



**COLORADO
DEPARTMENT
OF
TRANSPORTATION
INSPECTOR'S
CHECKLIST**

2014

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GENERAL INSTRUCTIONS

INTRODUCTION

THE INTENT OF THIS CHECKLIST IS TO PROMPT THE INSPECTOR TO RESEARCH SOURCE DOCUMENTS TO DETERMINE ANSWERS. THE INSPECTOR SHOULD ALSO CONSULT WITH THE PROJECT ENGINEER AND OTHER EXPERIENCED PERSONNEL IF FURTHER CLARIFICATION IS REQUIRED.

Source documents include but are not limited to:

ATSSA Quality Standards for Work Zone Traffic Control Devices (American Traffic Safety Services Association)	M & S Standard Plans Manual of Uniform Traffic Control Devices (MUTCD)
Construction Bulletins	Field Materials Manual
Construction Manual	Project Plans
Erosion Control Manual	Project Special Provisions
Hot-Mix Asphalt Paving Handbook	Standard Special Provisions
	Standard Specifications
	Survey Manual

BEFORE BEGINNING INSPECTION DUTIES

DO NOT TAKE UNREASONABLE RISKS WHEN PERFORMING DUTIES. REPORT UNSAFE PRACTICES TO THE PROJECT ENGINEER.

1. CDOT Workplace Safety Manual and Contractor's safety policy reviewed?
2. Authority and responsibilities discussed with Project Engineer?
3. Format and required content of pay documentation forms and Inspector's diaries reviewed?
4. Testing requirements and the certifications that must accompany material delivery reviewed?
5. Traffic Control Plan (TCP), Method of Handling Traffic (MHT) and necessary traffic control and safety requirements reviewed?

DURING INSPECTION

1. Advise the Project Engineer of any changes, corrections, delays, rejections or deviations from specification work.

2. Record all required measurements for pay item documentation on appropriate forms (e.g., #266, #7, Pile Driving book).
3. If you are not sure of your duties, go over them again with the Project Engineer.

SUMMARY OF MANUFACTURER'S REPRESENTATIVE AND CERTIFICATION REQUIREMENTS

Some specifications require that a manufacturer's technical representative be present when a particular process is performed; other specifications require written certification of processes. A spreadsheet summarizing these requirements is located on the CDOT website at:

http://www.coloradodot.info/business/designsupport/bulletins_manuals/cdot-manu-checklist/view

ASK QUESTIONS!

DOCUMENTATION

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

PROVISIONS CONTAINED IN STANDARD OR PROJECT SPECIAL PROVISIONS, AND/OR PLANS SOMETIMES SUPERSEDE THE PROVISIONS CONTAINED IN THE STANDARD SPECIFICATIONS AND/OR M & S STANDARD PLANS. THESE DOCUMENTS SHOULD BE CAREFULLY REVIEWED TO DETERMINE THE EXACT METHOD OF MEASUREMENT AND BASIS OF PAYMENT TO BE USED ON THE PROJECT.

1. The Standard Specifications, Standard or Project Special Provisions and/or M & S Standard Plans contain a Method of Measurement and a Basis of Payment section for every pay item in the Contract. These sections detail exactly how the items are to be measured for payment. Before starting work, carefully review the specific section for the pay item to be inspected.
2. The Construction Manual furnishes further information on the documentation that is required for Contract pay items.
3. Obtain and record the required documentation on the proper form.

4. Complete an Inspector's Project Diary (CDOT Form 103) each day. Record required information on the form.
5. The following should be submitted to the Project Engineer at the end of each day or as directed by the Project Engineer:
 - a. Inspector's Project Diary - CDOT Form 103
 - b. Inspector's Progress Report - CDOT Form 266 or Daily Work Report (DWR)
 - c. Material Weight Tickets
 - d. Concrete batch tickets
 - e. Seed bag tickets
 - f. Weight and chemical analysis for fertilizer
 - g. Certificates of Compliance (COC)

**107 LEGAL RELATIONS AND
RESPONSIBILITY TO THE PUBLIC
107.06 SAFETY, HEALTH, AND SANITATION PROVISIONS**

1. Did Contractor include certification statement in Project Safety Management Plan?

109 MEASUREMENT AND PAYMENT

(WEIGHING MATERIALS - GENERAL)

1. Scales
 - a. Operating with an In-Service report?
 - b. Sealed by the Department of Agriculture
 - (1) Annually?
 - (2) After each move?
 - c. Operated by a certified weigher?
 - d. Large enough to allow all haul truck wheels onto the scale deck at the same time?
 - e. Ticket with all required information?
2. Method used to verify scale and weighing accuracy?
3. Inspector/Ticket Taker
 - a. Receiving each ticket?
 - b. Signing or initialing each ticket?
 - c. Recording station where material was placed?
 - d. Checking for overweight loads before trucks dump?

**TICKETS ARE NOT TO BE ISSUED
TO OVERWEIGHT VEHICLES**

4. Haul units
 - a. Identification marks and axle lengths shown on list provided by the Contractor?
 - b. Maximum legal load limits calculated for each vehicle?
 - c. In compliance with load restrictions?
 - d. Loads in excess of legal limit rejected?
 - e. Tare weights being taken and recorded?
5. Scale tickets signed or initialed upon material delivery?

**LOADS OR TICKETS EXCEEDING THE LEGAL LIMIT
SHALL NOT BE ACCEPTED**

IF A SCALE TICKET FROM AN OVERWEIGHT VEHICLE IS INADVERTENTLY ACCEPTED AND THE MATERIAL INCORPORATED INTO THE PROJECT, THE MATERIAL SHALL BE PRICE-REDUCED PER THE SPECIFICATIONS.

202 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

1. Limits of removal marked by Contractor?
2. Saw cutting complete?
3. Area measured prior to removal?
4. Pavement markings removal by approved method (not painted or covered with emulsion)?
5. For removal of bridge, did Contractor's Engineer certify bridge removal plan? Is each phase followed daily?

203 EXCAVATION AND EMBANKMENT

BEFORE STARTING EXCAVATION/EMBANKMENT

1. Utilities located?
2. Earthwork cross-sections match plan typical sections?
3. Slope staking performed and properly documented in accordance with typical sections?
4. Slope stakes fall within the ROW (slope stakes in cut areas providing adequate room for rounding)?
5. Original roadway and borrow area cross-sections completed?
6. Borrow source material approved for use?
7. Clearing and grubbing work completed?
8. Erosion control plans reviewed?

EXCAVATION

1. Types of excavation to be performed?
2. Contractor intends to use explosives? If so
 - a. Contractor has proper permits?
 - b. Contractor made required notifications?

USE OF EXPLOSIVES REQUIRES STRICT ADHERENCE TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) GUIDELINES AND AN APPROVED METHOD OF HANDLING TRAFFIC.

3. Contractor preserving slope stakes and control point references?
4. Overburden or topsoil stripping required?
5. Intercepting ditches required along top of cuts?
6. Rounding along top of cut slopes being completed?
7. Rock encountered at base of cuts excavated to proper grade?
8. Unsuitable material being removed and disposed of as directed by Project Engineer?

9. Subexcavated areas measured for payment prior to backfilling?

EMBANKMENT

1. Free of organic material, running water and frozen materials?
2. Rocks, concrete and asphalt chunks larger than allowable dimensions removed from the embankment?
3. Material placed in uniform lifts not more than maximum allowable thickness?
4. Moisture and density required for type of embankment being placed?
5. Specific types of compaction equipment required?
6. Existing slopes benched prior to placement of new embankment as required?
7. End dumping of material permitted?
8. Roadbed well drained and erosion control measures maintained during embankment construction?
9. Embankment placed to avoid damage to structures?
10. Top 2' of embankment being constructed in accordance with specifications and plans?
11. Final surfaces graded to required elevation and cross-slope within required tolerances?

206 EXCAVATION AND BACKFILL FOR STRUCTURES

1. Unsuitable foundation material removed and replaced?
2. Is Class 1 and Class 2 material non-organic?
3. Flowfill being used?
4. Appropriate cement and correct aggregates gradation for flowfill?
5. Flowfill lift no more than 3 feet?
6. Class 1 and Class 2 backfill lifts no more than 6 inches?
7. AASHTO T 180 compaction for Class 1?
8. Subsection 203.07 compaction for Class 2?
9. Backfill outside roadway prism compacted to density of surrounding material?

206.09 SHORING MATERIALS AND CONSTRUCTION REQUIREMENTS

1. Did Contractor's Engineer certify shoring in conformance with the shoring drawings?

207 TOPSOIL

1. Approved source?
2. Grade of existing slopes acceptable for topsoil placement?
3. Proper thickness per plans?

208 EROSION CONTROL

1. Approved Stormwater Management Plan reviewed?
2. Appropriate permits reviewed?
3. Environmental Pre-construction Conference held?
4. What BMPs are required and when? See Contractor's CPM.
5. Do materials comply with 208.02? BMPs with 208.05?
6. Inspected every two weeks and after every storm event?
7. Form 1176 completed for each inspection?
8. Erosion Control Supervisor designated and certified?
9. Waste products and spills appropriately removed and disposed?

210 RESET STRUCTURES

1. Reset materials properly handled and stored?
2. Unserviceable reset materials replaced with new?

210.05 RESET GUARDRAIL AND 606 GUARDRAIL

210.05 RESET GUARDRAIL

1. Adequate provisions to protect traveling public from sections not completed?
2. Contractor providing new materials to reset guardrail to current standards?
3. Different posts segregated by groups?
4. Surface properly treated on post cut offs?
5. Rail being installed at correct height?
6. Voids under posts filled with concrete mixture?

606 GUARDRAIL

1. Type of guardrail required?
2. If bridge railing, were working drawings sent to Staff Bridge?
3. In zones open to traffic, has the direction of installation and maximum number of posts installed ahead of rail been determined?
4. Concrete deadmen for end anchorages required?

5. Posts
 - a. Specific type required (wood or steel)?
 - b. Wood posts field inspected?
 - c. Dimensions meet requirements of current standards?
 - d. Set per specified methods?
 - e. Set within tolerance and appropriately backfilled?
 - f. Surface properly treated on post cut offs?
 - g. Rail installed to correct height?
 - h. Blocks nailed in place?

606 RAIL, STEEL POSTS, AND HARDWARE

1. Contractor furnished Mill Test Reports?
2. Materials and hardware handled with care to avoid damage and kept from contact with foreign material?
3. Hardware per current standard?
4. Bolts extend beyond nuts?
5. Washers omitted where specified and assembly tightened?
6. Rail installations result in a smooth, continuous vertical and horizontal alignment?
7. Necessary to shop-bend rail?
8. Recoating material required to repair damaged areas?
9. Reflector tabs installed per current standard?

606 CONCRETE GUARDRAIL

1. Concrete and reinforcing steel per specifications?
2. Concrete finish per specifications?
3. Lifting holes for precast sections filled with approved material?
4. Trench for cast-in-place barrier or base for precast barrier constructed per specifications?
5. Barrier checked with 10' straightedge for longitudinal alignment?
6. Required provisions made to connect different types of barrier and rail where required?
7. Reflectors installed?

606 TENSIONED CABLE BARRIER

1. Did manufacturer's representative oversee and certify installation?

606 TEMPORARY END TREATMENT

1. In zones open to traffic, rail installation keeping up with post placement?
2. Rail end protected at end of day?

212 SEEDING, FERTILIZER, SOIL CONDITIONER, AND SODDING

212 SEEDING

1. Pre-emergent treatment applied at correct time?
2. Bag or container labels provide required information?
3. Seed labels retained for project records?
4. Mixture free from noxious weeds?
5. Certification of laboratory test furnished?
6. Seed wet, moldy, or damaged in transit?
7. Seed type and pure live seed per Contract?
8. Pure live seed determined per specification formula?
9. Application rate determined?
10. If seed is not placed by drill, spread by broadcast or hydraulically at twice the specified rate?
11. Appropriate time of year for seeding?
12. Engineer approved seeding outside of specification seasons?
13. Ground conditions suitable?
14. Areas inaccessible to seed drills identified?
15. Rocks, clods, or other material more than 2 inches in any dimension, removed and soil properly prepared for seeding?
16. Seed drilled or sown to provide a 1/4" cover?
17. Drill seeding equipment calibrated?
18. Hydraulic seeding equipment appropriate?
19. Plans provide for water and maintenance?
20. Areas identified that will need reseeding?

212 FERTILIZER AND SOIL CONDITIONER

1. Mixture type and percentages per plan?
2. Bag label being retained for project records?
3. Commercial fertilizer providing nutrient components specified or meet requirements recommended by tests on topsoil?
4. Fertilizer delivered in unopened containers?
5. Fertilizer worked into top 4" of soil?
6. Is compost STA certified?

212 SODDING

1. Irrigation or sprinkler system completed and functioning properly?
2. Soil prepared and fertilized / soil conditioned for sodding?
3. Certificates from grower received for each sod load?
4. No undesirable perennial or annual grasses or plants defined as noxious by current State statute?
5. Sod cut within 24 hours?

6. Sod correct species?
7. Soil thickness on sod delivered?
8. Sod cuts of uniform strip dimensions?
9. Sod laid by staggering joints with edges touching?
10. Sod fertilized after laying completed and prior to soaking?
11. Sod watered and rolled?

213 MULCHING

1. Landscape borders installed?
2. Correct type of mulch provided?
3. Correct application rate?
4. Method of mulching specified?
5. Tackifier required?
6. Approved wood cellulose dyed to allow inspection?
7. Certificates from supplier indicating dry weight?
8. Regional Weed-Free Certification obtained and bales checked for acceptable bale ties?
9. Hay or straw is not discolored, brittle, rotten, or moldy

MECHANICAL METHOD

1. Mulch contains correct Regional Weed-Free Certification before unloading?
2. Hay or straw mulching applied at a uniform rate?
3. If required, method of crimping approved?
4. Area mulched within 24 hours after seeding?
5. Areas designated for turf-reinforced mat or blanketing?

HYDRAULIC METHOD

1. Slurry tank contains proportionate quantities?
2. Uniform plan rate applied?
3. Mulching area free from surface water?

214 PLANTING

1. Planting layout approved?
2. Final grading accepted?
3. Planting locations coordinated with existing or proposed utilities?
4. Plants properly labeled to indicate species or variety designated in Contract?
5. Plants healthy with well-developed branch and root system?
6. Required certifications?
7. Specified sizes per plant list furnished?
8. Handling and shipping requirements met?

9. Plants for fall season balled and burlapped or container grown?
10. Plants inspected at nursery or sample plants furnished?
11. All plants are free from plant diseases and insect pests?
12. Soil conditioners and fertilizer approved?
13. Planting taking place in appropriate season?
14. Plant locations appropriate distance from roadway?
15. Planting pits of appropriate size?
16. Plants properly prepared prior to planting (soaked and unwrapped)?
17. Plants properly backfilled with required soil conditioners?
18. Plant saucers prepared and watered?
19. Topsoil and soil conditioners rototilled prior to planting ground cover type plants?
20. Trees staked as required?
21. Trunk wrapping approved?
22. Contractor watering and maintaining plants per specifications?

215 TRANSPLANTING

1. Utilities located?
2. Plants for transplanting dormant?
3. Root systems pruned?
4. Plants sprayed per specification?
5. Minimum diameter of balled root system maintained?
6. Plant pits of appropriate size?
7. Backfill worked and watered?
8. Trees remaining in machine spade or transported in a pod trailer?
9. Pits for machine dug trees same dimension as machine ball?
10. Water basins of appropriate capacity and filled with water at proper intervals?
11. Saucers covered with approved moist wood chip mulch?
12. Appropriate fertilizer/soil conditioner and rate of application used?
13. Transplanting accomplished within one day?
14. Transplanted trees properly maintained?

216 SOIL RETENTION COVERING

1. Blankets/turf reinforcement mats consist of specification material and placement in accordance with type?
2. Blanket/turf reinforcement mat Pins appropriate size, type, quantity and location?
3. Blankets/turf reinforcement mats correctly placed?
4. Blankets/turf reinforcement mats overlapped correctly and trenched in where needed?
5. Covering maintained?

217 HERBICIDE TREATMENT

1. Safety precautions reviewed?
2. Areas for treatment identified?
3. Sensitive areas identified (wetlands, threatened and endangered species, etc.)?
4. Types of herbicide properly labeled and the types specified in the Contract?
5. Applicator's license furnished?
6. Label information furnished?
7. Mixing and application per manufacturer's recommendations?
8. Weather conditions suitable for application?
9. Provisions for control of overspray?

250 ENVIRONMENTAL, HEALTH AND
SAFETY MANAGEMENT

1. Approved Health and Safety Plan reviewed?
2. Health and Safety Officer designated? Certified?
3. Monitoring Technician designated? Fulfilled training requirements?
4. HASP been approved and available as required?
5. Appropriate permits obtained?
6. Transportation company covered by appropriate insurance?
7. HSO available during construction activities?
8. Hazardous materials handled and disposed properly?
9. Contaminated soils handled and disposed properly?
10. Asbestos-containing materials handled appropriately?

300 BASES
304 AGGREGATE BASE COURSE
BEFORE PLACING BASE COURSE

1. Section 109, Weighing Materials - General, of this checklist reviewed?
2. Base course material approved for use?
3. Subgrade
 - a. Graded and compacted properly?
 - b. Soft spots identified and corrected?
 - c. Cross-slope, elevation and alignment correct?
 - d. Ground conditions suitable?
 - e. Proof rolled?
 - f. Approved?
4. Widths and depths of base course staked and approved, as per plan?

PLACING BASE COURSE

1. Placed without mixing into subgrade?
2. Compacted lift depth and yield being checked frequently?
3. Uniformity of material maintained?
4. Water applied uniformly?
5. Random material samples taken from each lift?
6. Each lift compacted to required density prior to placing subsequent lifts?
7. Checked for debris during dumping and spreading?
8. Final surface meets specified elevation within required tolerances?

306 RECONDITIONING

1. Sufficient water added?
2. Smoothness and density achieved?
3. Irregularities corrected?

307 LIME-TREATED SUBGRADE

1. Lime meets specification and approved for use?
2. Water meets specification and has been checked for sulfate levels?
3. Lime mix design submitted and approved?
4. Contractor has tester to perform required testing?
5. Subgrade approved for smoothness, uniformity, density and moisture content?
6. Test section approved?

7. Proof rolling completed before and after treatment?
8. Void of vegetation and other organic or man-made material
9. Initial Mixing: Subgrade not frozen? Lime and soil above 35 degrees F?
10. Subgrade cut and pulverized to correct depth?
11. Lime applied as a slurry uniformly?
12. Number of passes used to mix?
13. Passes overlap?
14. Uniform surface color after mixing?
15. Moisture content of mixture checked?
16. Uniform Density
17. Uniform Moisture Content
18. Mixture cured for how long?
19. Mixture kept moist during curing period?
20. Final Mixing: Mixture free of oversized clods? Gradation of mixture meets specification?
21. Moisture content checked?
22. Compaction and moisture content achieved? Strength testing complete?
23. Finished surface smooth and uniform?
24. Curing method used meets specification? Curing duration? Thickness checked after curing? Price reduction for thickness required?

400 PAVEMENTS

401 PLANT MIX PAVEMENTS - GENERAL

403 HOT MIX ASPHALT PAVEMENT

THE FOLLOWING ITEMS THAT ARE MARKED WITH AN x ARE NOT CONTRACT REQUIREMENTS. REFER TO THE HOT-MIX ASPHALT PAVING HANDBOOK FOR FURTHER INFORMATION REGARDING THESE ITEMS.

1. Pre-paving Conference held?
2. Asphalt plant
 - a. Operator has
 - (1) Approved laboratory mix design?
 - (2) Current air quality certification?
 - b. In good mechanical condition?
 - c. Capacity adequate?
 - d. Producing mix at correct temperature?
 - e. Minimizing segregation
 - (1) Stockpiles
 - (a) Built in layers?
 - x (b) Separated to avoid intermingling?
 - (2) Aggregate handling

- x (a) Loader operator working full face of stockpile?
- x (b) Coarse aggregate blended by loader operator if it becomes segregated?
- x (c) Material in one cold feed bin does not flow into another?
- (3) Loading and unloading surge silo
 - x (a) Conveying device depositing mix into center of silo or batcher?
 - x (b) Batchers being used at top of silo?
 - x (c) Gates on batcher closed unless dropping load of mix?
 - x (d) Gates on batcher closed before it is empty?
 - x (e) Trucks center (left to right) when loading?
 - x (f) Trucks loaded in multiple drops with first drop at rear and second at front and then alternating?
 - x (g) Mix not dribbling into truck to complete load?
- f. Addition of lime
 - (1) Proper amount of lime added uniformly?
 - (2) Correct amount of water added uniformly?
 - (3) Pugmill uniformly mixing aggregate, water and lime?
- g. Drum mix plant operating efficiently?
 - x (1) No brown fines at discharge conveyor?
 - x (2) Temperature of dryer discharge gas, at hood, not more than 20 degrees F higher than aggregate temperature?
- 3. Subgrade
 - a. Graded and compacted properly?
 - b. Soft spots identified and corrected?
 - c. Proof rolled?
 - d. Cross-slope, elevation, and alignment correct?
 - e. Ground conditions suitable?
 - f. Approved?
- 4. Overlays
 - a. Patching completed?
 - b. Crack sealing completed?
 - c. Surface dry and swept clean including edge of pavement?
 - d. If bridge deck, refer to Section 515 Waterproofing Membrane.
- 5. Laydown operations
 - a. Method of Handling Traffic (MHT) approved?
 - b. Weather conditions acceptable for paving? Ambient and surface temperature?

- c. Stations established to allow yield checks and material placement?
- d. Material placement location, thickness, yield checks and temperature documented?
- e. Temporary and permanent pavement marking plans approved?
- f. Adequate control provided to place final striping?
- g. Temperature of delivered plant mix meets specifications?
- h. Asphalt paver
 - (1) Screed checked for trueness with a string line?
 - (2) Equipped with full-width augers?
 - (3) Equipped with a full-width vibratory screed?
 - (4) Automatic leveling ski of proper length?
 - (5) Approved?
 - x (6) Wings on hopper dumped only at end of day?
 - x (7) Stopped as quickly as possible after truck finishes dumping?
 - x (8) Hopper kept more than half-full at all times?
 - x (9) Material kept at midpoint of augers?
 - (10) Placing material at cross-slope or crown shown on typical section?
 - (11) Producing an acceptable finish without segregation?
 - (12) Placing material within required surface tolerance?
 - (13) Placing material at specified thickness and yield?
- i. Haul trucks
 - (1) Identification and distance between axles shown on Contractor's list?
 - (2) Legal load limits calculated?
 - (3) Scale ticket provided?
 - (4) Within legal load limits?
 - (a) Loads in excess of legal limit handled in accordance with specifications?
 - (5) Raising bed before opening tailgate to provide surge of material?
 - (6) Equipped with covers suitable to protect mix from weather?
 - (7) Beds cleaned with an approved release agent?
 - (8) All material removed from road when using pick-up machine?
- j. Longitudinal pavement joints
 - (1) Properly located in relation to lane lines (out of wheel track)?
 - (2) Continuously string lined to delineate longitudinal joint?
 - (3) Offset in multiple lifts?

- (4) Tapered, if required, for maintaining traffic?
- (5) Constructed with approximately 2" overlap on previously placed pavement?
- k. Transverse pavement joints
 - (1) Smooth?
 - (2) Within required tolerances?
- l. Rollers
 - (1) Compaction Test Section completed by Contractor?
 - (2) Rollers operating in accordance with approved Compaction Section?
 - (3) Vibratory rollers operating at high frequency?
 - (4) Rubber tires correct tire pressure?
 - (5) Obtaining density before mat cools to minimum specified temperature?
 - (6) Removing roller marks?
 - (7) Picking up material?
 - (8) Rollers kept clean?
 - (9) Traveling below 3 mph?
 - (10) Producing required density with a consistent roller pattern?
 - (11) Crushing aggregate?
 - (12) Operating in vibratory mode on final pass?
 - (13) Rolling stopped when pavement temperature below specified minimum?
- 6. Rejected areas (segregated or soft spots) corrected prior to placing additional lifts?
- 7. HMA Pavement Smoothness (tested by Contractor)
 - a. Distance calibration site approved?
 - b. Smoothness test equipment certified?
 - c. Operator of smoothness test equipment certified?
 - d. MHT for smoothness testing submitted?
 - e. Excluded areas properly located and identified?
 - f. Smoothness testing scheduled?
 - g. Smoothness testing witnessed?
 - h. Smoothness test data submitted immediately?
 - i. Smoothness data transmitted/sent to Central Lab for evaluation immediately?
 - j. Central Lab contacted to see if data will be verified?
 - (1) Done prior to corrective work?
 - (2) Verification testing can be completed at the same time as contractor testing.
 - k. Corrective work locations identified and corrected?
 - l. If corrective work was required and corrected, was retesting completed? Follow d. thru k.

405 HEATING AND REMIXING TREATMENT

1. Pavement cleaned of all loose material?
2. Pavement surface evenly heated, milled and remixed to the width and depth shown on the plans?
3. Rejuvenating or Recycling Agent applied uniformly to the mixed material prior to remixing?
4. Heating operation extended at least 4 inches beyond width of remixing?
5. Follow 403 HMA Inspection practices for placement and compaction.

406 COLD ASPHALT PAVEMENT (RECYCLE)

1. Appropriate temperature for recycling operation?
2. Appropriate weather conditions for recycling operation?
3. Recycling agent applied properly?
4. Representative of the recycling agent supplier present on the project until an appropriate production sequence is established?
5. Rolling done appropriately?
6. Segregation behind the roller eliminated?
7. Lab density been achieved?
8. Smoothness achieved?

407 PRIME COAT, TACK COAT, AND REJUVENATING AGENT

1. Proper application of tack coat on pavement before overlay?
2. Type and grade identified by Certificates of Compliance and delivery tickets?
3. Sampled properly?
4. Applied at proper rate and temperature?
5. Properly diluted with water?
6. Stored properly?
7. Allowed to break after application?
8. Tack coat application rates
 - a. Comply with plans/specifications?
 - b. Producing desired results?
 - c. Verified by test section?
 - d. Approved?
9. Placed on edges of pavement and curbs?
10. Distributor
 - a. Equipped with proper spread rate and temperature controls?
 - b. Capable of positive cut-off?

- c. Spray bar/nozzles delivering material uniformly without streaking?
 - d. Spray width properly set?
 - e. Tank stabbed or load readings taken on level ground?
11. Blotter material available if needed?

409 SEAL COAT AND COVER COAT MATERIAL

1. Traffic control adequately addressed?
2. Correct type of temporary pavement markings available for installation?
3. Surface clean and dry?
4. Manhole covers, drop inlets, valve boxes, and valley pans covered with dirt or paper?
5. Paper placed at start and stop of each pass for square ends?
6. Weather conditions suitable?
7. Butt or lap seams correctly placed?
8. Seams not in wheel path?
9. Placement sequence to minimize turning movements on freshly placed surface?
10. Application rates per specification?
11. Test area placed as needed to determine application rates/yield for asphalt and cover coat materials?
12. Embedment of approximately 75%?

APPLYING ASPHALT MATERIAL

1. Type and grade of asphalt material as specified?
 - a. At proper temperature?
2. Distributor bar at proper elevation and nozzles at correct skew to operate properly to reduce streaking and drilling (corn rows)?
3. End nozzles turned at 90 degrees?
4. Spare, clean nozzles available?
5. Application in a uniform, continuous manner?
6. Rates adjusted to compensate for oxidized, open graded, and flushed surfaces?
7. Adequate asphalt material applied to seam line?
8. Skipped and deficient areas corrected?
9. Junctions of spreads carefully constructed?
10. Length of asphalt spread only for immediate coverage by cover coat material?
11. Asphalt material not allowed to chill, setup or dry?
12. Distributor and spreader kept close together?
13. Tires kept off uncovered asphalt material?

APPLICATION OF COVER COAT MATERIAL

1. Type and gradation as required?
2. Aggregate spreader equipment approved?
3. Moistened with water prior to placement to reduce dust coating?
4. Material spread
 - a. At specified or verified rate/yield?
 - b. Uniformly without streaking?
 - c. Within asphalt material width?
 - d. On asphalt material that has not been allowed to chill, set up, or dry?
 - e. Proper distance behind distributor?
 - f. Adequate coverage?
 - (1) Deficient areas covered by additional aggregate?
 - (2) Excess piles removed prior to rolling?
 - g. Tires picking up aggregate?
 - (1) Haul trucks staggering backing paths?
5. Rollers
 - a. Approved type and weight?
 - b. Correct tire pressure?
 - c. Picking up aggregate?
 - d. Keeping up with spreader?
 - e. Completing proper coverages?
 - f. Three complete coverages prior to setting of asphalt material?
 - g. Rapid start and stop movements not allowed?
6. Aggregate
 - a. Embedment in asphalt materials satisfactory?
 - b. Bleeding of asphalt material not allowed?
 - c. Blotting sand available for excess bleeding or other unforeseen problems?
 - d. Adhering to asphalt materials?
7. Brooming
 - a. Performed as required?
 - b. Removing embedded aggregate?
 - c. Final brooming after curing?
8. No exposed asphalt or loose aggregate at end of day?
9. Temporary pavement marking ready for traffic?

411 ASPHALT MATERIALS

1. Type and grade per specifications?
2. Application method causing discoloration of concrete structures, concrete curbs, or gutters?
3. Traffic inconvenience minimized?
4. Emulsified asphalt diluted before application as specified or directed?

5. Payment made for non-diluted quantity?

412 PORTLAND CEMENT CONCRETE PAVEMENT

1. Pre-paving Conference held?
2. Approved Quality Control Plan and Surface Texturing plan reviewed?
3. Subgrade
 - a. Graded and compacted properly?
 - b. Soft spots corrected?
 - c. Proof rolled?
 - d. Properly referenced for line and grade?
 - e. Trimmed to correct elevation and cross-slope using outside control from reference lines?
 - f. Ground conditions suitable?
 - g. Approved?
4. Load transfer devices
 - a. Dowel bar test section complete?
 - (1) MIT Scan present for locating dowel bars?
 - (2) MIT Scan report submitted?
 - b. Placed within tolerances?
 - c. Firmly fastened down?
 - d. Correctly located?
 - e. Locations marked for saw crew?
 - f. Properly lubricated?
 - g. Shipping brace cut?
 - h. Dowels correct size and length?
 - i. Dowels checked for proper placement and depth?
5. Grade moist before placing concrete?
 - a. No ponding of water of subgrade?
6. Check and approve the following equipment
 - a. Placer spreader machine if load transfer devices are used?
 - b. Paver
 - (1) Vibrators checked for frequency and location?
 - (2) Vibrators working properly?
 - (3) Bar inserters correctly located?
 - c. Test bridge for CDOT?
 - d. Texturing Method
 - (1) Provision for blackout at joints?
 - e. Curing machines?
 - f. Burlap drag?
7. Hauling vehicles checked and approved?
8. Concrete mix design
 - a. Approved?
 - b. Class of concrete?

9. Concrete delivery and placement
 - a. Concrete ticket
 - (1) Ticket with each load?
 - (2) Required information on each ticket?
 - (3) Mix is batched within specification limits of the approved mix design?
 - b. Added water documented?
 - c. Water/cementitious material ratio not exceeded when water is added?
 - d. Truck mixers using correct number of revolutions before discharging and after adding water?
 - e. Temperature of concrete meets specifications?
 - f. Air temperature meets specifications?
 - g. Placed so minimum rehandling is required?
 - h. Signs of segregation?
 - i. Slump (consistency) visually similar for each load?
 - j. Discharge complete within specified time limits?
 - k. Concrete removed from non-agitating trucks?
 - l. Heavy equipment handling concrete?
 - m. Foot prints in fresh concrete vibrated?
 - n. Transverse construction joint placed at least 2' from any other transverse joint?
10. Longitudinal construction joints
 - a. Properly located at lane lines?
 - b. Keyways correctly installed?
 - c. Tie bars (if specified)
 - (1) Inserted by approved method?
 - (2) Epoxy coated?
 - (3) Correct size?
 - (4) Correct length?
 - (5) Correct spacing?
 - (6) Correct location?
 - (7) Cross-transverse joints?
 - (8) Pull test completed.
11. Longitudinal-weakened plane joints
 - a. Properly located at lane lines?
 - b. Tie bars (if specified)
 - (1) Inserted by approved method?
 - (2) Inserted ahead of vibrators?
 - (3) Epoxy coated? From an approved epoxy coater?
 - (4) Correct size?
 - (5) Correct length?
 - (6) Correct depth?
 - (7) Correct spacing?
 - (8) Correct location?
 - (9) Not across transverse joints?
 - (10) Pull test completed.
 - (11) Steel from an approved source?

12. Transverse-weakened plane joints
 - a. Properly located?
 - b. Load transverse devices (see #4)?
 - c. Tooled joint in widening or shoulders?
13. Expansion joints – Preformed joint filler material placed at all structures, manholes, inlets and other projections into the pavement?
14. Manholes, inlets and utilities to be incorporated into pavement located and marked?
15. Paver providing an acceptable finish?
16. Hand finishing required?
17. Water is not being added to surface to assist finishing?
18. Burlap drag excessively wet, leaving water on surface of the pavement?
19. Stationing being stamped into pavement at correct locations?
20. Rumble strips
 - a. Correct locations?
 - b. Bicycle traffic unimpeded?
 - c. Interfere with joints?
 - d. Correct size, shape and depth?
 - e. Not placed across acceleration and deceleration lanes or ramps?
21. Texturing or tining
 - a. Parallel to the longitudinal joint?
 - b. Uniform in depth and within the specification requirements?
 - c. Neat in appearance?
22. Curing
 - a. Approved curing material?
 - b. Application rate correct?
 - c. Placed within specified time?
 - d. Cold weather protection required?
 - e. Materials available to protect pavement from rain?
 - f. Maturity chart submitted with mix design, if required?
 - g. Maturity meters installed, if required?
23. Sawing
 - a. Saw joints properly located within specified tolerance over load transfer devices?
 - b. Weakened plane joints sawed before cracking occurs?
 - c. Joints sawed cleanly without spalling?
 - d. Saw cut completed full depth to the end of the slab?
 - e. Saw residue immediately flushed from joint and removed from surface of pavement by an approved method?
 - f. Second-stage saw cuts correct size and depth?
24. Sealing

- a. Concrete cured properly before sealing starts?
 - b. Approved?
 - c. Sealant placed to specified tolerances?
 - d. Sealing damaged by corrective work repaired?
25. Traffic not permitted on pavement before it achieves 3000 psi?
26. PCC Pavement Smoothness (tested by CDOT)
- a. Distance calibration site approved?
 - b. MHT for smoothness testing submitted?
 - c. Excluded areas properly located and identified?
 - d. Smoothness testing scheduled?
 - e. Corrective work locations identified and corrected?
 - f. If corrective work was required and corrected, was retesting completed? Follow c. thru e.

420 GEOSYNTHETICS

- 1. Material meets specifications?
- 2. Technician from geosynthetic supplier available to give technical assistance?
- 3. Paving
 - a. According to plan locations?
 - b. Immediately following asphalt material application?
 - c. Proper width including overlap?
 - d. Without wrinkles?
 - e. Covered daily by hot mix asphalt (HMA)?
- 4. Erosion control or drainage placement
 - a. Loose and with correct roll direction?
 - b. Sufficient overlap
 - c. Uphill layer on top?
 - d. Secure to prevent displacement?

502 PILING

- 1. Type, length, size, heat numbers, condition, certification and Mill Test Reports documented?
- 2. Heat numbers on piling match Mill Test Reports?
- 3. Piles made in the USA?
- 4. Excavation completed prior to driving pile?
- 5. Pile locations properly staked?
- 6. Utility locations checked and conflicts resolved?
- 7. Pile tips required?
- 8. Pile driving equipment data provided?
- 9. Proper size pile hammer used for size of each pile?
- 10. Hammer cushion suitable to prevent damage?
- 11. Staff Bridge consulted for possible usage of pile driving analyzer (PDA)?
- 12. Are a minimum of 2 piles per structure monitored?

13. Driving head in accordance with manufacturer's recommendation?
14. Driving leads adequate?
15. Driving equipment approved by Project Engineer?
16. Test piles required?
17. Flanges orientated per layout?
18. Predrilling required? If yes, are hole diameters correct?
19. Driven to minimum specified tip elevation?
20. Driven to virtual refusal?
21. Steel pipe piles free of water or foreign debris prior to filling with concrete?
22. Certified welder qualified to weld splices?
23. Copy of Welder Certificate on file?
24. Splices approved and recorded?
25. Defective piles corrected?
26. Pile cutoffs measured and documented?
27. Staff Bridge consulted if piling deviates from plans and specifications?

503 DRILLED CAISSONS

1. Approved concrete mix design?
2. Locations adequately staked and referenced?
3. Underground utility conflicts checked and resolved?
4. Drilling rig suitable for the work?
5. Drilled shaft plumb?
6. Final centerline of shaft per plan location?
7. Excavation protected from persons or materials falling into hole?
8. Oversized protective casing required?
9. Excessive caving eliminated?
10. Drilled hole pumped free of water and cleaned of debris?
11. Drilled hole to proper elevation, and minimum embedment obtained and documented?
12. Reinforcing steel cage inspected and approved?
13. CSL tubes installed correctly, if required?
14. Necessary splices approved?
15. Steel cage placed immediately prior to placing concrete?
16. Steel cage adequately supported and checked for bottom and side clearances?
17. Approved spacers provided at proper intervals?
18. Additional steel necessary to stiffen cage?
19. Steel casing properly sized and oiled?
20. Casing removed properly?
21. Reinforced cage and concrete elevation checked after casing removed?
22. Concrete placed within required time of drilling?

23. Concrete placed in one continuous pour?
24. Concrete dropping straight down without hitting sides of holes or reinforcing cage?
25. Engineer approved concrete to be placed under water?
26. Water-diluted concrete at top of caisson removed?
27. Final location of projecting reinforcing steel checked in all directions including splice length?
28. Concrete vibrated?
29. Top of caisson at planned elevation?
30. Top surface of concrete caisson properly cured?
31. Projecting steel adequately cleaned?
32. QA testing results (sonic, CSL, etc.) documented?
33. Form 1333 completed?

504 MECHANICALLY STABILIZED EARTH (MSE) WALLS
 [also applicable to
GEOSYNTHETIC REINFORCED SOIL (GRS) WALLS]

1. Pre-construction conference held? Wall installer's or foreman's qualifications verified?
2. Materials as specified? Vendor or proprietary product supplier for wall facing identified?
3. Shop drawings and forms approved and submitted to Staff Bridge for documentation control?
4. Form 1401 or 1402 completed during construction? (Forms may be completed and submitted multiple times depending upon quantity and inspection frequency, especially for freeze and thaw resistance requirements.)
5. Forty-foot test wall constructed in presence of Manufacturer's technical representative?
6. After excavation and proof roll, does foundation material meet required bearing capacity?

509 STEEL STRUCTURES
510 STRUCTURAL PLATE STRUCTURES

1. Field welding approved?
2. Reviewed Erection Plan?
3. Falsework required?
4. Falsework conforms to drawings?
5. Inspection of bearing devices completed?
6. Anchor bolts acceptable?
 - a. If straightening is required, has method been approved?
 - b. Repair to galvanized coatings required?
7. For welded stud shear connectors, did Manufacturer furnish the Engineer with a certification as required by AWS D1.5 paragraph 7.3.3?

8. Did Contractor furnish certification that gas or gas mixture was suitable for intended application?
9. Bearing surfaces and splice connections adequately cleaned?
10. Connections completed adequately prior to removing supports?
11. Misfits reported to Project Engineer?
12. Project Engineer approved method of correcting misfits?
13. Field connections completed and checked?
14. Bolts approved and proper torque applied?
15. Surface preparation completed and accepted?
16. Uncoated or damaged areas field coated with shop primer?
17. Final painting procedures conform to specifications?

512 BEARING DEVICE

1. Type of bearing device designated by plans?
2. Shop drawings approved?
3. Bearing devices pre-inspected prior to delivery and required certifications provided?
4. Bearings packaged and protected from damage?
5. Bearing seat checked for correct elevation within required tolerances?
6. Concrete surfaces beneath bearings within tolerance, clean and free of cracks?
7. Manufacturer's representative present during installation of bearing devices?
8. Proper placement and alignment established and checked to allow for temperature, post tensioning and shrinkage as shown on plans?
9. No interference between anchor bolts and upper part of device?
10. Sole plate placed correctly for grade and superelevation?
11. Full contact between sole plate and bottom flange of girder?
12. Following completion of superstructure
 - a. Alignment of bearing devices checked?
 - b. Manufacturer's representative certified in writing that bearing devices installed correctly?
13. Devices protected from application of structure coatings?

515 WATERPROOFING MEMBRANE

1. Membrane material approved?
2. Does membrane extend up the curb facing or barrier 2" above the final pavement height? (Typically for a new

bridge, we have 3" of asphalt, so the membrane would extend 5" up the curb.)

3. Is deck surface dry and ambient weather 50° F or above?

518 WATERSTOPS AND EXPANSION JOINTS

1. Type of waterstop or expansion device to be installed?
2. Shop drawings for modular expansion devices and working drawings for regular expansion devices reviewed?
3. Materials pretested and certified by manufacturer?
4. Manufacturer's literature reviewed for proper installation procedures?
5. Joint opening checked for proper alignment, grade and dimensions?
6. Qualified manufacturer's representative present for installation of expansion device?
7. Cleaning, preparation and installation procedures per specification?
8. Expansion joint system installed flush with surface of bridge deck?
9. Finished surface meets smoothness criteria?
10. Completed installation watertight?

519 THIN BONDED OVERLAY (POLYESTER CONCRETE)

1. Does Contractor have at least five years of experience and 10 successful projects?
2. Certified Test Report submitted for materials?
3. Trial application performed successfully?
4. New bridge deck cured for at least 28 days?
5. Proposed system plan approved by Engineer at least 15 days prior to delivery of materials?
6. Does Contractor's paver have ski or string-line grade control?
7. Has scale been calibrated and are weight/batch tickets legible?
8. Has deck been properly prepped (i.e. cleaned, shot-blasted and dried) and within the specified temperature range (40-100° F)?
9. Overlay allowed to cure sufficiently?

601 STRUCTURAL CONCRETE

1. Structural Concrete Pre-placement Conference held?
2. Design mix approved for class of concrete?
3. Truck mixer certification for all trucks?

4. Batch ticket indicates conformance to mix design?
5. Batch ticket contains all required information?
6. Truck operator added water? Revolutions?
7. Following items checked and recorded
 - a. Discharge time, mix temperature?
 - b. Water/cementitious material ratio?
 - c. Air content?
 - d. Slump?
 - e. Revolutions at mixing speed?

FORMS

1. Forms mortar tight and sufficiently rigid to prevent distortion?
2. Unsuitable forms rejected?
3. Inside surfaces cleaned of dirt, mortar and foreign materials?
4. Form oil acceptable?
5. Form release agent compatible with finish coatings?
6. Embedment materials and block outs (e.g. conduits, drains, utility blockouts, anchoring devices) placed and adequately secured?
7. Omitting backforms approved?
8. Required chamfer strips in place?
9. Metal form ties acceptable?
10. Dirt, chips, sawdust, water or other foreign materials removed from between forms?
11. Wood forms thoroughly moistened with water prior to concrete placement?
12. Concrete obtained required strength and/or minimum elapsed time per specifications prior to form removal?
13. Forming materials removed when permanent access is available to portions of structures?
14. Inside of box girders cleaned with an industrial vacuum?

PRECAST PANEL DECK FORMS

1. Bearing area beneath the precast panel form checked?
2. Minimum vertical and horizontal clearances specified on the plans provided?
3. Fit between meeting surfaces of panels in accordance with specifications?
4. Areas damaged from welding resolved per American Welding Society (AWS) D1.5, Section 3.10? (Welding to structural steel elements is prohibited.)
5. Support angles or steel elements for deck panels to be left in place and exposed to the atmosphere galvanized?

PERMANENT STEEL BRIDGE DECK FORMS

1. Erection drawings provided?
2. Forms, materials and installation in accordance with erection drawings?
3. Attachments made by approved methods?
4. Welding arcs prevented from contacting steel girder flanges?

FALSEWORK

1. Falsework drawings or statement provided?
2. Certified falsework drawings reviewed?
3. Contractor certified that falsework materials and construction conform to design?

PLACING AND CURING CONCRETE

1. Minutes from Structural Concrete Pre-placement Conference reviewed and updated?
2. Forms, reinforcing steel and embedments approved?
3. Construction joints adequately cleaned and loose concrete removed?
4. Concrete mix temperature between 50 and 90 degrees F?
5. Method of placing concrete to avoid segregation?
6. Vibrators providing adequate consolidation?
7. Concrete placed in accordance with approved placing sequence?
8. Drainage and weep holes at proper locations and elevations?
9. Construction joints only at approved locations?
10. Reinforcing dowels required in adjacent existing concrete?
11. Proper finish provided on all surfaces?
12. Concrete temperature maintained in accordance with the Specifications for the curing period?
13. Curing method approved?
14. Approved curing compound applied at proper rate?
15. Sampling method and location approved?

FINISHING CONCRETE

1. Class 1 finish applied immediately after form removed?
2. Surfaces adequately cured prior to applying Class 5 or structural coating?
3. Surfaces thoroughly cleaned by water blasting and/or sand blasting within required time?
4. Coating material and color approved?

5. Proper number of coats and application rates used?
6. Surface temperatures within allowable limits to apply coating?

BRIDGE DECKS

1. Reinforcing steel checked prior to deck placement?
2. Required thickness and clearance maintained during dry run of finishing machine?
3. Deck machine supported beyond edge of deck?
4. Provisions and safety items for protecting workers and traveling public adequately addressed?
5. Mechanical vibrators providing required consolidation?
6. Finishing machine providing a uniform sealed finish with minimum ridges or air voids in surface?
7. Hand work kept to a minimum?
8. Water only applied with an approved fog spray?
 - a. Water not used to aid finishing?
9. Straightedge used where necessary?
10. Surface smoothness meets requirements for asphalt or concrete riding surface?
11. Method of cure approved?
12. Curing applied immediately behind finishing operation without damaging finished deck?

602 REINFORCING STEEL

1. Grade, size type and number of bars as required?
2. Supports and ties coated for epoxy bars?
3. Bar lists provided?
4. Delivered bars protected from damage?
5. Field bending procedures followed?
6. Clearance and concrete coverage of reinforcement adequate?
7. Adjustments to reinforcement approved?
8. Splice lengths appropriate for size and type of bar?
9. Bars tied at all intersections or as required?
10. Upper mat of bars in a bridge deck tied properly to lower mat?
11. Slab bolsters and chairs at proper locations and spacing?
12. Welding or torch cutting of reinforcing bars?
13. Bar splices correctly staggered?
14. Damaged epoxy bars repaired?
15. Bar placement and clearance in accordance with plans?
16. Bars and embedments correctly placed so that concrete can be adequately consolidated?

17. Embedded bars adequately supported to eliminate field damage and displacement?
18. Bars from an approved steel mill
19. Epoxy coating (if specified) from an approved epoxy coater?

603 CULVERTS AND SEWERS

604 MANHOLES, INLETS, AND METER VAULTS

617 CULVERT PIPE

619 WATER LINES

623 IRRIGATION SYSTEM

REVIEW SAFETY REQUIREMENTS FOR TRENCHING OPERATIONS AND CONFINED SPACE ENTRY. DO NOT ENTER MANHOLES, INLETS, VAULTS, TRENCHES OR OTHER CONFINED SPACES WITHOUT PROPER SAFETY PRECAUTIONS.

1. Pipe proper
 - a. Size?
 - b. Type?
 - c. Length?
 - d. Class?
 - e. Thickness?
 - f. Schedule?
 - g. Gauge?
2. Proper material certification?
3. Pipe coating required?
4. Smooth lined pipe used for irrigation?
5. Pipe damaged or defective?
6. Pipe elevations and locations properly staked?
7. Plan elevations and locations meet requirements for existing field conditions?
8. Manholes and inlets properly staked?
9. Underground utility conflicts located and/or potholed and resolved?
10. Grout mixed in correct proportions if pipe is to be jacked?
11. Trench excavation correctly aligned and proper width?
12. Trench bed properly graded and compacted?
13. Rock encountered in trenching removed to 12" below grade?
14. Pipe placement begun at downstream end?
15. Lower section of pipe in contact with bedding along its entire length?
16. Bell or grooved end of concrete pipe or outside lap of metal or plastic pipe placed upstream?
17. Pipe joints sealed or properly banded?
18. Grouting of joints required?
19. Lift holes plugged?
20. Alignment and elevation checks performed regularly?

21. In-place pipe checked for damage prior to backfilling and again before accepting project?
22. Sewer lines pressure tested for water tightness prior to backfilling?
23. Alternate material approved for Class 1 or 2 structure backfill?
24. Backfill material placed simultaneously on both sides of pipe in layers of 6" or less?
25. Required compaction obtained prior to placing successive layers?
26. Damage or displacement to pipe or structure corrected?
27. Pipe and structures cleaned prior to acceptance?
28. Trenches in roadway resurfaced before opening to traffic?

607 FENCES

1. Type of fences and gates required?
2. Barbed and woven wire rolls tagged with required information?
3. Steel posts checked for weight, length, and coating?
4. Timber posts field inspected for preservative, straightness and size?
5. Hardware per standards?
6. Fence installed on correct side of post?
7. Metal posts set to face correct direction?
8. Temporary fence required for stock control?
9. Area where fence is to be installed cleared?
10. Fence installed approximately 6" inside CDOT right of way (ROW)?
11. Line braces installed as necessary at grade changes?
12. Concrete set sufficiently around posts and braces to hold fence stress?
13. Posts set at required elevation and alignment?
14. Working drawings for sound walls reviewed?
15. For sound barriers, are components tightly abutted?

608 SIDEWALKS AND BIKEWAYS

609 CURB AND GUTTER

1. Subgrade
 - a. Graded and compacted properly?
 - b. Soft spots identified and corrected?
 - c. Cross-slope, elevation, and alignment correct?
 - d. Ground conditions suitable?
 - e. Approved?
2. Reinforcing
 - a. If required, type and kind?

- b. Correctly placed?
- 3. Forms
 - a. Set to proper line and elevation?
 - b. Set per grade stakes?
 - c. Firmly set and staked?
 - d. Correct dimensions?
 - e. Lightly oiled for concrete release?
 - f. Correctly set for inlet sections, handicap ramps and driveways?
 - g. Correctly set to handle all drainage per plan typical section?
- 4. Slipform paver method
 - a. Grade trimmed to correct cross-slope and elevation?
 - b. Gradeline correct per grade stakes?
 - c. Inlet sections, handicap ramps and driveways correctly located?
 - d. Electronic controls set per grade line?
 - e. Pan constructed to spill or catch per typical section?
 - f. Alignment correct?
 - g. Extruded sections meet plan typical?
- 5. Concrete
 - a. Approved mix design?
 - b. Test requirements met?
 - c. Acceptable finish achieved?
 - d. Properly consolidated?
 - e. Finish accomplished without use of water?
 - f. Curing compound an approved type, applied at appropriate time and rate?
 - g. Cold weather protection necessary?
- 6. Joints
 - a. Edged where required?
 - b. Expansion material of correct type and placed where required?
 - c. Expansion material extending full depth?
 - d. Types and locations match joints in adjacent concrete?
 - e. Transverse type per plan?
 - f. Expansion material an approved type?
- 7. Backfill started at correct time?
- 8. Asphalt curb
 - a. Location and layout correct per plans and drainage requirement?
 - b. Asphalt mix correct?
 - c. Tack coat proper type and rate?
 - d. Alignment correct?
 - e. Automatic machine forming uniform shape?
 - f. Painting required?
 - g. Fog coated after placement?
- 9. Asphalt sidewalks and bikeways

- a. Alignment and elevation correct?
- b. Bed course material correctly compacted?
- c. Job-mix formula approved?
- d. Tack coat proper type and rate?
- e. Compaction achieved?
- f. Equipment acceptable?

612 DELINEATORS AND REFLECTORS

1. Utilities located?
2. Layout per current standard for spacing, location and color?
3. Type of posts determined?
4. Height of post, height of reflector, angular placement, and distance from edge of pavement per current standard?

STEEL POSTS

1. Checked for weight, length, and condition of coating?
2. Conform to current standard?
3. Certificate of Compliance?

FLEXIBLE POSTS

1. Certificates of Compliance?
2. Checked for compliance with specifications?

REFLECTORS

1. Containers marked with CDOT stamp indicating preinspection or samples submitted to Materials Lab?
2. Correct number on each post and color per current standard installed?
3. Reflectors for concrete barrier per current standard?

614 TRAFFIC CONTROL DEVICES

1. Utilities located?
2. Sign locations correspond to plan detail or latest Standard?
3. Conflicts necessitating layout changes?
4. Check of signing per specifications and Manual of Uniform Traffic Control Devices (MUTCD)?
5. Sign removals and installations follow logical sequence to maintain traffic safety?
6. Concrete, reinforcing steel, and backfill for footings per specifications?
7. Permanent barricades required?

8. Breakaway devices and ground cover over footers and caissons meet current standard?
9. Masking of sign legends required
10. Certificates of Compliance?

SIGNS

1. Detailed layouts for Class III and special signs furnished to Contractor?
2. Sign brackets including bolts, shop painting, and galvanizing pre-inspected?
3. Back side of sign panels date-stamped?
4. Sign illumination required?
5. Modifications of existing sign legends required?
6. Shop drawings reviewed for sign bridges and cantilevers?

POSTS

1. Steel post Certificates of Compliance received including materials, welding and coating?
2. Timber posts grade marked or certification received?
3. Portions of timber posts that are to be underground treated with acceptable material?
4. Timber posts drilled for break-away?
5. Modifications of existing posts required?

TUBULAR STEEL SIGN SUPPORTS

1. Installation of tubular steel sign supports supervised and certified by manufacturer-trained installer?

IMPACT ATTENUATORS

1. Installation of impact attenuators supervised and certified by trained manufacturer's representative or certified installer?

TRAFFIC SIGNALS

IT IS RECOMMENDED THAT THE REGION TRAFFIC ENGINEER BE CONSULTED FOR ASSISTANCE DURING INSTALLATION AND ACCEPTANCE OF TRAFFIC SIGNALS.

1. List of equipment and materials approved for traffic signals?
2. New signal installation coordinated with existing system (removal or tie-in)?

3. Final traffic signal installation drawings and wiring diagrams furnished?
4. Manufacturer guarantee for signal equipment provided?
5. Copy of controller diagram and intersection-phase diagram placed in controller cabinet?
6. Magnetic, magnetometer or micro loop detectors required?
7. Detector wire at appropriate depth?
8. Slots properly filled with correct material after installation of detector wire?
9. Traffic signal poles
 - a. Poles and mast arms of same manufacture?
 - b. Certification received including materials, welding and coating?
 - c. Located per plan and as directed?
 - d. Plumb?
 - e. Nuts and washers correctly installed?
 - f. Base properly grouted?
10. Pedestal poles and push buttons properly located?
11. Traffic signal faces and pedestrian faces, type and location per plan or as directed?
12. Signal faces placed and focused for maximum visibility?
13. Conduit coupling acceptable?
14. Pull boxes and valve boxes placed per plans and specifications or as directed?
15. Trenches backfilled and patched as specified?
16. Necessary field tests completed per plans and specifications?
17. Emergency pre-emption pre-wired or tested?
18. Entity ready to accept operation of system?
19. Final disposition of removals?
20. Pull lines blown in unused conduits?

618 PRESTRESSED CONCRETE

1. Contractor QC Manager certified?
2. QCP submitted by Contractor and reviewed by Staff Bridge?
3. For post-tensioned box girders, has the Contractor inspected interiors of box girders for grout leakage?
4. Has concrete batching and testing equipment been calibrated and in good condition?
5. Are forms properly treated with form release agent and tightly assembled?
6. Has concrete been finished and cured in accordance with plans?
7. Is jacking equipment calibrated?
8. Verify jacking strand size and required jacking forces.

9. Verify grout type, consistency, mixing and pumping procedures.
10. Grouting from the correct locations (i.e. lowest to highest point)?
11. Any signs of bleed water at anchorages, grout ports or vents?
12. For prestressed girders, check for spalls or cracking.
13. Are the drain tubes open at the bottom (prestressed boxes only)?
14. Has the 193A (or 193B for Consultant QA) been completed and provided.
15. Did QC employee witness and verify final tensioning operations and record jacking forces and net measured elongations?

625 CONSTRUCTION SURVEYING

WORK PERFORMED BY CONTRACTOR WHEN CONSTRUCTION SURVEYING IS A BID ITEM.

1. Horizontal control
 - a. All CDOT-established points checked before being used and project control points located and checked within tolerances?
 - b. Project center, control, and survey line points (each station with points of tangency and curve points located and checked within tolerances?
 - c. Points properly referenced, marked and flagged for protection?
 - d. Discrepancies brought to attention of Project Engineer?
 - e. Field notes in format as specified in CDOT Survey Manual?
2. Vertical control
 - a. CDOT-established bench marks checked prior to usage?
 - b. Field notes formatted as required by CDOT Survey Manual?
 - c. New bench marks and connections to existing network adequately described?
 - d. Elevation closures calculated, analyzed, and documented in meeting tolerances?
3. Slope stakes
 - a. Trial and error procedure used as described in Survey Manual?
 - b. If another method was used were field locations recorded to compare with calculated locations?
 - c. Slope stakes checked and within tolerance for position and elevation?

- d. Slope stakes marked on front side as described in Survey Manual?
 - (1) Front side marked with
 - (a) Cut or fill?
 - (b) Distance from center/survey line?
 - (c) Slope ratio?
 - (d) Base distance or distance from center/survey line to point of slope selection?
 - (e) Other information such as offset distance, benching of slopes?
 - (2) Backside marked with
 - (a) Station?
 - (b) Alignment number (e.g., center, survey, detour)?
- e. Slope stakes set within right of way?
- f. Slope stakes and references correctly marked with flagging and lath?
- g. Required site or landscape grading staked by grid or contour?
- h. Final survey made and submitted for areas of design or field changes?
- i. Field notes formatted as required by Survey Manual?
 - (1) Following documented on right-hand page
 - (a) Elevation of ground at catch point?
 - (b) Cut or fill?
 - (c) Distance from center or survey line?
 - (d) Slope ratio?
 - (2) Following documented on left-hand page
 - (a) Station?
 - (b) Point of slope selection grade?
 - (c) Level field work?
- j. As-staked and/or machine control earthwork quantities submitted to Project Engineer prior to completion of 20% of earthwork phase?
- k. Discrepancies in plans brought to attention of Project Engineer?
- 4. Blue tops
 - a. Placed at specified intervals longitudinally and transversely?
 - b. Placed securely to hold lateral position and elevation while being used?
 - c. Placed within appropriate tolerances for lateral position and elevation?
 - d. Placed for each course of subbase and base material?
 - e. Field notes formatted as required by Survey Manual?
 - f. Calculations include each blue-top elevation?

- g. Calculations checked?
 - h. As-set elevations documented?
 - i. Discrepancies in plan elevations brought to attention of Project Engineer?
5. Minor structures
- a. Flowline grades set to appropriate tolerance for culverts, pipes, inlets, and manholes?
 - b. Inlet grades checked for coincidence with curb and gutter or appropriate adjacent grades?
 - c. Stakes and references appropriately written and flagged?
 - d. Structures staked to fit terrain?
 - e. Field notes formatted as required by Survey Manual and acceptable to Project Engineer?
 - f. As-staked skews, lengths, and cambers, if specified, for pipes and culverts documented?
 - g. As-staked inlet and outlet flowline elevations documented?
 - h. Required and actual cover documented?
 - i. References include
 - (1) Cut or fill?
 - (2) Offset distance?
 - (3) Rise or fall per foot (percent slope)?
 - j. Discrepancies in plans brought to attention of Project Engineer?
6. Major structures
- a. Required data available to Surveyor, either in plans or from Project Engineer?
 - b. Staking completed prior to beginning construction?
 - c. Adequate references set to construct proposed structure?
 - d. Stakes and references appropriately written and flagged?
 - e. Stakes checked by triangulation, traverse, or coordinates to verify calculated positions?
 - f. Specified tolerances met?
 - g. Complete sketch of structure including stationing and elevations on piers, abutments and bearings, span distances, skew angles, wing wall angles, wing wall lengths, reference lines, and offset point locations submitted to Project Engineer?
 - h. Calculations and data on sketch checked and certified?
 - i. Structure and roadway grades checked for coincidence?
 - j. Discrepancies in plans brought to attention of Project Engineer?
7. Miscellaneous (refer to specific bid item for further information)

- a. Topsoil, seeding and mulching?
- b. Fencing?
 - (1) Right of way monuments placed prior to starting fencing operations, either temporary or permanent?
 - (2) End posts, corner posts, and gates field located per Project Engineer?
- c. Guardrail
 - (1) Earthwork staked to fit flares?
 - (2) Appropriate slope from edge of pavement?
- d. Signs
 - (1) Post lengths verified to fit slopes?
- e. Pavement markings?
- f. Traffic signals?
- g. Retaining walls?
- h. Utility work?

627 PAVEMENT MARKINGS

1. Specific pavement marking plan, if required, or Contractor provided layout of existing conditions?
2. Conflicts resolved among typical section, pavement marking plan or existing markings?
3. Certificate of Compliance or Certified Test Report?
4. Full compliance marking required and placement timely?
5. Full compliance temporary markings provided for cross-overs, detours, and no passing zones?
6. Pavement markings of appropriate length, width and spacing?
7. Roadway surface clean and dry?

PAVEMENT MARKING WITH PAINT

1. Paint and beads approved?
2. Pavement and air temperature in accordance with the specification?
3. Painting equipment capable of maintaining alignment and application rate?
4. Paint and bead application rate correct?

EPOXY PAVEMENT MARKING

1. Equipment capable of metering components at correct ratio and maintaining correct temperature?
2. Pavement and air temperature in accordance with specifications?
3. Epoxy paint thickness and rate of beads per specifications?

THERMOPLASTIC

1. Suitable equipment provided for heating, mixing, extruding and controlling flow of material?
2. Primer applied and tacky prior to placing thermoplastic markings?
3. Continuous uniformity in stripe dimensions being maintained?
4. Beads applied almost instantly on completed line?
5. Proper thickness maintained?

PREFORMED PLASTIC PAVEMENT MARKING

1. Installation of preformed plastic pavement marking supervised and certified by manufacturer-trained installer?

EXISTING COLD PAVEMENT

1. Surface for application, dry and properly prepared?
2. Sandblasting required?
3. Primer applied?
4. Minimum air temperature per specifications?
5. Material cut and laid out prior to removing paper backing?
6. Roller of appropriate weight?
7. Splice sequence appropriate?

HMA INLAY

1. Material applied in proper locations and sequence to new mat?
2. Pavement surface at recommended temperature to obtain complete inlay?
3. Final alignment acceptable?

PAVEMENT MARKING TAPE

1. Tape materials in compliance?
2. Tape suitable for temporary use?
3. Proper marking lengths and intervals?
4. Location per plans or as directed?
5. Tape installed in accordance with manufacturer's recommendations?
6. Tape clean?
7. Surface for tape suitably prepared?
8. Tape pressed down until it adheres?
9. Conflicts of tape with pavement markings completely removed?

10. Temporary tape being removed prior to subsequent lifts of HMA?

630 CONSTRUCTION ZONE TRAFFIC CONTROL

ON-SITE DOCUMENTS

1. Manual of Uniform Traffic Control Devices (MUTCD) with FHWA revisions and Colorado supplement?
2. Traffic Control Plan (TCP) sheets, Standard Plans, detour plan and profile sheets, if applicable?
3. Each Method of Handling Traffic (MHT):
 - a. Approved by Contractor and CDOT for each construction operation?
 - b. Tabulation of traffic control devices and flaggers?
 - c. Match CDOT Form 568 for location and approved speed limitations?
 - d. Provide for emergencies, special events, pedestrian, bicycle, and other non-vehicle traffic?
 - e. Provide for access, construction and maintenance, turn around locations, and median crossings?
 - f. Contractor checking and verifying horizontal and vertical clearances for every MHT?
 - g. All MHTs submitted a minimum of 5 days before implementation?
 - h. Have a specific MHT number?
4. American Traffic Safety Services Association (ATSSA) or Colorado Contractors Association (CCA) certifications for Traffic Control Supervisor (TCS) and CDOT certifications for all flaggers?
 - a. Certifications current?
 - b. Match person with card?
5. 24-hour emergency phone numbers on site?

DAILY DIARY

1. Traffic Control Supervisor diary reviewed by CDOT personnel?
 - a. Problems or unsafe conditions reported?
 - b. Accident reports attached?
 - c. Flaggers' start and stop times and device quantities reasonable?
 - d. Approved Method of Handling Traffic (MHT) number?
 - e. Set up and take down times documented?
2. Discrepancies being corrected in a timely manner?

3. Weekly night inspections conducted and properly documented?
4. Device cleaning and maintenance documented?
5. Engineer notifying Permit Unit of Maintenance and Operations Branch of any restrictions 72 hours in advance of implementing MHT?

TRAFFIC CONTROL MANAGEMENT

1. Traffic Control Supervisor (TCS) American Traffic Safety Services Association (ATSSA) or Colorado Contractors Association (CCA) certified for duration of project?
2. TCS has current CDOT Flagger certification to relieve flaggers?
3. TCS has on-site documents as required by specifications (e.g., current Part VI of MUTCD, Plan S-630-1)?
4. TCS
 - a. Available on project at all times?
 - b. Appropriate clothing, hats and vests?
 - c. Making and documenting periodic project inspections including nighttime?

FLAGGERS

1. CDOT Flagger Certifications
 - a. Valid for duration of project?
 - b. Person matches card?
2. Flagger's dress and equipment comply with CDOT Specifications and Manual on Uniform Traffic Control Devices (MUTCD) recommendations?
 - a. Appropriate hard hat and vest?
 - b. "Stop/Slow" paddle correct size, shape and retroreflectivity?
 - c. Clothing and equipment retroreflectorized if working at night?
3. Proper flagging methods used?
4. Flagger location meets following criteria
 - a. Flagger facing oncoming traffic?
 - b. Visible to oncoming traffic?
 - c. Proper distance in advance of work?
 - d. Flagger's station illuminated if working at night?

AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) "QUALITY STANDARDS FOR WORK ZONE TRAFFIC CONTROL DEVICES" MAY BE USED AS A GUIDELINE WHEN INSPECTING SIGNING AND DEVICES.

CONSTRUCTION SIGNING

1. Signs conform to specifications, M & S Standards and Manual of Uniform Traffic Control Devices (MUTCD) recommendations?
 - a. Size, shape, and color?
 - b. High brightness retroreflective sheeting required?
 - c. Appropriate for location and as per approved MHT?
2. Signs installed properly and in satisfactory condition?
 - a. Signs conform to Traffic Control Plan (TCP) and approved Method of Handling Traffic (MHT)?
 - b. Signs clean, legible, and in good repair?
 - c. Accommodations made for breakaway on post-mounted signs?
 - d. Temporary signs properly weighted, mounted, and at correct height?
 - e. Signs not in use properly stored
 - (1) Laying flat, including base?
 - (2) Beyond clear zone and not visible to traffic?
 - (3) Outside normal roadside recovery area?
 - (4) Not on landscaped areas or sidewalks?
 - f. Conflicting permanent signs properly masked?

CONSTRUCTION TRAFFIC CONTROL DEVICES

1. Flashing arrow panels in correct locations and functioning properly?
 - a. Lights working and in correct mode?
 - b. Auto dimmer for night use in working order?
 - c. Correct panel size and mounted at correct height?
2. Channelizing devices conform to requirements of specifications, MUTCD, TCP, MHT, etc.?
3. Devices
 - a. Correct dimensions, clean, and in serviceable condition?
 - b. Equipped with appropriate retroreflectorized sheeting or collars?
 - c. Placed correctly with proper taper lengths and spacing?
 - d. Equipped with functional warning lights that are set in correct mode?
 - e. Weighted by acceptable methods?
4. Temporary concrete guardrail correctly placed with proper end section treatment, correct color, connected stabilization pins, and appropriate retroreflectorization?

5. Impact attenuators properly located and installed according to plans, specifications or manufacturer's recommendations?
 - a. Correct weight of proper material placed in each barrel?
 - b. Measures taken to prevent filler materials from freezing?

TEMPORARY IMPACT ATTENUATORS

1. Installation of temporary impact attenuators supervised and certified by trained manufacturer's representative or certified installer?

TEMPORARY PAVEMENT MARKINGS

1. Temporary pavement markings meet requirements of MHT, TCP, striping plan, and appropriate specifications?
2. Temporary markings placed correctly and in timely manner?
3. Conflicting markings completely removed?

MISCELLANEOUS ITEMS

1. Provisions made for safety of pedestrian and other non-vehicle traffic?
2. Bike or recreation trail detours correctly identified and signed?
3. Pilot car
 - a. Properly identified per MUTCD?
 - b. Operation conducted properly?
4. Clear-zone free of obstructions (vehicles, materials, equipment, etc.)?

641 SHOTCRETE

Submittals

1. Shotcrete Pre-placement Conference held?
2. Design mix approved or prepackaged material on Approved Products List?
4. Shop Drawings submitted?
5. Application method submitted?
6. Quality control plan submitted?
7. Test panel submitted (if required)?
8. Color chips submitted (if required)?

Site Preparation

1. Surfaces prepared to line & grades?
2. Survey submitted?
3. Surfaces not frozen?
4. Drainage system installed?
5. Loose material removed?

Placement

1. Shotcrete applied in the specified thickness?
2. Shotcrete uniform and without segregation?
3. Test panels cast?
4. Shotcrete not slumping excessively?
5. Rebound removed and disposed of?
6. For additional layers, is the curing compound removed and loose material removed from the underlying layers?

Curing

1. Cure applied?
2. Length of cure?
3. Cold weather protection required?

Acceptance

1. Segregation, honeycombing, delamination or excessive cracking observed?
2. Test panels cured in the same manner as the structure?
3. Cores obtained from the test panels at proper times?

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