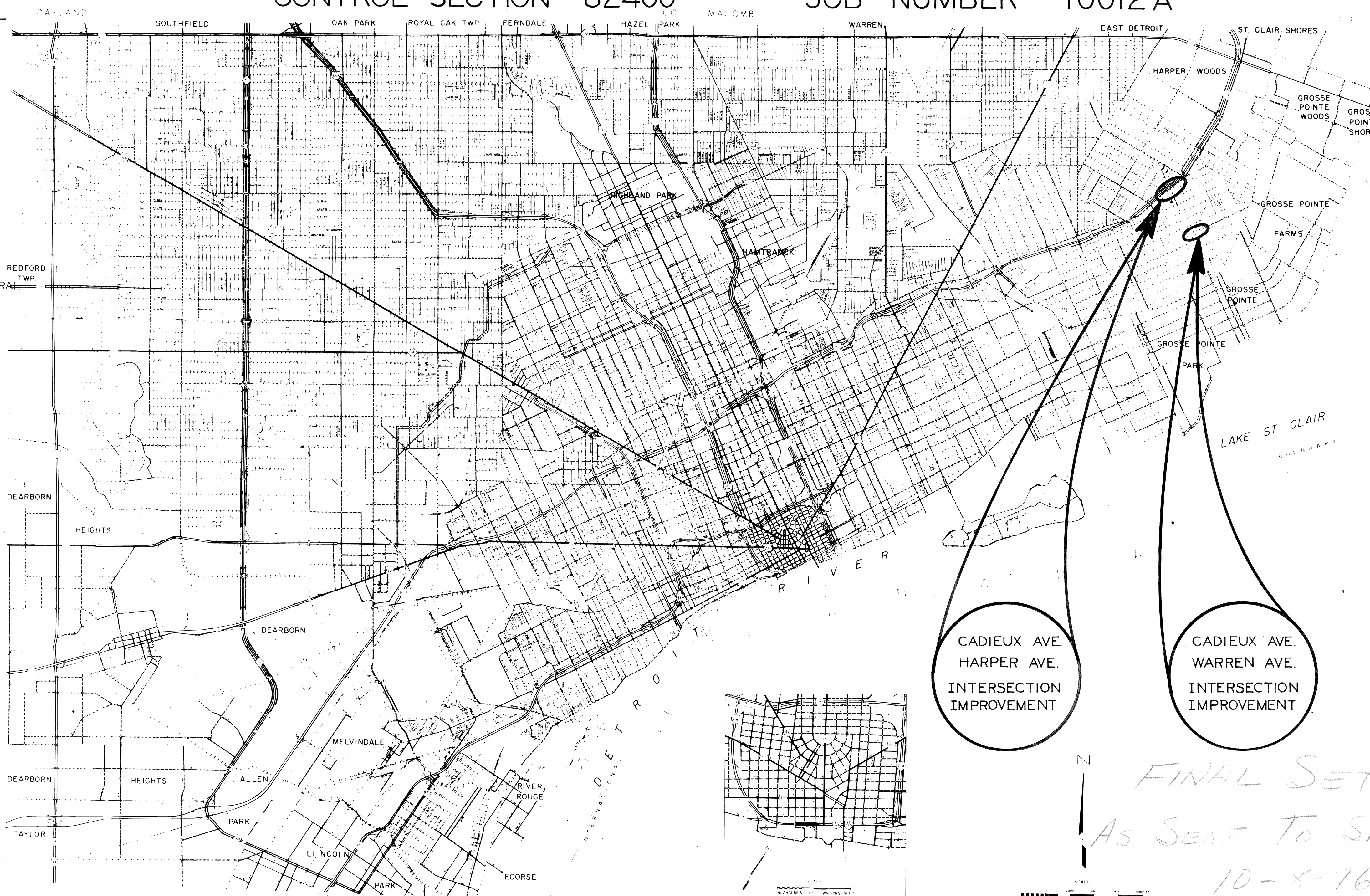
	ADT TRAFFIC COUNT	
	PRESENT	FUTURE
CADIEUX HARPER	22,900	22,900
CADIEUX WARREN	17,500	17,500
	15,700	15,700
	18,500	18,500

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- 4 REMOVALS
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- 31 P.L.D. TRAFFIC SIGNAL
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- 54 P.L.D. QUANTITIES

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- II 28F
- II 29B
- II 39C
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- II 42A
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- II 44A
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- VII 124B
- VII 125C
- E-4-A-10E



CADIEUX AVE.
HARPER AVE.
INTERSECTION
IMPROVEMENT

CADIEUX AVE.
WARREN AVE.
INTERSECTION
IMPROVEMENT

FINAL SET

As Sent To STATE

10-8-76

ITEM No 226

CONTRACT FOR INTERSECTIONAL IMPROVEMENTS

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

APPROVED BY _____ DATE _____
ASSISTANT CITY ENGINEER

APPROVED BY _____ DATE _____
CITY ENGINEER

RECOMMENDED FOR APPROVAL

BY _____ DATE _____
F. A. U. ENGINEER

PLANS CHECKED BY _____ DATE _____

DEPARTMENT OF STATE HIGHWAYS APPROVAL
APPROVED FOR COMMISSION

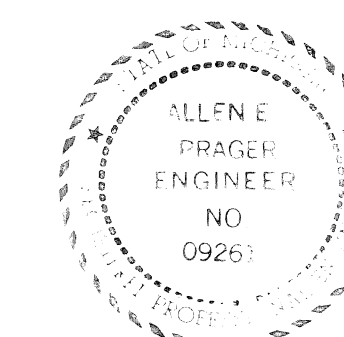
BY _____ DATE _____
DEPUTY DIRECTOR-HIGHWAYS

PREPARED UNDER SUPERVISION OF

Mane Roga
REGISTERED PROFESSIONAL ENGINEER REGISTRATION NO. 29261

CITY OF DETROIT
ORGANIZATION

DETROIT MICHIGAN
ADDRESS



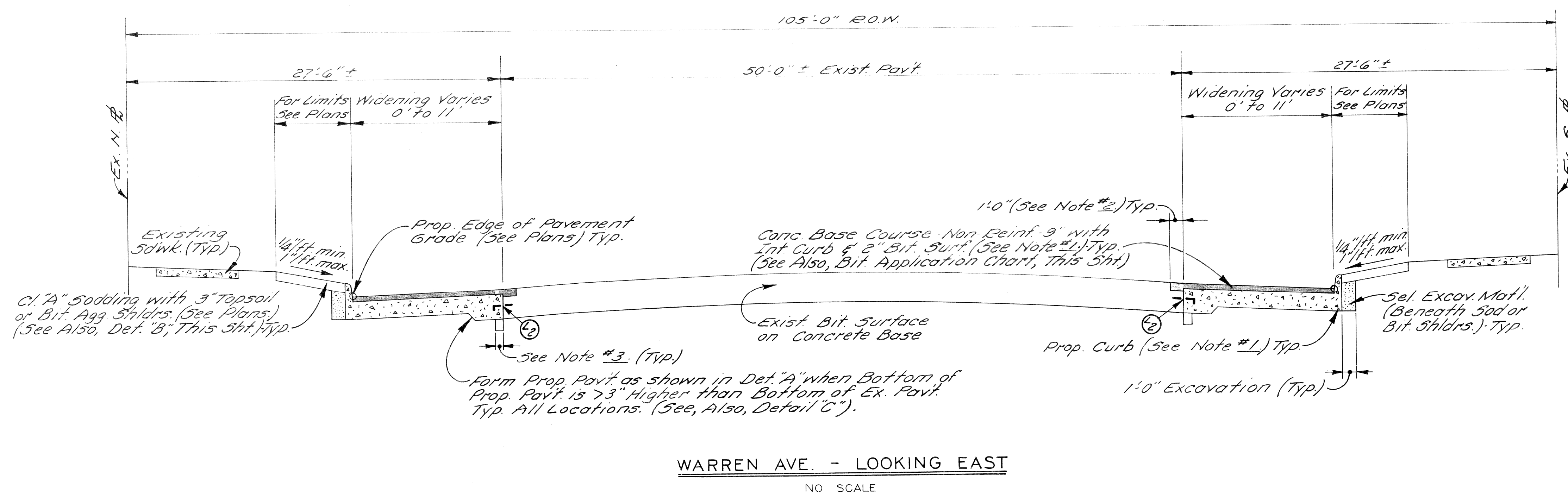
(SEAL)

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

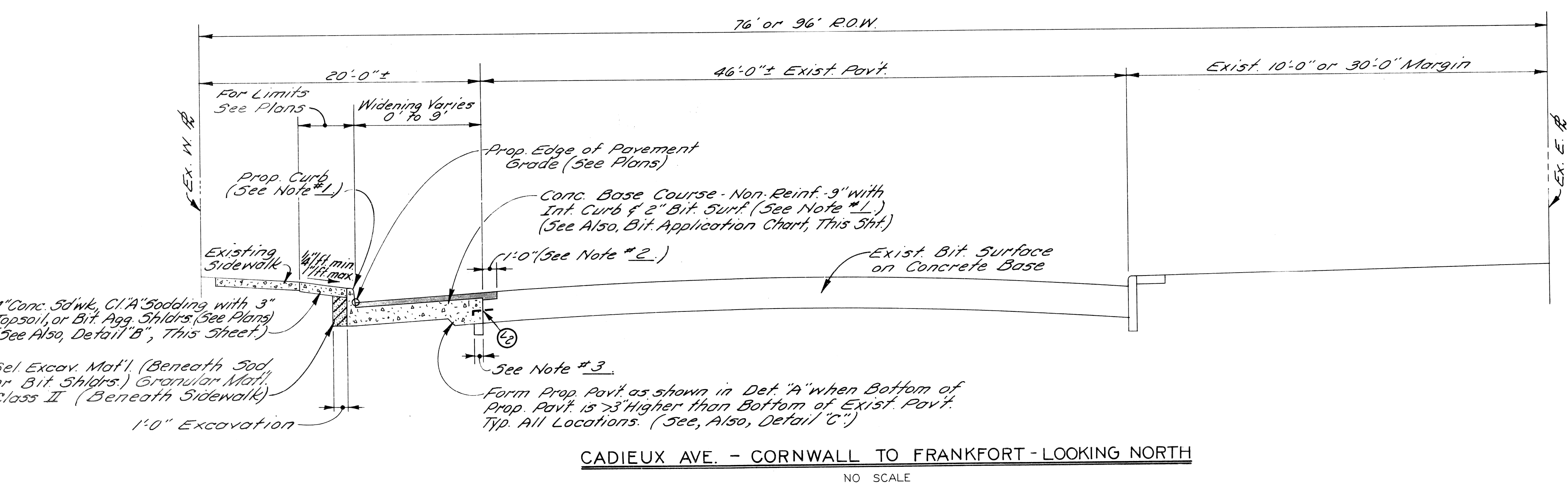
APPROVED _____ DATE _____
DISTRICT ENGINEER

FILE NO.	STATE PROJECT	FEDERAL PROJECT	SHEET NO.
NO. 250			1

JOB No 10012A
C.S. 82400

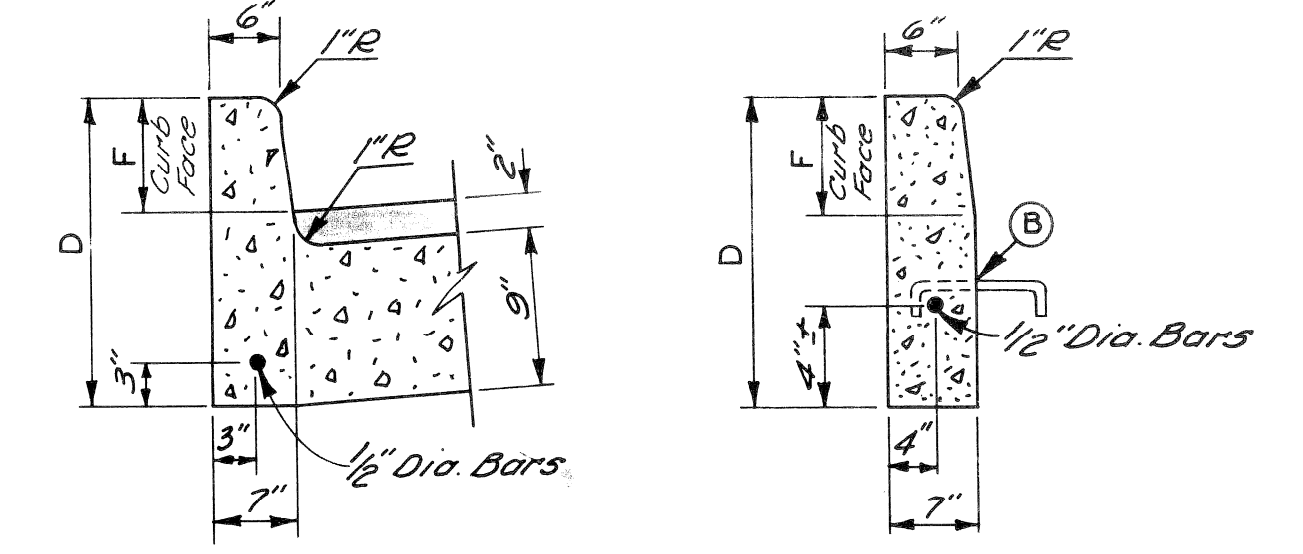


WARREN AVE. - LOOKING EAST
NO SCALE



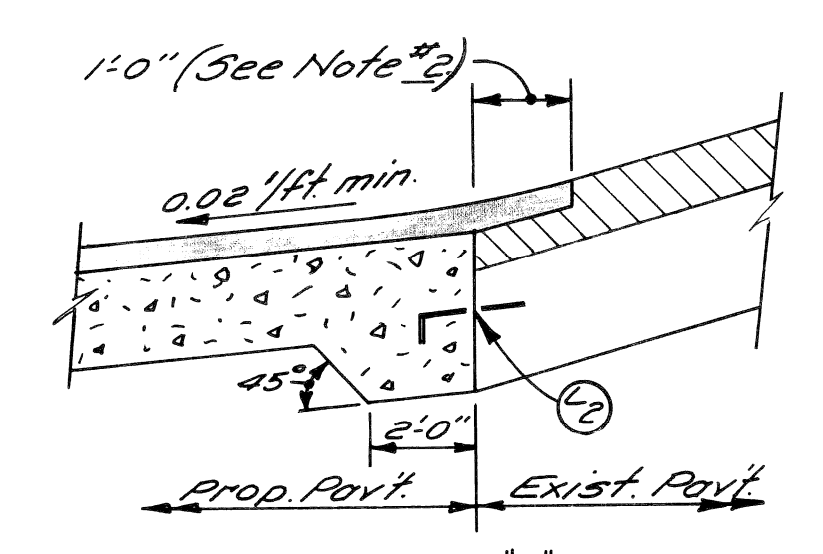
CADIEUX AVE. - CORNWALL TO FRANKFORT - LOOKING NORTH
NO SCALE

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

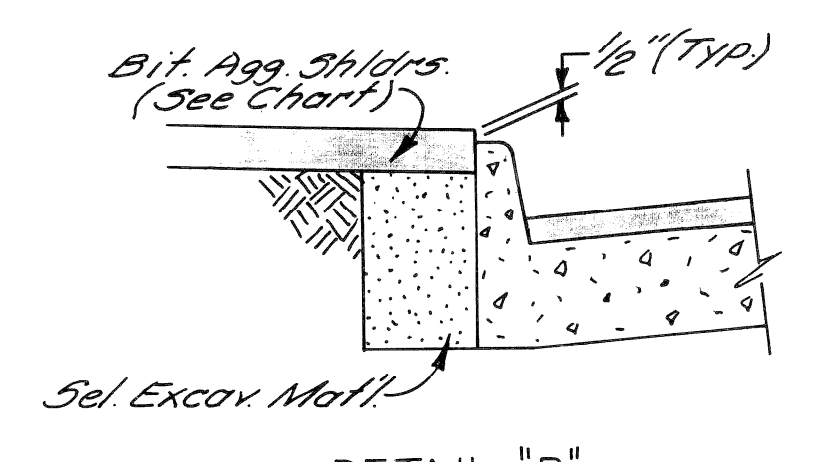


INTEGRAL CURB
NO SCALE

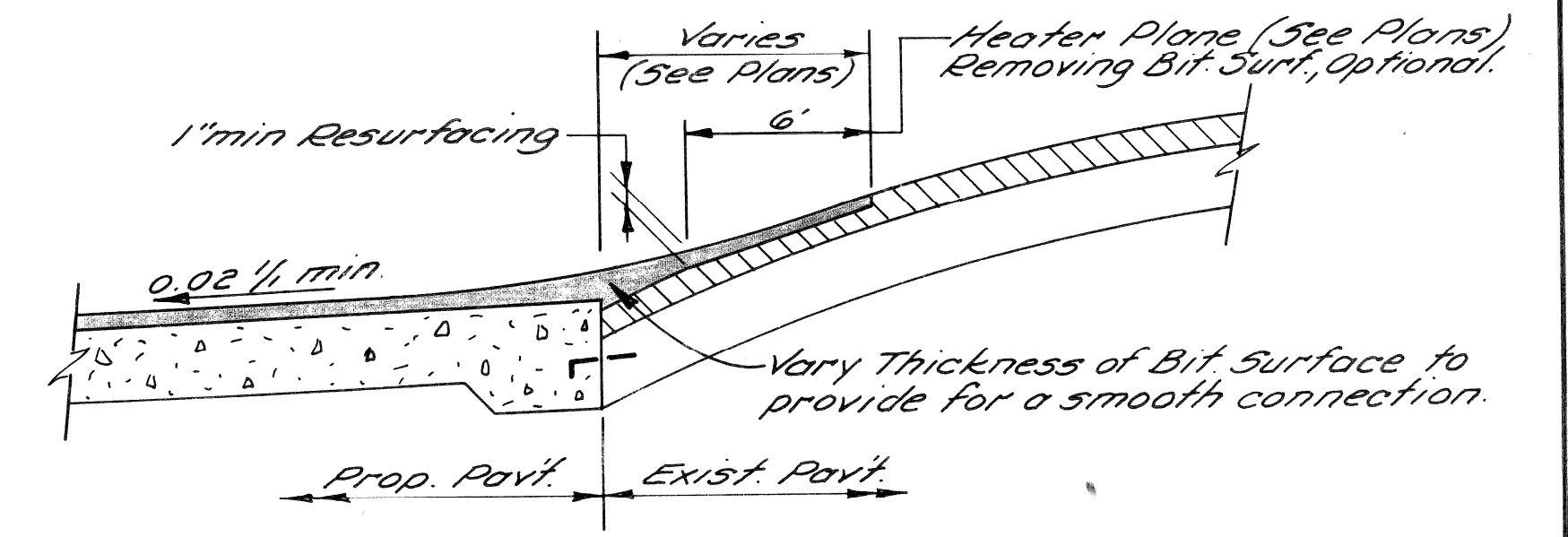
CONCRETE CURB DETAIL "X"
NO SCALE



DETAIL "A"
NO SCALE



DETAIL "B"
NO SCALE



DETAIL "C"
NO SCALE

EARTHWORK LEGEND

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

JOINT LEGEND

or 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. Shoulders	1.0 Tons
Subgrade Undercutting - Type II	64 Cu. Yds.
Conc. Pavt. - Non-Reinf. 8" (Drive way)	42 Sq. Yds.

Miscellaneous Quantities Warren-Cadieux

Maintaining Traffic	L.5
Type II Barricade (Drums) Lighted	81 Each
Drum Guide Rail	150 L.F.
Mobilization - Warren-Cadieux	L.5
Type III Barricades	4 Each

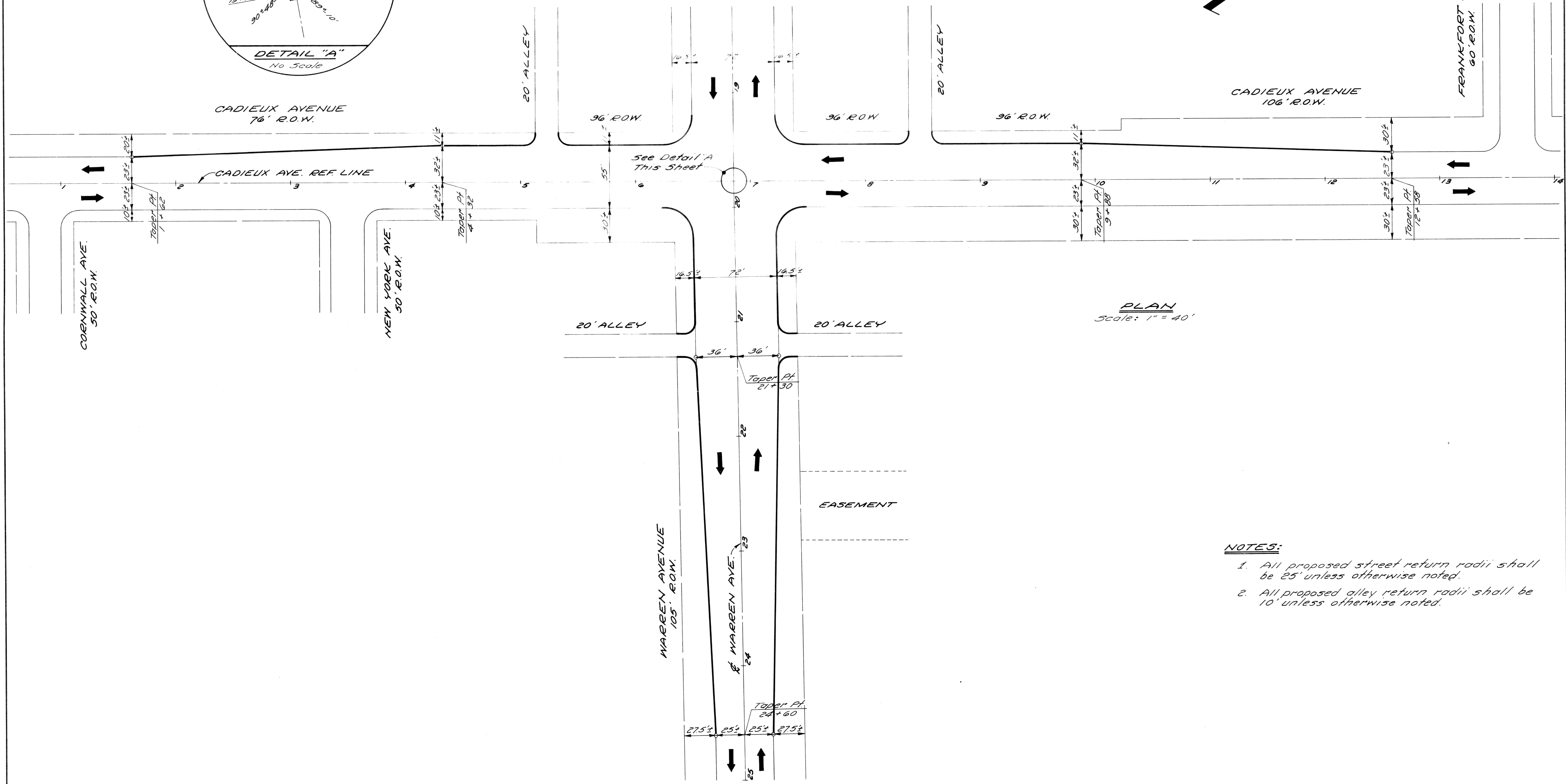
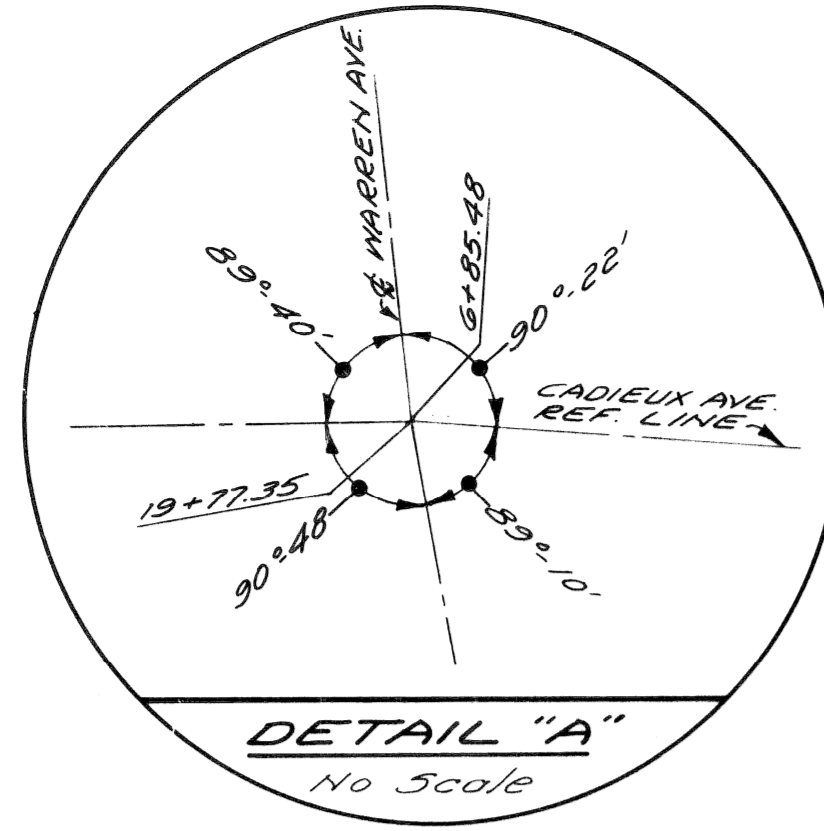
BITUMINOUS APPLICATION CHART

ITEM	RATE OF APPLICATION	ESTIMATED THICKNESS	ASPHALT PENETRATION
Bit Conc. Leveling Course (25A)	110#/5Y/In.	1 Inch	85 - 100
Bit Conc. Wearing Course (31A) Type M	110#/5Y	1 Inch	85 - 100
Bit Aggregate Shoulders	170#/5Y	1 1/2 Inches	200 - 250
Bit Conc. Leveling Course (25A)	160#/5Y	1 1/2 Inches	85 - 100

Bit Bond Coat RC-70 may be used in lieu of M-5-2a & 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**
- 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 pavt. & curb must be constructed integrally where the pavt. widening is 1'-0" or less. Regardless of construction method the curb shall be paid for as concrete base course.
 - 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).
 - Fill Exist. Curb Void with Gran. Mat'l. Cl. II (Incidental)
 - Backfill, if req'd. under Prop. Sidewalks & Pavt. shall be Granular Mat'l. Cl. II (Incidental)
 - Use Detail "C" when it is necessary to heater plane & place bit surf. on exist. pavt. in order to provide a smooth connection & a 0.02% min. slope on the prop. pavt. widening.

CITY OF DETROIT CITY ENGINEER OF CONSTRUCTION F. 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
DESIGNED BY: Com 14 DRAWN BY: YMA TRACED BY: CHECKED BY: Com 14	APPROVED: Allen G. Proger ENGINEER OF EXPRESSWAYS			



- 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.

NO.	DESCRIPTION	CHKD	APVD	DATE

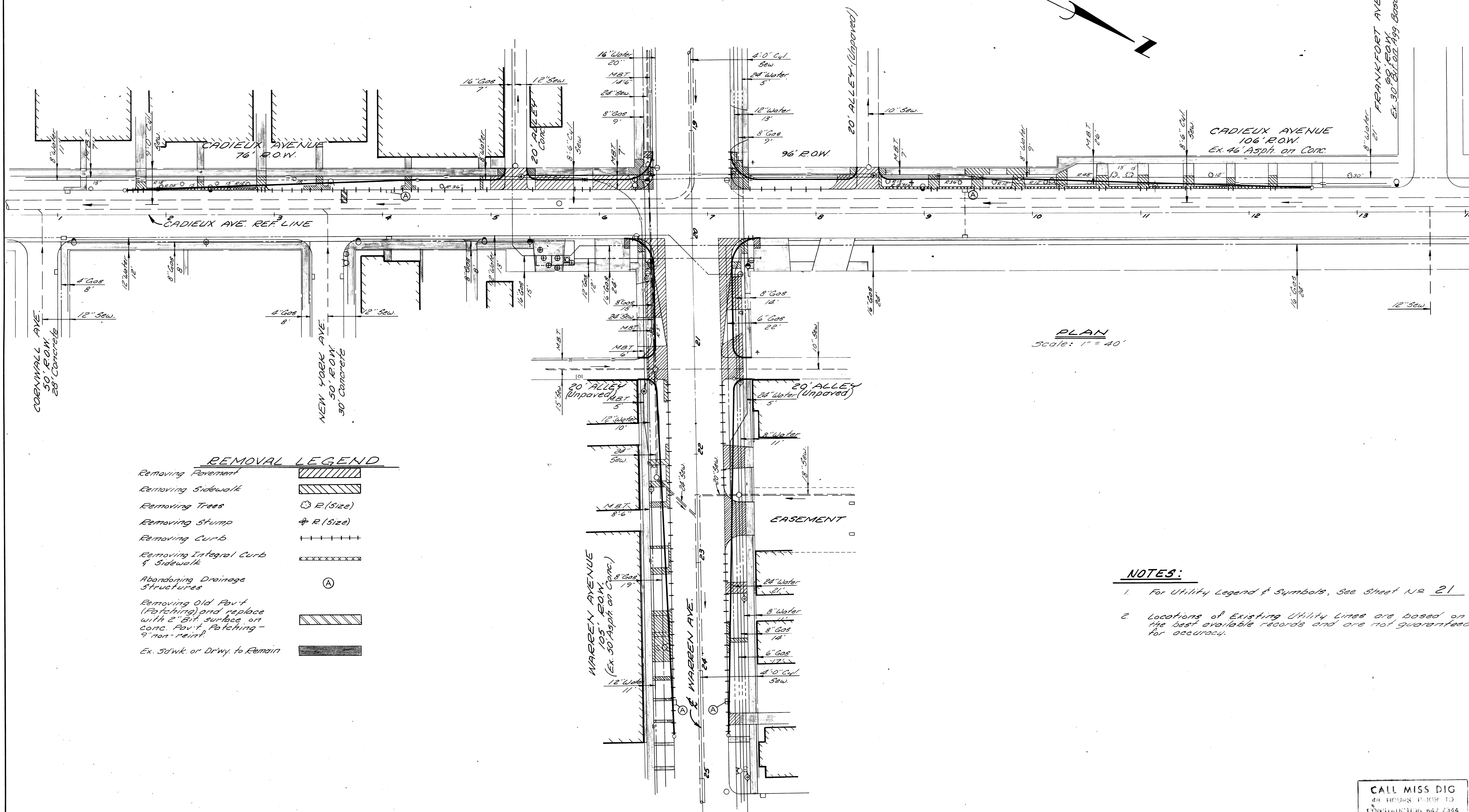
REVISIONS LOCATED BY COORDINATES ON SHEET

DESIGNED BY		APPROVED:	<i>Alan E. Moran</i> ENGINEER OF EXPRESSWAYS
DRAWN BY	MHP		
TRACED BY			
CHECKED BY	RBP		

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



PLAN
Scale: 1" = 40'

REMOVAL LEGEND

Removing Pavement	
Removing Sidewalk	
Removing Trees	
Removing Stump	
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-reinfr.	
Ex. Sidwk. or Drwy. to Remain	

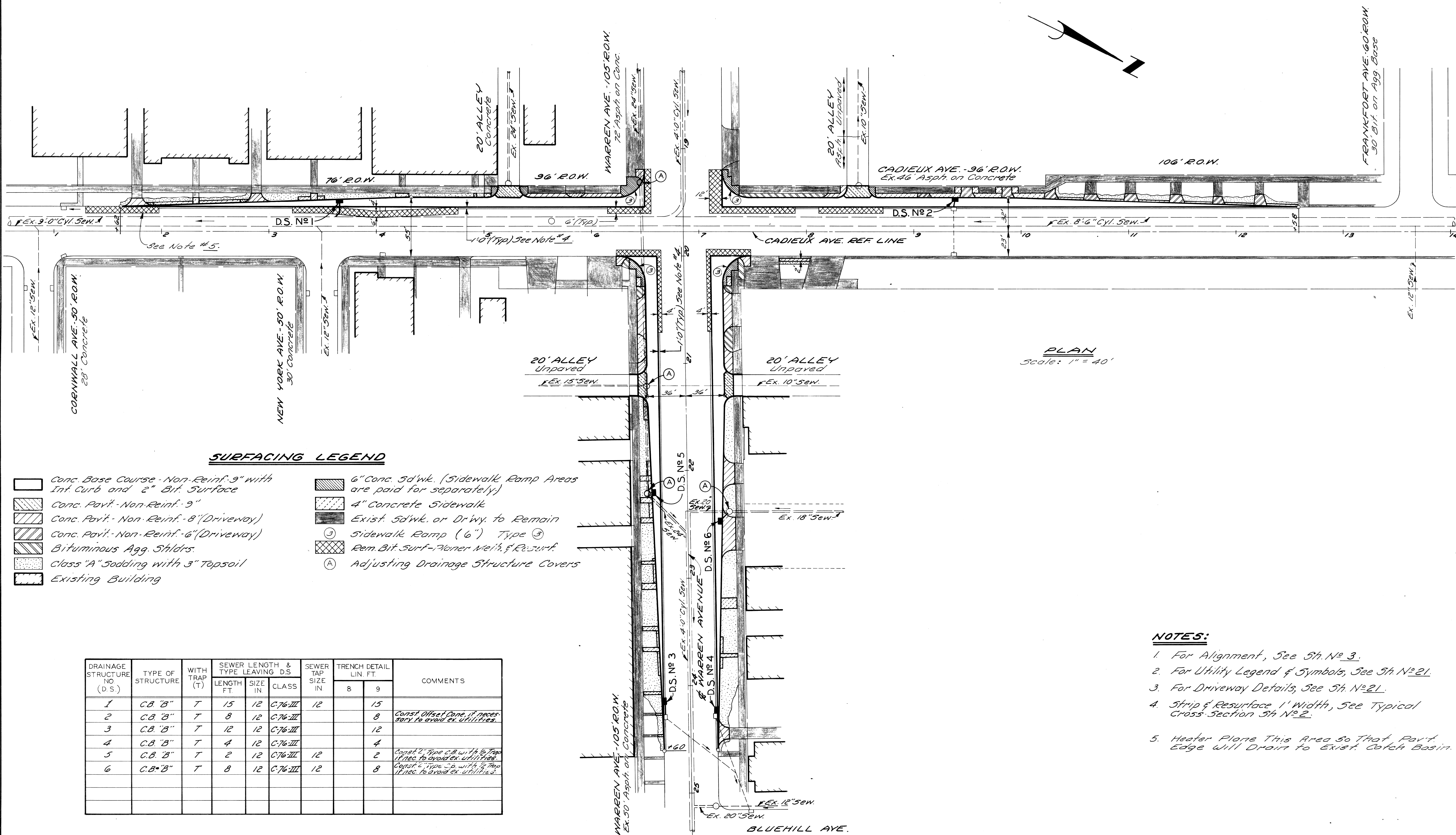
- NOTES:**
1. For Utility Legend & Symbols, See Sheet No 21
 2. Locations of Existing Utility Lines are based on the best available records and are not guaranteed for accuracy.

CALL MISS DIG
48 HOURS PRIOR TO
CONSTRUCTION 647 1344

CITY OF DETROIT CITY ENGINEERING DIVISION E. P. M. D.		WARREN AVE. - CADIEUX AVE. INTERSECTION IMPROVEMENT		SHEET 4 OF 54 SHEETS
DESIGNED BY DRAWN BY M.S. TRACED BY CHECKED BY R.B.P.		APPROVED: ENGINEER OF EXPRESSWAYS		CONTRACT NO. 10012A DRWG NO. DATE 10-7-76
REFERENCE DRAWINGS		DESCRIPTION REVISIONS LOCATED BY COORDINATES ON SHEET		

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 & Cadieux Ave.

C.B.M. Elev. 111.12 West Bolt on Texaco Sign Base N.E. Corner Warren & Cadieux.
 C.B.M. Elev. 113.68 Arrow on Hydrant N.W. Corner Frankfort Ave & Cadieux Ave.



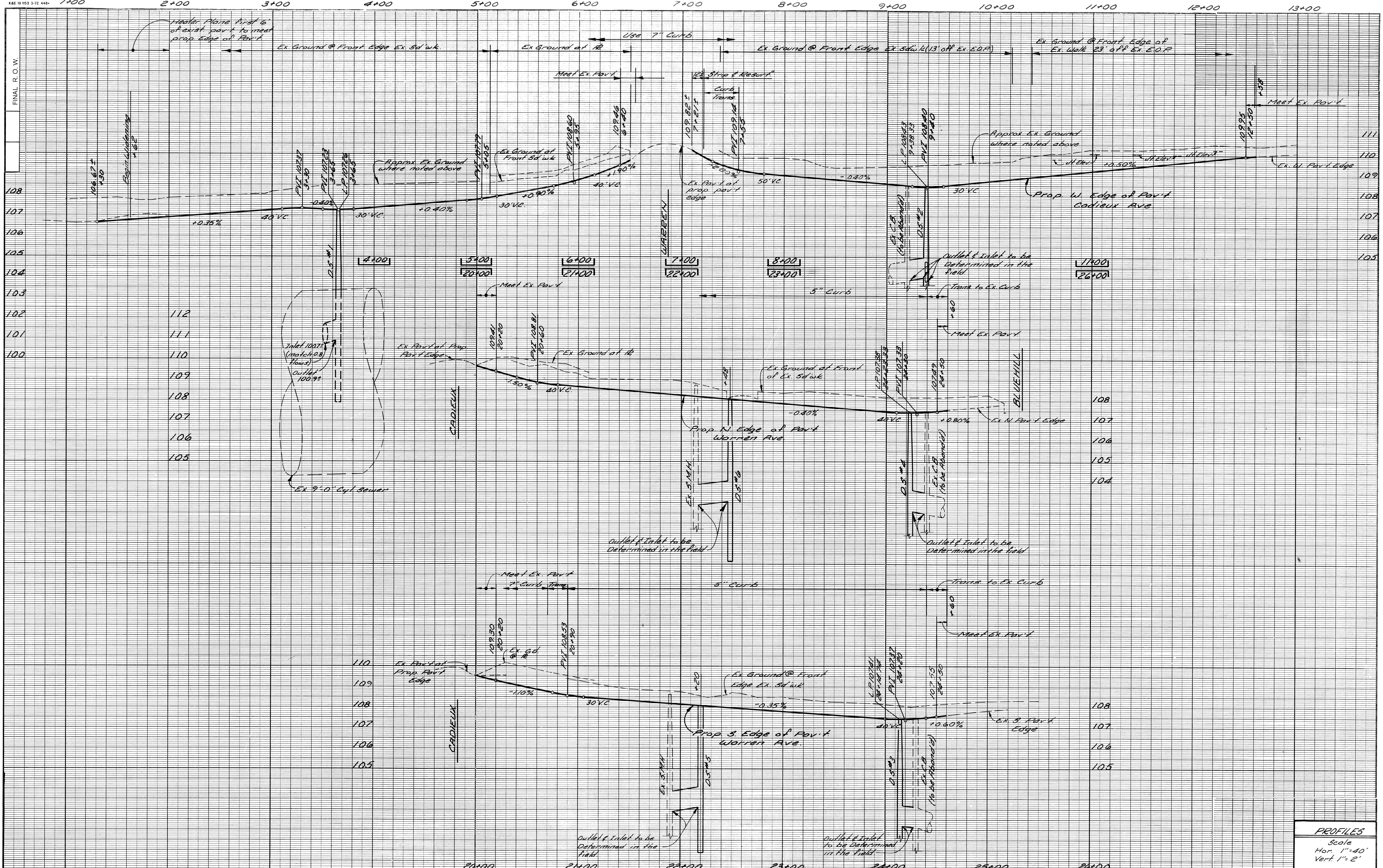
SURFACING LEGEND

- Conc. Base Course - Non-Reinf. 9" 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. Shlts.
- Class "A" Sadding with 3" Topsoil
- Existing Building
- 6" Conc. Sd'wk. (Sidewalk Ramp Areas are paid for separately)
- 4" Concrete Sidewalk
- Exist. Sd'wk. or Drwy. to Remain
- Sidewalk Ramp (6") Type 3
- Rem. Bit. Surf. - Planer Mill. & Resurf.
- Adjusting Drainage Structure Covers

DRAINAGE STRUCTURE NO. (D.S.)	TYPE OF STRUCTURE	WITH TRAP (T)	SEWER LENGTH & TYPE LEAVING D.S.			SEWER TAP SIZE IN.	TRENCH DETAIL LIN. FT.		COMMENTS
			LENGTH FT.	SIZE IN.	CLASS		8	9	
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 Cone, if neces. sary 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. 2" Type CB with 1/2" Top if nec. to avoid ex. utilities.
6	C.B. "B"	T	8	12	C-76-III	12		8	Const. 6" Type Sp. with 1/2" Top if nec. to avoid ex. utilities.

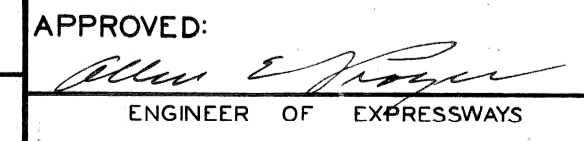
- NOTES:**
- For Alignment, See 5th. N^o 3.
 - For Utility Legend & Symbols, See 5th. N^o 21.
 - For Driveway Details, See 5th. N^o 21.
 - Strip & Resurface 1' Width, See Typical Cross-Section 5th. N^o 2.
 - Heater Plane This Area So That Pavt. Edge will Drain to Exist. Catch Basin.

DESIGNED BY	DRAWN BY	TRACED BY	CHECKED BY	APPROVED:	CITY OF DETROIT CITY ENGINEERING DIVISION E.P.M.D.		WARREN AVE. - CADIEUX AVE. INTERSECTION IMPROVEMENT
				[Signature] ENGINEER OF EXPRESSWAYS			
REVISIONS LOCATED BY COORDINATES ON SHEET							PLAN SHEET 5 OF 54 SHEETS CONTRACT No. 10012A DRWG No. DATE 10-7-76



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

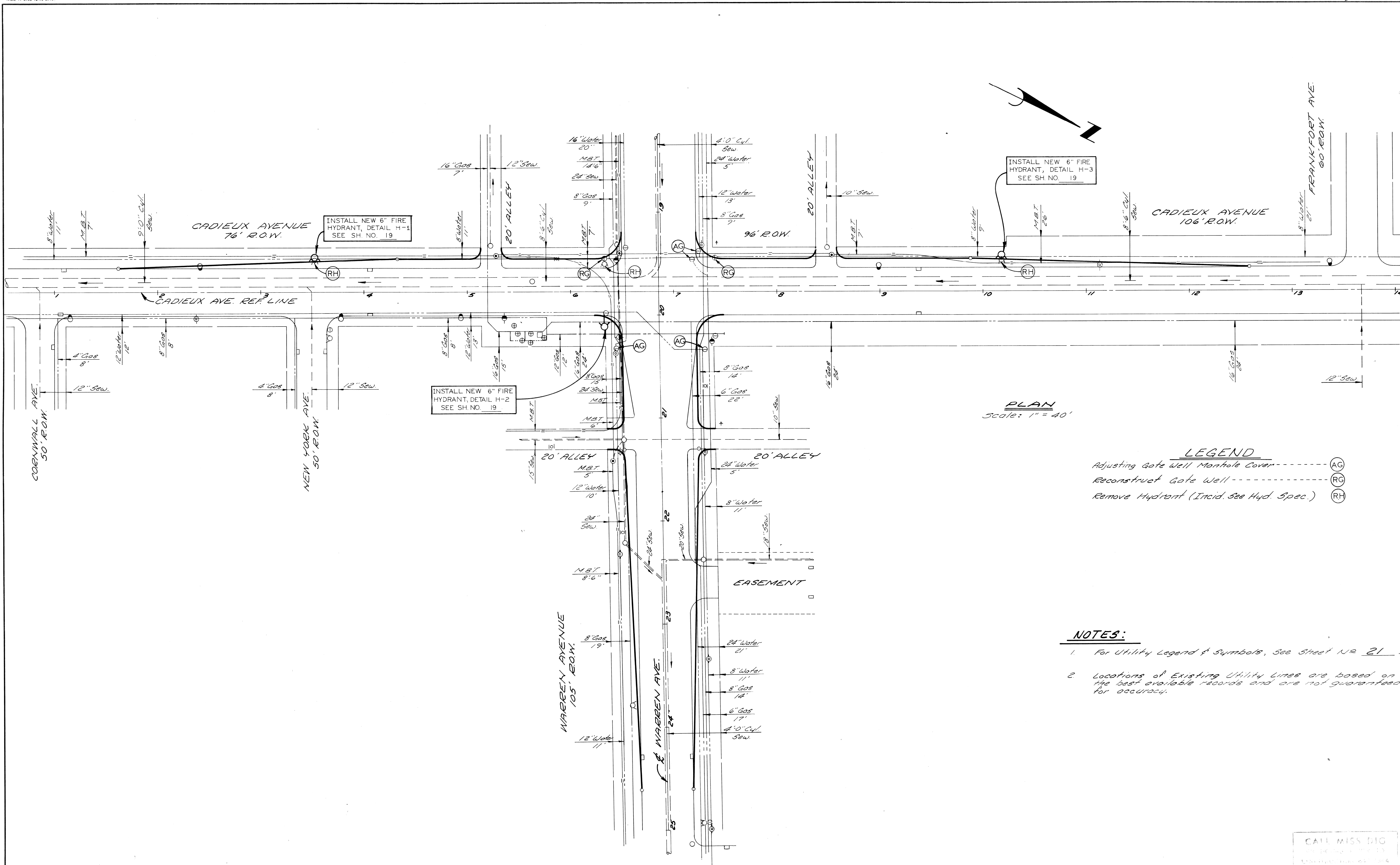
DESIGNED	
DRAWN	M.S.
CHECKED	R.B.P.

APPROVED:

 ENGINEER OF EXPRESSWAYS

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

WARREN AVE - CADIEUX AVE
 INTERSECTION IMPROVEMENT
 PROFILES

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



INSTALL NEW 6" FIRE HYDRANT, DETAIL H-3 SEE SH. NO. 19

INSTALL NEW 6" FIRE HYDRANT, DETAIL H-1 SEE SH. NO. 19

INSTALL NEW 6" FIRE HYDRANT, DETAIL H-2 SEE SH. NO. 19

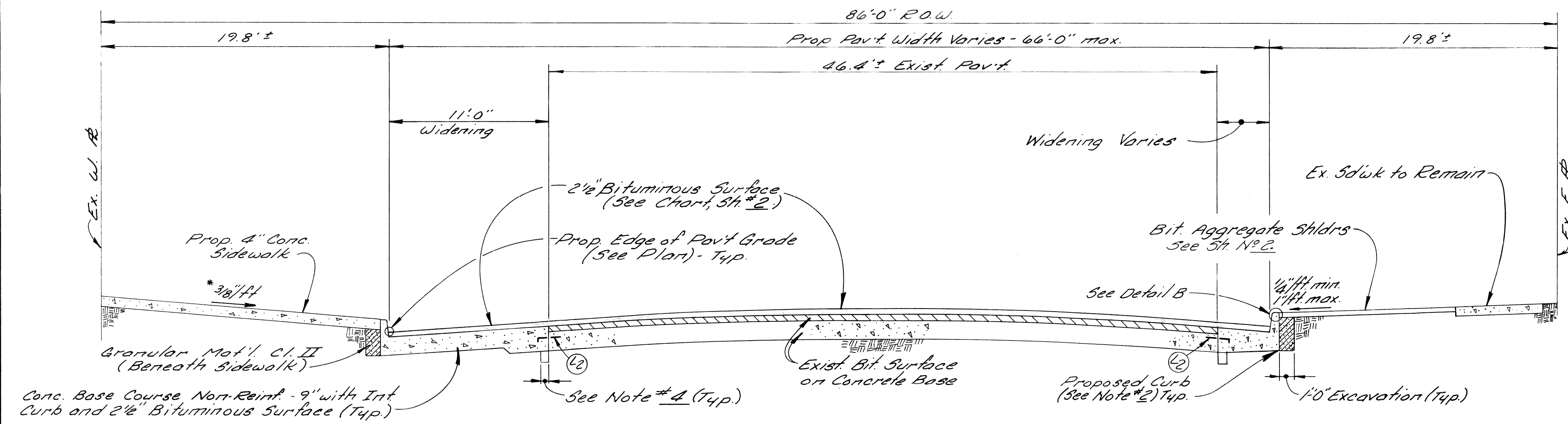
PLAN
Scale: 1" = 40'

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.

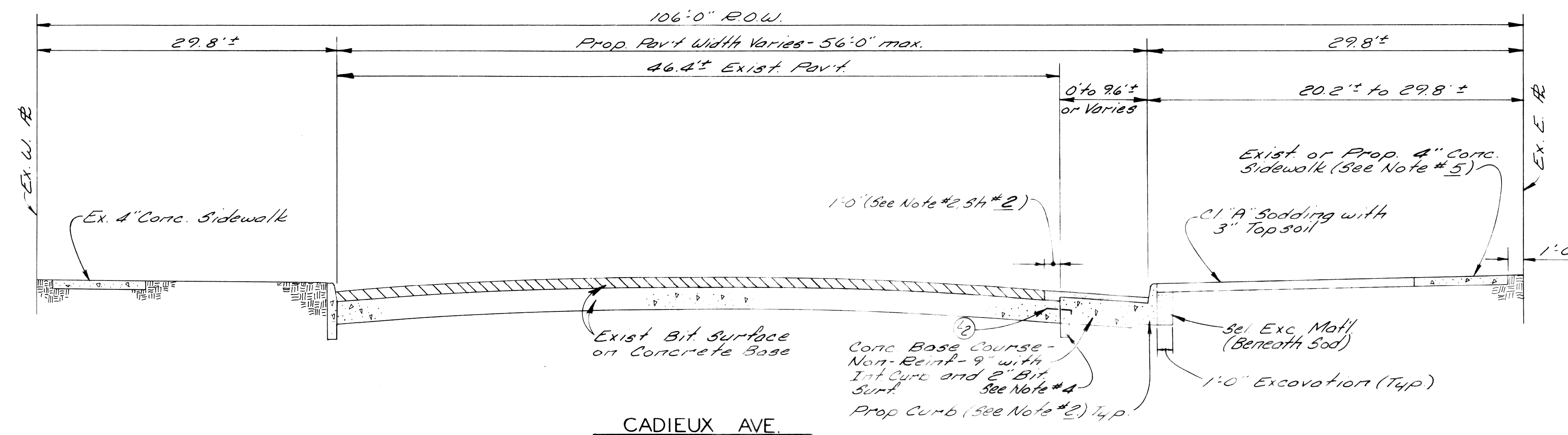
CALL MISS DIG
 311-555-5555
 311-555-5555

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.	WARREN AVE. - CADIEUX AVE. INTERSECTION IMPROVEMENT UTILITIES	SHEET 7 OF 54 SHEETS CONTRACT No. 10012A DRWG No. DATE 10-7-76
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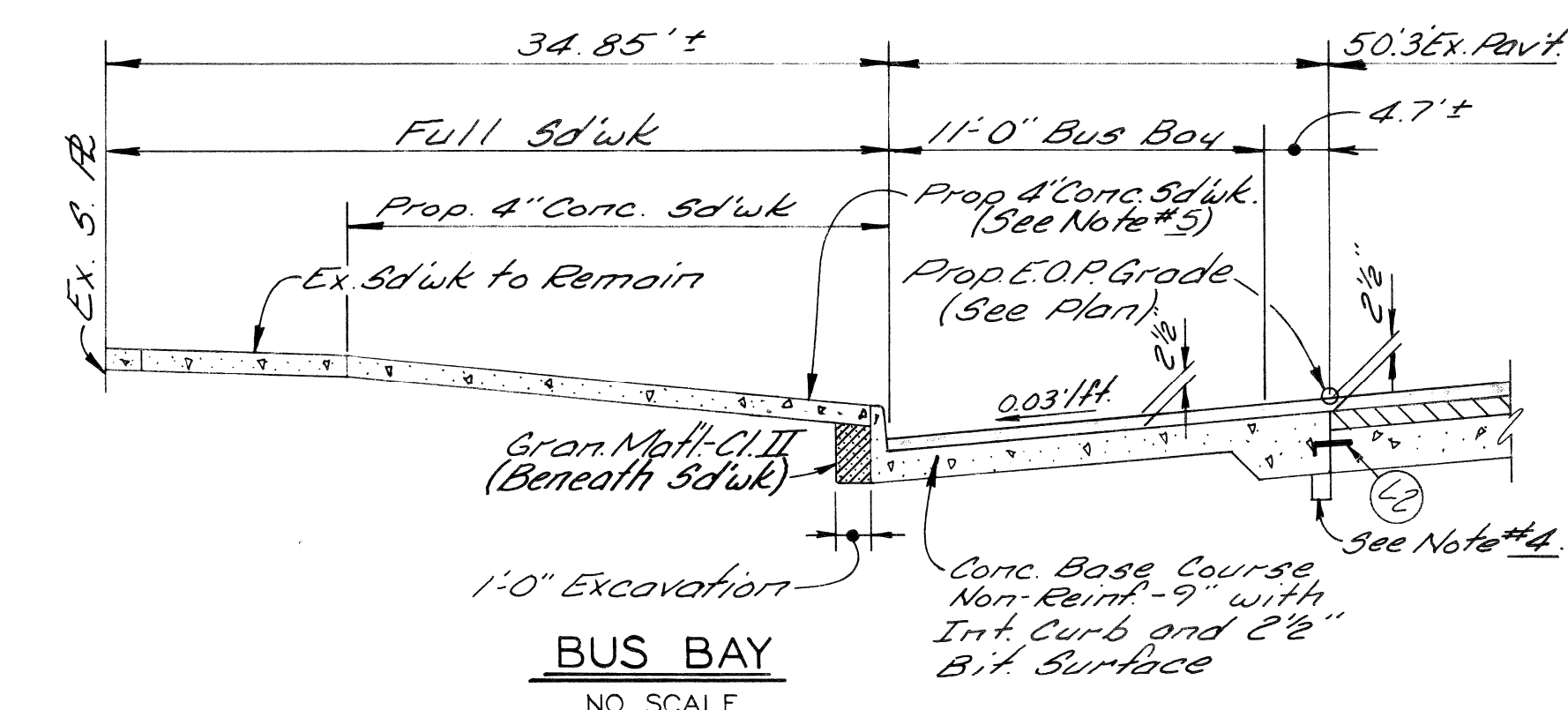


* Sidewalk slopes are to be 3/8"/1' unless the Engineer determines that a minimum slope of 1/4"/1' or a maximum slope of 3/4"/1' must be used to meet exist. conditions.

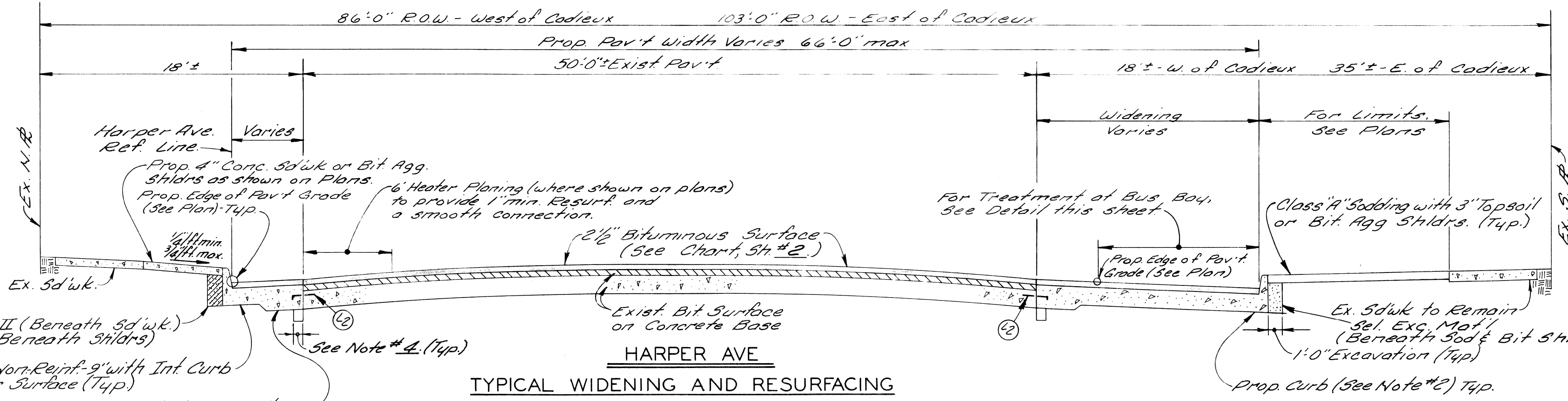
CADIEUX AVE
TYPICAL WIDENING AND RESURFACING
NORTH OF HARPER
 NO SCALE



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 St. # 2
 2. The prop curb shall be Int. Curb (See Detail St. # 2) with Conc. Curb Det. X as an alternate. If Conc. Curb Det. X is used, the new pavt. & curb must be constructed integrally, where the pavt. widening is 1'0" or less. Regardless of construction method the curb shall be paid for as concrete base course.
 3. Place 4" Conc. Sidwk. 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. sdwks. & pavt. shall be Granular Mat'l. Class II (Incidental to Contract Costs)

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

4" Concrete Sidewalk	504 Sq. Ft.
Removing Sidewalk	50 Sq. Yds.
Class A Sodding	50 Sq. Yds.
Topsoil Surface, 3"	50 Sq. Yds.
Subgrade Undercutting Type II	90 Cu. Yds.
Bituminous Aggregate Shoulders	0.7 Tons
Conc. Pavt. Non-Reint. 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

COORD	DESCRIPTION	OWN	CRD	APVD	DATE

DESIGNED BY	Comly
DRAWN BY	Suecht
TRACED BY	
CHECKED BY	Comly

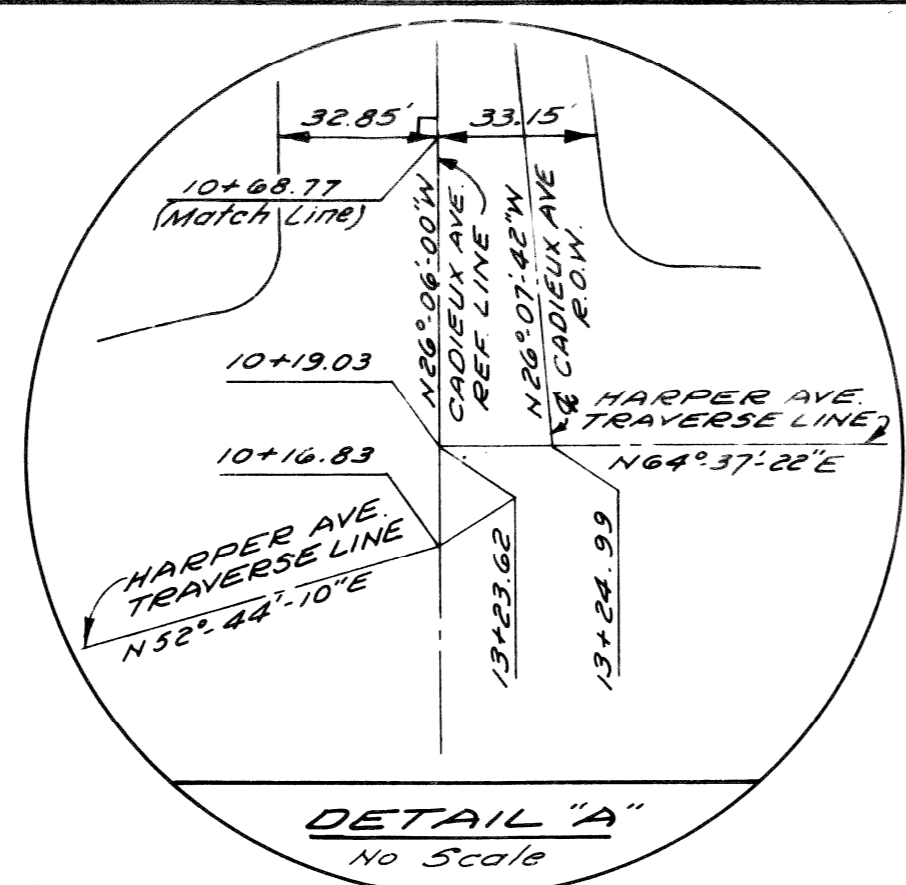
APPROVED:

 ENGINEER OF EXPRESSWAYS

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

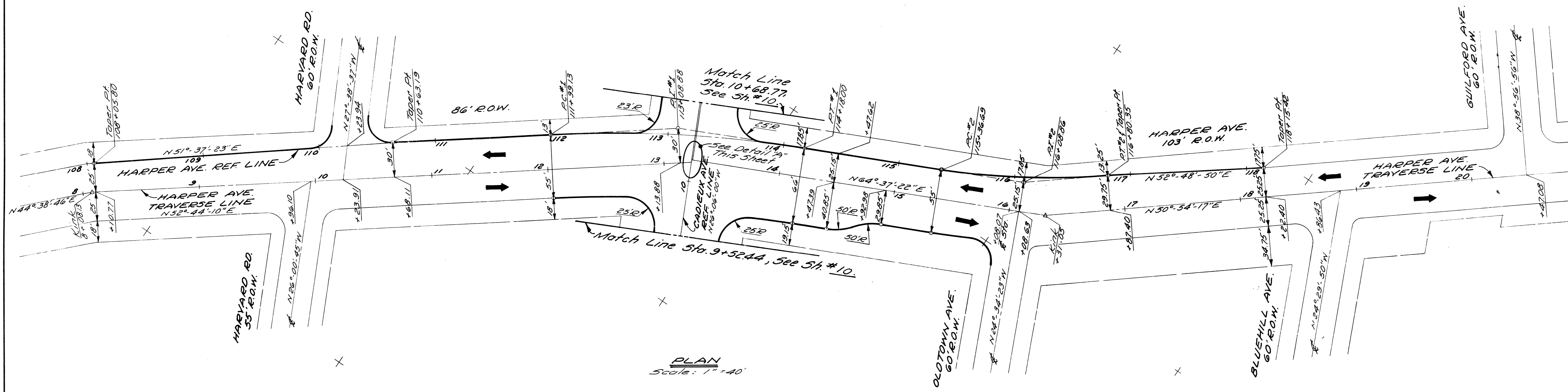
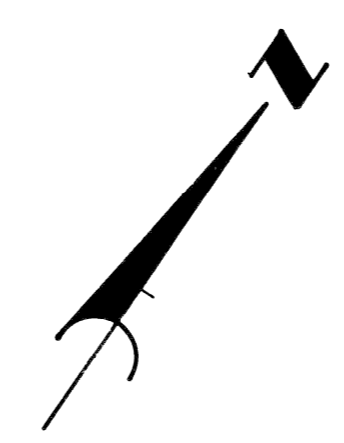
HARPER AVE. - CADIEUX AVE.
 INTERSECTION IMPROVEMENT
 TYPICAL CROSS-SECTIONS

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



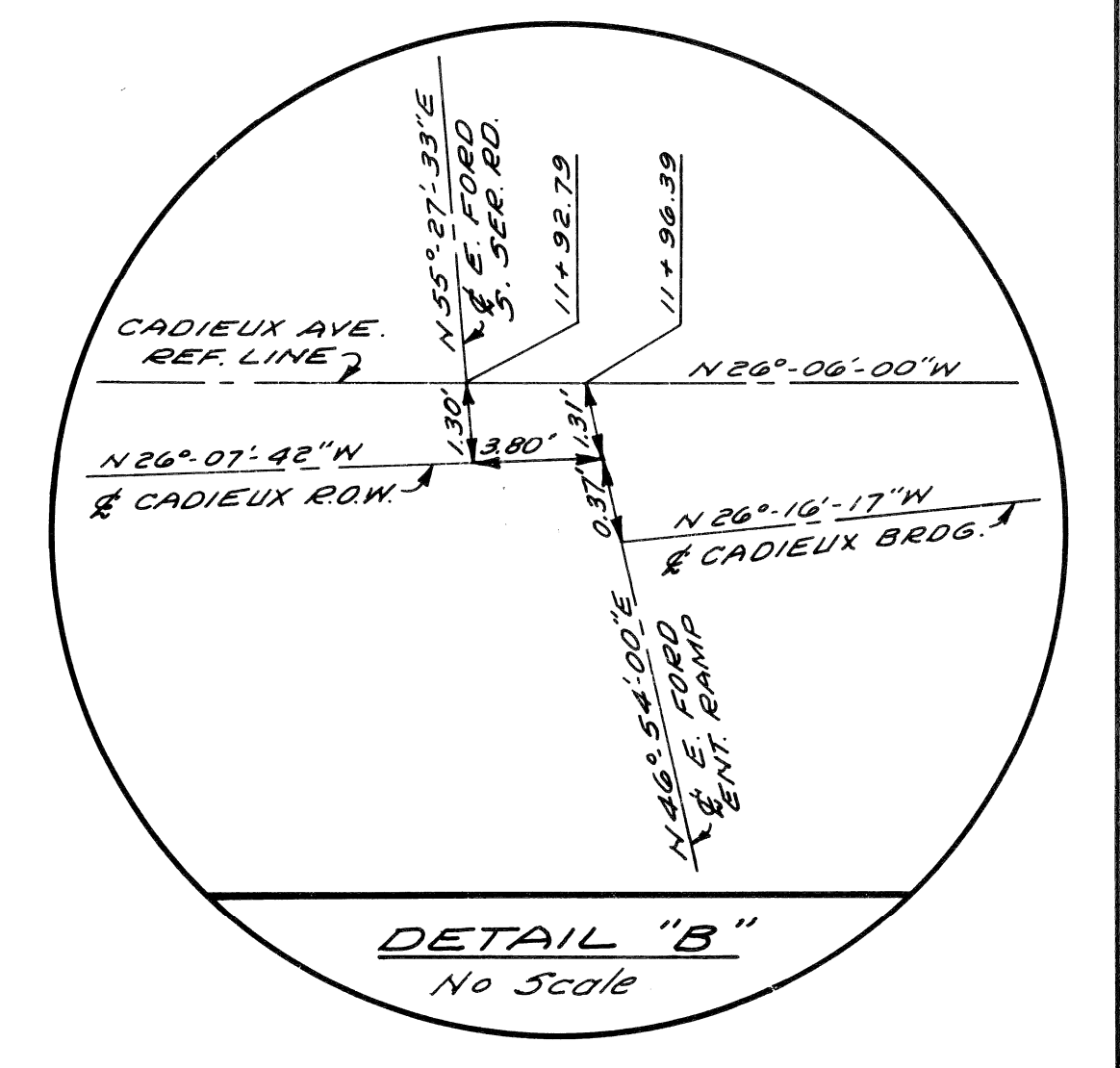
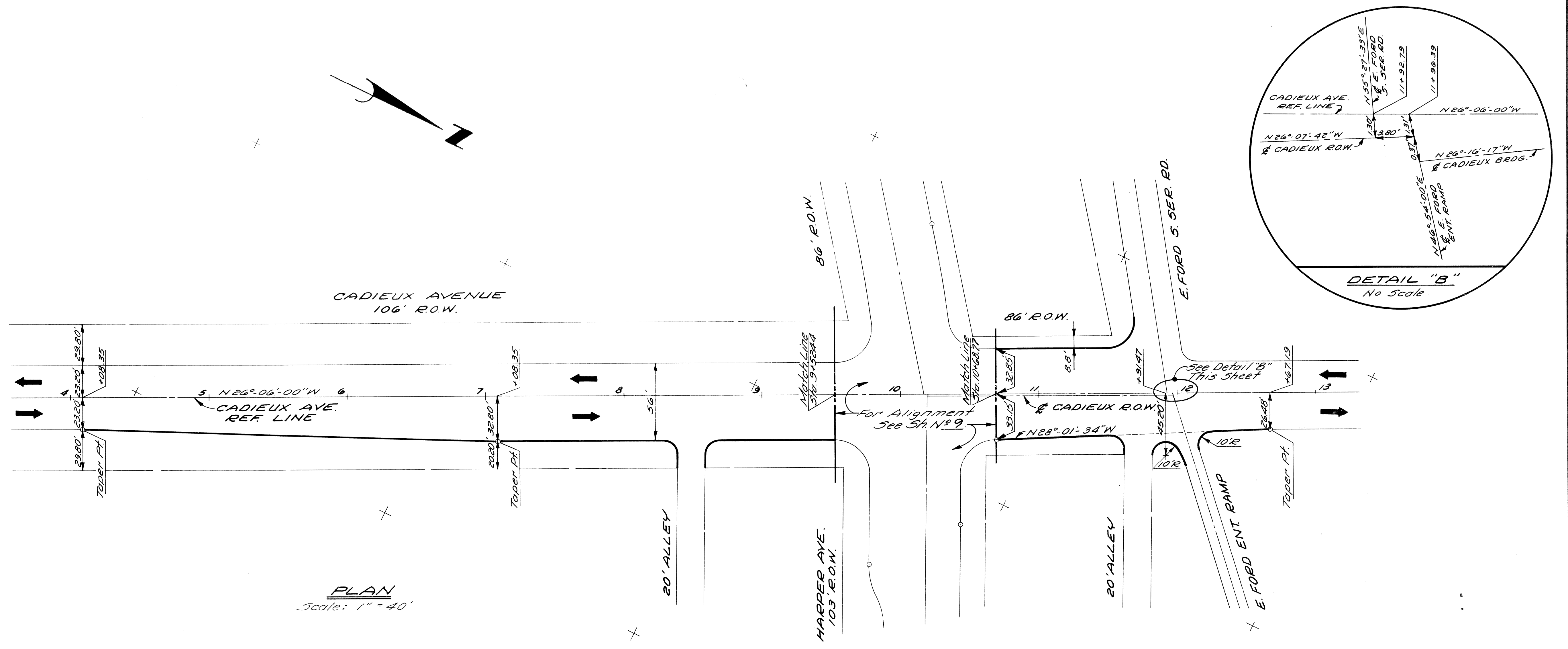
HARPER AVE. CURVE DATA

CURVE #1	CURVE #2
$\Delta = 11^\circ 53' 12''$	$\Delta = 13^\circ 43' 05''$
$D = 5^\circ 25' 51''$	$D = 9^\circ 32' 57.47''$
$R = 1055'$	$R = 600'$
$T = 109.83'$	$T = 72.17'$
$L = 218.87'$	$L = 143.66'$
$E = 5.70'$	$E = 4.33'$
$PC = 111+99.13$	$PC = 115+36.69$
$PI = 113+08.88$	$PI = 116+08.86$
$PT = 114+18.00$	$PT = 116+80.35$



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

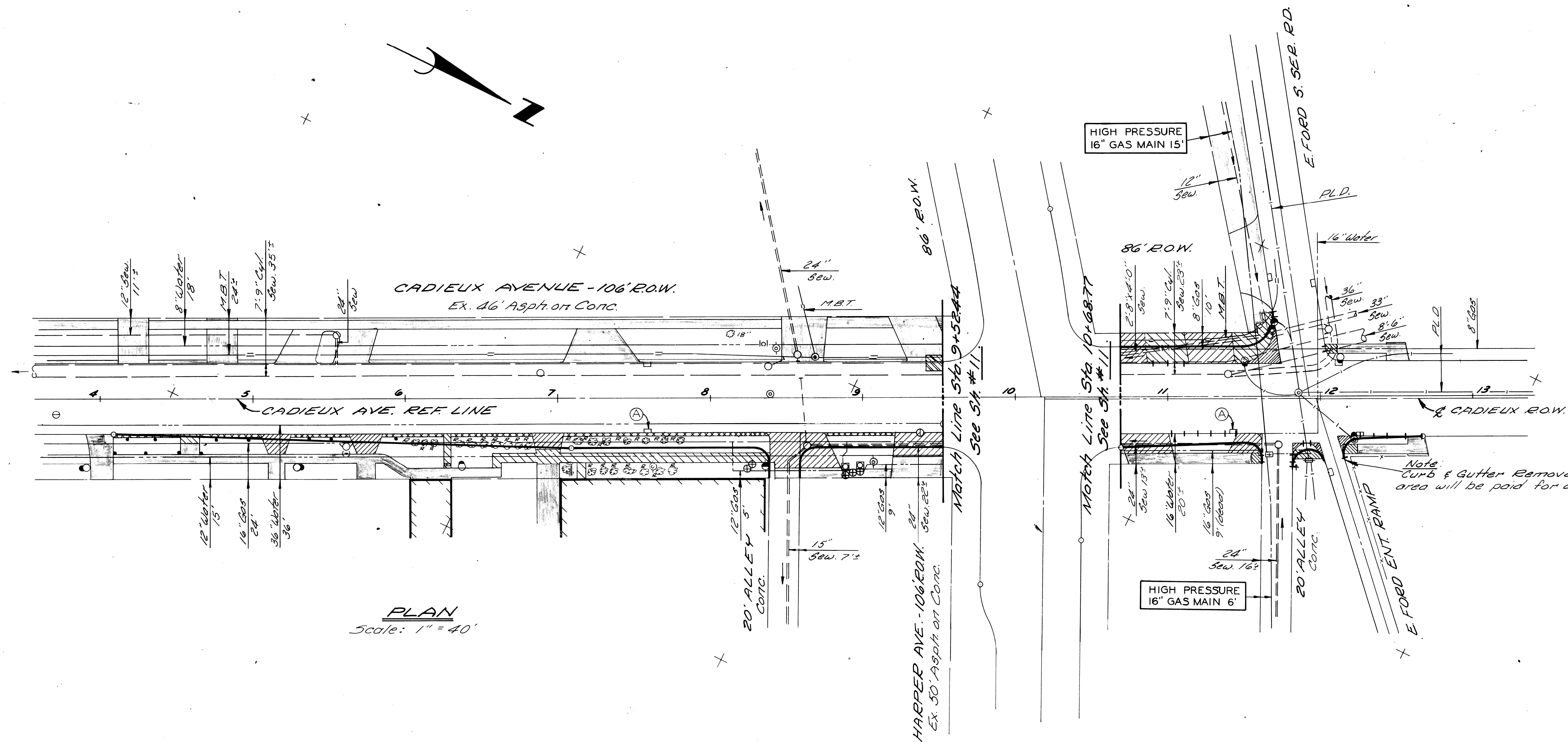
REFERENCE DRAWINGS DESIGNED BY DRAWN BY: <i>VAP</i> TRACED BY CHECKED BY: <i>I.H.K.</i>		APPROVED: ENGINEER OF EXPRESSWAYS		CITY OF DETROIT CITY ENGINEERING DIVISION E.P.M.D.			HARPER AVE. - CADIEUX AVE. INTERSECTION IMPROVEMENT ALIGNMENT			SHEET <u>9</u> OF <u>54</u> SHEETS CONTRACT NO. 10012A DRWG NO. DATE 10-7-76	
COORD. DESCRIPTION REVISIONS LOCATED BY COORDINATES ON SHEET											



PLAN
Scale: 1" = 40'

- 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.

<table border="1"> <tr> <td>DESIGNED BY</td> <td></td> </tr> <tr> <td>DRAWN BY</td> <td>WAB</td> </tr> <tr> <td>TRACED BY</td> <td></td> </tr> <tr> <td>CHECKED BY</td> <td>I.H.K.</td> </tr> </table>		DESIGNED BY		DRAWN BY	WAB	TRACED BY		CHECKED BY	I.H.K.	<table border="1"> <tr> <td>APPROVED:</td> <td><i>[Signature]</i></td> </tr> <tr> <td></td> <td>ENGINEER OF EXPRESSWAYS</td> </tr> </table>	APPROVED:	<i>[Signature]</i>		ENGINEER OF EXPRESSWAYS	<p align="center">CITY OF DETROIT CITY ENGINEERING DIVISION E. P. M. D.</p>	<p align="center">HARPER AVE. - CADIEUX AVE. INTERSECTION IMPROVEMENT</p>	<p align="center">ALIGNMENT</p>	<p align="center">SHEET <u>10</u> OF <u>54</u> SHEETS</p> <p align="center">CONTRACT No. 10012A</p> <p align="center">DRWG No.</p> <p align="center">DATE 10-7-76</p>
DESIGNED BY																		
DRAWN BY	WAB																	
TRACED BY																		
CHECKED BY	I.H.K.																	
APPROVED:	<i>[Signature]</i>																	
	ENGINEER OF EXPRESSWAYS																	
<table border="1"> <tr> <td>COORD.</td> <td>DESCRIPTION</td> <td>DRW.</td> <td>CHK'D.</td> <td>APP'VD.</td> <td>DATE</td> </tr> <tr> <td></td> <td>REVISIONS LOCATED BY COORDINATES ON SHEET</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		COORD.	DESCRIPTION	DRW.	CHK'D.	APP'VD.	DATE		REVISIONS LOCATED BY COORDINATES ON SHEET									
COORD.	DESCRIPTION	DRW.	CHK'D.	APP'VD.	DATE													
	REVISIONS LOCATED BY COORDINATES ON SHEET																	



PLAN
Scale: 1" = 40'

REMOVAL LEGEND

- Removing Pav't.
- Removing Sidewalk
- Removing Curb
- Abandoning Drainage Structures
- Removing Trees (Incld)
- 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. Location 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

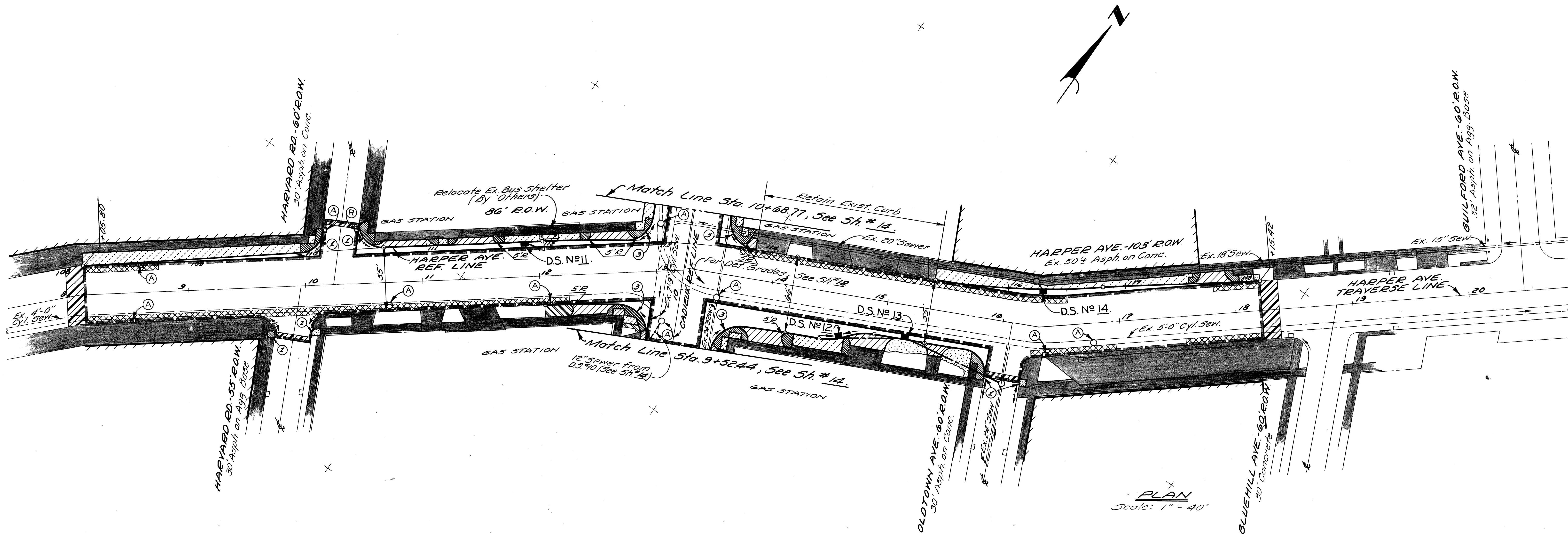
	DESIGNED BY <i>M.S.</i>	APPROVED: ENGINEER OF EXPRESSWAYS	CITY OF DETROIT CITY ENGINEERING DIVISION E. P. M. D.	HARPER AVE. - CADIEUX AVE. INTERSECTION IMPROVEMENT	SHEET <u>12</u> OF <u>54</u> SHEETS
	DRAWN BY				CONTRACT No. 10012A
	TRACED BY				DRWG NO.
	CHECKED BY <i>R.B.P.</i>				DATE 10-7-76
REVISIONS LOCATED BY COORDINATES ON SHEET					

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.			SEWER TAP SIZE (IN.)	TRENCH DETAIL (LIN. FT.)		COMMENTS
			LENGTH (FT)	SIZE (IN)	CLASS		8	9	
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"	T	86	12	C-76-III	12	42	44	
14	C.B. "B"	T	6	12	C-76-III	12		6	

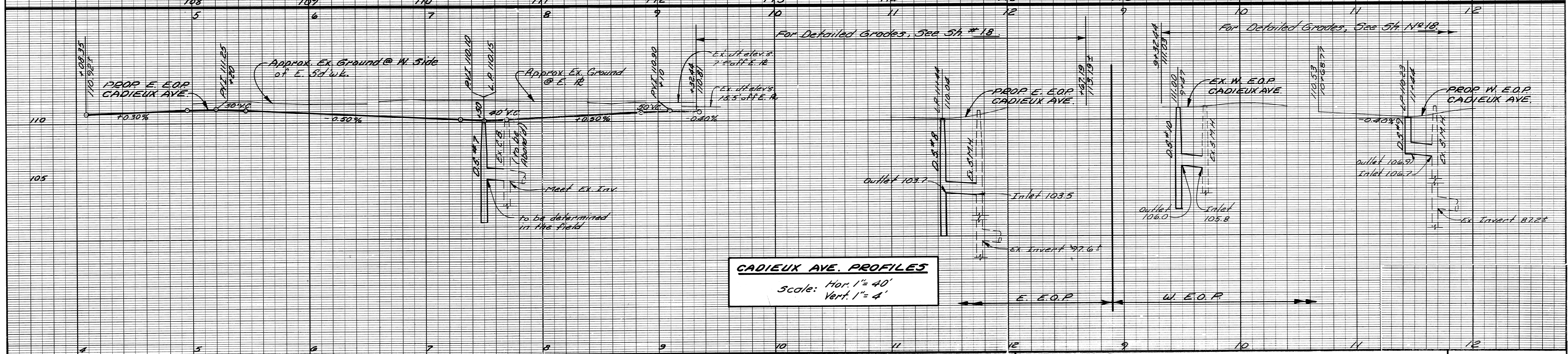
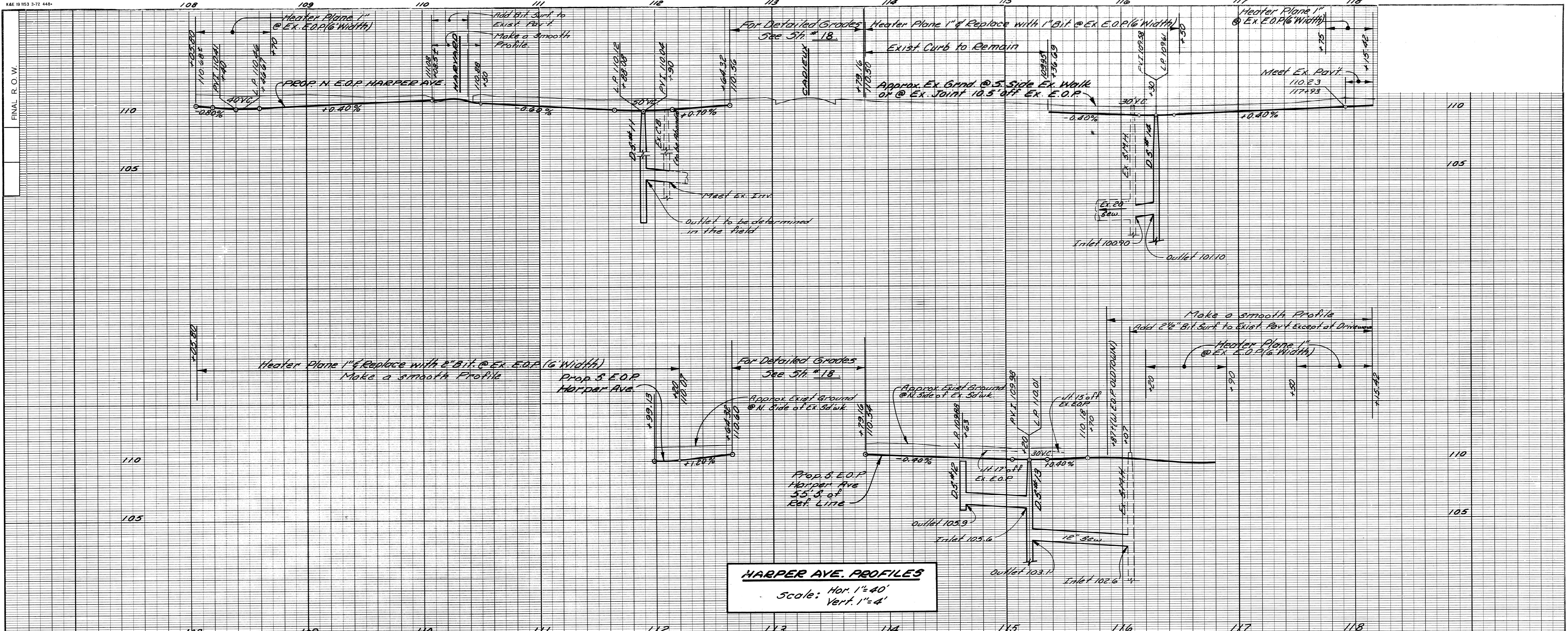
SURFACING LEGEND

- Conc. Base Course Non-Reinf. 9" with Int. Curb and 2 1/2" Bit. Surface
- Removing Bit. Surf. & Resurface
- Conc. Pavt. Non-Reinf. 8" (Driveway)
- Conc. Pavt. Non-Reinf. 6" (Driveway)
- Bituminous Agg. 5" Slabs.
- Class "A" Sodding with 3" Topsoil
- Existing Building
- Reconstruct Drainage Structures
- 6" Conc. 5d'wk. (Sidewalk Ramp Areas are paid for separately)
- 4" Concrete Sidewalk
- Exist. 5d'wk. or Drwy. to Remain
- 5d'wk Ramps (for 6) Types ① or ②
- Rem. Bit. Surf. Planer Meth. & Resurface
- Adjusting Drainage Structure Covers
- 2 1/2" Bituminous Surface on Exist. Pavt.

NOTES:

1. For Alignment, See 5h. N^o 9.
2. For Utility Legend & Symbols, See 5h. N^o 21.
3. For Driveway Details, See 5h. N^o 21.

DESIGNED BY 		APPROVED: ENGINEER OF EXPRESSWAYS		CITY OF DETROIT CITY ENGINEERING DIVISION E. P. M. D.		HARPER AVE. - CADIEUX AVE. INTERSECTION IMPROVEMENT		SHEET 13 OF 54 SHEETS	
DRAWN BY 		CHECKED BY 						CONTRACT No. 10012A	
TRACED BY		DATE		PLAN		DRWG No.		DATE 10-7-76	

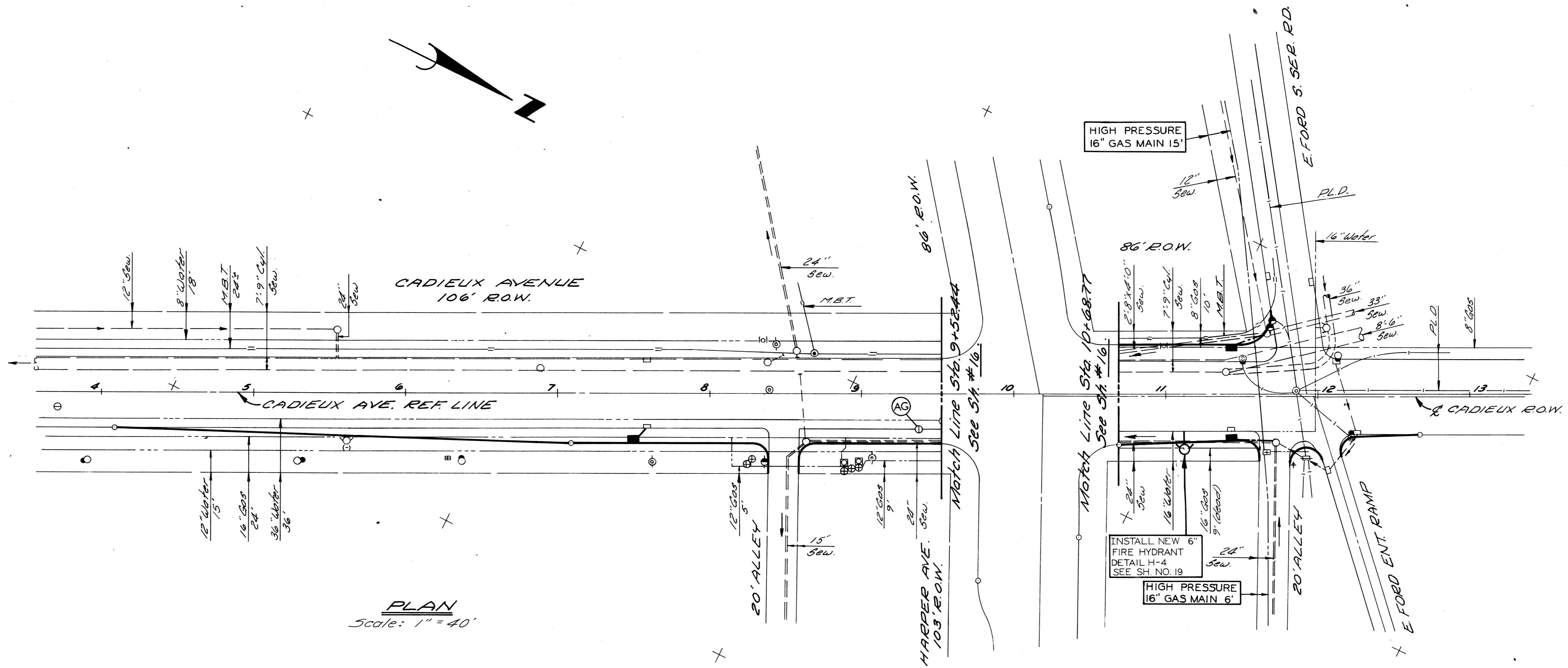


DESIGNED	
DRAWN	M.A.P.
CHECKED	I.H.K.

APPROVED	<i>[Signature]</i> ENGINEER OF EXPRESSWAYS
----------	---

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

HARPER AVE - CADIEUX AVE INTERSECTION IMPROVEMENT		SHEET 15 OF 54 SHEETS
PROFILES		JOB No. 10012A
		DATE 10-7-76



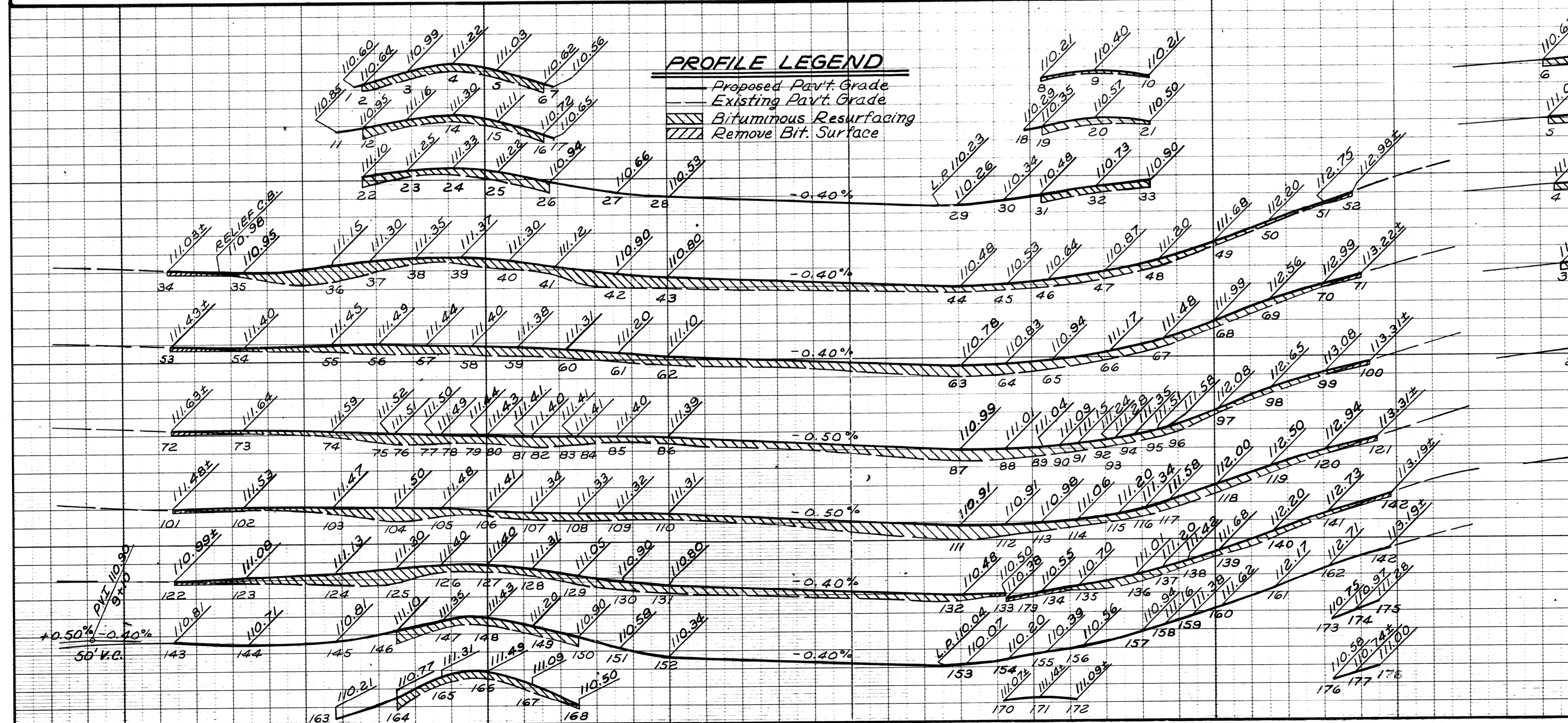
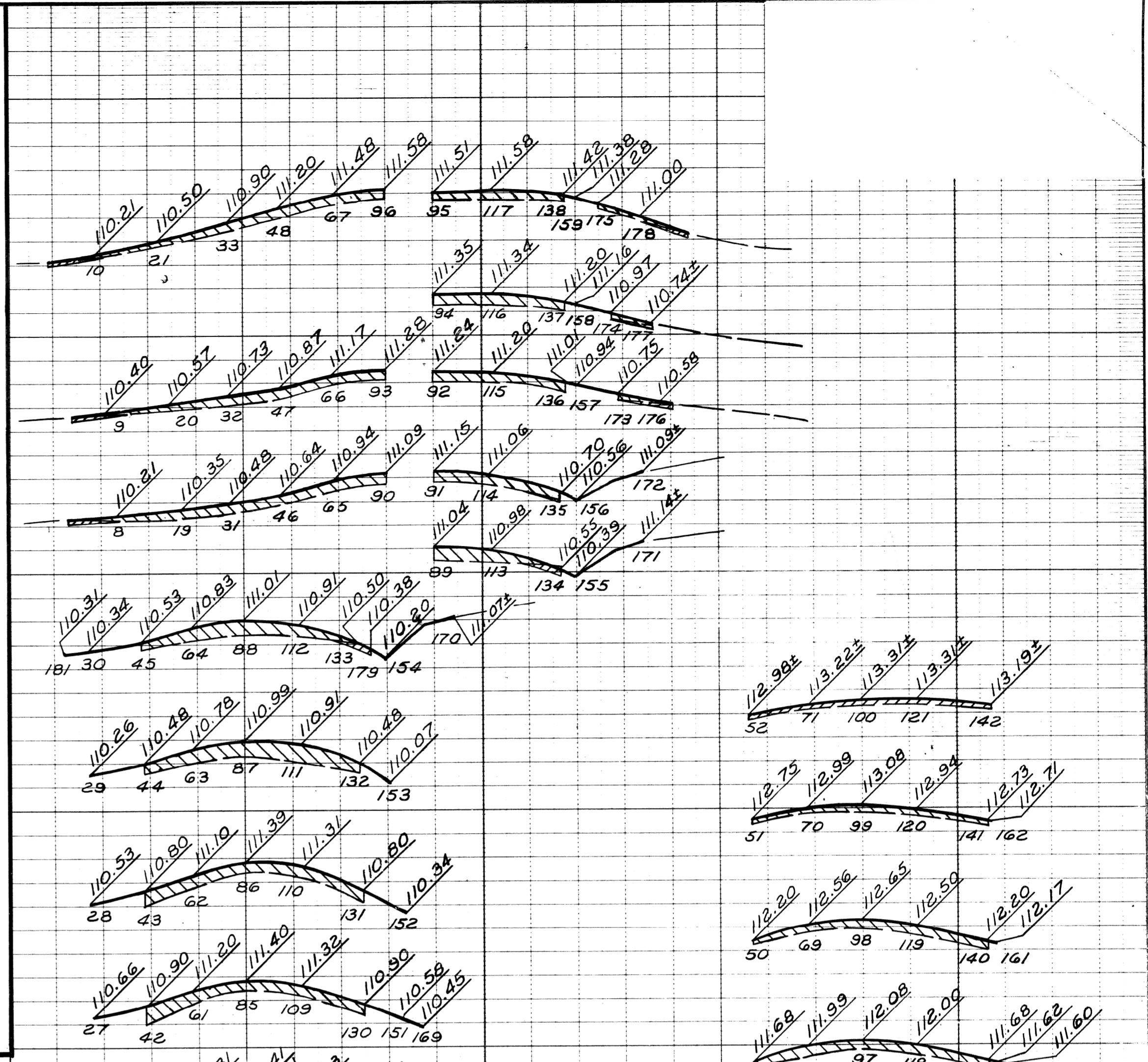
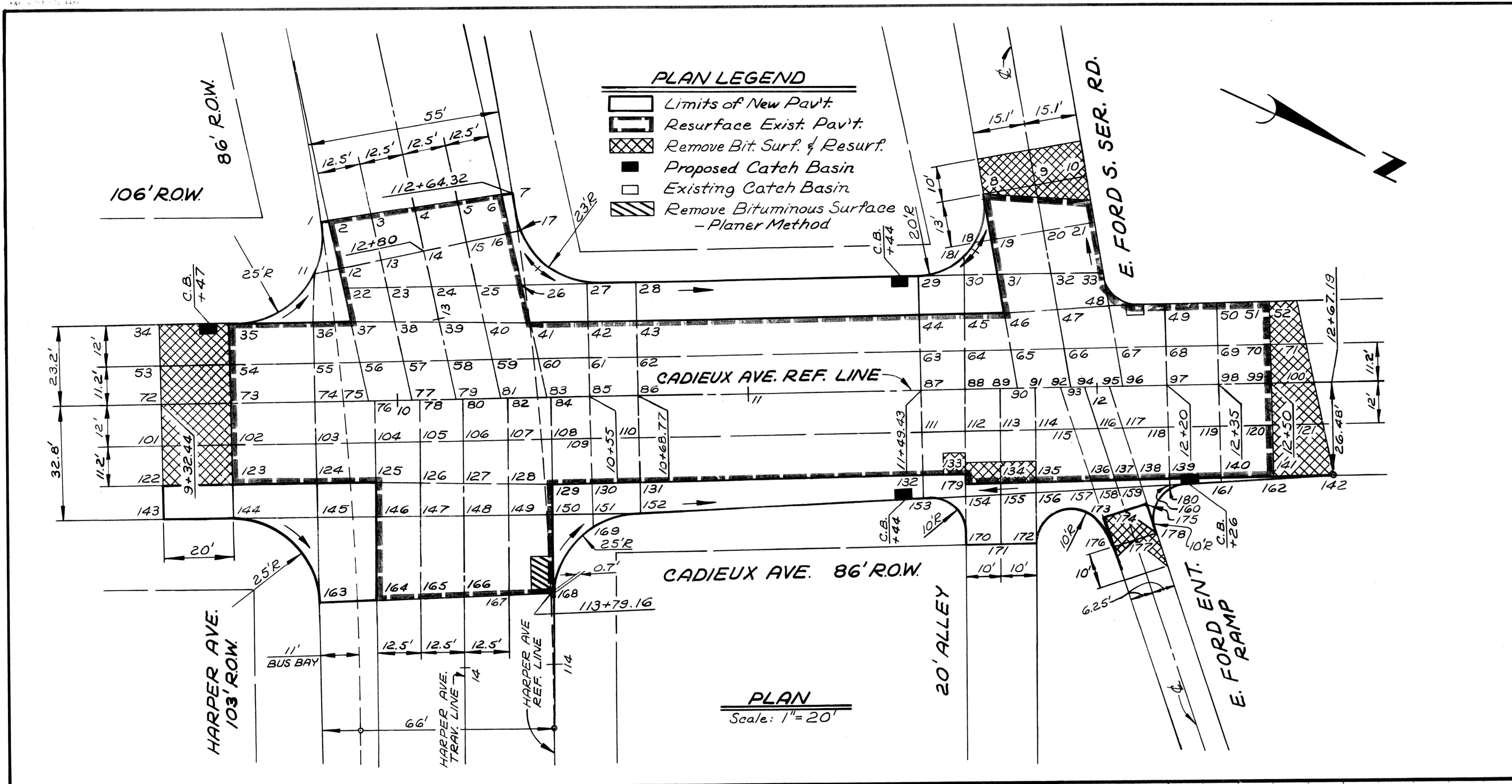
PLAN
Scale: 1" = 40'

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

REFERENCE DRAWINGS DESIGNED BY DRAWN BY <i>M.S.</i> TRACED BY CHECKED BY <i>W.B.</i>		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
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DESIGNED BY	W. Bonus
DRAWN BY	W. Bonus
CHECKED BY	R. Comly

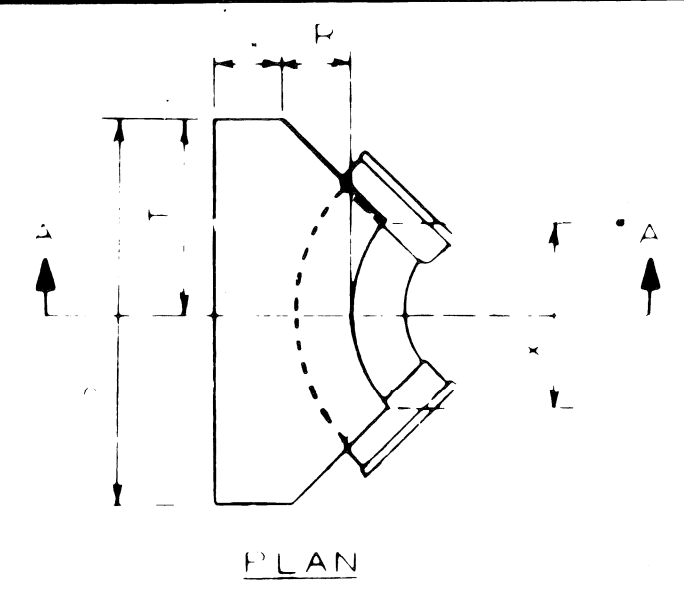
APPROVED: *Allen J. Brown*
ENGINEER OF EXPRESSWAYS

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

HARPER AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT

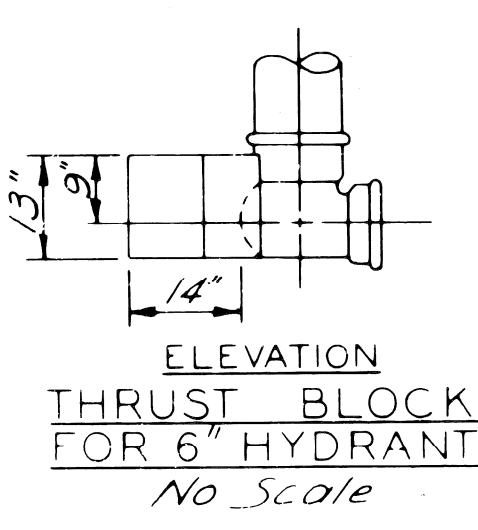
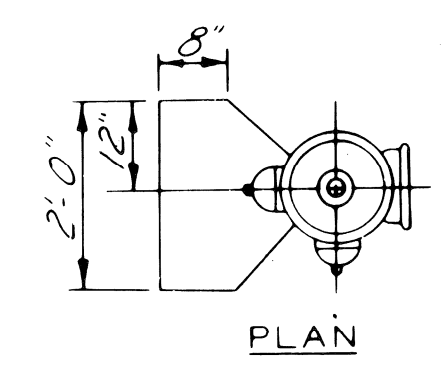
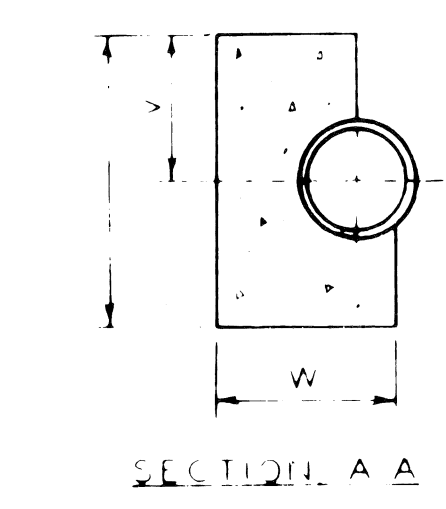
DETAILED GRADES FOR CADIEUX AVE. AT HARPER AVE. & E. FORD SOUTH SERVICE ROAD

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

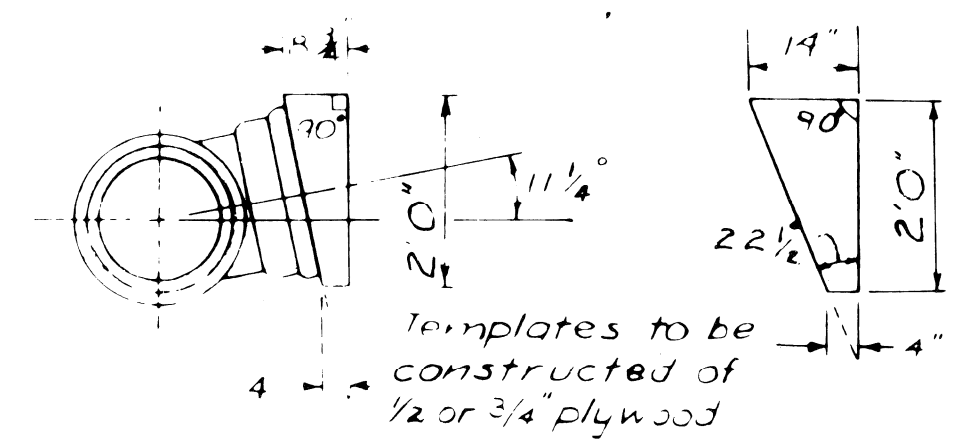


R-ND SIZE	CODE									
	G	R	S	T	U	V	W	X		
6" x 8" 90°	0' 9"	1' 0"	3' 4"	1' 4"	2' 6"	1' 3"	1' 11"	1' 2"		
12" 90°	0' 9"	1' 4"	5' 6"	2' 9"	3' 0"	1' 6"	2' 4"	1' 8"		
16" 90°	1' 0"	1' 8"	6' 0"	3' 0"	5' 0"	2' 6"	3' 0"	2' 8"		
6" x 8" 45°	0' 9"	1' 0"	2' 4"	1' 2"	2' 0"	1' 0"	1' 11"	1' 4"		
12" 45°	0' 9"	1' 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" x 12" 22 1/2°	0' 9"	1' 0"	2' 6"	1' 3"	2' 0"	1' 0"	2' 0"	1' 4"		
16" 22 1/2°	1' 0"	1' 8"	3' 4"	1' 8"	2' 6"	1' 3"	3' 0"	1' 2"		

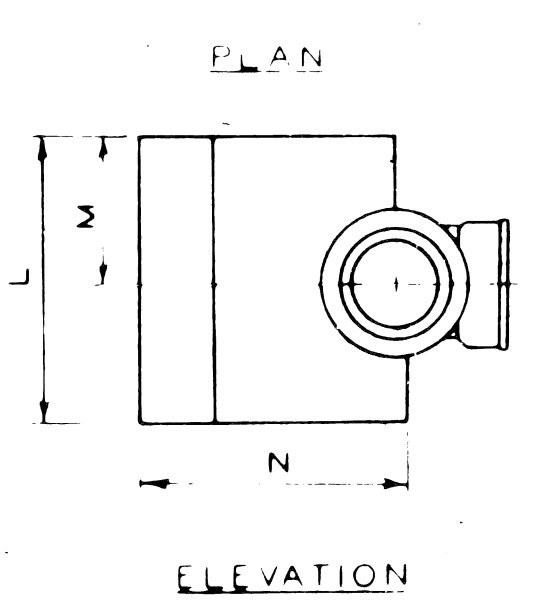
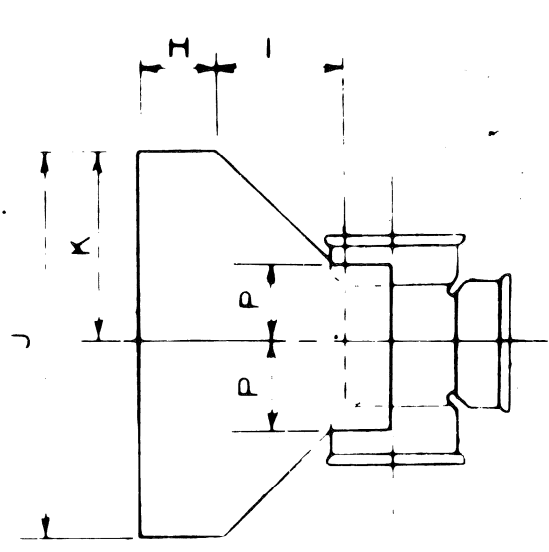
DETAIL OF STANDARD THRUST BLOCKS FOR BENDS
No Scale



THRUST BLOCK FOR 6" HYDRANT
No Scale



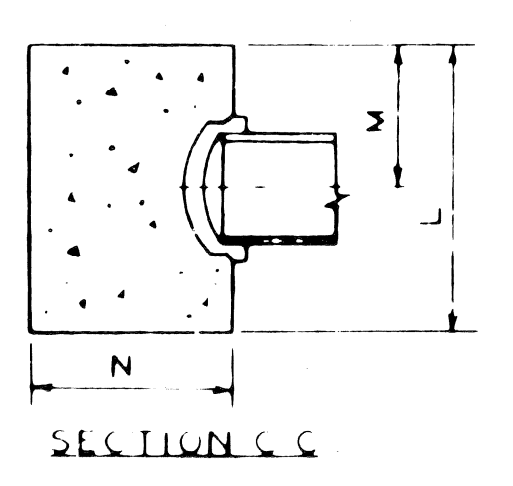
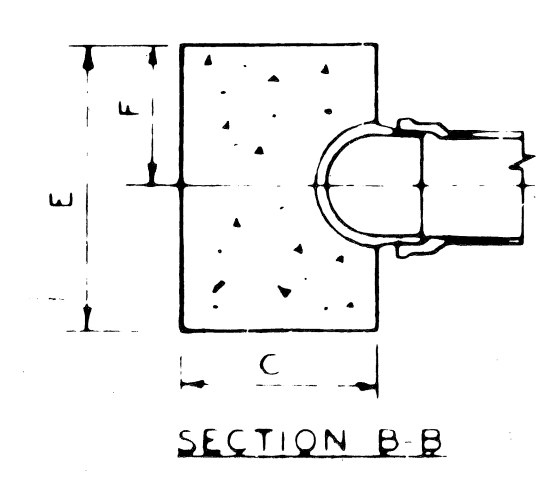
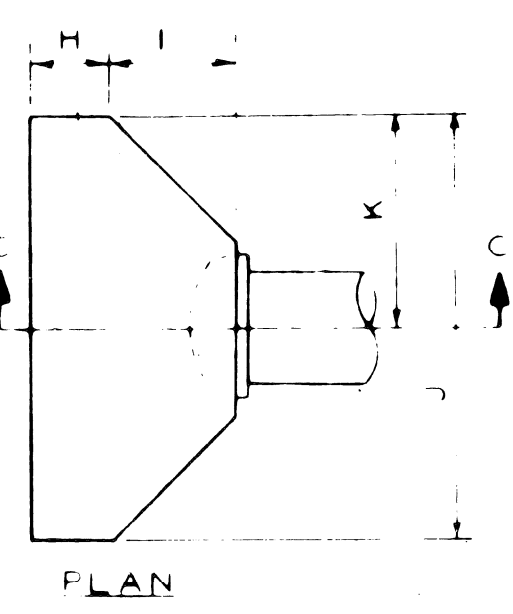
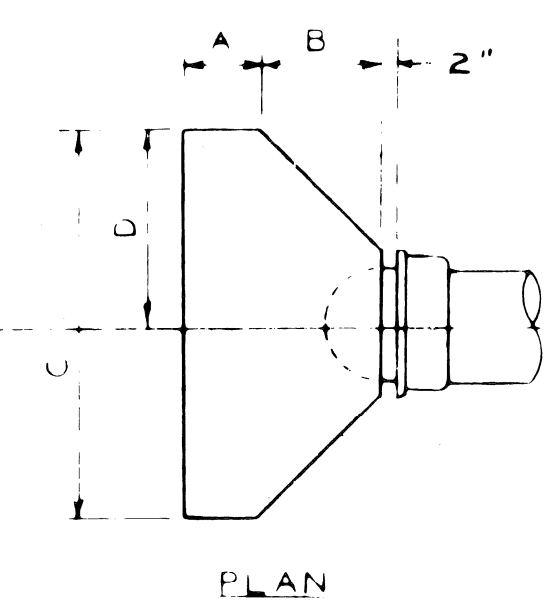
TEMPLATE FOR SETTING TEES
AT 1 1/4" x 22 1/2" ANGLES
No Scale



TEF SIZE	CODE									
	H	I	J	K	L	M	N	P		
8" x 8"	0' 9"	1' 0"	3' 0"	1' 6"	2' 0"	1' 0"	8' 2 3/4"	8' 0' 6"		
12" x 8"	0' 9"	1' 4"	4' 0"	2' 0"	3' 0"	1' 6"	12' 2 5/8"	12' 0' 8"		
16" x 8"	0' 9"	1' 4"	4' 0"	2' 0"	3' 0"	1' 6"	16' 2' 9"	16' 0' 6"		
12" x 12"	0' 9"	1' 4"	4' 0"	2' 0"	3' 0"	1' 6"	12' 2' 9"	8' 0' 8"		
16" x 12"	0' 9"	1' 4"	4' 0"	2' 0"	3' 0"	1' 6"	16' 3' 1"	16' 0' 8"		
16" x 16"	1' 0"	1' 8"	5' 0"	2' 6"	4' 0"	2' 0"	16' 3' 8"	16' 0' 11"		

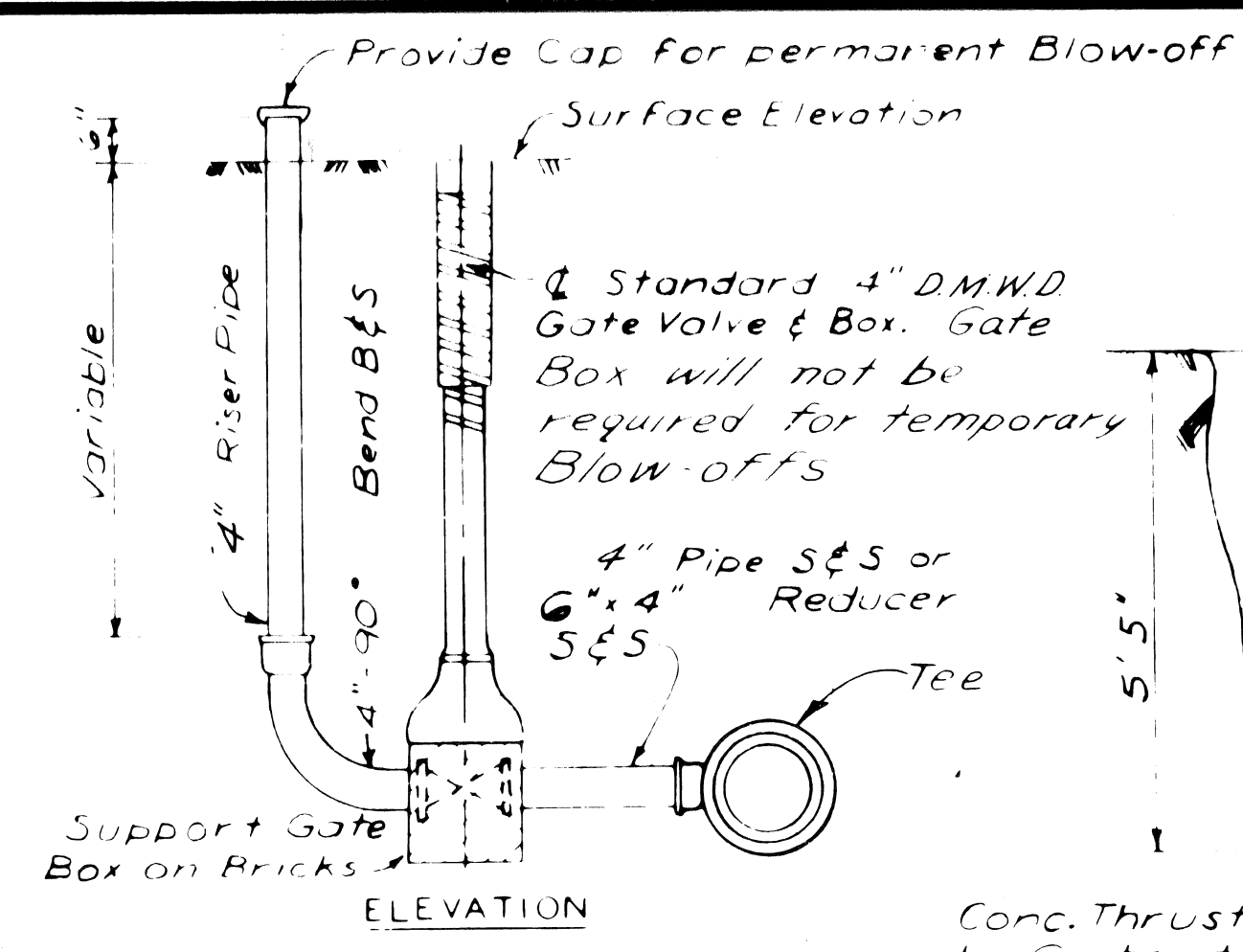
DETAIL OF STANDARD THRUST BLOCKS FOR TEES
No Scale

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 1 1/4".

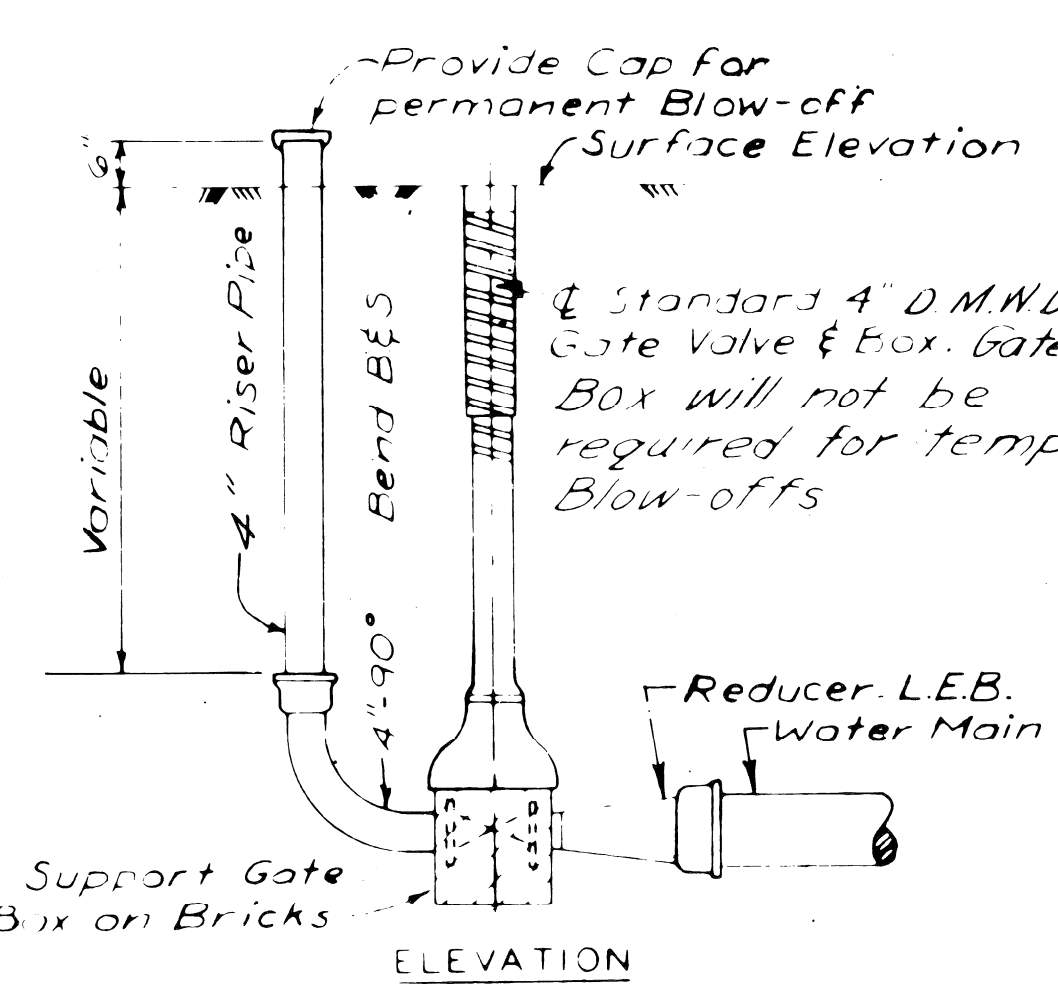


PLUG SIZE	CODE							
	A	B	C	D	E	F	G	H
6" x 8"	0' 9"	1' 2"	3' 0"	1' 6"	2' 0"	1' 0"	1' 11"	1' 1"
12"	0' 9"	1' 4"	4' 0"	2' 0"	3' 0"	1' 6"	2' 1"	2' 1"
16"	1' 0"	1' 8"	5' 0"	2' 6"	4' 0"	2' 0"	2' 8"	2' 8"

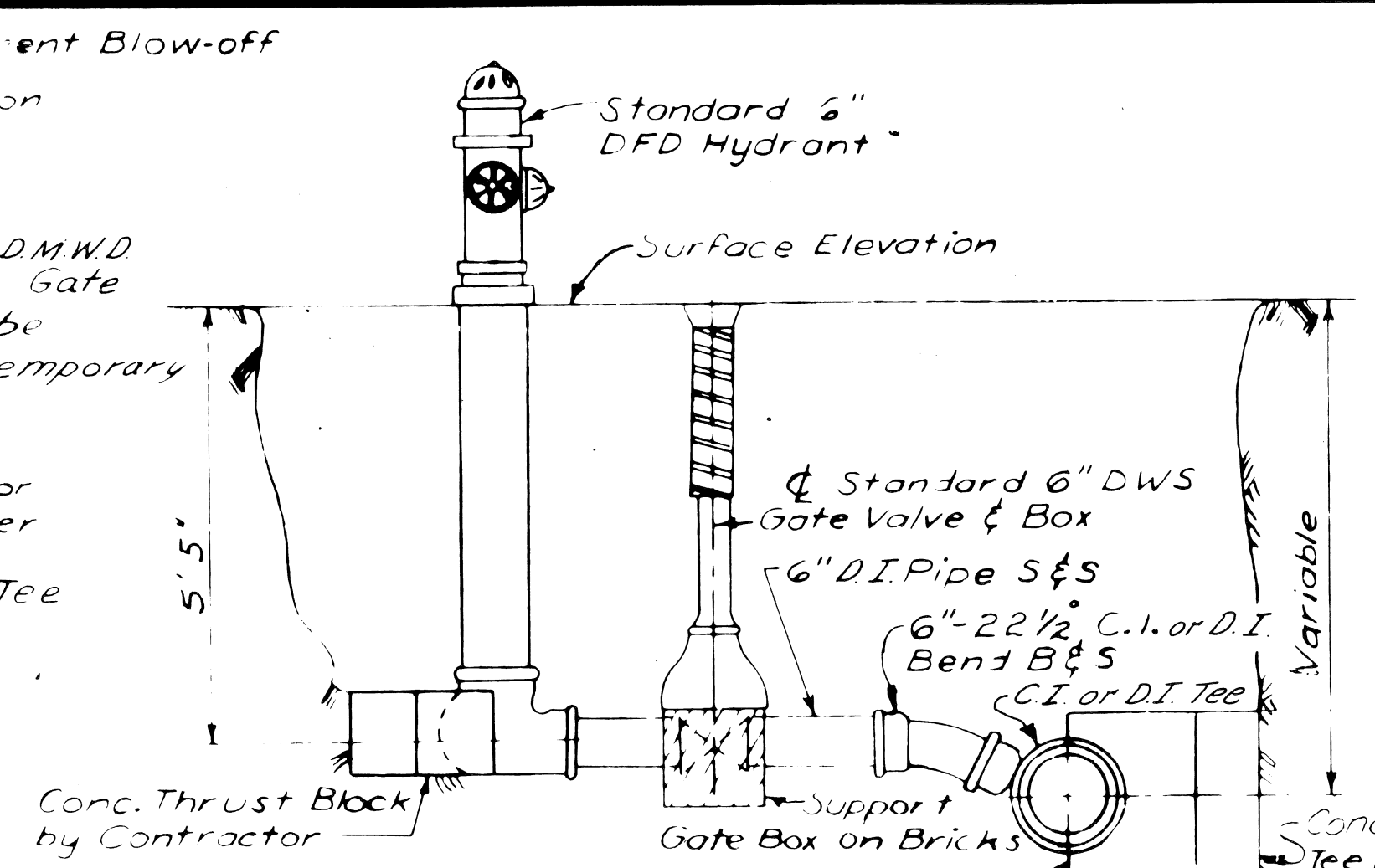
DETAIL OF STANDARD THRUST BLOCKS FOR PLUGS & CAPS
No Scale



DETAIL OF 4" BLOW OFF
No Scale



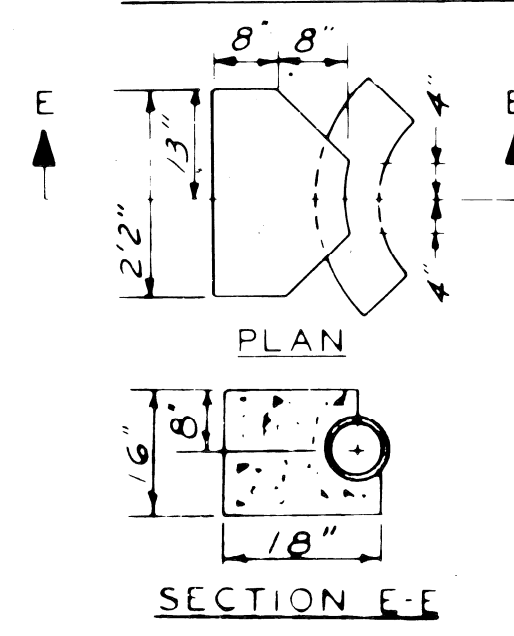
DETAIL OF 4" BLOW-OFF
No Scale



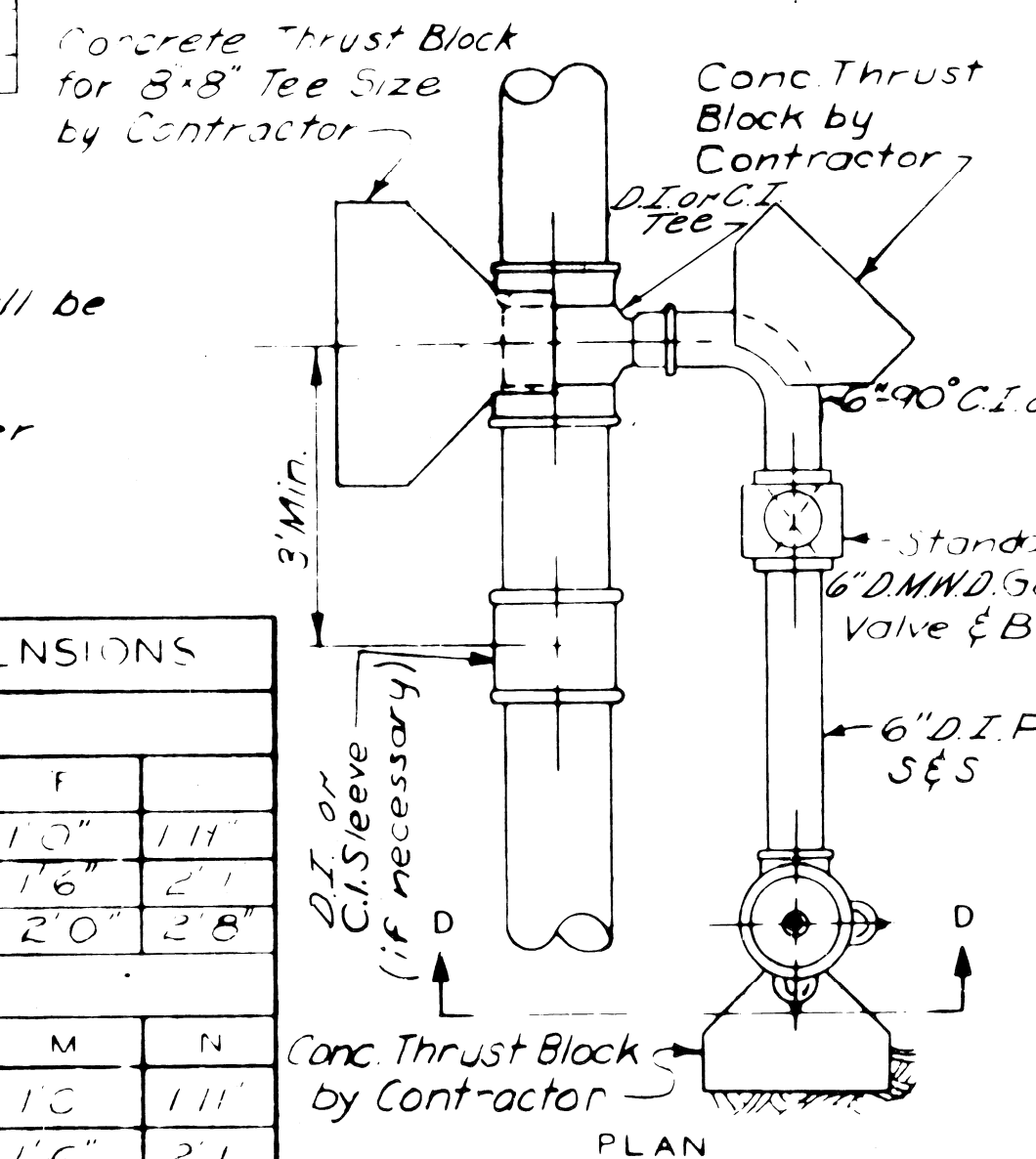
From the new main the Contractor shall install the Tee, 6" x 22 1/2" Bend B&S, 6" Pipe, 6" DMWD Gate Valve & Box, 6" Pipe, Concrete Thrust Blocks and Hydrant. From any existing main the complete Hydrant installation shall be done by the Contractor.

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" x 90° Bend S&S, 6" Pipe, 6" DMWD Gate Valve & Box, 6" Pipe Concrete Thrust Blocks and Hydrant. From any existing main the complete Hydrant installation shall be done by the Contractor.

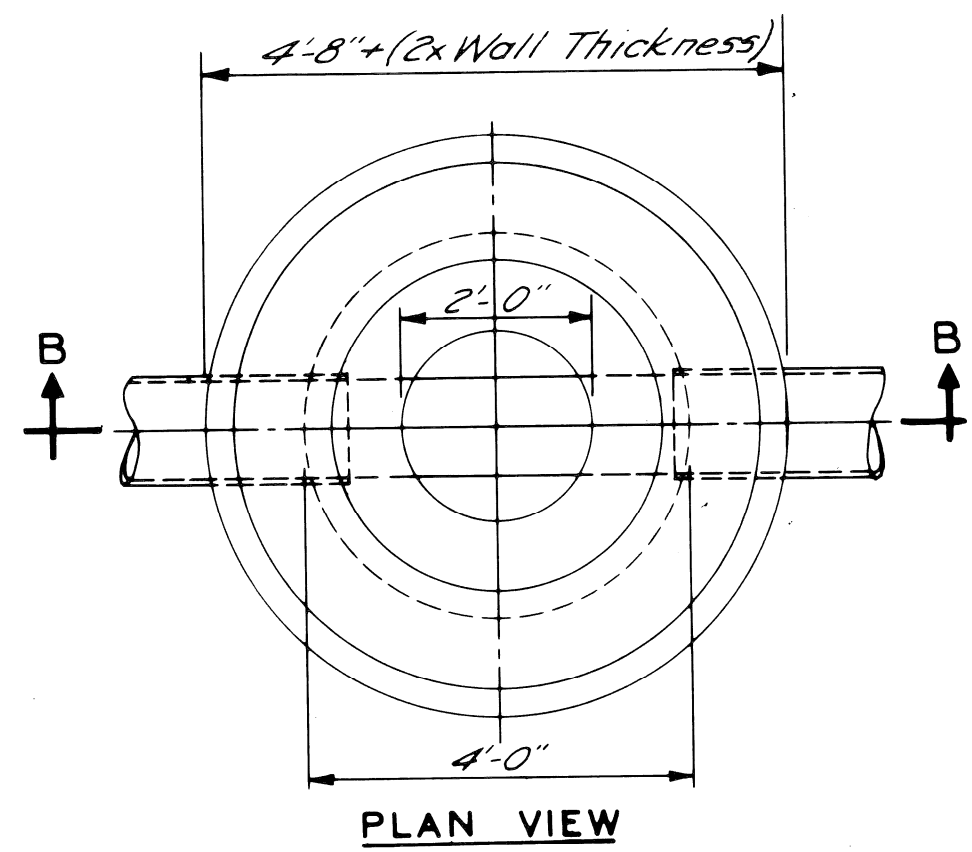
Hydrants to be a minimum of 6' behind the Curb, unless otherwise shown on the drawings. Dimensions given from Curb are from Pavement Joint line which is at Face of Curb.

DETAIL OF 6" HYDRANT INSTALLATION
No Scale

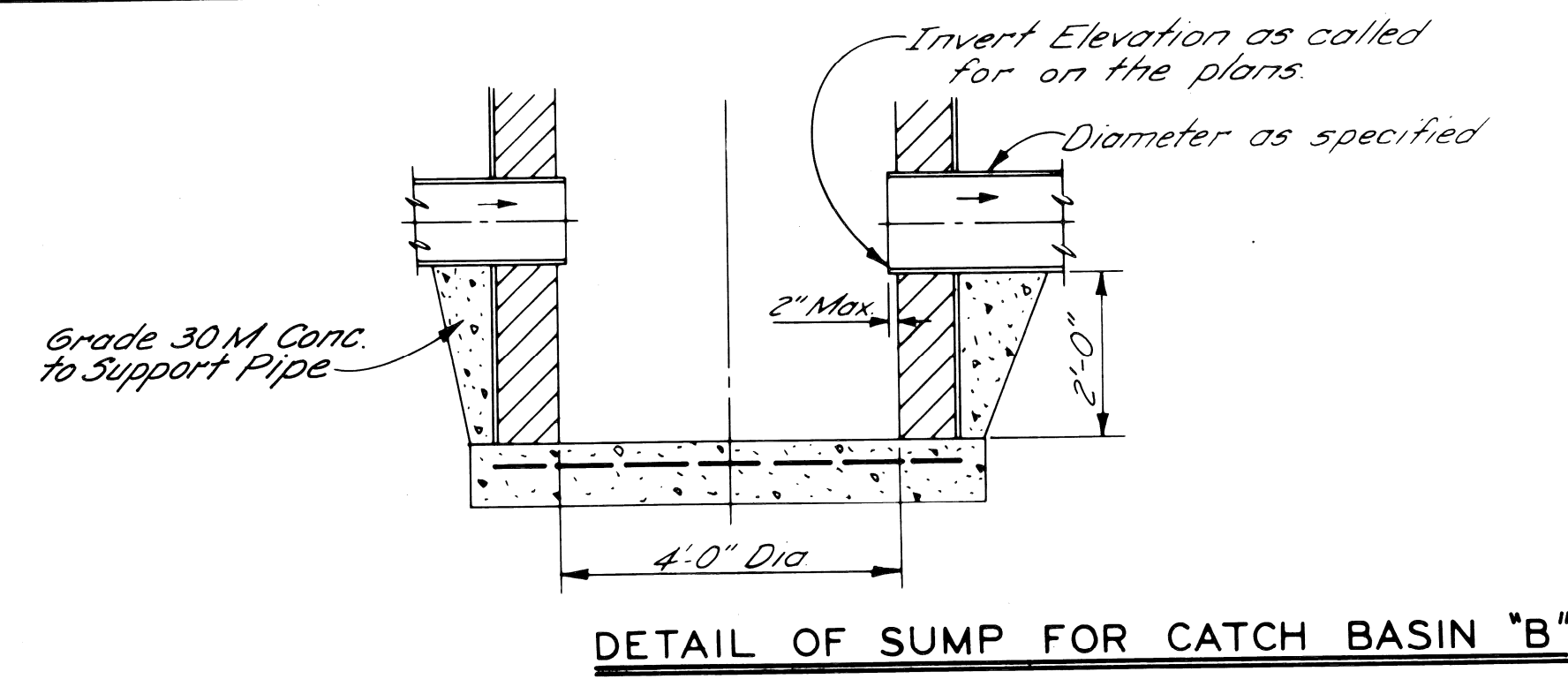
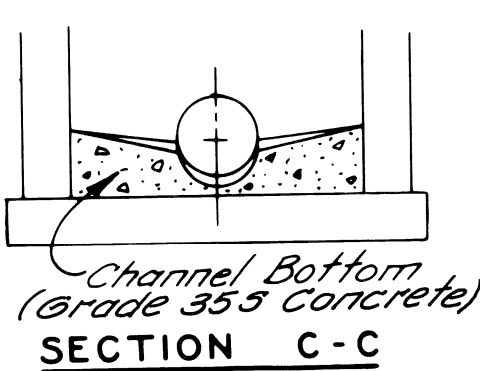
GENERAL NOTES

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

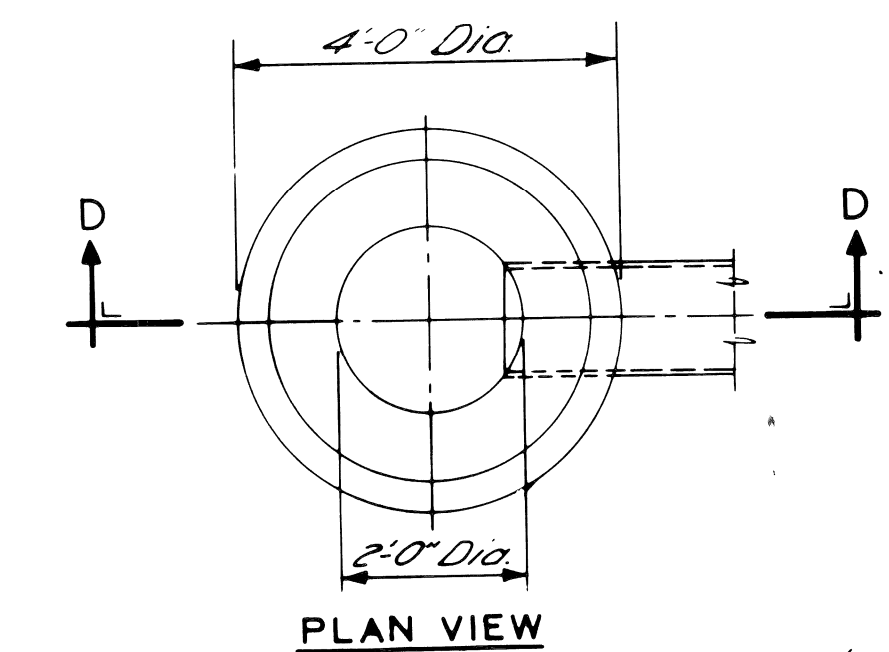
PROJECT NO.		ASSIGN No.	
FIRE HYDRANT MISCELLANEOUS DETAILS			
REVISIONS			
NO.	DESCRIPTION	DATE	BY
DRAWN BY: RBP		CHECKED BY: J.C.	
SCALE BY: M.P.		DATE: J.C.	



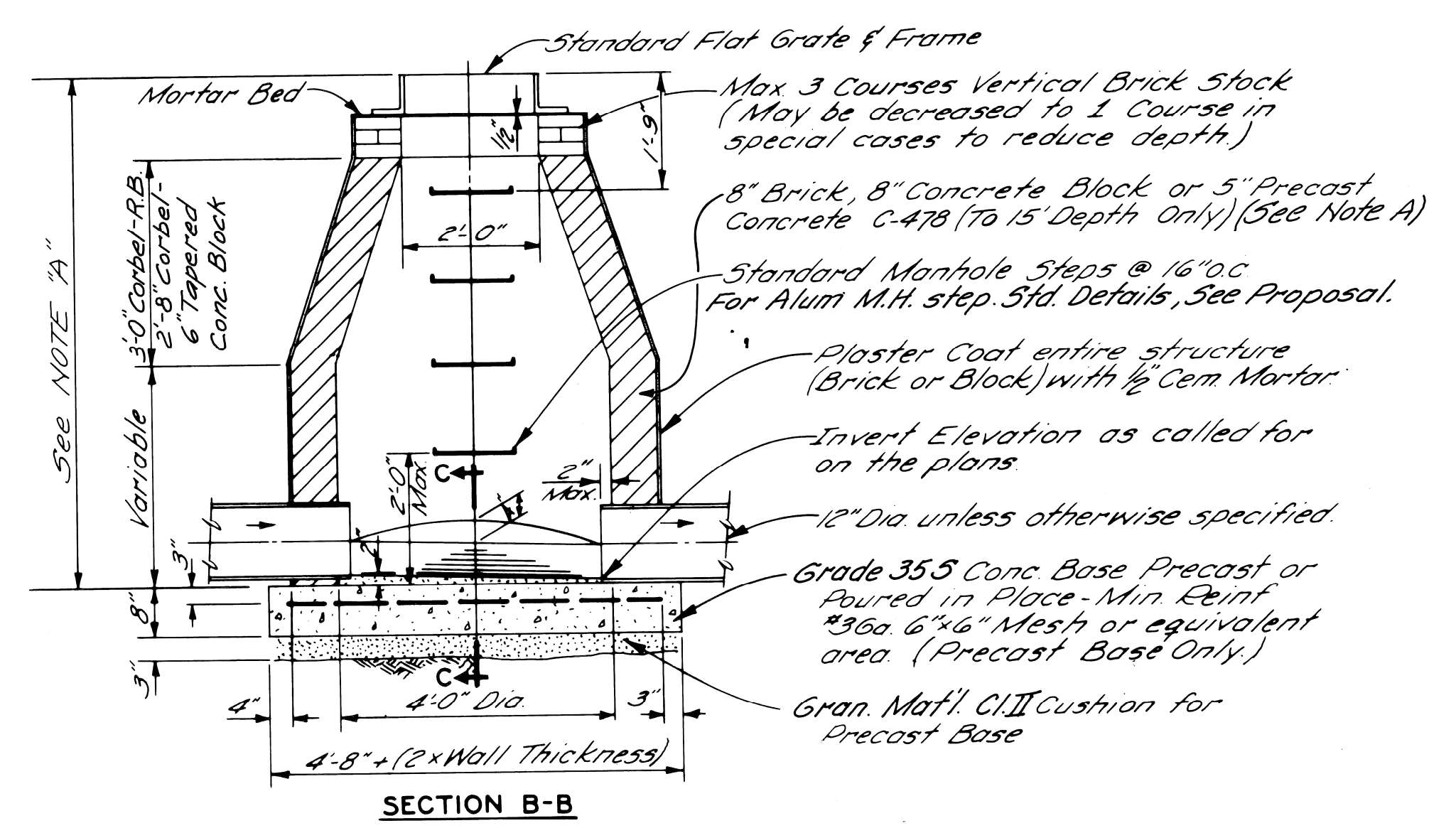
NOTE "A"
Wall thickness below a depth of 15 feet shall be 12 inches.



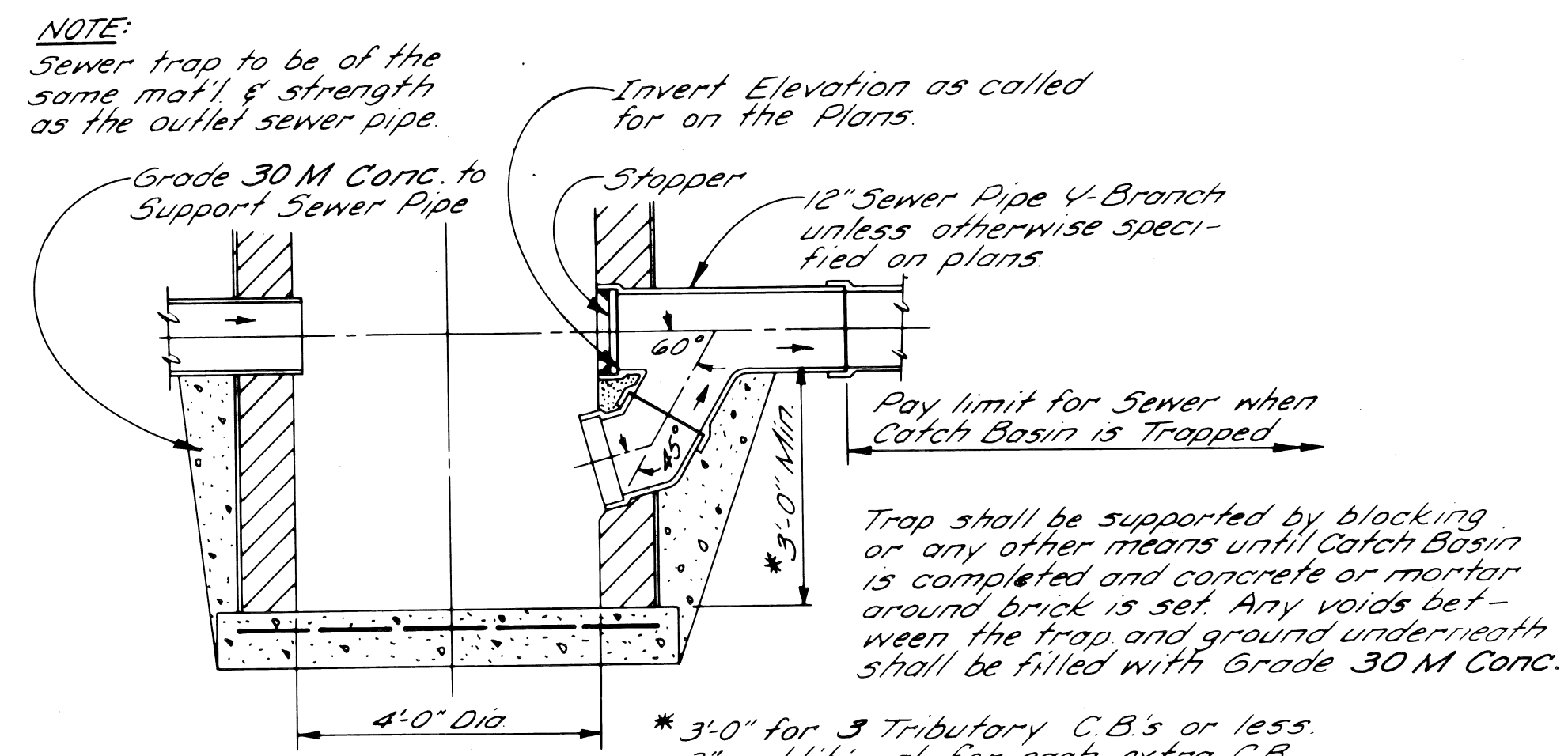
DETAIL OF SUMP FOR CATCH BASIN "B"
NO SCALE



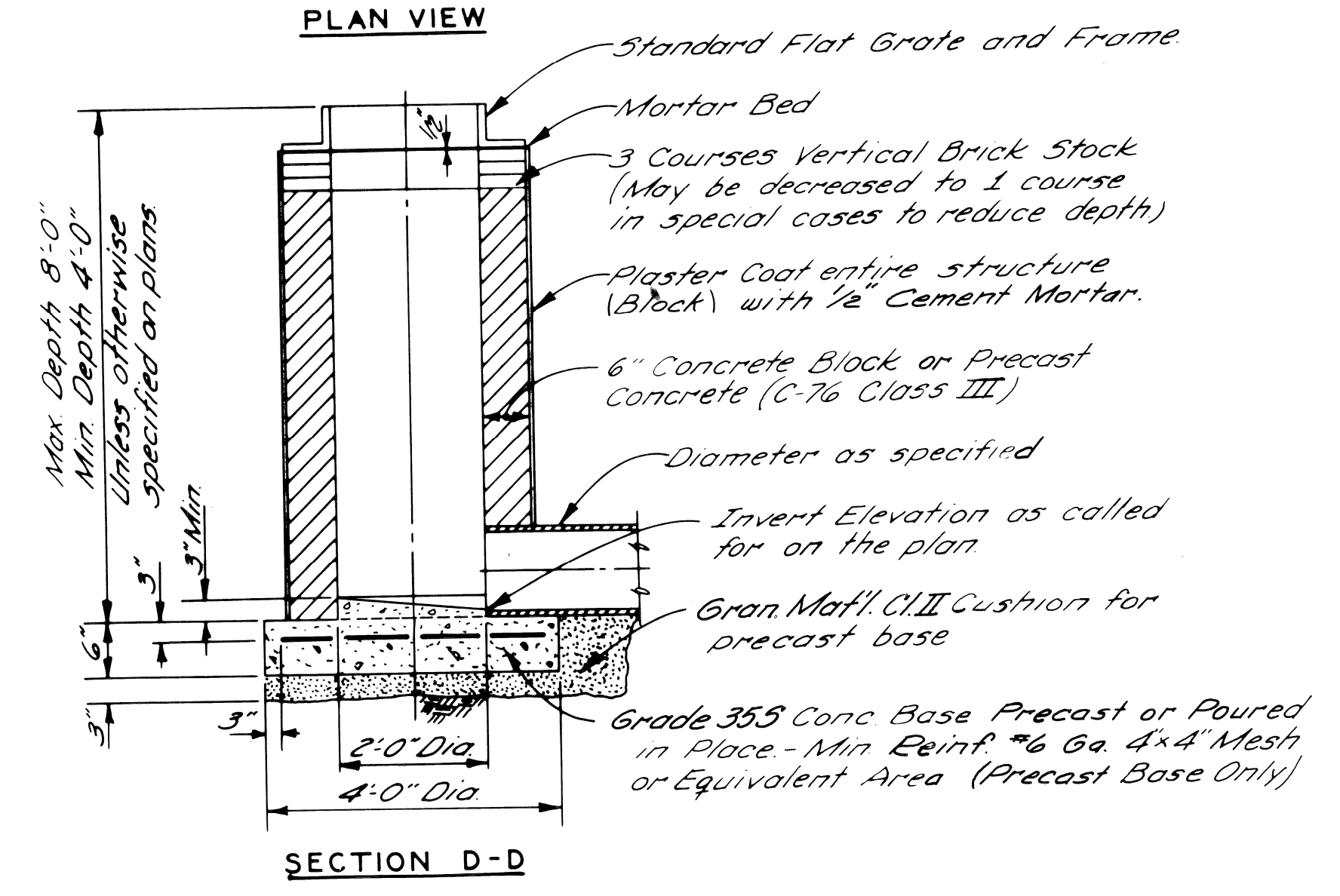
NOTE:
Catch Basin "A" will be used only when outletting to a Catch Basin "B"



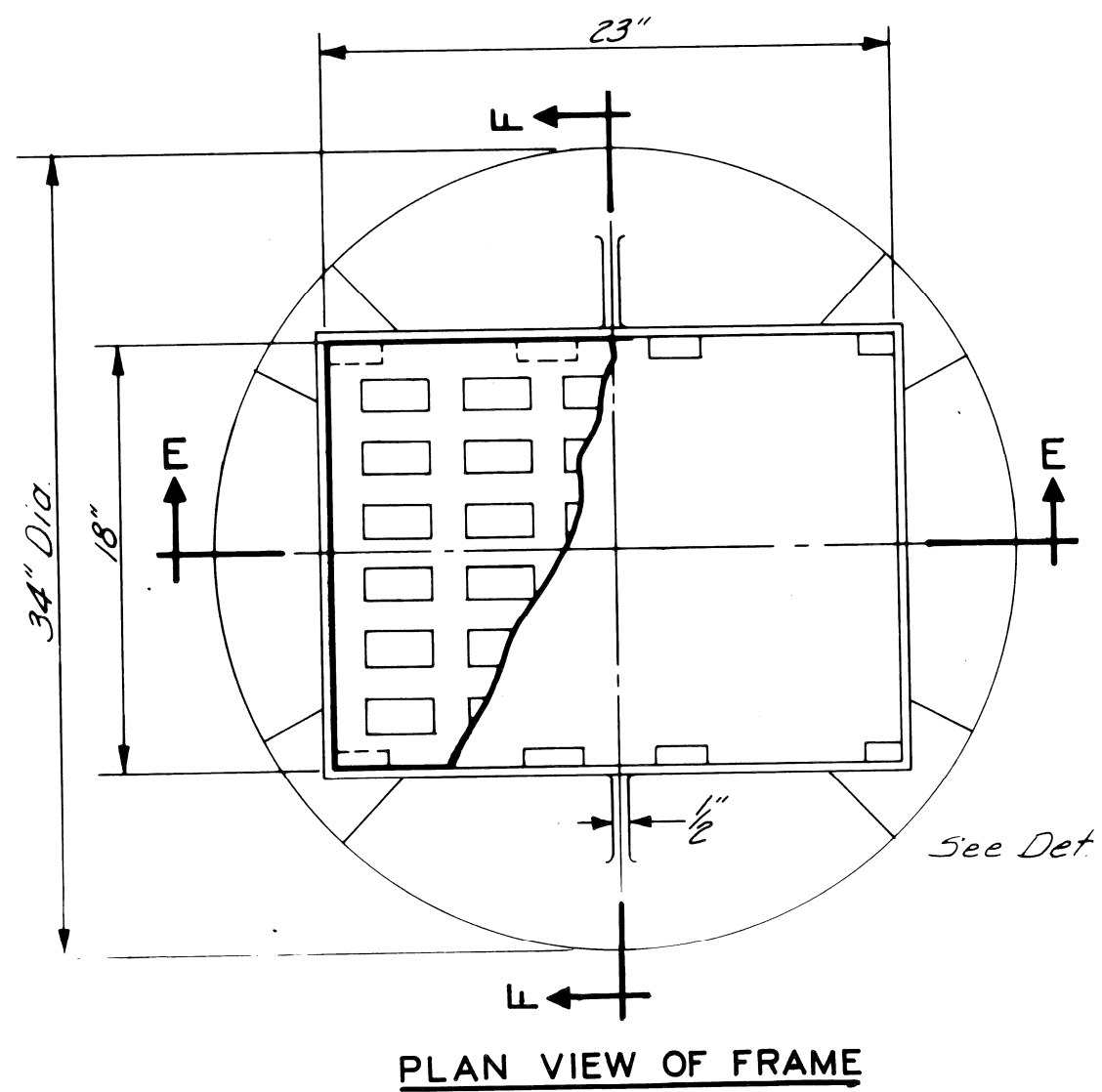
CATCH BASIN "B"
NO SCALE



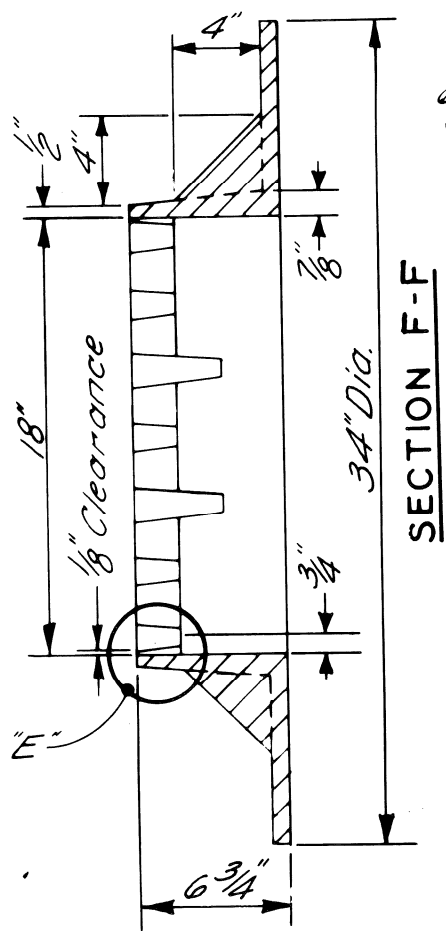
DETAIL OF TRAP FOR CATCH BASIN "B"
NO SCALE



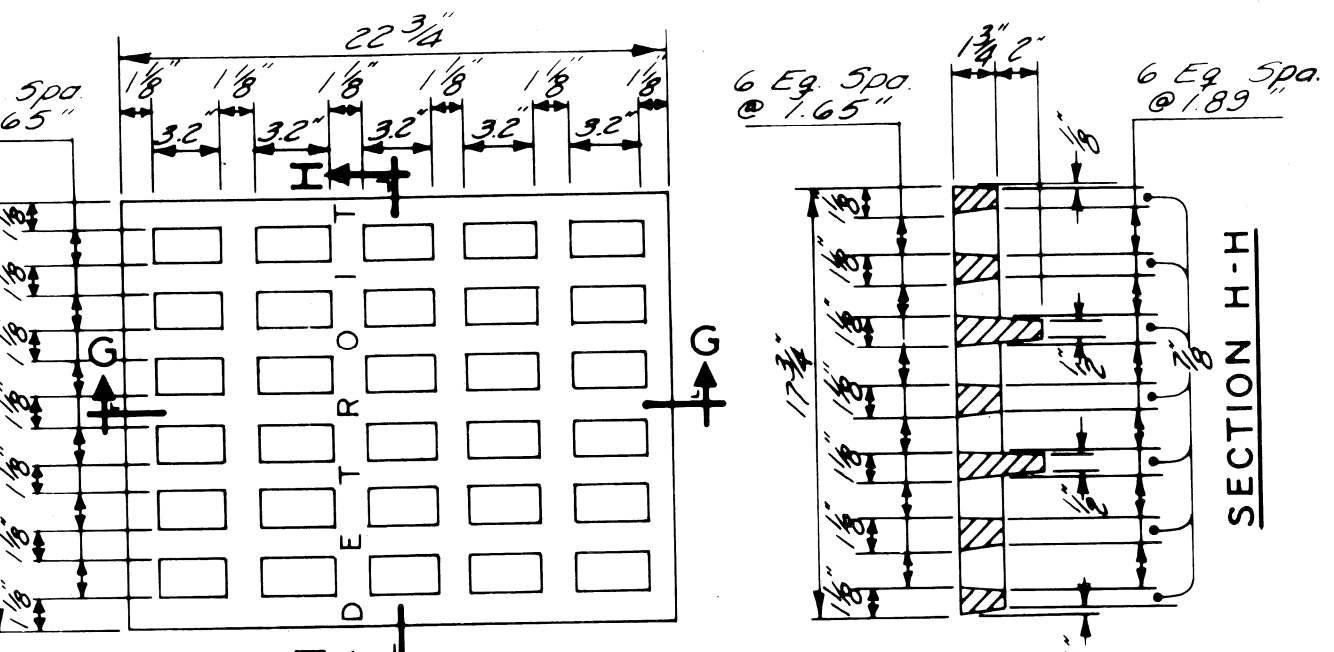
CATCH BASIN "A"
NO SCALE



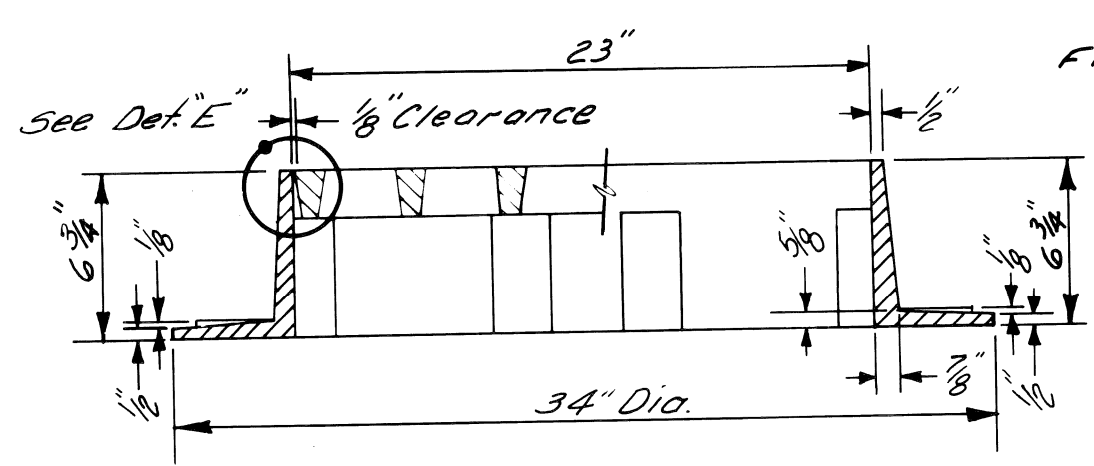
PLAN VIEW OF FRAME



PLAN VIEW OF GRATE



SECTION G-G



SECTION E-E

STANDARD FLAT GRATE AND FRAME
NO SCALE

GENERAL NOTES

- The materials & workmanship shall be in accordance with the current standard specifications.
- Center of Catch Basin shall be 20 inches from back of curb.
- 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.
- 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.
- A plaster coat of mortar 1/2 inch in thickness shall be applied to the outer surface of the structure as shown. A 1/2 inch cement plaster coat shall be placed on the inside of all sumps.
- 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.
- 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.
- Pay limit for sewers shall be inside faces of structures unless otherwise noted.

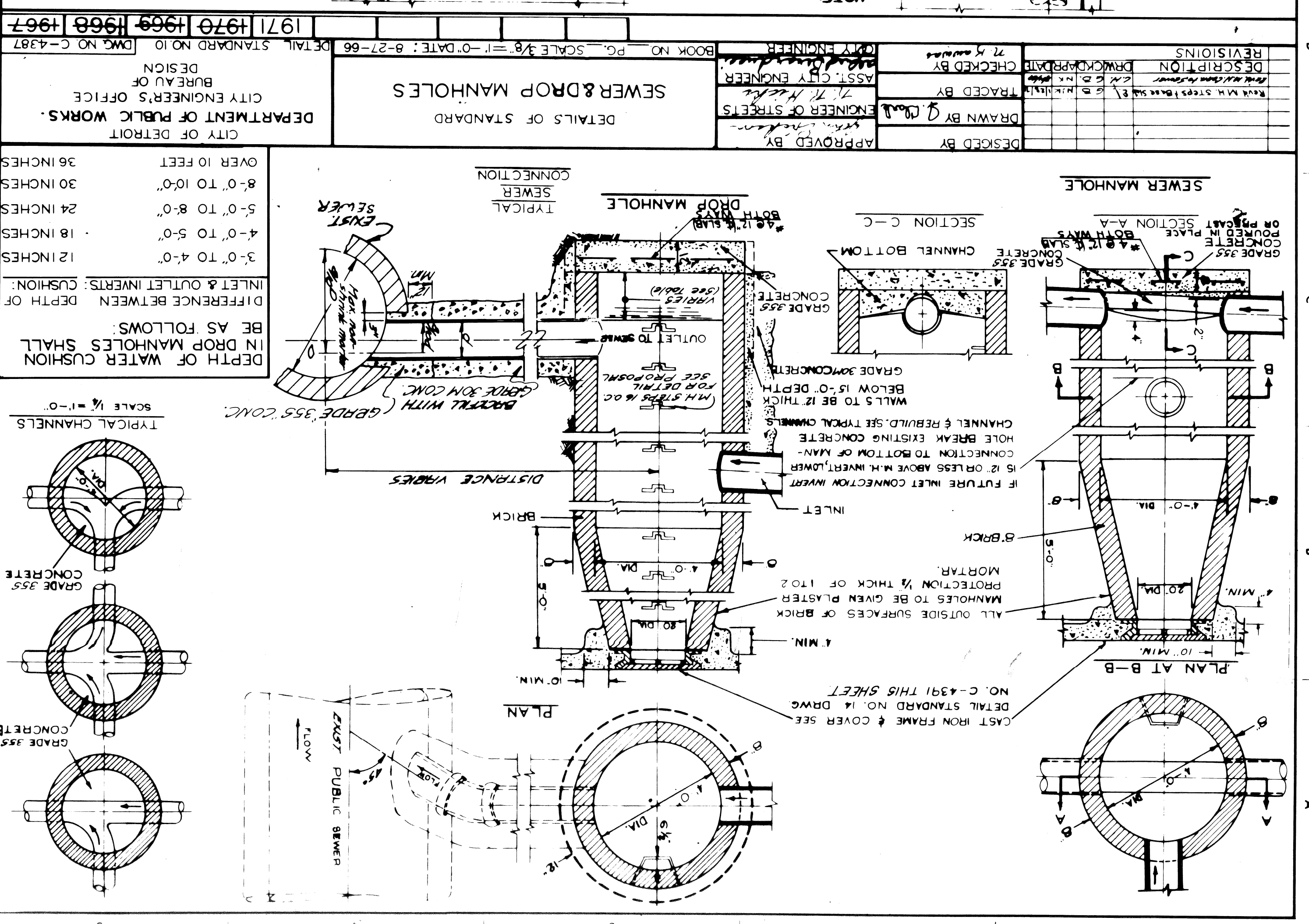
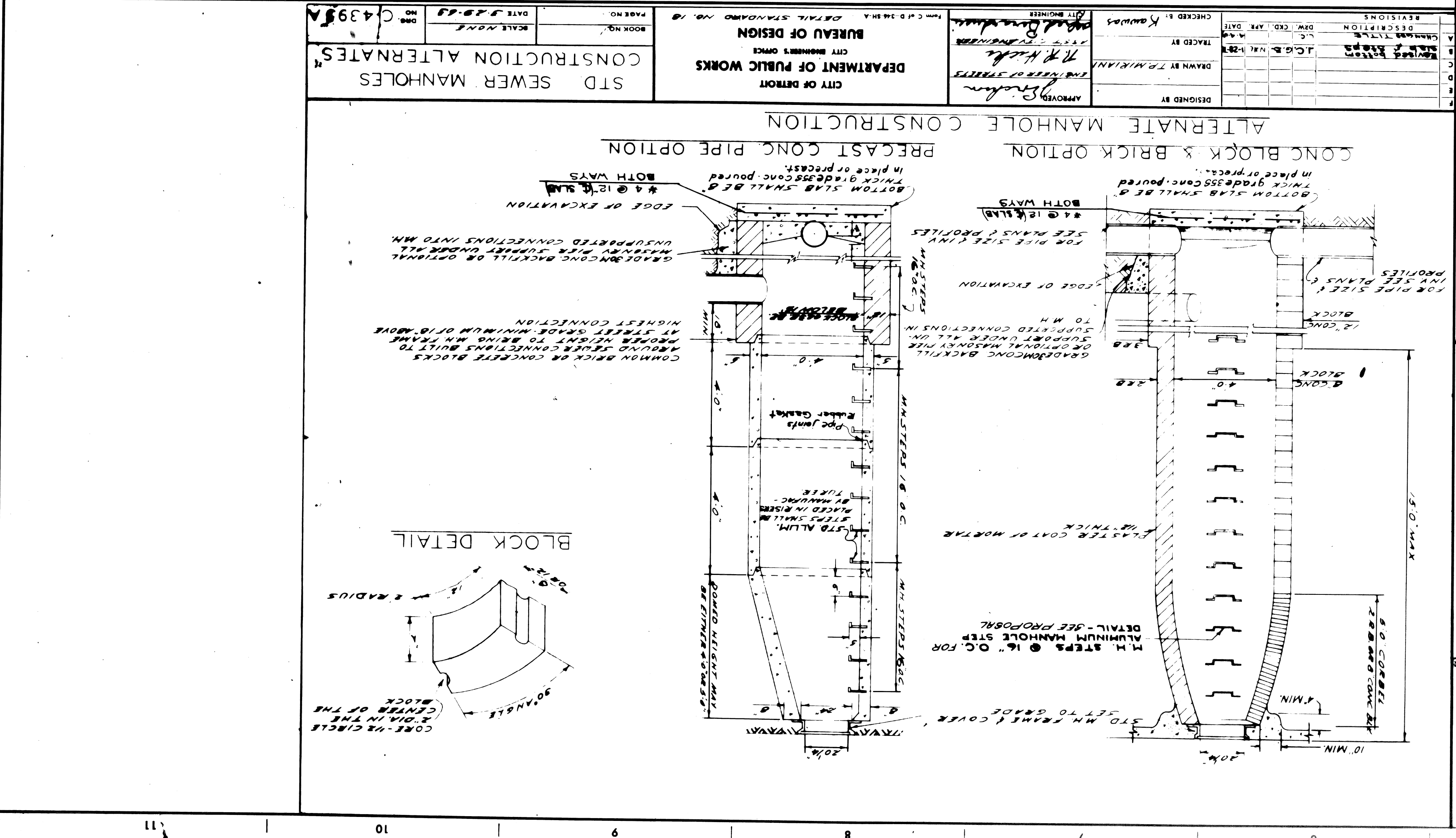
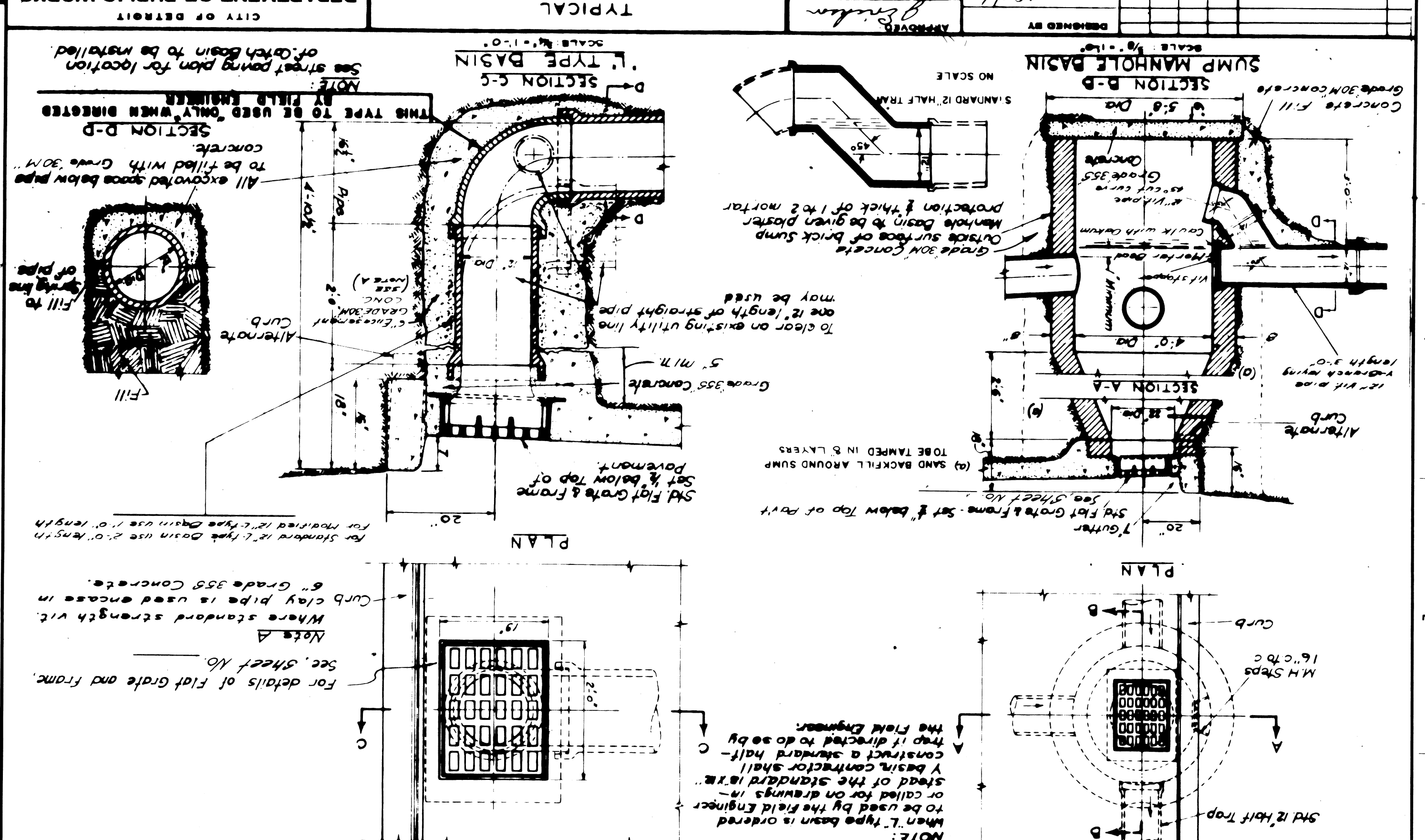
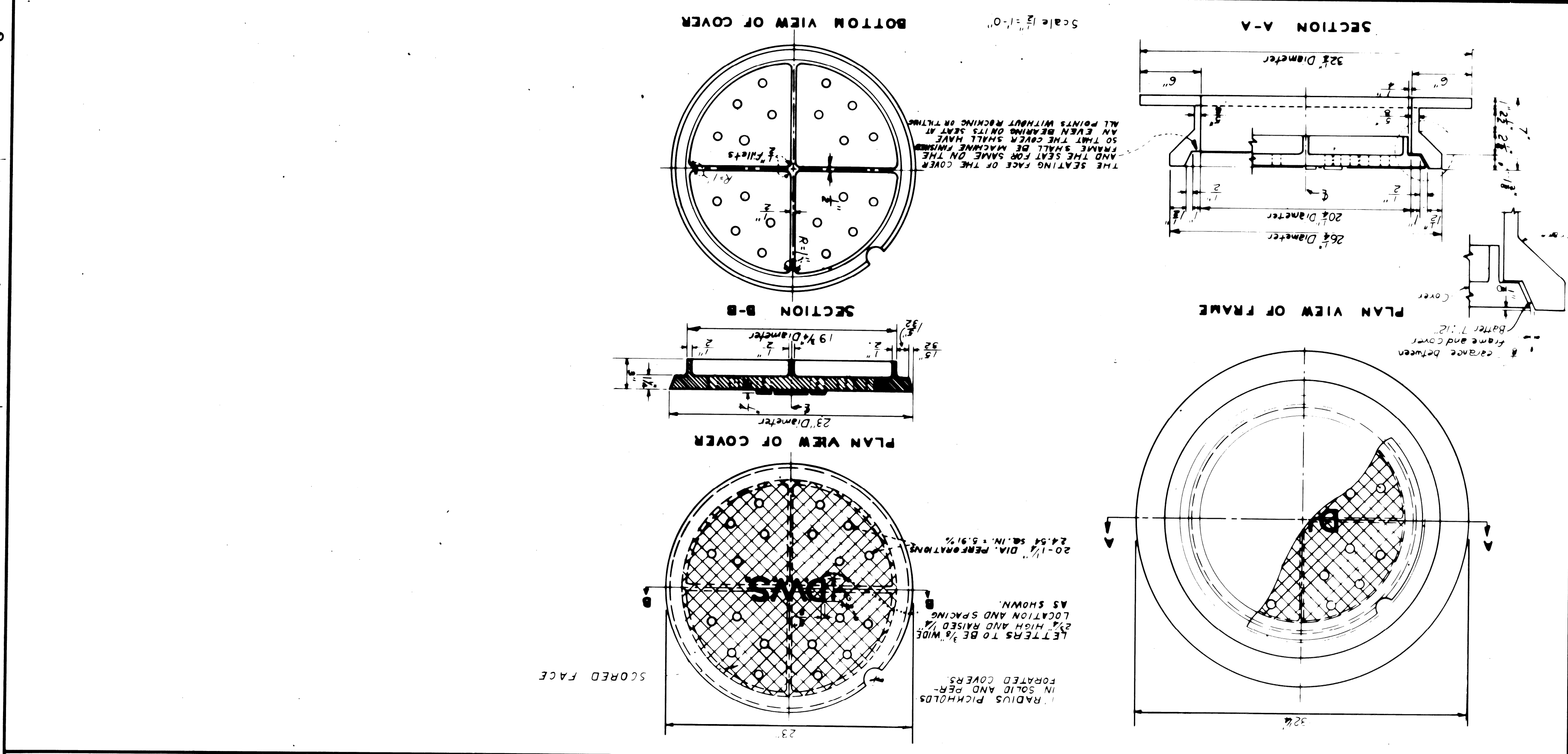
DESIGNED BY	M. POLITO	APPROVED:	John Erickson ENGINEER OF STREETS
DRAWN BY	M. POLITO		W. K. Bannard ENGINEER OF EXPRESSWAYS
TRACED BY			
CHECKED BY	D. MILZ		W. K. Bannard HEAD CIVIL ENGINEER

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

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



LEGEND SHEET

(USE THIS SHEET WITH DRWG. NO. 2)

T-

UNDERGROUND

- EXISTING P.L.C. MANHOLE
- EXISTING P.L.C. HANDHOLE
- EXISTING SINGLE P.L.C. DUCT RUN
- EXISTING P.L.C. DUCT RUN (4-3" SHOWN)
- ABANDON EXISTING P.L.C. DUCT RUN (2-3" SHOWN)
- BUILD 1-3" ENCASED CONDUIT (EXCEPT AS OTHERWISE INDICATED)
- BUILD MULTIPLE ENCASED CONDUIT (4-4" SHOWN)
- GALVANIZED STEEL CONDUIT JACKING-BORING (2-3" SHOWN)
- BUILD NEW MANHOLE (2-WAY)
- BUILD NEW MANHOLE (3-WAY)
- BUILD NEW MANHOLE (CORNER)
- BUILD NEW MANHOLE (4-WAY)
- BUILD ROUND HANDHOLE
- BUILD TYPE "D" HANDHOLE
- INSTALL MULT. ST. LTG. CONTROL CABINET ON NEW FDN.
- EXISTING DIRECT BURIAL OR PARKWAY CABLE
- ABANDON DIRECT BURIAL OR PARKWAY CABLE
- INSTALL DIRECT BURIAL CABLE (NO. & SIZE AS INDICATED)
- INSTALL DIRECT BURIAL CONDUIT (1-3" SHOWN)
- EXISTING TRAFFIC SIGNAL CONTROLLER
- EXISTING MAST ARM STANDARD
- EXISTING PEDESTAL
- EXISTING STEEL SHAFT POLE
- EXISTING FIRE OR POLICE CALL BOX
- INSTALL NEW FIRE OR POLICE CALL BOX (EXCEPT AS OTHERWISE INDICATED)
- INSTALL SALVAGED FIRE OR POLICE CALL BOX (EXCEPT AS OTHERWISE INDICATED)
- BUILD 6" SEWER (LIGHTING)
- EXISTING U.G.-FED ST. LTG. UNIT
- EXISTING U.G.-FED ST. LTG. UNIT WITH DBL. ARM
- FUTURE U.G.-FED ST. LTG. UNIT
- REMOVE U.G.-FED ST. LTG. UNIT & FOUNDATION (EXCEPT AS OTHERWISE NOTED)
- INSTALL SALVAGED U.G.-FED ST. LTG. UNIT ON NEW FDN.
- INSTALL CODE 009-00 ST. LTG. STD., 6FT. CLAMP-ON BRACKET ARM WITH 3'-0" RISE ON NEW FDN. WITH UNIV. TRANSF. BASE. INSTALL 400W. TYPE III MERCURY VAPOR LUMINAIRE.
- INDICATES TRAFFIC SIGNAL CONTACT ON ST. LTG. STD.

OVERHEAD

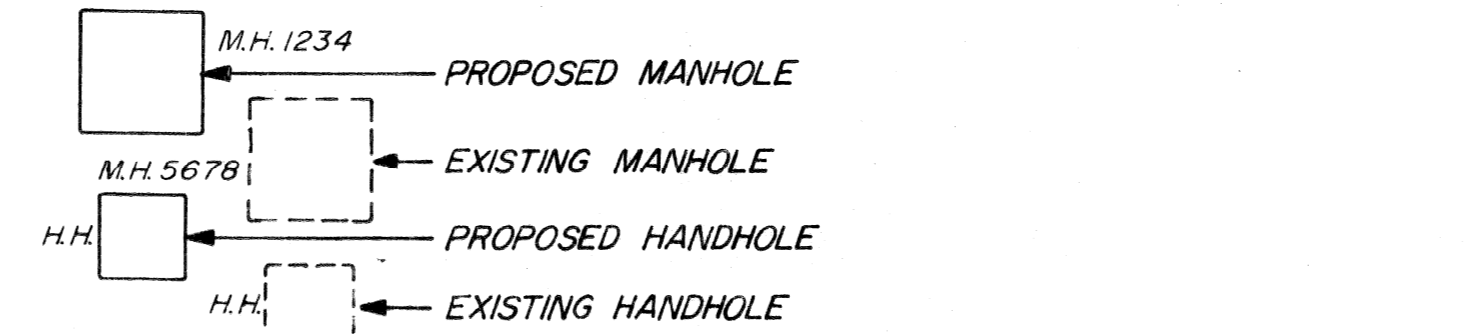
- EXISTING WOOD POLE (D.E. CO. POLE SHOWN)
- REMOVE WOOD POLE (P.L.C. POLE SHOWN)
- REPLACE WOOD POLE (HEIGHT & CLASS AS INDICATED)
- INSTALL WOOD POLE (HEIGHT & CLASS AS INDICATED) (USE SALVAGED POLE WHERE INDICATED)
- EXISTING OVERHEAD ST. LTG. UNIT
- REMOVE OVERHEAD ST. LTG. UNIT
- INSTALL OVERHEAD ST. LTG. UNIT WITH 8 FT. ARM & 400 W. MV. LUMINAIRE (EXCEPT WHERE OTHERWISE NOTED) (USE SALVAGED UNIT WHERE INDICATED)
- INSTALL NEW 100W. MERCURY VAPOR LUMINAIRE FOR ALLEY LTG. WITH NEW SERIES COIL & NEW 6FT. BRACKET ARM. USE SALVAGED LUMINAIRE & ARM WHERE INDICATED.
- INSTALL NEW 250 W. MERCURY VAPOR LUMINAIRE, TYPE I, (2-WAY, 3-WAY, OR 4-WAY AS SHOWN) FOR RESIDENTIAL LTG. WITH NEW SERIES COIL & NEW BRACKET ARM OF LENGTH AS SHOWN. (USE SALVAGED LUMINAIRE & ARM WHERE INDICATED.)
- EXISTING OVERHEAD LINE (2-#6 OF STANTON-24 SHOWN)
- REMOVE OVERHEAD LINE (3-#2 OF STANTON-662 SHOWN)
- INSTALL OVERHEAD LINE (2-#6 OF STANTON-24 SHOWN)
- INSTALL A LATER REMOVE OVERHEAD LINE (3-#6 MULT. ST. LTG. SHOWN)
- INSTALL GUY & ANCHOR (1/2" GUY SHOWN)
- REMOVE GUY & ANCHOR ROD
- INSTALL POLE GUY (1/2" GUY SHOWN)
- INSTALL ARM GUY (3/8" GUY SHOWN)
- REMOVE GUY (TYPE AS INDICATED)
- MATERIAL TO BE INSTALLED
- MATERIAL TO BE REMOVED
- MAKE WOOD POLE SELF-SUPPORTING IN CONCRETE
- PHASES OF P.L.C. DISTRIBUTION WIRES OR EQUIPMENT
- D.E. CO. DISTRIBUTION WIRE
- D.E. CO. SECONDARY WIRE
- CABLE POLE
- INSTALL SUSPENSION INSULATOR
- P.L.C. DISTRIBUTION WIRE
- P.L.C. SECONDARY WIRE
- P.L.C. STREET LIGHTING WIRE
- P.L.C. MULTIPLE STREET LIGHTING WIRE

GENERAL

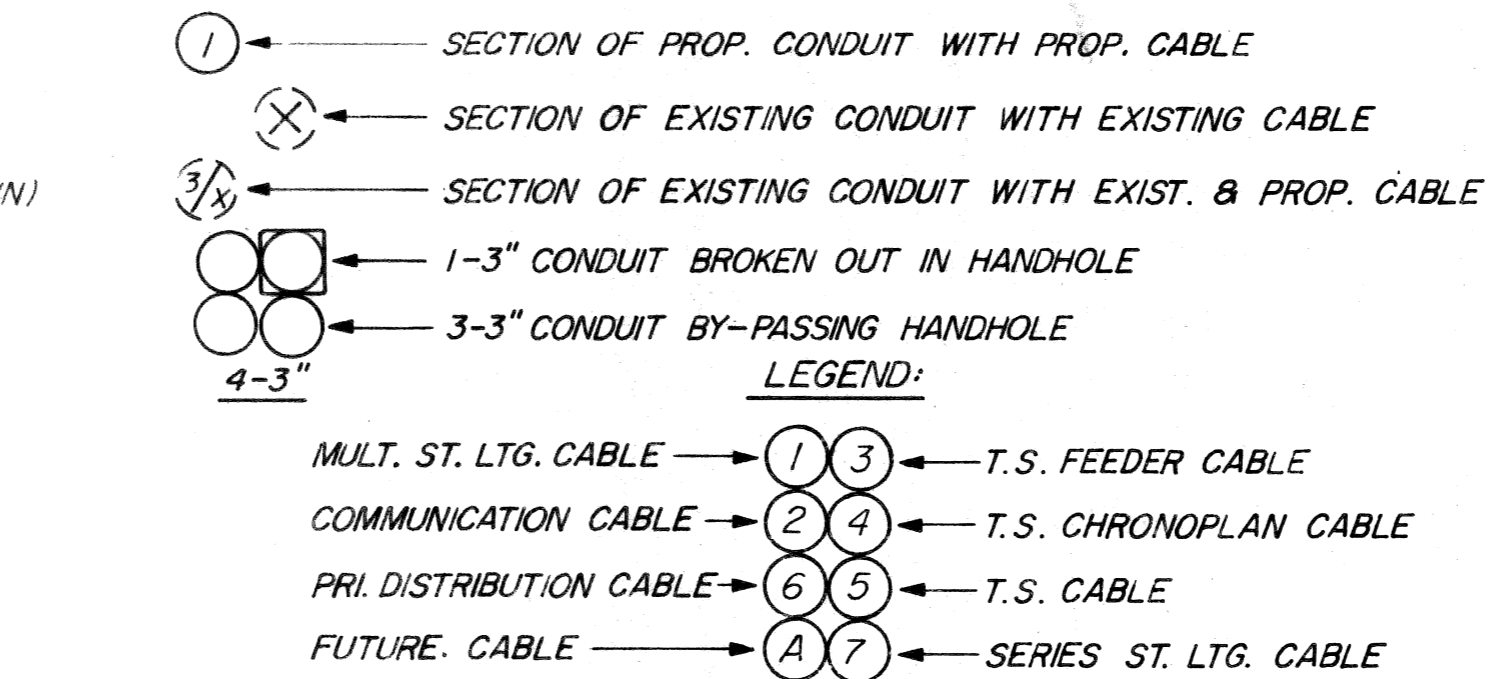
- PROPERTY LINE
- EXISTING PAVEMENT LIMIT
- PROPOSED PAVEMENT JOINT LINE, LIMIT OR FACE OF CURB
- FUTURE PAVEMENT LIMIT
- SEWER LINE, MANHOLE & CATCH BASIN
- DETROIT EDISON COMPANY U.G. LINE & MANHOLE
- MICH. BELL TEL. COMPANY U.G. LINE & MANHOLE
- WATERMAIN & GATEWELL
- (OTHER UTILITIES SHOWN SIMILAR.)

DIAGRAMS & CONDUIT ALLOCATION

(U.G.-FED ST. LTG. STD. SYMBOLS SAME AS UNDERGROUND LEGEND OF THIS SHEET.)



- INSTALL U.G. CABLE (NO. & SIZE AS INDICATED)
- EXISTING U.G. CABLE
- U.G. CABLE TO BE ABANDONED
- U.G. CABLE TO BE REMOVED
- LEAD SHEATH OF EXIST. SERIES ST. LTG. CABLE USE FOR NEUTRAL OF MULT. ST. LTG. CIRCUITS.



- DISCONNECT, INSULATE AND CAP CABLE END (SEE DETAIL, DRWG. NO.)
- SPLICE STRAIGHT THRU
- SPLICES

- INDICATES 7500V. 1-1/C #8 L.C. ST. LTG. CABLE
- INDICATES 7500V. 2-1/C #8 L.C. ST. LTG. CABLES
- INDICATES 600V. 2-1/C #2 ST. LTG. CABLES & 1-#2 NEUTRAL
- INDICATES 600V. 2-1/C #6 ST. LTG. CABLES & 1-#6 NEUTRAL (ALL UNLABELED CABLE GROUPS ON WIRING DIAGRAMS ARE SUCH)
- INDICATES 600V. 1-1/C #6 ST. LTG. CABLE
- INDICATES 600V. 1-1/C #6 ST. LTG. CABLE & 1-#6 NEUTRAL
- INDICATES 600V. 3-1/C #6 ST. LTG. CABLES & 1-#6 NEUTRAL



INDICATES NEW ST. LTG. STANDARD NUMBER
 INDICATES OLD ST. LTG. STANDARD NUMBER

TRAFFIC SIGNAL

- INSTALL 3-SECTION TRAFFIC SIGNAL (1-WAY SHOWN)
- INSTALL 3-SECTION TRAFFIC SIGNAL WITH SALVAGED HEADS (2-WAY SHOWN)
- REMOVE 3-SECTION TRAFFIC SIGNAL (3-WAY SHOWN)
- EXISTING 3-SECTION TRAFFIC SIGNAL (4-WAY SHOWN)
- INSTALL 2-SECTION PEDESTRIAN (WALK-DON'T WALK) TRAFFIC SIGNAL (2-WAY SHOWN)
- INSTALL 2-SECTION PEDESTRIAN (WALK-DON'T WALK) TRAFFIC SIGNAL WITH SALVAGED HEAD (1-WAY SHOWN)
- REMOVE 2-SECTION PEDESTRIAN (WALK-DON'T WALK) TRAFFIC SIGNAL (1-WAY SHOWN)
- EXISTING 2-SECTION PEDESTRIAN (WALK-DON'T WALK) TRAFFIC SIGNAL (1-WAY SHOWN)
- INSTALL JUNCTION BOX
- INSTALL SALVAGED JUNCTION BOX
- REMOVE JUNCTION BOX
- EXISTING JUNCTION BOX
- INSTALL OVERHEAD PLASTIC JACKETED CABLE
- EXISTING OVERHEAD PLASTIC JACKETED CABLE
- REMOVE OVERHEAD PLASTIC JACKETED CABLE
- INSTALL TRAFFIC SIGNAL CONTROLLER (NEW OR SALVAGED AS INDICATED) ON NEW FDN. (EXCEPT AS OTHERWISE INDICATED)
- INSTALL BACK-BRACE TYPE TRAFFIC SIGNAL MAST ARM STANDARD & MAST ARM ON NEW FOUNDATION (EXCEPT AS OTHERWISE INDICATED)
- INSTALL 8 FT. TRAFFIC SIGNAL PEDESTAL ON NEW FOUNDATION (EXCEPT AS OTHERWISE INDICATED)
- INSTALL STEEL SHAFT POLE ON NEW FDN.
- EXISTING TRAFFIC SIGNAL CONTROLLER
- EXISTING MAST ARM STANDARD
- EXISTING PEDESTAL
- EXISTING STEEL SHAFT POLE
- BACK-OUT LAMPS & HOOD SIGNALS (INCIDENTAL TO INSTALLATION OF T.S. ON THIS CONTRACT).
- REMOVE HOOD & INSTALL LAMPS (INCIDENTAL TO INSTALLATION OF T.S. ON THIS CONTRACT).
- POLE CONTACT HEIGHT OF T.S. SPAN WIRE
- LOW CONTACT HEIGHT OF SPAN WIRE T.S. TO SPAN WIRE
- INDICATES TYPE OF SIDEWALK RAMP TO BE CONSTRUCTED.

PLAN INDEX	
DRWG. NO.	SUB-TITLE
1	LEGEND
2	GENERAL INFORMATION & AREA MAP
3	GENERAL PLAN (HARPER & CADIEUX)
4	T.S. AT HARPER - CADIEUX
5	T.S. AT FORD SERV. DR'S - CADIEUX
6	GENERAL PLAN (WARREN & CADIEUX)
7	T.S. AT WARREN - CADIEUX
8 THRU 29	DETAILS
30	QUANTITY SHEET

HARPER AVE. - CADIEUX AVE.
 WARREN AVE. - CADIEUX AVE. M2000 (033)
 INTERSECTION IMPROVEMENT
 LEGEND

SHEET 25 OF 54 SHEETS
 CONTRACT NO.
 JOB NO. 10012A
 DATE 10-7-76

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

DRAWN CEA
 CHECKED ep CAD
 APPROVED M
 DATE 9-16-76

PLAN PREPARED BY:
 CONSULTING ENGINEERING ASSOCIATES INC.
 ENGINEERING CONSULTANTS
 16580 WYOMING DETROIT MICH., 48221
 DRWG. NO. 1 OF 30
 FILE NO. CEA FED AID 9

PUBLIC LIGHTING
 COMMISSION
 CITY OF DETROIT

FILE NO. 49-0573
 SHEET NO. 1 OF 30
 DATE 9-16-76

GENERAL INFORMATION SHEET

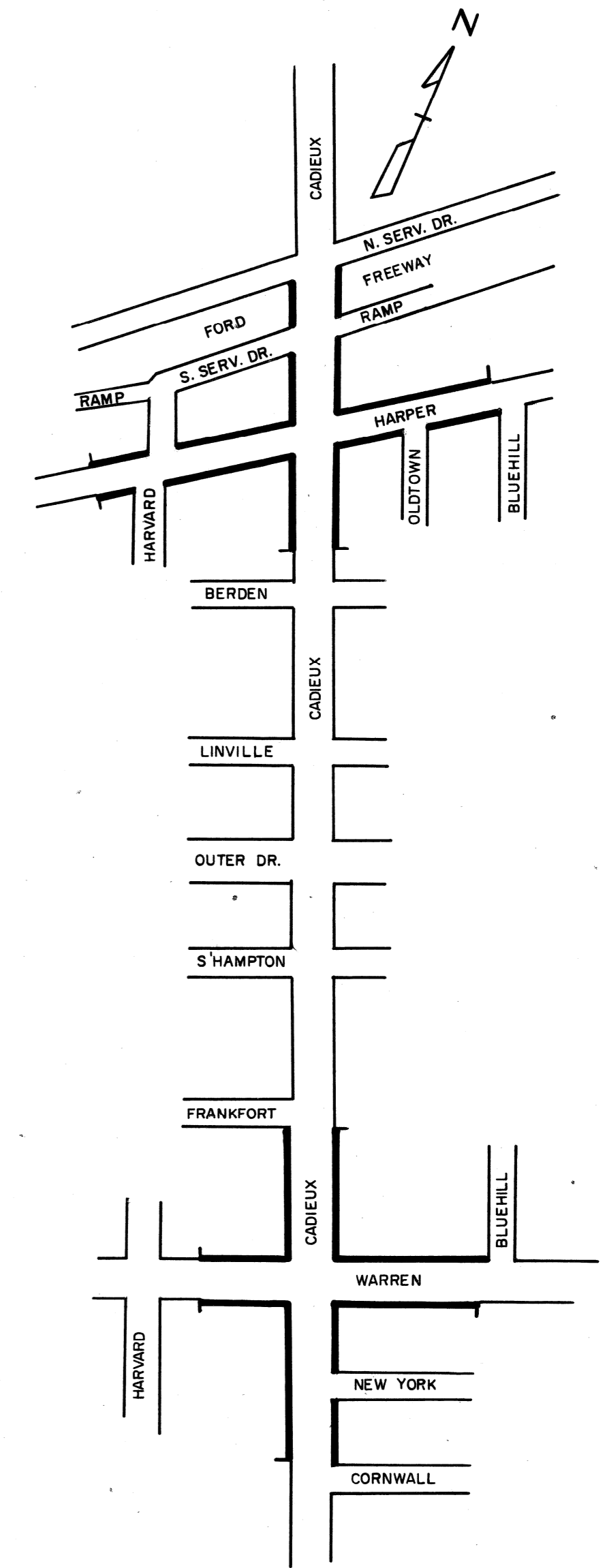
(USE THIS SHEET WITH DRWG. NO. 1)

GENERAL NOTES

1. CONTRACTOR TO NOTIFY MICH. CONS. GAS CO. AT 800-8000 IF PROTECTIVE COATED GAS MAIN IS EXPOSED OR DAMAGED.
 2. CALL MISS DIG (647-7344) 48 HRS. PRIOR TO ANY EXCAVATION FOR THE LOCATIONS OF UNDERGROUND UTILITIES.
 3. ALL MANHOLES SHALL BE PROVIDED WITH MANHOLE SUMP.
 4. WHERE ABANDONING OF U.G. CABLES IS CALLED FOR ON PLANS OR DIAGRAMS, CONTRACTOR SHALL CUT & REMOVE CABLES WITHIN MANHOLES & HANDHOLES.
 5. WHERE INSTALLATION OF NEW MANHOLES OVER EXISTING CONDUITS (TO ACCOMMODATE NEW & EXIST. CONDUITS) IS CALLED FOR ON PLANS, CONTRACTOR SHALL CAREFULLY & SO AS NOT TO DAMAGE EXIST. CABLES, REMOVE THE EXIST. CONDUITS & ENCASEMENT WITHIN MANHOLES. EXIST. CABLES SHALL BE EXTENDED & PROPERLY TRAINED, RACKED & SUPPORTED.
 6. CONTRACTOR SHALL NOTIFY SYSTEM OPERATING DIVISION OF THE P.L.C. 48 HRS. IN ADVANCE OF ANY WORK ON UNDERGROUND OR OVERHEAD TRANSMISSION, DISTRIBUTION, & ST. LTG. CIRCUITS. PHONE 961-1360.
 7. ALL EXISTING STREET LIGHTING, TRAFFIC SIGNAL, PRIMARY, TRANSMISSION ETC. CIRCUITS SHALL ALWAYS BE MAINTAINED IN AN OPERATIONAL CONDITION. (EXCEPT WHERE OTHERWISE NOTED.)
 8. FOR LOCATIONS OF P.L.C. INSTALLATIONS ON STRUCTURES SUCH AS CONDUITS, HANDHOLES, CONDUIT SLEEVES, GALVANIZED STEEL CONDUITS & ST. LTG. STD. ANCHOR BOLTS SEE STRUCTURE PLANS.
 9. ALL CONDUITS NOT TERMINATING IN STRUCTURES SUCH AS MANHOLES, HANDHOLES OR FOUNDATIONS SHALL EXTEND 2 FT. BEYOND PAVEMENT LIMIT. (EXCEPT AS OTHERWISE INDICATED) ALL UNOCCUPIED CONDUITS SHALL BE PLUGGED.
 10. "REMOVE U.G.-FED ST. LTG. UNIT" SHALL INCLUDE ST. LTG. STANDARD, ARM, LUMINAIRE & FOUNDATION. (EXCEPT AS OTHERWISE INDICATED.)
 11. "INSTALL SALVAGED U.G.-FED ST. LTG. UNIT ON NEW FDN" SHALL INCLUDE THE CONSTRUCTION OF THE FOUNDATION & THE ERECTION OF THE SALVAGED ST. LTG. STD., ARM & LUMINAIRE READY FOR OPERATION.
 12. ALL TREE TRIMMING REQUIRED TO CLEAR NEW OR SALVAGED ST. LTG. & TRAFFIC SIGNAL STD'S & O.H. ST. LTG. & TRAFFIC SIGNAL UNITS SHALL BE INCIDENTAL TO THE PAY-ITEM & NO EXTRA PAYMENT SHALL BE MADE.
 13. UNDERGROUND CABLE QUANTITIES ARE ITEMIZED ON GENERAL PLANS.
 14. "FIRE" OR "POLICE CALL BOX PEDESTAL" SHALL INCLUDE CONSTRUCTION OF THE FOUNDATION.
 15. ALL NEW, SALVAGED & CONVERTED ST. LTG. STD'S. SHALL BE PAINTED.
 16. EXISTING O.H. & T.S. FACILITIES ARE NOT NECESSARILY SHOWN ON PLANS.
 17. ALL OVERHEAD WIRES & UNDERGROUND CABLES SHALL CONSIST OF COPPER CONDUCTORS AS PER THE SPECIFICATIONS.
 18. NEW CONDUITS BROKEN INTO EXISTING MANHOLES OR HANDHOLES SHALL NOT INTERFERE WITH RACKING AND/OR TRAINING OF CABLES.
- ALL LUMINAIRES SHALL BE PROVIDED WITH 480V. INTERNAL BALLASTS (EXCEPT AS OTHERWISE NOTED.)
- THE CANDLEPOWER DISTRIBUTION FOR ALL MERCURY VAPOR ST. LTG. LUMINAIRES SHALL BE MEDIUM DISTRIBUTION OF TYPE AS INDICATED ON THE PLANS & SEMI-CUTOFF

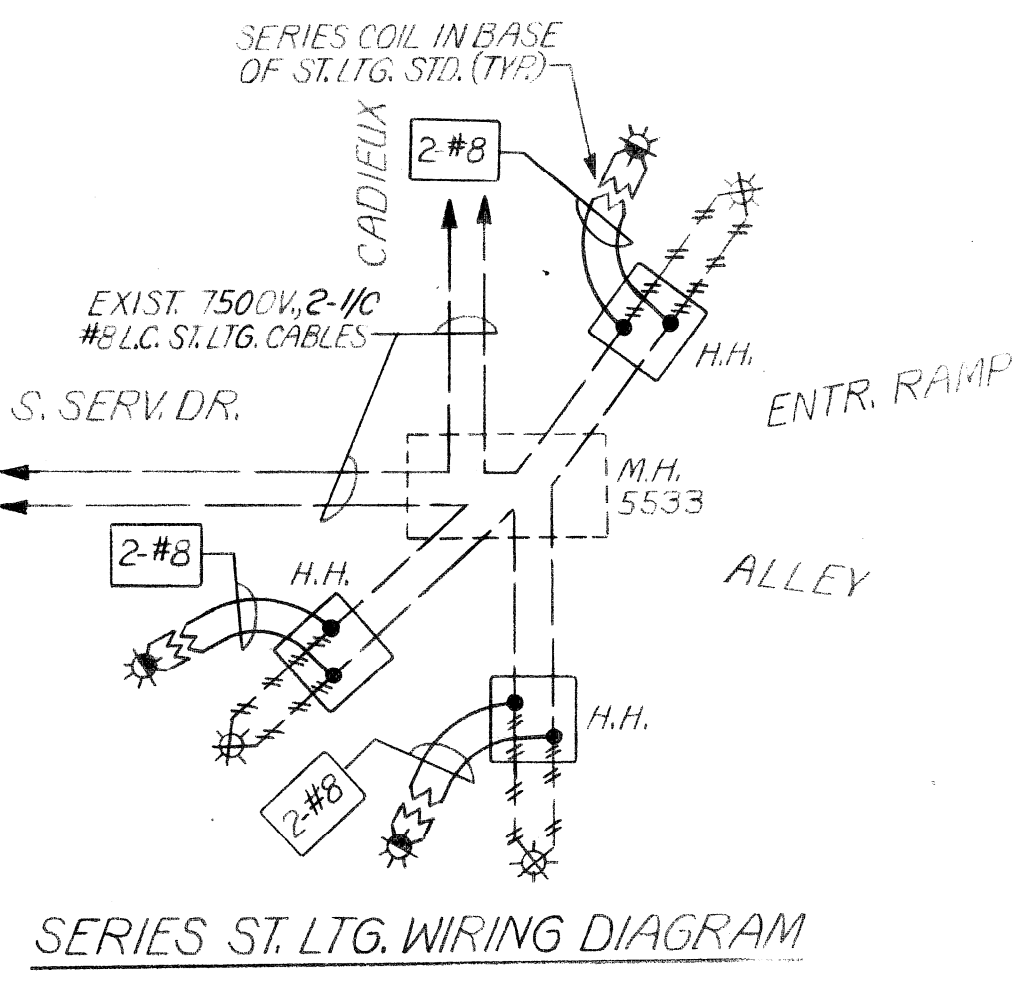
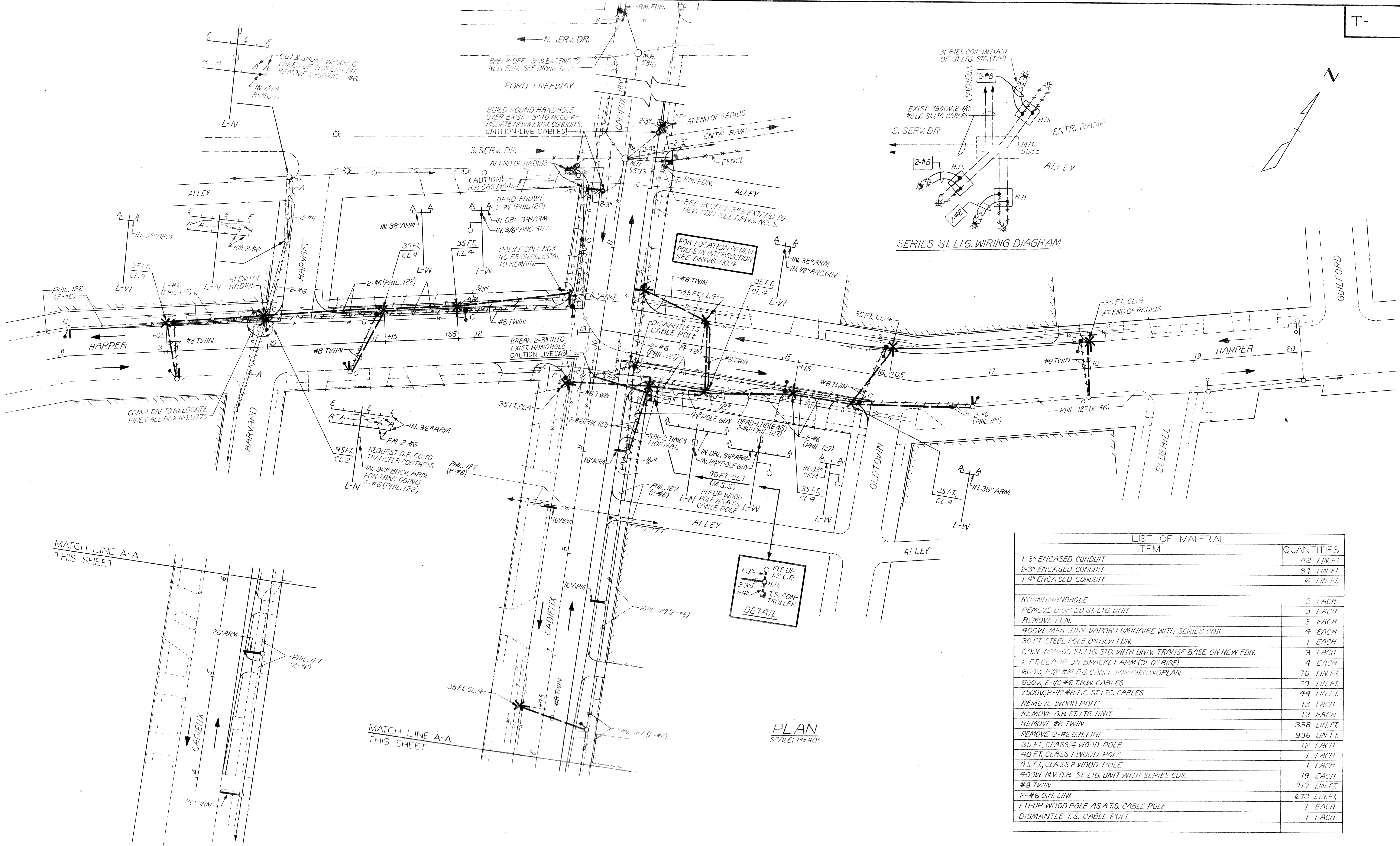
21. ALL NEW & SALVAGED ST. LTG. STD'S INSTALLED ON THIS CONTRACT & EXIST. ST. LTG. STD'S CONVERTED OR RE-CONNECTED TO OTHER CIRCUITS SHALL BE STENCILLED OR RE-STENCILLED AS SHOWN ON PLANS. SUBSTATION NAMES INDICATED ON THE PLANS SHALL BE STENCILLED IN THE FIELD AS SHOWN BELOW.
22. STENCILLING & RE-STENCILLING OF ST. LTG. STD'S IS INCIDENTAL ST. LTG. STD.
23. WHERE U.G. UTILITIES INTERFERE WITH THE INSTALLATION OF A NEW FOUNDATION, INSTALL THE SPECIAL FOUNDATION OF PARTICULAR DIMENSIONS AS INDICATED ON THE DETAIL DRWG. TO SUIT THE FIELD CONDITION THERE WILL BE NO EXTRA PAYMENT FOR THE SPECIAL FOUNDATION. IT WILL BE PAID FOR AS A NORMAL FOUNDATION.
24. INSTALLATION OF ARMS FOR EQUIPMENT, CUTOUTS, POTHEADS, TRANSFORMERS, ETC ARE NOT SHOWN ON NEW CABLE AND TRANSFORMER POLES. THEY SHALL BE INSTALLED AS PER THE DETAIL DRWG. REQUIREMENT AND SHALL BE INCIDENTAL TO THE FITTING-UP THE CABLE AND/OR TRANSFORMER POLE.
25. ALL TRANSFORMER POLES AND CABLE POLES SHALL BE FITTED UP WITH 120" ARMS. (EXCEPT WHERE OTHERWISE NOTED.)
26. ALL NEW ANCHOR GUYS SHALL BE INSTALLED ON A 1:1 RATIO OR AS NEARLY AS POSSIBLE (EXCEPT WHERE OTHERWISE NOTED. STRUT GUYS ARE EXCEPTED.)
27. ALL POTHEADS ON PRIMARY DISTRIBUTION CABLE POLES SHALL BE FLAT DIVERGENT DISCONNECTING TYPE.
28. BAND INSULATED CLEVIS TO ST. LTG. STD. SHAFT BRING U.G. CABLES THRU TOP OF SHAFT WITH WEATHERCAP TO FIT SHAFT OPENING. STORE SHAFT CAP IN BASE OF STD. CONNECTION OF O.H. WIRES TO U.G. CABLES SHALL BE MADE OUTSIDE OF SHAFT (INCIDENTAL TO INSTALLATION OF O.H. WIRES.)
29. REMOVE INSULATED CLEVIS & WEATHERCAP FROM ST. LTG. STD. SHAFT MOUNT SHAFT CAP ON ST. LTG. STD. (INCIDENTAL TO REMOVAL OF O.H. WIRES.)
30. BAND SEC. RACK TO ST. LTG. STD. SHAFT. BRING U.G. CABLES THRU TOP OF SHAFT WITH WEATHERCAP TO FIT SHAFT OPENING. STORE SHAFT CAP IN BASE OF STD. CONNECTION OF O.H. WIRES TO U.G. CABLES SHALL BE MADE OUTSIDE OF SHAFT. (INCIDENTAL TO INSTALLATION OF O.H. WIRES.)
31. REMOVE SEC. RACK & WEATHERCAP FROM ST. LTG. STD. SHAFT. MOUNT SHAFT CAP ON ST. LTG. STD. (INCIDENTAL TO REMOVAL OF O.H. WIRES.)
32. ALL CABLES SHALL BE TAGGED IN ALL MANHOLES & HANDHOLES THIS INCLUDES EXIST. CABLES THAT ARE CONVERTED TO MULTIPLE, RECONNECTED TO OTHER CIRCUITS OR RENDERED DEAD.
33. INSTALL WOOD POLES SO AS NOT TO INTERFERE WITH TRAFFIC OR FUTURE CONSTRUCTION STAGES.
34. ALL SALVAGED WOOD POLES SHALL BE POLES PREVIOUSLY INSTALLED NEW ON THIS CONTRACT.
35. ALL TRAFFIC STREET SIGNS SUCH AS "NO PARKING", "NO STANDING" ETC. SHALL BE TRANSFERRED FROM OLD ST. LTG. STD. TO NEW ST. LTG. STD. AT SAME LOCATION OR ON NEW STD. IN CLOSE PROXIMITY BY DEPT. OF TRANSPORTATION.
36. ALL TRAFFIC SIGNALS SHALL BE MOUNTED WITH NEW STANDARD TRAFFIC SIGNAL BRACKET & FITTINGS.
37. ALL TRAFFIC SIGNAL ITEMS AS CALLED FOR ON PLANS SHALL INCLUDE AS INCIDENTAL TO THE TRAFFIC SIGNAL ALL CABLES FROM THE CONTROLLER TO THE TRAFFIC SIGNALS & FOUNDATIONS AS INDICATED.

38. ALL SALVAGED TRAFFIC SIGNALS SHALL BE TRAFFIC SIGNALS PREVIOUSLY INSTALLED NEW ON THIS CONTRACT. (EXCEPT AS OTHERWISE INDICATED.)
39. FOR TRAFFIC SIGNAL SPAN WIRES USE 1/2" SIEMENS-MARTIN GRADE AS SPECIFICATION.
40. ALL TRAFFIC SIGNAL LAMPS SHALL BE PURCHASED FROM THE PUBLIC LIGHTING DEPARTMENT.
41. WHERE TRIMMING OF TREES ON CITY PROPERTY IS CALLED FOR ON PLANS THE CONTRACTOR SHALL OBTAIN A PERMIT FROM THE RECREATION DEPT. OF THE CITY OF DETROIT AND SHALL HAVE SUCH WORK DONE BY A LICENSED TREE SERVICE CONTRACTOR. CALL MR. CRAIG GRANT AT 931-3950.
42. CROSSARMS SHALL BE REMOVED AFTER ALL CONTACTS ARE REMOVED (INCIDENTAL TO REMOVAL OF OVERHEAD LINES.)
43. WHERE REMOVAL OF LUMINAIRES IS CALLED FOR ON PLANS THE ASSOCIATED O.H. SERIES COIL SHALL BE REMOVED BY THE CONTRACTOR. (REMOVE O.H. COIL IS INCIDENTAL TO REMOVE LUMINAIRE.)
44. WHERE A P.L.D. POLE WITH OTHER UTILITY CONTACTS IS TO BE REMOVED THE P.L.D. INSPECTOR WILL INDICATE IF THE POLE IS, IN FACT, TO BE REMOVED.
45. INSTALLATION OF SECONDARY LIGHTING ARRESTERS, ASSOCIATED GROUND WIRE & 8 1/2" x 8'-0" GROUND RODS SHALL BE INCIDENTAL TO INSTALLATION OF 3-#6 TRIPLEX O.H. LINE GROUND ROD & GROUND WIRE SHALL BE FURNISHED & INSTALLED SIMILAR TO INSTALLATION AT CABLE POLES.
46. ALL CONNECTIONS & DISCONNECTIONS OF EXIST. COMM. DIV. FACILITIES TO BE MADE BY COMM. DIV.
47. COIL-UP 6 FT. OF SLACK IN STD. SHAFT FOR CONNECTION TO CALL BOX. CALL BOX TO BE INSTALLED & CONNECTIONS TO BE MADE BY COMM. DIV.
48. SEAL-END OF CABLE WHERE COILING UP OF CABLE IS CALLED FOR (CONTRACTOR SHALL RECEIVE PAYMENT FOR COILED-UP CABLES)
49. SECONDARY IN-LINE FUSES SHALL BE A.B. CHANCE TYPE C.T.S.I. (SIZE AS INDICATED ON PLANS.)
50. CONTRACTOR SHALL DELIVER WHERE REQUIRED TO THE PUBLIC LIGHTING DEPARTMENT THE T.S. CONTROLLER FOR TIMING. CONTRACTOR SHALL PICK-UP CONTROLLER FROM THE PUBLIC LIGHTING DEPARTMENT WHEN READY FOR INSTALLATION.
51. PROPOSED T.S. SHALL BE PUT INTO OPERATION AT TIME OF REMOVAL OF EXISTING T.S. FACILITIES. CONTRACTOR SHALL NOTIFY THE P.L.D. INSPECTOR IF HE IS UNABLE TO MAINTAIN T.S. IN OPERABLE CONDITION AT ALL TIMES.
52. A MINIMUM CLEARANCE OF 3'-6" HORIZONTAL & 1' VERTICAL MUST BE MAINTAINED BETWEEN PROPOSED P.L.D. FACILITIES & EXISTING WATER FACILITIES.

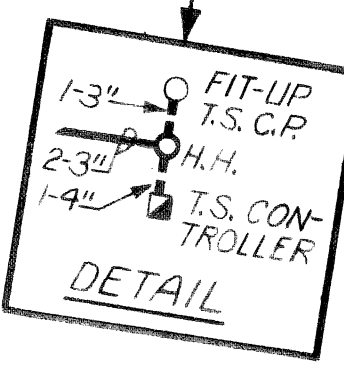


AREA MAP
N.T.S.

	HARPER AVE. - CADIEUX AVE., M2000 (033) WARREN AVE. - CADIEUX AVE. INTERSECTION IMPROVEMENT GENERAL INFORMATION & AREA MAP	SHEET <u>26</u> OF <u>54</u> SHEETS CONTRACT NO. JOB NO. 10012A DATE 10-7-76	CITY OF DETROIT CITY ENGINEERING DIVISION E.P.M.D.	DRAWN BY CEA CHECKED BY <i>[Signature]</i> APPROVED BY <i>[Signature]</i> DATE 9-16-76	PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS 16580 WYOMING DETROIT, MICH. 48221 DRWG. 2 OF 30 FILE NO. CEA FED AID 9	PUBLIC LIGHTING COMMISSION CITY OF DETROIT	FILE NO. 49-0573 SHEET NO. 2 OF 30 DATE 9-16-76
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ITEM	QUANTITIES
1-3" ENCASED CONDUIT	42 LIN. FT.
2-3" ENCASED CONDUIT	84 LIN. FT.
1-4" ENCASED CONDUIT	6 LIN. FT.
ROUND HANDHOLE	3 EACH
REMOVE U.G. FED ST. LTG. UNIT	3 EACH
REMOVE FDN.	5 EACH
400W. MERCURY VAPOR LUMINAIRE WITH SERIES COIL	4 EACH
30 FT. STEEL POLE ON NEW FDN.	1 EACH
CODE 009-00 ST. LTG. STD. WITH UNIV. TRANSF. BASE ON NEW FDN.	3 EACH
6 FT. CLAMP ON BRACKET ARM (3'-0" RISE)	4 EACH
600V, 1-7/8" #14 R.U. CABLE FOR CHRONOPLAN	70 LIN. FT.
600V, 2-1/0 #6 T.H.W. CABLES	70 LIN. FT.
7500V, 2-1/0 #8 L.C. ST. LTG. CABLES	44 LIN. FT.
REMOVE WOOD POLE	13 EACH
REMOVE O.H. ST. LTG. UNIT	13 EACH
REMOVE #8 TWIN	338 LIN. FT.
REMOVE 2-#6 O.H. LINE	936 LIN. FT.
35 FT. CLASS 4 WOOD POLE	12 EACH
40 FT. CLASS 1 WOOD POLE	1 EACH
45 FT. CLASS 2 WOOD POLE	1 EACH
400W. M.V. O.H. ST. LTG. UNIT WITH SERIES COIL	19 EACH
#8 TWIN	717 LIN. FT.
2-#6 O.H. LINE	673 LIN. FT.
FITUP WOOD POLE AS A T.S. CABLE POLE	1 EACH
DISMANTLE T.S. CABLE POLE	1 EACH



PLAN
SCALE: 1"=40'

DATE	DESCRIPTION	CHKD. BY

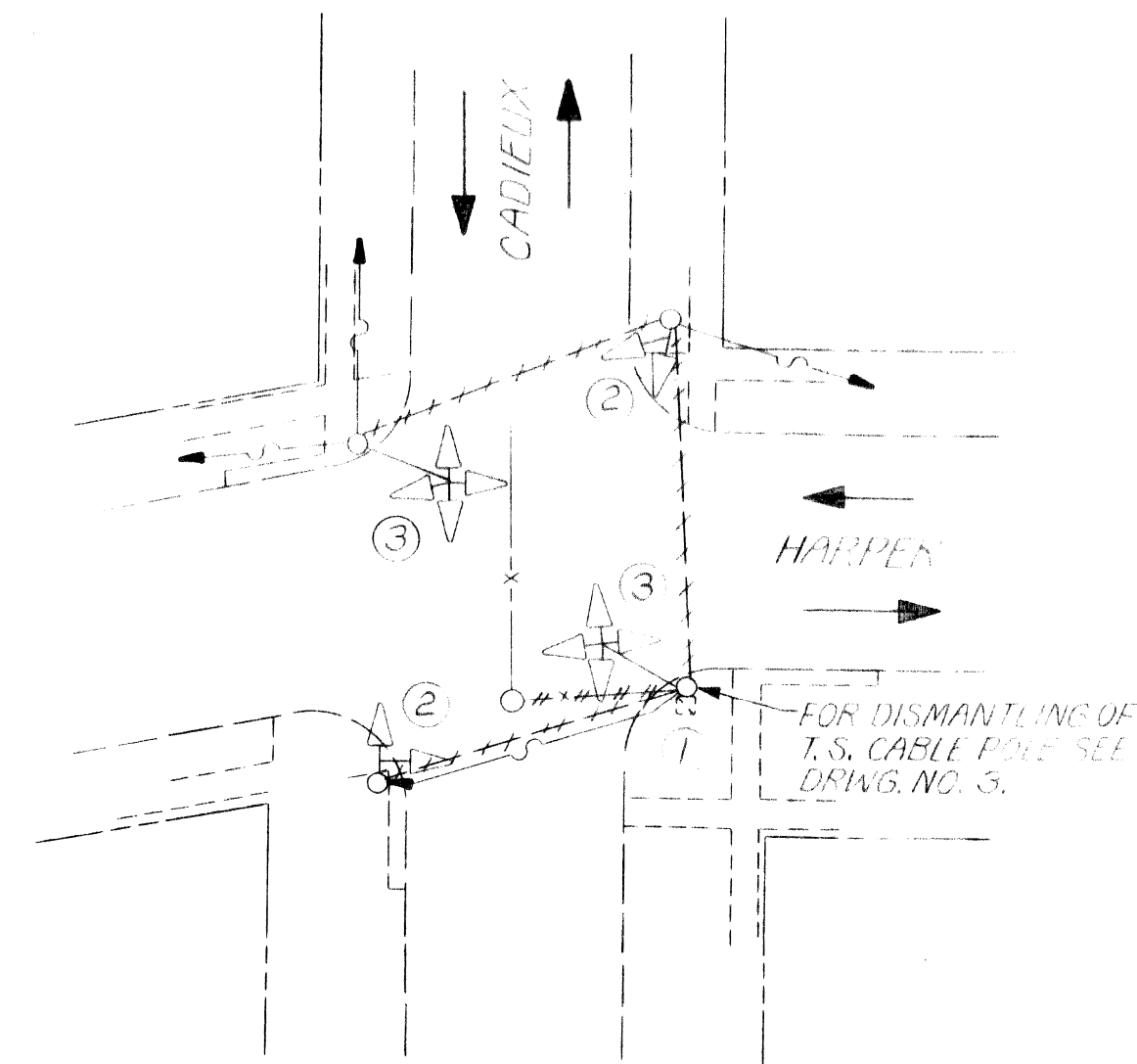
HARPER AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
GENERAL PLAN

SHEET 27 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

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

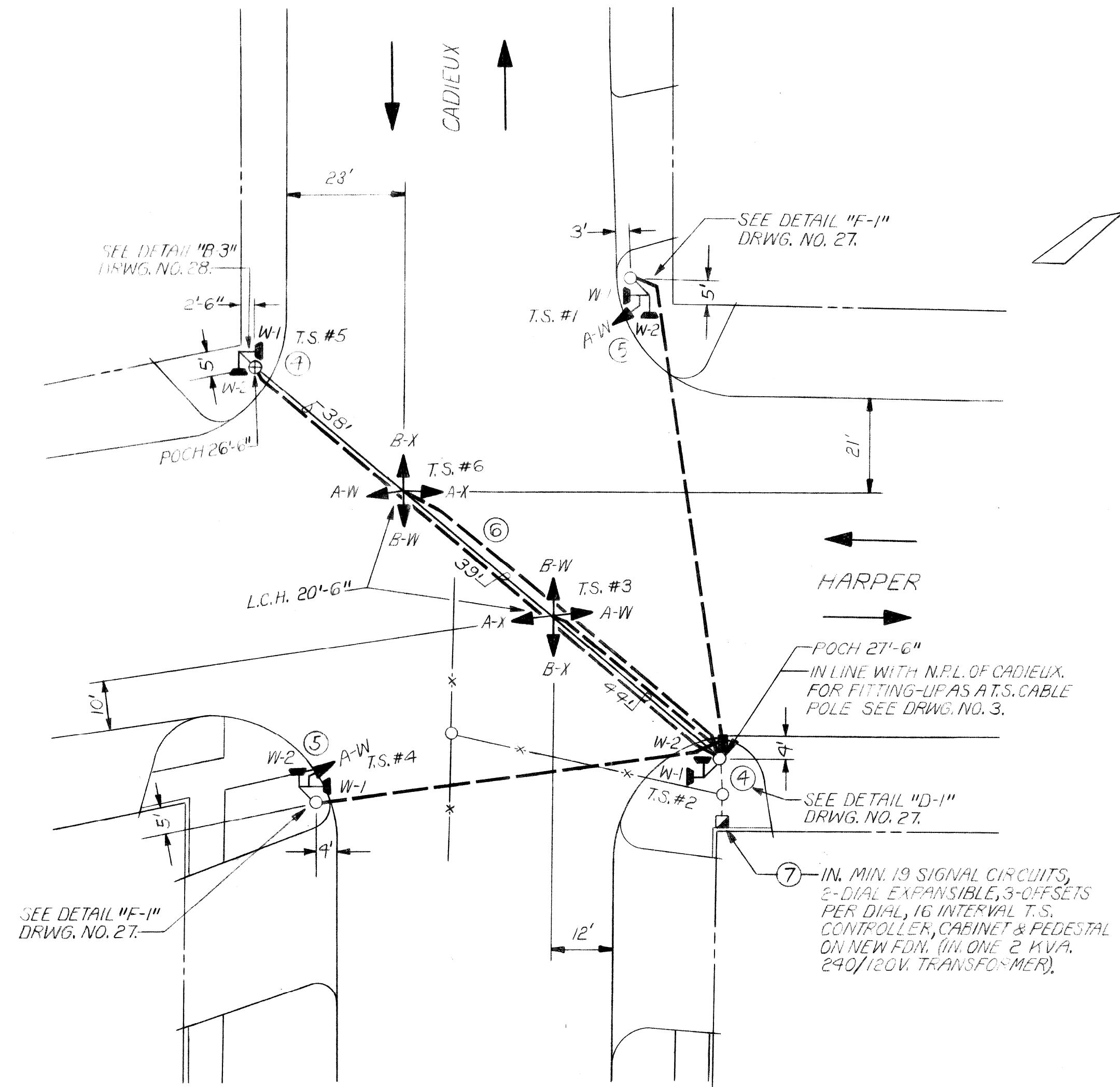
DRAWN BY CEA	PLAN PREPARED BY: CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
CHECKED BY [Signature]	CHECKED BY
APPROVED BY [Signature]	APPROVED BY
DATE 9-16-76	DATE
DRWG. NO. 3 OF 30	FILE NO. CEA FED AID 9

PUBLIC LIGHTING COMMISSION CITY OF DETROIT	FILE NO. 49-0573 SHEET NO. 3 OF 30 DATE 9-16-76
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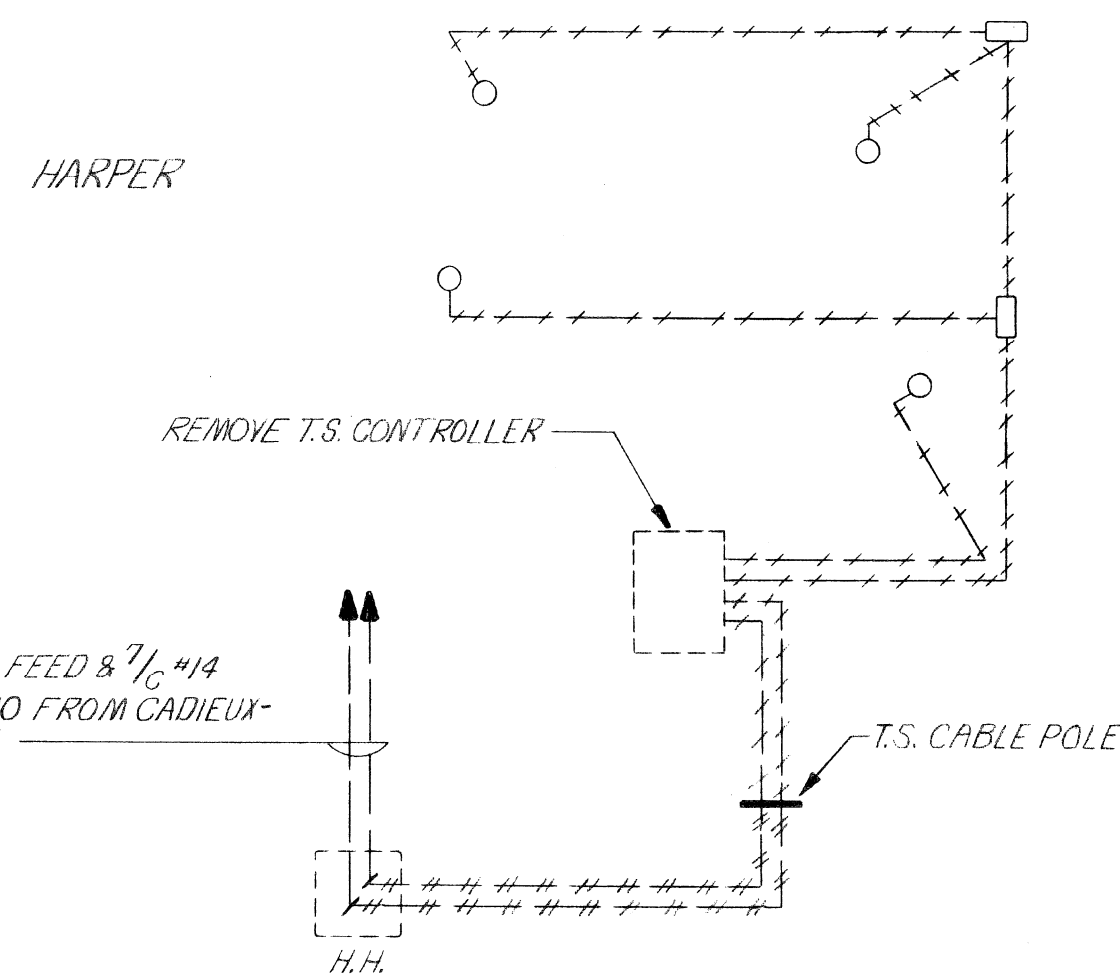


REMOVAL OF EXIST. T.S.
SCALE: 1"=40'

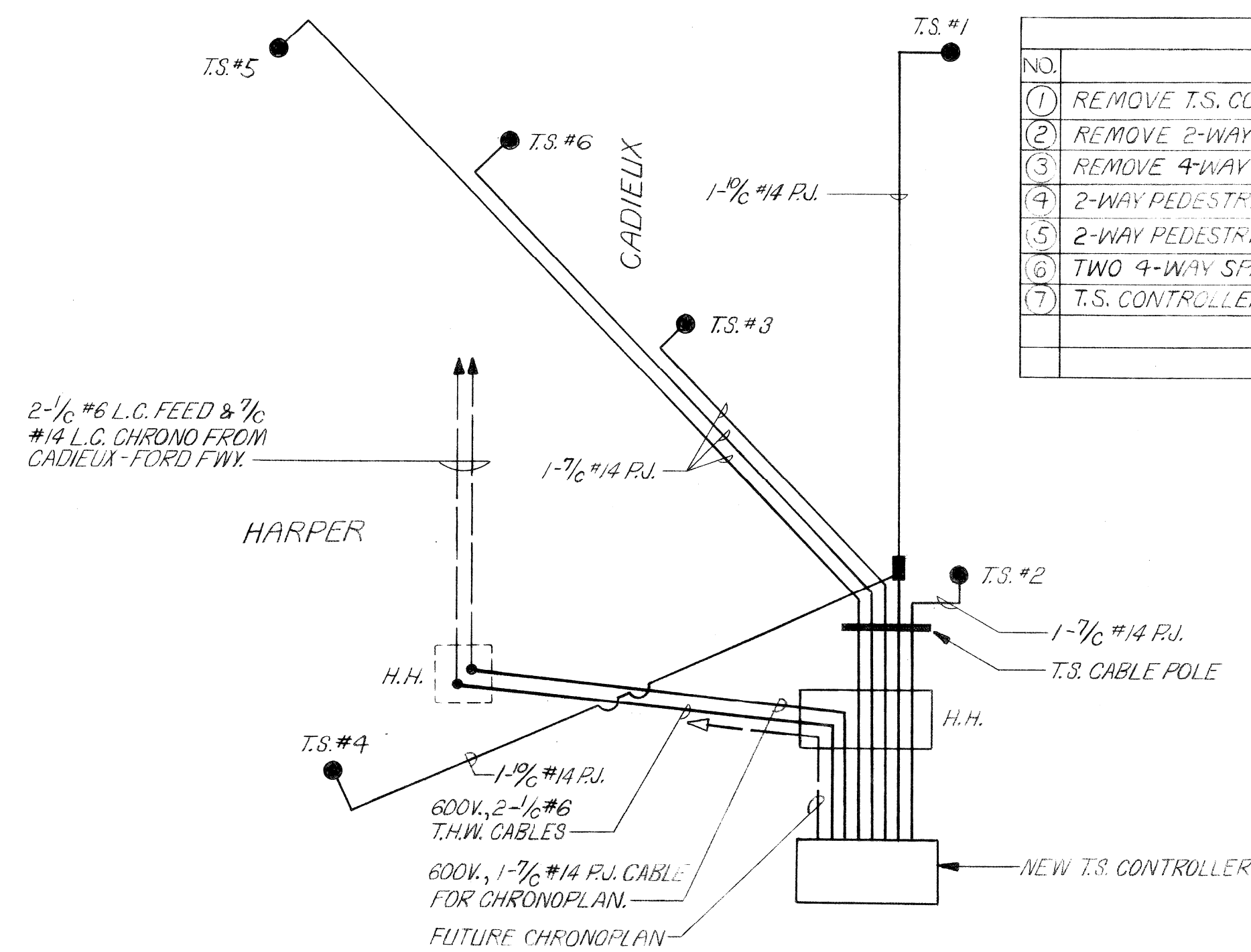
REMOVAL OF EXIST. T.S. & INSTALLATION OF NEW T.S. SHALL BE COORDINATED WITH THE ENGINEER.



PLAN FINAL T.S.
SCALE: 1"=20'



REMOVAL WIRING DIAGRAM



FINAL WIRING DIAGRAM

LIST OF MATERIAL		
NO.	ITEM	QUANTITIES
①	REMOVE T.S. CONTROLLER & CABINET	1 EACH
②	REMOVE 2-WAY BRACKET ARM T.S.	2 EACH
③	REMOVE 4-WAY MAST ARM T.S. & MAST ARM	2 EACH
④	2-WAY PEDESTRIAN BRACKET ARM T.S.	2 EACH
⑤	2-WAY PEDESTRIAN BRACKET ARM T.S. & 1-WAY T.S.	2 EACH
⑥	TWO 4-WAY SPAN WIRE T.S. ON NEW SPAN WIRE	1 EACH
⑦	T.S. CONTROLLER, CABINET, & PEDESTAL ON NEW FDN.	1 EACH

NOTES:

1. ALL PEDESTRIAN T.S. SHALL BE 12" 2-SECTION T.S.

DATE	DESCRIPTION	CHKD. BY

HARPER AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
T.S. AT HARPER & CADIEUX

SHEET 28 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

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

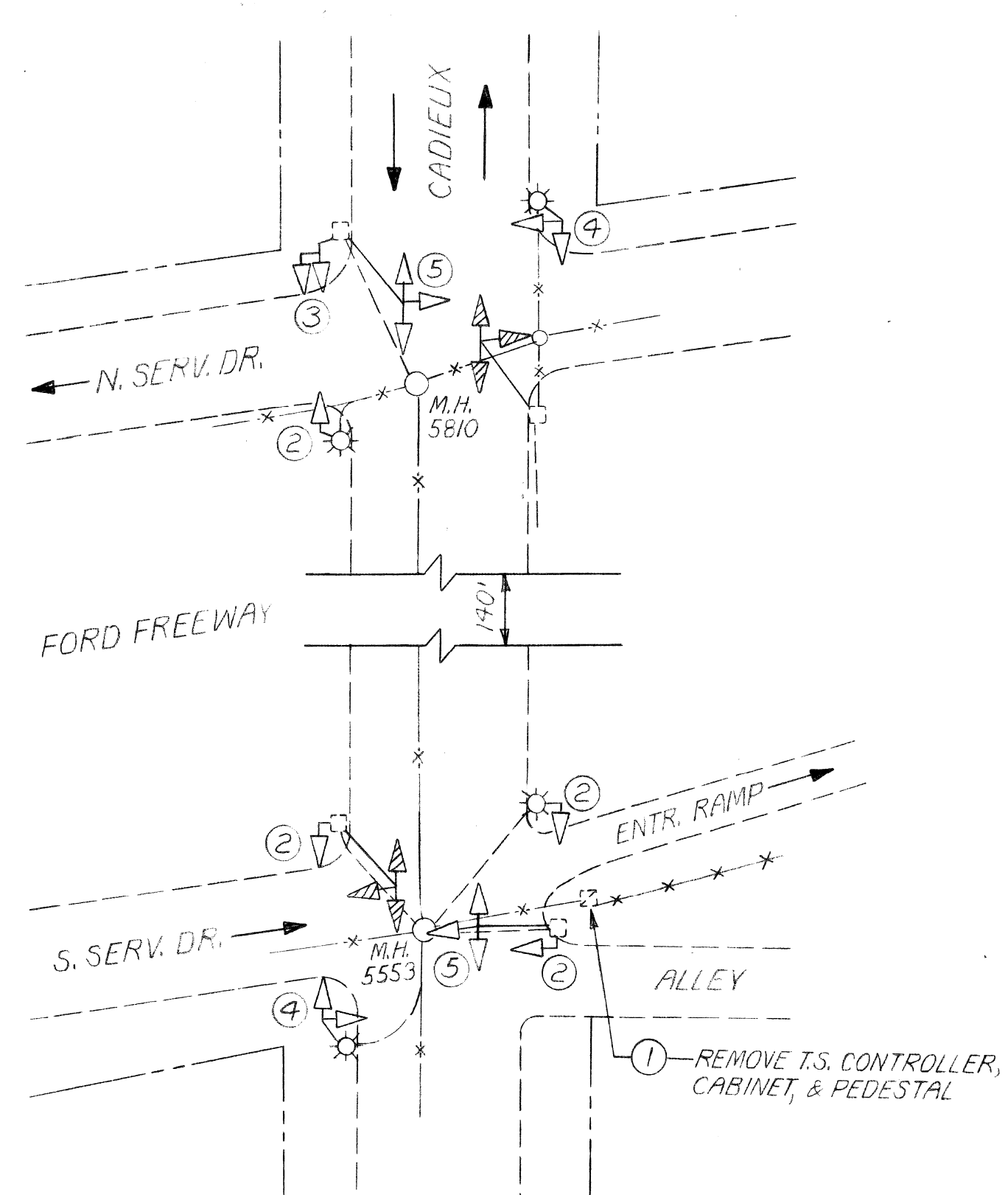
DRAWN CEA
CHECKED BY SPJ
APPROVED BY
DATE 9-16-76

PLAN PREPARED BY:
CONSULTING ENGINEERING ASSOCIATES INC.
ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH., 48221
DRWG. NO. 4 OF 30
FILE NO. CEA FED AID 9

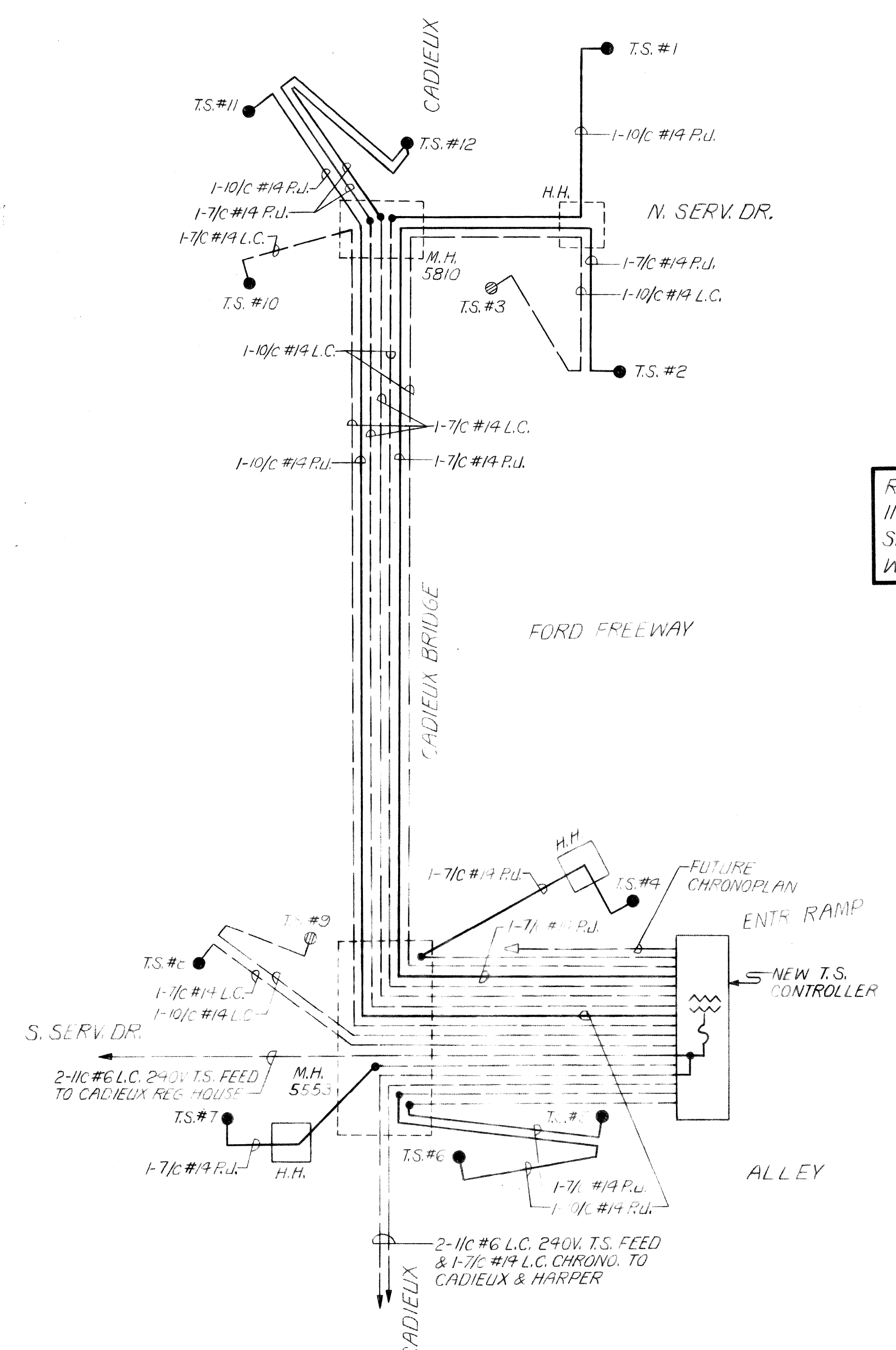
DRAWN BY
CHECKED BY
APPROVED BY

PUBLIC LIGHTING
COMMISSION
CITY OF DETROIT

FILE NO. 49-0573
SHEET NO. 4 OF 30
DATE 9-16-76

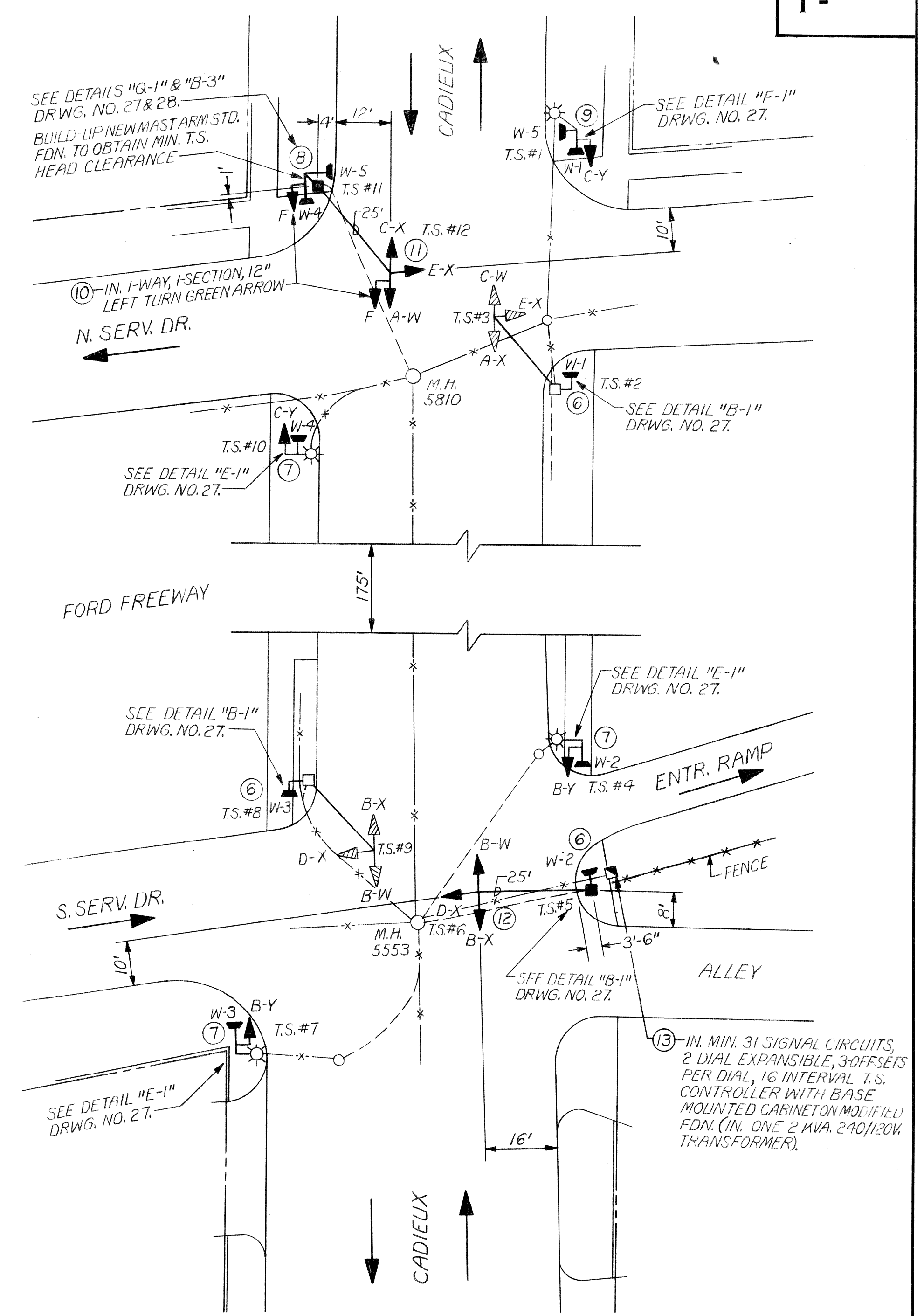


REMOVAL OF EXIST. T.S.
SCALE: 1"=90'

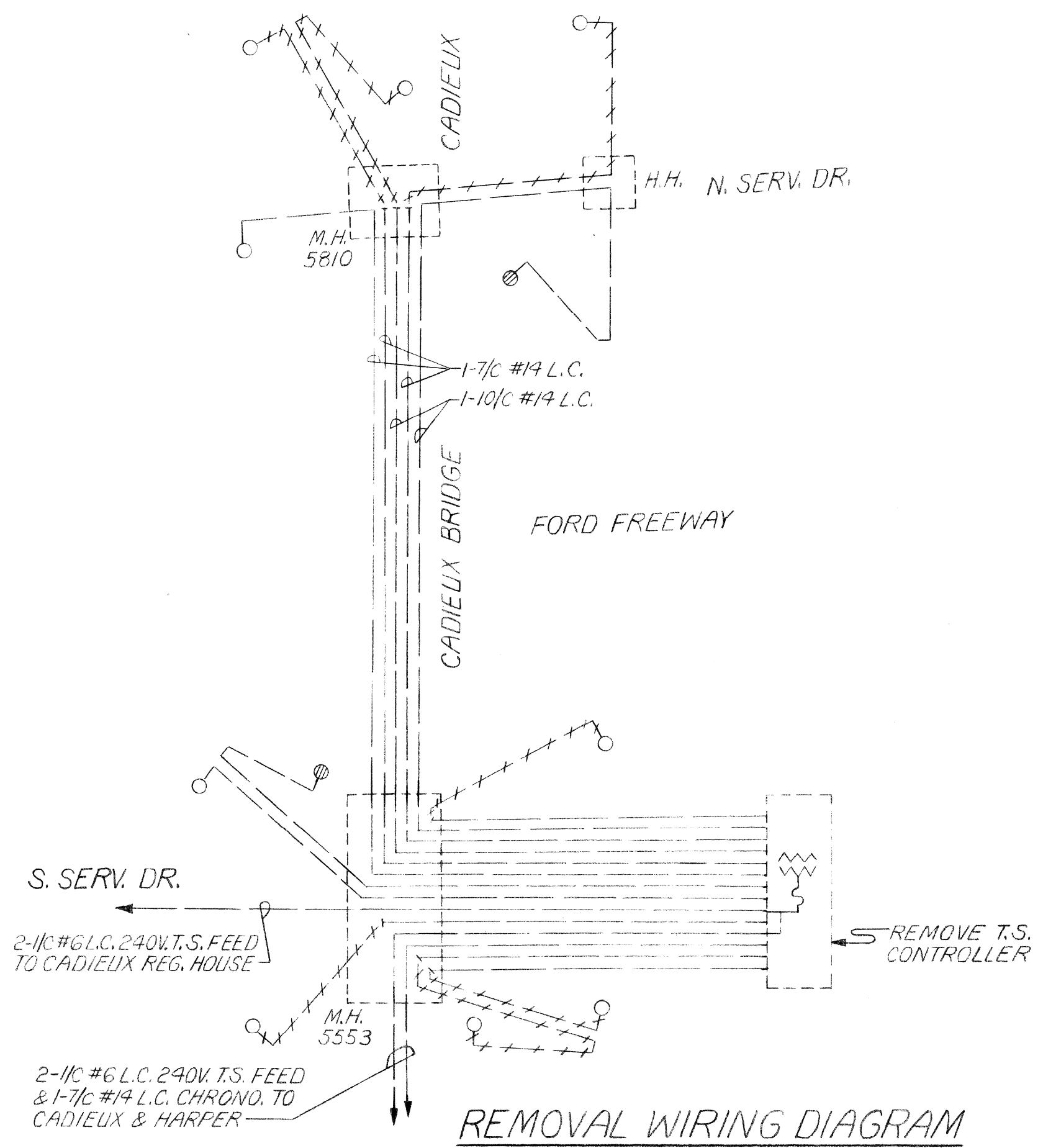


FINAL WIRING DIAGRAM

REMOVAL OF EXIST. T.S. & INSTALLATION OF NEW T.S. SHALL BE COORDINATED WITH THE ENGINEER.



PLAN-FINAL T.S.
SCALE: 1"=20'



REMOVAL WIRING DIAGRAM

LIST OF MATERIAL		
NO.	ITEM	QUANTITIES
1	REMOVE T.S. CONTROLLER, CABINET, & PEDESTAL	1 EACH
2	REMOVE 1-WAY BRACKET ARM T.S.	4 EACH
3	REMOVE 1-WAY BRACKET ARM T.S. & 1-WAY TURN SIGNAL	1 EACH
4	REMOVE 2-WAY BRACKET ARM T.S.	2 EACH
5	REMOVE 3-WAY MAST ARM T.S., MAST ARM & STD.	2 EACH
6	1-WAY PEDESTRIAN BRACKET ARM T.S.	3 EACH
7	1-WAY PEDESTRIAN BRACKET ARM T.S. & 1-WAY T.S.	3 EACH
8	2-WAY PEDESTRIAN BRACKET ARM T.S.	1 EACH
9	2-WAY PEDESTRIAN BRACKET ARM T.S. & 1-WAY T.S.	1 EACH
10	1-WAY TURN SIGNAL	2 EACH
11	3-WAY MAST ARM T.S., SALV. MAST ARM, & SALV. STD. ON NEW FDN.	1 EACH
12	3-WAY MAST ARM T.S., MAST ARM, & SALV. STD. ON NEW FDN.	1 EACH
13	T.S. CONTROLLER WITH BASE MOUNTED CABINET ON MODIFIED FDN.	1 EACH

DATE	DESCRIPTION	CHKD. BY

HARPER AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
FORD SERV. DR. - CADIEUX

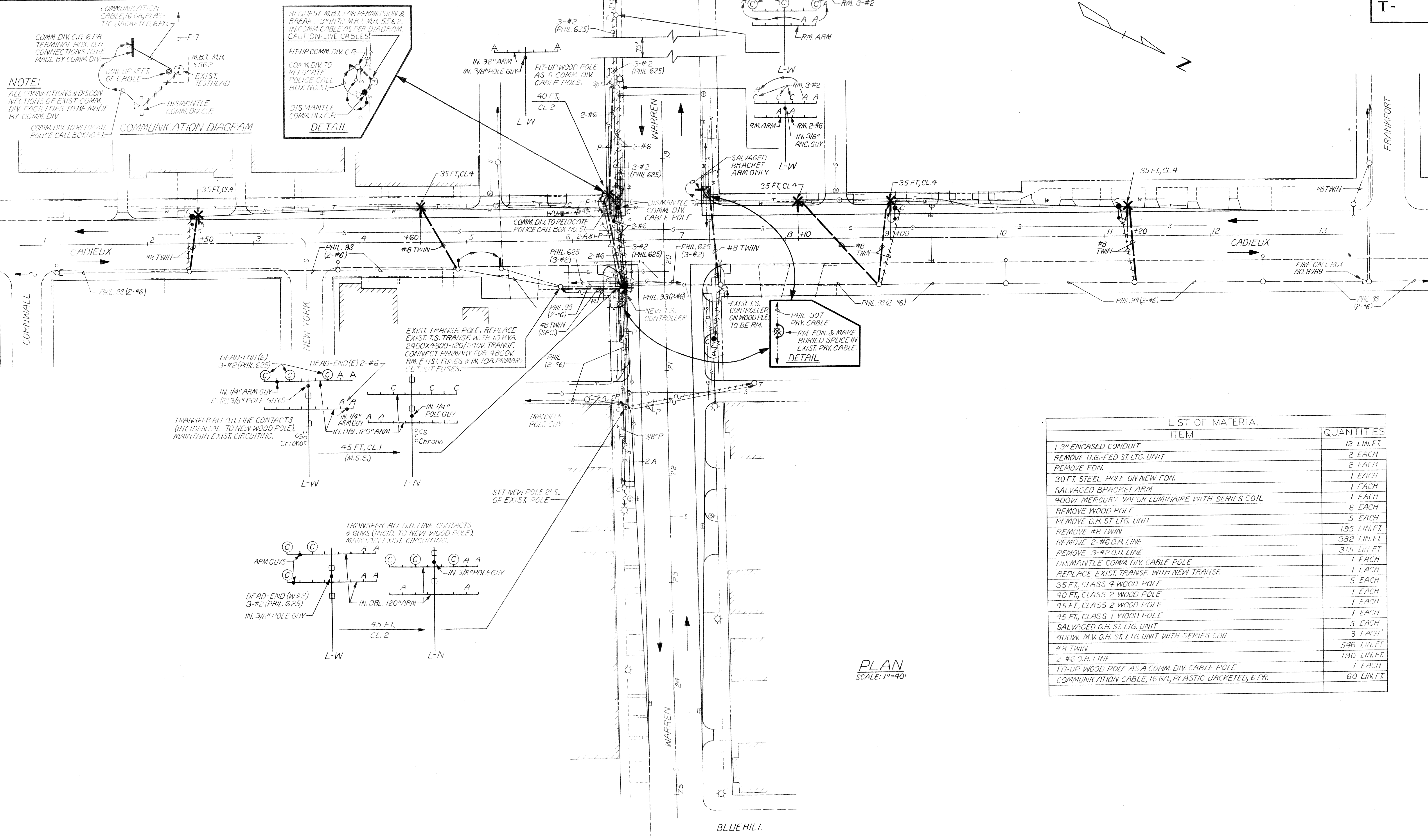
SHEET 29 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

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

PLAN PREPARED BY
CONSULTING ENGINEERING ASSOCIATES INC.
ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH., 48221
DRAWN BY
CHECKED BY
APPROVED BY
DATE 9-16-76
DRWG. NO. 5 OF 30
FILE NO. CEA FED AID 9

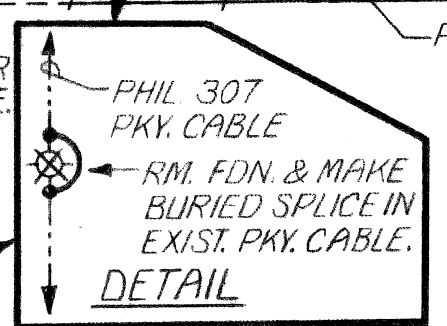
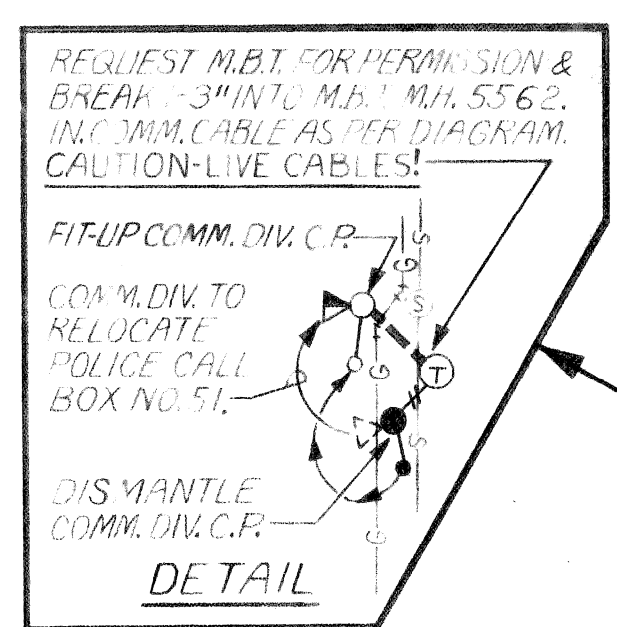
PUBLIC LIGHTING
COMMISSION
CITY OF DETROIT

FILE NO. 49-0573
SHEET NO. 5 OF 30
DATE 9-16-76



NOTE:
ALL CONNECTIONS & DISCONNECTIONS OF EXIST. COMM. DIV. FACILITIES TO BE MADE BY COMM. DIV.
COMM. DIV. TO RELOCATE POLICE CALL BOX NO. 51.

COMMUNICATION DIAGRAM



LIST OF MATERIAL	
ITEM	QUANTITIES
1-3" ENCASED CONDUIT	12 LIN. FT.
REMOVE U.G.-FED ST. LTG. UNIT	2 EACH
REMOVE FDN.	2 EACH
30 FT STEEL POLE ON NEW FDN.	1 EACH
SALVAGED BRACKET ARM	1 EACH
400W. MERCURY VAPOR LUMINAIRE WITH SERIES COIL	1 EACH
REMOVE WOOD POLE	8 EACH
REMOVE O.H. ST. LTG. UNIT	5 EACH
REMOVE #8 TWIN	195 LIN. FT.
REMOVE 2-#6 O.H. LINE	382 LIN. FT.
REMOVE 3-#2 O.H. LINE	315 LIN. FT.
DISMANTLE COMM. DIV. CABLE POLE	1 EACH
REPLACE EXIST. TRANSF. WITH NEW TRANSF.	1 EACH
35 FT. CLASS 4 WOOD POLE	5 EACH
40 FT. CLASS 2 WOOD POLE	1 EACH
45 FT. CLASS 2 WOOD POLE	1 EACH
45 FT. CLASS 1 WOOD POLE	1 EACH
SALVAGED O.H. ST. LTG. UNIT	5 EACH
400W. M.V. O.H. ST. LTG. UNIT WITH SERIES COIL	3 EACH
#8 TWIN	546 LIN. FT.
2-#6 O.H. LINE	190 LIN. FT.
FIT-UP WOOD POLE AS A COMM. DIV. CABLE POLE	1 EACH
COMMUNICATION CABLE, 16 GA., PLASTIC JACKETED, 6 PR.	60 LIN. FT.

PLAN
SCALE: 1"=40'

DATE	DESCRIPTION	CHKD. BY

WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
GENERAL PLAN

SHEET 30 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

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

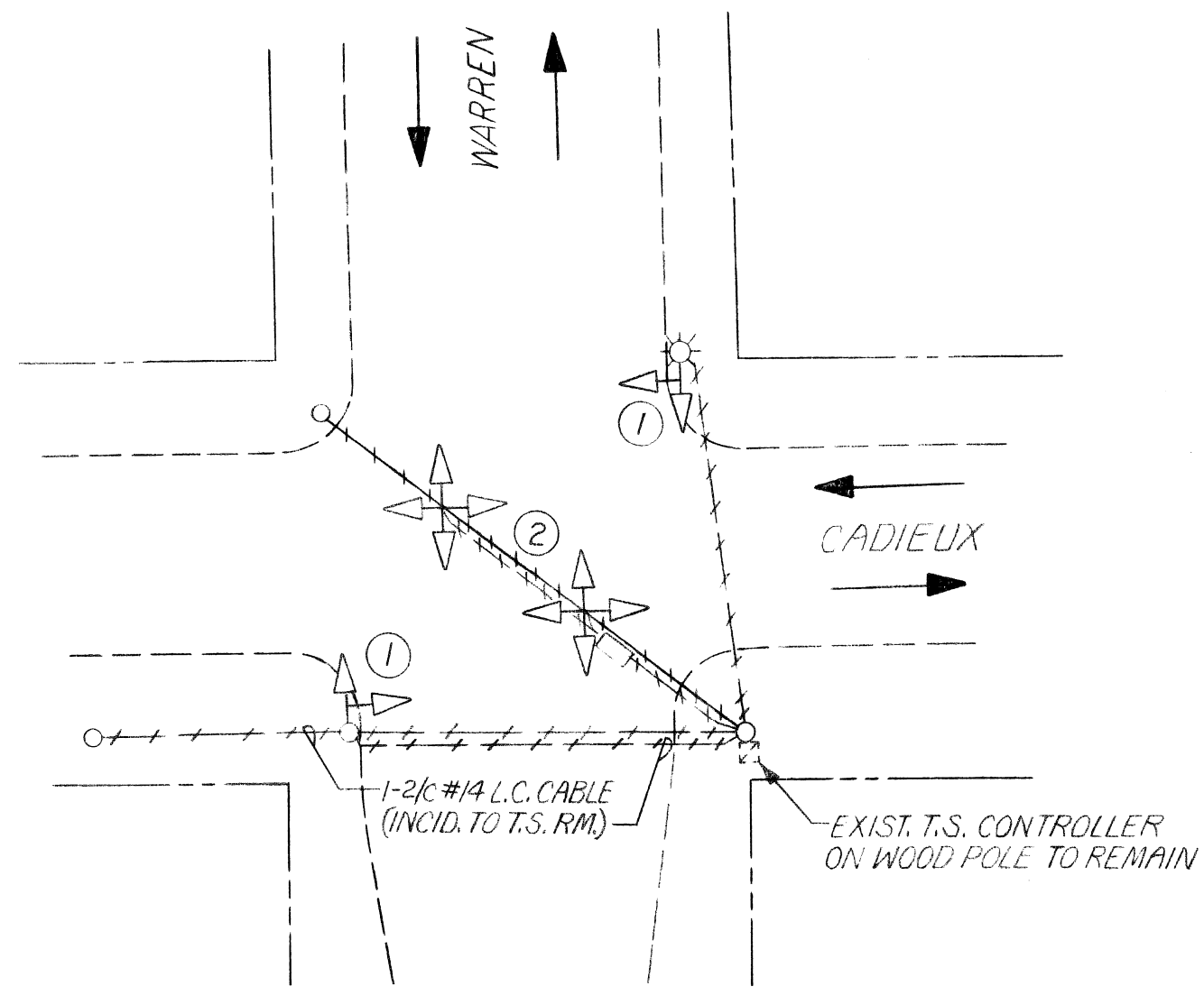
DRAWN BY CEA
CHECKED BY
APPROVED BY
DATE 9-16-76

PLAN PREPARED BY:
CONSULTING ENGINEERING ASSOCIATES INC.
ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH, 48221
DRWG. NO. 6 OF 30
FILE NO. CEA FED AID 9

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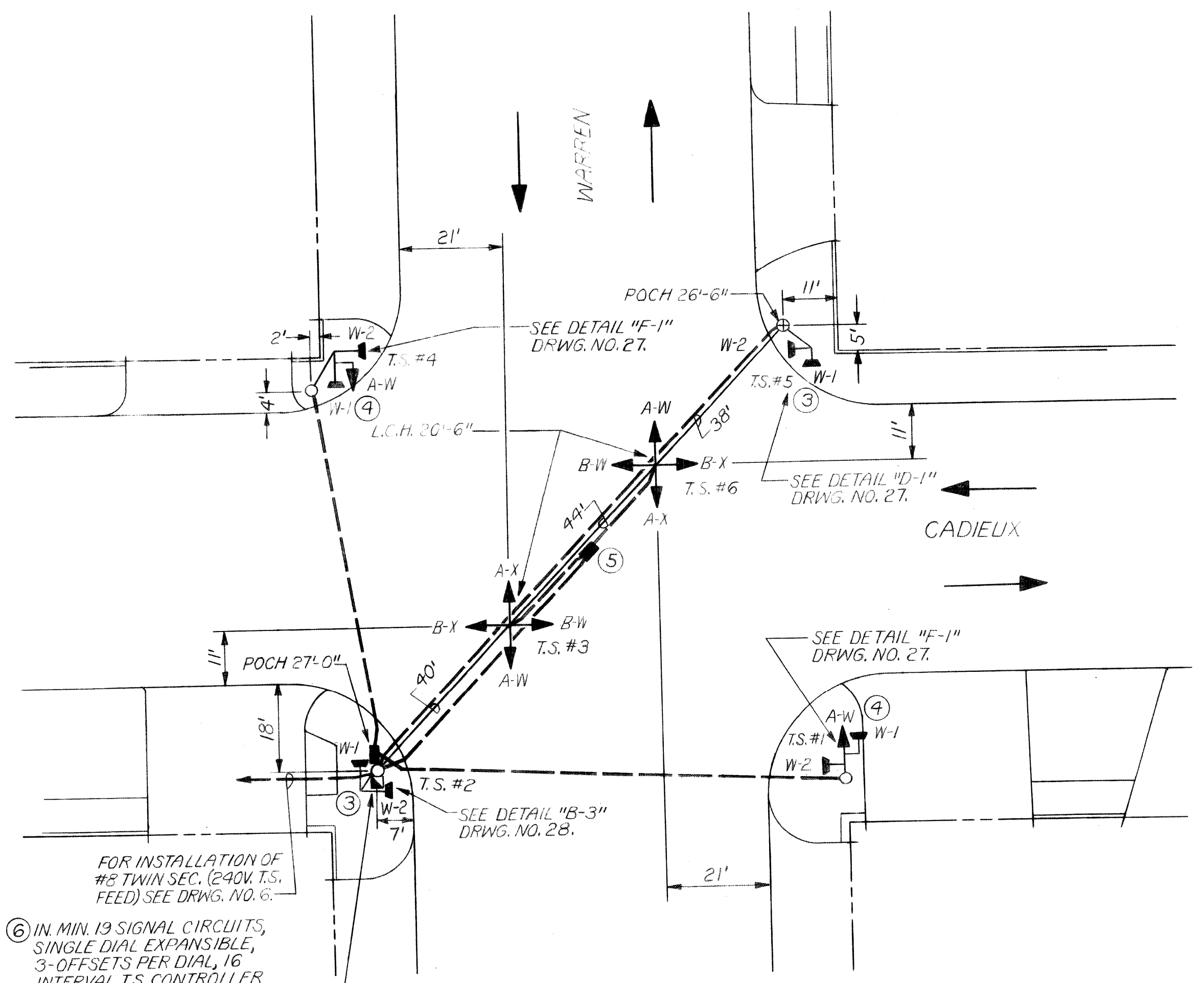
PUBLIC LIGHTING
COMMISSION
CITY OF DETROIT

FILE NO. 49-0573
SHEET NO. 6 OF 30
DATE 9-16-76



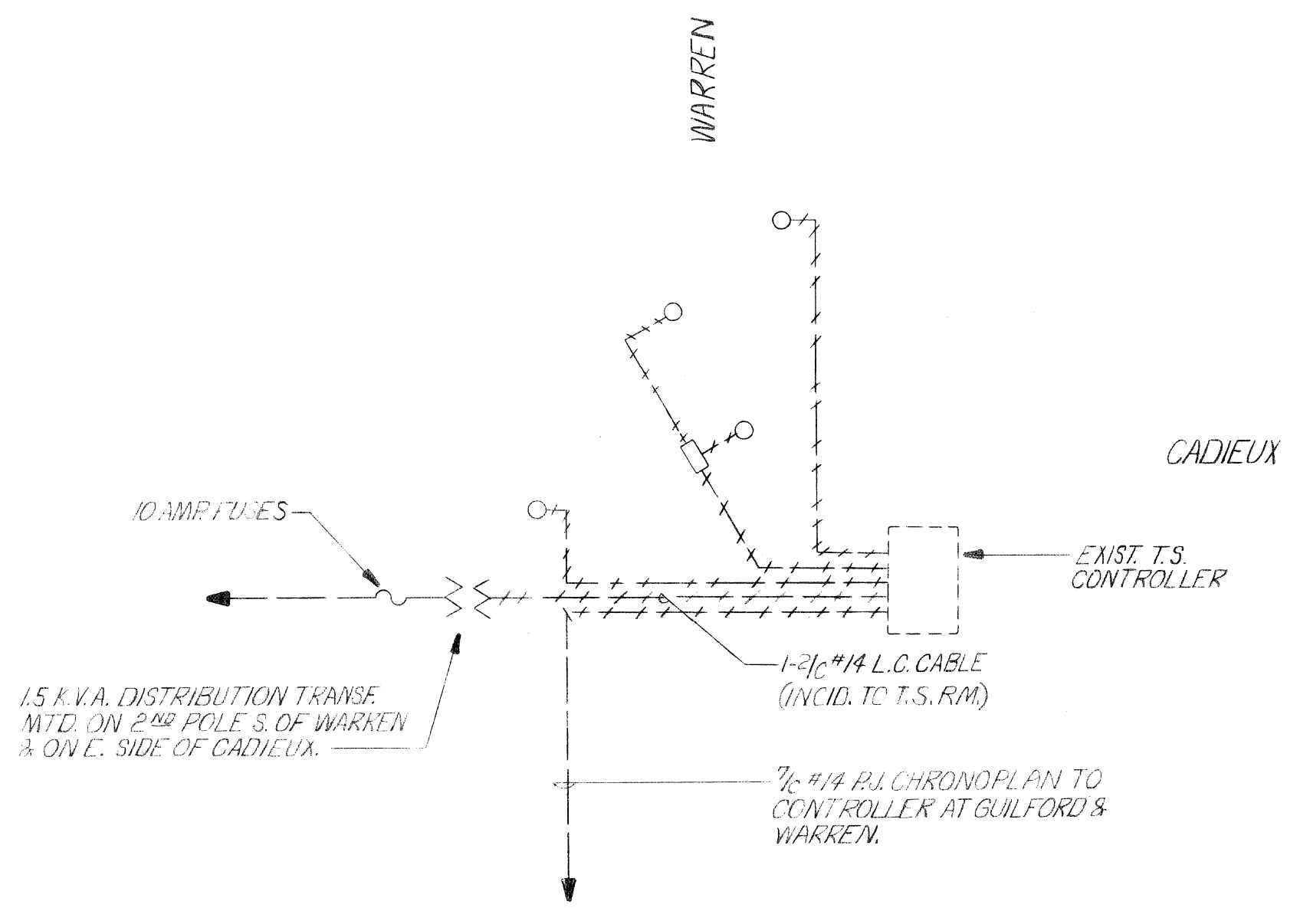
REMOVAL OF EXIST. T.S.
SCALE: 1"=40'

REMOVAL OF EXIST. T.S. & INSTALLATION OF NEW T.S. SHALL BE COORDINATED WITH THE ENGINEER.



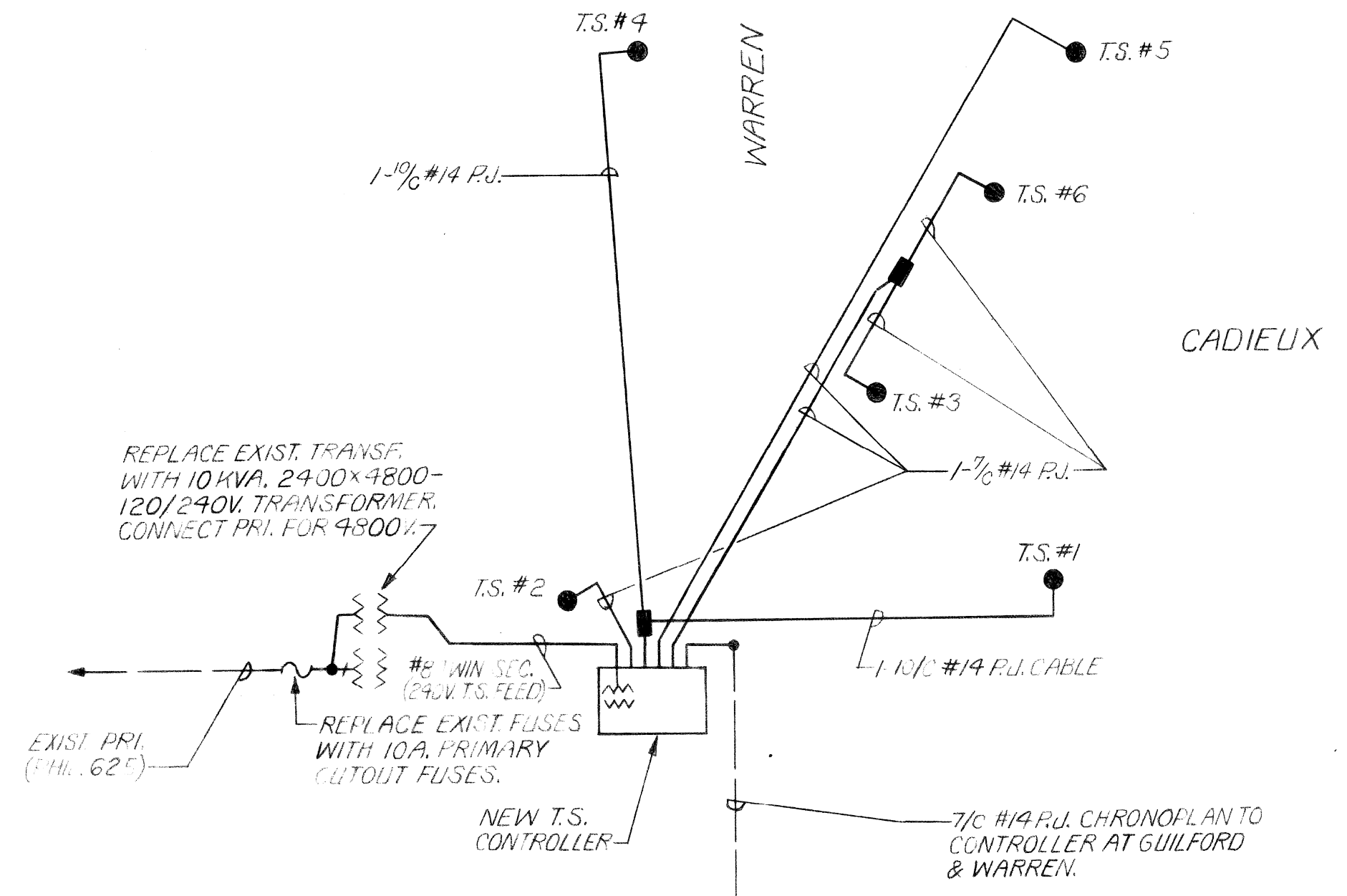
PLAN FINAL T.S.
SCALE: 1"=20'

FOR INSTALLATION OF #2 TWIN SEC. (240V. T.S. FEED) SEE DRWG. NO. 6.
⑥ IN. MIN. 19 SIGNAL CIRCUITS, SINGLE DIAL EXPANSIBLE, 3-OFFSETS PER DIAL, 16 INTERVAL T.S. CONTROLLER & CABINET MOUNTED ON WOOD POLE. (IN ONE 2-KVA, 240/120V. TRANSFORMER).



REMOVAL WIRING DIAGRAM

LIST OF MATERIAL		
NO.	ITEM	QUANTITIES
①	REMOVE 2-WAY BRACKET ARM T.S.	2 EACH
②	REMOVE (2) SPAN WIRE T.S. & SPAN WIRE	1 EACH
③	2-WAY PEDESTRIAN BRACKET ARM T.S.	2 EACH
④	2-WAY PEDESTRIAN BRACKET ARM T.S. & 1-WAY T.S.	2 EACH
⑤	TWO 9-WAY SPAN WIRE T.S. ON NEW SPAN WIRE	1 EACH
⑥	T.S. CONTROLLER & CABINET MOUNTED ON WOOD POLE	1 EACH



FINAL WIRING DIAGRAM

NOTES:
1. ALL PEDESTRIAN T.S. SHALL BE 12" 2-SECTION T.S.

DATE	DESCRIPTION	CHKD. BY

WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
T.S. AT WARREN & CADIEUX

SHEET 31 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

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

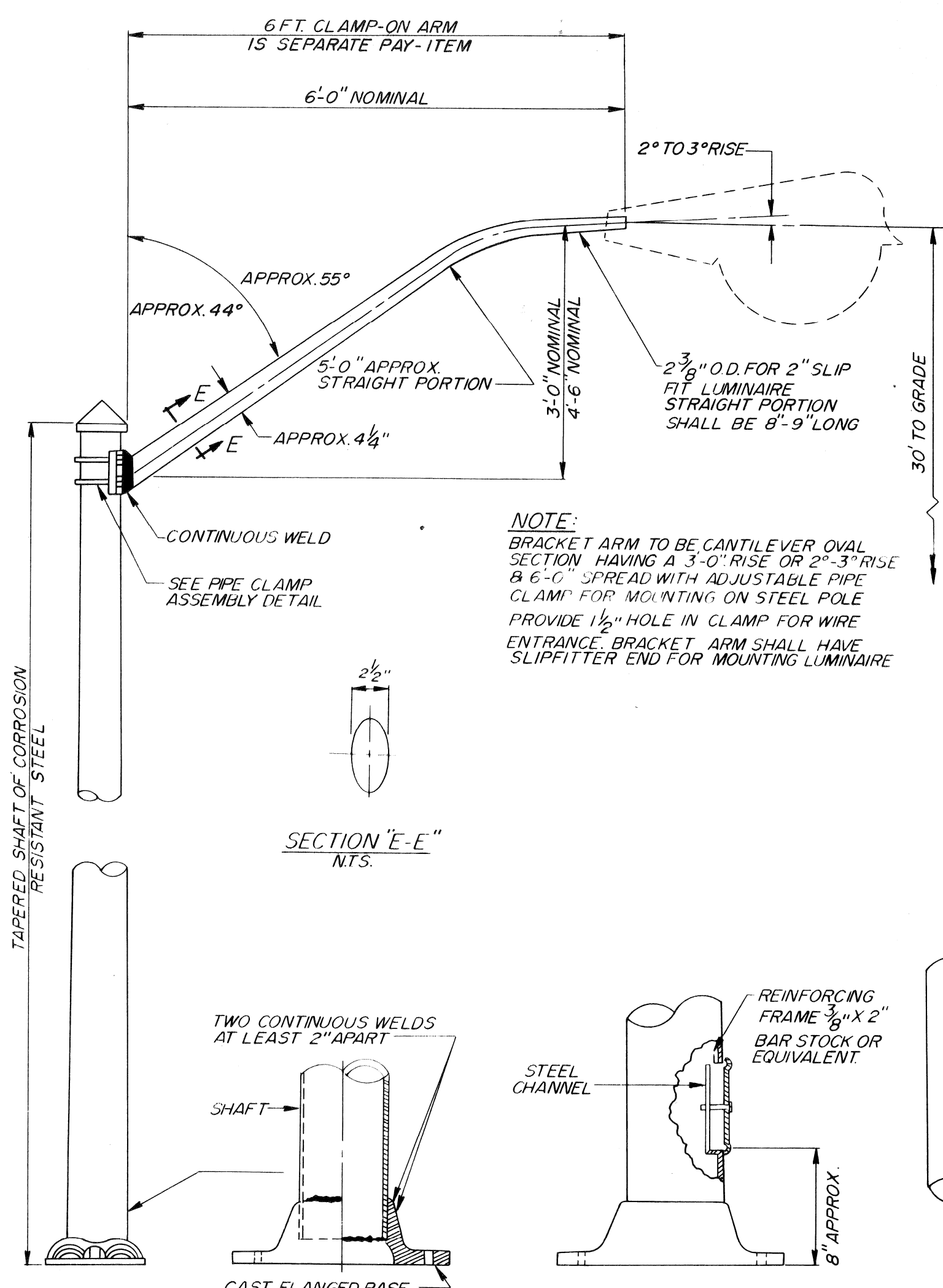
DRAWN CEA
CHECKED
APPROVED
DATE 9-16-76

PLAN PREPARED BY: CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS 16580 WYOMING DETROIT, MICH. 48221
DRWG NO. 7 OF 30
FILE NO. CEA FED AID 9

CHECKED BY
APPROVED BY

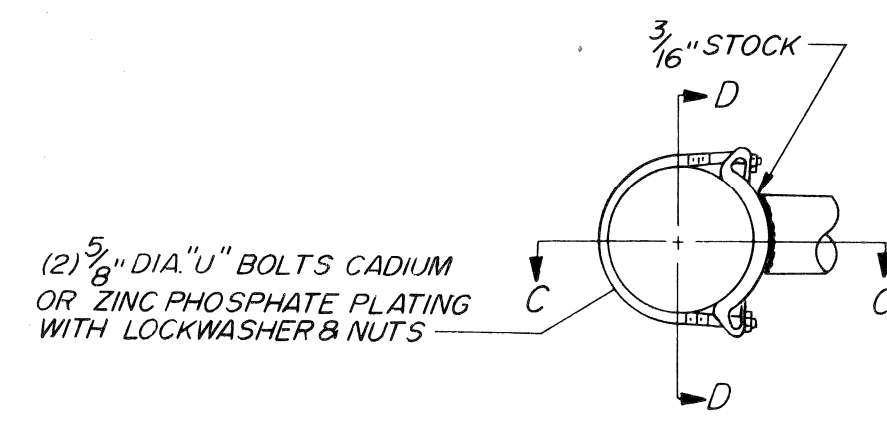
PUBLIC LIGHTING
COMMISSION
CITY OF DETROIT

FILE NO. 49-0573
SHEET NO. 7 OF 30
DATE 9-16-76



STREET LIGHTING STANDARD
N.T.S.

SHAFT MODIFICATION
N.T.S.



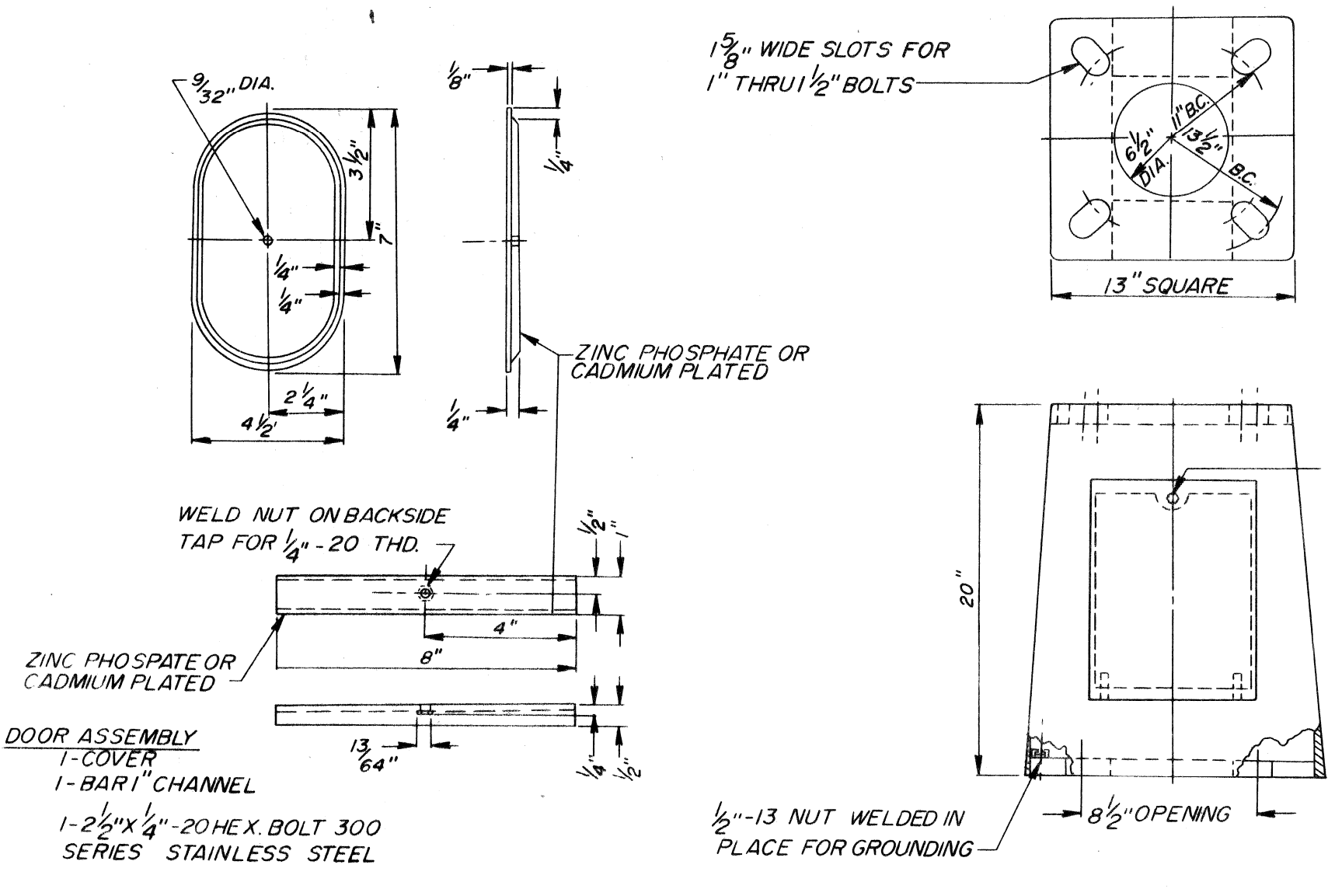
CLAMP ASSEMBLY DETAILS
N.T.S.

TYPE	POLE DIAMETER
A	36"-4.5"
B	61"-6.9"
C	75"-8.5"

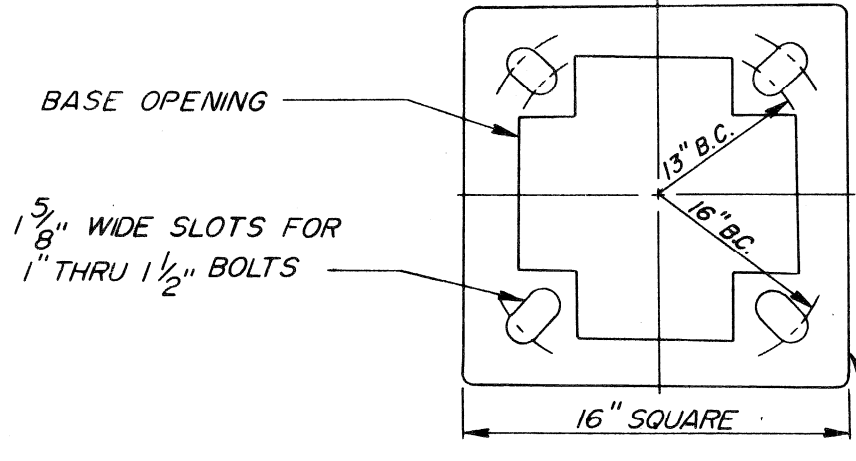
STD CODE NO	SHAFT LENGTH	SHAFT DEFLECTION	MINIMUM LOAD	ANCHOR BOLT CIRCLE Ø	ANCHOR BOLT Ø	HANDHOLE	LUMINAIRE MOUNTING HEIGHT	BRACKET FITTERS REQ'D	BRACKET LENGTH
009-00	28'-6"	2.9"	880 #	13 1/2"	1" X 40"	4" X 6 1/2"	30'	—	6'

* SHAFT DEFLECTION: SHAFT DEFLECTION MEASURED IN INCHES AT TOP SHALL NOT BE GREATER THAN THAT SHOWN FOR A HORIZONTAL LOAD OF 100 LBS APPLIED 18 INCHES BELOW TOP OF SHAFT.

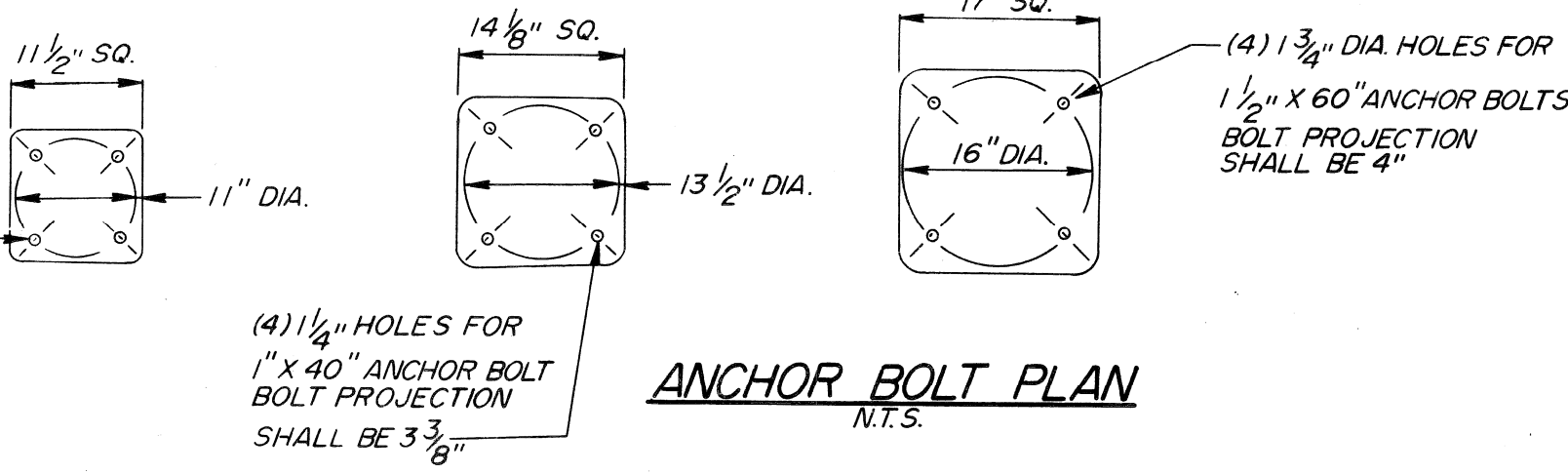
* * SHAFT LOADING: SHAFTS SHALL WITHSTAND, AT THE GUARANTEED MINIMUM YIELD STRENGTH OF THE SHAFT MATERIAL, THE LOADS SHOWN IN THIS TABLE. THE LOAD SHALL BE APPLIED IN A SINGLE HORIZONTAL DIRECTION ANYWHERE AROUND THE CIRCUMFERENCE OF SHAFT 18 INCHES FROM THE TOP.



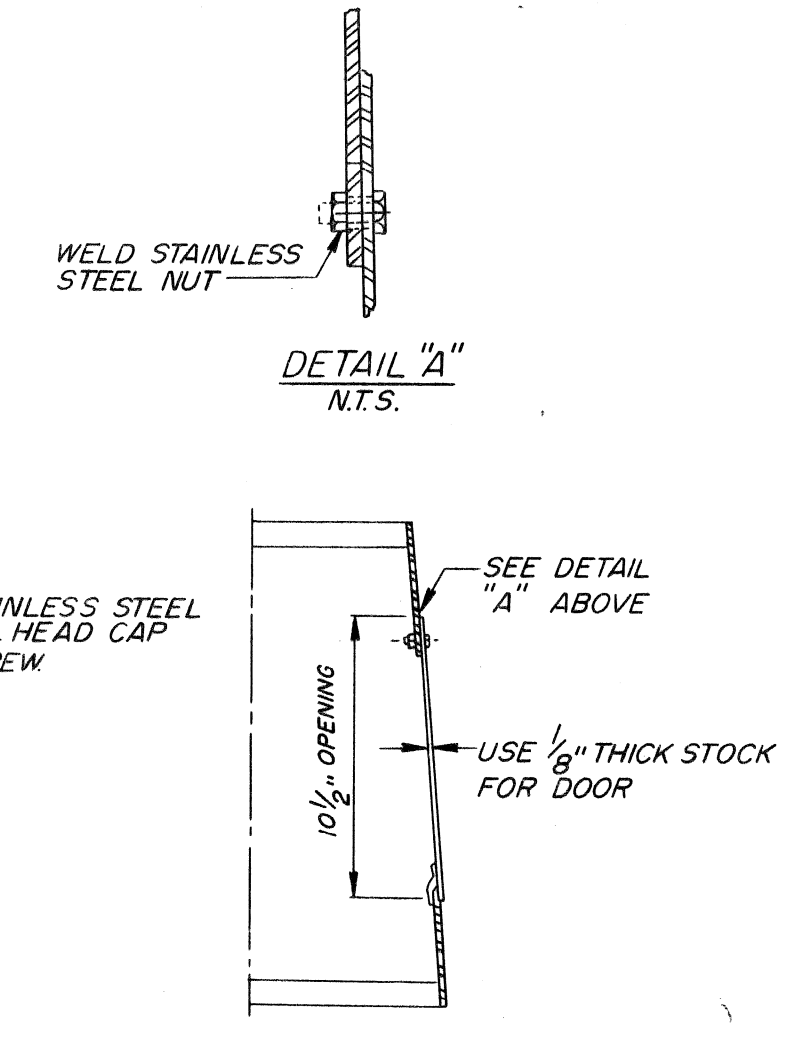
HANDHOLE COVER DETAIL
N.T.S.



P.L.D. UNIVERSAL STEEL TRANSFORMER BASE
N.T.S.



ANCHOR BOLT PLAN
N.T.S.

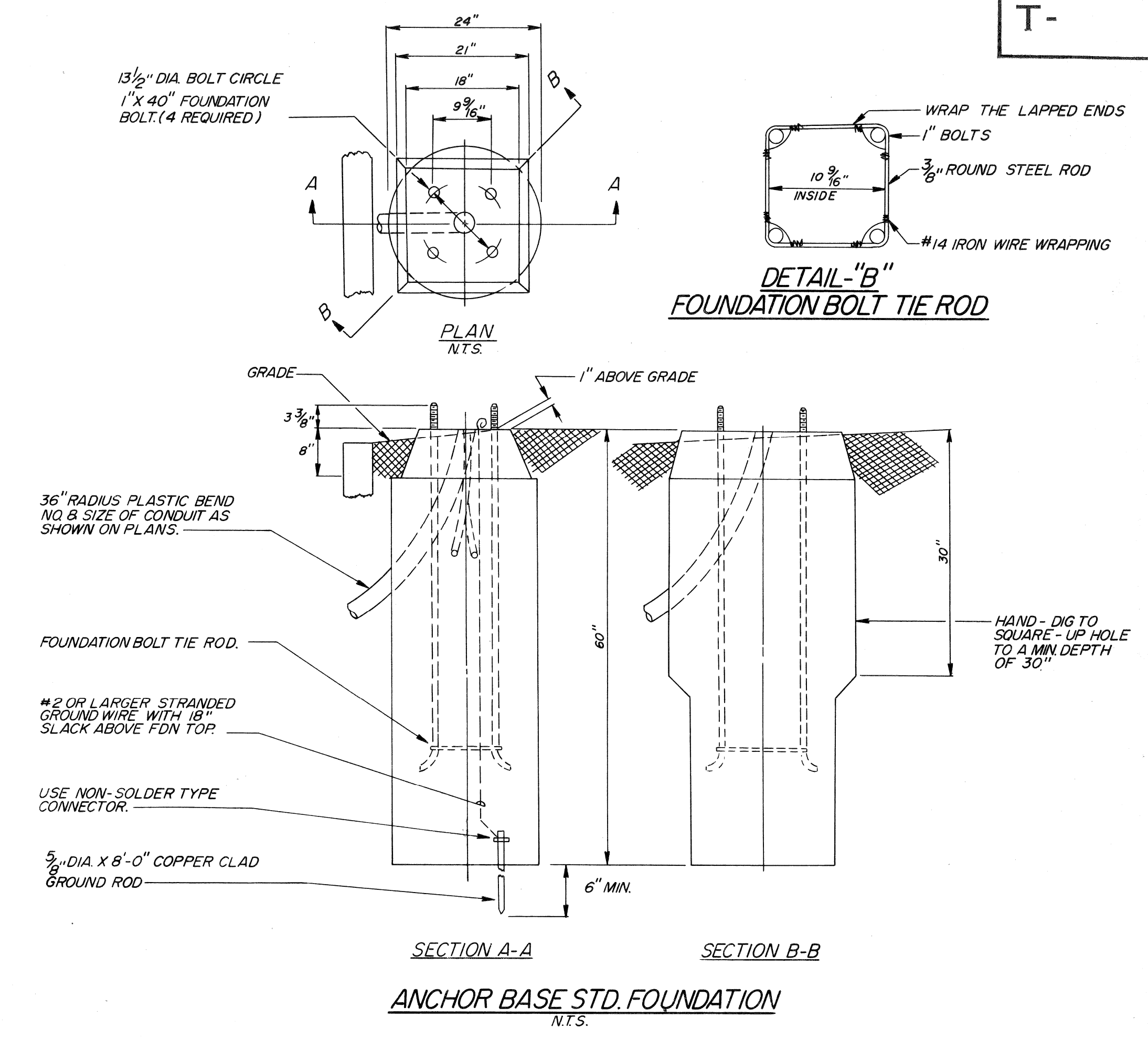


DETAIL "A"
N.T.S.

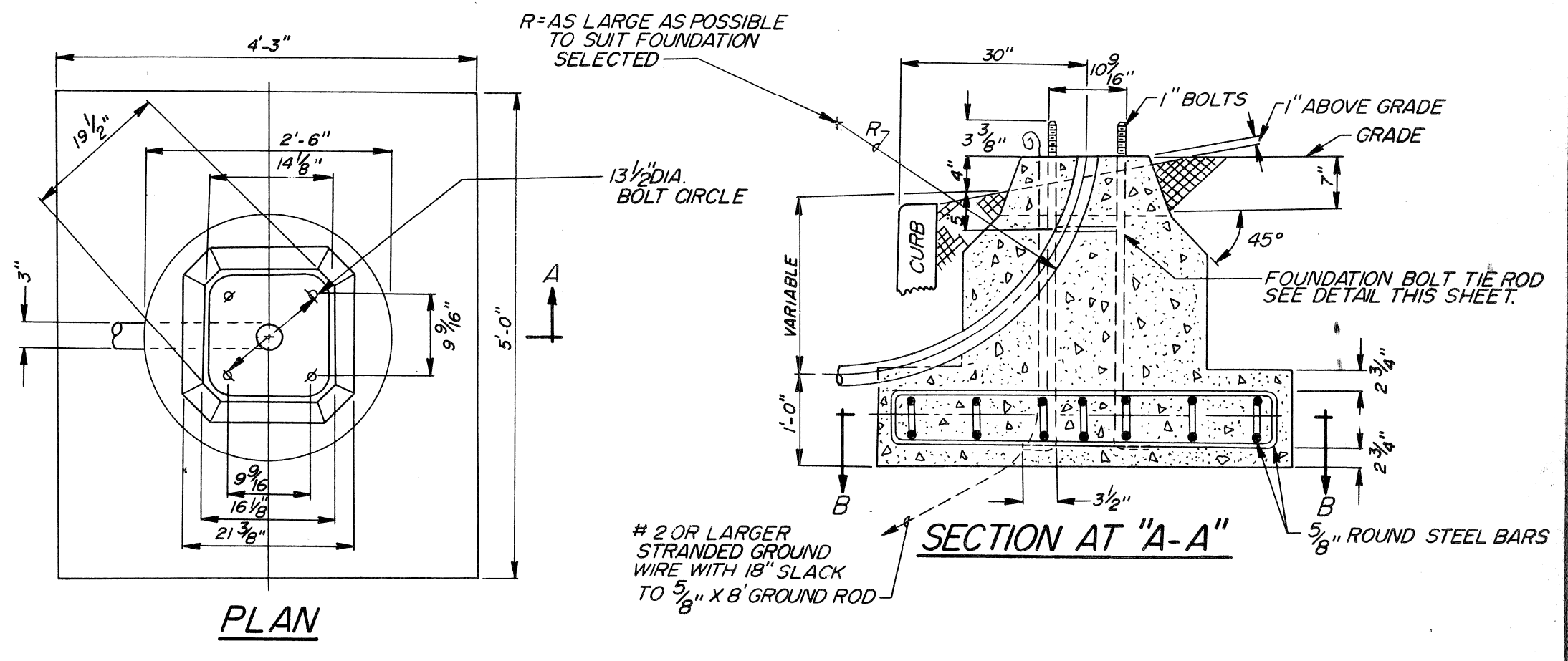
NOTES: MATERIALS

1. TOP, BOTTOM & SIDES TO BE U.S. COR-TEN REPUBLIC 50 OR EQUAL.
2. DOOR FASTENING SCREW TO BE ASTM SERIES 300 STAINLESS STEEL MIN. 1/4" - 20 NC. HEX HEAD CAP SCREW ONLY.
3. THE DOOR FASTENING METHOD SHALL USE ONLY ONE HEX HEAD CAP SCREW, SERIES 300 STAINLESS STEEL. MULTIPLE SCREWS WILL NO LONGER BE ALLOWED TO INSURE PROPER FIELD INSTALLATION AND OPERATION.

BASE PLATE SHALL HAVE THE MAX CUTAWAY AS SHOWN & STILL DEVELOP FULL REQUIRED STRENGTH.



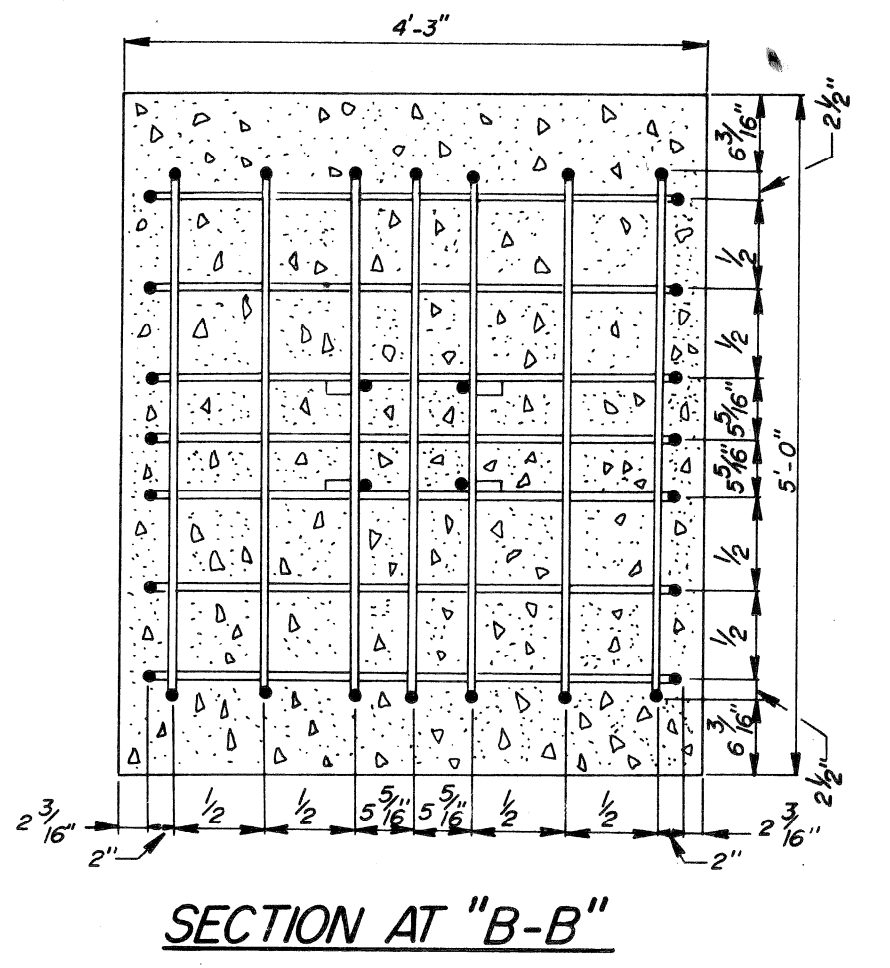
ANCHOR BASE STD. FOUNDATION
N.T.S.



SPECIAL FOUNDATION
N.T.S.

THERE SHALL BE NO EXTRA PAYMENT FOR SPECIAL FDN.
(TO BE PAID FOR AS A NORMAL ST. LTG. STD. FDN. INSTALLATION)

L	W	T
5'-0"	4'-3"	1'-0"
4'-6"	3'-6"	1'-6"
4'-0"	3'-3"	2'-0"
3'-9"	3'-0"	2'-6"
3'-4"	3'-0"	3'-0"



SECTION AT "B-B"

DATE	DESCRIPTION	APPROVED BY

3 HARPER AVE. - CADIEUX AVE.
WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
ANCHOR BASE ST. LTG. STD. (CODE 009-00) DETAILS

SHEET 32 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

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

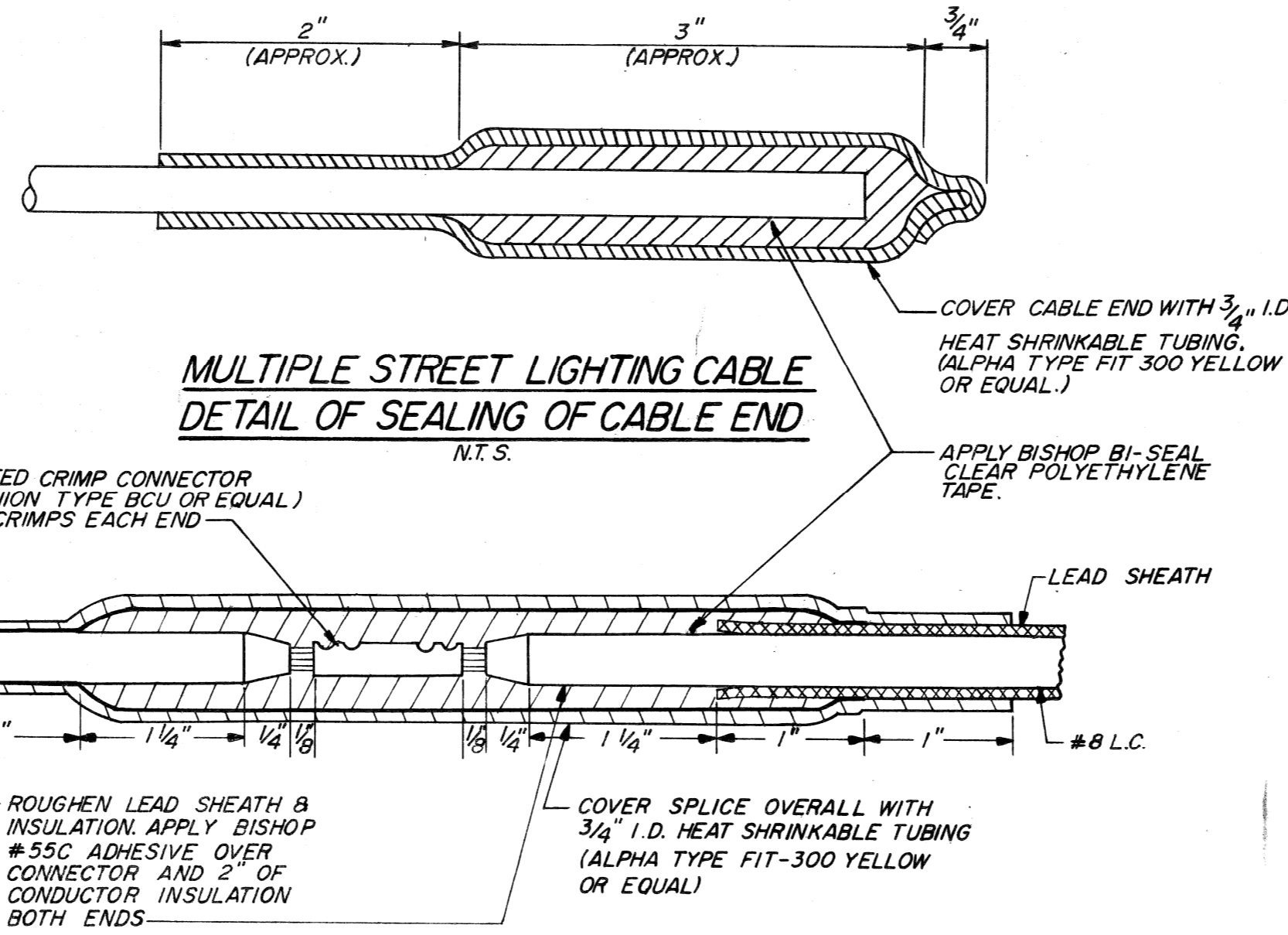
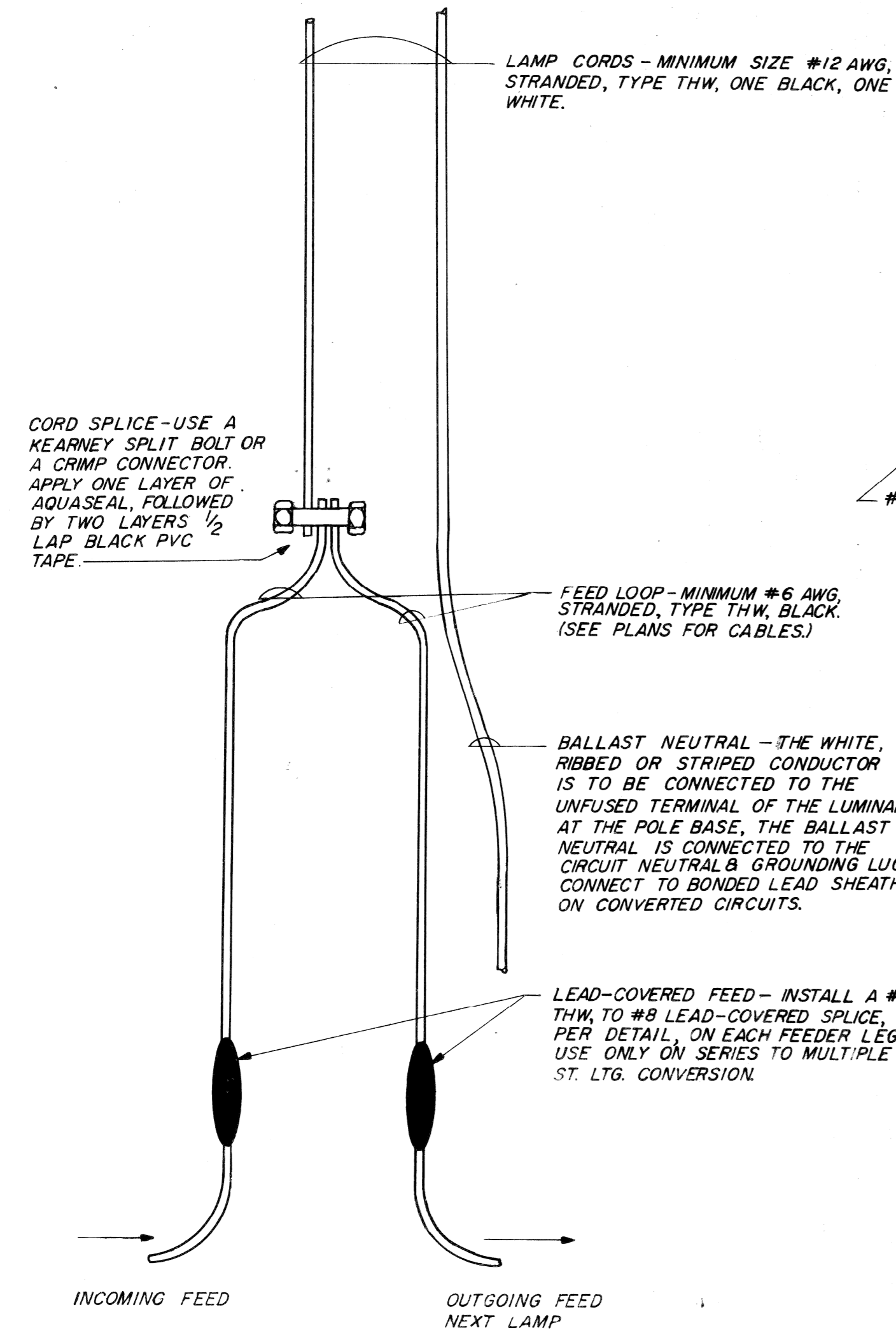
DRAWN BY CEA
CHECKED BY
APPROVED BY
DATE 9-16-76

PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH. 48221
DRAWING NO. 8 OF 30
FILE NO. CEA FED AID 9

CHECKED BY
APPROVED BY

PUBLIC LIGHTING COMMISSION
CITY OF DETROIT

FILE NO. 49-0573
SHEET NO. 8 OF 30
DATE 9-16-76

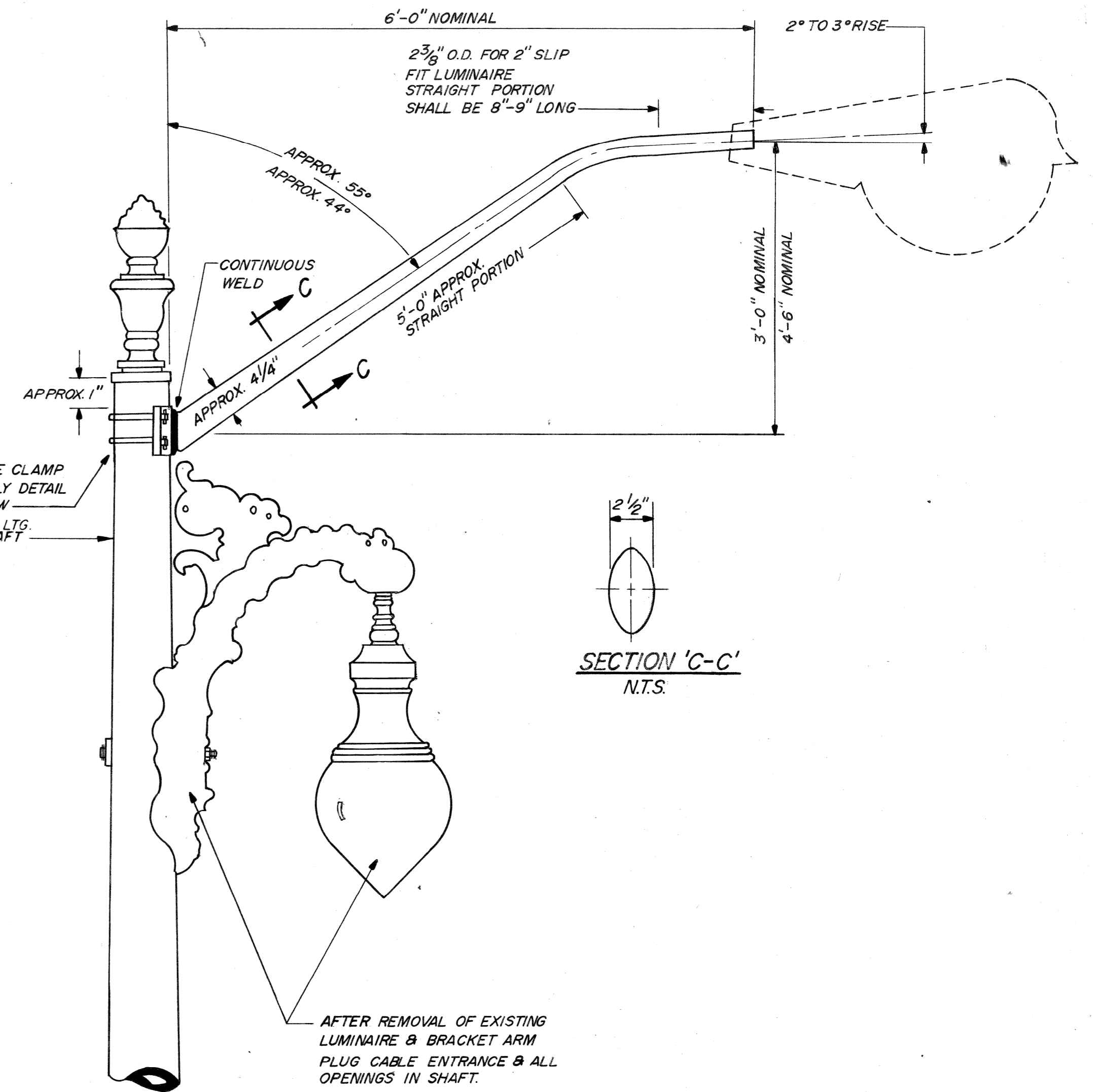


SUBSTATION NAMES ON IDENTIFICATION TAGS SHALL BE SPELLED AS FOLLOWS

ATWTR.	MCRDY.
BL	MTRSE.
BUTZL.	PAL. PK.
CNFLD.	PHILP.
CONVR.	PORTER.
CLUSTER.	STANTN.
GRNFD.	STONE.
HUDSN.	TRNTY.
J. CAMP.	TRBLY.
JOY RD.	TURNR.
L.A. BEL.	VERNIR.
LTHRP.	WALTN.
LUDDN.	WARRN.
MAPLE.	WD. TER.

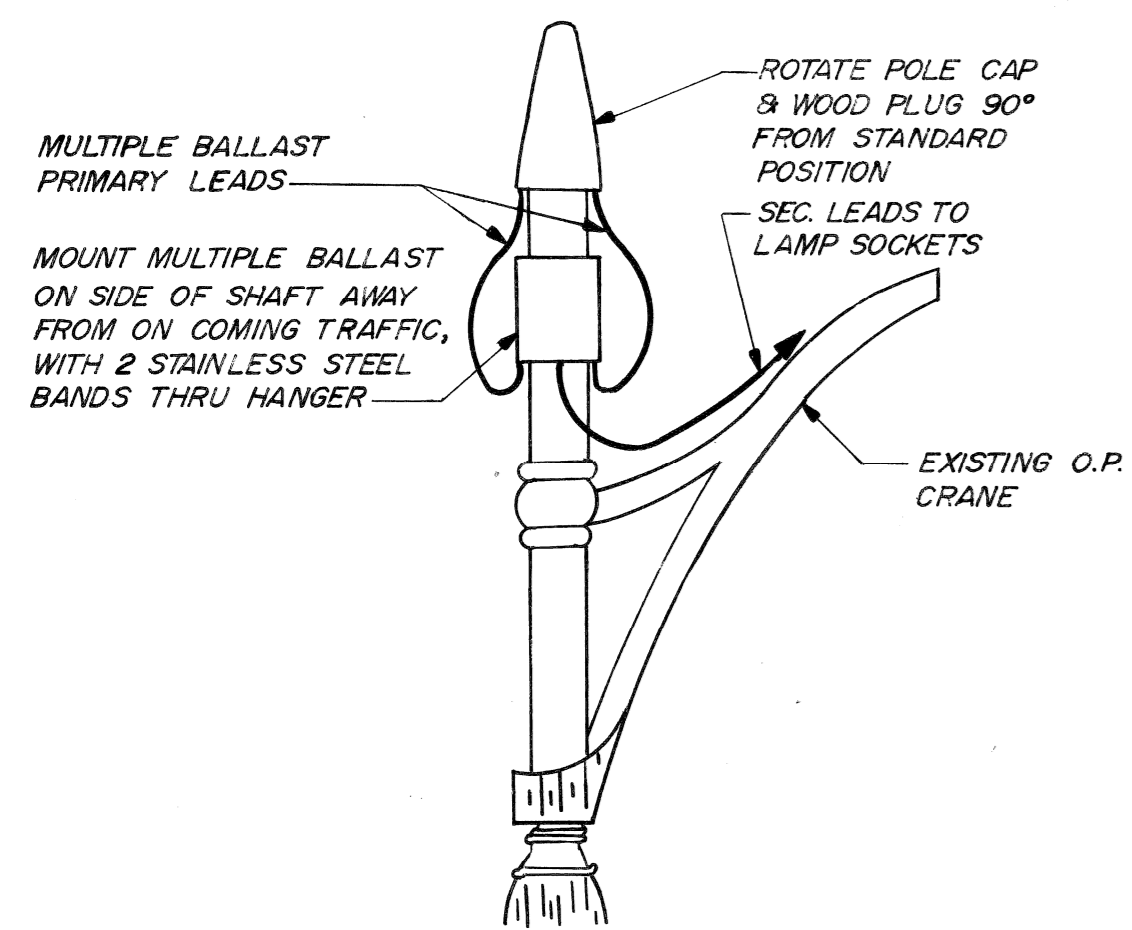
- COLOR**
- YELLOW - MULTIPLE STREET LIGHTING, EITHER PLASTIC OR LEAD CABLE.
 - BLUE - SERIES STREET LIGHTING.
 - GREEN - COMMUNICATIONS, PILOT WIRE AND SUPERVISORY CABLES.
 - WHITE - TRAFFIC SIGNALS.
 - ORANGE - CONVENIENCE OUTLETS, COMFORT STATION FEEDS, MARINA POWER, ETC.
- WRITTEN INFORMATION SHOULD INCLUDE CIRCUIT NUMBER, PHASE (A1, B3, etc.), VOLTAGE PRESENT (480/960, 120, 480/277, 6.6 SERIES, etc.), ADDITIONAL INFORMATION AS REQUIRED.

CABLE MARKING TAG (PLASTIC)
N.T.S.

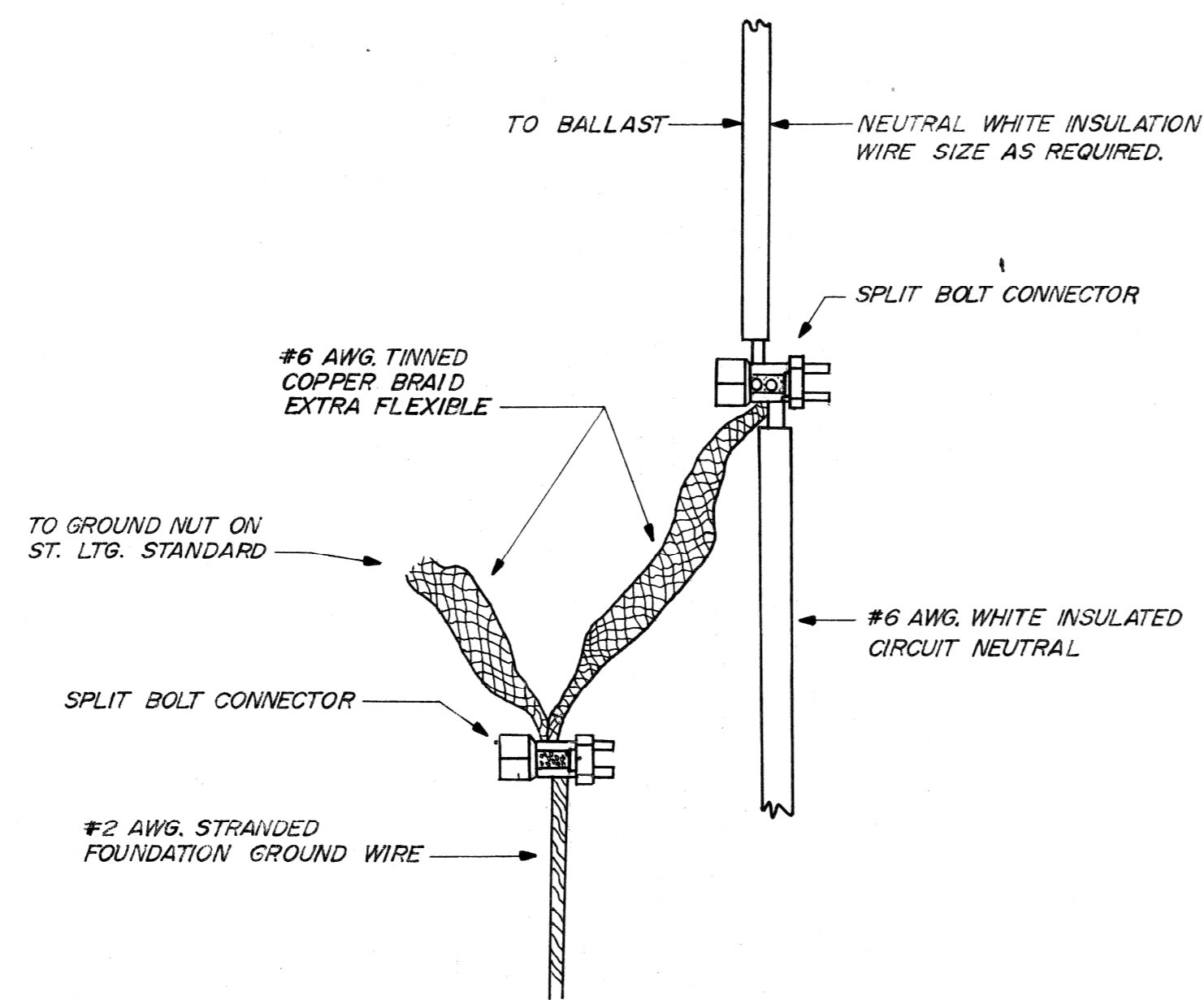


CLAMP ON BRACKET ARM ELEVATION
N.T.S.

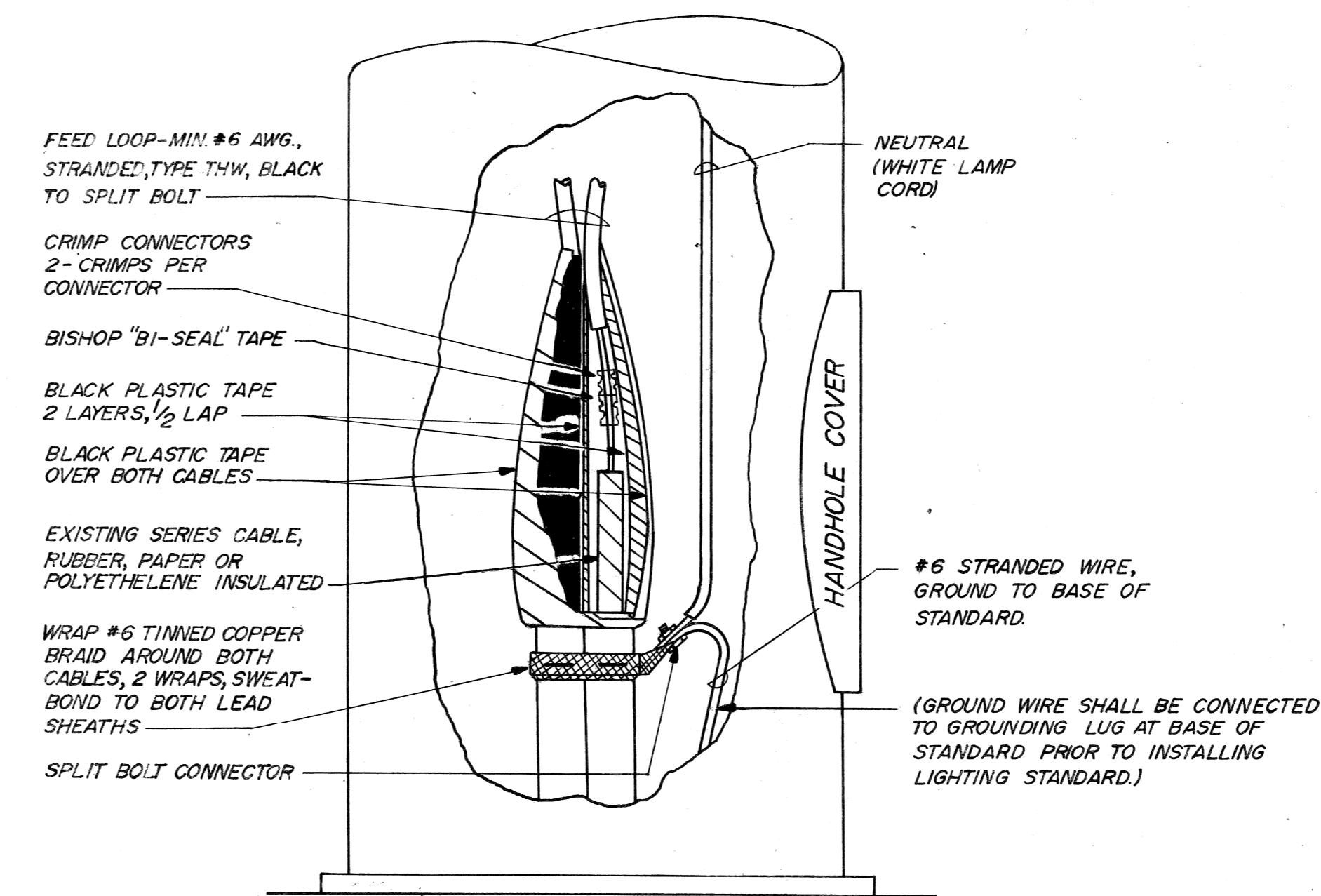
MULTIPLE STREET LIGHTING CONNECTION IN POLE BASE
N.T.S.



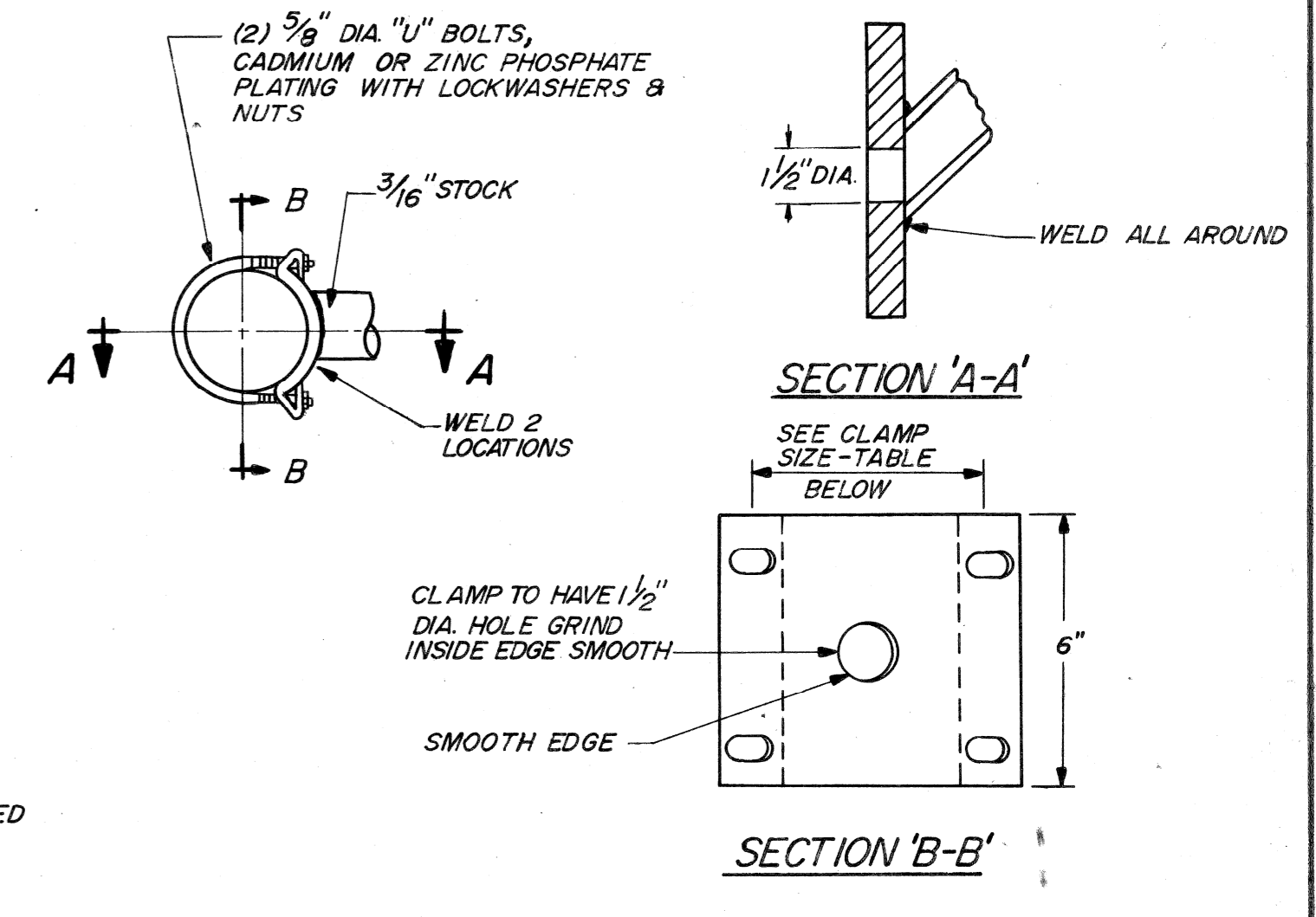
O.P. CONVERSION TO MERCURY VAPOR DETAIL "C"
N.T.S.



GROUND CONNECTION
N.T.S.



SERIES-TO-MULTIPLE LIGHTING CONVERSION POLE BASE CONNECTIONS
N.T.S.



CLAMP SIZE TABLE

TYPE	POLE DIAMETER
A	3.6" - 4.5"
B	6.1" - 6.9"
C	7.5" - 8.5"

DATE	DESCRIPTION	CHKD. BY
		6

**HARPER AVE. - CADIEUX AVE.
WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT**

MULT. ST. LTG. CABLE CONNECTIONS, CLAMP-ON ARM & MISC. DETAILS

SHEET 33 OF 54 SHEETS

CONTRACT NO.

JOB NO. 10012A

DATE 10-7-76

CITY OF DETROIT

CITY ENGINEERING DIVISION
E.P.M.D.

DRAWN BY: CEA

CHECKED BY: [Signature]

APPROVED BY: [Signature]

DATE 9-16-76

PLAN PREPARED BY
CONSULTING ENGINEERING ASSOCIATES INC.
ENGINEERING CONSULTANTS

16580 WYOMING DETROIT, MICH. 48221

9 OF 30

CEA FED AID 9

CHECKED BY:

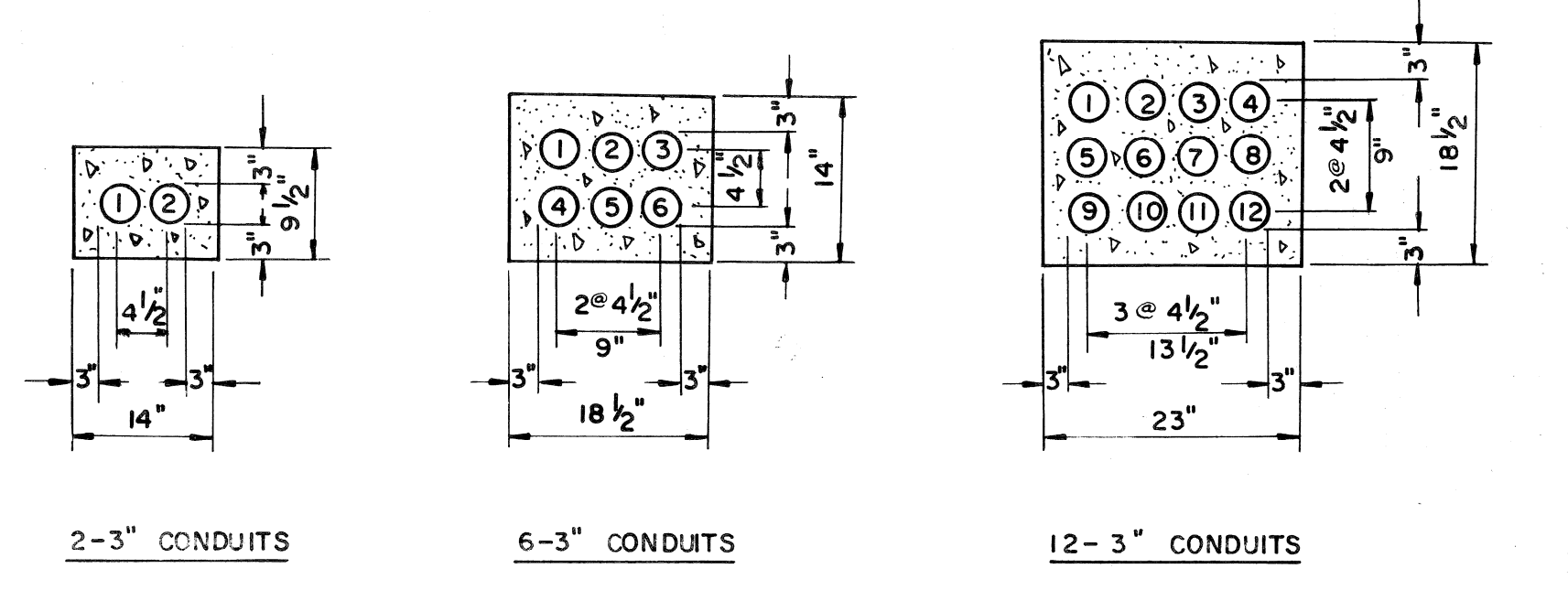
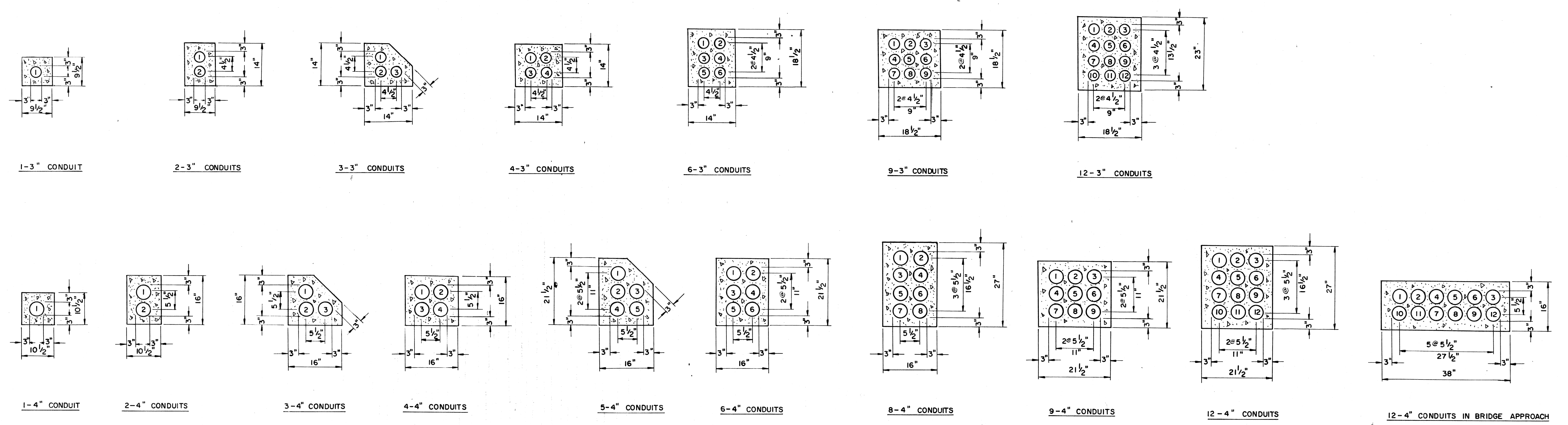
APPROVED BY:

PUBLIC LIGHTING COMMISSION
CITY OF DETROIT

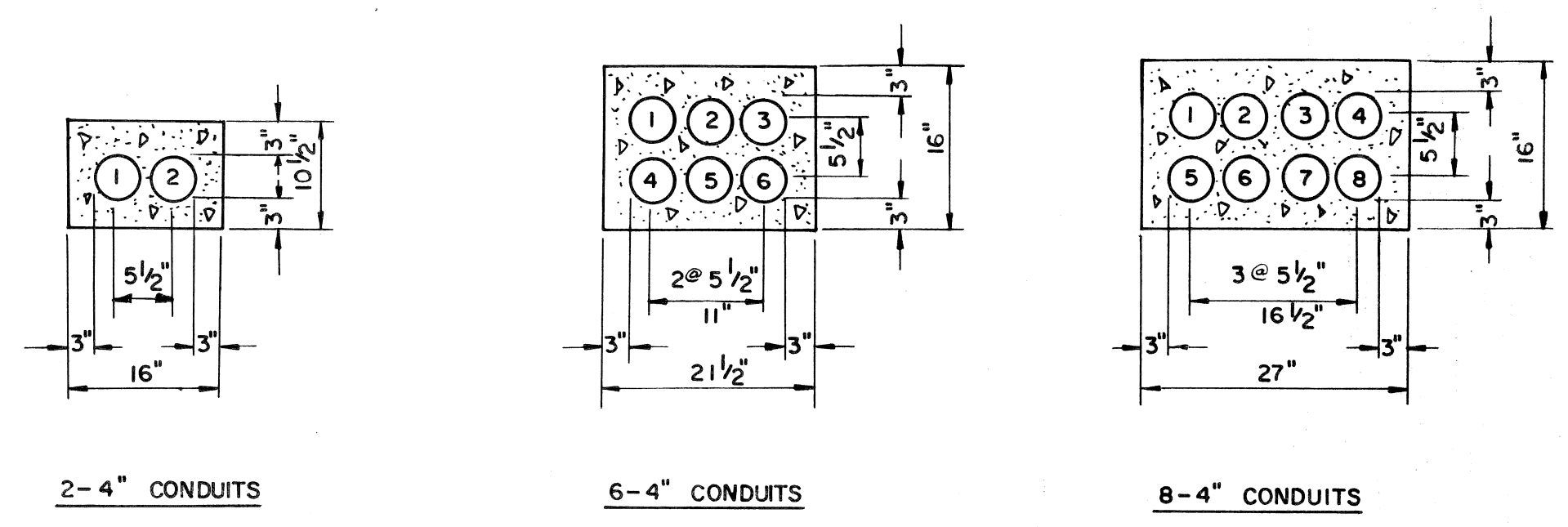
FILE NO. 49-0573

SHEET NO. 9 OF 30

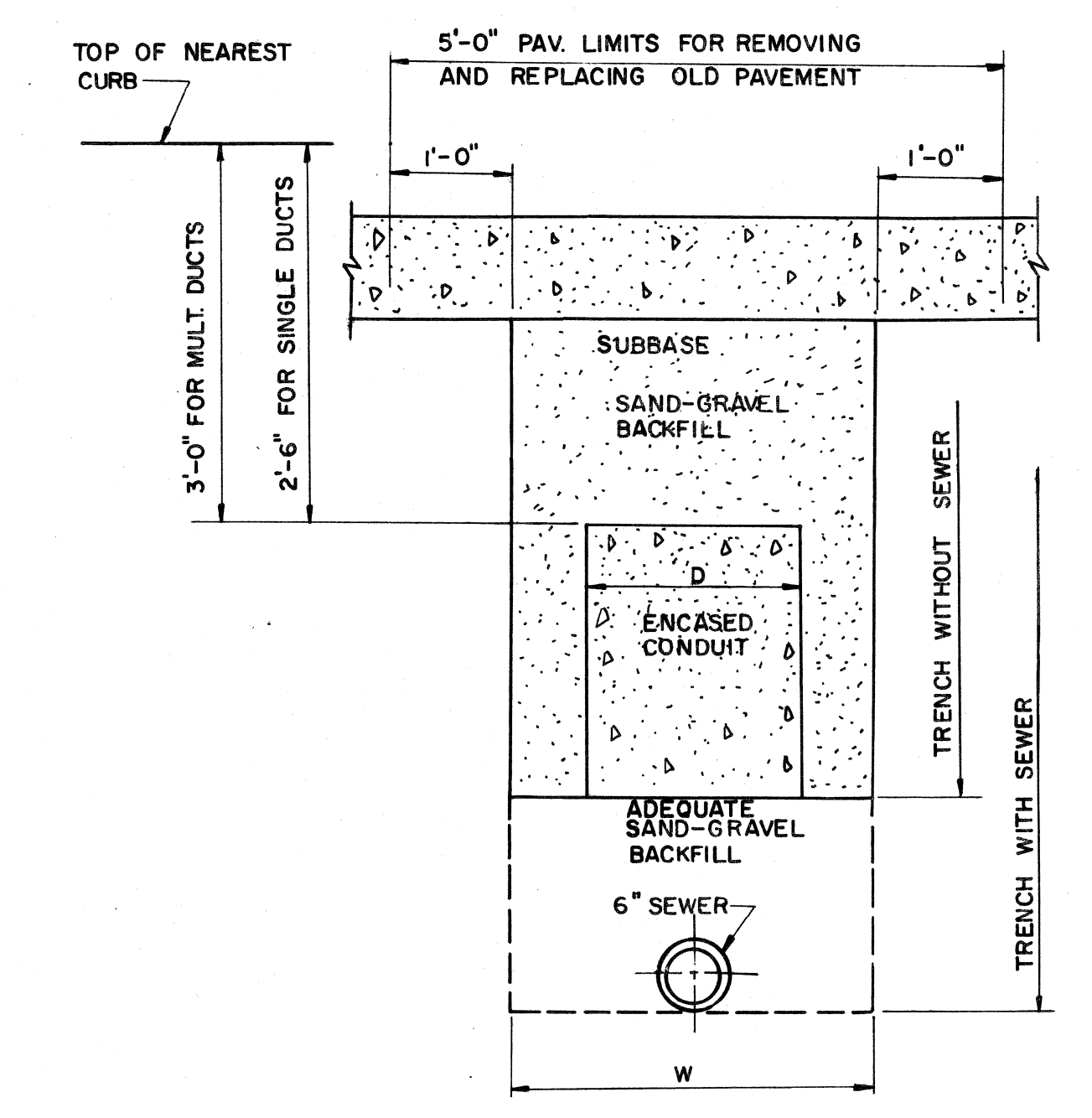
DATE 9-16-76



ALTERNATE ARRANGEMENT OF 3\"/>



ALTERNATE ARRANGEMENT OF 4\"/>



TYPICAL SECTION OF TRENCH
N.T.S.

NOTE:
PREFERRED TRENCH WIDTH "W"
NOT WIDER THAN CONDUIT
ENCASEMENT WIDTH "b"

DATE	DESCRIPTION	CHKD. BY
		12

HARPER AVE - CADIEUX AVE.
WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
MISCELLANEOUS CONDUIT SECTIONS
DETAILS

SHEET 34 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

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

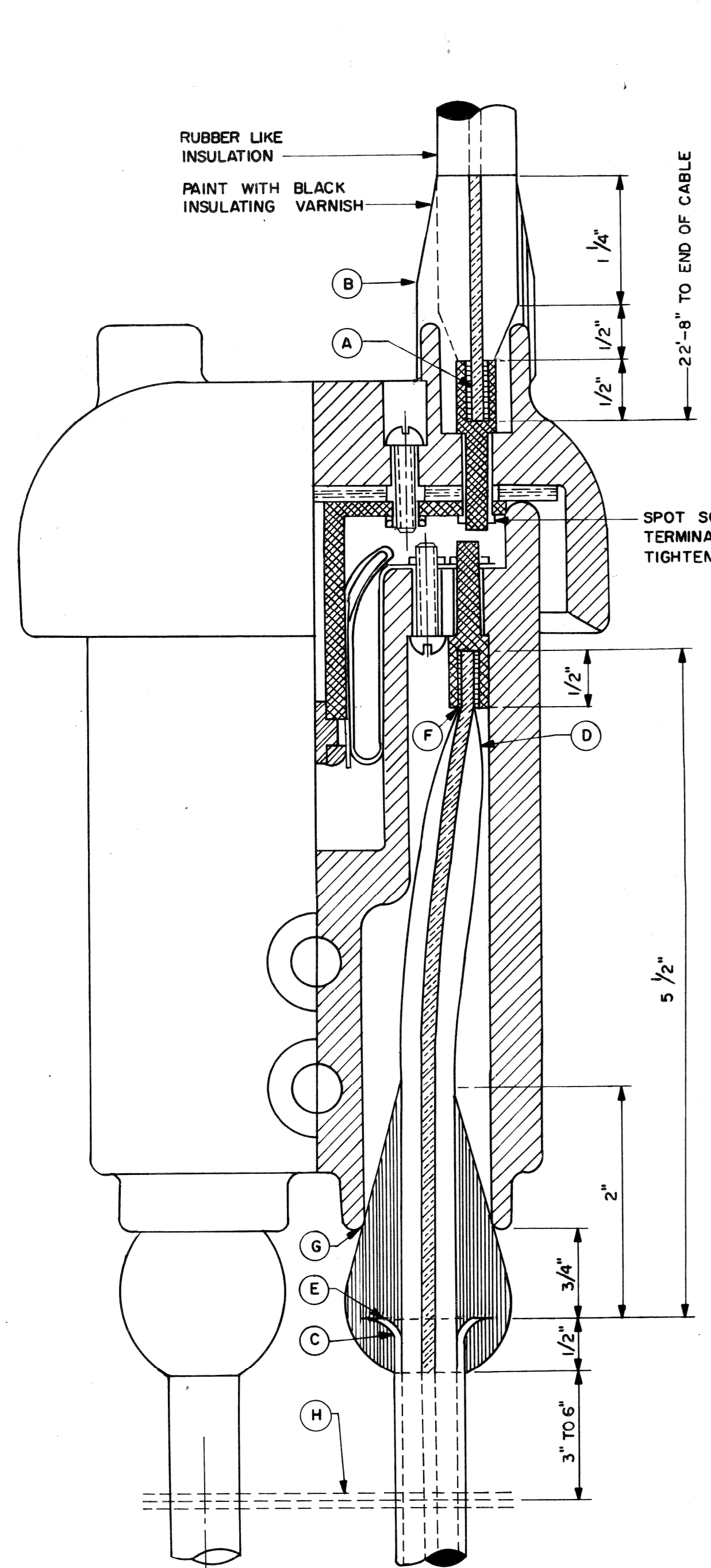
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DATE 9-16-76

PLAN PREPARED BY
CONSULTING ENGINEERING ASSOCIATES INC.
ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH. 48221
DRAW. NO. 10 OF 30
FILE NO. CEA FED AID 9

CHECKED BY	APPROVED BY	FILE NO.
		CEA FED AID 9

PUBLIC LIGHTING
COMMISSION
CITY OF DETROIT

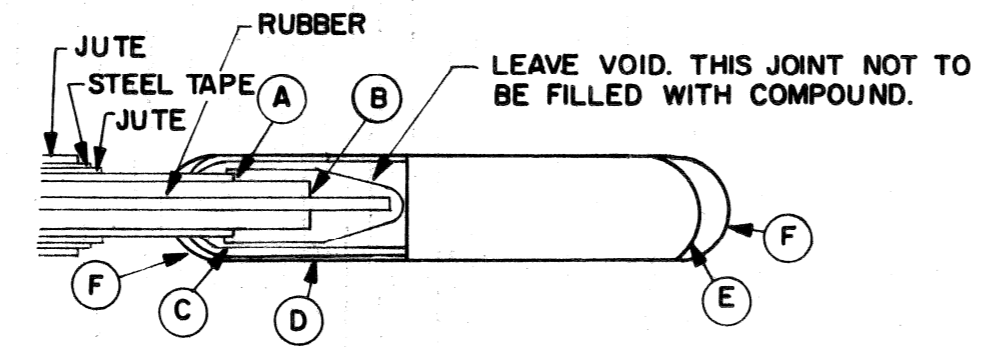
FILE NO. 49-0573
SHEET NO. 10 OF 30
DATE 9-16-76



CONNECTION FOR SERIES CUTOUT
N.T.S.

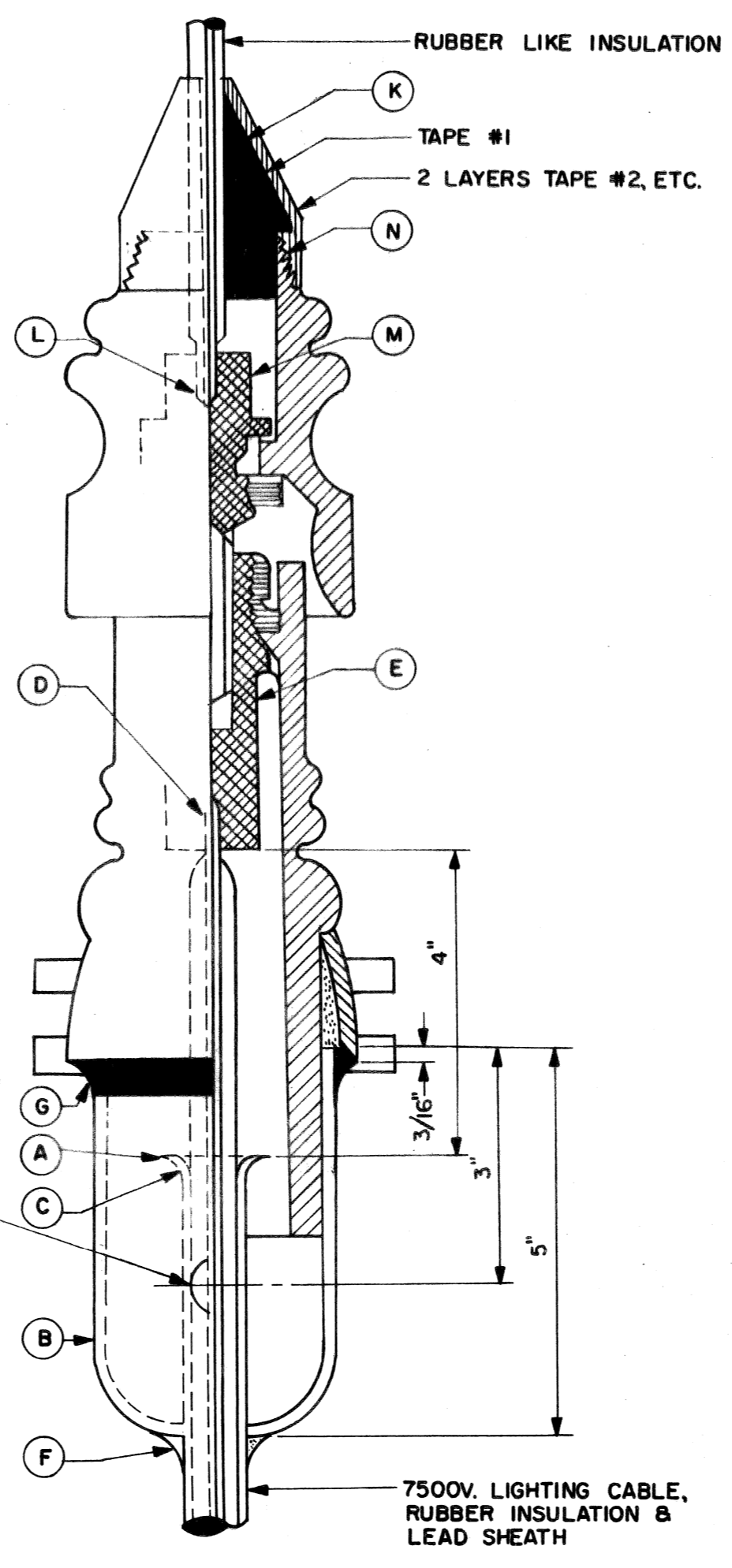
- A- SWEAT TERMINAL & PENCIL RUBBER INSULATION TO FIT SNUGLY IN PORCELAIN CAP OPENING SO THAT THE CONNECTOR NUT IS TIGHTENED, THE OPENING IS COMPLETELY & TIGHTLY FILLED.
- B- BUILD UP WITH #1 TAPE AS SHOWN, & COVER WITH 2 LAYERS, HALF LAP, WITH #2 TAPE. PAINT WITH ONE COAT OF BLACK INSULATING VARNISH.
- C- USE TUBE CUTTER TO SCORE LEAD SHEATH & CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING.
- D- CUT INSULATION & PENCIL SMOOTHLY.
- E- BELL LEAD SHEATH. REMOVE TAPE COMPLETELY, INCLUDING AS MUCH AS CAN BE REMOVED INSIDE OF BELL. FILL SHEATH CAVITY WITH RUBBER CEMENT.
- F- SWEAT CONDUCTOR INTO TERMINAL.
- G- APPLY TAPE #1 OVER BELL AS SHOWN TO FORM A TIGHT FIT BETWEEN INSULATION AND PORCELAIN AT "G" WHEN NUT IS TIGHTENED. COVER TAPE #1 WITH 2 LAYERS OF TAPE #2 APPROX. 3/4" FROM END OF TAPE #1.
- H- #18 SERVICE WIRE OR BRAID 4 WRAPS BETWEEN CABLES & SWEATED TO LEAD SHEATH FOR BOND TIE TO GROUND WIRE.

NOTES:
1. FOR PARKWAY CABLE, STRIP JUTE & STEEL TAPE DOWNWARD TO DUCT ENTRANCE.
2. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A LIST OF ALL SPLICING MATERIALS HE PROPOSES TO USE WITH SUPPORTING DATA THAT THE MATERIAL IS SUITABLE FOR THE APPLICATION AS SHOWN ON THE DRAWINGS.

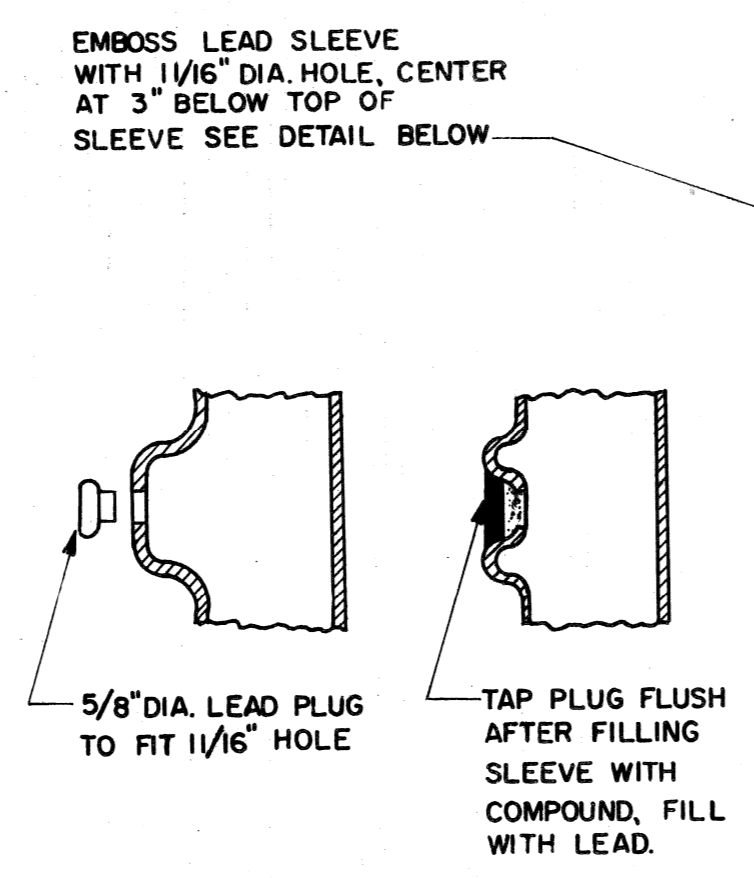


#8 LIGHTING CABLE DEAD END CAP

- A- SCORE LEAD SHEATH WITH TUBE CUTTER & CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING.
- B- CUT INSULATION
- C- OVERLAP WITH TAPE #2 APPROXIMATELY 1/4" FROM END OF LEAD OF LEAD SHEATH, AT LEAST 2 LAYERS OF TAPE AT THIS POINT.
- D- 1/4" x 8" x 1/8" LEAD SLEEVE
- E- SHAPE AND BEAT LEAD SLEEVE TO FORM A CLOSED END.
- F- CADMIUM ALLOY WIPING METAL. DO NOT POUR METAL FOR WIPE. USE TORCH AND FINGER WIPE WITH MINIMUM OF HEAT.



CONNECTIONS FOR 1/4" 7500V. POTHEAD
N.T.S.



EMBOSSED LEAD SLEEVE WITH 1/16" DIA. HOLE, CENTER AT 3" BELOW TOP OF SLEEVE SEE DETAIL BELOW.

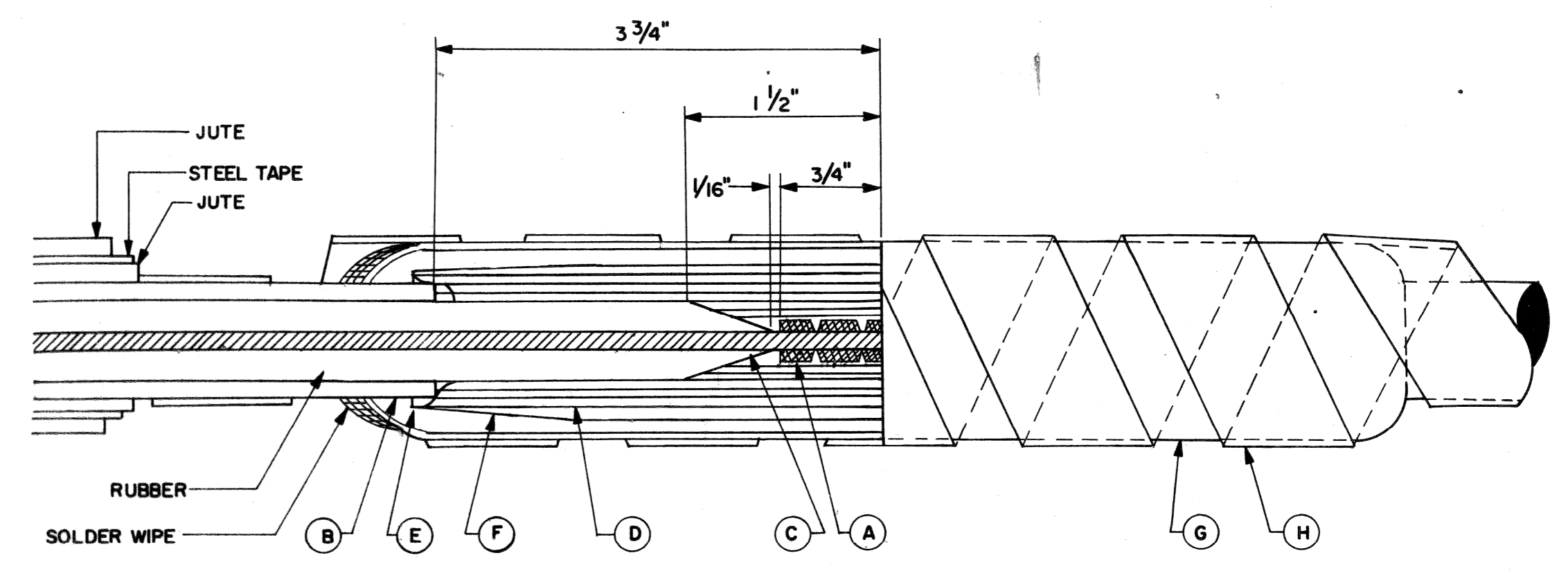
5/8" DIA. LEAD PLUG TO FIT 1/16" HOLE

TAP PLUG FLUSH AFTER FILLING SLEEVE WITH COMPOUND, FILL WITH LEAD.

- A- USE TUBE CUTTER TO SCORE LEAD SHEATH AND CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING 4" OF INSULATION TO REMAIN, NOT INCLUDING BARED CONDUCTOR.
- B- FORM BOTTOM OF EMBOSSED SLEEVE & SLIP OVER CABLE, HOLE IN FRONT.
- C- BELL LEAD SHEATH, REMOVE TAPE FROM INSULATION, INCLUDING AS MUCH AS POSSIBLE FROM WITHIN BELLED SHEATH.
- D- SWEAT CONDUCTOR INTO TERMINAL & PENCIL INSULATION SMOOTHLY FOR 3/4".
- E- MOUNT TERMINAL FIRMLY INTO PORCELAIN.
- F- PUSH SLEEVE INTO CAST IRON COLLAR AND WIPE SMOOTHLY TO LEAD SHEATH.
- G- INVERT & FILL JOINT BETWEEN IRON COLLAR AND SLEEVE WITH EPOXY RESIN.
- H- LAY POTHEAD HORIZONTAL & FILL COMPLETELY WITH APPROVED COMPOUND.
- I- INSERT LEAD PLUG INTO EMBOSSED HOLE, TAP FLUSH & FILL WITH LEAD.
- J- TRAIN CABLE & MOUNT POTHEAD ON CROSS ARM.
- K- SLIP THE CONE SHAPED RUBBER BUSHING ON THE RUBBER INSULATED CABLE RISER.
- L- SWEAT CONDUCTOR INTO TERMINAL FIRMLY INTO THE POTHEAD CAP.
- M- MOUNT THE TERMINAL FIRMLY INTO THE POTHEAD CAP.
- N- BUILD UP WITH TAPE #1 AND CARRY 2 LAYERS OVER THE CAP TO POINT "N" AS SHOWN. COVER WITH 2 LAYERS TYPE #2 - HALF LAP. PAINT WITH BLACK INSULATION VARNISH.

MATERIAL TYPES

TAPE #1 - CORONA RESISTING HIGH VOLTAGE RUBBER TAPE ONLY.
TAPE #2 - BLACK PLASTIC ELECTRICAL TAPE.

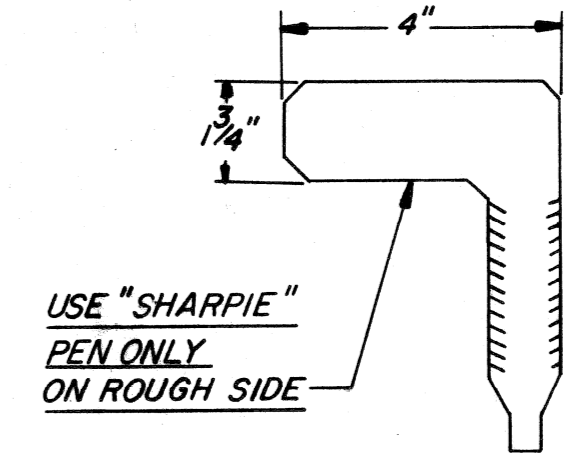


#8 LIGHTING CABLE JOINT
N.T.S.

- A- 1/2" #8 TINNED COPPER SLEEVE, 2 CIRCUMFERENTIAL CRIMPS ON EACH END.
- B- SCORE LEAD SHEATH WITH TUBE CUTTER & CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING.
- C- CUT INSULATION & PENCIL SMOOTHLY AS SHOWN, AFTER REMOVING TAPE.
- D- APPLY TAPE #1 TO APPROXIMATELY 1" DIAMETER OVERALL.
- E- OVERLAP WITH TAPE #1 APPROXIMATELY 1/4" FROM END OF LEAD OF LEAD SHEATH, AT LEAST 2 LAYERS OF TAPE AT THIS POINT.
- F- 2 LAYERS OF TAPE #2 APPLIED HALF LAP.
- G- 1/4" x 8" x 1/8" LEAD SLEEVE.
- H- TWO LAYERS OF TAPE #2 HALF LAP, ON ARMORED PARKWAY CABLE ONLY.

SUBSTATION NAMES ON IDENTIFICATION TAGS SHALL BE SPELLED AS FOLLOWS.

ATWTR.	MCRDY.
BL	MTRSE.
BUTZL.	PAL.PK.
CNFLD.	PHIL.P.
CONN.R.	PORTER.
CUSTER.	STNTN.
GRNFD.	STONE.
HUDSN.	TRNTY.
J.CAMP.	TRBLY.
JOY RD.	TURNR.
L.A. BEL.	VERNR.
LTHRP.	WALTN.
LUDDN.	WARRM.
MAPLE.	WD.TER.

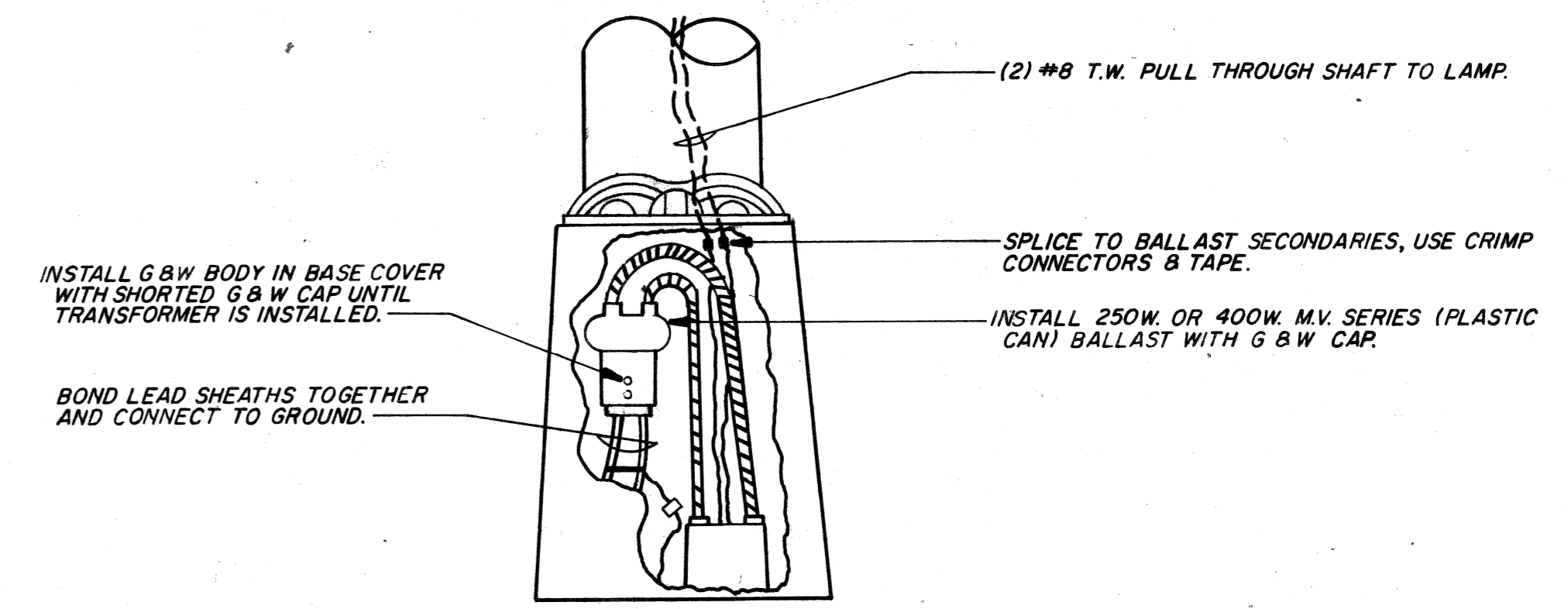


USE "SHARPIE" PEN ONLY ON ROUGH SIDE

COLOR:
YELLOW - MULTIPLE STREET LIGHTING, EITHER PLASTIC OR LEAD CABLE.
BLUE - SERIES STREET LIGHTING.
GREEN - COMMUNICATIONS, PILOT WIRE AND SUPERVISORY CABLES.
WHITE - TRAFFIC SIGNALS.
ORANGE - CONVENIENCE OUTLETS, COMFORT STATION FEEDS, MARINA POWER, ETC.

WRITTEN INFORMATION SHOULD INCLUDE CIRCUIT NUMBER, PHASE (A1, B3, ETC.), VOLTAGE PRESENT (480/960, 120, 480/277, 6.6 SERIES, ETC.) ADDITIONAL INFORMATION AS REQUIRED.

CABLE MARKING TAG (PLASTIC)
SERIES ST. LTG.
N.T.S.



INCANDESCENT TO MERCURY CONVERSION
N.T.S.

DATE	DESCRIPTION	CHGD. BY

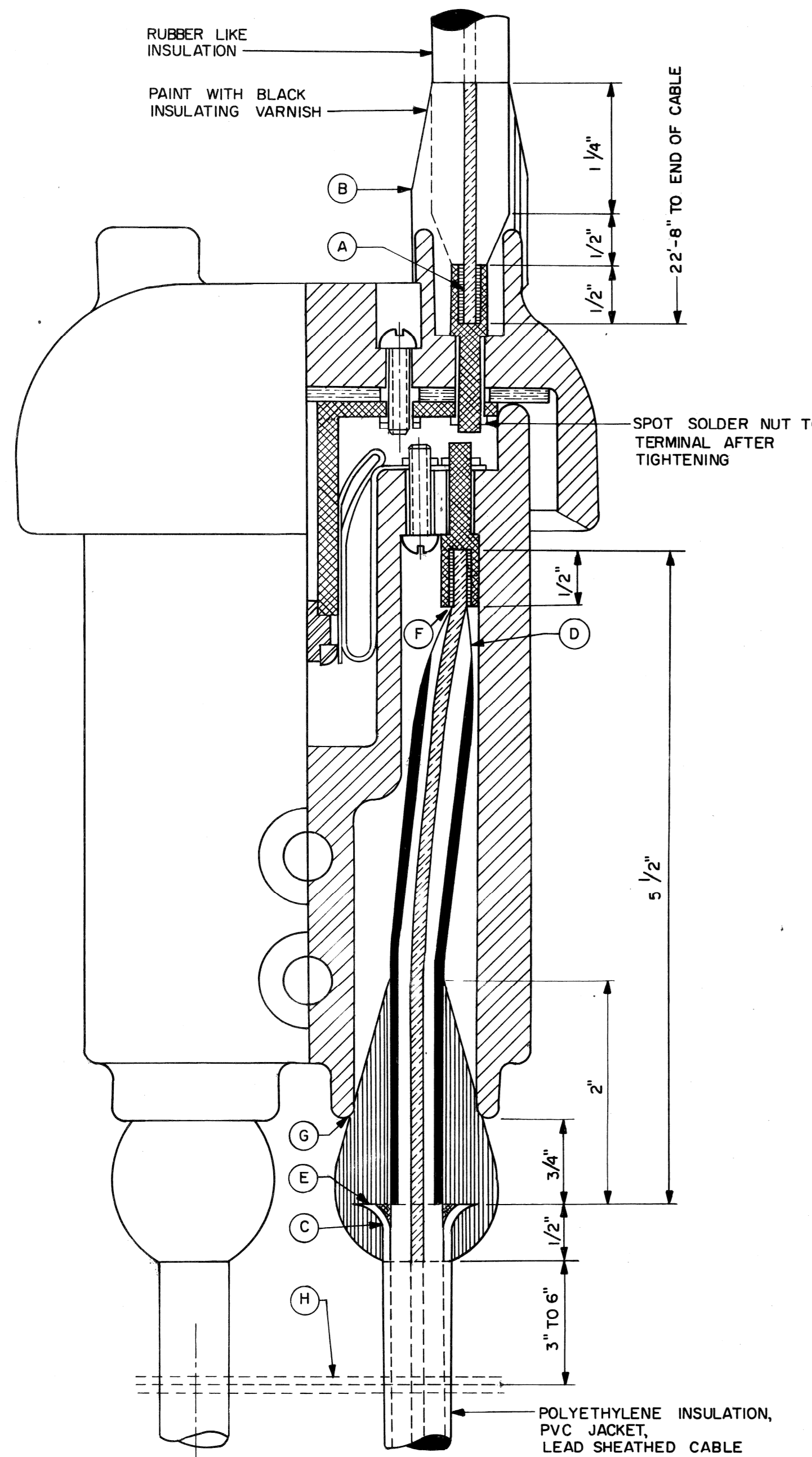
HARPER AVE. - CADIEUX AVE.
WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
RUBBER INSULATED LEAD SHEATHED CABLE SPLICE & CONNECTIONS
DETAILS

SHEET 36 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

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

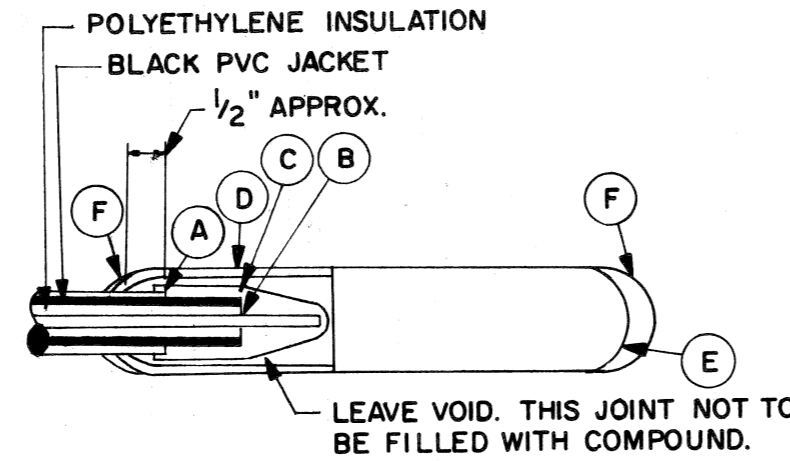
DRAWN BY CEA	PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
CHECKED BY [Signature]	16580 WYOMING DETROIT, MICH. 48221
APPROVED BY [Signature]	FILE NO. CEA FED AID 9
DATE 9-16-76	DRWG. NO. 12 OF 30

PUBLIC LIGHTING COMMISSION CITY OF DETROIT	FILE NO. 49-0573 SHEET NO. 12 OF 30 DATE 9-16-76
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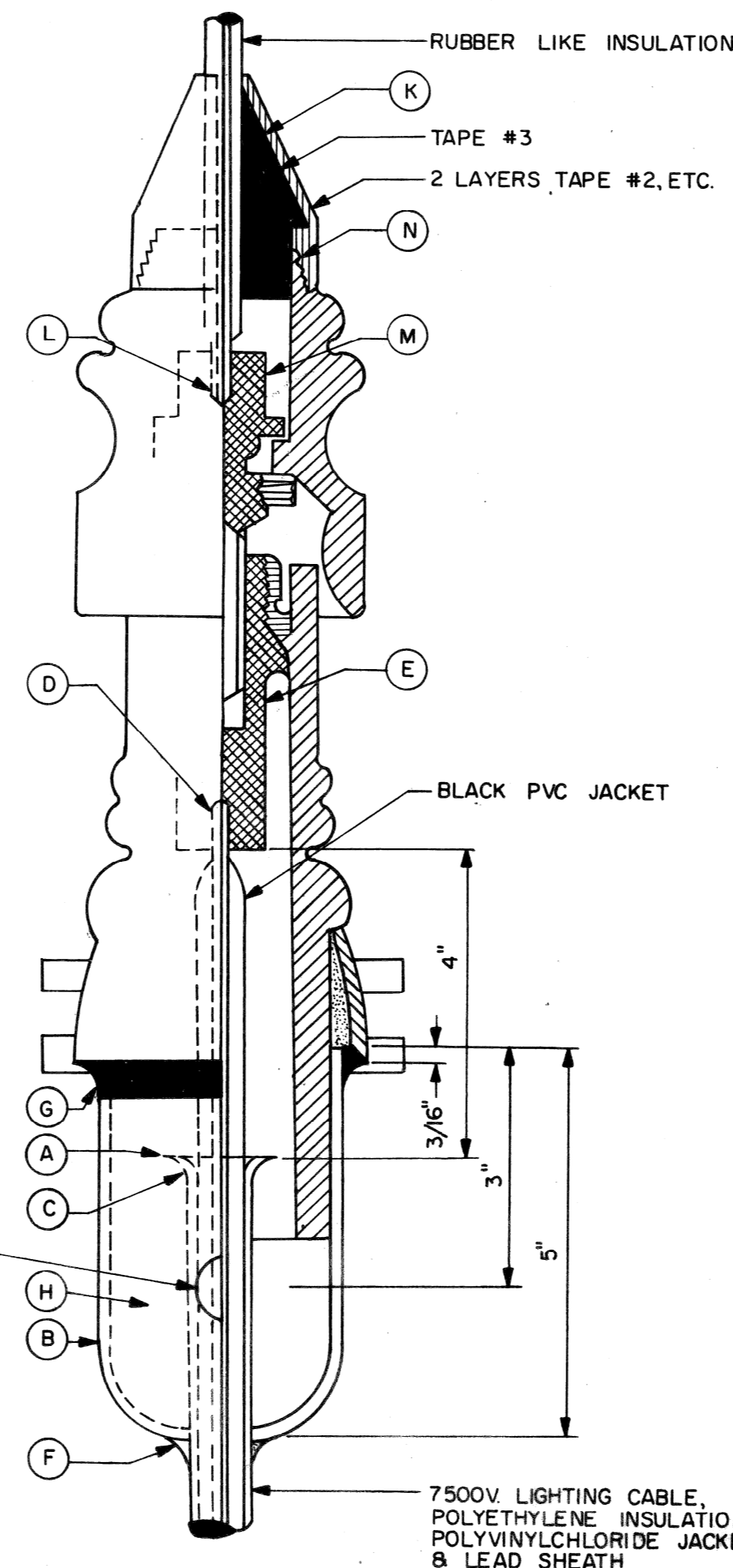
CONNECTION FOR SERIES CUTOUT
N.T.S.

- A - SWEAT TERMINAL & PENCIL INSULATION TO FIT SNUGLY IN PORCELAIN OPENING SO THAT AS NUT IS DRAWN UP TIGHT THE OPENING IS COMPLETELY AND TIGHTLY FILLED.
- B - BUILD UP WITH TAPE #3 AS SHOWN AND COVER WITH 2 LAYERS 1/2" HALF LAP, TAPE #2 PAINT AS NOTED.
- C - USE TUBE CUTTER TO SCORE LEAD SHEATH AND CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING.
- D - CUT INSULATION AND PENCIL SMOOTHLY FOR CONNECTION.
- E - BELL LEAD SHEATH AND FILL SHEATH CAVITY WITH APPROVED ADHESIVE.
- F - SWEAT CONDUCTOR INTO TERMINAL.
- G - APPLY TAPE #1 OVER BELL SUFFICIENTLY TO FORM A TIGHT FIT BETWEEN CABLE AND PORCELAIN. AT G COVER TAPE #1 WITH 2 LAYERS OF TAPE #2 TO ABOUT 3/4" FROM END OF TAPE #1.
- H - #18 SERVICE WIRE OR BRAID, 4 WRAPS BETWEEN CABLES AND SWEATED TO LEAD SHEATH FOR BOND TIE TO GROUND WIRE.



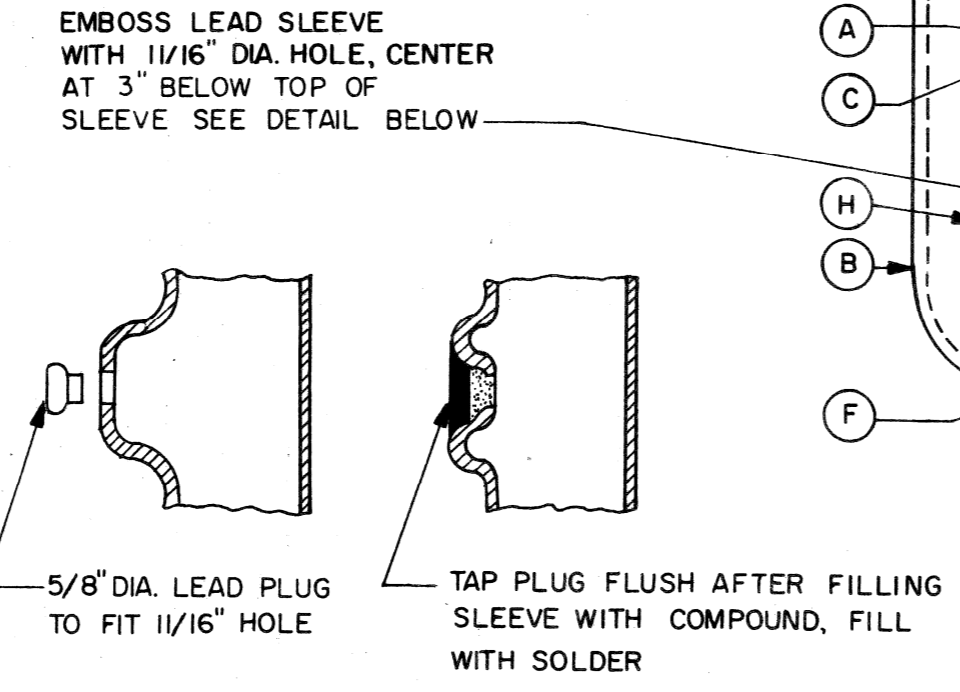
#8 LIGHTING CABLE DEAD END CAP
N.T.S.

- A - SCORE LEAD SHEATH WITH TUBE CUTTER AND CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING.
- B - CUT INSULATION TO EXPOSE 1" OF BARE COPPER.
- C - APPLY 3 LAYERS TAPE #2 OVER PVC JACKET LEAD SHEATH. OVERLAP SHEATH WITH TAPE APPROX. 1/4" & COVER BARE COPPER.
- D - LEAD SLEEVE 8" LONG, 1/8" WALL, 1 1/4" INSIDE DIAMETER.
- E - SHAPE & BEAT LEAD SLEEVE TO FORM A CLOSED END.
- F - CADMIUM ALLOY WIPING METAL. DO NOT POUR METAL FOR WIPE. USE TORCH & FINGER WIPE WITH MINIMUM OF HEAT.



#8 LIGHTING CABLE JOINT
N.T.S.

- A - 1/2" #8 TINNED COPPER SLEEVE, 2 CIRCUMFERENTIAL CRIMPS ON EACH END.
- B - SCORE LEAD SHEATH WITH TUBE CUTTER AND CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING.
- C - CUT INSULATION AND PENCIL SMOOTHLY AS SHOWN.
- D - BELL LEAD SHEATH TO DIAMETER SHOWN AND FILL SHEATH CAVITY WITH APPROVED ADHESIVE.
- E - APPLY TAPE #1 OVER PVC JACKET AND BELLED SHEATH TO A DIA. OF 1" OVERLAP BELLED SHEATH WITH TAPE APPROX. 1/4".
- F - 2 LAYERS OF TAPE #2 APPLIED HALF LAP.
- G - LEAD SLEEVE 10" LONG, 1/8" WALL, 1 1/4" INSIDE DIAMETER.
- H - SPECIAL LOW TEMPERATURE CADMIUM ALLOY WIPING METAL.



CONNECTIONS FOR 1/2 7500V POTHEAD
N.T.S.

- A - USE TUBE CUTTER TO SCORE LEAD SHEATH AND CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING. 4" OF INSULATION TO REMAIN, NOT INCLUDING BARED CONDUCTOR.
- B - FORM BOTTOM OF EMBOSSED LEAD SLEEVE & SLIP OVER CABLE HOLE IN FRONT.
- C - BELL LEAD SHEATH.
- D - SWEAT CONDUCTOR INTO TERMINAL & PENCIL INSULATION SMOOTHLY FOR 3/4".
- E - MOUNT TERMINAL FIRMLY INTO PORCELAIN HOUSING.
- F - PUSH SLEEVE INTO CAST IRON COLLAR AND FINGER WIPE TO CABLE SHEATH WITH LOW TEMPERATURE CADMIUM ALLOY. USE MINIMUM OF HEAT. DO NOT POUR METAL.
- G - INVERT & FILL JOINT BETWEEN IRON COLLAR AND LEAD SLEEVE WITH APPROVED EPOXY RESIN.
- H - LAY POTHEAD HORIZONTAL & FILL WITH APPROVED COMPOUND. DO NOT HEAT COMPOUND MORE THAN NECESSARY FOR POURING.
- I - INSERT 5/8" DIA. LEAD PLUG INTO SLEEVE HOLE, TAP FLUSH, AND FILL IN WITH SOLDER.
- J - TRAIN THE CABLE AND MOUNT THE POTHEAD ON CROSSARM.
- K - SLIP THE CONE SHAPED RUBBER BUSHING ON THE RUBBER INSULATED CABLE RISER.
- L - SWEAT CONDUCTOR INTO TERMINAL 'L' AND PENCIL INSULATION AS SHOWN.
- M - MOUNT THE TERMINAL FIRMLY INTO THE POTHEAD CAP.
- N - BUILD UP WITH TAPE #3 AND CARRY 2 LAYERS OVER THE END OF THE CAP TO POINT 'N' AS SHOWN. COVER WITH 2 LAYERS TAPE #2 HALF LAP. PAINT WITH APPROVED BLACK INSULATING VARNISH.

MATERIAL & SPECIAL PRECAUTIONS

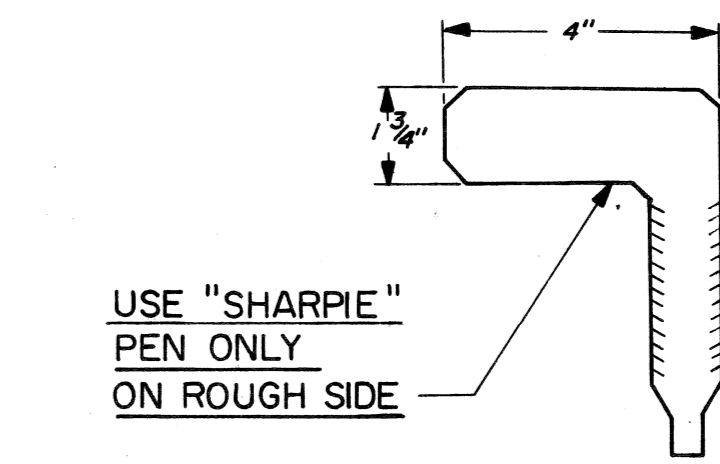
1. TAPE #1: CLEAR POLYETHYLENE TAPE, 0.02" THICK X 3/4" WIDE. TAPE #2: BLACK PVC PLASTIC ELECTRICAL TAPE. TAPE #3: APPROVED A.S.T.M. RUBBER TAPE. ADHESIVE: APPROVED ADHESIVE. FILLING COMPOUND: APPROVED COMPOUND. WIPING METAL: APPROVED LOW TEMPERATURE CADMIUM ALLOY WIPING METAL.
2. USE SMALL HAND TORCH FOR WIPING JOINTS, AT MINIMUM TEMPERATURE.
3. WHEN IT IS NECESSARY TO SPLICE POLYETHYLENE INSULATED CABLE TO RUBBER CABLE, USE ABOVE MATERIALS.
4. APPLY ADHESIVE INSIDE BELLED SHEATH CAVITY ONLY. APPLY TAPE AFTER ADHESIVE HAS BECOME TACKY.

NOTE:

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A LIST OF ALL SPLICING MATERIALS, HE PROPOSES TO USE WITH SUPPORTING DATA THAT THE MATERIAL IS SUITABLE FOR APPLICATION AS SHOWN ON THE DRAWINGS.

SUBSTATION NAMES ON IDENTIFICATION TAGS SHALL BE SPELLED AS FOLLOWS

ATWTR.	MCRDY.
BL.	MTRSE.
BUTZL.	PAL. PK.
CNFLD.	PHILP.
CONNR.	PORTER.
CUSTER.	STNTN.
GRNFD.	STONE.
HUDSN.	TRNTY.
J. CAMP.	TRBLY.
JOY RD.	TURNR.
L.A. BEL.	VERNIR.
LTHRIP.	WALTN.
LUDDN.	WARRN.
MAPLE.	WD. TER.

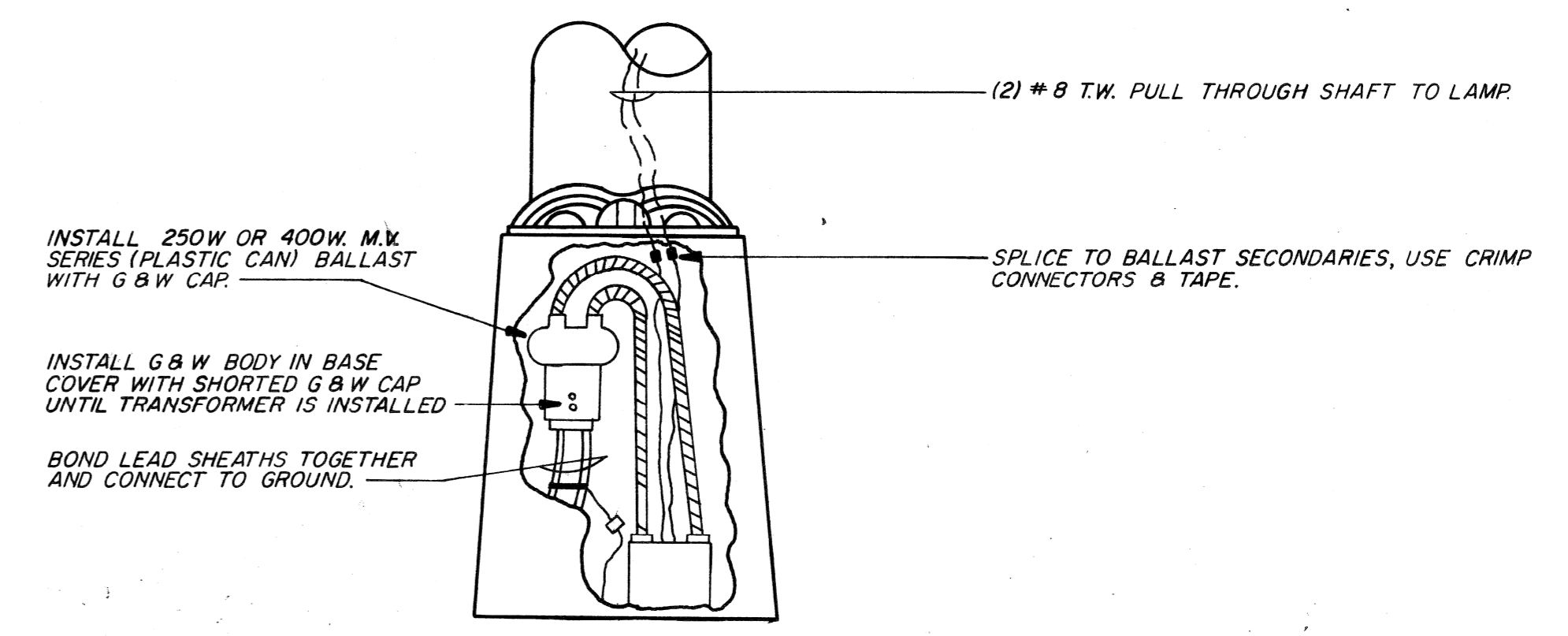


COLOR

- YELLOW - MULTIPLE STREET LIGHTING, EITHER PLASTIC OR LEAD CABLE
- BLUE - SERIES STREET LIGHTING
- GREEN - COMMUNICATIONS, PILOT WIRE AND SUPERVISORY CABLES
- WHITE - TRAFFIC SIGNALS.
- ORANGE - CONVENIENCE OUTLETS, COMFORT STATION FEEDS, MARINAS POWER, ETC.

WRITTEN INFORMATION SHOULD INCLUDE CIRCUIT NUMBER, PHASE (A1, B3, ECT.), VOLTAGE PRESENT (480/960, 120, 480/277, 6.6 SERIES, ECT.) ADDITIONAL INFORMATION AS REQUIRED.

CABLE MARKING TAG (PLASTIC)
SERIES ST. LTG.
N.T.S.



INCANDESCENT TO MERCURY CONVERSION
N.T.S.

DATE	DESCRIPTION	CHRD. BY

22
HARPER AVE. - CADIEUX AVE.
WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
POLYETHYLENE INSULATED, POLYVINYLCHLORIDE JACKETED, LEAD SHEATHED CABLE CONNECTION SPECIFICATIONS
DETAILS

SHEET 37 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

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

DRAWN BY CEA	PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
CHECKED BY Ep	16580 WYOMING DETROIT MICH. 48221
APPROVED BY	FILE NO. CEA FED AID 9
DATED 9-16-76	DRWG. NO. 13 OF 30

CHECKED BY	PUBLIC LIGHTING COMMISSION CITY OF DETROIT	FILE NO. 49-0573 SHEET NO. 13 OF 30 DATE 9-16-76
APPROVED BY		

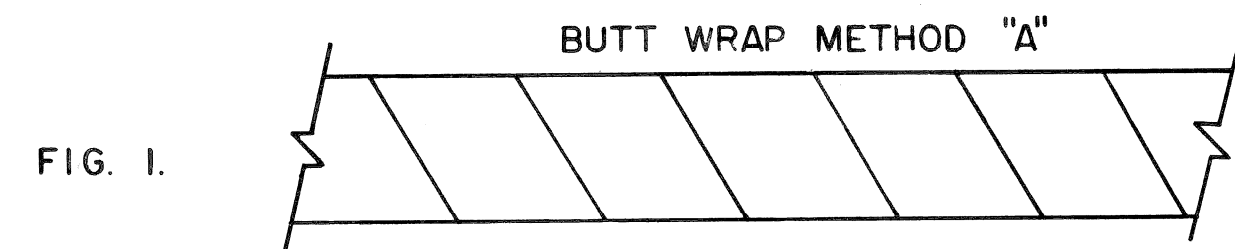


FIGURE 1.
FELTED ASBESTOS INITIAL WRAP BUTT WRAP.

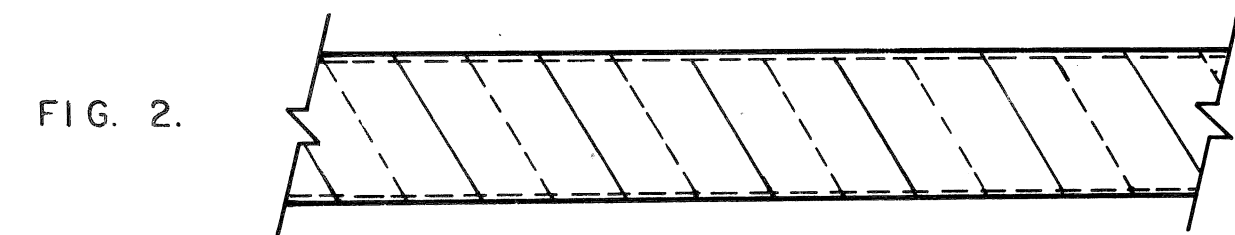


FIGURE 2.
SECOND WRAP FLAME RETARDANT ELASTOMER
OFFSET BUTT WRAP.

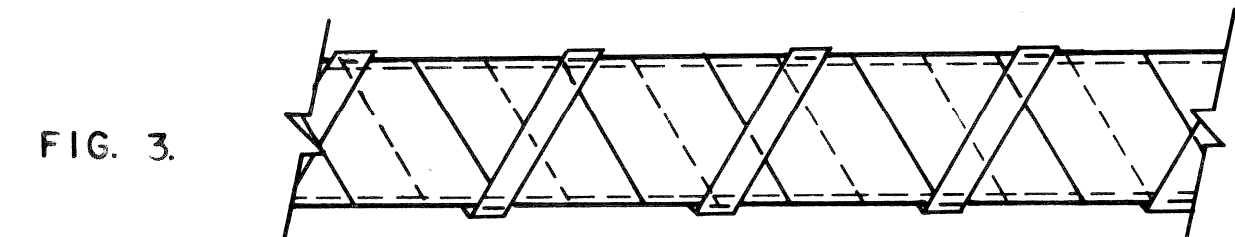


FIGURE 3.
RANDOM WRAP OUTER LAYER WITH A PRESSURE
SENSITIVE FIBERGLASS ADHESIVE TAPE TO
PREVENT UNRAVELLING

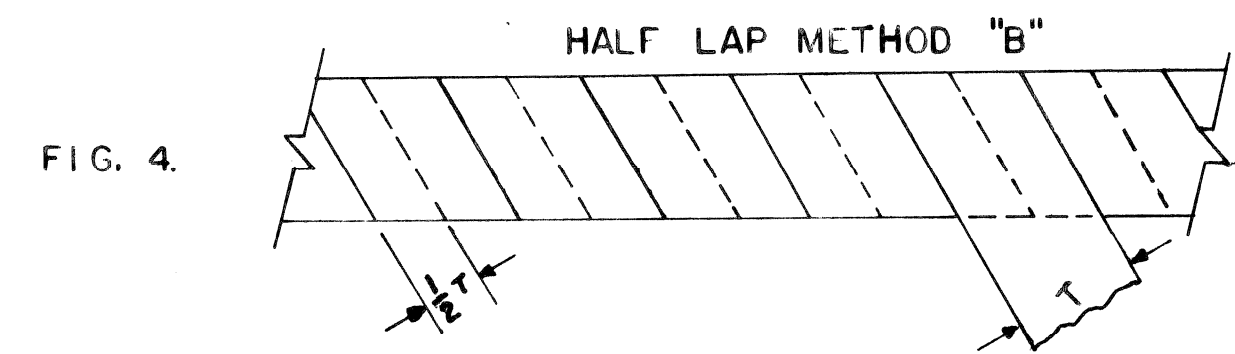
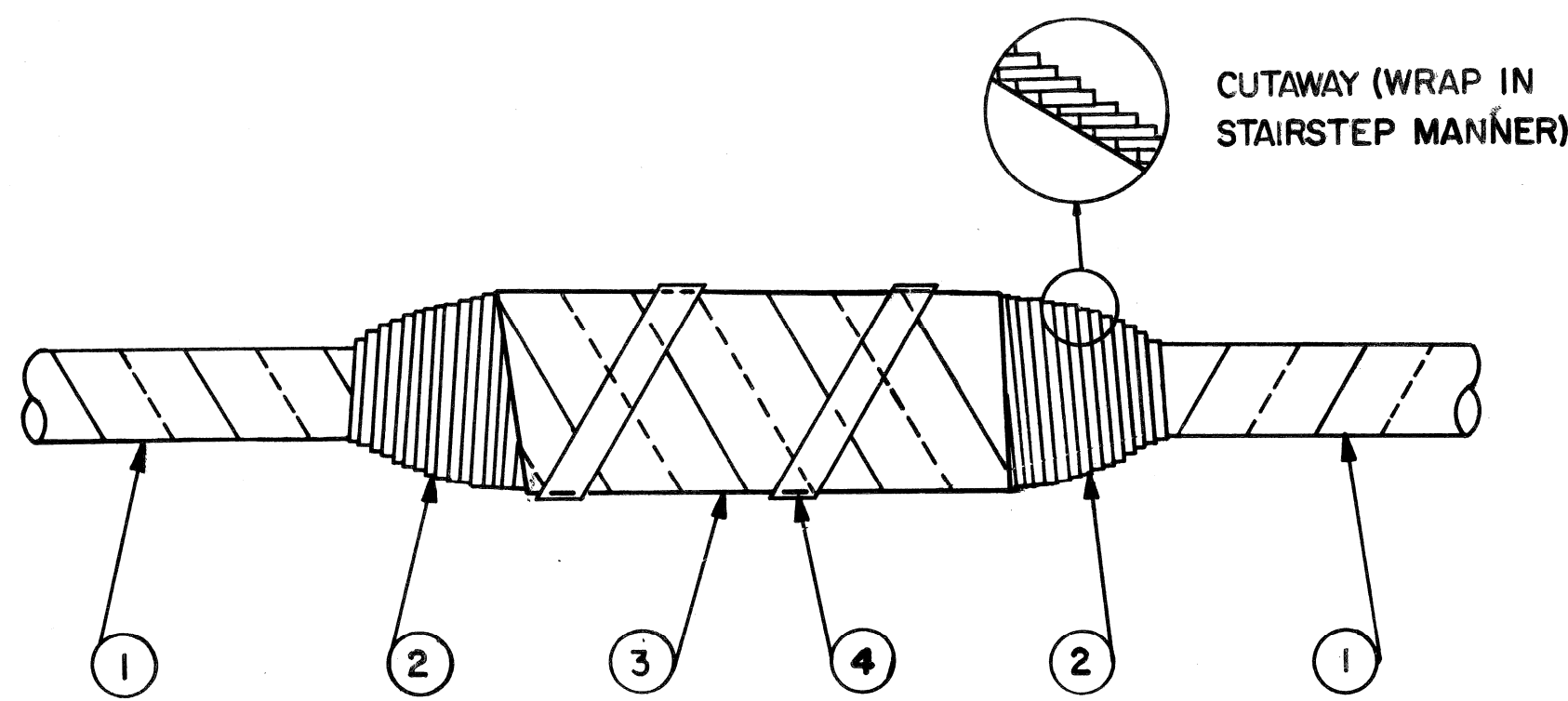


FIGURE 4.
ONE WRAP FLAME RETARDANT ELASTOMER 1/2
OVERLAPPED RANDOM WRAP WITH PRESSURE
SENSITIVE FIBERGLASS ADHESIVE TAPE.



- ① WRAP CABLE WITH 3" WIDE TAPE METHOD "A" OR "B".
- ② WRAP WIPE WITH 1 1/2" WIDE ELASTOMER TAPE AS SHOWN (SPLIT 3" TAPE WITH SKINNING KNIFE FOR THIS STEP).
- ③ WRAP SPLICE SLEEVE WITH 3" WIDE TAPE THE SAME AS IN #1 ABOVE.
- ④ RANDOM WRAP FIBERGLASS TAPE TO HOLD IN PLACE.

NOTE: WRAP CABLE ON BOTH SIDES OF SPLICE FIRST.
NEXT WRAP BOTH WIPES AND THEN COVER THE
SPLICE SLEEVE.

NOTE. ELASTOMER TAPE TO BE APPLIED WITH SMOOTH SIDE
ON CABLE (ROUGH OR FABRIC SIDE OUT).

APPROXIMATE QUANTITIES REQUIRED PER MANHOLE

METHOD "A"
5 ROLLS 3" X 15'-0" FELTED ASBESTOS TAPE
4 ROLLS 3" X 20'-0" ELASTOMER TAPE
1 ROLL FIBERGLASS TAPE

METHOD "B"
8 ROLLS 3" X 20'-0" ELASTOMER TAPE (FLAME RETARDANT)
1 ROLL FIBERGLASS TAPE

DATE	DESCRIPTION	CHKD BY
		24

HARPER AVE. - CADIEUX AVE.
WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
P.L.C. DETAILS CABLE FIREPROOFING

SHEET 38 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

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

DRAWN BY CEA
CHECKED BY <i>[Signature]</i>
APPROVED BY <i>[Signature]</i>
DATE 9-16-76

PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH. 48221
DRWG. NO. 14 OF 30
FILE NO. CEA FED AID 9

CHECKED BY
APPROVED BY

PUBLIC LIGHTING
COMMISSION
CITY OF DETROIT

FILE NO. 49-0573
SHEET NO. 14 OF 30
DATE 9-16-76

DISTRIBUTION AND TRANSMISSION CABLES

ALL TRANSMISSION CABLES, (24 K.V. ITEMS 11-16 INCLUSIVE) ARE FOR CIRCUITS WITH GROUNDED NEUTRAL, AND SHALL CONFORM STRICTLY WITH THE LATEST REVISION OF THE A.E.I.C. "SPECIFICATION FOR IMPREGNATED, PAPER INSULATED, LEAD COVERED SOLID TYPE CABLE", 9TH EDITION, DATED APRIL, 1954, AND CONSTRUCTION OPTIONS AS NOTED IN SHEET 1.
 ALL DISTRIBUTION CABLES, (7.85 KV, ITEMS 19-21 INCLUSIVE) ARE FOR CIRCUITS WITH UNGROUNDED NEUTRAL AND SHALL ALSO CONFORM WITH THE ABOVE SPECIFICATION, WITH CONSTRUCTION OPTIONS AS NOTED IN TABLE I.

2. OVERHEAD LINE WIRE

OVERHEAD LINE WIRE SHALL BE IN ACCORDANCE WITH LATEST REVISION OF ASA C8.34 (NEOPRENE COVERING) OR THE LATEST REVISION OF ASA C8.35 (POLYETHYLENE COVERING).

3. 8/C, #8 AWG, STREET LIGHTING CABLE, 7500V.

THIS IS A SPECIAL CONSTRUCTION AND SHALL BE MADE STRICTLY IN ACCORDANCE WITH THE DESCRIPTION IN TABLE I.

4. OTHER RUBBER OR THERMOPLASTIC INSULATED CABLES, LEADED & NON-LEADED

WIRE SIZE, INSULATION TYPE AND NOMINAL THICKNESSES, OTHER CONSTRUCTION FEATURES SHALL BE AS SHOWN IN TABLE I, AND APPLICABLE REFERENCE SPECIFICATIONS SHOWN BELOW:

ORIGINAL	TENSILE STRENGTH PSI	2300, MIN.	2300, MIN.	1400, MIN.	700, MIN.	600, MIN.
	ELONGATION AT RUPTURE, PERCENT	250, MIN.	250, MIN.	350, MIN.	300, MIN. AND 1/2" SET, MAX.	350, MIN. AND 1/2" SET MAX.
AIR OVEN TEST, TIME & TEMP. AS NOTED	TENSILE STRENGTH % OF ORIGINAL	65, MIN. 168 HRS., 100±1°C	120, MAX. 80, MIN. 168 HRS., 120±1°C	75, MIN. 48 HRS., 100±1°C	—	60, MIN. 168 HRS., 100±1°C
	ELONGATION % OF ORIGINAL	* 65, MIN. 168 HRS., 100±1°C	** 75, MIN. 168 HRS., 120±1°C	75, MIN. 48 HRS., 100±1°C	—	60, MIN. 168 HRS., 100±1°C
OXYGEN PRESSURE TEST	TENSILE STRENGTH % OF ORIGINAL	—	—	—	50, MIN. 168 HRS., 80±1°C	—
	ELONGATION % OF ORIGINAL	—	—	—	50, MIN. 168 HRS., 80±1°C	—
AIR PRESSURE HEAT TEST	TENSILE STRENGTH % OF ORIGINAL	—	—	—	50, MIN. 20 HRS., 127±1°C	50, MIN. 40 HRS., 127±1°C
	ELONGATION % OF ORIGINAL	—	—	—	50, MIN. 20 HRS., 127±1°C	50, MIN. 40 HRS., 127±1°C
HEAT DISTORTION 121±1°C	% OF ORIGINAL	50, MAX.	25, MAX.	—	—	—
OIL IMMERSION 4 HRS., 70±1°C	TENSILE STRENGTH % OF ORIGINAL	* 85, MIN.	** 85, MIN.	—	—	—
	ELONGATION, % OF ORIGINAL	* 85, MIN.	** 85, MIN.	—	—	—
HEAT SHOCK 121±1°C	—	NO CRACKS	NO CRACKS	—	—	—
COLD BEND	—	NO CRACKS -30±1°C	NO CRACKS -30±1°C	NO CRACKS -55±1°C	—	—
INSULATION RESISTANCE CONSTANT AT 15.6°C	—	1,000 MIN.	2,000 MIN.	50,000 MIN.	4,000 MIN.	20,000 MIN.
FLAME RESISTING PROPERTIES	—	SECT. 6.5 IPCEA S-61-402	SECT. 6.5 IPCEA S-61-402	—	—	—
ACCELERATED WATER ABSORPTION REQUIREMENT	ELECTRIC-AL METHOD	DIELECTRIC CONSTANT, 1 DAY	10, MAX.	10, MAX.	—	5, MAX.
		% CAPACITANCE INCREASE	1-14 DAYS -10, MAX. 7-14 DAYS - 5, MAX.	1-14 DAYS -4.0 MAX. 7-14 DAYS -2.0 MAX.	—	1-14 DAYS 10.0 MAX. 7-14 DAYS 4.0, MAX.
	OR GRAVIMETRIC METHOD	TEMP.	50±1°C	75±1°C	—	75±1°C
TEST IN ACCORDANCE WITH LATEST REVISION OF		IPCEA S-61-402 (EXCEPTIONS ARE NOTED ABOVE)		IPCEA S-61-402	IPCEA S-19-81 (EXCEPTIONS ARE NOTED ABOVE)	IPCEA S-19-81

FOR #6 AWG AND LARGER, USING BUFFED DIE-CUT SPECIMENS, THE FOLLOWING VALUES SHALL APPLY:
 * ELONGATION AFTER AIR OVEN TEST 45% MIN.
 ** ELONGATION AFTER AIR OVEN TEST 50% MIN.
 * OR ** TENSILE STRENGTH AFTER OIL IMMERSION 80% MIN.
 * OR ** ELONGATION AFTER OIL IMMERSION 60% MIN.

INSULATIONS

THE MINIMUM INSULATION THICKNESS OF ANY OF THESE CABLES SHALL BE LESS THAN 90% OF THE NOMINAL THICKNESS SHOWN ON TABLE I.

THE PHYSICAL AND AGING PROPERTIES OF THERMOPLASTIC AND RUBBER INSULATIONS SHALL BE AS FOLLOWS:

CONDUCTORS

ALL CONDUCTORS SHALL BE COPPER, COMPLYING WITH THE LATEST REVISIONS OF ASTM SPECIFICATIONS, AS FOLLOWS:

SOFT OR ANNEALED, BARE COPPER WIRE ASTM B3
 MEDIUM HARD DRAWN COPPER WIRE ASTM B2
 HARD DRAWN COPPER WIRE ASTM B1
 CONCENTRIC-LAY-STRANDED COPPER CONDUCTORS, HARD, MEDIUM HARD OR SOFT, COATED OR UNCOATED, AS REQUIRED. ASTM B8
 ROPE-LAY-STRANDED, SOFT, COPPER CONDUCTORS, COATED OR UNCOATED, AS REQUIRED. ASTM B173
 SOFT, SOLID COPPER CONDUCTORS, TINNED. ASTM B33
 SOFT, SOLID COPPER CONDUCTORS, LEAD OR LEAD ALLOY COATED. ASTM B189

JACKETS

THE MINIMUM JACKET THICKNESS SHALL NOT BE LESS THAN 80% OF THE NOMINAL THICKNESS SHOWN ON TABLE I.

ORIGINAL	TENSILE STRENGTH PSI	1800, MIN.	1500, MIN.	1500, MIN.	1400, MIN.
	ELONGATION AT RUPTURE, %	300, MIN. 3/8" MAX. SET	250, MIN. 3/8" MAX. SET	100, MIN.	350, MIN.
AIR OVEN TEST, TIME & TEMP. AS NOTED	TENSILE STRENGTH, % OF ORIGINAL	—	—	85, MIN. 120 HRS., 100±1°C	75, MIN.
	ELONGATION % OF ORIGINAL	—	—	60, MIN. 120 HRS., 100±1°C	75, MIN.
OXYGEN PRESSURE TEST 168 HRS. 80±1°C	TENSILE STRENGTH % OF ORIGINAL	50, MIN.	50, MIN.	—	—
	ELONGATION % OF ORIGINAL	50, MIN.	50, MIN.	—	—
AIR PRESSURE HEAT TEST 20 HRS. 127±1°C	TENSILE STRENGTH, % OF ORIGINAL	50, MIN.	50, MIN.	—	—
	ELONGATION, % OF ORIGINAL	50, MIN.	50, MIN.	—	—
OIL IMMERSION TEST, TIME & TEMP. AS NOTED	TENSILE STRENGTH, % OF ORIGINAL	60, MIN. 18 HRS. 121±1°C	60, MIN. 18 HRS. 121±1°C	60, MIN. 4 HRS. 70±1°C	—
	ELONGATION % OF ORIGINAL	60, MIN. 18 HRS. 121±1°C	60, MIN. 18 HRS. 121±1°C	60, MIN. 4 HRS. 70±1°C	—
HEAT DISTORTION, PERCENT OF UNAGED VALUE	—	—	—	50, MAX. 121±1°C	25, MAX. 90±1°C
HEAT SHOCK 121±1°C	—	—	—	NO CRACKS	—
COLD BEND TEST -35±1°C	—	—	—	NO CRACKS	NO CRACKS
ENVIRONMENTAL CRACKING	—	—	—	—	NO CRACKS
LIGHT ABSORPTIVITY	—	—	—	—	24,000, MIN.
TEST IN ACCORDANCE WITH LATEST REVISION OF		IPCEA S-19-81	IPCA S-61-402	IPCEA INTERIM REVISION #1 PUB. S-54-401 SEPT. 1959	—

CERTIFIED TEST REPORTS

SHIPMENTS OF WIRE AND CABLE SHALL NOT BE CONSIDERED COMPLETE UNTIL CERTIFIED TEST REPORTS ARE RECEIVED AND APPROVED. TEST REPORTS FOR THE VARIOUS ITEMS OF WIRE AND CABLE SHOWN ON SHEET 1 SHALL CONTAIN THE FOLLOWING TEST RESULTS:

ITEMS 1 - 5 INCLUSIVE - OVERHEAD LINE WIRE

1. CONDUCTOR CONTINUITY, RESISTANCE, TENSILE STRENGTH AND ELONGATION TESTS.
2. COVERING THICKNESS, PHYSICAL AND AGING TESTS.
3. WEIGHT OF FINISHED WIRE.

ALL TESTS IN ACCORDANCE WITH THE LATEST REVISION OF ASA 8.34 (NEOPRENE COVERING) OR ASA 8.35 (POLYETHYLENE COVERING)

ITEMS 6 - 10 INCLUSIVE

1. CONDUCTOR CONTINUITY, RESISTANCE, TENSILE STRENGTH, AND ELONGATION TESTS IN ACCORDANCE WITH THE LATEST REVISIONS OF ASTM B 8, B 33 OR B 189.
2. THE PHYSICAL AND OTHER TESTS FOR THE SPECIFIED INSULATION SHOWN ON SHEET-2.
3. INSULATION THICKNESS MEASUREMENTS.
4. THE ALTERNATING-CURRENT VOLTAGE TEST IN ACCORDANCE WITH THE LATEST REVISION OF IPCEA S-61-402.
5. INSULATION RESISTANCE TEST. INSULATION RESISTANCE CONSTANT AS SHOWN ON SHEET-2.
6. (CABLE ITEM 8 ONLY) MINIMUM, MAXIMUM AND AVERAGE LEAD THICKNESS MEASUREMENTS. SHALL ALSO BE INCLUDED.
7. (CABLE ITEM 10 ONLY) A RIP TEST SHALL ALSO BE INCLUDED AS FOLLOWS:

A SIX-FOOT SAMPLE OF THE COMPLETED 2 CONDUCTOR WIRE WITH CLEANLY CUT ENDS SHALL BE SUBJECTED TO A TEMPERATURE OF -10°F. FOR ONE HOUR, WHILE STILL COLD, THE TWO INSULATED CONDUCTORS SHALL BE SEPARATED AT ONE END FOR A DISTANCE OF APPROXIMATELY 3 INCHES AND THEN SHALL BE TORN APART WITH A STEADY PULL AT A RATE OF 33 INCHES IN ONE SECOND OR LESS. THERE SHALL BE NO DAMAGE TO THE INSULATION.

ITEMS 11 - 16 INCLUSIVE - DISTRIBUTION CABLES UNDER 10 KV RATING

1. CONDUCTOR RESISTANCE.
2. SHEATH THICKNESS MEASUREMENTS.
3. HIGH VOLTAGE TEST.
4. MECHANICAL INTEGRITY TEST.
5. BENDING TEST.
6. SPARK TEST ON COVERING OVER LEAD SHEATH ON EACH LENGTH IF COVERING IS SPECIFIED.

ALL TESTS SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF "SOLID-TYPE IMPREGNATED-PAPER-INSULATED LEAD-COVERED CABLE SPECIFICATIONS", PUBLISHED BY THE ASSOCIATION OF EDISON ILLUMINATING COMPANIES.

ITEMS 17 - 18 INCLUSIVE - SERIES STREET LIGHTING CABLE

1. CONDUCTOR RESISTANCE AND CONTINUITY, IN ACCORDANCE WITH THE LATEST REVISION OF ASTM B-3.
2. THE PHYSICAL AND OTHER TESTS FOR HIGH MOLECULAR WEIGHT POLYETHYLENE INSULATION AS SHOWN ON SHEET-2.
3. THE PHYSICAL AND OTHER TESTS FOR 60°C. POLYVINYL-CHLORIDE INSULATION AS SHOWN ON SHEET-2.
4. THE FOLLOWING TESTS SHALL ALSO BE MADE AND REPORTED:

HIGH VOLTAGE TEST - AFTER NOT LESS THAN SIX (6) HOURS IMMERSION IN WATER AT 60°F. AND WHILE STILL IMMersed, EACH REEL OF INSULATED CABLE WITHOUT LEAD, SHALL WITHSTAND A 60 CYCLE POTENTIAL OF 30,000 VOLTS FOR A PERIOD OF FIVE (5) MINUTES.

INSULATION RESISTANCE TEST - THE INSULATION RESISTANCE SHALL NOT BE LESS THAN 26,500 MEGOHMS PER THOUSAND FEET AT 60°F. THIS TEST SHALL BE CONDUCTED UPON COMPLETION OF THE HIGH VOLTAGE TEST.

SHORT-TIME DIELECTRIC STRENGTH TEST - A TEN (10) FT. SAMPLE OF THE FINISHED CABLE WITH ONLY THE LEAD REMOVED, AFTER TWELVE (12) HOURS SUBMERSION IN WATER AND WHILE STILL IMMersed, SHALL WITHSTAND A VOLTAGE TEST OF 60,000 VOLTS 60 CYCLE AC. FOR FIVE (5) MINUTES. ON COMPLETION OF THIS TEST, THE VOLTAGE WILL BE GRADUALLY RAISED IN ACCORDANCE WITH I.P.C.E.A. SPECIFICATIONS UNTIL THE INSULATION IS PUNCTURED. THIS VOLTAGE SHALL BE RECORDED AND SHALL BE NOT LESS THAN 72,000 VOLTS.

EXTERNAL CORONA TEST - THIS TEST SHALL BE CONDUCTED ON ONE (1) SAMPLE PER 10,000 FT. OF COMPLETED CABLE EIGHTEEN (18) INCHES LONG WITH ONLY THE LEAD SHEATH REMOVED, AFTER WHICH IT SHALL BE WIPED WITH A CLEAN DRY CLOTH. THESE SAMPLES SHALL BE BENT AND MAINTAINED IN A "U-SHAPE" HAVING A BENDING DIAMETER EQUAL TO FIVE TIMES THE INSULATED CABLE DIAMETER. THE BENT SAMPLES SHALL THEN BE PLACED IN A VERTICAL POSITION ON A FLAT METALLIC GROUNDED PLATE AND 60 CYCLE AC. VOLTAGE SHALL BE GRADUALLY APPLIED WITH A CORONA-LEVEL TEST APPARATUS OF THE FILTER-CIRCUIT TYPE, MAINTAINING SUFFICIENT AMPLIFICATION TO INDICATE THE EXISTENCE OF CORONA DISCHARGE. THIS VOLTAGE SHALL BE RAISED UNTIL CORONA IS INDICATED, AND SHALL NOT BE LESS THAN 8,200 VOLTS RMS.

THE VOLTAGE SHALL THEN BE RAISED TO 25,000 VOLTS AND MAINTAINED FOR SIX (6) HOURS WITHOUT FAILURE OF THE INSULATION. THE VOLTAGE SHALL THEN BE RAISED IN 10% STEPS AT TEN (10) MINUTE INTERVALS UNTIL FAILURE OF THE INSULATION OR FLASHOVER OCCURS.

THESE VOLTAGES SHALL BE RECORDED AND REPORTED.

INTERNAL-CORONA LEVEL - EACH LENGTH OF COMPLETED CABLE SHALL BE TESTED IN ACCORDANCE WITH SECTION 6.13 OF THE LATEST REVISION OF I.P.C.E.A. STANDARD S-61-402, EXCEPT THAT THE MINIMUM CORONA LEVEL SHALL BE 8,200 VOLTS.

ITEMS 19 - 21 INCLUSIVE - TRANSMISSION CABLES.

1. CONDUCTOR RESISTANCE.
2. SHEATH THICKNESS MEASUREMENT.
3. HIGH VOLTAGE TEST.
4. MECHANICAL INTEGRITY TEST.
5. BENDING TEST.
6. IONIZATION TEST.
7. HIGH VOLTAGE - TIME TEST) THERE IS A QUANTITY LIMITATION OF
8. DIELECTRIC POWER TEST) 25,000 FT. ON THESE TESTS PER AEIC
9. POWER FACTOR TEST
10. SPARK TEST ON COVERING OVER LEAD SHEATH ON EACH LENGTH.

ALL TESTS SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF "SOLID-TYPE IMPREGNATED-PAPER-INSULATED LEAD-COVERED CABLE SPECIFICATIONS", PUBLISHED BY THE ASSOCIATION OF EDISON ILLUMINATING COMPANIES.

ITEMS 22 - 23 INCLUSIVE - MULTI-CONDUCTOR TRAFFIC SIGNAL CABLE

1. INDIVIDUAL CONDUCTOR RESISTANCE IN ACCORDANCE WITH THE LATEST REVISION OF ASTM B3.
2. INSULATION THICKNESS MEASUREMENTS.
3. INSULATION PHYSICAL AND OTHER TESTS FOR 60°C. POLYVINYLCHLORIDE AS SHOWN ON SHEET-2.
4. ALTERNATING-CURRENT VOLTAGE TEST.
5. INSULATION RESISTANCE TEST. INSULATION RESISTANCE CONSTANT IS SHOWN ON SHEET-2.
6. (CABLE ITEM 23 ONLY)
 - a. POLYVINYL CHLORIDE JACKET PHYSICAL AND OTHER TESTS SHOWN ON SHEET-2
 - b. JACKET THICKNESS MEASUREMENTS.
7. (CABLE ITEM 22 ONLY) , LEAD SHEATH THICKNESS MEASUREMENTS.

TESTS NO. 4-7, INCLUSIVE, SHALL BE MADE IN ACCORDANCE WITH THE LATEST REVISION OF IPCEA S-61-402, EXCEPT THAT THE INSULATION RESISTANCE CONSTANT SHALL BE 1000 AT 15.6°C.

ITEM 24 - B/C SERIES STREET LIGHTING CABLE

1. CONDUCTOR CONTINUITY AND RESISTANCE IN ACCORDANCE WITH THE LATEST REVISION OF ASTM B-33.
2. LEAD SHEATH THICKNESS MEASUREMENTS.
3. A HIGH VOLTAGE TEST CONSISTING OF 22,500 VOLTS, 60 CYCLES AC, FOR A DURATION OF 5 MINUTES, BETWEEN CONDUCTORS AND FROM EACH CONDUCTOR TO THE LEAD SHEATH.

ITEM 25 - FLEXIBLE OVERHEAD TRAINER WIRE

1. CONDUCTOR RESISTANCE, TENSILE STRENGTH AND ELONGATION IN ACCORDANCE WITH THE LATEST REVISION OF ASTM B-173.
2. INSULATION PHYSICAL AND OTHER TESTS SHOWN ON SHEET-2.
3. ADDITIONAL INSULATION TESTS IN ACCORDANCE WITH THE LATEST REVISION OF IPCEA S-19-81 AS FOLLOWS:
 - a. ALTERNATING-CURRENT VOLTAGE TEST.
 - b. INSULATION RESISTANCE TEST.
 - c. DIRECT-CURRENT VOLTAGE TEST.
 - d. CORONA LEVEL TEST.
 - e. SHORT-TIME DIELECTRIC STRENGTH TEST.
 - f. COLD-BENDING AND LONG-TIME DIELECTRIC STRENGTH TEST.
 - g. CAPACITY AND POWER FACTOR TEST.
 - h. OZONE RESISTANCE TEST.
4. PHYSICAL AND OTHER TESTS ON THE NEOPRENE JACKET (GENERAL PURPOSE OR HEAVY DUTY), AS SHOWN ON SHEET-2.
5. JACKET THICKNESS MEASUREMENTS.

ITEM 26 - SUPERVISORY CONTROL CABLE (MULTI-CONDUCTOR)

1. CONDUCTOR RESISTANCE, TENSILE STRENGTH AND ELONGATION, IN ACCORDANCE WITH THE LATEST REVISION OF ASTM B-3.
2. INSULATION PHYSICAL FOR 60°C. PVC INSULATION AND OTHER TESTS SHOWN ON SHEET 2.
3. INSULATION RESISTANCE TESTS.
4. VOLTAGE TESTS PER IPCEA S-61-402.
5. INSULATION THICKNESS.
6. LEAD SHEATH THICKNESS.
7. THICKNESS OF COVERING OVER LEAD SHEATH.
8. SPARK TEST ON COVER OVER LEAD SHEATH ON EACH LENGTH.

MULTI-PAIR COMMUNICATION CABLES (Maximum Mutual Capacitance = 90nf per mile) (ALSO FOR TRAFFIC SIGNAL CHRONOPLAN.) AND SUPERVISORY

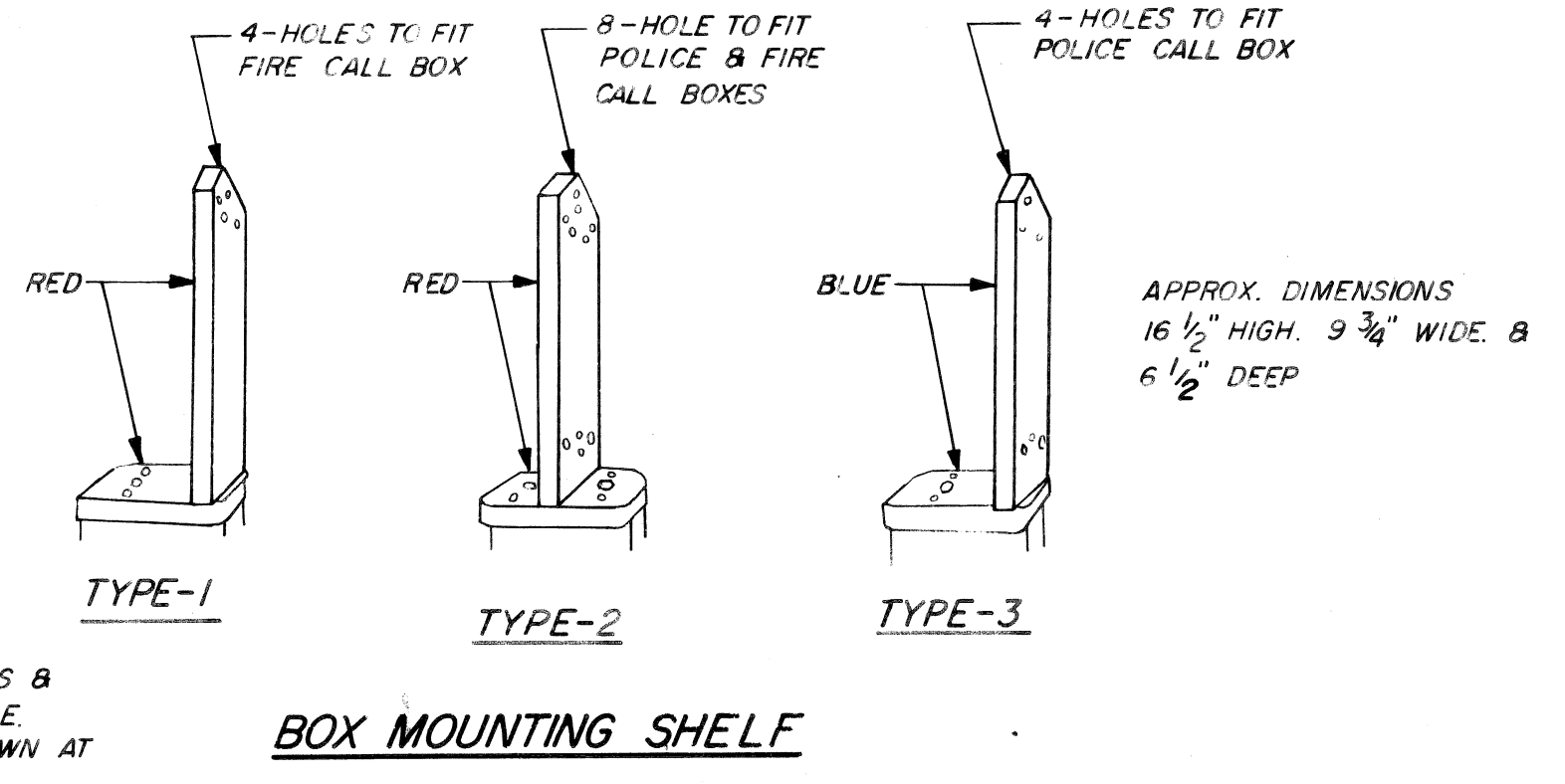
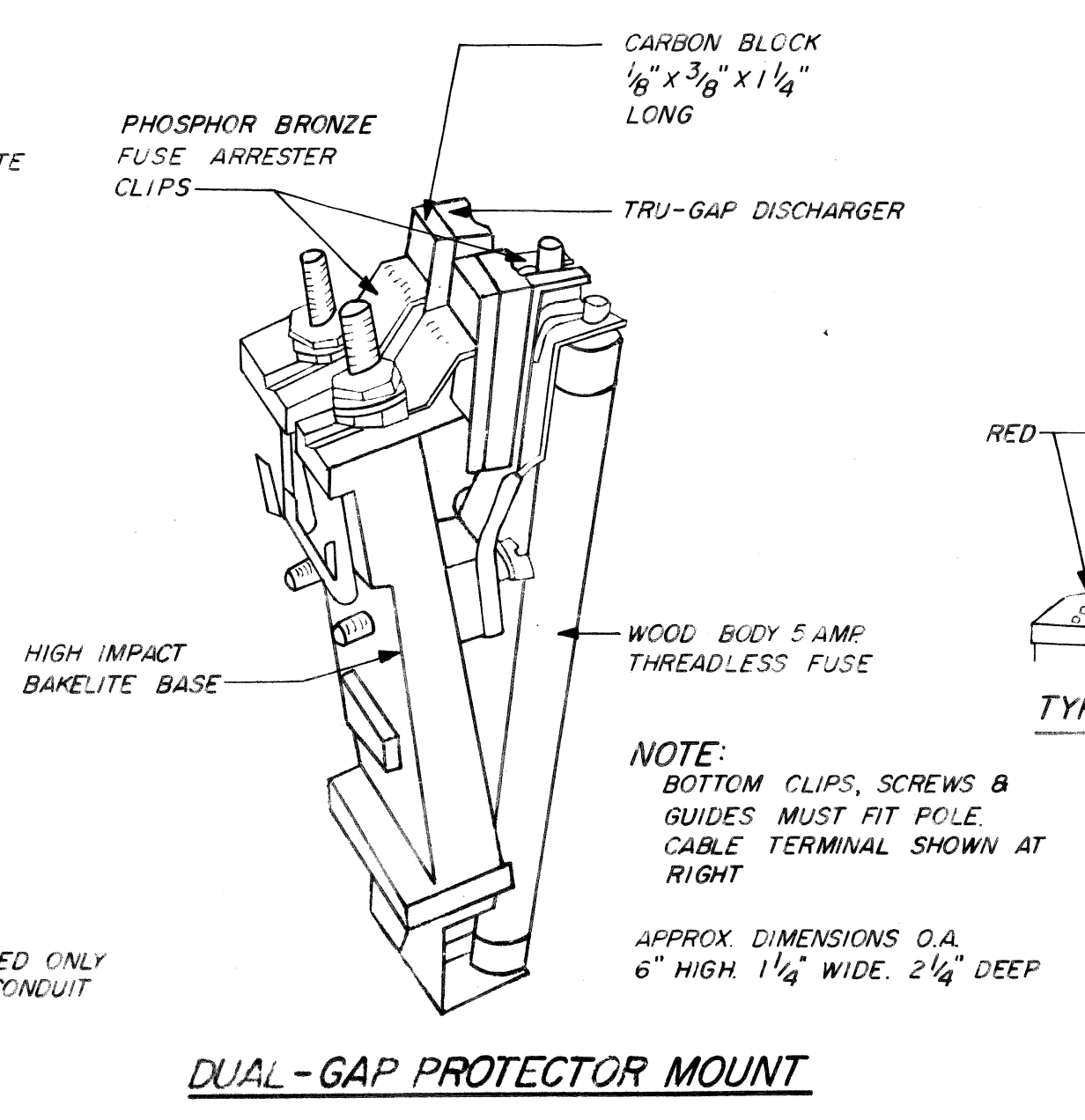
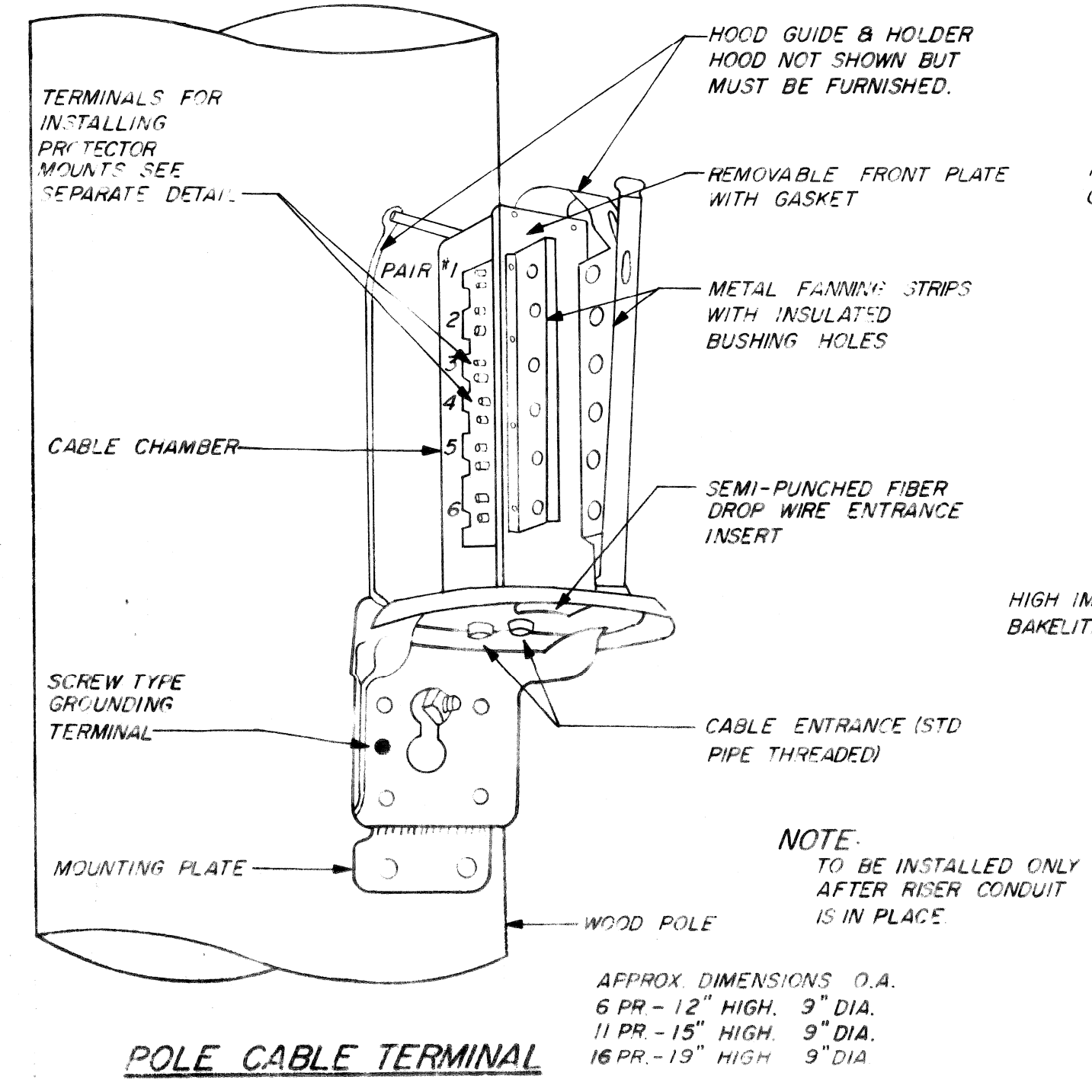
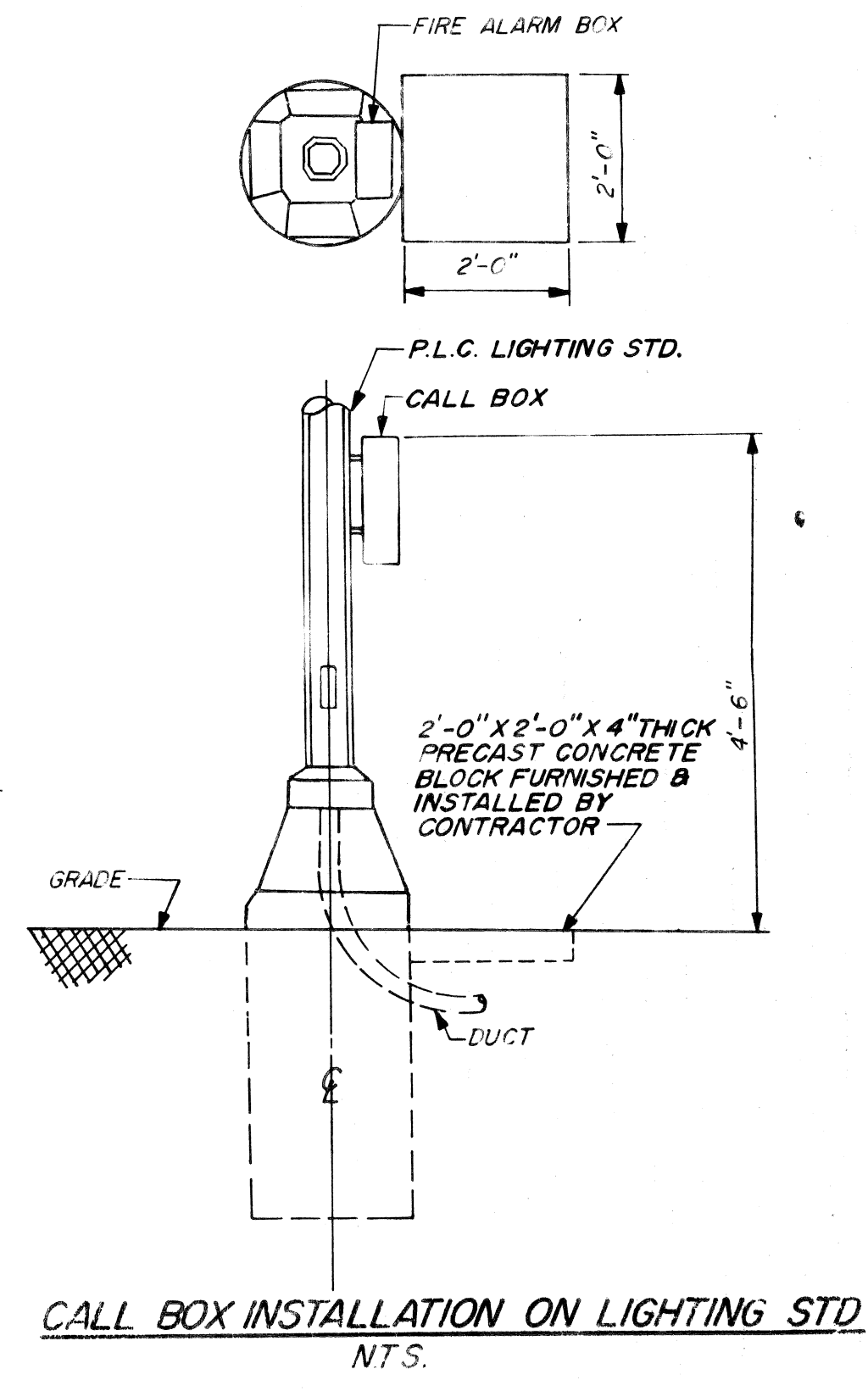
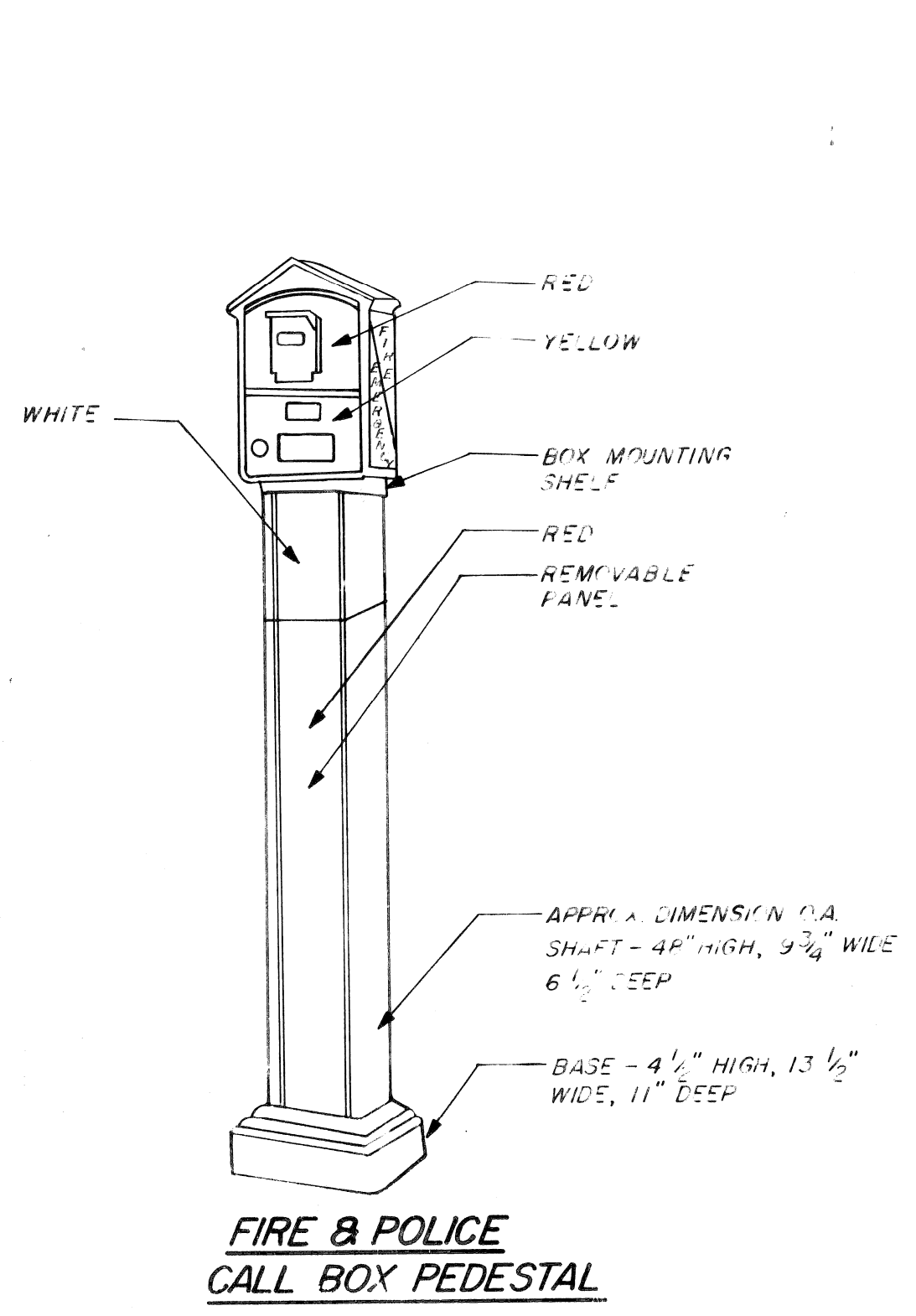
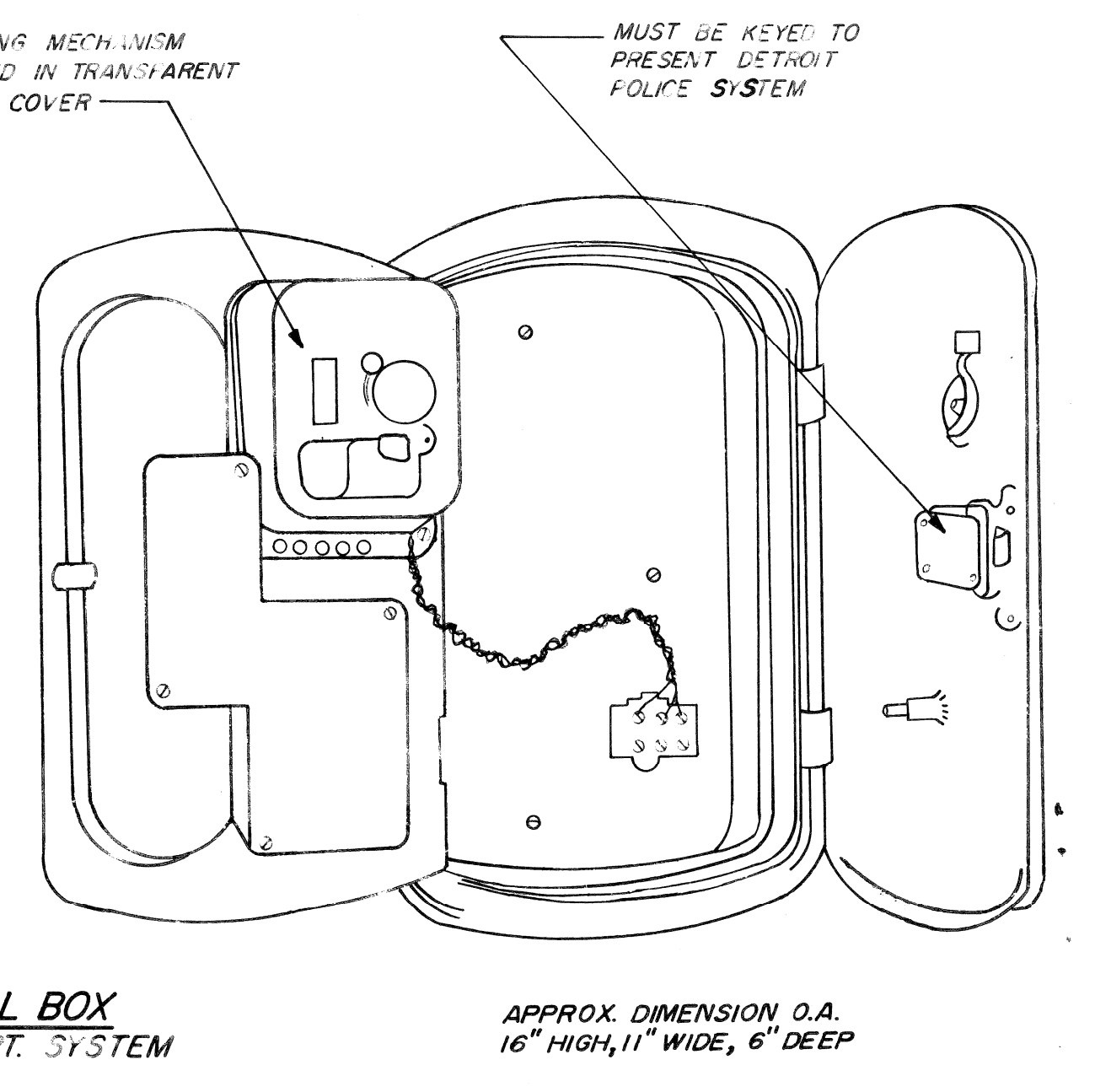
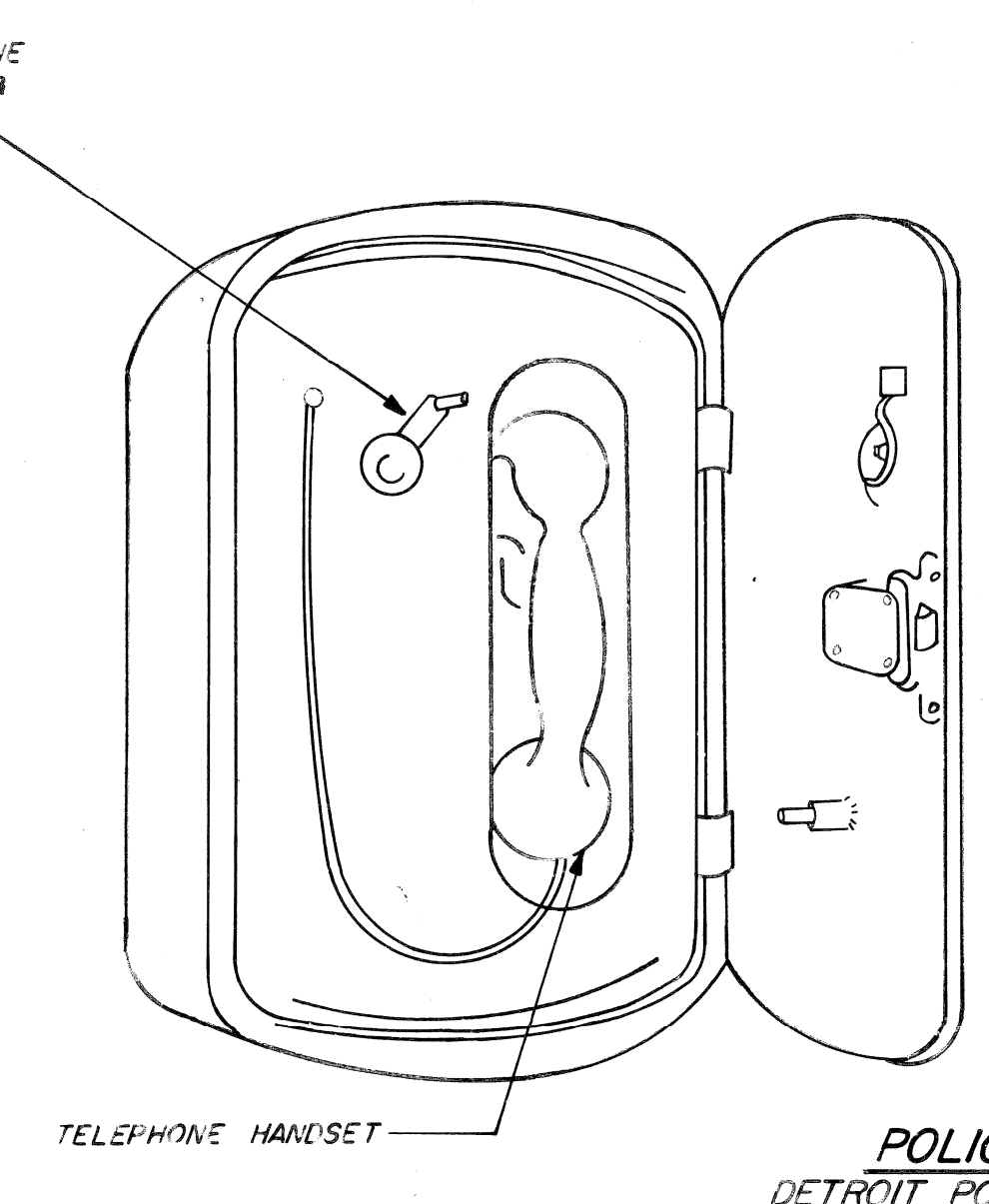
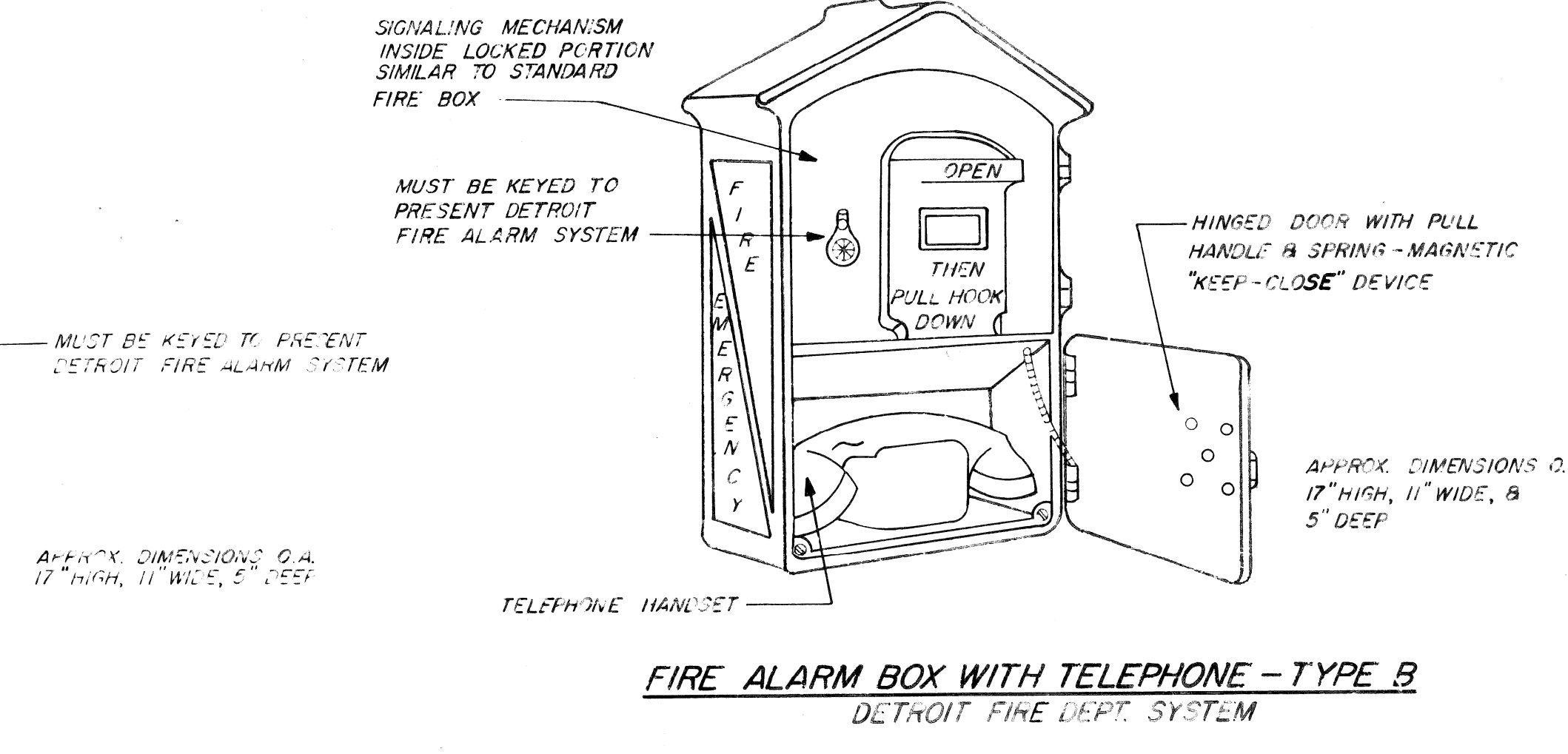
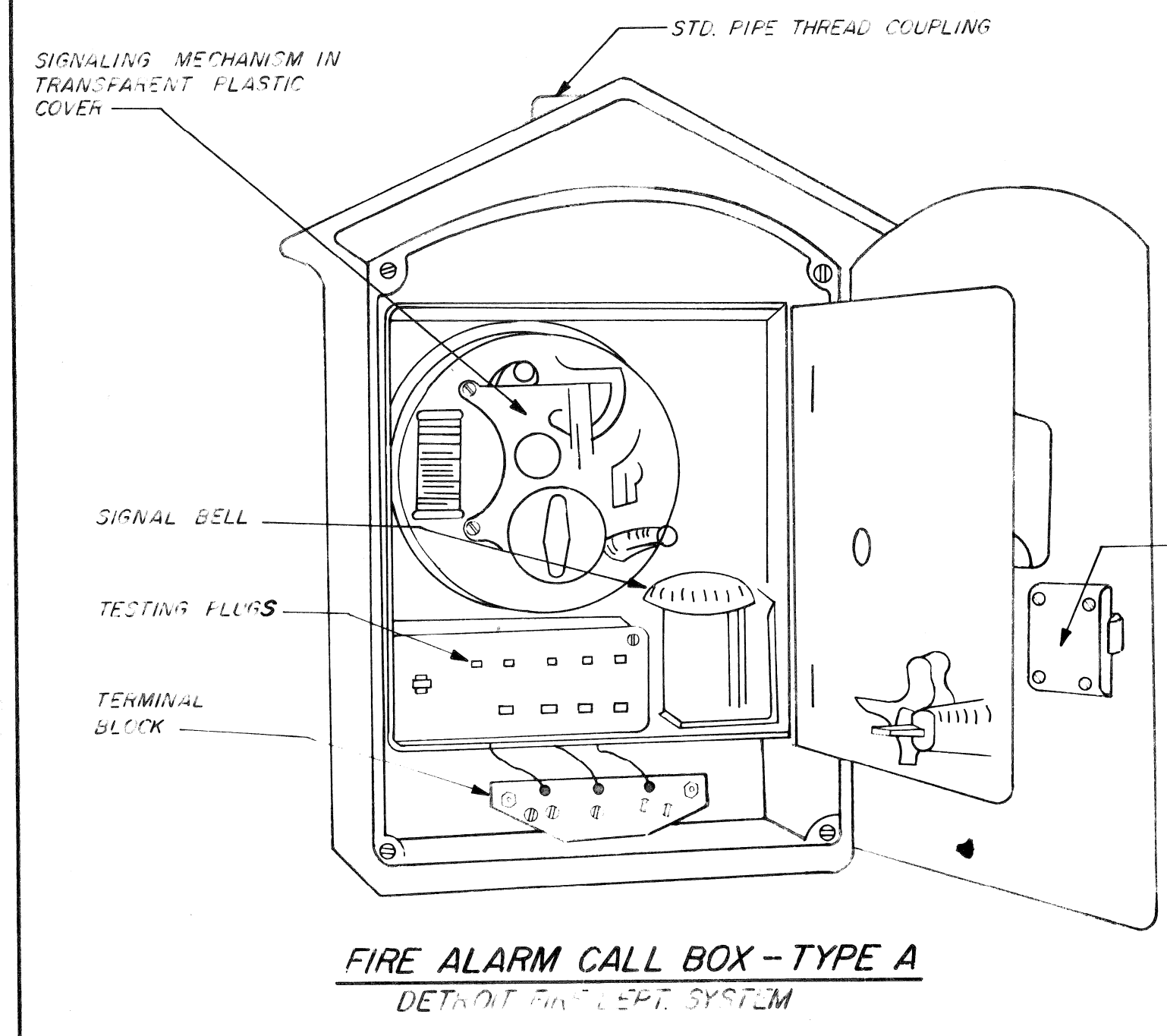
ITEM NO.	USE AND RATING	CONDUCTOR	INSULATION (b)	TAPE OVER INSULATED CONDUCTORS	INNER BELT	SHIELD OVER TAPE OR BELT	JACKET OR SHEATH	COVERING OVER SHEATH
27	AERIAL (a) 600 V.		0.025-IN (c) CLASS B POLYETHYLENE (ASTM D 1351)			CORRUGATED, LONGITUDINAL, ANNEALED, (c) 0.004-IN. COPPER	BLACK POLYETHYLENE (ASTM D 2308). THICKNESSES OVER CORE AND MESSENGER AND WEB DIMENSIONS IN ACCORDANCE WITH REA SPECIFICATION PE-38.	
28	IN DUCT 600 V.	#16 OR #19 AWG, SOLID, UNCOATED COPPER (ASTM B 3), NUMBER OF PAIRS AS REQUIRED		12.5 PERCENT MINIMUM LAP. POLYETHYLENE TEREPHTHALATE	BLACK POLYETHYLENE (ASTM D 2308) 0.010-IN. MIN. 0.030-IN. MAX. THICKNESS		BLACK POLYETHYLENE (ASTM D 2308) THICKNESS IN ACCORDANCE WITH PARAGRAPH 3.6.7.3.7 AND TABLE IV OF FED. SPEC. J-C-III.	
29	IN DUCT 600V.		0.031 IN. (c) DIOCTYL PHTHALATE PLASTICIZED PVC (ASTM D 2219)				LEAD-ANTIMONY THICKNESS PER ITEM 26 EXCEPT 0.063-IN. MIN. THICKNESS (c)	
30	DIRECT BURIAL 600 V.	#16 OR #19 AWG, SOLID, TINNED COPPER (ASTM B 33), NUMBER OF PAIRS AS REQUIRED					COMMERCIALLY PURE LEAD, THICKNESS PER ITEMS 22 & 23.	ASPHALTUM-SATURATED JUTE STEEL ARMOR PER ITEMS 17 & 18.

TEST REPORTS

SHIPMENTS OF WIRE AND CABLE SHALL NOT BE CONSIDERED COMPLETE UNTIL CERTIFIED TEST REPORTS ARE RECEIVED AND APPROVED. TEST REPORTS FOR THE VARIOUS ITEMS ABOVE SHALL SHOW COMPLIANCE WITH CITED SPECIFICATIONS, LISTING TEST RESULTS, AS WELL AS THE FOLLOWING TESTS:

1. CONDUCTOR RESISTANCE OF EACH LENGTH OF EACH CONDUCTOR IN OHMS PER 1000 FT.
2. CERTIFICATION OF MUTUAL CAPACITANCE OF ALL CABLES AND OF NON-INJURIOUS EFFECT OF FLOODING COMPOUND ON ITEM 27.
 - (a) "FIGURE B" CONSTRUCTION. MESSENGER SHALL BE 7 STRAND EHS GALVANIZED, CLASS A, 1/4-IN. NOMINAL DIAM. (ASTM A 475) AND SHALL BE FULLY FLOODED.
 - (b) COLOR CODED PER FEDERAL SPECIFICATION J-C-III.
 - (c) NOMINAL THICKNESS, INCHES.

DATE	DESCRIPTION	CRKD. BY	27	HARPER AVE. - CADIEUX AVE. WARREN AVE. - CADIEUX AVE. INTERSECTION IMPROVEMENT CABLE & WIRE SPECIFICATIONS DETAILS	SHEET 41 OF 54 SHEETS	CONTRACT NO.	JOB NO. 10012 A	DATE 10-7-76	CITY OF DETROIT CITY ENGINEERING DIVISION E.P.M.D.	DRAWN BY CEA	CHECKED BY [Signature]	APPROVED BY [Signature]	DATE 9-16-76	PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS 16580 WYOMING DETROIT, MICH. 48221	DRAWING NO. 17 OF 30	FILE NO. CEA FED AID 9	CHECKED BY	APPROVED BY	PUBLIC LIGHTING COMMISSION CITY OF DETROIT	FILE NO. 49-0573	SHEET NO. 17 OF 30	DATE 9-16-76
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DATE	DESCRIPTION	CHKD. BY
		3/

HARPER AVE. - CADIEUX AVE.
WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
COMMUNICATION CALL BOXES
DETAILS

SHEET 42 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012 A
DATE 10-7-76

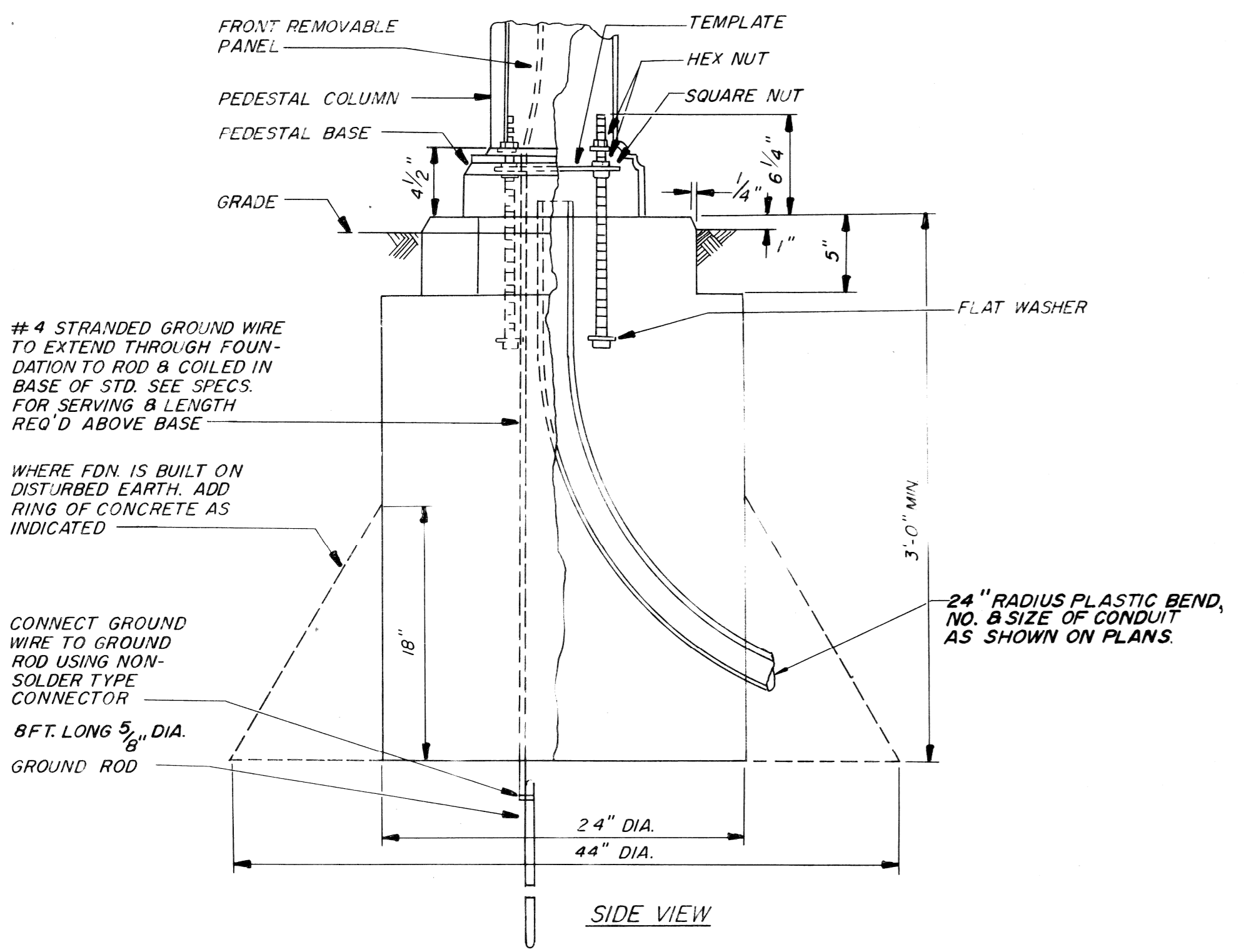
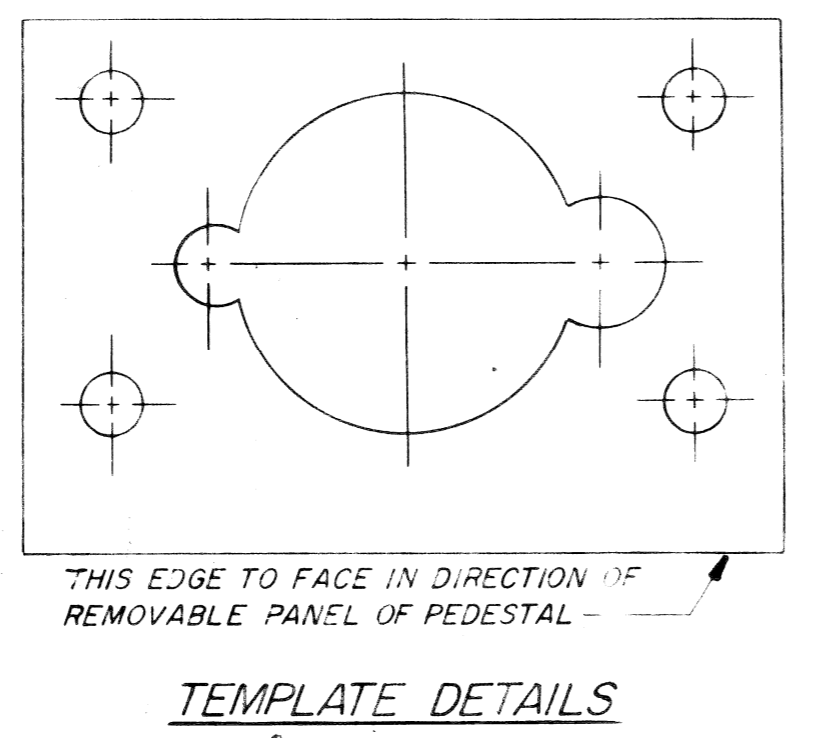
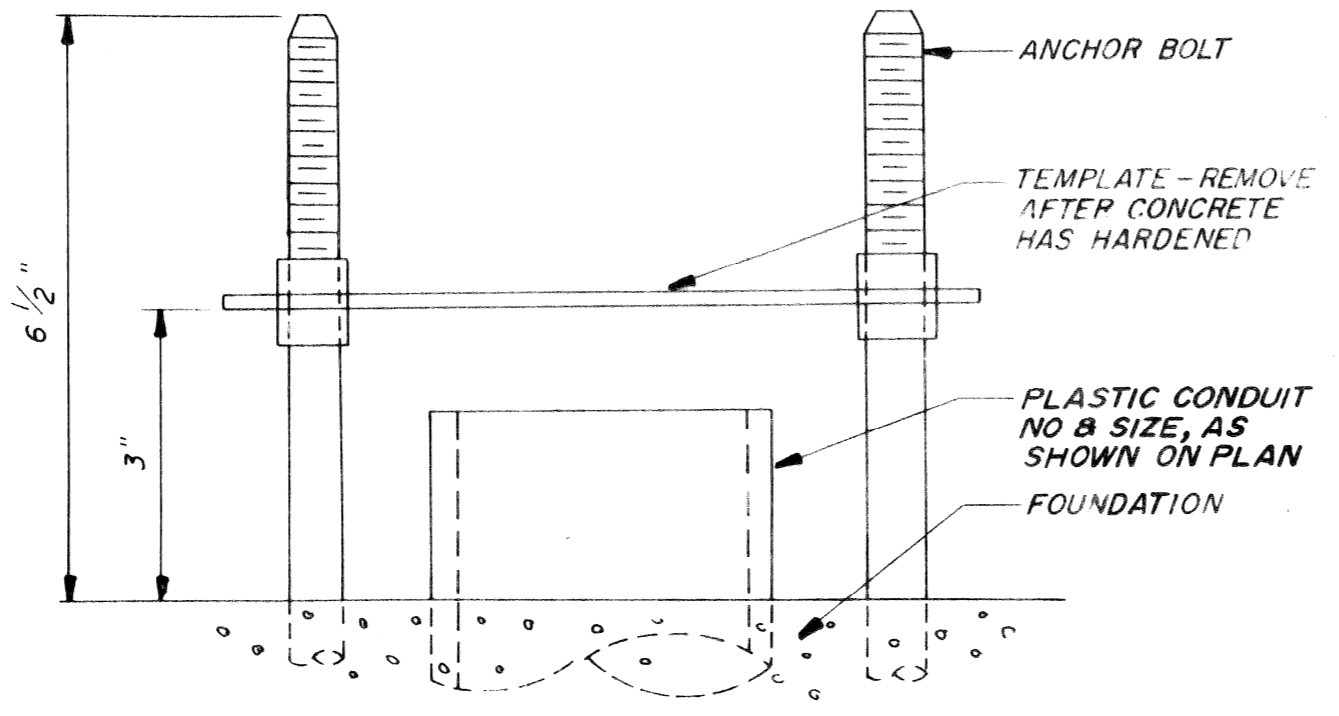
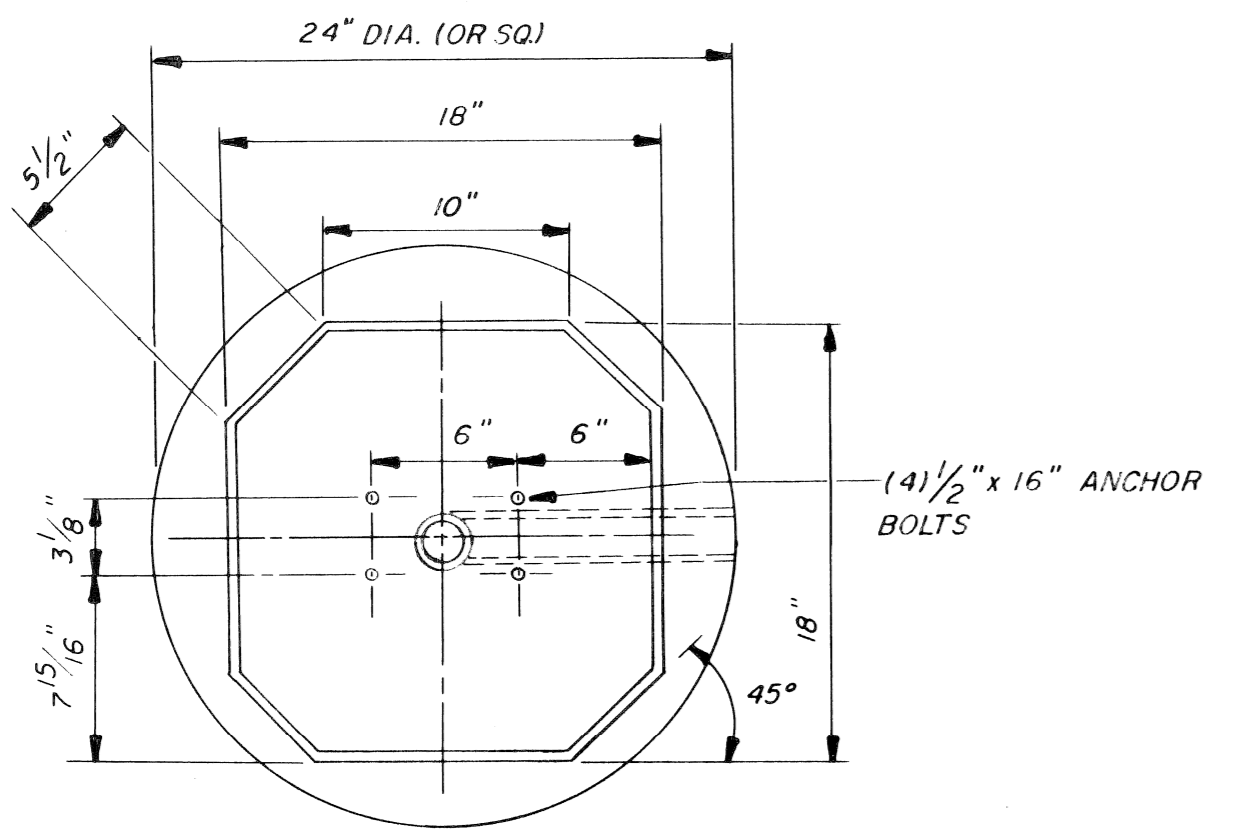
CITY OF DETROIT
CITY ENGINEERING DIVISION
E.P.M.D.

DRAWN BY CEA
CHECKED BY
APPROVED BY
DATE 9-16-76

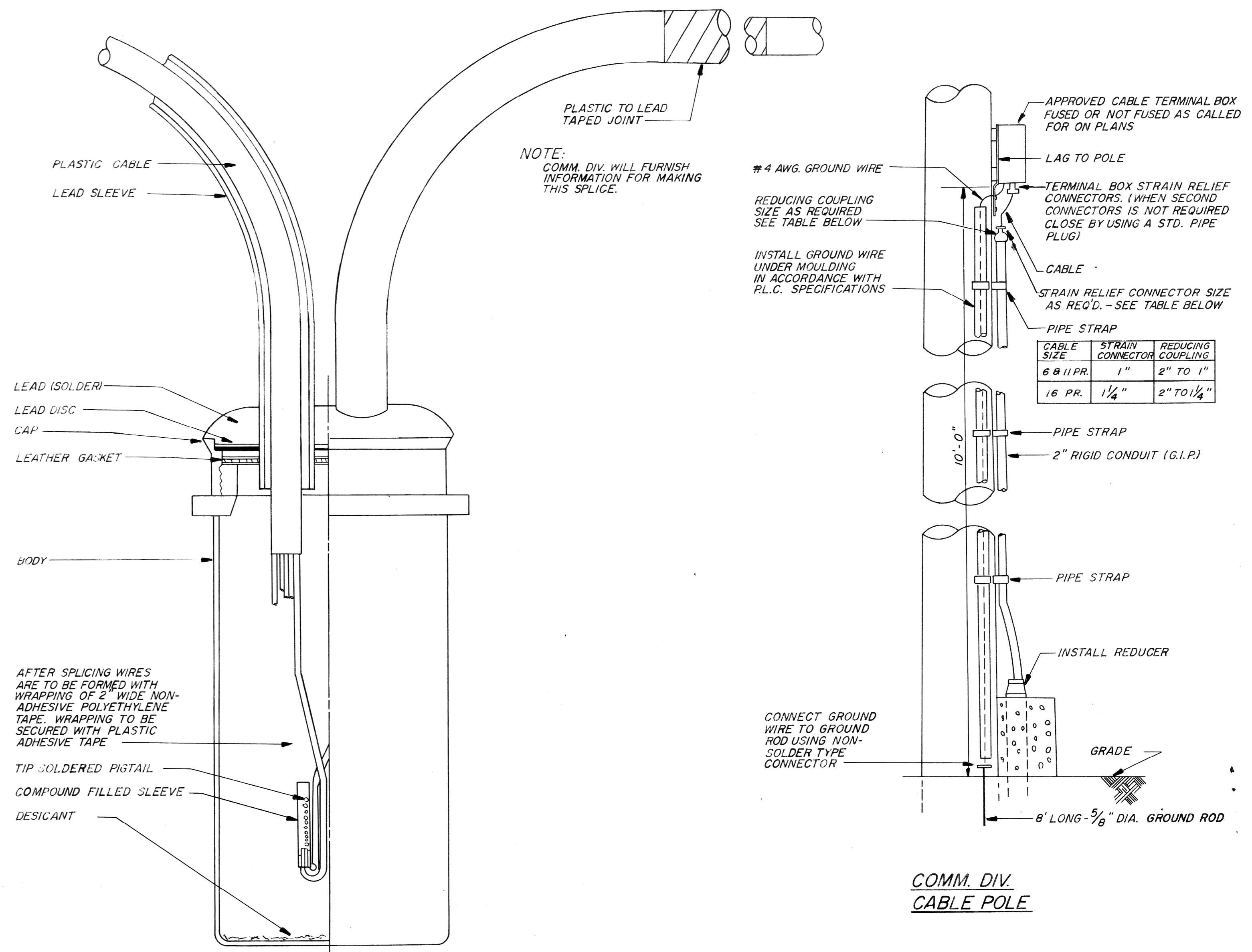
PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH. 48221
DRWG. NO. 18 OF 30
FILE NO. CEA FED AID 9

CHECKED BY
APPROVED BY
PUBLIC LIGHTING COMMISSION
CITY OF DETROIT

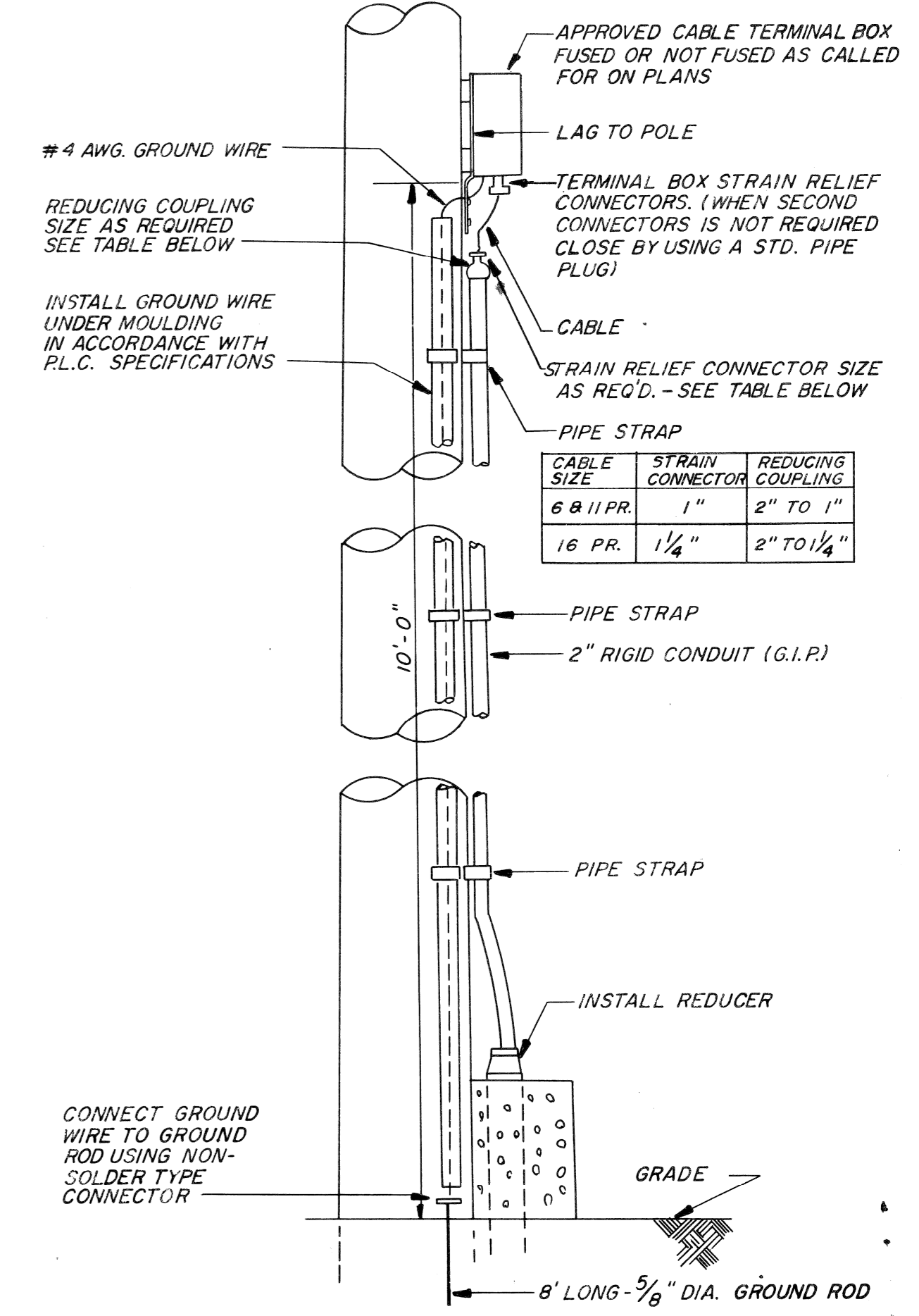
FILE NO. 49-0573
SHEET NO. 18 OF 30
DATE 9-16-76



CALL BOX PEDESTAL FOUNDATION DETAILS
N.T.S.

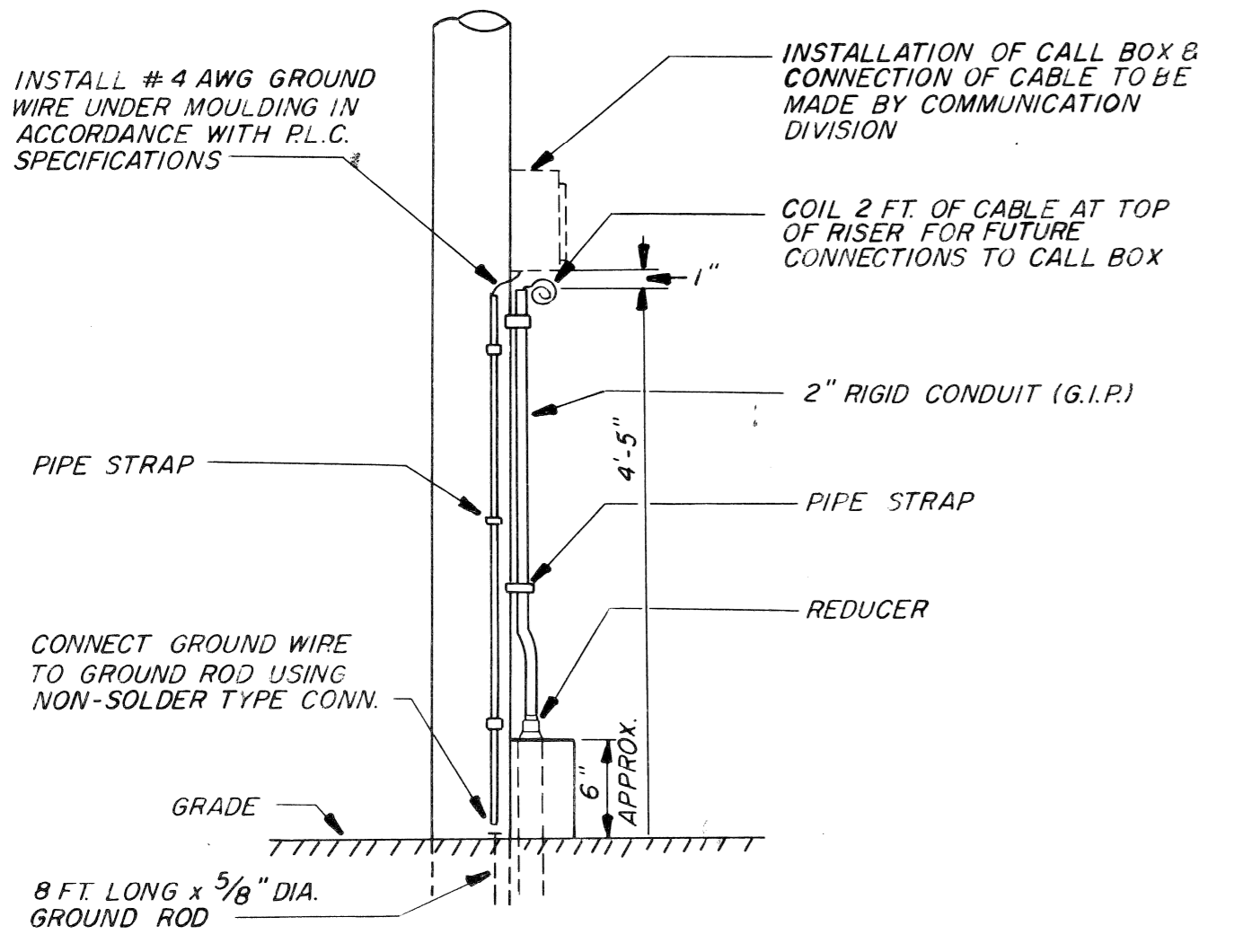


TESTHEAD DETAIL

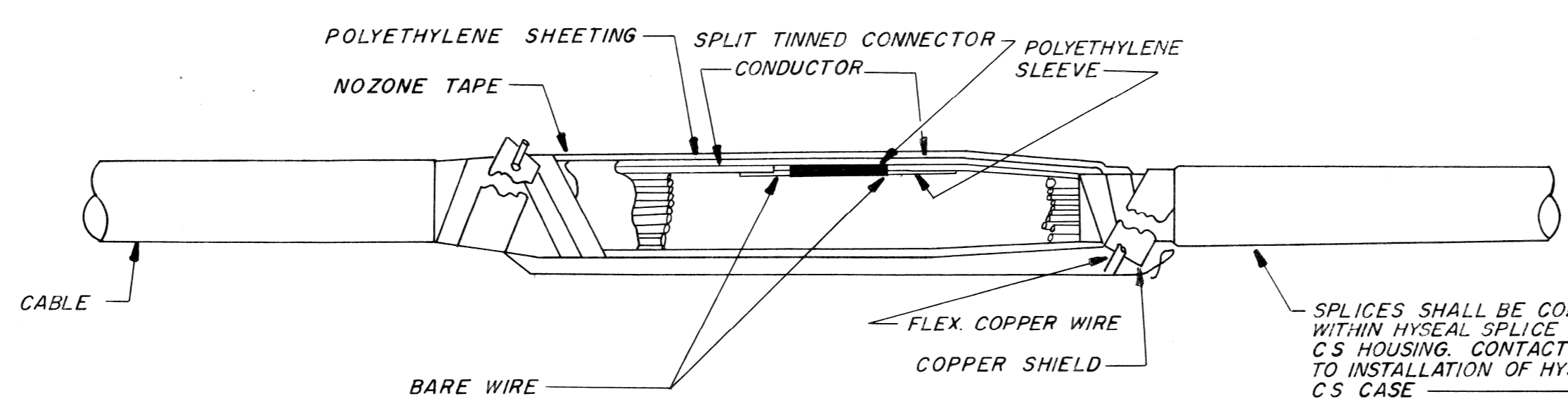


COMM. DIV.
CABLE POLE

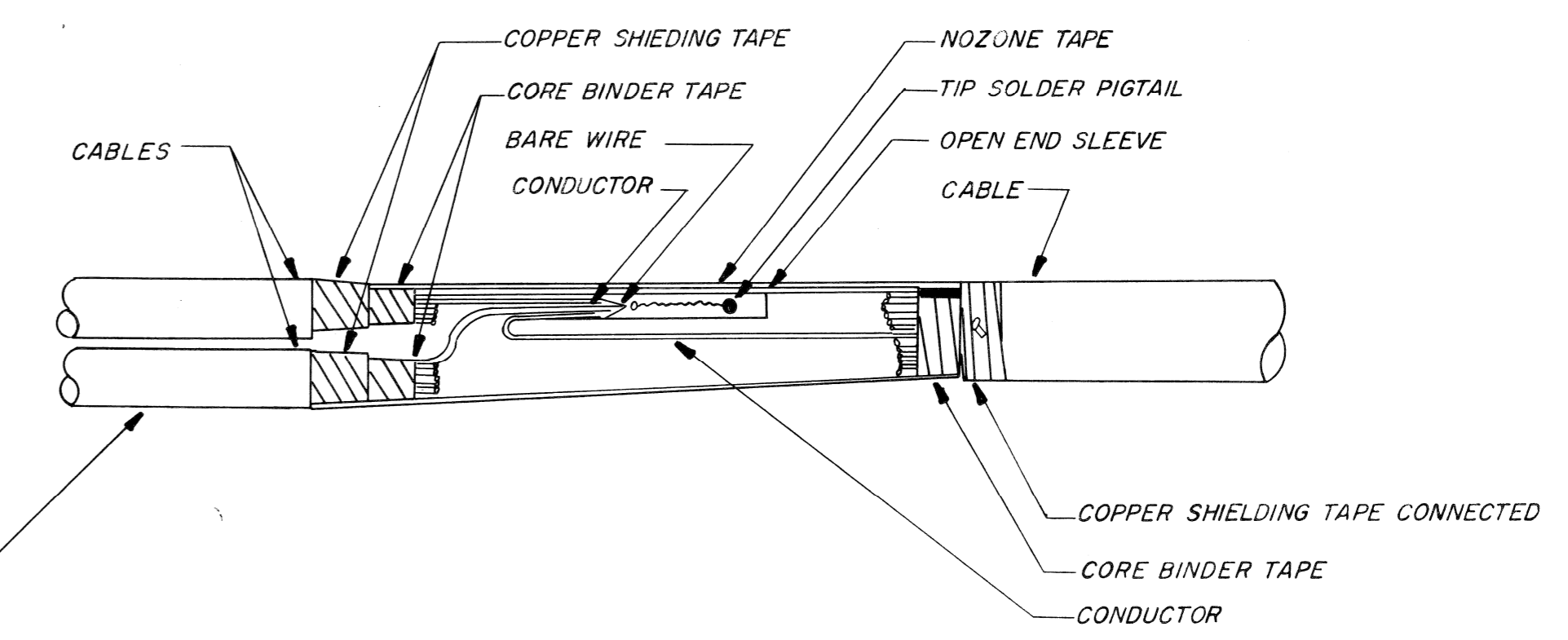
CABLE SIZE	STRAIN CONNECTOR	REDUCING COUPLING
6 B. I.P.R.	1"	2" TO 1"
16 PR.	1/4"	2" TO 1/4"



COMMUNICATION CALL BOX POLE
N.T.S.

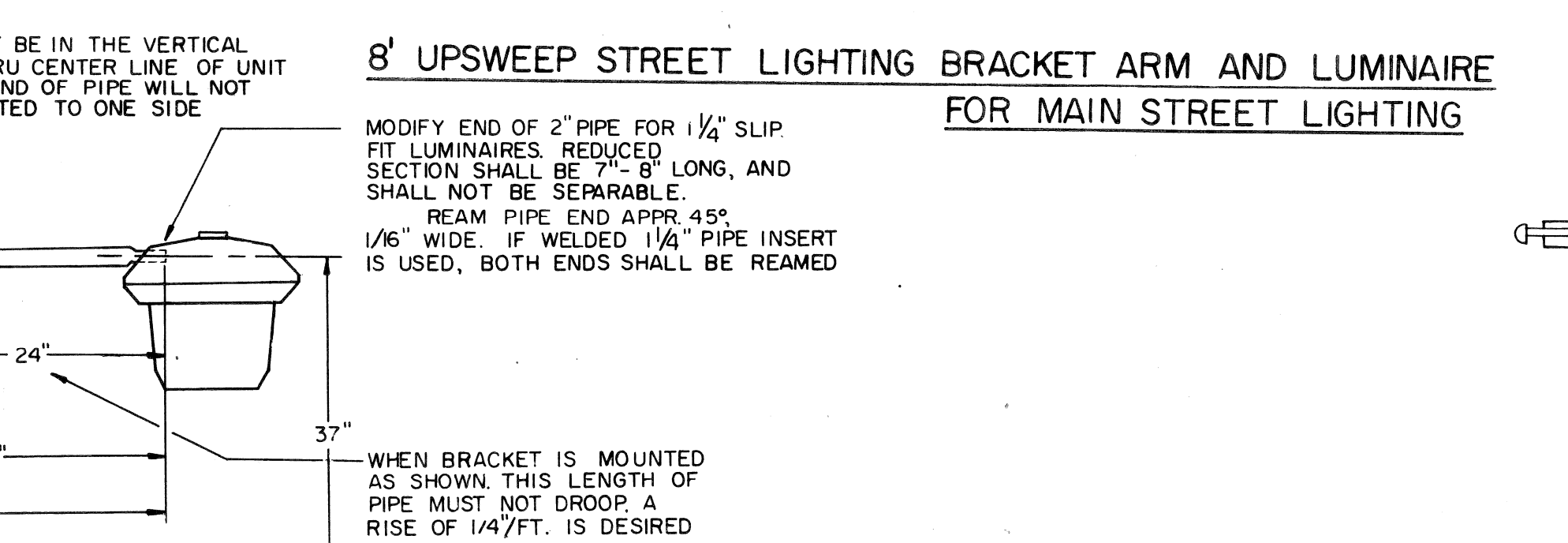
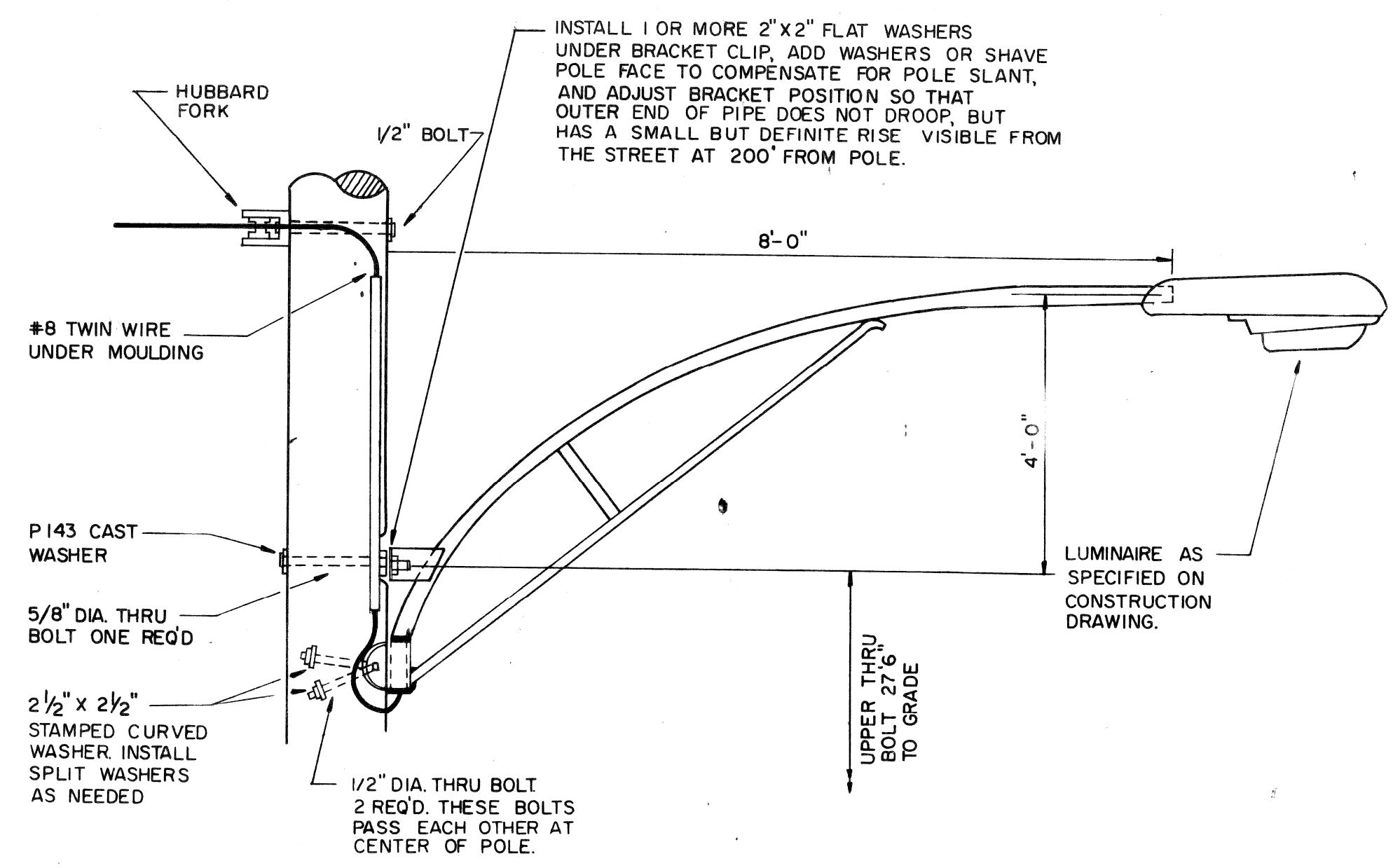
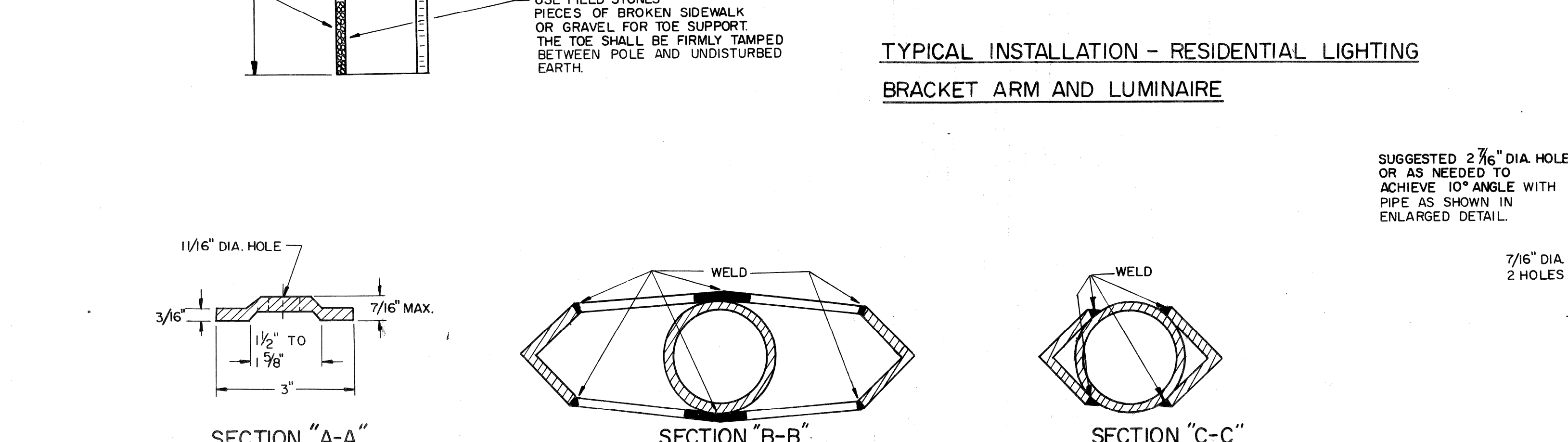
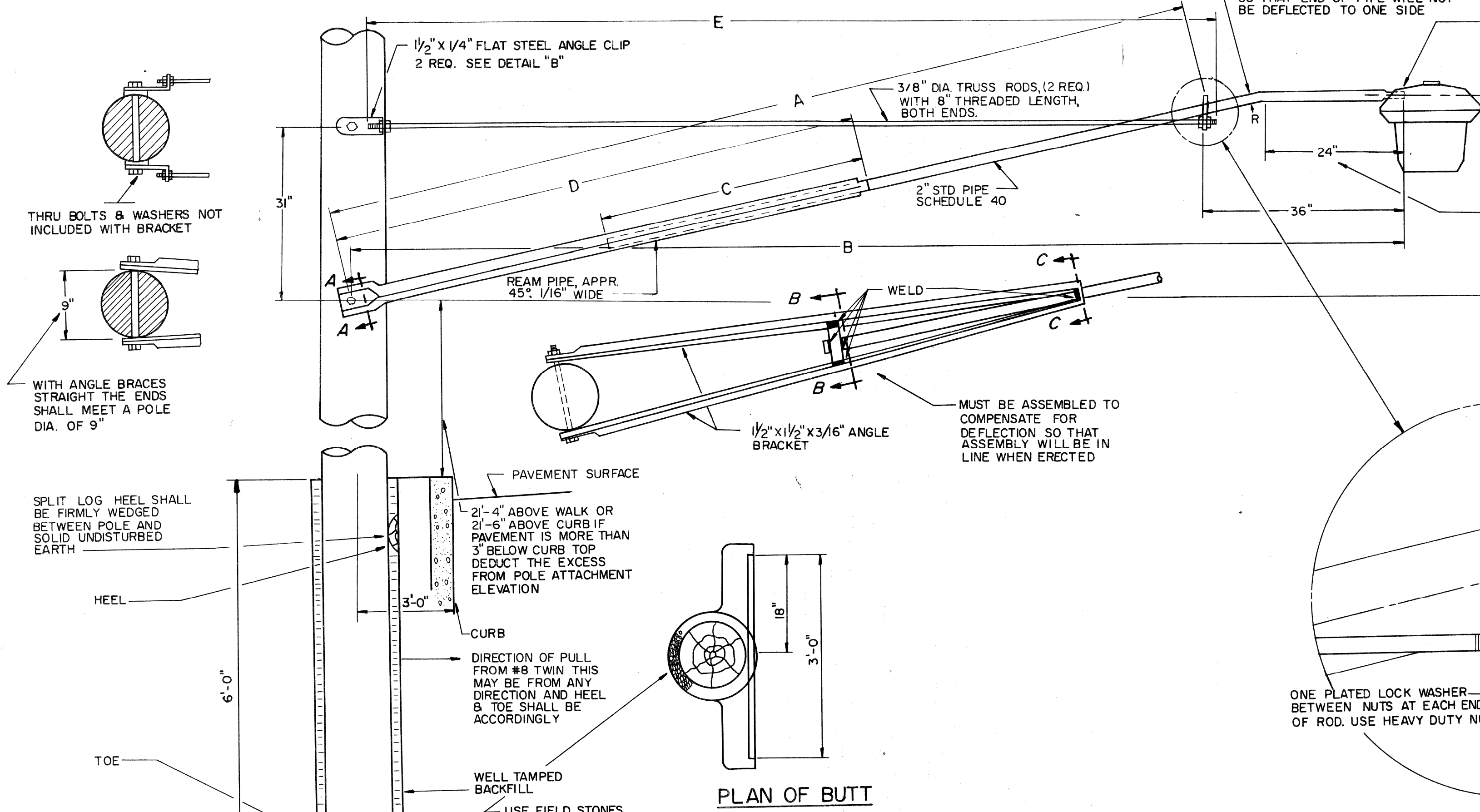
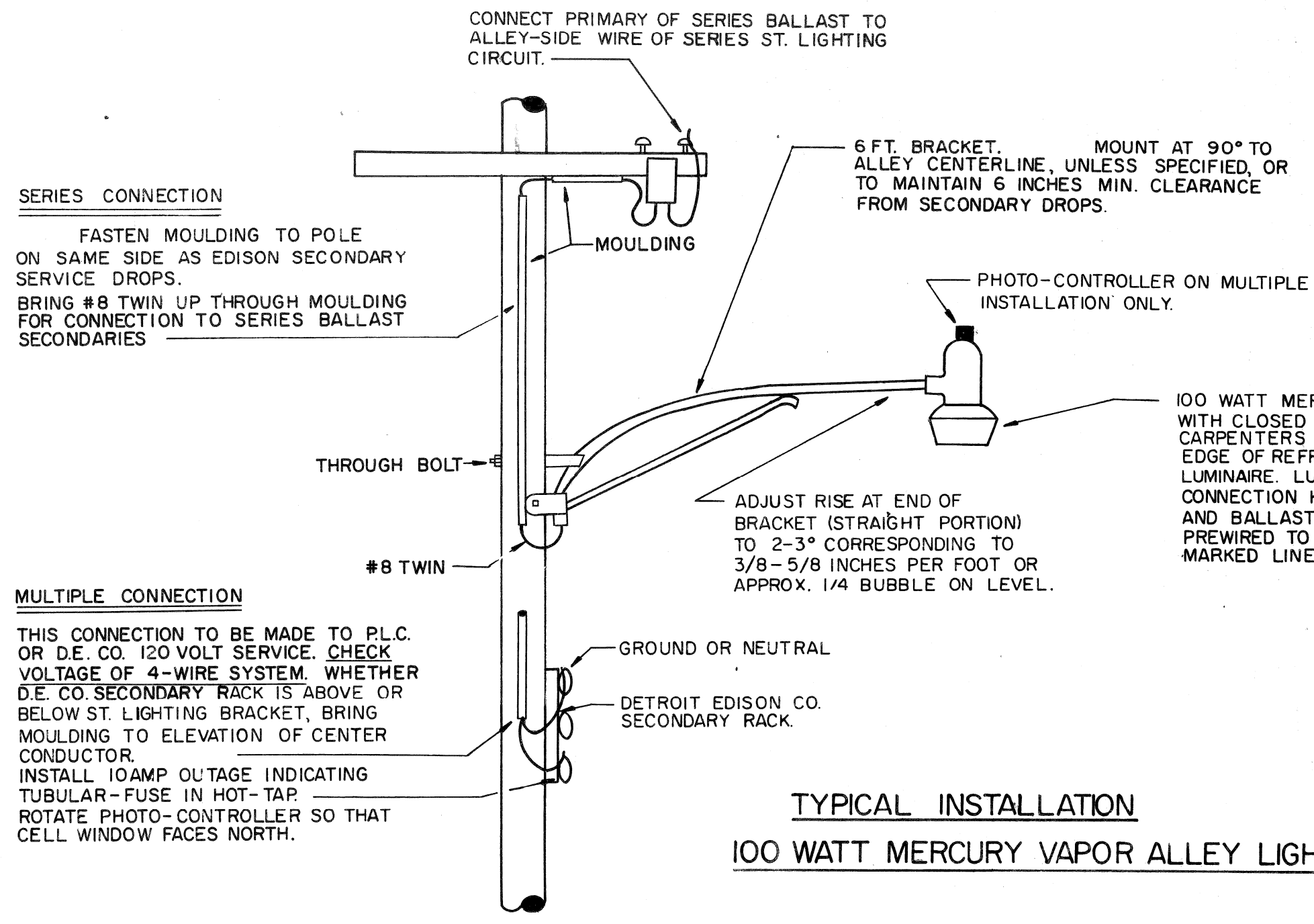


STRAIGHT SPLICE



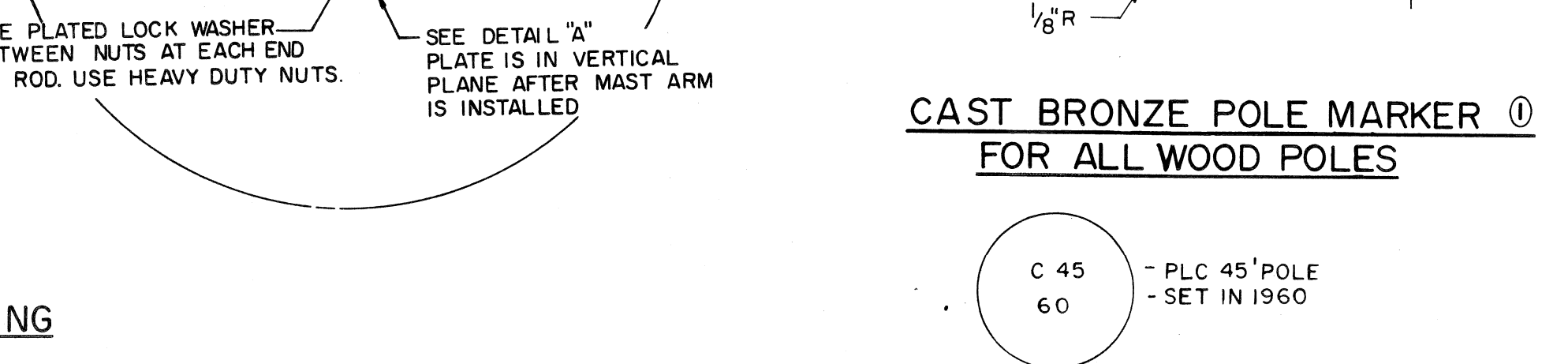
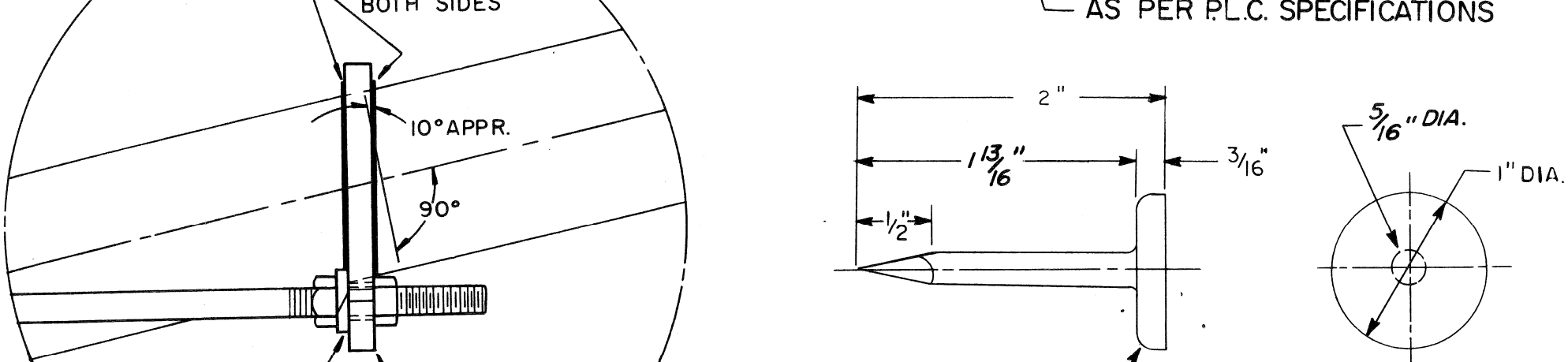
THREE WAY WYE SPLICE

SPLICE DETAILS COMMUNICATION & SUPERVISORY CABLES



DIMENSIONS					ROD LENGTH
A	B	C	D	E	
13'-4"	16'-0"	4'8"	9'6"	13'-3"	
17'-3"	20'-0"	6'-0"	10'-0"	17'-3"	
	26'-0"				

AS PER P.L.C. SPECIFICATIONS



DATE	DESCRIPTION	CHKD BY

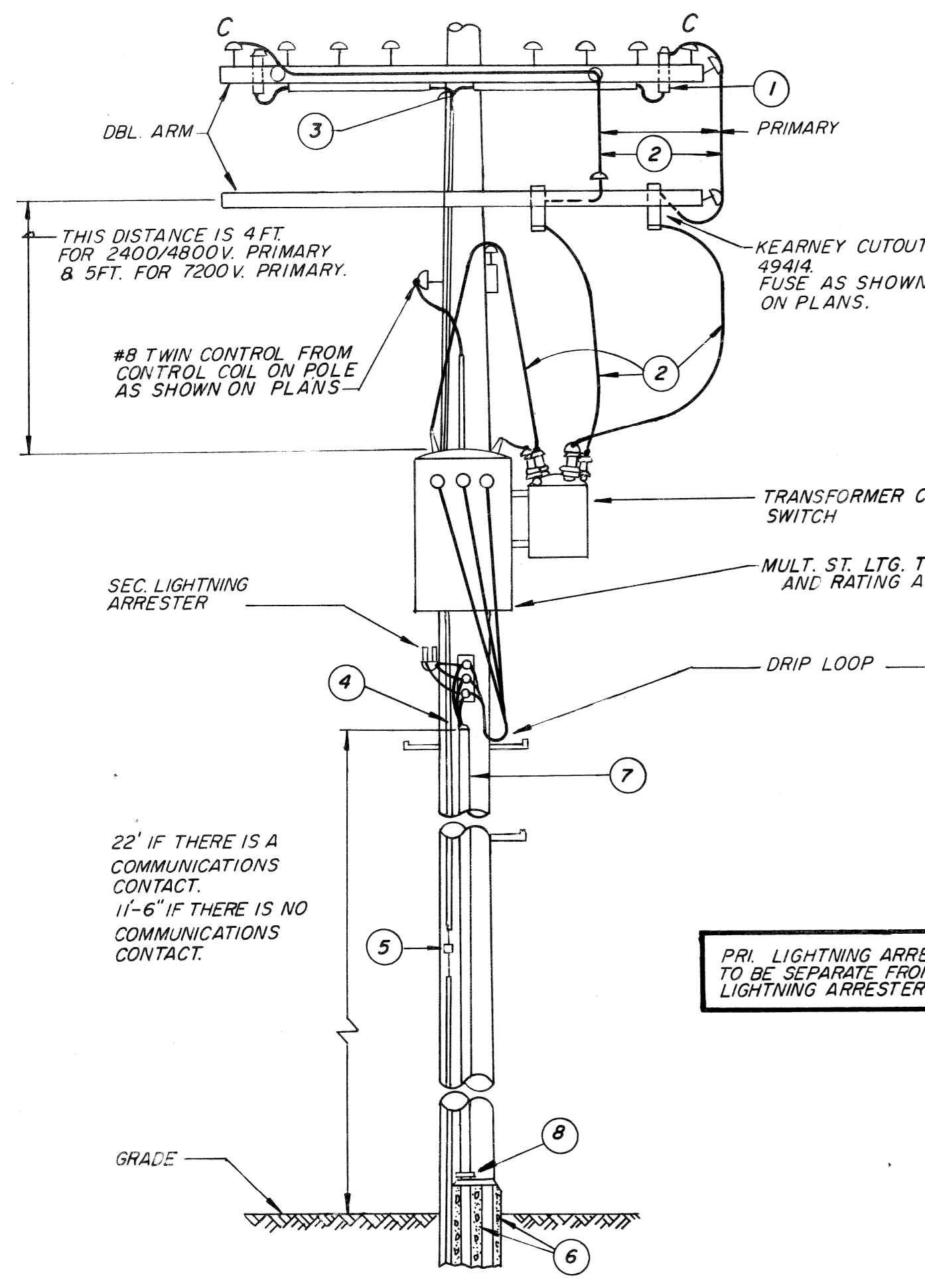
HARPER AVE. - CADIEUX AVE.
WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
MISCELLANEOUS OVERHEAD
DETAILS

SHEET 44 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

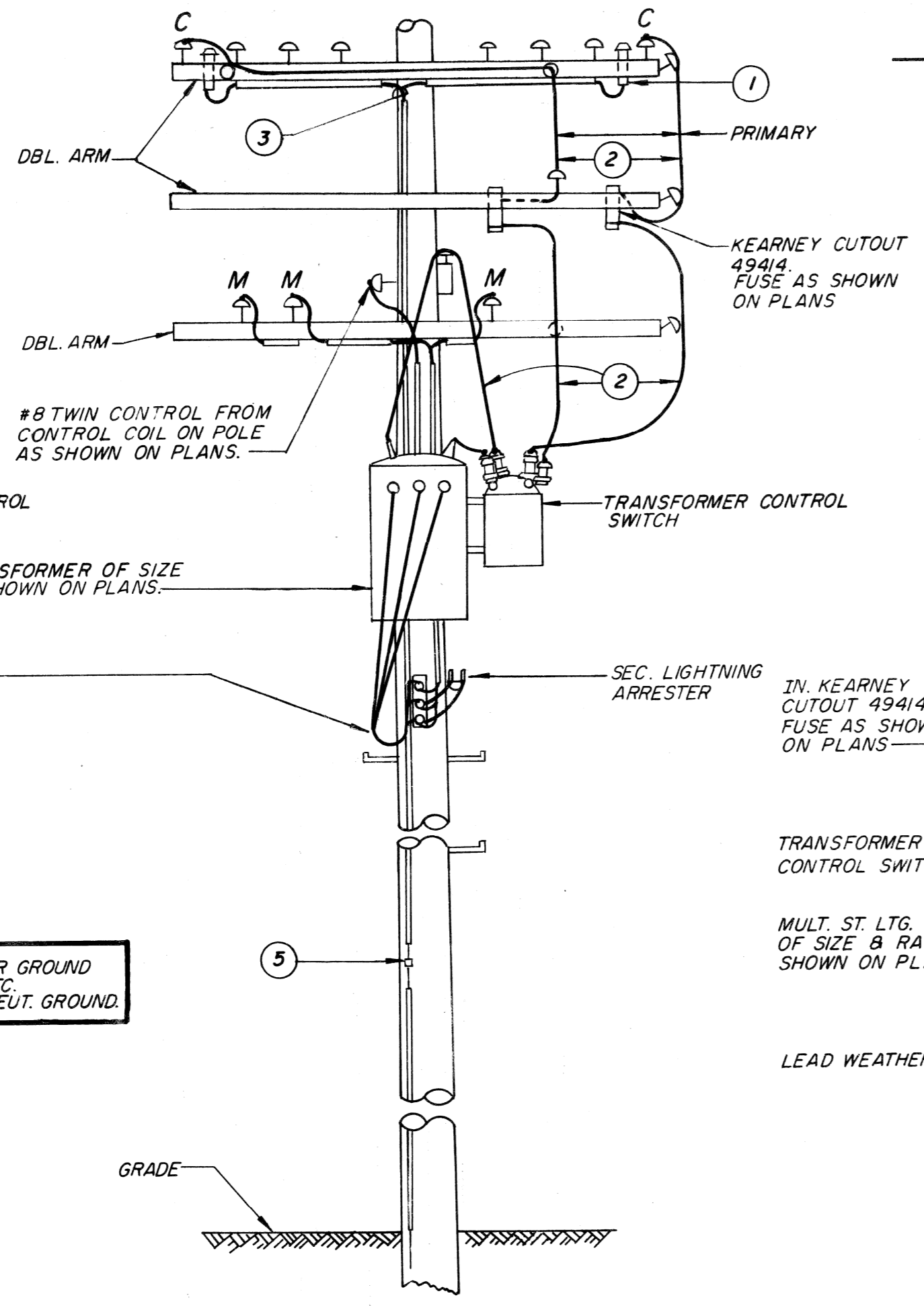
CITY OF DETROIT
CITY ENGINEERING DIVISION
E.P.M.D.

DRAWN BY CEA	PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
CHECKED BY [Signature]	16580 WYOMING DETROIT, MICH. 48221
APPROVED BY [Signature]	CEA FED AID 9
DATE 9-16-76	DRWG NO. 20 OF 30 FILE NO.

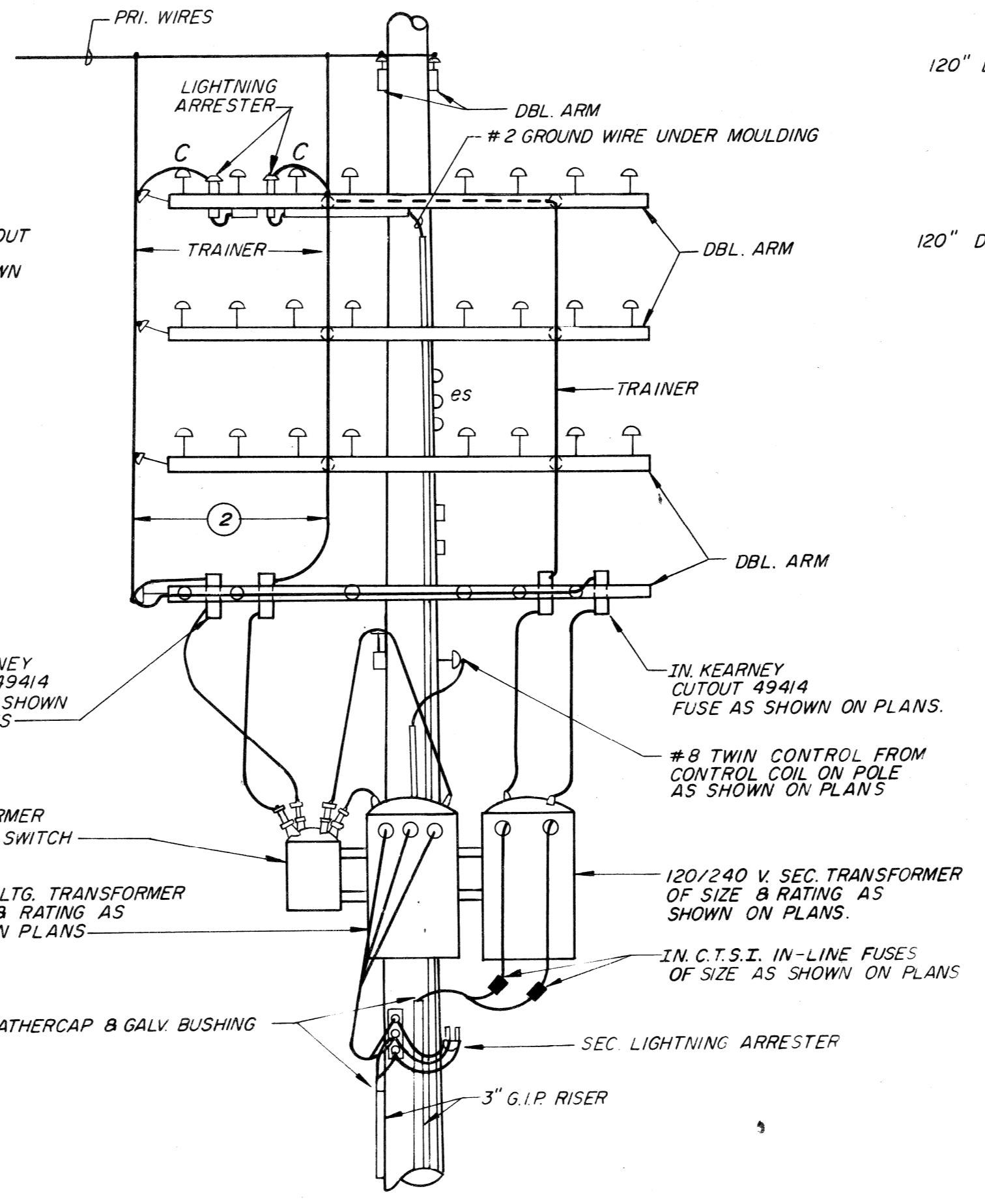
PUBLIC LIGHTING COMMISSION CITY OF DETROIT	FILE NO. 49-0573 SHEET NO. 20 OF 30 DATE 9-16-76
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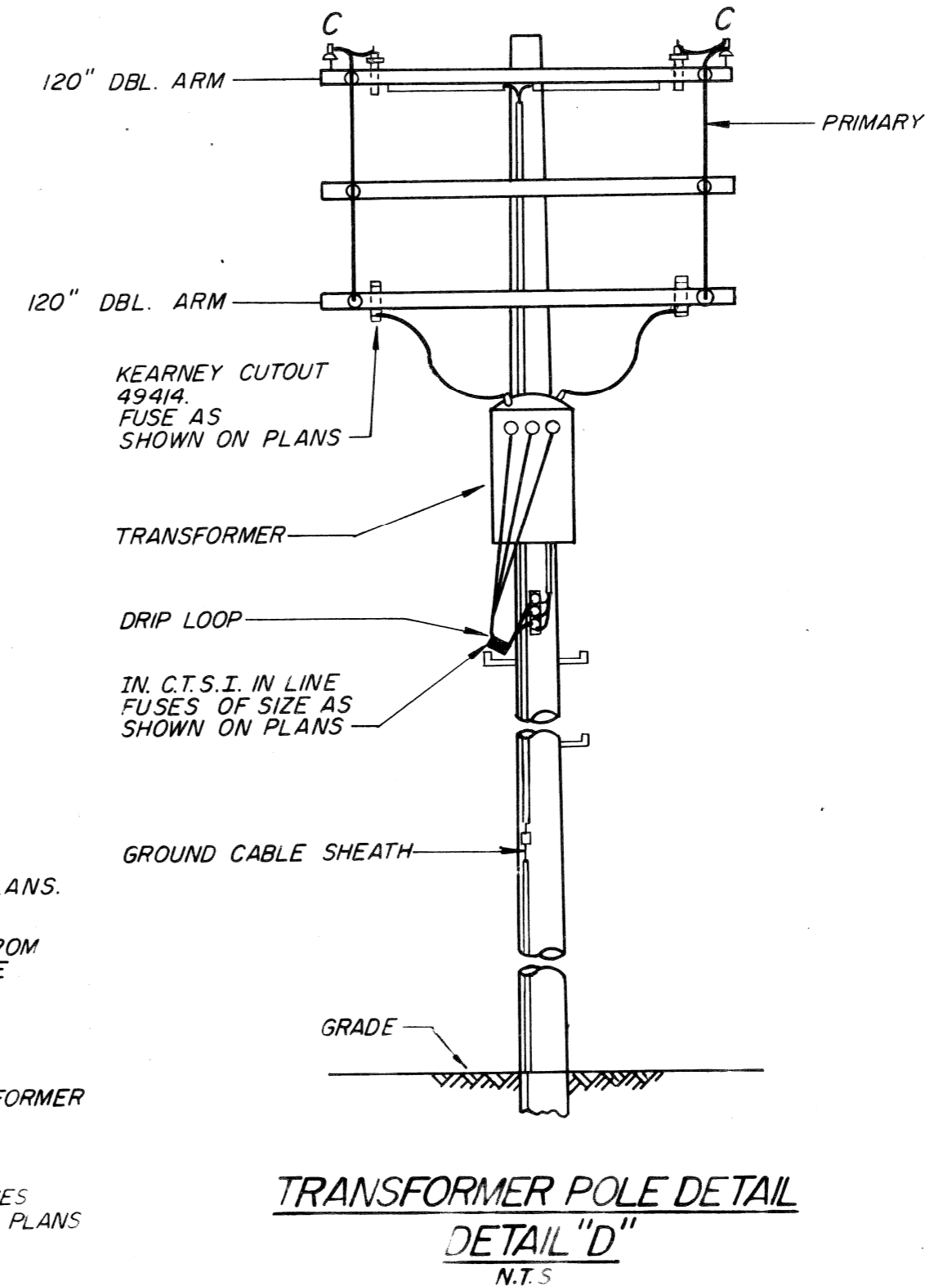
COMB. MULT. ST. LTG. TRANSF. POLE & MULT. ST. LTG. CABLE POLE
DETAIL "A"
 N.T.S.



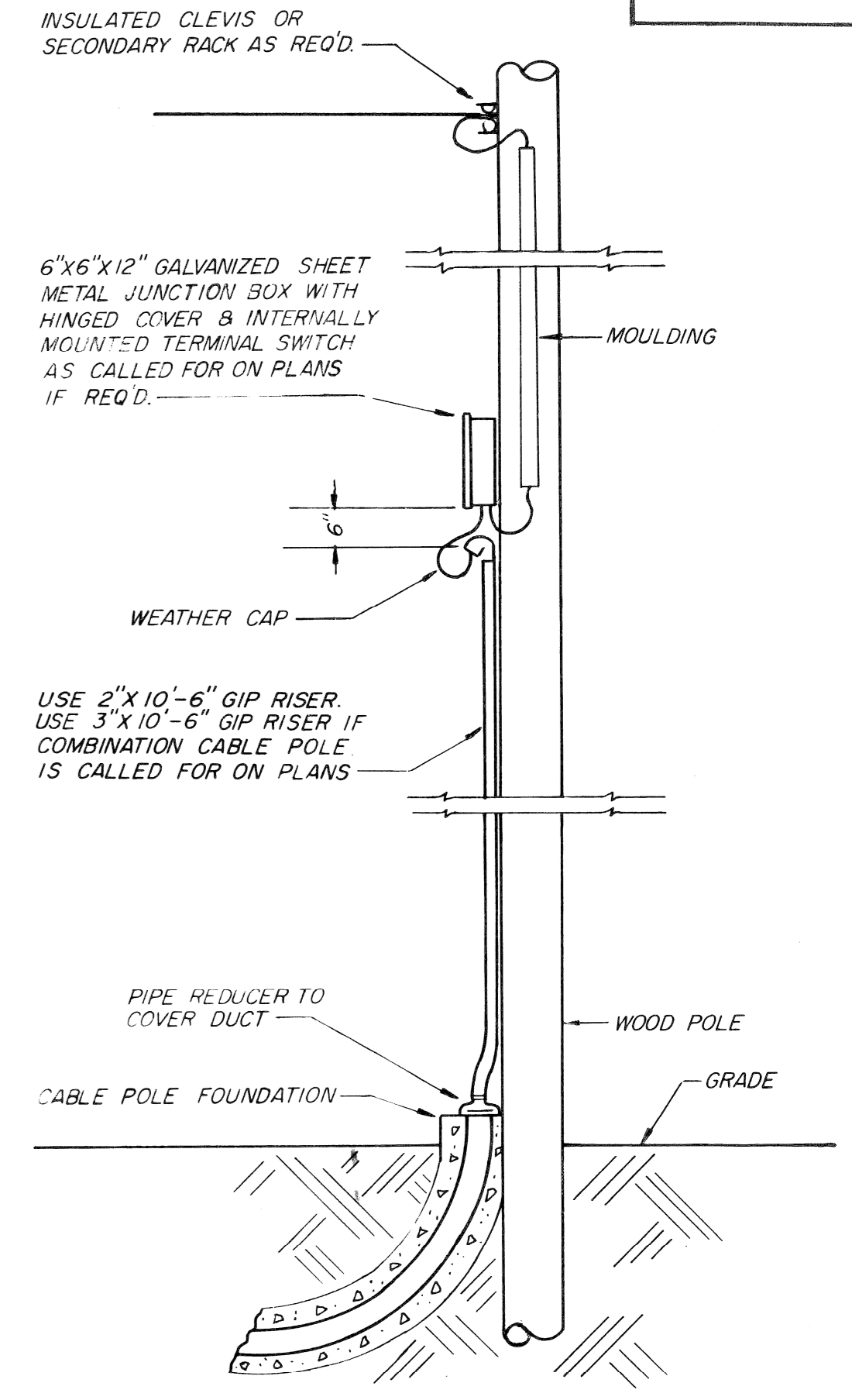
MULT. ST. LTG. TRANSFORMER POLE
DETAIL "B"
 N.T.S.



COMB. TRANSF. POLE, MULT. ST. LTG. TRANSF. POLE, MULT. ST. LTG. & SEC. CABLE POLE
(CLUSTER MOUNT-TYP.)
DETAIL "C"
 N.T.S.

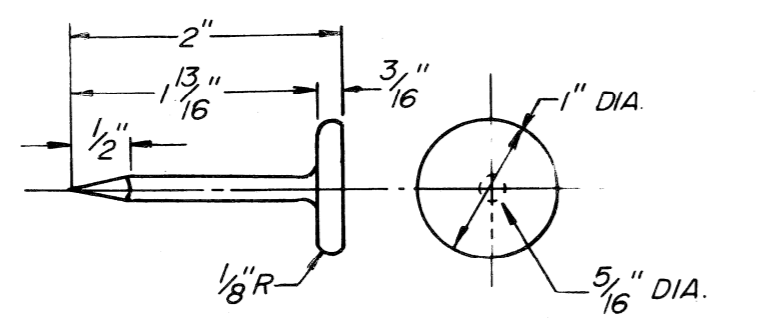
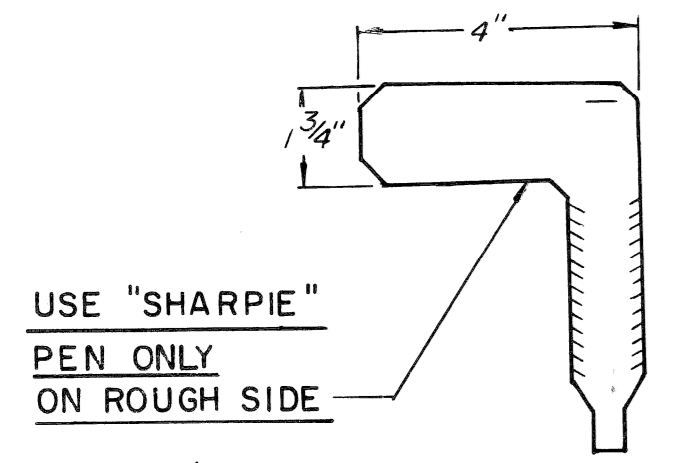


TRANSFORMER POLE DETAIL
DETAIL "D"
 N.T.S.



TYPICAL CHRONOPLAN, SECONDARY, MULT. ST. LTG. & TRAFFIC SIGNAL CABLE POLE DETAIL

DETAIL ITEMS	
①	LIGHTNING ARRESTER
②	#6 OVERHEAD TRAINING WIRE, (NEOPRENE COVERED, WEATHERPROOF)
③	#2 GROUND WIRE UNDER MOULDING
④	LEAD WEATHERCAP & GALV. BUSHING
⑤	FOUR SCREW CONNECTOR
⑥	3/8" RADIUS PLASTIC BEND, NO. & SIZE OF CONDUIT AS SHOWN ON PLANS.
⑦	3" G.I.P. RISER
⑧	3" X 4" REDUCER ADAPTER

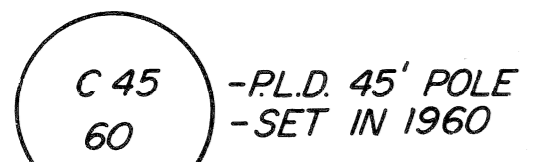


CAST BRONZE POLE MARKER 0
FOR ALL WOOD POLES
 N.T.S.

COLOR
 YELLOW - MULTIPLE STREET LIGHTING, EITHER PLASTIC OR LEAD CABLE
 GREEN - COMMUNICATIONS, PILOT WIRE AND SUPERVISORY CABLES
 WHITE - TRAFFIC SIGNALS
 ORANGE - CONVENIENCE OUTLETS, COMFORT STATION FEEDS, MARINA POWER, ETC.

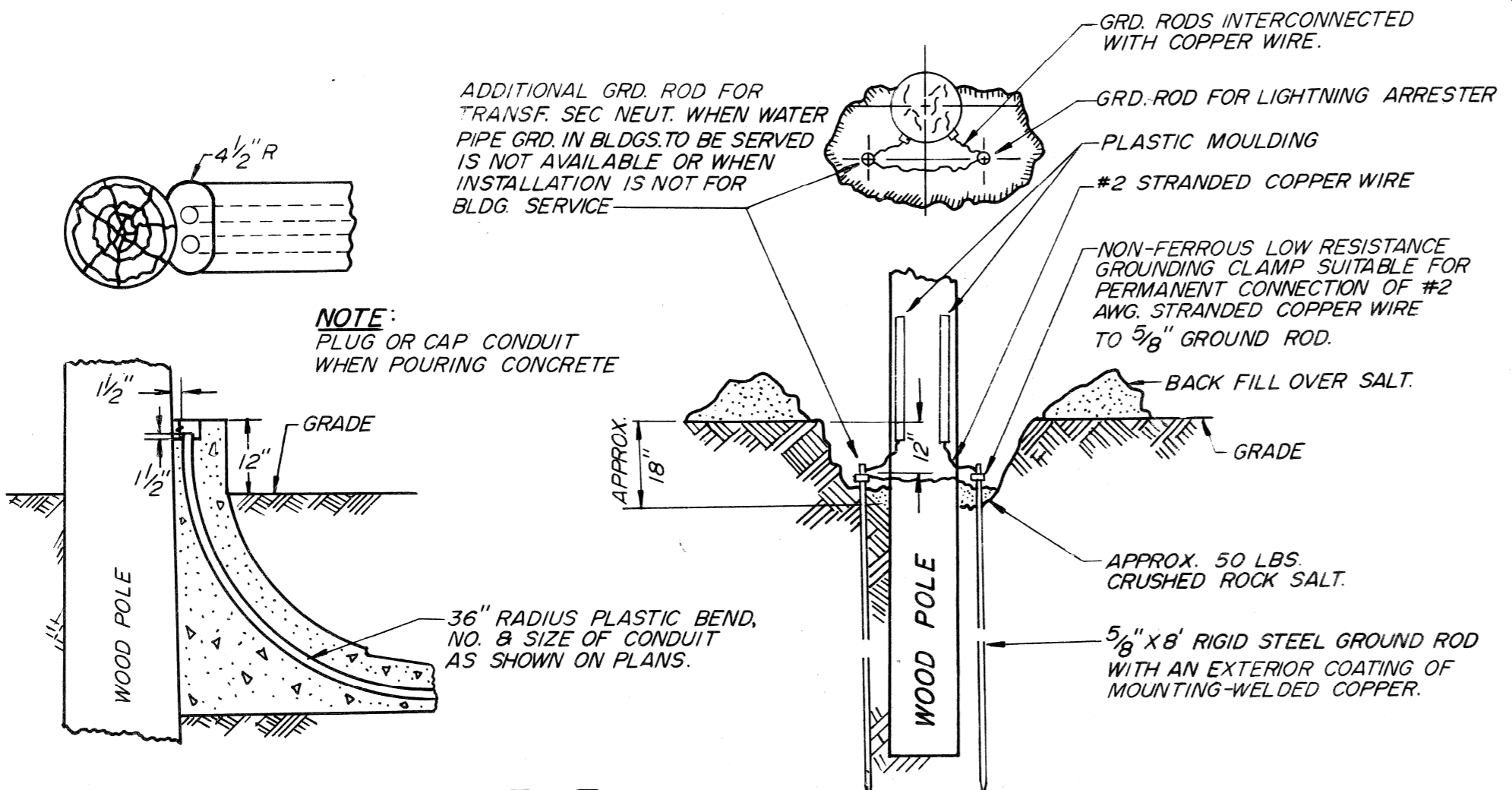
WRITTEN INFORMATION SHOULD INCLUDE CIRCUIT NUMBER, PHASE (A1, B3, ETC.), VOLTAGE PRESENT (480/960, 120, 480/277, 6.6 SERIES, ETC.). ADDITIONAL INFORMATION AS REQUIRED.

CABLE MARKING TAG
(PLASTIC)
 N.T.S.



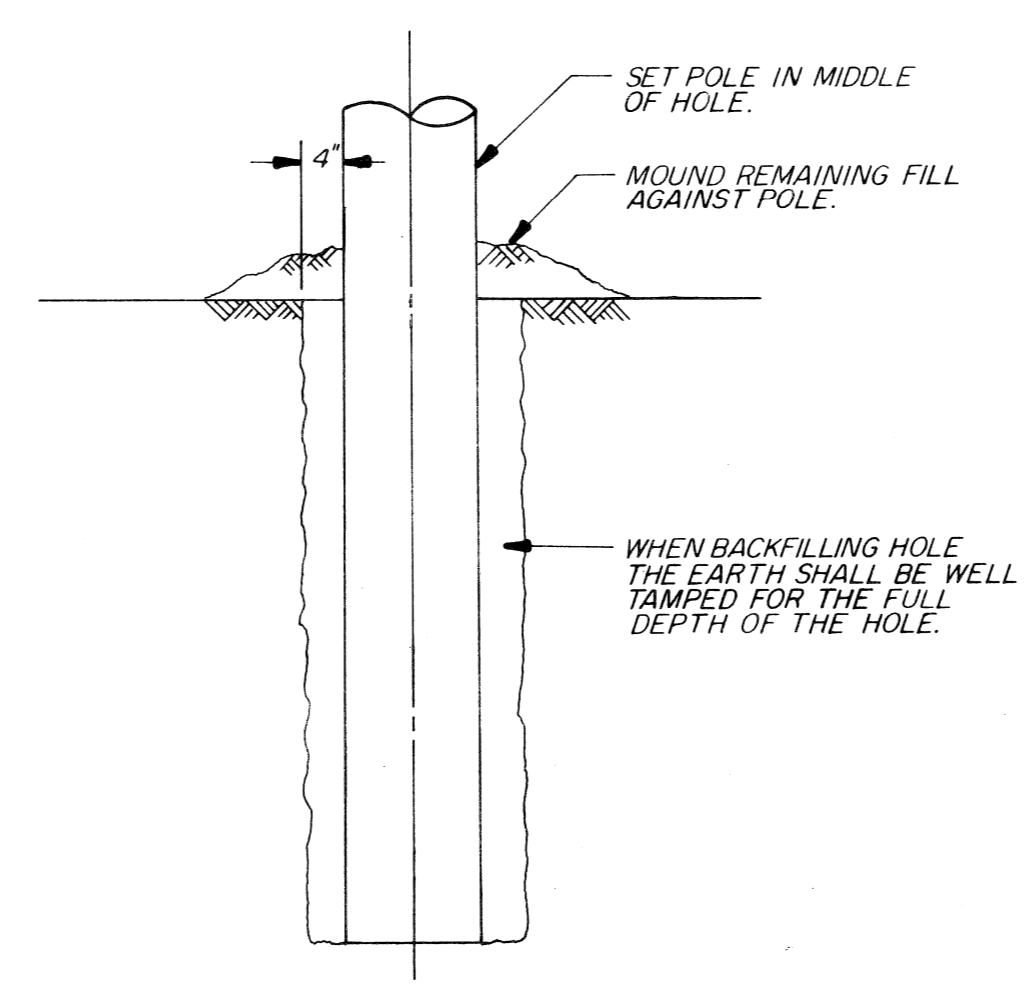
USE 1/4" STREET STAMP FOR LETTERING
 PIN SET MARK 7"-0" ABOVE GRADE. FACE OF HEAD TO BE ROUGH-GROUND. P.L.D. PATTERN PROVIDES FOR 40 MARKERS PER POURING.

TYPICAL MARKING
 N.T.S.

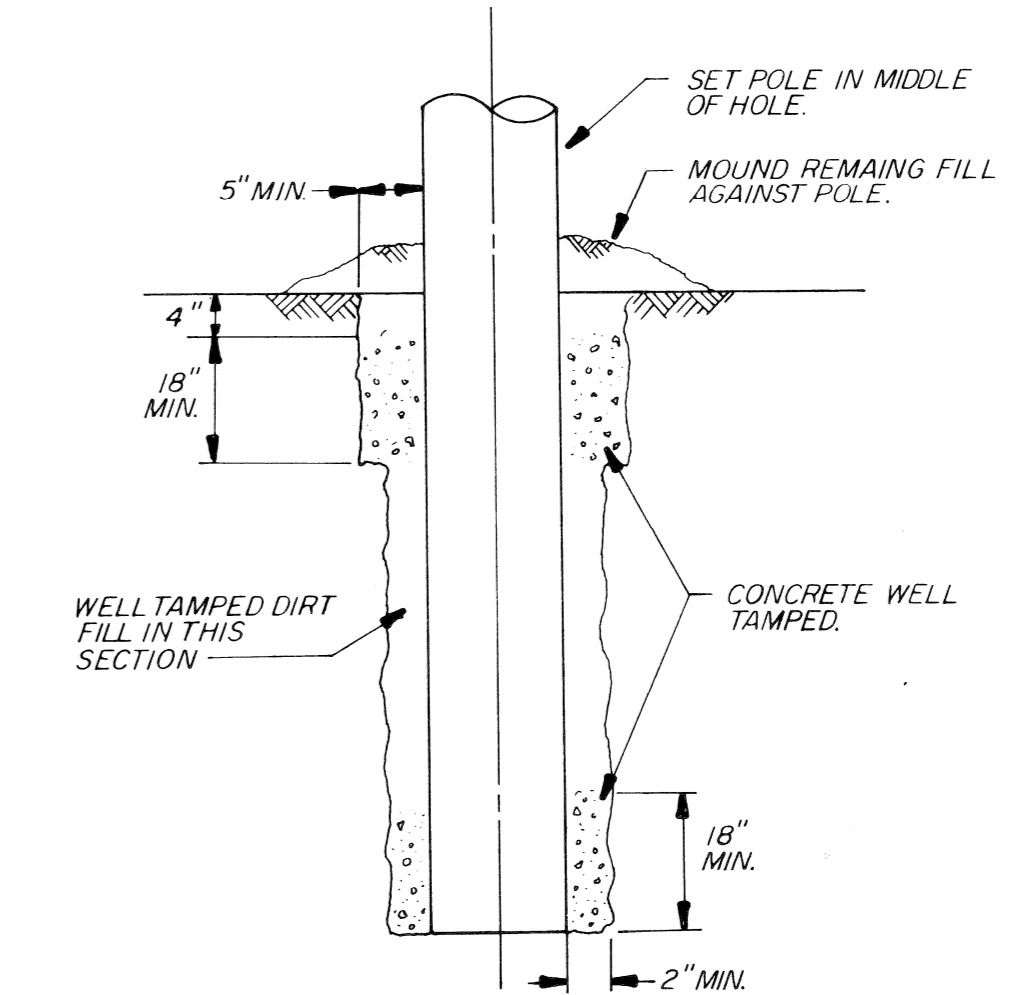


INSTALLATION OF CONDUIT AT CABLE POLE
 N.T.S.

GROUND ROD INSTALLATION
 N.T.S.



WOOD POLE INSTALLATION
 N.T.S.



M.S.S. SELF-SUPPORTING WOOD POLE IN CONCRETE

SUBSTATION NAMES ON IDENTIFICATION TAGS SHALL BE SPELLED AS FOLLOWS

ATWTR.	MCRDY.
BI.	MTRSE.
BUTZL.	PAL. PK.
CNFLD.	PHILP.
CONNR.	PORTER.
CUSTER.	STNTN.
GRNFD.	STONE.
HUDSN.	TRNTY.
J. CAMP.	TRBLY.
JOY RD.	TURNR.
L.A. BEL.	VERNR.
LTHRP.	WALTN.
LUDDN.	WARRN.
MAPLE.	WD. TER.

NO.	DATE	REVISION
42		

HARPER AVE. - CADIEUX AVE
WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
TRANSFORMER POLES & MISC. CABLE POLE DETAILS

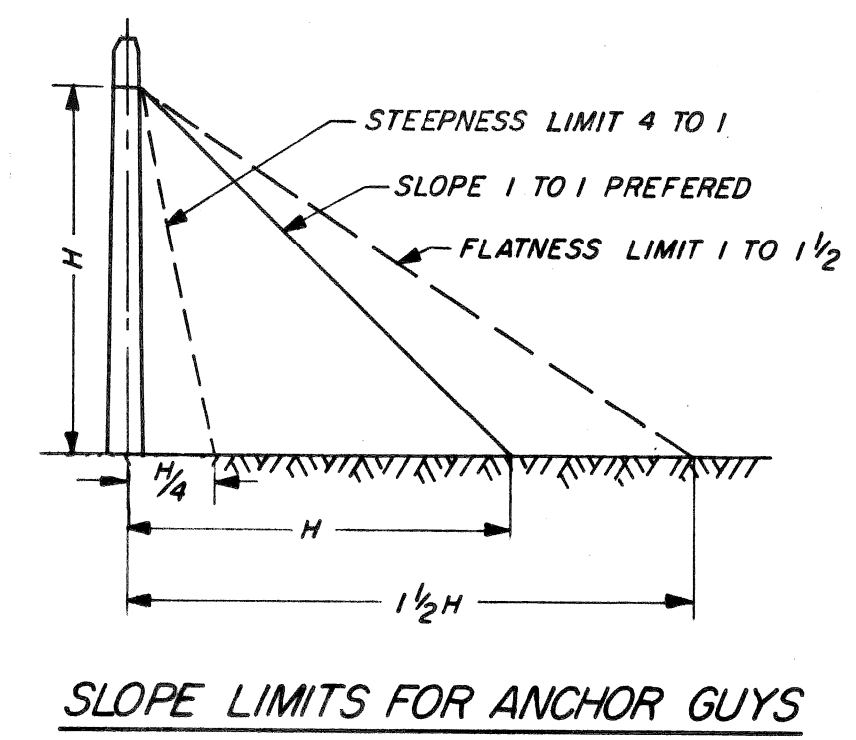
SHEET 45 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

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

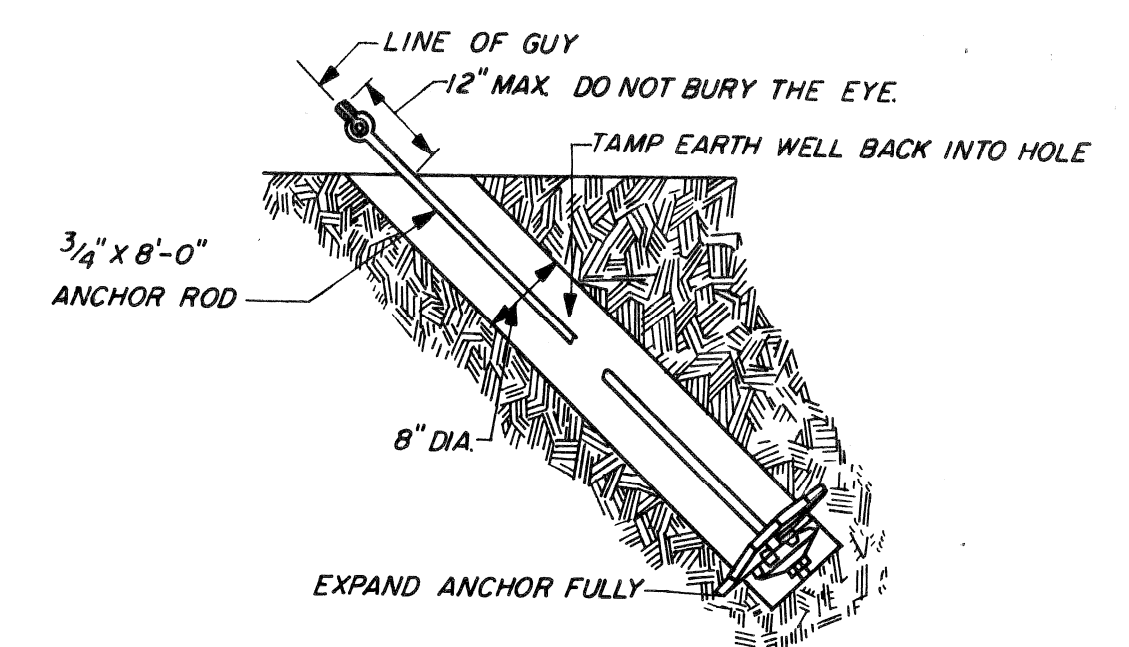
DRAWN BY CEA
CHECKED BY [Signature]
APPROVED BY [Signature]
DATE 9-16-76

PLAN PREPARED BY
 CONSULTING ENGINEERING ASSOCIATES INC.
 ENGINEERING CONSULTANTS
 16580 WYOMING DETROIT, MICH 48221
 DRWG. NO. 21 OF 30
 FILE NO. CEA FED AID 9

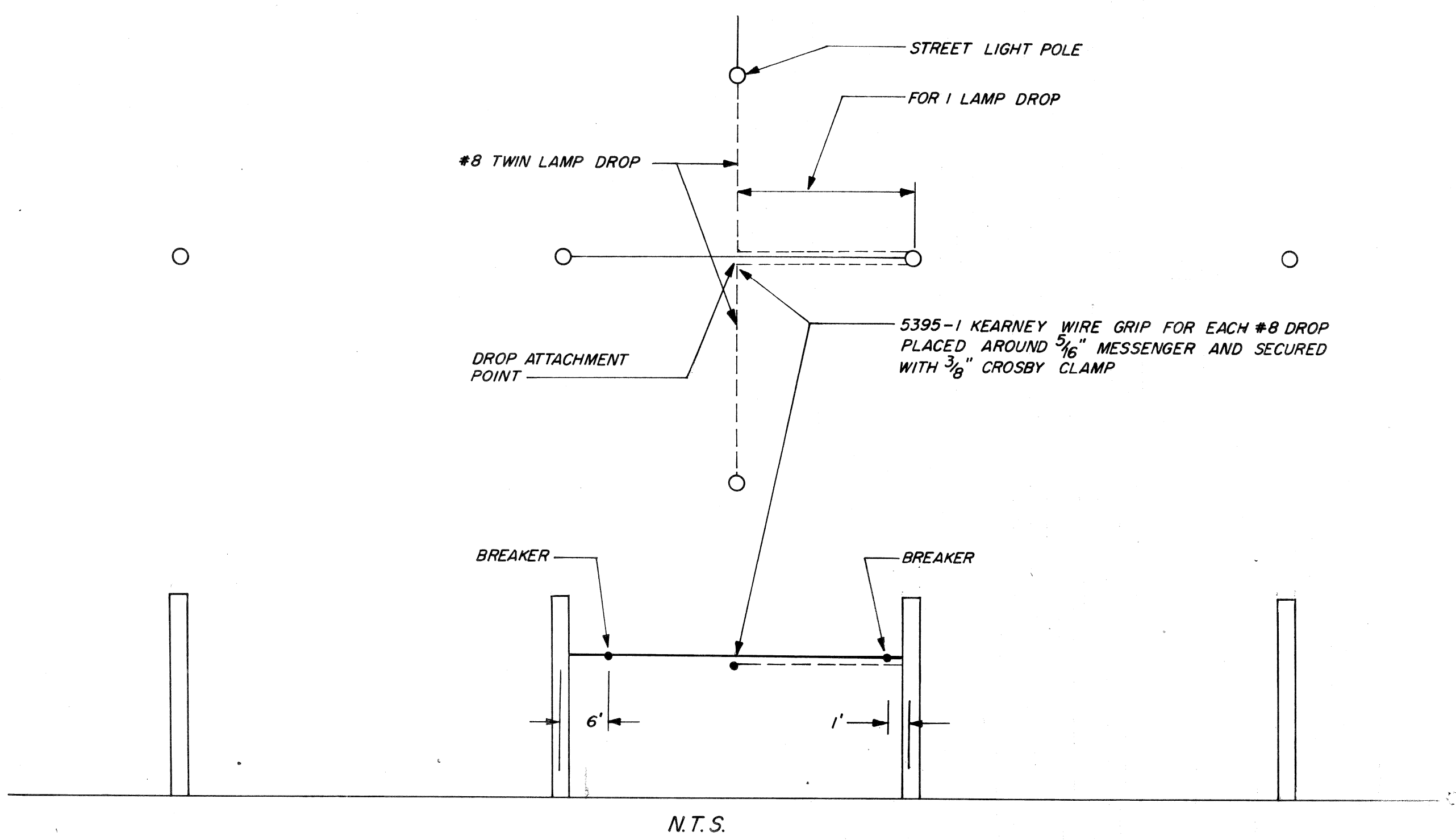
PUBLIC LIGHTING COMMISSION	CITY OF DETROIT
FILE NO. 49-0573	SHEET NO. 21 OF 30
DATE 9-16-76	



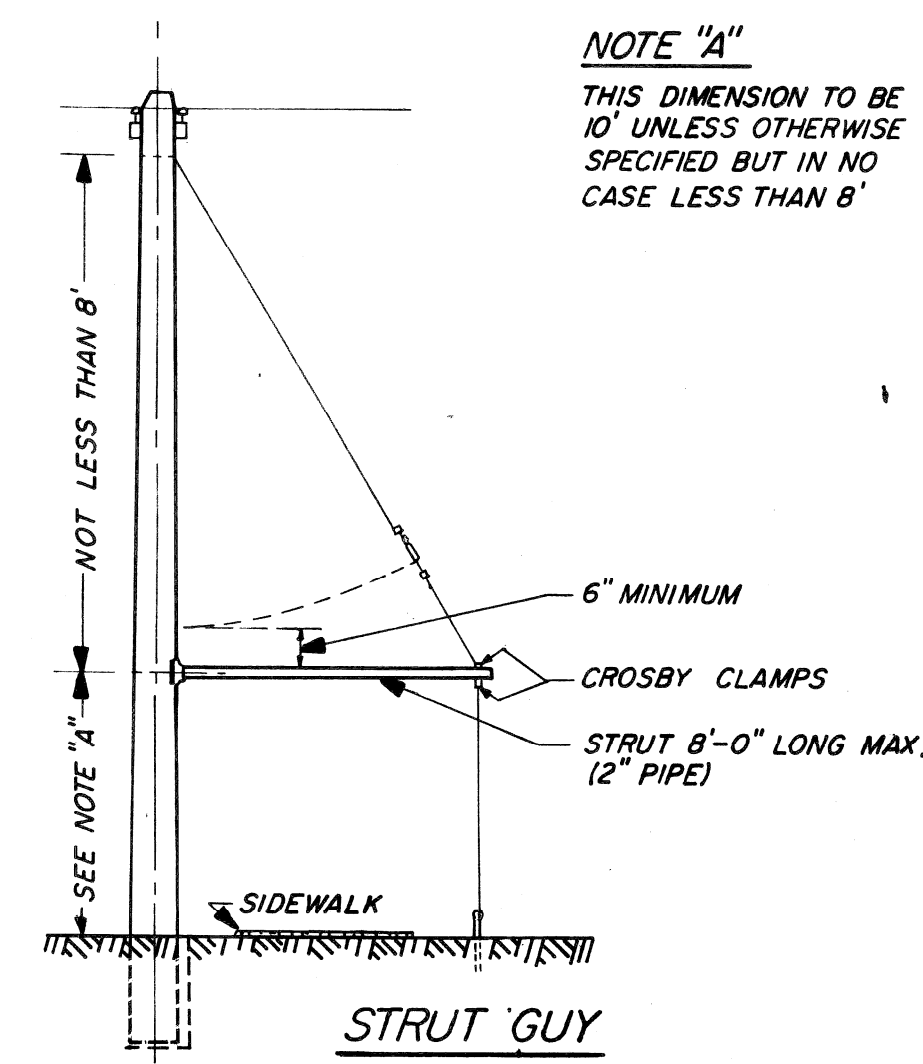
SLOPE LIMITS FOR ANCHOR GUYS



EXPANDING ANCHOR



N.T.S.

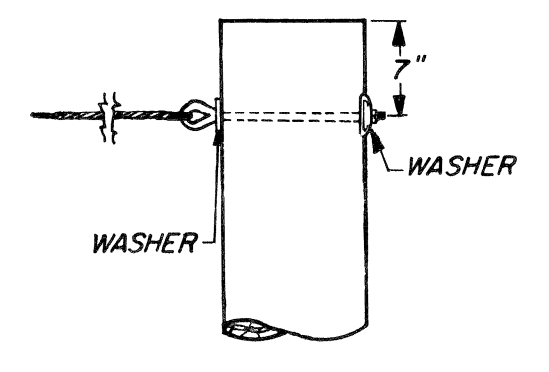


STRUT GUY

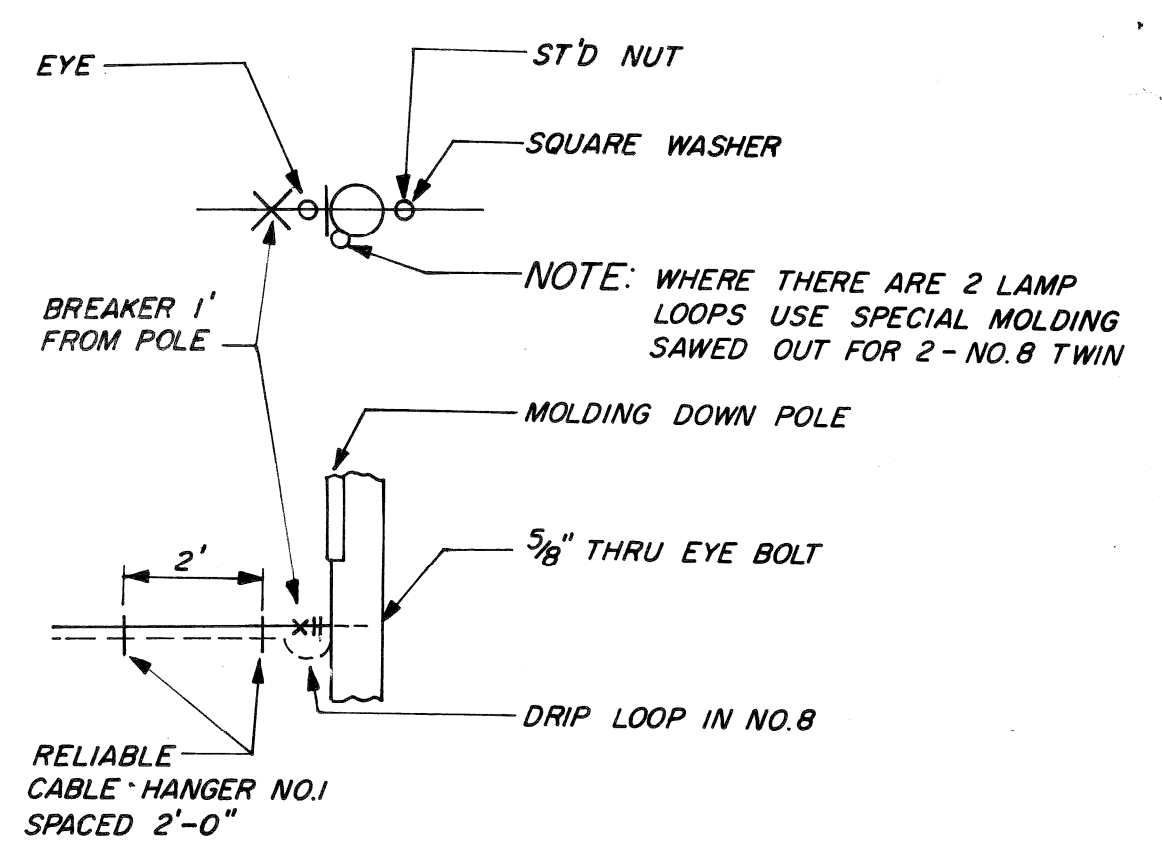
NOTE "A"
THIS DIMENSION TO BE 10' UNLESS OTHERWISE SPECIFIED BUT IN NO CASE LESS THAN 8'

POLE HEIGHT	SETTING DEPTH
30	6.0'
35	6.0'
40	6.0'
45	6.5'
50	7.0'
55	7.5'
60	8.0'

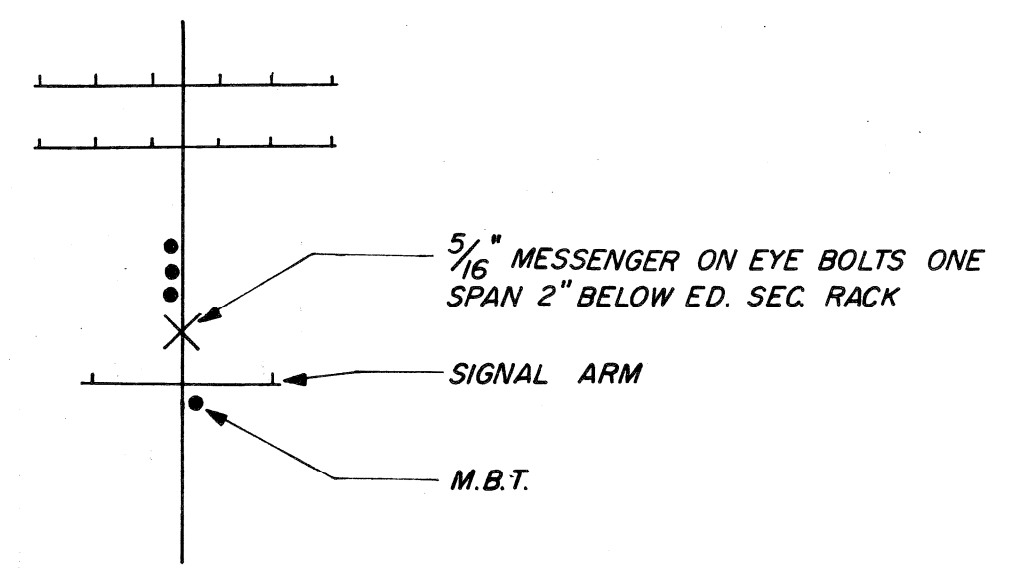
TYPICAL POLE SETTING DEPTH



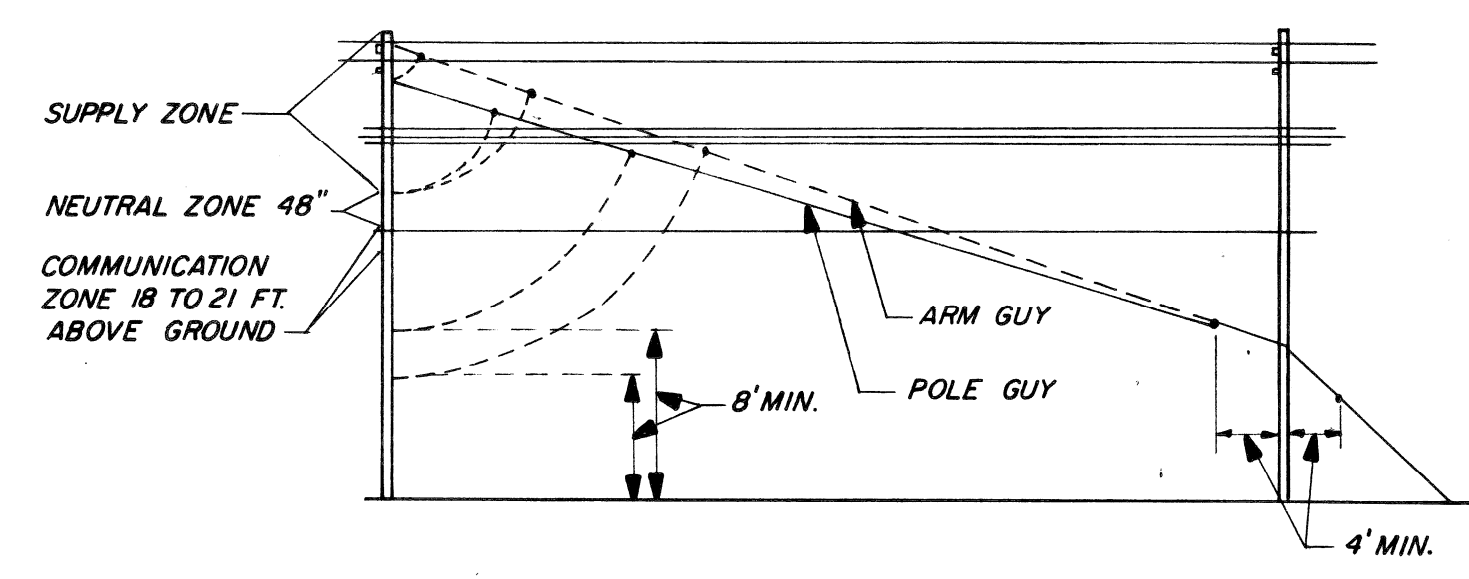
POLE GUY



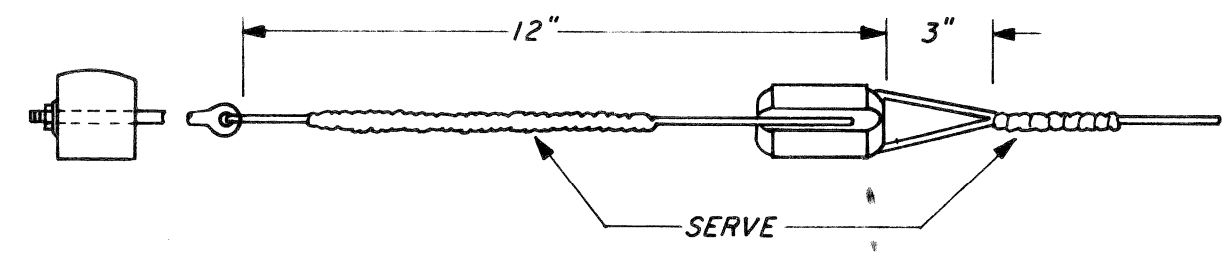
(POLE DETAIL)



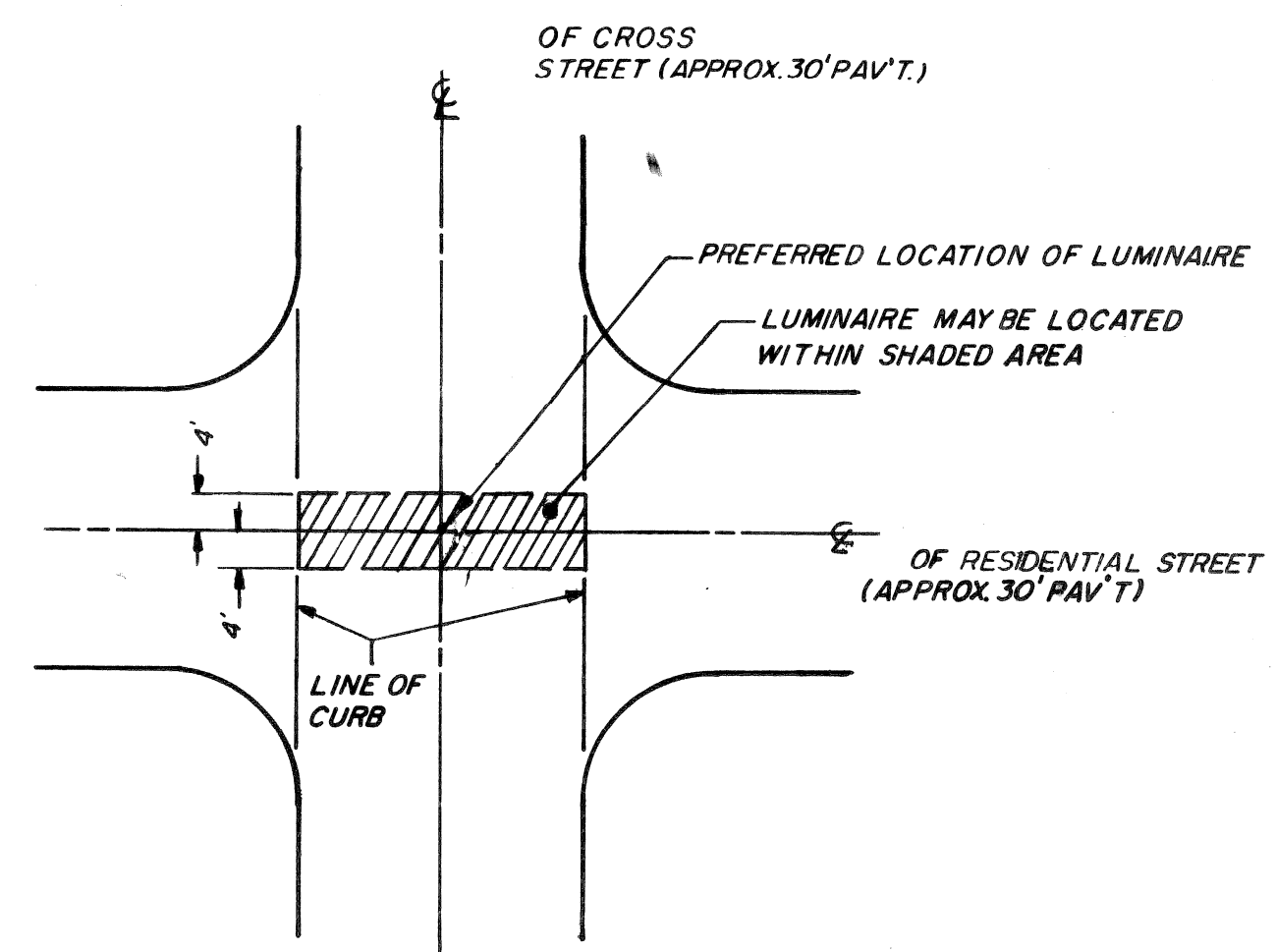
NOTE: INSTALL 5/16" MESSENGER SPAN FIRST WITH SAME SAG AS EDISON SEC. THEN INSTALL NO.8 TWIN DROPS IN THE CASES WHERE THERE IS A SINGLE DROP AND THE ATTACHMENT POINT IS PULLED OUT AND UP READJUST SAG AT EYE BOLT.



STRAIN INSULATOR POSITIONS IN GUY WIRES



ARM GUY DETAILS



INSTALLATION OF RESIDENTIAL M.V. OH. LUMINAIRE N.T.S.

MESSENGER WIRE LAMP DROP SUPPORT: STANDARD INSTALLATION METHOD

DATE	DESCRIPTION	CHKD. BY
		45

HARPER AVE. - CADIEUX AVE.
WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
MESSENGER WIRE INSTALLATION & MISC. DETAILS

SHEET 46 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

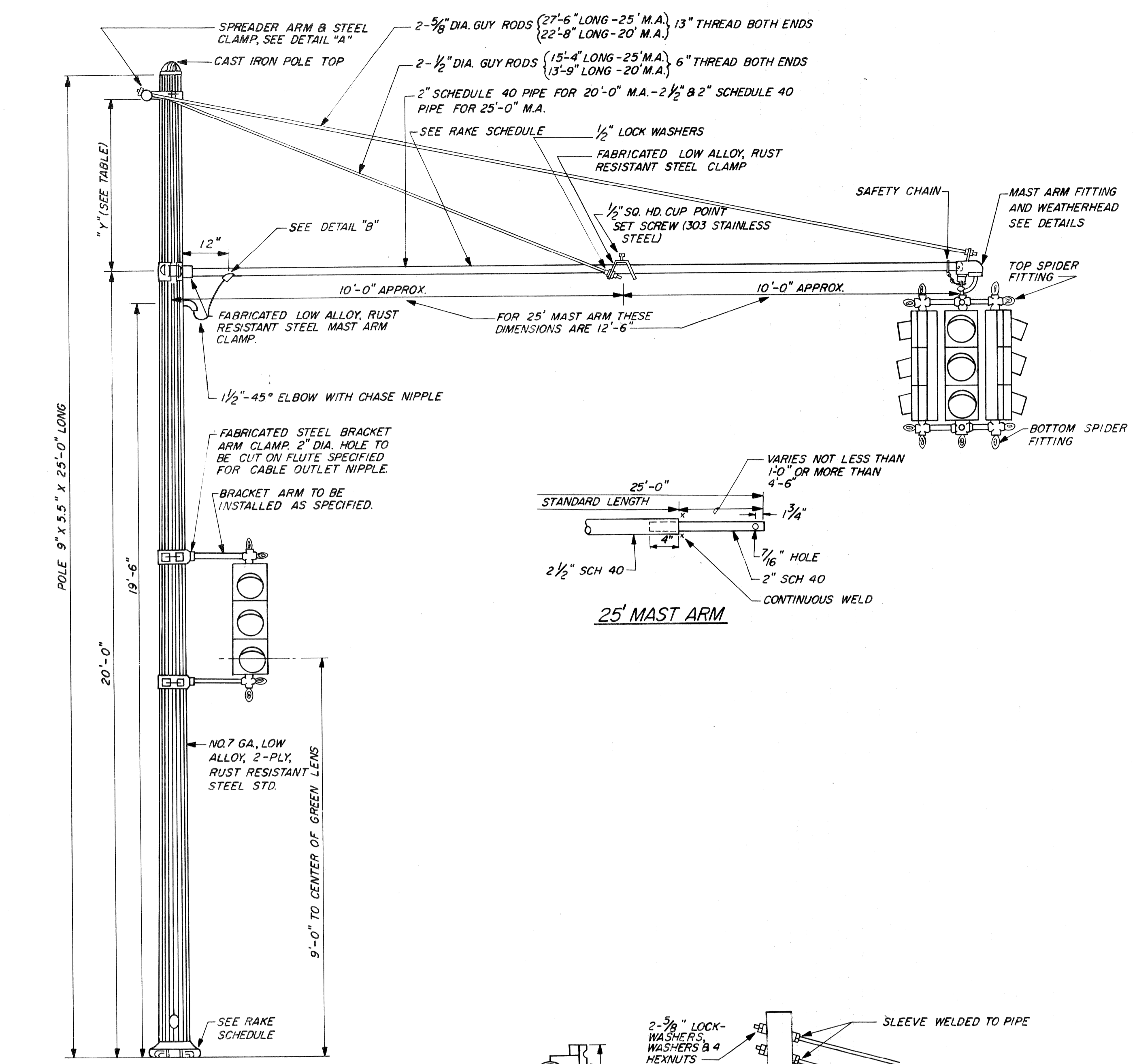
CITY OF DETROIT
CITY ENGINEERING DIVISION
E.P.M.D.

DRAWN BY CEA
CHECKED BY
APPROVED BY
DATE 9-16-76

PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH. 48221
FILE NO.
22 OF 30
CEA FED AID 9

PUBLIC LIGHTING COMMISSION
CITY OF DETROIT

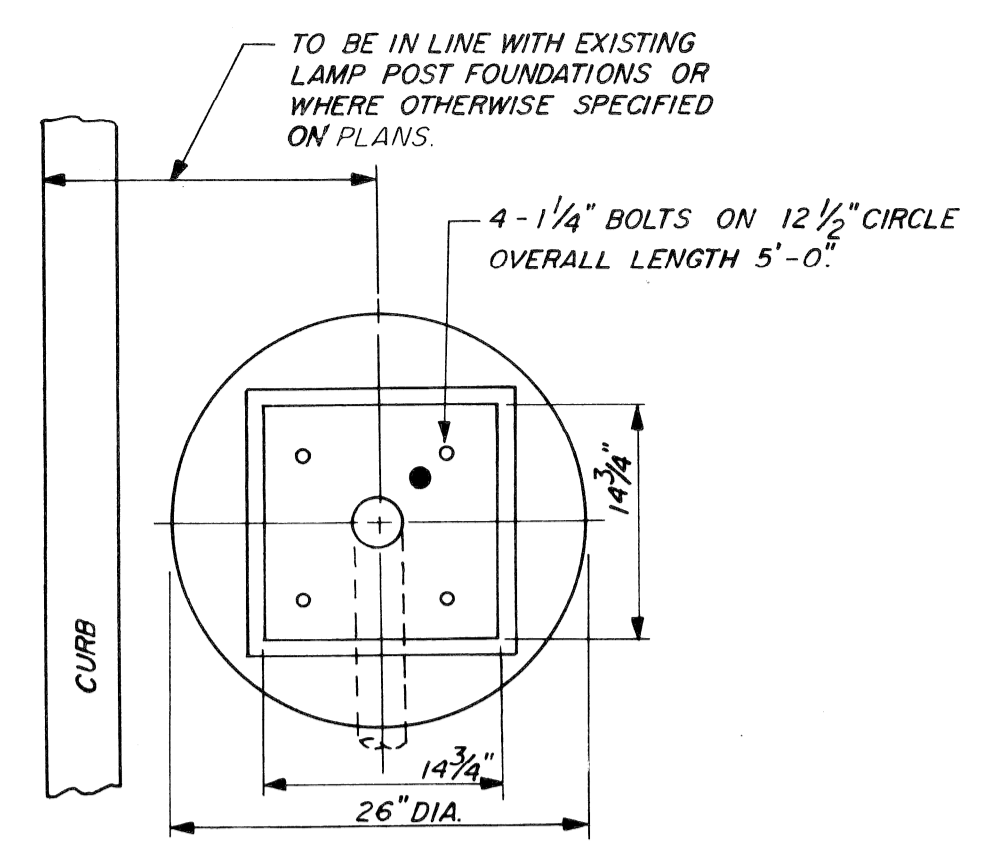
49-0573
SHEET NO. 22 OF 30
DATE 9-16-76



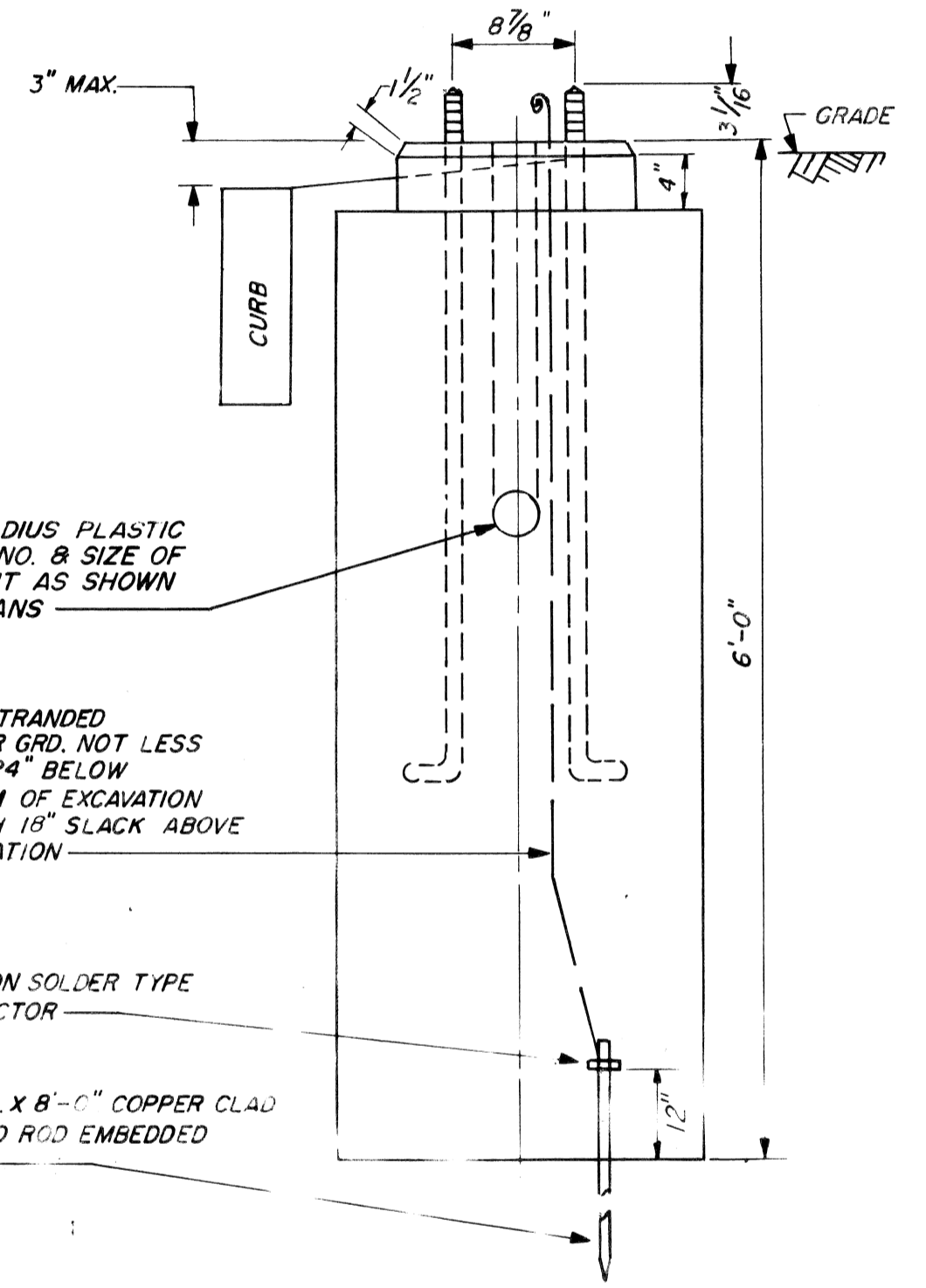
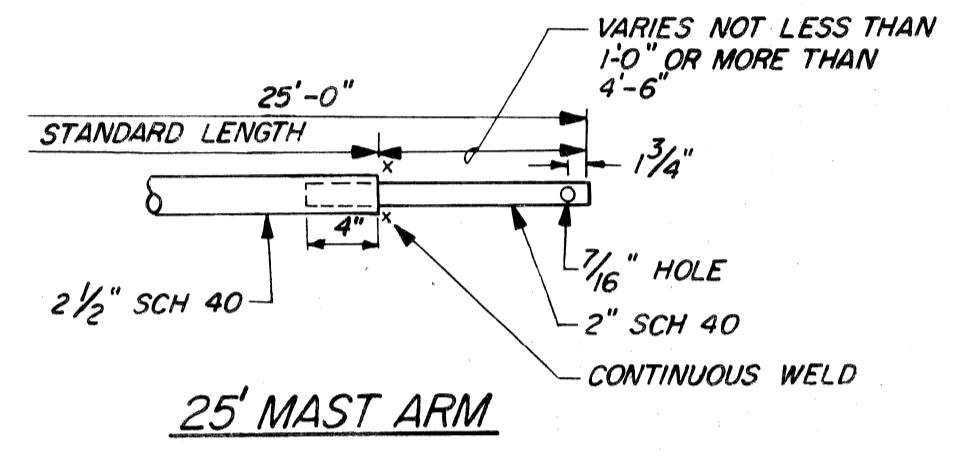
RAKE SCHEDULE

	RAKE AT TOP OF POLE 180° FROM MAST ARM. USE STEEL U-SHAPED SHIMS		
25' M.A.	16 FLUTE	8 FLUTE	COMBINATION POLE
4 WAY HD.	6" 5"	3" 2 1/2"	4" 3 1/2"
3 WAY HD.	4 1/2" 3 1/2"	2" 1 1/2"	3" 2"
2 WAY HD.	3" 2"	1 1/2" 1"	2" 1 1/2"
1 WAY HD.	1 1/2" 1"	1" 1"	1" 1"

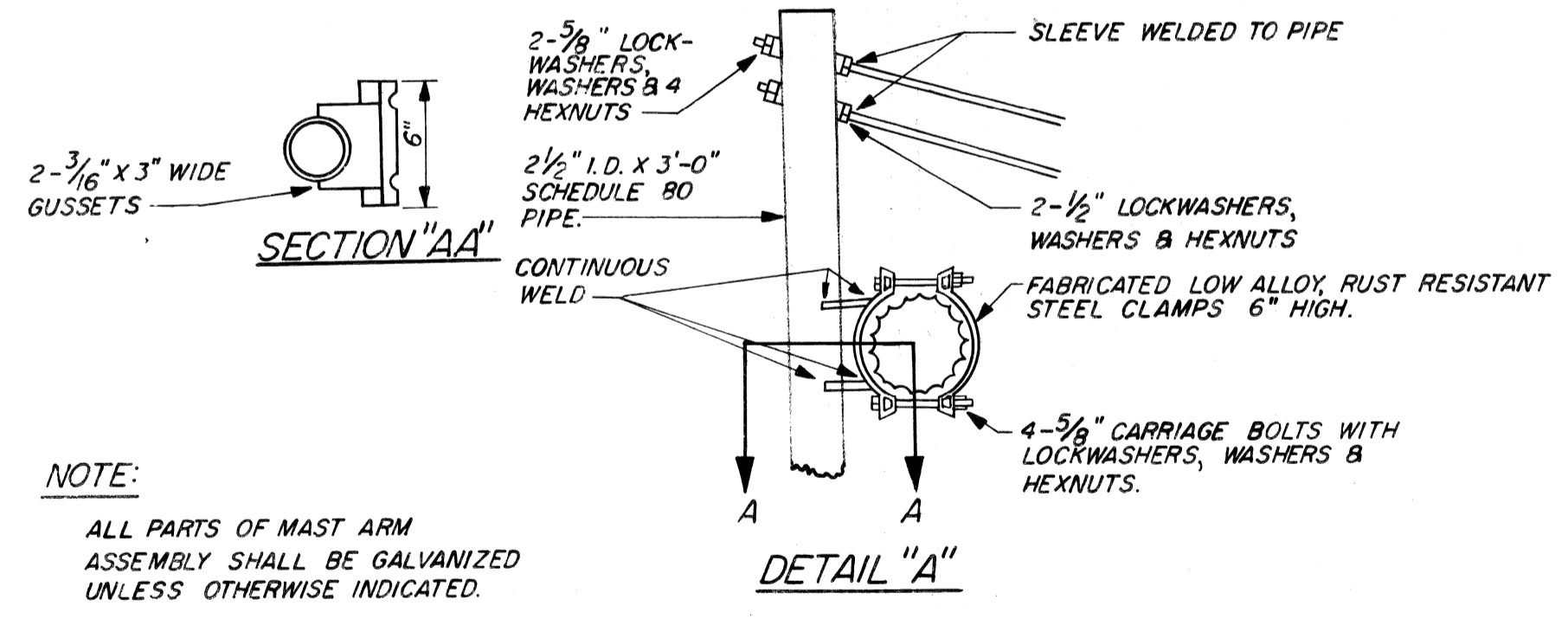
NOTE: THE 25' M.A. SHALL BE INSTALLED WITH A RISE OF 1 1/2" IN ITS LENGTH & THE 20' M.A. SHALL RISE 1".
 LIGHTING FIXTURES SHALL BE PLUMBED AFTER THE POLE IS RAKED & THE T.S. MAST ARM WHEN SIGNAL IS INSTALLED.



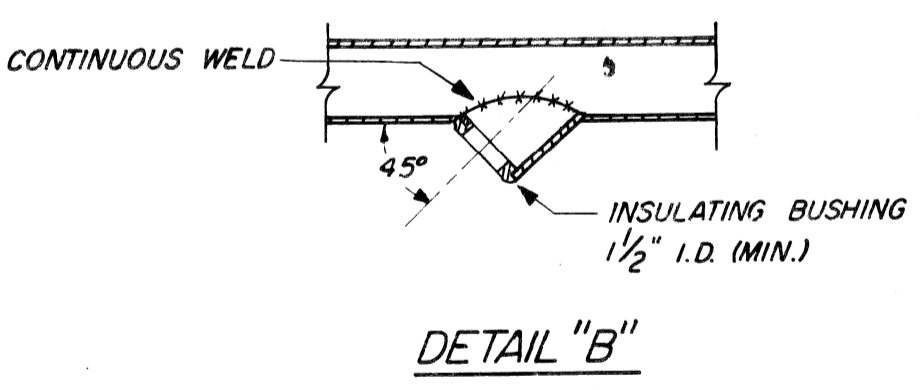
POLE SIZE	NUMBER OF FLUTES	DIMENSION "Y"
9" X 5.5" X 25'-0" MAST ARM STD.	8	4'-6"
10" X 6.5" X 25'-0" COMB. STD.	16	6'-4"
9" X 5" X 28'-6" COMB. STD.	8	5'-0"



BACK-BRACE TYPE MAST ARM STD. NT.S.



NOTE:
 ALL PARTS OF MAST ARM ASSEMBLY SHALL BE GALVANIZED UNLESS OTHERWISE INDICATED.



TRAFFIC SIGNAL MAST ARM STANDARD FOUNDATION 20 FT. & 25 FT. BACK-BRACE TYPE ONLY

DATE	DESCRIPTION	CHKD. BY
		53

HARPER AVE. - CADIEUX AVE.
 WARREN AVE. - CADIEUX AVE.
 INTERSECTION IMPROVEMENT
 T.S. BACK-BRACE TYPE MAST ARM ASSEMBLY DETAILS

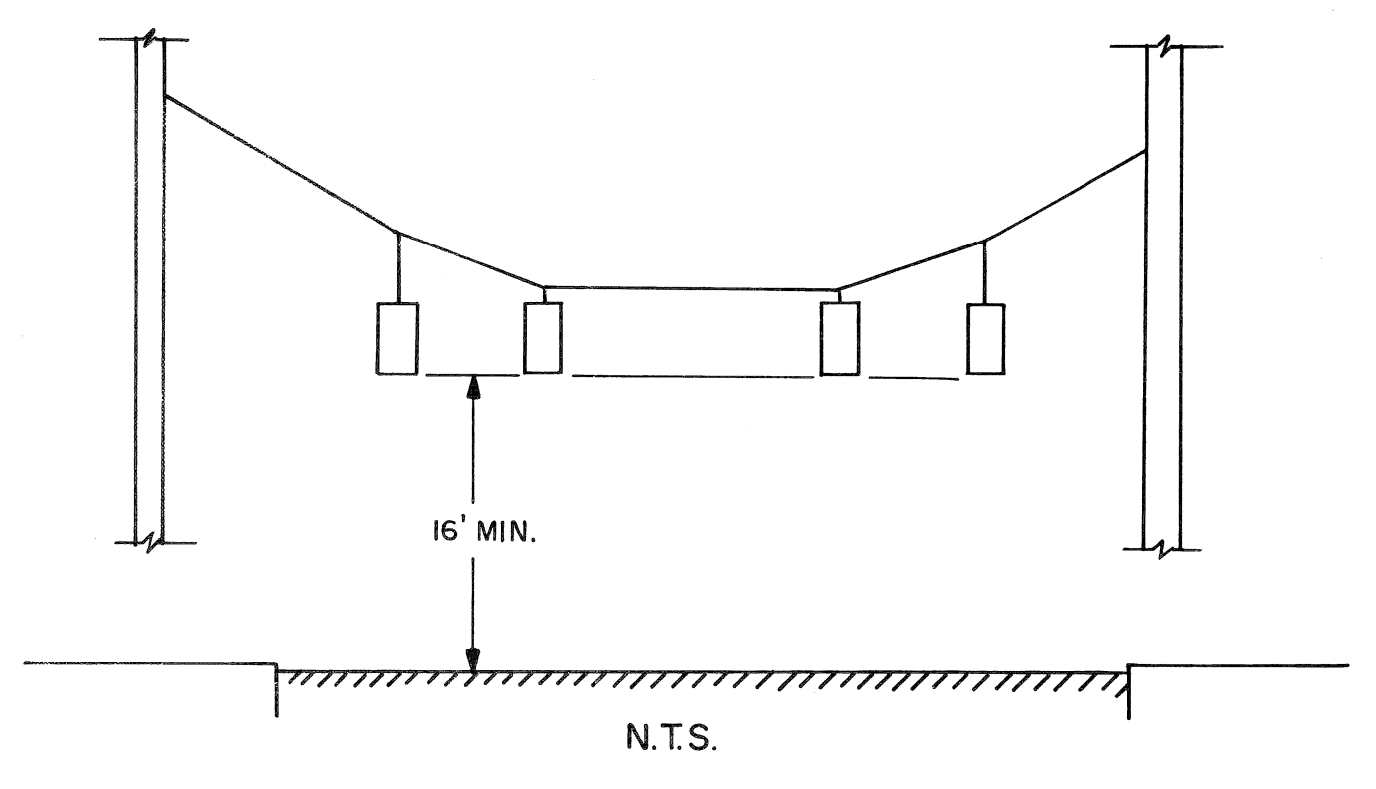
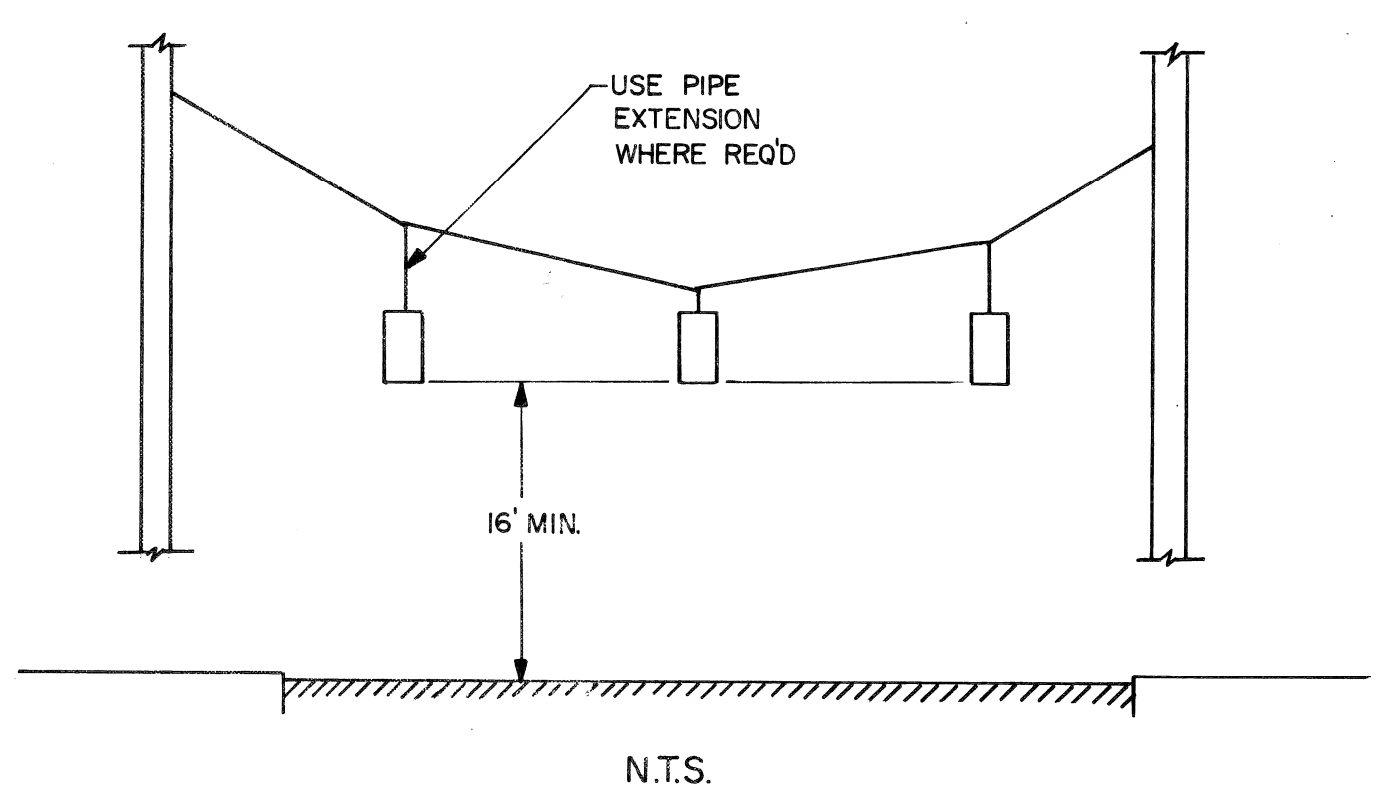
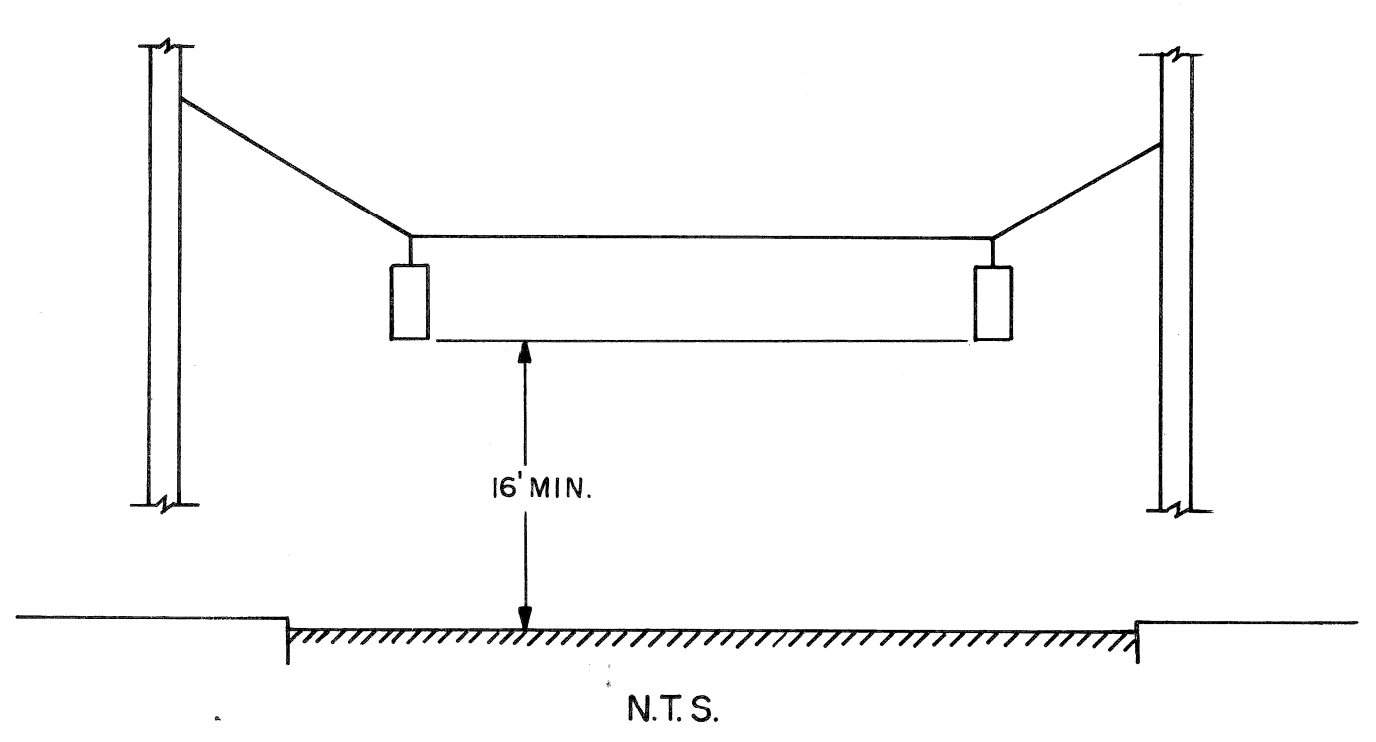
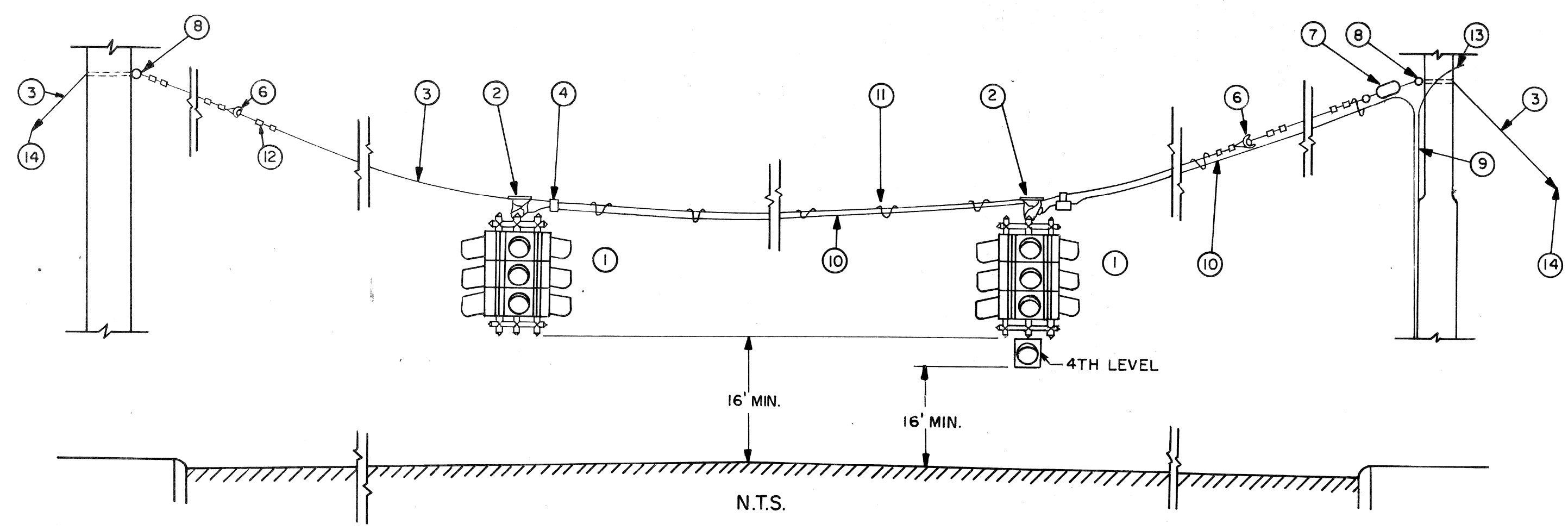
SHEET 47 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

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

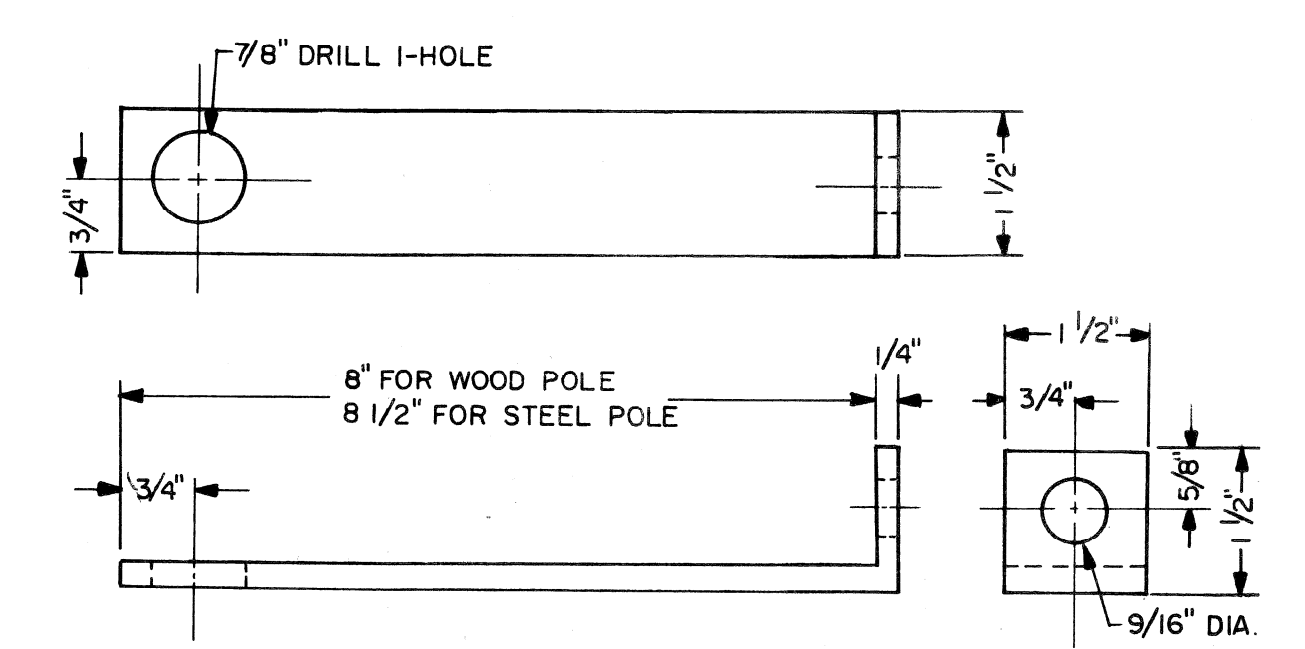
DRAWN BY CEA	PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
CHECKED BY	16580 WYOMING DETROIT, MICH. 48221
APPROVED BY	CEA FED AID 9
DATE 9-16-76	DRAWING NO. 23 OF 30

PUBLIC LIGHTING COMMISSION
 CITY OF DETROIT

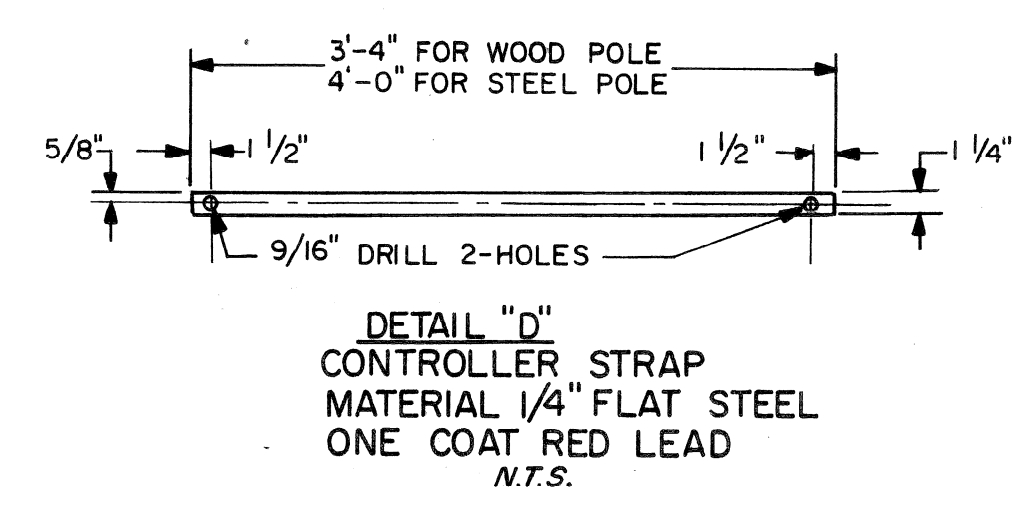
FILE NO. 49-0573
SHEET NO. 23 OF 30
DATE 9-16-76



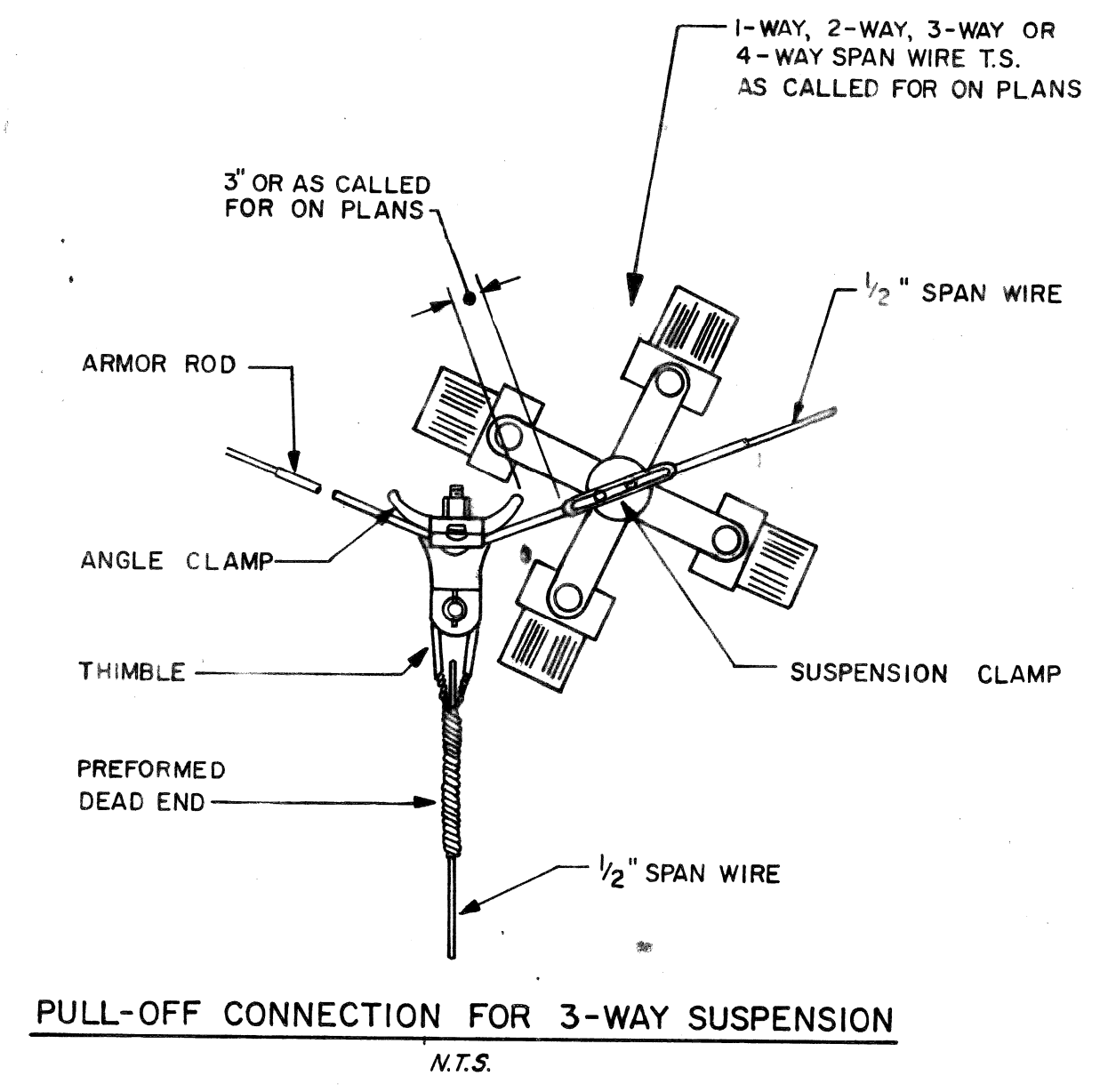
NO.	ITEM
1	TRAFFIC SIGNAL AS REQUIRED ON GENERAL PLAN
2	SPAN WIRE HANGER
3	1/2" GUY WIRE (USE SIEMENS-MARTIN AS PER SPEC.)
4	CABLE HANGER DETAIL "B"
6	STRAIN INSULATOR
7	3/4" X 18" TURNBUCKLE
8	3/4" EYEBOLT
9	SPLIT PLASTIC CONDUIT
10	#14 T.S. CABLE (AS SPECIFIED)
11	PREFORMED STEEL LASHING RODS OR CABLE HANGERS
12	WIRE ROPE CLIPS OR PREFORMED DEAD ENDS
13	2/C-#8 CABLE FOR SERVICE (WHEN REQ'D)
14	1/2" GUY, GUARD AND ANCHOR



DETAIL "C"
CONTROLLER BRACKET MATERIAL FLAT STEEL
ONE COAT RED LEAD
N.T.S.

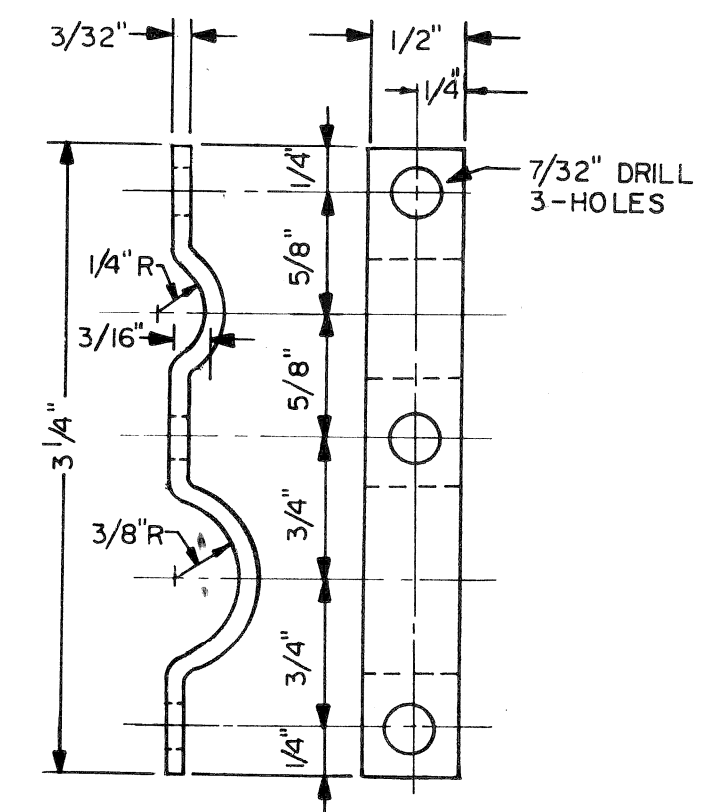


DETAIL "D"
CONTROLLER STRAP
MATERIAL 1/4" FLAT STEEL
ONE COAT RED LEAD
N.T.S.

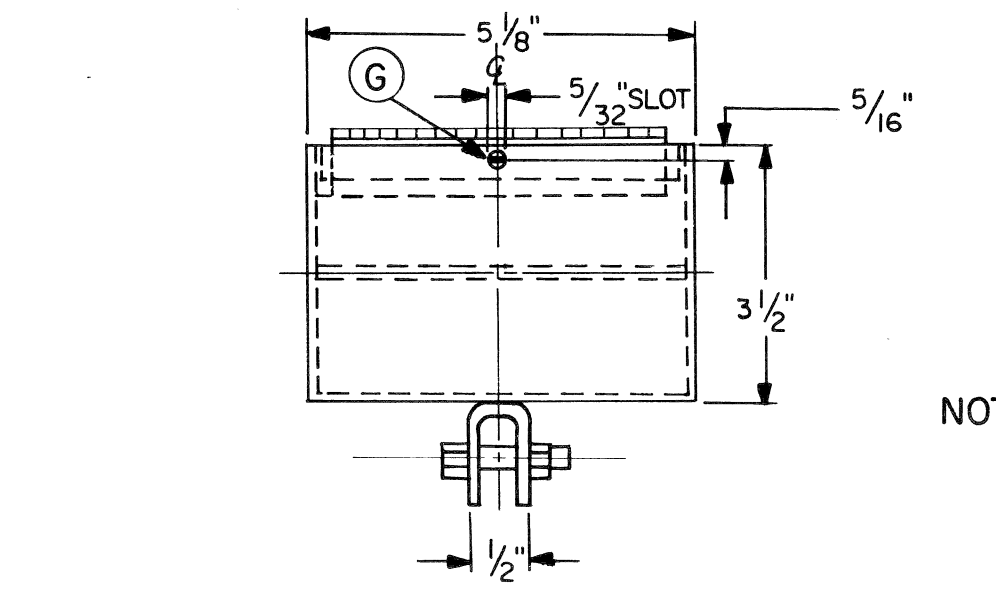
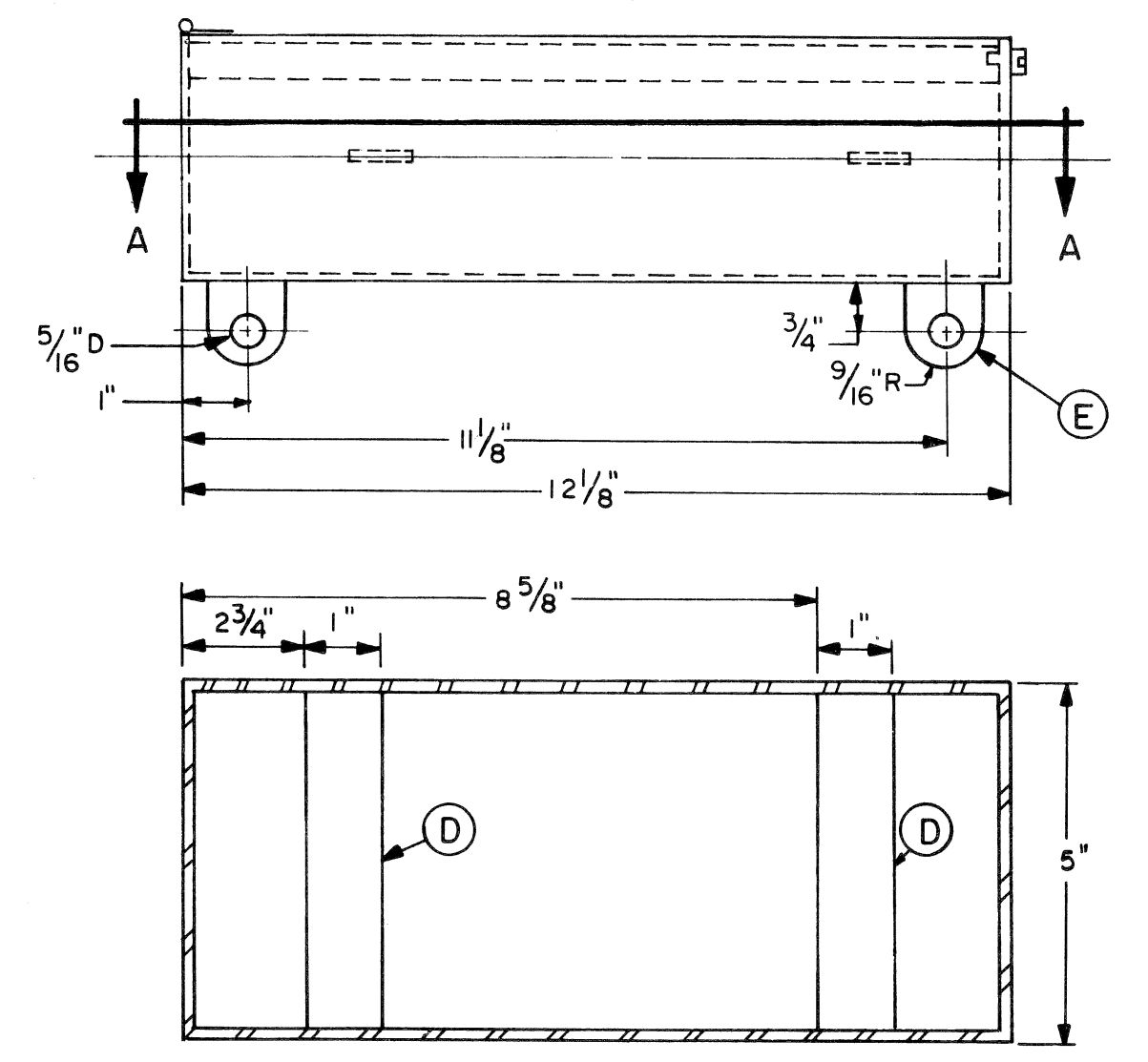
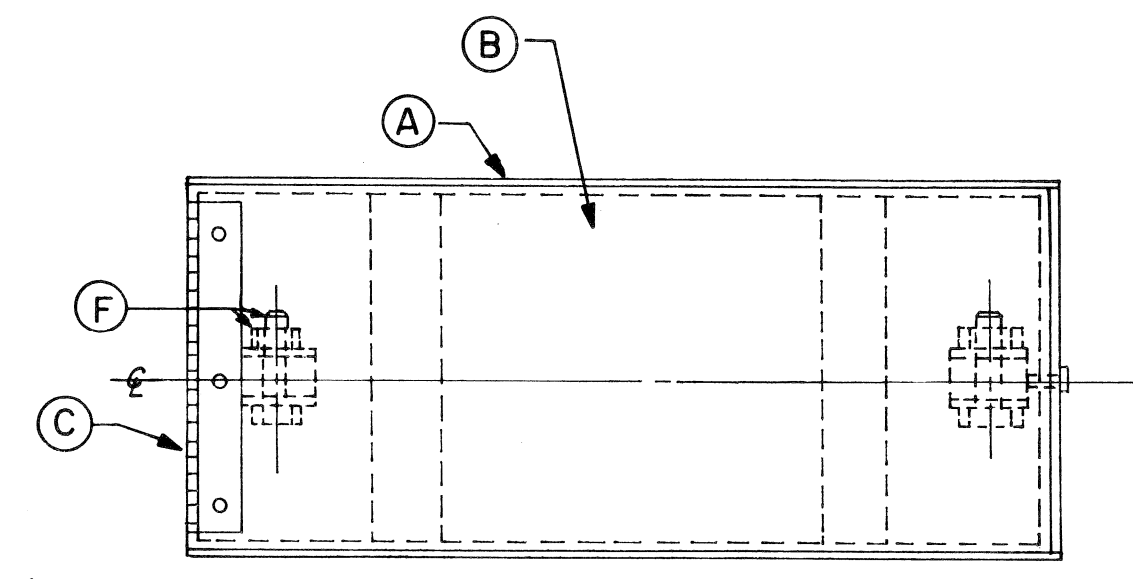


PULL-OFF CONNECTION FOR 3-WAY SUSPENSION
N.T.S.

- MATERIALS FOR JUNCTION BOX**
- (A) BOX - #14 BBS ALUMINUM
 - (B) LID - #14 BBS ALUMINUM
 - (C) PIANO HINGE
 - (D) TERMINAL MOUNTING STRAPS - #10 BBS ALUMINUM
 - (E) MOUNTING LUGS - #8 BBS ALUMINUM
 - (F) 1/4" BOLT & NUT
 - (G) 1/8" SHEET METAL SCREW

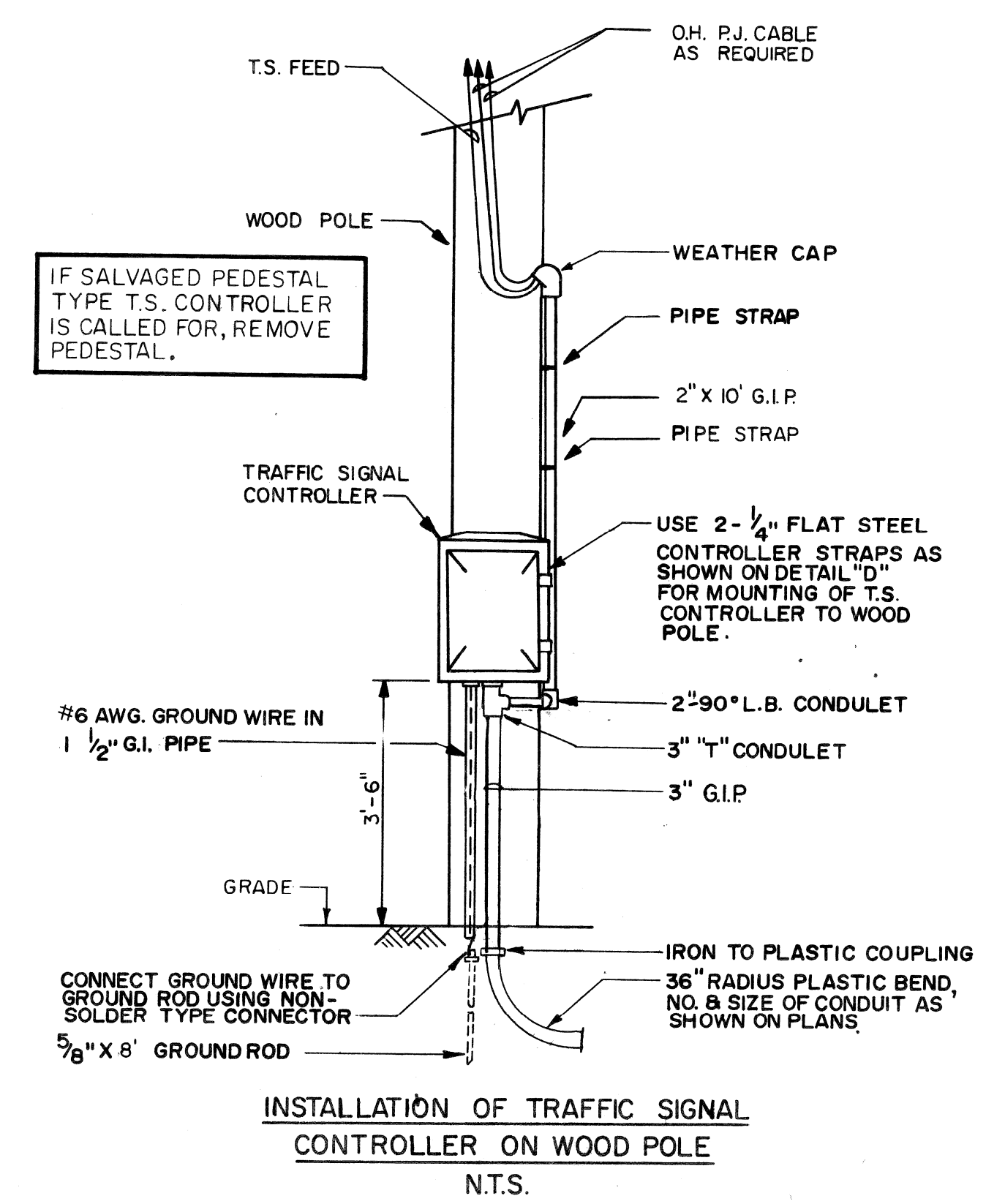


DETAIL "B"
T.S. CABLE HANGER
MATERIAL - FLAT STEEL
ONE COAT RED LEAD
N.T.S.



ALUMINUM JUNCTION BOX FOR
SPANWIRE MOUNTING
N.T.S.

NOTE: BOX TO BE OF WEATHER TIGHT CONSTRUCTION



INSTALLATION OF TRAFFIC SIGNAL CONTROLLER ON WOOD POLE
N.T.S.

DATE	DESCRIPTION	CHKD BY
		55

HARPER AVE. - CADIEUX AVE.
WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
WOOD POLE T.S. SPAN WIRE INSTALLATION
DETAILS

SHEET 48 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

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

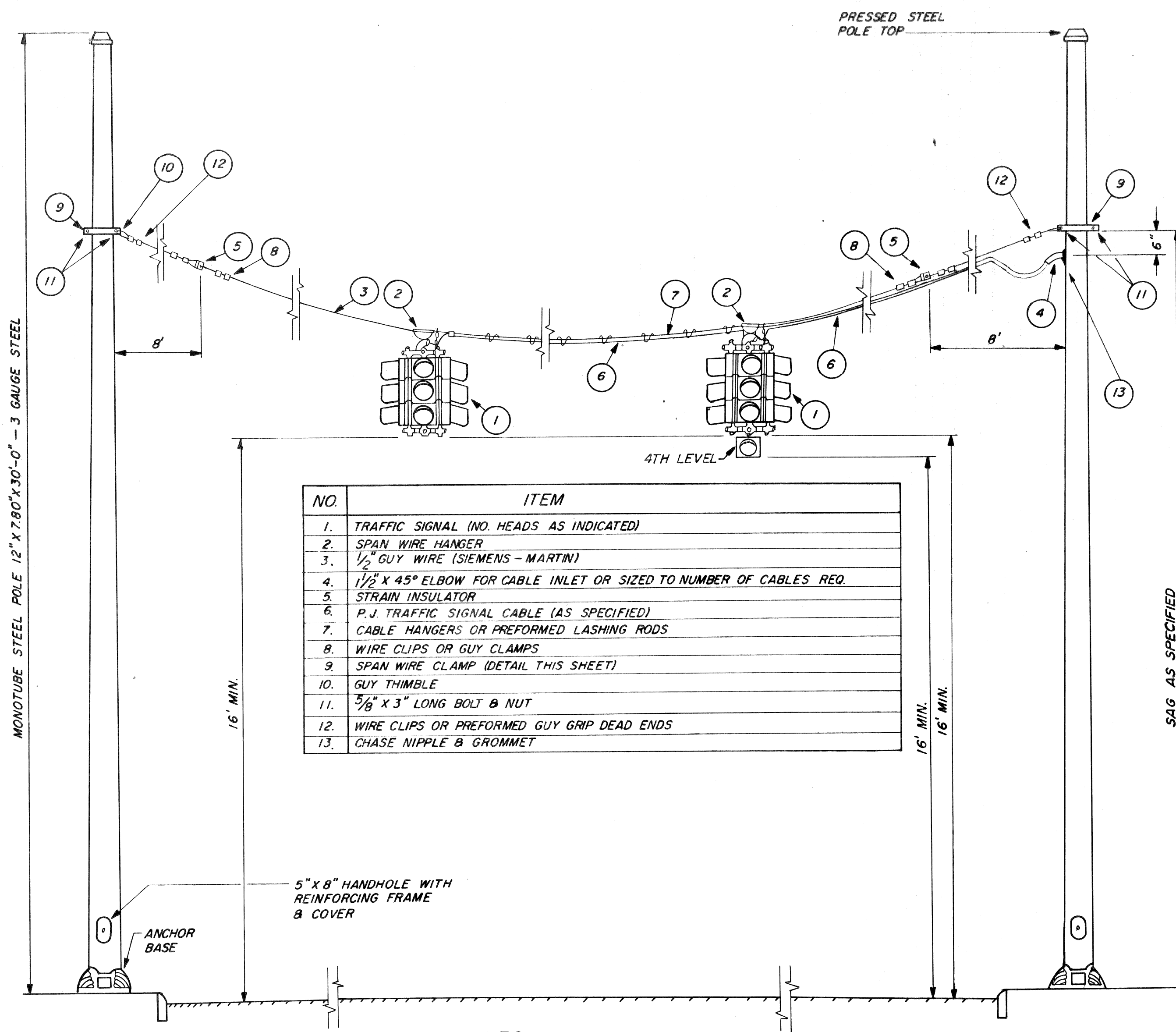
DRAWN BY CEA
CHECKED BY
APPROVED BY
DATE 9-16-76

PLAN PREPARED BY
CONSULTING ENGINEERING ASSOCIATES INC.
ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH. 48221
FILE NO. CEA FED AID 9

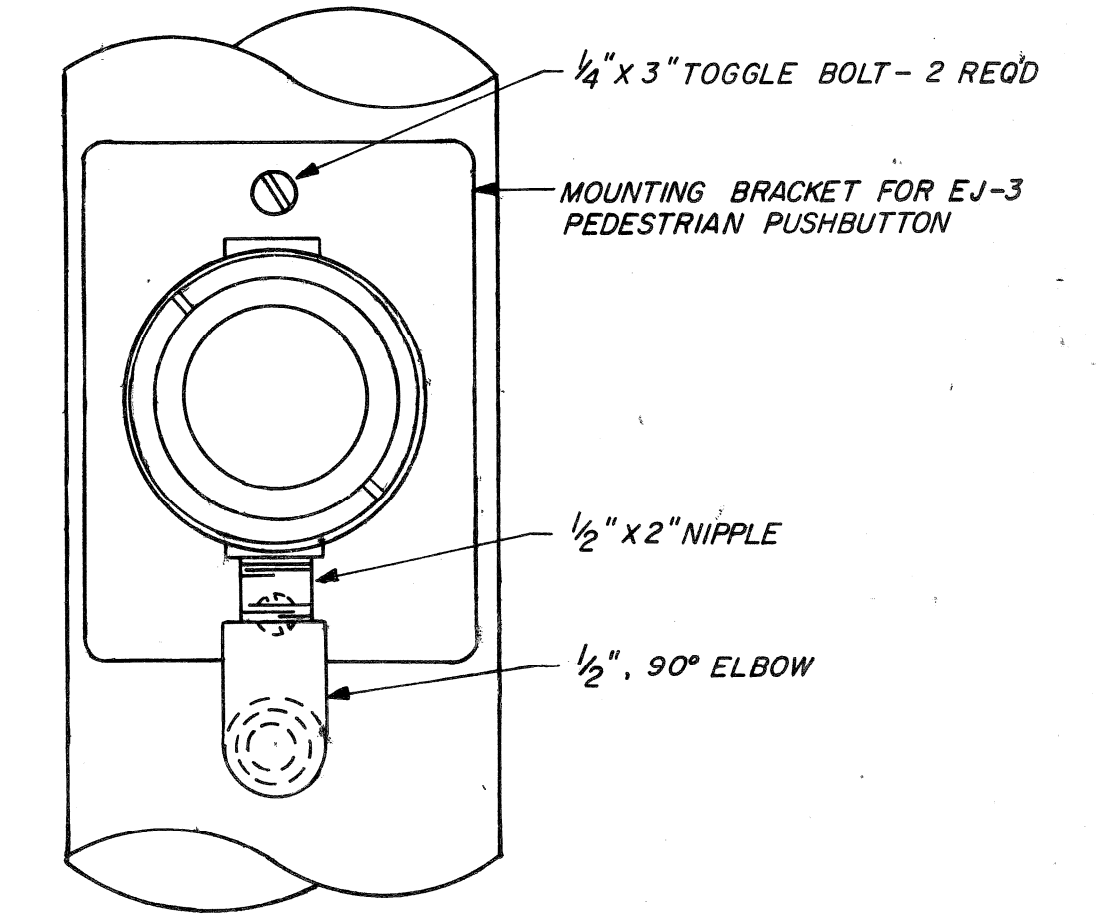
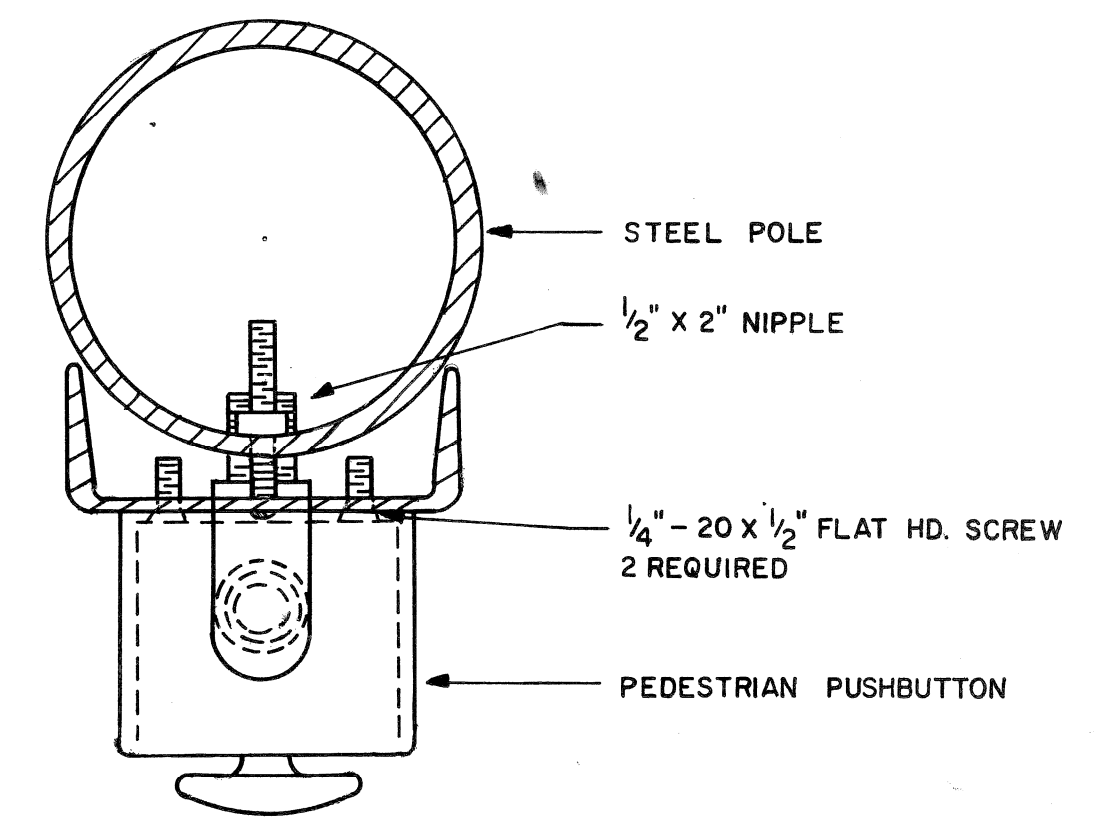
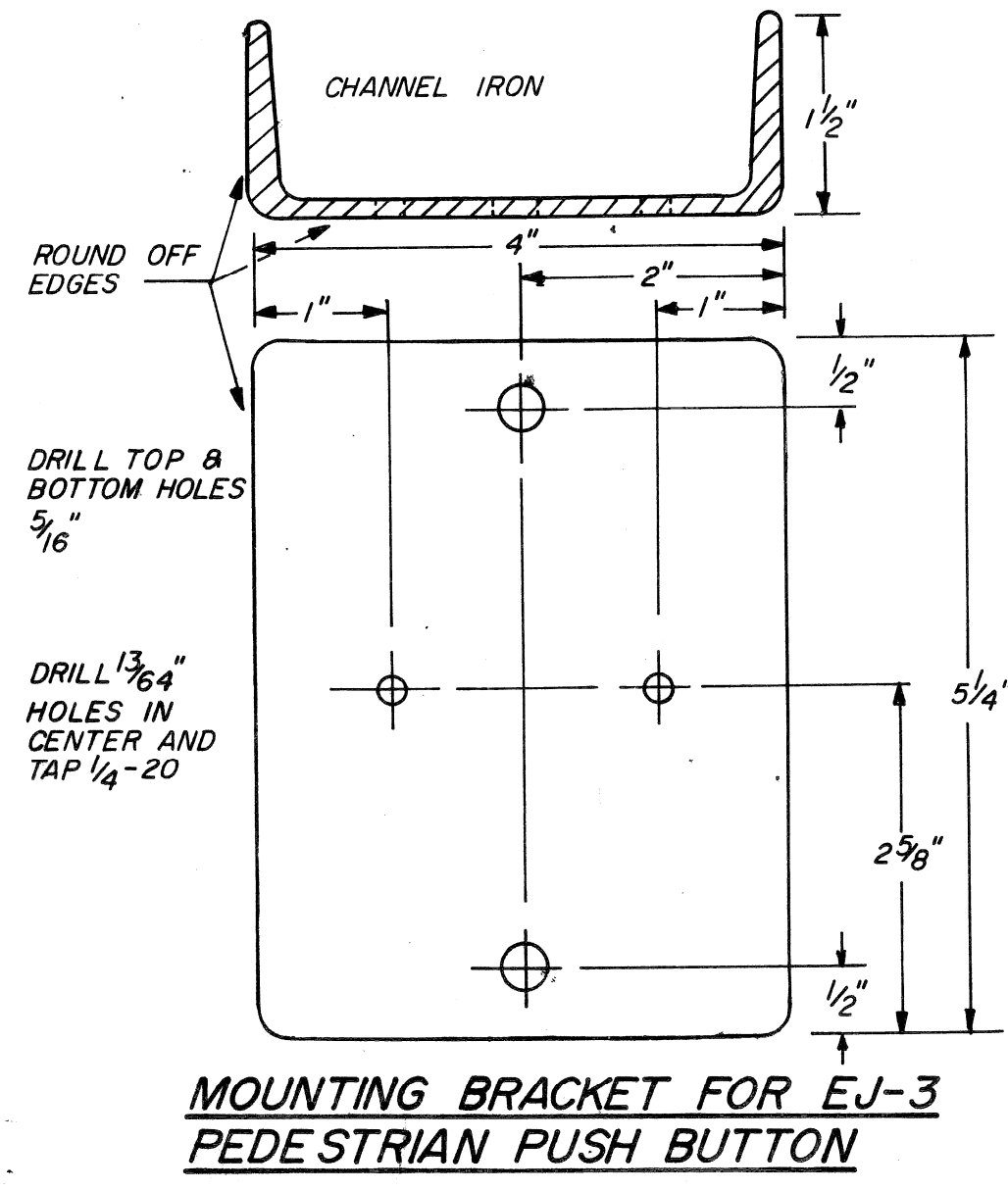
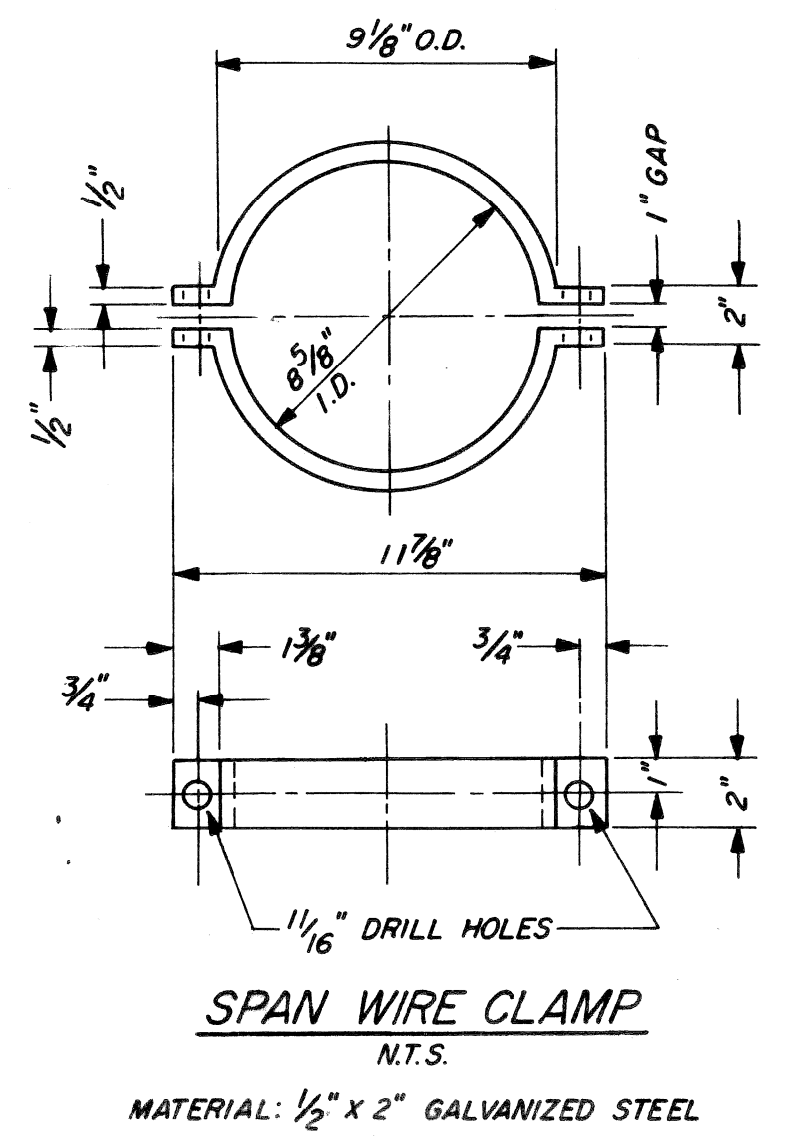
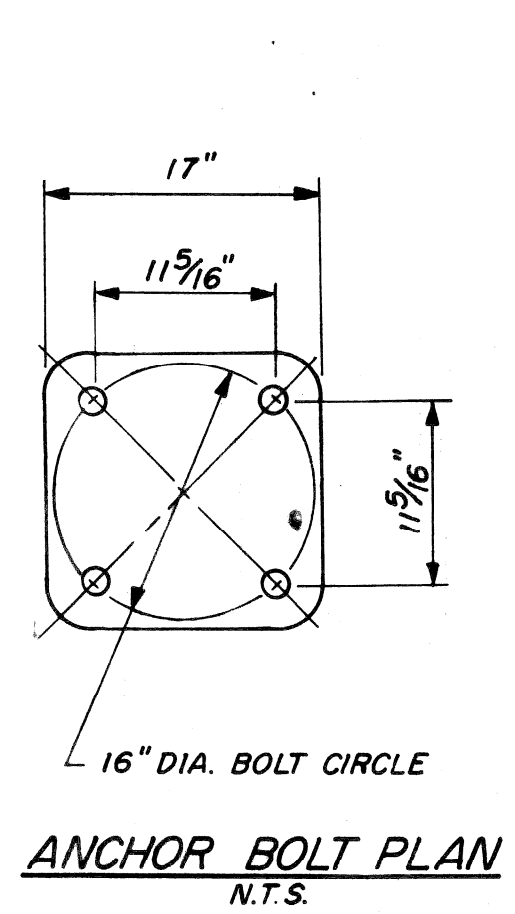
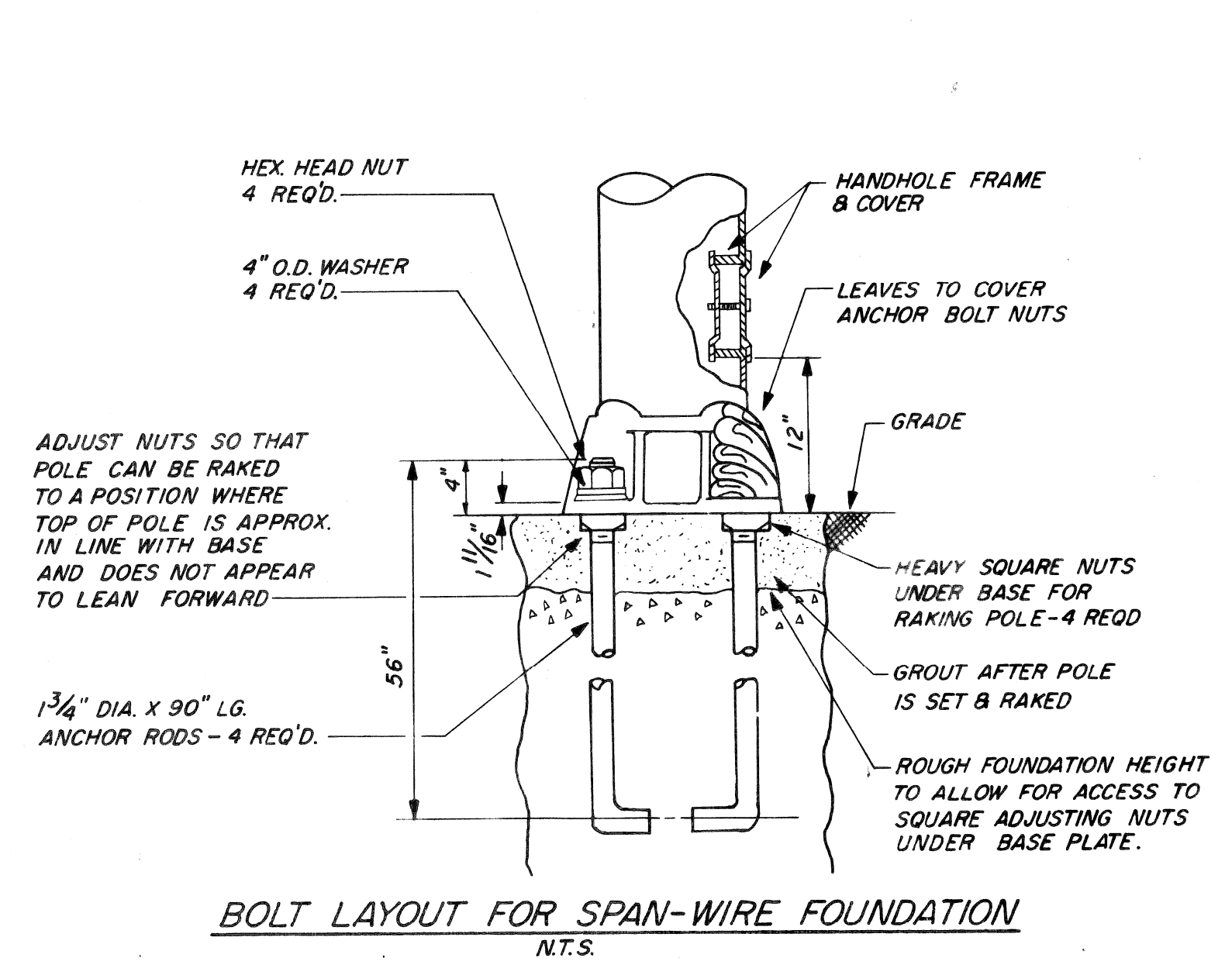
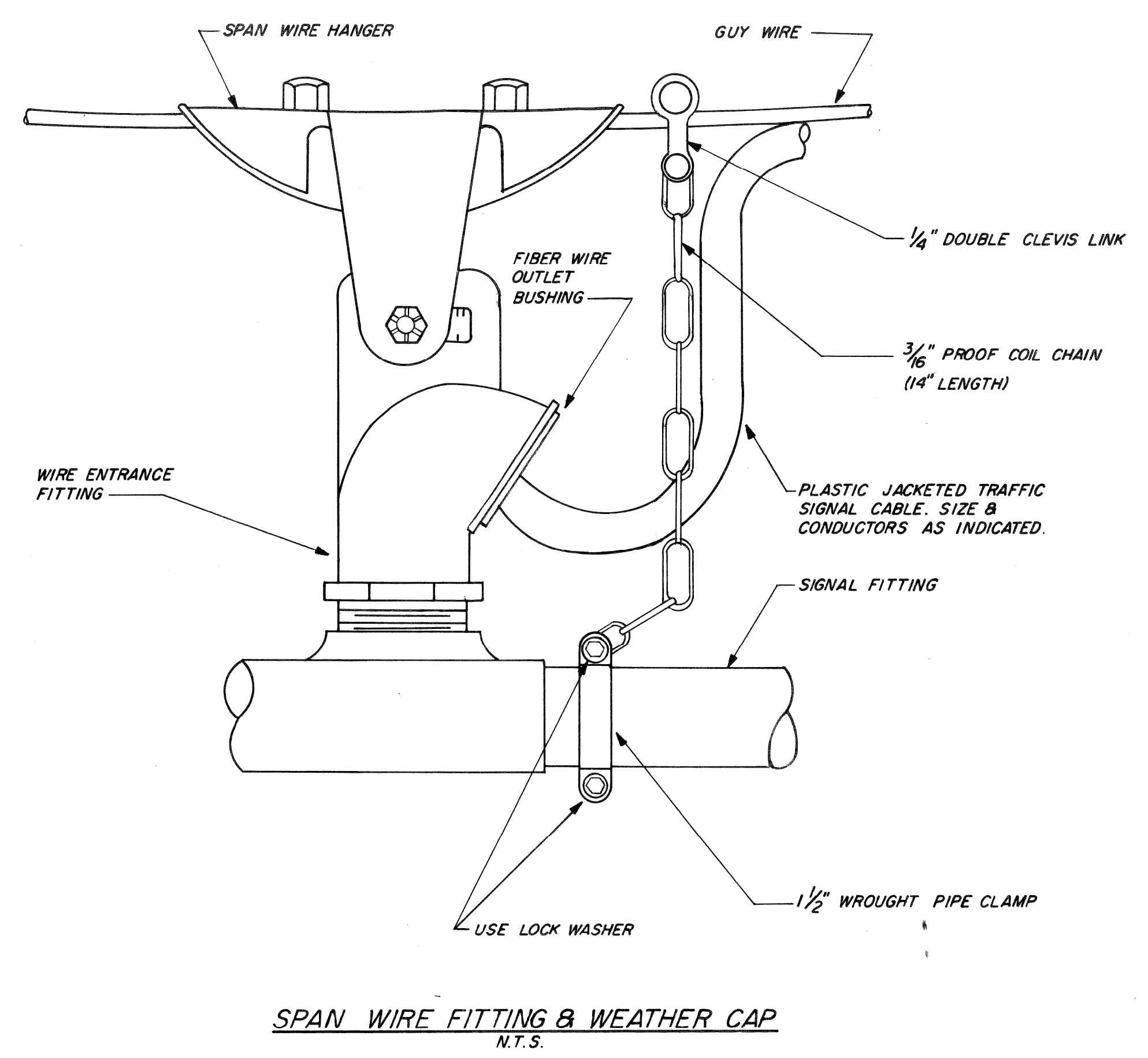
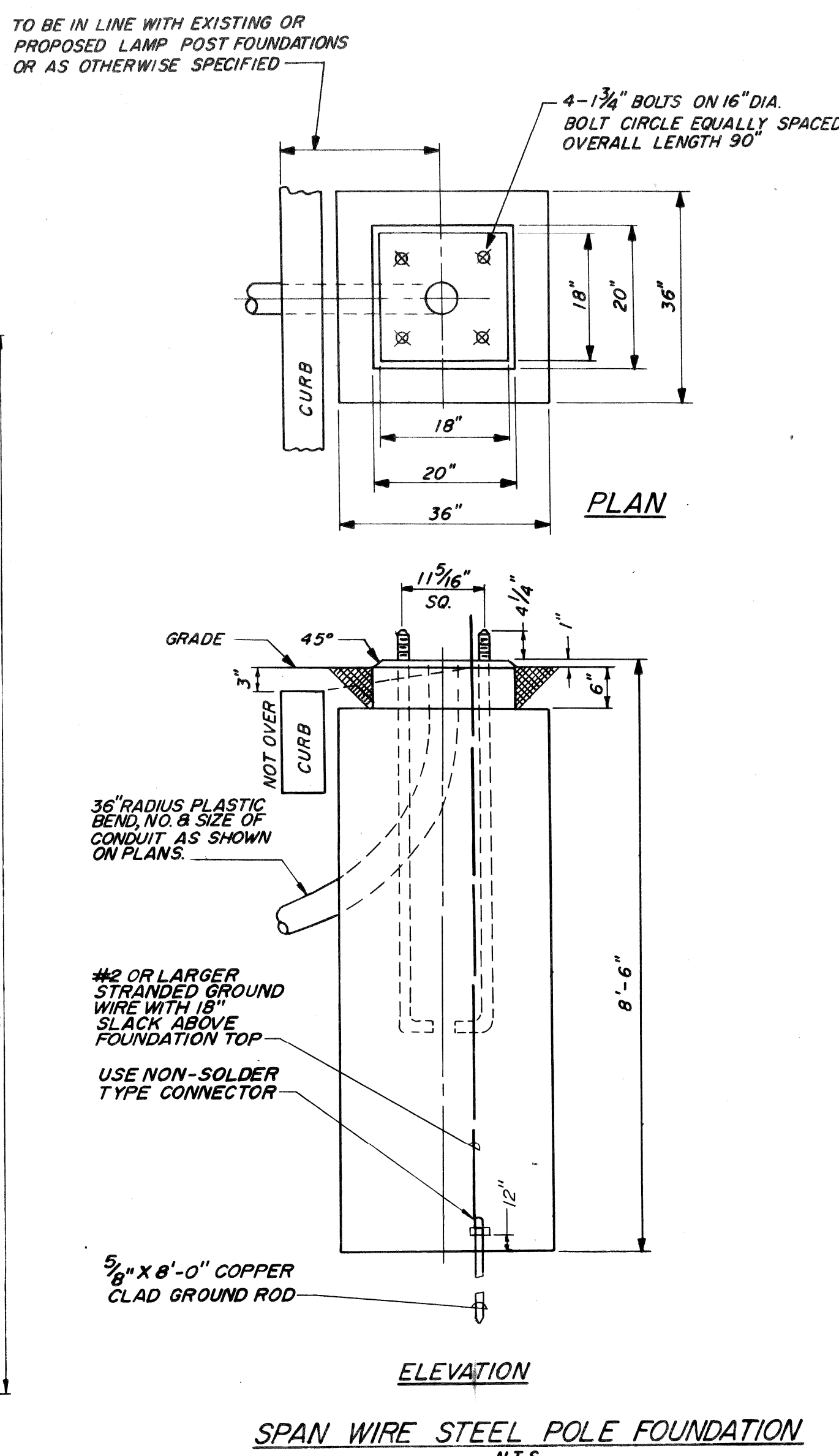
CHECKED BY
APPROVED BY

PUBLIC LIGHTING COMMISSION
CITY OF DETROIT

FILE NO. 49-0573
SHEET NO. 24 OF 30
DATE 9-16-76



NO.	ITEM
1.	TRAFFIC SIGNAL (NO. HEADS AS INDICATED)
2.	SPAN WIRE HANGER
3.	1/2" GUY WIRE (SIEMENS - MARTIN)
4.	1 1/2" X 45° ELBOW FOR CABLE INLET OR SIZED TO NUMBER OF CABLES REQ.
5.	STRAIN INSULATOR
6.	P.J. TRAFFIC SIGNAL CABLE (AS SPECIFIED)
7.	CABLE HANGERS OR PREFORMED LASHING RODS
8.	WIRE CLIPS OR GUY CLAMPS
9.	SPAN WIRE CLAMP (DETAIL THIS SHEET)
10.	GUY THIMBLE
11.	3/8" X 3" LONG BOLT & NUT
12.	WIRE CLIPS OR PREFORMED GUY GRIP DEAD ENDS
13.	CHASE NIPPLE & GROMMET



DATE	DESCRIPTION	CHKD. BY
		56

HARPER AVE. - CADIEUX AVE.
WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
STEEL POLE SPAN WIRE INSTALLATION
DETAILS

SHEET 49 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

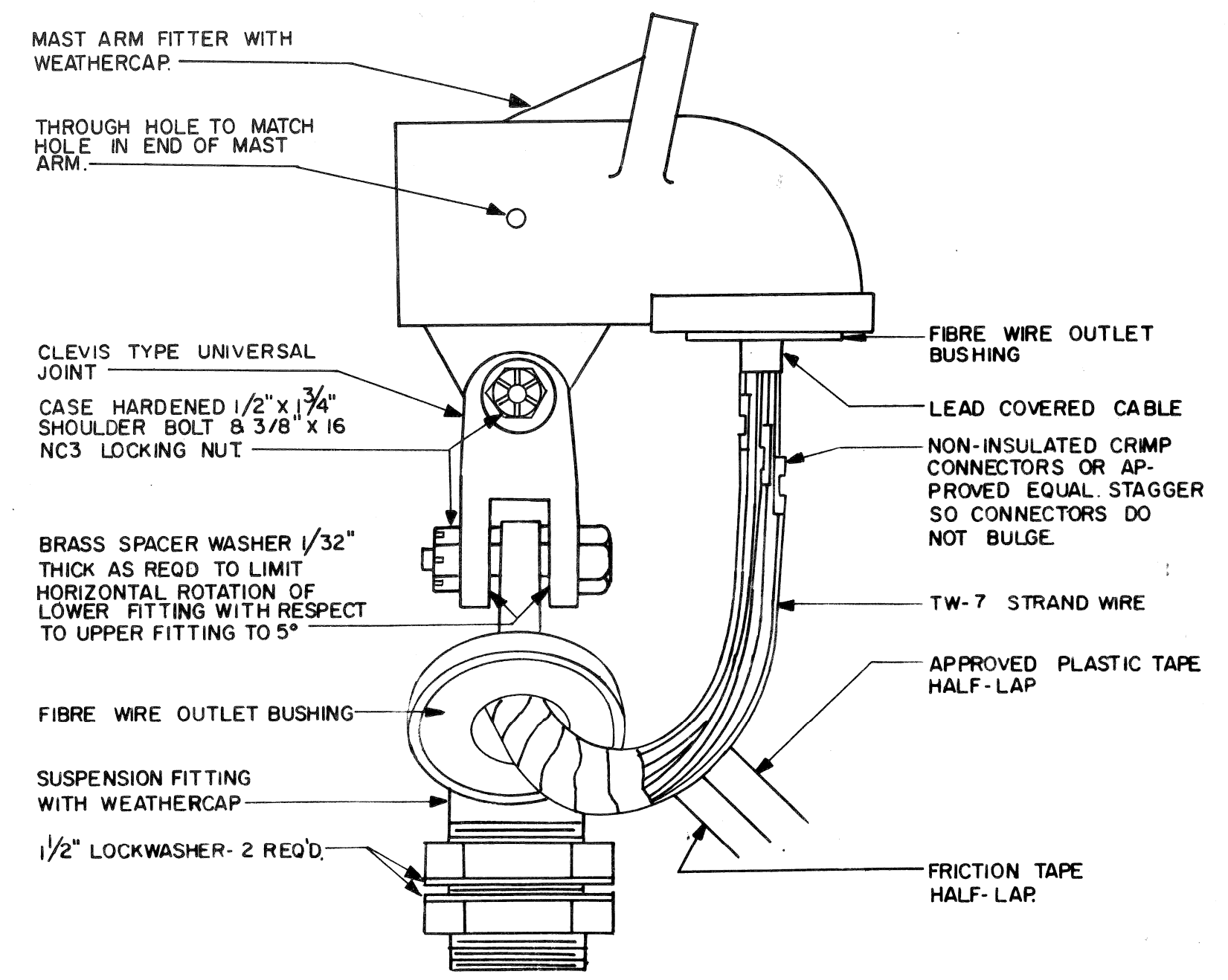
CITY OF DETROIT
CITY ENGINEERING DIVISION
E.P.M.D.

DRAWN BY CEA
CHECKED BY [Signature]
APPROVED BY [Signature]
DATE 9-16-76

PLAN PREPARED BY
CONSULTING ENGINEERING ASSOCIATES INC.
ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH. 48221

FILE NO. 49-0573
SHEET NO. 25 OF 30
DATE 9-16-76

PUBLIC LIGHTING
COMMISSION
CITY OF DETROIT

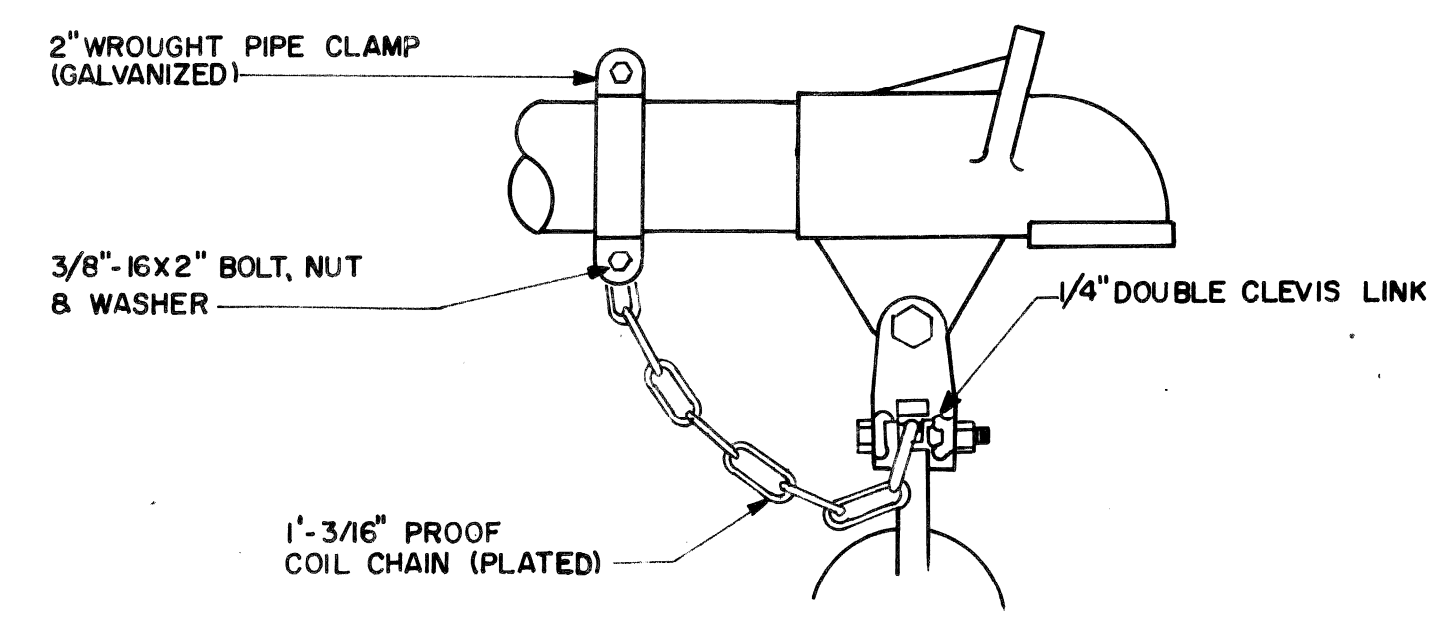


MAST ARM FITTING & WEATHERHEAD DETAIL

NOTE:

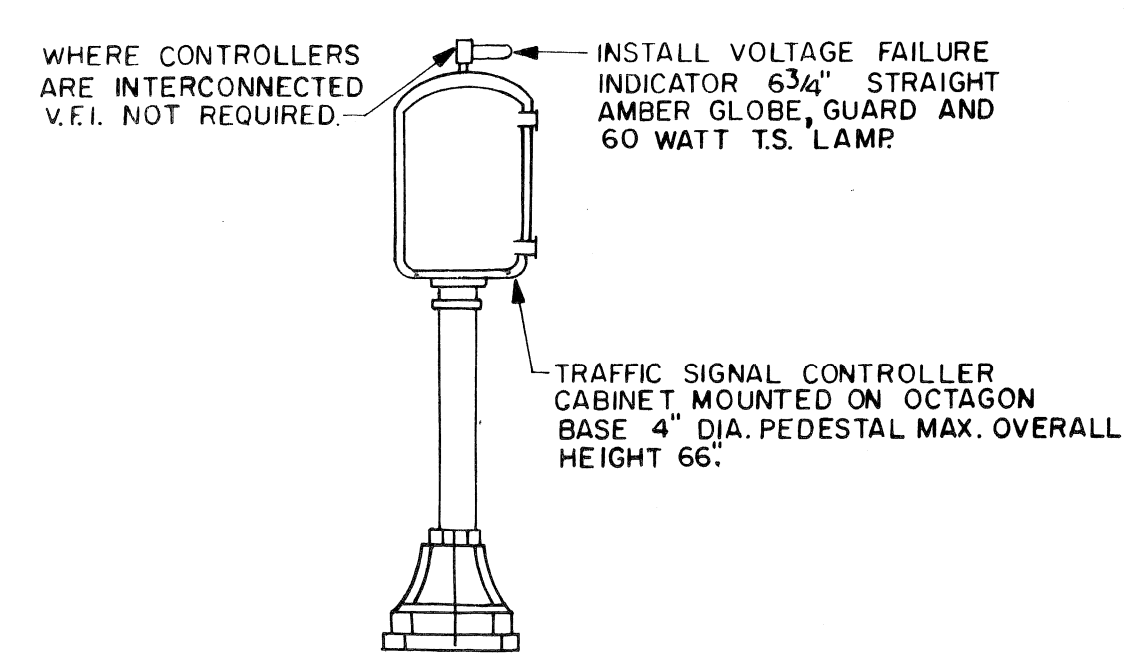
INDIVIDUAL CONNECTION TO BE TAPED WITH APPROVED PLASTIC TAPE.

N.T.S.



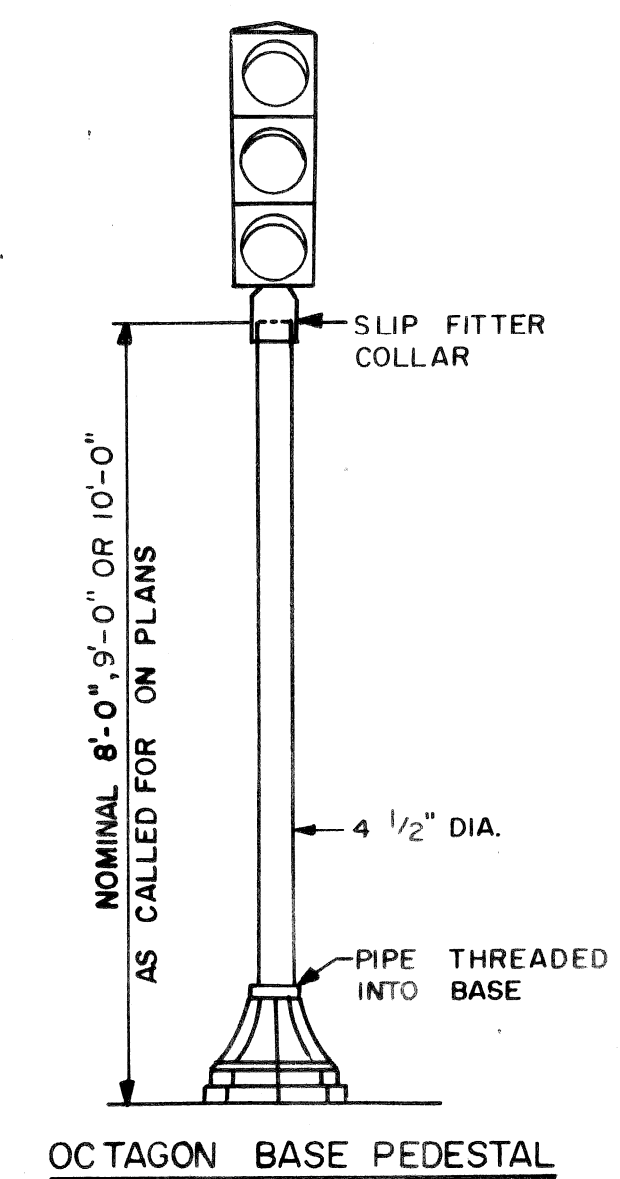
SAFETY CHAIN DETAIL

N.T.S.

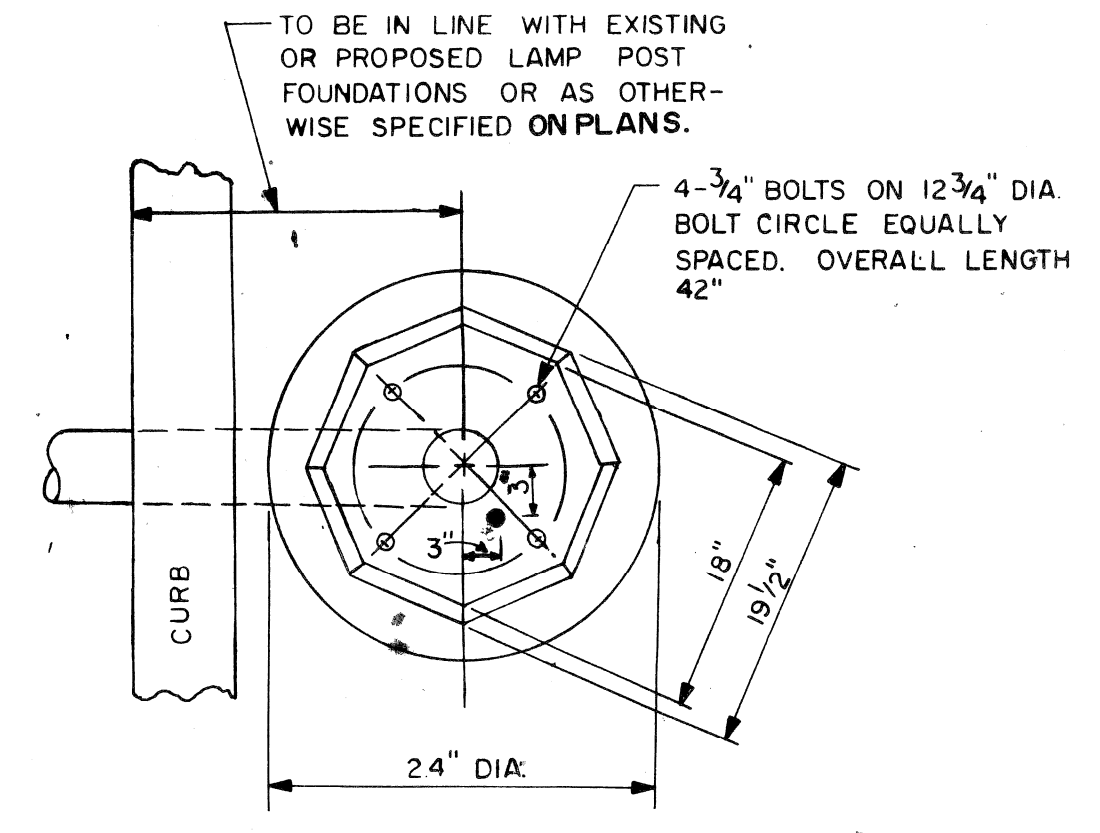


SINGLE CABINET CONTROLLER OCTAGON BASE

N.T.S.

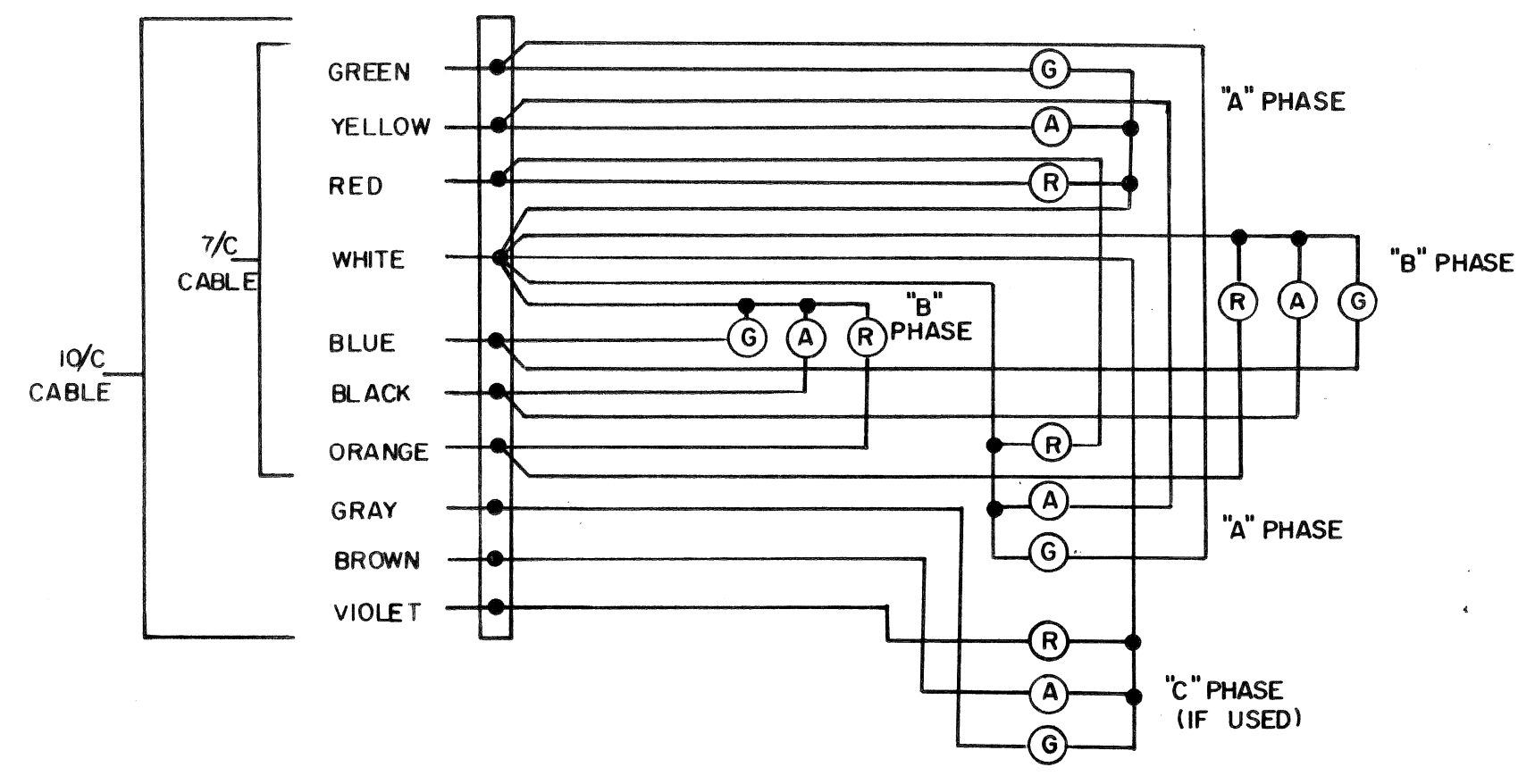


OCTAGON BASE PEDESTAL



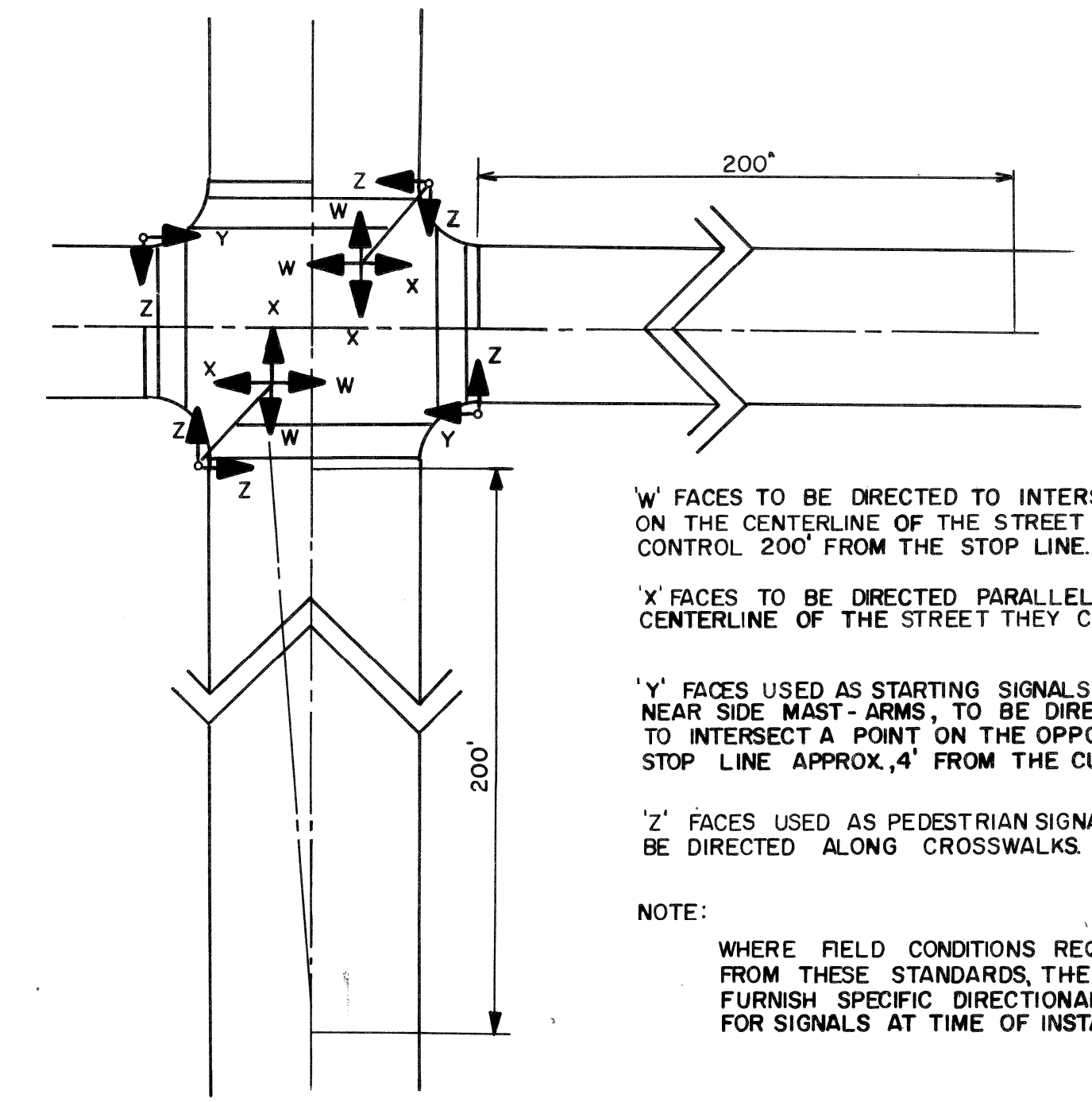
FOUNDATION FOR OCTAGON BASE PEDESTAL FOR TRAFFIC SIGNALS OR CONTROLLER

N.T.S.



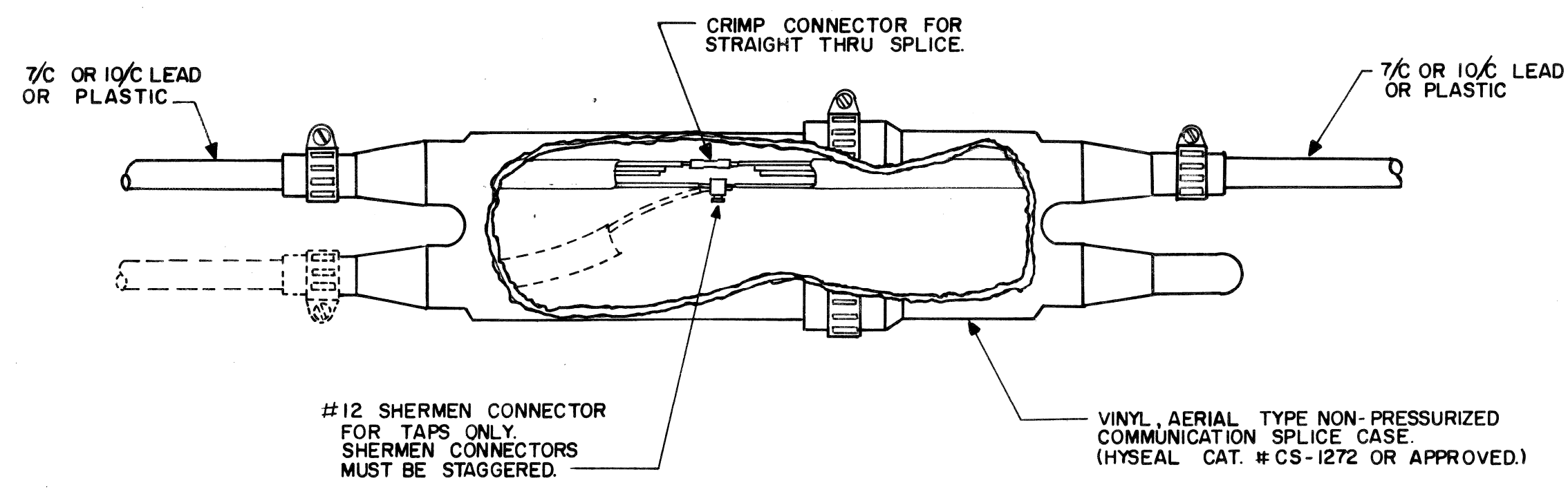
COLOR CODING & CABLE CONNECTIONS FOR TRAFFIC SIGNAL LAMPS

THE INCOMING CABLE FROM THE CONTROLLER IS TO BE CONNECTED TO THE TERMINAL BLOCK IN ONE FACE OF THE SIGNAL ASSEMBLY. THE OTHER FACES IN THE ASSEMBLY ARE TO BE CONNECTED TO THIS TERMINAL BLOCK BY #14 TW WIRES THROUGH THE ASSEMBLY FRAMEWORK.



STANDARDS FOR DIRECTIONAL SETTINGS OF TRAFFIC SIGNALS

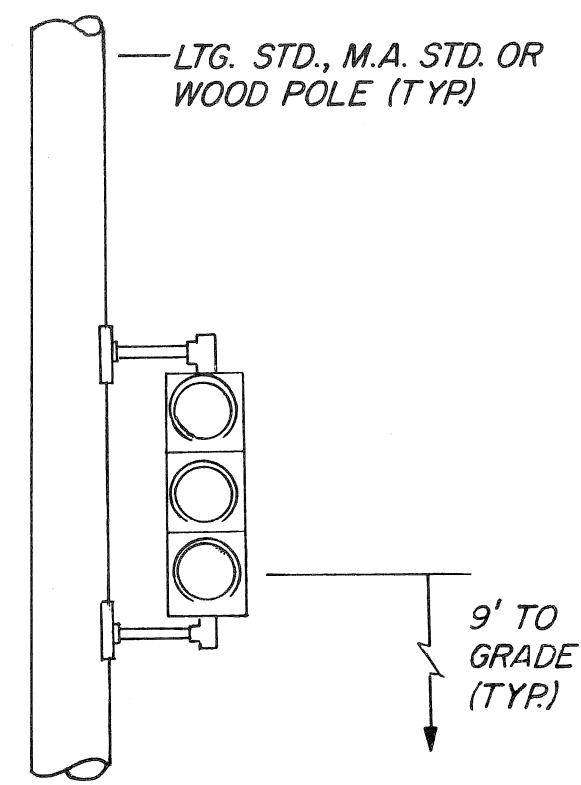
W FACES TO BE DIRECTED TO INTERSECT A POINT ON THE CENTERLINE OF THE STREET THEY CONTROL 200' FROM THE STOP LINE.
 X FACES TO BE DIRECTED PARALLEL TO THE CENTERLINE OF THE STREET THEY CONTROL.
 Y FACES USED AS STARTING SIGNALS WITH NEAR SIDE MAST-ARMS, TO BE DIRECTED TO INTERSECT A POINT ON THE OPPOSITE STOP LINE APPROX. 4' FROM THE CURB.
 Z FACES USED AS PEDESTRIAN SIGNALS TO BE DIRECTED ALONG CROSSWALKS.
 NOTE:
 WHERE FIELD CONDITIONS REQUIRE DEVIATION FROM THESE STANDARDS, THE P.L.C. WILL FURNISH SPECIFIC DIRECTIONAL SETTINGS FOR SIGNALS AT TIME OF INSTALLATION.



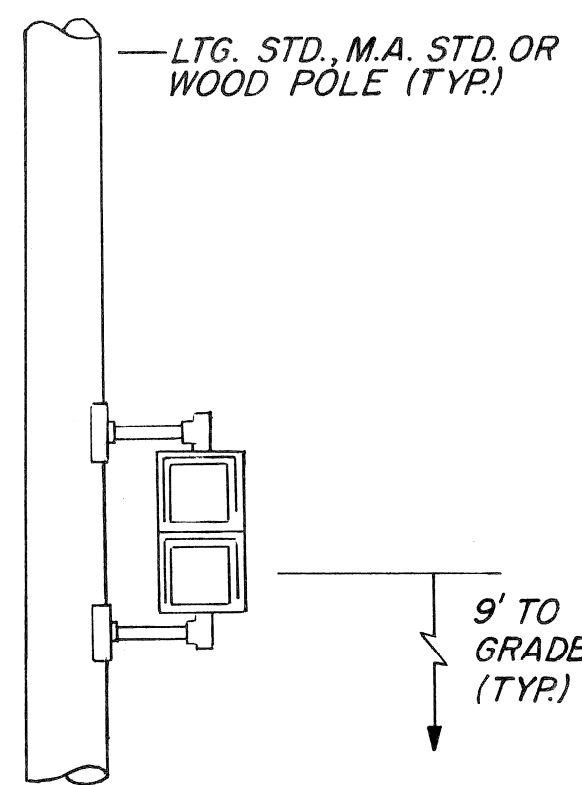
TRAFFIC SIGNAL CABLE SPLICE DETAIL

NOTE:
 INDIVIDUAL CONNECTORS TO BE TAPED WITH 3 LAYERS OF APPROVED PLASTIC TAPE & OVERALL ONE LAYER OF HALF-LAP APPROVED PLASTIC TAPE.

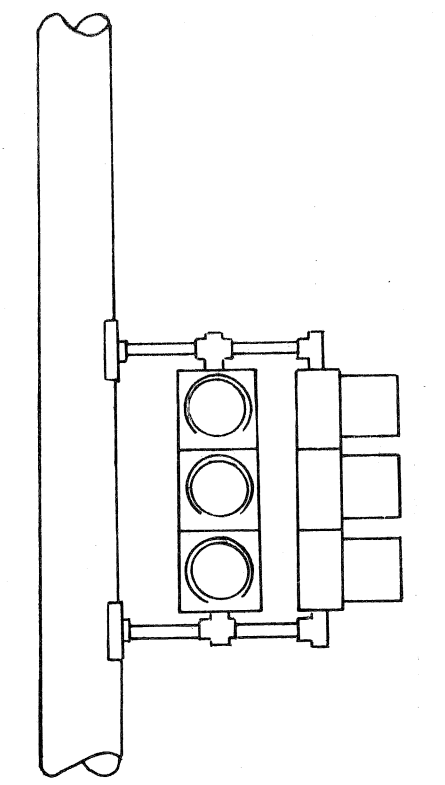
DATE	DESCRIPTION	CHKD. BY	HARPER AVE. - CADIEUX AVE. WARREN AVE. - CADIEUX AVE. INTERSECTION IMPROVEMENT MISCELLANEOUS TRAFFIC SIGNAL, DETAILS	SHEET 50 OF 54 SHEETS	CITY OF DETROIT	DRAWN BY	PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS	FILE NO. 16580 WYOMING DETROIT, MICH. 48221	CHECKED BY	PUBLIC LIGHTING COMMISSION CITY OF DETROIT	FILE NO.		
						CONTRACT NO.					DATE	26 OF 30	49-0573
						JOB NO. 10012A					9-16-76	26 OF 30	26 OF 30
						DATE 10-7-76						CEA FED AID 9	9-16-76



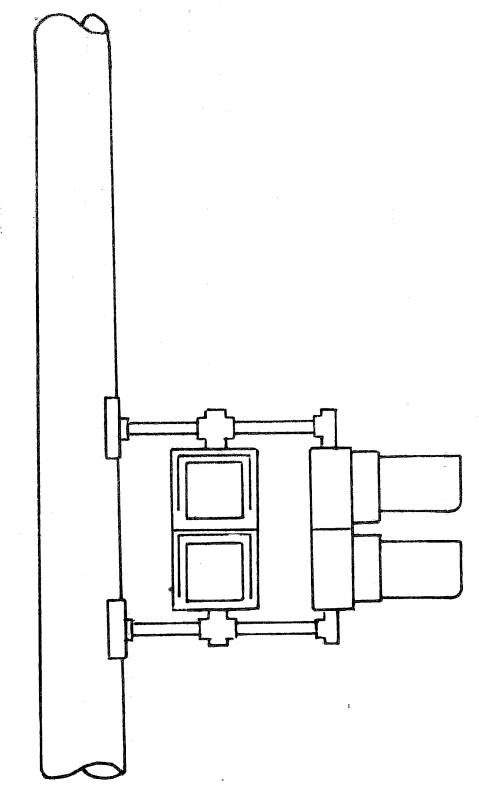
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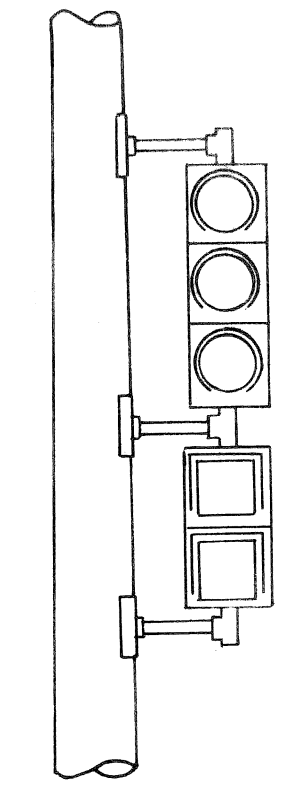
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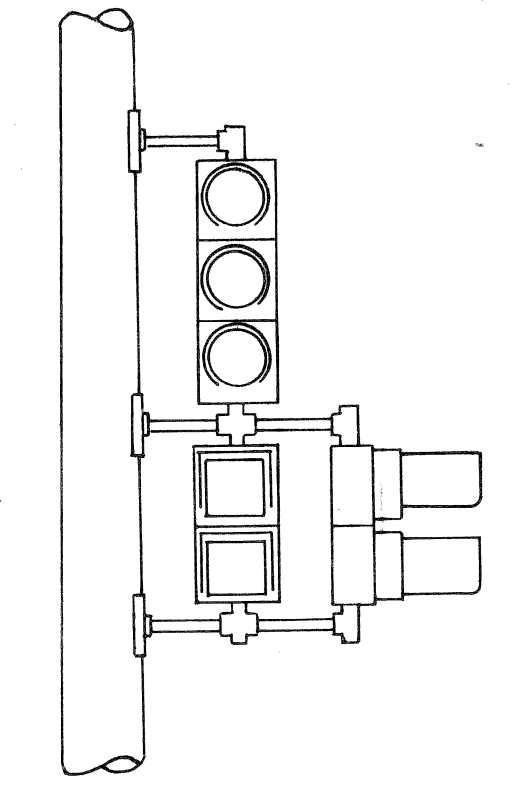
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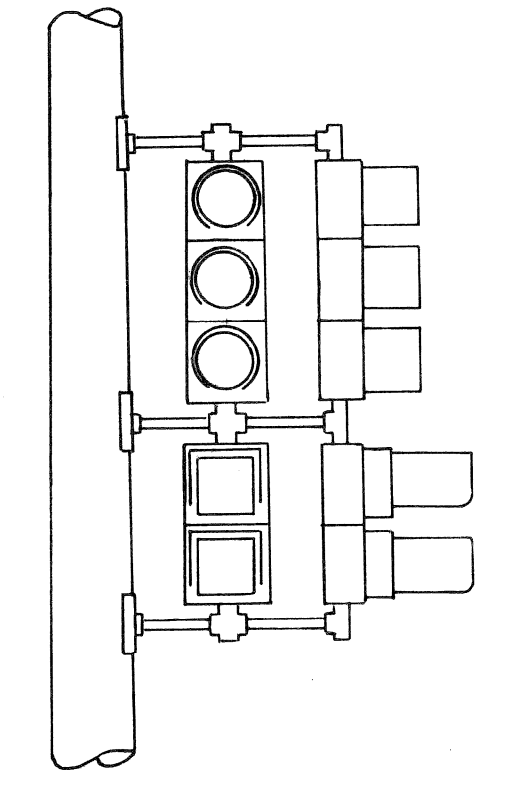
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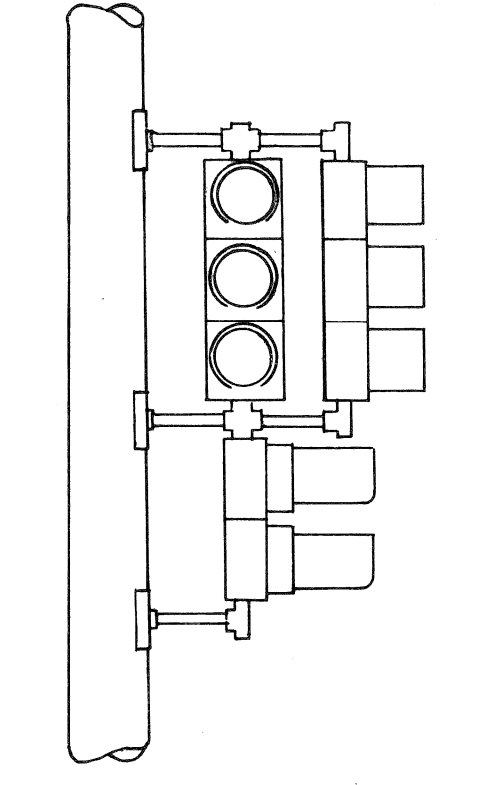
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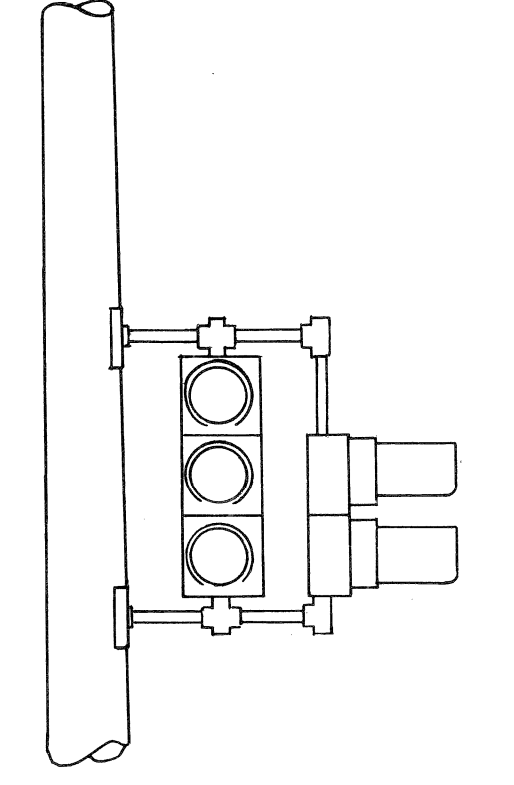
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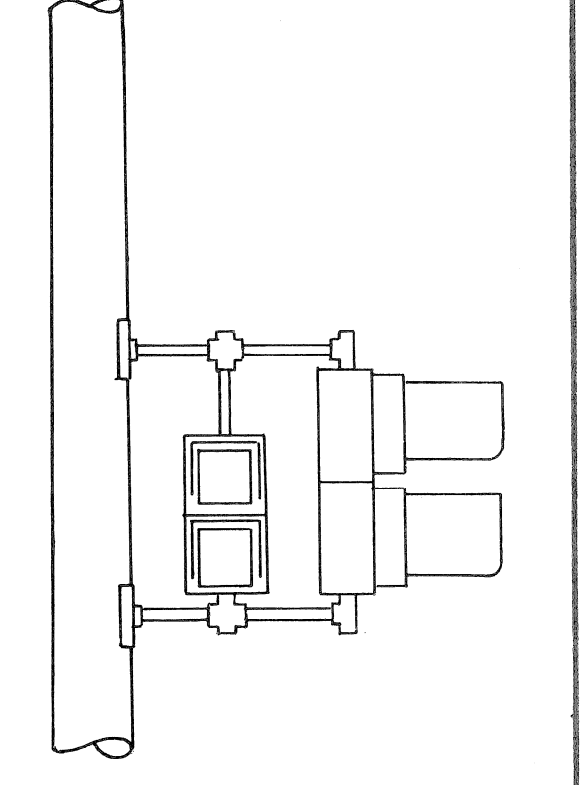
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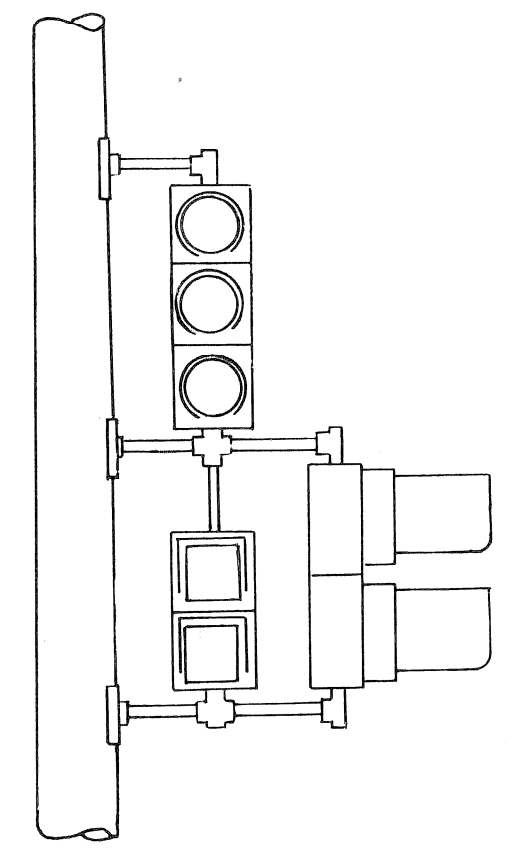
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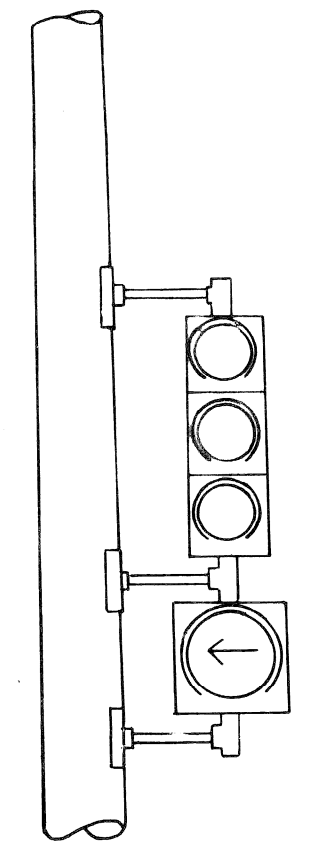
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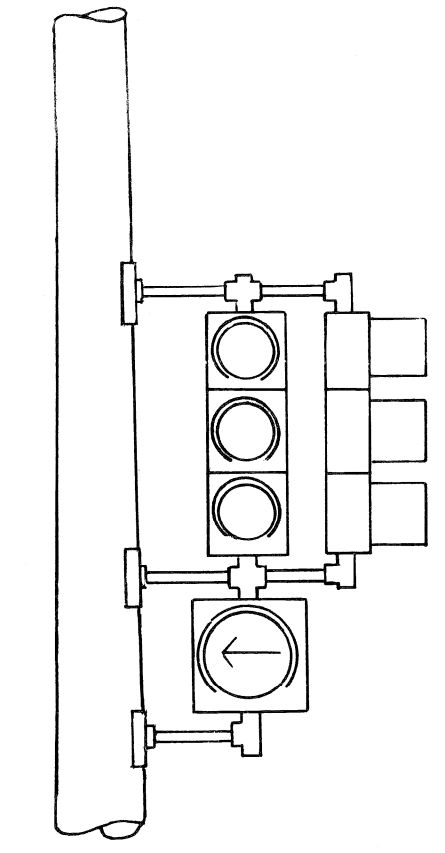
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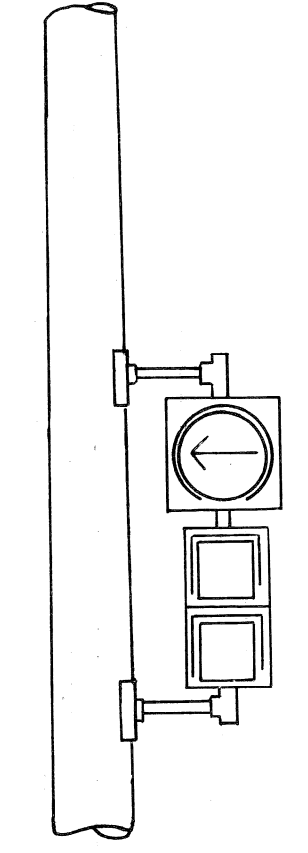
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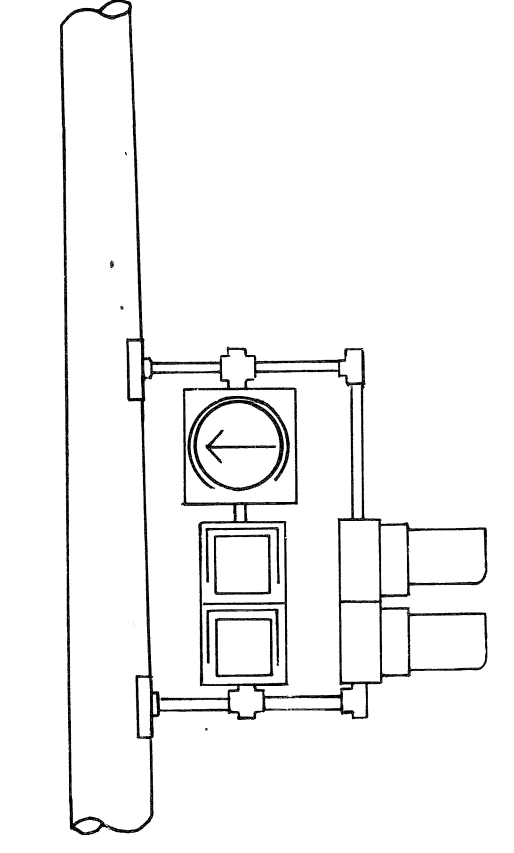
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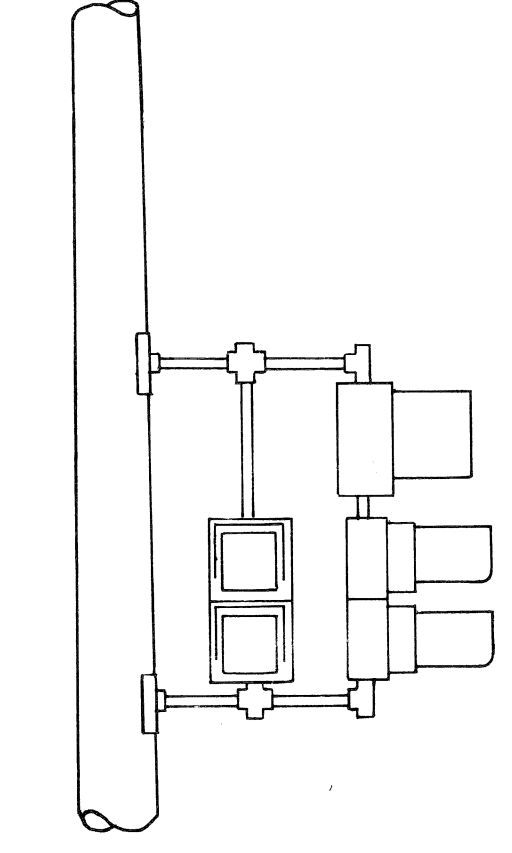
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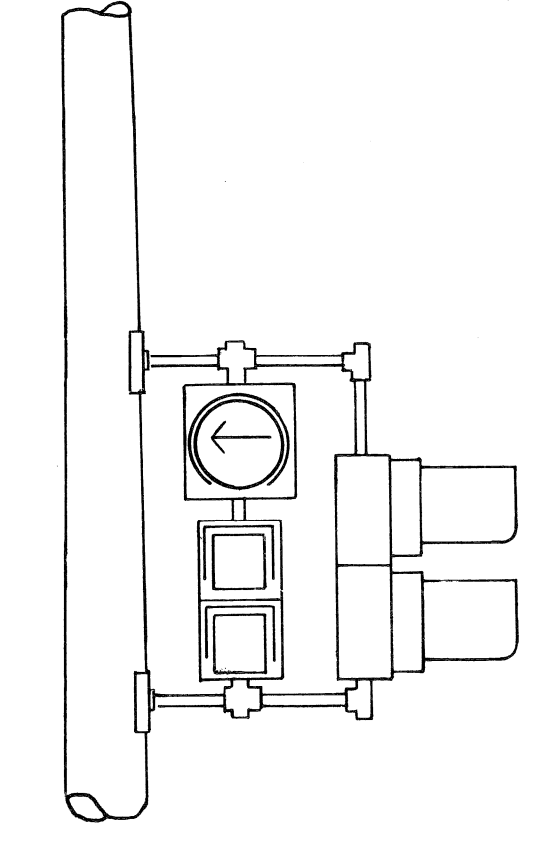
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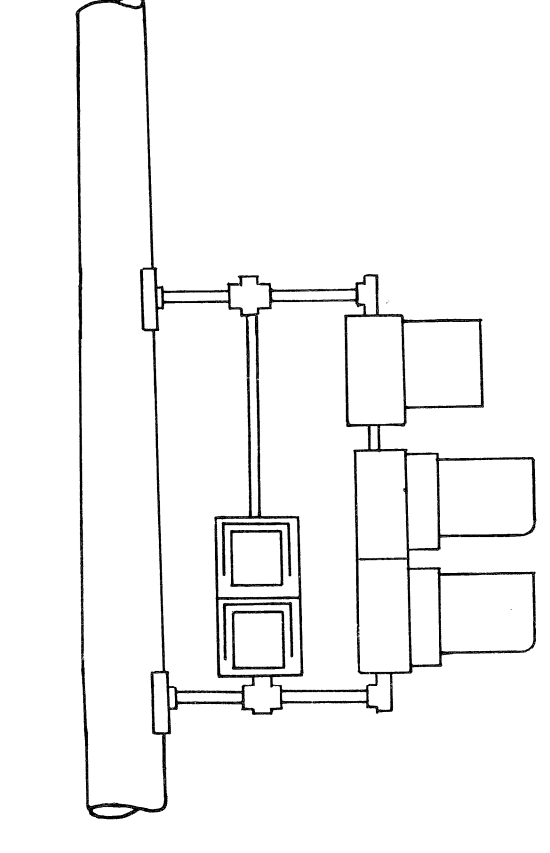
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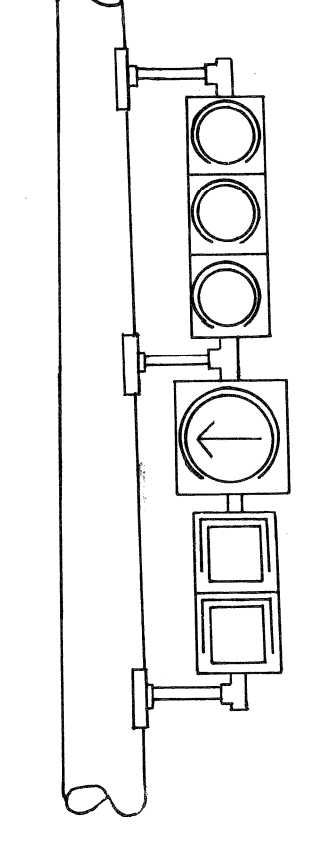
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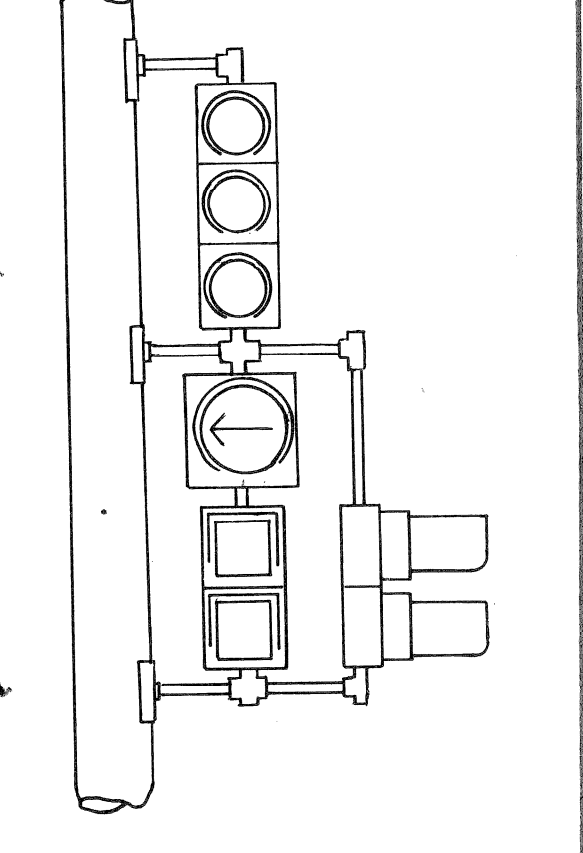
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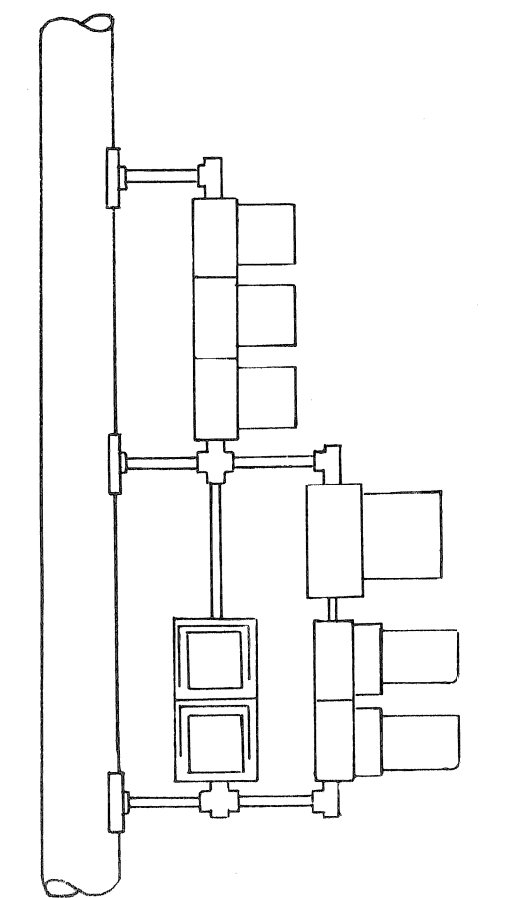
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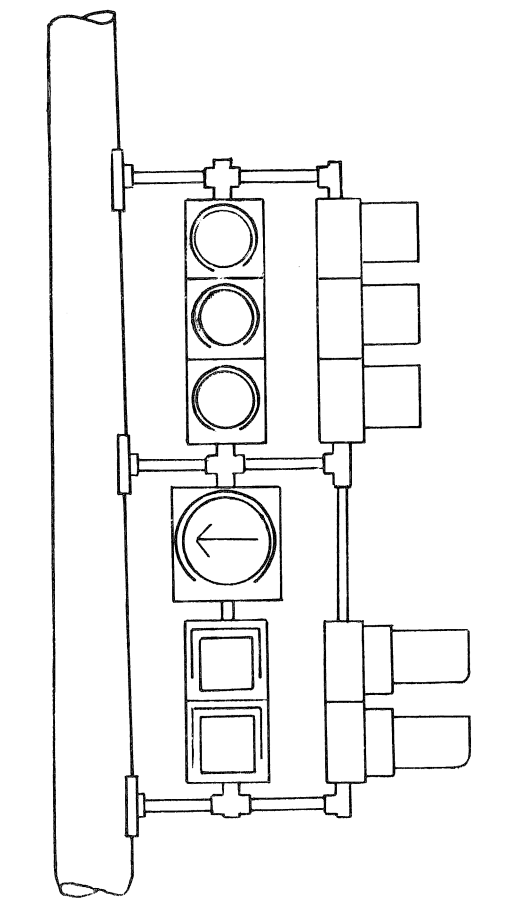
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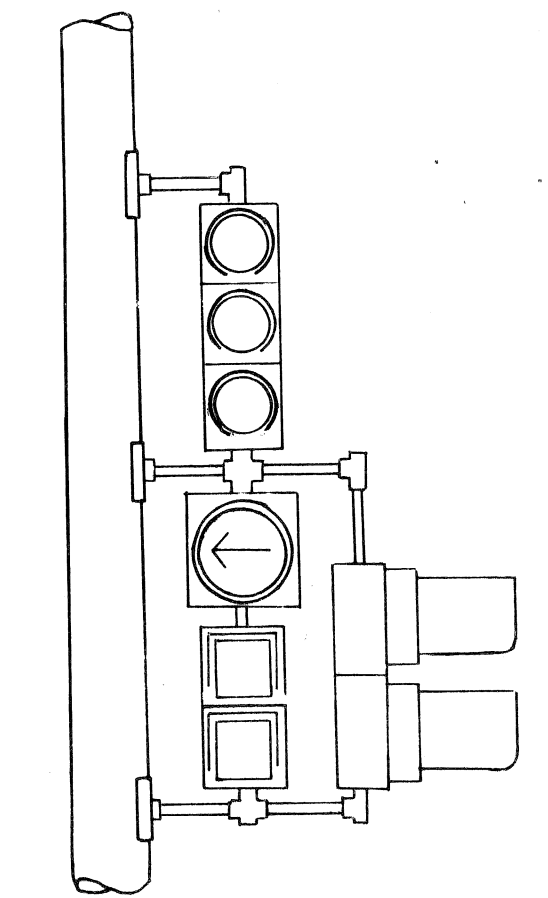
DETAIL "V-1"



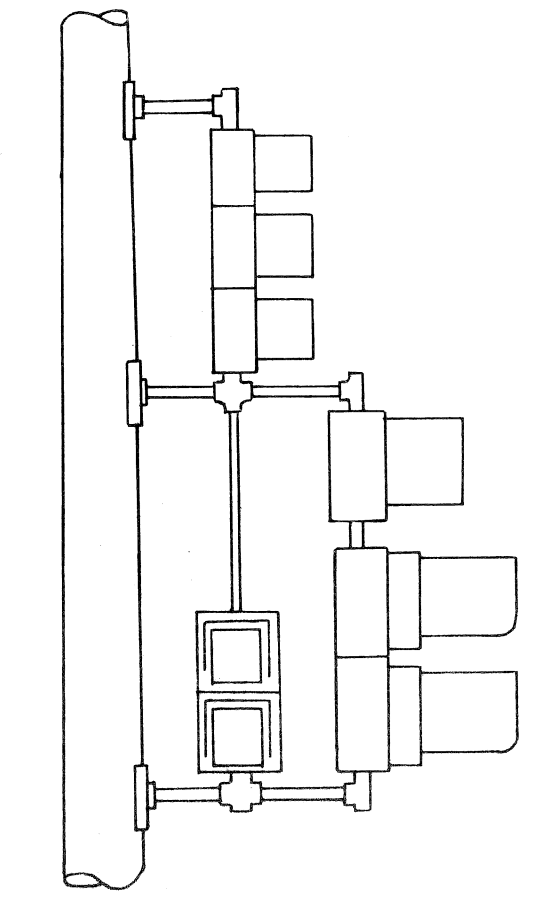
DETAIL "W-1"



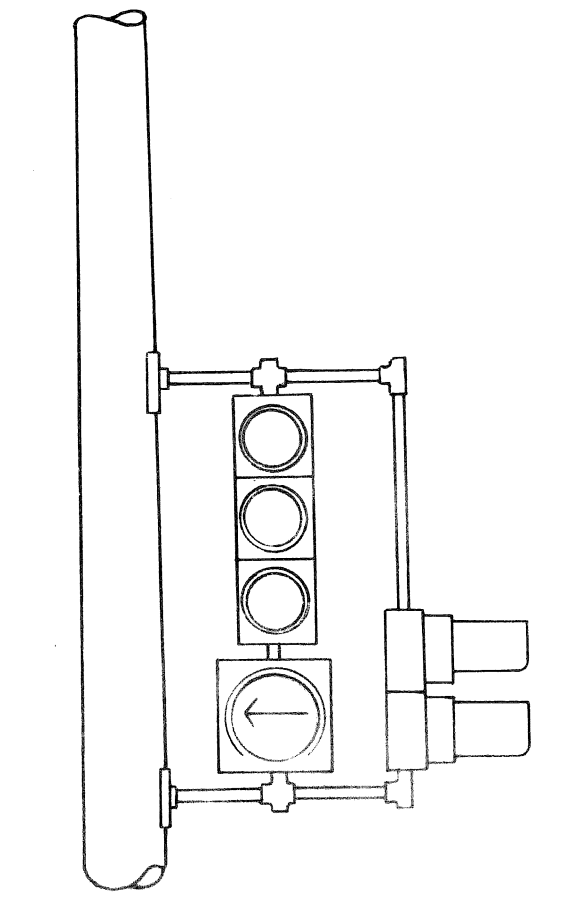
DETAIL "X-1"



DETAIL "Y-1"



DETAIL "Z-1"



DETAIL "A-A-1"

NOTE:
 PIPE ASSEMBLY SHALL BE OF SUCH LENGTH AND HEIGHT AS TO ACCOMMODATE TRAFFIC SIGNALS AND PEDESTRIAN SIGNALS FOR PROPER MAINTENANCE AND CLEAR VEHICULAR AND PEDESTRIAN VIEWING.

- NOTES**
1. USE EAGLE SIGNAL POLE CLAMP UJ158 OR EQUAL FOR MOUNTING BRACKET ARMS TO LIGHTING OR MAST ARM STDS.
 2. USE EAGLE SIGNAL CURVED WOOD POLE FLANGE UJ60 OR EQUAL FOR MOUNTING BRACKET ARMS TO WOOD POLES.

DATE	DESCRIPTION	APPROVED BY
		58

HARPER AVE. - CADIEUX AVE.
 WARREN AVE. - CADIEUX AVE.
 INTERSECTION IMPROVEMENT
 T.S. BRACKET ARM ASSEMBLY DETAILS

SHEET 51 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

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

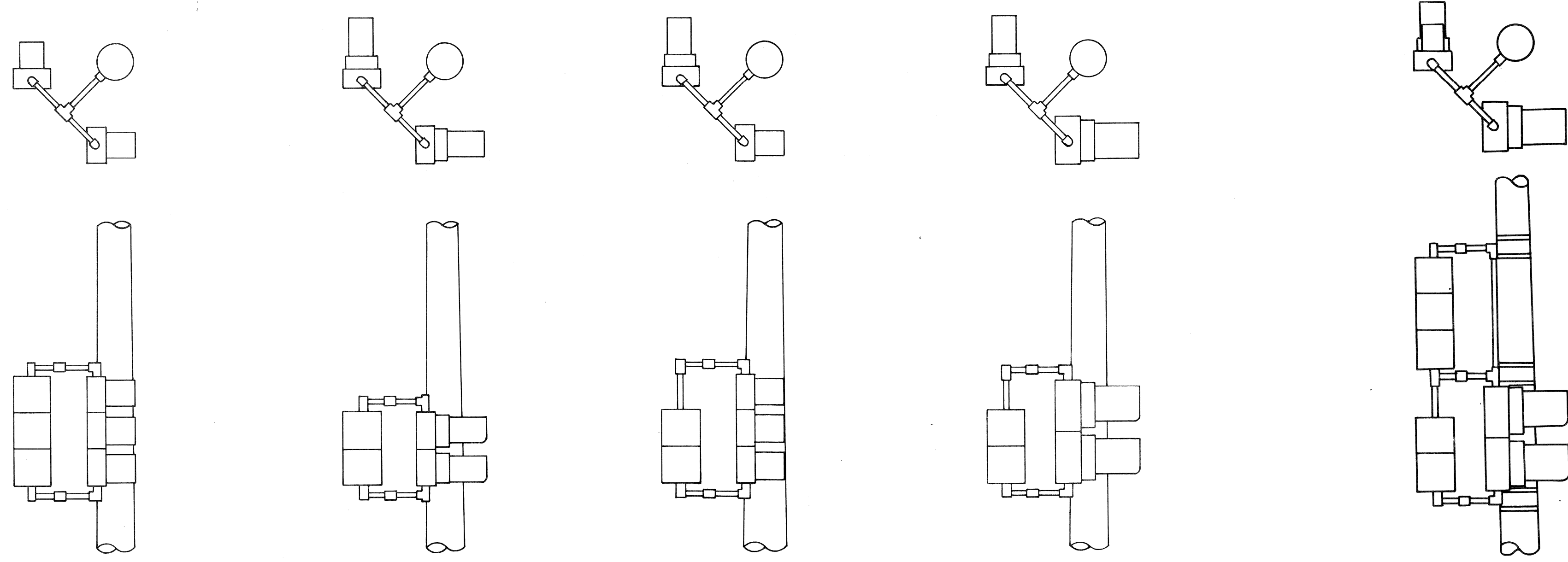
DRAWN CEA
CHECKED <i>[Signature]</i>
APPROVED <i>[Signature]</i>
DATE 9-16-76

PLAN PREPARED BY:
 CONSULTING ENGINEERING ASSOCIATES INC.
 ENGINEERING CONSULTANTS
 16580 WYOMING DETROIT, MICH., 48221
 DRWG. NO. 27 OF 30
 FILE NO. CEA FED AID 9

CHECKED BY
APPROVED BY

PUBLIC LIGHTING COMMISSION
 CITY OF DETROIT

FILE NO. 49-0573
SHEET NO. 27 OF 30
DATE 9-16-76



DETAIL "A-3"

DETAIL "B-3"

DETAIL "C-3"

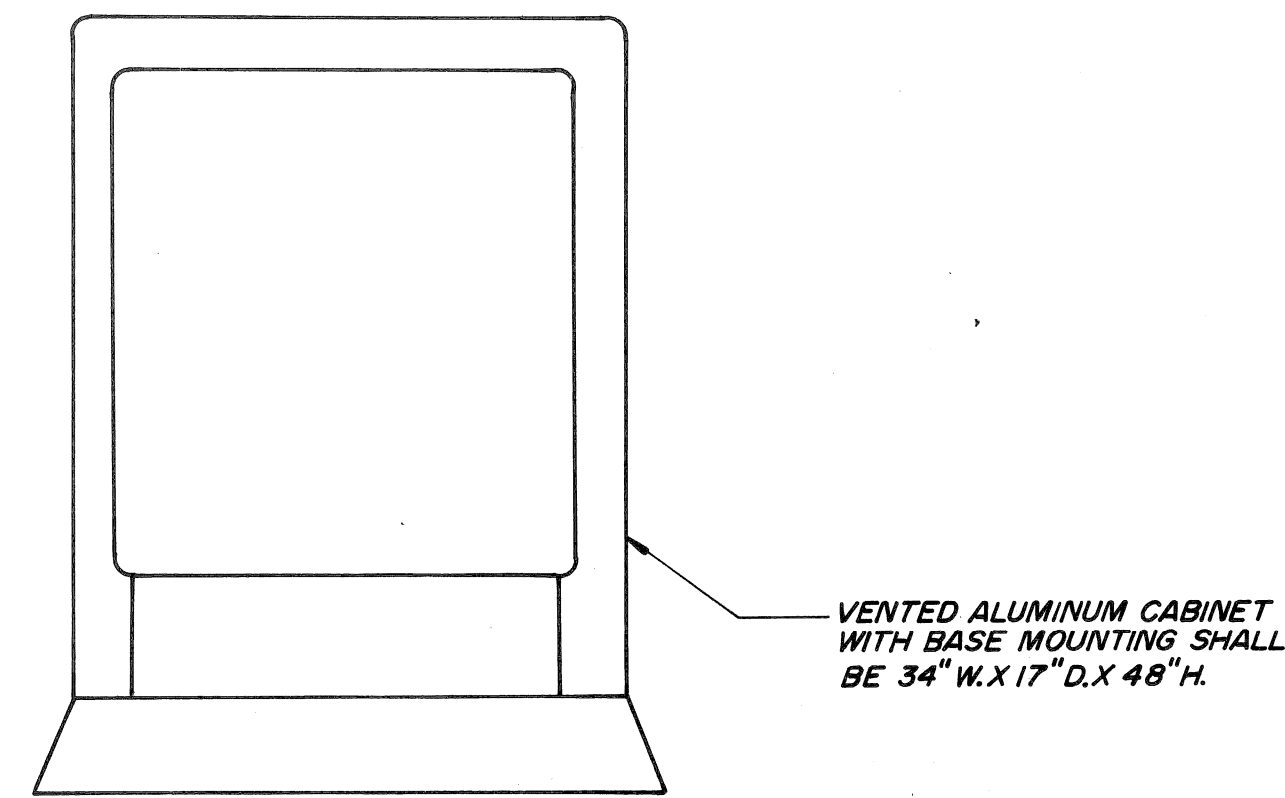
DETAIL "D-3"

DETAIL "E-3"

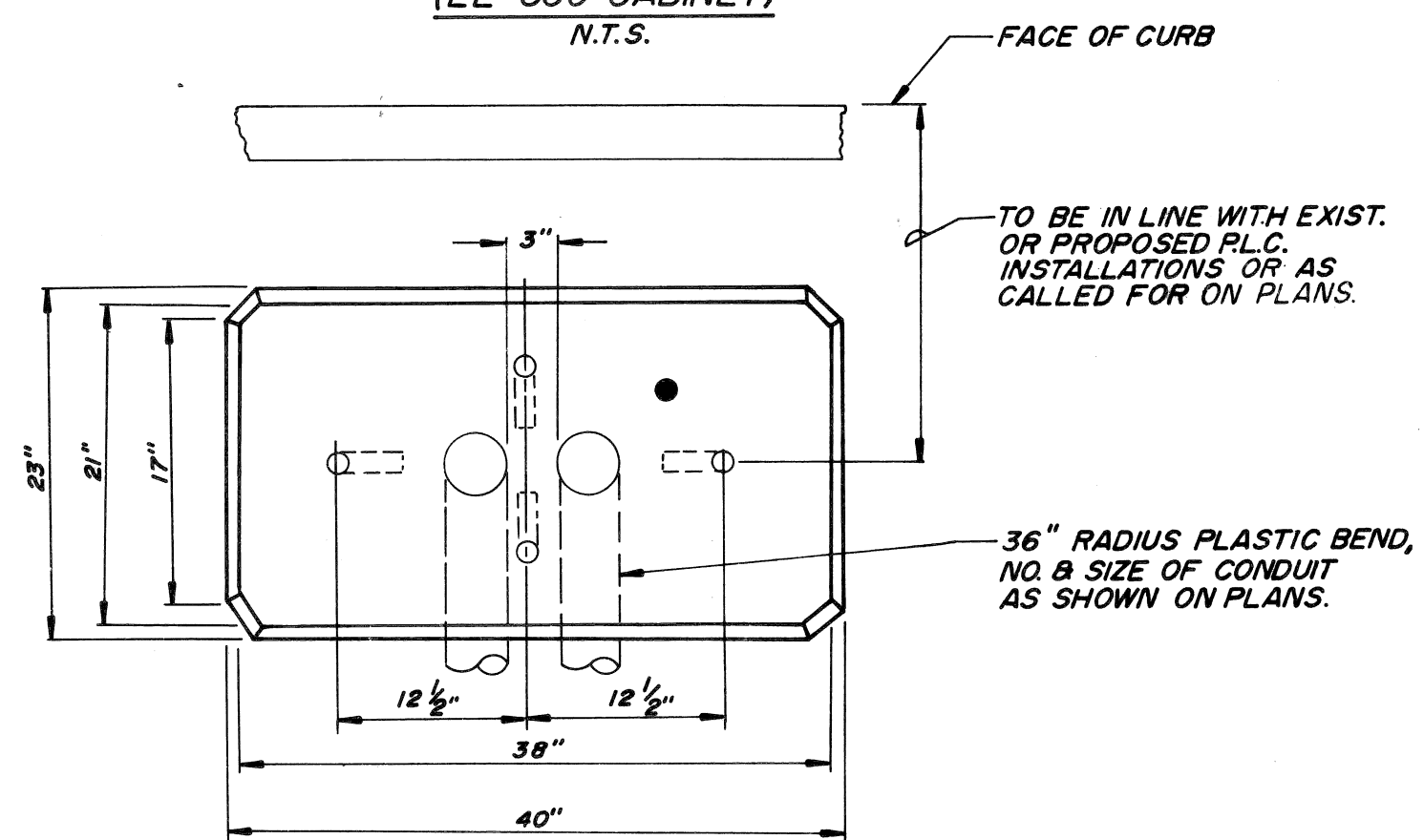
NOTE:
 PIPE ASSEMBLY SHALL BE OF SUCH LENGTH AND HEIGHT AS TO ACCOMMODATE TRAFFIC SIGNALS AND PEDESTRIAN SIGNALS FOR PROPER MAINTENANCE AND CLEAR VEHICULAR AND PEDESTRIAN VIEWING.

- NOTES**
1. USE EAGLE SIGNAL POLE CLAMP UJ158 OR EQUAL FOR MOUNTING BRACKET ARMS TO LIGHTING OR MAST ARM STDS.
 2. USE EAGLE SIGNAL CURVED WOOD POLE FLANGE UJ60 OR EQUAL FOR MOUNTING BRACKET ARMS TO WOOD POLES

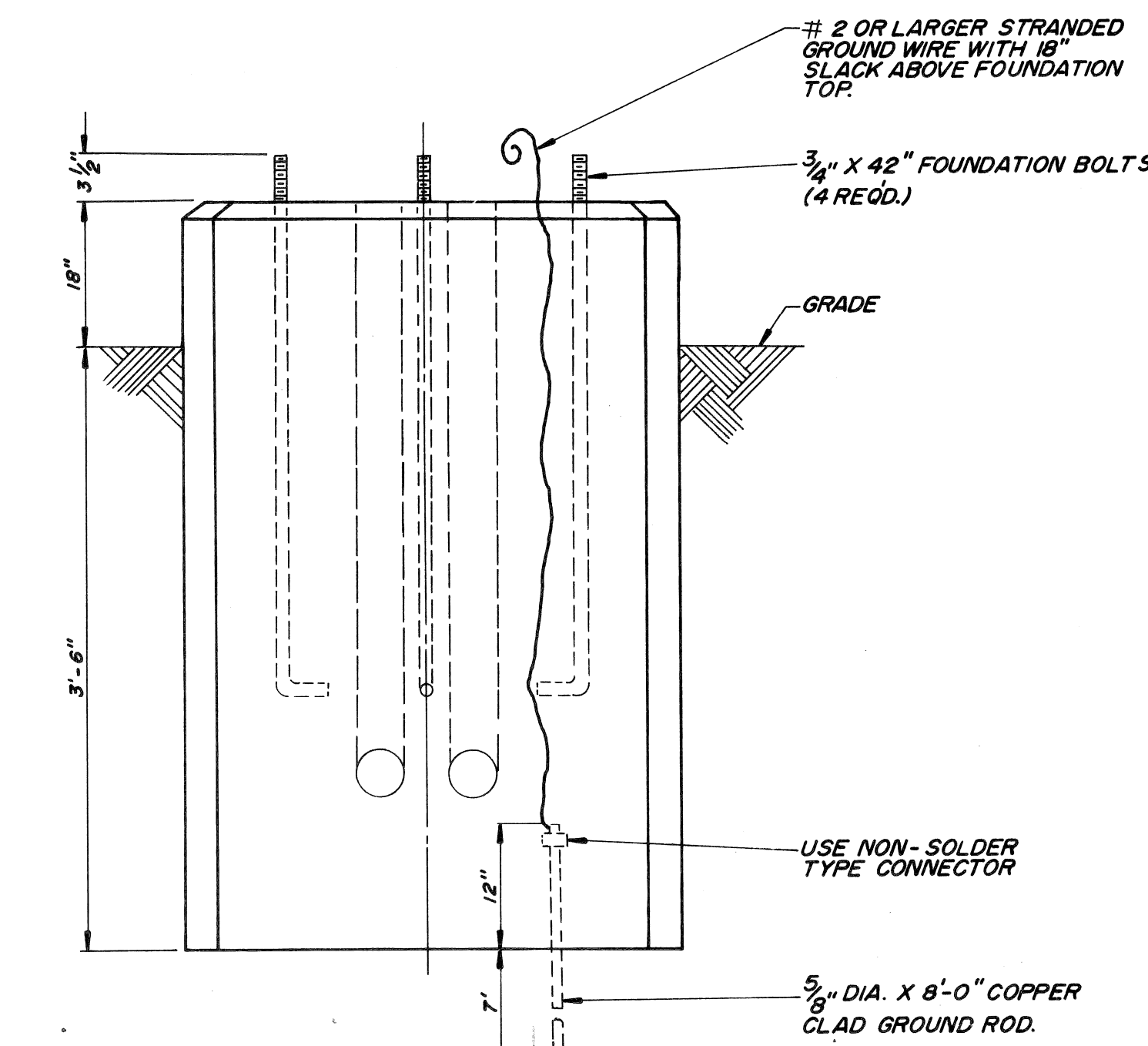
10-16-76 WED:W-CR	DATE	DESCRIPTION	CHKD. BY	HARPER AVE. - CADIEUX AVE. WARREN AVE. - CADIEUX AVE. INTERSECTION IMPROVEMENT T.S. BRACKET ARM ASSEMBLY DETAILS	SHEET <u>52</u> OF <u>54</u> SHEETS	CITY OF DETROIT CITY ENGINEERING DIVISION E.P.M.D.	DRAWN	CEA	PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS 16580 WYOMING DETROIT, MICH., 48221	PUBLIC LIGHTING COMMISSION CITY OF DETROIT	FILE NO.	49-0573						
			60				CONTRACT NO.				CHECKED BY		SHEET NO.	28 OF 30				
							JOB NO.	10012A			APPROVED		DATE	9-16-76	DRWG. NO.	28 OF 30	FILE NO.	CEA FED AID 9
							DATE	10-7-76										



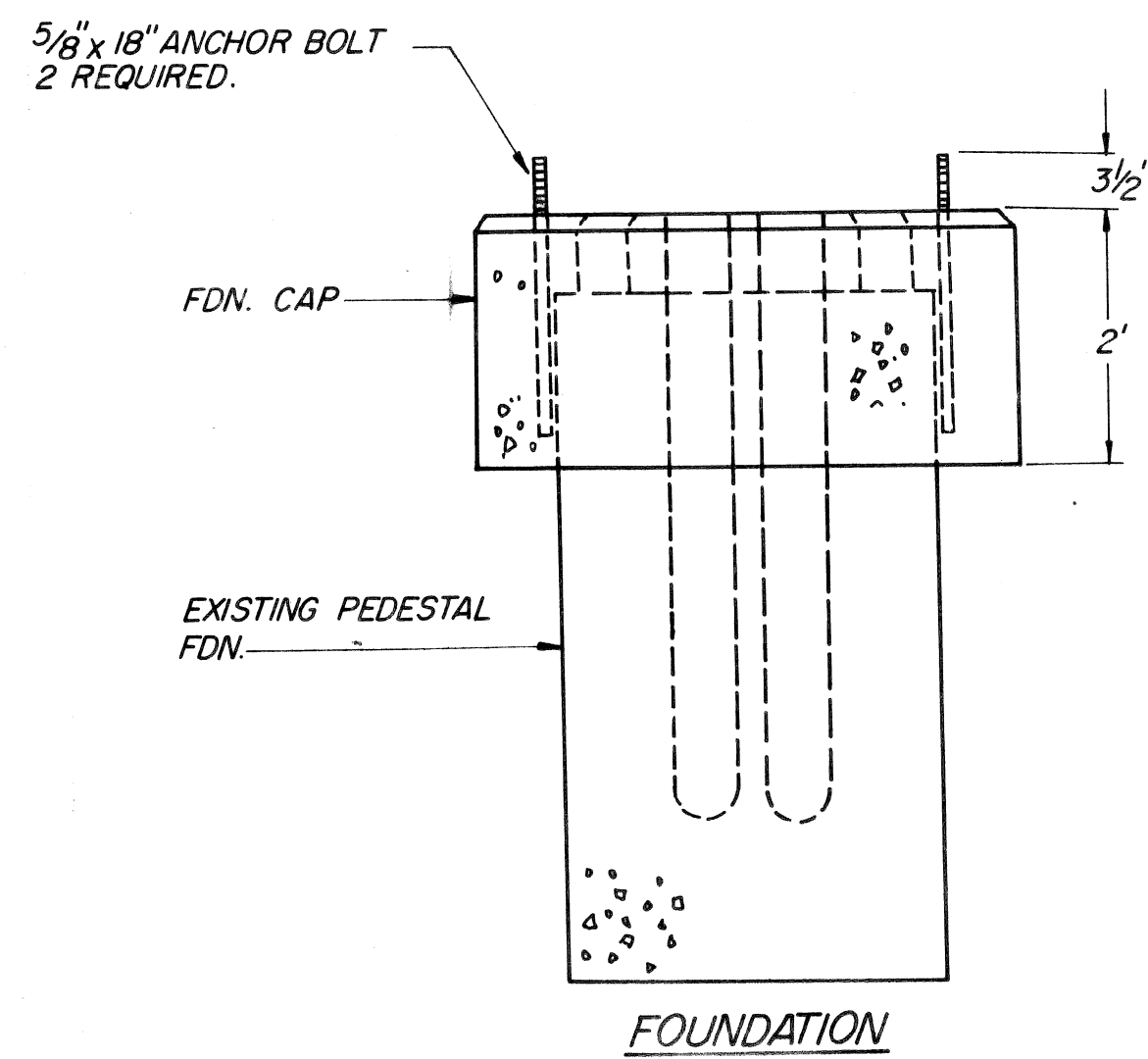
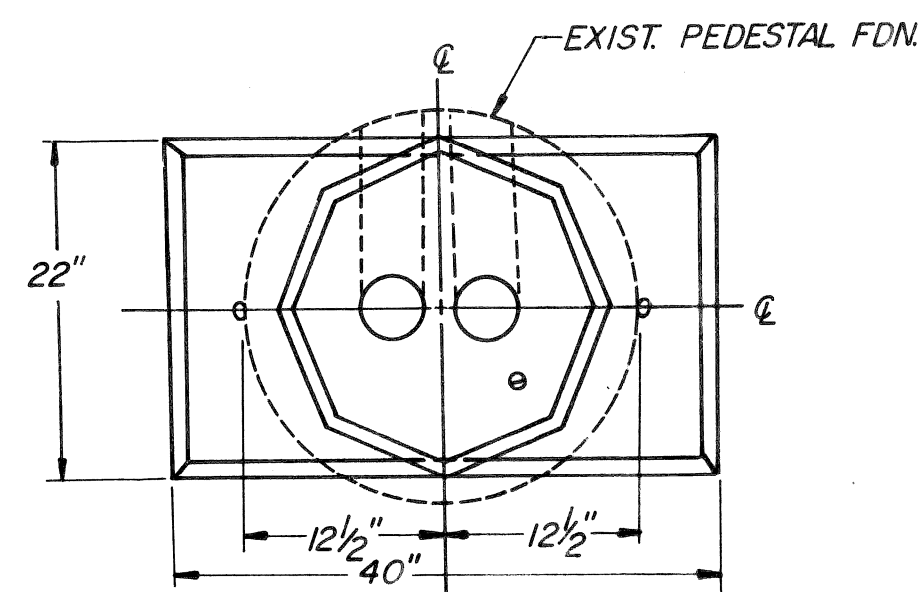
**BASE MOUNTED TRAFFIC SIGNAL
CONTROLLER & CABINET**
(EL-600 CABINET)
N.T.S.



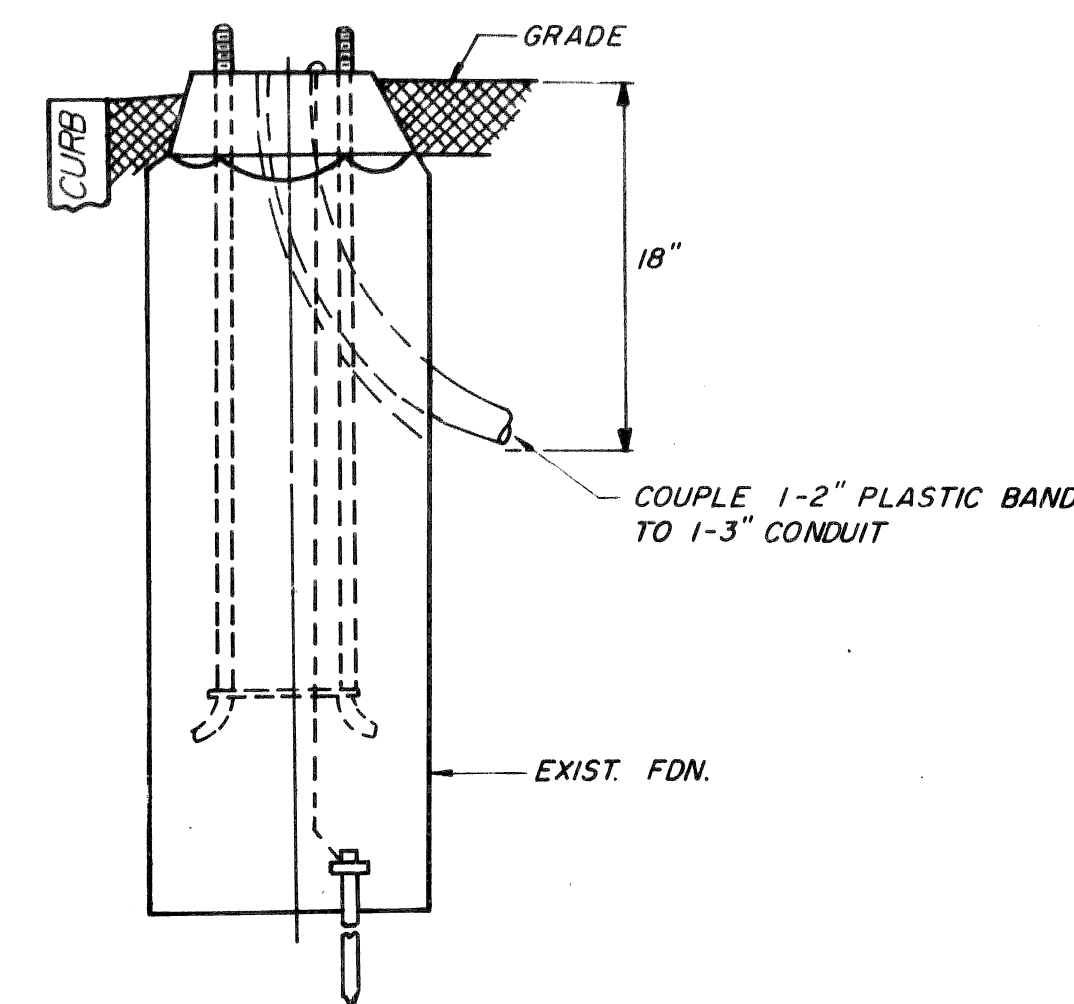
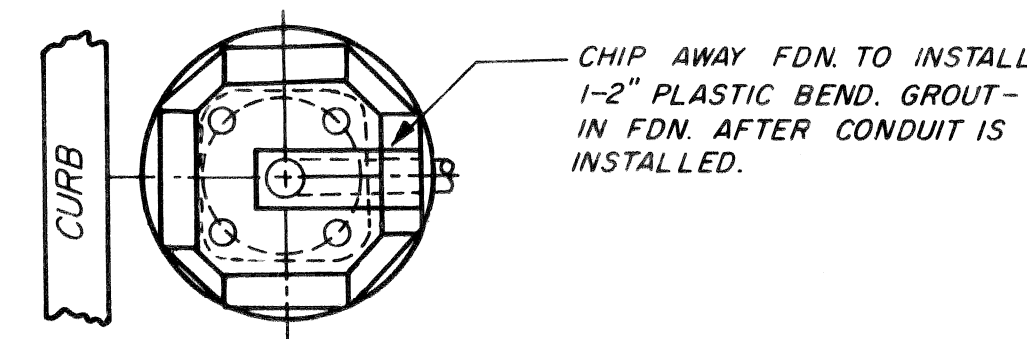
PLAN



ELEVATION
FOUNDATION FOR BASE MOUNTED T.S. CONTROLLER & CABINET
(EL-600 CABINET)
N.T.S.

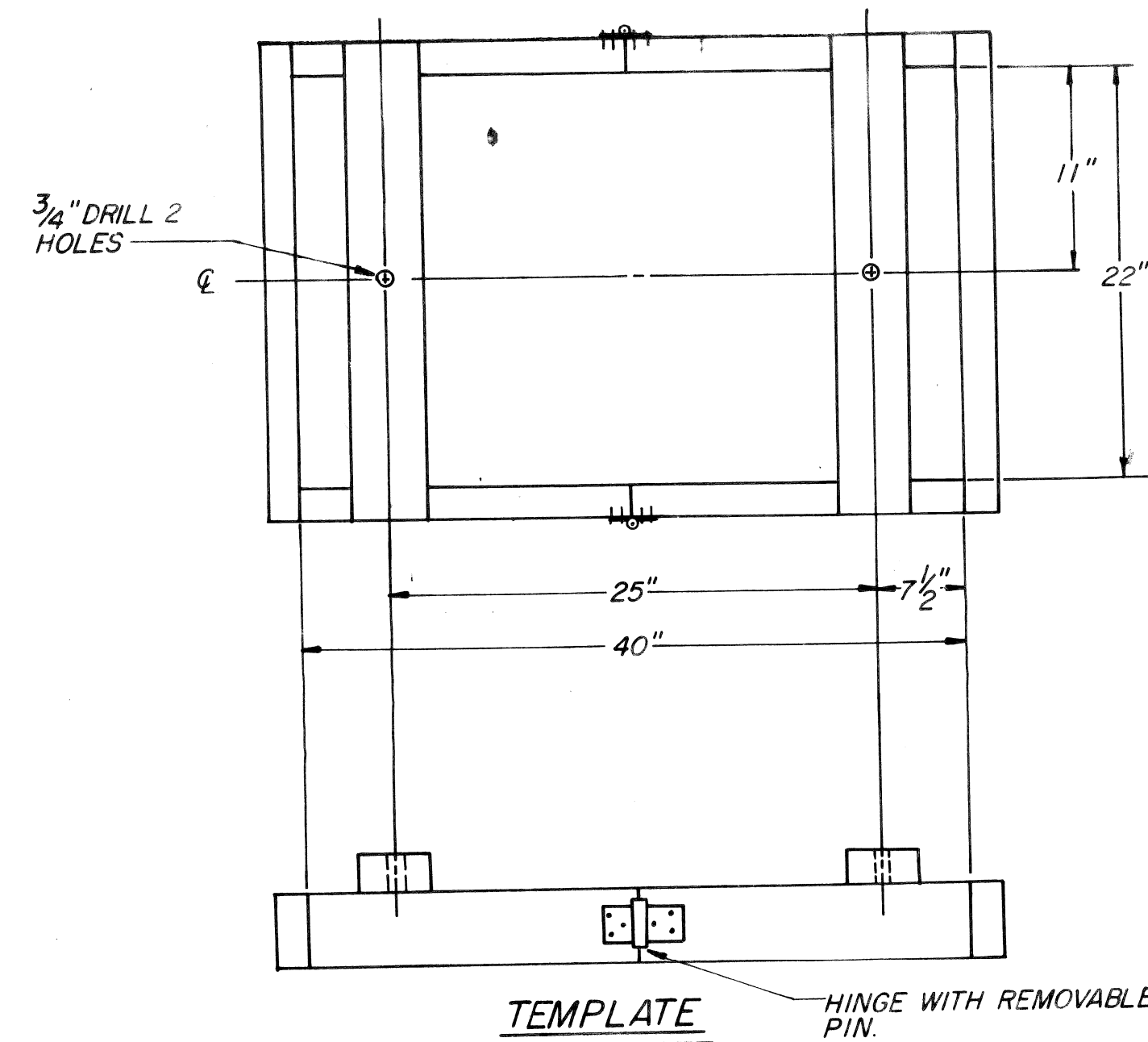


FOUNDATION



DETAIL "A"
N.T.S.

NOTE: TEMPLATE TO BE MADE WITH 2"x6" STOCK.



TEMPLATE
**CONVERSION OF PEDESTAL FDN.
FOR BASE MOUNTED CONTROLLER**

DATE	DESCRIPTION	CHKD. BY
		61

HARPER AVE. - CADIEUX AVE.
WARREN AVE. - CADIEUX AVE.
INTERSECTION IMPROVEMENT
BASE MOUNTED T.S. CONTROLLER CABINET & FOUNDATION
DETAILS

SHEET 53 OF 54 SHEETS
CONTRACT NO.
JOB NO. 10012A
DATE 10-7-76

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

DRAWN BY C.E.A.	PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS 16580 WYOMING DETROIT, MICH. 48221
CHECKED BY	CHECKED BY
APPROVED BY	APPROVED BY
DATE 9-16-76	DATE 9-16-76
DRAWING NO. 29 OF 30	FILE NO. CEA FED AID 9

PUBLIC LIGHTING COMMISSION
CITY OF DETROIT

FILE NO. 49-0573
SHEET NO. 29 OF 30
DATE 9-16-76

AS PER PLANS

AS CONSTRUCTED

BID-ITEM	UNIT	DRWG. NO.					TOTAL						TOTAL	
		3	4	5	6	7		3	4	5	6	7		
1-3" ENCASED CONDUIT	LIN. FT.	42	--	--	12	--	54							
2-3" ENCASED CONDUIT	LIN. FT.	84	--	--	--	--	84							
1-4" ENCASED CONDUIT	LIN. FT.	6	--	--	--	--	6							
ROUND HANDHOLE	EACH	3	--	--	--	--	3							
REMOVE U.G.-FED ST. LTG. UNIT	EACH	3	--	--	2	--	5							
REMOVE FDN.	EACH	5	--	--	2	--	7							
30 FT. STEEL POLE ON NEW FDN.	EACH	1	--	--	1	--	2							
CODE 009-00 ST. LTG. STD. WITH UNIV. TRANSF. BASE ON NEW FDN.	EACH	3	--	--	--	--	3							
SALVAGED BRACKET ARM	EACH	--	--	--	1	--	1							
6 FT. CLAMP-ON BRACKET ARM (3'-0" RISE)	EACH	4	--	--	--	--	4							
400 W. MERCURY VAPOR LUMINAIRE WITH SERIES COIL	EACH	4	--	--	1	--	5							
COMMUNICATION CABLE, 16 GA., PLASTIC JACKETED, 6 PR.	LIN. FT.	--	--	--	60	--	60							
600V., 1-7/C #14 P.J. CABLE FOR CHRONOPLAN	LIN. FT.	70	--	--	--	--	70							
600V., 2-1/C #6 T.H.W. CABLES	LIN. FT.	70	--	--	--	--	70							
7500V., 2-1/C #8 L.C. ST. LTG. CABLES	LIN. FT.	44	--	--	--	--	44							
REMOVE WOOD POLE	EACH	13	--	--	8	--	21							
REMOVE O.H. ST. LTG. UNIT	EACH	13	--	--	5	--	18							
REMOVE #8 TWIN	LIN. FT.	338	--	--	195	--	533							
REMOVE 2-#6 O.H. LINE	LIN. FT.	936	--	--	382	--	1318							
REMOVE 3-#2 O.H. LINE	LIN. FT.	--	--	--	315	--	315							
DISMANTLE COMM. DIV. CABLE POLE	EACH	--	--	--	1	--	1							
DISMANTLE T.S. CABLE POLE	EACH	1	--	--	--	--	1							
REPLACE EXIST. TRANSF. WITH NEW TRANSF.	EACH	--	--	--	1	--	1							
35 FT., CLASS 4 WOOD POLE	EACH	12	--	--	5	--	17							
40 FT., CLASS 2 WOOD POLE	EACH	--	--	--	1	--	1							
40 FT., CLASS 1 WOOD POLE	EACH	1	--	--	--	--	1							
45 FT., CLASS 2 WOOD POLE	EACH	1	--	--	1	--	2							
45 FT., CLASS 1 WOOD POLE	EACH	--	--	--	1	--	1							
SALVAGED O.H. ST. LTG. UNIT	EACH	--	--	--	5	--	5							
400 W. M.V. O.H. ST. LTG. UNIT WITH SERIES COIL	EACH	19	--	--	3	--	22							
#8 TWIN	LIN. FT.	717	--	--	546	--	1263							
2-#6 O.H. LINE	LIN. FT.	673	--	--	190	--	863							
FIT-UP WOOD POLE AS A COMM. DIV. CABLE POLE	EACH	--	--	--	1	--	1							
FIT-UP WOOD POLE AS A T.S. CABLE POLE	EACH	1	--	--	--	--	1							
REMOVE T.S. CONTROLLER & CABINET	EACH	--	1	--	--	--	1							
REMOVE T.S. CONTROLLER, CABINET & PEDESTAL	EACH	--	--	1	--	--	1							
REMOVE 1-WAY BRACKET ARM T.S.	EACH	--	--	4	--	--	4							
REMOVE 1-WAY BRACKET ARM T.S. & 1-WAY TURN SIGNAL	EACH	--	--	1	--	--	1							
REMOVE 2-WAY BRACKET ARM T.S.	EACH	--	2	2	--	2	6							
REMOVE 3-WAY MAST ARM T.S., MAST ARM & STD.	EACH	--	--	2	--	--	2							
REMOVE 4-WAY MAST ARM T.S. & MAST ARM	EACH	--	2	--	--	--	2							
REMOVE (2) SPAN WIRE T.S. & SPAN WIRE	EACH	--	--	--	--	1	1							
1-WAY PEDESTRIAN BRACKET ARM T.S.	EACH	--	--	3	--	--	3							
1-WAY PEDESTRIAN BRACKET ARM T.S. & 1-WAY T.S.	EACH	--	--	3	--	--	3							
2-WAY PEDESTRIAN BRACKET ARM T.S.	EACH	--	2	1	--	2	5							
2-WAY PEDESTRIAN BRACKET ARM T.S. & 1-WAY T.S.	EACH	--	2	1	--	2	5							
1-WAY TURN SIGNAL	EACH	--	--	2	--	--	2							
3-WAY MAST ARM T.S., SALV. MAST ARM & SALV. STD. ON NEW FDN.	EACH	--	--	1	--	--	1							
3-WAY MAST ARM T.S., MAST ARM, & SALV. STD. ON NEW FDN.	EACH	--	--	1	--	--	1							
TWO 4-WAY SPAN WIRE T.S. ON NEW SPAN WIRE	EACH	--	1	--	--	1	2							
T.S. CONTROLLER & CABINET MOUNTED ON WOOD POLE	EACH	--	--	--	--	1	1							
T.S. CONTROLLER, CABINET, & PEDESTAL ON NEW FDN.	EACH	--	1	--	--	--	1							
T.S. CONTROLLER WITH BASE MOUNTED CABINET ON MODIFIED FDN.	EACH	--	--	1	--	--	1							

DATE OF DESCRIPTION
 CHECKED BY

HARPER AVE. - CADIEUX AVE.
 WARREN AVE. - CADIEUX AVE. M2000 (033)
 INTERSECTION IMPROVEMENT
 QUANTITY SHEET

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

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

DRAWN CEA
 CHECKED
 APPROVED
 DATE 9-16-76

PLAN PREPARED BY:
 CONSULTING ENGINEERING ASSOCIATES INC.
 ENGINEERING CONSULTANTS
 16580 WYOMING DETROIT, MICH., 48221
 DRWG. NO. 30 OF 30
 FILE NO. CEA FED AID 9

CHECKED BY
 APPROVED BY

PUBLIC LIGHTING
 COMMISSION
 CITY OF DETROIT

FILE NO. 49-0573
 SHEET NO. 30 OF 30
 DATE