

AGENDA ITEM 4A

**Planned Unit Development – 14607 Chandler Road
- AD Industrial Park – Fenton Construction**

AGENDA ITEM 4B

**Replat – 14607 Chandler Road - AD Industrial Park –
Fenton Construction**



**CITY OF LA VISTA
PLANNING DIVISION
RECOMMENDATION REPORT**

CASE NUMBERS: PPUD23-0005; PRP23-0005

FOR HEARING ON: APRIL 4, 2024

REPORT PREPARED ON: MARCH 26, 2024

I. GENERAL INFORMATION

A. APPLICANT:

Fenton Construction, Inc.
Attn: Casey Fenton
PO Box 2669
Sioux City, IA 51106

B. PROPERTY OWNER:

Fenton Construction, Inc.
Attn: Casey Fenton
PO Box 2669
Sioux City, IA 51106

C. LOCATION: 14607 Chandler Road, La Vista, NE 68138, generally located southwest of the intersection of 144th Street and Chandler Road.

D. LEGAL DESCRIPTION: Tax Lot 19 in Section 14, Township 14 North, Range 11 East of the 6th PM, Sarpy County, Nebraska (Parcel #011592217 and #011040238)

E. REQUESTED ACTION(S):

1. Approval of a Planned Unit Development for AD Industrial Park to allow for the construction of speculative industrial multi-tenant buildings. There are 4 buildings proposed within the PUD area that combine to equal over 200,000 square feet, but the full development will include 6 buildings.
2. Approval of a replat application for Tax Lot 19 (Parcel #011592217 and #011040238) to be replatted as AD Industrial Park Lots 1-6.

F. EXISTING ZONING AND LAND USE: I-1 Light Industrial, Planned Unit Development (Overlay District), and a portion of the property contains the Gateway Corridor District (Overlay District). This property is currently vacant. The Future Land Use Map designates these properties as Business Park.

G. PURPOSE OF REQUEST: Applicant is seeking to construct light industrial buildings as part of the AD Industrial Park and has requested a Planned Unit Development to establish the

ingress/egress easements necessary to satisfy the lot frontage requirements of La Vista's Subdivision Regulations as three of the proposed buildings will be located south of the railroad tracks and will be accessible via approved railroad crossings through the northern lots on the site that front Chandler Road. In addition, the applicant seeks an allowance through the PUD to allow for the operation of a "Heavy Construction Contractors" use in addition to allowing for outdoor storage on the southern parcels adjacent to the railroad tracks (with the required screening).

H. SIZE OF SITE: The PUD area includes approximately 45.59 acres.

II. BACKGROUND INFORMATION

A. GENERAL NEIGHBORHOOD/AREA LAND USES AND ZONING:

<u>Direction From Subject Property</u>	<u>Future Land Use Designation</u>	<u>Current Zoning Designation</u>	<u>Surrounding Development</u>
North	Light Industrial (Sarpy County); & Low-Medium Density Residential (Sarpy County)	IGM Industrial General Manufacturing (Sarpy County) & RS-72 Single-Family Residential (Sarpy County Zoning)	Chalco Industrial properties and the Echo Hills Neighborhood
East	Industrial	I-1 Light Industrial, I-2 Heavy Industrial, and portions with the Gateway Corridor District (Overlay District).	Chalco Valley Business Park
South	Business Park; Low-Medium Density Residential (Sarpy County); & Medium-High Density Residential (Sarpy County)	C-1 Shopping Center Commercial, Gateway Corridor District (Overlay District); RD-50 Two Family Residential (Sarpy County) and RG-15 General Residential District (Sarpy County)	Vacant Property & Chalco Pointe Neighborhood
West	Light Industrial (Sarpy County)	IGM Industrial General Manufacturing (Sarpy County)	Chalco Industrial Properties & Vacant Properties

B. RELEVANT CASE HISTORY:

1. On November 21, 2023 the City Council of the City of La Vista voted to extend the City's extraterritorial zoning jurisdiction to include the entirety of Tax Lot 19. At the same meeting, Council voted to amend the City's Future Land Use Map of the Comprehensive Plan to designate the property as Business

Park, in addition to amending the Official Zoning Map to zone the property I-1 Light Industrial, with a portion of the property fronting S. 144th Street with the Gateway Corridor Overlay District designation.

C. APPLICABLE REGULATIONS:

1. Section 5.13 of the City of La Vista Zoning Ordinance – I-1 Light Industrial
2. Section 5.15 of the City of La Vista Zoning Ordinance – PUD Planned Unit Development District (Overlay District)
3. Section 5.17 of the City of La Vista Zoning Ordinance – Gateway Corridor District (Overlay District)
4. Section 7.16 of the City of La Vista Zoning Ordinance – Performance Standards for Industrial Uses
5. Section 3.07 of the La Vista Subdivision Regulation – Replat Procedures

III. ANALYSIS

A. COMPREHENSIVE PLAN:

1. The Future Land Use Map of the La Vista Comprehensive Plan designates this property for Business Park development. The La Vista Land Use Plan lists the I-1 Light Industrial Zoning District as a potential/compatible zone for the Business Park designation. Subsequently, light industrial development in this location is compatible with the Future Land Use Map and the La Vista Comprehensive Plan.

B. OTHER PLANS: N/A.

C. TRAFFIC AND ACCESS:

1. The development will have driveway access to Chandler Road. The western-most proposed building (to be located south of the railroad tracks) will have access over a railroad crossing to Kearney Ave that connects with Chandler Road. Another driveway to Chandler Road will connect the other three proposed buildings within the PUD area, two of which will be accessed through an additional railroad crossing to the two buildings to be located south of the tracks.
2. A Traffic Impact Analysis (TIA) was prepared by Lamp Rynearson and provided to the City for review. The TIA suggested that no public improvements will be required to address/accommodate the additional traffic that will be generated by the proposed development. The TIA was also reviewed by Sarpy County (as Chandler Road is under their authority), and the Nebraska Department of Transportation (as Highway 50/S. 144th Street is under their authority). Both organizations provided comments to the applicant which were

addressed in a revised report, and both organizations have expressed that the report is acceptable, along with the City Engineer. The TIA (without appendices) is attached to this report.

3. A permanent ingress/egress easement will be recorded along with the Final Plat to ensure proper access to the buildings south of the railroad tracks that do not directly abut Chandler Road. The draft easement language has been provided to and reviewed by the City.
4. BNSF Railway has given their approval for the two proposed railroad crossings and has executed agreements with the property owner/applicant that allow for their construction and use.

D. UTILITIES:

1. The property has access to all necessary utilities.

E. PARKING REQUIREMENTS:

1. The amount of off-street parking stalls proposed for each of the lots included within AD Industrial Park exceeds the amount required by Section 7.06 of the La Vista Zoning Ordinance. The minimum off-street parking stall requirements and the number of proposed parking stalls for each lot in the development are as follows:

<u>Lot #</u>	<u>Building Size (Square Feet)</u>	<u>Requirement</u>	<u>Required Stalls</u>	<u>Provided Stalls</u>
Lot 3	50,000	Industrial uses: 1 stall per 3,000 square feet	17	79
Lot 4	50,000		17	36
Lot 5	60,000		20	38
Lot 6	41,520		14	26
Total	201,520		68	179

IV. REVIEW COMMENTS:

1. Per Section 5.15.02.04 of the La Vista Zoning Ordinance, land uses not permitted in the underlying zoning district may be allowed by City Council through a Planned Unit Development Overlay District. The development proposal related to this application includes facilities for Heavy Construction Contractors with outdoor storage on proposed lots 4-6 (the parcels south of the railroad tracks). These uses not currently permitted in the underlying I-1 Light Industrial Zoning District, but that would be permitted through the PUD ordinance if approved by City Council. Due to the secluded nature of the parcels south of the tracks that are situated between the railroad to the north and the South Papillion Creek to the south, in addition to the screening that will be required for any

- and all outdoor storage of materials through the use of fencing, landscaping, or other means as determined by the Community Development Director, staff support this allowance.
2. Outdoor storage will not be permitted on the properties fronting Chandler Road.
 3. A subdivision agreement for the development has been drafted and will be reviewed by City Council along with the Final Plat. It addresses items including but not limited to: public and private improvements, maintenance of common areas, stormwater management, sewer connection fees, easements and covenants, and more.
 4. Proposed lot 1 which is on the southwest corner of S. 144th Street and Chandler Road is outside of the PUD area and not included in the PUD application, but is included in the Gateway Corridor District (Overlay Zoning District) so the building, site, and landscaping design for the building on Lot 1 will need to be approved through the City's design review process and adhere to the Gateway Corridor Design Guidelines.
 5. The development will be required to meet the requirements for a Post Construction Storm Water Management Plan as per City regulations.

V. STAFF RECOMMENDATION – PLANNED UNIT DEVELOPMENT:

Staff recommends approval of the Planned Unit Development for AD Industrial Park, contingent upon the approval of the Replat and Subdivision Agreement, as the request is consistent with the Comprehensive Plan and the Zoning Ordinance.

VI. STAFF RECOMMENDATION – REPLAT:

Staff recommends approval of the replat of Tax Lot 19, to be replatted as AD Industrial Park Lots 1-6, contingent upon approval of the Planned Unit Development and Subdivision Agreement, as the replat is consistent with La Vista's Subdivision Regulations.

VII. ATTACHMENTS TO REPORT:

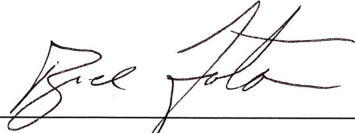
- A. Vicinity Map
- B. Review and response letters
- C. PUD plan set
- D. Preliminary Plat
- E. Final Plat
- F. Traffic Impact Analysis

VIII. COPIES OF REPORT SENT TO:

- A. Casey Fenton, Fenton Construction
- B. Randy Kuszak, Lamp Rynearson, Inc.
- C. Public Upon Request



Prepared by: Associate City Planner



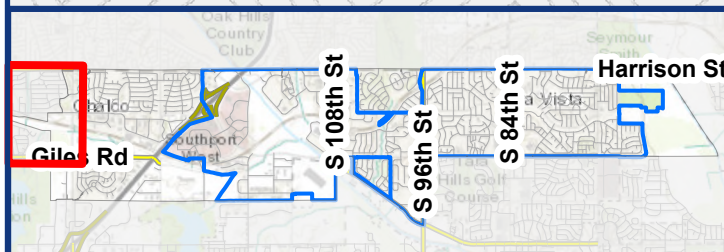
3/28/24

Community Development Director

Date



AD Industrial Park - Vicinity Map



Legend

- Property Lines
- Development Boundary





December 29, 2023

Lamp Rynearson, Inc.
Attn: Randy Kuszak
14710 West Dodge Road, STE 100
Omaha, NE 68154

RE: AD Industrial Park – Preliminary Plat & PUD Applications
Initial Review Letter

Mr. Kuszak,

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

Preliminary Plat Application

1. Regarding Section 3.03.11 of La Vista's Subdivision regulations, a qualified environmental specialist must delineate the locations of any wetlands on site, if applicable.
2. Regarding Section 3.03.19, the traffic impact analysis and access points along Chandler Road need to be reviewed and approved by Sarpy County Public Works as Sarpy County operates and maintains this portion of Chandler Road. Upon confirmed review by the County, the City may elect to have the analysis further reviewed by the City's third-party reviewer.

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La Vista, NE 68128-2198
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402.331.4375 F

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8116 Park View Blvd.
402.593.6400 P
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402.537.3902 F

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402.331.1582 P
402.331.7210 F

Public Works
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402.331.8927 P
402.331.1051 F

Recreation
8116 Park View Blvd.
402.331.3455 P
402.331.0299 F

3. Regarding Section 3.03.19, the traffic impact analysis of the intersection of HWY 50 and Chandler Road needs to be reviewed by the Nebraska Department of Roads (NDOT) as the NDOT operates and maintains HWY 50. Upon confirmed review by the NDOT, the City may elect to have the analysis further reviewed by the City's third-party reviewer.
4. Regarding Section 3.03.20.1, please provide the depth of the sanitary sewer that transects the proposed lots 4, 5 and 6. Generally, Lots 5 and 6 fall outside of the City's current Wastewater Service Agreement with the City of Omaha, and therefore the City of Omaha will need to evaluate how the lots would be served, and if the current Wastewater Service Agreement would need to be amended. La Vista Public Works will contact Omaha Public Works to begin the evaluation.
5. Regarding Section 3.03.20.4, as the subdivision is a new platting, the Post Construction Storm Water Management Plan (PCSMP) should meet the no-net increase requirements for the 2, 10, and 100-year storm events.
6. Regarding Section 3.03.20.4, please confirm the catchment area delineation and impact point calculation locations are consistent with the current City of Omaha Stormwater Design Manual.
7. Regarding Section 3.03.20.4, please provide a draft Maintenance Agreement and Easement for review.
8. Draft language and exhibits for the public access and utility easement noted on the preliminary plat that is to be recorded via separate instrument will be required as part of the review process for the Final Plat.

Planned Unit Development Application

9. Regarding Section 5.15.04.04, please provide details on the two proposed private railroad crossings/access driveways, to ensure that they will adequately support the anticipated traffic generated by this development in a safe manner (crossing dimensions, associated improvements, any potential barricading, signage, lights, etc.)

10. Regarding Section 5.15.05.02.2, please provide the height of all proposed structures.
11. Regarding Section 5.15.05.04, please show the point of connection and other pertinent design information for the sanitary sewer. Generally, Lots 5 and 6 fall outside of the City's current Wastewater Service Agreement with the City of Omaha, and therefore the City of Omaha will need to evaluate how the lots would be served, and if the current Wastewater Service Agreement would need to be amended. La Vista Public Works will contact Omaha Public Works to begin the evaluation.
12. Regarding Zoning Ordinance Section 5.15.04.13, provisions for the proper maintenance and ownership of common spaces (including shared access drives) shall be included in the submittal.
13. Regarding Zoning Ordinance Section 5.15.05.09, please submit copies of any restrictive covenants that are to be recorded with respect to the properties included in the planned development district.
14. Do you anticipate the construction of ground monument signs for each of the lots fronting Chandler Road? If so, please identify the potential locations for those signs and include setback distances.
15. Any outdoor storage of materials permitted through the Planned Unit Development Ordinance on proposed Lots 4, 5, and 6 shall be screened from view. Screening will be required in the form of fencing, landscaping, or other means as determined by the Community Development Director.

General Development Comments

16. The building design for the proposed building on Lot 1 AD Industrial Park must be reviewed as part of the design review process that is required for developments within the Gateway Corridor Overlay District prior to building permit submittal. The full design review process will be conducted outside of the PUD and replat approval processes, with the exception of the review of the preliminary landscaping plan. The City's third-party Design Review Architect is currently reviewing the landscaping plan, and comments may be forthcoming.

17. Please add parking lot light pole locations to the landscaping plan of the PUD plan set in order to ensure there are no conflicts with the planting plan as presented.

Please resubmit 2 paper copies of the Preliminary Plats, PUD site plans, and other supporting documentation requested in this letter (including electronic copies) to the City for further review. Please also provide a response letter that answers or acknowledges each of the comments contained in this letter.

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, reading "Cale Brodersen", followed by a long horizontal flourish.

Cale Brodersen, AICP
Associate City Planner
City of La Vista
cbrodersen@cityoflavista.org
(402) 593-6400

cc:

Casey Fenton, Fenton Construction
Bruce Fountain, Community Development Director – City of La Vista
Chris Solberg, Deputy Community Development Director – City of La Vista
Pat Dowse, City Engineer – City of La Vista
Garrett Delgado, Engineer Assistant – City of La Vista

VIA Email

January 10, 2024

**LAMP
RYNEARSON**

14710 W. Dodge Rd., Ste. 100
Omaha, NE 68154
[P] 402.496.2498
[F] 402.496.2730
LampRynearson.com

Cale Brodersen, AICP
Associate City Planner
City of La Vista
8116 Park View Blvd
La Vista, NE 68128

REFERENCE: AD Industrial Park
Review Comments – Preliminary Plat & PUD Applications
Job No. 0123094.01-003

Dear Mr. Brodersen:

Submitted herewith are our responses to comments received from City of La Vista Planning Department, letter dated December 29, 2023, and from Schemmer, letter dated January 5, 2024, for the submittal of the Preliminary Plat and PUD Applications for the AD Industrial Park project, located near Highway 50 and Chandler Road.

City of La Vista Planning Department Comments
Preliminary Plat Application

1. Regarding Section 3.03.11 of La Vista's Subdivision regulations, a qualified environmental specialist must delineate the locations of any wetlands on site, if applicable.

Response: Agreed, a wetland delineation report identifying jurisdictional wetlands has been included in the resubmittal documents.

2. Regarding Section 3.03.19, the traffic impact analysis and access points along Chandler Road need to be reviewed and approved by Sarpy County Public Works as Sarpy County operates and maintains this portion of Chandler Road. Upon confirmed review by the County, the City may elect to have the analysis further reviewed by the City's third-party reviewer.

Response: Agreed.

3. Regarding Section 3.03.19, the traffic impact analysis of the intersection of HWY 50 and Chandler Road needs to be reviewed by the Nebraska Department of Roads (NDOT) as the NDOT operates and maintains HWY 50. Upon confirmed review by the NDOT, the City may elect to have the analysis further reviewed by the City's third-party reviewer.

Response: Agreed.

4. Regarding Section 3.03.20.1, please provide the depth of the sanitary sewer that transects the proposed lots 4, 5, and 6. Generally, Lots 5 and 6 fall outside of the City's current Wastewater Service Agreement with the City of Omaha, and therefore the City of Omaha will need to evaluate how the lots would be served, and if the current Wastewater Service Agreement would need to be amended. La Vista Public Works will contact Omaha Public Works to begin the evaluation.

Response: Depths of the sanitary sewer transecting Lots 4, 5 and 6 was unable to be determined during field investigation due to ceased manholes. Information on the interceptor sewer is in the process of being requested from the City of Omaha and upon receipt of the record drawings, they will be forward to the Public Works department. A manhole feeding into the interceptor sewer was able to be surveyed, indicating a depth of approximately 8.5'. As all proposed buildings will be slab on grade, raised to a minimum of 1' above the base flood elevation, we anticipate no issues with providing gravity service to each of the buildings. It is anticipated that each building service will tap an existing interceptor sewer manhole, and that as necessary, a manhole drop connection compliant with the City of Omaha Standard Plate 703-03 will be utilized to meet the grade of the sewer.

5. Regarding Section 3.03.20.4, as the subdivision is a new platting, the Post Construction Storm Water Management Plan (PCSMP) should meet the no-net increase requirements for the 2, 10, and 100-year storm events.

Response: PCSMP updated to require 2, 10 and 100-year storm events. CFS requirements calculated and shown in associated table on PCSMP exhibits and drainage study have been revised and included in the resubmittal package.

6. Regarding Section 3.03.20.4, please confirm the catchment area delineation and impact point calculation locations are consistent with the current City of Omaha Stormwater Design Manual.

Response: Confirmed. Area delineation and impact point calculation locations are consistent with current ORSDM.

7. Regarding Section 3.03.20.4, please provide a draft Maintenance Agreement and Easement for review.

Response: A draft Maintenance Agreement and Easement has been provided. As proposed, each individual lot owner will be required to submit PCSMP measures through the city process at the time of building permit, and will be responsible for providing an acceptable maintenance agreement and easement to the city. The PCSMP shown on the submittal establishes the baseline allowable peak flow and water quality conditions for each lot.

8. Draft language and exhibits for the public access and utility easement noted on the preliminary plat that is to be recorded via separate instrument will be required as part of the review process for the Final Plat.

Response: Draft exhibits and language for all proposed easements shown on the plat have been included as part of the resubmittal package.

Planned Unit Development Application

9. Regarding Section 5.15.04.04, please provide details on the two proposed private railroad crossings/access driveways, to ensure that they will adequately support the anticipated traffic generated by this development in a safe manner (crossing dimensions, associated improvements, any potential barricading, signage, lights, etc.).

Response: Cross sections showing details of the concrete crossings to be constructed are included as part of

the resubmittal. Each crossing will be 40' wide as permitted with the Railroad. Each crossing approach will have Railroad Crossing signs in accordance with MUTCD, and will utilize a flashing indicator sign, without a crossing bar. All proposed railroad crossing equipment and improvements will be approved as required by BNSF railroad.

10. Regarding Section 5.15.05.02.2, please provide the height of all proposed structures.

Response: All structures are anticipated to have a height of 40'. The table on the PUD site plan has been updated.

11. Regarding Section 5.15.05.04, please show the point of connection and other pertinent design information for the sanitary sewer. Generally, Lots 5 and 6 fall outside of the City's current Wastewater Service Agreement with the City of Omaha, and therefore the City of Omaha will need to evaluate how the lots would be served, and if the current Wastewater Service Agreement would need to be amended. La Vista Public Works will contact Omaha Public Works to begin the evaluation.

Response: Sanitary connections are shown on original PUD utility plan. Lots 4-6 are connected at existing manholes on City of Omaha Interceptor south of the properties. Lot 3 will connect to proposed public sanitary line that passes through Lot 1 and 2. Service agreement will need to be amended. Connections will be made at a minimum depth above floodplain elevation. We are in the process of requesting invert information from the City of Omaha.

12. Regarding Zoning Ordinance Section 5.15.04.13, provisions for the proper maintenance and ownership of common spaces (including shared access drives) shall be included in the submittal.

Response: Common space (shared access drives) are identified by easements for this development. The land will be owned by the underlying property owner, the rights to the easement will be held by all property owners with rights to each easement. Maintenance will be the obligation of the underlying property owner. Provisions for ownership and maintenance are indicated on the draft easement documents which have been included as a part of the resubmittal.

13. Regarding Zoning Ordinance Section 5.15.05.09, please submit copies of any restrictive covenants that are to be recorded with respect to the properties included in the planned development district.

Response: Draft Covenants have been included as part of the resubmittal package.

14. Do you anticipate the construction of ground monument signs for each of the lots fronting Chandler Road? If so, please identify the potential locations for those signs and include setback distances.

Response: Ground monument signs for each of the lots fronting Chandler Road are not anticipated.

15. Any outdoor storage of materials permitted through the Planned Unit Development Ordinance on proposed Lots 4, 5 and 6 shall be screened from view. Screening will be required in the form of fencing, landscaping, or other means as determined by the Community Development Director.

Response: Agreed.

General Development Comments

16. The building design for the proposed building on Lot 1 AD Industrial Park must be reviewed as part of the design review process that is required for developments within the Gateway Corridor Overlay District prior to building permit submittal. The full design review process will be conducted outside of the PUD and replat approval processes, with the exception of the review of the preliminary landscaping plan. The City's third-party Design Review Architect is currently reviewing the landscaping plan, and comments may be forthcoming.

Response: Agreed. We have received comments related to the preliminary landscaping plan. As this area is outside the PUD and replat approval process, the comments will be address as part of a future design review process for that site plan prior to building permit submittal. For clarity, landscaping shown on the PUD landscaping plan for all lots outside the PUD limits have been removed.

17. Please add parking lot light pole locations to the landscaping plan of the PUD plan set in order to ensure there are no conflicts with the plating plan as presented.

Response: Parking lot light pole locations have been added to the landscaping plan. A mix of Pole mount lighting and building mount downlighting will be utilized for all buildings.

Schemmer Comments

Landscaping

1. Per 4.III.D.2, a minimum of one species of coniferous tree is required, none are included in the plant schedule.

Response: A species of coniferous tree has been added to the plant schedule.

2. Per 4.III.F, Landscape plan shall be designed to provide natural undulating landscape forms and avoid straight line plantings. All proposed plantings are arranged as straight line plantings.

Response: The landscape plan for Lot 1 will be modified to provide natural undulating landscape forms and avoid straight line plantings when submitted for design review at the time of end user lot development. The area of plantings in Lot 3 along Chandler Road are outside the limits of the Corridor Overlay District. For clarity, all plantings outside the limits of the PUD area have been removed from the Landscape plan.

3. Compliant screening shrubs are included in the planting list, but not included on the submitted plan. For clarity, all plantings outside the limits of the PUD area have been removed from the Landscape plan.

Response: Screening shrubs are located along the north lot line of Lot 3 along Chandler Road and are denoted by a hatch.

4. Irrigation required per 4.III.G not indicated on plans.

Response: The requirement for irrigation has been added for Lot 4, which is the only lot within the Corridor Overlay District that falls within the PUD area. The requirement for irrigation will be added to future landscape plans for Lot 1 when they are submitted. For clarity, all plantings outside the limits of the PUD area have been removed from the Landscape plan.

5. Parking areas and traffic ways are not indicated as landscaped in accordance with 4.III.H.

Response: Additional landscape islands with trees have been added to the parking lots of Lot 4 per 4.III.H. All other parking lot areas within the PUD area are outside the Corridor Overlay District. For clarity, all plantings outside the limits of the PUD area have been removed from the Landscape plan.

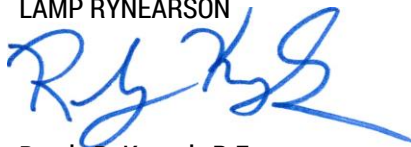
Documents included in this resubmittal are as follows (2 copies each):

1. Waters of the US Delineation Report
2. Preliminary Plat PCSMP Plan
3. PUD Site Plan
4. PUD Utility Plan
5. PUD Landscape Plan
6. PUD PCSMP Plan
7. Draft PCSMP Maintenance Agreement
8. Draft Easement Exhibits and Language
9. Draft Covenants
10. Preliminary Drainage Study

Please call if you have any questions or concerns regarding this submittal.

Sincerely,

LAMP RYNEARSON



Randy R. Kuszak, P.E.
Senior Project Manager



February 2, 2024

Lamp Rynearson, Inc.
Attn: Randy Kuszak
14710 West Dodge Road, STE 100
Omaha, NE 68154

RE: AD Industrial Park – Preliminary Plat and PUD Applications
2nd Review Letter

Mr. Kuszak,

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

Preliminary Plat Application

1. Lamp Rynearson Response #1 – Please include in the environmental documentation and/or PUD submittals confirmation that development on Lots 4, 5, and 6 meet or exceed the 3:1+50' major stream setback as defined in Exhibit B of the 2019 Papillion Creek Watershed Partnership Interlocal Agreement.

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402.331.1051 F

Recreation
8116 Park View Blvd.
402.331.3455 P
402.331.0299 F

2. Lamp Rynearson Responses #2 and #3 – Please review and revise the traffic impact analyses as to incorporate the comments of Sarpy County and the Nebraska Department of Transportation (NDOT). It would appear comments in regard to the existing traffic signal configuration at the intersection of 144th Street and Chandler Road, and the future lane configuration (4 lanes vs. 6 lanes) of HWY 50/144th Street will likely modify the current and projected Level of Service. Upon further review, the City may still engage a review with the City's 3rd party reviewer. Copies of the responses from Sarpy County and NDOT have been attached to this letter for your review.
3. Lamp Rynearson Response #9 – In review of the provided Private Crossing Agreements for the two (2) private rail crossings, it would appear each crossing agreement is valid for 25 years. What are the provisions/assurances to ensure that the lots south of said crossings will be accessible into perpetuity?

Planned Unit Development Application

1. The boundaries of the PUD Site Plans within the submittal package are not contiguous. The boundaries of the PUD Site Plan set should match that of the PUD district boundary set within the Zoning Map Amendment approved by the City Council on November 21, 2023. Attached is an excerpt from the City Council packet that depicts the PUD district boundary as contiguous, crossing over the railroad along the eastern edge of Lot 3 in the submitted plan set.
2. Lamp Rynearson Response #9 - In review of the provided Private Crossing Agreements for the two (2) private rail crossings, it is not clear if the oncoming trains will sound horns in advance of the crossing. Does BNSF typically sound ahead of private crossings, or is that practice for public crossings?
3. Lamp Rynerson Response #11 – Please provide details on how the connection to public sanitary sewer is intended to be made. Be aware that pre- and post-connection inspection reports are to be submitted to the La Vista Public Works Department.
4. To reiterate earlier discussions, the allowance for outdoor storage on the lots that are proposed south of the railroad tracks will be completed through the

adopting PUD Ordinance. The ordinance will not allow for outdoor storage on the lots fronting Chandler Road on the north side of the railroad tracks.

Also please note that the aforementioned PUD Ordinance will provide requirements for screening of the outdoor storage areas. A copy of the draft ordinance will be prepared prior to Planning Commission review.

General Development Comments

5. Although no landscaping is required to be depicted on proposed Lots 1-2 of this development through the PUD Landscaping Plan. Landscaping will still be required as per Section 7.17 of the Zoning Ordinance on Lot 2 and as per Section 7.17 of the Zoning Ordinance at the Gateway Corridor District on Lot 1.

Please resubmit 2 paper copies of the Preliminary Plats, PUD site plans, and other supporting documentation requested in this letter (including electronic copies) to the City for further review. Please also provide a response letter that answers or acknowledges each of the comments contained in this letter.

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 are able to submit the final plat at this time, staff could begin internal review and the preliminary and final Plats could be reviewed by the Planning Commission and City Council at the same time to reduce the overall approval schedule (as opposed to submitting the final plat after City Council approval of the preliminary plat). If you have any questions regarding these comments, please feel free to contact me at any time.

Thank you,



Cale Brodersen, AICP
Associate City Planner
City of La Vista
cbrodersen@cityoflavista.org
(402) 593-6400

cc:

Casey Fenton, Fenton Construction

Bruce Fountain, Community Development Director – City of La Vista

Chris Solberg, Deputy Community Development Director – City of La Vista

Pat Dowse, City Engineer – City of La Vista

Garrett Delgado, Engineer Assistant – City of La Vista

VIA Email

February 15, 2024



14710 W. Dodge Rd., Ste. 100
Omaha, NE 68154
[P] 402.496.2498
[F] 402.496.2730
LampRynearson.com

Cale Brodersen, AICP
Associate City Planner
City of La Vista
8116 Park View Blvd
La Vista, NE 68128

REFERENCE: AD Industrial Park
Review Comments – Preliminary Plat & PUD Applications (2nd Review)
Job No. 0123094.01-003

Dear Mr. Brodersen:

Submitted herewith are our responses to comments received from City of La Vista Planning Department, letter dated February 2, 2024, for the submittal of the Preliminary Plat and PUD Applications for the AD Industrial Park project, located near Highway 50 and Chandler Road.

City of La Vista Planning Department Comments
Preliminary Plat Application

1. Please include in the environmental documentation and/or PUD submittals confirmation that development on Lots 4, 5 and 6 meet or exceed the 3:1 +50' major stream setback as defined in Exhibit B of the 2019 Papillion Creek Watershed Partnership Interlocal Agreement.

Response: Major setback lines for the 3:1 +50' have been added to the PUD Grading, Site, PCSMP and Utility Plans showing the 3:1 + 50' does not intersect proposed development inside Lots 4, 5, and 6. Additionally, the 3:1 + 50' line has been added to the Preliminary Plat Storm Sewer, Grading and Erosion Control Plan, Paving and Sanitary Plan, and PCSMP Plan as well.

2. Please review and revise the traffic impact analyses as to incorporate the comments of Sarpy County and Nebraska Department of Transportation (NDOT). It would appear comments regarding the existing traffic signal configuration at the intersection of 144th Street and Chandler Road, and the future lane configuration (4 lanes vs. 6 lanes) of HWY 50/144th Street will likely modify the current and projected Level of Service. Upon further review, the City may still engage a review with the City's 3rd party reviewer. Copies of the responses from Sarpy County and NDOT have been attached to this letter for your review.

Response: An updated Traffic Impact Analysis has been included with the resubmittal addressing the comments provided by NDOT and JEO. Comment responses for the Traffic Study comments provided are included in the NDOT matrix format for ease of resubmittal to NDOT. A copy of the filled-out comment matrix is included with the resubmittal documents.

3. In review of the provided Private Crossing Agreements for the two (2) private rail crossings, it would appear such crossing agreement is valid for 25 years. What are the provisions/assurances to ensure that the lots south of said crossings will be accessible into perpetuity?

Response: The crossing agreement is for the upgrade of the physical crossing, which is the concrete panels which are to be installed. The 25-year time period is consistent with the expected lifespan of the concrete crossing panels, and is the period the railroad will assume maintenance of the privately constructed panels. After the 25-year period, the railroad will no longer assume maintenance, and if replacement is needed due to their condition, the current owners of Lots 4, 5 and 6 will need to seek replacement and a new Private Crossing Agreement. The actual crossing right is already in existence as the railroad makes Lots 4, 5, and 6 landlocked and inaccessible without crossing the railroad ROW. The existing grant of access is being utilized. The railroad has reviewed and approved the improvements to the existing access indicates they agree with the existence of the permanent access points.

Planned Unit Development Application

4. The boundaries of the PUD Site Plans within the submittal package are not contiguous. The boundaries of the PUD Site Plan set should match that of the PUD district boundary set within the Zoning Map Amendment approved by the City Council on November 21, 2023. Attached is an excerpt from the City Council packet that depicts the PUD district boundary as contiguous, crossing over the railroad along the eastern edge of Lot 2 in the submitted plan set.

Response: PUD limit has been redrawn to be continuous located along the eastern edge of Lot 3 projected across the Railroad ROW. The owner does not desire to include Lot 2 in the PUD.

5. In review of the provided Private Crossing Agreements for the two (2) private rail crossings, it is not clear if the oncoming trains will sound horns in advance of the crossing. Does BNSF typically sound ahead of private crossings, or is that practice for public crossings?

Response: Federal Railroad Administration regulations require horn sounding occurs at all public at grade crossings. This crossing is currently a private crossing, so a sounding of the horns would not appear to be required by regulation. Ultimately the decision for the operation of trains through this corridor will be solely at the discretion of the railroad. The applicant does not intend to seek any non-standard horn sounding practices from the railroad for these crossings.

6. Please provide details on how the connection to public sanitary sewer is intended to be made. Be aware that pre- and post-connection inspection reports are to be submitted to the La Vista Public Works Department.

Response: It is anticipated each building service will tap into the existing interceptor sewer manholes for Lots 4, 5 and 6, and as necessary, include a manhole drop connection compliant with the City of Omaha Standard Plate 703-03. All connections shall be set to match crowns of the existing outflow pipe crown. For the connection to the existing City of La Vista sanitary sewer for Lots 1, 2 and 3 service, a connection will be made such that the tapping sewer enters the existing manhole above the shoulder of the manhole invert, approximately 0.5' above the outflow flowline. Existing manholes will be utilized as if the condition is deemed acceptable by the City and replaced with new structures should it be necessary. Pre and Post connection inspection reports will be submitted to the La Vista Public Works Department during design and after construction. All taps will be in accordance with City of Omaha Standard Plate 700-02.

7. To reiterate earlier discussions, the allowance for outdoor storage on the lots that are proposed south of the railroad tracks will be completed through the adopting PUD Ordinance. The ordinance will not allow for outdoor storage on the lots fronting Chandler Road on the north side of the railroad tracks.

Response: The applicant is in agreement with this statement.

8. Also please note the aforementioned PUD Ordinance will provide requirements for screening of the outdoor storage areas. A copy of the draft ordinance will be prepared prior to Planning Commission review.

Response: The applicant is in agreement with this statement.

General Development Comments

9. Although no landscaping is required to be depicted on proposed Lots 1-2 of this development through the PUD Landscaping Plan. Landscaping will still be required as per Section 7.17 of the Zoning Ordinance on Lot 2 and as per Section 7.17 of the Zoning Ordinance at the Gateway Corridor District on Lot 1.

Response: Agreed. Landscaping compliant with the applicable zoning ordinance and previously provided comments will be provided as part of building permit submittals for each lot as they are developed.

Documents included in this resubmittal are as follows (2 copies each):

1. Traffic Impact Analysis.
2. NDOT Comment Matrix.
3. Preliminary Plat PCSMP Plan.
4. Preliminary Plat Paving and Sanitary Sewer Plan.
5. Preliminary Plat Storm Sewer, Grading and Erosion Control Plan.
6. P.U.D. Site Plan.
7. P.U.D. Emergency Vehicle Access Exhibit.
8. P.U.D. Landscape Plan.
9. P.U.D. Post Construction Stormwater Management Plan.
10. P.U.D. Grading Plan.
11. P.U.D. Utility Plan.
12. Draft Subdivision Agreement.
13. Draft Subdivision Agreement Exhibits (8.5"x11"):
 - a. Surveyors Certificate.
 - b. Final Plat.
 - c. Post Construction Stormwater Management Plan.
 - d. Draft PCSMP Maintenance Agreement.
 - e. Draft Sewer Connection Agreement.

- f. Draft Easement Exhibits and Language.
- g. Draft Restrictive Covenants.

Please call if you have any questions or concerns regarding this submittal.

Sincerely,

LAMP RYNEARSON



Randy B. Kuszak, P.E.
Senior Project Manager

LOTS 1 THROUGH 6, INCLUSIVE, BEING A PLATTING OF PART OF TAX LOT 19 IN THE SOUTH HALF OF SECTION 14,
TOWNSHIP 14 NORTH, RANGE 11 EAST OF THE 6TH P.M., SARPY COUNTY, NEBRASKA



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OMAHA, NEBRASKA
14710 W. DODGE RD., STE. 100 (402) 498.2498
NE AUTHORIZATION NO.: CA0130

FORT COLLINS, COLORADO
4715 INNOVATION DR., STE. 100 (970) 228.0342

KANSAS CITY, MISSOURI
9001 STATE LINE RD., STE. 200 (816) 581.0440
MO AUTH. NO.: E-2013011903 / LS-2019043127



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RANDALL R. KUSZAK

PUD SITE PLAN

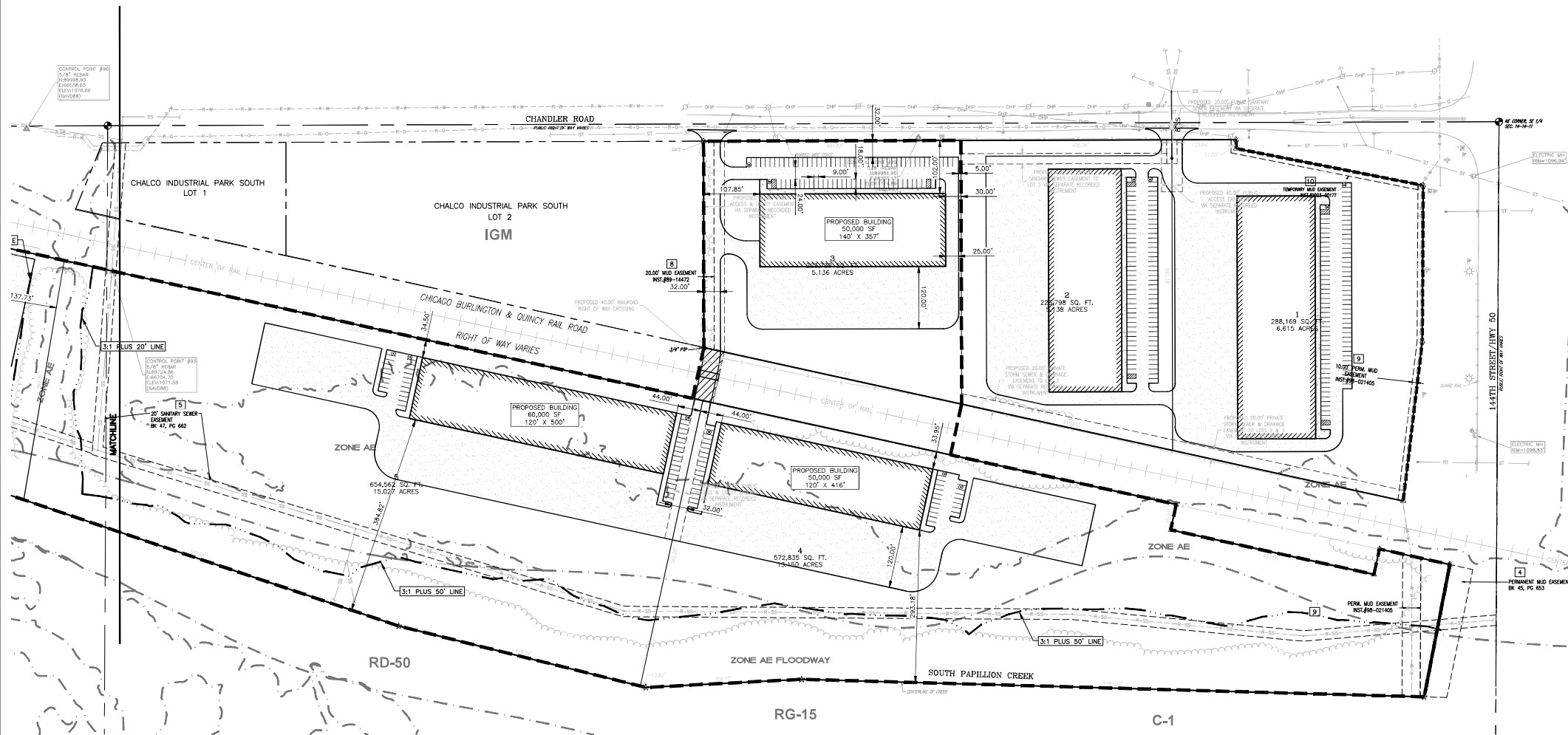
AD INDUSTRIAL PARK
SARPY COUNTY, NEBRASKA

PREVISIONS

DESIGNER / DRAFTER
C. MIKA/J. CASPER/R. KELLER
DATE
12-04-2023
PROJECT NUMBER
0123094.01-003
BOOK AND PAGE

SHEET

1 OF 1



PROJECT PHASING

THE FOLLOWING ARE ESTIMATED PHASE COMPLETION DATES:

PHASE 1	- OVERLOT GRADING LOTS 1-3	- SPRING 2024
PHASE 2	- OVERLOT GRADING LOTS 4-6	- FALL 2024
PHASE 3	- PUBLIC IMPROVEMENTS	- SPRING 2025
PHASE 4	- LOT 1-6 SITE CONSTRUCTION	- TBD - BASED UPON LOT SALES

ZONING

1-1 (LIGHT INDUSTRIAL DISTRICT)

5.13.45 Height and Lot Requirements

5.13.05.01 The height and minimum lot requirements shall be as follows:

Use	Lot Area	Lot	Front	Side	Rear	Ma
-----	----------	-----	-------	------	------	----

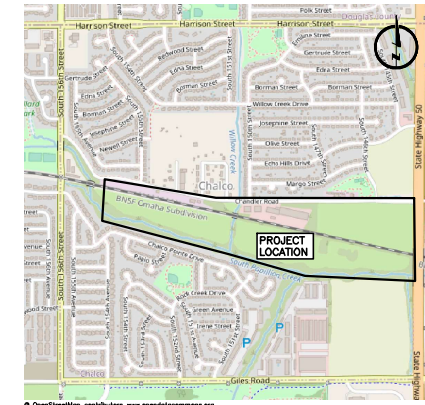
	(SF) ²	Width ²	Yard	Yard	Yard	Height	Coverage
Permitted Uses	10,000	100	35 ¹	30 ²	25 ³	45 ⁴	65%
Permitted Conditional Uses	10,000	100	35 ¹	30 ²	25 ³	45 ⁴	65%
Accessory Buildings	-	-	70 ¹	10 ²	10 ²	25 ³	20%

¹ 35' front yard setback required only when no parking is present in the front yard. If parking is located in the front yard then front yard setback is a minimum of sixty (60) feet.

² Lots created before January 1, 2018 may have a minimum Lot Area of 10,000 square feet and may have less than the minimum 100 feet lot width. (Ordinance No. 1953, 1-15-08)

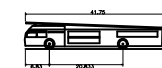
LOT NO.	LOT AREA	BUILDING TYPE	BUILDING FOOT PRINT (SQ FT)	BUILDING HEIGHT	LOT COVERAGE (BUILDING FOOT PRINT / LOT AREA)	REQUIRED PARKING (1 SPACE/3000 SF)	PROVIDED PARKING	REQUIRED ACCESSIBLE STALLS	PROVIDED ACCESSIBLE STALLS
	SQ. FT								
LOT 3	223,692	GENERAL WAREHOUSING	50,000	40'	22.35%	17	79	4	4
LOT 4	572,837	GENERAL WAREHOUSING	50,000	40'	8.73%	17	36	2	2
LOT 5	654,571	GENERAL WAREHOUSING	60,000	40'	9.17%	20	38	2	2
LOT 6	534,767	FACILITIES FOR BUILDING CONSTRUCTION CONTRACTORS	41,520	40'	7.76%	14	26	2	2
GRAND TOTAL	1,985,867	PUR. AREA (LOTS 3-6)	201,520	40'	26.35%	68	179	10	10

LOTS 1 THROUGH 6, INCLUSIVE, BEING A PLATTING OF PART OF TAX LOT 19 IN THE SOUTH HALF OF SECTION 14,
TOWNSHIP 14 NORTH, RANGE 11 EAST OF THE 6TH P.M., SARPY COUNTY, NEBRASKA

VICINITY MAP

LEGEND

- | | | | |
|--|---------------------------------------|--|---------------------------------------------------------|
| | PROPERTY LINE | | FLARED END SECTION |
| | LOT LINE | | FIBER OPTICS MANHOLE |
| | SECTION LINE | | FIRE HYDRANT |
| | EASEMENT | | + GAS VALVE |
| | NO ACCESS LINE
PER INST. #95-15439 | | ⚠ GAS WARNING SIGN |
| | SS
SANITARY SEWER | | GRATE INLET |
| | ST
STORM SEWER | | GRATE INLET ROUND |
| | SS-ST
RECORD SANITARY SEWER | | GUY |
| | OHP
OVERHEAD POWER | | STREET LIGHT |
| | G
GAS | | MAILBOX |
| | R-G
RECORD GAS | | POWER POLE |
| | R-W
RECORD WATER | | RIGHT OF WAY MARKER |
| | X
FENCE | | SANITARY MANHOLE |
| | X
RAIL GEAR | | SIGN |
| | APPROXIMATE FLOOD ZONE LINE | | STOP SIGN |
| | TREE LINE | | STORM MANHOLE |
| | RAILROAD TRACKS | | TELEPHONE PEDESTAL |
| | GRAVEL AND DIRT EDGE | | TRAFFIC SIGNAL PUSH B. |
| | AREA INLET ROUND | | UNDEFINED MANHOLE |
| | BOLLARD | | UNDEFINED PEDESTAL |
| | CONTROL POINT | | VALVE |
| | CURB INLET | | WELL |
| | ELECTRIC MANHOLE | | MONUMENT SET (5/8" REBAR W/ 1 1/4" YPC STAMPED 15-6922) |
| | ELECTRIC TRANSFORMER | | SECTION CORNER |
| | PROPOSED SANITARY SEWER | | COMPUTED CORNER |
| | FLOW ARROW | | |
| | PROPOSED MANHOLE | | |
| | PROPOSED PAVEMENT | | |
| | PROPOSED SITE PAVEMENT | | |
| | PROPOSED BARRICADE | | |
| | PUD LIMITS | | |

VEHICLE INFORMATION

Popillon Aerial Fire Truck	
Overall Length	41.750ft
Overall Width	8.000ft
Overall Body Height	7.496ft
Min Body Ground Clearance	0.746ft
Track Width	8.142ft
Lock-to-lock time	5.00s
Max Wheel Angle	37.00°

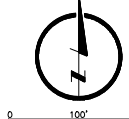
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MO AUTH. NO. E-2013011903 | LS-20190



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RANDALL R. KUSZAK

PUD EMERGENCY VEHICLE ACCESS EXHIBIT

AD INDUSTRIAL PARK
SARPY COUNTY, NEBRASKA



Know what's below.
Call before you dig.

REVISIONS:

DESIGNER / DRAFTER

C. MIKA/J CASPER/R. KELLER

DATE _____

12-04-2023
PROJECT NUMBER

PROJECT NUMBER
0123094.01-003

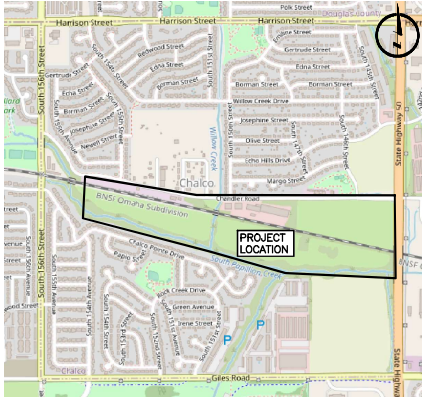
BOOK AND PAGE

SHEET

1 OF 1

AD INDUSTRIAL PARK

LOTS 1 THROUGH 6, INCLUSIVE, BEING A PLATTING OF PART OF TAX LOT 19 IN THE SOUTH HALF OF SECTION 14, TOWNSHIP 14 NORTH, RANGE 11 EAST OF THE 6TH P.M., SARPY COUNTY, NEBRASKA



**LAMP
RYNEARSON**

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8001 STATE ST. STE. 200 KCM-161440
MO AUTH. NO. 64510181900 JL-52019040127



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RACELL R. KUSZAK

PUD LANDSCAPE PLAN

AD INDUSTRIAL PARK
SARPY COUNTY, NEBRASKA



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REVISIONS

DESIGNER / DRAFTER

C. MIKA / J. CASPER / R. KELLER

DATE

12-04-2023

PROJECT NUMBER

0123084.01-003

BOOK AND PAGE

SHEET

1 OF 1

LEGEND

- PROPERTY LINE
- LOT LINE
- SECTION LINE
- EASEMENT
- NO ACCESS LINE
PER INST. #95-15439
- SANITARY SEWER
- ST
- R-SS
- R-SP
- R-G
- R-W
- FENCE
- GUARD RAIL
- APPROXIMATE FLOOD ZONE LINE
- TREE LINE
- RAILROAD TRACKS
- GRAVEL AND DIRT EDGE
- AREA INLET ROUND
- BOLLARD
- CONTROL POINT
- CURB INLET
- ELECTRIC MANHOLE
- ELECTRIC TRANSFORMER
- PROPOSED SANITARY SEWER
- FLOW ARROW
- PROPOSED MANHOLE
- PROPOSED PAVEMENT
- PROPOSED SITE PAVEMENT
- PROPOSED SITE SIDEWALK
- PUD LIMITS
- PROPOSED LIGHT POLE
- FLARED END SECTION
- FIBER OPTICS MANHOLE
- FIRE HYDRANT
- GAS VALVE
- GAS WARNING SIGN
- GRATE INLET
- GRATE INLET ROUND
- GUY
- STREET LIGHT
- MAILBOX
- POWER POLE
- RIGHT OF WAY MARKER
- SANITARY MANHOLE
- SIGN
- STOP SIGN
- STORM MANHOLE
- TELEPHONE PEDESTAL
- TRAFFIC SIGNAL PULL BOX
- UNIDENTIFIED MANHOLE
- UNIDENTIFIED PEDESTAL
- WATER VALVE
- WELL
- MONUMENT SET (5/8" REBAR W/ 1 1/4" YPC STAMPED LS-692)
- MONUMENT FOUND
- SECTION CORNER
- COMPUTED CORNER

ALL LANDSCAPING ON LOT 4 SHALL
BE IRRIGATED PER THE REQUIREMENTS
OF THE CORRIDOR OVERLAY DISTRICT

LANDSCAPE CODE REVIEW			
		REQUIRED	PROVIDED
A.	STREET FRONTAGE	15'	30'
	...REQUIRED TREES	1 TREE EVERY 40' OF STREET FRONTAGE	47 TREES PROVIDED
	STREET YARD LANDSCAPE	<25% INORGANIC MATERIALS	1,098 SF INORGANIC MATERIAL / 15,358 SF TOTAL STREET YARD = 7.2%
B.	PARKING LOT INTERIOR LANDSCAPE	10 SF PER PARKING STALL	367 STALLS * 10 = 3,670 SF INTERIOR LANDSCAPE, 16,485 SF PROVIDED
C.	SCREENING	6' HEIGHT ALONG ABUTTING RESIDENTIAL PROPERTY LINES	6' HEDGE PROVIDED

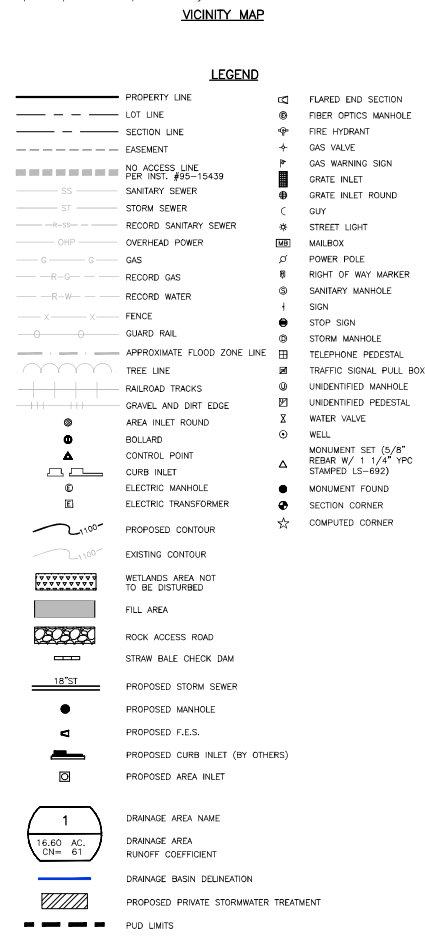
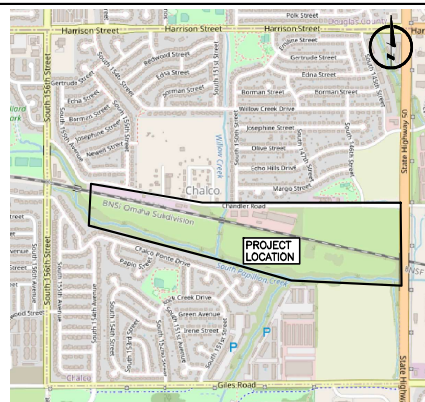
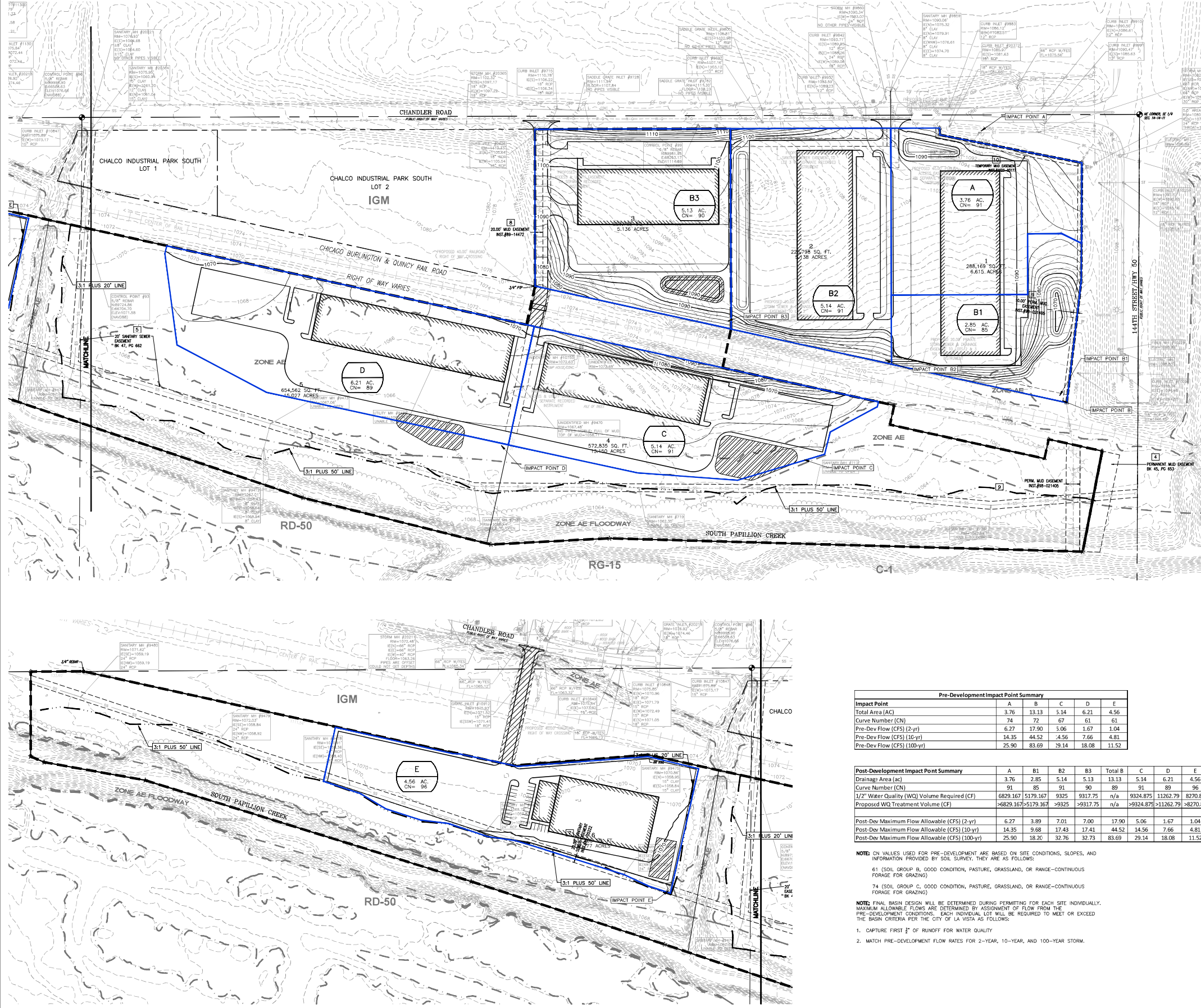
PLANT SCHEDULE					
CODE	BOTANICAL NAME	COMMON NAME	PLANTING SIZE	HEIGHT	WIDTH
DECIDUOUS TREES					
QB	QUERCUS BICOLOR	SWAMP WHITE OAK	2" CAL.	45'-65'	40'-50'
GT	QUERCUS TRIACANTHOS VAR. INERMIS 'HALKA'	HALKA HONEYLOCUST	2" CAL.	40'	40'
CONIFEROUS TREES					
AC	ABIES CONCOLOR	CONCOLOR FINE	6"-8"	30'-50'	30'-40'
SCREENING SHRUBS					
CODE	BOTANICAL NAME	COMMON NAME	PLANTING SIZE	HEIGHT	WIDTH
EA	EVONYMUS ALATUS 'COLE'S COMPACT'	COLE'S COMPACT BURNING BUSH	5 GAL.	6'-8"	6'-8"
JP	JUNIPERUS X PITTZERIANA 'SEA GREEN'	SEA GREEN JUNIPER	5 GAL.	4'-6"	6'-8"

PLAN LEGEND

- TURF GRASS LAWN, SEED OR SOG AREA
- EXISTING TREE CANOPY TO REMAIN
- MULCH BED WITH NATURAL EDGING
- BUILDING FOOTPRINT
- LOT LINE

AD INDUSTRIAL PARK

LOTS 1 THROUGH 6, INCLUSIVE, BEING A PLATTING OF PART OF TAX LOT 19 IN THE SOUTH HALF OF SECTION 14, TOWNSHIP 14 NORTH, RANGE 11 EAST OF THE 6TH P.M., SARPY COUNTY, NEBRASKA



Pre-Development Impact Point Summary							
Impact Point	A	B	C	D	E		
Total Area (AC)	3.76	13.13	5.14	6.21	4.56		
Curve Number (CN)	74	72	67	61	61		
Pre-Dev Flow (CFS) (2-yr)	6.27	17.90	5.06	1.67	1.04		
Pre-Dev Flow (CFS) (10-yr)	14.35	44.52	4.56	7.66	4.81		
Pre-Dev Flow (CFS) (100-yr)	25.90	83.69	39.14	18.08	11.52		

Post-Development Impact Point Summary								
Drainage Area (ac)	A	B1	B2	B3	Total B	C	D	E
Drainage Area (ac)	3.76	2.85	5.14	5.13	13.13	5.14	6.21	4.56
Curve Number (CN)	91	85	91	90	89	91	89	96
1/2" Water Quality (WQ) Volume Required (CF)	6829.167	5179.167	9325	9317.75	n/a	9324.875	11262.79	8270.83
Proposed WQ Treatment Volume (CF)	>6829.167	>5179.167	>9325	>9317.75	n/a	>9324.875	>11262.79	>8270.83
Post-Dev Maximum Flow Allowable (CFS) (2-yr)	6.27	3.89	7.01	7.00	17.90	5.06	1.67	1.04
Post-Dev Maximum Flow Allowable (CFS) (10-yr)	14.35	9.68	17.43	17.41	44.52	14.56	7.66	4.81
Post-Dev Maximum Flow Allowable (CFS) (100-yr)	25.90	18.20	32.76	32.73	83.69	29.14	18.08	11.52

NOTE: CN VALUES USED FOR PRE-DEVELOPMENT ARE BASED ON SITE CONDITIONS, SLOPES, AND INFORMATION PROVIDED BY SOIL SURVEY. THEY ARE AS FOLLOWS:

61 (SOIL GROUP B, GOOD CONDITION, PASTURE, GRASSLAND, OR RANGE-CONTINUOUS FORAGE FOR GRAZING)

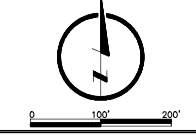
74 (SOIL GROUP C, GOOD CONDITION, PASTURE, GRASSLAND, OR RANGE-CONTINUOUS FORAGE FOR GRAZING)

NOTE: FINAL BASIN DESIGN WILL BE DETERMINED DURING PERMITTING FOR EACH SITE INDIVIDUALLY. MAXIMUM ALLOWABLE FLOWS ARE DETERMINED BY ASSIGNMENT OF FLOW FROM THE PRE-DEVELOPMENT CONDITIONS. EACH INDIVIDUAL LOT WILL BE REQUIRED TO MEET OR EXCEED THE BASIN CRITERIA PER THE CITY OF LA VISTA AS FOLLOWS:

- CAPTURE FIRST 1" OF RUNOFF FOR WATER QUALITY
- MATCH PRE-DEVELOPMENT FLOW RATES FOR 2-YEAR, 10-YEAR, AND 100-YEAR STORM.

LAMP RYNEARSON

LAMP RYNEARSON, INC.
OMAHA, NEBRASKA
1478 W. DODGE ST., STE. 100, OMAHA, NE 68104-1000, (402) 466-1000
FORT COLLINS, COLORADO
4710 W. WATSON ST., STE. 100, FORT COLLINS, CO 80501-1000
KANSAS CITY, MISSOURI
800 STATE ST., STE. 200, KANSAS CITY, MO 64101-1000, (816) 461-1000



PRELIMINARY

NOT RELEASED FOR CONSTRUCTION
RACELLE R. KUSZAK

PUD POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

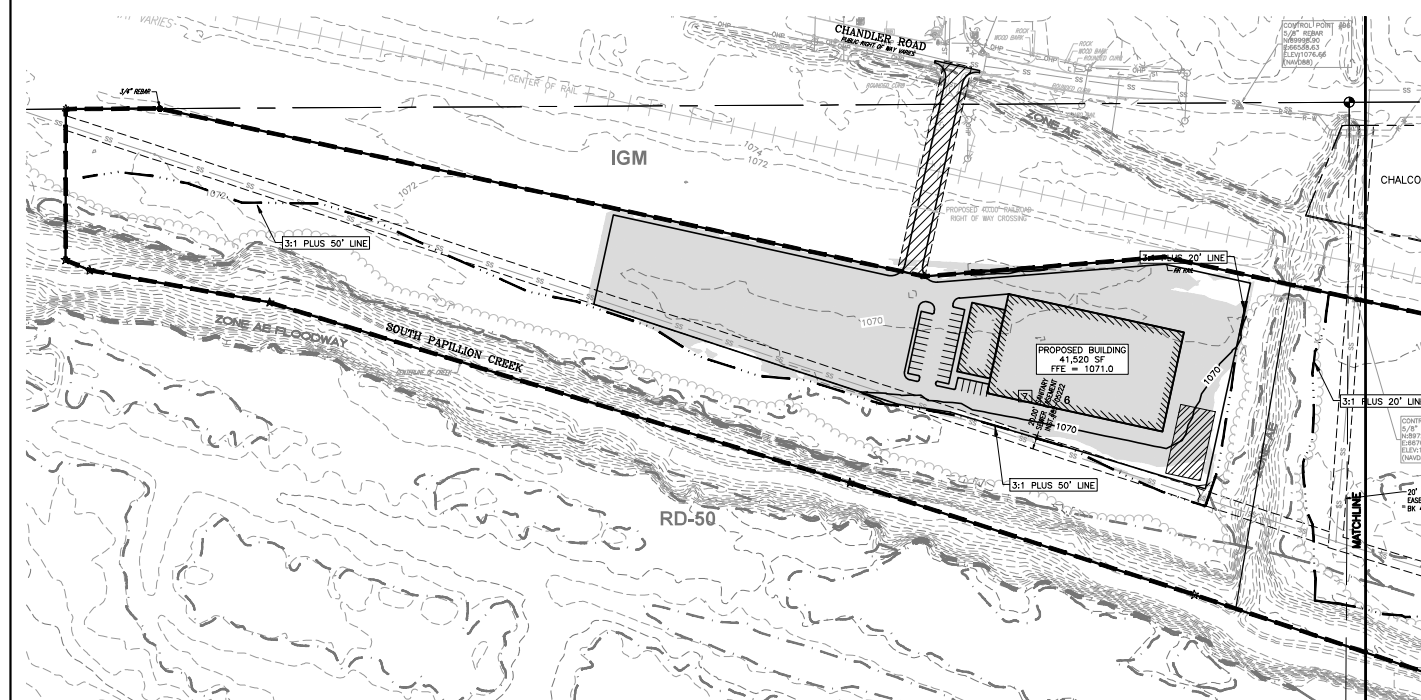
AD INDUSTRIAL PARK
SARPY COUNTY, NEBRASKA

811
Know what's below.
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	PROPERTY LINE		FLARED END SECTION
	LOT LINE		FIBER OPTICS MANHOLE
	SECTION LINE		FIRE HYDRANT
	EASEMENT		GAS VALVE
	NO ACCESS LINE PER INST. 15-15439		GAS WARNING SIGN
	SANITARY SEWER		GRATE INLET
	STORM SEWER		GRATE INLET ROUND
	RECORD SANITARY SEWER		GUY
	OVERHEAD POWER		STREET LIGHT
	GAS		MAILBOX
	RECORD GAS		POWER POLE
	RECORD WATER		RIGHT OF WAY MARKER
	FENCE		SANITARY MANHOLE
	GUARD RAIL		SIGN
	APPROXIMATE FLOOD ZONE LINE		STOP SIGN
	TREE LINE		STORM MANHOLE
	RAILROAD TRACKS		TELEPHONE PEDESTAL
	GRAVEL AND DIRT EDGE		TRAFFIC SIGNAL PULL BOX
	AREA INLET ROUND		UNIDENTIFIED MANHOLE
	BOLLARD		UNIDENTIFIED PEDESTAL
	CONTROL POINT		WATER VALVE
	CURB INLET		WELL
	ELECTRIC MANHOLE		MONUMENT SET (5/8" REBAR W/ 1 1/4" YPC STAMPED LS-692)
	ELECTRIC TRANSFORMER		SECTION CORNER
	PROPOSED CONTOUR		COMPUTED CORNER
	EXISTING CONTOUR		
	WETLANDS AREA NOT TO BE DISTURBED		
	FILL AREA		
	ROCK ACCESS ROAD		
	STRAW BALE CHECK DAM		
	PROPOSED STORM SEWER		
	PROPOSED MANHOLE		
	PROPOSED F.E.S.		
	PROPOSED CURB INLET (BY OTHERS)		
	PROPOSED AREA INLET		
	PROPOSED PRIVATE STORMWATER TREATMENT		

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PUD GRADING PLAN

AD INDUSTRIAL PARK
SARPY COUNTY, NEBRASKA



DEFINITION

DESIGNER / DRAFTER

C. MIKA/J CASPER/R. KELLER
DATE

12-04-2023

PROJECT NUMBER

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1 OF 1

LOTS 1 THROUGH 6, INCLUSIVE, BEING A PLATTING OF PART OF TAX LOT 19 IN THE SOUTH HALF OF SECTION 14,
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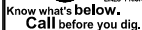
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LEGEND

- | | | | |
|--|----------------------------------------|--|--------------------------------------------------------|
| | PROPERTY LINE | | FLARED END SECTION |
| | LOT LINE | | FIBER OPTICS MANHOLE |
| | SECTION LINE | | FIRE HYDRANT |
| | EASEMENT | | GAS VALVE |
| | NO ACCESS LINE
PER INST. #995-15439 | | GAS WARNING SIGN |
| | SANITARY SEWER | | GRATE INLET |
| | STORM SEWER | | GRATE INLET ROUND |
| | RECORD SANITARY SEWER | | GUY |
| | OVERHEAD POWER | | STREET LIGHT |
| | GAS | | MAILBOX |
| | RECORD GAS | | POWER POLE |
| | RECORD WATER | | RIGHT OF WAY MARKER |
| | FENCE | | SANITARY MANHOLE |
| | GUARD RAIL | | SIGN |
| | APPROXIMATE FLOOD ZONE LINE | | STOP SIGN |
| | TREE LINE | | STORM MANHOLE |
| | RAILROAD TRACKS | | TELEPHONE PEDESTAL |
| | GRAVEL AND DIRT EDGE | | TRAFFIC SIGNAL PULL BOX |
| | AREA INLET ROUND | | UNIDENTIFIED MANHOLE |
| | BOLLARD | | UNIDENTIFIED PEDESTAL |
| | CONTROL POINT | | WATER VALVE |
| | CURB INLET | | WELL |
| | ELECTRIC MANHOLE | | MONUMENT SET (5/8" REBAR W/ 1 1/4" xPC STAMPED LS-692) |
| | ELECTRIC TRANSFORMER | | MONUMENT FOUND |
| | | | SECTION CORNER |
| | | | COMPUTED CORNER |
| | PROPOSED SITE SANITARY SEWER | | |
| | FLOW ARROW | | |
| | PROPOSED MANHOLE | | |
| | PROPOSED PAVEMENT | | |
| | PROPOSED PAVEMENT | | |
| | PROPOSED PRIVATE STORMWATER TREATMENT | | |
| | PROPOSED SITE STORM SEWER | | |
| | PROPOSED SITE F.E.S. | | |
| | PROPOSED SITE CURB INLET | | |
| | PROPOSED SITE AREA INLET | | |
| | PUD LIMITS | | |

PUD UTILITY PLAN

AD INDUSTRIAL PARK
SARPY COUNTY, NEBRASKA



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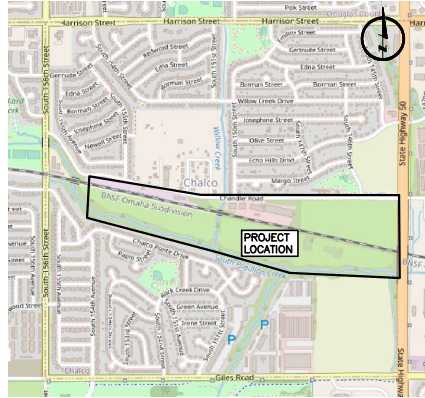
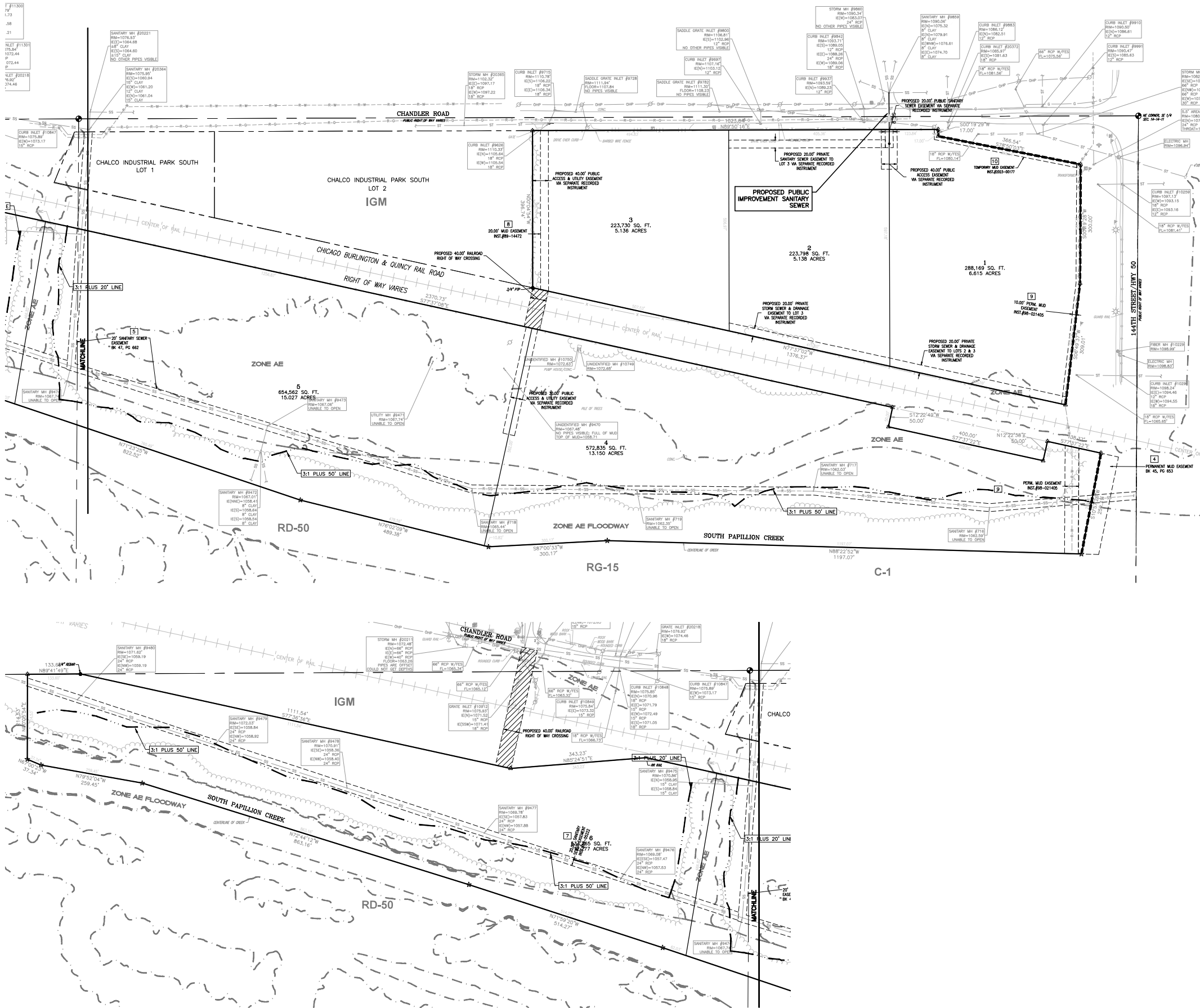
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800 STATE ST., STE. 200, KANSAS CITY, MO 64101
MO. AUTH. NO. 643101810001 | L-2410640127

PRELIMINARY

LEGEND	
	PROPERTY LINE
	LOT LINE
	SECTION LINE
	EASEMENT
	NO ACCESS LINE PER INST. #95-15439
	SANITARY SEWER
	STORM SEWER
	RECORD SANITARY SEWER
	OVERHEAD POWER
	GAS
	RECORD GAS
	RECORD WATER
	FENCE
	GUARD RAIL
	APPROXIMATE FLOOD ZONE LINE
	TREE LINE
	RAILROAD TRACKS
	GRAVEL AND DIRT EDGE
	AREA INLET ROUND
	BOLLARD
	CONTROL POINT
	CURB INLET
	ELECTRIC MANHOLE
	ELECTRIC TRANSFORMER
	PROPOSED PUBLIC SANITARY SEWER
	FLOW ARROW
	PROPOSED PUBLIC MANHOLE
	PROPOSED PAVEMENT
	PROPOSED PUBLIC PAVEMENT
	PROPOSED BARRICADE
	FLARED END SECTION
	FIBER OPTICS MANHOLE
	FIRE HYDRANT
	GAS VALVE
	GAS WARNING SIGN
	GRATE INLET
	GRATE INLET ROUND
	GUY
	STREET LIGHT
	MAILBOX
	POWER POLE
	RIGHT OF WAY MARKER
	SANITARY MANHOLE
	SIGN
	STOP SIGN
	STORM MANHOLE
	TELEPHONE PEDESTAL
	TRAFFIC SIGNAL PULL BOX
	UNDERSIZED MANHOLE
	UNDERSIZED PEDESTAL
	WATER VALVE
	WELL
	MONUMENT SET (5/8" REBAR W/ 1 1/4" YPC STAMPED LS-692)
	MONUMENT FOUND
	SECTION CORNER
	COMPUTED CORNER

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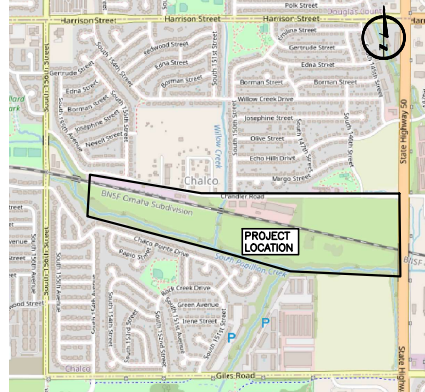
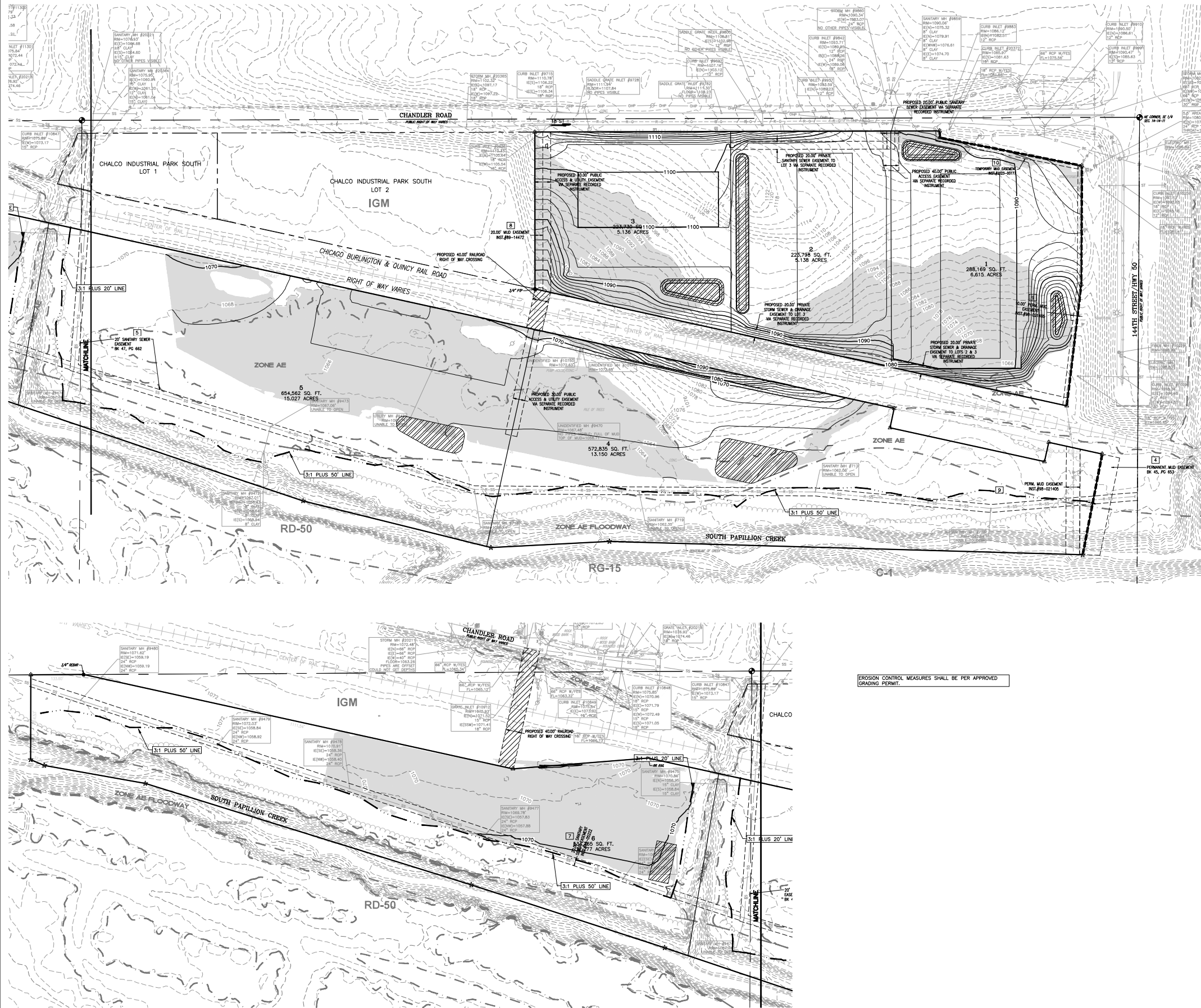
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LEGEND

—

 PROPERTY LINE

- - -

 LOT LINE

- - -

 SECTION LINE

- - -

 EASEMENT

- - -

 NO ACCESS LINE PER INST. #95-15439

- - -

 SANITARY SEWER

- - -

 STORM SEWER

- - -

 RECORD SANITARY SEWER

- - -

 OVERHEAD POWER

- - -

 CHP

- - -

 RECORD GAS

- - -

 RECORD WATER

- - -

 FENCE

- - -

 GUARD RAIL

- - -

 APPROXIMATE FLOOD ZONE LINE

- - -

 TREE LINE

- - -

 RAILROAD TRACKS

- - -

 GRAVEL AND DIRT EDGE

- - -

 AREA INLET ROUND

- - -

 BOLLARD

- - -

 CONTROL POINT

- - -

 CURB INLET

- - -

 ELECTRIC MANHOLE

- - -

 ELECTRIC TRANSFORMER

- - -

 PROPOSED CONTOUR

- - -

 EXISTING CONTOUR

- - -

 WETLANDS AREA NOT TO BE DISTURBED

- - -

 FILL AREA

- - -

 ROCK ACCESS ROAD

- - -

 STRAW BALE CHECK DAM

- - -

 PROPOSED STORM SEWER

- - -

 PROPOSED MANHOLE

- - -

 PROPOSED F.E.S.

- - -

 PROPOSED CURB INLET (BY OTHERS)

- - -

 PROPOSED AREA INLET

- - -

 PROPOSED PRIVATE STORMWATER TREATMENT

FLARED END SECTION

FIBER OPTICS MANHOLE

FIRE HYDRANT

GAS VALVE

GAS WARNING SIGN

GRATE INLET

GRATE INLET ROUND

GUY

STREET LIGHT

MAILBOX

POWER POLE

RIGHT OF WAY MARKER

SANITARY MANHOLE

SIGN

STOP SIGN

STORM MANHOLE

TELEPHONE PEDESTAL

TRAFFIC SIGNAL PULL BOX

UNIDENTIFIED MANHOLE

UNIDENTIFIED PEDESTAL

WATER VALVE

WELL

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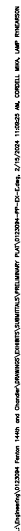
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TOWNSHIP 14 NORTH, RANGE 11 EAST OF THE 6TH P.M., SARPY COUNTY, NEBRASKA



LEGEND

- | | | | |
|--|---------------------------------------|--|------------------------------------------------------|
| | PROPERTY LINE | | FLARED END SECTION |
| | LOT LINE | | FIBER OPTICS MANHOLE |
| | SECTION LINE | | FIRE HYDRANT |
| | EASEMENT | | GAS VALVE |
| | NO ACCESS LINE
PER INST. #95-15439 | | GAS WARNING SIGN |
| | SS | | GRATE INLET |
| | SANITARY SEWER | | GRATE INLET ROUND |
| | STORM SEWER | | C |
| | RECORD SANITARY SEWER | | STREET LIGHT |
| | OVERHEAD POWER | | MAILBOX |
| | GAS | | POWER POLE |
| | RECORD GAS | | RIGHT OF WAY MARKER |
| | RECORD WATER | | SANITARY MANHOLE |
| | FENCE | | IGN |
| | GUARD RAIL | | STOP SIGN |
| | APPROXIMATE FLOOD ZONE LINE | | STORM MANHOLE |
| | TREE LINE | | TELEPHONE PEDESTAL |
| | RAILROAD TRACKS | | TRAFFIC SIGNAL PULL BOX |
| | GRAVEL AND DIRT EDGE | | UNIDENTIFIED MANHOLE |
| | AREA INLET | | UNIDENTIFIED PEDESTAL |
| | BOLLARD | | WATER VALVE |
| | CONTROL POINT | | WELL |
| | CURB INLET | | MONUMENT SET (5/8" REBAR W/ 1/4" TPC STAMPED (S-692) |
| | ELECTRIC MANHOLE | | MONUMENTED |
| | ELECTRIC TRANSFORMER | | SECTION CORNER |
| | PROPOSED CONTOUR | | COMPUTED CORNER |
| | EXISTING CONTOUR | | |
| | WETLANDS AREA NOT TO BE DISTURBED | | |
| | FILL AREA | | |
| | ROCK ACCESS ROAD | | |
| | STRAW BALE CHECK DAM | | |
| | 18"ST | | |
| | PROPOSED MANHOLE | | |
| | PROPOSED F.E.S. | | |
| | PROPOSED CURB INLET (BY OTHERS) | | |
| | PROPOSED AREA INLET | | |
| | PROPOSED PRIVATE STORMWATER TREATMENT | | |
| | DRAINAGE AREA NAME | | |
| | DRAINAGE AREA RUNOFF COEFFICIENT | | |
| | DRAINAGE BASIN DELINEATION | | |

Pre-Development Impact Point Summary					
Impact Point	A	B	C	D	E
Total Area (AC)	3.76	13.13	5.14	6.21	4.56
Curve Number (CN)	74	72	67	61	61
Pre-Dev Flow (CFS) (2-yr)	6.27	17.90	3.06	1.67	1.04
Pre-Dev Flow (CFS) (10-yr)	14.35	44.52	4.56	7.66	4.81
Pre-Dev Flow (CFS) (100-yr)	25.90	83.69	9.14	18.08	11.52

Post-Development Impact Point Summary									
Drainage Area (ac)	A	B1	B2	B3	Total B	C	D	E	F
Water Number (CN)	91	85	91	90	89	91	89	96	96
1/2" Water Quality (WQ) Volume Required (CF)	6829.167	5179.147	9325	9317.75	n/a	9324.875	11262.79	8270.83	
Proposed WQ Treatment Volume (CF)	-6829.167	-5179.867	-9325	-9317.75	n/a	-9324.875	-11262.79	-8270.83	
Post-Dev Maximum Flow Allowable (CFS) (2-yr)	6.27	3.98	7.01	7.00	17.90	5.06	1.67	1.04	
Post-Dev Maximum Flow Allowable (CFS) (10-yr)	14.35	9.68	17.43	17.41	44.52	14.56	7.66	4.81	
Post-Dev Maximum Flow Allowable (CFS) (100-yr)	25.90	18.2c	32.76	32.73	83.69	29.14	18.08	11.51	

NOTE: CN VALUES USED FOR PRE-DEVELOPMENT ARE BASED ON SITE CONDITIONS, SLOPES, AND INFORMATION PROVIDED BY SOIL SURVEY. THEY ARE AS FOLLOWS:

61 (SOIL GROUP B, GOOD CONDITION, PASTURE, GRASSLAND, OR RANGE—CONTINUOUS)

74 (SOIL GROUP C, GOOD CONDITION, PASTURE, GRASSLAND, OR RANGE—CONTINUOUS)

NOTE: FINAL BASIN DESIGN WILL BE DETERMINED DURING PERMITTING FOR EACH SITE INDIVIDUALLY. MAXIMUM ALLOWABLE FLOWS ARE DETERMINED BY ASSIGNMENT OF FLOW FROM THE PRE-DEVELOPMENT CONDITIONS. EACH INDIVIDUAL LOT WILL BE REQUIRED TO MEET OR EXCEED THE BASIN CRITERIA PER THE CITY OF LA VISTA AS FOLLOWS:

1. CAPTURE FIRST $\frac{1}{2}$ " OF RUNOFF FOR WATER QUALITY
2. MATCH PRE-DEVELOPMENT FLOW RATES FOR 2-YEAR, 10-YEAR, AND 100-YEAR STORM

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KANSAS CITY, MISSOURI
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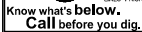
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POST CONSTRUCTION STORM WATER MANAGEMENT PLAN

AD INDUSTRIAL PARK
SARPY COUNTY, NEBRASKA



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FENTON CONSTRUCTION FINAL TRAFFIC STUDY

144TH STREET AND CHANDLER ROAD

Project No. 0123094.01-119

Date: FEBRUARY 7, 2024

FINAL TRAFFIC STUDY

FENTON CONSTRUCTION

144TH STREET / HIGHWAY 50 AND CHANDLER ROAD

LA VISTA, NEBRASKA

FEBRUARY 2024

Prepared for:

**FENTON CONSTRUCTION
&
CITY OF LA VISTA
&
SARPY COUNTY
&
NEBRASKA DEPARTMENT OF TRANSPORTATION**

Prepared by:

**Matthew L. Kruse, P.E.
E-11507**

**Lamp Rynearson
14710 West Dodge Road
Omaha, Nebraska**

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CHAPTER 1: INTRODUCTION

1.1 Study Background, Purpose and Goals

This report summarized the findings and recommendations of a traffic study for the Fenton Construction site. This property is bounded by Chandler Road to the north, 144th Street / Highway 50 to the east, a residential development and a storage facility to the west, and an industrial complex along with a residential development to the south. The location of this proposed development is shown in Figure 1.

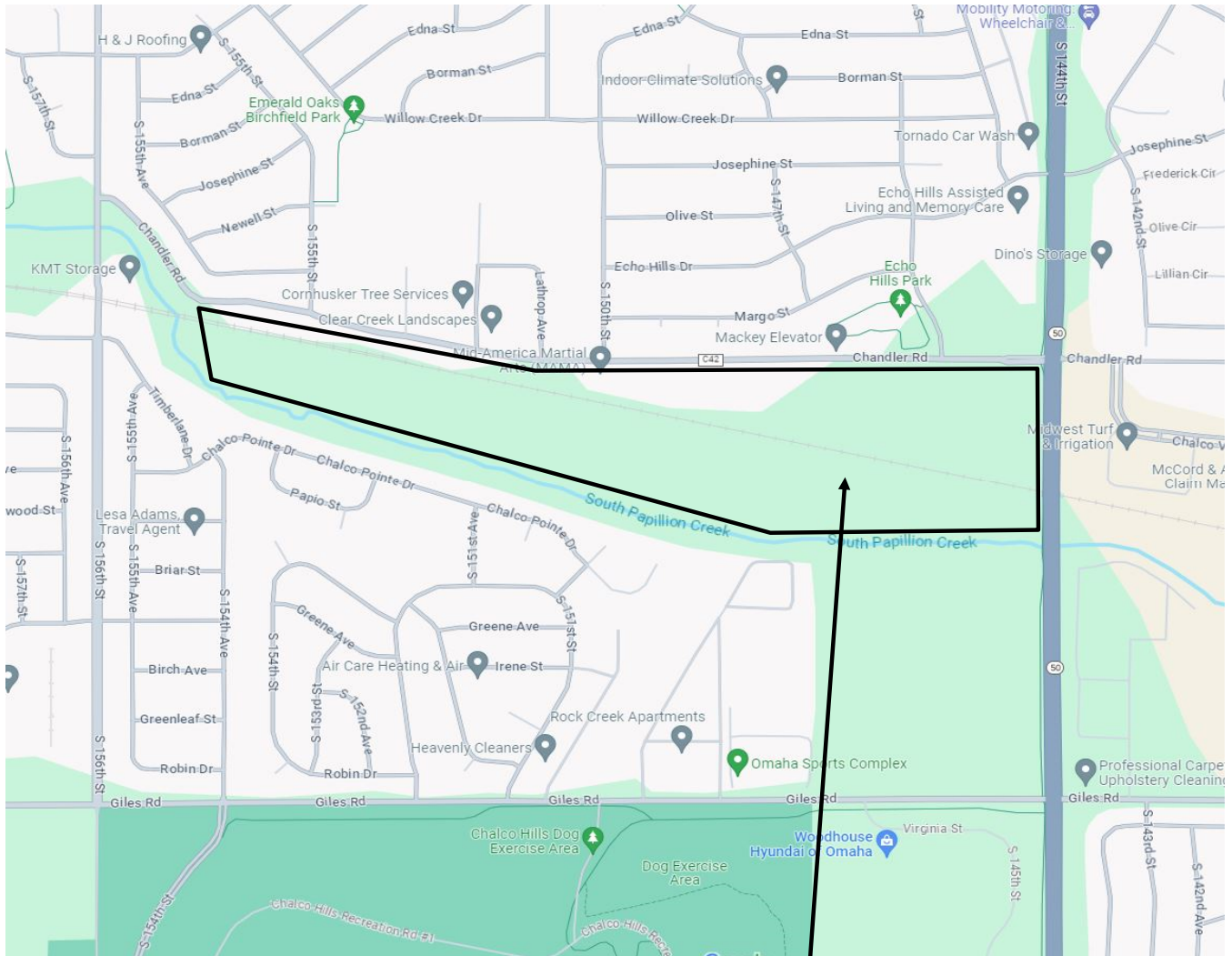
The proposed layout of the overall site is shown in Figure 2. The site is planned to consist of a 331,520 square foot industrial complex. The land use and resulting trip generation is shown in Table 1.

The purpose of this study was to assess the capacity of the existing roadway system to handle the background traffic and the impacts of the proposed development on Chandler Road along with 144th Street / Highway 50 in the vicinity of the site. Another objective of this study was to look at right and left turn lane warrants along with signal warrants at all intersections since these roadways and intersections will provide the primary access for traffic generated from the development on a daily basis.

1.2 Data Gathering

The following bullet chart summarizes the data and the source of the data used to complete this study:

- 2023 Existing Traffic Counts at the intersections of Chandler Road and 144th Street / Highway 50 and Chandler Road and 146th Street by Lamp Ryneearson in September 2023
- Site generated trips – *ITE Trip Generation Manual, 11th Edition, 2021*.



Site Location



FIGURE 2
SITE PLAN

1.3 Overview of Study Approach

To achieve the main goal of the study, the following tasks were accomplished:

- Field inspection to observe the current lane configuration, signal operation and geometry;
- Traffic counts were conducted at the intersections of Chandler Road and 144th Street / Highway 50 and Chandler Road and 146th Street by Lamp Rynearson on September 19, 2023;
- Determine site generated traffic, distribution and assignment including internal trips for the site;
- Determine year 2023, year 2025, year 2030 and year 2050 intersection capacity to handle background traffic using Synchro Version 11 and SimTraffic Software;
- Determine total traffic volumes (site and background) for the peak hours in the year 2025, year 2030 and year 2050.
- Determine year 2025, year 2030 and year 2050 intersection capacity to handle opening day (build-out site + background traffic) and future horizon year traffic, using Synchro Version 11 and SimTraffic;
- Queue analysis; and
- Development of recommendations for roadway and traffic control improvements.

CHAPTER 2: ROADWAY NETWORK CHARACTERISTICS

2.1 Site and Study Area Boundaries

The study area is shown on Figure 1. The site is located in La Vista, Nebraska on the southwest corner of Chandler Road and 144th Street / Highway 50. The property consists of two lots split down the middle by a railroad track and is bounded by Chandler Road to the north, a residential development and a storage facility to the west, an industrial complex and residential houses to the south, and 144th Street / Highway 50 to the east. The main intersections analyzed as a part of this study are:

- 144th Street / Highway 50 and Chandler Road
- 146th Street and Chandler Road
- Chandler Road and Site Entrance 1
- Chandler Road and Site Entrance 2

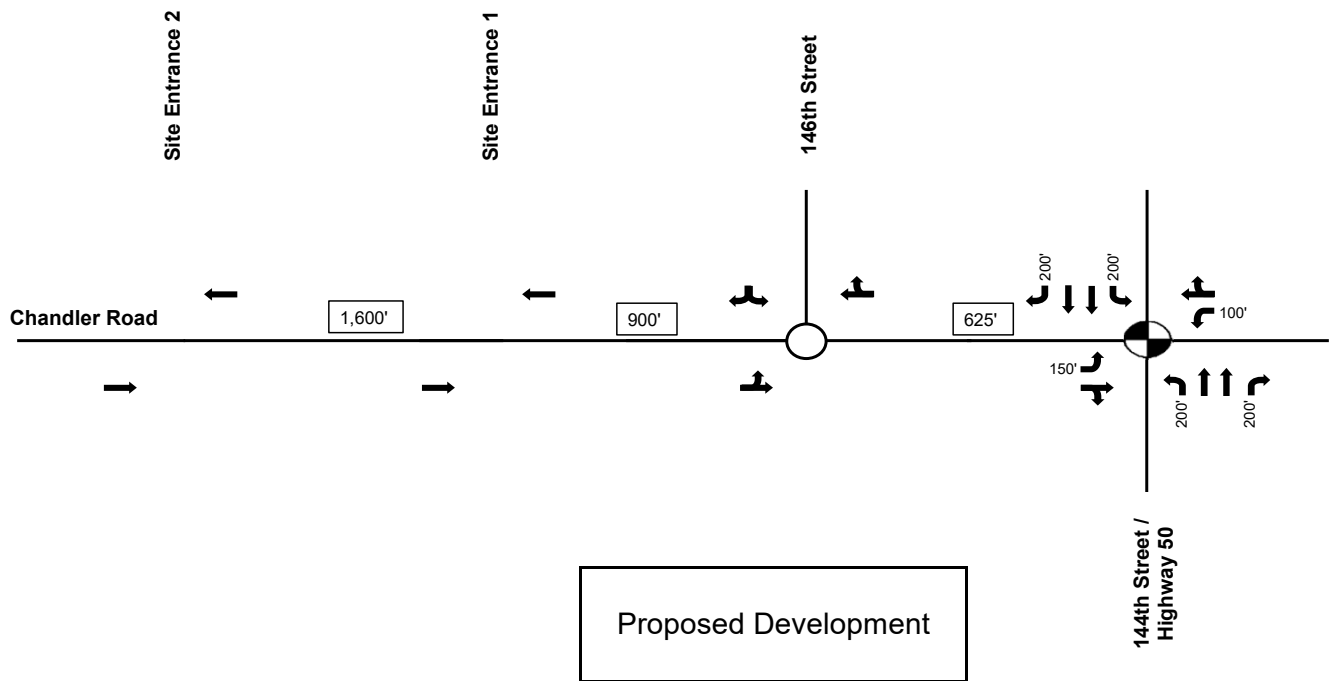
The proposed site is anticipated to have three access points into the site. The first is located at the intersection of Chandler Road and 146th Street. This access is proposed to be a full movement access point and would provide access to two of the six buildings. Three buildings can be accessed from the proposed intersection of Chandler Road and Site Entrance 1, which is located approximately 900 feet west of the 146th Street intersection. This is also proposed to be a full movement access point. The final intersection, Chandler Road and Site Entrance 2, provides access to the final building. This proposed full movement access is located approximately 1,600 feet west of the intersection of Site Entrance 1 and Chandler Road.

2.2 Existing Roadway Configuration

144th Street / Highway 50 is a major arterial. This section of 144th Street / Highway 50 is a four-lane divided roadway that runs north and south. At the intersection of Chandler Road, there are existing right and left turn lanes in both the northbound

and southbound directions. 144th Street / Highway 50 starts at State Street in Omaha and continues south through the state. It provides access to Interstate 80 to the south. The posted speed limit along this road is 45 miles per hour.

Chandler Road is a two-lane paved roadway in the vicinity of the site. This section of Chandler Road starts near 156th Street to the west and terminates at 132nd Street. The posted speed limit for the section of Chandler Road along the site is 35 miles per hour. The existing geometry is shown in Figure 3.



Proposed Development

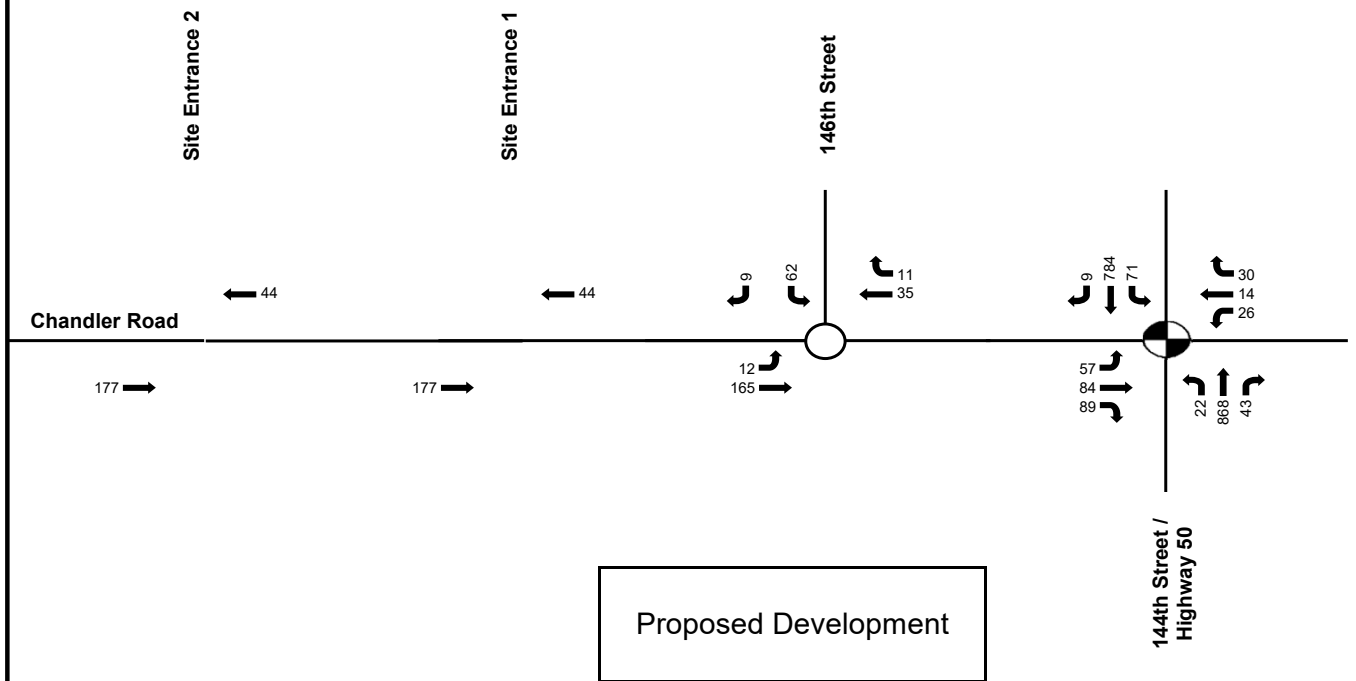
LEGEND		
	Unsignalized Intersection	Link Distance
	Signalized Intersection	Through Traffic Movement
	Future Intersection Leg	Turning Traffic Movement (Right or Left Movement)

CHAPTER 3: BACKGROUND TRAFFIC VOLUMES

3.1 Year 2023, year 2025, year 2030 and year 2050 Background Traffic Volumes

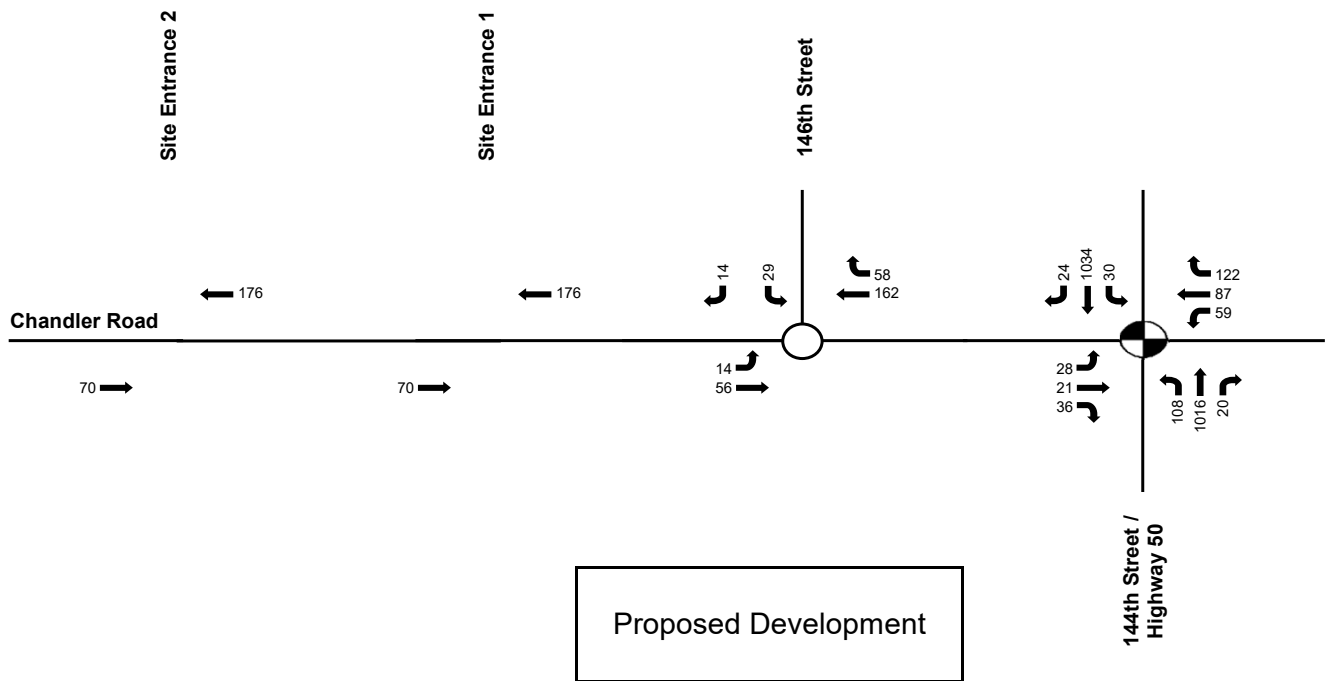
A traffic count was conducted at two intersections along Chandler Road: 144th Street / Highway 50 and 146th Street, in September of 2023. These intersections were counted in the morning from 7:00 am to 9:00 am and in the evening from 4:00 pm to 6:00 pm. The peak hour of the area was found to occur during the PM peak hour from 4:30 pm to 5:30 pm. The AM peak hour was observed from 7:15 am to 8:15 am. The 2023 background traffic for the AM peak hour is included in Figure 4 and the PM peak hour volumes in Figure 5.

An estimated overall growth factor of 3.5 percent was used along 144th Street / Highway 50 while a 0.25 percent growth rate was used for Chandler Road adjacent to the site. These growth rates were calculated based on the existing traffic counts and the 2050 future traffic projections provided by MAPA. The reason that Chandler Road was shown with a small growth rate was due to the counted background volumes being greater than the 2050 projections. Using the 3.5 percent growth factor for 144th Street / Highway 50 and the 0.25 percent growth factor for Chandler Road, background traffic was developed for the years 2025, 2030 and 2050 from the growth rate. The year 2025 was selected as the full build-out year with the year 2030 being the 5-year horizon scenario and the year 2050 as a future horizon year to match the MAPA projections. Figures 6 and 7 include the background volumes for the peak hours in the year 2025 volumes. Figures 8 and 9 show the 2030 peak hour background volumes. The 2050 background volumes can be found in Figures 10 and 11.



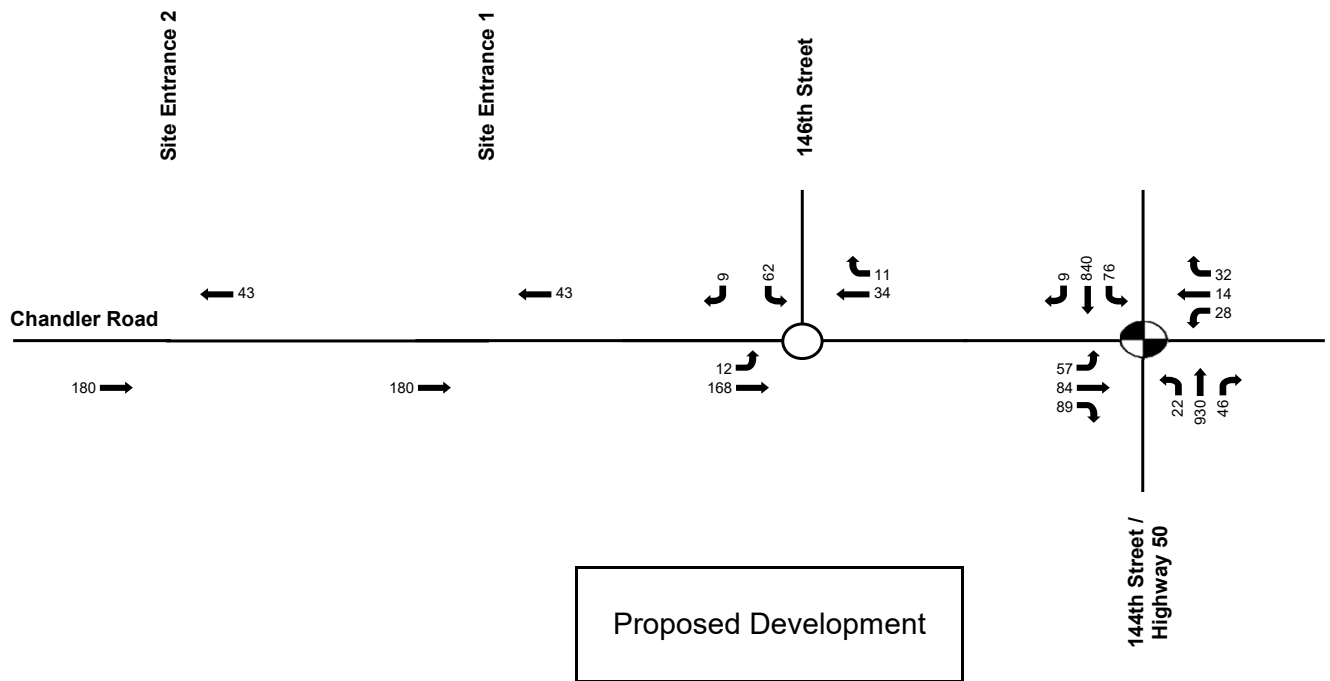
LEGEND			
	Unsignalized Intersection	155	Traffic Volume
	Signalized Intersection		Through Traffic Movement
	Future Intersection Leg		Turning Traffic Movement (Right or Left Movement)

FIGURE 4
2023 AM PEAK HOUR
BACKGROUND VOLUMES



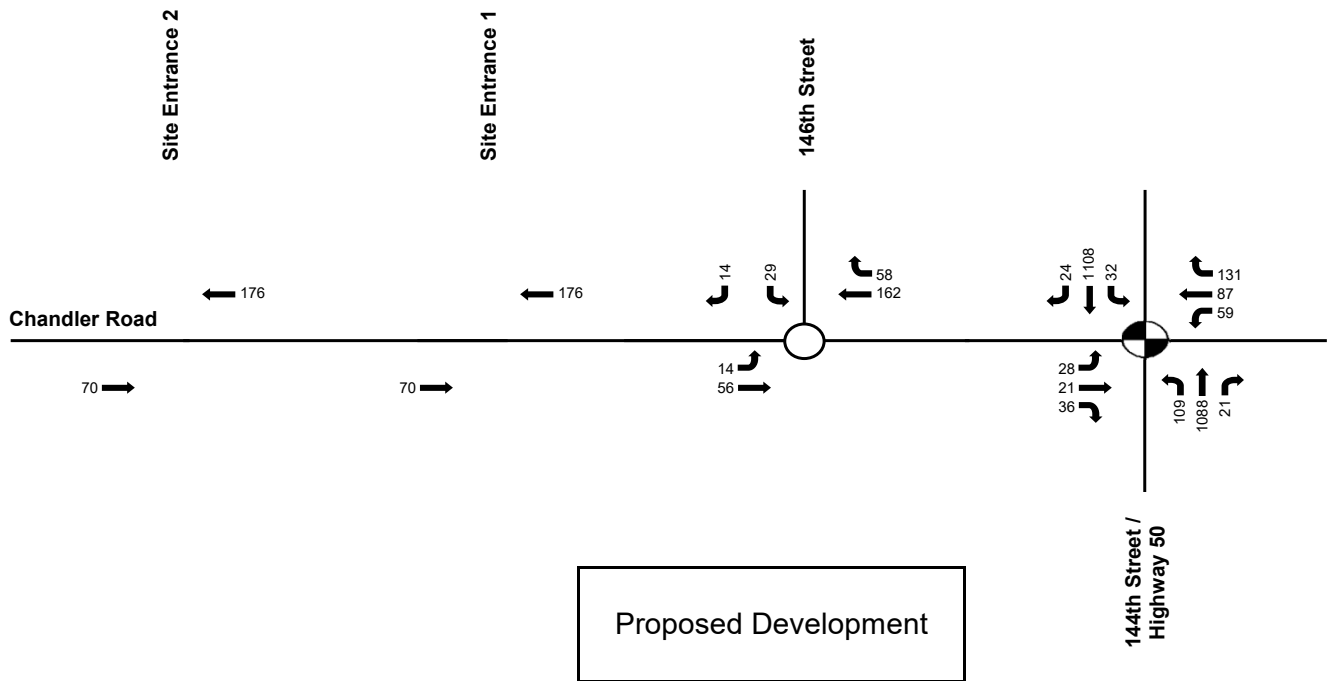
LEGEND		
	Unsignalized Intersection	155 Traffic Volume
	Signalized Intersection	Through Traffic Movement
	Future Intersection Leg	Turning Traffic Movement (Right or Left Movement)

FIGURE 5
2023 PM PEAK HOUR
BACKGROUND VOLUMES



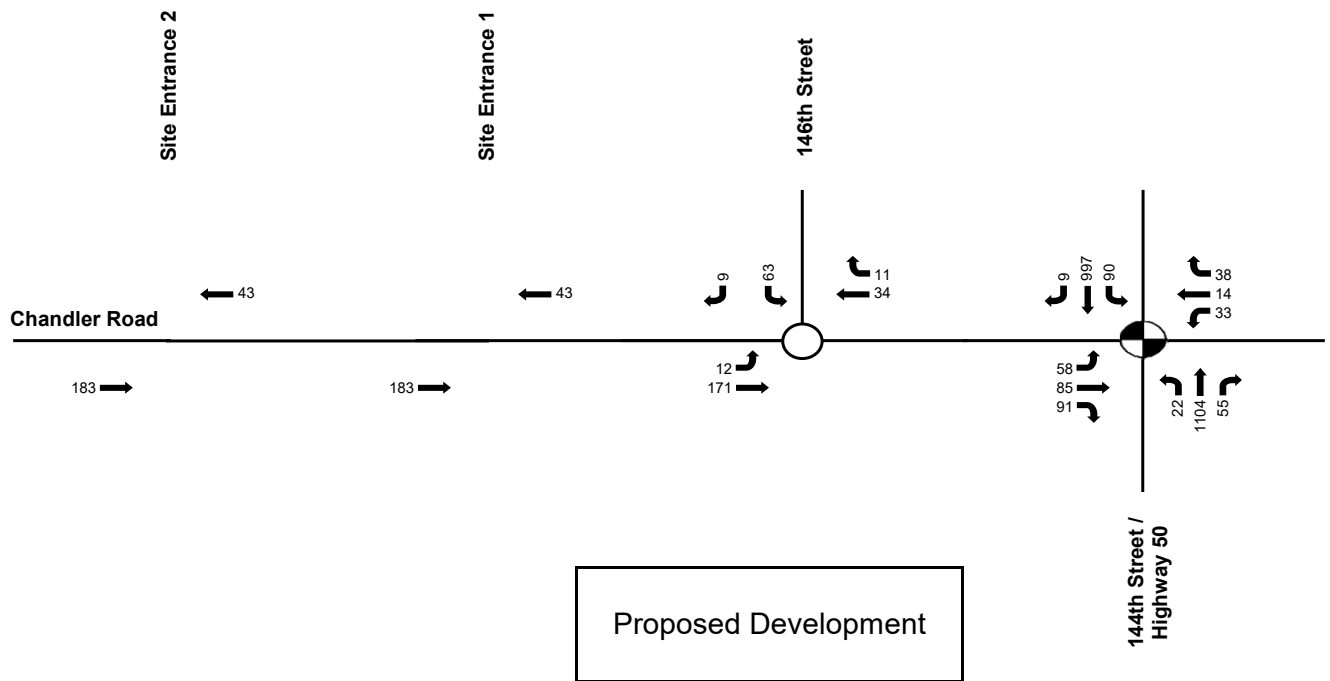
LEGEND			
	Unsignalized Intersection	155	Traffic Volume
	Signalized Intersection		Through Traffic Movement
	Future Intersection Leg		Turning Traffic Movement (Right or Left Movement)

FIGURE 6
2025 AM PEAK HOUR
BACKGROUND VOLUMES



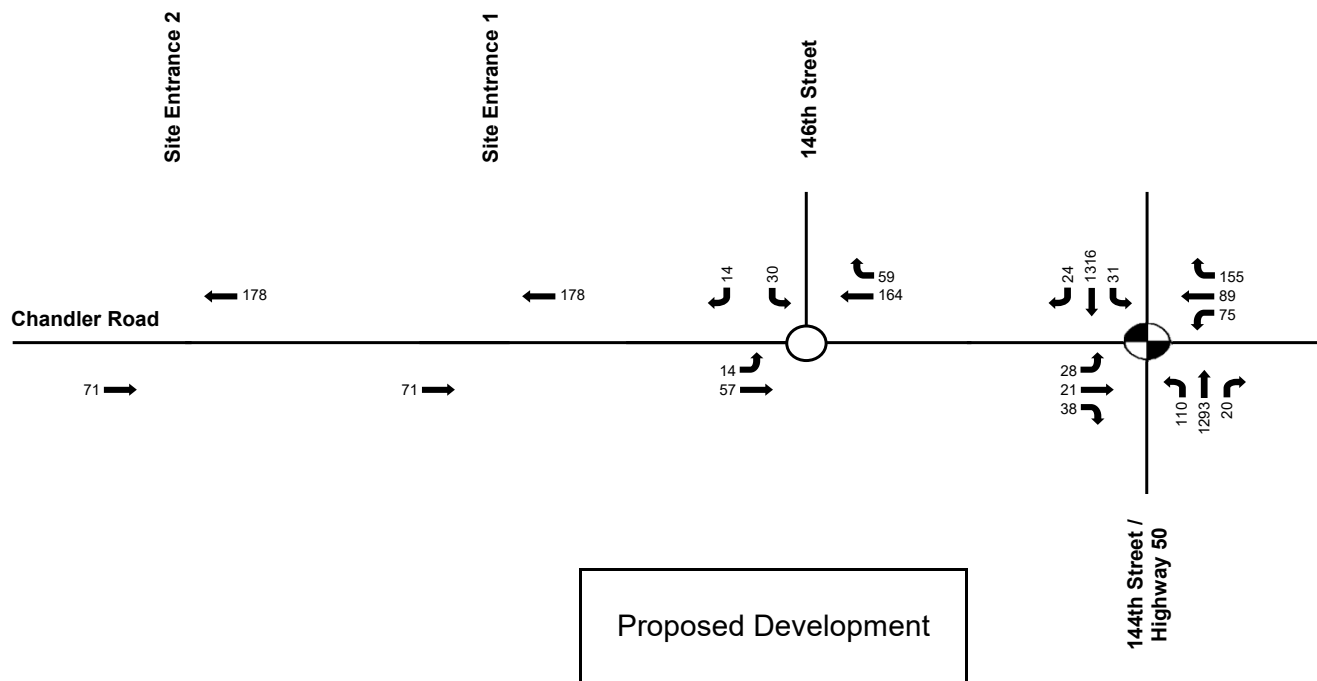
LEGEND			
	Unsignalized Intersection	155	Traffic Volume
	Signalized Intersection		Through Traffic Movement
	Future Intersection Leg		Turning Traffic Movement (Right or Left Movement)

FIGURE 7
2025 PM PEAK HOUR
BACKGROUND VOLUMES



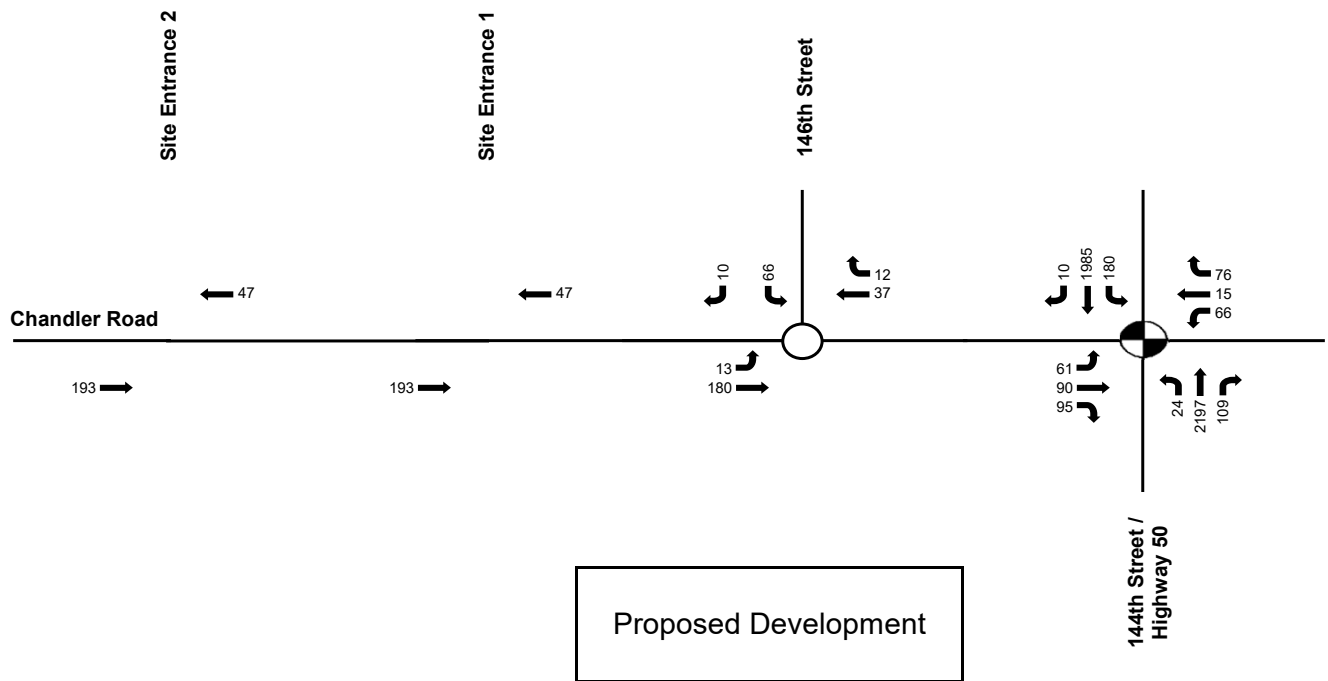
LEGEND		
	Unsignalized Intersection	155 Traffic Volume
	Signalized Intersection	Through Traffic Movement
	Future Intersection Leg	Turning Traffic Movement (Right or Left Movement)

FIGURE 8
2030 AM PEAK HOUR
BACKGROUND VOLUMES



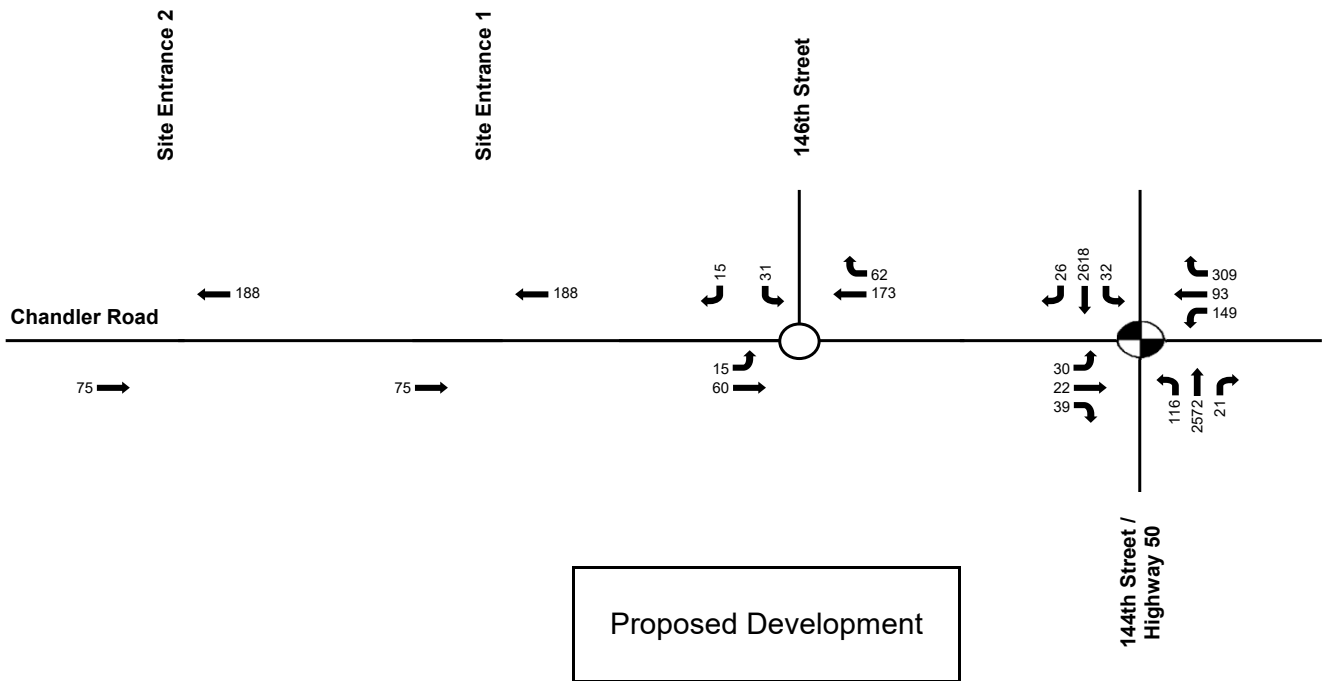
LEGEND			
	Unsignalized Intersection	155	Traffic Volume
	Signalized Intersection		Through Traffic Movement
	Future Intersection Leg		Turning Traffic Movement (Right or Left Movement)

FIGURE 9
2030 PM PEAK HOUR
BACKGROUND VOLUMES



LEGEND			
	Unsignalized Intersection	155	Traffic Volume
	Signalized Intersection		Through Traffic Movement
	Future Intersection Leg		Turning Traffic Movement (Right or Left Movement)

FIGURE 10
2050 AM PEAK HOUR
BACKGROUND VOLUMES



LEGEND			
	Unsignalized Intersection	155	Traffic Volume
	Signalized Intersection		Through Traffic Movement
	Future Intersection Leg		Turning Traffic Movement (Right or Left Movement)

FIGURE 11
2050 PM PEAK HOUR
BACKGROUND VOLUMES

CHAPTER 4: SITE TRIP ANALYSIS

4.1 Proposed Access Locations

There are three proposed accesses into the site, one of which is anticipated to be located at the intersection of 146th Street and Chandler Road. This access is proposed to be a full movement access point with one entering lane and one exiting lane and provides access to two of the six buildings. The Site Entrance 1 access point is anticipated to be located 900 feet to the west of the 146th Street intersection and provides access to three buildings. This access is anticipated to have one entering lane and one exiting lane. The final access, Site Entrance 2, is located approximately 1,600 feet west of the intersection of Site Entrance 1. This access is proposed to be one entering lane and one exiting lane and provides access to the final building on the site.

4.2 Trip Generation

4.2.1 Site Trip Generation

The proposed development is planned to consist of an industrial complex. The trip generation rates, as published in the ITE *Trip Generation Manual*, 11th Edition, 2021, were used to estimate the vehicle trips generated by the proposed site. When possible, the formulas for trip generation estimates were used instead of average rates. A detailed breakdown of the trip generation rate is shown in Table 1 for the daily AM and PM peak hour. Table 1 also summarizes the land use type, the quantity, and the units of the land use for the development as illustrated in Figure 2.

4.2.2 Primary Trips

Primary trips are net new trips added to the study area as a result of the proposed development or stated otherwise, trips made for the specific purpose of coming to or leaving the site. For example, a home-to-school-to-home is considered a primary trip. Primary trips are of major importance since this is the net increase in

traffic volume that the system must be designed to handle. Table 1 shows the primary trip generation for the site. For the AM peak hour, the site is anticipated to generate 229 vehicle trips with 202 of those trips entering the site and the remaining 27 trips exiting the site. For the PM peak hour, the site is anticipated to generate 95 vehicle trips, with 13 of those trips entering the site and 82 trips exiting the site.

Site Trips For Proposed Development
Fenton Construction - 144th & Chandler

Lot No.	Land Use	Intensity	Unit	Daily Trip Rate	ADT	Pass-by Reduced Trips															
						AM Peak Hour				PM Peak Hour				AM Peak Hour				PM Peak Hour			
						Rate	In	Out	Total	Rate	In	Out	Total	Rate	In	Out	Total	Rate	In	Out	Total
	General Light Industrial	331520	SF	3.91 /1000 SF	1297	0.69	202	27	229	0.29	13	82	95	0%	202	27	229	0%	13	82	95
Total Traffic					1297		202	27	229		13	82	95		202	27	229		13	82	95

Notes:

1. All trip generation rates based on "Trip Generation", Institute of Transportation Engineers, 11th Edition
2. Peak hour directional splits from "Trip Generation":

General Light Industrial	AM Peak Hour 88% 12%	PM Peak Hour 14% 86%
--------------------------	-------------------------	-------------------------

TABLE 1
Trip Generation

4.3 Trip Distribution and Assignment

Trip distribution is the process of determining a pattern of distribution of existing (background) traffic within the existing system. Traffic assignment is the process of allocating the site-generated trips to the adjacent roadway system.

The orientation of site-generated traffic is a function of trip purposes, surrounding land uses, and the configuration and accessibility of the street network. The vehicle trips estimated by the trip generation process are directionally distributed onto the roadway network using directional percentages calculated from the existing travel patterns found from the background traffic volumes collected in the traffic counts. This process involves using a cordon line around the proposed site and finding the total number of vehicles passing over the cordon line. It is anticipated that the entire development would be built-out by the year 2025. For this study, there would be two intersections where vehicles were assumed to travel through to leave and return to the site. These were the intersections of Chandler Road and 144th Street / Highway 50 and Chandler Road and Site Entrance 2. The AM peak hour trip distribution is shown in Figure 12 with the PM shown in Figure 13.

These site generated trips are then added to the corresponding background trips to establish build-out volumes for both the AM and PM peak hours. The build-out volumes for the AM peak hour in 2025 are included in Figure 14 and for the PM peak hour in Figure 15. Figure 16 shows the 2030 AM build-out volumes with Figure 17 showing the 2030 PM build-out volumes. The volumes for the future build-out year of 2050 are shown in Figure 18 for the AM peak hour and Figure 19 for the PM peak hour.

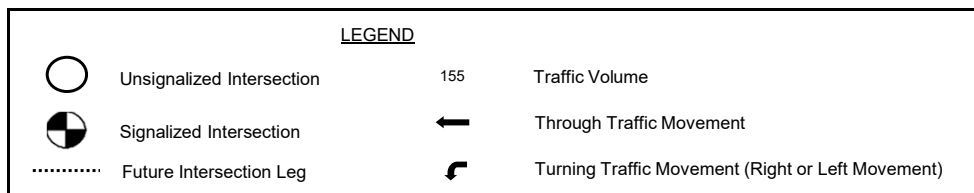
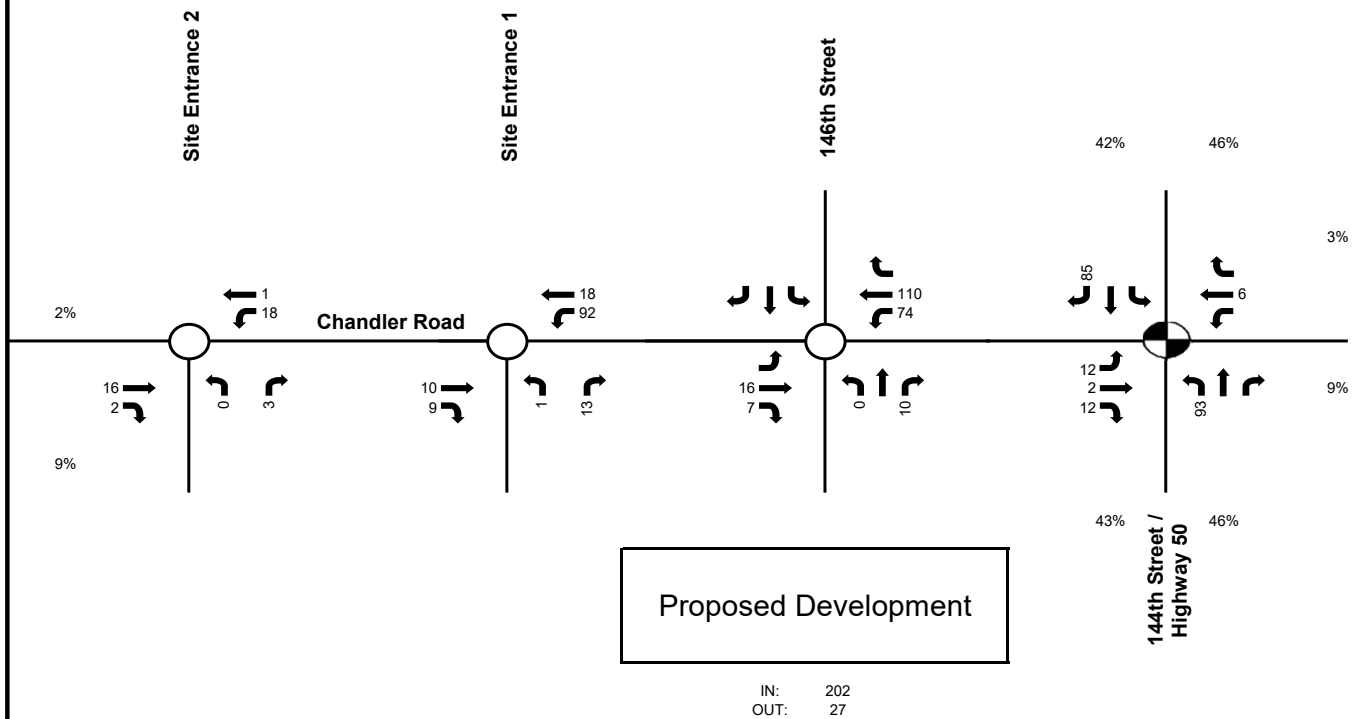


FIGURE 12
AM PEAK HOUR
TRIP DISTRIBUTION VOLUMES

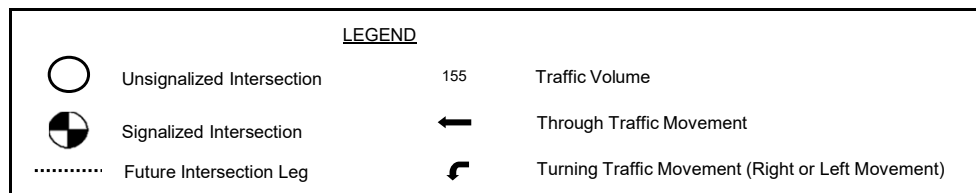
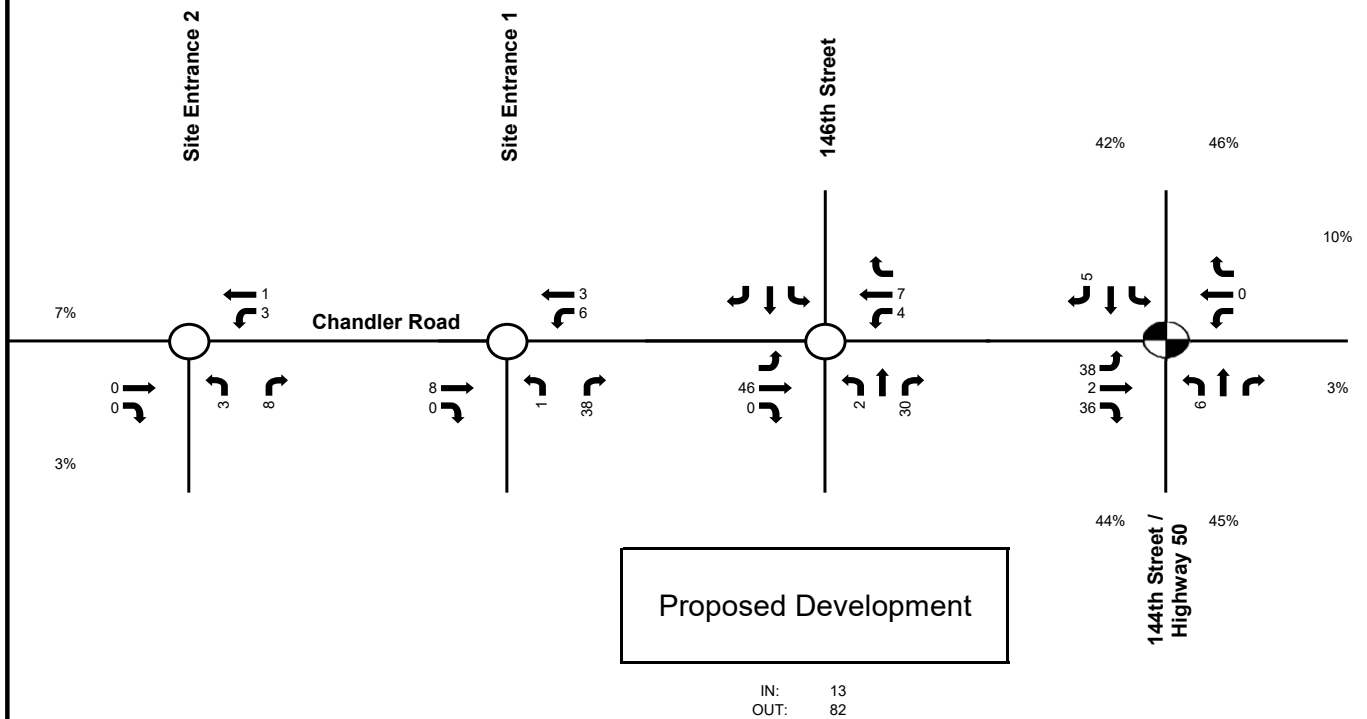


FIGURE 13
PM PEAK HOUR
TRIP DISTRIBUTION VOLUMES

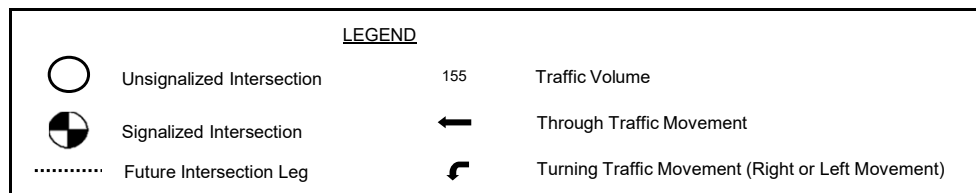
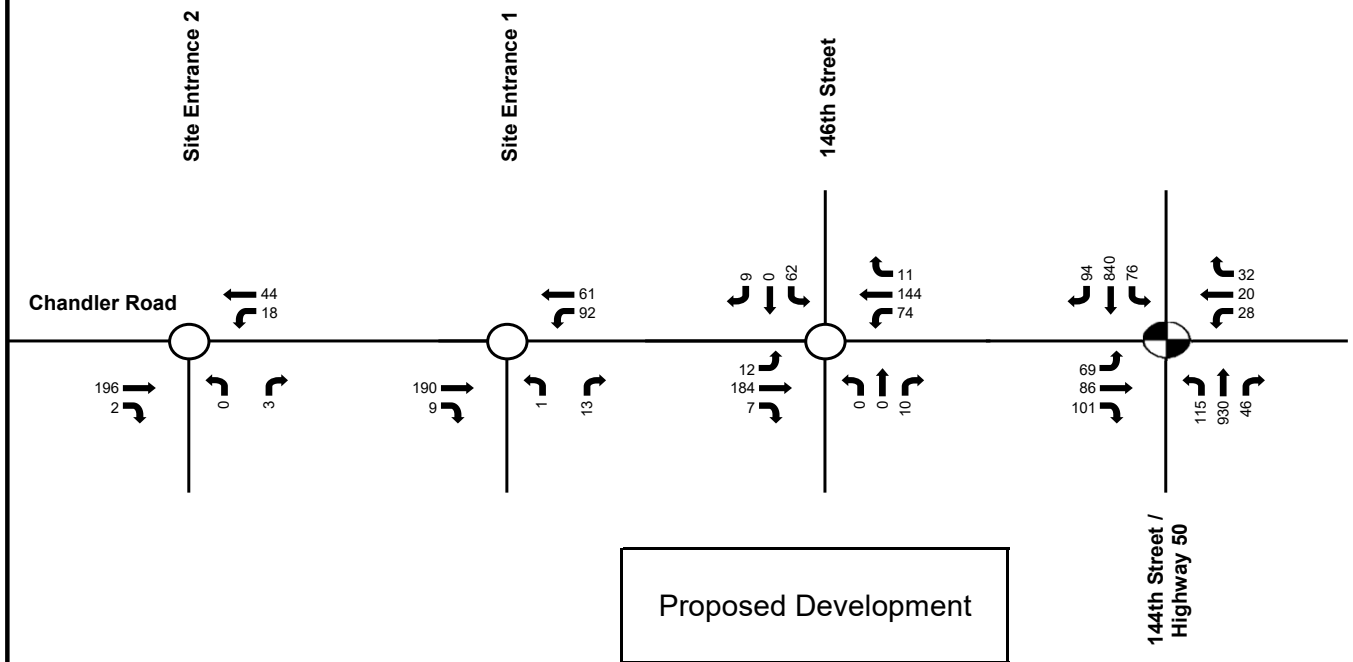
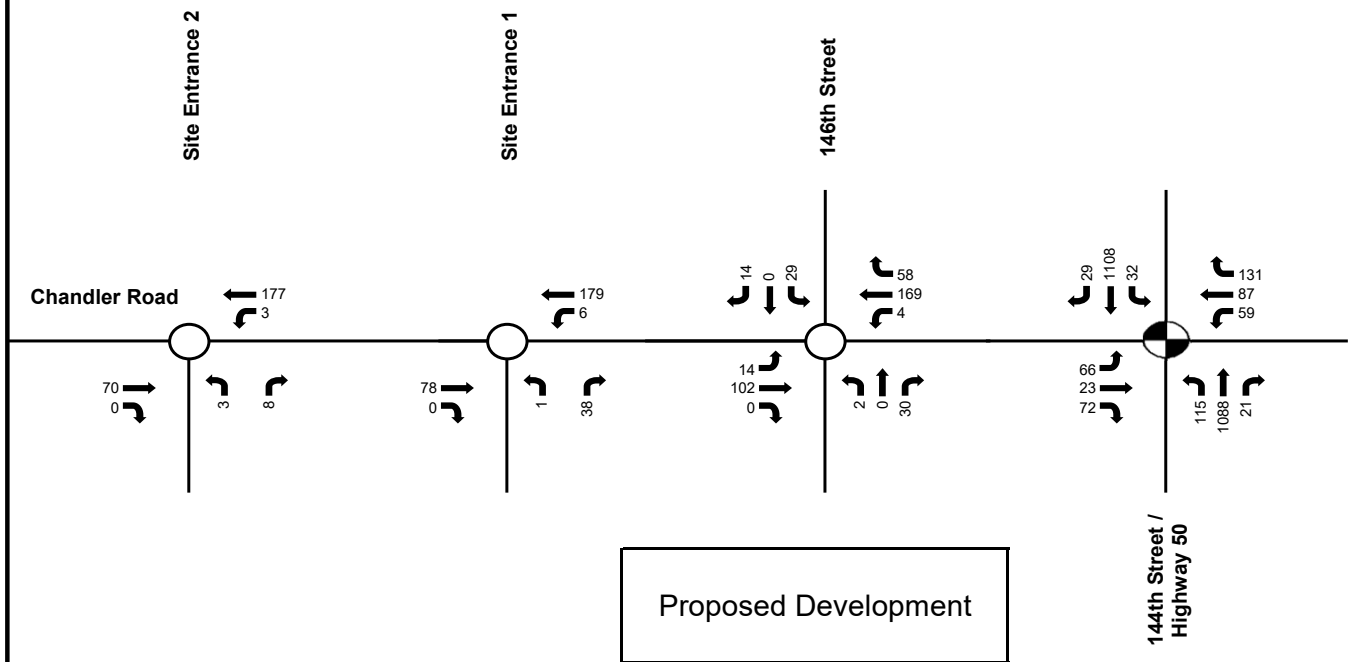


FIGURE 14
2025 AM PEAK HOUR
BUILD-OUT VOLUMES



Unsignalized Intersection

Signalized Intersection

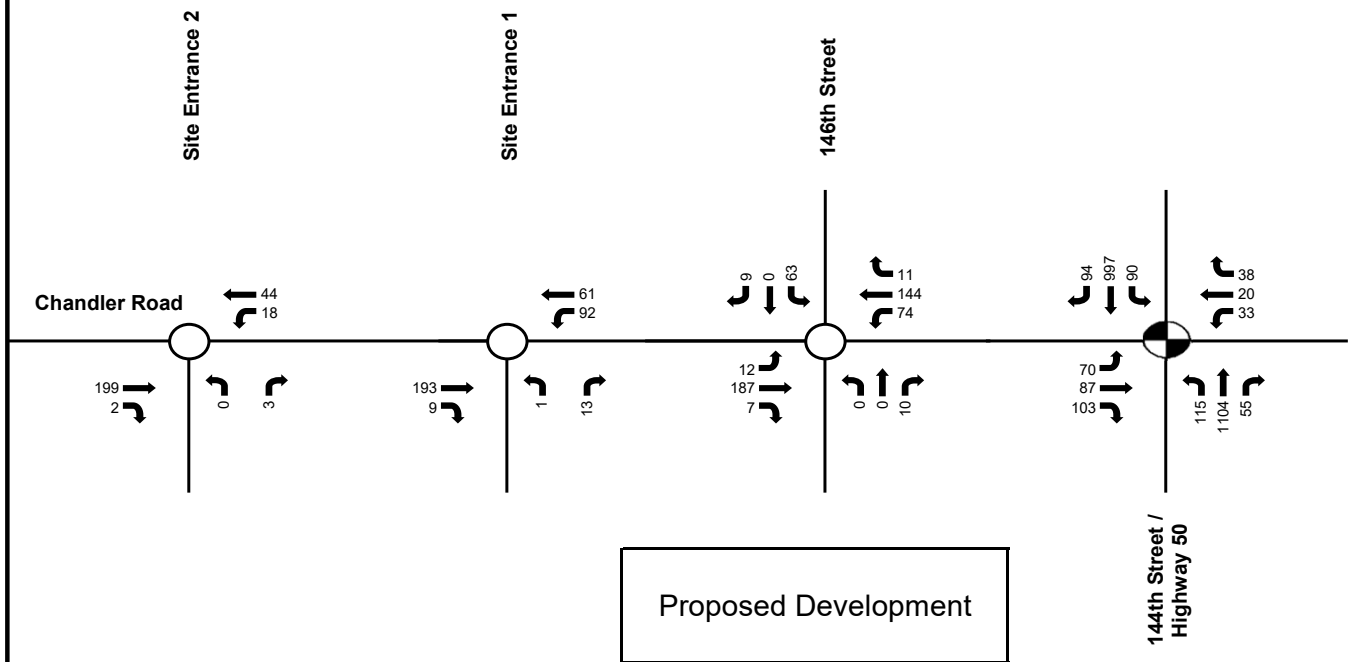
Future Intersection Leg

LEGEND

Through Traffic Movement

Turning Traffic Movement (Right or Left Movement)

FIGURE 15
2025 PM PEAK HOUR
BUILD-OUT VOLUMES



LEGEND			
	Unsignalized Intersection	155	Traffic Volume
	Signalized Intersection		Through Traffic Movement
	Future Intersection Leg		Turning Traffic Movement (Right or Left Movement)

FIGURE 16
2030 AM PEAK HOUR
BUILD-OUT VOLUMES

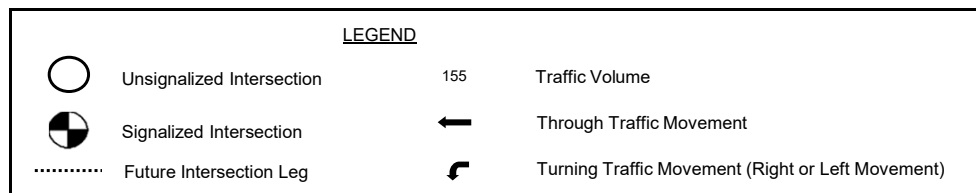
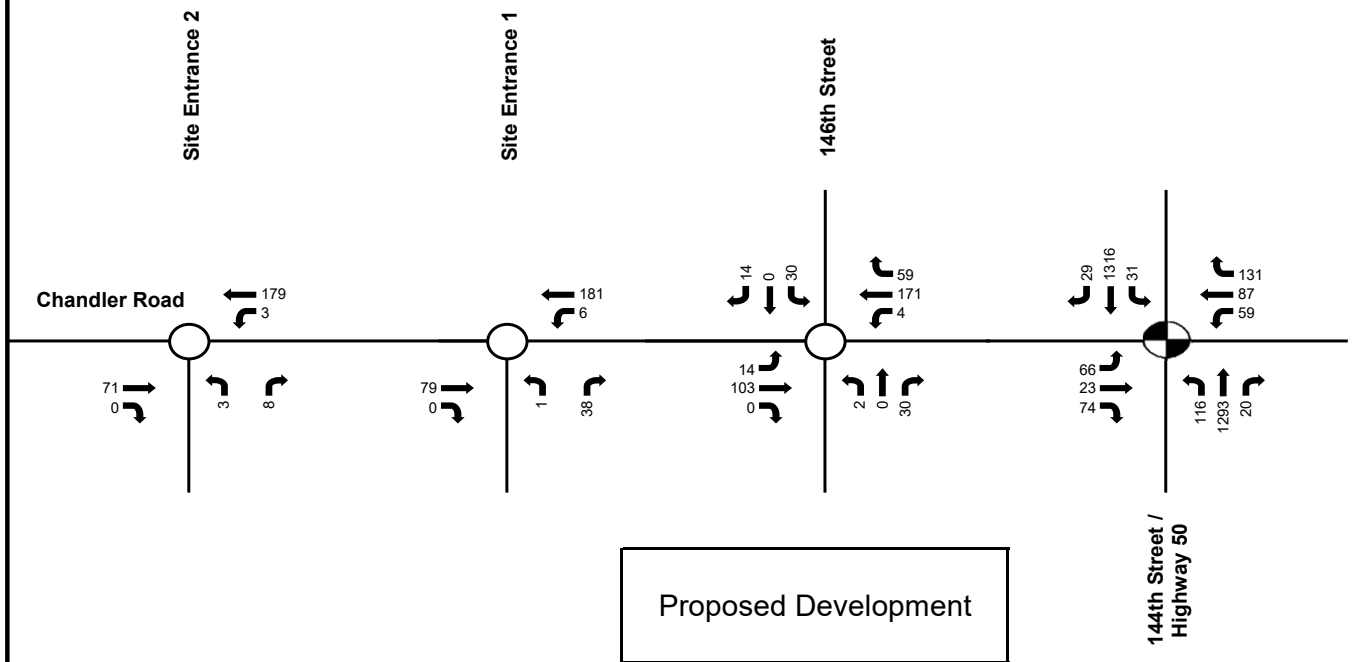
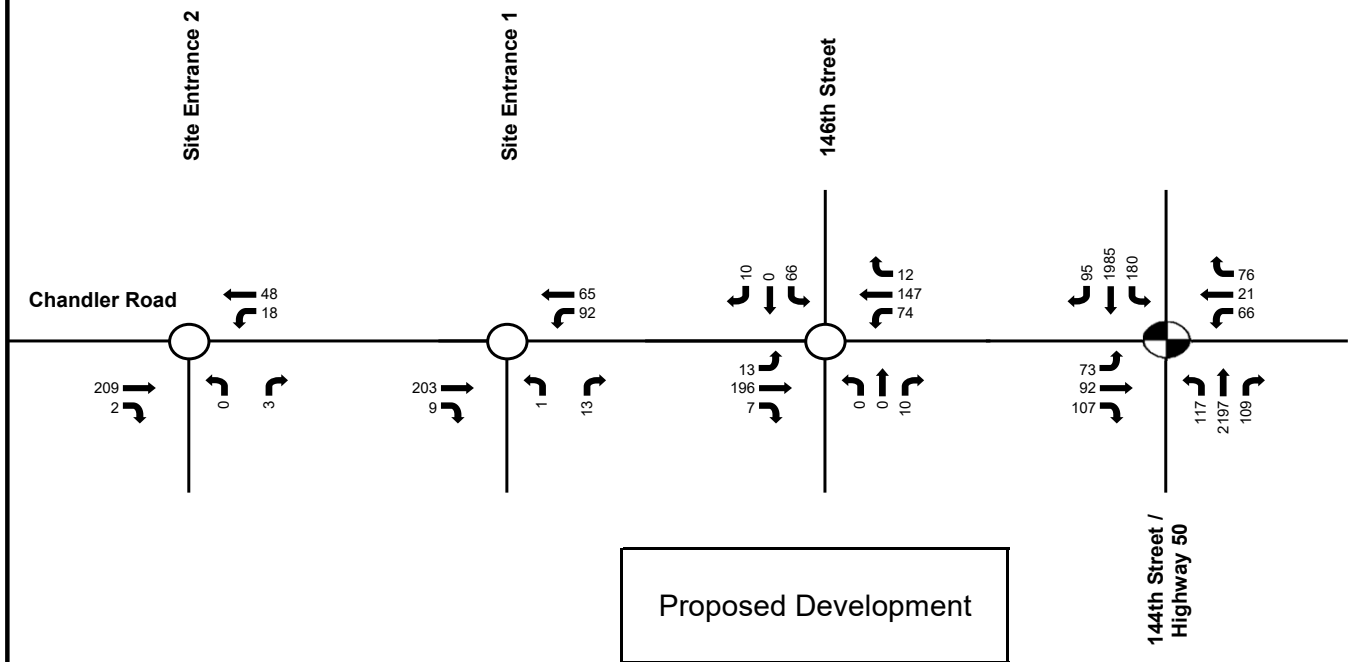


FIGURE 17
2030 PM PEAK HOUR
BUILD-OUT VOLUMES



LEGEND		
	Unsignalized Intersection	155 Traffic Volume
	Signalized Intersection	Through Traffic Movement
	Future Intersection Leg	Turning Traffic Movement (Right or Left Movement)

FIGURE 18
2050 AM PEAK HOUR
BUILD-OUT VOLUMES

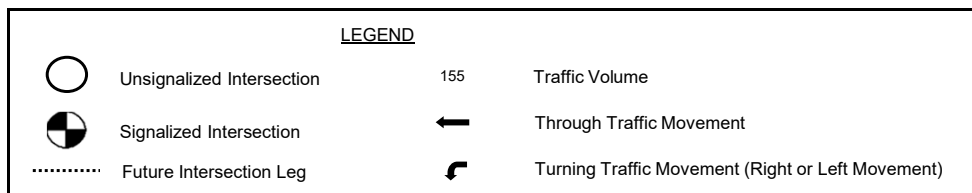
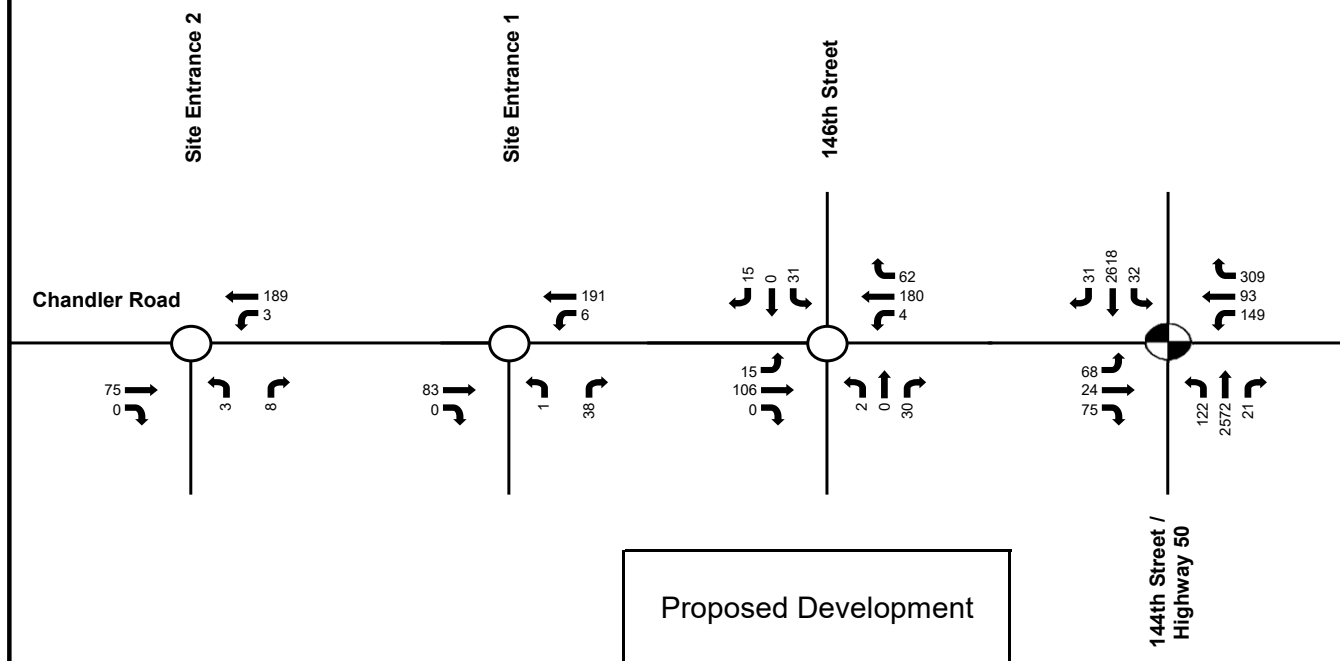


FIGURE 19
2050 PM PEAK HOUR
BUILD-OUT VOLUMES

CHAPTER 5: TRAFFIC ANALYSIS

5.1 Background Traffic Intersection Performance Analysis

An analysis of all the signalized intersections capacity performance was performed using Synchro 11.0. Synchro is a macroscopic traffic software program that replicates the signalized intersection capacity analysis. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the intersections. Equations are used to determine measures of effectiveness such as delay and queue length. Effect of queues was observed with SimTraffic simulation.

While observations of traffic volumes provide an understanding of the general nature of traffic in the area, they are insufficient to indicate either the ability of the street network to carry additional traffic or the quality of service provided by the street facilities. For this reason, the concept of level of service (LOS) has been developed to correlate numerical traffic-volume data to subjective descriptions of traffic performance at intersections. Each lane of traffic has delay associated with it and therefore a correlating LOS. The overall LOS of a signalized intersection is made up of the weighted average delay for each lane of traffic for all of the approaches.

LOS is a measure of effectiveness for intersection operating conditions and is based on delay experience by vehicles passing through the intersection. LOS ranges from “A” to “F”, with LOS “A” representing little or no delay, and LOS “F” representing extreme delay. LOS “C” or better is considered desirable, LOS “D” being acceptable in some urban situations. The qualitative definition of each category can be found in the appendix. The following Table 2 shows the intersection LOS Criteria for both signalized and unsignalized intersections. (HCM 2010):

Table 2 – Intersection LOS Criteria

Level of Service	Signalized Control Delay Range	Unsignalized Control Delay Range
A	≤ 10 seconds	≤10 seconds
B	>10 and ≤ 20 seconds	>10 and ≤ 15 seconds
C	>20 and ≤ 35 seconds	>15 and ≤ 25 seconds
D	>35 and ≤ 55 seconds	>25 and ≤ 35 seconds
E	>55 and ≤ 80 seconds	>35 and ≤ 50 seconds
F	>80 seconds	>50 seconds

The AM and PM weekday peak performance analysis of background traffic with existing conditions was performed for all of the intersections on the roadway network for the background scenarios in the year 2023, year 2025, year 2030 and year 2050. For the background figures, potential improvements were shown in a separate figure. For the build-out figures, the improvements to the roadway that were made in previous scenarios (background or build-out) were assumed for the following build-out scenarios. The build out scenarios include the traffic anticipated to be generated from the site at all of the entrances. The Synchro outputs are included in the appendix of this study. The results of the background traffic analysis for the existing intersections are summarized below:

Background Year 2023 Analysis

The two intersections along Chandler Road, 144th Street / Highway 50 and 146th Street are analyzed in this study. Their performance is mentioned below.

- 144th Street / Highway 50 and Chandler Road: This signalized intersection is anticipated to operate at an overall LOS of A in the AM peak hour and a LOS of B in the PM peak hour. All of the individual movements are anticipated to operate at a LOS of C or better in both the AM and PM peak hour.
- 146th Street and Chandler Road: This is an unsignalized intersection where all individual movements are anticipated to operate at a LOS of B or better in both the AM and PM peak hour.

The 2023 Background LOS and the corresponding delays are included in Figure 20.

Background Year 2025 Analysis

- 144th Street / Highway 50 and Chandler Road: Similar to the background scenario, this signalized intersection is anticipated to operate at an overall LOS of A in the AM peak hour and a LOS of B in the PM peak hour. All of the individual movements are anticipated to operate at a LOS of C or better in both the AM and PM peak hour.
- 146th Street and Chandler Road: All individual movements are anticipated to operate at a LOS of B or better in both the AM and PM peak hour.

The 2025 Background LOS and the corresponding delays are included in Figure 21.

Background Year 2030 Analysis

- 144th Street / Highway 50 and Chandler Road: The performance of the overall intersection is anticipated to slightly decrease in performance in the AM peak hour from the previous 2025 background scenario, with the anticipated LOS of B in both peak hours. All of the individual movements except for two are anticipated to operate at a LOS of D or better in both peak hours.
- 146th Street and Chandler Road: The same three individual movements are anticipated to operate at a LOS of B or better, as shown in the previous 2025 background scenario.

The 2030 Background LOS and the corresponding delays are included in Figure 22.

Background Year 2050 Analysis

- 144th Street / Highway 50 and Chandler Road: The overall intersection is anticipated to decrease to a LOS of D in the AM peak hour and a LOS of F

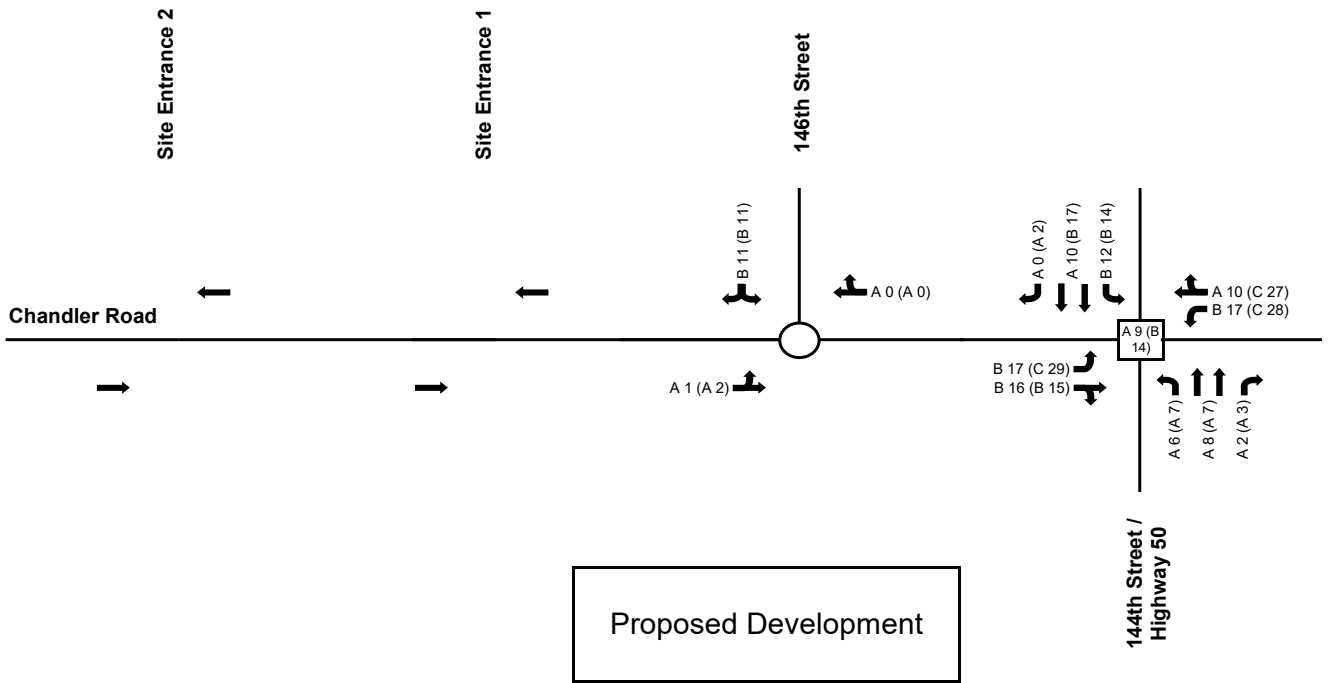
in the PM peak hour. Seven individual movements are also anticipated to operate at a LOS of E or F in either the AM or PM peak hour (or both). The eastbound left turning movement is anticipated to operate at a LOS of E in the PM peak hour. The northbound left turning movement is anticipated to operate at a LOS of F in the PM peak hour and northbound through movement is anticipated to operate at a LOS of E in the PM peak hour. The southbound left turning movement is anticipated to operate at a LOS of F in the AM peak hour and the southbound through movement is anticipated to operate at a LOS of F in the PM peak hour. The westbound through/right movement is anticipated to operate at a LOS of F in the PM peak hour and the westbound left turning movement is anticipated to operate at a LOS of F in the AM peak hour. These are increases from the previous scenario where all of the individual movements are anticipated to operate at a LOS of D or better in both peak hours.

In this scenario, increasing the northbound and southbound movements to three through lanes would improve the overall performance of the intersection along with many individual movements but is not shown as an improvement under the direction of NDOT. The traffic signal is also anticipated to need to be improved to include a permissive/protected phase at the eastbound, westbound and southbound left turning movements. Finally, adding a westbound right turn lane also helps improve this intersection. With these improvements, the overall intersection is anticipated to remain the same at a LOS of D in the AM peak hour and a LOS of F in the PM peak hour. The movements on the westbound lanes are anticipated to improve to a LOS of D or better with the exception of the westbound right turn lane which is anticipated to be a LOS of E in the PM peak hour. The westbound through movement is anticipated to operate at a LOS of E in the AM peak hour. The northbound left turning movement along with the southbound through movement are still anticipated to operate

at a LOS of F in the PM peak hour. The northbound through movement is still anticipated to operate at a LOS of E in the AM peak hour and a LOS of F in the PM peak hour. The southbound left turning movement is still anticipated to operate at a LOS of F in the AM peak hour.

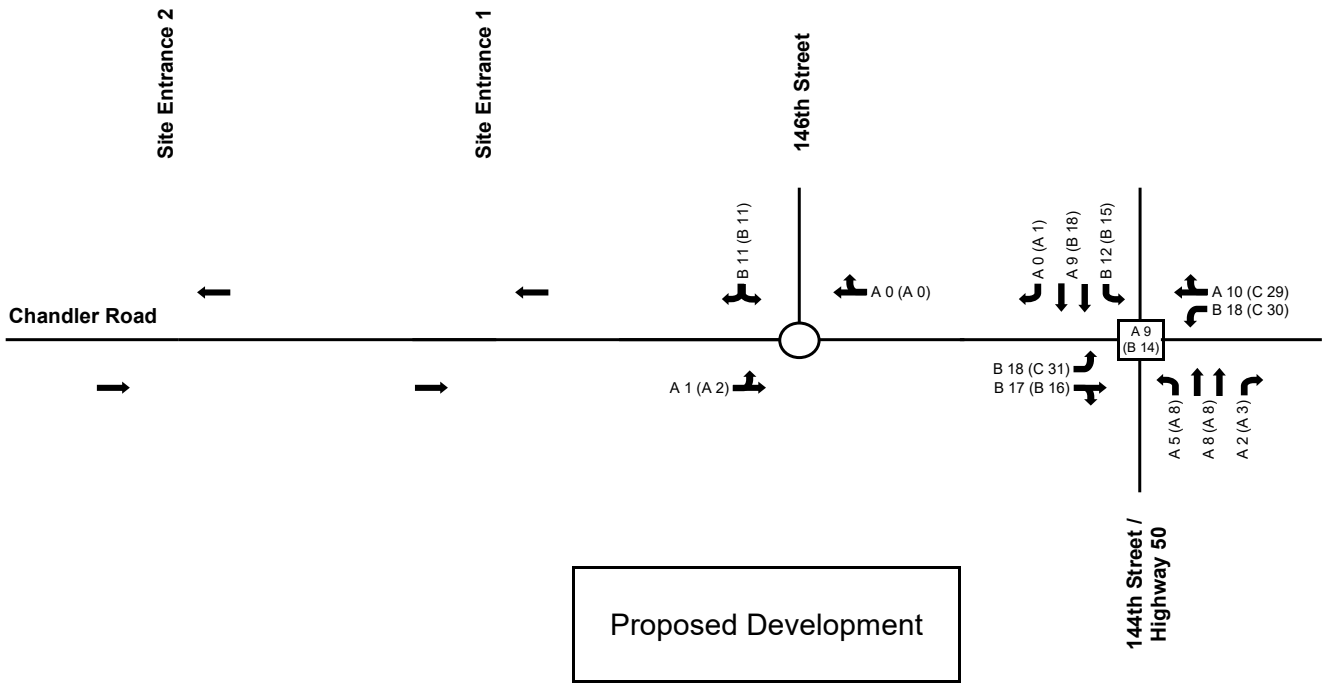
- 146th Street and Chandler Road: All of the individual movements at this intersection are still anticipated to operate at a LOS of B or better in both peak hours, which is similar to all of the previous scenarios.

The 2050 Background LOS and the corresponding delays are included in Figure 23. Figure 24 includes the 2050 Background LOS with improvements.



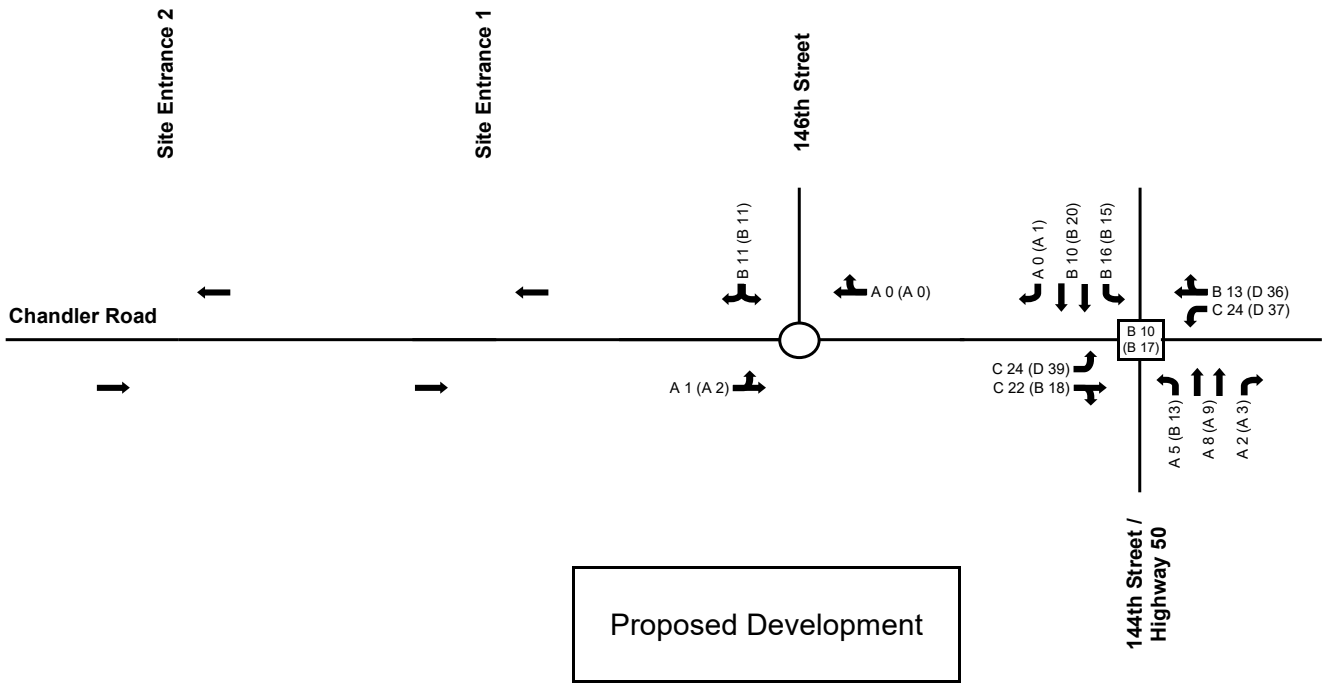
LEGEND		
	Unsignalized Intersection	B 17 (C 28) Level of Service AM(PM), seconds
	Signalized Intersection	Through Traffic Movement
	Future Intersection Leg	Turning Traffic Movement (Right or Left Movement)

FIGURE 20
2023 BACKGROUND PEAK HOUR
LEVEL OF SERVICE



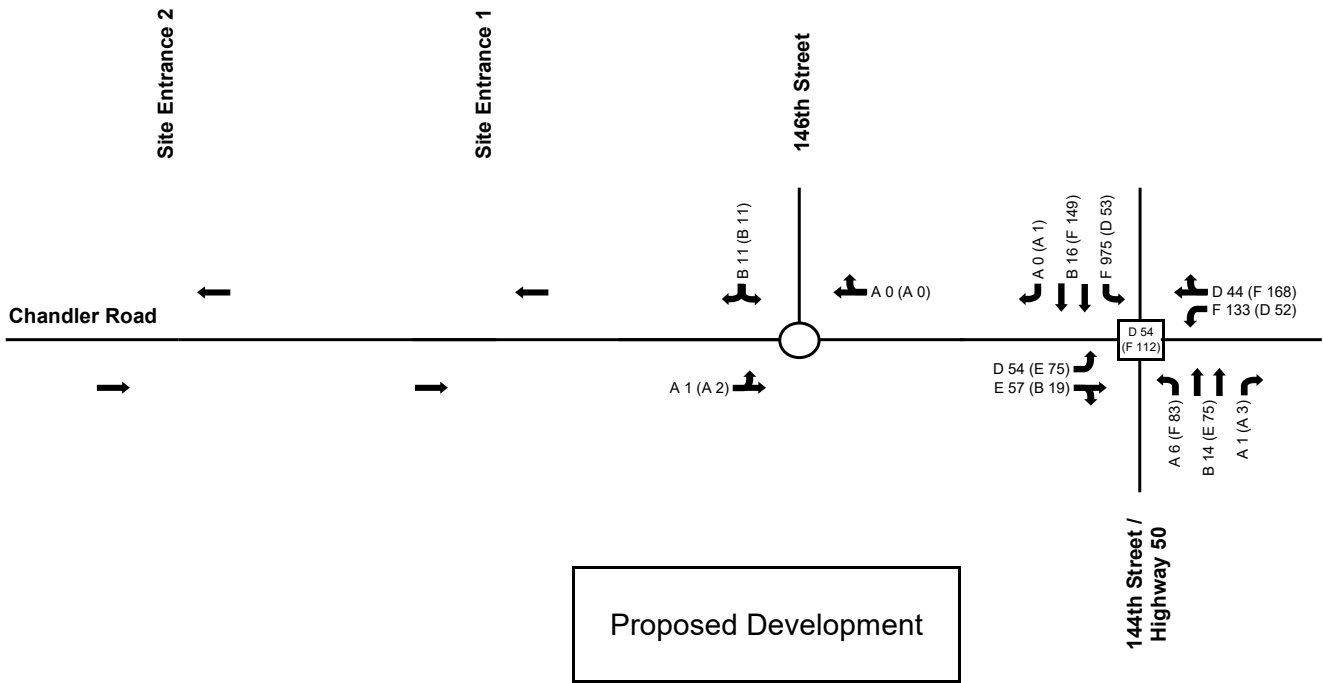
LEGEND			
	Unsignalized Intersection	B 17 (C 28)	Level of Service AM(PM), seconds
	Signalized Intersection		Through Traffic Movement
	Future Intersection Leg		Turning Traffic Movement (Right or Left Movement)

FIGURE 21
2025 BACKGROUND PEAK HOUR
LEVEL OF SERVICE



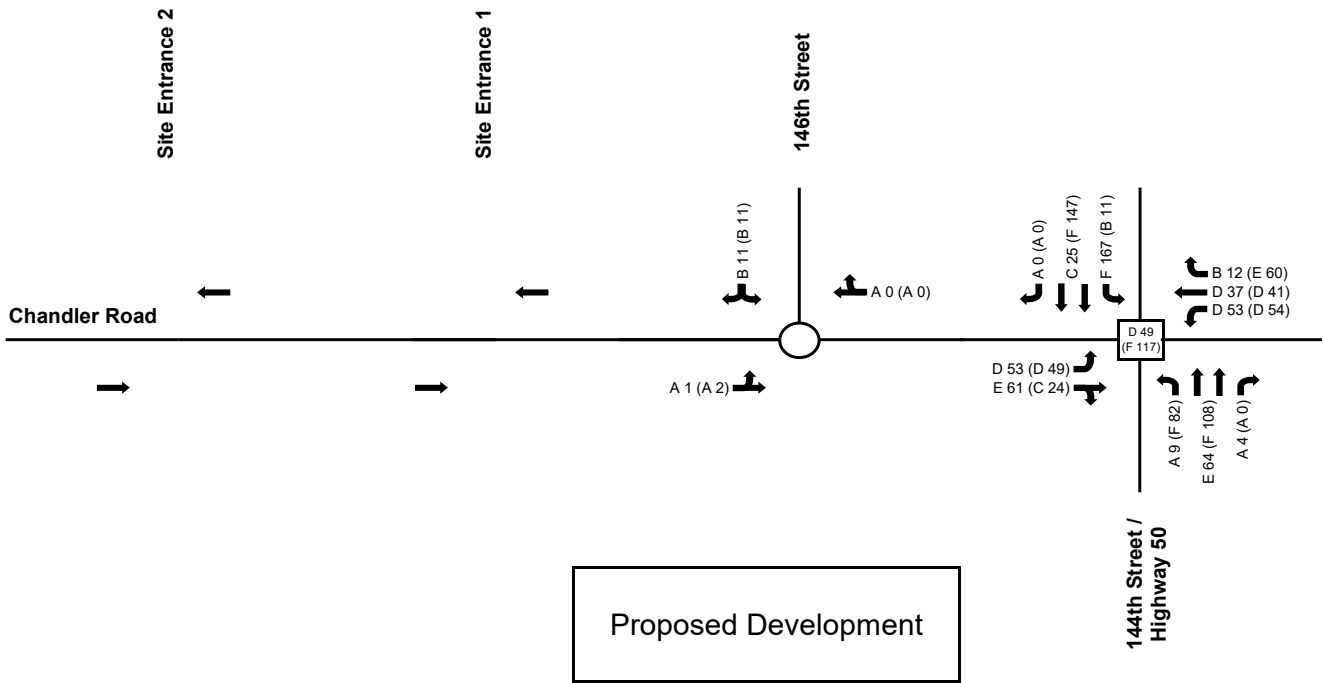
LEGEND		
	Unsignalized Intersection	B 17 (C 28) Level of Service AM(PM), seconds
	Signalized Intersection	Through Traffic Movement
	Future Intersection Leg	Turning Traffic Movement (Right or Left Movement)

FIGURE 22
2030 BACKGROUND PEAK HOUR
LEVEL OF SERVICE



LEGEND		
	Unsignalized Intersection	B 17 (C 28) Level of Service AM(PM), seconds
	Signalized Intersection	Through Traffic Movement
	Future Intersection Leg	Turning Traffic Movement (Right or Left Movement)

FIGURE 23
2050 BACKGROUND PEAK HOUR
LEVEL OF SERVICE



LEGEND		
	Unsignalized Intersection	B 17 (C 28)
	Signalized Intersection	
	Future Intersection Leg	
	Through Traffic Movement	
	Turning Traffic Movement (Right or Left Movement)	
		Level of Service AM(PM), seconds

FIGURE 24
2050 BACKGROUND PEAK HOUR
LEVEL OF SERVICE WITH IMPROVEMENTS

5.2 ***Build-out (2025, 2030 and 2050) Intersection Performance Analysis***

The analysis of the transportation impacts of the site on the surrounding roadway network is based on the distribution of the opening day site generated traffic onto the existing volumes as previously discussed. The procedure involved intersection capacity analysis for all intersections directly impacted by the proposed site. This analysis was performed for the design year of 2025, year 2030 and year 2050 scenarios. If there are any potential improvements to the intersections, the improvements were carried through to the following scenarios. The intersections were analyzed to determine intersection delay, LOS and vehicle queue lengths to determine blocking problems. Synchro was used to determine the anticipated delay, LOS and queue lengths at the intersections. See Appendix for Synchro outputs. Queuing and blocking issues are discussed in section 5.3 later on in the report.

Build-out Year 2025 Analysis

For this scenario, the three new access points were added to the site.

- 144th Street / Highway 50 and Chandler Road: The overall intersection is anticipated to operate at a LOS of B in both the AM and PM peak hour. This is a slight increase in the AM peak hour from the 2025 background scenario. All of the individual movements, except for one, are anticipated to operate at a LOS of C or better. The westbound left turning movement is anticipated to decrease to a LOS of D in the PM peak hour.
- 146th Street and Chandler Road: Even with the addition of the south leg of the intersection, all of the individual movements at this intersection are anticipated to operate at a LOS of B or better in both peak hours. This is similar to the 2025 background scenario.
- Remaining Intersections: All of the individual movements are anticipated to operate at a LOS of A in both peak hours.

Figure 25 shows the 2025 Build-out LOS and the corresponding delays.

Build-out Year 2030 Analysis

- 144th Street / Highway 50 and Chandler Road: The overall intersection is anticipated to operate at a LOS of B in both peak hours. The individual movements are anticipated to operate at a similar level to the 2030 background scenario with all of the individual movements operating at a LOS of D or better in both peak hours.
- 146th Street and Chandler Road: The individual movements are anticipated to operate at a LOS of B or better in both peak hours, which is similar to the background 2030 scenario.
- Remaining Intersections: All of the individual movements are anticipated to operate at a LOS of A in both peak hours.

Figure 26 shows the 2030 Build-out LOS and the corresponding delays.

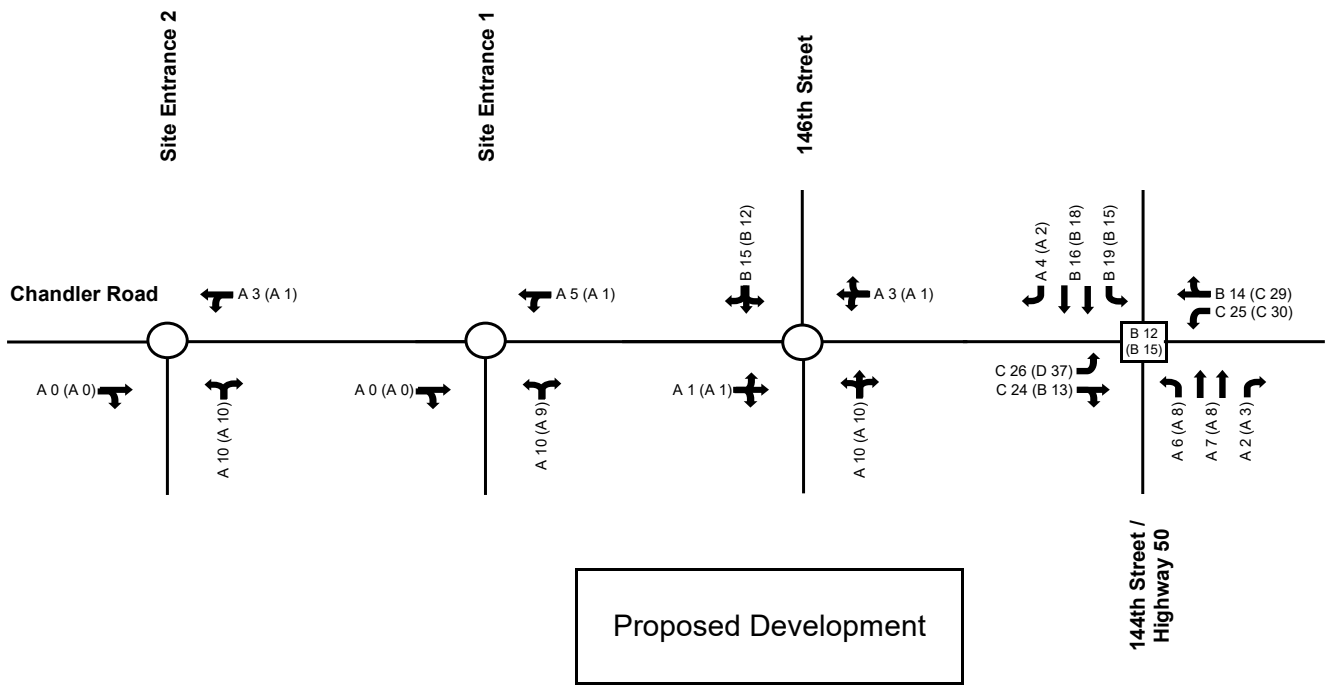
Build-out Year 2050 Analysis

Improvements from the 2050 background scenario were included in this scenario.

- 144th Street / Highway 50 and Chandler Road: The overall intersection is anticipated to operate at a LOS of D in the AM peak hour and F in the PM peak hour, which is not a change from the 2050 background with improvements scenario. In this scenario, seven individual movements are anticipated to operate at a LOS of E or F in various peak hours. The eastbound through/right movement is anticipated to operate at a LOS of E in the AM peak hour. The westbound left movement is anticipated to operate at a LOS of E in the PM peak hour. The westbound right movement and the southbound through movement are anticipated to operate at a LOS of F in the PM peak hour. The northbound left and through movements are anticipated to operate at a LOS of E in the AM peak hour and F in the PM peak hour. The southbound left movement is anticipated to operate at a LOS of F in the AM peak hour. The remaining movements are anticipated to operate at a LOS of D or better in both the AM and PM peak hours.

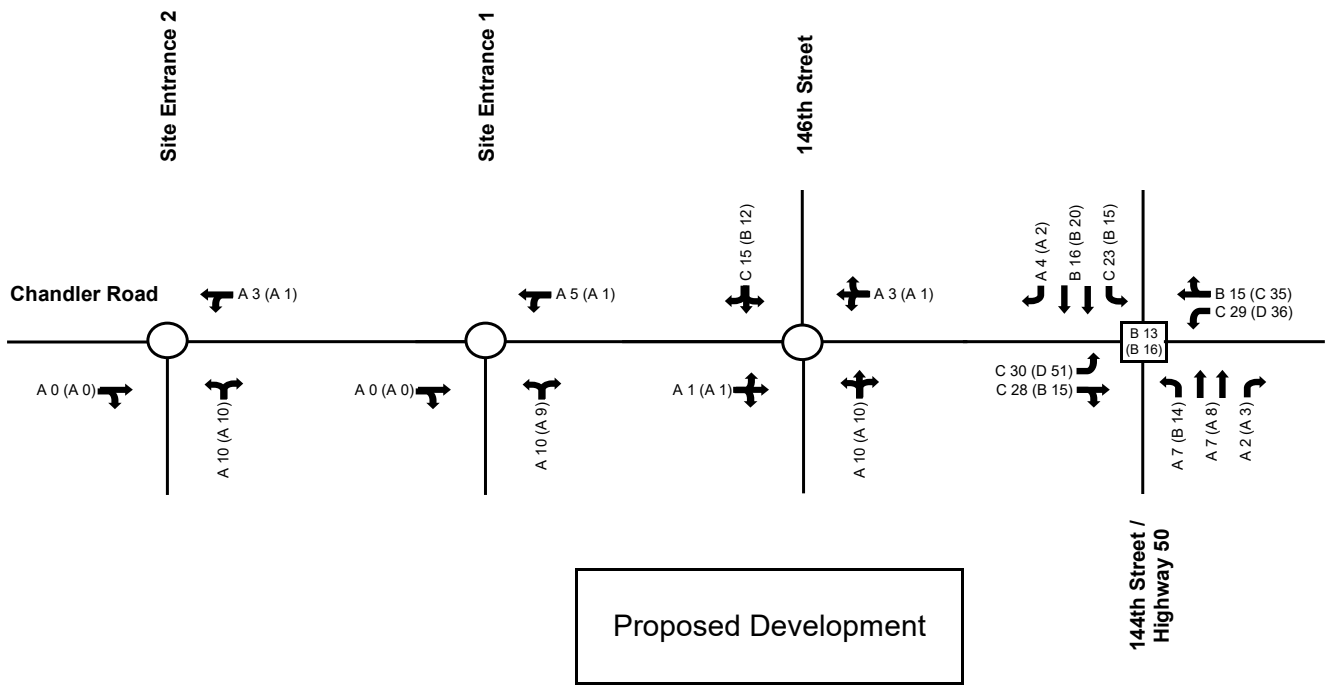
- 146th Street and Chandler Road: All individual movements are anticipated to operate at a LOS of C or better in both peak hours, which is similar to the previous 2050 background with improvements scenario.
- Remaining Intersections: All of the individual movements are anticipated to operate at a LOS of A in both peak hours.

The 2050 Build-out LOS with improvements are included in Figure 27.



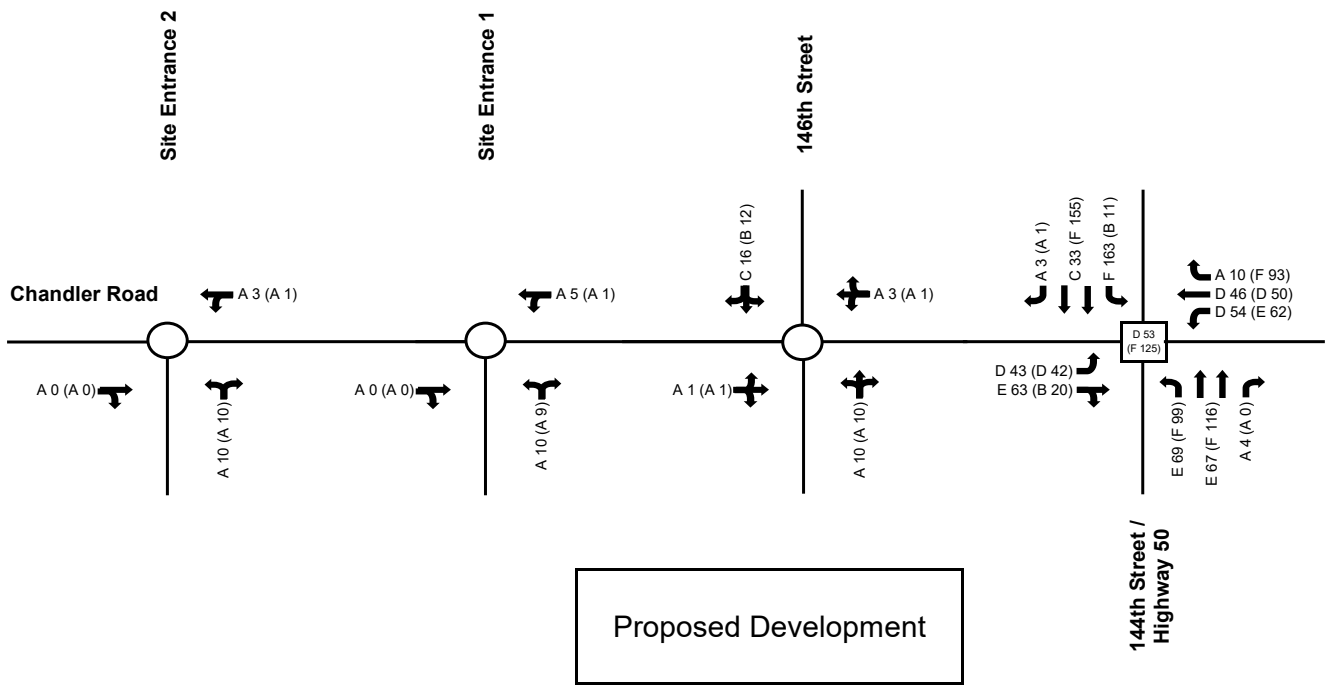
LEGEND		
	Unsignalized Intersection	B 17 (C 28)
	Signalized Intersection	Level of Service AM(PM), seconds
	Future Intersection Leg	Through Traffic Movement
		Turning Traffic Movement (Right or Left Movement)

FIGURE 25
2025 BUILD-OUT PEAK HOUR
LEVEL OF SERVICE



LEGEND		
	Unsignalized Intersection	B 17 (C 28)
	Signalized Intersection	Level of Service AM(PM), seconds
	Future Intersection Leg	Through Traffic Movement
		Turning Traffic Movement (Right or Left Movement)

FIGURE 26
2030 BUILD-OUT PEAK HOUR
LEVEL OF SERVICE



LEGEND		
	Unsignalized Intersection	B 17 (C 28) Level of Service AM(PM), seconds
	Signalized Intersection	Through Traffic Movement
	Future Intersection Leg	Turning Traffic Movement (Right or Left Movement)

FIGURE 27
2050 BUILD-OUT PEAK HOUR
LEVEL OF SERVICE

5.3 Queue Length Analysis

Based on volumes used in the previous analysis, the anticipated vehicle queue lengths were determined using the Synchro Software. The purpose for this analysis is to determine if added trips create situations where turning vehicles queue up and block through traffic or if through lanes queues block entrances to the left-turn or right-turn storage bays for given signal operating parameters. Synchro only calculates the 95th percentile queues for unsignalized intersections, thus the 95th percentile queues were analyzed.

There appears to be one instance where the queue would be long enough to block an intersection. This is anticipated to occur in the southbound through lane at the intersection of 144th Street / Highway 50 and Chandler Road. This movement is anticipated to have a 95th percentile queue length of 1,615 feet in the 2050 PM background with improvements scenario along with the 2050 build-out scenario. The closest intersection to the north of this is the existing intersection of 144th Street / Highway 50 and Echo Hills Drive, that is approximately 1,100 feet away. With this occurring in the background scenario and not increasing with the build-out scenario, the site traffic is not adding to this queue.

In the 2050 background with improvements scenario, the southbound and westbound left turn lane queues are anticipated to extend outside of the existing turn lane storage lengths. These lengths are not anticipated to increase with the addition of the site traffic, therefore this is based solely on the background traffic volumes and not based on the site traffic volumes. The queue lengths for all background and build-out scenarios are shown in Figures 28 through Figure 33.

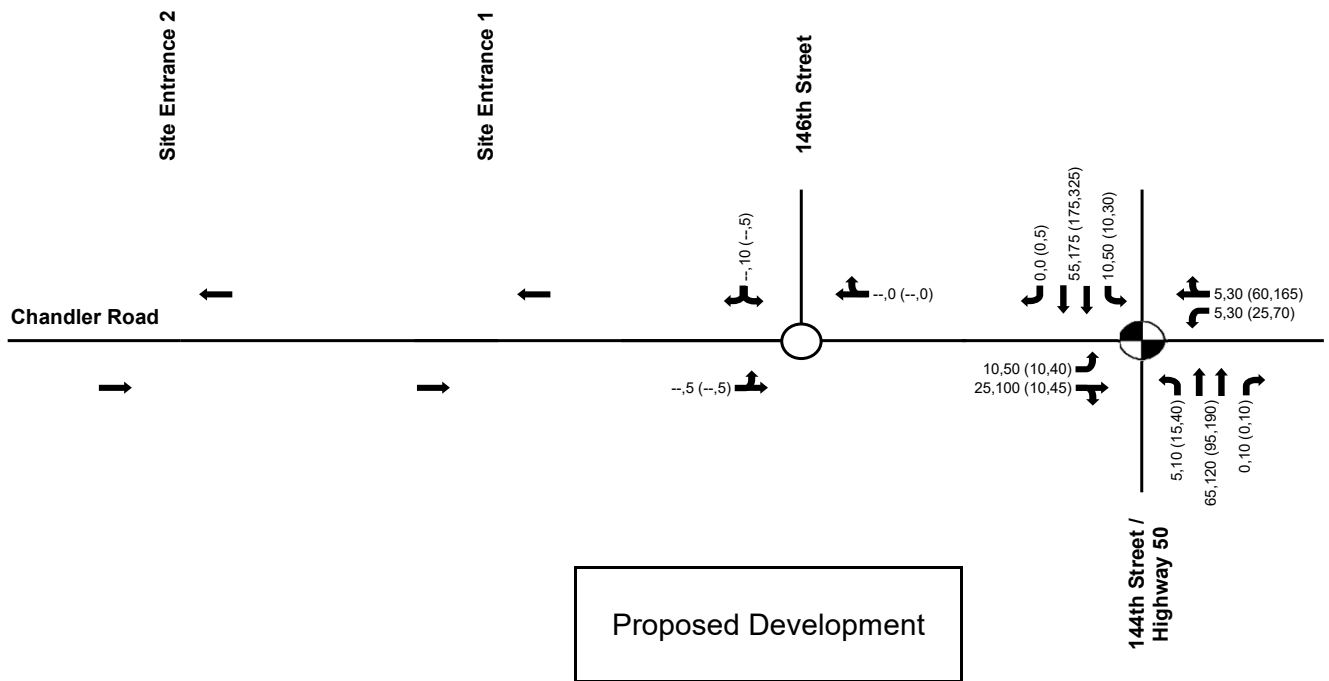
5.4 Traffic Signal Warrants

None of the proposed entrance intersections are anticipated to be above the threshold for a traffic signal in any scenario based on the Manual on Uniform Traffic

Control Devices (MUTCD) Warrant 3 (Peak Hour). The traffic signal warrant graphs are included in the appendix.

5.5 Turn Lane Warrants

Right and left turn lane warrants were checked at the two proposed entrances into the site. None of these intersections are anticipated to be above the threshold for a right or left turn lane in any scenario, according to the NCHRP 279 report.



LEGEND

- Unsignalized Intersection
- ◐ Signalized Intersection
- Future Intersection Leg

5,30 (60,165)

Through Traffic Movement

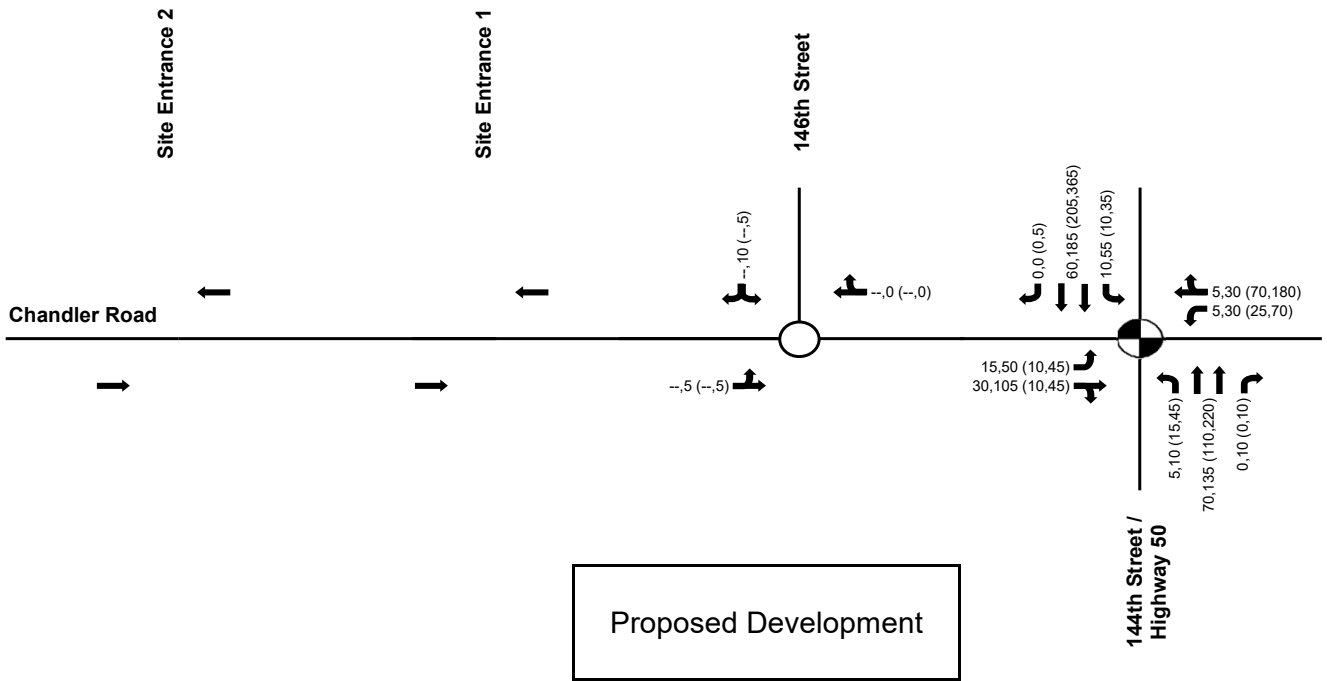
Turning Traffic Movement (Right or Left Movement)

Queue Length AM 50th, 95th (PM 50th, 95th), feet

#: 95th percentile volume exceeds capacity, queue may be longer

~: Queue shown is maximum after two cycles

FIGURE 28
2023 BACKGROUND PEAK HOUR
QUEUE LENGTHS



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Future Intersection Leg

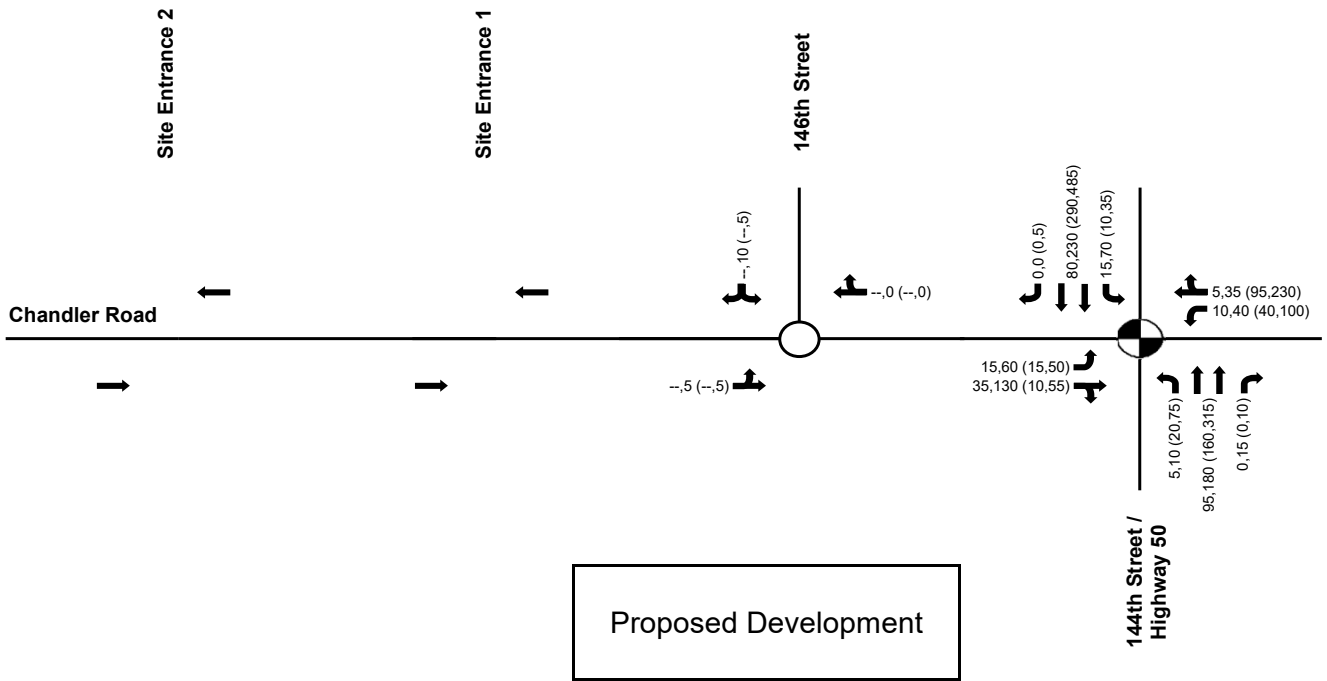
5,30 (60,165)

Queue Length AM 50th, 95th (PM 50th, 95th), feet
#: 95th percentile volume exceeds capacity, queue may be longer
~: Queue shown is maximum after two cycles

Through Traffic Movement

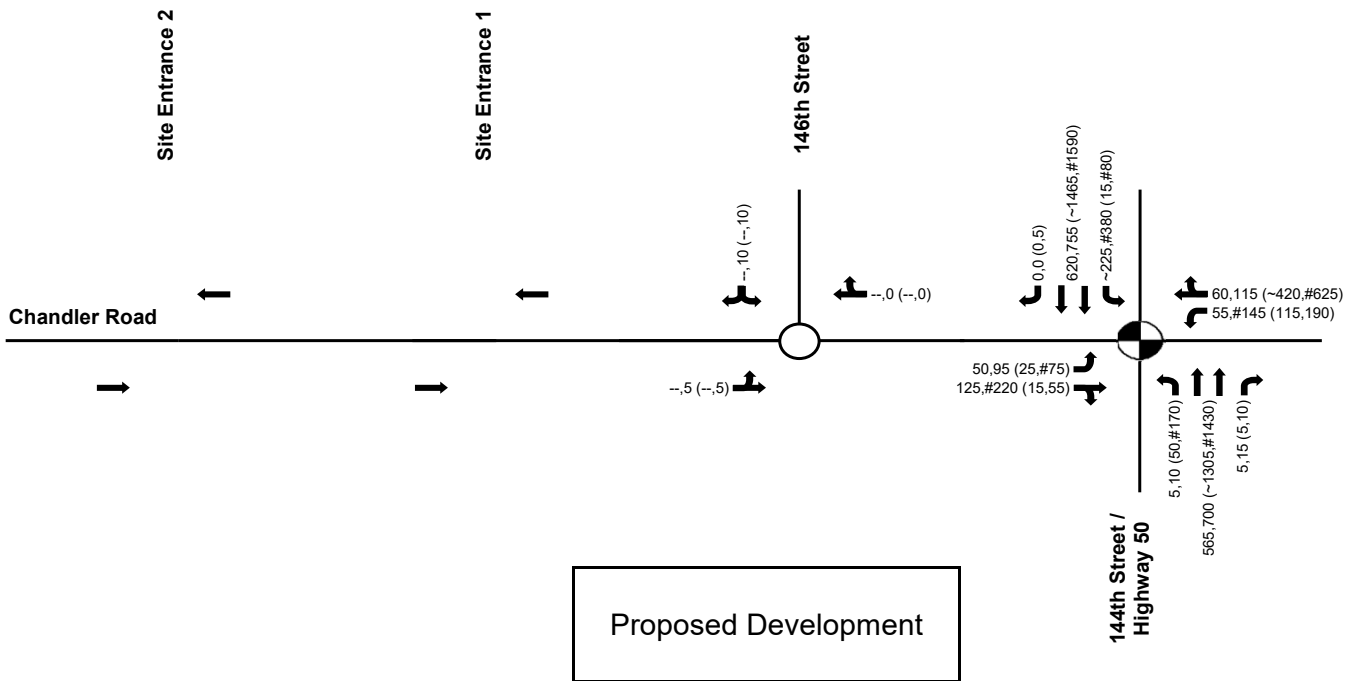
Turning Traffic Movement (Right or Left Movement)

FIGURE 29
2025 BACKGROUND PEAK HOUR
QUEUE LENGTHS



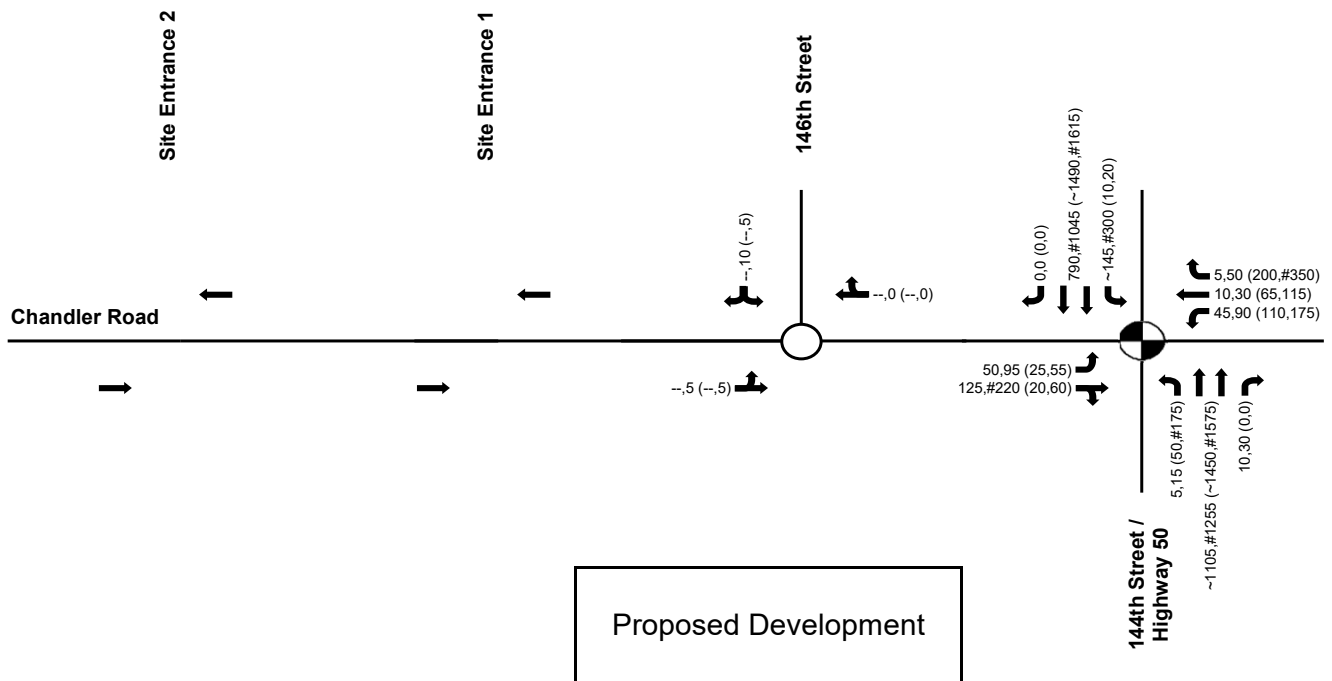
LEGEND	
	Unsignalized Intersection
	Signalized Intersection
	Future Intersection Leg
	Through Traffic Movement
	Turning Traffic Movement (Right or Left Movement)

FIGURE 30
2030 BACKGROUND PEAK HOUR
QUEUE LENGTHS



LEGEND		
	Unsignalized Intersection	5,30 (60,165)
	Signalized Intersection	
	Future Intersection Leg	
	Through Traffic Movement	
	Turning Traffic Movement (Right or Left Movement)	

FIGURE 31
2050 BACKGROUND PEAK HOUR
QUEUE LENGTHS



Unsignalized Intersection

Signalized Intersection

Future Intersection Leg

LEGEND

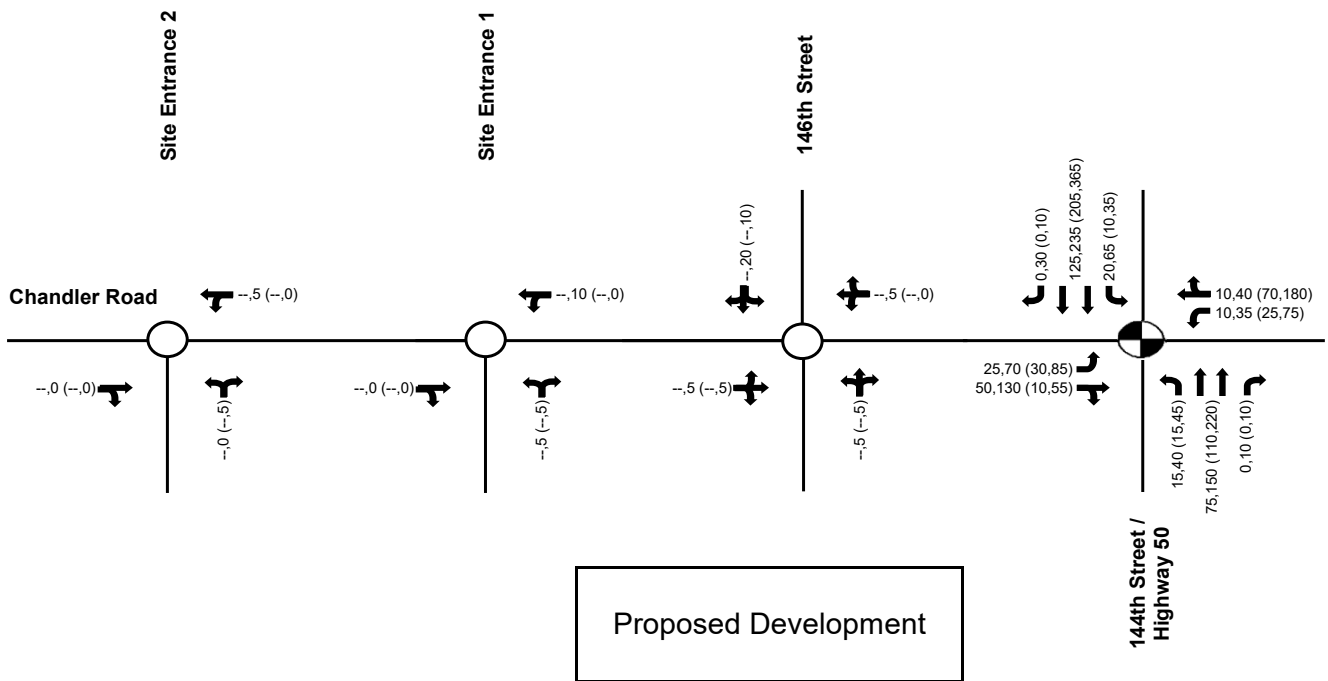
5,30 (60,165)

Through Traffic Movement

Turning Traffic Movement (Right or Left Movement)

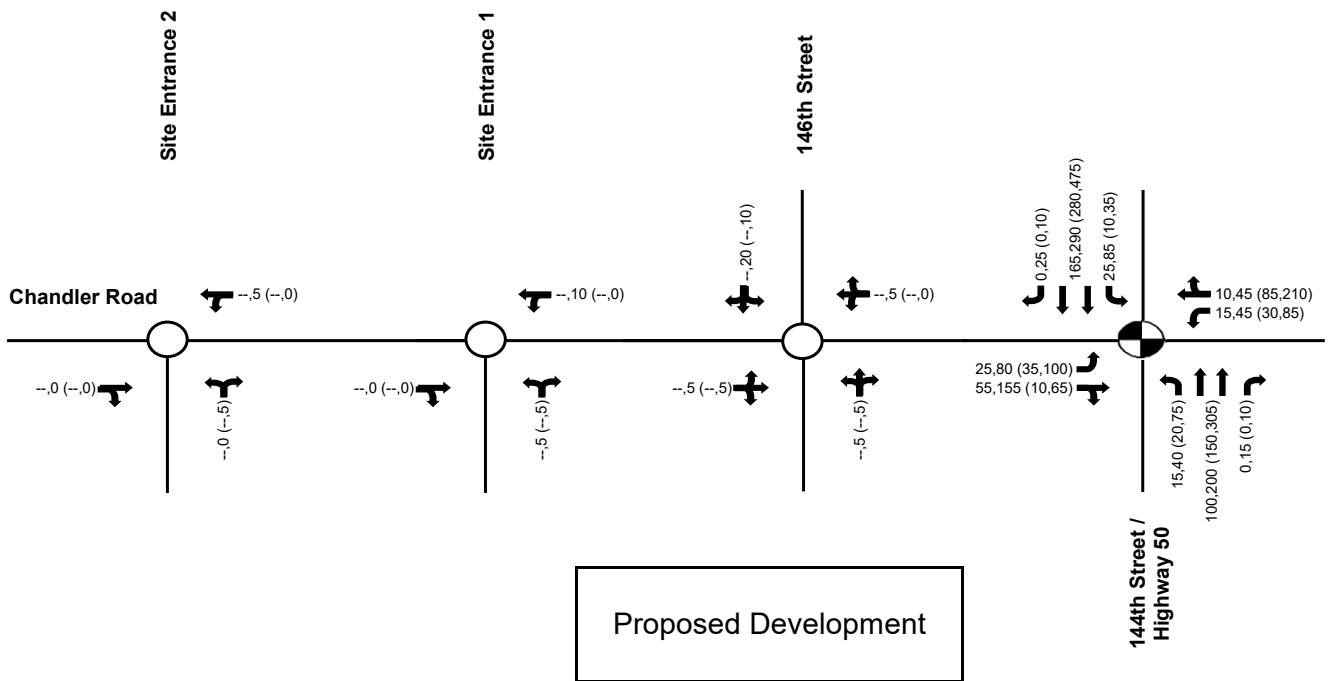
Queue Length AM 50th,95th (PM 50th,95th), feet
#: 95th percentile volume exceeds capacity, queue may be longer
~: Queue shown is maximum after two cycles

FIGURE 32
2050 BACKGROUND PEAK HOUR
QUEUE LENGTHS WITH IMPROVEMENTS



LEGEND	
	Unsignalized Intersection
	Signalized Intersection
	Future Intersection Leg
	Through Traffic Movement
	Turning Traffic Movement (Right or Left Movement)

FIGURE 33
2025 BUILD-OUT PEAK HOUR
QUEUE LENGTHS



Unsignalized Intersection

Signalized Intersection

Future Intersection Leg

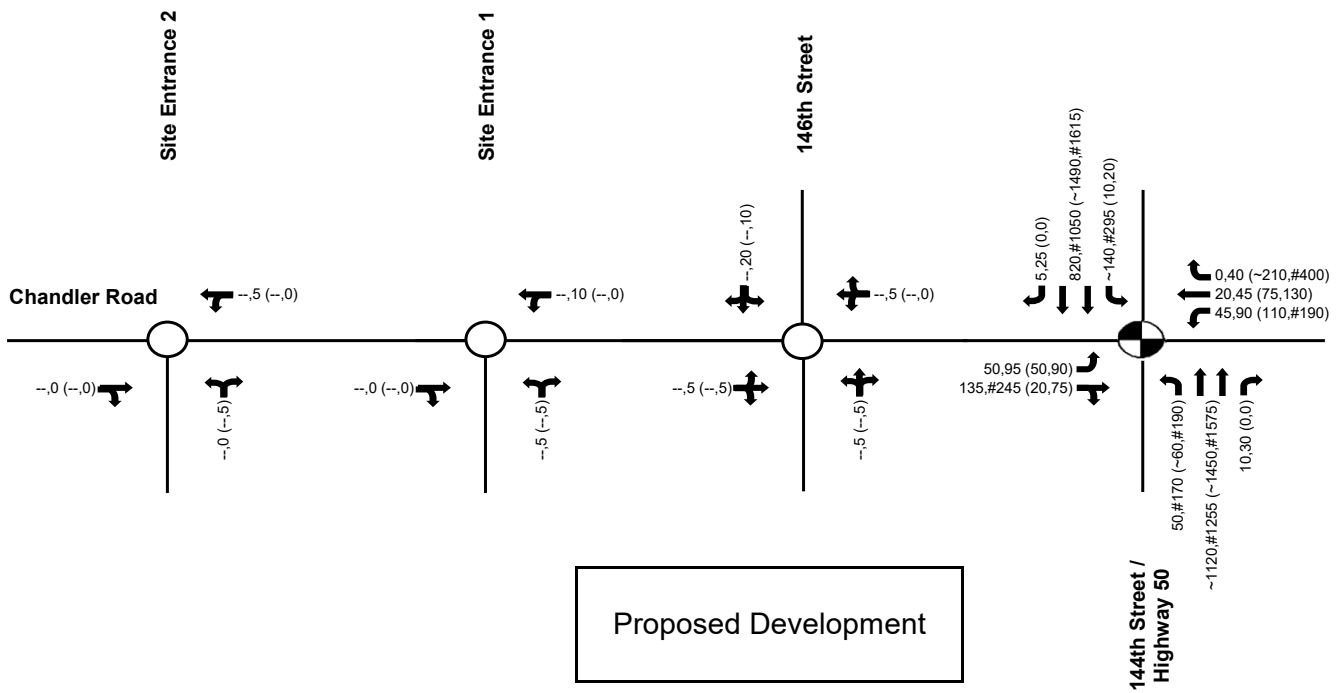
LEGEND

5,30 (60,165)

Through Traffic Movement

Turning Traffic Movement (Right or Left Movement)

FIGURE 34
2030 BUILD-OUT PEAK HOUR
QUEUE LENGTHS



Unsignalized Intersection

Signalized Intersection

Future Intersection Leg

LEGEND

5,30 (60,165)

Through Traffic Movement

Turning Traffic Movement (Right or Left Movement)

Queue Length AM 50th,95th (PM 50th,95th), feet

#: 95th percentile volume exceeds capacity, queue may be longer

--: Queue shown is maximum after two cycles

FIGURE 35
2050 BUILD-OUT PEAK HOUR
QUEUE LENGTHS

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

Following are the main conclusions and potential improvements:

- The site is anticipated to generate a total of 229 trips in the AM peak hour and 95 trips in the PM peak hour. In the AM peak hour, 202 vehicle trips will be entering the site and 27 trips exiting the site. For the PM peak hour, there will be 13 trips entering the site and 82 trips exiting the site.
- An annual growth rate of 3.5 percent was used along 144th Street. A 0.25 percent growth rate was used along Chandler Road adjacent to the site. The growth rates were determined based on MAPA projections.
- Synchro analysis shows that 144th Street/Highway 50 has the potential to be increased to three through lanes in the 2050 background scenario. In this same scenario, the existing traffic signal potentially needs to be improved to include a permissive/protected phase to the southbound, eastbound and westbound left turning movements. Finally, the westbound movement is anticipated to need to be improved to include a right turn lane at this same intersection. These improvements are all shown in the 2050 background scenario and do not include the Fenton Development traffic and are therefore, not due to the development.
- Traffic signal warrants were checked at the entrance intersections, no unsignalized intersections are anticipated to be above the threshold for a traffic signal in any scenario.
- None of the intersections along Chandler Road are anticipated to be above the threshold for a right or left turn lane.
- There appears to be one instance where the queue would be long enough to block an intersection. This is anticipated to occur at the intersection of 144th Street / Highway 50 and Chandler Road. The longest queue length occurs in the 2050 PM background scenario and the 2050 PM build-out scenario at the intersection of 144th Street / Highway 50 and Chandler Road. This 95th percentile length is estimated to be approximately 1,615 feet on the north leg of the intersection in both scenarios and is not affected by the site traffic.