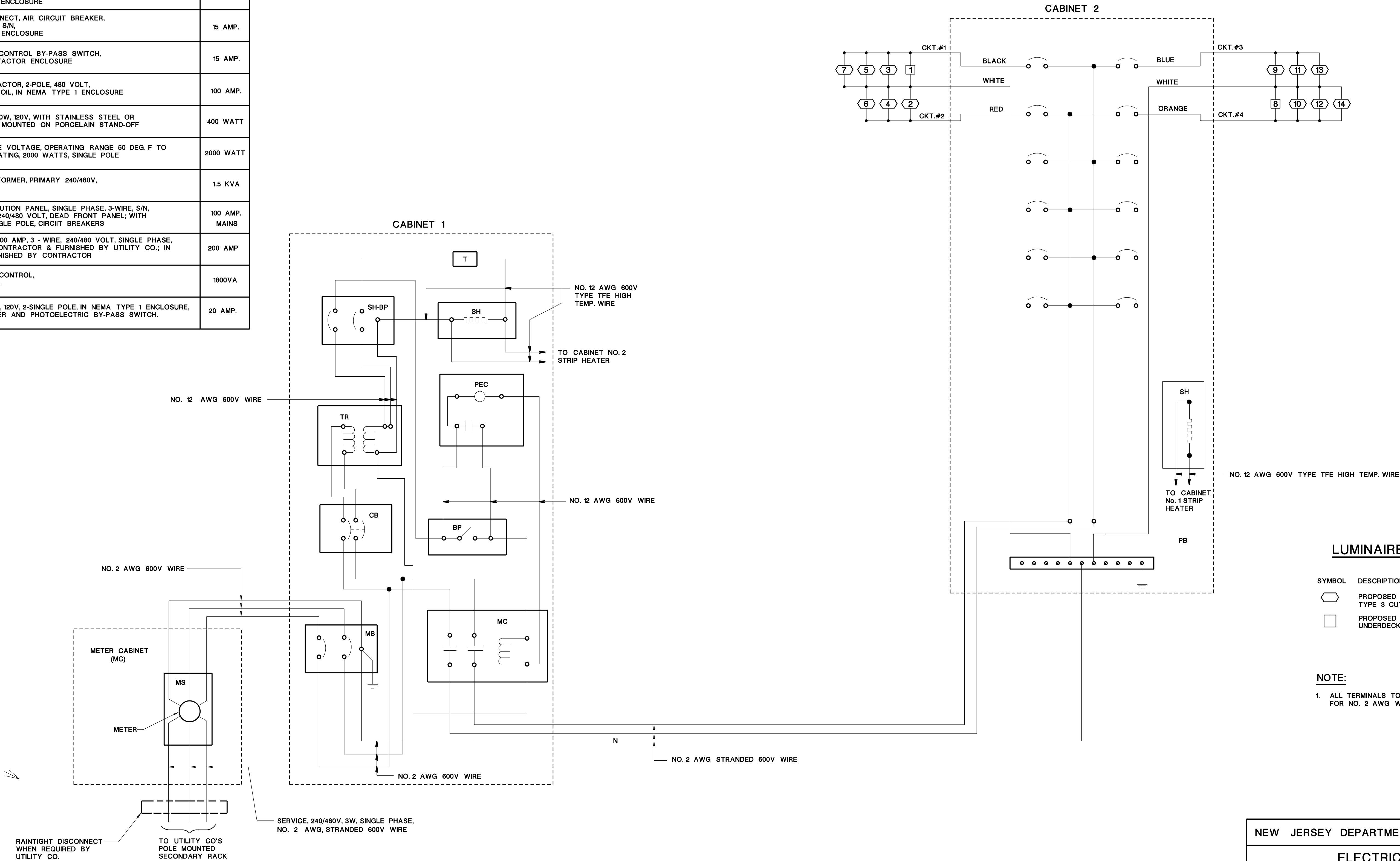


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METER CABINET TYPE 2M-MC		
SYMBOL	APPARATUS DESCRIPTION	RATING
MB	MAIN BREAKER, 2-POLE, 480 VOLT, S/N, IN NEMA TYPE 1 ENCLOSURE	100 AMP.
CB	CONTROL DISCONNECT, AIR CIRCUIT BREAKER, 2-POLE, 480 VOLT, S/N, IN NEMA TYPE 1 ENCLOSURE	15 AMP.
BP	PHOTOELECTRIC CONTROL BY-PASS SWITCH, BUILT INTO CONTACTOR ENCLOSURE	15 AMP.
MC	MAGNETIC CONTACTOR, 2-POLE, 480 VOLT, WITH 120 VOLT COIL, IN NEMA TYPE 1 ENCLOSURE	100 AMP.
SH	STRIP HEATER, 400W, 120V, WITH STAINLESS STEEL OR CHROME SHEATH, MOUNTED ON PORCELAIN STAND-OFF	400 WATT
T	THERMOSTAT, LINE VOLTAGE, OPERATING RANGE 50 DEG. F TO 70 DEG. F, 120V RATING, 2000 WATTS, SINGLE POLE	2000 WATT
TR	CONTROL TRANSFORMER, PRIMARY 240/480V, SECONDARY 120V	1.5 KVA
PB	LIGHTING DISTRIBUTION PANEL, SINGLE PHASE, 3-WIRE, S/N, MIN. 12 CIRCUITS, 240/480 VOLT, DEAD FRONT PANEL; WITH 30 AMP, 240V, SINGLE POLE, CIRCUIT BREAKERS	100 AMP. MAINS
MS	METER SOCKET, 200 AMP, 3 - WIRE, 240/480 VOLT, SINGLE PHASE, INSTALLED BY CONTRACTOR & FURNISHED BY UTILITY CO., IN JCP&L AREA, FURNISHED BY CONTRACTOR	200 AMP
PEC	PHOTOELECTRIC CONTROL, 120 VOLTS, 1800VA	1800VA
SH-BP	CIRCUIT BREAKER, 120V, 2-SINGLE POLE, IN NEMA TYPE 1 ENCLOSURE, FOR STRIP HEATER AND PHOTOELECTRIC BY-PASS SWITCH.	20 AMP.



LUMINAIRE LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 150W HPS CONVENTIONAL TYPE 3 CUTOFF LUMINAIRE
	PROPOSED 100W HPS WALL MOUNT UNDERDECK LUMINAIRE

- NOTE:
- ALL TERMINALS TO BE SOLDERLESS CONNECTORS FOR NO. 2 AWG WIRE.

LOAD CENTER "HA"
NTS

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAIL

ROUTE U.S. 46 AT HOLLYWOOD AVENUE CONTRACT NO. 053950370
MUNICIPALITY TOWNSHIP OF FAIRFIELD COUNTY ESSEX

SCHEMATIC WIRING DIAGRAM
PROPOSED LOAD CENTER "HA"

ARORA AND ASSOCIATES, P.C.

MANDEEP SINGH ARORA, P.E.
N.J. P.E. LIC. No. 24GE04310900

CONTROL SECTION
NO.

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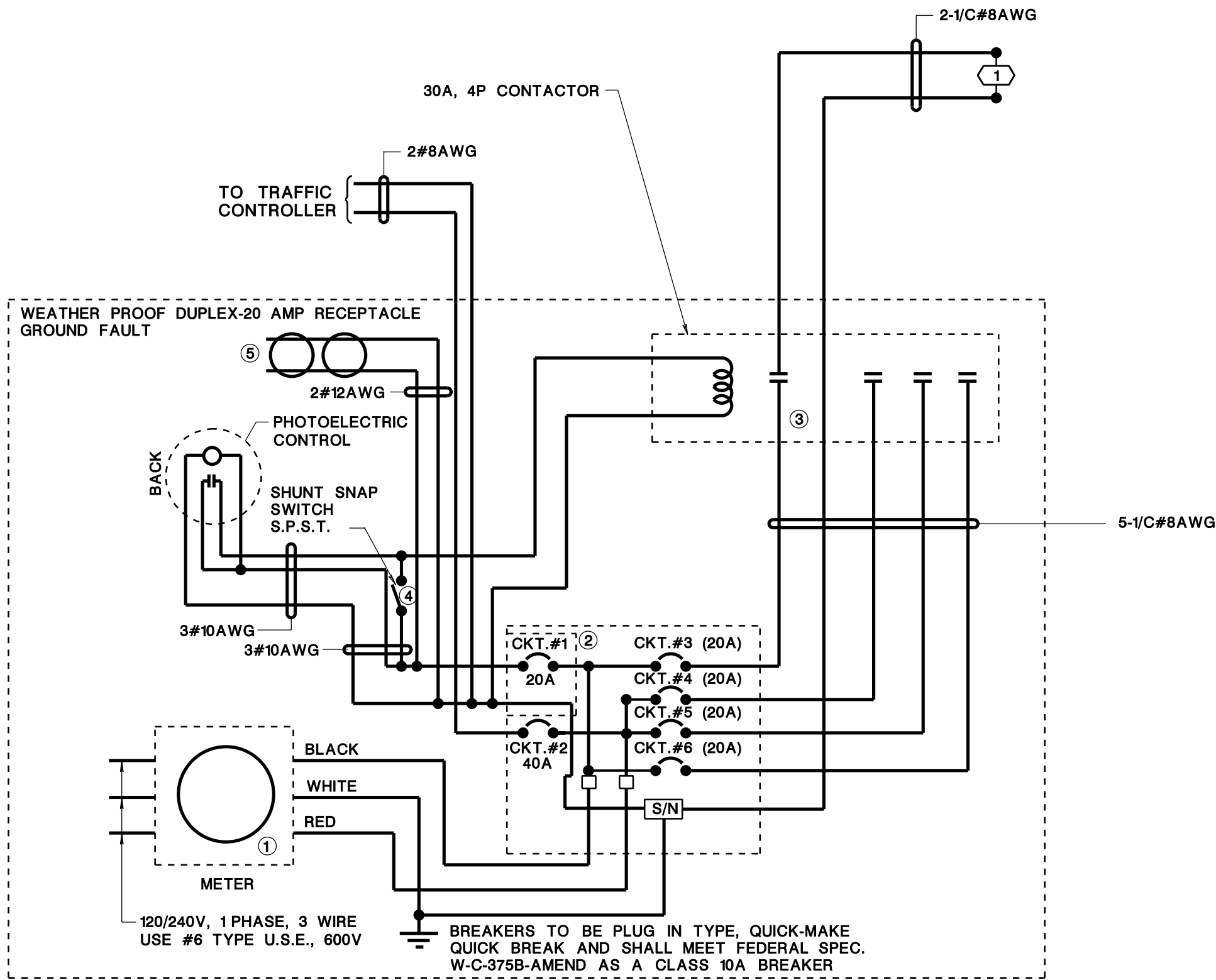
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NOTE:
ALL WIRE TO BE #6-AWG-600 VOLT
OR AS OTHERWISE SHOWN.

SCHEMATIC WIRING DIAGRAM: 120/240 VOLT

LEGEND

- ① METER SOCKET-INSTALLED BY CONTRACTOR-PROVIDED BY UTILITY COMPANY ON REQUEST (IN JCP&L CO. AREA METER SOCKET IS TO BE INSTALLED AND FURNISHED BY CONTRACTOR).
- ② 4/8 CIRCUIT LOAD CENTER WITH ENCLOSURE COMPLETE WITH 5-20A SINGLE POLE AND 1-40A SINGLE POLE CIRCUIT BREAKERS.
- ③ MAGNETIC CONTACTOR, 30 AMP, 120 VOLT COIL, NEMA 1 ENCLOSURE.
- ④ PHOTOELECTRIC CONTROL UNIT 15 AMP. SHUNT SWITCH IN 2" X 4" HANDY BOX OR EQUIVALENT.
- ⑤ WEATHERPROOF, 20A DUPLEX RECEPTACLE WITH GROUND FAULT PROTECTION.
- ⑥ IF METER IS NOT REQUIRED, INSTALL 1¼" I.D. SEALTITE FLEX CONDUIT AND 1¼" I.D. NIPPLE FROM REDUCER COUPLING TO MAIN BREAKER PANEL.
- ⑦ THE TOTAL NUMBER OF CIRCUIT BREAKERS SHALL NOT EXCEED SIX.

STATE	FEDERAL PROJECT NO.
N.J.	NHS-7802(161)

LUMINAIRE LEGEND

SYMBOL	DESCRIPTION
◻	PROPOSED 150W HPS CONVENTIONAL TYPE 3 CUTOFF LUMINAIRE

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAIL

ROUTE U.S. 46 AT HOLLYWOOD AVENUE CONTRACT NO. 053950370
MUNICIPALITY TOWNSHIP OF FAIRFIELD COUNTY ESSEX

SCHEMATIC WIRING DIAGRAM
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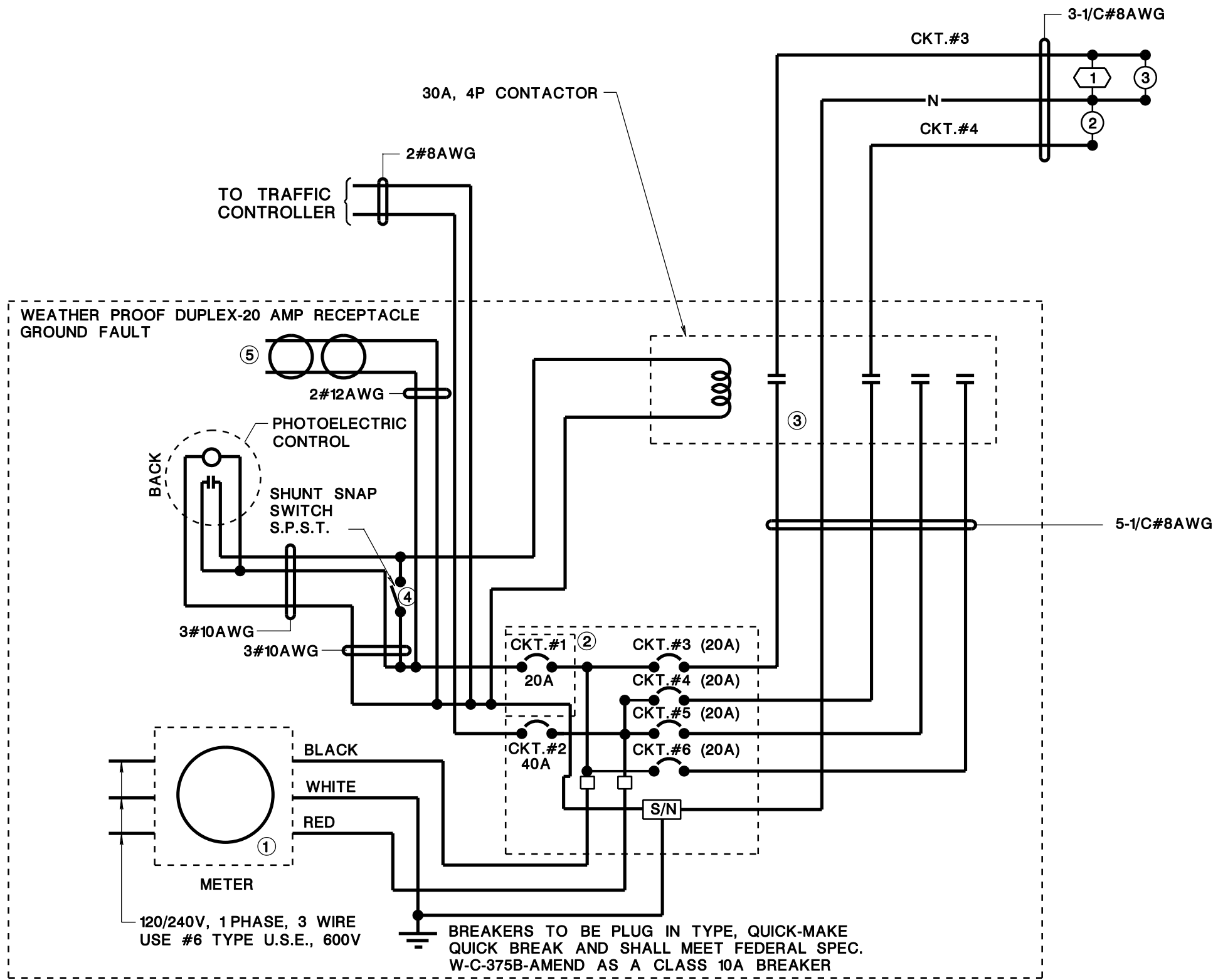
ARORA AND ASSOCIATES, P.C.

MANDEEP SINGH ARORA, P.E.
N.J. P.E. LIC. No. 24GE04310900

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NOTE:
ALL WIRE TO BE #6-AWG-600 VOLT
OR AS OTHERWISE SHOWN.

SCHEMATIC WIRING DIAGRAM: 120/240 VOLT

LEGEND

- ① METER SOCKET-INSTALLED BY CONTRACTOR-PROVIDED BY UTILITY COMPANY ON REQUEST (IN JCP&L CO. AREA METER SOCKET IS TO BE INSTALLED AND FURNISHED BY CONTRACTOR).
- ② 4/8 CIRCUIT LOAD CENTER WITH ENCLOSURE COMPLETE WITH 5-20A SINGLE POLE AND 1-40A SINGLE POLE CIRCUIT BREAKERS.
- ③ MAGNETIC CONTACTOR, 30 AMP, 120 VOLT COIL, NEMA 1 ENCLOSURE.
- ④ PHOTOELECTRIC CONTROL UNIT 15 AMP. SHUNT SWITCH IN 2" X 4" HANDY BOX OR EQUIVALENT.
- ⑤ WEATHERPROOF, 20A DUPLEX RECEPTACLE WITH GROUND FAULT PROTECTION.
- ⑥ IF METER IS NOT REQUIRED, INSTALL 1¼" I.D. SEALTITE FLEX CONDUIT AND 1¼" I.D. NIPPLE FROM REDUCER COUPLING TO MAIN BREAKER PANEL.
- ⑦ THE TOTAL NUMBER OF CIRCUIT BREAKERS SHALL NOT EXCEED SIX.

LUMINAIRE LEGEND

SYMBOL	DESCRIPTION
◻	PROPOSED 150W HPS CONVENTIONAL TYPE 3 CUTOFF LUMINAIRE
○	PROPOSED 150W HPS VERTICAL TYPE LUMINAIRE

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAIL

ROUTE U.S. 46 AT HOLLYWOOD AVENUE CONTRACT NO. 053950370
MUNICIPALITY TOWNSHIP OF FAIRFIELD COUNTY ESSEX

SCHEMATIC WIRING DIAGRAM
LOAD CENTER "HC"

ARORA AND ASSOCIATES, P.C.

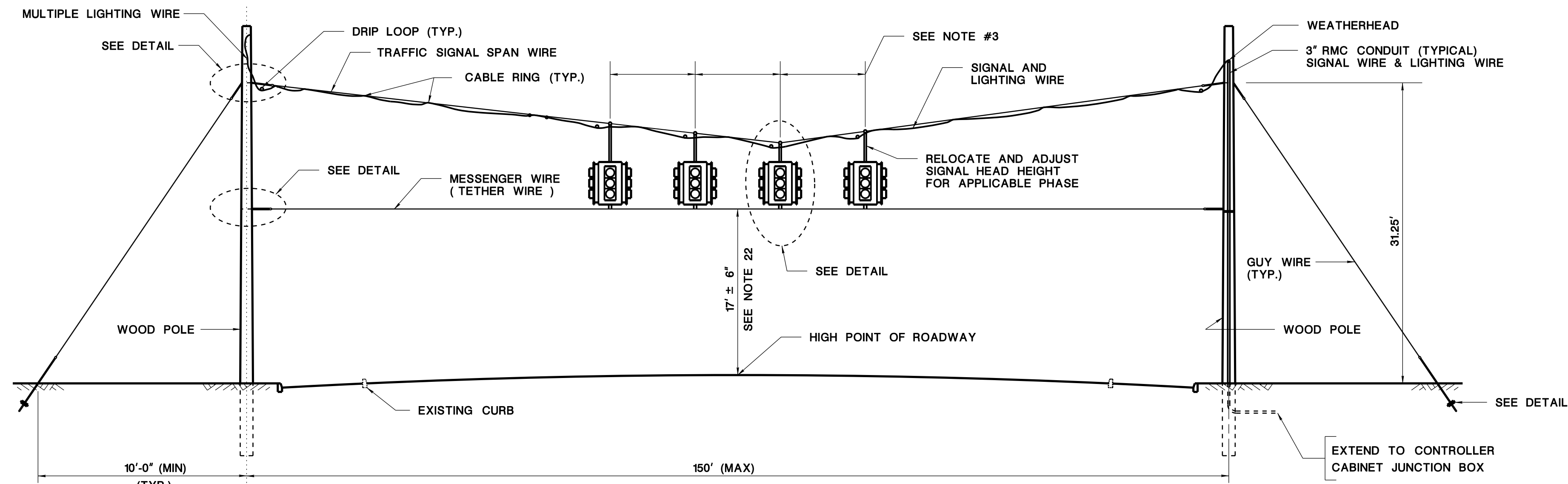
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N.J. P.E. LIC. No. 24GE04310900

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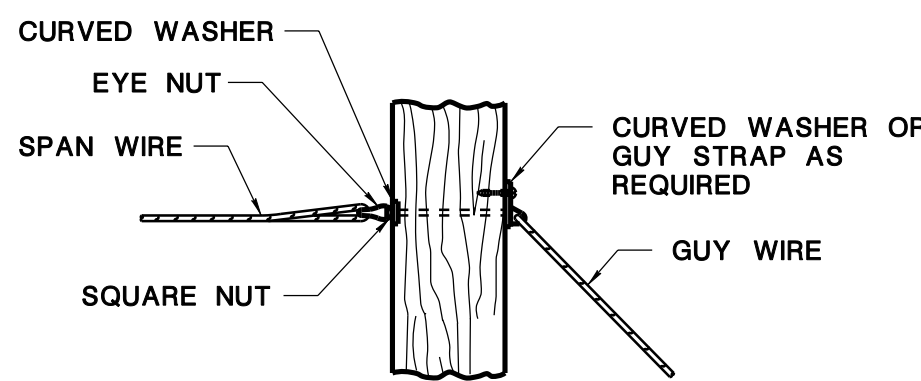
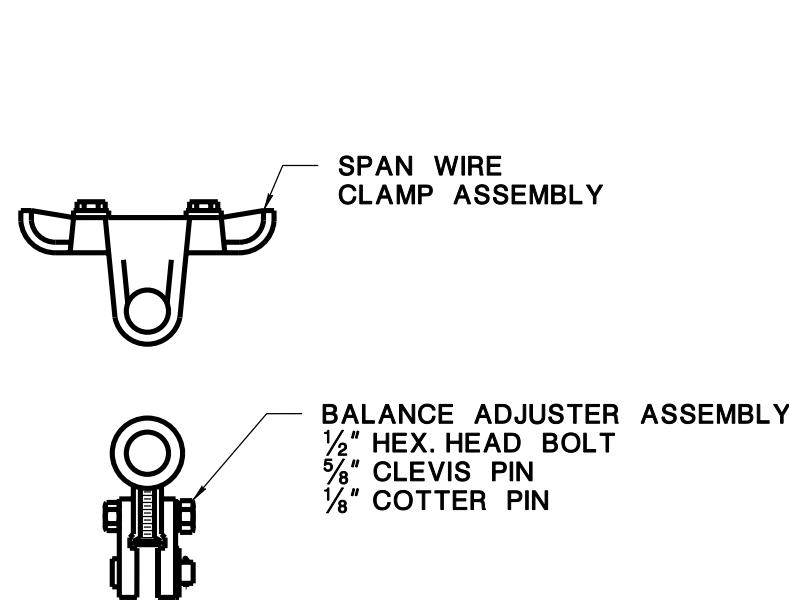
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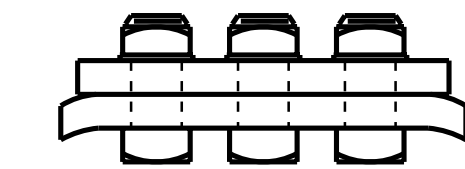
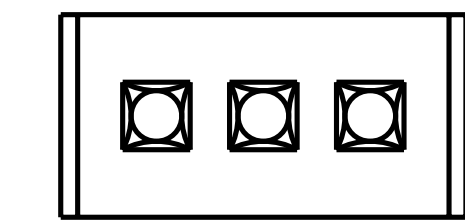
STATE	FEDERAL PROJECT NO.
N.J.	NHS-7802(161)



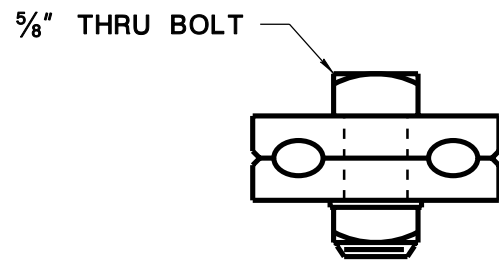
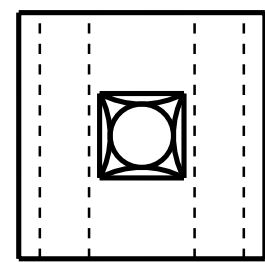
TYPICAL ELEVATION - DIAGONAL SPAN
WITH OVER - THE - ROADWAY
TRAFFIC SIGNALS
NTS



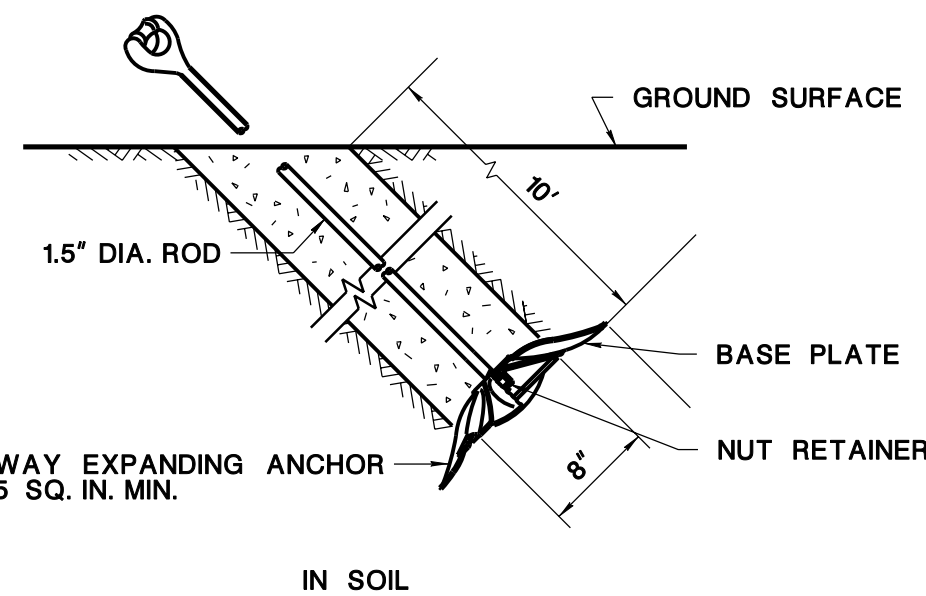
INSTALLATION OF ANGLED THIMBLE EYE BOLT
(FOR END SPANS WITHOUT OVER-THE-ROADWAY
TRAFFIC SIGNALS)
NTS



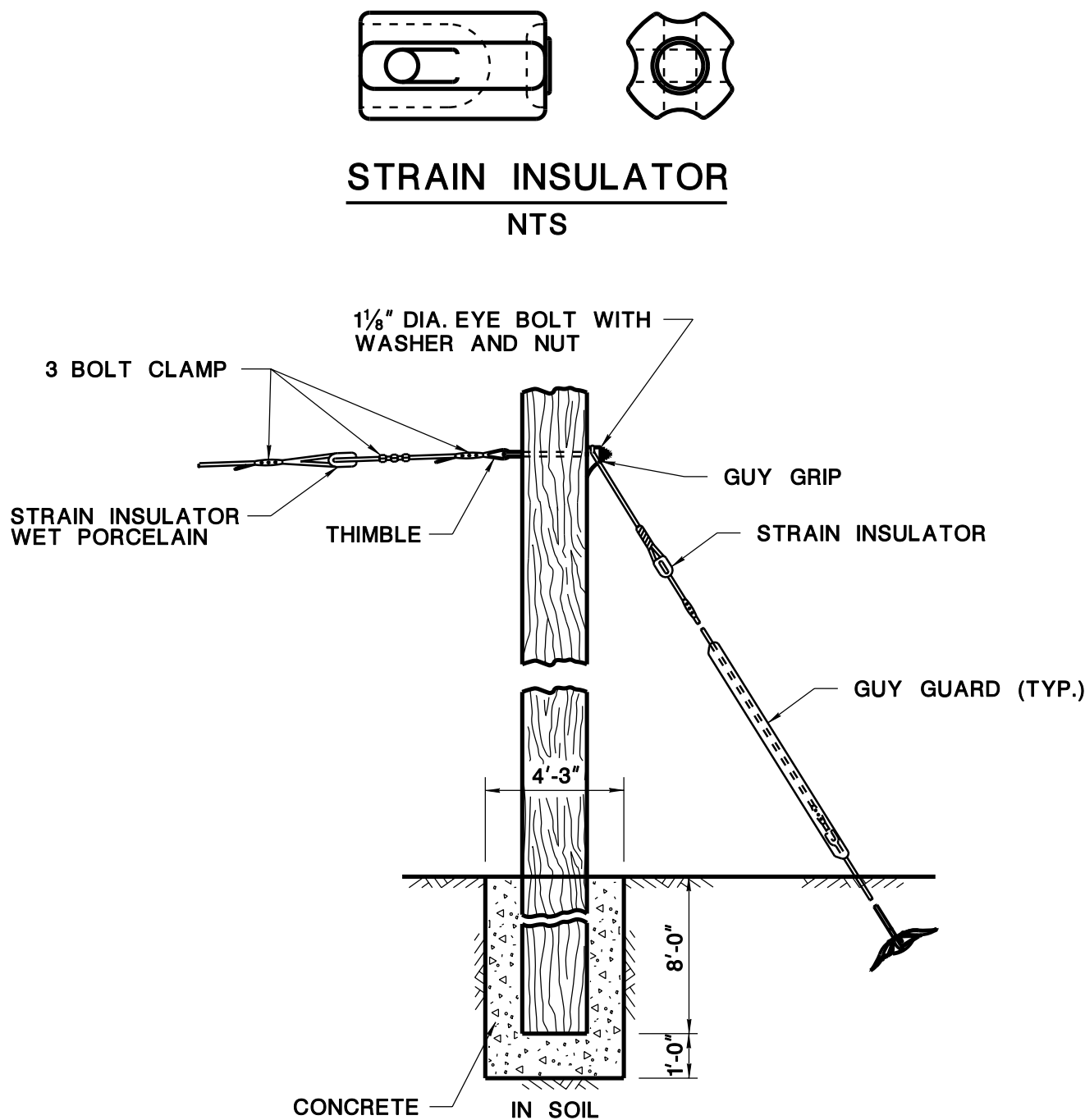
3 - BOLT GUY CLAMP
NTS



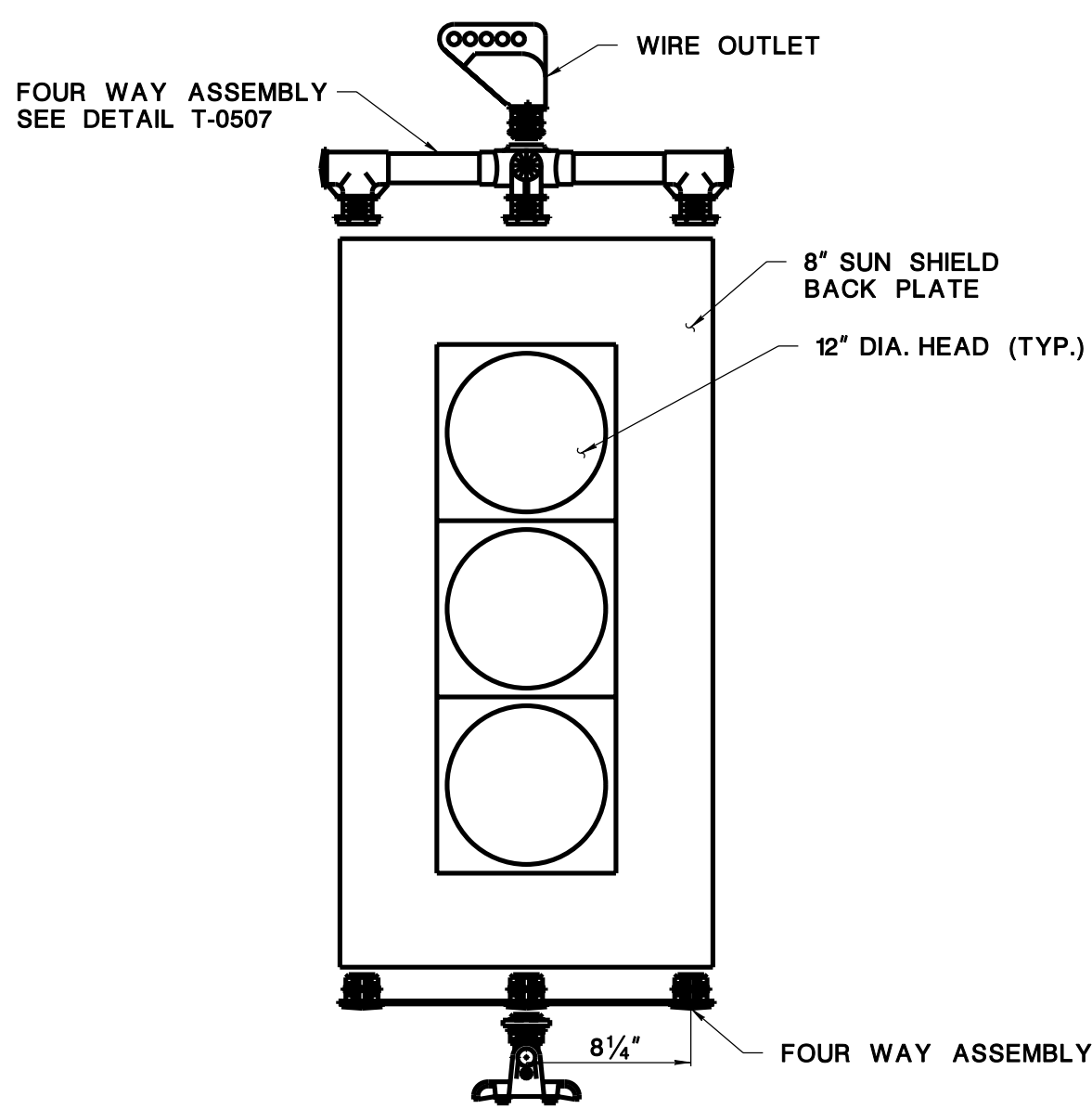
1 - BOLT GUY CLAMP
NTS



ANCHOR ROD DETAIL
NTS



WOOD POLE INSTALLATION
(FOR END SPANS WITHOUT OVER-THE-ROADWAY
TRAFFIC SIGNALS)
NTS



TYPICAL SIGNAL HEAD ASSEMBLY
NTS

NOTE:

- THE DESIGN OF CIRCULAR FOOTINGS IS BASED ON THE CONCRETE BEING PLACED AGAINST UNDISTURBED EARTH. IF AN EARTH AUGER IS USED IT MUST BE OF THE SAME WIDTH AS THE FOOTING DIAMETER AND PLUMB.
- ALL CONCRETE SHALL BE 3,000 PSI CLASS B CONCRETE.
- FOR EXACT NUMBER AND LOCATION OF SIGNAL HEADS SEE TEMPORARY TRAFFIC SIGNAL PLANS.
- SPAN WIRE SHALL BE DOUBLE GALVANIZED SEVEN-STRAND EXTRA HIGH STRENGTH GRADE STEEL WIRE CABLE 1/2 INCH IN DIAMETER WITH 26,900 POUNDS BREAKING STRENGTH.
- THE ANCHOR GUY STRAND WIRE SHALL BE SEVEN-STRAND EXTRA HIGH STRENGTH GRADE STEEL WIRE CABLE 1/2 INCH IN DIAMETER WITH 26,900 POUNDS BREAKING STRENGTH.
- THE WIRE CABLE SHALL BE ZINC COATED BY THE HOT-DIP GALVANIZED PROCESS IN ACCORDANCE WITH ASTM A-475.
- THE GUY WIRE PROTECTOR TO BE USED SHALL BE THE HALF-ROUND TYPE, FABRICATED FROM AT LEAST 14-GAGE STEEL AND SHALL BE HOT-DIP GALVANIZED. ITS LENGTH SHALL BE A MINIMUM OF 7 FEET.
- THE ANCHOR TO BE USED FOR GUYING THE POLE SHALL BE AN 8 INCH DIAMETER HELICAL ANCHOR WITH A 1.5 INCH ANCHOR ROD OR AN 8 INCH 8-WAY EXPANDING ANCHOR.
- THE ANCHOR ROD TO BE USED FOR GUYING THE POLE SHALL BE OF DROP STEEL AND SHALL BE HOT-DIP GALVANIZED.
- ALL FITTINGS TO BE EITHER GALVANIZED STEEL OR STAINLESS STEEL.
- THE ERECTION SEQUENCE SHALL BE AS FOLLOWS:
 - INSTALL POLES AND ALLOW CONCRETE TO CURE.
 - INSTALL ANCHORS, CONNECT SPAN WIRE AND GUY WIRE WITH STRAIN INSULATORS. LEAVE A MINIMUM OF 2 FOOT OF TAIL AFTER THE 3-BOLT CLAMP AT EACH ANCHOR ROD AND AT EACH END OF THE SPAN WIRE.
 - USING COME-ALONG SNUG EACH GUY WIRE AND TIGHTEN 3-BOLT CLAMP.
 - ATTACH SIGNAL HEADS TO SPAN WIRE.
 - TIGHTEN SPAN WIRE TO ALLOW A MAXIMUM DEFLECTION OF 7 FEET 6 INCH AT THE LOWEST POINT IN THE SPAN WIRE.
 - TIGHTEN GUY WIRES SO AS TO STAIGHTEN POLES AND TO HAVE EQUAL TENSION IN EACH GUY WIRE.
- INSPECT AND ADJUST CABLES AND TIGHTEN 3-BOLT CLAMPS WEEKLY TO COMPENSATE FOR STRETCH IN WIRE CABLES. RECORD THE CLEARANCE WEEKLY.
- AT NO TIME SHALL MORE THAN 4 SIGNAL FACES OCCUPY A SIGNAL HEAD ASSEMBLY. AT NO TIME SHALL MORE THAN 7 SIGNAL HEAD ASSEMBLIES BE HUNG FROM THE SPAN WIRE.
- THE POLES SHALL BE CLASS 2, CCA SOUTHERN YELLOW PINE, OF 55 - FOOT LENGTH, 12 INCH DIAMETER AT THE BOTTOM, AND 9 INCH DIAMETER AT THE TOP (MIN.). AFTER INSTALLATION, THE POLES SHALL BE CUT FROM THE TOP TO AN APPROPRIATE LENGTH.
- MESSENGER WIRE SHALL BE DOUBLE GALVANIZED SEVEN-STRAND COMMON STEEL WIRE CABLE 1/2 INCH IN DIAMETER WITH 7,400 POUNDS BREAKING STRENGTH.
- TRAFFIC SIGNAL MINIMUM SPACING 12' PERPENDICULAR TO LINE OF TRAVEL. EXACT LOCATION TO BE DETERMINED IN FIELD BY ENGINEER.
- NIGHTTIME ADJUSTMENT OF HIGHWAY LUMINAIRES MAY BE REQUIRED.
- ALL TEMPORARY SIGNALS TO BE POLYCARBONATE.
- SIGNAL WIRE SHALL BE SUNLIGHT RESISTANT.
- MULTIPLE LIGHTING WIRE SHALL BE #10 AWG-THW.
- COBRA HEAD LIGHTING SHALL BE PROTECTED WITH 5 AMP FUSES LOCATED IN NEAREST JUNCTION BOX.
- OVER ROADWAY CLEARANCE SHALL BE MAINTAINED THROUGHOUT THE LIFE OF THE TEMPORARY TRAFFIC SIGNAL INSTALLATION.
- ALL TRAFFIC SIGNAL ITEMS MUST CONFORM TO THE CONTRACT SPECIFICATIONS.



NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAIL

ROUTE U.S. 46 AT HOLLYWOOD AVENUE CONTRACT NO. 053950370

MUNICIPALITY TOWNSHIP OF FAIRFIELD COUNTY ESSEX

TEMPORARY TRAFFIC SIGNAL ASSEMBLIES

ARORA AND ASSOCIATES, P.C.

MANDEEP SINGH ARORA, P.E.
N.J. P.E. LIC. No. 24GE04310900

CONTROL SECTION
NO.