



**Planning Commission
Meeting Agenda
April 2, 2024
Bentonville City Hall
Tech Review: 4:00 PM
Public Hearing: 5:00 PM**

Registration Link: <https://us06web.zoom.us/j/84244536287>

I. Call to Order

II. Approval of Minutes

- | | |
|--|------------------------------------|
| 1. March 19th, 2024 Meeting Minutes | Approval of Meeting Minutes |
|--|------------------------------------|

III. Consent Agenda

- | | |
|---|------------------|
| 1. Lots 225 & 226 of the Original Town of Bentonville Subdivision
301 West Central Avenue (LS22-0030) | Lot Split |
| 2. Lots 29 and 30, Block 11 of W.A. Burks Addition
1215 Fillmore Street (LS24-0004) | Lot Split |
| 3. Lots 13 and 14, Block 3 of Fairfield Addition
908 Southeast G Street (LS24-0006) | Lot Split |
| 4. Lots 1 and 2 of the Cottages at Simpson Farms Subdivision
3179 AR Highway 112 (LS24-0008) | Lot Split |
| 5. Lot 1 of Marsiglio Subdivision
505 Northeast 2nd Street (PLA24-0004) | Lot Split |
| 6. Lot 38 of Clark's Addition
208 Southwest E Street (PLA24-0005) | Lot Split |

IV. New Business

Advertised Public Hearings

- | | |
|---|------------------|
| 1. 0806 Investments LLC
1202 Northwest A Street (RZ24-0006)
Future Land Use Map Amendment: Open Space to Medium Density Residential (MDR)
Rezoning: R-1, Low-Density Single-Family Residential to R-2, Medium Density Two Family and Townhome Residential | Rezoning* |
|---|------------------|

2. **URAR 413 LLC** **Rezoning***
413 Southeast 4th Street ([RZ24-0007](#))
Future Land Use Map Amendment: High Density Residential (HDR)
to Downtown Commercial
Rezoning: R-3, Medium-High Density Multifamily Residential to DE, Downtown
Edge
3. **Dallaire** **Rezoning***
206 Southwest F Street ([RZ24-0008](#))
Rezoning: R-1, Low-Density Single-Family Residential to DN-2, Downtown
Medium Density Residential
4. **Manning** **Rezoning***
1003 Northwest A Street ([RZ24-0009](#))
Rezoning: R-1, Low-Density Single-Family Residential to DN-2, Downtown
Medium Density Residential
5. **Street Specifications** **Ordinance***
6. **Cottage Zoning** **Ordinance***

V. **Other New Business**

VI. **Old Business**

VII. **Other Business**

VIII. **Adjournment**



**Planning Commission
Meeting Agenda
March 19, 2024
Bentonville City Hall
Tech Review: 4:30 PM
Public Hearing: 5:00 PM**

Meeting Recording: https://us06web.zoom.us/rec/share/-Q_iSGkhLz4x-vZE5vcjC0fmWpAGQckWEobeKhE1oUOjB1PorWLFFVKNjX4QyOc.NfvwgfprwKLwLrBc

Commissioners Present: Reginald Wright (Chair) Via Zoom, Rod Sanders, Elaine Kerr, Danny Bennett, Dana Davis via Zoom, Joe Haynie

Commissioners Absent: Eric Hipp

Staff Present: Tyler Overstreet, Tom Adler, Bradley Gavrielides, Brittany Chue, Dan Weese, Keegan Stanton via Zoom, Jon Stanley via Zoom

I. Call to Order

- Commissioner Sanders calls the meeting to order at 5:00 pm.

II. Approval of Minutes

1. March 5th Meeting Minutes

Approval of Meeting Minutes

- Motion to approve by Haynie, second by Wright.
- Minutes are approved 6-0.

Commissioner Davis requests, without objection, that Item 1 of Other New Business with the associated waiver and condition of approval, and Item 1 of Old Business be moved to the Consent Agenda. No objections heard.

III. Consent Agenda

- 1. Lot 27, Block 17 Deming's Second Addition** **Property Line Adjustment**
505 Northwest C Street (PLA24-0003)
- 2. Lots 13 and 14, Block 2 of Sunset Addition** **Lot Split**
909 Northwest 9th Street (LS24-0001)
- 3. Lots 12, 13, 14, and 15, Block 2 Brathwaite Park Addition** **Lot Split**
1304 Bella Vista Road (LS23-0054)
- 4. Morningstar Subdivision** **Preliminary Plat**
South Morningstar Road & Gaston Road (PP24-0002)
Condition of Approval: The POA is to maintain the non-buildable portion of Lot 5 in perpetuity. Applicant shall work with staff to find the means acceptable to the city prior to Final Map approval.

Waiver 1: A waiver from Section 3.4.1.3 of the Bentonville Drainage Manual to allow the alignment of the storm pipe to the flowline rather than the soffit or crown.

5. **O'Reilly Auto Parts**

Waiver

Southwest Regional Airport Blvd. ([WAV24-0003](#))

- Mr. Adler provides a brief overview of the staff report for items on the consent agenda.
- Consent Agenda is approved 6-0.

IV. New Business

Advertised Public Hearings

1. **404 GLV, LLC**

Rezoning*

801 and 803 Northwest 8th Street ([RZ24-0005](#))

Future Land Use Map Amendment: Low Density Residential (LDR) to Medium Density Residential (MDR)

Rezoning: R-1, Low-Density Single-Family Residential to DN-2, Downtown Medium Density Residential

- Mr. Adler provides an overview of the staff report.
- Commissioner Sanders opens the public hearing.
- Bill Butler, representing the applicant, is here for any questions.
- Commissioner Sanders closes the public hearing.
- Discussion between the applicant and the Commission on land use, growth and increased development in the area and DN-2 functioning as a buffer district between downtown, commercial use, and residential.
- Future Land Use map amendment is approved 6-0.
- Rezone is approved 6-0.

V. Other New Business

1. **Williams**

Waiver

501 Jefferson Street ([WAV24-0006](#))

Waiver to Article 1100, Development Standards, Section 1100.02, Access Management Standards, (a) Curb cuts Section, (5) Number of curb cuts allowed.

- Mr. Adler provides an overview of the staff report.
- Marcella Williams, representing the applicant, is here for any questions.
- Discussion between Ms. Williams, Staff, and the Commission on traffic congestion, off-street parking, safety concerns, sidewalks, and the driveway infringing on a utility easement.
- Motion to approve the full-circle driveway (green) by Sanders, no second; motion is not recognized.
- Waiver failed for lack of motion.

VI. Old Business

VII. Other Business

VIII. Adjournment

- Motion to adjourn by Haynie, second by Kerr.
- Approved 6-0.
- Meeting Adjourned.



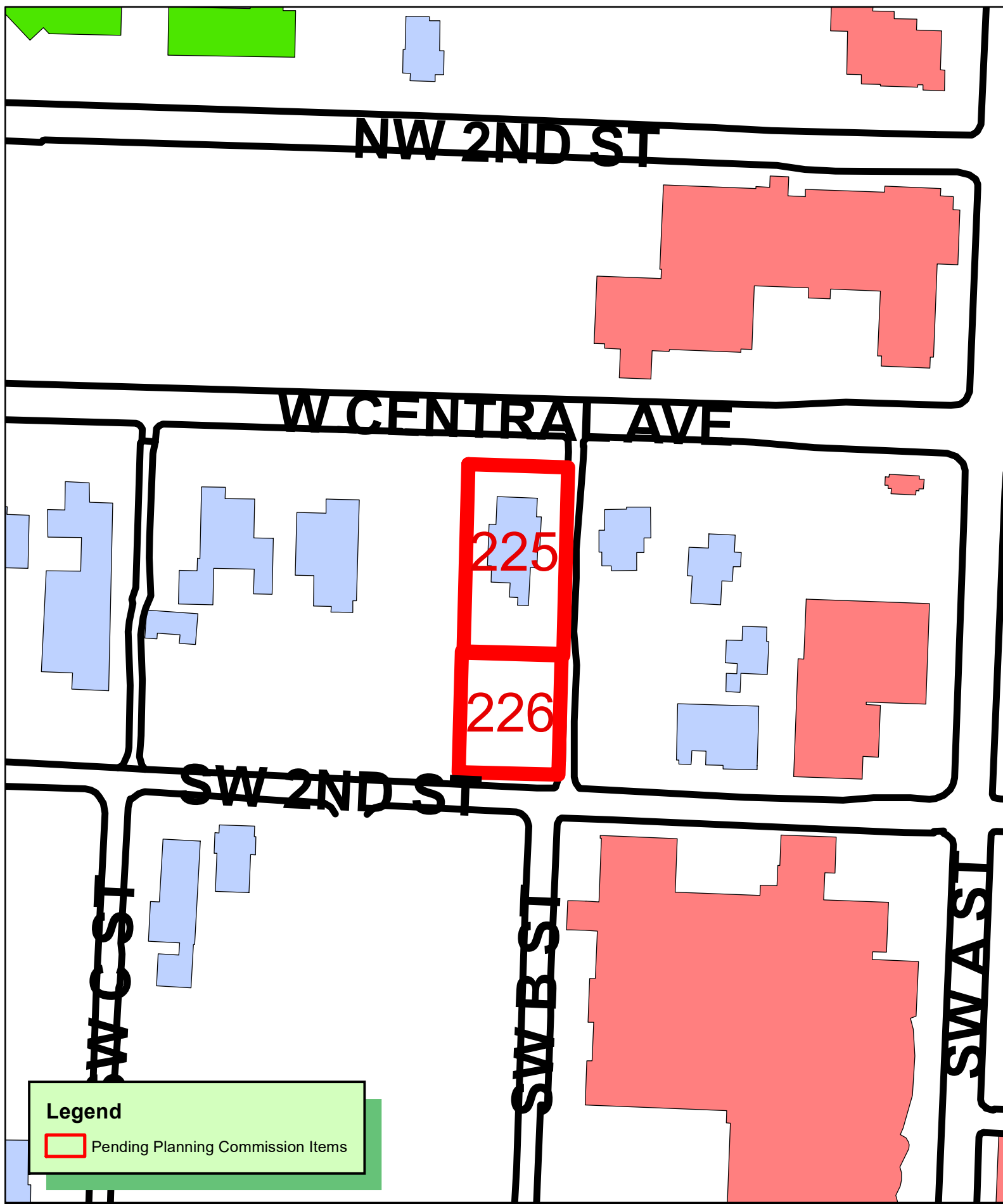
Consent Agenda Item [LS22-0030](#)

For the Planning Commission meeting on April 2, 2024

Details

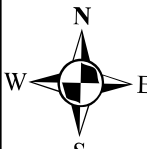
Lot Split: Lots 225 and 226 of the Original Town of Bentonville Subdivision, Culpepper Family TR, Robert Lee Jr & Bethany Joann, 301 West Central Avenue, R-1, Low-Density Single-Family Residential and DN-1, Downtown Low Density Residential, *LS22-0030*

A lot split of Lot 147A, creating new Lots 225 and 226 of the Original Town of Bentonville Subdivision. The plat dedicates a small portion of right-of-way along West Central and a 15' utility easement along Central. An existing utility easement is located on the lot line between these lots and the lot split being done to the west to provide adequate utility access to all newly created lots. No other dedications are proposed, no variances or waivers are associated with this request.



Legend

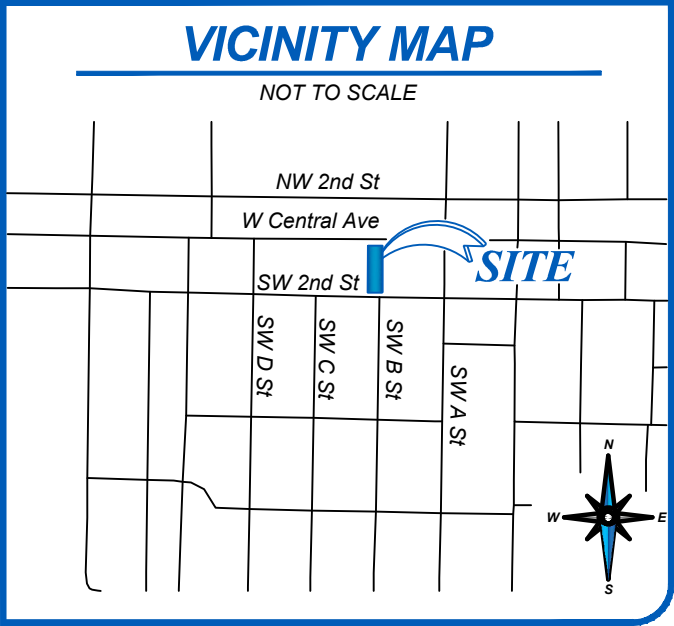
 Pending Planning Commission Items


1 inch = 100 feet

LS22-0030 8/2/22
LOT SPLIT
ORIGINAL TOWN OF BENTONVILLE SUB
LOTS 147-148 CREATING LOTS 225-226

THE CITY OF

BENTONVILLE
Page 6 of 21



LOT SPLIT FOR 147A

OF THE ORIGINAL TOWN OF BENTONVILLE SUBDIVISION

(CREATING LOTS 225 & 226)

301 W CENTRAL AVENUE, BENTONVILLE,

BENTON COUNTY, ARKANSAS 72712

FLOOD ZONE INFORMATION

BY GRAPHIC PLOTTING ONLY, NO PORTION OF THIS PROPERTY IS IN ZONE "A" OR "AE" OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 05007C0255K, WHICH BEARS AN EFFECTIVE DATE OF 06/05/2012 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.

ZONING INFORMATION

SETBACKS SHALL BE PER THE CURRENT ZONING DISTRICT AS STATED IN THE MOST RECENT CITY OF BENTONVILLE ZONING CODE.

UTILITY INFORMATION

THE LOCATION OF UTILITIES SHOWN HEREON ARE FROM OBSERVED EVIDENCE OF ABOVE GROUND APPURTENANCES ONLY. THE SURVEYOR WAS NOT PROVIDED WITH UNDERGROUND PLANS OR SURFACE GROUND MARKINGS TO DETERMINE THE LOCATION OF ANY SUBTERRANEAN USES. ALL UTILITY LOCATIONS HAVE BEEN FIELD VERIFIED.

SURVEY DESCRIPTION

PARENT TRACT: PARCEL #01-01088-000 (DEED BOOK 2013 PAGE 48597) LOT 147A, ORIGINAL TOWN OF BENTONVILLE, BENTON COUNTY, ARKANSAS, A REPLAT OF THE E 1/2 OF LOTS 147 & 148 AND THE EAST 1/2 OF A CLOSED 12 FOOT ALLEY BETWEEN LOTS 147 & 148, AS SHOWN IN PLAT RECORD 15 AT PAGE 11.

LOT 225:
BEING A PORTION OF LOT 147A, ORIGINAL TOWN OF BENTONVILLE, BENTON COUNTY, ARKANSAS, A REPLAT OF THE E 1/2 OF LOTS 147 & 148 AND THE EAST 1/2 OF A VACATED 12 FOOT ALLEY BETWEEN LOTS 147 & 148, AS SHOWN IN PLAT RECORD 15 AT PAGE 11, ALSO BEING DESCRIBED AS FOLLOWS:

COMMENCING AT A FOUND 5/8" REBAR MARKING THE NORTHEAST CORNER OF LOT 147, AS SHOWN IN PLAT BOOK "S" AT PAGE 75; THENCE S01°41'17"W 3.13 FEET TO A SET 5/8" REBAR BEING THE TRUE POINT OF BEGINNING; THENCE CONTINUING S01°41'17"W 160.04 FEET TO A SET 5/8" REBAR; THENCE N87°19'11"W 78.11 FEET TO A SET 5/8" REBAR; THENCE S01°39'54"W 99.53 FEET TO A SET 5/8" REBAR ON THE NORTH RIGHT-OF-WAY LINE OF SOUTHWEST 2ND STREET; THENCE ALONG SAID RIGHT-OF-WAY LINE N87°19'11"W 5.00 FEET TO A SET 5/8" REBAR; THENCE LEAVING SAID RIGHT-OF-WAY LINE, N01°39'54"E 258.23 FEET TO A SET 5/8" REBAR ON THE SOUTH RIGHT-OF-WAY LINE OF WEST CENTRAL AVENUE, SAID REBAR MARKING THE NORTHWEST CORNER OF SAID LOT 147A, AS SHOWN IN PLAT BOOK 15 AT PAGE 11; THENCE ALONG SAID RIGHT-OF-WAY LINE, S88°29'26"E 28.19 FEET TO A SET 5/8" REBAR; THENCE S88°02'04"E 24.76 FEET TO A SET 5/8" REBAR; THENCE S88°12'16"E 23.61 FEET TO A SET 5/8" REBAR; THENCE S88°04'48"E 6.60 FEET TO THE POINT OF BEGINNING, CONTAINING 0.316 ACRES, MORE OR LESS. SUBJECT TO EASEMENTS AND RIGHT-OF-WAYS OF RECORD.

LOT 226:
BEING A PORTION OF LOT 147A, ORIGINAL TOWN OF BENTONVILLE, BENTON COUNTY, ARKANSAS, A REPLAT OF THE E 1/2 OF LOTS 147 & 148 AND EAST 1/2 OF A VACATED 12 FOOT ALLEY BETWEEN LOTS 147 & 148, AS SHOWN IN PLAT RECORD 15 AT PAGE 11, BEING DESCRIBED AS FOLLOWS:

COMMENCING AT A FOUND 5/8" REBAR MARKING THE NORTHEAST CORNER OF LOT 147, AS SHOWN IN PLAT BOOK "S" AT PAGE 75; THENCE S01°41'17"W 3.13 FEET TO A SET 5/8" REBAR; THENCE CONTINUING S01°41'17"W 160.04 FEET TO A SET 5/8" REBAR BEING THE TRUE POINT OF BEGINNING; THENCE CONTINUING S01°41'17"W 99.52 FEET TO A SET 5/8" REBAR MARKING THE SOUTHEAST CORNER OF SAID LOT 147A, AS SHOWN IN PLAT BOOK 15 AT PAGE 11, SAID REBAR BEING LOCATED ON THE NORTH RIGHT-OF-WAY LINE OF SOUTHWEST 2ND STREET; THENCE ALONG SAID RIGHT-OF-WAY LINE N87°19'11"W 83.07 FEET TO A SET 5/8" REBAR; THENCE LEAVING SAID RIGHT-OF-WAY LINE, N01°39'54"E 99.53 FEET TO A SET 5/8" REBAR; THENCE S87°19'11"E 78.11 FEET TO THE POINT OF BEGINNING, CONTAINING 0.178 ACRES, MORE OR LESS. SUBJECT TO EASEMENTS AND RIGHT-OF-WAYS OF RECORD.

MISCELLANEOUS NOTES

COMPLETED FIELD WORK:
JUNE 1, 2022

BASIS OF BEARING
THE BASIS OF BEARING OF THIS SURVEY IS GRID NORTH, BASED ON ARKANSAS STATE PLANE COORDINATE SYSTEM, NORTH ZONE NAD83.

REFERENCE DOCUMENTS:
1. WARRANTY DEED FILED IN DEED BOOK 2013 AT PAGE 48597.
2. SURVEY PLAT FILED IN PLAT BOOK 15 AT PAGE 11.

SOME FEATURES SHOWN ON THIS PLAT MAY BE SHOWN OUT OF SCALE FOR CLARITY.

DIMENSIONS ON THIS PLAT ARE EXPRESSED IN FEET AND DECIMAL PARTS THEREOF UNLESS OTHERWISE NOTED. MONUMENTS WERE FOUND AT POINTS WHERE INDICATED.

EXCEPT AS SPECIFICALLY STATED OR SHOWN ON THIS PLAT, THIS SURVEY DOES NOT PURPORT TO REFLECT OF ANY OF THE FOLLOWING WHICH MAY BE APPLICABLE TO THE SUBJECT PROPERTY: EASEMENTS, OTHER THAN POSSIBLE EASEMENTS WHICH WERE VISIBLE AT THE TIME OF SURVEY; RESTRICTIVE COVENANTS; SUBDIVISION RESTRICTIONS OR OTHER LAND USE REGULATIONS; AND ANY OTHER FACTS WHICH AN ACCURATE TITLE SEARCH MAY DISCLOSE.

BEFORE ANY WORK IN THE RIGHT-OF-WAY COMMENCES, CONTRACTOR AND OR OWNER IS TO OBTAIN RIGHT-OF-WAY PERMIT FROM THE CITY OF BENTONVILLE TRANSPORTATION DEPARTMENT.

OWNER/DEVELOPER SHALL COORDINATE WITH ALL LOCAL UTILITIES TO ENSURE THAT EACH LOT HAS WATER, SEWER AND ELECTRIC SERVICE.

SIDEWALKS SHALL BE THE RESPONSIBILITY OF THE BUILDER/OWNER AT TIME OF BUILDING PERMIT ISSUANCE.

THERE MAY NOT BE FENCES OR ANY OTHER STRUCTURES BUILT IN ANY DRAINAGE EASEMENTS.

ALL STRUCTURES MUST MAINTAIN MINIMUM OF 20' CLEARANCES FROM ALL ELECTRIC LINES.

SIGNATURE BLOCKS

CERTIFICATE OF OWNERSHIP:
WE THE UNDERSIGNED, OWNERS OF THE REAL ESTATE SHOWN AND DESCRIBED HEREIN, DO HEREBY CERTIFY THAT WE HAVE LAID OFF, PLATTED, AND SUBDIVIDED AND DO HEREBY LAY OFF, PLAT, SUBDIVIDE SAID REAL ESTATE IN ACCORDANCE WITH THIS PLAT AND DO HEREBY DEDICATE TO THE USE OF THE PUBLIC THE STREETS, ALLEYS, DRIVES, EASEMENTS, ETC. AS SHOWN ON SAID PLAT.

DATE OF EXECUTION: _____

SIGNED: _____

NAME AND ADDRESS: _____

PRINT NAME: _____

SOURCE OF TITLE: D.R. _____

PAGE _____

CERTIFICATE OF APPROVAL:
PURSUANT TO THE BENTONVILLE LAND DEVELOPMENT CODE AND ALL OTHER CONDITIONS AND APPROVAL HAVING BEEN COMPLETED, THIS DOCUMENT IS HEREBY ACCEPTED. THIS CERTIFICATE IS HEREBY EXECUTED UNDER THE AUTHORITY OF THE SAID RULES AND REGULATIONS.

DATE OF EXECUTION: _____

SIGNED:
BENTONVILLE PLANNING COMMISSION CHAIRMAN

SIGNED: _____
MAYOR CITY OF BENTONVILLE

SIGNED: _____
CITY CLERK, CITY OF BENTONVILLE

CERTIFICATE OF SURVEYING ACCURACY:
I, HEATH A. MYERS, HEREBY CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS A BOUNDARY SURVEY MADE BY ME AND BOUNDARY MARKERS AND LOT CORNERS SHOWN HEREON ACTUALLY EXIST AND THEIR LOCATION, TYPE AND MATERIAL ARE CORRECTLY SHOWN AND ALL MINIMUM REQUIREMENTS OF THE ARKANSAS MINIMUM STANDARDS FOR LAND SURVEYORS HAVE BEEN MET.

DATE OF EXECUTION _____

HEATH A. MYERS
REGISTERED PROFESSIONAL LAND SURVEYOR
NO. AR 1826
STATE OF ARKANSAS

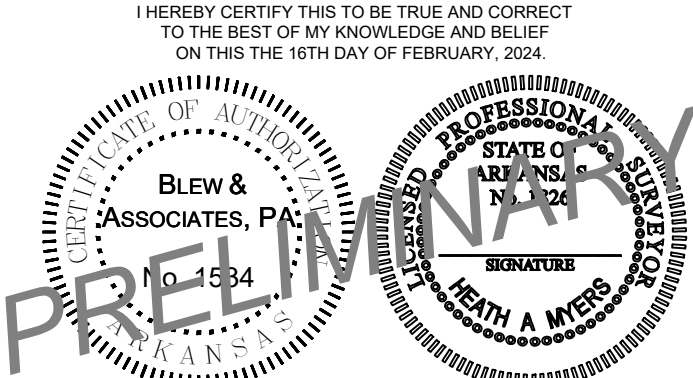
STATE OF ARKANSAS
COUNTY OF _____
SUBSCRIBED AND SWORN BEFORE ME THIS _____ DAY OF _____, 2024.

NOTARY PUBLIC _____

MY COMMISSION EXPIRES _____

SHEET 1 OF 2

DATE	REVISION
7/11/2022	PLANNING COMMENTS
7/19/2022	PLANNING COMMENTS



IF THE SIGNATURE ON THIS SEAL IS NOT AN ORIGINAL AND NOT BLUE IN COLOR THEN IT SHOULD BE ASSUMED THAT THIS PLAT MAY HAVE BEEN ALTERED. THE ABOVE CERTIFICATION SHALL NOT APPLY TO ANY COPY THAT DOES NOT BEAR AN ORIGINAL SEAL AND SIGNATURE.



3825 N. SHILOH DRIVE - FAYETTEVILLE, AR 72703
EMAIL: SURVEY@BLEWINC.COM
OFFICE: 479.443.4506 · FAX: 479.582.1883
EMAIL: SURVEY@BLEWINC.COM · WWW.BLEWINC.COM

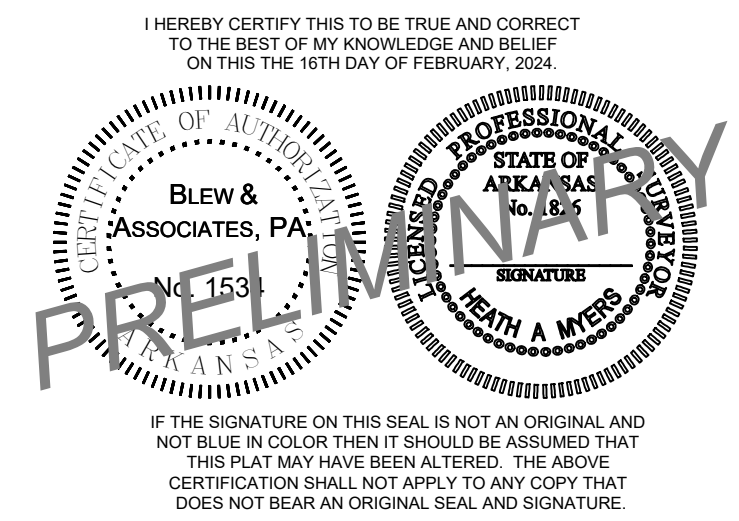
SURVEYOR JOB NUMBER: 22-1289.01	SURVEY DRAWN BY: ANS - 06/09/2022
SURVEY REVIEWED BY: TPN	SCALE: 1" = 30'
FOR THE USE AND BENEFIT OF: ROBERT & BETHANY CULPEPPER	

COB PROJECT NUMBER: LS22-0030

301 W CENTRAL AVENUE, BENTONVILLE,
BENTON COUNTY, ARKANSAS 72712



- | LINE | BEARING | DISTANCE |
|------|---------------|----------|
| L1 | S 88°29'26" E | 28.19' |
| L2 | S 88°02'04" E | 24.76' |
| L3 | S 88°12'16" E | 23.61' |
| L4 | S 88°04'48" E | 6.60' |



3825 N. SHILOH DRIVE - FAYETTEVILLE, AR 72703
EMAIL: SURVEY@BLEWINC.COM
OFFICE: 479.443.4506 - FAX: 479.582.1883
EMAIL: SURVEY@BLEWINC.COM-WWW.BLEWINC.COM

SCALE:
1" = 30'

FOR THE USE AND BENEFIT OF:
ROBERT & BETHANY CUI PEPPER

COB PROJECT NUMBER: LS22-0030

ORDINANCE NO. _____

**AN ORDINANCE ACCEPTING A LOT SPLIT OF LOT 147A OF THE
ORIGINAL TOWN OF BENTONVILLE SUBDIVISION CREATING NEW LOTS
225 AND 226 OF THE ORIGINAL TOWN OF BENTONVILLE SUBDIVISION
TO THE CITY OF BENTONVILLE, ARKANSAS; AND FOR OTHER
PURPOSES.
(PROJECT NUMBER: LS22-0030)**

WHEREAS, pursuant to the provisions of the Land Development Code of the Bentonville Municipal Code, the lot split of LOT 147A OF THE ORIGINAL TOWN OF BENTONVILLE SUBDIVISION creating new LOTS 225 AND 226 OF THE ORIGINAL TOWN OF BENTONVILLE SUBDIVISION, Benton County, Arkansas, was submitted to the Bentonville Planning Commission on April 2, 2024;

WHEREAS, said lot split is attached hereto as Exhibit “A”;

WHEREAS, the Bentonville Planning Commission considered said lot split on the date stated, and at other times, and voted to recommend the approval of said lot split to the City Council; and

WHEREAS, the lot split of real property as described herein has been submitted to the City Council of the City of Bentonville and, after consideration and deliberation, said Council is of the opinion that said lot split should be approved.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL FOR THE CITY OF BENTONVILLE, ARKANSAS:

Section 1: That the lot split of LOT 147A OF THE ORIGINAL TOWN OF BENTONVILLE SUBDIVISION creating new LOTS 225 AND 226 OF THE ORIGINAL TOWN OF BENTONVILLE SUBDIVISION to the City of Bentonville, Arkansas, should be and the same is hereby accepted and approved for all purposes;

Section 2: That the Mayor and City Clerk be and are hereby authorized and directed to evidence the acceptance of said lot split by certifying said acceptance on the approved lot split;

Section 3 - Severability Provision: If any part of this Ordinance is held invalid, the remainder of this Ordinance shall continue in effect as if such invalid portion never existed; and

Section 4 - Repeal of Conflicting Provisions: All Ordinances, Resolutions, or Orders of the City Council, or parts of the same, in conflict with this Ordinance are repealed to the extent of such conflict.

PASSED AND APPROVED this _____ day of _____,
2024.

APPROVED:

ATTEST:

Stephanie Orman, Mayor

Malorie Marrs, City Clerk



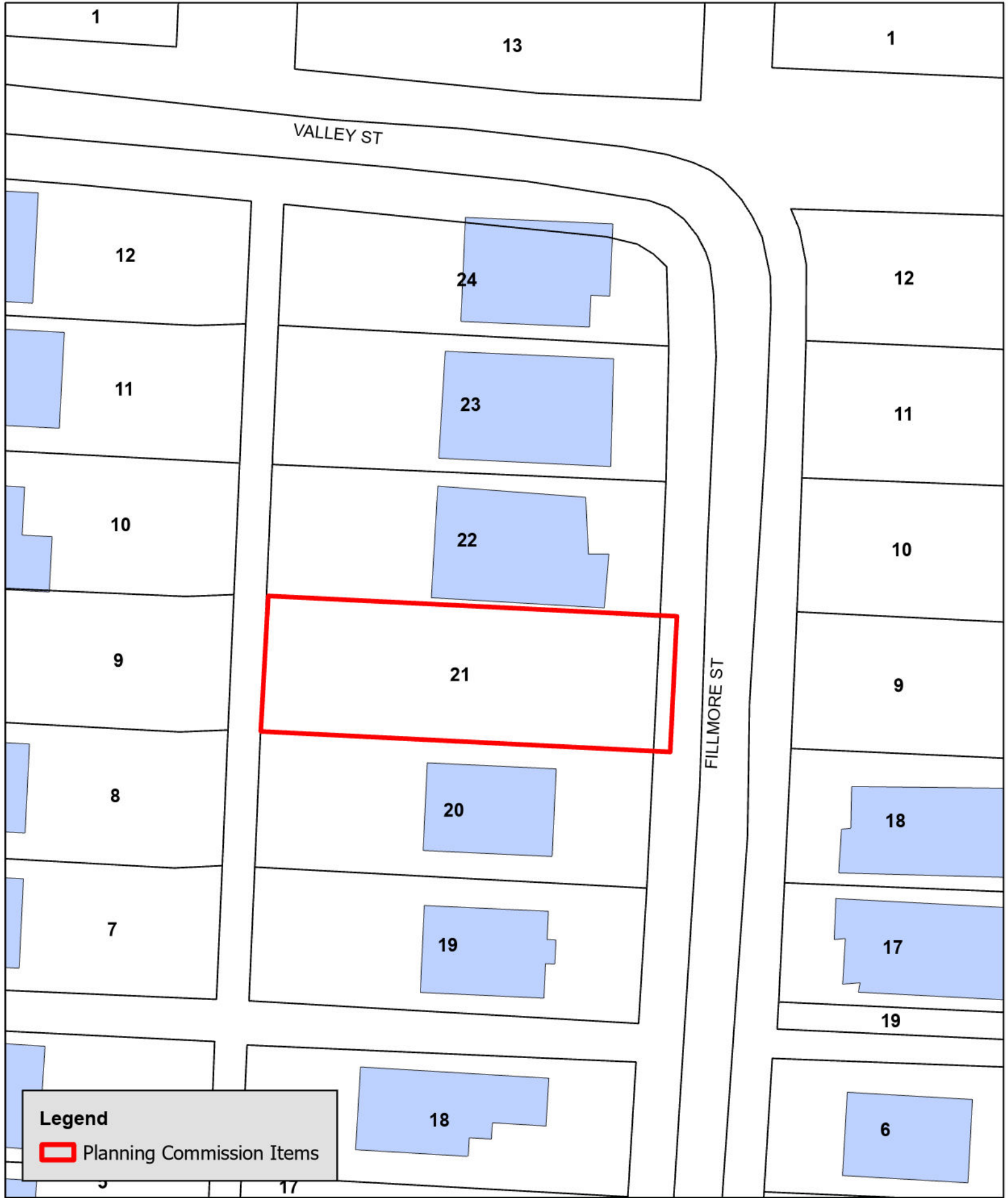
Consent Agenda Item [LS24-0004](#)

For the Planning Commission meeting on April 2, 2024

Details

Lot Split: Lots 29 and 30, Block 11 of W. A. Burk's Addition, BV Way Properties LLC, 1215 Fillmore Street, DN-2, Downtown Medium Density Residential, LS24-0004

A lot split of old Lot 21, Block 11 of W. A. Burk's Addition, creating new Lots 29 and 30, Block 11 of W. A. Burk's Addition. The plat dedicates a 12-foot utility easement along the east property line abutting Northeast Fillmore Street. Adequate right of way is already present.



Legend

 Planning Commission Items



LS24-0004
Lot Split
Lot 21 WA Burks Add LSP



NOTES:

1. PARCEL NUMBER: 01-04605-001.
2. CURRENT ZONING: DOWNTOWN MEDIUM DENSITY RESIDENTIAL (DN-2).
3. OWNER: BV WAY PROPERTIES LLC. / TODD JACOBS - P.O. BOX 1285 - BENTONVILLE, AR. 72712. PHONE NUMBER 479-466-1717.
4. ROTATION BASED ON ARKANSAS STATE PLANE GRID NORTH ZONE (NAD83).
5. BOUNDARY BASED ON FINAL PLAT OF W.A. BURK'S ADDITION PLAT RECORD A AT PAGE 81 AND 119 AND SURVEY FILE #L202053245.
6. THIS PROPERTY IS NOT AFFECTED BY THE 100 YEAR FLOOD PLAIN AS PER FIRM #05007C0090J DATED SEPTEMBER 28, 2007.
7. ALL STRUCTURES MUST MAINTAIN MINIMUM OF 20' CLEARANCES FROM ALL ELECTRIC LINES.
8. BEUD'S STANDARD PRACTICE IS TO PLACE UNDERGROUND EQUIPMENT (TRANSFORMERS, SECONDARY PEDESTALS, JUNCTION BOXES, ETC.) ON THE LOT LINE OF A DEVELOPMENT. ANY ADJUSTMENTS TO THE PROPERTY LINE THAT RESULT IN OUR EQUIPMENT NOT BEING ON THE LOT LINE WILL REQUIRE THE DEVELOPER TO PAY FOR THE COST OF BEUD TO RELOCATE THE EQUIPMENT TO THE LOT LINE.
9. IT IS THE RESPONSIBILITY OF THE DEVELOPER TO COORDINATE WITH THE NEW SERVICE COORDINATOR @ 479-271-3139 TO DETERMINE IF EQUIPMENT IS IN CONFLICT.
10. IT IS THE RESPONSIBILITY OF THE DEVELOPER TO PAY FOR ANY COSTS ASSOCIATED WITH MOVING OF EQUIPMENT. THIS INCLUDES BUT IS NOT LIMITED TO ANY COSTS ASSOCIATED WITH LOSS OF EQUIPMENT (WIRE AND ELBOWS) AND LABOR AND MATERIAL TO MOVE THE EQUIPMENT TO THE NEW LOT LINE.
11. BEFORE ANY WORK IN THE RIGHT-OF-WAY COMMENCES, CONTRACTOR AND OR OWNER IS TO OBTAIN RIGHT-OF-WAY PERMIT FROM THE CITY OF BENTONVILLE TRANSPORTATION DEPARTMENT.
12. OWNER/DEVELOPER SHALL COORDINATE WITH ALL LOCAL UTILITIES TO ENSURE THAT EACH LOT HAS WATER, SEWER AND ELECTRIC SERVICE.
13. SIDEWALKS SHALL BE THE RESPONSIBILITY OF THE BUILDER/OWNER AT TIME OF BUILDING PERMIT ISSUANCE.
14. THERE MAY NOT BE FENCES OR ANY OTHER STRUCTURES BUILT IN ANY DRAINAGE EASEMENTS.
15. SETBACKS SHALL BE PER THE CURRENT ZONING DISTRICT AS STATED IN THE MOST RECENT CITY OF BENTONVILLE ZONING CODE. FOR MORE INFO VISIT WWW.BENTONVILLEPLANNING.COM OR CALL THE PLANNING DEPARTMENT @ 479-271-3122.
16. THERE ARE NO WAIVERS, VARIANCES AND/OR CONDITIONAL USES AT THE TIME OF PREPARING THIS PLAT OR PLAN.

LEGAL DESCRIPTION: (PARCEL #01-04605-001)

Lot 21 in Block 11 of W.A. Burk's Addition to the City of Bentonville as per Plat Record A Page 81 and 119 recorded in the office of the Circuit Clerk and Ex-Officio Recorder of Benton County, Arkansas, and being described as follows: Beginning at the SW Corner of said Lot 21, said point being the POINT OF BEGINNING, thence N03°09'31"E 50.03 feet, thence S87°08'50"E 150.79 feet, thence S02°49'16"W 50.08 feet, thence N87°07'52"W 151.09 feet to the POINT OF BEGINNING: Containing 7,555.16 square feet or 0.17 acres more or less subject to easements and right of way of record.

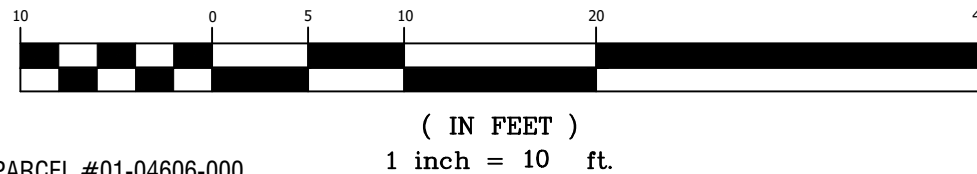
LEGAL DESCRIPTION: (NEW LOT 29)

A part of Lot 21 in Block 11 of W.A. Burk's Addition to the City of Bentonville as per Plat Record A Page 81 and 119 recorded in the office of the Circuit Clerk and Ex-Officio Recorder of Benton County, Arkansas, and being described as follows: Commencing at the SW Corner of said Lot 21, thence N03°09'31"E 27.01 feet to the POINT OF BEGINNING; thence N03°09'31"E 23.02 feet, thence S87°08'50"E 150.79 feet, thence S02°49'16"W 23.02 feet, thence N87°08'50"W 150.93 feet to the POINT OF BEGINNING: Containing 3,473.16 square feet or 0.08 acres more or less subject to easements and right of way of record.

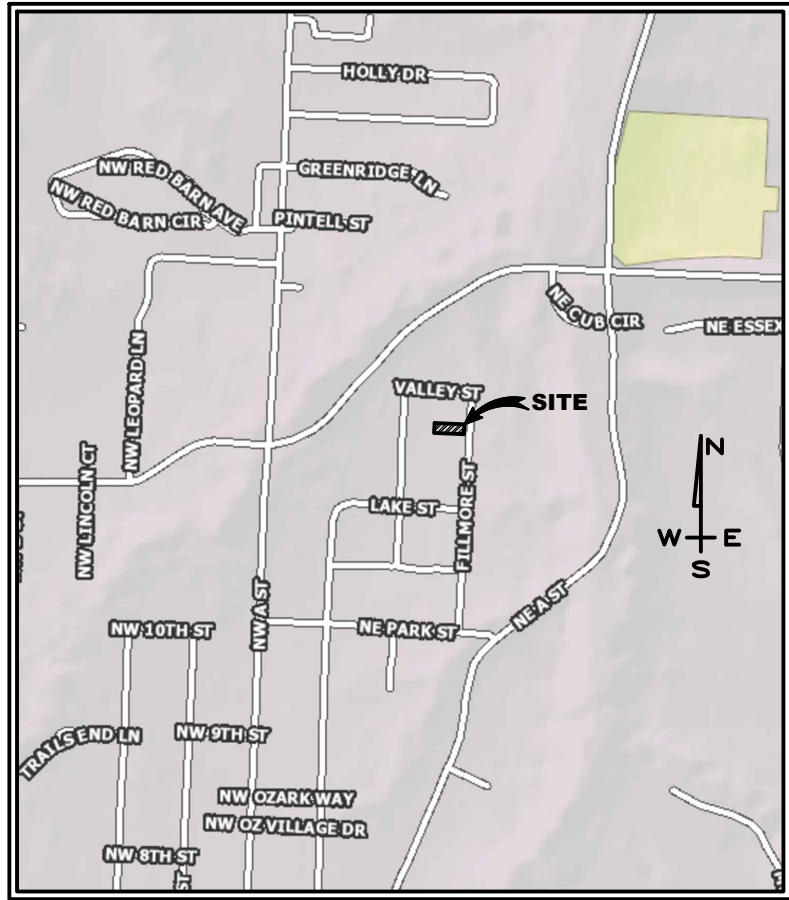
LEGAL DESCRIPTION: (NEW LOT 30)

A part of Lot 21 in Block 11 of W.A. Burk's Addition to the City of Bentonville as per Plat Record A Page 81 and 119 recorded in the office of the Circuit Clerk and Ex-Officio Recorder of Benton County, Arkansas, and being described as follows: Beginning at the SW Corner of said Lot 21, said point being the POINT OF BEGINNING, thence N03°09'31"E 27.01 feet, thence S87°08'50"E 150.93 feet, thence S02°49'16"W 27.05 feet, thence N87°07'52"W 151.09 feet to the POINT OF BEGINNING: Containing 4,082.00 square feet or 0.09 acres more or less subject to easements and right of way of record.

GRAPHIC SCALE



VICINITY MAP



ORDINANCE NO. _____

**AN ORDINANCE ACCEPTING A LOT SPLIT OF LOT 21, BLOCK 11 OF W.A. BURKS ADDITION CREATING NEW LOTS 29 AND 30, BLOCK 11 OF W.A. BURKS ADDITION TO THE CITY OF BENTONVILLE, ARKANSAS; AND FOR OTHER PURPOSES.
(PROJECT NUMBER: LS24-0004)**

WHEREAS, pursuant to the provisions of the Land Development Code of the Bentonville Municipal Code, the lot split of LOT 21, BLOCK 11 OF W.A. BURKS ADDITION creating new LOTS 29 AND 30, BLOCK 11 OF W.A. BURKS ADDITION, Benton County, Arkansas, was submitted to the Bentonville Planning Commission on April 2, 2024;

WHEREAS, said lot split is attached hereto as Exhibit “A”;

WHEREAS, the Bentonville Planning Commission considered said lot split on the date stated, and at other times, and voted to recommend the approval of said lot split to the City Council; and

WHEREAS, the lot split of real property as described herein has been submitted to the City Council of the City of Bentonville and, after consideration and deliberation, said Council is of the opinion that said lot split should be approved.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL FOR THE CITY OF BENTONVILLE, ARKANSAS:

Section 1: That the lot split of LOT 21, BLOCK 11 OF W.A. BURKS ADDITION creating new LOTS 29 AND 30, BLOCK 11 OF W.A. BURKS ADDITION to the City of Bentonville, Arkansas, should be and the same is hereby accepted and approved for all purposes;

Section 2: That the Mayor and City Clerk be and are hereby authorized and directed to evidence the acceptance of said lot split by certifying said acceptance on the approved lot split;

Section 3 - Severability Provision: If any part of this Ordinance is held invalid, the remainder of this Ordinance shall continue in effect as if such invalid portion never existed; and

Section 4 - Repeal of Conflicting Provisions: All Ordinances, Resolutions, or Orders of the City Council, or parts of the same, in conflict with this Ordinance are repealed to the extent of such conflict.

PASSED AND APPROVED this _____ day of _____, 2024.

APPROVED:

Stephanie Orman, Mayor

ATTEST:

Malorie Marrs, City Clerk



Consent Agenda Item [LS24-0006](#)

For the Planning Commission meeting on April 2, 2024

Details

Lot Split: Lots 13 and 14, Block 3 of Fairfield Addition, Himageeta Kalluri, 908 Southeast G Street, DN-3, Downtown High Density Residential, LS24-0006

A lot split of existing Lot 2, Block 3 of Fairfield Addition, creating new Lots 13 and 14, Block 3 of Fairfield Addition. The plat dedicates a 15-foot utility easement along the east property line abutting Southeast G Street. Per the requirements of the current Master Streets Plan, the plat also dedicates additional right-of-way along Southeast G Street. Adequate right-of-way is already present.

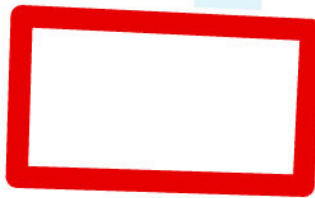


Pending PC Items

DURHAM

SE G ST

SE 10TH ST



LS24-0006
908 SE G St
Lot Split



ORDINANCE NO. _____

**AN ORDINANCE ACCEPTING A LOT SPLIT OF LOT 2, BLOCK 3 OF
FAIRFIELD ADDITION CREATING NEW LOTS 13 AND 14, BLOCK 3 OF
FAIRFIELD ADDITION TO THE CITY OF BENTONVILLE, ARKANSAS; AND
FOR OTHER PURPOSES.
(PROJECT NUMBER: LS24-0006)**

WHEREAS, pursuant to the provisions of the Land Development Code of the Bentonville Municipal Code, the lot split of LOT 2, BLOCK 3 OF FAIRFIELD ADDITION creating new LOTS 13 AND 14, BLOCK 3 OF FAIRFIELD ADDITION, Benton County, Arkansas, was submitted to the Bentonville Planning Commission on April 2, 2024;

WHEREAS, said lot split is attached hereto as Exhibit “A”;

WHEREAS, the Bentonville Planning Commission considered said lot split on the date stated, and at other times, and voted to recommend the approval of said lot split to the City Council; and

WHEREAS, the lot split of real property as described herein has been submitted to the City Council of the City of Bentonville and, after consideration and deliberation, said Council is of the opinion that said lot split should be approved.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL FOR THE CITY OF BENTONVILLE, ARKANSAS:

Section 1: That the lot split of LOT 2, BLOCK 3 OF FAIRFIELD ADDITION creating new LOTS 13 AND 14, BLOCK 3 OF FAIRFIELD ADDITION to the City of Bentonville, Arkansas, should be and the same is hereby accepted and approved for all purposes;

Section 2: That the Mayor and City Clerk be and are hereby authorized and directed to evidence the acceptance of said lot split by certifying said acceptance on the approved lot split;

Section 3 - Severability Provision: If any part of this Ordinance is held invalid, the remainder of this Ordinance shall continue in effect as if such invalid portion never existed; and

Section 4 - Repeal of Conflicting Provisions: All Ordinances, Resolutions, or Orders of the City Council, or parts of the same, in conflict with this Ordinance are repealed to the extent of such conflict.

**PASSED AND APPROVED this _____ day of _____,
2024.**

APPROVED:

Stephanie Orman, Mayor

ATTEST:

Malorie Marrs, City Clerk



Consent Agenda Item [LS24-0008](#)

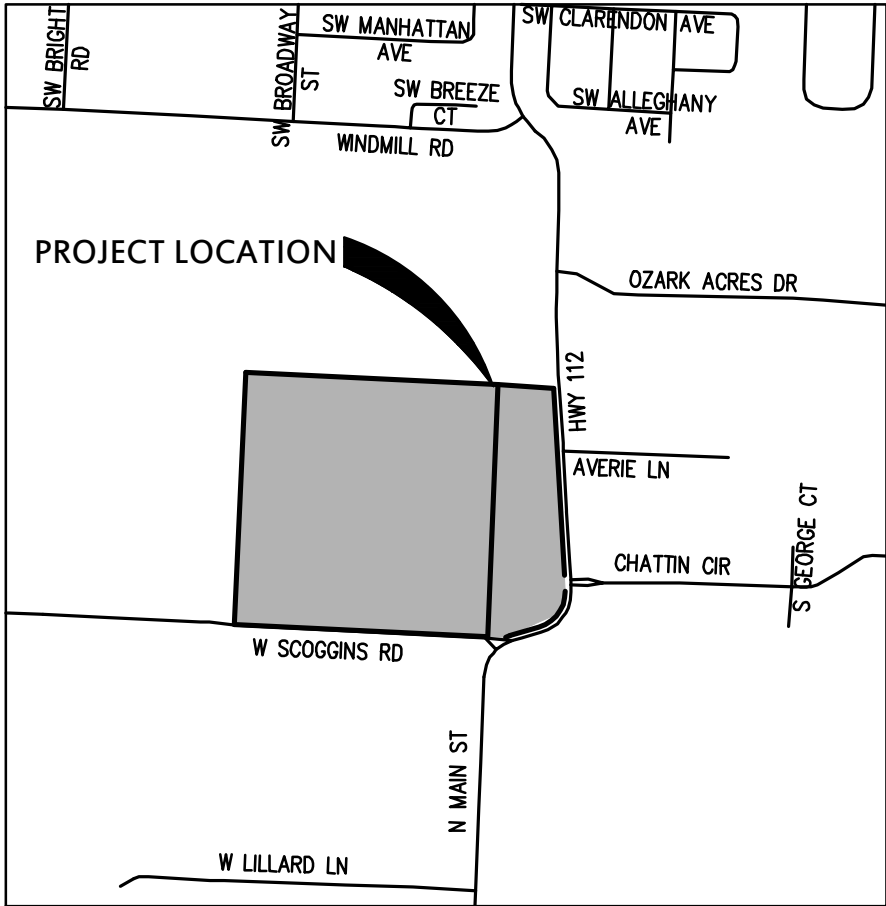
For the Planning Commission meeting on April 2, 2024

Details

Lot Split: Lots 1 and 2, of Cottages at Simpson Farms Subdivision, Cottages at Simpson Farms, LLC, 3179 AR 112 Hwy, R-3, Medium-High Density Multifamily Residential, LS24-0008

A lot split of unplatted section land, creating new Lots 1 and 2, of Cottages at Simpson Farms Subdivision. Per the requirements of the current Master Street Plan, the plat dedicates right-of-way along both Highway 112 and West Scroggins Road. A public drainage easement to convey stormwater, a public access easement to allow ingress/egress, and various utility easements to serve the lots are all being dedicated with plat.

LOT SPLIT CREATING LOTS 1 AND 2 COTTAGES AT SIMPSON FARMS SUBDIVISION



VICINITY MAP NTS

DESCRIPTION PARENT PARCEL 01--08215--425:

PART OF THE SE 1/4 OF THE NE 1/4 AND THE SW 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP 19 NORTH, RANGE 31 WEST, BENTON COUNTY ARKANSAS, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF THE SW 1/4 OF THE NE 1/4 OF SAID SECTION 24; THENCE ALONG THE SOUTH LINE THEREOF N87°20'18"W 1319.25 FEET TO THE SOUTHWEST CORNER OF THE SW 1/4 OF THE NE 1/4 OF SAID SECTION 24, SAID POINT BEING A RAILROAD SPIKE; THENCE ALONG THE WEST LINE THEREOF N02°35'13"E 1316.95 FEET TO THE NORTHWEST CORNER OF THE SW 1/4 OF THE NE 1/4 OF SAID SECTION 24, SAID POINT BEING A 5/8" IRON PIN LABELED PS 1439; THENCE ALONG THE NORTH LINE THEREOF S87°06'24"E 1316.20 FEET TO THE NORTHWEST CORNER OF THE SE 1/4 OF THE NE 1/4 OF SAID SECTION 24, SAID POINT BEING A 5/8" IRON PIN LABELED PS 1439; THENCE ALONG THE NORTH LINE THEREOF S86°37'13"E 289.96 FEET TO THE WESTERN PRESCRIPTIVE RIGHT-OF-WAY LINE OF ARKANSAS STATE HIGHWAY 112 AS SHOWN IN STATE PLAT 201309090023 BY ENGINEERING SERVICES, INC, DAVID A. WALKINS, PS 1439, DATED AUGUST 29, 2013, WORK ORDER 13373, SAID POINT BEING A 5/8" IRON PIN LABELED PS 1439; THENCE ALONG SAID RIGHT-OF-WAY THE FOLLOWING FIVE COURSES: THENCE S03°17'44"E 974.88 FEET; THENCE S01°56'34"E 83.67 FEET TO A 5/8" IRON PIN LABELED PS 1439; THENCE 248.77 FEET ALONG A CURVE TO THE RIGHT WITH A RADIUS OF 188.61 FEET AND A LONG CHORD OF S35°50'10"W 231.12 FEET TO A 5/8" IRON PIN LABELED PS 1439; THENCE S73°37'15"W 156.49 FEET TO A 5/8" IRON PIN; THENCE 28.88 FEET ALONG A CURVE TO THE LEFT WITH A RADIUS OF 249.37 FEET AND A LONG CHORD OF S69°43'29"W 26.87 FEET TO A 5/8" IRON PIN LABELED PS 1439, SAID POINT BEING ON THE SOUTH LINE OF THE SE 1/4 OF THE NE 1/4 OF SAID SECTION 24; THENCE ALONG SAID SOUTH LINE N87°20'18"W 93.91 FEET TO THE POINT OF BEGINNING, CONTAINING 49.92 ACRES, MORE OR LESS AND SUBJECT TO ANY AND ALL EASEMENTS OF RECORD OR FACT.

OWNER:

COTTAGES AT SIMPSON FARMS, LLC
1501 HONEYSUCKLE RD STE 2
DOTHAN, AL 36305
JONATHAN@4DEVELOPMENTLLC.COM
202--309--0999

CERTIFICATE OF OWNERSHIP PARCEL 01--04651--000

WE THE UNDERSIGNED, OWNERS OF THE REAL ESTATE SHOWN AND DESCRIBED HEREIN, DO HEREBY CERTIFY THAT WE HAVE LAID OFF, PLATTED, AND SUBDIVIDED AND DO HEREBY LAY OFF, PLAT, SUBDIVIDE SAID REAL ESTATE IN ACCORDANCE WITH THIS PLAT AND DO HEREBY DEDICATE TO THE USE OF THE PUBLIC THE STREETS, ALLEYS, DRIVES, EASEMENTS, ETC. AS SHOWN ON SAID PLAT.

DATE OF EXECUTION: _____

BY: _____

COTTAGES AT SIMPSON FARMS, LLC

(PRINT)

SOURCE OF TITLE: DEED L202362729

STATE OF ARKANSAS

} SS

COUNTY OF BENTON
SUBSCRIBED AND SWORN BEFORE ME THIS ____ DAY OF _____, 2023
MY COMMISSION EXPIRES:

NOTARY PUBLIC _____

DESCRIPTION LOT 1:

PART OF THE SW 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP 19 NORTH, RANGE 31 WEST, BENTON COUNTY ARKANSAS, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE SW 1/4 OF THE NE 1/4 OF SAID SECTION 24, SAID POINT BEING A RAILROAD SPIKE;
THENCE ALONG THE WEST LINE THEREOF N02°35'13"E 35.00 FEET TO THE POINT OF BEGINNING;
THENCE CONTINUING ALONG SAID WEST LINE SAID WEST LINE N02°35'13"E 1281.95 FEET TO THE NORTHWEST CORNER OF THE SW 1/4 OF THE NE 1/4 OF SAID SECTION 24, SAID POINT BEING A 5/8" IRON PIN LABELED PS 1439;
THENCE ALONG THE NORTH LINE THEREOF S87°06'24"E 1239.18 FEET;
THENCE LEAVING SAID NORTH LINE S03°20'08"W 940.51 FEET;
THENCE S00°21'33"W 310.01 FEET;
THENCE S25°26'40"W 29.00 FEET;
THENCE N87°20'18"W 1227.65 FEET TO THE POINT OF BEGINNING, CONTAINING 36.22 ACRES, MORE OR LESS AND SUBJECT TO ANY AND ALL EASEMENTS OF RECORD OR FACT.

DESCRIPTION LOT 2:

PART OF THE SE 1/4 OF THE NE 1/4 AND THE SW 1/4 OF THE NE 1/4 OF SECTION 24, TOWNSHIP 19 NORTH, RANGE 31 WEST, BENTON COUNTY ARKANSAS, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE SW 1/4 OF THE NE 1/4 OF SAID SECTION 24, SAID POINT BEING A RAILROAD SPIKE;
THENCE ALONG THE WEST LINE THEREOF N02°35'13"E 35.00 FEET;
THENCE LEAVING SAID WEST LINE S87°20'18"E 1227.65 FEET TO THE POINT OF BEGINNING
THENCE N25°26'40"E 29.00 FEET;
THENCE N00°21'33"E 310.01 FEET;
THENCE N03°20'08"E 940.51 FEET TO THE NORTH LINE OF THE SW 1/4 OF THE NE 1/4 OF SAID SECTION 24;
THENCE ALONG SAID NORTH LINE S87°06'24"E 77.02 FEET TO THE NORTHWEST CORNER OF THE SE 1/4 OF THE NE 1/4 OF SAID SECTION 24, SAID POINT BEING A 5/8" IRON PIN LABELED PS 1439;
THENCE ALONG THE NORTH LINE THEREOF S86°37'13"E 274.86 FEET;
THENCE LEAVING SAID NORTH LINE S03°17'44"E 976.46 FEET;
THENCE S01°56'34"E 83.53 FEET;
THENCE 228.94 FEET ALONG A CURVE TO THE RIGHT WITH A RADIUS OF 173.61 FEET AND A LONG CHORD OF S35°50'32"W 212.71 FEET;
THENCE S73°37'15"W 124.77 FEET;
THENCE N87°20'18"W 235.39 FEET TO THE POINT OF BEGINNING, CONTAINING 12.06 ACRES, MORE OR LESS AND SUBJECT TO ANY AND ALL EASEMENTS OF RECORD OR FACT.

DESCRIPTION STREET RIGHT OF WAY:

PART OF THE NE 1/4 OF SECTION 24, TOWNSHIP 19 NORTH, RANGE 31 WEST, BENTON COUNTY ARKANSAS, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF THE SW 1/4 OF THE NE 1/4 OF SAID SECTION 24, SAID POINT BEING A RAILROAD SPIKE;
THENCE ALONG THE WEST LINE THEREOF N02°35'13"E 35.00 FEET;
THENCE LEAVING SAID WEST LINE S87°20'18"E 1463.04 FEET;
THENCE N73°37'15"E 124.77 FEET;
THENCE 228.94 FEET ALONG A CURVE TO THE LEFT WITH A RADIUS OF 173.61 FEET AND A LONG CHORD OF N35°50'32"E 212.71 FEET;
THENCE N01°56'34"W 83.53 FEET;
THENCE N03°17'44"W 976.46 FEET TO THE NORTH LINE OF THE SE 1/4 OF THE NE 1/4 OF SAID SECTION 24;
THENCE ALONG SAID NORTH LINE S86°37'13"E 15.10 FEET TO THE WESTERN PRESCRIPTIVE RIGHT-OF-WAY LINE OF ARKANSAS STATE HIGHWAY 112 AS SHOWN IN STATE PLAT 201309090023 BY ENGINEERING SERVICES, INC, DAVID A. WALKINS, PS 1439, DATED AUGUST 29, 2013, WORK ORDER 13373, SAID POINT BEING A 5/8" IRON PIN LABELED PS 1439;
THENCE ALONG SAID RIGHT-OF-WAY THE FOLLOWING FIVE COURSES:
THENCE S03°17'44"E 974.88 FEET;
THENCE S01°56'34"E 83.67 FEET TO A 5/8" IRON PIN LABELED PS 1439;
THENCE 248.77 FEET ALONG A CURVE TO THE RIGHT WITH A RADIUS OF 188.61 FEET AND A LONG CHORD OF S35°50'10"W 231.12 FEET TO A 5/8" IRON PIN LABELED PS 1439;
THENCE S73°37'15"W 156.49 FEET TO A 5/8" IRON PIN;
THENCE 28.88 FEET ALONG A CURVE TO THE LEFT WITH A RADIUS OF 249.37 FEET AND A LONG CHORD OF S69°43'29"W 26.87 FEET TO A 5/8" IRON PIN LABELED PS 1439, SAID POINT BEING ON THE SOUTH LINE OF THE SE 1/4 OF THE NE 1/4 OF SAID SECTION 24;
THENCE ALONG SAID SOUTH LINE N87°20'18"W 93.91 FEET TO SOUTHEAST CORNER OF THE SW 1/4 OF THE NE 1/4 OF SAID SECTION 24;
THENCE ALONG THE SOUTH LINE THEREOF N87°20'18"W 1319.25 FEET TO THE POINT OF BEGINNING, CONTAINING 1.65 ACRES, MORE OR LESS AND SUBJECT TO ANY AND ALL EASEMENTS OF RECORD OR FACT.

CERTIFICATE OF APPROVAL

PURSUANT TO THE BENTONVILLE LAND DEVELOPMENT CODE AND ALL OTHER CONDITIONS AND APPROVAL HAVING BEEN COMPLETED, THIS DOCUMENT IS HEREBY ACCEPTED. THIS CERTIFICATE IS HEREBY EXECUTED UNDER THE AUTHORITY OF THE SAID RULES AND REGULATIONS.

DATE OF EXECUTION: _____

SIGNED _____
BENTONVILLE PLANNING COMMISSION CHAIRMAN

SIGNED _____
MAYOR CITY OF BENTONVILLE

SIGNED _____
CITY CLERK, CITY OF BENTONVILLE

NOTES:

THE WORD "CERTIFY" AS SHOWN HEREON IS AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THE FACTS OF THIS SURVEY AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EXPRESSED OR IMPLIED.

THE PROPERTY SURVEYED IS WITHIN THE MUNICIPAL LIMITS OF BENTONVILLE, AR.

ACCORDING TO THE CITY OF BENTONVILLE GIS WEB SITE THE PROPERTY SURVEYED IS ZONED R-3.

THE ADJACENT PROPERTY OWNERS NAMES SHOWN ON THIS PLAT WERE OBTAINED FROM THE BENTON COUNTY GIS WEB SITE.

THE BOUNDARY DETERMINATION SHOWN HEREON WAS BASED UPON THE FOLLOWING DOCUMENTS AND NO OTHERS: DEED L201854684, DEED L201854685, DEED L201854686, DEED L201854687, PLAT 2013--591 AND STATE PLAT 201309090023 BY ENGINEERING SERVICES, INC, DAVID A. WALKINS, PS 1439, DATED AUGUST 29, 2013, WORK ORDER 13373.

OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY COMMITMENT FOR TITLE INSURANCE FILE NO. 22--71068J, DATED JUNE 22, 2023, LAST REVISED NOVEMBER 13, 2023, WAS ENTIRELY RELIED UPON FOR RECORD INFORMATION REGARDING RIGHTS-OF-WAY, EASEMENTS AND ENCUMBRANCES IN THE PREPARATION OF THIS SURVEY. THE PROPERTY SHOWN HEREON IS ALL OF THE PROPERTY DESCRIBED IN SAID TITLE COMMITMENT.

THE SURVEYOR HAS NOT MADE A SEPARATE INVESTIGATION OR SEARCH FOR EASEMENTS OF RECORD, ENCUMBRANCES, OR RESTRICTIVE COVENANTS OR ANY OTHER FACTS WHICH MIGHT AFFECT THE PROPERTY. ANY EASEMENTS SHOWN HEREON CAME TO THE ATTENTION OF THE SURVEYOR FROM EXAMINATION OF OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY COMMITMENT FOR TITLE INSURANCE FILE NO. 22--71068J, DATED JUNE 22, 2023, LAST REVISED NOVEMBER 13, 2023.

NO ATTEMPT WAS MADE TO SHOW BUILDING SETBACK LINES GRAPHICALLY ON THE SURVEY. THE DESIGNATION OR ORIENTATION OF SETBACKS THAT AFFECT THE USE OF THIS PROPERTY ARE DETERMINED BY THE LOCAL GOVERNING JURISDICTION. SETBACK DIMENSIONS WILL BE BASED ON THE ORIENTATION OF THE BUILDINGS TO BE CONSTRUCTED.

THERE MAY BE BUILDINGS AND OTHER IMPROVEMENTS ON THE PROPERTY THAT ARE NOT SHOWN ON THIS PLAT.

UTILITIES WERE NOT CONSIDERED A PART OF THIS SURVEY.

SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT CONSIDERED A PART OF THIS SURVEY AND NO INVESTIGATION OF THESE CONDITIONS WAS MADE.

THIS PROPERTY IS NOT IN FLOOD ZONE "A" OR "AE", AND IS OUTSIDE THE 100--YEAR FLOOD PLAIN AS SHOWN ON THE NATIONAL FLOOD INSURANCE PROGRAM'S FIRM PANEL NUMBER 05007C0265K, REVISED DATE JUNE 5, 2012.

THE ABOVE STATEMENT IS FOR INFORMATION ONLY AND THIS SURVEYOR ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THE CITED MAP(S). IN ADDITION, NO INDEPENDENT STUDY OF THE LIKELIHOOD OF FLOODING OF THE SURVEYED PROPERTY HAS BEEN DONE BY THE SURVEYOR AND NO OPINION OF FLOOD HAZARDS IS INCLUDED IN THIS SURVEY. THE FLOOD HAZARD ZONE BOUNDARIES SHOWN HEREON WERE SCALED FROM THE MAPS CITED AND ARE NOT THE RESULT OF INDEPENDENT COMPUTATION OR ANALYSIS.

NO ATTEMPT WAS MADE TO SHOW BUILDING SETBACK LINES GRAPHICALLY ON THE SURVEY. THE DESIGNATION OR ORIENTATION OF SETBACKS THAT AFFECT THE USE OF THIS PROPERTY ARE DETERMINED BY THE LOCAL GOVERNING JURISDICTION. SETBACK DIMENSIONS WILL BE BASED ON THE ORIENTATION OF THE BUILDINGS TO BE CONSTRUCTED.

BEFORE ANY WORK IN THE RIGHT-OF-WAY COMMENCES, CONTRACTOR AND OR OWNER IS TO OBTAIN RIGHT-OF-WAY PERMIT FROM THE CITY OF BENTONVILLE TRANSPORTATION DEPARTMENT.

THERE MAY NOT BE FENCES OR ANY OTHER STRUCTURES BUILT IN ANY DRAINAGE EASEMENTS.

NO RESIDENTIAL LOT SHALL BE PERMITTED DIRECT ACCESS TO A COLLECTOR OR ARTERIAL STREET. ALL RESIDENTIAL SUBDIVISION DEVELOPMENT CONTIGUOUS TO A COLLECTOR OR ARTERIAL STREET SHALL ORIENT FRONTAGE TO A LOCAL STREET, AND BACK OF THE PROJECT, WITHOUT ACCESS TO THE SAID MAJOR STREETS.

OWNER/DEVELOPER SHALL COORDINATE WITH ALL LOCAL UTILITIES TO ENSURE THAT EACH LOT HAS WATER, SEWER AND ELECTRIC SERVICE.

SIDEWALKS SHALL BE THE RESPONSIBILITY OF THE BUILDER/OWNER AT TIME OF BUILDING PERMIT ISSUANCE.

BUILDING SETBACK NOTE:

SETBACKS SHALL BE PER THE CURRENT ZONING DISTRICT AS STATED IN THE MOST RECENT CITY OF BENTONVILLE ZONING CODE. FOR MORE INFORMATION, VISIT WWW.BENTONVILLEPLANNING.COM OR CALL THE PLANNING DEPARTMENT AT 479--271--3122.

CERTIFICATE OF SURVEYING ACCURACY

I, KEVIN J. MONTGOMERY, HEREBY CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS A BOUNDARY SURVEY MADE BY ME AND BOUNDARY MARKERS AND LOT CORNERS SHOWN HEREON ACTUALLY EXIST AND THEIR LOCATION, TYPE AND MATERIAL ARE CORRECTLY SHOWN AND ALL MINIMUM REQUIREMENTS OF THE ARKANSAS MINIMUM STANDARDS FOR LAND SURVEYORS HAVE BEEN MET.

DATE OF EXECUTION: 03/07/2024

CRAFTON, TULL & ASSOCIATES, INC.
BY KEVIN J. MONTGOMERY (AGENT)

SIGNED: KEVIN J. MONTGOMERY (AGENT)
REGISTERED LAND SURVEYOR
NO. 1460
STATE OF ARKANSAS

ALL COPIES THAT DO NOT BEAR AN ORIGINAL SEAL AND SIGNATURE MAY HAVE BEEN ALTERED. THE ABOVE DECLARATION SHALL NOT APPLY TO ANY COPY THAT DOES NOT BEAR AN ORIGINAL SEAL AND SIGNATURE.



ATLAS PAGE: 566

CITY OF BENTONVILLE
PROJECT NUMBER: LS24--0008

RECORD INFORMATION

STATE PLAT CODE:
XXX-XXX-XXX-X-XX-XXX-XX-XXXX

SEAL

LOT SPLIT CREATING LOTS 1 AND 2
COTTAGES AT SIMPSON FARMS SUBDIVISION

PREPARED FOR:
COTTAGES AT SIMPSON FARMS, LLC

BENTONVILLE ARKANSAS

DATE: 03/07/2024
PROJECT NO.: 22113200
CONTACT: K.MONTGOMERY

901 N. 47th St., Suite 400
Rogers, Arkansas 72756
479.636.4838-1
www.craftontull.com

CERTIFICATE OF AUTHORIZATION:



© 2024 Crafton, Tull & Associates, Inc.

DELTA	DESCRIPTION	DATE
1	REVISED PER COMMENTS	03/07/2024

SHEET NO.:

1 OF 3

DRAWING: G:\22113200-SIMPSONCANNINFRASTRUCTURE\SURVEY\DWG\22113200-FINAL PLAT.DWG
LAYOUT: LAYOUT2, LAST SAVED: 6/7/2024 4:37:36 PM
LAST PLOTTED BY: KEVIN MONTGOMERY, 3/7/2024 4:39:05 PM (PLOTTED BY: "VALID ON HARD COPY ONLY")

PARCEL LINE TABLE		
LINE #	DIRECTION	LENGTH
L1	S1° 56' 34"E	83.67'
L2	S73° 37' 15"W	156.49'
L3	N87° 20' 18"W	93.91'
L4	S25° 26' 40"W	29.00'
L5	S1° 56' 34"E	83.53'
L6	S87° 20' 18"E	163.83'
L7	N2° 43' 09"E	17.22'
L8	S87° 16' 51"E	20.00'
L9	S2° 43' 09"W	17.20'

PARCEL LINE TABLE		
LINE #	DIRECTION	LENGTH
L10	N25° 13' 09"E	13.04'
L11	N87° 16' 51"W	1.00'
L12	N87° 16' 51"W	118.56'
L13	N87° 16' 51"W	119.62'
L14	N19° 46' 51"W	14.31'
L15	N2° 43' 09"E	40.04'
L16	N1° 51' 17"W	25.08'
L17	N2° 43' 09"E	48.43'
L18	N2° 43' 09"E	65.28'

PARCEL LINE TABLE		
LINE #	DIRECTION	LENGTH
L19	N32° 39' 02"E	24.72'
L20	N43° 27' 54"E	59.75'
L21	S42° 02' 56"E	15.50'
L22	N43° 27' 54"E	57.73'
L23	N2° 43' 09"E	64.08'
L24	N2° 43' 09"E	87.63'
L25	N79° 03' 57"W	61.66'
L26	N79° 03' 57"W	80.42'
L27	N3° 04' 46"E	20.00'

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	248.77'	188.61'	75°34'11"	S35° 50' 10"W	231.12'
C2	26.88'	249.37'	6°10'36"	S69° 43' 29"W	26.87'
C3	228.94'	173.61'	75°33'26"	S35° 50' 32"W	212.71'
C4	30.63'	19.50'	89°59'59"	N42° 16' 50"W	27.58'
C5	30.63'	19.50'	89°59'43"	N47° 43' 18"E	27.58'

RECORD INFORMATION

STATE PLAT CODE:
XXX-XXX-XXX-X-XX-XXX-XX-XXXX

SEAL

LOT SPLIT CREATING LOTS 1 AND 2
COTTAGES AT SIMPSON FARMS SUBDIVISION

PREPARED FOR:
COTTAGES AT SIMPSON FARMS, LLC
BENTONVILLE
ARKANSAS

DATE: 03/07/2024
PROJECT NO.: 22113200
CONTACT: K MONTGOMERY



Crafton Tull

architecture | engineering | surveying

479.636.4838 f

www.craftontull.com

901 N. 47th St., Suite 400
Rogers, Arkansas 72756

CERTIFICATE OF AUTHORIZATION

CRAFTON, TULL & ASSOCIATES, INC.
No. 107

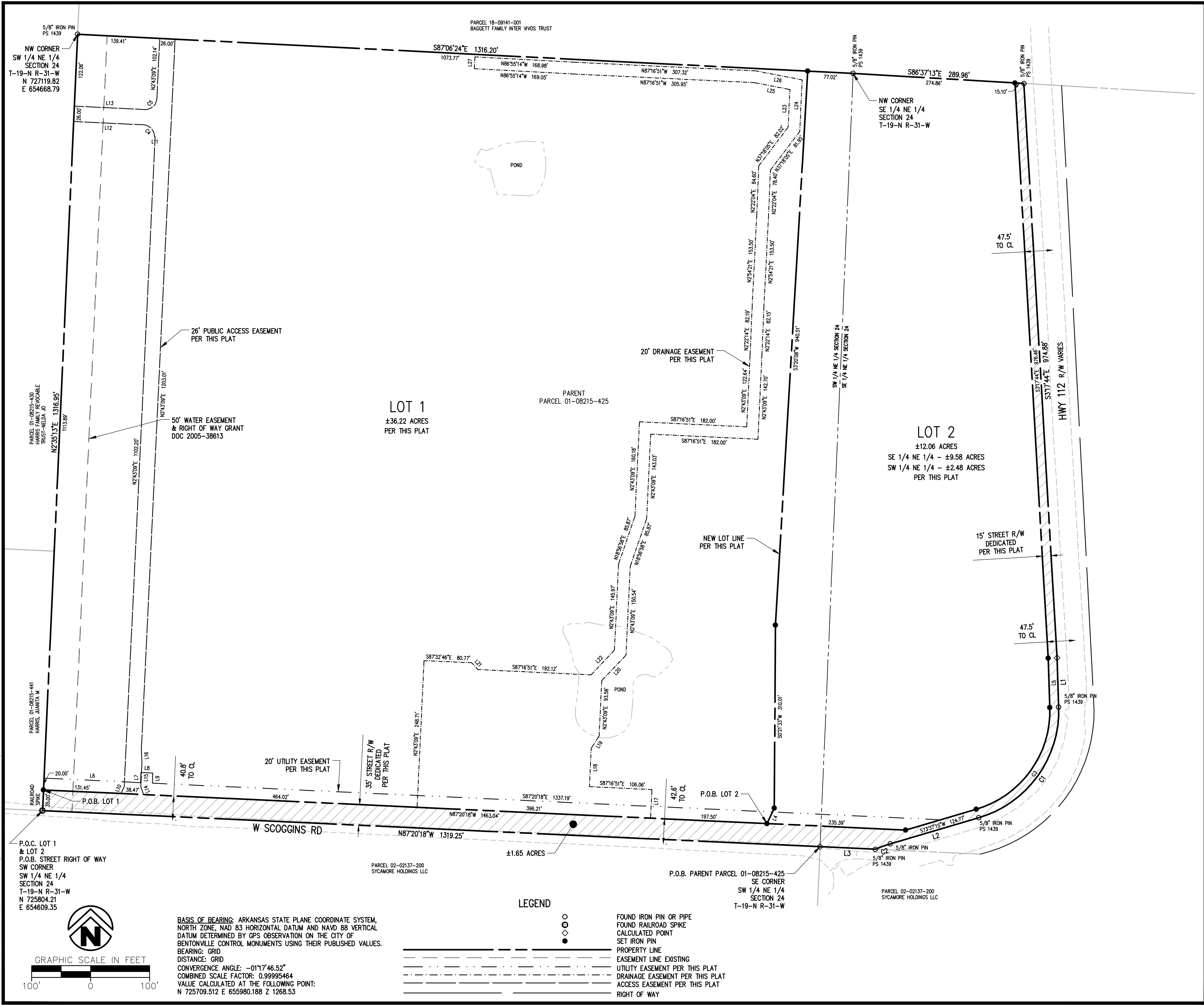
ARKANSAS ENGINEER

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DELTA	DESCRIPTION	DATE

SHEET NO.:
2 OF 3

DRAWING: G:\2021\3200 SIMPSON CANN INFRASTRUCTURE SURVEY\DWG\22113200.FINAL PLAT.DWG
LAYOUT: LAYOUTS, LAST SAVED: 06/16/2024 4:37:36 PM
LAST PLOTTED BY: KEVIN MONTGOMERY, 3/7/2024 4:39:16 PM (PLOTTED BY: VALID ON HARD COPY ONLY)



RECORD INFORMATION

STATE PLAT CODE:
XXX-XXX-XXX-X-XX-XXX-XX-XXXX

SEAL

LOT SPLIT CREATING LOTS 1 AND 2
COTTAGES AT SIMPSON FARMS SUBDIVISION

PREPARED FOR:
COTTAGES AT SIMPSON FARMS, LLC
BENTONVILLE
ARKANSAS

DATE: 03/07/2024
PROJECT NO: 22113200
CONTACT: K MONTGOMERY

901 N. 47th St., Suite 400
Rogers, Arkansas 72756
Crafton Tull
architecture | engineering | surveying
479.636.4838
www.craftontull.com

CERTIFICATE OF AUTHORIZATION:



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DELTA	DESCRIPTION	DATE

SHEET NO.:

3 OF 3

ORDINANCE NO. _____

**AN ORDINANCE ACCEPTING A LOT SPLIT OF PREVIOUSLY UNPLATTED
LAND CREATING NEW LOTS 1 AND 2 COTTAGES AT SIMPSON FARMS
SUBDIVISION TO THE CITY OF BENTONVILLE, ARKANSAS; AND FOR
OTHER PURPOSES.
(PROJECT NUMBER: LS24-0008)**

WHEREAS, pursuant to the provisions of the Land Development Code of the Bentonville Municipal Code, the lot split of PREVIOUSLY UNPLATTED LAND creating new LOTS 1 AND 2 COTTAGES AT SIMPSON FARMS SUBDIVISION, Benton County, Arkansas, was submitted to the Bentonville Planning Commission on April 2, 2024;

WHEREAS, said lot split is attached hereto as Exhibit “A”;

WHEREAS, the Bentonville Planning Commission considered said lot split on the date stated, and at other times, and voted to recommend the approval of said lot split to the City Council; and

WHEREAS, the lot split of real property as described herein has been submitted to the City Council of the City of Bentonville and, after consideration and deliberation, said Council is of the opinion that said lot split should be approved.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL FOR THE CITY OF BENTONVILLE, ARKANSAS:

Section 1: That the lot split of PREVIOUSLY UNPLATTED LAND creating new LOTS 1 AND 2 COTTAGES AT SIMPSON FARMS SUBDIVISION to the City of Bentonville, Arkansas, should be and the same is hereby accepted and approved for all purposes;

Section 2: That the Mayor and City Clerk be and are hereby authorized and directed to evidence the acceptance of said lot split by certifying said acceptance on the approved lot split;

Section 3 - Severability Provision: If any part of this Ordinance is held invalid, the remainder of this Ordinance shall continue in effect as if such invalid portion never existed; and

Section 4 - Repeal of Conflicting Provisions: All Ordinances, Resolutions, or Orders of the City Council, or parts of the same, in conflict with this Ordinance are repealed to the extent of such conflict.

PASSED AND APPROVED this _____ day of _____,
2024.

APPROVED:

ATTEST:

Stephanie Orman, Mayor

Malorie Marrs, City Clerk



Lot 1 of Marsiglio Subdivision

505 Northeast 2nd Street

PC Date: 4/2/2024

Staff Report Details

Project Number	PLA24-0004
Applicant / Current Owner	
Site Area	+/- .34 Acres
Current Zoning	
Requested Zoning	
Current Future Land Use Map Designation	
Requested Future Land Use Map Designation	
Development Type / Use	
Related projects	

Property Description

Lot Split: Lot 1 of Marsiglio Subdivision, Mark and Cynthia Marsiglio, 505 Northeast 2nd Street, R-1, Low-Density Single-Family Residential, PLA24-0004

A lot split of previously unplatted land, creating new Lot 1 of Marsiglio Subdivision. The plat dedicates a 15-foot utility easement and right of way according to the Master Street Plan along Northeast 2nd Street.

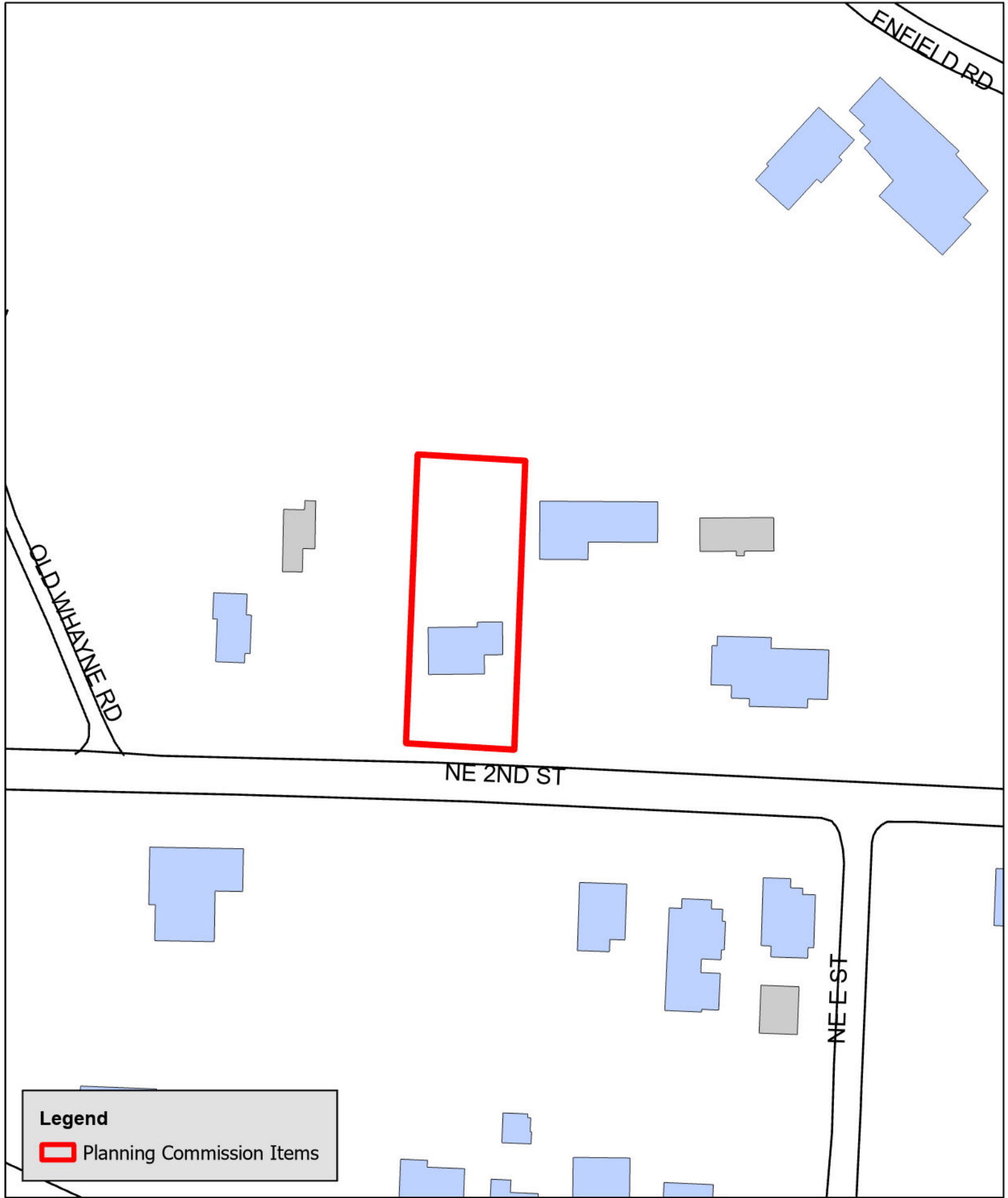
Project Details

Relationship to the General Plan / Projected Traffic Impact

Public Comment

Has Staff received Public Comment at the time of this report? : **No**

Analysis / Waivers**Conclusion****Additional Details**

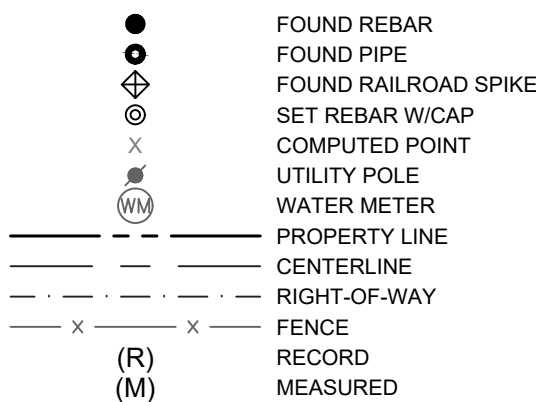


PLA24-0004
Property Line Adjustment
Creating Lot 1 Marsiglio Subdivision



OWNERSHIP INFORMATION:
MARK LOREN & CYNTHIA HILL MARSIGLIO
cindi@marsiglio.com
403 TORRANCE DR
CAVE SPRINGS AR 72718

LEGEND



FLOOD CERTIFICATION:

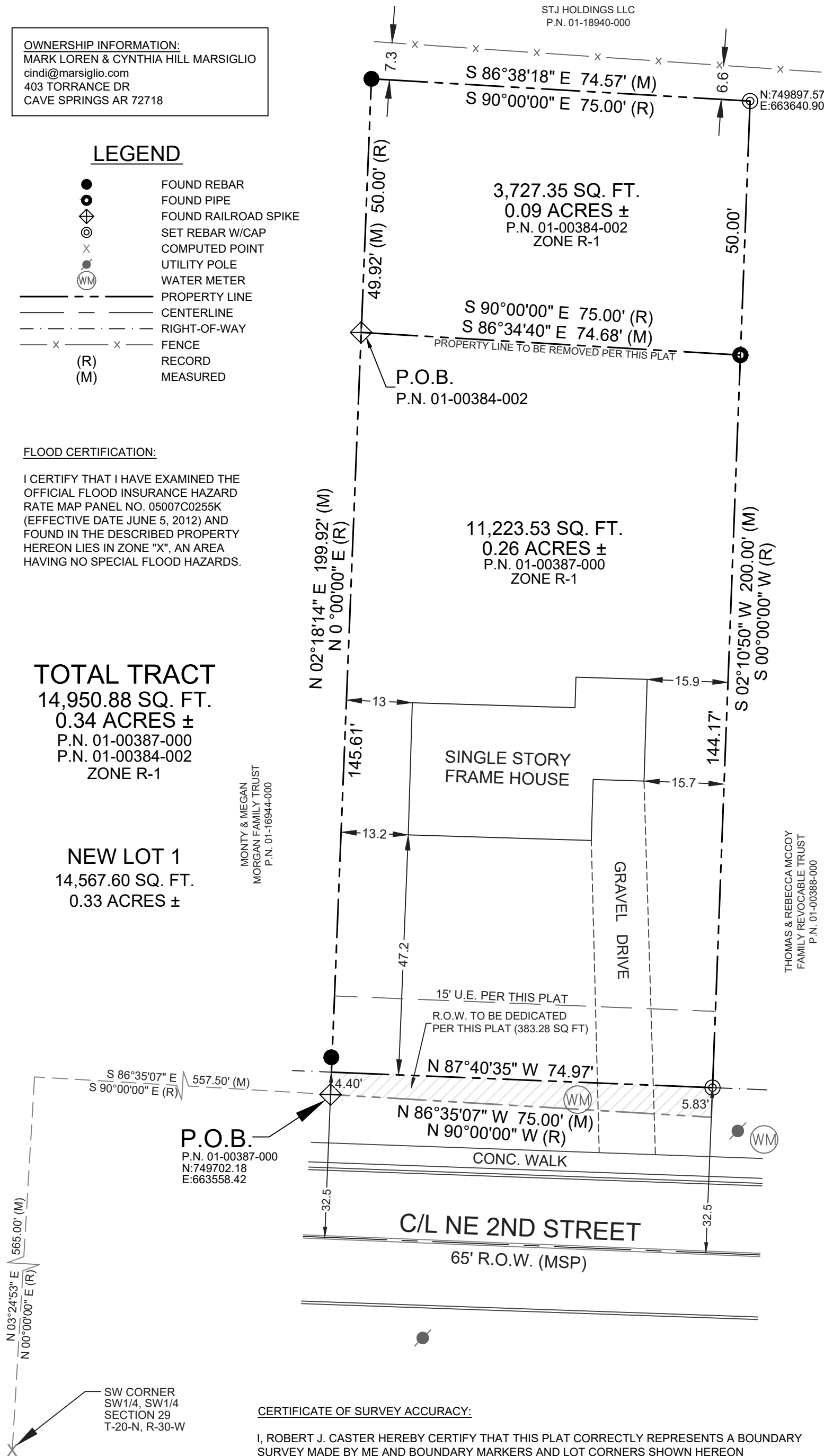
I CERTIFY THAT I HAVE EXAMINED THE OFFICIAL FLOOD INSURANCE HAZARD RATE MAP PANEL NO. 05007C0255K (EFFECTIVE DATE JUNE 5, 2012) AND FOUND IN THE DESCRIBED PROPERTY HEREON LIES IN ZONE "X", AN AREA HAVING NO SPECIAL FLOOD HAZARDS.

TOTAL TRACT
14,950.88 SQ. FT.
0.34 ACRES ±
P.N. 01-00387-000
P.N. 01-00384-002
ZONE R-1

NEW LOT 1
14,567.60 SQ. FT.
0.33 ACRES ±

MONTY & MEGAN
MORGAN FAMILY TRUST
P.N. 01-16944-000

THOMAS & REBECCA MCCOY
FAMILY REVOCABLE TRUST
P.N. 01-00388-000



CERTIFICATE OF SURVEY ACCURACY:

I, ROBERT J. CASTER HEREBY CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS A BOUNDARY SURVEY MADE BY ME AND BOUNDARY MARKERS AND LOT CORNERS SHOWN HEREON ACTUALLY EXIST AND THEIR LOCATION, SIZE, TYPE AND MATERIAL ARE CORRECTLY SHOWN AND ALL MINIMUM REQUIREMENTS OF THE ARKANSAS MINIMUM STANDARDS FOR LAND SURVEYORS HAVE BEEN MET.

DATE OF EXECUTION _____

SIGNED: _____
REGISTERED LAND SURVEYOR
NO. 1370
STATE OF ARKANSAS

NOTES:

1. EXCEPT AS SPECIFICALLY STATED OR SHOWN ON THIS PLAT, THIS SURVEY DOES NOT PURPORT TO REFLECT ANY OF THE FOLLOWING WHICH MAY BE APPLICABLE TO THE SUBJECT REAL ESTATE: EASEMENTS, OTHER THAN POSSIBLE EASEMENTS WHICH WERE VISIBLE AT THE TIME OF MAKING OF THIS SURVEY; BUILDING SETBACK LINES; RESTRICTIVE COVENANTS; SUBDIVISION RESTRICTIONS; ZONING OR OTHER LAND-USE REGULATIONS, AND ANY OTHER FACTS WHICH AN ACCURATE AND CURRENT TITLE COMMITMENT MAY DISCLOSE.

2. BASIS OF BEARINGS: ARKANSAS STATE PLANE COORDINATE SYSTEM, NORTH ZONE.

3. DECLARATION IS MADE TO ORIGINAL PURCHASER OF THE SURVEY. IT IS NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.

4. THIS SURVEY IS VALID ONLY IF THE DRAWING INCLUDES THE SEAL AND SIGNATURE OF THE SURVEYOR.

5. SETBACKS SHALL BE PER THE CURRENT ZONING DISTRICT AS STATED IN THE MOST RECENT CITY OF BENTONVILLE ZONING CODE. FOR MORE INFO VISIT WWW.BENTONVILLEPLANNING.COM OR CALL THE PLANNING DEPARTMENT AT (479) 271-3122.

6. SURVEYOR HAS MADE NO INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENTS OF RECORD, ENCUMBRANCES, RESTRICTIVE COVENANTS, OWNERSHIP, TITLE EVIDENCE, OR ANY OTHER FACTS WHICH AN ACCURATE AND CURRENT TITLE COMMITMENT MAY DISCLOSE.

7. SIDEWALKS SHALL BE THE RESPONSIBILITY OF THE BUILDER/OWNER AT TIME OF BUILDING PERMIT ISSUANCE.

8. THERE MAY NOT BE FENCES OR ANY OTHER STRUCTURES BUILT IN ANY DRAINAGE EASEMENTS.

9. OWNER/DEVELOPER SHALL COORDINATE WITH ALL LOCAL UTILITIES TO INSURE THAT EACH LOT HAS WATER, SEWER AND ELECTRIC SERVICE.

10. BEFORE ANY WORK IN THE RIGHT-OF-WAY COMMENCES, CONTRACTOR AND/OR OWNER IS TO OBTAIN RIGHT-OF-WAY PERMIT FROM THE CITY OF BENTONVILLE TRANSPORTATION DEPARTMENT.

11. ALL STRUCTURES MUST MAINTAIN MINIMUM OF 20' CLEARANCES FROM ALL ELECTRIC LINES.

12. THERE ARE NO WAIVERS, VARIANCES, AND/OR CONDITIONAL USES A THE TIME OF PREPARING THIS PLAT.

13. NO RESIDENTIAL LOT SHALL BE PERMITTED DIRECT ACCESS TO A COLLECTOR OR ARTERIAL STREET. ALL RESIDENTIAL SUBDIVISION DEVELOPMENT CONTIGUOUS TO A COLLECTOR OR ARTERIAL STREET SHALL ORIENT FRONTAGE TO A LOCAL STREET, AND BACK OF THE PROJECT, WITHOUT ACCESS TO THE SAID MAJOR STREETS.

PARENT TRACT:

DEED REFERENCE: INSTRUMENT #L202352375

PART OF THE SOUTHWEST QUARTER (SW¼) OF THE SOUTHWEST QUARTER (SW¼) OF SECTION 29, TOWNSHIP 20 NORTH, RANGE 30 WEST, BENTON COUNTY, ARKANSAS, AND BEING MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE SW CORNER OF THE SW¼ OF THE SW¼ OF SAID SECTION 29; THENCE N 03°24'53" E A DISTANCE OF 565.00 FEET; THENCE S 86°35'07" E A DISTANCE OF 557.50 FEET TO THE POINT OF BEGINNING; THENCE N 02°18'14" E A DISTANCE OF 150.00 FEET; THENCE S 86°38'18" E A DISTANCE OF 74.68 FEET; THENCE S 02°10'50" W A DISTANCE OF 150.00 FEET; THENCE N 86°35'07" W A DISTANCE OF 75.00 FEET TO THE POINT OF BEGINNING, WITH AN AREA OF 11,223.53 SQUARE FEET, OR 0.26 ACRES, MORE OR LESS.

AND

PART OF THE SOUTHWEST QUARTER (SW¼) OF THE SOUTHWEST QUARTER (SW¼) OF SECTION 29, TOWNSHIP 20 NORTH, RANGE 30 WEST, BENTON COUNTY, ARKANSAS, AND BEING MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE SW CORNER OF THE SW¼ OF THE SW¼ OF SAID SECTION 29; THENCE N 03°24'53" E A DISTANCE OF 565.00 FEET; THENCE S 86°35'07" E A DISTANCE OF 557.50 FEET; THENCE N 02°18'14" E A DISTANCE OF 150.00 FEET TO THE POINT OF BEGINNING; THENCE N 02°18'14" E A DISTANCE OF 49.92 FEET; THENCE S 86°38'18" E A DISTANCE OF 74.57 FEET; THENCE S 02°10'50" W A DISTANCE OF 150.00 FEET; THENCE N 86°35'07" W A DISTANCE OF 75.00 FEET TO THE POINT OF BEGINNING, WITH AN AREA OF 3,727.35 SQUARE FEET, OR 0.09 ACRES, MORE OR LESS.

NEW LOT 1 DESCRIPTION:

PART OF THE SOUTHWEST QUARTER (SW¼) OF THE SOUTHWEST QUARTER (SW¼) OF SECTION 29, TOWNSHIP 20 NORTH, RANGE 30 WEST, BENTON COUNTY, ARKANSAS, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE SW CORNER OF SAID SECTION 29; THENCE N 03°24'53" E A DISTANCE OF 565.00 FEET; THENCE S 86°35'07" E A DISTANCE OF 557.50 FEET; THENCE N 02°18'14" E A DISTANCE OF 4.40 FEET TO THE POINT OF BEGINNING; THENCE N 02°18'14" E A DISTANCE OF 195.52 FEET; THENCE S 86°38'18" E A DISTANCE OF 74.57 FEET; THENCE S 02°10'50" W A DISTANCE OF 194.17 FEET; THENCE N 87°40'35" W A DISTANCE OF 74.97 FEET TO THE POINT OF BEGINNING, WITH AN AREA OF 14567.60 SQUARE FEET, OR 0.33 ACRES, MORE OR LESS, AND SUBJECT TO ALL RIGHTS-OF-WAY, EASEMENTS AND RESTRICTIVE COVENANTS OF RECORD OR FACT.

CERTIFICATE OF OWNERSHIP AND DEDICATION:

WE THE UNDERSIGNED, OWNERS OF THE REAL ESTATE SHOWN AND DESCRIBED HEREIN, DO HEREBY CERTIFY THAT WE HAVE LAID OFF, PLATTED, AND SUBDIVIDED AND DO HEREBY LAY OFF, PLAT, SUBDIVIDE SAID REAL ESTATE IN ACCORDANCE WITH THIS PLAT AND DO HEREBY DEDICATE TO THE USE OF THE PUBLIC THE STREETS, ALLEYS, DRIVES, EASEMENTS, ETC. AS SHOWN ON SAID PLAT.

DATE OF EXECUTION: _____

PRINT NAME: _____

SIGNATURE: _____

STATE OF ARKANSAS, COUNTY OF BENTON, SUBSCRIBED AND SWORN BEFORE ME THIS _____ DAY OF _____, 20__.

NOTARY PUBLIC

MY COMMISSION EXPIRES: _____

CERTIFICATE OF APPROVAL:

PURSUANT TO THE BENTONVILLE LAND DEVELOPMENT CODE AND ALL OTHER CONDITIONS AND APPROVAL HAVING BEEN COMPLETED, THIS DOCUMENT IS HEREBY ACCEPTED. THIS CERTIFICATE IS HEREBY EXECUTED UNDER THE AUTHORITY OF THE SAID RULES AND REGULATIONS.

DATE OF EXECUTION: _____

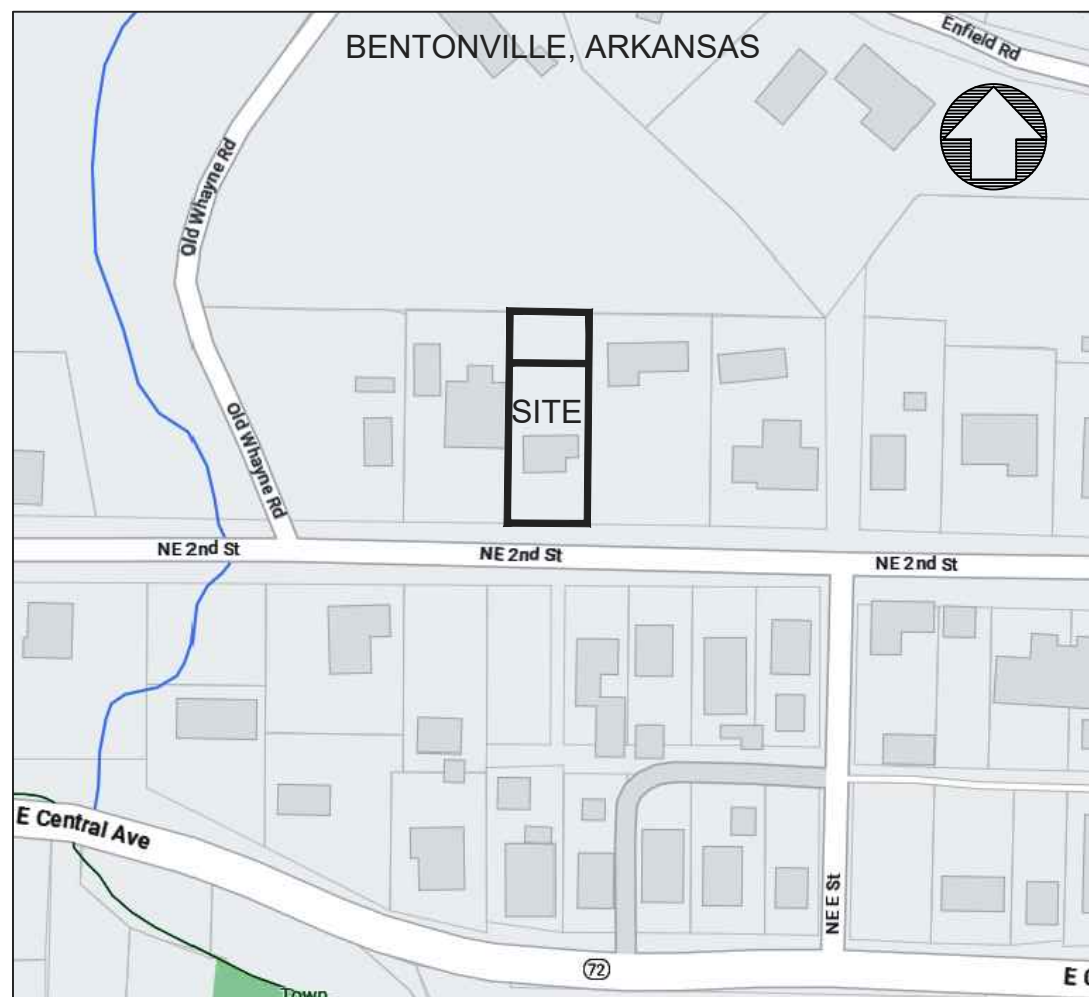
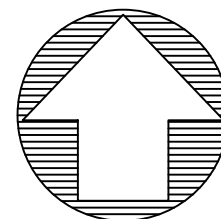
SIGNED _____
PLANNING COMMISSION CHAIRPERSON

DATE OF EXECUTION: _____

SIGNED _____
MAYOR, CITY OF BENTONVILLE

SIGNED _____
CITY CLERK, CITY OF BENTONVILLE

CERTIFICATE OF AUTHORIZATION
COA CERTIFICATE NUMBER: 3049

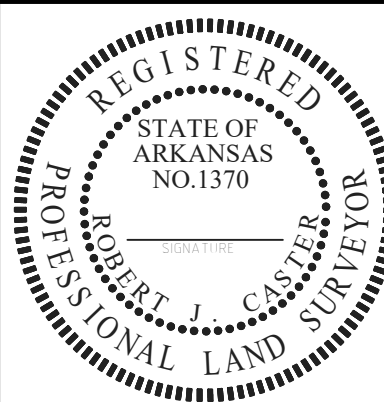
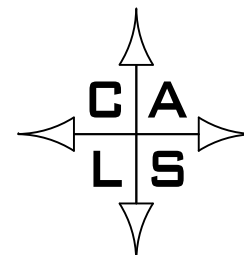


VICINITY MAP
(N.T.S.)

CITY OF BENTONVILLE PROJECT #PLA24-0004

CASTER & ASSOCIATES
LAND SURVEYING, INC.

2715 SE "I" Street, Suite 5
Bentonville, AR 72712
(479) 268-4464



SCALE: 1" = 20'

DATE: 03/04/2024

LOT SPLIT
CREATING MARSIGLIO SUBDIVISION, LOT 1
PART SW1/4 OF SW1/4
SECTION 29, T-20-N, R-30-W

505 NE 2ND STREET
CITY OF BENTONVILLE
BENTON COUNTY, ARKANSAS

JOB #	DRAWN BY:	CHKD BY:	PAGE
23-209-2	ASD/ASG	RJC	1 OF 1

ORDINANCE NO. _____

**AN ORDINANCE ACCEPTING A PROPERTY LINE ADJUSTMENT OF
PREVIOUSLY UNPLATTED LAND CREATING NEW LOT 1 OF MARSIGLIO
SUBDIVISION TO THE CITY OF BENTONVILLE, ARKANSAS; AND FOR OTHER
PURPOSES.**

(PROJECT NUMBER: PLA24-0004)

WHEREAS, pursuant to the provisions of the Land Development Code of the Bentonville Municipal Code, the property line adjustment of PREVIOUSLY UNPLATTED LAND creating new LOT 1 OF MARSIGLIO SUBDIVISION the City of Bentonville, Benton County, Arkansas was submitted to the Bentonville Planning Commission on April 2, 2024;

WHEREAS, said property line adjustment is attached hereto as Exhibit “A”;

WHEREAS, the Bentonville Planning Commission considered said property line adjustment on the date stated and at other times, and voted to recommend the approval of said property line adjustment to the City Council; and

WHEREAS, the property line adjustment of real property as described herein has been submitted to the City Council for the City of Bentonville, and after consideration and deliberation, said Council is of the opinion that said property line adjustment should be approved.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL FOR THE CITY OF BENTONVILLE, ARKANSAS:

Section 1: That the property line adjustment of PREVIOUSLY UNPLATTED LAND creating new LOT 1 OF MARSIGLIO SUBDIVISION to the City of Bentonville, Arkansas, should be and the same is hereby accepted and approved for all purposes;

Section 2: That the Mayor and City Clerk be and are hereby authorized and directed to evidence the acceptance of said property line adjustment by certifying said acceptance on the approved property line adjustment;

Section 3 - Severability Provision: If any part of this Ordinance is held invalid, the remainder of this Ordinance shall continue in effect as if such invalid portion never existed; and

Section 4 - Repeal of Conflicting Provisions: All Ordinances, Resolutions, or Orders of the City Council, or parts of the same, in conflict with this Ordinance are repealed to the extent of such conflict.

PASSED AND APPROVED this _____ day of _____, 2024.

APPROVED:

Stephanie Orman, Mayor

ATTEST:

Malorie Marrs, City Clerk

**Lot 38 of Clark's Addition**

208 Southwest E Street

PC Date: 4/2/2024**Staff Report Details**

Project Number	PLA24-0005
Applicant / Current Owner	
Site Area	+/- .27 Acres
Current Zoning	
Requested Zoning	
Current Future Land Use Map Designation	
Requested Future Land Use Map Designation	
Development Type / Use	
Related projects	

Property Description**Lot Split: Lot 38 of Clark's Addition, Jonathan and Allison Atwell, 208 Southwest E Street, R-1, Low-Density Single-Family Residential, PLA24-0005**

A lot split of the north 75 feet of Lot 14 of Clark's Addition, creating new Lot 38 of Clark's Addition. The plat dedicates a 15-foot utility easement along Southwest E Street. Adequate right of way already exists.

Project Details**Relationship to the General Plan / Projected Traffic Impact**

Public Comment

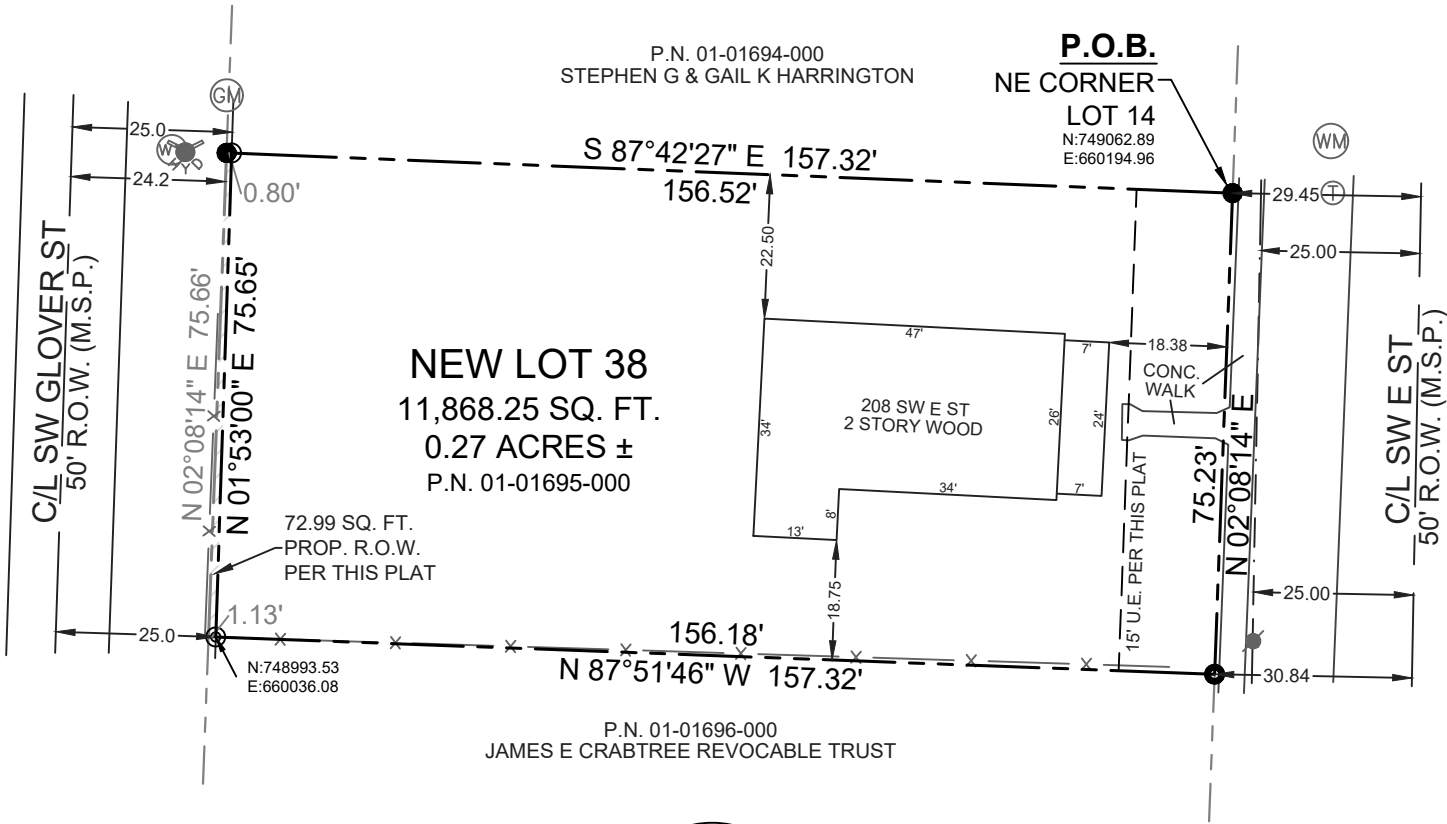
Has Staff received Public Comment at the time of this report? : **No**

Analysis / Waivers**Conclusion****Additional Details**



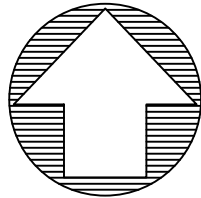
PLA24-0005
Property Line Adjustment
Creating Lot 19 Clark's Addition





LEGEND

- FOUND REBAR
- FOUND PIPE
- SET REBAR W/CAP
- UTILITY POLE
- TELEPHONE RISER
- GAS METER
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- PROPERTY LINE
- RIGHT-OF-WAY
- CENTERLINE
- EASEMENT
- FENCE LINE



OWNERSHIP INFORMATION:
JOHNATHAN TRAVIS &
ALLISON LEIGH ATWELL
ozarkvibesllc@gmail.com
217 SW E ST
BENTONVILLE AR 72712

CERTIFICATE OF AUTHORIZATION
COA CERTIFICATE NUMBER: 3049

NOTES:

- EXCEPT AS SPECIFICALLY STATED OR SHOWN ON THIS PLAT, THIS SURVEY DOES NOT PURPORT TO REFLECT ANY OF THE FOLLOWING WHICH MAY BE APPLICABLE TO THE SUBJECT REAL ESTATE: EASEMENTS, OTHER THAN POSSIBLE EASEMENTS WHICH WERE VISIBLE AT THE TIME OF MAKING OF THIS SURVEY; BUILDING SETBACK LINES; RESTRICTIVE COVENANTS; SUBDIVISION RESTRICTIONS; ZONING OR OTHER LAND-USE REGULATIONS, AND ANY OTHER FACTS WHICH AN ACCURATE AND CURRENT TITLE COMMITMENT MAY DISCLOSE.
- BASIS OF BEARINGS: ARKANSAS STATE PLANE COORDINATE SYSTEM, NORTH ZONE.
- DECLARATION IS MADE TO ORIGINAL PURCHASER OF THE SURVEY. IT IS NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.
- THIS SURVEY IS VALID ONLY IF THE DRAWING INCLUDES THE SEAL AND SIGNATURE OF THE SURVEYOR.
- SETBACKS SHALL BE PER THE CURRENT ZONING DISTRICT AS STATED IN THE MOST RECENT CITY OF BENTONVILLE ZONING CODE. FOR MORE INFO VISIT WWW.BENTONVILLEPLANNING.COM OR CALL THE PLANNING DEPARTMENT AT (479) 271-3122.
- SURVEYOR HAS MADE NO INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENTS OF RECORD, ENCUMBRANCES, RESTRICTIVE COVENANTS, OWNERSHIP, TITLE EVIDENCE, OR ANY OTHER FACTS WHICH AN ACCURATE AND CURRENT TITLE COMMITMENT MAY DISCLOSE.
- SIDEWALKS SHALL BE THE RESPONSIBILITY OF THE BUILDER/OWNER AT TIME OF BUILDING PERMIT ISSUANCE.
- THERE MAY NOT BE FENCES OR ANY OTHER STRUCTURES BUILT IN ANY DRAINAGE EASEMENTS.
- OWNER/DEVELOPER SHALL COORDINATE WITH ALL LOCAL UTILITIES TO INSURE THAT EACH LOT HAS WATER, SEWER AND ELECTRIC SERVICE.
- BEFORE ANY WORK IN THE RIGHT-OF-WAY COMMENCES, CONTRACTOR AND/OR OWNER IS TO OBTAIN RIGHT-OF-WAY PERMIT FROM THE CITY OF BENTONVILLE TRANSPORTATION DEPARTMENT.
- ALL STRUCTURES MUST MAINTAIN MINIMUM OF 20' CLEARANCES FROM ALL ELECTRIC LINES.
- THERE ARE NO WAIVERS, VARIANCES, AND/OR CONDITIONAL USES AT THE TIME OF PREPARING THIS PLAT.

CERTIFICATE OF OWNERSHIP AND DEDICATION:

WE THE UNDERSIGNED, OWNERS OF THE REAL ESTATE SHOWN AND DESCRIBED HEREIN, DO HEREBY CERTIFY THAT WE HAVE LAID OFF, PLATTED, AND SUBDIVIDED AND DO HEREBY LAY OFF, PLAT, SUBDIVIDE SAID REAL ESTATE IN ACCORDANCE WITH THIS PLAT AND DO HEREBY DEDICATE TO THE USE OF THE PUBLIC THE STREETS, ALLEYS, DRIVES, EASEMENTS, ETC. AS SHOWN ON SAID PLAT.

DATE OF EXECUTION: _____

PRINT NAME: _____ PRINT NAME: _____

SIGNATURE: _____ SIGNATURE: _____

STATE OF ARKANSAS, COUNTY OF BENTON, SUBSCRIBED AND SWORN BEFORE ME THIS _____ DAY OF _____, 20____.

NOTARY PUBLIC
MY COMMISSION EXPIRES: _____

CERTIFICATE OF APPROVAL:

PURSUANT TO THE BENTONVILLE LAND DEVELOPMENT CODE AND ALL OTHER CONDITIONS AND APPROVAL HAVING BEEN COMPLETED, THIS DOCUMENT IS HEREBY ACCEPTED. THIS CERTIFICATE IS HEREBY EXECUTED UNDER THE AUTHORITY OF THE SAID RULES AND REGULATIONS.

DATE OF EXECUTION: _____

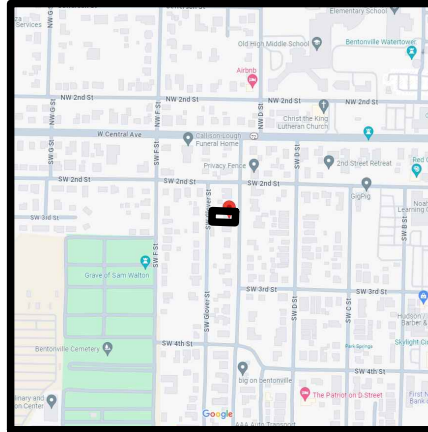
SIGNED _____
PLANNING COMMISSION CHAIRPERSON

DATE OF EXECUTION: _____

SIGNED _____
MAYOR, CITY OF BENTONVILLE

SIGNED _____
CITY CLERK, CITY OF BENTONVILLE

VICINITY MAP



(N.T.S.)

CERTIFICATE OF SURVEY ACCURACY:

I, ROBERT J. CASTER HEREBY CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS A BOUNDARY SURVEY MADE BY ME AND BOUNDARY MARKERS AND LOT CORNERS SHOWN HEREON ACTUALLY EXIST AND THEIR LOCATION, SIZE, TYPE AND MATERIAL ARE CORRECTLY SHOWN AND ALL MINIMUM REQUIREMENTS OF THE ARKANSAS MINIMUM STANDARDS FOR LAND SURVEYORS HAVE BEEN MET.

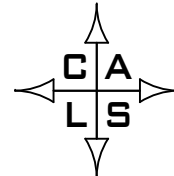
DATE OF EXECUTION _____

SIGNED: _____
REGISTERED LAND SURVEYOR
NO. 1370
STATE OF ARKANSAS

CITY OF BENTONVILLE PROJECT # PLA24-0005

CASTER & ASSOCIATES
LAND SURVEYING, INC.

2715 SE "I" Street, Suite 5
Bentonville, AR 72712
(479) 268-4464



SCALE: 1" = 30' DATE: 03/04/2024

LOT SPLIT
NORTH 75' OF LOT 14
CREATING NEW LOT 38
CLARK'S ADDITION

208 SW E STREET
CITY OF BENTONVILLE
BENTON COUNTY, ARKANSAS

JOB #	DRAWN BY:	CHK'D BY:	PAGE
24-005	ASG	RJC	1 OF 1

ORDINANCE NO. _____

**AN ORDINANCE ACCEPTING A PROPERTY LINE ADJUSTMENT OF NORTH 75'
OF LOT 14 OF CLARK'S ADDITION CREATING NEW LOT 38 OF CLARK'S
ADDITION TO THE CITY OF BENTONVILLE, ARKANSAS; AND FOR OTHER
PURPOSES.**

(PROJECT NUMBER: PLA24-0005)

WHEREAS, pursuant to the provisions of the Land Development Code of the Bentonville Municipal Code, the property line adjustment of NORTH 75' OF LOT 14 OF CLARK'S ADDITION creating new LOT 38 OF CLARK'S ADDITION the City of Bentonville, Benton County, Arkansas was submitted to the Bentonville Planning Commission on April 2, 2024;

WHEREAS, said property line adjustment is attached hereto as Exhibit "A";

WHEREAS, the Bentonville Planning Commission considered said property line adjustment on the date stated and at other times, and voted to recommend the approval of said property line adjustment to the City Council; and

WHEREAS, the property line adjustment of real property as described herein has been submitted to the City Council for the City of Bentonville, and after consideration and deliberation, said Council is of the opinion that said property line adjustment should be approved.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL FOR THE CITY OF BENTONVILLE, ARKANSAS:

Section 1: That the property line adjustment of NORTH 75' OF LOT 14 OF CLARK'S ADDITION creating new LOT 38 OF CLARK'S ADDITION to the City of Bentonville, Arkansas, should be and the same is hereby accepted and approved for all purposes;

Section 2: That the Mayor and City Clerk be and are hereby authorized and directed to evidence the acceptance of said property line adjustment by certifying said acceptance on the approved property line adjustment;

Section 3 - Severability Provision: If any part of this Ordinance is held invalid, the remainder of this Ordinance shall continue in effect as if such invalid portion never existed; and

Section 4 - Repeal of Conflicting Provisions: All Ordinances, Resolutions, or Orders of the City Council, or parts of the same, in conflict with this Ordinance are repealed to the extent of such conflict.

PASSED AND APPROVED this _____ day of _____, 2024.

APPROVED:

Stephanie Orman, Mayor

ATTEST:

Malorie Marrs, City Clerk



0806 Investments LLC

1202 Northwest A Street

PC Date: 4/2/2024

Staff Report Details

Project Number	RZ24-0006
Applicant / Current Owner	0806 Investments, LLC
Site Area	+/- 0.58 Acres
Current Zoning	R-1, Low-Density Single-Family Residential
Requested Zoning	R-2, Medium Density Two Family and Townhome Residential
Current Future Land Use Map Designation	Open Space
Requested Future Land Use Map Designation	Medium Density Residential (MDR)
Development Type / Use	Single Family Homes
Related projects	N/A

Property Description

This property is located at 1202 Northwest A Street and is currently zoned R-1, Low-Density Single-Family Residential. All adjacent zoning are also R-1, Low-Density Single-Family Residential.

Project Details

The Future Land Use Plan currently shows this property as Open Space. However, the applicant is requesting a change to the Future Land Use Map to Medium-Density Residential. These areas include townhouses or duplex residential properties with a typical density of 8-12 units per acre. These areas are found both near Downtown and in some recent growth areas. These areas may also include local amenities for residents, including neighborhood parks, places of worship, schools, etc.

This property is located within Priority Area 2, Infill, as identified in Chapter 4 of the Bentonville Community Plan. This area looks to leverage the City's existing investments in utilities and streets to accommodate new development. The property is adjacent to Black Apple Creek and it is presumed that any development of the property will be limited to the bluffs and not impact the creek. Any proposed development in the floodplain will require a floodplain development permit and any work in the floodway will require additional flood studies.

Relationship to the General Plan / Projected Traffic Impact

This request is not consistent with the Future Land Use Plan. However, the context of the property - with a significant number of existing two-family residential uses within the immediate vicinity of the subject property, along with the goals of the Community Plan to capitalize on the existing infrastructure in Priority Area 2 of the City, an amendment to the Future Land Use Plan to Medium-Density Residential would seem appropriate.

Public Comment

Has Staff received Public Comment at the time of this report? : **No**

Analysis / Waivers

The R-2 District encourages the same basic land use restrictions as the R-1 District. It allows a slightly higher population density than the R-1 District, with residential and related uses separated from commercial and industrial activity. Such a district shall encourage and maintain duplex and patio home development at appropriate locations. The R-2 District has a dual purpose. First, the district should provide areas for the development of two-family residential structures. Second, the district should facilitate the conversion of one-family residences to two-family use in established developed areas. The district may be located in developed areas or undeveloped areas of the city where an environment compatible with moderate-density residential development can be established. Such a district can also be located in medium-density areas where conversion may facilitate its continuation as a desirable area.

Conclusion

This rezoning request is not consistent with the Future Land Use Plan unless the amendment is approved, but it is in line with the vision of growth and development for this area of the city. The applicant states in their narrative that they wish to develop the lot into 6 single-family attached units however, the minimum lot size for this building type is 5,000 square feet with a minimum lot width of 50', so ultimate development plans may need to be revised in addition to addressing access management requirements for a shared drive off of NW A St.

Additional Details



Pending PC Items

R-1

R-1

R-1

MIKE HUEY
1202 NW
A ST

R-1

R-1

R-1

TIGER BLVD

R-1

R-1

R-1

R-1

NW A ST

NE TIGER BLVD



RZ24-0006
Mike Huey
R-1 to R-2



Rezone Narrative

Owner: Michael Hodges
Address: 1202 NW A ST.
Bentonville, AR 72712

Current Zoning: R-1, Single Family Residential

Proposed Zoning: R-2, Medium Density Two Family and Townhome Residential

Owner: Michael Hodges

Reason for rezoning: Setback change with R-2.

How will property relate to surrounding properties: The current surrounding properties are all zoned R-1, Single Family Residential.

Proposed Use: 6 Single Family Detached Units.

Traffic: The current city infrastructure is adequate to accommodate the use. No significant impact is expected to traffic.

Signage: Any signage to comply with city ordinances and regulations. None planned.

Appearance: 6 Single Family Residential Lots/Homes.

Water and Sewer Availability: Water mains and a 8" Sanitary system will need to be constructed to serve the property. City requested 8" sanitary lines tie into existing line to the south. New water meters and sanitary service lines will need to be constructed.

**AN ORDINANCE CHANGING REAL ESTATE IN THE CITY OF BENTONVILLE,
ARKANSAS, FROM ITS PRESENT ZONING CLASSIFICATION OF R-1, LOW
DENSITY SINGLE FAMILY RESIDENTIAL TO R-2, MEDIUM DENSITY TWO
FAMILY AND TOWNHOME RESIDENTIAL; AND FOR OTHER PURPOSES.**

(PROJECT NUMBER: RZ24-0006)

WHEREAS, 0806 INVESTMENTS LLC duly filed a petition with the Planning Commission requesting that the hereinafter described property situated in Benton County, Arkansas, be changed from its present zoning classification of R-1, LOW DENSITY SINGLE FAMILY RESIDENTIAL to R-2, MEDIUM DENSITY TWO FAMILY AND TOWNHOME RESIDENTIAL to be used in accordance with city zoning laws and state laws, which property is described as follows:

LOT 11A, BLOCK 3 OF W.A. BURK'S ADDITION, TO THE CITY OF BENTON COUNTY, ARKANSAS, AS SHOWN ON PLAT RECORD BOOK "20" AT PAGE 7. SUBJECT TO EXISTING EASEMENTS, MINERAL RESERVATIONS, CONVEYANCES AND/OR LEASES, AND COVENANTS, AND RESTRICTIONS, IF ANY;

WHEREAS, the Planning Commission duly met and considered the application and duly set the petition for public hearing to be held April 2, 2024 in the Council Chambers of the City of Bentonville;

WHEREAS, public notice of said hearing having been published in the Northwest Arkansas Democrat-Gazette for the time and in the manner required by law; and

WHEREAS, the Planning Commission voted to recommend to the City Council that the petition be approved and that said property be rezoned from its present classification of R-1, LOW DENSITY SINGLE FAMILY RESIDENTIAL to R-2, MEDIUM DENSITY TWO FAMILY AND TOWNHOME RESIDENTIAL.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL FOR THE CITY OF BENTONVILLE, ARKANSAS:

Section 1: That the above described real property is hereby changed from its present zoning classification of R-1, LOW DENSITY SINGLE FAMILY RESIDENTIAL to R-2, MEDIUM DENSITY TWO FAMILY AND TOWNHOME RESIDENTIAL to be used in accordance with the city zoning laws and state laws;

Section 2 - Severability Provision: If any part of this Ordinance is held invalid, the remainder of this Ordinance shall continue in effect as if such invalid portion never existed; and

Section 3 - Repeal of Conflicting Provisions: All Ordinances, Resolutions, or Orders of the City Council, or parts of the same, in conflict with this Ordinance are repealed to the extent of such conflict.

PASSED AND APPROVED this _____ day of _____, 2024.

APPROVED:

Stephanie Orman, Mayor

ATTEST:

Malorie Marrs, City Clerk

RESOLUTION NO. _____

**A RESOLUTION AMENDING THE CITY OF BENTONVILLE FUTURE LAND USE
MAP FOR A SPECIFIC AREA FROM OPEN SPACE TO MEDIUM-DENSITY
RESIDENTIAL; AND FOR OTHER PURPOSES.
(PROJECT NUMBER: RZ24-0006)**

WHEREAS, 0806 INVESTMENTS LLC duly filed a petition with the Planning Commission requesting that the hereinafter described property situated in Benton County, Arkansas, be changed from its present land use classification of OPEN SPACE and to MEDIUM-DENSITY RESIDENTIAL, which property is described as follows:

LOT 11A, BLOCK 3 OF W.A. BURK'S ADDITION, TO THE CITY OF BENTON COUNTY, ARKANSAS, AS SHOWN ON PLAT RECORD BOOK "20" AT PAGE 7. SUBJECT TO EXISTING EASEMENTS, MINERAL RESERVATIONS, CONVEYANCES AND/OR LEASES, AND COVENANTS, AND RESTRICTIONS, IF ANY;

WHEREAS, the Planning Commission duly met and considered the application and duly set the petition for public hearing to be held April 2, 2024 at the Council Chambers of the City of Bentonville;

WHEREAS, public notice of said hearing having been published in the Northwest Arkansas Democrat Gazette for the time and in the manner required by law; and

WHEREAS, the Planning Commission voted to recommend to the City Council that the petition be approved and that said future land use classification as presented on the property be changed.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL FOR THE CITY OF BENTONVILLE, ARKANSAS:

Section 1: That the above described real property is hereby changed from its present land use classification of OPEN SPACE to MEDIUM-DENSITY RESIDENTIAL on the City of Bentonville Future Land Use Map;

Section 2 - Severability Provision: If any part of this Resolution is held invalid, the remainder of this Resolution shall continue in effect as if such invalid portion never existed; and

Section 3 - Repeal of Conflicting Provisions: All Ordinances, Resolutions, or Orders of the City Council, or parts of the same, in conflict with this Resolution are repealed to the extent of such conflict.

PASSED AND APPROVED this ____ day of _____, 2024.

APPROVED:

ATTEST:

Stephanie Orman, Mayor

Malorie Marrs, City Clerk



URAR 413 LLC
413 Southeast 4th Street
PC Date: 4/2/2024

Staff Report Details	
Project Number	RZ24-0007
Applicant / Current Owner	Mark Haney / URAR 413 LLC
Site Area	+/- 0.27 Acres
Current Zoning	R-3, Medium-High Density Multifamily Residential
Requested Zoning	DE, Downtown Edge
Current Future Land Use Map Designation	High Density Residential (HDR)
Requested Future Land Use Map Designation	Downtown Commercial
Development Type / Use	Single Family Attached
Related projects	N/A

Property Description
This property is located at 413 Southeast 4th Street. The property is currently zoned R-3, Medium-High Density Multifamily Residential, and has a land use classification of High Density Residential (HDR). The property has R-1, Low-Density Single-Family Residential to the north and west, DE, Downtown Edge to the south, and a PRD to the east. All the adjacent properties are either Medium Density Residential (MDR) or High Density Residential (HDR).

Project Details
N/A

Relationship to the General Plan / Projected Traffic Impact
The Future Land Use Plan currently shows this property as High-Density Residential (HDR), in which the proposed rezoning of DE, Downtown Edge is not compatible. As such, the applicant is requesting a Future Land Use Map Amendment to Downtown Commercial. Downtown commercial areas include traditional mixed-use developments with a focus on design character and pedestrian access. Ground-floor uses should

Relationship to the General Plan / Projected Traffic Impact

include activities that capitalize on pedestrian traffic and support street life, such as restaurants, retail, and services that create frequent patron traffic. Upper-floor uses could include offices, services not reliant on ground-floor visibility, and residential units. Parking could be provided in downtown commercial areas, but only where it is not detrimental to the character of the area and is secondary to an active use.

Public Comment

Has Staff received Public Comment at the time of this report? : **No**

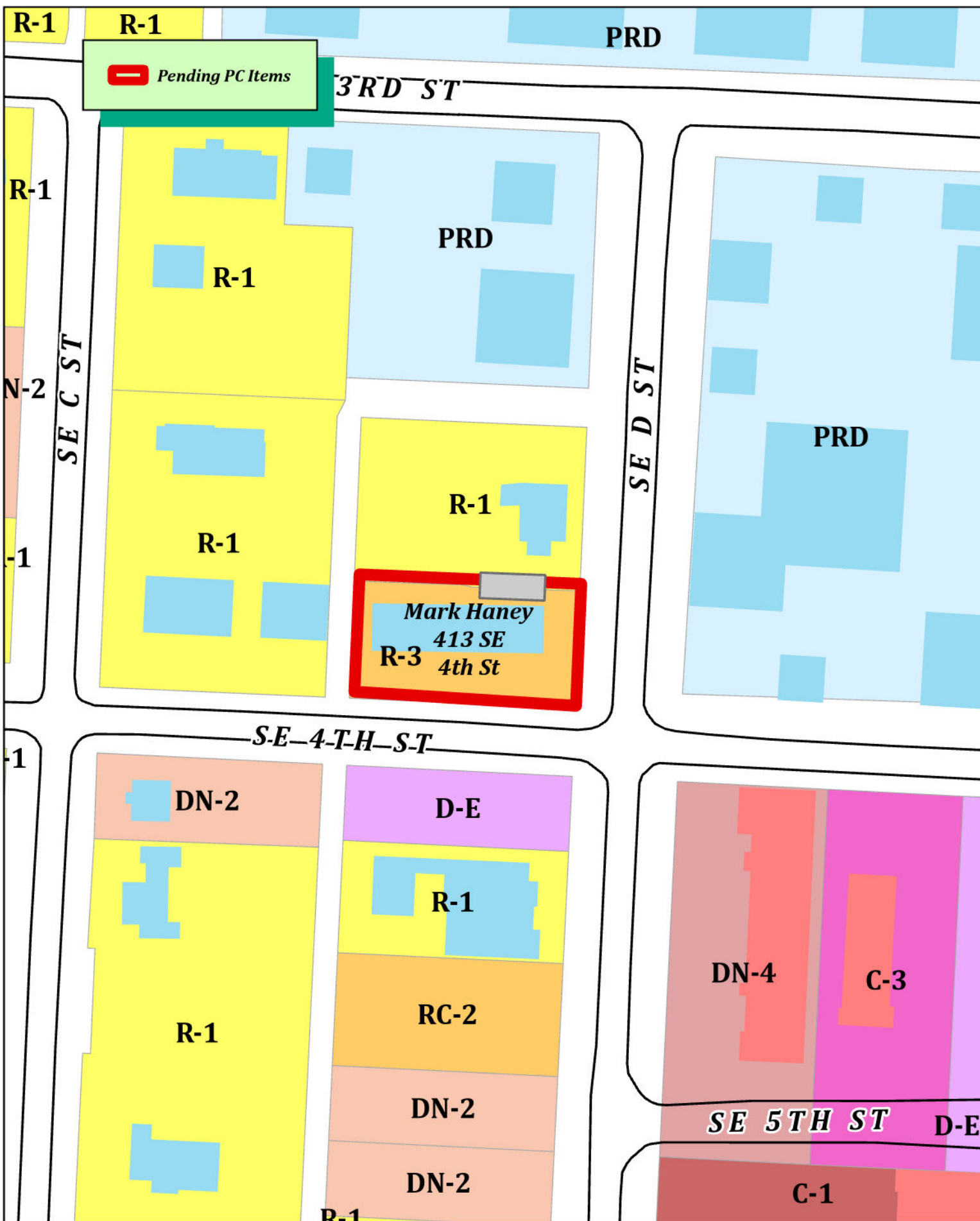
Analysis / Waivers

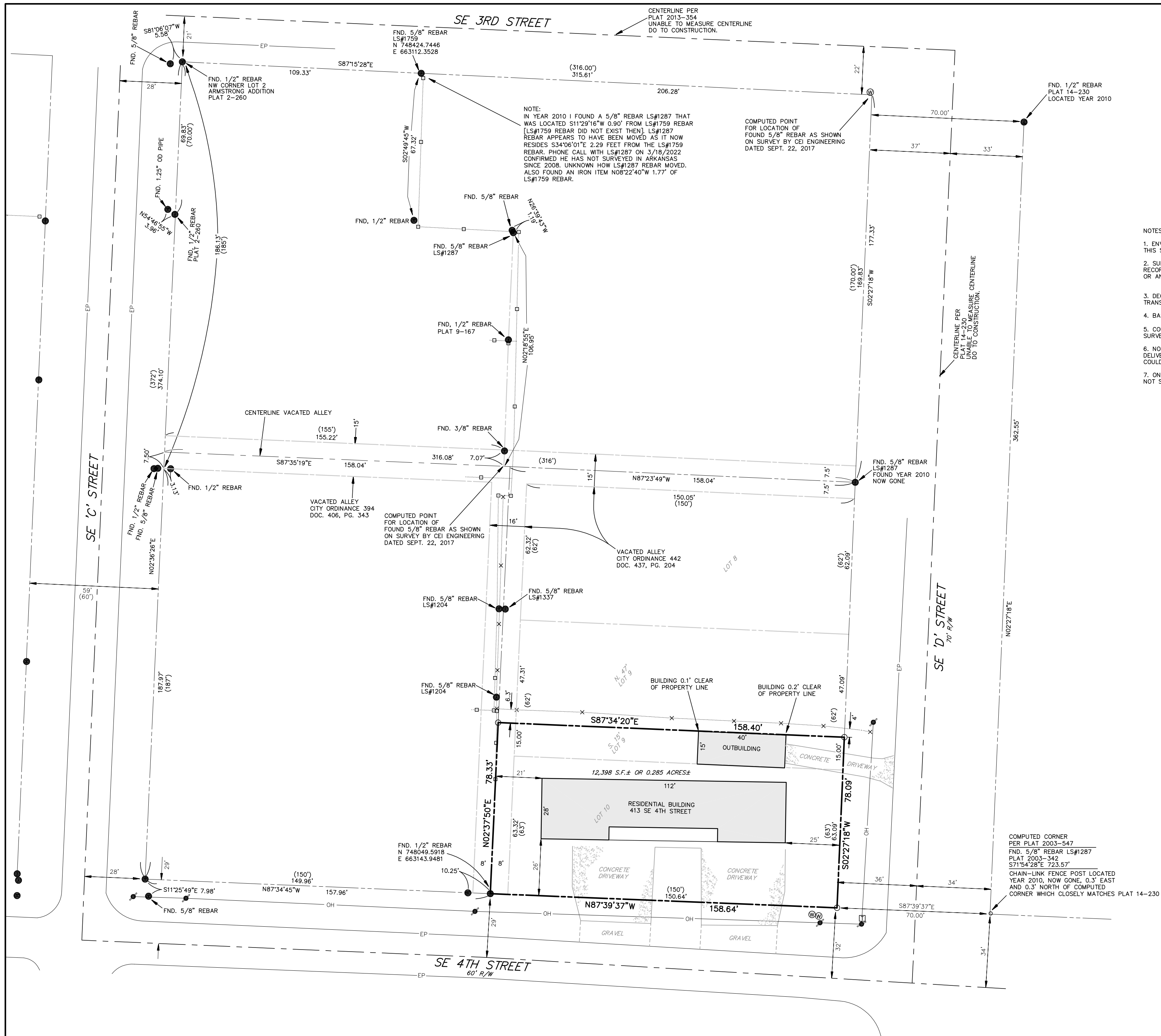
The requested Downtown Edge zoning district creates an area of transition between the Downtown Core with its retail emphasis and the lower-density residential neighborhoods on the outskirts of downtown. This is the area of downtown with the greatest potential for infill and redevelopment. The physical form of structures begins to shift from commercial to residential character with flexibility in use, taking on a more service-oriented character for surrounding neighborhoods. The horizontal and vertical mixed-use allows retail, commercial, office, and residential uses on all floors. Live/work housing, personal services, and small offices are strongly evident in this district. Buildings are spaced closely but are separated by setbacks.

Conclusion

This rezoning request is not consistent with the Future Land Use Plan, but there are compelling reasons why the Planning Commission may want to find that the proposal is consistent with the vision of growth and development for this area of the city, specifically the Downtown Edge directly south of the proposal and the Planned Unit Development to the north-east. The applicant states in their narrative that they wish to develop the lot into single-family attached units with a potential mixed-use component on the corner.

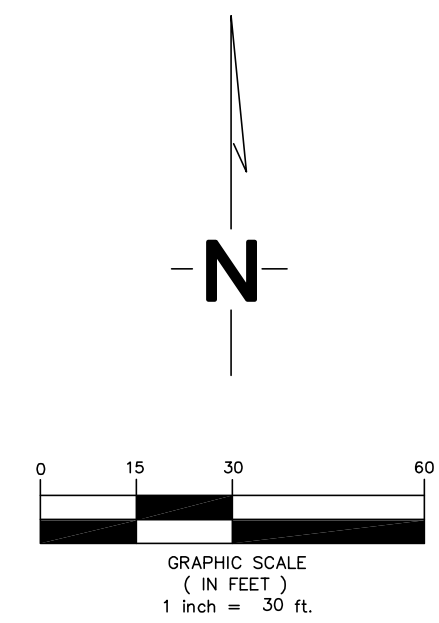
Additional Details





- LEGEND
- FOUND 1/2" REBAR OR AS NOTED
 - SET 1/2" REBAR W/CAP
 - PROPERTY LINE
 - LOT LINE
 - CENTERLINE
 - VACATED ALLEY LINES
 - WIRE/METAL FENCE
 - WOOD FENCE
 - OH OVERHEAD ELECTRIC LINE
 - U UTILITY POLE
 - ⊕ TELEPHONE RISER
 - ⊗ WATER METER
 - (XXX.XX') RECORDED DISTANCE
 - EP EDGE OF PAVEMENT

- NOTES:
1. ENVIRONMENTAL AND SUBSURFACE CONDITIONS WERE NOT EXAMINED AS A PART OF THIS SURVEY.
 2. SURVEYOR HAS MADE NO INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENTS OF RECORD, ENCUMBRANCES, RESTRICTIVE COVENANTS, TITLE EVIDENCE, ZONING RESTRICTIONS, OR ANY OTHER FACTS WHICH AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE.
 3. DECLARATION IS MADE TO THE ORIGINAL PURCHASER OF THE SURVEY AND IS NOT TRANSFERABLE.
 4. BASIS OF BEARINGS: ARKANSAS STATE PLAN GRID, NAD-83, NORTH ZONE.
 5. COUNTY JUDGMENT/COURT RECORDS WERE NOT EXAMINED AS A PART OF THIS SURVEY.
 6. NO ABSTRACT OF TITLE, TITLE COMMITMENT OR RESULTS OF TITLE SEARCH WERE DELIVERED TO SURVEYOR. THERE MAY EXIST OTHER DOCUMENTS NOT NOTED HEREON THAT COULD EFFECT THE HEREON DESCRIBED PARCEL.
 7. ONLY ABOVE GROUND OBSERVED UTILITIES WERE LOCATED. THERE MAY EXIST UTILITIES NOT SHOWN HEREON.



DESCRIPTION (TAKEN FROM WARRANTY DEED L201821309)

LOT 10 AND THE SOUTH 15 FEET OF LOT 9, BLOCK 2, ARMSTRONG'S SUBDIVISION OF RAILROAD ADDITION TO THE CITY OF BENTONVILLE, BENTON COUNTY, ARKANSAS, AS SHOWN ON PLAT RECORD 'B' AT PAGE 98.



PARCEL #01-01174-000
500-20N-30W-0-32-440-04-1286

BOUNDARY SURVEY
for PAM UNDERWOOD/URAR 413, LLC
LOT 10 & SOUTH 15' OF LOT 9, BLOCK 2
ARMSTRONG'S SUBDIVISION
BENTON COUNTY, ARKANSAS

Costello Land Surveying
4342 E. STATE HIGHWAY 90
PINEVILLE, MO. 64656
(417) 226-4524

JOB NO. 22022 FIELD DATE: MARCH/APRIL 2022
SHEET 1 OF 1 DRAWING: BNDY-REV1



Feb 23, 2024

Dear Bentonville Planning Commission,

We are requesting a rezone from R-3 to DE (Downtown Edge) at 413 SE 4th St in line with the Bentonville land use plan for high density residential in this area. Neighboring parcels are a mix of multifamily, commercial, and single family homes. The parcel at 402 SE D St directly south of this parcel is zoned DE, along with a handful of other parcels in the area in the same “High Density Residential” land use area. The Town Branch project is directly east of this parcel, zoned PRD and featuring a mix of multifamily and commercial uses compatible with the DE zoning.

Our intention at this time is to develop new single family attached homes on the site, and the flexible setback requirements of the DE zoning will allow us to design attractive new homes within the constraints of a small site. We may consider a mixed use component on the corner, but residential housing is our primary goal. Both SE D St and SE 4th St are designated as “Downtown Local” streets with a 50’ ROW requirement on the Master Street Plan, but the pre-existing ROWs are 70’ and 60’ respectively. The DE zoning on this site allows us to build closer to property lines, and with the existing ROW exceeding MSP requirements, there is still plenty of room for street trees, sidewalks, drainage, utilities, and traffic lanes. Existing water, sewer, and electric service are available on both SE 4th and SE D St. With 4 dwelling units currently on the site, change in traffic patterns will be negligible with redevelopment.

Thank you for considering our request.

Respectfully,
Mark Haney

**AN ORDINANCE CHANGING REAL ESTATE IN THE CITY OF BENTONVILLE,
ARKANSAS, FROM ITS PRESENT ZONING CLASSIFICATION OF R-3, MEDIUM-
HIGH DENSITY MULTIFAMILY RESIDENTIAL TO DE, DOWNTOWN EDGE; AND
FOR OTHER PURPOSES.**

(PROJECT NUMBER: RZ24-0007)

WHEREAS, URAR 413 LLC duly filed a petition with the Planning Commission requesting that the hereinafter described property situated in Benton County, Arkansas, be changed from its present zoning classification of R-3, MEDIUM-HIGH DENSITY MULTIFAMILY RESIDENTIAL to DE, DOWNTOWN EDGE to be used in accordance with city zoning laws and state laws, which property is described as follows:

LOT 10 AND THE SOUTH 15 FEET OF LOT 9, BLOCK 2, ARMSTRONG'S SUBDIVISION OF RAILROAD ADDITION TO THE CITY OF BENTONVILLE, BENTON COUNTY, ARKANSAS, AS SHOWN ON PLAT RECORD 'B' AT PAGE 98;

WHEREAS, the Planning Commission duly met and considered the application and duly set the petition for public hearing to be held April 2, 2024 in the Council Chambers of the City of Bentonville;

WHEREAS, public notice of said hearing having been published in the Northwest Arkansas Democrat-Gazette for the time and in the manner required by law; and

WHEREAS, the Planning Commission voted to recommend to the City Council that the petition be approved and that said property be rezoned from its present classification of R-3, MEDIUM-HIGH DENSITY MULTIFAMILY RESIDENTIAL to DE, DOWNTOWN EDGE.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL FOR THE CITY OF BENTONVILLE, ARKANSAS:

Section 1: That the above described real property is hereby changed from its present zoning classification of R-3, MEDIUM-HIGH DENSITY MULTIFAMILY RESIDENTIAL to DE, DOWNTOWN EDGE to be used in accordance with the city zoning laws and state laws;

Section 2 - Severability Provision: If any part of this Ordinance is held invalid, the remainder of this Ordinance shall continue in effect as if such invalid portion never existed; and

Section 3 - Repeal of Conflicting Provisions: All Ordinances, Resolutions, or Orders of the City Council, or parts of the same, in conflict with this Ordinance are repealed to the extent of such conflict.

PASSED AND APPROVED this _____ day of _____, 2024.

APPROVED:

Stephanie Orman, Mayor

ATTEST:

Malorie Marrs, City Clerk

RESOLUTION NO. _____

**A RESOLUTION AMENDING THE CITY OF BENTONVILLE FUTURE LAND USE
MAP FOR A SPECIFIC AREA FROM HIGH-DENSITY RESIDENTIAL TO
DOWNTOWN COMMERCIAL; AND FOR OTHER PURPOSES.
(PROJECT NUMBER: RZ24-0007)**

WHEREAS, URAR 413 LLC duly filed a petition with the Planning Commission requesting that the hereinafter described property situated in Benton County, Arkansas, be changed from its present land use classification of HIGH-DENSITY RESIDENTIAL and to DOWNTOWN COMMERCIAL, which property is described as follows:

LOT 10 AND THE SOUTH 15 FEET OF LOT 9, BLOCK 2, ARMSTRONG'S SUBDIVISION
OF RAILROAD ADDITION TO THE CITY OF BENTONVILLE, BENTON COUNTY,
ARKANSAS, AS SHOWN ON PLAT RECORD 'B' AT PAGE 98;

WHEREAS, the Planning Commission duly met and considered the application and duly set the petition for public hearing to be held April 2, 2024 at the Council Chambers of the City of Bentonville;

WHEREAS, public notice of said hearing having been published in the Northwest Arkansas Democrat Gazette for the time and in the manner required by law; and

WHEREAS, the Planning Commission voted to recommend to the City Council that the petition be approved and that said future land use classification as presented on the property be changed.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL FOR THE CITY OF BENTONVILLE, ARKANSAS:

Section 1: That the above described real property is hereby changed from its present land use classification of HIGH-DENSITY RESIDENTIAL to DOWNTOWN COMMERCIAL on the City of Bentonville Future Land Use Map;

Section 2 - Severability Provision: If any part of this Resolution is held invalid, the remainder of this Resolution shall continue in effect as if such invalid portion never existed; and

Section 3 - Repeal of Conflicting Provisions: All Ordinances, Resolutions, or Orders of the City Council, or parts of the same, in conflict with this Resolution are repealed to the extent of such conflict.

PASSED AND APPROVED this ____ day of _____, 2024.

APPROVED:

ATTEST:

Stephanie Orman, Mayor

Malorie Marrs, City Clerk



Dallaire

206 Southwest F Street

PC Date: 4/2/2024

Staff Report Details

Project Number	RZ24-0008
Applicant / Current Owner	CEI Engineering / Seth and Courtney Dallaire
Site Area	+/- 0.34 Acres
Current Zoning	R-1, Low-Density Single-Family Residential
Requested Zoning	DN-2, Downtown Medium Density Residential
Current Future Land Use Map Designation	Medium Density Residential (MDR)
Requested Future Land Use Map Designation	N/A
Development Type / Use	N/A
Related projects	N/A

Property Description

This property is located at 204 Southwest F Street. The property is currently zoned R-1, Low-Density Single Family Residential, and has a land use classification of Medium Density Residential (MDR). The property is surrounded by R-1, Low-Density Single-Family Residential properties to the east and west, and DN-2, Downtown Medium Density Residential to the north and south. There is a mix of land use classifications around the property including Medium Density Residential (MDR), Low Density Residential (LDR), and Public/Semi-Public.

Project Details

N/A

Relationship to the General Plan / Projected Traffic Impact

The Future Land Use Plan currently shows this property as Medium Density Residential (MDR), in which the proposed rezoning of DN-2 is compatible. As such, Medium-density residential areas include townhouses or duplex residential properties with a typical density of 8-12 units per acre. These areas are

Relationship to the General Plan / Projected Traffic Impact

found both near Downtown and in some recent growth areas. Relationship to the General Plan / Projected Traffic Impact These areas may also include local amenities for residents, including neighborhood parks, places of worship, etc.

This property is located within Priority Area 1, Downtown Intensification, as identified in Chapter 4 of the Bentonville Community Plan. This area highlights reinvestment in urban neighborhoods in and around Downtown Bentonville.

Public Comment

Has Staff received Public Comment at the time of this report? : **No**

Analysis / Waivers

The requested DN-2 zoning designation is to allow for an increased single-family density through small lot widths where alleys and infrastructure support such development, and where small-lot single-family development provides an appropriate transition between large-lot residential areas and those of higher density. In some instances, such as the end of blocks, townhouses may be appropriate in this district. Rezoning matches the Master Land Use Plan.

Conclusion

This rezoning request is consistent with the Future Land Use Plan and is in line with the vision of growth and development for this area of the city. The applicant states in their narrative that they wish to develop the lots with single family homes.

Additional Details

W CENTRAL AVE

 Pending PC Items

R-1

R-1

DN-1

SW 2ND ST

DN-1

DN-2

**Dallaire
206 SW F St**

DN-2

DN-1

R-1

DN-2

R-1

DN-2

R-1

DN-2

SW F ST

RZ24-0008
Dallaire
R-1 to DN-2





Civil Engineering, Landscape Architecture,
Survey, Planning & Program Management

2600 NE 11th Street, 3rd Floor
Bentonville, AR 72712
Office: 479.273.9472
ceieng.com

02-23-2024

City of Bentonville
Planning Dept.
305 SW A Street
Bentonville, AR 72712

RE: Bentonville Parcel 01-01871-000 Rezoning Application

Dear Planning Commission:

Please accept this narrative letter to accompany a formal request by Dallaire Trust, owner of real property located in the City of Bentonville, for consideration of a rezoning of parcel 01-01871-000 from R-1, *Single-Family Residential* to DN-2, *Downtown Medium-density Residential*. The parcel is approximately 0.34 acres.

Pending approval of this rezoning request, a proposed development plan will be submitted to address details of construction. It will be consistent with the allowable uses under the current City of Bentonville zoning code for the proposed district. Zoning of the subject tract as DN-2 use will be compatible with the adjacent neighbors made up of DN-2.

Thank you for your time and consideration in this matter.

Respectfully submitted,
CEI Engineering Associates, Inc.
Dustin Riley, PS

**AN ORDINANCE CHANGING REAL ESTATE IN THE CITY OF BENTONVILLE,
ARKANSAS, FROM ITS PRESENT ZONING CLASSIFICATION OF R-1, LOW
DENSITY SINGLE FAMILY RESIDENTIAL TO DN-2, DOWNTOWN MEDIUM-
DENSITY RESIDENTIAL; AND FOR OTHER PURPOSES.**

(PROJECT NUMBER: RZ24-0008)

WHEREAS, Seth and Courtney Dallaire duly filed a petition with the Planning Commission requesting that the hereinafter described property situated in Benton County, Arkansas, be changed from its present zoning classification of R-1, LOW DENSITY SINGLE FAMILY RESIDENTIAL to DN-2, DOWNTOWN MEDIUM-DENSITY RESIDENTIAL to be used in accordance with city zoning laws and state laws, which property is described as follows:

SEVENTY-FIVE FEET (75') OF EQUAL WIDTH SQUARELY OFF THE NORTH SIDE OF LOT 6 IN CORLEY'S ADDITION. ALSO, THE SOUTH 4 FEET OF A VACATED 8 FOOT ALLEY ADJACENT TO, AND NORTH OF SAID LOT 6 IN CORLEY'S ADDITION TO THE CITY OF BENTONVILLE, BENTON COUNTY, ARKANSAS, AS SHOWN PER PLAT RECORD A AT PAGE 152;

WHEREAS, the Planning Commission duly met and considered the application and duly set the petition for public hearing to be held April 2, 2024 in the Council Chambers of the City of Bentonville;

WHEREAS, public notice of said hearing having been published in the Northwest Arkansas Democrat-Gazette for the time and in the manner required by law; and

WHEREAS, the Planning Commission voted to recommend to the City Council that the petition be approved and that said property be rezoned from its present classification of R-1, LOW DENSITY SINGLE FAMILY RESIDENTIAL to DN-2, DOWNTOWN MEDIUM-DENSITY RESIDENTIAL.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL FOR THE CITY OF BENTONVILLE, ARKANSAS:

Section 1: That the above described real property is hereby changed from its present zoning classification of R-1, LOW DENSITY SINGLE FAMILY RESIDENTIAL to DN-2, DOWNTOWN MEDIUM-DENSITY RESIDENTIAL to be used in accordance with the city zoning laws and state laws;

Section 2 - Severability Provision: If any part of this Ordinance is held invalid, the remainder of this Ordinance shall continue in effect as if such invalid portion never existed; and

Section 3 - Repeal of Conflicting Provisions: All Ordinances, Resolutions, or Orders of the City Council, or parts of the same, in conflict with this Ordinance are repealed to the extent of such conflict.

PASSED AND APPROVED this _____ day of _____, 2024.

APPROVED:

Stephanie Orman, Mayor

ATTEST:

Malorie Marrs, City Clerk



Manning

1003 Northwest A Street

PC Date: 4/2/2024

Staff Report Details

Project Number	RZ24-0009
Applicant / Current Owner	Mark Haney / Bobby and Wanda Manning
Site Area	+/- 0.71 Acres
Current Zoning	R-1, Low-Density Single-Family Residential
Requested Zoning	DN-2, Downtown Medium Density Residential
Current Future Land Use Map Designation	Medium Density Residential (MDR)
Requested Future Land Use Map Designation	N/A
Development Type / Use	Single Family Homes
Related projects	N/A

Property Description

This property is located at 1003 Northwest A Street. The property is currently zoned R-1, Low-Density Single Family Residential, and has a land use classification of Medium Density Residential (MDR). The property is surrounded by R-1, Low-Density Single-Family Residential properties to the north, south, and west with a few DN-2, Downtown Medium Density Residential and R-3, Medium-High Density Multifamily Residential properties to the east and southeast. All the adjacent properties fall within the Medium Density Residential (MDR) land use classification.

Project Details

N/A

Relationship to the General Plan / Projected Traffic Impact

The Future Land Use Plan currently shows this property as Medium Density Residential (MDR), in which the proposed rezoning of DN-2 is compatible. As such, Medium-density residential areas include townhouse or duplex residential properties with a typical density of 8-12 units per acre. These areas are found both

Relationship to the General Plan / Projected Traffic Impact

near Downtown and in some recent growth areas. Relationship to the General Plan / Projected Traffic Impact These areas may also include local amenities for residents, including neighborhood parks, places of worship, etc.

This property is located within Priority Area 1, Downtown Intensification, as identified in Chapter 4 of the Bentonville Community Plan. This area highlights reinvestment in urban neighborhoods in and around Downtown Bentonville.

Public Comment

Has Staff received Public Comment at the time of this report? : **No**

Analysis / Waivers

The requested DN-2 zoning designation is to allow for an increased single-family density through small lot widths where alleys and infrastructure support such development, and where small-lot single-family development provides an appropriate transition between large-lot residential areas and those of higher density. In some instances, such as the end of blocks, townhouses may be appropriate in this district. Rezoning matches the Master Land Use Plan.

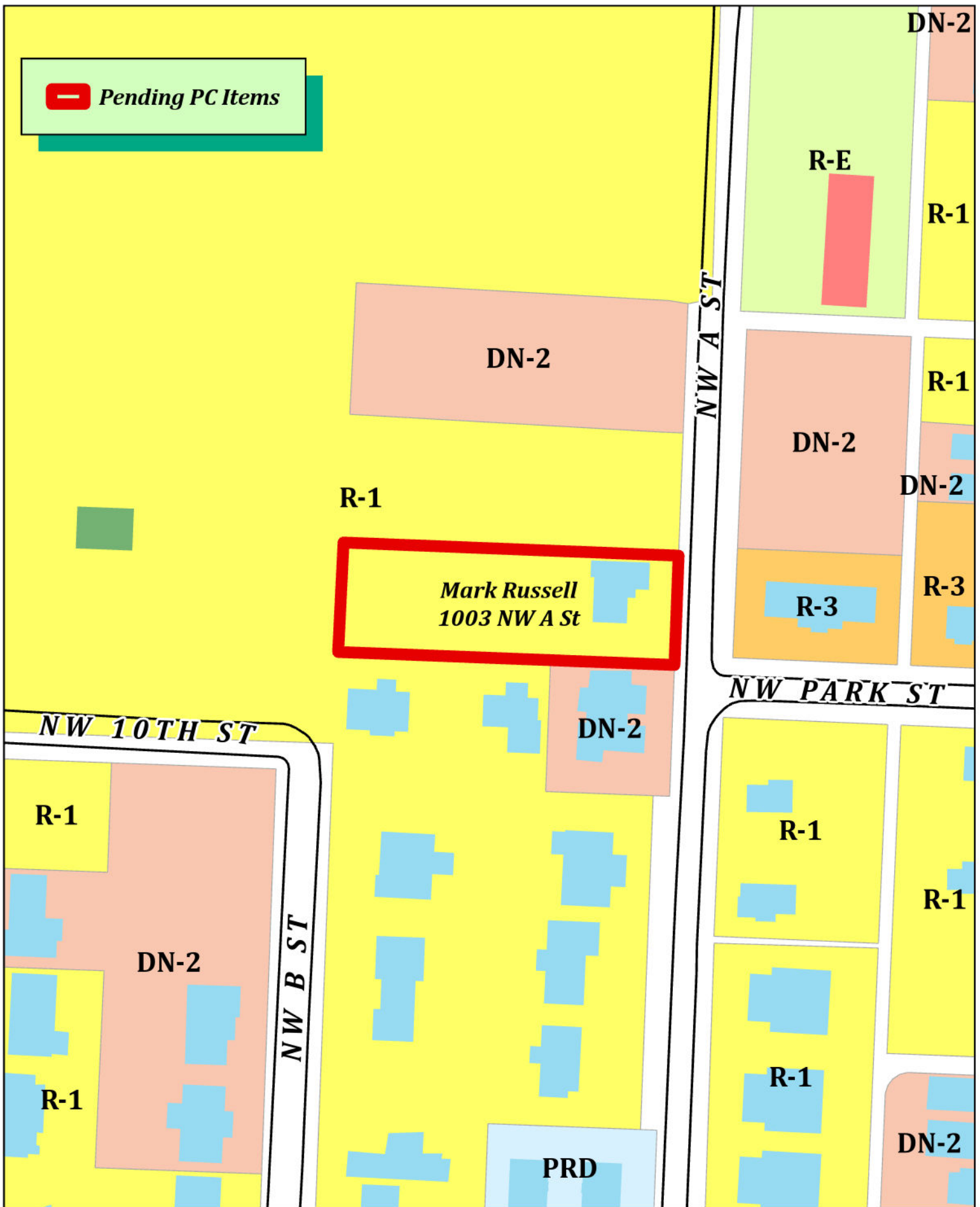
Conclusion

This rezoning request is consistent with the Future Land Use Plan and is in line with the vision of growth and development for this area of the city. The applicant states in their narrative that they wish to develop the lots with single family homes.

Additional Details



Pending PC Items



RZ24-0009
Mark Russell 1003 NW A St
R-1 to DN-2





Feb 23, 2024

Dear Bentonville Planning Commission,

We are requesting a rezone from R-1 to DN-2 at 1003 NW A St in line with the Bentonville land use plan for medium density residential in this area. Neighboring parcels are a mix of single family and small multifamily.

Our intention at this time is to develop new single family homes on the site. Existing water, sewer, and electric service are available on NW A St, however we intend to design and build a small sewer main extension along NW A St to accommodate more than one home, with the current service only available at the corner of the property. Traffic impact with new development on this site will be negligible.

Thank you for considering our request.

Respectfully,
Mark Haney

ORDINANCE NO. _____

**AN ORDINANCE CHANGING REAL ESTATE IN THE CITY OF BENTONVILLE,
ARKANSAS, FROM ITS PRESENT ZONING CLASSIFICATION OF R-1, LOW
DENSITY SINGLE FAMILY RESIDENTIAL TO DN-2, DOWNTOWN MEDIUM-
DENSITY RESIDENTIAL; AND FOR OTHER PURPOSES.**

(PROJECT NUMBER: RZ24-0009)

WHEREAS, BOBBY R & WANDA MANNING duly filed a petition with the Planning Commission requesting that the hereinafter described property situated in Benton County, Arkansas, be changed from its present zoning classification of R-1, LOW DENSITY SINGLE FAMILY RESIDENTIAL to DN-2, DOWNTOWN MEDIUM-DENSITY RESIDENTIAL to be used in accordance with city zoning laws and state laws, which property is described as follows:

LOTS #1 AND #2, TRACT B IN GREEN ACRES SUBDIVISION TO THE CITY OF BENTONVILLE
IN BENTON COUNTY, ARKANSAS;

WHEREAS, the Planning Commission duly met and considered the application and duly set the petition for public hearing to be held April 2, 2024 in the Council Chambers of the City of Bentonville;

WHEREAS, public notice of said hearing having been published in the Northwest Arkansas Democrat-Gazette for the time and in the manner required by law; and

WHEREAS, the Planning Commission voted to recommend to the City Council that the petition be approved and that said property be rezoned from its present classification of R-1, LOW DENSITY SINGLE FAMILY RESIDENTIAL to DN-2, DOWNTOWN MEDIUM-DENSITY RESIDENTIAL.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL FOR THE CITY OF BENTONVILLE, ARKANSAS:

Section 1: That the above described real property is hereby changed from its present zoning classification of R-1, LOW DENSITY SINGLE FAMILY RESIDENTIAL to DN-2, DOWNTOWN MEDIUM-DENSITY RESIDENTIAL to be used in accordance with the city zoning laws and state laws;

Section 2 - Severability Provision: If any part of this Ordinance is held invalid, the remainder of this Ordinance shall continue in effect as if such invalid portion never existed; and

Section 3 - Repeal of Conflicting Provisions: All Ordinances, Resolutions, or Orders of the City Council, or parts of the same, in conflict with this Ordinance are repealed to the extent of such conflict.

PASSED AND APPROVED this _____ day of _____, 2024.

APPROVED:

ATTEST:

Stephanie Orman, Mayor

Malorie Marrs, City Clerk



Street Specifications

PC Date: 4/2/2024

Staff Report Details

Project Number	2024-709
Applicant / Current Owner	
Site Area	+/- [Site_Area] Acres
Current Zoning	
Requested Zoning	
Current Future Land Use Map Designation	
Requested Future Land Use Map Designation	
Development Type / Use	
Related projects	

Property Description

Project Details

Relationship to the General Plan / Projected Traffic Impact

Public Comment

Has Staff received Public Comment at the time of this report? : **No**

Analysis / Waivers

Conclusion

Additional Details



Street Specifications

PC Date: 4/2/2024

Reviewer: Dan Weese, PE, Deputy Director Transportation

Type	Amendment
Code Impacted	Street Specifications
Recommendation	APPROVAL

Here is a summary of the modifications made to the Street Specifications. They are referenced to the new section numbering.

General – Changes to a format that more closely matches ARDOT’s specification format. This will help contractors while they are preparing their bids, possibly resulting in more bidders.

Section 100 – Definitions moved from former Section 200.

Section 200 – General Provisions moved from former section 100.

Section 300 – Plan submittal requirements. Moved some information from former Section 400

Section 400 – New Transportation Impact Study Section.

Section 500 – Design and Technical Criteria consolidates design and technical information from former sections 300 and 400.

Section 600 - Included requirements for Street Cuts, Excavations, and Borings. Consolidated information from former section 500. Section 600.3 Updated Round-a-bout design standards.

Section 700 – Consolidated information from former section 500.

Section 800 – Traffic Control Devices. Consolidated information from former section 400.3. Added more content to address these facilities.

Section 900 – Pedestrian Facilities. Consolidated information from former section 900. Added more content to address these facilities.

Section 1000 – Bicycle Facilities. Consolidated information from former section 900. Added more content to address these facilities.

Sections 1100 and 1101 - Added the Traffic Calming Guidebook, Residential Traffic Management Policy to this document. We also made updates to the list of methods available based on comments from the Traffic, Safety, and Signage committee, and emergency services.

Section 1200 – Inspection and Testing. Former section 800.

Section 1300 – Acceptance and Warranty. Added new information and former section 800.

Added Standard Details. These will be made available on the City Website once approved.

ORDINANCE NO. _____

**AN ORDINANCE REPEALING ORDINANCE NO. 2006-184 AND
ADOPTING AND CODIFYING NEW MINIMUM STANDARD
SPECIFICATIONS FOR STREETS; AND FOR OTHER PURPOSES.**

WHEREAS, City Council adopted Ordinance No. 99-74 on July 27, 1999, establishing Minimum Standard Specifications for Streets;

WHEREAS, City Council adopted Ordinance No. 2006-184 on November 28, 2006, repealing Ord. No. 99-74 and adopting new Minimum Standard Specifications for Streets;

WHEREAS, Minimum Standard Specifications for Streets should be updated and amended;

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY
OF BENTONVILLE, ARKANSAS:**

Section 1: That Ordinance No. 2006-184 is hereby repealed.

Section 2: That the Minimum Standard Specifications for Streets shall be and is hereby adopted with Attachment A: Minimum Standard Specifications for Streets, an electronic copy and paper copy of which is on file with the City Clerk, and is hereby adopted by references as though it were copied herein fully to be codified in Bentonville Municipal Code as Appendix C.

Section 3- Severability Provision: If any part of this Ordinance is held invalid, the remainder of this Ordinance shall continue in effect as if such invalid portion never existed; and

Section 4 - Repeal of Conflicting Provisions: All Ordinances, Resolutions, or Orders of the City Council, or parts of the same, in conflict with this Ordinance are repealed to the extent of such conflict.

PASSED and APPROVED this _____ day of _____, 2024.

APPROVED:

Stephanie Orman, Mayor

ATTEST:

Kirby Romines, City Clerk

Bentonville Municipal Code
Appendix C

**MINIMUM STANDARD
SPECIFICATIONS FOR STREETS**

DRAFT

100 DEFINITIONS OF TERMS AND ABBREVIATIONS

The following words, terms, and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

AASHTO - American Association of State Highway and Transportation Officials

ACCEPTABLE COMPLETION - This term shall mean substantial completion of the street construction as agreed upon by the CITY and the ENGINEER OF RECORD.

ACCESS MANAGEMENT – The concept of a public agency controlling the location of access points in order to achieve the dual purposes of providing access to individual land uses and limiting access on higher order streets in order to facilitate the smooth flow of traffic with a limited amount of impedance.

ACHM – Asphalt Concrete Hot Mix

ACI – American Concrete Institute

ADEQ – Arkansas Department of Environmental Quality

ALLEY – A minor public way dedicated to public use for utility easements and vehicle access to the back or the side of properties abutting a street.

APPLICANT – The person or designated agent providing pertinent information for preparation of permit, etc. This is often the developer.

ARDOT – Arkansas Department of Transportation

ASTM - American Society for Testing and Materials

CBR – California Bearing Ratio

CITY - The City of Bentonville, Arkansas, and its employees expressly authorized by the Mayor to accomplish the specified task.

CODE – The latest official adopted ordinances, policies, codes, and/or regulations of the City of Bentonville.

CONSTRUCTION COSTS – Generally, the cost of all right-of-way, earthwork, paving, drainage, structures, signing and striping, traffic control, curb and gutter, sidewalk, and utility work necessary to complete the required improvements.

CONTRACT DOCUMENTS – The executed contract agreement, approved plans, and technical specifications, prepared by an Arkansas licensed professional engineer, for constructing a facility.

CONTRACTOR - The licensed contracting company hired by the Developer/Owner to construct the street improvements.

CROSS SLOPE – Slope of the pavement surface, excluding gutter, measured perpendicular to the street centerline.

DECELERATION LANE – A right-turn lane or left-turn lane lengthened to provide for safe reduction of travel speed.

DESIGN SPEED – The speed determined for design that takes into account the physical features of a street influencing vehicle operation; the maximum safe speed maintainable on a specified section of street when conditions permit design features to govern. Design speed is normally 5 to 10 mph higher than the posted speed limit to provide a factor of safety and allow for other conditions or uses of the street that may affect vehicle operation.

DEVELOPER/OWNER - The person, firm, partnership, corporation or other entity planning, constructing, altering or reconstructing a public street.

DEVELOPMENT – Shall include, but shall not be limited to, the construction of a new improvement, the construction of an addition to an existing improvement, or a parceling which results in the need for access and utilities.

DRIVEWAY – A private access from a public or private roadway.

ENGINEER OF RECORD - The Arkansas Registered Professional Engineer responsible for the design of the improvements, usually engaged by the Developer/Owner.

ESAL – Equivalent Single Axle Load

FINAL INSPECTION - The final inspection shall be the formal inspection of the street construction by the CITY, the ENGINEER OF RECORD, and the CONTRACTOR, which results in a declaration of acceptable completion.

FORMAL ACCEPTANCE - Acceptance of the street construction in writing after a Maintenance Warranty has been submitted to and approved by the CITY.

FRONTAGE – The property line or lines of a lot which coincide with a right-of-way or other public open space.

ISSUED FOR CONSTRUCTION PLANS – Design plans that conform to these Standards and are signed and stamped by the engineer of record, ready for distribution to the contractor for construction.

ITE – Institute of Transportation Engineers

LANE WIDTH – The width of a travel lane measured from the centerline of the lane striping to the centerline of the parallel lane stripe, the face of curb, or to the lip of gutter, whichever is applicable.

LIFT – The maximum specified thickness of material that may be placed at one time.

LIP – Defines the outermost edge of the gutter pan.

LOS – Level of Service

MAINTENANCE WARRANTY - The security instrument which binds the Owner/Developer to a one (1) year responsibility for street construction repairs and/or reconstruction in the event of street construction failure.

PC – Point of curvature

PCC – Portland Cement Concrete

PCR – Point of curb return

PERMITTEE – The holder of a valid permit issued in accordance with these Standards or other City related process.

PHASING PLAN – A plan that defines improvements to be completed in specified parts over a defined sequence.

PI – Point of intersection

PLANS – Construction plans depicting public improvements to be constructed for the project.

PRE-CONSTRUCTION MEETING – A meeting between the engineer of record and assigned agents and the City to review proposed work necessary to construct the project, prior to proceeding with the work. A meeting may be required for each project, at the City's discretion.

PROFESSIONAL ENGINEER (P.E.) – An Arkansas licensed professional engineer.

PROFESSIONAL LAND SURVEYOR (P.L.S.) – An Arkansas licensed land surveyor.

PROJECT – The public or private improvement(s) designated in the approved plans, which are to be constructed in conformance with these Standards, including all public or private improvement projects whether development projects, private utility projects, or capital improvement projects.

PROJECT SUPERVISOR – The person appointed by the developer or contractor for management and control of the work on the project as performed by the contractor and subcontractors.

PROWAG – Public Right-of-Way Accessibility Guidelines. Federal Highway Administration

PT – Point of tangency

PUBLIC IMPROVEMENTS – Those public-type facilities to include: pavement, curb and gutter, sidewalk, pedestrian/bike paths, storm drain facilities with related appurtenances, culverts, channels, bridges, water distribution or transmission facilities with related appurtenances, sanitary sewer collection facilities with related appurtenances, water and waste water treatment facilities, pavement markings, signage and striping, traffic signals and related appurtenances, erosion control and right-of-way grading, or earth excavation processes integral to construction of other public improvements listed herein.

PUNCH LIST, INITIAL OR FINAL – A written list of work items, compiled by the inspector, which do not conform to these Standards, the plans or other associated City Codes that govern the project.

RECORD DRAWINGS – Original design drawings updated by the engineer of record depicting all modifications from the design that occurred during construction.

REPORT – A bound document, the contents of which may contain certain necessary analyses, surveys, tests, exhibits, and other pertinent data supporting the subject matter.

RIGHT-OF-WAY (ROW) – The land opened, reserved or dedicated for streets, sidewalks, drainage or other public purposes.

SHALL – A mandatory condition.

SHOULD – An advisory condition, recommended, but not required.

SIDEWALKS – Paved or otherwise improved area for pedestrian use.

SIGHT DISTANCE – The distance necessary for the driver of a motor vehicle stopped at a stop sign on a minor street or driveway to see approaching vehicles, pedestrians, and bicyclists along the intersecting major street and have sufficient space to make any allowed move to cross the major street or merge with traffic on the major street without causing vehicles, pedestrians, or bicyclists traveling at or near the design speed on the major street to slow down. The controlling distance for design is the longest distance, generally the distance necessary to merge with traffic.

STOP WORK ORDER (SWO) – A written instruction/notice from the City, revoking the developer's and/or contractor's rights to continue work on the project due to nonconformance with these Standards.

STOPPING SIGHT DISTANCE – The distance required by the driver of a vehicle traveling at the design speed to bring the vehicle to a stop after an object on the road becomes visible.

STREET CONSTRUCTION - Where this or similar terms are used, it shall mean construction of the street, curb and gutter, drainage (whether on the street or not), and all other appurtenances normally associated with street construction and approved as part of the street plans, whether on- site or off-site.

STRUCTURE – Anything constructed or erected with a fixed location below, upon, or above grade, including without limitation foundations, traffic signals, fences, retaining walls, buildings, inlets, vaults, poles, bridges, and major drainage facilities.

SUBCONTRACTOR – A person, other than the contractor, supplying labor and materials, or labor only, for the project, and working for the contractor or the City.

SUBSTANTIAL COMPLETION – The construction stage at which point all improvements and associated appurtenances have been fully constructed and are functional.

SWPPP – Storm Water Pollution Prevention Plan

USGS – United States Geological Survey

WARRANTY PERIOD – The period of time that the developer or contractor is responsible for material and workmanship defects in the public improvements, until written notification by the City of final acceptance of the public improvements.

WORK – All construction activity, including materials, labor, supervision, and use of tools and equipment necessary to complete the project in full compliance with these Standards, or approved plans.

200 GENERAL PROVISIONS

200.1 Authority of this Document

This document adopted by the City Council of the City of Bentonville, provides technical procedures and design standards to support applicable chapters of the Bentonville Municipal Code.

200.2 Intent and Provisions

These regulations shall be applicable to all lands within the City of Bentonville and its planning area and to lands either contiguous to or served by Bentonville water and/or sanitary sewer. The planning area includes those areas depicted on the Planning Area Map, copies of which are on file with the City Clerk and the Benton County Recorder. The City's review and approval of any plans, reports, or drawings or the City's inspection and approval of any improvements constructed by the developer in accordance with these Standards, does not constitute a representation, warranty, or guarantee by the City that such improvements are free from defects or will operate adequately for the purpose intended. These Standards shall also be used as a guidance document for projects to be constructed by the City.

The chapters and appendices that make up these Standards pertain to planning, design, approval, construction, inspection, testing, and documentation of street improvements. All construction and development within the jurisdiction of the City of Bentonville is subject to these regulations and approval by the City Engineer or their respective designee(s). Street improvements associated with private development must receive Planning Commission approval prior to commencing construction. The specifications presented within are the minimum requirements and it is understood that more stringent requirements may be mandated by the Planning Commission, City Engineer, and/or the project design engineer with regard to a specific project.

200.2.1 Objectives of Street Standards

It is the objective of these Minimum Street Standards to address the following:

- Public Safety and Convenience. To protect the public health, safety, and welfare and to minimize public inconvenience resulting from construction and maintenance activities within the public rights-of-way.
- Maintaining Public Use. To assure that bicycle, pedestrian, and vehicular uses of rights-of-way are the primary uses thereof and that the rights-of-way are properly maintained during construction and repair work in these areas.
- Standardizing Criteria. To protect the City's infrastructure investment by establishing standardized design, materials, construction, and repair criteria for all public improvements.
- Optimizing Use. To optimize the use of the limited physical capacity of public rights-of-way held by the City.
- Protecting Private Property. To protect private property from damages that could occur

because of faulty design and construction of public improvements upon public rights-of-way and easements.

- Inspection. To provide criteria for inspection of public and private improvements, by the City or the engineer of record's designated inspector, in order to assure conformance with approved plan's uniformity, proper construction techniques, and to ensure that acceptable materials are used for the construction process of such public and/or private improvements.

200.3 Resource Standards

The following resource standards (the latest editions unless otherwise stated) may be used as reference material when certain design or construction methods and materials are not specifically addressed in these Standards and require approval of the City Engineer.

- Arkansas Department of Transportation (ARDOT) Standard Specifications for Highway Construction
- ARDOT Standard Specifications for Transportations Materials and Methods of Sampling and Testing, and AASHTO Provisional Standards
- Arkansas Fire Prevention Code
- American Association of State Highway and Transportation Officials (AASHTO), A Policy on Geometric Design of Highways and Streets (also called the "Green Book")
- Institute of Traffic Engineers (ITE), Trip Generation Volumes 1 through 3
- Institute of Traffic Engineers (ITE), Designing Walkable Urban Thoroughfares: A Context Sensitive Approach
- Institute of Traffic Engineers (ITE), Highway Capacity Manual
- ASTM International (formerly American Society for Testing and Materials)
- Federal Americans with Disabilities Act (ADA) Regulations
- U.S. Department of Transportation, Manual on Uniform Traffic Control Devices (MUTCD)
- Federal Highway Administration (FHWA), Roundabouts: An Informational Guide
- American Association of State Highway and Transportation Officials (AASHTO), Guide for the Development of Bicycle Facilities
- City of Bentonville standard drawings, details, and specifications when available
- National Association of City Transportation Officials (NACTO), Urban Bikeway Design Guide

200.4 Authority of the City Engineer

The City Engineer shall have the authority on behalf of the City to determine that all design and construction is completed to a level that is equal to or exceeds the requirements set forth in these Minimum Street Standards.

200.5 Enforcement Responsibility

It shall be the duty of the City Engineer acting on behalf of the City of Bentonville to enforce the provisions of these Minimum Street Standards.

200.6 Interpretations of Standards

In the interpretation and application of the provisions of these Minimum Standard Specifications for Streets, the following principles apply:

200.6.1 Governing Standards

All standards and specifications shall meet Federal, State and Local regulations.

200.6.2 Prior Acceptance of Construction Plans

These Minimum Standard Specifications for Streets shall not modify or alter any street construction plans that have been filed with and approved by the Planning Commission prior to the effective date of the ordinance or resolution adopting these Standards. This exception shall be subject to the conditions and limitations under which said plans were accepted by the City Engineer.

200.6.3 Amendments and Revisions to Standards

Amendments to these regulations must be presented to the City Council for adoption.

200.7 Responsibility of the Developer/Owner

The Developer/Owner shall be responsible for all aspects of the project including but not limited to: Engineering, Construction, Inspections, Site Safety and all cost associated therewith.

The City shall have the right of access to sites during the planning, design, and construction phases of the development. The Developer shall schedule all activities to provide the City with adequate notice and review time.

200.8 Waivers

When strict interpretation of these regulations causes undue restrictions, the City of Bentonville Planning Commission may grant a waiver of specific requirements. Waiver requests shall be submitted to the Planning Commission pursuant to the requirements and procedures set forth in the Land Development Code.

200.9 Work Schedule

Normal Working Week is Monday through Friday between the hours of 7:30a.m. to 4:00p.m., excluding City Holidays. Any work performed by the City of Bentonville Transportation

Department outside of the normal hours of operation will be assessed at the After Hours Fee, per hour, of the most recent amount approved by City Council.

200.10 Utility Coordination

The developer shall coordinate construction with affected private utility companies and notify said utilities in accordance with their notification prior to interruption of service or operation. Prior to construction, the developer shall be responsible to make special arrangements with private utilities for any relocation necessary within the approved project and to coordinate such relocation activities with adjacent affected property owners. The developer shall be responsible to notify said utilities of any damage to utility systems caused during construction.

All private utility installation within the City of Bentonville right-of-way shall follow all requirements of the ARDOT Utility Accommodation Policy.

200.11 Traffic Control

No work within the Right-of-Way shall be allowed until a Traffic Control Plan has been submitted and approved. Traffic Control Plans shall conform to the Manual on Uniform Traffic Control Devices (Latest Edition) and include the dates, times and duration of the proposed closure. Any work that has commenced within the Right-of-Way without an approved Traffic Control Plan shall immediately halt all activities, install the Right of Way back to pre-existing conditions by any means necessary, pay any and all fees or fines associated, and submit a Traffic Control Plan for approval.

200.12 Permits

200.12.1 General

All permits required to accomplish the work shall be the responsibility of the Developer/Owner or the Engineer of Record. Copies of all permits shall be submitted to the City of Bentonville to ensure compliance with regulatory agencies.

200.12.2 Right-of-Way Permit

Right-of-Way permits shall be required for all work performed within the public right-of-way that is not associated with a defined project as described in the City of Bentonville Land Development Code, unless deemed necessary by the Transportation Director or Designee.

A complete Right-of-Way Permit Application shall be submitted to the City of Bentonville Transportation Department. Once the application has been reviewed and determined to be complete and applicable, the permit application fee must be paid. The application fee can be submitted in the form of a cashiers' check, company check, cash or credit card (if services are available).

Prior to the permit being issued, the permittee must submit a performance guarantee to the City of Bentonville, in the form of a performance bond, cashier's check, cash, or letter of credit. The guarantee shall be 150% of the estimated cost to restore the public infrastructure to pre work conditions. This amount will be developed by the City of Bentonville and relayed to the permittee. If a bond or a letter of credit is used as a guarantee, it must be issued by a surety

company licensed to do business in the State of Arkansas and must list the City of Bentonville as the beneficiary.

Once the permit has been issued, the permittee shall post the permit onsite visible from the adjacent roadway and establish the proper work zone according to the approved traffic control plan.

The Transportation Director or designee may issue a Stop Work Order and suspend work. Stop Work Orders, Notices and instructions may be given to the permittee or his agent or to any person in charge of the work. The City of Bentonville may require additional work to be performed by the permittee in the interest of safety, to avoid traffic congestion, or to meet required regulations.

Permittee shall schedule inspections on the work as required. Additional information on inspections can be found in Article 1100 of these specifications. Any work performed without an inspection is subject to removal. Re-inspections will be billed at the current rate established by City Council.

A Final Inspection is required and must be approved before the permit can be closed. Once the final inspection has been approved, the performance guarantee will be held for an additional ninety (90) days as a warranty. At the end of the warranty period, if no deficiencies are found then the guarantee will be sent back to the permittee and the work will be considered complete. If deficiencies are found, then the permittee will be responsible for correcting these items. If the permittee fails to fix the deficiencies, the City shall use the guarantee provided by the permittee to correct the work.

300 CONSTRUCTION PLAN SUBMITTAL REQUIREMENTS

300.1 General

This chapter gives criteria for submitting engineering drawings as required by these Minimum Standard Specifications for Streets. Plans, Specifications and additional documentation shall be submitted electronically following the City's most current submittal procedures. Hard Copies may be requested.

300.1.1 Submittal Content

The submittal shall be complete with all necessary information included for review of the project, including but not limited to:

- Traffic Study, where required – refer to Chapter 300;
- Soils investigation report – refer to Chapter 600, Pavement Design and Report;
- Pavement design report – refer to Chapter 600, Pavement Design and Report;
- Utility plans;
- Erosion control plans;
- SWPPP – refer to ADEQ General Stormwater Permit Requirements;
- Tree preservation and landscape plans, where required;
- Drainage report – refer to the City's Stormwater Management and Drainage Manual;
- Public Improvement Construction Plans

The following sequence should be used as a general guide when assembling plans:

- Title Sheet
- Index of Sheets
- Governing Specifications, General Notes, and Legend
- Typical Street Sections
- Special Details
 - Driveway, County Roads, Guardrail Widening and Pipe Underdrains
 - Stage Construction
 - Box Culvert Details
 - At-Grade Intersection Layouts
 - Temporary Erosion Control Details
 - Other Details
- Maintenance of Traffic
- Summary of Quantities, if required
- Survey Control Information and Details
- Street Plan and Profile Sheets
- Signalization Plans
- Street Signage, Pavement Markings, and Detail Sheets
- Cross-Sections

300.1.2 Engineering Services

All engineering services needed for the project shall be under the supervision of a Professional Engineer registered in the State of Arkansas (Engineer of Record).

The design data, plans, specification, and related information shall bear the name of the Engineer of Record. The registration seal of the Engineer of Record shall be placed on each sheet of the Plans along with his/her signature.

Soils investigations, materials testing, and quality control testing shall be performed by a laboratory approved by the City Engineer. All reports submitted shall bear the name of the Engineer of Record.

Written Certification by the Engineer of Record that materials and construction conform to the approved Plans and Specifications is required.

300.1.3 Horizontal and Vertical Datum

Construction conforming to these standards shall meet the requirements of Article 1000 of the Land Development Code – “Minimum Survey Standards”. Engineer of Record shall identify which monuments were used for horizontal and vertical control.

300.1.4 Design Report

The Design Report shall contain all information not normally shown on the plans or given in the specifications, including design calculations, results of soil borings, soil test results, and any other design data used in the development of the Plans and Specifications, and shall be required before the project will be allowed to go to Planning Commission. The City Engineer may waive this requirement on a case-by-case basis.

300.1.5 Additional Requirements

The engineer of record should be aware that whenever unusual or serious problems are anticipated or encountered for a proposed construction project as determined by the City Engineer, additional information and analysis beyond the minimum requirements of these Standards and criteria will be required.

300.1.6 Plan Revisions

Any changes to the plans and specifications shall be submitted to the City of Bentonville for review and approval. These submittals shall follow the City of Bentonville’s standard process.

The Engineer of Record shall submit a cover letter explaining all changes along with all sheets of the plans or specifications that are affected. Any changes made to the plans and specifications that are not addressed in the cover letter will not be approved. Revisions to drawings shall be indicated on the title block and shall show the nature of revisions and preparation date along with cloud revision(s) in plan and /or profile view(s).

300.1.7 Incomplete Plans

Incomplete plan submittals or plans that do not have a sufficient level of detail will not be reviewed. The applicant shall be notified if the submitted plans are incomplete. Partial plans may be submitted when appropriate. This may be allowed on a case by case basis and must be authorized by the City prior to submittal.

300.2 General Formatting and Required Information

A detailed list of requirements can be found in Article 900 of the Land Development Code. Below is a list in addition to the required items that need to be included within the plans:

- 2" x 2" blank box on each sheet to place the City approval stamp after the preconstruction meeting:
- All sheets shall include the engineer of record's signature, seal and date and shall be stamped and signed in accordance with the rules and regulations established by the Arkansas State Board of Licensure for Professional Engineers and Professional Surveyors. No plans are considered final and ready for construction until signed and stamped by the engineer of record and stamped by the City.
- Indemnification Statement. The indemnification statement shall be shown on the cover sheet, as follows:

These plans have been reviewed by the City for concept only. The review does not imply responsibility by the reviewing department, the City Engineer, or the City for accuracy and correctness of the calculations. Furthermore, the review does not imply that quantities of items on the plans are the final quantities required. The review shall not be construed for any reason as acceptance of financial responsibility by the City for additional quantities of items shown that may be required during the construction phase.

- Waivers. All approved waivers shall be listed on the Cover Sheet along with the date approved.

300.2.1 Scale

- For plan and profile scales, horizontal scales shall be 1 inch = 10, 20, 30, 40, or 50 feet and Vertical scales shall be 1 inch = 5 or 10 feet;
- Overall plan scales shall not exceed 1 inch = 100 feet; and
- Cross sections shall have a maximum vertical exaggeration ratio of 5:1, while 1:1 is preferred.
- All signage and striping plans shall have a minimum scale of 1 inch = 30 feet.

The scales listed above may not be appropriate for all plans. Other scales may be approved on a case by case basis upon request. A bar scale shall be shown on all scaled plan sheets. Other scale types may be used upon City approval.

300.2.2 Dates

All sheets shall have dates shown in the title block for both plan preparations and subsequent revisions. An electronic date shall appear on all electronic files to be submitted. Final approved construction plans shall start the date sequence again.

300.2.3 North Arrow

All design sheets shall have a north arrow oriented toward the top or right side of applicable sheets.

300.2.4 Existing Facilities

Each sheet shall show all existing facilities in a screened (ghosted) or alternate line weight or type.

300.2.5 Legends of Symbols

Each plan sheet shall include a legend that identifies the symbols pertaining to the sheet unless an overall legend is provided for the entire plan set.

300.3 Sheet Title Names and Specific Requirements

This section outlines the minimum required information to be included on specific sheets of the plan set. The following sheets are listed in the order they should appear in the plan set. Some sections of the plan set may have more than one sheet but should be labeled alike.

300.3.1 Cover Sheet

Cover sheet shall contain an index of all sheets within the plan set.

300.3.2 Grading and SWPPP

These plan sheets shall be drawn at a legible scale (1 inch = 10 - 50 feet) to clearly convey design and construction intent. All erosion control devices (temporary and long-term) shall be included, as well as stabilization methods with specific notes. Plan must show grades of all drainage facilities. All grading plans shall meet the requirements as described in the Land Development Code, Section 1100.08 Grading and Drainage Regulations of the Bentonville Municipal Code. The Stormwater Pollution Prevention Plan (SWPPP) and erosion control measures shall meet the requirements the Arkansas Department of Environment Quality.

300.3.3 Street Improvements

The plans shall include plan and profile views for all public and private streets proposed in the development. Cross-sections are required for all streets. All plans shall be produced at a scale that is completely legible for review and for construction. In addition to the requirements set

forth elsewhere in these Minimum Standard Specifications for Streets, the following information shall be shown on all street plans submitted for review and approval:

- Street Plan View. The plan view shall include, but not be limited to, the following:
 1. Existing and proposed property/right-of-way lines, easements, and adjacent property owner names and addresses. The type and dimension of easement or tract is to be clearly labeled, and dimensions of property and right-of-way lines are to be marked.
 2. Survey lines and stationing lines shall normally be based on centerline of travel lanes; other profiles may be included but shall be referenced to centerline stationing. Stationing in cul-de-sacs shall be on the centerline to the center of the bulb with flowlines dimensioned within the bulb. Survey lines and stationing lines shall deviate from centerline of the street to parallel the roadway for situations where two sides of a divided street are not parallel.
 3. Stationing shall read in ascending order in the direction of the north arrow or to the right.
 4. Streets, including street names, if known. Streets that have not been named shall be labeled similarly (e.g. Street A, B, C, etc.).
 5. Dimensions of roadway including sidewalk/share-use path widths, greenspace widths, back of curb widths, etc.
 6. Existing utilities and structures including, but not limited to:
 - a. Storm sewer*
 - b. Ditches/swales
 - c. Bridges/culverts
 - d. Fence lines and gates
 - e. Water lines*
 - f. Sewer lines*
 - g. Curbs and gutters
 - h. Edge of pavement
 - i. Telephone lines*
 - j. Electric lines/poles*
 - k. CATV lines*
 - l. Gas lines*
 - m. Signs
 - n. Guardrails
 - o. Houses/structures
 - p. Trees/landscaping
 - q. Driveways
 7. Critical elevation (flowline, invert of pipe, etc.) of all existing and proposed utility or drainage structures.

*Denotes all appurtenances for existing infrastructure shall be shown.

8. Storm drainage flow direction arrows, particularly at intersections and all high and low points.
9. Match lines, stations and consecutive sheet numbers, beginning with cover sheet.
10. Station and elevation of all horizontal curves including PI, PCs, PTs, etc.; high or low point and VPI/PVI of all vertical curves; existing and proposed, centerline bearings, distances, and complete curve data.
11. Curb return radii, existing and proposed. Stations and elevations of all curb returns at the gutter line; mid-point elevations and additional locations as necessary, flowline to flowline intersection elevations, corresponding centerline spot elevations and percent of grade from the PCR to flowline-to-flowline intersections of all crossspans.
12. Centerline stations of all intersecting streets.
13. Survey tie lines to section corners or quarter corners, consistent with that shown on the plat.
14. All street intersections shall include construction and lane details for proposed and existing facilities for a minimum of 150 feet beyond the limits of construction.
15. Basis of plan view and profile elevations shall be the same (e.g. flowline to flowline, top of curb and bottom of curb, etc.).
16. Cul-de-sac high point and grades shown with percent arrows at critical points (e.g. cross slope and flowline).
17. Location of all proposed and existing sidewalk and/or trails.
18. Soil boring locations and CBR test locations (when available). Soil boring and CBR results shall be provided in a standalone sheet with results in a tabular format for each location.
19. Location of all existing or proposed retaining walls.
- **Street Profile.** Profiles shall include, but not be limited to, the following:
 1. All streets shall be designed to show profile of centerline.
 2. Existing grade and proposed grade. Both grades are to be plainly labeled for all centerline profiles.
 3. Existing and design elevations shall be provided for the centerline.
 4. Elevation and location of all underground utilities (e.g. waterlines, sanitary sewer lines, storm drains, etc.) in the immediate vicinity of the construction shall be shown on the profile. Separate left and right profiles may be required for clarification when there are multiple underground utilities.
 5. Station and elevation of all vertical grade breaks.
 6. Distance and grade between VPIs.

7. Vertical curves, when necessary, with VPI, VPC, and VPT, high or low point (if applicable) stations and elevations. All vertical curves shall be labeled with length of curve (L) and K- values.
 8. Superelevation information (when relevant)
 9. Profiles for curb returns, when requested.
 10. Specify limits of typical sections and transitions.
 11. Separate drainage profiles are required for off-site storm drain infrastructure.
- **Typical Street Section(s).** A typical street section shall be included in the plans and shall show the following:
 1. Pavement section type, width, and thickness;
 2. Street cross slope and crown;
 3. Location of profile grade (crown, centerline, curb line);
 4. Curbs and/or ditches/swales;
 5. Existing and proposed grades;
 6. Right-of-way width;
 7. Sidewalks and/or trails, where required;
 8. Landscaping, if required;
 9. Stationing limits for the typical section;
 10. Street name(s) and classification for all proposed street sections; and
 11. Parking, where required.
 - **Cross-Sections.** Street cross-sections shall be provided at intervals deemed necessary by the City to effectively evaluate connection with the existing facilities (typically every 50 feet horizontally, at intersections, transition points, driveways, storm drain infrastructure, etc.). Typical and unique cross-sections shall be submitted for each street, including the proposed width, treatment of curbs and gutters, and sidewalks/trails where deviations are proposed from these Standards. The cross-sections shall include the following:
 1. Profile centerline, including proposed and existing spot elevations;
 2. Street width;
 3. Right-of-way width;
 4. Pavement cross slope;
 5. Pavement thickness;
 6. Curbs and/or ditches/swales;
 7. Proposed and existing waterlines, sanitary sewer lines, and storm drains (including size, material, elevation, and location); and
 8. Street name.
 - **Key Map.** *Clearly depict each sheet's relative position compared to the overall project. The street or area that the design pertains to shall be shaded. Minimum scale is 1 inch = 500 feet, showing the location and name of all streets within and adjacent to the proposed construction and all planned streets. The scale should be indicated. The key map should be oriented consistent with detail in the sheet (i.e. same north).*

300.3.4 Street Improvement Details

All pertinent details related to street improvements shall be shown on a detail sheet (or sheets) for the project. Standard City of Bentonville detail sheets shall be included, along with standard ARDOT detail sheets where work is planned within ARDOT right-of-way.

300.3.5 Traffic Signing and Pavement Markings

All permanent and temporary traffic signage and pavement markings shall be shown on the signing and striping plan, with the existing and proposed street system used as the base layout. Locations of signs and pavement markings shall be indicated by station/offset, or other specific dimensions indicating exact locations. This sheet shall also contain any construction or application notes (e.g., application temperatures, surface cleaning methods to be used prior to application, etc.).

- Area Map. Separate signage and striping plans are to consist of an overall area map noting all specific use areas (e.g. schools, parks, recreation centers, library, commercial, industrial, fire zones, no-parking and designated parking areas, etc.).
- Street Segment Pages. The pages following the area map are to be broken down into street segments, for notation of signage and striping details.
- Signage Plan. The permanent signage plan should:
 1. Show the general longitudinal location of each sign (horizontal offset and station)
 2. Specify the sign legend and sign type, per MUTCD requirements;
 3. Specify the sign size;
 4. Detail post and base dimensions and installation plan (showing sleeves, depth below surface, and materials used, according to City standards);
 5. Specify the blank gauge of the sign; and
 6. Note the reflectorization provided
- Striping Plan. The striping plan must show:
 1. Width, color and type;
 2. Lane widths, taper lengths, storage lengths, etc.;
 3. Striping/skip interval;
 4. Typical treatments for acceleration/deceleration lanes, turning lanes, and crosswalks;
 5. Type of material (thermoplastic);
 6. Station and offset or dimensions to all angle points, symbol locations, and line terminations; and
 7. Pedestrian crossings.
- Traffic Control Plan. Refer to section 100.11 for details

400 TRANSPORTATION IMPACT STUDY

400.1 Introduction

400.1.1 General

This chapter contains the policies and guidelines necessary for the preparation of Transportation Impact Studies (TIS) for development proposals in the City of Bentonville. The policies exist to ensure consistent and proper traffic planning and engineering practices when developments are being considered within the City. The guidelines provide for a standard process, set of assumptions, set of analytic techniques, and presentation format to be used in the preparation of the TIS.

400.1.2 Applicant Responsibility

The traffic study shall provide the necessary data and analysis to adequately assess the impacts of a development proposal on the existing and/or planned street system. The primary responsibility for assessing the traffic impacts associated with a proposed development will rest with the developer, with the City serving in a review capacity. It shall be prepared under the supervision of, and sealed by, a licensed Professional Engineer in the State of Arkansas with experience in traffic engineering and transportation planning/engineering.

Typically, staff will review any first submittal traffic study within 10 working days of the date of submittal to the City Engineer's office. If study revisions are needed, staff will normally review these within 5 working days of the date of re-submittal. Longer time periods will be necessary if the Arkansas Department of Transportation is involved in the review process. For all State Highways within the study area, the applicant is required to meet the requirements of the Arkansas Department of Transportation. No Pre-construction conference shall be scheduled until the traffic impact study is reviewed and approved by the City as part of the development plans package.

All previous traffic studies relating to the development that are more than two years old will have to be updated, unless the City determines that conditions have not changed significantly.

Where access points are not defined, or a site plan is not available at the time the traffic study is prepared, additional traffic work may be required when a site plan becomes available or the access points are defined.

The applicant shall submit a traffic study for the development unless they can prove, to the satisfaction of the City Engineer, that the trip generation criteria is not met. If sufficient information is unavailable but the property appears to involve sufficiently intense land use, the applicant will be informed that a traffic study is required.

The contents and extent of a traffic impact study will depend on the location and size of the proposed development and the conditions prevailing in the surrounding area. Larger developments proposed in congested areas require more extensive traffic analysis, whereas smaller sites may only require minimal analysis of traffic on site and at immediate adjacent intersections. Transportation consultants are required to discuss projects with the City prior to starting the study. At a minimum, topics for possible discussion will include trip generation,

directional distribution of traffic, trip assignment, definition of the study area, intersections requiring critical lane analysis, and methods for projecting build-out or horizon year volumes. This provides a base of coordination and communication between the City, the owner or developer, and the project's consultants in forecasting future traffic characteristics that realistically define traffic movements associated with the proposed development. Specific requirements will vary depending on the site location.

400.1.3 Capacity and Safety Issues

Development has a direct impact on transportation, including vehicular, transit, bicycle, and pedestrian traffic. In order to meet capacity and safety needs as they relate to the traffic generated from a particular development, specific improvements may be necessary. The goal of the TIS is to address the transportation related issues that result from the new development and to determine the improvements required such that appropriate levels of service are safely maintained. The competing objectives of vehicular movement, pedestrians, bicyclists, and others must be balanced in the development review process. A balanced combination of elements is needed to provide facilities that serve all transportation modes. The TIS will provide information and guidance as plans are developed and decisions made for the approved plan.

- *Vehicular Traffic Improvements.* Examples of capacity and safety improvements for vehicular traffic include road widening/narrowing, capacity of travel lanes, turn lanes, acceleration and deceleration lanes, intersection improvements, traffic signals, stop signs and modifications to access points.
- *Pedestrian and Bicycle* Traffic Considerations and Improvements. Examples of safe, comfortable, and convenient pedestrian services are shorter blocks, lower traffic speeds, tree-lined sidewalks, well-defined crosswalks, median refuges and channelized islands in large street crossings. Grade separated structures are examples of safety improvements where vehicular traffic causes unsafe conditions for pedestrians, and where space is available for the needed ramps or steps. The addition of on- or off-street bicycle facilities per the guidelines found in **Chapter 900, Bicycle Facilities Design and Technical Criteria** may be needed to achieve connectivity between the proposed project and the existing bikeway system.
- *Transit Traffic Improvements.* Examples of transit traffic improvements include accommodation of public transit facilities such as bus stops, bus bays, and transit stop facilities. This may involve wider lanes to accommodate larger vehicles.

400.2 Requirements and Criteria

400.2.1 When a TIS is Required

An Individual Site TIS shall be required when any new development, has the potential to increase average daily total traffic on the surrounding streets more than 60 trips per hour or 5%, or when considered necessary by the Planning Director or City Engineer, the applicant shall provide a traffic impact study sealed by an Arkansas registered professional engineer with certification as a Professional Traffic Operations Engineer. A draft of the report shall be

submitted for review with the initial project submittal, but no later than 30 days before Tech Review Committee.

400.2.2 Scoping Meeting

- **Purpose.** The purpose of the scoping meeting is to determine the parameters for the study of traffic impacts for a specific development project, and to document those parameters. The parameters determined in the scoping meeting represent general agreement between the City and the consulting engineer, but they may not be all-inclusive. The City retains the right to require any additional information and/or analysis to complete an evaluation of the proposed development project.
- **Meeting Setup and Content.** The applicant is required to contact the City to arrange for a scoping meeting to discuss the TIS requirements and determine the base assumptions. It is incumbent upon the Applicant to be prepared to discuss the following:
 1. Previous TIS prepared for the site, if any;
 2. Location of the site;
 3. Proposed access and its relationship to adjacent properties and their existing/proposed access;
 4. Preliminary estimates of the site's trip generation and trip distribution at build-out;
 5. Identification of proposed year of build-out;
 6. Trip adjustment factors proposed, if any;
 7. Approved and proposed developments in the study area, and the associated committed roadway improvements;
 8. Anticipated roadway improvements to be provided by the applicant;
 9. Phasing plan proposed;
 10. Potential bicycle and pedestrian connections;
 11. Special analysis needs.

400.2.3 Types of Study

- **Master TIS.** Where large complex projects are planned or a project is phased over a multi-year build-out, it may be appropriate to prepare a Master TIS for the initial development followed by periodic updates for specific phases. The Master TIS must include overall phasing of improvements to coincide with project phasing. Updates to the Master TIS shall be submitted with the development applications for the specific phases and shall meet the requirements for the Individual Site TIS.
- **Individual Site Transportation Impact Study.** An Individual Site TIS is prepared for a project that stands alone or is a phase of a master development. It can be for a new use in an existing or remodeled building, the construction of a new building (either single occupant or multiuser), construction of multiple buildings, or the construction of new residential development.

400.2.4 Revisions and Updates

A revision to an approved TIS may be required when a previously approved development proposes an expansion, a change to access, or a change in use where new trip generation

estimates exceed the original trip-end generation estimates. If the currently approved study was prepared within the last three years, an amendment letter addressing the changes may be accepted and satisfy the requirements of this guideline.

The letter must address: a) an estimate of site trip generation, b) existing site trip generation, c) the differences between anticipated estimates and existing trip generation and d) changes to the bicycle or pedestrian facilities. If the original study is older than three years, an entirely new study will be required.

400.3 Study Parameters

400.3.1 Project Description

A description of the proposed project will be prepared and include the type of land use and size of the proposed project (number of dwelling units or building square footage). Any proposed phasing will be discussed, and the anticipated completion date established. A figure depicting the proposed site plan will also be included and the proposed vehicular access locations will be described. This section will also include a description of how pedestrian and bicycle travel will be accommodated within the proposed site plan. This will include a discussion of types of sidewalks, trails, and connections to local and perimeter destinations.

400.3.2 Analysis Horizons

Three study horizons are required for a Master or Individual Site TIS analysis. It may be acceptable for the short range and long-range horizons to be identical for some large projects.

- **Existing Horizon.** The intent of completing an analysis of the existing (current) study horizon is to establish a baseline of traffic conditions.
- **Short-Range Horizon.** The intent of the short-range planning horizon is to investigate the immediate impacts of the completed, proposed project on the existing and proposed roadway network. The short-range planning horizon year is defined as one year after the full occupancy of the project. If the project is proposed to occur over multiple phases, each phase shall be evaluated for impacts one year after the occupancy of that phase for the short-range analysis. To properly model the impacts, two analyses should be completed. One to project traffic conditions at full build out, and the other to project traffic conditions during the same time without build out.
- **Long-Range Horizon.** The third planning horizon is the long-range planning horizon. It shall be based on the current Regional Transportation Plan 20-year planning horizon and related modeling. The intent of the long-range planning horizon is to evaluate the implications of the fully developed proposed project on the long-range traffic condition. Data from the Northwest Arkansas Regional Planning Commission is available.

400.3.3 Study Area

The limits of the transportation network study area shall be defined for all levels of TIS analysis. The limits of the transportation network to be studied shall be based on the size and extent of

the application for development approval, the existing and future land uses, and traffic conditions on and near the site.

The exact limits of the study area are to be based on good engineering judgment, and an understanding of existing and future land use and traffic conditions at and around the site. The limits of the study area shall be agreed upon at the scoping meeting. The Master TIS shall generally establish the study area for all subsequent Individual Site TIS(s).

At a minimum, the factors to be considered for the establishment of the limits of the study area, the Master or Individual Site TIS should include as designated below:

- All adjacent and internal collector and arterial roadways – Master
- Offside collector and arterial roadways within the study area impacted 10% or more by the project, or provide the primary connections between the project and the urban services, unless otherwise approved by the City Engineer – Master
- Continuity and adequacy of pedestrian and bike facilities – Master
- Access to most direct transit facility or transit route – Master, Individual Site
- Access routes to schools - Master, Individual site
- All adjacent streets, intersections, and high-volume driveways - Individual Site
- Nearest offsite major intersection(s), collector roadways, and arterial roadways - Individual Site
- Internal public roads, including establishing the road classification - Individual Site
- Additional offsite intersections as identified in the scoping meeting - Individual Site
- Pedestrian and bicyclist destinations - Individual Site

400.3.4 Evaluation Elements

The purpose of the Master TIS is to provide a general sense of the overall impacts to the transportation system and to identify the larger scale improvement needs necessitated by the proposed development (i.e. widening of streets, connecting gaps in the street system, etc.). The Master TIS does not need to include intersection analyses, although it may, at the applicant's option, if the applicant intends to proceed with a specific phase of the project immediately following approval of the Master Development Plan.

For example, for a Master Development Plan with a multi-phase build-out, the Master TIS would not only address the overall project, but also identify key measurable criteria that would trigger the construction of some incremental portion of the overall infrastructure improvement plan. Typically, at the Large Scale Development (LSD) or Preliminary Plat (PPL) stage, with each phase of the project a new individual site TIS specific to that phase would be prepared. This new study would verify the accuracy of the original traffic projections, both on-site and background, and check the criteria identified for infrastructure improvements, and other pertinent information.

The key elements of the project impact assessment for a Master or Individual Site TIS shall include the following minimum evaluations as designated below:

- Conformity with the adopted Master Street Plan including any adopted access control plans – Master, Individual Site
- Appropriateness of access locations – Master, Individual Site
- Pedestrian/bike requirements and/or improvements – Master
- Safety and accident analysis – Master, Individual Site
- Neighborhood and public input issues – Master
- Peak hour intersection LOS – Individual Site
- Location and requirements for turn lanes or acceleration/deceleration lanes at accesses or intersections, including recommendations for taper lengths, storage length, acceleration/deceleration lengths, and other geometric design requirements per City or ARDOT requirements – Individual Site
- Intersection and stopping sight distance evaluations and recommendations – Individual Site
- Continuity and adequacy of pedestrian and bicycle facilities within the study area – Individual Site
- Recommended traffic control devices for intersections which may include two-way stop control, four-way stop control or yield signs, school flashers, crosswalks, traffic signals, or roundabouts – Individual Site
- Traffic signal and stop sign warrants – Individual Site
- Appropriateness of the existing roadway signage and striping – Individual Site

400.3.5 Transportation Impact Study Format and Content

In order to provide consistency and to facilitate staff review of the TIS, the following format shall be followed in the preparation of such studies by transportation consultants. A summary outline is provided (as an attachment). Selected items from the following list may be excluded if not applicable to the situation and exclusion is specifically authorized by the City.

- A. Introduction. The introduction of the report must contain the following:
- a. Land Use, Site and Study Area Boundaries. A brief description of the size of the land parcel, general terrain features, the location within the jurisdiction and the region must be included in this section. In addition, the roadways adjacent to the site must be identified, along with a description of the roadway's characteristics. The exact limits of the study area should be based on engineering judgment, and an understanding of existing traffic conditions surrounding the site. In all instances, however, the study area limits must be recommended by the developer and their engineer and approved by the City Engineer. A vicinity map that shows the site and

the study area boundaries, in relation to the surrounding transportation system, must be included.

- b. *Existing and Proposed Site Uses.* The existing and proposed uses of the site must be identified in terms of the various zoning categories of the City. In addition, the specific use for which the request is being made must be identified if known, since a number of uses may be permitted under the existing ordinances. It will be the intent of the TIS to evaluate the reasonable worst-case traffic impacts for the proposed development allowed by the zoning. If several different uses are permitted by the zoning, the highest trip generation uses must be assumed for the study.
- c. *Existing and Proposed Uses in Vicinity of Site.* A complete description (including a map) of the existing land uses in the study area as well as their current zoning and use must be included. In addition, all vacant land within the study area and its assumed future uses must be identified. This latter item is especially important where large tracts of undeveloped land are in the vicinity of the site, and within the prescribed study area. Generally, much of this information can be obtained from the City's Planning and Development Department staff or from the neighboring jurisdiction if the study area extends beyond the City of Bentonville boundary.
- d. *Existing and Proposed Roadways and Intersections.* Within the study area, the applicant must describe and provide volumes for existing roadways and intersections including geometrics and traffic signal control as well as improvements contemplated by government agencies. This would include the nature of the improvement project, its extent, implementation schedule, and the agency or funding source responsible. A map must be provided showing the location of such facilities.

B. *Trip Generation and Design Hour Volumes.*

See **Section 300.4.3 Project Traffic** for more information on the requirements.

C. *Trip Distribution*

See **Section 300.4.3 Project Traffic** for more information on the requirements.

D. *Trip Assignment*

See **Section 300.4.3 Project Traffic** for more information on the requirements.

E. *Existing and Projected Traffic Volumes*

Graphics must be provided which show the following traffic impacts for private access points, intersections and streets:

1. A.M. peak hour site traffic (in and out) including turning movements.
2. P.M. peak hour site traffic (in and out) including turning movements.
3. A.M. peak hour total traffic including site generated traffic (in and out). These volumes must include through and turning movement volumes for current conditions and a separate set of numbers that also includes build-out.

4. P.M. peak hour traffic total including site generated traffic (in and out). These volumes must include through and turning movement volumes for current conditions and a separate set of numbers that also includes build-out.
5. Any other peak hour which may be critical to site traffic and the street system in the study area should be included in the graphics and show the same information as is provided for the A.M./P.M. peak hours.
6. Actual counts of existing total daily traffic for the street system in the study area at the time the study is being prepared. Counts shall not occur during periods of unusual traffic with approval by the City Engineer.
7. Projected total daily traffic for the street system in the study area based on traffic from the proposed development and counts of existing daily traffic obtained from item 6. The component of the existing daily traffic attributable to the existing uses must be identified and the increase to total daily traffic from the proposed uses.
8. Projected total daily traffic for the street system in the study area on traffic from the proposed development, counts of existing daily traffic obtained in item f above, and traffic projections based on build-out of land use within the study area.

F. Raw Traffic Count Data

All raw traffic count data (including average daily volumes and peak hour turning movements) and analysis worksheets must be provided in the appendices of the report. Computer techniques, and the associated printouts may be used as part of the report. All total daily traffic counts must be actual counts and not based on factored peak hour sampling. Latest available counts from Arkansas Department of Transportation, the City, and other agencies may be acceptable if not more than two years old.

400.4 Traffic Volumes

400.4.1 Existing Traffic

- **Roadway Traffic Volumes/Traffic Counts.** Current A.M. and P.M. peak hour traffic counts as specified shall be obtained for the roadways within the study area for one, non-holiday Tuesday, Wednesday, or Thursday. Each peak hour count shall be conducted over a two-hour period (or as specified by the City Engineer) and shall include 15-minute count data to clearly identify the peak hours.

Weekend counts and/or average daily counts on local roadways may also be required where appropriate when requested by the City Engineer.

The volumes shall be no more than one year old (from the date of application submittal). The City may require the use of seasonal adjustment factors depending on when data was collected and if the project is considered to be in an affected area (i.e. downtown area).

- **Intersection Level of Service.** A.M. and P.M. peak hour intersection levels of service shall be determined for the existing signalized and unsignalized intersections with

collectors and arterials within the area to be studied. Locations to be analyzed will normally be set in the scoping meeting. The analysis shall use procedures described in the latest edition of the Highway Capacity Manual.

400.4.2 Background Traffic

- Short Range Volume Projections. The traffic forecast for the short-range planning horizon shall be the sum of existing traffic volumes plus cumulative development traffic. The cumulative development traffic shall be based, in part, on the A.M. and P.M. peak hour and ADT data established and accepted from planned and approved developments within and near the study area.

100% of the committed trips from the build out of the planned and approved projects in the study area must be included in the short-range volume projection. The assumed baseline surface transportation network should reflect existing facilities (without the proposed project improvements) plus any committed improvements by the City, other public agencies, and/or other approved developments within the study.

The short-range planning horizon background traffic growth rate shall be based on a growth rate based on one of the following methodologies:

1. Historical traffic counts projected to the build-out year (at least three years of traffic data should be used for this), or
 2. Area-wide traffic count analysis which considers traffic volume trends in the study area's circulation system and uses proportion/extrapolation methods.
- Long Range Volume Projection.
 1. Historical traffic counts projected to the build-out year (at least three years of traffic data should be used for this), or
 2. Area-wide traffic count analysis which considers traffic volume trends in the study area's circulation system and uses proportion/extrapolation methods, or
 3. Growth rate agreed upon with the City Engineer.

400.4.3 Project Traffic

- Trip Generation Rate. Trip generation should be calculated from the latest data contained within the Institute of Transportation Engineers' Trip Generation Manual. Other industry publications (such as the ITE Journal or other sources) may be approved by the City. Data limitations, data age, choice of peak hours (for the land use or adjacent street traffic), choice of independent variables, and choice of average rate versus statistically significant modification should be discussed in the study when appropriate. When data is not available for a proposed land use or a modification is proposed, the Applicant must conduct a local trip generation study following procedures prescribed in the ITE Trip Generation Manual and provide sufficient justification for the proposed generation rate. This rate must be approved by the City prior to its use in the written study.

- **Preliminary Land Use Assumptions.** The trip generation values contained in studies submitted prior to the establishment of a site-specific development plan shall be based on the maximum number of dwelling units permitted for the approved land uses, and/or the maximum trip generation rates for the non-residential development. When a TIS is being developed for a project with an established site-specific development plan, trip generation shall be based on actual dwelling unit counts and square footage(s) proposed on the final plan.
 - **Trip Generation Table.** The Applicant shall prepare a Trip Generation Table, listing each type of land use within the site at build-out, the size and unit of measure for each land use, trip generation rates (total daily traffic, A.M. and P.M. peaks), directional splits for each in/out driveway, the resultant total trips generated. The data source shall be stated. Build-out land uses and trip generation shall be used for both the short range and long range planning horizons. Developments proposed that are of a type that build-out in the short-range is not feasible due to the size, may propose phases (such as 2-year increments) for the development.
 - **Adjustments to Trip Generation.** Trip-making reduction factors may be used after first generating trips at full ITE rates or pre-approved rates from other professional sources. These factors fall into two categories: those that reassign some portion of generated trips to the background stream of traffic, and those that remove or move generated trips. In all cases, the underlying assumptions of the ITE trip generation rates must be recognized and considered before any reductions are used in the TIS. Two specific situations will be closely reviewed. The first is when the traffic study assumes rates where the collection of mixed uses, such as at a shopping center, result in lower peak hour trips than when applying individual rates to each land use. The second is when reductions in the trip generation rates are assumed based on reductions due to travel demand management.
4. Pass-by Trips. This first category may be considered when trips to the proposed development currently exist as part of the background traffic stream, referred to as a pass-by trip. Pass-by percentages identified in the ITE Trip Generation report or other industry publications will be considered with appropriate explanation and documentation. Pass-by traffic must remain assigned to driveways and access points. They are not additive to the background traffic stream. A technical appendix, table or map that illustrates the re- diversion of pass-by trips is required which may be submitted as a legible, hand-written work sheet(s).
 5. Internal Site Trips/TDM. Analytic support documentation of internal site trips, and transit use shall be provided to show how trip adjustments are derived. Optimistic assumptions regarding transit use will not be accepted unless accompanied by specific implementation proposals that will become a condition of approval. Such implementation proposals must have a high expectation of realization within a 5-year period after project initiation.
- **Trip Distribution.** Trip distribution must be documented in the TIS. It may be based on the professional engineer's judgment applied to one or more of the following: regional traffic volume projections, gravity model, market analysis, existing traffic flows, or

applied census data. Regardless of the basis of the estimates, the procedures and rationale used in determining the trip distributions must be fully explained and documented. A map showing the percentage of site traffic on each street must be provided as part of the TIS graphic material.

- *Trip Assignment.* The project traffic will be assigned to the roadway system according to the trip distribution established above. The resulting project site generated traffic and total site traffic will be depicted on figures for each analysis horizon. These figures will include peak hour traffic volume information, plus daily traffic volume. Separate maps or values are required when the trip distribution differs by more than 10% between the short- and long-range analysis horizons.

400.4.4 Total Traffic

The total traffic projections will be determined for each of the analysis horizons identified earlier in the base assumptions. The total traffic projections will include the existing traffic, plus the future background traffic, plus the project generated traffic. The future total traffic projections will be depicted on figures for each study year.

Based upon the total traffic projections and the City's street standards and Master Street Plan, the Applicant shall provide roadway functional classification recommendations.

400.5 Project Impacts

400.5.1 Significant Negative Impacts

This section applies primarily to vehicular related impacts associated with the proposed project. A project is defined as significantly impacting a study intersection when one of the following criteria are satisfied:

- *For Signalized Intersections.*
 1. When the added project traffic causes an intersection to fail the minimum acceptable level of service standard; or
 2. When the background traffic conditions (without project traffic) causes an intersection to fail the minimum acceptable level of service standards; and when the project traffic causes more than a 2 percent increase in the intersection delay.
- *For Unsignalized Intersections.*
 1. When backstacking to adjacent intersections would create impeded traffic flows and/or excessive congestion; or
 2. When added project traffic is determined to create potential safety problems.

400.5.2 Project Impact Assessment

The key elements of the project impact assessment include evaluations of issues outlined for a specific analysis. Refer to **Section 300.3.4** for a listing of the Evaluation Elements.

- Motor Vehicle Impact Evaluations.

1. Existing Condition. Drawings shall be prepared and included in the report to document traffic counts, lane geometrics (including striping, signing and other pavement markings), traffic control, existing access locations, lane lengths, widths, tapers, and any other notable features. When arterial roadways are impacted by the proposed project, the report shall include a tabulation or diagram which identifies the number of existing and proposed accesses contained within, and up to one-quarter mile of, the evaluated Arterial Roadway and/or intersection.
2. Using the peak hour traffic volumes forecast and the maximum traffic volumes allowed for the specific classes of roadways, a general evaluation should be made of the street system for the specified analysis horizons. A summary report of the level of service evaluations for roadway links shall be presented in the TIS. Within one block (approximately 500 to 1000 feet) of an intersection with a street of higher functional classification, additional through and turning lanes may be required on a street to meet the level of service requirements in Section 300.6 and/or for the intersection. The additional lanes shall not be considered a reclassification of the street.
3. Intersection Delay.
 - a. An A.M. and P.M. peak hour intersection level of service analysis shall be conducted for each intersection analyzed in the TIS, based on procedures specified in the most recent release of the Highway Capacity Manual.
 - b. The principal objective of the intersection level of service traffic impact analysis is to identify whether the traffic from the proposed project when added to the short-range planning horizon traffic will result in a significant impact and an unacceptable level of service.
4. Driveway Access. The design, number, and location of access points to collector and arterial roadways must be submitted for approval with the development. State Highway accesses require the issuance of a permit from ARDOT. The number of access points must be kept to a minimum and be designed to be consistent with the Access Management Policy. Access points will be reviewed and approved by the City based on the following information:
 - a. Access location(s) as shown on the site plan
 - b. Proposed traffic turning movements.
 - c. Analysis of on site (driveway) stacking/queuing and impacts to adjacent streets.
 - d. Signalization requirements and design in accordance with these guidelines.
5. Traffic Signals.
 - a. Proposed and existing access points, proposed intersections, and existing intersections effected by the development being analyzed in the report that have any potential for signalization will be reviewed and discussed during the development review process. Discussion will include review of existing

- signals/potential modifications, proposed signals, school signals for school crossings, school flashers, pedestrian signals/crossings, and any other potential for signal devices and signal interconnect issues.
- b. Signal Warrant Analysis for potential signal locations shall consist of a review of the applicable signal warrants contained in the Manual on Uniform Traffic Control Devices.
 - c. If any location proposed for signalization is not spaced according to the City's policy, then a traffic signal progression analysis shall be required.
 - d. Alternatives to signalization at potential signal locations will be discussed in the report. The alternatives to adding new intersections to be discussed should include no new intersection, limited movements, and roundabouts.
 - e. If any signal timing and/or phasing changes are proposed, an appropriate signal progression analysis may be required.
6. **Traffic Accidents.** Traffic accident data for affected street corridors may be required for the study. The study period will normally be three years. Such locations will be specified by the City. Where this is necessary, estimates of increased or decreased accident potential must be evaluated for the development, particularly if the proposed development might impact existing traffic safety problems in the study area, and safely improvement recommended where necessary.
7. **Noise attenuation.** If a residential development is planned adjacent to a freeway or arterial roadway, the need for noise attenuation measures may be required as part of the impact analysis. It is recommended that the need for noise attenuation measures be determined using the methods outlined in Fundamentals and Abatement of Highway Traffic Noise Textbook, FHWA, September 1980.
- **Pedestrian and Bicycle Evaluations.** Pedestrian and bike facility demand shall be identified and related items for discussion should include:
 1. School routing plans per the MUTCD between the project and all schools within 1-1/2 miles of the project boundary;
 2. The demand for pedestrian and bike facilities to serve high pedestrian activity areas within the land use;
 3. The need for links of bicycle or pedestrian facilities to neighboring land uses or attractions (trails, etc) as guided by the Connecting Bentonville Plan;
 4. Geometric improvements and recommended traffic control devices to accommodate pedestrians and bicyclists;
 5. Existing and proposed pedestrian and bike facilities shall be evaluated for compliance with the following elements:
 - a. Directness. Walking distance to destinations like transit stops, schools, parks, and commercial or activity areas should be direct.

- b. Continuity. The sidewalk/ walkway system should be complete, without gaps. The pedestrian corridor should be integrated with the activities along the corridor and should provide continuous access to destinations.
 - c. Street Crossings. Safety and comfort is essential while crossing streets, intersections and mid-block crossings. Factors that affect the LOS include: number of lanes to cross, crossing delay for pedestrians, signal indication, cross-walks, lighting, raised medians, visibility, curb ramps, pedestrian buttons, convenience, comfort, and security.
 - d. Security. Pedestrians should be visible to motorists, separated from motor vehicles and bicycles, and under adequate street lighting.
 - e. Surface Condition. Pedestrian facilities should be free from obstructions, cracks, and interruptions.
 - f. Grade. Off street facilities shall be designed to minimize running slopes; maximum grade shall be 5% where possible. If steeper slopes are needed due to terrain, no more than 30% of the length of a facility should exceed 8.33%.
- Special Studies. This section provides the City with opportunities to request specific focused traffic analyses that may be unique to the proposed land use action. The Applicant and the City will determine if special studies are required. These may include, but are not limited to the following:
 - 1. Access spacing,
 - 2. Accident/safety concerns (accident statistics),
 - 3. Truck routing,
 - 4. Neighborhood Transportation Impact Evaluation. The TIS may be required to include a focused analysis of the potential project related impacts on adjacent residential neighborhood quality of life issues such as potential cut-through traffic and speeding/volume concerns. If it is determined that a neighborhood transportation impact evaluation is required, the following procedure should be followed:
 - a. Examine existing transportation conditions within the neighborhood. This should follow the same procedure as set forth earlier for the transportation impact analysis. Daily and peak hour traffic volumes should be collected for the local streets to be included in the analysis.
 - b. Determine project generated traffic for all modes within the neighborhood and show on a figure.
 - c. Determine total traffic projections for the local streets. This should follow the same procedures as described earlier, including other projects and area wide growth if applicable.

- d. Determine if the proposed project would create significant impacts to the residential streets using the criteria stated earlier.
- e. If necessary, develop measures, including but not limited to traffic calming techniques, to mitigate any significant impacts.
- f. Sight Distance. Sight distance concerns that are anticipated or observed which may impact driveway, intersection, or roadway operation and safety need to be discussed in the TIS. Recommendations regarding stopping sight distance, intersection sight distance, and passing sight distance needs should be provided by the Applicant's traffic engineer for detailing on the final development, site plan, or final construction plans.

400.6 Level of Service Standards

Level of service "C" will be the design objective for roadways, the overall intersection, and all individual movements. Under no circumstances will be less than the level of service "C" be accepted for site and non-site traffic including existing traffic at build-out of the study area. The design year will be approximately 5 years following construction and include volumes generated by build-out of the study area. The interpretations of "Level of Service" shall be based on the definition specified in the TRB Highway Capacity Manual Special Report 209.

400.7 Mitigation Measures

When a project's vehicular impacts are determined to not meet the minimum acceptable level of service standard, the TIS shall include feasible measures, which would mitigate the project's impacts. The mitigation measures are intended to be in addition to the minimum required improvements necessary to meet the City's standards and codes.

400.7.1 Traffic Signal Operations Improvements

Traffic Signal Operational improvements would include upgrading signal to include additional signal phases and/or, signalization of an unsignalized intersection. Signalization of project access drives would not be considered as a mitigation measure. The City Engineer must approve signal improvements and/or installations.

The need for new traffic signals will be based on warrants contained in the latest edition of Manual on Uniform Traffic Control Devices. In determining the location of a new signal, traffic progression is of paramount importance. Generally, a spacing of one-half mile for all signalized intersections should be maintained. This spacing is usually desirable to achieve good speed, capacity, and optimum signal progression. Pedestrian and non-motorized vehicle movements must be considered in the evaluation and adequate pedestrian and non-motorized vehicle clearance provided in the signal cycle split assumptions.

To provide flexibility for existing conditions and ensure optimum two-way signal progression, an approved traffic engineering analysis must be made to properly locate all proposed accesses that may require signalization. The section of roadway to be analyzed for signal progression will be determined by the City and will include all existing and possible future signalized intersections.

The progression pattern calculations must use a cycle consistent with current signal timing policies of the City. A desirable bandwidth of 50% of the signal cycle must be used where existing conditions allow. Where intersections have no signals presently, but are expected to have signals, typically a 60% mainline, and 40% cross street cycle split should be assumed. Cycle split assumptions must relate to the volume assumptions in the capacity analysis of individual intersections, and where computerized progression analysis techniques are used, they must be of the type which utilizes turning movement volume data and pedestrian and non-motorized vehicle clearance times in the development of time/space diagrams. The green time allocated to the cross street will be considered no less than the time which is required for a pedestrian and non-motorized vehicle to clear the main street using Manual on Uniform Traffic Control Devices standards. Those intersections which would reduce the optimum bandwidth if a traffic signal were installed may be required by the City to remain unsignalized and have turning movements limited by access design or median islands.

400.7.2 Street Widening and Other Physical Improvements

Mitigation measures, which include street widening, and other physical improvements must be demonstrated to be physically feasible and must meet minimum City Standards and Ordinances for both on-site and off-site improvements.

400.7.3 Geometric Improvements

Turn lanes and other auxiliary lane needs shall be identified for each access. Design basis shall generally be ITE, AASHTO, CDOT, NCHRP or other nationally accepted standards. All proposed project entrances onto arterial streets shall be evaluated as to whether they require acceleration lanes or deceleration lanes.

400.8 Report Conclusions

400.8.1 Recommended Improvements

The findings of the Transportation Impact Study should be provided in summary format, including the identification of any areas of significant impacts and recommended improvements/mitigation measures to achieve the LOS standards for all modes.

- Geometric Improvements. The TIS shall include recommendations for all geometric improvements such as pavement markings, signs, adding through or turn lanes, adding project access and associated turn lanes, acceleration lanes, and changes in medians. Sufficient dimensions/data shall be identified to facilitate review. Anticipated right-of-way needs shall also be identified.
- Volume/Capacity Analysis at Critical Points- Another iteration of the volume/capacity analysis must be described, which demonstrates the anticipated level of service as a result of making these improvements. This level of service must be "C" or better.
- Traffic Volume Proportions- Percentage based on the traffic impact analysis may be required by the City to determine the proportion of traffic using various public improvements (both existing and proposed) from several developments with the study.

- *Responsibility.* The applicant shall describe the location, nature, and extent of all transportation improvements that the applicant recommends to achieve the required level of service for each analysis horizon's year. In addition, the party(ies) responsible to complete the improvements shall be identified.

400.8.2 Revisions to the Study

Revisions to the Transportation Impact Study must be provided as required by the City. The need to require revisions will be based on the completeness of the traffic study, the thoroughness of the impact evaluation and the compatibility of the study with the proposed access and development plan. The revised study or report shall be signed and sealed by the Professional Engineer.

500 STREET DESIGN AND TECHNICAL CRITERIA

500.1 General

This chapter defines layout criteria and other design criteria that shall be followed for locating and designing all streets.

500.2 Street Layout Requirements

The locations of Collector and Arterial roadways shall be in accordance with the current Master Street Plan. Other streets shall be located in accordance with all other applicable street layout requirements.

500.2.1 Logical Placement and Extension

All streets shall have a logical relationship to the existing topography and to the location of existing or platted streets within adjacent properties. Certain streets within the project may need to be extended to the project boundary to provide for the future extension of the street through adjacent properties.

500.2.2 Master Planned Arterial and Collector Roadways

The Master Street Plan shows the approximate locations of all Arterial and Collector Roadways for the City and its Planning Area. The Master Street Plan shall be used for establishing approximate locations of these streets. The City Engineer shall hold approval authority for specific alignments for all Arterial and Collector Roadways.

500.2.3 Local Roadways

Layout of new Local Roadways not covered by the Master Street Plan shall meet the needs of the specific development and satisfy all other specific requirements of this chapter and the access management requirements of the Land Development Code, Article 1100, Section 1100.02 Access Management Standards of the Bentonville Municipal Code. The City retains the authority for approval of the overall street layout.

500.3 Street Classifications

Street cross sections shall meet the classifications as shown in the current Master Street Plan and **Table 400-1**.

500.4 General Design Elements

All streets shall be designed in accordance with design speeds specified for each street classification in **Table 400-1**. Where ranges are specified, the design speed shall be determined by the City Engineer.

ATTACHMENT A: Minimum Standard Specifications for Streets

Table 400-1 Roadway Design Criteria by Classification

Design Element	Street Classification												
	Arterial Boulevard with Sidewalk	Arterial with Sidewalk	Arterial with 2-Way Separated Bike Lanes	Arterial with Sidewalks	Collector Boulevard with Bike Lanes	Collector with Sidewalk	Collector with Bike Lanes	Local with Shared Use	Downtown Collector	Downtown Collector with Parking	Downtown Collector with Bike Lane	Downtown Local	Alley
Right of Way Width, Feet	95	90	95	90	75	70	70	50	65	65	65	50	20
Number of Traffic Lanes (Travel), Feet	4	4	4	4	2	2	2	2	2	2	2	2	2
Number of Center Lanes (Turn), Feet		1	1	1		1	1		1				
Number of Parking Lanes, Feet										2			
Traffic Lane Width, Feet	11	11	11	11	11	11	11	14	11	11	11	14	8
Center Lane Width, Feet		12	12	12		12	12		12				
Parking Lane Width, Feet										9			
Pavement Width (Back-to-Back of Curb), Feet	25' per side	59'	59'	59'	21' per side	37'	51'	31'	37'	41'	41'	31'	16' (no curb & gutter)
On-Street Bike Lane Width, Feet	n/a	n/a	n/a	n/a	7' both sides**	n/a	7' both sides**	n/a	n/a	n/a	9'#	n/a	n/a
Raised Median Width (Back to Back of Curb), Feet	16'	n/a	n/a	n/a	14'	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Sidewalk/Sidewalk Width, Feet	5' Sidewalk & 12' Sidewalk	5' Sidewalk & 12' Sidewalk	5' Sidewalk both sides & 12' SBL*	5' Sidewalk both sides	5' Sidewalk both sides	5' Sidewalk & 12' Sidewalk	5' Sidewalks both sides	5' Sidewalk both sides	12' Sidewalk both sides	12' Sidewalk both sides	12' Sidewalk both sides	8' Sidewalk both sides	n/a
Greenspace Width, Feet	5'	6'	6'	10'	4'	7'	4'	4'	n/a	n/a	n/a	n/a	n/a
Average Daily Traffic Ranges (veh/day)	5,000 to 60,000	5,000 to 60,000	5,000 to 60,000	5,000 to 60,000	1,000 to 5,000	1,000 to 5,000	1,000 to 5,000	<1,000	1,000 to 5,000	1,000 to 5,000	1,000 to 5,000	<1,000	<100
Design Speed, MPH	45 min. ^b	45 min. ^b	45 min. ^b	45 min. ^b	35	35	35	25	30	30	30	25	15
^b Desired Operating Speed, MPH	^b	^b	^b	^b	30 or less	30 or less	30 or less	20	25	25	25	20	10

* Separated Bike Lanes with 1' separation between adjacent sidewalk.

**Measured from inside edge of bike lane to edge of pavement.

^a Measured from the face of curb

^b Requires individual design and analysis as approved by City Engineer

ATTACHMENT A: Minimum Standard Specifications for Streets

500.4.1 Horizontal Alignment

Horizontal Curves. Horizontal curves shall be circular curves with a minimum centerline radius based on the design speed and cross slope as shown in the **Table 400-2**.

Table 400-2 Minimum Centerline Radii

<u>Design</u>	<u>2% Cross Slope</u>	<u>3% Cross Slope</u>
<u>Speed (mph)</u>	<u>Radius (ft)</u>	<u>Radius (ft)</u>
15	50	52
20	107	111
25	198	208
30	333	353
35	510	544
40	762	821
45	1039	1125

Roadways with higher design speeds, non-standard cross slopes, and/or superelevation shall have minimum centerline radii based on the requirements set forth in the current edition of AASHTO's "Geometric Design of Highways and Streets" (AASHTO Green Book).

Minimum Tangent Length. A tangent of at least 100 feet shall separate reverse curves on arterial and collector roadways unless otherwise directed by the City Engineer. Local roadways shall have a minimum tangent distance between reverse curves of 30 feet and alleys do not have a minimum tangent distance requirement. If the curve radii are at least 50% greater than the radii required by the design speed, the tangent sections may not be required depending on grades and topography. If the curves are superelevated, the superelevation transition lengths will determine the minimum length of tangent between reverse curves.

Consistent Radii. All curves along a Local Roadway segment shall be designed with radii that are approximately equal to provide consistency and minimize unexpected difficult or quick maneuvers for the driver.

Curves with Small Deflection Angles (10° or less). To reduce the appearance of kinks in the street, minimum lengths of curve shall be designed with minimum arc lengths as shown in

Table 400-3.

Table 400-3 Centerline Arc Lengths

Street Classification	Minimum Centerline Arc Length (ft)
Arterial	400
Collector	300
Local	200

Horizontal Curves on Vertical Curves. For driver safety, horizontal curves shall not begin near the top of a crest vertical curve nor near the bottom of a sag vertical curve.

Coefficient of Friction. The coefficient of friction shall conform to the recommendations in Chapter 3 of the AASHTO "Green Book."

Joining Existing Improvements. Connection with existing streets shall be made to match the existing alignment of the existing improvements, in accordance with horizontal alignment criteria.

Lane Transitions. The lengths for the transition in the lane width or for the addition or reduction of the number of travel lanes shall be designed in accordance with AASHTO and MUTCD standards.

500.4.2 Vertical Alignment

Vertical curves shall be used on all vertical grade changes that are equal to or exceeding a 2.00% algebraic difference in grades. All vertical curves shall be parabolic type curves. Minimum vertical curve lengths (L) shall depend on the design speed and shall be equal to K times A where K equals the rate of vertical curvature, and A equals the algebraic difference in grades when the grades are expressed as a percentage. Please see Table 400-4 for maximum allowable K coefficient, which is based on design speed of the road. ($L_{\min} = K \times A$)

Table 400-4 Design Controls for Vertical Curves

Speed (mph)	K Values	
	Crest	Sag
25	20	30
30	30	40
35	40-50	50

The minimum grades outside of the 100 ft. intersection requirement shall be 1.00% for the street unless otherwise approved by the City. The maximum allowable grade for a public street is 10%.

The minimum longitudinal slope of any public roadway or alley shall not be less than 1.00%. All plan submittals must provide plan and profile of any public street or alley showing compliance with these design requirements.

In situations where topography does not allow for compliance with these standards, a waiver may be requested from the planning commission. Where grades are greater than 8% for distances of more than 300 feet, the paving material shall be concrete unless approved otherwise by the City Engineer.

Joining Existing Improvements. Connection with existing streets shall be made to match the existing grade of the existing streets, in accordance with vertical alignment criteria. Grade breaks shall not exceed allowable.

Vertical Clearance. Vertical clearance above a roadway is a minimum of 16.5 feet. Clearance may be higher in ARDOT right-of-way, where ARDOT requirements will govern.

500.4.3 Intersection Sight Distance

Street intersections shall be designed so that adequate sight distance is provided along all streets. The required sight distance shall be determined by the max design speed, grade, number of lanes, lane width, median width, and the vehicle type (as it pertains to driver's eye height and the average acceleration rate of the vehicle). Calculate intersection sight distance using the current edition of AASHTO's "Geometric Design of Highways and Streets" (AASHTO Green Book). Please note that the left and right turning movements have different sight distance lengths. Longer sight distances may be required, as directed by the City Engineer, where topography dictates and/or higher speeds are present and/or when streets with a classification of collector or higher are involved.

Per Appendix B Land Development Code, Article 1100, Section 1100.01 General Provisions of the Bentonville Municipal Code, no obstructions may encroach within the sight triangle between 42" and 90" above the elevations of the pavement edge of each intersecting street, commercial driveway, or vehicular access easement. Additionally, refer to Chapter 94 – I, In General, Section 94-12 of the Bentonville Municipal Code for limitations of objects within intersection corners. In no case shall any permanent object encroach into the line-of-sight of any part of the sight distance triangle.

500.4.4 Cross Slope

Cross slope on a pavement is provided to drain water from the street surface. The design of cross slope shall consider driver comfort and safety.

Minimum Cross Slope. A minimum cross slope on all streets shall be 2.0%. Minimum cross slope on reconstruction or overlays of existing roadways is 1.5%.

Maximum Allowable Cross Slope. The maximum allowable cross slope on all new construction shall be 3%. The maximum allowable cross slope on any reconstruction or overlays of existing roadways shall be 4%.

Cross Slope for Street Modifications. When widening an existing street or adding turn lanes to an existing street, the resulting cross slope of the widened portion shall be within the limits stated above and the new cross slope shall be no less than the existing cross slope. However, if the cross slope of the existing street exceeds these Standards then new curb and gutter shall be designed such that the existing pavement, when overlaid, will result in a straight-line cross slope grade that meets these Standards. Alternatively, the existing pavement may be removed and re-profiled to comply with these Standards.

500.4.5 Superelevation on Horizontal Curves

The purpose of superelevation on a roadway is to maintain the riding comfort on smaller than standard curves. Superelevation may only be used when other means of design will not work and is subject to review and approval by the City Engineer. The following criteria shall be followed:

- Where Superelevation Is Permitted. Superelevation may be allowed for curves on Collector and Arterial streets in order to reduce the minimum centerline radius. In no case shall superelevation exceed 4.0% cross slope. Superelevation shall not be used to reduce minimum radii on Residential Links.

- Run-Out. When superelevation is used, the minimum run-out used entering and exiting the superelevated portion shall be 100 feet.

500.4.6 Design Speed

Each roadway classification has a specific design speed. See **Table 400-1**.

500.5 Median

500.5.1 Turn Lane and Access

The design of medians shall include the evaluation for needed turn lanes and accesses. For the minimum requirements of turn lanes, refer to Chapter 5, Intersections.

500.5.2 Drainage

Landscaped medians shall be provided with drainage facilities to handle sprinkler runoff and nuisance flows. Sprinklers shall be designed to prevent spray onto the pavement surface. A properly designed under drain system shall be required.

500.5.3 Nose

Vehicle tracking templates shall be used to determine the position of the median nose so that vehicles do not track onto the median. The minimum radius for nose curbs shall be 2 feet to back of curb. A WB-40 truck template should be used for the design vehicle.

500.5.4 Transitions

The ends of medians shall transition into turn lanes with a minimum radius of 100 feet. A change of directions must be accomplished with the use of radii. Angle points shall not be allowed.

500.5.5 Objects

No permanent structures, except light poles and fire hydrants shall be placed within 3 feet of the travel lane or in any location that would obstruct sight distance except for structures as approved in these Standards. If a median streetlight is placed within 5 feet of the travel lane, the light must be a breakaway model.

500.6 On-Street Parking

On-street parking shall be provided where the current Master Street Plan dictates on-street parking shall be included as shown in the standard typical section for a particular street classification or as directed by the City Engineer. All on-street parking that is delineated with pavement markings shall be constructed of concrete pavement unless otherwise approved by the City Engineer. On-street parking shall not be placed within 20 feet from the approach or departure of any marked or unmarked crosswalk or within 30 feet from the approach of a flashing signal, stop sign, yield sign, or traffic-control signal located at the side of the road. No part of the on-street parking shall be located within the sight distance triangle. On-Street Parking shall be constructed using the same methods as typical concrete street construction contained within these specifications. Curbing within these on-street spaces shall not exceed 6" in height to allow vehicle door opening. Additionally, all stalls must provide positive drainage to the street or provide curb inlet within the stalls to convey runoff and prevent ponding.

Parallel Parking

On-Street parallel parking stalls shall be a minimum of 10 feet wide from the face of curb unless otherwise required by the Master Street Plan typical section or approved by the City Engineer. A parallel parking stall shall be a minimum of 22 feet and a maximum of 26 feet long, unless approved by the City Engineer.

Angled Parking

Angled parking shall only be permitted on Local Streets. Arterial and Collector Street sections must use parallel parking only. Angled parking stalls shall be a minimum of 9 feet wide and 19 feet long as measured along the parking stall. **Table 400-7** provides dimensions for various parking angles. **Figure 400-7** shows an example of the configuration of 30° angled parking. The City Engineer must approve parking angle on a given street on a case-by-case basis.

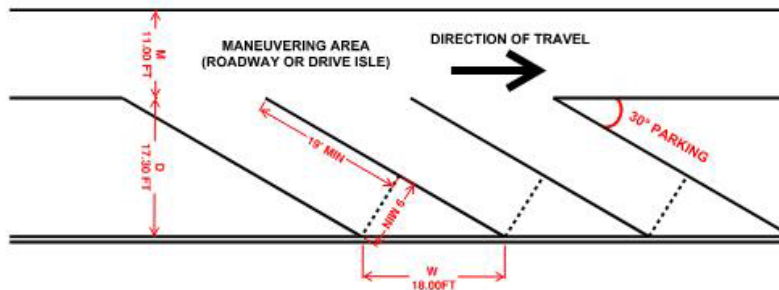
Table 400-5 On-Street Angled Parking Minimum Dimensions

Parking Angle	Width ^a (Feet)	Depth ^b (Feet)
30°	18	17.3
45°	12.7	19.8
60°	10.4	21
90°	9	19

^a Measured from the outside edge to the outside edge of consecutive parking stalls.

^b Measured from the outside edge perpendicular to the edge of adjacent travel lane.

Figure 400-6 On-Street 30° Angled Parking Configuration



500.7 Driveways

Driveway design and construction shall adhere to the Land Development Code, Article 1100, Section 1100.05 Driveway Standards and applicable City of Bentonville Driveway details. The sidewalk cross slope where the sidewalk crosses the driveway shall not have a slope greater than 2%. All driveways shall be concrete to the Right-of-Way line.

All driveways, except for single family residential drives, shall be constructed using the same methods as typical street construction contained within these specifications. Concrete thickness for drives within City right-of-way shall be a minimum of 6 inches over 4 inches of compacted Class 7 Aggregate Base Course over prepared subgrade. Materials and Construction Requirements for concrete driveways shall meet the requirements of the current edition of ARDOT Standard Specifications section 505, except as modified herein. Concrete shall be Class "S" Portland Cement Concrete in accordance with Section 802 or 501, ARDOT

Standard Specifications with a 28-day compressive strength of 3,500 psi and 4% to 7% air entrained. Class 7 Aggregate Base Course and Subgrade material shall adhere to the requirements set forth within these specifications.

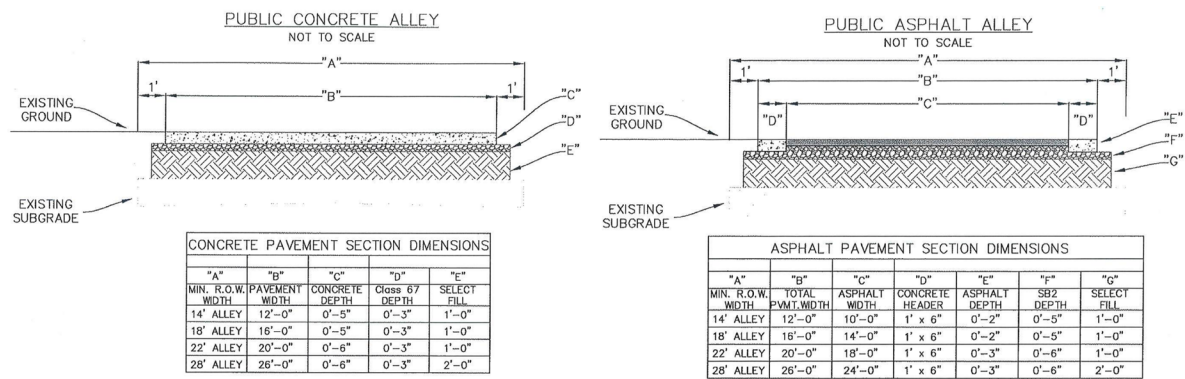
500.8 Alleys (Public)

Alleys are intended to provide access to the rear or side of lots or buildings and not intended for through vehicular traffic. Alleys used in conjunction with single- and two-family units are not intended to serve as fire access roads when structures also adjoin a private or public street that provides the required fire access. When an alley serves as the sole fire access, or when more than one access is required due to building height, condition of terrain, climatic conditions, the potential for impairment of a single road by vehicle congestion, or other factors that could limit access, alleys shall be designed in accordance with the Arkansas Fire Code to support apparatus access, with approval from the fire code official.

Alleys should be aligned parallel to property lines. While it is not required, it is desirable that alleys be designed so that both ends of the alley are connected to a street or another alley. If two alleys intersect, a minimum 10 feet triangular corner cutoff or 15-foot radius along each alley property line should be provided at each corner to accommodate turning movements and sight distance. If an alley does not connect to a street or another alley, and instead, dead-ends, a turnaround area shall be provided. The minimum turnaround area should be 20 foot wide, 60 foot long (centered on the alley), and provide a 10-foot triangular corner cutoff or a 15-foot radius at both corners.

Alley cross sections are permitted be V-shaped, sloping towards the middle of the alley, with a 2% cross slope. This will allow the runoff to slope to the middle of the alley as opposed to the outsides, toward the edge of the lot or building.

Alleys shall be constructed of either concrete or asphalt pavement. Materials, pavement thickness, and construction methods shall adhere to concrete or asphalt pavement specifications provided in **Exhibit 400-8** below. All alley sections adjoining a street shall be concrete through the streets right-of-way. Low Impact Design features may be used if approved in writing by the City Engineer



GENERAL CONCEPT NOTES FOR PUBLIC ALLEYS IN THE DOWNTOWN AREA AND NEW SUBDIVISIONS THROUGHOUT BENTONVILLE.

0. ALLEY DESIGNS MUST FOLLOW EXISTING GRADE AND NOT CHANGE EXISTING DRAINAGE PATTERNS.
1. GRAVEL ALLEY DESIGN IS INTENDED AS AN OPTION FOR THE OLD DOWNTOWN AREA AND DOES NOT SUPPORT TRASH OR FIRE SERVICE. THE GRAVEL ALLEY IS DESIGNED FOR ONE WAY TRAFFIC OF AUTOMOBILES. EXISTING RIGHT OF WAY WIDTHS VARY IN THE OLD DOWNTOWN AREA. NEW, PROPOSED, AND DEDICATED PUBLIC ALLEY RIGHT OF WAY WIDTHS TO BE DETERMINED BY PLANNING COMMISSION IN THE OLD DOWNTOWN AREA.
2. ALLEY DESIGN, CONSTRUCTION, MATERIALS, AND TESTING SHALL COMPLY WITH THE CITY OF BENTONVILLE STREET STANDARDS AND STORMWATER MANAGEMENT AND DRAINAGE MANUAL.
3. ALLEY RIGHT OF WAY WIDTH IS DESIGNATED FOR THE ALLEY AND MOVEMENT OF VEHICLES. ADDITIONAL RIGHT OF WAY OR UTILITY EASEMENTS MAY BE REQUESTED AND DEDICATED, PARALLEL THE ALLEY, FOR THE INSTALLATION OF PUBLIC UTILITIES.
4. ALLEYS PROVIDING TRASH OR FIRE ACCESS SHALL PROVIDE A MINIMUM OF 20' OF PAVEMENT WIDTH. MINIMUM 26' PAVEMENT WIDTH ALLEY REQUIRED FOR FIRE DEPARTMENT AERIAL ACCESS, CONTACT BENTONVILLE FIRE DEPARTMENT.
5. NO PARKING IN ALLEYS.
6. CONTACT STREET DEPARTMENT FOR REQUIRED ALLEY STREET CUT PERMITS AND SIGNAGE.
7. DESIGN SPEEDS FOR ALLEYS IS 5-10 MPH.
9. ALL WORK IN THE CITY RIGHT OF WAY REQUIRES CONSTRUCTION PLANS TO BE SUBMITTED, REVIEWED, AND APPROVED BY CITY OF BENTONVILLE ENGINEERING DEPARTMENT.
10. PRIVATE OR PUBLIC ALLEY INTERSECTIONS WITH PUBLIC ROADS SHALL BE CONCRETE THROUGH THE PUBLIC ROAD RIGHT OF WAY. FIFTEEN FOOT MINIMUM TURNING RADIUS SHALL BE PROVIDED AT ALLEY INTERSECTIONS. SIDEWALKS SHALL EXTEND THROUGH THE ALLEY AND TRUNCATED DOMES SHALL BE PROVIDED. SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

An alternative paving section other than the sections above may be considered if submitted in writing by a geotechnical engineer for review and approval by the City Engineer.

500.9 Railroad Crossings

Grade crossings at railroads shall provide for sight distances per AASHTO Greenbook. The Engineer of Record shall be responsible for all coordination with the railroad company connected with approval of the crossing and shall work with the City in obtaining a Joint Use Agreement with the railroad.

500.10 Non-Connective Street Alignments

500.10.1 Cul-de-sacs

Permitted Locations. Cul-de-sacs shall be used only where necessary. Cul-de-sacs are permitted only on Local Roadways in conformance with Appendix B Land Development Code, Article 1100, Section 1100.16 Street Standards of the Bentonville Municipal Code. Cul-de-sac roads shall be no longer than 660'.

Minimum Radius. The cul-de-sac shall have a minimum diameter of 96 feet to back of curb, or as required by the fire code.

500.10.2 Knuckle

Definition. A bulb or semi-circular extension of a curb on the outside edge of a street or at an "L" turn to provide more street frontage for adjacent lots.

Permitted Locations. Knuckles may be permitted only on Local Roadways that intersect Local Roadways.

Permitted Radii. Knuckles shall have a maximum outside radius measured from the back of curb that is less than or equal to the intersecting road widths as measured from the back of curbs. The minimum radius shall be 15-ft. Refer to **Table 400-10** below for minimum intersection radii based on Master Street Plan classification.

Table 400-10 Minimum Curb Radius by Road Classification

Minimum Curb Radius		
Local Streets	25 feet	
Collector Streets	50 feet	
Arterial Streets	60 feet	7

500.10.3 Dead-End Streets

Temporary Dead-End Streets. Temporary dead-end streets will be permitted only on streets that have no direct access from adjoining property. Additionally, a temporary dead-end street shall be planned to extend into neighboring property during a later development phase or project. The road must be fully constructed to the property line and provide temporary road closure signage per MUTCD

Temporary Turnarounds. At locations where a temporary dead-end street exceeds 150 feet in length, a temporary turnaround shall be constructed to the shape and dimensions as required by the fire code.

Temporary Turnaround Easements. All temporary turnarounds shall be constructed within an access easement or street right-of-way. The easement may be vacated by the City when the easement is no longer necessary.

500.11 Drainage Systems

500.11.1 Drainage

Drainage system design shall be in accordance with current City of Bentonville Stormwater Management and Drainage Manual.

Material Submittals. The engineer of record shall submit approved material submittals for all drainage infrastructure within right-of-way. All materials shall conform to the Stormwater Management and Drainage Manual.

Bury Depth. All storm drain underneath roadways shall be designed to have minimum 1 foot cover from the top of the pipe to the bottom of the pavements gravel base course. At locations other than street crossings, it must maintain a minimum of 2 foot cover. If cover does not meet this minimum bury depth, a class IV concrete pipe will be required in that location. When manufacturer recommendations exceed 1-foot, minimum cover shall be per the manufacturer recommendation.

500.11.2 Underdrains

Controlling Groundwater. Underdrains used for the purpose of controlling groundwater on private property may not be constructed within public right-of-way. The system shall be private and must be maintained by viable private parties.

Protecting Right-of-Way Improvements. Underdrains constructed for the purpose of protecting public right-of-way improvements may be installed only if other means are not possible. The City shall own and maintain these systems.

Design Criteria. All underdrains covered by these Standards shall be designed to meet the following criteria:

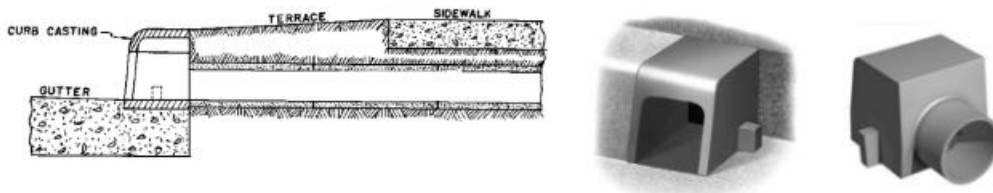
1. Positive Outfall. Demonstrate that under drain has positive outfall for gravity drainage.
2. Groundwater Barriers. The system shall be designed such that clay cutoff walls are provided at boundaries of the development to preclude hydraulic communication with offsite utility trenches either upstream or downstream.

3. **Filter Fabric.** The underdrain trench shall be lined with a filter fabric specifically selected in consideration of on-site soil conditions in order to minimize the invasion of fine soil particles into the bedding gravel.

500.11.3 Sidewalk Underdrains

Storm water from concentrated points of discharge shall not be allowed to flow over sidewalks but shall drain to the roadway by use of a sidewalk underdrain or other methods approved by the City Engineer. A sidewalk underdrain shall not be located within a curb ramp, curb cut, or driveway. Sidewalk underdrains shall only be allowed in special situations, on a case-by-case basis, as determined by the City Engineer. If a pipe is being discharged under the sidewalk and to the gutter, the curb must be cored to allow the pipe to discharge or a cast iron curb opening must be used. See Figure 400-11 below.

Figure 400-11 Cast Curb Opening



500.11.4 Crossspans

Basic Requirements. Crossspans for passing storm drainage flow across roadways shall be constructed at intersections along streets that have a slope of 1% or less.

Dimensions and Depth. Crossspans shall be a minimum width of 1.5 feet and a 1-inch typical depth adjacent to all street classifications. All Crossspans shall be concrete.

Minimum Grade. Minimum grade on crossspans at the flowline of the pan shall be 0.5%.

500.11.5 Inlets

Refer to the Stormwater Management and Drainage Manual requirements for sizing of inlets. Inlets or inlet depressions should not be located in the curb return or in the ADA ramp location but shall be located at or behind the tangent points of the curb returns. Inlets located in a sidewalk shall be integrated with sidewalks with a formed ledge. Expansion material should be used where the sidewalk and inlet meet. The transition from inlet to sidewalk surface should be flush meeting ADA threshold requirements. No manholes, inlets, or other storm sewer facilities are allowed within handicap access ramps.

500.11.6 Waterway Crossings

All waterway crossings beneath and/or within the public right-of-way shall be designed to minimize maintenance requirements. The design shall maintain or increase the water velocity through the structure to minimize silting or provide other design elements to address this issue.

500.11.7 Roadside Ditches and Driveway Culvert

Roadside Ditches. Any roadway sections developed without curbs (and with roadside drainage ditches) must complete the ditch construction with the installation of staked sod or other approved erosion control blanket within the ditch area. The profile grade of the ditch shall be maintained at a minimum slope of 1% and a

maximum slope of 5%. A ditch profile grade greater than 5% may be approved by the City Engineer if the ditch is permanently stabilized to prevent erosion. The side slopes of the ditches shall be a 3:1 slope or less with a 4-foot wide shoulder between the edge of pavement and the top of slope. Existing and proposed roadside ditches for curbed sections of street are not permitted and shall use a closed storm sewer system and inlets when developed or improved with a Large Scale Development or Preliminary Plat unless otherwise approved by the City Engineer.

Driveway Culverts. The slope and capacity of any roadside ditches shall be maintained in any areas that driveways cross the ditch. Each site is required to provide a pipe culvert that is a minimum of 18 inch and concrete, calculated to meet capacity and strength. The pipe shall be designed to have no less than 12 inches of cover over the pipe. At each end of the culvert, there shall be a headwall or a flared end section installed.

500.11.8 Roadway Ponding and Spread

Ponding and Spread. The roadway shall provide a sufficient number on-street inlets at an adequate spacing to ensure the minimum ponding depth and spread width are met. These values vary based on the roadway classification per the Master Street Plan. See bentonville Drainage Manual for the minimum requirements.

500.12 Street Improvements

500.12.1 Description of Improvements

Street improvements shall occur on all streets adjacent to the development and meet the Master Street Plan requirements. These improvements shall extend to the property lines of the development and go to the centerline of the street. Additional improvements may be required to safely tie in the existing street to the improved street or at the discretion of the City Engineer, Transportation Director, or Planning Commission based on the developments traffic study.

600 INTERSECTIONS

600.1 General

Intersections shall be designed to provide for the safety of motorists, pedestrians, and bicyclists. This chapter is based on criteria from the ITE Traffic Engineering Handbook, ITE Designing Walkable Urban Thoroughfares and AASHTO's A Policy on Geometric Design of Highways and Streets.

600.1.1 General Principles and Considerations

- (i) By their nature, intersections are conflict locations. Vehicles, pedestrians, and bicycles all cross paths. Each crossing is a conflict point. The basic design of intersections includes the following objectives: Minimize conflicts between modes of transportation.
- (ii) Accommodate all modes with appropriate levels of service for motorists, pedestrians, bicyclists, and transit given the recommended speed, volume and expected mix of traffic.
- (iii) Avoid elimination of any travel modes due to intersection design. Intersection widening for additional turn lanes to relieve traffic congestion should be balanced against impacts to pedestrians, bicyclists and transit.
- (iv) Provide good driver and non-driver visibility through proper sight distance triangles and geometric features that increase visibility.
- (v) Minimize pedestrian exposure to moving traffic.
- (vi) Avoid extreme intersection angles and break up complex intersections with pedestrian refuge islands. Keep intersections easily and fully comprehensible for all users. Strive for simplicity in intersection design.
- (vii) Ensure intersections are fully accessible to the physically disabled.

600.2 Intersection Design Criteria

600.2.1 Locations of Intersections

For intersection location criteria, refer to Appendix B Land Development Code, Article 1100, Section 1100.02 Access Management Standards and Section 1100.16 Street Standards of the Bentonville Municipal Code.

600.2.2 Lane Alignment

All lanes shall be in alignment through each intersection, with a maximum of a 2-foot shift in a hardship situation only, subject to approval by the City Engineer.

600.2.3 Angle of Intersection

Crossing roadways should intersect at 90 degrees whenever possible. In no case shall they intersect at less than 75 degrees or more than 105 degrees.

600.2.4 Horizontal and Vertical Profile

Horizontal. The horizontal alignment of streets through an intersection shall be designed in conformance with **Section 400.4.1**. Intersections may be placed on horizontal curves, provided that the tangent lengths given in **Section 400.4.1** are provided on the minor street and the required sight distance is obtained.

Vertical. The grade of the street with the higher classification shall prevail at intersections. The lesser street shall adapt to the grade of the major street. When roads are of equal classification, the City Engineer shall determine which street grade prevails.

The street profile grade of the lesser street shall not exceed 5% on the approach to the intersection, as measured along the centerline of the street for a minimum distance equal to the tangent length for the street classification. In areas where steep terrain is an issue, the City Engineer may allow a greater approach grade in order to reduce the grading impact on the site.

600.2.5 Exclusive Left Turn Lanes

Exclusive left turn lanes shall be provided on Arterial Roadways and other streets wherever left turn lanes are warranted and approved by the City Engineer. The engineer of record shall use information in the Transportation Impact Study (TIS) to determine whether an exclusive left turn lane is warranted on streets other than Arterial Roadways.

600.2.6 Exclusive Right Turn Lanes

Exclusive right turn lanes shall be provided at locations where they are required by the applicable TIS, and approved by the City Engineer.

Warrants for Right Turn Lanes. The standard details provide guidelines and warrants for whether a right turn lane shall be provided at intersections or accesses.

Design Criteria. Right turn lanes shall be designed to accomplish the following functions:

- Provide a means of safe deceleration outside the high speed through lane.
- Provide a separate storage area for right turns to assist in the optimization of traffic signal phasing.
- Provide a means of separating right turn movements at stop-controlled intersections. The design elements are the approach taper, bay taper, lengths of lanes, width of lanes, and departure taper.

600.2.7 Design Vehicles

As a minimum, intersections shall be designed to accommodate the following design vehicles for the specified turns. The minimum allowable intersection turning radii are as follows.

DL-23 (Delivery Truck). All DL-23 vehicles must be able to turn easily from one street to the next and remain in the correct lane for each roadway. This is required for all roadways.

SU-30 (Single Unit Truck). All SU-30 vehicles must be able to turn easily from one street to the next and remain in the correct lane for each roadway. For low traffic Local/Local Link intersections, the SU-30 may use more than one traffic lane to complete the turn without tracking onto the curb at corners. For all other roadways this vehicle must be able to complete turns without entering into opposing lanes.

CITY-BUS (City Transit Bus). All CITY-BUS vehicles may use more than one traffic lane to complete the turn when turning from the correct lane without tracking onto the curb at corners. This shall apply to all streets. When the intersection is on a regular or planned transit route where the turning movement could conflict with a stopped vehicle at the intersection, then the intersection must be designed to allow the bus to turn easily from one street to the next without entering opposing lanes of either roadway.

WB-40 (Intermediate Semitrailer). All WB-40 vehicles may use more than one traffic lane to complete the turn without tracking onto the curb at corners. In addition, the vehicle must make the turn in one forward maneuver not encroaching into opposing traffic lanes unless the intersection has been designed to allow for safe encroachment. This requirement shall apply to all Arterial/Arterial, Arterial/Collector, Arterial/Local and Collector/Collector intersections. For all other intersections (including mini- roundabouts), the vehicles may use the entire paved surface of the street to negotiate the turn. The vehicle may have to back up to complete the turn.

WB-67 (Interstate Semitrailer). All modern roundabouts and arterial intersections containing raised medians and channelizing islands shall be designed to accommodate a WB- 67 vehicle.

Other Vehicles. For special circumstances other design vehicles may be required by the City Engineer.

600.2.8 Curb Returns

Curb Return Radii. The corner radii at intersections shall be set so that the selected design vehicles can pass through the intersection in an appropriate manner.

Table 500-7 Minimum Curb Radius per Roadway Classification

Street Classification	Minimum Radius (ft.)
Alley	15 ft.
Local Streets	25 ft.
Collector Streets	50 ft.
Arterial Streets	60 ft.

Intersections shall be designed to minimize curb radii while still accommodating the largest applicable design vehicle. The following should be considered when possible in order to minimize the curb return radii:

- Bike lanes, on-street parking, and other facilities should be included to create an effective corner radius which accommodates the design vehicle. When on-street

parking is used to establish an effective turning radius, the effective radius shall be delineated within the parking lane by an approved striping pattern, raised curb, or other approved traffic control device.

- Traffic control devices should be arranged as to allow safe encroachment of infrequent vehicles into approaching lanes of traffic.
- Compound radii should be used to minimize the crossing distance for pedestrians.
- The outside vehicular lane should be widened through the intersection to increase the effective turning radius.

A waiver from the above requirements and **Section 500.2.7** may be approved by the City Engineer where:

- High pedestrian volumes are present or reasonably anticipated.
- Volumes of turning vehicles are low.
- The design vehicle constitutes a very low proportion of the turning vehicles.
- Occasional encroachment of the design vehicle beyond that provided in Section 500.2.7 is acceptable.
- Occasional encroachment of turning school bus, moving van, or oversized delivery truck into an opposing lane is not acceptable.
- Larger vehicles than those listed in 500.2.7 are expected to be frequent users of the street.

For curb returns on a State Highway, every effort shall be made to minimize curb radii through negotiation with ARDOT while acknowledging ARDOT's curb radii requirements supersede these Standards.

Curb Return Grades. The minimum allowable grade for flow lines around curb returns shall be no less than 0.50%. 1.00% minimum slope is recommended.

600.2.9 Traffic Islands

The following is a list of different types of traffic islands:

- **Corner Islands Separating Right Turns.** Standard corner islands may be used in Arterial/Arterial intersections to channelize traffic where required to provide pedestrian refuge, or where required by the City Engineer. The striping shall be in accordance with the requirements of **Chapter 700, Traffic Control Devices**.
- **Median Islands Separating Opposing Traffic.** Median islands are required at all Collector/Collector intersections. The length of the island shall include the appropriate approach taper, bay taper and length of lane required by these Standards or supported by another approved resource standard. The design shall be in accordance with standard details and as follows:

1. No Obstruction. Medians must not obstruct the minimum left turn radius for the design vehicle(s).
 2. Drainage. Landscaped medians shall include drainage facilities to handle sprinkler run-off and nuisance flows. When low maintenance landscaping is used in conjunction with trickle irrigation, drainage requirements may be waived and outfall curb and gutter should be used.
 3. Pedestrian Refuge. A pedestrian refuge area shall be provided at all pedestrian crossings.
- Splitter Islands on Roundabouts. In modern roundabout designs, raised splitter islands shall be designed in accordance with Federal Highway Administration Roundabouts to direct traffic and provide pedestrian refuge.

600.2.10 Traffic Signals, Striping and Signing

See **Chapter 700, Traffic Control Devices**.

600.2.11 Access Ramps

See **Chapter 800, Pedestrian Facilities Design and Technical Criteria**.

600.2.12 Right-of-Way

Requirements. All intersection rights-of-way shall be dedicated as shown in the current Master Street Plan to provide adequate right-of-way to include greenspace, sidewalks, and access ramps around the radii. Additional right-of-way may be required at intersections to provide space for additional left or right turn lanes without reducing the widths of standard required facilities.

600.2.13 Intersection Sight Distance

Street intersections shall be designed so that adequate sight distance is provided along all streets. The required sight distance shall be determined by the design speed and grades of the street and the acceleration rate of an average vehicle as prescribed below.

Minimum Requirements. All designs must provide minimum safe stopping sight distance in accordance with **Chapter 400, Street Design and Technical Criteria**, and AASHTO. In addition, for all streets that intersect with Arterial and Collector Roadways, the sight distance must be large enough to allow a vehicle to enter the street and accelerate to the average running speed without interfering with the traffic flow on the Arterial or Collector roadway.

600.2.14 Pedestrian Requirements

See **Chapter 700, Traffic Control Devices**, concerning crosswalk requirements and **Chapter 800, Pedestrian Facilities Design and Technical Criteria**.

600.2.15 Drainage

See **Chapter 400, Street Design and Technical Criteria**, concerning drainage.

600.3 Roundabouts

600.3.1 General

Roundabouts shall meet the standards for roundabout design as defined by the NCHRP Report 672 Roundabouts: An Informational Guide, except as modified herein. Roundabouts shall be designed to have appropriate entry, exit, and maneuvering speeds to ensure the safety of pedestrians, bicyclists, and vehicles in and around the roundabout. Equal spacing between entries is desired, except that roundabouts with three entries should have angles as close to 90 degrees as possible. Roundabouts are divided into three categories according to the size and number of lanes: mini-roundabouts, single-lane roundabouts, and multilane roundabouts.

600.3.2 Design Vehicle

Generally, roundabouts shall be designed to accommodate the largest vehicle likely to use the intersection. **Table 500-9** below provides design vehicles and inscribed diameter ranges for various roundabout configurations. However, each roundabout should be analyzed separately, and the design vehicle may need to be adjusted depending on the project location and application, as directed by the City Engineer.

Table 500-8 Roundabout Design Vehicles and Inscribed Diameters

<u>Roundabout Configuration</u>	<u>Design Vehicle</u>	<u>Inscribed Circle Diameter</u>
Mini-Roundabout	SU-30	45 to 90 ft
Single-Lane Roundabout	B-40	90 to 150 ft
	WB-50	105 to 200 ft
	WB-67	130 to 180 ft
Multilane Roundabout (2 lanes)	WB-50	200 to 250 ft
	WB-67	220 to 300 ft

The design vehicle is to be accommodated by maintaining a 2-foot separation between the design vehicle and the full height curb face. A truck apron shall be provided around the circulatory island. The design vehicle may use the center truck apron for left turn movements and may use a corner truck apron for right-turn movements if necessary. For multilane roundabouts on higher classification roadways with high truck volume, the design vehicles (WB-50 or WB-67) shall be required to operate simultaneously in adjacent lanes with the use of the truck apron for the inside design vehicle, as directed by the City Engineer.

600.3.3 Roundabout Design Criteria and Checklist

The roundabout shall be designed per the requirements provided below in **Table 500-10**. A design checklist shall be provided to the City that includes the actual design criteria utilized as listed in **Table 500-10** for a given roundabout.

Table 500-9 Roundabout Design Criteria

Design Consideration	Mini-Roundabout	Single-Lane Roundabout	Multilane Roundabout
Maximum Entry Speed	20 mph	25 mph	25 to 30 mph
Speed Differential	10 to 15 mph	10 to 15 mph (12mph) sec 6.4.5	10 to 15 mph
Maximum Exit Speed	30 mph	30 mph	30 mph
Maximum Number of Entering Lanes per Approach	1	1	2 or more
Central Island Treatment	Fully Traversable	Raised (may have a traversable apron)	Raised (may have a traversable apron)
Splitter Island Length	50' (min.), 100' (desirable), 200' (or more is desirable on high-speed roadways)		
Splitter Island Width	6' (min.) at the crosswalk		
Entry Width	14' to 18'	14' to 18'	24' to 30' (two-lane) 36' to 45' (three-lane)
Circulatory Roadway Width	16' to 20'	Equal to or up to 120% of the maximum entry width. (typically 16' to 20')	28' to 32' (two-lane) 42' to 48' (three lane)
Entry Curb Radii	50' (min.) 65' to 100' (desirable)	50' (min.) 65' to 100' (desirable)	65' (min.) -or- a small entry curve radii (65' to 120') paired with a tangent or larger entry curve radii (150' min.)
Entry Angle	20° to 40°	20° to 40°	20° to 40°
Exit Radius	50' (min.); 100' to 200' (typical)	50' (min.); 100' to 200' (typical); 800' (max.)	100' to 200' (typical); 800' (max.)
Circulatory Roadway Cross Slope	Outward Sloping is desirable, but can be constructed on a constant plane in grade restricted areas: 1.5% to 3.0% (range), 2.0% (desirable)		
Entry Vertical Profile	Profile should not exceed 3% (max.), 2% (desirable) slope for approximately two car lengths (45') away from the circulatory roadway. 2% shall be the maximum slope where crosswalks are present.		
Exit Vertical Profile	Match entry profile (desirable), 4% (max.) slope for approximately two car lengths (45') away from the circulatory roadway. 2% shall be the maximum slope where crosswalks are present.		

600.3.4 Pedestrian and Bicyclist Facilities at Roundabouts

Roundabouts shall be designed to accommodate pedestrian and bicycle traffic. Roundabouts shall have pedestrian crossings only at the legs of the roundabout. All types of roundabouts shall have splitter islands at each leg of the roundabout to provide a refuge area for pedestrians while crossing. The crosswalk location should be setback one or two vehicle lengths away from the circulatory roadway, typically 20 foot or 45 foot. At the crosswalk location, the splitter island shall be a minimum of 6-foot wide to provide a sufficient refuge area for pedestrians and bicyclists. The crosswalk cut-through in the splitter island shall be at a minimum width of 10 foot. A 2-foot detectable warning device should be used on handicap ramps and on both sides of the splitter island cut-throughs.

Bicycle lanes shall be terminated in advance of a roundabout and should not be placed around the outside of the circulatory roadway of a roundabout. Bicycle lanes should be terminated at least 100 foot before the edge of the circulatory roadway. The approach roadway must narrow down with a taper to accommodate the bicycle lane termination. An AASHTO approved taper rate should be used and the taper should end prior to any crosswalks prior to the circulatory roadway. The bicycle lane should be striped with a dotted pavement marking 50 foot to 200 foot prior to the beginning of the taper and the lane should be dropped entirely through the taper itself.

Bicycle ramps, from the roadway and up to the sidewalk or sidepath, shall not be used unless approved by the City. Bicycle ramps can be confused for pedestrian ramps and therefore should only be used if the roundabout design speed is too high for bicyclists to safely maneuver within the circulatory roadway, or at some multilane roundabouts where it is more challenging for bicyclists to navigate through the roundabout. If a ramp is permitted, the sidewalk or sidepath should be a minimum 10 foot wide to accommodate bicyclists and pedestrians. A bicycle ramp shall be placed at the beginning the roadway taper prior to the roundabout and at a minimum of 50 foot prior to the crosswalk. Bicycle ramps should be placed at a 35° to 45° angle to the roadway and sidewalk and can have up to a 20% steep slope. Bicycle ramps at roundabout exits should be placed similarly to the ramps at the roundabout entrance, but the ramps can be constructed at an angle as small as 20° between the bike ramp and roadway. Bike ramps at roundabout exits should be placed at a minimum of 50 foot after the crosswalks.

600.3.5 Roundabout Sight Distance

Roundabouts shall be designed to verify sufficient stopping sight distance and intersection sight distance. Stopping sight distance should be checked at every point within the roundabout and on each entering and exit approach. Intersection sight distance should be verified for vehicles entering the roundabout with conflicting vehicles within the roundabout and vehicles entering the roundabout from the immediate upstream entry. For additional information on sight distance checks see the NCHRP Report 672 Section 6.7 Performance Checks.

600.3.6 Truck Aprons

Truck aprons shall be included in roundabout designs to minimize roundabout dimensions and maintain deflection for smaller vehicles while accommodating larger design vehicles turning movements. The outer edge of the truck apron shall be raised 2" to 6" above the circulatory

roadway using a mountable curb and be constructed of a different material to discourage smaller design vehicles from encroaching onto the apron. The width of the truck apron is defined based on the turning movement of the design vehicle but shall not be less than 8 foot wide. The truck apron shall have a target cross slope of 1% to 2% sloping away from the center of the roundabout but up to 5% cross slope is acceptable.

600.3.7 Fastest Path

Fastest path is a performance check to ensure the roundabout geometry achieves a safe design speed. The fastest path allowed by the geometry determines the maneuvering speed for that particular movement into, through, and exiting the roundabout. A vehicle's fastest path is the smoothest, flattest path possible for a single vehicle disregarding other traffic and all lane markings. The fastest path shall be drawn for all approaches and all movements as a vehicle traverses through the roundabout entry, around the central island, and out each exit. For each fastest path scenario, five critical path radii must be checked: the entry path radius, the circulating path radius, the exit path radius, the left-turn path radius, and the right-turn path radius. With these radii, the velocities shall be determined for each scenario and compared to the roundabout's entry speed, exit speed, and speed differential guidelines. For additional information on constructing the fastest path lines and how to determine the relationship between travel speed and horizontal curvature see the NCHRP Report 672 Section 6.7 Performance Checks.

700 PAVEMENT DESIGN, MATERIALS, AND REPORT

700.1 General

The purpose of this chapter is to present the pavement design criteria and materials required for use on streets in the City of Bentonville. These criteria shall be used in conjunction with **Chapter 400, Street Design and Technical Criteria**. The final pavement design report shall include all testing in accordance with **Table 1100-29**.

All pavement materials, construction methods, standards, time and temperature constraints, seasonal constraints, and performance requirements shall be in accordance with the current edition of the ARDOT Standard Specifications for Highway Construction, except as modified herein or specifically approved otherwise in writing by the City for a specific and individual exception. All testing shall be in accordance with **Article 800, Inspections and Testing**.

700.1.1 Existing Streets

For existing streets, the City Engineer may require an evaluation of the existing pavement and base structure to determine if an overlay is feasible, or if reconstruction is necessary. Any damage done to existing City streets during construction shall be repaired and/or replaced at the contractor's expense. All repair work shall meet the requirements of this document.

700.1.2 AASHTO Design

The design criteria and procedures presented follow the AASHTO Guide for the Design of Pavement Structures.

700.1.3 Standard Pavement Section

Streets are to be constructed of Asphalt Concrete Hot Mix (ACHM) pavement or Portland Cement Concrete (PCC) pavement, base course material, and subbase material (where required), and placed on compacted, unyielding subgrade.

The use of treated subgrade, treated base, and/or full depth asphalt pavement may be acceptable when designed and submitted by the engineer of record, and approved by the City Engineer in accordance with these Standards.

The pavement section requirements for alley construction, whether private or public, shall be the same as for a public roadway. Proposals for alternative pavement materials will require approval from the City Engineer.

700.1.4 Roundabout Pavement

The pavement thickness design for the circulatory roadway shall be based on the sum of the 20- year design volumes from all legs. A separate design analysis is required. Refer to **Section 500.3** for roundabout design requirements.

700.1.5 Approval

The pavement design shall be submitted with final construction plans for approval.

700.1.6 Pavement Report Revisions

A revised pavement design investigation and report shall be required if the following conditions occur:

- **Phases.** If a street is to be built in phases, (i.e., the center two lanes are built first, then at some later date more lanes are added), and it has been at least two years since the original design was completed.
- **Imported Fill Material.** If any new fill material that does not match the properties of the subgrade soil proposed in the design is imported, the City may require a new pavement design report or additional testing to verify the acceptability of this material for roadway fill.
- **Change in Existing Conditions.** If material that is not consistent with the approved design report is discovered during construction, the City may require a new pavement design report or additional testing to verify the acceptability of this material.

700.2 Soil Investigation Requirements

All testing and geotechnical work shall be provided by a firm approved by the City Engineer and provided at the expense of the developer or the design engineer. The geotechnical firm shall provide copies of all test results, reports, soils classifications and subsurface drainage requirements as required in **Section 200.1.4** directly to the City Engineer.

700.2.1 Location and Frequency of Soil Borings

Soil borings shall be taken in the existing or proposed street right-of-way. Subgrade samples shall be taken upon the material that will be subgrade for the proposed street improvements. Sample sizes shall be adequate for soil classification, compaction, and California Bearing Ratio (CBR) testing.

A minimum of one boring shall be obtained for any roadway segment. The distance between borings shall not exceed 500 feet. Multiple samples shall be taken alternately among lanes and shall be evenly spaced. The City Engineer may require more frequent testing. The investigation and sampling of soils shall conform to AASHTO T 86 (ASTM D420) or latest revision and test procedures referenced therein. The sampling of in-situ subgrade soils may be accomplished by boring or excavation of test pits. The minimum sampling and testing frequency shall be one (1) density test, one (1) liquid limit, one (1) plasticity index, one (1) gradation and soils classification and one (1) CBR for each 500 feet of street or section thereof, or change in subgrade material, with a minimum of three sets of tests per project. The sample, whether by boring or test pit, shall be performed within the proposed roadway limits. The minimum depth of boring or excavation for in-situ materials shall be four (4) feet below the top of the elevation of the final compacted subgrade. Additional depth shall be required when deemed necessary by the design engineer or the City Engineer.

700.2.2 Imported Fill

All fill material placed in the right-of-way shall be tested and receive approval by the City prior to its use on the project. The material shall meet minimum requirements. Sampling shall be at

the beginning of the project, and after every 3,000 cubic yards of material is placed. The cost of testing shall be at the contractor's expense.

700.2.3 Supervision by Engineer

All sampling and testing of soils shall be performed under the direct supervision of a professional engineer who must sign and stamp the report.

700.3 Subgrade and Fill Requirements

700.3.1 Materials and Construction Requirements

Subgrade shall be defined as the in-situ or imported material within 24 inches of the bottom of the aggregate or asphalt base layer. Subgrade limits shall extend to 1 foot behind the back of curb, or edge of pavement when no curb is present. Embankment shall adhere to the materials and construction requirements for Compacted Embankment of Section 210 or the ARDOT Standard Specifications, current addition except as modified herein. Prepared subgrade for the placement of pavement shall adhere to the materials and construction requirements for Subgrade of Section 212 of the ARDOT Standard Specifications, current edition, except as modified herein.

Any suitable in-situ material, as determined by a qualified Geotechnical Engineer, may be used in part or in total to construct embankments or it may be removed from the project and replaced with new material conforming to material requirements as specified in this specification.

Roadway embankment shall be placed in parallel layers over the full width not exceeding 10", loose measurement, and shall be compacted as specified and stable before the next layer is placed. Effective spreading equipment shall be used on each lift to obtain uniform thickness before compacting. Water shall be added or removed, as necessary to obtain required density. The Contractor shall be responsible for the stability of each layer. The material will be considered stable when it will not rut and/or pump under construction operations.

When the excavated material consists predominantly of rock fragments of such size that the material cannot be placed in layers of the thickness prescribed, such material may be placed in the embankment in layers not exceeding in thickness the approximate size of the larger rocks (30" maximum). Rocks or boulders too large to permit placing in 30" layers shall be reduced in size as necessary to permit this placement. The 12" of the embankment immediately below finished subgrade may be placed in one layer with no rock exceeding 10" in its greatest dimension. Each layer shall be constructed so that rock voids are substantially filled with rock fines and/or earth. Rocks shall not be end dumped over the edges of the layer being constructed, but shall be deposited on the layer and moved ahead so as to advance the layer with a mixture of rock fines and/or earth.

The Contractor shall be responsible for the stability of all constructed embankments and shall restore, at no cost to the City, any portions that have become displaced due to carelessness or negligent work.

In portions of embankment immediately adjacent to structures or are for other reasons inaccessible to the compaction equipment in use, only suitable material shall be used and it

shall be placed in successive parallel layers of not more than 6" thickness, loose measurement. Hand tamping will not be permitted.

Roadway, shared-use path, driveways, and sidewalk subgrade shall be compacted to a density not less than ninety-five percent (95%) of maximum density, at or near optimum moisture, obtained in the laboratory. Optimum moisture may be maintained in each layer by the addition of water or by aeration as may be necessary to increase or decrease moisture under the conditions encountered. The moisture-density relationship of the material shall be determined in the laboratory in accordance with AASHTO Designation T 99. In-situ soils used as subgrade shall be scarified to a minimum depth of 8 inches below finish subgrade, recompacted, and tested for compliance with these standards. Density requirements will not apply to portions of embankment constructed of material so rocky that it cannot satisfactorily tested according to the above requirements.

The subgrade shall be kept properly drained at all times by the use of temporary ditches and/or pumps as required during construction. Improperly drained subgrade will not be justification for undercut. The City Engineer may require the exposed surface to dry before any judgment is rendered to the quality or workmanship of the exposed soils. The City Engineer may require the subgrade to be scarified/disked (to promote drying) and recompacted prior to determining whether undercut will be permitted. When the City Engineer deems material unsuitable for use, the material shall be undercut and backfilled to the finished grade with approved material.

CBR testing in accordance with ASTM D 1883-94 shall be completed on all soils proposed for use as subgrade material. CBR testing shall be performed at the dry density corresponding to 95% of the maximum dry density of the material being tested, and at 2% above optimum moisture content. The 3-point method of CBR testing shall be performed on in-situ soils classified as A-1 or A-2, and on all soils proposed for use as borrow material for subgrade.

The top 24 inches of subgrade material (in-situ or imported) must be of material meeting the following requirements unless a formal design is approved:

- A. Material classified by the AASHTO Soil Classification System as A-1, A-2, or A-3, having a maximum of 35 percent of the material passing the number 200 sieve, and having a CBR equal to or greater than 8.
- B. Material not meeting the above requirements for AASHTO Classification and gradation, but having a CBR equal to or greater than 8, a Liquid Limit and Plasticity Index of less than or equal to 40 and 15, respectively.
- C. Material not meeting the above requirements for Liquid Limit and Plasticity Index may be used if chemically modified by the use of lime, fly ash, or cement. The type and amount of treatment shall be determined by a material testing lab, supported by the Engineer of Record, and approved by the City. The chemically modified soil must meet all requirements of Section A above.
- D. Material not meeting the CBR requirements of Section A above but meeting the requirements for Liquid and Plasticity limits may be used provided a formal pavement design based on the actual CBR value of the soil provided. For this case, CBR values shall be a minimum of 4. Use of lower CBR values may be allowed where specialized pavement designs using geogrids or other technologies are proposed.

In-situ or imported subgrade soils not meeting the requirements listed above and with a liquid limit greater than 45 or a plasticity index greater than 15 shall be undercut to a depth determined by the design engineer and accepted by the City Engineer. The unsuitable material shall be removed from the street section or improved by a designed method of stabilization accepted by the City Engineer. The minimum depth of undercut and backfill shall be 24 inches in the absence of engineering data showing otherwise. Other soils which the City Engineer determines cannot be properly compacted shall also be undercut to a specified depth. This excavated unsuitable material shall be disposed of off-site.

Backfill for undercut areas shall meet the requirements described above for subgrade material. Other materials exceeding these requirements may be used as backfill, subject to the approval of the City Engineer. All backfill shall be free of organic matter, debris, and durable rock fragments in excess of approximately a 30" dimension. Backfill shall be placed and compacted in maximum lifts and density requirements in accordance with this specification.

700.3.2 Subsurface Water Investigation

If groundwater is encountered or predicted to be encountered within 5 feet of the original or proposed ground surface, a subsurface water investigation report shall be submitted for approval by the City Engineer. Special attention is called to the typical need for all streets in cut sections and on hillsides to include subsurface drainage systems. The design engineer shall be required to perform, or acquire, geotechnical and subsurface investigation to determine the need of subsurface drainage for each street and segment thereof to be designed and constructed. This information may be a separate report or may be included in the geotechnical report. This investigation is required to ensure mitigation of high groundwater effects upon public improvements within the right-of-way. The requirement for drainage layers, subsurface drainage, and underdrains shall be evaluated by the design engineer/geotechnical engineer on an individual project basis. Pipe underdrains shall be installed at all locations where subsurface moisture will affect the stability of the subgrade or result in unsatisfactory pavement performance.

700.3.3 Embankment Outside of the Roadway

Material for curb backfill, under sidewalks, on backslopes, or in other areas within the right-of-way may be any material that is free from sod, stumps, roots, or other perishable or deleterious material that is capable of forming a stable embankment when compacted. Areas outside the roadway shall be compacted to minimum of 95% Standard Proctor Density unless otherwise specified.

700.3.4 Construction Acceptance

Sampling and testing of subgrade materials shall be as set forth in **Section 1100** of these Standards. Moisture content shall be +/- 3% optimum moisture unless otherwise supported by site specific geotechnical data and approved in writing by City Engineer. Pavement designs that utilize a subbase course shall include test data and specifications for the subbase material in the calculations submitted to the City Engineer for review and approval.

The Geotechnical Engineer and the Engineer of Record shall certify that street construction was performed in accordance with these specifications before placement of pavement.

700.4 Pavement Design Criteria

700.4.1 Design Method

Pavement thickness shall be designed by the AASHTO Guide for Design of Pavement Structures, latest edition. Other design methods, including the Asphalt Institute method, may be approved on an individual basis.

In lieu of formal design for Local streets and Alleys, the designer may use the minimum criteria as provided in **Table 600-13** and **Table 600-14**. Streets classified as arterial and collector must be designed on an individual basis and all criteria utilized must be documented.

700.4.2 Design Period

A minimum design period (traffic analysis period) of 20 years shall be used for pavement designs.

700.4.3 Traffic Analysis

A formal Transportation Impact Study with projections and supporting data shall be submitted for all street classifications to provide minimum Equivalent Single Axle Loads (ESAL) criteria. The basis for traffic projections shall be included in data submitted. Equivalent Single Axle Loads (ESAL) units are based on 18 kip (80 kN) axle loading on each design lane. All data and design procedures in this section use ESAL units for pavement loading repetitions. Directional distribution of ESALs may be 50% unless the Transportation Impact Study indicates otherwise. Lane distribution factors shall be 80% for two lanes of travel in each direction.

In the absence of truck traffic distribution data, 5% trucks shall be used, distributed across truck types in accordance with Federal Highway Administration guidance for urban arterial streets. The City Engineer may require a higher percentage of trucks to be included in the calculations when existing or projected truck traffic is expected to exceed 5%.

The following equation shall be used when calculating the design traffic for 20-year projections:

$$\text{ESALs} \times \text{DD} \times \text{LD} \times 365 \times 20$$

Where:

ESALs = 18-kip Equivalent Single Axle Loads

DD = Directional Distribution

LD = Lane Distribution

Two Lane: $\text{ESALs} \times 0.5 \times 1.0 \times 20 \times 365$

Four Lane: $\text{ESALs} \times 0.5 \times 0.8 \times 20 \times 365$

700.4.4 Resilient Modulus Correlation

The correlation of California Bearing Ratio (CBR) and Resilient Modulus for pavement design input should be made using the NCHRP 1-37A equation shown: $M_R (\text{psi}) = 2555 \times \text{CBR}^{0.64}$

700.4.5 Design Reliability and Serviceability

The design reliability percentage and serviceability index inputs are shown for each functional classification in **Table 600-11**.

Table 600-10 Design Reliability and Serviceability Inputs

Design Reliability and Serviceability Inputs						
Classification	Reliability	Standard Deviation		Initial Serviceability	Terminal Serviceability	Performance
		Flexible	Rigid			
Arterial	95	0.45	0.35	4.5	2.5	2.0
Collector	85	0.45	0.35	4.5	2.5	2.0
Local	85	0.45	0.35	4.5	2.5	2.0
Alley	80	0.45	0.35	4.5	2.5	2.5

700.4.6 Pavement Material Parameters

Table 600-12 provides structural coefficients for pavement materials.

Table 600-11 Pavement Material Parameters

Material	Structural Coefficient (Per Inch)	Limiting Test Criteria
ACHM Surface Course	0.44	2" Min. Course
ACHM Binder Course	0.44	3" Min. Course
ACHM Base Course	0.36	R>90 4" Min. Course
Aggregate Base Course (Class 7)	0.14	R>72 6" Min. Course
Chemically Treated Subgrades (or Approved Substitute)		Compressive Strength of Field Specimen
Cement Treated Subgrade	0.10	7 day, 650–1000 psi
Fly Ash Treated Subgrade	0.10	7 day, 150 psi @ 70°±
Lime Treated Subgrade	0.07	7 day, 160 psi, PI <6
Kiln Dust Treated Subgrade	0.10	7 day, 150 psi, PI <6

700.4.7 Minimum Pavement Sections for Roadways by Classification

Table 600-13 and **Table 600-14** provide minimum pavement sections for asphalt and concrete roadways by roadway classification.

Table 600-12 Minimum Pavement Sections for Asphalt Roadways

Street Classification	Local/Alley	Collector	Arterial
Minimum Thickness Asphalt Surface Course (in.)	3 in.	Pvmt. Design Required	Pvmt. Design Required
Minimum Thickness Asphalt Binder Course (in.)	n/a	Pvmt. Design Required	Pvmt. Design Required
Minimum Thickness Aggregate Base Course (in.)	8 in.	Pvmt. Design Required	Pvmt. Design Required

(Minimum SN = 3.0)

Table 600-13 Minimum Pavement Sections for Concrete Roadways*

Street Classification	Local/Alley	Collector	Arterial
Minimum Thickness Concrete Pavement (in.)	6 in.	Pvmt. Design Required	Pvmt. Design Required
Minimum Thickness Aggregate Base Course (in.)	4 in.	Pvmt. Design Required	Pvmt. Design Required

*All rigid pavement designs require a joint layout plan and associated details.

All street classifications except for local or alley shall require formal design. Formal designs shall be performed by the Design Engineer to determine specific pavement sections required for specific subgrade and specific project requirements. Pavement designs shall be submitted to the City Engineer for review. Soils testing is required in compliance with the Pavement Design Standards and a minimum acceptable subgrade CBR value of 8 shall be required to utilize the minimum sections shown above.

Joint spacing and joint design shall be in accordance with the AASHTO Guide for Design of Pavement Structures, except as modified herein. (Ord. of 7-20-1999, app. B)

700.5 Pavement Design Report

The pavement design report shall be prepared by (or under the supervision of), signed, and stamped by an Arkansas licensed professional engineer. The report shall make a recommendation for a typical pavement structural section based on known site soil conditions

and a valid transportation impact study, when required. The report shall be submitted in PDF format.

700.5.1 Required Information for Pavement Design Report

1.0 Study Area

- a. Site vicinity map depicting project area.
- b. Plat with street names labeled.

2.0 Traffic Data

- a. Existing and Future Average Daily Traffic (ADT)
- b. Heavy truck percentage
- c. 18-kip Equivalent Single Axle Loads (ESAL) determination

3.0 Soils Report

- a. Field Investigation
 - i. Method of subsurface exploration
 - ii. Boring locations on scaled drawings.
 - iii. Boring logs
- b. Laboratory Testing (In-situ and borrow)
 - i. Load bearing strength – California Bearing Ratio (CBR)
 - ii. Natural water content
 - iii. Atterberg limits
 - iv. Sieve analyses
 - v. AASHTO soil classification
 - vi. Moisture-Density relationship (Procter Test)
- c. General Conditions
 - i. Site conditions
 - ii. Subsurface conditions
 - iii. Subgrade support
 - iv. Subgrade preparation
- d. Construction considerations

4.0 Pavement Design

- a. AASHTO pavement design calculations
- b. Recommended pavement sections

700.6 Asphalt Concrete Hot Mix (ACHM) Pavement

700.6.1 Materials and Construction Requirements

Materials and Construction Requirements for Asphalt Concrete Hot Mix Base, Binder, and Surface courses shall meet the requirements of the current edition of ARDOT Standard Specifications sections 404, 405, 406, 407, 409 and 410 as applicable, except as modified herein. No Marshall mixes are allowed unless specifically authorized in writing by City staff.

Asphalt grade and number of gyrations (Nmax) shall be per **Table 600-15**

Table 600-14 Asphalt Requirements

	Surface Course	Binder Course
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Street Classification	Min. Asphalt Grade	Number of Gyration (Nmax)	Min. Asphalt Grade	Number of Gyration (Nmax)
Local/Alley	64-22	115	64-22	115
Collector	70-22	160	64-22	160
Arterial	76-22	205	70-22	205

Lift Thickness

Surface Course lift thicknesses shall be a minimum of 3 times the maximum nominal aggregate size and a maximum of 2". Base and Binder Courses shall be minimum of three times the maximum nominal aggregate size. Base and Binder Course maximum lift thicknesses will be limited by capability of compaction equipment to achieve minimum compaction requirements but will not be allowed to exceed six times the maximum nominal aggregate size.

Surface Course Mix

3/8" (9.5 mm) nominal maximum aggregate size surface course mix shall be used on all local and alley streets, and 1/2" (12.5 mm) nominal maximum aggregate size surface course mix shall be used on arterial and collector streets unless otherwise approved in writing by the City Engineer.

700.6.2 Design and Quality Control of Asphalt Mixtures

Design and Quality Control of Asphalt Mixtures shall be in accordance with ARDOT Section 404.

700.6.3 Construction Acceptance

Construction acceptance shall be in accordance with ARDOT Section 410, except as modified herein.

The finished surface, when checked with a 10' straight-edge parallel to the centerline, shall show no variation more than 3/16" for binder courses and not more than 1/8" for surface courses when the profile grade line is shown on the plans. If the profile grade line is not shown on the plans, the variations shall be not more than 1/4" for binder courses and not more than 3/16" for surface courses. When surface tests indicate surface tolerances do not meet these requirements, corrections to the pavement and changes to the paving operations shall be made before beginning the next day's operations.

All transverse joints shall be straightedged immediately following rolling of the joint. Paving shall not continue until the transverse joint meets the applicable surface tolerances shown above.

Pavement that is determined to be non-complying for any reason other than the properties listed in table 410-1 will be evaluated according to the following:

- All ACHM placement shall be within reasonably close conformity with the lines, grades, cross sections, dimensions, and material requirements, including tolerances, shown in the plans or indicated in the specifications.
- Unless otherwise specified, in the event the materials or finished product in which the materials are used is not within close conformity with the plans and specifications but reasonably acceptable work has been produced, the City Engineer will then determine if the work shall be accepted and remain in place. In this event, the Engineer of Record will document the basis of acceptance by Change Order that will provide for an appropriate adjustment in the contract cost for such work or materials as deemed necessary to conform to the determination based on engineering judgement.
- In the event the materials or the finished product in which the materials are used or the work performed is found not to be in reasonably close conformity with the plans and specifications and have resulted in inferior or unsatisfactory product, the work or materials shall be removed and replaced or otherwise corrected at no cost to the City.
- The City Engineer will determine whether the non-complying pavement must be corrected, removed and replaced, or left in place.
- Corrections shall be completed in accordance to section 410.09 of ARDOT specifications.

Incentive pay will not be applied to placement of ACHM courses.

700.7 Aggregate Base Course

700.7.1 Materials and Construction Requirements

Base course material shall be crushed stone meeting the materials and construction requirements for Class 7 aggregate base course of Section 303 of the ARDOT Standard Specifications, current edition, except as modified herein. Base course materials shall be certified by the supplier to meet the ARDOT Class 7 requirements and identified as to the type of material, properties (including gradation, density and proctor), and source.

700.8 Portland Cement Concrete Pavement

700.8.1 Materials and Construction Requirements

Portland Cement Concrete Pavement (P.C.C.) shall meet the requirements of the latest edition of the ARDOT Standard Specifications Section 501, except as modified herein. Concrete for paving shall have a minimum 28-day compressive strength of 4,000 psi and shall have air entrainment of 4 to 8 percent.

Joint Spacing

For jointed plain concrete pavement (JPCP), the maximum panel dimension in feet shall not exceed 1.5 to 2 times the slab thickness in inches with a maximum slab dimension in any direction not greater than 15 foot. In addition, the ratio of panel length and width shall not exceed the 1.5 ratio unless slab is continuously reinforced.

Joint Sealant

Sealant for joints shall be silicone conforming to section 501.02 (h) of ARDOT specifications. Materials shall be selected from ARDOT's Qualified Products List.

Backer rod shall be a non-moisture absorbing, closed-cell, expanded polyethylene foam rod. The rod shall be compatible with the sealant and no bond or reaction shall occur between the rod and the sealant.

Joints shall be sealed no sooner than 6 days following placement of the concrete except when High Early Strength Concrete pavement is specified, the period may be reduced to 18 hours. Joints shall be sealed before the pavement is opened to traffic, including construction equipment. The pavement temperature shall be above 50°F (10°C) before installation of silicone joint sealing material.

Immediately after saw cutting is complete the resulting cement slurry shall be completely removed from the joint by water washing (less than 100 psi pressure). After the joint is sufficiently dried, the joint shall be sandblasted. One pass along each reservoir face is required. After sandblasting the joint shall be blown out with compressed air. When the surfaces are clean and dry, and just prior to placement of the sealant, compressed air shall be used to blow out the joint and remove all residual dust. Air compressors shall be equipped with suitable traps capable of removing all free water and oil from the compressed air and shall be capable of furnishing air with a pressure greater than 90 psi.

Sealant shall be installed in accordance with the following requirements:

A backer rod or bond breaker shall be installed prior to placement of the joint sealer. The backing material shall be placed and shall be non-adhesive to the concrete or the sealant material. The self-leveling sealant shall be applied in a continuous operation, by means of approved pressure equipment that will force the sealing material to the bottom of the joint and completely fill the joint without spilling the material on the surface of the pavement. Sealant which does not bond to the concrete surface of the joint walls, contains voids, or fails to set up to a tack-free condition will be rejected and replaced by the Contractor at no additional cost to the City. Before sealing the joints, the Contractor shall demonstrate that the equipment and procedures for preparing, mixing, and placing the sealant will produce a satisfactory joint seal. This shall include the preparation and application of an adequate amount of the sealant that will demonstrate, to the satisfaction of the City, the installation of the sealant.

700.9 Curb and Gutter

700.9.1 Standard Detail

All curb and gutter shall be portland cement concrete conforming to the City of Bentonville Curb and Gutter Detail. Mountable curbs will not be allowed in the City of Bentonville except at driveways or designated mountable aprons without written authorization of the City Engineer.

700.9.2 Materials and Construction Requirements

Materials and construction methods for curb and gutters shall meet the requirements of the latest edition of the ARDOT Standard Specifications Section 634, except as modified herein.

Concrete

Concrete shall be Class "S" Portland Cement Concrete in accordance with Section 802 or 501, ARDOT Standard Specifications with a 28-day compressive strength of 3,500 psi. Admixtures shall not be used unless specifically approved by the City Engineer. Maximum slump shall not exceed 4".

Curing compound shall be a white pigmented membrane-forming liquid conforming to the requirements of ASTM Designation C309, Type 2.

Joints

1/2" wide expansion joints shall be required at 75 ft. intervals and at all stationary structures and ends of curb returns. Expansion joints shall be made with 1/2 " asphalt impregnated fiberboard conforming to AASHTO M-213. Acceptable materials may be found on the current ARDOT "Qualified Products List". Expansion joint material shall be full depth of the curb and perpendicular to the curb line.

Contraction joints shall be 1/8" to 3/8" x 1 1/2" at 15 ft. Intervals. All contraction joints and cold joints shall be filled with joint sealant to finished grade. Joint sealing compound for contraction joints shall be filled in accordance with the requirements for Joint Seals as specified in section 501. Closed cell backer rod shall be used in deep joints, as needed, according to the manufacturer's instructions.

Forms

Forms shall be made of metal or wood and shall have a depth equal to or greater than the thickness of the pavement slab. The minimum length of each section of form used shall be ten (10) feet. Each section or form shall be uniform and free from undesirable bends or warps.

The maximum deviation of the top surface of any section shall not exceed one-eighth (1/8) inch, or the inside face not more than 1/4 inch from planned alignment. The method of connection between sections shall be such that the joint thus formed shall be free from movement in any direction. Forms shall be of such cross-section and strength and so secured as to resist the pressure of the impact and vibration of any equipment which they support, without springing or settlement.

Every 10-foot length of form shall have at least three form braces and pin sockets which shall be spaced at intervals of not more than 5 feet, having the end brace and socket not more than six inches from the end of the form. Approved flexible forms shall be used for construction where the radius is 150 feet or less.

The subgrade under the forms shall be cut and compacted to a width not less than one foot behind the back of curb and gutter, removing all soft and yielding areas and replacing with suitable material compacted. Forms shall be joined neatly and in such a manner that the joints are free from play or movement in any direction. The supply of forms shall be sufficient to permit their remaining in place for at least twelve hours after the concrete has been placed. All forms shall be cleaned and oiled prior to use.

The alignment and grade elevations of the forms shall be checked by the Contractor and the necessary corrections made immediately before placing the concrete. When any form has been disturbed or any subgrade there under has become unstable, the forms shall be reset and rechecked.

Placing Concrete

The subgrade shall be moist, but not muddy, at the time of placing of the concrete. If required by the City, the prepared subgrade shall be saturated with water the previous night, or not less than 6 or more than 20 hours prior to placing the concrete. If the subgrade subsequently becomes too dry, it shall be sprinkled again ahead of placing the concrete, in such a manner as not to form mud or puddles of water.

Engineer of Record shall give the City at least twenty-four (24) hours advance notice before placing concrete, and the subgrade shall be checked and approved by the City Engineer or his/her designated representative before any concrete is placed.

The concrete shall be mixed in quantities required for immediate use and shall be deposited on the subgrade to the required depth and width of the curb and gutter in successive batches and in a continuous operation without the use of intermediate forms or bulkheads. The concrete shall be placed as uniformly as possible in order to minimize the amount of additional spreading necessary. While being placed, the concrete shall be vibrated with suitable tools so that the formation of voids or honeycomb pockets is prevented.

The concrete shall be especially well vibrated and tamped against the forms along all joints. Care shall be taken in the distribution of the concrete to deposit a sufficient volume along the outside form lines so that the curb section can be consolidated and finished simultaneously with the slab.

No concrete shall be placed around manholes or other structures until they have been adjusted to the required grade and alignment.

Mechanical Placement

Curb and gutter placed by slip-form or extruding equipment will be accepted providing it complies with all of the above requirements other than forms.

Finishing

The curb shall be tooled to the required radii as soon as possible after the concrete takes its initial set. The gutter shall be shaped with a wood float at least 4 feet long. After the face forms and templates are removed, the joints shall be tooled and the surface shall be finally finished with a hard bristle broom to remove all imperfections without additional mortar or dryer. In all cases, the resulting surface shall be smooth and of uniform color, free from sags, twists or warps and true to the specified lines and grades shown on the plans.

Face forms shall be removed from curbs within 24 hours and the face finished by rubbing with a wetted cement mortar brick or wood float until it is smooth.

Surface tests shall be performed in accordance with section 634.03 (e).

Curing

Immediately after the finishing operation has been completed and as soon as marring of the concrete will not occur, the entire surface of the newly placed concrete shall be cured according to Section 501 of ARDOT Standard Specifications.

Cold Weather Protection

Cold weather protection shall be as specified in Section 501 ARDOT Standard Specifications.

Backfilling

After curing, the curb shall be immediately backfilled to within 4" of the top curb to eliminate any possibility of washing beneath the curb. The remaining 4" shall be topsoil.

Driveway Entrances

At all entrances to residences or commercial buildings the concrete curb shall be removed by saw cutting of either side of the entrance. All driveway entrances shall require a minimum of 8 foot formed and poured transition that will tie to the saw cut curb. Removal of curb by sledgehammer without first saw cutting shall not be allowed. The practice of excavating behind the curb and gutter and then backfilling with the broken curb section concrete is not acceptable. Any backfill shall be Class 7 crushed limestone.

700.10 Street Cuts, Excavations, and Borings

700.10.1 General Requirements and Permit

Permit. It shall be unlawful for any person to excavate, bore under or cut any street, alley, sidewalk, road, highway or other public way, or curb and gutter in the City of Bentonville, Arkansas, without first obtaining a Right of Way permit from the City. Such permit shall be granted only after a written application has been filed, all fees have been paid, and guarantees are in place as set forth herein. Utilities crossings shall be required to be bored unless an open cut is deemed to be required and approved by the City. Information to be included in the permit application shall include:

- Name and address of the owner or agent in charge of the property abutting the proposed work area.
- The name and address of the party doing the work.
- A map that indicates the location of the work area and the dimensions of the excavation area
- A plan or a clear description of the work to be done.
- A traffic control plan that meets the "Manual on Uniform Traffic Control Devices" latest edition.

Inspection fee and Surety bond. At the time of making application for a boring, jacking or open cut permit, an inspection fee as noted in the current fee schedule. Before a permit for boring, jacking or open cut shall be issued, the applicant for such permit shall deposit a cashier's check or a sufficient surety bond with the City of Bentonville as required per Appendix B Land

Development Code, Article 300, Section 300.10 Completion Guarantee of the Bentonville Municipal Code. The cashier's check and/or bond shall be forfeited for failure to comply with the requirements set forth herein. The amount of such cashier's check or surety bond shall be determined by the criteria as follows:

The amount for a boring or jacking permit shall not be less than the approved amount in the schedule of fees.

The amount for an open cut shall be estimated by square surface yards and calculated by the current fees for open cuts as set forth in the Municipal Code and then multiplied by 150%.

In the case of sidewalks and curb and gutter, or other public way, the amount shall be determined by the current fee schedule as set forth in the Municipal Code.

No fees or bonds shall be required for those projects funded by the City.

Upon satisfactory completion and approval of the bore, jack, or open cut, the City shall authorize the return of any sum deposited as previously described. If the Permit holder shall fail, refuse or neglect to make such repair or remove and replace any rejected work as provided in this ordinance, the City may make such repair or cause such repair to be made. The cost of such repair shall be deducted from the amount on deposit with the City. Any remaining balance of the deposit shall be returned to the Permit holder.

700.10.2 Street Cut Procedures and Repair

Street cuts cause damage that reduces the level of service of the street on which they are made. To minimize this damage, and in some cases, improve the street conditions where cuts are made, the City is adopting the backfill, patch, and surface repair standards as described herein and relevant details.

These street cut standards apply for all cuts and excavations, regardless of the reason for the cut and excavation. These standards apply to all private and public utilities and contractors. These standards are not intended to supersede more substantial repair or resurfacing requirements on projects where specified repairs are shown on approved construction drawings or otherwise directed by the Transportation Director or Designee.

In general, the repair standard shall conform to [City Standard Details E-0 to E-3](#) and be what is termed a "T-patch," which includes a minimum bench (or key) of 18 inches beyond the edges of the excavation. This 18-inch bench will define the width of the required surface repair (if applicable) measured parallel to the travel direction of the street.

700.10.2.1 The length of the surface repair (if applicable) measured perpendicular to the street will be at a minimum the full width of a travel lane (from curb or edge of pavement to the crown or edge of travel lane). If the edge of the excavation crosses the crown or edge of the travel lane, the surface repair must extend to the edge of the next travel lane. The cost of all repairs shall be borne by the party cutting the streets.

- 700.10.2.2 Resurfacing requirements may be reduced or increased at the Transportation Director or Designee's discretion. In situations where extenuating circumstances exist, such as pending resurfacing or road widening projects, safety, traffic flow issues, speed humps, adjacent pavement features, drainage concerns, or the condition of adjoining pavement.
- 700.10.2.3 All streets shall not be cut unless specific approval in writing is obtained from the Transportation Director or Designee.
- 700.10.2.4 No Right of Way permit shall be issued without prior consent from the Transportation Director or Designee. Once the permit has been reviewed, approved, and all financial obligations met, the permit will be issued, allowing construction to commence.
- 700.10.2.5 A guarantee must be posted with the City Street Department before any street may be cut. The size of the street cut will determine the guarantee amount. Guarantees are in the form of a cashier's check, license and permit bond, or a letter of credit.
- 700.10.2.6 The contractor is responsible for all work zone signage. All work zones must meet MUTCD standards and be set in place before work begins. A traffic control plan must be submitted and approved by the City before any road closure is approved. One weeks' notice will be needed before a road closure is allowed.
- 700.10.2.7 No overnight opened street cuts are permitted unless approved by the City. If street cuts are authorized to be left open overnight, the cut must be plated by the contractor and the work zone marked with approved devices, as noted in MUTCD.
- 700.10.2.8 All street cuts shall be visibly marked and must be saw-cut full depth on all sides to ensure smooth straight edges before any excavations begin.
- 700.10.2.9 All stockpiled material shall be handled in a safe manner and placed where it will cause the least possible inconvenience to the public. In no case shall such material be stockpiled or scattered over the surface of the pavement or impede vehicular or pedestrian traffic flow. Acceptable erosion control Best Management Practices (BMP's) shall be implemented for stockpiled materials as described in Appendix B Land Development Code, Article 1700.
- 700.10.2.10 No trench or opening made on any street, alley, sidewalk, road, highway, or other public way, or curb and gutter shall remain open longer than is absolutely necessary, and in no event more than 24 hours, except by special written permission of the City. If a cut is required to be open for longer than 24 hours and the party making it failed to secure the necessary extension of time, then such refilling shall be made under the direction of the City at the expense of the party that has secured the permit. Temporary bridging of the open cut such as "plating" shall be required if a cut is required to stay open more than 12 hours. For public safety, a minimum "plate" thickness of one inch shall be required. The contractor shall follow all Occupational Safety and Health Administration (OSHA) standards.
- 700.10.2.11 No excavation shall be made in any street, alley, sidewalk, road, highway, or other public way or curb and gutter in the City that exceeds 400 feet in length at any one time, except by special written permission of the Transportation Director or Designee.

700.10.2.12 The City Street Department must be notified before any base materials or backfill is placed into the trench. No backfill may be placed in an open trench without the presence of the City Inspector. Regular working hours are from 7:30 am to 4:00 pm, Monday through Friday (7:00 am to 3:30 pm during summer hours). Any party needing to make an emergency street cut after those hours must call the City Street Inspector. Nothing in this article shall prevent any person from performing any open cut that may be necessary for the preservation of life or property when necessity may arise during the times when City offices are closed. In cases of emergency, the person making such excavation shall make application for a permit within 24 hours after City offices are first opened subsequent to the making of such excavation. A per hour fee will be assessed to all after hour call-outs or additional time required that occurs after regular working hours in addition to the standard charges. This fee can be found in the current fee schedule. Inspections require a minimum of 24-hour notification.

700.10.2.13 Class 7 base is required for all backfilling. Base material must be placed into the trench in no more than 6-inch lifts, and each lift must be machine tamped to a minimum of 95% density. The City will review the use of substitute materials as backfill when submitted with the street cut request. The contractor must have approval from the Transportation Director or Designee before using any substitute. If pervious material is approved for use as backfill, impervious material shall be paced at the ends of the trench to prevent the loss of structural bedding

700.10.2.14 Materials and testing shall follow the requirements set forth within these specifications. Submittals may be requested at any time to ensure conformance. The City may reduce, increase, or modify testing as needed.

700.10.2.15 After the repair work has been completed, the permittee shall notify the City that such work has been completed. The City shall make an inspection to ensure that the work has been done in accordance with the requirements of this chapter and reasonable specifications provided to the Permittee by the City prior to the commencement of the repair work. In the event any or part of any work is not done in a satisfactory manner or not in conformity with this chapter or specifications, the City shall notify the contractor and owner in writing of the non-acceptance of the work. All such rejected work shall be removed and replaced within thirty (30) days of the notification.

700.10.2.16 Pavement smoothness shall be checked for both temporary and permanent patches. The finished surface, when tested with a contractor supplied, City approved straight-edge, placed parallel to the centerline, shall show no variation more than a 1/4". If pavement smoothness can not be met after 60 days then the entire street width will need to be milled and overlaid with 2" of asphalt. The length of the overlay will need to be a minimum of 50'. The mill and overlay will be centered over the patches and pass the straight edge test noted above.

700.10.2.17 A temporary patch of cold mix must be placed and compacted over the final lift of the back-fill to match the existing street grade (3-inch minimum).

700.10.2.18 The width and length of the permanent patch will be measured, and the individual requiring the cut will be billed at a rate for the current amount approved by City Council for asphalt by the square yard for the permanent repair.

700.10.2.19 The party cutting the trench shall be responsible for any settling of the street cut for a period of (90) ninety days from the date of acceptance of the temporary patch by the City. The guarantee will be held as a warranty for 90 days.

700.10.2.20 The guarantee shall be returned to the applicant only after the City has received payment in full for the permanent repair and the warranty period for the permitted area has expired.

700.10.3 Boring and Jacking Procedures

The following procedures and requirements for boring and jacking shall apply:

700.10.3.1 The Permittee shall provide a map that clearly depicts the location of each individual bored or jacked crossing.

700.10.3.2 The Permittee shall mark each individual bored or jacked crossing with "pink" chalk paint, as to provide the City inspector a reference line as to where the boring or jacking took place.

700.10.3.3 When jacking or boring, the depth of bury on installations which are jacked or bored under any street shall have a minimum depth of bury of two and one-half (2 ½) feet below the low points of the street cross section to the top of the pipe or casing, or three and one-half (3½) feet below the bottom of the pavement structure (top of subgrade) to the top of the pipe or casing, whichever gives the greatest depth. In the case of a street section with a ditch section, the bury shall be a minimum of one (1) foot below flow line, but still a minimum of the above referenced depth below street section, whichever is greater. If the pavement or curb and gutter structure is damaged by the jacking or boring installation, it shall be repaired in a manner approved by the Street Manager.

700.10.3.4 After the completion of the jacking or boring, the permittee shall contact the Transportation Director or Designee within forty-eight (48) hours of such completed work for an inspection. Upon satisfactory completion and approval of the jack or bore and upon satisfactory completion of any repairs required as a result of the jack or bore, the Transportation Director or Designee shall authorize the return of any sum deposited. In the event that the permittee shall fail, refuse or neglect to remove and replace any rejected work as provided in this ordinance, the City may deduct the cost from the amount on deposit with the City. Any remaining balance of the deposit shall be returned to the Permit holder.

700.10.4 Penalty

Except in emergency situations, any person, firm, organization, contractor, or engineer that performs any excavation, cut, jacking, or boring prior to acquiring a permit shall be punished by a fine not to exceed one thousand dollars (\$1,000.00). All activities requiring a permit shall be immediately halted and temporarily repaired until proper permit has been issued.

700.10.5 Street Cuts and Repairs by the City

The City may choose to cut and repair any street, alley, sidewalk, road, highway or other public way or curb and gutter for individuals, if the City determines that it is in the City's best interests. A fee for such a cut and repair will be collected from the individual requesting such a service from the City in accordance with the fee schedule as set forth in the Municipal Code. If this street cut/repair requires any after hour's services from the City, an after-hours fee shall be required in addition to the normal fee.

800 TRAFFIC CONTROL DEVICES

800.1 General

This chapter describes general signal, signing, and striping design requirements for use in the City of Bentonville. All design and construction of signals, signing, and striping shall be in conformance with this chapter and the latest revision of the MUTCD. These criteria are established to provide uniform procedures to aid the design engineer in preparing improvement plans for projects in the City of Bentonville. These criteria are not intended to restrict the design engineer from utilizing innovative design; however, they may be modified only with prior authorization of the City Engineer. If applicable, a traffic signal, signage, or pavement marking plan must be included in the construction plan submittal.

Engineer of Record shall provide a letter at the end of the project stating the date when product and maintenance will be turned over to the City of Bentonville

800.2 Installation Responsibility

The cost and installation of traffic signals, street signage and pavement markings are the responsibility of the developer with a proposed development. The work and materials necessary for the installation shall be included as part of the street improvements.

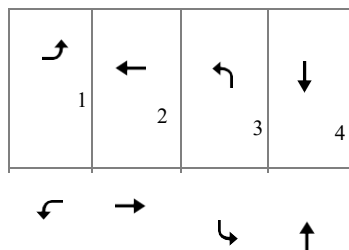
800.3 Traffic Signal Design Requirements

The traffic signal system shall consist of the signal controller, signal poles, signal heads, cable, conduit, detection, communication equipment, preemption, backup battery system, and any other appurtenances required to provide a complete, operable traffic signal system. Components of the system shall conform to these specifications unless otherwise approved in writing by the City Engineer. Equipment used shall be from the City's Approved Products List (APL).

800.3.1 Signal Phasing

When designing a traffic signal (new installation or modification), the signal phasing (number and sequence of the phases) shall be discussed with the City. Traffic signal phasing will be illustrated on the plans using a NEMA diagram as shown in **Figure 700-2** below. The City uses two standard phasing sequences, depending on whether the main-street/coordinated movements are north-south or east-west:

East-West street is coordinated/major



North-South street is coordinated/major

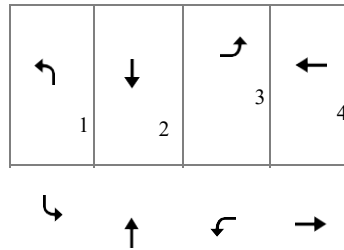


Figure 700-1 NEMA Diagram

800.3.2 Signal Head

All vehicular traffic signal heads shall be 12 inches in diameter and Black polycarbonate with tunnel visor. Traffic signal heads shall be placed in accordance with the most current version of ARDOT standard drawings SD-8 (Signal Head Placement) and SD-11 (Steel Pole With Mast Arm). These placement criteria are to be used as guidance by designers. Special situations may arise in which alternate arrangements are appropriate. Deviations from the above criteria must be approved by the City Engineer.

All traffic signal and pedestrian indications shall be LED. Pedestrian signals should include countdown displays. In addition, backplates shall be provided for all traffic signal heads that are mounted to the mast arm. Signal heads that are mounted to the signal pole will be evaluated for backplates on a case-by-case basis.

800.3.3 Emergency Preemption

Installation will consist of Opticom GPS emergency preemption equipment with cabinet mount antenna. See City's Approved Product List.

800.3.4 Video Detection

Unless otherwise specified by the City Engineer, video detection shall be used for stop bar detection at all signal installations. The video detection system shall be per the City's APL. Typically, one camera per approach will be used, unless needs (posted speed limits) dictate otherwise. Stop bar cameras should be used for side streets while advanced and stop bar for main street/coordinated streets. The camera should be mounted to the signal mast arm via a six-foot riser arm. The manufacturer's representative shall be consulted to determine the proper placement of the video cameras. In addition to the video detectors, virtual detection zones (VDZ) should also be illustrated and numbered on the signal plan. VDZ are typically shown as; 6' x 50' VDZ presence, centered in the lane, with the leading end of the zone two feet in advance of the stop line and 6' x 6' VDZ advance, centered in lane, with the lagging edge being a distance from the stop bar, the placement is dependent on posted speed limit, see ARDOT VDZ placement guidelines.

800.3.5 Battery Backup System (BBS)

The Design Engineer shall coordinate and verify the location of the proposed traffic signal cabinet and power supply. This item consists of installing an emergency BBS in the vicinity of the power supply. It shall be mounted inside a separate equipment cabinet of the type and size as used shall be from the City's Approved Products List (APL).

800.3.6 Traffic Signal Pull Boxes

Pull boxes should typically be provided whenever conduit changes direction and adjacent to signal poles and controllers, see the most current version of ARDOT standard drawing SD-6

(Heavy Duty Pull Box). Pull boxes should be installed at least 1 foot 6 inches from the back of curb to the center of the box and no closer than 2 feet to any pole. The distance between traffic signal boxes should not exceed 200 feet to facilitate the pulling of cable.

Traffic signal box lids (including interconnect) shall be labeled "TRAFFIC SIGNAL" or "CITY FIBER."

800.3.7 Conduit

All conduit for traffic signal installations shall be either Schedule 40 polyvinyl chloride (PVC) conduit or Schedule 40 high density polyethylene (HDPE) conduit. Conduit installed under roadway surfaces shall be installed by pushing or boring methods. If this is not feasible a design exception must be approved by the City Engineer, then a trenching method as shown in the most current version of the ARDOT standard drawing SD-11 (Steel Pole with Mast Arm) may be used. All trenching shall comply with federal, state, and local regulations.

Signal conduit that extends from signal poles to adjacent pull boxes should typically be a minimum 3-inch conduit, while signal conduit that extends from the signal controller to the adjacent pull box should consist of two 3-inch conduits. Any conduit crossing the street should be a minimum of 3 inches. Signal conduit for interconnect cable should typically be 2-inch conduit.

Table 700-15 Typical Conduit Sizes

Signal pole to Adjacent Box	3"
Controller to Adjacent Pull Box	3"
Street Crossing	3"
Interconnect	2"

Street lighting cable is permitted in signal conduit runs and boxes. The conduit sizes in **Table 700-17** are typical applications. No street lighting cable should run through (or terminate in) the traffic signal controller cabinet.

At new installations, an additional 2-inch conduit run from the controller to the adjacent pull box (with pull string) shall be included for fiber interconnect.

The Design Engineer shall verify that the signal conduit is properly sized adhering to the National Electric Code conduit fill guidelines, any design exceptions shall be noted on the plans and approved by the City Engineer. For estimating conduit quantities, center-to-center distances should be used.

800.3.8 Power Supply

The Design Engineer shall coordinate and verify the location of the proposed power supply with the Bentonville Electric Utility Department (BEUD) or other appropriate utility company to ensure availability of service. A service disconnect shall be located within 10 feet of cabinet,

refer to the most current version of ARDOT standard drawing SD-9 (Service Point). Contractor shall build Free Standing Meter Rack, refer to BEUD standard detail BEUD DS-1003 (100A/200A Meter Pedestal).

800.3.9 Signal Poles

Signal poles shall typically be located six feet (four feet minimum) from the back of curb (or edge of pavement, where there is no curb) to the center of the pole unless otherwise approved by the City Engineer. See ARDOT standard drawings SD-11 (Steel Pole With Mast Arm). However, no signal pole, pole base, or appurtenance shall be located within 2 feet of the face of curb or edge of shoulder. Signal poles shall typically not be located in a median or channelizing island. When pedestrian signal heads are used, signal poles with push buttons should be placed at locations that comply with, to the extent possible, with all Americans with Disabilities Act (ADA) provisions. At a maximum, the push button should be located within 5 feet of the crosswalk extended; within 10 feet of the edge of curb, shoulder or pavement at its closest point; and be accessible. This may require the use of pedestrian push button pedestals. The City does not require that signal poles be aligned with the crosswalk locations. However, the pedestrian heads shall be visible for pedestrian traffic.

Signal pole clearance to overhead power lines shall be a minimum distance 10 feet horizontally and vertically.

Astrobrackets (not prefabricated nipples) shall be used for attaching signal heads to poles.

800.3.10 Controller Cabinet Assembly

Controller Cabinets shall be oriented per International Municipal Signal Association (IMSA) Standards, located adjacent to and behind the sidewalk or at least 10 feet from the back of curb to the center of the controller where no sidewalk exists. In locations where no curb exists, the controller should typically be placed more than 10 feet from the edge of pavement to the center of the controller if possible. The area around controller cabinet shall be flat and level 5 feet in all directions, see the most current version of ARDOT standard drawing SD-11 (Steel Pole with Mast Arm) for details.

The controller type and manufacturer shall be per the City's Approved Product List.

800.3.11 Wiring

The City has standardized the number of conductors required for the various types of traffic signal equipment.

Four and five section signal heads shall be fed by 7-conductor cable from the signal head to the pole base. Three section signal heads shall be fed by 5-conductor cable from the signal head to the pole base.

Pedestrian signal heads shall be fed by 5-conductor cable from the pedestrian head to the pole base. Pushbutton detectors, when used, shall be fed by one 2-conductor cable from the pushbutton detector to the controller cabinet.

In estimating quantities, cable slack shall be computed according to the **Table 700-18** below.

Table 700-16 Cable Slack

Abbreviations				Description Examples			
S.H.	=		Signal Head	S. H. #5 TO POLE BASE			
P	=		Pole	PED HEAD #22 TO POLE BASE			
P.H.	=		Pole Height	POLE BASE TO PB (E&F)			
P.F.	=		Pole Foundation	PB (E&F TO PB (D)			
P.B.	=		Pull Box	PB (D) TO PB (D/C)			
CONT.	=		Controller Cabinet	PB (D/C) TO PB (C)			
+	=		Additional Material	PB (C) TO PB (ANT.)			
CON. L.	=		Conduit Length	PB (ANT.) TO CONTROLLER			
LUM. ARM	=		Luminaire Arm Length	PUSH BUTTON TO POLE BASE			
LUM.	=		Luminaire Head	POLE BASE TO PB (E&F)			
V.C.	=		Video Camera	PB (E&F TO PB (D)			
TUBE LEN.	=		Tube Length	PB (D) TO PB (D/C)			
ANT.	=		Antenna	PB (D/C) TO PB (C)			
S.P.	=		Service Point	PB (C) TO PB (ANT.)			
				PB (ANT.) TO CONTROLLER			
				LUMINAIRE TO POLE BASE			
				VIDEO CAM. #2 TO POLE BASE			
				SERVICE POINT TO PB(SP)			

Additional material			
3-Section Head	=	8	Feet
4-Section Head	=	10	Feet
5-Section Head	=	13	Feet
Dog House Head	=	10	Feet
Hybrid Beacon Head	=	6	Feet
Emergency Head	=	6	Feet
Pedestrian Head	=	3	Feet
Pole Base (Signal Pole/10'-15' Ped Pole)			
1 - 5c	=	6	Feet
1 - 12c	=	6	Feet
1 - 20c	=	6	Feet
E.C. for Luminaires	=	6	Feet
Video Cable	=	6	Feet
Antenna Cable	=	6	Feet
N.M.C.	=	6	Feet
Pole Base (Push Button Pole)			
1 - 5c	=	2	Feet
Pull Box	=	3	Feet
Controller Cabinet	=	10	Feet
Service Point	=	14	Feet
Luminaire Head	=	5	Feet
Video Camera	=	2	Feet
Antenna	=	5	Feet

On Signal Pole			
Pedestrian Head Height	=	8	Feet
Push Button Height	=	4	Feet
Supplement Signal Head	=	10	Feet

Pedestrian Push Button Pole			
Push Button Height	=	4	Feet

If Video Camera is on the luminaire arm			
Length of the luminaire arm plus 23" tube length plus additional material for video camera			

If Video Camera is on the end of the mast arm			
Length of the mast arm plus tube length plus additional material for video camera			

If Video Camera is between two signal heads			
Length from pole to the signal head futherest away from pole plus tube length plus additional material for video camera			

For 1c/#8 E.G.C., A.W.G (pole to pull box)			
Pole Base	=	12	Feet
Pull Box	=	6	Feet
Length of Conduit is double from pole base to pull box			

The City prefers right-turn overlaps to be hard-wired. This is done by connecting the yellow and green arrows in the signal head to appropriate field terminals.

Splicing of cables will not be allowed.

800.3.12 Timing

Traffic signal timings shall be provided to the City Engineer by the designer and shall **not** be shown on the plans.

800.3.13 Overhead Signs

The overhead street name signs shall be placed between the signal pole and the first vehicle signal head, refer to the most current version of ARDOT standard drawing SD-11 (Steel Pole with Mast Arm).

The designer will compute the sign dimensions and show them on the plans. Lettering sizes are included in the City's standard plans.

800.3.14 Traffic Signal Interconnect

At locations specified by the City Engineer or where a new traffic signal is to be constructed, interconnection of the traffic signals is required. Pull box labeling and spacing should be as per

Section 700.3.6.

Interconnect cable shall be Single Mode Fiber (SMF), unless otherwise directed by the City Engineer (or designee).

At new installations where interconnect is not required, future interconnect conduit shall be installed as per Section 700.3.7.

800.4 Traffic Signal Plan Requirements

This section governs the preparation of improvement plans for a traffic signal project.

800.4.1 General

The traffic signal plans shall include all information necessary to build and check the design of a traffic signal system. For new developments, the traffic signal plans shall be submitted with the public improvement plans (if any) and shall clearly show public street and stormwater drainage improvements and utilities in a de-emphasized manner. The plans shall be arranged as required by the City. The title sheet for the plans shall be signed and sealed by an Arkansas Registered Professional Engineer responsible for preparing the plans. The signed and sealed plans shall be submitted to the City for review and approval prior to construction.

800.4.2 Private Improvements

If any private improvements are shown on the public improvement plans, they shall be clearly defined and marked as such. An appropriate note shall be included on the drawings stating that these private improvements will not be maintained by the City of Bentonville. This section is not intended to imply that private improvements will be allowed within the public right-of-way.

800.4.3 Sheet Size

The sheet size for improvement plans is twenty-two inches by thirty-four inches. Full-size and half-size plans are required for all submittals. All sheets in a given set shall be the same size.

800.4.4 Types of Sheets in Plans

The improvement plans shall typically consist of the following sheets:

Title Sheet

General Notes, Legend, and Survey Control Sheet

City Standard Details

Traffic Signal Notes and Quantities Sheet

Traffic Signal Plan Sheet (60 scale)

Traffic Signal Plan Sheet (40 scale)

Interconnect Plan Sheet (if needed)

Wiring Diagram Sheet

Phasing, Signal Heads, and Detector Chart Sheet

Pavement Marking and Signing Plan (if needed)

Traffic Control Plan (if needed)

ARDOT Standard Detail Sheets

Each sheet should contain proper project identification, the type of sheet, a sheet number, including the individual sheet number and the total number of sheets, and dates of when the plans were originally prepared and all revisions.

Applicable City and ARDOT Standard Details sheets shall be included in the plan set.

800.4.5 Title Sheet

The title sheet shall include the following information:

- A. The project title, centered at the top of the sheet as follows:

NAME OF INTERSECTION/PROJECT

CITY OF BENTONVILLE

BENTONVILLE, ARKANSAS

(City Project Number, Bid Number When Applicable)

- B. The City logo shall appear bottom center.
- C. An index of the sheets included in the plans.
- D. A list of applicable ARDOT Standard Roadway Drawings. (As Needed)

- E. A list containing the name and local telephone number of each utility company and the Arkansas 811 One-Call System.
- F. The name, address, and telephone number of the design engineer.
- G. The name, address, and telephone number of the owner/developer, where applicable.
- H. A vicinity map adequately showing the project location in relation to major streets and the section in which it is situated, with a north arrow and approximate scale.
- I. A signature block to be signed and sealed by the Arkansas Registered Professional Engineer responsible for preparing the plans.

Note that traffic volume information need not be shown in the plans unless required by another reviewing agency (e.g., ARDOT).

800.4.6 General Notes and Legend Sheet

See the City's example signal plans for a sample sheet. The general notes and legend sheet shall include the following information:

- A. list of general notes to the contractor.
- B. A legend of symbols that apply to all sheets.
- C. Survey Control Points

800.4.7 City Standard Detail Sheet

See the City's example signal plans for a sample sheet.

- A. City Standard Detail Sheets (As needed).

800.4.8 Traffic Signal Notes and Quantities Sheet

See the City's example signal plans for a sample sheet.

- A. Notes and Quantities sheet should include General and project specific traffic signal notes as well as Traffic Signal Quantities Summary.

800.4.9 Traffic Signal Plan Sheet (60 Scale)

See the City's example signal plans for a sample sheet. The traffic signal plan sheet shall include the following information:

- A. One or more plan sheets adequately showing the traffic signal system in relation to the streets and adjacent properties, with a north arrow, and a bar scale at a minimum scale of one inch (1") equals sixty feet (60').
- B. All existing and proposed utilities such as power, gas, water, telephone, cable, sanitary sewer, storm sewer, and other items shall be accurately shown according to the best available information in the records of the owner of the facility, or field location, and shall be identified as to type, size, material, etc., as may be applicable. Existing utilities should be shown in gray.

- C. All existing and known proposed improvements within fifty feet (50') each side of the right-of-way and one hundred feet (100') beyond the project limits shall be shown at their proper locations unless otherwise approved or required by the Engineer. These improvements shall include items such as street pavement, curbs and gutters, sidewalks and driveways, storm and sanitary sewers, water mains and fire hydrants, utility poles and pedestals, trees and shrubs, fences and walls, buildings, and similar items, and shall be identified as to type, size, material, etc., as may be applicable. Irrelevant items may be omitted for new developments. Existing items should be shown in gray. New non-signal items may be shown with a thin black line. Future non-signal items may be shown with a dashed line.

Pole locations. Typically, signal equipment does not need to be identified by station and offset unless stationing is available. If the signal is part of an improvement project for which stationing and controls have been developed, street centerline stations should be shown and marked at one hundred-foot (100') intervals for consistency between the signal and improvement plans. Pole locations should be referenced from the curb or pavement edge using a schematic location diagram on the signal plan sheet (see City example signal plans) and with station and offset when available.

The plans should clearly show the proposed placement of all traffic signal equipment including power supply assembly, power source, poles, heads, Opticom, cameras, signs, street lights, junction and service boxes, conduit, loops, and controller cabinet. The items to be constructed or installed for the project should be legibly noted. The following should be displayed: Pole Dimensions, Detector Spacing Chart, Signal Faces with Notes, Phasing Diagram, Notes, and Call outs.

800.4.10 Traffic Signal Plan Sheet (40 Scale)

See the City's example signal plans for a sample sheet. The traffic signal plan sheet shall include the following information:

The plans should clearly show the proposed placement of all traffic signal equipment including power supply assembly, power source, poles, heads, Opticom, cameras, signs, street lights, junction and service boxes, conduit, loops, and controller cabinet. The items to be constructed or installed for the project should be legibly noted. The following should be displayed: Pole Locations, Design Parameters, Notes, and Call outs.

800.4.11 Interconnect Plan Sheet (if needed)

If interconnect to an adjacent signal (or fiber optic system) is part of the design, a separate interconnect plan may be included. This plan should be at a minimum scale of 1 inch = 80 feet and should identify all conduit and boxes necessary to provide a complete interconnect system. The plan should also include notes (and details, if necessary) identifying how connections will be made in each controller. The plan should include a quantity table indicating total length of conduit and wiring, as well as the total number of boxes.

800.4.12 Wiring Sheet

See the City's example signal plans for a sample sheet and ARDOT Traffic Signal Design Checklist. This sheet should include the following information:

- A. Wiring Diagram (an overall schematic of the traffic signal system, including interconnect if any)
- B. Notes
- C. Grounding Array
- D. Ped Push-Button Detail (if needed)

800.4.13 Phasing, Signal Heads, and Detector Chart Sheet

- A. NEMA signal phasing diagram and sequence diagram should be displayed and should follow the City's standard phasing (see Section 700.3.1)
- B. Interval Chart with Flash Sequence
- C. Detector Chart
- D. Signal Faces proposed and existing
- E. Notes

800.5 Traffic Signing

800.5.1 General

- A. Type and Location of Signs. The City Engineer shall make the final determination regarding the type and location of signage controls within the city right-of-way. These controls shall include traffic control signs, street name signs, delineators, and permanent barricades.
- B. Design, Installation, and Maintenance. Because the City will maintain the permanent traffic control devices on public rights-of-way, all traffic control devices shall be fabricated and installed in accordance with this chapter and the latest edition of the MUTCD.
- C. New Roadway. Permanent signage, unless otherwise approved by the City Engineer, shall be completely in place before any new roadway is opened to the public.
- D. Other Standards. These Standards are to be used in conjunction with other applicable City regulations.
- E. Sign Posts, Supports, and Mountings
 - a. Sign Post (Greenspace Installation). The post shall be 2 #/ft green U-channel for signs with an area of 8 square feet or less. Signs with an area greater than 8 square feet shall be 3 #/ft. Stop and Yield signs shall be 3 #/ft. Post height will vary based on the size of the sign, minimum height required by the MUTCD, and a minimum vertical penetration of 30 inches.
 - b. Sign Post (Concrete Installation). Shall be same as Greenspace Installation with the exception of a 12" sleeve made of 4" Schedule 40 PVC. After installation, the space inside the sleeve shall be filled with gravel and topped off with ¾ to 1" grout to match sidewalk, etc.

- c. Pole Mounted Signs. Signs being attached to traffic signal poles, mast arms, or any other pole shall be installed using a stainless-steel strap and bracket system with an aluminum stiffener.
- d. Sign Bolts. The bolt, washer, lock washer, and nut shall be zinc coated. A nylon washer shall be placed between the face of the sign and a zinc washer.
- F. Sign Reflectivity. Reflective materials shall be a prismatic sheeting made with Micro-Prism in accordance with the latest version of ASTM D4956. Guide, pedestrian, and school area signs shall have a TYPE XI (DG3) sheeting material and all other signs shall have a minimum TYPE III. Reflective material shall have a minimum 7-year warranty.
- G. Backing Plates. Aluminum blanks of .080 gauge are standard, except for signs larger than 36 x 36 inches, which shall be .100- or .125-gauge aluminum.

800.5.2 Intersections

A. Street Name Sign.

- a. Signalized Intersection. The sign face shall be a combination of upper and lowercase letters and include the street name, suffix, and block number & direction. 18-inch plates shall be used at all signalized intersections; lengths will vary to fit street names.
- b. Sign Assembly: There shall be one plate for each mast arm. Typical installation shall include four street name signs, one for each direction. All 18-inch blank signs shall be .125-gauge.
- c. Sign Face: The font shall be Hwy. Series B. The letter size shall be 12 inches for the street name upper case (first letter) followed by 9 inches lower case and 6 inches for the prefix and suffix. The letters and numbers are to be white on a green background. There shall be a 0.75-inch white border. See Section 7.3.1 (F) for reflectivity requirements.

B. Non-Signalized Intersection. The sign face shall be a combination of upper and lowercase letters and include the street name and suffix. 9-inch plates shall be used at all nonsignalized intersections; lengths will vary to fit street names.

- a. Sign Assembly: There shall be one plate for each road, with a minimum of two plates per street sign assembly. Typical installation shall include two street name signs, one for each direction. All 9-inch blank signs shall be .080-gauge.
- b. Sign Face: The font shall be Hwy. Series B. The initial letter size shall be 6 inches followed by 4.5-inch lettering. Prefix and suffix shall be 3 inches. The letters and numbers shall be white on a green background. There shall be a 0.625-inch white border.

C. Stop Signs.

- a. Location of all stop signs shall be determined and discussed in the Transportation Impact Study (TIS), when required.

- b. Stop signs will be placed in accordance with the TIS, approved construction plans, and the MUTCD.

800.5.3 Traffic Control Signs

- A. Regulatory. All regulatory signs shall be sized, designed, and installed in accordance with the latest editions of FHWA's Standard Highway Signs and MUTCD. All signage is subject to review and approval by the City Engineer.
- B. Warning. All warning signs shall be sized, designed, and installed in accordance with the latest editions of FHWA's Standard Highway Signs and MUTCD. All signage is subject to review and approval by the City Engineer.

Pedestrian crossings located along established school pedestrian routes and in school zones shall be signed at the crossing and in advance in accordance with the latest edition of the MUTCD. School area signs shall have a fluorescent yellow/green background.

800.5.4 Roundabouts

Roundabouts shall be signed in accordance with the latest edition of the NCHRP Report 672 Roundabouts: An Informational Guide.

800.5.5 Temporary Construction Signage

All temporary construction signage shall be placed according to MUTCD standards. All temporary signage is subject to review and approval by the City. Temporary street lane closures shall be coordinated with the City Engineer, emergency services and transportation providers. When required Detour Plans shall be submitted for review.

800.6 Pavement Markings and Striping

800.6.1 General

- A. Design of Striping and Markings. The design of striping and markings shall be in accordance with these Standards and the latest edition of the MUTCD.

The City Engineer shall make the final determination in regards to the type and location of pavement striping and marking within the right-of-way during the review of the project.

- B. Installation and Maintenance. The City maintains the permanent pavement striping and marking on public rights-of-way after completion of the warranty period. All such devices shall be specified and installed in accordance with these Standards and the latest edition of ARDOT's Standard Specifications for Highway Construction.
- C. New Roadway. Permanent striping and marking, unless otherwise approved by the City Engineer, shall be completely in place before any new roadway is opened to the public.

800.6.2 Pavement Markings (Symbols and Arrows)

- A. General. Preformed thermoplastic shall be used for all pavement markings such as arrows, “only,” crosswalks, railroad crossings, school crossings, stop lines, yield lines, bike symbols and any other symbol required by the City Engineer.
- B. Preformed Thermoplastic Pavement Marking Specifications. See Section 719 of ARDOT's Standard Specifications for Highway Construction, latest edition.
- C. Crosswalks.
 - a. General. Crosswalk markings shall be used at all signalized intersections, approved crossings, school routes, adjacent to schools, and as otherwise directed. All crossing locations with 20 or more pedestrians per hour for any hour of an average day shall be marked. Children, senior citizens, and disabled users shall be counted 2x in this volume calculation.
 - b. Standard Crosswalk. White 6-foot long x 1-foot wide bars at 4-feet on centers shall be used for all crosswalks.
 - c. Crosswalk Enhancements. Crosswalk enhancements may be required at certain intersections, including uncontrolled intersections and midblock crossings. See Section 700.7 for selection and design guidance.
- D. Stop Lines. All stop lines shall be white and a minimum of 12 inches wide. Stop bars are required at all signalized locations.
- E. Roundabouts. Pavement Markings in roundabouts shall be designed and installed in accordance with the latest edition of the NCHRP Report 672, Roundabouts: An Information Guide and the MUTCD.

800.6.3 Striping

- A. General.
 - a. Typical striping widths for lane lines are 6 inches, unless otherwise noted. Double yellow centerline must have a 6-inch minimum gap between stripes.
 - b. Thermoplastic markings shall be used on all striping unless otherwise approved by the City Engineer. Refer to Section 719, ARDOT Standard Specifications for Highway Construction latest edition for thermoplastic marking specifications.
 - c. All striping on sealcoats shall require a layout line. Prior to striping, tabs are required for sealcoats (prior to the sealcoat process). All other conditions require spot taping at an interval of 25 feet or closer.
- B. Broken Line. All broken lines shall be 6-inch wide using a 40-foot cycle (10 feet long with 30- foot gap).
- C. Dotted Line. All dotted lines shall be 6-inch wide using a 6-foot cycle (2 feet long with 4-foot gap).

- D. Turn Bay Line. All turn bay lines shall be created with a minimum 6-inch wide line. However, if a turn bay occurs on a horizontal curve, the bay taper from the start of the double wide 6-inch may be marked with short 6-inch-wide dotted lines (2 feet long with 4-foot gap).
- E. Centerline. All centerline striping shall be double yellow, each a minimum of 6 inches wide, with a 6-inch minimum gap between the two.
- F. Parking Stalls. All striping for parking shall be white and 4 inches wide. All edge lines of parking areas shall also be white and a minimum of 4 inches wide.
- G. Bikeway. Striping to separate a travel lane and a bike lane shall be white and 6 inches wide.

800.6.4 Temporary Striping

All temporary striping shall conform to the ARDOT Standard Specifications for Highway Construction. When approved, temporary striping shall be required prior to the opening of a roadway for travel where pavement and/or permanent striping cannot be completed due to weather and/or time constraints or for staged construction.

- A. Specifications. Temporary striping shall be the same color and width as for permanent striping. Temporary striping shall consist of tabs, tape, or paint depending on the pavement surface, spaced at 25-foot intervals.
- B. Time Duration Limit. Temporary striping is permitted for no more than 7 days unless for staged construction or otherwise approved.
- C. Extensions. Extensions must be requested in writing if weather does not allow installation of permanent striping.

800.7 Midblock Crossings and Uncontrolled Intersections

To increase walkability and pedestrian safety, midblock crossings may be allowed or required on certain streets and implemented in accordance with NACTO's Guidance for Midblock Crossings and these Standards. The minimum expected crossing volume for installation of a midblock crosswalk is typically 20 or more pedestrians per hour for any hour of an average day. Children, senior citizens, and disabled users shall be counted 2x in this volume calculation. Crossing locations near schools, parks, or other destinations, and more than 300 feet from the nearest crossing may be considered regardless of the pedestrian volume.

Midblock crossings and crossings at intersections without stop or signal control may require additional safety features under certain conditions. Countermeasures as outlined in the FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations shall be installed as appropriate for the speed and volume of traffic and type of roadway conditions.

Crosswalks shall be marked at uncontrolled crossing locations where the following conditions occur:

- Pedestrians exceed 20 pedestrians per hour for one hour, 18 pedestrians per hour for two hours, or 15 pedestrians per hour for 3 hours. Children,

senior citizens, and disabled users count 2x for purposes of this volume calculation.

- Vehicle ADT exceeds 3000 vpd.
- Operating (85 percentile) speeds are greater than 35 mph.

All marked crosswalks at uncontrolled locations shall include:

- High visibility crosswalk markings per standard details.
- Adequate sight distance by restricting parking and other obstructions.
- Adequate nighttime lighting levels. Lighting shall be installed on both sides of the crosswalk located such that the pedestrian is front lit while in the crosswalk.
- Crossing warning signs.

Table 1 of the FHWA Guide for Improving Safety at Uncontrolled Crossing Locations shall be used to select crossing enhancements beyond the standards listed above. Notes and modifications to this table are as follows:

- 397.1.1.1.2 RRFB's are a minimum requirement when operating (85th percentile) speeds are above 35 mph and may be required at lower speeds when ADT is higher than 9000 vpd.
- 397.1.1.1.3 Pedestrian hybrid beacons are always required when warranted per MUTCD criteria.
- 397.1.1.1.4 Other treatments identified in Table 1 shall be considered based on roadway configuration and traffic speed and volume. Treatment types circled or highlighted in black shall be minimum requirements.

900 PEDESTRIAN FACILITIES DESIGN AND TECHNICAL CRITERIA

900.1 General

This chapter sets forth the minimum criteria to be used in the design of all sidewalks, access ramps, and other pedestrian facilities within the right-of-way, or other public easements.

900.1.1 Reference Documents

Within this chapter, AASHTO's A Policy on Geometric Design of Highways and Streets, the AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities, the NACTO Urban Street Design Guide, and the ITE Designing Walkable Urban Thoroughfares were used as a reference.

900.1.2 ADA Requirements

All pedestrian facilities shall be designed in accordance with American Disabilities Act (ADA) regulations and the requirements of these Standards. Any waivers from these requirements shall be in accordance with ADA requirements and shall be approved by the City Engineer prior to construction.

900.1.3 Obstructions

Manholes, utility poles or other appurtenances or obstructions, should not be located in sidewalks or trails unless specifically approved by the City Engineer. A minimum accessible path of 5 feet in width should be provided that is free of such obstruction when feasible.

900.1.4 Pedestrian Crossings

All crosswalks shall be marked in accordance with **Chapter 700, Traffic Control Devices**. Crosswalks will be required at all signalized intersections, school areas, and high pedestrian areas as designated by the City Engineer.

900.1.5 Pedestrian Refuge Area

For Arterial Roadways with raised medians and on splitter islands for roundabouts, a pedestrian refuge area shall be created in the median to increase pedestrian safety as directed by City Engineer.

900.1.6 Safety Railings (Handrails)

Safety railings will be required on any drop adjacent to a sidewalk/trail greater than 30 inches that has a slope of 1:1 or greater. Handrails shall be a minimum of 42 inches in height according to AASHTO.

900.2 Sidewalks

Materials and construction requirements for sidewalks shall meet the requirements of the latest edition of the ARDOT Standard Specifications Section 633 and the ARDOT Qualified Product List (QPL), except as modified herein.

900.2.1 General Layout, Design Criteria, and Material Properties

- A. Width. Minimum sidewalk widths for the various street classifications shall be as specified in the City of Bentonville Master Street Plan and as shown in **Table 400-1**. The City Engineer may require additional width for activity areas and routes leading to and from these areas. The final sidewalk width shall be determined through additional study of higher pedestrian traffic areas.
- When a sidewalk is less than 8 feet in width and located adjacent to the back of curb where on street parking is allowed, the sidewalk shall be widened by 1.5 feet to accommodate the car doors opening onto the sidewalk area.
- B. Shy Distance. A shy distance of 2 feet is required where vertical barriers (walls, fences, signs, etc.) greater than 40 inches in height are adjacent to the sidewalk and extend more than 4 feet in length parallel to the sidewalk. A shy distance of 1.5 feet is required from the back of curb. A shy distance of 1 foot is required for all other fixed obstacles. Shy distances shall be added to the minimum widths of sidewalks specified in the Master Street Plan or required by the City Engineer to determine the final sidewalk width.
- C. Minimum Distance to Slope. There shall be a minimum of 1 foot between the sidewalk and the beginning of a slope greater than 2.00%.
- D. Concrete. Concrete shall conform to ARDOT Class "S", 3500 psi, 6.5 bag mix with 4-7% air entrainment. Alternative materials must be approved in writing by the City Engineer. All sidewalks not within driveways shall be a minimum of 4 inches thick concrete. All sidewalks within a driveway shall be a minimum of 6 inches thick.
- E. Sidewalk Crossings of Driveways and Alleys. Sidewalks and side paths shall have continuous longitudinal grade through driveways and alleys. Sidewalks shall have an expansion joint at the edge of sidewalk opposite the street. The sidewalk edge adjacent to the street shall have at least 1 inch deep grooved joint mark to clearly delineate the sidewalk from the driveway or alley.
- F. Sidewalk Elevation. The back of sidewalk elevation shall be such that the slope down from the back of sidewalk to the top of curb is not greater than 2.00% with a target slope of 1.00% unless otherwise approved by the City Engineer.
- G. Slope.
- a. Cross Slope. Sidewalk cross slopes shall be a minimum of 1 percent and a maximum of 2%. The cross slope shall be towards the street unless otherwise approved.

- b. Longitudinal Slope. Longitudinal slope of sidewalks shall be consistent with the adjacent street slopes.
- c. ADA Requirements for Steeper Slopes. Sidewalks with greater than 5 percent longitudinal slope or those not adjacent to a street, shall be constructed to meet ADA requirements by use of ramps and landings, construction of switchbacks, or other acceptable means.

H. Joints.

- a. Material. Expansion joint material shall meet AASHTO M213 for an asphaltic fiber expansion joint material or other joint material meeting the requirements of the latest edition of the ARDOT Standard Specifications and Qualified Product List (QPL). Joint material shall be installed with a zip strip which is removed after the concrete has cured and sealed with a mastic sealer. Expansion joint material shall be left 1/2" lower than grade or trimmed 1/2" lower and filled with self-leveling sealant to finished grade. No wood shall be utilized for expansion joint material.
- b. Location. Full depth expansion joints shall be provided where sidewalks abut drainage structures, retaining walls, building faces, existing concrete flatwork, and all other fixed objects. Expansion joint material shall be provided at each cold joint. Additionally, expansion joints shall be installed perpendicular to the sidewalk at intervals equal to five (5) times the sidewalk width. Expansion joints shall be a minimum of 1/2" width and extend the full depth of the concrete.

Contraction (weakened plan) joints shall have tooled or saw-cut transverse joints with joint spacing matching sidewalk width. The contraction joints shall be constructed to 1/4 depth of the sidewalk thickness and shall be 1/8" to 3/8" wide.

- c. Joint Sealant. All contraction joints and cold joints shall be filled to finished grade with self-leveling sealant such as Sonneborn sl-1 or equivalent meeting the requirements of ASTM C 920, Type S. A self-leveling sealant shall be used for horizontal surfaces. A non-sag sealant shall be used for vertical or nearly vertical surfaces.
- I. Aggregate Base. A minimum 4" compacted aggregate base course (Class 7) shall be constructed below concrete sidewalk extending 6" beyond sidewalk edges. Material shall adhere to ARDOT Standard Specifications Section 303 and be compacted to 95% of Modified Proctor Density as determined by AASHTO T 180 or ASTM D1557.
 - J. Subgrade. The subgrade shall be excavated or filled to the required grade. Unacceptable material shall be removed and replaced with suitable material, free from topsoil, leaves, twigs, or other organic material, trash, large rocks, or other deleterious materials, and the entire subgrade shall be thoroughly compacted with approved mechanical equipment to not less than 90% of the material's maximum density as determined by AASHTO T99 or ASTM D698.

- K. Finish. All sidewalks shall receive a broom finish and all edges shall have a 1/2" radius edge.
- L. Curing Compound. All sidewalks require the application of a concrete curing compound or the concrete is to be kept moist for seven (7) days. Concrete curing compound shall be Sealtight 1600-white manufactured by W.R. Meadows, or an approved equal on the ARDOT Qualified Product List (QPL.)
- M. Existing Sidewalks. When redevelopment is proposed on properties with existing sidewalks, the plans shall show the location of all existing and proposed sidewalk improvements. Each development will be subject to review of the overall impact to the sidewalks to evaluate the extent of the sidewalk replacement. All sidewalks shall conform to the Master Street plan standards unless approved by the City Engineer. Widening of the existing sidewalks to meet current sidewalk width standards is not allowed.

Removal and replacement of the existing sidewalks is required for all:

1. Segments of the sidewalk, including ramps, that do not meet all applicable ADA standards, including cross slope and running slope.
2. Segments that have cracked and/or settled to the extent that they are out of ADA compliance. This is defined as more than ¼ inch of vertical displacement or cracks or joints more than ½ inch wide.
3. Segments that display surface spalling or other distress such that a trip hazard (more than ¼ inch vertical displacement) is created.
4. Segments of sidewalk damaged during construction to the extent that any of the items above apply.

900.2.2 Construction Requirements

Topsoil shall be stripped to a minimum depth of 6" below grade underneath the sidewalk. Subgrade shall be prepared as required being well and firmly tamped with rammer and brought to a firm and solid surface upon which to construct the sidewalk. A minimum of four (4) inches of Class 7 Aggregate Base Course shall be placed on subgrade and firmly tamped down to meet compaction requirements at a minimum 4" compacted depth. The Class 7 base course shall extend six (6) inches either side of the sidewalk to help provide a strengthened base.

After the Class 7 Aggregate Base Course has been compacted and inspected and approved, 4" of Portland Cement Concrete shall be placed, tamped to consolidate concrete, brought to a smooth level surface with the top of the form, then floated well and a broom finished. Tooled or sawcut transverse joints shall be placed perpendicular to the sidewalk at intervals equal to the width of the sidewalk. Concrete shall be properly protected from damage until sufficiently hard for use.

All Subgrade, base and formwork for sidewalks constructed within the public right-of way are required to be inspected and approved prior to placement of the sidewalk.

900.3 Access Ramps

900.3.1 Ramp Requirements

Access ramps shall be installed where sidewalk intersects a curb, commercial driveway, street or alley for all new construction or reconstruction of curb and sidewalk. Access ramps shall meet ADA requirements to the maximum extent feasible. Materials and construction methods for sidewalk ramps shall meet the requirements of the latest edition of the ARDOT Standard Specifications Section 641, except as modified herein.

- A. **Locations.** Two access ramps shall be included at all intersection corners. On T-intersections, corresponding access ramp are required opposite the intersecting street. Access ramps shall not be placed in designated parking areas nor in or across from driveways. Ramps shall be located to avoid conflicts with the storm drain inlet depressions. Ramps shall be included when no ramp exists on the opposite side of the street.
- B. **Width.** The minimum width of an access ramp shall match the width of the sidewalk or trail unless supported by the Engineer of Record and approved by the City Engineer.
- C. **Slope.** The slope of the ramp shall not be greater than 8.33% (1:12) for all new developments. It is preferred that ramp slopes are less than the allowed maximum.
- D. **Flared Sides.** The slope of the flared sides shall not be greater than 10% (1:10).
- E. **Finish.** Access ramps shall have a broom finish.
- F. **Curing Compound.** All access ramps require the application of a concrete curing compound or the concrete is to be kept moist for seven (7) days.
- G. **Detectable Warnings.** Detectable warning devices (truncated domes) meeting ADA requirements shall be installed at curb ramps and blended transitions at street crossings, cut through pedestrian refuge islands (excluding those less than six feet wide), pedestrian at-grade rail crossings, and other locations as required by ADA. Detectable warning devices shall be located so that the nearest edge of the device is 6 inches from the face of curb.

900.4 Shared-Use Paved Trails

900.4.1 General Layout and Design Criteria

- A. **Width.** The minimum width of shared-use paved trails shall be 12 feet, or in accordance with applicable Master Street Plan cross sections and shall follow the trail cross-section standard details. Plan.
- B. **Materials.** All materials shall be in accordance with these specifications.
- C. **Grades.** All trails shall be constructed with a 2% maximum cross slope in the same direction as the existing grade unless otherwise designated to allow drainage to sheet

flow across the trail. Trails adjacent to streets shall have 2% maximum cross slope towards the street. Longitudinal grade shall not exceed 5%. Longitudinal grade may be varied for sites with difficult topography. In such cases, the AASHTO longitudinal grade requirement for bicycles shall apply.

- D. Clear Zones for Shared-Use Paved Trails. A clear zone space of 3 feet is required from the edge of the trail where no vertical barriers (walls, fences, signs, etc.) are allowed. For safety of the trail, clear zones shall be free of any obstructions according to AASHTO requirements.
- E. Concrete Trail Requirements. All concrete shall conform to ARDOT Class "S", 3500 psi, 6.5 bag mix with 4-7% air entrainment except as modified herein. Concrete trail sections shall be constructed to the following standards:
- a. Surface. Concrete trail portions shall have a minimum 4-inch-thick concrete surface reinforced with fibers or welded wire fabric with a medium broom finish.
 - b. Base Course. Base course for concrete trails shall consist of a 4-inch minimum thick layer of Class 7 aggregate compacted to 95% M.P.D.
 - c. Subgrade. The top 24 inches of subgrade shall meet the requirements of **Chapter 600, Section 600.3** Subgrade and Fill Requirements. Existing material not meeting these requirements shall be removed and replaced with approved select fill and compacted to 95% Standard Proctor Density (S.P.D.). Specific site conditions may require the additional undercut, placement of stone backfill or other methods in order to create a solid base. If a trail is along the roadway, subgrade shall meet both the requirements of sidewalk subgrade and be compacted to 95% Standard Proctor Density.
 - d. Expansion joints. Full depth expansion joints shall be provided where trails abut drainage structures, retaining walls, building faces, and all other fixed objects. Expansion joint material shall be provided at each cold joint. Expansion joint material shall be asphalt impregnated fiberboard meeting the requirements of AASHTO M213, or other joint material meeting the requirements of the latest edition of the ARDOT Standard Specifications.
 - e. Contraction Joints. 1 inch deep weakened plane joints, or saw-cut joints, shall be placed in trail at regular intervals matching the trail width, but not greater than 12 feet apart.
 - f. Joint Sealant. All expansion joints and saw joints shall be sealed with joint sealant such as Sonneborn SL1 meeting the requirements of ASTM C 920, Type S. A self-leveling sealant shall be used for horizontal surfaces. A non-sag sealant shall be used for vertical or nearly vertical surfaces.
- F. Trail Shoulders. A 2-foot shoulder adjacent to the trail shall be graded smooth and should not exceed 2% cross-slope in the same direction as the trail.

- G. Tie Back Slopes. The ground beyond the shoulder shall meet the existing grade with a maximum slope of 3:1. A swale may be required on the uphill side of the trail to direct stormwater runoff to a storm sewer system or culvert crossing. These may be required where runoff is concentrated onto the trail.
- H. Trail Signage. Trail signage shall comply with the MUTCD, Part 9 – Traffic Controls for Bicycle Facilities. Note: signs specified in the MUTCD for trails are smaller than signs used along streets, refer to the MUTCD chart for shared use paths.
- I. Street Crosswalks. Trails that intersect and cross public streets shall have crosswalk pavement markings. Shared-use paved trails shall have continuous longitudinal grade through driveways, streets, and alleys.
- J. Striping. Striping shall be included on shared-use paved trails and installed according to the MUTCD, Part 9 – Traffic Controls for Bicycle Facilities. Additional striping may be required for increased safety.
- K. Location Criteria. Shared-use paved trail locations shall be based on safety, circulation, and access considerations.
- L. Overhead Clearance. All shared-use paved trails shall have a minimum of 10 feet clear vertical distance above the path.
- M. Drainage Design. All culvert crossings shall be designed to carry the 10-year storm event.

900.4.2 Horizontal Curves

Shared-use paved trails shall have a minimum centerline radius of 50 feet unless otherwise approved. All changes in horizontal alignment shall be curved and not have angle transitions.

900.4.3 Trail Lighting

Trail lighting and electrical conduit shall be installed as required by the City Engineer. Trail lighting shall be spaced to meet AASHTO 0.5-foot candle minimum.

900.5 Pedestrian Crossings

All crosswalks shall be marked in accordance with **Chapter 700, Traffic Control Devices**. Crosswalk markings will be required at all signalized intersections, school areas, and high pedestrian areas as designated by the City Engineer. Crossings at uncontrolled intersections or midblock locations may be required to have additional enhancements including rapid flashing beacons or pedestrian hybrid beacons as provided in the MUTCD.

900.6 Pedestrian Refuge Areas

For Arterial Roadways with raised medians and on splitter islands for roundabouts, a pedestrian refuge area shall be created to increase pedestrian safety.

900.7 Pedestrian or Shared Tunnel

All tunnels shall be designed and constructed with a clear interior width of 14' and clear interior height of 9'. The clear space must be free of all obstruction including but not limited to lights, handrails, and elevated floors.

900.8 Timeframe for Completion of Sidewalks

Sidewalks must be completed before the Certificate of Occupancy will be issued and permanent connection to utilities permitted. The owner(s) of record will be required to install sidewalks on any lot(s) which remain undeveloped three years after filing of the final plat or within 90 days from notification by the City if sidewalks are constructed on both sides of said lot. If the sidewalks are not constructed within three years of filing of the final plat or upon notification by the City, the City shall have the right (but shall not be required) to construct the sidewalks and to charge the cost thereof to the property owner(s) through placement of a lien on the real property. The final plat and protective covenants shall state these requirements.

1000 BICYCLE FACILITIES DESIGN AND TECHNICAL CRITERIA

1000.1 General

This chapter sets forth the minimum criteria to be used in the design of all bike lanes, bike paths, or other bicycles facilities within the City's rights-of-way.

1000.1.1 Reference Documents

In this chapter, the Connecting Bentonville Bicycle and Pedestrian Master Plan, the AASHTO Guide for the Development of Bicycle Facilities, the NACTO Urban Bikeway Design Guide, and the MUTCD were used as references.

1000.1.2 Bicycle Master Plan

This subsection was developed based on the City's Connecting Bentonville Bicycle and Pedestrian Master Plan. All projects shall optimize bicycle travel within the City by providing bicycle facilities in all new developments in accordance with this plan and the FHWA Bicycle Selection Guide.

1000.1.3 Obstructions

Manholes, storm drains, utility poles or other appurtenances or obstructions, should not be located in bike lanes or bike paths.

1000.1.4 Protected Intersections

When an intersection is planned along a bike facility that is designated on the Connecting Bentonville Bicycle and Pedestrian Master Plan, a protected intersection may be required as determined by the City Engineer. Protected intersection design shall be based on NACTO's Don't Give Up at the Intersection.

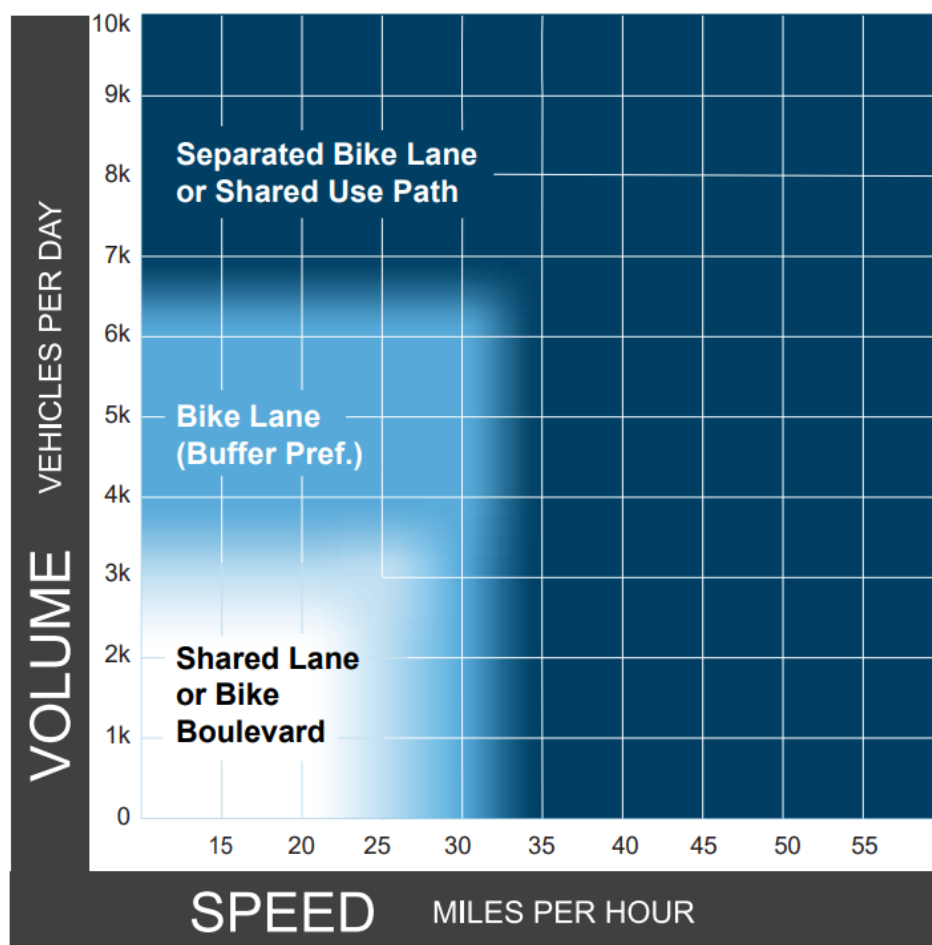
1000.2 On-Street Bike Lanes Design Requirements

1000.2.1 Bicycle or Shared Tunnel

All tunnels shall be designed and constructed with a clear interior width of 14' and clear interior height of 9'. The clear space must be free of all obstruction including but not limited to lights, handrails, and elevated floors.

1000.2.2 On-Street Bike Routes

Specific streets are designated in the Connecting Bentonville Bicycle and Pedestrian Master Plan as on-street bicycle routes. Streets designated as on-street bicycle routes shall be designed in accordance with the Master Street Plan and the FHWA Bikeway Selection Guide as shown **Figure 900-3.**



Notes

- 1 Chart assumes operating speeds are similar to posted speeds. If they differ, use operating speed rather than posted speed.
- 2 Advisory bike lanes may be an option where traffic volume is <3K ADT.
- 3 See page 32 for a discussion of alternatives if the preferred bikeway type is not feasible.

Figure 900-2 FHWA Bikeway Selection Guide

1000.2.3 Widths and Cross Sections

In almost all cases, vehicle traffic volumes and speeds will dictate whether a shared street or separate shared-use paved trail is appropriate. Bike lane width shall not be less than 6 feet measured from the face of curb or edge of pavement if no curb exists.

1000.2.4 Signage and Striping

All designated bike facilities shall be signed and striped, as required by MUTCD and as required in **Chapter 700, Traffic Control Devices**. 6-inch green thermoplastic or epoxy striping is required through intersections. For shared streets, a thermoplastic “sharrow” symbol with green backing shall be used.

1100 NEIGHBORHOOD TRAFFIC SAFETY

1100.1 General

This chapter presents acceptable methods of neighborhood traffic calming that are determined by the City to be necessary for existing Local Roadways. This chapter also provides for specific design criteria for several traffic calming methods.

The City of Bentonville is taking a proactive approach to improving road safety by adopting ordinances that incorporate traffic calming into street design. One ordinance establishes a policy regarding retrofitting existing residential and local streets with traffic calming devices. The second ordinance requires the use of traffic calming techniques and devices in the design of new local and residential streets. This guidebook is designed to assist city officials as well as developers of new streets in incorporating traffic calming into their design. Each method of traffic calming carries its own advantages and disadvantages. This guidebook is designed to identify these so that the city official or developer can determine the device or technique that is most appropriate for the particular street or neighborhood.

What is Traffic Calming? The Institute of Transportation Engineers defines traffic calming as the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users. Traffic calming measures are intended to be self-enforcing.

What is a Traffic Calming Device? A traffic calming device is a physical change or design of a street that causes a driver to slow down. Must be engineered and relies on physics.

What are Traffic Calming Strategies? Traffic calming strategies are techniques that are used to create a traveling environment that naturally causes a driver to slow down. These strategies require the driver to pay closer attention. This may include the layout of the streets in a curvilinear fashion, allowing parking along the street, a tree canopy, landscaping, streetscape and signage. Relies on human psychology.

Why use traffic calming? Traffic calming can reduce through traffic; reduce truck traffic; reduce occurrence of excessive speeding; reduce noise, vibration, and air pollution; reduce accidents; and provide a safer environment for pedestrians and children.

The Residential Traffic Management Policy identifies three levels of traffic calming. The following sections identify the traffic calming techniques based on these identified levels. Level 1 is essentially getting the word out regarding speed and volume of traffic on local and residential streets. Level 2 and Level 3 include physical changes to the street that naturally disperses and slows down traffic.

Section 1100.5 Streets of the Subdivision Code requires speed control points. The Speed Control Traffic Calming devices described in Level 3 qualify as speed control points in new developments. These regulations also encourage traffic reducing techniques which are identified in the street layout and design section.

1100.1.1 Intended Use

The necessity or desire for traffic safety and calming stems from the perception that Local Roadways, particularly in residential areas, do not always function as intended. These roadways

should be low traffic volume roadways used for direct access to residences on the street. They are also intended as a multi-modal system that is shared by vehicular, bicycle, and pedestrian traffic in a manner that minimally impacts residents in these areas.

1100.2 Traffic Safety Problems

The presence of too many vehicles traveling at high speeds through a neighborhood diminishes that neighborhood's quality of life. Traffic calming measures are intended to minimize these issues and return the quality of life to the neighborhood. Care must be taken by the designer so that the installation of traffic calming devices does not create unintended hazards that delay emergency response or jeopardize the safety of bicyclists, pedestrians or motorists.

1100.2.1 Speeding

Speeding may occur on roadways that allow the driver to feel safe while exceeding the posted speed limit. Factors that contribute to this perception include long, unbroken lines of sight, steep roadway grades, wide roadways, low density developments, low pedestrian activity, and large building setbacks. In addition, speeding may occur when the street functions as a higher classification street than originally intended.

1100.2.2 Measuring Speed of Roadway

The standard method of measuring speed on any street is the determination of the 85th percentile speed. The 85th percentile speed is the speed at which or below which 85 percent of the vehicles travel. If the 85th percentile speed is at or below the posted speed limit, then speeding is not considered a problem. However, if the 85th percentile speed is over the posted speed limit by 5 miles per hour or greater, either the posted speed limit may be inappropriate, or a speeding problem may exist.

1100.2.3 Intrusion (Cut-Through Traffic)

Intrusion is increased volume or excessive non-local traffic along a neighborhood street. This cut-through traffic is caused by drivers who use a Local Roadway to go through a neighborhood and save time on their trip. These streets, which are less impeded than others, will often invite cut-through traffic. Routes that are perceived to be timesaving will attract more traffic. This increased cut-through traffic can cause Local roadways to function more like a Collector Roadway.

1100.2.4 Pedestrian Safety

Pedestrian safety negatively impacted by speeding vehicles, cut-through traffic, or a combination of these problems. The high concern areas are in the vicinity of neighborhood schools and parks or mid-block pedestrian crossings, particularly on streets with on-street parking. These areas require special consideration for the mobility and safety of the pedestrian.

1100.3 Traffic Calming Design Criteria

Specific signage, striping, and markings shall be in accordance with other City standards, the MUTCD, and NACTO. The use of some traffic calming devices may not be appropriate in certain locations. In all instances where traffic calming will be implemented, the design and location shall be approved by the City Engineer and Fire Marshal.

1100.3.1 Level 1: Education and Awareness

Level 1 involves educational and informational techniques to increase public awareness of speed limits, traffic safety concerns and encourage reduced speeds. Below are the methods associated with Level 1.

1100.3.1.1 Discussion

Conversations, e-mails, meetings, letters and handouts to residents regarding neighborhood traffic safety. Staff helps provide informational materials and residents are responsible for getting the information to residents affected by the issue or concern. Cost is minimal. Conversations, e-mails, meetings, letters and handouts to residents regarding neighborhood traffic safety. Staff helps provide informational materials and residents are responsible for getting the information to residents affected by the issue or concern. Cost is minimal.

Advantages	Disadvantages
- Allows residents to express views. - Identifies traffic issues.	- Effectiveness may be minimal. - Audience limited to those concerned. - Potentially time consuming.

1000.3.2 Radar
Trailer: Placement of a portable radar trailer that displays the speed of passing vehicles. Cost is minimal.



- | Advantages | Disadvantages |
|--|--|
| <ul style="list-style-type: none">• Educates drivers of speeds.• Can temporarily reduce speeds. | <ul style="list-style-type: none">☐ Does not enforce the speed limit.☐ Effective only on single lane roadways.☐ Limited effectiveness with higher volumes |

1100.3.2 Enf orcement: Police Department selects times and locations to pro-actively enforce posted speed limits by issuing tickets/citations. Cost is minimal.



- | Advantages | Disadvantages |
|--|---|
| <ul style="list-style-type: none">☐ Visibility of enforcement.☐ Temporarily reduces speeds. | <ul style="list-style-type: none">☐ Increases awareness. |

☐ Temporary solution.

☐ Police resources must be available.

Signage:



May include a variety of signage, including additional speed limit signs or specialty signs, such as “Children at Play” or “Keep Kids Alive, Drive 25.”

Costs are associated with installation and maintenance of signs.

Advantages	Disadvantages
Clearly indicates the message. Helps reduce speeds.	Ineffective without other measures. Sign clutter / visual pollution. Vandalism

Level 2: Minor Street Changes

Level 2 traffic calming measures include minor changes to the physical street condition that are of reasonable cost that can be applied to residential and local streets. Below are the methods associated with Level 2.

1100.3.3 High Visibility Crosswalks:

1100.3.4 Increasing visibility of crosswalks by painting a strip on the outer edges of the crosswalk and installation of appropriate signage.

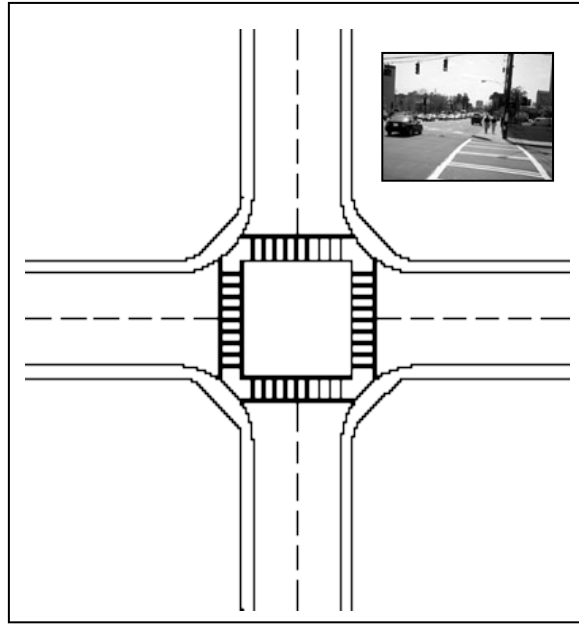
Advantages

- Increases visibility.

Disadvantages

- False sense of security for pedestrians.
- ☐ High maintenance costs.

- Increases cost of resurfacing.



1100.3.5 Neighborhood Main Street

Center island narrowing are areas of curbed or painted islands located before an intersection or mid-block along the centerline of a street. They can be an appropriate traffic calming device on Local Roadways. Center island narrowing is used to slow traffic by narrowing the roadway with a median, and to increase pedestrian safety by providing a refuge halfway across the street so that only one direction of traffic needs be crossed at a time. Fire code requires 20' minimum for 2 way traffic. 15' can be used for 1 way traffic if the roadway is divided. A drivable curb will be needed in some situations to allow for emergency equipment access. Provisions to allow traffic to pull to the side of the road to allow for emergency equipment access.

Advantages	Disadvantages
- Can be implemented quickly - Improves Safety - Reduce vehicle speeds - Can add aesthetic value. - Effective in reducing traffic volume. - appearance with landscaping - Does not restrict resident access - Improves bicycle safety	- Can result in loss of on-street parking space - Residents may oppose striping local streets. - Increases maintenance and resurfacing costs. - Landscaping maintenance - Reduces width of greenspace between the street and sidewalk

Reference <https://nacto.org/publication/urban-street-design-guide/streets/neighborhood-main-street/>



In-Street Pedestrian Crossing Sign: Used to remind motorists to yield the right-of-way to a pedestrian crossing the roadway within a marked crosswalk. The following policies should be followed to ensure this technique is not overused.

- Sign shall not be used at intersections whose approaches are controlled either by stop signs or traffic control signals.
- Use only at key locations such as high pedestrian volume crosswalks.
- Use sign only at existing crosswalk locations.
- The sign shall only be used as an in-street sign, not on the outside shoulder or parking lane. When installed, the sign shall not impede or obstruct any traffic movement including through turn movements.
- When the sign is used at or in advance of a school crossing to supplement the ground mounted school warning signs, the sign shall include the SCHOOL plaque.
- The sign shall be used on streets with vehicle traffic volumes that exceed 1,500 vehicles per day.
- Use only in 35 mph or lower speed zones.
- The following supplemental conditions may warrant the signs installation:
 - Locations adjacent to and along established pedestrian routes to and from a school.
 - Locations adjacent to community centers, libraries, and other high use public facilities.
 - Locations adjacent to public parks.
 - Locations where accident records, sight obstructions and/or pedestrian volume warrants the installation.
 - Locations where significant numbers of handicapped persons cross a street.
 - Locations where significant numbers of senior citizens cross a street.

Advantages	Disadvantages
• Can be implemented quickly. • Can reduce speeds and improve safety.	- Gives pedestrians a false sense of security. - Vandalism may be an issue.



Level 3: Major Street Changes Speed Control Measures

Level 3 traffic calming measures are those that result in a major change to the physical character of the street and are typically associated with higher costs. Below are the methods associated with Level 3, categorized by those designed to control speed and those designed to control volume.

1100.3.6 Speed Table

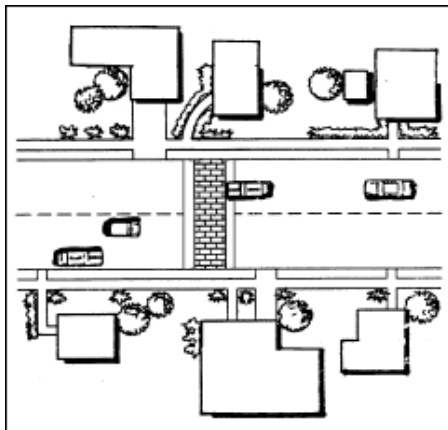
Speed tables are midblock traffic calming devices that raise the entire wheelbase of a vehicle to reduce its traffic speed. Speed tables are longer than speed humps and flat-topped, with a maximum height of 3 inches and a length of 25 feet. Vehicle operating speeds for streets with speed tables range from 25–45 mph, depending on the spacing. Speed tables are flat-topped speed humps often constructed with brick or other textured materials on the flat section. Speed tables are typically long enough for the entire wheelbase of a passenger car to rest on the flat section. The brick or other textured materials improve the appearance of speed tables and draw attention to them. Speed tables are good for locations where low speeds are desired, but a somewhat smooth ride is needed for larger vehicles. Speed Tables are not acceptable in areas that require aerial fire fighting equipment or near fire hydrants.

Advantages	Disadvantages
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- Reduces vehicle speeds - Easier on large vehicles (such as fire trucks) than Speed Humps. - Effective in reducing speeds, but not as well as Speed Humps. - Enhance safety. Can also be used as a raised crosswalk with proper markings and signage.	- Unattractive without textured pavement. - Textured materials, if used, can be expensive. - May increase noise and air pollution. - Can cause drainage issues.
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Other Considerations. Need to be removable for snow removal and street maintenance.

Reference <https://nacto.org/publication/urban-street-design-guide/street-design-elements/vertical-speed-control-elements/speed-table/>



1100.3.7 Speed Cushion

Speed cushions are either speed humps or speed tables that include wheel cutouts to allow large vehicles to pass unaffected, while reducing passenger car speeds. They can be offset to allow unimpeded passage by emergency vehicles and are typically used on key emergency response routes.

Advantages	Disadvantages
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- Reduce vehicle speeds	- Can result in loss of on-street parking space - Street Maintenance and Snow removal - Drainage must be accommodated - Landscaping maintenance
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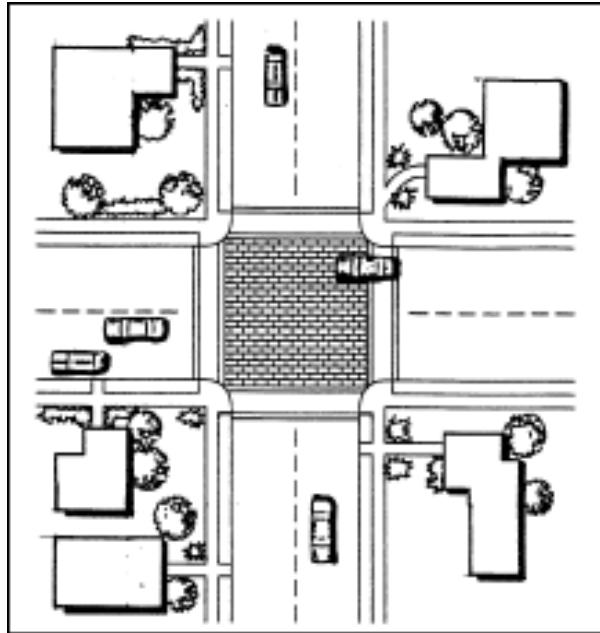
Reference <https://nacto.org/publication/urban-street-design-guide/street-design-elements/vertical-speed-control-elements/speed-cushion/>



1100.3.8 Raised Intersection:

Raised intersections are flat raised areas covering an entire intersection, with ramps on all approaches and often with brick or other textured materials on the flat section. Raised intersections are good for intersections with substantial pedestrian activity, and areas where other traffic calming measures would be unacceptable because they take away scarce parking spaces. Raised Intersection are longer than speed humps and flat-topped, with a maximum height of 3 inches and a length of 25 feet. Vehicle operating speeds for streets with Raised Intersection range from 25–45 mph, depending on the spacing. Raised Intersection are flat-topped speed humps often constructed with brick or other textured materials on the flat section. Raised Intersection are typically long enough for the entire wheelbase of a passenger car to rest on the flat section. The brick or other textured materials improve the appearance of Raised Intersection and draw attention to them. Raised Intersection are good for locations where low speeds are desired, but a somewhat smooth ride is needed for larger vehicles. Raised Intersection are not acceptable in areas that require aerial fire-fighting equipment or near fire hydrants.

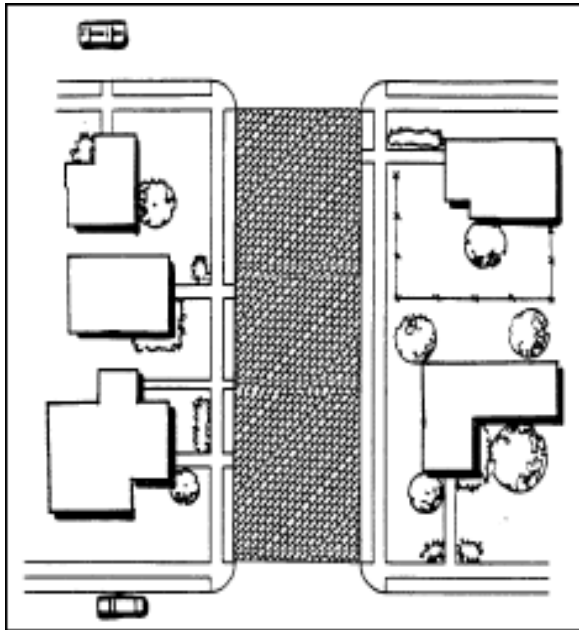
Advantages	Disadvantages
- Improves pedestrian and vehicular safety. - Can add aesthetic value. - Can calm two streets at once.	- Tend to be expensive, varying by materials used - Less effective in reducing speeds than Speed Tables - Can cause drainage issues



1100.3.9 Textured Pavement:

Textured and colored pavement includes the use of stamped pavement or alternate paving materials to create an uneven surface for vehicles to traverse. Textured pavements are good for areas where there is substantial pedestrian activity and noise is not a major concern. Often effective in conjunction with other measures.

Advantages	Disadvantages
- Can reduce vehicle speeds over an extended length. - Can add aesthetic value. - Can calm two streets at once.	- Tend to be expensive, varying by materials used. - Can make crossings more difficult for wheelchair users and the visually impaired. - Can create noise disturbance for nearby residences.



1100.3.10 Chicanes

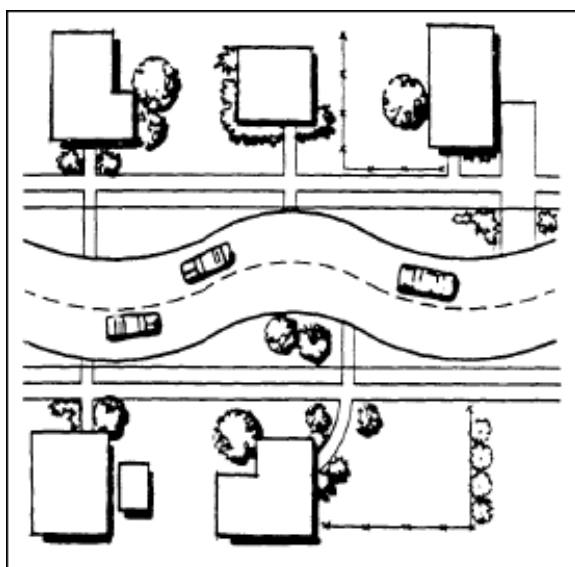
Chicanes are a series of three curb bulb-outs that are staggered on alternating sides of the street, forming S-shaped curves that force vehicles to negotiate the narrowed roadway in a snake-like fashion. They can be an appropriate traffic calming device on Local Roadways having volumes less than 3,500 vehicles per day, and on two-lane, two way or one-lane, one-way streets. Chicanes are used mid-block to slow vehicle speeds by forcing motorists to weave through the bulb-outs using horizontal deflection. A drivable curb will be needed in some situations to allow for emergency equipment access. Chicanes are not acceptable in areas that require aerial fire-fighting equipment or near fire hydrants. Provisions to allow traffic to pull to the side of the road to allow for emergency equipment access are required.

Advantages	Disadvantages
- Reduce vehicle speeds - Reduce traffic volumes - May reduce collisions - May reduce traffic noise - Can approve neighborhood appearance with landscaping - Improves bicycle safety - Easily negotiable by large vehicles, except under heavy traffic conditions.	- Can result in loss of on-street parking space - With two-lane chicanes, motorists may cross the centerline to maintain a straight line of travel - Landscaping maintenance - May slow emergency vehicles - Must be designed carefully to discourage drivers from deviating out of the appropriate lane. - Can be expensive. - May eliminate some on- street

	parking. - Can cause drainage issues.
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Other Considerations. Traffic volumes should be balanced in each direction as chicanes lose effectiveness when volumes are significantly unbalanced. Chicanes may not be appropriate in areas with high truck traffic and should not be used in locations where grades exceed 8%. Placement will depend on site conditions and driveway locations.

Reference <https://nacto.org/publication/urban-street-design-guide/street-design-elements/curb-extensions/chicane/>

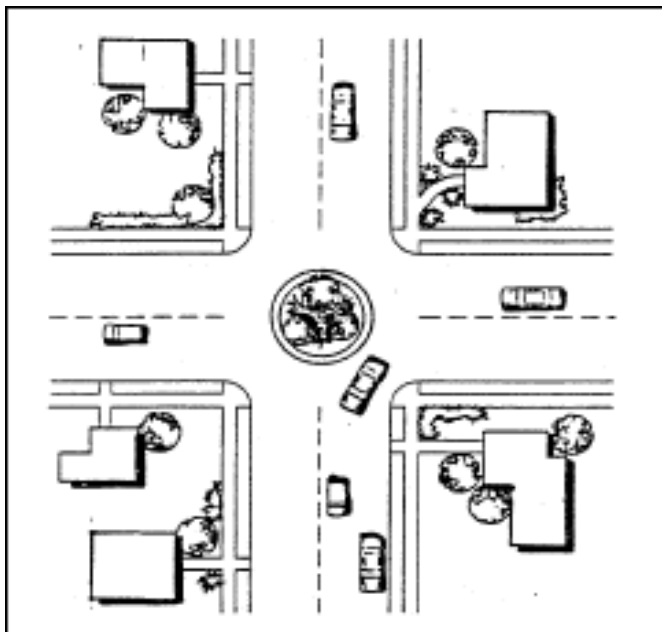


1100.3.11 Mini roundabout

Mini Roundabouts are raised islands located in the center of an unsignalized intersection that force traffic to circulate in a counterclockwise direction. They can be an appropriate traffic calming device on Local Roadways having volumes less than 3,500 vehicles per day and on streets without high pedestrian or left-turning volumes. Traffic circles are used to slow vehicles at intersections due to the horizontal deflection. They are good for calming intersections, especially within neighborhoods, where large vehicle traffic is not a major concern, but speeds, volumes, and safety are problems.

Advantages	Disadvantages
- Reduce vehicle speeds - May reduce collisions - Reduces number of conflict points at an intersection - May reduce traffic noise - Can approve neighborhood appearance with landscaping - Creates a visual obstruction that deters through traffic - Improves bicycle safety - Can calm two streets at once.	- Can result in loss of on-street parking space - May make it difficult for emergency vehicles, buses, and trucks to turn left - Landscaping maintenance - May require additional right-of-way

Other Considerations. Mini roundabouts circles may not actually be round depending on the intersection configuration. A turning analysis must be completed to ensure that the design vehicle



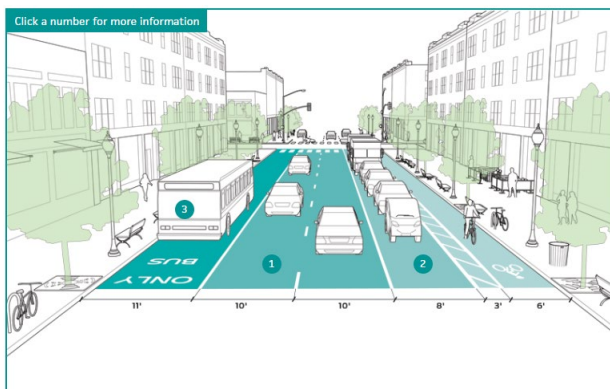
can negotiate the traffic circle. To accommodate emergency vehicles, buses, and trucks a mountable concrete apron may be used. Additional street lighting may be required.

Reference <https://nacto.org/publication/urban-street-design-guide/intersections/minor-intersections/mini-roundabout/>

On-street parking creates the appearance of a narrower roadway due to the proximity of parked vehicles and doors opening into traffic. It can be an appropriate traffic calming device on any street of adequate width, commonly found in commercial areas and business districts. On-street parking is used to reduce vehicle speeds on wide streets and provide additional parking spaces for businesses and residents. Lane width changes need to be approved by the Fire Marshall.

Advantages	Disadvantages
- Reduce vehicle speeds - Creates buffer between moving vehicles and pedestrians/bicycles	- May require additional right-of-way - Disrupts traffic flow when vehicles are parking - Drainage must be accommodated

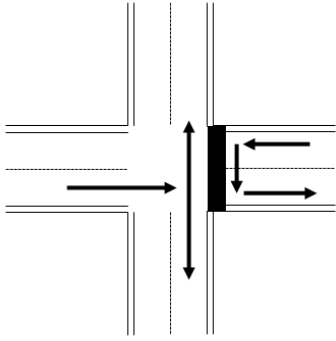
Reference <https://nacto.org/publication/urban-street-design-guide/street-design-elements/lane-width/>



Level 3: Major Street Changes Volume Control Measures

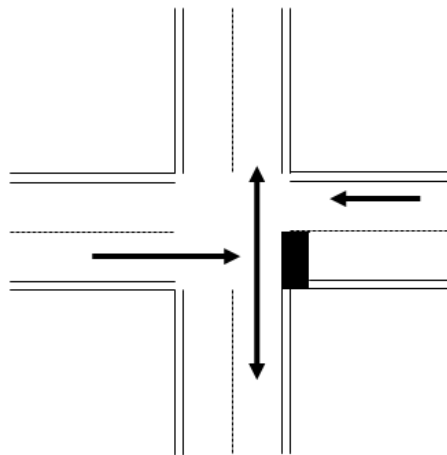
Full Closures: Full street closures are barriers placed across a street to completely close the street to through-traffic, usually leaving only sidewalks open. They are good for locations with extreme traffic volume problems and several other measures have been unsuccessful. May include cul-de-sacs or dead-ends.

Advantages	Disadvantages
• Can maintain pedestrian and bicycle access. • Effective in reducing traffic volume.	• Cause circuitous routes for local residents and emergency services. • Tend to be expensive. • May limit access to businesses.



Half Closures: Half closures are barriers that block travel in one direction for a short distance on otherwise two-way streets. They are good for locations with extreme traffic volume problems and other measures have been unsuccessful. Also called partial closures or one-way closures.

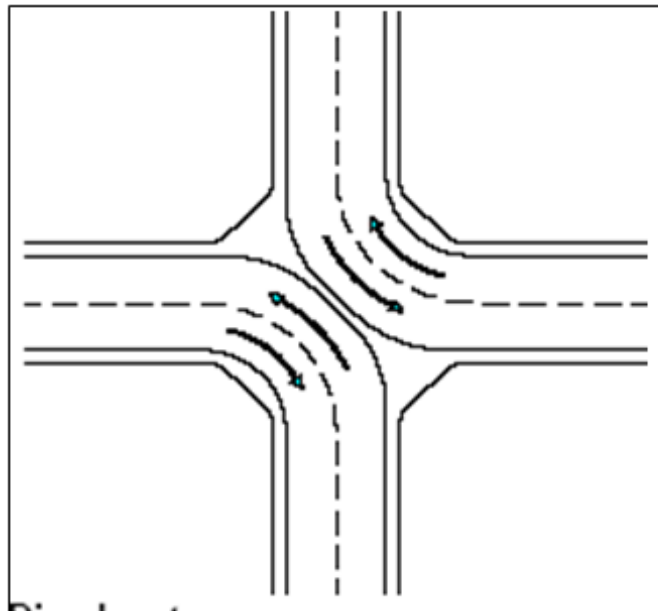
Advantages	Disadvantages
Can maintain pedestrian and bicycle access. Effective in reducing traffic volume.	Cause circuitous routes for local residents and emergency services. Depending on the design, drivers may be able to circumvent the barrier May limit access to businesses.



Diagonal Diverters: Diagonal diverters are barriers placed diagonally across an intersection, blocking through movements and creating two separate, L-shaped streets. Like half closures, diagonal diverters are often staggered to create circuitous routes through the neighborhood as a whole, discouraging non-local traffic while maintaining access for local residents. They are good for inner-neighborhood locations with non- local traffic volume problems. Also called full diverters or diagonal road closures.

Advantages	Disadvantages
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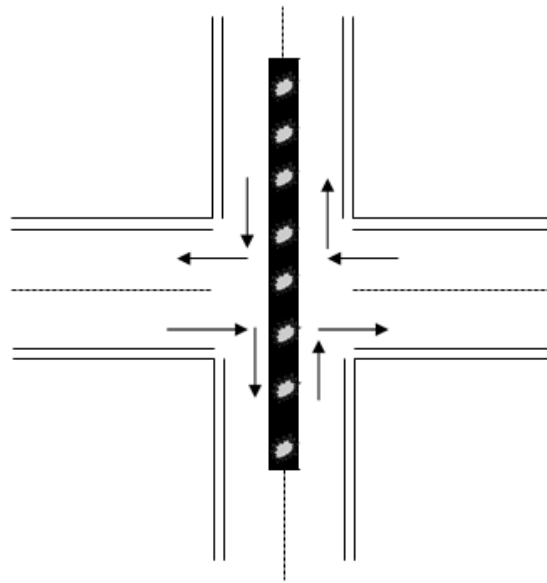
- Does not require a closure per se, only a redirection of existing streets. - Can maintain pedestrian and bicycle access. - Effective in reducing traffic volumes.	- Cause circuitous routes for local residents and emergency services. - Tend to be expensive. - May require reconstruction of corner curbs.
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Median Barriers: Median barriers are islands located along the centerline of a street and continuing through an intersection to block through movement at a cross street. Also called median diverter or island diverters. They are good for:

- Local street connections to main streets where through traffic along the continuing local street is a problem
- Main streets where left-turns to and/or from the side street are unsafe

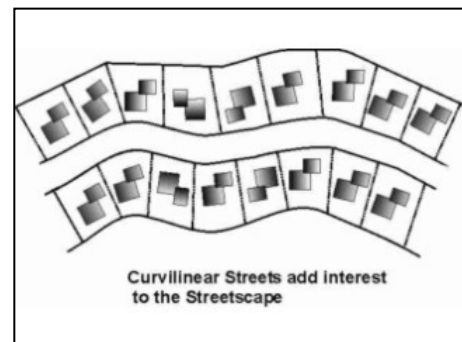
Advantages	Disadvantages
- Can improve safety at an intersection of a local street. - Can reduce traffic volumes on a cut-through route that crosses a major street.	- Require available street width on the major street. - Limit turns to and from the side street for local residents and emergency services



Street Layout and Design

Curvilinear Street Form

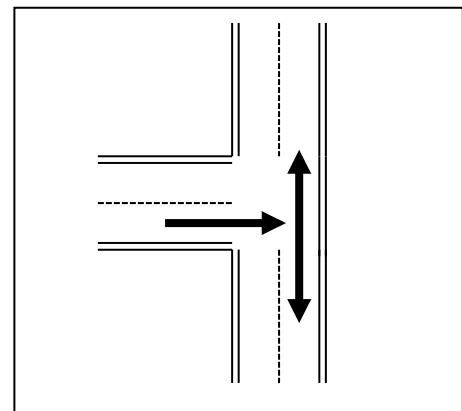
Curvilinear street form takes a grid pattern and applies moderate curves to the street to encourage drivers to slow down.



T-intersections (three-way intersections)

T-intersections, or three-way intersections, help slow down traffic while still maintaining connectivity.

Typically, a minor street intersects into a major street.



Entry Treatments

Subdivision entry treatments, such as a landscaped median with signage help encourage drivers to slow down and pay closer attention to surroundings. The entry treatments helps drivers become aware that they are entering a residential area.



Tree-lined Streets

Streets lined with large, mature trees establishes a natural canopy, which creates a sense of enclosure. The sense of enclosure tends to compel a driver to reduce speed. Raised Intersection are not acceptable in areas that require aerial fire-fighting equipment or near fire hydrants.



Impact of Traffic Calming Measures								
Measure	Volume Reduction	Speed Reduction	Improved Safety	Emergency Access	Costs	Maintenance Problems	Noise Pollution	Loss of On-Street Parking
Level 1 Measures								
Discussion	None	Minor	Minor	None	Minor	None	None	None
Radar Trailer	None	Minor	Minor	None	Minor	None	None	None
Enforcement	Minor	Minor	Minor	None	Minor	None	None	None
Signage	Minor	Minor	Minor	None	Minor	Minor	None	None
Level 2 Measures								
High Visibility Crosswalks	None	None	Minor	None	Minor	None	None	None
Narrowing Lanes	None	Minor	Minor	Major	Minor	None	None	None
Neighborhood Main Street	None	Minor	Minor	Major	Minor	None	None	Major
In Street Pedestrian Sign	None	Minor	Minor	Minor	Minor	Minor	None	Minor
Level 3 Measures – Speed Control								
Speed Table	None	Major	None	Minor	Minor	Minor	Minor	Minor
Speed Cushion	None	None	Minor	Minor	Minor	None	Minor	Minor
Raised Intersection	None	Major	Minor	Minor	Major	None	Minor	None

Textured Pavement	None	Major	Minor	Minor	Major	None	Minor	None
Chicane	None	Major	Minor	Minor	Major	None	Minor	Major
Mini Roundabout	None	Major	Minor	Minor	Major	None	Minor	Major
Lane Width	None	Major	Minor	Minor	Major	None	None	None
Level 3 Measures – Volume Control								
Full Closure	Major	Minor	Minor	Minor	Minor	None	None	None
Half Closure	Major	Minor	Minor	Minor	Minor	None	None	None
Diagonal Diverters	Major	Minor	Minor	Major	Major	Minor	Minor	Minor
Median Barriers	Major	Minor	Minor	Major	Major	None	None	Minor
Other Measures								
Curvilinear Streets	None	Minor	Minor	Major	Major	Minor	Minor	Minor
T Intersection	None	Minor	Minor	Minor	Minor	None	None	None
Entry Treatments	None	None	Minor	Minor	Minor	Minor	None	Minor
Treelined Streets	None	Minor	Minor	Minor	Minor	Major	Minor	None

1101 RESIDENTIAL TRAFFIC MANAGEMENT

1101.1 Purpose

A common concern of neighborhood residents is the volume and speed of traffic on local residential streets. Traffic calming techniques are designed to help address these concerns. They use a combination of primarily physical measures to reduce speeds, reduce the number of vehicles, and improve road safety for all users.

The purpose of this policy is to establish a process by which neighborhood residents can seek traffic calming measures on residential and local streets. This policy shall not be deemed to limit the authority of the city to remedy problems on their own initiative.

1101.2 Applicability

The following criteria must be met in order to be considered for traffic calming measures:

1. Street shall be residential in nature and classified as a residential or local on the Master Street Plan.
2. Street shall be a public street.
3. Street must not be classified as a primary route for emergency response vehicles which would produce significant evidence of emergency response delay.
4. Vehicular volumes meet or exceed 250 vehicles per day.
5. Changes in traffic flow will not result in unreasonable liability exposure to the City.
6. Changes in traffic flow will not divert significant amounts of traffic to other residential streets.

1101.3 Traffic Calming Measures

The City's traffic management program involves three levels of traffic management and traffic calming measures. The measures are described briefly below. Detailed information is provided in the Traffic Calming Guidebook.

Level 1 — Education and Awareness. Level 1 traffic calming measures involve providing education about traffic and road safety and increasing awareness of posted speed limits and safety issues. These are the least intrusive and lowest cost measures and should be implemented first before proceeding to Level 2 or Level 3 measures.

Level 2 — Minor Street Changes. Level 2 measures result in minor changes to the street designed to help increase awareness and improve safety.

Level 3 — Major Street Changes. Level 3 measures require major changes to the physical character of the street and are typically associated with higher costs. They are categorized by those that control speed and those that control volume. These measures include:

1101.4 Process for Residential Traffic Management

The following process will be used by the City to address requests for traffic calming measures:

1101.4.1 **Application (Resident Responsibility).** Residents with concerns regarding traffic volume and speed within the neighborhood must complete and submit the Neighborhood Traffic Management Request Form to the Traffic and Signage Committee. The form must include a written description of the concerns and requires signatures from four (4) separate residents in the impacted area.

1101.4.2 **Existing Condition Traffic Study (City Responsibility).** Once the City receives the Neighborhood Traffic Management Request Form, staff will conduct an Existing Condition Traffic Study to determine if the affected area meets the requirements shown in Table 1 and to determine the extent of the problem. The Existing Condition Traffic Study includes the study of three elements: volume, speed and accidents. The street must meet at least two of the requirements provided in Table 1: Existing Condition Traffic Study Requirements, below, in order to be considered for traffic calming measures.

Table 1 Existing Condition Traffic Study Requirements			
Study Element	Measurement	Department Responsible	Requirement for Traffic Calming Measures
Traffic Count	24 hour	Transportation	250 vpd
Traffic Speed	4-hour sample, or 100 vehicles, whichever is first	Transportation	50% of speeds recorded 7 miles or more above posted speed limit
Accident Records	Past 3 years	Police	Average 1.5 accidents per year

1101.5 Level 1 Implementation.

1101.5.1 **Responsibilities.** If applicable, Level 1 traffic calming measures should be recommended first. Staff will make a recommendation to the residents of the suggested measures. The city and residents will share responsibility in implementing these measures, depending on the technique proposed.

1101.5.2 **Costs.** The City will be responsible for all costs associated with Level 1 traffic calming measures.

1101.5.3 **C. Evaluation.** If Level 1 is recommended, these measures will be evaluated for two (2) months. At the end of two months, the city will evaluate the measures by conducting the traffic count and documentation of traffic speeds as outlined in Table 1: Existing Condition Traffic Study Requirements. If data show conditions are the same or increases, the City may proceed with additional studies to determine appropriate Level 2 or Level 3 measures. If data show conditions are improved, no further action is required.

1101.6 Level 2 / Level 3 Implementation.

1101.6.1 **Cost.** Level 2 measures will be funded at a 50/50 cost share between the city and residents. This does not guarantee that the City will have funding available for its share at the time of the petition and may need to approve funding in future years. The property owners may wait until City funds are available or pay 100% of the costs. Any resident share of the funding shall be collected on a volunteer basis by the local residents and presented to the City prior to construction.

1101.6.2 If Level 3 measures are to be implemented, City staff will make the request to City Council for approval and funding determination. The City may choose to fund 0% to 100% of the project costs. Again, this does not guarantee funding will be available at the time of the request. Any resident share of the project cost shall be collected on a volunteer basis by the local residents and presented to the City prior to construction.

1101.6.3 **Evaluation.** An evaluation of installed traffic calming measures will be conducted approximately 6 months after installation to determine whether the traffic calming measures have adequately addressed the traffic concerns.

1101.6.4 **Appeal of Staff Decision.** If the city proposes no action based on the results of the Existing Condition Traffic Analysis, the applicant may appeal to the City Council within 21 days of the written notification. Such appeal shall be in writing, signed by the persons desiring to appeal, and shall state the reasons and basis of the appeal, listing any errors which formed the basis for staff decision. Streets that do not meet the qualifying criteria outline in B. Applicability above are not eligible for traffic calming measures and are not eligible for appeal.

1101.6.5 **Traffic Calming Removal.** Residents wishing to remove an installed Level 2 or Level 3 traffic calming measure shall follow the same procedures as the installation process of the traffic calming measure, including the petition. If the request is made within one year of the installation of the Level 2 or Level 3 traffic calming measure, the residents' cost share for the

removal will be the same proportion as the installation. The City may choose to remove an installed traffic calming measure at its own cost if emergency response is significantly impacted or if the initial problem has transferred to another street.

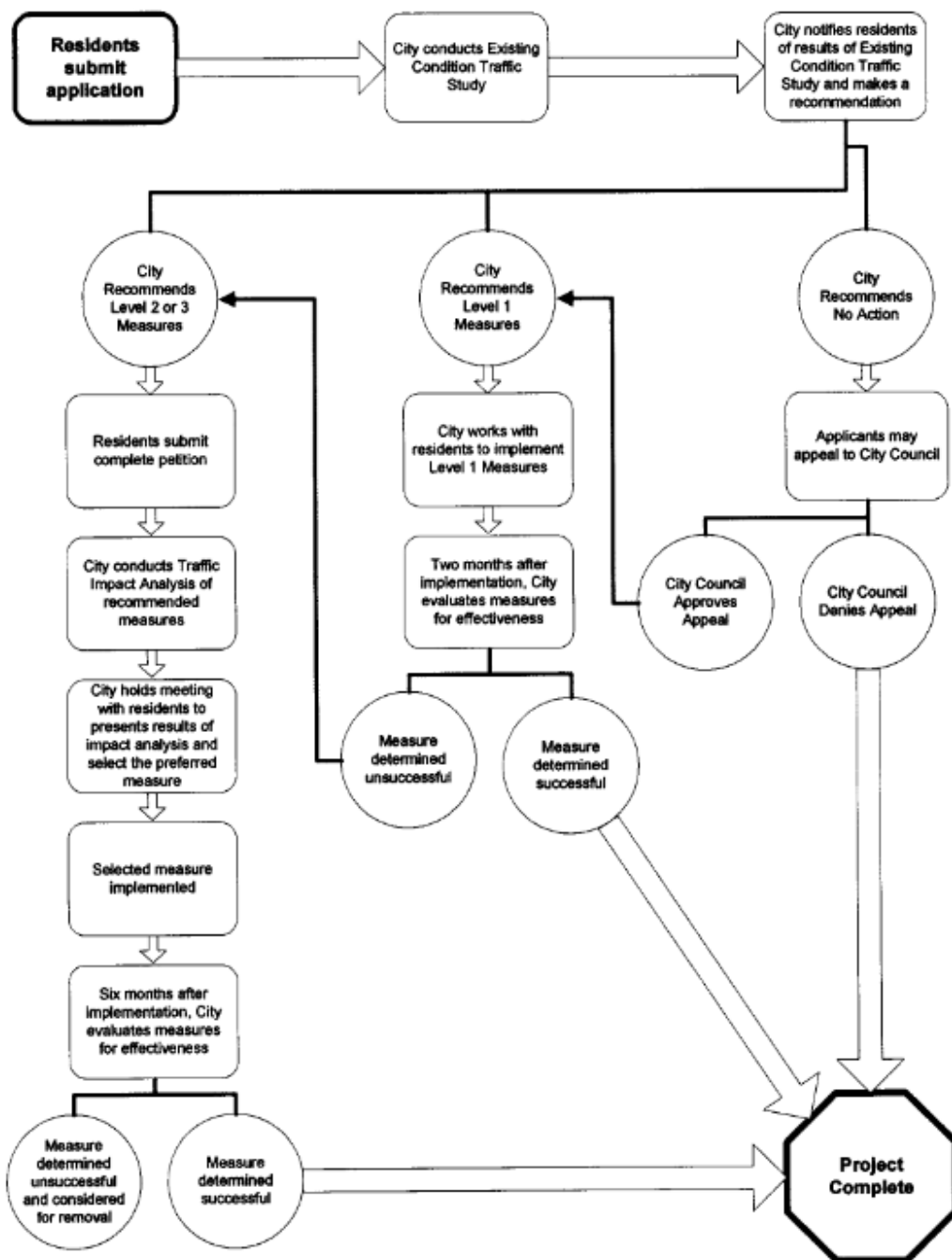
1101.7 Petition Requirements

The following procedures shall be followed in order to submit a petition to the City for Level 2 or Level 3 traffic calming measures:

- 1101.7.1 **Boundary.** The city will determine the affected area of the planned traffic calming improvement, which will be the area for petitioning. The affected area will be defined by those property owners where necessary travel routes to and from their residential property are to be altered by the proposed measure and properties that could be impacted by traffic diversion cause by the traffic calming measure. The city will provide a map of the affected area along with property owner addresses.
- 1101.7.2 **Petition Document.** The petition document used for circulation must include the following information and shall be approved by the City:
- 1101.7.2.1 *Existing Condition Traffic Study.* Include a brief summary showing the results of the Existing Conditions Traffic Study.
 - 1101.7.2.2 *Description or Illustration of Proposed Measure(s).* The petition must include a statement and drawing describing the proposed traffic calming measure(s).
 - 1101.7.2.3 *C. Anticipated Costs.* The petition shall include a statement that all persons signing the petition acknowledge that it is the City's policy that residents may be responsible for costs directly associated with the design and construction of Level 2 or Level 3 traffic calming measure(s).
 - 1101.7.2.4 *d. Contact Information.* Each property owner who signs the petition must provide a current address and phone number.
- 1101.7.3 **Signatures Needed.** The petition requesting a Level 2 traffic calming measure must have signatures of 80% of the property owners in the affected area as defined by the City. The petition requesting a Level 3 traffic calming measure must have signatures of 85% of the property owners in the affected area, as defined by the City.
- 1101.7.4 **Review for Compliance.** The Community Development Department is responsible for reviewing all petitions to verify compliance with the above described requirements. Any petition not meeting these requirements will not be accepted for consideration and will be returned.
- 1101.7.5 **Level 2 or Level 3 Traffic Impact Analysis.** The City will recommend and examine the technical feasibility and anticipated impacts of the proposed traffic calming measures. The analysis must address each of the following issues:

- 1101.7.5.1 *Master Street Plan*: What is the classification of the street as shown on the currently adopted Master Street Plan?
- 1101.7.5.2 *Existing Conditions*: What are the results of the Existing Condition Traffic Study?
- 1101.7.5.3 *Effectiveness*: Does or will the proposed action address the specific traffic concern? See Traffic Calming Guidebook for potential impacts.
- 1101.7.5.4 *Effect on Emergency Vehicle Response Time*: What is the extent of the impact on response time for emergency vehicles? Fire and Police must address this issue.
-
- 1101.7.5.6 *Traffic Diversion*. Will the proposed traffic calming measure divert a significant amount of traffic onto adjacent roadways?
- 1101.7.5.7 *Consideration for Other Users*. How does the proposed measure impact other road users, such as bicyclists and pedestrians?
- 1101.7.5.8 *Noise Impacts*. Will the proposed measure result in extreme braking, or other noise caused by going over or around the device that could result in extreme noise pollution for residents near the device?
- 1101.7.5.9 *Loss of Parking*. Will the proposed device result in an unacceptable loss of
- 1101.7.5.10 on-street parking?
- 1101.7.5.11 *Visual Impact*. What is the impact of the proposed device to the visual
- 1101.7.5.12 quality of the neighborhood? Is there an opportunity for landscaping?
- 1101.7.5.13 *Maintenance Costs*. What are the costs associated with maintaining the device and is the cost feasible? Cost estimates should include landscaping that requires regular maintenance, vandalism, street paving, striping, and replacement.

Neighborhood Traffic Management Process



1200 STREET INSPECTION AND TESTING PROCEDURES

1200.1 General

1200.1.1 Scheduling

The Engineer of Record or their representative shall schedule inspections and tests with the City. A minimum of a 48-hour notice is required. Tests delayed by weather or other factors will be rescheduled on the same basis and require the Engineer of Record to re-schedule.

If the City is not able to observe an inspection or a test, the Engineer of Record or their representative may conduct the inspection or test with prior approval from the City. The Engineer of Record shall furnish the City with a copy of the inspection report of this day, indicating what tests and inspections were performed and the results of those inspections and tests (i.e., pass, fail, or numerical results). The report shall be reviewed by the Engineer of Record for conformance with Federal, State and Local laws before submitting to the City for review and approval.

1200.1.2 City Observation

The inspection of street construction by the City will be limited to general observations, inspections, and testing of the project at various stages as outlined in these specifications. The City reserves the right to observe and inspect the construction at all times.

1200.1.3 Responsibility of the Engineer of Record

1200.1.3.1 Inspections

The Engineer of Record shall provide full-time inspection on the job as required by state law. This law is interpreted by the City to mean that the Engineer of Record or their representative must be on the job whenever a critical construction activity is taking place. The Engineer of Record or their representative shall keep a daily log of all construction activities and testing for the project. The logs shall be submitted to the City in PDF format on a weekly basis, unless otherwise approved.

The Engineer of Record shall be qualified to read and interpret the plans and specifications and to observe the construction and testing procedures to ensure compliance. The costs of all inspections and oversight of the construction process shall be paid for by the developer.

Prior to final acceptance, the project shall be subject to a final inspection by the City, the Engineer of Record, Developer/Owner, and the Contractor.

1200.1.3.2 Field Decisions

The Engineer of Record or their designee shall be qualified to make field decisions regarding the development. The Engineer of Record or their designee shall work with the development to provide immediate solutions to any issues that may arise in the field. These solutions shall be

presented to the City for approval. If the City determines that the solutions are significant then the Engineer of Record shall submit revisions to the approved plans as discussed in these specifications.

1200.1.3.3 Revisions to Approved Plans

If revisions to the approved plans are warranted, the Engineer of Record shall submit all revisions to the City for review and approval. The Engineer of Record shall review the revisions before submission to ensure compliance with all Federal, State and Local laws. Any work performed without all the necessary approvals shall be subject to removal.

1200.1.4 Testing

During the construction process, testing from an independent laboratory is required on all infrastructure installation including but not limited to: soils, concrete, asphalt, etc.. All testing laboratories engaged in testing for projects shall be pre-qualified by the City Engineer. All costs associated with testing, the work performed, and materials supplied to verify compliance with these specifications shall be the responsibility of the developer.

The use of the testing laboratory's services does not relieve the developer of the responsibility to furnish the required materials and to perform the required construction in full compliance with these specifications. Passing test results do not constitute acceptance of the work or materials represented by the test. The developer is responsible for quality control of their work.

When evidence indicates that the work performed may not comply with these specifications, the City Engineer may require additional tests or data beyond that required in these specifications. The costs of such requests shall be borne by the developer. Should such tests or additional data show a failure to meet these specifications, the developer shall be responsible for all costs associated with repair or replacement of said failure.

1200.2 Subgrade and Fill

1200.2.1 General

Subgrade must be evaluated and approved by the Engineer of Record or their designated representative and receive concurrence with the City before placement of the next course. Any necessary reworking, compaction or replacement will be required prior to continuation. Approvals are only valid to a time when weather conditions may have changed the condition of the subgrade. Changes in weather such as freezing or precipitation, which may cause changes in the subgrade, will require re-approval of the subgrade. The Engineer of Record or their designee shall inform the City and the Developer on the conditions of the subgrade and their recommendations in weather conditions.

1200.2.2 Inspections and Testing

1200.2.2.1 Existing Material.

Unsuitable material shall be excavated to a depth as directed by the Engineer of Record or the geotechnical engineer. This recommendation will need to be approved by the City before work in this area continues. This unsuitable material shall be disposed of and replaced with fill material meeting the requirements of **Section 600.3, Subgrade and Fill Requirements**.

If the existing material is acceptable for use as subgrade material, or modified to be suitable, the subgrade will be scarified to a depth of 8 inches and recompact to conform to the requirements of this chapter.

1200.2.2.2 Moisture and Density Requirements.

All lifts in embankment areas shall be compacted to requirements set forth in **Section 600.3, Subgrade and Fill Requirements**. The moisture content of the material shall be within 3% of optimum moisture content before compaction.

Maximum density will be determined using AASHTO T-99 (Standard Proctor). In-place field density measurements shall be determined using AASHTO T-191, T-233 or T-310.

Density requirements do not apply to portions of embankments constructed of materials such as rock that cannot be tested by approved testing methods.

1200.2.2.3 Proof-Rolling.

Proof rolling of subgrade shall be required prior to taking density tests. Proof rolling shall be done with a fully loaded tandem-axle dump truck. Proof Rolling shall occur in each lane for the entire length of the proposed street. Proof Rolling shall occur on subgrade before placement of the initial lift of material and again once final subgrade has been achieved.

1200.2.2.4 Testing Frequency.

Density tests shall be taken every 300 feet for each lane or portion thereof. For streets less than 300 feet in length, a minimum of one test shall be taken for each lane. The Engineer of Record or their designee shall determine the location of the tests. Locations that are chosen are subject to approval by the City.

1200.2.2.5 Finished Subgrade.

The subgrade shall be shaped for its full width to the required grade and cross section. The finished subgrade shall not vary at any point by more than 1/2 inch from the design elevation. Contractor shall work with the Engineer of Record, Geotechnical Firm and the City to provide any type of data to support that final subgrade has been achieved and is in compliance.

Table 1100.2.2 – Material-Testing and Inspection Requirements

Test Required	Test Reference ^a	Frequency
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	AASHTO	ASTM	ARDOT	
Sampling	T 87	D 421		One/Type of Soil
Soil Classification	M 145			
Sieve Analysis	T 88	D 422		
Atterberg Limits	T 89/T90	D 4318		
Standard Proctor Moisture-Density	T 99	D 698		
Modified Proctor Moisture-Density	T 180	D 1557		
California Bearing Ratio (CBR)	T 193	D 1883		
Subgrade Stability Proof Roll				EA Lane/ Length of Roadway
Moisture & Density (In-Place)	T 310	D 6938		One/300 LF/ 8" Lift

1200.2.3 Base Course

The base course material shall be placed on a completed and approved subgrade or existing base that conforms to the grade and cross section shown on the plans. Base course shall not be placed on frozen subgrade.

1200.2.3.1 **Materials.** Materials for aggregate base courses shall meet the requirements of Section 303 of the ARDOT Standard Specifications (latest edition) for Class 7 as specified in

Section 600.7, Aggregate Base Course.

1200.2.3.2 **Moisture and Density Requirements.** All lifts shall be compacted at substantially optimum moisture content to not less than 98% of the maximum density within the traveled way of the road. Aggregate base course placed in areas outside of traveled ways, such as driveways, islands, gore areas, or sidewalks shall be compacted to not less than 95% of the maximum density. Maximum density will be determined using AASHTO T-180 (Modified Proctor). In-place field density and moisture measurements shall be determined using AASHTO T-310. The testing frequency shall be in accordance with **Table 1100.2.3**

1200.2.3.3 **Thickness.** The compacted base course shall be tested for thickness in the same general location of the density testing. The finished base course shall not vary at any point by more than 1/4 inch from the design thickness.

1200.2.3.4 **Testing Frequency.** Density tests shall be taken every 300 feet for each lane or portion thereof. For streets less than 300 feet in length, a minimum of one test shall be taken

for each lane. The Engineer of Record or their designee shall determine the location of the tests. Locations that are chosen are subject to approval by the City.

1200.2.3.5 **Finished Grade.** The base course shall be shaped for its full width to the required grade and cross section. The finished base course shall not vary at any point by more than 1/2-inch from the design elevation. Contractor shall work with the Engineer of Record, Geotechnical Firm and the City to provide any type of data to support that final subgrade has been achieved and is in compliance.

1200.2.3.6 **Final Proof-Rolling.** Proof rolling of base course shall be required prior to taking density tests. Proof rolling shall be done with a fully loaded tandem-axle dump truck. Proof Rolling shall occur in each lane for the entire length of the proposed street.

Table 1100.2.3 – Material-Testing and Inspection Requirements

Test Required	Test Reference ^a			Frequency
	AASHTO	ASTM	A _R DOT	
Sampling	T 2	D 75		One/Type of Aggregate
Percentage of Wear	T 96	C 131		
Soundness	T 104	C 88		
Sieve Analysis	T 27	C 136		
Moisture-Density Relationship	T 180	D 1557		
Moisture & Density (In-Place)	T 310	D 6938		One/ 300LF/ 8" Lift
Thickness				

1200.2.4 Pavement Pre-Construction Conference

Below are a list of items needed before a pavement pre-construction conference can be scheduled onsite. These items shall be reviewed by the Engineer of Record before being submitted to the City for review. If approved, the Engineer of Record may schedule a meeting with the City following the inspection requirements in section 1100.1.1. If the items are not approved, the Engineer of Record shall make the necessary modifications and re-submit.

1200.2.4.1 **Engineer of Record Recommendation.** The Engineer of Record shall submit a cover letter recommending that the Development has performed and passed all of the testing required to pave in accordance with all City of Bentonville Regulations.

1200.2.4.2 **Mix Designs.** Pavement mix designs shall be reviewed by the Engineer of Record for conformance with these standards. Once the Pavement Mix Design has been

reviewed by the Engineer of Record, the Engineer of Record shall submit a recommendation along with the Pavement Mix Design to the City for review and approval. If a mix design not accepted by the City is used, the City may require removal of all improvements placed with the unaccepted material.

1200.2.4.3 Test Reports. Testing Reports shall be reviewed by the Engineer of Record for conformance with these standards. Once the Testing Reports have been reviewed by the Engineer of Record, the Engineer of Record shall submit a recommendation along with the Testing Reports to the City for review and approval. All test reports shall show the location where the test was performed or at which work or batch is represented by the test. Test reports shall include all information specified in the AASHTO, ASTM, or local test procedure used. Prior to acceptance of each phase of a project, all final reports shall be submitted to the City indicating compliance with these Standards.

1200.2.5 Asphalt Concrete Hot Mix (ACHM)

1200.2.5.1 Materials. Materials for Asphalt Concrete Hot Mix base, binder, and surface courses shall meet the requirements of the ARDOT Standard Specifications (latest edition) as referenced in **Section 600.6** of these Standards. Construction Acceptance of Asphalt Concrete Mix Courses shall be in accordance with ARDOT Section 410, except as modified herein.

1200.2.5.2 ACHM Testing. All testing shall be done in accordance with AASHTO or ASTM as designated throughout this chapter. Testing results for asphalt binder content, VMA, and air voids shall be provided by the contractor upon request by the City Engineer. Prior to the pavement being cored, plant data shall be furnished to the City.

For every development, the pavement shall be cored at 300-foot intervals, alternating lanes for each core. The core locations shall be chosen to accurately represent the quality of the asphalt placed in a particular area. For all developments, a minimum of two cores shall be taken regardless of total pavement length for averaging purposes. The City Engineer reserves the right to require additional cores be taken if paving was done under different conditions. For example, if part of a development was paved one week and the other part the next week due to inclement weather or other reasons.

1200.2.5.3 Thickness. Asphalt streets shall be cored every 300 feet or portion thereof for the purpose of checking density and thickness, except that each cul-de-sac street shall have a minimum of two cores taken regardless of length, with one being taken within the cul-de-sac. The location of the core shall be chosen by the City Engineer or his/her designated representative so as to accurately represent the quality of the asphalt laid in a particular area. Lanes of streets laid on different days may be required to have additional cores at City Engineer's discretion. Core samples shall be used to indicate asphalt thickness, and in no case shall be more than $\frac{1}{4}$ inch less than specified thickness. For cores that indicate thickness $\frac{1}{4}$ inch to $\frac{1}{2}$ inch less than that specified, "isolation" cores will be required. To "isolate", the contractor, at no expense to the City, shall cut cores 10 feet either side of the initial core. If one or both of the cores are in the acceptable tolerance, the section will be

accepted. If one or both cores fail, then additional cores will be cut 25 feet away from the initial core in the failing directions. Subsequent cores will be cut at 50 foot intervals in the direction of failure until a core that passes tolerance is obtained. The isolated area will be that which falls within the limits of acceptable thickness. The areas that fall within the ¼ inch to ½ inch less than specified thickness may be removed and replaced or warranted for five (5) years at 150% of construction cost based on the estimate provided by the Engineer of Record. Areas that are determined to exceed the ½ inch less than specified thickness shall be removed and replaced within the limits of the acceptable thickness determined by the isolation method.

1200.2.5.4 **Density Requirements.** Minimum asphalt density for black base, binder, and surface courses shall be 92.0% of the maximum theoretical density. Maximum asphalt density for black base, binder and surface courses shall be 96% of maximum theoretical density. Asphalt densities that fall between 90% to 92% and 96% to 98% shall be left in place and an extended warranty of five (5) years at 150% of construction cost based on the estimate provided by the Engineer of Record will be required on the deficient asphalt pavement. Where densities are less than 90% or greater than 98%, the paving shall be removed and replaced. The limits of the deficient asphalt pavement shall be determined by the "isolation method" by first cutting two cores within 2 feet each side of the failing core, then add the results of the density of the original core and the two additional core densities. Divide by three and if the average of the three core densities fall within the acceptable ranges as specified above, then that section will be accepted per the aforementioned requirements. If the average of the original and the two re-cores fall below acceptable range, then additional cores will be cut first going 25 feet longitudinally in each direction from the original core and determining the densities of each. A resulting failing core from that point will require an additional core being cut 50 feet from that previous core and will continue in 50 foot increments until a passing core density is obtained. The failed area will consist of the area falling within the limits of the passing re-cores and will be addressed per the aforementioned requirements.

1200.2.5.5 **Smoothness.** The finished surface, when checked with a 10 foot straight-edge parallel to the centerline, shall show no variation more than 3/16" (5 mm) for binder courses and not more than 1/8" (3 mm) for surface courses when the profile grade line is shown on the plans. If the profile grade line is not shown on the plans, the variations shall be not more than ¼" (6 mm) for binder courses and not more than 3/16" (5 mm) for surface courses. When surface tests indicate surface tolerances do not meet these requirements, corrections to the pavement and changes to the paving operations shall be made as directed by the City Engineer at no cost to the City. The Contractor is responsible for providing the straightedge and execution of the test. The Contractor, EOR, and the City shall be present for testing. The EOR shall record the locations of all deficiencies and help the contractor develop a plan to correct these areas. This plan will be submitted to the City for review and approval before any work begins.

Table 1100.2.5 – Material-Testing and Inspection Requirements

Test Required	Test Reference ^a			Frequency
	AASHTO	ASTM	A _R DOT	
Aggregates				
Sampling	T 2	D 75		One/Source of Material
Percentage of Wear	T 96	C 131		
Soundness	T 104	C 88		
Sieve Analysis	T 27	C 136		
Bituminous Mixture				
Sampling	T 168		465	One/Type of Mixture
Stability	T 45			
Air Voids (AV)	T269			
Voids in Mineral Aggregate (VMA)			464	
Water Sensitivity			455	
Density – Maximum Theoretical	T 209			
Density (Field)	T 166		461	One/300 LF
Thickness (Core)				
Asphalt Binder Content			449/449A	One/500 TN
Smoothness			410.09(b) (2)	Daily Inspection
Aggregate Gradation	T 30	C 136	460	One/750 TN

1200.2.6 Portland Cement Concrete Pavement

1200.2.6.1 Materials. Materials for Portland Cement Concrete Pavement shall meet the requirements of Section 501 of the ARDOT Standard Specifications (latest edition), except as modified herein, as referenced in **Section 600.8** of these Standards.

1200.2.6.2 Concrete Testing. All testing shall be done in accordance with AASHTO or ASTM as designated throughout this chapter.

1200.2.6.3 Construction Acceptance. Acceptance of Portland Cement Concrete Pavement (P.C.C.) shall meet the requirements of Section 501.04 of the ARDOT Standard Specifications, as shown in **Table 1100-31**, except as modified herein. When the average of the test results for a given property for a lot fall within the range shown as "Compliance Limits", the lot will be accepted with no price reduction. If the average of the test results for a lot listed in the table falls within the limits shown as "Price Reduction Limits", the material shall be left in place and an extended five (5) year warranty for concrete placement at 150% of construction costs based on estimate provided by the Engineer of Record percentage of the in-place construction cost of the deficient P.C.C. Pavement shall be provided to the City. If the average of the test results for a lot falls outside the limits shown as "Lot Rejection Limits", the entire lot shall be removed and replaced at no cost to the City.

At the Contractor's option, additional testing due to compressive strength results may be performed by the Contractor at locations determined by the City. In such cases, three cores shall be taken in each subplot containing compressive strength results not in Compliance Limits. The compressive strength shall be determined by the average result of the cores. Cores shall be sampled according to AASHTO T 24. The average of the three cores must meet or exceed applicable price reduction limits or pavement rejection limits. Acceptance and warranties will then be determined based on these results. This testing will be performed at no cost to the City. The holes made in taking the samples shall be repaired by the Contractor at no cost to the City.

Thickness shall not be more than 0.50 inches deficient. Areas of more than 0.50 inches deficiency shall be removed and replaced. The City may at its sole discretion choose to leave the deficient concrete slab in place and accept an extended five (5) year warranty for concrete placement at 150% of construction costs based on estimate provided by the Engineer of Record. All core test holes for concrete streets shall be filled with non-shrink grout flush with final surface within 24 hours of test.

The finished pavement surface shall have a maximum profile index of 5" per mile (± 0.1 " blanking band) for each 0.1 mile section, or portion thereof. The cross slope of the pavement shall vary no more than 1/8" in 10' when tested with a straightedge. Methods for determining this shall be as described in of Section 501.05(m) of the ARDOT Standard Specifications. Grinding shall be performed, if necessary, to meet these requirements for high spots in the pavement. Areas showing low spots of more than 1/4" in 10' in the longitudinal direction shall be corrected by grinding or shall be

removed and replaced according to Section 507 of the ARDOT Standard Specifications to an elevation that will not show surface deviations in excess of 1/8" in 10'.

All panels with cracks wider than 1/8 inch shall be repaired by total removal of the panel and replacement as required by the criteria herein. All panel cracks 1/8 inch and narrower may be routed and sealed at the discretion of the City Engineer. There shall be no more than one structural crack per panel. Panels with more than one structural crack shall be repaired by total panel removal and replacement.

All sections removed shall have edges parallel to adjacent panel joints. All saw cuts for removal of slabs shall be full depth cuts. No panel shall be allowed that has a crack meeting an adjacent panel at an angle more acute than 45 degrees to a finished edge or control joint. All corner cracks to a panel shall be removed and replaced. Any vertical differential movement across a crack greater than 3/16 inch shall be repaired by either partial or total panel removal and replacement. All panels with faulted joints resulting from settlement and/or pumping of the edges shall be repaired by removal and replacement. All manholes, water valves, range boxes, etc., shall be flush to 1/4 inch below the final surface roadway grade. When an entire panel is removed, the panel shall be secured to the surrounding panels with 18-inch long 1/2-inch diameter smooth dowel bars placed at 12-inch centers.

Table 1100-17 Compliance, Price Reductions, and Rejection limits for P.C.C. Pavement

Property	Compliance Limits	Price Reduction Limits	Price Reduction	Lot Rejection Limits	Sublot Rejection Limits
Air Content	4.0% -8.0%	3.5% - 3.9% and 8.1% - 8.4%	10%	less than 3.0% and more than 9.0%	less than 2.0% and more than 10.0%
		3.0% - 3.4% and 8.5% - 9.0%	20%		
Compressive Strength	4000 psi (min) (28.0 MPa)	3999 – 3800 psi (27.9 – 26.2 MPa)	10%	Less than 3400 psi (23.4 MPa)	Less than 3200 psi (22.1 MPa)
		3799 – 3600 psi (26.1 – 24.8 MPa)	20%		
		3599 – 3400 psi (24.7 – 23.4 MPa)	30%		

1200.3 Structural Concrete

This section delineates the testing, inspection, and related documentation requirements for all structures, including retaining walls, cast-in-place box culverts, and other concrete structures specified within.

1200.3.1 Concrete Specifications

Concrete for structures shall meet the minimum requirements of ARDOT Class S concrete as provided in the latest edition of the ARDOT Specifications Section 802, Concrete for Structures, except as modified herein. Class S shall be used in drop inlets, junction boxes, box culverts, bridges, retaining walls, and other structures as specified. Class S (AE) may be substituted for Class S.

1200.3.2 Concrete Testing and Inspections

- A. Structural and Inspection Requirements. The structural design engineer or his representative, familiar with assumptions inherent in the structure design, shall inspect the construction in sufficient detail to confirm that the construction meets the requirements of the plans and specifications.
- B. Foundation Testing and Inspection Requirements. Unstable foundation material shall be removed to a depth determined by the Engineer of Record or Geotechnical Engineer and approved by the City Engineer below the finish grade elevation and be replaced with a material and construction procedure as approved by the City.
- C. Inspection of Forms and False Work.
 - a. The forms shall be clean of all dirt, mortar, and all foreign material. Forms that will later be removed shall be thoroughly coated with an approved form oil.
 - b. The forms shall be mortar tight and of a quality (in addition to the bracing) to withstand the pressures from deposited concrete.
 - c. Unless otherwise specified, forms for exposed surfaces shall be constructed with triangular fillets 3/4 inch at all exterior corners.
- D. Inspection of Reinforcing Steel.
 - a. Material Grade and Size. The material grade and size shall be as specified by the engineer of record on the certified construction plans.
 - b. Tying.
 - i. The intersections of all bars shall be tied in accordance with the following requirements: Slab bars shall be tied at every intersection around the periphery and at spacing according to bar sizes. Unless bar spacing is less than 12" in which case every other intersection shall be tied. However, in no case shall less than 30% of the intersections be tied.

- ii. Wall bars should be tied sufficiently to prevent shifting, at least 3 times in any bar length at every third or fourth intersection and at spaces according to bar sizes, staggered:

1. #5 and smaller - 3'0"
2. #6 to #9 - 4'0" to 5'0"
3. #10 to #11 - 6'0" to 8'0"

Upper and lower mats shall be tied or otherwise fastened at 4 foot maximum spacing in each direction. Minimum splice length shall be 24 bar diameters.

1. All reinforcing steel shall be supported with steel chair or precast mortar.
2. Reinforcing steel shall be clean and free of all foreign material before concrete is placed.
3. All clearances shall be in compliance with approved plans and specifications.

E. Concrete Testing and Inspections.

- a. Materials Specifications. The class of concrete shall be in accordance with these specifications. Concrete that does not meet strength in 28 days is subject to removal.
- b. Concrete Tests.
 - i. All testing shall be done in accordance with AASHTO or ASTM as designated in **Table 1100-3.**
 - ii. Maximum time allowed between sampling and casting cylinders shall not exceed 15 minutes. Cylinders shall be transported to the laboratory within 24 hours of casting but after the concrete has hardened, (see AASHTO T23 or ASTM C-31).
 - iii. The slump test shall be performed in accordance with AASHTO T119. The air test shall be performed in accordance with AASHTO T196 or T121. Slump and air test measurements shall be taken with each cylinder series.
 - iv. If compressive strength of cylinders does not meet the specified values, the engineer of record shall recommend and the City Engineer shall approve the necessary mitigation measures needed.

F. Testing Frequency and Related Inspections.

- a. Testing frequency shall be in accordance with **Table 1100-3.**
- b. At least 4 compressive strength cylinders shall be taken from the same concrete delivery truck to provide design compliance testing at the laboratory. Two of the four

specimens will be tested at 28 days for acceptance and 1 shall be tested at 7 days for information. The fourth cylinder shall only be necessary if the 28-day fails. Additional cylinders may be required, as directed by the City Engineer.

G. Placement (Inspection).

- a. Concrete placement shall be done in a manner such that the concrete is not segregated or altered before placing. It shall not be allowed to free fall more than 5 feet. Concrete shall be placed in lifts not to exceed 18 inches.
- b. A sufficient number of vibrators shall be used to properly consolidate the concrete as required.
- c. Weepholes and drainage systems should be installed in the structure at the locations noted on the plans or specifications.
- d. Construction joints and expansion joints shall be constructed in conformance with approved plans and specifications.

Table 1100.3 – Material-Testing and Inspection Requirements

Test Required	Test Reference ^a			Frequency
	AASHTO	ASTM	A _R DOT	
Aggregates				
Sampling	T 2	D 75		One/Source of Material
Organic Impurities	T 21	C 40		
Sieve Analysis	T 27	C 136		
Percentage of Wear	T 96	C 131		
Soundness	T 104	C 88		
Friable Particles	T 112	C 142		
Concrete Mixture				
Sampling	T 141	C 172		One/100 CY
Slump	T 119	C 143		
Temperature				
Air Content	T 152	C 231		
Cylinders	T 22/T 23	C 39/C 31		One Set (4)/100 CY
Thickness (Core)	T 24	C 42		One/1000 LF/Lane
Smoothness			501.05(m)	Daily Inspection

1200.4 Non- Structural Concrete

Non-structural concrete includes curb, gutter, sidewalks, driveways, crossspans and ADA ramps.

1200.4.1 Concrete Specifications

- A. **Materials.** Non-Structural concrete shall meet the minimum requirements of ARDOT Class S with 4% to 7% air entrainment as provided in the latest edition of the ARDOT Specifications Section 802, Concrete for Structures, except as modified herein. Non-structural concrete shall be used in curb and gutter, sidewalks driveways, crossspans, ADA ramps and miscellaneous concrete items as specified.
- B. **General Specifications.**
 - a. **Humps and Depressions.** Any localized humps and/or depressions greater than 1/4 inch (as measured with a 10-foot straight edge) will require removal and replacement of the work in question.
 - b. **Water Ponding.** Ponding of water shall not be greater than 1/4 inch in depth.
 - c. **Flow Line Depth.** Curb and gutter flow line depth shall not vary from adopted standards by more than $\pm 1/4$ inch, measured vertically from the top of curb to the gutter invert.
 - d. **Cross Slope in Pedestrian Walks.** Pedestrian walks shall have a maximum of 2.0% cross slope.
 - e. **Joint Spacing.** Contraction and construction joints shall be placed at a maximum spacing of 15 feet in curb and gutter, crossspans, trickle channels, etc. Refer to **Chapter 800, Pedestrian Facilities Design and Criteria**, for sidewalk and trail joint spacing.
 - f. **Heave or Settlement of Sidewalk.** Heave or settlement of sidewalk, relative to separate curb pour, greater than 1/4" shall be cause for corrective action.
 - g. **Utility Placement.** No utility facilities shall be placed in curb and gutter, sidewalk, crossspan, ADA ramp etc., unless specifically called out on the approved construction plans. This includes meter boxes, manholes, power poles, fire hydrants, water valves, etc.
 - h. **Concrete Cracks.**
 - i. At the time of final acceptance, the repair of all cracks shall be completed.
 - ii. Any section of concrete with longitudinal cracks or with cracks greater than 1/16- inch in width will require complete removal and replacement of that section between joints.

- iii. Repair action for hairline cracks may be waived at the discretion of the City Engineer. For the purpose of this section, a hairline crack is one that is reasonably immeasurable and without separation as determined by the City Engineer.
- i. Concrete Chips and Gouges. Chips and gouges in the concrete will be evaluated on an individual basis. If determined by the City to be unacceptable, then the section shall be removed and replaced.
- j. Other Imperfections in Concrete Surface. Stress cracking, pop-outs, spalling, rain damage, graffiti, and other surface defects will remain discretionary and will usually require removal and replacement.
- k. Final Grade.
 - i. A light broom finish shall be required.
 - ii. All concrete work shall have the proper finished grade.
 - iii. No abrupt changes in grade shall be allowed, i.e., curb returns from new to existing, driveway entrances, etc.

1200.4.2 Concrete Testing and Inspections

A. Concrete Tests.

- a. Concrete Tests.
 - i. All testing shall be done in accordance with AASHTO or ASTM as designated in **Table 1100-4**.
 - ii. Maximum time allowed between sampling and casting cylinders shall not exceed 15 minutes. Cylinders shall be transported to the laboratory within 24 hours of casting but after the concrete has hardened, (see AASHTO T23 or ASTM C-31).
 - iii. The slump test shall be performed in accordance with AASHTO T119. The air test shall be performed in accordance with AASHTO T196 or T121. Slump and air test measurements shall be taken with each cylinder series.
 - iv. If compressive strength of cylinders does not meet the specified values, the engineer of record shall recommend and the City Engineer shall approve the necessary mitigation measures needed.
- b. Grade Verification of Gutter Flow Line. After completion of curb and gutter, including curb returns and crosspans, and prior to installation of asphalt, the new installation must be flow-tested with water in the presence of the City Engineer Designated Representative to confirm that there are no areas that hold water. The City Engineer will confirm the results and accept or reject the work.

The work will not be accepted if it holds water more than 1/4 inch deep or for a distance greater than 5 feet. Unacceptable work must be removed and replaced.

B. Testing Frequency and Related Inspections.

- a. Testing frequency shall be in accordance with **Table 1100-4.**
- b. At least 4 compressive strength cylinders shall be taken from the same concrete delivery truck to provide design compliance testing at the laboratory. Two of the four specimens will be tested at 28 days for acceptance and 1 shall be tested at 7 days for information. The fourth cylinder shall only be necessary if the 28-day fails. Additional cylinders may be required, as directed by the City Engineer.

C. Placement (Inspection).

- a. Concrete placement shall be done in a manner such that the concrete is not segregated or altered before placing. It shall not be allowed to free fall more than 5 feet. Concrete shall be placed in lifts not to exceed 18 inches.
- b. A sufficient number of vibrators shall be used to properly consolidate the concrete as required.
- c. Construction joints and expansion joints shall be constructed in conformance with approved plans and specifications.

Table 1100.4 – Material-Testing and Inspection Requirements

Test Required	Test Reference ^a			Frequency
	AASHTO	ASTM	A _R DOT	
Aggregates				
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Sieve Analysis	T 27	C 136		
Percentage of Wear	T 96	C 131		
Soundness	T 104	C 88		
Friable Particles	T 112	C 142		
Concrete Mixture				
Sampling	T 141	C 172		One/100 CY
Slump	T 119	C 143		
Temperature				
Air Content	T 152	C 231		
Cylinders	T 22/T 23	C 39/C 31		One Set (4)/100 CY
Thickness (Core)	T 24	C 42		One/1000 LF/Lane
Smoothness			501.05(m)	Daily Inspection

1200.5 Miscellaneous

1200.5.1 Traffic Signs, Striping, and Signals

- A. *Installation/Application.* The Engineer of Record shall verify that traffic control devices are installed or applied at appropriate locations as shown on the approved signing and striping plans. Engineer of Record shall notify the City of their findings and schedule an inspection.

All striping layouts will be reviewed by the Engineer of Record prior to any installation of paint or markings. The Engineer of Record shall notify the City 48-hours in advance before any application for inspection or approval.

1200.5.2 Storm Drain Bury Depth

- A. All storm drain underneath roadways shall have a minimum of 1 foot of cover from the top of the pipe to the bottom of the pavement structure or meet manufacturer recommendations for cover less than 1 foot. When manufacturer recommendations exceed 1 foot, the minimum cover shall be per the manufacturer recommendation. Storm drain not meeting minimum cover requirements is subject to removal and replacement at the discretion of the City Engineer.

Table 1100-18 City Inspection Items

Construction Stage	Inspection Items
Subgrade	*Street subgrade constructed to accurate grade and within specified tolerances. *Moisture condition of subgrade ($\pm$ 3% of optimum unless otherwise approved in writing). *Subgrade stability (Proof rolling required in addition to density tests. Proof-roll to be performed with rubber-tired construction vehicle weighing a minimum of 25 tons such as a fully loaded, tandem-axle dump truck unless otherwise approved in writing by City Engineer.).
Base Course	*Base course constructed to accurate grade and within specified tolerance. *Surface texture uniform (no evidence of segregation). *Moisture condition of base course *Base course stability (Proof rolling required in addition to density tests. Proof-roll to be performed with rubber-tired construction vehicle weighing a minimum of 25 tons such as a fully loaded, tandem-axle dump truck unless otherwise approved in writing by City Engineer.)
Curb and gutter	*Curb and gutter alignment and grade accuracy *Cross section in conformance with City Standard detail *Concrete finish as specified. No toppings or thin patches permitted. No cracks or other defects. *Joint spacing accurate. Joint filler and sealer complete. *Where removal and replacement of curb and gutter is required, the replacement section shall extend from joint to joint or as directed by the City Engineer.
Surfacing	*Grade and cross section accurate. Surfaces within prescribed tolerance. *Texture and finish uniform. *Joints straight and smooth. Joint filler and sealer completed. No cracks or openings at joints. *Finish pavement surface shall not be lower than the top of gutter.
Sidewalks/Ramps	*Grade and cross section accurate. *Sidewalk subgrade stability. *Texture and finish uniform. *Joints straight and smooth. Joint filler and sealer completed. No cracks or openings at joints. *Meets ADA and Requirements
Stormwater BMP's	*BMP's installed correctly and functioning as intended per approved plans *SWPPP and all other necessary permits obtained and properly posted at the site

1300 ACCEPTANCE, WARRANTY PROCEDURES & RECORD DRAWINGS

1300.1 General

This chapter defines the requirements for approval and acceptance of the improvements installed within the rights-of-way and easements. This chapter also covers warranty procedures and record drawings requirements.

1300.1.1 Developer's Process

The developer shall be required to meet the following process prior to the acceptance of the public improvements and maintenance:

- A. Completion of Work. Completion of all public improvements required in the approved construction plans and specifications in accordance with these Standards.
- B. Notification. Developer notifies the engineer of record of the project completion.
- C. Inspection – By Engineer of Record. The engineer of record shall perform a site inspection to determine if the project is substantially complete and ready for a joint inspection as described below. The engineer of record shall generate a punch list of deficiencies and all items on the list shall be corrected before scheduling a joint inspection. The City Engineer may deem some punch list items as incidental and allow the scheduling of the joint inspection.
- D. Joint Inspection. A joint inspection will be performed with City representatives, the engineer of record, and the contractor. The public improvements will be inspected for compliance to the plans, standards, and specifications. The engineer of record shall develop a final punch list.
- E. Correction of Deficiencies. The contractor or developer shall correct deficiencies. As-built survey may identify additional deficiencies, which shall be addressed as stated below.
- F. Submittal of Record Drawings. The engineer of record shall submit signed and sealed record drawings in accordance with the description in **Section 1200.5**. One hard copy, one electronic copy in PDF format and one electronic copy in .dwg format shall be submitted to the Engineering Department. A review copy in PDF format will be required for review purposes prior to the final submittal.
- G. Initial Acceptance. After the contractor has corrected the deficiencies identified on the punch list and the engineer of record has inspected the site, the City may be contacted by the engineer of record to inspect the corrections. Upon satisfactory completion of the punch list items and submittal of the public improvement construction costs, warranty guarantee, inspection reports, material testing reports, engineer certifications, final as-built drainage report, record drawings, and any other project requirements per the approval letter, initial acceptance shall be granted.

1300.2 Initial Acceptance

1300.2.1 Recommendation for Initial Acceptance

After the contractor has completed the punch list, the engineer of record shall inspect and notify the City Engineer that the work has been complete. The City Engineer shall recommend granting or denial of initial acceptance based on re-inspection for compliance with the joint inspection punch list.

If new deficiencies are found, either in quality or extent of construction, the developer/contractor shall be notified in writing of these deficiencies. These deficiencies shall be also be corrected, and additional inspections shall be performed until the work is acceptable.

1300.2.2 Initial Acceptance Letter

The City Engineer shall issue written notice either granting or withholding initial acceptance within ten working days of the acceptance re-inspection. The initial acceptance letter shall specify the date on which the developer is eligible to request final acceptance.

1300.2.3 Submittal of Record Drawings

Prior to issuance of the initial acceptance, record drawings shall be completed, stamped, and signed by the engineer of record and submitted to the City Engineer. The record drawings shall be submitted in electronic form (as specified by the City Engineer). Refer to Section 1200.5 for record drawing requirements.

1300.2.4 Submittal of Warranty Guarantee

Prior to issuance of the initial acceptance, a warranty maintenance guarantee in the amount of 25% of all public improvements associated with the project shall be submitted to the City. The following items shall be included on the guarantee:

- a. Identify guarantee as for MAINTENANCE.
- b. Name of project.
- c. Project description & location (address, subdivision, if applicable).
- d. Description of items guaranteed & total construction cost of public infrastructure.
- e. Name the City of Bentonville as Obligee or Dual Obligee.
- f. Contact information for the provider of guarantee – (who purchased the guarantee).

1300.3 Warranty Period

1300.3.1 Definition of the Warranty Period

The warranty period for all public improvements shall be no less than one year. During the warranty period, the developer/contractor shall guarantee the work to be free of any damage or defects in workmanship and material. The warranty period shall start the date that initial acceptance occurs. The warranty period shall end with the final acceptance of the public improvements. If deficiencies are noted during the City's warranty inspection, the developer/contractor shall repair the deficiencies.

1300.3.2 The Warrantee Guarantee

A warranty guarantee shall be required for the entire warranty period. The warranty guarantee shall be in the form of a letter of credit, maintenance bond, or cashier's check in accordance with Appendix B Land Development Code, Article 300, Section 300.09 Maintenance Guarantee of the Bentonville Municipal Code. The guarantee shall be in the amount of 25% of the total value of the public improvements for the project, including water, sewer, drainage, sidewalk, etc.

1300.3.3 Time Frames for Completing Repair

At any time before the completion of the warranty period, the City may notify the developer of needed repairs. If repair areas are considered to be an imminent danger to the public health, safety, and welfare, the contractor shall act within 24 hours to complete the repair. If the work is not considered a safety issue, the developer has 10 working days to schedule the work, and 30 calendar days to complete the work. Extensions of time may be considered when necessary due to weather constraints.

1300.3.4 Failure to Complete Repair

If the developer has not completed the warranty repairs in the time frame specified, the City may choose to affect the necessary repairs. The City will either invoice the developer for all costs for the related work plus a \$500.00 administrative fee or it will collect from the guarantee.

1300.3.5 Responsibility for Maintenance

The developer is responsible for maintaining all public improvements throughout the warranty period.

1300.4 Final Acceptance

1300.4.1 Request for Final Inspection

Within 45 days of the end of the warranty period, the developer shall request a final inspection and acceptance, in writing, to the City Engineer.

1300.4.2 Preparation for Inspection

The developer is responsible for sweeping and cleaning public improvements for inspection. If the developer does not provide a clean site, including having curb flow lines clear of debris and dirt, then the inspection may be postponed until the site is sufficiently clean.

1300.4.3 Inspection and Punch List

The City Engineer shall inspect all public improvements related to the project. If applicable, a written final punch list shall be compiled listing any necessary repair or replacement of materials or workmanship. The punch list shall be sent to the developer and contractor.

1300.4.4 Damage Caused by City Crews

If the developer can demonstrate that the City maintenance crews caused damage to certain improvements, the developer will not be held responsible for the replacement.

1300.4.5 Re-inspection

If repair or replacement of public improvements is required, the developer/contractor shall complete repair or replacement within 30 calendar days of receipt of the final punch list, unless otherwise agreed upon. Upon completion, the developer/contractor shall contact the City Engineer for a re-inspection.

1300.4.6 Release from Responsibility

Once all repairs or replacements are satisfactorily completed, the developer/contractor shall receive written notice from the City that all public improvements are complete and the City releases the developer/contractor from responsibility for all future maintenance and repairs for the public improvements on this project.

1300.4.7 Release of Warranty Guarantee

Upon the satisfactory completion of the final punch list the City will release the warranty guarantee.

1300.4.8 Failure to Complete Repair

If the developer has not completed the warranty repairs in the time frame specified, the City may choose to affect the necessary repairs. The City will either invoice the developer for all costs for the related work plus a \$500.00 administrative fee or it will collect from the guarantee.

1300.5 Record Drawings

1300.5.1 Updating Plans with Design Changes

The construction plans shall be updated with all design changes that occurred after plan approval. The final installation of all public infrastructure shall be surveyed prior to submittal of record drawings. The professional surveyor shall provide stamped drawings specifically identifying the limits of as-built survey performed. Field changes not previously approved by City Engineer, discovered during the as-built process are at the contractor's risk and may not be accepted.

- A. Street. Street record drawings shall identify the actual pavement type and grade or mix type used; if the subgrade was treated or additional undercut: location of any under drains added; and document all changes to widths and lengths for streets, sidewalks, and curbs.
 - a. At 100 ft interval or as necessary to reflect actual placement of roadway, the back of curb shall be located in reference to the existing/or proposed right-of-way.
 - i. Deviations more than 6 inches shall be identified on the plans and included in a transmittal letter to the City Engineer.
 - ii. Additional right-of-way dedication or reconstruction may be required.

- b. At grade breaks, no more than 500 ft intervals, profile and cross slope verification will be performed and shown on plans.
 - i. Deviations more than 0.5% profile or cross slope shall be identified on the plans and included in a transmittal letter to the City Engineer.
 - ii. Geometric K values no longer meeting city criteria shall be evaluated.
 - iii. Additional calculations or reconstruction may be required.
 - c. Record drawings shall identify all signage and striping locations as actually placed in the project.
- B. Drainage. Record storm drainage drawings shall document the location, size, rim elevation and invert elevation of all pipes (including pipe class), inlets, riprap, headwalls, detention pond volumes, swale cross-sections and all other storm drainage infrastructure shown on the construction plans, including those improvements located in areas outside of the public right- of-way, if appropriate. Record drawings shall also show all pipe and/or drainage way/swale grade percentages.
- a. More than 2-foot deviation of design alignment shall require new easement dedication or adjustment of the storm drain.
 - b. More than 0.1-foot deviation of design elevation shall require revisions in the drainage report. Any field changes, that no longer meets drainage design criteria, shall be removed and replaced.
 - c. Any field changes, that creates an adverse slope, shall be removed and replaced to original design.
 - d. Change in specified material shall require revisions to the drainage report.
- C. Utilities. Water and sanitary sewer record drawings shall document the location, size, invert elevations and rim elevation of all pipes and manholes, location of all valves, changes in direction, encasements, meters, services, hydrants, etc.
- a. Professional surveyor shall provide stamped drawings specifically identifying the limits of as-built survey performed.
 - b. More than 2-foot deviation of design alignment shall require new easement dedication or adjustment of the utility drain.
 - c. See Water & Sewer Specifications for additional criteria.
- D. Other. Record drawings shall verify other information as specifically requested by the City Engineer or outlined in the project's conditional approval letter.

1300.5.2 Minor Design Changes

Minor changes are not required to be included on the record drawings. Minor changes include incorrect references and grade changes less than 0.1 foot.

1300.5.3 Submittal of Plans

An Arkansas licensed professional engineer shall update and stamp the record drawing construction plans. The engineer of record shall submit the plans to the City and receive approval prior to the initial acceptance.

The engineer of record must also certify that the streets, sidewalk, storm sewer, water, fire line, and sewer lines, etc., were installed per approved plans and City of Bentonville requirements.

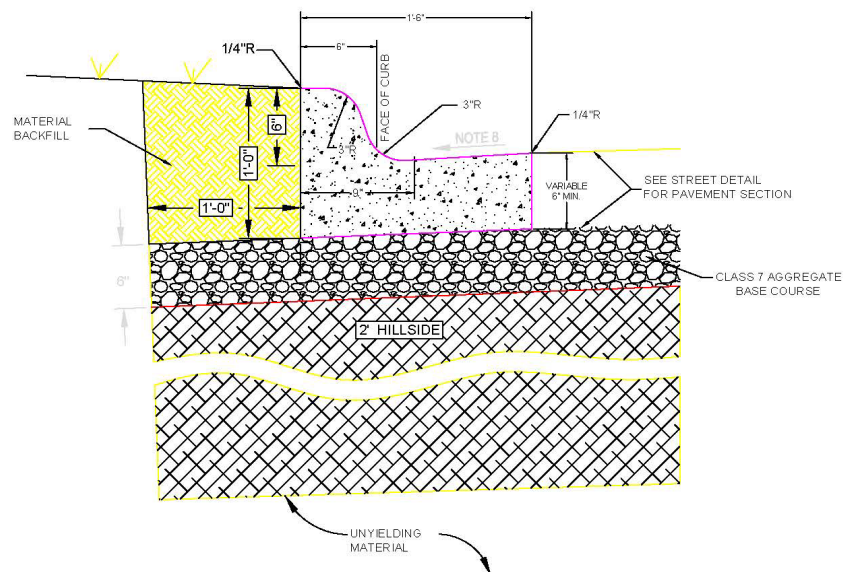
1300.5.4 Form of Submittal

All record documents shall be submitted in the following formats as required by the City Engineer:

- A. Record drawings shall be submitted in electronic format as specified by the City Engineer, in PDF format, in .dwg format and three full size paper copies. CAD files with "As-built" information shall be georeferenced in an AutoCad compatible digital format for incorporation into the City's GIS systems.
- B. Warranty guarantee shall be original documents.
- C. All other documents shall be submitted in electronic PDF format.
 - a. Public improvement construction costs;
 - b. Inspection reports;
 - c. Submittals & material testing reports;
 - d. Engineer certifications;
 - e. Final as-built drainage report.

1400 Detail Drawings

1400.01 Curb and Gutter Detail (CG-1)

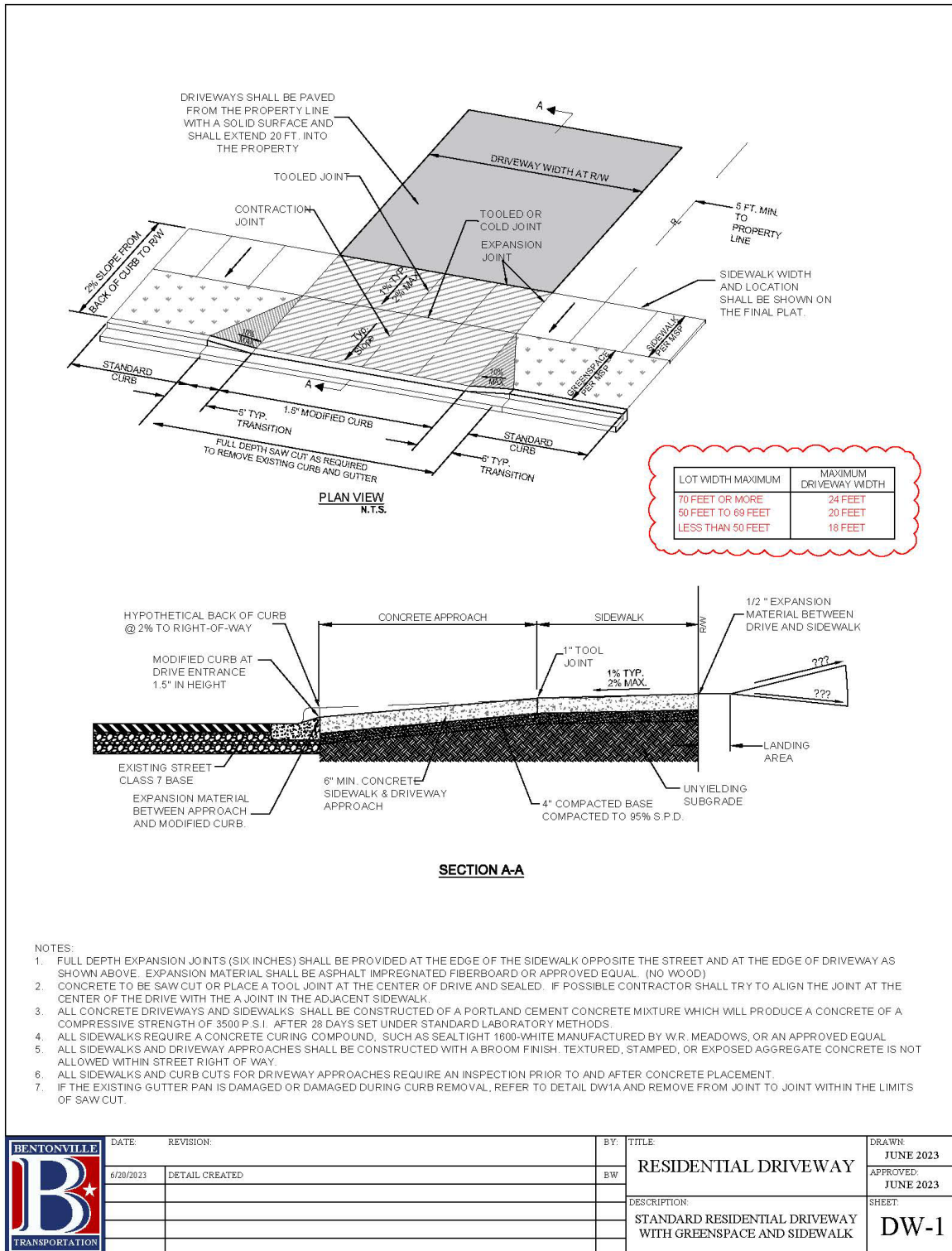


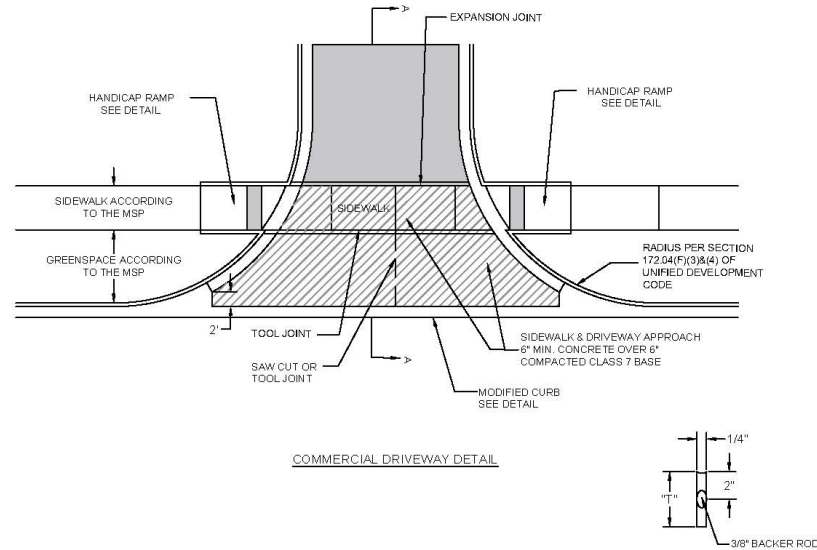
CURB & GUTTER NOTES:

1. CONTRACTION JOINTS SHALL BE 1/8" TO 3/8" X 1 1/2" AT 15 FT. INTERVALS. ALL CONTRACTION JOINTS AND COLD JOINTS SHALL BE FILLED WITH JOINT SEALANT TO FINISHED GRADE.
2. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,500 p.s.i.
3. EXPANSION MATERIAL SHALL BE REQUIRED AT ALL STATIONARY STRUCTURES AND ENDS OF CURB RETURNS. THE EXPANSION MATERIAL SHALL BE 1/2" ASPHALT IMPREGNATED FIBERBOARD CONFORMING TO AASHTO M-213. EXPANSION JOINT MATERIAL SHALL BE LEFT 1/2" LOWER THAN GRADE OR TRIMMED 1/2" LOWER THAN GRADE.
4. EXPANSION JOINTS SHALL BE FILLED WITH JOINT SEALANT SHAPED TO THE CROSS SECTION OF THE CURB AND CONSTRUCTED AT RIGHT ANGLES WITH THE CURB LINE.
5. FINISH SHALL BE MEDIUM BROOM FINISH.
6. CONCRETE CURING COMPOUND SHALL BE SEALTIGHT 1600-WHITE MANUFACTURED BY W.R. MEADOWS, OR AN APPROVED EQUAL.
7. CONCRETE JOINT SEALANT SHALL BE SONNEBORN "SONOLASTIC SLI" OR AN APPROVED EQUAL. CLOSED CELL BACKER ROD SHALL BE USED IN DEEP JOINTS, AS NEEDED, ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
8. GUTTER SHALL MATCH THE CROSS SLOPE OF THE ROAD WITHIN $\pm 0.5\%$. GUTTER DRAINING THE OPPOSITE DIRECTION AS THE ROAD WILL NOT BE ACCEPTED.

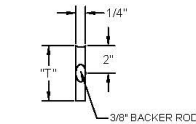
	DATE:	REVISION:	BY:	TITLE:	DRAWN:
	6/20/2023	DETAIL CREATED	BW	CURB AND GUTTER	JUNE 2023
					APPROVED:
					JUNE 2023
				DESCRIPTION:	SHEET:
				TYPE "A" CURB AND GUTTER	CG-1

1400.02 Residential Driveway Detail (DW-1)



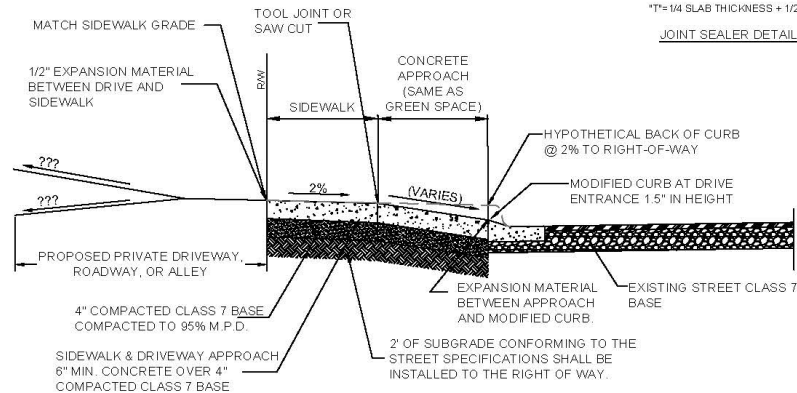


COMMERCIAL DRIVEWAY DETAIL



T = 1/4 SLAB THICKNESS + 1/2"

JOINT SEALER DETAIL



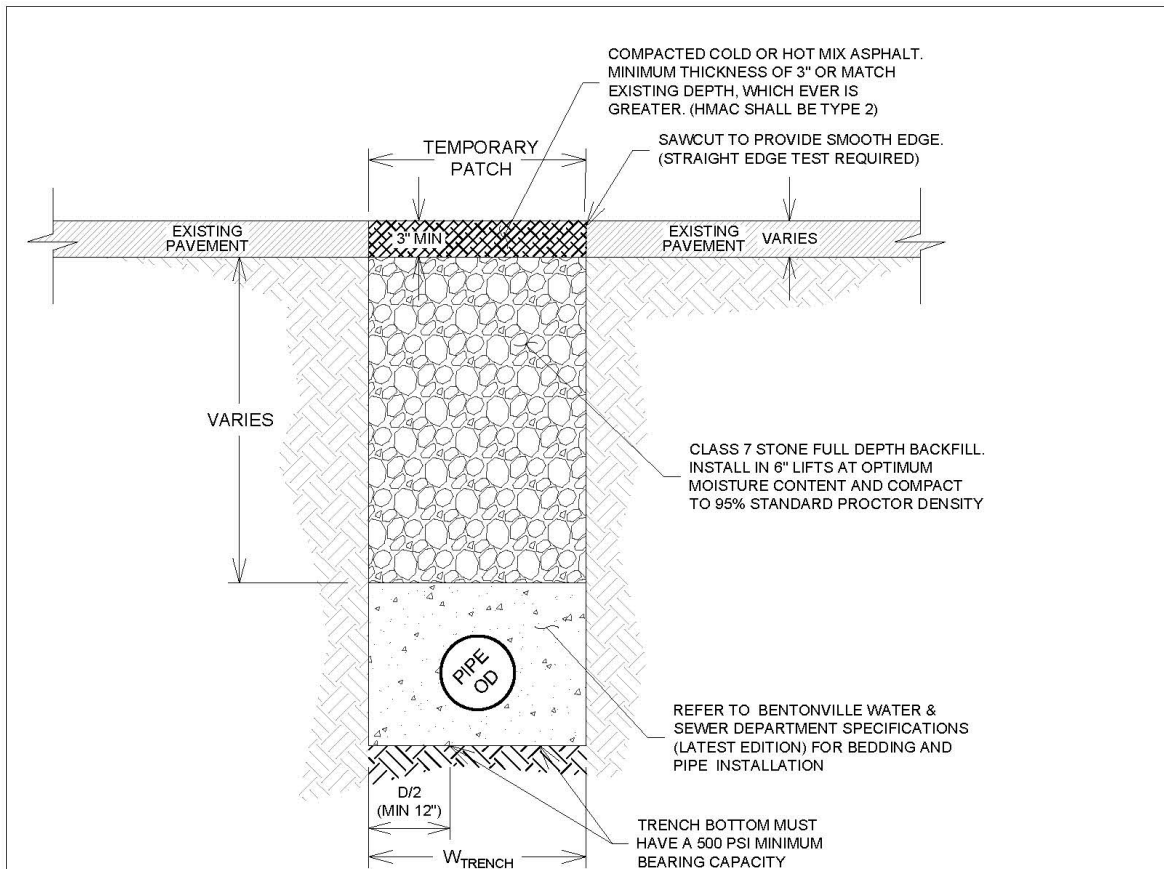
SECTION A-A

NOTES:

1. FULL DEPTH EXPANSION JOINTS (FOUR INCHES) SHALL BE PROVIDED AT THE EDGE OF THE SIDEWALK OPPOSITE THE STREET.
2. CONCRETE TO BE SAWCUT OR PLACE A TOOL JOINT AT THE CENTER OF DRIVE AND SEALED. IF POSSIBLE CONTRACTOR SHALL TRY TO ALIGN THE JOINT AT THE CENTER OF THE DRIVE WITH THE A JOINT IN THE ADJACENT SIDEWALK.
3. ALL CONCRETE DRIVEWAYS AND SIDEWALKS SHALL BE CONSTRUCTED OF A PORTLAND CEMENT CONCRETE MIXTURE WHICH WILL PRODUCE A CONCRETE OF A COMPRESSIVE STRENGTH OF 3500 P.S.I. AFTER 28 DAYS SET UNDER STANDARD LABORATORY METHODS.
4. ALL SIDEWALKS REQUIRE A CONCRETE CURING COMPOUND.
5. ALL SIDEWALKS AND DRIVEWAY APPROACHES SHALL BE CONSTRUCTED WITH A BROOM FINISH.
6. *ALL SIDEWALKS AND CURB CUTS FOR DRIVEWAY APPROACHES REQUIRE AN INSPECTION PRIOR TO CONCRETE PLACEMENT.*

	DATE:	REVISION:	BY:	TITLE:	DRAWN:
	6/20/2023	DETAIL CREATED	BW	COMMERCIAL DRIVEWAY	JUNE 2023
				DESCRIPTION:	APPROVED:
				STANDARD COMMERCIAL DRIVEWAY WITH GREENSPACE AND SIDEWALK	JUNE 2023
					SHEET:
					DW-2

1400.04 Street Cut Temporary Patch Detail (E-1)



STREET CUT TEMPORARY PATCH

(DONE BY CONTRACTOR CUTTING ROAD)

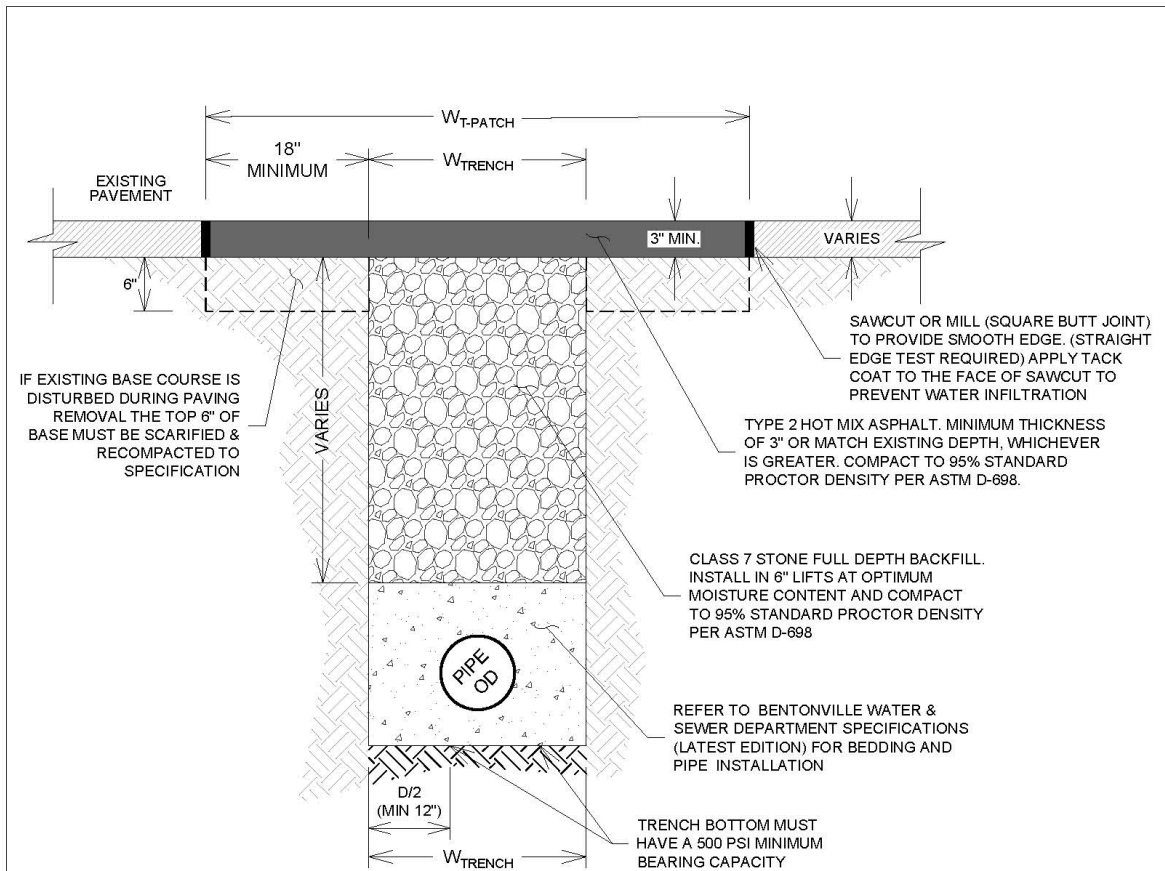
NOTES:

1. FLOWABLE FILL AS AN ALTERNATIVE TO CLASS 7 FULL DEPTH BACKFILL MUST BE REQUESTED AND APPROVED BY ENGINEERING DEPARTMENT PRIOR TO USE. A 300 PSI MIX IS REQUIRED IF APPROVED.
2. REFER TO BENTONVILLE WATER & SEWER SPECIFICATIONS AND DETAILS FOR INFORMATION REGARDING PIPE BEDDING.
3. REFER TO CITY OF BENTONVILLE STREET CUT SPECIFICATIONS (LATEST EDITION) FOR ADDITIONAL INFORMATION.
4. A RIGHT-OF-WAY PERMIT IS REQUIRED FOR ALL STREET CUTS. THESE CAN BE FOUND ON OUR WEBSITE (WWW.BENTONVILLEAR.COM) OR PICKED UP AT THE STREET/ENGINEERING DEPARTMENT OFFICE LOCATED AT 3200 SW MUNICIPAL DRIVE.
5. INSURE AN APPROVED TRAFFIC CONTROL PLAN IS IN PLACE PRIOR TO CLOSING ANY ROADWAY.
6. NO OVERNIGHT STREET CUTS ARE ALLOWED UNLESS APPROVED BY THE CITY STREET DEPARTMENT AND IS MARKED ACCORDING TO NIGHT TIME CLOSURE REQUIREMENTS FOUND IN MUTCD AND IS COVERED WITH STEEL TRAFFIC PLATES.

DETAIL
E-1



1400.05 Street Cut Permanent Patch Detail (E-2)



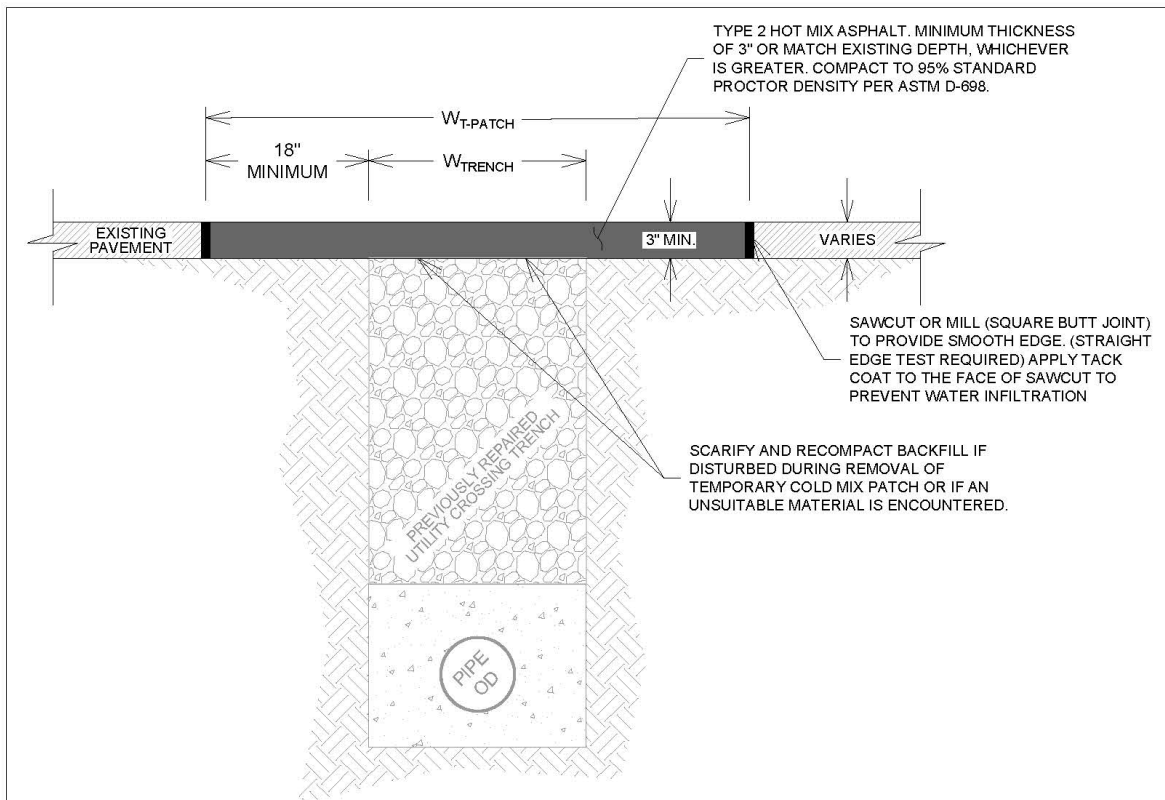
STREET CUT PERMANENT PATCH

NOTES:

1. FLOWABLE FILL AS AN ALTERNATIVE TO CLASS 7 FULL DEPTH BACKFILL MUST BE REQUESTED AND APPROVED BY ENGINEERING DEPARTMENT PRIOR TO USE. A 300 PSI MIX IS REQUIRED IF APPROVED.
2. REFER TO BENTONVILLE WATER & SEWER SPECIFICATIONS AND DETAILS FOR INFORMATION REGARDING PIPE BEDDING.
3. REFER TO CITY OF BENTONVILLE STREET CUT SPECIFICATIONS (LATEST EDITION) FOR ADDITIONAL INFORMATION.
4. A RIGHT-OF-WAY PERMIT IS REQUIRED FOR ALL STREET CUTS. THESE CAN BE FOUND ON OUR WEBSITE (WWW.BENTONVILLEAR.COM) OR PICKED UP AT THE STREET/ENGINEERING DEPARTMENT OFFICE LOCATED AT 3200 SW MUNICIPAL DRIVE.
5. INSURE AN APPROVED TRAFFIC CONTROL PLAN IS IN PLACE PRIOR TO CLOSING ANY ROADWAY.
6. NO OVERNIGHT STREET CUTS ARE ALLOWED UNLESS APPROVED BY THE CITY STREET DEPARTMENT AND IS MARKED ACCORDING TO NIGHT TIME CLOSURE REQUIREMENTS FOUND IN MUTCD AND IS COVERED WITH STEEL TRAFFIC PLATES.

DETAIL
E-2





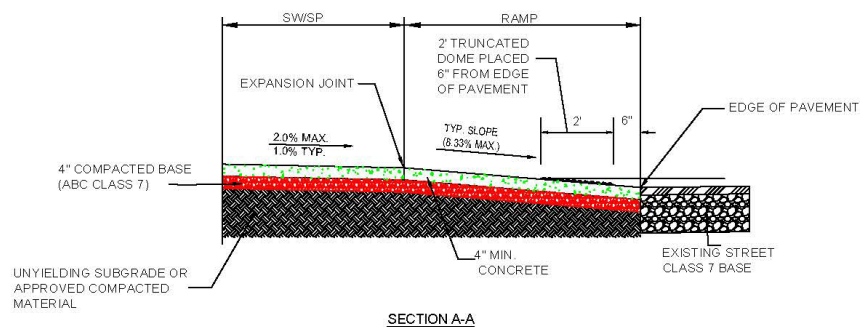
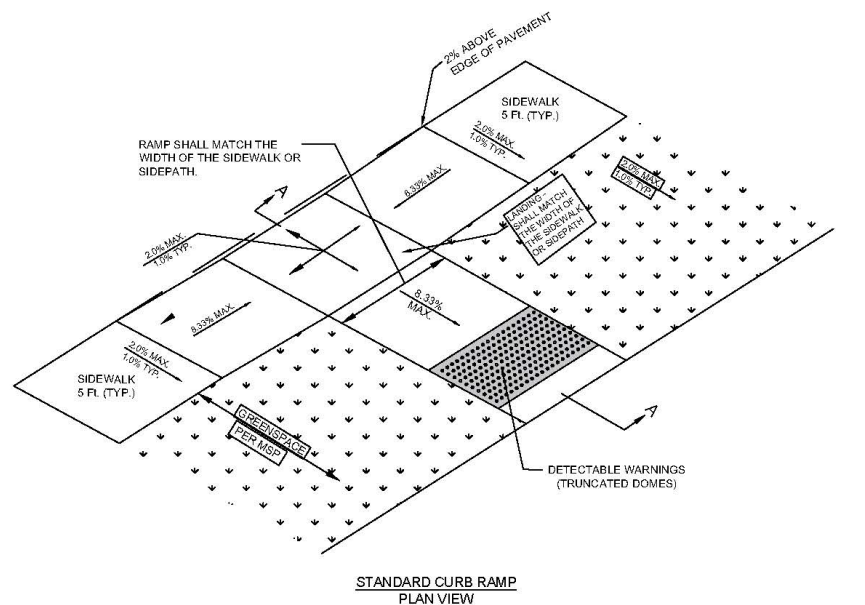
BID/CONTRACTED STREET CUT REPAIR

(AWARDED CONTRACTOR REPAIRS WITH CITY)

NOTES:

1. FLOWABLE FILL AS AN ALTERNATIVE TO CLASS 7 FULL DEPTH BACKFILL MUST BE REQUESTED AND APPROVED BY ENGINEERING DEPARTMENT PRIOR TO USE. A 300 PSI MIX IS REQUIRED IF APPROVED.
2. REFER TO BENTONVILLE WATER & SEWER SPECIFICATIONS AND DETAILS FOR INFORMATION REGARDING PIPE BEDDING.
3. REFER TO CITY OF BENTONVILLE STREET CUT SPECIFICATIONS (LATEST EDITION) FOR ADDITIONAL INFORMATION.
4. A RIGHT-OF-WAY PERMIT IS REQUIRED FOR ALL STREET CUTS. THESE CAN BE FOUND ON OUR WEBSITE (WWW.BENTONVILLEAR.COM) OR PICKED UP AT THE STREET/ENGINEERING DEPARTMENT OFFICE LOCATED AT 3200 SW MUNICIPAL DRIVE.
5. INSURE AN APPROVED TRAFFIC CONTROL PLAN IS IN PLACE PRIOR TO CLOSING ANY ROADWAY.
6. NO OVERNIGHT STREET CUTS ARE ALLOWED UNLESS APPROVED BY THE CITY STREET DEPARTMENT AND IS MARKED ACCORDING TO NIGHT TIME CLOSURE REQUIREMENTS FOUND IN MUTCD AND IS COVERED WITH STEEL TRAFFIC PLATES.





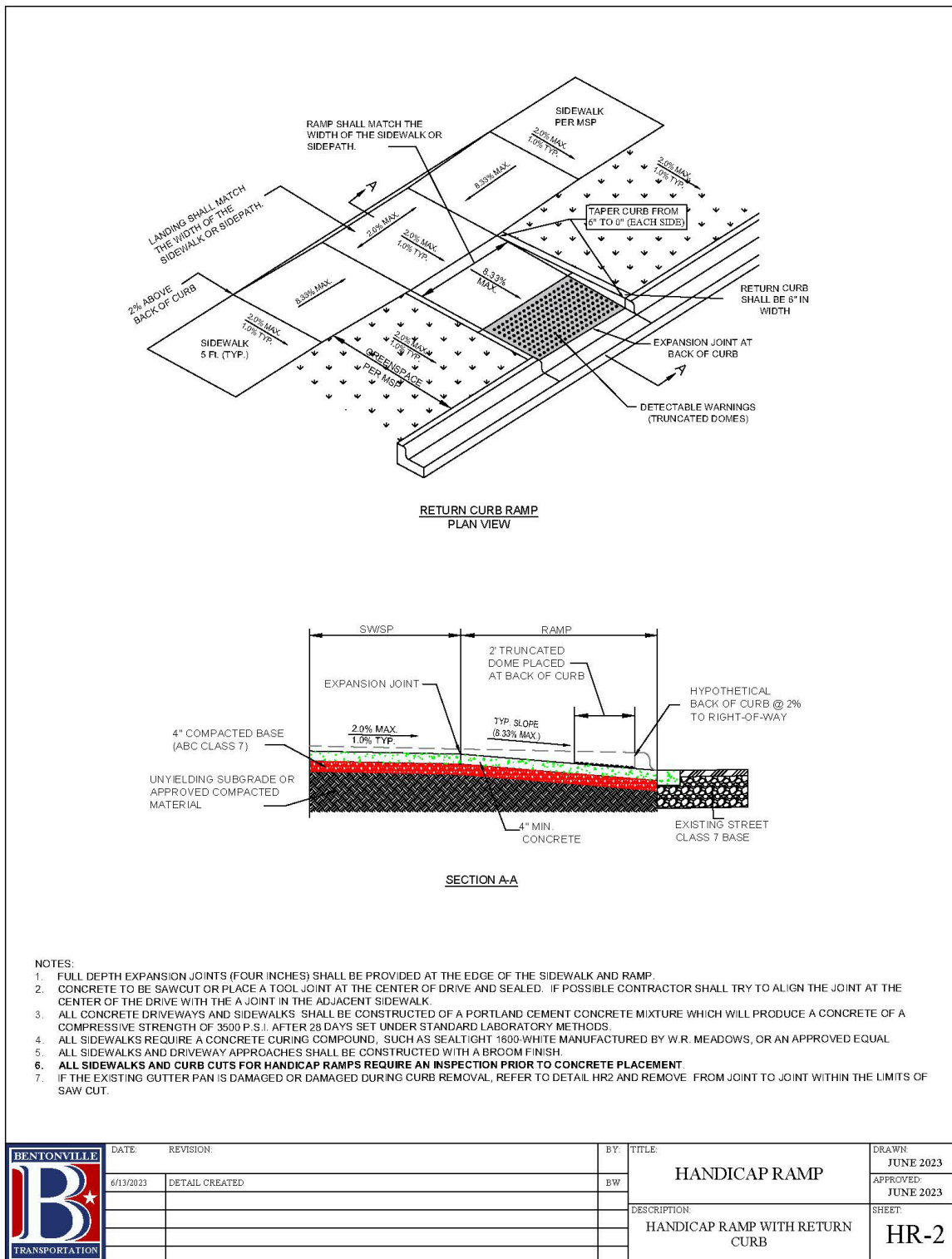
SECTION A-A

NOTES:

1. THIS RAMP SHALL BE USED WHEN THERE IS NOT ANY CURB AND GUTTER PRESENT WITHIN THE ROADWAY.
2. FULL DEPTH EXPANSION JOINTS (FOUR INCHES) SHALL BE PROVIDED AT THE EDGE OF THE SIDEWALK AND RAMP.
3. CONCRETE TO BE SAWCUT OR PLACE A TOOL JOINT AT THE CENTER OF DRIVE AND SEALED. IF POSSIBLE CONTRACTOR SHALL TRY TO ALIGN THE JOINT AT THE CENTER OF THE DRIVE WITH THE A JOINT IN THE ADJACENT SIDEWALK.
4. ALL CONCRETE DRIVEWAYS AND SIDEWALKS SHALL BE CONSTRUCTED OF A PORTLAND CEMENT CONCRETE MIXTURE WHICH WILL PRODUCE A CONCRETE OF A COMPRESSIVE STRENGTH OF 3500 P.S.I. AFTER 28 DAYS SET UNDER STANDARD LABORATORY METHODS.
5. ALL SIDEWALKS REQUIRE A CONCRETE CURING COMPOUND, SUCH AS SEALIGHT 1600-WHICH MANUFACTURED BY W.R. MEADOWS, OR AN APPROVED EQUAL.
6. ALL SIDEWALKS AND DRIVEWAY APPROACHES SHALL BE CONSTRUCTED WITH A BROOK FISH.
7. SIDEWALKS AND DRIVEWAY CUTS FOR HANDICAPPED INSPECTION PRIOR TO CONCRETE PLACEMENT.
8. IF THE EXISTING GUTTER PAN IS DAMAGED OR DAMAGED DURING CURB REMOVAL, REFER TO DETAIL HR2 AND REMOVE FROM JOINT TO JOINT WITHIN THE LIMITS OF SAW CUT.

	DATE:	REVISION:	BY:	TITLE:	DRAWN: JUNE 2023
	6/13/2023	DETAIL CREATED	BW	HANDICAP RAMP	APPROVED: JUNE 2023
				DESCRIPTION:	SHEET:
				HANDICAP RAMP FOR USE WITH NO CURB AND GUTTER	HR-1

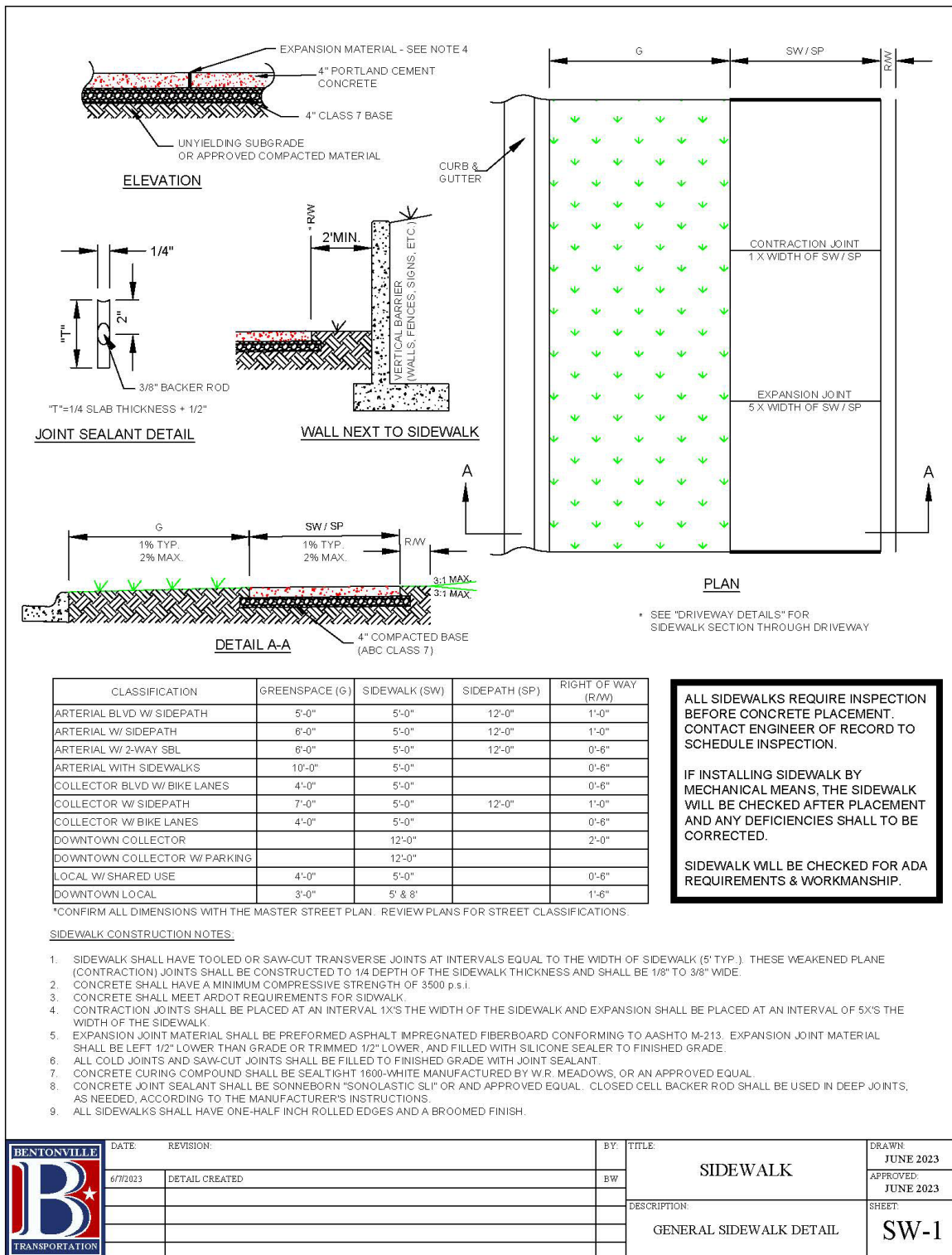
1400.08 Handicap Ramp – Return Curb Detail (HR-2)



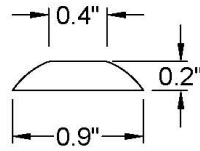


1. FULL DEPTH EXPANSION JOINTS (FOUR INCHES) SHALL BE PROVIDED AT THE EDGE OF THE SIDEWALK AND RAMP.
2. CONCRETE TO BE SAWCUT OR PLACE A TOOL JOINT AT THE CENTER OF DRIVE AND SEALED. IF POSSIBLE CONTRACTOR SHALL TRY TO ALIGN THE JOINT AT THE CENTER OF THE DRIVE WITH THE A JOINT IN THE ADJACENT SIDEWALK.
3. ALL CONCRETE DRIVEWAYS AND SIDEWALKS SHALL BE CONSTRUCTED OF A PORTLAND CEMENT CONCRETE MIXTURE WHICH WILL PRODUCE A CONCRETE OF A COMPRESSIVE STRENGTH OF 3500 P.S.I. AFTER 28 DAYS SET UNDER STANDARD LABORATORY METHODS.
4. ALL SIDEWALKS REQUIRE A CONCRETE CURING COMPOUND, SUCH AS SEALTIGHT 1600-WHITE MANUFACTURED BY W.R. MEADOWS, OR AN APPROVED EQUAL.
5. ALL SIDEWALKS AND DRIVEWAY APPROACHES SHALL BE CONSTRUCTED WITH A BROOM FINISH.
6. **ALL SIDEWALKS AND CURB CUTS FOR HANDICAP RAMPS REQUIRE AN INSPECTION PRIOR TO CONCRETE PLACEMENT.**
7. IF THE EXISTING GUTTER PAN IS DAMAGED OR DAMAGED DURING CURB REMOVAL, REFER TO DETAIL HR2 AND REMOVE FROM JOINT TO JOINT WITHIN THE LIMITS OF SAW CUT.

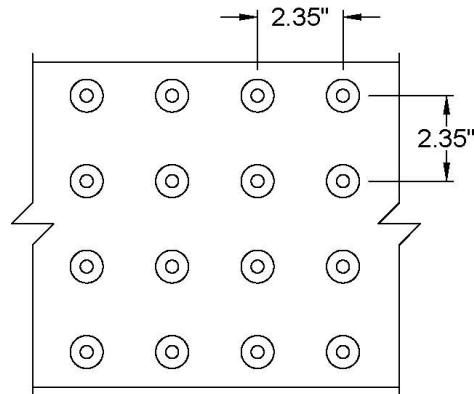
145



1400.11 Truncated Dome (TD-1)



TRUNCATED DOME SECTION



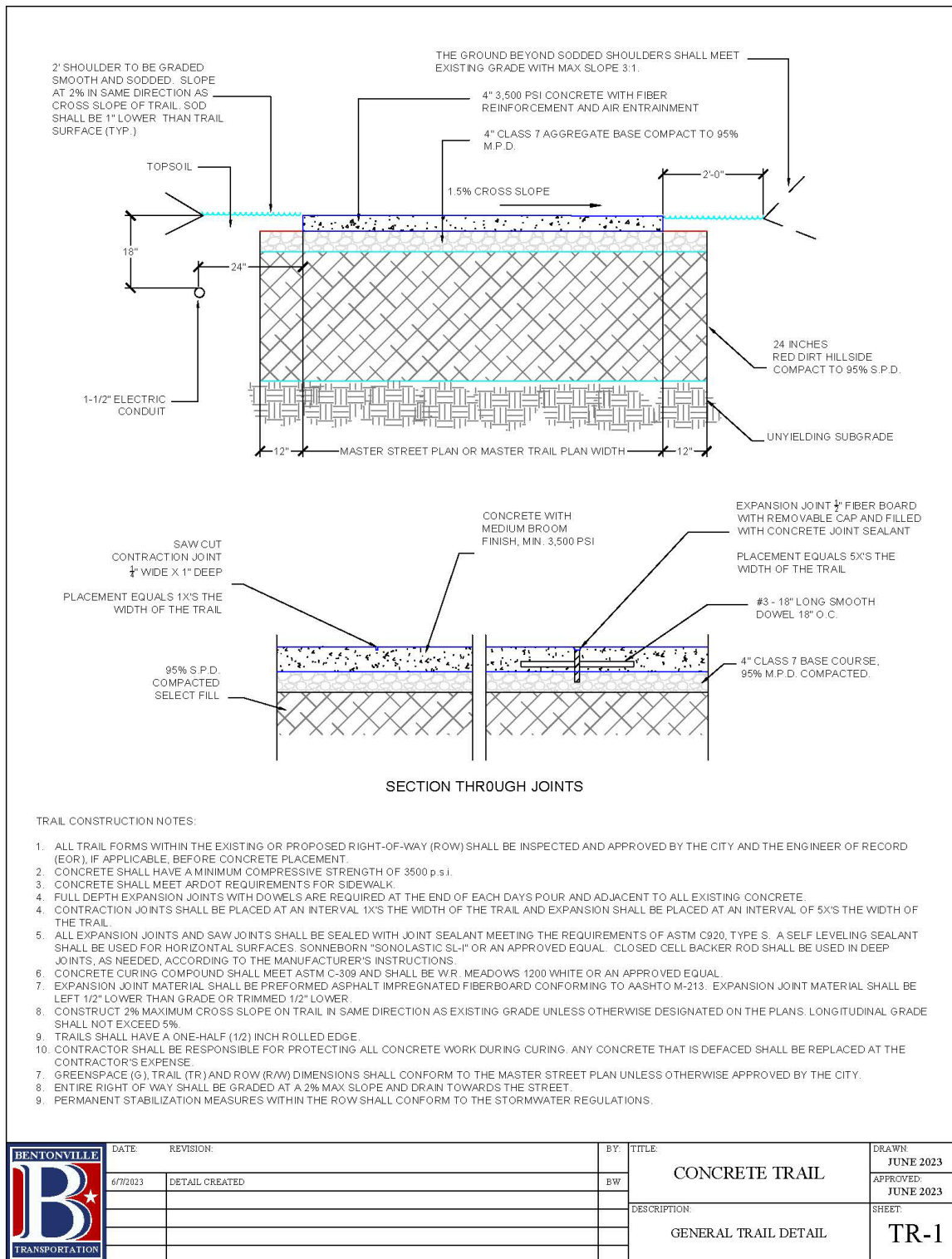
TRUNCATED DOME SPACING

DETECTABLE WARNING DEVICE DETAIL

- NOTES:
1. THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS LOCATED AT THE BACK OF CURB.
 2. TRUNCATED DOMES SHALL HAVE A DIAMETER OF 0.9 INCH AT THE BOTTOM, A DIAMETER OF 0.4 INCH AT THE TOP, A HEIGHT OF 0.2 INCH, AND A CENTER-TO-CENTER SPACING OF 2.35 INCHES MEASURED ALONG ONE SIDE OF A SQUARE ARRANGEMENT.
 3. DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
 4. DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
 5. TYPE OF DETECTABLE WARNING DEVICE SHALL BE APPROVED BY THE CITY OF BENTONVILLE PRIOR TO INSTALLATION. STAMPED CONCRETE SHALL NOT BE USED AS A DETECTABLE WARNING DEVICE.

	DATE:	REVISION:	B.Y.	TITLE:	DRAWN:
	6/13/2023	DETAIL CREATED	BW	DETECTABLE WARNING DEVICE	JUNE 2023
					APPROVED:
					JUNE 2023
				DESCRIPTION:	SHEET:
				DETECTABLE WARNING DEVICE WITH TRUNCATED DOMES	TD-1

1400.12 Concrete Trail Detail (TR-1)





Cottage Zoning

PC Date: 4/2/2024

Staff Report Details

Project Number	2024-720
Applicant / Current Owner	
Site Area	+/- [Site_Area] Acres
Current Zoning	
Requested Zoning	
Current Future Land Use Map Designation	
Requested Future Land Use Map Designation	
Development Type / Use	
Related projects	

Property Description

Project Details

Relationship to the General Plan / Projected Traffic Impact

Public Comment

Has Staff received Public Comment at the time of this report? : **No**

Analysis / Waivers

Conclusion

Additional Details



Cottage Court Zoning

PC Date: 4/2/2024

Reviewer: Tyler Overstreet, AICP, Planning Director

Type	Amendment
Code Impacted	Zoning Code
Section(s)	Articles 201, 401, 501 & 601
Recommendation	APPROVAL

REQUEST

Approval of an ordinance amending the Zoning Code to establish cottage courts as an acceptable land use.

PROPOSED CHANGES

In Art. 201 Definitions:

- **Sec. 201.02 Definition of Terms and Uses.**
 - Add *Dwelling, Cottage Court* definition.
 - Amend *Dwelling, Multi-Family* by excluding cottage court.
 - Amend *Dwelling, Townhouse* to limit to six units.
 - Amend the definition of *Dwelling, Two-Family*.

In Art. 401 Zoning District Regulations:

- **Sec. 401.07 Residential (R) District Regulations:**
 - Amend *Lot and Area Standards* to add a Cottage Court building type to R-1, R-2, R-3 and R-4 districts.
 - Reference Cottage Court setback requirements in Sec. 601.07.
- **Sec. 401.07-B Downtown Neighborhood (DN) Districts Regulations:**
 - Amend *Building Types Allowed* to include Cottage Court in DN-1, DN-2, DN-3, and DN-4.
 - Amend to allow ground-floor commercial uses in multifamily buildings.
 - Amend *Lot and Area Standards* to add Cottage Court to DN-1, DN-2, DN-3 and DN-4.
 - Reference Cottage Court setback requirements in Sec. 601.07.

In Art. 501 Off Street Parking and Loading:

- **Sec. 201.06 Number of Off-Street Parking Spaces required.**
 - Amend so that the RC-2 and RC-3 space requirements are applicable to all Downtown Neighborhood (DN) Districts.

In Article 601 Use Regulations:

- **Add Sec. 601.35 Cottage Courts.**
 - Add regulations for cottage court developments, including applicability, maximum number of units per lot, set back standards, height and roofs, open space, pedestrian connectivity, parking, bicycle parking, design requirements, and approval process.

ORDINANCE NO. _____

AN ORDINANCE AMENDING BENTONVILLE MUNICIPAL CODE
APPENDIX A ZONING CODE TO ESTABLISH REGULATIONS FOR
COTTAGE COURT DEVELOPMENT; AND FOR OTHER PURPOSES.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY
OF BENTONVILLE, ARKANSAS:

Section 1: That Bentonville Municipal Code, Appendix A Zoning Code, shall be and is hereby amended with *Attachment A: Cottage Court Zoning*, an electronic copy and hard copy of which is on file with the City Clerk and is hereby adopted by references as though it were copied herein fully.

Section 2: That Bentonville Municipal Code, Appendix A Zoning Code, Sec. 401.04 Table of Uses for Zoning Districts shall be and is hereby amended by deleting adding the following use:

RESIDENTIAL	Use Regs.	A1	R E	R 1	R 2	R 3	R 4	R- M H	R- ZL	RC -2	R C- 3	R O	D N- 1	D N- 2	D N- 3	D N- 4	C 1	C 2	C 3	D C	D E	I1	I2
<u>Dwelling, Cottage Court</u>	<u>601.35</u>			<u>C</u>	<u>●</u>	<u>●</u>	<u>●</u>						<u>●</u>	<u>●</u>	<u>●</u>	<u>●</u>					<u>●</u>		

Section 3- Severability Provision: If any part of this Ordinance is held invalid, the remainder of this Ordinance shall continue in effect as if such invalid portion never existed; and

Section 4 - Repeal of Conflicting Provisions: All Ordinances, Resolutions, or Orders of the City Council, or parts of the same, in conflict with this Ordinance are repealed to the extent of such conflict.

PASSED and APPROVED this _____ day of _____, 2024.

APPROVED:

Stephanie Orman, Mayor

ATTEST:

Kirby Romines, City Clerk

Attachment A
Cottage Court Zoning

*Underline text to be added; strikethrough text to be deleted.
Any sections(s) or text not included in this attachment remain as currently approved.*

Article 201 Definitions: Sec. 201.02 Definitions of Terms and Uses

Dwelling: A building or part of a building designed or primarily used for human habitation containing permanent facilities for living, sleeping, cooking, and sanitation for occupancy by one or more families. This definition does not include a recreational vehicle trailer, hotel, dormitory, hospital or other accommodations for the transient public or group living or sleeping accommodations.

Dwelling, Accessory: A habitable living unit added to, created within or detached from a single-family dwelling that provides basic requirements for living, sleeping, eating, cooking and sanitation.

Dwelling, Cottage Court: A group of no less than four and no more than 12, detached structures arranged around a shared courtyard visible from the street. Each unit has its own separate entrance oriented towards the shared courtyard.

Dwelling, Manufactured: A dwelling unit constructed in a factory in accordance with and meeting the definitions set forth in the Federal Manufactured Home Construction and Safety Standards, 24 C.F.R. pt. 3280, promulgated by the United States Department of Housing and Urban Development under the authority of 42 U.S.C. 5401 et. seq., as it existed on January 1, 1976 and as defined in the Arkansas State Statute Sec. 20-25-102.

Dwelling, Modular: A factory built structure produced in accordance with the standards set forth in the City of Bentonville Building Code and designed to be used as a dwelling unit with a foundation when connected to the required utilities.

Dwelling, Multi-Family: A residence designed for or occupied by three or more families with separate housekeeping and cooking facilities for each. This use shall include apartment houses, and multiple family dwellings. This definition shall not include "dwelling, townhouse or row house," or "dwelling, cottage court," which are separately defined. or "dwelling, condominium" which are separately defined.

Dwelling, Single-Family: A detached dwelling primarily designed for or occupied by one family only.

Dwelling, Single-family attached: Two side-by-side single-family dwellings attached by a common wall extending from the ground to the roof, with all exits opening directly to the outside, and each unit located on or capable of being located on a separate lot.

Dwelling, Townhouse structure: A dwelling structure consisting of three or more, but no more than six, attached townhouse dwelling units.

Dwelling, Townhouse unit: A single dwelling unit in a townhouse structure attached to the adjoining dwelling unit by a common wall extending from the ground to the roof with all exits opening directly to the outside, and each unit located on, or capable of being located on, a separate lot.

Dwelling, Townhouse or Row House - End Block: A townhouse or row house development located at the end of a block.

Dwelling, Two-Family: ~~A dwelling structure designed for or occupied by two families only with separate living, sleeping, cooking, and sanitation facilities for each dwelling unit and not located on or capable of being located on a separate lot.~~ A small, 1 to 2-story, detached structure that consists of two dwelling units arranged either side-by-side or stacked one above the other, each with an entry from a public right-of-way. This definition shall include a duplex and shall not include "dwelling, accessory" or "dwelling, single-family attached", which are separately defined.

Dwelling Unit: A room or group of rooms forming a single complete, independent living unit with permanent facilities for living, sleeping, cooking, and sanitation.

Dwelling, Zero Lot Line: A single detached dwelling unit that is constructed on a side property line of said lot; such that the wall located on the side property line should be "blank" with no openings of any type allowed.

DRAFT

Sec 401.07 Residential (R) Districts Regulations

(b) *Residential (R) districts lot and area standards.*

(1) *Standards.* The table below establishes minimum residential lot and area standards.

RESIDENTIAL (R) DISTRICTS LOT AND AREA STANDARDS						
District	Building type	Min. Lot area (sq. ft.)	Min. Land area/ Dwelling unit (sq. ft.)	Minimum lot width	Max. lot coverage	
					Interior lot	Exterior/ corner lot
R-E	All	87,120 (2 acres)	--	100'	10%	15%
R-1	Cottage Court	10,000	2,500	100'	50%	55%
	All others not listed	6,000	--	60'	40%	45%
R-2	Single-family	5,000	--	50'	40%	45%
	Two-family	5,000	--	50'	50%	55%
	Cottage Court	8,000	2,000	80'	50%	55%
	Townhouse - unit	2,000	--	20'	--	--
	Townhouse - structure	6,000	2,000	60'	65%	70%
	All others not listed	6,000	6,000	60'	40%	45%
R-3	Single-family	5,000	--	50'	40%	45%
	Two-family	5,000	--	50'	50%	55%
	Cottage Court	6,000	1,500	60'	50%	55%
	Townhouse - unit	2,000	--	20'	--	--
	Townhouse - structure	6,000	2,000	60'	65%	70%
	Multi-family	6,000	1,500	60'	65%	70%
	All others not listed	10,000	--	100'	50%	55%
R-4	Single-Family	5,000	--	50'	40%	45%
	Two-family	5,000	--	50'	50%	55%
	Cottage Court	6,000	1,500	60'	50%	55%
	Townhouse - unit	2,000	--	20'	--	--

RESIDENTIAL (R) DISTRICTS LOT AND AREA STANDARDS						
District	Building type	Min. Lot area (sq. ft.)	Min. Land area/ Dwelling unit (sq. ft.)	Minimum lot width	Max. lot coverage	
					Interior lot	Exterior/ corner lot
	Townhouse - structure	6,000	2,000	60'	65%	70%
	Multi-family	10,000	800	100'	50%	55%
	All others not listed	10,000	--	100'	50%	55%
R-MH	Manufactured home lots	4,500	4,500	50'	30%	35%
	Manufactured home parks	11,000	3,500	60'	30%	35%
	All others not listed	7,000	7,000	65'	40%	45%
R-ZL	Zero lot line	4,000	--	40'	60%	65%
R-O	Single-family	6,000	--	60'	40%	45%
	Two-family	7,000	--	70'	50%	55%
	All others not listed	6,000	6,000	60'	60%	65%
R-C2	Single-family and all others not listed	4,000	--	35', rear access via alley or private drive; 50', no rear access via alley or private drive	--	--
	Two-family Townhome structure - End block	--	2,000	20', rear access via alley or private drive; 25', no rear access via alley or private drive	--	--
R-C3	Single-family	3,000	--	15'	70%	75%
	Two-family	7,000	--	15'	70%	75%
	Townhome structure	--	1,200	15' per unit	No max.	No max.
	Multi-family	--	1,200	No minimum	No max.	No max.
	All others not listed	4,000	--	15'	70%	75%

(c) *Residential (R) districts setback standards.*

(1) *Standards:* The table below establishes the minimum residential setback standards.

(2) Cottage Courts. The setback requirements for Dwelling, Cottage Court are regulated in Section 601.17 of the Zoning Code.

(2)(3) Garages.

- a. *Street facing garage.* The minimum front setback for street facing garages shall be 30 feet from the property line that the garage faces.
- b. *Side or rear-loading garage.* The minimum front setback for side- or rear-loading garages shall be 20 feet from the front property line. The minimum garage setbacks apply to attached and detached garages.
- c. *Garages in R-C2 and R-C3 districts.* In the R-C2 and R-C3 districts, when a rear alley or rear private drive exists or is platted, a rear-loading garage is required. When no rear alley or rear private drive exists or is platted, a front-loading garage is allowed, but must be pushed toward the rear lot line and must be recessed a minimum of 6 feet from the front façade of the building.

(3) Easements. Where a utility easement extends beyond the required setback, the edge of the utility easement shall be the setback.

(d) *Residential (R) districts height standards.* The table below establishes the maximum height allowed in residential (R) districts.

(1) *Standards.*

RESIDENTIAL (R) DISTRICTS HEIGHT STANDARDS	
District	Maximum height allowed
RE, R-1, R-2, R-MH, R-ZL	36'
R-3, R-C2, R-C3, RO	40'
R-4	50'

- (2) *Guidelines.* New infill structures should be constructed at a height that is compatible to the adjacent structures. If at all possible, the new dwelling should have a height within an acceptable percentage to the Planning Commission to ensure compatible massing, scale and to prevent the overshadowing of the adjacent structure(s).
- (3) *Exceptions.* The principal use building or structure may exceed the maximum allowed height when an additional one foot of interior side yard setback is provided for each two feet of additional height. This exception does not apply to zero lot line buildings.

Sec 401.07-B Downtown Neighborhood (DN) Districts Regulations

(a) *Description and purpose.*

- (1) *DN-1, Downtown Low Density Residential purpose.* The intent of the DN-1 district is to preserve the established development pattern of portions of the downtown neighborhoods that are predominantly single-family with lots generally larger than 60 feet in width.
- (2) *DN-2, Downtown Medium Density Residential purpose.* The intent of the DN-2 district is to allow for an increased single-family density through small lot widths where alleys and infrastructure support such development, and where small-lot single-family development provides an appropriate transition between large-lot residential areas and those of higher density. In some instances, such as the end of blocks, townhouses may be appropriate in this district.
- (3) *DN-3, Downtown High Density Residential purpose.* The intent of the DN-3 district is to allow for an increased neighborhood density through the development of small-lot single-family housing and townhouses throughout the district. These areas tend to be adjacent to downtown commercial uses. In some instances, such as at the ends of blocks, multi-family apartment buildings may be an appropriate use in this district.
- (4) *DN-4, Downtown Mixed-use Residential purpose.* The intent of the DN-4 district is to allow for increased neighborhood density and increased local commerce through the development of multi-family housing and mixed-use structures. These areas tend to be located in areas of unique activity due to the surrounding context and resulting levels of activity and housing demand.

1.(b) *Design Standards.* This Code Section is not inclusive of all development requirements for Downtown Neighborhood (DN) districts. For additional information, reference Section 1100.22 of the Land Development Code.

(b)(c) *DN districts building types allowed.*

- (1) *Standards.* For the purposes of the Downtown Neighborhood districts, all structures must be classified as one of the building types below, as defined in Article 201, Definitions.

	Single-family	<u>Cottage Court</u>	Two-family	Townhouse		Multi-family		Mixed-use
				Block-end	Mid-block	Block-end	Mid-block	
DN-1	•	•						
DN-2	•	•	•	•				
DN-3	•	•	•	•	•	•		
DN-4	•	•	•	•	•	•	•	•

- (2) *Commercial buildings.* Commercial uses allowed in the DN-3 and DN-4 districts shall be located within a mixed-use building unless Planning Commission approves a conditional use permit for a single-use commercial building.

(2)(3) *Integrated Commercial Uses.* Ground-floor commercial uses are permitted in multi-family buildings subject to the design criteria outlined in Section 1100.22 of the Land Development Code.

(e)(d) DN districts lot and area standards.

- (1) *Standards.* The table below establishes the lot and area standards for all development in the Downtown Neighborhood districts. Accessory dwelling units (ADUs) are permitted in DN-1 and DN-2 on lots with single-family structures and do not require additional land area per the table below, but are subject to additional standards in Article 601.02 Accessory dwelling units.

DOWNTOWN NEIGHBORHOOD (DN) DISTRICTS LOT AND AREA STANDARDS							
				Lot Width		Max. Lot Coverage ©	
District	Building Type	Min. Lot Area (sq. ft.) ①	Min. Land Area/ Dwelling Unit (sq. ft.)	Min. Lot Width ②	Max. Lot Width	Interior lot	Exterior/ corner lot
DN-1	Single-family	5,000	--	50'	--	40%	45%
	<u>Cottage Court</u>	<u>10,000</u>	<u>2,500</u>	<u>100'</u>	<u>--</u>	<u>50%</u>	<u>55%</u>
DN-2	Single-family, alley access	4,000	--	40'	--	50%	55%
	Single-family, no alley access	5,000	--	50'	--	50%	55%
	Single- family attached - unit	2,000	--	20'	--	--	--
	Single-family attached - structure, alley access	4,000	--	40'	--	50%	55%
	Single-family attached - structure, no alley access	5,000	--	50'	--	50%	55%
	<u>Cottage Court</u>	<u>8,000</u>	<u>--</u>	<u>80'</u>	<u>--</u>	<u>50%</u>	<u>55%</u>
	Two-family, alley access	4,000	--	40'	--	50%	55%
	Two-family, no alley access	5,000	--	50'	--	50%	55%
	Townhouse unit	2,000	--	20'	--	--	--
	Townhouse structure	7,500	2,500	75'	--	60%	65%
DN-3	Single-family, alley access	4,000	--	40'	<u>-55'</u>	50%	55%
	Single-family, no alley access	5,000	--	50'	<u>-65'</u>	50%	55%
	Single-family attached - unit	2,000	--	20'	--	--	--
	Single-family attached – structure, alley access	4,000	--	40'	<u>55'--</u>	50%	55%
	Single-family attached – structure, no alley access	5,000	--	50'	<u>65'--</u>	50%	55%

DOWNTOWN NEIGHBORHOOD (DN) DISTRICTS LOT AND AREA STANDARDS							
				Lot Width		Max. Lot Coverage ©	
District	Building Type	Min. Lot Area (sq. ft.) ①	Min. Land Area/ Dwelling Unit (sq. ft.)	Min. Lot Width ②	Max. Lot Width	Interior lot	Exterior/ corner lot
	<u>Cottage Court</u>	<u>6,000</u>	--	<u>60'</u>	--	<u>50%</u>	<u>55%</u>
	Two-family, alley access	4,000	--	40'	<u>55'--</u>	50%	55%
	Two-family, no alley access	5,000	--	50'	<u>65'--</u>	50%	55%
	Townhouse unit	2,000	--	20'	--	--	--
	Townhouse structure	6,000	2,000	60'	--	65%	70%
	<u>Multi-family: Block-end, Mixed-Use, Commercial, and others not listed</u> Multi-family and all others not listed	10,000	800	100'	--	65%	70%
DN-4	Single-family, alley access	4,000	--	40'	50'	50%	55%
	Single-family, no alley access	5,000	--	50'	<u>--60'</u>	50%	55%
	Single-family attached - unit	2,000	--	20'	--	--	--
	Single-family attached – structure, alley access	4,000	--	40'	<u>--50'</u>	50%	55%
	Single-family attached – structure, no alley access	5,000	--	50'	<u>--60'</u>	50%	55%
	<u>Cottage Court</u>	<u>6,000</u>	--	<u>60'</u>	--	<u>50%</u>	<u>55%</u>
	Two-family, alley access	4,000	--	40'	50'	50%	55%
	Two-family, no alley access	5,000	--	50'	<u>--60'</u>	50%	55%
	Townhouse unit	2,000	--	20'	--	--	--
	Townhouse structure	6,000	2,000	60'	--	65%	70%
	Multi-family	8,000	800	80'	--	75%	80%
	Mixed-use, <u>Commercial</u> , and all others not listed	10,000	800	80'	--	75%	80%

(2) *Street frontage.* All lots in the DN districts shall have a minimum street frontage of 20'.

- (e) *DN districts setback standards.* The table below establishes the setback standards for the Downtown Neighborhood districts.

DOWNTOWN NEIGHBORHOOD (DN) DISTRICTS: MINIMUM SETBACK STANDARDS								
District	Building type	Front Yard		Side Yard				Rear Yard (R)
				Exterior / Corner Side Yard (CS)		Interior Side Yard (S)		
		Min. (F1)	Max. (F2)	Min.	Max.	Detached Yard	Attached Yard	
DN-1	All	15'	25'	15'	--	7'	0'	25'
DN-2	Single-family and Two-family	12'	25'	12'	25'	7'	0'	25'
	Townhouse: block-end, and all others not listed	12'	25'	12'	25'	10'	0'	25'
DN-3	Single-family and Two-family	10'	20'	10'	20'	7'	0'	25'
	Townhouse	10'	20'	10'	20'	10'	0'	25'
	Multi-family: Block-end, <u>Mixed-Use, Commercial</u> , and others not listed	10'	20'	10'	20'	10'	0'	15'
DN-4	Single-family & two-family	8'	15'	8'	15'	7'	0'	25'
	Townhouse	8'	15'	8'	15'	10'	0'	25'
	Multi-family	8'	15'	8'	15'	10'	0'	15'
	Mixed-use, Commercial and others not listed	0'	15'	0'	15'	0', 12' if adjacent to a non-mixed-use building	0'	15'

(2) *Cottage Courts.* The setback requirements for *Dwelling, Cottage Court* are regulated in Section 601.17 of the Zoning Code.

- (f) *DN districts height standards.* The table below establishes the maximum height allowed in the Downtown Neighborhood districts.

DOWNTOWN NEIGHBORHOOD (DN) DISTRICTS: HEIGHT STANDARDS				
District	Single-family / Two-family	Townhouse	Multi-family	Mixed-use <u>and Commercial</u>
DN-1	36'	--	--	--
DN-2	36'	36'	--	--
DN-3	40'	40'	40'	--
DN-4	40'	40'	50'	50'

Sec 501.06 Number Of Off-Street Parking Spaces Required

(e) *R-C2, Central Residential - Moderate Density and R-C3, Central Residential High Density Districts and Downtown Neighborhood (DN) Districts.*

(1) *Standards.*

- a. One (1) parking space per dwelling unit shall be provided for ~~multi-family~~residential development. This may be achieved via on-site parking, on-street parking or a shared parking agreement.
- b. In a mixed-use project, parking shall be clearly marked for residents to distinguish it from employee or customer parking.
- c. Surface parking shall be located at the side or the rear of the building to ensure that entering and exiting vehicles do not interrupt pedestrian movement at the front of the building.
- d. Alleys shall remain clear and passable at all times.

~~e. *Guidelines.*~~

~~f.e.~~ Shared parking access and facilities are encouraged where practical. Joint use of required parking spaces may occur where two or more establishments on the same site or on separate sites are able to share the same parking spaces because their parking demands occur at different times. In order to utilize shared parking to meet parking standards, an agreement should be submitted as part of the City's site development review process.

~~a. *Structured parking should be located underground or be designed to resemble a street-level building.*~~

~~(f) *Access to parking via rear driveways and alleys is appropriate where possible.*~~

~~(g)~~(f) *Standards.* Off-street parking shall be provided in accordance with the following schedule, with the exception of the DC and DE district, already provided for in Section 501.6(d)(1) above:

Sec 601.35 Cottage Courts

(a) Applicability. The regulations in this section shall apply to all dwelling units and developments that meet the definition of *Dwelling, Cottage Court* in Article 201 of the Zoning Code.

(b) Maximum Number of Cottage Court Units per lot. The maximum number of cottage court units permitted on a single lot is 12, subject to the land area per dwelling requirements of Article 401 of the Zoning Code.

(1) Exceptions. Developments located in the R-3 and R-4 districts are exempt from the maximum number of cottage court units per lot requirement but must meet all other requirements of this Section.

(c) Setback Standards. The table below establishes the minimum setback and unit separation standards for Cottage Courts.

<u>Standard</u>	<u>Requirement</u>
<u>Front Setback</u>	<u>10 foot minimum and 20 foot maximum</u>
<u>Side Setback</u>	<u>7 feet</u>
<u>Rear Setback</u>	<u>7 feet</u>
<u>Minimum distance between units</u>	<u>7 feet</u>

(d) Height and Roofs. Cottage Court units shall be a maximum of two- and one-half stories in height.

(e) Open Space.

(1) Minimum Common Open Space/Unit. Cottage Court developments shall provide a minimum of 500 square feet of common, usable open space per unit. The open space shall be adjacent to a public street or public trail.

a. No dimension of a common open space area used to satisfy the minimum square footage requirement shall be less than ten feet.

b. Required common open space shall be divided into no more than two (2) separate areas per cluster of dwelling units.

c. Common open space shall be improved for passive or active recreational use, garden/food production, social gathering spaces or landscaped areas. Examples may include but are not limited to courtyards, orchards, landscaped picnic areas, plazas or gardens. A detailed site plan of the common open space depicting the design and amenities of the space shall be reviewed with the site plan for approval.

d. Amenities such as permanent or movable seating, landscaping, trails and paths, barbeque or eating facilities, covered shelters or water features shall be included within the common open space. Low Impact Development stormwater management facilities may be placed within the common open space when they are integrated with the amenities listed above.

(2) Private Open Space.

a. Minimum Area. Each cottage court unit shall be provided with a private open space of a minimum of 250 square feet with no dimension less than 10 square feet. Private open space shall be contiguous to each cottage court unit and in intended for the private use of the individual resident.

- b. Fencing. Private open spaces shall have a maximum fence height of 6-feet. Private open space fences located between the cottage court unit and public streets, public trails, or the common open space, however, shall have a maximum height of 4-feet.

(f) Pedestrian Connectivity.

- (1) All buildings and common spaces shall be served by a pedestrian circulation system that connects to an existing or planned public sidewalk or trail system.

(g) Parking.

- (1) Minimum Spaces Required. Cottage Court Developments shall provide parking proportionate to the square footage of cottage court dwelling units established below:
 - a. Dwelling units 1,250 square feet or less shall provide one parking space per unit.
 - b. Dwelling units greater than 1,250 square feet shall provide 1.5 spaces per unit.
- (2) Location. Parking shall be located inside a structure detached from cottage court units or outside a structure subject to the following:
 - a. The parking is screened from direct street view by one or more street facades, by garage doors, or by a fence and landscaping.
 - b. Parking between structures is only allowed when it is located toward the rear of the principal structure and is served by an alley or private driveway.
 - c. Parking may not be located in the front yard.
 - d. Parking may be located between any structure and the rear lot line of the lot or between any structure and a side lot line, which is not a street side lot line.
 - e. Designated on-street parking spaces may be counted towards the minimum parking requirements of this section.

(h) Bicycle Parking.

- (1) Minimum Spaces Required. Cottage Courts shall provide a minimum of one bicycle parking space per dwelling unit.
- (2) Design. The design and siting of bicycle parking spaces shall be consistent with the recommendations of *Essentials of Bike Parking*, published by the Association of Pedestrian and Bicycle Professionals.

(i) Design Requirements.

- (1) Materials and design. Front, side, and rear building facades visible from any public street or trail, or the common open space, shall incorporate attractive design materials and massing elements that create visual interest and a character consistent with surrounding development. Such design and massing elements could include porches or stoops, dormers, varied roof lines planar modulation or varied façade materials.
- (2) Unit Orientation. All cottage court units must abut the shared, common open space. Cottage Court units adjacent to a public street or trail may orient their primary façade towards either the public street/trail or the common open space. In this case, both the façade that fronts the public street and the façade that fronts the open space must incorporate design and character elements consistent with this Article. Units that are not adjacent to the public street/trail, must orient towards the common open space.

(3) *Porches.* Cottage Court Units should incorporate usable, front porches that orient towards either the public street or common open space, depending on unit location.

(4) *Functional character elements.* Where appropriate, character elements shall be fully functional. Dormers shall be constructed to allow for occupiable space, and porches shall be a minimum depth of 6' to allow for regular use.

(5) *Exterior materials.* Exterior façade materials and details should be consistent with the character of the surrounding context.

(j) *Approval Process.*

(1) Cottage Court Developments may be approved through the administrative Large Scale Development process, outlined in Section 700.04 of the Land Development Code.

(2) Cottage Court Units shall be subject to all building and fire safety permitting requirements.

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