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October 4, 2006

Mr. Bill Jeffers
Vanderburgh County Surveyor
One NW Martin Luther King Jr., Room 208
Evansville, IN 47708

Re: Shoe Carnival Distribution Center
NE Corner of SR 57 and Ruston Lane

Dear Mr. Jeffers:

On July 19, 2006, we received comments from your review of the above-referenced Shoe Carnival Distribution Center. Since then, there have been two other issues arise on this site that required our attention. One of them, of which you are no doubt aware, involved determination of the 100-year flood elevation through the Building Commissioners Office. The other involved the petroleum pipeline on the north end of the site, owned by Marathon Pipeline. Both of the issues involved things that would affect your comments. They are now resolved to the point we are comfortable returning plans to your office to continue your review.

Below is a list of your original comments, along with actions taken in response to each.

1. *The entrance roadway from "Russian Lane" (is this supposed to be Ruston Lane?) indicates over 400 feet of road surface draining without an inlet or subsurface drain system all to a single point of discharge apparently over the back of curb and into a swale in the southeast corner of the intersection of the entrance to the south parking lot. This condition will generate an excessive amount of run-off discharging through single apparently substandard designed outlet from the roadway. Provide exact details of the proposed structure to release the run-off from the road into the swale including temporary and permanent erosion/sediment control measures.*

- The entrance road was to drain north roughly 400 feet from Ruston Lane east through a curb turnout and into a swale. It was never our intent to drain it over the back of curb, which apparently wasn't clear from the original plan. We have now added a second curb turnout halfway between Ruston and the original turnout. The first 400 feet of the entrance drive between Ruston and the entrance to the south parking lot will be drained by two curb turnouts and through a swale into the dry detention basin. Riprap will be placed on the ditch banks at the turnout locations to prevent erosion. Details of the curb turnouts can be seen on Sheet C6.1.

RECEIVED BY THE
VANDERBURGH COUNTY
SURVEYOR'S OFFICE

10/6/06 am TBJ

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2. *The scant details given for the construction of the entrance roadway and its curbing indicate that the entire road surface and adjacent lawn surface area west of the entrance road, east of SR 57, and south of the entrance to the south parking lot will be graded to flow across the back of curb, east across the road surface and over the top of the east curbing, thence into the same swale as serves to drain the entrance road.*
 - The lawn between SR 57 and the entrance roadway will drain via overland flow onto the entrance roadway and through the curb turnouts above. All areas of the lawn steeper than 6:1 shall be covered by erosion control blanket. The entire area will be seeded to establish grass cover.
3. *The scant grading details available indicate the back of curb at the cross drainage point described above in #2 will create either a puddle of standing water or a diversion of the flow northward and into the entrance to the south parking lot.*
 - There will be two curb turnouts along the east curb line. Details of the curb turnouts are on Sheet C6.1.
4. *The swale currently under discussion requires a design including cross sections, flow line grades, a paved invert liner since its grade is less than 0.8%, and details of construction phase erosion/sediment control measures as well as final stabilization measures for post-construction lawn conditions.*
 - We have steepened up the grade on this ditch to one percent so a paved invert is no longer necessary. In addition, we have added cross-sections for each ditch proposed on our plan. All cross-sections can be found on Sheet C3.4. Erosion/sediment control procedures are on the erosion control plan, Sheets C5.1 and C5.2. Details for erosion control measures are on Sheet C5.3.
5. *Provide a structure number and design particulars for the discharge structure for the "250 L.F. of Ditch @ 1.00% Grade" located between the entrance road and the south parking lot. If this "ditch" serves as a "detention basin," then it requires a paved invert from one end to the other.*
 - This has been labeled as "Ditch B". Cross-sections for the ditch appear on Sheet C3.4. This particular ditch is not meant to function for detention, so a paved invert is not necessary.
6. *Provide construction details of the required paved invert along the bottom of the detention basin along the south parking lot.*
 - Detail of required paved inverts for the ditches has been added to Sheet C3.4, which also shows typical cross-sections of each ditch.
7. *Provide construction details of the curb breaks and paved flumes from the south parking lot into the detention basin.*
 - These details are located on Sheet C6.1 and are labeled as "curb turnouts."

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8. *Provide erosion/sediment control details for the detention basin and area between the basin and the parking lot both during construction and for establishing a stable post-construction lawn condition.*
 - The detention basin will be covered with erosion control blanket and grass seed after grade is established. It will also contain a rock check dam at the downstream end during construction to sediment leaving the basin during construction, prior to establishing vegetative cover. The area between the basin and the parking lot, along with all other non-paved areas, will be covered with grass seed after final grade is established. It shall also be temporarily seeded during construction if construction activity ceases in the area for more than 14 days. An "Erosion and Sediment Control Construction Sequence", on Sheets C5.1 and C5.2, outline erosion control implementation.
9. *The large open ditch receiving discharge from the southern area of the project and conveying it along the east side of the project appears to have flatter than 0.5% slope and will require a paved invert.*
 - This ditch is regulated by the Corps of Engineers as a "waters of the US", and under our permit through them, a natural channel bottom is required.
10. *Number all swales and show their design with cross sections, paved liner construction details where required, design invert elevations at upstream, downstream and break points, along with construction phase erosion/sediment control measures and post-construction details for stabilization.*
 - All proposed swales have been labeled as "A, B, C, etc...," their lengths and slopes have been labeled, and cross-sections are provided on Sheets C3.4. Erosion/sediment control measures can be found on Sheets C5.1-C5.3.
11. *Show exact construction details for the interception swale intended to capture run-off from the east side of the building. The contractor was unaware after viewing the plans that a swale even is intended for this area.*
 - There was an existing swale in this area, west of the large berm, which we had intended to remain undisturbed and be used post-construction. Since the contractor was unaware it was supposed to remain there, it's our understanding fill could have already been placed in the area. We've provided details for construction of a new swale in this area, along with cross-sections for the swale. These can be found on Sheets C3.1, 3.2, and C3.4.
12. *If downspouts are intended for roof drainage, show their locations and any connections to underground conduit or surface treatment to prevent erosion on the down slopes away from the building especially on the east side fill areas.*
 - We are labeling downspout locations east of the building on Sheets C5.1 and C5.2 and showing erosion control blanket to be placed at each location from the building east to the interception swale.
13. *Regarding the detention basin on the north side of the building:*
 - *a. A paved invert liner is required from the flared end section draining the west parking lot all the way to a point below the normal pool elevation.*

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- At the request of our client, in place of this swale, we've extended the wet detention basin west and then north to a point where the 36" RCP from under the truck parking area outlets into the pond. We've placed a Reno riprap mattress at the outlet point of the 36" RCP.
- *b. Give construction details of the orifice in the discharge structure.*
 - This detail is located on Sheet C6.2.
- *c. Show a "Reno" type rock mattress at the discharge end of the system into the receiving ditch and show it extending across the bottom of the ditch and sufficiently up the opposite side to prevent embankment scour.*
 - At the client's request, the outlet location of this pond has been changed to the northeast corner of the pond. We have added a "Reno" rock mattress at the outlet location, extending to the property line. The Reno mattress is called out on Sheet C5.2.
- *d. Provide adequate construction details of the revetment application in the emergency overflow from the basin along with exact dimensions of the overflow structure sufficient to construct.*
 - This can be found in Cross-Section H-H on Sheet C3.4.
- *e. Give cross sections and construction details of the detention pond regarding side slopes, safety ledges, depth of pool, etc. sufficient to construct.*
 - These can be found on Sheet C3.4.
- *f. Show the required 10-foot-wide flat maintenance pathway to be constructed all around the top of each detention basin.*
 - There is a minimum 10-foot-wide flat area around all detention basins with the exception of roughly 200' on the northeast side of the wet "finger" extending north and east from the main pond. The ledge through this area is five feet wide. The reason for that is there are existing wetlands east of the pond that cannot be filled or disturbed per the IDEM/DNR permit for this job. There should not be many people or maintenance vehicles in this area after construction because the entire area is fenced off.
- *g. Show adequate and appropriate erosion/sediment control measures and permanent stabilization planned for the basin area.*
 - These are shown on Sheets C5.1 and C5.2 and details for specific measures can be found on Sheet C5.3.
- 14. *Number the flared end section discharging from the north parking lot and give construction details for its placement. Also either extend it into the receiving detention basin or provide a swale to convey its flow in an orderly and stable fashion into the basin.*
 - Each storm structure (manhole or inlet) on the plan is numbered and listed in the Storm Structure Data Table. The data table can be found on Sheets C3.1 and C3.2. Each structure in the table has

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a length/size of pipe associated with it, and end sections for those pipes are called out in the remarks column on the data table. The end section in question is on the end of 473 feet of 36" RCP from Storm Structure No. 9. Also, the wet detention pond north of the building has been extended north and west. The pipe now outlets into this basin.

15. *Show standing curbing along the north parking lot or provide adequate and appropriate design details to prevent erosive velocities of run-off from severely eroding the fill at the edges of pavement. This adverse condition is obvious and chronic at all parking lots where sheet flow is allowed to run off the unprotected edges of pavement and is unacceptable.*
 - Throughout the north parking lot, the truck parking lot drains inward from the outside edges, so runoff will not be eroding the fill outside the pavement. The parking lot pitches to the north before draining off the asphalt at the north edge and the far northern end of the east edge. In these areas, ten feet of riprap has been added off the edge of the pavement to dissipate erosive velocities. A ditch has also been added north of the parking lot to convey runoff east into the northernmost detention basin.
16. *Show exact construction details of how the collected sheet flow is conveyed off the northeast corner of the north parking lot and into the basin including erosion/sediment and permanent stabilization measures.*
 - Grades have been changed in this area due to cover concerns over the petroleum pipeline. Sheet-flow will runoff principally off the north edge of the pavement and secondarily off the east edge at the very north corner. A 10-foot strip of riprap has been added at these areas, and a 0.8 percent sloped channel has been added north of the pavement to convey runoff east into the basin. Cross-sections of the channel can be found on Sheet C3.4.
17. *Show existing lake's pool elevation and pipe invert relationship at primary discharge from detention basin at northeast corner of north parking lot.*
 - The existing lake's pool elevation is shown as ± 388.2 feet. The detention basin's pool will be 389.0 feet. Both elevations are shown on Sheet C3.2.
18. *Show required emergency overflow structure through berm with appropriate erosion control and stabilization for northeast detention basin.*
 - A cross-section for the spillway can be found on Sheet C3.4, Cross-Section H-H.
19. *Show signage and surface paint marking details to be used to warn of flood hazard in parking lot areas greater than 0.5 feet below base flood elevation (BFE).*
 - Since the BFE has been established by the Building Commissioner at 395.0, we are showing an 8-inch-wide yellow paint line at elevation 394.5, which is six inches below the BFE. Beyond that line, all parking spaces are painted yellow (rather than white), and the words "SUBJECT TO FLOODING" are painted in yellow across the drive aisle.

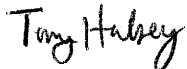
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20. *Give construction details for all sumped inlets in parking lots so that the contractor sets grades sufficiently that the inlets actually are sumped and gather water.*
- There are no inlets draining parking lot areas on this job. All of the parking lots drain via sheet flow into ditches before being collected in pipes. Structure No. 1 is a Type "E" inlet that drains runoff from Ditch "B". The rim and invert elevations for the structure are located in the structure data table on Sheets C3.1 and C3.2. Standard details for the inlet and standard manhole details for all manholes are shown on Sheet C6.2.
21. *Provide standard pipe trenching and bedding details appropriate for installations under pavement and outside of paved areas all in accordance with manufacturers' recommendations or INDOT requirements.*
- These bedding details are located on Sheet C6.2.
22. *There are several flared end sections, pipes, inlets, and other structures on Sheet C3.1 and Sheet C3.2, which are unnumbered and shown without sufficient detail regarding inverts, rims, bedding, connection, and other detail. Please correct these deficiencies.*
- All end sections on the plans are labeled with their invert. Rims, pipe-sizes and connection detail can be seen in the structure data table on Sheets C3.1 and C3.2. Structure numbers for the end sections are referenced in the data table from either the storm structure immediately upstream of the end section. Concrete end section details and bedding details for pipes are on Sheet C6.2.

If you have any questions or additional comments, or if we need to provide anything else to complete your review, please do not hesitate to contact me at our office at (317) 547-5580.

Very truly yours,
American Consulting, Inc.



Anthony W. Halsey, PE

AWH:ejp

Enclosure