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Date January 30, 1989

TRI-STATE SIGNAL INC  
Contractor

[Signature]  
Signature

President / Treasurer  
Title

[Signature]  
Transportation Secretary's Signature

ITEM SUMMARY					
ITEM NO.	ITEM	UNIT	QUANTITY	RNDG.	TOTAL
204.20	TRENCH EXCAVATION OF EARTH	CY.	300	-	300
501.25	CONCRETE CLASS B	CY.	5	-	5
507.15	REINFORCING STEEL	Lbs.	450	-	450
605.10	UNDERDRAIN 6" (PERF CORR. POLY.)	LF.	170	-	170
605.10	(MOD.) 6" U.D. (PERF. CORR. POLY.)	LF.	400	-	400
605.20	U-DRAIN 6" CARRIER (STEEL OR ALUM.)	LF.	150	-	150
605.95	UNDERDRAIN FLUSHING BASINS	EA.	6	-	6
635.10	MOBILIZATION	LS.	1	-	1
651.25	TOPSOIL	CY.	23	2	25
678.21	ELECTRICAL CONDUIT (MODIFIED)	LF.	1000	-	1000
678.26	JUNCTION BOX	EA.	15	-	15
679.15	STREET LIGHTING (MODIFIED)	LS.	1	-	1
679.21	LIGHT POLE BASE	EA.	3	-	3
* 641.10	TRAFFIC CONTROL	LS.	1	-	1
* 631.16	TESTING EQUIPMENT-CONCRETE	LS.	1	-	1

\* THIS ITEM OUT OF NUMERICAL ORDER

# STATE OF VERMONT

## AGENCY OF TRANSPORTATION



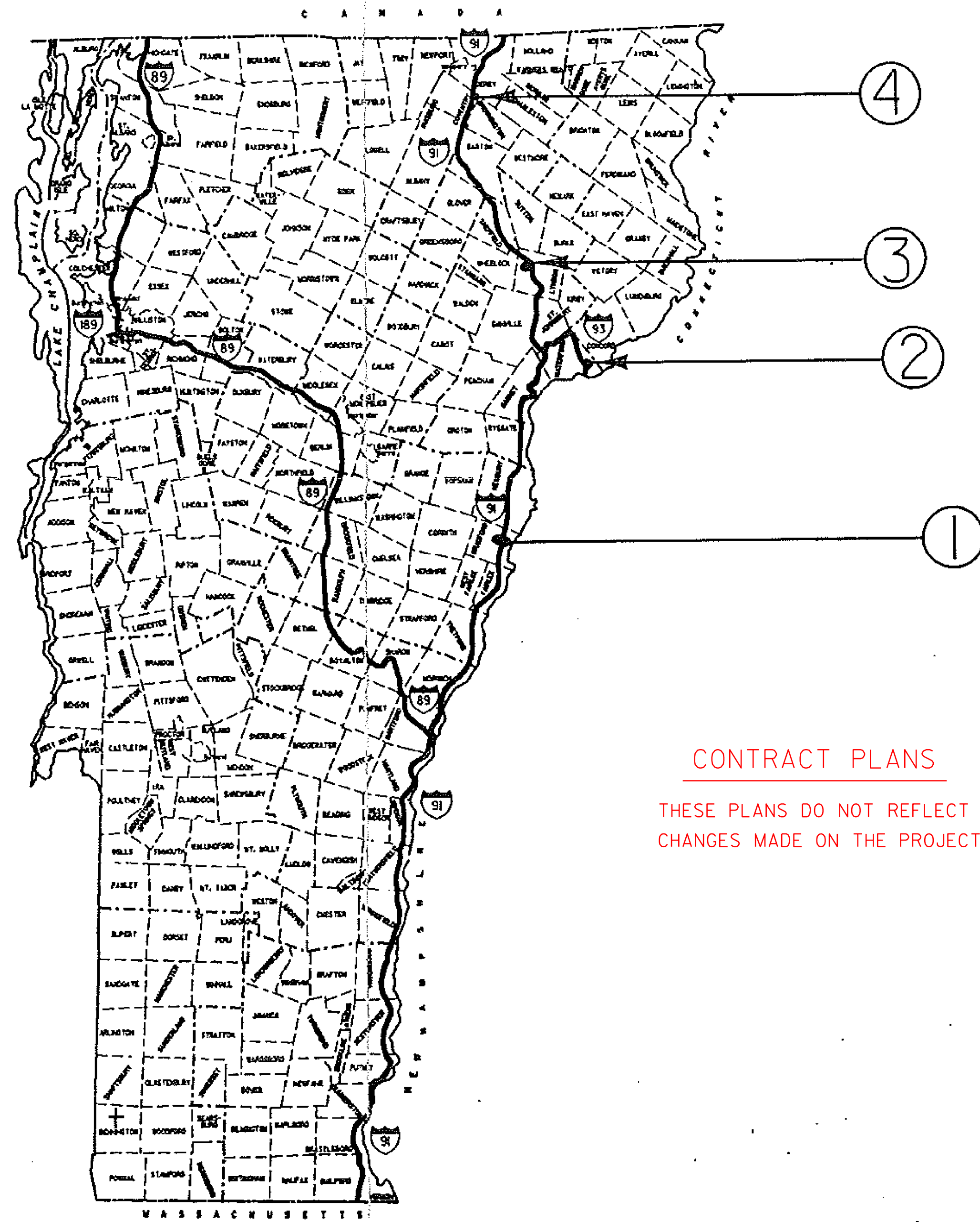
### PROPOSED IMPROVEMENT

PROJECT DESCRIPTION

TOWNS OF : BRADFORD, WATERFORD, LYNDON AND COVENTRY.  
COUNTIES OF : ORANGE, CALEDONIA AND ORLEANS.

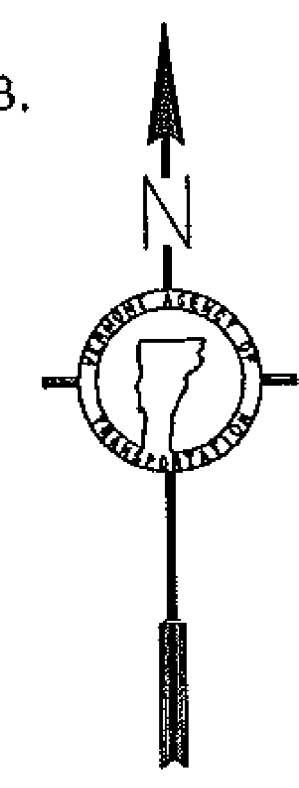
THE PROJECTS ARE REST AREAS LOCATED IN THE TOWNS OF BRADFORD, WATERFORD, LYNDON AND COVENTRY ON INTERSTATES I-91 AND I-93.

ON I-91, THE PROJECT INVOLVES THE REPLACEMENT OF LUMINAIRES (TO ENERGY EFFICIENT, HIGH PRESSURE SODIUM) AND REPLACEMENT OF POLES, ETC., AS REQUIRED. ON I-93, THE WELCOME CENTER, ONLY LUMINAIRES WHICH ARE INOPERATIVE SHALL BE REPLACED FOR THEY ARE ALREADY HIGH PRESSURE SODIUM. OTHER WORK TO LIGHTING SYSTEM SHALL BE DONE AS REQUIRED. THIS SHALL INCLUDE THE INSTALLATION OF UNDERDRAIN AND A DROP INLET AT THE WATERFORD REST AREA.



PROJECT LOCATION FOR CONTRACT

- 1) BRADFORD REST AREAS - N.B. & S.B.
- 2) WATERFORD WELCOME CTR. - W.B.
- 3) LYNDON REST AREA - S.B.
- 4) COVENTRY REST AREA - N.B.



CONTRACT PLANS  
THESE PLANS DO NOT REFLECT  
CHANGES MADE ON THE PROJECT.

DESIGNED BY THE  
AGENCY OF TRANSPORTATION  
DESIGN DIVISION  
SCALE  
JANUARY 1988

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE CHIEF ENGINEER.  
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 1966, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON NOVEMBER 24, 1985 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

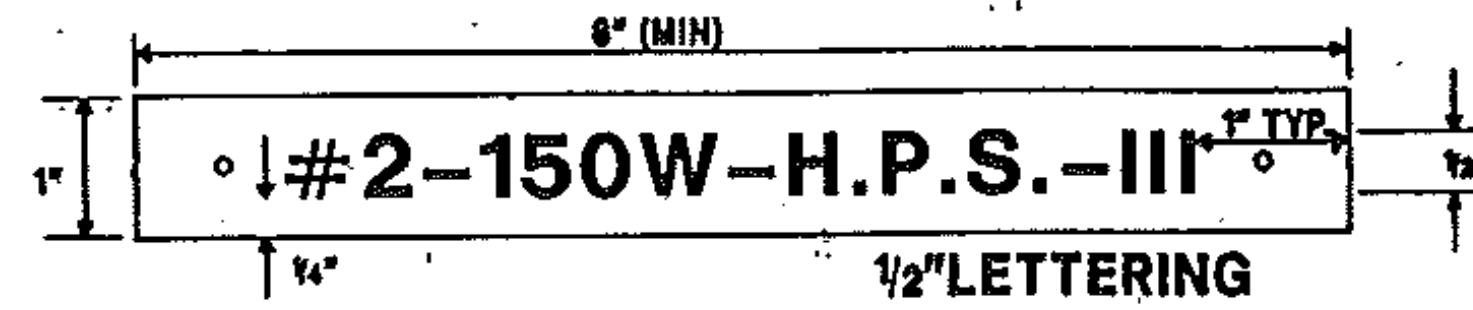
SUBMITTED BY ORDER OF THE STATE TRANSPORT

APPROVED [Signature] DATE \_\_\_\_\_  
Acting CHIEF ENGINEER

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

APPROVED [Signature] DATE \_\_\_\_\_  
DIVISION ADMINISTRATOR

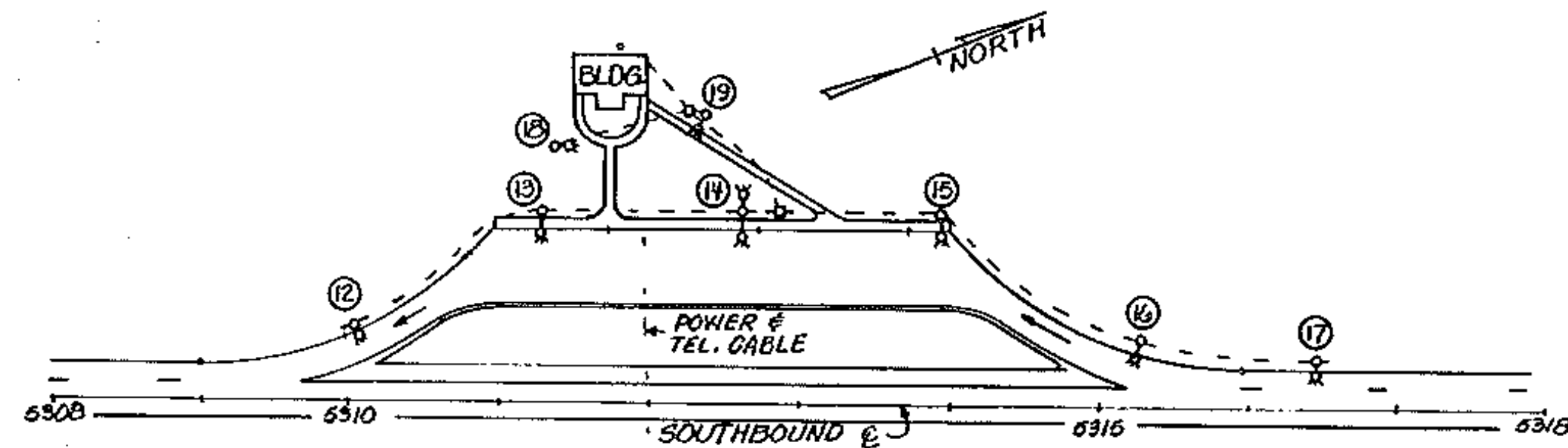
PROJECT STATEWIDE NO. \_\_\_\_\_  
SHEET 1 OF 18 SHEETS



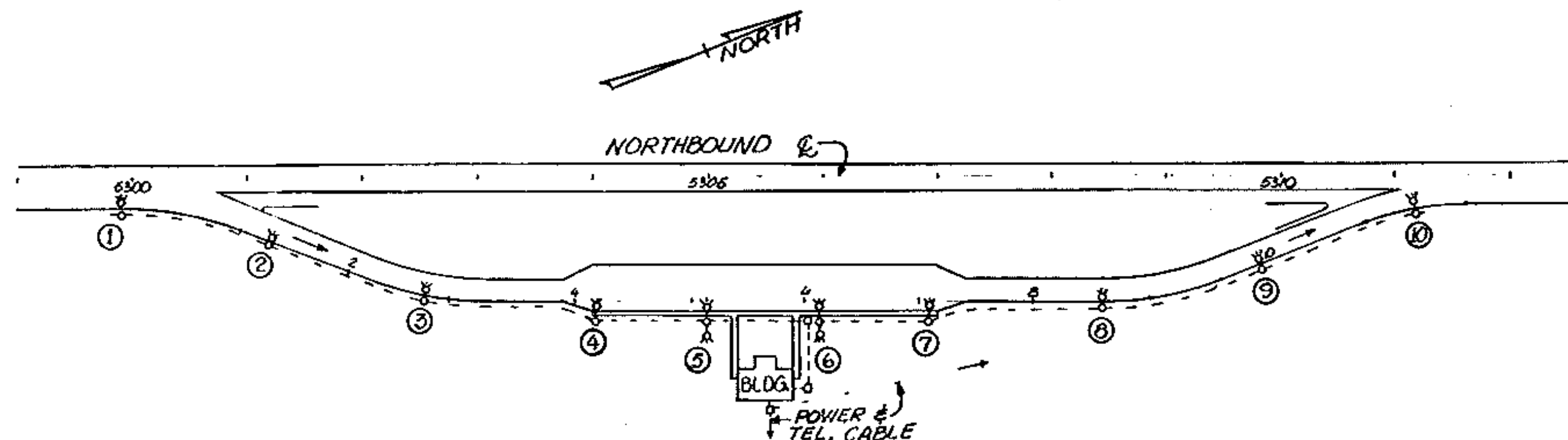
LEGEND: BLACK OR WHITE (NON-REFL.) - STAMPED PRIOR TO PAINTING.  
BACKGROUND: NATURAL ALUMINUM OR FLAT BLACK SURFACE, SAME AS POLE FINISH.

- NOTES:
1. THE TAG SHALL BE MOUNTED ON ALL STREET LIGHT POLES IN SUCH A MANNER AS NOT TO BE EASILY REMOVED, SUCH AS WELDED, RIVETED OR BOLTED WITH VANDAL PROOF BOLTS.
  2. THE LETTERS SHALL BE PUNCHED, STAMPED, ENGRAVED OR PHOTO-ETCHED. STAMPING SHALL PENETRATE AT LEAST 1/2 THE BASE MATERIAL THICKNESS. THE PHOTO-ETCHING WOULD NOT PENETRATE 1/2 THE BASE MATERIAL THICKNESS.
  3. THE BASE MATERIAL FOR THE TAG SHALL BE ALUMINUM WITH A MINIMUM THICKNESS OF 0.100 INCHES.

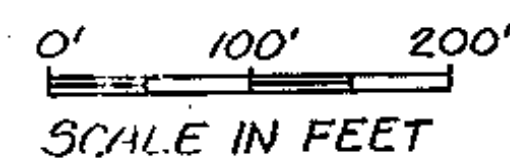
**DETAILS FOR TAGS ATTACHED TO STREET LIGHT POLES.**



BRADFORD S.B. REST AREA



BRADFORD N.B. REST AREA



**WORK TO BE PERFORMED BY THE CONTRACTOR**

THE CONTRACTOR SHALL:

1. PERFORM AN INSULATION TEST ON EXISTING NON-GROUNDED CONDUCTORS (INCLUDING NEUTRAL). IF READING IS AROUND ONE MEGOHM OR LESS, A) LOCATE BAD SEGMENT. B) CONTACT TRAFFIC AND SAFETY SECTION WITH THE READINGS ON THE REST OF CIRCUITRY FOR A DETERMINATION FOR EXTENT OF REPLACEMENT OF WIRING AND/OR CONDUIT.
2. PERFORM A RESISTANCE TO GROUND TEST AT SPECIFIED GROUNDS, 25 OHMS OR LESS ACCEPTABLE.
3. FURNISH THE TRAFFIC AND SAFETY SECTION VIA THE RESIDENT ENGINEER, INSULATION TEST READINGS ON THE EXISTING AND NEW (IF REQUIRED) ELECTRICAL SYSTEM, RESISTANCE TO GROUND READINGS AT SPECIFIED GROUNDS, VOLTAGE READINGS AT CIRCUIT BREAKERS AND IF CIRCUIT LENGTH IS OVER 1000 FEET IN LENGTH FURNISH A VOLTAGE READING (WITH FULL LOAD) AT END OF CIRCUITS.
4. DISCONNECT AND REMOVE EXISTING LUMNAIRES, INSTALL NEW LUMNAIRES AS PER PLAN, STOCKPILE OLD LUMNAIRES FOR PICK UP BY DISTRICT FORCES.
5. REPAIR OR REPLACE ANY FAULTY MATERIAL WHICH MAY HAMPER THE SAFETY OR OPERATION OF THE COMPLETED LIGHTING SYSTEM.
6. REPLACE BOLT AND HANDHOLE COVERS AND STAINLESS STEEL HARDWARE AS REQUIRED, FOR POLES AND PULLBOXES.
7. PLUMB EXISTING POLES AS REQUIRED USING STAINLESS STEEL OR GALVANIZED STEEL SHIMS.
8. INSTALL METAL TAGS TO THE EXISTING POLES WITH INFORMATION AS INDICATED IN THE NOTES.
9. AT POLE LOCATION #1, 8 AND 10, INSTALL NEW POLES, 8 FOOT ARMS, LUMNAIRES AND OTHER RELATED EQUIPMENT. NEW POLES AND ARMS TO BE EITHER, REPLACEMENT IN KIND OR SAME MATERIAL SPECIFICATIONS AND APPEARANCE AS EXISTING.
10. POLES # 1, 10, 16 & 17 SHALL HAVE BREAKAWAY COUPLINGS INSTALLED.

ALL THE ABOVE WORK, INCLUDING ELECTRICAL CIRCUIT TESTING, WHICH IS NOT PAID FOR UNDER A SEPARATE ITEM NUMBER, SHALL BE PAID FOR UNDER ITEM 679.15, STREET LIGHTING (1106)

**GENERAL NOTES**

ALL STREET LIGHT POLES SHALL HAVE A METAL TAG ATTACHED TO THE HANDHOLE WITH THE POLE NUMBER, WATTAGE, TYPE OF LAMP AND DISTRIBUTION, EXAMPLE, #2-150W-H.P.S.-W, MINIMUM LETTER SIZE IS 1/2" HIGH. PAYMENT FOR TAGS WILL BE SUBSIDIARY TO ITEM 679.15, STREET LIGHTING.

**STREET LIGHTING DESIGN PARAMETERS**

AVERAGE MAINTAINED ILLUMINATION:  
ENTRANCE - 0.6 FOOTCANDLES  
PARKING AREA - 0.8 TO 1.0 FOOTCANDLES  
FILTERED LUMINAIRE: 0.95  
LAMP DEPRECIATION: 0.75 @ 24,000 HOURS  
COMBINED LAMP FACTOR: 0.7  
MOUNTING HEIGHT FACTOR: (80/M.H.)<sup>2</sup>  
UNIFORMITY RATIO: 4:1 MAX.  
MIN. FOOTCANDLES ON ACCESS OR PARKING AREA: 0.20

THESE NOTES APPLY TO ALL REST AREAS.

BRADFORD N.B. REST AREA						
POLE NO.	LOCATION	OFF-SET	LENGTH OF POLE ARM	LUMINAIRE WATTS TYPE	MOUNTING HEIGHT	REMARKS
1	EXISTING		28' 8'	100W MC III	30'	REQUIRES A BREAKAWAY FEATURE
2	"		EXISTING	100W "	"	
3	"		"	100W "	"	
4	"		"	150W MC III	"	
5	"		"	2@ 150W "	"	TWO LUMNAIRES
6	"		"	2@ 150W "	"	TWO LUMNAIRES
7	"		"	150W "	"	
8	"		28' 8'	100W "	30'	
9	"		EXISTING	100W "	"	
10	"		"	100W "	"	REQUIRES A BREAKAWAY FEATURE
BRADFORD S.B. REST AREA						
12	EXISTING		EXISTING	100W MC III	EXISTING	
13	"		"	150W MC III	"	
14	"		"	2@ 150W MC III	"	TWO LUMNAIRES
15	"		"	150W MC III	"	
16	"		"	100W MC III	"	REQUIRES A BREAKAWAY FEATURE
17	"		"	100W MC III	"	REQUIRES A BREAKAWAY FEATURE
18	"		"	150W MC III	"	
19	"		"	150W MC III	"	

BRADFORD  
I-91 REST AREAS NB. & SB.

STREET LIGHTING,  
DESIGN CRITERIA  
AND  
GENERAL NOTES

PREPARED BY R. DAVIS DATE 4-88  
CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_  
DESIGN SUPERVISOR DAB DATE \_\_\_\_\_  
PROJ. STATEWIDE IR LITE (2)  
TRAFFIC SHEET NO. 2 OF 7  
SHEET 2 OF 18 SHEETS

# WATERFORD W.B. REST AREA

POLE NO.	LOCATION	OFF-SET	LENGTH OF POLE ARM	LUMINAIRE WATTS TYPE	MOUNTING HEIGHT	REMARKS
1	EXISTING		25' 4"	100W NC II	20'	
2	"		" "	100W "	"	
3	"		" "	100W "	"	
4	"		" "	150W NC III	"	
5	"		" @ 2' 4"	2 @ 150W "	"	TWO ARMS, TWO LUMINAIRES
6	"		" @ 2' 4"	2 @ 150W "	"	TWO ARMS, TWO LUMINAIRES
7	"		" 4'	150W "	"	
8	"		" "	100W NC II	"	
9	"		" "	100W "	"	
10	"		" 6'	100W NC III	"	REPLACE OR REPAIR LUMINAIRE REPLACE ARM AS REQUIRED
11	"		" "	100W "	"	
12	"		" "	100W "	"	
13	"		" "	100W "	"	
14	"		" "	100W "	"	
15	"		" 4'	100W NC II	"	

**NOTE:**  
THE LUMINAIRE WATTS AND TYPE ARE LISTED ON THIS SHEET FOR INFORMATION IF REPLACEMENT IS REQUIRED.

**WORK TO BE PERFORMED BY THE CONTRACTOR**

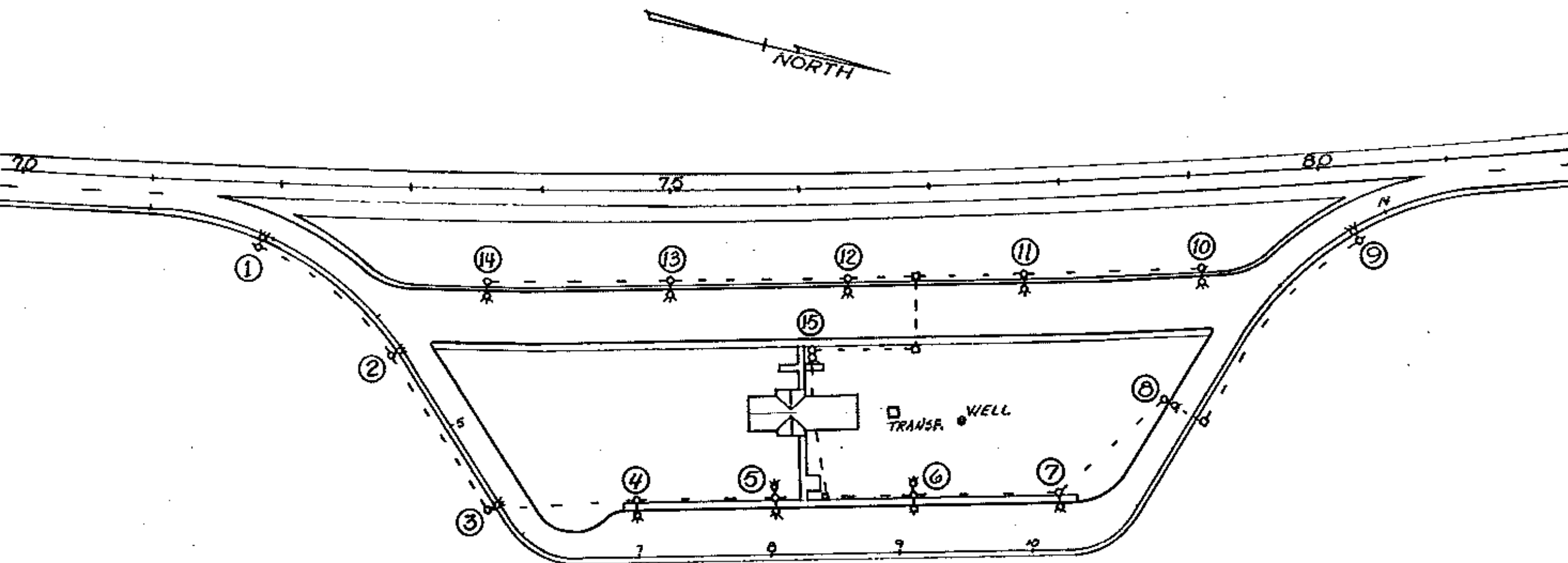
**THE CONTRACTOR SHALL:**

1. PERFORM AN INSULATION TEST ON EXISTING NON-GROUNDED CONDUCTORS (INCLUDING NEUTRAL). IF READING IS AROUND ONE MEGOHM OR LESS, A.) LOCATE BAD SEGMENT. B.) CONTACT TRAFFIC AND SAFETY SECTION WITH THE READINGS ON THE REST OF CIRCUITRY FOR A DETERMINATION FOR EXTENT OF REPLACEMENT OF WIRING AND/OR CONDUIT.
2. PERFORM A RESISTANCE TO GROUND TEST AT SPECIFIED GROUNDS, 25 OHMS OR LESS ACCEPTABLE.
3. FURNISH THE TRAFFIC AND SAFETY SECTION VIA THE RESIDENT ENGINEER, INSULATION TEST READINGS ON THE EXISTING AND NEW (IF REQUIRED) ELECTRICAL SYSTEM, RESISTANCE TO GROUND READINGS AT SPECIFIED GROUNDS, VOLTAGE READINGS AT CIRCUIT BREAKERS AND IF CIRCUIT LENGTH IS OVER 1000 FEET IN LENGTH FURNISH A VOLTAGE READING (WITH FULL LOAD) AT END OF CIRCUITS.
4. DISCONNECT AND REMOVE EXISTING LUMINAIRES (IF INOPERABLE), INSTALL NEW LUMINAIRES AS REQUIRED, STOCKPILE OLD LUMINAIRES FOR PICK UP BY DISTRICT FORCES.
5. REPAIR OR REPLACE ANY FAULTY MATERIAL WHICH MAY HAMPER THE SAFETY OR OPERATION OF THE COMPLETED LIGHTING SYSTEM.
6. PLUMB EXISTING POLES AS REQUIRED.
7. AT POLE LOCATION #10, INSTALL NEW ARM, ALSO AT OTHER LOCATIONS IF REQUIRED.
8. INSTALL NEW JUNCTION BOXES AT THE BASE OF EACH LIGHT POLE AS PER PLAN.
9. INSTALL 6" UNDERDRAIN AS PER PLAN.
10. INSTALL NEW CONDUIT AS PER PLAN AND AS DETERMINED NECESSARY AFTER ELECTRICAL CIRCUIT TESTING.
11. INSTALL NEW CONCRETE DROP INLET WITH CONCRETE COVER AS PER PLAN.

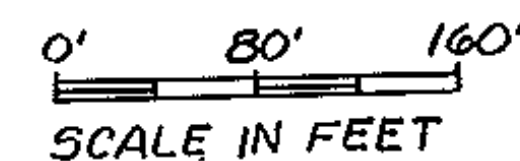
ALL THE ABOVE WORK, INCLUDING ELECTRICAL CIRCUIT TESTING, WHICH IS NOT PAID FOR UNDER A SEPARATE ITEM NUMBER, SHALL BE PAID FOR UNDER ITEM 679.15, STREET LIGHTING (MOD).

**GENERAL NOTES**

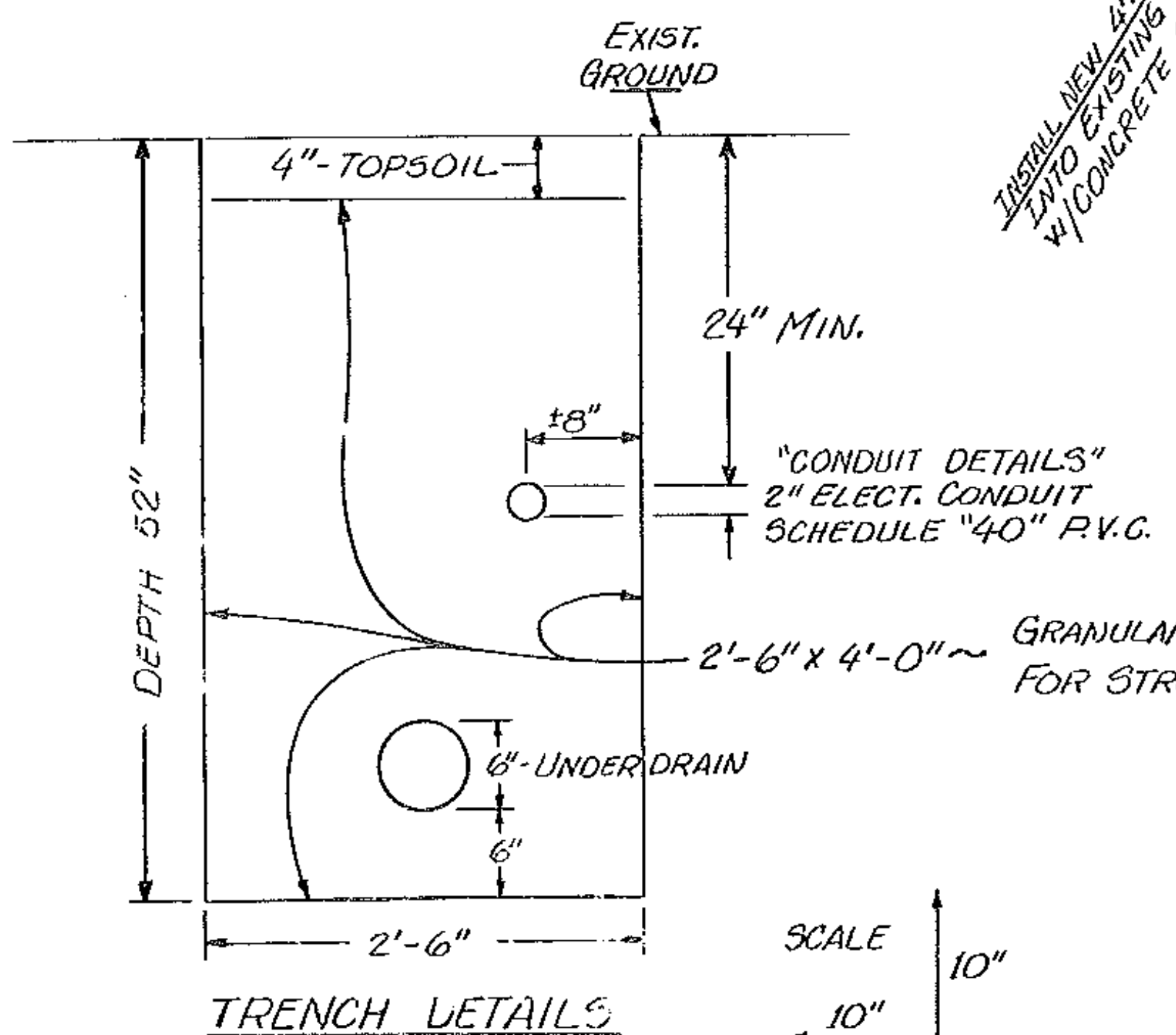
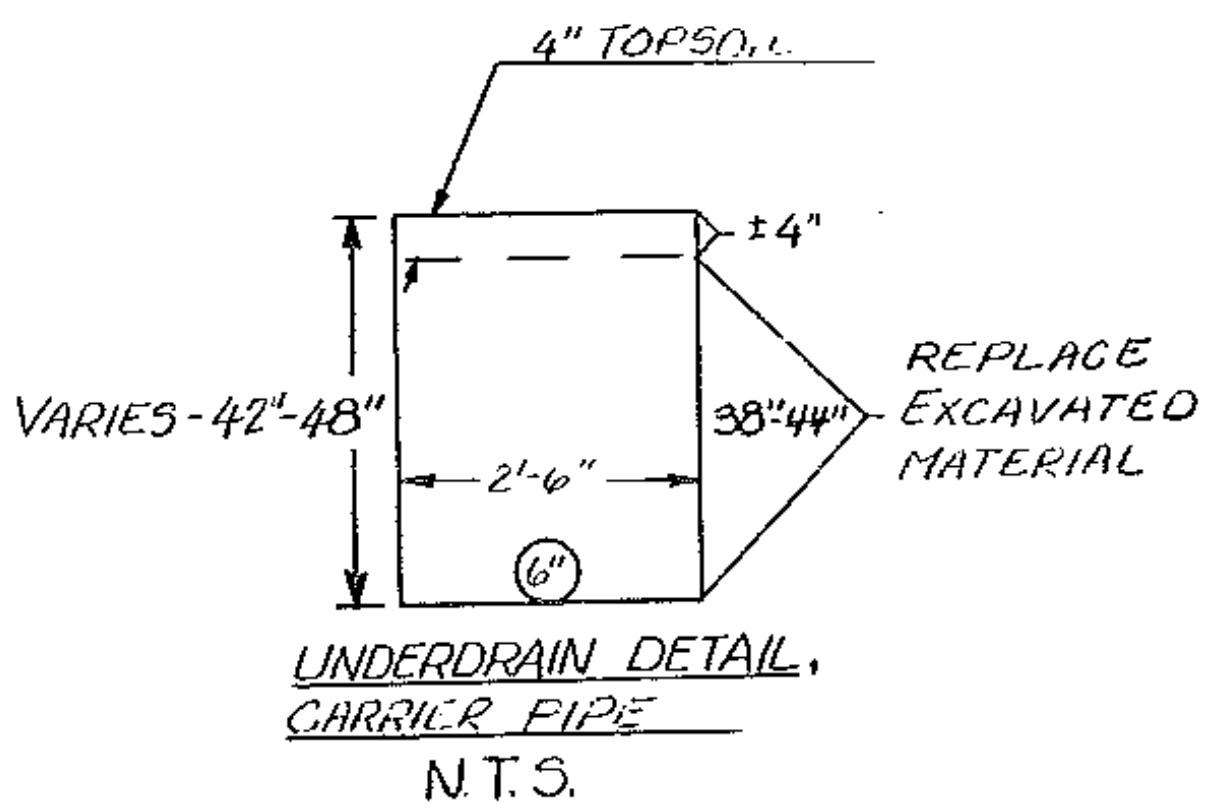
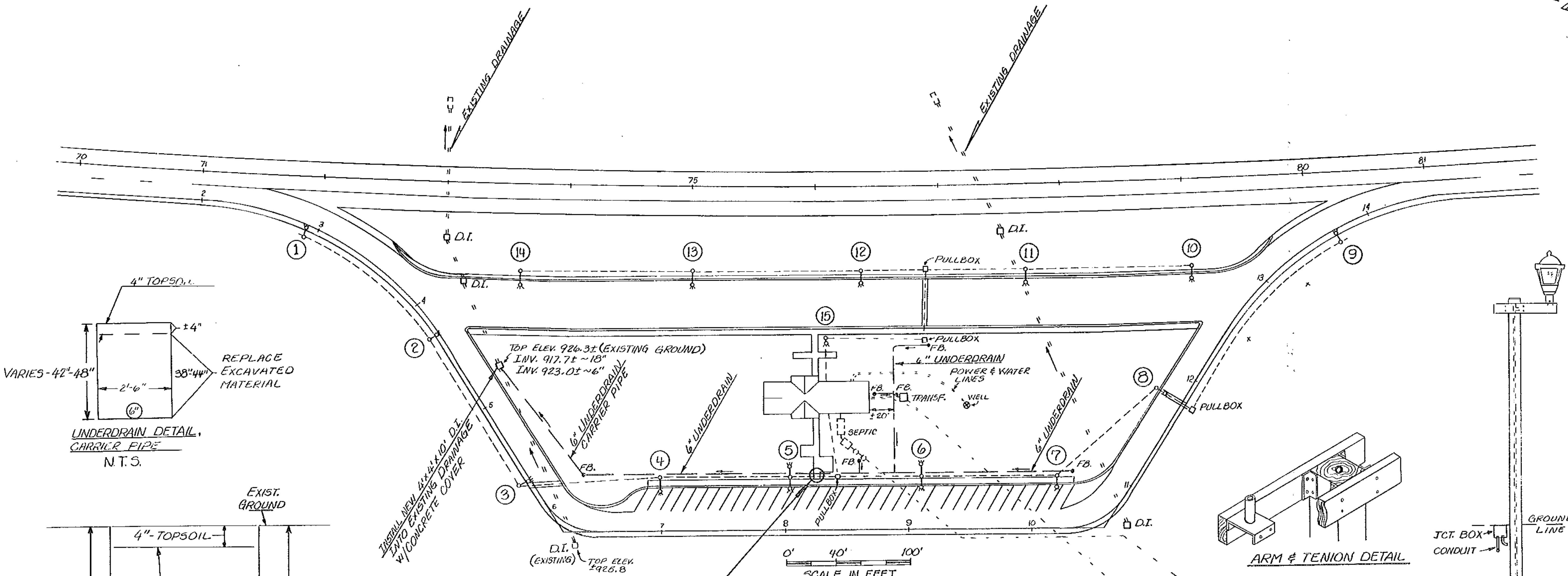
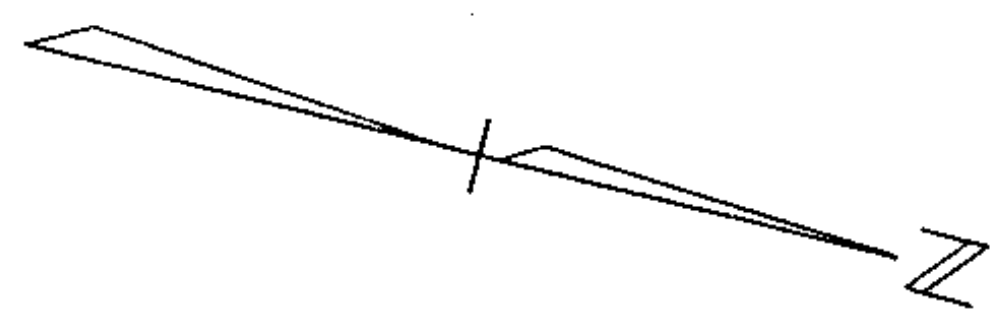
- POLES #4 THRU #7 SHALL BE BRACED DURING EXCAVATION OF TRENCH DUE TO CLOSE PROXIMITY OF TRENCH.
- EXISTING POWER, WATER AND SEPTIC LINES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS, USE CARE DURING EXCAVATION.
- JUNCTION BOXES SHALL MEET THE LOADING REQUIREMENTS AS MENTIONED IN THE STANDARD SPECIFICATIONS FOR CONSTRUCTION, 752J2 AND SHALL HAVE A WATERTIGHT COVER, CONDUIT ENTERIES AND HAVE CONDUIT SEALING BUSHINGS IN ALL CONDUITS.
- ESTABLISHMENT OF TURF, EXCAVATE AND REPLACE EXISTING TOPSOIL AS DIRECTED BY THE RESIDENT ENGINEER, SEED, FERTILIZER, LIME AND MULCH SHALL BE PAID FOR SUBSIDIARY TO OTHER ITEMS.
- THE NEW DROP INLET SHALL BE POURED IN PLACE. A TWO FOOT LONG SECTION OF THE EXISTING PIPE TO BE REMOVED AS NECESSARY.



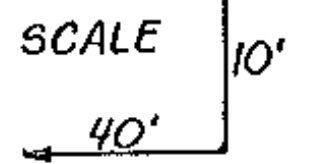
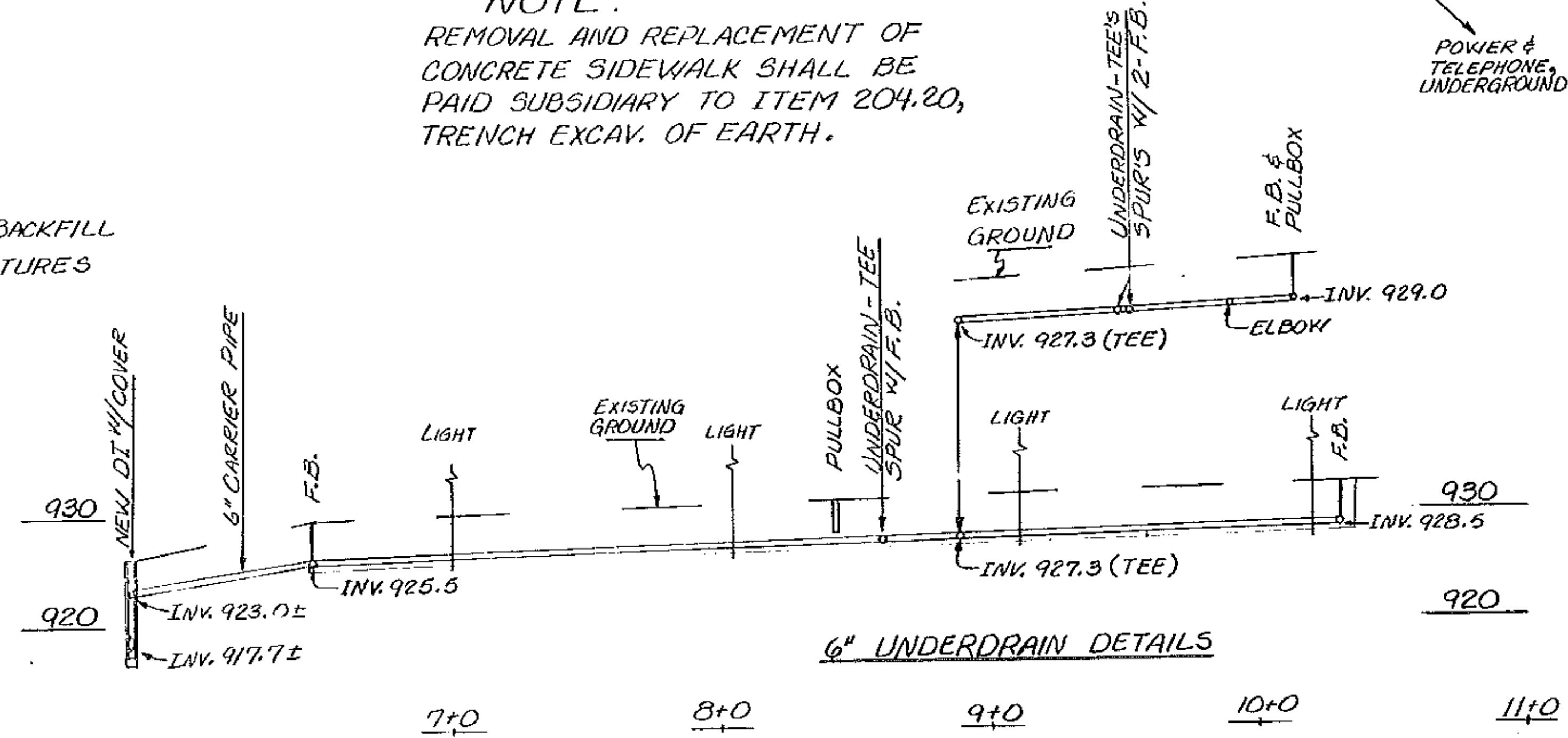
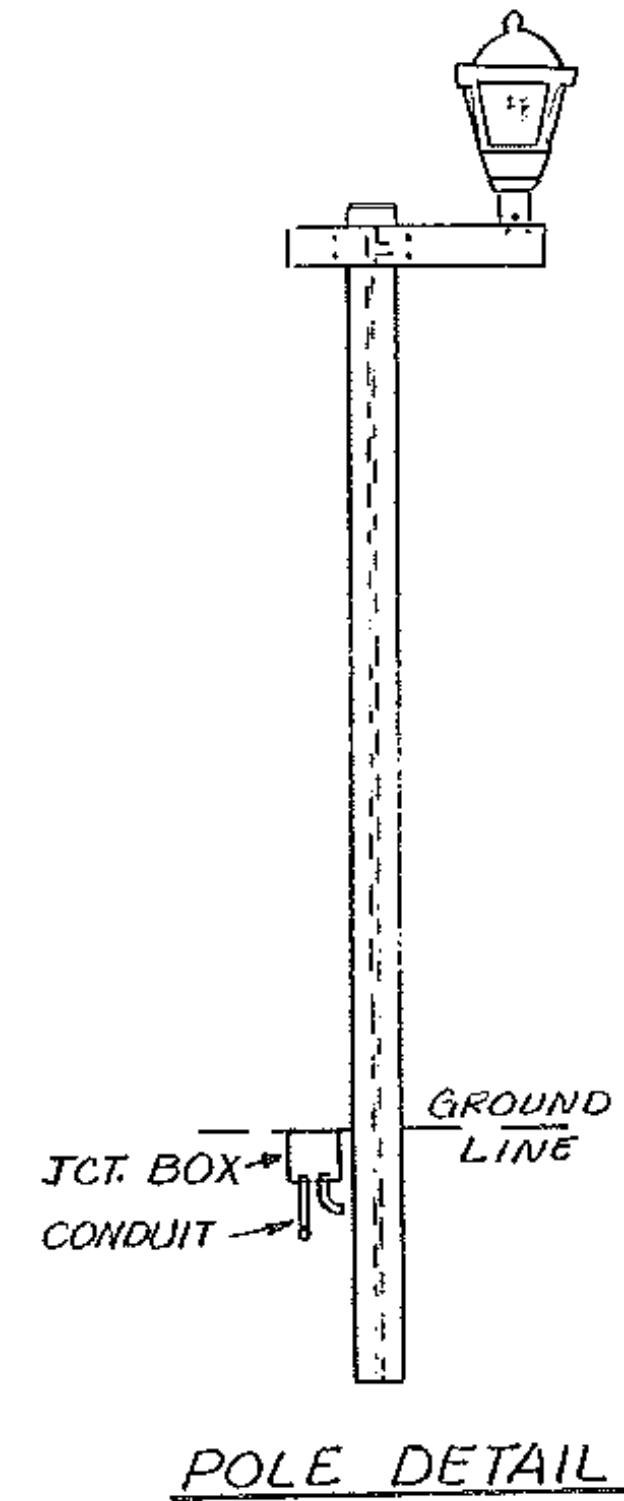
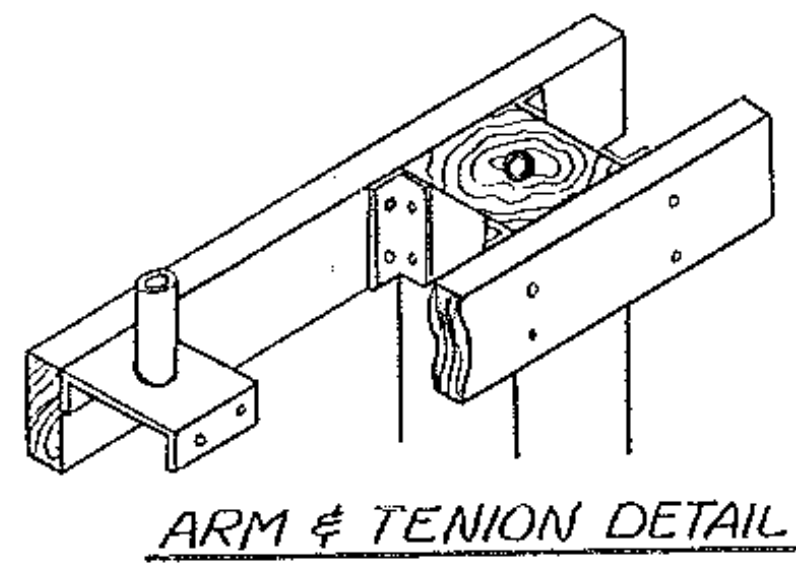
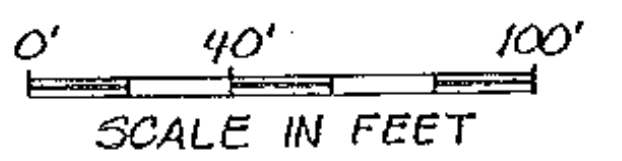
WATERFORD W.B. WELCOME CENTER



WATERFORD I-93 WELCOME CENTER	
STREET LIGHTING DESIGN CRITERIA AND GENERAL NOTES	PREPARED BY <u>R. DAVIS</u> DATE <u>4-88</u>
	CHECKED BY _____ DATE _____
	DESIGN SUPERVISOR <u>DAR</u> DATE _____
	PROJ. <u>STATEWIDE IR LITE (2)</u>
	TRAFFIC SHEET NO. <u>3</u> OF <u>7</u>
	SHEET <u>3</u> OF <u>18</u> SHEETS



**NOTE:**  
REMOVAL AND REPLACEMENT OF CONCRETE SIDEWALK SHALL BE PAID SUBSIDIARY TO ITEM 204.20, TRENCH EXCAV. OF EARTH.

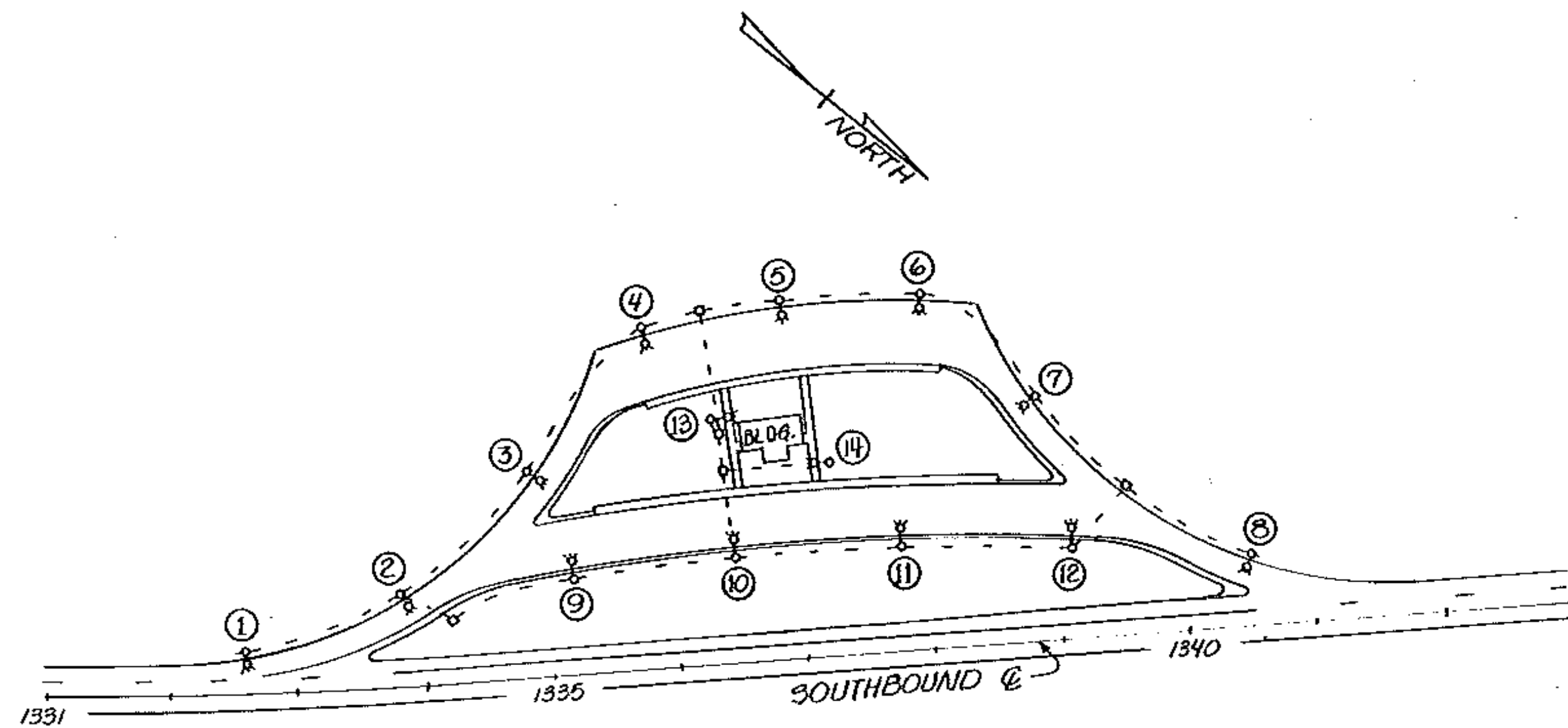


**NOTE:**  
THE ABOVE DETAIL TO BE USED FROM STA. 6±37 LT. TO 10±32 LT. CONDUIT DETAIL TO BE USED FROM STATION 6±98 LT. TO 10±25 LT. SEE TOP DETAIL FOR CARRIER PIPE.

WATERFORD  
I-93 WELCOME CENTER

SURVEYED BY \_\_\_\_\_ DATE \_\_\_\_\_  
DRAWN BY R. DAVIS DATE 5-88  
TRACED BY \_\_\_\_\_ DATE \_\_\_\_\_

STATEWIDE  
PROJ. IR NO. LITE (2)  
SHEET 4 OF 18

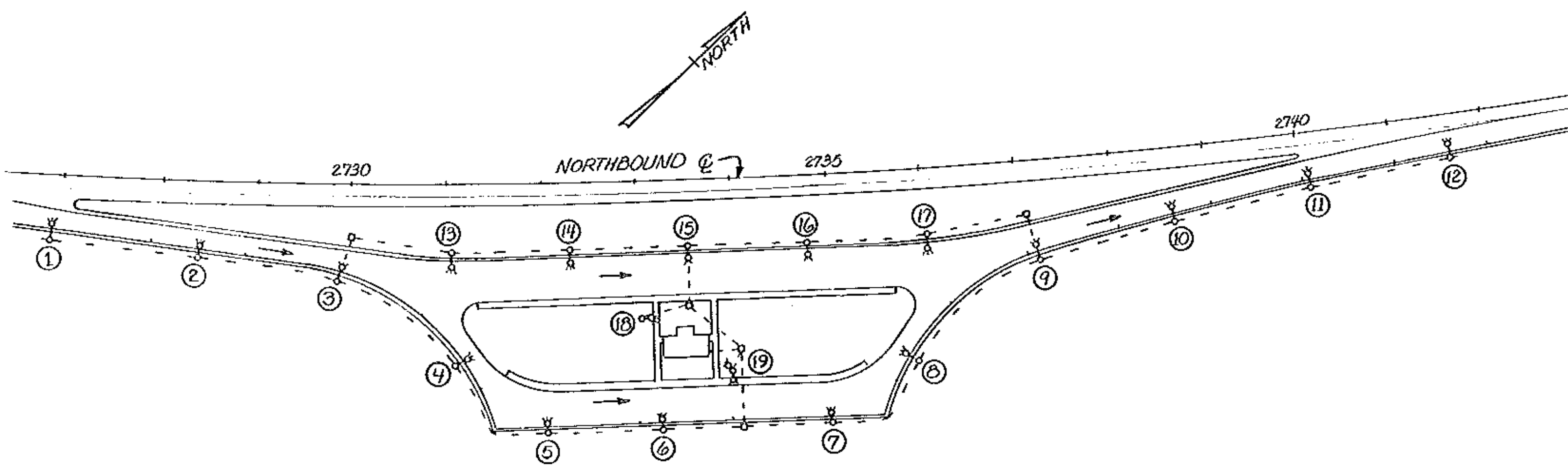


LYNDON S.B. REST AREA

0' 100' 200'  
SCALE IN FEET

LYNDON S.B. REST AREA							
POLE NO.	LOCATION	OFF-SET	LENGTH OF POLE ARM	LUMINAIRE WATTS	TYPE	MOUNTING HEIGHT	REMARKS
1	1332 ± 60	±38	28' ± 8'	100W	MC III	30'	COMPLETE NEW INSTALLATION (BREAKAWAY)
2	1333 ± 82	±78'	28' ± 8'	100W	MC III	30'	COMPLETE NEW INSTALLATION
3	EXISTING		EXISTING	100W	MC III	EXISTING	
4	"		"	150W	MC III	"	
5	"		"	"	"	"	
6	"		"	"	"	"	
7	"		"	100W	MC III	"	
8	1340 ± 53	±61'	28' ± 8'	100W	MC III	30'	COMPLETE NEW INSTALLATION
9	EXISTING		EXISTING	150W	MC III	30'	
10	"		"	"	"	"	
11	"		"	"	"	"	
12	"		"	"	"	"	
13	"		"	"	"	"	
14	"		"	"	"	"	

COVENTRY N. B. REST AREA							
POLE NO.	LOCATION	OFF-SET	LENGTH OF POLE ARM	LUMINAIRE WATTS	TYPE	MOUNTING HEIGHT	REMARKS
1	EXISTING		EXISTING	100W	MC III	EXISTING	
2	"		"	"	"	"	
3	"		"	"	"	"	
4	"		"	"	"	"	
5	"		"	150W	MC III	"	
6	"		"	"	"	"	
7	"		"	"	"	"	
8	"		"	100W	MC III	"	
9	"		"	"	"	"	
10	"		28' ± 8'	"	"	30'	NEW POLE, TRUSS ARM & LUMNAIRE
11	"		EXISTING	"	"	EXISTING	
12	"		"	"	"	"	
13	"		"	150W	MC III	"	
14	"		"	"	"	"	
15	"		"	"	"	"	
16	"		"	"	"	"	
17	"		"	"	"	"	
18	"		"	150W	MC III	"	
19	"		"	2x150W	MC III	"	



COVENTRY N. B. REST AREA

0' 100' 200'  
SCALE IN FEET

WORK TO BE PERFORMED BY THE CONTRACTOR

- THE CONTRACTOR SHALL:
- PERFORM AN INSULATION TEST ON EXISTING NON-GROUNDED CONDUCTORS (INCLUDING NEUTRAL), IF READING IS AROUND ONE MEGOHM OR LESS, A.) LOCATE BAD SEGMENT, B.) CONTACT TRAFFIC AND SAFETY SECTION WITH THE READINGS ON THE REST OF CIRCUITRY FOR A DETERMINATION FOR EXTENT OF REPLACEMENT OF WIRING AND/OR CONDUIT.
  - PERFORM A RESISTANCE TO GROUND TEST AT SPECIFIED GROUNDS, 25 OHMS OR LESS ACCEPTABLE.
  - FURNISH THE TRAFFIC AND SAFETY SECTION VIA THE RESIDENT ENGINEER, INSULATION TEST READINGS ON THE EXISTING AND NEW (IF REQUIRED) ELECTRICAL SYSTEM, RESISTANCE TO GROUND READINGS AT SPECIFIED GROUNDS, VOLTAGE READINGS AT CIRCUIT BREAKERS AND IF CIRCUIT LENGTH IS OVER 1000 FEET IN LENGTH FURNISH A VOLTAGE READING (WITH FULL LOAD) AT END OF CIRCUITS.
  - DISCONNECT AND REMOVE EXISTING LUMNAIRES, INSTALL NEW LUMNAIRES AS PER PLAN, STOCKPILE OLD LUMNAIRES FOR PICK UP BY DISTRICT FORCES.
  - REPAIR OR REPLACE ANY FAULTY MATERIAL WHICH MAY HAMPER THE SAFETY OR OPERATION OF THE COMPLETED LIGHTING SYSTEM.
  - REPLACE BOLT AND HANDHOLE COVERS AND STAINLESS STEEL HARDWARE AS REQUIRED, FOR POLES AND PULBOKES.
  - PLUMB EXISTING POLES AS REQUIRED USING STAINLESS STEEL OR GALVANIZED STEEL SHIMS.
  - INSTALL METAL TAGS TO THE EXISTING POLES WITH INFORMATION AS INDICATED IN THE NOTES.
  - (COVENTRY) AT POLE LOCATION #10, INSTALL NEW POLE, 8' TRUSS ARM, LUMNAIRE AND OTHER RELATED EQUIPMENT. NEW POLE AND ARM TO BE EITHER, REPLACEMENT IN KIND OR SAME MATERIAL SPECIFICATIONS AND APPEARANCE AS EXISTING.
  - (COVENTRY) POLES #1 AND #12 SHALL HAVE BREAKAWAY COUPLINGS INSTALLED BETWEEN POLE BASE AND CONCRETE BASE.
  - (LYNDON) AT POLE LOCATIONS #1, #2 AND #8, INSTALL NEW POLE, 8' ARMS, LUMNAIRES AND OTHER RELATED EQUIPMENT. NEW POLES AND ARMS TO BE EITHER, REPLACEMENT IN KIND OR SAME MATERIAL SPECIFICATIONS AND APPEARANCE AS EXISTING. AT THE ABOVE THREE POLE LOCATIONS, INSTALL CONDUIT SEALING BUSHINGS TO KEEP WATER OUT OF THE CONDUITS.
  - (LYNDON) AT POLES #1 AND #8 INSTALL BREAKAWAY COUPLINGS BETWEEN CONCRETE BASE AND POLE BASE.
- ALL THE ABOVE WORK, INCLUDING ELECTRICAL CIRCUIT TESTING, WHICH IS NOT PAID FOR UNDER A SEPARATE ITEM NUMBER, SHALL BE PAID FOR UNDER ITEM 679.15, STREET LIGHTING(M&D).

GENERAL NOTES

ALL STREET LIGHT POLES SHALL HAVE A METAL TAG ATTACHED TO THE HANDHOLE WITH THE POLE NUMBER, WATTAGE, TYPE OF LAMP AND DISTRIBUTION. EXAMPLE, #2-150W-HP-S-III. MINIMUM LETTER SIZE IS 1/2" HIGH. PAYMENT FOR TAGS WILL BE SUBSIDIARY TO ITEM 679.15, STREET LIGHTING.  
(SEE DETAILS ON SHEET # 2)

COVENTRY & LYNDON  
I-91 REST AREAS NB.&SB.

STREET LIGHTING, DESIGN CRITERIA AND GENERAL NOTES	PREPARED BY R. DAVIS DATE 4-88
	CHECKED BY _____ DATE _____
	DESIGN SUPERVISOR DAR DATE _____
	PROJ. STATEWIDE IR LITE (2)
	TRAFFIC SHEET NO. 5 OF 7
	SHEET 5 OF 18 SHEETS

# GENERAL STREET LIGHT NOTES

## CONCRETE BASES

THE OFFSET FOR CONCRETE BASES TO BE A MINIMUM OF SIX (6') FEET FROM EDGE OF PAVEMENT OR AS OTHERWISE NOTED ON THE PLANS. WHEN GUARDRAIL EXISTS, THE GUARD RAIL DEFLECTION WILL GOVERN MINIMUM OFFSET.

MINIMUM CONCRETE BASE SIZES SHALL BE 2' X 6' FOR ARMS UP TO 8 FEET IN LENGTH AND 2 1/2' X 8' FOR ARMS LONGER THAN 8 FEET.

WHEN CONCRETE BASES ARE INSTALLED IN SLOPING GROUND, THE GREATEST EXPOSED HEIGHT TO KEEP ALL OF THE TOP ABOVE GROUND MUST BE DOUBLED AND THEN ADDED TO THE MINIMUM DEPTH FOR THE TOTAL BASE HEIGHT.

CARE SHOULD BE TAKEN WHERE CONCRETE BASES, DRAINAGE STRUCTURES, OR UTILITIES ARE CLOSE TOGETHER.

## CONDUIT

A 2 1/2" (I.D.) MINIMUM CONDUIT SHALL BE USED FOR ROAD CROSSINGS AND BE CONTINUOUS BETWEEN PULLBOXES AND/OR POLE BASES, NO REDUCERS. 2" (I.D.) MINIMUM CONDUIT SHALL BE USED AT ALL OTHER LOCATIONS UNLESS OTHERWISE NOTED ON THE PLANS. ALL CONDUIT SHALL BE AT LEAST (SCHEDULE 40 P.V.C.) OR RIGID GALVANIZED STEEL ELECTRICAL CONDUIT. TYPE OF CONDUIT (P.V.C. OR STEEL) SHALL BE NOTED ON THE PLANS.

THE FINAL CONDUIT DEPTH SHALL BE (A MINIMUM OF 2') AND BE 2' TO 3' BELOW GRADE FOR CONDUIT RUNS PARALLEL WITH CURB OR EDGE OF SHOULDER, AND 3' TO 5' DEPTH UNDER ROADWAYS OR AS DIRECTED BY THE ENGINEER.

A 6" WIDE YELLOW MARKING TAPE (PLASTIC) SHALL BE INSTALLED 6" TO 12" BELOW FINISH GRADE OVER THE CONDUIT RUNS.

A MAXIMUM OF 270° IN TOTAL BENDS WILL BE PERMITTED IN A SINGLE RUN OF CONDUIT.

ALL P.V.C. CONDUIT ABOVE GROUND SHALL BE SCHEDULE 80.

## CONDUIT SLEEVE

MINIMUM WALL THICKNESS FOR RIGID PLASTIC PIPE SLEEVES SHALL BE 1/35TH THE DIAMETER. ALL CONDUIT RUNS UNDER ROADWAY SHALL BE INSTALLED IN RIGID PLASTIC PIPE SLEEVES. THE SLEEVE SHALL EXTEND TO WITHIN 2 FEET OF THE SIDE OF A CONCRETE BASE OR PULLBOX. WHERE NO CONCRETE BASE OR PULLBOX IS PRESENT, THE SLEEVE SHALL EXTEND 2' BEYOND THE OUTSIDE EDGE OF SHOULDER OR FACE OF CURB. BACKFILLING AROUND A SLEEVE SHALL BE IN ACCORDANCE WITH SUBSECTION 601.08 OF SPECIFICATIONS.

WHEN JACKING A SLEEVE UNDER A ROADWAY IT SHALL BE STEEL WITH A MINIMUM DIAMETER OF 8" AND MINIMUM WALL THICKNESS OF 3/8 INCH. ACTUAL LENGTH TO BE DETERMINED IN THE FIELD BY THE RESIDENT ENGINEER.

## GROUNDING

IN ADDITION TO A GROUND ROD AT EACH CONCRETE POLE BASE A CONTINUOUS GROUNDING CIRCUIT (MINIMUM #6 A.W.G. COPPER CONDUCTOR) SHALL BE RUN BACK TO A CIRCUIT PROTECTIVE DEVICE AT THE POWER SOURCE OR TRANSFORMER. ALUMINUM WIRE SHALL NOT BE USED FOR GROUND WIRE.

ALL CONDUIT MUST INCLUDE A GROUNDING CONDUCTOR, AND RIGID STEEL CONDUIT SHALL BE PROPERLY CONNECTED AT THE JOINTS SO AS TO BE WATERTIGHT AND MAINTAIN ELECTRICAL CONTINUITY AND HAVE GROUNDING BUSHINGS SO AS TO ACT AS A GROUND CONDUCTOR.

## POLES, ANCHOR BASES, AND ARMS

NO STREET LIGHT POLE SHAFT WALL THICKNESS SHALL BE LESS THAN 0.188" AND SHALL HAVE A MINIMUM 8" (O.D.) BOTTOM DIMENSION.

ALL NEW STREET LIGHT POLES AND LUMINAIRE ARMS SHALL BE ALUMINUM, IN ACCORDANCE WITH SUBSECTION 753.01(B).

ALL STREET LIGHT POLES SHALL HAVE A FRANGIBLE OR BREAKAWAY DEVICE BETWEEN THE POLE BASE AND CONCRETE BASE UNLESS PROPERLY PROTECTED BY GUARD RAIL OR BE BEYOND THE SAFETY ZONE, OF THRU NORTHBOUND OR SOUTHBOUND MAINLINE.

## WIRE

ALL WIRING BETWEEN THE METER AND/OR POWER SOURCE AND THE FIRST POLE AND/OR PULLBOX AND BETWEEN POLES AND/OR PULLBOXES SHALL BE AS SPECIFIED ON THE PLANS (ALUMINUM OR COPPER) AND SIZED AS SPECIFIED ON THE PLANS. ALL WIRE TO HAVE TYPE XHHW INSULATION OR EQUIVALENT.

USE #10 A.W.G. STRANDED COPPER WIRES IN EACH POLE BETWEEN THE POLE BASE AND THE LUMINAIRE.

USE #6 A.W.G. COPPER (MIN.) FOR THE CONTINUOUS AND OTHER GROUND CIRCUITS.

ALL WIRE CONNECTIONS IN THE LIGHT POLE BASES SHALL BE MADE WITH THE PROPER IN LINE OR WYE TYPE WATERPROOF DISCONNECT KIT. THE LOAD SIDE TO THE LUMINAIRE SHALL BE FUSED AT 3 TIMES THE LOAD.

VOLTAGE LOSSES GREATER THAN 3% IN THE SECONDARY CIRCUIT REQUIRE LARGER WIRE.

## PULLBOXES AND JUNCTION BOXES

FOR DETAILS SEE STANDARD SHEET E-173.

## LUMINAIRES

LUMINAIRES SHALL BE DESIGNED FOR STREET LIGHTING AND THE INDICATED LIGHT DISTRIBUTION. THEY SHALL INCLUDE AN ALUMINUM HOUSING WITH EASY ACCESS TO THE BALLAST ASSEMBLY, PHOTO-ELECTRIC CONTROL, FILTERED OPTICAL ASSEMBLY, MEDIUM CUT-OFF DISTRIBUTION AND REGULATOR BALLAST (CWA) FOR 120 VOLT HIGH PRESSURE SODIUM LAMPS.

LIGHT DISTRIBUTION IS BASED ON GENERAL ELECTRIC PHOTOMETRIC DATA DRAWINGS \*35-177285, MEDIUM CUT-OFF, TYPE III DISTRIBUTION, DATED 03-26-85 AND DRAWING \*35-177304, MEDIUM CUT-OFF, TYPE III DISTRIBUTION, DATED 04-24-85.

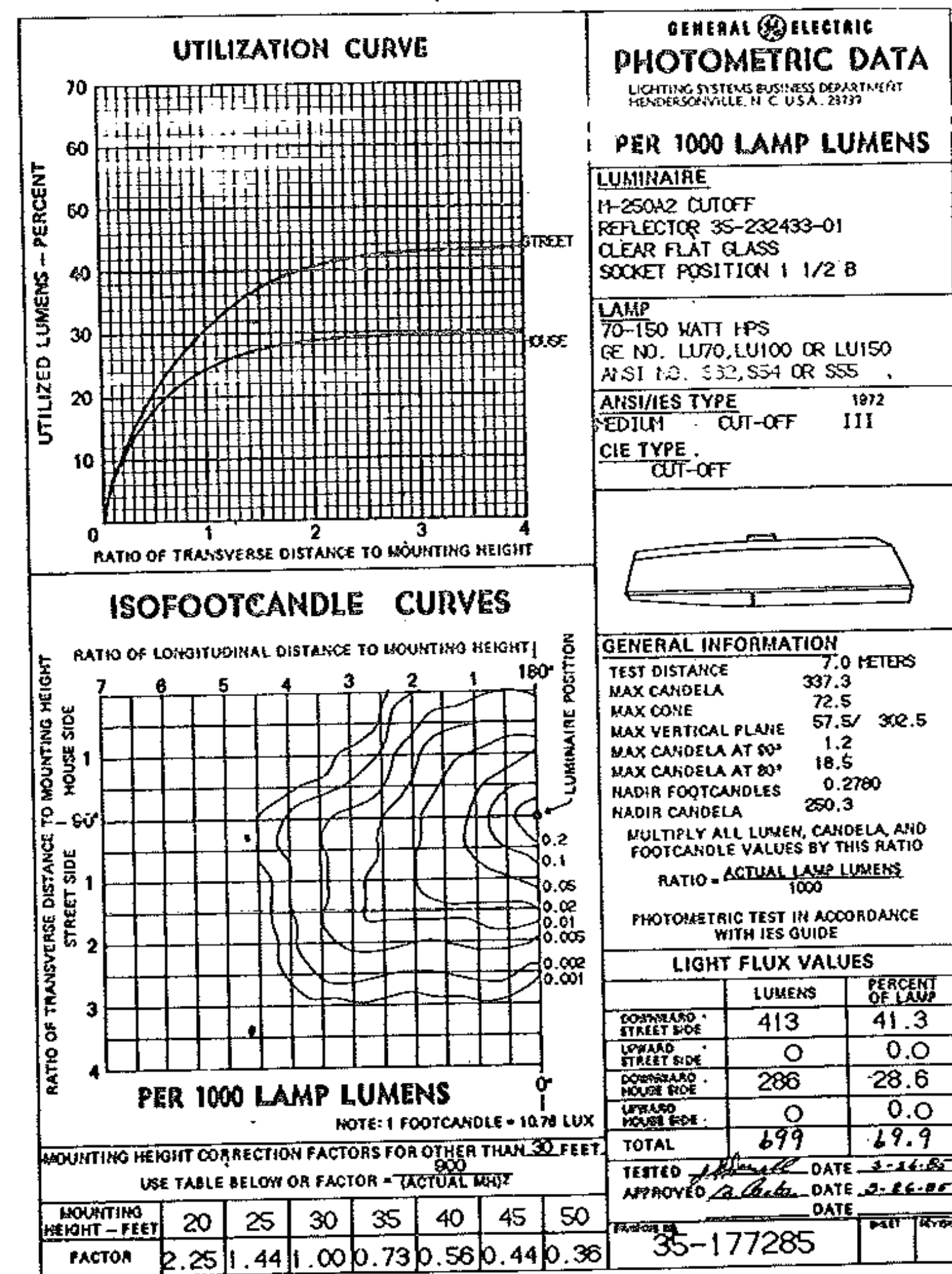
THE ABOVE PHOTOMETRIC DATA DRAWINGS WERE USED FOR DESIGN PURPOSES ON THIS PROJECT. OTHER MANUFACTURERS' PRODUCTS MAY BE SUBSTITUTED IF THE INSTALLED LUMINAIRE LIGHT UTILIZATION AND MINIMUM FOOTCANDLES ON THE ROADWAY AND SHOULDER ARE AT LEAST AS GREAT AS THAT INDICATED BY THE ABOVE PHOTOMETRICS.

## GENERAL

ALL ELECTRICAL MATERIAL AND INSTALLATION SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, STATE AND LOCAL CODES, AND REQUIREMENTS OF THE LOCAL UTILITY COMPANY AT THE POWER SOURCE.

THE LOAD ON EACH BRANCH OF A THREE WIRE CIRCUIT SHALL BE AS BALANCED AS POSSIBLE, LOAD TO NEUTRAL.

THE LAST CONCRETE POLE BASE AT THE END OF EACH CIRCUIT SHALL HAVE A CONDUIT SWEEP WITH CAP INSTALLED FOR FUTURE USE.



PREPARED BY R. DAVIS DATE 5-88  
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PROJ. [Signature]  
STATEWIDE R LITE (2)  
TRAFFIC SHEET NO. 6 OF 7  
SHEET 6 OF 18 SHEETS

