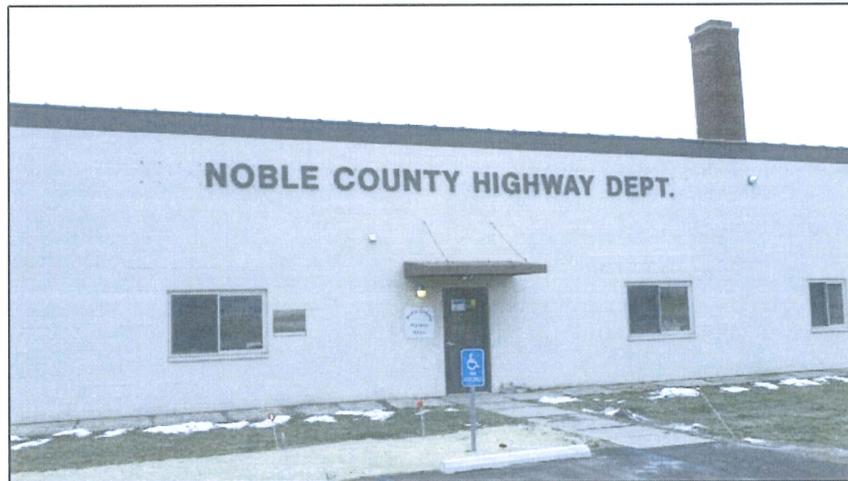


2014 NOBLE COUNTY HIGHWAY CONSTRUCTION STANDARDS

FOR

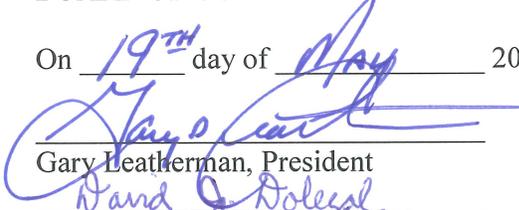
ROADS, CURBS, DRAINAGE STRUCTURES, SIDEWALKS,
DRIVEWAYS AND OTHER RELATED ITEMS



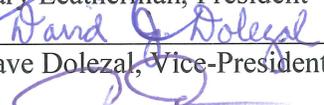
NOBLE COUNTY HIGHWAY DEPARTMENT
1118 EAST MAIN STREET, ALBION, INDIANA 46701
Email: highway@nobleco.org

ADOPTED BY THE NOBLE COUNTY
BOARD OF COMMISSIONERS

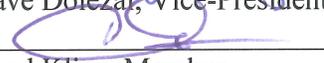
On 19TH day of May 2014.



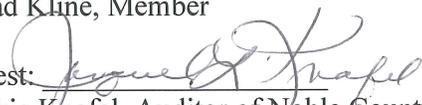
Gary Leatherman, President



Dave Dolezal, Vice-President



Chad Kline, Member

Attest: 

Jackie Knafel, Auditor of Noble County

Table of Contents

Section – I: General Requirements

- A. Governing Specifications
- B. Dedication of Road Right-of-Way by Plat
- C. Dedication of Right-of-Way by Metes and Bounds
- D. Plan Submissions
- E. Acceptance Procedures

Section – II: Minimum Design Standards for Roads

- A. Residential Type Subdivisions
 - 1. Table 1 - Design Standards for Roads in Subdivisions.
 - 2. Additional comments on Simple, Standard and Conservation Type Subdivisions:
- B. Commercial/Industrial Type Developments
 - 1. Table-2 – Design Standards for Roads in Commercial/Industrial Developments.
 - 2. Additional comments on Commercial/Industrial Type Developments:
- C. Arterial and Collector Roads
 - 1. Table 3 - Design Standards for Arterial and Collector Roads.
 - 2. Additional comments on Arterial and Collector Roads:
- D. Storm Drainage
- E. Street Name and Traffic Signs
- F. Driveways
 - 1. Design Controls
 - 2. Driveway Location and Spacing
 - 3. Existing Driveways
 - 4. Bonding
 - 5. Driveway Standards Summary
- G. Street Lighting

Section – III: Specifications for Construction

- A. Subgrade
- B. Rigid Pavement – Plain Concrete
- C. Bituminous Pavement
- D. Bridges

Section - IV: Road Acceptance Standards

- A. Required Specifications for Acceptance
- B. Acceptance Procedures for Roads and Bridges
- C. Maintenance Provision Notice by the Board of Commissioners
- D. Exceptions to Acceptance and Maintenance
- E. Testing
- F. Utility Installation, Relocation Notice and Timing Standards

Section - V: Maintenance Bonds

- A. Three Year Maintenance Bond Term
- B. Letter of Credit

Section – VI: Permits

- A. Driveway Permit
- B. Right-of-Way Cut Permit
- C. Oversize, Overweight Permit

- D. Use of County Right-of-Way Permit
- E. Utility Permit

Section – VII: Fees

- A. Developer fees for Road plan review
- B. Developer fees for Bridge plan review
- C. Developer costs for street name signs, traffic signs and posts.
- D. Inspection Agreement with Developer.

Section – VIII: Construction Drawings

- A. Typical pavement cross section
 - 1. Drawing #01 - Flexible-Curb & Gutter- Local/Boulevard
 - 2. Drawing #02 - Concrete Curb & Gutter
 - 3. Drawing #03 - Concrete – Open Drainage
- B. Curb & Gutter Sections
 - 1. Drawing #04 - Concrete Rolled Curb and Gutter
 - 2. Drawing #05 - Integral Concrete Curb
- C. Underdrains
 - 1. Drawing #06 - Underdrains
- D. Cul-de-Sac
 - 1. Drawing #07 - Cul-de-Sac
- E. Driveways
 - 1. Drawing #08 - Class I Drive
 - 2. Drawing #09 - Class II Drive
 - 3. Drawing #10 - Class III Drive
 - 4. Drawing #11 - Concrete Curb & Gutter Connection for Class I & III Drives
 - 5. Drawing #12 - Class IV Drive – Paved Shoulder 8'-0" or Greater in Width
 - 6. Drawing #13 - Class IV Drive – Paved Shoulder less than 8'-0" or Unpaved Shldr.
 - 7. Drawing #14 - Class V Drive
 - 8. Drawing #15 - Proposed Driveway Details-A
 - 9. Drawing #16 - Proposed Driveway Details-B
- F. Backfill Requirements
 - 1. Drawing #17 - Storm Sewers & Utilities within R/W of Existing Streets-A
 - 2. Drawing #18 - Storm Sewers & Utilities within R/W of Existing Streets-B
 - 3. Drawing #19 - Typical Utility Locations in Right-of-Way

SECTION - I: GENERAL REQUIREMENTS

A: GOVERNING SPECIFICATIONS

B: DEDICATION OF ROAD RIGHT-OF-WAY BY PLAT

C: DEDICATION OF ROAD RIGHT-OF-WAY BY METES AND BOUNDS

D: PLAN SUBMISSION

E: ACCEPTANCE PROCEDURES

SECTION - I: GENERAL REQUIREMENTS

A. GOVERNING SPECIFICATIONS

1. Purpose:

The design and construction of Noble County Roads that are in a suitable location, have sufficient width, are constructed of approved materials, accommodate prospective traffic and afford satisfactory access to police, firefighting, snow removal, sanitation and road maintenance equipment. To create a coordinated roadway system for the public.

2. Design Standards

All “new roads” shall be designed and constructed in accordance with:

- a. The Noble County Highway Construction Standards (NCHCS),
- b. Noble County Unified Development Ordinance (NCUDO), which may also be cited and referred to as the “Zoning Ordinance”, “Subdivision Control Ordinance”, or “Unified Development Ordinance”, and the
- c. Noble County Storm Drainage & Erosion Control Ordinance.

All “existing roads” approved for maintenance by the NCHD shall be maintained as directed by the County Highway Engineer and approved by the Noble County Board of Commissioners.

3. Reference Manuals:

If design elements are not covered or addressed in the above defined standards, the following manuals can be used for reference and guidance. Any design element used from these manuals shall be approved by the County Highway Engineer.

- a. The American Association of State Highway and Transportation Officials (AASHTO): A Policy on Geometric Design of Highways and Streets (commonly referred to as the "Green Book"),
- b. National Cooperative Highway Research, Report 659, titled, Guide for the Geometric Design of Driveways,
- c. Indiana Department of Transportation (INDOT) Standard Specifications, and
- d. Indiana Manual on Uniform Traffic Control Devices (IMUTCD) for Streets and Highways.

4. Coordination/Communication:

To enhance the review and approval process of subdividing and dedicating of road right-of-way, the developer/owner should consult with the County Highway Engineer, County Surveyor, and the County Plan Commission prior to the preparation and submission of a Primary Plat and/or roadway improvement plans.

Throughout this document reference is made to the County Highway Engineer. This reference shall mean a professional engineer licensed in the state of Indiana to fulfill the

duties of County Highway Engineer as defined by IC Chapter 8-17-5. If the County has not employed a professional engineer, the Highway Superintendent shall assume the Highway Engineer responsibilities under these construction standards, unless prohibited by Indiana Code and/or the law. If the Highway Superintendent is prohibited from completing certain tasks, the County will hire a professional engineer consultant to perform these tasks.

B. DEDICATION OF ROAD RIGHT-OF-WAY BY PLAT

Dedication by plat shall conform to the Noble County Uniform Development Ordinance (NCUDO) and any applicable amendments thereto.

Road right-of-way widths shall meet the minimum widths as defined by the Noble County Thoroughfares Map. The legend is shown below:

<u>Road Classification</u>	<u>Width (feet)</u>
Limited Access Highway	300
Arterial	100
Collector	60 - 80
Local Road	50 - 60
Unpaved Road	50

C. DEDICATION OF ROAD RIGHT-OF-WAY BY METES AND BOUNDS

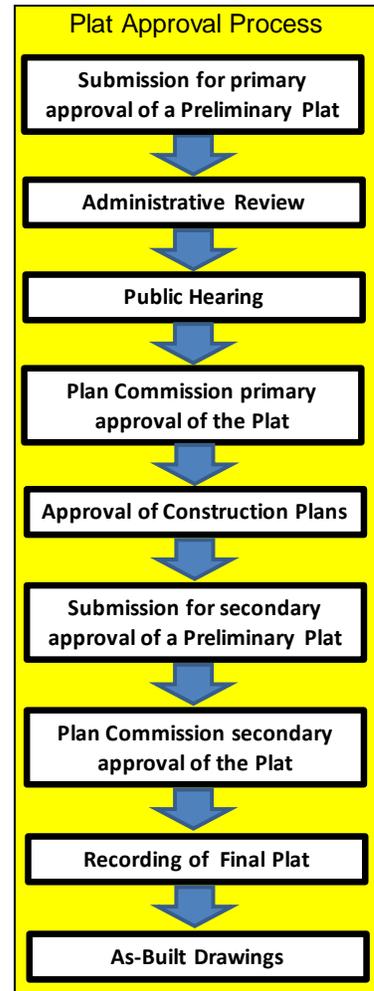
Road right-of-way may be dedicated to or acquired by NCHD:

1. By acceptance of a deed of dedication to the Board of Commissioners,
2. By eminent domain procedures, or
3. By other undertakings acceptable to NCHD that increases the road right-of-way width of an existing, accepted, and maintained road of Noble County.

The applicant shall use a form acceptable to the Board of Commissioners and filed with the NCHD for review and approval.

A legal description for the road right-of-way shall be prepared and signed by a land surveyor registered in the State of Indiana. The road right-of-way width shall conform to the standards of the NCHD as specified in Tables 1, 2, and 3: Minimum Design Standards for Roads (see Section II).

Upon review and approval by the appropriate Noble County agencies, the dedication shall be recorded by the NCHD and copies of the recorded document will be distributed to the grantor and to all County agencies having a probable interest in the dedication.



If improvements are proposed for the dedicated roadway, plans shall be submitted to the NCHD and Noble County Surveyor for review. This review can take place concurrent with the dedication process. No work shall begin until the dedication is recorded and the plans are approved.

D. PLAN SUBMISSION

Submission of plans for review by the Highway Department shall contain the following information.

General plans shall be prepared for all required improvements. Plans shall be drawn at a scale that is readable and clear but no smaller than one (1) inch equals fifty (50) feet, or as defined below. Plan sheets shall be minimum 22x34 inch size, on a landscape orientation, stapled along the left edge.

1. The Site Plan shall include the following items:
 - a. North arrow.
 - b. Graphic scale.
 - c. Proposed address for each lot.
 - d. Proposed name of the subdivision.
 - e. Area map insert showing the general location of the site referenced to major streets.
 - f. Legal description of the site.
 - g. Boundary lines of the site including all dimensions of the site.
 - h. Names, centerlines, and right-of-way widths of all streets, alleys, and easements.
 - i. Layout, number, dimension, area, building setback lines on all lots.
 - j. Location and dimensions of any existing structures.
 - k. Location of all floodway, floodway fringe areas, and wetlands within the boundaries of the site.
 - l. Areas reserved for park, recreation, conservation, wetland, common area, lake, trails, and the like.
 - m. Proposed perimeter landscaping areas.
 - n. Proposed entryway feature signs.
 - o. Stamp of Registered Professional Engineer or Surveyor.
 - p. Any other information necessary to support a thorough review of the project as requested on the application form or from the Plan Commission or Zoning Administrator.
2. Representative building elevations for each facade of primary structures including the following information.
 - a. Permitted building materials to be used for wall, window, roof, and other architectural features.
 - b. Placement, size, color, and illumination details for any proposed wall sign.
 - c. Any other information necessary to support a thorough review of the project as requested on the application form or from the Plan Commission or Zoning Administrator.

3. The Site Access and Circulation Plan shall be incorporated into the Site Plan or may be submitted as a separate plan. It shall be drawn to scale, preferably one (1) inch equals twenty (20) feet, and shall include the following items:
 - a. North arrow.
 - b. Graphic scale.
 - c. Proposed name of the subdivision.
 - d. Names, centerlines, and right-of-way widths of all existing and proposed streets, alleys, and easements within 100 feet of the site.
 - e. All improvements to the street system on-site and off-site.
 - f. Measurement of curb radius and/or flares.
 - g. Location of proposed and existing sidewalk and sidepaths.
 - h. Location and details of all proposed wayfinding signs.
 - i. Any other information necessary to support a thorough review of the project as requested on the application form or from the Plan Commission or Zoning Administrator.

4. The Utility Plan, drawn to scale, preferably one (1) inch equals twenty (20) feet, including the following items:
 - a. Location of all existing and proposed utility easements.
 - b. Location and size of all existing and proposed utility components including, but not limited to sanitary sewer components, water components, storm water components, electric, gas, telephone, and cable.
 - c. Location and illumination capacity of all lights.
 - d. Names of legal ditches and streams in or adjacent to the site.
 - e. Contours sufficient to illustrate storm water runoff.
 - f. Storm water drainage plan including estimated runoff.
 - g. Any other information necessary to support a thorough review of the project as requested on the application form or from the Plan Commission or Zoning Administrator.

5. The Landscape Plan shall indicate, either on the required Site Plan or on a separate landscape plan, the existing and proposed perimeter landscaping that meets or exceeds the standards detailed in Article 07: Perimeter Landscaping Standards of the NCUDO.

6. Traffic Impact Study (TIS).
 - a. A TIS shall be required when a proposed development meets or exceeds the warrants of the Indiana Department of Transportation (INDOT) TIS Guidelines (150 or more dwelling units; 15,000 square feet or more of retail space; 35,000 or more square feet of office space; 70,000 square feet or more square feet of industrial space; 30,000 square feet or more of educational space; 120 or more occupied rooms; 46,000 or more square feet of medical space; or any mixed use development which generates 100 or more peak hour trips in the peak direction).
 - b. A TIS shall be required if requested by the County Highway Engineer.
 - c. A registered professional engineer shall prepare and certify the TIS. The TIS shall evaluate the impact of present and future traffic generated by the proposed development on the adjacent roadway system. Prior to commencement, the applicant

shall meet with the Zoning Administrator and County Highway Engineer to determine an appropriate scope for the TIS.

E. ACCEPTANCE PROCEDURES

The developer/builder shall meet all provisions, conditions and procedures as outlined in “Section IV: Noble County Road Acceptance Standards“, of these NCHCS.

SECTION - II: MINIMUM DESIGN STANDARDS FOR ROADS

- A. RESIDENTIAL TYPE SUBDIVISIONS
- B. COMMERCIAL/INDUSTRIAL TYPE DEVELOPMENTS
- C. ARTERIAL AND COLLECTOR ROADS
- D. STORM DRAINAGE
- E. STREET NAME AND TRAFFIC SIGNS
- F. DRIVEWAYS
- G. STREET LIGHTING

SECTION - II: MINIMUM DESIGN STANDARDS FOR ROADS

A. RESIDENTIAL TYPE SUBDIVISIONS

1. Table 1 - Design Standards for Roads in Subdivisions.

TABLE - 1: MINIMUM DESIGN STANDARDS FOR ROADS							
	Residential Uses (0)						
	Conservation Use / Local			Standard Use / Local			Simple Use / Local
Right-of-Way Width	50 ft.			60 ft.			N/A (1)
Pavement Width	22 ft.			30 ft. (5)			N/A (1)
Pave: H.A. Surface	1 in.	1 in.		1 in.	1 in.		N/A (1)
Pave: H.A. Binder	3 in.	3 in.		3 in.	3 in.		N/A (1)
Pave: H.A. Base		5 in.			5 in.		N/A (1)
Pave: Stone Base #73	3 in.		4 in.	3 in.		4 in.	N/A (1)
Pave: Stone Base #2	7 in.			7 in.			N/A (1)
Pave: Plain Concrete			6 in.			6 in.	N/A (1)
Design Speed	20-30 mph			20-30 mph			N/A (1)
On Street Parking	No			Yes-1 Side			N/A (1)
Median	No			No			N/A (1)
Curb & Gutter	No			Yes-24 in.			N/A (1)
Curb Type	No			Roll/Vert.(6)			N/A (1)
Back-to-Back of Curb	N/A			34 ft.			N/A (1)
Material Specs	(2)			(2)			N/A (1)
Sidewalks/Sidepath (4)	Yes-4 ft.-1 Side			Yes-5 ft.-2 Sides			N/A (1)
Tree Plot Width	Yes - 5 ft.			Yes - 5 ft.			N/A (1)
Maximum Grade	6.0%			6.0%			N/A (1)
Minimum Grade (3)	0.5%			0.5%			N/A (1)
Horiz. Curve Radius	150 ft.			150 ft.			N/A (1)
Length of Tangent	50 ft.			50 ft.			N/A (1)
Sight Distance	200 ft.			200 ft.			N/A (1)
Curb return Radius	20 ft.			20 ft.			N/A (1)
Cul-de-Sac Pave Dia.	80 ft.			80 ft.			N/A (1)
Cul-de-Sac R/W Dia.	110 ft.			110 ft.			N/A (1)
Cul-de-Sac Length (Max)	1,000 ft.(7)			600 ft.(7)			N/A (1)
Cul-de-Sac Length (Min)	60 ft.(7)			60 ft.(7)			N/A (1)
Block Length (Max)	1,760 ft.			1,000 ft.			N/A (1)
Block Length (Min)	100 ft.			140 ft.			N/A (1)
Street Lights Height	20 ft.			20 ft.			N/A (1)

(0) The three road types found in Residential subdivisions. See NCUDO, Article 6.

(1) Standards developed by Plan Commission in coordination with County Engineer.

(2) Material Specifications shall follow Indiana DOT Design Standards and approved by County

(3) Minimum length of vertical curve - 100 ft., but not less than 20 ft. for each percent of algebraic

(4) Sidewalks and sidepaths not required if the subdivision does not utilize a sanitary sewer system

(5) Includes 8 foot Parking Lane.

(6) Rolled curbs are typical along residential street, but Vertical curbs are used for curb extensions

(7) Cul-de-sac length measured from center of through street to center of cul-de-sac.

2. Additional comments on roads in Simple, Standard and Conservation Type Subdivisions:
- a. Right-of-Way - All residential roads shall have minimum right-of-way width of fifty (50) or sixty (60) feet, including cul-de-sacs. **These values are based on the Comprehensive Plan's, "Thoroughfare Map"**. Typical pavement cross section

- drawings can be found in Section VIII: Construction Drawings, for details. Additional right-of-way may be required in locations where the top of the back slope falls outside the minimum right-of-way line. Additional right-of-way may also be required for added traffic lanes (deceleration, passing, acceleration, right or left turn lanes, etc.).
- b. Pavement Width – The pavement width for Conservation type subdivisions is 22 feet (includes 2-11 foot lanes). Curbs are not required but aggregate shoulders may be considered. The pavement width for Standard type subdivisions is 30 feet (includes 2-11 foot lanes plus an 8 foot parking lane, not including the 2 foot curb & gutter). The parking lane does not need to be marked.
 - c. Normal Crown – Pavements shall have a maximum cross slope of two percent (2%), with crown at centerline. Acceleration/deceleration and turn lanes shall not exceed three percent (3%). Cul-de-sac shall have a maximum cross slope of three percent (3%), front to back or side to side.
 - d. Back to Back of curb width – Means full pavement width plus curb width.
 - e. Curb & Gutter – See Section VIII: Construction Drawings, for details.
 - f. Curb Type – The two types of curb and gutter sections are rolled and vertical. Rolled curbs are primarily used in subdivisions. Vertical curbs, also called barrier curbs, are used at locations to discourage vehicles from driving over the curb.
 - g. Underdrains – If applicable, curb and gutter sections shall have 4 inch underdrains.
 - h. On Street Parking – Only required for Standard type subdivisions.
 - i. Median – Not required.
 - j. Pavement Section – The NCHD allows several pavement sections utilizing asphalt and concrete. The pavement section will be based on soil conditions and projected traffic characteristics.
 - k. Sidewalk/Sidepath – Sidewalk shall consist of 4 inches of concrete. Sidepaths may be an aggregate surface or other porous materials. Sidewalks/sidepaths are not required if the subdivision does not utilize a sanitary sewer system and water utility system.
 - l. Tree Plot Width – This is the grass area between the curb and sidewalk-R/W line, sometime called a park-strip. Trees shall be centered in the Tree Plot area. If there are no curbs, the trees shall be placed a minimum of 10 feet from the edge of pavement. Selection of trees shall follow the Indiana Community Tree Selection Guide.
 - m. Maximum Profile Grade – This is the maximum grade along the centerline of the pavement. The minimum length of vertical curve is 100 feet, but not less than 20 feet for each percent of algebraic difference in grade or as required by AASHTO.
 - n. Minimum Grade – This is the minimum grade along the gutter line.
 - o. Horizontal Curve Radius – This is the curvature along the centerline of the pavement.
 - p. Length of Tangent – This is the required straight tangent between horizontal curves.
 - q. Sight Distance – This is the minimum unobstructed sight distance.
 - r. Curb return Radius – This is the radius at all intersections along back of curb.
 - s. Cul-de-Sac Pavement Diameter – See Section VIII: Constr. Drawings, for details.
 - t. Cul-de-Sac R/W Diameter - See Section VIII: Construction Drawings, for details.
 - u. Cul-de-Sac Length (Max) - From center of intersection to center of cul-de-sac.
 - v. Cul-de-Sac Length (Min) - From center of intersection to center of cul-de-sac.
 - w. Block Length (Maximum) - From center of intersection to center of intersection.
 - x. Block Length (Minimum) - From center of intersection to center of intersection.
 - y. Street Light Height – See Section “G. Street Lighting” below for more details.

B. COMMERCIAL/INDUSTRIAL TYPE DEVELOPMENTS

1. Table-2 – Design Standards for Roads in Commercial/Industrial Developments.

TABLE - 2: MINIMUM DESIGN STANDARDS FOR ROADS									
	Commercial / Industrial Uses (0)								
	Collector / Urban			Commercial Use / Local			Industrial Use / Local		
Right-of-Way Width	60 - 70 ft.			60 ft.			60 ft.		
Pavement Width	26 ft.			24 ft.			24 ft.		
Pave: H.A. Surface	1 in.	1 in.		1 in.	1 in.		1 in.	1 in.	
Pave: H.A. Binder	4 in.	4 in.		4 in.	4 in.		4 in.	4 in.	
Pave: H.A. Base		5 in.			5 in.			5 in.	
Pave: Stone Base #73	4 in.		4 in.	4 in.		4 in.	3 in.		4 in.
Pave: Stone Base #2	7 in.			7 in.			7 in.		
Pave: Plain Concrete			8 in.			8 in.			8 in.
Design Speed	30-45 mph			20-35 mph			20-35 mph		
On Street Parking	No			No			No		
Median	No			No			No		
Curb & Gutter	Yes-24 in.			Yes-24 in.			Yes-24 in.		
Curb Type	(2)			Roll or Vert.			Roll or Vert.		
Back-to-Back of Curb	30 ft.			28 ft.			28 ft.		
Material Specs	(2)			(2)			(2)		
Sidewalks/Sidepath (4)	Yes - 6 ft.-2 Sides			Yes - 4 ft.-1 Side			Yes - 4 ft.-1 Side		
Tree Plot Width	Yes - 5 ft.			Yes - 5 ft.			Yes - 5 ft.		
Maximum Grade	5.0%			5.0%			5.0%		
Minimum Grade (3)	0.5%			0.5%			0.5%		
Horiz. Curve Radius	200 ft.			200 ft.			200 ft.		
Length of Tangent	200 ft.			200 ft.			200 ft.		
Sight Distance	200 ft.			200 ft.			200 ft.		
Curb return Radius	30 ft.			30 ft.			30 ft.		
Cul-de-Sac Pave Dia.	N/A			100 ft.			120 ft.		
Cul-de-Sac R/W Dia.	N/A			130 ft.			156 ft.		
Cul-de-Sac Length (Max)	N/A			600 ft.(7)			No		
Cul-de-Sac Length (Min)	N/A			60 ft.(7)			No		
Block Length (Max)	(2)			1,000 ft.			No Max.		
Block Length (Min)	(2)			140 ft.			No Min.		
Street Lights Height	25 ft.			25 ft.			25 ft.		

(0) The three road types found in Commercial / Industrial subdivisions. See NCUDO, Article 6.

(1) Standards developed by Plan Commission in coordination with County Engineer.

(2) Material Specifications shall follow Indiana DOT Design Standards and approved by

(3) Minimum length of vertical curve - 100 ft., but not less than 20 ft. for each percent of

(4) Sidewalks and sidepaths not required if the subdivision does not utilize a sanitary

(5) Includes 8 foot Parking Lane.

(6) Rolled curbs are typical along residential street, but Vertical curbs are used for curb

(7) Cul-de-sac length measured from center of through street to center of cul-de-sac.

2. Additional comments on Roads in Commercial/Industrial Developments:

- a. Right-of-Way - All commercial/industrial roads shall have minimum right-of-way width of sixty (60) feet, including cul-de-sacs, except for some urban collectors. These values are based on the Comprehensive Plan’s, “Thoroughfare Map”. Typical pavement cross section drawings for these roads can be found in Section VIII: Construction Drawings, for details. Additional right-of-way may be required in locations where the top of the back slope falls outside the minimum right-of-way line.

- Additional right-of-way may also be required for added traffic lanes (deceleration, passing, acceleration, right turn or left turn lanes, etc.).
- b. Pavement Width – The pavement width for commercial/industrial type subdivisions is 24 feet (includes 2 - 12 foot lanes). Curbs are required. The pavement width for urban Collectors is 26 feet (includes 2 - 13 foot lanes, not including the 2 foot curb & gutter).
 - c. Normal Crown – Pavements shall have a maximum cross slope of two percent (2%), with crown at centerline. Acceleration/deceleration and turn lanes shall not exceed three percent (3%). Cul-de-sac shall have a maximum cross slope of three percent (3%) front to back or side to side.
 - d. Back to Back of curb width – Means full pavement width plus curb width.
 - e. Curb & Gutter – See Section VIII: Construction Drawings, for details.
 - f. Curb Type – The NCHD uses two types of curb and gutter sections, rolled and vertical. Rolled curbs are used along the curb-line parallel to the road centerline. This allows new driveways to be located anywhere along the back of the curb without reconstruction of the curb. Vertical curbs are also called barrier curbs, and are used at locations to discourage vehicles from driving over the curb.
 - g. Underdrains – All curb and gutter sections shall have 4 inch underdrains.
 - h. On Street Parking – Not recommended for Commercial/Industrial type developments.
 - i. Median – Not required.
 - j. Pavement Section –The Highway Department allows several pavement sections utilizing asphalt and concrete. The final pavement section will be based on soil conditions and the pavement design.
 - k. Sidewalk/Sidepath – Sidewalk shall consist of 4 inches of concrete. Sidepaths may be an aggregate surface or other porous materials.
 - l. Tree Plot Width– This is the grass area between the curb and sidewalk, sometime called a park-strip. Trees shall be centered in the Tree Plot area. If there are no curbs, the trees shall be placed a minimum of 10 feet from the edge of pavement. Selection of trees shall follow the Indiana Community Tree Selection Guide.
 - m. Maximum Grade – This is the maximum grade along the centerline of the pavement.
 - n. Minimum Grade – This is the minimum grade along the gutter line.
 - o. Horizontal Curve Radius – This is the curvature along the centerline of the pavement.
 - p. Length of Tangent – This is the required straight tangent between horizontal curves.
 - q. Sight Distance – This is the minimum unobstructed sight distance.
 - r. Curb return Radius – This is the radius at all intersections along back of curb.
 - s. Cul-de-Sac Pavement Diameter – See Section VIII: Constr. Drawings, for details.
 - t. Cul-de-Sac R/W Diameter - See Section VIII: Construction Drawings, for details.
 - u. Cul-de-Sac Length (Max) - From center of intersection to center of cul-de-sac.
 - v. Cul-de-Sac Length (Min) - From center of intersection to center of cul-de-sac.
 - w. Block Length (Maximum) - From center of intersection to center of intersection.
 - x. Block Length (Minimum) - From center of intersection to center of intersection.
 - y. Street Light Height – See Section “G. Street Lighting” below for more details.

C. ARTERIAL AND COLLECTOR ROADS

1. Table 3 - Design Standards for Arterial and Collector Roads.

TABLE - 3: MINIMUM DESIGN STANDARDS FOR ROADS			
	All Uses (0)		
	Divided Arterial	Primary Arterial	Secondary Arterial / Collector
Right-of-Way Width	100 ft.	80 ft.	60 - 80 ft.
Pavement Width	2 @ 25 ft.	50 ft.	26 - 42 ft.
Pave: H.A. Surface	(2)	(2)	(2)
Pave: H.A. Binder	(2)	(2)	(2)
Pave: H.A. Base	(2)	(2)	(2)
Pave: Stone Base #73	(2)	(2)	(2)
Pave: Stone Base #2	(2)	(2)	(2)
Pave: Plain Concrete	(2)	(2)	(2)
Design Speed	(2)	(2)	(2)
On Street Parking	(2)	(2)	(2)
Median	16 ft.	No	Left Tune Ln
Curb & Gutter	Yes-24 in.	Yes-24 in.	Yes-24 in.
Curb Type	(2)	(2)	(2)
Back-to-Back of Curb	2 @ 27 ft.	54 ft.	30 - 46 ft.
Material Specs	(2)	(2)	(2)
Sidewalks/Sidepath (4)	Yes - 6 ft.-1 Side	Yes - 6 ft.-1 Side	Yes - 6 ft.-1 Side
Tree Plot Width	(2)	(2)	(2)
Maximum Grade	(2)	(2)	(2)
Minimum Grade (3)	0.5%	0.5%	0.5%
Horiz. Curve Radius	(2)	(2)	(2)
Length of Tangent	(2)	(2)	(2)
Sight Distance	(2)	(2)	(2)
Curb return Radius	(2)	(2)	(2)
Cul-de-Sac Pave Dia.	N/A	N/A	N/A
Cul-de-Sac R/W Dia.	N/A	N/A	N/A
Cul-de-Sac Length (Max)	N/A	N/A	N/A
Cul-de-Sac Length (Min)	N/A	N/A	N/A
Block Length (Max)	(2)	(2)	(2)
Block Length (Min)	(2)	(2)	(2)
Street Lights Height	25 ft.	25 ft.	25 ft.

(0) The roads defined in the Noble County Thoroughfares plan.

(1) Standards developed by Plan Commission in coordination with County Engineer.

(2) Material Specifications shall follow Indiana DOT Design Standards and approved by County

(3) Minimum length of vertical curve - 100 ft., but not less than 20 ft. for each percent of algebraic

(4) Sidewalks and sidepaths not required if the subdivision does not utilize a sanitary sewer system

(5) Includes 8 foot Parking Lane.

(6) Rolled curbs are typical along residential street, but Vertical curbs are used for curb extensions

(7) Cul-de-sac length measured from center of through street to center of cul-de-sac.

2. Additional comments on Arterial and Collector Roads:

- a. Right-of-Way - Arterials and Collector roads have right-of-way widths that vary from sixty (60) feet to one hundred (100) feet (Table-3). These values are based on the Comprehensive Plan's, "Thoroughfare Map". Typical pavement cross section drawings for these roads can be found in Section VIII: Construction Drawings.

- Additional right-of-way may be required in locations where the top of the back slope falls outside the minimum right-of-way line. Additional right-of-way may also be required for added traffic lanes (deceleration, passing, acceleration, right turn or left turn lanes, etc.).
- b. Pavement Width - The pavement width for arterial/collector roads vary from twenty six (26) feet (includes 2 - 13 foot lanes) for collectors to fifty (50) feet (includes 2 - 25 foot lanes).
 - c. Normal Crown - Pavements shall have a maximum cross slope of two percent (2%), with crown at centerline. Accel/decel and turn lanes shall not exceed three percent (3%). Cal-de-Sac shall have a maximum cross slope of three percent (3%) front to back or side to side.
 - d. Back to Back of curb width – Means full pavement width plus curb width.
 - e. Curb & Gutter - See Section VIII: Construction Drawings, for details.
 - f. Curb Type - The NCHD uses two types of curb and gutter sections, rolled and vertical. Rolled curbs are not used on high volume arterial/collector roads. Vertical curbs are used for lane channelization and drainage. Shoulder sections are normally used in rural areas of the county.
 - g. Underdrains - All curb and gutter sections shall have 4 inch underdrains.
 - h. On Street Parking - Not recommended for Commercial/Industrial type developments.
 - i. Median – May be used on high volume arterial roads.
 - j. Pavement Section - The NCHD allows several pavement sections utilizing asphalt and concrete. The final pavement section will be based on soil conditions and the pavement design.
 - k. Sidewalk/Sidepath - Sidewalk shall consist of 4 inches of concrete.
 - l. Tree Plot Width - This is the grass area between the curb and sidewalk, sometime called a park-strip. Trees shall be centered in the Tree Plot area. If there are no curbs, the trees shall be placed a minimum of 10 feet from the edge of pavement. Selection of trees shall follow the Indiana Community Tree Selection Guide.
 - m. Maximum Grade - This is the maximum grade along the centerline of the pavement.
 - n. Minimum Grade - This is the minimum grade along the gutter line.
 - o. Horizontal Curve Radius - This is the curvature along the centerline of the pavement.
 - p. Length of Tangent - This is the required straight tangent between horizontal curves.
 - q. Sight Distance - This is the minimum unobstructed sight distance.
 - r. Curb return Radius - This is the radius at all intersections along back of curb.
 - s. Cul-de-Sac Pavement Diameter - Not allowed.
 - t. Cul-de-Sac R/W Diameter - Not allowed.
 - u. Cul-de-Sac Length (Max) - Not allowed.
 - v. Cul-de-Sac Length (Min) - Not allowed.
 - w. Block Length (Maximum) - From center of intersection to center of intersection.
 - x. Block Length (Minimum) - From center of intersection to center of intersection.
 - y. Street Light Height - See Section “G. Street Lighting” below for more details.

D STORM DRAINAGE

Storm drainage design shall meet the requirements of current Noble County Storm Drainage and Erosion Control Ordinance. Drainage plans shall be submitted to and approved by the Noble County Surveyor.

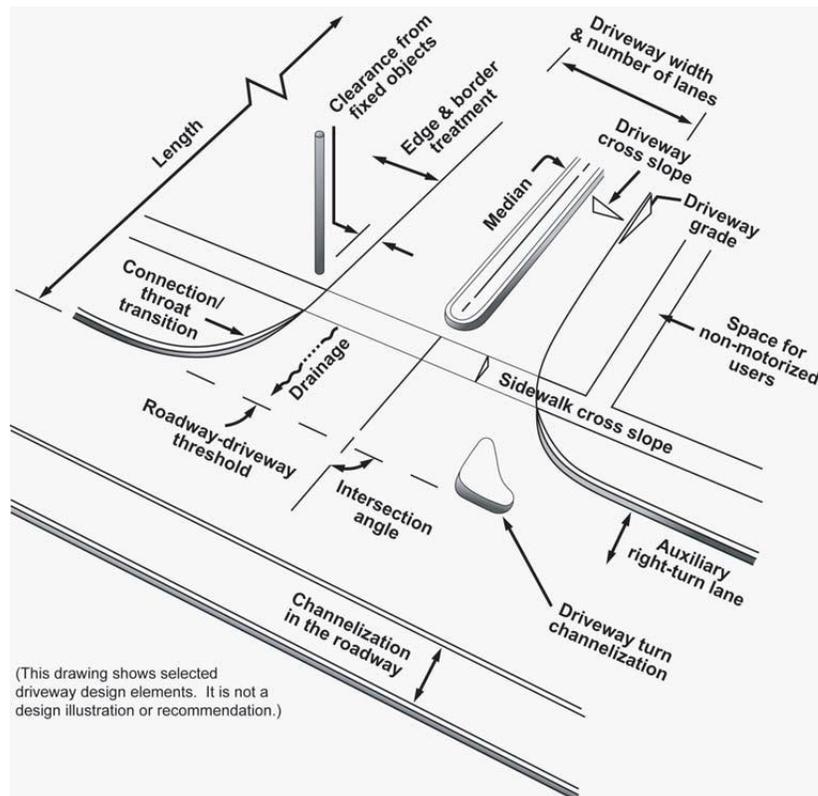
E. STREET NAME AND TRAFFIC SIGNS

The NCHD shall provide and install the street name signs, traffic signs and posts for new developments. The developer shall reimburse the NCHD for the cost prior to completing the work. The NCHD will provide the developer with the cost and the developer will pay the NCHD.

F. DRIVEWAYS

1. Design Controls

Driveways are private roads that provide access between public ways and activities or buildings on abutting land. All new driveways in Noble County require an approved Driveway Permit issued by the NCHD (see paragraph A, Section VI - Permits for these requirements). Driveways are controlled by the Noble County Driveway Ordinance.



Driveway Design Elements

The objective of this section is to provide driveway design information to;

- a. Provide a safe environment for various users: bicyclists, motorists, and pedestrians (including pedestrians with disabilities and transit passengers).
- b. Provide geometry that accommodates the characteristics and limitations of the various users, and avoid geometric conditions that create traffic operations problems.
- c. Provide driveways that allow traffic to flow smoothly.
- d. Avoid driveway locations that create traffic operations problems.
- e. Provide driveways that are conspicuous and clearly delineated for the various users.

Driveways provide access or connections to the Noble County road network. Driveway connection points are not controlled by stop or yield signs; therefore, for safety reasons, it is very important to place them at locations that provide good visibility for road users and property owners. Although all types of property tracts need access to and from public roadways, the nature of that need varies according to the type of land use (e.g., agricultural, commercial, and residential). The design of the driveway depends on the type of land use associated with factors such as the volume of mainline traffic and the types and volume of vehicles in and out of the driveway.

Driveway design practice should address many issues. Some broad considerations include the following:

- a. Convenient and safe vehicle egress and ingress;
- b. Sight distance and safety for sidewalk users;
- c. Accessibility for pedestrians with disabilities and incorporating requirements of the ADA Accessibility Guidelines;
- d. Interactions where bicycle lanes or paths are present; and
- e. Interactions where public transportation stops are in the vicinity of the driveway, and
- f. Environmental factors, such as wetlands.

2. Driveway Location and Spacing

To preserve safety and mobility there is a need to manage access along roadways. In practice, this includes regulating the number of, location of, spacing between, and geometric design of driveways.

Although private property enjoys the right of access to the system of county roadways, this is not an unlimited right. The right of access must be balanced with the needs of and potential harm to the general traveling public. To preserve mobility and provide safety for the traveling public, NCHD will follow the guidelines in section and the permit process outlined in Section VI, Driveway Permits to manage access to the roadway network. The guidelines are more restrictive for major arterials, the roadways intended to accommodate higher volumes and speeds; however, some objectives and practices apply to most driveways.

NCHD will control the number of driveways allowed, this includes when and where direct driveway access will be allowed onto the roadway network, whether alternative

access should be provided, and the need for shared access. If direct access is allowed, it may include the extent of that access (i.e., right-in and right-out versus full movement) and circumstances in which multiple driveways are allowed. In addition, the NCHD may require that steps be taken to mitigate projected traffic operations and/or safety impacts. An example of mitigation might be providing an auxiliary lane to remove driveway turning traffic from the through traffic lanes on an arterial road.

Number of driveways allowed is as follows:

- a. For a typical residential lot in a residential subdivision, shall be permitted one (1) driveway,
- b. For a residential lot in a rural setting consisting of two (2) acres or more, shall be permitted one (1) primary driveway and one (1) secondary driveway if it can be justified, recommended by Highway Engineer and approved by the Board of Commissioners for Noble County,
- c. For a residential/agricultural lot/farm consisting of two (2) acres or more, shall be permitted one (1) primary driveway and one (1) secondary driveway if it can be justified, recommended by Highway Engineer and approved by the Board of Commissioners for Noble County,
- d. For a residential/agricultural lot/farm consisting of two (2) acres or more, shall permit one Farm Field entrance to access each field adjacent to county right-of-way.
- e. For a business/commercial lot, shall be permitted one (1) driveway and may receive additional driveway(s) if justified, recommended by Highway Engineer and approved by the Board of Commissioners for Noble County.

The radius or decel-accel lanes of the driveway shall not cross the property line. For example, if the drive radius is 10 feet, the drive shall be a minimum of 10 feet from the adjacent property line, unless the property owners have signed an agreement with the adjacent property owner (or cross-access agreement). The cross-access agreement shall be submitted to the NCHD at the time the driveway permit is processed.

These standards are not intended to address all possible driveway design options. For example, driveways at lake properties are design challenges because of small lots, narrow right-of-way, no drainage system and limited space. The NCHD shall review each permit application and apply the design that fit the situation, with the desire to provide a safe, usable, and efficient access point.

3. Existing Driveways

Many existing driveways throughout the county were constructed without processing a Driveway Permit or prior to the permit process. Some of these driveways do not meet current design standards. While the Highway Department does not have the resources to inspect every driveway, they will assist property owners and/or realtors who want a driveway checked for compliance to standards. Properties with existing driveways that are proposing new buildings will be reviewed by the Highway Department. If the driveway does not meet current standards, a new Driveway Permit will be required.

Anyone that constructed an existing driveway or a new driveway without a Driveway Permit, does so at his/her/its own risk and such party, and any successor in ownership to such driveway, shall indemnify and hold Noble County, and its agents, officials, and employees, free and harmless from any and all, claims and liabilities arising from such placement, whether placed by these recommendations or otherwise.

4. Bonding

Per the Noble county Driveway Ordinance, the NCHD may require, before granting a permit, that a sufficient bond be given or cash deposit be made with the NCHD to insure the carrying out of the terms of the permit, which bond or deposit shall be returned when the requirements of the permit have been met. If work is not performed as required permittee will be notified in writing, and will be given twenty one (21) calendar days to complete said work. If work is not corrected as required, bond will be used by the NCHD to bring the work to county compliance.

5. Driveway Standards Summary

- a. The following Table #4, “Driveway Standards Summary”, shows specific design requirements for new and reconstructed driveways in Noble County.

Table #4 - DRIVEWAY STANDARDS SUMMARY				
Driveway Type (per UDO)	Agricultural Driveway	Residential Driveway	Residential Driveway	Non-residential Driveway
Zoning	OS-A1-A2-A3-RE	R1-R2-R3-R4-R5-MH	LR	IS-VM-C1-C2-C3-I1-I2-HI-
Permit Required:	yes	yes	yes	yes
Separation/Offset:	-	-	-	-
1. From Intersecting Street:	-	-	-	-
- arterial or collector street	100 feet	150 feet	150 feet	150 feet
- local street	100 feet	100 feet	100 feet	100 feet
- lot is not large enough	na	farthest from the intersection(1)	farthest from the intersection(1)	farthest from the intersection(1)
2. From Property Lines:	10 feet	3 feet	3 feet	10 feet
3. From Another Driveway:	-	-	-	-
- arterial or collector street	60 feet	100 feet	70 feet	100 feet
- local street.	60 feet	16 feet	16 feet	45 feet
Stopping Sight Distance Req'd	yes(6)	yes(6)	yes(6)	yes(6)
Width: (Measured at R/W line)	Minimum = 20 feet, shall not exceed 30 feet, maximum = 40 feet(2)	Minimum = 12 feet, shall not exceed 16 feet, maximum = 24 feet(2)	Minimum = 12 feet, shall not exceed 16 feet, maximum = 24 feet(2)	Minimum = 16 feet, shall not exceed 40 feet, maximum = 45 feet(2)
Approach Grade - Max.	8.33%+/-	8.33%+/-	8.33%+/-	8.33%+/-
Driveway Grade - Max.	12%+/-	12%+/-	12%+/-	12%+/-
Lane Cross Slope	2%	2%	2%	2%
Radius - Ingress	10 feet min.	10 feet min.	10 feet min.	15 feet min.
Radius - Egress	10 feet min.	10 feet min.	10 feet min.	25 feet min.
Materials:	Asphalt, concrete, limestone, or gravel shall be acceptable driveway surface materials	Aphalt, concrete, or other materials approved by the NCHD	Aphalt, concrete, or other materials approved by the NCHD	Aphalt, concrete, or other non-porous material approved by the NCHD
Material Depth:	(7)	(7)	(7)	(7)
Drainage Pipe Required:	yes(3)	yes(3)	yes(3)	yes(3)
1. Minimum Pipe Size	12 inch(4)	12 inch(4)	12 inch(4)	12 inch(4)
2. Minimum Pipe Length	Drive Width plus 10 feet(5)	Drive Width plus 10 feet(5)	Drive Width plus 10 feet(5)	Drive Width plus 10 feet(5)
Shared Driveway:	-	-	-	-
1. Easement Required:	na	yes	yes	yes
2. Width:	same as above	same as above	same as above	same as above
(1) = If lot does not allow required setback, the Permit has to be approved by the Commissioners.				
(2) = Driveways wider than shown must be justified and approved by NCHD.				
(3) = A Driveway Drainage Pipe is required unless waived by the NCHD. The pipe shall be located in the same alignment as the sideditch or as director by the NCHD.				
(4) = Some locations may require a larger pipe size to meet drainage requirements. If the sideditch is a Legal Drain the County Surveyor will determine the pipe size.				
(5) = The pipe shall extend 5 feet beyond the edge of the driveway on each side.				
(6) = See Section VI - Driveway Permit for required stopping sight distances for posted speed limit.				
(7) = The approach material shall be constructed to a depth as shown on Standard Drawings.				

- b. Additional information about Driveway Standards Summary table.
1. Permit Required – See Section VI – Driveway Permit for details on the permit application.
 2. Separation/Offset – The NCHD requires driveways to be separated or offset from intersections, property lines and other driveways a specified minimum distance measured along the property line, based on the land zoning. The reason for the separation is to ensure good traffic movement and avoid vehicular conflicts and safety problems.
 3. Stopping Sight Distance – This is the distance required to stop a vehicle when traveling at a certain speed. By county ordinance the speed limit is 55 miles per hour unless posted otherwise. Vehicles entering or exiting a driveway have to be seen by vehicles traveling on the county roads to avoid accidents, and likewise, a vehicle exiting the driveway should be able to see on-coming vehicles. The NCHD will not approve a driveway permit if it does not meet minimum stopping sight distance requirements. Property owners may appeal to the Noble County Board of Commissioners.
 4. Width – The width of a driveway is measured at the right-of-way line. The values in the table are typical widths based on the type of vehicles using the driveway. If a wider drive is desired, the property owner shall submit a written request and justification to the NCHD for review.
 5. Approach Grade – This is the profile grade of the drive approach between the edge of the road and the right-of-way line. If a steeper grade is desired, the property owner shall submit a written request and justification to the NCHD for review.
 6. Driveway Grade – This is the profile grade of the driveway beyond the right-of-way line. If a steeper grade is desired, the property owner shall submit a request and justification to the NCHD for review.
 7. Lane Cross Slope – This is the grade from the center of the driveway (or crown) to the edge of the drive. This is the minimum grade to facilitate drainage off the driveway.
 8. Radius Ingress – This is the radius from the road into the driveway or right turn. If a larger radius is desired, the property owner shall submit a request and justification to the NCHD for review.
 9. Radius Egress – This is the radius from the driveway into road or right turn. If a larger radius is desired, the property owner shall submit a request and justification to the NCHD for review.
 10. Materials – The driveway pavement can be constructed with a variety of materials. The approach pavement, between the edge of road and right-of-way line, shall be structurally sound for the type of traffic expected to use the driveway. The property owner is responsible for maintaining the surface of the driveway approach, especially along the edge of the roadway to prevent edge drop-offs, pot holes and loose stone. Concrete driveway approach surfaces shall not extend above the elevation of the roadway pavement because this condition may cause damage to snow removal equipment. Commercial driveways shall have a concrete or asphalt surface. The NCHD may also require high volume driveways (more than 100 cars per day) to be hard surfaced.

11. Material Depth: The approach material shall be constructed to a depth as shown on the Construction Drawings.
12. Drainage Pipe Required: All driveways shall be constructed to allow side-ditch drainage under the drive approach through a culvert pipe, except when waived by the NCHD. The NCHD will inspect each driveway location to determine the need for a culvert pipe, because in some locations a pipe is not needed. The NCHD will also determine the culvert pipe size and required length.
13. Shared Driveway – This is a driveway that is shared between two or more property owners. If a shared driveway is desired, a representative of the property owners shall submit a request to the NCHD. If the NCHD approves the request, the property owners will be instructed to have a legal description prepared of the easement area and submitted along with the driveway permit. See Section VI – Permits for more details.

G. STREET LIGHTING

1. Residential Street Lighting Standards

Street Light System Design: The proposed street light system shall meet the following conditions:

- a. Glare: Street lights shall be shielded to prevent glare on residential properties.
- b. Continuity: Street lights shall be consistent in size, type, and scale throughout the entire development. If a street light exists along the street on which the entrance to the development is located, the applicant shall install the same or similar street light at the entrance.
- c. At Intersections: The applicant shall propose a lighting design that provides the minimum amount of light necessary for vehicular and pedestrian safety at all intersections within the development.
- d. Between Intersections: Unless street lights have been provided at mid-block or every fifteen (15) lots, a dusk-to-dawn light that operates on a photo cell shall be installed on each residential lot. This lighting shall be provided by the builder and maintained by the owner in perpetuity.
- e. Height: Street lights located at the entrance, intersections or mid-block shall not exceed twenty (20) feet in height.

2. Non-residential Street Lighting Standards

Street Light System Design: The proposed street light system shall meet the following conditions:

1. Glare: Street lights shall be shielded (e.g. down lighting) to prevent glare on residential properties.
2. Continuity: Street lights shall be consistent in size, type, and scale throughout the entire development.
 - a. If a street light exists along the street on which the entrance to the development is located, the applicant shall install the same or similar street light at the entrance.

3. At Intersections: The applicant shall propose a lighting design that provides the minimum amount of light necessary for vehicular and pedestrian safety at all intersections within the development.
4. Height: Street lights located at the entrance or intersections shall not exceed twenty-five (25) feet in height.

SECTION - III. SPECIFICATIONS FOR CONSTRUCTION

- A. SUBGRADE
- B. RIGID PAVEMENT – PLAIN CONCRETE
- C. BITUMINOUS PAVEMENT
- D. BRIDGES

A. SUBGRADE

1. The construction of the subgrade shall conform to the lines, grades, and cross sections as shown on the engineering plans.
2. The NCHD is to be provided with nuclear density gauge tests on the sub-base and sub-grade every four hundred (400) feet at random locations along the course of the proposed road centerline. Each compacted lift shall be tested. Approved acceptable results must be on file with the NCHD prior to Initial Acceptance. The Sub Base is to be compacted to at least 98% Standard Proctor density.
3. The developer, at his expense, prior to paving, in order to determine the required sub-base materials stability and compaction will perform a "Proof Roll". The "Proof Roll" may be done on the sub-base or sub-grade. Rutting greater than one (1) inch or adverse pumping of the sub-base or sub-grade will be unacceptable. Notice shall be provided to NCHD forty-eight hours in advance of such activity to allow scheduling of an observer to verify the Proof rolling is completed. Paving shall not commence until an approved and acceptable Roll Test can be performed. Paving must commence within forty-eight (48) hours of an approved "Proof Roll" or a new "Proof Roll" will be required.
4. Certified test results, from a State of Indiana Certified Laboratory, of asphalt plate samples shall be supplied to NCHD. The satisfactory results must be on file with NCHD prior to initial acceptance. Plate samples shall be taken at each street location where asphalt is being placed. NCHD may require additional sample be taken when on site at random locations. Core samples may be required periodically prior to initial acceptance in order to identify actual asphalt thicknesses. The expense for all testing is the responsibility of the developer. Unsatisfactory results will result in corrective action being taken. While minor deviations may be allowed from time to time, continued repetitive offenses by an asphalt company will be evaluated periodically and possibly be found that the company may no longer perform work for NCHD or work that is to be accepted by NCHD.
5. During subgrade preparation and after its completion, adequate drainage shall be provided at all times to prevent water from standing on the subgrade.
6. A leveling course is not required as long as the finished subgrade conforms to the lines, grades and cross sections of the approved engineering plans is firm and unyielding with a uniform density. However, if, a leveling course is used, it shall be a suitable compacted aggregate, such as "B" Borrow, or 53-73 INDOT aggregate.
7. Inspection by the NCHD shall be in accordance with Section I, Subsection "F" of these specifications.

B. RIGID PAVEMENT - PLAIN CONCRETE

The construction of rigid pavement (plain cement concrete) shall conform to the current INDOT Standard Specifications and all current supplemental specifications.

C. BITUMINOUS PAVEMENTS

The construction of bituminous pavement (hot mix asphalt) shall conform to the current INDOT Standard Specifications and all current supplemental specifications.

D. BRIDGES:

1. Plans for bridges or pipe structures (including multiple pipes) having clear spans of twenty (20) feet or greater shall be reviewed and approved by the County Highway Engineer. The bridge plans shall be separate from the development plans. Construction may be separate or combined with the adjacent street at the discretion of the developer.
2. The bridge shall be designed to meet the criteria set forth in the AASHTO Standard Specifications for highway bridges in effect at the time of design, and shall be designed for a minimum loading of HS-20 (Local Roads) and HS-25 (Collector/Arterials).
3. A waterway opening must be submitted to the Noble County Surveyor and approved before the County Highway Engineer will review the plans for a bridge crossing. The waterway opening approval letter shall be submitted along with the plans.
4. In the event construction of the bridge is not initiated within two (2) years and work completed within three (3) years after approval of the final engineering plans, such plans shall be resubmitted to the County Highway Engineer for review and approval.
5. All required permits (ACO, IDEM, IDNR, etc.) shall be obtained and submitted to the County Highway Engineer for inspection prior to construction.
6. The developer shall deposit a fee with the NCHD for review of preliminary and final plans. See Section VII - Fees.

SECTION - IV: ROAD ACCEPTANCE STANDARDS

- A. REQUIRED SPECIFICATIONS FOR ACCEPTANCE OF ROADS INTO THE NOBLE COUNTY HIGHWAY MAINTENANCE SYSTEM
- B. ACCEPTANCE OF ROADS IN MOBILE HOME COURTS AND APARTMENT COMPLEXES
- C. ACCEPTANCE PROCEDURES FOR ROADS AND BRIDGES
- D. MAINTENANCE PROVISION NOTICE BY THE BOARD OF COMMISSIONERS
- E. EXCEPTIONS TO ACCEPTANCE AND MAINTENANCE
- F. TESTING
- G. UTILITY INSTALLATION; RELOCATION; NOTICE AND TIMING STANDARDS

SECTION - IV: ROAD ACCEPTANCE STANDARDS

A. REQUIRED SPECIFICATIONS FOR ACCEPTANCE

When the developer/builder has complied with the terms and conditions of these “Construction Standards”, and any and all other legal requirements arising from the NCUDO, or Indiana Statutes; the road or related improvement will be accepted into the Noble County Highway system.

B. ACCEPTANCE PROCEDURES FOR ROADS AND BRIDGES:

To assure proper road construction, the following policy for road acceptance in the Noble County Highway System shall apply to subdivision roads that are beyond the jurisdictional limits of any City or Town in Noble County, Indiana. This policy shall include all subdivision roads that are petitioned to NCHD for maintenance.

1. PLAN REVIEW PROCEDURES

Prior to beginning construction of any road or bridge that is to be dedicated to Noble County, the plans and specifications for the road and/or bridge shall be approved by the County Highway Engineer. One copy of the plans (22 x 34 inch) shall be submitted along with the review fee and the County Highway Engineer shall either approve or reject, specifying the reasons for rejection.

Initial review of the plans will be completed within 30 days. Review comments will be returned to the developer for corrections. When the plans are approved, the County Highway Engineer shall notify the developer in writing of the approval. Any amendments to the plans shall also be submitted to the County Highway Engineer and must be approved by the County Highway Engineer prior to the construction of any changes.

Construction plans may be submitted for approval and construction prior to final approval of a subdivision or plat by the Noble County Board of Commissioners. However, the approval of construction plans for roads and the execution and approval of the inspection agreement (see paragraph below) shall not be deemed, nor construed, as an approval of the plat or subdivision by the Noble County Board of Commissioners, the Noble County Plan Commission, or any other agency having regulatory authority or jurisdiction over the property platted or divided.

Prior to starting construction of any road and/or bridge to be dedicated to the county, the developer shall execute an agreement with NCHD which will provide that NCHD will supply an inspector to inspect the construction to insure that such construction meets the requirements of the approved plans and specifications, except for items that are the responsibility of other agencies and will not be a part of this agreement. The inspector shall not be an employee of NCHD, but a qualified inspector from an engineering consulting firm. The developer shall provide a copy of the agreement to the Plan Commission having planning jurisdiction over the improvements. The developer shall reimburse NCHD for the full cost of all inspection, laboratory, and field tests except for

those costs related to other items. The developer shall escrow 100% of the estimated total costs with the NCHD at the time the agreement is executed.

All improvements shall be constructed, inspected and certified pursuant to the executed agreement described above. Upon completion of construction, or a portion of construction, the inspector will certify to the County Highway Engineer whether the construction complies with Noble County construction standards, approved construction plans, and approved change orders. Where the inspector and the County Highway Engineer agree it is necessary to confirm conformance with these standards, the pavement will be cored as part of the inspection process. The average thickness of the cores must equal or exceed the minimum required thickness, and no single core can have a deficiency greater than one-half inch. All deficient portions of pavements will be replaced at the developer's expense before the pavements are accepted.

2. INSPECTION PROCEDURE:

A subdivision road to be petitioned for NCHD maintenance requires the subdivision owner, developer, or developer's agent to notify the NCHD at the following stages of construction.

- a. At the completion of the subgrade. For concrete roads, the subgrade may be considered bare soil or the compacted aggregate leveling course.
- b. Prior to "proof rolling".
- c. Prior to the application of any base materials.
- d. Prior to the placing of bituminous materials or concrete pavement.

The period of notice prior to the anticipated time of application of any materials shall be at least twenty-four (24) hours.

3. SUBMISSION AND ACCEPTANCE PROCEDURES:

Prior to sixty (60) days after the completion of any subdivision road construction within the affected area, the subdivision owner, developer, or agent must file a petition with the NCHD requesting acceptance of the road into the Noble County Highway Maintenance System.

In order to provide a mutual understanding of the proposed road construction schedule, the owner, developer or agent shall consult with the County Highway Engineer. Following the discussion, the County Highway Engineer will advise the owner or developer or agent of the acceptance policy and suggest a petitioning schedule so as not to place an undue burden on the owner or developer. Within sixty (60) days of receipt of the petition, the NCHD shall have the roads cored and inspected which have been petitioned for acceptance into the Noble County Highway System. The petitioner shall pay for the cores. In the event the road meets or exceeds the approved construction plans for same, the applicant shall be so notified in writing. In the event there are conditions which must be corrected in order to meet the approved construction plans, the owner or developer or agent shall be so notified in writing and given sixty (60) days to correct the

condition. In the event adverse weather conditions occur, the NCHD may extend the completion time. If the corrections are not made to the satisfaction of the NCHD within the allotted time, the Noble County Board of Commissioners shall request the appropriate Zoning Administrator to withhold further Improvement Location Permits on lots fronting on the affected road until the condition is corrected. The NCHD shall advise the Zoning Administrator of the request to withhold permits seven (7) days in advance of the actual request and the Zoning Administrator will notify the owner, developer or agent in writing three (3) days in advance of the actual withholding of additional Improvement Location Permits.

In determining the affected lots, permits will be withheld only between the two (2) nearest intersecting roads from the defective area. In the case of cul-de-sac roads, all lots on the cul-de-sac roads shall be affected.

C. MAINTENANCE PROVISION NOTICE BY THE BOARD OF COMMISSIONERS:

A road constructed according to engineering and drainage plans as approved by and on file with the Noble County Plan Commission, the NCHD and other related agencies, will be included in the Noble County Highway Maintenance System.

D. EXCEPTIONS TO ACCEPTANCE AND MAINTENANCE:

The NCHD does not accept or maintain road lighting, sidewalks, parks, open space, retention/detention ponds, drainage facilities outside the curb line, utilities, or other facilities unless the Noble County Board of Commissioners have interest in maintenance. Furthermore, the NCHD does not accept or maintain trees, shrubs or any other extraneous landscaping along the roads, entryway planters, or within cul-de-sac planters.

E. TESTING

When testing is required, all test results shall be submitted for review by the County Highway Engineer for acceptance.

H. UTILITY INSTALLATION; RELOCATION; NOTICE AND TIMING STANDARDS

1. Utility Installations

All utility installations within the public rights-of-way under the jurisdiction of NCHD are placed at the choice, risk and responsibility of the applicable utility, consistent with these Construction Standards. The allowance of any such utility installation, prior to or after the effective of these Construction Standards, or any amendments or additions thereto, by NCHD, does not alter, diminish, or otherwise impact the inherent right of NCHD to demand that any and all such utility installations within the right-of-way be removed and/or relocated, at the expense of the utility owning or operating the same, upon written demand by NCHD as part of the undertaking of a public infrastructure or roadway improvement by NCHD, or for other determination by NCHD, at its sole discretion, as the benefit and/or necessity of such removal and/or relocation. A minimum set back of the greater of 40' from the centerline of the road or 10" from the Right of Way will be required for all irrigation structures.

2. Removal and/or Relocation

Upon determination by NCHD that a utility installation should be removed and/or relocated, the owning and/or operating utility shall receive written notice to such effect. Such utility installation shall thereafter be removed and/or relocated, consistent with the terms and conditions of such notice, within ninety (90) days after the date of the issuance of such notice. Such notice shall be submitted to such utility at its last known business mailing address for dealing with NCHD on utility installations of such type or character. Subject to the variance standards herein set forth, which may be perceived by the applicable utility owner or operator, failure of the utility owner or operator to remove and/or relocation such utility installation within such ninety (90) day period shall subject such utility owner and/or operator to each of the following:

- a. A claim by NCHD for money damages for all extra costs in undertaking the planned infrastructure improvement or alteration by NCHD giving rise to the notice of removal or relocation, to include, but not to be limited to, damages based upon delay in the public works project being undertaken, additional costs incurred by NCHD in undertaking the public works project, extra sums owed to and/or legitimately claimed by contractors precluded from doing work within the public right-of-way due to untimely action by the utility owner or operator, and any and all other economic or monetary losses or damages occasioned to NCHD, its agents, representatives, and/or contractors, by such failure by such utility;
- b. All other rights and remedies available at law or in equity to NCHD based upon noncompliance with these Construction Standards by such utility, to include injunctive relief, and the remedy of specific performance;
- c. Removal, relocation, and/or destruction of such utility installations by NCHD and/or its agents and contractors in their timely undertaking of the public works project giving rise to the notice; and
- d. Payment of all attorney fees and costs of collection or enforcement incurred by NCHD, in effecting the removal and/or relocation of such utility installations by the owner or operator thereof from and after breach of the terms and conditions of these Construction Standards by such utility owner or operator relative to such removal or relocation.

SECTION - V: MAINTENANCE BONDS

A. THREE YEAR MAINTENANCE BOND TERM

B. LETTER OF CREDIT

SECTION - V: MAINTENANCE BONDS

A. THREE YEAR MAINTENANCE BOND:

A three year maintenance bond will be required on all road right-of-ways which have been petitioned to the Noble County Board of Commissioners for acceptance into the Noble County Highway Maintenance System. The bond shall be twenty (20) percent of the total construction cost of the said road right-of-way. The term of the bond is to start at the same date NCHD accepts said right-of-way. The three year maintenance bond cannot be terminated at any time prior to its full term; however, the Noble County Board of Commissioners reserves the right to increase the minimum amount of the bond.

When the petitioned road has been determined acceptable by the NCHD and the Noble County Board of Commissioners, the developer will be notified in writing by the NCHD.

Prior to the acceptance of a bridge into the Noble County Maintenance System, the developer shall file a maintenance bond with the Noble County Board of Commissioners.

The bond shall

1. Be a minimum of twenty percent (20%) of construction costs for a period of three (3) years; however, the Noble County Board of Commissioners reserves the right to increase the minimum amount of the bond.
2. Provide surety and principal satisfactory to the Noble County Board of Commissioners.
3. Warrant that workmanship and materials used in the construction of the bridge are in conformance with approved engineering plans and specifications.
4. Provide that, for a period of three (3) years the developer or his approved principal will make necessary repairs in accordance with the warranty of item number "three" (3) above.

B. LETTER OF CREDIT

A Letter of Credit can be used in lieu of a Maintenance Bond for roads or bridges. This letter of credit is to be the same term length as the three year bonds, subject to acceptance by the Noble County Board of Commissioners.

SECTION - VI: PERMITS

- A. DRIVEWAY PERMIT
- B. RIGHT-OF-WAY CUT PERMIT
- C. OVERSIZE, OVERWEIGHT PERMIT
- D. USE OF COUNTY RIGHT-OF-WAY PERMIT
- E. UTILITY PERMIT

SECTION - VI: PERMITS

A. DRIVEWAY PERMIT

1. Ordinance - The driveway permit is established under ordinance #2002 - 8 (August 26, 2002) and amended by ordinance #2009-2 (April 27, 2009).
2. Requirements to obtain a Driveway Permit
 - a. These procedures were developed to implement Noble County Driveway Ordinance #2002-8, effective August 26, 2002 and amended by Ordinance #2009-2, effective April 27, 2009.
 - b. This document and other information on permits are available on the Noble County Highway web site. The property owner or their representative (contractor) shall come to the Highway Department office to file a Driveway Permit Application. The application form is completed electronically by the NCHD secretary, and signed electronically by the property owner/representative.
 - c. Prior to coming to the NCHD office, the owner/representative should collect the following information:
 1. A copy of the property deed, - The deed must be recorded in the owner's name.
 2. A signed "Drainage Form", - This form can be obtained from the Noble County Surveyor's office, 2090 N. SR 9, Suite B, Albion, Indiana 46701 (260-636-2131). The form has to be signed by the owner/representative. The NCHD needs a copy of the form signed by the Surveyor.
 3. A copy of the property survey, - If a copy of the property survey is not available, then ask for a tax plat map at the County Surveyors office. The property survey is preferred as it provides measurements of the property.
 4. A drawing or sketch of the proposed driveway, showing dimensions as shown on Construction Drawing #15. See Section VIII: Construction Drawings.
 5. A fee of thirty five (\$35.00) dollars will be paid, - The fee has to be paid at the time of permit application. All payments shall be made by money order, cashier's check or personal check at the discretion of the NCHD. Cash will not be accepted. Returned checks will incur a fee of \$35.00.
 6. A Permission Statement is required, - If the permit is signed by a representative (contractor, realtor, etc.), the representative shall provide NCHD with a permission statement (see Sample Permission Statement in paragraph 6 below) signed by the property owner(s) giving representative permission to act on their behalf.
 - d. After completing the Driveway Permit Application, the NCHD will give the property owner/representative three (3) stakes. The property owner/representative is instructed to mark the location of the proposed driveway. One stake is to be used to mark the center of the proposed driveway. The other stakes are to be used to mark the front property corners (lot line corners). The stakes must be visible so the NCHD inspector can locate the property frontage. Remove weeds or high grass 2 feet around the stakes.
 - e. The NCHD will give the property owner/representative information on how to select a safe driveway location (see paragraph 3 below). Many driveway permits are denied

- because of inadequate stopping sight distance so review these instructions thoroughly.
- f. The edge of the driveway shall be a minimum distance from the adjacent property line or “Offset Distance” and a minimum distance between driveways (see Table #4 – Driveway Design Standards for this information), unless there is a Shared Access Easement between adjacent property owners.
 - g. After the three (3) stakes have been placed, the owner/representative shall call NCHD to request an on-site inspection (260-636-2124). The inspector will look for the stakes and become familiar with the area. The inspector will check the Offset Distance and the distance between drives (if applicable). The inspector will also check (measure) the stopping sight distance, and determine the culvert pipe size (diameter and length), if one is required.
 - h. Additional information,
 1. It will take between three (3) to fourteen (14) days to process the permit application. The time depends on the season, weather, workload, etc. The NCHD understands that a Driveway Permit is required before a Building Permit can be obtained, so the NCHD will try to process the application in a timely manner; however, the owner/representative should plan ahead and allow plenty of time for the Driveway Permit to be processed.
 2. A copy of the Driveway Permit will be mailed to the owner/representative, and contractor if known. On the back of the permit, the inspector will indicate the permit has been approved or denied as submitted. If denied, the permit will explain the reason(s). The permit will also show the required culvert pipe size and length.
 3. If the permit is denied, the owner/representative should discuss the reasons with the NCHD inspector, County Highway Engineer. If the issues cannot be resolved, the owner/representative has the option to follow the Appeal Process as defined in the Driveway Ordinance.
 4. If the permit is approved, the owner/representative can proceed with installing the driveway. If the contractor has any questions, they can contact the NCHD for assistance. After the driveway is completed, the contractor/owner/representative shall call the NCHD for final inspection. The inspector will verify that the driveway was constructed as defined on the permit and construction drawing. Failure to call the NCHD for a final inspection will mean the permit will not be finalized (construction not approved by NCHD) and the owner will be responsible for any corrections at a later date or when the property is sold.
 5. A Driveway Permit issued by the NCHD is valid for a period of one (1) year. If the driveway is not constructed within the one (1) year period the permit will be voided, and the owner/representative will be required to process a new permit.
 - i. To assist owners/representatives, NCHD has developed typical driveway construction drawings. See Section VIII: Construction Drawings, Drawing #8 through #16.

3. Instructions on determining Driveway Sight Distance

Selecting a visible access point onto a county road provides increased safety for the property owner and the motoring public. And, if the mail box is in the same area as the driveway, it will also provide increased safety for the mail carrier. Sight Distance is the length of the roadway ahead that is visible to the driver. Stopping Sight Distance is the

sum of two distances; 1) the distance the vehicle travels from the instant the driver sees an object necessitating a stop, and the instant the brakes are applied, and 2) the distance it takes for the vehicle to stop from the instant the brakes are applied. The speed limit on Noble County roads is 55 miles per hour, if not posted otherwise. At this speed, it requires approximately 525 feet to stop a car, on level, dry pavement. This is called the Stopping Sight Distance. Providing an adequate Stopping Sight Distance ensures safe access for the property owner and the driving public.

The property owner is responsible for selecting the access point, or proposed driveway. The NCHD will inspect the access point and will deny the permit if the Stopping Sight Distance is not met. The availability of an access point that meets the Stopping Sight Distance requirements on each tract of land in Noble County is not guaranteed. Available access points should be checked before purchasing property where building a home is desired. The NCHD will work with property owners and realtors who want to pre-check driveway locations.

Determining sight distance: The property owner/seller should place a stake (42 inches high) at the edge of the road at the centerline of the driveway/proposed driveway. Place a ribbon (white or yellow) or something easily visible on top of the stake. Drive a car down the road in each direction 525 feet. If the top of the stake can be seen from the car in both directions the sight distance is adequate. However, if a hill or other objects obstructs the view, the stake should be move until the 525 foot Stopping Sight Distance can be achieved. If the stake is still within the boundary lines of the property, the location should be identified on the permit. The following table shows Stopping Sight Distance for various speed limits.

<u>Posted Speed</u>	<u>Sight Distance</u>	<u>Posted Speed</u>	<u>Sight Distance</u>
55	525 ft	40	382 ft
50	474 ft	35	335 ft
45	427 ft	30	284 ft

The NCHD will not reduce the speed limit to accommodate driveway Stopping Sight Distances.

These Construction Standards require specific Offset Distances (between property line and edge of drive) and distances between driveways. See Table #4: Driveway Standards Summary.

Driveway construction shall not impede the flow of water off of or along the roadway. Culvert pipes shall be installed at the time the driveway is installed to accommodate side-ditch drainage. If the proposed driveway is located on top of a hill a culvert pipe would not be required. In some areas around the county, existing side-ditches are not clearly defined or obvious. The NCHD will make the final determination on the need for a culvert pipe. The size of the pipe diameter will be determined by the NCHD, typically 12 to 15 inches, but could be larger based on drainage requirements. The pipe shall be located parallel to the pavement edge and a minimum of seven (7) feet from the

pavement edge. The length of the culvert pipe is determined by the width of the driveway at the ditch line, plus ten (10) feet.

4. Appeal Process (from the Driveway ordinance)

- a. The NCHD Highway Engineer shall make all decisions in accordance with the standards, regulations, and requirements set forth herein and adopted herein. In matters where the decision of the County Highway Engineer is challenged, the aggrieved person or entity has the right to appeal the decision to the Board of Commissioners of Noble County, and then to the Noble Circuit Court pursuant to the following process:
- b. The NCHD Highway Engineer shall make the decision and findings about the contested matter in writing and provide a copy to the aggrieved party within ten (10) days of informing the party of the Highway Engineer's adverse decision;
- c. Within fifteen (15) days after receiving the adverse decision, the aggrieved party must file in writing with the Noble County Auditor a "Notice of Intent to Appeal" which shall include supporting reasons and a summary of any evidence the party wishes the Board of Commissioners to consider. Upon receipt of a "Notice of Intent to Appeal", the auditor shall set the matter for hearing by the Board of Commissioners at the earliest reasonable date. All documents and exhibits to be used as evidence by the aggrieved party shall be submitted to the Noble County Auditor no later than ten (10) days prior to the hearing date;
- d. Within thirty (30) days after receiving the aggrieved person's notice of appeal, the Noble County Commissioners shall hold a hearing on the appeal, hear evidence thereon, and then make a decision either upholding the decision overturning the decision or modifying the decision , and make findings of fact and conclusions in support of the decision on appeal;
- e. If the aggrieved party disagrees with the Board of Commissioner's decision on appeal, then that party may continue the appeal to the Noble Circuit Court pursuant to applicable Indiana Code.
- f. Ordinance 2009-2. Severability - Should any section, paragraph, sentence, clause or any other portion of this ordinance be declared by a Court of competent jurisdiction to be invalid for any reason, the remaining provisions shall not be effected, if and only if, such remaining provisions can, without the invalid provision or provisions, be given the effect intended by the Council in adopting this ordinance. To this end the provisions of this ordinance are severable.

5. Driveway Drawing Detail Sheets

Driveway approaches shall be constructed as shown in Section VIII: Construction Drawings, Drawing #8 through #16.

6. Sample Permission Statement

The Permission Statement shown below is required when the property owner uses a representative to apply for a Driveway Permit.

NOBLE COUNTY HIGHWAY DEPARTMENT		
1118 E. MAIN STREET ALBION, INDIANA 46701 E-MAIL: HIGHWAY@NOBLECO.ORG	TELEPHONE: (260) 636-2124 FAX: (260) 636-2542	

PERMISSION STATEMENT

I/ we _____
print name *sign here*

and _____
print name *sign here*

is the owner(s) of said property, address: _____
the same as shown on the Driveway Application form. I/ we hereby, give permission to:

Representative: _____
print name
Address, if not the same as above: _____

to represent my interest in my/our name, for the purpose of obtaining a Driveway Permit.

Signed

Signed

Date: _____

7. Mail Box Recommendations

On county roads with no paved shoulder, the front or closest edge of a mailbox shall be a minimum of three (3) feet off of the edge of the traveled and/or paved portion of the public right-of-way. On subdivision streets and on numbered county roads with a paved shoulder, that face (closest portion) of the mailbox shall be located a minimum of twelve (12) inches off of the edge of the paved shoulder. On streets with raised curbs, the face (closest portion) of the mailbox shall be located at least six (6) inches from the back of the curb. If a mailbox is located at or near intersecting streets, it shall be located a minimum of ninety (90) feet from the centerline of the two intersecting streets.

Mailboxes should be of light sheet metal or plastic construction conforming to the requirements of the U.S. Postal Service; accompanying or related or adjacent newspaper delivery boxes shall be of comparable construction and be of no greater size than necessary or suitable for the receipt of a newspaper, and should otherwise comply with

the mailbox standards herein set forth. No more than two (2) mailboxes may be mounted on a support structure unless the support structure and mailbox arrangement have been demonstrated by the property owner or owners to be acceptable for traffic and highway safety under American Association of State Highway Officials (AASHTO) certified crash tests. Mailbox supports shall not be set in concrete unless the support design has been demonstrated by AASHTO certified crash tests when so installed. A single four (4) inches by four (4) inches square wooden post, four (4) inch in diameter wooden post or a metal post with a strength no greater than a two (2) inch diameter standard strength steel pipe will be acceptable as a mailbox support. The support may be embedded no more than twenty-four (24) inches into the ground will be acceptable as a mailbox support. A metal post shall not be fitted with an anchor plate, but it may have an anti-twist device that extends no more than ten (10) inches below the ground surface. The post to box attachment details shall be in conformance with the current Indiana Department of Transportation standards or current standards of AASHTO's "A Guide for Erecting Mailboxes on Highways".

Anyone placing a mailbox within the public right-of-way of a street or road, under the jurisdiction of Noble County, does so at his/her/its own risk and such party, and any successor in ownership to such mailbox, shall indemnify and hold Noble County, and its agents, officials, and employees, free and harmless from any and all, claims and liabilities arising from such placement, whether placed by these recommendations or otherwise.

B. RIGHT-OF-WAY CUT PERMIT

This permit is subject to the following conditions and failure to comply with these will result in a Stop Work Order being issued.

1. Contractor and/or owner will notify the NCHD 48 hours in advance of the date/time of the start of construction. They will also notify the NCHD in writing the date the work was completed.
2. Contractor and/or owner will assume all responsibility and liability for the road cut operation. Any and all current and future maintenance of this project work will be the sole responsibility of the property owner(s).
3. In the event the NCHD is required to perform any necessary work, (repair work, etc.), the cost will be charged to the contractor and/or property owner(s). The cost will be back charged for the following, but not limited to the manpower, material, and machinery.
4. All necessary barricades, detour signs, and warning signs, etc., required by the current Indiana Uniform Traffic Control Manual (MUTCD) shall be erected and maintained so long as work is in progress or construction equipment is on site.
5. To indemnify NCHD against any claims for injury or damage to persons or property and to execute a bond conditioned to pay such damages and provide proof of insurance.
6. Future circumstances may warrant the removal of any type of pipe or other material, etc., at the owner's expense.
7. To move or remove any structures installed under this permit, should future conditions or road improvements necessitate and when requested to do so by the NCHD.
8. A detailed drawing is required and must be submitted with permit application. Drawing is to show exact location, depth, width, and distance from intersections, size, and type, controlling dimensions of the proposed improvement relative to existing pavements,

- existing structures, existing right-of-way, and existing utilities.
9. To restore the county property, cut or damaged, including road surface to its condition prior to construction to the satisfaction of the NCHD.
 10. Contractor/owner(s) will be responsible for all material required in the installation of this project.
 11. All backfill shall meet the following standard if the trench is within five (5) feet of the edge of the road surface. A bedding of six (6) inches of pea gravel or #9 lime stone will be placed under the pipe the full width of the trench. Backfill should be #53 crushed limestone or #23 sand, which will be thoroughly compacted in layers not to exceed six (6) inches in depth to within eighteen (18) inches of the surface. Compaction will be as performed with a jumping jack style compactor. A Skid Plate compactor will not be allowed. Remaining eighteen (18) inches shall be filled per existing conditions except in the traveled roadway. The traveled roadway shall be filled with #53 Gravel or crushed stone and maintained for a period of four (4) weeks after opening to traffic then replaced as per existing conditions unless otherwise provided. All excess excavated material shall be removed from highway right-of-way.
 12. If it is necessary to run irrigation system piping under the pavement all of the above conditions apply. It is recommended that the pipe be installed using the directional boring method. Open pavement cuts are discouraged, but if unavoidable, shall meet NCHD standards. All costs associated with the directional boring or pavement cut will be the responsibility of the contractor/owner(s). A minimum set back of the greater of 40' from the centerline of the road or 10" from the Right of Way will be required for all irrigation structures.

C. OVERSIZE, OVERWEIGHT PERMIT

This permit is used when the owner/contractor wants to transport an oversized and/or overweight load over and upon county roads. The applicant shall provide the following information:

1. Proof of insurance.
2. Map showing the proposed route.
3. Actual drawing of the layout of the weight distribution of the load that is being moved. This drawing is to include: dimension of trailer, tire size, tire air pressure, number of axles, dimension of axles, weight distribution on each tire, etc.
4. If it is a large load, wider than 12 feet, higher the 16 feet and longer than 75 feet, an escort vehicle is required by the Noble County Sheriff Department.
5. If more than one vehicle is involved, each vehicle must be listed on permit.

D. USE OF COUNTY RIGHT-OF-WAY PERMIT

This permit is primarily used when roads are temporarily closed for parades, festivals, etc. The applicant is responsible to notify appropriate city, county and state police, emergency services and school districts. Proof of notification shall be provided to the NCHD prior to issuance of the permit. The applicant is responsible for the following:

1. Proof of insurance.
2. Submit a road closure plan to the NCHD for approval prior placing the signs. All signage must comply with the current Manual of Uniform Traffic Control Devices. The applicant shall notify the NCHD when the signs are in place.

3. Upon expiration of the permit, the NCHD will inspect the road closure site. If damage is found the NCHD will contact the applicant to review the damage and required repairs.

The applicant agrees to indemnify, defend, exculpate, and hold harmless the NCHD, its officials and employees from any liability due to loss, damage injuries, or other casualties of whatsoever kind or by whomsoever caused to the person or property of anyone on or off the right-of-way arising out of, or resulting from the issuance of this permit or the work connected therewith, or from the installation, existence, use, maintenance, condition, repairs, alteration, or removal of any equipment or material whether due in whole or in part to the negligent acts or omissions (1) of the County, Its officials, agents or employees; or (2) of the applicant, his agents or employees or the persons engaged in the performance of the work, or (3) the joint negligence of any of them: including any of them: including any claims arising out of the workman's compensation act or any other law, ordinance, order, or decree. The applicant also agrees to pay all reasonable expenses and attorney's fees incurred or imposed on the NCHD in connection herewith in the event that the applicant should default under the provisions of this paragraph.

E. UTILITY PERMIT

This permit is for permission to bury necessary cable, pedestals, and attachments thereto or underground conduits or all (aerial) necessary wires, poles, fixtures, and attachments, etc. within NCHD road right-of-way. The applicant is responsible for the following:

1. Provide engineering plans that show the exact location, depth of trench (“Depth Chart” must be adhered to and the chart placed on each page of the drawing.), distance to be buried, and type of road surface to be cut. The footages from the nearest intersection shall be listed for all installed items.
2. Agrees to replace the disturbed portion of the highway adjacent right-of-way to its original condition and to backfill any trench or opening by thoroughly tamping the backfilling in layers not to exceed four (4) inches in depth, and to maintain the surface which has been disturbed in a smooth and uniform condition for a period of six (6) months after the work is done.
3. Agrees to assume all responsibility for any injury or damage to persons and property resulting directly or indirectly from the work contemplated in this application. The applicant further agree to notify the NCHD in writing five (5) days in advance of the time of beginning of the work covered by this permit, also to notify the NCHD the day preceding the beginning of the work at 260/636-2124.
4. Agree that there are no fiber optic utility lines located or to be placed within the boundaries of this work zone. If fiber optic lines are located within this area, these will be marked, named, and highlighted on the attached prints. We also understand the fiber optic lines that are not located on these plans or placed as per this permit are the full responsibility of the Permittee, with no responsibility to NCHD. If fiber optic lines are to be placed, additional information may be required before an approval will be considered.

The applicant understands the NCHD's Conditional Approval which states as follows: The County's right to use the right-of-way is by easement and not by ownership. Therefore, our approval will be only with respect to the applicant's interference with the NCHD's right to use the right-of-way. The NCHD's approval will not relieve the applicant of the responsibility of obtaining the adjoining titleholders permission to use the right-of-way.

SECTION - VII: FEES

A. Developer fees for Road Plan Review

1. Preliminary Plans - \$250 to \$1,000 depending on size of development.
2. Final Plans - \$100 to \$500 depending on size of development.

B. Developer fees for Bridge plan review

1. Preliminary Plans - \$150 to \$750 depending on size and number of structures.
2. Final Plans - \$75 to \$400 depending on size and number of structures.

C. Developer costs for Street Name Signs, Traffic Signs and Posts

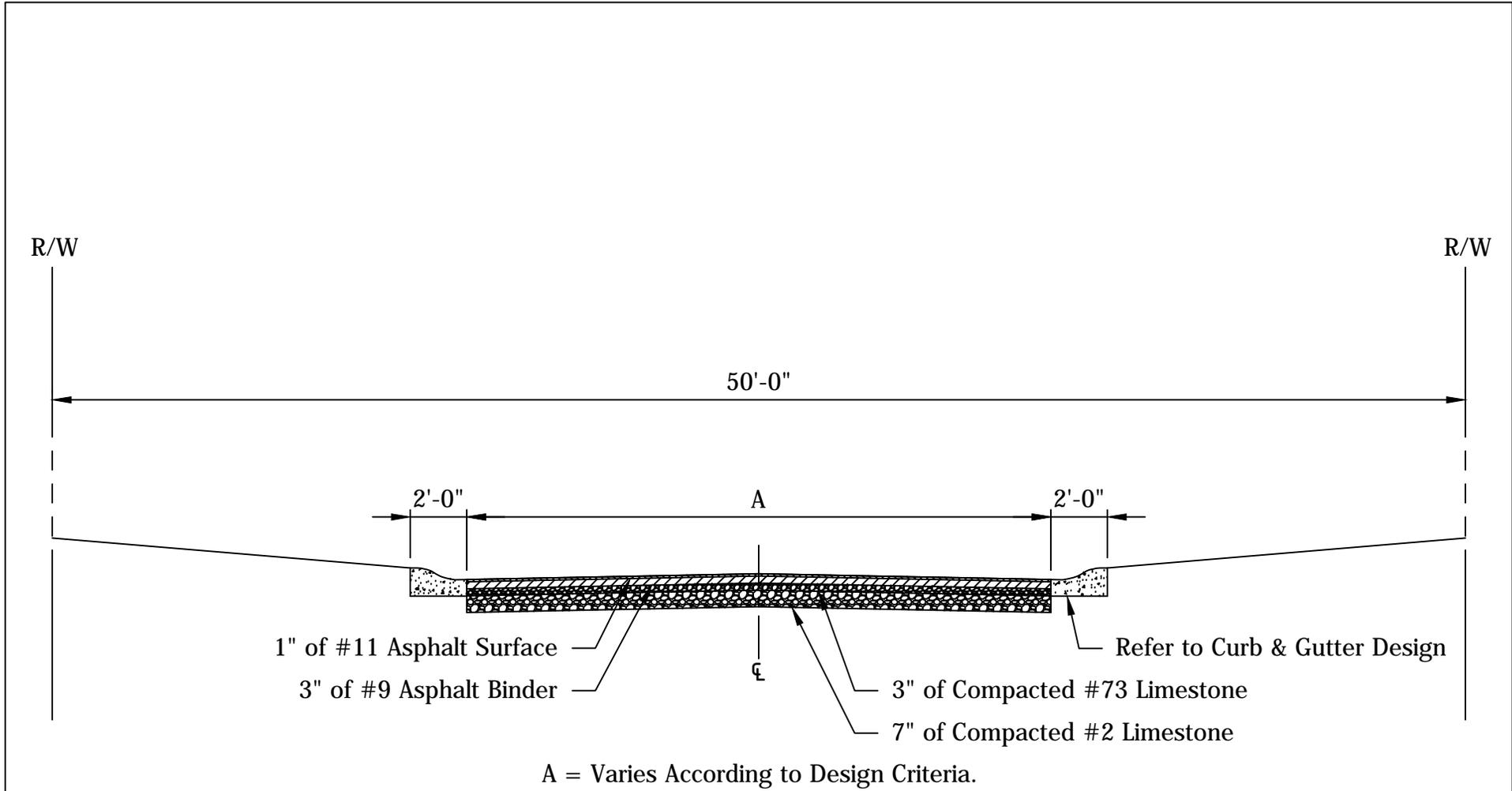
Actual costs for material, parts and labor. NCHD will provide estimate.

D. Inspection Agreement with Developer

The County Highway Engineer will estimate the costs based on the scope of work. The developer shall put the estimated amount in escrow. Upon completion of the inspection work, the developer will pay NCHD actual cost of services. Any remaining funds will be returned to the developer.

SECTION - VIII: CONSTRUCTION DRAWINGS

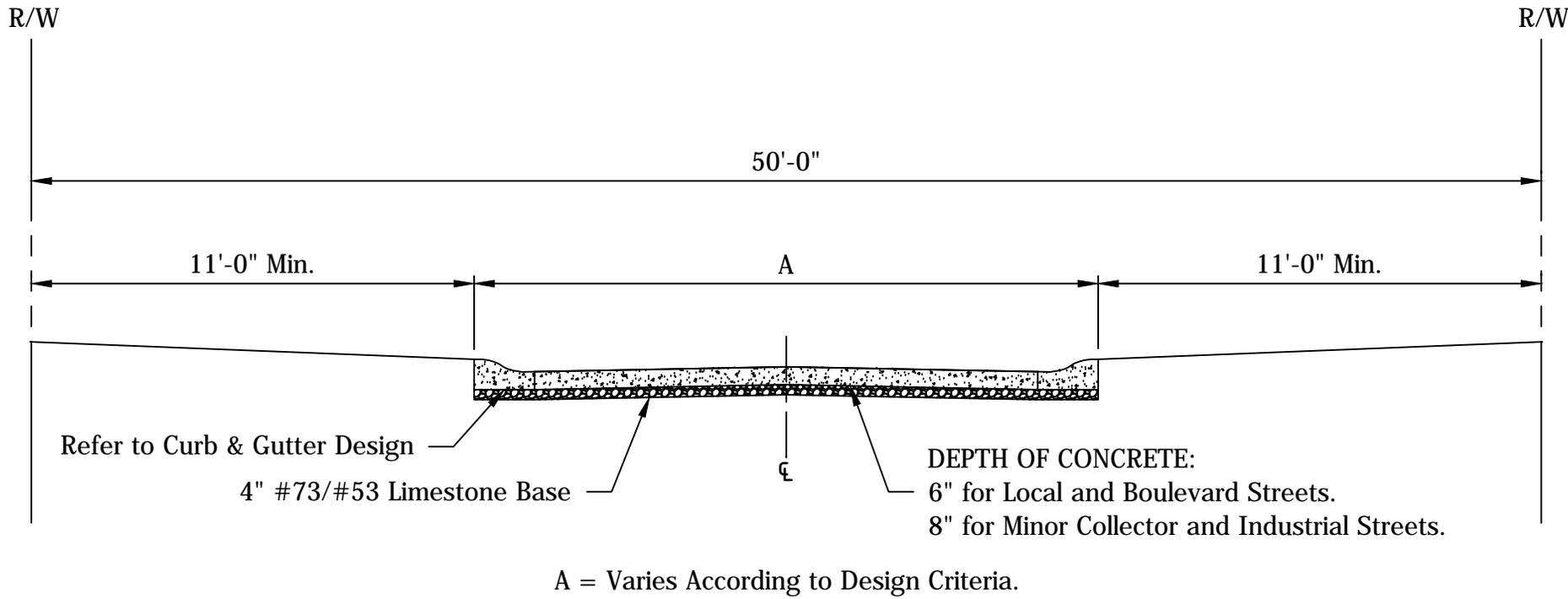
- A. Typical pavement cross section
 - 1. Drawing #01- Flexible-Curb & Gutter- Local/Boulevard
 - 2. Drawing #02 - Concrete Curb & Gutter
 - 3. Drawing #03 - Concrete – Open Drainage
- B. Curb & Gutter Sections
 - 1. Drawing #04 - Concrete Rolled Curb and Gutter
 - 2. Drawing #05 - Integral Concrete Curb
- C. Underdrains
 - 1. Drawing #06 - Underdrains
- D. Cul-de-Sac
 - 1. Drawing #07 - Cul-de-Sac
- E. Driveways
 - 1. Drawing #08 - Class I Drive
 - 2. Drawing #09 - Class II Drive
 - 3. Drawing #10 - Class III Drive
 - 4. Drawing #11 - Concrete Curb & Gutter Connection for Class I & III Drives
 - 5. Drawing #12 - Class IV Drive – Paved Shoulder 8'-0" or Greater in Width
 - 6. Drawing #13 - Class IV Drive – Paved Shoulder Less than 8'-0" or Unpaved Shldr.
 - 7. Drawing #14 - Class V Drive
 - 8. Drawing #15 - Proposed Driveway Details-A
 - 9. Drawing #16 - Proposed Driveway Details-B
- F. Backfill Requirements
 - 1. Drawing #17 - Storm Sewers & Utilities within R/W of Existing Streets-A
 - 2. Drawing #18- Storm Sewers & Utilities within R/W of Existing Streets-B
 - 3. Drawing #19 - Typical Utility Locations in Right-of-Way



NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

FLEXIBLE - CURB & GUTTER - LOCAL/BOULEVARD STREETS

DATE APPROVED		REVISIONS		DWG-01
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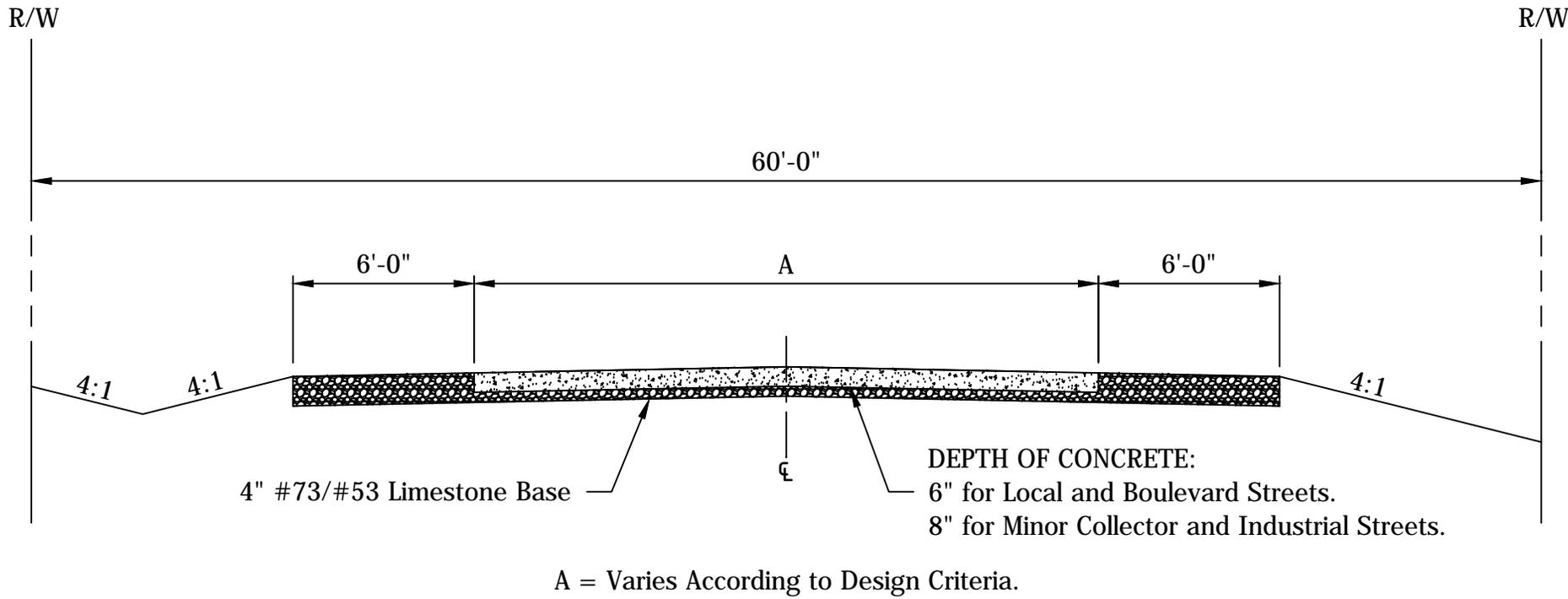
NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

CONCRETE CURB & GUTTER

DATE
APPROVED

REVISIONS

DWG-02



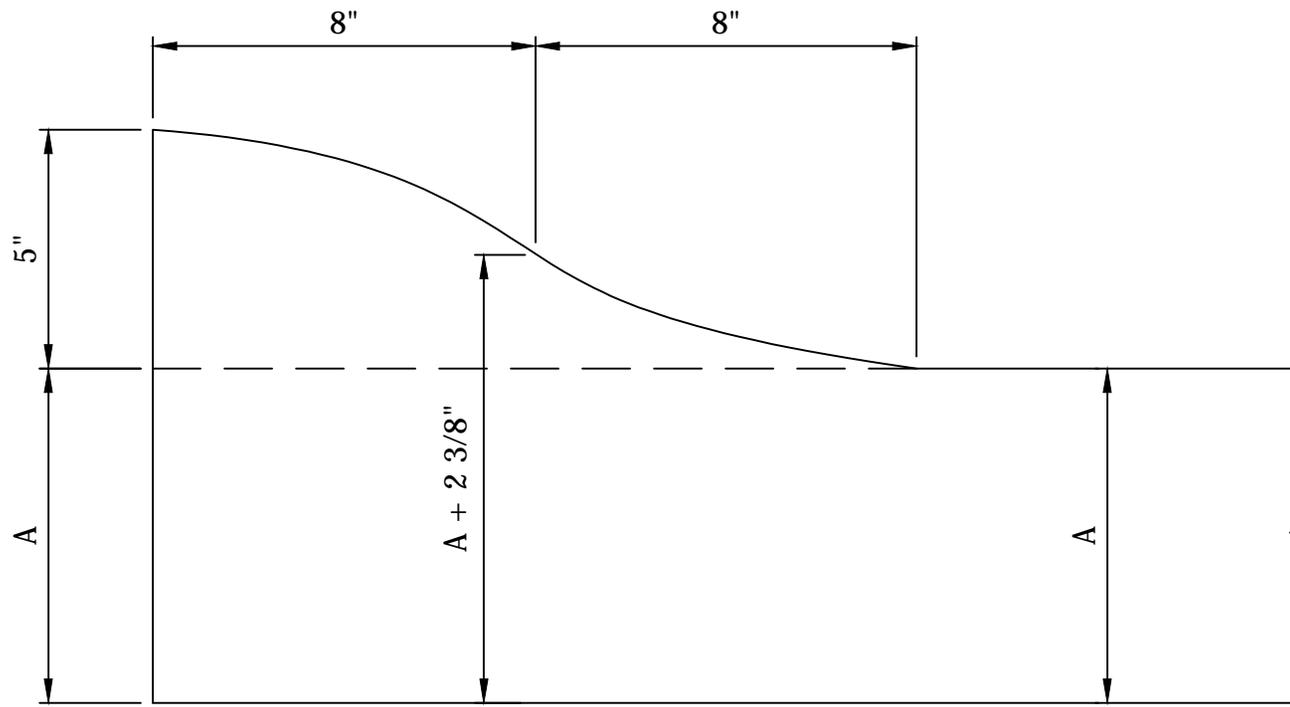
NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

CONCRETE - OPEN DRAINAGE

DATE
APPROVED

REVISIONS

DWG-03



A = 6", 7" as Required by Street Design

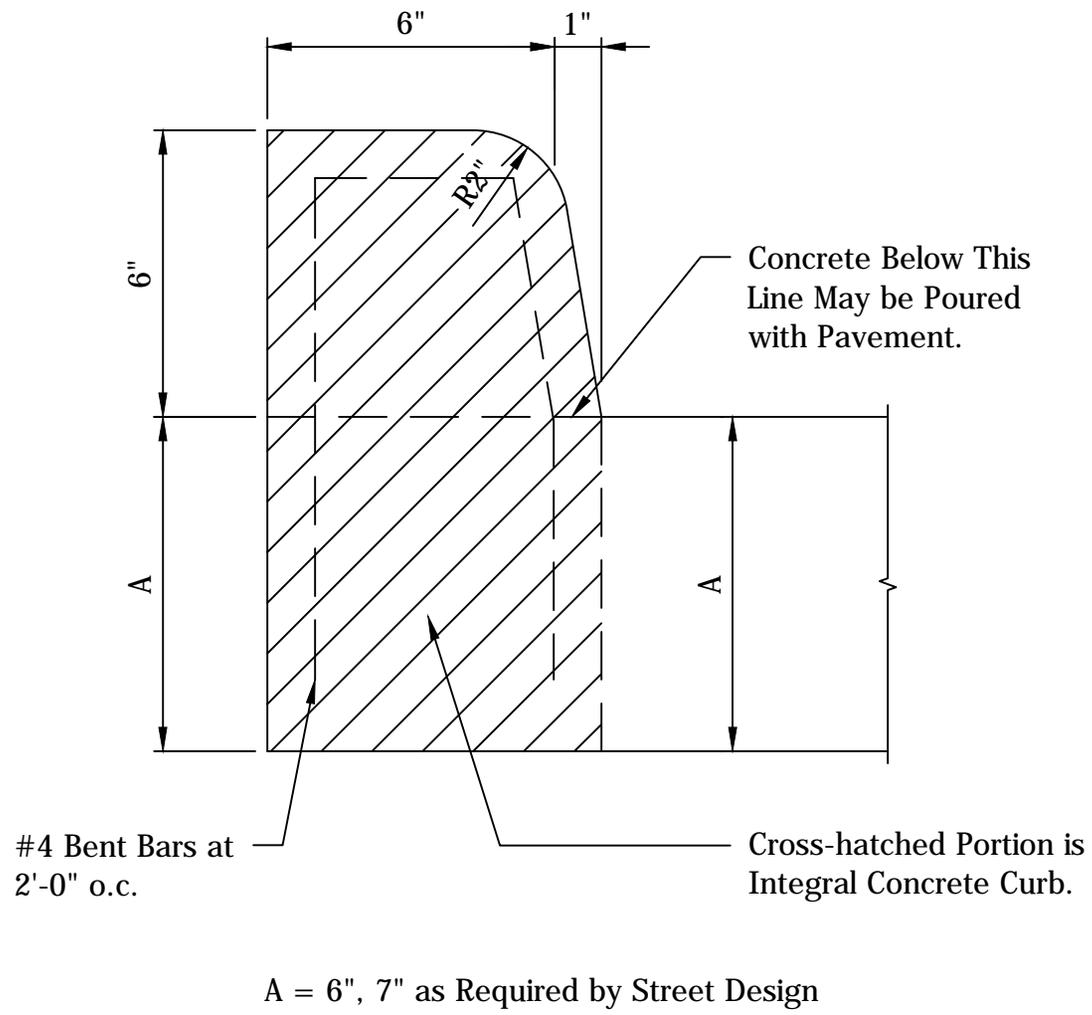
NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

CONCRETE ROLLED CURB AND GUTTER

DATE
APPROVED

REVISIONS

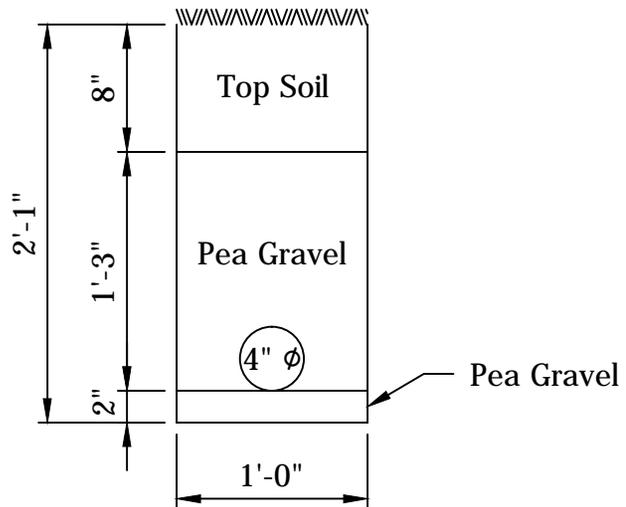
DWG-04



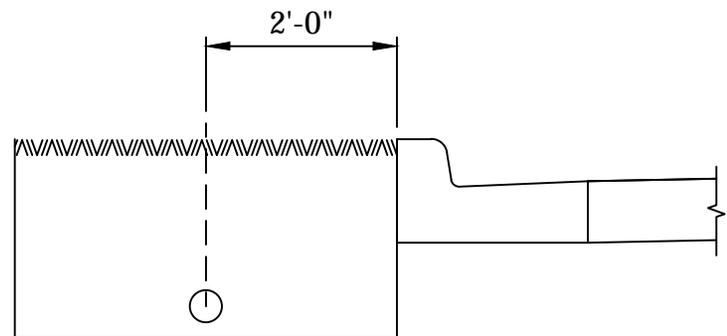
NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

VERTICAL CONCRETE CURB

DATE APPROVED		REVISIONS		DWG-05
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DETAIL



SECTION

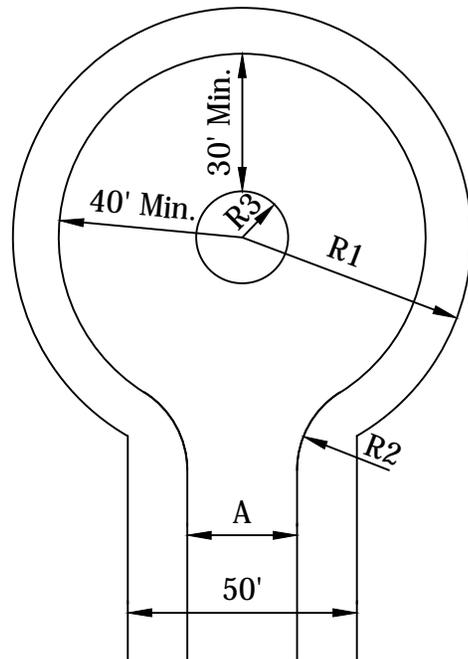
NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

UNDERDRAINS

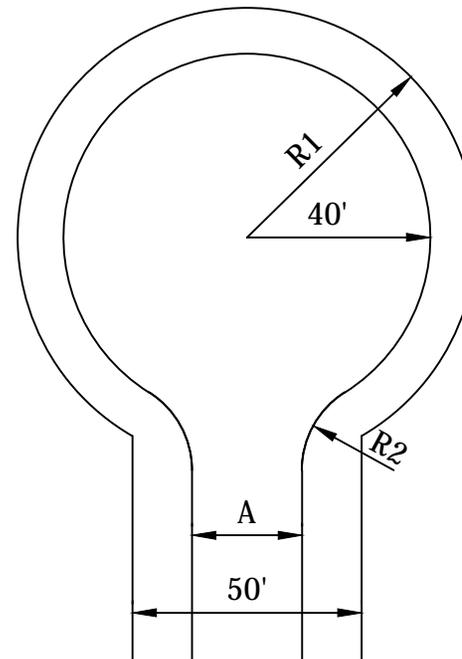
DATE
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REVISIONS

DWG-06



OPEN CENTER
CUL-DE-SAC



FULLY PAVED
CUL-DE-SAC

- R1 = 50' Min. Curb and Gutter, 60' Min. Open Drainage
- R2 = 20' Min.
- R3 = 10' Max.
- A = As Required by Street Design

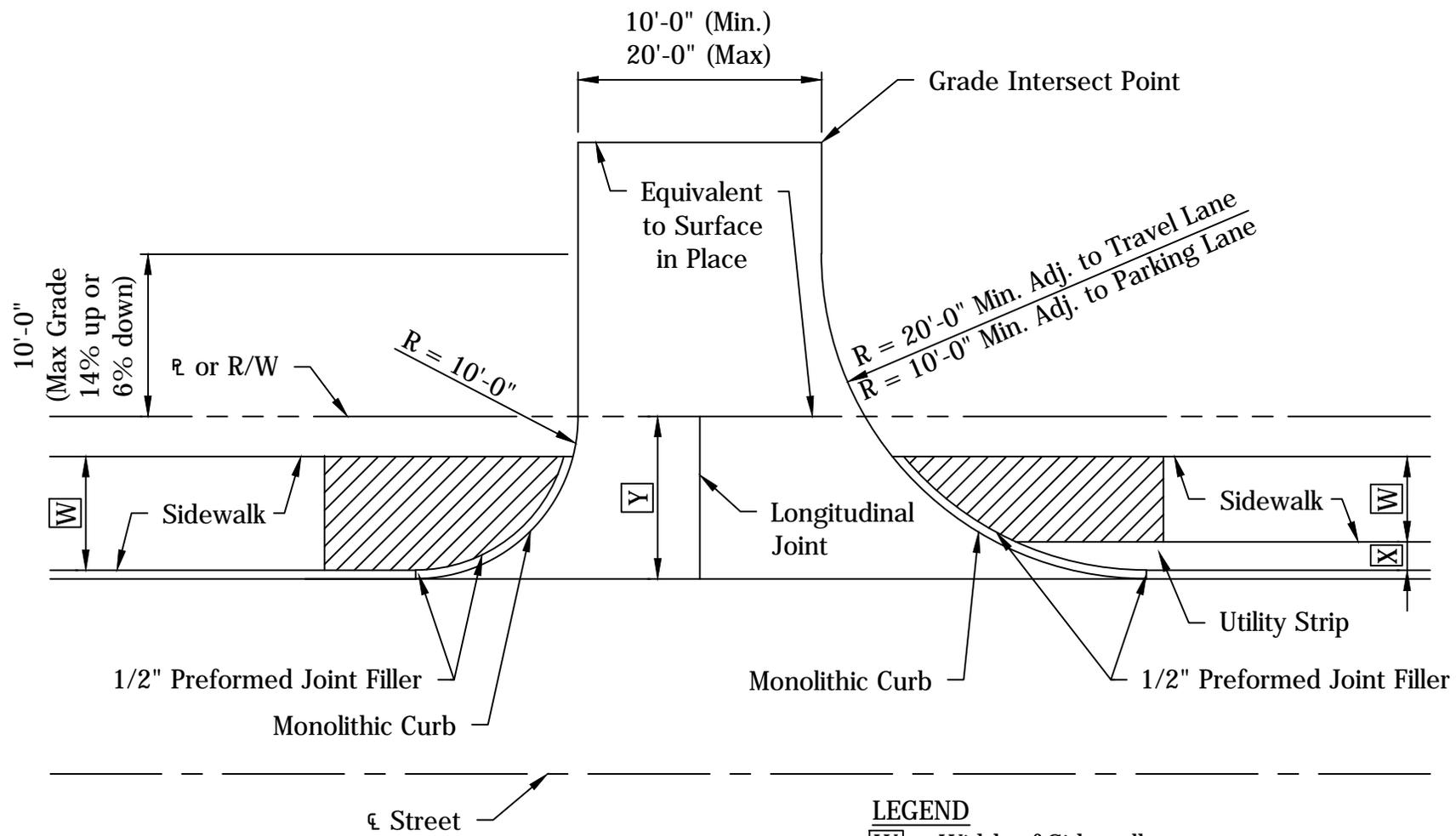
NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

TYPICAL CUL-DE-SAC

DATE
APPROVED

REVISIONS

DWG-07



NOTE: Maximum Algebraic Difference in Grades Shall not Exceed 8% for Crested Grades and 12% for Sagged Grades.

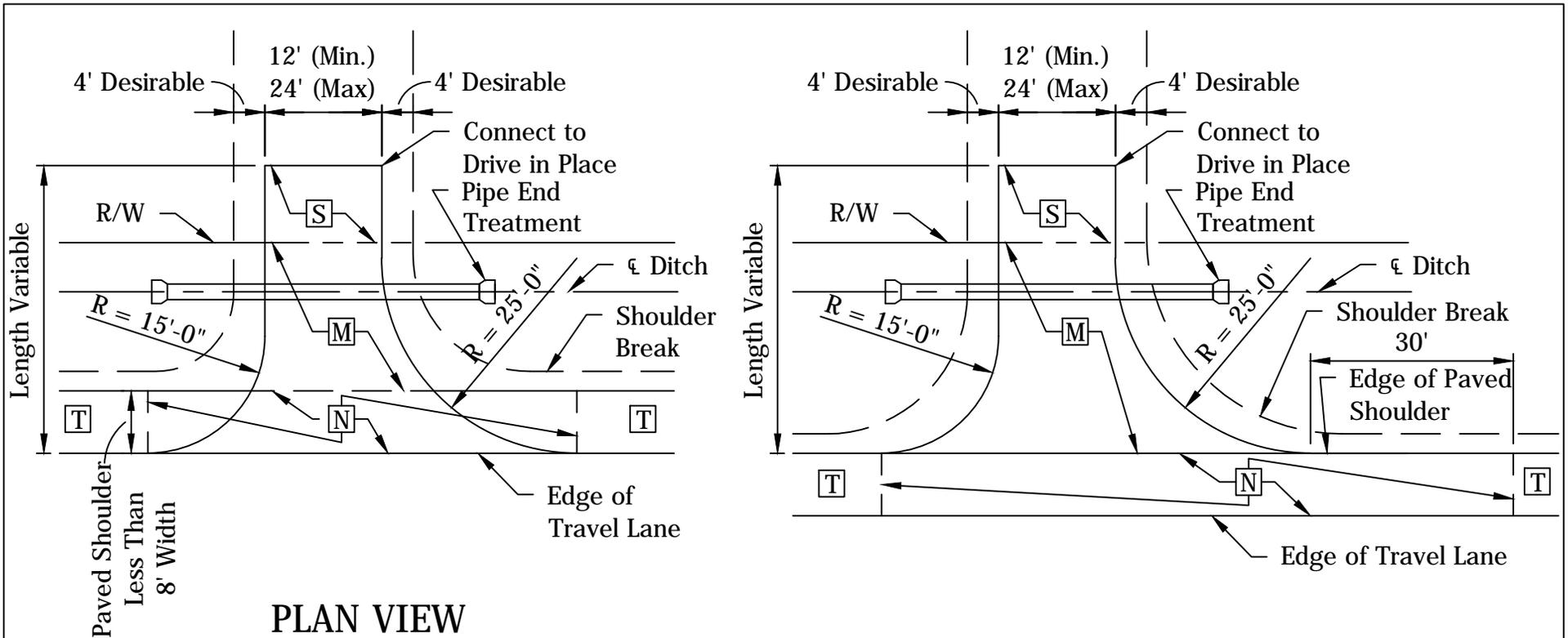
- LEGEND**
- \bar{W} = Width of Sidewalk
 - \bar{X} = Distance Between Back Face of Curb to Sidewalk
 - \bar{Y} = Distance from Front Face of Curb to \bar{r} or R/W
 - Hatched Box = Sidewalk Elevation Transition

PLAN VIEW

NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

CLASS I DRIVE

DATE APPROVED		REVISIONS		DWG-08
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PLAN VIEW

(PAVED SHOULDERS LESS THAN 8'-0" IN WIDTH OR UNPAVED SHOULDER)

LEGEND

[M] HMA for Approaches:

165#/syd HMA Surface Type B on
 385#/syd HMA Intermediate Type B on
 subgrade treatment Type IIIA
 or
 PCCP for Approaches, 6",
 subgrade treatment Type IIIA

[N] The Greater Thickness of Either the
 Drive M or the Paved Shoulder T Section
[T] Plan Shoulder Section
[S] For Type and Thickness Equivalent to
 Surface in Place, See Plans

NOTE: Maximum Algebraic Difference
 in Grades Shall not Exceed
 11% for Crested Grades and
 14% for Sagged Grades.

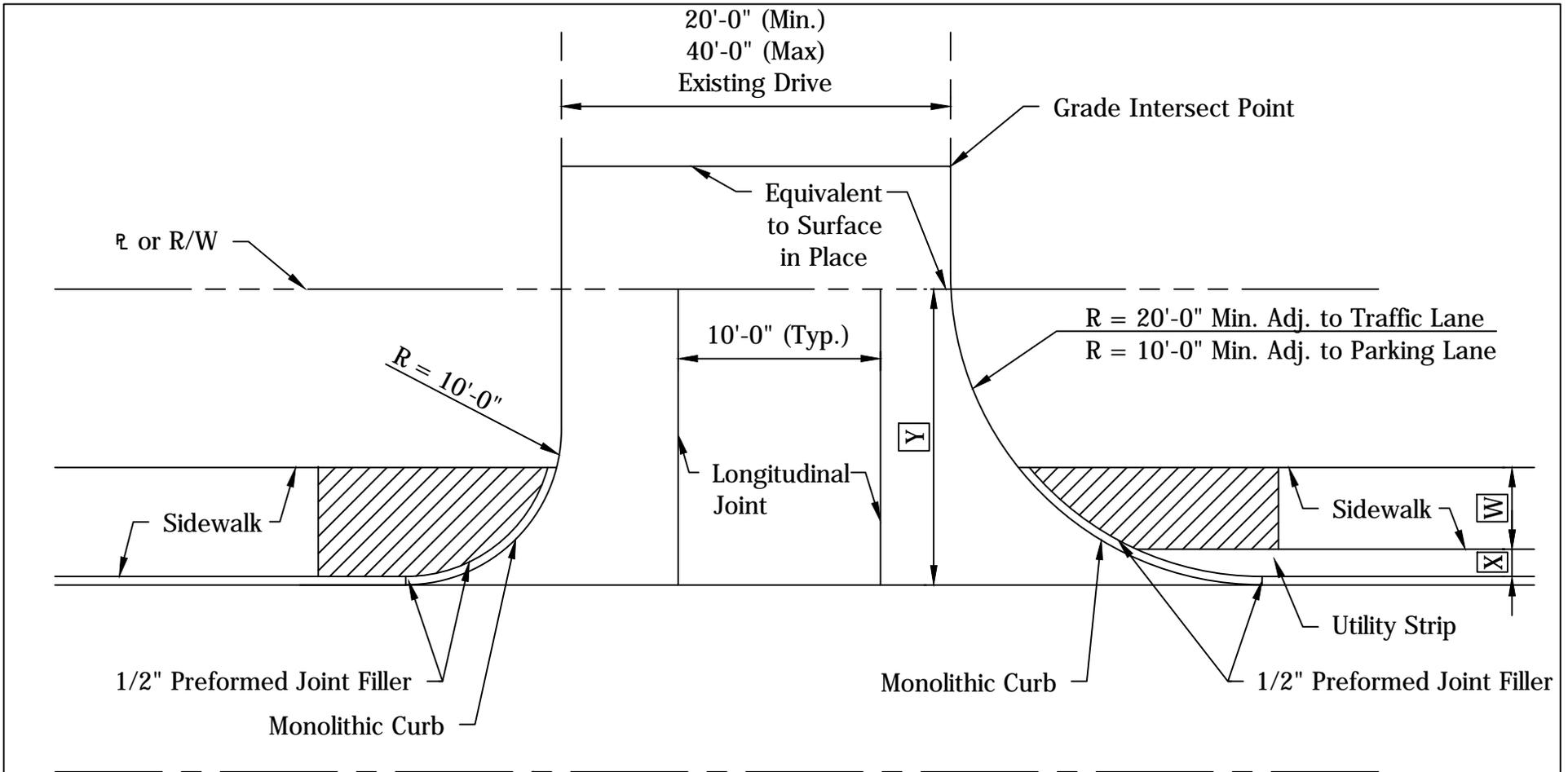
NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

CLASS II DRIVE

DATE
 APPROVED

REVISIONS

DWG-09



NOTE: Maximum Algebraic Difference in Grades Shall not Exceed 8% for Crested Grades and 12% for Sagged Grades.

LEGEND

- W = Width of Sidewalk
- X = Distance Between Back Face of Curb to Sidewalk
- Y = Distance from Front Face of Curb to φ or R/W
- / = Sidewalk Elevation Transition

PLAN VIEW

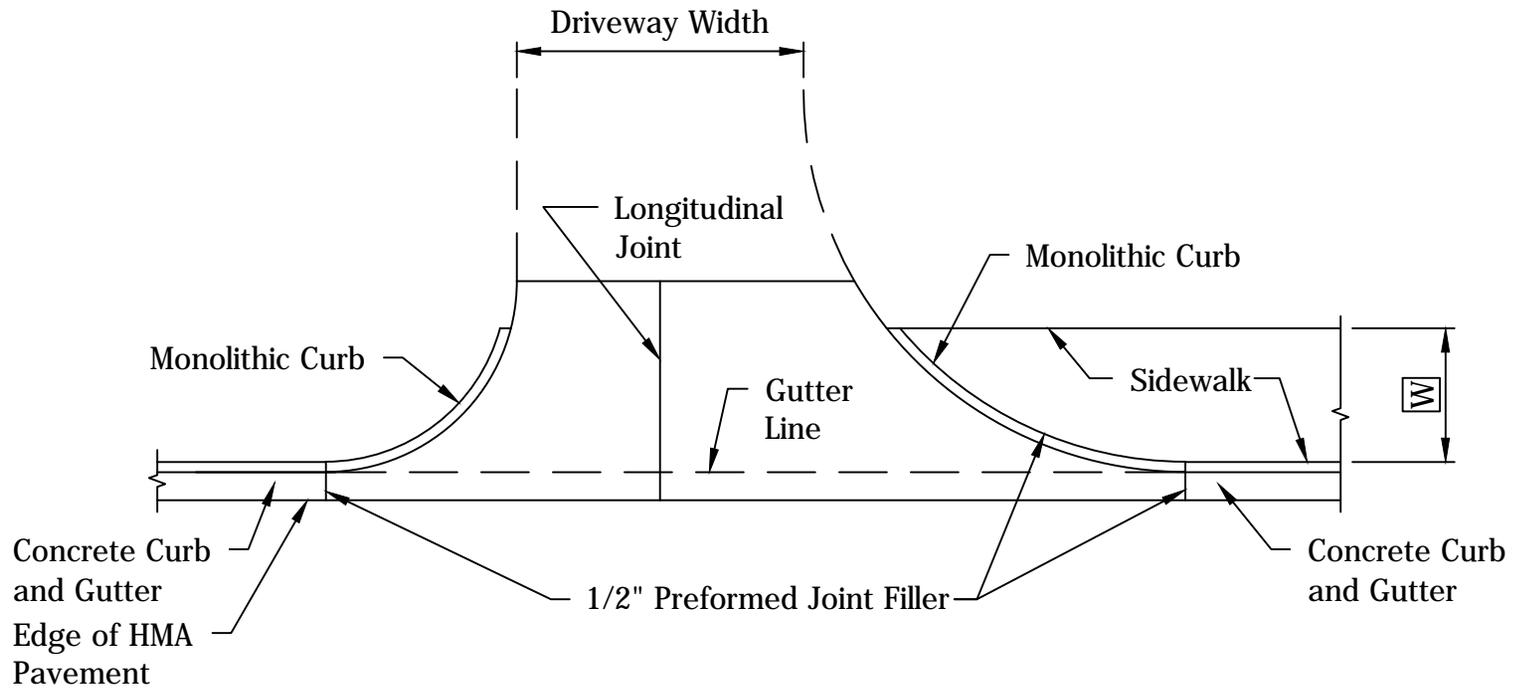
NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

CLASS III DRIVE

DATE APPROVED

REVISIONS

DWG-10



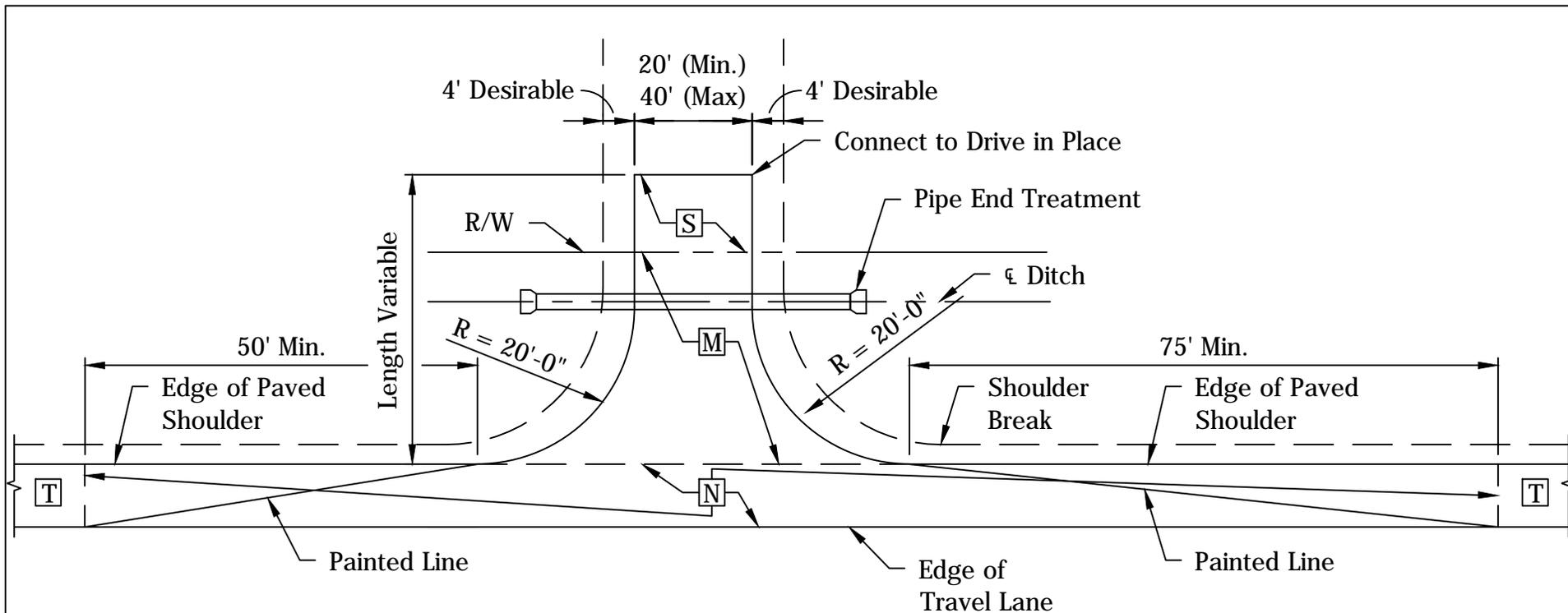
NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

CONCRETE CURB & GUTTER CONNECTION FOR CLASS I & III DRIVES

DATE
APPROVED

REVISIONS

DWG-11



PLAN VIEW

(PAVED SHOULDERS 8'-0" OR GREATER IN WIDTH)

LEGEND

M HMA for Approaches:
 165#/syd HMA Surface Type B on
 385#/syd HMA Intermediate Type B on
 subgrade treatment Type IIIA
 or
 PCCP for Approaches, 6",
 subgrade treatment Type IIIA

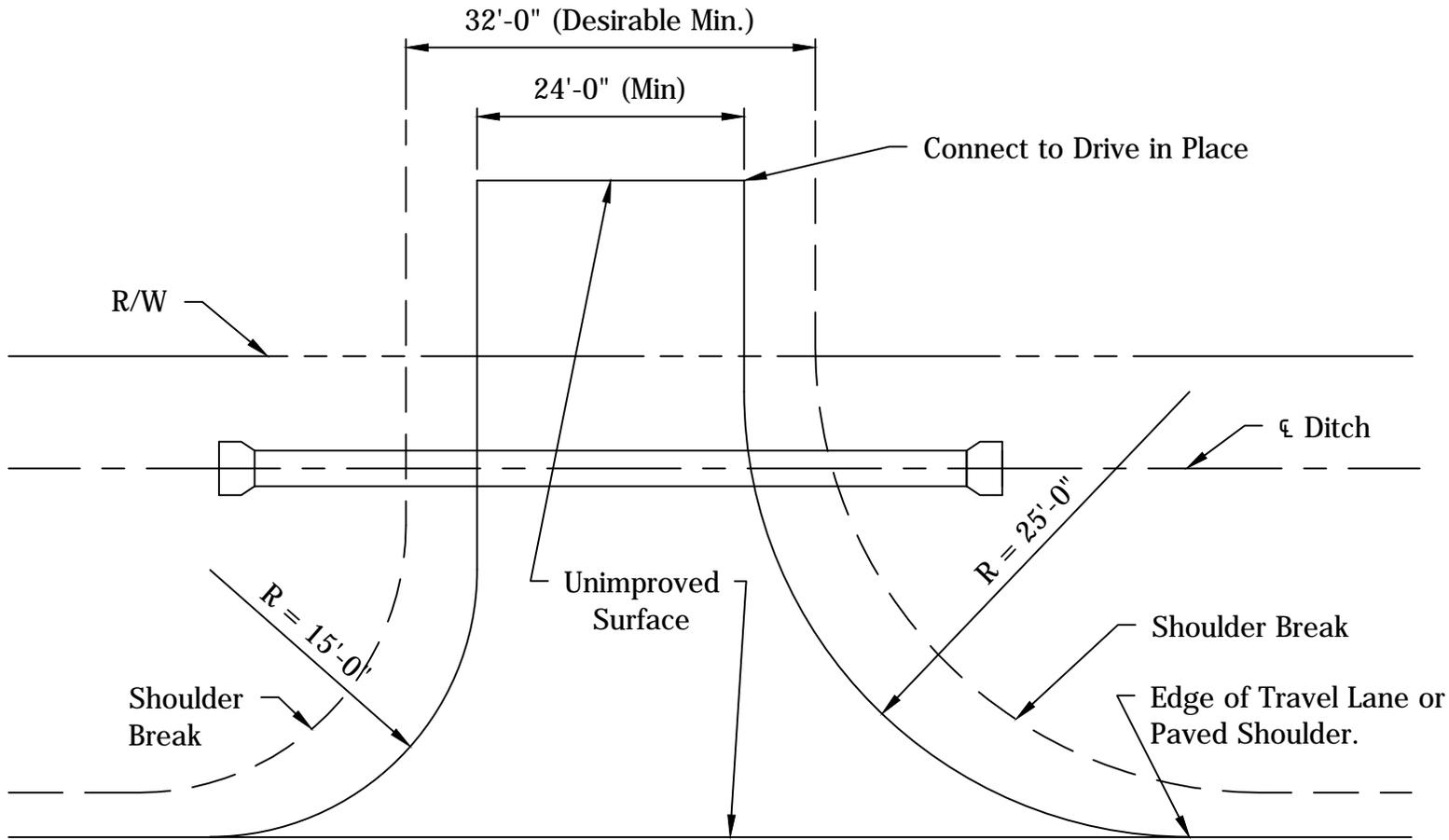
N The Greater Thickness of Either the
 Drive M or the Paved Shoulder T Section
T Plan Shoulder Section
S For Type and Thickness Equivalent to
 Surface in Place, See Plans

NOTE: Maximum Algebraic Difference
 in Grades Shall not Exceed
 11% for Crested Grades and
 14% for Sagged Grades.

NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

CLASS IV DRIVE - PAVED SHOULDER 8'-0" OR GREATER IN WIDTH

DATE APPROVED		REVISIONS		DWG-12
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PLAN VIEW

NOTE: Maximum Algebraic Difference in Grades Shall not Exceed 11% for Crested Grades and 14% for Sagged Grades.

Where the Shoulder is Earth or Aggregate or the Paved Width is Less than 8'-0", the Drive Radii shall be Tangent to the Edge of the Travel Lane. Where the Paved Shoulder Width is 8'-0" or more, the Drive Radii shall be Tangent to the Edge of the Paved Shoulder.

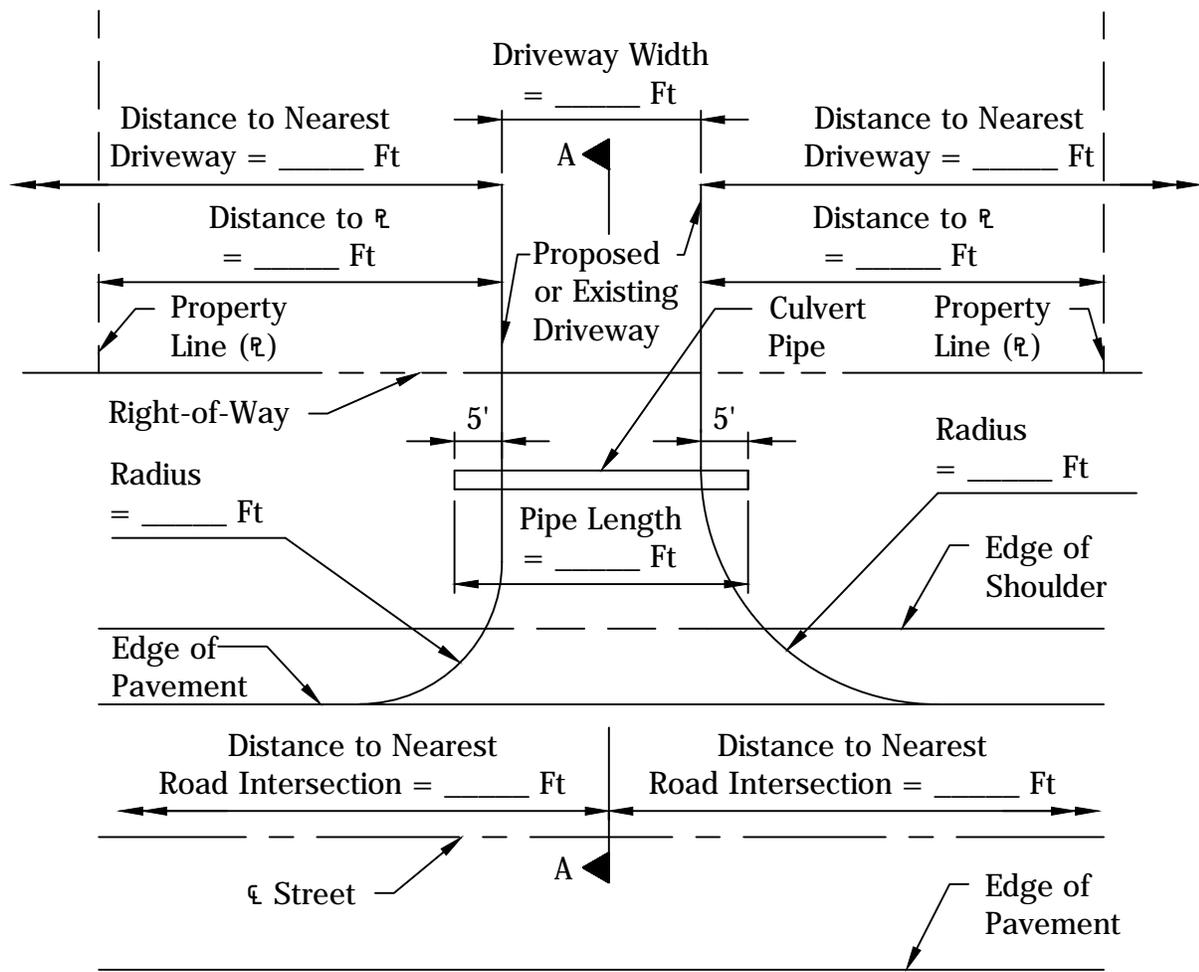
NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

CLASS V DRIVE

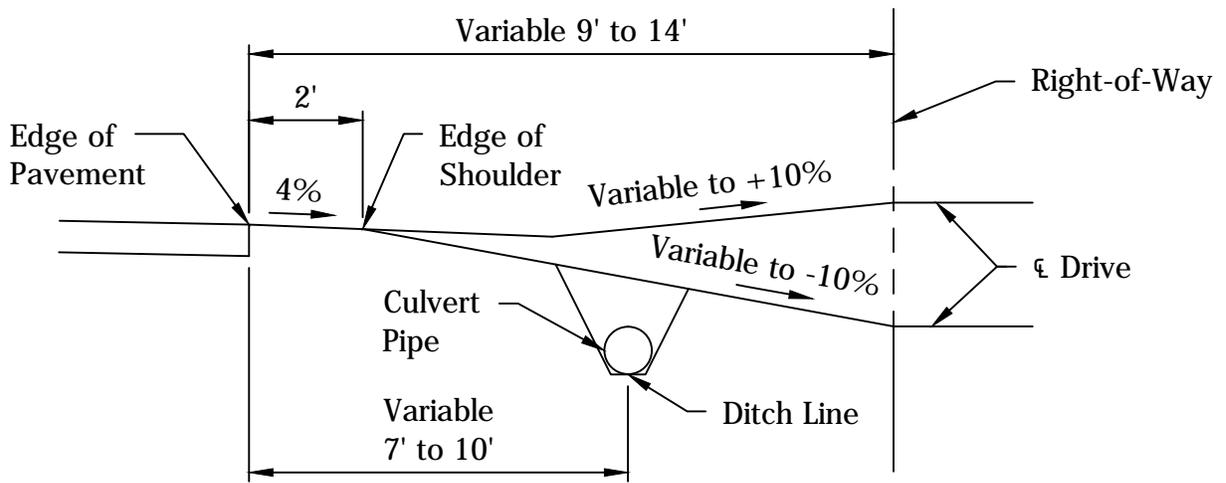
DATE APPROVED

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DWG-14



PLAN VIEW



SECTION A-A

(with Typical 2 Foot Earth Shoulders)

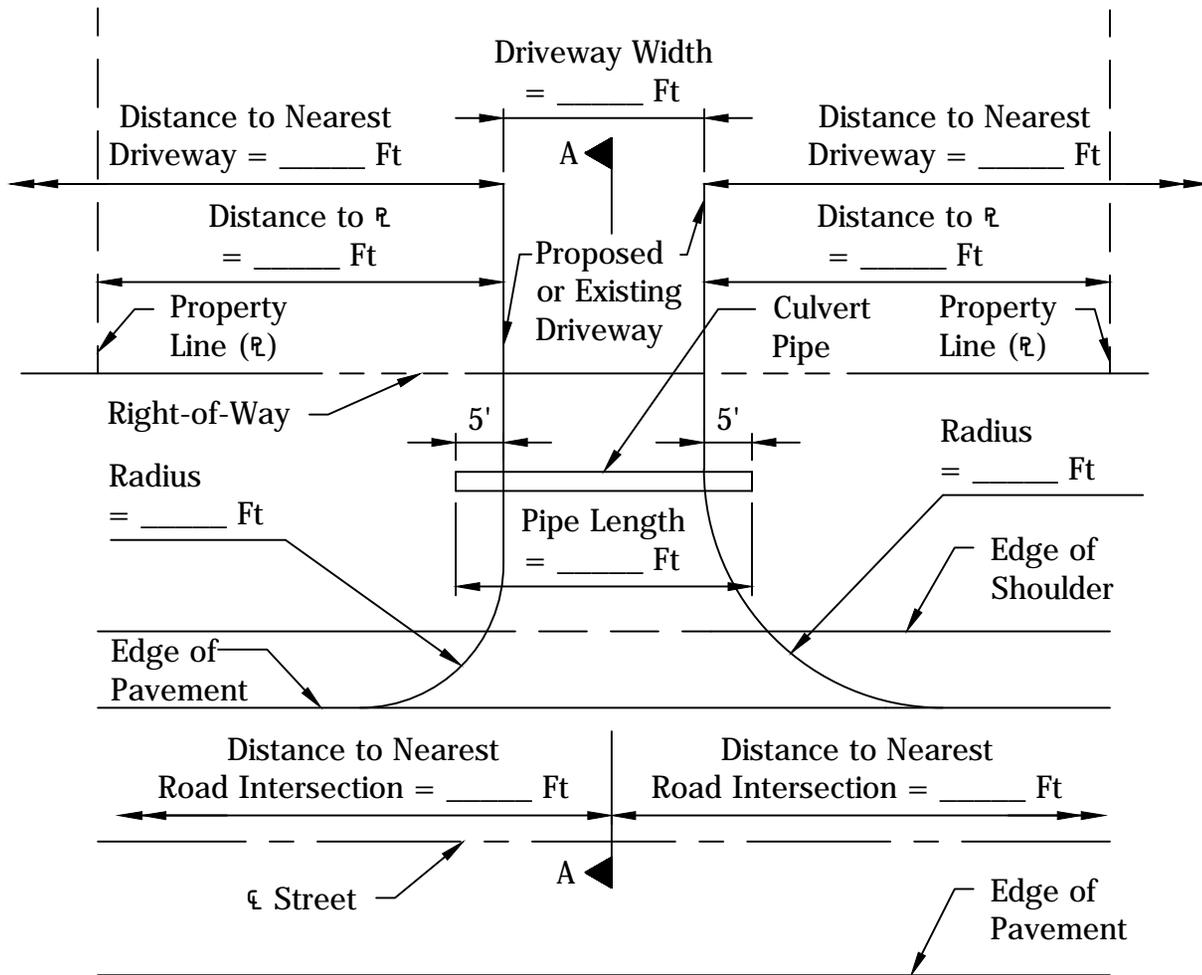
NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

PROPOSED DRIVEWAY DETAILS

DATE APPROVED

REVISIONS

DWG-15



PLAN VIEW

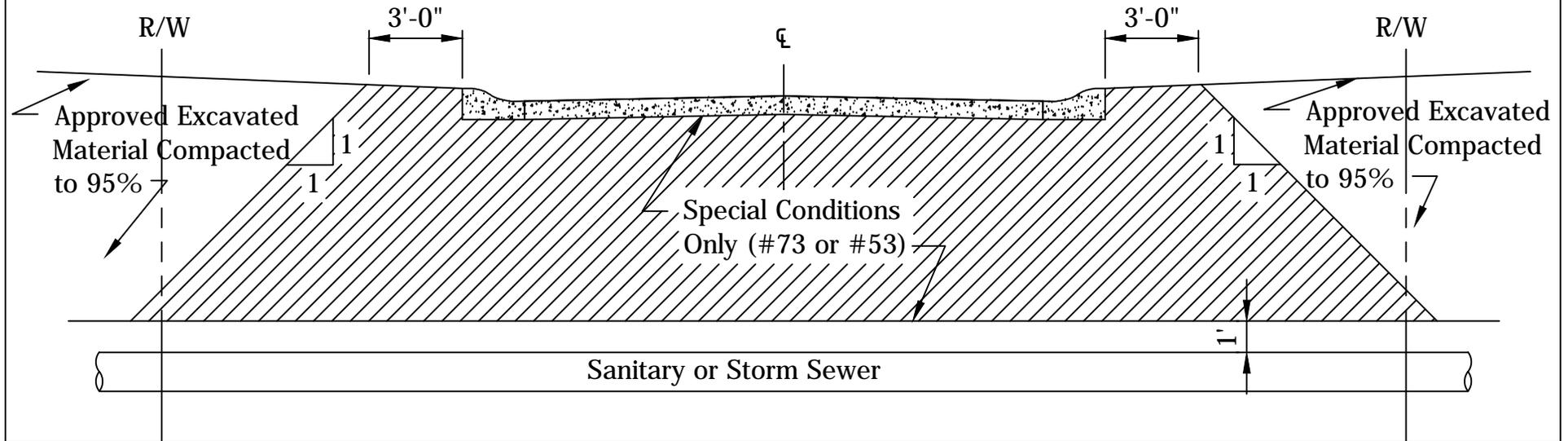
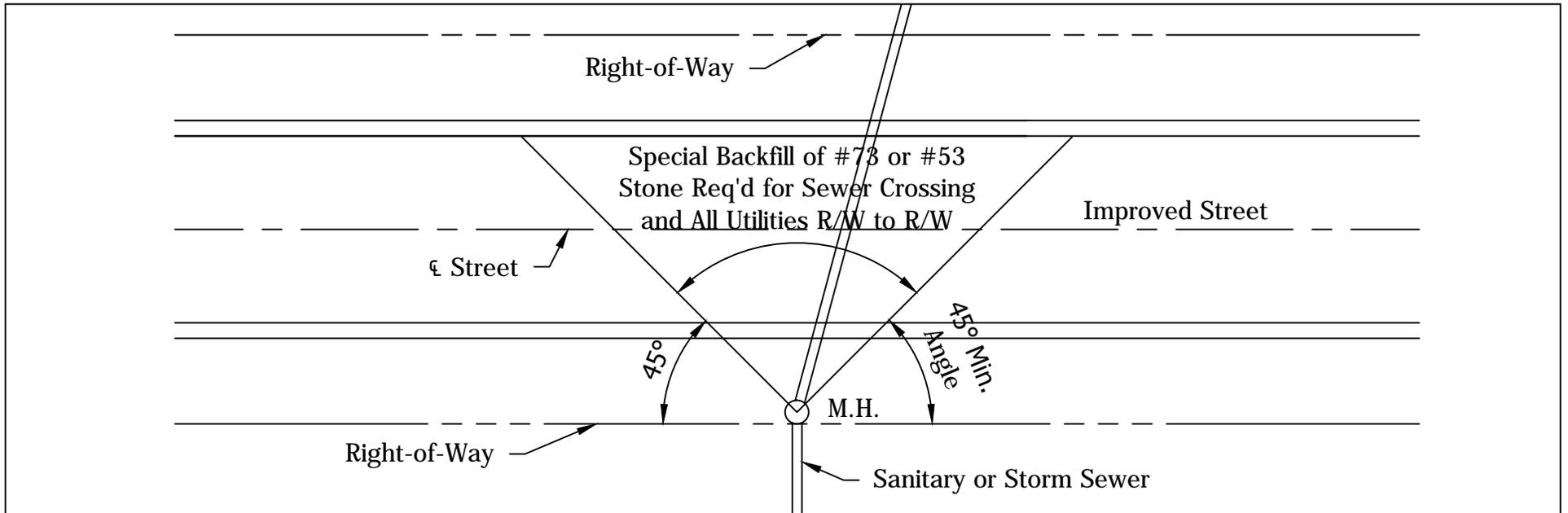
NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

PROPOSED DRIVEWAY DETAILS

DATE APPROVED

REVISIONS

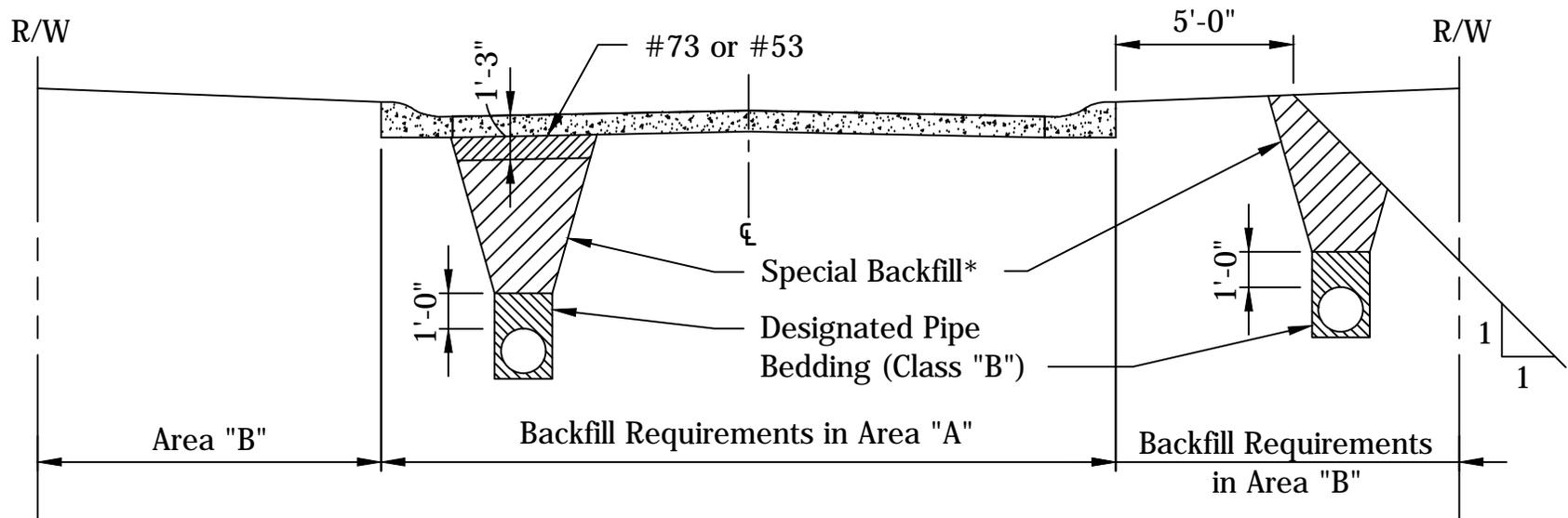
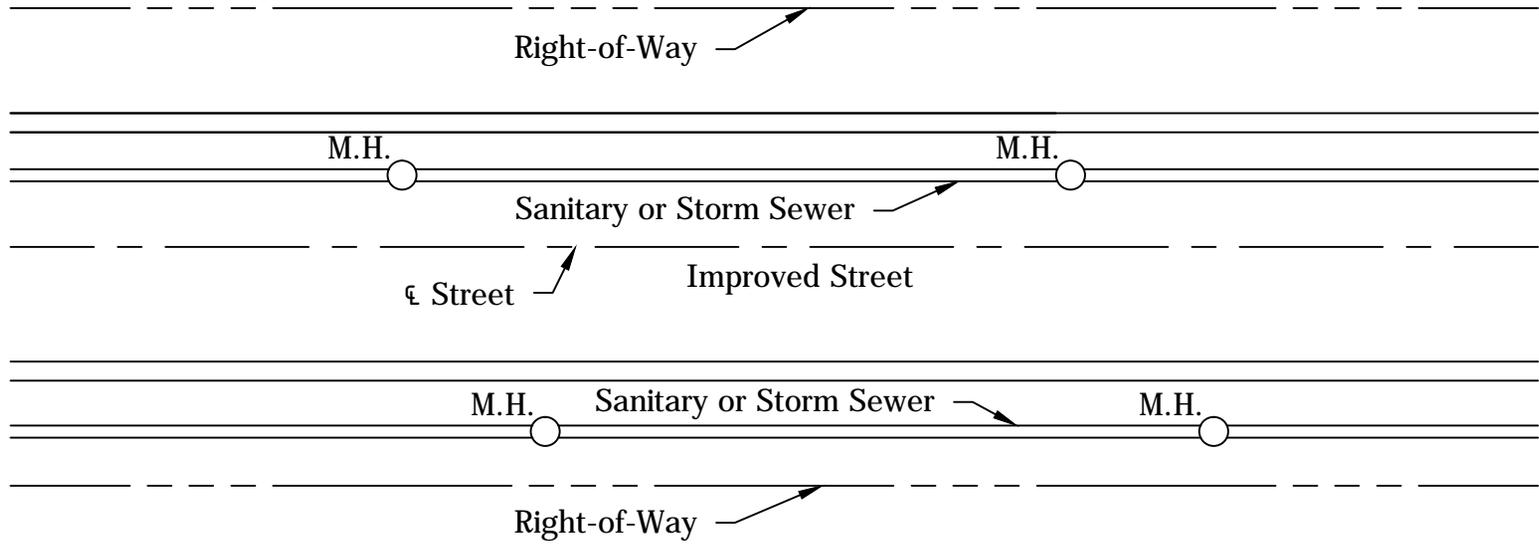
DWG-16



NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

BACKFILL REQUIREMENTS - STORM SEWERS & UTILITIES WITHIN R/W OF EX. STREETS

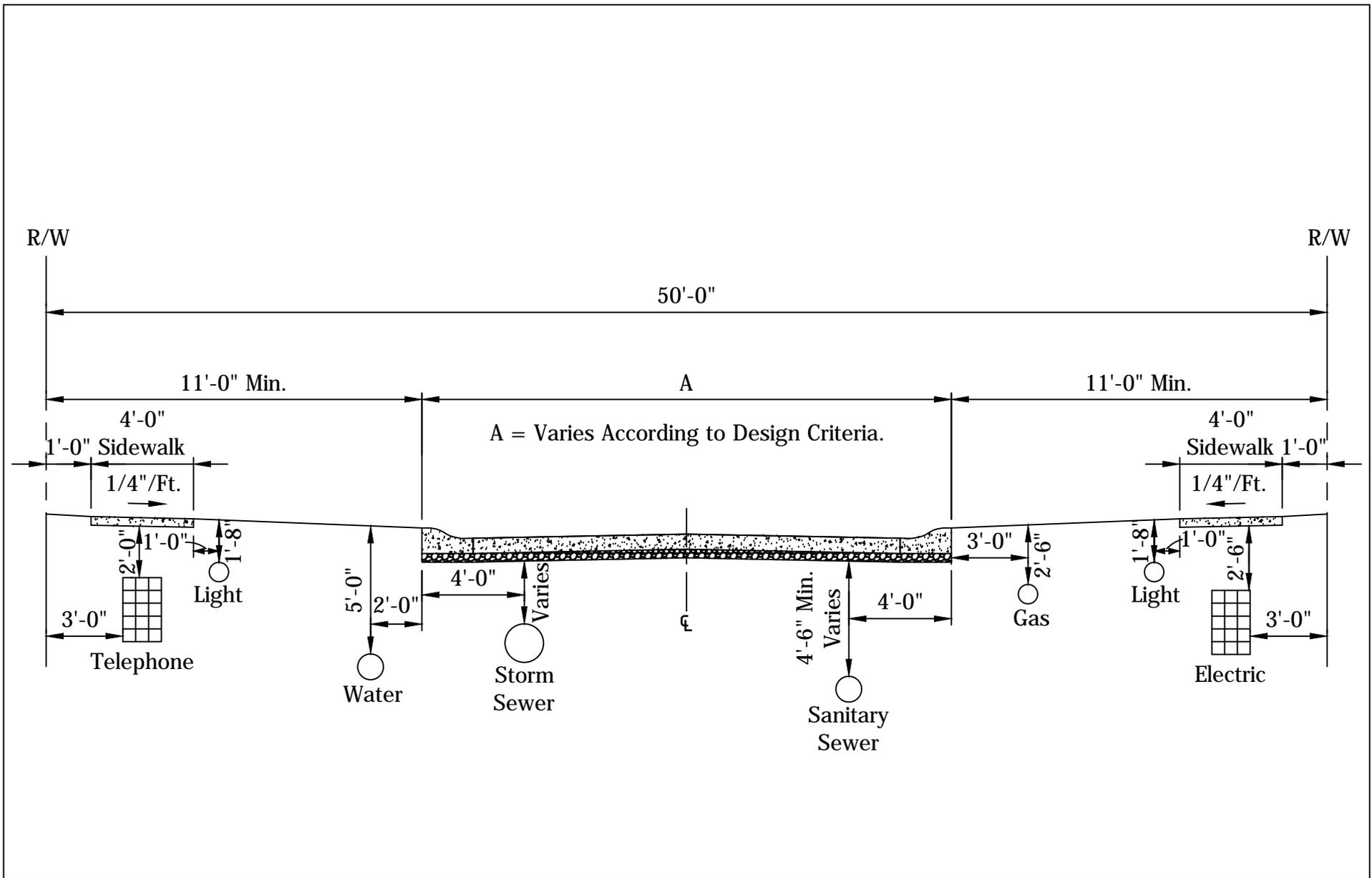
DATE APPROVED		REVISIONS		DWG-17
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NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

BACKFILL REQUIREMENTS - STORM SEWERS & UTILITIES WITHIN R/W OF EX. STREETS

DATE APPROVED		REVISIONS		DWG-18
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NOBLE COUNTY HIGHWAY DEPARTMENT STANDARDS

CROSS SECTION - TYPICAL UTILITY LOCATIONS IN RIGHT-OF-WAY

DATE APPROVED		REVISIONS			DWG-19
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