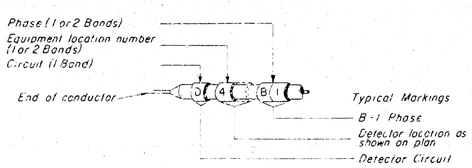
DIST	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS

DISTRICT ENGINEER DIST VIII

APPROVED _____

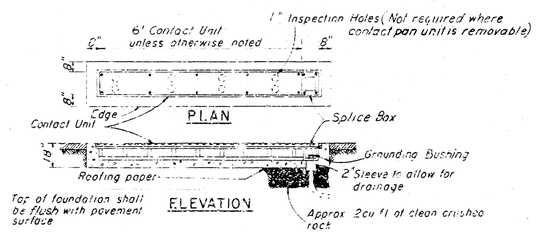
SYMBOLS

PROPOSED	EXISTING	
		Signal conduit
		Lighting conduit
		Pull box
		Non-directional pressure detector
M D	M D	Non-directional magnetic detector
		Directional pressure detector
		Controller
		Traffic signal, each arrow one-way three color
		Traffic signal one way three-color with backplate
		Traffic signal one way three-color with green arrow (on 7' Type I standard unless otherwise specified) (Red and yellow louvered)
		Walk-Wait pedestrian signal
		Pedestrian signal, 2-color head
		Mast arm traffic signal (with backplate) (on Type II standard)
		Electrolier, mast arm type with mast arm traffic signal with backplate (Type III standard)
		Electrolier, mast arm type (Type I standard)
		Electrolier, upright type
PPB	PPB	Pedestrian push button
PP	PP	Power pole " " on post
		Telephone pole
		Fire hydrant
		Flashing beacon, one-way
		Traffic signal with all colors louvered
		Overhead conductor
1A		Pull box marker



TYPICAL BANDING OF CONDUCTOR ENDS

NO SCALE



PRESSURE DETECTOR

NO SCALE

INSTALLATION NOTES

CONDUIT

1. Unless otherwise indicated, service and detector runs and conduit into sign structure foundations shall be 1 inch and all other conduit shall be not less than 1½ inch.
2. Conduit shall be installed 18" minimum below curb grade in sidewalk areas and 24" minimum below grade or finished surface in all other areas, except that conduit installed within curbed dividing strips constructed on existing pavement may be laid on and secured to the pavement.
3. Conduit runs parallel to curbs shall be placed adjacent to back of curb, except where in conflict with existing facilities.
4. Existing underground conduit to be incorporated into new systems shall be cleaned with a mandrel and blown out with compressed air.
5. Conduit terminating in standards and pedestals shall extend 2" max. above finished top of foundation and shall slope toward the handhole.
6. Service risers shall be terminated with a service head or shall be sealed to prevent the entrance of water, as approved by the serving utility.

PULL BOXES

1. Pull boxes shown in the vicinity of curbs shall be placed adjacent to back of curb, except when in conflict with existing facilities.
2. Top of pull boxes shall be flush with top of curb or sidewalk grade or 1" above surrounding ground when no finished grade is established.
3. Pull boxes shown adjacent to standards shall be installed against but not on roadway side of foundation.

CONDUCTORS AND WIRING

1. Signal neutral shall be a separate #10 AWG conductor.
2. Conductors between ballasts or transformers and luminaires shall be #10 AWG, 600 volt.
3. Conductors between series-to-multiple transformers and sign switch shall be #12 AWG, 600 volt.
4. Number of conductors indicated in signal system conduit includes 3 #14 AWG spares.
5. Conductors shall be identified with bands.
6. Underground conductors to signals shall be run without splice, except that where existing signals are being modified, signal conductors may be spliced where indicated.
7. Neutral conductors may be spliced in pull boxes.
8. Two feet of slack shall be provided in each conductor in each pull box.
9. A separate conductor, other than neutral, shall be run from each detector or pedestrian push button to controller cabinet.
10. Color coding for wiring to pedestrian signals shall be as specified for corresponding vehicular green and red indications.
11. One side of secondary circuit of series-to-multiple transformers shall be grounded. On structures the grounding electrode shall be the conduit system. Off structures, it shall be a 1/2" X 8' ground rod installed through bottom of pull box.

SIGNAL EQUIPMENT

1. Pressure detectors shall be 6 feet long, non-directional, unless otherwise indicated.
2. Detector position dimensions refer to contact unit.
3. Top of detector foundation shall be flush and true with pavement surface.
4. Detector contact unit surface shall be level with rim of frame or no more than 1/8-inch higher.
5. Vehicular and pedestrian signal mountings shall be oriented so as to provide maximum horizontal clearance to adjacent roadway.

ELECTROLIERS

1. A Mercury-vapor lamp ballast shall be installed in a pull box adjacent to each electrolier, except as indicated.

FOUNDATIONS

1. Top of foundations for standards shall be level with top of curb in curbed areas or 6 inches above surrounding grade in other areas.
2. Except as indicated, standards shall be installed with 2 foot clearance to face of curb, edge of shoulder, back of dikes, and back of ditches.

GENERAL DETAILS

TRAFFIC SIGNAL AND
HIGHWAY LIGHTING
INSTALLATIONS

ES-4 VIII

SHEET 12 OF 15 SHEETS

PROJECT ENGINEER DATE | ENGINEER DATE | APPROVAL RECOMMENDED BY DATE

DIST	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS

DISTRICT ENGINEER DIST VIII

APPROVED _____

SYMBOLS

PROPOSED	EXISTING	
		Signal conduit
		Lighting conduit
		Pull box
		Non-directional pressure detector
M D	M D	Non-directional magnetic detector
		Directional pressure detector
		Controller
		Traffic signal, each arrow one-way three color
		Traffic signal one way three-color with backplate
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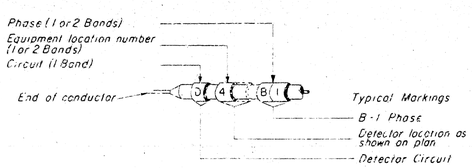
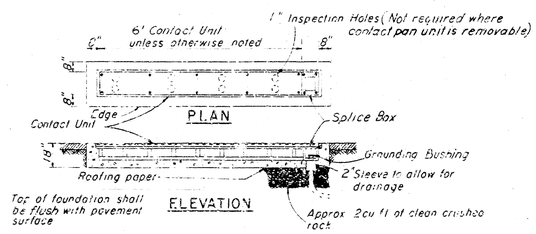
PPB	PPB	Pedestrian push button
PP	PP	Power pole " " on post
		Telephone pole
		Fire hydrant
		Flashing beacon, one-way
		Traffic signal with all colors louvered
		Overhead conductor
1A		Pull box marker



TYPICAL BANDING OF CONDUCTOR ENDS

NO SCALE



PRESSURE DETECTOR

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INSTALLATION NOTES

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3. Conduit runs parallel to curbs shall be placed adjacent to back of curb, except where in conflict with existing facilities.
4. Existing underground conduit to be incorporated into new systems shall be cleaned with a mandrel and blown out with compressed air.
5. Conduit terminating in standards and pedestals shall extend 2" max. above finished top of foundation and shall slope toward the handhole.
6. Service risers shall be terminated with a service head or shall be sealed to prevent the entrance of water, as approved by the serving utility.

PULL BOXES

1. Pull boxes shown in the vicinity of curbs shall be placed adjacent to back of curb, except when in conflict with existing facilities.
2. Top of pull boxes shall be flush with top of curb or sidewalk grade or 1" above surrounding ground when no finished grade is established.
3. Pull boxes shown adjacent to standards shall be installed against but not on roadway side of foundation.

CONDUCTORS AND WIRING

1. Signal neutral shall be a separate #10 AWG conductor.
2. Conductors between ballasts or transformers and luminaires shall be #10 AWG, 600 volt.
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4. Number of conductors indicated in signal system conduit includes 3 #14 AWG spares.
5. Conductors shall be identified with bands.
6. Underground conductors to signals shall be run without splice, except that where existing signals are being modified, signal conductors may be spliced where indicated.
7. Neutral conductors may be spliced in pull boxes.
8. Two feet of slack shall be provided in each conductor in each pull box.
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10. Color coding for wiring to pedestrian signals shall be as specified for corresponding vehicular green and red indications.
11. One side of secondary circuit of series-to-multiple transformers shall be grounded. On structures the grounding electrode shall be the conduit system. Off structures, it shall be a 1/2" X 8' ground rod installed through bottom of pull box.

SIGNAL EQUIPMENT

1. Pressure detectors shall be 6 feet long, non-directional, unless otherwise indicated.
2. Detector position dimensions refer to contact unit.
3. Top of detector foundation shall be flush and true with pavement surface.
4. Detector contact unit surface shall be level with rim of frame or no more than 1/8-inch higher.
5. Vehicular and pedestrian signal mountings shall be oriented so as to provide maximum horizontal clearance to adjacent roadway.

ELECTROLIERS

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GENERAL DETAILS

TRAFFIC SIGNAL AND
HIGHWAY LIGHTING
INSTALLATIONS

ES-4 VIII

SHEET 12 OF 15 SHEETS

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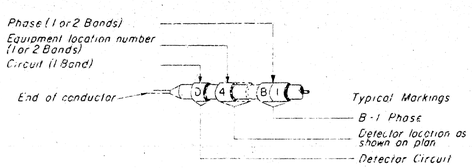

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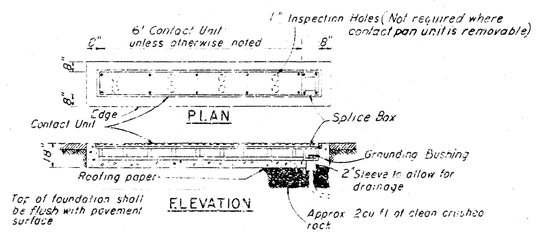

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HIGHWAY LIGHTING
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ES-4 VIII

SHEET 12 OF 15 SHEETS

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