



June 11, 2014

CM001

To: ODOT Technical Center Managers, Area Managers, and Project Managers  
From: Joe Squire, PE, State Construction and Materials Engineer *JS*

**Subject: Non-typical dimension materials and constraints that may impact project schedules**

As discussed at the June 4<sup>th</sup> PDLT meeting, the Construction Section has been approached by Industry through our monthly ODOT Industry Leadership meeting regarding the inclusion of certain materials that require long lead times. The issue concerns manufacturing constraints, shipping constraints, or both. Associated General Contractor (AGC) representatives indicated several recent ODOT projects have included non-typical dimension steel bid items, i.e. not off-the-shelf. The result has been manufacturers' inability to deliver in a timely fashion, thus impacting the construction schedule or budget. AGC has provided multiple examples, two of which are briefly discussed below.

By way of example provided by AGC and verified by the Construction Section, a project that bid in February 2014 and was awarded in March 2014 included a non-typical dimension H-pile. This particular project also has an In-Water-Work-Period (IWWP) starting July 1<sup>st</sup> of each year. The project's critical path ran through the H-pile and the structures related to the H-pile. This is a planned two season project as indicated by ODOT. Had the steel items not been obtained through extra cost and effort, the IWWP would have been missed and the project delayed by up to 1-year.

The contractor found that the only two manufacturers for this non-typical H-pile dimension are located in the eastern United States. Of the two manufacturers, only one manufacturer would commit to the contractor with "roll dates". Note: this was not an isolated issue to only one contractor. Upon award date, the contractor committed to the earliest of the "roll dates".

Please find an example of how a Nucor Steel Yamato mill in Arkansas sets roll dates at: <http://www.nucoryamato.com/staticdata/RollCastSchedule.pdf>. One will note in the example given, the mill has certain "roll dates" for a given steel product. Once complete with a given product type, the mill sets up for a different product type, meaning if a contractor misses the "roll date" then delay is likely to occur.

Compounding the issue, H-pile and other steel products are most economically transported from eastern United States manufacturers by rail. The contractor also indicated that competition for rail transport is fierce and has a priority system as follows:

1. Oil
2. Mid-western grain products
3. Autos
4. Everything else

Please see <http://agfax.com/2014/04/11/farmers-complain-rail-system-give-oil-shipments-priority-grain-dtn/> as independent verification of this assertion. The winter weather issues in the eastern United States further compounded this rail priority system as the weather shut-down rail and truck traffic multiple times leading to a huge freight backlog.

The contractor quickly learned that despite getting the earliest available “roll date”; H-pile delivery to the job site would adversely impact the first season IWWP. The “roll date” and H-pile potential transport time constraints were apparently not considered by the designer relative to the bid let and bid award dates, in the example provided.

Another AGC example was provided in which a pipe pile of non-typical wall thickness dimension has been incorporated into a project. The project consumed only about 75% of the several thousand linear feet of pipe pile purchased. Again this pipe pile was only available from an east coast manufacturer as verified by the Construction Section Structures Unit. Because the pipe pile was non-typical in dimension, the contractor does not want to hold the pile for potential future projects, nor is it returnable to the supplier. Had the pile been a typical dimension even if more robust and allowed by the engineer, then the pile may have been either returned to the supplier or held by the contractor versus a purchase by ODOT per specification and CCO.

**Action Requested:**

1. Please discuss this memo with your project delivery teams
2. Designers should consider:
  - a. Time constraints related to manufacturer ability to produce, i.e. “roll dates”;
  - b. Freight options and capacity, look for western US options when possible;
  - c. Weigh potential weather issues if bid award is early in winter months and the materials are coming from eastern US suppliers;
  - d. Project constraints such as IWWP or other known events as related to critical path items **and** bid/award dates;
  - e. Use other materials options that may be more robust in the design yet are manufactured commonly, i.e. off-the-shelf; and
  - f. Incorporate the constraint time(s) into the project schedule.
3. Consider alternatives if offered by Industry
4. Construction Section, Structures Service Engineer is available to assist, if needed

Thank you for your future considerations.