



Outsource Inspections

All work on MoDOT right of way to be in accordance with the following:

- The latest editions of MoDOT's Standard Drawings, MoDOT's Standard Specifications for Highway Construction and the Manual for Uniform Traffic Control Devices (MUTCD).
- Permit Plans stamped – "Permit Plans (Date) MODOT District 6".
- For material testing, follow Addendum A.

The duties (not inclusive) of an Outsource Inspector will be as follows:

1. Communication

- Work closely with MoDOT's Permit Inspector.
 - i. Attend any preconstruction meetings.
 - ii. Keep Permit Inspector informed by e-mail, phone, fax, daily log, etc.
 - iii. Submit a daily log to the Permit Inspector within 48 hours.
 - iv. Submit copies of the certifications and test results that are required and/or requested to the Permit Inspector.
 - v. Inform the Permit Inspector of any proposed changes (They **must** approve any construction changes).
 - vi. Keep Permit Inspector advised of any controversial issue that arises during the permit work.
 - vii. Notify Permit Inspector of any changes in Outsource Inspector for vacations, etc.

2. MoDOT's Permit Plans

- Review plans to become familiar with the work that has been approved.
- Check the contractor's construction layouts to ensure they are not deviating from the approved plans.

3. Project File (*to contain items below*)

- Copy of Permit
- Permit Plans
- Daily Log (*to contain items below*)
 - i. Weather
 - ii. Major operation of the day
 - iii. Conversations pertaining to the work
 - iv. Comments as to how work is progressing
 - v. Note anything that might be pertinent after job is complete or might cause a future problem for MoDOT

4. **Traffic Control** (Standard Specifications-*Section 1063 and MUTCD Manual-Part VI*)

- Verify that a MoDOT Workzone Verification Number has been given for any lane closures.
- Compare the Traffic Control Plan with the current conditions to see if any adjustments are needed.
- Submit Daily Workzone Inspection Form.
- When not in use, ensure all traffic control devices are located in an area that will not cause a hazard to the traveling public.
- Make sure all traffic control devices are removed as soon as practical when they are no longer needed.

5. **Grading** (Standard Specifications-*Division 200*)

- Make sure the contractor is following MoDOT spec's concerning cuts and fills when doing grading.

6. **Erosion Control** (Standard Specifications-*Section 806*)

- Check that the silt fence, ditch checks, etc. are in place and working (if required on right of way).
- Check periodically for any breaches.

7. **Pipes** (Standard Specifications-*Sections 725-730 & 732*)

- Check trench width, check pipe placement and see that backfill material is free of large rocks, and debris.
- Check size, length, condition and type of pipes.
- Ensure flow lines are correct.
- Check concrete pipe joints to ensure that they are sealed. Also, check that the concrete pipes are installed with the bells in the correct direction.
- Check corrugated metal pipes to ensure they are banded together properly.

8. **Drainage Structures** (Standard Specifications-*Sections 731-733*)

- Check to ensure that the correct inlets are being used and built with the correct materials and that the flow lines are correct.
- If the structure is cast in place, make sure all support materials are removed.
- Inlets and manholes located in the pavement (roadway surface) must have locking lids.

9. **Base for Pavements** (Standard Specifications-*Division 300*)

- Make sure of correct grade and correct material.
- Check thickness and compaction of each lift (requiring certifications where necessary).

10. **Pavements** (Standard Specifications-*Divisions 400 & 500*)

- **Concrete**

- i. Check joint spacing, use of dowel baskets and/or tie bars and type of finish.
- ii. Test air, slump and cylinders to ensure minimum requirements are met.
- iii. Check cores for thickness and the time of placement so that placement is done uninterrupted. Paver should proceed as continuously as possible.
- iv. Monitor or perform surface smoothness tests with profilograph.
- v. Monitor timing of texturing and curing and surface texture test.
- vi. Check joint sawing for time of sawing, spacing, depth, width, curing and sealing (if necessary).

- **Asphalt**

- i. Check that loads are covered and that temperature is of acceptable range for mix.
- ii. Check for segregation, separation and tack (if needed).
- iii. Check that paver maintains a speed that will minimize stop and start operations.
- iv. Check cores and density tests to ensure compaction.
- v. Check surface with profilograph or straightedge for ride quality.

11. **ADA Pedestrian Facilities**

- See the attached ADA Post Inspection Checklist for inspection checks.

12. **Signing** (Standard Specifications-*Section 903 and Addendum A, Section 1-3*)

- Check signing for size, reflectivity (NCHRP 350 compliant), and that the message matches what is shown on the plans.
- Check location of sign and make sure correct sign support is being used.
- Check to ensure sign is placed at the correct height above the ground or pavement.
- Check overhead sign trusses and provide certifications.

13. **Striping** (Standard Specifications-*Section 1048*)
 - Follow striping plan to ensure work is being done as planned.
 - Check that removal of any existing striping is done by a mechanical device (grinder, sander, etc) or by sandblasting. It cannot be covered with oils, paint, etc.
 - Check reflectivity of new striping.
 - Check mil thickness.
 - Use MoDOT's Traffic Striping Manual or Policy to insure that materials, locations and procedures are followed.

14. **Lighting & Signals** (Standard Specifications-*Sections 901 & 902*)
 - Use the attached sheet and checklist to ensure ALL work has been completed and inspected.

15. **Earthwork** (Standard Specifications-*Division 800*)
 - Curbs are to be backfilled to top of the back of curb.
 - Manholes and inlets are to be at ground level, sloped if necessary to match the surrounding earth.
 - All earth areas should be graded, seeded and mulched with straw or sod.

16. **Guardrail** (Standard Specifications-*Section 606*)
 - Check for correct type.
 - Check for correct end treatment.
 - Check for correct installation.

17. **Authority to Suspend Work**
 - Failing Test Results
 - i. Reject if not passing and notify MoDOT
 - Unsafe Conditions
 - i. Inform contractor to correct before continuing work and notify MoDOT
 - Requirements of Permit not met
 - i. Not following plans
 - ii. Not submitting lane closure requests
 - Changes to Plans
 - i. MoDOT permit inspector has to approve any changes of plans, whether verbal or written
 - Non-Compliance of Contractor
 - i. Job should be shut down if contractor does not comply with any of the above and MoDOT should be notified

18. Semi-Final Inspection

- Check to ensure that no silt has collected in any pipes, inlets or manholes.
- Inspect inlets and manholes in the pavement (roadway surface) to ensure they have locked lids.
- Make a general inspection of the work area.
 - i. Make sure everything is in place that is called for in the permit.
 - ii. Make sure the work area has been cleared of all excess items (signs, cones, lumber, forms, etc.).
 - iii. Make sure that the paving surface is free of dirt, mud, rocks and other debris.
 - iv. Make sure the MoDOT right of way has been policed with no debris being left.

19. Final Inspection

- Contact Permit Inspector
 - i. Walk project
 - ii. Make a punch list of any items that need attention.
 - iii. Notify Developer (or developer's representative) of any items that need attention.

20. NOTIFY PERMIT INSPECTOR WHEN ALL FINAL INSPECTION ITEMS HAVE BEEN COMPLETED.

Work Zone Inspection Form

Work Zone Information

District _____ County _____ Designation/Route/Direction _____ Project # _____ Work Zone # _____
 Route/Intersection _____ (Beginning) _____ Route/Intersection _____ (Ending)

Weather: Clear _____ Cloudy _____ Rain _____ Snow _____ Ice _____ Windy _____
 Date: _____ Time: _____ AM/PM _____

Reviewer User ID: _____

Yes/No/Not Applicable Items Reported

Does this work zone present an immediate danger to the traveling public or workers and need to be addressed immediately?

Warning

Y / N / NA	1. The changeable message sign (CMS) and/or dynamic message sign (DMS) is aligned with the road user's line of vision.	Y / N / NA	3. The CMS/DMS has an acceptable lateral clearance from the roadway.
Y / N / NA	2. The CMS/DMS cycle is consistent with the driver's operating speed.	Y / N / NA	4. All signs were present and in proper sequence.
Y / N / NA		Y / N / NA	5. Signs are free from obstructions (vegetation, traffic control devices, etc.).

Signing - Vision

Y / N / NA	1. The CMS/DMS has the proper light intensity for the work zone conditions.	Y / N / NA	4. The arrow board has the appropriate light intensity for the work zone conditions.
Y / N / NA	2. Sign(s) location and placement is appropriate for field and geometric conditions.	Y / N / NA	5. The temporary traffic signal(s) is clearly visible to oncoming traffic.
Y / N / NA	3. The arrow board is aligned with the road user's line of vision.	Y / N / NA	6. The arrow stem did not have in excess of one lamp out.

Signing - Message

Y / N / NA	1. The CMS and/or (DMS) is reporting the proper message.	Y / N / NA	5. The arrow board is functioning in the appropriate mode.
Y / N / NA	2. The CMS/DMS display is understandable.	Y / N / NA	6. The arrow head did not have any lamps out.
Y / N / NA	3. The work zone signs convey the proper message.	Y / N / NA	7. The stop bar or sign clearly indicates where to stop for a signal.
Y / N / NA	4. There was appropriate sign coverage, when required.	Y / N / NA	8. Appropriate use of "No Center Stripe" sign(s).

Personnel

Y / N / NA	1. The flagger was using proper safety attire and equipment for the work zone activity.	Y / N / NA	4. The flagger is attentive and focused on traffic control.
Y / N / NA	2. The flagger is in a safe and appropriate location in relation to the work zone activity, equipment, and travel roadway.	Y / N / NA	5. The flagger has an escape route.
Y / N / NA	3. If more than one flagger is present, they are communicating properly with each other.	Y / N / NA	6. The flagger location was properly illuminated.
Y / N / NA		Y / N / NA	7. All workers are safely within the boundaries of the work zone.

Channelizing Devices/Barricades

Y / N / NA	1. Channelizer location and placement is appropriate for field and geometric conditions.	Y / N / NA	4. The pavement markings are installed and removed properly and are not in conflict with other markings.
Y / N / NA	2. The work zone uses appropriate transition (taper). If no, is it too long or too short (please circle)?	Y / N / NA	5. The pavement markings are visible in current environmental conditions.
Y / N / NA	3. The pavement markings are complete and appropriate for the work zone activity.	Y / N / NA	6. The barricade(s) have appropriate striping for work zone usage.
Y / N / NA		Y / N / NA	7. The barricade location and placement is appropriate for field and geometric conditions.

Speed

Y / N / NA	1. The appropriate speed limit is set for the work zone. If no, was it too high or too low (please circle)?
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Yes/No/Not Applicable **Items Reported**

Timeliness

- | | | | |
|------------|--|------------|---|
| Y / N / NA | 1. Lane closures are appropriate for the work performed. | Y / N / NA | 4. The temporary traffic signal(s) is operating at an appropriate timing to accommodate traffic queues. |
| Y / N / NA | 2. Traffic flow did not slow or stop unnecessarily. | Y / N / NA | 5. If a detour was used, the length of the detour was acceptable. |
| Y / N / NA | 3. The traffic queue is not unnecessarily excessive. | | |

Cleanliness

- | | |
|------------|--|
| Y / N / NA | 1. Sign(s) are clean, visible, and suitable for work zone conditions. |
| Y / N / NA | 2. Channelizer(s) are clean, visible, and suitable for work zone conditions. |
| Y / N / NA | 3. Barricade(s) are clean, visible, and suitable for work zone conditions. |

Safety

- | | | | |
|------------|---|------------|---|
| Y / N / NA | 1. The traffic queue is within the work zone signs. | Y / N / NA | 9. Work zone lighting location, placement, and intensity is appropriate for the field and geometric conditions. |
| Y / N / NA | 2. The arrow board lateral clearance is at an acceptable distance from the roadway. | Y / N / NA | 10. Fleet lighting location, placement, and intensity is appropriate for the field and geometric conditions. |
| Y / N / NA | 3. The channelizers use proper and approved ballasts. | Y / N / NA | 11. Equipment and/or vehicles are moving in the same direction as traffic flow. |
| Y / N / NA | 4. The barricades use proper and approved ballasts. | Y / N / NA | 12. Edge drop-off is appropriate for the field and geometric conditions. |
| Y / N / NA | 5. The signs use proper and approved ballasts. | Y / N / NA | 13. There were no unnecessary adverse pavement conditions (e.g., ruts, pot holes, bumps, debris, etc.). |
| Y / N / NA | 6. The temporary traffic signal is operating correctly. | | |
| Y / N / NA | 7. The Automatic Flagger Assistance Device is operating correctly. | | |
| Y / N / NA | 8. The Truck or Trailer Mounted Attenuators were located properly within the stationary or moving operation work zones. | | |

Provide necessary detail on "No" ratings:

Reviewer shall convey any comment(s) to appropriate district staff. The above comment(s) were conveyed to

Name: _____

Title: _____

Date and Time of Review: / / : : a.m./p.m.

If necessary, immediate feedback given to :

Phone Numbers for Work Zone Issues	
D1	816.387.2350
D2	660.385.3176
D3	573.248.2490
D4	816.622.6500
D5	573.751.3322
D6	314.340.4100
D7	417.629.3300
D8	417.895.7600
D9	417.469.3134
D10	573.472.5333

Addendum A

1. MATERIALS TESTING

1. Job control samples and tests shall be run by an independent inspection company as the work progresses to assure that the project is constructed in compliance with applicable specifications. All project sampling and testing of materials shall be performed by the independent inspection company's personnel.

The independent inspection company shall have adequate equipment to perform all required tests and personnel capable of properly operating the equipment.

Test reports or certifications are necessary for all materials incorporated into the work. The test report or certification must show the quantity of material being reported and if it meets the specifications.

Actual test results of materials tested are preferred, although certifications from the supplier are acceptable on certain items. The independent inspection company should contact MoDOT district personnel for guidelines.

2. In order to facilitate the acceptance of small quantities of materials with a minimum of inspection and testing, MoDOT has approved a schedule of materials quantities which may be accepted without complying with the sampling and testing requirements noted above. This schedule is listed in Section 2 of this addendum. Any major deviation from this schedule should be cleared through MoDOT.

3. The following procedures have been established for the acceptance of structural steel. Shop drawings shall be submitted to the engineer for review and approval. The approval will cover only the general design features, and in no case shall this approval be considered to cover errors or omissions in the shop drawings. The contractor shall utilize a fabricator who is currently certified for Category III by the American Institute of Steel Construction (AISC). All welding operations, including material and personnel, shall meet the American Welding Society (AWS) specifications. The consultant has the option of inspecting the steel units during fabrication or requiring the fabricator to furnish a certification of contract compliance and substantiating test reports. In addition, the following reports will be required.

- (a) Certified mill test reports, including results of chemical and physical tests on all structural steel as furnished.
- (b) Non-destructive testing reports.

The consultant must verify and document that dimensions of the units were checked at the job and found to be in compliance with the shop drawings.

2. ACCEPTANCE OF SMALL QUANTITIES OF MATERIALS

The following guidelines may be used to reduce the amount of engineering control and sampling and testing for relatively small quantities of materials. These guidelines are intended for use on materials that will not adversely affect the traffic carrying capacity of the completed facility, and are not to be used for concrete in major structures, permanent mainline or ramp pavements or other structurally critical items.

1. Sampling and Testing of Small Quantities of Miscellaneous Materials

Samplings and testing of small quantities of miscellaneous materials may be waived by the project engineer and the material accepted on the basis of one of the two following methods.

- (a) Acceptance on the basis of visual examination, provided the source has recently furnished similar material found to be satisfactory under the state's normal sampling and testing procedures.
- (b) Acceptance on the basis of certification by the producer or supplier stating that the material complies with the specification requirements.

The primary documentation of acceptance of material under either of these two methods should be provided by the project engineer or individual approving the material. The documentation may consist of a daily inspector's report with a statement as to the basis of acceptance of the material and the approximate quantity of material covered by the acceptance.

The following quantities of material may be accepted under the methods indicated above.

- (a) Aggregate - Not to exceed approximately 100 tons per day nor more than approximately 500 tons per project.
- (b) Bituminous Mixtures - Not to exceed approximately 50 tons per day nor more than approximately 250 tons per project.
- (c) Bituminous Material – Not to exceed approximately 100 gallons per project.
- (d) Paint - Not to exceed approximately 20 gallons per project - acceptance to be based on weights and analysis on the container label.
- (e) Lumber - Recognized commercial grades only may be used.
- (f) Masonry Items - Subject to checking for nominal size and visual inspection -not to exceed approximately 100 pieces.
- (g) Plain concrete or clay pipe - 100 feet.

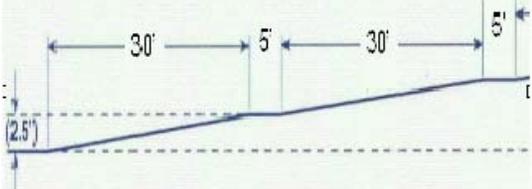
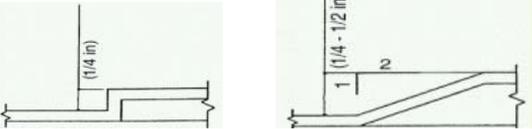
2. Portland Cement Concrete

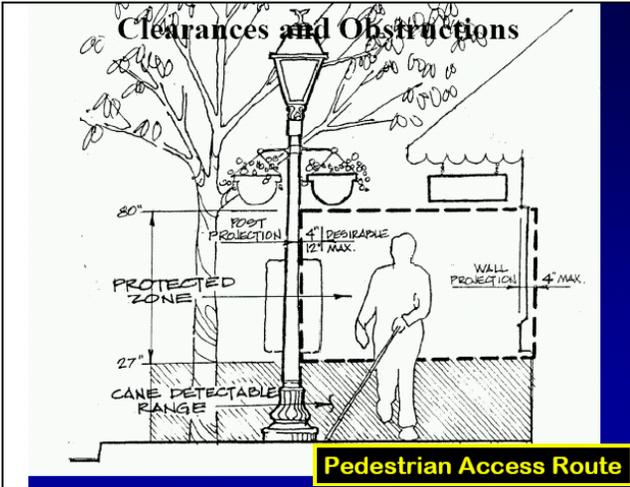
Concrete for the following items may be accepted on the basis of occasional conventional field sampling and testing for characteristics such as slump and air, where specified, and test cylinders, with only intermittent or random plant inspection as deemed necessary for control by the project engineer. Under this system, arrangements should be made for the producer to state the following on the delivery ticket accompanying each load of concrete: name of concrete plant, serial number of the ticket, date and truck number, name of contractor, specific project, route and county designation, specific class of concrete and quantity of concrete in cubic yards. Only concrete that meets MoDOT's requirements shall be used.

- (a) Sidewalk
- (b) Curb and/or gutter
- (c) Concrete base course
- (d) Pavement repair
- (e) Median barrier or strip
- (f) Slope protection
- (g) Paved ditch
- (h) Ditch liner
- (i) Guardrail anchorage
- (j) Fence posts
- (k) Pipe headwalls and collars
- (l) Manholes
- (m) Drop inlets
- (n) Lighting, signal and sign bases
- (o) Pull boxes
- (p) Grout
- (q) Flowable fill

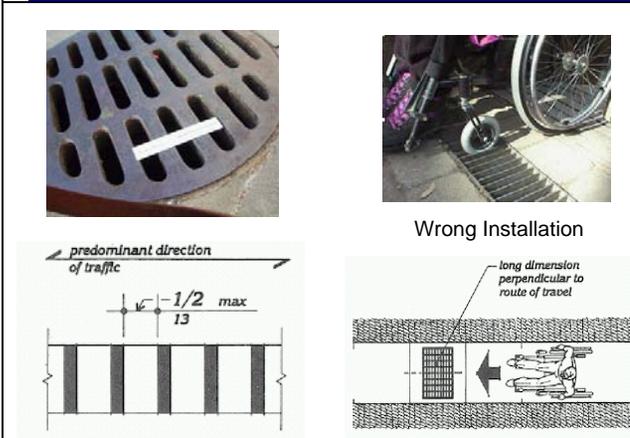
ADA POST INSPECTION CHECKLIST

Job No. _____ Route _____ County _____ Location _____

SIDEWALKS				
Figures/Examples	Requirements ¹	YES	NO	NA
	<p>All sidewalks constructed within the project limits are ADA compliant.</p> <ul style="list-style-type: none"> Sidewalks are 5' or greater in width. Exception, existing sidewalks or where physical restraints exists, sidewalks may be less than 5' wide, but must be at minimum 3' or greater in width with 5' x 5' level landings provided no more than 200' apart. (A level landing is defined as a landing with no cross or running slopes greater than 2.0%. Driveways or parking lots may be considered as landings if they meet the requirements of a landing.) 			
	<ul style="list-style-type: none"> Sidewalk cross slopes are 2.0% or less. 			
<p>For example, a segment with the maximum allowed running slope of 8.33% would require 5' x 5' landing every 30'.</p> 	<ul style="list-style-type: none"> Sidewalk running slopes meet any of the following conditions: <ul style="list-style-type: none"> The sidewalk is at the same grade as the roadway, regardless how steep the roadway grade is. If the sidewalk is at a different grade than the roadway, yet the running slope of the sidewalk is not greater than 5%. If the sidewalk running slope is at a different grade than the roadway and the running slope is greater than 5%, then the sidewalk will be considered a ramp and shall meet the following requirements: <ul style="list-style-type: none"> Maximum grade is 8.33% for any segment. Maximum rise for a segment is 30". 5' x 5' landings are located between each segment. 			
	<ul style="list-style-type: none"> Surface Level Criteria - There are no height differentials with a lip greater than 1/4" in height. Exceptions, a height differential between 1/4" and 1/2" is acceptable if it is beveled at a 2:1 slope, or a height differential greater than 1/2" is acceptable if it is ramped with a slope of 8.33% or less. 			
	<ul style="list-style-type: none"> All utility poles, light posts, traffic posts, fire hydrants, and other manmade vertical appurtenances are located outside of the sidewalk path. If right of way prevents relocation of an appurtenance, the pathway width is at minimum 32" wide and the length of the restricted pathway is no more than 2'. 			
	<ul style="list-style-type: none"> Utility covers, such as manholes and water meters, have a slip resistant top, as much as possible, and meet changes in level criteria. 			
	<ul style="list-style-type: none"> Lift holes for manhole/utility covers do not have an opening greater than 1/2". Plugging of holes greater than 1/2" with a material approved by the engineer is acceptable as long as it is flush with the cover surface. 			

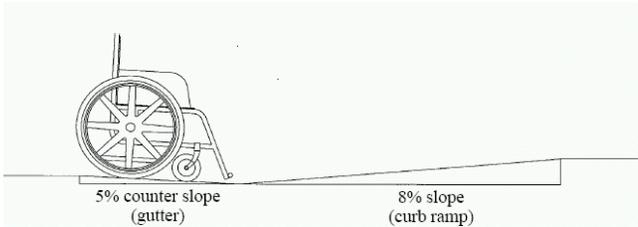


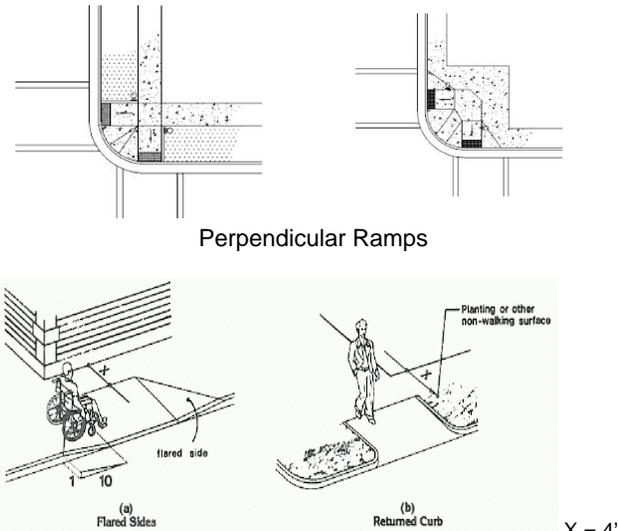
- There are no horizontal obstructions within the sidewalk pathway. See adjacent figure for examples of what is considered acceptable, specifically:
 - Wall projections or signs or other objects attached to posts do not exceed 4" into the pedestrian path between 27" and 80" above the ground. Exception, signs or other objects attached to posts may project into the pedestrian pathway up to 12", but is not preferred and should be limited to 4" where possible.

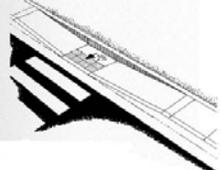
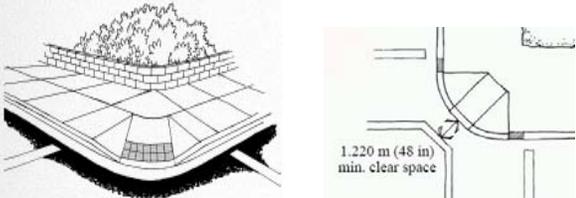


- If gratings are located in the sidewalk or other walkways paths, the spacing of the gratings is not greater than 1/2 in. (13 mm) wide in one direction. Gratings with elongated openings are installed so that the long dimension is perpendicular to the dominant direction of travel.

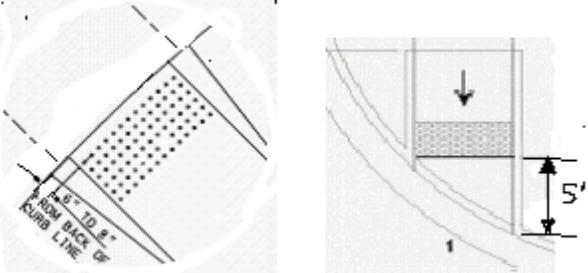
ENTRANCES				
Figures/Examples	Requirements ¹	YES	NO	NA
	All entrances within the project limits are ADA compliant.			
	<ul style="list-style-type: none"> A level pedestrian access route (walkway) is provided across commercial and residential entrances, meeting the following criteria: <ul style="list-style-type: none"> The walkway is at minimum 3' wide. Cross slope of walkway is 2 percent or less. Walkway is at the same grade as the adjacent roadway. The walkway does not have to be marked, but provides a straight line between the adjoining sidewalks or ramps. There is not an abrupt transition from the driveway to the roadway for vehicles, i.e., vehicles will not bottom out when driving over the transition. 			

RAMPS				
Figures/Examples	Requirements ¹	YES	NO	NA
	All ramps within the project limits are ADA compliant.			
	<ul style="list-style-type: none"> General requirements for all ramps are: <ul style="list-style-type: none"> Ramps are present where sidewalks exist. The ramp width is the same width as the sidewalk. The ramp is not less than 36" wide at the bottom. Cross slope of ramp is 2.0% or less. Running slope of ramp is 8.33% or less and oriented to path of travel. Exception, ramps being retrofitted into existing facilities where space limitations prohibit the use of a 8.33% slope or less may have slopes and rises as follows: <ul style="list-style-type: none"> A slope between 1:10 and 1:12 is allowed for a maximum rise of 6 inches (150 mm). A slope between 1:8 and 1:10 is allowed for a maximum rise of 3 inches (75 mm). A slope steeper than 1:8 is not allowed. Curb lip height is 1/2" or less. Street and ramp slope break is 13% or less. (See adjacent figure.) No drainage or silt problems within ramp or at gutter line at ramp exit. No design or maintenance obstructions within the ramp pathway. 			

 <p style="text-align: center;">Perpendicular Ramps</p> <p style="text-align: center;">(a) Flared Sides in Pathway (b) Flared Sides Not in Pathway</p> <p style="text-align: right;">X = 4'</p>	<ul style="list-style-type: none"> • Perpendicular ramps meet the following criteria: <ul style="list-style-type: none"> - Have at minimum a level 5' x 5' landing (not more than 2% cross slope in any direction) at the top of the ramp. Exception, a top landing is not required if the ramp serves only one sidewalk and the ramp is aligned with the direction of travel of that sidewalk, i.e., no turning movement required for a person in a wheelchair to align with the running slope of the ramp. A landing is preferred, but may not be able to be constructed because of the steep grade of a sidewalk, making it technically infeasible to construct. For example, an existing sidewalk at a 7% grade with a 6" curb height would require the beginning of a 5' x 5' landing to be installed at 35.7' back from the curb with a ramp at 8.33% running slope. This may be technically infeasible because of limited right of way and/or beyond the scope of the project. - Flared sides with a slope of 10 percent maximum, measured parallel to the curb line, are provided where a pedestrian circulation path crosses the curb ramp. If the flared sides are not in the pathway, then there is no maximum slope and can be vertical curbs. (See adjacent figure for further explanation.) 			
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	<ul style="list-style-type: none"> • Parallel ramps have at minimum a level 5' x 5' landing at the bottom of the ramp. 			
	<ul style="list-style-type: none"> • Diagonal ramps meet the following criteria: <ul style="list-style-type: none"> - Have at minimum a level 5' x 5' landing at the top and at minimum a 48" clear space at the bottom of the ramp. - If a crosswalk is present, the clear space is contained within the crosswalk. - If the flared sides are within the pedestrian pathway, the slope of the flares are 10% or less. 			

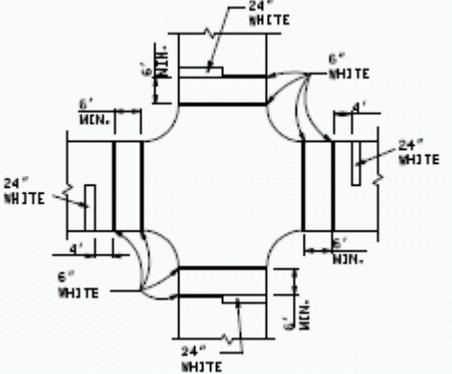
DETECTABLE WARNINGS (TRUNCATED DOMES)

Figures/Examples	Requirements ¹	YES	NO	NA
	<i>Detectable warnings (truncated domes) are properly installed and ADA compliant.</i>			
	<ul style="list-style-type: none"> Installed on all ramps at streets, signalized commercial entrances and railroad crossings. 			
	<ul style="list-style-type: none"> Not installed on ramps at residential, public or non-signalized commercial driveways. 			
	<ul style="list-style-type: none"> The preferred location of the truncated dome surface area is 6"-8" from the face of the curb (gutter line). Exception, on large curb radii one edge of the detectable warnings may be placed at the face of the curb to minimize the distance that the other edge is from the face of the curb; however, neither corner of the detectable warning may be more than 5' from the face of the curb line. The truncated dome surface area is at minimum a 2' strip that extends the entire width of the ramp, excluding flared sides. Exception, the dome surface area may be stopped 2" from each side of the ramp to aid construction and to prevent the concrete from chipping at the edges. The truncated domes are aligned on a square grid in the direction of pedestrian travel or installed radial to the grade break. 			
	<ul style="list-style-type: none"> Detectable warnings are not stamped into concrete and are an ADA approved product. 			
	<ul style="list-style-type: none"> Detectable warnings contrast visually with the adjoining surface, either light-on-dark or dark-on-light (recommended bright red on concrete and bright yellow on asphalt). 			
CUT THROUGHS IN ISLANDS OR MEDIANS				
Figures/Examples	Requirements ¹	YES	NO	NA
	<i>All cut throughs in islands or medians within the project limits are ADA compliant.</i>			
	<ul style="list-style-type: none"> The width of the cut through is at minimum 5' wide. Exception, narrower cut throughs of a minimum width of 3' are acceptable if there is a 5' x 5' passing area within the cut through. 			
	<ul style="list-style-type: none"> The cross slope is 2% or less. Exception, on steep grades this may not be possible, in which case, the cross slope shall not exceed the grade of the roadway. 			
	<ul style="list-style-type: none"> The cut through is oriented with the path of travel. 			
	<ul style="list-style-type: none"> Detectable warnings are installed on the surface of the cut through on each side, located 6"-8" back from the street. If the cut through \leq 6' in length, then the detectable warnings cover the entire area. 			

ACCESSIBLE PEDESTRIAN SIGNALS (PUSHBUTTONS)

Figures/Examples	Requirements ¹	YES	NO	NA
	All accessible pedestrian signals (pushbuttons) within the project limits are ADA compliant.			
 	<ul style="list-style-type: none"> Pushbuttons are a minimum 2" across in one dimension, raised (not recessed), contrast visually with the housing or mounting, and have a maximum force of 5 pounds to activate operable parts. The control face of the pushbuttons is installed to face the intersection and parallel to the direction of the crosswalk it serves. 			
 	<ul style="list-style-type: none"> The location of pushbuttons for new construction are within a longitudinal distance of 5' maximum from the crosswalk line, and 30" minimum to 10' maximum from the curb line (this measurement is taken from the center of the ramp). For audible pedestrian signal devices only, pushbuttons are a minimum 10' apart at crossings and a minimum 5' apart at islands or medians. This minimum distance may be waived for audible pushbuttons in medians and islands. 			
	<ul style="list-style-type: none"> Pushbuttons are located no higher than 42" from the ground and within 24" reach from a level paved landing with minimum dimensions of 30" x 48", and positioned for either forward or parallel approach to the pushbutton. For existing locations, pushbuttons at a height up to 48" and a reach of 25" are acceptable as long as other ADA accessibility criterion is met, i.e., pushbuttons are ADA compliant, level landing provided, within required distances from street and crosswalk. 			
	<ul style="list-style-type: none"> Where pushbuttons for the visually impaired are installed, tactile signs are to be provided that meet guidelines set forth in the EPG. 			

CROSSWALKS

Figures/Examples	Requirements ¹	YES	NO	NA
	All crosswalks within the project limits are ADA compliant.			
	<ul style="list-style-type: none"> Minimum width of the crosswalk is 6'. Crosswalk pavement marking is 6" white. Stop bar is at minimum 4' from the crosswalk. 			

¹ Any “NO” answer means that location is ADA non-compliant and needs to be corrected before acceptance of the work, except as follows. Although exceptions listed in the above requirements do not meet MoDOT current policy standards, that criterion does meet the minimum ADA standards and will be accepted as ADA compliant. Where it is technically infeasible to correct deficiencies as part of the current work, those locations will be labeled as non-compliant, “NO”, and added to the transition plan for correction at a later date. (Guidance is provided in the EPG on what may be considered as technically infeasible.) All exception and technically infeasible locations should be discussed with the project manager and/or area engineer prior to acceptance of the work. All exception and technically infeasible locations will be thoroughly documented by the engineer, and that documentation will be retained as part of the final acceptance records.

Inspector Name: _____ Inspector Signature: _____	Date: _____
Resident Engineer or Area Engineer Name: _____ Resident Engineer or Area Engineer Signature: _____	Date: _____
Distribution: <input type="checkbox"/> Project Office <input type="checkbox"/> District Permit Office	

Signals and Lighting

1.0 Description.

Traffic signal and lighting work for this project shall be in accordance with Sections 902, 1061, 1062, 1063, 1091, and 1092 of the Standard Specifications, and specifically as follows.

2.0 Starting Work.

2.1 The contractor must notify the engineer or authorized representative at least 1 working day prior to starting actual construction work.

2.2 Before starting any work, the contractor shall submit in writing to the engineer or authorized representative the contractor's service technician contact information as detailed in 902.21.1. This letter shall also include language from the contractor stating their acknowledgement that this technician shall be available as stated in both 902.21.1 and in paragraph 4 below until the project has undergone Final Acceptance by the Commission.

3.0 Existing Traffic Signals.

3.1 Once any part of an existing traffic signal or its controller has been modified or adjusted by the contractor, or the contractor makes any roadway changes to reduce the traffic capacity through a signal on the project, the contractor shall be responsible for all maintenance as specified in 902.2 and 902.3 (except for power costs) until Final Acceptance.

3.2 All programming changes to the controller(s) within the limits of the project shall be the responsibility of the contractor. The contractor will notify the engineer of the changes no later than 1 working day after changes are programmed if unable to provide advance notice as specified in 902.2.

3.3 The engineer shall provide to the contractor at the start of the project a detailed report on the existing phasing and timing of each traffic signal, and shall be available to the contractor before any changes are made to a signal or controller to answer any questions about the report. Once the contractor has modified a signal or controller for any reason, the contractor shall be solely responsible for the existing timing plans and all subsequent timing changes.

3.4 All modifications to existing signal equipment not detailed in the plans to make it compatible with the proposed signal work is to be performed by the applicant's contractor only after they receive written approval of these modification by the engineer or authorized representative.

4.0 Existing Traffic Signal Maintenance and Response.

Once a signal has been modified as noted in paragraph 3.0 above, the contractor shall respond to any signal timing complaints or malfunction complaints as specified in 902.21.1. Response time shall be 1 hour for complaints received by the engineer between 6 AM and 6 PM on non-holiday weekdays, and 2 hours for all other times. For some cases (due to travel times or other extenuating circumstances) additional time may be acceptable within reason, but must be approved by the engineer. These timeframes will replace the '24 hour' response time in Section 105.14 for any signal-related incidents, where the entire cost of the work, if performed by MoDOT personnel or a third party, will be computed as described in Sec 108.9 and deducted from the payments due the contractor.

5.0 New Traffic Signal Equipment and Test Periods.

5.1 In order to satisfy the provisions of 902.2, the contractor shall, at least 5 working days prior to possible activation, request in writing to the engineer a list of new equipment which will be ready for operation and a proposed start date of the 15-day test period. This date will not be authorized until all signal work has been completed and approved by the engineer.

5.2 No signal will be turned on to full operation prior to the signing and striping being in place and turn on approval being given by the engineer or authorized representative.

5.3 Upon experiencing any failure or malfunction, the 15-day test period will be terminated. The 15-day test period will start over at day one (1) once the malfunction or failure has been corrected to the satisfaction of the engineer.

5.4 Test periods for signal interconnection equipment shall remain at 30 days. The signal contractor is responsible for any work incidental to assuring the interconnected signals work as a unit. This is to include but not to be exclusive of an interconnect panel, interconnect conduit, POTS telephone conduit, proper "D" plug configuration, grading or trenching where applicable. Malfunctions of the interconnect system will be treated as stated in paragraph 5.3.

5.5 Completion of any test period will not relieve the contractor from maintenance of the equipment until the contractor receives Final Acceptance from the engineer.

6.0 New Traffic Signal Programming.

6.1 At least 2 working days before a new controller turn-on, the engineer will provide to the contractor a signal programming report. The contractor may use all or part of this report when programming the signal, but providing this report in no way waives the contractor's responsibility for the programming.

6.2 Any changes to the controller programming or other items during the test period are the responsibility of the Contractor.

6.3 Any complaints or malfunctions due to programming during the test period shall remain the responsibility of the Contractor as detailed in paragraph 3.0.

6.4 A programming change during the test period should not be considered grounds to restart the test period unless the cause of the malfunction is due to the equipment.

MODOT SIGNAL INSPECTION CHECKLIST

Permit # / Project: _____

Site Inspector: _____

CHECK CABINET FOR THE FOLLOWING:		YES	NO
CC-1	24" concrete pad for doorway in place and cabinet not buried with sloppy grading		
CC-2	Concrete bases finished and all forms removed		
CC-3	Caulking around cabinet		
CC-4	Cabinet installed so door opens away from traffic		
CC-5	Cabinet door opens easily		
CC-6	Cabinet interior light works and switch is located on door and labeled "Light"		
CC-7	Excessive scraps of wiring and signal items removed		
CC-8	Conduit openings sealed with perm-a-gum		
CC-9	Conduit properly stubbed above cabinet floor to prevent back-drainage		
CC-10	Wires/cables labeled with metal tags attached with copper wire		
CC-11	Ground wire included with all PVC pipe including service		
CC-12	Ground rod inside controller with proper connection to all ground wires (2 rods for double cabinets)		
CC-13	No splices of signal wires, all are to be continuously run		
CC-14	Proper slack and neatness of wiring in cabinet		
CC-15	Fiber jumpers (orange or yellow if used) not pinched or tightly coiled		
CC-16	All required fiber equipment present		
CC-17	Cabinet has detector and pedestrian test call buttons that can be pushed on the cabinet door		
CC-18	Detector card label for identifying detector cards (if used) in place below detector card rack		
CC-19	Controllers anchored with adequate nuts and washers		
CC-20	Cabinet components working and neatly placed on adjustable shelving, not stacked on each other		

CHECK POWER SUPPLY SIGNAL SERVICE FOR THE FOLLOWING:		YES	NO
PS-1	Location is accessible, practical and no threat of flooding		
PS-2	Proper type and proper meter box (aluminum and NEMA 3R or 4)		
PS-3	Service grounded properly		
PS-4	Lighting arrestor in place		
PS-5	Conduit installed properly, clamps installed at required spacing from enclosures		
PS-6	Old power supply removed, if applicable		

CHECK TRENCHING AND BACKFILLING FOR THE FOLLOWING:		YES	NO
TB-1	Burial tape is used		
TB-2	Proper fall and depth of conduit		
TB-3	Conduit is proper size with correct size and number of wire		

MODOT SIGNAL INSPECTION CHECKLIST

CHECK PULLBOXES FOR THE FOLLOWING:		YES	NO
PB-1	Boxes proper size and type		
PB-2	Spaced properly (metal wires - 250' apart, fiber optic cable only - 1000' apart)		
PB-3	Only concrete pull boxes in travel way, auxiliary lanes and shoulders		
PB-4	Proper excavation depth		
PB-5	Rock drain field installed beneath box (2' min. depth)		
PB-6	Proper coil amount/bending radius (metal wire-6' slack, fiber-10' coiled-mid-block & 60'-boxes next to cabinet)		
PB-7	Ground bonding conductors - ground rods and clamps installed		
PB-8	Holes for conduit cut properly		
PB-9	Installation of conduit sealed at pull box		
PB-10	Cable hooks installed according to standards		
PB-11	Cables and wires labeled with metal tags		
PB-12	Proper backfill		
PB-13	Concrete apron with no concrete on lids or bolts		
PB-14	Lid embossed with "State Signals" and secured with stainless steel or brass penta head bolts		

CHECK SIGNAL ARM & UPRIGHTS FOR THE FOLLOWING:		YES	NO
SP-1	Signal/Walk heads at correct height and aligned with traffic lanes		
SP-2	Cover and/or turn all signal indications not in use upon installation		
SP-3	Optically limiting signal heads are masked		
SP-4	All indications are LED		
SP-5	Street names appropriately labeled and located 1 foot from signal pole or not hidden from view		
SP-6	Signal head signing matches street striping and lane use		
SP-7	Ped push buttons place a call on the street and are ADA wheelchair accessible		
SP-8	Pedestrian informational signs installed with push buttons		
SP-9	Cover plates on top of upright & mast arm ends (not taped on)		
SP-10	Check standard 1-1/2" pipe bracket. Don't extend over 3" beyond slip fitting		
SP-11	Bare neutral grounding in mast post on lugs and signal or lighting post lugs		
SP-12	Setscrews in place and tight for signal hardware and at mast arm couplings		
SP-13	Upright hand-hole cover is in place		
SP-14	Nut covers installed on all mast base plates		
SP-15	Grout between post base plate and post base		
SP-16	Concrete bases adequately finished and all forms removed		
SP-17	No splattered concrete on existing signing or posts		

MODOT SIGNAL INSPECTION CHECKLIST

CHECK INDUCTION LOOP DETECTORS FOR THE FOLLOWING:		YES	NO
LD-1	Separate lead in slot for each loop		
LD-2	Separate lead in cable for each loop		
LD-3	Loop detector conductor wire is type XHHW insulation in-duct		
LD-4	Slots are cut at proper depth		
LD-5	Proper loop wire installation (leads require 3 turns per foot)		
LD-6	Proper epoxy seal (proper cover)		
LD-7	Loop wire lead-in splice properly soldered and encapsulated with corrosion inhibitor		
LD-8	No-splicing from pull box to controller or from loop to pull box		
LD-9	Proper connection in controller		
LD-10	Minimum megohms resistance (manufacturer recommendation) to ground reading at the controller cabinet prior to seal of slot		
LD-11	Loop wires tagged with metal tags		

CHECK VIDEO DETECTION FOR THE FOLLOWING:		YES	NO
VD-1	Location and mounting according to plans (camera posts to be plumb, not leaning)		
VD-2	Exposed cables form "drip loops" to prevent moisture running into arms		
VD-3	Installation to particular video detection's manufacturer's specifications		
VD-4	Power to cameras (if needed) is run from a separate outlet or power strip NOT mounted to door		
VD-5	Color monitor and all camera views are color		
VD-6	Cameras zoomed tight around desired detector zones with no horizon in background or images skewed		
VD-7	Monitor turns on when cabinet door is open and off when closed by a push button toggle usually mounted in top right corner of doorframe		
VD-8	All cameras viewable without swaping cables to the monitor		
VD-9	Video detection system is placing calls to the right phases once configured		
VD-10	A trackball (not standard mouse) installed and tested to navigate video detection processor on-screen menus		
VD-11	Camera EMI / surge unit installed and cables attached to correct sides		
VD-12	Camera cables tagged with metal tags		

MODOT SIGNAL INSPECTION CHECKLIST

CHECK FIBER OPTICS FOR THE FOLLOWING:		YES	NO
FO-1	Fiber optic cable must NEVER be pinched, bent or tightly coiled		
FO-2	Fiber distribution unit secured to cabinet		
FP-3	Proper numbers of fiber strands in fiber distribution unit are terminated to plugs and are ready to use		
FO-4	Unused plugs and jumper ends capped		
FO-5	Fiber distribution unit labeled for color of cables and strands and direction of cable		
FO-6	Proper fiber jumpers used (orange=multi-mode; yellow=single mode, CANNOT interchange these!)		
FO-7	Fiber jumpers not pinched or tightly coiled		
FO-8	Fiber communication working (flashing green lights where jumpers are connected to signal controller)		

ALL APPLICABLE ITEMS ON APPROVED PRODUCTS LIST (APL)

http://www.modot.mo.gov/business/contractor_resources/documents/APL-Internet.pdf

***** REFER TO THE STANDARD SPECS AND DRAWINGS FOR SPECIFIC DETAILS THAT APPLY TO EACH APPLICATION *****
SECTIONS 707, 901, 902, 1060, 1061, 1062, 1091, 1092

MODOT LIGHTING INSPECTION CHECKLIST

Permit # / Project: _____

Site Inspector: _____

CHECK CABINET FOR THE FOLLOWING:		YES	NO
CC-1	Correct cabinet size and is aluminum or stainless steel		
CC-2	Concrete "footpad" apron present and dimensions met per plan specs		
CC-3	Caulking around cabinet		
CC-4	Ground at final grade		
CC-5	Conduit openings sealed with pliable putty		
CC-6	Conduit properly stubbed above cabinet floor (1" max above finished concrete) to prevent back-drainage		
CC-7	Wires/cables identified with round aluminum ID tag		
CC-8	Proper cabinet wiring and breaker size and type		
CC-9	Cabinet grounding circuit		
CC-10	If more than one circuit, a pull box is installed for the control station		
CC-11	Circuits pass 10 meg ohm min test		
CC-12	Photo control is time delay		
CC-13	All cabinet equipment installed is on Approved Product List and working properly		

CHECK POWER SUPPLY FOR THE FOLLOWING:		YES	NO
PS-1	Service is grounded		
PS-2	Lighting arrestor installed		
PS-3	Disconnect breaker rated as per design		
PS-4	Conduit from Utility Company is rigid steel		
PS-5	I.D. labels installed		
PS-6	All equipment on the Approved Product List		
PS-7	Ground at final grade		

CHECK PULL BOXES FOR THE FOLLOWING:		YES	NO
PB-1	Rock drain field installed beneath box (2' min. depth)		
PB-2	Conduit has no kinks		
PB-3	No splices except in pole or pull box. 3-way splices in pole or pull box and in-line splices only in poles		
PB-4	Correct fused slip connectors (Approved Product List)		
PB-5	Conduit enters box as per standard plans (placement and sizing)		
PB-6	Conduit ends are sealed with pliable sealant		
PB-7	Meg circuits and document readings and passed test		
PB-8	Hooks installed in sidewalls and wires secured neatly to hooks		
PB-9	Circuit I.D. tags installed		
PB-10	Concrete apron installed around pull box		
PB-11	Lid embossed with "State Lighting" and secured with 5pt. Stainless steel Penta head bolts		
PB-12	Ground at final grade		

MODOT LIGHTING INSPECTION CHECKLIST

CHECK POLES FOR THE FOLLOWING:		YES	NO
LP-1	1" pipe nipple in bracket arm		
LP-2	Conduit extends min. 6" above foundation plate		
LP-3	Conduit ends sealed with pliable sealant		
LP-4	Grounds attached to "transformer base" grounding lug		
LP-5	Hinged plastic door on transformer base with "Warning High Voltage" label		
LP-6	Fused disconnect devices installed		
LP-7	Lock & flat washers used for all attachments		
LP-8	Bolt covers installed (external) at pole to base connection		
LP-9	Cap installed at top of pole		
LP-10	No photo cell (jumper plug if required)		
LP-11	Luminaire is correct type (glass globe, wattage, design) and on Approved Product List		
LP-12	Luminaire at proper mounting height		
LP-13	Luminaire at proper angle (level for 30' M.H. or 15 for 45' M.H.)		
LP-14	Pole is plumb after fully loaded		
LP-15	Foundations flush with ground with proper backfill		
LP-16	Ground at final grade		

CHECK UNDERPASS FOR THE FOLLOWING:		YES	NO
UP-1	Conduit secured properly (max hanger spacing)		
UP-2	Conduit has weep holes to remove moisture		
UP-3	Grounds attached		
UP-4	Correct fixture type (glass globe, wattage, design) and on Approved Product List		
UP-5	Fused disconnect devices installed when specified		
UP-6	Lock & flat washers used for all attachments		

ALL APPLICABLE ITEMS ON APPROVED PRODUCTS LIST (APL)

http://www.modot.mo.gov/business/contractor_resources/documents/APL-Internet.pdf

* * * REFER TO THE STANDARD SPECS AND DRAWINGS FOR SPECIFIC DETAILS THAT APPLY TO EACH APPLICATION * * *
SECTIONS 707, 901, 902, 1060, 1061, 1062, 1091, 1092

Outsource Inspector Evaluation Form

Inspector (name/company): _____
Address/Phone #: _____
Permit # / Project Name: _____ Rte/Co: _____

1) **Preconstruction Meeting**

Did the Outsource Inspector attend the meeting(s)? yes no
Was the Outsource Inspector given the Outsource Inspection packet? yes no

2) **Daily Reports**

Were the reports completed with adequate information? yes no
Were the reports received within 48 hours? yes no

3) **Test Results**

Were there any failing tests? yes no If yes, how were they resolved? _____

Were the test results received within 48 hours? yes no

4) **Questions pertaining to Project**

Did the Outsource Inspector ask the questions? yes no If no, who? _____
Could the answers have been easily found in spec book? yes no

5) **Traffic Control**

Was the lane closure request sent in? yes no
Were there any problems with the traffic control? yes no

6) **Signals and Lighting**

Were there any complaints from the signal shop? yes no n/a
Were there any complaints from the lighting shop? yes no n/a

7) **Final Inspection**

Did the Outsource Inspector conduct a semi-final inspection and do a punchlist? yes no
Did the Outsource Inspector attend the final inspection? yes no

8) **Recommendation**

Would you recommend this inspector for future outsource inspection? yes no
Why or Why Not? _____

** If any no's are checked, please explain on the back of this sheet and attach supporting documentation

Evaluation Done By MoDOT Permit Inspector, _____ Date: _____

