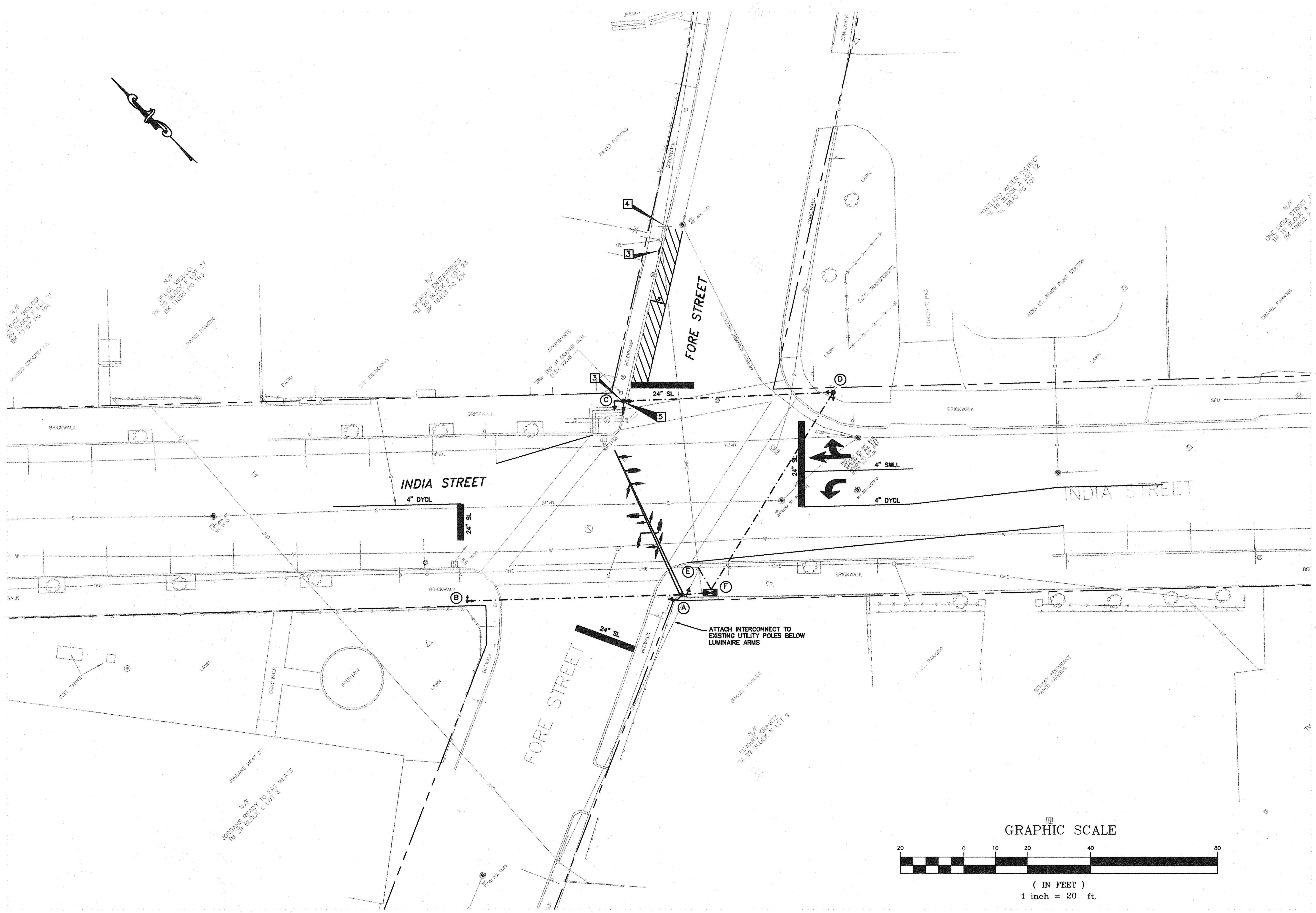


NOTES:

1. MAST ARMS AND POLES SHALL BE HOT DIPPED GALVANIZED. MAST ARMS SHALL BE VALMONT SM16 OR CB16 SERIES ONLY.

2. ALL MAST POLES SHALL BE ON A 36 INCH DIAMETER FOUNDATION AND EXTEND 9 FEET BELOW EXISTING GRADE, AS A MINIMUM. PEDESTAL POLES SHALL HAVE 18" DIAMETER FOUNDATONS AND EXTEND 6 FEET BELOW EXISTING GRADE.

3. ALL SIGNAL SECTIONS SHALL HAVE LED LENSES 12 INCHES IN DIAMETER WITH BACK PLATES. SIGNAL HOUSINGS SHALL BE McCAIN MODEL MTSTA OR MTSTP SERIES ONLY. LED MODULES FOR VEHICLE INDICATIONS SHALL BE GELCORE MODEL DR6 SERIES ONLY.

4. ALL SIGNAL HEADS SHALL BE MOUNTED TO MAST ARMS WITH ASTROBRACKETS.

5. THE CONTRACTOR MUST MEET ALL UTILITY REQUIREMENTS FOR THE SERVICE CONNECTION AT CMP POLE LABELED "E" AND FOR CONNECTION OF INTERCONNECT WIRES TO THEIR POLES.

6. THE BOTTOM OF THE HOUSING OF THE SIGNAL FACE SHALL BE AT LEAST 16 FEET BUT NOT MORE THAN 19 FEET ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY. PEDESTAL MOUNTED SIGNALS SHALL BE A MINIMUM 10 FEET ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY.

7. TWO COPIES OF AS-BUILT PLANS AND CONTROLLER MANUALS SHALL BE LEFT IN THE CONTROLLER CABINET.

8. CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY JUNCTION BOXES AND ASSOCIATED CONDUIT AND WIRING.

9. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING STRIPING AS INDICATED ON PLANS AND FOR REMOVING ANY STRIPING THAT CONFLICTS WITH THE PROPOSED STRIPING.

10. UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY AND THE CONTRACTOR IS RESPONSIBLE FOR FINDING EXACT LOCATIONS OF UTILITIES PRIOR TO CONSTRUCTION.

11. CONTRACTOR SHALL CONTACT UTILITIES UPON AWARD OF THE CONTRACT. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING DIG SAFE PRIOR TO ANY CONSTRUCTION.

12. TRAFFIC SIGNAL WORK SHALL BE COMPLETED IN A MANNER AND ORDER THAT WILL CAUSE THE MINIMUM DISRUPTION TO TRAFFIC, AND TRAFFIC CONTROL PLANS SHALL BE IN ACCORDANCE WITH MDOT AND CITY OF PORTLAND STANDARD PLANS AS APPLICABLE.

13. TRAFFIC SIGNAL HEADS SHALL BE BAGGED UNTIL THEY BECOME OPERATIONAL. STOP SIGNS AND POSTS SHALL BE REMOVED WHEN TRAFFIC SIGNAL BECOMES OPERATIONAL.

14. ALL WORK AND MATERIAL COMPLETED UNDER THIS CONTRACT SHALL CONFORM TO THE MDOT STANDARD SPECIFICATIONS, SUPPLEMENT SPECIFICATIONS AND STANDARD DETAILS, THE FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND THE CITY OF PORTLAND TRAFFIC SIGNAL SPECIFICATIONS WHICH SHALL SUPERCEDE THE MDOT SPECIFICATIONS.

15. THE PROPOSED TRAFFIC SIGNAL TIMING AND PHASING PLAN SHALL BE INPUT BY THE CONTRACTOR UNDER OBSERVATION BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE 48 HOURS NOTICE TO THE ENGINEER.

16. TRAFFIC CONTROLLER SHALL BE NAZTEC MASTER 981 SERIES TS2 MODEL TYPE 1 WITH ETHERNET PORT AND GPS INTERFACE FOR TIME SYNCHRONIZATION. MMU SHALL BE NAZTEC MODEL MMU 516E. TRAFFIC CONTROLLER CABINET SHALL BE NAZTEC MODEL P44 TS2 TYPE 1 SERIES T ONLY.

17. VIDEO DETECTION SHALL CONSIST OF TRAFICON MODEL VIP 3.1 AND 3.2 SERIES PROCESSOR BOARDS, TRAFICON MODEL VIEWCOM/E COMMUNICATION BOARD, TRAFICON CAMERA ASSEMBLIES, 9" B/W MONITOR, SURGE/FUSE PANEL AND TRAFICON KEYPAD ONLY.

18. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING MDOT AND CITY OF PORTLAND STREET OPENING PERMITS IF NECESSARY.

19. IT IS THE INTENT OF THIS WORK TO HAVE A COMPLETE OPERATIONAL, TESTED AND ACCEPTED TRAFFIC SIGNAL UPON COMPLETION OF THIS CONTRACT.

20. CONTRACTOR SHALL CONNECT AND INTEGRATE THE TRAFFIC SIGNAL CONTROLLER TO THE EXISTING CLOSED LOOP SYSTEM AND PROGRAM CONTROLLER TO OPERATE WITHIN THE SYSTEM. THE INTERCONNECT SHALL BE FIBER OPTIC AND ATTACHED TO THE EXISTING UTILITY POLE ALONG FORE STREET. AT THE POLE CLOSEST TO THE CONTROLLER CABINET AT FRANKLIN STREET/FORE STREET, A RISER SHALL BE PLACED AND THE INTERCONNECT RUN IN 2 INCH SCHEDULE 80 CONDUIT INTO THE CONTROLLER CABINET AT FRANKLIN ARTERIAL AND FORE STREET.

FIBER OPTIC INTERCONNECT

FIBER OPTIC CABLE SHALL HAVE THE FOLLOWING FEATURES AND CHARACTERISTICS:

-LOOSE TUBE OUTSIDE PLANT CABLE FOR CONDUIT OR LASHED AERIAL. IF THE CABLE CANNOT BE LASHED TO EXISTING CABLE, THE CONTRACTOR SHALL USE A SELF-SUPPORTING FIGURE-8 TYPE AERIAL CABLE.
-MULTI MODE FIBER
-MINIMUM OF 12 FIBERS.
-ALL-DIELECTRIC (NON-ARMORED).
-DIELECTRIC CENTRAL AND OUTER STRENGTH MEMBERS.
-RIPCORD FOR EASY STRIPPING.
-COLOR-CODED FIBERS AND BUFFER TUBES FOR EASY IDENTIFICATION.
-RATED FOR OUTDOOR USE.
-DRY CABLE WITH WATERBLOCKING DESIGN. GEL-FILLED CABLE SHALL NOT BE ALLOWED.
-STORAGE AND OPERATING TEMPERATURE OF -400 TO +700C (-400 TO +1580F).
-62.5/125 TYPE MULTIMODE CABLE WITH A 62.5MM CORE, 125MM CLAD AND 245MM COATING.
-MAXIMUM ATTENUATION OF 3.5DB PER KM FOR 850NM AND 1.0DB PER KM FOR 1300NM.
-MINIMUM LED BANDWIDTH OF 200MHZ?KM FOR 850NM AND 500MHZ?KM FOR 1300NM.
-SERIAL GIGABIT ETHERNET DISTANCE OF 500M FOR 850NM AND 1000M FOR 1300NM.
-MEETS BELLCORE GR-20 SPECIFICATIONS.
-FIBERS COMPLY WITH EIA/TIA 492 AND ISO/IEC793 SPECIFICATIONS.
-SPLICES SHALL BE FUSION SPLICED.

THE CONTRACTOR SHALL SUPPLY FIBER OPTIC PATCH PANELS AT EACH INTERSECTION THAT SHALL BE INSTALLED IN THE TRAFFIC SIGNAL CONTROLLER CABINETS OR IN ITS OWN CABINET MEETING THE MDOT SPECIFICATION FOR TRAFFIC SIGNAL CONTROLLER CABINETS.

FIBER OPTIC PATCH PANELS SHALL HAVE THE FOLLOWING FEATURES AND CHARACTERISTICS:
-WALL/SURFACE MOUNT.
-MINIMUM OF 12 PORTS.
-ADAPTER PANEL TYPE.
-HOLDS 2 ADAPTER PANELS.
-MT-RJ OR SC MULTIMODE CONNECTORS.
PLEASE CONSULT HIGHWAY TECH (SUPPLIER OF TRAFFIC SIGNAL CABINETS) AT TIME OF PURCHASE TO DETERMINE TYPE REQUIRED.
-FULLY GASKETED TOP AND BOTTOM CABLE ENTRIES.
-SINGLE DOOR WITH LOCK.
-INTERNAL CABLE MANAGEMENT.
-PLASTIC OR HEAVY GAUGE STEEL WITH DURABLE POWER COAT FINISH.
-BLACK OR BEIGE IN COLOR.
-NOMINAL DIMENSIONS OF 10"W X 9"H X 3.5"D.

SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8
MINIMUM INITIAL	–	8.0	–	8.0	–	8.0	–	8.0
PASSAGE TIME	–	3.0	–	3.0	–	3.0	–	3.0
MAXIMUM GREEN	–	30.0	–	30.0	–	30.0	–	30.0
YELLOW	–	3.0	–	3.0	–	3.0	–	3.0
ALL RED	–	2.0	–	2.0	–	2.0	–	2.0
WALK	–	–	–	4.0	–	4.0	–	–
PEDESTRIAN CLEARANCE	–	–	–	13.0	–	13.0	–	–
FLASH	–	R	–	R	–	R	–	R
PHASE RECALL	–	SOFT	–	–	–	SOFT	–	–
MEMORY	–	–	–	–	–	–	–	–
DETECTOR MODE	–	PRESENCE	–	PRESENCE	–	PRESENCE	–	PRESENCE
DETECTOR DELAY	–	–	–	–	–	–	–	–

EQUIPMENT SCHEDULE

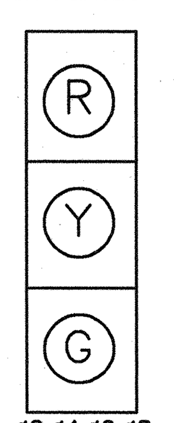
DESIGNATION	ITEM	AASHTO 2001 MAST ARM/ POLE CATEGORY	DESCRIPTION
A	50' MAST ARM & POLE	2	WITH 8 3-SECTION R-Y-G SIGNAL HEADS, 4 VIDEO DETECTORS, 4 R10-12 SIGNS, 2 PEDESTRIAN HEADS, 2 PUSH BUTTONS, 2 SIGNS
B	PEDESTAL POLE		2 PEDESTRIAN HEADS, 2 PUSH BUTTONS, 2 SIGNS
C	PEDESTAL POLE		1 3-SECTION R-Y-G SIGNAL HEAD, 2 PEDESTRIAN HEADS, 2 PUSH BUTTONS, 2 SIGNS. MOUNT A PUSH BUTTON ON RAILING TO BE ADA ACCESSIBLE FROM THE SHOULDER OF FORE STREET, SIGNS #3 AND #5
D	PEDESTAL POLE		2 PEDESTRIAN HEADS, 2 PUSH BUTTONS, 2 SIGNS
E	EXISTING UTILITY POLE		SERVICE CONNECTION AND INTERCONNECT RISER
F	CONTROLLER CABINET		CABINET WITH CONTROLLER

CONDUIT SCHEDULE

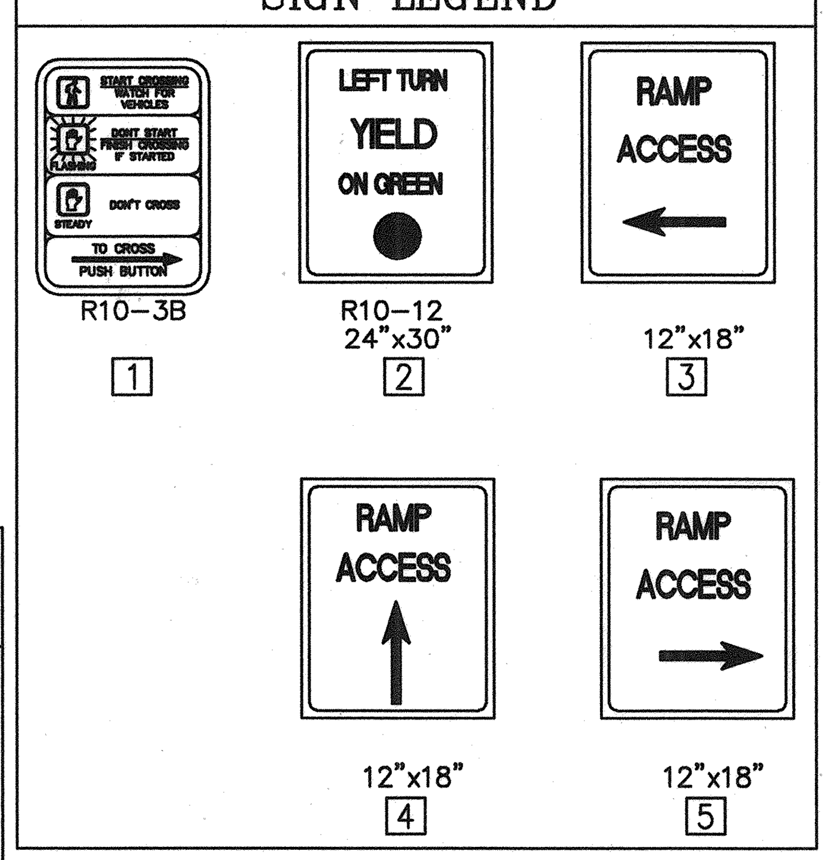
RUN	CENTER TO CENTER (LINEAR FEET)	COMMENTS
A-B	68 FT	3 INCH SCHEDULE 80
D-F	75 FT	3 INCH SCHEDULE 80
F-E	10 FT	3 INCH STEEL
C-D	66 FT	3 INCH SCHEDULE 80
A-F	10 FT	3 INCH SCHEDULE 80

TRAFFIC SIGNAL HEADS

ALL SIGNAL HEADS 12" L.E.D. WITH BACK PLATES



SIGN LEGEND

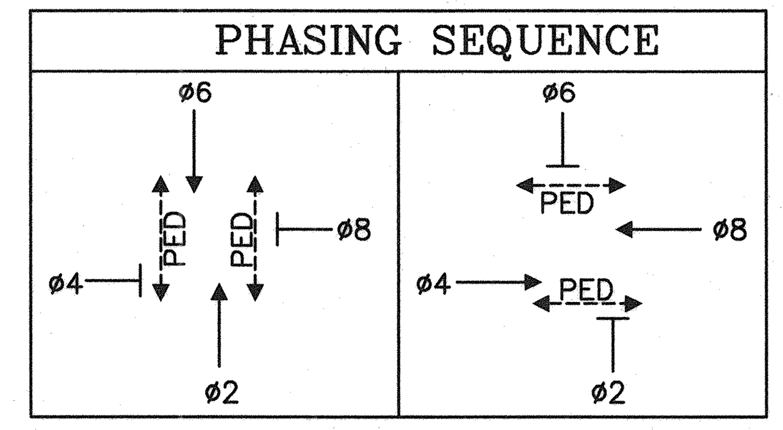


STRIPING LEGEND

SIGNAGE, STRIPING AND PAVEMENT MARKING SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REGARDING SIZE, INSTALLATION, LOCATION & REFLECTIVITY.

24"SL – 24" WIDTH STOP LINE
4"SWLL – 4" WIDTH SOLID WHITE LANE LINE
4"DYCL – 4" WIDTH DOUBLE YELLOW CENTERLINE

PHASING SEQUENCE



PEDESTRIAN SIGNAL HEADS

ALL SIGNAL HEADS SHALL BE GELCORE OR EQUIVALENT

GELCORE MODEL NO. PS7-CFC9-01A

LEGEND

▭	CONTROLLER WITH CABINET
▬	MAST ARM WITH STEEL POLE
◀	VEHICULAR SIGNAL HEAD
☒	JUNCTION BOX
——	CONDUIT
⊢	OVERHEAD SIGNS
←	PEDESTRIAN SIGNAL HEAD
✡	LUMINAIRE
▬	VIDEO DETECTOR
●	METER PEDESTAL

Gorrill-Palmer Consulting Engineers, Inc.
Traffic and Civil Engineering Services
PO Box 1237
15 Shaker Road
Gray, ME 04039
207-657-6910
FAX: 207-657-6912
E-Mail: mailbox@gorrillpalmer.com

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PROJECT NUMBER 009215.00

PIN
009215.00

STATE OF MAINE
RALPH C. NORWOOD IV
NO. 9699
REGISTERED PROFESSIONAL ENGINEER

SIGNATURE
9699
P.E. NUMBER
10-6-04
DATE

PROJ. MANAGER PAUL POTTLE	BY	DATE
DESIGN-DETAILED	RCN	LAN	SEP 2004
CHECKED-REVIEWED	TLG	TLG	10/06/04
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1	ISSUED FOR BID		10/27/04
REVISIONS 2	–		–
REVISIONS 3	–		–
REVISIONS 4	–		–
FIELD CHANGES	–		–

CITY OF PORTLAND
OCEAN GATEWAY PHASE 1

TRAFFIC SIGNAL PLAN

C221