BILL OF MATERIALS

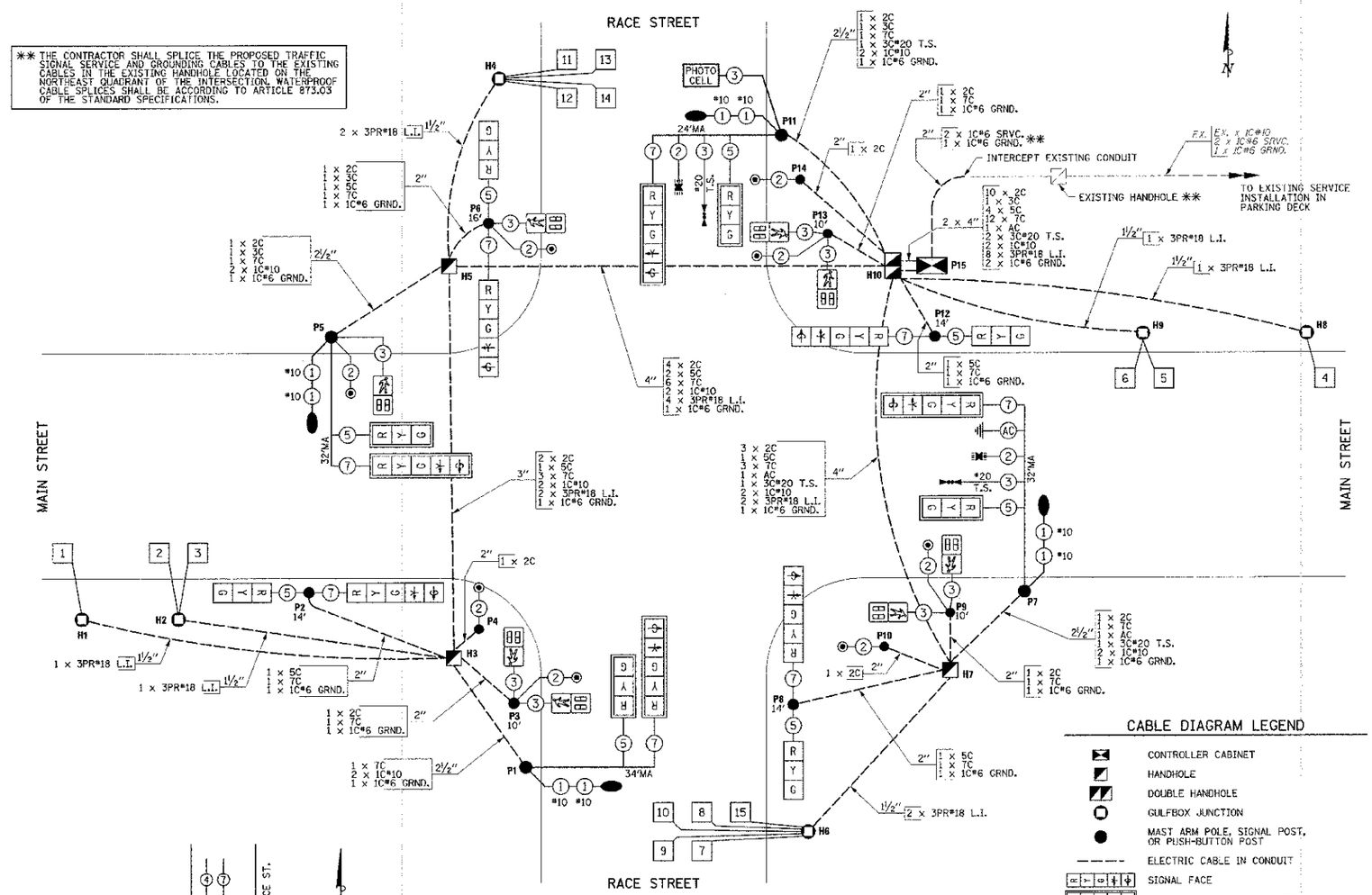
ITEM	UNIT	QUANTITY
UNDERGROUND CONDUIT, PVC, 1" DIA.	FOOT	49
UNDERGROUND CONDUIT, PVC, 1½" DIA.	FOOT	51
UNDERGROUND CONDUIT, PVC, 2" DIA.	FOOT	106
UNDERGROUND CONDUIT, PVC, 2½" DIA.	FOOT	66
UNDERGROUND CONDUIT, PVC, 3" DIA.	FOOT	65
UNDERGROUND CONDUIT, PVC, 4" DIA.	FOOT	146
UNDERGROUND CONDUIT, COILABLE NONMETALLIC CONDUIT, 1½"	FOOT	360
HANDHOLE, PORTLAND CEMENT CONCRETE	EACH	3
DOUBLE HANDHOLE, PORTLAND CEMENT CONCRETE	EACH	1
GULFBOX JUNCTION, COMPOSITE CONCRETE	EACH	6
ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 10	FOOT	1120
FULL-ACTUATED CONTROLLER AND TYPE IV CABINET	EACH	1
UNINTERRUPTABLE POWER SUPPLY, STANDARD	EACH	1
ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 2C	FOOT	1300
ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 3C	FOOT	150
ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 5C	FOOT	710
ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 7C	FOOT	1730
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 3 PAIR	FOOT	1330
ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 1C	FOOT	80
ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C	FOOT	570
TRAFFIC SIGNAL POST, 10 FT.	EACH	3
TRAFFIC SIGNAL POST, 14 FT.	EACH	3
TRAFFIC SIGNAL POST, 16 FT.	EACH	1
PEDESTRIAN PUSH-BUTTON POST, TYPE I	EACH	3
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 24 FT.	EACH	1
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 32 FT.	EACH	2
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 34 FT.	EACH	1
CONCRETE FOUNDATION, TYPE A	FOOT	21 *
CONCRETE FOUNDATION, TYPE C	FOOT	4 *
CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER	FOOT	54 *
SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	4
SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	4
SIGNAL HEAD, POLYCARBONATE, LED, 2-FACE, 1-3-SECTION, 1-5-SECTION, BRACKET MOUNTED	EACH	4
PEDESTRIAN SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH	8
TRAFFIC SIGNAL BACKPLATE	EACH	8
DETECTOR LOOP, TYPE I	FOOT	660
LIGHT DETECTOR	EACH	2
LIGHT DETECTOR AMPLIFIER	EACH	1
REMOVE EXISTING HANDHOLE	EACH	2
REMOVE EXISTING CONCRETE FOUNDATION	EACH	9
MODIFY EXISTING SERVICE INSTALLATION	EACH	1
RADIO INTERCONNECT SYSTEM COMPLETE, LOCAL	EACH	1
PHOTOCELL CONTROL SYSTEM	EACH	1
ELECTRIC CABLE IN CONDUIT, NO. 20 3C, TWISTED, SHIELDED	FOOT	280
ACCESSIBLE PEDESTRIAN SIGNALS	EACH	8
VIBROTACTILE FEATURE	EACH	8
INDUCTIVE LOOP DETECTOR, RACK MOUNTED	EACH	9
REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT, SPECIAL	L SUM	1
LUMINAIRE (SPECIAL)	EACH	3

* SEE SPECIAL PROVISIONS FOR SYSTEM GROUNDING INFORMATION.

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 SHALL BE INSTALLED SUCH THAT NO PART OF THE SIGNAL HEAD IS WITHIN TWO (2) FEET OF THE FACE OF CURB. MAST ARM POLES SHALL 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) UNLESS OTHERWISE SHOWN ON THE PLANS.
3. COMBINATION MAST ARM ASSEMBLIES SHALL BE FURNISHED WITH 12-FOOT LUMINAIRE ARMS WITH A MOUNTED LUMINAIRE HEIGHT OF 35 FEET.
4. ALL MAST ARM MOUNTED SIGNAL HEADS ON AN INDIVIDUAL MAST ARM SHALL BE MOUNTED SO THAT THE RED INDICATIONS ARE LEVEL WITH EACH OTHER UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
5. 12" LENSES SHALL BE USED ON ALL SIGNAL FACES. LED INDICATIONS SHALL BE USED ON ALL SIGNAL HEADS AND PEDESTRIAN SIGNAL HEADS. PEDESTRIAN SIGNAL HEAD FACES SHALL BE SYMBOLS WITH COUNTDOWN TIMERS.
6. ACCESSIBLE PEDESTRIAN SIGNALS SHALL BE THE POLARA NAVIGATOR SYSTEM OR APPROVED EQUIVALENT.
7. THE LUMINAIRE ARM, LUMINAIRE POLE WIRING, LUMINAIRE, AND PHOTOCELL SHALL BE ERECTED WITH THE TRAFFIC SIGNAL MAST ARM POLE.
8. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
9. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR UNCOVERING OR HAND DIGGING AROUND UTILITIES.
10. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR PLACING CONDUIT AT GREATER THAN 2 FOOT DEPTH.
11. A ¼" POLYPROPYLENE PULL ROPE SHALL BE INSTALLED IN ALL CONDUIT RUNS EXCEEDING 20 FEET. A MINIMUM OF 2 FEET OF ROPE SHALL BE PROVIDED AT EACH END OF A CONDUIT RUN. THE ROPE SHALL BE INCLUDED IN THE COST OF THE RESPECTIVE CONDUIT PAY ITEM.
12. ALL ADAPTERS REQUIRED TO CONNECT THE PROPOSED CONDUIT TO THE EXISTING CONDUIT SHALL BE INCLUDED IN THE COST OF THE RESPECTIVE CONDUIT PAY ITEM.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ELECTRICAL SERVICE FOR THE TRAFFIC SIGNALS AND SHALL CONTACT THE UTILITY COMPANY AND THE CITY OF URBANA PRIOR TO COMMENCEMENT OF WORK FOR THE REQUIREMENTS FOR THE SERVICE INSTALLATION.
14. THE TRAFFIC SIGNAL CONTROLLER SHALL BE ORIENTED SUCH THAT INTERSECTION OPERATION AND CONTROLLER COMPONENTS CAN BE VIEWED SIMULTANEOUSLY.
15. CONTROLLER PROGRAMMING OF SIGNAL TIMING WILL BE PROVIDED BY THE CITY OF URBANA.
16. THE CONFIRMATION BEACON SHALL BE INCLUDED IN THE COST OF THE LIGHT DETECTOR.
17. THE ELECTRIC CABLE FOR THE LIGHT DETECTOR SHALL BE A CONTINUOUS UNBROKEN RUN FROM THE LIGHT DETECTOR TO THE LIGHT DETECTOR AMPLIFIER. SPLICES IN THE CABLE SHALL NOT BE ALLOWED.
18. THE ELECTRIC CABLE FOR THE RADIO INTERCONNECT ANTENNA SHALL BE A CONTINUOUS UNBROKEN RUN FROM THE ANTENNA TO THE SURGE ARRESTOR. SPLICES IN THE CABLE SHALL NOT BE ALLOWED.
19. THE THREE SECTION AND FIVE SECTION SIGNAL HEADS THAT OPERATE TOGETHER IN THE SAME PHASE AT THE SAME LOCATION WILL BE COMBINED ON A SINGLE SEVEN CONDUCTOR CABLE. TWO PEDESTRIAN SIGNAL HEADS AT THE SAME LOCATION OR ON THE SAME QUADRANT WILL BE COMBINED ON A SINGLE SEVEN CONDUCTOR CABLE. SPLICES WILL BE MADE AT THE POLE HANDHOLE OR CONCRETE HANDHOLE WITH INDIVIDUAL CABLES RUNNING FROM THE SPLICE TO EACH SIGNAL HEAD OR PEDESTRIAN SIGNAL HEAD. WATERPROOF CABLE SPLICES SHALL BE ACCORDING TO ARTICLE 873.03 OF THE STANDARD SPECIFICATIONS.
20. THE CONCRETE FOUNDATION FOR THE PEDESTRIAN PUSH-BUTTON POST SHALL BE INCLUDED IN THE COST OF THE PEDESTRIAN PUSH-BUTTON POST.
21. DETECTOR LOOPS SHALL BE INSTALLED AFTER CONSTRUCTION OF THE HMA SURFACE COURSE.
22. DISTURBED AREAS AROUND PROPOSED CONCRETE FOUNDATIONS SHALL BE BACKFILLED WITH CONTROLLED LOW-STRENGTH MATERIAL UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THIS WORK SHALL BE INCLUDED IN THE COST OF THE CONCRETE FOUNDATION, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

** THE CONTRACTOR SHALL SPLICE THE PROPOSED TRAFFIC SIGNAL SERVICE AND GROUNDING CABLES TO THE EXISTING CABLES IN THE EXISTING HANDHOLE LOCATED ON THE NORTHEAST QUADRANT OF THE INTERSECTION. WATERPROOF CABLE SPLICES SHALL BE ACCORDING TO ARTICLE 873.03 OF THE STANDARD SPECIFICATIONS.



CABLE DIAGRAM

DETECTOR LOOP DATA					
NO.	SIZE	MODE	NO.	SIZE	MODE
1	6' x 6'	PULSE	9	6' x 6'	PRESENCE
2	6' x 6'	PRESENCE	10	6' x 6'	PRESENCE
3	6' x 6'	PRESENCE	11	6' x 6'	PRESENCE
4	6' x 6'	PULSE	12	6' x 6'	PRESENCE
5	6' x 6'	PRESENCE	13	6' x 6'	PRESENCE
6	6' x 6'	PRESENCE	14	6' x 6'	PRESENCE
7	6' x 6'	PRESENCE	15	6' x 4' QUADRUPOLE	PRESENCE
8	6' x 6'	PRESENCE			

THE FOLLOWING LOOPS SHALL BE WIRED TO COMMON AMPLIFIERS:
(1) (2,3) (4) (5,6) (7,8) (9,10) (11,12) (13,14) (15) = 9 AMPLIFIERS REQUIRED.

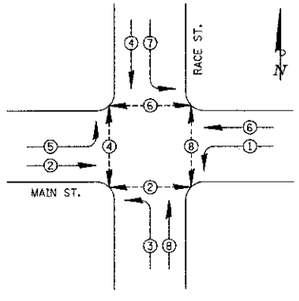
THE CONTROLLER SHALL BE SET TO MINIMUM RECALL ON MAIN STREET.

QUADRUPOLE LOOPS SHALL BE USED IN BIKE LANES AS SHOWN ON THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE 6' DIMENSION SHALL BE THE LENGTH OF THE LOOP IN THE DIRECTION OF TRAVEL. THE 4' DIMENSION SHALL BE THE OVERALL WIDTH OF THE LOOP ACROSS THE BIKE LANE.

THE HOME-RUN FROM EACH LOOP SHALL ENTER A GULFBOX JUNCTION THROUGH A SEPARATE 1" CONDUIT. EACH PROPOSED SERIES OF LOOPS SHALL BE SPLICED TO ITS RESPECTIVE LEAD-IN CABLE IN A GULFBOX JUNCTION.

EACH BIKE LANE LOOP SHALL USE THE REMAINING PAIR OF THE 3 PAIR LEAD-IN CABLE FOR THE ADJACENT VEHICLE LANE LOOPS BUT SHALL BE WIRED TO ITS OWN AMPLIFIER.

PHASE DESIGNATION DIAGRAM



PHASE DESIGNATION DIAGRAM LEGEND

DUAL ENTRY PHASE

PEDESTRIAN PHASE

* NUMBER REFERS TO ASSOCIATED PHASE

CABLE DIAGRAM LEGEND

- CONTROLLER CABINET
- HANDHOLE
- DOUBLE HANDHOLE
- GULFBOX JUNCTION
- MAST ARM POLE, SIGNAL POST, OR PUSH-BUTTON POST
- ELECTRIC CABLE IN CONDUIT
- SIGNAL FACE
- SIGNAL FACE AND BACKPLATE
- ACCESSIBLE PEDESTRIAN SIGNALS
- PEDESTRIAN SIGNAL FACE
- CONFIRMATION BEACON
- EMERGENCY VEHICLE PREEMPTION DETECTOR
- SERVICE INSTALLATION
- [1] DETECTOR LOOP, TYPE I (WITH LOOP NO.)
- LUMINAIRE
- RADIO INTERCONNECT ANTENNA
- (AC) RADIO INTERCONNECT ANTENNA CABLE
- (3) DENOTES NUMBER OF CONDUCTORS ALL CABLE #14 EXCEPT AS INDICATED
- L.I. LEAD-IN CABLE (TWISTED, SHIELDED)
- T.S. TWISTED, SHIELDED
- SRVC. SERVICE CABLE
- GRND. GROUNDING CABLE (GREEN)
- 2" 1 x 5C 1 x 7C — NUMBER OF CABLES IN CONDUIT; NUMBER OF CONDUCTORS IN EACH CABLE; CONDUIT SIZE

FILE NAME = p:\u0070061_Urbana - Main Street HSIP\Plans\sheets\08 traffic signals.dgn	DESIGNED - JAJ	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
PLOT DATE = 1/15/2013 9:06:19 PM	DRAWN - KLR	REVISED -	
	CHECKED - SMW	REVISED -	
	DATE - 01/2013	REVISED -	

MAIN STREET & RACE STREET TRAFFIC SIGNAL PLANS
CABLE AND PHASE DESIGNATION DIAGRAMS / GENERAL NOTES / BILL OF MATERIALS

SCALE : NONE | SHEET NO. 10 OF 12 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7124	11-00510-00-TL	CHAMPAIGN	12	10
	MAIN STREET	CONTRACT NO. 91481		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CITY OF URBANA SECTION NO. 11-00510-00-TL CHAMPAIGN COUNTY