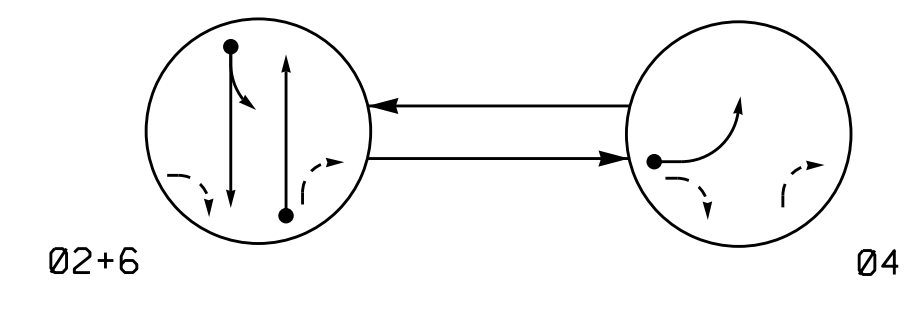


PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND
 ● DETECTED MOVEMENT
 ○ UNDETECTED MOVEMENT (OVERLAP)
 - UNSIGNALIZED MOVEMENT
 - PEDESTRIAN MOVEMENT

QUEUE PREEMPT PHASE (Low Priority)

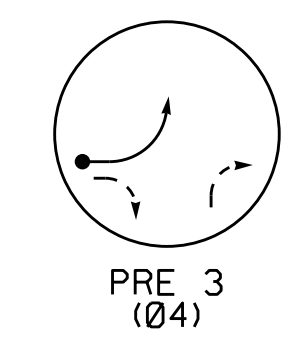
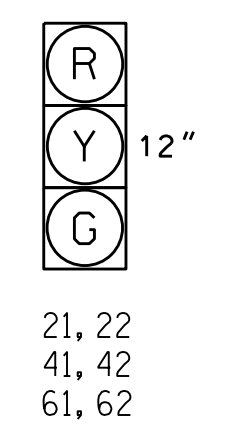


TABLE OF OPERATION

| SIGNAL FACE | PHASE | | | |
|-------------|-------|---|---|-------|
| | 2 | 4 | 6 | PRE 3 |
| 21, 22 | G | R | R | Y |
| 41, 42 | R | G | G | R |
| 61, 62 | G | R | R | Y |

SIGNAL FACE I.D.

All Heads L.E.D.



OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

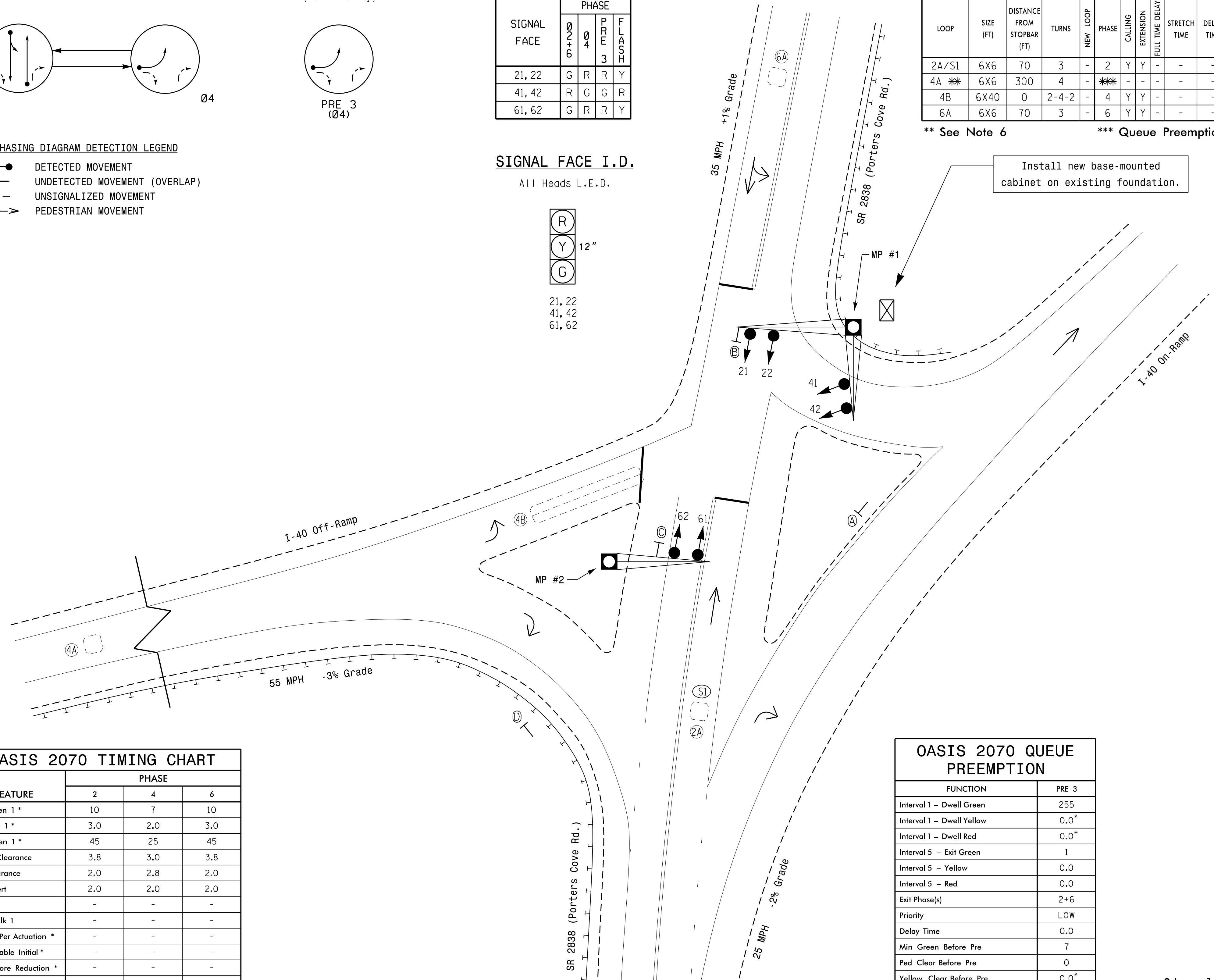
| INDUCTIVE LOOPS | | | | DETECTOR PROGRAMMING | | | | | | | | | | | |
|-----------------|-----------|----------------------------|-------|----------------------|-------|---------|-----------|-----------------|--------------|------------|--------------------------|----------------------|-------------------------|-------------|----------|
| LOOP | SIZE (FT) | DISTANCE FROM STOPBAR (FT) | TURNS | NEW LOOP | PHASE | CALLING | EXTENSION | FULL TIME DELAY | STRETCH TIME | DELAY TIME | QUEUE MAX OCCUPANCY TIME | QUEUE GAP RESET TIME | PREEMPT INDEX FOR QUEUE | SYSTEM LOOP | NEW CARD |
| 2A/S1 | 6X6 | 70 | 3 | - | 2 | Y | Y | - | - | - | - | - | - | - | - |
| 4A ** | 6X6 | 300 | 4 | - | ** | - | - | - | - | - | 5 | 0.1 | 3 | - | - |
| 4B | 6X40 | 0 | 2-4-2 | - | 4 | Y | Y | - | - | - | - | - | - | - | - |
| 6A | 6X6 | 70 | 3 | - | 6 | Y | Y | - | - | - | - | - | - | - | - |

** See Note 6 *** Queue Preemption

2 Phase Fully Actuated w/ Queue Preemption Asheville Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Pavement markings are existing.
- This loop serves as a queue backup detector. After 5 seconds of constant actuation, the detector unit shall put in a call to the controller to force off any phase in the cycle and go to phase 4 to clearout the storage lanes and prevent the backup of vehicles onto I-40 eastbound.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



OASIS 2070 TIMING CHART

| FEATURE | PHASE | | |
|-------------------------|------------|-----|------------|
| | 2 | 4 | 6 |
| Min Green 1 * | 10 | 7 | 10 |
| Extension 1 * | 3.0 | 2.0 | 3.0 |
| Max Green 1 * | 45 | 25 | 45 |
| Yellow Clearance | 3.8 | 3.0 | 3.8 |
| Red Clearance | 2.0 | 2.8 | 2.0 |
| Red Revert | 2.0 | 2.0 | 2.0 |
| Walk 1 * | - | - | - |
| Don't Walk 1 | - | - | - |
| Seconds Per Actuation * | - | - | - |
| Max Variable Initial * | - | - | - |
| Time Before Reduction * | - | - | - |
| Time To Reduce * | - | - | - |
| Minimum Gap | - | - | - |
| Recall Mode | MIN RECALL | - | MIN RECALL |
| Vehicle Call Memory | YELLOW | - | YELLOW |
| Dual Entry | - | - | - |
| Simultaneous Gap | ON | ON | ON |

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

OASIS 2070 QUEUE PREEMPTION

| FUNCTION | PRE 3 |
|---------------------------|-------|
| Interval 1 - Dwell Green | 255 |
| Interval 1 - Dwell Yellow | 0.0* |
| Interval 1 - Dwell Red | 0.0* |
| Interval 5 - Exit Green | 1 |
| Interval 5 - Yellow | 0.0 |
| Interval 5 - Red | 0.0 |
| Exit Phase(s) | 2+6 |
| Priority | LOW |
| Delay Time | 0.0 |
| Min Green Before Pre | 7 |
| Ped Clear Before Pre | 0 |
| Yellow Clear Before Pre | 0.0* |
| Red Clear Before Pre | 0.0* |
| Dwell Min Time | 30 |
| Enable Backup Protection | N |
| Ped Clear Through Yellow | N |
| Omit Overlaps | - |
| Preempt Extend** | - |

* Time defaults to time used for phase during normal operation

LEGEND

| PROPOSED | EXISTING |
|--|----------|
| ○ Traffic Signal Head | ● N/A |
| ○ Modified Signal Head | ○ N/A |
| ○ Sign | ○ N/A |
| ○ Pedestrian Signal Head With Push Button & Sign | ○ N/A |
| ○ Signal Pole with Guy | ○ N/A |
| ○ Signal Pole with Sidewalk Guy | ○ N/A |
| ○ Inductive Loop Detector | ○ N/A |
| ○ Controller & Cabinet | ○ N/A |
| ○ Junction Box | ○ N/A |
| ○ 2-in Underground Conduit | ○ N/A |
| ○ Right of Way | ○ N/A |
| ○ Directional Arrow | ○ N/A |
| ○ Metal Pole with Mastarm | ○ N/A |
| ○ "YIELD" Sign (R1-2) | ○ N/A |
| ○ No Left Turn Sign (R3-2) | ○ N/A |
| ○ No Right Turn Sign (R3-1) | ○ N/A |
| ○ "STOP" Sign (R1-1) | ○ N/A |

Signal Upgrade

SR 2838 (Porters Cove Rd.) at I-40 Eastbound Ramps

Division 13 Buncombe County Asheville

PLAN DATE: July 2016 REVIEWED BY: T.J. Williams

PREPARED BY: R.N. Zinser REVIEWED BY:

REVISIONS INIT. DATE

11/4/2016

SIG. INVENTORY NO. 13-1225

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

PROFESSIONAL ENGINEER

RICHARD N. ZINSER

043914

11/4/2016

13-1225

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 R.N. Zinser