

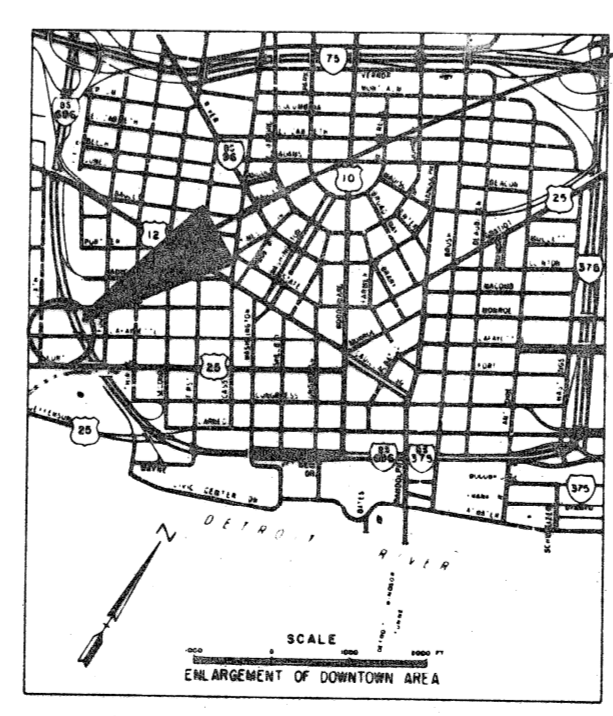
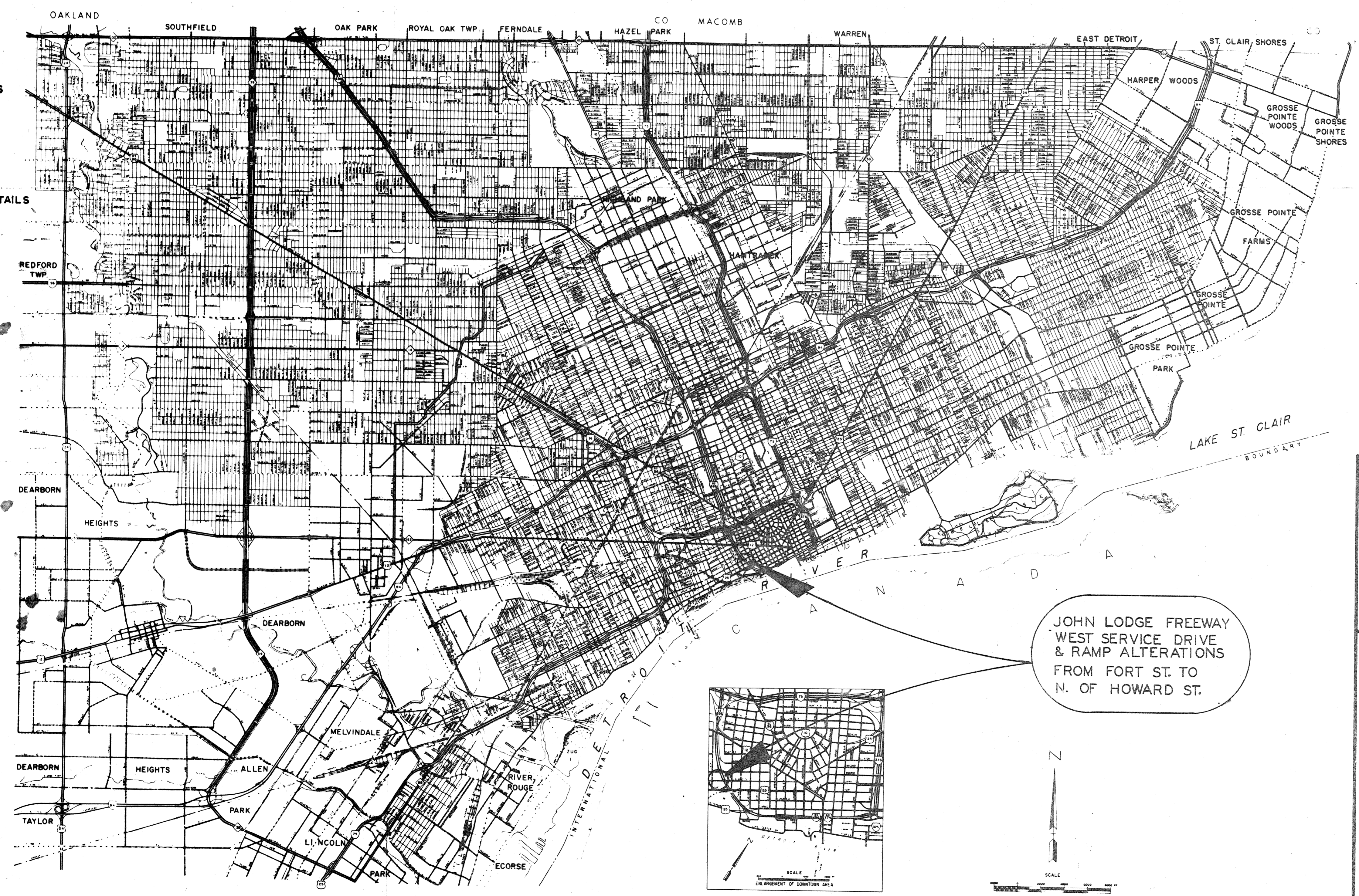
CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
 IN CO-OPERATION WITH
MICHIGAN DEPARTMENT OF TRANSPORTATION
 AND
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL AID URBAN PROJECT NO. MICHIGAN M 2000 (227)
CONTROL SECTION 82400 **JOB NO. 15765A**

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

F H W A REGION	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MICH.				
STREL	CITY	COUNTY	TWP	SHEET NO.	TOTAL SHEETS

ADT: 12690 ADT
DESIGN SPEED: 25 MPH

- INDEX OF SHEETS**
- 1 TITLE SHEET
 - 2 TYPICAL CROSS - SECTIONS
 - 3 ALIGNMENT
 - 4 CONSTRUCTION SEQUENCE
 - 5 REMOVALS
 - 6 PLAN AND PROFILES
 - 7-8 DETAILED GRADES
 - 9 UTILITIES
 - 10-12 STANDARD PLANS AND DETAILS
 - 13 QUANTITY SHEET
 - 14-19 PLD PLANS
 - 20 PLD QUANTITY SHEET
 - 21-36 PLD DETAILS
- STANDARD PLANS**
- I - 9C
 - I - 13C
 - II - 28G
 - II - 29D
 - II - 30C
 - II - 31C
 - II - 39H
 - II - 40E
 - II - 41D
 - II - 42E
 - II - 43D
 - II - 44F
 - II - 45E
 - IV - 80D
 - IV - 84D
 - V - 96C
 - V - 98D
 - V - 100A
 - V - 112J
 - V - 124C
 - VI - 125F



JOHN LODGE FREEWAY
WEST SERVICE DRIVE
& RAMP ALTERATIONS
FROM FORT ST. TO
N. OF HOWARD ST.

ITEM NO. UF 1014

CONTRACT FOR G, DS, P, & UTILITIES

LOCAL AUTHORITY APPROVAL
CITY OF DETROIT
CITY ENGINEERING DEPARTMENT

APPROVED BY E.M. Kennedy Jr. 1/29/36
DEPUTY DIRECTOR DATE

APPROVED BY C.R. Hayden 2-24-36
DIRECTOR DATE

PREPARED UNDER SUPERVISION OF
William R. Talley 20185
REGISTERED PROFESSIONAL ENGINEER REGISTRATION NO.

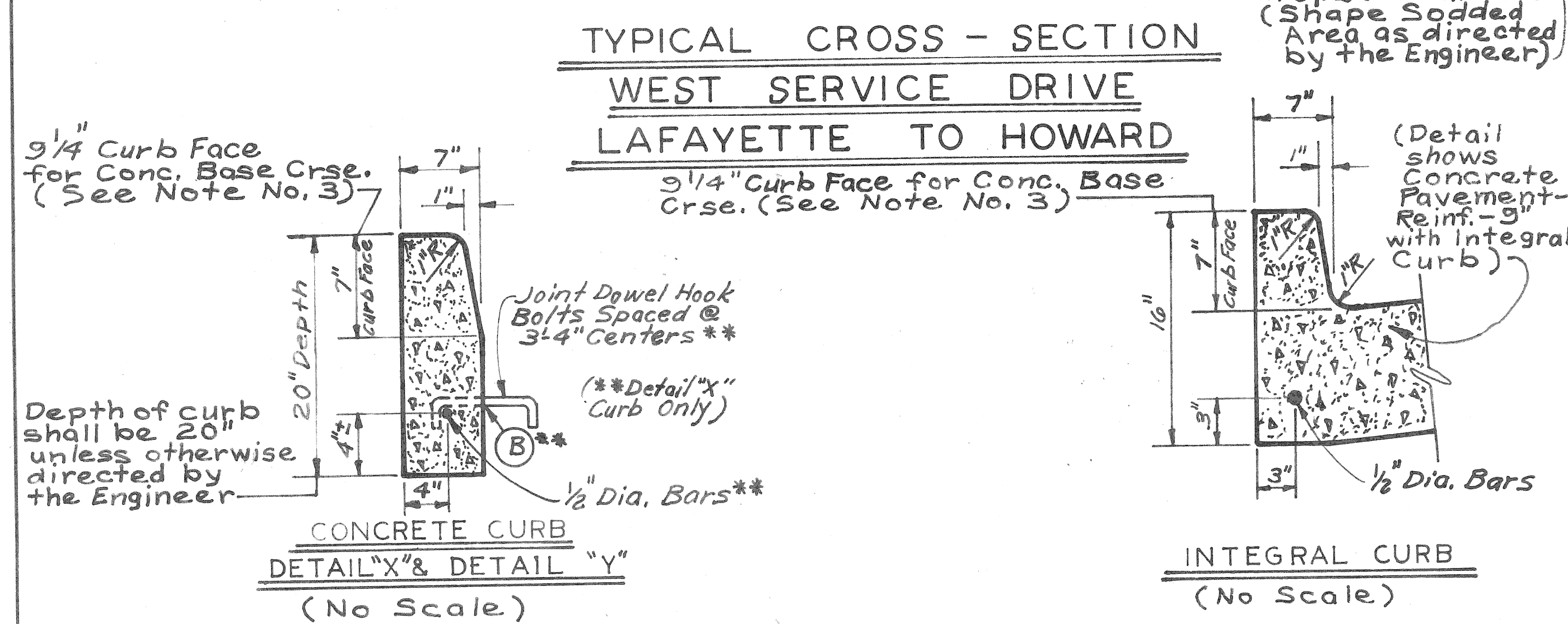
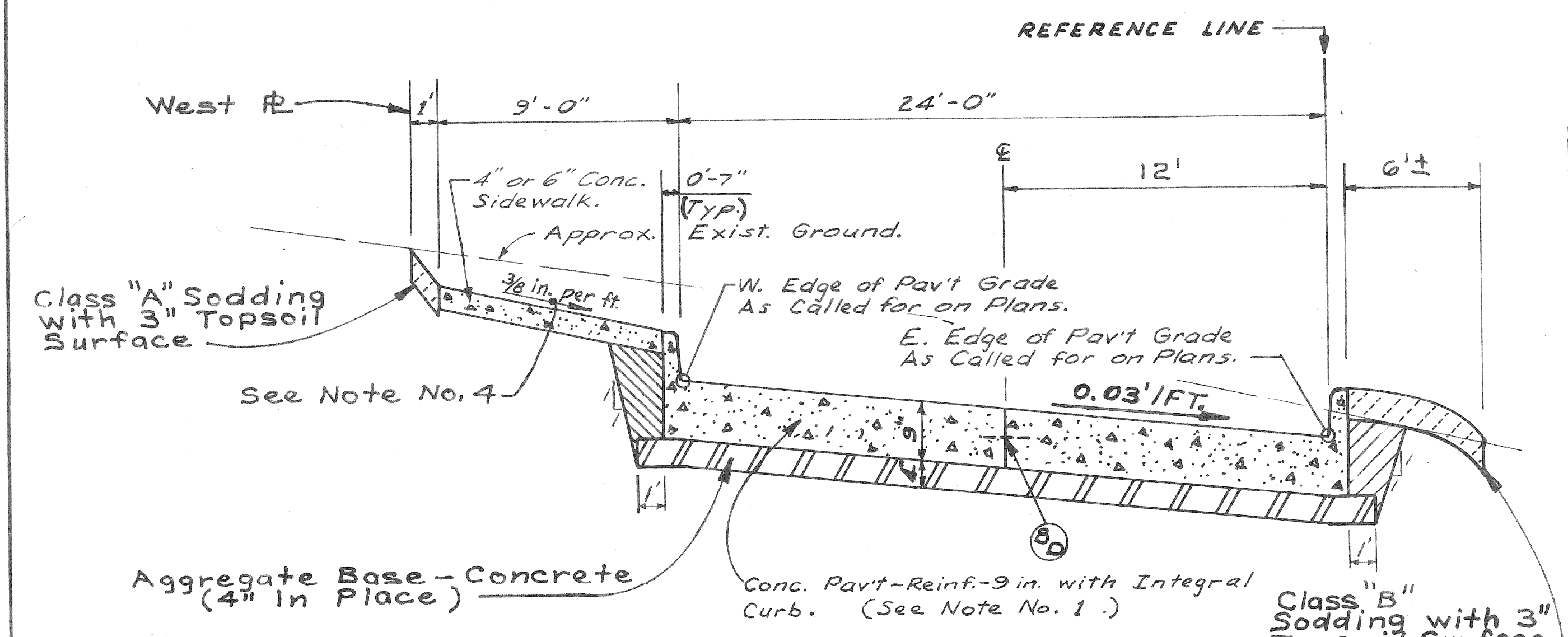
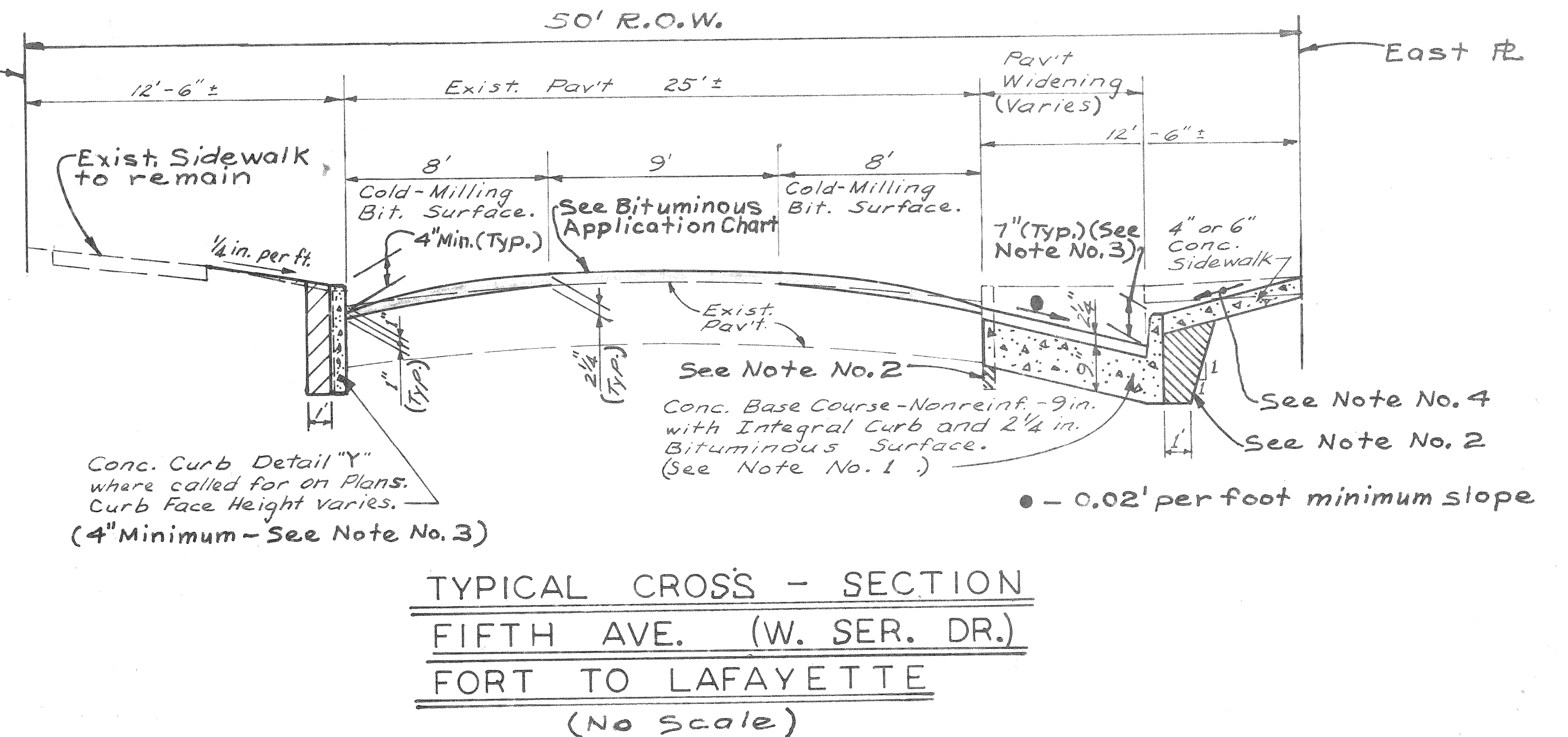
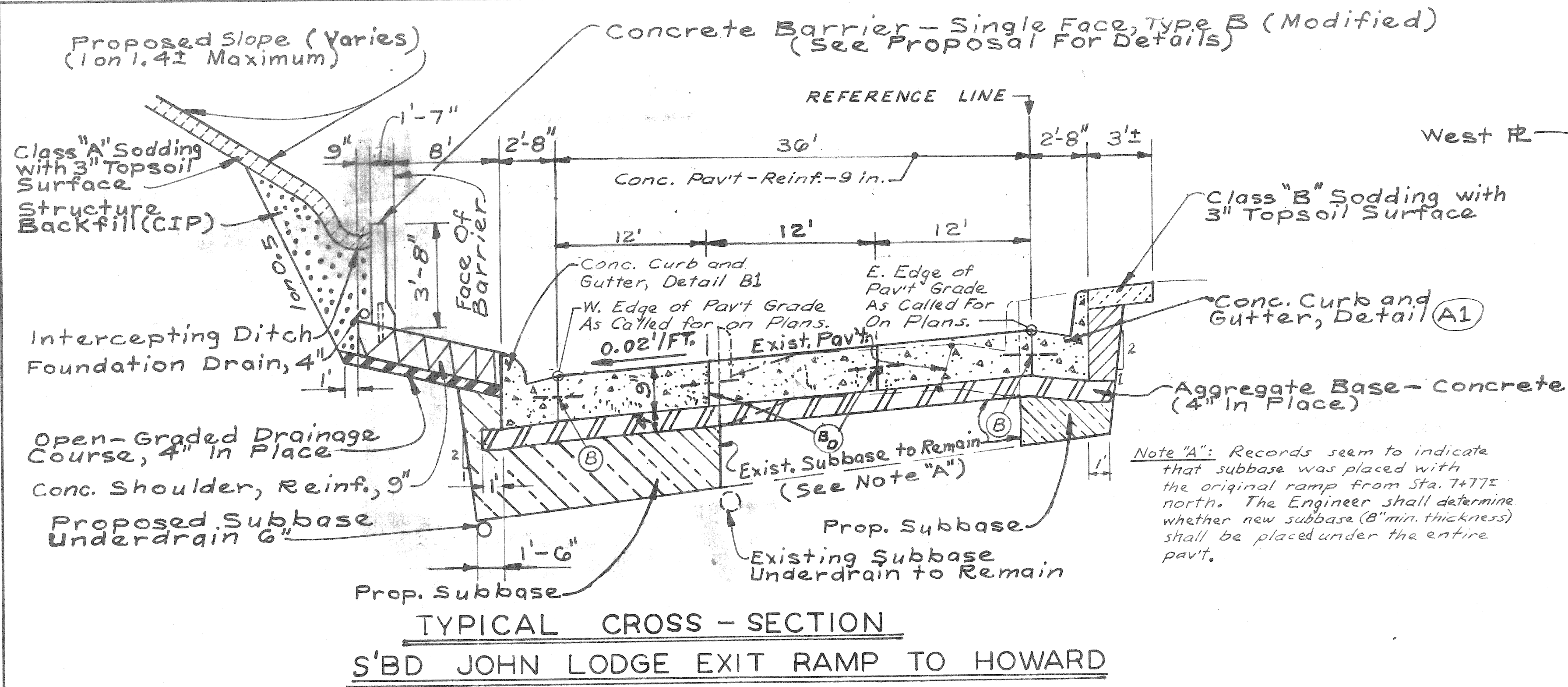
CITY OF DETROIT
ORGANIZATION

DETROIT, MICHIGAN
ADDRESS

(SEAL)

STATE PROJECT FEDERAL PROJECT SHEET NO.

CONTROL SECTION 82400, JOB NO. 15765A, ITEM NO. UF 1014



ESTIMATED QUANTITIES TO BE USED THROUGHOUT THE PROJECT AT THE DISCRETION OF THE ENGINEER

BARRICADE, TYPE III, LIGHTED, FURNISHED	2 EACH
BARRICADE, TYPE III, LIGHTED, OPERATED	2 EACH
REMOVING PAVEMENT (REPAIR)	20 SQ. YARDS
CONCRETE PAVEMENT REPAIR, 10", NONREINFORCED	20 SQ. YARDS
SUBGRADE UNDERCUTTING TYPE II	30 CU. YARDS
4" CONCRETE SIDEWALK	90 SQ. FEET
REMOVING SIDEWALK	10 SQ. YARDS
CLEANING EXISTING STORM DRAINAGE STRUCTURES	6 EACH
SEWER CLEANOUT	100 LIN. FEET
CLASS "A" SODDING	25 SQ. YARDS
CLASS "B" SODDING	25 SQ. YARDS
TOPSOIL SURFACE, 3"	50 SQ. YARDS
CATCH BASIN "L"	1 EACH
REMOVING DRAINAGE STRUCTURES	1 EACH
WATER	1 UNIT
CEMENT	10 TONS
CONCRETE CURB DETAIL "X"	50 LIN. FEET
CONCRETE CURB DETAIL "Y"	50 LIN. FEET
RECONSTRUCT GATE WELL	1 EACH
MOVING FENCE	360 LIN. FEET

MISCELLANEOUS QUANTITIES

FIELD OFFICE	4 MONTHS
MOBILIZATION	1 LUMP SUM
FLAG CONTROL	1 LUMP SUM
MINOR TRAFFIC DEVICES	1 LUMP SUM

BITUMINOUS APPLICATION CHART

ITEM	RATE OF APPLICATION	ESTIMATED THICKNESS	ASPHALT PENETRATION
Bituminous Mix, No. 1100L, 20AA	130 #/S.Y.	1 1/4 inches	85-100
Bituminous Mix, No. 1100T, 20AA	120 #/S.Y.	1 inch	85-100

Bituminous Bond Coat 0-0.10 Gal/1.5.Y. to Rigid Bases and 0-0.05 Gal/1.5.Y. Tack Coat between layers.

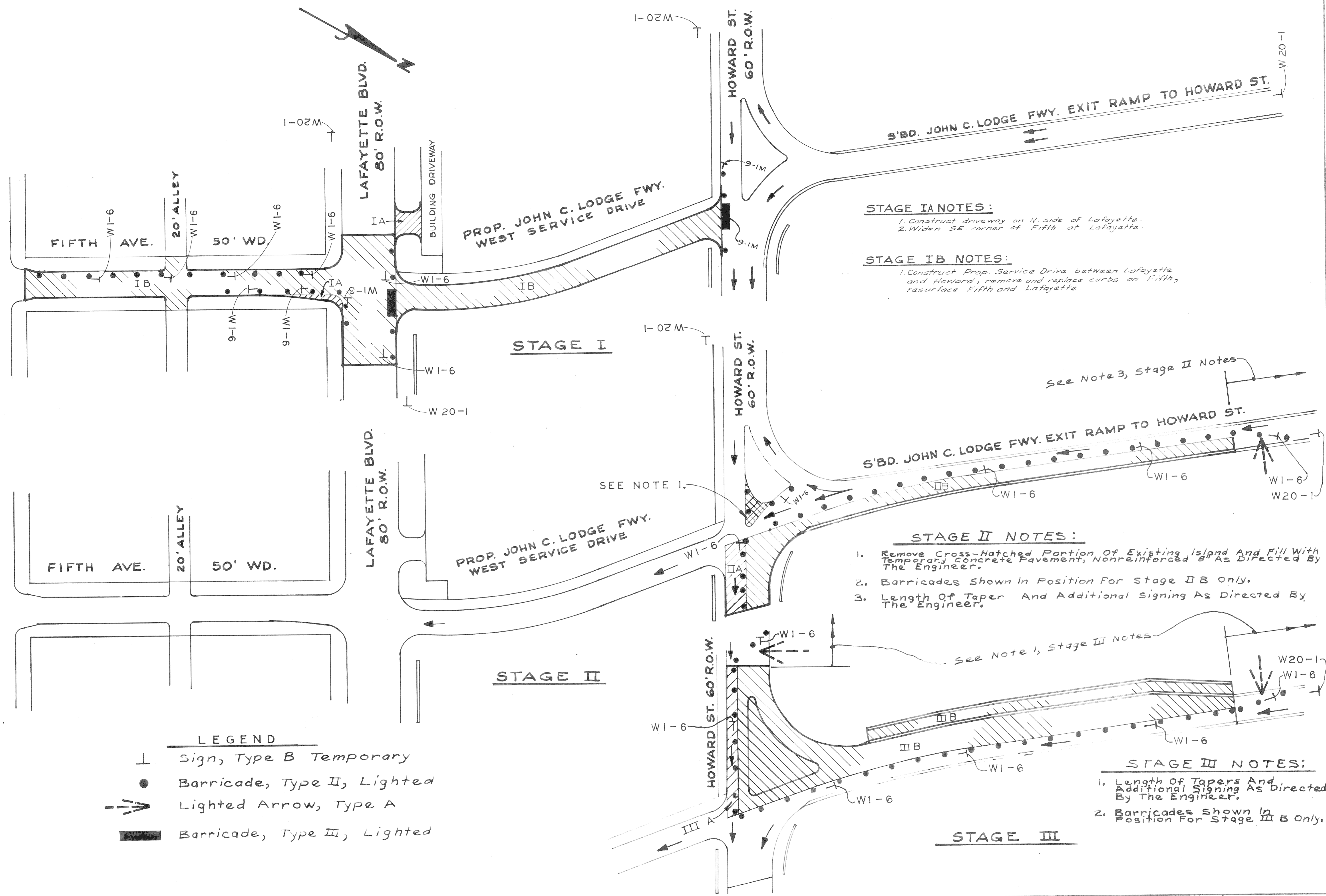
- LEGEND
- Concrete Shoulder, Reinforced, 9"
 - Selected Excavated Material (Incidental to Paving).
 - Granular Material Class II (See Note No. 2)
 - Aggregate Base - Concrete (4 inches in Place).
 - Subbase (LM)
 - Class "B" (East Side of Rdwy.) or Class "A" (West Side) Sodding with 3" Topsoil Surface.
 - Existing Pavt, Sidewalk or Ground Line.
 - Proposed Pavt, Sidewalk or Ground Line.
 - Longitudinal Bulkhead Joint according to MDOT Std Divg. II-41D.
 - Longitudinal Lane Tie Joint with Tie Bar according to MDOT Std Divg. II-41D.
 - Optional, B or D Joint.

- NOTES
- The proposed curb shall be Integral Curb (See Detail this sheet) with Concrete Curb Details "X" and "Y" as alternates. Regardless of construction method, the proposed curb shall be paid for as "Concrete Base Course - Nonreinforced - 9" with integral curb" (Fort to Lafayette, Detail "Y" as the alternate) or "Concrete Pavement - Reinforced - 9" with integral curb" (Lafayette to Howard, Detail "X" as the alternate).
 - Backfill, if required under proposed sidewalk or pavement, shall be Granular Material Class II. (Incidental to sidewalk or pavement).
 - Proposed final curb face height shall be 7" unless otherwise called for on the Plans or directed by the Engineer.
 - Sidewalk shall slope at 3/8" per foot unless the Engineer determines otherwise to meet existing conditions. The Engineer will choose within these limits: 1/4" per foot minimum to 1/2" per foot maximum.

DESIGNED BY R.B.P./W.B.	APPROVED William L. Alley ENGINEER OF STREETS	CITY OF DETROIT CITY ENGINEERING DEPARTMENT BUREAUS OF STREETS AND HIGHWAYS	JOHN LODGE FWY W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD	SHEET 2 OF 36 SHEETS
DRAWN BY R.B.P./U.J.	HIGHWAY ENGINEER			CONTRACT NO. 15765A
TRACED BY			TYPICAL CROSS-SECTIONS	ASSIGNMENT NO.
CHECKED BY W.B.				DATE 4-86

FORT ST. 100' R.O.W.

FORT ST. 100' R.O.W.



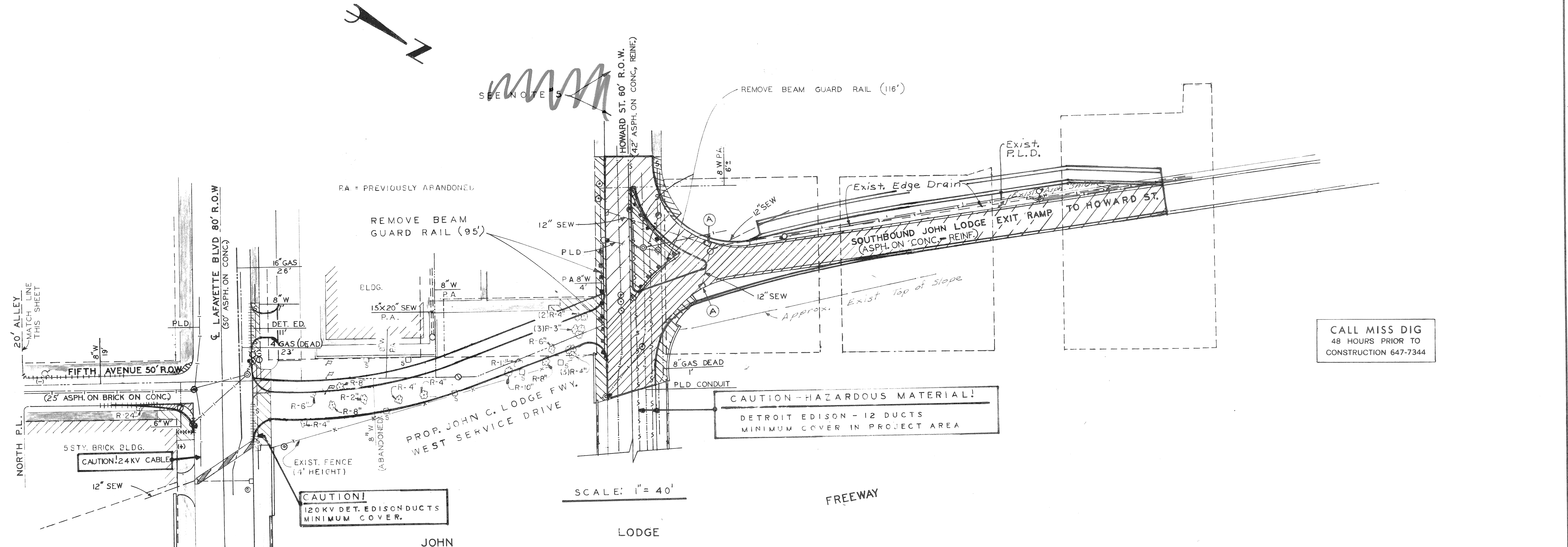
DESIGNED BY	RBP/WB	APPROVED	<i>William R. Kelley</i> ENGINEER OF STREETS
DRAWN BY	JK/JJ	HIGHWAY ENGINEER	
TRACED BY			
CHECKED BY	WB		

CITY OF DETROIT
CITY ENGINEERING DEPARTMENT
BUREAUS OF STREETS AND HIGHWAYS

JOHN LODGE FWY, W. SERVICE DRIVE & RAMP
ALTERATIONS, FROM FORT TO N. OF HOWARD

CONSTRUCTION SEQUENCE

SHEET	4	OF	36	SHEETS
CONTRACT NO.	15765A			
ASSIGNMENT NO.				
DATE	4-86			



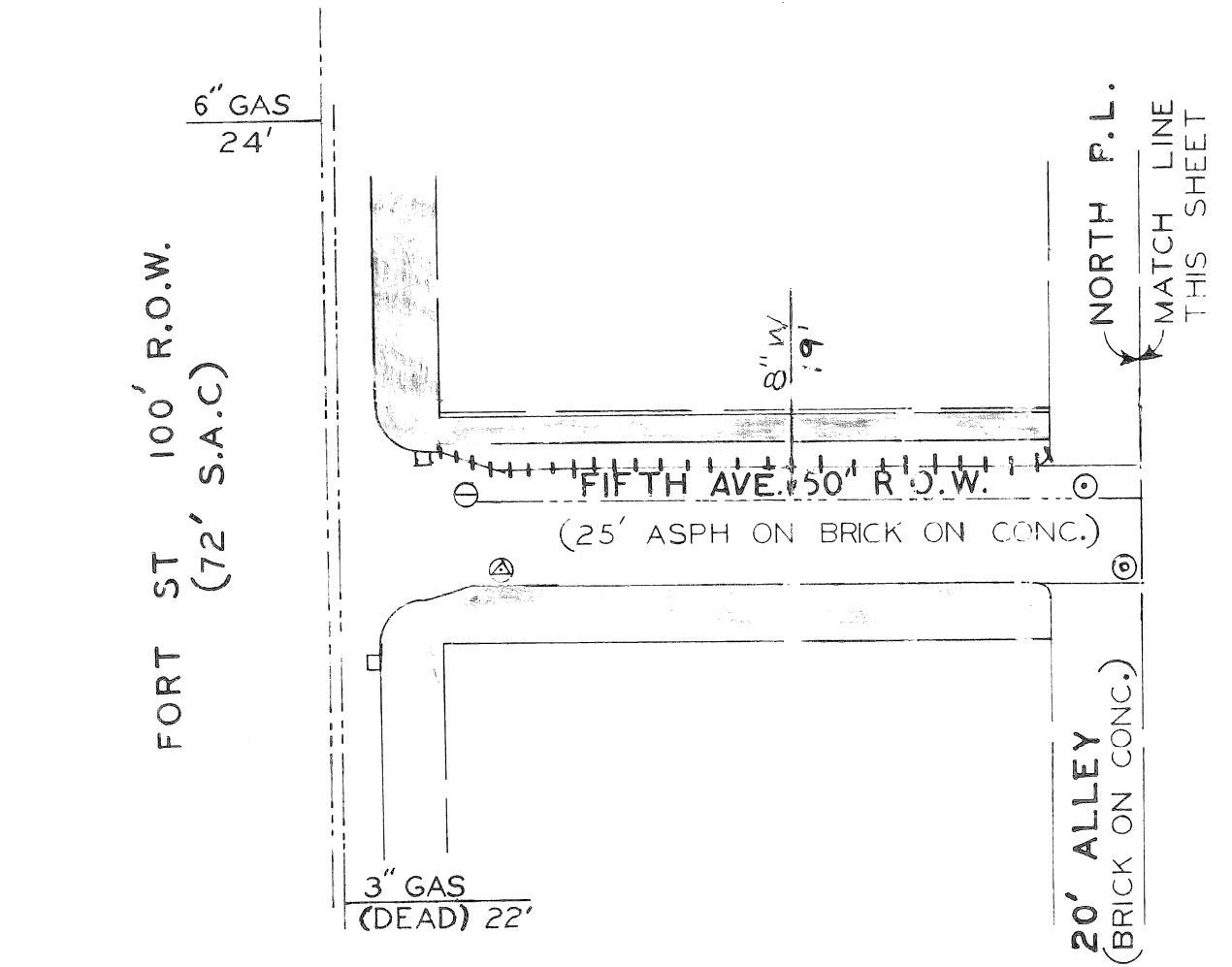
CALL MISS DIG
48 HOURS PRIOR TO
CONSTRUCTION 647-7344

CAUTION - HAZARDOUS MATERIAL!
DETROIT EDISON - 12 DUCTS
MINIMUM COVER IN PROJECT AREA

CAUTION!
120KV DET. EDISON DUCTS
MINIMUM COVER.

- REMOVAL LEGEND**
- REMOVING PAVEMENT
 - REMOVING SIDEWALK
 - EXISTING SIDEWALK OR DRIVEWAY TO REMAIN
 - REMOVING CURB
 - REMOVE TREE
 - EXISTING FLAG POLE. (SEE NOTE #3)
 - EXISTING WATER SPRINKLER HEAD. (SEE NOTE #4)
 - EXISTING BUILDING TO REMAIN
 - REMOVING PAVEMENT - REPLACE WITH CONCRETE PAVEMENT REPAIR, 10\"/>

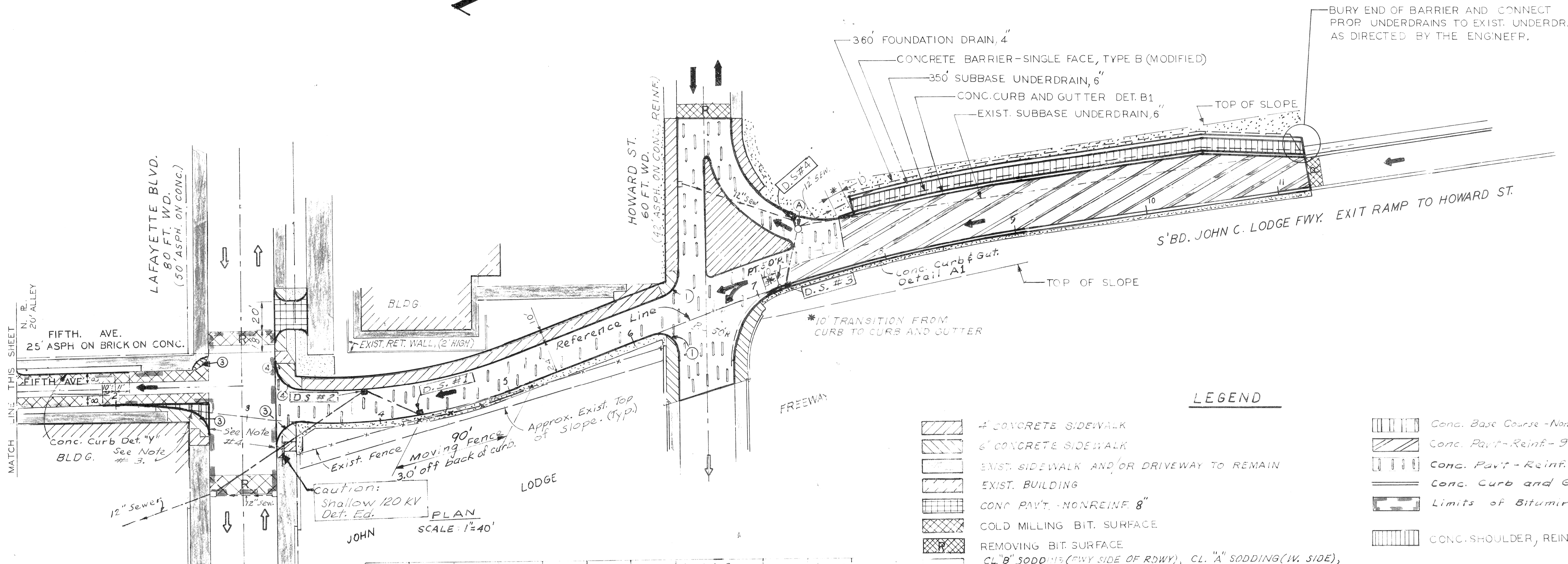
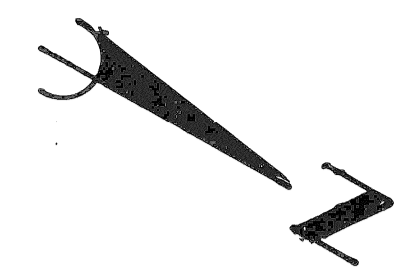
- NOTES**
- 1) FOR UTILITY LEGEND, SEE SHEET NO. 12.
 - 2) LOCATIONS OF EXIST. UTILITY LINES ARE BASED ON THE BEST AVAILABLE RECORDS AND ARE NOT GUARANTEED FOR ACCURACY.
 - 3) THERE ARE THREE EXISTING FLAG POLES. THE TWO EASTERLY POLES MUST BE REMOVED, SALVAGED, AND DELIVERED BY THE CONTRACTOR TO THE OWNER (WAYNE COUNTY). THE WESTERLY POLE SHALL REMAIN IN PLACE.
 - 4) THE CONTRACTOR SHALL REMOVE THE EXISTING SPRINKLER SYSTEM WITHIN THE ROADWAY RIGHT OF WAY, CAP THE WATER LINES, SALVAGE THE SPRINKLER HEADS AND MATERIALS, AND DELIVER THEM TO THE OWNER (WAYNE COUNTY).
 - 5) THE CONTRACTOR SHALL REMOVE THE EXISTING RUMBLE STRIP ON HOWARD ST. BETWEEN SIXTH AVE. AND THE WEST LIMIT OF THE HOWARD ST. PAVEMENT REMOVAL. THIS WORK SHALL BE DONE AS DIRECTED BY THE ENGINEER AND SHALL BE CONSIDERED INCIDENTAL TO REMOVING PAVEMENT.



DESIGNED BY R.B.P. DRAWN BY L.G./J.J. TRACED BY CHECKED BY W.B.		APPROVED: ENGINEER OF STREETS HIGHWAY ENGINEER	CITY OF DETROIT CITY ENGINEERING DEPARTMENT BUREAU OF STREETS AND HIGHWAYS	JOHN LODGE FWY W. SERVICE DRIVE & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD.	SHEET 5 OF 36 SHEETS CONTRACT NO. 15765A ASSIGNMENT NO. DATE 4-86
REVISIONS LOCATED BY COORDINATES ON SHEET				REMOVALS	

C.B.M. EL. 130.80 ARROW ON HYDRANT
100' W. OF W. LINE LODGE FREEWAY

C.B.M. ELEV. 129.11 BRASS CAP
S. SIDE HOWARD @ W. LINE
LODGE FREEWAY (ON BRIDGE).

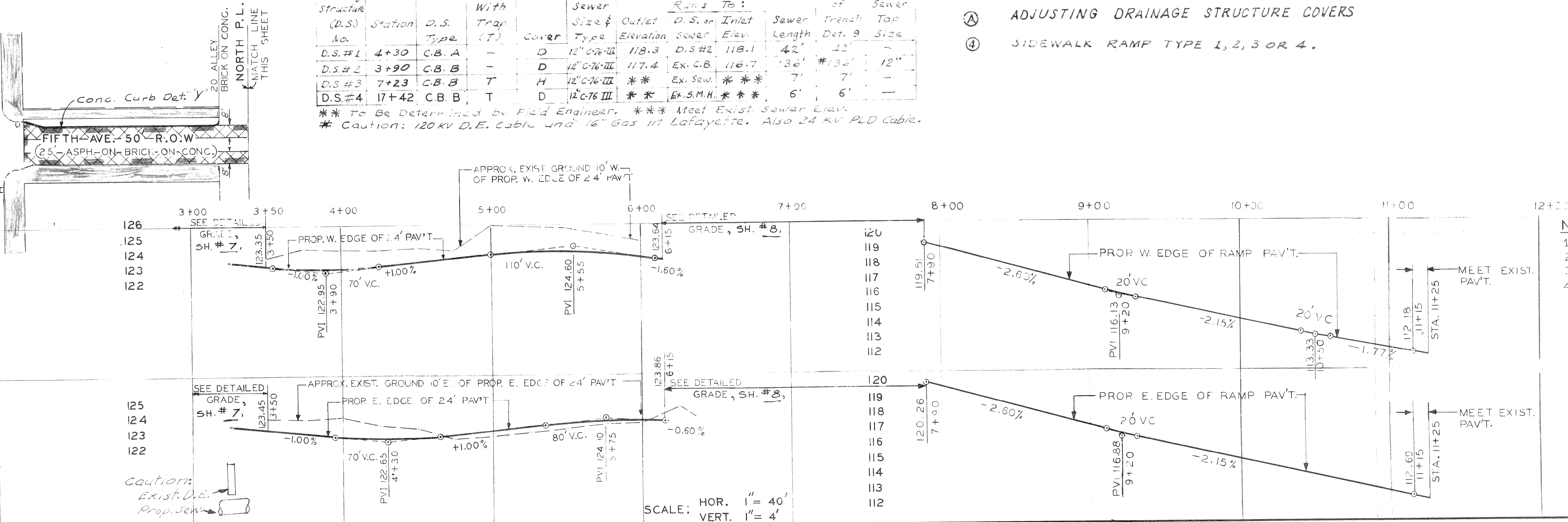


LEGEND

- 4" CONCRETE SIDEWALK
- 6" CONCRETE SIDEWALK
- EXIST. SIDEWALK AND/OR DRIVEWAY TO REMAIN
- EXIST. BUILDING
- CONC. PAVT. - NONREINF. 8"
- COLD MILLING BIT. SURFACE
- REMOVING BIT SURFACE
- CL "B" SODDING (FWY SIDE OF RDWY), CL. "A" SODDING (W. SIDE), WITH 3" TOPSOIL SURFACE.
- ADJUSTING DRAINAGE STRUCTURE COVERS
- SIDEWALK RAMP TYPE 1, 2, 3 OR 4.
- Conc. Base Course - Nonreinf. - 9" with Int. Curb #24, 3/4" Rein.
- Conc. Pavt. - Reinf. - 9"
- Conc. Pavt. - Reinf. - 9" with Integral Curb.
- Conc. Curb and Gutter Det. A1 or Det. B1
- Limits of Bituminous Resurfacing.
- CONC. SHOULDER, REINF., 9"

Drainage Structure (D.S.) No.	Station	D.S. Type	With Trap (T)	Outlet Sewer Size & Cover	Outlet Sewer Elevation	Outlet Sewer Runs To: D.S. or Inlet Sewer Elev.	Length	Det. 9	Sewer Trench Tap Size
D.S. #1	4+30	C.B. A	-	D 12" C-76-III	118.3	D.S. #2 118.1	42'	12"	12"
D.S. #2	3+90	C.B. B	-	D 12" C-76-III	117.4	Ex. S.W. ***	136'	7"	7"
D.S. #3	7+23	C.B. B	T	H 12" C-76-III	***	Ex. S.M.H. ***	6'	6"	6"
D.S. #4	17+42	C.B. B	T	D 12" C-76-III	***	Ex. S.M.H. ***	6'	6"	6"

** To Be Determined by Field Engineer. *** Meet Exist. Sewer Elev.
Caution: 120 KV D.E. Cable and 16" Gas in Lafayette. Also 24 KV PLD Cable.



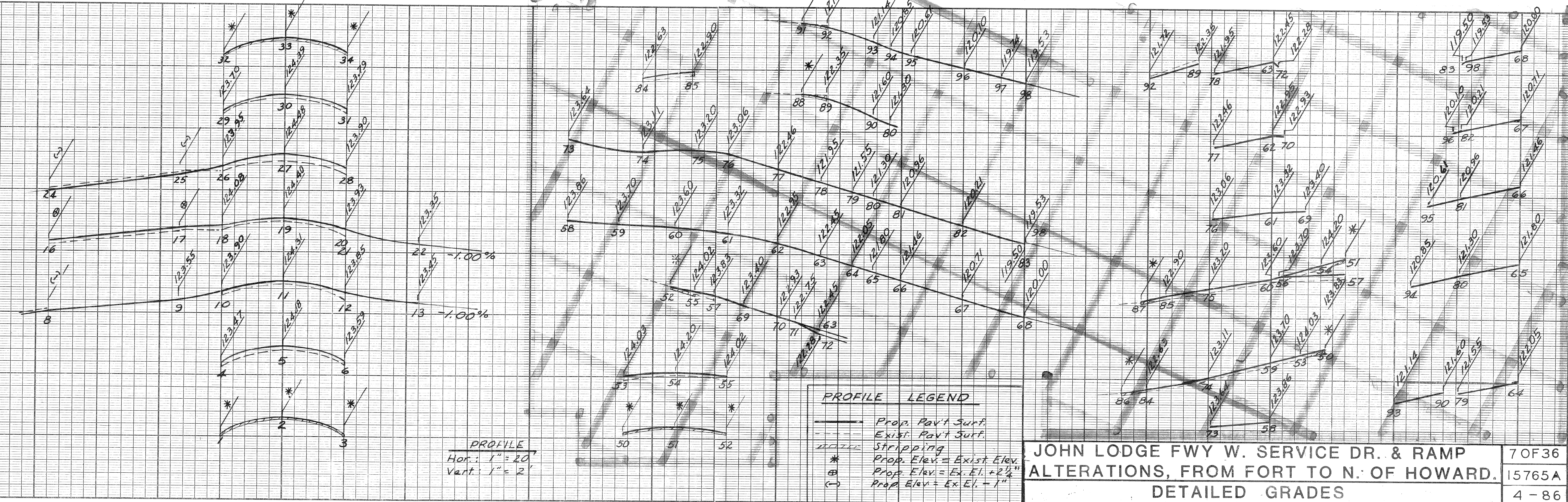
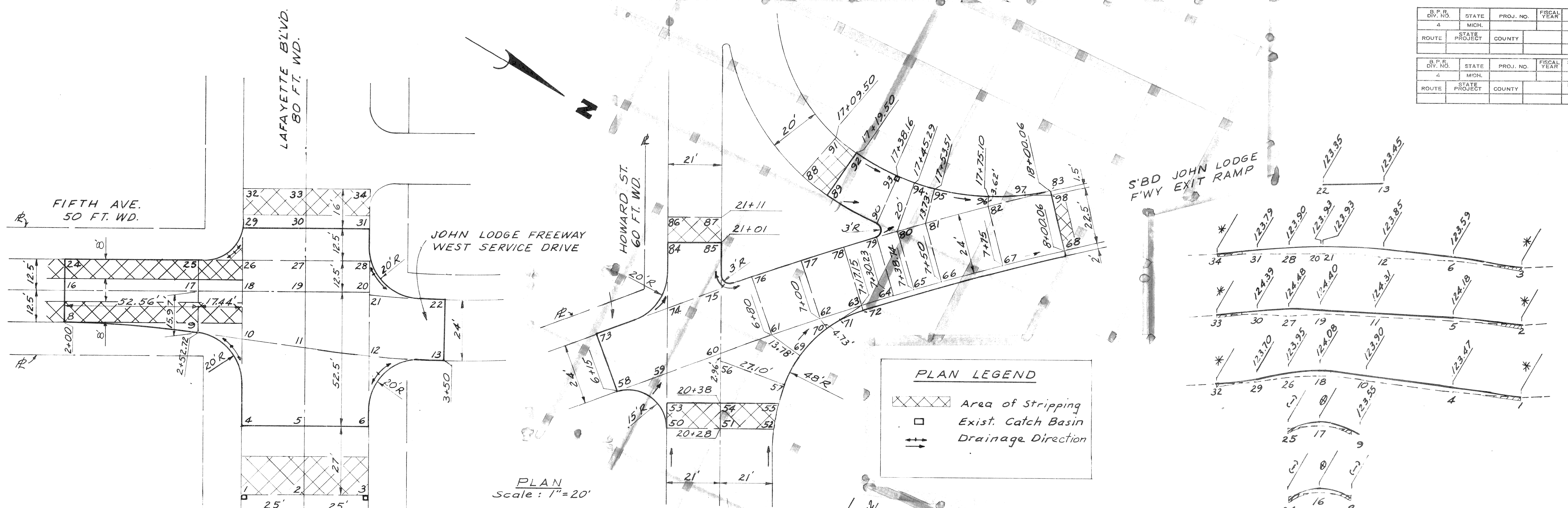
- NOTES:
- FOR ALIGNMENT, SEE SHEET # 3
 - FOR UTILITY LEGEND, SEE SHEET # 12
 - 6" MIN. CURB FACE STA. 2+00 TO LAFAYETTE.
 - 4" MIN. CURB FACE BOTH SIDES OF LAFAYETTE.

	REFERENCE DRAWINGS DESIGNED BY: RBP/JUP DRAWN BY: RBP/JUP TRACED BY: CHECKED BY: WB	APPROVED: ENGINEER OF STREETS HIGHWAY ENGINEER	CITY OF DETROIT CITY ENGINEERING DEPARTMENT BUREAU OF STREETS AND HIGHWAYS	JOHN LODGE FWY W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD	SHEET 6 OF 36 SHEETS CONTRACT NO. 15765A ASSIGNMENT NO. DATE 4-86
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B.P.R. DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
ROUTE	STATE PROJECT	COUNTY		SHEET NO.	TOTAL SHEETS

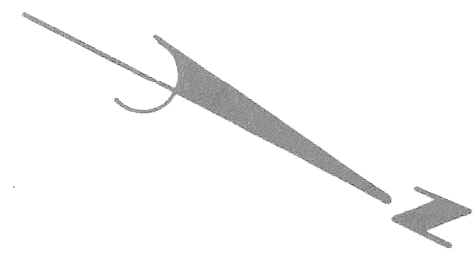
OPERATION	DATE	REVISION	FINAL R.O.W.
PRELIMINARY R.O.W. CHECKED			
FINAL DESIGN			
FINAL R.O.W. CHECK			
QUANTITIES CHECKED			
BY			
DATE			

OPERATION	DATE
PRELIMINARY R.O.W. CHECKED	
FINAL DESIGN	
FINAL R.O.W. CHECK	
QUANTITIES CHECKED	
BY	
DATE	



JOHN LODGE FWY W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD.
DETAILED GRADES

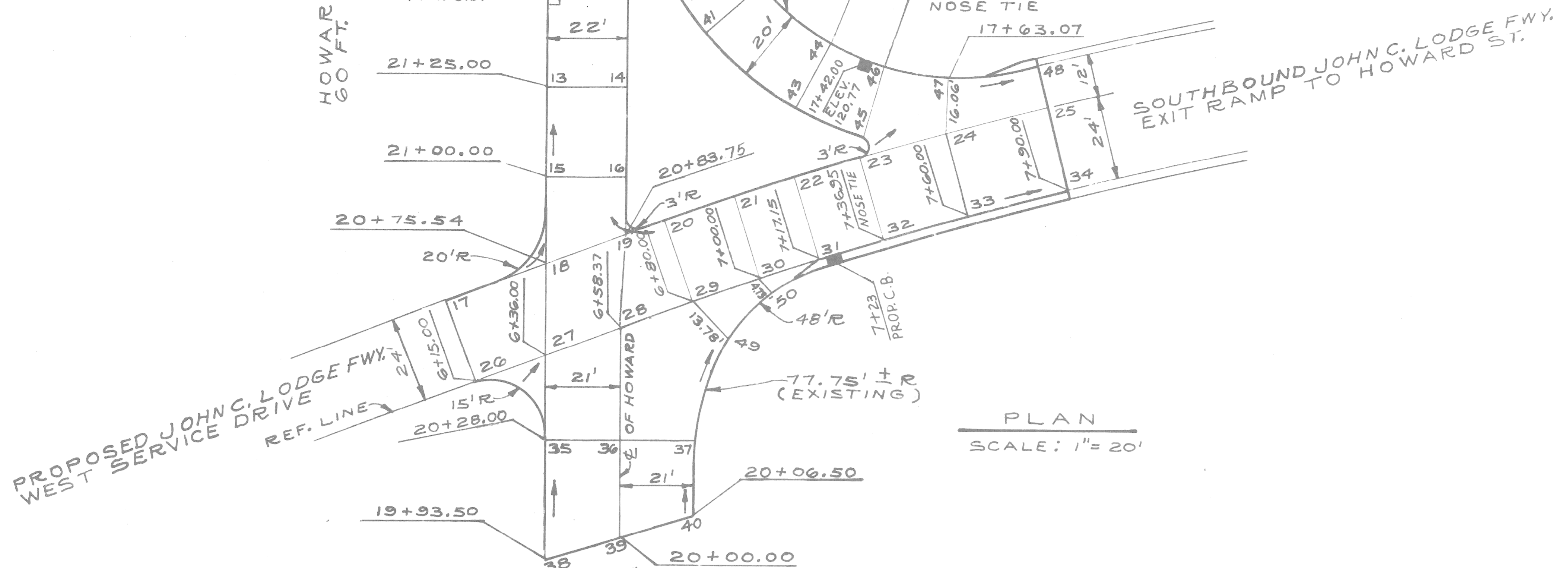
7 OF 36
15765A
4-86



SCALE	HORIZONTAL	VERTICAL	BOOK	NO.	DATE	REVISIONS	CONTRACT NO.	ASSIGNMENT NO.	DATE

NOTE - FOR SYMBOLS (A, B, C, D) SEE STANDARD DETAIL DRAWING NO. 101
 BENCH MARKS
 C.B.M. #1 ON HYD. N. SIDE LAFAYETTE E1127.29
 100' W. OF W.L. OF LODGE FWY.
 C.B.M. #2 BRASS CAP S. SIDE HOWARD E123.83
 W. LINE LODGE FWY. (ON BRIDGE)
 P.B.M. # 28-353 N.W. CORNER FORT AND E1124.80
 SECOND

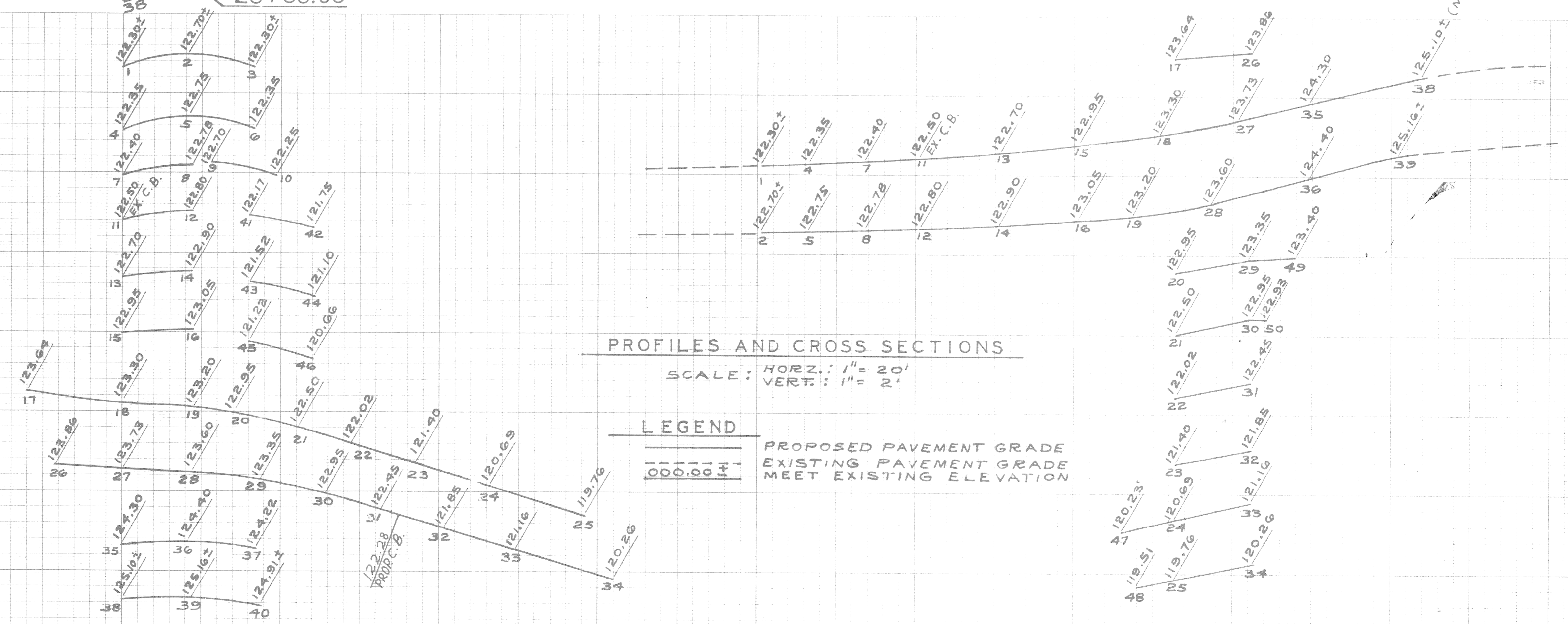
HOWARD ST.
60 FT. WD.



PLAN
SCALE: 1" = 20'

- LEGEND**
- , □ PROP. EXIST. CATCH BASINS
 - DETAIL GRADE AREA
 - ⇄ DRAINAGE DIRECTION

NOTES:
FOR DETAIL ALIGNMENT, SEE SHEET # 3



PROFILES AND CROSS SECTIONS
SCALE: HORIZ.: 1" = 20'
VERT.: 1" = 2'

- LEGEND**
- PROPOSED PAVEMENT GRADE
 - EXISTING PAVEMENT GRADE
 - · · MEET EXISTING ELEVATION

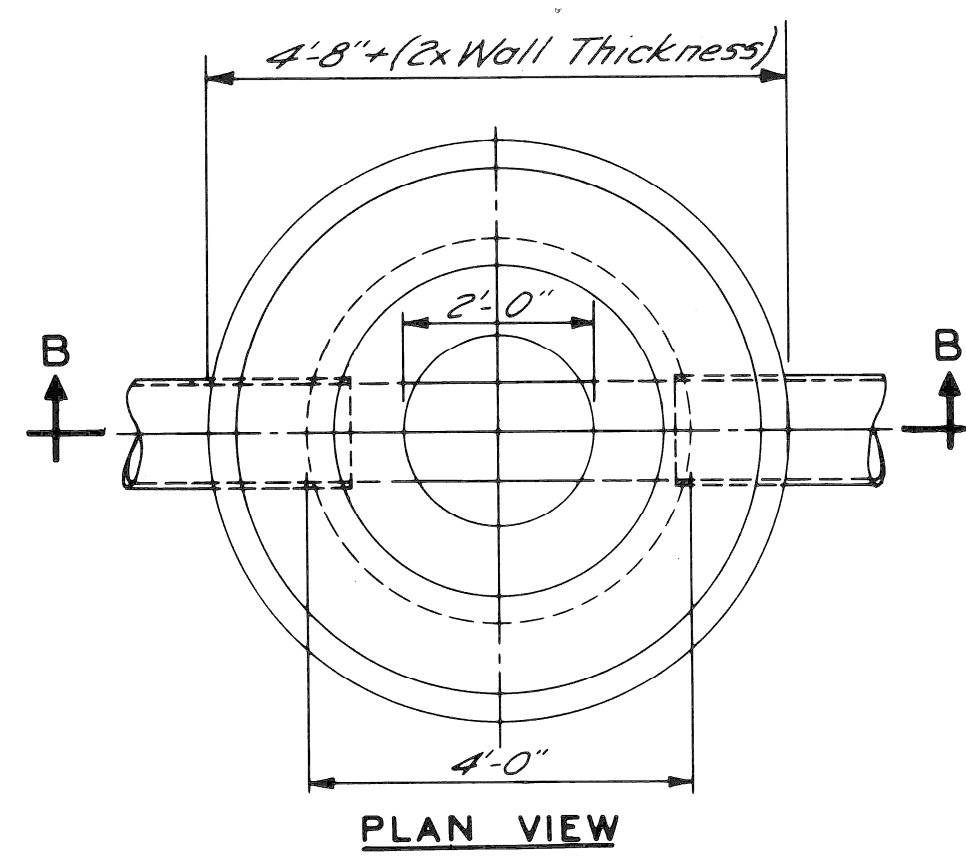
PLAN	BY U.P./J.J.	CHECKED BY U.P.	APPROVED
GRADE	U.P.	W.B.	<i>William B. Talley</i>
ESTIMATE			HIGHWAY ENGINEER
DESCRIPTION	DRN. CK. D. AP. V. DATE	FINAL	CHECK REVIEW

CITY OF DETROIT
CITY ENGINEERING DEPARTMENT
BUREAU OF STREETS AND HIGHWAYS

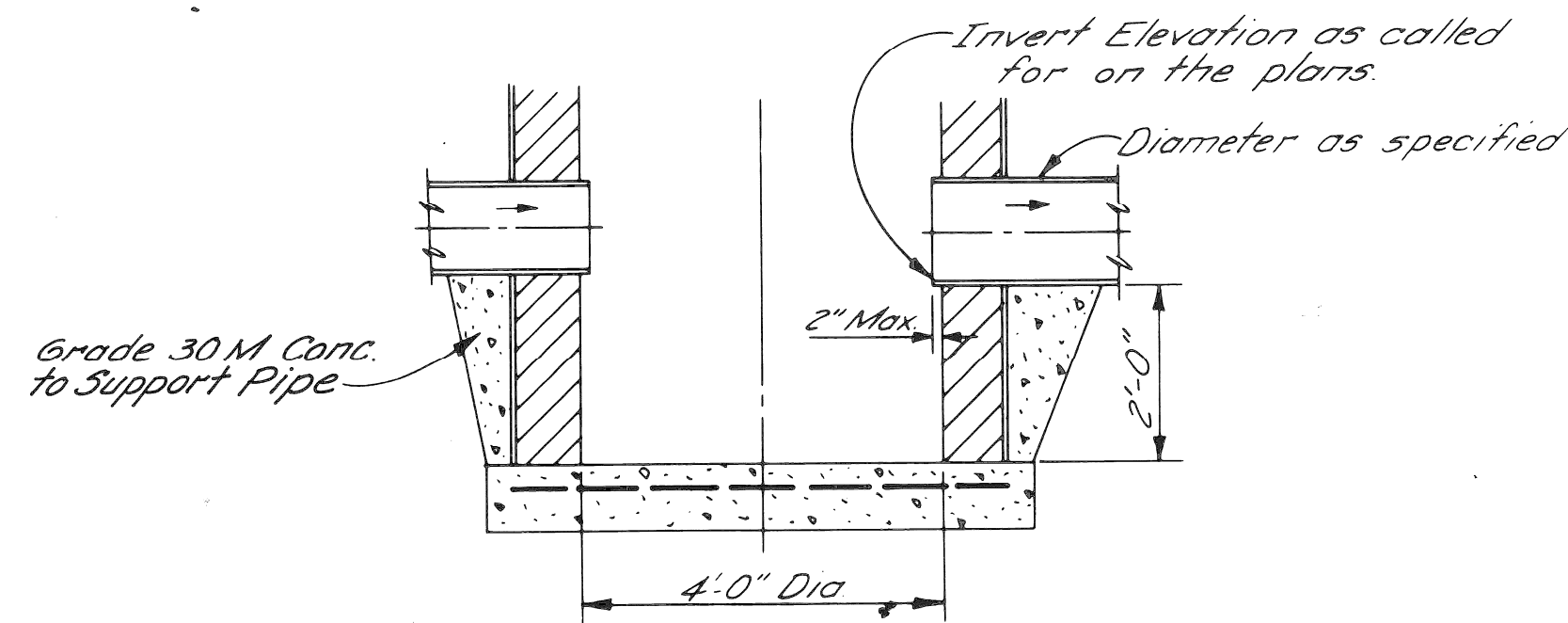
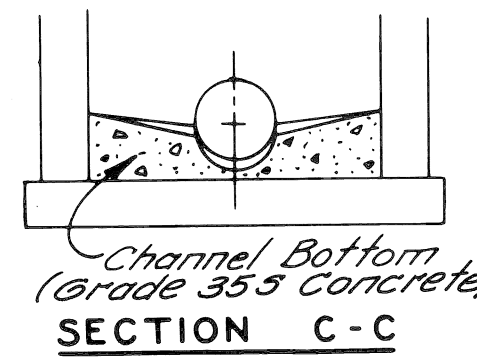
JOHN LODGE FWY. W. SERVICE DRIVE & RAMP
ALTERATIONS, FROM FORT TO N. OF HOWARD

DETAILED GRADES AT HOWARD ST.

INDEX NO.	SHEET 8 OF 36 SHEETS
CONTRACT NO.	15765A
ASSIGNMENT NO.	
DATE	4 - 86

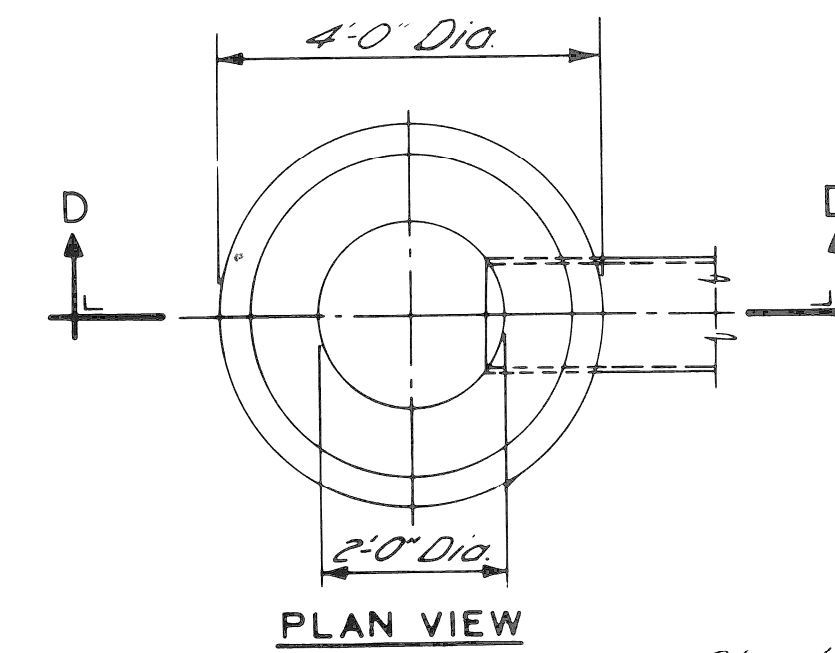


NOTE "A"
Wall thickness below a depth of 15 feet shall be 12 inches.

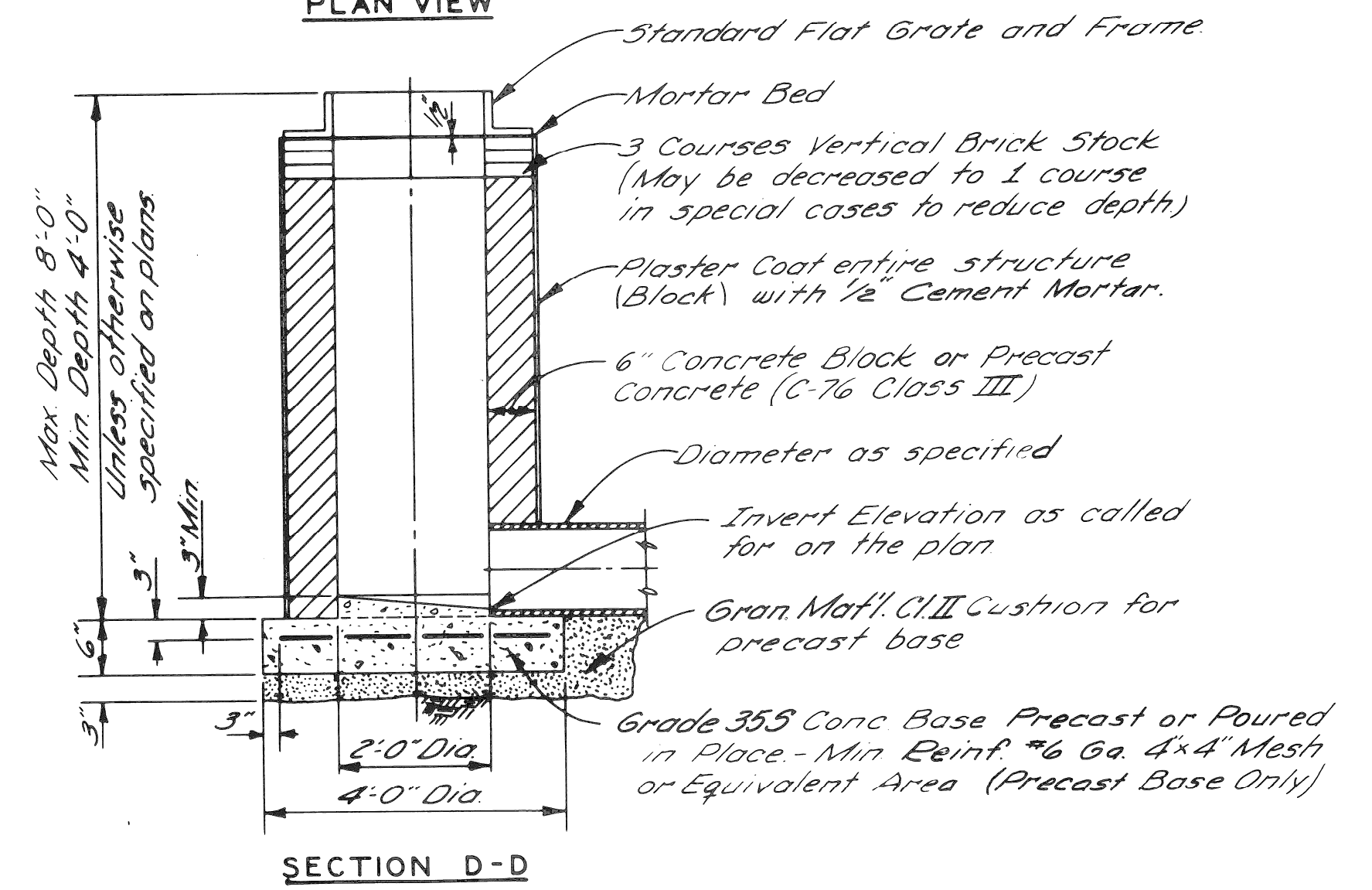


DETAIL OF SUMP FOR CATCH BASIN "B"

NO SCALE

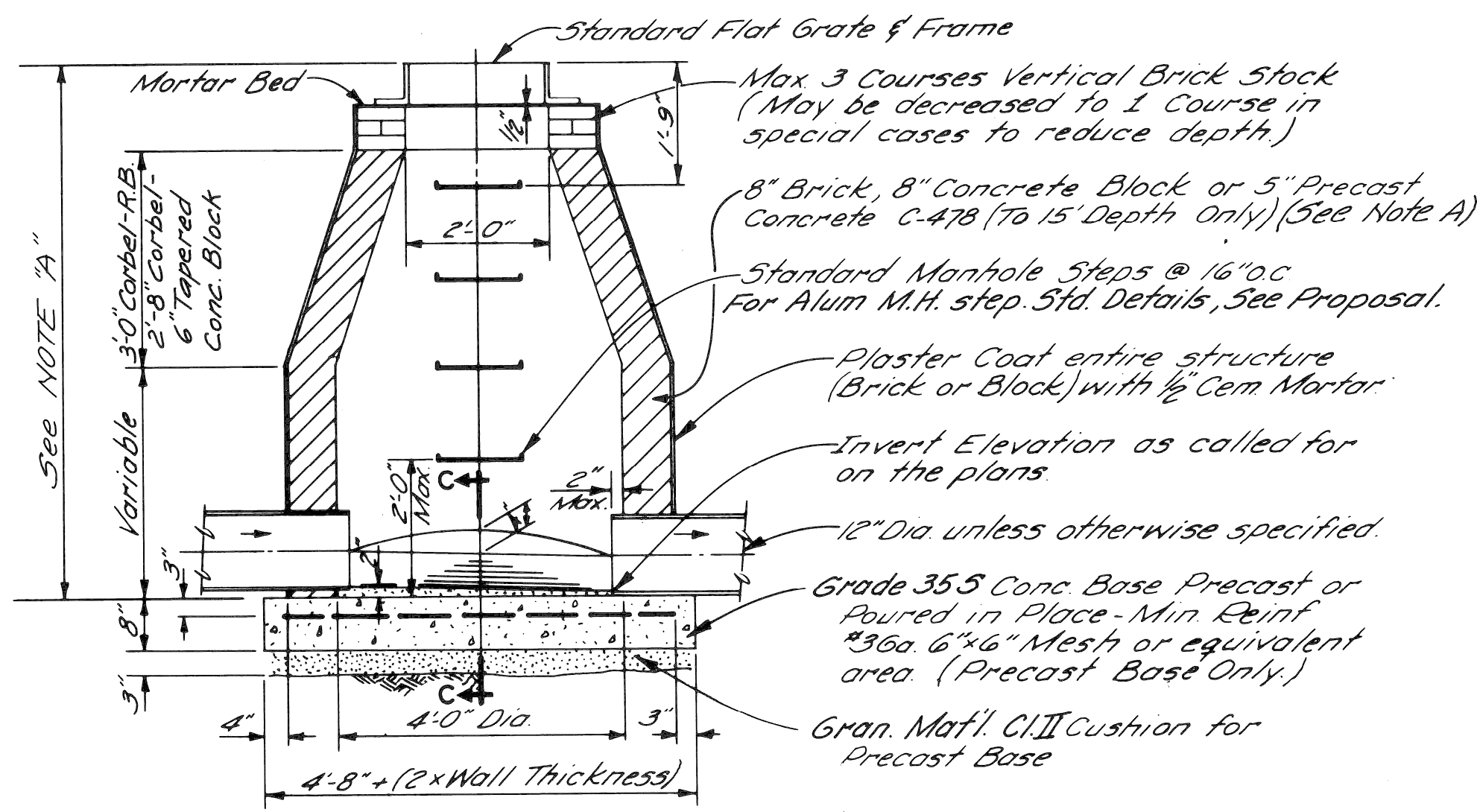


NOTE:
Catch Basin "A" will be used only when outletting to a Catch Basin "B"



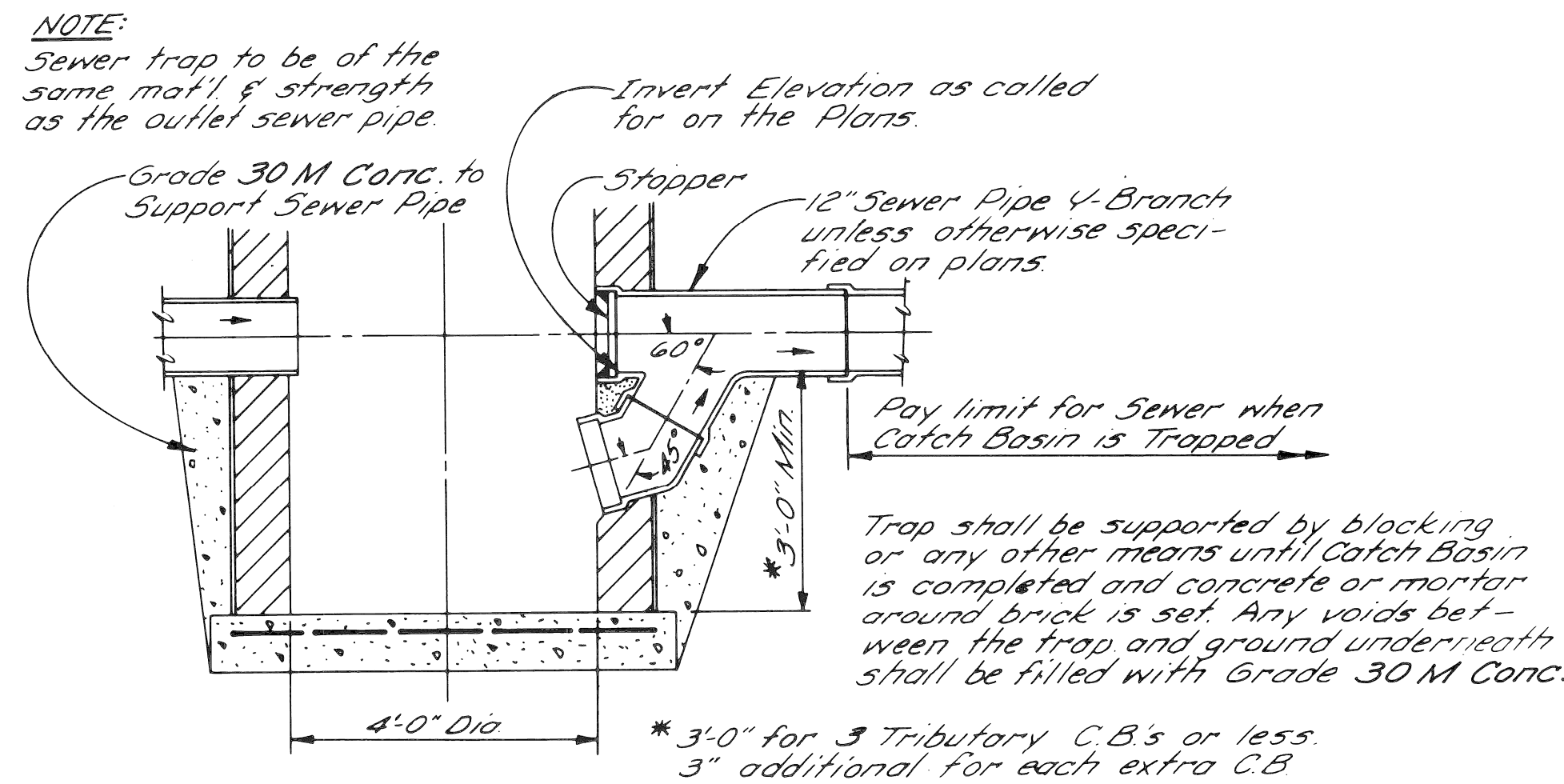
CATCH BASIN "A"

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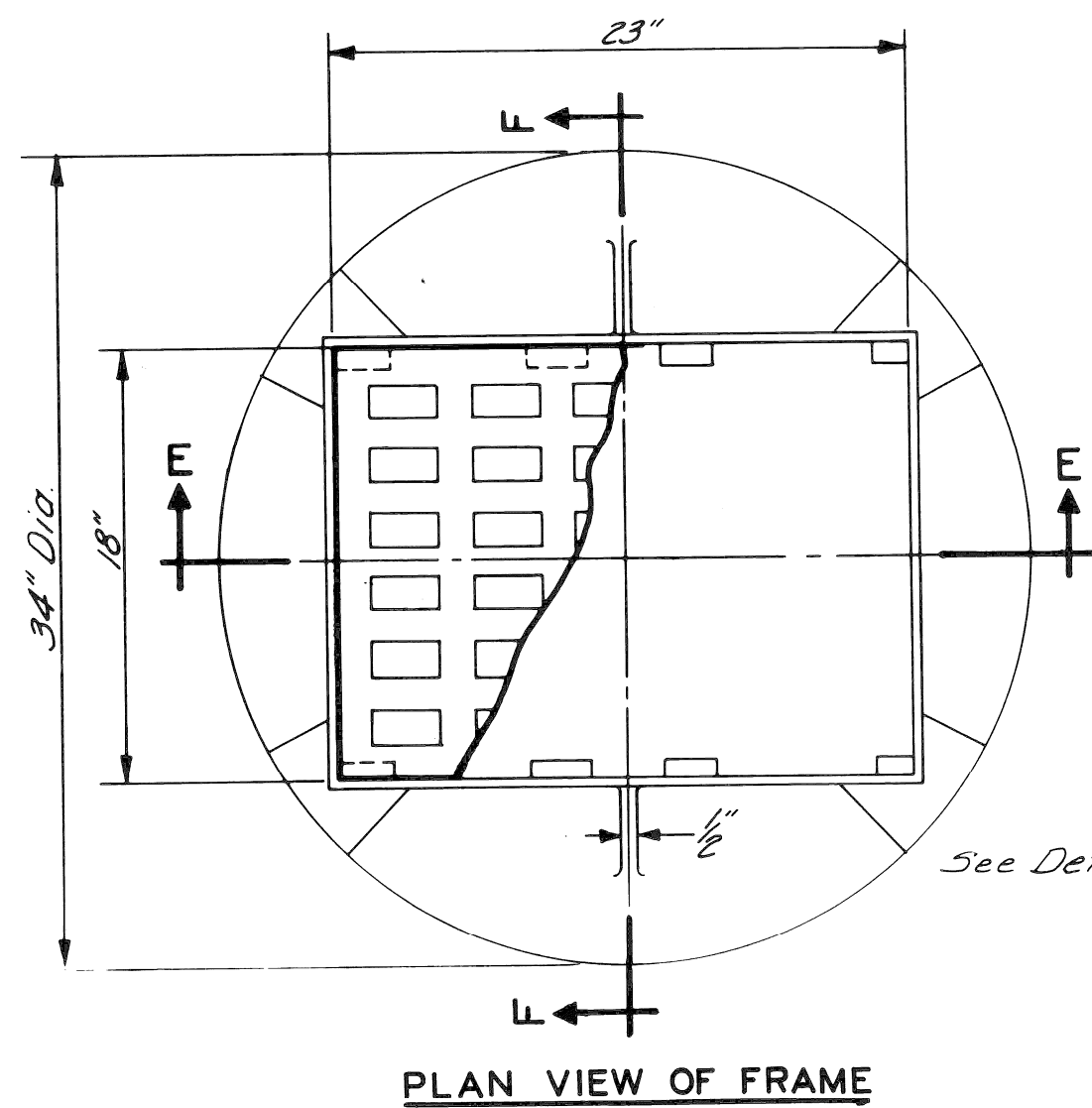
CATCH BASIN "B"

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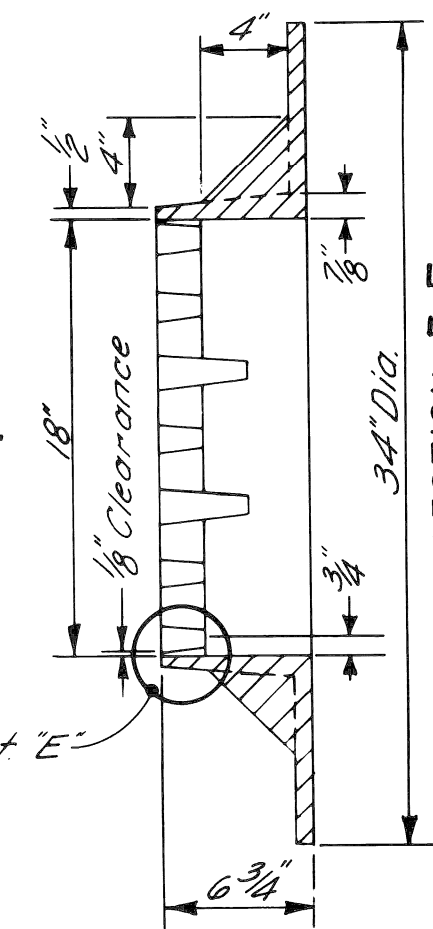


DETAIL OF TRAP FOR CATCH BASIN "B"

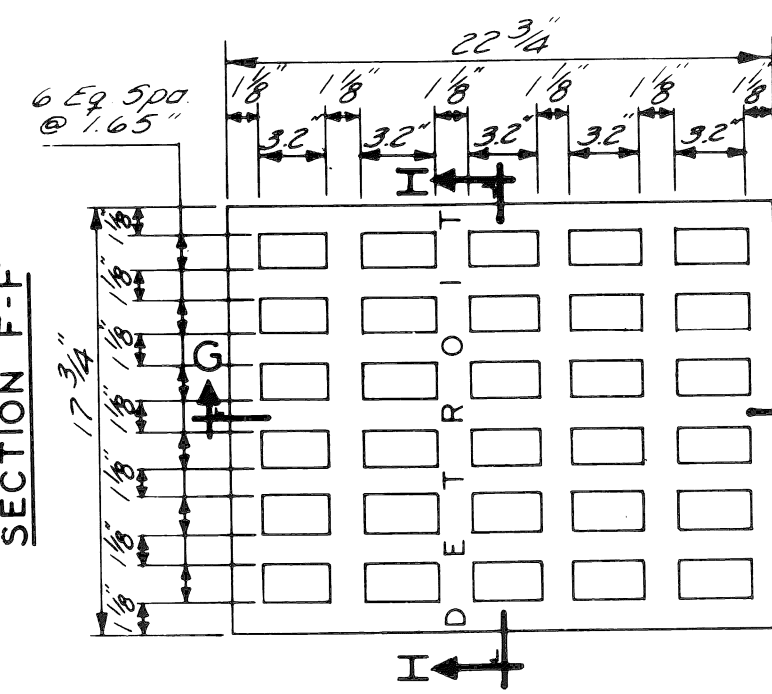
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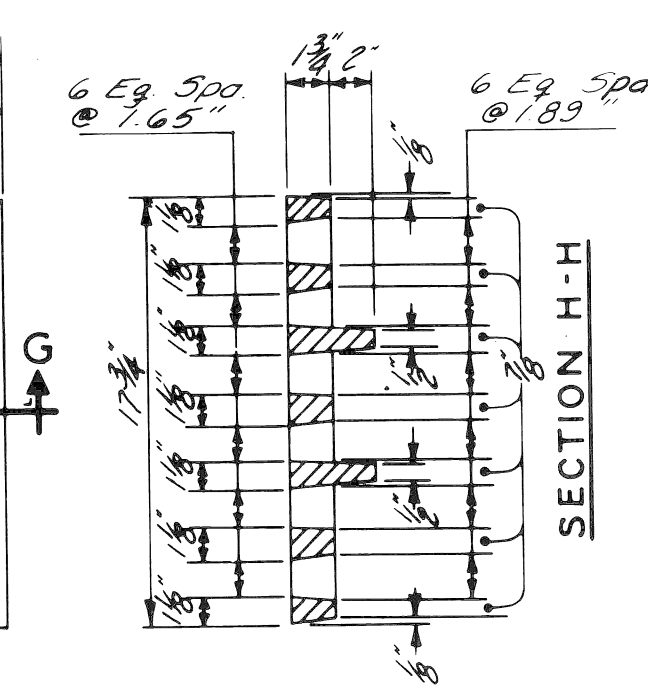
PLAN VIEW OF FRAME



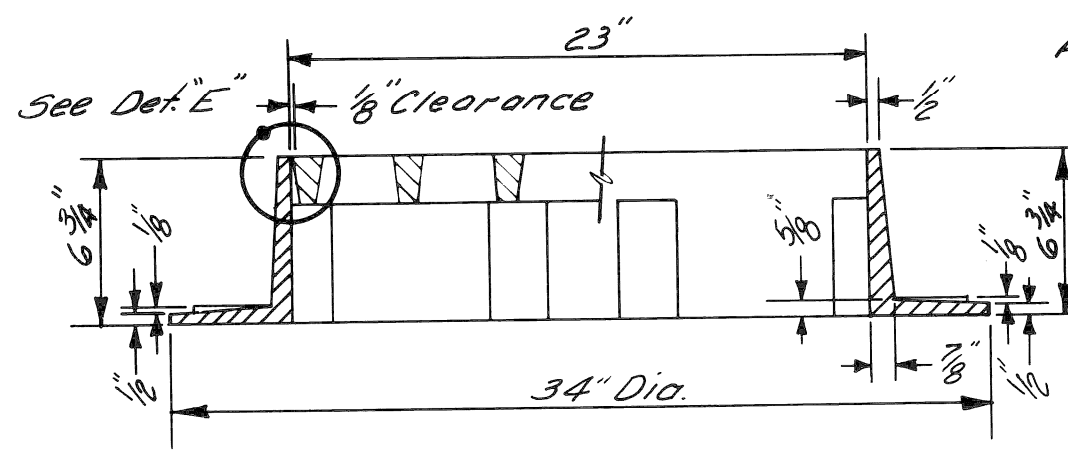
SECTION F-F



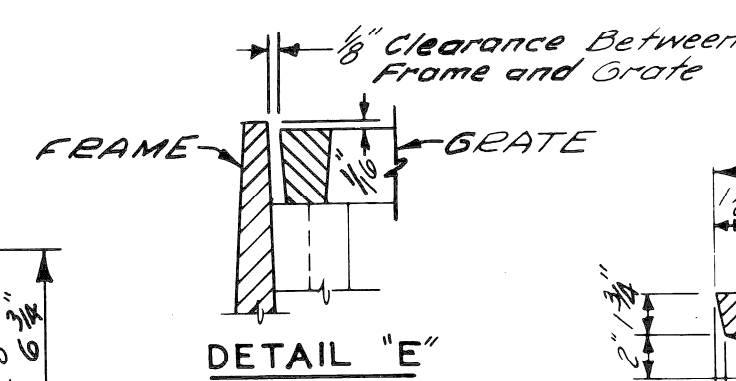
PLAN VIEW OF GRATE



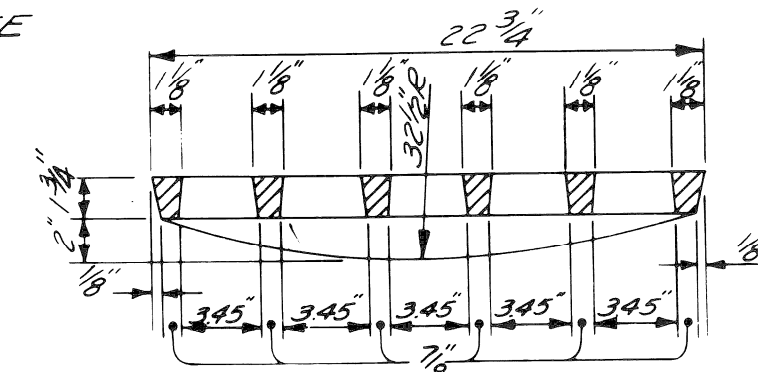
SECTION H-H



SECTION E-E



DETAIL "E"



SECTION G-G

STANDARD FLAT GRATE AND FRAME

NO SCALE

GENERAL NOTES

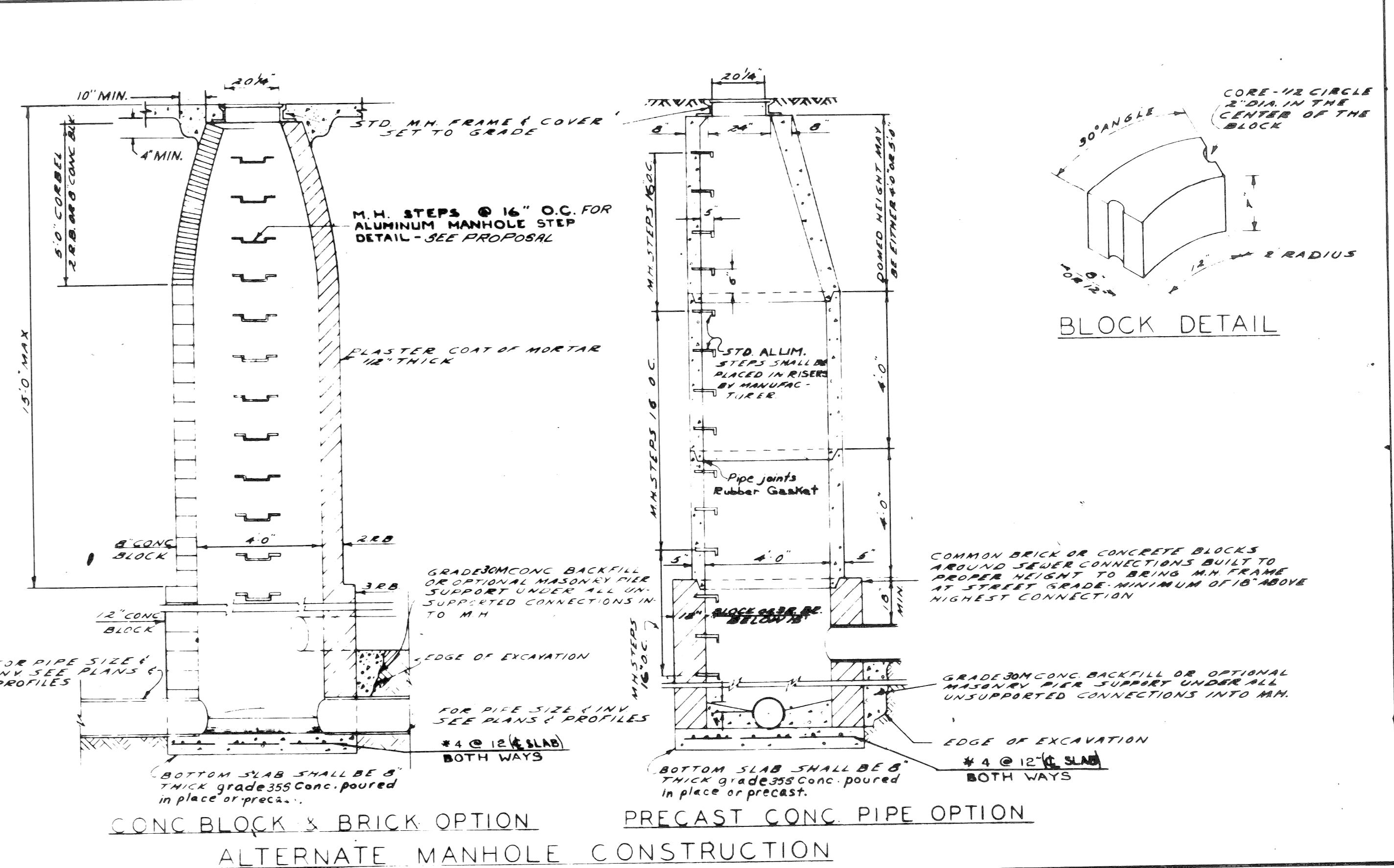
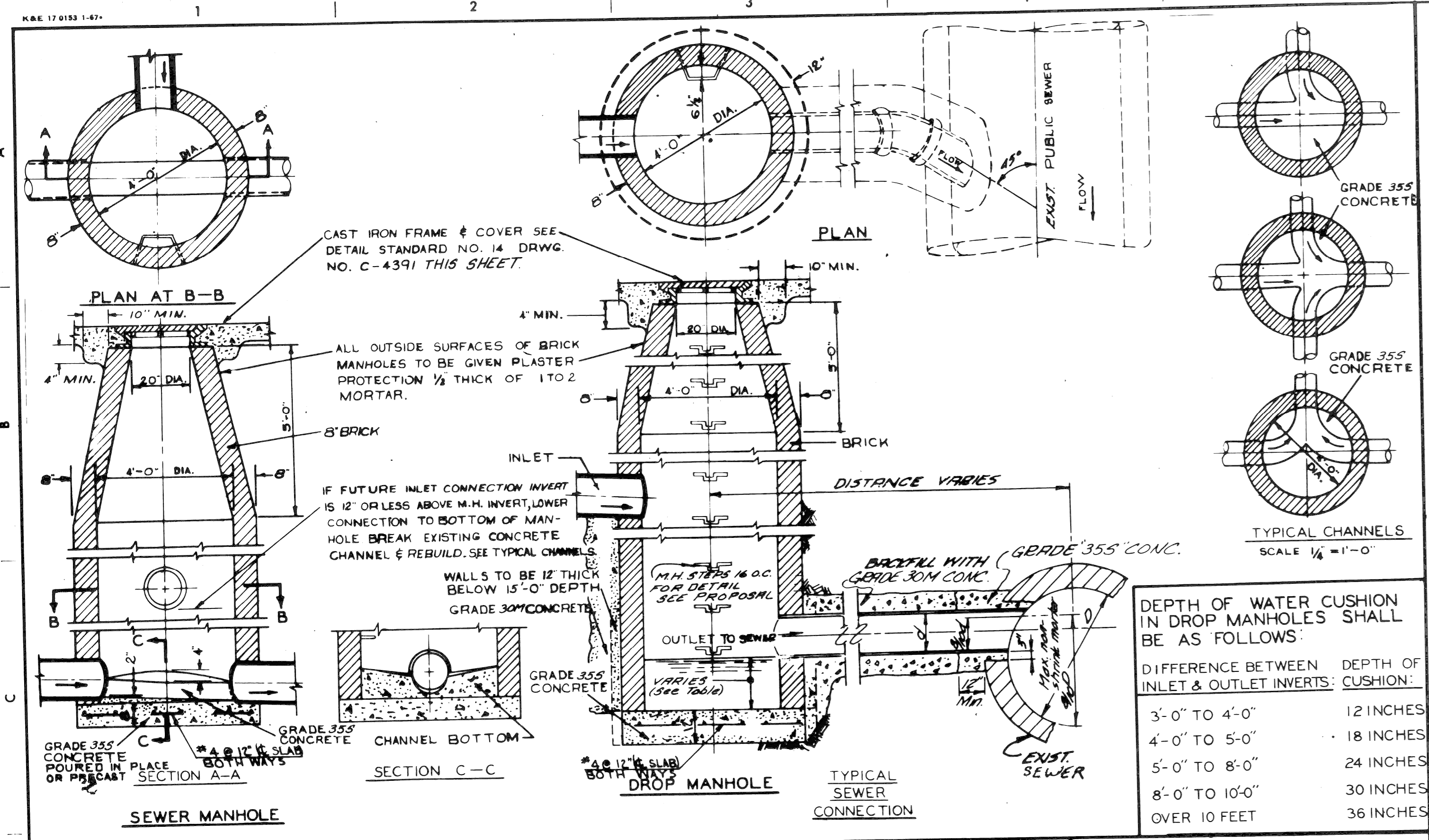
- The materials & workmanship shall be in accordance with the current standard specifications.
- Center of Catch Basin shall be 20 inches from back of curb.
- All sizes & flow lines of pipe, and elevations for top & bottom of structures shall be determined from the plans or construction requirements. 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:	William R. Talley ENGINEER OF STREETS
DRAWN BY			Alan C. Pagan ENGINEER OF EXPRESSWAYS
TRACED BY			W. R. Combs HEAD CIVIL ENGINEER
CHECKED BY	D. MILZ		

CITY OF DETROIT
CITY ENGINEERING DEPARTMENT

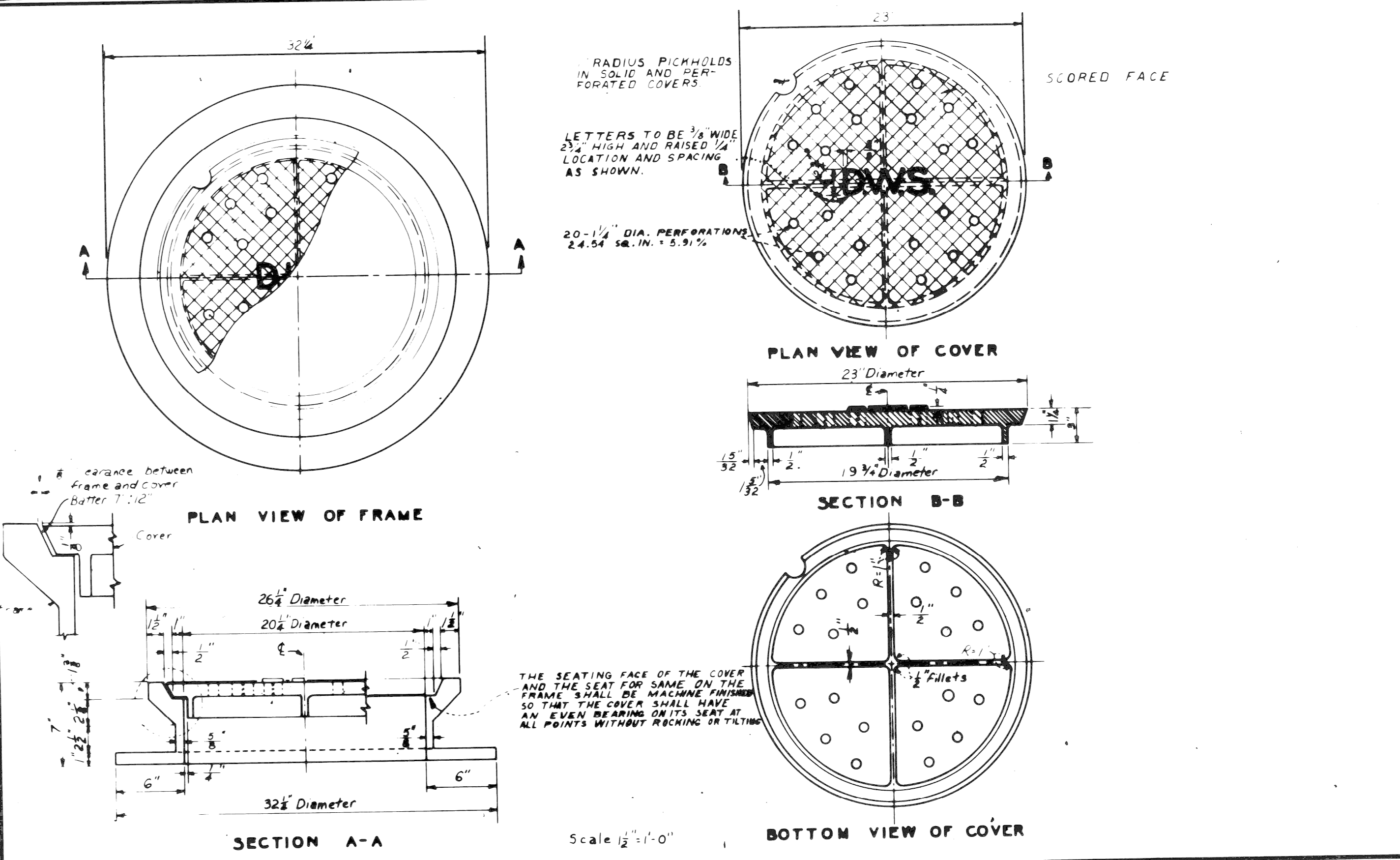
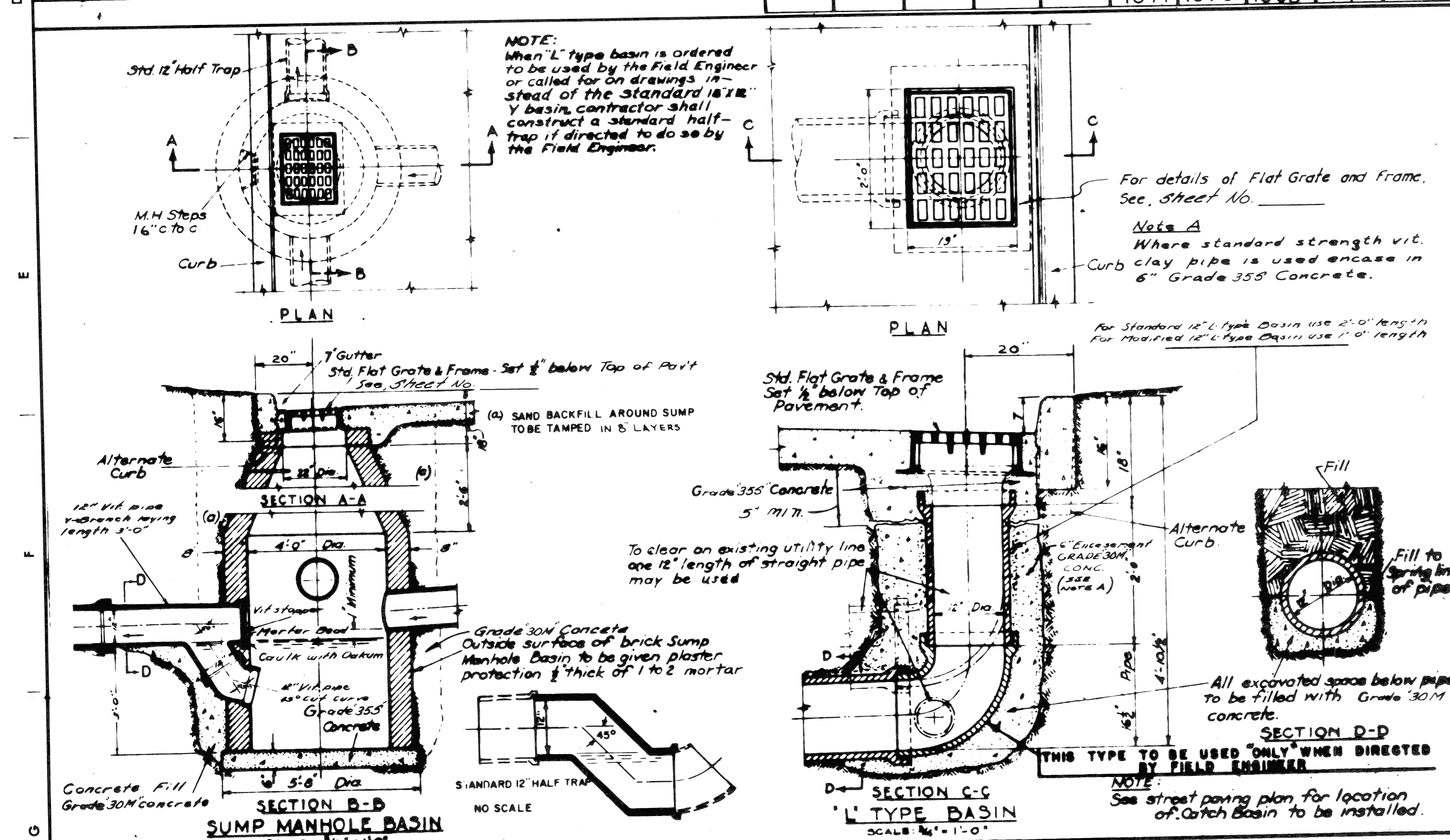
DETAILS OF STANDARD
CATCH BASINS "A" & "B"
AND FLAT GRATE & FRAME

SHEET 10 OF 36 SHEETS
CONTRACT No. 15765A
ASSIGN. NO.
DATE 4-86



DESIGNED BY	APPROVED BY	CITY OF DETROIT	DETAILS OF STANDARD
DRAWN BY	ENGINEER OF STREETS	DEPARTMENT OF PUBLIC WORKS	SEWER & DROP MANHOLES
TRACED BY	ASST. CITY ENGINEER	CITY ENGINEER'S OFFICE	BUREAU OF DESIGN
CHECKED BY	CITY ENGINEER		
REVISED M.H. STEPS			
DESCRIPTION	DATE		
REVISIONS			

DESIGNED BY	APPROVED BY	CITY OF DETROIT	STD SEWER MANHOLES
DRAWN BY	ENGINEER OF STREETS	DEPARTMENT OF PUBLIC WORKS	CONSTRUCTION ALTERNATES
TRACED BY	ASST. CITY ENGINEER	CITY ENGINEER'S OFFICE	BUREAU OF DESIGN
CHECKED BY	CITY ENGINEER		
REVISED M.H. STEPS			
DESCRIPTION	DATE		
REVISIONS			



DESIGNED BY	APPROVED BY	CITY OF DETROIT	TYPICAL
DRAWN BY	ENGINEER OF STREETS	DEPARTMENT OF PUBLIC WORKS	SUMP MANHOLE & 'L' TYPE
TRACED BY	ASST. CITY ENGINEER	CITY ENGINEER'S OFFICE	CATCH BASINS
CHECKED BY	CITY ENGINEER		
REVISED M.H. STEPS			
DESCRIPTION	DATE		
REVISIONS			

DESIGNED BY	APPROVED BY	CITY OF DETROIT	DETAILS OF STANDARD
DRAWN BY	ENGINEER OF STREETS	DEPARTMENT OF PUBLIC WORKS	MANHOLE FRAME AND COVER
TRACED BY	ASST. CITY ENGINEER	CITY ENGINEER'S OFFICE	BUREAU OF DESIGN
CHECKED BY	CITY ENGINEER		
REVISED M.H. STEPS			
DESCRIPTION	DATE		
REVISIONS			

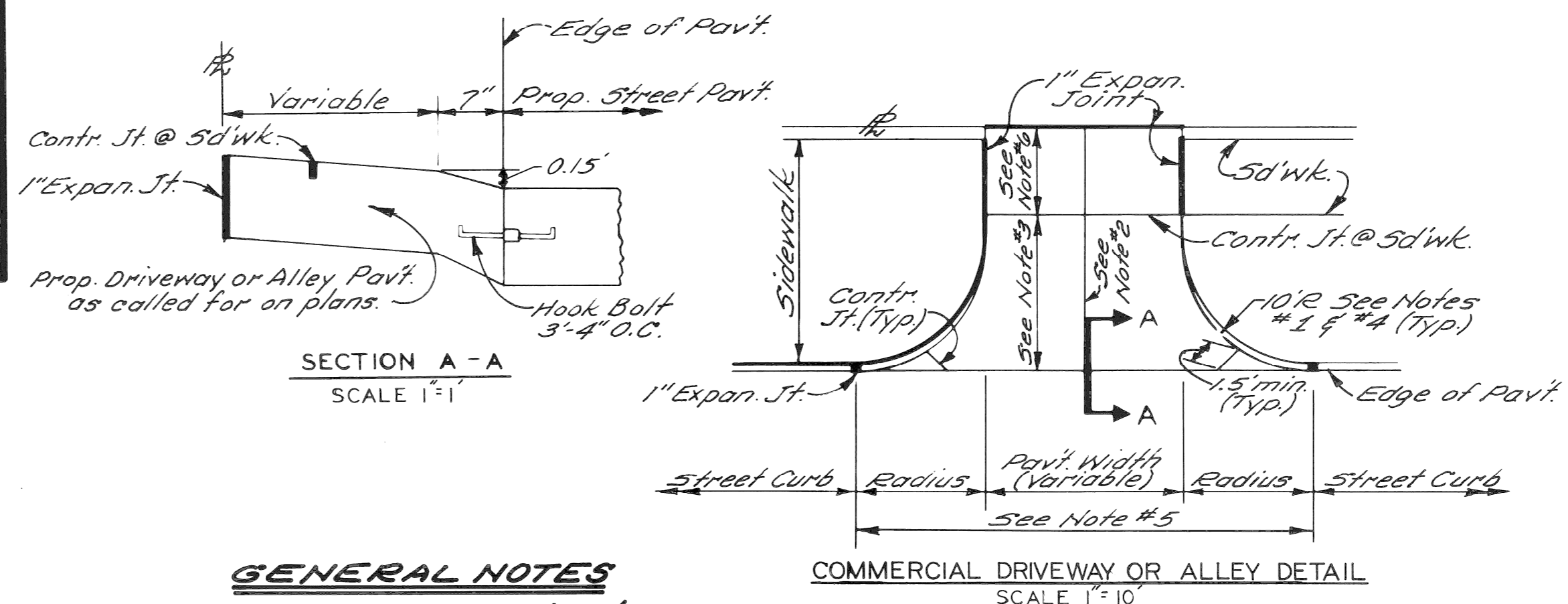
DESIGNED BY	APPROVED BY	CITY OF DETROIT	JOHN LODGE FWY. W. SERVICE DRIVE & RAMP
DRAWN BY	ENGINEER OF STREETS	DEPARTMENT OF PUBLIC WORKS	ALTERATIONS, FROM FORT TO N. OF HOWARD
TRACED BY	ASST. CITY ENGINEER	CITY ENGINEER'S OFFICE	SPECIAL DETAILS
CHECKED BY	CITY ENGINEER		
REVISED M.H. STEPS			
DESCRIPTION	DATE		
REVISIONS			

DESIGNED BY	APPROVED BY	CITY OF DETROIT	JOHN LODGE FWY. W. SERVICE DRIVE & RAMP
DRAWN BY	ENGINEER OF STREETS	DEPARTMENT OF PUBLIC WORKS	ALTERATIONS, FROM FORT TO N. OF HOWARD
TRACED BY	ASST. CITY ENGINEER	CITY ENGINEER'S OFFICE	SPECIAL DETAILS
CHECKED BY	CITY ENGINEER		
REVISED M.H. STEPS			
DESCRIPTION	DATE		
REVISIONS			

SHEET	11	OF	36	SHEETS
CONTRACT	NO. 15765 A			
ASSIG.	DATE 4-86			

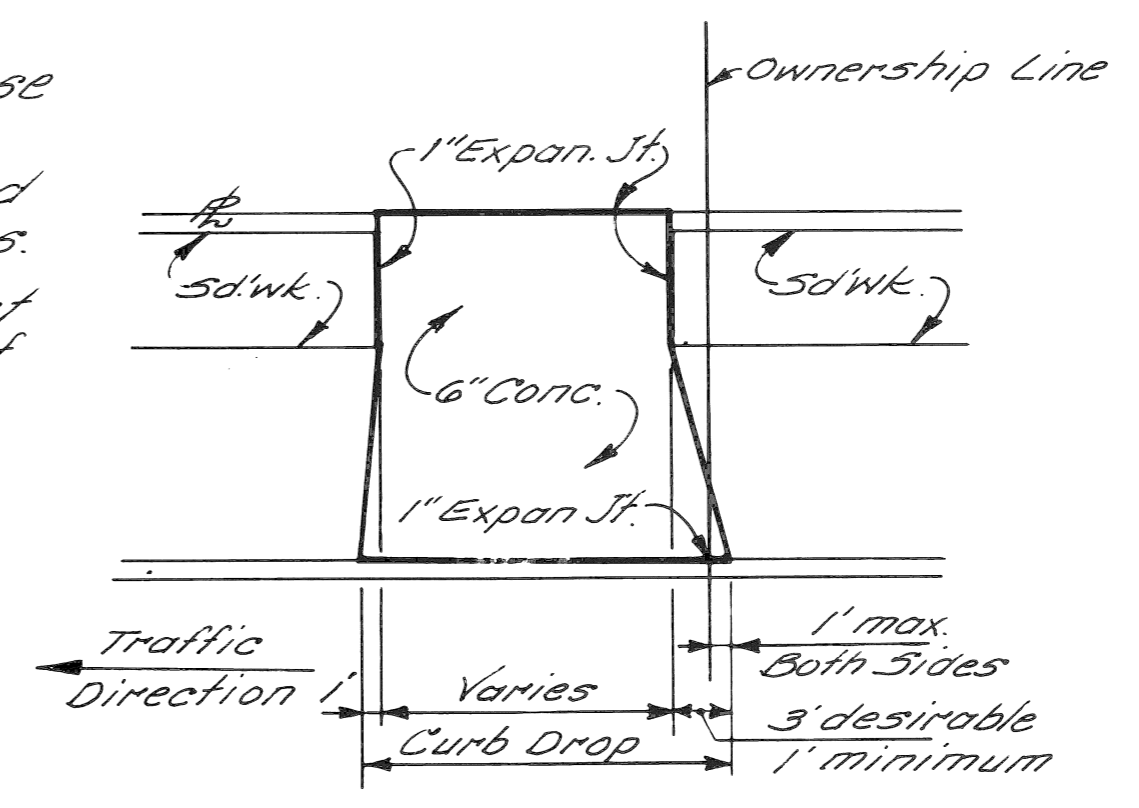
COLOR	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
BLACK	---	PROPERTY AND LOT LINES	○	SEWER MANHOLE	#	STREET SIGN POST
"	---	PROPOSED CURB LINES AND HEADERS AT RETURNS	⊙	P.L.C. HANDHOLE	□	LATCH BASIN
"	---	EXISTING CURB LINES OR EDGE OF PAVEMENT	⊕	WATER MANHOLE OR GRATE	(W)	WATER METER
"	---	PROPOSED CURB OR PAVING ON INTERSECTING STREET	⊖	GAS MANHOLE OR GRATE	(-)	WATER SHUT OFF
"	---	PROPOSED SEWER TO CATCH BASINS	⊗	WESTERN UNION MANHOLE	(+)	GAS SHUT OFF
12" CR	---	EXISTING LATERAL SEWERS	⊙	MICHIGAN BELL MANHOLE	□	GAS DRIP
4" CR	---	EXISTING PUBLIC SEWERS	⊕	EDISON STEAM MANHOLE	□	DRAIN OR VENT
"	---	EXISTING GAS LINES	⊖	EDISON ELECTRIC MANHOLE	(H)	GUY POLE
"	---	EXISTING WATER LINES	⊗	FIRE DEPT. MANHOLE	+	MAIL BOX
"	---	ELEV. OF SEWER INVERT	⊕	POLICE DEPT. MANHOLE	⊗	AWAYWAY OR COAL CHUTE
"	---	PROPOSED C.B. M.H. & INLET SEWER	⊖	D.S.P. MANHOLE	⊙	FLANK POLE
"	---	ELEV.	⊗	FIRE DEPT. STANDARD HYDRANT	□	SPRINKLER BOX
"	---	EXISTING C.B. M.H. & INLET SEWERS	⊕	FIRE DEPT. HIGH PRESSURE HYDRANT	⊖	DEAD MANHOLE
"	---	PROPOSED C.B. M.H. & INLET SEWERS ON INTERSECTING STREETS	⊖	FIRE DEPT. CALL BOX	⊗	TREE
			⊗	FIRE DEPT. HIGH PRESSURE MANHOLE	⊗	P.L.C. MANHOLE FILLED WITH SAND
			⊕	POLICE DEPT. CALL BOX	(=)	TRACK DRAIN
			⊙	P.L.C. LIGHT POLE	+	TRAFFIC SIGN POST
			⊙	P.L.C. POLE	(2)	TRAFFIC SIGNAL LIGHT
			⊙	TELEPHONE POLE	⊙	TRAFFIC SIGNAL ON LIGHT POST
			⊙	EDISON POLE	II	D.S.P. DANGER PLATE
			⊕	TRAFFIC CONTROL BOX	⊕	R.R. SIGNAL CONTROL BOX
				SYMBOL		DESCRIPTION
			---	DETROIT EDISON ELECTRIC CONDUIT		
			---	DETROIT EDISON STEAM CONDUIT		
			---	WESTERN UNION DUCTS		
			---	MICHIGAN BELL TELEPHONE DUCTS		
			---	P.L.C. CONDUITS		
			---	DETROIT FIRE OR POLICE DEPT. CONDUITS (P.L.C. COMMUNICATIONS)		

CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS CITY ENGINEER'S OFFICE BUREAU OF DESIGN PAVING DETAIL NO. 25		STANDARD SYMBOLS FOR UTILITIES	
DESIGNED BY	APPROVED BY	DATE	DRAWN BY
DRAWN BY	W.L.L.		C-902 A
CHECKED BY			
REVISIONS			



GENERAL NOTES
COMMERCIAL DRIVEWAYS & ALLEYS

1. Transition edge of driveway or alley from curb at the street to no curb at the end of the driveway or alley radius.
2. Where driveway or alley exceeds 15' in width a contraction joint shall be placed longitudinally along it.
3. When distance exceeds 15', a transverse contraction joint will be required.
4. Radius 10' unless otherwise directed by the Engineer, or as shown on plans.
5. All work & materials req'd to construct the driveway or alley between the end of returns will be paid for as 'Concrete Pavement' of the specified thickness.
6. Minimum & Maximum Slopes of 1/4" ft. & 3/4" ft. shall be used in the sidewalk area.



RESIDENTIAL DRIVEWAY DETAIL
 SCALE 1" = 10'

DESIGNED BY	APPROVED BY	CITY OF DETROIT
DRAWN BY	W.L.L.	CITY ENGINEERING DEPARTMENT
CHECKED BY		

CITY OF DETROIT
 CITY ENGINEERING DEPARTMENT

JOHN LODGE FWY, W. SERVICE DRIVE & RAMP
 ALTERATIONS, FROM FORT TO N. OF HOWARD
 SPECIAL STANDARDS & SPECIAL DETAILS

SHEET	12	OF	36	SHEETS
CONTRACT No.	15765A			
ASSIGNMENT No.	A.O.			
DATE	4-86			

QUANTITY SHEET - E

ITEMS	AS PER PLANS																				
	SHEET NO'S.		2	5	6	9	4	1													
	TOTALS	UNITS	TYPICAL CROSS SECTIONS	REMOVALS	PLAN AND PROFILE	UTILITIES	CONSTRUCTION SEQUENCE	SEE PROPOSAL													
REMOVING TREES, 8-18" DIA.	5	EA		5																	
REMOVING TREES, 19-36" DIA.	1	EA		1																	
REMOVING PAVEMENT	2,478	SY		2,478																	
REMOVING CURB	385	LF		385																	
REMOVING SIDEWALK	812	SY	10	802																	
REMOVING BEAM GUARD RAIL	211	LF		211																	
ABANDONING DRAINAGE STRUCTURES	2	EA		2																	
REMOVING DRAINAGE STRUCTURES	1	EA	1																		
STRUCTURE BACKFILL (CIP)	275	CY			275																
EARTH EXCAVATION	3,600	CY			3,600																
SUBGRADE UNDERCUTTING, TYPE II	30	CY	30																		
SUBBASE (LM)	550	CY			550																
AGGREGATE BASE - CONCRETE (4" IN PLACE)	4,000	SY			4,000																
OPEN-GRADED DRAINAGE COURSE, 4" IN PLACE	470	SY			470																
REMOVING BITUMINOUS SURFACE	247	SY			247																
COLD-MILLING BITUMINOUS SURFACE	40	CY			40																
CONC. PAV'T- REINF- 9" WITH INTEGRAL CURB	2,200	SY			2,200																
TEMP. CONC. PAVEMENT, NONREINF. 8"	80	SY						80													
CONC. PAVEMENT REINF. 9"	1,500	SY			1,500																
CONC. BASE COURSE - NONREINF. 9" WITH INTEGRAL CURB	31	SY			31																
CONC. PAVEMENT - NONREINF. 8"	64	SY			64																
CEMENT	10	TON	10																		
BARRICADE, TYPE III, LIGHTED, FURNISHED	4	EA						2													
REMOVING PAVEMENT (REPAIR)	20	SY	20																		
CONC. PAVEMENT REPAIR, 10" NONREINF.	54	SY	20	34																	
BIT. SURFACING MIXTURE NO. 1100L, 20AA	77	TON		2	75																
BIT. SURFACING MIXTURE NO. 1100T, 20AA	152	TON		2	150																
CONC. BARRIER - SINGLE FACE, TYPE B (MODIFIED)	360	LF			360																
CONDITIONING EXISTING PAVEMENT	20	TON			20																
12" SEWER, C-76-III, TRENCH DETAIL 9	191	LF			191																
12" SEWER TAP	1	EA			1																
CLEANING EXISTING STORM DRAINAGE STRUCTURES	6	EA	6		(NON - PARTICIPATING)																
FOUNDATION DRAINS, 4"	360	LF			360																
SEWER CLEANOUT	100	LF	100		(NON - PARTICIPATING)																
CONC. CURB AND GUTTER, DETAIL A1	450	LF			450																
CONC. CURB AND GUTTER, DETAIL B1	380	LF			380																
CONC. CURB DETAIL "X"	50	LF	50																		
SUBBASE UNDERDRAIN, 6"	350	LF			350																
4" CONC SIDEWALK	6,990	SF	90		6,900																
6" CONC SIDEWALK	2,000	SF			2,000																
SIDEWALK RAMP, TYPE 3	240	SF			240																
SIDEWALK RAMP, TYPE 4	140	SF			140																
CONCRETE CURB DETAIL "Y"	277	LF	50		227																
MOVING FENCE	450	LF	360		90																
FENCE POST	1	EA			1																
ADJUSTING WATER SHUT OFF	1	EA			1																
ADJUSTING DRAINAGE STRUCTURE COVERS	1	EA			1																
SIDEWALK RAMP, TYPE 1	100	SF			100																
12" SEWER TRAP	2	EA			2																
BARRICADE, TYPE II, LIGHTED, FURNISHED	150	EA						150													
BARRICADE, TYPE II, LIGHTED, OPERATED	100	EA						100													
BARRICADE, TYPE III, LIGHTED, OPERATED	4	EA	2					2													
FIELD OFFICE	4	MO	4																		
SIGN, TYPE B TEMPORARY	400	SF						400													
CLASS "A" SODDING	675	SY	25		650																
CLASS "B" SODDING	450	SY	25		425																
WATER	4	UNIT	1		3																
CONCRETE SHOULDER, REINF, 9"	3,600	SF			3,600																
TOPSOIL SURFACE, 3"	1,125	SY	50		1,075																
LIGHTED ARROW, TYPE A, FURNISHED	2	EA						2													
LIGHTED ARROW, TYPE A, OPERATED	2	EA						2													
ADJUST GATE WELL COVER	3	EA							3												
DRAINAGE STRUCTURE COVERS	2,030	LB			2,030																
CATCH BASIN "A"	1	EA			1																
CATCH BASIN "B"	3	EA			3																
CATCH BASIN "L"	1	EA			1																
RECONSTRUCT GATE WELL	1	EA	1																		
PERFORMED WHITE THERM. PAV'T. MARKINGS - 4"	580	LF						580													
REMOVING TWO FLAG POLES	1	LS			1																
REMOVING EXISTING LAWN SPRINKLER SYSTEM	1	LS			1																
MOBILIZATION	1	LS			1																
MINOR TRAFFIC DEVICES	1	LS			1																
FLAG CONTROL	1	LS			1																
PERFORMED YELLOW THERM. PAV'T. MARKINGS - 4"	400	LF						400													
PERFORMED WHITE THERM. PAV'T. MARKINGS - 6"	1,724	LF						1,724													
PERFORMED YELLOW THERM. PAV'T. MARKINGS - 6"	88	LF						88													

LEGEND

UNDERGROUND PLAN

- EXISTING DIRECT BURIAL OR PARKWAY CABLE
- ABANDON DIRECT BURIAL OR PARKWAY CABLE
- INSTALL DIRECT BURIAL OR PARKWAY CABLE (NO. & SIZE AS INDICATED)
- 1-3" --- INSTALL DIRECT BURIAL CONDUIT (1-3" SHOWN)
- EXISTING SINGLE P.L.D. DUCT RUN
- 4-3" --- EXISTING P.L.D. DUCT RUN (4-3" SHOWN)
- 2-3" --- ABANDON EXISTING P.L.D. DUCT RUN (2-3" SHOWN)
- 4-4" --- BUILD ENCASED CONDUIT (4-4" SHOWN)
- 2-3" --- GALVANIZED STEEL CONDUIT, JACKING-BORING (2-3" SHOWN)
- EXISTING P.L.D. HANDHOLE
- M.H. 1234 EXISTING P.L.D. MANHOLE
- BUILD ROUND HANDHOLE
- BUILD TYPE "D" HANDHOLE
- M.H. 790C BUILD NEW MANHOLE (2-WAY)
- △ M.H. 1234 BUILD NEW MANHOLE (3-WAY)
- ◊ M.H. 5679 BUILD NEW MANHOLE (CORNER)
- ◇ M.H. 5012 BUILD NEW MANHOLE (4-WAY)
- BUILD TRAFFIC SIGNAL CONTROLLER FDN.
- BUILD T.S. MAST ARM STANDARD FDN.
- BUILD T.S. PEDESTAL FDN.
- INSTALL 30FT. STEEL STRAIN POLE ON NEW FDN.
- △ 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)
- INSTALL MULT. ST. LTG. CONTROL CABINET ON NEW FDN.
- ☀ 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.
- "T" INDICATES TRAFFIC SIGNAL CONTACT ON ST. LTG. STD.
- ★ INSTALL CODE 009-00 ANCHOR BASE ST. LTG. STD. WITH 6FT. CLAMP-ON ARM (3'-0" RISE) & 250W. TYPE III SODIUM VAPOR LUMINAIRE ON NEW FOUNDATION.

OVERHEAD PLAN

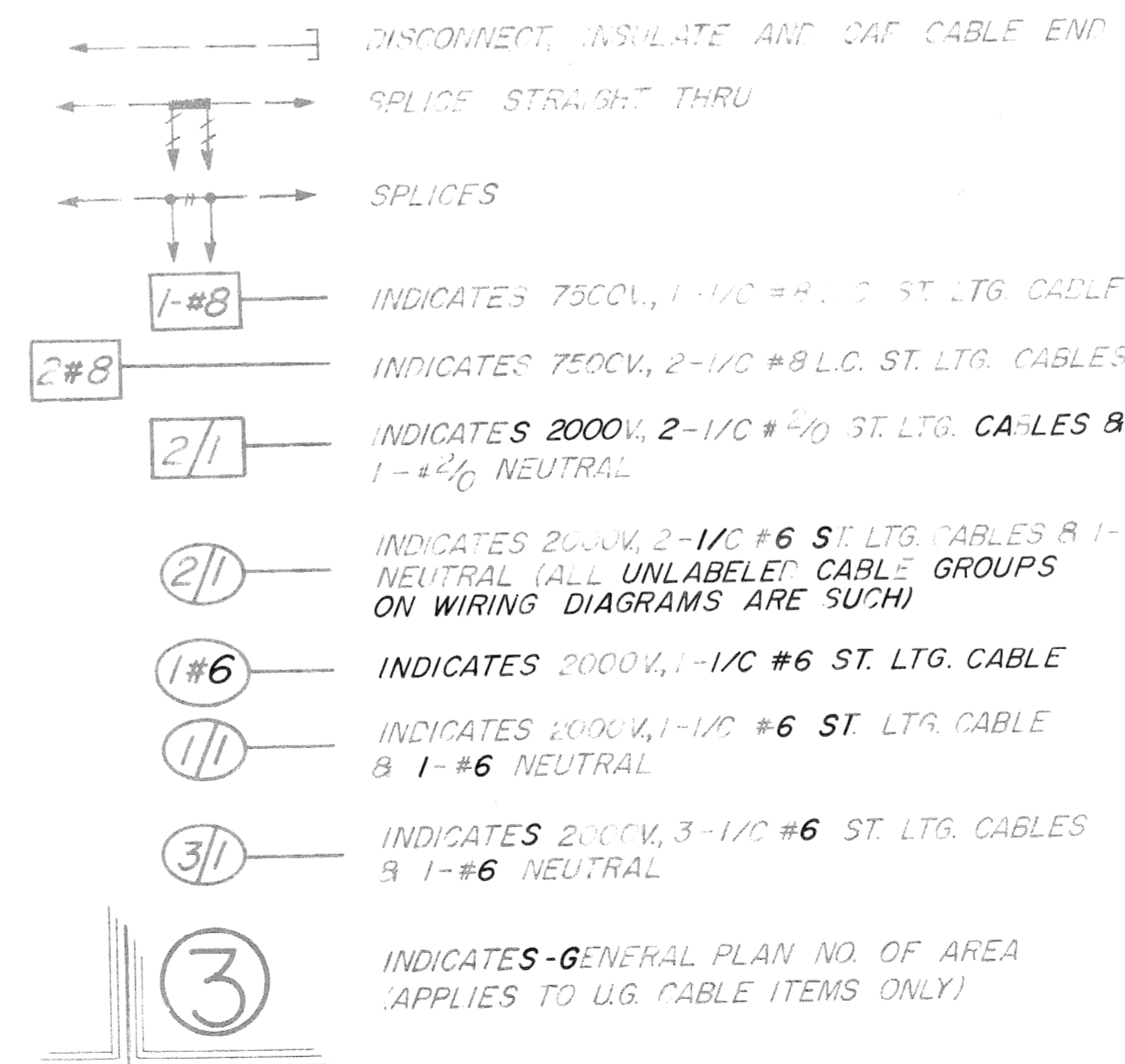
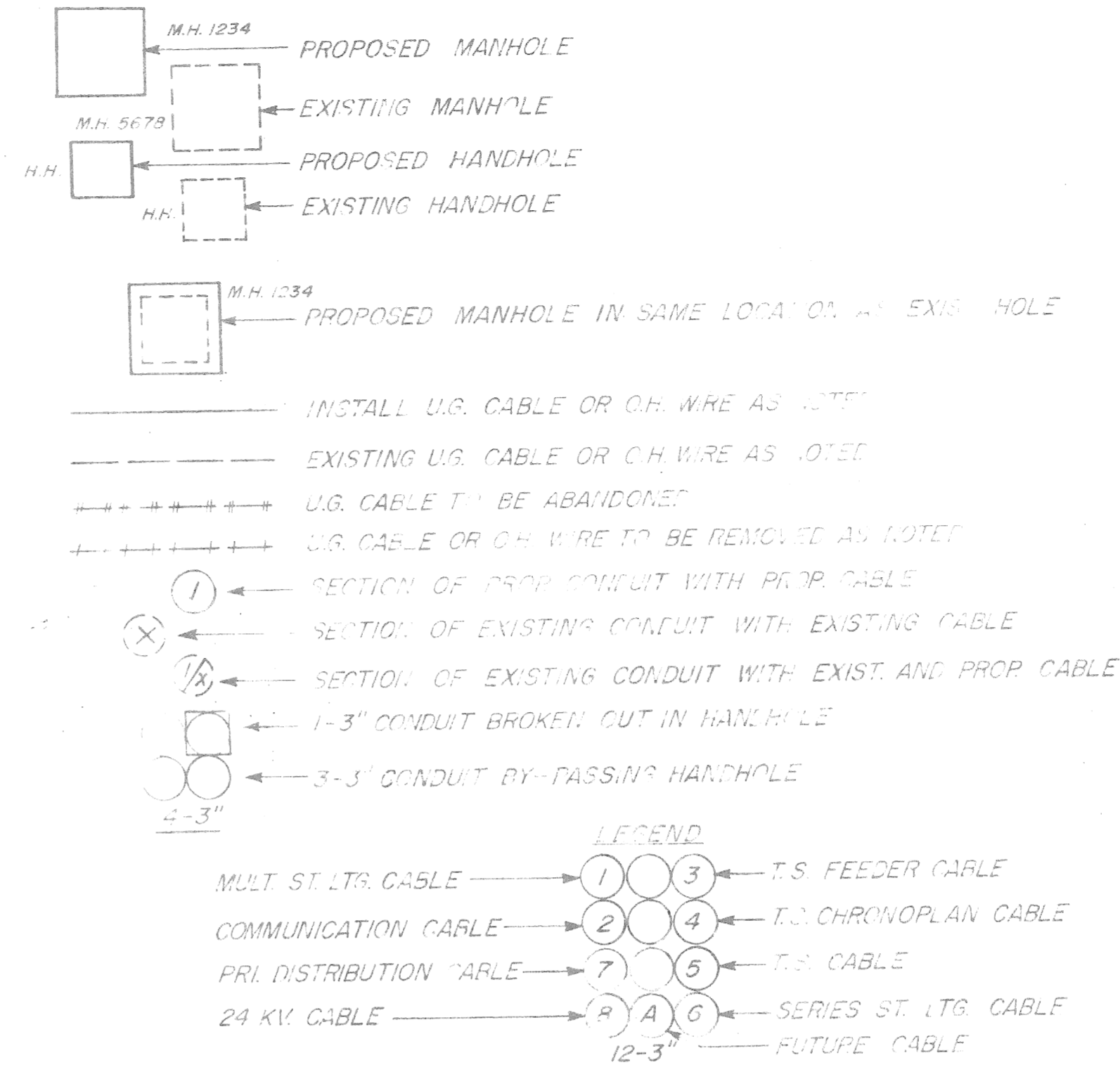
- OE EXISTING WOOD POLE (D.E. CO. POLE SHOWN)
- C REMOVE WOOD POLE (P.L.D. POLE SHOWN)
- REPLACE WOOD POLE (HEIGHT & CLASS AS INDICATED)
- ✕ INSTALL 35FT. CLASS 4 WOOD POLE (EXCEPT WHERE OTHERWISE NOTED) (USE SALVAGED POLE WHERE INDICATED)
- EXISTING OVERHEAD ST. LTG. UNIT
- REMOVE OVERHEAD ST. LTG. UNIT
- INSTALL OVERHEAD ST. LTG. UNIT WITH 6FT. BRACKET ARM & LUMINAIRE AS PER PLANS. INSTALL SERIES COIL IF CALLED FOR (USE SALVAGED UNIT WHERE NOTED)
- INSTALL NEW 100W. MERCURY VAPOR LUMINAIRE FOR ALLEY LTG. WITH NEW SERIES COIL & NEW 6FT. BRACKET ARM. (USE SALVAGED UNIT WHERE INDICATED)
- INDICATES 2-3" --- INSTALL NEW 250W. MERCURY VAPOR LUMINAIRE, TYPE I, (2-WAY OR 4-WAY AS SHOWN) FOR RESIDENTIAL LTG. WITH NEW SERIES COIL & NEW 10FT. BRACKET ARM. (EXCEPT WHERE OTHERWISE NOTED) (USE SALVAGED UNIT WHERE INDICATED)
- STA-24 2-#6 --- 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-124 SHOWN)
- INSTALL & LATER REMOVE OVERHEAD LINE (3-#6 MULT. SHOWN)
- INSTALL GUY & ANCHOR (1/2" GUY SHOWN)
- REMOVE GUY & ANCHOR
- INSTALL POLE GUY (1/2" GUY SHOWN)
- INSTALL ARM GUY (3/8" GUY AS SHOWN)
- REMOVE GUY (TYPE AS INDICATED)
- IN. MATERIAL TO BE INSTALLED
- RM. MATERIAL TO BE REMOVED
- M.S.S. MAKE WOOD POLE SELF-SUPPORTING IN CRUSHED STONE
- XYZ PHASES OF P.L.D. DISTRIBUTION WIRES OR EQUIPMENT
- E D.E. CO. DISTRIBUTION WIRE
- SC D.E. CO. SECONDARY WIRE
- C.P. CABLE POLE
- INSTALL SUSPENSION INSULATOR
- EXISTING PROPOSED --- C --- P.L.D. DISTRIBUTION WIRE
- EXISTING PROPOSED --- CS --- P.L.D. SECONDARY WIRE
- EXISTING PROPOSED --- A --- P.L.D. SERIES ST. LTG. WIRE
- EXISTING PROPOSED --- M --- P.L.D. MULTIPLE STREET LIGHTING WIRE

GENERAL

- PROPERTY LINE
- EXISTING FACE OF CURB WHEN NEW STREET CONST.
- PROPOSED FACE OF CURB WHEN NEW STREET CONST. OR EXISTING FACE OF CURB WHEN NO STREET CONST.
- FUTURE PAVEMENT
- SEWER LINE, MANHOLE & CATCH BASIN
- DETROIT EDISON COMPANY U.G. LINE & MANHOLE
- MICH. BELL TEL. COMPANY U.G. LINE & MANHOLE
- WATERMAIN & GATEWELL
- MICH. CONSOLIDATED GAS CO. U.G. LINE & WELL (OTHER UTILITIES SHOWN SIMILAR)

DIAGRAMS & CONDUIT ALLOCATION

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



POR 301 A1-1 INDICATES NEW ST. LTG. STANDARD NUMBER
POR 24-26 INDICATES OLD ST. LTG. STANDARD NUMBER

CONTRACTOR TO SALVAGE ALL REMOVED EQUIPMENT & STORE ON SITE FOR PICK-UP BY P.L.D.

TRAFFIC SIGNAL PLAN

- 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.
- INSTALL CANTILEVER TYPE TRAFFIC SIGNAL MAST ARM STANDARD & MAST ARM ON NEW FOUNDATION. (EXCEPT AS OTHERWISE INDICATED)
- INSTALL 8FT. TRAFFIC SIGNAL PEDESTAL ON NEW FOUNDATION (EXCEPT AS OTHERWISE INDICATED)
- INSTALL STEEL STRAIN POLE ON NEW FDN.
- EXISTING TRAFFIC SIGNAL CONTROLLER
- EXISTING MAST ARM STANDARD
- EXISTING PEDESTAL
- EXISTING STEEL STRAIN 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).
- POCH POLE CONTACT HEIGHT OF T.S. SPAN WIRE
- L.C.H. LOW CONTACT HEIGHT OF SPAN WIRE T.S. TO SPAN WIRE
- ② INDICATES TYPE OF SIDEWALK RAMP TO BE CONSTRUCTED.

PLAN INDEX	
DRWG. NO.	SUB-TITLE
1	LEGEND
2	GENERAL INFORMATION
3	GENERAL PLAN
4	T.S. AT HOWARD
5	T.S. AT LAFAYETTE
6	T.S. AT FORT ST.
7	QUANTITY SHEET
8 THRU 23	DETAILS

JOHN LODGE FWY. W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD

LEGEND

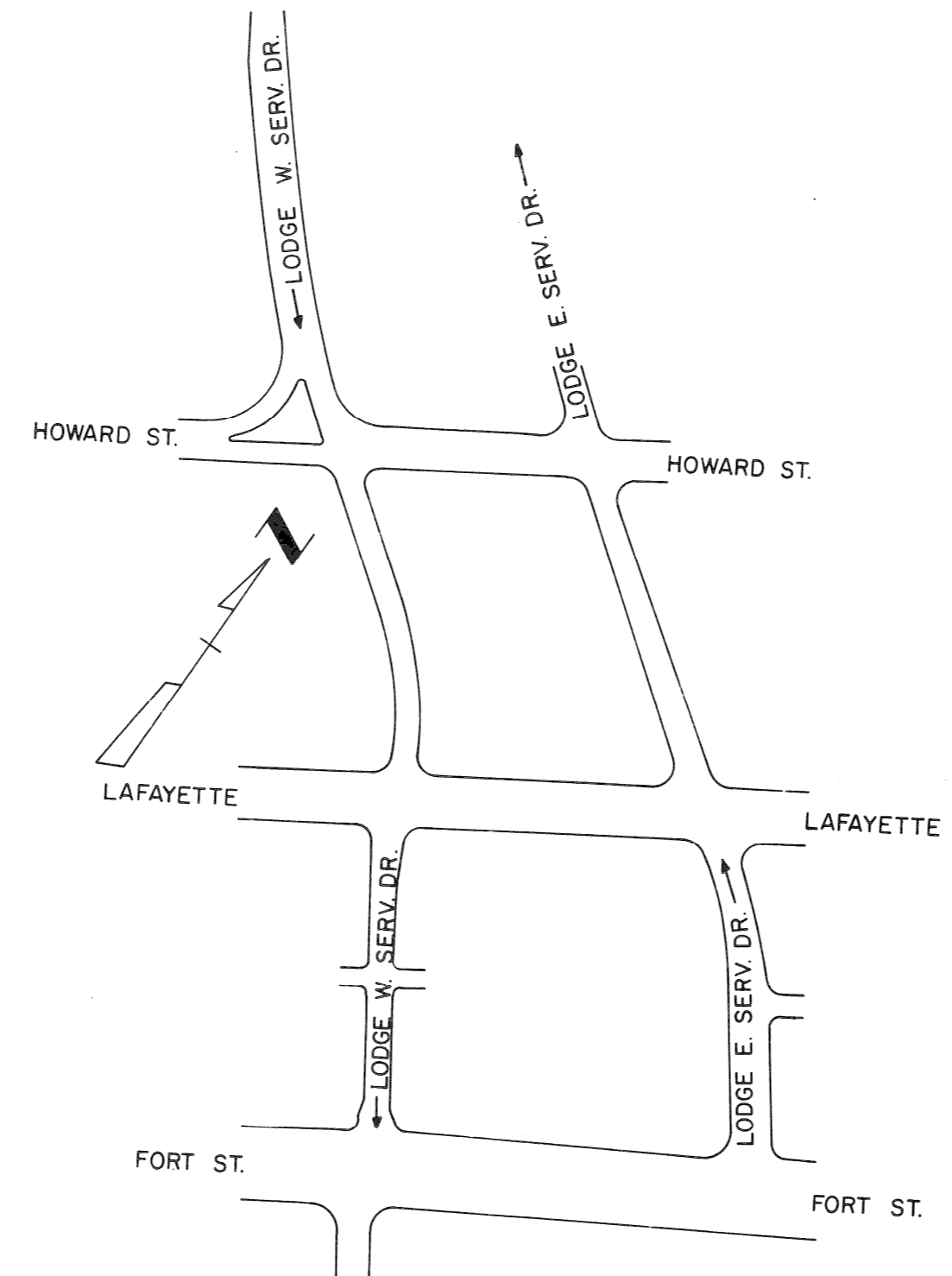
SHEET 14 OF 36 SHEETS
 CONTRACT NO. 15765A
 ASSIGNMENT NO.
 DATE 4-86

CITY OF DETROIT
 CITY ENGINEERING DEPARTMENT

DRAWN CEA	PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS 16580 WYOMING DETROIT, MICH. 48221	PUBLIC LIGHTING COMMISSION CITY OF DETROIT	48-0331
CHECKED GP	DATE APRIL 1986	DRWG. NO. 1 OF 23	FILE NO. CEA 1096
APPROVED [Signature]			1 OF 23
			APR. 1986

GENERAL INFORMATION SHEET

1. CALL MISS DIG (647-7344) 48 HRS. PRIOR TO ANY EXCAVATION FOR THE LOCATIONS OF UNDERGROUND UTILITIES.
2. CONTRACTOR TO NOTIFY MICH. CONS. GAS CO. AT WO-5-9000 IF PROTECTIVE COATED GAS MAIN IS EXPOSED OR DAMAGED.
3. A MINIMUM CLEARANCE OF 3'-6" HORIZONTAL & 1' VERTICAL MUST BE MAINTAINED BETWEEN PROPOSED P.L.D. FACILITIES & EXISTING WATER FACILITIES.
4. CONTRACTOR SHALL NOTIFY SYSTEM OPERATING DIVISION OF THE P.L.D. 48 HRS. IN ADVANCE OF ANY WORK ON UNDERGROUND OR OVERHEAD TRANSMISSION, DISTRIBUTION, & ST. LTG. CIRCUITS. PHONE 224-0500
5. ALL EXISTING STREET LIGHTING, TRAFFIC SIGNAL, PRIMARY, TRANSMISSION ETC. CIRCUITS SHALL ALWAYS BE MAINTAINED IN AN OPERATIONAL CONDITION (EXCEPT WHERE OTHERWISE NOTED).
6. EXISTING O.H. & T.S. FACILITIES ARE NOT NECESSARILY SHOWN ON PLANS.
7. ALL OVERHEAD WIRES & UNDERGROUND CABLES SHALL CONSIST OF COPPER CONDUCTORS AS PER THE SPECIFICATIONS.
8. 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.
9. NEW CONDUITS BROKEN INTO EXISTING MANHOLES OR HANDHOLES SHALL NOT INTERFERE WITH RACKING AND/OR TRAINING OF CABLES. EXERCISE CAUTION INSTALLING NEW CABLES INTO EXIST. HOLES.
10. ALL CONDUITS NOT TERMINATING IN STRUCTURES SUCH AS MANHOLES, HANDHOLES OR FOUNDATIONS SHALL EXTEND 2FT. BEYOND PAVEMENT LIMIT (EXCEPT AS OTHERWISE INDICATED). ALL UNOCCUPIED CONDUITS SHALL BE PLUGGED.
11. WHERE ABANDONING OF U.G. CABLES IS CALLED FOR ON PLANS OR DIAGRAMS, CONTRACTOR SHALL CUT & REMOVE CABLES WITHIN MANHOLES & HANDHOLES
12. UNDERGROUND CABLE QUANTITIES ARE ITEMIZED ON GENERAL PLANS. 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.
13. ALL LUMINAIRES SHALL BE PROVIDED WITH 480V. INTERNAL BALLASTS (EXCEPT AS OTHERWISE NOTED).
14. THE CANDLEPOWER DISTRIBUTION FOR ALL MERCURY & SODIUM VAPOR ST. LTG. LUMINAIRES SHALL BE SEMI-CUTOFF, MEDIUM DISTRIBUTION OF TYPE AS INDICATED ON THE PLANS.
15. ALL NEW, SALVAGED & CONVERTED ST. LTG. STD'S. SHALL BE PAINTED.
16. 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. (STENCILING & RESTENCILING OF ST. LTG. STD'S. IS INCIDENTAL TO ST. LTG. STD.)
17. ALL TREE TRIMMING REQUIRED TO CLEAR NEW OR SALVAGED ST. LTG. & TRAFFIC SIGNAL STD'S. & O.H. LINES SHALL BE INCIDENTAL TO THE PAY-ITEM & NO EXTRA PAYMENT SHALL BE MADE.
18. 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.
19. 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.
20. ALL NEW U.G.-FED ST. LTG. UNITS SHALL BE INSTALLED 2'-6" BACK OF CURB UNLESS OTHERWISE INDICATED ON PLANS.
21. 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 STANDARD. CONNECTION OF O.H. WIRES TO U.G. CABLES SHALL BE MADE OUTSIDE OF SHAFT (INCIDENTAL TO INSTALLATION OF O.H. WIRES).
22. RAND 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).
23. REMOVE WEATHERCAP & INSULATED CLEVIS OR SEC. RACK FROM ST. LTG. STD. SHAFT. MOUNT SHAFT CAP ON ST. LTG. STD. (INCIDENTAL TO REMOVAL OF O.H. WIRES).
24. FOR LOCATIONS OF P.L.D. INSTALLATIONS ON STRUCTURES SUCH AS CONDUITS, HANDHOLES, CONDUIT SLEEVES, GALVANIZED STEEL CONDUITS & ST. LTG. STD. ANCHOR BOLTS SEE STRUCTURE PLANS.
25. INSTALLATION OF ARMS FOR EQUIPMENT, CUTOUPS, 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 OF THE CABLE AND/OR TRANSFORMER POLE.
26. ALL TRANSFORMER POLES AND CABLE POLES SHALL BE FITTED UP WITH 120" ARMS (EXCEPT WHERE OTHERWISE NOTED).
27. 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).
28. ALL POTHEADS ON PRIMARY DISTRIBUTION CABLE POLES SHALL BE FLAT DIVERGENT DISCONNECTING TYPE.
29. INSTALL WOOD POLES SO AS NOT TO INTERFERE WITH TRAFFIC OR FUTURE CONSTRUCTION STAGES.
30. CROSSARMS SHALL BE REMOVED AFTER ALL CONTACTS ARE REMOVED (INCIDENTAL TO REMOVAL OF OVERHEAD LINES).
31. 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).
32. WHERE A P.L.D. WOOD 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.
33. ALL SALVAGED WOOD POLES SHALL BE POLES PREVIOUSLY INSTALLED NEW ON THIS CONTRACT.
34. 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. (OR WOOD POLES)
35. 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.
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. 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.
39. ALL SALVAGED TRAFFIC SIGNALS SHALL BE TRAFFIC SIGNALS PREVIOUSLY INSTALLED NEW ON THIS CONTRACT (EXCEPT AS OTHERWISE INDICATED).
40. FOR TRAFFIC SIGNAL SPAN WIRES USE 3/8" SIEMANS-MARTIN GRADE AS SPECIFICATION.
41. ALL TRAFFIC SIGNAL LAMPS SHALL BE PURCHASED FROM THE PUBLIC LIGHTING DEPARTMENT.
42. SEAL-END OF CABLE WHERE COILING UP OF CABLE IS CALLED FOR (CONTRACTOR SHALL RECEIVE PAYMENT FOR COILED-UP CABLES)
43. D.S.R. STREETCAR RAILS AND FOUNDATIONS (TRACKS) ARE SHOWN ON THE PLANS IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION. EXACT LOCATIONS WITHIN THE STREETS & INTERSECTIONS ARE NOT KNOWN. SOME RAILS MAY HAVE BEEN REMOVED.
44. SIDEWALK RAMPS OF THE TYPE & LOCATION AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER SHALL BE CONSTRUCTED.
45. "CONDUIT REPAIR - UNDER PAVEMENT" AND "CONDUIT REPAIR UNDER SIDEWALK OR DIRT" SHALL INCLUDE LOCATING EXISTING P.L.D. CONDUIT BREAKDOWN OR RUPTURE AT A POINT LOCATED IN THE EXISTING CONDUIT INSTALLATION WHETHER A SINGLE CONDUIT OR MULTIPLE OF TWO OR MORE. THE WORK SHALL INCLUDE EXCAVATION AT THE POINT OF BREAKDOWN, CHIPPING & BREAKING AWAY THE CONCRETE ENCASEMENT, INSTALLING A CONDUIT SLEEVE TO REPLACE THE CUTAWAY OR REMOVED SECTION OF DEFECTIVE CONDUIT, GROUTING THE CONCRETE ENCASEMENT TO ITS ORIGINAL THICKNESS THEN BACKFILLING THE EARTH AND REPAIRING THE SIDEWALK OR PAVEMENT. EXERCISE CARE NOT TO DAMAGE EXISTING ENERGIZED CABLES. NOTE: NONE OF THIS WORK SHALL BE UNDERTAKEN UNTIL FIRST CONTACTING THE PROJECT ENGINEER.
46. INSTALL 600V, 1-6 PR #16 I.M. SHIELDED CABLE FOR CHRONOPLAN 1'-0" BELOW D.E. CO. SECONDARY (EXCEPT WHERE OTHERWISE NOTED).
47. PAVEMENT, SIDEWALK, & CURB REMOVAL AND REPLACEMENT SHALL BE DONE ACCORDING TO CITY OF DETROIT SPECIFICATION.
48. T.S. JUNCTION BOX SHALL BE MOUNTED 2FT. (MAX) FROM SPAN WIRE T.S. NEAREST TO T.S. FEED SOURCE.
49. CONTRACTOR TO NOTIFY D.E. CO., MR. J. TYSON AT 237-9564 IF PROTECTIVE COATING OF ANY D.E. CO. HIGHVOLTAGE UNDERGROUND LINE IS EXPOSED OR DAMAGED.



AREA MAP
N.T.S.

LIST OF MATERIAL	
ITEM	QUANTITIES
CONDUIT REPAIR- UNDER PAVEMENT	2 EACH
CONDUIT REPAIR- UNDER SIDEWALK OR DIRT	2 EACH
REMOVING STREETCAR RAIL AND FOUNDATION	50 LIN. FT.

NOTE:
THE ITEMS AND QUANTITIES LISTED ABOVE SHALL APPLY TO ALL LOCATIONS DIRECTED BY THE ENGINEER.

DATE	DESCRIPTION	BY

JOHN LODGE FWY. W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD
GENERAL INFORMATION & AREA MAP

SHEET 15 OF 36 SHEETS
CONTRACT NO. 15765A
ASSIGNMENT NO.
DATE 4-86

CITY OF DETROIT
CITY ENGINEERING DEPARTMENT

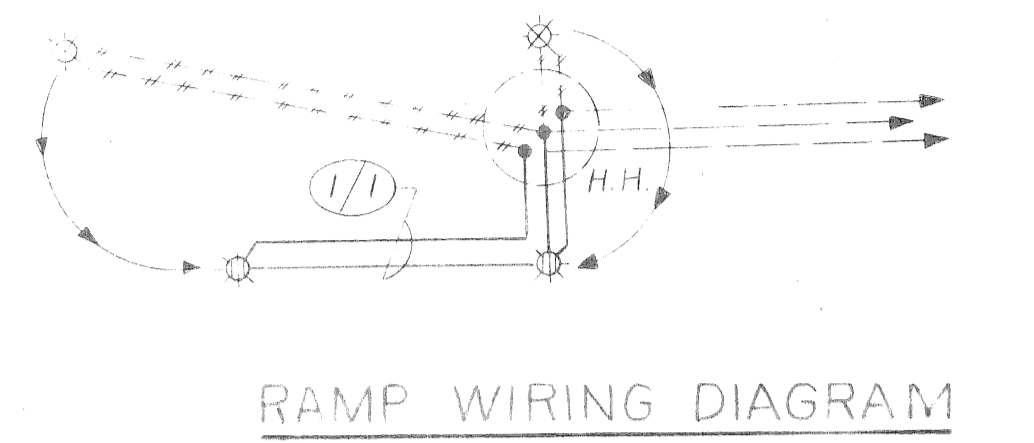
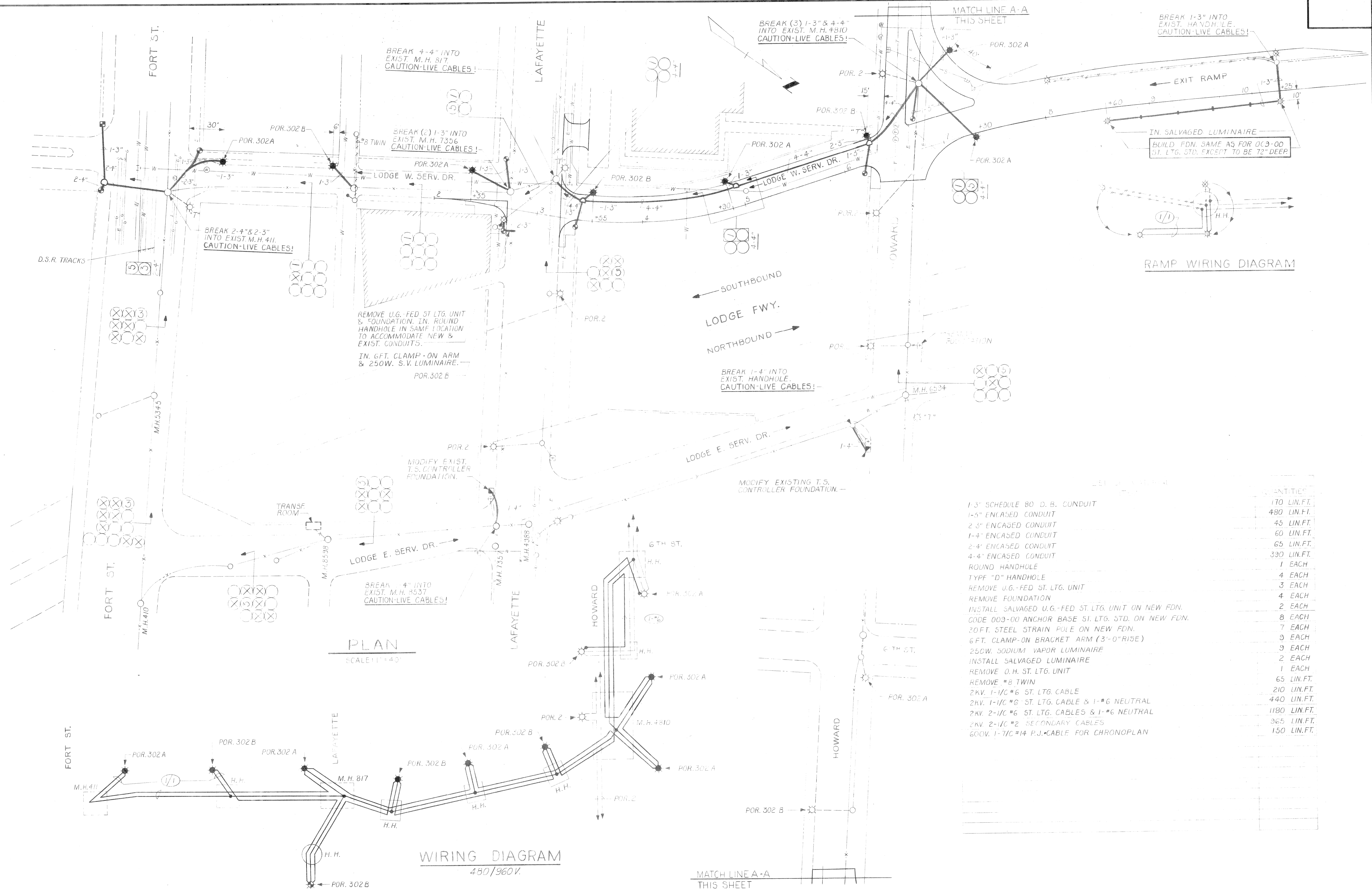
DRAWN CEA
CHECKED
APPROVED
DATE APRIL 1986

PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH. 48221
DRWG. NO. 2 OF 23
FILE NO. CEA 1096

CHECKED BY
APPROVED BY

PUBLIC LIGHTING COMMISSION
CITY OF DETROIT

SHEET NO. 48-0331
2 OF 23
DATE APR. 1986



QUANTITIES	
170 LIN. FT.	1-3" SCHEDULE 80 D.B. CONDUIT
480 LIN. FT.	1-5" ENCASED CONDUIT
45 LIN. FT.	2-3" ENCASED CONDUIT
60 LIN. FT.	1-4" ENCASED CONDUIT
65 LIN. FT.	2-4" ENCASED CONDUIT
330 LIN. FT.	4-4" ENCASED CONDUIT
1 EACH	ROUND HANDHOLE
4 EACH	TYPE "D" HANDHOLE
3 EACH	REMOVE U.G.-FED ST. LTG. UNIT
4 EACH	REMOVE FOUNDATION
2 EACH	INSTALL SALVAGED U.G.-FED ST. LTG. UNIT ON NEW FDN.
8 EACH	CODE 009-00 ANCHOR BASE ST. LTG. STD. ON NEW FDN.
7 EACH	30 FT. STEEL STRAIN POLE ON NEW FDN.
9 EACH	6 FT. CLAMP-ON BRACKET ARM (3'-0" RISE)
9 EACH	250W. SODIUM VAPOR LUMINAIRE
2 EACH	INSTALL SALVAGED LUMINAIRE
1 EACH	REMOVE O.H. ST. LTG. UNIT
65 LIN. FT.	REMOVE #8 TWIN
210 LIN. FT.	2KV. 1-1/2" #6 ST. LTG. CABLE
440 LIN. FT.	2KV. 2-1/2" #6 ST. LTG. CABLE & 1-#6 NEUTRAL
1180 LIN. FT.	2KV. 2-1/2" #6 ST. LTG. CABLES & 1-#6 NEUTRAL
365 LIN. FT.	2KV. 2-1/2" #2 SECONDARY CABLES
150 LIN. FT.	600V. 1-7/8" #14 P.J. CABLE FOR CHRONOPLAN

JOHN LODGE FWY. W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD

SHEET 16 OF 36 SHEETS
 CONTRACT NO. 15765 A
 ASSIGNMENT NO.
 DATE 4 - 86

CITY OF DETROIT
 CITY ENGINEERING DEPARTMENT

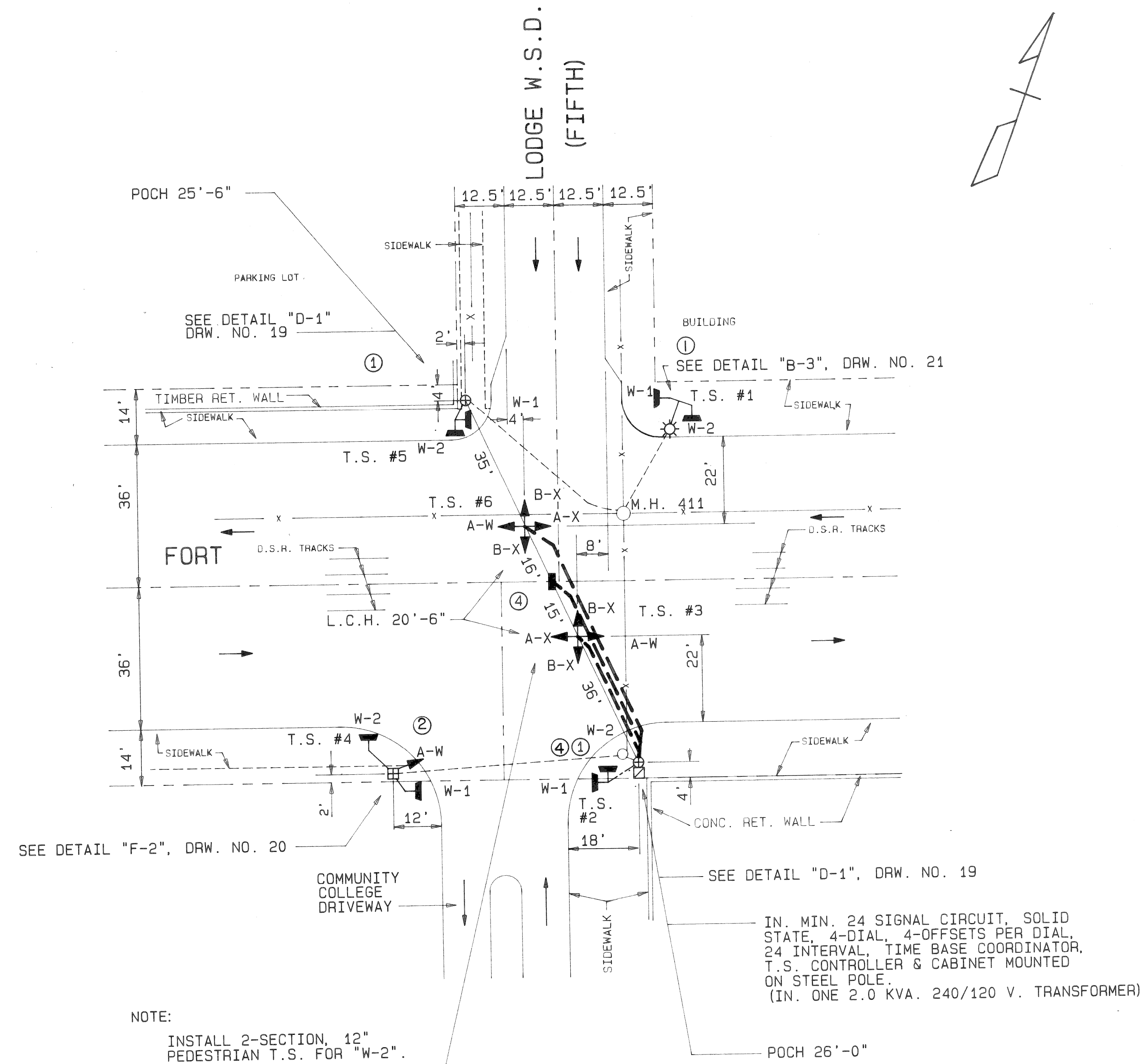
DRAWN CEA
 CHECKED
 APPROVED
 DATE APRIL 1986

PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
 16580 WYOMING DETROIT, MICH. 48221
 DATE 3 OF 23
 FILE NO. CEA 1096

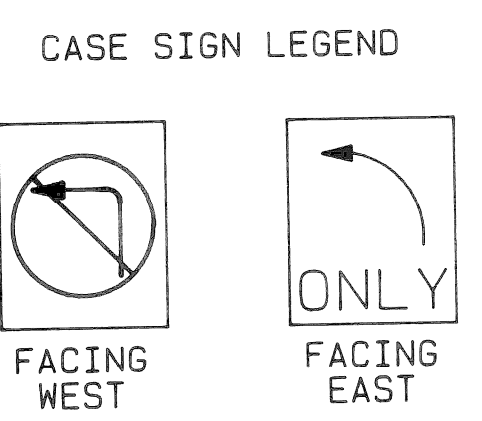
DRAWN BY
 CHECKED BY
 APPROVED BY

PUBLIC LIGHTING COMMISSION
 CITY OF DETROIT

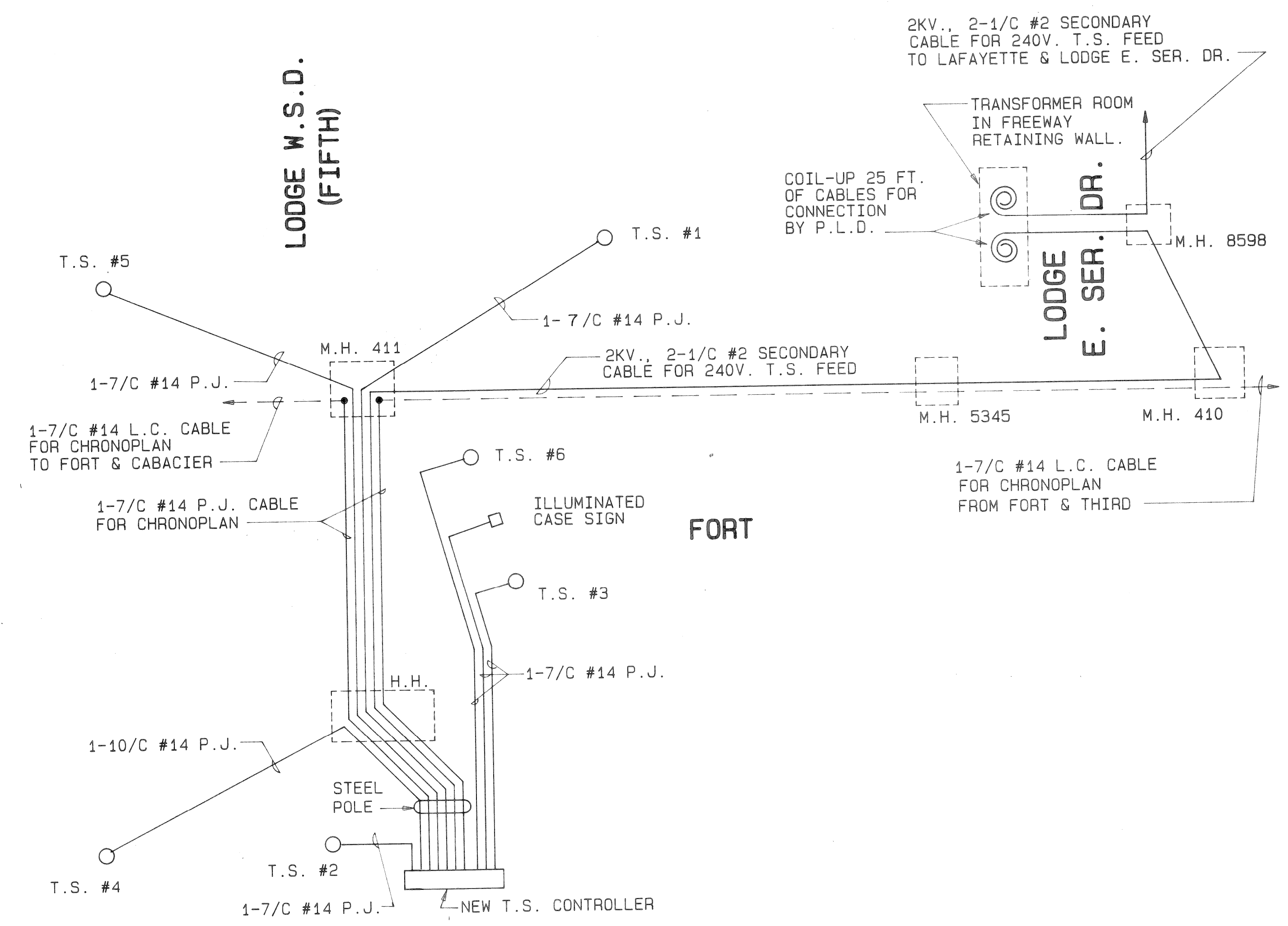
FILE NO. 48-0331
 SHEET NO. 3 OF 23
 DATE APR. 1986



PLAN
SCALE: 1" = 20'



INSTALL 2-WAY ILLUMINATED CASE SIGN



WIRING DIAGRAM

LIST OF MATERIAL		
NO.	ITEM	QUANTITIES
①	2-WAY PEDESTRIAN BRACKET ARM T.S.	3 EACH
②	2-WAY PEDESTRIAN T.S. & 1-WAY T.S. ON 10 FT PEDESTAL ON NEW FDN.	1 EACH
③	TWO 4-WAY SPAN WIRE T.S. & ILLUMINATED CASE SIGN ON NEW SPAN WIRE.	1 EACH
④	T.S. CONTROLLER & CABINET MOUNTED ON STEEL POLE	1 EACH

REVISIONS	DATE	DESCRIPTION	CHKD. BY

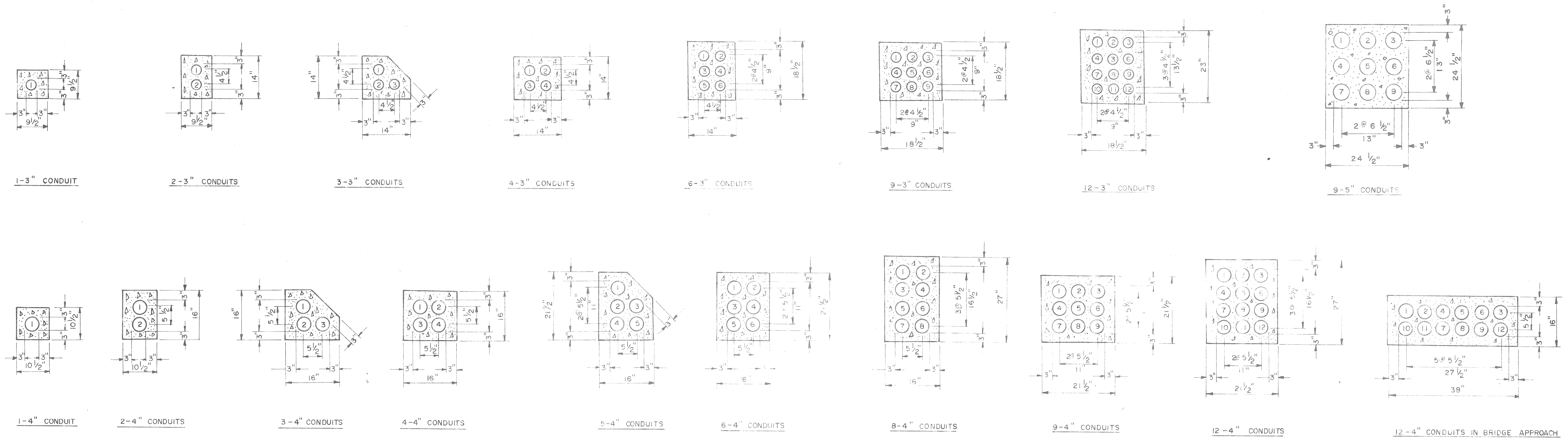
**TRAFFIC SIGNAL INSTALLATION
AT FORT & LODGE WEST SERVICE DRIVE**

SHEET 19 OF 36 SHEETS
CONTRACT NO. 15765A
ASSIGNMENT NO.
DATE 4-86

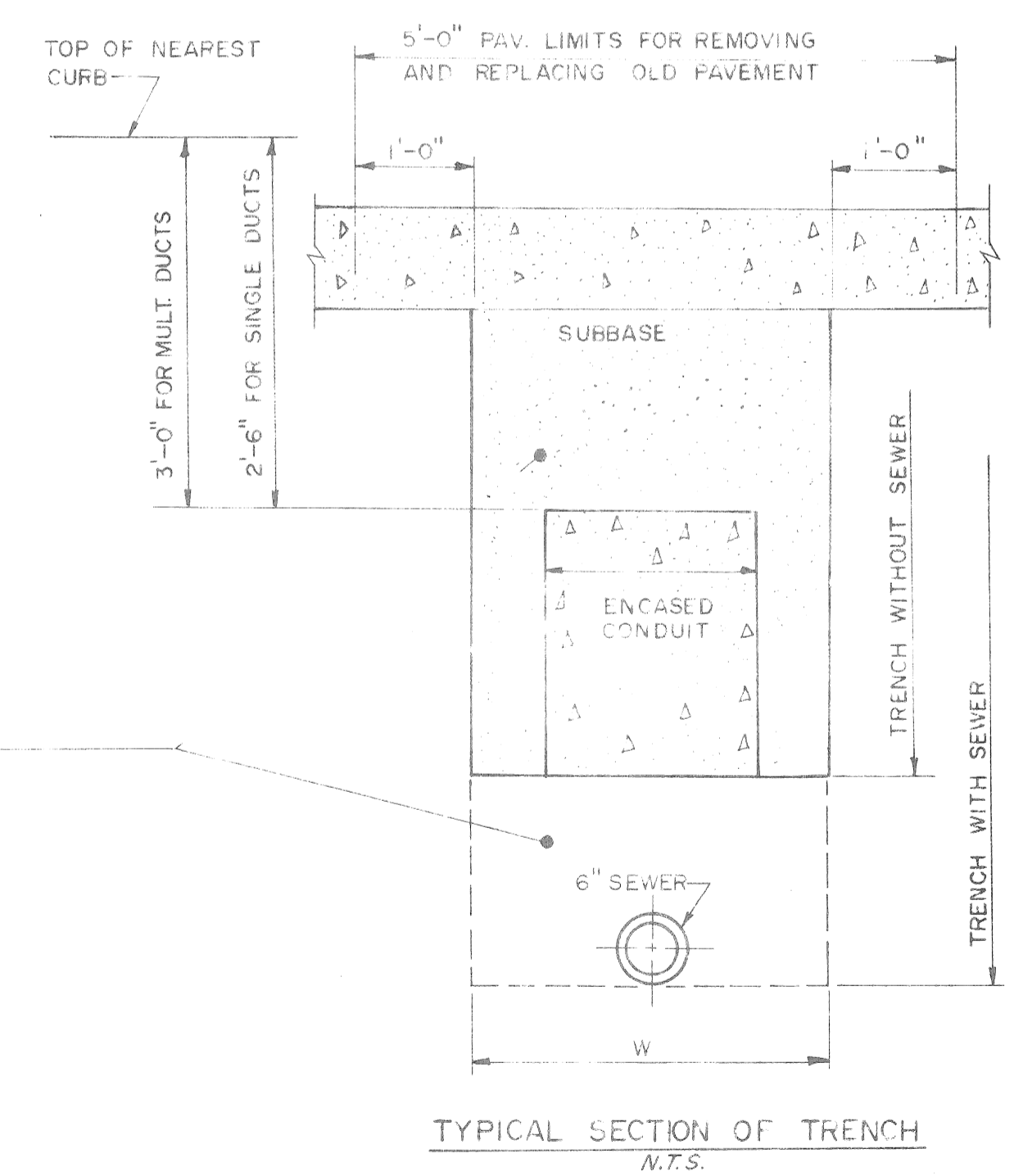
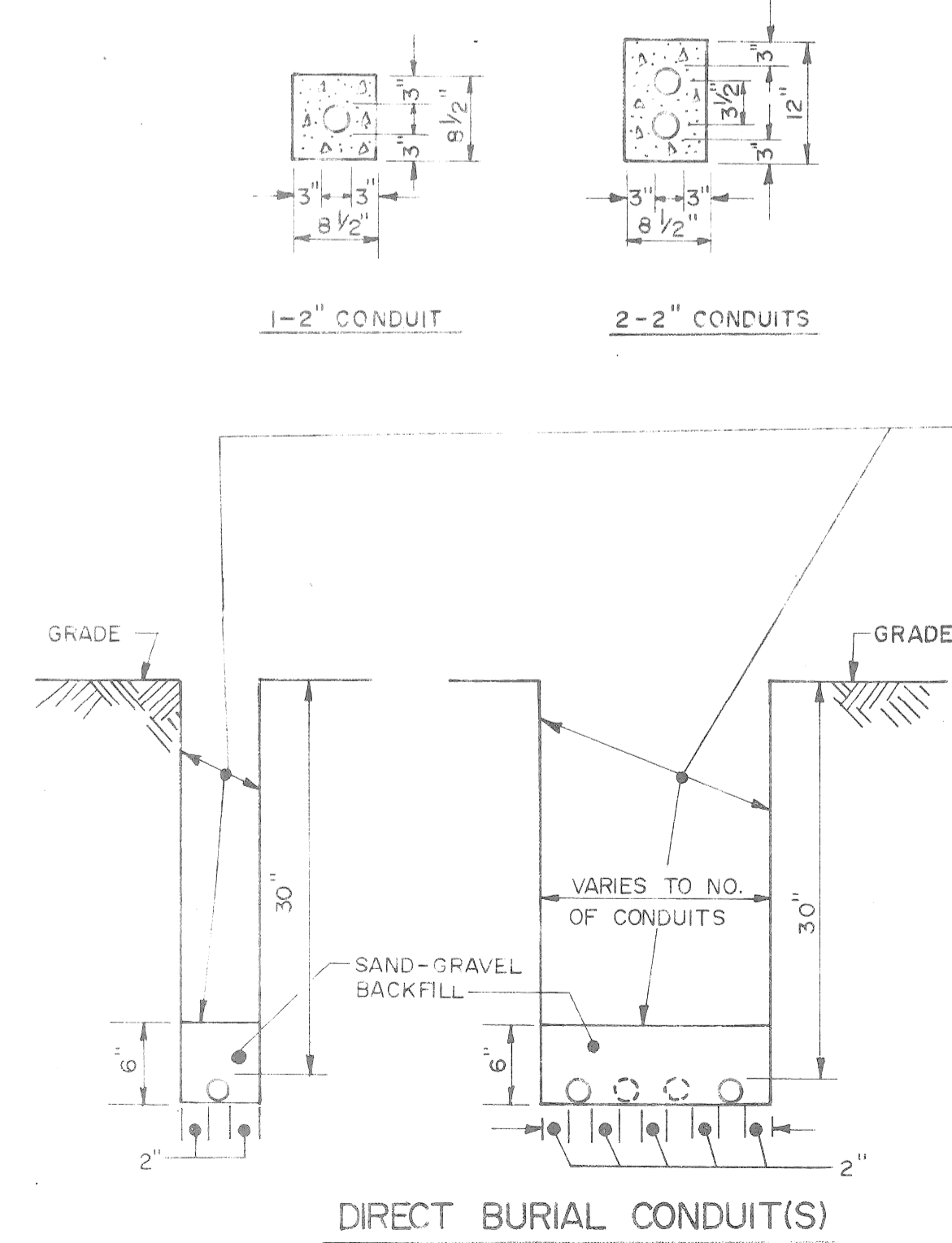
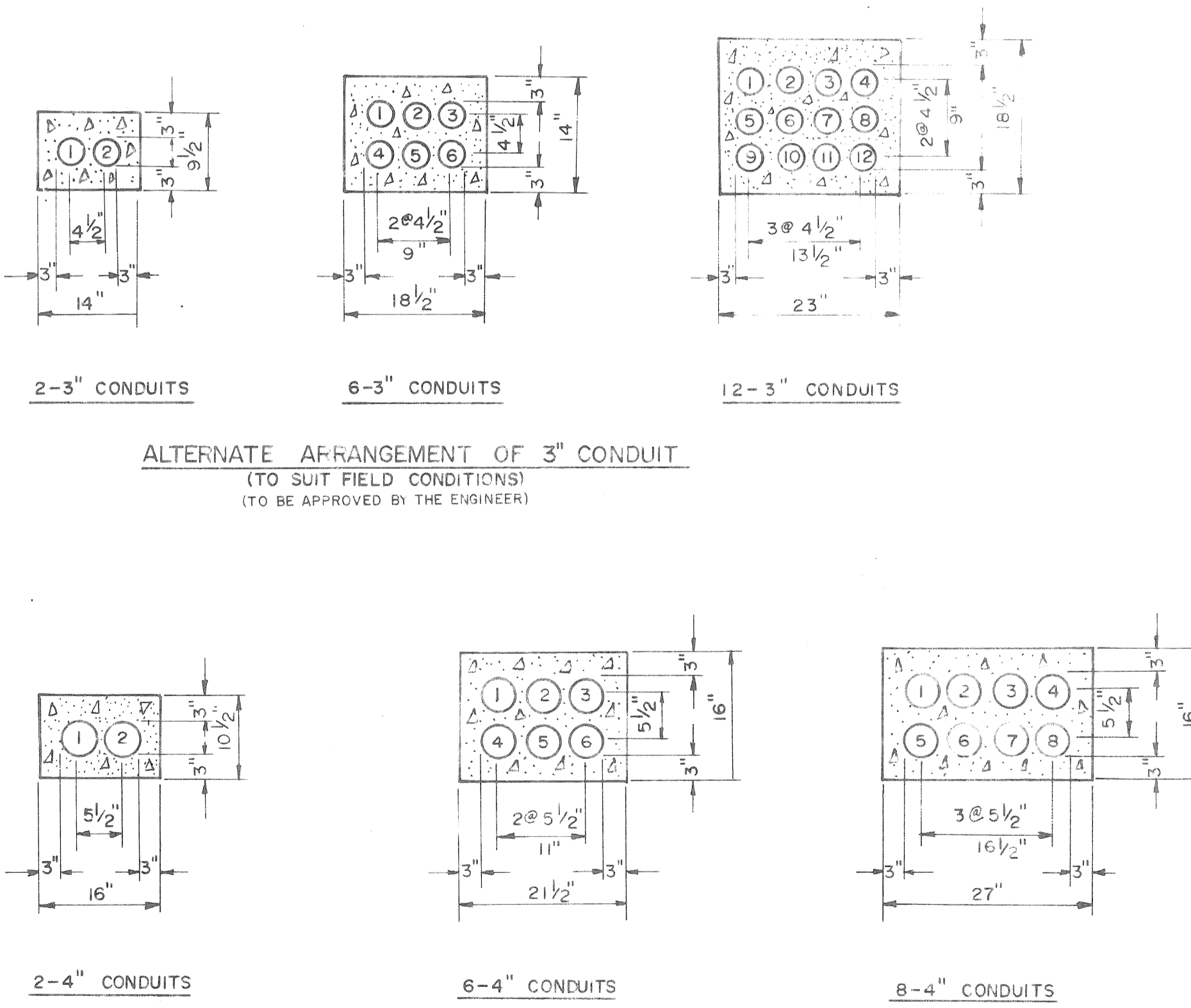
CITY OF DETROIT
CITY ENGINEERING DEPARTMENT

DRWN. C.E.A.
CHECKED
APPROVED
DATE APRIL 1986
PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH. 48221
FILE NO. C.E.A. 1096

PUBLIC LIGHTING DEPARTMENT
CITY OF DETROIT
FILE NO. 48-0331
SHEET NO. 6 OF 23
DATE APRIL 1986



CONCRETE ENCASED CONDUIT SECTIONS



BACK FILL WITH GRADE "A" MATERIAL ACCORDING TO CITY OF DETROIT SPECIFICATION

NOTE: PREFERRED TRENCH WIDTH "W" NOT WIDER THAN CONDUIT ENCASUREMENT WIDTH "D"

DATE	DESCRIPTION	CHKD BY

JOHN LODGE FWY. W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD
 MISC. ENCASED CONDUIT SECTIONS
 DETAILS

SHEET 21 OF 36 SHEETS
 CONTRACT NO. 15765A
 ASSIGNMENT NO.
 DATE 4-86

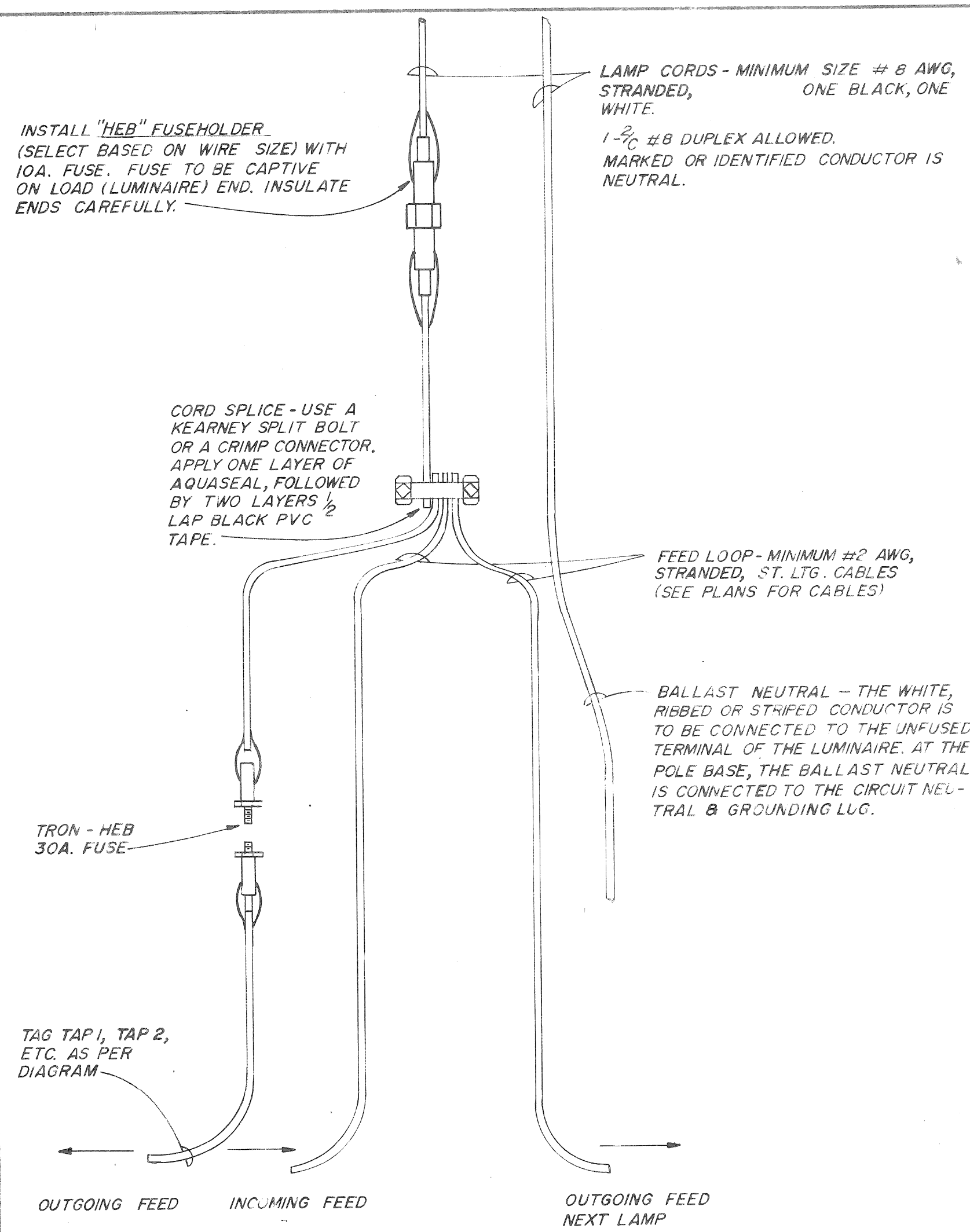
CITY OF DETROIT
 CITY ENGINEERING DEPARTMENT

DRAWN CEA
 CHECKED *ep*
 APPROVED *WJ*
 DATE APRIL 1986

PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
 16580 WYOMING DETROIT, MICH., 48221
 DRWS. NO. 8 OF 23
 FILE NO. CEA 1096

PUBLIC LIGHTING COMMISSION
 CITY OF DETROIT

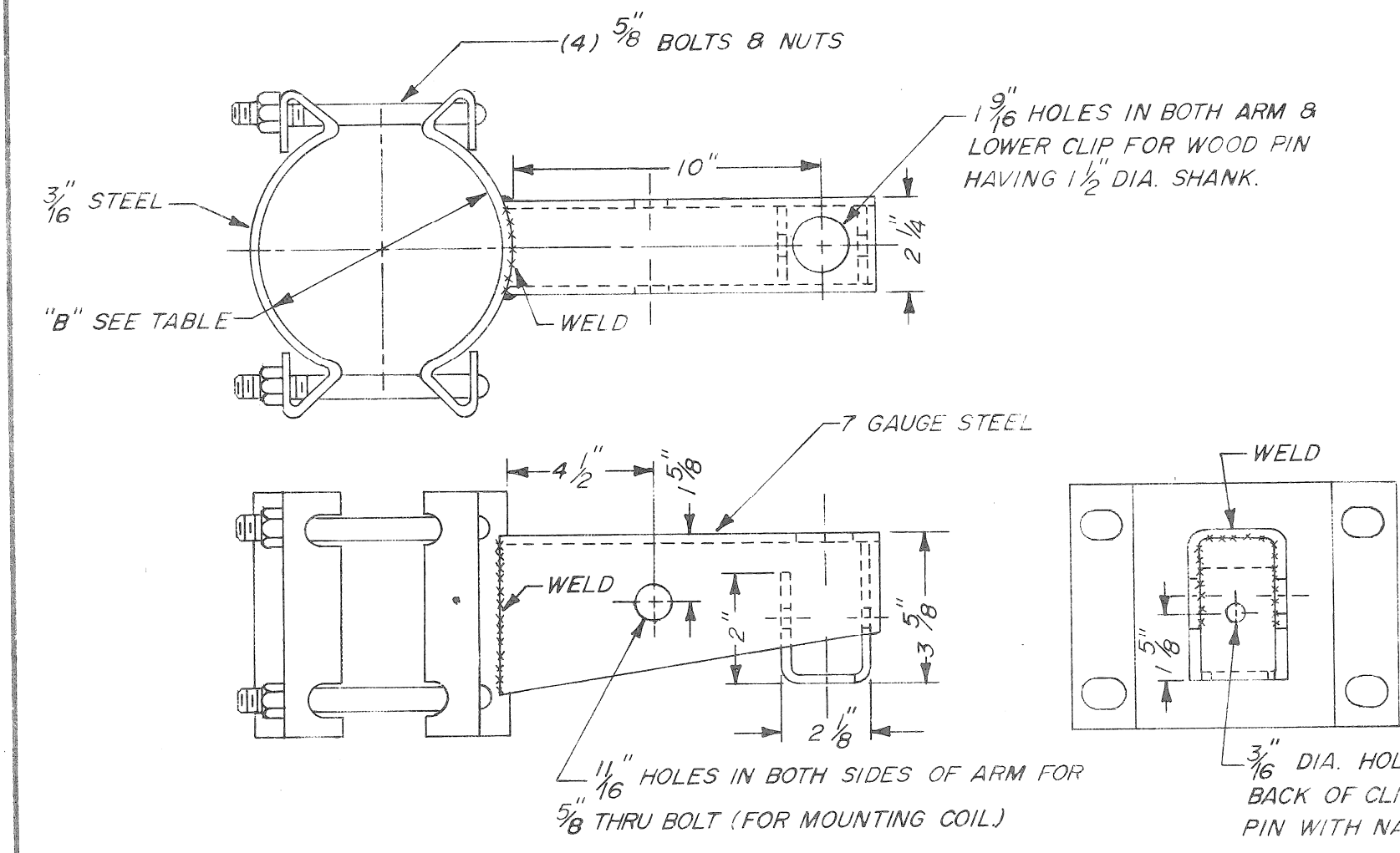
FILE NO. 48-0331
 SHEET NO. 8 OF 23
 DATE APR. 1986



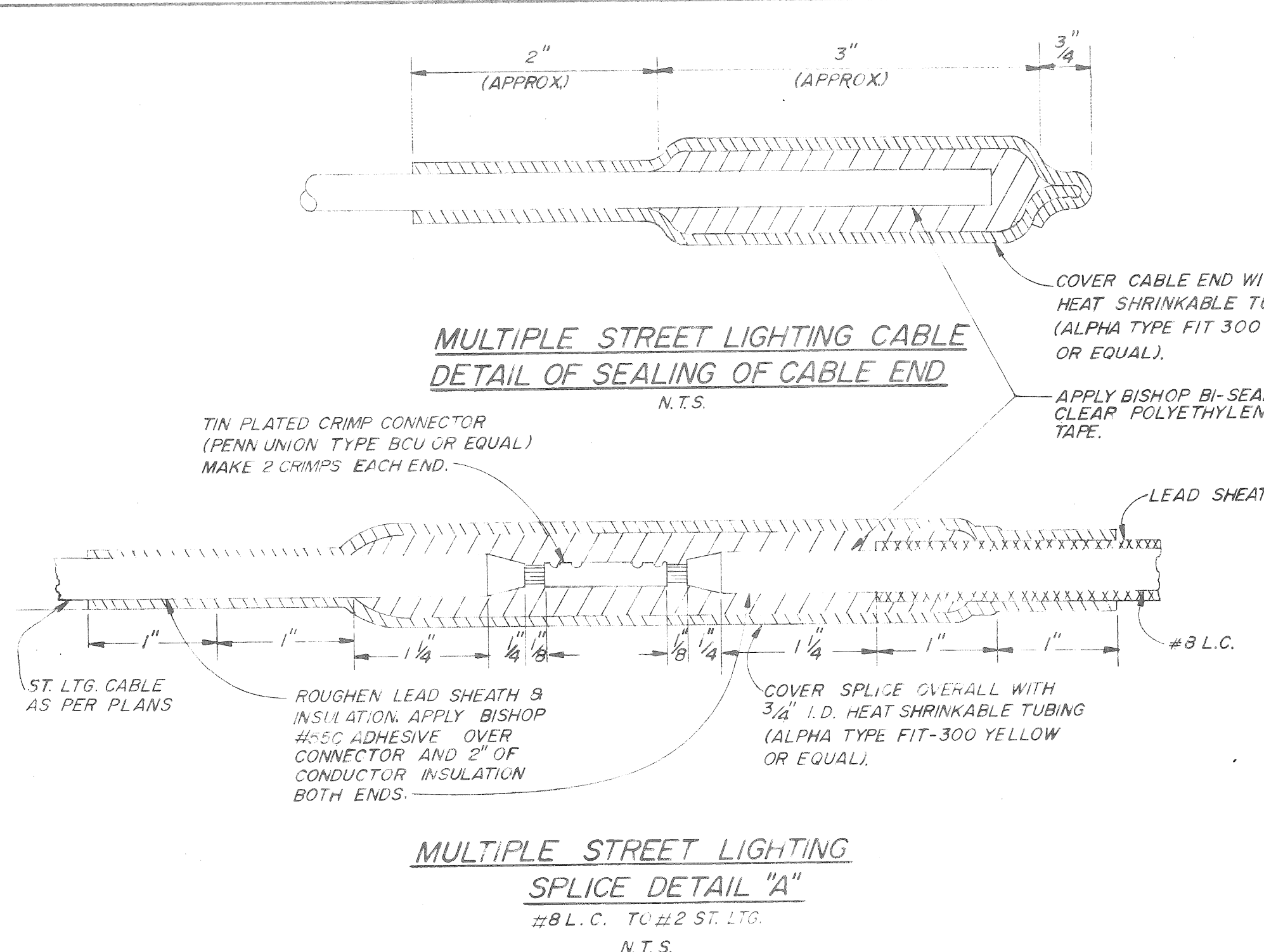
MULTIPLE STREET LIGHTING CONNECTION IN POLE BASE
N.T.S.

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

CLAMP SIZE TABLE

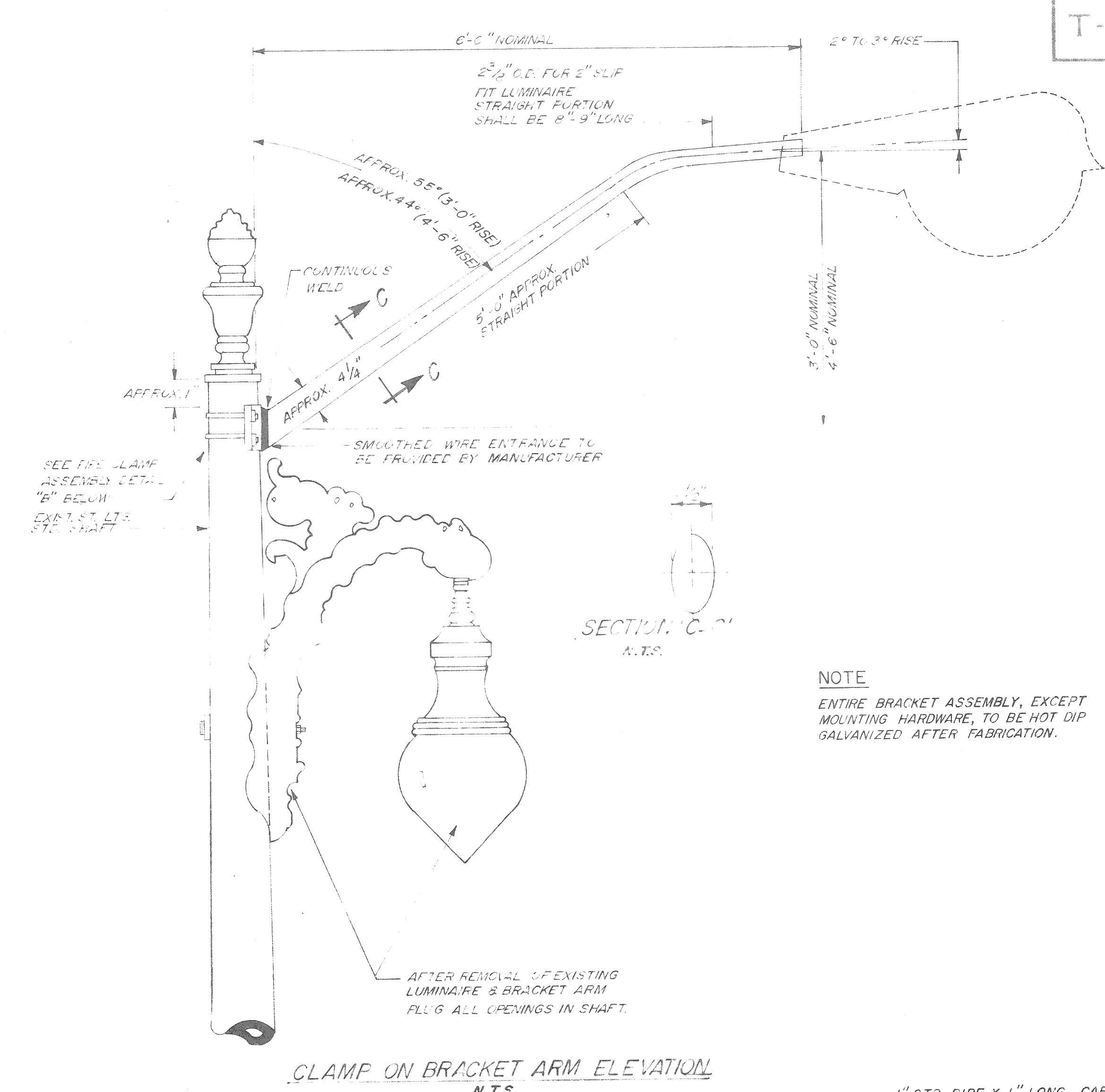
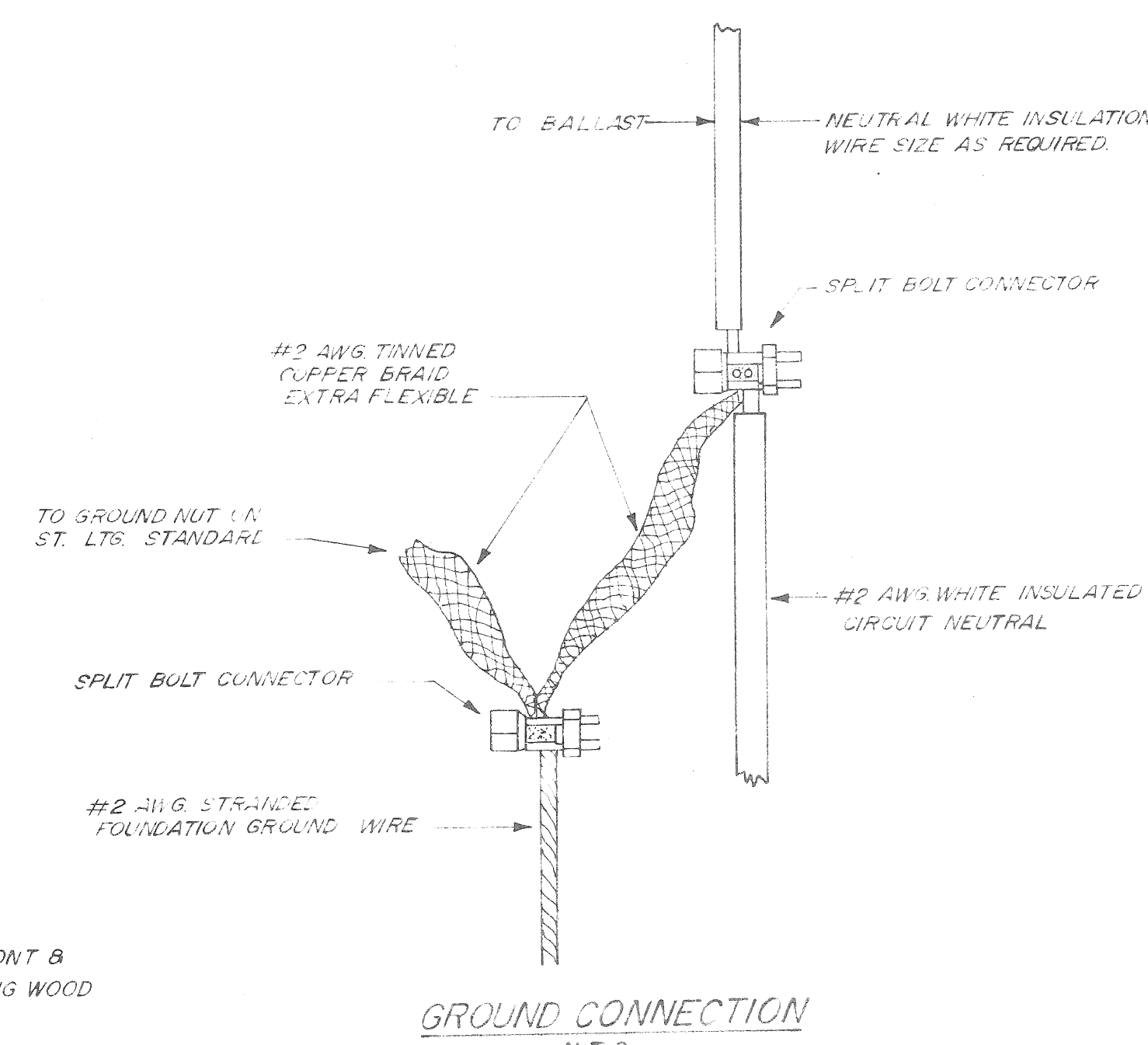


CLAMP FEEDER ARM
N.T.S.

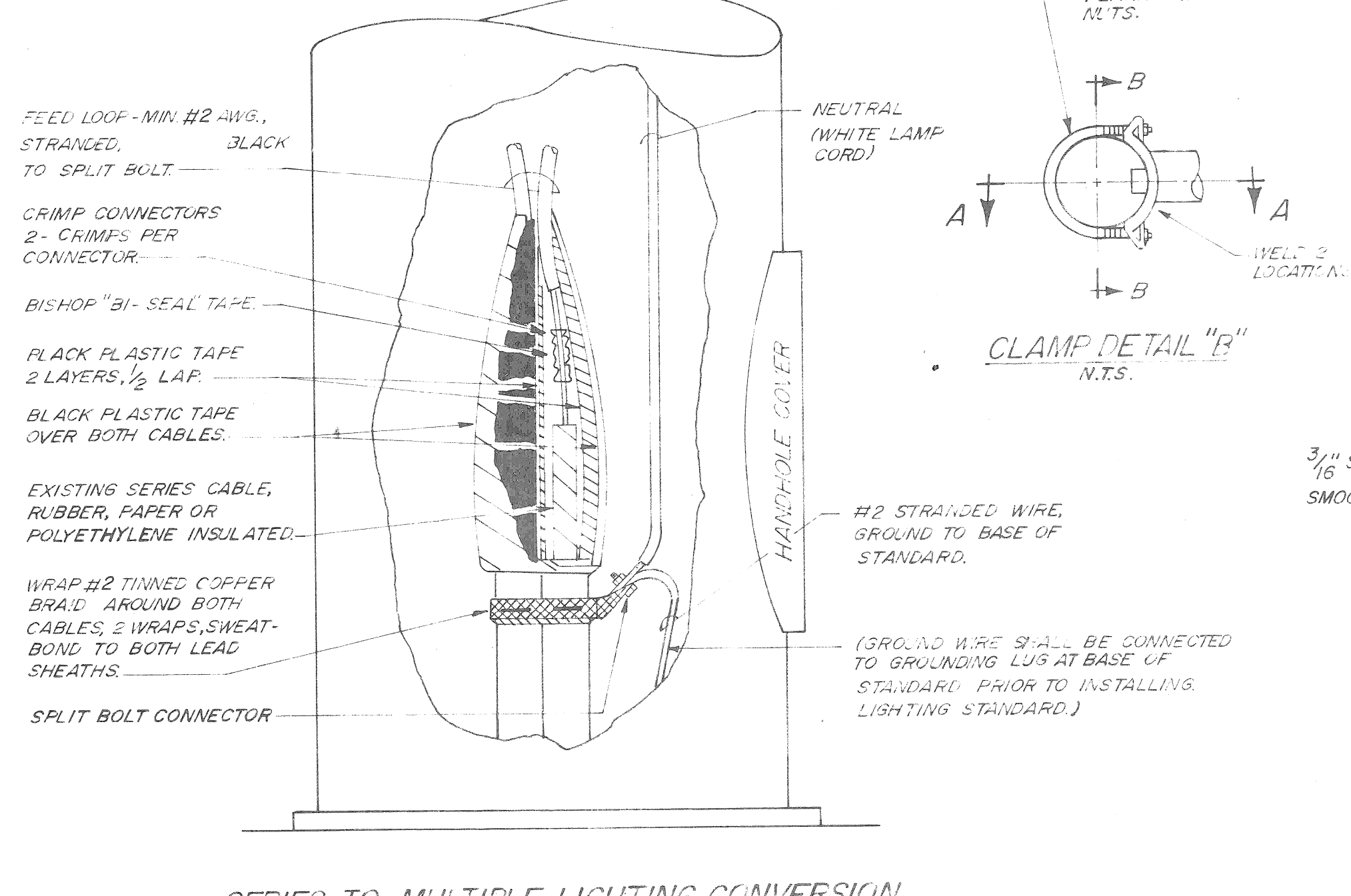


SUBSTATION NAMES ON IDENTIFICATION TAGS SHALL BE SPELLLED AS FOLLOWS

ATWTR.	MCRDY.
BL.	MTRSE.
BUTZL.	FAL. PK.
CNFLD.	PHILP.
CONN'R.	PORTER.
CLUSTER.	STNTN.
GRNT.	STONE.
HUDSN.	TRNTY.
J. CAMP.	TRBLY.
JUY. H.	TURNR.
LA. BEL.	VERNR.
LTHRE.	WALTE.
LYDON.	WARREN.
MAPLE.	WITTE.



NOTE
ENTIRE BRACKET ASSEMBLY, EXCEPT MOUNTING HARDWARE, TO BE HOT DIP GALVANIZED AFTER FABRICATION.



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"

NO.	DATE	DESCRIPTION	BY
6			

JOHN LODGE FWY. W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD
MULT. ST. LG. CABLE CONNECTIONS, CLAMP-ON ARM & MISC. DETAILS

SHEET 23 OF 36 SHEETS
CONTRACT NO. 15765A
ASSIGNMENT NO.
DATE 4-86

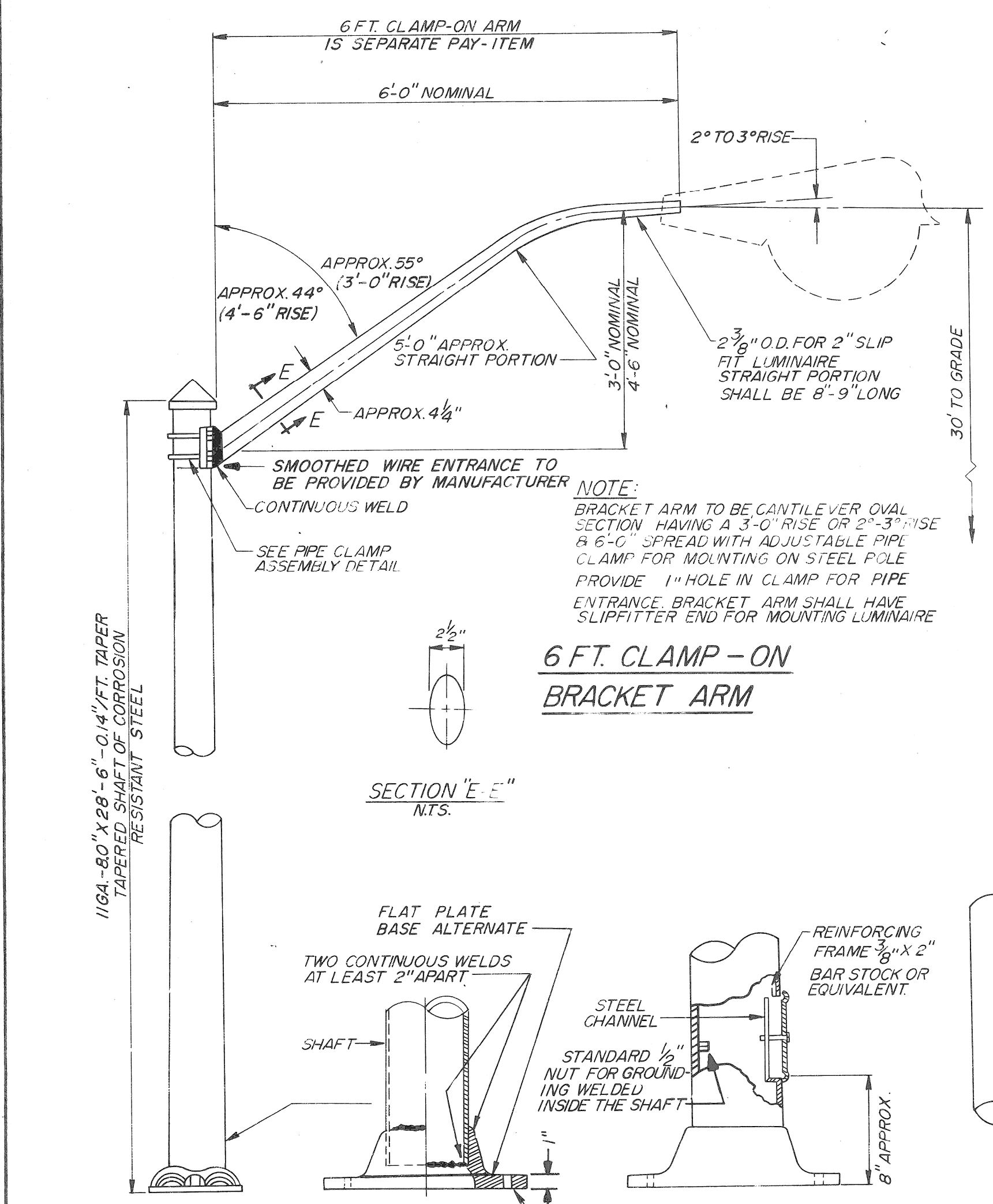
CITY OF DETROIT
CITY ENGINEERING DEPARTMENT

DRAWN BY C.E.A.
CHECKED BY
APPROVED BY
DATE APRIL 1986

PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH 48221
DRWG. NO. 10 OF 23
FILE NO. CEA 1096

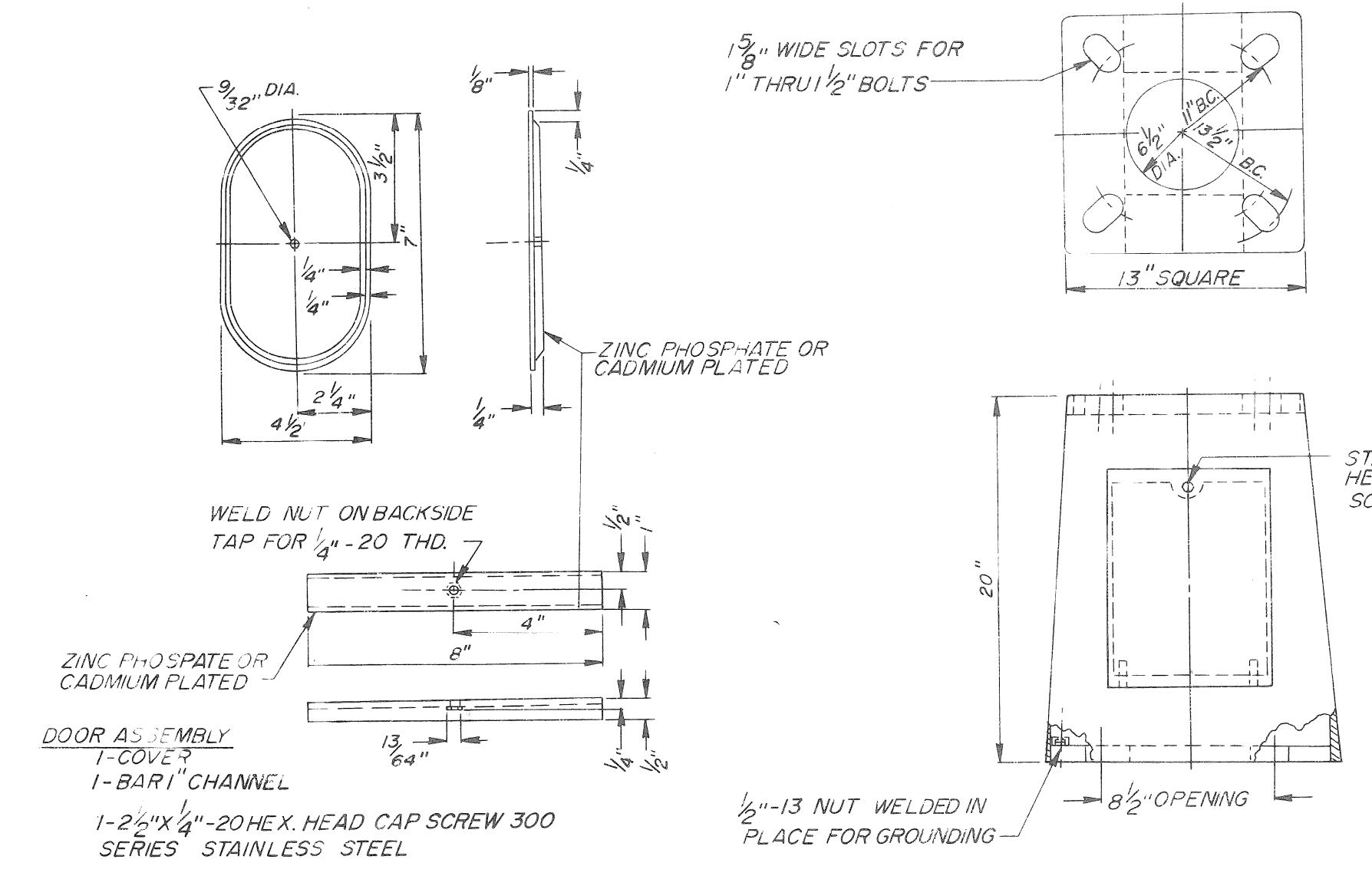
PUBLIC LIGHTING COMMISSION
CITY OF DETROIT

48-0331
10 OF 23
APR. 1986

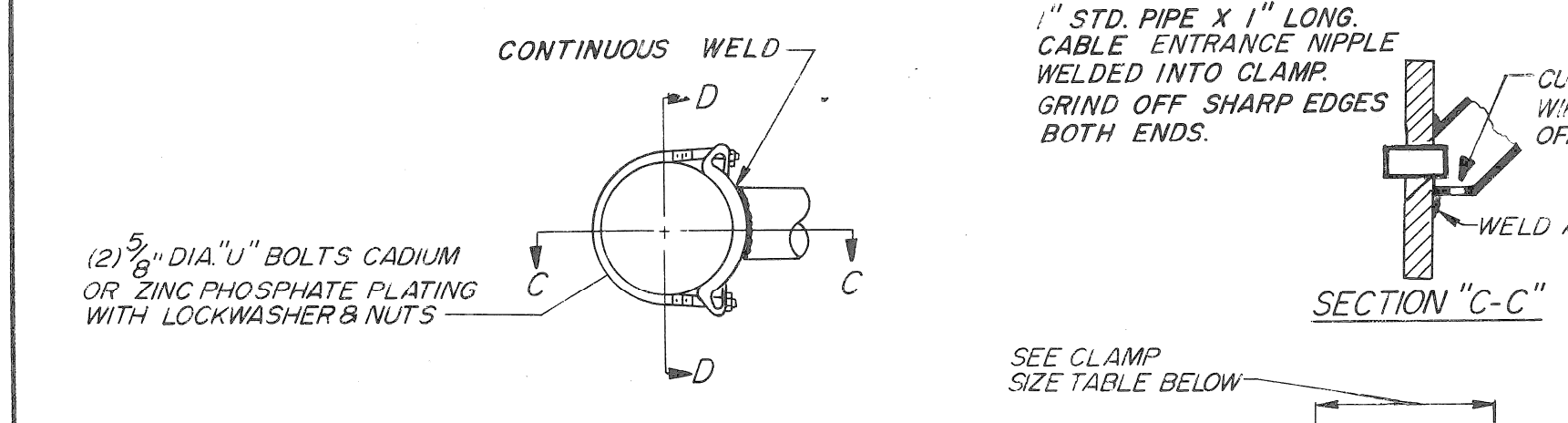


6 FT. CLAMP-ON BRACKET ARM
N.T.S.

CODE 009-00
STREET LIGHTING STANDARD
N.T.S.



HANDHOLE COVER DETAIL
N.T.S.



SHAFT MODIFICATION
N.T.S.

TYPE	POLE DIAMETER
A	36" - 4.5"
B	6.1" - 6.9"
C	7.5" - 8.5"

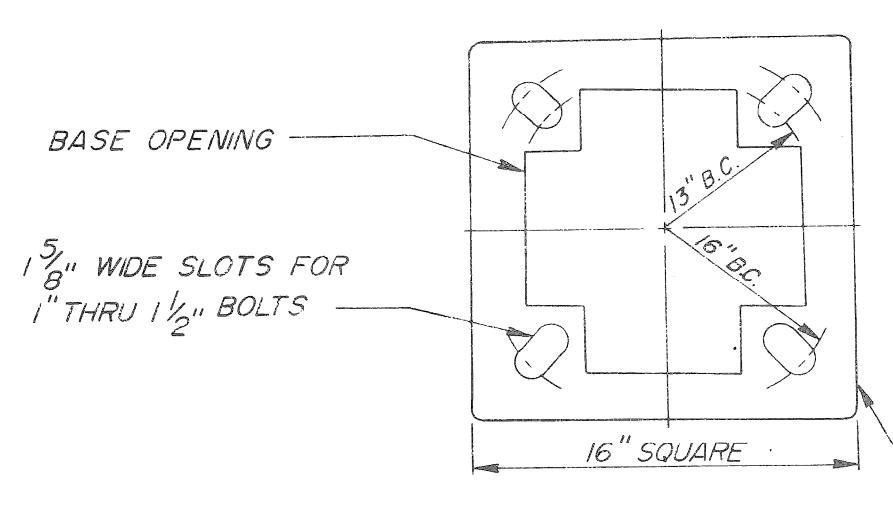
CLAMP SIZE TABLE

CLAMP ASSEMBLY DETAILS
N.T.S.

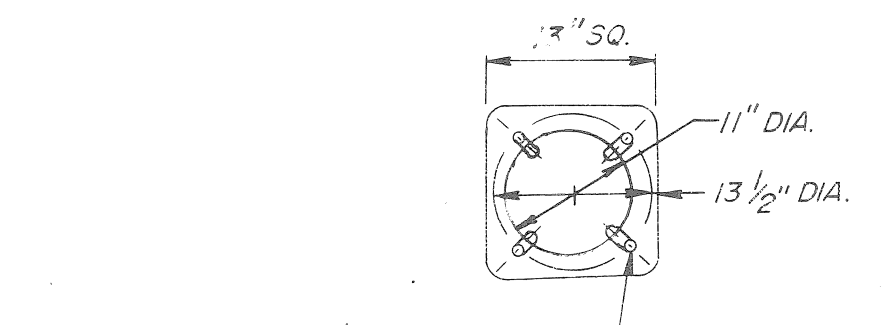
STD CODE NO.	SHAFT LENGTH	SHAFT DEFLECTION	MINIMUM LOAD	ANCHOR BOLT	ANCHOR BOLT Ø	HANDHOLE	LUMINAIRE MOUNTING HEIGHT	BRACKET FITTERS REQ'D	BRACKET LENGTH
009-00	28'-6"	2.9"	880 #	13 1/2"	1" x 40"	4" x 6 1/2"	30'	—	6'

* 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.

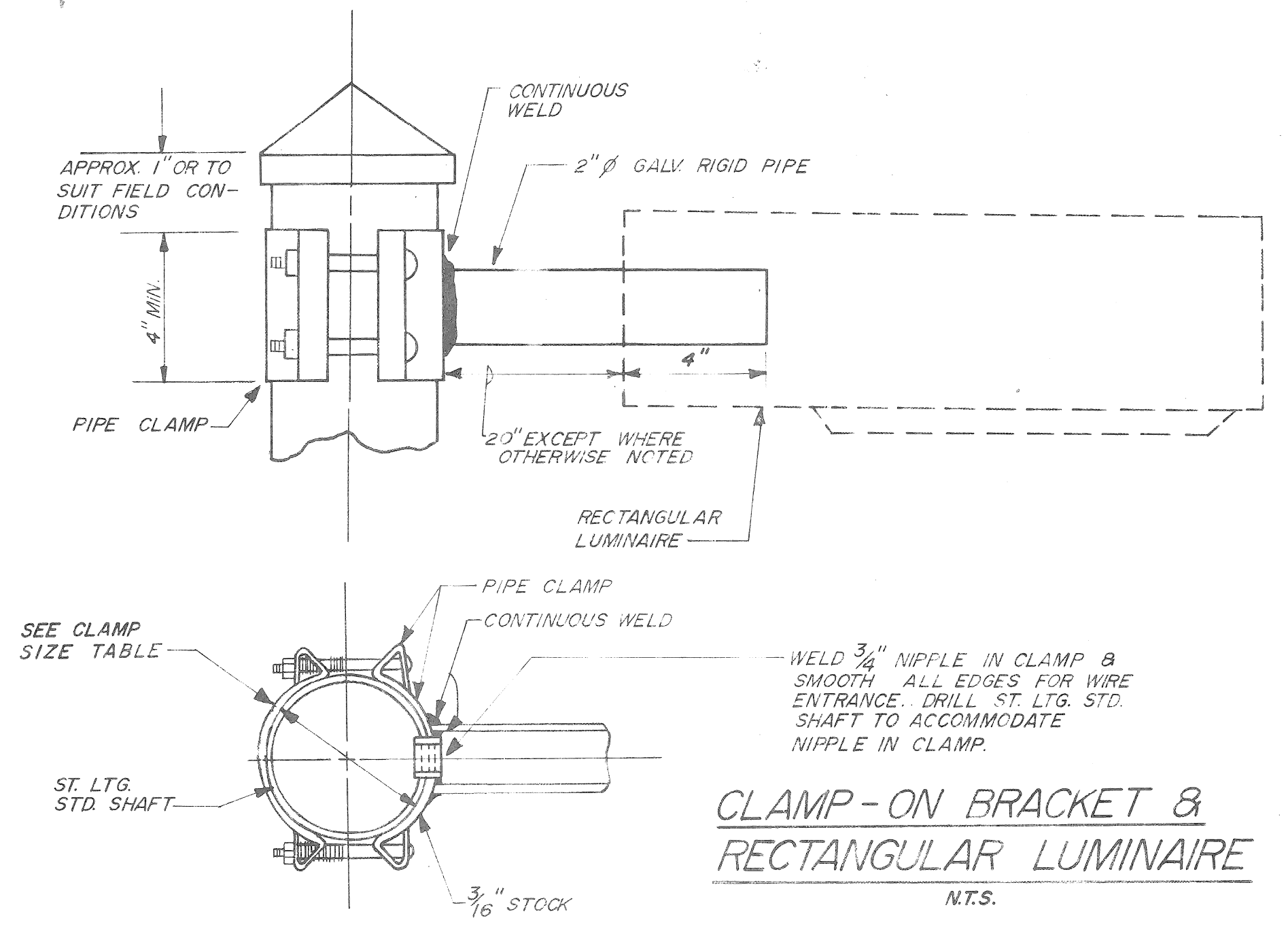
** SHAFT LOADING: SHAFTS SHALL WITHSTAND AT THE GUARANTEED MINIMUM YIELD STRENGTH OF THE SHAFT MATERIAL THE LOADS SHOWN IN THIS TABLE. THE LOAD SHALL BE APPLIED IN A SINGLE HORIZONTAL DIRECTION ANYWHERE AROUND THE CIRCUMFERENCE OF SHAFT 18 INCHES FROM THE TOP.



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

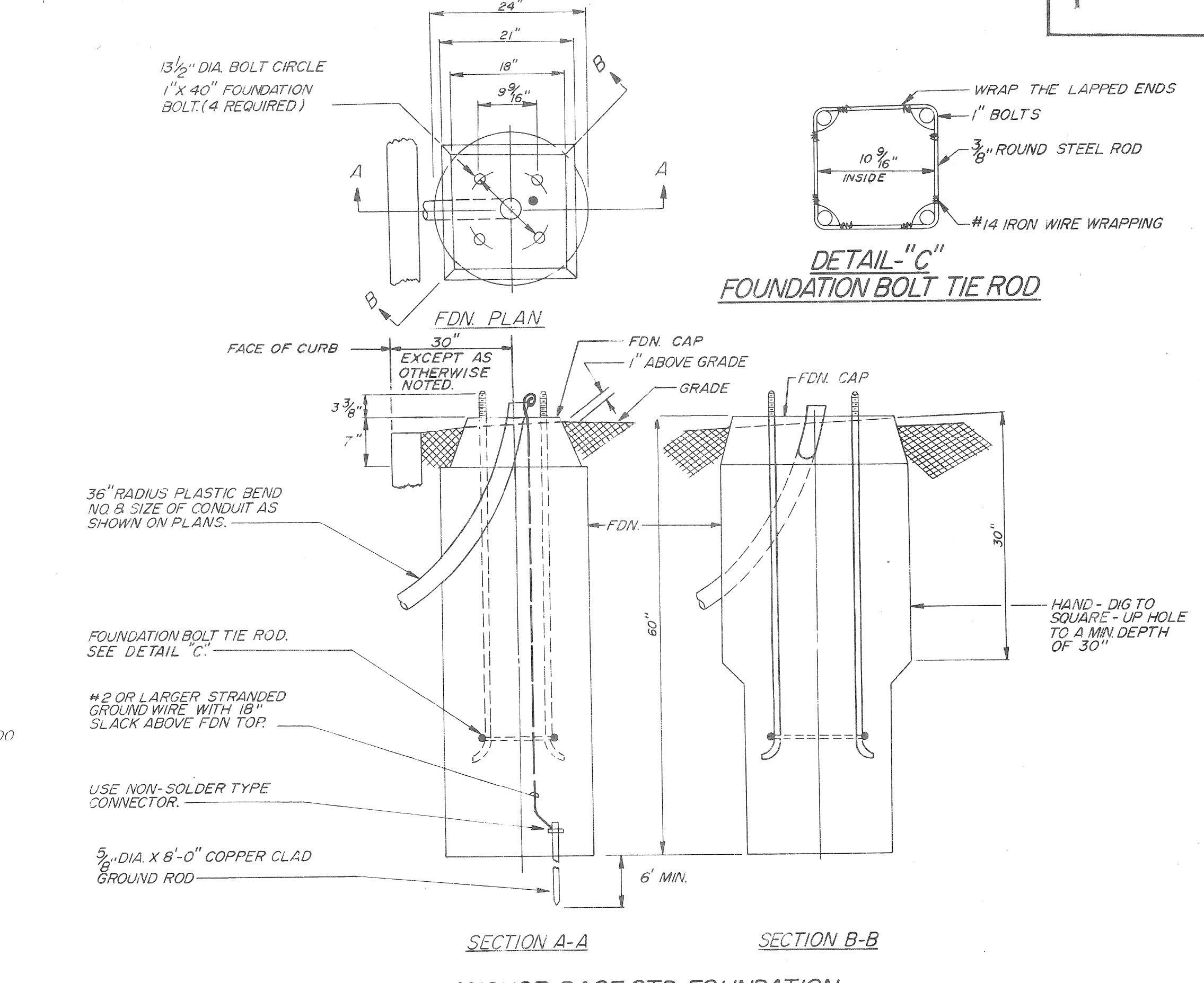


ANCHOR BOLT PLAN
N.T.S.

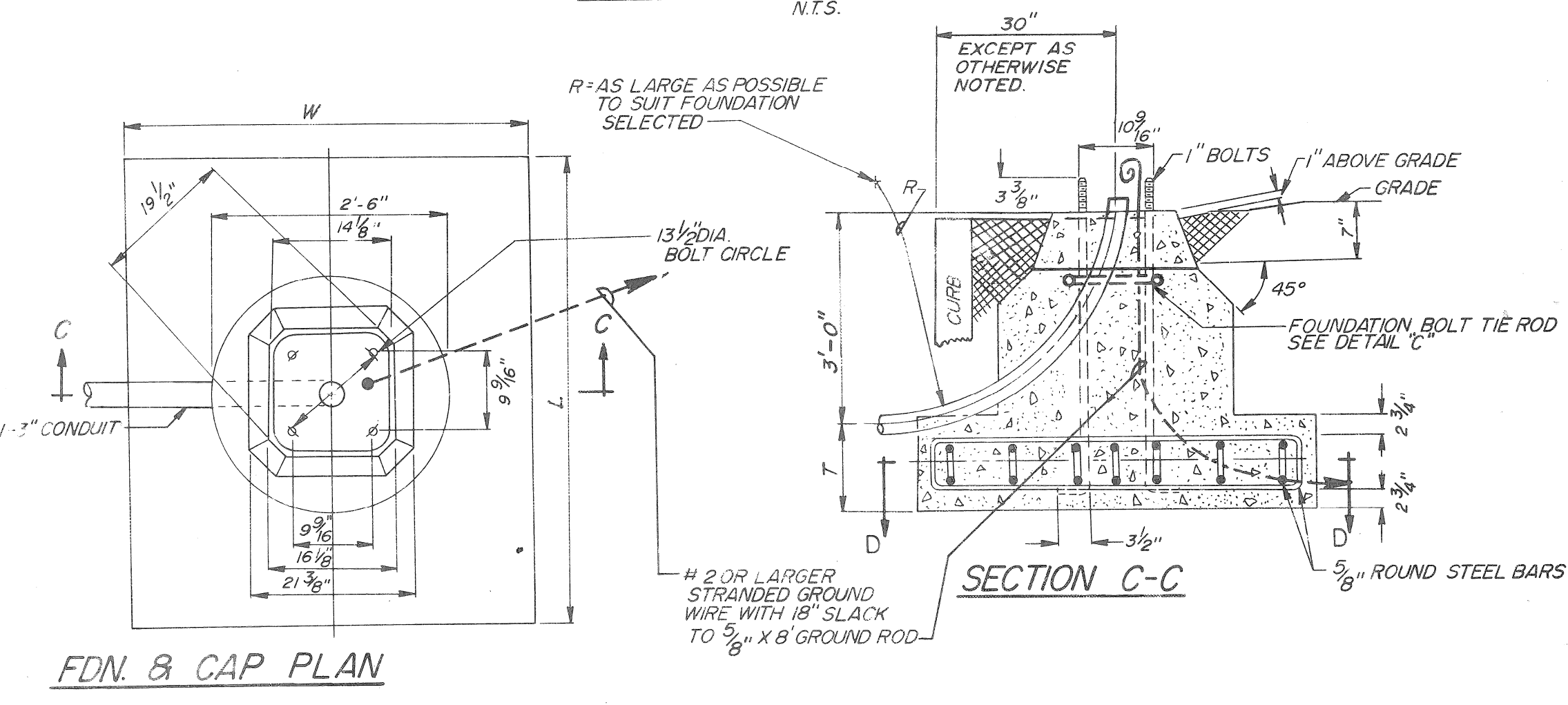


CLAMP-ON BRACKET & RECTANGULAR LUMINAIRE
N.T.S.

- 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.



ANCHOR BASE STD. FOUNDATION
N.T.S.

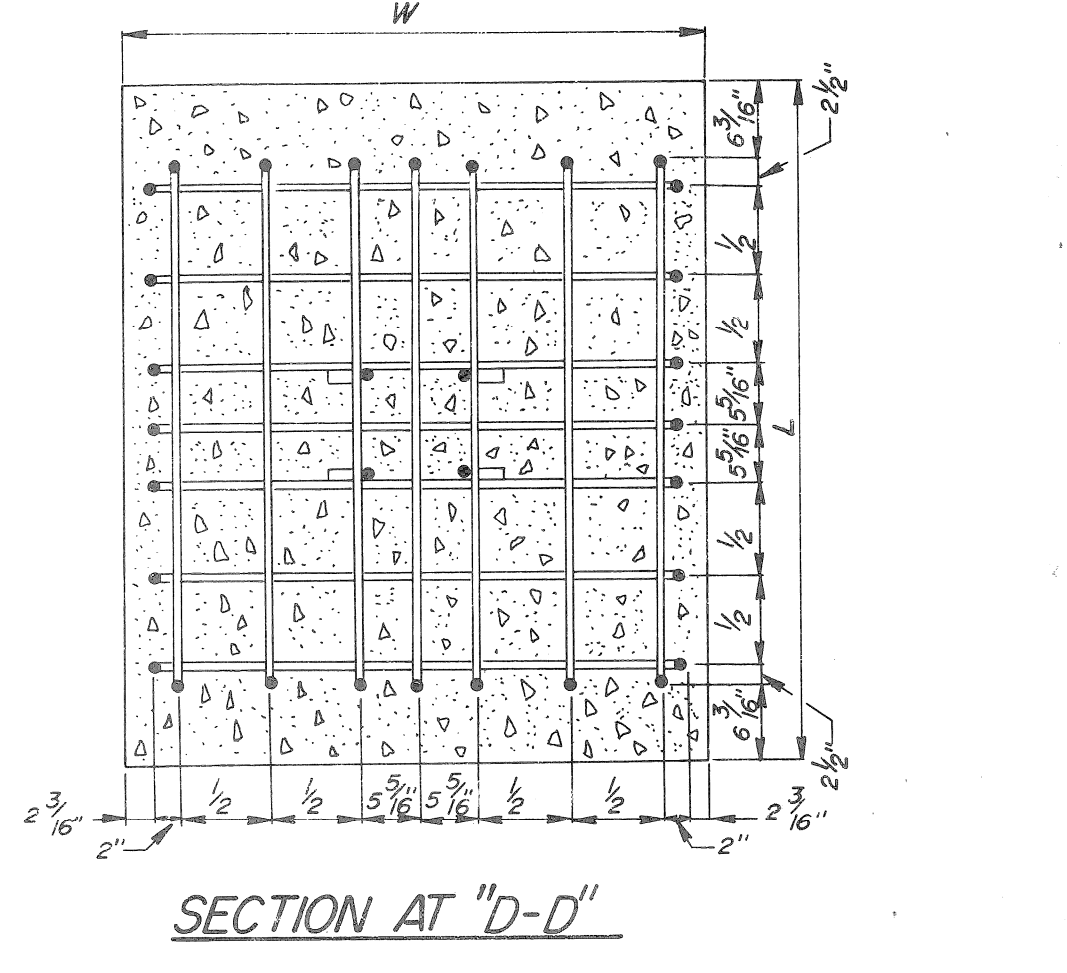


FDN. & CAP PLAN
N.T.S.

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"



SECTION AT 'D-D'
N.T.S.

DATE	DESCRIPTION	DRAWN BY
		3

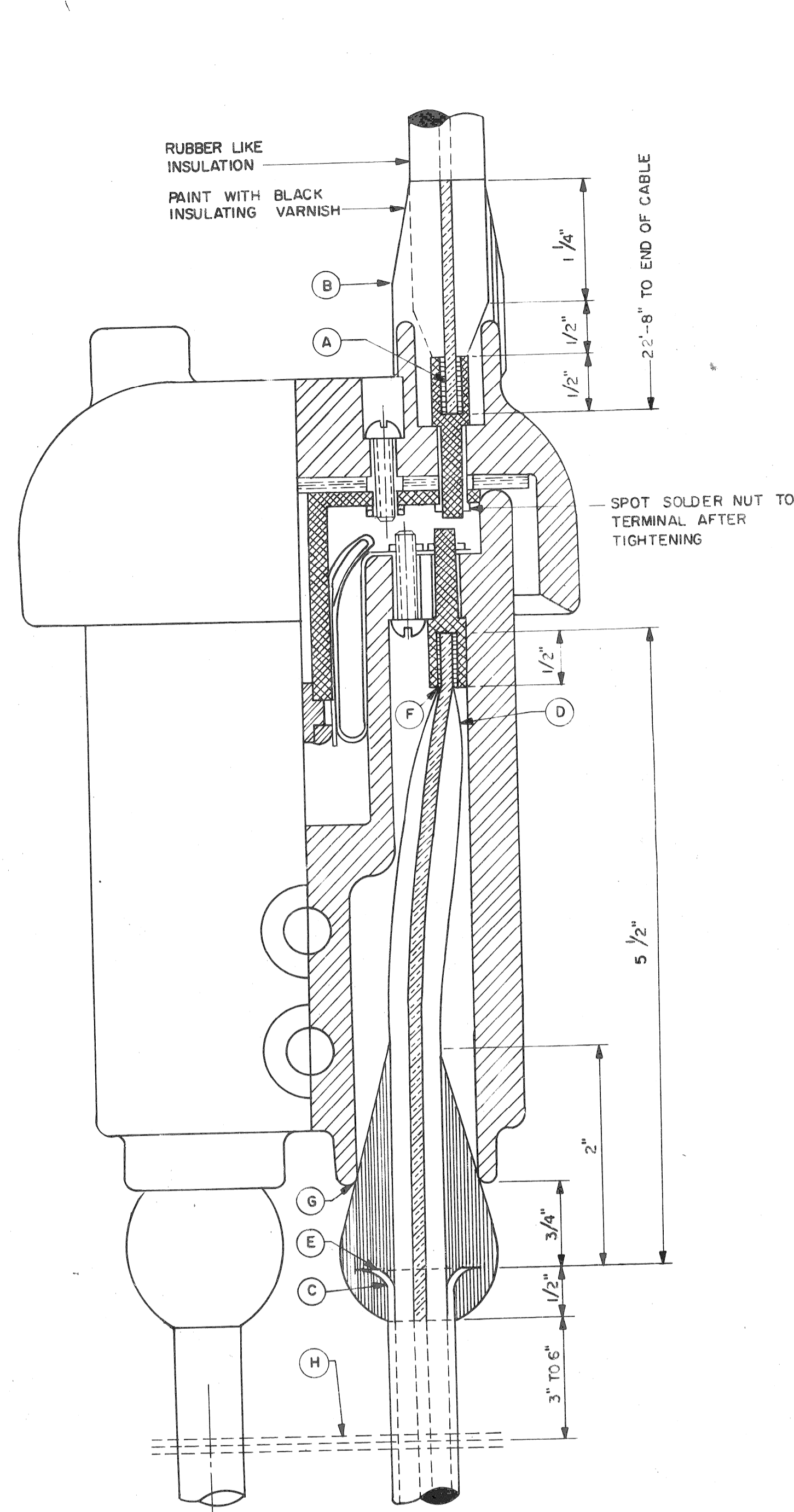
JOHN LODGE FWY. W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD
ANCHOR BASE ST. LTG. STD. (CODE 009-00) DETAILS

SHEET 24 OF 36 SHEETS
CONTRACT NO. 15765A
ASSIGNMENT NO.
DATE 4-86

CITY OF DETROIT
CITY ENGINEERING DEPARTMENT

DRAWN BY CEA
CHECKED BY
APPROVED BY
DATE APRIL 1986
PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH 48221
DRAWING NO. 11 OF 23
FILE NO. CEA 1096

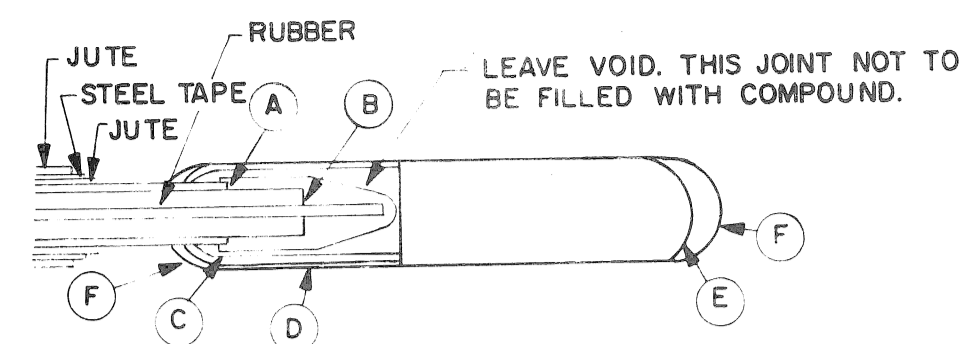
PUBLIC LIGHTING COMMISSION
CITY OF DETROIT
FILE NO. 48-0331
SHEET NO. 11 OF 23
DATE APR. 1986



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.

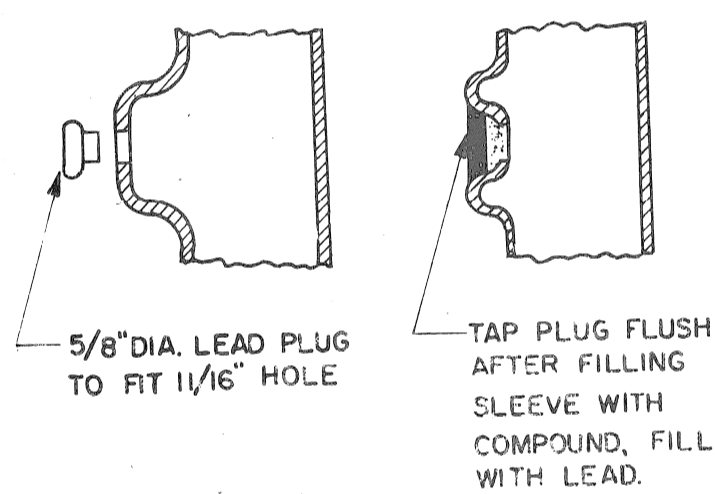
NOTES:
1. FOR PARKWAY CABLE, STRIP JUTE & STEEL TAPE DOWNWARD TO DUCT ENTRANCE.
2. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A LIST OF ALL SPLICING MATERIALS HE PROPOSES TO USE WITH SUPPORTING DATA THAT THE MATERIAL IS SUITABLE FOR THE APPLICATION AS SHOWN ON THE DRAWINGS.



#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 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

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

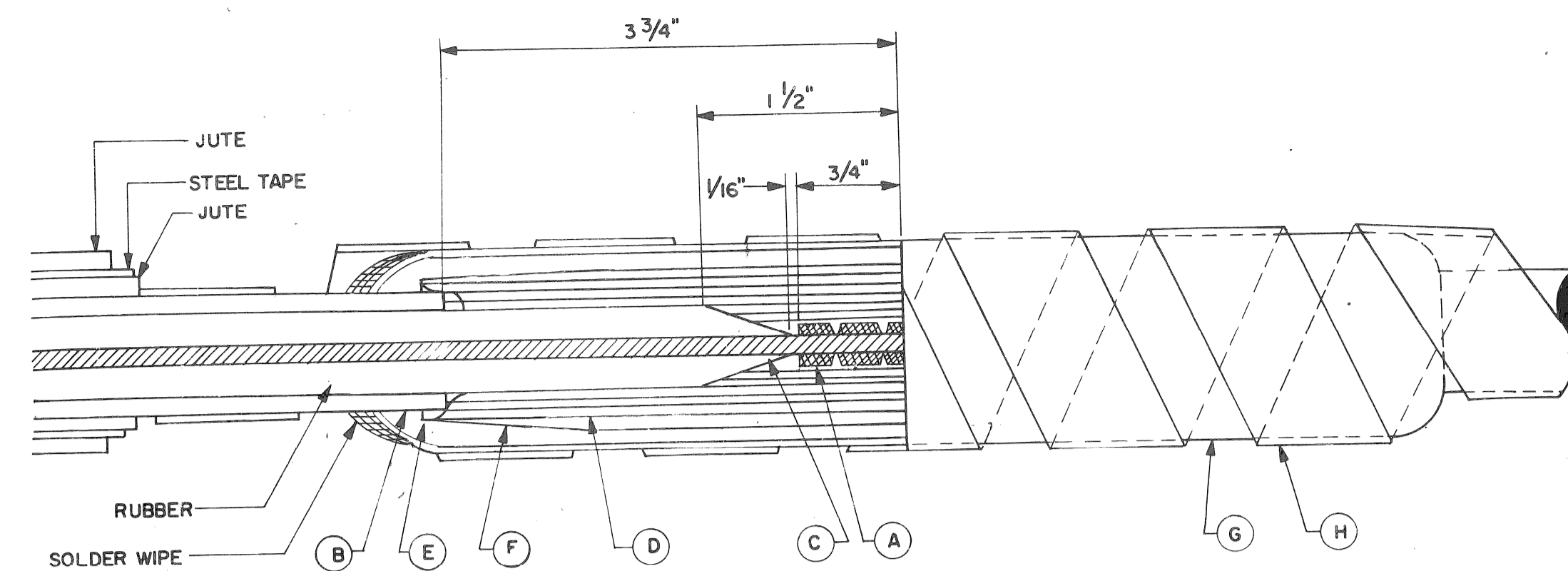
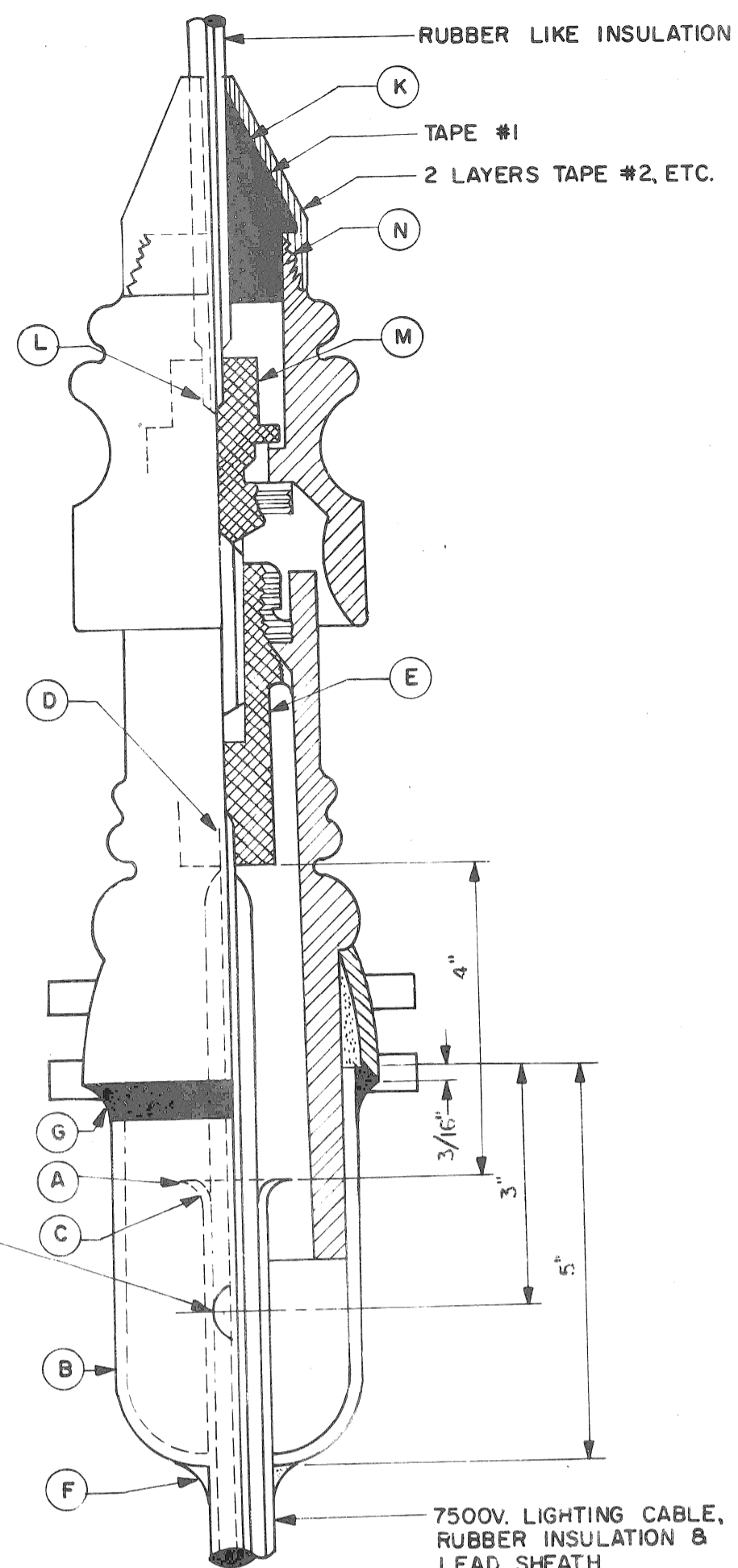


CONNECTIONS FOR 1/2 7500V. POTHEAD
N.T.S.

- 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 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 TAPE #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

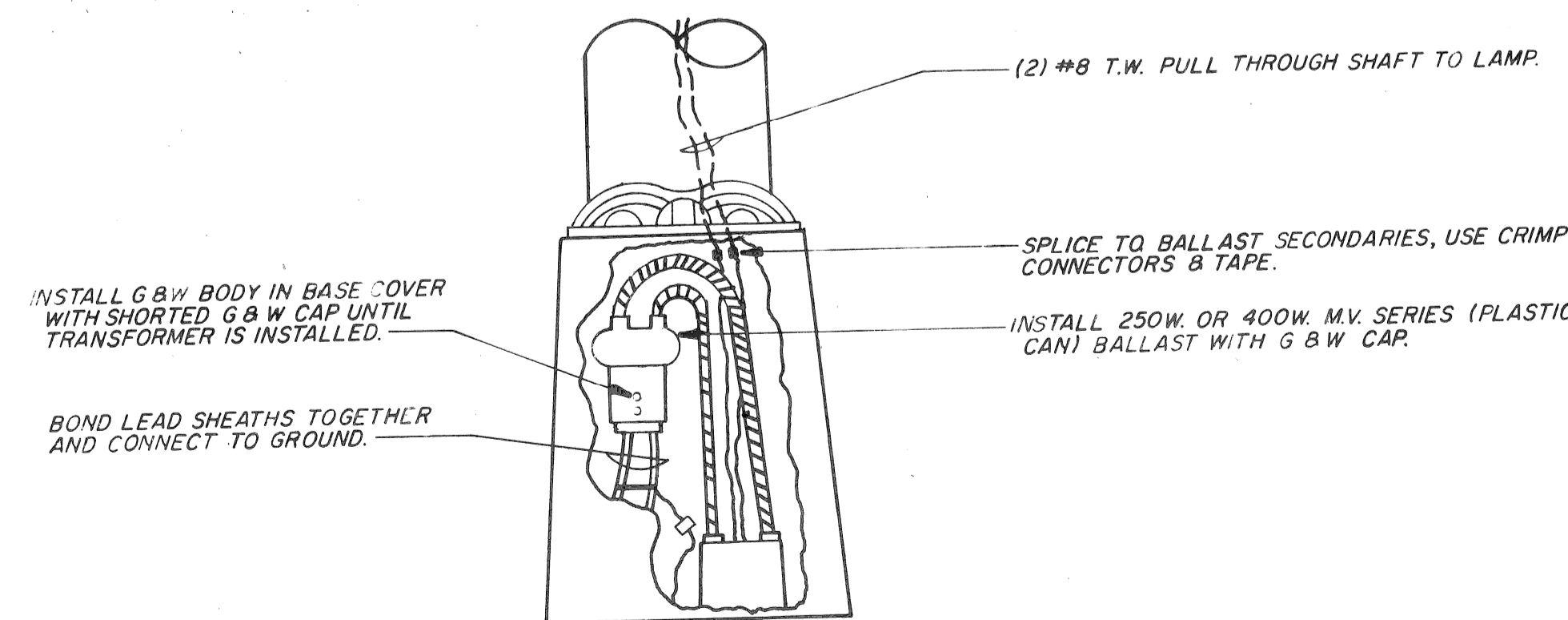


#8 LIGHTING CABLE JOINT
N.T.S.

- A - 1 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 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.
BI.	MTRSE.
BUTZL.	PAL.PK.
CNFLD.	PHILP.
CONNR.	PORTER.
CUSTER.	STINTN.
GRNFD.	STONE.
HUDSN.	TRNTY.
J.CAMP.	TRBLY.
JOYRD.	TURNR.
L.A.BEL.	VERNR.
LTHRP.	WALTN.
LUDDN.	WARRN.
MAPLE.	WD.TER.



INCANDESCENT TO MERCURY CONVERSION
N.T.S.

NO.	DATE	DESCRIPTION	CHD BY

JOHN LODGE FWY. W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD
RUBBER INSULATED LEAD SHEATHED CABLE SPLICE & CONNECTIONS DETAILS

SHEET 25 OF 36 SHEETS
CONTRACT NO. 15765A
ASSIGNMENT NO.
DATE 4 - 86

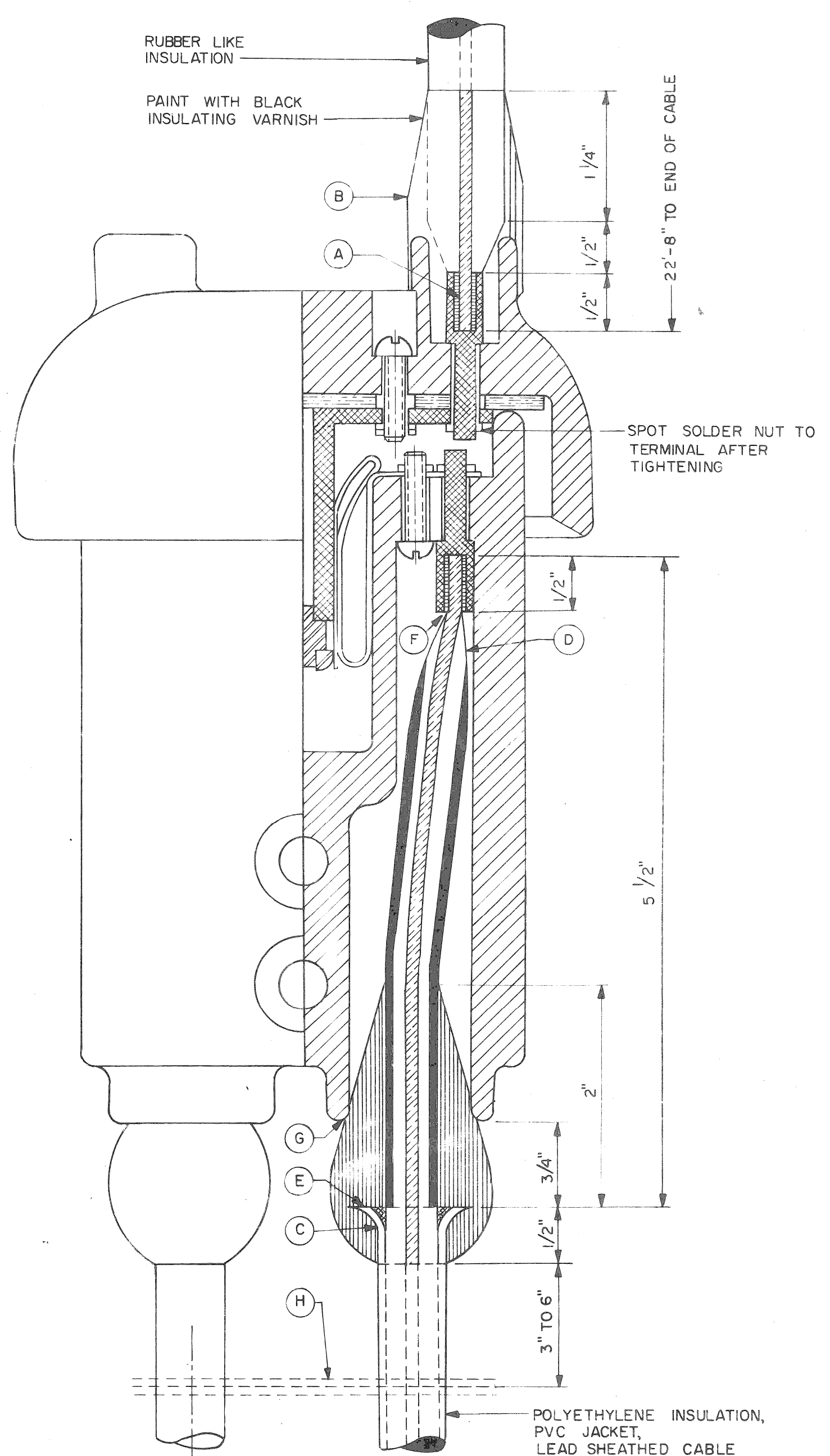
CITY OF DETROIT
CITY ENGINEERING DEPARTMENT

DRAWN BY CEA	PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
CHECKED BY	16580 WYOMING DETROIT, MICH. 48221
APPROVED BY	FILE NO. CEA 1096
DATE APRIL 1985	DRWG. NO. 12 OF 23

CHECKED BY
APPROVED BY

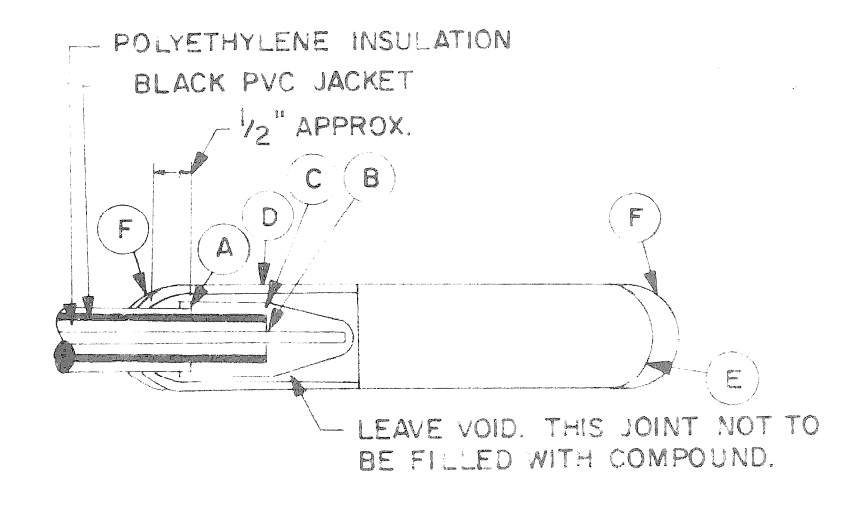
PUBLIC LIGHTING COMMISSION
CITY OF DETROIT

FILE NO. 48-0331
SHEET NO. 25 OF 36
DATE



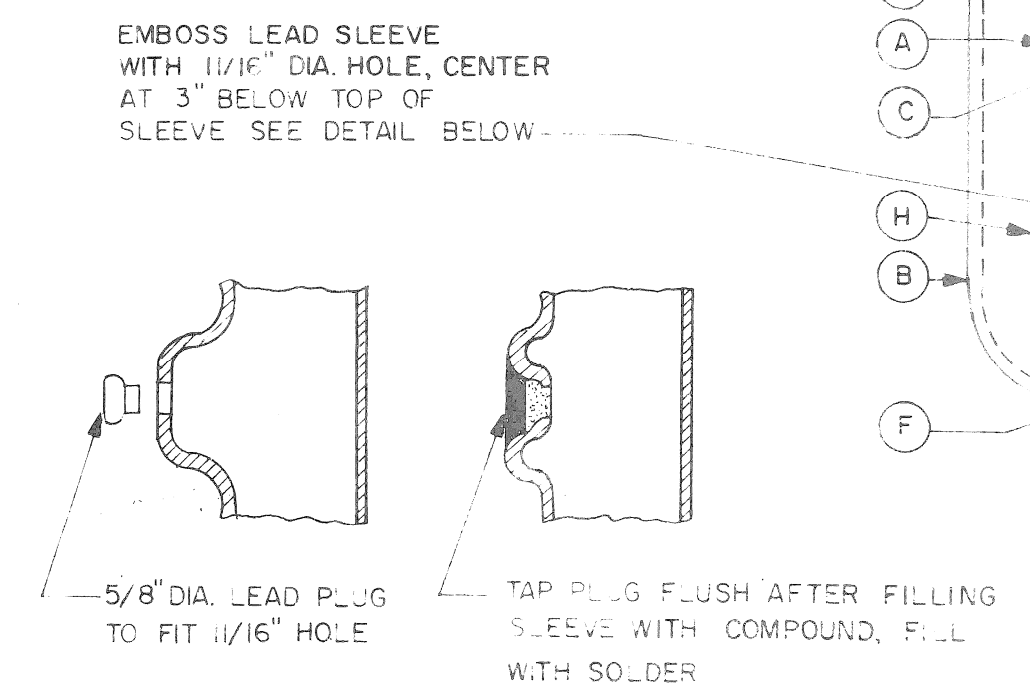
CONNECTION FOR SERIES CUTOUT
N.T.S.

- 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.
- H- #8 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 #3 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 CLOSE FIT.
- F- CADMIUM ALLOY WIPING METAL. DO NOT POUR METAL FOR WIPE. USE TORCH & FINGER WIPE WITH MINIMUM OF HEAT.



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

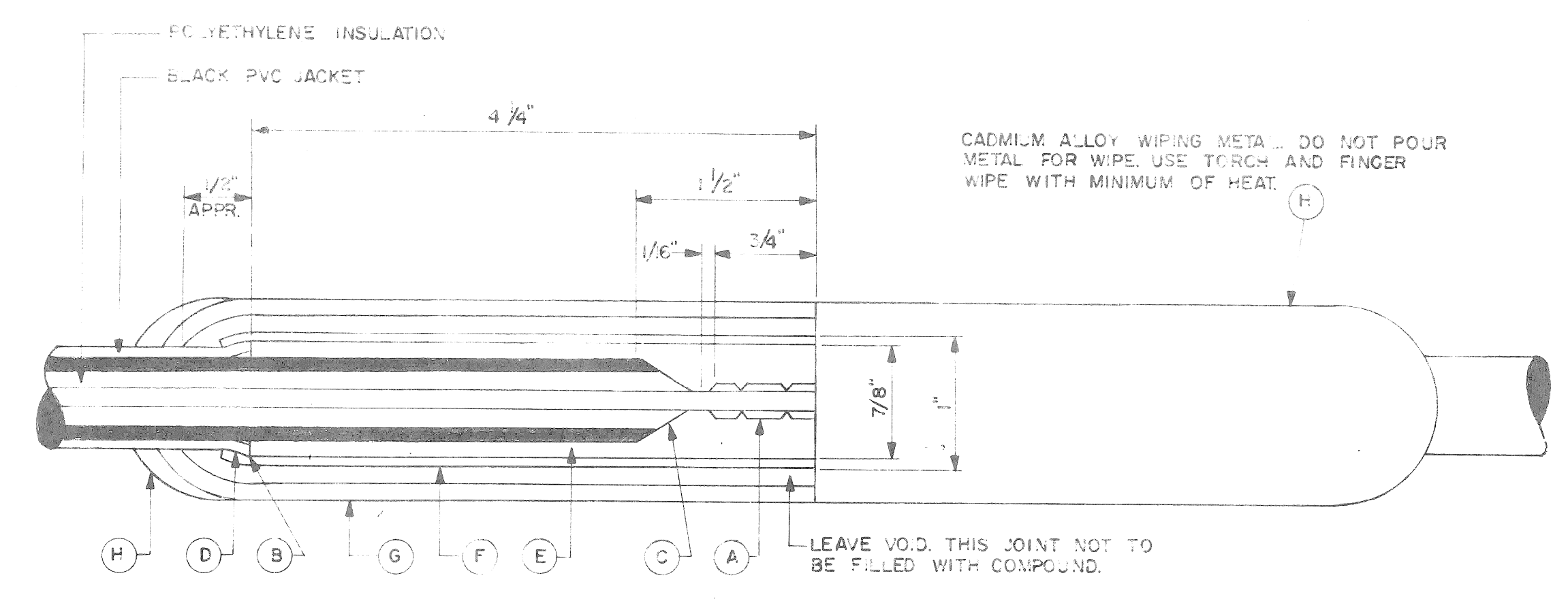
- A- USE TUBE CUTTER TO SCORE LEAD SHEATH AND CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING. 4" OF INSULATION TO REMAIN, NOT INCLUDING BARED CONDUCTOR.
- B- FORM BOTTOM OF EMBOSSED LEAD SLEEVE & SLIP OVER CABLE WIRE IN FULL.
- C- BELL LEAD SHEATH.
- D- SWEAT CONDUCTOR INTO TERMINAL & PENCIL INSULATION SMOOTHLY FOR 2 1/2"
- 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 POTHEAD ARM.
- K- SLIP THE DRIVE SHAPED RUBBER BUSHING ON THE INSULATED CABLE WIRE.
- L- SWEAT CONDUCTOR INTO TERMINAL & 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 'A' 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. FILLING COMPOUND: APPROVED COMPOUND. ADHESIVE: APPROVED ADHESIVE. 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.

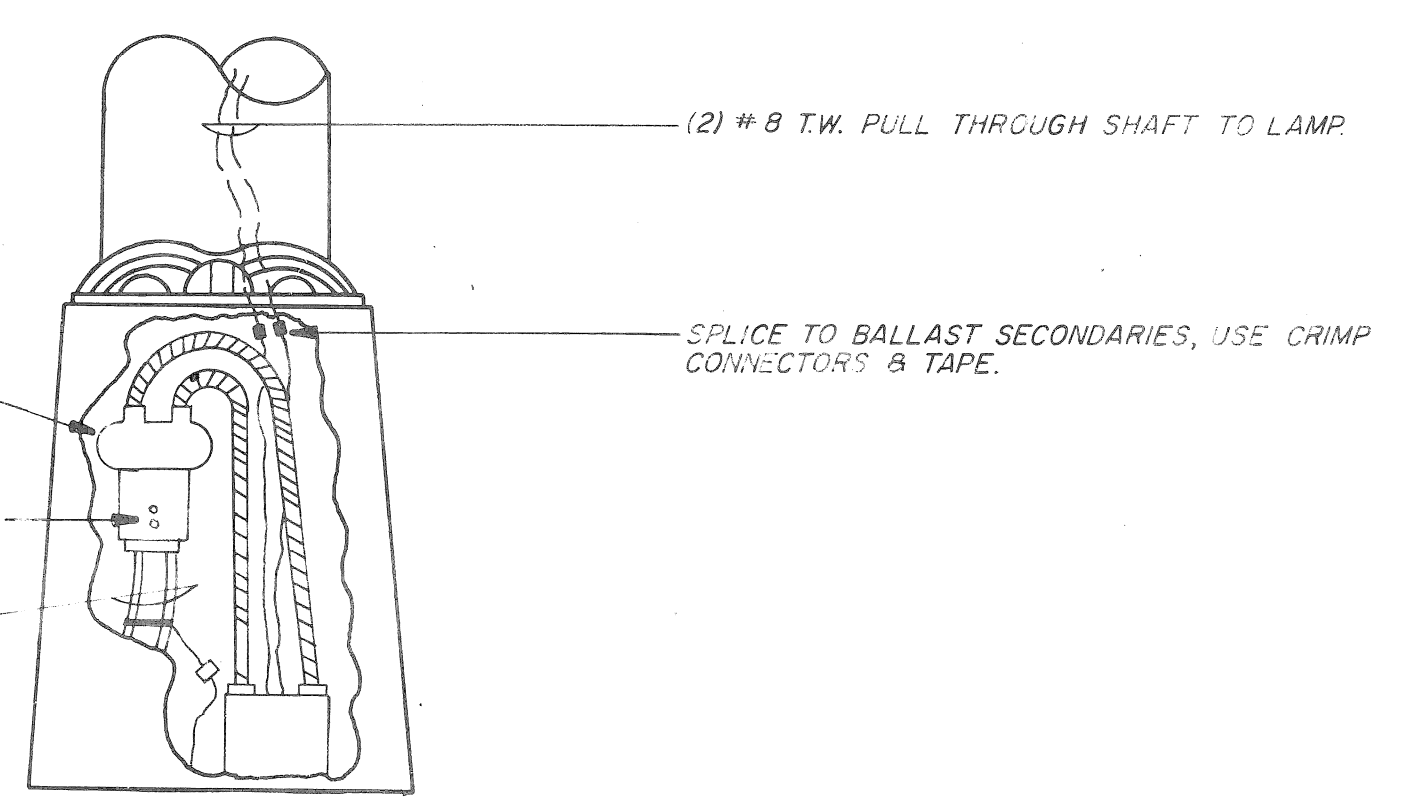


#8 LIGHTING CABLE JOINT
N.T.S.

- A- 1 1/2" #8 TINNED COPPER SLEEVE, 2 CIRCUMFERENTIAL CRAMPS 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 4 DIA. 1/2" OVERLAP BELLED SHEATH WITH TAPE APPROX. 1/4".
- F- 2 LAYERS OF TAPE #3 APPLIED HALF LAP.
- G- LEAD SLEEVE 10" LONG, 1/8" WALL, 1 1/4" INSIDE DIAMETER.
- H- SPECIAL LOW TEMPERATURE CADMIUM ALLOY WIPING METAL.

SUBSTATION NAMES ON IDENTIFICATION TAGS SHALL BE SPELLED AS FOLLOWS

ATWTR.	MCRDY.
BL	MTRSE.
RUTZL.	PAL PK.
CNFLD.	PHILP.
CONNR.	PORTER.
CLSTER.	STNTN.
GRNFD.	STONE.
HUDSA.	TRNTY.
J. CAMP.	TRBLY.
JCA RD.	TURNR.
LA. BEL.	VERNR.
LTHRP.	WALTN.
LUDDN.	WARRN.
MAPLE.	WD. TER.



INCANDESCENT TO MERCURY CONVERSION
N.T.S.

DATE	DESCRIPTION	DRAWN BY

22
JOHN LODGE FWY. W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD
 POLYETHYLENE INSULATED, POLYVINYLCHLORIDE JACKETED, LEAD SHEATHED CABLE CONNECTION SPECIFICATIONS
 DETAILS

SHEET 26 OF 36 SHEETS
CONTRACT NO. 15765A
ASSIGNMENT NO.
DATE 4-86

CITY OF DETROIT
 CITY ENGINEERING DEPARTMENT

DRAWN BY CEA
CHECKED BY Ep
APPROVED BY [Signature]
DATE APRIL 1986

PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
 16580 WYOMING DETROIT, MICH. 48221
 DRWS. NO. 13 OF 23 FILE NO. CEA 1096

PUBLIC LIGHTING COMMISSION CITY OF DETROIT	FILE NO. 48-0331 SHEET NO. 13 OF 23 DATE APR. 1986
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USE	VOLT RATING	ITEM NO.	CONDUCTOR	SYNTHETIC RUBBER	IMPREG-NATED PAPER	POLYETHYLENE	POLYVINYL-CHLORIDE	SHIELD OVER INSULATED CONDUCTOR	TAPE OVER INSULATED CONDUCTORS/PAPER BELT	IMPREG-NATED PAPER BELT	JACKET	LEAD SHEATH	COVERING OVER LEAD	STEEL TAPE ARMOR	COVERING OVER STEEL TAPE	COVERING OVER CONDUCTOR	
OVERHEAD LINE WIRE	—	1	#2-#6 AWG H.D. UNCOATED SOLID COPPER A.S.T.M. B1													0.047 INCH BLACK POLYETHYLENE	
		2	#4-10 #2/0 AWG M.H.D. UNCOATED 7/STR COPPER A.S.T.M. B2, B8														0.063 INCH RED PENE
		3	#6 AWG, H.D., UNCOATED SOLID COPPER A.S.T.M. B1														0.032 INCH BLACK POLYETHYLENE
		4	#2 AWG, H.D., UNCOATED SOLID COPPER A.S.T.M. B1														0.047 INCH BLACK POLYETHYLENE
		5	#4/0 - #1/2 AWG M.H.D. UNCOATED 7/STR COPPER A.S.T.M. B2, B8														0.063 INCH BLACK POLYETHYLENE

ALL MULTIPLE STREET LIGHTING, TRAFFIC SIGNAL SECONDARY AND SPECIAL EVENT CABLES INSTALLED IN CONDUIT SHALL BE AS PER THE FOLLOWING: CONDUCTORS COATED, STRANDED COPPER CONDUCTOR PER ASTM B-8 AND B-189, INSULATION MEETS OR EXCEEDS ALL REQUIREMENTS OF INTERIM STANDARD #1 TO IPCEA S-68-516 NEMA WC 8 (MARCH 1971) FOR ETHYLENE PROPYLENE RUBBER INSULATION AND ASTM D 2802-70 AND UL STANDARD 44. JACKET: EXCEEDS ALL REQUIREMENTS OF IPCEA S-19-81, (5TH EDITION) SECTION 4.3.8a FOR HEAVY DUTY CHLOROSULFONATED-POLYETHYLENE LISTED BY UNDERWRITERS LABORATORIES, INC. AS TYPE RHH OR RHW.

COLOR CODED AS FOLLOWS:
RED - A CIRCUIT
BLACK - B CIRCUIT
WHITE - NEUTRAL

NOTE: PRIOR TO PLACING ORDER FOR PURCHASE OF THIS CABLE, A SAMPLE LENGTH OF CABLE MUST FIRST BE SUBMITTED TO P.L.D. FOR THEIR APPROVAL OF INSULATION AND JACKET CHARACTERISTICS.

SPECIAL EVENT FEEDER,	2000 V.	6														
MULT. ST. LTG.	2500 V.	7														
TRAFFIC SIG. SECONDARY	2000 V.	8														
RECEPTACLE, BRACKET & LAMP POST WIRE	600 V.	9	#6 AWG, H.D. UNCOATED 7/STR COPPER A.S.T.M. B8			0.062 INCH 70% BLACK OR WHITE AS REQ'D. UNIMPRINTED										
2/0 AERIAL SERVICE	600 V.	10	2/0 #8 AWG, UNCOATED 7/STR COPPER A.S.T.M. B8			0.062 INCH 60% BLACK, 40% WHITE CONSTRUCTION										
DISTRIBUTION CABLES	5000 V. BELTED	11	3/0 350 MCM UNCOATED COPPER A.E.C.													
	500 V. BELTED	12	3/0 #2 AWG, UNCOATED COPPER A.E.C.													
	5000 V. BELTED	13	3/0 #2 AWG, UNCOATED COPPER A.E.C.													
	7000 V. BELTED	14	3/0 350 MCM UNCOATED COPPER A.E.C.													
	7000 V. BELTED	15	3/0 #2 AWG, UNCOATED COPPER A.E.C.													
SERIES ST. LTG. CABLE, IN DUCT	7500 V.	16	3/0 350 MCM UNCOATED COPPER A.S.T.M. B3			0.047 INCH 60% BLACK CONDUCTOR										
SERIES ST. LTG. CABLE DIRECT BURIAL	7500 V.	17	1/2 #8 AWG, UNCOATED COPPER A.S.T.M. B3			0.084 INCH 60% BLACK CONDUCTOR										
TRANSMISSION CABLES	24000 V. SHIELDED	19	3/0 500 MCM UNCOATED COPPER A.E.C.													
	24000 V. SHIELDED	20	3/0 350 MCM UNCOATED COPPER A.E.C.													
	24000 V. SHIELDED	21	3/0 350 MCM UNCOATED COPPER A.E.C.													
MULTI-CONDUCTOR SIGNAL CABLE, IN DUCT	—	22	#14 AWG, UNCOATED COPPER, NO. OF CONDUCTORS AS REQ'D. A.S.T.M. B3													
MULTI-CONDUCTOR SIGNAL CABLE, AERIAL	—	23	#14 AWG, UNCOATED COPPER, NO. OF CONDUCTORS AS REQ'D. A.S.T.M. B3													
8/0 SERIALIZED ST. LTG. IN DUCT	7500 V.	24	8/0 #8 AWG, TANNED COPPER A.S.T.M. B 2, 3													
OVERHEAD FLEXIBLE TRAINER WIRE (UNSHIELDED)	—	25	1/2 #2 AWG & LARGER SOFT CLASS 6 OR H STRANDING TINNED COPPER A.S.T.M. B17, 3													

ACCORDING TO SPECIFICATIONS

* BINDER TAPE OVER SHIELDED INSULATED CONDUCTORS AND FILLERS TO BE COPPER OR BRONZE TAPE INTERLACED WITH PAPER TAPE OR METALLIZED PAPER TAPE.

* CARBON BLACK PAPER TAPE OVER CONDUCTOR

* * * * *

SPECIAL CONSTRUCTION

0.063 INCH OF 30% HEAVY RUBBER AND ONE LAYER OF LARDED FILLED COTTON TAPE OVER EACH CONDUCTOR CENTRAL CONDUCTOR FOR UNFINISHED LAMINAR TAPE REMAINS TO CONDUCTORS EACH WHITE PAPER FOR IDENTIFICATION ALL CONDUCTORS LABEL WITH AFFIXED JUTE (OUTSIDE FILLER). 0.094 INCH BELT OF OIL SATURATED PAPER OVERALL 0.112 INCH COPPER BEARING LEAD BENEATH OVERALL.

SEMI-CONDUCTING COTTON TAPE OVER CONDUCTORS & OVERLAPING RESISTING BOTTLE

0.062 INCH GENERAL HEAVY DUTY BLACK POLYETHYLENE NEOPRENE

JOHN LODGE FWY. W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD
CABLE & WIRE SPECIFICATIONS, DETAILS

SHEET 28 OF 36 SHEETS
CONTRACT NO. 15765 A
ASSIGNMENT NO.
DATE 4 - 86

CITY OF DETROIT
CITY ENGINEERING DEPARTMENT

PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH. 48221
APRIL 1986 15 OF 23 CEA 1096

PUBLIC LIGHTING COMMISSION
CITY OF DETROIT
48-0331
15 OF 23
APR. 1986

1 DISTRIBUTION AND TRANSMISSION CABLES

ALL TRANSMISSION CABLES, (24 KV, 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, (7.5 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 1.

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, #8AWG, STREET LIGHTING CABLE, 7500 V.

THIS IS A SPECIAL CONSTRUCTION AND SHALL BE MADE STRICTLY IN ACCORDANCE WITH THE DESCRIPTION IN TABLE 1.

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 1, AND APPLICABLE REFERENCE SPECIFICATIONS SHOWN BELOW:

INSULATIONS

THE MINIMUM INSULATION THICKNESS OF ANY OF THESE CABLES SHALL BE LESS THAN 90% OF THE NOMINAL THICKNESS SHOWN ON TABLE 1.
 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, PURE COPPER WIRE ASTM B2
 MEDIUM HARD DRAWN COPPER WIRE ASTM B2
 HARD DRAWN COPPER WIRE ASTM B1
 CONCENTRIC-LAY-STRAINED COPPER CONDUCTORS, HARD, MEDIUM HARD OR SOFT, COATED OR UNCOATED, AS REQUIRED. ASTM B8
 PIPE-LAY-STRAINED, SOFT, COPPER CONDUCTORS, COATED OR UNCOATED, AS REQUIRED. ASTM B73
 SOFT, SOLID COPPER CONDUCTORS, TINNED. ASTM B33
 SOFT, SOLID COPPER CONDUCTORS, LEAD OR LEAD ALLOY COATED. ASTM B189

		POLYVINYL-CHLORIDE 60°C	POLYVINYL-CHLORIDE 75°C	HIGH MOLECULAR WEIGHT NATURAL POLYETHYLENE	SYNTHETIC RUBBER 75°C HEAT & MOISTURE RESISTANT	OZONE RESISTING BUTYL RUBBER
ORIGINAL	TENSILE STRENGTH PSI	2500, 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.	250, 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 -5±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 IFLCA 5-61-402	SECT. 6.5 IFLCA 5-61-402	—	—	—
ACCELERATED WATER ABSORPTION REQUIREMENT	ELECTRIC METHOD	DIELECTRIC CONSTANT, DAY	10, MAX.	10, MAX.	—	5, MAX.
		% CAPACITANCE INCREASE	1-14 DAYS-11, MAX. 7-14 DAYS-5, MAX.	1-14 DAYS-4, MAX. 7-14 DAYS-2, MAX.	—	1-4 DAYS-11, MAX. 7-14 DAYS-4, MAX.
	OR GRAVIMETRIC METHOD	TEMP.	50±1°C	75±1°C	—	75±1°C
		20 MILLIGRAMS PER SQ. INCH, MAX.	10 MILLIGRAMS PER SQ. INCH, MAX.	—	20 MILLIGRAMS PER SQ. INCH, MAX.	15 MILLIGRAMS PER SQ. INCH, MAX.
TEST IN ACCORDANCE WITH LATEST REVISION OF		IPCEA S-61-402 (EXCEPTIONS ARE NOTED ABOVE)	—	IPCEA S-61-402	IPCEA S-7-11 (EXCEPTIONS ARE NOTED ABOVE)	IPCEA S-19-81

FOR #6 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.

JACKETS

THE MINIMUM JACKET THICKNESS SHALL NOT BE LESS THAN 80% OF THE NOMINAL THICKNESS SHOWN IN TABLE 1.

		NEOPRENE BLACK, HEAVY DUTY	NEOPRENE BLACK GENERAL PURPOSE	POLYVINYL-CHLORIDE, BLACK	HEAT & LIGHT STABILIZED BLACK POLYETHYLENE COVER OVER LEAD SHEATH
ORIGINAL	TENSILE STRENGTH PSI	1800, MIN.	1500, MIN.	1000, MIN.	1400, MIN.
	ELONGATION AT RUPTURE, %	200, MIN. 6 3/8" MAX. SET	250, MIN. 8 3/4" MAX. SET	100, MIN.	350, MIN.
AIR OVEN TEST TIME & TEMP. AS NOTED	TENSILE STRENGTH % OF ORIGINAL	—	—	80, 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-19-8	—	IPCEA S-61-402	IPCEA 111 FROM REVISION #1, PUB. 1-54-401 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 RIF 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 A.C. 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) ONE TEST PER ORDER OR
8. DIELECTRIC POWER TEST) THERE IS A QUANTITY LIMITATION OF
9. POWER FACTOR TEST) 25,000 FT. ON THESE TESTS PER A.C.
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-B 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. FOLD-BENDING AND LONG-TIME DIELECTRIC STRENGTH TEST.
 - g. CAPACITANCE AND POWER FACTOR TEST.
 - h. STONE 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 IPCEAS-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 = 90 nf 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 (d) 600 V.						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 33), NUMBER OF PAIRS AS REQUIRED	0.025 IN. CLASS B POLYETHYLENE (ASTM D 1351)			CORRUGATED, LONGITUDINAL, ANNEALED, (c) 0.004-IN. COPPER	BLACK POLYETHYLENE (ASTM D 2308) THICKNESS IN ACCORDANCE WITH PARAGRAPH 3-9.7.3.7 AND TABLE IV OF FED. SPEC. J.C.III.	
29	IN DUCT 600 V.			12.5 PERCENT MINIMUM LAP, POLYETHYLENE TEREPHTHALATE			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	0.03 IN. CLASS B POLYETHYLENE PLASTICIZED PVC (ASTM D 2219)				COMMERCIAL PURE LEAD, THICKNESS PER ITEMS 22 & 23.	ASPHALTUM-SATURATED JUTE STEEL ARMOR PER ITEMS 17 & 18.

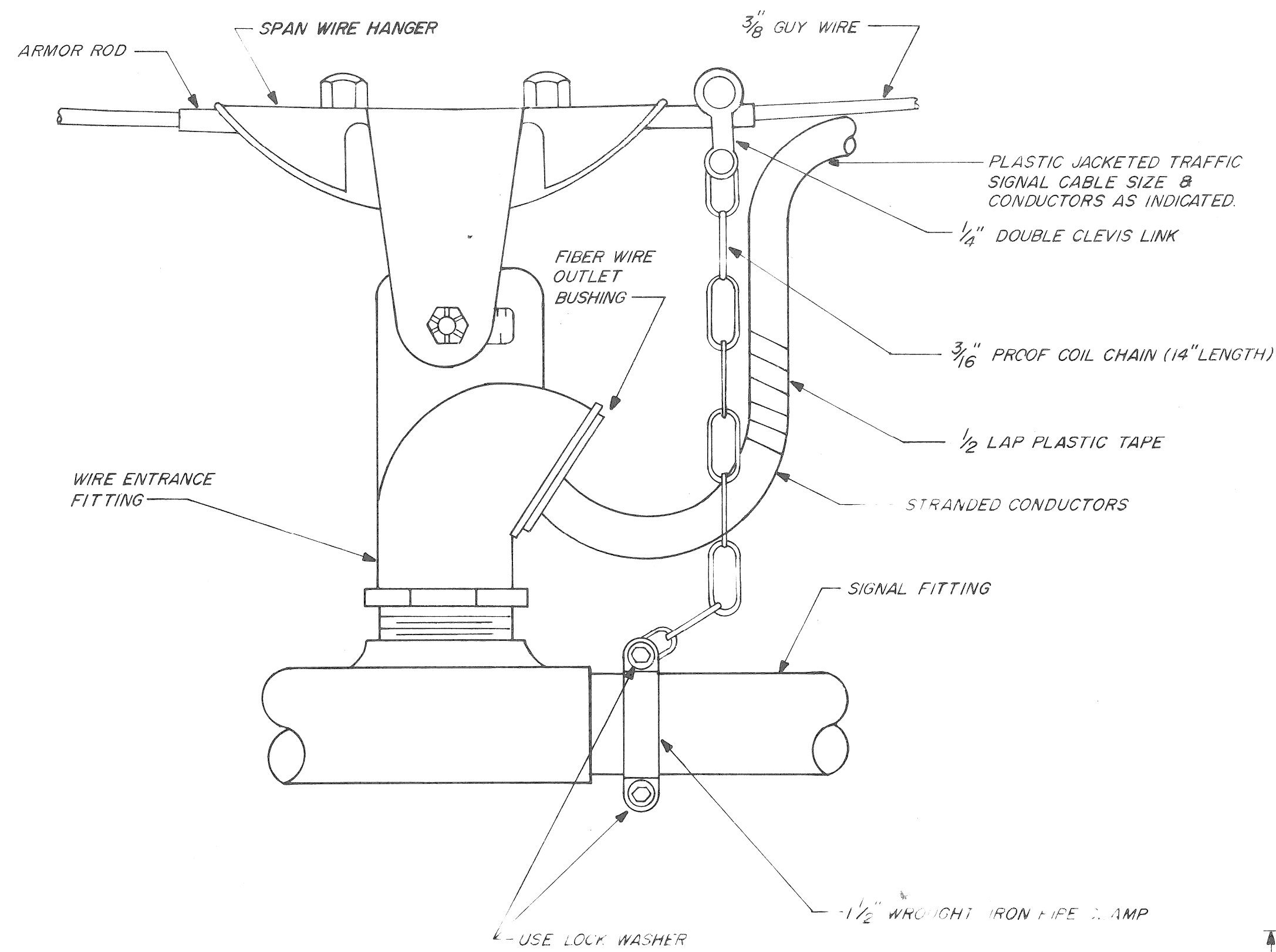
TEST REPORTS

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:

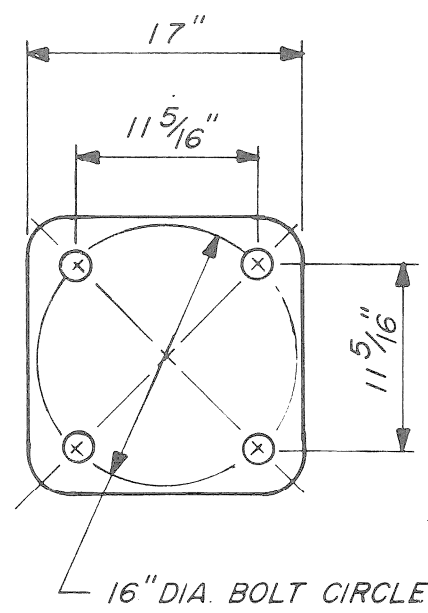
1. CONDUCTOR RESISTANCE OF EACH LENGTH OF EACH CONDUCTOR IN OHMS PER 1000 FT.
2. CERTIFICATION OF MUTUAL CAPACITANCE OF ALL CABLES AND OF NON-INJURIOUS EFFECT OF FLOODING COMPOUND ON ITEM 27.
 - (a) FIGURE B' CONSTRUCTION. MESSENGER SHALL BE 7 STRAND EHS GALVANIZED, CLASS A, 1/4-IN. NOMINAL DIAM. (ASTM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

REVISIONS	DATE	DESCRIPTION	BY	SHEET <u>30</u> OF <u>36</u> SHEETS CONTRACT NO. <u>15765A</u> ASSIGNMENT NO. DATE <u>4-86</u>	CITY OF DETROIT CITY ENGINEERING DEPARTMENT	DRAWN BY	CEA	PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS 16580 WYOMING DETROIT, MICH. 48221	CHECKED BY	gp	PUBLIC LIGHTING COMMISSION CITY OF DETROIT	FILE NO.	48-0331
	APPROVED BY	AS	DATE			APRIL 1986	DRAWING NO.		17 OF 23	SHEET NO.		17 OF 23	
	DATE	APRIL 1986	FILE NO.			CEA 1096	DATE		APR. 1986				

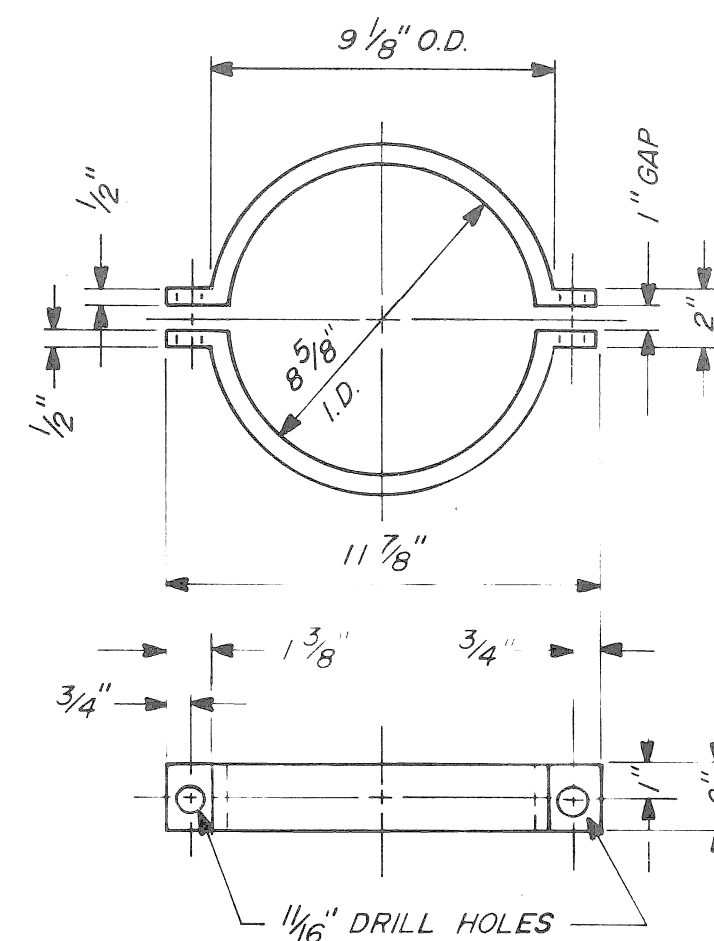
JOHN LODGE FWY. W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD CABLE & WIRE SPECIFICATIONS DETAILS



SPAN WIRE FITTING & WEATHER CAP
N.T.S.

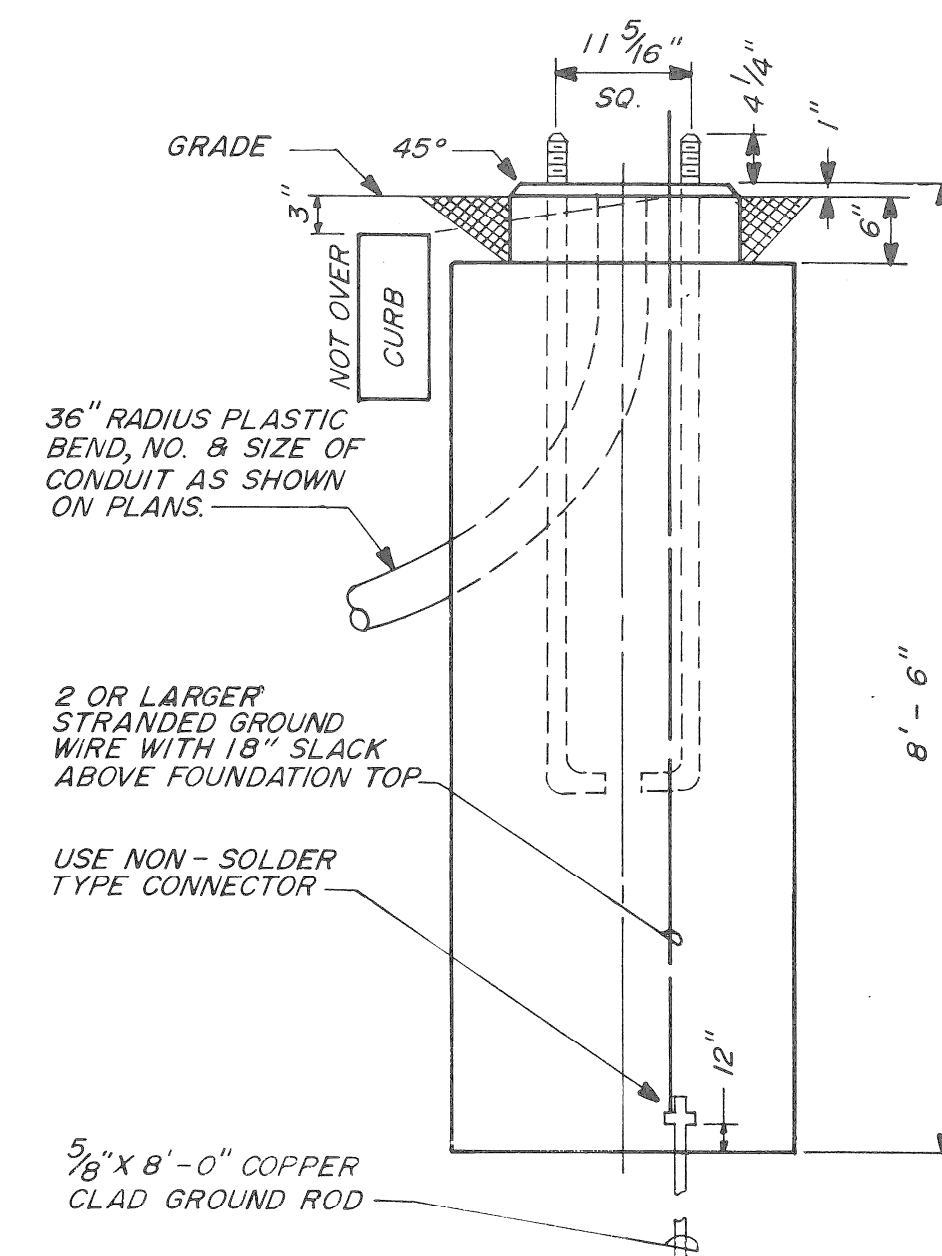
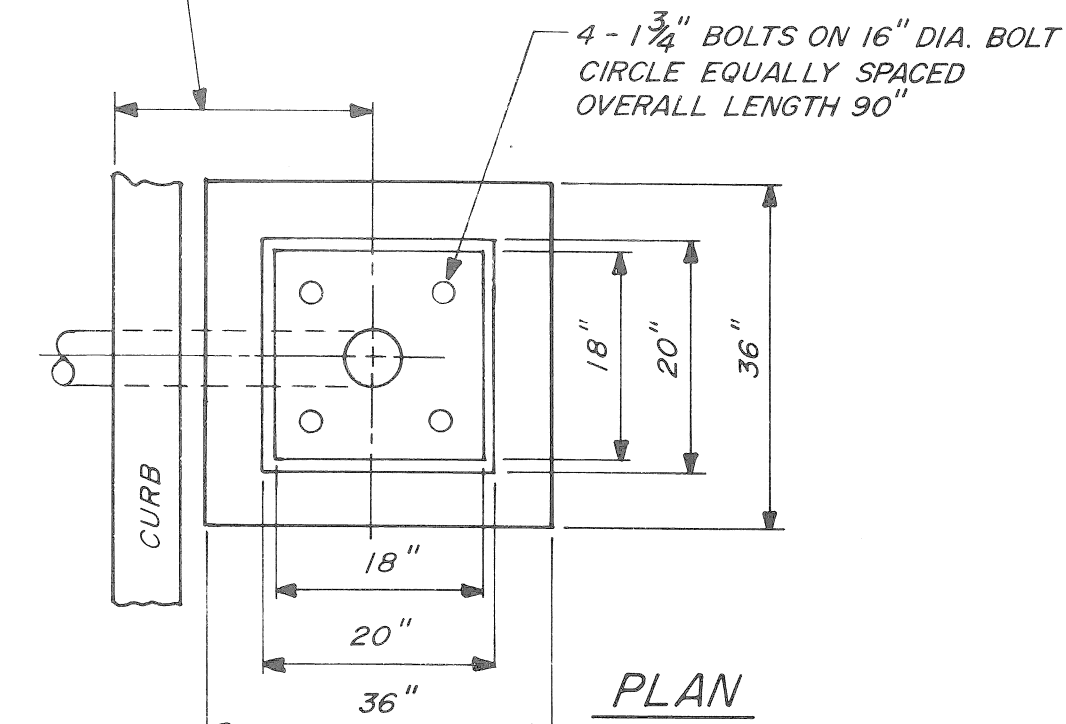


ANCHOR BOLT PLAN
N.T.S.

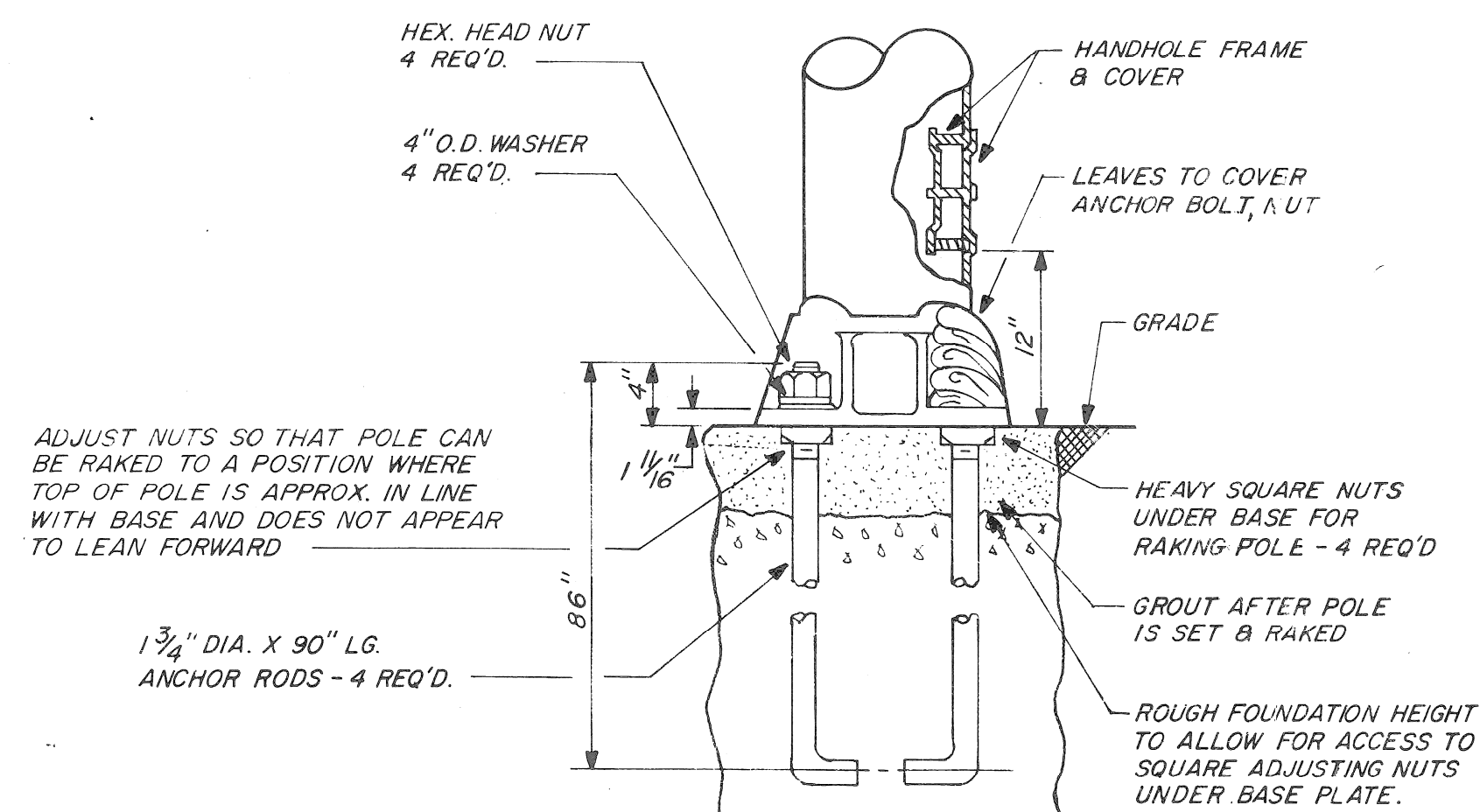


SPAN WIRE CLAMP
N.T.S.
MATERIAL: 1/2" X 2" GALVANIZED STEEL

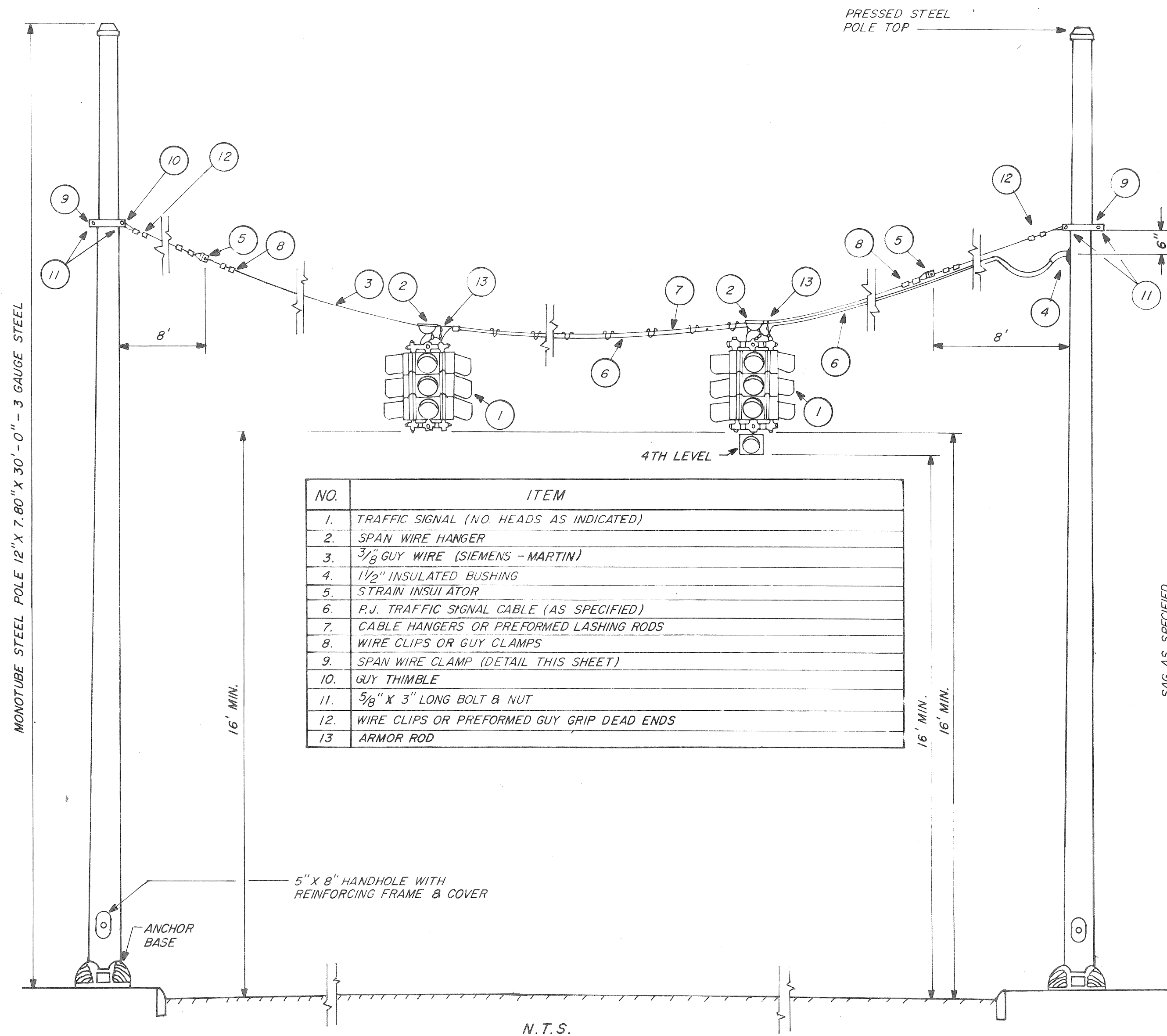
TO BE IN LINE WITH EXISTING OR PROPOSED LAMP POST FOUNDATIONS OR AS OTHERWISE SPECIFIED



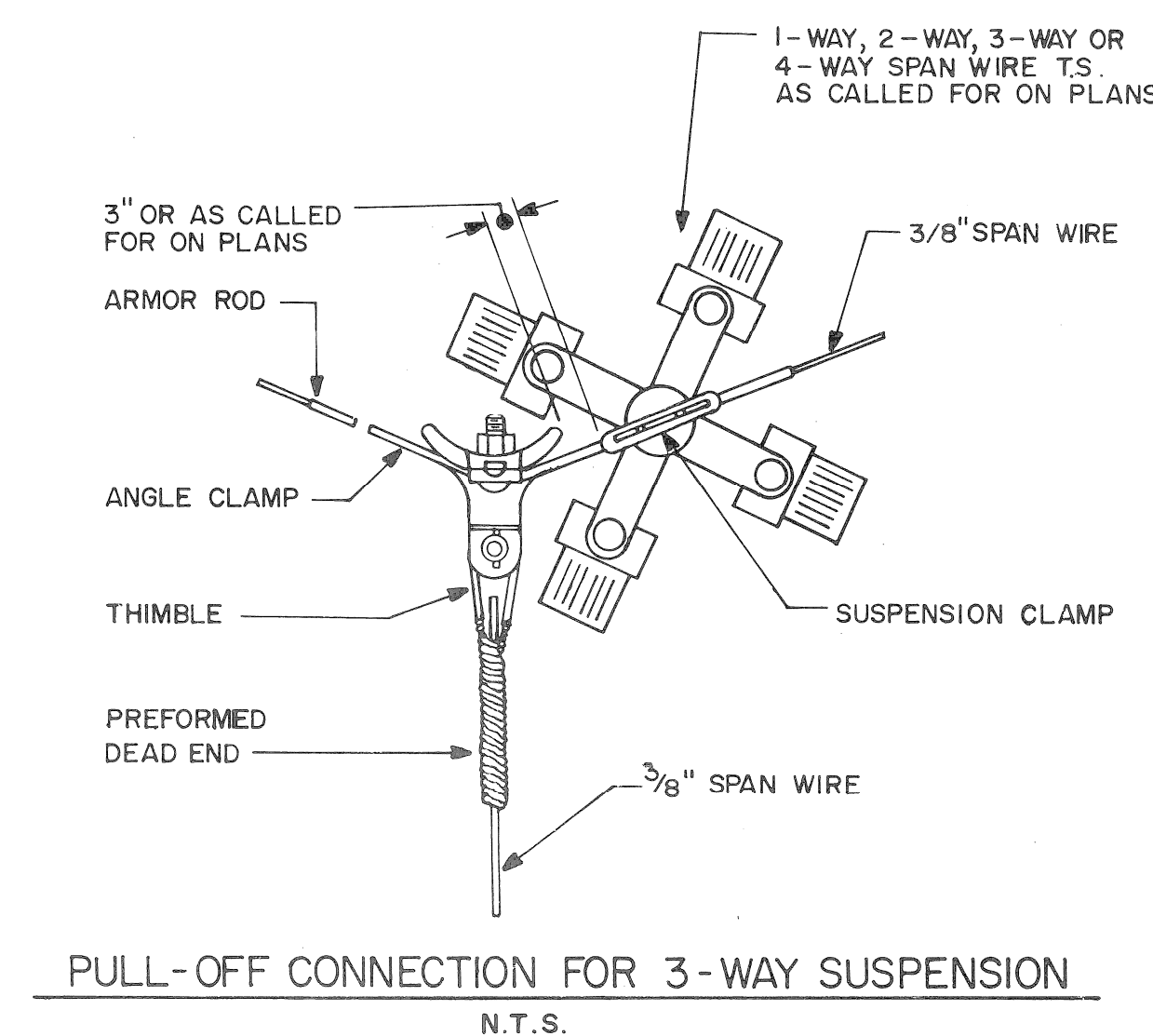
ELEVATION
SPAN WIRE STEEL POLE FOUNDATION
N.T.S.



BOLT LAYOUT FOR SPAN-WIRE FOUNDATION
N.T.S.



NO.	ITEM
1.	TRAFFIC SIGNAL (NO HEADS AS INDICATED)
2.	SPAN WIRE HANGER
3.	3/8" GUY WIRE (SIEMENS - MARTIN)
4.	1 1/2" INSULATED BUSHING
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.	5/8" X 3" LONG BOLT & NUT
12.	WIRE CLIPS OR PREFORMED GUY GRIP DEAD ENDS
13.	ARMOR ROD



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

DATE	DESCRIPTION	CHKL. BY

JOHN LODGE FWY. W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD
STEEL POLE SPAN WIRE INSTALLATION
DETAILS

SHEET 31 OF 36 SHEETS
CONTRACT NO. 15765 A
ASSIGNMENT NO.
DATE 4 - 86

CITY OF DETROIT
CITY ENGINEERING DEPARTMENT

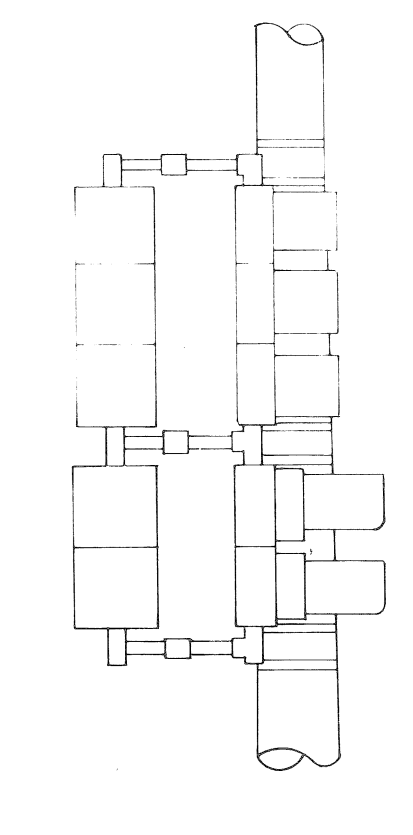
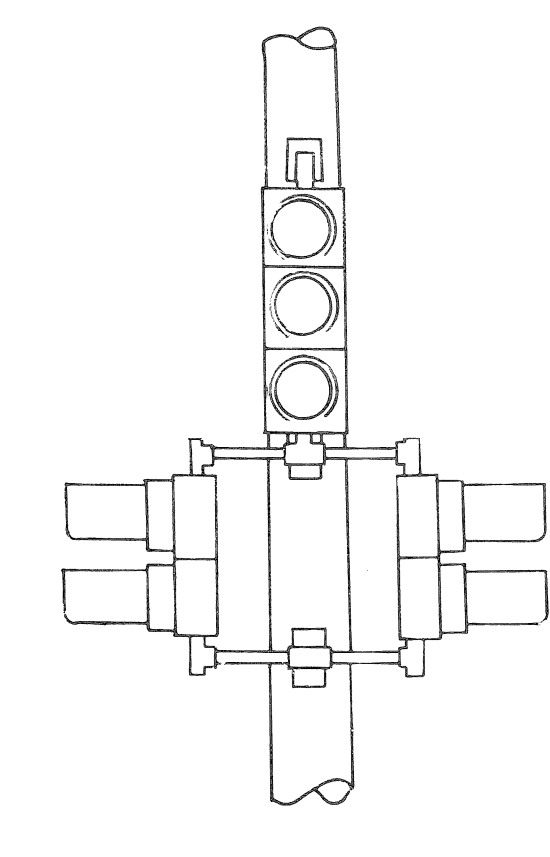
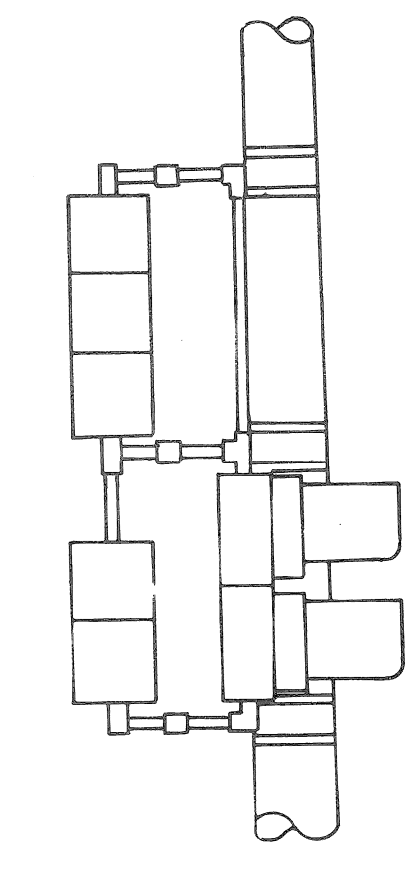
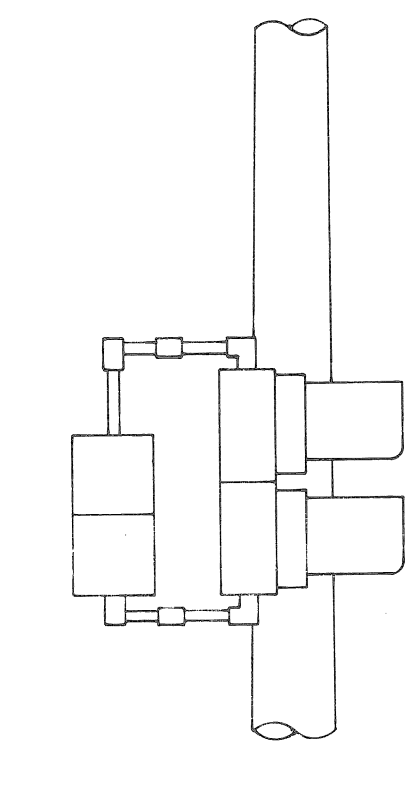
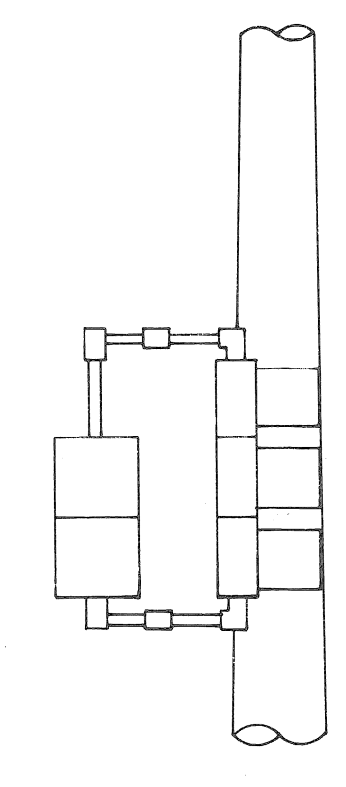
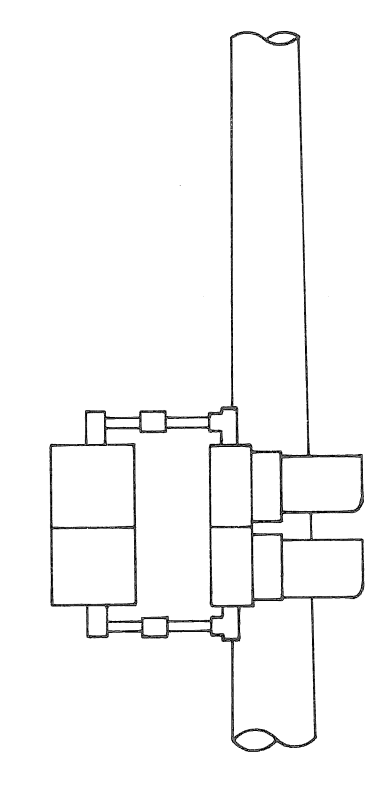
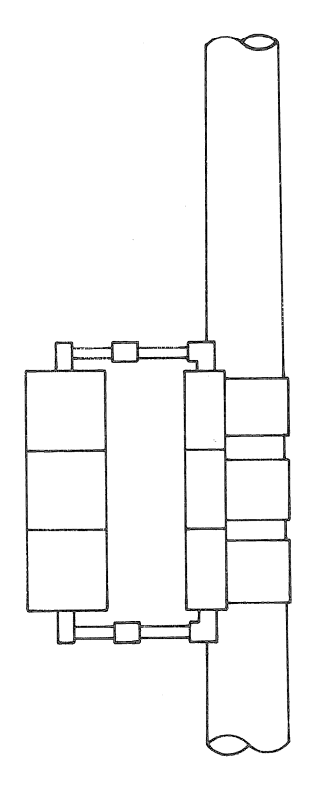
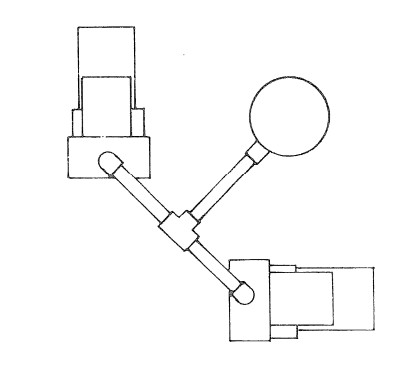
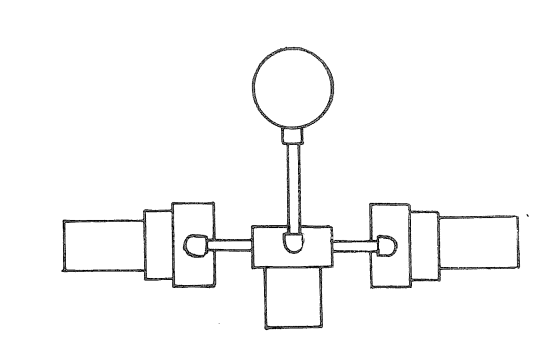
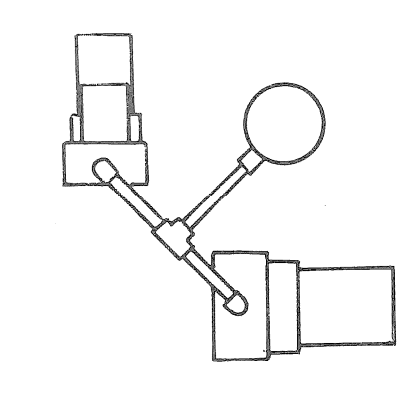
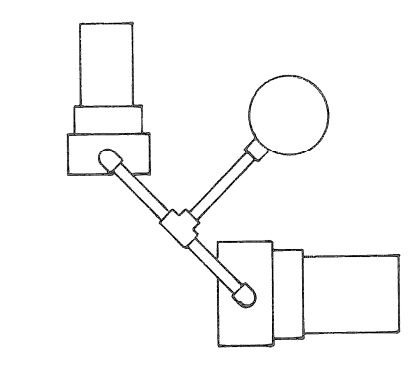
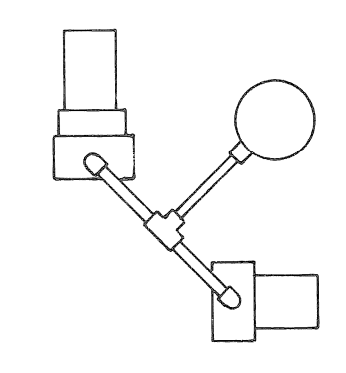
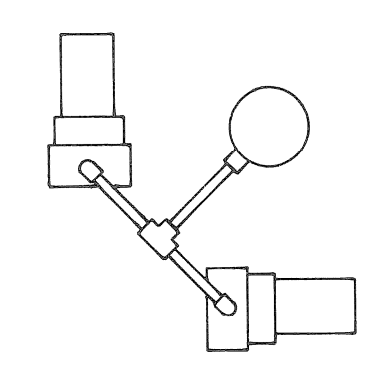
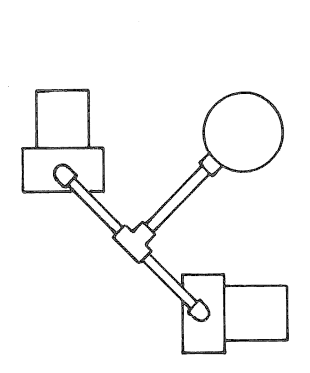
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APPROVED
DATE APRIL 1986

PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH., 48221
DRWG. NO. 18 OF 23
FILE NO. CEA 1096

CHECKED BY
APPROVED

PUBLIC LIGHTING DEPARTMENT
CITY OF DETROIT

507
FILE NO. 48-0331
SHEET NO. 18 OF 23
DATE APR. 1986



DETAIL "A-3"

DETAIL "B-3"

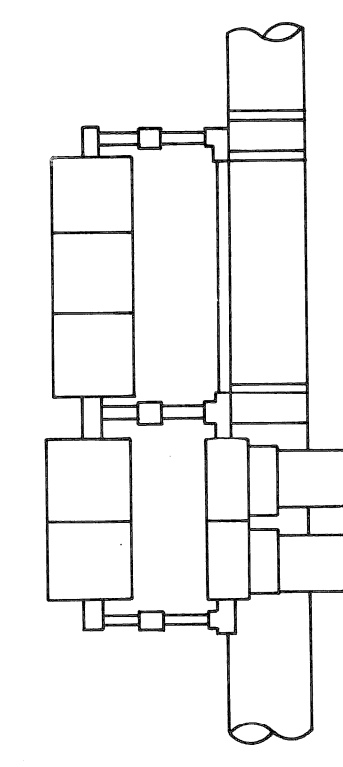
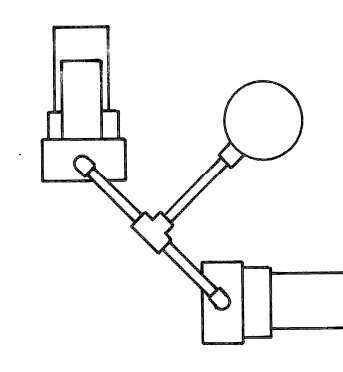
DETAIL "C-3"

DETAIL "D-3"

DETAIL "E-3"

DETAIL "F-3"

DETAIL "G-3"



DETAIL "H-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.

DATE	DESCRIPTION	CHKD BY
		60

JOHN LODGE FWY. W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD
 T.S. BRACKET ARM ASSEMBLY DETAILS

SHEET 34 OF 36 SHEETS
 CONTRACT 15765A
 ASSIGNMENT NO.
 DATE 4 - 86

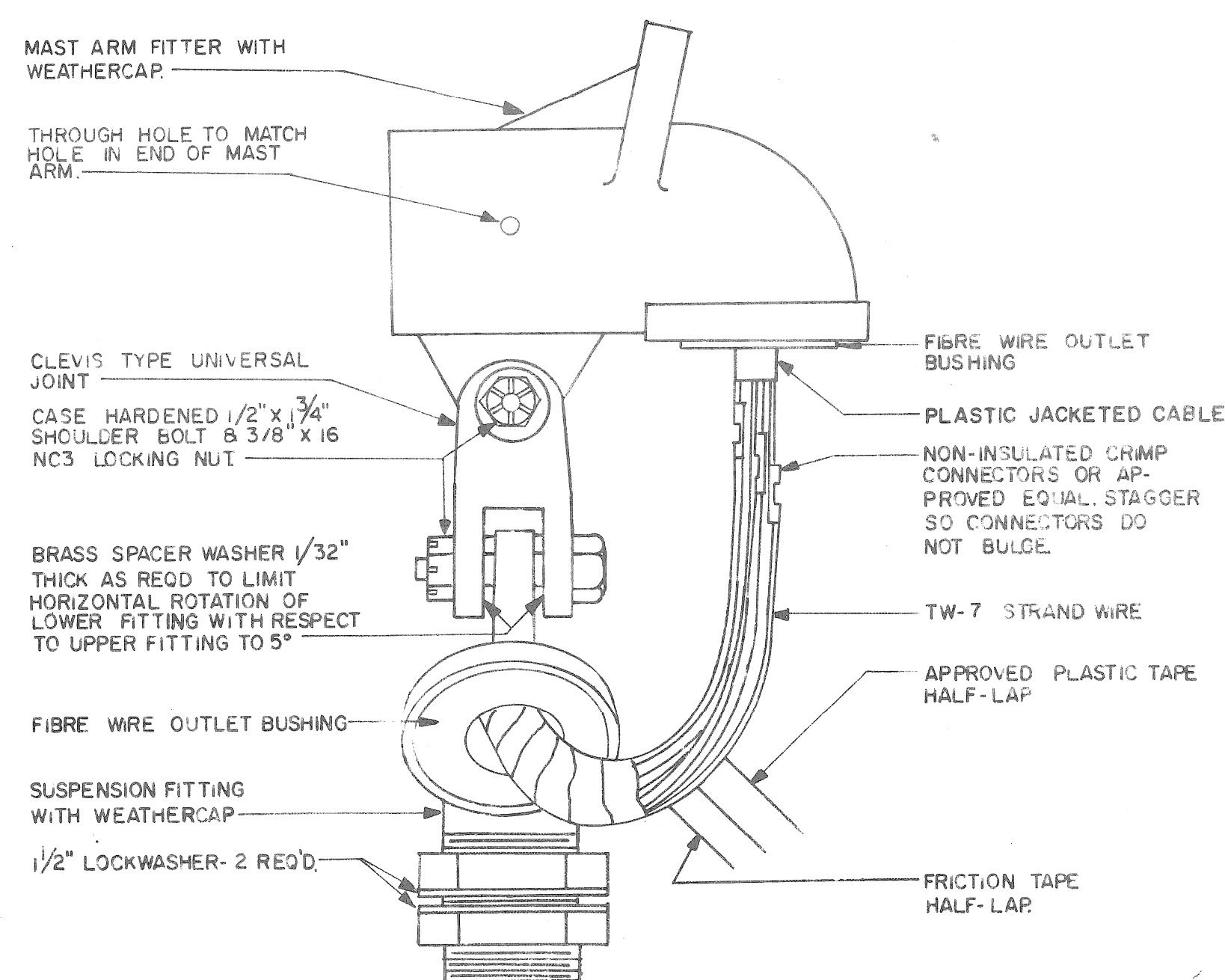
CITY OF DETROIT
 CITY ENGINEERING DEPARTMENT

DRAWN CEA
 CHECKED ep
 APPROVED [Signature]
 DATE APRIL 1986

PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
 16580 WYOMING DETROIT, MICH., 48221
 DRWG. NO. 21 OF 23
 FILE NO. CEA 1096

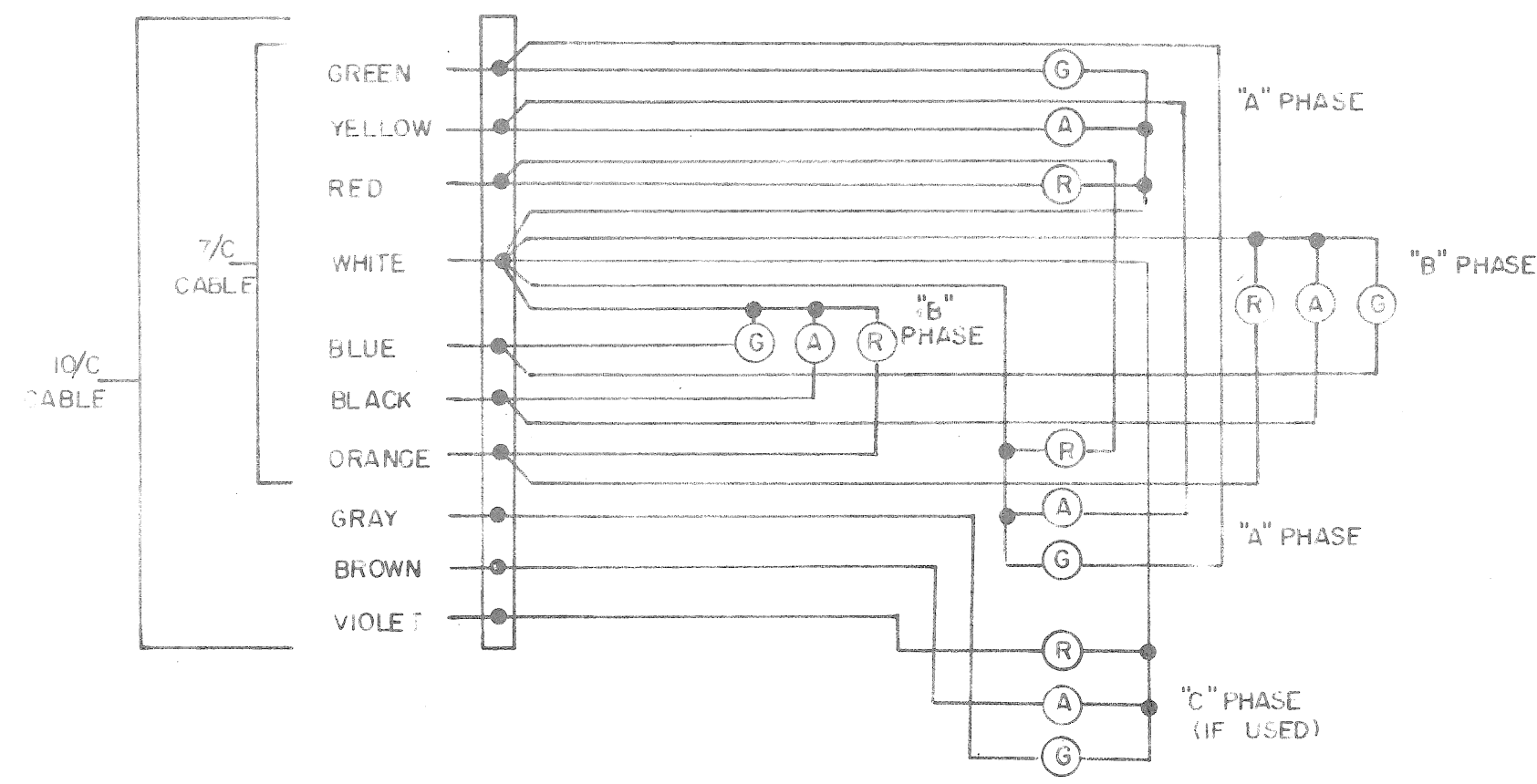
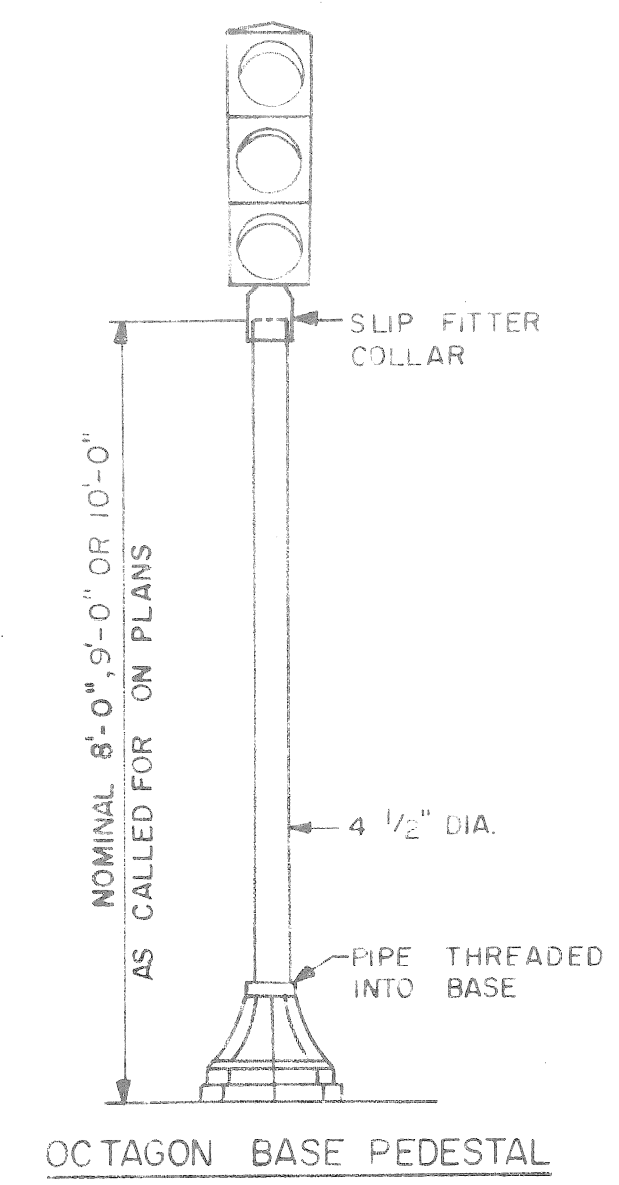
PUBLIC LIGHTING COMMISSION
 CITY OF DETROIT

FILE NO. 48-0331
 SHEET NO. 21 OF 23
 DATE APR. 1986

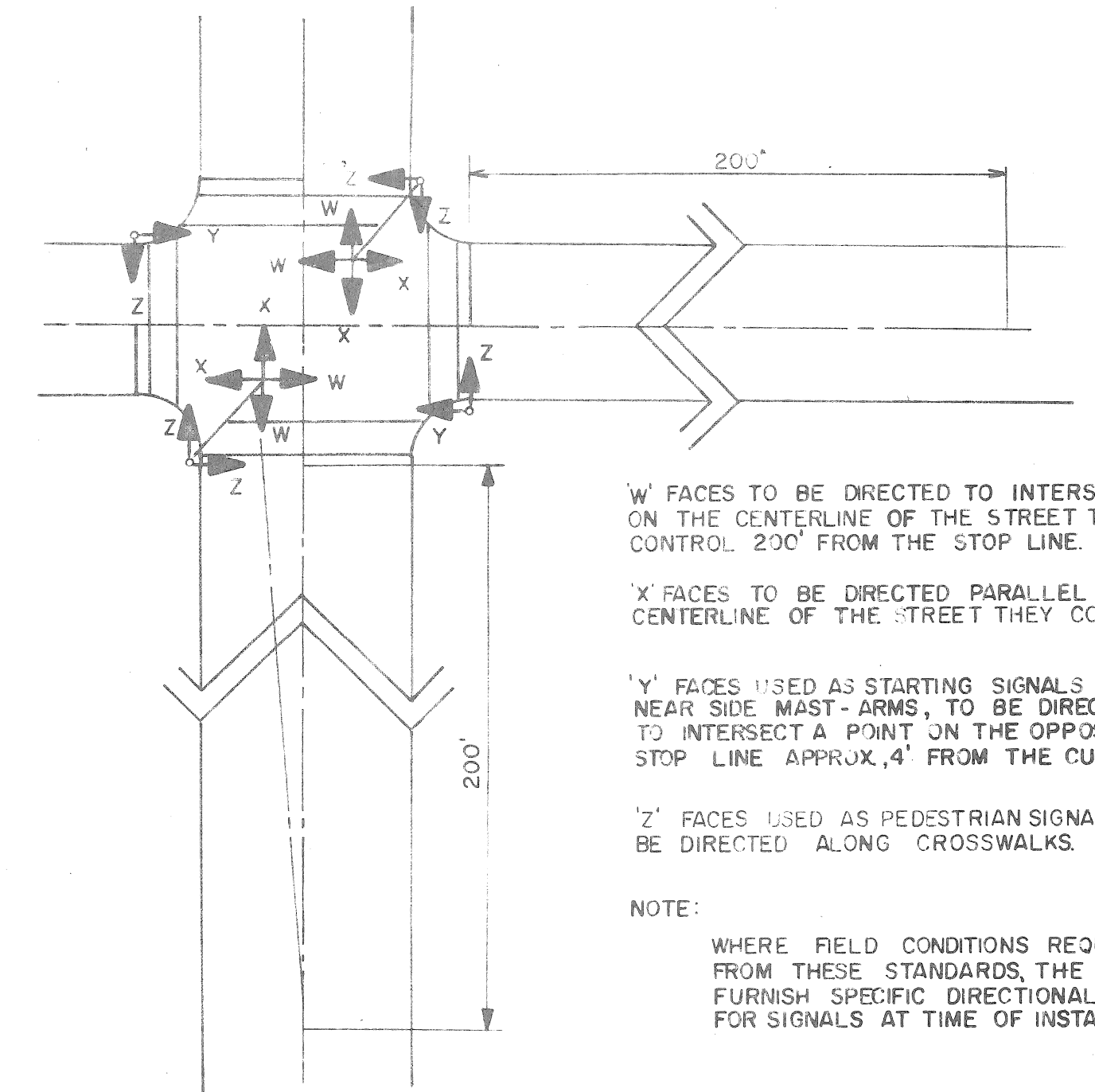


NOTE: INDIVIDUAL CONNECTION TO BE TAPED WITH APPROVED PLASTIC TAPE.

N.T.S.



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.



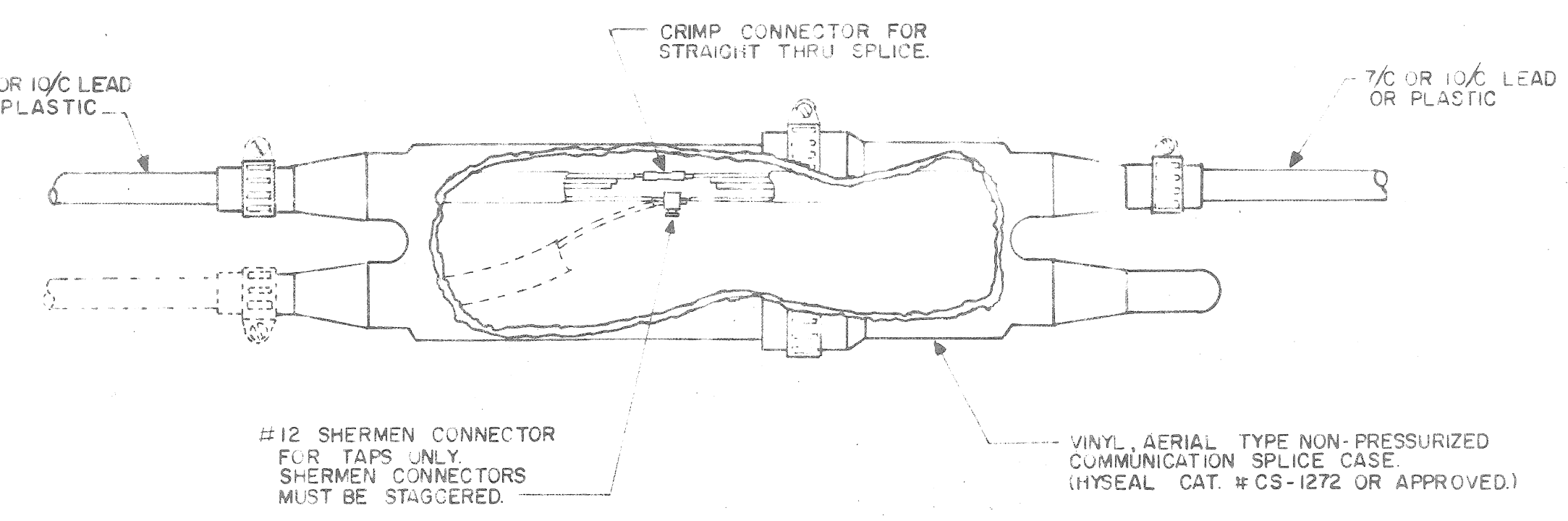
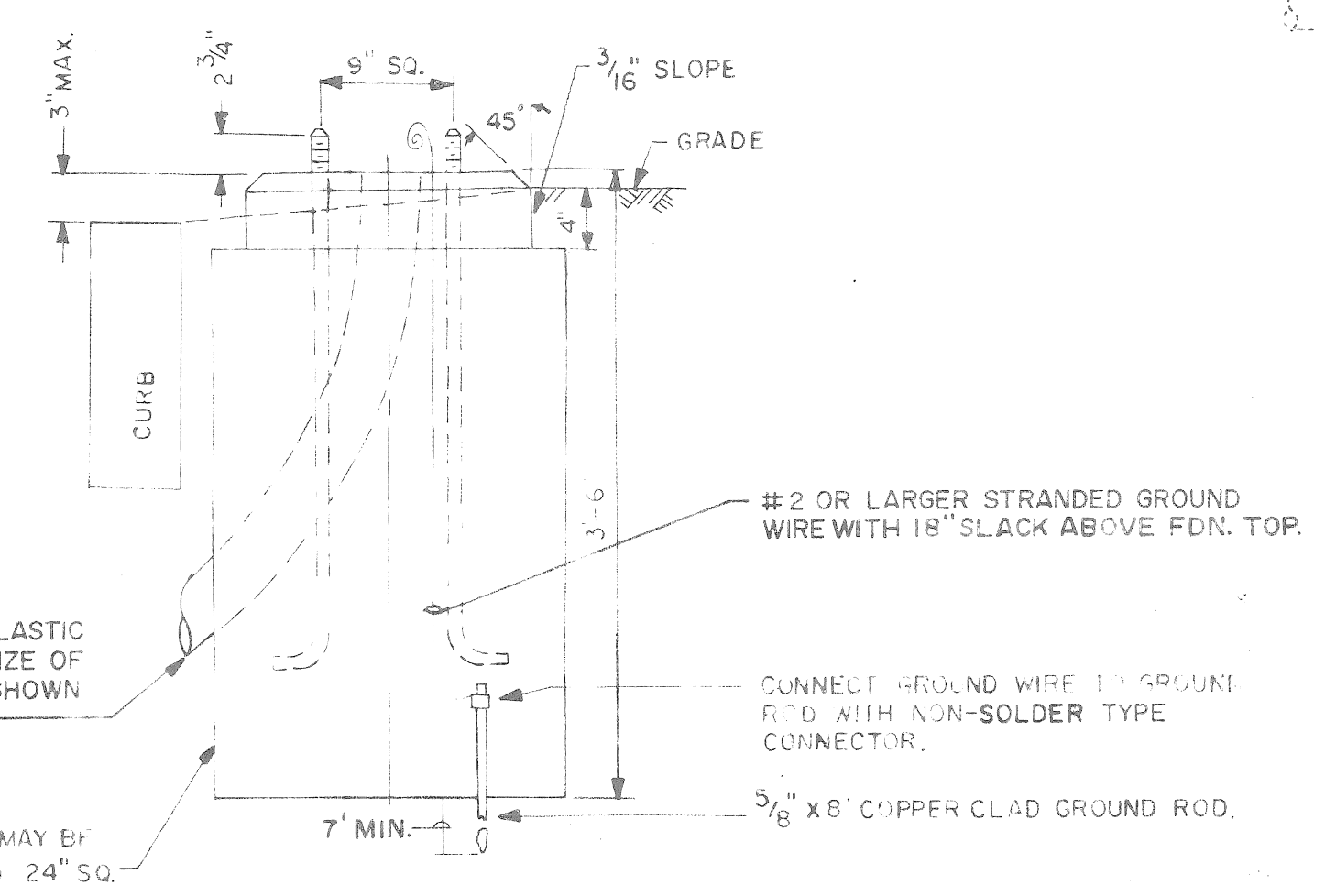
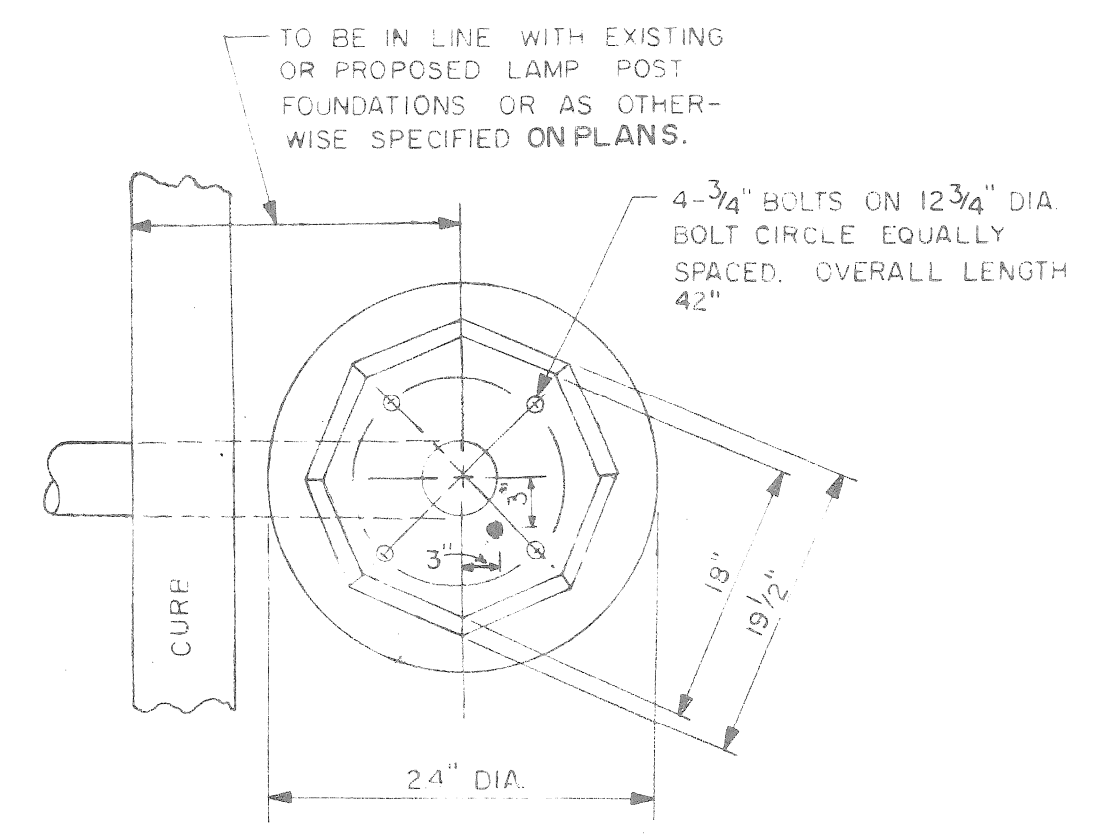
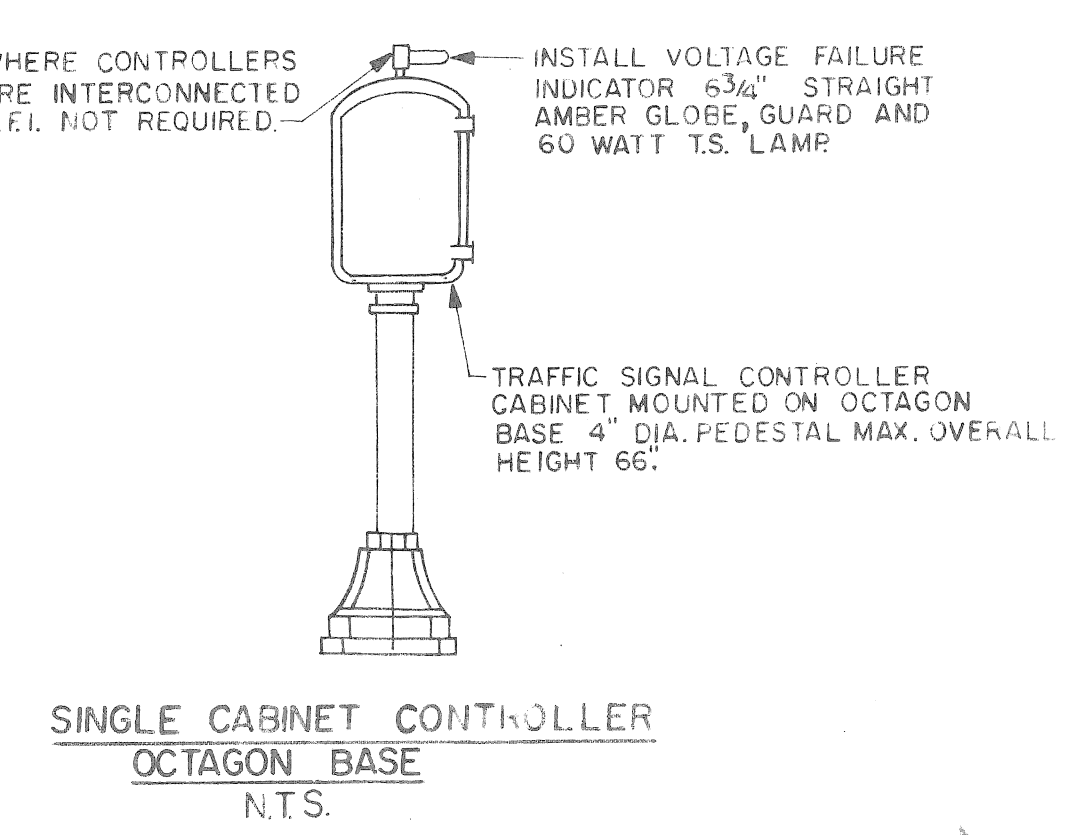
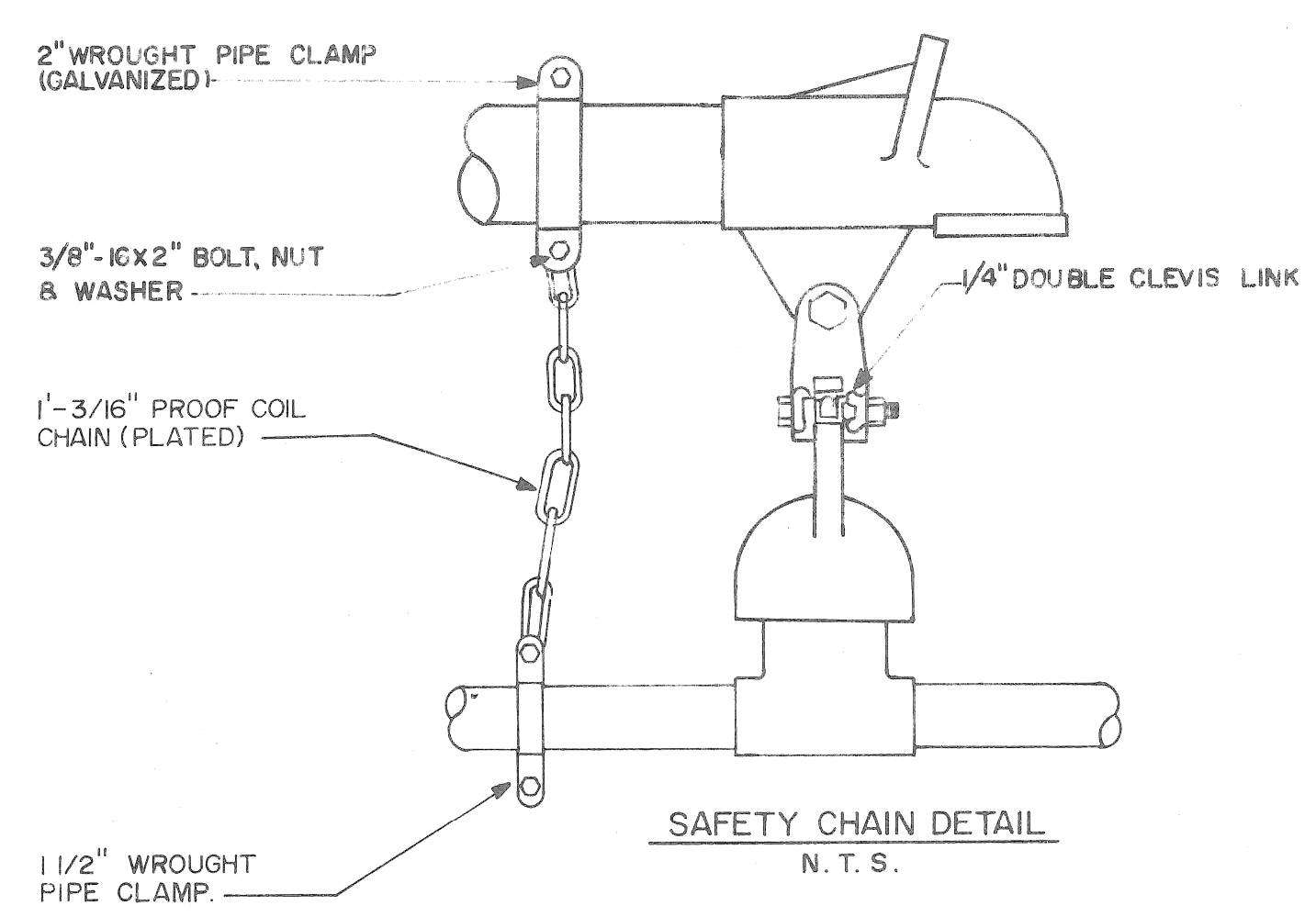
W' FACES TO BE DIRECTED TO INTERSECT A POINT ON THE CENTERLINE OF THE STREET THEY CONTROL 200' FROM THE STOP LINE.

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.



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

JOHN LODGE FWY. W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD

MISCELLANEOUS TRAFFIC SIGNAL, DETAILS

SHEET 35 OF 36 SHEETS

CONTRACT NO. 15765 A

ASSIGNMENT NO.

DATE 4-86

CITY OF DETROIT

CITY ENGINEERING DEPARTMENT

DRAWN BY CEA

CHECKED BY

APPROVED BY

DATE APRIL 1986

PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS

16590 WYOMING DETROIT, MICH. 48221

FILE NO. CEA 1096

DRWG. NO. 22 OF 23

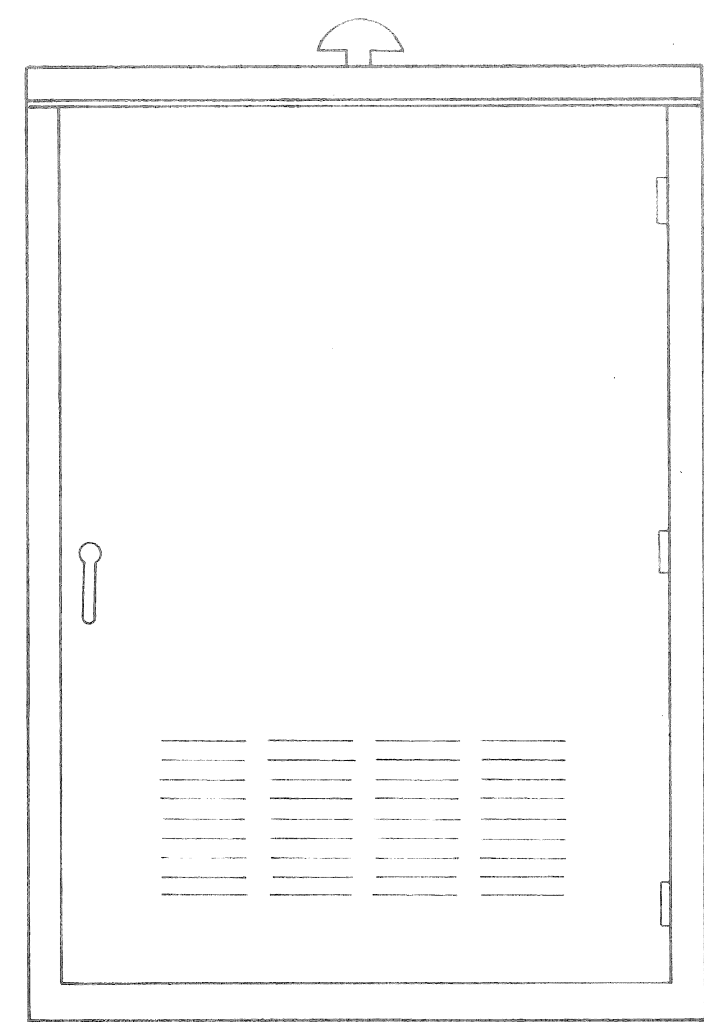
PUBLIC LIGHTING COMMISSION

CITY OF DETROIT

FILE NO. 48-0331

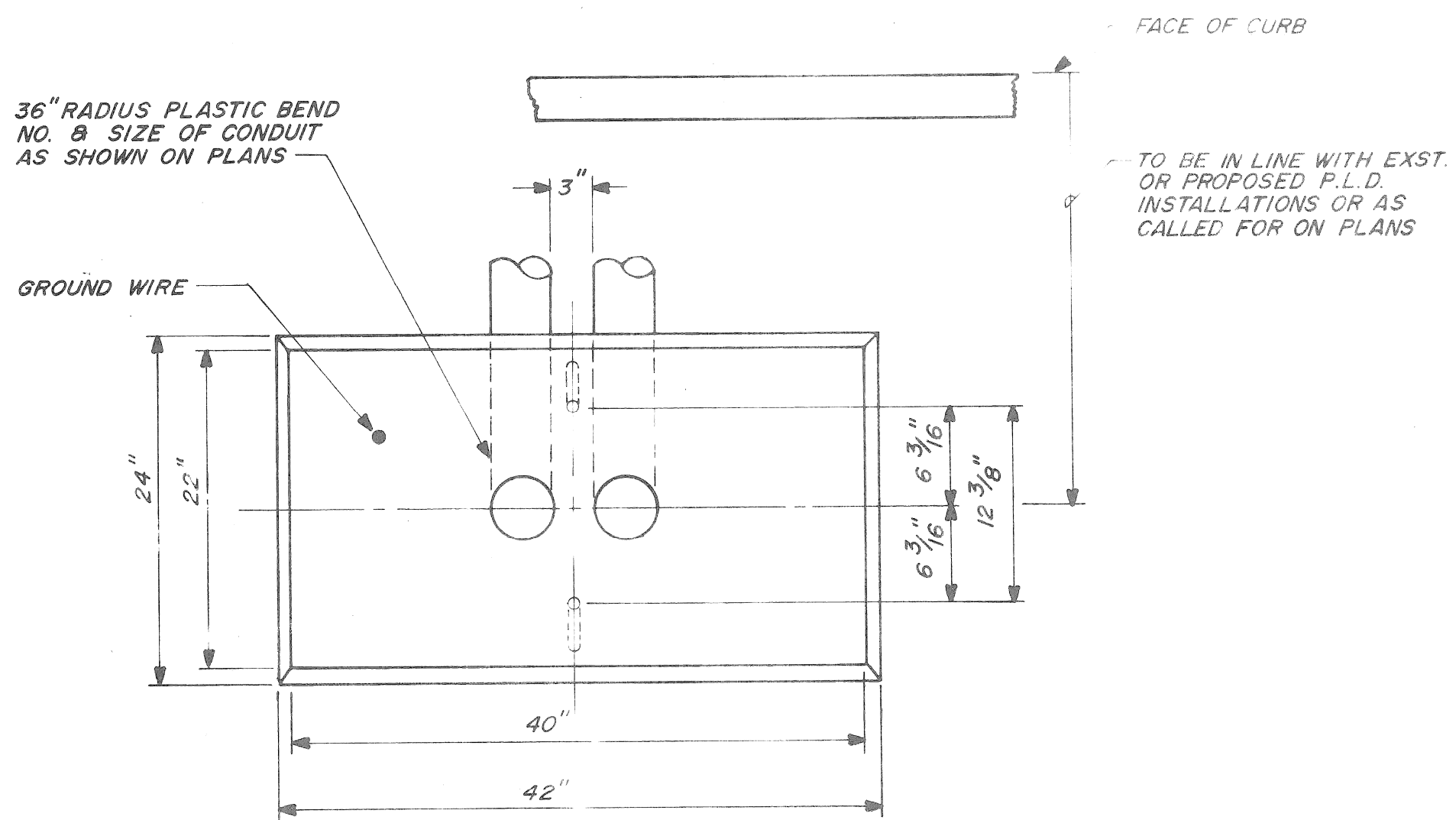
SHEET NO. 22 OF 23

DATE APR. 1986

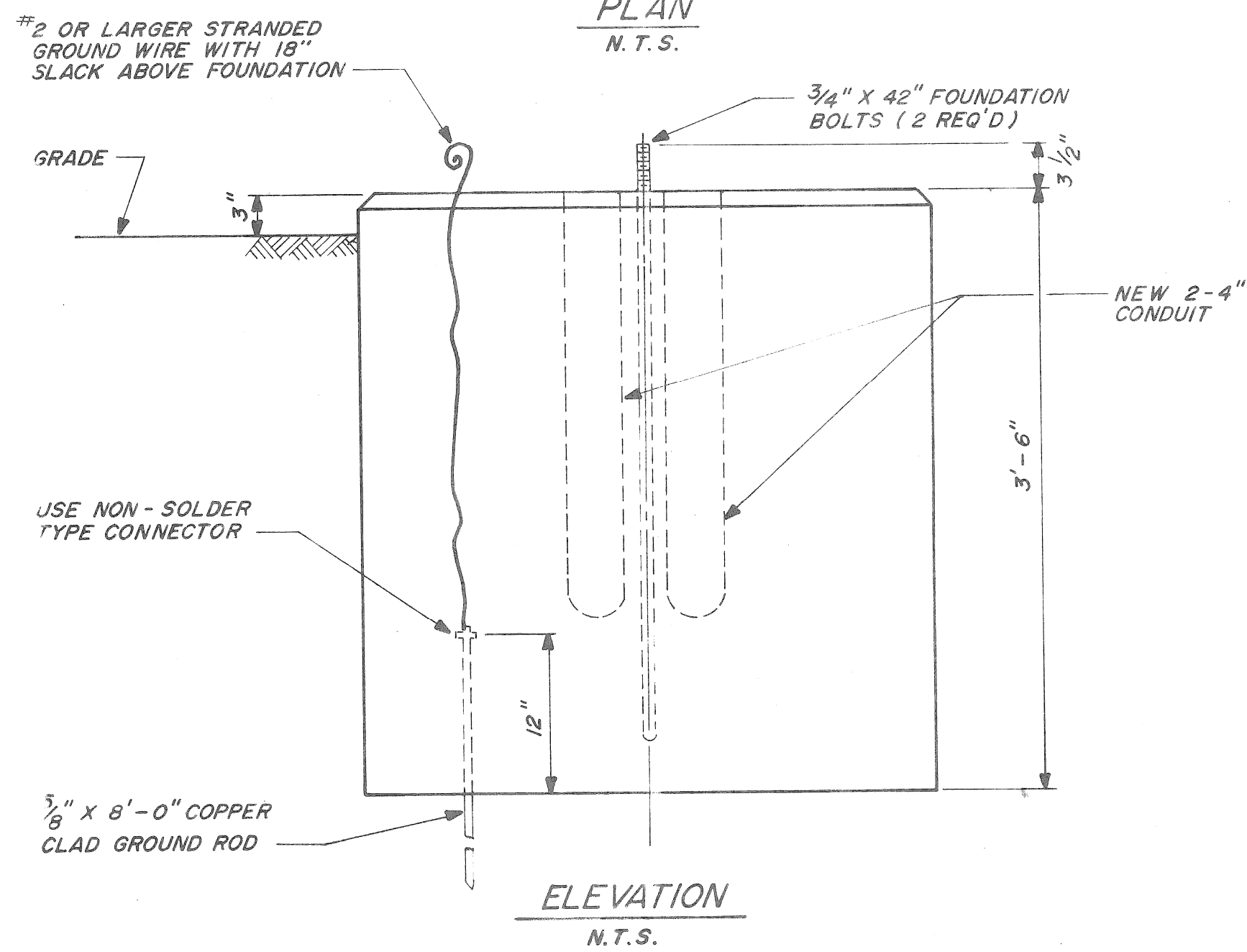


VENTED ALUMINUM CABINET WITH BASE MOUNTING SHALL BE NEMA 5

BASE MOUNTED TRAFFIC SIGNAL CONTROLLER & CABINET
N.T.S.

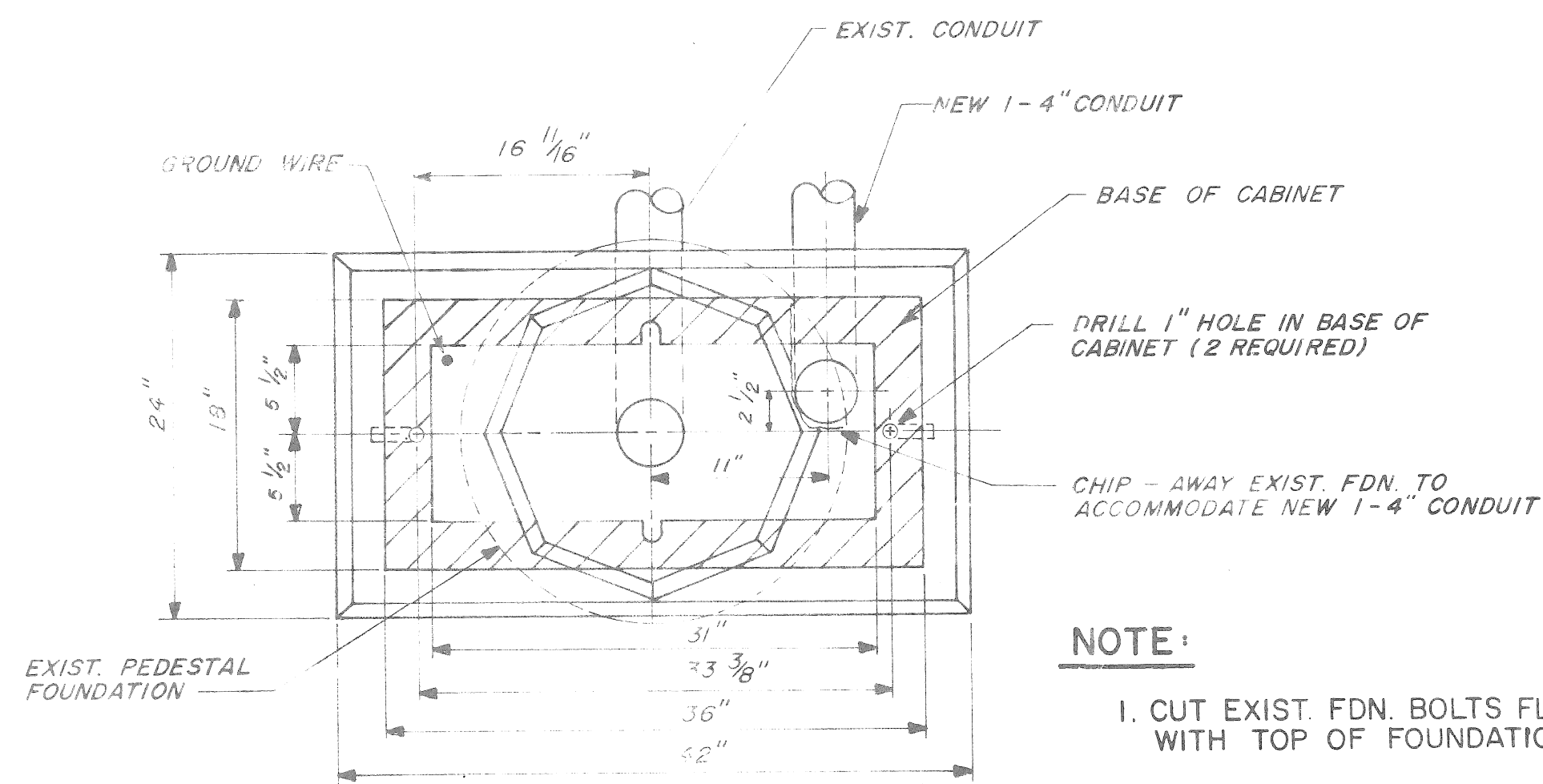


PLAN
N.T.S.



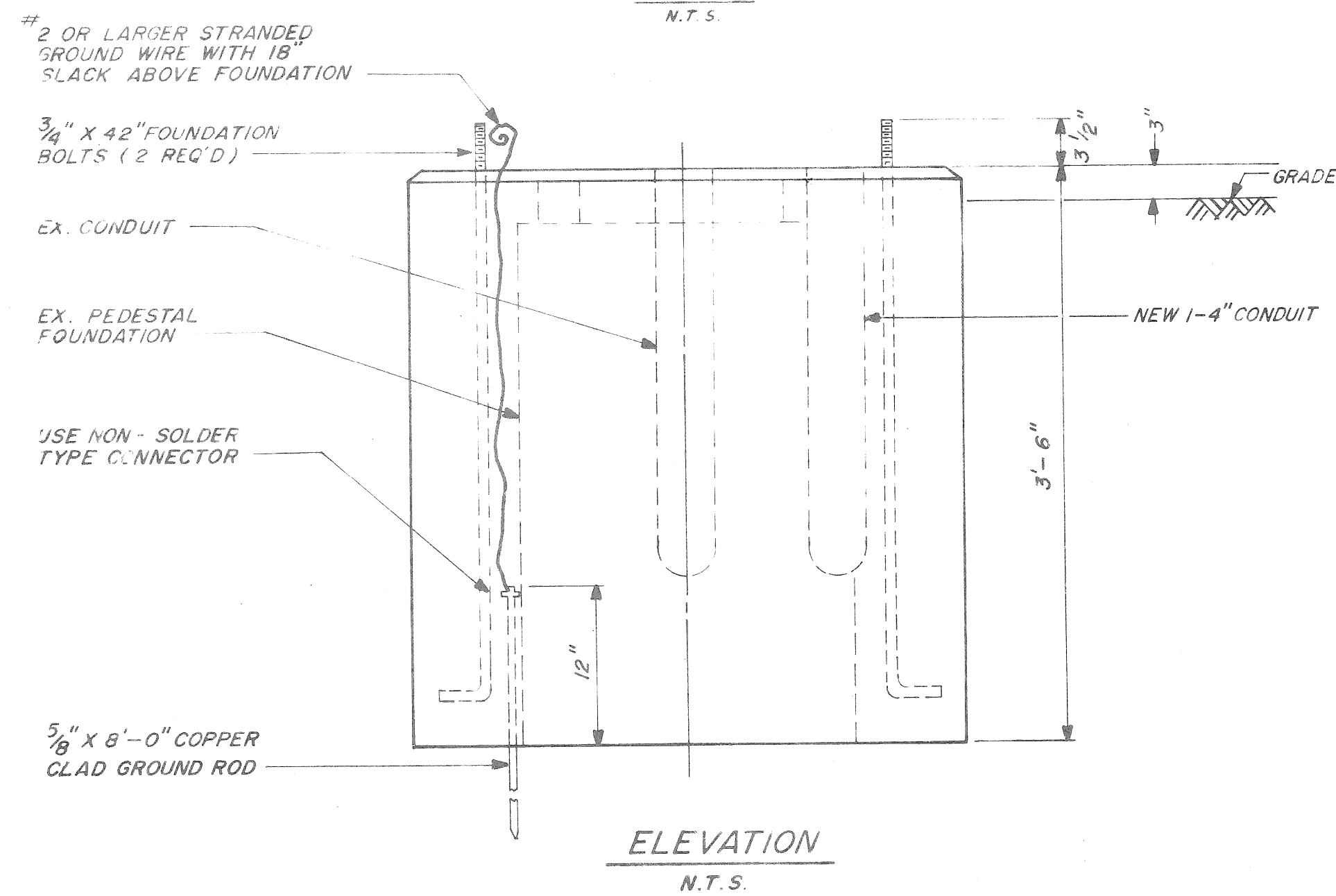
ELEVATION
N.T.S.

FOUNDATION FOR BASE MOUNTED T.S. CONTROLLER & CABINET



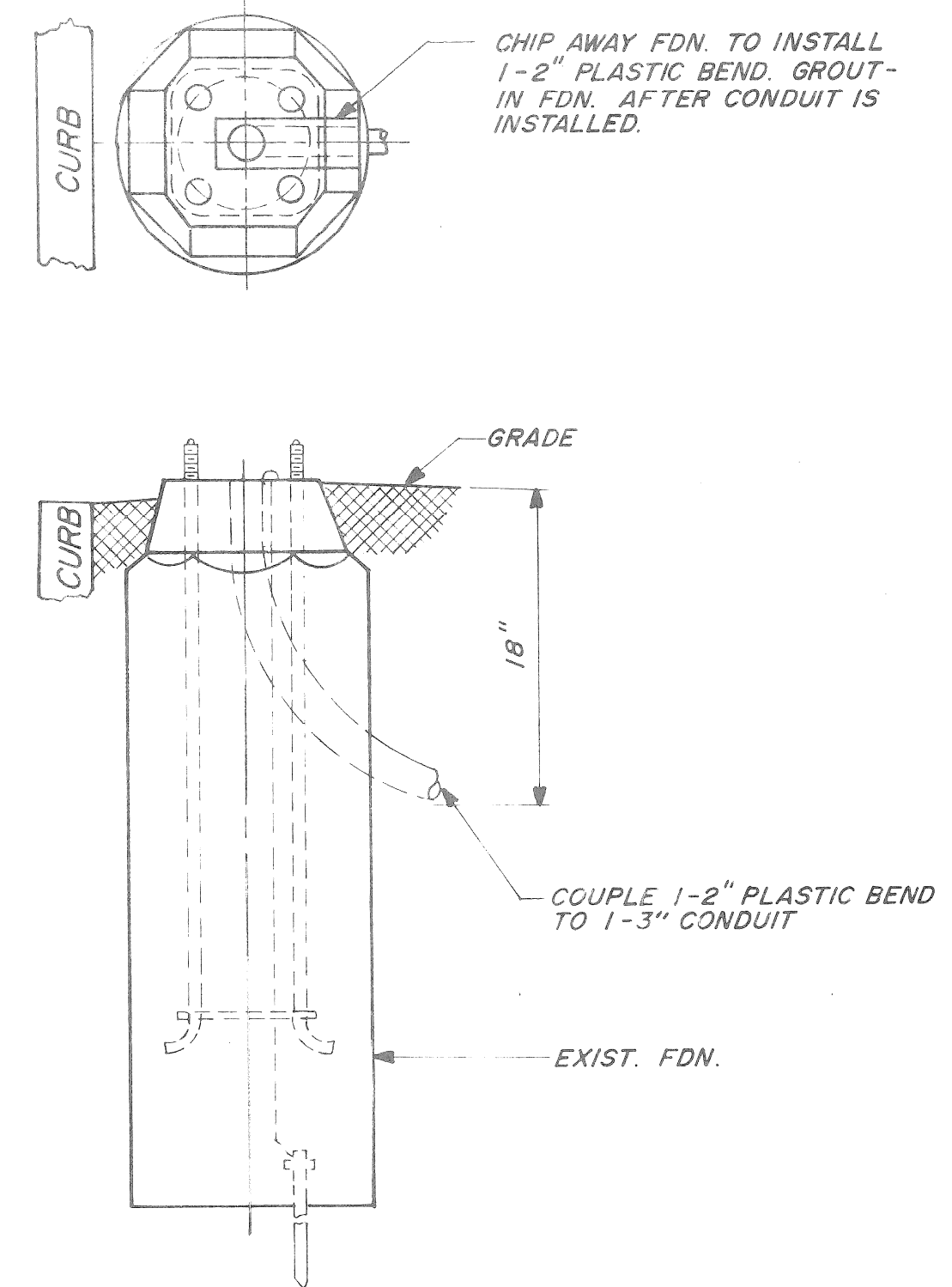
NOTE:
1. CUT EXIST. FDN. BOLTS FLUSH WITH TOP OF FOUNDATION.

PLAN
N.T.S.

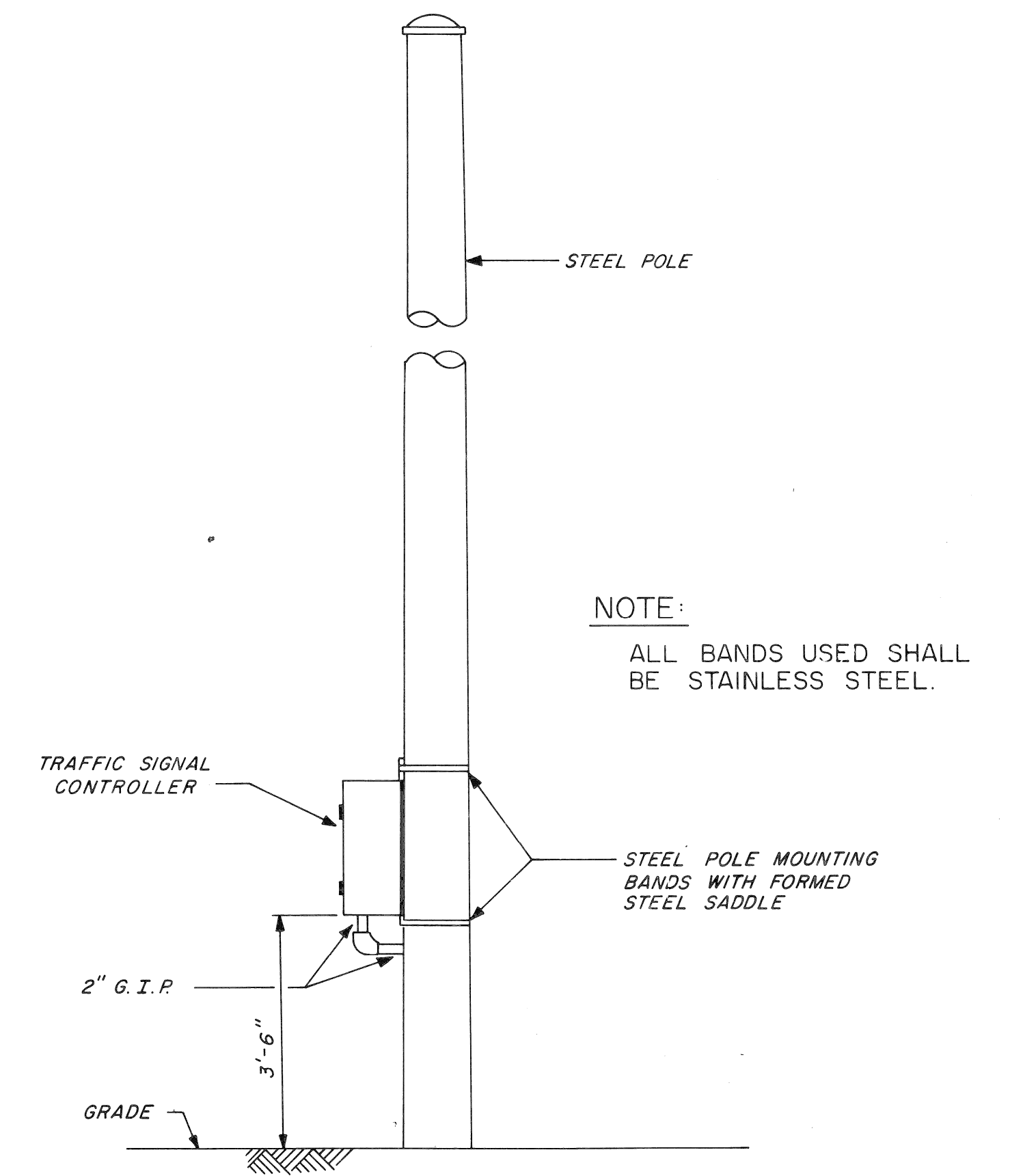


ELEVATION
N.T.S.

MODIFICATION OF PEDESTAL FDN. FOR BASE MOUNTED T.S. CONTROLLER



DETAIL OF INSTALLING CONDUIT INTO EXISTING FDN.
N.T.S.



NOTE:
ALL BANDS USED SHALL BE STAINLESS STEEL.

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

DATE	DESCRIPTION	CHKD. BY

JOHN LODGE FWY. W. SERVICE DR. & RAMP ALTERATIONS, FROM FORT TO N. OF HOWARD
BASE MOUNTED T.S. CONTROLLER CABINET & FOUNDATION DETAILS

SHEET 36 OF 36 SHEETS
CONTRACT NO. 15765 A
ASSIGNMENT NO.
DATE 4-86

CITY OF DETROIT
CITY ENGINEERING DEPARTMENT

DRAWN C.E.A.
CHECKED ep
APPROVED [Signature]
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PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS
12550 WYOMING DETROIT, MICH., 48221
FILE NO. CEA 1096
DATE 23 OF 23

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APPROVED

PUBLIC LIGHTING DEPARTMENT
CITY OF DETROIT

FILE NO. 48-0331
SHEET NO. 23 OF 23
DATE APR. 1986