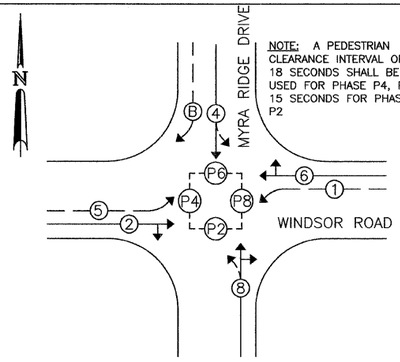
BILL OF MATERIALS

ITEM NO.	ITEM	UNIT	QUANTITY
80500105	SERVICE INSTALLATION, TYPE A, MODIFIED	EACH	1
81012300	CONDUIT IN TRENCH, 1" DIA., PVC	FOOT	72
81012500	CONDUIT IN TRENCH, 1.5" DIA., PVC	FOOT	783
81012600	CONDUIT IN TRENCH, 2" DIA., PVC	FOOT	452
81012800	CONDUIT IN TRENCH, 3" DIA., PVC	FOOT	68
81013100	CONDUIT IN TRENCH, 5" DIA., PVC	FOOT	2
81021540	CONDUIT AUGERED, 1.5" DIA., PVC	FOOT	183
81021590	CONDUIT AUGERED, 4" DIA., PVC	FOOT	148
81021600	CONDUIT AUGERED, 5" DIA., PVC	FOOT	100
81306400	RELOCATE EXISTING JUNCTION BOX	EACH	1
81400730	HANDHOLE, COMPOSITE CONCRETE	EACH	12
81400740	DOUBLE HANDHOLE, COMPOSITE CONCRETE	EACH	1
81702100	ELECTRIC CABLE IN CONDUIT, 600V(XLP-TYPE USE), 1/C NO.12	FOOT	1100
81702110	ELECTRIC CABLE IN CONDUIT, 600V(XLP-TYPE USE), 1/C NO.10	FOOT	1525
81900200	TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	1377
85700200	FULL ACTUATED CONTROLLER AND TYPE IV CABINET	EACH	1
86400100	TRANSCEIVER-FIBER OPTIC	EACH	1
87100140	FIBER OPTIC CABLE IN CONDUIT NO. 62.5/125, 12F	FOOT	1100
87301215	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2/C	FOOT	1125
87301225	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3/C	FOOT	250
87301245	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5/C	FOOT	1300
87301255	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7/C	FOOT	1800
87301515	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 3PAIR	FOOT	2025
87500600	TRAFFIC SIGNAL POST, 10 FT.	EACH	1
87500800	TRAFFIC SIGNAL POST, 12 FT.	EACH	1
87501000	TRAFFIC SIGNAL POST, 14 FT.	EACH	3
87600100	PEDESTRIAN PUSH BUTTON POST, TYPE 1	EACH	5
87702810	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE, 16 FT.	EACH	1
87702840	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE, 22 FT.	EACH	1
87702900	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE, 34 FT.	EACH	1
87702910	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE, 36 FT.	EACH	1
87800100	CONCRETE FOUNDATION, TYPE A	FOOT	15
87800200	CONCRETE FOUNDATION, TYPE D	FOOT	3.5
87800400	CONCRETE FOUNDATION, TYPE E, 30-INCH DIAMETER	FOOT	47
88040070	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	1
88040090	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	6
88040160	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	3
88042230	SIGNAL HEAD, POLYCARBONATE, LED, 2-FACE, 3-SECTION, BRACKET MOUNTED	EACH	1
88040260	SIGNAL HEAD, POLYCARBONATE, LED, 2-FACE, 1-3-SECTION, 1-5 SECTION, BRACKET MOUNTED	EACH	3
88200100	TRAFFIC SIGNAL BACKPLATE	EACH	9
88600100	DETECTOR LOOP, TYPE 1	FOOT	924
88700200	LIGHT DETECTOR	EACH	1
88700300	LIGHT DETECTOR AMPLIFIER	EACH	1
88800100	PEDESTRIAN PUSH BUTTON	EACH	8
XX003581	ELECTRIC CABLE IN CONDUIT, SERVICE NO. 6 1C	FOOT	150
X8730027	ELECTRIC CABLE IN CONDUIT, GROUNDING NO. 6 1/C	FOOT	625
X8730250	ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED	FOOT	200
X8850106	INDUCTIVE LOOP DETECTOR, RACK MOUNTED	EACH	9
XX006511	LUMINAIRE, METAL HALIDE, SPECIAL, 400 WATT	EACH	3
XX006512	LUMINAIRE, METAL HALIDE, SPECIAL, 400 WATT WITH PHOTOCELL	EACH	1
XX006514	JUNCTION BOX, POLYMER CONCRETE, 12"X12"X12"	EACH	3
XX006533	PEDESTRIAN SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, BRACKET MOUNTED, COUNTDOWN TIMER	EACH	8

TRAFFIC SIGNAL GENERAL NOTES

1. THE ACTUAL LOCATIONS OF ALL SIGNAL FOUNDATIONS, HANDHOLES, AND THE TRAFFIC SIGNAL CONTROLLER WILL BE VERIFIED IN THE FIELD BY THE ENGINEER.
2. POST MOUNTED SIGNAL HEADS WILL BE INSTALLED SUCH THAT NO PART OF THE SIGNAL HEAD IS WITHIN TWO (2) FEET OF THE FACE OF CURB. MAST ARM POLES WILL BE PLACED SUCH THAT A MINIMUM DISTANCE OF SIX (6) FEET IS MAINTAINED BETWEEN THE CENTER OF THE POLE AND THE FACE OF CURB (ON THE MAST ARM SIDE).
3. 12" LENSES WILL BE USED ON ALL SIGNAL FACES.
4. THE LUMINAIRE ARM, LUMINAIRE POLE WIRING, AND LUMINAIRE SHALL BE ERECTED WITH THE TRAFFIC SIGNAL MAST ARM POLE. THE LUMINAIRE SHALL HAVE A 400 WATT HELIOS HBM METAL HALIDE LUMINAIRE AND AN M-C-III DISTRIBUTION. LUMINAIRE SHALL NOT HAVE INDIVIDUAL PHOTOCELLS AND WILL BE CONTROLLED BE A PHOTOCELL IN THE STREET LIGHT NEAREST THE CONTROLLER.
5. THE CONTRACTOR SHALL VERIFY, BY POTHOLING, THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
6. A ¼" CONTINOUS NYLON ROPE SHALL BE FURNISHED AND LEFT IN PLACE IN ALL CONDUITS BETWEEN HANDHOLES, FOUNDATIONS, AND CONTROLLERS. THE ROPE SHALL BE INCLUDED IN THE COST OF THE RESPECTIVE CONDUIT PAY ITEM.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ELECTRICAL SERVICE FOR THE TRAFFIC SIGNALS. THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANY PRIOR TO COMMENCEMENT OF WORK TO OBTAIN UTILITY COMPANY REQUIREMENTS FOR THE SERVICE INSTALLIATION. THE CONTRACTOR SHALL ARRANGE FOR A PERMIT AND INSPECTION OF THE SERVICE BY THE CITY OF URBANA ELECTRICAL INSPECTOR.
8. THE CONTROLLER SHALL BE ORIENTED SUCH THAT INTERSECTION OPERATION AND CONTROLLER COMPONENTS CAN BE VIEWED SIMULTANEOUSLY AND NOT PLACED TO INTERFERE WITH VISIBILITY SIGHT LINES FOR VEHICLES TURNING RIGHT ON RED.
9. INITIAL CONTROLLER PROGRAMMING OF SIGNAL TIMING ARE PROVIDED HERE. THE CITY OF URBANA TRAFFIC SIGNAL TECHNICIAN MAY ALTER THE TIMINGS IN THE FIELD TO MATCH CONDITIONS.
10. THE NECESSARY CONNECTIONS FOR PROPER OPERATION OF THE EMERGENCY VEHICLE PRIORITY SYSTEM SHALL BE INCLUDED IN THE COST OF THE LIGHT DETECTOR. LIGHT CABLE TO BE PAID SEPARATELY AND BE NO. 18 COMM 3 PAIR TWISTED AND SHIELDED.
11. THE ELECTRIC CABLE FOR THE LIGHT DETECTOR SHALL BE A CONTINOUS UNBROKEN RUN FROM THE LIGHT DETECTOR TO THE LIGHT DETECTOR AMPLIFIER. SPLICES SHALL NOT BE ALLOWED.
12. A PEDESTRIAN PUSH-BUTTON SIGN WILL BE MOUNTED ABOVE EACH PEDESTRIAN PUSH-BUTTON.
13. THE CONCRETE FOUNDATION FOR THE PEDESTRIAN PUSH-BUTTON POST SHALL BE INCLUDED IN THE COST OF THE PEDESTRIAN PUSH-BUTTON POST, TYPE I.
14. ALL LOOP DETECTOR STATIONS AND OFFSETS INDICATED ARE TO THE CENTER OF THE 6'X6' LOOP.
15. ALL PEDESTRIAN PUSH-BUTTONS SHALL BE MOUNTED A MAXIMUM TEN (10) INCHES FROM THE EDGE OF WALK. ALL PEDESTRIAN PUSH-BUTTON POSTS SHALL BE A MAXIMUM OF TEN (10) FEET FROM THE FACE OF CURB. THE CONTRACTOR SHALL ENSURE THESE REQUIREMENTS ARE MET AS EQUIPMENT IS LOCATED IN THE FIELD.
16. SEE THE PAVEMENT MARKING PLANS FOR THE LOCATION OF PAVEMENT MARKINGS.



PHASING DIGRAM

NOTE: A PEDESTRIAN CLEARANCE INTERVAL OF 18 SECONDS SHALL BE USED FOR PHASE P4, P6 & P8, 15 SECONDS FOR PHASE P2

SUGGESTED TIMINGS								
PHASE:	1	2	3	4	5	6	7	8
MIN. GRN.	7.0	25.0		15.0	5.0	25.0		15.0
SEC./ ACT.		1.2				1.2		
MAX. GRN.	11.0	50.0		30.0	7.0	50.0		30.0
PASSAGE	2.0	3.0		3.0	2.0	3.0		3.0
MIN. GAP						2.5		
AMB. CLR.	3.0	3.5		3.5	3.0	3.5		3.5
RED CLR.	1.0	1.5		1.5	1.0	1.5		1.5
WALK		7.0		7.0		7.0		7.0
PED CLR.		15.0		18.0		18.0		18.0

DETECTOR LOOP DATA

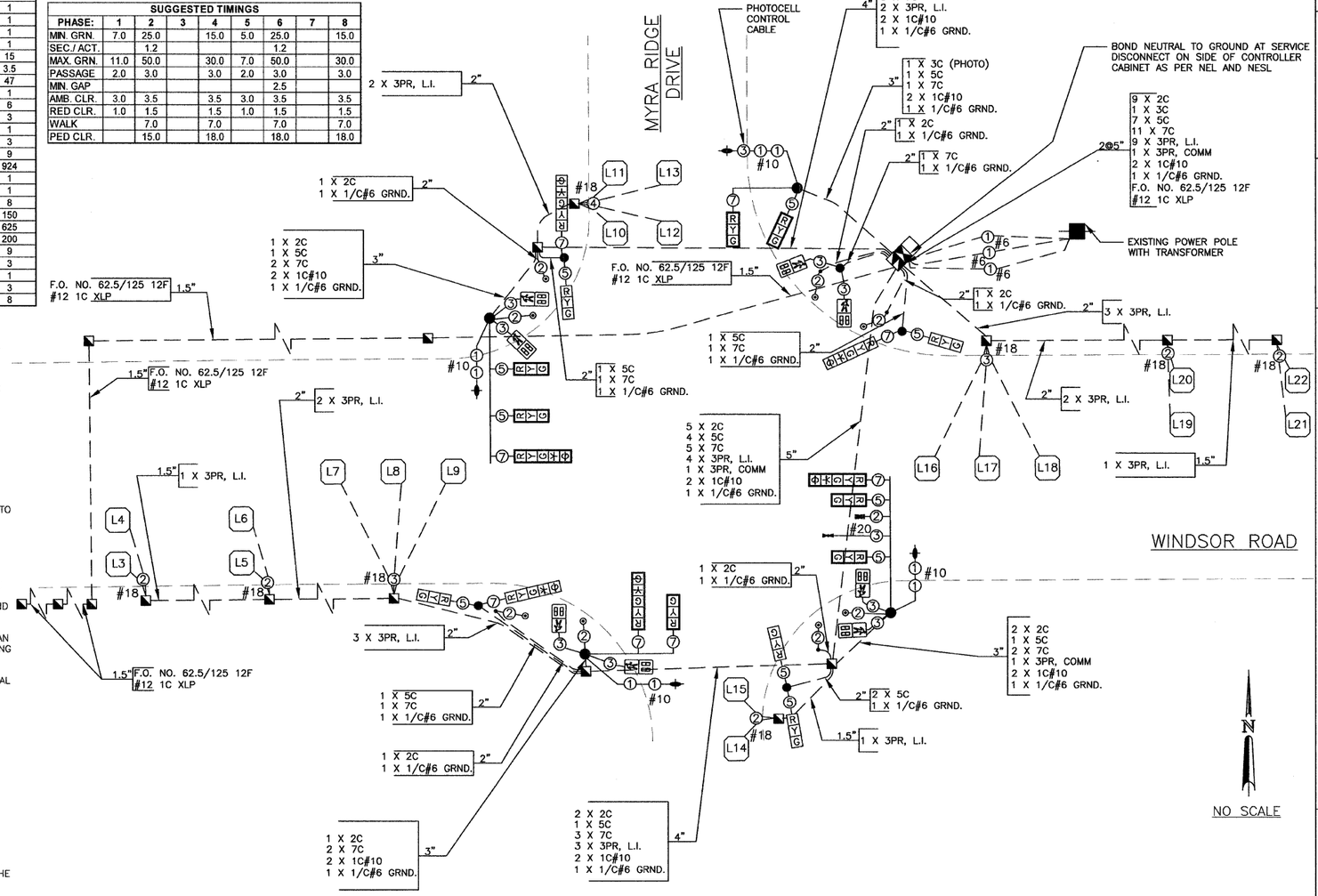
LOOP:	SIZE:	MODE:	QUADRA-POLE	DELAY
7,8,9,10, 11,12,13,14, 15,16,17,18,	6.0 ft.x6.0 ft.	PRESENCE	NO	0
3,4,21,22	6.0 ft.x6.0 ft.	PULSE	NO	0
5,6,19,20	6.0 ft.x6.0 ft.	PULSE GREEN ONLY	NO	0
10,11,14,15	6.0 ft.x6.0 ft.	PRESENCE	NO	8

THE FOLLOWING LOOPS SHALL BE WIRED TO COMMON AMPLIFIERS:
(3,4), (5,6), (7,8,9), (10,11), (12,13), (14,15), (16,17,18), (19,20), (21,22), – 9 AMPLIFIERS TOTAL REQUIRED
THE CONTROLLER SHALL BE SET TO MINIMUM RECALL WINDSOR ROAD

CABLE DIAGRAM LEGEND

- CONTROLLER CABINET
- SIGNAL FACE(S)
- SIGNAL FACE(S) AND BLACKPLATE(S)
- PEDESTRIAN PUSH-BUTTON DETECTOR
- PEDESTRIAN SIGNAL FACE
- CONFIRMATION BEACON
- EMERGENCY VEHICLE PREEMPTION DETECTOR
- SERVICE INSTALLATION
- (#) DENOTES NUMBER OF CONDUCTORS ALL CABLE NO. 14 EXCEPT AS INDICATED. ALL LOOP DETECTOR CABLE TO BE NO. 18 3PR TWISTED AND SHIELDED. ALL INTERCONNECT CABLE TO BE FIBER OPTIC CABLE, NO. 62.5/125, 12F.
- F.O. FIBER OPTIC CABLE
- GRND. GROUND
- L.I. LEAD-IN CABLE
- PR PAIR

CONDUIT SIZE — 2" — 1 X 5C / 1 X 7C (NUMBER OF CABLES IN CONDUIT; NUMBER OF CONDUCTORS IN EACH CABLE)



CITY OF URBANA
PUBLIC WORKS
ENGINEERING DIVISION

CONTRACT NO. 91391

DATED: 1/09
DESIGNED BY: CES
DRAWN BY: AJS
CHECKED BY: GLJ
CITY SECTION 00-00361-00-PV

WINDSOR ROAD IMPROVEMENTS
TRAFFIC SIGNAL PLANS
CABLE PLAN

SHEET NO. 80 OF 145

JAN 09 2009 12:42PM SIGNAL 03.DWG