|  |
| --- |
| ODOT TRAFFIC SIGNALINSPECTION CHECKLIST |
| Project Number/PID |   | Date |  |  |

|  |  |
| --- | --- |
| Project Engineer / Supervisor |  |

|  |  |  |
| --- | --- | --- |
| Signal Contractor |  |  |
| Final Inspector |  |  |

|  |  |  |
| --- | --- | --- |
| Intersection  |  |  |

|  |
| --- |
| Note: Checklist based on 2019 Construction & Material SpecificationsOSIS No: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Controller/Make/Model No: S/N: . MMU: S/N: .Cabinet Type: S/N: S |
|  Meets |  Deficient |  N/A | **WARRANTY INFORMATION:** |
|[ ] [ ] [ ]  1. Ensure that each unit has a permanent label or stamp indicating the date of shipment. Controller, Monitor, BIU, 2070 CPU board, field I/O module, Front Panel (CMS 733.02B) |
|[ ] [ ] [ ]  2. CMS 733.02BFurnish 60-month warranties or the manufacturers’ standard warranty, whichever is greater for the following equipment: **1. NEMA Controller Equipment** a. ATC controller b. Bus Interface Units c. Malfunction Management Units**2. CalTrans Controller Equipment** a. Model 2010 or 2018 Conflict Monitor Units b. ATC Rackmount Controller c. 2070LX Controller Units including the following subassembly units:                   (1)     2070-IC CPU Board                   (2)     2070-2A Field I/O Module                   (3)     2070-3B Front Panel.                   (4)     2070-6A,B.Ensure that the warranty period begins on the date of shipment to the project. **Ensure that each unit has a permanent label or stamp indicating the date of shipment.** |
| Comments: |  |



|  |  |  |  |
| --- | --- | --- | --- |
|  Meets |  Deficient |  N/A | **CONTROLLER & CABINET:** |
|[ ] [ ] [ ]  1. Is the cabinet sealed to the concrete base (and/or riser) with waterproof material? (TC-83.20 & CMS 633.08) |
|[ ] [ ] [ ]  2. Are all tags or labels properly installed and legible including the service wire, phase numbers and directions? (CMS 632.05) |
|[ ] [ ] [ ]  3. Are the connectors soldered on the loop lead in wires? (CMS 632.23) |
|[ ] [ ] [ ]  4. Is all field wiring neatly arranged and routed to prevent being pinched when the cabinet door is closed and free of debris? (CMS 633.08) |
|[ ] [ ] [ ]  5. Is the work pad in place? (CMS 633.11) |
|[ ] [ ] [ ]  6. Was the work pad poured separate from the foundation pour? (CMS 633.11) |
|[ ] [ ] [ ]  7. Is all wiring (except power) fitted with spade terminals? (CMS 633.08) |
|[ ] [ ] [ ]  8. Is all power wiring fitted into spade, screw, or spring terminals? (CMS 633.08) |
|[ ] [ ] [ ]  9. Is there LED lighting in the cabinet? (CMS 733.03) |
|[ ] [ ] [ ]  10. Is the controller cabinet properly grounded (max 10 ohms)? (CMS 625.16)Ground Rod Readings=  |
|[ ] [ ] [ ]  11. When shorted, does the monitor cause the intersection to go to flash? (CMS 733.03) |
|[ ] [ ] [ ]  12. Is the control equipment, terminal blocks, or shelves no closer than 6" to the top of the foundation? (CMS 633.08) |
|[ ] [ ] [ ]  13. Is there ½" preformed joint filler between foundation and adjacent paved areas (this includes work pad)? (TC-83.20) |
|[ ] [ ] [ ]  14. Does the enclosure include a vent, fan and thermostat? (CMS 733.03) |
|[ ] [ ] [ ]  15. Is the conduit sealed with a removable sealing compound? *No foam sealer!* (CMS 633.08) |
|[ ] [ ] [ ]  16. Are the proper diodes cut on the permissive card (2070)? Additional diodes shall not be allowed to be removed. |
|[ ] [ ] [ ]  17. Are there two (2) sets of equipment lists, operation and maintenance manuals, and board-level schematic and wiring diagrams of the UPS, and the battery data sheets? (CMS 633.05 and UPS Note) |
|[ ] [ ] [ ]  18. SD card or data key present? |
|[ ] [ ] [ ]  19. Does the cabinet have the proper finish inside and out as per plan? (CMS 733.03) |
|[ ] [ ] [ ]  20. Is all the equipment as per plan or ODOT approved? (CMS 733.03) |
|[ ] [ ] [ ]  21. Is the pole-mounted cabinet at the proper height? Less than 36” tall cabinet equal 30” +/- 3”. Over 36” tall cabinet equal to 23” +/- 3”. (TC-83.10) |
|[ ] [ ] [ ]  22. Are all wire terminals tight? (CMS 632.28) |
|[ ] [ ] [ ]  23. Is the cabinet air filter in place and clean? Front and/or Back (CMS 733.03) |
|[ ] [ ] [ ]  24. Are all unused conductors grounded in the controller cabinet? |
|[ ] [ ] [ ]  25. In a TS-2 cabinet, are the neutral (AC-) and grounding bars in the controller cabinet connected together? (CMS 733.03.B.1.b) |
| Comments: |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  Meets |  Deficient |  N/A | **CABINET:** |
|[ ] [ ] [ ]  1. Do all empty conduits have an HDPE insulated copper tracer wire, 12 AWG minimum, installed and then have all the ends sealed? (CMS 625.12) |
|[ ] [ ] [ ]  2. Does the cabinet come with the specified amount of power receptacles? NEMA: Min. one GFCI utility outlet with two receptacles and min. three non-GFCI NEMA 5-15 utility outlets with six receptacles (CMS 733.03.B) or Caltrans: Min. 4 GFCI receptacles and min. 2 non-GFCI (733.03.C & 733.03.D referencing Caltrans TEES specifications) |
|[ ] [ ] [ ]  3. Do all 332L ground mount cabinets come wired with an auxiliary output file? (733.03.C.2.d.) |
| Comments: |  |
|  Meets |  Deficient |  N/A | **OPERATIONAL CHECKS:** |
|[ ] [ ] [ ]  1. Upload timings from controller. Are they per plan, including correct clearance intervals and for concurrent phases? |
|[ ] [ ] [ ]  2. Do the detectors work for the assigned detector in the proper phase? |
|[ ] [ ] [ ]  3. Do the detectors place a call to the controller on the proper phase? |
|[ ] [ ] [ ]  4. Does the controller call in the proper direction and movement? |
|[ ] [ ] [ ]  5. Do all movements come in when a call is placed on a detector for that movement? |
|[ ] [ ] [ ]  6. Do ped push buttons put a call into the controller through the DC isolator? |
|[ ] [ ] [ ]  7. Does the controller receive the pedestrian call and the proper movement? |
|[ ] [ ] [ ]  8. Is the Leading Pedestrian Interval (LPI) properly programmed? See OTO’s Traffic Signal Resources Guide regarding LPI. |
|[ ] [ ] [ ]  9. Do the left turn phases not conflict with WALK indication on intersecting street and/or driveway? |
|[ ] [ ] [ ]  10. Countdown peds go to zero on yellow?  |
|[ ] [ ] [ ]  11. Flash All Red (or Y/R) as per plan? |
|[ ] [ ] [ ]  12. If applicable, is the Yellow Ball Trap eliminated in all typical sequencing through backup prevent and/or in Preemption sequencing (EV or RR) by way of All Red interval and then proceeding to Clearance phase(s)?  |
|[ ] [ ] [ ]  13. If applicable, does the Flashing Yellow Arrow have a minimum 3 second delay between adjacent green ball activation? (TEM 403-7 |
| Comments: |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  Meets |  Deficient |  N/A | **RADAR DETECTION:** |
|[ ] [ ] [ ]  1. Are the radar sensors aimed/aligned properly? |
|[ ] [ ] [ ]  2. Are the detection zones at the proper location? Confirm in software. |
|[ ] [ ] [ ]  3. Are the controller detector channels assigned to the proper detection zone? |
|[ ] [ ] [ ]  4. Are the sensors grounded? |
|[ ] [ ] [ ]  5. Was dielectric grease used on the sensor’s electrical connections? (inside the military connector) |
|[ ] [ ] [ ]  6. Are all conduit entrances, ends of bracket arms, etc. sealed? Grommets in place, if necessary? |
|[ ] [ ] [ ]  7. Is the cabinet interface panel properly installed? |
|[ ] [ ] [ ]  8. Are the cables tagged? |
|[ ] [ ] [ ]  9. Is the Ethernet (Click 301) module in place for the Stop Line Radar AND the Advance Radar? (SS 809.12) |
|[ ] [ ] [ ]  10. Is all mounting hardware tight and none missing? |
|[ ] [ ] [ ]  11. Has strain relief been provided for the pigtail between the splice box and the sensor? |
|[ ] [ ] [ ]  12. Was the existing Loop Lead-In Cable removed per the plan note? |
| Comments: |  |
|  Meets |  Deficient |  N/A | **UPS:** |
|[ ] [ ] [ ]  1. Does the UPS have lightning surge protection? (CMS 733.09) |
|[ ] [ ] [ ]  2. Does the UPS include a backlit LCD display that includes an event counter, hour meter, line and battery voltages/percentages and fault status? (CMS 733.09) |
|[ ] [ ] [ ]  3. Are the UPS alarms (ON Battery, Battery 2 Hour Timer, Low Battery) wired and functional to the controller and/or cabinet?  |
| Comments: |  |
|  Meets |  Deficient |  N/A | **UPS OPERATIONAL CHECKS:** |
|[ ] [ ] [ ]  1. Does UPS take over when disconnect is opened? |
|[ ] [ ] [ ]  2.After Utility power turned off and UPS activated, is Utility Line AC voltage zero?  |
|[ ] [ ] [ ]  3. Plug in generator. Does signal run on Line power and run properly through the generator panel? |
|[ ] [ ] [ ]  4. Does Manual Bypass switch remove power from the UPS input on the terminal block (and turn signal completely dark)? |
|[ ] [ ] [ ]  5. Check line voltage of cabinet with AC power and after UPS is tripped. |
|[ ] [ ] [ ]  6. Confirmation light installed and functioning? |
|[ ] [ ] [ ]  7. When the UPS enters low battery flash after running on full function battery, does it do so after servicing the minor roadway? (UPS Plan note, typical TEM 442-41) |
| Comments: |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  Meets |  Deficient |  N/A | **LOOP DETECTORS:** |
|[ ] [ ] [ ]  1. Were the corners, cracks, and/or joints drilled with a minimum diameter 1-1/4” drill bit? (TC-82.10) |
|[ ] [ ] [ ]  2. Is the lead-in conduit installed a minimum of 2 feet from edge of pavement (not shoulder, normally the white line) or edge of full depth shoulder? Conduit shall not go through curb and/or gutter (TC-82.10) |
|[ ] [ ] [ ]  3. Is the Lead-in cable twisted 3 to 5 turns per foot from the loop to the splice? (CMS 632.23) |
|[ ] [ ] [ ]  4. Is cured loop sealant flush with or higher than the pavement surface? (CMS 632.11) |
|[ ] [ ] [ ]  5. Are all adjacent loop slots a minimum of 1'-0" apart? (TC-82.10) |
|[ ] [ ] [ ]  6. If loop crosses joint in concrete pavement, was a 3” x 3” square of material removed and filled with elastic join material or asphalt across joint? (TC-82.10)  |
|[ ] [ ] [ ]  7. Are the detector loops installed at the proper location as per plan? |
| Comments: |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  Meets |  Deficient |  N/A | **TRENCHING:** |
|[ ] [ ] [ ]  1. Is the trench at final grade and restored? (CMS 107.10)  a. If noted in the plans, is the area seeded? |
|[ ] [ ] [ ]  2. Is the trench in paved areas restored? (CMS 625.13)  |
|[ ] [ ] [ ]  3. Is the trench 24 inches deep and less than 12 inches wide? CMS 625.13 |
|[ ] [ ] [ ]  4. Have the conduit threads been protected with zinc paint? (CMS 625.12)  |
| Comments: |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  Meets |  Deficient |  N/A | **BATTERIES:** |
|[ ] [ ] [ ]  1. Are batteries deep cycle, sealed prismatic lead-calcium based AGM/VRLA (Absorbed Glass Mat / Valve Regulated Lead Acid)? (CMS 733.09) |
|[ ] [ ] [ ]  2. Are batteries rated for 105 Ahrs? (CMS 733.09) |
|[ ] [ ] [ ]  3. Are batteries labeled to operate over a temperature range of -13 °F to +165 °F (– 25 °C to +74 °C)? (CMS 733.09) |
|[ ] [ ] [ ]  4. Are batteries **placed on** battery heater mats in the enclosure? (CMS 733.09) |
|[ ] [ ] [ ]  5. Disconnect and load test each battery |
| Comments: |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  Meets |  Deficient |  N/A | **SUPPORTS:** |
|[ ] [ ] [ ]  1. Is all the hardware on the poles: caps, covers, etc. (TC-81.11 & TC-81.22) |
|[ ] [ ] [ ]  2. Is pole essentially vertical or slightly raked away from intersection? (CMS 632.16) |
|[ ] [ ] [ ]  3. Is the pole/pedestals properly grounded (max 25 ohms)? Table below. (CMS 625.16) |
|[ ] [ ] [ ]  4. Are all scratches coated with zinc coating? *Do not use galvanizing spray* (CMS 711.02)  |
|[ ] [ ] [ ]  5. Are all required washers and nuts in place? (CMS 630.06) *Leveling nut underneath. Plain structural washer & anchor nut on top.* |
|[ ] [ ] [ ]  6. Does it appear that anaerobic adhesive (lock-tite) was used on anchor bolt? (CMS 630.06) |
|[ ] [ ] [ ]  7. Are all conduits 2” minimum above foundation but less than the height of the anchor bolts? (TC-21.21) |
|[ ] [ ] [ ]  8. Are all conduits into the pole sealed? (CMS 625.12) |
|[ ] [ ] [ ]  9. Are the anchor bolts the proper height above the foundation? (TC-81.11 & TC-81.22)*The top of the bolt should be one full bolt thread above the nut so that water does not sit in there.* |
|[ ] [ ] [ ]  10. Is there at least one conduit ell in addition to the grounding PVC, even if not used (minimum 2" conduit) (TC-21.21) |
|[ ] [ ] [ ]  11. Do all the poles contain permanent legible markings indicating SCD number, Design Number, and fabrication date? (CMS 732.11) |
|[ ] [ ] [ ]  12. Are the cable support assembles in place and the correct size? (CMS 732.17). Cable and wire inside of poles shall include cable support assemblies. (CMS 632.21 and TC-84.20) |
|[ ] [ ] [ ]  13. Does the strain pole have at least one 2-inch cable entrance with a weather head and a welded blind half-coupling? (CMS 732.12) |
|[ ] [ ] [ ]  14. Is the pole properly grounded, cad welded with 2 coats of varnish applied over the welds and exposed cable? (CMS 625.09) |
|[ ] [ ] [ ]  15. Are all unused holes plugged? (CMS 732.11, TC-81.11, TC-81.22) |
|[ ] [ ] [ ]  16. Are the pole identification tags present? (TC-81.11, TC-81.22) |
|  |  |
| Comments: |

|  |
| --- |
| Pole Ground Readings |
| NW |  | NE |  | SW |  | SE |  |

 |

|  |  |  |  |
| --- | --- | --- | --- |
|  Meets |  Deficient |  N/A | **PEDESTRIAN SIGNALS & ADA INFORMATION:** |
|[ ] [ ] [ ]  1. Is the bottom of the pedestrian signal head 8' to 9' above the walk? (TC-85.10) |
|[ ] [ ] [ ]  2. Is the front of the pedestrian signal head visor (or sun shade) more than 2' from the face of the curb? (TC-85.10) |
|[ ] [ ] [ ]  3. Is the pedestrian signal head properly oriented to its crosswalk? (CMS 632.08) |
|[ ] [ ] [ ]  4. Is there an unobstructed path to the pushbutton (no guardrail, no unpaved surface)? (PROWAG R204) |
|[ ] [ ] [ ]  5. Does the curb ramp have an all-weather surface/detectable warning? (BP-7.1) |
|[ ] [ ] [ ]  6. Is the pushbutton installed between 1.5 ft. and 6 ft. from the edge of the curb, shoulder, or pavement?  If exceptions, the pushbutton should not be further than 10 ft. from the edge of the curb, shoulder, or pavement. (OMUTCD Fig. 4E-3) |
|[ ] [ ] [ ]  7. Are two pedestrian pushbuttons on a corner separated by at least 10 feet? (OMUTCD Fig. 4E-3) |
|[ ] [ ] [ ]  8. There should be no visible wiring on the pedestrian pushbutton? (CMS 632.09) |
|[ ] [ ] [ ]  9. Are all pedestrian signs installed and oriented correctly? (CMS 632.09) |
|[ ] [ ] [ ]  10. Is the bottom of the pedestrian pushbutton 3'-6" to 4'-0" above the walk? (TC-85.10) |
|[ ] [ ] [ ]  11. On steel poles the pushbutton and pedestrian signal heads must have a ¾” diameter rubber grommet installed where the signal cable passes through the pole. (TC-85.10) |
|[ ] [ ] [ ]  12. The cover assembly shall be attached to the housing by stainless machine screws resulting in a weatherproof and shock proof assembly. (CMS 732.06) |
|[ ] [ ] [ ]  13. Any unused conduit attachment holes shall be plugged. (CMS 632.08 and CMS 632.09) |
|[ ] [ ] [ ]  14. Are the pedestrian pushbutton signs in place on all corners oriented parallel to the crossing and as per plan? (CMS 632.09) |
|[ ] [ ] [ ]  15. Are all pedestrian signal head visors and lenses of the proper material and color as per plan? (CMS 732.05) |
|[ ] [ ] [ ]  16. Are the pedestrian pushbuttons operational? |
|[ ] [ ] [ ]  17. Do the pedestrian pushbuttons call the proper phase? |
|[ ] [ ] [ ]  18. Do countdown peds go to zero on yellow? (OMUTCD 4E.06) |
|[ ] [ ] [ ]  19. Do all ADA compliant items meet (#4, 5, 6, 7, 10, 14)? If not, email all exceptions/reasoning for these deficiencies for record keeping to the ODOT ADA Office, Sarah.Wade@dot.ohio.gov |
| Comments: |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  Meets |  Deficient |  N/A | **SERVICE:** |
|[ ] [ ] [ ]  1. Can the service be padlocked in the ON or OFF position? (CMS 732.21) |
|[ ] [ ] [ ]  2. Is conduit of the size and type shown on the plans? (CMS 625.12) |
|[ ] [ ] [ ]  3. Were all conduit nipples coated with zinc paint? (CMS 625.12) |
|[ ] [ ] [ ]  4. All service hardware shall have connections sealed as to have no water leaks? (TC-83.10) |
|[ ] [ ] [ ]  5. Is disconnect furnished with a padlocked keyed to the maintaining agency? (CMS 631.06) |
|[ ] [ ] [ ]  6. Is power feed run through a disconnect before it is run inside the signal pole? (TC-83.10) |
|[ ] [ ] [ ]  7. Is the ground rod and cable connected by an exothermic weld over the weld and exposed cable? (CMS 625.16) |
|[ ] [ ] [ ]  8. Are the cable tags attached to all services wires except bare ground bonding cables? (CMS 625.17) |
|[ ] [ ] [ ]  9. Conduit risers mounted on painted poles shall be painted to match the poles. (CMS 632.24) |
|[ ] [ ] [ ]  10. All conduit fittings in steel poles for the service disconnect switch shall be a welded blind half coupling. (TC-83.10) |
|[ ] [ ] [ ]  11. Is the lock in place on the “Service Disconnect” switch? (CMS 631.06) |
|[ ] [ ] [ ]  12. Is the disconnect switch the proper height? (TC-83.10) |
|[ ] [ ] [ ]  13. Is the neutral bar in the “Service Disconnect Switch connected directly to the pole grounding lug? (CMS 725.19.F) |
|[ ] [ ] [ ]  14. Is the ground wire connected from the ground rod directly to the disconnect switch neutral (AC-) then to the pole?  (G&B Note and TC-83.10) |
| Comments: | Meter #  |

|  |  |  |  |
| --- | --- | --- | --- |
|  Meets |  Deficient |  N/A | **MAST ARMS & SIGNAL CABLES:** |
|[ ] [ ] [ ]  1. Is the wire chafing against mounting brackets? (TC-85.20) |
|[ ] [ ] [ ]  2. Are there no splices in the wire, except between: A) Detector wire and lead-in-cable (CMS 632.23) B) Power cable and power supply source or service cable (CMS 632.23) C) Long lengths of interconnect or service cable (CMS 632.23) |
|[ ] [ ] [ ]  3. Have the Cable Support Assemblies (Grips) been properly installed? (CMS 632.21) Max 4 cables per grip. |
|[ ] [ ] [ ]  4. If the arm is greater than 59 feet, is the Damping device installed incidental with support per standard, or install only per a plan note? (TC-81.22) A) If dumbbell style, is the damper installed below the mast arm?  B) If cylinder style, is the damper installed vertically and on the backside of the arm?  C) Is it installed no closer than 1 foot from the end of the arm?  |
| Comments: |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  Meets |  Deficient |  N/A | **SPAN WIRE AND SIGNAL CABLES:** |
|[ ] [ ] [ ]  1. Are bull rings located as per plan? (CMS 632.22) |
|[ ] [ ] [ ]  2. Is the wire chafing against any span hanger or other type of mounting brackets? (TC-85.20) |
|[ ] [ ] [ ]  3. Is the messenger wire sag between 3% and 5%? Check using a tension force gauge. (CMS 632.22) |
|[ ] [ ] [ ]  4. Are the drip loops greater than 6" where cabling comes out of Blind Half Coupling at Strain Pole? TC-84.20 |
|[ ] [ ] [ ]  5. Were 3 bolt clamps used to attach the span wire to the shackle? (TC-84.20) |
|[ ] [ ] [ ]  6. Is the lashing rod the proper size for the conductors being wrapped? (CMS 632.22, 732.18) |
|[ ] [ ] [ ]  7. Are there no splices in the wire, except between: A) Detector wire and lead-in-cable (CMS 632.23) B) Power cable and power supply source or service cable (CMS 632.23) C) Long lengths of interconnect or service cable (CMS 632.23) |
|[ ] [ ] [ ]  8. Tag end of span wire shall be Min. of 12 inches long and Max. of 24 inches long and be served or clamped. (TC-84.20) |
|[ ] [ ] [ ]  9. Have the Cable Support Assemblies (Grips) been properly installed? (CMS 632.21) Max 4 cables per grip. |
| Comments: |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  Meets |  Deficient |  N/A | **SIGNAL HEADS:** |
|[ ] [ ] [ ]  1. Is the signal head height between 17 and 19 feet? (TC-81.22) *Non-ODOT maintained signals are allowed to be between 15 and 19 feet if the maintaining agency agrees.* |
|[ ] [ ] [ ]  2. Are the signal heads hanging plumb? (CMS 632.06 & TC-85.20) |
|[ ] [ ] [ ]  3. Are all LEDs oriented correctly installed in the UP position? |
|[ ] [ ] [ ]  4. Are signal heads more than 8 feet apart? (OMUTCD 4D-15-(F)) |
|[ ] [ ] [ ]  5. Is each signal face oriented to its traffic approach? (CMS 632.06) |
|[ ] [ ] [ ]  6. Are spade terminals used, not wires wrapped around the screw? (CMS 632.05) |
|[ ] [ ] [ ]  7. Are all wire entrances facing the direction of the controller housing? (ODOT preference) |
|[ ] [ ] [ ]  8. Are signal heads sealed with silicone against water leakage? (Sealed: CMS 732.01, 732.02, 732.03, 732.05; With Silicone: Typical plan note from TEM 442-13) |
|[ ] [ ] [ ]  9. Is all hardware used to join optical sections together (tri-stud) stainless steel? (CMS 732.01) *Not zinc plated. Zinc plated is shiny like it is chromed. Stainless steel is barely magnetic. Test with a magnet* |
|[ ] [ ] [ ]  10. Do all signal heads have at least 6-inch drip loops? (TC-85.22) |
|[ ] [ ] [ ]  11. Are all set screws and locking nuts tight? |
|[ ] [ ] [ ]  12. Are all unused openings plugged? |
|[ ] [ ] [ ]  13. Are balance adjusters required by the Plans? (CMS 632.06) |
|[ ] [ ] [ ]  14. Are all signal heads visors and lenses of the proper material and color as per plan? (CMS 732.01) |
|[ ] [ ] [ ]  15. Are the “optically programmed” heads masked properly or according to the plan? (CMS 732.02) |
|[ ] [ ] [ ]  16. Are all signal heads placed as per plan? |
|[ ] [ ] [ ]  17. Are the signals installed using an extender hanger at the top of the signal? Bottom tether anchor extenders shall only be used if there is interference between the backplate and tether wire. |
|[ ] [ ] [ ]  18. Are supplemental, pole mounted signals installed 11’ to 12’ above the pavement? (TC-85.10) |
| Comments: |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  Meets |  Deficient |  N/A | **PULL BOXES:** |
|[ ] [ ] [ ]  1. Are pull boxes installed to grade? (CMS 625.11) |
|[ ] [ ] [ ]  2. Is the pull box installed on a 6" gravel base? (CMS 625.11) |
|[ ] [ ] [ ]  3. Are all tags/labels in place and legible? (CMS 632.05) |
|[ ] [ ] [ ]  4. Is there duct seal in all the conduits entering the base of a signal pole, sign support, light pole, light tower or pad mounted equipment? (CMS 625.12) |
|[ ] [ ] [ ]  5. Is the proper ID “TRAFFIC” or “ELECTRIC” on the pull box lid? (CMS 725.08.B) |
|[ ] [ ] [ ]  6. Are there bolts in the pull box lid? *Shall be hex head cap screws* (HL-30.11) |
|[ ] [ ] [ ]  7. Splice kits are completely filled with sealant and air voids are less than 1/4"? (TC-82.10) |
|[ ] [ ] [ ]  8. Are all the openings, around conduits or knockouts, sealed? (HL-30.11) |
|[ ] [ ] [ ]  9. If plan specifies, are drains installed to under drains or side slopes? (HL-30.11) |
|[ ] [ ] [ ]  10. If underdrain for pull box installed & plan note specifies it, is the vent screen fitting at the outlet installed? |
|[ ] [ ] [ ]  11. Are all ends of rigid metal conduits capped with proper bushings? (CMS 625.12) |
|[ ] [ ] [ ]  12. Are bolt holes in metal diagonal pieces not in the concrete pull box itself? (HL-30.11) |
|[ ] [ ] [ ]  13. Is the equipment grounding conductor attached to the frame diagonal? (CMS 625.11) |
|[ ] [ ] [ ]  14. Is there a durable label reminding of the need to lubricate the threads of the cover hold down screws with grease or anti-seize compound on the inside of the frame or upper wall? (HL-30.11) |
|[ ] [ ] [ ]  15. Are all metallic items enclosing electrical conductors bonded together and to a good earth ground? (CMS 625.12) |
|[ ] [ ] [ ]  16. Are the Splice Kits ODOT approved? (CMS 632.23) |
|[ ] [ ] [ ]  17. Is “cement grout” in place around the conduits that enter the pull box? (HL-30.11) |
|[ ] [ ] [ ]  18. Are the pull boxes the correct size and type according to the plan? (HL-30.11) |
|[ ] [ ] [ ]  19. Is the final grade and seeding complete around the pull boxes? (CMS 625.01,625.11,632.01,HL-30.22, and HL-30.11) |
|[ ] [ ] [ ]  20. Do all empty conduits have a HDPE insulated copper tracer wire, 12 AWG minimum, pull wire installed and then have all the ends sealed? (CMS 625.12) |
| Comments: |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  Meets |  Deficient |  N/A | **TETHER & BACKPLATES:** |
|[ ] [ ] [ ]  1. Is S-hook and turnbuckle at least at one end of simple span or at all ends of complex span?  |
|[ ] [ ] [ ]  2. Is S-hook closed at pole end? |
|[ ] [ ] [ ]  3. Is 1/8” stainless steel wire wound around turnbuckle to prevent turning of turnbuckle?  |
|[ ] [ ] [ ]  4. Is tether installed horizontally? |
|[ ] [ ] [ ]  5. Is S-hook properly sized? (TC-85.21) 3 / 8” for Pole Design No 1-4  1 / 2” for Pole Design No. 5-14  |
|[ ] [ ] [ ]  6. Is safety tie installed at each turnbuckle?  |
|[ ] [ ] [ ]  7. Is safety tie 1x19, 1 / 8” stainless steel wire?  |
|[ ] [ ] [ ]  8. Is safety tie slack but not so slack that it touches pole?  |
|[ ] [ ] [ ]  9. Does the safety tie have three clips per end at 3-1/4” spacing?  |
|[ ] [ ] [ ]  10. Is safety tie thimble clamp less than 6” from messenger wire clamp?  |
|[ ] [ ] [ ]  11. Does tether wire have a vertical clearance of 17 feet to 19 feet over the roadway?  |
|[ ] [ ] [ ]  12. Are cast wire rope clips installed on both sides of all compression springs? (TC-85.21)  |
|[ ] [ ] [ ]  13. Is tether wire 7 strand ASTM A475 or EHS Grade 1 / 4” wire? (TC-85.21) |
|[ ] [ ] [ ]  14. If heads have backplates, is the tether wire below the backplate? (TC-85.21) |
|[ ] [ ] [ ]  15. Is tether wire in the bottom of the breakaway clamp? |
|[ ] [ ] [ ]  16. Do backplates have 2” wide continuous fluorescent yellow reflective border? (TC-85.21) |
|[ ] [ ] [ ]  17. Are backplates aluminum? (CMS 732.22) |
|[ ] [ ] [ ]  18. Does backplate extend 5” beyond the outside of the signal assembly on all sides? (CMS 732.22) |
|[ ] [ ] [ ]  19. Are there no gaps between the backplate and the signal head or between signal sections? (CMS 732.22) |
|[ ] [ ] [ ]  20. Is all assembly and mounting hardware stainless steel? (CMS 732.22)  |
|[ ] [ ] [ ]  21. If used, are machine nuts thread-deforming or nylon locknuts? (CMS 732.22) |
|[ ] [ ] [ ]  22. Rivets shall not be used for mounting the backplate. (CMS 732.22) |
|[ ] [ ] [ ]  23. Were a minimum of four mounting points used on each signal section for attaching the backplate? (CMS 732.22) |
|[ ] [ ] [ ]  24. Is the tether wire tension adjusted to minimize movement of signal heads in high winds? Typical tension is 600-800 lbs (check with tension gauge). |
| Comments: |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  Meets |  Deficient |  N/A | **COMMUNICATIONS:** |
|[ ] [ ] [ ]  1. Are all communications equipment and all accessories provided per the plans (Fiber, High-Speed Ethernet Radios, Modems, Network Switches, etc.)?  |
|[ ] [ ] [ ]  2. Are all ethernet/patch cables provided as per the plans?  |
|[ ] [ ] [ ]  3. If communication device is attached to support, is it installed to prevent water intrusion with proper cable routing and drip loops?  |
|[ ] [ ] [ ]  4. If a modem, was a 3-antenna assembly furnished as part of typical 633 Communications APP note?  |
|[ ] [ ] [ ]  5. If a High-Speed Ethernet Radio, are the RJ-45 ends crimped down on the inner jacket (*and not the individual conductors*) allowing it to carry any tension at the connection?  |
|[ ] [ ] [ ]  6. Do all intended devices communicate to the ODOT network? |
| Comments: |  |
|  Meets |  Deficient |  N/A | **ASSET COLLECTOR (Typ. for ODOT personnel only):** |
|[ ] [ ] [ ]  1. Has all data been collected and properly populated in all collector apps? Including but not limited to the following collector apps: ITS, ADA, Highway Lighting, Signs?  |