

CITY OF AUSTIN – WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT
SITE PLAN APPLICATION – MASTER COMMENT REPORT



CASE NUMBER: **SPC-2010-0061C**
REVISION #: **00** UPDATE: **U2**
CASE MANAGER: **Nikki Hoelter** PHONE #: **974-2863**

PROJECT NAME: **New Theatre @ Zach Scott**
LOCATION: **202 S LAMAR BLVD**

SUBMITTAL DATE: **July 30, 2010**
REPORT DUE DATE: **August 13, 2010**
FINAL REPORT DATE: **August 20, 2010**
7 DAYS HAVE BEEN ADDED TO THE UPDATE DEADLINE

STAFF REPORT:

This report includes all staff comments received to date concerning your most recent site plan submittal. The comments may include requirements, recommendations, or information. The requirements in this report must be addressed by an updated site plan submittal.

The site plan will be approved when all requirements from each review discipline have been addressed. However, until this happens, your site plan is considered disapproved. Additional comments may be generated as a result of information or design changes provided in your update.

If you have any questions, problems, concerns, or if you require additional information about this report, please do not hesitate to contact your case manager at the phone number listed above or by writing to the City of Austin, Watershed Protection and Development Review Department, P.O. Box 1088, Austin, Texas 78704.

UPDATE DEADLINE (LDC 25-5-113):

It is the responsibility of the applicant or his/her agent to update this site plan application. **The final update to clear all comments must be submitted by the update deadline, which is September 22, 2010.** Otherwise, the application will automatically be denied. If this date falls on a weekend or City of Austin holiday, the next City of Austin workday will be the deadline.

EXTENSION OF UPDATE DEADLINE (LDC 25-1-88):

You may request an extension to the update deadline by submitting a written justification to your case manager on or before the update deadline. Extensions may be granted for good cause at the Director's discretion.

UPDATE SUBMITTALS:

A formal update submittal is required. You must make an appointment with the Intake Staff (974-2689) to submit the update. Please bring a copy of this report with you upon submittal to Intake.

Please submit 7 copies of the plans and 8 copies of a letter that address each comment for distribution to the following reviewers. Clearly label information or packets with the reviewer's name that are intended for specific reviewers. **No distribution is required for the Planner 1 and only the letter is required for Austin Water Utility.**

REVIEWERS:

Drainage Construction: Ron Czajkowski
PARD / Planning & Design: Jenna R.Neal
Planner 1: Cindy Casillas
Site Plan: Nikki Hoelter
Water Quality: Ron Czajkowski
Environmental: Jeb Brown
Fire for Site Plan: James Reeves
R.O.W. : Tim Vogt
Transportation: Shandrian Jarvis
Austin Water Utility: Howard Neil Kepple

Drainage Construction Review - Ron Czajkowski - 974-6307

DC 1. CLEARED

DC 2. Storm sewer pipes must have a minimum diameter of 18 inches (DCM 5.3.3). Label all pipes to be RCP (DCM 5.2.0.G).

Update 1: There are still storm pipes shown less than 18" in diameter. Also, the pipes need to be labeled or indicated as RCP. Note that this does not apply to the biofiltration pond underdrain piping system (DCM 5.2.0.H).

Update 2: A waiver will be required if pipe other than the minimum 18" RCP is proposed. Request a waiver in writing with justification from Kevin Selfridge, P.E. Also indicate type of pipe (RCP or other) for all lines on the plans.

DC 3. Please show pipe profile(s) with 25 and 100 year depths of flows, velocities, and Q's (DCM 5.2.0). Also, show 25 year HGL (and 100 year HGL if pipe is flowing full).

Update 1: Only two pipe profiles are shown on Sheet 10. Please show the rest of the pipe profiles (i.e. include the pipes conveying to the ponds). Include the 100-year storm flows in addition to the 25-year storm flows. Also include the existing pipe in which Line A terminates to verify that the existing pipe has sufficient capacity for the additional developed site flows.

Update 2: Pipe profiles are missing for the 12" line to water quality pond C, the 12" line to rain garden A, and the 8" lines to line B1.

DC 4. CLEARED

DC 5. Provide a manhole at the intersection of the 24" and two 18" storm sewer lines near Pond C.

Update 1: The conveyance system has been revised. Provide a manhole at the 45° bend in the stormsewer 32 ft upgradient from the curb inlet/splitter box. Provide a manhole at the 45° bend in the stormsewer approximately 30 ft upgradient from the headwall at the vegetative filter strip.

Update 2: A manhole is still needed at the 45° bend in the 12" stormsewer approximately 30 ft upgradient from the headwall at the vegetative filter strip (note that maintenance of a storm sewer proceeds in an upgradient direction from an access point). Also provide a manhole at the intersection of lines A1 and A2.

DC 6. Several retaining walls are indicated on Sheet 6. Provide structural detail for all walls greater than 4 feet in height or more than 100 feet long.

Update 1: There appear to be four walls identified on Sheet 6. Note the following:

- (1) The wall along the south side of area P4 is approximately 160 ft long. Structural detail is needed.
- (2) There is insufficient data to verify the height of the walls along the west side of area P4 and at the stairway on the south side of the proposed theater building. Please provide elevation data.

- (3) The wall on the west side of the existing ZPACC metal building appears to be less than 4 ft high. No further action is needed.

Update 2: Retaining wall design will be reviewed by Public Works Department (DPW). Comments regarding design may be generated by DPW structural engineer.

DC 7. Add note indicating that all flow from the building rooftop will be routed to the downspouts and the conveyance at the eastern end of the building (Sheet 9). Show elevations and/or flow indicators (Sheet 9) in the area corresponding to drainage area P4 to show drainage towards the inlets in the center of the area.

Update 1: Is runoff from the roof to be directed to the north end of the building? Please indicate on the plan sheets.

Update 2: Add note to Sheet 9 indicating that all runoff from the theater roof will be directed to the downspouts at the north or east ends of the building for clarification.

DC 8. Provide spot elevations (Sheet 8) in the area corresponding to area P4 to verify drainage towards the inlets (see DC 7). Provide additional spot elevations (Sheet 8) in the drainage areas to inlets CB1 and CB3 to demonstrate whether flows from the intended drainage areas will drain or bypass these inlets. It is not clear, for example, whether flow from area B through the curb cut at the northwest corner of area B will drain to or bypass inlet CB3.

Update 2: Please review the indicated surface elevation of 454.25 at the top of the steps near the southwest corner of Area P4 (this area will not drain to the inlets in P4 at elevation 456.5 – should the elevation actually be 457.25?). Also show (1) additional elevations and/or high point in the drive between inlet CB1 and Lamar to verify no bypass flow from drainage area P1 to Lamar, and (2) additional elevations along the top of the south wall in area P4.

Environmental Review - Jeb Brown - 974-2716

Update #2: 08/09/2010

Update #1: 06/07/2010

EV 0 Please be advised that additional comments may be generated as update information is reviewed. If an update has been rejected, reviewers are not able to clear comments based on phone calls, e-mails, or meetings, but must receive formal updates in order to confirm positive plan set changes.

Fees and Fiscal [LDC 25-1-82, 25-7-65, 25-8-234]

EV 1 Provide a fiscal estimate for erosion/sedimentation controls and revegetation based on Appendix S-1 of the Environmental Criteria Manual. The approved amount must be posted with the City prior to permit/site plan approval. [LDC 25-7-65, ECM 1.2.1.]

Update #1: Please correct the numerical typo on the fiscal estimate sum. Also, the estimate needs to be sealed.

Update #2: Fiscal estimate approved. Pending confirmation of payment.

EV 2 Specify the area (S.F. or S.Y.) within the LOC and match with that submitted for the revegetation quantity on the E/S cost estimate. [LDC 25-7-65, 25-2-1002, ECM 1.2.1.1]

Update #1: Non-disturbance areas need to be hatched within the LOC.

Update #2: Comment Cleared.

EV 3 For sites with a limit of construction greater than one acre, the fiscal estimate must include a

clean-up fee [ECM 1.2.1, appendix S-1]

Update #1: Comment cleared.

EV 4 Payment of the landscape inspection fee is required prior to permit/site plan approval.

Payment of the fee is made through Intake. Upon payment, please forward a copy of the receipt to the environmental reviewer. Payment is \$500.

Update #1: Comment pending.

EROSION / SEDIMENTATION (E/S) CONTROLS [LDC 25-7-61,65, 25-8-181,182,183,184]

EV 5 A CofA SWPPP is required for sites greater than 1 acre. ESC plan will not be reviewed until a SWPPP is received.

Update #1: Comment cleared.

EV 6 Move the SCE outside the CRZ of tree 787.

Update #1: Comment cleared.

EV 7 Do you have any offsite drainage coming onsite? If so, demonstrate how you will control for offsite flows.

Update #1: Comment cleared.

EV 8 Add note on Sequence of construction and ESC plan stating: *"If disturbed area is not to be worked on for more than 14 days, disturbed area needs to be stabilized by revegetation, mulch, tarp or revegetation matting."* [ECM 1.4.4.B.3., Section 5, I.]

Update #1: Comment cleared.

EV 9 Please include the updated erosion control notes per ECM appendix P-1 (adopted 3/24/09).

Update #1: Comment cleared.

EV 10 Revise the sequence of construction to include scheduling and conducting the final inspection with EV Inspector prior to the removal of erosion controls.

Update #1: Comment cleared.

Landscape Requirements [LDC 25-8-604, 621 / 25-2, Article 9]

EV 11 Add a note stating: The OWNER will continuously maintain the required landscaping in accordance with LDC Section 25-2-984.

Update #1: Comment cleared.

EV 12 Identify on the landscape plan the method of landscape protection, and provide the following note on both the site plan and the landscape plan: *All landscaped areas are to be protected by six-inch wheel curbs, wheelstops or other approved barriers as per ECM 2.4.7. 7*

Update #1: Comment cleared.

EV 13 Since there are two streetyards (Riverside Drive and Lamar Blvd.), provide separate

calculations for each streetyard area per ECM Appendix C. and ECM 2.4.1(B).
[reviewers – can accept one calculation but ask for separate ones if you feel that one streetyard is lacking landscaping]

Update #1: Comment cleared.

EV 14 Call out the quantity of plants on the plant list.

Update #1: Comment cleared.

Arborist/Tree Preservation

EV 15 Comment pending conversations with the city arborist regarding the 39" American elm (*Ulmus americana*).

Update #1: It is the reviewer's understanding the proposed removal of this tree will go before Environmental Board and Planning and Zoning Commission. Please contact the reviewer to prepare variance material.

Update #2: Comment cleared.

EV 16 Parking is proposed within the ½ critical root zone of trees 787 and 900. Revise to avoid impacts within the ½ CRZ. The reviewer suggests removing the proposed parking spot impacting the ½ CRZ of tree 787 and adjusting the parking for tree 900.

Update #1: Comment cleared.

EV 17 Tree Remediation – 25-8-604 and ECM 3.5.4.(C), ECM Appendix P-6:
Insert the following as number 1A in the Sequence of Construction.

For all existing Class I trees:

1. *Supplemental Nutrients per guidelines below.*
2. *An organic mulch layer of one to three inches in depth is to be applied within the entire area of the critical root zone (within construction area).*
3. *Utilization of a rock saw is required to sever tree roots cleanly adjacent to proposed grade cuts. Application depth to be 18 inches. Chain link protective fencing (in addition to planking).*
4. *Humate/nutrient solutions are to be applied at recommended manufacturer rates. Apply as a pressurized soil injection within the available critical root zone area. Where soil injection is not practical, soil drench application is required. Nutrient solutions are to have a macro nutrient level which does not exceed 4% per volume. Trees which are to receive remedial care are to be identified graphically on the plans.*

Update #1: Note was not added.

Update #2: Comment Cleared.

EV 18 Place the following note on the landscape plan

Special Construction Techniques ECM 3.5.4(D)

Prior to excavation within tree driplines, or the removal of trees adjacent to other trees that are to remain, make a clean cut between the disturbed and undisturbed root zones with a rock saw or similar equipment to minimize root damage.

In critical root zone areas that cannot be protected during construction with fencing, and where heavy vehicular traffic is anticipated, cover those areas with four (4) inches of organic mulch to be produced on site, to minimize soil compaction.

Perform all grading within critical root zone areas with small equipment to minimize root damage.

Water all trees most heavily impacted by construction activities deeply as necessary during periods of hot, dry weather. Spray tree crowns with water periodically to reduce dust accumulation on the leaves.

When installing concrete adjacent to the root zone of a tree, use a plastic vapor barrier behind the concrete to prohibit leaching of lime into the soil.

Update #1: Comment cleared.

EV 19 Proposed mitigation is not acceptable. Mitigation is required at the following rates.

Class I and II trees	19"+ diameter	Replace at 100%
Class I and II trees	8-18" diameter	Replace at 50%
Class III and IV trees	19"+ diameter	Replace at 50%
Class III and IV trees	8-18" diameter	Replace at 25%

Update #1: Comment cleared.

EV 20 Graphically differentiate replacement trees from landscape trees. ECM 3.3.2(D)(2)

Update #1: Comment cleared.

EV 21 For urban forest accounting purposes, please provide the following information after all Landscaping and/or tree-related comments are cleared.

1. Total tree inches surveyed
2. Total tree inches removed, Class 1 & 2
3. Total tree inches removed, Class 3 & 4
4. Total tree inches planted on site

E-mail copy this reviewer. This comment pending receipt of e-mail copy. ECM 3.5.0

Update #1: Comment cleared.

Fire For Site Plan Review - James Reeves - 974-0193

August 9, 2010

UPDATE 2

INFORMAL UPDATE

1. The required fire flow shown on the cover sheet is incorrect.
2. Provide a post indicator valve in underground lead-in. A wall post indicator valve or exterior door with direct access to riser room will be accepted as alternate.

PARD / Planning & Design Review - Jenna R.Neal - 974-9457

PA1 - 6: cleared

Please make note that anything that will need additional PARD review must be through PARD Planning & Design Staff vs PARD

PA 7-9: Please break out the PARD parking lot and street parking from the existing parking table.

Update 1: Please correct Parking Summary Table to have all existing parking information only listed under the Existing Parking category. Existing should not be listed under proposed since it is not being constructed.

Update 2: Not addressed

PA 10 – 11: Since the street parking is heavily used by park and trail users, how will these street parking spaces be addressed during construction?

Update 1: PARD Planning and Design will need to be updated on the street parking spaces and flaggers.

Update 2: cleared

PA 12: LOC extends beyond subject boundary – is this not a conflict?

Update 1:

- a. The storm sewer work and installation that is outside the Land Lease Agreement is work that falls into the Chapter 26 public process and mitigation must be provided for the use of parkland for non-park activities. The project manager or consultant must contact PARD, so that an MOU (Memorandum Of Understanding) application can be sent. The information entered on the application will be used to calculate the mitigation for this work. The MOU must go through community outreach and the Parks Board before going to Council for approval. (*contact Robert Brennes: Robert.brennes@ci.austin.tx.us*)

Update 2: cleared

- b. After installation of the additional storm sewer line on parkland, who will assume responsibility for the maintenance and repair of this line? If Watershed Protection has agreed to maintain and repair this line, have they signed off? If not Watershed Protection, then the entity responsible will need to be identified in the Memorandum Of Understanding. There may need to be a separate document for this agreement of responsibility also. (*contact Robert Brennes: Robert.brennes@ci.austin.tx.us*)

Update 2: Specify the City department that has agreed to assume responsibility for maintenance/repair

PA 13: Why does the LOC boundary exceed the western parking lot and include the sidewalk that is the ADA entrance to the PARD Main Office front doors?

Update 1: Site plan does not reflect the changes mentioned in your comments. (C1.09)

a. Where will construction fencing be located if LOC is moved to BOC?

Update 2: cleared

b. PARD recommends placing the construction fencing on the back of the sidewalk for safety purposes due to proposed new walk (C1.06).

Update 2: cleared

c. Insure that with vehicle overhang the existing 4' walk will remain ADA complaint (width) due to the parking stalls being proposed at 17.5' without bumpers.

Update 2: Not address – no note to ensure sufficient width or indication of parking blocks to prevent encroachment

d. If additional width of walk is required for ADA, anticipate repair to landscape and irrigation.

Update 2: Not address – Contingent on resolution of PA 13c

PA 14: The LOC boundary include the entrance to the trail; which is not apart of the subject boundary. This is the only formal/ADA compliant entrance to the trail in this area, please consider adjusting LOC to not include and/or impact the trail entrance.

Update 1:

a. Show LOC to verify impacts of storm sewer man hole at trail entrance does not affect the existing ADA parking stall.

b. Verify capacity of existing 24" RCP

c. Verify outlet at lake is adequate for increased volume

Update 2: cleared

PA 15: Please show all the sidewalks around the PARD Main Office and the most western parking lot. Your parking lot calculations include these areas therefore the walks from these lots connecting to the Theatre site need to be shown to determine sidewalk and trail detours.

Update 1: Not all sidewalks were included correctly. The walk located directly south of the PARD main office is not shown and the angled walk from the western portion of the PARD main office to Zach does not exist.

Update 2: cleared

PA 16: Tree #583 is a memorial tree that was purchased and planted over 15 years ago by a citizen. This information has been conveyed to the Theatre administration staff since the initial discussions of the proposed new theatre. What protection measures will be taken to insure this tree is not removed? If relocated, what protection measures will be taken to insure the tree survives the transplant?

Update 1: not addressed

PA 17: C1.10 ~ inconsistent w/ 12" RCP vs 15" RCP (profile). Please correct.

Update 1: cleared

PA 18: How will parking be addressed during construction to accommodate appropriate PARD and Zach staff during construction?

Update 1: Future meetings with PARD need to include Planning and Design

PA 19: Where will construction crew be permitted/restricted to park during construction?

Update 1: cleared

PA 20: What parking agreement has been discussed with the PARD Director to address parking post construction for continued PARD staff use (business hours and night meetings)?

Update 1: Future meetings with PARD need to include Planning and Design

PA 21: Where will the proposed off-site parking that will be used by Valet be located?

Update 1: not addressed

PA 22: Please add the following note to sheet L1.28:

Submit sign design and placement to PARD Planning & Design prior to installation

Update 1: Please make note that anything that will need additional PARD review must be through PARD Planning & Design Staff vs PARD

PA 23: Not all trees are shown. E.g. the large Oak tree located on near the NE corner of the PARD Main Office and the existing parking lot. Please update your tree information.

Update 1: not addressed

It is necessary to show this tree due to the proximity to the sidewalk and parking lot that will be replaced

The Following Comments are from Emily King. If there are any questions regarding the following comments, you may contact her at Emily.king@ci.austin.tx.us or 512.974.9548

PA 24: The tree survey is still inconsistent. The following items need to be addressed:

- a. Tree # 562 is shown on the plan as removed but not listed on the master list as such
- b. Tree # 581 is shown as removed on the plan but has tree protection fencing around it
- c. Tree #576 is shown as preserved on the plan but listed as removed on the master list
- d. Tree #788 is shown on the plan as removed but has tree protective fencing around it

Update 1: cleared

PA 25: Tree # 576: how do you plan to preserve the critical root zone on the south side of this tree where the service drive is planned?

Update 1: The specification for the Ecocrete is generic. Please indicate on the plans the specific plan for this site. Include information pertaining to site prep for the Ecocrete, how much of the subsoil will be compacted, what is the method of application, etc.

PA 26: Tree # 786: there is adequate tree protective fencing shown around this tree but the plans show the line that connects the two inlets as running through the tree protection fence. Please explain this seeming inconsistency.

Update 1: cleared

(PA 27-34 comments are from the first round that were not addressed and/ or left off during the 2nd round of comments. These have been added back in for tracking purposes)

PA 27: Tree survey is inaccurate. The following problems must be corrected:

- a. Trees are missing from the Tree List
- b. Trees are missing from the Site Plan
- c. Some trees show up on the Tree List and not on the Site Plan
- d. Some trees show up on the Site Plan and not on the Tree List
- e. Some trees do not show up on either the Tree List or the Site Plan
- f. At least one tree is shown on the Site Plan but not the Tree List and is not present at the site
- g. ALL tree sizes are inaccurate. DBH inaccuracies range from 1" to 8"
- h. Not all species are identified
- i. The LOC extends north of Riverside Dr/main driveway but the tree survey does not-these trees need to be accounted for

Update 1: Trees in front of the PARD Main Office must be shown on all relevant site plans and included in the Master Tree List

PA 28: Tree survey is inconsistent. The following inconsistencies must be addressed:

- a. Tree 896 is shown to preserve on Site Plan but is listed on the Tree List as being removed
- b. Tree 583 is shown on the Site Plan as being removed but listed on the Tree List as being preserved
- c. Tree 569 is shown on the Site Plan as being removed but listed on the Tree List as being preserved

Update 1: cleared

PA 29: Tree 787 is being encroached upon by the “stabilized construction entrance”; can the entrance be shifted west so that the CRZ of 787 is preserved?

Update 1: cleared

PA 30: Tree 573 is the healthiest Bigtooth maple on the site; I would like to see options to preserve this tree.

Update 1: cleared

PA 31: Tree 583 is a specimen Bur oak; see PA 16

Update 1: Pending relocation information

PA 32: Please denote trees to be removed on the Tree List in a format that can be viewed on black and white prints (an “*” or an “R” will do).

Update 1: cleared

PA 33: Due to inaccuracies with the tree sizes, all tree protection fencing must be redrawn to appropriate scale.

Update 1: cleared

PA 34: Appraised values for trees to be removed & approved for removal will be submitted for mitigation once it is clear which trees can not be preserved.

Update 1: Pending final removal list

The Following Comments are from Rey Hernandez. If there are any questions regarding the following comments, you may contact her at rey.hernandez@ci.austin.tx.us or 512.974.9464

PA 35: C1.02 – Please correct Tree and Natural Area Protection Note #2 page # reference.

PA 36: C1.03 –

- Illustrate proposed Limits of Construction
- Correct the label of ‘Existing Baseball Field’ to read as ‘Existing Softball Field’

PA 37: C1.04 Notes should be revised to include:

- Note #1 – page number for general notes
- Note #2 – page number of erosion/sediment control details
- ‘Protection’ on existing tree with tree protection fencing
- Correct spelling for revegetation

PA 38: C1.05 Parking Lot/Building Coverage Tables references areas that are not consistently labeled on all relevant Site Maps/sheets. (eg. ZPACC listed in tables yet not labeled)

PA 39: C1.06 – Indicate % slope on ADA ramps

- Remove 'H.C' from note
- Missing the Accessible Ramp Detail
- Keynotes: Indicate location of proposed details
- Legend vs Keynotes # 3 – Legend Plan indicates pervious pavement however Notes says 'concrete'
- Include sheet # to the note that states "Refer to Landscape Plan for Street Tree..."
- Clarify Notes #11
- Clarify Notes #16 – 'Plaza' not indicated on plans
- Clarify Notes #16 – Add sheet # for Landscape Plans references
- 'Private Common Open Space' – How can this be private if this is on Public land?
- Correct the label of 'Existing Baseball Field' to read as 'Existing Softball Field'

PA 40: C1.27 – Tree List #s not shown on plan

PA 41 C1.28 –

- Tree List #s not shown on plan
- AIPP Benches – how will these be installed? Concrete footing, etc?

PA 42 PARD Main Office limestone vertical sign is not shown on any plans. Is this staying or going? What about the Crape Myrtle trees behind the stone sign?

<h2>Site Plan Review - Nikki Hoelter - 974-2863</h2>
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SP 1. The site plan will also require Design Commission, Parks Board, and Environmental Board review and recommendation, prior to being scheduled for Planning Commission.

Up# 1- Thank you for the summary of Board dates and actions. This comment will be cleared once all boards have reviewed and provided a recommendation for the project.

Up#2 –It appears the project still needs to obtain approval from Urban Forestry Board, EV Board, Waterfront Planning Advisory Board, and Planning Commission, as shown in the Board spreadsheet.

Please provide a copy of the response provided to the Design Commission from Zach on the requested recommendations.

SP 2. This site is zoned P, Public, and is greater than one acre in size; therefore, a Conditional Use Permit is required to establish the site development regulations for all portions of the site zoned P, according to the Land Development Code {Section 25-2-625}. The CUP will be placed on the Planning Commission agenda once all recommendations are received from the other Boards and all comments are clear.

Up#1 – Pending

Up#2 - Pending

SP 3-5. **Clear**

SP 6. Please list the submittal date on the coversheet, March 11, 2010. Show the case number on all sheets.

Up# 1- Please update the case number to SPC...

Up#2 – Clear

SP 7. **Clear**

SP 8. Update all site data tables to reflect this area is zoned CS-1.

Up#1 – Within the Building Coverage Table on sheet 5, under the CS-1 Zoning, I've determined the building coverage to be 96% and FAR .96:1. CS-1 zoning district permits 95% building coverage, please explain how the building coverage was calculated to get a total of 94.38%. Please reduce the building coverage to comply.

Up#2 – CLEAR

Under the CS zoning FAR column, its shown as 1.62:1, however I've calculated the FAR at .50:1, please explain. Up#2 - CLEAR

On sheet 5, within the Building Summary Table by Zoning District, under CS-1, the Kleberg Theatre is shown to be 2 stories, however the Building Coverage Table shows it to be one story, please update and/or correct all tables to show the same information for the building height. Up#2 - CLEAR

On sheet 5, within the Building Summary Table by Zoning district, under P, please explain what is meant by "Level 0" . The new building is proposed to have 3 stories, however the table would appear to show 4 stories, please explain. UP#2 - CLEAR

On sheet 5, within the Site Data Table Under CS-1 zoning, the permitted impervious cover is 95%, however the impervious cover is at 100%. Please reduce the IC to 95%.

On sheet 5, within the Site Data Table Under CS zoning, the permitted impervious cover is 95%, however the impervious cover is at 99%. Please reduce the IC to 95%. UP#2 - CLEAR

On sheet 5, within the Site Data Table under P zoning, please explain the difference in the Building Coverage and Roof & Covered Walk, these numbers does not match.

Up#2 – Building coverage should include all covered walkways. Conditioned space would be considered Gross floor area. Please update all calculations to reflect these definitions.

SP 9-11. **Clear**

SP 12. On the coversheet, for the legal description of the Zach Property, provide the recording information.

Up#1 – The recording information for the recorded plat is Volume 80, Page 120, please update the legal description for Lot A Seiders subdivision. Please remove reference to the 2008040744, its assumed this number is the recording information for the deed.

Up#2 – Repeat comment.

Please provide a Land Status Determination for the unplatted portion of the property, because the property is not be used by the City of Austin, this is required.

Up#2 – It's understood that a Land Status Determination is required because this site will not be used by the City of Austin.

SP 13-16. **Clear**

SP 17. For the proposed site plan, please record a Unified Development agreement that clearly ties these lots together for the construction, use, and maintenance of the proposed Detention facility. Please submit this document to this reviewer. This reviewer will coordinate with the Legal Department for review and approval. For any legal document questions please contact Annette Bogusch – PDRD Legal Liaison (974-6483). Please be aware this process takes some time and now requires lien-holders information/consent.

Up# 1- Pending, please submit the document and exhibits as soon as possible. The site plan will not be approved until this document is approved and recorded.

Up#2 – Pending review and approval by staff and COA legal.

SP 18. Ensure all existing and future dedicated easements, including joint access, drainage, conservation, utility, communication, etc are shown? Indicate volume and page or document number, or dedication by plat. All buildings, fences, landscaping, patios, flatwork and other uses or obstructions of a drainage easement are prohibited, unless expressly permitted by a license agreement approved by the City of Austin authorizing use of the easement. ******Please provide recording information on the plan and a copy of the recorded WWL and WL easement once approved.**

Up#1 – Pending

Up#2 – Pending

SP 19. A determination has not been made whether additional CS-1 zoning will be required for the sale of alcohol within the theatre and in the plaza area.

Up# 1-

Its staffs understanding that Zach Scott intends to sell alcohol outside in a plaza and on the 2nd floor of the facility too. P, public zoning does not permit a cocktail lounge and the Director has determined alcohol sales cannot be an accessory use, therefore a zoning change will be required if alcohol is to be served outside of the existing CS-1 zoning. P zoning is not within the zoning heicharcy therefore cannot take advantage of the pedestrian oriented use of Cocktail Lounge in the Waterfront Overlay section.

Once the CS-1 zoning is granted, a conditional use permit will be required to permit the cocktail lounge.

Specifically designate all areas in which alcohol will be sold and consumed, specify all other areas as theatre. Parking tables will need to updated as well.

Lastly, because theatre and cocktail lounge uses are not permitted pedestrian oriented uses, the Planning Commission will be to approve a waiver to permit each use. Section 25-2-691(C)(12).

Up#2- Comment Cleared - Staff and the applicant agreed that the alcohol sales for the theatre would be removed from the proposed plan. Staff will pursue a code

amendment to Community Events use under LDC 25-2-842. Until the amendment is processed and approved, the site plan will proceed with the CUP process.

Subchapter E, Commercial Design Standards

SP 20. Clear

SP 21. A license agreement will be required to be approved and recorded prior to site plan approval and release, for the trees and street furniture installed in the right of way. Please contact Andy Halm at 974-7185 for further information

Up#1 – Pending approval of the license agreement.

Up#2 – Pending

SP 22. Utilities must be underground from building to property line. Utilities within the right-of-way must be placed underground or to rear of site to the maximum extent practicable. If overhead utilities remain, no portion of the building may be located within a 10-foot radius of the energized conductor. (§ 2.2.2.B.3.; p. 16)

Up#1 – Show location of all utilities, specifically those along Lamar Boulevard, and that they will be located underground.

Up# 2- Comment cleared, no utilities located along Lamar, per applicant.

SP 23-24. Clear

SP 25. Because this site is larger than 5 acres, please show a minimum of 2% of net site area shall be devoted to following private common open space or pedestrian amenities: a) Natural, undisturbed private common open space, b) Landscape area beyond minimum landscape requirements, meeting specified standards (p.53), c) Playground, patio, plaza, meeting specified standards (p.53), d) Combination of above (§ 2.7.3.A.; p. 53-54)

The following not counted for open space/pedestrian amenity: a) Private yards, b) Public/private streets, c) Parking areas and driveways for dwellings, d) Water quality/stormwater detention ponds (§ 2.7.3.C.; p. 54), e) Area shall meet specified location and design criteria (§ 2.7.3.B. and D.; p. 54-55)

Area shall be maintained by owners of development (§ 2.7.3.E.; p. 55)

Fee in lieu option available within urban roadways boundary (§ 2.7.3.F.; p. 54)

Up#1 – Thank you for providing the square footage for the private common open space. Please show the amount of area dedicated to the Lease Area.

Also show the type of amenities that will be provided within the common open space, and/or provide more details on the landscape plan.

Up#2 – Comment cleared.

SP 26. Include the following note on the site plan page: "All exterior lighting will be full cut-off and fully shielded in compliance with Subchapter E 2.5. All site lighting to be located on the building will be in compliance with Subchapter E 2.5, and will be reviewed during building plan review. Any change or substitution of lamp/light fixtures shall be submitted to the Director for approval in accordance with Section 2.5.2.E." Also include Figure 42 from Section 2.5.

Up# 1- Thank you for providing the note on sheet 6. Also include Figure 42 from Section 2.5 on sheet 6.

Up#2 – Comment cleared.

WATERFRONT OVERLAY DISTRICT

SP 27. Please state how this plan addresses these goals in order for staff to make a favorable recommendation.

25-2-715 (B) The board shall consider a request for review and recommendation under Subsection (A) at the earliest meeting for which notice can be timely provided and shall base its recommendation on the goals and policies of the Town Lake Corridor Study.

The site plan will be scheduled for the Waterfront Planning Advisory Board once the majority of the review comments are addressed.

Up#1 – Pending approval by the WPAB. Please be sure to list the 2 variances being requested when being scheduled for the WPAB.

Up#2 - Pending

SP 28. **Clear**

SP 29. This subsection applies to a nonresidential use in a building adjacent to parkland adjoining Town Lake (1) For a ground level wall that is visible from park land or a public right of way that adjoins parkland, at least 60 percent of the wall area that is between 2 and 10 feet above grade must be constructed of clear or lightly tinted glass. The glass must allow pedestrians a view of the interior of the building. (Comment should be addressed with an architectural rendering of the building clearly labeled within the plan set.) [LDC Section 25-2-733(E)(1)]

Up#1- Response noted, however this section is separate from Subchapter E, Commercial Design Guidelines and Alternative Equivalent Compliance. A variance request to this section is required. It will be scheduled for Planning Commission along with the other requested variance and CUP.

Up#2 - Pending

SP 30. Entryways or architectural detailing is required to break the continuity of nontransparent basewalls. (3) Except for transparent glass required by this subsection, natural building materials are required for an exterior surface visible from park land adjacent to Town Lake. [LDC Section 25-2-733(E)(2)(3)] (Comment should be addressed with an architectural rendering of the building clearly labeled within the plan set.)

Up#1 – Variance request submitted, Pending approval by the Planning Commission.

Up# 2- Pending

SP 31. In the North Shore Central, South Shore Central, Auditorium Shores, Butler Shores, and City Hall Waterfront Overlay subdistricts, at least 50 percent of the net usable floor area of a structure adjacent to Town Lake must be used for pedestrian-oriented uses. Note the net usable floor area of the ground floor of each proposed structure and the respective percentage of proposed pedestrian uses on the ground level. [Section 25-2-691, 692].

Up#1 – See SP 19.

Up#2 – The Theatre use may be requested as a permitted pedestrian use to the Planning Commission. Pending.

SP 32. Provide architectural information for the exterior of buildings (including building materials and type of glass) sufficient to demonstrate compliance with waterfront design requirements. [Sec. 25-2-721(E)(1-4)].

Up#1 – In response to the distinctive building top required for the building, please provide call outs for the building material types on the architectural rendering, this is in addition to the note provided on sheet 33.

On sheet 31 and 33, please provide the height of the basewall on the architectural drawing, to show compliance that the basewall does not exceed a height of 45 feet.

On sheet 31, its unclear how Note 2 addresses the building façade not extending in an unbroken line. Provide the measurement.

Up#2 - CLEAR

SP 33. Clear

**SP 34. Under LDC Section 25-2-691(C) Pedestrian Oriented Uses does not include the existing and proposed use of Theatre or Office. The Planning Commission may determine that both can be permitted uses. This will required PC approval, and will be scheduled at the same time of any other requested variances. **

Up#1 – See SP 19.

Up#2 – The use for the ZPACC building is listed as office on the site plan and art workshop within the site data table. Please clarify. Art Workshop is listed as a pedestrian oriented use within the waterfront overlay.

SP 35. Therefore, based on LDC 25-2-692(H), in the Butler Shores subdistrict not less than 50 percent of the net usable floor area of the ground level of a structure adjacent to Town Lake must be used for pedestrian oriented uses.

Up#1 – See SP 19.

Up#2 – Pending, see SP 31.

SP 36. Clear

NEW COMMENT:

SP 37. Please provide a parking plan to show how required parking will be addressed during construction.

Up#2 – Comment will be cleared once a copy of the shared parking agreement is provided to this reviewer.

R.O.W. Review - Tim Vogt - 974-7011
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8-10-2010: Informal Update.

Red line plans await pick up at OTC suite 815

- 1. Sheet C1.25 (25 of 35), Special Detail – Lamar Lane Closure needs revisions as shown on the returned plan.**

Since the plan calls for closing the right hand SB traffic lane of Lamar Blvd. at Riverside, prior to traffic entering and driving in that lane, the lane block signs and the arrow board aren't needed. The transition should not be designed as a wedge but as a radius as shown on the returned plans. Finally, the detail does not properly represent the intersection geometry and lane assignments. Plan should be revised to correct differences.

Transportation Review - Shandrian Jarvis - 974-2628

Accessibility

TR1. Comment addressed.

TR2. Slopes on accessible routes may not exceed 1:20 unless designed as a ramp. [ANSI 403.3]

Update 1: Provide grading information for the accessible route along the west of the Kleburg and Whisenhunt buildings.

U2: Comment not addressed.

TR3. Comment addressed.

TR4. Accessible parking spaces must be provided in accordance with IBC Table 1106.1.

Identify the accessible spaces among the entire development.

Update 1: 8 spaces are required for the 245 spaces provided on this site. I can identify 8 spaces and the parking table states that there are 10 spaces. Please update the plan so that these two numbers correspond.

U2: Comment cleared.

TR5. Comment addressed.

TR6. Comment addressed.

TR6. Comment addressed.

Sidewalks

TR7. Comment addressed.

TR8. Comment addressed.

Parking & Loading

TR9. Comment addressed.

TR10. Comment addressed.

TR11. Comment addressed.

Driveways

TR12. Waiver received and approved. Please identify the access gate on the site plan.

U2: Comment cleared.

TR13. Waiver received and approved. Please identify the access gate on the site plan.

U2: Comment cleared.

TR14. Comment addressed.

Commercial Design Standards

TR15. Comment addressed.

TR16. Comment cleared; while the entrance is more than 100 feet from the street facing façade line, this is due to the design requirements of the space, and a shaded sidewalk has been provided between the building entrance and the public sidewalk.

TR17. Comment addressed.

TR18. Applicability: Projects with net site area ≥ 3 acres in non-residential districts; projects with net site < 3 acres if parking placed between building and principal street. All sites shall:

- Comment addressed.
- Comment addressed.
- All sites or developments subject to this section must also select and comply with at least two of the bicycle/pedestrian improvement options listed in the table provided in §2.3.2.B.2 on page 47. If the site provides more than %125 of the parking required in Appendix A (Off-Street Parking and Loading Requirements), the site must select and comply with three of the options. (§2.3.2.B.2; p. 46)
Update 1: Response noted; please provide a note on the plan that utility lines will be provided in drive aisles.

U2: Comment cleared.

TR19. A license agreement will be required for the trees installed in the right of way. Please contact Andy Halm at 974-7185 for further information.

Update 2: Response noted; comment will be cleared when license agreement is recorded.

TR20. Comment addressed.

New Comments

TR21: The 74 un-striped spaces must be striped and dimensioned in order to be counted in the parking table. Please provide this information with the next submittal.

U2: Comment cleared.

TR22. Include the following note on the site plan: Each compact parking space/aisle will be signed "small car only." LDC, 25-6-477.

U2: Comment not addressed.

TR23. The compact parking depicted on the site plan does not match the amount included in the parking table. Please update the plan so that the numbers correspond.

U2: Comment cleared.

Austin Water Utility Review - Howard Neil Kepple - 972-0077
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WW1. The review comments will be satisfied once the Austin Water Utility/Pipeline Engineering has approved the water and wastewater utility plan. For plan review status, contact George Resendez with Pipeline Engineering at 972-0252. Response comments and corrections, along with the original redlines, must be returned to the assigned Pipeline Engineering reviewer at the Waller Creek office, 625 E 10th St., 4th floor.

Water Quality Review - Ron Czajkowski - 974-6307

WQ 1 to WQ 4. CLEARED

WQ 5. Provide calculations demonstrating that the splitter designs will be capable of passing the peak flow rate of a twenty-five (25) year storm into the water quality pond (ECM 1.6.2.B).

Update 1: The calculation (Sheet 15) indicates that the splitter box orifice for Pond C is insufficient to pass the 25-year flow without overtopping the splitter weir. See also WQ 12.

Update 2: There appears to be an error in the orifice calculation. Actual flow capacity of the orifice based on the dimensions and elevations indicated is approximately 3.5 cfs (Sheet 16).

WQ 6. Provide detailed plant selection (type and quantities of each) for the sedimentation and biofiltration ponds (see ECM 1.6.7.C.5.A, D, and E). Include plans showing complete plant layout in the ponds (see ECM 1.6.7.C.5.C).

Update 1: Sheet L1.28 – Note the following:

- (1) Show the rock flow spreader/hedgerow for Ponds A and B on the plans. Provide a section detail (see ECM Figure 1.6.7.C.2).
- (2) Provide a breakdown of plant type by sedimentation and filtration area rather than base and sides for Ponds A and B.
- (3) Modify plantings based on any revisions to sedimentation and filtration pond areas.
- (4) Additional comments regarding trees in the ponds may be generated after meeting with John Gleason.
- (5) Big Red Sage (included in the filtration area planting for Ponds A and B) is listed as suitable for sedimentation ponds but not filtration ponds in ECM Table 1-17.

Update 2: Show a section detail for the rock flow spreader/hedgerow for Ponds A and B (including VFS). Modify plantings to account for any changes due to other comments herein.

WQ 7. CLEARED

WQ 8. Provide the minimum criteria for the 18" sand bed in the biofiltration ponds (see ECM 1.6.7.C.4) on the plan sheets. Modify the sequence of construction to account for certification and acceptance of the biofiltration media and other biofiltration issues (see ECM 1.6.7.C.4 and 1.6.3.C.6.D).

Update 1: Indicate the criteria listed in ECM 1.6.7.C.4 for the biofiltration media on the plan sheet detail on Sheet 15 (do not just reference the ECM). Modify the Sequence of Construction (Sheet 4). Item 7 (rough cut ponds) should come before Item 6. Item 13 (certification) should be included in Item 6 and expanded similar to the following (see ECM 1.6.3.C.6.D): "The biofiltration media must be delivered to, or mixed at, the site prior to the mid-construction conference. The media must be certified as meeting the required specifications by the project Engineer, or his/her designee, and approved by the City Inspector. The media must be stored on-site separate from other materials, and covered to prevent erosion of the mixture by rainfall and runoff. The media must have a prominent tag affixed that reads "BIOFILTRATION MEDIA FOR WATER QUALITY POND." Modify Item 17 as follows: "Complete construction and stabilize all areas draining to the biofiltration basin. Permanent controls will be cleaned out and

filter media will be installed after stabilization of the site. Pre-soak the in-place biofiltration media and add additional media as needed until the 18" design depth is achieved. Provide plant material tags for the vegetation to the City Inspector prior to planting. The project Engineer must be present during installation of the biofiltration media and plantings, and approve the installation."

Update 2: Include the percent organic matter (1%-4%) and cation exchange capacity (>10 meq/100 g) criteria on the biofiltration media bed detail (Sheet 16).

WQ 9. CLEARED

WQ 10. Pond C has an underdrain pipe. Note the following:

- (1) Provide cleanouts every 50 feet and at every bend. Include at least one cleanout which is accessible when the pond is full. (See ECM 1.6.7.C.4.B.)
- (2) Provide a removable PVC cap with an appropriately sized orifice at the end of the underdrain pipe for a 48-hour drawdown time (ECM 1.6.7.C.4.C). Provide calculations demonstrating a 48-hour drawdown time from water quality elevation to top of sand bed. Include access at the PVC cap location.
- (3) The elevations of the sand bed and the flowline at the upgradient end of the pipe are incompatible with the thicknesses indicated in the inset detail.

Update 1: Provide a removable PVC cap with an orifice on the 6" pipe rather than a pipe with a diameter equal to the required orifice size (a 1" pipe will be difficult to maintain). Make sure access to the orifice (i.e. manhole) is provided. Also review the orifice calculations; the initial, final, and average heads appear to be 1 ft greater than indicated in the calculations.

Update 2: The maximum head on the orifice is from splitter elevation (450.85) to orifice (approximately 446.3), or 4.55 ft. The final head on the orifice is from the top of sand bed elevation (449.0) to the orifice, or 2.7 ft. Please review/correct.

WQ 11. Provide a geotextile fabric between the sand bed and underlying gravel layer in the ponds (ECM 1.6.7.C.4.B). Include properties of the geotextile (ECM 1.6.7.C.4.B and 1.4.5.P).

Update 1: Sheet 15 - Include the geotextile properties on the plan sheet (don't just reference the ECM). Note also that the liner which has been added with the update is not necessary unless the pond is over the Edwards aquifer.

Update 2: Include the properties of the geotextile on the detail on Sheet 12. See Table 1.4-F in ECM 1.4.5.P.

WQ 12 to WQ 16. CLEARED

WQ 17. An Integrated Pest Management (IPM) plan is required for this project (ECM 1.6.7.C.1). For guidance on this issue, please contact this reviewer to receive a memo issued by John Gleason regarding IPM plan assistance. Once received, the IPM plan will be forwarded to John Gleason, Environmental Resource Management, for review and approval.

Updates 1 and 2: Comment to be cleared upon submittal and approval of IPM plan.

WQ 18. A Restrictive Covenant (RC) is required for implementation of the IPM plan (1.6.7.C.1). Contact this reviewer for a standard RC form if needed.

Updates 1 and 2: Comment to be cleared upon submittal and approval of RC.

WQ 19. Provide a Restrictive Covenant (RC) or Unified Development Agreement (UDA) which addresses construction, use and maintenance of the water quality facilities. Contact this reviewer for standard legal forms if needed.

Updates 1 and 2: Comment to be cleared upon submittal and approval of UDA.

WQ 20. CLEARED

WQ 21. Show the splitter box/curb inlet lip on the revised splitter box detail on Sheet 15.

Update 2: Change lip elevation in Section B-B (Sheet 16) to 451.0 to agree with plan.

WQ 22. FYI - Three small sunken "islands" in the parking area have been included in the provided water quality volume calculations for Pond C. While beneficial from the water quality standpoint, they would need to be designed as part of the water quality pond (i.e. flow bypass, sedimentation and biofiltration areas, plantings, etc.) for water quality credit. It is unclear, however, whether these areas will be needed for water quality. Additional comments may follow after addressing all other WQ comments with the final design of Pond C. See also WQ 20.

Update 2: Note the following:

- (1) Provide additional spot elevations in the parking lot and label all high points to verify the drainage areas to rain gardens D, E, and F.
- (2) The acceptability of Chinquapin Oaks as vegetation in the rain gardens will be determined after consultation with Environmental Resource Management.

WQ 23. Review the calculations for Pond B (Sheet 14). Note the following:

- (1) There appear to be errors in the provided sedimentation and infiltration pond area and volume calculations. The areas and volumes shown in the table for each pond appear to be the total areas and volumes for both ponds combined.
- (2) The required areas and volumes in the table should reflect the actual areas and volumes required to be treated. If the existing water quality pond to be removed is currently providing water quality control for the offsite Schlotsky's, the required treatment area would be approximately 1.1 acres (this would exceed the maximum 1 acre allowed for rain gardens). If the offsite Schlotsky's is not currently being treated by the existing water quality pond, then the required treatment area would be approximately 0.44 acres. In the latter case, the offsite flow should be routed around the pond if the pond is not sized for the offsite area.
- (3) For an infiltration system, the measured permeability should be reduced by a factor of 2 to account for potential clogging over time (ECM 1.6.7.H.2).
- (4) It is not clear how the drainage area to control (13,068 ft²) and the water quality volume used in the infiltration area calculation (1874 ft³) were determined.

Update 2: Note the following:

- (1) The infiltration area should have a constant elevation. The actual infiltration area would then be the area within the elevation 452.5 contour (1225 ft²). It is also not clear how the sedimentation pond volume was determined (the sedimentation area corresponding to the 453.5 contour is measured to the hedgerow and appears substantially smaller than the 1800 ft² indicated).

- (2) The onsite area to be treated is 0.39 ft^2 . The impervious cover in this area appears substantially larger than the 25% indicated in the calculation table (over 50% and probably closer to 75%).
- (3) The table still indicates the measured permeability value without the reduction factor of 2.
- (4) It is still not clear how the 1874 ft^3 used in the infiltration area calculation was determined. It appears nowhere else in the calculation table.

WQ 24. CLEARED

WQ 25. Note the following with respect to the vegetative filter strip (VFS) for Pond A (Sheet 13):

- (1) Indicate the area covered by the VFS by shading or other means. Note that the VFS must be entirely above areas which are subject to inundation (i.e. bypass inlet elevation plus overflow head). Make sure that the VFS slope is between 1% and 10% (ECM 1.6.7.B.3).
- (2) Provide a level spreader at the upgradient end of the VFS. The level spreader must be positioned to capture all flow from the building downspouts. Add a note indicating that all flow from the roof must be directed to the level spreader.
- (3) Provide calculations verifying that the maximum hydraulic loading rate for the 2-year, 3-hour rainfall does not exceed $0.05 \text{ cfs/ft width}$ (ECM 1.6.7.B.3).
- (4) Indicate vegetation type to be placed in the VFS (ECM 1.6.7.B.4). Do not include trees in the VFS.

Update 2: As presently designed, the level spreader will not evenly distribute the flows to the VFS since it is not level. The level spreader and VFS are lower at the east end where flow from the storm sewer enters the spreader area with flowline at el. 454.5. The majority of the spreader appears intended to distribute flow to the VFS at elevation 455.65, but flows will tend to concentrate at the low end of the spreader near the storm sewer headwall. Since building flows (approximately 80% of the total) enter the spreader area at a higher elevation (455.65), it appears feasible to design two level spreader and corresponding VFS sections (one for flows from the storm sewer and one for flows from the building) at different levels. Alternatively, consideration could be given to replacing the storm sewer with a channel to facilitate a single spreader design.

WQ 26. Review the design and calculations for Pond A (Sheet 13). Note the following:

- (1) For an infiltration system, the measured permeability should be reduced by a factor of 2 to account for potential clogging over time (ECM 1.6.7.H.2).
- (2) Based on (1), the provided infiltration area will be insufficient. Since the sedimentation basin would not be needed if a VFS is provided, and since the overall provided water quality volume appears to be sufficient, it appears that additional filtration area can be provided by conversion of the sedimentation basin.
- (3) Provide a flow spreader across the five 6" pipe outlets to the sedimentation basin.
- (4) It is not clear how the drainage area to control ($31,761 \text{ ft}^2$) and the water quality volume used in the infiltration area calculation (2599 ft^3) were determined.

Update 2: The infiltration area should have a constant elevation. The actual infiltration area would then be the area within the elevation 453.5 contour (1508 ft^2). It appears that this can be corrected by moving the 453.5 and 454 contours outward as much as possible until sufficient area is achieved.