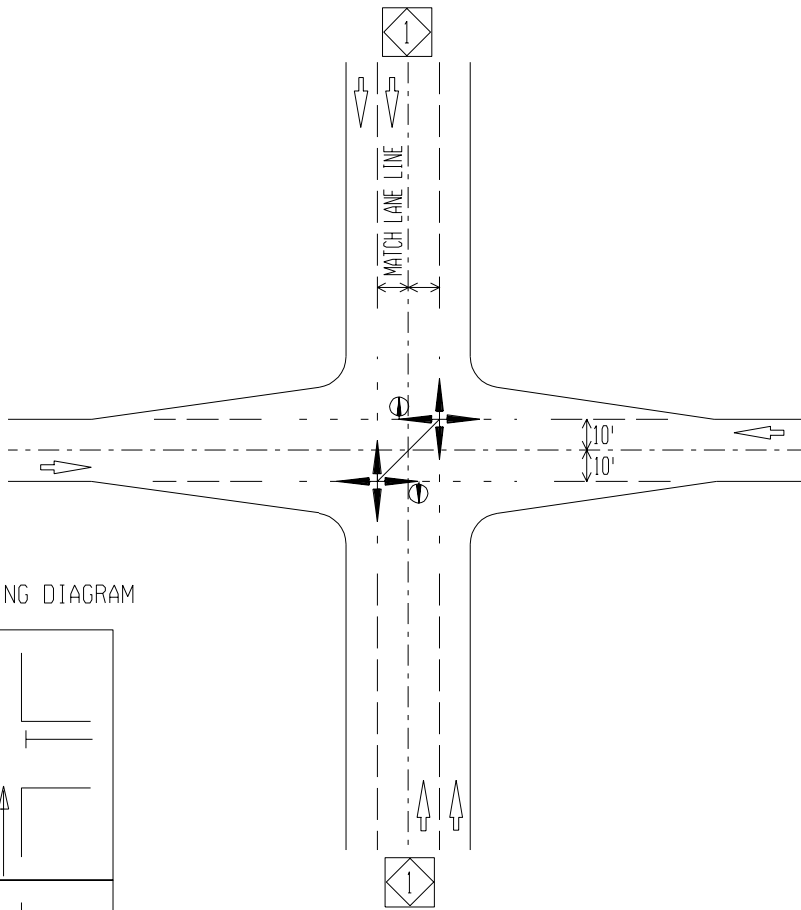
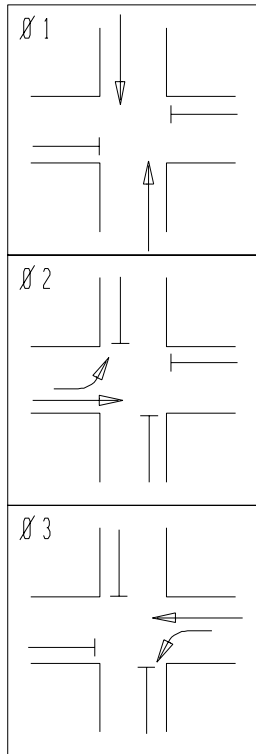


NOTES:

- 1 DRAW HEAD PLACEMENT BOX - SPLIT THRU LANEAGE
- 2 USE NEAR RIGHT - FAR LEFT ON TRUNKLINE

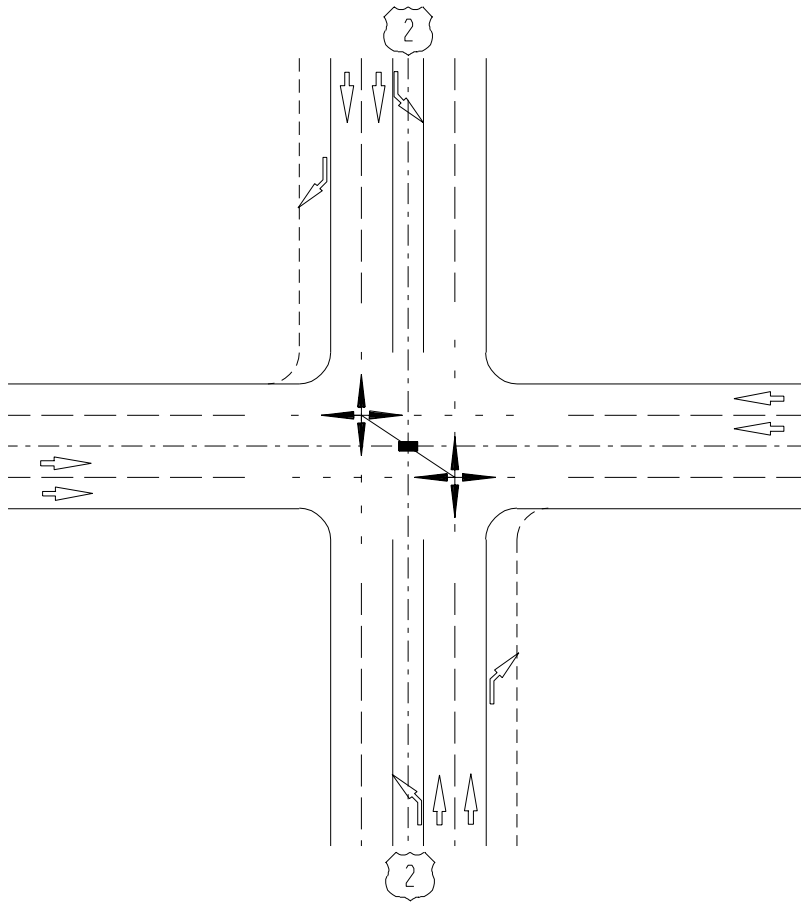


SIGNAL PHASING DIAGRAM



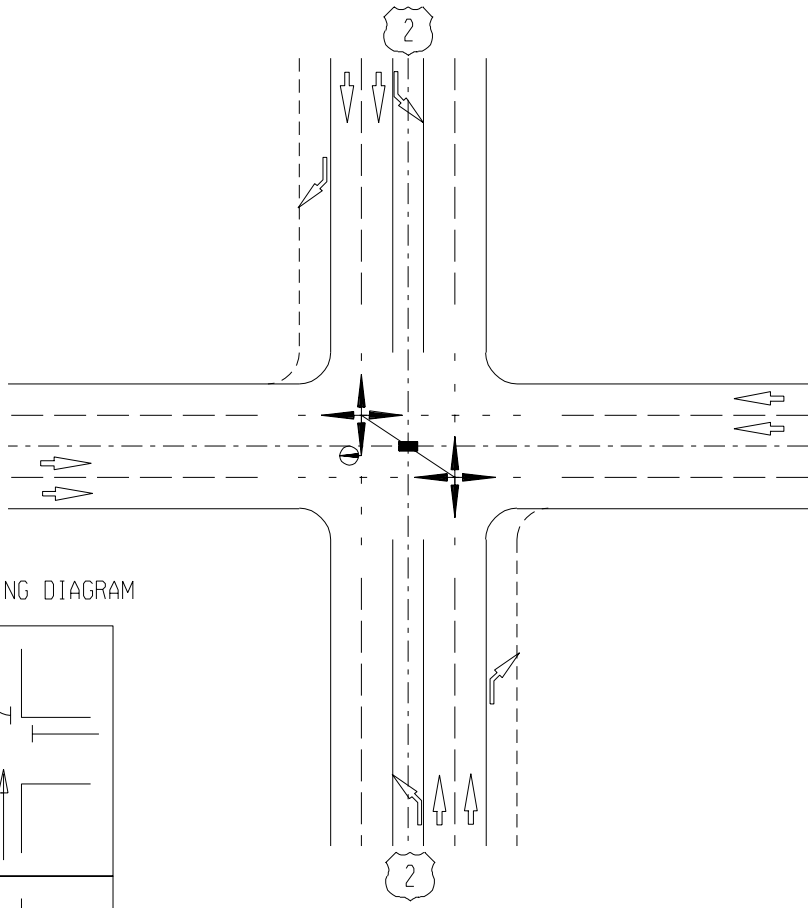
NOTES:

- 1 DRAW HEAD PLACEMENT BOX - SPLIT THRU LANEAGE
- 2 USE NEAR RIGHT - FAR LEFT FOR PHASED DIRECTION
- 3 USE FAR SIDE 4th LEVEL LEFT TURN GREEN ARROWS (L.T.G.A.)
- 4 PEDESTRIAN SIGNALS REQUIRED

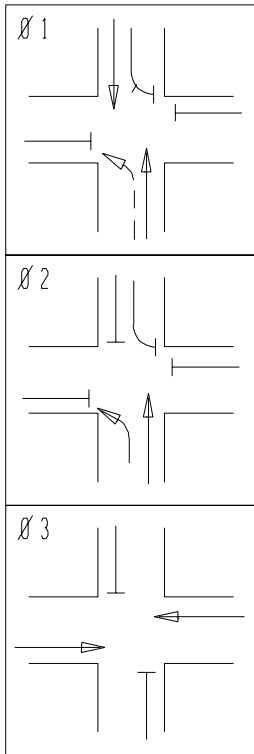


NOTES:

- 1 DRAW HEAD PLACEMENT BOX - SPLIT THRU LANEAGE
- 2 USE NEAR RIGHT - FAR LEFT ON TRUNKLINE
- 3 USE 2-WAY CASE SIGN
- 4 CONSIDER LOW LEVEL SIGNALS ON X-RD F OR HEAVY LEFT TURN MOVEMENT

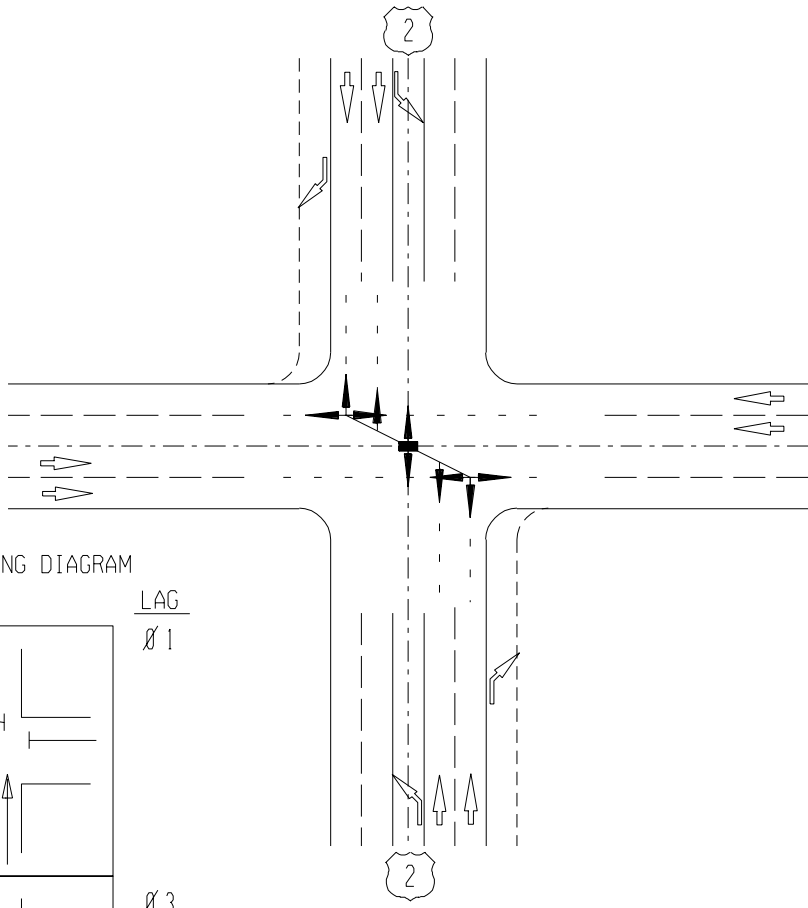


SIGNAL PHASING DIAGRAM

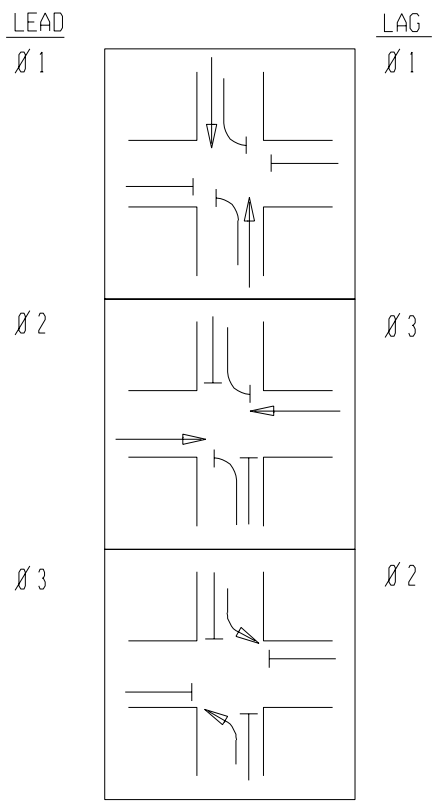


NOTES:

- 1 DRAW HEAD PLACEMENT BOX - SPLIT THRU LANEAGE
- 2 USE NEAR RIGHT - FAR LEFT ON TRUNKLINE
- 3 USE 4TH LEVEL LEFT TURN GREEN ARROW (L.T.G.A.)
- 4 USE 2 - WAY CASE SIGN
- 5 OPPOSING LEFT-TURN MOVEMENT MUST BE PROHIBITED
- 6 PEDESTRIAN SIGNALS OPTIONAL



SIGNAL PHASING DIAGRAM

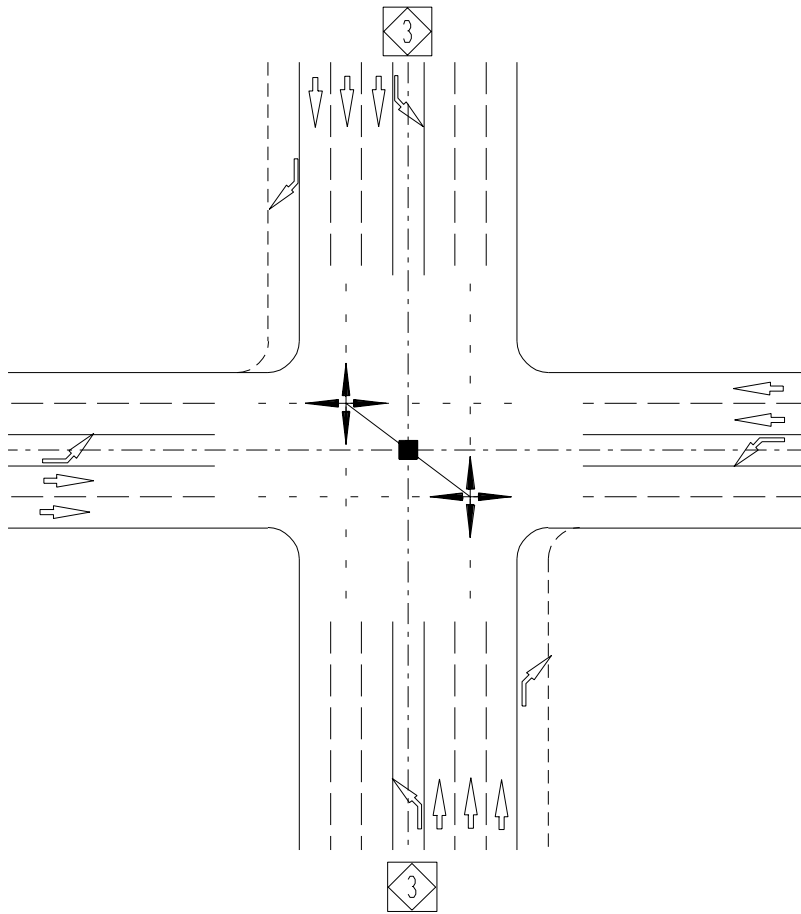


NOTES:

- 1 DRAW HEAD PLACEMENT BOX - SPLIT LANE S FOR EACH APPROACH
- 2 USE EXCLUSIVE LEFT-TURN SIGNAL HEAD S WITH CASE SIGNS
- 3 PLACE TWO THRU SIGNALS TO RIGHT OF THE LEFT-TURN SIGNAL
- 4 WITH TWO THRU LANES - SPLIT EACH LANE
- 5 WITH TWO THRU LANES & RIGHT LANE - ADJUST LEFT SIGNAL TOWARD RIGHT LANE LINE AND RIGHT SIGNAL TOWARD RIGHT TURN LANE. THIS IS TO PROVIDE FOR A WIDER HEAD SEPARATION & IMPROVE VISIBILITY FOR ALL LANES
- 6 PEDESTRIAN SIGNALS REQUIRED UNLESS OTHERWISE DIRECTED
- 7 LEAD LEFT-TURN PHASE SHALL NOT BE PERMISSIVE (i.e. FLASHING RED LEFT-TURN SIGNAL)

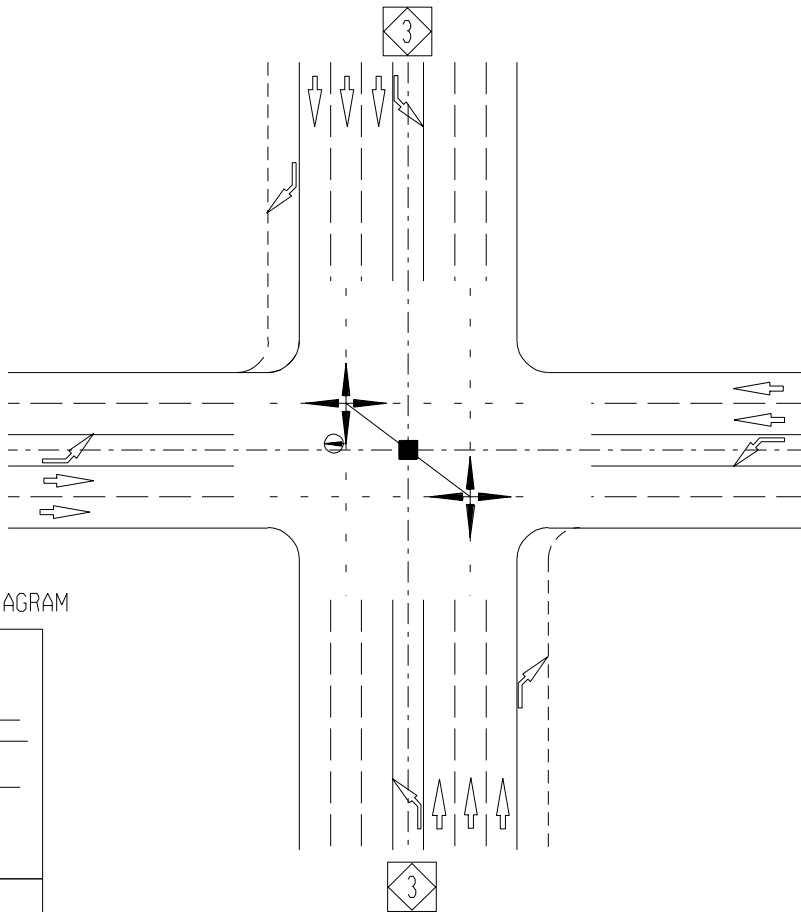
HEAD PLACEMENT DIAGRAM

3 PHASE OPERATION WITH DUAL LEAD OR LAG LEFT TURN PHASE ON TRUNKLINE

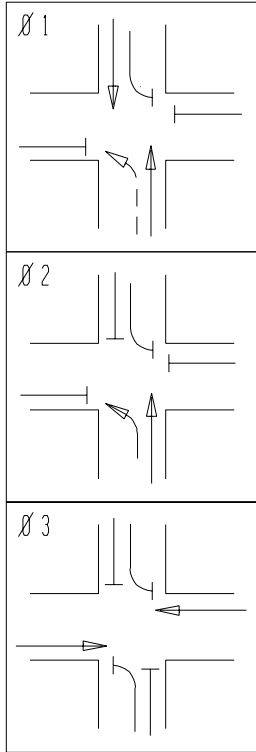


NOTES:

- 1 DRAW HEAD PLACEMENT BOX - SPLIT THRU LANEAGE
- 2 USE NEAR RIGHT - FAR LEFT ON TRUNKLINE
- 3 USE 4-WAY CASE SIGN
- 4 CONSIDER LOW LEVEL SIGNALS ON X-RD F OR HEAVY LEFT TURN MOVEMENTS



SIGNAL PHASING DIAGRAM

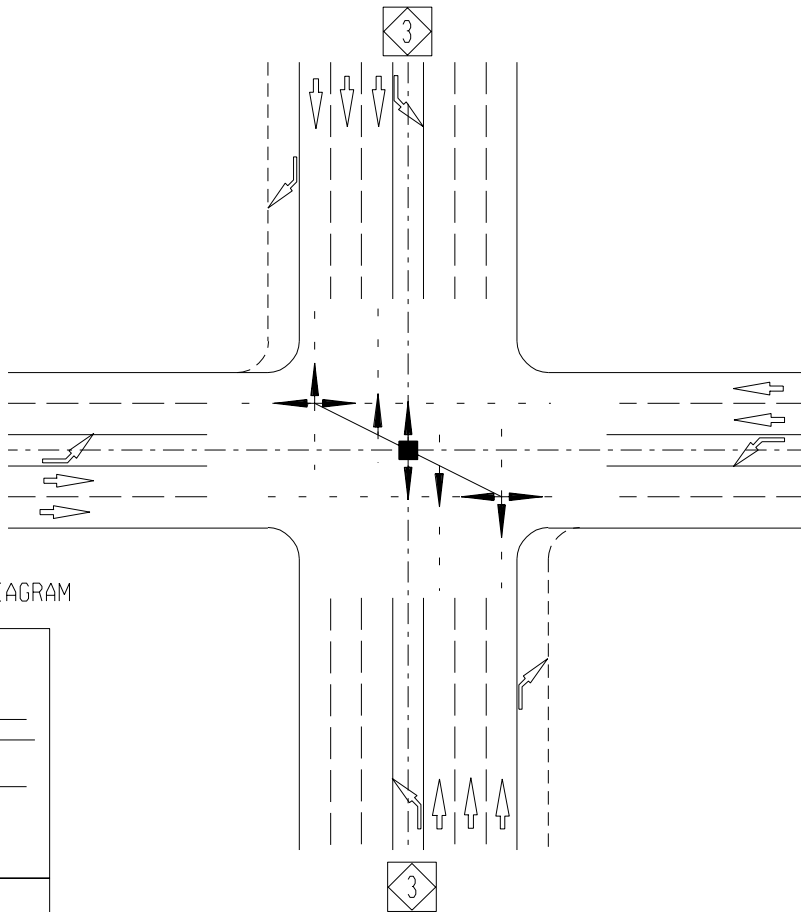


NOTES:

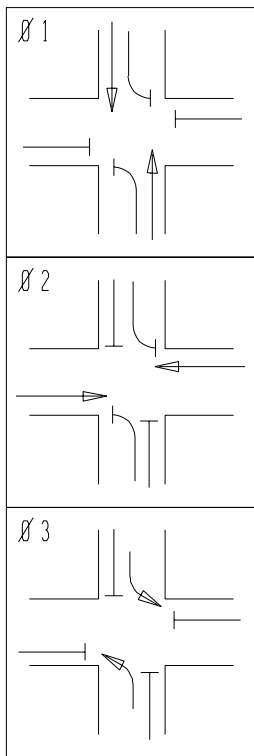
- 1 DRAW HEAD PLACEMENT BOX - SPLIT THRU LANEAGE - BOTH APPROACHES
- 2 USE NEAR RIGHT - FAR LEFT ON TRUNKLINE
- 3 USE 4TH LEVEL LEFT TURN GREEN ARROW (L.T.G.A.)
- 4 USE 4-WAY CASE SIGN
- 5 OPPOSING LEFT TURN MOVEMENT MUST BE PROHIBITED
- 6 PEDESTRIAN SIGNALS OPTIONAL
- 7 CONSIDER LOW LEVEL SIGNALS ON X-RD F OR HEAVY LEFT TURNS MOVEMENTS

HEAD PLACEMENT DIAGRAM

3 PHASE OPERATION WITH
SINGLE LAGGING LEFT TURN PHASE
ON TRUNKLINE

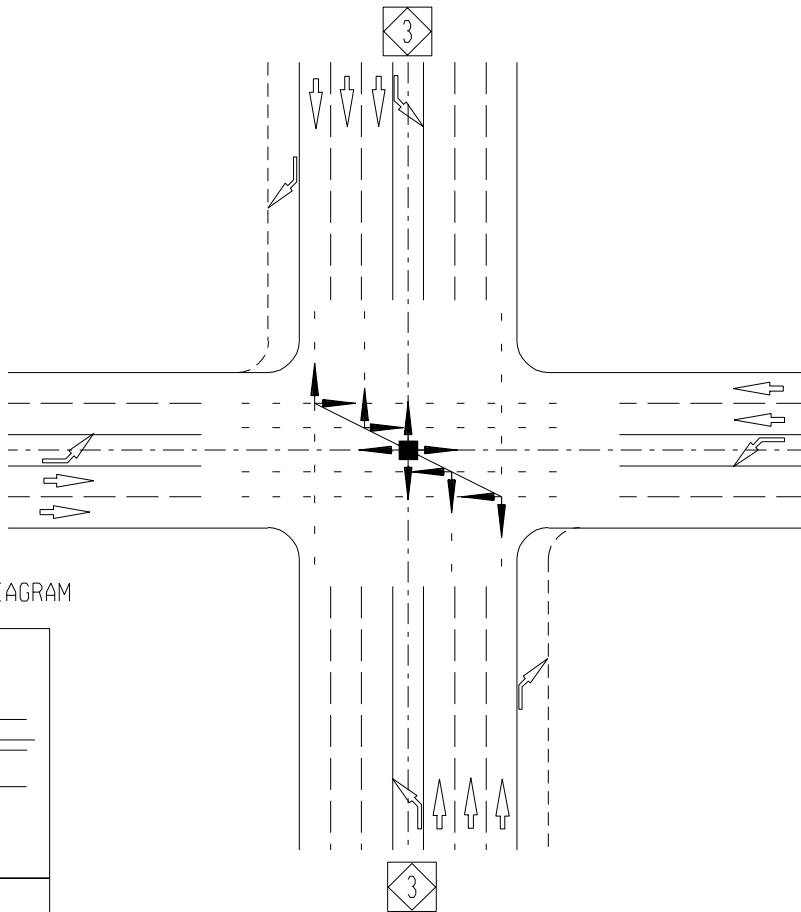


SIGNAL PHASING DIAGRAM

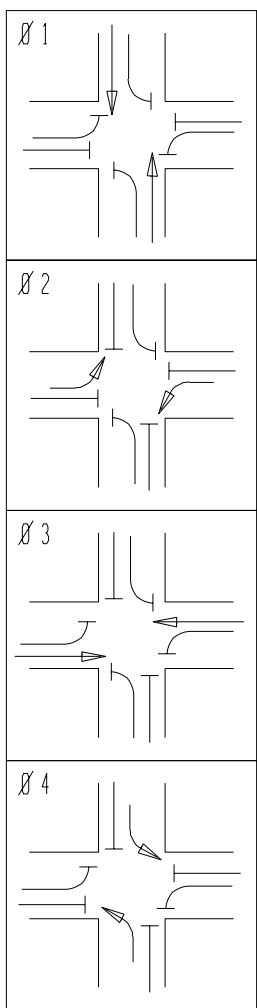


NOTES:

- 1 DRAW HEAD PLACEMENT BOX-SPLIT LANES FOR EACH TRUNKLINE APPROACH
- 2 USE EXCLUSIVE LEFT - TURN SIGNAL HEADS WITH CASE SIGNS
- 3 PLACE TWO THRU SIGNALS TO THE RIGHT OF THE LEFT TURN SIGNAL
- 4 WITH THREE LANES: SPLIT CURB LANE FOR RIGHT SIGNAL AND ADJUST LEFT SIGNAL BETWEEN CENTER OF LEFT THRU LANE AND LANE LINE
- 5 WITH THREE LANES & RIGHT LANES: SAME PLACEMENT BUT RIGHT SIGNAL CAN BE ADJUSTED TOWARD RIGHT TURN LANE IF DESIRABLE
- 6 PEDESTRIAN SIGNALS REQUIRED UNLESS OTHERWISE DIRECTED
- 7 CONSIDER LOW LEVEL SIGNALS ON X-RD FOR HEAVY LEFT TURN MOVEMENTS



SIGNAL PHASING DIAGRAM



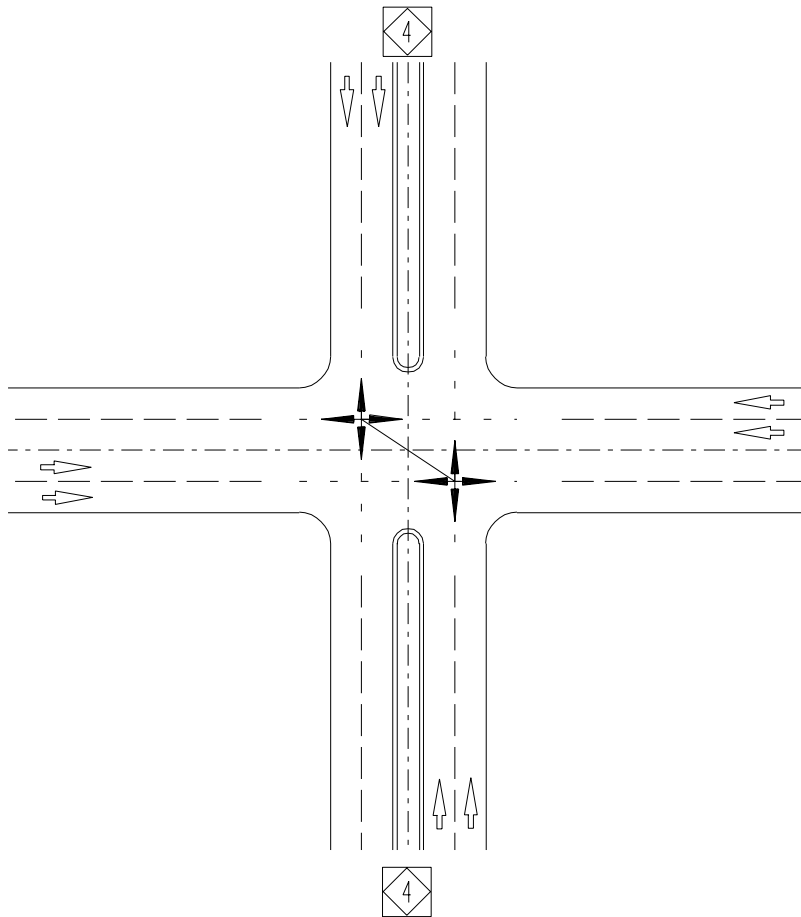
NOTES:

- 1 DRAW HEAD PLACEMENT BOX- SPLIT THRU LANEAGE ON EACH APPROACH
- 2 USE EXCLUSIVE 4-WAY LEFT TURN SIGNALS WITH CASE SIGNS
- 3 PLACE TWO THRU SIGNALS TO THE RIGHT OF THE LEFT TURN SIGNAL
- 4 WITH THREE LANES: SPLIT THRU LANEAGE
- 5 WITH THREE LANES: SPLIT CURB LANE FOR RIGHT SIGNAL AND ADJUST LEFT SIGNAL BETWEEN CENTER OF LEFT THRU LANE AND LANE LINE
- 6 PEDESTRIAN SIGNALS REQUIRED
- 7 LOW LEVELS NOT REQUIRED FOR SUPPLEMENTAL HEADS FOR LEFT TURNS



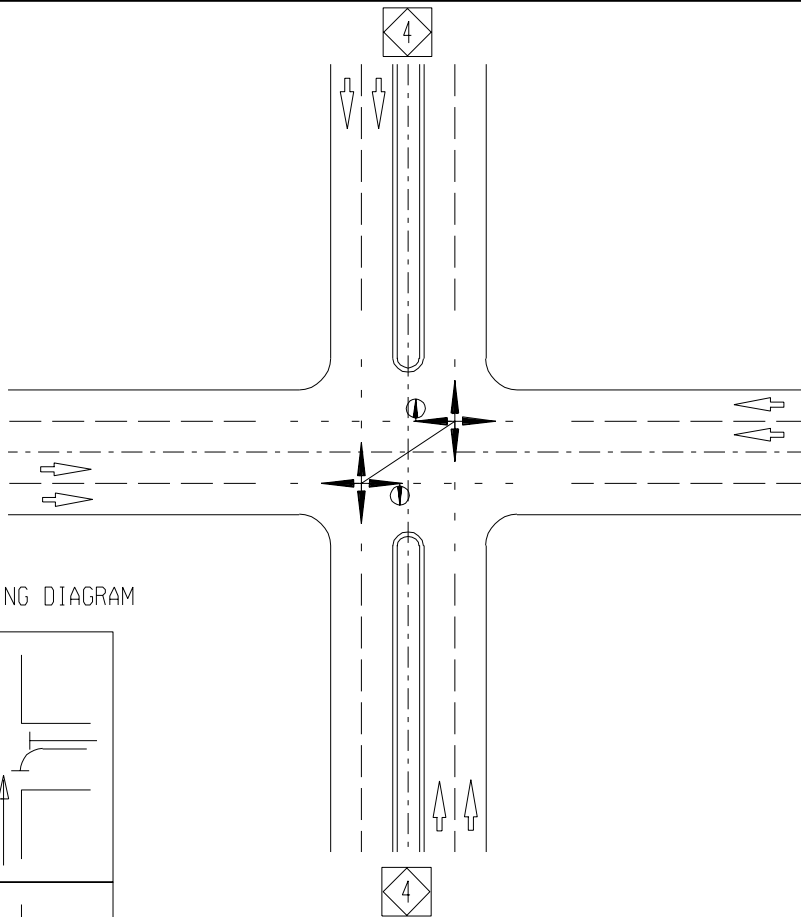
HEAD PLACEMENT DIAGRAM

4 PHASE OPERATION WITH LEADING LEFT TURNS FOR BOTH ROADS (SAME OPERATION AS 8 PHASE)

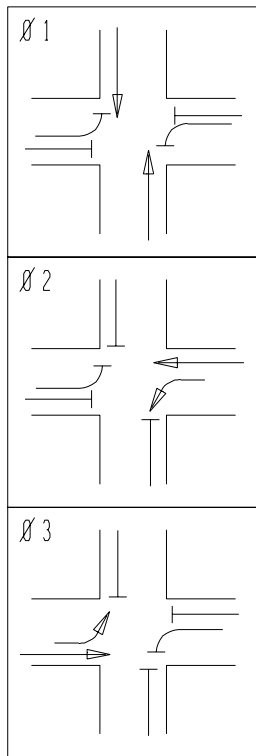


NOTES:

- 1 MEDIAN WIDTH LESS THAN 30'
- 2 DRAW HEAD PLACEMENT BOX-SPLIT THRU L ANEAGE
- 3 USE NEAR RIGHT - FAR LEFT ON TRUNKLINE

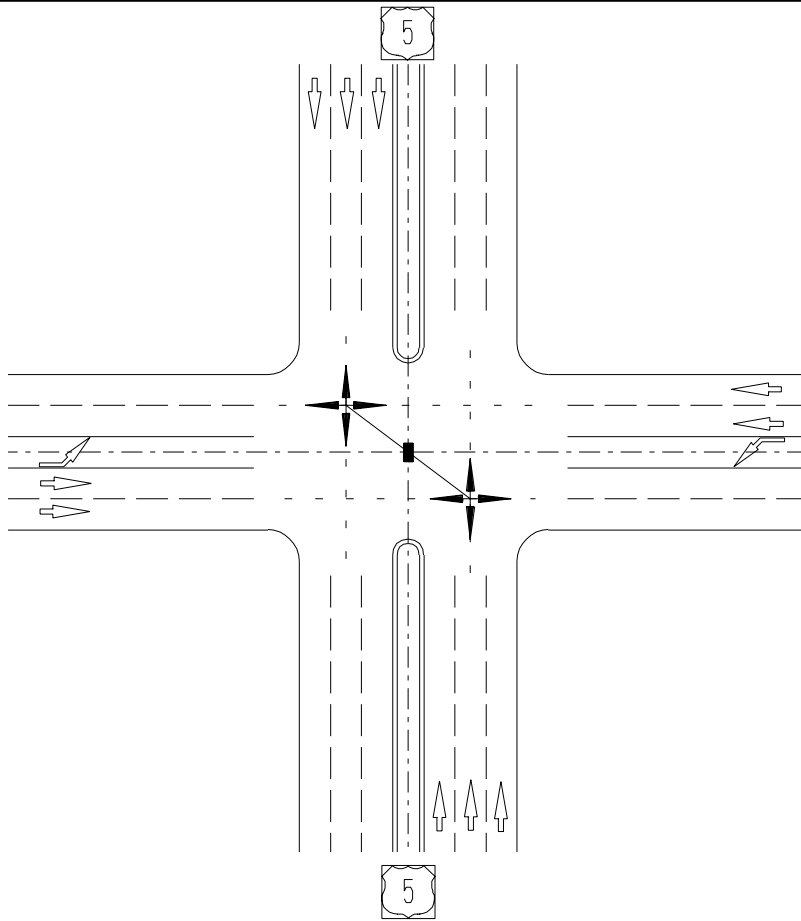


SIGNAL PHASING DIAGRAM



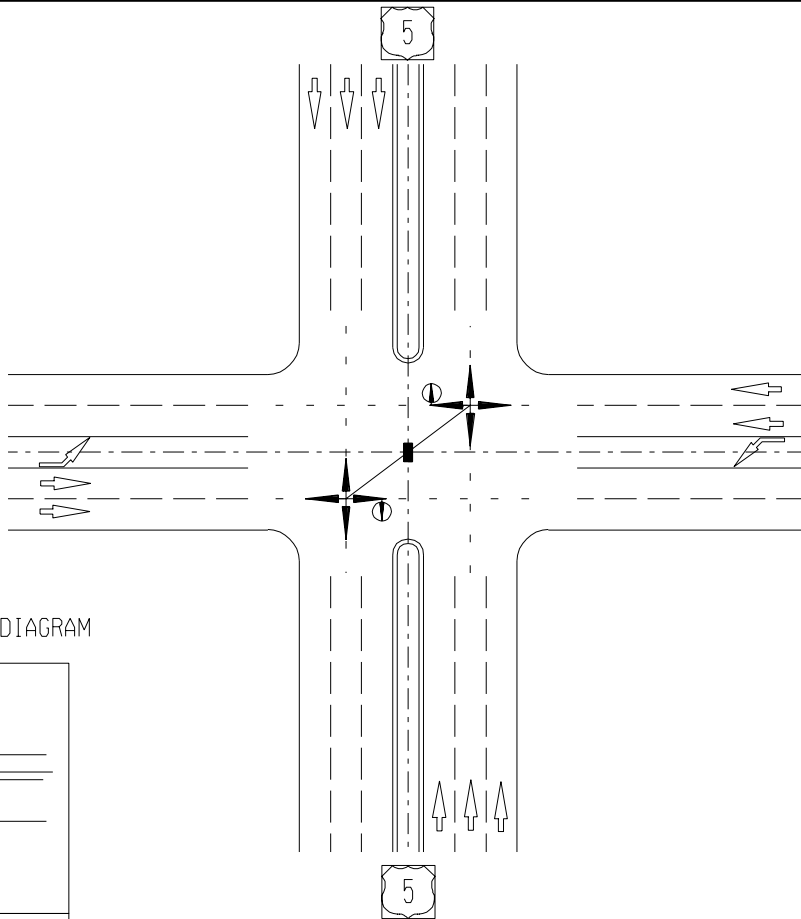
NOTES:

- 1 MEDIAN WIDTH LESS THAN 30'
- 2 DRAW HEAD PLACEMENT BOX-SPLIT THRU L ANEAGE
- 3 USE NEAR RIGHT FAR LEFT FOR PHASE DI RECTION
- 4 USE 4th LEVEL LEFT TURN GREEN ARROWS (L.T.G.A.'S)
- 5 PEDESTRIAN SIGNALS REQUIRED

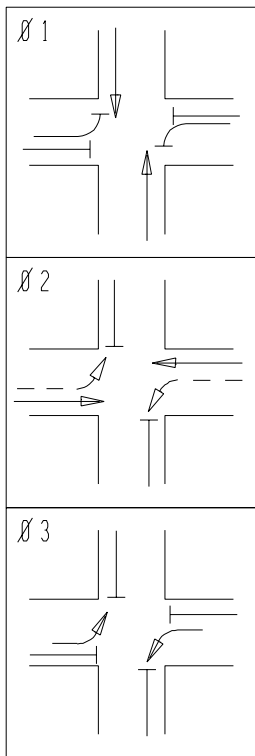


NOTES:

- 1 MEDIAN WIDTH LESS THAN 30'
- 2 DRAW HEAD PLACEMENT BOX-SPLIT THRU L ANEAGE
- 3 USE NEAR RIGHT - FAR LEFT ON TRUNKLINE
- 4 USE 2-WAY CASE ON X-RD WHEN LEFT TURNS ARE ALLOWED OR PROHIBITED

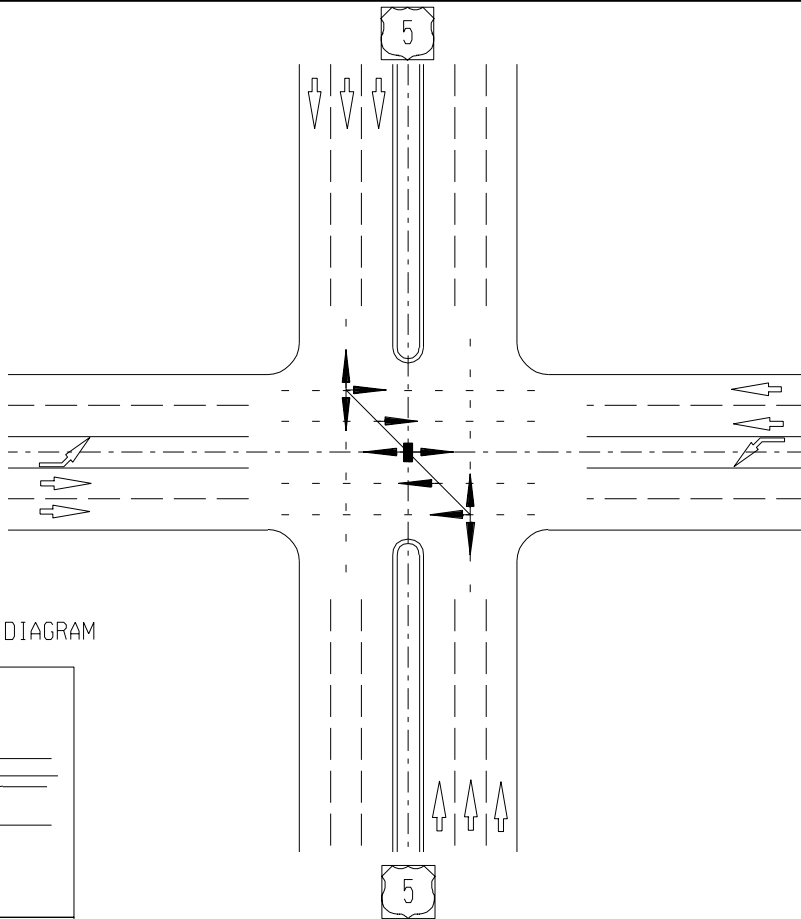


SIGNAL PHASING DIAGRAM

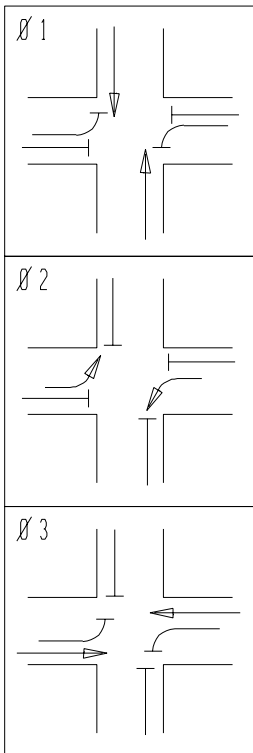


NOTES:

- 1 MEDIAN WIDTH LESS THAN 30'
- 2 DRAW HEAD PLACEMENT BOX-SPLIT THRU L ANEAGE
- 3 USE NEAR RIGHT - FAR LEFT FOR PHASE DIRECTION
- 4 USE 4th LEVEL LEFT TURN GREEN ARROWS (L.T.G.A'S)
- 5 USE 2-WAY CASE SIGN FOR X-RD
- 6 PEDESTRIAN SIGNALS OPTIONAL

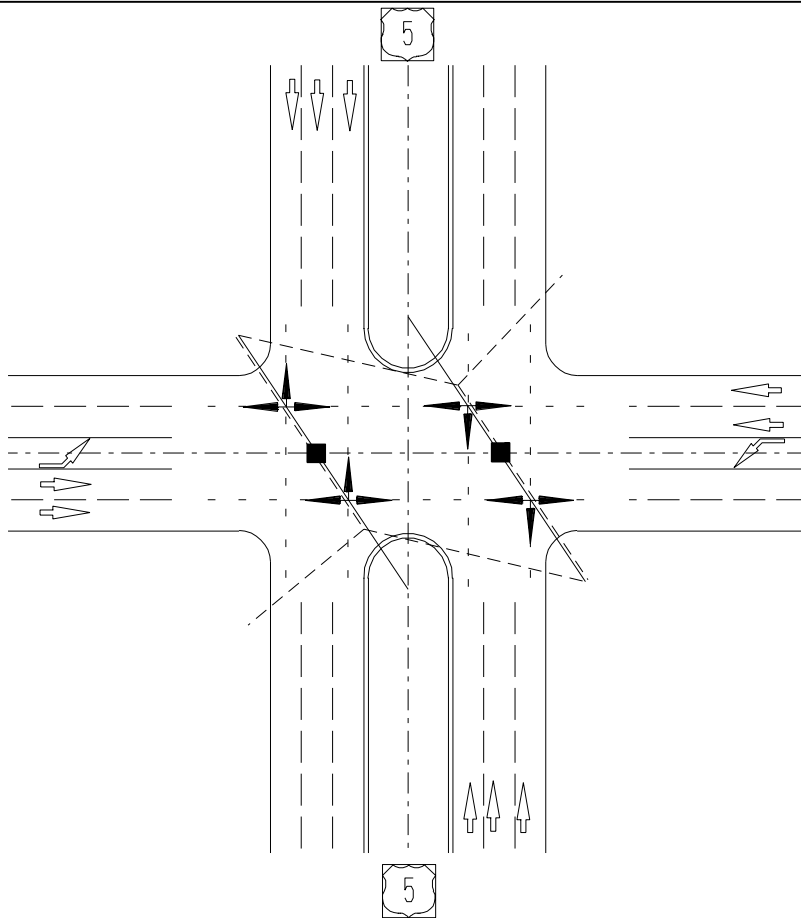


SIGNAL PHASING DIAGRAM



NOTES:

- 1 MEDIAN WIDTH LESS THAN 30'
- 2 DRAW HEAD PLACEMENT BOX-SPLIT THRU L ANEAGE ON TRUNKLINE AND SPLIT LANES FOR X-RD A PPROACHES
- 3 USE EXCLUSIVE LEFT TURN SIGNAL ON X- RD WITH CASE SIGNS
- 4 PLACE TWO THRU SIGNALS TO THE RIGHT OF THE LEFT TURN SIGNAL ON X-RD
- 5 PEDESTRIAN SIGNALS REQUIRED UNLESS O THERWISE DIRECTED

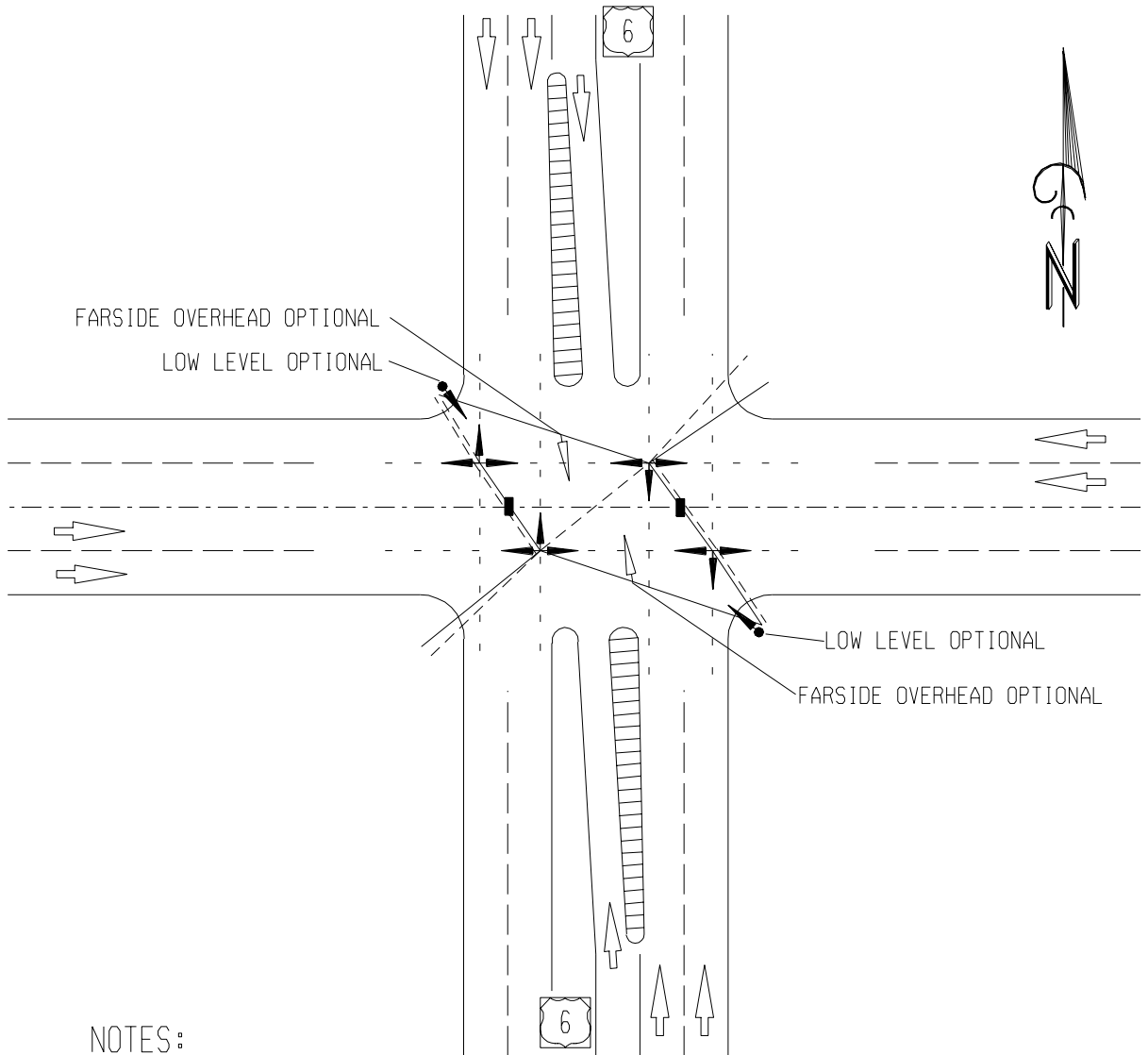


NOTES:

- 1 MEDIAN WIDTH 30' OR MORE
- 2 DESIGN AS TWO SEPARATE INTERSECTIONS
- 3 DRAW HEAD PLACEMENT BOX-SPLIT THROUGH APPROACH LANES ON TRUNKLINE; SPLIT LANEAGE ON X-RD
- 4 USE NEAR RIGHT - FAR LEFT ON TRUNKLINE AT BOTH INTERSECTIONS
- 5 USE 4-WAY CASE SIGN AT BOTH INTERSECTIONS
- 6 WHILE PHASING IS POSSIBLE FOR EITHER ROADWAY - USUALLY LEFT TURNS ARE PROHIBITED AT THE INTERSECTION PROPER AND REDIRECTED THROUGH MEDIAN CROSSOVERS. THE MAIN PROBLEM IS THE INTERLOCKING OF LEFT-TURN MOVEMENTS.
- 7 SOLID LINE SPAN ARRANGEMENT SHOWS TWO THROUGH SPANS
- 8 DASHED LINE SPAN ARRANGEMENTS SHOWS TWO 3-WAY TIE-OFF COMBINATIONS
- 9 PEDESTRIAN SIGNALS OR A BACKSIDE HEAD SHOULD BE CONSIDERED WHERE PEDESTRIAN ACTIVITY IS EVIDENT AND THE OVERHEAD SIGNAL INDICATIONS ARE NOT READILY VISIBLE.

HEAD PLACEMENT DIAGRAM

2 PHASE OPERATION

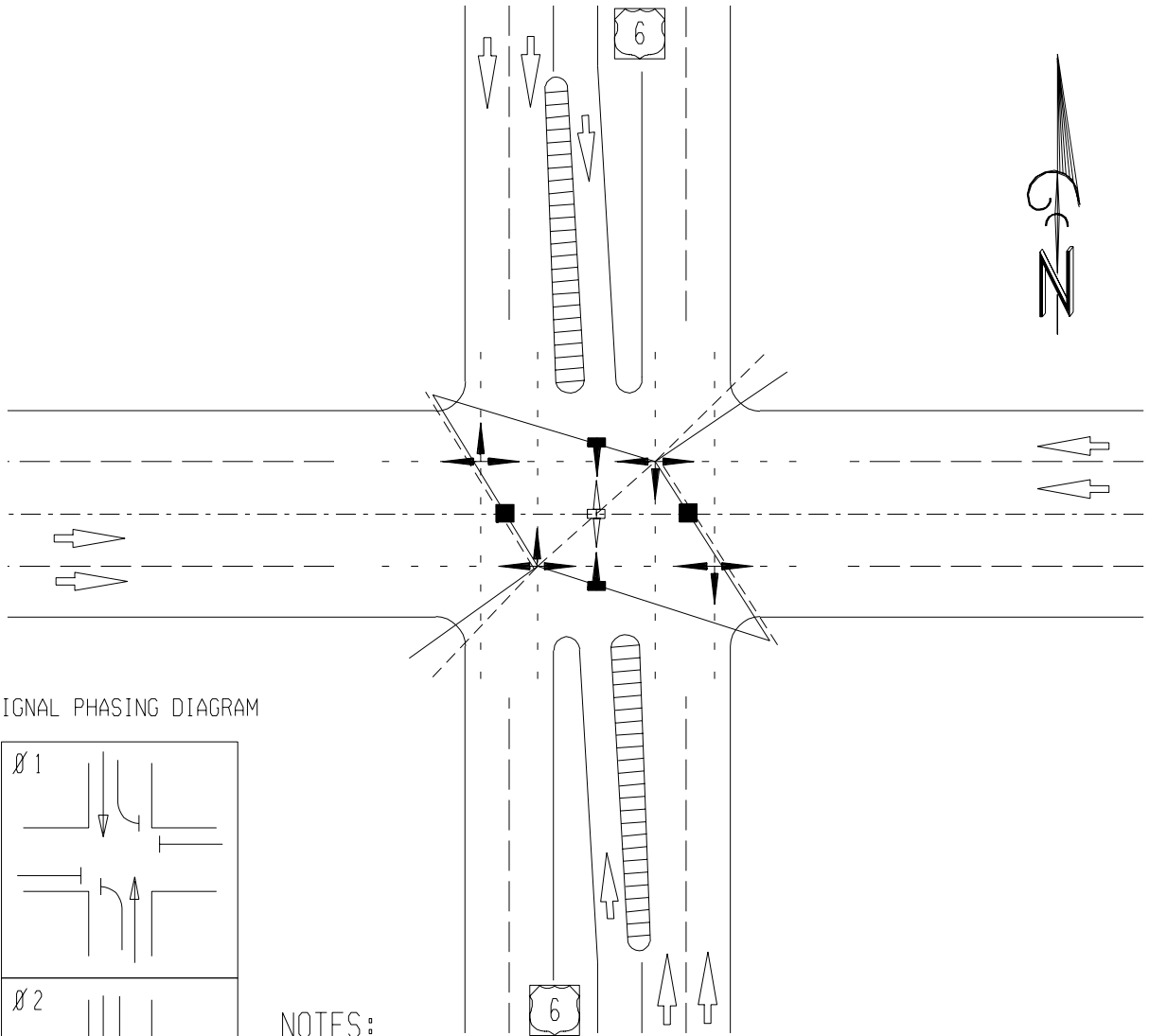


NOTES:

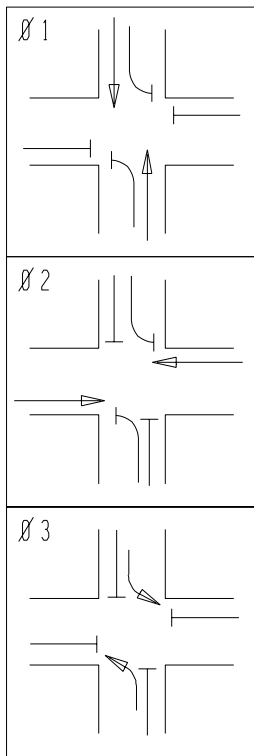
- 1 EXCLUSIVE LEFT - TURN SLOTS
- 2 DESIGN AS TWO SEPARATE INTERSECTIONS
- 3 DRAW HEAD PLACEMENT BOX: SPLIT THRU APPROACH LANEAGE ON TRUNKLINE - SPLIT LANEAGE ON X-RD
- 4 USE NEAR RIGHT - FAR LEFT ON TRUNKLINE AND BOTH INTERSECTIONS
- 5 USE 2-WAY CASE SIGN FACING X-RD
- 6 LOW LEVEL OR FARSIDE OVERHEAD SIGNALS ARE OPTIONAL
- 7 SOLID LINE SPAN ARRANGEMENT SHOWS TWO 3-WAY TIE-OFF SPAN COMBINATIONS
- 8 DASHED LINE SPAN ARRANGEMENT SHOWS 4-WAY TIE-OFF (SADDLE SPAN)
- 9 PEDESTRIAN SIGNALS OR A BACKSIDE HEAD SHOULD BE CONSIDERED WHERE PEDESTRIAN ACTIVITY IS EVIDENT AND THE OVERHEAD SIGNAL INDICATIONS ARE NOT READILY VISIBLE.

HEAD PLACEMENT DIAGRAM

2 PHASE OPERATION

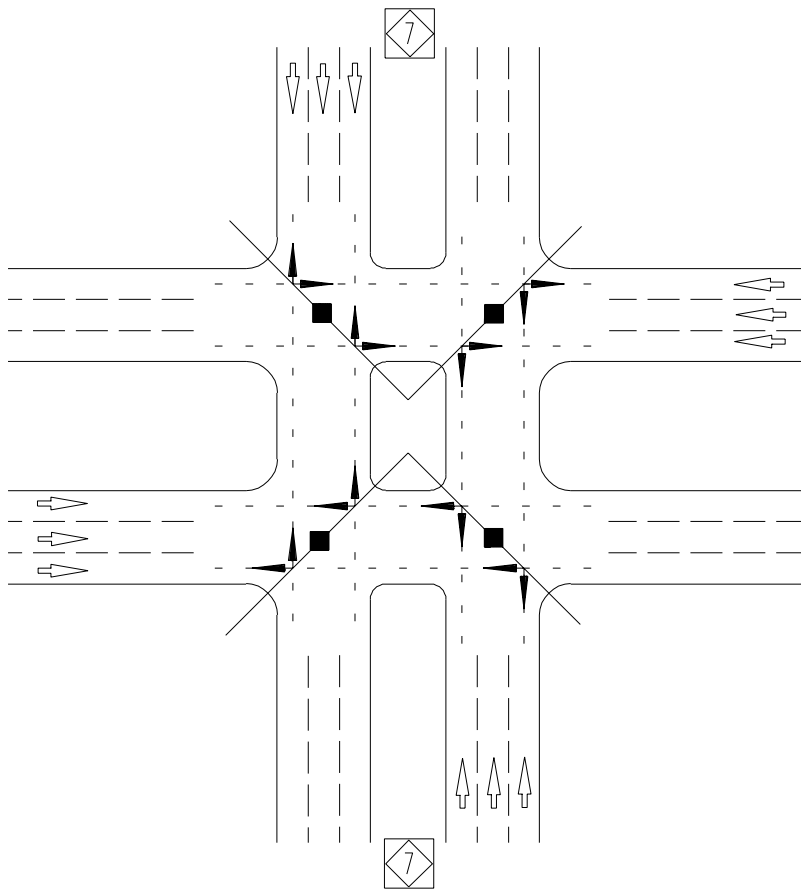


SIGNAL PHASING DIAGRAM



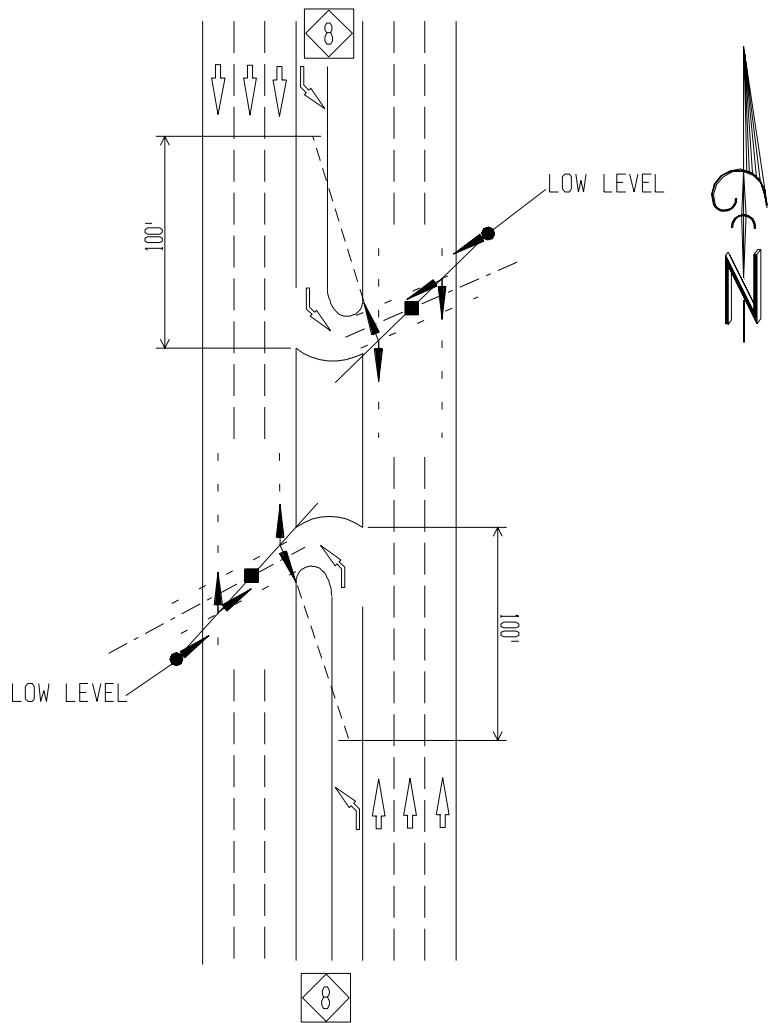
NOTES:

- 1 EXCLUSIVE LEFT - TURN SLOTS
- 2 DESIGN AS TWO SEPARATE INTERSECTIONS
- 3 DRAW HEAD PLACEMENT BOX: SPLIT THRU APPROACH LANEAGE ON TRUNKLINE- SPLIT LANEAGE ON X-RD
- 4 USE NEAR RIGHT - FAR LEFT ON TRUNKLINE AT BOTH INTERSECTIONS
- 5 USE TWO 1-WAY EXCLUSIVE LEFT TURN SIGNALS WITH CASE SIGNS ON THE 3-WAY TIE-OFF SPAN COMBINATION-SOLID LINE SPAN ARRANGEMENT
- 6 USE ONE 2-WAY EXCLUSIVE LEFT TURN SIGNAL ON THE 4-WAY TIE OFF (SADDLE SPAN) WITH CASE SIGNS - DASH ED LINE SPAN ARRANGEMENT
- 7 USE TWO 4-WAY CASE SIGNS OVER THRU ROADWAY
- 8 PEDESTRIAN SIGNALS REQUIRED



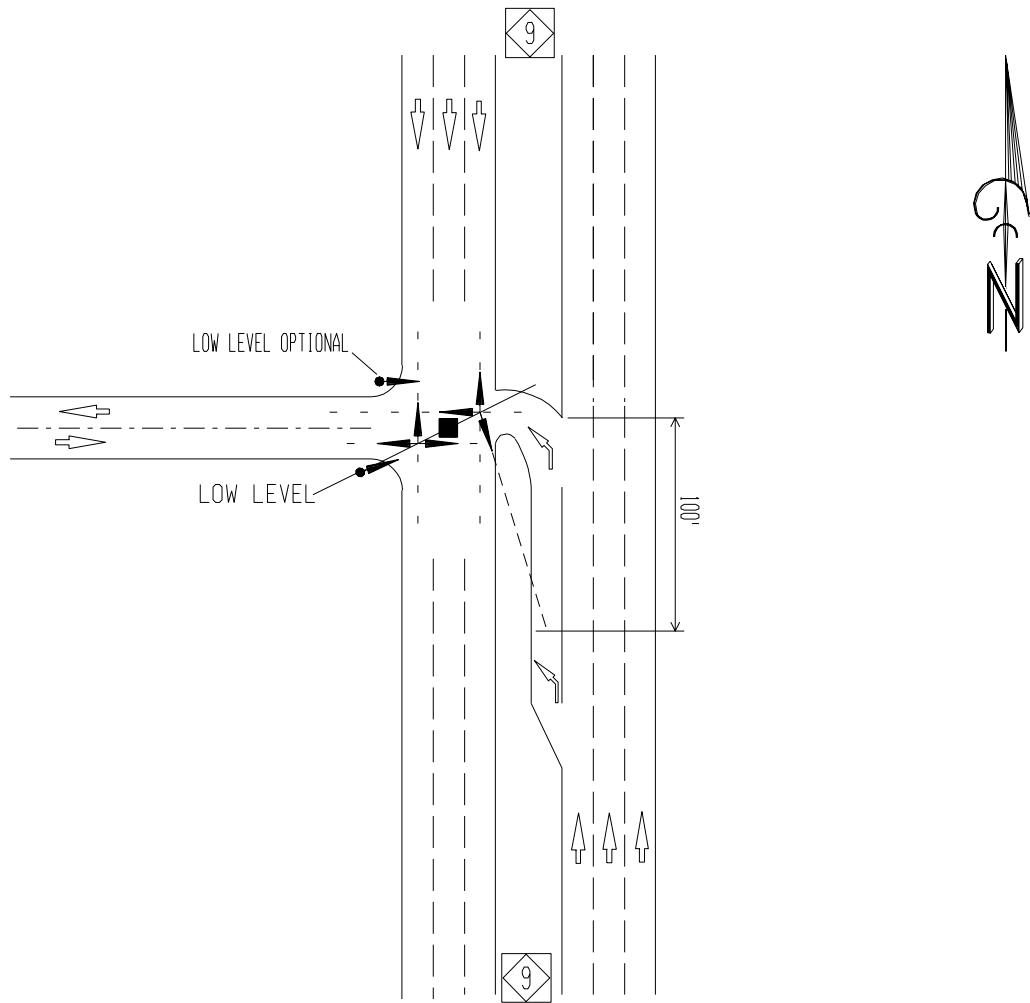
NOTES:

- 1 DESIGN AS FOUR SEPARATE INTERSECTIONS
- 2 DRAW HEAD PLACEMENT BOX: SPLIT THRU APPROACH LANEAGE ON BOTH ROADWAYS
- 3 USE NEAR RIGHT - FAR LEFT FOR FIRST INTERSECTION ON APPROACH LEG FOR BOTH ROADWAYS
- 4 USE 4-WAY CASE SIGNS AT ALL INTERSECTIONS
- 5 WHILE PHASING IS POSSIBLE FOR EITHER ROADWAY, USUALLY LEFT-TURNS ARE PROHIBITED AT THE INTERSECTION PROPER AND REDIRECTED THROUGH MEDIAN CROSSOVERS. THE MAIN PROBLEM IS THE INTERLOCKING OF LEFT-TURN MOVEMENTS.
- 6 PEDESTRIAN SIGNALS OR A BACKSIDE HEAD SHOULD BE CONSIDERED WHERE PEDESTRIAN ACTIVITY IS EVIDENT AND THE OVERHEAD SIGNAL INDICATIONS ARE NOT READILY VISIBLE.



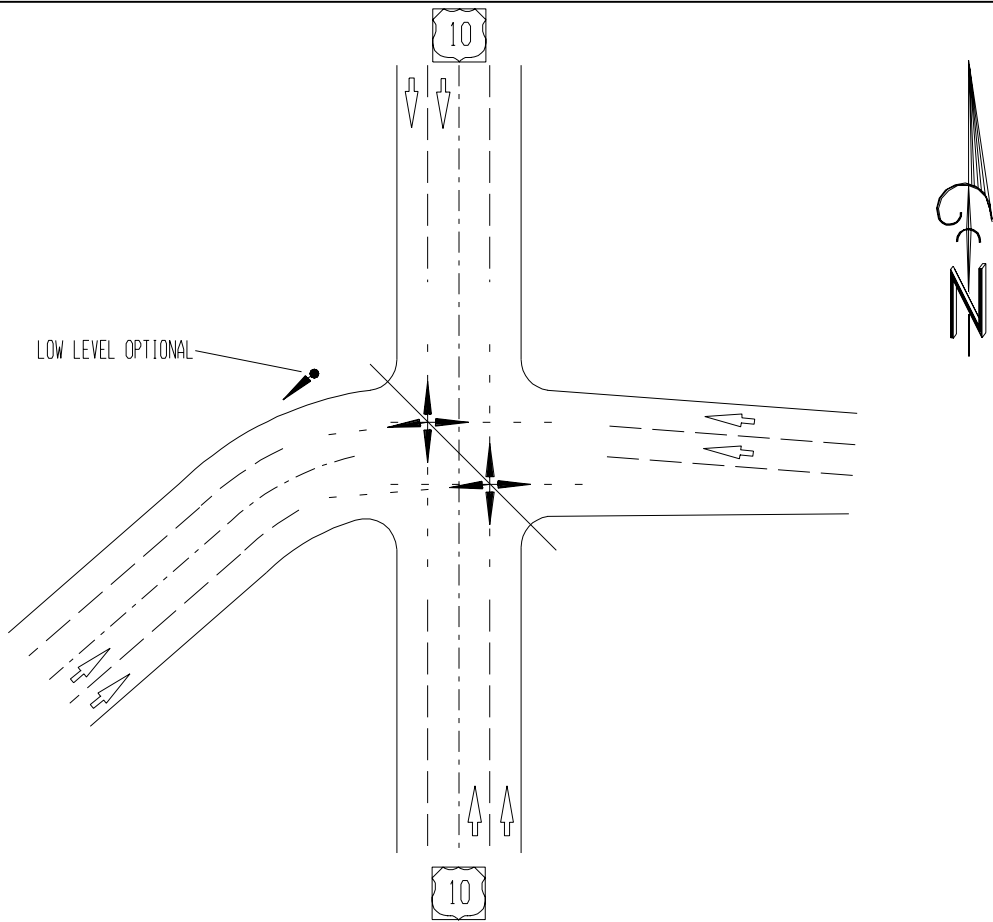
NOTES:

- 1 TREAT EACH CROSSOVER AS SEPARATE INTERSECTION
- 2 DRAW HEAD PLACEMENT BOX - SPILT THRU LANEAGE ON TRUNKLINE
- 3 USE NEAR RIGHT - FAR LEFT FOR CROSSOVER
- 4 SIGNAL SEPARATION FOR CROSSOVER HEADS SHOULD BE 10' AND 10'
- 5 AIM RIGHT SIGNAL INDICATION FOR CROSSOVER TO MIDDLE OF LEFT-TURN LANE AT A SPOT 100' FEET FROM CROSSOVER RADI I POINT
- 6 ADD FARSIDE LOW LEVEL SIGNAL TO INSURE TWO INDICATIONS ARE FACING CROSSOVER
- 7 USE ONE 4-WAY CASE SIGN



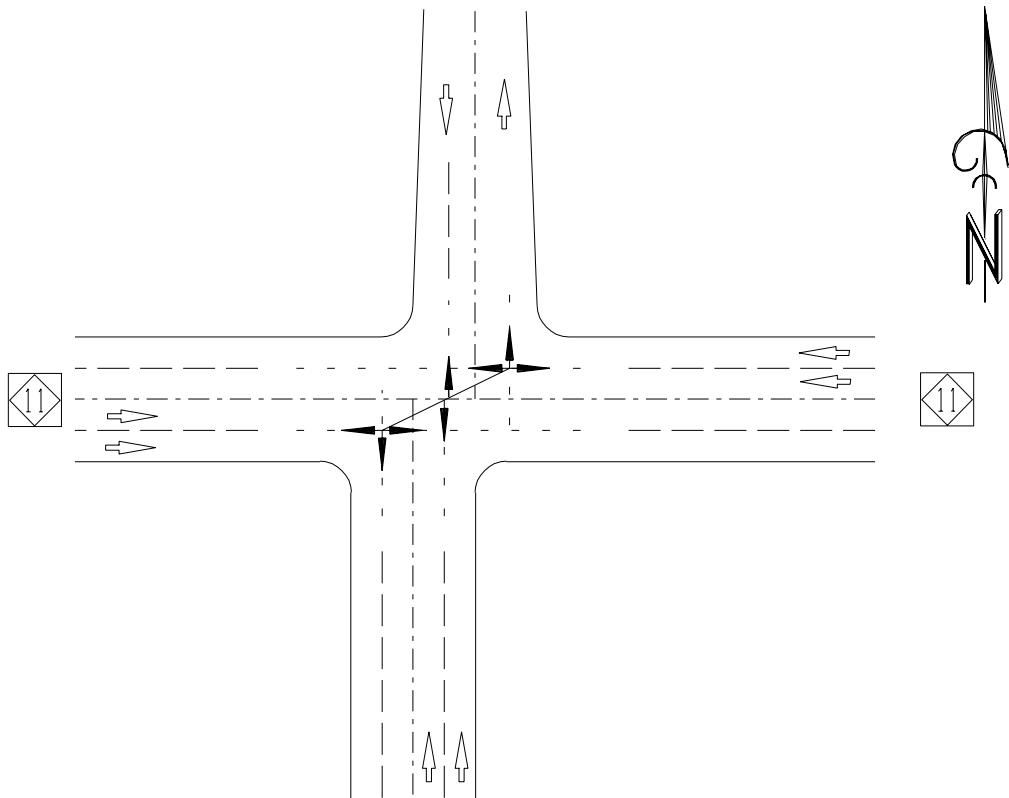
NOTES:

- 1 DRAW HEAD PLACEMENT BOX - SPLIT LANE AGE ON TRUNKLINE AND ON X-RD
- 2 USE NEAR RIGHT - FAR LEFT FOR CROSSOVER
- 3 SIGNAL SEPARATION FOR CROSSOVER HEADS SHOULD BE 10' AND 10'
- 4 AIM RIGHT SIGNAL INDICATION FOR CROSSOVER TO MIDDLE OF LEFT-TURN LANE AT A SPOT 100' FROM CROSSOVER RADIUS POINT
- 5 ADD FAR SIDE LOW LEVEL SIGNAL TO INSURE TWO INDICATIONS ARE FACING CROSSOVER
- 6 FAR SIDE LOW LEVEL INDICATION ON RIGHT SIDE IS OPTIONAL FOR THRU MOVEMENT FROM CROSSOVER
- 7 USE ONE 4-WAY CASE SIGN



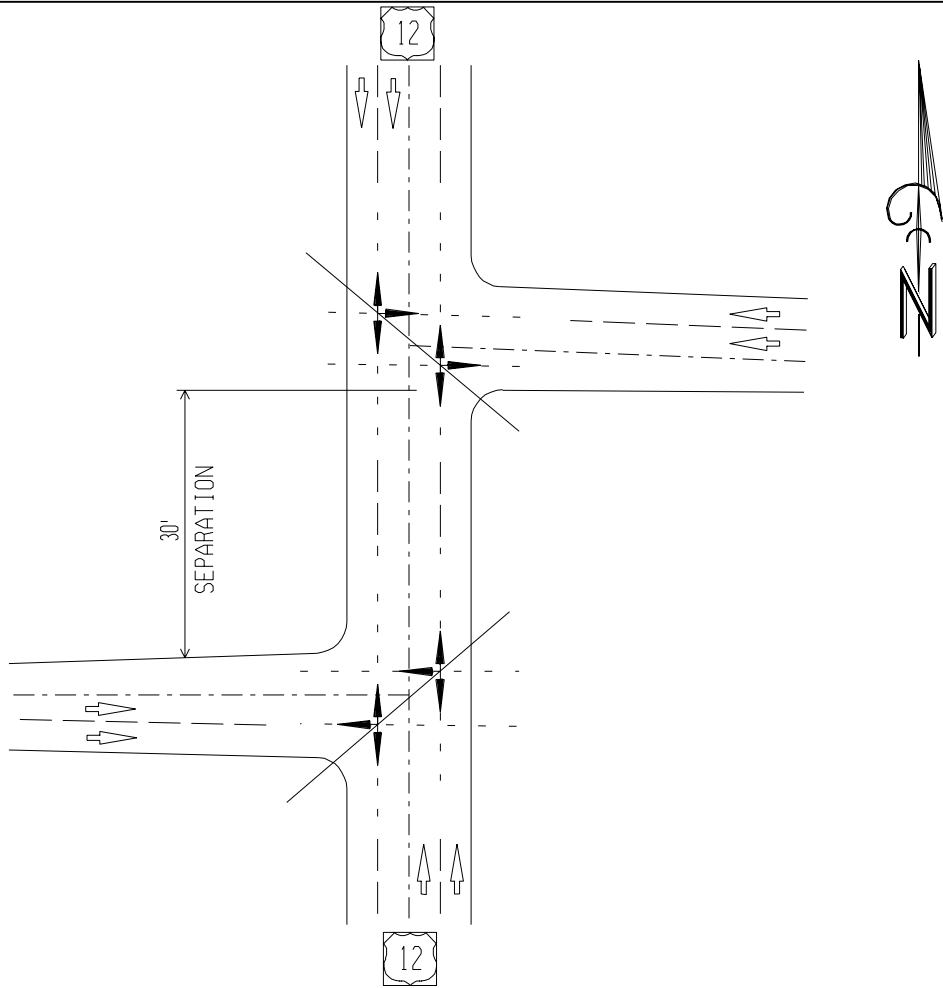
NOTES:

- 1 DRAW HEAD PLACEMENT BOX - SPLIT THRU LANEAGE FOR EACH ROADWAY
- 2 USE NEAR RIGHT - FAR LEFT ON TRUNKLINE
- 3 ADDITIONAL ADVANCE LOW LEVEL INDICATION ON CROSSROAD IS OPTIONAL DEPENDENT ON GEOMETRICS



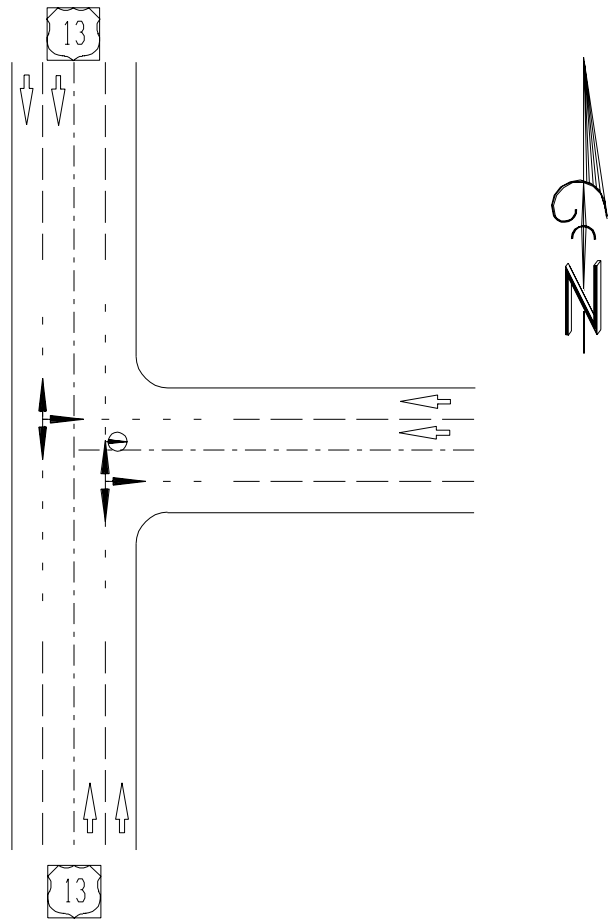
NOTES:

- 1 TREAT CLOSELY SPACED OFFSET AS ONE INTERSECTION
- 2 DRAW HEAD PLACEMENT BOX:
 - SPLIT THRU LANEAGE TRUNKLINE
 - SPLIT LANEAGE ON EACH SIDE STREET (OFFSET) APPROACH
- 3 USE NEAR RIGHT - FAR LEFT ON TRUNKLINE

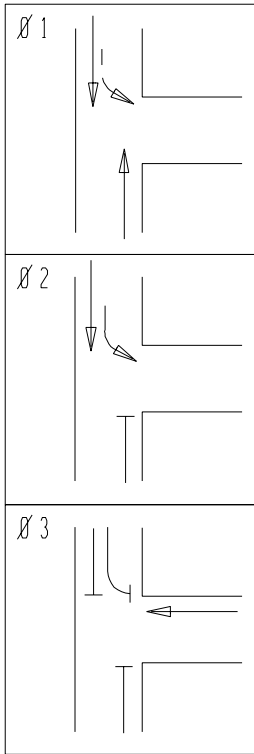


NOTES:

- 1 DESIGN AS TWO SEPARATE INTERSECTIONS (IF SEPARATION IS 30' OR MORE)
- 2 DESIGN AS ONE INTERSECTION (IF SEPARATION IS LESS THAN 30')
- 3 DRAW HEAD PLACEMENT BOX - SPLIT THRU ON TRUNKLINE AND ON EACH SIDE STREET T
- 4 USE NEAR RIGHT - FAR LEFT ON TRUNKLINE
- 5 NOTE: NEAR RIGHT - FAR LEFT CAN BE USED ON SIDE STREET TO ACCOMMODATE HEAVY TURNING MOVEMENTS.
- 6 USE INSIDE SIGNAL INDICATIONS FOR WIDELY SPACED OFFSET



SIGNAL PHASING DIAGRAM



NOTES:

- 1 DRAW HEAD PLACEMENT BOX - SPLIT THRU LANEAGE ON BOTH TRUNKLINE AND CROSSROAD
- 2 USE NEAR RIGHT - FAR LEFT ON TRUNKLINE
- 3 USE 4th LEVEL LEFT TURN GREEN ARROW(L.T.G.A.'S)
- 4 PEDESTRIAN SIGNALS REQUIRED UNLESS OTHERWISE DIRECTED