City of Conway Council Agenda

Council Meeting Date:	**May 8th, 2018**
5:30pm - Committee Meeting:	No Committee Meeting
6:30pm:	Council Meeting
Call to Order:	Mayor Bart Castleberry
Roll Call:	Michael O. Garrett, City Clerk/Treasurer
Minutes Approval:	April 24th, 2018

Mayor Bart Castleberry
City Clerk Michael O. Garrett
City Attorney Chuck Clawson

City Council Members

Ward 1 Position 1 – Andy Hawkins

Ward 1 Position 2 – David Grimes

Ward 2 Position 1 – Wesley Pruitt

Ward 2 Position 2 – Shelley Mehl

Ward 3 Position 1 – Mark Ledbetter

Ward 3 Position 2 – Mary Smith

Ward 4 Position 1 – Theodore Jones Jr.

Ward 4 Position 2 – Shelia Isby

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1. Report of Standing Committees:

A. Community Development Committee (Planning, Zoning, Permits, Community Development, Historic District, Streets, Airport, & Conway Housing Authority)

1. Consideration to approve the board nomination of Kim Williams to the Public Art Board.
2. Consideration to approve the nomination of Ester McClellan to the Advertising and Promotion Board.
3. Consideration to approve the engineering firms for on call services for the Street & Engineering Department.
4. Ordinance amending the Conway subdivision ordinance to comply with the Master Street Plan.

Adjournment

CONWAY PUBLIC ART

MEMO

To: **City Council Members**

CC: **Mayor Bart Castleberry**

Joanna Nabholz, President Conway Public Art Board

From: **Felicia Rogers**

Date: **May 3, 2018**

Re: **Public Art Board Nomination**

The Public Art Board met on Wednesday, May 9, 2018 and nominated Kim Williams for board membership with a term expiration on 2020.

She will replace Melissa Pearson on the board.

Please advise if you have any questions.

City of Conway
www.cityofconway.org
Board/Commission Nomination Form:

Date: 4 - 09 - 2018

Board applying for: (One board per form)

Conway Art Committee

(If you are applying for more than one board, you will only need to fill out the second page once.)

Person Nominated: Kim Williams

Address: 2555 Jayme Circle *City, State, Zip* Conway, AR 72032

Phone/Home: 501-730-2095 *Work:* 501-327-7788

Person making nomination: _____

Address: _____

Phone/Home: _____ *Work:* _____

Please send to: Michael O. Garrett

City Clerk/Treasurer
1201 Oak Street
Conway, AR 72032
(501) 450-6100
(501) 450-6145 (f)
cityclerk@cityofconway.org
felicia.rogers@cityofconway.org

Please provide the following information for consideration to a City of Conway Board/Commission. List community/civic activities. Indicate activities in which you (or your nominee) are or have been involved.

I am currently on the board of the Conway Civic League. Previously served on the board of the Conway Alliance for the Arts, 9 years. Just rolled off the board for United Way of Central Arkansas. Served on Friends of CASA for several years. Also have volunteered for several organizations.

Indicate why you (or your nominee) are interested in serving on this board or commission and what other qualifications apply to this position.

I have had an active role in CAFTA and the promotion of the arts for several years and would like to continue that work. I feel I can contribute to the Conway Art Committee in several different ways from my relationship with the business community to a love of the arts in all forms.

What contributions do you hope to make?

I feel my strengths will be with the business community and various institutions; UCA, Hendrix, CBC, Blackbird Academy, Red Curtain Theatre, Lantern Theatre, the Conway Art School, Conway League of Artists, On the Green and various other art groups.

Please feel free to attach to this application any additional information.

The City of Conway strives to ensure all City Boards are representative of our diverse community. To assist in these endeavors; please provide the following information on a voluntary basis:

Age: 55 *Sex:* Female *Race:* White

Occupation: Director | Conway Downtown Partnership *Ward* 2

Email Address: kim@conwayarkansas.org

Kim Williams — 4-9-2018

Signature of Applicant or Nominator *Date*

City of Conway
Mayor's Office
Mayor Bart Castleberry
1201 Oak Street
Conway, AR 72032
www.cityofconway.org

MEMO

To: **City Council Members**
Mayor Bart Castleberry

From: **Felicia Rogers**

Date: **May 3rd, 2018**

Re: **A&P Commission Nomination**

The Advertising and Promotion Commission met on Tuesday, May 1, 2018 and nominated Ester McClellan, co-owner of US Pizza for a four year term.

She will replace Reggie Rose on the board.

Please advise if you have any other questions.

City of Conway
www.cityofconway.org
Board/Commission Nomination Form:

Date: 3-11-2018

Board applying for: (One board per form)

A & P Commission

(If you are applying for more than one board, you will only need to fill out the second page once.)

Person Nominated: Esther McClellan

Address: 1115 Applewood Dr. *City, State, Zip* Conway, AR 72034

Phone/Home: 501-831-6327 *Work:* 501-450-9700

Person making nomination: _____

Address: _____

Phone/Home: _____ *Work:* _____

Please send to: Michael O. Garrett

City Clerk/Treasurer
1201 Oak Street
Conway, AR 72032
(501) 450-6100
(501) 450-6145 (f)
cityclerk@cityofconway.org
felicia.rogers@cityofconway.org

Please provide the following information for consideration to a City of Conway Board/Commission. List community/civic activities. Indicate activities in which you (or your nominee) are or have been involved.

I helped found Conway Celebrity Waiter, an event benefiting American Cancer Society, and I have served as a committee member and participated in this event since 2010. I help with special olympics and a benifit for the Lonoke Exceptional School, which serves children and adults with development disablities. I am involved with Freezin' for a Reason, which is a 5k benefiting Arkansas Children's Hospital. I serve as a board member for Conway Regional Fitness Center. As a board member, I participate in Kids Run Arkansas & The Great American Workout, an activity day for 5th graders across the state.

Indicate why you (or your nominee) are interested in serving on this board or commission and what other qualifications apply to this position.

I graduated from the University of Central Arkansas with a Bachelor of Science in Kinesiology in 2001. In the years following, I served as the wellness coordinator at St. Vincent Health System. In 2009, my family moved to Conway to open our first U.S. Pizza. I have been co-owner/operator of U.S. Pizza of Conway since 2009. I have seventeen years of management and leadership experience. I bring passion and drive to everything I do. I am also a mother of three children who are in the Conway public school system. I am invested in Conway. I love Conway. And I am proud to live and work here.

What contributions do you hope to make?

I hope to help build, sustain, and foster activities and highlight locations that will continue to draw people to Conway from all over the U.S. Through my extensive interactions with the public, I will be able to help bring more awareness to the community about the A& P Commission. Two of my greatest strengths are facilitation and determination. I can do whatever is needed to make things run smoother for the committee. Basically, tell me what needs to be done, and I will get it done.

Please feel free to attach to this application any additional information.

The City of Conway strives to ensure all City Boards are representative of our diverse community. To assist in these endeavors; please provide the following information on a voluntary basis:

Age: 37 *Sex:* Female *Race:* Caucasian

Occupation: Co-Owner/Operator U.S. Pizza of Conway & Cabot *Ward* _____

Email Address: uspmcclellan@gmail.com

_____ _____

Signature of Applicant or Nominator *Date*

MEMO

City of Conway, Arkansas
Jamie Brice, Purchasing Manager
1201 Oak Street
Conway, AR 72032
www.cityofconway.org

To: Mayor Bart Castleberry and City of Conway Council

CC: Finley Vinson Phillip Vick Felicia Rogers Jack Bell

From: Jamie Brice

Date: April 30, 2018

Re: City of Conway Street Department – Engineering Services

The City of Conway accepted statements of qualifications and performance data from prospective consulting firms to provide engineering and support services for public projects during fiscal year 2018 pursuant to State of Arkansas Procurement Laws and Rules, Subchapter 8, Procurement of Professional Services, paragraph R1:19-11-802.

The Street Department will ask Council to approve Engineering Firms for large projects individually and before each project begins.

There are many small projects that require Engineering services throughout the year that may need immediate Engineering Services. The Street and Purchasing Departments would like to request Council approve the following firms for on call services:

- Geotechnical Engineering - Grubbs, Hoskyn, Barton, Wyatt and MTA
- Hydraulics/Hydrology - FTN
- General Civil Engineering - RDH Professional Engineering Services
- Construction Inspection and Quality Assurance - Mid-South
- Landscape Architecture – Crafton Tull
- Surveying - CAPS
- Commercial Real Estate Services – Arkansas Appraisals and Pinnacle Management

Sincerely,

Jamie Brice
Purchasing Manager
City of Conway

Department Head Acknowledgement

Name: Finley Vinson

Signature: B. Finley Vinson III

City of Conway, Arkansas
Ordinance No. O-17-___

AN ORDINANCE AMENDING THE CONWAY SUBDIVISION ORDINANCE NO. O-00-03 TO COMPLY WITH THE MASTER STREET PLAN; AND FOR OTHER PURPOSES

Whereas: The City of Conway Standard Details for Roadway & Drainage Construction have been updated with new street cross sections, and;

Whereas: It is desirable to update the subdivision ordinance to reflect these new street cross sections;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CONWAY, ARKANSAS THAT:

Section 1. That ARTICLE I. GENERAL PROVISIONS. SECTION 4. DEFINITIONS, include the following definition in alphabetical sequence:

Urban Core Area: Dense urban area typified by, mixed land uses, traditional storefronts, and gridded street network. Zoning may include; C-1 (Central Business District), T-5 (Urban), T-4 (Transitional), C-MU (Commercial Mixed Use), and R-MU (Residential Mixed Use), and CC-MU (College Campus Mixed Use).

Section 2. That ARTICLE IV. GENERAL DESIGN PRINCIPLES, SECTION 5. SUBDIVISION DESIGN STANDARDS, A. Streets, (10) Intersections and Alignment, paragraph a. of the Subdivision Regulations, City of Conway, Arkansas as adopted by Ordinance 0-00-03 on January 25, 2000 is hereby amended by adding the following language with subsequent paragraph numbering in sequence:

> "f. Roundabouts of appropriate size are recommended at all proposed four-way intersections, which may require larger curb radii. All intersection designs must be approved by the City Engineer."

Section 3. That ARTICLE IV. GENERAL DESIGN PRINCIPLES, SECTION 5. SUBDIVISION DESIGN STANDARDS, A. Streets, (10) Intersections and Alignment, paragraph d. of the Subdivision Regulations, City of Conway, Arkansas as adopted by Ordinance 0-00-03 on January 25, 2000 shall be deleted and replaced as follows:

> "d. Property line corners at intersections that involve two collector or arterial streets shall be rounded with a radius of at least one hundred (100) feet to provide adequate right-of-way for the construction of a roundabout. Property line corners at all other street intersections shall be rounded with a radius of at least twenty-eight (28) feet."

Section 4. That ARTICLE IV. GENERAL DESIGN PRINCIPLES, SECTION 5. SUBDIVISION DESIGN STANDARDS, A. Streets, (11), of the Subdivision Regulations, City of Conway, Arkansas as adopted by Ordinance 0-00-03 on January 25, 2000, including Table 2, shall be deleted and replaced as follows:

"(11) Specific Street Design Standards

a. ~~Central Business District Rights of Way - For existing streets in the C-1 Central Business District, no additional right of way dedication that would encompass any existing buildings is required during the replat or subdivision process.~~ Urban Core Area - For existing streets in the Urban Core Area, no additional right of way dedication that would encompass any existing buildings is required during the replat or subdivision process. No additional right of way dedication or reduced rights of way may also be applicable if warranted by the pattern of urban development.

b. Major and Minor Arterial Paving Width - Developers are responsible for the cost of the first 36 feet of paving width of major and minor arterial streets. The City of Conway will be responsible for the cost of any additional width of streets should the City choose to have a wider street built. The City may choose to build or have built a lesser width than that shown in the Street Classification and Design Standards Table for major and minor arterial streets, but no less than thirty six (36) feet, except when the first phase of a four lane or greater roadway is being built.

c. Curb Cut/Traffic Conflicts - For subdivisions and replats that abut collectors, minor arterials, and major arterials, the lots shall be configured to allow curb cuts on those streets only as a final option for providing access.

d. Minimum Lot Width on Collector and Above - In order to reduce potential traffic conflict points caused by lots with less than 100 feet of street frontage with access to collectors, minor arterials, and major arterials, the Planning Commission and/or the Director of Planning may require the grouping or sharing of driveways. Driveway access easements will be shown on the plat/replat.

e. Fire Hydrant Clearance - A minimum clearance of twenty-six (26) feet must be provided around a fire hydrant. See Figure B.

f. Curb Island Clearances - A minimum clearance of twenty (20) feet must be provided on each side of an island within the street right of way. Street right of way must extend ten (10) feet beyond outside curbs where islands are used."

Section 5. That ARTICLE V. IMPROVEMENTS, SECTION 2. STREETS; G. Curbs and Gutters and Sidewalks of the Subdivision Regulations, City of Conway, Arkansas as adopted by Ordinance 0-00-03 on January 25, 2000 shall be deleted and replaced as follows:

"G. Curbs and gutters are required for all streets unless otherwise specified. The curb and gutters shall be constructed in accordance with the most current edition of the City of Conway STANDARD DETAILS FOR ROADWAY & DRAINAGE CONSTRUCTION. Expansion joints (1/2" remolded material) shall be placed on each side of drainage structures, at the ends of the radius at intersections and cul-de-sacs and at maximum one hundred (100) foot spacing throughout the length of the curb and gutter. Expansion joints (1/2" premolded material) shall be provided in the sidewalk where abutting driveways, concrete curb and gutter or other rigid items and at one hundred (100) foot maximum spacing throughout the length of the sidewalk. Material and construction shall conform to the requirements of Section 634 of the Arkansas Department of Transportation's "Standard Specifications for Highway Construction".

Section 6. That ARTICLE V IMPROVEMENTS, SECTION 9. SIDEWALKS, SUBSECTION 13 Sidewalk Specifications, paragraph (A) of the Subdivision Ordinance for the City of Conway as adopted by Ordinance No. O-00-03 on January 25, 2000 is deleted and replaced as follows:

"(A) Size. Sidewalks shall be constructed to the appropriate size as depicted by the City of Conway STANDARD DETAILS FOR ROADWAY & DRAINAGE CONSTRUCTION. Any deviation from these details must be approved by the City Engineer."

Section 7. That ARTICLE V IMPROVEMENTS, SECTION 9. SIDEWALKS, SUBSECTION 13 Sidewalk Specifications, paragraph (C) of the Subdivision Ordinance for the City of Conway as adopted by Ordinance No. O-00-03 on January 25, 2000 is deleted and replaced as follows:

"(C) Sidewalk distances from the curb. The sidewalk shall be installed in the location depicted by the City of Conway STANDARD DETAILS FOR ROADWAY & DRAINAGE CONSTRUCTION unless specifically approved otherwise by the City Engineer."

Section 8. All ordinances in conflict herewith are repealed to the extent of the conflict.

PASSED this 8th day of May, 2018.

Approved:

_____
Mayor Bart Castleberry

Attest:

_____
Michael O. Garrett
City Clerk/Treasurer

04.18.2018

Memo

To
Mayor Bart Castleberry

From
B. Finley Vinson, P.E.

CC
Felicia Rogers
Bryan Patrick
Chuck Clawson

Re
Typical Street Sections/
Subdivision Ordinance
Amendment

Comments:

In an attempt to amend the subdivision ordinance to comply with the complete streets ordinance I present the following amendment to the subdivision ordinance. This amendment removes several specific street construction requirements and instead refers to the City of Conway Standard Details for Roadway & Drainage Construction. To that end, I have several attached typical street sections for each roadway classification, which I propose including in the City of Conway Standard Details for Roadway & Drainage Construction. Also included is the Garver report that was consulted in the creation of these details. Please don't hesitate to contact me if you have any questions or concerns.

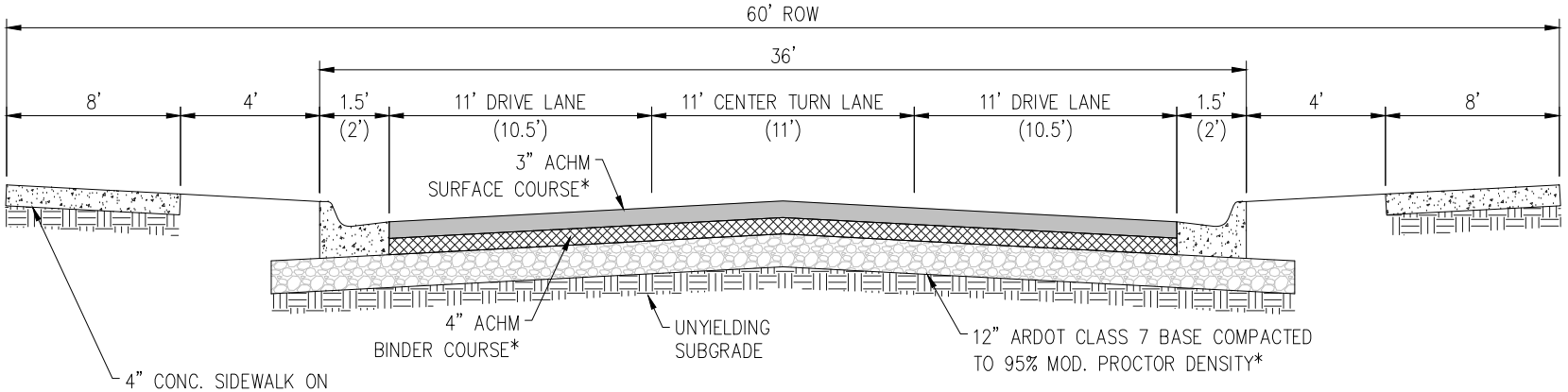
City of Conway Street & Engineering Department

(501) 450-6165
100 E Robins St, Conway, AR 72032

www.cityofconway.org/pages/street-department/
finley.vinson@cityofconway.org

COLLECTOR/LOCAL– FLEXIBLE PAVEMENT DESIGN						
	AVG ADT LOW M_R	AVG ADT MID M_R	AVG ADT HIGH M_R	HIGH ADT LOW M_R	HIGH ADT MID M_R	HIGH ADT HIGH M_R
ACHM SURFACE COURSE (1/2")	2"	2"	2"	3"	2"	2"
ACHM BINDER COURSE (1–1/2")	4"	4"	4"	4"	4"	4"
CLASS 7 BASE COURSE	10"	8"	6"	12"	12"	10"
MIN. STRUCTURAL NUMBER	4.03	3.69	3.44	4.66	4.28	4.01

NOTES:
1. ADT = AVERAGE DAILY TRAFFIC
2. M_R = RESILIENT MODULUS
3. REFERENCE DETAIL SHEET TS–0 FOR INFORMATION ON AVG ADT AND M_R CLASSIFICATIONS.



*SECTION THICKNESS MAY BE REDUCED ACCORDING TO THE TABLE ABOVE PENDING APPROVAL OF A TRAFFIC STUDY AND/OR GEOTECHNICAL REPORT AT THE DISCRETION OF THE CITY ENGINEER

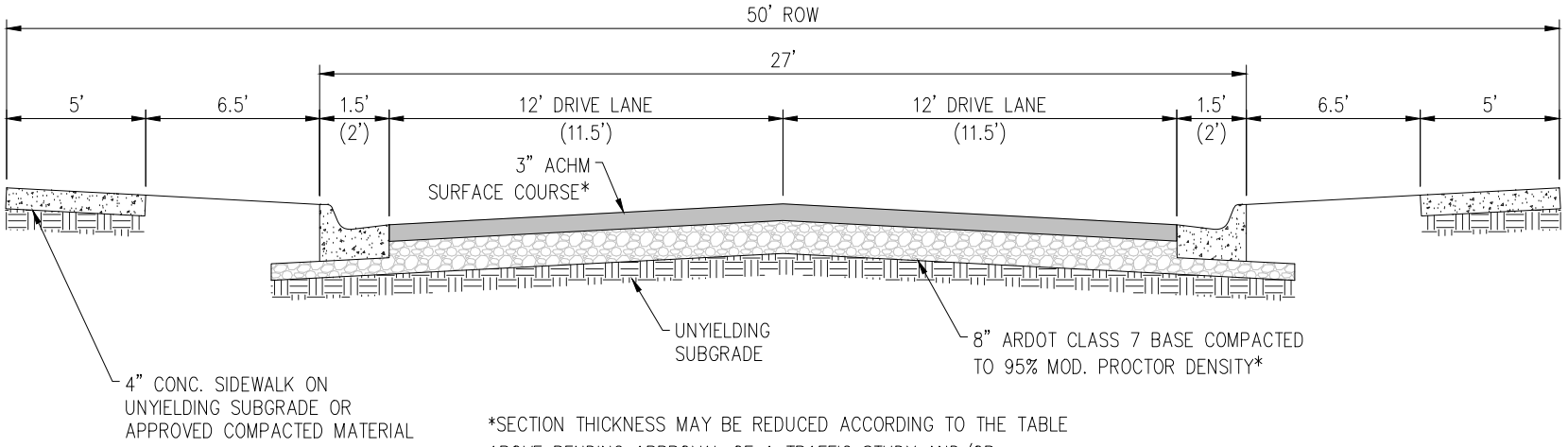
TYPICAL SECTION
LOCAL/COLLECTOR

SHEET: TS-1
DATE: FEBRUARY 2017
REVISED ---- ---- ---- ----
TITLE: *TYPICAL SECTIONS*
DESCRIPTION: LOCAL/COLLECTOR
DRAWN BY: NTR | CHECKED BY: BFV | FILE NAME: TS-1 LOCAL & COLLECTOR STREET SECTION.dwg

CITY OF CONWAY STREET &
ENGINEERING DEPARTMENT
100 EAST ROBINS
CONWAY, ARKANSAS 72032
501-450-6165

RESIDENTIAL– FLEXIBLE PAVEMENT DESIGN			
	EST. ADT LOW M_R	EST. ADT MID M_R	EST. ADT HIGH M_R
ACHM SURFACE COURSE (1/2")	3"	3"	3"
CLASS 7 BASE COURSE	8"	7"	6"
MIN. STRUCTURAL NUMBER	2.42	2.21	2.04

NOTES:
1. ADT = AVERAGE DAILY TRAFFIC
2. M_R = RESILIENT MODULUS
3. REFERENCE DETAIL SHEET TS–0 FOR INFORMATION ON AVG ADT AND M_R CLASSIFICATIONS.



*SECTION THICKNESS MAY BE REDUCED ACCORDING TO THE TABLE ABOVE PENDING APPROVAL OF A TRAFFIC STUDY AND/OR GEOTECHNICAL REPORT AT THE DISCRETION OF THE CITY ENGINEER

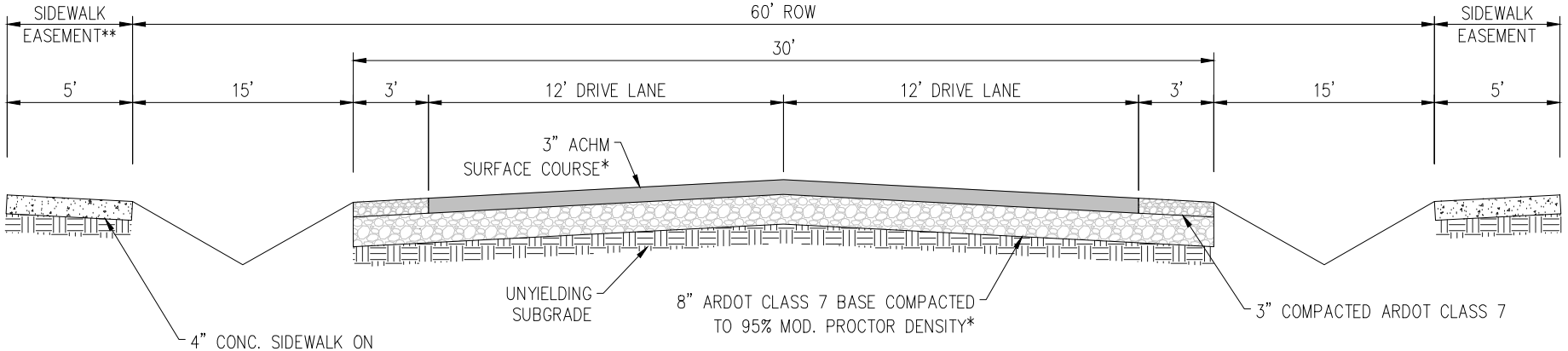
TYPICAL SECTION
LOCAL IN A RESIDENTIAL ZONE

SHEET: TS-2
DATE: FEBRUARY 2017
REVISED
TITLE: *TYPICAL SECTIONS*
DESCRIPTION: **LOCAL IN A RESIDENTIAL ZONE**
DRAWN BY: NTR | CHECKED BY: BFV | FILE NAME: TS-2 LOCAL RESIDENTIAL STREET SECTION.dwg

CITY OF CONWAY STREET &
ENGINEERING DEPARTMENT
100 EAST ROBINS
CONWAY, ARKANSAS 72032
501-450-6165

RESIDENTIAL– FLEXIBLE PAVEMENT DESIGN			
	EST. ADT LOW M_R	EST. ADT MID M_R	EST. ADT HIGH M_R
ACHM SURFACE COURSE (1/2")	3"	3"	3"
CLASS 7 BASE COURSE	8"	7"	6"

NOTES:
1. ADT = AVERAGE DAILY TRAFFIC
2. M_R = RESILIENT MODULUS
3. REFERENCE DETAIL SHEET TS–0 FOR INFORMATION ON AVG ADT AND M_R CLASSIFICATIONS.



*SECTION THICKNESS MAY BE REDUCED ACCORDING TO THE TABLE ABOVE PENDING APPROVAL OF A TRAFFIC STUDY AND/OR GEOTECHNICAL REPORT AT THE DISCRETION OF THE CITY ENGINEER

**SIDEWALK CONSTRUCTION AND THE ASSOCIATED EASEMENT TO BE REQUIRED AS SHOWN ON THE PLAT

TYPICAL SECTION
LOCAL IN A RURAL RESIDENTIAL ZONE

SHEET: TS-3

DATE: FEBRUARY 2017
REVISED

TITLE: *TYPICAL SECTIONS*

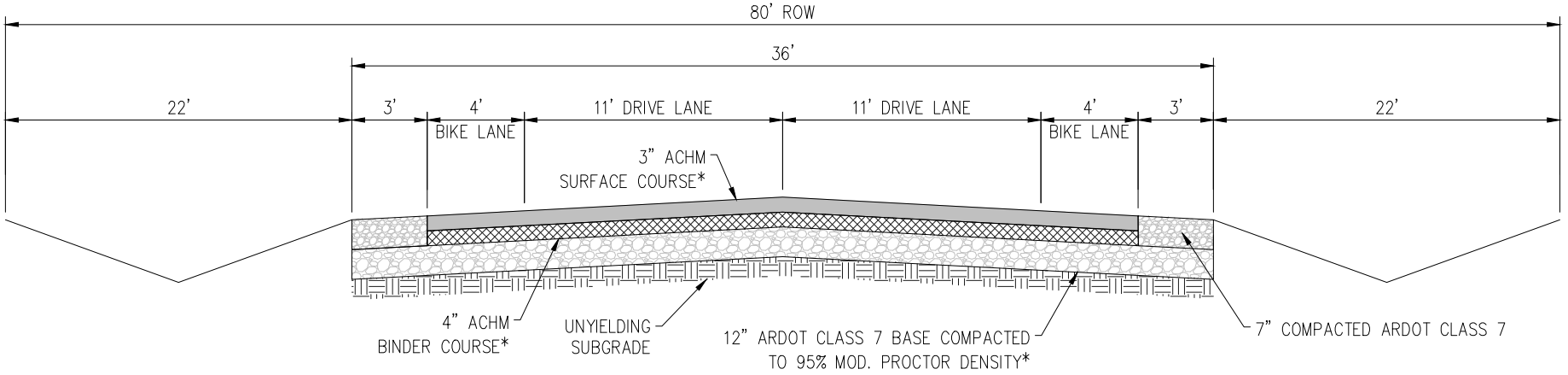
DESCRIPTION: **LOCAL IN A RURAL RESIDENTIAL ZONE**

DRAWN BY: NTR | CHECKED BY: BFV | FILE NAME: LOCAL RURAL RESIDENTIAL STREET SECTION.dwg

CITY OF CONWAY STREET & ENGINEERING DEPARTMENT
100 EAST ROBINS
CONWAY, ARKANSAS 72032
501-450-6165

INDUSTRIAL– FLEXIBLE PAVEMENT DESIGN						
	AVG ADT LOW M_R	AVG ADT MID M_R	AVG ADT HIGH M_R	HIGH ADT LOW M_R	HIGH ADT MID M_R	HIGH ADT HIGH M_R
ACHM SURFACE COURSE (1/2")	3"	2"	2"	3"	3"	2"
ACHM BINDER COURSE (1–1/2")	4"	4"	4"	4"	4"	4"
CLASS 7 BASE COURSE	11"	12"	10"	12"	10"	11"
MIN. STRUCTURAL NUMBER	4.60	4.21	3.94	4.75	4.35	4.06

NOTES:
1. ADT = AVERAGE DAILY TRAFFIC
2. M_R = RESILIENT MODULUS
3. REFERENCE DETAIL SHEET TS–0 FOR INFORMATION ON AVG ADT AND M_R CLASSIFICATIONS.



*SECTION THICKNESS MAY BE REDUCED ACCORDING TO THE TABLE ABOVE PENDING APPROVAL OF A TRAFFIC STUDY AND/OR GEOTECHNICAL REPORT AT THE DISCRETION OF THE CITY ENGINEER

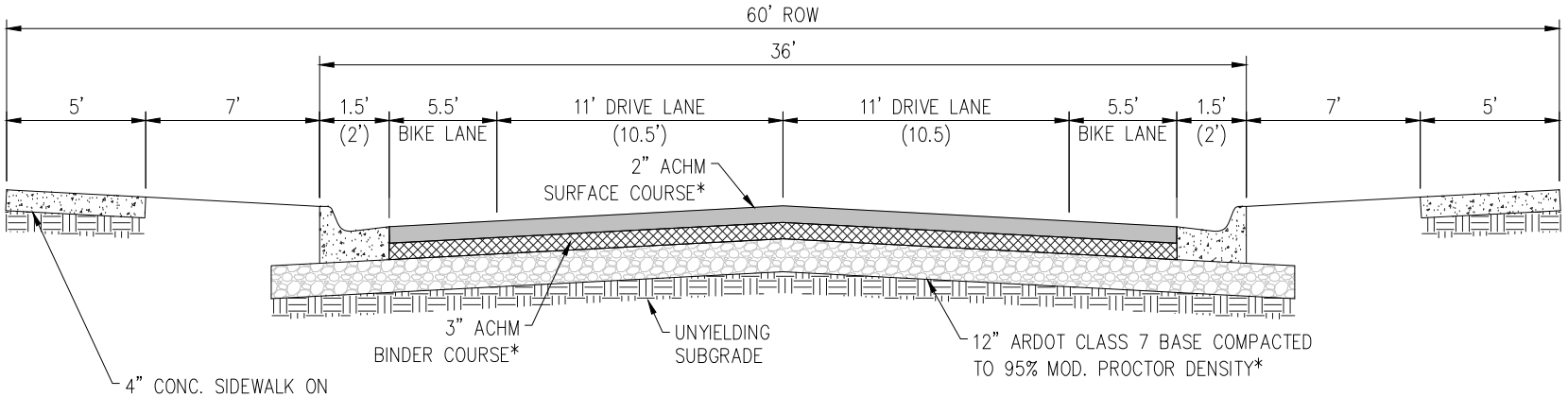
TYPICAL SECTION
LOCAL IN AN INDUSTRIAL ZONE

SHEET: TS-4
DATE: FEBRUARY 2017
REVISED ---- ---- ---- ----
TITLE: *TYPICAL SECTIONS*
DESCRIPTION: LOCAL IN AN INDUSTRIAL ZONE
DRAWN BY: NTR | CHECKED BY: BFV | FILE NAME: TS-4 LOCAL INDUSTRIAL STREET SECTION.dwg

CITY OF CONWAY STREET & ENGINEERING DEPARTMENT
100 EAST ROBINS
CONWAY, ARKANSAS 72032
501-450-6165

RESIDENTIAL COLLECTOR– FLEXIBLE PAVEMENT DESIGN						
	AVG ADT LOW M_R	AVG ADT MID M_R	AVG ADT HIGH M_R	HIGH ADT LOW M_R	HIGH ADT MID M_R	HIGH ADT HIGH M_R
ACHM SURFACE COURSE (1/2")	2"	2"	4"	2"	2"	4"
ACHM BINDER COURSE (1–1/2")	4"	4"	0"	4"	4"	0"
CLASS 7 BASE COURSE	7"	6"	10"	9"	6"	11"
MIN. STRUCTURAL NUMBER	3.60	3.28	3.05	3.80	3.47	3.22

NOTES:
1. ADT = AVERAGE DAILY TRAFFIC
2. M_R = RESILIENT MODULUS
3. REFERENCE DETAIL SHEET ST–0 FOR INFORMATION ON AVG ADT AND M_R CLASSIFICATIONS.



*SECTION THICKNESS MAY BE REDUCED ACCORDING TO THE TABLE ABOVE PENDING APPROVAL OF A TRAFFIC STUDY AND/OR GEOTECHNICAL REPORT AT THE DISCRETION OF THE CITY ENGINEER

TYPICAL SECTION
COLLECTOR IN A RESIDENTIAL ZONE

TITLE: *TYPICAL SECTIONS*
DESCRIPTION: **COLLECTOR IN A RESIDENTIAL ZONE**
DRAWN BY: NTR | CHECKED BY: BFV | FILE NAME: RESIDENTIAL COLLECTOR STREET SECTION.dwg

DATE:	REVISED
FEBRUARY 2017	----

SHEET: **TS-5**

CITY OF CONWAY STREET & ENGINEERING DEPARTMENT
100 EAST ROBINS
CONWAY, ARKANSAS 72032
501-450-6165

MINOR ARTERIAL– FLEXIBLE PAVEMENT DESIGN						
	AVG ADT LOW M_R	AVG ADT MID M_R	AVG ADT HIGH M_R	HIGH ADT LOW M_R	HIGH ADT MID M_R	HIGH ADT HIGH M_R
ACHM SURFACE COURSE (1/2")	2"	2"	2"	3"	2"	2"
ACHM BINDER COURSE (1–1/2")	4"	4"	3"	4.5"	4.5"	4"
CLASS 7 BASE COURSE	12"	10"	11"	12"	12"	12"
MIN. STRUCTURAL NUMBER	4.28	3.92	3.65	4.95	4.54	4.25

NOTES:
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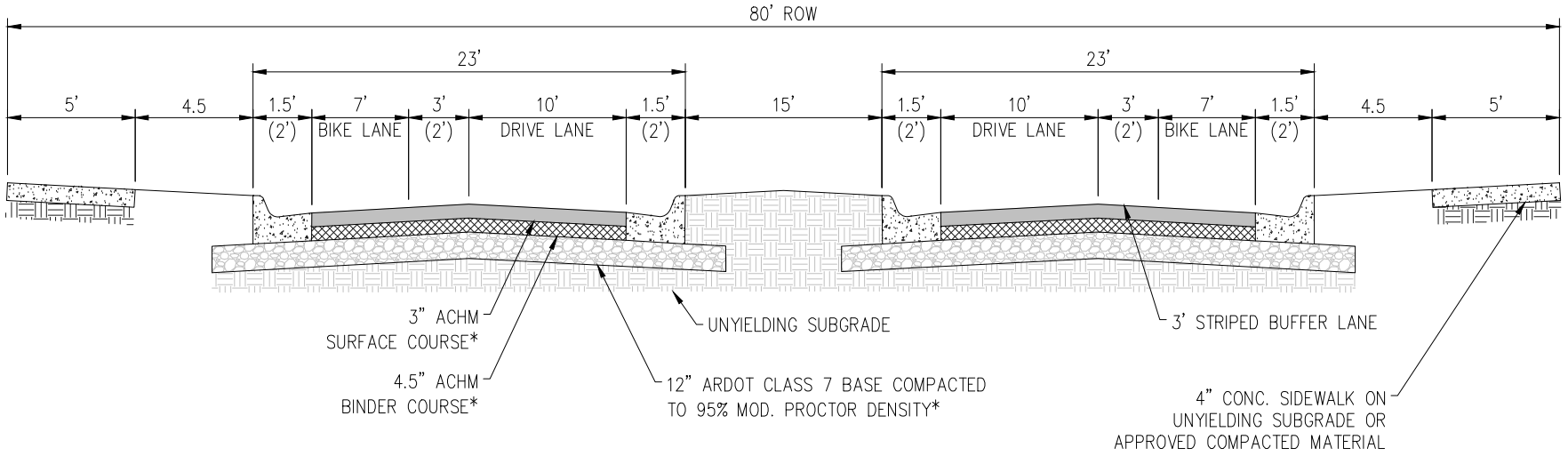
2. M_R = RESILIENT MODULUS
3. REFERENCE DETAIL SHEET TS–0 FOR INFORMATION ON AVG ADT AND M_R CLASSIFICATIONS.



*SECTION THICKNESS MAY BE REDUCED ACCORDING TO THE TABLE ABOVE PENDING APPROVAL OF A TRAFFIC STUDY AND/OR GEOTECHNICAL REPORT AT THE DISCRETION OF THE CITY ENGINEER

TYPICAL SECTION
MINOR ARTERIAL

SHEET: TS-6

DATE: FEBRUARY 2017
REVISED

TITLE: *TYPICAL SECTIONS*

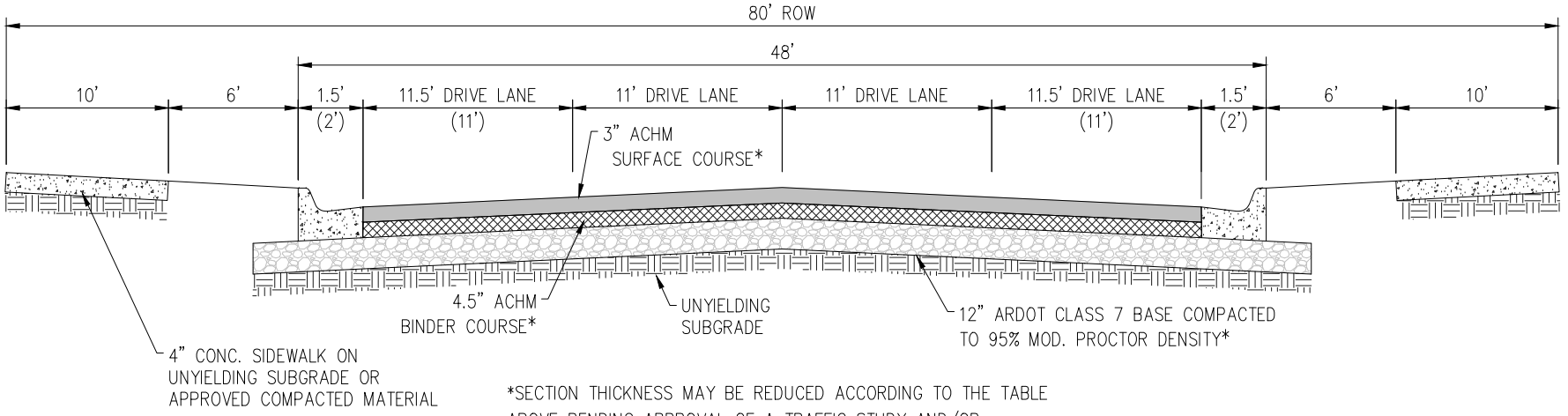
DESCRIPTION: **MINOR ARTERIAL**

DRAWN BY: NTR | CHECKED BY: BFV | FILE NAME: TS-6 MINOR ARTERIAL STREET SECTION.dwg

CITY OF CONWAY STREET &
ENGINEERING DEPARTMENT
100 EAST ROBINS
CONWAY, ARKANSAS 72032
501-450-6165

MINOR ARTERIAL– FLEXIBLE PAVEMENT DESIGN						
	AVG ADT LOW M_R	AVG ADT MID M_R	AVG ADT HIGH M_R	HIGH ADT LOW M_R	HIGH ADT MID M_R	HIGH ADT HIGH M_R
ACHM SURFACE COURSE (1/2")	2"	2"	2"	3"	2"	2"
ACHM BINDER COURSE (1–1/2")	4"	4"	3"	4.5"	4.5"	4"
CLASS 7 BASE COURSE	12"	10"	11"	12"	12"	12"
MIN. STRUCTURAL NUMBER	4.28	3.92	3.65	4.95	4.54	4.25

NOTES:
1. ADT = AVERAGE DAILY TRAFFIC
2. M_R = RESILIENT MODULUS
3. REFERENCE DETAIL SHEET TS–0 FOR INFORMATION ON AVG ADT AND M_R CLASSIFICATIONS.



*SECTION THICKNESS MAY BE REDUCED ACCORDING TO THE TABLE ABOVE PENDING APPROVAL OF A TRAFFIC STUDY AND/OR GEOTECHNICAL REPORT AT THE DISCRETION OF THE CITY ENGINEER

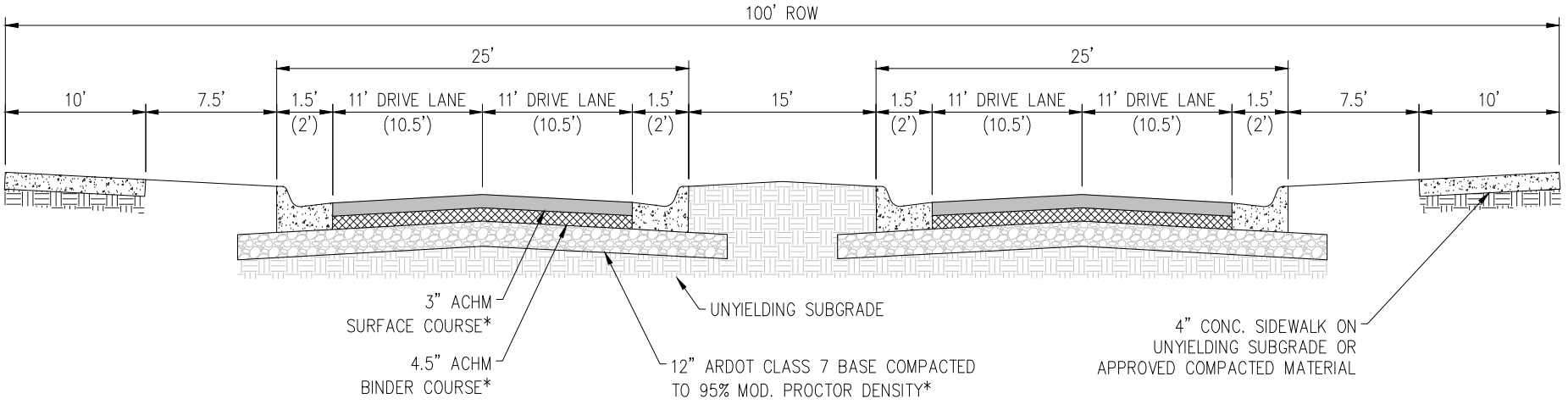
TYPICAL SECTION
MINOR ARTERIAL ALTERNATIVE

CITY OF CONWAY STREET & ENGINEERING DEPARTMENT
100 EAST ROBINS
CONWAY, ARKANSAS 72032
501-450-6165

TITLE: *TYPICAL SECTIONS*
DESCRIPTION: **MINOR ARTERIAL ALTERNATIVE**
DRAWN BY: NTR | CHECKED BY: BFV | FILE TS-7 MINOR ARTERIAL ALTERNATIVE STREET SECTION.dwg
DATE: FEBRUARY 2017
REVISED ---- ---- ---- ----
SHEET: **TS-7**

MAJOR ARTERIAL – FLEXIBLE PAVEMENT DESIGN						
	AVG ADT LOW M_R	AVG ADT MID M_R	AVG ADT HIGH M_R	HIGH ADT LOW M_R	HIGH ADT MID M_R	HIGH ADT HIGH M_R
ACHM SURFACE COURSE (1/2")	3"	3"	3"	4"	4"	3"
ACHM BINDER COURSE (1-1/2")	6"	5"	4.5"	6"	4.5"	5"
CLASS 7 BASE COURSE	12"	12"	12"	11"	12"	12"
MIN. STRUCTURAL NUMBER	5.54	5.11	4.77	5.84	5.40	5.05

NOTES:
1. ADT = AVERAGE DAILY TRAFFIC
2. M_R = RESILIENT MODULUS
3. REFERENCE DETAIL SHEET TS-0 FOR INFORMATION ON AVG ADT AND M_R CLASSIFICATIONS.



*SECTION THICKNESS MAY BE REDUCED ACCORDING TO THE TABLE ABOVE PENDING APPROVAL OF A TRAFFIC STUDY AND/OR GEOTECHNICAL REPORT AT THE DISCRETION OF THE CITY ENGINEER

TYPICAL SECTION
MAJOR ARTERIAL

SHEET: TS-8

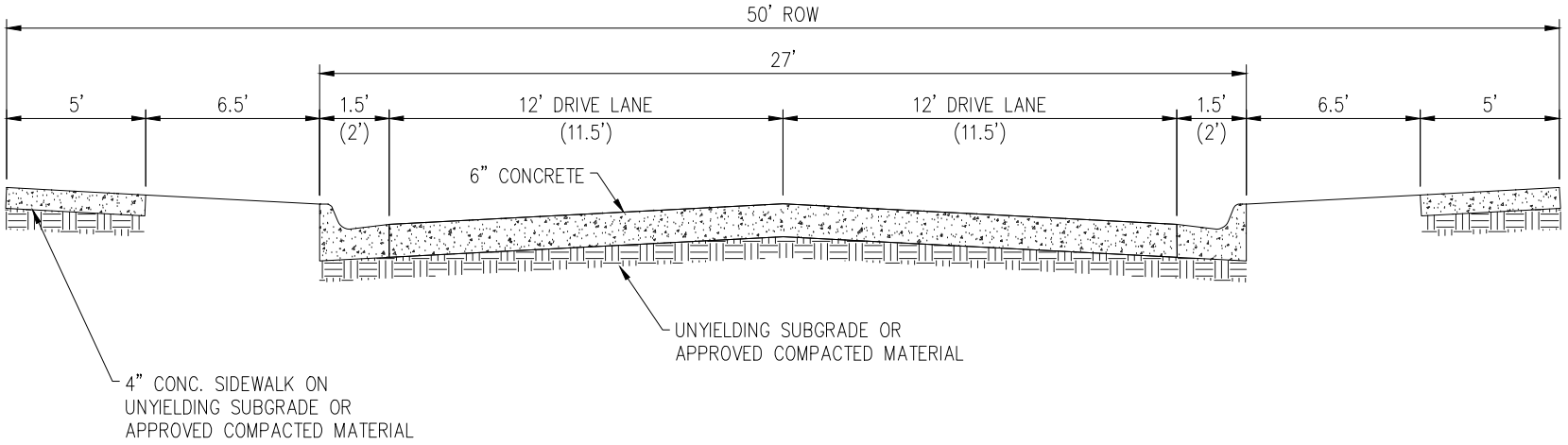
DATE: FEBRUARY 2017
REVISED

TITLE: *TYPICAL SECTIONS*

DESCRIPTION: **MAJOR ARTERIAL**

DRAWN BY: NTR | CHECKED BY: BFV | FILE NAME: TS-8 MAJOR ARTERIAL STREET SECTION.dwg

CITY OF CONWAY STREET & ENGINEERING DEPARTMENT
100 EAST ROBINS
CONWAY, ARKANSAS 72032
501-450-6165



TYPICAL SECTION
LOCAL IN A RESIDENTIAL ZONE (CONCRETE)

CITY OF CONWAY STREET &
ENGINEERING DEPARTMENT
100 EAST ROBINS
CONWAY, ARKANSAS 72032
501-450-6165

TITLE: *TYPICAL SECTIONS*

DESCRIPTION: **LOCAL IN A RESIDENTIAL ZONE (CONCRETE)**

DATE: FEBRUARY 2017
REVISED

SHEET: **TS-9**

DRAWN BY: NTR | CHECKED BY: BFV | FILE NAME: LOCAL RESIDENTIAL (CONCRETE) STREET SECTION.dwg

TABLE 1: RESILIENT MODULUS

RESILIENT MODULUS, M_R (psi)		
M_R (LOW)	M_R (MID)	M_R (HIGH)
2700	3500	4300

NOTE:
1. THESE VALUES WERE DEVELOPED UNDER THE ASSUMPTION THAT PROPER DRAINAGE AND GRADING BE IMPLEMENTED TO MAINTAIN A STABLE SUB-GRADE

TABLE 2: TRAFFIC DATA

FUNCTIONAL CLASSIFICATION	2018 ADT (PROJECTED VOLUME)	
	AVERAGE	HIGH
MAJOR ARTERIAL (4 LANE)	23,000	35,700
MAJOR ARTERIAL (2 LANE)	8,900	18,600
MINOR ARTERIAL	5,900	16,400
INDUSTRIAL	3,800	4,800
COLLECTOR	4,100	11,200
LOCAL	1,500	2,600
RESIDENTIAL	500	500

NOTES:
1. ADT = AVERAGE DAILY TRAFFIC
2. ADT DATA EXTRACTED FROM TRAFFIC VOLUMES PUBLISHED BY THE ARDOT

CITY OF CONWAY STREET &
ENGINEERING DEPARTMENT
100 EAST ROBINS
CONWAY, ARKANSAS 72032
501-450-6165

TITLE: *TYPICAL SECTIONS*

DESCRIPTION: **TYPICAL SECTION SUPPORT DATA**

DRAWN BY: NTR | CHECKED BY: BFV | FILE NAMEts-0 TYPICAL SECTION SUPPORT DATA.dwg

DATE: FEBRUARY 2017

REVISED

SHEET: **TS-0**

BICYCLE & PEDESTRIAN
ADVISORY BOARD
CITY OF CONWAY, ARKANSAS

April 27, 2018

Mayor Bart Castleberry

City Hall, Conway, AR

Mayor Castleberry,

On April 19th, Mr. Finley Vinson, Director of Conway Streets and Engineering Dept., asked the City's Bicycle and Pedestrian Advisory Board to review cross sections of streets as part of proposed master street plan amendments. The Board has reviewed these cross sections, discussed them with Mr. Vinson, and has voted to recommend these to the city. We think these context sensitive cross sections will serve the city well as it moves to become increasing pedestrian and bicycle friendly.

Please let me know if you have any questions.

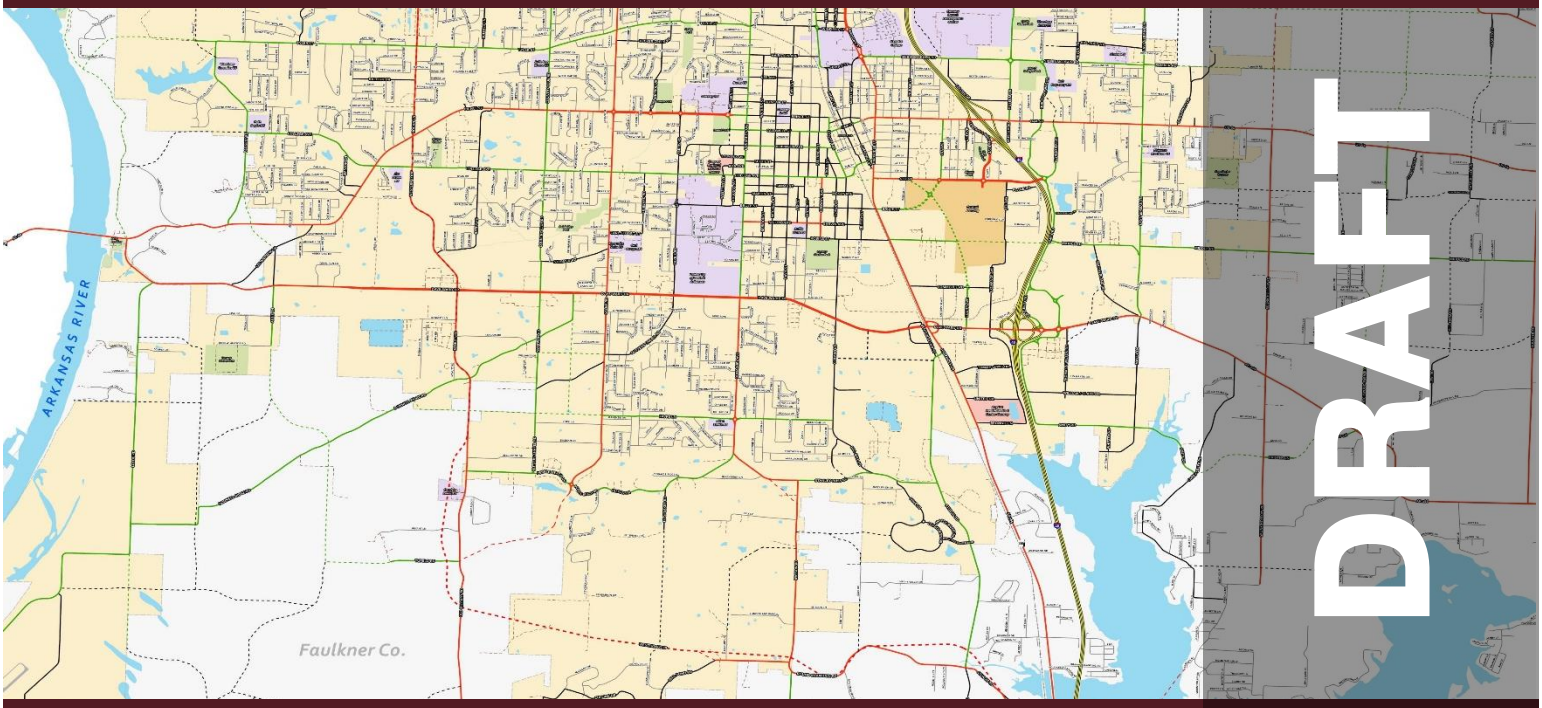
Sincerely,

Peter J. Mehl

Chair, Bicycle and Pedestrian Advisory Board

Master Street Plan Revisions

Pavement Design Analysis



DRAFT

Prepared For:

City of Conway

January 2018

GARVER

GarverUSA.com

Master Street Plan Revisions

Pavement Design Analysis

City of Conway

Prepared by:

831 Parkway, Suite C
Conway, AR 72034

January 2018

Garver Project No.: 09017230

Table of Contents

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1.0 Introduction

The City of Conway desires to evaluate existing minimum pavement sections concurrently with revisions to the Master Street Plan. Garver performed a pavement design analysis, specific to the City of Conway, based on published Arkansas Department of Transportation (ArDOT) traffic counts and restructured functional classifications associated with revisions to the Master Street Plan. The design analysis format results in the calculation of six unique structural numbers for each roadway functional classification type. A structural number represents the overall structural requirement needed to sustain the traffic loads anticipated in the design. The structural requirement is highly dependent on soil support and traffic loading. Therefore, three soil support parameters, resilient modulus (M_R), and two unique traffic values were used to calculate the six varying structural numbers. Sensitivity of pavement designs based on varying soil support and traffic input parameters are highlighted by the results and can be used as a general guideline for pavement thickness requirements. The following sections document the pavement design methodology, input parameter development and resulting pavement designs.

2.0 Pavement Design Methodology

2.1 AASHTO Design Method

The current American Association of State Highway and Transportation Officials (AASHTO) pavement design methodology was utilized for the pavement design included in this report. The AASHTO design is a regression method based on the results of road tests. The AASHTO method utilizes an index termed the “structural number” (SN) to indicate the required combined structural capacity of all pavement layers overlying the subgrade. The required SN is a function of reliability, serviceability, subgrade resilient modulus, and expected traffic intensities. The actual SN must be greater than the required SN to ensure long term pavement performance. Unique SN values were calculated for each functional classification with varying subgrade and traffic inputs.

2.2 ArDOT Pavement Design Criteria

To supplement the AASHTO design methodology, the ArDOT Pavement Design Criteria was used to develop inputs for reliability, serviceability, terminal serviceability and standard deviation. The design criteria, as shown in **Appendix A**, was also referenced for coefficients of relative strength for Asphalt Concrete Hot Mix (ACHM) and aggregate base courses. Pavement layer selections were based on maximum and minimum allowable lifts of pavement structure materials based on constructability and capability of compaction equipment to achieve minimum compaction requirements. Table 3, within Appendix A, lists acceptable ranges of lift thicknesses for aggregate base and ACHM thicknesses. Table 3 can be used to develop a number of acceptable pavement layer combinations for each calculated SN.

3.0 Input Parameter Development

3.1 Geotechnical Data Research

3.1.1 Resilient Modulus

Garver developed a database of soil support parameters based on previous projects, designed by Garver, within the City of Conway. An average resilient modulus of 3,500 psi was calculated from the

previously collected data and used as the mid-range soil support value. In order to have a range of inputs for varying subgrade conditions, a low and a high-range value for resilient modulus were obtained. A low-range resilient modulus value of 2,700 psi was provided by Grubbs, Hoskyn, Barton & Wyatt as an estimation based on their geotechnical investigation experience across the City of Conway. A high-range value of 4,300 psi was used for soil support parameter based on an ArDOT recommended maximum for pavement design. A comparison of these values can be seen in **Table 1**. It is important to note that this geotechnical information is used along with the assumption that proper drainage and grading is implemented to maintain a stable subgrade. Actual, site specific, resilient modulus values can vary widely across the city.

Table 1: Resilient Modulus

Resilient Modulus, M_R (psi)		
M_R (LOW)	M_R (MID)	M_R (HIGH)
2700	3500	4300

3.1.2 Modulus of Subgrade Reaction

The modulus of subgrade reaction (k) is used as a primary input for rigid pavement design. It estimates the soil support below the Portland Cement Concrete (PCC) slab. Grubbs, Hoskyn, Barton & Wyatt provided a low and high-range k value based on their geotechnical investigation experience across the City of Conway. As shown in **Table 2**, the low-range k value is 75 pci and the high-range value is 150 pci. It should be noted that a subbase material can be used below the PCC slab to increase the in-situ k value.

Table 2: Modulus of Subgrade Reaction

Modulus of Subgrade Reaction, k (pci)	
k (LOW)	k (HIGH)
75	150

3.2 Traffic Data Development

Garver developed traffic data, including Average Daily Traffic (ADT) and heavy truck percentages, for each functional classification for years 2018 and 2038. The most recent data, year 2016, was extracted from traffic volumes published by the ArDOT. The 2016 data was then sorted by functional classification based on the City of Conway's Master Street Plan. ADT values for each functional classification were averaged and projected to years 2018 and 2038. In addition to the averages, the high ADT value from each function classification was also projected to years 2018 and 2038. The projected volumes along with the average heavy truck percentages for each functional classification were input into 18 kip Equivalent Single Axle Load (18k ESAL) calculations.

3.2.1 Growth Rates

Annual growth rates were calculated using both a 10 year data set (2006 to 2016) and a 20 year data set (1996 to 2016) for each roadway classification. Two methods were used to calculate the growth rates used for traffic volume projection. The first method utilized a trend function for both the 10 and 20 year data sets which resulted in an annual growth rate for each roadway classification. The second method of calculating the annual growth rate utilized the following equation.

$$\text{Projected} = \text{Existing} * (1 + {}^{AGR}/_{100\%})^{\text{no. years}}$$

$$AGR = (\text{Projected} / \text{Existing})^{1/20 \text{ years}} - 1$$

The equation was used with both the 10 year and 20 year data sets for each roadway classification. Some calculated growth rates resulted in negative values indicating a decline in traffic volume. Conservatively, all negative growth rates were forced to be a minimum zero percent. The two methods produced four annual growth rates for each roadway classification which were then averaged to produce the annual growth rate used for projection calculations.

3.2.2 Data Modification

In some instances, there was not enough data to calculate an average growth rate based on a 20 year time frame so any missing ADT data for a particular year was assumed to be an average between the preceding and subsequent years. The same methodology was used for 10 year data sets. There were some roadways that lacked too many years of data to calculate an annual growth rate for a 20 year period and some that had insufficient data for the 10 year annual growth rate calculations. These roadways were not used in calculating the annual growth rates for each functional classification. Data outliers were examined and excluded from calculations as necessary. For example, a data point collected on Hwy 319 was removed from the truck percentage calculations. Using the truck data at this location would falsely skew the results of truck percentages based on unusual truck travel patterns to and from the sand quarry.

The average growth rates for each functional classification were used to calculate the projected 2018 and 2038 ADT's for each roadway classification as seen in **Table 3**.

Table 3: Traffic Data

Functional Classification	Average Trucks (%)	2016 Existing Volume (ADT)		Average Growth Rate (%)	2018 ADT Projected Volume (ADT)		2038 ADT Projected Volume (ADT)	
		Average	High		Average	High	Average	High
Major Arterial (4 Lane)	3	23,121	35,000	0.94	23,600	35,700	28,400	43,000
Major Arterial (2 Lane)	3	8,580	18,000	1.59	8,900	18,600	12,100	25,400
Minor Arterial	2	5,718	16,000	1.18	5,900	16,400	7,400	20,700
Industrial	7	3,750	4,700	0.62	3,800	4,800	4,300	5,400
Collector	3	3,976	11,000	1.07	4,100	11,200	5,000	13,900
Local	4	1,455	2,600	0.21	1,500	2,600	1,500	2,700
Residential	1	500*		N/A	500*		500*	

*Estimated Maximum ADT

3.3 Concrete Hot Mix (ACHM) Pavement Design

The flexible pavement designs, each with a 20 year design life, were performed referencing AASHTO 1993 design handbook and the ARDOT's Roadway Design Plan Development Guidelines, Appendix A Pavement Design Criteria, shown in **Appendix A** of this report. A maximum of six unique design structural numbers were developed for each of the following functional classifications.

- Major Arterial (4 Lane)
- Major Arterial (2 Lane)
- Minor Arterial
- Industrial
- Collector
- Local
- Residential

These unique structural numbers were developed by calculating an average 18k ESAL value and a high 18k ESAL value for each of the classifications based on the projected average and high ADT values for each roadway classification. The average and high 18k ESAL values were then paired with the three developed resilient modulus values in order to calculate a structural number for each unique soil support and traffic loading condition for each roadway classification. **Table 4** shows the final calculated 18k ESAL values for each geotechnical condition and roadway classification. All other structural number design variables were held constant within each roadway classification as show in **Table 5**.

Table 4: 18k Equivalent Single Axle Loads

18k Equivalent Single Axle Loads													
M_R	Major Arterial (4 Lane)		Major Arterial (2 Lane)		Minor Arterial		Industrial		Collector		Local		Residential
	Avg. (ADT)	High (ADT)	Avg. (ADT)	High (ADT)	Avg. (ADT)	High (ADT)	Avg. (ADT)	High (ADT)	Avg. (ADT)	High (ADT)	Avg. (ADT)	High (ADT)	Avg. (ADT)
Low	682	1032	330	691	124	347	263	331	106	292	62	88	5
Mid	682	1032	325	691	127	347	263	331	109	292	62	88	5
High	672	1032	325	681	127	347	270	331	109	300	62	88	5

Table 5: Pavement Design Variables

Pavement Design Variables						
Classification	Reliability	Standard Deviation		Initial Serviceability	Terminal Serviceability	Performance
		Flexible	Rigid			
Major Arterial	95	0.45	0.35	4.5	2.5	2.0
Minor Arterial	90	0.45	0.35	4.5	2.5	2.0
Industrial	85	0.45	0.35	4.5	2.5	2.0
Collector	85	0.45	0.35	4.5	2.5	2.0
Local	80	0.45	0.35	4.5	2.5	2.0
Residential	80	0.45	0.35	4.5	2.5	2.0

With the pavement design variables constant, the resulting SN values are solely based on the condition of the soil and traffic volume per roadway classification. **Tables 6-12** show the results of the pavement designs including the required SN value along with one combination of pavement layers that meets or exceeds the required value. The table columns represent variable inputs for design calculations including traffic volumes represented by ESALs and the three resilient modulus values shown in **Table 1**. Multiple pavement designs, other than those shown, may be applicable to meet the minimum required structural number.

Table 6: Major Arterial (4-Lane) – Flexible Pavement Designs

Major Arterial (4-Lane) – Flexible Pavement Designs						
	AVG ADT M_R (LOW)	AVG ADT M_R (MID)	AVG ADT M_R (HIGH)	HIGH ADT M_R (LOW)	HIGH ADT M_R (MID)	HIGH ADT M_R (HIGH)
Structural Number Needed for Design	5.54	5.11	4.77	5.84	5.4	5.05
Structural Number Calculated	5.64	5.20	4.98	5.94	5.42	5.20
ACHM Surface Course (1/2")	3	2	3	2	2	2
ACHM Surface Course (1/2")	0	0	0	2	2	0
ACHM Binder Course (1")	6	6	4.5	6	4.5	6
ACHM Base Course (1 1/2")	0	0	0	0	0	0
Aggregate Base Course (Class 7)	12	12	12	11	12	12
Total Flexible Pavement Thickness	21	20	19.5	21	20.5	20

Table 7: Major Arterial (2-Lane) – Flexible Pavement Designs

Major Arterial (2-Lane) – Flexible Pavement Designs						
	AVG ADT M_R (LOW)	AVG ADT M_R (MID)	AVG ADT M_R (HIGH)	HIGH ADT M_R (LOW)	HIGH ADT M_R (MID)	HIGH ADT M_R (HIGH)
Structural Number Needed for Design	5.17	4.75	4.44	5.71	5.27	4.93
Structural Number Calculated	5.2	4.76	4.54	5.86	5.29	4.98
ACHM Surface Course (1/2")	2	3	2	1.5	3	3
ACHM Surface Course (1/2")	0	0	0	2	0	0
ACHM Binder Course (1")	6	4	4.5	6	6	4.5
ACHM Base Course (1 1/2")	0	0	0	0	0	0
Aggregate Base Course (Class 7)	12	12	12	12	9.5	12
Total Flexible Pavement Thickness	20	19	18.5	21.5	18.5	19.5

Table 8: Minor Arterial – Flexible Pavement Designs

Minor Arterial – Flexible Pavement Designs						
	AVG ADT M_R (LOW)	AVG ADT M_R (MID)	AVG ADT M_R (HIGH)	HIGH ADT M_R (LOW)	HIGH ADT M_R (MID)	HIGH ADT M_R (HIGH)
Structural Number Needed for Design	4.28	3.92	3.65	4.95	4.54	4.25
Structural Number Calculated	4.32	3.96	3.74	4.98	4.54	4.32
ACHM Surface Course (1/2")	2	2	2	3	2	2
ACHM Surface Course (1/2")	0	0	0	0	0	0
ACHM Binder Course (1")	4	3.5	3	4.5	4.5	4
ACHM Base Course (1 1/2")	0	0	0	0	0	0
Aggregate Base Course (Class 7)	12	11	11	12	12	12
Total Flexible Pavement Thickness	18	16.5	16	19.5	18.5	18

Table 9: Industrial – Flexible Pavement Designs

Industrial – Flexible Pavement Designs						
	AVG ADT M_R (LOW)	AVG ADT M_R (MID)	AVG ADT M_R (HIGH)	HIGH ADT M_R (LOW)	HIGH ADT M_R (MID)	HIGH ADT M_R (HIGH)
Structural Number Needed for Design	4.60	4.21	3.94	4.75	4.35	4.06
Structural Number Calculated	4.62	4.32	4.04	4.76	4.4	4.10
ACHM Surface Course (1/2")	3	2	2	3	3	2
ACHM Surface Course (1/2")	0	0	0	0	0	0
ACHM Binder Course (1")	4	4	4	4	3.5	3.5
ACHM Base Course (1 1/2")	0	0	0	0	0	0
Aggregate Base Course (Class 7)	11	12	10	12	11	12
Total Flexible Pavement Thickness	18	18	16	19	17.5	17.5

Table 10: Collector – Flexible Pavement Designs

Collector – Flexible Pavement Designs						
	AVG ADT M_R (LOW)	AVG ADT M_R (MID)	AVG ADT M_R (HIGH)	HIGH ADT M_R (LOW)	HIGH ADT M_R (MID)	HIGH ADT M_R (HIGH)
Structural Number Needed for Design	4.03	3.69	3.44	4.66	4.28	4.01
Structural Number Calculated	4.04	3.74	3.46	4.76	4.32	4.10
ACHM Surface Course (1/2")	2	2	2	3	2	2
ACHM Surface Course (1/2")	0	0	0	0	0	0
ACHM Binder Course (1")	4	3	3	4	4	3.5
ACHM Base Course (1 1/2")	0	0	0	0	0	0
Aggregate Base Course (Class 7)	10	11	9	12	12	12
Total Flexible Pavement Thickness	16	16	14	19	18	17.5

Table 11: Local – Flexible Pavement Designs

Local – Flexible Pavement Designs						
	AVG ADT M_R (LOW)	AVG ADT M_R (MID)	AVG ADT M_R (HIGH)	HIGH ADT M_R (LOW)	HIGH ADT M_R (MID)	HIGH ADT M_R (HIGH)
Structural Number Needed for Design	3.60	3.28	3.05	3.80	3.47	3.22
Structural Number Calculated	3.6	3.30	3.22	3.88	3.60	3.22
ACHM Surface Course (1/2")	2	2	3.5	2	2	3.5
ACHM Surface Course (1/2")	0	2	0	0	0	0
ACHM Binder Course (1")	3	0	0	3	3	0
ACHM Base Course (1 1/2")	0	0	0	0	0	0
Aggregate Base Course (Class 7)	10	11	12	12	10	12
Total Flexible Pavement Thickness	15	15	15.5	17	15	15.5

Table 12: Residential – Flexible Pavement Designs

Residential – Flexible Pavement Designs			
	ESTIAMTED ADT M_R (LOW)	ESTIMATED ADT M_R (MID)	ESTIMATED ADT M_R (HIGH)
Structural Number Required for Design	2.42	2.21	2.04
Structural Number Calculated	2.78	2.56	2.28
ACHM Surface Course (1/2")	3	3	3
ACHM Surface Course (1/2")	0	0	0
ACHM Binder Course (1")	0	0	0
ACHM Base Course (1 1/2")	0	0	0
Aggregate Base Course (Class 7)	8	7	6
Total Flexible Pavement Thickness	11	10	9

3.4 Portland Cement Concrete (PCC) Pavement Design

The rigid pavement designs, each with a 20 year design life, were performed referencing AASHTO 1993 design handbook and the ARDOT's Roadway Design Plan Development Guidelines, Appendix A Pavement Design Criteria. In addition to the flexible pavement designs, the City of Conway requested a rigid pavement design for residential streets. In contrast to flexible pavement design, the AASHTO rigid pavement design methodology results in a minimum slab thickness in lieu of a required structural number. Additional inputs, as shown below, are required for rigid pavement design and are based on values recommended by ArDOT.

Load Transfer Coefficient, J = 4.4
Drainage Coefficient, C_d = 1.00
PCC Elastic Modulus, E_{pcc} = 3,500,000 psi
PCC Flexural Strength, S'_c = 600 psi

Table 13: Residential – Rigid Pavement Designs

Residential – Rigid Pavement Designs		
	ESTIMATED ADT k = 75 pci	ESTIMATED ADT k = 150 pci
Slab Thickness Required for Design (in.)	5.41	5.14
Rigid PCC Pavement (in.)	6	6

APPENDIX A

ArDOT Pavement Design Criteria

Appendix A

PAVEMENT DESIGN CRITERIA

DATE: 5/1/98

1. A pavement design analysis should be completed on all projects using the latest AASHTO design guidelines.
2. An approved copy of the pavement design should be sent to the following:
   a) Master ("B" File) in the Construction office.
   b) FHWA for all federal oversight projects
3. In accordance with Paul Debusk's memo of March 18, 1992, the minimum typical section for collectors and local roads should be as follows:

Current ADT	0 - 250 < 10% Trucks	28' DAST & 7 " Aggregate Base
Current ADT	> 250	28' 220 Lbs/Sq. Yd. ACHM Surface Crse. & 9 " Aggregate Base

4. The following values should be used for Coefficients of relative strength:
   ACHM Surface Course(3/8",9.5mm,1/2",12.5mm)---0.44
   ACHM Binder Course(1",25mm)----------0.44
   ACHM Base Course(1-1/2",37.5mm)----------0.36
   P.C. Stabilized Base(Soil Cement)----------0.20
   Aggregate Base Course(Class 7)----------0.14
   Aggregate Base Course(Class 5)----------0.11
   Lime Treated Subgrade----------0.07
5. The correlation of the R-Value and the Resilient Modulus should be made using the "Correlation Chart for Estimating Resilient Modulus" shown on Page A-5.
6. Reliabilities used for the specified type of roadway should be as follows:
   Interstate - 90 - 95%
   Primary - 85 - 90%
   Secondary - 75 - 80%
   Urban - 80 - 95%
7. Pavement Designs for two lane roadways shall use the following format when calculating the design traffic for 20 year projections:
   ESALS x 0.5 x 20 x 365
8. Pavement Designs for four lane roadways shall use the following format when calculating the design traffic for 20 year projections:
   ESALS x 0.5 x 0.8 x 20 x 365
9. Initial Serviceability should be 4.5 and Terminal Serviceability should be 2.5. Standard Deviation should be 0.45 for flexible designs and 0.35 for rigid designs.

10. Prime Coat should not be used except when using Asphalt Surface Treatment.
11. In accordance with Robert L. Walters' memo of December 2, 1992, the following practices should be used in the design of flexible pavements:
    a) If locally available subgrade material does not provide desired stability characteristics, either import better material or treat the on-site material.
    b) The binder course should not be placed directly on the subgrade.
12. On the main lanes for all freeways and principle arterial routes, extend full depth pavement structure 2 foot into each shoulder for two-way routes and into the outside shoulder for one-way routes.
13. If a non-permeable base is considered for use on the shoulders, an economic analysis should be made to determine the most economical alternative(non-permeable base with underdrains or permeable base).
14. All pavement designs should include at least 3 alternates with an economic analysis for each alternate. High volume projects on new location should include alternates for flexible and rigid pavement.
15. In accordance with Jim Gee's memo of September 6, 2000, the following criteria should be used for the selection of Performance Grade Asphalt Binder for asphalt concrete hot mix projects:

Design ESAL's (Millions)	*Performance Grade Binder
<3.0	64-22
3.0 to 30.0	70-22
>30.0 & Interstate	76-22

*For Urban areas with slow moving and/or stopping traffic and for rural **arterial** intersections with stopping traffic, increase the Performance Grade **ONLY** for ACHM Surface Course as follows:

NORTH of Interstate 40: Use one level higher grade with 76-22 being maximum grade.
SOUTH of Interstate 40: Use two levels higher grade with 76-22 being maximum grade.

Use a minimum of 1000 tons of asphalt mix when specifying PG 70-22 or PG 76-22. When using higher performance grade asphalt in an urban area, use 4" of ACHM Surface Course where feasible. When specifying PG 70-22 or PG 76-22, use PG 64-22 for driveways and minor roadway approaches.

16. The maximum number of gyrations(Nmax) used with Superpave Asphalts shall be in accordance with the following table:

Appendix A

PAVEMENT DESIGN CRITERIA

DATE: 5/10/06

DESIGN ESALS(millions)	Nmax
<3.0	115
3.0-30	160
>30	205

17. In accordance with the March 23, 1998, Pavement Selection QIP Team's recommendations, the following procedures should be followed in developing pavement designs for flexible pavements:

Pavement Design Procedure

The pavement selection procedure eliminates the Pavement Design Review Committee's review for each individual project. The procedure allows the designer to prepare the pavement design based on pavement selection criteria developed by the Committee.

The pavement selection criteria for flexible pavements is shown in Table 3 for major collector routes and above. This table is to be used for new construction and widening only. It does not apply to overlays. An Interstate rehabilitation procedure is not shown because of its complexity. The table reflects the views of the QIP Team regarding the use of design alternatives. This table is recommended for use by designers when considering alternatives. However, it should be realized that this table does not include all design alternates available to the designer. Options, such as the use of cement stabilized base, soil stabilization, and subbases are not listed explicitly in the table. Furthermore, if economics or other considerations cause a deviation from this criteria, the reasoning should be documented and approval obtained from the Roadway Design Engineer.

The proposed pavement design procedure is presented in Table 3. The procedure eliminates the need for the Pavement Design Review Committee to meet on a regular basis. The Assistant Chief Engineer for Design may call on the Pavement Design Review Committee to meet to discuss general issues regarding pavement selection, revisions to the Pavement Selection Criteria, or particular designs as needed.

Appendix A

PAVEMENT DESIGN CRITERIA

DATE:4/12/04

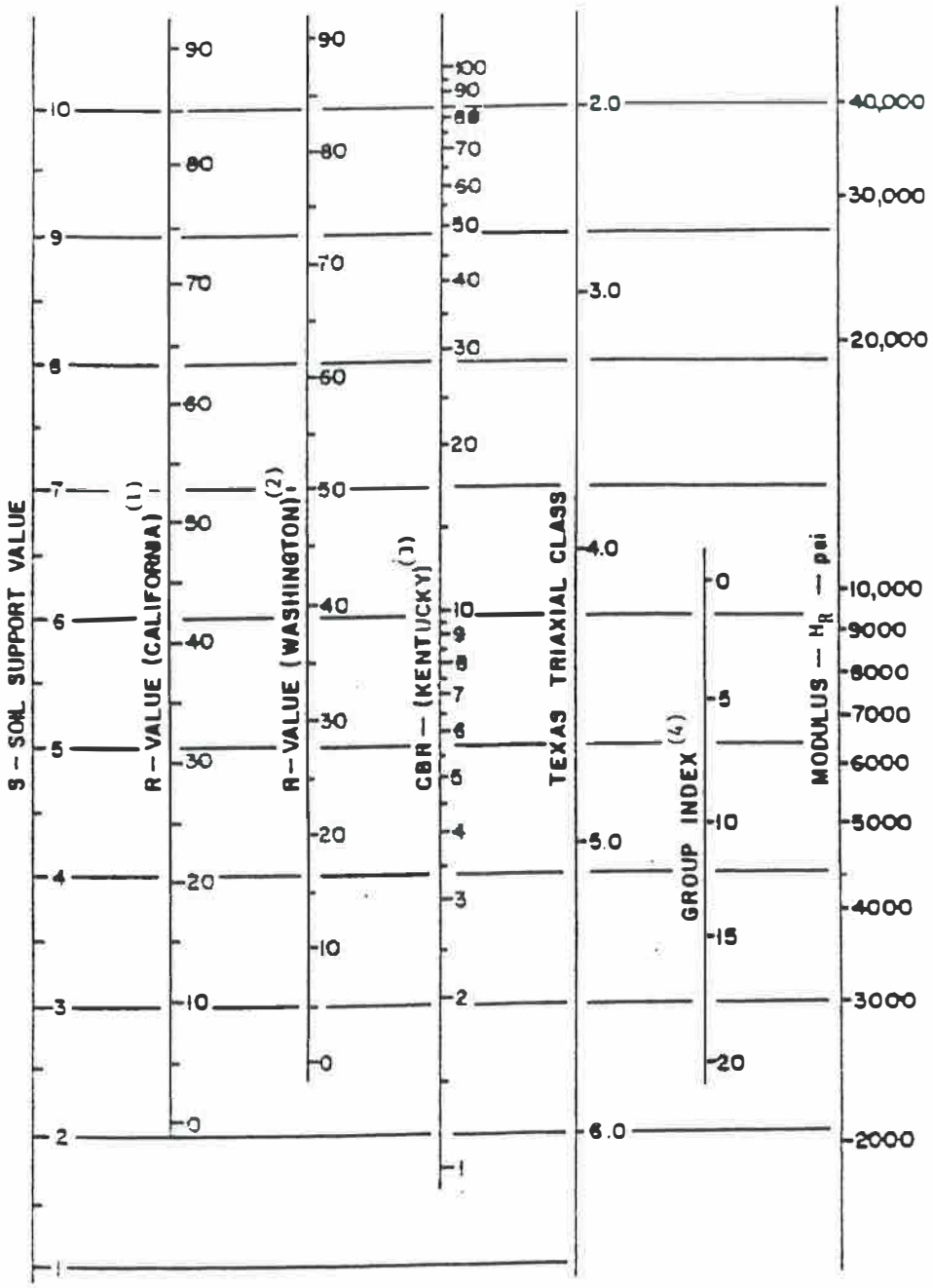
TABLE 3

Aggregate Base Thickness(in)		* *ACHM Base Thickness (in)		*ACHM Binder Thickness (in)		ACHM Surface Thickness (in)		Total Thickness (in)	
Min	max	min	max	min	max	min[1]	max	min[2]	max
6	12	4	12	3	6	2	4	12	N/A

[1] 9.5 mm asphalt mixes may be placed in 1.5 inch lifts to a maximum of 3 inches.
[2] The minimum total thickness will not apply for low volume roads.
* ACHM Binder would be limited to design thicknesses of 3", 3.5", 4", 4.5" or 6".
**ACHM Base would be limited to design thicknesses of 4", 4.5", 5", 8", 8.5", 9", 9.5",10", or 12".

Pavement Design Procedure

- The designer gathers all needed information such as traffic, equivalent axle loads, soil strength, and deflection data needed to design the pavement.
- The designer designs the pavement according to AASHTO and within the parameters established by the Roadway Design Division.
- The designer consults with District personnel concerning preferences and needs as it pertains to pavement selection.
- The designer selects three (3) alternatives for a detailed design and cost analysis. Generally, one of the three alternatives is a full depth asphalt pavement design with the other two alternatives consisting of a stone base with asphalt surfacing. All of the alternatives should meet the Flexible Pavement Design Criteria.
- If any of the design alternatives do not meet the Flexible Pavement Design Criteria, the alternative should include a note to that effect and a brief explanation of the reasons for using a special design alternative.
- The designer submits these three alternates complete with cost estimates to the Roadway Design Engineer for review.
- The Roadway Design Engineer selects the appropriate alternative and submits the recommended alternative to the Assistant Chief Engineer for Design for approval.



CORRELATION CHART FOR ESTIMATING RESILIENT MODULUS

APPENDIX B

18k Equivalent Single Axle Loads

JOB NUMBER: N/A
JOB TITLE: Master Street Plan - Pavement Design
LOCATION: Conway

COUNTY: Faulkner
CLASS: Major Arterial_4Lane_Avg

	% TRUCKS	TOTAL VEHICLES	PASSENGER VEHICLES	COMMERCIAL VEHICLES
2018 ADT	2.5	23600	23010	590
2038 ADT	2.5	28400	27690	710
AVERAGE ADT	2.5	26000	25350	650

DD = .60 F-FACTOR = 3.165 SN = 5 SI= 2.50

SINGLE AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	39	0.01
2,001- 4,000	224	0.45
4,001- 6,000	215	2.15
6,001- 8,000	104	3.55
8,001-10,000	106	9.37
10,001-12,000	170	32.11
12,001-14,000	116	41.93
14,001-16,000	56	34.94
16,001-18,000	27	26.62
18,001-20,000	24	35.71
20,001-22,000	12	26.13
22,001-24,000	4	12.00
24,001-26,000	1	4.05
26,001-28,000	1	5.34
28,001-30,000	0	0.00
30,001-32,000	0	0.00
32,001-34,000	0	0.00
34,001-36,000	0	0.00
36,001-38,000	0	0.00
38,001-40,000	0	0.00
TOTALS	1100	234.35

TANDEM AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	2	0.00
2,001- 4,000	5	0.00
4,000- 6,000	6	0.01
6,001- 8,000	6	0.02
8,001-10,000	15	0.10
10,001-12,000	20	0.28
12,001-14,000	28	0.76
14,001-16,000	33	1.56
16,001-18,000	32	2.49
18,001-20,000	37	4.50
20,001-22,000	38	6.87
22,001-24,000	27	7.06
24,001-26,000	21	7.80
26,001-28,000	16	7.76
28,001-30,000	19	12.23
30,001-32,000	17	14.25
32,001-34,000	21	22.40
34,001-36,000	23	32.40
36,001-38,000	22	38.20
38,001-40,000	23	48.63
40,001-42,000	17	43.90
42,001-46,000	18	55.48
46,001-48,000	17	61.40
48,001-50,000	9	36.36
50,001-52,000	6	27.94
52,001-54,000	0	0.00
54,001-56,000	0	0.00
56,001-58,000	0	0.00
58,001-60,000	0	0.00
TOTALS	479	432.40

S/A 18K EAL= 234 T/A 18K = 432 AUTO 18K = 5

TOTAL 18K EAL= ***672***

WORKED BY: MJM

JOB NUMBER: N/A
JOB TITLE: Master Street Plan - Pavement Design
LOCATION: Conway

COUNTY: Faulkner
CLASS: Major Arterial_4Lane_High

	% TRUCKS	TOTAL VEHICLES	PASSENGER VEHICLES	COMMERCIAL VEHICLES
2018 ADT	2.5	35700	34808	893
2038 ADT	2.5	43000	41925	1075
AVERAGE ADT	2.5	39350	38366	984

DD = .60 F-FACTOR = 3.165 SN = 6 SI= 2.50

SINGLE AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	59	0.01
2,001- 4,000	339	0.68
4,001- 6,000	326	2.93
6,001- 8,000	158	4.90
8,001-10,000	161	12.89
10,001-12,000	257	45.26
12,001-14,000	176	60.29
14,001-16,000	85	51.44
16,001-18,000	40	40.28
18,001-20,000	36	55.47
20,001-22,000	18	41.73
22,001-24,000	6	19.59
24,001-26,000	1	6.71
26,001-28,000	1	8.96
28,001-30,000	0	0.00
30,001-32,000	0	0.00
32,001-34,000	0	0.00
34,001-36,000	0	0.00
36,001-38,000	0	0.00
38,001-40,000	0	0.00
TOTALS	1665	351.15

TANDEM AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	3	0.00
2,001- 4,000	8	0.00
4,000- 6,000	9	0.01
6,001- 8,000	9	0.03
8,001-10,000	22	0.13
10,001-12,000	30	0.39
12,001-14,000	42	1.02
14,001-16,000	50	2.16
16,001-18,000	49	3.43
18,001-20,000	56	6.19
20,001-22,000	58	9.58
22,001-24,000	41	9.95
24,001-26,000	32	11.09
26,001-28,000	24	11.14
28,001-30,000	28	17.81
30,001-32,000	25	20.99
32,001-34,000	31	33.60
34,001-36,000	36	49.03
36,001-38,000	34	58.84
38,001-40,000	35	75.73
40,001-42,000	26	69.08
42,001-46,000	28	88.45
46,001-48,000	26	99.21
48,001-50,000	13	59.26
50,001-52,000	9	45.95
52,001-54,000	0	0.00
54,001-56,000	0	0.00
56,001-58,000	0	0.00
58,001-60,000	0	0.00
TOTALS	725	673.07

S/A 18K EAL= 351 T/A 18K = 673 AUTO 18K = 8

TOTAL 18K EAL= ***1032***

WORKED BY: MJM

JOB NUMBER: N/A
JOB TITLE: Master Street Plan - Pavement Design
LOCATION: Conway

COUNTY: Faulkner
CLASS: Major Arterial_2Lane_Avg

	% TRUCKS	TOTAL VEHICLES	PASSENGER VEHICLES	COMMERCIAL VEHICLES
2018 ADT	3	8900	8633	267
2038 ADT	3	12100	11737	363
AVERAGE ADT	3	10500	10185	315

DD = .60 F-FACTOR = 3.165 SN = 5 SI= 2.50

SINGLE AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	19	0.00
2,001- 4,000	109	0.22
4,001- 6,000	104	1.04
6,001- 8,000	51	1.72
8,001-10,000	52	4.54
10,001-12,000	82	15.56
12,001-14,000	56	20.32
14,001-16,000	27	16.93
16,001-18,000	13	12.90
18,001-20,000	11	17.30
20,001-22,000	6	12.66
22,001-24,000	2	5.81
24,001-26,000	0	1.96
26,001-28,000	0	2.59
28,001-30,000	0	0.00
30,001-32,000	0	0.00
32,001-34,000	0	0.00
34,001-36,000	0	0.00
36,001-38,000	0	0.00
38,001-40,000	0	0.00
TOTALS	533	113.57

TANDEM AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	1	0.00
2,001- 4,000	2	0.00
4,000- 6,000	3	0.00
6,001- 8,000	3	0.01
8,001-10,000	7	0.05
10,001-12,000	10	0.13
12,001-14,000	14	0.37
14,001-16,000	16	0.76
16,001-18,000	16	1.21
18,001-20,000	18	2.18
20,001-22,000	18	3.33
22,001-24,000	13	3.42
24,001-26,000	10	3.78
26,001-28,000	8	3.76
28,001-30,000	9	5.93
30,001-32,000	8	6.91
32,001-34,000	10	10.86
34,001-36,000	11	15.70
36,001-38,000	11	18.51
38,001-40,000	11	23.57
40,001-42,000	8	21.27
42,001-46,000	9	26.89
46,001-48,000	8	29.76
48,001-50,000	4	17.62
50,001-52,000	3	13.54
52,001-54,000	0	0.00
54,001-56,000	0	0.00
56,001-58,000	0	0.00
58,001-60,000	0	0.00
TOTALS	232	209.55

S/A 18K EAL= 114 T/A 18K = 210 AUTO 18K = 2

TOTAL 18K EAL= ***325***

WORKED BY: MJM

JOB NUMBER: N/A
JOB TITLE: Master Street Plan - Pavement Design
LOCATION: Conway

COUNTY: Faulkner
CLASS: Major Arterial_2Lane_High

	% TRUCKS	TOTAL VEHICLES	PASSENGER VEHICLES	COMMERCIAL VEHICLES
2018 ADT	3	18600	18042	558
2038 ADT	3	25400	24638	762
AVERAGE ADT	3	22000	21340	660

DD = .60 F-FACTOR = 3.165 SN = 5 SI= 2.50

SINGLE AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	40	0.01
2,001- 4,000	227	0.45
4,001- 6,000	219	2.19
6,001- 8,000	106	3.61
8,001-10,000	108	9.51
10,001-12,000	173	32.61
12,001-14,000	118	42.57
14,001-16,000	57	35.48
16,001-18,000	27	27.02
18,001-20,000	24	36.25
20,001-22,000	12	26.54
22,001-24,000	4	12.18
24,001-26,000	1	4.11
26,001-28,000	1	5.42
28,001-30,000	0	0.00
30,001-32,000	0	0.00
32,001-34,000	0	0.00
34,001-36,000	0	0.00
36,001-38,000	0	0.00
38,001-40,000	0	0.00
TOTALS	1117	237.96

TANDEM AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	2	0.00
2,001- 4,000	5	0.00
4,000- 6,000	6	0.01
6,001- 8,000	6	0.02
8,001-10,000	15	0.10
10,001-12,000	20	0.28
12,001-14,000	28	0.77
14,001-16,000	34	1.59
16,001-18,000	33	2.53
18,001-20,000	38	4.57
20,001-22,000	39	6.97
22,001-24,000	28	7.17
24,001-26,000	22	7.92
26,001-28,000	16	7.87
28,001-30,000	19	12.42
30,001-32,000	17	14.47
32,001-34,000	21	22.75
34,001-36,000	24	32.90
36,001-38,000	23	38.79
38,001-40,000	24	49.38
40,001-42,000	18	44.57
42,001-46,000	19	56.34
46,001-48,000	18	62.35
48,001-50,000	9	36.92
50,001-52,000	6	28.37
52,001-54,000	0	0.00
54,001-56,000	0	0.00
56,001-58,000	0	0.00
58,001-60,000	0	0.00
TOTALS	487	439.06

S/A 18K EAL= 238 T/A 18K = 439 AUTO 18K = 4

TOTAL 18K EAL= ***681***

WORKED BY: MJM

JOB NUMBER: N/A
JOB TITLE: Master Street Plan - Pavement Design
LOCATION: Conway

COUNTY: Faulkner
CLASS: Minor Arterial_Avg

	% TRUCKS	TOTAL VEHICLES	PASSENGER VEHICLES	COMMERCIAL VEHICLES
2018 ADT	2	5900	5782	118
2038 ADT	2	7400	7252	148
AVERAGE ADT	2	6650	6517	133

DD = .60 F-FACTOR = 3.826 SN = 4 SI= 2.50

SINGLE AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	30	0.01
2,001- 4,000	47	0.14
4,001- 6,000	21	0.27
6,001- 8,000	25	1.01
8,001-10,000	32	3.29
10,001-12,000	29	6.21
12,001-14,000	18	6.93
14,001-16,000	10	6.48
16,001-18,000	4	4.21
18,001-20,000	2	3.44
20,001-22,000	3	7.04
22,001-24,000	1	1.48
24,001-26,000	0	0.87
26,001-28,000	0	0.58
28,001-30,000	0	0.30
30,001-32,000	0	0.20
32,001-34,000	0	0.25
34,001-36,000	0	0.32
36,001-38,000	0	0.00
38,001-40,000	0	0.00
TOTALS	223	43.03

TANDEM AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	0	0.00
2,001- 4,000	2	0.00
4,000- 6,000	3	0.00
6,001- 8,000	4	0.02
8,001-10,000	7	0.06
10,001-12,000	8	0.14
12,001-14,000	7	0.25
14,001-16,000	9	0.53
16,001-18,000	9	0.85
18,001-20,000	9	1.21
20,001-22,000	8	1.72
22,001-24,000	9	2.57
24,001-26,000	9	3.75
26,001-28,000	10	5.13
28,001-30,000	9	6.35
30,001-32,000	10	8.46
32,001-34,000	9	10.34
34,001-36,000	7	9.28
36,001-38,000	5	8.75
38,001-40,000	4	8.19
40,001-42,000	2	4.31
42,001-46,000	1	3.42
46,001-48,000	1	2.63
48,001-50,000	0	1.76
50,001-52,000	0	1.19
52,001-54,000	0	0.92
54,001-56,000	0	0.62
56,001-58,000	0	0.41
58,001-60,000	0	0.23
TOTALS	143	83.11

S/A 18K EAL= 43 T/A 18K = 83 AUTO 18K = 1
TOTAL 18K EAL= ***127***
WORKED BY: MJM

JOB NUMBER: N/A
JOB TITLE: Master Street Plan - Pavement Design
LOCATION: Conway

COUNTY: Faulkner
CLASS: Minor Arterial_High

	% TRUCKS	TOTAL VEHICLES	PASSENGER VEHICLES	COMMERCIAL VEHICLES
2018 ADT	2	16400	16072	328
2038 ADT	2	20700	20286	414
AVERAGE ADT	2	18550	18179	371

DD = .60 F-FACTOR = 3.826 SN = 5 SI= 2.50

SINGLE AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	84	0.02
2,001- 4,000	132	0.26
4,001- 6,000	57	0.57
6,001- 8,000	69	2.34
8,001-10,000	90	7.91
10,001-12,000	81	15.37
12,001-14,000	50	17.93
14,001-16,000	28	17.47
16,001-18,000	12	11.75
18,001-20,000	7	9.86
20,001-22,000	9	20.47
22,001-24,000	1	4.33
24,001-26,000	1	2.54
26,001-28,000	0	1.68
28,001-30,000	0	0.87
30,001-32,000	0	0.55
32,001-34,000	0	0.70
34,001-36,000	0	0.86
36,001-38,000	0	0.00
38,001-40,000	0	0.00
TOTALS	622	115.50

TANDEM AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	1	0.00
2,001- 4,000	5	0.00
4,000- 6,000	7	0.01
6,001- 8,000	11	0.03
8,001-10,000	19	0.13
10,001-12,000	21	0.30
12,001-14,000	21	0.56
14,001-16,000	26	1.23
16,001-18,000	26	1.99
18,001-20,000	24	2.89
20,001-22,000	23	4.18
22,001-24,000	25	6.39
24,001-26,000	26	9.50
26,001-28,000	27	13.27
28,001-30,000	25	16.78
30,001-32,000	27	22.81
32,001-34,000	26	28.31
34,001-36,000	19	25.88
36,001-38,000	15	24.69
38,001-40,000	11	23.40
40,001-42,000	5	12.42
42,001-46,000	3	9.94
46,001-48,000	2	7.65
48,001-50,000	1	5.16
50,001-52,000	1	3.49
52,001-54,000	0	2.70
54,001-56,000	0	1.81
56,001-58,000	0	1.18
58,001-60,000	0	0.67
TOTALS	398	227.37

S/A 18K EAL= 116 T/A 18K = 227 AUTO 18K = 4

TOTAL 18K EAL= ***347***

WORKED BY: MJM

JOB NUMBER: N/A
JOB TITLE: Master Street Plan - Pavement Design
LOCATION: Conway

COUNTY: Faulkner
CLASS: Industrial_Avg

	% TRUCKS	TOTAL VEHICLES	PASSENGER VEHICLES	COMMERCIAL VEHICLES
2018 ADT	7	3800	3534	266
2038 ADT	7	4300	3999	301
AVERAGE ADT	7	4050	3767	284

DD = .60 F-FACTOR = 3.826 SN = 4 SI= 2.50

SINGLE AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	64	0.01
2,001- 4,000	101	0.30
4,001- 6,000	44	0.57
6,001- 8,000	53	2.15
8,001-10,000	69	7.00
10,001-12,000	62	13.24
12,001-14,000	38	14.77
14,001-16,000	21	13.82
16,001-18,000	9	8.98
18,001-20,000	5	7.33
20,001-22,000	7	15.00
22,001-24,000	1	3.16
24,001-26,000	0	1.86
26,001-28,000	0	1.24
28,001-30,000	0	0.65
30,001-32,000	0	0.42
32,001-34,000	0	0.54
34,001-36,000	0	0.68
36,001-38,000	0	0.00
38,001-40,000	0	0.00
TOTALS	475	91.73

TANDEM AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	1	0.00
2,001- 4,000	4	0.00
4,000- 6,000	6	0.01
6,001- 8,000	9	0.03
8,001-10,000	15	0.13
10,001-12,000	16	0.29
12,001-14,000	16	0.53
14,001-16,000	20	1.14
16,001-18,000	20	1.82
18,001-20,000	18	2.58
20,001-22,000	18	3.67
22,001-24,000	19	5.48
24,001-26,000	20	8.00
26,001-28,000	20	10.94
28,001-30,000	19	13.54
30,001-32,000	20	18.04
32,001-34,000	20	22.03
34,001-36,000	14	19.78
36,001-38,000	11	18.65
38,001-40,000	9	17.45
40,001-42,000	4	9.19
42,001-46,000	3	7.29
46,001-48,000	2	5.60
48,001-50,000	1	3.76
50,001-52,000	1	2.55
52,001-54,000	0	1.97
54,001-56,000	0	1.33
56,001-58,000	0	0.88
58,001-60,000	0	0.50
TOTALS	305	177.17

S/A 18K EAL= 92 T/A 18K = 177 AUTO 18K = 1
TOTAL 18K EAL= ***270***
WORKED BY: MJM

JOB NUMBER: N/A
JOB TITLE: Master Street Plan - Pavement Design
LOCATION: Conway

COUNTY: Faulkner
CLASS: Industrial_High

	% TRUCKS	TOTAL VEHICLES	PASSENGER VEHICLES	COMMERCIAL VEHICLES
2018 ADT	7	4800	4464	336
2038 ADT	7	5400	5022	378
AVERAGE ADT	7	5100	4743	357

DD = .60 F-FACTOR = 3.826 SN = 5 SI= 2.50

SINGLE AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	81	0.02
2,001- 4,000	127	0.25
4,001- 6,000	55	0.55
6,001- 8,000	66	2.25
8,001-10,000	86	7.61
10,001-12,000	78	14.79
12,001-14,000	48	17.26
14,001-16,000	27	16.81
16,001-18,000	11	11.31
18,001-20,000	6	9.49
20,001-22,000	9	19.70
22,001-24,000	1	4.17
24,001-26,000	1	2.45
26,001-28,000	0	1.61
28,001-30,000	0	0.84
30,001-32,000	0	0.53
32,001-34,000	0	0.67
34,001-36,000	0	0.83
36,001-38,000	0	0.00
38,001-40,000	0	0.00
TOTALS	598	111.14

TANDEM AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	1	0.00
2,001- 4,000	5	0.00
4,000- 6,000	7	0.01
6,001- 8,000	11	0.03
8,001-10,000	19	0.13
10,001-12,000	20	0.29
12,001-14,000	20	0.54
14,001-16,000	25	1.18
16,001-18,000	25	1.92
18,001-20,000	23	2.78
20,001-22,000	22	4.02
22,001-24,000	24	6.15
24,001-26,000	25	9.14
26,001-28,000	26	12.77
28,001-30,000	25	16.14
30,001-32,000	26	21.95
32,001-34,000	25	27.24
34,001-36,000	18	24.90
36,001-38,000	14	23.76
38,001-40,000	11	22.52
40,001-42,000	5	11.95
42,001-46,000	3	9.56
46,001-48,000	2	7.36
48,001-50,000	1	4.96
50,001-52,000	1	3.36
52,001-54,000	0	2.59
54,001-56,000	0	1.74
56,001-58,000	0	1.14
58,001-60,000	0	0.65
TOTALS	383	218.79

S/A 18K EAL= 111 T/A 18K = 219 AUTO 18K = 1
TOTAL 18K EAL= ***331***
WORKED BY: MJM

JOB NUMBER: N/A
JOB TITLE: Master Street Plan - Pavement Design
LOCATION: Conway

COUNTY: Faulkner
CLASS: Collector_Avg

	% TRUCKS	TOTAL VEHICLES	PASSENGER VEHICLES	COMMERCIAL VEHICLES
2018 ADT	2.5	4100	3998	103
2018 ADT	2.5	5000	4875	125
AVERAGE ADT	2.5	4550	4436	114

DD = .60 F-FACTOR = 3.826 SN = 5 SI= 2.50

SINGLE AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	26	0.01
2,001- 4,000	41	0.08
4,001- 6,000	18	0.18
6,001- 8,000	21	0.72
8,001-10,000	28	2.42
10,001-12,000	25	4.71
12,001-14,000	15	5.50
14,001-16,000	9	5.36
16,001-18,000	4	3.60
18,001-20,000	2	3.02
20,001-22,000	3	6.28
22,001-24,000	0	1.33
24,001-26,000	0	0.78
26,001-28,000	0	0.51
28,001-30,000	0	0.27
30,001-32,000	0	0.17
32,001-34,000	0	0.21
34,001-36,000	0	0.27
36,001-38,000	0	0.00
38,001-40,000	0	0.00
TOTALS	191	35.41

TANDEM AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	0	0.00
2,001- 4,000	1	0.00
4,000- 6,000	2	0.00
6,001- 8,000	3	0.01
8,001-10,000	6	0.04
10,001-12,000	7	0.09
12,001-14,000	6	0.17
14,001-16,000	8	0.38
16,001-18,000	8	0.61
18,001-20,000	7	0.89
20,001-22,000	7	1.28
22,001-24,000	8	1.96
24,001-26,000	8	2.91
26,001-28,000	8	4.07
28,001-30,000	8	5.14
30,001-32,000	8	6.99
32,001-34,000	8	8.68
34,001-36,000	6	7.93
36,001-38,000	4	7.57
38,001-40,000	3	7.18
40,001-42,000	2	3.81
42,001-46,000	1	3.05
46,001-48,000	1	2.35
48,001-50,000	0	1.58
50,001-52,000	0	1.07
52,001-54,000	0	0.83
54,001-56,000	0	0.55
56,001-58,000	0	0.36
58,001-60,000	0	0.21
TOTALS	122	69.71

S/A 18K EAL= 35 T/A 18K = 70 AUTO 18K = 1

TOTAL 18K EAL= ***106***

WORKED BY: MJM

JOB NUMBER: N/A
JOB TITLE: Master Street Plan - Pavement Design
LOCATION: Conway

COUNTY: Faulkner
CLASS: Collector_High

	% TRUCKS	TOTAL VEHICLES	PASSENGER VEHICLES	COMMERCIAL VEHICLES
2018 ADT	2.5	11200	10920	280
2038 ADT	2.5	13900	13553	348
AVERAGE ADT	2.5	12550	12236	314

DD = .60 F-FACTOR = 3.826 SN = 5 SI= 2.50

SINGLE AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	71	0.01
2,001- 4,000	112	0.22
4,001- 6,000	49	0.49
6,001- 8,000	58	1.98
8,001-10,000	76	6.69
10,001-12,000	69	13.00
12,001-14,000	42	15.16
14,001-16,000	24	14.78
16,001-18,000	10	9.94
18,001-20,000	6	8.34
20,001-22,000	8	17.31
22,001-24,000	1	3.66
24,001-26,000	1	2.15
26,001-28,000	0	1.42
28,001-30,000	0	0.74
30,001-32,000	0	0.47
32,001-34,000	0	0.59
34,001-36,000	0	0.73
36,001-38,000	0	0.00
38,001-40,000	0	0.00
TOTALS	526	97.68

TANDEM AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	1	0.00
2,001- 4,000	4	0.00
4,000- 6,000	6	0.01
6,001- 8,000	10	0.03
8,001-10,000	16	0.11
10,001-12,000	18	0.25
12,001-14,000	18	0.48
14,001-16,000	22	1.04
16,001-18,000	22	1.69
18,001-20,000	20	2.45
20,001-22,000	20	3.53
22,001-24,000	21	5.40
24,001-26,000	22	8.03
26,001-28,000	23	11.22
28,001-30,000	22	14.19
30,001-32,000	23	19.29
32,001-34,000	22	23.94
34,001-36,000	16	21.89
36,001-38,000	12	20.88
38,001-40,000	10	19.79
40,001-42,000	4	10.50
42,001-46,000	3	8.40
46,001-48,000	2	6.47
48,001-50,000	1	4.36
50,001-52,000	1	2.95
52,001-54,000	0	2.28
54,001-56,000	0	1.53
56,001-58,000	0	1.00
58,001-60,000	0	0.57
TOTALS	337	192.29

S/A 18K EAL= 98 T/A 18K = 192 AUTO 18K = 2

TOTAL 18K EAL= ***292***

WORKED BY: MJM

JOB NUMBER: N/A
JOB TITLE: Master Street Plan - Pavement Design
LOCATION: Conway

COUNTY: Faulkner
CLASS: Local_Avg

	% TRUCKS	TOTAL VEHICLES	PASSENGER VEHICLES	COMMERCIAL VEHICLES
2018 ADT	3.5	1800	1737	63
2038 ADT	3.5	1900	1834	67
AVERAGE ADT	3.5	1850	1785	65

DD = .60 F-FACTOR = 3.826 SN = 4 SI= 2.50

SINGLE AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	15	0.00
2,001- 4,000	23	0.07
4,001- 6,000	10	0.13
6,001- 8,000	12	0.49
8,001-10,000	16	1.60
10,001-12,000	14	3.02
12,001-14,000	9	3.37
14,001-16,000	5	3.16
16,001-18,000	2	2.05
18,001-20,000	1	1.68
20,001-22,000	2	3.43
22,001-24,000	0	0.72
24,001-26,000	0	0.42
26,001-28,000	0	0.28
28,001-30,000	0	0.15
30,001-32,000	0	0.10
32,001-34,000	0	0.12
34,001-36,000	0	0.16
36,001-38,000	0	0.00
38,001-40,000	0	0.00
TOTALS	109	20.95

TANDEM AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	0	0.00
2,001- 4,000	1	0.00
4,000- 6,000	1	0.00
6,001- 8,000	2	0.01
8,001-10,000	3	0.03
10,001-12,000	4	0.07
12,001-14,000	4	0.12
14,001-16,000	5	0.26
16,001-18,000	5	0.42
18,001-20,000	4	0.59
20,001-22,000	4	0.84
22,001-24,000	4	1.25
24,001-26,000	5	1.83
26,001-28,000	5	2.50
28,001-30,000	4	3.09
30,001-32,000	5	4.12
32,001-34,000	5	5.03
34,001-36,000	3	4.52
36,001-38,000	3	4.26
38,001-40,000	2	3.99
40,001-42,000	1	2.10
42,001-46,000	1	1.66
46,001-48,000	0	1.28
48,001-50,000	0	0.86
50,001-52,000	0	0.58
52,001-54,000	0	0.45
54,001-56,000	0	0.30
56,001-58,000	0	0.20
58,001-60,000	0	0.11
TOTALS	70	40.46

S/A 18K EAL= 21 T/A 18K = 40 AUTO 18K = 0

TOTAL 18K EAL= ***62***

WORKED BY: MJM

JOB NUMBER: N/A
JOB TITLE: Master Street Plan - Pavement Design
LOCATION: Conway

COUNTY: Faulkner
CLASS: Local_High

	% TRUCKS	TOTAL VEHICLES	PASSENGER VEHICLES	COMMERCIAL VEHICLES
2018 ADT	3.5	2600	2509	91
2038 ADT	3.5	2700	2606	95
AVERAGE ADT	3.5	2650	2557	93

DD = .60 F-FACTOR = 3.826 SN = 4 SI= 2.50

SINGLE AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	21	0.00
2,001- 4,000	33	0.10
4,001- 6,000	14	0.19
6,001- 8,000	17	0.70
8,001-10,000	22	2.29
10,001-12,000	20	4.33
12,001-14,000	12	4.83
14,001-16,000	7	4.52
16,001-18,000	3	2.94
18,001-20,000	2	2.40
20,001-22,000	2	4.91
22,001-24,000	0	1.03
24,001-26,000	0	0.61
26,001-28,000	0	0.40
28,001-30,000	0	0.21
30,001-32,000	0	0.14
32,001-34,000	0	0.18
34,001-36,000	0	0.22
36,001-38,000	0	0.00
38,001-40,000	0	0.00
TOTALS	155	30.01

TANDEM AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	0	0.00
2,001- 4,000	1	0.00
4,000- 6,000	2	0.00
6,001- 8,000	3	0.01
8,001-10,000	5	0.04
10,001-12,000	5	0.10
12,001-14,000	5	0.17
14,001-16,000	7	0.37
16,001-18,000	6	0.60
18,001-20,000	6	0.84
20,001-22,000	6	1.20
22,001-24,000	6	1.79
24,001-26,000	7	2.62
26,001-28,000	7	3.58
28,001-30,000	6	4.43
30,001-32,000	7	5.90
32,001-34,000	6	7.21
34,001-36,000	5	6.47
36,001-38,000	4	6.10
38,001-40,000	3	5.71
40,001-42,000	1	3.01
42,001-46,000	1	2.38
46,001-48,000	1	1.83
48,001-50,000	0	1.23
50,001-52,000	0	0.83
52,001-54,000	0	0.64
54,001-56,000	0	0.43
56,001-58,000	0	0.29
58,001-60,000	0	0.16
TOTALS	100	57.96

S/A 18K EAL= 30 T/A 18K = 58 AUTO 18K = 1
TOTAL 18K EAL= ***88***
WORKED BY: MJM

JOB NUMBER: N/A
JOB TITLE: Master Street Plan - Pavement Design
LOCATION: Conway

COUNTY: Faulkner
CLASS: Residential

	% TRUCKS	TOTAL VEHICLES	PASSENGER VEHICLES	COMMERCIAL VEHICLES
2018 ADT	1	500	495	5
2038 ADT	1	500	495	5
AVERAGE ADT	1	500	495	5

DD = .60 F-FACTOR = 3.826 SN = 4 SI= 2.50

SINGLE AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	1	0.00
2,001- 4,000	2	0.01
4,001- 6,000	1	0.01
6,001- 8,000	1	0.04
8,001-10,000	1	0.12
10,001-12,000	1	0.23
12,001-14,000	1	0.26
14,001-16,000	0	0.24
16,001-18,000	0	0.16
18,001-20,000	0	0.13
20,001-22,000	0	0.26
22,001-24,000	0	0.06
24,001-26,000	0	0.03
26,001-28,000	0	0.02
28,001-30,000	0	0.01
30,001-32,000	0	0.01
32,001-34,000	0	0.01
34,001-36,000	0	0.01
36,001-38,000	0	0.00
38,001-40,000	0	0.00
TOTALS	8	1.62

TANDEM AXLES

WEIGHT GROUP	# OF AXLES	18K EQ
UNDER 2,000	0	0.00
2,001- 4,000	0	0.00
4,000- 6,000	0	0.00
6,001- 8,000	0	0.00
8,001-10,000	0	0.00
10,001-12,000	0	0.01
12,001-14,000	0	0.01
14,001-16,000	0	0.02
16,001-18,000	0	0.03
18,001-20,000	0	0.05
20,001-22,000	0	0.06
22,001-24,000	0	0.10
24,001-26,000	0	0.14
26,001-28,000	0	0.19
28,001-30,000	0	0.24
30,001-32,000	0	0.32
32,001-34,000	0	0.39
34,001-36,000	0	0.35
36,001-38,000	0	0.33
38,001-40,000	0	0.31
40,001-42,000	0	0.16
42,001-46,000	0	0.13
46,001-48,000	0	0.10
48,001-50,000	0	0.07
50,001-52,000	0	0.04
52,001-54,000	0	0.03
54,001-56,000	0	0.02
56,001-58,000	0	0.02
58,001-60,000	0	0.01
TOTALS	5	3.12

S/A 18K EAL= 2 T/A 18K = 3 AUTO 18K = 0

TOTAL 18K EAL= ***5***

WORKED BY: MJM

APPENDIX C

Pavement Design Calculations

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Major Arterial - Four Lane

INPUTS	
Design Traffic, w18 (ESAL)	1,991,440
Reliability, R (%)	95
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	2700
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**5.54**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Major Arterial - Four Lane

INPUTS	
Design Traffic, w18 (ESAL)	1,991,440
Reliability, R (%)	95
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	3500
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**5.11**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Major Arterial - Four Lane

INPUTS	
Design Traffic, w18 (ESAL)	1,962,240
Reliability, R (%)	95
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	4300
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.77**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Major Arterial - Four Lane

INPUTS	
Design Traffic, w18 (ESAL)	3,013,440
Reliability, R (%)	95
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	2700
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**5.84**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Major Arterial - Four Lane

INPUTS	
Design Traffic, w18 (ESAL)	3,013,440
Reliability, R (%)	95
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	3500
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**5.40**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Major Arterial - Four Lane

INPUTS	
Design Traffic, w18 (ESAL)	3,013,440
Reliability, R (%)	95
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	4300
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**5.05**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Major Arterial - Two Lane

INPUTS	
Design Traffic, w18 (ESAL)	1,204,500
Reliability, R (%)	95
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	2700
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**5.17**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Major Arterial - Two Lane

INPUTS	
Design Traffic, w18 (ESAL)	1,186,250
Reliability, R (%)	95
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	3500
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.75**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Major Arterial - Two Lane

INPUTS	
Design Traffic, w18 (ESAL)	1,186,250
Reliability, R (%)	95
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	4300
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.44**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Major Arterial - Two Lane

INPUTS	
Design Traffic, w18 (ESAL)	2,522,150
Reliability, R (%)	95
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	2700
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**5.71**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Major Arterial - Two Lane

INPUTS	
Design Traffic, w18 (ESAL)	2,522,150
Reliability, R (%)	95
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	3500
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**5.27**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Major Arterial - Two Lane

INPUTS	
Design Traffic, w18 (ESAL)	2,485,650
Reliability, R (%)	95
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	4300
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.93**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Minor Arterial

INPUTS	
Design Traffic, w18 (ESAL)	452,600
Reliability, R (%)	90
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	2700
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.28**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Minor Arterial

INPUTS	
Design Traffic, w18 (ESAL)	463,550
Reliability, R (%)	90
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	3500
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**3.92**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Minor Arterial

INPUTS	
Design Traffic, w18 (ESAL)	463,550
Reliability, R (%)	90
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	4300
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**3.65**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Minor Arterial

INPUTS	
Design Traffic, w18 (ESAL)	1,266,550
Reliability, R (%)	90
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	2700
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.95**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Minor Arterial

INPUTS	
Design Traffic, w18 (ESAL)	1,266,550
Reliability, R (%)	90
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	3500
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.54**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Minor Arterial

INPUTS	
Design Traffic, w18 (ESAL)	1,266,550
Reliability, R (%)	90
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	4300
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.25**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Industrial

INPUTS	
Design Traffic, w18 (ESAL)	959,950
Reliability, R (%)	85
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	2700
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.60**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Industrial

INPUTS	
Design Traffic, w18 (ESAL)	959,950
Reliability, R (%)	85
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	3500
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.21**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Industrial

INPUTS	
Design Traffic, w18 (ESAL)	985,500
Reliability, R (%)	85
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	4300
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**3.94**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Industrial

INPUTS	
Design Traffic, w18 (ESAL)	1,208,150
Reliability, R (%)	85
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	2700
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.75**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Industrial

INPUTS	
Design Traffic, w18 (ESAL)	1,208,150
Reliability, R (%)	85
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	3500
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.35**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Industrial

INPUTS	
Design Traffic, w18 (ESAL)	1,208,150
Reliability, R (%)	85
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	4300
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.06**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Collector

INPUTS	
Design Traffic, w18 (ESAL)	386,900
Reliability, R (%)	85
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	2700
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.03**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Collector

INPUTS	
Design Traffic, w18 (ESAL)	397,850
Reliability, R (%)	85
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	3500
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**3.69**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Collector

INPUTS	
Design Traffic, w18 (ESAL)	397,850
Reliability, R (%)	85
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	4300
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**3.44**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Collector

INPUTS	
Design Traffic, w18 (ESAL)	1,065,800
Reliability, R (%)	85
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	2700
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.66**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Collector

INPUTS	
Design Traffic, w18 (ESAL)	1,065,800
Reliability, R (%)	85
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	3500
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.28**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Collector

INPUTS	
Design Traffic, w18 (ESAL)	1,095,000
Reliability, R (%)	85
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	4300
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**4.01**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Local

INPUTS	
Design Traffic, w18 (ESAL)	226,300
Reliability, R (%)	80
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	2700
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**3.60**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Local

INPUTS	
Design Traffic, w18 (ESAL)	226,300
Reliability, R (%)	80
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	3500
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**3.28**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Local

INPUTS	
Design Traffic, w18 (ESAL)	226,300
Reliability, R (%)	80
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	4300
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**3.05**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Local

INPUTS	
Design Traffic, w18 (ESAL)	321,200
Reliability, R (%)	80
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	2700
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**3.80**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Local

INPUTS	
Design Traffic, w18 (ESAL)	321,200
Reliability, R (%)	80
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	3500
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**3.47**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Local

INPUTS	
Design Traffic, w18 (ESAL)	321,200
Reliability, R (%)	80
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	4300
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**3.22**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Residential

INPUTS	
Design Traffic, w18 (ESAL)	18,250
Reliability, R (%)	80
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	2700
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**2.42**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Residential

INPUTS	
Design Traffic, w18 (ESAL)	18,250
Reliability, R (%)	80
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	3500
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**2.21**

1993 AASHTO Pavement Design
Flexible Pavement Design
Structural Number Analysis

Master Street Plan
Residential

INPUTS	
Design Traffic, w18 (ESAL)	18,250
Reliability, R (%)	80
Standard Deviation, So	0.45
Subgrade Modulus, MR (psi)	4300
Initial Serviceability	4.5
Terminal Serviceability	2.5
Performance, ΔPSI	2

Design Structural Number, SN	**2.04**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