

AGENDA ITEMS 4B, 4C, 4D, & 4E

Lot 3 Echo Hills
West Management LLC

4B
Comprehensive Plan Amendment:
Future Land Use Map

4C
Rezoning

4D
Planned Unit Development

4E
Preliminary Plat



CITY OF LA VISTA
PLANNING DIVISION

RECOMMENDATION REPORT

CASE NUMBERS: PCPA19-0002;
PRZ19-0002; PPUD19-0004; PSPP19-0003

FOR HEARING OF: December 12, 2019
Report Prepared on: December 4, 2019

I. GENERAL INFORMATION

A. APPLICANT:

Brett West
West Management LLC
3042 Sheridan Blvd
Lincoln, NE 68502

B. PROPERTY OWNER:

Omaha Community Foundation
3555 Farnam Street
Omaha, NE 68131

C. LOCATION: Northwest of the intersection of Chandler Road and 144th Street.

D. LEGAL DESCRIPTION: Lot 3 Echo Hills.

E. REQUESTED ACTION(S): Approval of an amendment to the Future Land Use Map of the Comprehensive Plan, Rezoning, PUD Site Plan, and a Preliminary Plat.

F. EXISTING ZONING AND LAND USE: C-1 – Shopping Center Commercial District, Gateway Corridor District (Overlay District); Lot 3 Echo Hills is currently vacant.

G. PURPOSE OF REQUEST: Development including an assisted living facility, memory care facility, multi-family housing, a restaurant, retail space, and drive-thru coffee shop.

H. SIZE OF SITE: Approximately 12.4 acres.

II. BACKGROUND INFORMATION

A. EXISTING CONDITION OF SITE: The property slopes downward to the south and to the east; the site is currently vacant.

B. GENERAL NEIGHBORHOOD/AREA LAND USES AND ZONING:

1. **North:** Tornado Car Wash, C-1 Shopping Center Commercial District, Gateway Corridor Overlay (Overlay District); Echo Hills Neighborhood, RS-72 - Single Family Residential.
2. **East:** Dino's Storage, C-1 – Shopping Center Commercial District, Gateway Corridor Overlay (Overlay District).

3. **South:** Vacant Lot, I-1 Light Industrial District, Gateway Corridor Overlay (Overlay District).
4. **West:** Echo Hills Park; Echo Hills Neighborhood, RS-72 - Single Family Residential.

C. RELEVANT CASE HISTORY:

1. N/A

D. APPLICABLE REGULATIONS:

1. Section 5.08 of the Zoning Regulations – R-3 High Density Residential
2. Section 5.10 of the Zoning Regulations – C-1 Shopping Center Commercial
3. Section 5.15 of the Zoning Regulations – PUD Planned Unit Development (Overlay District)
4. Section 5.17 of the Zoning Regulations – Gateway Corridor District (Overlay District)
5. Article 6 of the Zoning Regulations – CUP – Conditional Use Permit
6. Section 3.08 of the Subdivision Regulations – Replats
7. Section 4.02 of the Subdivision Regulations – Design Standards; Streets

III. ANALYSIS

A. COMPREHENSIVE PLAN:

1. The Future Land Use Map of the Comprehensive Plan designates the area for commercial development. The proposed amendment to the Future Land Use Map would change the designation for part of the site from commercial to high density residential to allow for this portion of the property to be rezoned from C-1 Shopping Center Commercial to R-3 High Density Residential PUD (retaining the Gateway Corridor District (Overlay District)).
2. The proposed project will meet Policy Live-2.2 of the La Vista Comprehensive Plan which reads: “Promote the development of housing types and supportive programs for people of retirement age, allowing residents to age in place with access to daily services.” This policy directly promotes Goal 2 of the Live Long category of the Comprehensive Plan, which reads: “Maintain the balance of diverse, high-quality housing that appeals to people of varying backgrounds, incomes and abilities.”

B. OTHER PLANS: Traffic Impact Analysis dated December 2, 2019.

C. TRAFFIC AND ACCESS:

1. There will be two main full access points to the development; one onto 144th Street (N-50) via Echo Hills Drive, and one onto Chandler Road via 146th Street.

2. A traffic impact analysis for the development has been prepared by Felsburg, Holt & Ullevig (FHU). The study is currently under review by the City Engineer and additional adjustments to the study that may have an impact to the site plan are expected.

The traffic impact analysis noted that MUTCD traffic signal warrants were not satisfied at the intersection of N-50 (144th Street) with Echo Hills Drive/Josephine Street or 146th Street with Chandler Road under 2019 existing or 2021 buildout traffic conditions. As the area surrounding the site continues to develop, these two intersections should be continually monitored to determine if signalization is warranted.

The traffic impact analysis recommends signal head improvements to the traffic signal at the intersection of N-50 (144th Street) and Chandler Road at the time of full buildout. Full recommendations are available in the attached traffic impact analysis.

D. UTILITIES:

1. The property has access to sanitary sewer, water, gas, power, and communication utilities.
2. Storm water management fees will be collected at the time of building permit.

E. PARKING REQUIREMENTS: The parking stall requirements for the proposed development, per the La Vista Zoning Ordinance, are:

Lot #	Use	Required Stalls	Provided Stalls
Lot 1	Assisted Living & Memory Care	80 + 24 Employees	83
Lot 2	Multi-Family	388	514
Lot 3	Commercial	104 + Employees	129
Lot 4	Commercial	21	25

The applicant has requested a reduction in the required parking stall count for the assisted living and memory care facilities on Lot 1 based on historical data from the operating history of similar projects. The applicant anticipates that only 5 assisted living residents will operate vehicles, and that no memory care residents will be operating a vehicle, greatly reducing the need for parking. City staff approve of the revised stall count based on the anticipated demand for these uses.

IV. REVIEW COMMENTS:

1. With approval of the Comprehensive Plan Amendment, Rezoning, PUD Plan, and Preliminary Plat, the applicant will also need to have the Final Plat, Subdivision Agreement, and Conditional Use Permits

approved in order to commence the development process. Conditional Use Permits will be required for the proposed assisted living and memory care facility on Lot 1, and for the multi-family housing proposed for Lot 2.

2. The design of each building will need to be approved through the City's Design Review process under the Gateway Corridor District regulations, prior to receiving building permits.
3. Any traffic signal improvements required by NDOT must be completed prior to the issuance of a Certificate of Occupancy and will be addressed through the Subdivision Agreement as part of the Replat process.
4. The applicant informed staff that they held a forum on November 14th, 2019 to discuss the proposed development with neighborhood residents and the SID Board, and to listen to their feedback.
5. Prior to City Council approval, the following conditions shall be met:
 1. Satisfactory review of the Traffic Impact Analysis and any resulting impacts that it has on the site plan.
 2. Satisfactory review of a revised photometric plan.
 3. Satisfactory update to the side yard setbacks for the smaller building located on Lot 4.

V. STAFF RECOMMENDATION – Comprehensive Plan – Future Land Use Map Amendment:

Staff recommends approval of the Comprehensive Plan Amendment, contingent on the satisfactory resolution of the issues stated within this staff report prior to City Council approval.

VI. STAFF RECOMMENDATION - Rezoning from C-1 to R-3:

Staff recommends approval of the Rezoning of proposed Lots 3 and 4 Echo Hills Replat 4 from C-1 Shopping Center Commercial and Gateway Corridor Overlay to C-1 Shopping Center Commercial, Gateway Corridor Overlay, and Planned Unit Development, and staff recommends approval of the Rezoning of proposed Lots 1 and 2 Echo Hills Replat 4 from C-1 Shopping Center Commercial and Gateway Corridor Overlay to R-3 High-Density Residential, Gateway Corridor Overlay, and Planned Unit Development, as depicted in the Zoning Map Amendment Exhibit, contingent on the satisfactory resolution of the issues stated within this staff report prior to City Council approval.

VII. STAFF RECOMMENDATION – Planned Unit Development:

Staff recommends approval of the Planned Unit Development, contingent on the satisfactory resolution of the issues stated within this staff report prior to City Council approval, as the PUD Site Plan request is consistent with the Comprehensive Plan (as amended) and the Zoning Ordinance.

VIII. STAFF RECOMMENDATION – Preliminary Plat:

Staff recommends approval of the Preliminary Plat for Lot 3 Echo Hills, being replatted as Lots 1-4 Echo Hills Replat 4, contingent on the satisfactory resolution of the issues stated within this staff report prior to City Council approval.

IX. ATTACHMENTS TO REPORT:

1. Vicinity Map
2. Review Letters
3. Future Land Use Map Amendment Exhibit
4. Zoning Map Amendment Exhibit
5. PUD Plan Set
6. Preliminary Plat Plan Set
7. Traffic Impact Analysis

X. COPIES OF REPORT SENT TO:

1. Brett West, West Management LLC
2. Joe Dethlefs, Thompson, Dreessen & Dorner Inc.
3. Public Upon Request



Prepared by: Assistant Planner

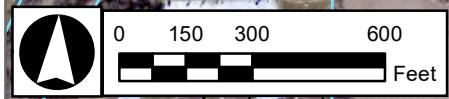
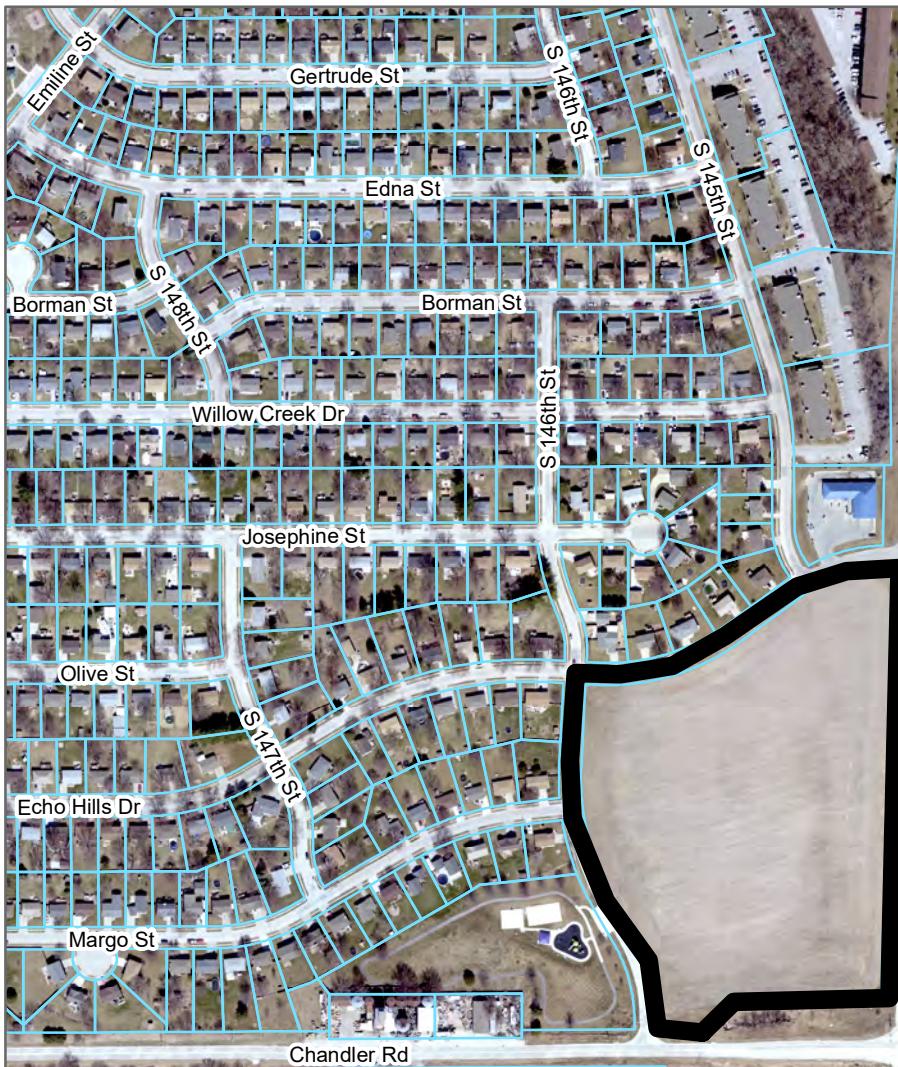


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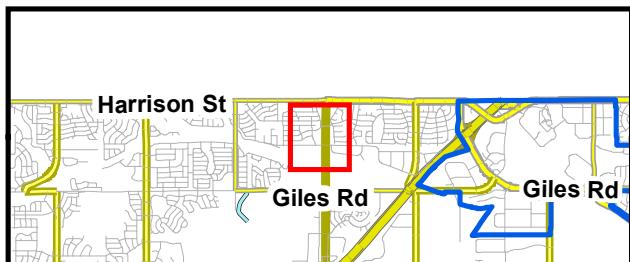
12/6/19

Date

Senior Planner



Vicinity Map



**Lot 3 Echo Hills -
Comprehensive Plan Amendment,
Rezoning, Planned Unit Development
& Preliminary Plat**

12/6/2019



CB



November 22, 2019

Joe Dethlefs
Thompson, Dreessen & Dorner, Inc.
10836 Old Mill Road
Omaha, NE 68154

RE: Planned Unit Development – Initial Review Letter
Lot 3 Echo Hills

Mr. Dethlefs,

We have reviewed the documents submitted for the above-referenced application. Based on the elements for consideration set forth in the applicable sections of the Zoning Ordinance, the City has the following comments:

1. Section 5.15.03 – The zoning listed on the PUD Site Plan needs to be corrected to include the Gateway Corridor District (Overlay District) over all parcels to reflect the actual zoning.
2. Section 5.15.04.01 - Project schedule should be resubmitted as to show the duration of tasks prior to January 2020.
3. Section 5.15.04.03 - If the traffic study or other determinations require public improvements, certain assurances may be required to ensure performance in accordance with the development plan.
4. 5.15.04.03 - It is anticipated that a traffic impact study will be completed for this development. Traffic study should identify any potential public improvements required to address adverse traffic impacts. The driveway for the drive-through coffee shop in proposed Lot 4 appears to be problematic in that traffic may stack into the public street. Internal circulation or geometry changes may be needed to address this potential issue.
5. Section 5.15.04.06 - Proposed trash enclosures locations need to be detailed and/or relocated as to ensure appropriate screening and/or location. Please confirm if the single enclosure depicted on Lot 2 is sufficient to meet the needs of the buildings of that lot. Note that enclosures must abide by Section 7.17.04.03 of the Zoning Ordinance and the Gateway Corridor District Design Guideline in regards to design and construction.

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6. Section 5.15.04.07 - Parking requirements appear to be adequate for lots 2, 3 and 4. Lot 1 does not meet the requirements per 7.06 of the Zoning Ordinance. Please show how assumptions were calculated, and what provisions will be taken to ensure parking will not become an issue in the future. Some stalls in Lot 2 and Lot 4 appear to be less than standard length of 18 feet, however this may be due to overhang. Applicant should confirm all stalls are standard dimension, otherwise provisions should be made for compact parking.
7. Section 5.15.04.09 – The residential structures within the PUD Site Plan do not meet the 30-foot front yard setback requirement of the proposed underlying R-3 Zoning District. However, these setbacks do meet the minimum requirement of Section 5.15.04.09 of the Zoning Ordinance when found reasonable by the Planning Commission and City Council as per that section of the Ordinance.

Applicant needs to provide the number of stories in height of Building 4 in order to assess the proposed building's conformance with the setbacks listed within Section 5.08.05 of the Zoning Ordinance.

The smaller building depicted on Lot 4 does not meet the setbacks within the underlying C-1 Zoning District as listed within Section 5.10.06 of the Zoning Ordinance.

8. Section 5.15.04.11 – The open space percentage listed for Lot 2 does not conform with the 30% requirement as set forth in this Section.
9. Section 5.15.04.14 - The proposed commercial parcel has significant access restrictions to 144th as well as Chandler Road per NDOT. However, 146th Street is in proximity of Chandler Road as well as 144th Street and would generally act a local collector. Similar roadway configurations can be found in the adjacent Stonybrook South subdivision.
10. Section 5.15.04.15 - PUD plan needs to show five foot (5') wide sidewalk dimensioning on public street frontages.
11. Section 5.15.04.17-20 - The overall site and landscape plans are currently under review by the City's Design Review Architect. A separate design review letter will be forwarded once the initial review has been completed. The design review process for these plans needs to be substantially complete prior to proceeding through City Council approval process.

Separate design review processes will be required for each building phase at the time of development for the proposed commercial properties and at the time of application for Conditional Use Permit for the residential properties proposed

in the site plan. Building and landscaping design for each phase will be reviewed in relation to each specific building/addition.

In addition to the Design Review Architect's comments, staff has noted possible site line issues with the proposed Vanderwolf Pine closest to the intersection of 146th Street and Chandler Road. Please confirm that the tree, at maturity, will remain out of site triangle requirements set forth in Section 2.20 of the Ordinance.

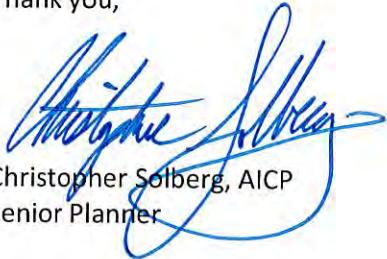
Staff has also noted the placement of an Amur Maple in the same location as a proposed dumpster enclosure on Lot 1.

12. Section 5.15.04.21- Exterior lighting needs to be shown as to ensure there are no adverse impacts to the adjacent residential homes. Please submit a detailed photometric plan to support this requirement.
13. Site lighting needs to abide by the Gateway Corridor District Design Guideline. See the Guideline for the parking lot light fixture and pole required for developments within the Gateway Corridor District.
14. Section 5.15.05.02, Subsection 2 - Height of each proposed structure needs to be addressed within the PUD plan.
15. Section 5.15.05.02 Subsection 4 - Ensure pedestrian walkways for internal circulation and connections to the perimeter sidewalk are adequate. The parking island immediately east of the 12 parking stall group south of west leg of Building 3 should be shifted west to align with the north/south sidewalk connection going through the parking lot. Additionally, a connection should be made between the east/west sidewalk along the northern end of the commercial property to the sidewalk along the west face of the south leg of Building 3.

Please submit 4 full size revised copies of the PUD plans and related documents (along with electronic copies) to the City for further review. A timeline for review by the Planning Commission and City Council will be determined based on the timing of the resubmittal and the extent to which the issues noted this review have been sufficiently addressed.

If you have any questions regarding these comments, please feel free to contact me at any time.

Thank you,

A handwritten signature in blue ink, appearing to read "Christopher Solberg".

Christopher Solberg, AICP
Senior Planner

cc:

Brett West, West Management LLC
Pat Dowse, City Engineer
Bruce Fountain, Community Development Director

November 25, 2019

Christopher Solberg, AICP.
City of La Vista Planning Department
8116 Park View Blvd
La Vista, NE 68128

RE: Echo Hills Planned Unit Development Review Letter
Lot 3 Echo Hills
TD2 Project No. 2142-102.2

Mr. Solberg:

Below are the responses to the comments from the Planned Unit Development – Initial Review Letter dated November 22, 2019. The City comments are listed below followed by our response in bold.

1. Section 5.15.03 - The zoning listed on the PUD Site Plan needs to be corrected to include the Gateway Corridor District (Overlay District) over all parcels to reflect the actual zoning.
Okay, Site Plan has been updated.
2. Section 5.15.04.01 - Project schedule should be resubmitted as to show the duration of tasks prior to January 2020.
Okay, schedule updated.
3. Section 5.15.04.03 - If the traffic study or other determinations require public improvements, certain assurances may be required to ensure performance in accordance with the development plan.
Acknowledged.
4. 5.15.04.03 - It is anticipated that a traffic impact study will be completed for this development. Traffic study should identify any potential public improvements required to address adverse traffic impacts. The driveway for the drive-through coffee shop in proposed Lot 4 appears to be problematic in that traffic may stack into the public street. Internal circulation or geometry changes may be needed to address this potential issue.
Okay, based on the findings of the traffic study, the layout of Lot 4 may be modified.
5. Section 5.15.04.06 - Proposed trash enclosures locations need to be detailed and/or relocated as to ensure appropriate screening and/or location. Please confirm if the single enclosure depicted on Lot 2 is sufficient to meet the needs of the buildings of that lot. Note that enclosures must abide by Section 7.17.04.03 of the Zoning Ordinance and the Gateway Corridor District Design Guideline in regard to design and construction.
Okay, trash enclosure detail has been added to this submittal. Additional trash enclosure has been added to Lot 2.

6. Section 5.15.04.07 - Parking requirements appear to be adequate for lots 2, 3 and 4. Lot 1 does not meet the requirements per 7.06 of the Zoning Ordinance. Please show how assumptions were calculated, and what provisions will be taken to ensure parking will not become an issue in the future. Some stalls in Lot 2 and Lot 4 appear to be less than standard length of 18 feet, however this may be due to overhang. Applicant should confirm all stalls are standard dimension, otherwise provisions should be made for compact parking.

Lot 1 parking calculations were based on Housing (Congregate), Assisted-living facilities, which is 1 space per dwelling unit plus 1 space per employee on the largest shift. This comes to 104 spaces total, however no one in the memory care units operate vehicles and only about 5 residents in the assisted living facility operate vehicles. Hence the 83 spaces provided will be adequate for the 24 employees and the residents.

If Commercial Uses, Nursing Home was used to calculate the required parking at 1 space per 3 beds plus 1 per employee on the largest shift, the total calculated required parking would be 51 stalls.

Some of the stalls in Lots 2 and 4 have a parking bay width of 16' with a vehicle overhang of 2' per Section 7.09.01.

7. Section 5.15.04.09 - The residential structures within the PUD Site Plan do not meet the 30-foot front yard setback requirement of the proposed underlying R- 3 Zoning District. However, these setbacks do meet the minimum requirement of Section 5.15.04.09 of the Zoning Ordinance when found reasonable by the Planning Commission and City Council as per that section of the Ordinance.

Acknowledged. Residential structures are setback 25' from the property line per 5.15.04.09.

Applicant needs to provide the number of stories in height of Building 4 in order to assess the proposed building's conformance with the setbacks listed within Section 5.08.05 of the Zoning Ordinance.

All residential buildings onsite will be 3 stories with a maximum height of 45'.

The smaller building depicted on Lot 4 does not meet the setbacks within the underlying C-1 Zoning District as listed within Section 5.10.06 of the Zoning Ordinance.

Per Section 5.15.02.04, we request the side yard setback of 10' be adjusted to what is shown on the PUD Site Plan.

8. Section 5.15.0411 - The open space percentage listed for Lot 2 does not conform with the 30% requirement as set forth in this Section.

Acknowledged. Lot 2 open space was displayed incorrectly on the Site Plan. The correct open space percentage is 34%.

9. Section 5.15.04.14 - The proposed commercial parcel has significant access restrictions to 144th as well as Chandler Road per NDOT. However, 146th Street is in proximity of Chandler Road as well as 144th Street and would generally act a local collector. Similar roadway configurations can be found in the adjacent Stonybrook South subdivision.

Acknowledged

10. Section 5.15.04.1s - PUD plan needs to show five foot (5') wide sidewalk dimensioning on public street frontages.

Acknowledged. Label has been added.

11. Section 5.15.04.17-20 - The overall site and landscape plans are currently under review by the City's Design Review Architect. A separate design review letter will be forwarded once the initial review has been completed. The design review process for these plans needs to be substantially complete prior to proceeding through City Council approval process.

Acknowledged

Separate design review processes will be required for each building phase at the time of development for the proposed commercial properties and at the time of application for Conditional Use Permit for the residential properties proposed in the site plan. Building and landscaping design for each phase will be reviewed in relation to each specific building/addition.

Acknowledged

In addition to the Design Review Architect's comments, staff has noted possible site line issues with the proposed Vanderwolf Pine closest to the intersection of 146th Street and Chandler Road. Please confirm that the tree, at maturity, will remain out of site triangle requirements set forth in Section 2.20 of the Ordinance.

The Vanderwolf Pine in the southwest corner has been moved to the northeast to ensure the proper site triangle is achieved.

Staff has also noted the placement of an Amur Maple in the same location as a proposed dumpster enclosure on Lot 1.

Amur Maple location has been updated.

12. Section 5.15.04.21 – Exterior lighting needs to be shown as to ensure there are no adverse impacts to the adjacent residential homes. Please submit a detailed photometric plan to support this requirement.

Okay, detailed photometric plan is currently being designed and will be forwarded when complete.

13. Site lighting needs to abide by the Gateway Corridor District Design Guideline. See the Guideline for the parking lot light fixture and pole required for developments within the Gateway Corridor District.

Acknowledged

City of La Vista
Lot 3 Echo Hills
November 25, 2019
Page 4

14. Section 5.15.05.02, Subsection 2 - Height of each proposed structure needs to be addressed within the PUD plan.

Building Heights have been added to the Site Statistics Table.

15. Section 5.15.05.02 Subsection 4 - Ensure pedestrian walkways for internal circulation and connections to the perimeter sidewalk are adequate. The parking island immediately east of the 12 parking stall group south of west leg of Building 3 should be shifted west to align with the north/south sidewalk connection going through the parking lot. Additionally, a connection should be made between the east/west sidewalk along the northern end of the commercial property to the sidewalk along the west face of the south leg of Building 3.

Site Plan has been updated per comments. The sidewalk connection on the west side of the south leg of Building 3 to the commercial lot is not shown due to elevation differences.

We appreciate the City's effort and assistance with the development process. Please contact me with any additional questions or comments.

Respectfully submitted,

THOMPSON, DREESSEN & DORNER, INC.



Joe Dethlefs, P.E.



December 6, 2019

Joe Dethlefs
Thompson, Dreessen & Dorner, Inc.
10836 Old Mill Road
Omaha, NE 68154

RE: Planned Unit Development – Second Review Letter
Lot 3 Echo Hills

Mr. Dethlefs,

We have reviewed the documents submitted for the above-referenced application. Based on the elements for consideration set forth in the applicable sections of the Zoning Ordinance, the City has the following comments:

1. Section 5.15.04.09 - The side-yard setback of 10' cannot be reduced to what is depicted on the PUD Site Plan for the smaller building located on Lot 4. While Section 5.15.02.04 does allow for reductions in the setback requirements of the underlying zoning districts, Section 5.15.04.09 sets the minimum setbacks allowed with a PUD. The minimum setback is 10'. Please adjust the site as necessary in order to meet the setback requirement for all buildings.
2. Section 5.15.04.03 - Per the draft traffic study it does appear that there will be needed modifications to the signal at HWY 50 (144th Street) and Chandler Road, to include adding a permissive/protected phase to the northbound left turn lane with a 4-section signal head to include a flashing yellow arrow, and the modification to 3-section signal heads, with a flashing yellow arrow, to all other left turning lane signal head as to be consistent with signals in the vicinity. As Chandler Road is operated by Sarpy County, and the signal is operated by the Nebraska Department of Transportation (NDOT), the traffic study needs to be reviewed both entities, and the traffic signal improvements need to be confirmed by NDOT. Certain assurances will need to be made as to guarantee performance by the developer if NDOT requires these or any additional improvements to the NDOT roadway system, and/or if Sarpy County requires any additional improvements to the Sarpy County roadway system.

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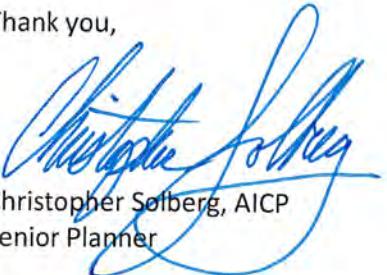
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3. Section 5.15.04.03 - Traffic study also indicated the need for a mid-block pedestrian crossing on 146th Street to Echo Hills Park. Improvements should be made by the applicant as indicated in the traffic study, and certain assurances should be made to the City of La Vista and to Echo Hills SID as to ensure performance.
4. Section 5.15.04.03 -Traffic study indicated stored lane queues may block traffic from turning into said stored lanes, particularly at 145th Street and Echo Hills Drive. Appropriate signage or other measures should be contemplated as to thwart queues from blocking the intersection during peak traffic times.
5. Section 5.15.04.03 -The traffic study focused on the nearby major intersections of the development but did not evaluate the local roadways of 146th Street and/or Echo Hills Drive. Traffic study should identify any potential public improvements required to address adverse traffic impacts on the local roadways. The driveway for the drive-through coffee shop in proposed Lot 4 appears to be problematic in that traffic may stack into the public street. Internal circulation or geometry changes may be needed to address this potential issue.
6. Section 5.15.04.03 - Traffic study suggests that traffic waiting on Echo Hills Drive to exit east onto HWY 50 may eventually migrate to the south and exit at 146th Street onto Chandler Road. Will anticipated change in traffic dispersion adversely impact the south intersections of 145th Street and Chandler Road, and/or Chandler Road and HWY 50? Will the increased traffic to the south have any adverse impacts on the local roadway network?
7. Section 5.15.04.21- Photometric plan does not show if there are any potential lighting impacts related to any proposed on-building lighting, and none of the modeled values extend to the existing properties to show if there are any potential impacts to existing, surrounding properties. Photometric plan should be revised.
8. General Comment: A review of the proposed PUD Landscaping Plan is currently under review by the City's third-party Design Review Architect. Once the review is complete, alterations to the Landscaping Plan may be required.

Please submit 4 full size revised copies of the PUD plans and related documents (along with electronic copies) to the City for further review. If the Planning Commission approves of the Comprehensive Plan Amendment, Rezoning, PUD, and Preliminary Plat on the 12/12/19 meeting, all of the issues noted in this letter will need to be addressed to the satisfaction of City staff before the zoning actions will be brought before the City Council. If any issues remain or are not satisfactorily addressed, deviations from the proposed timeline can and will occur.

If you have any questions regarding these comments, please feel free to contact me at any time.

Thank you,



Christopher Solberg, AICP
Senior Planner

cc:

Brett West, West Management LLC
Pat Dowse, City Engineer
Bruce Fountain, Community Development Director



November 22, 2019

Joe Dethlefs
Thompson, Dreessen & Dorner, Inc.
10836 Old Mill Road
Omaha, NE 68154

RE: Preliminary Plat – Initial Review Letter
Lot 3 Echo Hills

Mr. Dethlefs,

We have reviewed the documents submitted for the above-referenced application. Based on the elements for consideration set forth in the applicable sections of the Subdivision Regulations, the City has the following comments:

1. Section 3.03.07 - The width and location of platted streets and alleys within 200 feet of the property as well any physical features of the property, including but not limited to the sizes, elevations and flowlines of existing culverts, utilities and/or other features affecting the subdivision should be shown on the plat.
2. Section 3.03.08 - Location and names of all adjoining subdivisions or undeveloped land should be shown.
3. Section 3.03.09 - Ensure all lot dimensions are shown.
4. Section 3.03.10 - Thickness, radii and other dimension of the parking lots, driveways and sidewalks should be shown.
5. Section 3.03.19 - Per the Echo Hills Trip Generation Memo dated November 6, 2019 from Felsburg, Holt and Ullevig, the anticipated trip generation numbers from the project indicate a traffic impact analysis should be completed.
6. General Comment - Drainage study should be updated to capture all drainage catchments as currently contemplated, including catchments that do not drain to the stormwater BMP. 10 year design calculations should be updated once catchment delineations are updated. Final drainage study will need to verify stormwater BMP is designed to meet the Post Construction Storm Water Management requirements as set forth within the City of La Vista Municipal Code.

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Community Development
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p: 402-331-4343
f: 402-331-4375

Fire
8110 Park View Blvd.
p: 402-331-4748
f: 402-331-0410

Golf Course
8305 Park View Blvd.
p: 402-339-9147

Library
9110 Giles Rd.
p: 402-537-3900
f: 402-537-3902

Police
7701 South 96th St.
p: 402-331-1582
f: 402-331-7210

Public Buildings & Grounds
8112 Park View Blvd.
p: 402-331-4343
f: 402-331-4375

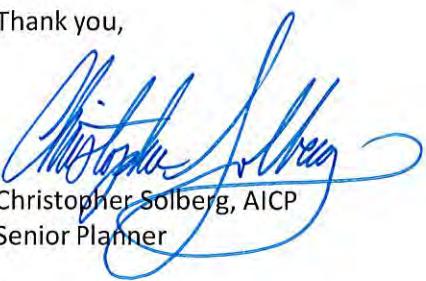
Public Works
9900 Portal Rd.
p: 402-331-8927
f: 402-331-1051

Recreation
8116 Park View Blvd.
p: 402-331-3455
f: 402-331-0299

Please submit 4 full size revised copies of the plat and related documents (along with electronic copies) to the City for further review. A timeline for review by the Planning Commission and City Council will be determined based on the timing of the resubmittal and the extent to which the issues noted this review have been sufficiently addressed.

If you have any questions regarding these comments, please feel free to contact me at any time.

Thank you,

A handwritten signature in blue ink, appearing to read "Christopher Solberg".

Christopher Solberg, AICP
Senior Planner

cc:

Brett West, West Management LLC
Pat Dowse, City Engineer
Bruce Fountain, Community Development Director

November 25, 2019

Christopher Solberg, AICP.
City of La Vista Planning Department
8116 Park View Blvd
La Vista, NE 68128

RE: Echo Hills Preliminary Plat Review Letter
Lot 3 Echo Hills
TD2 Project No. 2142-102.1

Mr. Solberg:

Below are the responses to the comments from the Preliminary Plat – Initial Review Letter dated November 22, 2019. The City comments are listed below followed by our response in bold.

1. Section 3.03.07 - The width and location of platted streets and alleys within 200 feet of the property as well any physical features of the of the property, including but not limited to the sizes, elevations and flowlines of existing culverts, utilities and/or other features affecting the subdivision should be shown on the plat.
Okay, aerial photo showing existing features, dimensions of right-of-way widths, and existing sewer information has been added.
2. Section 3.03.08 - Location and names of all adjoining subdivisions or undeveloped land should be shown.
Okay, adjacent subdivision names are shown on the Preliminary Plat and on the Vicinity Map.
3. Section 3.03.09 - Ensure all lot dimensions are shown.
Okay, plan has been updated.
4. Section 3.03.10 - Thickness, radii and other dimension of the parking lots, driveways and sidewalks should be shown.
Okay, plan has been updated, see Exhibit D.
5. Section 3.03.19 - Per the Echo Hills Trip Generation Memo dated November 6, 2019 from Felsburg, Holt and Ullevig, the anticipated trip generation numbers from the project indicate a traffic impact analysis should be completed.
Okay, complete traffic study is being performed for the project.

City of La Vista
Lot 3 Echo Hills
November 25, 2019
Page 2

6. General Comment - Drainage study should be updated to capture all drainage catchments as currently contemplated, including catchments that do not drain to the stormwater BMP. 10-year design calculations should be updated once catchment delineations are updated. Final drainage study will need to verify stormwater BMP is designed to meet the Post Construction Storm Water Management requirements as set forth within the City of La Vista Municipal Code.

Drainage study, Exhibit E, has been updated to include areas draining off-site. The complete drainage study will analyze each Impact Point and the site will be designed to comply with the City of La Vista's stormwater requirements.

Runoff calculations on Exhibit F were previously completed using all drainage areas, therefore the runoff calculations previously shown are current.

We appreciate the City's effort and assistance with the development process. Please contact me with any additional questions or comments.

Respectfully submitted,

THOMPSON, DREESSEN & DORNER, INC.



Joe Dethlefs, P.E.

JD/tjp



December 6th, 2019

Joe Dethlefs
Thompson, Dreessen & Dorner, Inc.
10836 Old Mill Road
Omaha, NE 68154

RE: Preliminary Plat – Second Review Letter
Lot 3 Echo Hills

Mr. Dethlefs,

We have reviewed the documents submitted for the above-referenced application. Based on the elements for consideration set forth in the applicable sections of the Subdivision Regulations, the City has the following comments:

1. Section 3.03.10 - Please indicate widths of sidewalk along the perimeter of the lots, as well as distance between back of curb and sidewalk, (furniture zone) to ensure sidewalk meets the requirements of Section 4.20 of the Subdivision Regulations. Sidewalk widths are indicated on the PUD submittals, however. Certain portions of the sidewalks meander inside of the lot lines in proposed Lot 1, Lot 2 and Lot 4, which may require sidewalk easements for public use.
2. Section 3.03.10 - Please indicate the radii of the driveway access points.

Please submit 4 full size revised copies of the PUD plans and related documents (along with electronic copies) to the City for further review. If the Planning Commission approves of the Comprehensive Plan Amendment, Rezoning, PUD, and Preliminary Plat on the 12/12/19 meeting, all of the issues noted in this letter will need to be addressed to the satisfaction of City staff before the zoning actions will be brought before the City Council. If any issues remain or are not satisfactorily addressed, deviations from the proposed timeline can and will occur.

If you have any questions regarding these comments, please feel free to contact me at any time.

Thank you,

Christopher Solberg, AICP
Senior Planner

cc:

Brett West, West Management LLC
Pat Dowse, City Engineer
Bruce Fountain, Community Development Director

City Hall
8116 Park View Blvd.
La Vista, NE 68128-2198
p: 402-331-4343
f: 402-331-4375

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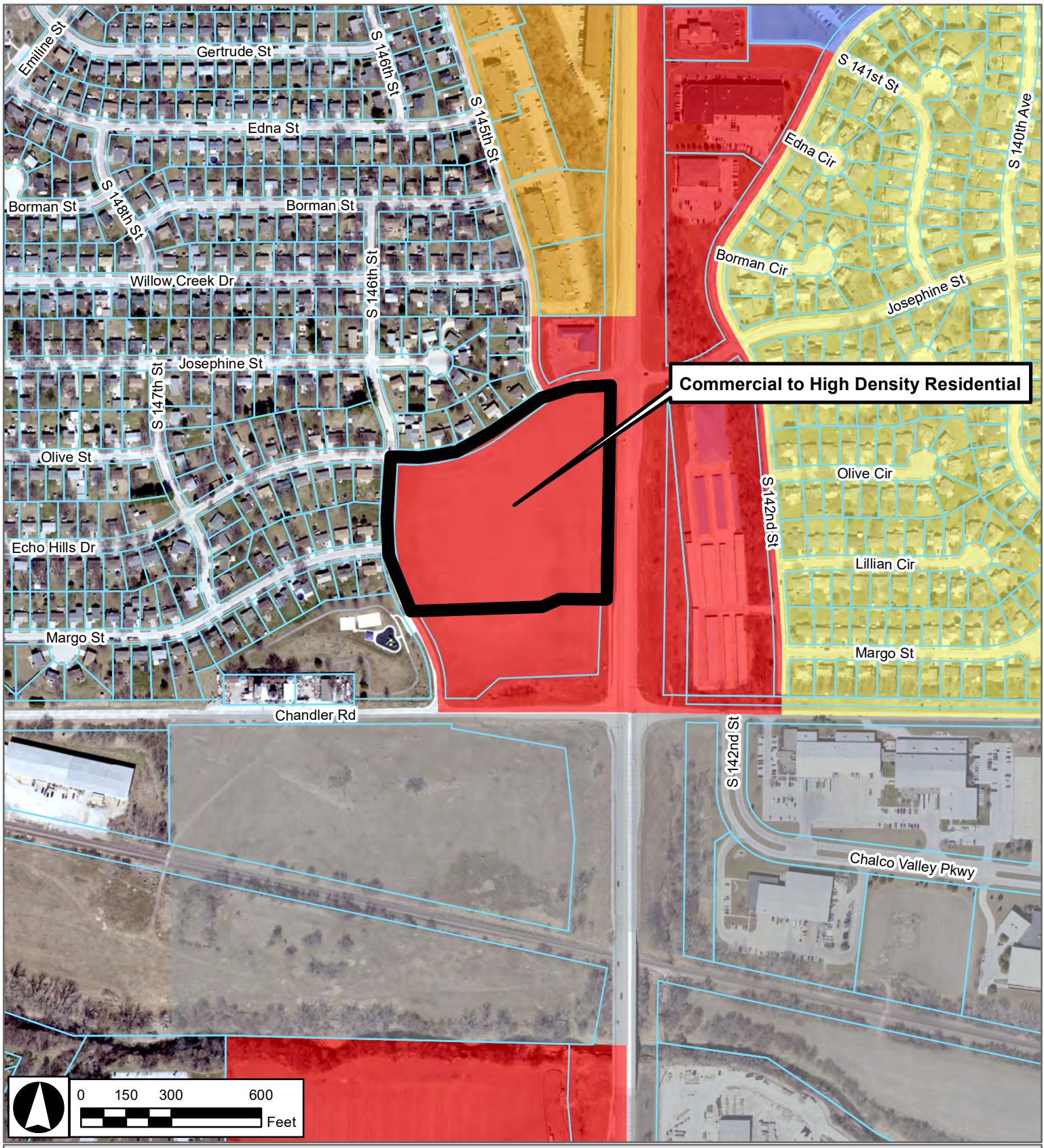
Public Works
9900 Portal Rd.
p: 402-331-8927
f: 402-331-1051

Recreation
8116 Park View Blvd.
p: 402-331-3455
f: 402-331-0299

www.cityoflavista.org
info@cityoflavista.org

AGENDA ITEM 4B

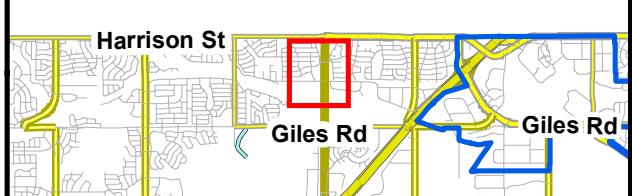
**Comprehensive Plan Amendment: Future Land Use
Map — West Management LLC
Lot 3 Echo Hills**



Future Land Use Map Amendment Exhibit Comprehensive Plan Amendment Proposed Lots 1 & 2 Echo Hills Replat 4

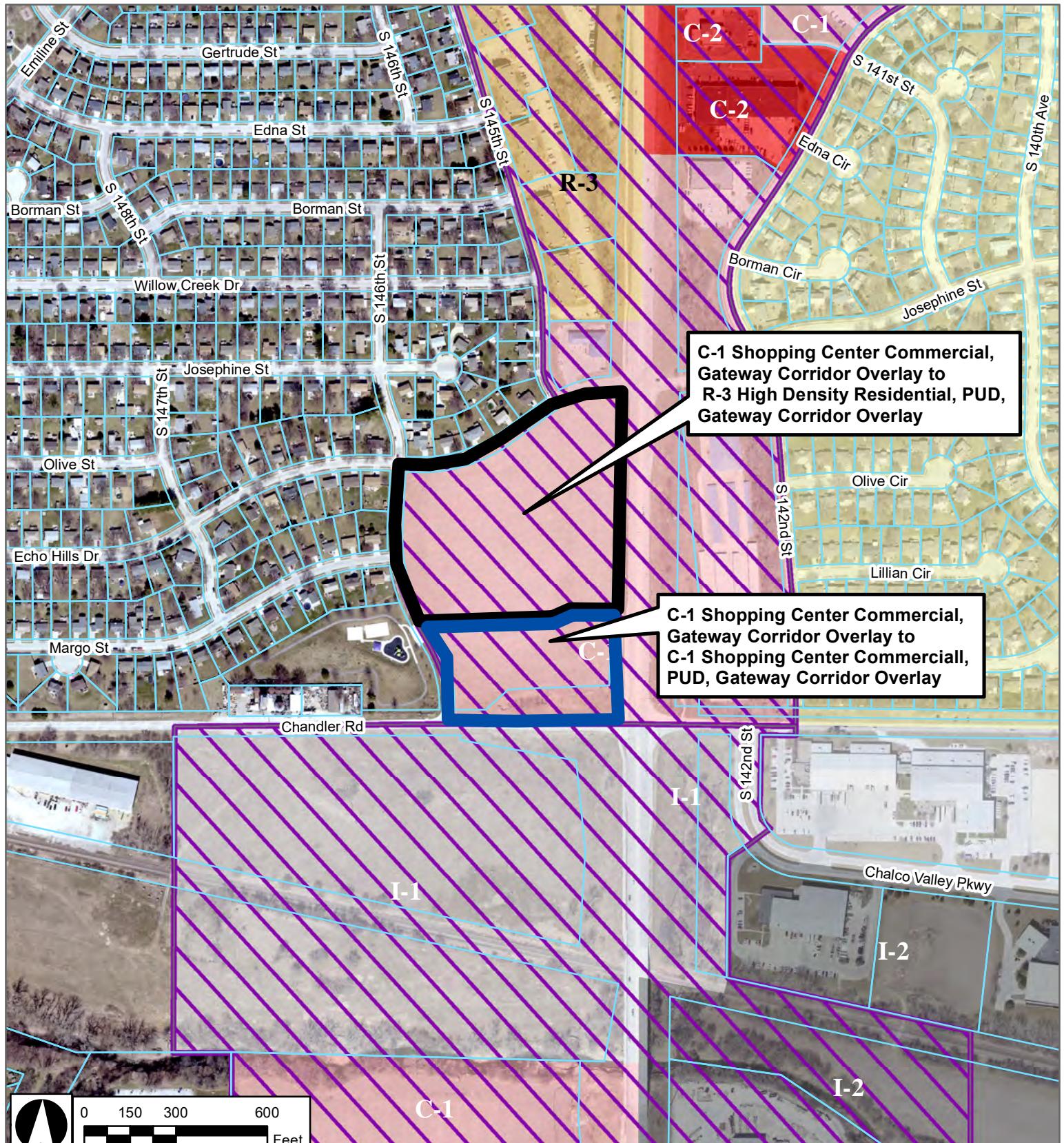
12/6/2019

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AGENDA ITEM 4C

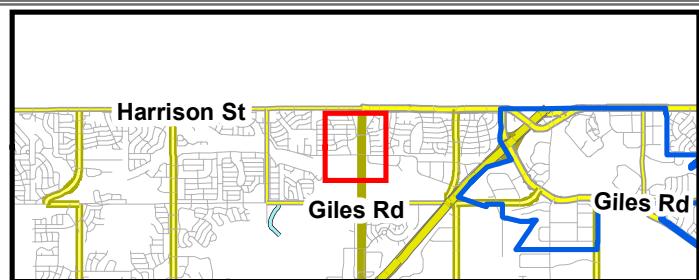
**Rezoning — West Management LLC
Lot 3 Echo Hills**



Zoning Map Amendment Exhibit Lot 3 Echo Hills

12/6/2019

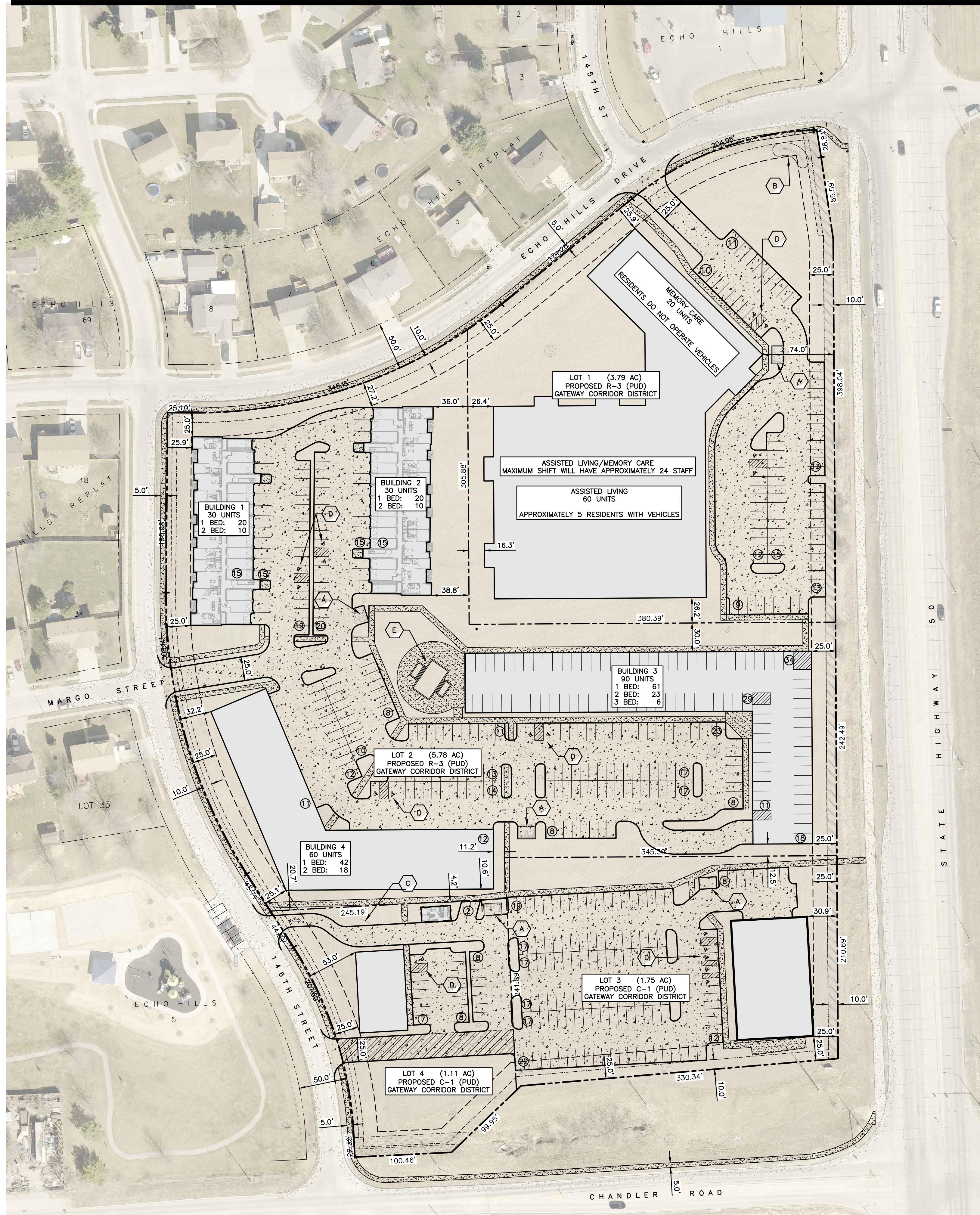
CB



AGENDA ITEM 4D

**Planned Unit Development
West Management LLC
Lot 3 Echo Hills**

Echo Hills Proposed Schedule (11.1.19)



TD2

engineering
& surveying

thompson, dreessen & dorner, inc.
10836 Old Mill Rd
Omaha, NE 68154
p.402.330.8860 www.td2co.com

Project Name

Echo Hills Replat 4

Lots 1 - 4

Client Name

West Management L L C

SITE KEY NOTE

- A. TRASH ENCLOSURE LOCATION
- B. MONUMENT SIGN LOCATION
- C. DRIVE THRU SIGN LOCATION
- D. PROPOSED ADA STALLS
- E. PROPOSED POOL LOCATION

ECHO HILLS REPLAT 4, LOTS 1-4, BEING A REPLATTING OF
LOT 3, ECHO HILLS, A SUBDIVISION IN SARPY COUNTY,
NEBRASKA.

LEGEND

LEGAL DESCRIPTION

ECHO HILLS REPLAT 4, LOTS 1-4, BEING A REPLATTING OF
LOT 3, ECHO HILLS, A SUBDIVISION IN SARPY COUNTY,
NEBRASKA.

LEGEND

	PROPOSED P.C.C. PAVEMENT
	PROPOSED P.C.C. SIDEWALK
	PROPOSED SANITARY SEWER MANHOLE
	PARCEL BOUNDARY
	PROPOSED LOT LINES
	BUILDING SETBACK
	LANDSCAPE SETBACK
	PROPOSED ACCESS EASEMENT
	PERMANENT SANITARY SEWER EASEMENT AS SHOWN ON THE FINAL PLAT OF ECHO HILLS.
	UTILITY EASEMENT GRANTED TO OMAHA PUBLIC POWER DISTRICT AND NORTHWESTERN BELL TELEPHONE COMPANY IN THE FINAL PLAT DEDICATION OF ECHO HILLS.
	EASEMENT AND RIGHT-OF-WAY GRANTED TO METROPOLITAN UTILITIES DISTRICT OF OMAHA RECORDED AS INSTRUMENT NO. 98-022243 OF THE DODGE COUNTY RECORDS.

BUILDING HEIGHT			
LOT NUMBER	BUILDING NUMBER/NAME	STORIES	HEIGHT
1	ASSISTED LIVING	2	35'
	MEMORY CARE	1	20'-2"
2	BUILDING 1	3	45' MA
	BUILDING 2	3	45' MA
	BUILDING 3	3	45' MA
	BUILDING 4	3	45' MA
3	RETAIL	1	20'-2"
4	RETAIL	1	20'-2"

SITE STATISTICS

Site Statistics										
Lot Number	Proposed Zoning	Lot Size (sf/ac)	Building Coverage (sf)	Building Coverage (%)	Gross Floor (sf)	Pavement Area (sf)	Total Impervious (sf)	Total Impervious (%)	Open Space (sf)	Total Open Space (%)
LOT 1	R-3 (PUD) GATEWAY CORRIDOR DISTRICT	165,264 SF / 3.79 AC	61,216	37	122,432 SF	38,500	99,716	60 %	65,548	40 %
LOT 2	R-3 (PUD) GATEWAY CORRIDOR DISTRICT	215,772 SF / 5.78 AC	81,500	32	237,900 SF	96,150	177,650	71 %	74,122	34 %
LOT 3	C-1 (PUD) GATEWAY CORRIDOR DISTRICT	76,228 SF / 1.75 AC	9,600	13	9,600 SF	45,000	54,600	72 %	21,628	28 %
LOT 4	C-1 (PUD) GATEWAY CORRIDOR DISTRICT	48,135 SF / 1.11 AC	4,690	10	4,690 SF	18,150	22,840	47 %	25,295	53 %

PARKING SUMMARY

LOT NUMBER	PARAMETERS	REQUIRED STALLS	PROVIDED STALLS
1	60 ASSISTED CARE UNITS & 20 MEMORY CARE UNITS	80 + 24 EMPLOYEES **	83
2	210 UNITS	105 COVERED	145
	283 BEDROOMS	283	369
3	10,400 SF (INCLUDES OUTDOOR SEATING)	104 + EMPLOYEE	129
4	4,200 SF	21	25

PHASING INFORMATION

PHASE NUMBER	LOT NUMBER	PROPOSED USE
PHASE 1	LOT 3	COMMERCIAL
PHASE 2	LOT 1	ASSISTED LIVING
PHASE 3	LOT 2	MULTI-FAMILIY
PHASE 4	LOT 4	COMMERCIAL

Drawn By: TDV Reviewed By: JAD
Job No : 2142.102 Date: 11.04.10

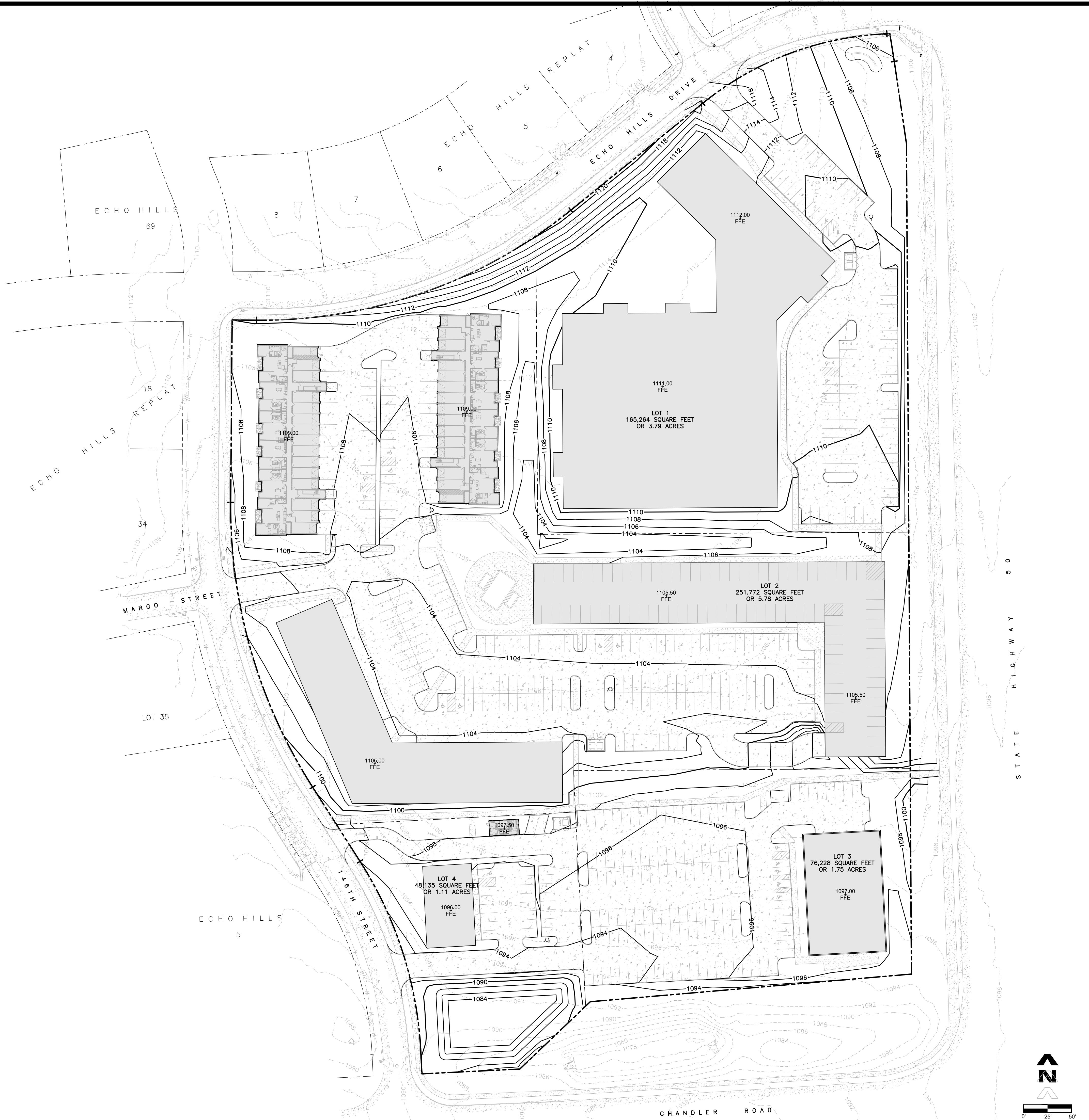
Sheet Title

PUD

Site Plan

Sheet Number

C1.0



West Management L.L.C.

Professional Se

Revision Dates

Drawn By: TDV Reviewed By: JAD
Job No.: 2142-102 Date: 11.04.19

Sheet Title

PUD Grading Plan

Page 10

C2.0

UTILITY LEGEND

	PROPOSED SANITARY SEWER
	PROPOSED WATER MAIN
	PROPOSED STORM SEWER
	EXISTING STORM SEWER
	EXISTING SANITARY SEWER
	EXISTING WATER MAIN
	PROPOSED FIRE HYDRANT
	PROPOSED PIV VALVE
	EXISTING FIRE HYDRANT

Client Name

West Management L.L.C.

Professional Sea

Revision Dates

Drawn By: TDV Reviewed By: JAD
Job No.: 2142-102 Date: 11.04.19

Sheet Title

PUD Utility Plan

Sheet Number

C3.0

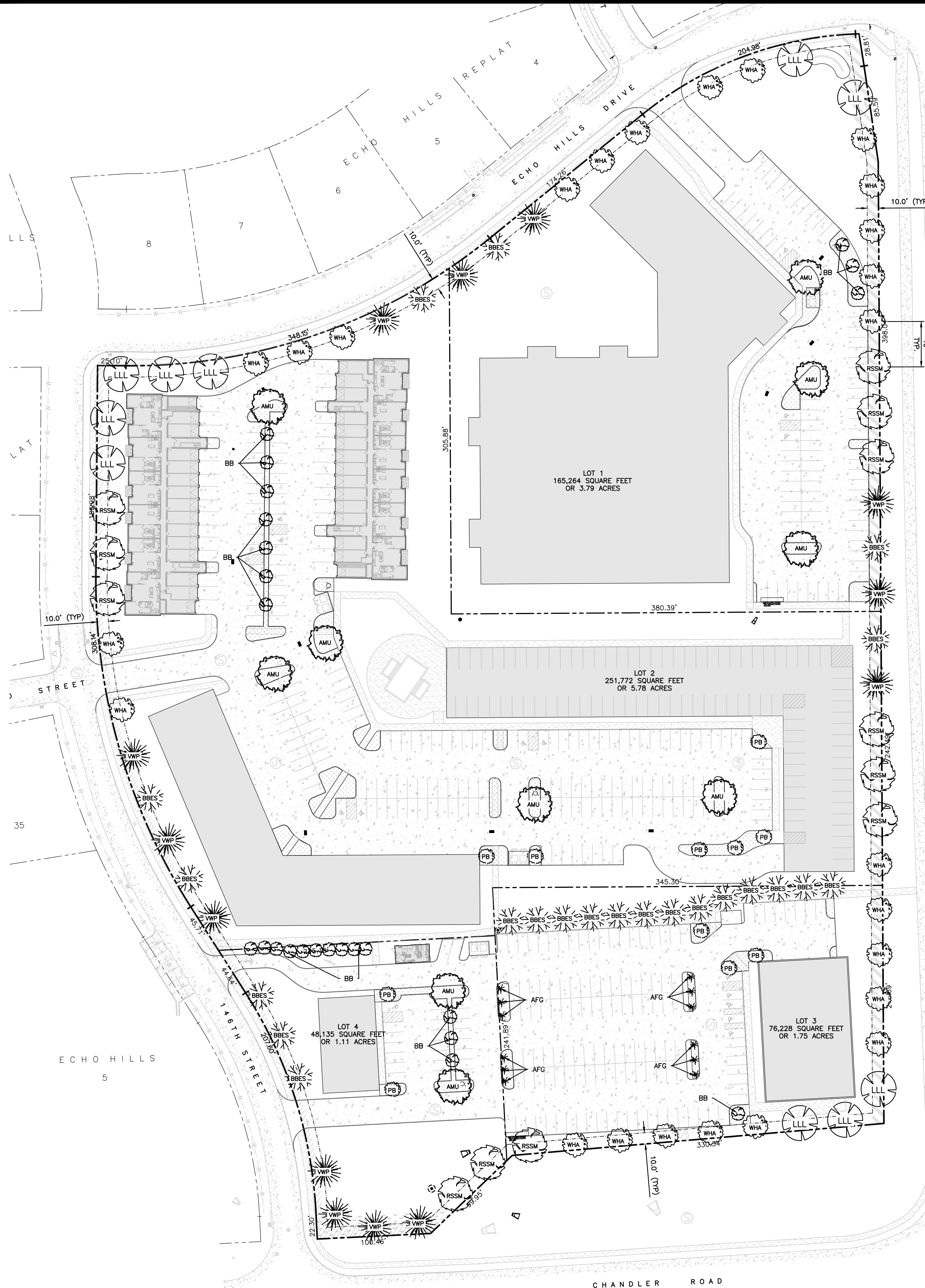
This site plan illustrates the layout of four lots (LOT 1, LOT 2, LOT 3, and LOT 4) in the Echo Hills area, bounded by CHANDLER ROAD to the south and ECHO HILLS STREET to the west. The plan shows the following key features:

- LOT 1:** 165,264 square feet or 3.79 acres. Contains a building footprint with internal rooms and a proposed fire hydrant.
- LOT 2:** 251,772 square feet or 5.78 acres. Contains a building footprint with internal rooms and a proposed fire hydrant.
- LOT 3:** 76,228 square feet or 1.75 acres. Contains a building footprint with internal rooms and a proposed fire hydrant.
- LOT 4:** 48,135 square feet or 1.11 acres. Contains a building footprint with internal rooms and a proposed fire hydrant.

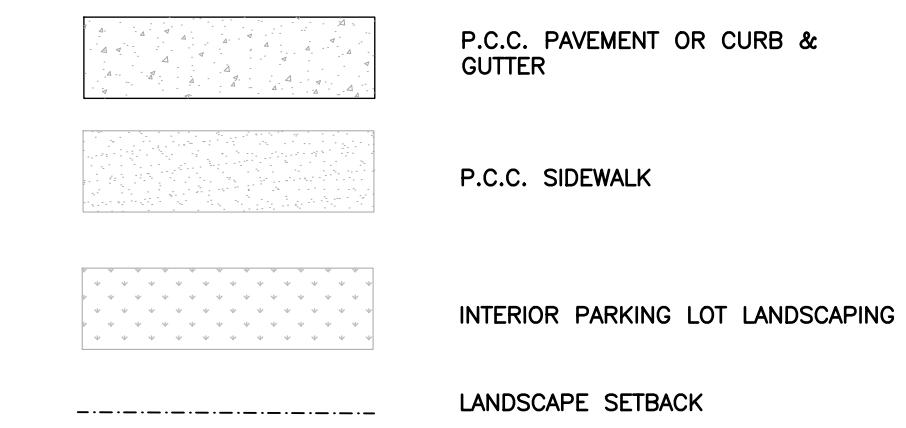
Utility Infrastructure:

- Water Supply:** A network of HDPE/PVC and PVC pipes is shown, with various pipe sizes including 8", 12", 15", 24", 30", and 36".
- Wells:** Multiple wells (WF) are indicated throughout the lots.
- Fire Hydrants:** Proposed fire hydrants are marked with circles and labeled "PROPOSED FIRE HYDRANT" on the plan.
- WATER TAP:** A note specifies that the water tap shall be coordinated with M.U.D. and the City of La Vista (TYP).

Coordinate All Utility Entrances into Buildings with Architectural and Mechanical Plans (TYP): A note in the center of the plan specifies this requirement.



LEGEND



thompson, dreessen & dorner, inc.
10836 Old Mill Rd
Omaha, NE 68154
p.402.330.8860 www.td2co.com

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p.402.330.8860 www.td2co.com

LANDSCAPE NOTES

1. ALL LANDSCAPED AREAS SHALL BE EQUIPPED WITH AN IRRIGATION SYSTEM.
2. ALL AREAS NOT SHOWN AS BUILDING, PCC PAVEMENT, OR SIDEWALK SHALL BE TURF TYPE FESCUE.
3. ALL LANDSCAPING MATERIALS & CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF LA VISTA'S LANDSCAPE ORDINANCES AND REGULATIONS.

- TOTAL PARKING SPACES NOT ON STREET FRONTAGE.
- INTERIOR LANDSCAPING AREA NEEDED:
INTERIOR LANDSCAPING AREA PROVIDED

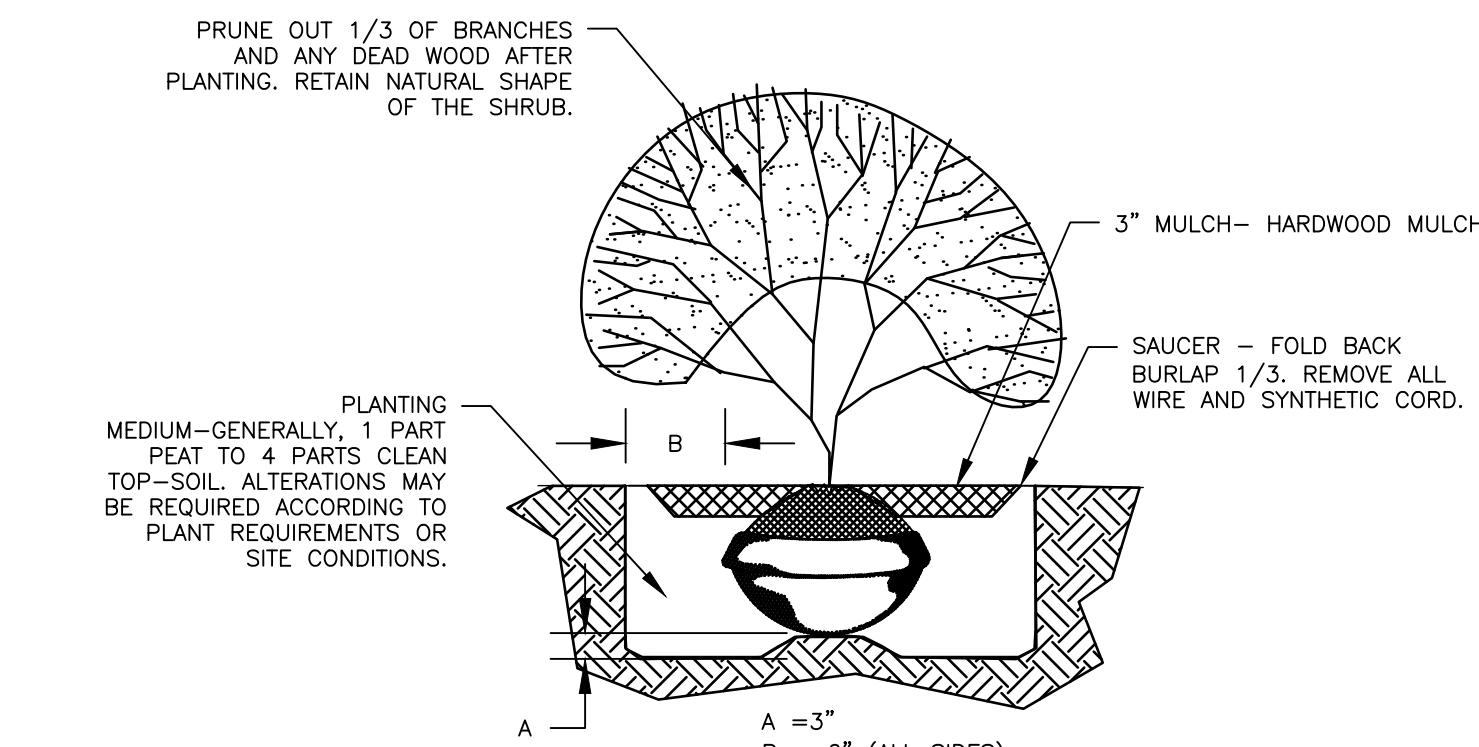
- 10 S.F. OF INTERIOR LANDSCAPING FOR EACH PARKING SPACE, EXCLUDING SPACES ABUTTING A PERIMETER FOR WHICH LANDSCAPING REQUIRED BY OTHER SECTIONS.

PROV
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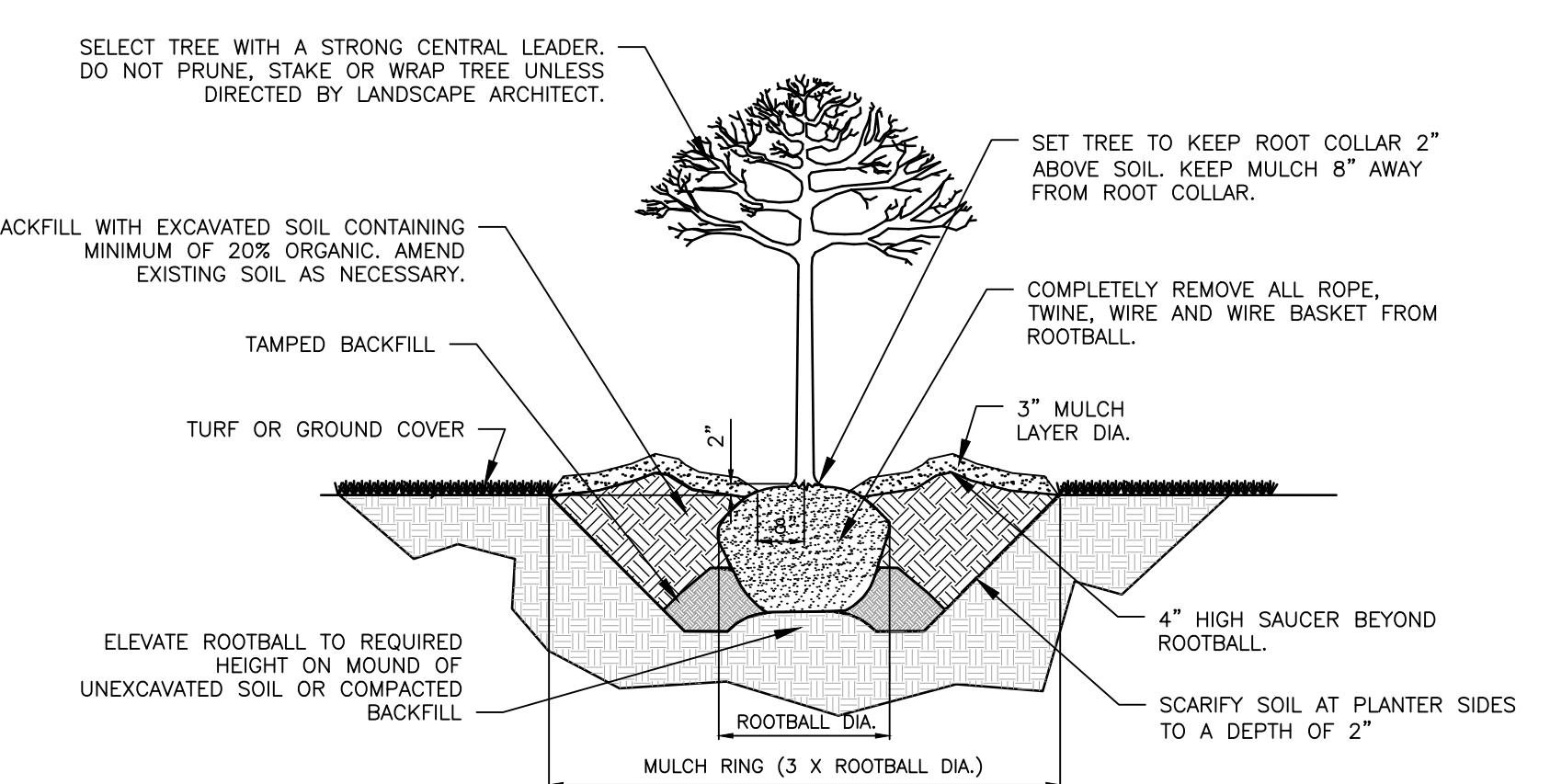
<u>LOT 1</u>	• TOTAL PARKING SPACES NOT ON STREET FRONTAGE:	85	
	• INTERIOR LANDSCAPING AREA NEEDED:	850	SF
	• INTERIOR LANDSCAPING AREA PROVIDED:	3,284	SF
<u>LOT 2</u>	• TOTAL PARKING SPACES NOT ON STREET FRONTAGE:	160	
	• INTERIOR LANDSCAPING AREA NEEDED:	1,600	SF
	• INTERIOR LANDSCAPING AREA PROVIDED:	6,334	SF
<u>LOT 3</u>	• TOTAL PARKING SPACES NOT ON STREET FRONTAGE:	134	
	• INTERIOR LANDSCAPING AREA NEEDED:	1,340	SF
	• INTERIOR LANDSCAPING AREA PROVIDED:	2,186	SF
<u>LOT 4</u>	• TOTAL PARKING SPACES NOT ON STREET FRONTAGE:	26	
	• INTERIOR LANDSCAPING AREA NEEDED:	260	SF
	• INTERIOR LANDSCAPING AREA PROVIDED:	1,884	SF

PERIMETER LANDSCAPING (SEC. 7.17.03.0)

- ONE TREE FOR EACH FORTY LINEAL FEET OF STREET FRONTEAGE
- SATISFIED BY SECTION 7.17.03.02



SHRUB PLANTING DETAIL



TYPICAL TREE PLANTING DETAIL

PLANT SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE	COND.	MATURE HEIGHT	MATURE SPREAD	TOTAL QUANTITY
DECIDUOUS TREES							
LLL	TILIA "LITTLELEAF"	LITTLE LEAF LINDEN	2.5" CAL.MIN.	B&B	65'	30'	10
AMU	ACER GINNALA	AMUR MAPLE	2.5" CAL.MIN.	B&B	20'	20'	10
WHA	CRATAEGUS PHAENOPYRUM	WASHINGTON HAWTHORN	25 GAL.MIN.	B&B	20'	15'	25
RSSM	ACER RUBRUM 'FRANKSRED'	RED SUNSET MAPLE	2.5" CAL.MIN.	B&B	45'	35'	12
PB	BETULA PLATYPHYLLA 'JEFPARK'	PARKLAND PILLAR BIRCH	2.5" CAL.MIN.	B&B	40'	7'	11
CONIFEROUS TREES							
BBES	PICEA PUNGENS 'BABY BLUE EYES'	BABY BLUE EYES SPRUCE	3' HT. MIN.	B&B	20'	12'	22
VWP	PINUS FLEXILIS 'VANDERWOLF'	VANDERWOLF PINE	6-7' HT. MIN	B&B	30'	15'	13
DECIDUOUS SHRUBS							
BB	EUONYMUS ALATUS 'COMPACTUS'	DWARF BURNING BUSH	5 GAL.MIN.	B&B	6'	5'	24
PERENNIALS							
AFG	MISCANTHUS 'AUTUMN FLAME'	AUTUMN FLAME GRASS	1 GAL.MIN.	B&B	4'	8'	9

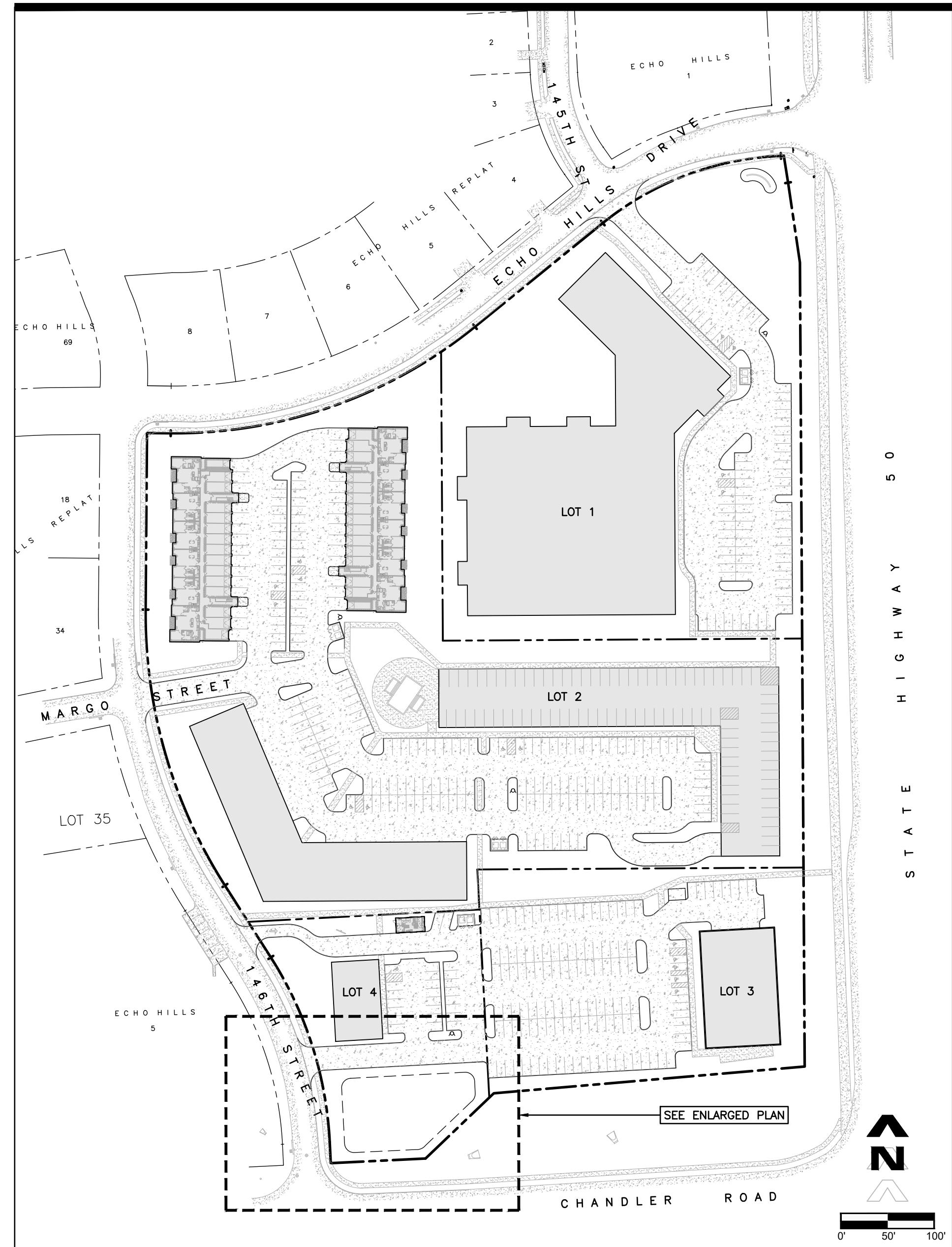
NOTE: ALL OTHER INTERNAL LANDSCAPING & DETAILED PLANS TO BE COMPLETED WITH EACH LOT'S BUILDING PERMIT OR DESIGN REVIEW. PLANT SCHEDULE IS APPROXIMATE AND SUBJECT TO CHANGE; HOWEVER, ANY CHANGES MUST BE IN ACCORDANCE WITH THE CITY OF LA VISTA'S LANDSCAPE ORDINANCES AND REGULATIONS.

Drawn By: TDV
Job No.: 2142-102

PUD Landscaping Plan

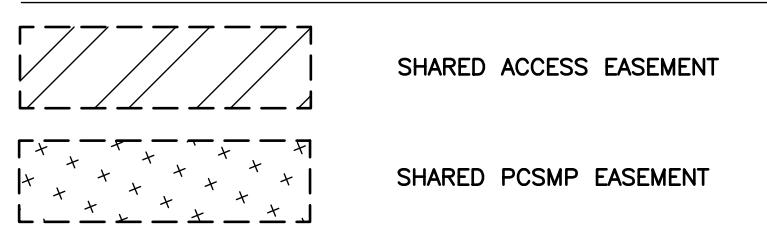
Page 1 of 1

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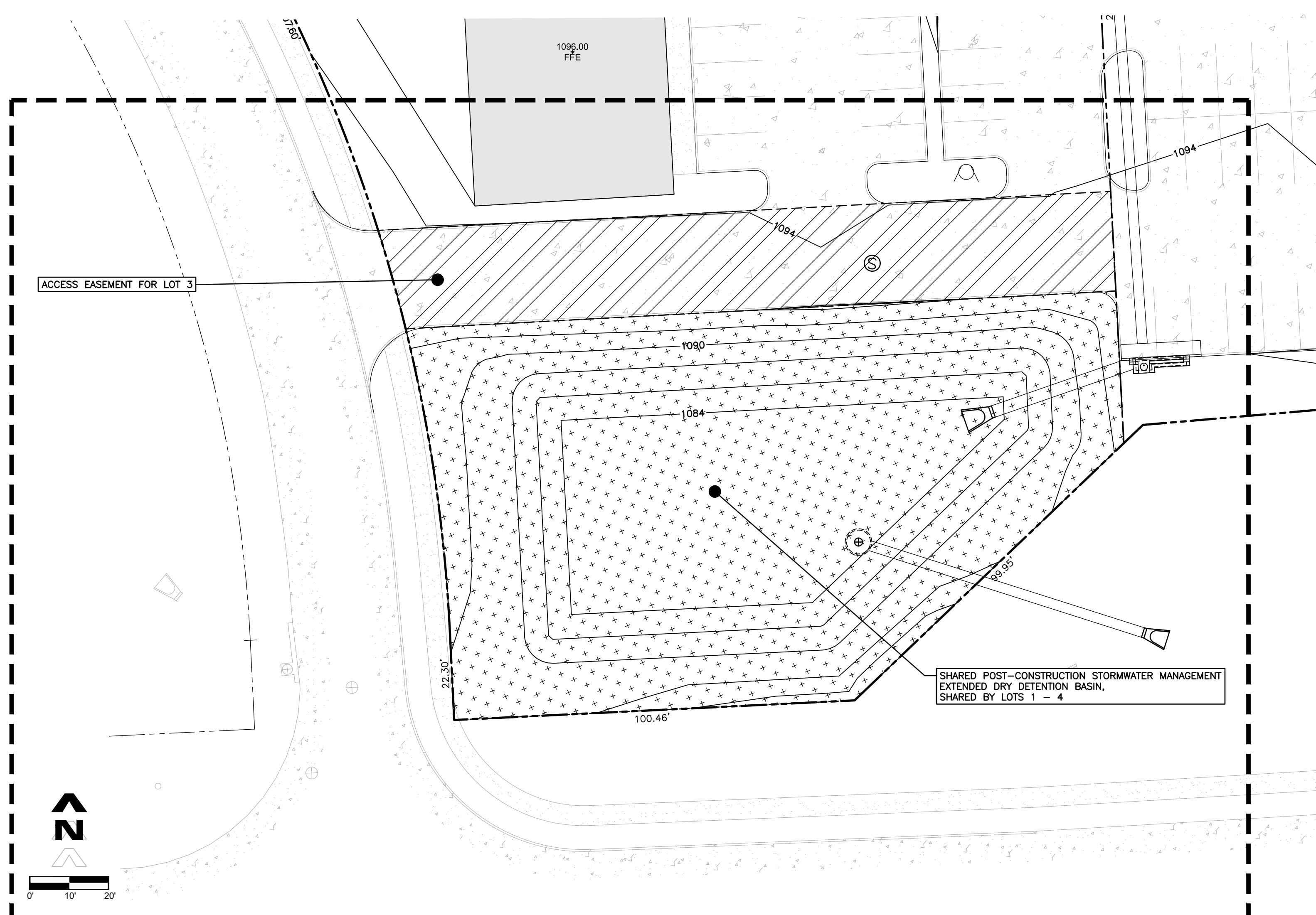
SHARED ELEMENTS VICINITY MAP

LEGEND



NOTES

1. SHARED STORM, SANITARY, AND WATER LINES AND EASEMENTS SHALL BE SHOWN ON THE FINAL PLAT.
2. MAINTENANCE OF SHARED ELEMENTS SHALL BE ADDRESSED IN THE SUBDIVISION AGREEMENT AND COMMON USE MAINTENANCE AGREEMENT AND SHALL BE PROVIDED WITH THE FINAL PLAT.



SHARED ELEMENTS ENLARGED PLAN

thompson, dreessen & dorner, inc.
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10836 Old Mill Rd
Omaha, NE 68154
p.402.330.8860 www.td2co.com

Project Name

Echo Hills Replat 4

Lots 1 - 4

Client Name

West Management L.L.C.

Professional Seal

Revision Dates

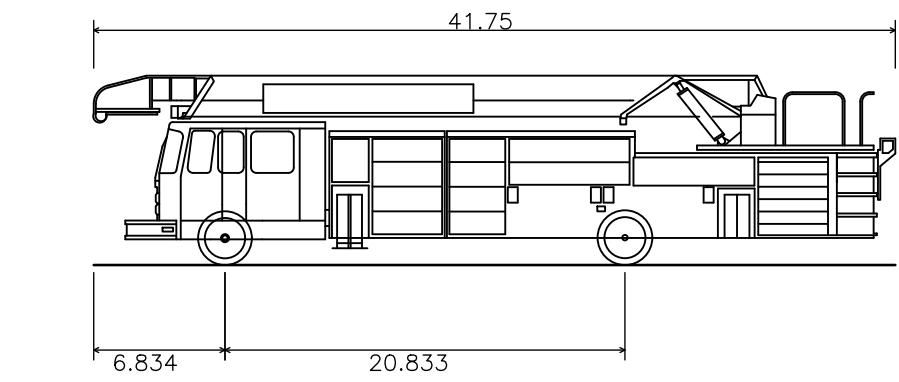
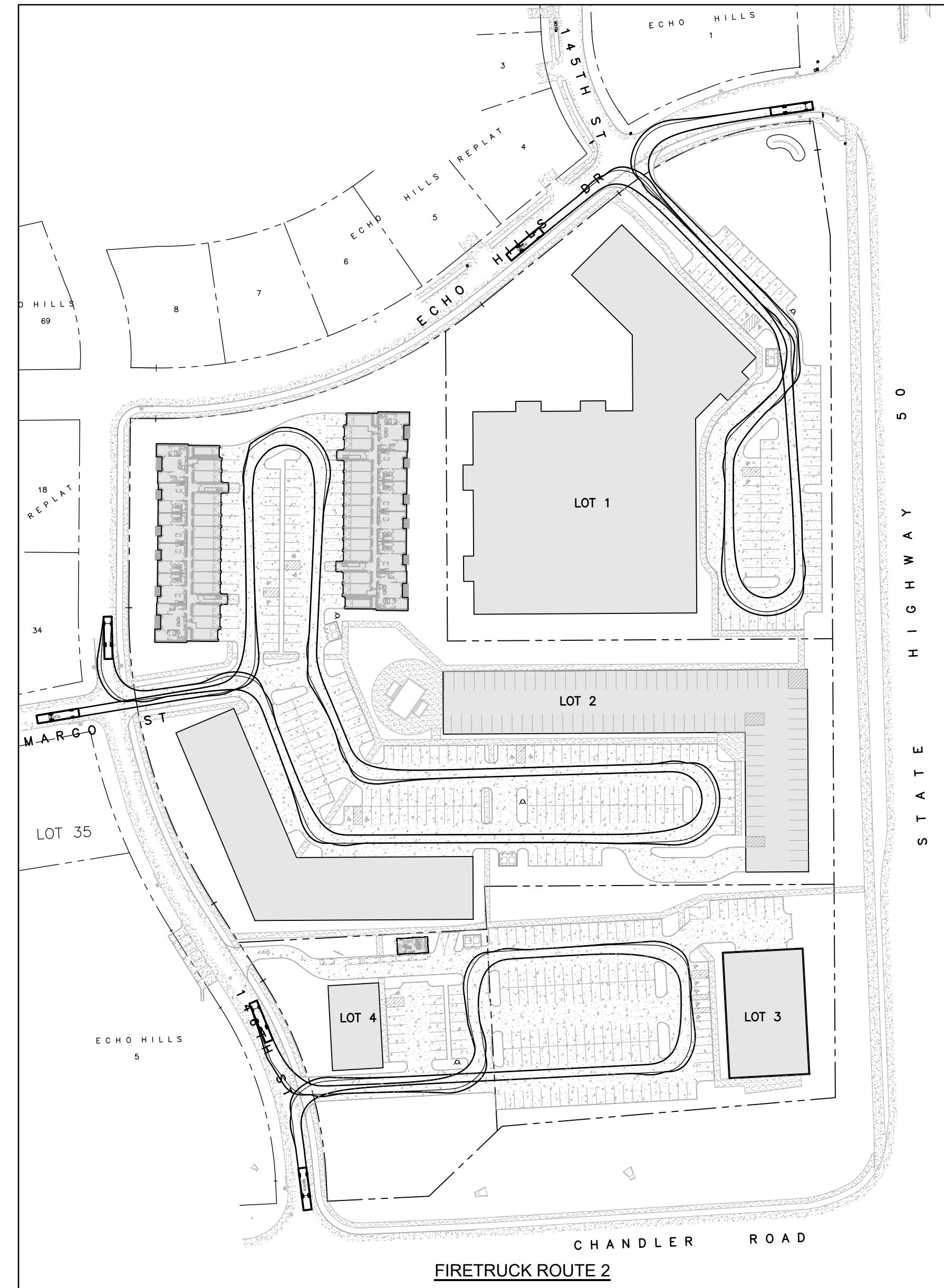
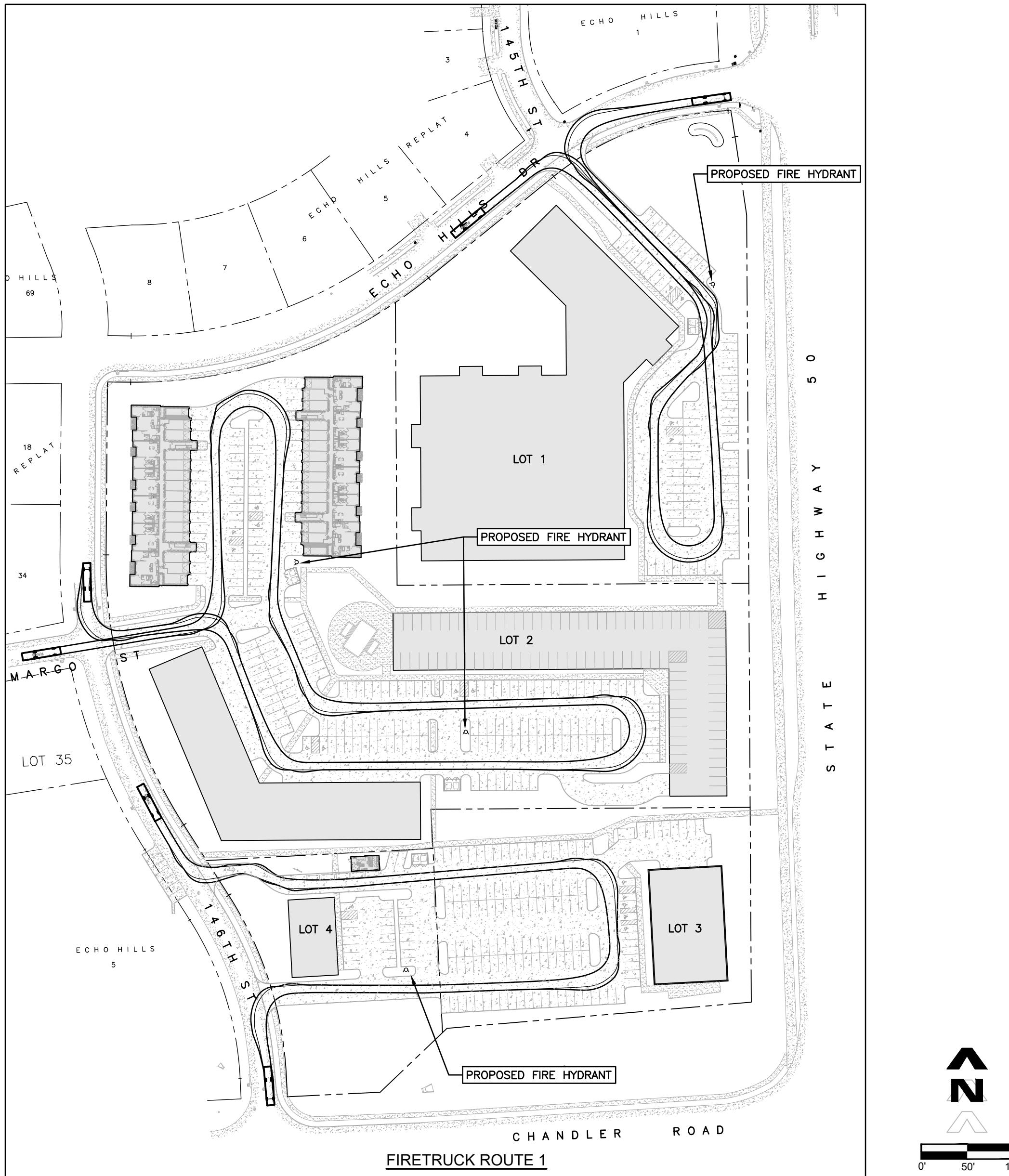
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Job No.: 2142-102 Date: 11.04.19

Sheet Title

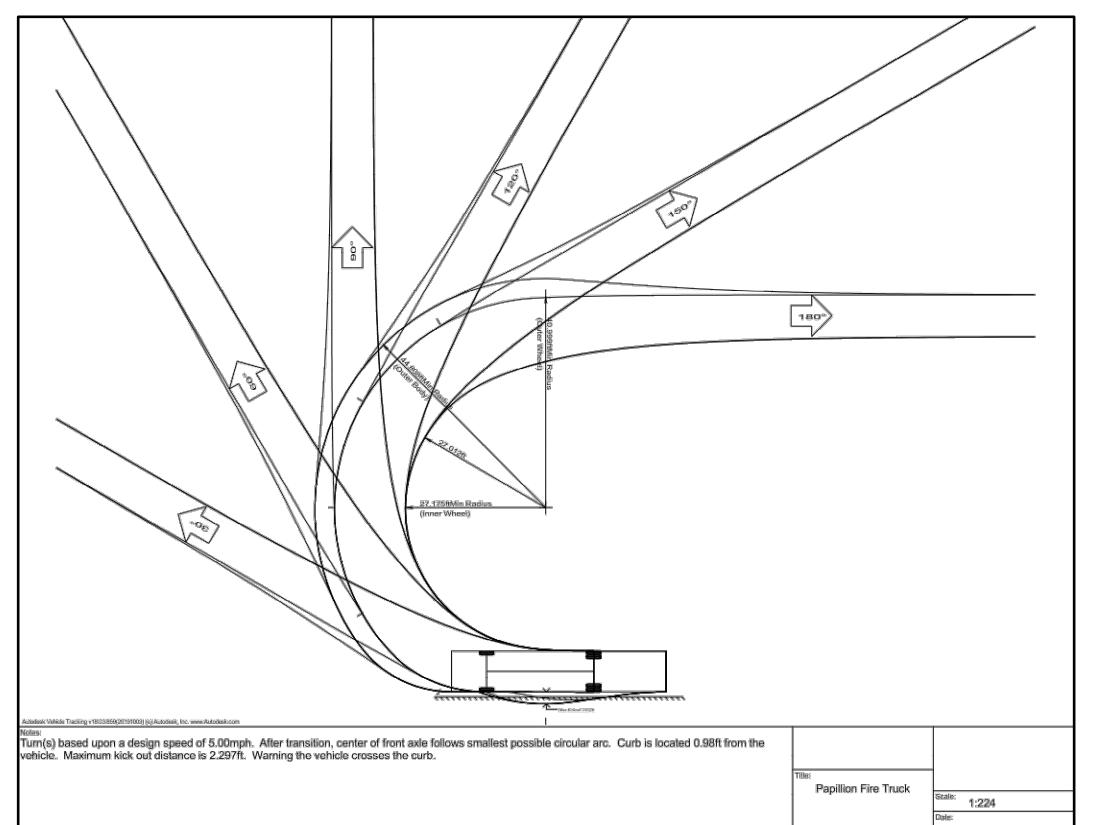
PUD Shared Elements Plan

Sheet Number

C5.0



Papillion Fire Truck	
Overall Length	41.750ft
Overall Width	8.000ft
Overall Body Height	9.864ft
Min Body Ground Clearance	0.875ft
Max Track Width	8.142ft
Lock-to-lock time	5.00s
Max Wheel Angle	37.00°



Professional Seal

Revision Dates

Drawn By: TDV Reviewed By: JAD
Job No.: 2142-102 Date: 11.04.19

Sheet Title

PUD Emergency Vehicle Plan

Sheet Number

C6.0

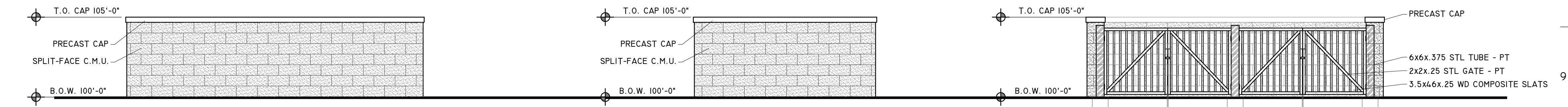
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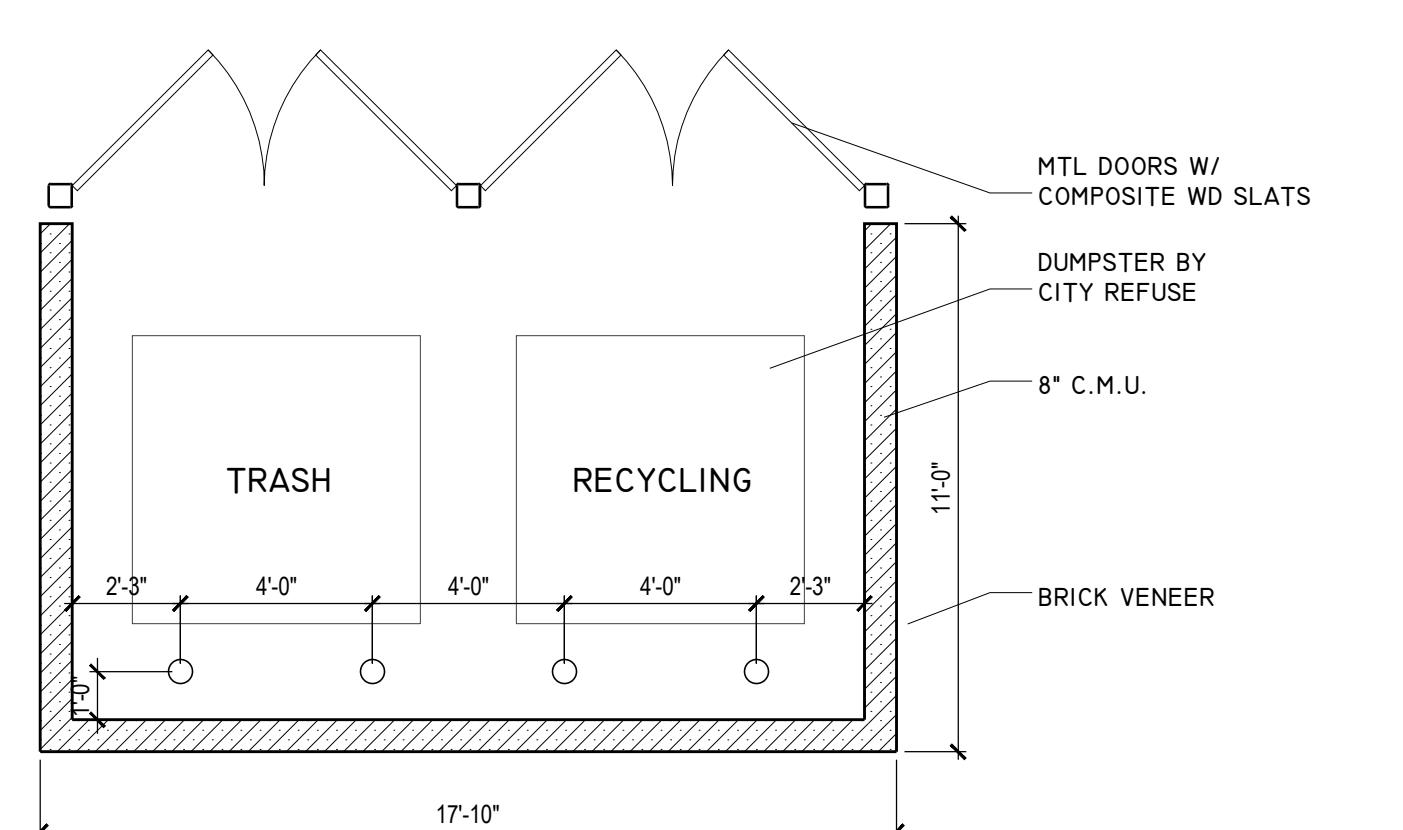
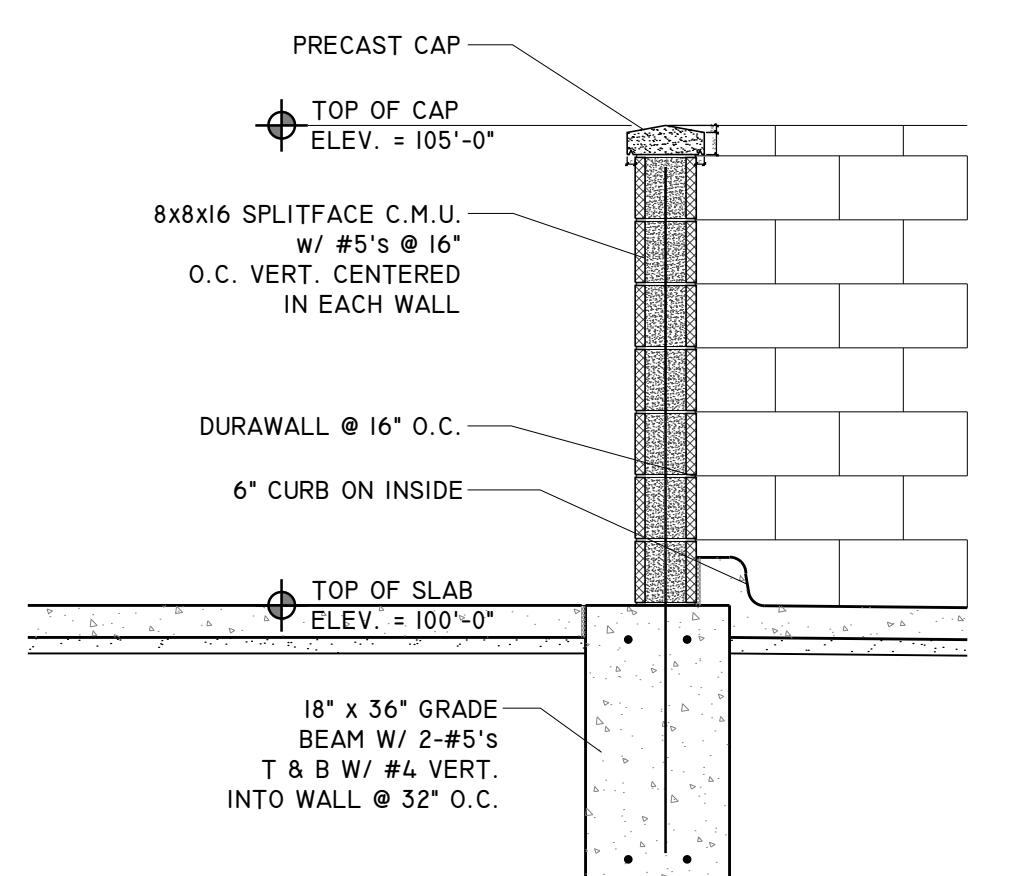
951

STUDIO 951 INC.
4024771666
800 P street, Suite 203, Lincoln, ne 68508

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T 7	REAR ELEVATION	L 7	SIDE ELEVATION	F 7	FRONT ELEVATION
1/4" = 1'-0"		1/4" = 1'-0"		1/4" = 1'-0"	



MUKWONAGO APARTMENTS TRASH ENCLOSURE
MULTI-FAMILY
MUKWONAGO, MN
TRASH ENCLOSURES

NO. ISSUED FOR DATE
BIDDING 2019.II.31
REVISED FOR BIDDING 2019.II.18

JOB No. 19-001

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K I	SECTION	F I	PLAN						
1/2" = 1'-0"		1/4" = 1'-0"							
K I	J	H	G	F I	E	D	C	B	A

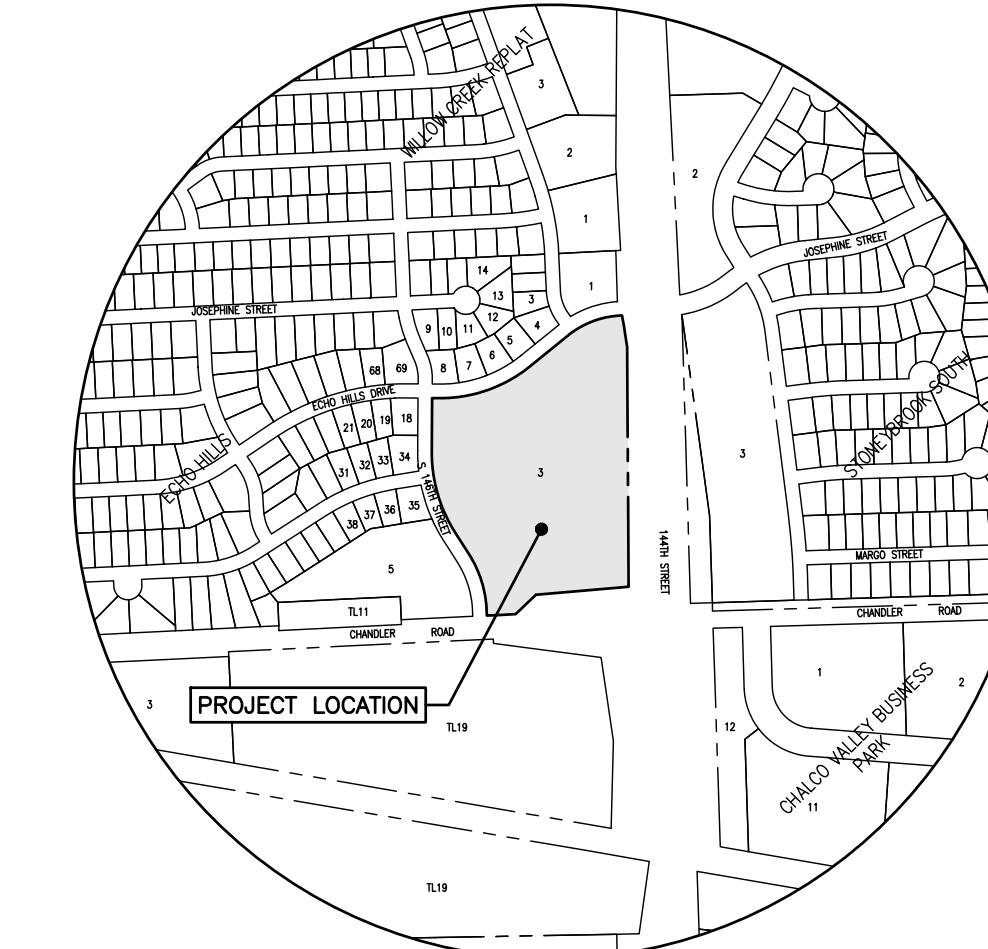
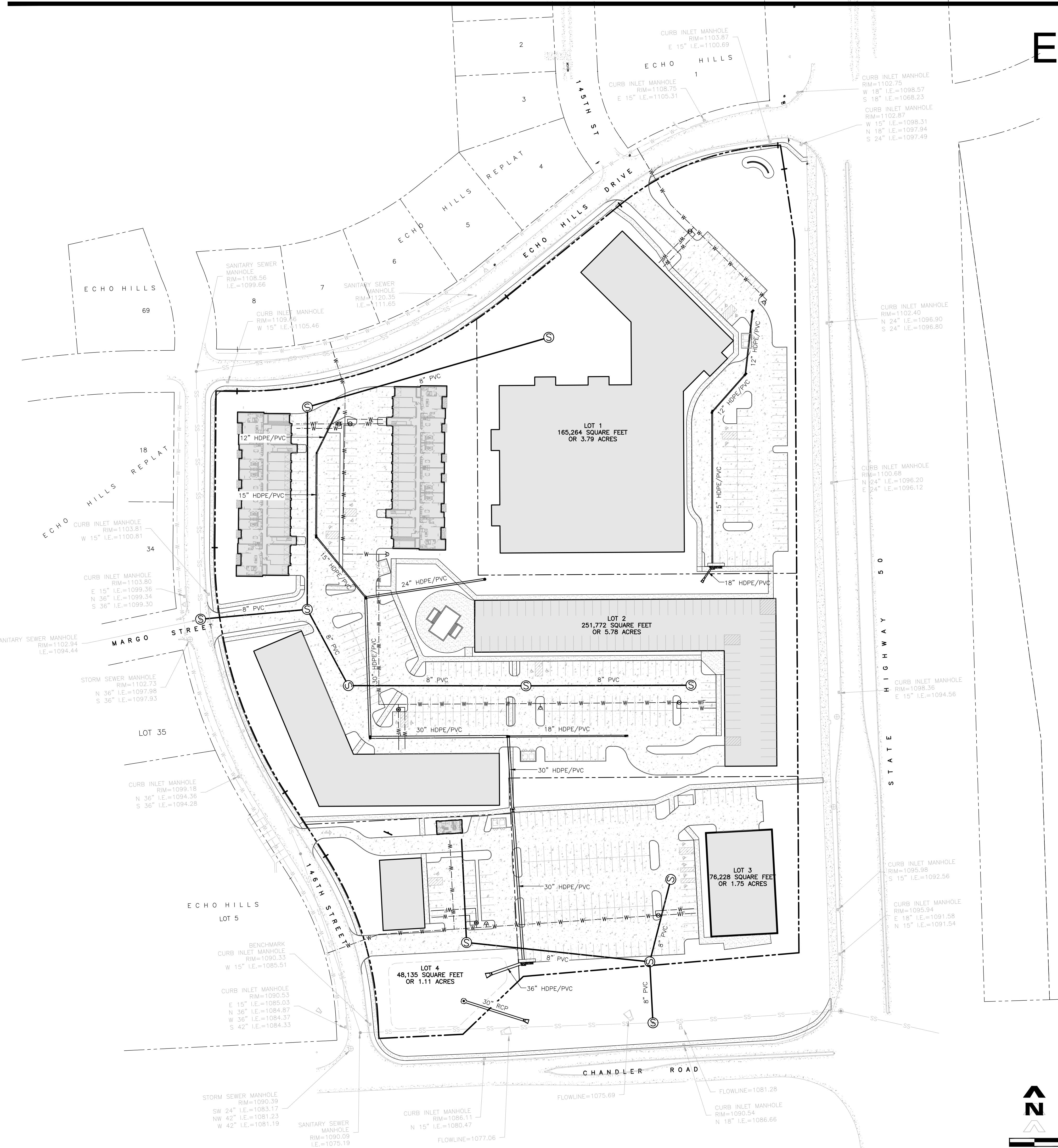
AGENDA ITEM 4E

**Preliminary Plat — West Management LLC
Lot 3 Echo Hills**

ECHO HILLS REPLAT 4

LOTS 1 THRU 4

SARPY COUNTY, NEBRASKA



VICINITY MAP

NOTES

1. EXISTING ZONING IS GENERAL COMMERCIAL (C1 – GATEWAY CORRIDOR). PROPOSED ZONING IS R-3 PUD GATEWAY CORRIDOR AND C-1 PUD GATEWAY CORRIDOR.
2. EXISTING AND PROPOSED CONTOURS ARE SHOWN AT 2 FT. INTERVALS.
3. WATER SHALL BE PROVIDED BY METROPOLITAN UTILITIES DISTRICT.
4. GAS SHALL BE PROVIDED BY THE BLACK HILLS ENERGY.
5. POWER SHALL BE PROVIDED FROM THE OMAHA PUBLIC POWER DISTRICT.
6. TYPICAL UTILITY EASEMENTS WILL BE DEDICATED WITH THE FINAL PLAT.

PROPERTY OWNER

MATT DARLING
3555 FARNAM STREET
OMAHA, NE 68131
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SUBDIVIDER

WEST MANAGEMENT LLC
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ENGINEER

THOMPSON, DREESSEN & DORNER
10836 OLD MILL ROAD
OMAHA, NEBRASKA 68154
PHONE: 402-572-2222

LEGAL DESCRIPTION

ECHO HILLS REPLAT 4, LOTS 1-4, BEING A REPLATTING OF
LOT 3, ECHO HILLS, A SUBDIVISION IN SARPY COUNTY,
NEBRASKA.

UTILITY LEGEND

UTILITY LEGEND

Drawn By: TDV Reviewed By: JAD
Job No.: 2142-102 Date: 11-4-19

Sheet Title

Utility Plan

Sheet Number

Ex. C

ECHO HILLS - LOT 3

TRAFFIC IMPACT ANALYSIS

Prepared for:

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FHU Reference No. 19-100-18

December 2, 2019

DRAFT

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DRAFT

I. INTRODUCTION

This is a traffic impact analysis (TIA) for a proposed mixed-use development located in Sarpy County, NE. The project site is located on the northwest corner of Nebraska Highway 50 (N-50), locally named 144th Street, and Chandler Road. This analysis utilizes information from the Echo Hills - Lot 3 site plan for the proposed development provided to Felsburg Holt & Ullevig (FHU) by Thompson, Dreessen & Dorner, Inc., dated 10-31-2019, information provided by the Nebraska Department of Transportation (NDOT) and the City of La Vista. The location of the development site in relation to the surrounding roadway network is shown on **Figure 1**.

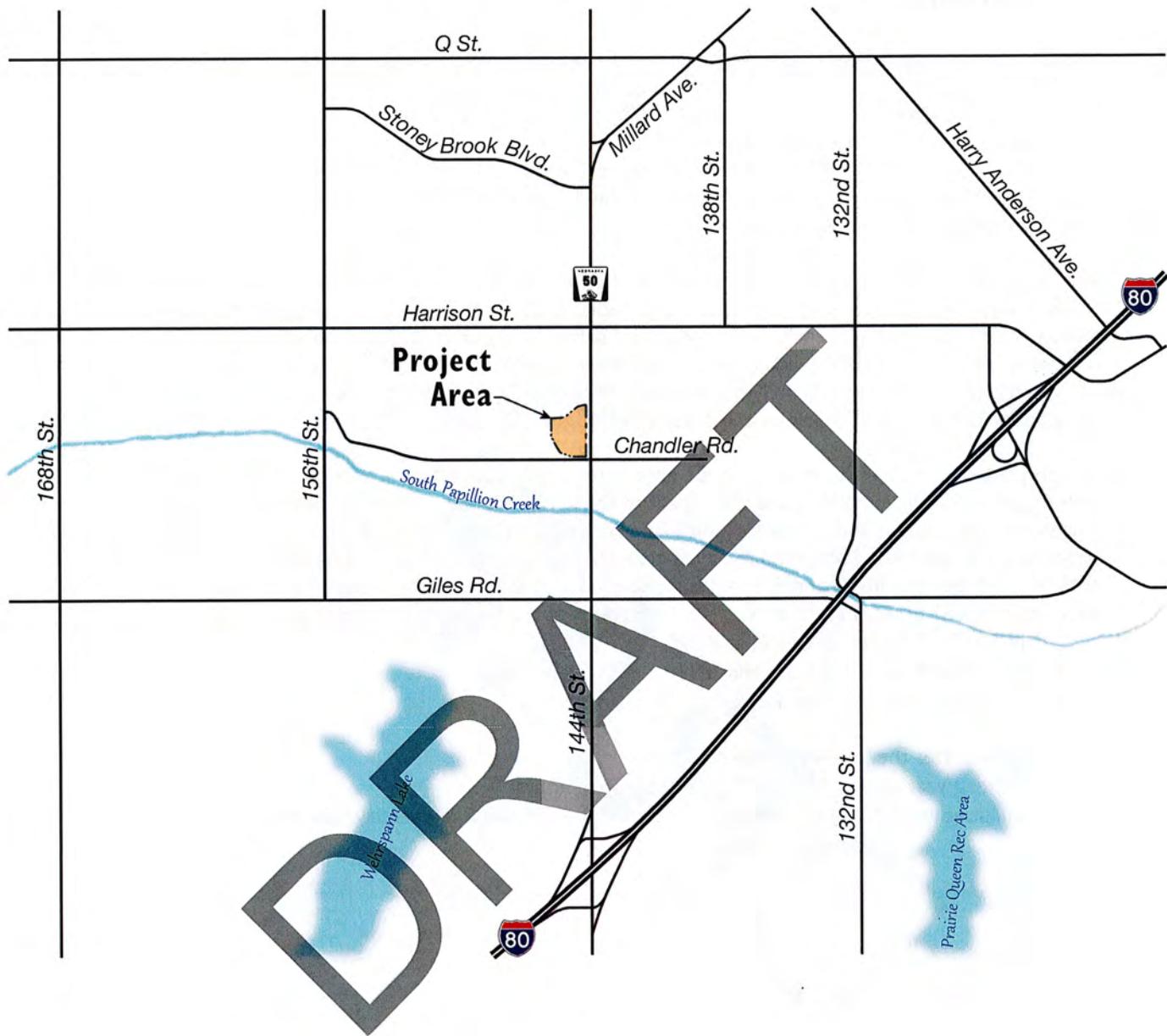
The proposed development sits on approximately 12.4 acres of land and is assumed to be complete in buildout year 2021. The site will consist of an 80-bed assisted living facility, 210-unit apartment complex, 4,200 square foot shopping center, 490 square foot drive through coffee shop, and a 9,600 square foot restaurant. Access to the site will be provided at one location onto N-50 (144th Street) via Echo Hills Drive and one location onto Chandler Road via 146th Street. Both are existing full access locations. The site plan for the proposed development is shown on **Figure 2**.

The purpose of this TIA is to determine the anticipated traffic operations at the intersections associated with the proposed development and the impact to the area roadway network. Included in this report is a signal warrant analysis and an auxiliary turn lane analysis for the access locations on to N-50/144th Street and Chandler Road. Additionally, a left-turn phasing analysis for the existing signalized intersection of N-50/144th Street with Chandler Road is included as well as a queueing analysis for all study intersections. The primary focus is on traffic operations at the following intersections:

- N-50 (144th Street) & Chandler Road
- N-50 (144th Street) & Echo Hills Drive
- 146th Street & Chandler Road

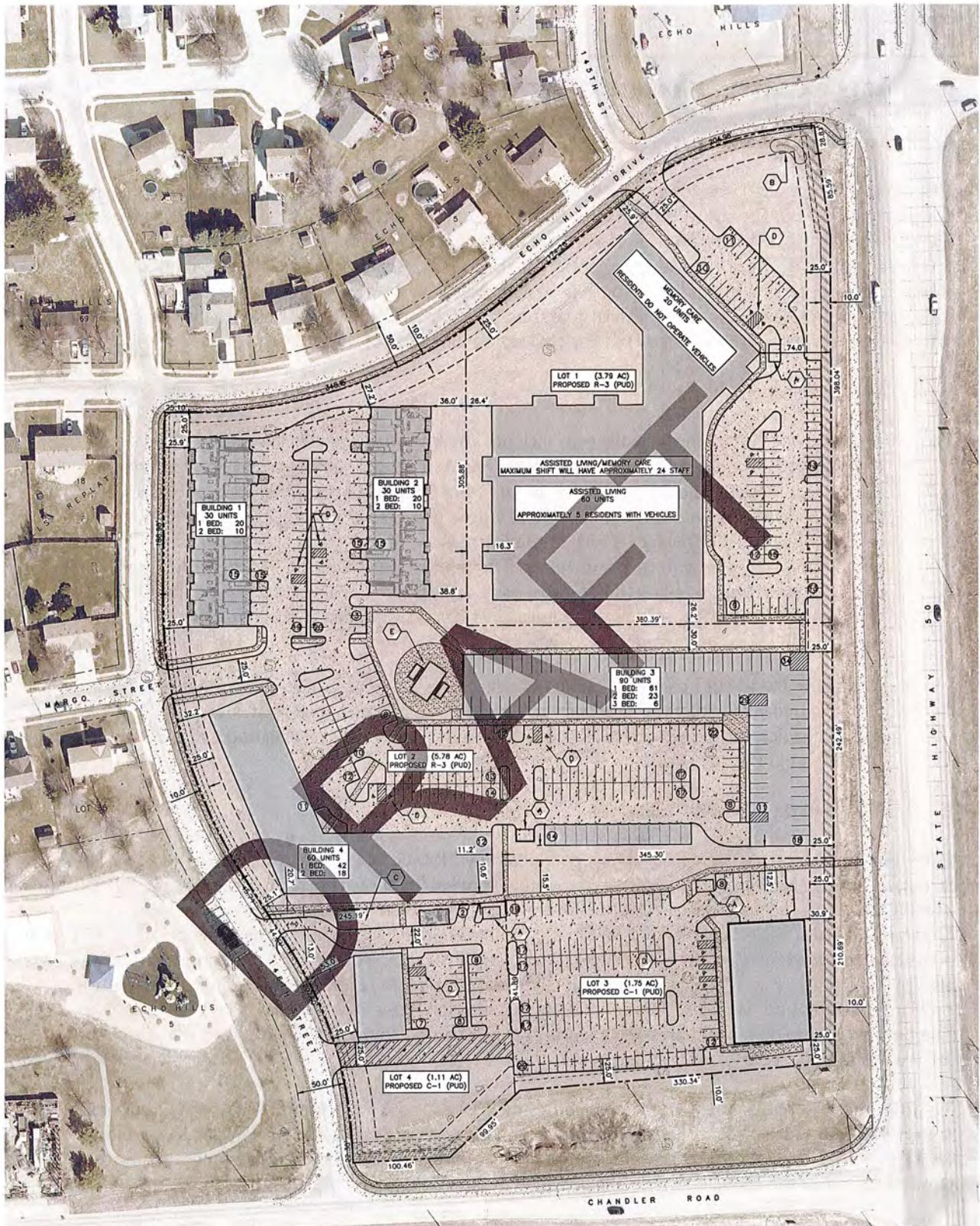
The study evaluates the following time periods:

- Existing year (2019) AM and PM weekday peak hours
- Buildout year (2021) of the development for the AM and PM weekday peak hours



NORTH

FIGURE I
Vicinity Map



The logo consists of a dark blue triangle pointing upwards, with the word "NORTH" in a bold, dark blue, sans-serif font stacked directly beneath it.

FIGURE 2 Site Plan



II. 2019 EXISTING TRAFFIC CONDITIONS

A. Surrounding Land Uses

The site of the proposed development is just outside of the southwest edge of the city of Omaha and just northwest of the City of La Vista. It is located along the west side of N-50 (144th Street) and north side of Chandler Road. Immediately north and west of the site is a residential development with some industrial facilities bordering the neighborhood. To the east is a self-storage facility outside of another residential development. Immediately south is an approximately 16-acre undeveloped tax lot. To the southwest is a business park and industrial land uses. The Chalco Hills Recreation Area is just over one-half mile to the southwest and Echo Hills Park is located just west of the site.

B. Roadway Network

The existing roadway system in the study area includes the following primary facilities:

- **N-50 (144th Street)** runs north-south along the east side of the proposed development and throughout Douglas and Sarpy County. N-50 (144th Street) runs from State Street north of Omaha and continues south past Springfield where it curves west to cross the Platte River and becomes Nebraska Highway 1 south of the Platte River. In the study area the roadway is a four-lane divided roadway with curb and gutter. The posted speed limit on N-50 (144th Street) is 45 miles per hour (mph). N-50 (144th Street) has a federal functional classification of an Other Principal Arterial and an NDOT state functional classification of a Major Arterial in the study area.
- **Chandler Road** runs east-west along the south side of the proposed development and is a two-lane undivided roadway with curb and gutter. The posted speed limit is 35 mph in the study area. Chandler Road does not have a federal or state functional classification and is considered a Local Road in the study area.

C. 2019 Existing Traffic Conditions

Eight-hour turning movement counts were conducted by MNRG, LLC at the intersection of N-50 (144th Street) with Echo Hills Drive and 146th Street with Chandler Road on Thursday, November 7, 2019. The NDOT provided three historical eight-hour turning movement counts conducted on Tuesday, October 25, 2016, Thursday, March 2, 2017, and Thursday, June 21, 2018. The three historical NDOT provided counts were reviewed and compared to the MNRG, LLC counts in 2019. Consideration was also given to the increased traffic volumes on Chandler Road from rerouted traffic due to the closure on Harrison Street between 147th Street and 150th Street for Phase 3 of the Harrison Street project. The peak hour turning movement counts were then normalized to provide an accurate analysis of the 2019 existing traffic conditions.

The study area AM peak hour was determined to be 7:15 AM to 8:15 AM and the PM peak hour was 4:45 PM to 5:45 PM. Trucks and buses were counted separately from passenger vehicles to develop truck percentages for the study area. Existing traffic volumes are summarized on **Figure 3**. A more detailed report of the traffic count data is provided in the **Appendix**.

Traffic operations were analyzed for the study intersections using procedures documented in the *Highway Capacity Manual (HCM) 6th Edition*, Transportation Research Board, 2016. From the analyses, a key measure or “level of service” rating of the traffic operational condition was obtained. In general, level of service (LOS) is a qualitative assessment of traffic operational conditions within a traffic stream

in terms of the average stopped delay per vehicle at a controlled intersection. Levels of service are described by a letter designation of either A, B, C, D, E or F, with LOS A representing essentially uninterrupted flow, and LOS F representing a breakdown of traffic flow with noticeable congestion and delay. Unsignalized, or stop sign controlled, intersection capacity analyses produce LOS results for each movement which must yield to conflicting traffic at the intersection. **Table I** summarizes LOS criteria for signalized and unsignalized (stop sign controlled) intersections.

Table I. Level of Service (LOS) Criteria

Level of Service	Average Control Delay per Vehicle (sec/veh)	
	Signalized Intersections	Stop Sign Controlled Intersections
A	≤ 10	≤ 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

HCM 6th Edition, Exhibit 19-8 & Exhibit 20-2

The Synchro traffic analysis software program was utilized to analyze traffic operations at the study intersections. **Figure 3** shows the lane geometry, traffic control, and levels of service for the 2019 existing traffic conditions. Capacity analysis worksheets for the 2019 existing traffic conditions are included in the **Appendix**. The following describe LOS results by intersection:

- **N-50 (144th Street) & Chandler Road** – Under traffic signal control, the intersection currently operates at LOS B during both the AM and PM peak hours.
- **N-50 (144th Street) & Echo Hills Drive** – Under two-way stop control, the eastbound and westbound left-turn movements operate at LOS F during both the AM and PM peak hours. The eastbound and westbound through/right-turn lane group operates at LOS D during the PM peak hour. However, it is not uncommon for unsignalized side street movements to operate at LOS D, E, or F during peak hours. The remaining movements currently operate at LOS C or better.
- **146th Street & Chandler Road** – Under two-way stop control, all movements at the intersection currently operate at LOS B or better both the AM and PM peak hours.

D. Auxiliary Right-Turn Lane Analysis

The National Cooperative Highway Research Program (NCHRP) has developed guidance to determine if an auxiliary right-turn is warranted on the major road of a two-way stop-controlled intersection. These guidelines are published in *NCHRP Report 457: Evaluating Intersection Improvements*. The methodologies are based on an evaluation of the operating and collision costs associated with the turning maneuver relative to the cost of constructing a turn lane. In addition, for right-turn lanes, *NCHRP Report 457* guidelines are based upon the following measures:

- Major road 85th percentile speed (posted speed can be used if data is unavailable)
- Major road peak hour approaching traffic volumes
- Right-turn traffic volumes

The AM and PM peak hour volumes for the 2019 existing traffic conditions were examined at the intersection of 146th Street with Chandler Road. Graphical results of the NCHRP Geometric Improvement Evaluation for an auxiliary right-turn lane are included in the **Appendix**. Per the *NCHRP Report 457* guidelines, the volume of right-turning traffic does not warrant the construction of a right-turn lane on the westbound approach of Chandler Road at 146th Street under 2019 existing traffic conditions.

E. Auxiliary Left-Turn Lane Analysis

NCHRP Report 457 also provides guidance for determining if an auxiliary left-turn is warranted on the major road of a two-way stop-controlled intersection. For left-turn lanes, *NCHRP Report 457* guidelines are based upon the following measures:

- Major road 85th percentile speed (posted speed can be used if data is unavailable)
- Percent of left-turns in advancing volume
- Major road peak hour advancing and opposing traffic volumes

The AM and PM peak hour volumes for the 2019 existing traffic conditions were examined at the intersection of 146th Street with Chandler Road. Graphical results of the NCHRP Geometric Improvement Evaluation for an auxiliary left-turn lane are included in the **Appendix**. Per *NCHRP Report 457* guidelines, the volume of left-turning traffic does not warrant the construction of a left-turn lane on the eastbound approach of Chandler Road at 146th Street under 2019 existing traffic conditions.

F. Minor Road Approach Analysis

NCHRP Report 457 also provides guidance on when to provide an additional approach lane on the minor leg of a two-way stop-controlled intersection. It is based on the need to provide the side street with an acceptable level of service. To determine the approach geometry, *NCHRP Report 457* guidelines are based upon the following measures:

- Major road peak hour traffic volumes (total of both directions)
- Minor road peak hour approaching traffic volumes
- Minor road right-turn traffic volumes
- Percentage of minor road right-turns

The AM and PM peak hour volumes for the 2019 existing traffic conditions were examined at the intersection of 146th Street with Chandler Road. Graphical results of the NCHRP Geometric Improvement Evaluation for the minor road approach are included in the **Appendix**. Per the *NCHRP Report 457* guidelines, the volumes do not warrant a two-lane approach on the southbound approach of 146th Street at Chandler Road under 2019 existing traffic conditions.

G. MUTCD Control Device Warrant Analysis

N-50 (144th Street) & Echo Hills Drive

A review was performed to determine if *Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways, 2009 Edition* traffic signalization Warrant 1 (Eight-Hour Vehicular Volume), Warrant 2 (Four-Hour Vehicular Volume), or Warrant 7 (Crash Experience) are satisfied under 2019 existing traffic conditions at the intersection of N-50 (144th Street) with Echo Hills Drive / Josephine Street. The intersection was evaluated as an urban intersection with speed limits greater than 40 miles per hour and two or more approach lanes on the major street. The minor street was evaluated as having two lanes moving traffic with no right turn reduction. Using these parameters, the intersection does not satisfy Warrant 1, Warrant 2, or Warrant 7 under 2019 existing traffic volumes. MUTCD traffic signal worksheets for 2019 existing traffic conditions are included in the **Appendix**.

146th Street & Chandler Road

A review was performed to determine if MUTCD traffic signalization Warrant 1 (Eight-Hour Vehicular Volume) or Warrant 2 (Four-Hour Vehicular Volume) are satisfied under 2019 existing traffic conditions at the intersection of 146th Street with Chandler Road. The intersection was evaluated as an urban intersection with speed limits 40 miles per hour or less and one lane per approach on the major street. If a signal is constructed, an additional southbound lane would be required to provide a minimum two-lane approach per City of Omaha policy. Therefore, the minor street was evaluated as having one lane moving traffic with 100% right turn reduction. Using these parameters, the intersection does not satisfy Warrant 1 or Warrant 2 under 2019 existing traffic volumes. MUTCD traffic signal worksheets for 2019 existing traffic conditions are included in the **Appendix**.

H. Left-turn Phasing Analysis

The City of Omaha has established guidelines for when a left-turn movement at a signalized intersection should be permitted, protected / permitted, or protected only. Two of three warrants should be satisfied before considering protected / permitted phasing. The warrants for consideration are an accident warrant, capacity warrant, and delay warrant. All four approaches of the intersection of N-50 (144th Street) with Chandler Road were analyzed under 2019 existing traffic conditions to determine the appropriate phasing. Under 2019 existing traffic conditions, all four approaches should remain permitted only. However, to provide positive guidance to drivers and provide a consistent driving experience with the surrounding City of Omaha traffic signals, a three-section flashing yellow arrow traffic signal should be provided over the left-turn lane for each approach. Warrants for left-turn arrow installation under 2019 existing traffic conditions are included in the **Appendix**.

I. Pedestrian and Bicycle Facilities

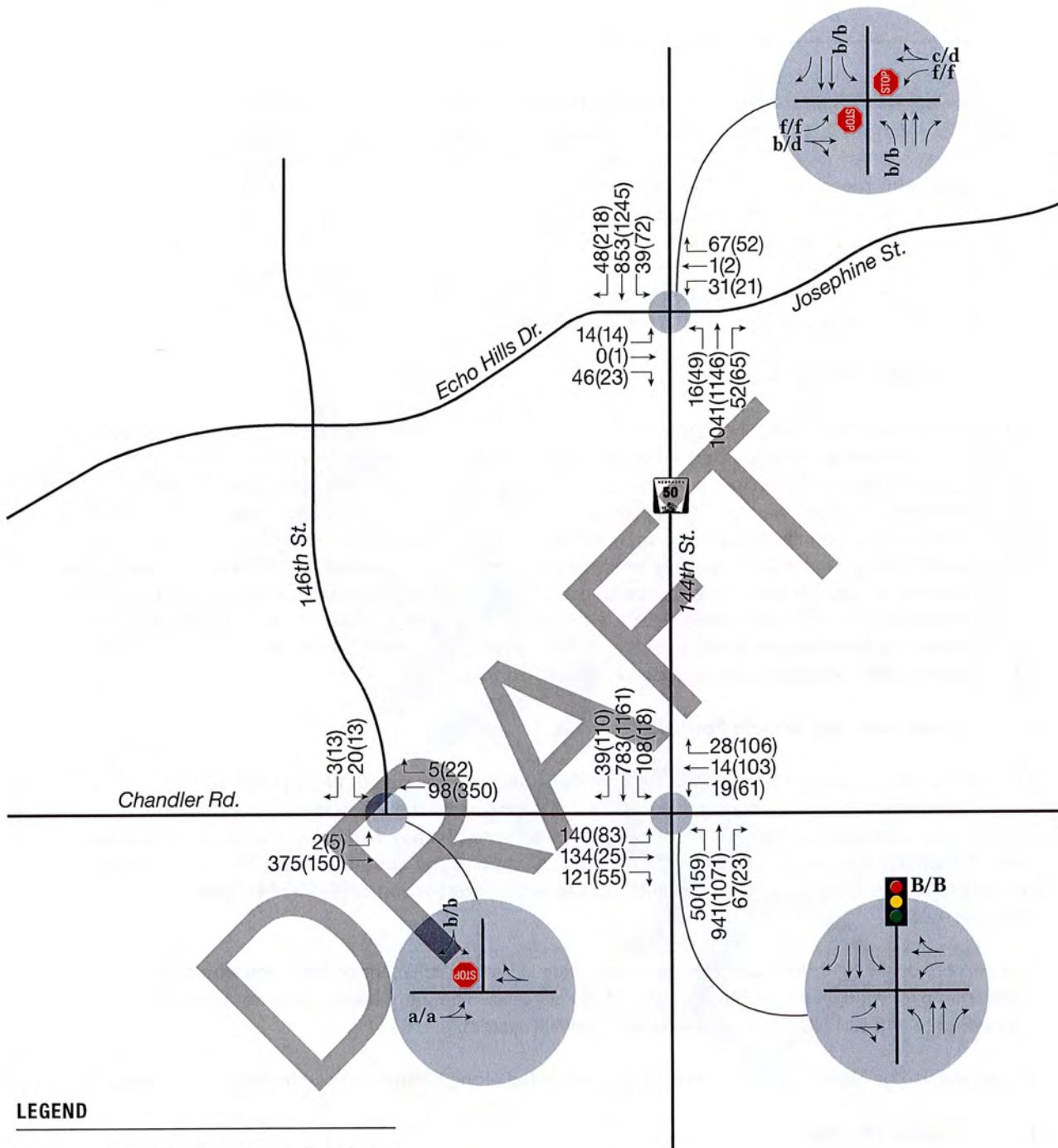
The 144th Street Trail is a 10-foot-wide trail provided on the west side of N-50 (144th Street) immediately adjacent to the proposed site. This trail connects to the Wehrspann Lake Trail in the Chalco Hills Recreation Area. The Wehrspann Trail is approximately 1 mile away via the 144th Street Trail. Pedestrian signal heads are provided for the northbound and southbound pedestrian crossings, crossing Chandler Road, at the traffic signal located at the intersection of N-50/144th Street with Chandler Road.

The surrounding neighborhoods provide 4-foot-wide sidewalks adjacent to each household. A pedestrian path is provided within the Echo Hills Park area. The path, however, is not currently connected to the surrounding neighborhood sidewalk system.

No pedestrian or bicycle facilities are currently provided along Chandler Road in the project area.

J. Transit Facilities

There are no transit facilities in the immediate project area. The nearest facility is Route 97, the Millard Express (Weekday Only), approximately 1.3 miles to the north. Route 97 provides service from 153rd Street to Downtown Omaha along Q Street via Interstate 80.



NORTH

FIGURE 3
Existing (2019)
Traffic Conditions

Echo Hills Lot 3 TIA 19-100-18 12/3/19

III. TRAVEL DEMAND ANALYSIS

A. Site Trip Generation

Trip generation rates from the Institute of Transportation Engineers' *ITE Trip Generation Manual*, Tenth Edition, 2017, were utilized to estimate the traffic generated by the site. The development is proposed to have an 80-bed assisted living facility (ITE Code 254), 210-unit apartment complex (ITE Code 220), 4,200 square foot shopping center (ITE Code 820), 490 square foot drive through coffee shop (ITE Code 937), and a 9,600 square foot restaurant (ITE Code 931), assumed to be complete in 2021.

Table 2 summarizes the estimated vehicle-trips that would be generated by the proposed development.

Table 2. Site Trip Generation

Lot	ITE Code	Land Use Description	Size	Unit	Daily	AM Peak Hour			PM Peak Hour		
						In	Out	Total	In	Out	Total
1	254	Assisted Living	80	Beds	208	9	6	15	8	13	21
2	220	Multifamily Housing (Low Rise)	210	DU	1,538	22	75	97	74	44	118
3	931	Quality Restaurant	9.6	KSF	806	4	4	8	50	25	75
4	820	Shopping Center	4.20	KSF	160	2	2	4	8	8	16
	937	Coffee/Donut Shop w/ Drive-Through Window	0.49	KSF	402	22	22	44	11	11	22
Total Trips Generated						3,114	59	109	168	151	252

Average Rates Utilized DU=Dwelling Units KSF= 1,000 Square Feet

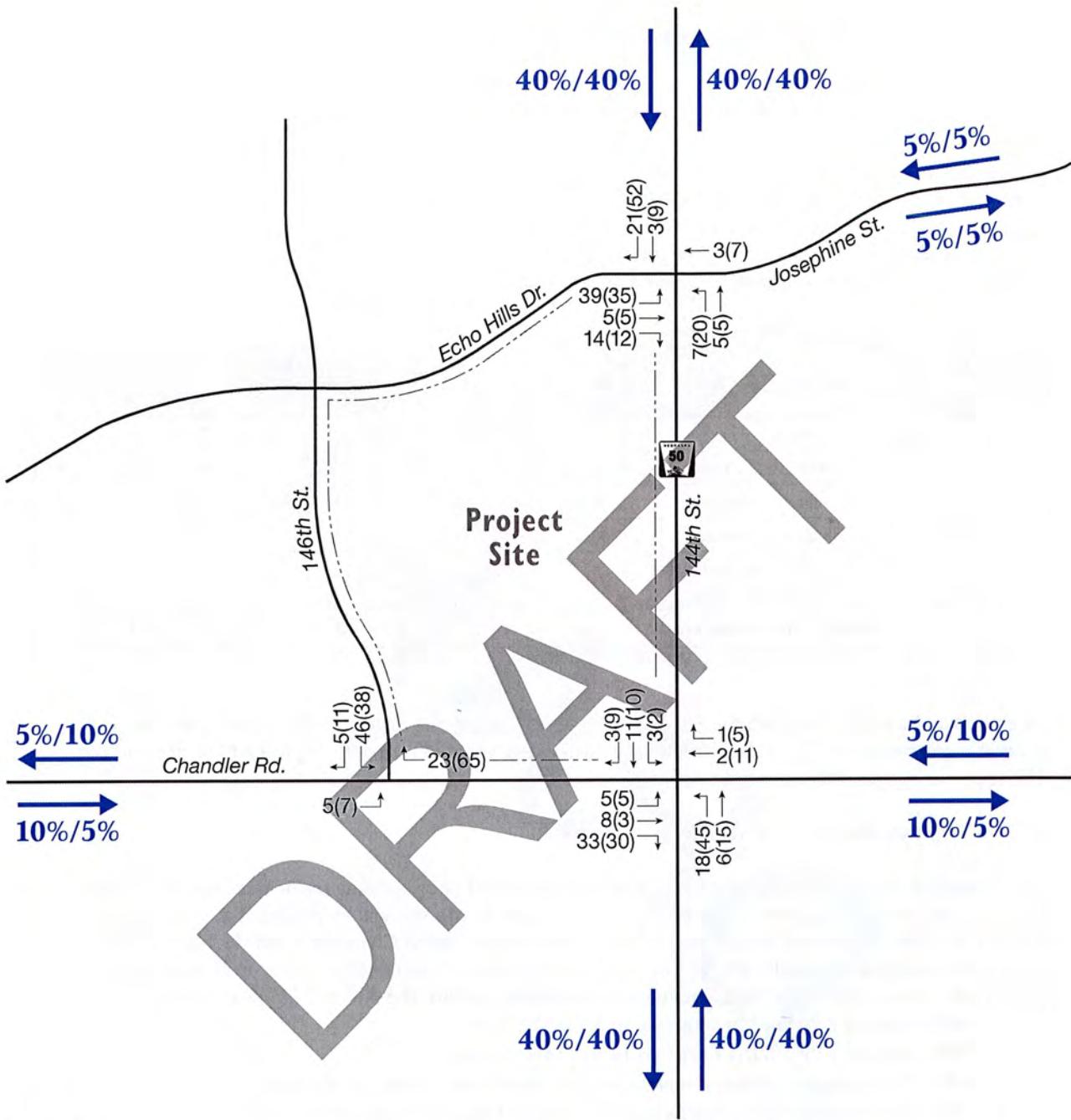
As shown in **Table 2**, based on the *ITE Trip Generation Manual*, the development is anticipated to generate approximately 3,114 daily weekday vehicle-trips, with 168 trips during the AM peak hour and 252 trips during the PM peak hour.

B. Trip Distribution and Traffic Assignment

The estimated distribution of site generated traffic was based upon existing traffic patterns, location of the site, and projected growth in the project area. Access to the site will be provided at one location onto N-50 (144th Street) via Echo Hills Drive and one location onto Chandler Road via 146th Street. Both are existing full access locations. The following distribution percentages were used to assign site generated vehicle-trips to the adjacent roadway network for both the AM and PM peak hours:

- 40% oriented to/from the south via N-50 (144th Street)
- 40% oriented to/from the north via N-50 (144th Street)
- 10% / 5% oriented to/from the west via Chandler Road (Varies by time of day)
- 10% / 5% oriented to/from the east via Chandler Road (Varies by time of day)
- 5% oriented to the east via Josephine Street (Echo Hills Drive)

The site-generated traffic volumes identified in **Table 2** were assigned to the study intersections according to these distribution patterns. The resulting total site generated traffic volumes for the development are shown on **Figure 4**.



NORTH
FIGURE 4
Site Trip Generation and Distribution

IV. 2021 BUILDOUT TRAFFIC CONDITIONS

A. 2021 Buildout Traffic Volumes

Full buildout of the development is anticipated to be completed by 2021. The site generated trips from **Figure 4** were added to the existing traffic volumes from **Figure 3** to obtain the 2021 buildout traffic assignment shown in **Figure 5**.

B. Auxiliary Right-Turn Lane Analysis

The AM and PM peak hour volumes for the 2021 buildout traffic conditions were examined at the intersection of 146th Street with Chandler Road. Graphical results of the NCHRP Geometric Improvement Evaluation for an auxiliary right-turn lane are included in the **Appendix**. Per the NCHRP Report 457 guidelines, the volume of right-turning traffic does not warrant the construction of a right-turn lane on the westbound approach of Chandler Road at 146th Street under 2021 buildout traffic conditions.

C. Auxiliary Left-Turn Lane Analysis

The AM and PM peak hour volumes for the 2021 buildout traffic conditions were examined at the intersection of 146th Street with Chandler Road. Graphical results of the NCHRP Geometric Improvement Evaluation for an auxiliary left-turn lane are included in the **Appendix**. Per NCHRP Report 457 guidelines, the volume of left-turning traffic does not warrant the construction of a left-turn lane on the eastbound approach of Chandler Road at 146th Street under 2021 buildout traffic conditions.

D. Minor Road Approach Analysis

The AM and PM peak hour volumes for the 2021 buildout traffic conditions were examined at the intersection of 146th Street with Chandler Road. Graphical results of the NCHRP Geometric Improvement Evaluation for the minor road approach are included in the **Appendix**. Per the NCHRP Report 457 guidelines, the volumes do not warrant a two-lane approach on the southbound approach of 146th Street at Chandler Road under 2021 buildout traffic conditions.

E. MUTCD Control Device Warrant Analysis

N-50 (144th Street) & Echo Hills Drive

A review was performed to determine if MUTCD traffic signalization Warrant 1 (Eight-Hour Vehicular Volume), Warrant 2 (Four-Hour Vehicular Volume), or Warrant 7 (Crash Experience) will be satisfied under 2021 buildout traffic conditions at the intersection of N-50 (144th Street) with Echo Hills Drive / Josephine Street. The intersection was evaluated as an urban intersection with speed limits greater than 40 miles per hour and two or more approach lanes on the major street. The minor street was evaluated as having two lanes moving traffic with no right turn reduction. Using these parameters, the intersection does not satisfy Warrant 1, Warrant 2, or Warrant 7 under 2021 buildout traffic volumes. MUTCD traffic signal worksheets for 2021 buildout traffic conditions are included in the **Appendix**.

146th Street & Chandler Road

A review was performed to determine if MUTCD traffic signalization Warrant 1 (Eight-Hour Vehicular Volume) or Warrant 2 (Four-Hour Vehicular Volume) will be satisfied under 2021 buildout traffic conditions at the intersection of 146th Street with Chandler Road. The intersection was evaluated as an urban intersection with speed limits 40 miles per hour or less and one lane per approach on the major street. If a signal is constructed, an additional southbound lane would be required for the minimum two-

lane approach. Therefore, the minor street was evaluated as having one lane moving traffic with 100% right turn reduction. Using these parameters, the intersection does not satisfy Warrant 1 or Warrant 2 under 2021 buildout traffic volumes. MUTCD traffic signal worksheets for 2021 buildout traffic conditions are included in the **Appendix**.

F. Left-turn Phasing Analysis

All four approaches of the intersection of N-50 (144th Street) with Chandler Road were analyzed under 2021 buildout traffic conditions to determine the appropriate phasing. Under 2021 buildout traffic conditions, the northbound left-turn movement should be provided with a four-section head flashing yellow arrow signal indication to allow for protected / permitted phasing. The three other approaches should remain permitted only. However, to provide positive guidance to drivers and provide a consistent driving experience with the surrounding City of Omaha traffic signals, a three-section flashing yellow arrow traffic signal should be provided over the left-turn lane for each of the permitted only approaches. Warrants for left-turn arrow installation under 2021 buildout traffic conditions are included in the **Appendix**

G. Storage Length and Queueing Analysis

Queueing at all project intersections was evaluated under 2019 existing and 2021 buildout conditions. **Table 3** displays existing turn lane storage lengths and 95th percentile queue lengths for 2019 existing and 2021 buildout traffic operations. Consideration was given to queues either spilling out of turn lanes (spillback queue) or blocking traffic from entering an adjacent turn lane (starvation queue). Queues that would create either situation are highlighted in yellow. All stored lanes are anticipated to provide adequate storage length. However, a few approach lanes are anticipated to have queue lengths long enough to block traffic from entering the stored lanes during one or both peak hours.

H. 2021 Buildout Traffic Conditions

Figure 5 shows the lane geometry, traffic control, and levels of service for the 2021 buildout traffic conditions. Capacity analysis worksheets for the 2021 buildout traffic conditions are included in the **Appendix**. The following describe LOS results by intersection:

- **N-50 (144th Street) & Chandler Road** – Under traffic signal control with a protected / permitted northbound left-turn phase, the intersection is anticipated to continue to operate at LOS B during both the AM and PM peak hours.
- **N-50 (144th Street) & Echo Hills Drive** – Under two-way stop control, the eastbound and westbound left-turn movements are anticipated to continue to operate at LOS F during both the AM and PM peak hours. During the AM peak hour, the eastbound left-turn is anticipated to have a volume to capacity (V/C) ratio exceeding 1.0, meaning the volume has exceeded the capacity of the roadway. During the PM peak hour, the westbound left-turn and right-turn movements are anticipated to have a V/C ratio exceeding 1.0. The eastbound and westbound through/right-turn lane group is also anticipated to operate at LOS F during the AM peak hour. However, it is not uncommon for unsignalized side street movements to operate at LOS D, E, or F during peak hours. The remaining movements are anticipated to operate at LOS C or better. Should queues and delays become excessive on Echo Hills Drive it is anticipated that traffic would migrate to the traffic signal at Chandler Road.
- **146th Street & Chandler Road** – Under two-way stop control, all movements at the intersection are anticipated to continue to operate at LOS B or better both the AM and PM peak hours.

Table 3. Turn Lane Storage and 95th percentile Queue Lengths

Location	Critical Movements	Turn Lane Storage Length (ft)	95 th %ile Queue Length (ft)	
			2019 Existing (AM / PM)	2021 Buildout (AM / PM)
N-50 (144 th St) & Chandler Rd	EB Left-turn	175	129 / #110	125 / #127
	EB Through ⁺	-	185 / 50	203 / 58
	NB Left-turn	275	30 / #192	37 / #107
	NB Through	-	201 / 196	227 / 200
	NB Right-turn	275	16 / 8	17 / 8
	WB Left-turn	-	29 / 69	28 / 69
	WB Through ⁺	100	32 / 161	32 / 177
	SB Left-turn	275	79 / 12	#123 / 19
	SB Through	-	159 / 223	258 / 340
	SB Right-turn	275	12 / 16	7 / 25
N-50 (144 th St) & Echo Hills Dr / Josephine St	EB Left-turn	-	20 / 50	120 / 202.5
	EB Through ⁺	75	8 / 10	23 / 55
	NB Left-turn	175	3 / 10	3 / 15
	NB Through	-	- / -	- / -
	NB Right-turn	175	- / -	- / -
	WB Left-turn	-	60 / 68	70 / 83
	WB Through ⁺	-	15 / 30	25 / 133
	SB Left-turn	175	5 / 10	5 / 10
	SB Through	-	- / -	- / -
	SB Right-turn	175	- / -	- / -
N-50 (144 th St) & Chandler Rd	EB Through ⁺	-	0 / 0	0 / 0
	WB Through ⁺	-	- / -	- / -
	SB Left-turn ⁺	-	5 / 5	15 / 18

*shared lane

- 95th percentile volume exceeds capacity, queues may be longerm - volume for 95th percentile queue is metered by upstream signal

- spillback or starvation queue

Assumed vehicle length of 25 feet.

I. Pedestrian and Bicycle Facilities

In order to provide system connectivity, a mid-block pedestrian crossing to cross 146th Street is recommended to provide access from the proposed development to Echo Hills Park. This crossing should be located on the north side of the parking lot for the park, approximately 210 feet south of Margo Street, and be marked and signed in accordance with the MUTCD. Advanced signage is recommended. Sidewalks should also be provided around the perimeter of the development site as well as internally. As a non-site related improvement, it is also recommended to connect the sidewalk on the west side of 146th Street from Margo Street to Echo Hills Park.

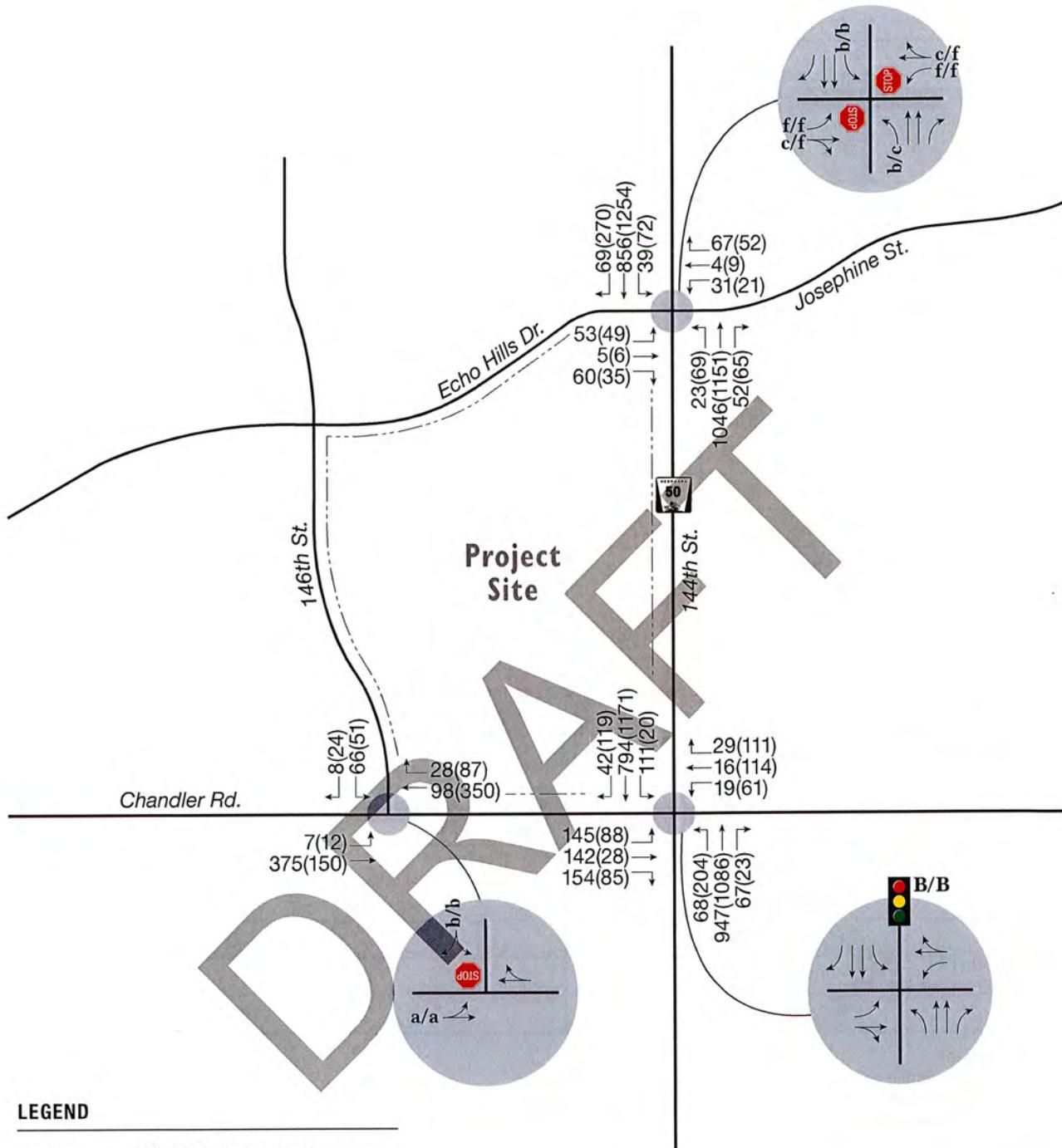


FIGURE 5
Buildout (2021)
Traffic Conditions

Echo Hills Lot 3 TIA 19-100-18 12/3/19

V. SUMMARY AND RECOMMENDATIONS

Based on the results of this analysis, the following summarizes the key findings and recommendations of this study.

- Based on the *ITE Trip Generation Manual*, the development is anticipated to generate approximately 3,114 daily weekday vehicle-trips, with 168 trips during the AM peak hour and 252 trips during the PM peak hour.
- According to *NCHRP Report 457*, auxiliary turn lanes are not warranted at the intersection of 146th Street with Chandler Road under 2021 buildout traffic conditions.
- MUTCD traffic signal warrants were not satisfied at the intersections of N-50 (144th Street) with Echo Hills Drive / Josephine Street or 146th Street with Chandler Road under 2019 existing or 2021 buildout traffic conditions. As the area surrounding the site continues to develop, these two intersections should be continually monitored to determine if signalization is warranted.
- Under 2021 buildout traffic conditions, the northbound left-turn movement should be provided with a four-section head flashing yellow arrow signal indication to allow for protected / permitted phasing. The three other approaches should remain permitted only. However, to provide positive guidance to drivers and provide a consistent driving experience with the surrounding City of Omaha traffic signals, a three-section flashing yellow arrow traffic signal should be provided over the left-turn lane for each of the permitted only approaches.
- All stored lanes provide adequate storage length. However, a few approach lanes are anticipated to have queue lengths long enough to block traffic from entering the stored lanes during one or both peak hours.
- Under 2021 buildout traffic conditions, with the intersection of N-50 (144th Street) with Chandler Road under traffic signal control with a protected / permitted northbound left-turn phase, the intersection is anticipated to continue to operate at LOS B during both the AM and PM peak hours.
- Under 2021 buildout traffic conditions, with the intersection of N-50 (144th Street) with Echo Hills Drive under two-way stop control, the eastbound and westbound left-turn movements are anticipated to continue to operate at LOS F during both the AM and PM peak hours. During the AM peak hour, the eastbound left-turn is anticipated to have a volume to capacity (V/C) ratio exceeding 1.0, meaning the volume has exceeded the capacity of the roadway. During the PM peak hour, the westbound left-turn and right-turn movements are anticipated to have a V/C ratio exceeding 1.0. The eastbound and westbound through/right-turn lane group is also anticipated to operate at LOS F during the AM peak hour. The remaining movements are anticipated to operate at LOS C or better.
- Under 2021 buildout traffic conditions, with the intersection of 146th Street with Chandler Road under two-way stop control, all movements at the intersection are anticipated to continue to operate at LOS B or better both the AM and PM peak hours.
- A mid-block pedestrian crossing to cross 146th Street is recommended to provide access from the proposed development to Echo Hills Park. This crossing should be marked and signed in accordance with the MUTCD. As a non-site related improvement, it is also recommended to connect the sidewalk on the west side of 146th Street from Margo Street to Echo Hills Park.