INDOT BRIDGE INSPECTION MANUAL

PART 3

LOAD RATING

Inspection Memorandum	Revision Date	Sections Affected
18-01	Apr. 2018	3-9.02(01), 3-9.02(02)
18-03	Oct. 2018	3-5.02, Appendix C
18-04	Oct. 2018	3-4.02
19-02	Apr. 2019	3-6.04, Appendix D
20-02	Nov. 2020	3-9.0, 3-9.01(02), 3-9.01(03), 3-9.01(04), 3-9.02(01)
21-02	Jul. 2021	3-2.0, 3-4.01, 3-4.02, 3-5.01, 3-5.01(01), 3-5.01(02), 3-7.0, Appendix C, Appendix E
22-03	Apr. 2022	3-4.02, 3-6.0, 3-6.04, Appendix C, Appendix D
22-03 (revised)	May 2022	3-6.04, Appendix D

The revision date is noted in brackets next to the heading for each affected section.

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Figure **Title**

3-1.0 INTRODUCTION

The primary purpose of this part of the manual is to establish a uniform policy of load rating procedures and standards for determining the safe load carrying capacity of bridges within the state of Indiana. This part is heavily influenced by the guidelines established in Section 6 of the *Manual for Bridge Evaluation*, 3rd Edition, which includes all interim revisions. Any variance with these guidelines is discussed in the sections to follow. At no point shall the requirements set forth in this document conflict with state or federal law. In the event of discrepancy, the law shall apply.

3-2.0 REFERENCE MATERIAL [REV. JUL. 2021]

AASHTO. (2008). *The Manual for Bridge Evaluation* (1st ed.). Washington, DC: American Association of State Highway and Transportation Officials.

AASHTO. (2018 with 2019 and 2020 Interim Revisions). *The Manual for Bridge Evaluation* (3rd ed.). Washington, DC: American Association of State Highway and Transportation Officials.

** References to the MBE in this manual refer to the 3rd Edition and its Interim Revisions. However, 23 CFR 650.317 references the 1st Edition, making this the binding edition. **

AASHTO. (2002). *Standard Specifications for Highway Bridges* (17th ed.). Washington, DC: American Association of State Highway and Transportation Officials.

Vehicle weight limitations – Interstate System, 23 U.S.C. 127 (2021)

National Bridge Inspection Standards, 23 CFR 650 subpart C (2020)

Hartmann, J. L. (November 3, 2016). *Load Rating for the FAST Act's Emergency Vehicles*. Washington, DC: U.S. Department of Transportation, Federal Highway Administration, Office of Bridges and Structures.

FHWA. (March 2018). *QUESTIONS AND ANSWERS Load Rating for the FAST Act's Emergency Vehicles* (REVISION R01). Washington, DC: U.S. Department of Transportation, Federal Highway Administration, Office of Bridges and Structures.

HNTP Corporation and Ghosn, Michael. (March 2019). *Load Rating for the Fast Act Emergency Vehicles Ev-2 and Ev-3* (NCHRP Project 20-07/Task 410). Transportation Research Board. http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-07Task410FinalReport_March2019.pdf

Size and Weight Regulation, IC 9-20 (2020)

Indiana Department of Transportation. (September 2011). *Bridge Inspection Program Coding Guide, Bridge Reporting for Appraisal & Greater Inventory* (Vols. 1-3)

(2011 with Revisions 1, 2, and 3). *Indiana Manual on Uniform Traffic Control Devices for Streets and Highways*. https://www.in.gov/dot/div/contracts/design/mutcd/2011rev3MUTCD.htm

Indiana Department of Transportation. (2013-2021). *Indiana Design Manual*. https://www.in.gov/dot/div/contracts/design/IDM.htm

3-3.0 ROLES AND RESPONSIBILITIES

Load rating roles for Bridge Owners, the Indiana Department of Transportation, and Load Rating Engineers are described within this section.

3-3.01 Bridge Owner

Bridge Owners in Indiana include the State, counties, other local agencies, toll roads, and private firms owning bridges open to public traffic. For bridges within their authority, Bridge Owners are responsible for the following items:

- Ensuring all bridges within their jurisdiction are load rated for their in-service condition.
- Ensuring that new, replacement, or rehabilitated bridges are load rated no later than the initial inspection.
- Quality control and maintaining of all required load rating documentation.
- Posting of bridges as required.

3-3.02 Indiana Department of Transportation

The Indiana Department of Transportation (INDOT) is responsible for ensuring that Bridge Owners are in compliance with the *National Bridge Inspection Standards* (NBIS) as given in 23 CFR 650 Subpart C, Bridges, Structures, and Hydraulics.

3-3.03 Load Rating Engineer

Qualifications for a Load Rating Engineer (LRE) are discussed in Part 1 of this manual. LREs must certify and be actively involved in reviewing the quality and accuracy of all load ratings performed. A qualified LRE is also responsible for submitting all required documentation as specified in 3-9.02.

3-4.0 VEHICLES

Vehicles are classified into three main categories: Design, Legal, and Permit. Each category is discussed in greater detail within this section. Vehicle configurations are shown in Appendix A.

3-4.01 Design [Rev. Jul. 2021]

Design vehicles are live load configurations used for the purpose of new design, replacement, or rehabilitation bridge projects. The Design classification is further subdivided into two reliability levels, Inventory and Operating. Applicable Design vehicles are listed on the plans for which the structural element in question was designed. Rules regarding the applicability of Design vehicles are specified in the *Indiana Design Manual*. See Figure 3-4.1 for a list of potential Design vehicles.

Additionally, for bridges rated in accordance with Load and Resistance Factor methodology and section 3-5.01(01), each bridge shall be load rated for the HL-93 vehicle at each Design level. For all other load rating methodologies, each bridge shall be load rated for the HS-20 vehicle at each Design level. Furthermore, general Toll Road and Michigan Train Truck applicability is discussed within this section as well as in the *Indiana Design Manual* section 403-3.01. Bridges shall be rated for all applicable Design vehicles at both the Inventory and Operating reliability levels.

Any bridge on the Indiana Toll Road or any state owned or maintained bridge within 15 miles of a toll road gate shall be rated for the Toll Road Truck configurations including a 0.64 klf lane load. Any bridge located on the Extra-Heavy-Duty Highway, as described in IC 9-20-5-4, shall be rated

for the Michigan Train Truck configurations including a 0.64 klf lane load. See Appendix B for supplementary information regarding the Indiana Toll Road and Extra-Heavy-Duty Highways.

Truck Configuration
HL-93
Fatigue*
H-20
HS-20
HS-25
Alternate Military
Toll Road Loading No. 1
Toll Road Loading No. 2
Special Toll Road Truck
Michigan Train Truck #5
Michigan Train Truck #8

* The Fatigue configuration shall be used for evaluating the Fatigue Limit State per MBE Table 6A.4.2.2-1 whenever HL-93 is specified on applicable plans.

Figure 3-4.1 Potential Design Vehicles

3-4.02 Legal [Rev. Oct. 2018, Apr. 2022]

Legal vehicles are live load configurations that are used to determine the safe load carrying capacity and posting of a bridge. This Legal vehicle category is described in the Manual for Bridge Evaluation (MBE) section 6A.4.4 for Load and Resistance Factor Rating (LRFR) and in section 6B.7.2 for Load Factor Rating (LFR). Every bridge in Indiana must be rated for the vehicles listed in Figure 3-4.2. Any of the required Legal vehicles not explicitly mentioned in the MBE should be considered a State Legal vehicle as discussed in the MBE.

Included as Legal vehicles are emergency vehicles, EV2 and EV3, as required by 23 U.S.C. 127 and provided by the Fixing America's Surface Transportation (FAST) Act (FHWA). These vehicles will be referred to as “FAST Act EVs” throughout this document. The FAST Act increased the weight limits for emergency vehicles beyond the limits given in the Federal Bridge Formula, yet it specified that these vehicles are to be considered at Legal Load levels for bridge load rating.

The FAST Act EVs are considered to occupy one lane with the remaining lanes occupied by the controlling legal vehicle (excluding the FAST Act EVs); the controlling legal vehicle may vary bridge to bridge and should be determined by analysis. If using the simplified live load distribution equations, choose the appropriate equation according to the number of design lanes. Where one-lane distribution is used, do not include the 1.2 multiple presence factor from the AASHTO LRFD specifications. Except for buried structures, a live load factor of 1.3 should be used irrespective of the ADTT. Alternatively, guidance from NCHRP Project 20-01/Task 410 may be used. This research established live load factors calibrated following a reliability analysis consistent with LRFD/LRFR methodology. Appendix E provides NCHRP 20-01/Task 410 guidance on the application of live loads and LRFR and LFR load factors.

Truck Configuration	LRFR Code Reference
H-20	MBE 6A.4.4.2.1a
HS-20	MBE 6A.4.4.2.1a
Alternate Military	MBE 6A.4.4.2.1a
AASHTO Type 3	MBE 6A.4.4.2.1a
AASHTO Type 3S2	MBE 6A.4.4.2.1a
AASHTO Type 3-3	MBE 6A.4.4.2.1a
Lane-Type*	MBE 6A.4.4.2.1a
EV2	MBE 6A.4.4.2.1a
EV3	MBE 6A.4.4.2.1a
NRL**	MBE 6A.4.4.2.1b
SU4	MBE 6A.4.4.2.1b
SU5	MBE 6A.4.4.2.1b
SU6	MBE 6A.4.4.2.1b
SU7	MBE 6A.4.4.2.1b

* Load and Resistance Factor Rating (LRFR) methodology only
** Not to be used for load posting. Not required for Engineering Judgment (EJ) methodology.

Figure 3-4.2 Required Legal Vehicles

3-4.03 Permit

Permit vehicles are live load configurations that exceed legal load limitations. These vehicles may be issued routine or special permits. Vehicles that represent routinely permitted configurations shall be used for determining the safe load capacity and posting of a bridge. Special permits are

for less frequent loads and often with additional limitations. Permit load rating is discussed in MBE 6A.4.5 for Load and Resistance Factor Rating (LRFR) and MBE 6B.8 for Load Factor Rating (LFR). See Figure 3-4.3 for a list of potential Permit vehicles.

Any bridge on the Indiana Toll Road, or any state owned or maintained bridge within 15 miles of a toll road gate shall be rated for the Toll Road Truck configurations. Any bridge located on the Extra-Heavy-Duty Highway, as described in IC 9-20-5-4, shall be rated for the Michigan Train Truck configurations. It is acceptable to limit Michigan Train Truck vehicles to one lane located so as to cause extreme force effects while the other lanes are occupied by regular Legal loads. A lane load shall be included with all Toll Road or Michigan Train Truck configurations if required by the MBE depending on rating method and bridge geometry. See Appendix B for supplementary information regarding the Indiana Toll Road and Extra-Heavy-Duty Highways.

Where analytical rating methods are used on state owned or maintained bridges, the Special Permit vehicles, as shown in Figure 3-4.3, shall be evaluated. The Special Permit vehicles shall be evaluated single trip, mixed with traffic, and without reduction in speed.

Routine	Special
Toll Road Loading No. 1	Superload – 11 Axles
Toll Road Loading No. 2	Superload – 13 Axles
Special Toll Road Truck	Superload – 14 Axles
Michigan Train Truck #5	Superload – 19 Axles (305K)
Michigan Train Truck #8	Superload – 19 Axles (480.09K)

Figure 3-4.3 Potential Permit Vehicles

3-5.0 METHODS

Analytical methods should be used for load rating whenever possible. Engineering judgment may be used to supplement calculations. If necessary, when bridge geometry or material properties are not available and cannot be obtained economically, then engineering judgment may be used in place of analytical methods. In addition, a more conservative rating may be determined at the discretion of the Bridge Owner; this may mean posting the bridge at a lower tonnage than required by analysis.

3-5.01 Analytical [Rev. Jul. 2021]

The two primary analytical bridge load rating methods are Load and Resistance Factor Rating (LRFR) and Load Factor Rating (LFR).

LRFR shall be used for all new bridge or superstructure replacement projects designed using LRFD. For state owned or maintained bridges, LRFR is the preferred analysis method regardless of the original design criteria. In certain situations, LRFR may be more restrictive than the original design criteria. This may lead to overly conservative ratings for existing structures that are performing well and showing no signs of distress. In situations such as this, other rating methods may be considered.

AASHTOWARE Bridge Rating (BrR) shall be used to perform load ratings whenever possible. It is permissible to use other programs and/or engineering judgment in cases where the use of BrR is insufficient or not plausible due to program limitations. Additional resources are available on the bridge design website including a list of programs that may be used to supplement BrR.

3-5.01(01) Load and Resistance Factor Rating (LRFR) [Rev. Jul. 2021]

Except as noted in this manual, Load and Resistance Factor Rating (LRFR) analysis should follow the procedures outlined in MBE Section 6A. As defined in this manual and discussed in the MBE, ratings fall into three categories, Design Load, Legal Load, and Permit Load. Please refer to Section 3-4 in this chapter for a list of vehicles that fall within each category and a discussion regarding their applicability. In short, for determining the load capacity or safe posting load of a bridge, ratings are required for all Legal Loads as well as any vehicle that represents loads that exceed legal requirements and are routinely permitted to cross the bridge.

In regard to MBE 6A.4.3.1, it is not permissible in Indiana to use HL-93 as a screening vehicle to determine whether or not to rate for Legal Loads. Similarly, it is not permissible to use the Notional Rating Load, NRL, as a screening vehicle for the AASHTO Specialized Hauling Vehicles as discussed in MBE C6A.4.4.2.1b and C6A.8.2. Lastly, in regard to MBE 6A.4.5.2, applicable Permit Loads shall be evaluated regardless of Legal Load rating results. All load ratings must follow the requirements specified in section 3-4 of this manual.

As discussed in MBE 6A.5.4 and with the exception of segmentally constructed bridges, service limit states in regard to crack control should not be considered for determining the load capacity or safe posting load of state owned or maintained reinforced concrete or prestressed concrete in-service bridge components. Crack control may be considered for determining the load capacity or

safe posting load for local bridges at the discretion of the Bridge Owner. This applies to both Legal and applicable Routine Permit loads. For Special Permit evaluation, use of these provisions is at the discretion of the Permitting Engineer. Crack control is a means for ensuring longevity of the structure and is therefore most applicable for design loading.

The condition factor Φ_C and system factor Φ_S should be used per MBE 6A.4.2.3 & 6A.4.2.4 respectively. Where material properties are unknown, assumptions can be made per MBE 6A.5.2 and 6A.6.2. Regarding MBE 6A.5.8, if the conditions of this article are met for reinforced concrete slab bridges, shear capacity need not be checked for Design and Legal Loads. Similarly, shear need not be evaluated for any proposed work on reinforced concrete slab bridges. For any other reinforced, prestressed, or post-tensioned concrete bridge, the shear capacity should be evaluated for Design, Legal, and Permit ratings regardless of condition or distress. When shear controls, refined analysis may be used to more accurately model boundary conditions and loading scenarios.

3-5.01(02) Load Factor Rating (LFR) [Rev. Jul. 2021]

Except as noted in this manual, Load Factor Rating (LFR) analysis should follow the procedures outlined in MBE 6B. As defined in this manual, ratings fall into three categories, Design Load, Legal Load, and Permit Load. Please refer to Section 3-4 in this manual for a list of vehicles that fall within each category and a discussion regarding their applicability. In short, for determining the load capacity or safe posting load of a bridge, ratings are required for all applicable Legal Loads as well as any vehicle that represents loads that exceed legal requirements and are routinely permitted to cross the bridge.

In regard to MBE C6B.7.2, it is not permissible in Indiana to use the Notional Rating Load, NRL, as a screening vehicle for the AASHTO Specialized Hauling Vehicles. All load ratings must follow the requirements specified in section 3-4 of this manual.

When referencing MBE 6B, because the Design, Legal, and Permit classifications are not directly defined, they shall be evaluated as follows. Design Loads shall be evaluated at both the LFR Inventory and Operating levels. Legal Loads and Permit Loads shall be evaluated at the LFR Operating level.

3-5.01(03) Other

If the LRFR method is not used, bridges designed by the Allowable or Working Stress Method should be rated LFR, see Section 3-5.01(02).

3-5.02 Engineering Judgment [Rev. Oct. 2018]

MBE 6.1.4 discusses the use of engineering judgment in place of, or as a supplement to, analytical methods when the necessary details to load rate are missing or incomplete.

Load rating based on engineering judgment may be used in lieu of analytical methods only when there are no plans or details available and physical measurement of the structural members is not possible, such as the reinforcing bars of a concrete structure. The LRE should consider all available information when determining the load rating, including, but not limited to:

- year of construction and common material properties for that era,
- assumed design vehicle,
- all measurable structure dimensions,
- redundancy of load path,
- deterioration levels,
- signs of distress such as transverse cracks in high moment regions or diagonal cracks in high shear regions, and
- changes to the structure such as increased dead loads since original construction.

The load rating shall be determined for all applicable vehicles as described in Section 3-4. Consideration should be given to the size and configuration of vehicles that routinely use the bridge being evaluated. A comparison of shear and moments produced by vehicles that routinely use the bridge to those produced by load rating vehicles that may not routinely use the bridge may aid the LRE in determining appropriate rating factors.

Engineering judgment may be used to assign lower ratings than computed at the Bridge Owner's request or to provide a more conservative rating when desired.

3-6.0 POSTING [REV. APR. 2022]

Bridges that cannot safely carry the applicable Legal or Routine Permit loads, as defined in Section 3-4 and shown in Figures 3-4.2 and 3-4.3, must be posted. The need for posting is indicated for a Legal or Routine Permit rating factor of less than 1.0 for at least one of the required vehicles. Posting for Design Loads is conservative and therefore will only be allowed at the discretion of the Bridge Owner.

There are two distinct types of posting for bridges – posting for commercial vehicle traffic and/or posting for emergency vehicles. A given bridge may require one of these types, both, or neither according to the following descriptions.

Posting for Commercial Vehicles. If any applicable Legal or Routine Permit vehicle, not including FAST Act EVs, produces a rating factor below 1.0, then the bridge shall be posted for the safe posting load of all these vehicles. This applies to each rating vehicle even if it rates higher than 1.0. This is necessary because even though only one vehicle may actually produce a rating less than the 1.0 rating factor threshold, the calculated load capacity or safe posting load may in fact be higher than for a different vehicle having a lighter gross vehicle weight (GVW).

Example 1:

Legal & Routine Permit Loads

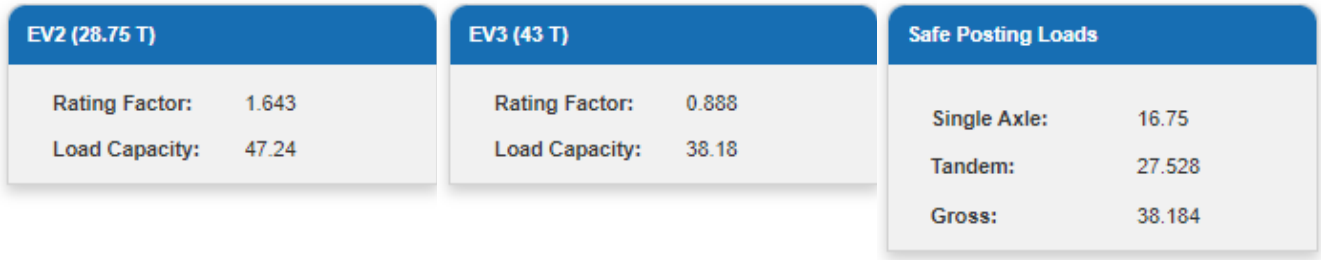
Number of Axles	Vehicle	Rating Factor	Load Capacity (tons)	Safe Posting Load (tons)
2	EV2	1.445	41.544	
3	EV3	1.029	44.247	
			Single Axle:	
			Tandem:	
			Gross:	
varies	NRL	0.914		
2	H20-44	1.407	28.140	28.140
2	Alternate Military	1.173	28.152	28.152
3	HS20-44	1.056	38.016	38.016
3	AASHTO Type 3	1.245	31.125	31.125
4	SU4	1.278	34.506	34.506
4	Toll Road Loading NO. 2			
5	AASHTO Type 3S2	1.431	51.516	51.516
5	SU5	1.154	35.774	35.774
5	Toll Road Loading NO. 1			
6	AASHTO Type 3-3	1.412	56.480	56.480
6	Lane-Type	1.595	63.800	63.800
6	SU6	1.040	36.140	36.140
7	Special Toll Road Truck			
7 / 8	SU7	0.958	37.123	36.425
8	Michigan Train Truck NO. 5			
11	Michigan Train Truck NO. 8			

This sample Load Rating Summary Report (see Appendix C: Load Rating Report Documentation Example 1) shows all the Legal and Routine Permit ratings for a bridge. Since there is at least one vehicle, SU7 in this case, having a rating factor lower than 1.0, this bridge must be posted for all commercial traffic. Even though there are other vehicles having higher Legal rating factors, the lower safe posting load calculated for the H20-44 vehicle governs the posted weight limit. In this example, the bridge would be posted for 28 Tons. When there is a large variation in calculated safe posting loads, it is permissible to consider rating vehicles in groups according to the number

of axles to determine a posting weight for each group. See Section 3-6.04 for required signage and options.

Posting for Emergency Vehicles. If the rating factor for either of the FAST Act EVs is below 1.0, then the bridge shall be posted for the Single Axle, Tandem Axle, and Gross Vehicle safe posting load for all emergency vehicles, even if one of the vehicles rates higher than 1.0.

Example 2:



In this sample showing BRADIN data, since the rating factor for the EV3 vehicle is below 1.0, this bridge must be posted for all emergency vehicles. The governing single axle, tandem axle, and gross vehicle safe posting loads have been calculated in accordance with the guidance in the *Load Rating for the FAST Act's Emergency Vehicles* memorandum and subsequent *Questions and Answers* document (see 3-2.0 for references). See Section 3-6.04 for required signage.

3-6.01 Load and Resistance Factor Rating Analysis

Except as noted within this manual, where analytical models have been developed consistent with Section 3-5.01(01), load posting criteria shall conform to MBE 6A.8. The load capacity is determined according to MBE 6A.4.4.4. For rating factors below 1.0, the safe posting load is determined according to MBE 6A.8.3. For rating factors greater than or equal to 1.0, the safe posting load is equivalent to the load capacity. All applicable Legal and Routine Permit loads listed in Section 3-4 in this manual shall be evaluated for posting purposes.

3-6.02 Load Factor Analysis

Except as noted within this manual, where analytical models have been developed consistent with Section 3-5.01(02), load posting criteria shall conform to MBE 6B.7. The load capacity is determined according to MBE 6B.4.1. The safe posting load calculation is equivalent to the load capacity and further discussed in MBE 6B.7.3. All applicable Legal and Routine Permit loads listed in Section 3-4 in this manual shall be evaluated for posting purposes.

3-6.03 Engineering Judgment

Where engineering judgment is warranted per Section 3-5.02, the load posting criteria shall conform to Section 3-6.02.

All applicable Legal and Routine Permit loads listed in Section 3-4 in this manual shall be evaluated for posting purposes.

3-6.04 Regulatory Signage [Rev. Apr. 2019, Apr. 2022, May 2022]

Regulatory signs shall conform to the *Indiana Manual on Uniform Traffic Control Devices* (IMUTCD). INDOT has developed additional word message signs for bridge weight limits (safe posting load). These signs have a sign code prefix of R12-Y5. The sign details, including specific emergency vehicle signs, have been added to the INDOT Supplemental Sign Catalog and Appendix D of this document until such time as they are incorporated into the IMUTCD. The emergency vehicle signs are R12-7 and R12-7aP.

Posting Signage for Commercial Vehicles. There are multiple options for restricting vehicle weight for commercial vehicle traffic. At a minimum, restrictions should be for gross vehicle weight. At the discretion of the Bridge Owner, restrictions may be further refined by listing multiple gross vehicle weight restrictions based on the corresponding number of axles for all applicable Legal and Routine Permit vehicles. Posting for the maximum permissible axle weights may be appropriate for short span bridges or critical bridge elements such as floor beams or stringers. Under no circumstances shall a restriction allow for an applicable Legal or Routine Permit vehicle to be in excess of the safe load carrying capacity of the bridge.

Existing IMUTCD Sign R12-1 (WEIGHT LIMIT XX TONS) should be used when the safe posting load is the same regardless of the number of axles. Each bridge shall be posted for the minimum calculated safe posting load as specified in this chapter. The R12-1 sign may be used when the safe posting load for all axles varies by no more than 2 tons, or if the Bridge Owner prefers to limit the gross vehicle weight regardless of the number of axles. Use of signs R12-3 (NO TRUCKS OVER XX LBS EMPTY WEIGHT) and R12-5 (WEIGHT LIMIT silhouette) is strongly discouraged as these signs are subject to misinterpretation.

Consider using signs R12-Y5 or sign variations R12-Y5a thru -Y5c (WEIGHT LIMIT AXLES XX WEIGHT XX) where the safe posting load varies by the number of axles. The tonnages listed shall correspond to the minimum calculated safe posting load for all applicable Legal and Routine

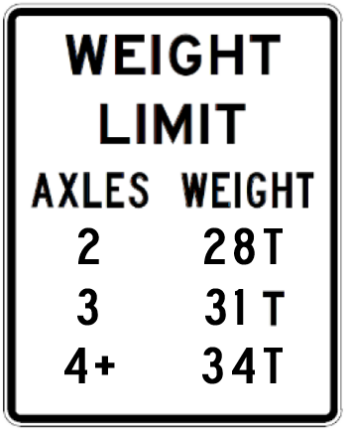
Permit vehicles, excluding FAST Act EVs, that correspond to the number of axles shown. The number of axles may be grouped together and use the minimum safe posting load for the group.

Example 1 Signage:

See Sample Load Rating Report 1 in Appendix C.

R12-1

OR

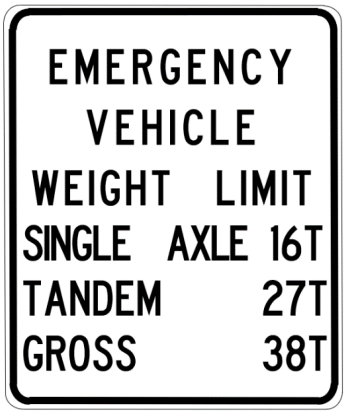


R12-Y5

Posting Signage for Emergency Vehicles. For posting required due to emergency vehicle (FAST Act EVs) safe posting load, signs showing weight limits for emergency vehicles with single rear axle, tandem rear axle, and gross vehicle weight must be placed. The R12-7 sign may only be used when placed as a standalone sign. The R12-7aP plaque may only be used when placed below a commercial vehicle posting sign on the same post.

Example 2 Signage:

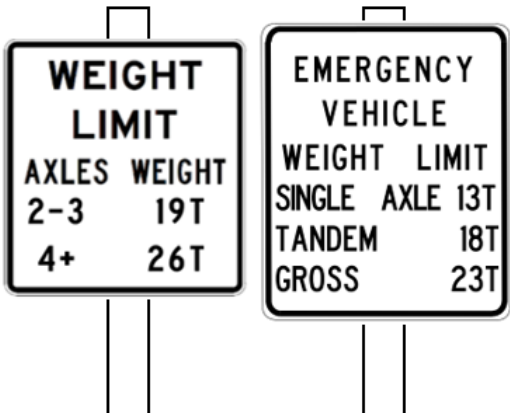
See Sample Load Rating Report 2 in Appendix C.



R12-7

Example 3 Signage:

See Load Rating Report Example 3 in Appendix C. Since the load rating for at least one of the other required Legal and Routine Permit Loads, the Alternate Military, HS20-44, Lane-Type, and SU7 in this case, is below 1.0, this bridge must also be posted for all commercial vehicle traffic as described in Posting for Commercial Vehicles and Example 1. Since the load rating for at least one of the FAST Act EVs, both EV2 and EV3 in this case, is below 1.0, the bridge must be posted for emergency vehicles as described in Posting for Emergency Vehicles and Example 2. Both of the following signs are required to be posted for this bridge. The R12-Y5c sign may be used in combination with either an R12-7 on two separate adjacent posts, or with an R12-7aP on a single post as shown below

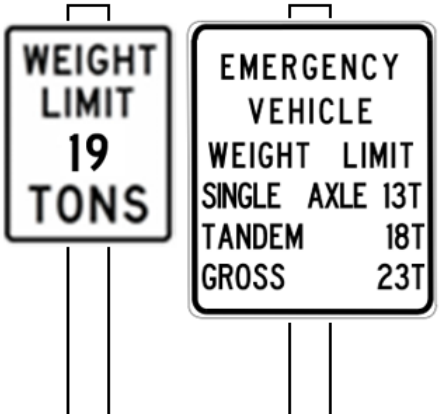


R12-Y5c and R12-7 on separate posts

OR

R12-Y5c and R12-7aP on a single post

If the R12-Y5c sign is not used, the R12-1 sign should be used in combination with either an R12-7 on two separate adjacent posts, or with an R12-7aP on a single post as shown below.



R12-1 and R12-7 on separate posts

OR

R12-1 and R12-7aP on a single post

Closure Signage. For bridge closures, the R11-2 sign shall be posted. Per IMUTCD Section 6F.08, "the words BRIDGE OUT (or BRIDGE CLOSED) may be substituted for ROAD (or STREET) CLOSED where applicable." Additionally, non-movable barriers and barricades per the standard specifications shall be erected at each end of the bridge to prevent crossing by vehicles and pedestrians.

R11-2

OR

R11-2

Advanced Warning Signage. At a minimum, additional signage shall be placed at the nearest intersection prior to the bridge in all directions to allow for vehicles to turn around. On limited access highways, additional signage shall be placed prior to the nearest exit ramp to allow for overweight vehicles to exit the highway. Any other signage shall conform to the IMUTCD and be

used at the discretion of the Roadway Owner. The advance warning sign assembly must consist of the same signage as posted on the bridge, along with the W16-3aP plaque indicating the distance to the bridge. A sample advance warning sign assembly is shown here:

R12-Y5c

W16-3aP

3-7.0 DOCUMENTATION [REV. JUL. 2021]

Examples of the required documentation are shown in Appendix C. The Load Rating Summary Report, at a minimum, should consist of the following:

- Title sheet
- Load rating method/program(s) used
- Geometric and material summary of the bridge
- Assumptions
- Rating factor and load capacity (in tons) for each applicable Design vehicle (discussed in Section 3-4.01)
    - Stamped by a Professional Engineer (PE) licensed in the State of Indiana.
- Rating factor and load capacity (in tons) for each applicable Legal and Routine Permit vehicle (discussed in Sections 3-4.02 & 3-4.03)
    - Stamped by a Professional Engineer (PE) licensed in the State of Indiana.
- Safe posting load, as required, for each applicable Legal and Routine Permit vehicle (discussed in Sections 3-4.02 & 3-4.03)
    - Stamped by a Professional Engineer (PE) licensed in the State of Indiana.
- Rating factor and load capacity (in tons) for each applicable Special (limited crossing) Permit vehicle (discussed in Section 3-4.03)
    - Stamped by a Professional Engineer (PE) licensed in the State of Indiana.
- Discussion, sketches, and photos of deterioration (if applicable)

If necessary details to load rate the bridge using analytical methods are unavailable and engineering judgment is used per Section 3-5.02, the Load Rating Summary Report shall also include the following note.

> *In accordance with the Manual for Bridge Evaluation, Third Edition, 2017, Section 6.1.4*
> – *Necessary details for this bridge are unavailable. A physical inspection of the bridge was performed by a qualified inspector and evaluated by a qualified engineer to establish an approximate load rating based on rational criteria.*

3-8.0 QUALITY CONTROL (QC) & QUALITY ASSURANCE (QA)

For a more detailed discussion of Quality Control (QC) and Quality Assurance (QA), refer to Part 2 of this manual. In short, LREs are responsible for ensuring a high degree of accuracy and consistency for any performed ratings. The Indiana Department of Transportation's Bridge Evaluation staff will periodically review calculations and documentation for accuracy and completeness. Rating inaccuracies, errors, or deficiencies related to procedure should be addressed immediately.

3-9.0 PROCEDURE [REV. NOV. 2020]

This chapter discusses when to perform a load rating, what to submit, and who to notify.

For new, replacement, or rehabilitated structures, Bridge Load Rating requests are required in accordance with the *Indiana Design Manual* (IDM) Chapter 103. All Bridge Load Rating requests for state maintained bridges must be requested through the Load Rating Request Application (LRRA). Any plans, sketches, notes, and photos (where applicable) must be uploaded to the LRRA.

Instructions for use of the LRRA are available from the Department's Bridge Load Rating Aids.

Load ratings for locally owned structures shall be performed by the Bridge Owner or its designated appointee.

3-9.01 Frequency

In general, load ratings are required whenever there is a change in condition from one inspection to another. Load ratings may also be required whenever new bridge construction projects are proposed. A description of various load rating situations is discussed in the following sections.

3-9.01(01) Project Scoping

Prior to programming bridge work, the Bridge Owner should consider load rating to help determine whether to rehabilitate or replace existing structures. This is particularly useful when deciding whether to use a concrete (rigid) or thin polymeric (flexible) overlay. It is also useful to determine if existing bridge railing may be replaced. There are limits to the effectiveness of load rating at this early stage. A more complicated rehabilitation (e.g. widening, member replacement, etc.) requires a set of plans to accurately model.

For state owned or maintained bridges, the District Bridge Asset Engineer (BAE) should review the structure's existing load rating prior to programming work that adds significant dead load, e.g. a concrete overlay.

3-9.01(02) New, Replacement, or Rehabilitated Structures [Rev. Nov. 2020]

The Bridge Owner should consider requiring a load rating be performed prior to any new, replacement, or rehabilitation work to take place on its bridge assets; this shall be done no later than the initial inspection for locally maintained structures. For state owned or maintained structures, a load rating analysis shall be performed prior to construction. See *Indiana Design Manual* Chapter 103 for specific requirements.

Following the completion of construction work, the bridge file shall be updated within thirty (30) days for state maintained structures, the Bridge Inspector is required to make a Construction Complete load rating request through the LRRA. The bridge file for locally maintained structures shall be updated within ninety (90) days.

3-9.01(03) Deterioration [Rev. Nov. 2020]

For bridges with a minor increase in, or newly discovered minor damage or deterioration, a load analysis shall be performed. At a minimum, a load rating considering deterioration shall be on file for each bridge with a deck condition rating (NBIS Item 58), superstructure condition rating (NBIS Item 59), or culvert condition rating (NBIS Item 61) of 4 or less.

For state owned or maintained structures, the deterioration load rating shall be performed and documented in the bridge file within thirty (30) days of the discovery. Within seven (7) days of the discovery, the District Bridge Inspector is required to make a Condition Change – Deterioration load rating request through the LRRA.

For locally maintained structures, the deterioration load rating shall be performed, and the bridge file shall be updated within sixty (60) days of the end of the inspection compliance month.

See Section 3-9.01(04) for requirements regarding more severe changes in condition. Additionally, if there is loss of bearing area or a substructure condition rating (NBIS Item 60) of 3 or less, consideration should be given to reducing the load rating.

3-9.01(04) Critical Findings [Rev. Nov. 2020]

For bridges with a significant increase in or newly discovered severe damage or deterioration, a load rating analysis shall be performed. The analysis shall be performed within seven (7) days and the bridge file updated within fifteen (15) days of the discovery for both state and locally maintained structures. For state maintained bridges, the District Bridge Inspector is required to make a Condition Change – Critical Finding load rating request through the LRRA within two (2) days of discovery. Notification of the Department's Bridge Evaluation staff shall be immediate for damage or deterioration that is considered severe enough to be an immediate safety concern for the traveling public.

3-9.01(05) Repairs

The Bridge Owner should consider requiring that a load rating be performed prior to any repairs taking place on its bridge assets. For state maintained structures, load rating consideration is required prior to reopening a bridge for closure situations or prior to construction for non-closure situations. Refer to the *Indiana Design Manual* for guidance related to requesting a load rating for state maintained bridges. For locally maintained structures, load ratings shall be performed no later than the initial inspection.

Following the completion of construction work, the bridge file shall be updated within thirty (30) days for state maintained structures and within ninety (90) days for locally maintained structures.

3-9.01(06) Permitting

Load ratings should be utilized when making determinations regarding the issuance of permits for overweight vehicles.

3-9.02 Submittal Process & Notification

The submittal process and notification can be considered in two categories, general and posting.

3-9.02(01) General [Rev. Apr. 2018, Rev. Nov. 2020]

For bridge construction projects, the Bridge Owner should be informed of load rating results prior to the commencement of any construction. For state maintained bridges, the Load Rating Summary Report and load rating model must be made available for review in the Load Rating Request Application within thirty (30) days of the receipt of the original load rating request.

Once the load rating reflects the "in-service" condition of the bridge, the bridge file shall be updated. The Load Rating Summary Report, as described in section 3-7, and the load rating model shall be uploaded to ERMS. Once uploaded, each file will be accessible in BIAS from the ERMS link on the "Asset Info" tab for each bridge; see Figure 3-9.1. Refer to Part 2, Figure 2-1.4, of this manual for detailed instructions regarding how to attach and upload documentation; this step is automatically performed for state maintained bridges using the Load Rating Request Application. Additionally, a new report shall be created in the Bridge Rating Application Database of Indiana (BRADIN).

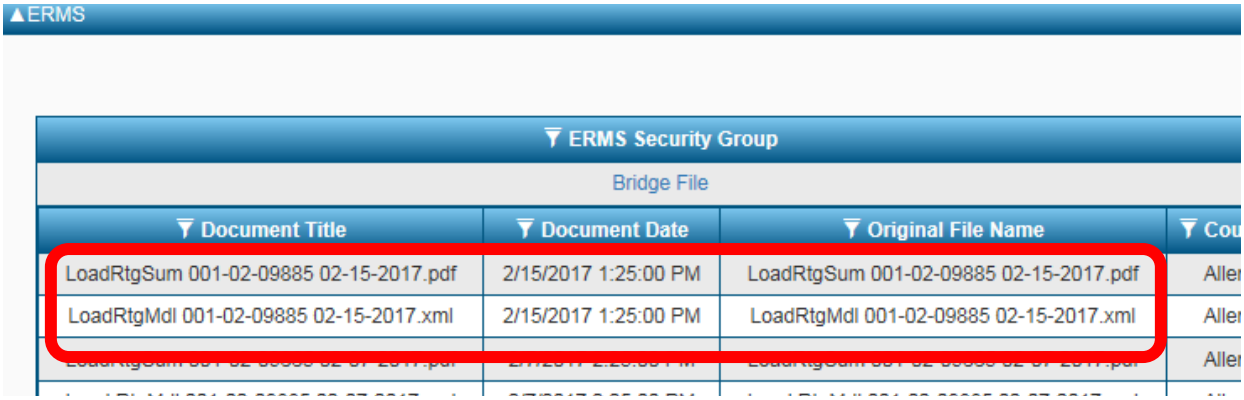


Figure 3-9.1 BIAS ERMS Link to the Bridge File

3-9.02(02) Posting [Rev. Apr. 2018]

In addition to the General process described in Section 3-9.02(01), the Bridge Owner shall immediately be notified by the LRE if load posting or any other restriction is required as discussed in Section 3-6. In addition, for state maintained bridges, the Bridge Weight Limit Notification Form should be completed and distributed according to INDOT Operations Memorandum 18-02.

The Bridge Owner has up to thirty (30) days to install all required signage and/or barriers. Once in place, the NBIS items and posting related fields in BRADIN shall be updated by the Load Rating Engineer within thirty (30) days to reflect the posting. Additionally, photos should be uploaded into BIAS that show the bridge posting/closure items in place.

3-10.0 MODELING GUIDELINES & ASSUMPTIONS

This section is under development.

3-11.0 APPENDICES

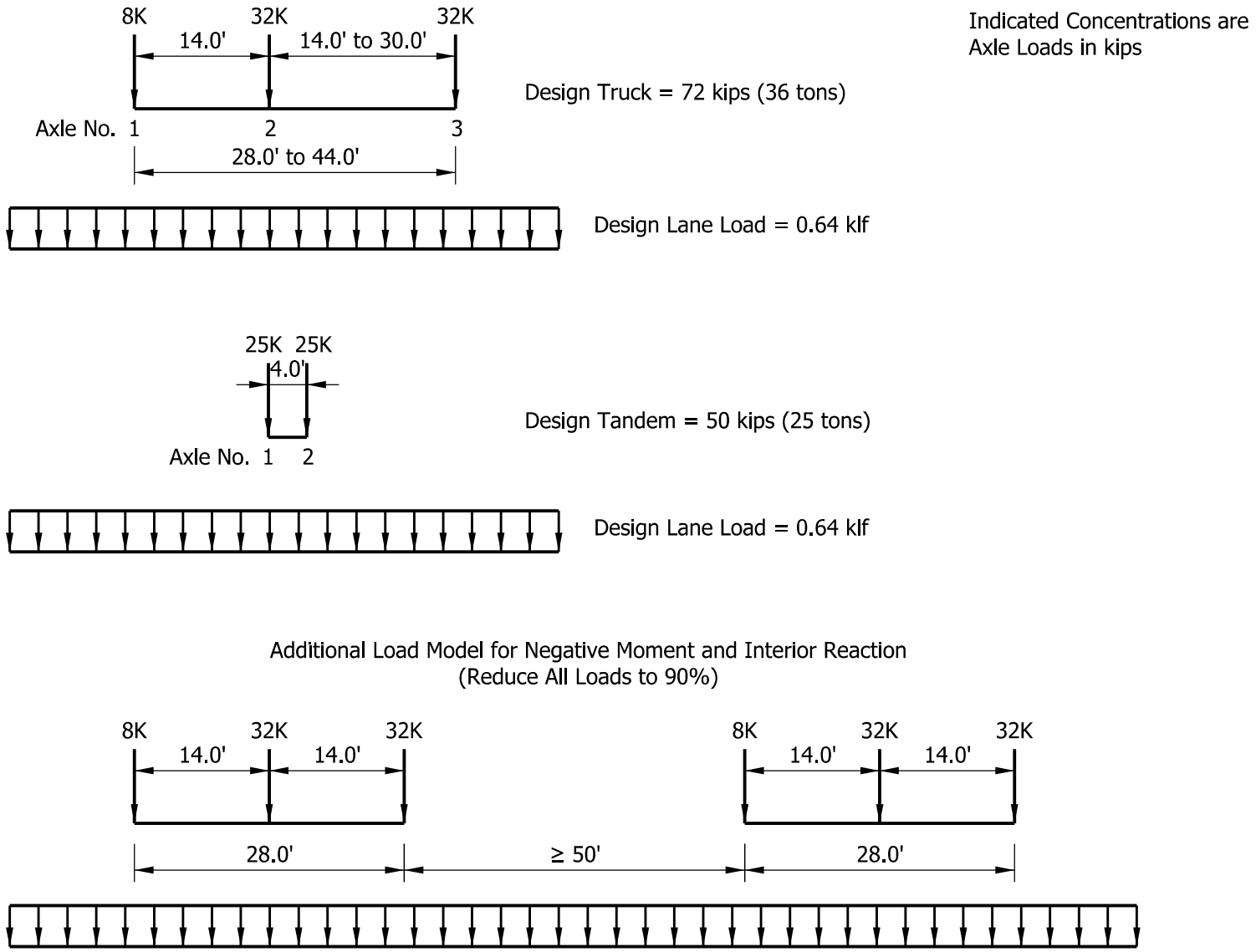


Figure A-1
HL-93 Loading

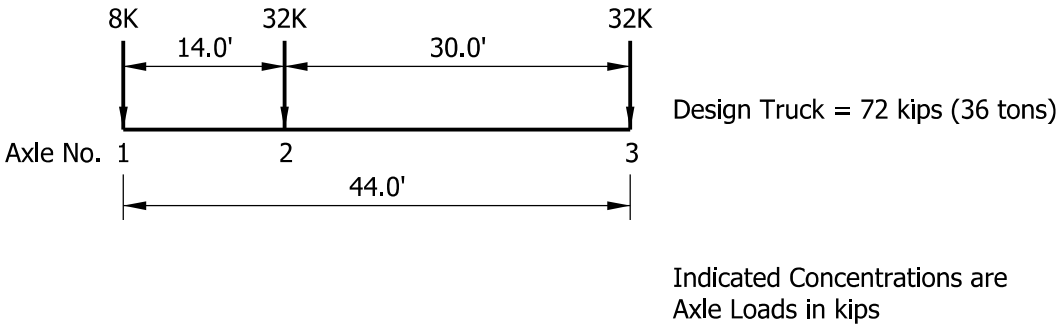


Figure A-2
Fatigue Loading

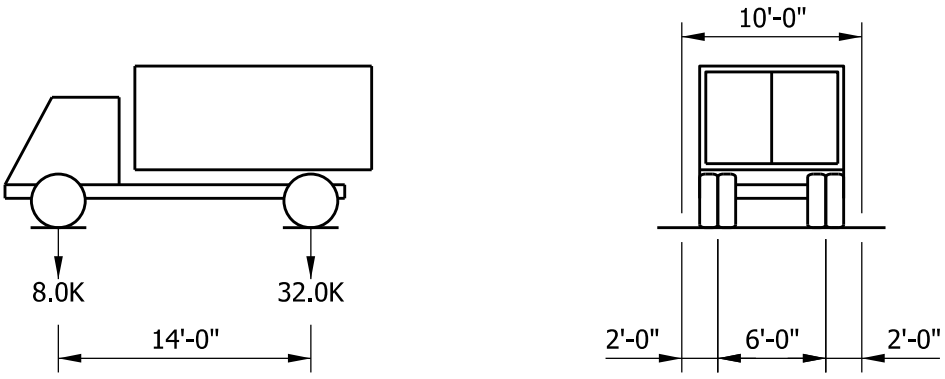
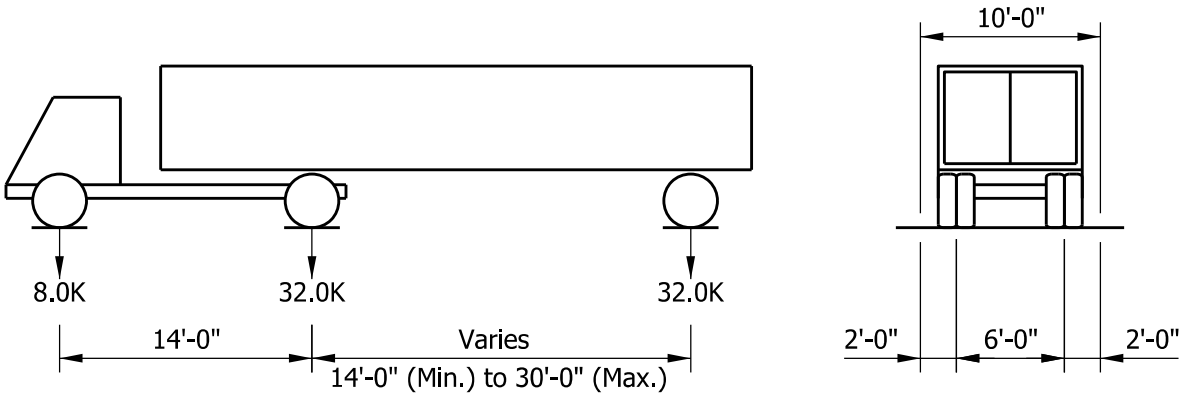
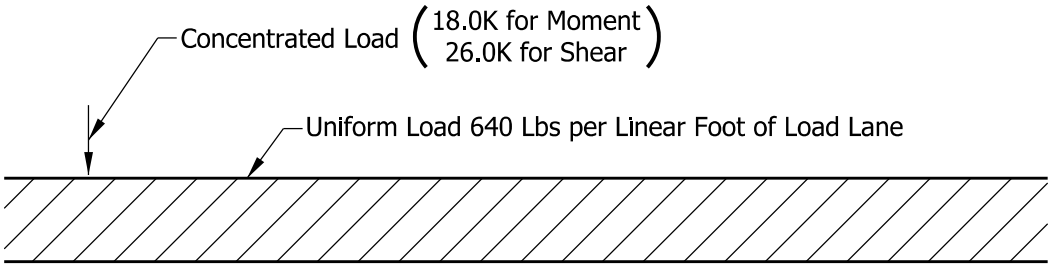


Figure A-3
H-20 Loading

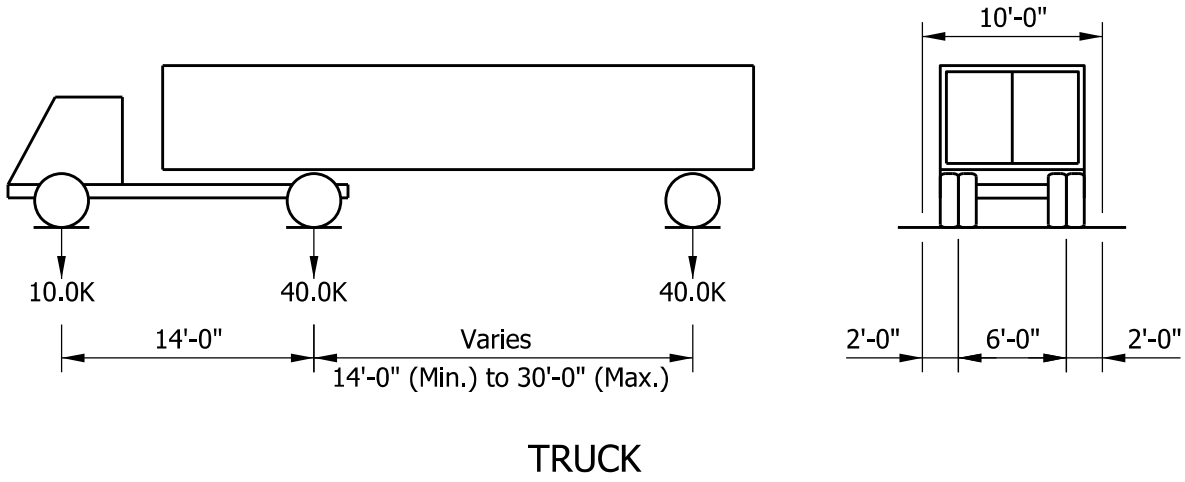


TRUCK

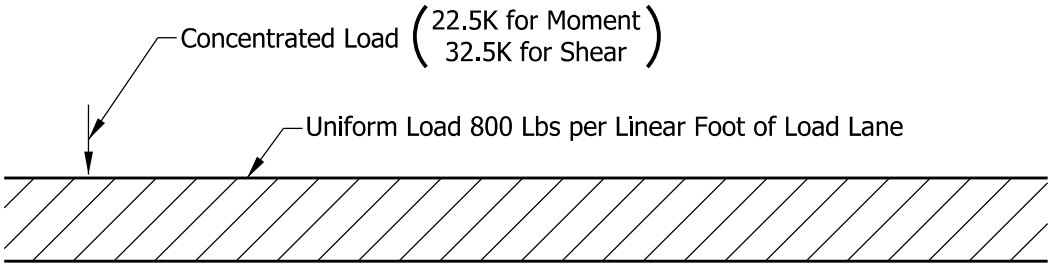


LANE
HS-20 LOADINGS

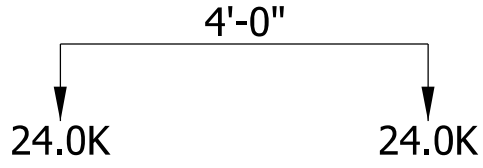
Figure A-4
HS-20 Loading



TRUCK

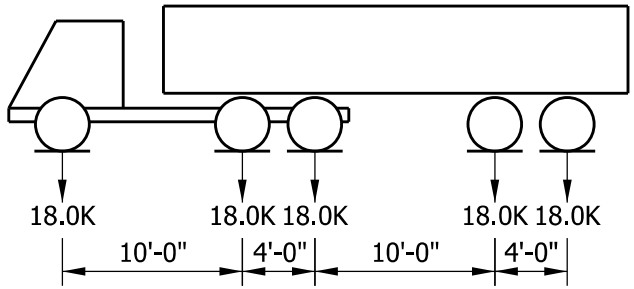


LANE
HS-25 LOADINGS

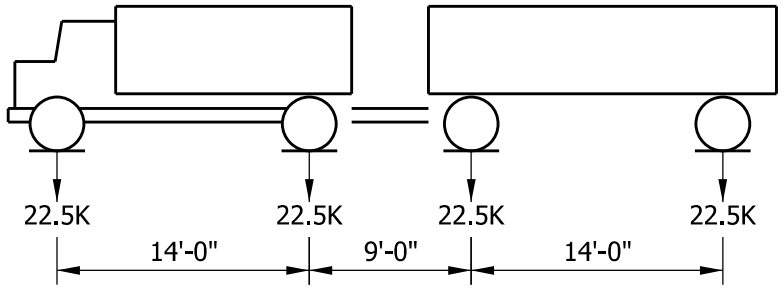


ALTERNATE MILITARY LOADING

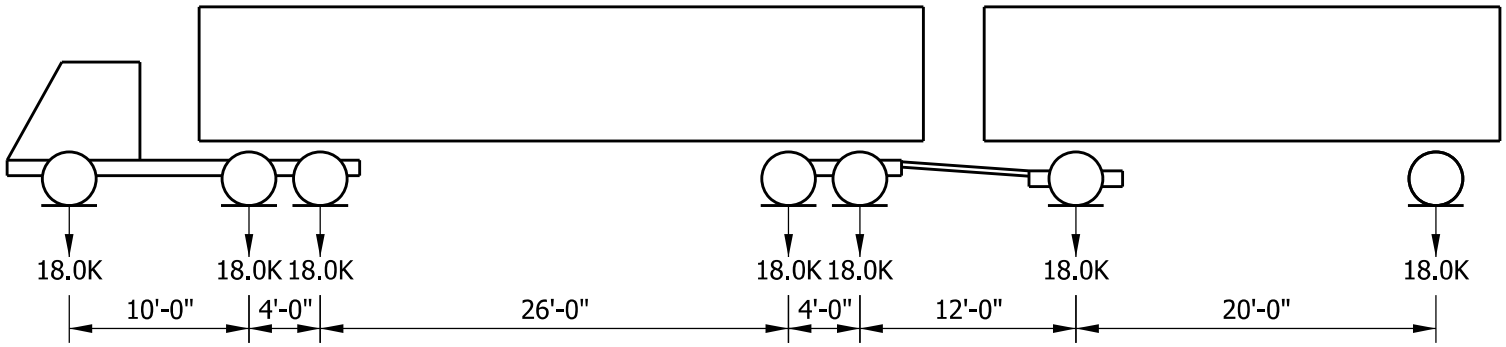
Figure A-5
HS-25 And Alternate Military Loading



TOLL ROAD LOADING NO.1
(W = 90.0K)

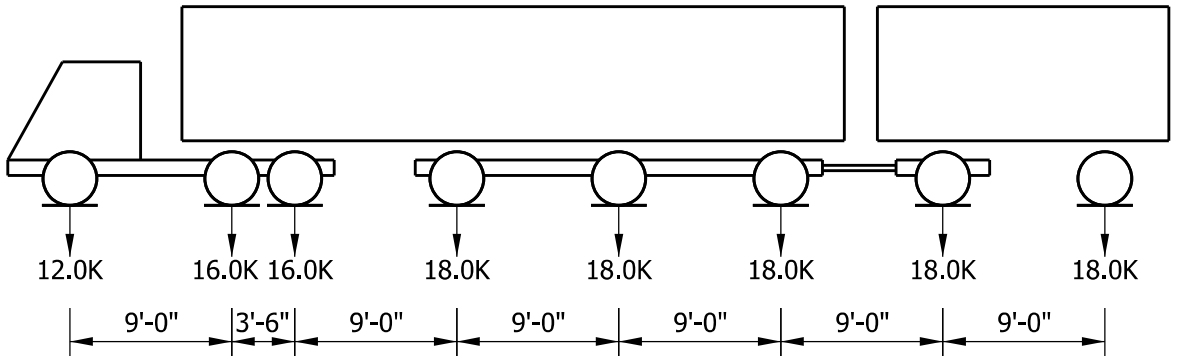


TOLL ROAD LOADING NO.2
(W = 90.0K)

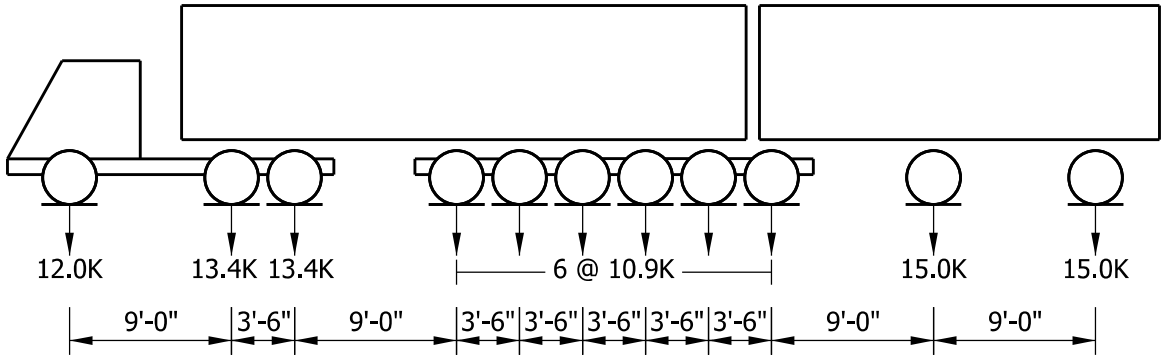


SPECIAL TOLL ROAD TRUCK
(W = 126.0K)

Figure A-6
Toll Road Truck Loads



MICHIGAN TRAIN TRUCK NO. 5
(W = 134.0K)



MICHIGAN TRAIN TRUCK NO. 8
(W = 134.2K)

Figure A-7
Michigan Train Truck Loads

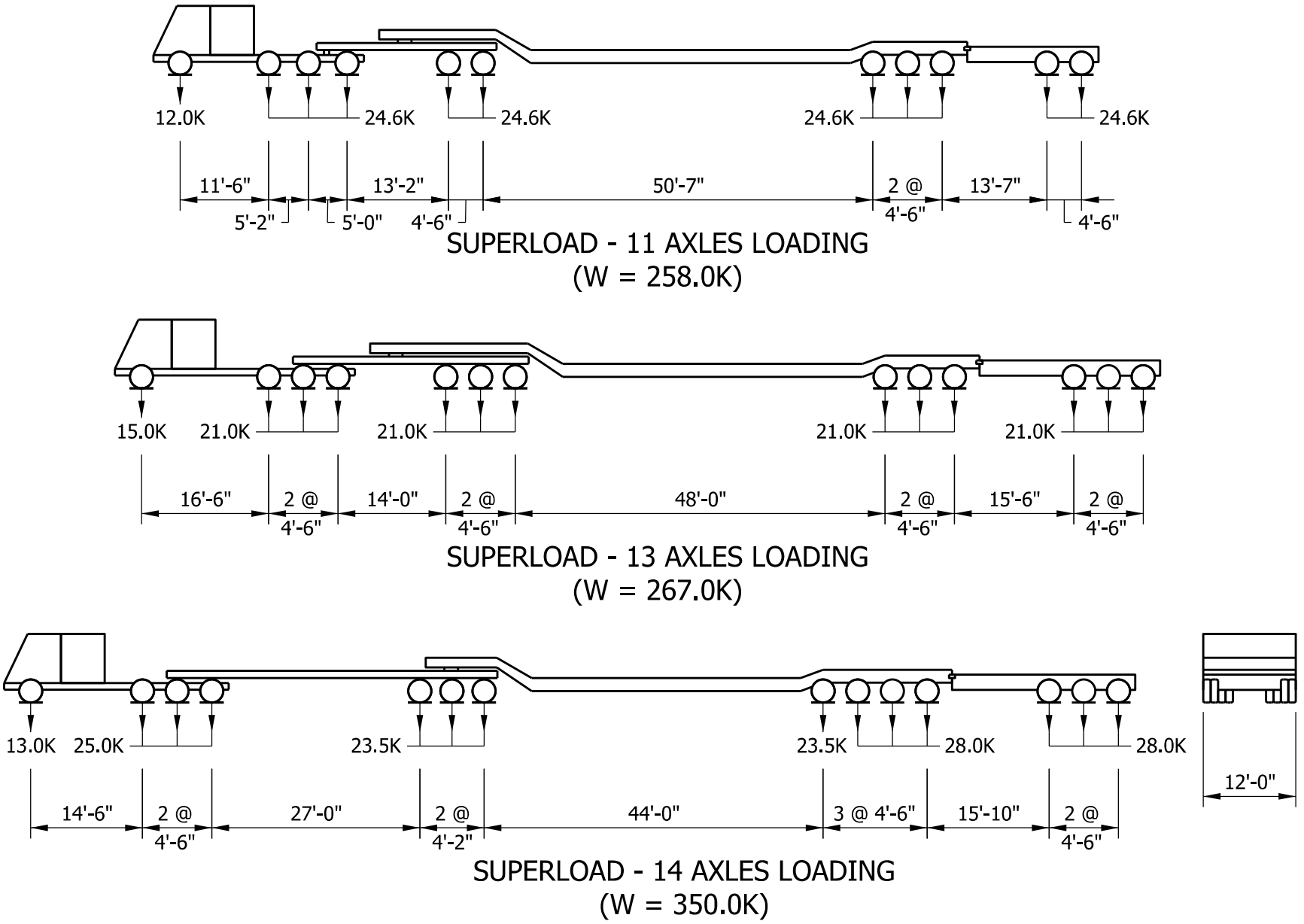
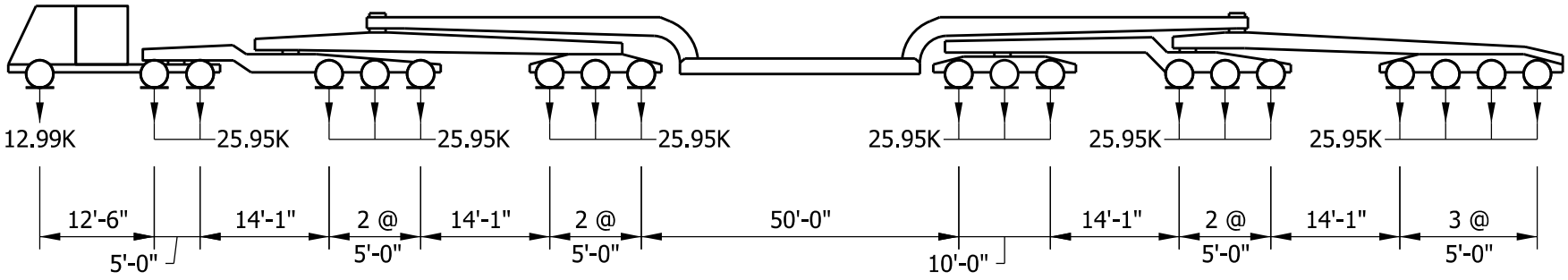
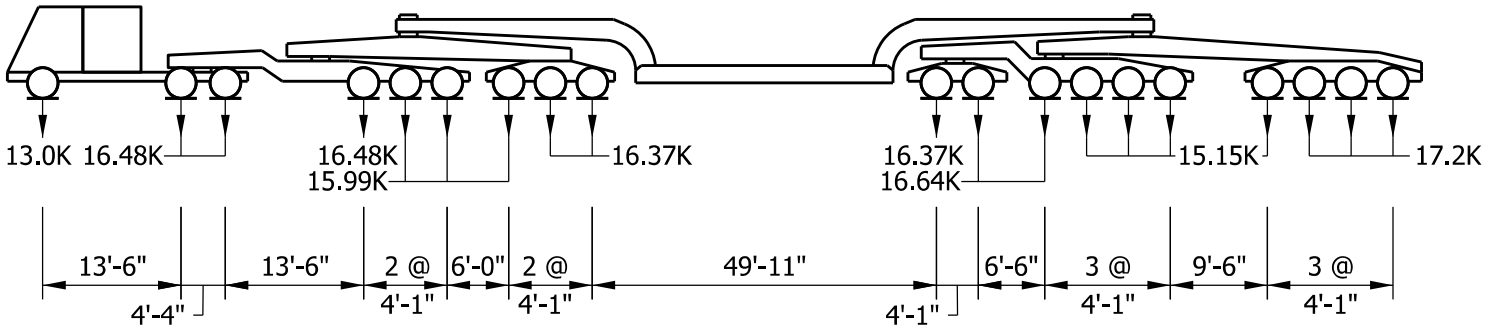


Figure A-8
Superload Vehicle Loads

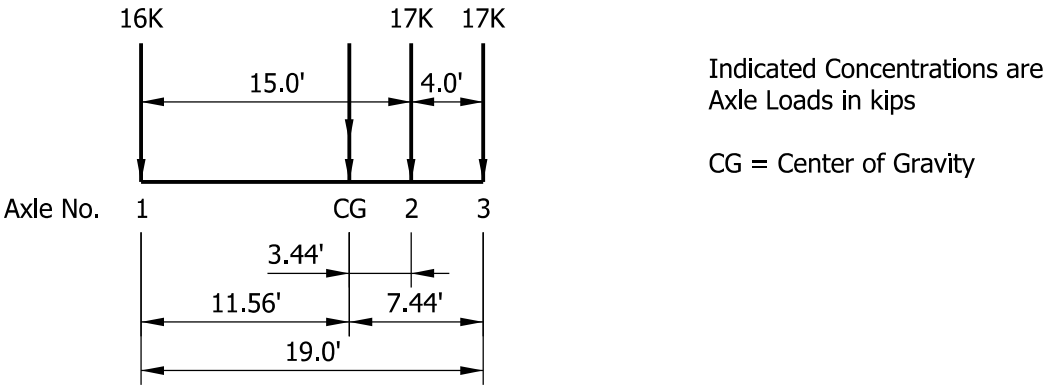


SUPERLOAD - 19 AXLES LOADING
(W = 480.09K)

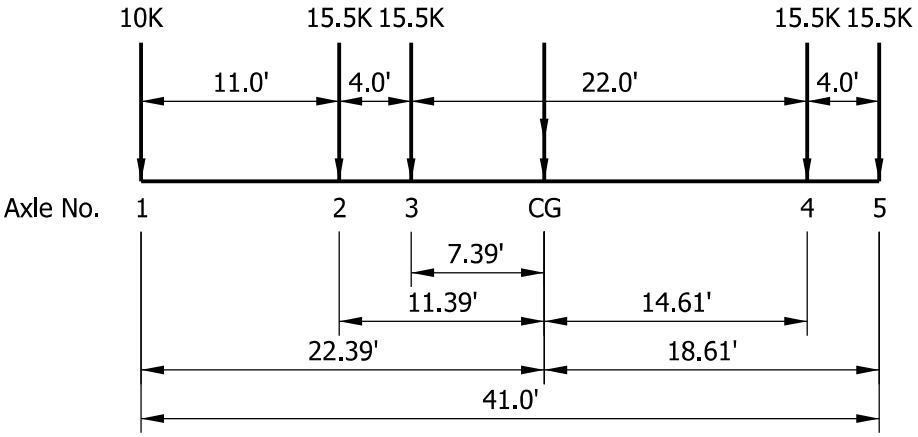


SUPERLOAD - 19 AXLES LOADING
(W = 305.0K)

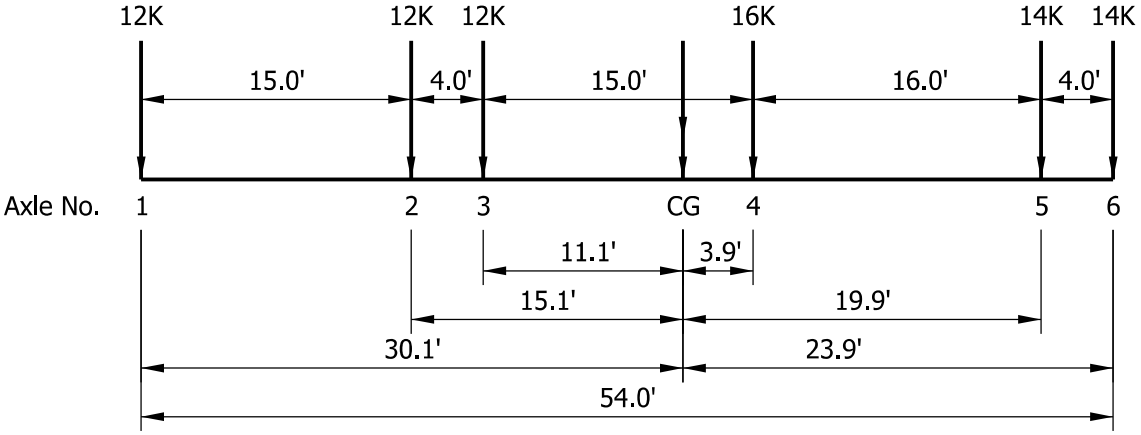
Figure A-9
Superload Vehicle Loads



TYPE 3 UNIT
Weight = 50 kips (25 tons)

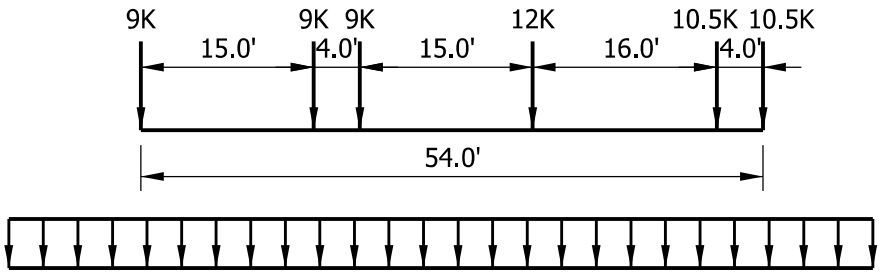


TYPE 3S2 UNIT
Weight = 72 kips (36 tons)



TYPE 3-3 UNIT
Weight = 80 kips (40 tons)

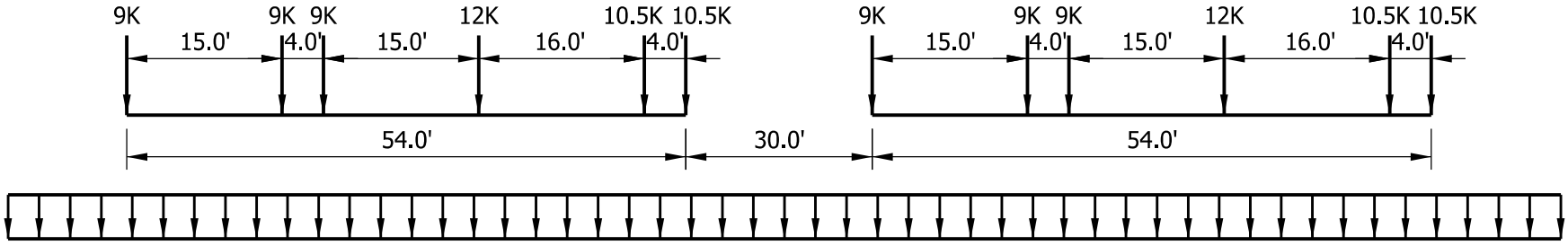
Figure A-10
AASHTO Legal Loads



Indicated Concentrations are
Axle Loads in kips
(75% of Type 3-3)

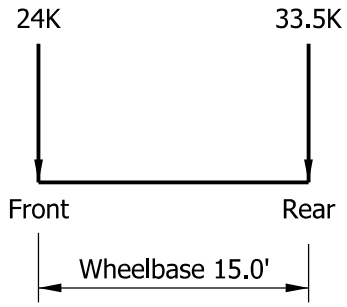
Legal Lane Weight/ft = 0.2 klf

Lane Type Loading
for Spans Greater Than 200 ft

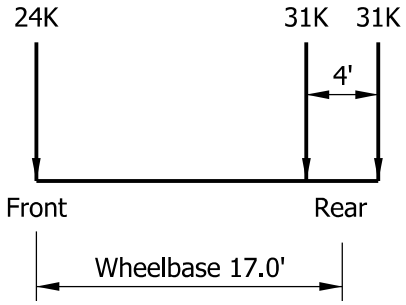


Lane Type Loading
for Negative Moment and Interior Reaction

Figure A-11
Lane-Type Loading

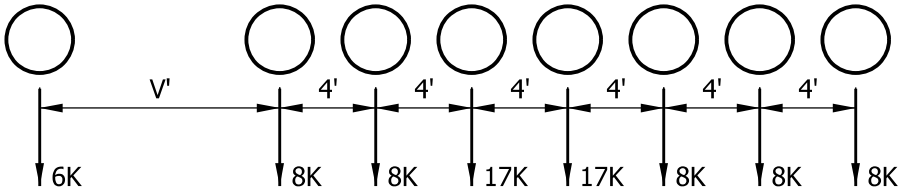


TYPE EV2



TYPE EV3

Figure A-12
FAST Act EV Loads



V = Variable Drive Axle Spacing - 6'-0" to 14'-0". Spacing to be used is that which produces maximum load effects.

Axles that do not contribute to the maximum load effect under consideration shall be neglected.

Maximum GVW = 80 Kips

Axle Gage Width = 6'-0"

Figure A-13
Notional Rating Load (NRL)

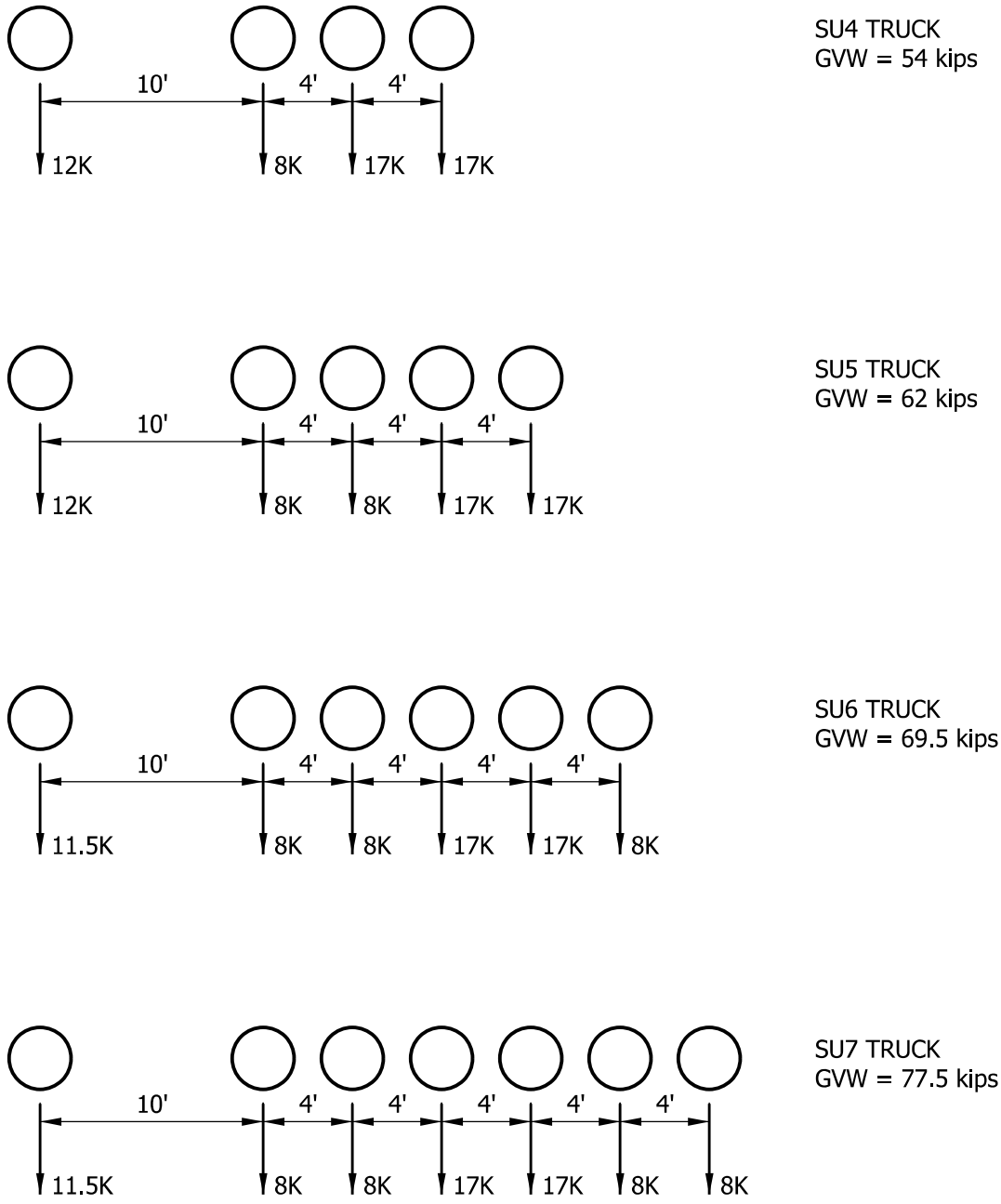


Figure A-14
Specialized Hauling Vehicles (SHV)

N W E S

0 5 10 15 miles
0 5 10 15 kilometers

LAKE MICHIGAN

ILLINOIS

MICHIGAN

INDIANA TOLL ROAD

INDIANA TOLL ROAD

CENTRAL TIME ZONE

EASTERN TIME ZONE

Chicago
Whiting
East Chicago
Lake Station
Gary
Calumet City
Hammond
Munster
Chicago Heights
Park Forest
Schererville
Merrillville
St. John
Crown Point
Cedar Lake
Lowell
Hobart
Portage
Chesterton
Porter
Michigan City
New Buffalo
Bridgman
Dowagiac
Berrien Springs
Niles
New Carlisle
Rolling Prairie
LaPorte
Westville
Union Mills
Valparaiso
Wanatah
Hebron
Kouts
La Crosse
Hamlet
Walkerton
North Liberty
Lakeville
Lapaz
Plymouth
Knox
North Judson
Culver
Argos
Bourbon
Etna Green
Warsaw
Mentone
Bremen
Nappanee
Syracuse
Milford
Leesburg
North Webster
Winona Lake
Pierceton
Three Rivers
White Pigeon
Sturgis
Coldwater
Bristol
Middlebury
Elkhart
South Bend
Mishawaka
Goshen
Wakarusa
Millersburg
Ligonier
Topeka
Wolcottville
Rome City
Howe
LaGrange
Shipshewana
Fremont
Angola
Ashley
Hamilton
South Milford
Kendallville
Waterloo
Corunna
Auburn
Avilla
Albion
Butler
Edon
Woodburn
Fort Wayne
New Haven
Columbia City
Churubusco
Huntertown
Chain O'Lakes State Park
Tri-County State Fish & Wildlife Area
Pokagon State Park
Pigeon R. State Fish & Wildlife Area
Steuben County Lakes Country
Shipshewana/ LaGrange County Amish Country
Der Kline Blatz Motel
Das Dutchman Essenhaus
Concord Mall
Elkhart County Amish Country
Amish Acres
Value Center Big & Tall
University of Notre Dame
College Football Hall of Fame
Studebaker Nat'l Museum
LaPorte County Antique Tour
Potato Creek S.P.
Kingsbury State Fish & Wildlife Area
Hesston Steam Museum
Michigan City Lighthouse
Lighthouse Place Premium Outlets
Indiana Welcome Center
Porter County Parks
Indiana Dunes National Lakeshore
Indiana Dunes State Park
LaSalle State Fish & Wildlife Area
Jasper-Pulaski State Fish & Wildlife Area
Willow Slough State Fish & Wildlife Area
Kankakee State Fish & Wildlife Area
Bass Lake State Beach
Winamac State Fish & Wildlife Area
Tippecanoe River State Park
Auburn Cord Duesenberg Museum
Shafer Queen-Indiana Beach
Lake Shafer
Indiana Beach
To Kalamazoo & Portage
To Lafayette & Indianapolis
To Muncie, Anderson & Indianapolis
Schneider
Demotte
Wheatfield
Medaryville
Winamac
Rensselaer
Monon
Remington
Monticello
Burnettsville
Hamlet
Royal Center
Fulton
Rochester
Silver Lake
North Manchester
Sidney
South Whitley
Logansport
Peru
Momence

Several different time zones are in effect for the area shown on this map. Please check for local time.

May 2022

ROADS
- Toll route
- Interstate highway
- U.S. highway
- State or county highway
- National park/state park/ fish and wildlife area

VISITOR CENTER: Comprehensive visitor services. Staffed during peak travel periods.

TRAVEL PLAZA: Number indicates mile marker at which plaza is located.

24 hour travel services including dining, fuel and automotive products, public phones, ATMs, and specialty goods may be accessed without exiting I-80/90.

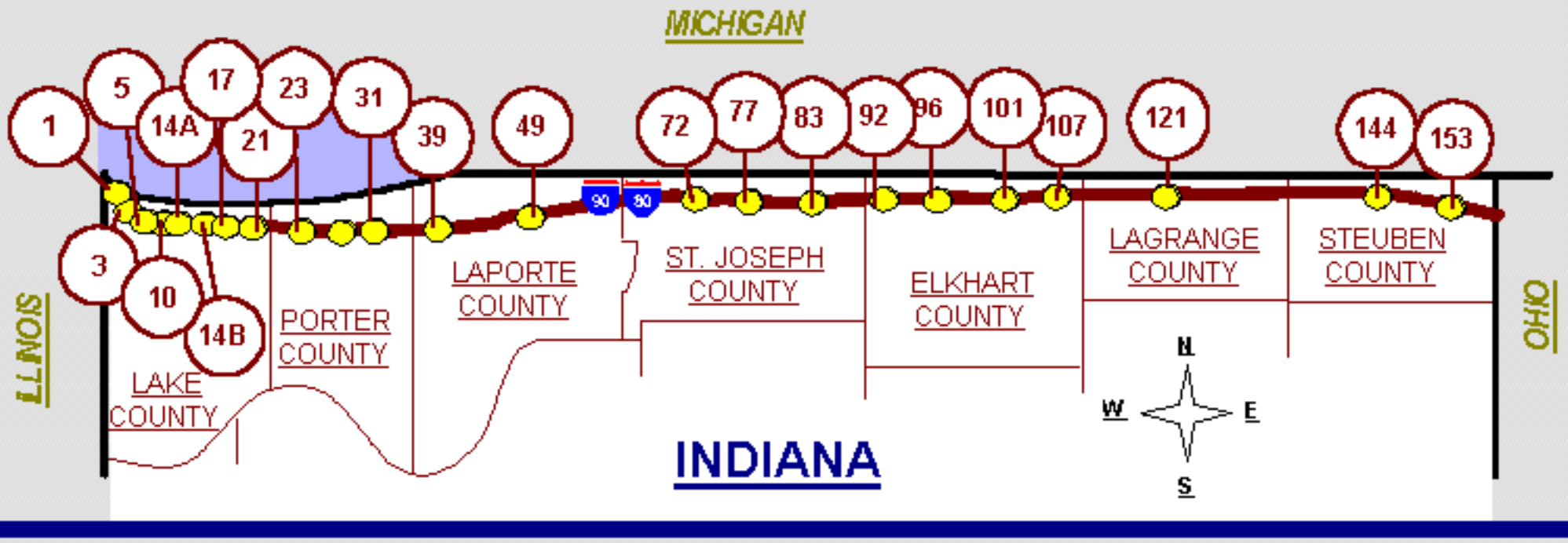
Self-serve visitor information resources including complimentary travel literature and maps.

I-80/90 EXIT: Number indicates mile marker and exit number.

Other exit

80 90

INDIANA TOLL ROAD
"Main Street of the Midwest"



EXIT & ENTRY LOCATIONS

Mile Marker	Toll Plaza	Intersecting Routes
1	Westpoint Barrier	Chicago Skyway & Indianapolis Blvd. & US 41
3	Exit 3 (Eastbound Only)	SR 912 North
5	Calumet Avenue	Calumet Avenue & US 41
10	Cline Avenue	SR 912 South
14A	Gary West	Grant & Buchanan Streets
14B	Broadway	US 12 & US 20
17	Gary East	I-65 & US 12 & US 20
21	Lake Station	I-80/94
23	Portage/Willow Creek	Willow Creek Road
31	Valparaiso/Chesterton	SR 49
39	Michigan City	US 421
49	LaPorte	SR 39
72	South Bend West	US 31 Bypass
77	South Bend/Notre Dame	SR 933 & Business US 31
83	Mishawaka	SR 23
92	Elkhart	SR 19
96	Elkhart East	CR 17
101	Bristol/Goshen	SR 15
107	Middlebury	SR 13 & US 131
121	Howe/LaGrange	SR 9
144	Angola	I-69 & US 27 & SR 127 & SR 120
153	Eastpoint Barrier	Ohio Turnpike

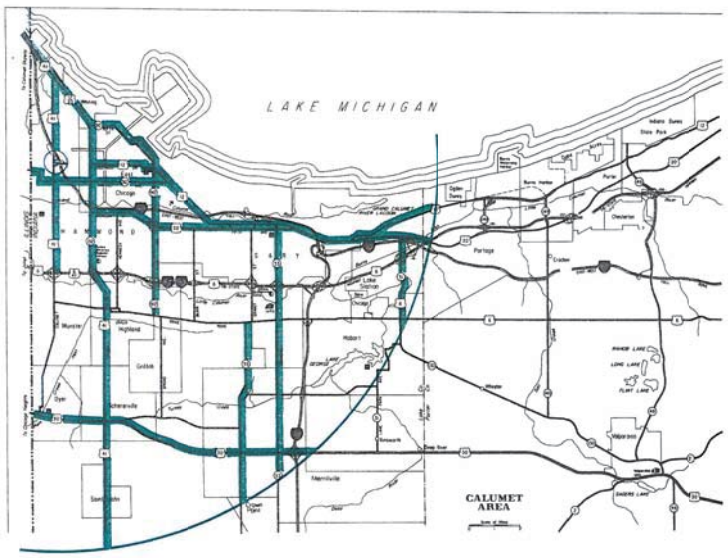
INDOT Coding Guide: *B*ridge *R*eporting for *A*ppraisal & *G*reater *I*nventory

Item Number:	501.02	**Item Name:**	"Heavy Duty Truck Route"
Main Tab/Sub Tab:	Aux. Forms/O.V. (501)	**Misc. Fields:**	501 Overall Comments
Main Tab/Sub Tab:	Load Rating/Struc. Data (1)	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-

NBIS:	☐ Yes	**Toll Road:**	☒ Yes	**Input Format:**	☒ Drop-Down	☐ Manual
INDOT:	☒ Yes	**County/Local:**	☒ Yes	**X**	☐ Check Box	☐ Read-Only

Description: "Heavy Duty Truck Route" (continued)

Instructions: See the detailed map below for Heavy Duty Truck Routes in Indiana, which are defined as any route carrying public vehicular traffic within a 15 mile radius of Toll Road exits.



5

Exit 5

Note that the following are excluded: All Interstate Highways, Indiana Harbor Canal Lift Bridges, and SR 51 Northbound between US 20 and I-94.

Notes: -

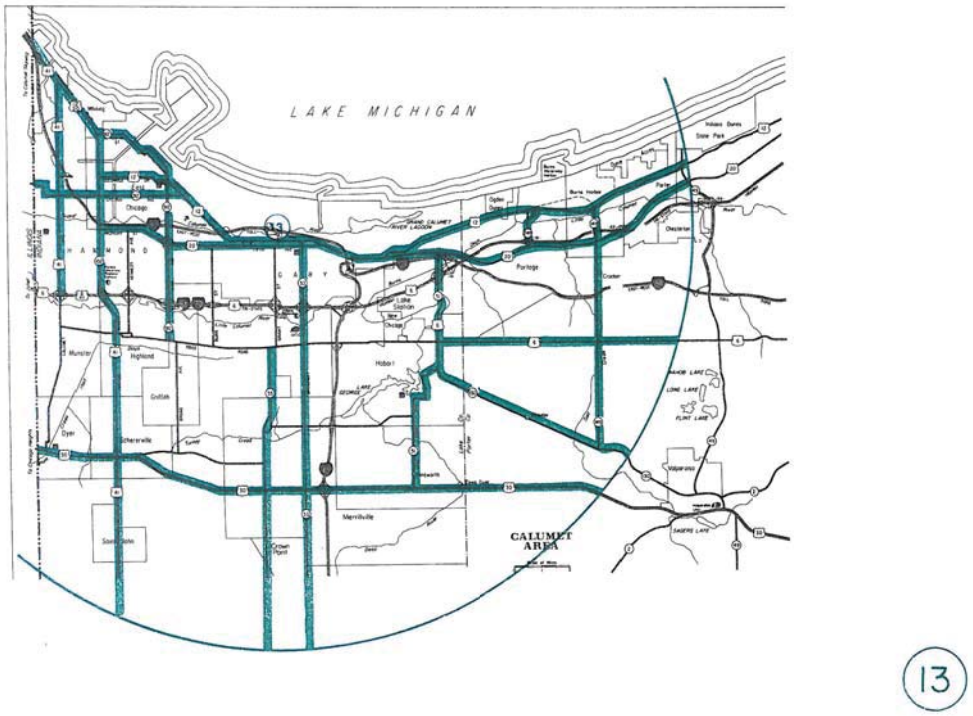
INDOT Coding Guide: *B*ridge *R*eporting for *A*ppraisal & *G*reater *I*nventory

Item Number:	501.02	**Item Name:**	"Heavy Duty Truck Route"
Main Tab/Sub Tab:	Aux. Forms/O.V. (501)	**Misc. Fields:**	501 Overall Comments
Main Tab/Sub Tab:	Load Rating/Struc. Data (1)	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-

NBIS:	☐ Yes	**Toll Road:**	☒ Yes	**Input Format:**	☒ Drop-Down	☐ Manual
INDOT:	☒ Yes	**County/Local:**	☒ Yes	**X**	☐ Check Box	☐ Read-Only

Description: "Heavy Duty Truck Route" (continued)

Instructions: See the detailed map below for Heavy Duty Truck Routes in Indiana, which are defined as any route carrying public vehicular traffic within a 15 mile radius of Toll Road exits.



Exit 13

Note that the following are excluded: All Interstate Highways, Indiana Harbor Canal Lift Bridges, and SR 51 Northbound between US 20 and I-94.

Notes: -

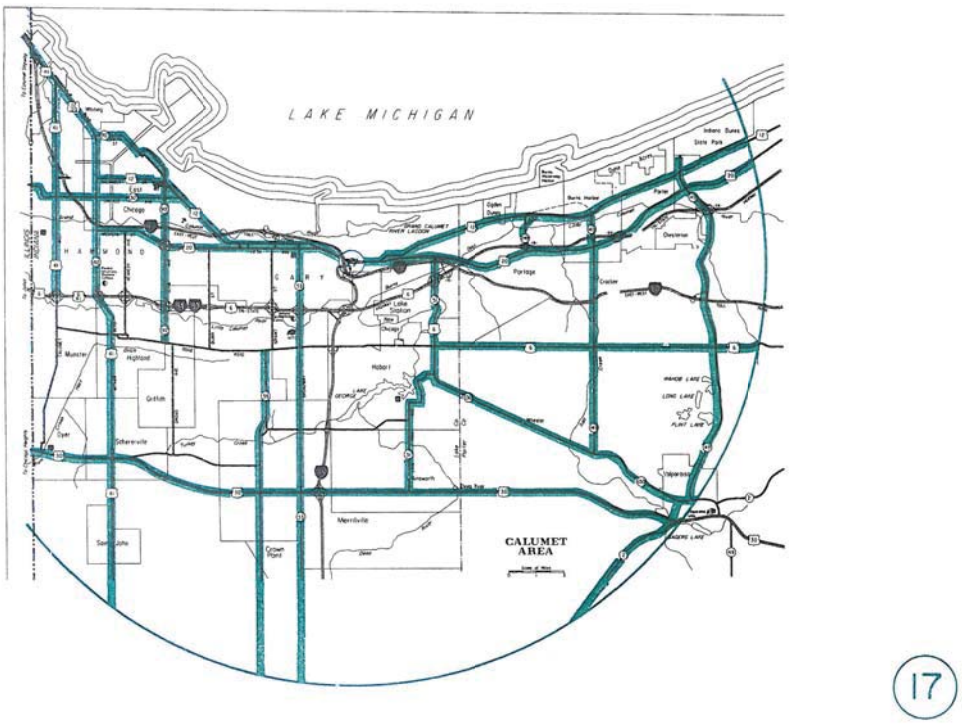
INDOT Coding Guide: *B*ridge *R*eporting for *A*ppraisal & *G*reater *I*nventory

Item Number:	501.02	**Item Name:**	"Heavy Duty Truck Route"
Main Tab/Sub Tab:	Aux. Forms/O.V. (501)	**Misc. Fields:**	501 Overall Comments
Main Tab/Sub Tab:	Load Rating/Struc. Data (1)	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-

NBIS:	☐ Yes	**Toll Road:**	☒ Yes	**Input Format:**	☒ Drop-Down	☐ Manual
INDOT:	☒ Yes	**County/Local:**	☒ Yes	**X**	☐ Check Box	☐ Read-Only

Description: "Heavy Duty Truck Route" (continued)

Instructions: See the detailed map below for Heavy Duty Truck Routes in Indiana, which are defined as any route carrying public vehicular traffic within a 15 mile radius of Toll Road exits.



Exit 17

Note that the following are excluded: All Interstate Highways, Indiana Harbor Canal Lift Bridges, and SR 51 Northbound between US 20 and I-94.

Notes: -

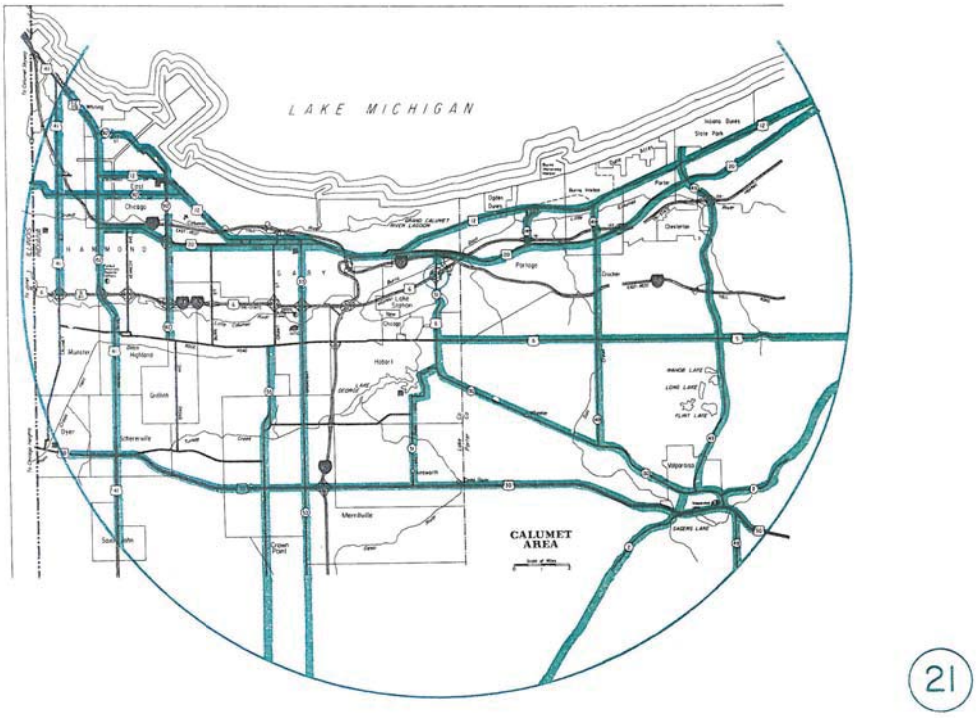
INDOT Coding Guide: *B*ridge *R*eporting for *A*ppraisal & *G*reater *I*nventory

Item Number:	501.02	**Item Name:**	"Heavy Duty Truck Route"
Main Tab/Sub Tab:	Aux. Forms/O.V. (501)	**Misc. Fields:**	501 Overall Comments
Main Tab/Sub Tab:	Load Rating/Struc. Data (1)	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-

NBIS:	☐ Yes	**Toll Road:**	☒ Yes	**Input Format:**	☒ Drop-Down	☐ Manual
INDOT:	☒ Yes	**County/Local:**	☒ Yes	**X**	☐ Check Box	☐ Read-Only

Description: "Heavy Duty Truck Route" (continued)

Instructions: See the detailed map below for Heavy Duty Truck Routes in Indiana, which are defined as any route carrying public vehicular traffic within a 15 mile radius of Toll Road exits.



Exit 21

Note that the following are excluded: All Interstate Highways, Indiana Harbor Canal Lift Bridges, and SR 51 Northbound between US 20 and I-94.

Notes: -

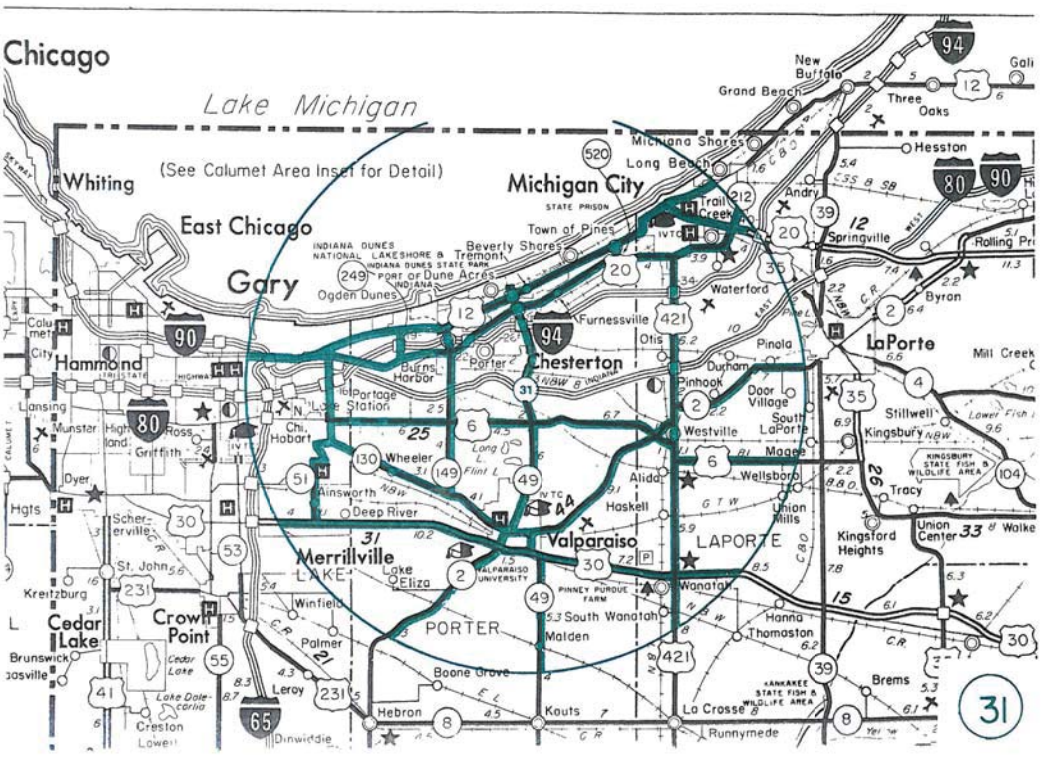
INDOT Coding Guide: *B*ridge *R*eporting for *A*ppraisal & *G*reater *I*nventory

Item Number:	501.02	**Item Name:**	"Heavy Duty Truck Route"
Main Tab/Sub Tab:	Aux. Forms/O.V. (501)	**Misc. Fields:**	501 Overall Comments
Main Tab/Sub Tab:	Load Rating/Struc. Data (1)	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-

NBIS:	☐ Yes	**Toll Road:**	☒ Yes	**Input Format:**	☒ Drop-Down	☐ Manual
INDOT:	☒ Yes	**County/Local:**	☒ Yes	**X**	☐ Check Box	☐ Read-Only

Description: "Heavy Duty Truck Route" (continued)

Instructions: See the detailed map below for Heavy Duty Truck Routes in Indiana, which are defined as any route carrying public vehicular traffic within a 15 mile radius of Toll Road exits.



Exit 31

Note that the following are excluded: All Interstate Highways and SR 51 Northbound between US 20 and I-94.

Notes: -

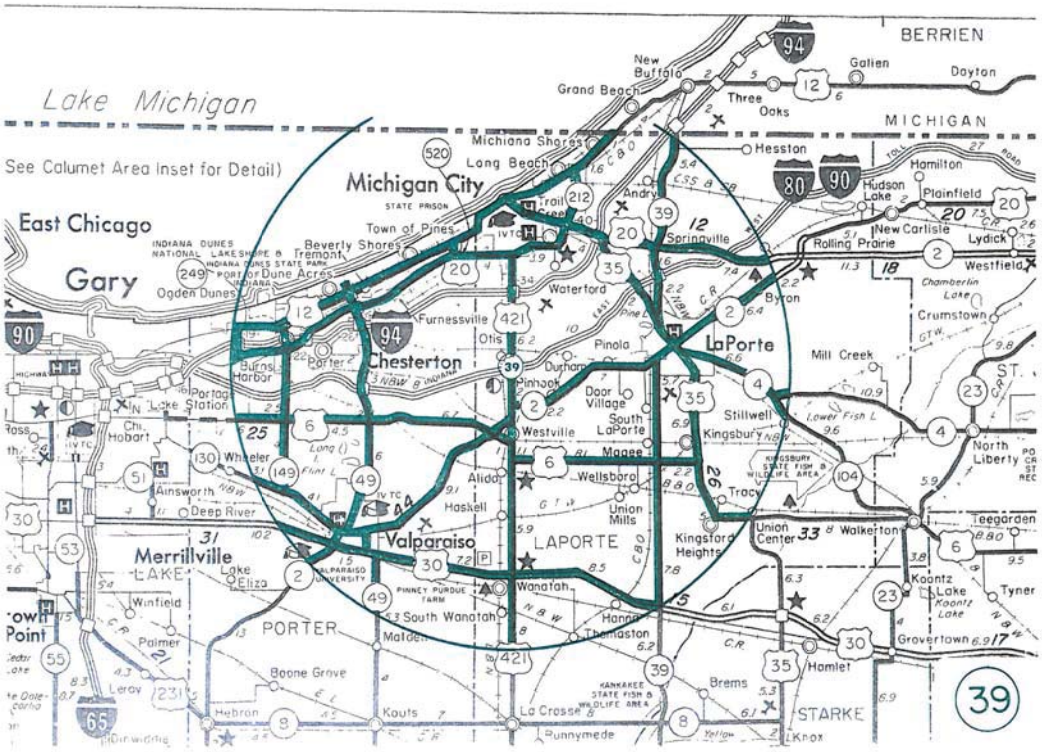
INDOT Coding Guide: *B*ridge *R*eporting for *A*ppraisal & *G*reater *I*nventory

Item Number:	501.02	**Item Name:**	"Heavy Duty Truck Route"
Main Tab/Sub Tab:	Aux. Forms/O.V. (501)	**Misc. Fields:**	501 Overall Comments
Main Tab/Sub Tab:	Load Rating/Struc. Data (1)	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-

NBIS:	☐ Yes	**Toll Road:**	☒ Yes	**Input Format:**	☒ Drop-Down	☐ Manual
INDOT:	☒ Yes	**County/Local:**	☒ Yes	**X**	☐ Check Box	☐ Read-Only

Description: "Heavy Duty Truck Route" (continued)

Instructions: See the detailed map below for Heavy Duty Truck Routes in Indiana, which are defined as any route carrying public vehicular traffic within a 15 mile radius of Toll Road exits.



Exit 39

Note that the following are excluded: All Interstate Highways.

Notes: -

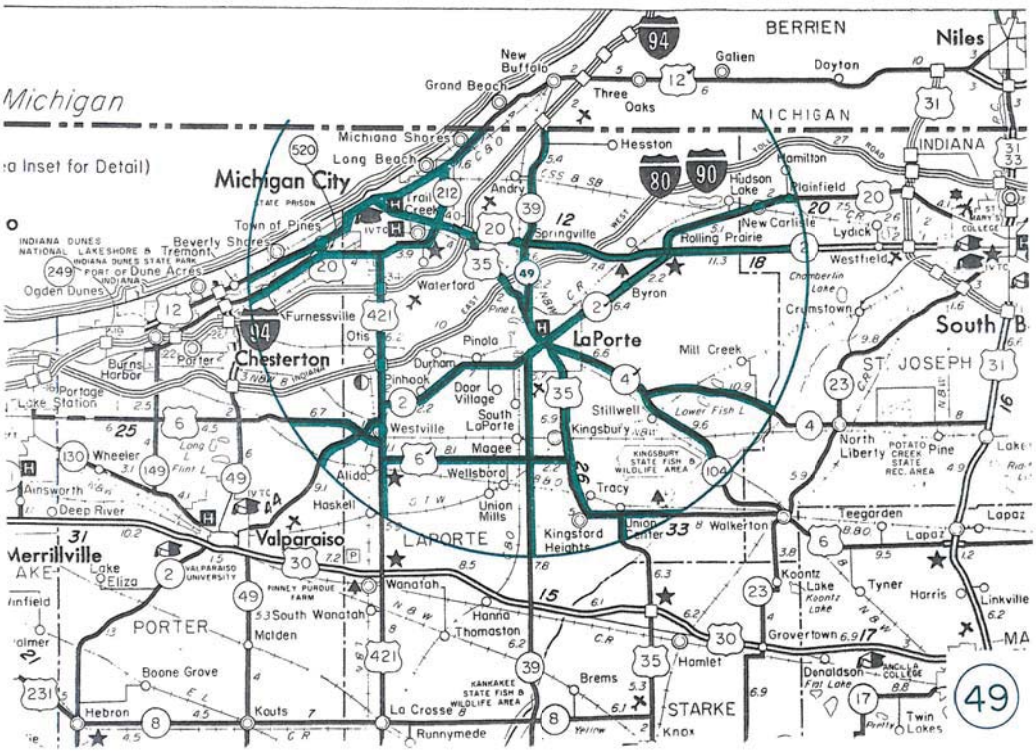
INDOT Coding Guide: *B*ridge *R*eporting for *A*ppraisal & *G*reater *I*nventory

Item Number:	501.02	**Item Name:**	"Heavy Duty Truck Route"
Main Tab/Sub Tab:	Aux. Forms/O.V. (501)	**Misc. Fields:**	501 Overall Comments
Main Tab/Sub Tab:	Load Rating/Struc. Data (1)	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-

NBIS:	☐ **Yes**	**Toll Road:**	☒ **Yes**	**Input Format:**	☒ **Drop-Down**	☐ **Manual**
INDOT:	☒ **Yes**	**County/Local:**	☒ **Yes**	**X**	☐ **Check Box**	☐ **Read-Only**

Description: "Heavy Duty Truck Route" (continued)

Instructions: See the detailed map below for Heavy Duty Truck Routes in Indiana, which are defined as any route carrying public vehicular traffic within a 15 mile radius of Toll Road exits.



Exit 49

Note that the following are excluded: All Interstate Highways.

Notes: -

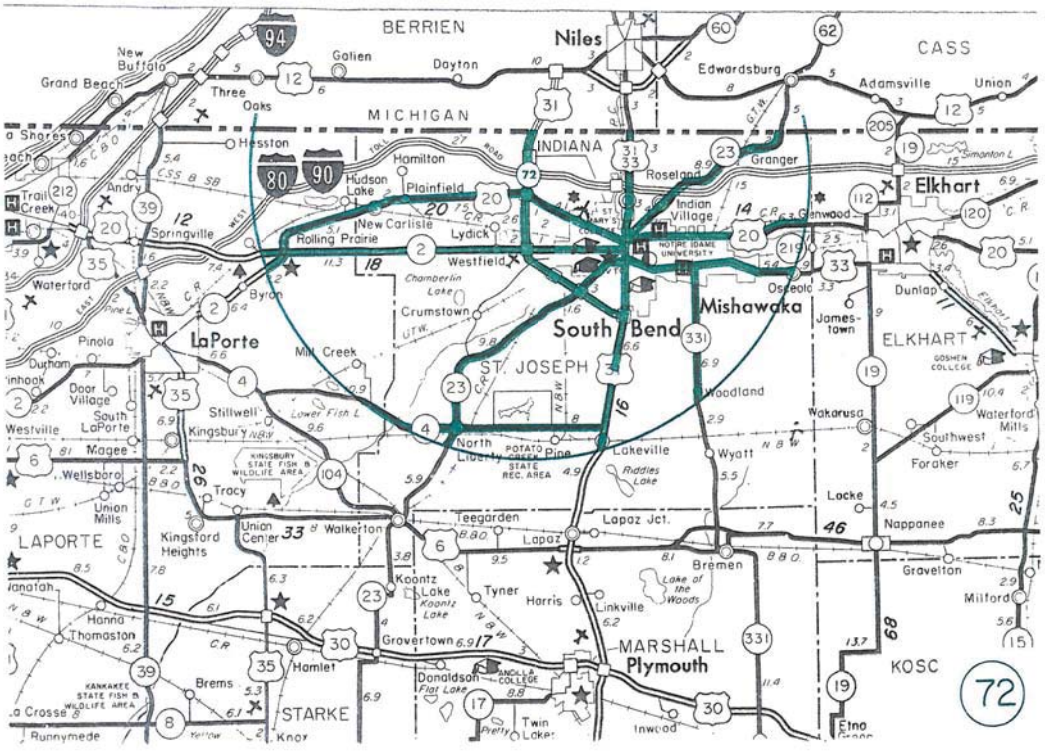
INDOT Coding Guide: *B*ridge *R*eporting for *A*ppraisal & *G*reater *I*nventory

Item Number:	501.02	**Item Name:**	"Heavy Duty Truck Route"
Main Tab/Sub Tab:	Aux. Forms/O.V. (501)	**Misc. Fields:**	501 Overall Comments
Main Tab/Sub Tab:	Load Rating/Struc. Data (1)	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-

NBIS:	☐ **Yes**	**Toll Road:**	☒ **Yes**	**Input Format:**	☒ **Drop-Down**	☐ **Manual**
INDOT:	☒ **Yes**	**County/Local:**	☒ **Yes**	**X**	☐ **Check Box**	☐ **Read-Only**

Description: "Heavy Duty Truck Route" (continued)

Instructions: See the detailed map below for Heavy Duty Truck Routes in Indiana, which are defined as any route carrying public vehicular traffic within a 15 mile radius of Toll Road exits.



Exit 72

Note that the following are excluded: All Interstate Highways and over posted height on SR 2 between US 31 and SR 23.

Notes: -

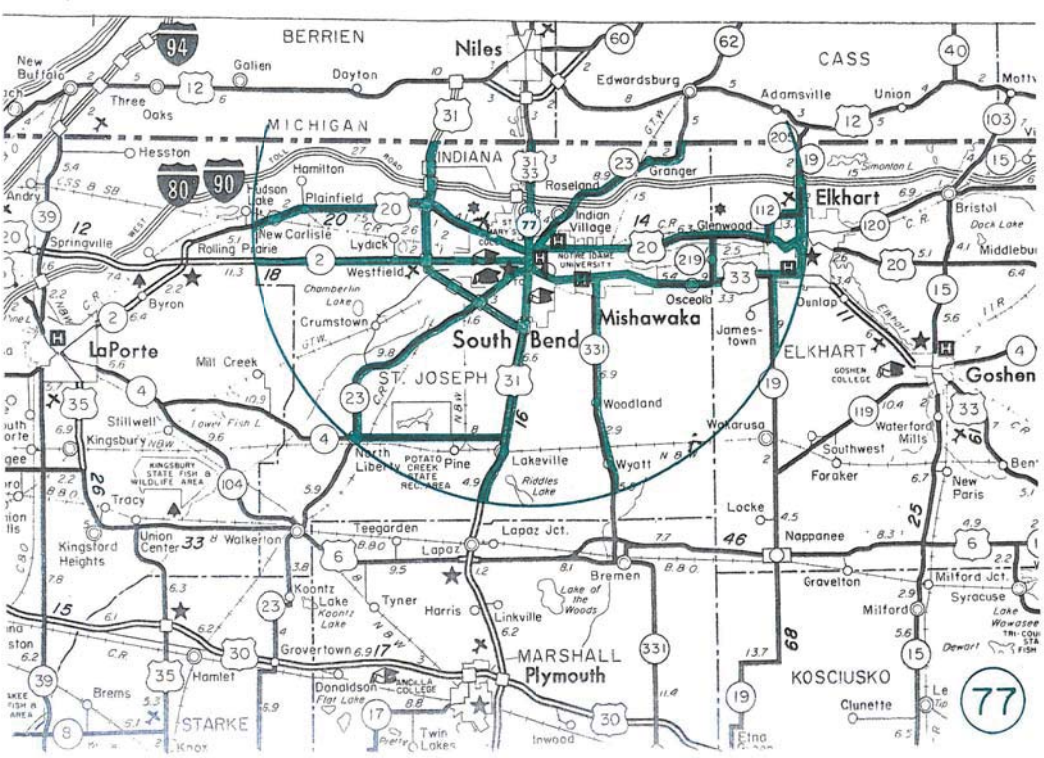
INDOT Coding Guide: *B*ridge *R*eporting for *A*ppraisal & *G*reater *I*nventory

Item Number:	501.02	**Item Name:**	"Heavy Duty Truck Route"
Main Tab/Sub Tab:	Aux. Forms/O.V. (501)	**Misc. Fields:**	501 Overall Comments
Main Tab/Sub Tab:	Load Rating/Struc. Data (1)	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-

NBIS:	☐ Yes	**Toll Road:**	☒ Yes	**Input Format:**	☒ Drop-Down	☐ Manual
INDOT:	☒ Yes	**County/Local:**	☒ Yes	**X**	☐ Check Box	☐ Read-Only

Description: "Heavy Duty Truck Route" (continued)

Instructions: See the detailed map below for Heavy Duty Truck Routes in Indiana, which are defined as any route carrying public vehicular traffic within a 15 mile radius of Toll Road exits.



Exit 77

Note that the following are excluded: All Interstate Highways and over posted height on SR 2 between US 31 and SR 23.

Notes: -

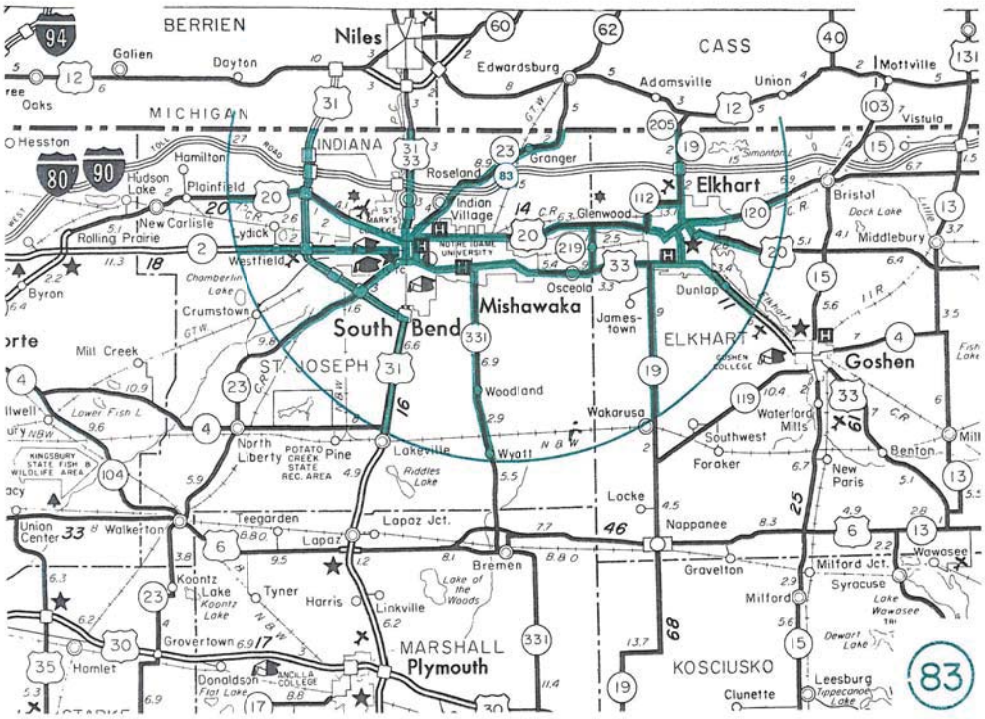
INDOT Coding Guide: *B*ridge *R*eporting for *A*ppraisal & *G*reater *I*nventory

Item Number:	501.02	**Item Name:**	"Heavy Duty Truck Route"
Main Tab/Sub Tab:	Aux. Forms/O.V. (501)	**Misc. Fields:**	501 Overall Comments
Main Tab/Sub Tab:	Load Rating/Struc. Data (1)	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-

NBIS:	☐ **Yes**	**Toll Road:**	☒ **Yes**	**Input Format:**	☒ **Drop-Down**	☐ **Manual**
INDOT:	☒ **Yes**	**County/Local:**	☒ **Yes**	**X**	☐ **Check Box**	☐ **Read-Only**

Description: "Heavy Duty Truck Route" (continued)

Instructions: See the detailed map below for Heavy Duty Truck Routes in Indiana, which are defined as any route carrying public vehicular traffic within a 15 mile radius of Toll Road exits.



Exit 83

Note that the following are excluded: All Interstate Highways and over posted height on SR 2 between US 31 and SR 23.

Notes: -

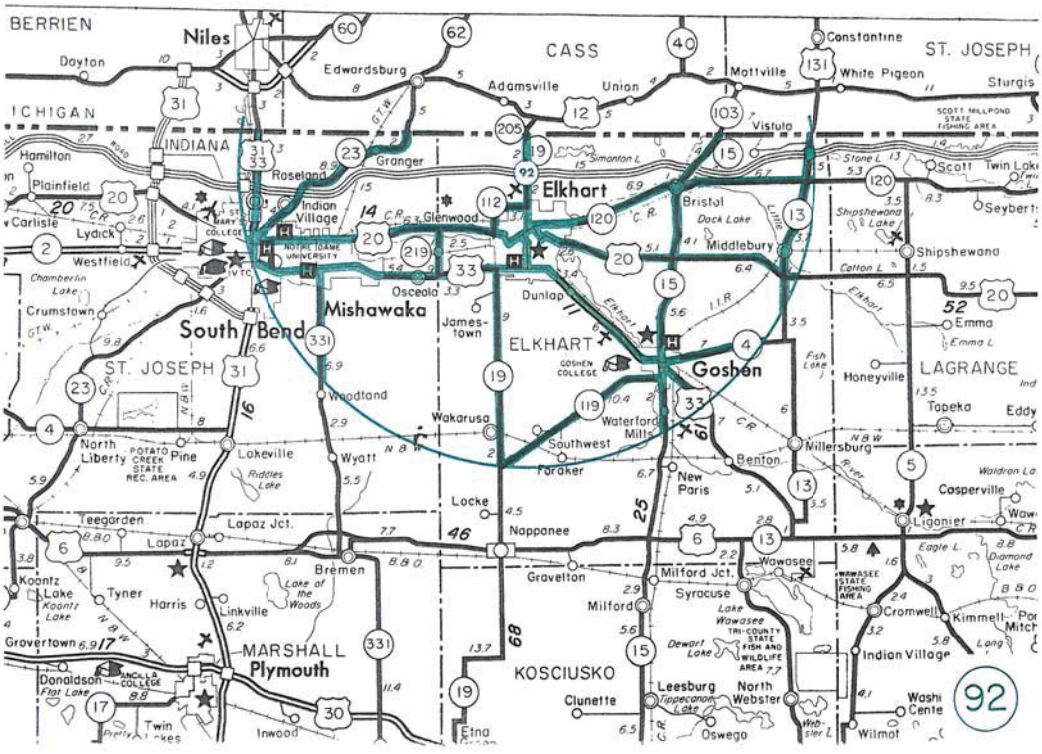
INDOT Coding Guide: *B*ridge *R*eporting for *A*ppraisal & *G*reater *I*nventory

Item Number:	501.02	**Item Name:**	"Heavy Duty Truck Route"
Main Tab/Sub Tab:	Aux. Forms/O.V. (501)	**Misc. Fields:**	501 Overall Comments
Main Tab/Sub Tab:	Load Rating/Struc. Data (1)	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-

NBIS:	☐ Yes	**Toll Road:**	☒ Yes	**Input Format:**	☒ Drop-Down	☐ Manual
INDOT:	☒ Yes	**County/Local:**	☒ Yes	**X**	☐ Check Box	☐ Read-Only

Description: "Heavy Duty Truck Route" (continued)

Instructions: See the detailed map below for Heavy Duty Truck Routes in Indiana, which are defined as any route carrying public vehicular traffic within a 15 mile radius of Toll Road exits.



Exit 92

Note that the following are excluded: All Interstate Highways.

Notes: -

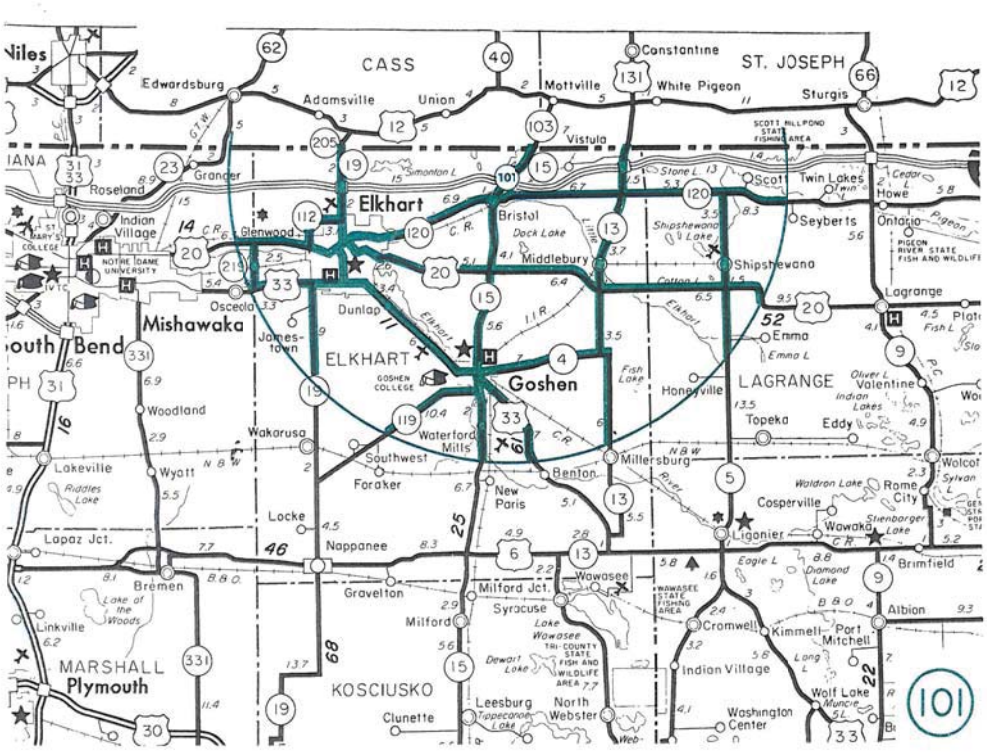
INDOT Coding Guide: *B*ridge *R*eporting for *A*ppraisal & *G*reater *I*nventory

Item Number:	501.02	**Item Name:**	"Heavy Duty Truck Route"
Main Tab/Sub Tab:	Aux. Forms/O.V. (501)	**Misc. Fields:**	501 Overall Comments
Main Tab/Sub Tab:	Load Rating/Struc. Data (1)	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-

NBIS:	☐ **Yes**	**Toll Road:**	☒ **Yes**	**Input Format:**	☒ **Drop-Down**	☐ **Manual**
INDOT:	☒ **Yes**	**County/Local:**	☒ **Yes**	**X**	☐ **Check Box**	☐ **Read-Only**

Description: "Heavy Duty Truck Route" (continued)

Instructions: See the detailed map below for Heavy Duty Truck Routes in Indiana, which are defined as any route carrying public vehicular traffic within a 15 mile radius of Toll Road exits.



Exit 101

Note that the following are excluded: All Interstate Highways and any vehicles with an overall length in excess of 95 feet.

Notes: -

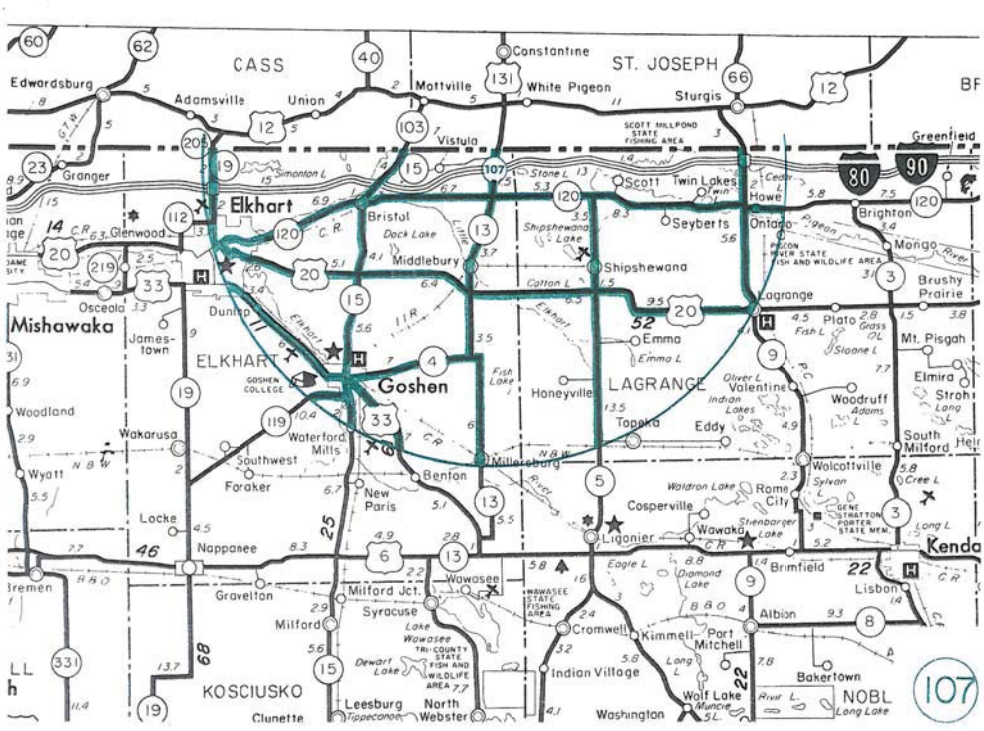
INDOT Coding Guide: *B*ridge *R*eporting for *A*ppraisal & *G*reater *I*nventory

Item Number:	501.02	**Item Name:**	"Heavy Duty Truck Route"
Main Tab/Sub Tab:	Aux. Forms/O.V. (501)	**Misc. Fields:**	501 Overall Comments
Main Tab/Sub Tab:	Load Rating/Struc. Data (1)	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-

NBIS:	☐ Yes	**Toll Road:**	☒ Yes	**Input Format:**	☒ Drop-Down	☐ Manual	
INDOT:	☒ Yes	**County/Local:**	☒ Yes	**X**	☐ Check Box	☐ Read-Only	

Description: "Heavy Duty Truck Route" (continued)

Instructions: See the detailed map below for Heavy Duty Truck Routes in Indiana, which are defined as any route carrying public vehicular traffic within a 15 mile radius of Toll Road exits.



Exit 107

Note that the following are excluded: All Interstate Highways.

Notes: -

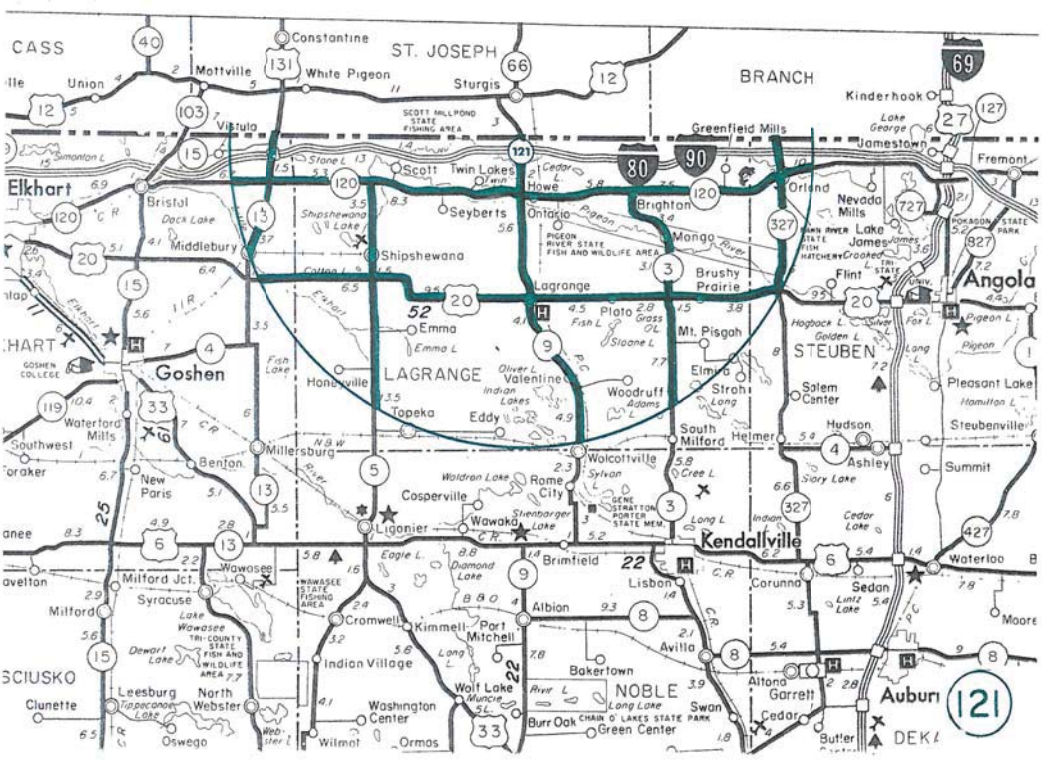
INDOT Coding Guide: *B*ridge *R*eporting for *A*ppraisal & *G*reater *I*nventory

Item Number:	501.02	**Item Name:**	"Heavy Duty Truck Route"
Main Tab/Sub Tab:	Aux. Forms/O.V. (501)	**Misc. Fields:**	501 Overall Comments
Main Tab/Sub Tab:	Load Rating/Struc. Data (1)	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-

NBIS:	☐ Yes	**Toll Road:**	☒ Yes	**Input Format:**	☒ Drop-Down	☐ Manual
INDOT:	☒ Yes	**County/Local:**	☒ Yes	**X**	☐ Check Box	☐ Read-Only

Description: "Heavy Duty Truck Route" (continued)

Instructions: See the detailed map below for Heavy Duty Truck Routes in Indiana, which are defined as any route carrying public vehicular traffic within a 15 mile radius of Toll Road exits.



Exit 121

Note that the following are excluded: All Interstate Highways.

Notes: -

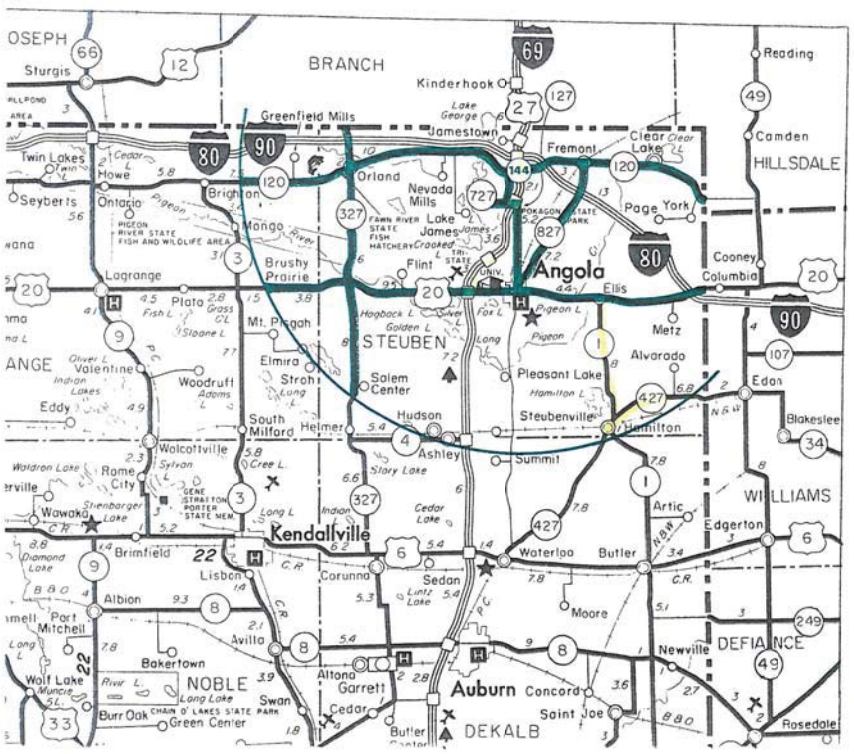
INDOT Coding Guide: *B*ridge *R*eporting for *A*ppraisal & *G*reater *I*nventory

Item Number:	501.02	**Item Name:**	"Heavy Duty Truck Route"
Main Tab/Sub Tab:	Aux. Forms/O.V. (501)	**Misc. Fields:**	501 Overall Comments
Main Tab/Sub Tab:	Load Rating/Struc. Data (1)	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-
Main Tab/Sub Tab:	-	**Misc. Fields:**	-

NBIS:	☐ Yes	**Toll Road:**	☒ Yes	**Input Format:**	☒ Drop-Down	☐ Manual
INDOT:	☒ Yes	**County/Local:**	☒ Yes	**X**	☐ Check Box	☐ Read-Only

Description: "Heavy Duty Truck Route" (continued)

Instructions: See the detailed map below for Heavy Duty Truck Routes in Indiana, which are defined as any route carrying public vehicular traffic within a 15 mile radius of Toll Road exits.

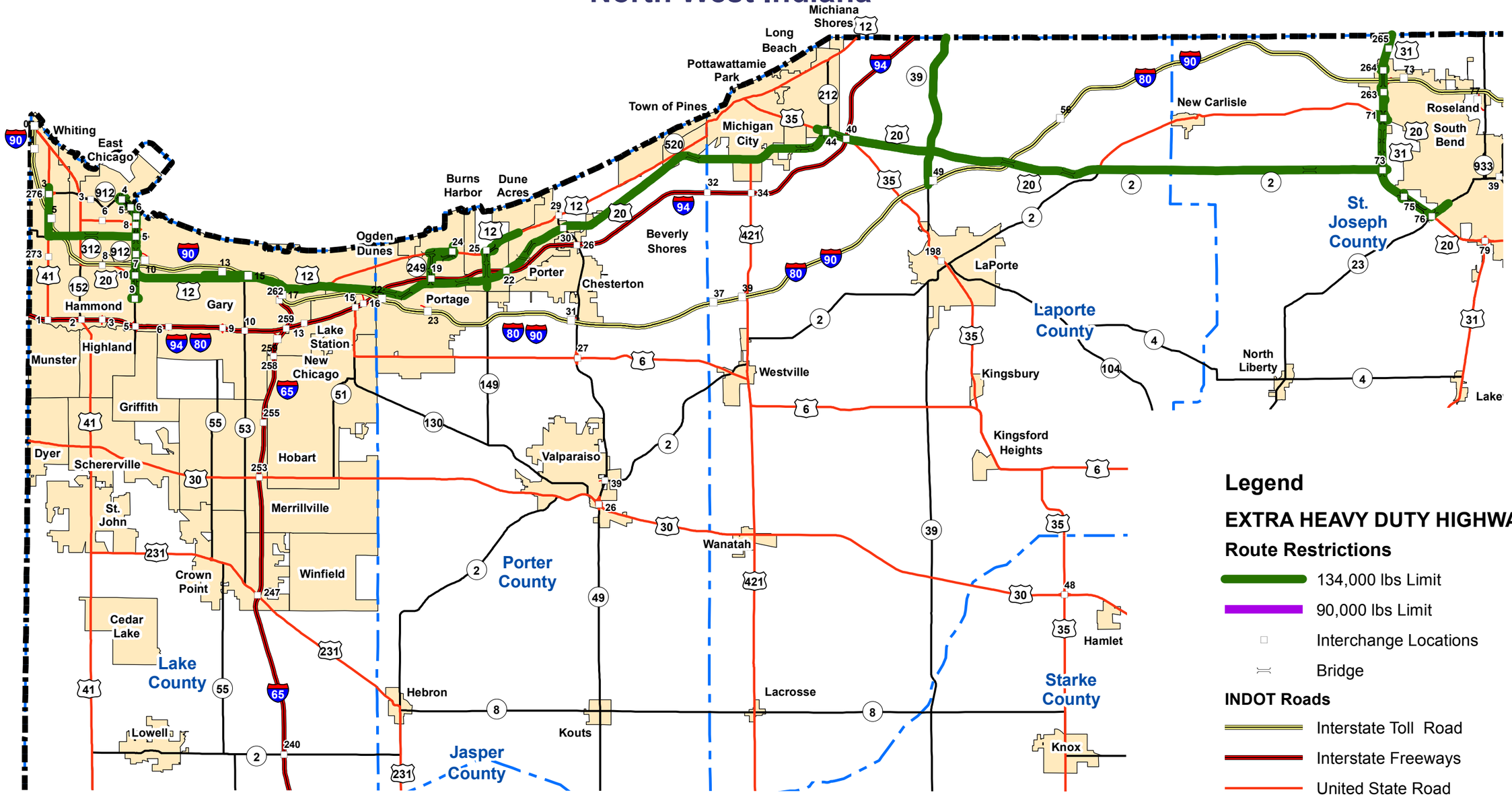


Exit 144

Note that the following are excluded: All Interstate Highways, SR 1, and SR 427.

Notes: -

INDIANA EXTRA HEAVY DUTY HIGHWAYS
North West Indiana



Legend

EXTRA HEAVY DUTY HIGHWAYS

Route Restrictions

- 134,000 lbs Limit
- 90,000 lbs Limit
- Interchange Locations
- Bridge

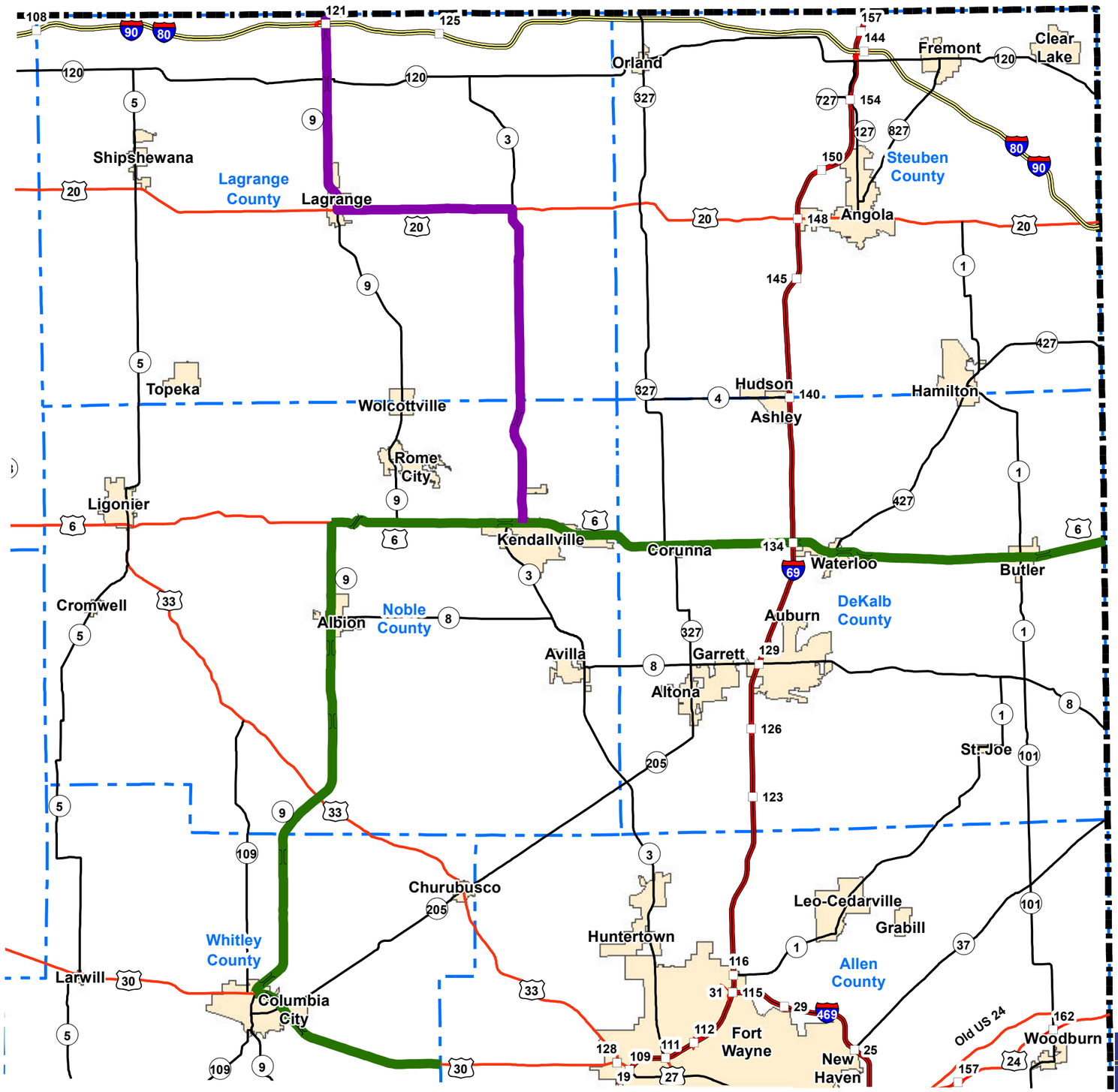
INDOT Roads

- Interstate Toll Road
- Interstate Freeways
- United State Road
- State Road
- Interchange Ramps
- INDIANA State Boundary
- County Boundaries

May 2022

INDIANA EXTRA HEAVY DUTY HIGHWAYS

North East Indiana



Legend

EXTRA HEAVY DUTY HIGHWAYS

Route Restrictions

- 134,000 lbs Limit
- 90,000 lbs Limit
- Interchange Locations
- System 1 Bridge

INDOT Roads

- Interstate Toll Road
- Interstate Freeways
- United State Road
- State Road
- Interchange Ramps
- INDIANA State Boundary
- County Boundaries

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IC 9-20-5

Chapter 5. Heavy Duty Highways and Extra Heavy Duty Highways

IC 9-20-5-1

Establishment and designation of heavy duty and extra heavy duty highways; removal of designation; publication of map

Sec. 1. (a) The Indiana department of transportation may adopt rules under IC 4-22-2 to do the following:

(1) Establish and designate a highway as a heavy duty highway.

(2) Remove the designation of a highway or part of a highway as a heavy duty highway.

(b) The Indiana department of transportation shall adopt rules under IC 4-22-2 to do the following:

(1) Establish and designate a highway as an extra heavy duty highway.

(2) Remove the designation of a highway or part of a highway as an extra heavy duty highway.

(c) Rules described in subsection (b)(1) must do the following:

(1) Designate the highways listed in section 4 of this chapter (before its expiration) as extra heavy duty highways.

(2) Establish maximum size and weight limits for vehicles operated with a special weight permit on an extra heavy duty highway as set forth in section 5 of this chapter (before its expiration).

(d) The Indiana department of transportation shall periodically publish a map showing all highways designated by the department at the time as heavy duty or extra heavy duty highways.

As added by P.L.2-1991, SEC.8. Amended by P.L.66-2012, SEC.1.

IC 9-20-5-2

Maximum weight limitations; heavy duty highways

Sec. 2. Whenever the Indiana department of transportation designates a heavy duty highway, the department shall also fix the maximum weights of vehicles that may be transported on the highway. The maximum weights may not exceed the following limitations:

(1) A vehicle may not have a maximum wheel weight, unladen or with load, in excess of eight hundred (800) pounds per inch width of tire, measured between the flanges of the rim, or an axle weight in excess of twenty-two thousand four hundred (22,400) pounds.

(2) The total weight concentrated on the roadway surface from any tandem axle group may not exceed eighteen thousand (18,000) pounds for each axle of the assembly.

(3) The total gross weight, with load, in pounds of a vehicle or combination of vehicles may not exceed eighty thousand (80,000) pounds.

As added by P.L.2-1991, SEC.8.

IC 9-20-5-3
Designation of heavy duty highways; conditions

Sec. 3. The Indiana department of transportation may not designate a highway as a heavy duty highway unless the department finds that the highway is:

(1) so constructed and can be so maintained; or

(2) in such condition;

that the use of the highway as a heavy duty highway will not materially decrease or contribute materially to the decrease of the ordinary useful life of the highway.

As added by P.L.2-1991, SEC.8. Amended by P.L.198-2016, SEC.340.

IC 9-20-5-4
Extra heavy duty highways; listing; expiration

Sec. 4. (a) In addition to the highways established and designated as heavy duty highways under section 1 of this chapter, the following highways are designated as extra heavy duty highways:

(1) Highway 41, from 129th Street in Hammond to Highway 312.

(2) Highway 312, from Highway 41 to State Road 912.

(3) Highway 912, from Riley Road in East Chicago to the U.S. 20 interchange.

(4) Highway 20, from Clark Road in Gary to Highway 39.

(5) Highway 12, from one-fourth (1/4) mile west of the Midwest Steel entrance to Highway 249.

(6) Highway 249, from Highway 12 to Highway 20.

(7) Highway 12, from one and one-half (1 1/2) miles east of the Bethlehem Steel entrance to Highway 149.

(8) Highway 149, from Highway 12 to a point thirty-six hundredths (.36) of a mile south of Highway 20.

(9) Highway 39, from Highway 20 to the Michigan state line.

(10) Highway 20, from Highway 39 to Highway 2.

(11) Highway 2, from Highway 20 to Highway 31.

(12) Highway 31, from the Michigan state line to Highway 23.

(13) Highway 23, from Highway 31 to Olive Street in South Bend.

(14) Highway 35, from South Motts Parkway thirty-four hundredths (.34) of a mile southeast to the point where Highway 35 intersects with the overpass for Highway 20/Highway 212.

(15) State Road 249 from U.S. 12 to the point where State Road 249 intersects with Nelson Drive at the Port of Indiana.

(16) State Road 912 from the 15th Avenue and 169th Street interchange one and six hundredths (1.06) miles north to the U.S. 20 interchange.

(17) U.S. 20 from the State Road 912 interchange three and seventeen hundredths (3.17) miles east to U.S. 12.

(18) U.S. 6 from the Ohio state line to State Road 9.

(19) U.S. 30 from Allen County/Whitley County Line Road (also known as County Road 800 East) to State Road 9.

(20) State Road 9 from U.S. 30 to U.S. 6.

(21) State Road 39 from Interstate 80 to U.S. 20.

(22) State Road 3 north from U.S. 6 to U.S. 20, U.S. 20 west from State Road 3 to State Road 9, State Road 9 north from U.S. 20 to the Michigan state line. However, the total gross weight, with load, of a vehicle or combination of vehicles operated with a special weight permit on these highways may not exceed ninety thousand (90,000) pounds.

(23) Highway 912, at an intersection approximately thirty hundredths (.30) of a mile southwest of the intersection of Dickey Road and Riley Road in East Chicago. The total gross weight, with load, of a vehicle or combination of vehicles operated with a special weight permit on this highway may not exceed two hundred sixty-four thousand (264,000) pounds.

(b) This section expires on the later of the following dates:

(1) The date on which rules described in section 1(c)(1) of this chapter are finally adopted.

(2) December 31, 2014.

As added by P.L.2-1991, SEC.8. Amended by P.L.12-1991, SEC.4; P.L.123-1993, SEC.1; P.L.124-1993, SEC.1; P.L.119-1995, SEC.2; P.L.45-1999, SEC.1; P.L.79-2000, SEC.3; P.L.147-2002, SEC.2; P.L.10-2004, SEC.1; P.L.17-2006, SEC.1; P.L.134-2007, SEC.1; P.L.120-2011, SEC.1; P.L.66-2012, SEC.2.

IC 9-20-5-4.5

Repealed

(Repealed by P.L.123-1993, SEC.2.)

IC 9-20-5-5

Maximum size and weight limitations; extra heavy duty highways; expiration

Sec. 5. (a) Except as provided in subsection (b), the maximum size and weight limits for vehicles operated with a special weight permit on an extra heavy duty highway are as follows:

(1) A vehicle may not have a maximum wheel weight, unladen or with load, in excess of eight hundred (800) pounds per inch width of tire, measured between the flanges of the rim.

(2) A single axle weight may not exceed eighteen thousand (18,000) pounds.

(3) An axle in an axle combination may not exceed thirteen thousand (13,000) pounds per axle, with the exception of one (1) tandem group that may weigh sixteen thousand (16,000) pounds per axle or a total of thirty-two thousand (32,000)

pounds.

(4) Except as provided in section 4(a)(22) of this chapter, the total gross weight, with load, of any vehicle or combination of vehicles may not exceed one hundred thirty-four thousand (134,000) pounds.

(5) Axle spacings may not be less than three (3) feet, six (6) inches, between each axle in an axle combination.

(6) Axle spacings may not be less than eight (8) feet between each axle or axle combination.

(b) A vehicle operated in accordance with section 4(a)(23) of this chapter may not have a:

(1) maximum wheel weight, unladen or with load, in excess of one thousand six hundred fifty (1,650) pounds per inch width of tire, measured between the flanges of the rim; or

(2) single axle weight that exceeds sixty-five thousand (65,000) pounds.

(c) This section expires on the later of the following dates:

(1) The date on which rules described in section 1(c)(2) of this chapter are finally adopted.

(2) December 31, 2014.

As added by P.L.2-1991, SEC.8. Amended by P.L.134-2007, SEC.2; P.L.120-2011, SEC.2; P.L.66-2012, SEC.3; P.L.13-2013, SEC.35.

IC 9-20-5-6

Safety procedures; implementation

Sec. 6. The Indiana department of transportation shall implement procedures that, in cooperation with the state police department and local police departments, enhance the safety of citizens along and near extra heavy duty highways listed in section 4 of this chapter (before its expiration) or described in rules adopted by the Indiana department of transportation under section 1 of this chapter.

As added by P.L.2-1991, SEC.8. Amended by P.L.66-2012, SEC.4.

IC 9-20-5-7

Special weight permits; extra heavy duty highways; fee; additional permit fee

Sec. 7. (a) The owner or operator of a vehicle or combination of vehicles having a total gross weight in excess of eighty thousand (80,000) pounds but less than two hundred sixty-four thousand (264,000) pounds must:

(1) obtain a special weight registration permit;

(2) register annually and pay annually a registration fee to the department of state revenue; and

(3) install an approved automated vehicle identifier in each vehicle operating with a special weight permit;

to travel on an extra heavy duty highway.

(b) The fee for an annual registration under subsection (a) is twenty-five dollars ($25). The fee imposed under this section must

be deposited in the motor carrier regulation fund established under IC 8-2.1-23.

(c) The department of state revenue may impose an additional permit fee in an amount that may not exceed one dollar ($1) on each trip permitted for a vehicle registered under subsection (a). This additional fee is for the use and maintenance of an automated vehicle identifier. The fee imposed under this section must be deposited in the motor carrier regulation fund established under IC 8-2.1-23.

As added by P.L.2-1991, SEC.8. Amended by P.L.122-1993, SEC.2; P.L.129-2001, SEC.30; P.L.120-2011, SEC.3; P.L.198-2016, SEC.341.

IC 9-20-5-8

Conditions under which permits not to be issued

Sec. 8. The Indiana department of transportation may not issue a permit under this chapter for the operation of a vehicle if any of the following conditions apply:

(1) The owner or operator of the vehicle has not complied with IC 8-2.1-24.

(2) The owner or operator of the vehicle has not provided the Indiana department of transportation with the owner's or operator's Social Security number or federal identification number.

(3) The owner or operator of the vehicle has not registered the vehicle with the bureau, if the vehicle is required to be registered under IC 9-18.

As added by P.L.122-1993, SEC.3. Amended by P.L.110-1995, SEC.30.

LOAD RATING SUMMARY REPORT
for
CONDITION CHANGE / DETERIORATION

BRIDGE NUMBER

XXX-XX-XXXXX

NBI NUMBER

XXXXXX

NBI Number:	XXXXXX	Rating Method:	LRFR
Bridge Number:	XXX-XX-XXXXX	Rating Program:	AASHTOWARE BrR 6.8.4.3002
DES Number:	XXXXXXX	Load Rater:	XXX on MM/DD/YYYY
Rating Type:	Deterioration	Reviewer:	XXX on MM/DD/YYYY

Identificiation

Facility Carried:	SR 15		
Features Intersected:	Little Elkhart River		
District:	02 - Fort Wayne	Toll Road:	No / not within 15 miles of gate
County:	20 - Elkhart	Extra Heavy Duty Highway:	No
Reference Post:	91+0.659		

Rehabilitation History

Year Built:	1941	**Description**
Year Rehabilitated:	975	Contract X-XXXXX Rehab A: Replace Superstructure
	2019	DES XXXXXXX Rehab B: Bridge Thin Deck Overlay

Geometry and Material Summary

Structure Type(s):	CPCIB - Continuous Prestressed Concrete I-Beam Bridge		
Span Length:	49'-7", 2@50'-1", 49'-7"	O-to-O Coping:	48'-4"
Number of Girders:	7	Clear Roadway:	45'-4"
Girder Spacing:	6 @ 7'-6"	Left Overhang:	1'-8"
		Skew:	30° 00' 00" RT

Deck		**Girder**	
Original Thickness:	8"	Size/Type:	AASHTO Type II
Structural Thickness:	6.5"	Structural Steel Fy:	N/A
Additional Overlay:	1.75" - 0.5" mill = 1.25"	Reinforcing Fy:	40 ksi
Deck Concrete f'c:	3 ksi	Girder Concrete f'c:	5 ksi
Reinforcing Fy:	40 ksi	Girder Concrete f'ci:	4 ksi
Stay-in-Place Forms:	15 psf	Strand Material:	1/2" Ø (7W-270ksi) LR

Modeling Assumptions

Plans Available:	Yes	Deterioration	Included
Shop Drawings:	N/A	Future Wearing Surface:	Not Included
Inspection Date:	MM/DD/YYYY		

Additional Notes

Load rating incorporates deterioration as observed during INDOT mm/dd/yyyy inspection.

NBI Number:	XXXXXX	Rating Method:	LRFR
Bridge Number:	XXX-XX-XXXXX	Rating Program:	AASHTOWARE BrR 6.8.4.3002
DES Number:	XXXXXXX	Load Rater:	XXX on MM/DD/YYYY
Rating Type:	Deterioration	Reviewer:	XXX on MM/DD/YYYY

NBIS Items

(65) Inventory Rating Method:	8	(31) Design Load:	A
(66) Inventory Rating:	0.925	(70) Bridge Posting:	4
(63) Operating Rating Method:	8	(41) Structure Open/Posted/Closed:	B
(64) Operating Rating:	1.199	Tons Posted:	
		Date Posted/Closed:	

Deisgn Loads

Vehicle	Inventory Rating Factor	Inventory Load Capacity (tons)	Operating Rating Factor	Operating Load Capacity (tons)
HL-93	0.601	21.636	0.808	29.082
Fatigue				
H-20				
HS-20				
HS-25				
Alternate Military				
Toll Road Loading NO. 2				
Toll Road Loading NO. 1				
Special Toll Road Truck				
Michigan Train Truck NO. 5				
Michigan Train Truck NO. 8				

NBI Number:	XXXXXX	Rating Method:	LRFR
Bridge Number:	XXX-XX-XXXXX	Rating Program:	AASHTOWARE BrR 6.8.4.3002
DES Number:	XXXXXXX	Load Rater:	XXX on MM/DD/YYYY
Rating Type:	Deterioration	Reviewer:	XXX on MM/DD/YYYY

Legal & Routine Permit Loads

Number of Axles	Vehicle	Rating Factor	Load Capacity (tons)	Safe Posting Load (tons)
2	EV2	1.445	41.544	
3	EV3	1.029	44.247	
			Single Axle:	
			Tandem:	
			Gross:	
varies	NRL	0.914		
2	H20-44	1.407	28.140	28.140
2	Alternate Military	1.173	28.152	28.152
3	HS20-44	1.056	38.016	38.016
3	AASHTO Type 3	1.245	31.125	31.125
4	SU4	1.278	34.506	34.506
4	Toll Road Loading NO. 2			
5	AASHTO Type 3S2	1.431	51.516	51.516
5	SU5	1.154	35.774	35.774
5	Toll Road Loading NO. 1			
6	AASHTO Type 3-3	1.412	56.480	56.480
6	Lane-Type	1.595	63.800	63.800
6	SU6	1.040	36.140	36.140
7	Special Toll Road Truck			
7 / 8	SU7	0.958	37.123	36.425
8	Michigan Train Truck NO. 5			
11	Michigan Train Truck NO. 8			

Special Permit Loads

Number of Axles	Vehicle	Rating Factor	Load Capacity (tons)
11	Superload	1.070	138.030
13	Superload	1.170	156.195
14	Superload	0.838	146.650
19	Superload (305K)	1.058	161.345
19	Superload (480.09K)	0.766	183.874

LOAD RATING SUMMARY REPORT
for
CONDITION CHANGE / DETERIORATION

BRIDGE NUMBER

XXX-XX-XXXXX

NBI NUMBER

XXXXXX

NBI Number:	XXXXXX	Rating Method:	LRFR
Bridge Number:	XXX-XX-XXXXX	Rating Program:	AASHTOWARE BrR 6.8.4.3002
DES Number:	XXXXXXX	Load Rater:	XXX on MM/DD/YYYY
Rating Type:	Deterioration	Reviewer:	XXX on MM/DD/YYYY

Identificiation

Facility Carried:	I-65 SB		
Features Intersected:	Mutton Creek Ditch		
District:	03 - Greenfield	Toll Road:	No / not within 15 miles of gate
County:	36 - Jackson	Extra Heavy Duty Highway:	No
Reference Post:	46+0.322		

Rehabilitation History

Year Built:	1959	**Description**
Year Rehabilitated:	1990	Contract X-XXXXX Rehab A: Bridge Deck Replacement
	2013	DES XXXXXXX Rehab B: Bridge Thin Deck Overlay

Geometry and Material Summary

Structure Type(s):	KCSB - Continuous Composite Steel Beam Bridge		
Span Length:	50'-0", 60'-0", 50'-0"	O-to-O Coping:	42'-2"
Number of Girders:	8	Clear Roadway:	39'06"
Girder Spacing:	6'-4", 5'-4", 4 @5'-0", 5'-4"	Left Overhang:	2'-7"
		Skew:	0° 00' 00" RT

Deck		**Girder**	
Original Thickness:	8"	Size/Type:	W 30 x 108
Structural Thickness:	6.5"	Structural Steel Fy:	36 ksi
Additional Overlay:	1.75" - 0.5" mill = 1.25"	Reinforcing Fy:	40 ksi
Deck Concrete f'c:	3 ksi	Girder Concrete f'c:	N/A
Reinforcing Fy:	40 ksi	Girder Concrete f'ci:	N/A
Stay-in-Place Forms:	15 psf	Strand Material:	N/A

Modeling Assumptions

Plans Available:	Yes	Deterioration	Included
Shop Drawings:	N/A	Future Wearing Surface:	Not Included
Inspection Date:	MM/DD/YYYY		

Additional Notes

Load rating incorporates deterioration as observed during INDOT mm/dd/yyyy inspection.

NBI Number:	XXXXXX	Rating Method:	LRFR
Bridge Number:	XXX-XX-XXXXX	Rating Program:	AASHTOWARE BrR 6.8.4.3002
DES Number:	XXXXXXX	Load Rater:	XXX on MM/DD/YYYY
Rating Type:	Deterioration	Reviewer:	XXX on MM/DD/YYYY

NBIS Items

(65) Inventory Rating Method:	8	(31) Design Load:	5
(66) Inventory Rating:	1.230	(70) Bridge Posting:	3
(63) Operating Rating Method:	8	(41) Structure Open/Posted/Closed:	B
(64) Operating Rating:	1.599	Tons Posted:	
		Date Posted/Closed:	

Deisgn Loads

Vehicle	Inventory Rating Factor	Inventory Load Capacity (tons)	Operating Rating Factor	Operating Load Capacity (tons)
HL-93	1.230	44.280	1.599	57.564
Fatigue				
H-20				
HS-20	1.848	66.528	2.402	95.472
HS-25				
Alternate Military				
Toll Road Loading NO. 2				
Toll Road Loading NO. 1				
Special Toll Road Truck				
Michigan Train Truck NO. 5				
Michigan Train Truck NO. 8				

NBI Number:	XXXXXX	Rating Method:	LRFR
Bridge Number:	XXX-XX-XXXXX	Rating Program:	AASHTOWARE BrR 6.8.4.3002
DES Number:	XXXXXXX	Load Rater:	XXX on MM/DD/YYYY
Rating Type:	Deterioration	Reviewer:	XXX on MM/DD/YYYY

Legal & Routine Permit Loads

Number of Axles	Vehicle	Rating Factor	Load Capacity (tons)	Safe Posting Load (tons)
2	EV2	1.643	47.240	
3	EV3	0.888	38.184	
			Single Axle:	16.750
			Tandem:	27.528
			Gross:	38.184
varies	NRL	1.619		
2	H20-44	1.720	34.400	
2	Alternate Military	1.147	27.530	
3	HS20-44	1.720	61.920	
3	AASHTO Type 3	1.619	40.480	
4	SU4	1.311	35.400	
4	Toll Road Loading NO. 2			
5	AASHTO Type 3S2	1.776	63.940	
5	SU5	1.311	40.640	
5	Toll Road Loading NO. 1			
6	AASHTO Type 3-3	1.966	78.640	
6	Lane-Type	2.621	104.840	
6	SU6	1.311	45.560	
7	Special Toll Road Truck			
7 / 8	SU7	1.311	50.800	
8	Michigan Train Truck NO. 5			
11	Michigan Train Truck NO. 8			

Special Permit Loads

Number of Axles	Vehicle	Rating Factor	Load Capacity (tons)
11	Superload	1.321	170.409
13	Superload	1.375	183.563
14	Superload	0.994	173.950
19	Superload (305K)	1.376	209.840
19	Superload (480.09K)	0.893	214.360

LOAD RATING SUMMARY REPORT
for
CONDITION CHANGE / DETERIORATION

BRIDGE NUMBER

XXX-XX-XXXXX

NBI NUMBER

XXXXXX

NBI Number:	XXXXXX	Rating Method:	LRFR
Bridge Number:	XXX-XX-XXXXX	Rating Program:	AASHTOWARE BrR 6.8.4.3002
DES Number:	XXXXXXX	Load Rater:	XXX on MM/DD/YYYY
Rating Type:	Deterioration	Reviewer:	XXX on MM/DD/YYYY

Identificiation

Facility Carried:	I-65 NB/SB		
Features Intersected:	Emerson Avenue		
District:	03 - Greenfield	Toll Road:	No / not within 15 miles of gate
County:	49 - Marion	Extra Heavy Duty Highway:	No
Reference Post:	102+0.630		

Rehabilitation History

Year Built:	1963	**Description**
Year Rehabilitated:	1979	Contract X-XXXXX Rehab A: widening, new beams
	2015	DES XXXXXXX Rehab B: LMC overlay, replace barriers

Geometry and Material Summary

Structure Type(s):	CPCIB - Continuous Prestressed Concrete I-Beam Bridge		
Span Length:	45'-0", 55'-0", 45'-0"	O-to-O Coping:	77'-0"
Number of Girders:	12	Clear Roadway:	74'-0"
Girder Spacing:	11 @ 6'-6"	Left Overhang:	2'-9"
		Skew:	30° 00' 00" RT

Deck		**Girder**	
Original Thickness:	8"	Size/Type:	AASHTO Type II
Structural Thickness:	6.5"	Structural Steel Fy:	N/A
Additional Overlay:	1.75" - 0.5" mill = 1.25"	Reinforcing Fy:	40 ksi
Deck Concrete f'c:	3 ksi	Girder Concrete f'c:	5 ksi
Reinforcing Fy:	40 ksi	Girder Concrete f'ci:	4 ksi
Stay-in-Place Forms:	15 psf	Strand Material:	1/2" Ø (7W-270ksi) SR

Modeling Assumptions

Plans Available:	Yes	Deterioration	Included
Shop Drawings:	N/A	Future Wearing Surface:	Not Included
Inspection Date:	MM/DD/YYYY		

Additional Notes

Load rating incorporates deterioration as observed during INDOT mm/dd/yyyy inspection.

NBI Number:	XXXXXX	Rating Method:	LRFR
Bridge Number:	XXX-XX-XXXXX	Rating Program:	AASHTOWARE BrR 6.8.4.3002
DES Number:	XXXXXXX	Load Rater:	XXX on MM/DD/YYYY
Rating Type:	Deterioration	Reviewer:	XXX on MM/DD/YYYY

NBIS Items

(65) Inventory Rating Method:	8	(31) Design Load:	5
(66) Inventory Rating:	0.713	(70) Bridge Posting:	0
(63) Operating Rating Method:	8	(41) Structure Open/Posted/Closed:	B
(64) Operating Rating:	0.973	Tons Posted:	
		Date Posted/Closed:	

Deisgn Loads

Vehicle	Inventory Rating Factor	Inventory Load Capacity (tons)	Operating Rating Factor	Operating Load Capacity (tons)
HL-93	0.713	25.668	0.973	35.028
Fatigue				
H-20				
HS-20	0.842	30.312	1.092	39.312
HS-25				
Alternate Military				
Toll Road Loading NO. 2				
Toll Road Loading NO. 1				
Special Toll Road Truck				
Michigan Train Truck NO. 5				
Michigan Train Truck NO. 8				

NBI Number:	XXXXXX	Rating Method:	LRFR
Bridge Number:	XXX-XX-XXXXX	Rating Program:	AASHTOWARE BrR 6.8.4.3002
DES Number:	XXXXXXX	Load Rater:	XXX on MM/DD/YYYY
Rating Type:	Deterioration	Reviewer:	XXX on MM/DD/YYYY

Legal & Routine Permit Loads

Number of Axles	Vehicle	Rating Factor	Load Capacity (tons)	Safe Posting Load (tons)
2	EV2	0.834	23.980	
3	EV3	0.581	24.980	
			Single Axle:	13.970
			Tandem:	18.010
			Gross:	23.980
varies	NRL	0.945		
2	H20-44	1.106	22.120	22.120
2	Alternate Military	0.982	23.570	23.380
3	HS20-44	0.671	24.160	19.080
3	AASHTO Type 3	1.510	37.750	37.750
4	SU4	1.380	37.260	37.260
4	Toll Road Loading NO. 2			
5	AASHTO Type 3S2	1.177	42.370	42.370
5	SU5	1.215	37.670	37.670
5	Toll Road Loading NO. 1			
6	AASHTO Type 3-3	1.150	46.000	46.000
6	Lane-Type	0.763	30.520	26.460
6	SU6	1.088	37.810	37.810
7	Special Toll Road Truck			
7 / 8	SU7	0.982	38.050	37.750
8	Michigan Train Truck NO. 5			
11	Michigan Train Truck NO. 8			

Special Permit Loads

Number of Axles	Vehicle	Rating Factor	Load Capacity (tons)
11	Superload	0.638	82.300
13	Superload	0.648	86.510
14	Superload	0.548	95.900
19	Superload (305K)	0.632	96.380
19	Superload (480.09K)	0.525	126.020

LOAD RATING SUMMARY REPORT
for
CONDITION CHANGE / DETERIORATION

BRIDGE NUMBER

XXX-XX-XXXXX

NBI NUMBER

XXXXXX

NBI Number:	XXXXXX	Rating Method:	Engineering Judgment
Bridge Number:	XXX-XX-XXXXX	Rating Program:	N/A
DES Number:	XXXXXXX	Load Rater:	XXX on MM/DD/YYYY
Rating Type:	Deterioration	Reviewer:	XXX on MM/DD/YYYY

Identificiation

Facility Carried:	SR 44		
Features Intersected:	Br Little Blue River		
District:	03 - Greenfield	Toll Road:	No / not within 15 miles of gate
County:	73 - Shelby	Extra Heavy Duty Highway:	No
Reference Post:	44+0.278		

Rehabilitation History

Year Built:	1941	**Description**
Year Rehabilitated:	2000	Contract X-XXXXX Rehab A: wearing surface and bridge railing replaced.

Geometry and Material Summary

Structure Type(s):	RCS - Reinforced Concrete Slab Bridge		
Span Length:	20'-1"	O-to-O Coping:	44'-6"
Number of Girders:	N/A	Clear Roadway:	42'-0"
Girder Spacing:	N/A	Left Overhang:	N/A
		Skew:	45° 00' 00" LT

Deck		**Girder**	
Original Thickness:	Unknown	Size/Type:	N/A
Structural Thickness:	Unknown	Structural Steel Fy:	N/A
Additional Overlay:	Unknown	Reinforcing Fy:	N/A
Deck Concrete f'c:	2.5 ksi assumed	Girder Concrete f'c:	N/A
Reinforcing Fy:	33 ksi assumed	Girder Concrete f'ci:	N/A
Stay-in-Place Forms:	N/A	Strand Material:	N/A

Modeling Assumptions

Plans Available:	No	Deterioration	Included
Shop Drawings:	N/A	Future Wearing Surface:	Not Included
Inspection Date:	MM/DD/YYYY		

Additional Notes

In accordance with the Manual for Bridge Evaluation, Third Edition, 2017, Section 6.1.4 - Necessary details for this bridge are unavailable. A physical inspection of the bridge was performed by a qualified inspector and evaluated by a qualified engineer to establish an approximate load rating based on rational criteria. Legal and Permit ratings were derived from a simple span moment comparision of the HS20 vehicle. Shear was assumed to not control for this slab structure. Material properties have been assumed based on guidance given in the MBE.

NBI Number:	XXXXXX	Rating Method:	Engineering Judgment
Bridge Number:	XXX-XX-XXXXX	Rating Program:	N/A
DES Number:	XXXXXXX	Load Rater:	XXX on MM/DD/YYYY
Rating Type:	Deterioration	Reviewer:	XXX on MM/DD/YYYY

NBIS Items

(65) Inventory Rating Method:	0	(31) Design Load:	0
(66) Inventory Rating:	32.400	(70) Bridge Posting:	5
(63) Operating Rating Method:	0	(41) Structure Open/Posted/Closed:	A
(64) Operating Rating:	54.000	Tons Posted:	
		Date Posted/Closed:	

Deisgn Loads

Vehicle	Inventory Rating Factor	Inventory Load Capacity (tons)	Operating Rating Factor	Operating Load Capacity (tons)
HL-93				
Fatigue				
H-20				
HS-20	0.900	32.400	1.500	54.000
HS-25				
Alternate Military				
Toll Road Loading NO. 2				
Toll Road Loading NO. 1				
Special Toll Road Truck				
Michigan Train Truck NO. 5				
Michigan Train Truck NO. 8				

NBI Number:	XXXXXX	Rating Method:	Engineering Judgment
Bridge Number:	XXX-XX-XXXXX	Rating Program:	N/A
DES Number:	XXXXXXX	Load Rater:	XXX on MM/DD/YYYY
Rating Type:	Deterioration	Reviewer:	XXX on MM/DD/YYYY

Legal & Routine Permit Loads

Number of Axles	Vehicle	Rating Factor	Load Capacity (tons)	Safe Posting Load (tons)
2	EV2	1.830	52.613	
3	EV3	1.220	52.460	
			Single Axle:	
			Tandem:	
			Gross:	
varies	NRL			
2	H20-44	1.500	30.000	
2	Alternate Military	1.240	29.760	
3	HS20-44	1.500	54.000	
3	AASHTO Type 3	1.750	43.750	
4	SU4	1.500	40.500	
4	Toll Road Loading NO. 2			
5	AASHTO Type 3S2	1.910	68.760	
5	SU5	1.430	44.330	
5	Toll Road Loading NO. 1			
6	AASHTO Type 3-3	2.120	84.800	
6	Lane-Type			
6	SU6	1.360	47.260	
7	Special Toll Road Truck			
7 / 8	SU7	1.360	52.700	
8	Michigan Train Truck NO. 5			
11	Michigan Train Truck NO. 8			

Special Permit Loads

Number of Axles	Vehicle	Rating Factor	Load Capacity (tons)
11	Superload	0.930	119.970
13	Superload	1.090	145.515
14	Superload	0.770	134.750
19	Superload (305K)	1.180	179.950
19	Superload (480.09K)	0.900	216.041

R12-1

24” x 30”,

1.50" Radius, 0.63" Border, 0.38" Indent, Black on White;
"WEIGHT" D; "LIMIT" D; "10" E; "TONS" D;

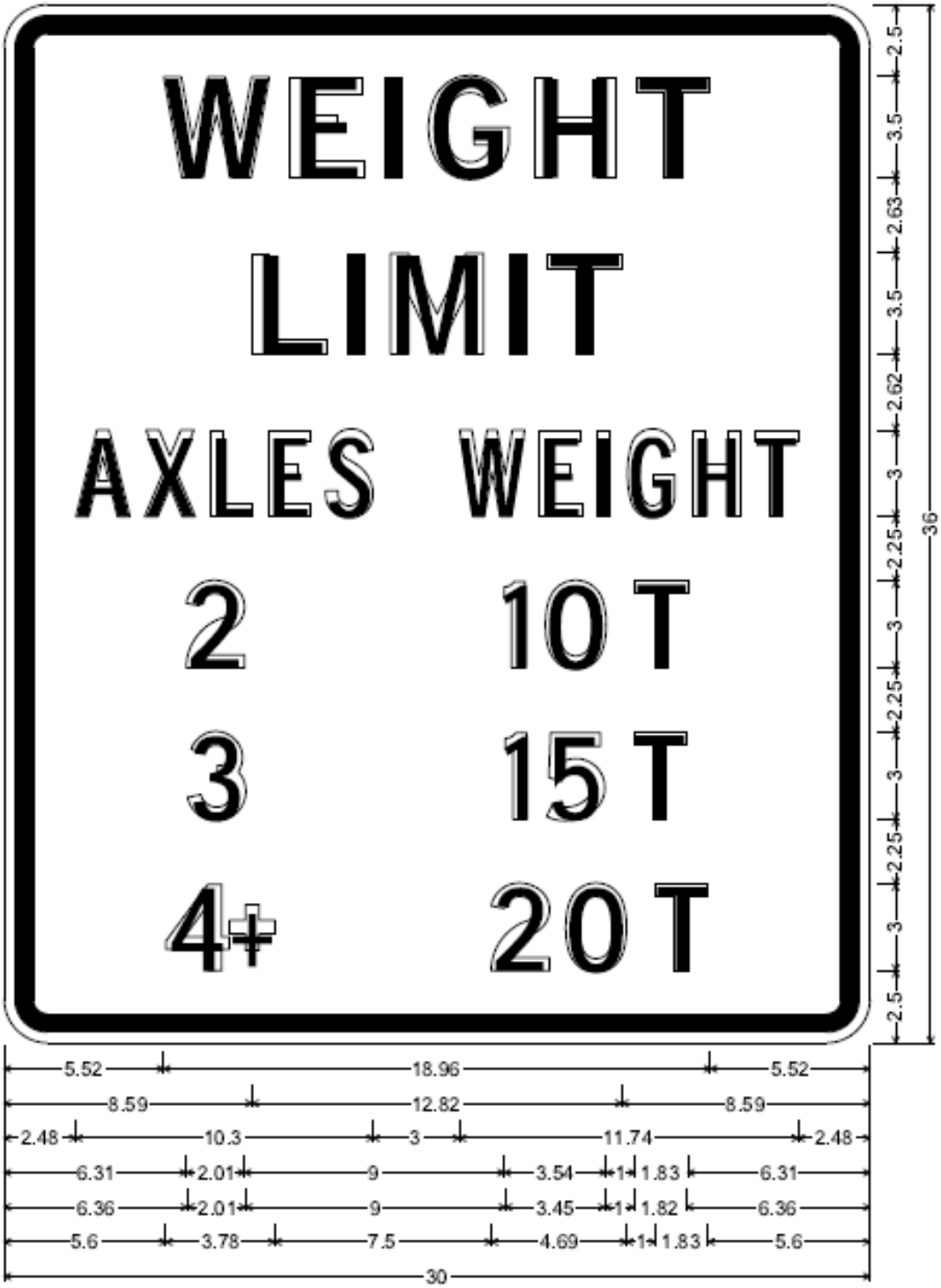
R12-1

36” x 48”

2.25" Radius, 0.88" Border, 0.63" Indent, Black on White;
"WEIGHT" D; "LIMIT" D; "10" E; "TONS" D;

R12-Y5

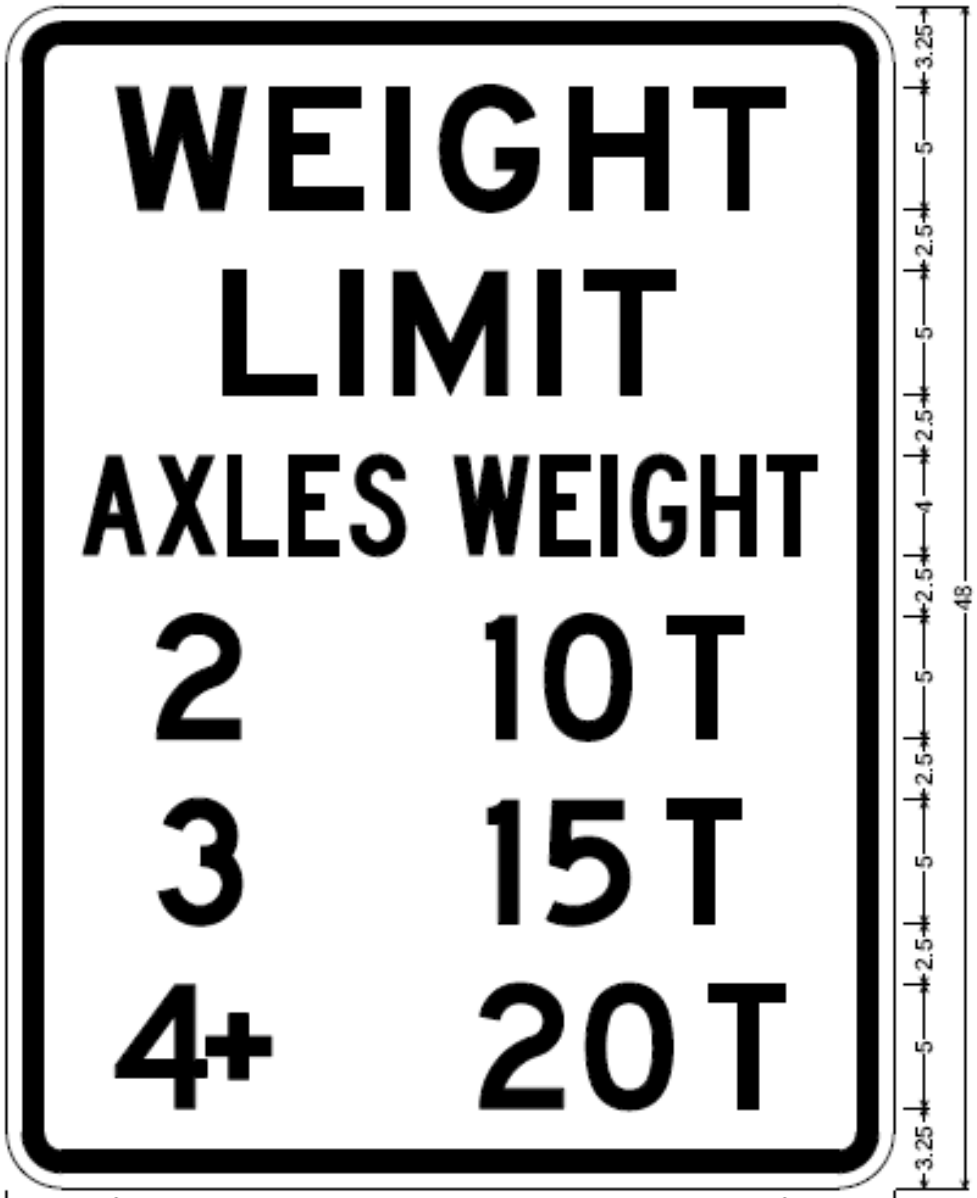
30” x 36”



1.50" Radius, 0.63" Border, 0.38" Indent, Black on White;
"WEIGHT" E; "LIMIT" E; "AXLES" C; "WEIGHT" C; "2" D; "10 T" D; "3" D; "15 T" D;
"4+" D; "20 T" D;

R12-Y5

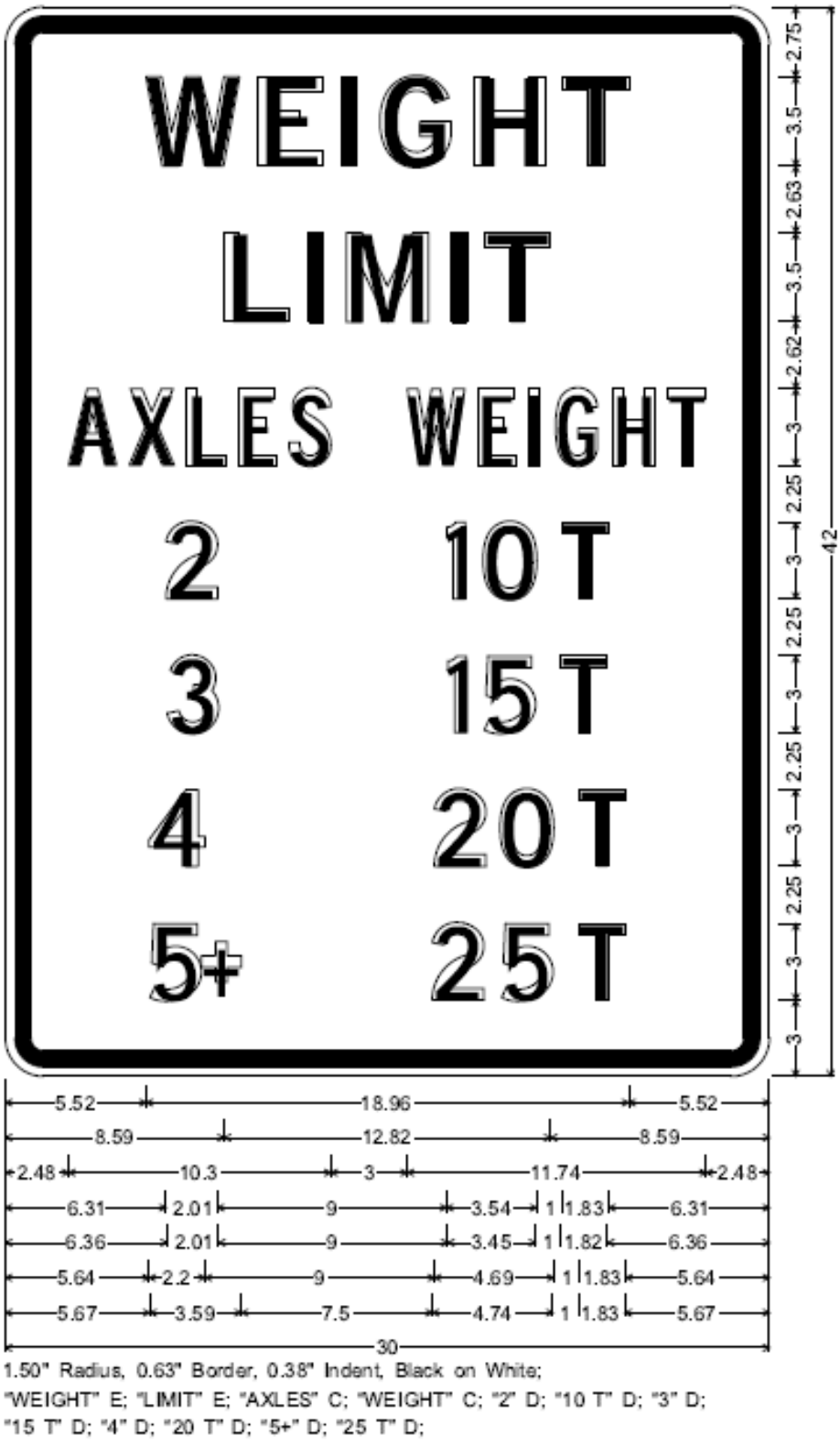
36” x 48”



2.25" Radius, 0.88" Border, 0.63" Indent, Black on White;
"WEIGHT" E; "LIMIT" E; "AXLES" C 75% spacing; "WEIGHT" C 75% spacing;
"2" D; "10 T" D; "3" D; "15 T" D; "4+" D; "20 T" D;

R12-Y5a

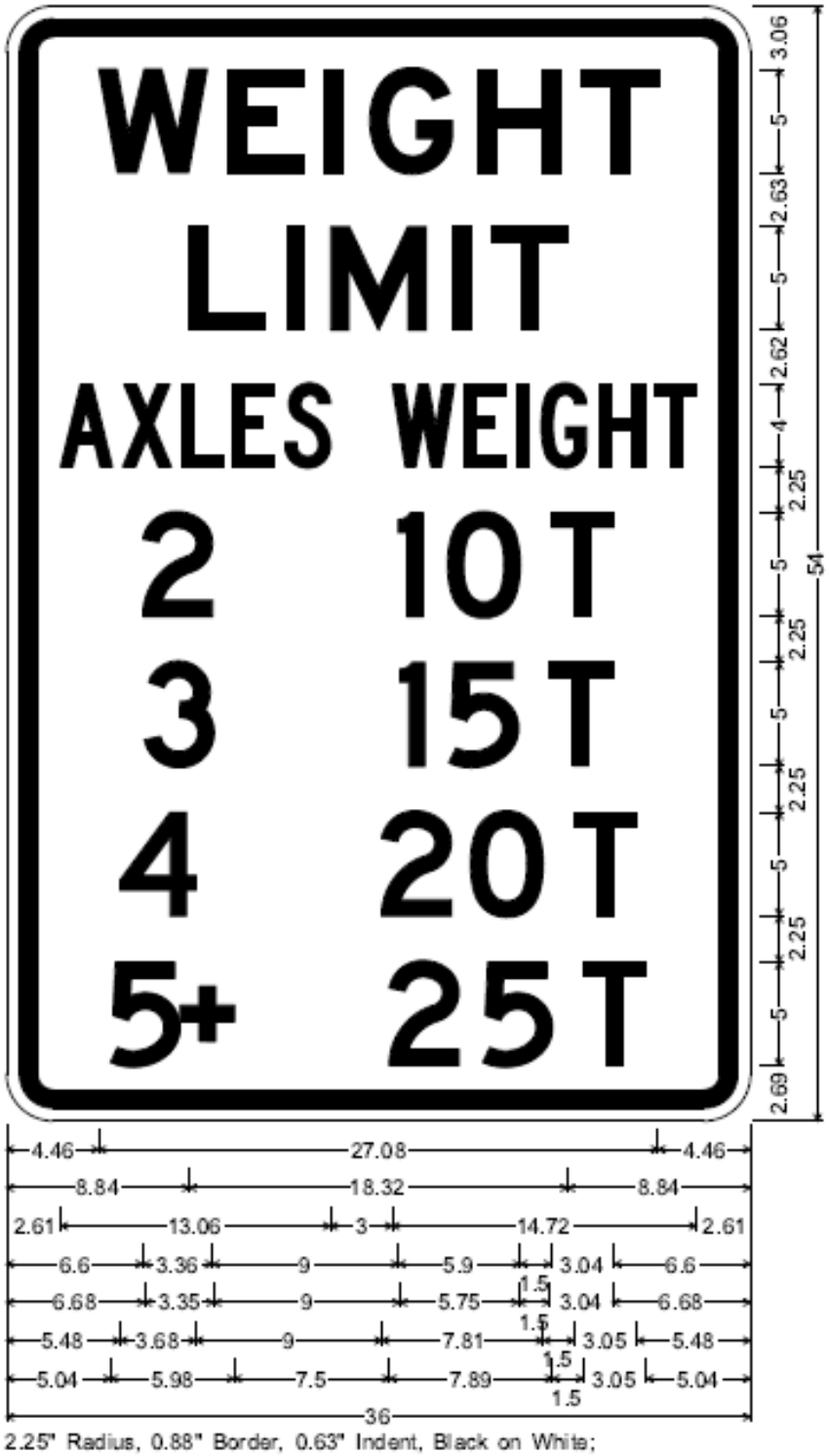
30” x 42”



1.50" Radius, 0.63" Border, 0.38" Indent, Black on White;
"WEIGHT" E; "LIMIT" E; "AXLES" C; "WEIGHT" C; "2" D; "10 T" D; "3" D;
"15 T" D; "4" D; "20 T" D; "5+" D; "25 T" D;

R12-Y5a

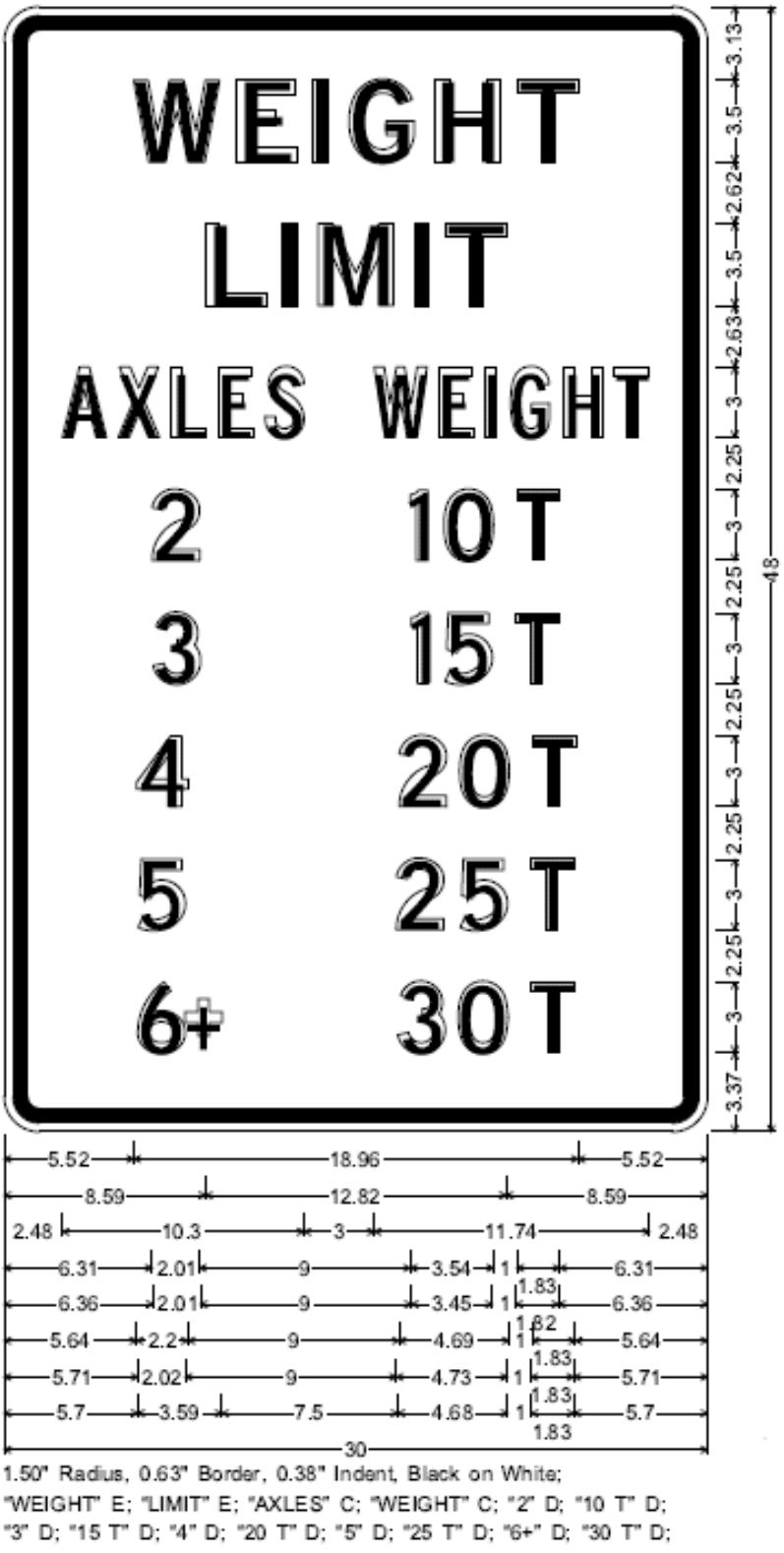
36” x 54”



2.25" Radius, 0.88" Border, 0.63" Indent, Black on White;
"WEIGHT" E; "LIMIT" E; "AXLES" C 75% spacing;
"WEIGHT" C 75% spacing; "2" D; "10 T" D; "3" D; "15 T" D; "4" D;
"20 T" D; "5+" D; "25 T" D;

R12-Y5b

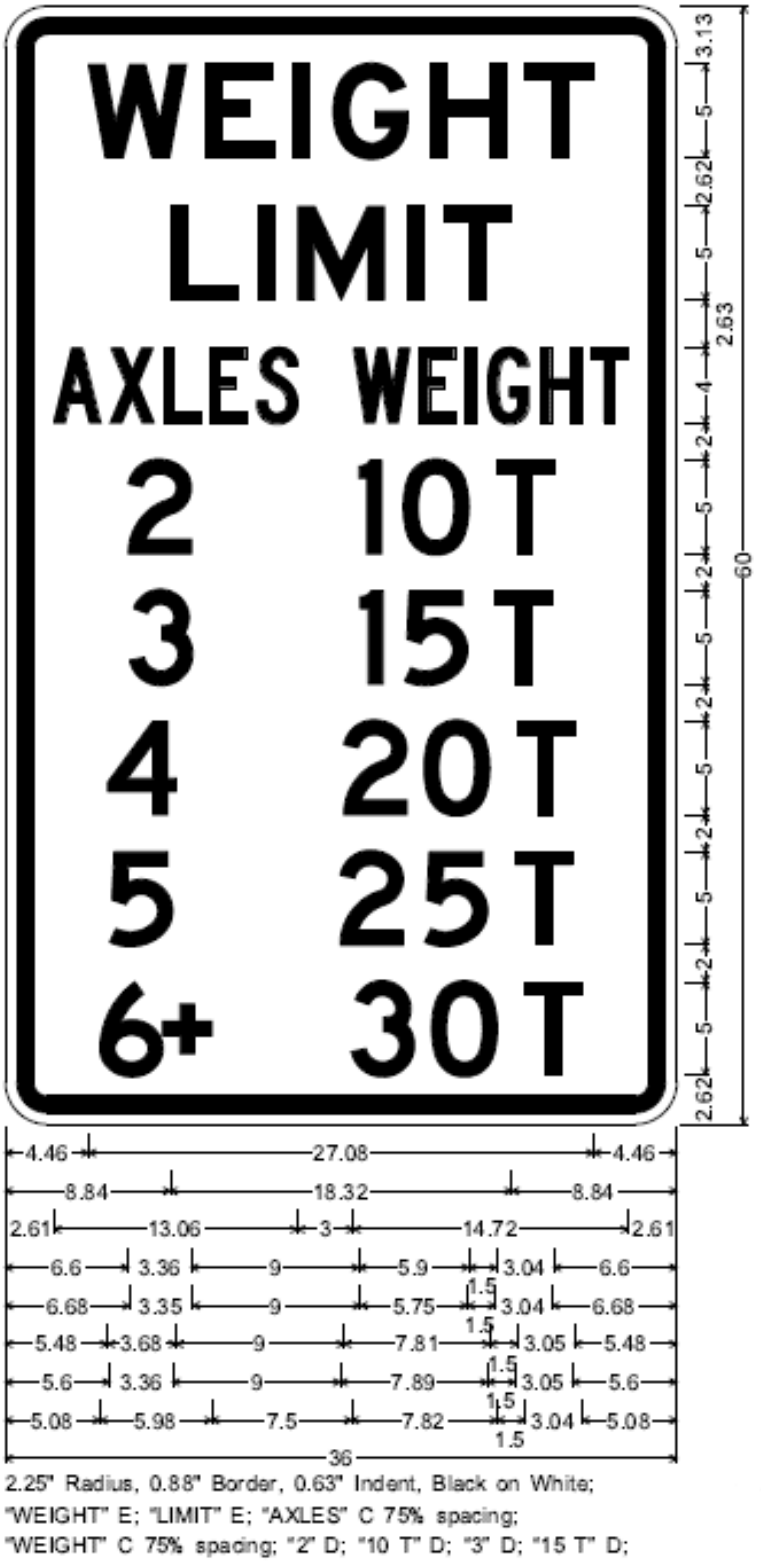
30” x 48”



1.50" Radius, 0.63" Border, 0.38" Indent, Black on White;
"WEIGHT" E; "LIMIT" E; "AXLES" C; "WEIGHT" C; "2" D; "10 T" D;
"3" D; "15 T" D; "4" D; "20 T" D; "5" D; "25 T" D; "6+" D; "30 T" D;

R12-Y5b

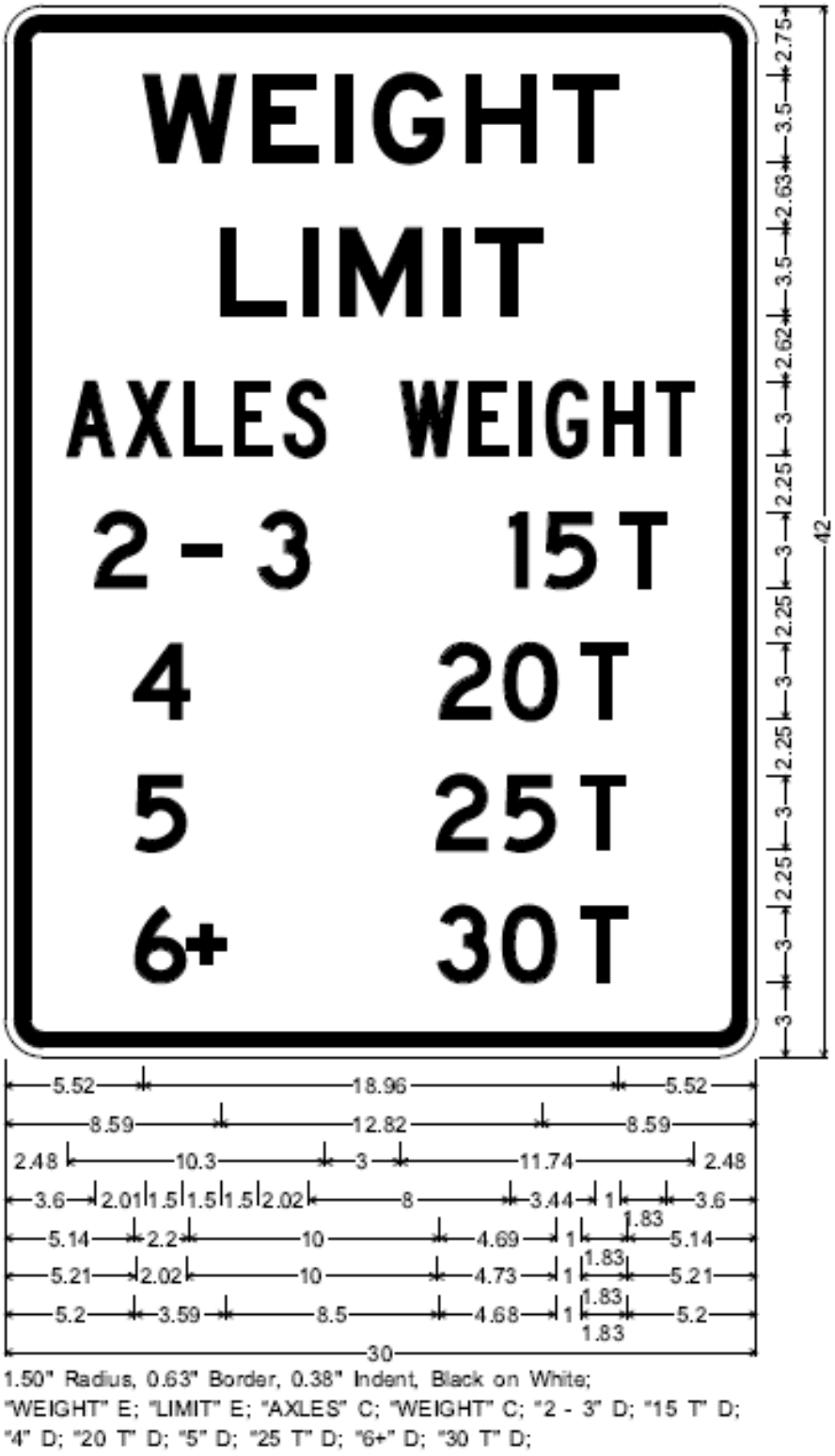
36” x 60”



2.25" Radius, 0.88" Border, 0.63" Indent, Black on White;
"WEIGHT" E; "LIMIT" E; "AXLES" C 75% spacing;
"WEIGHT" C 75% spacing; "2" D; "10 T" D; "3" D; "15 T" D;

R12-Y5c

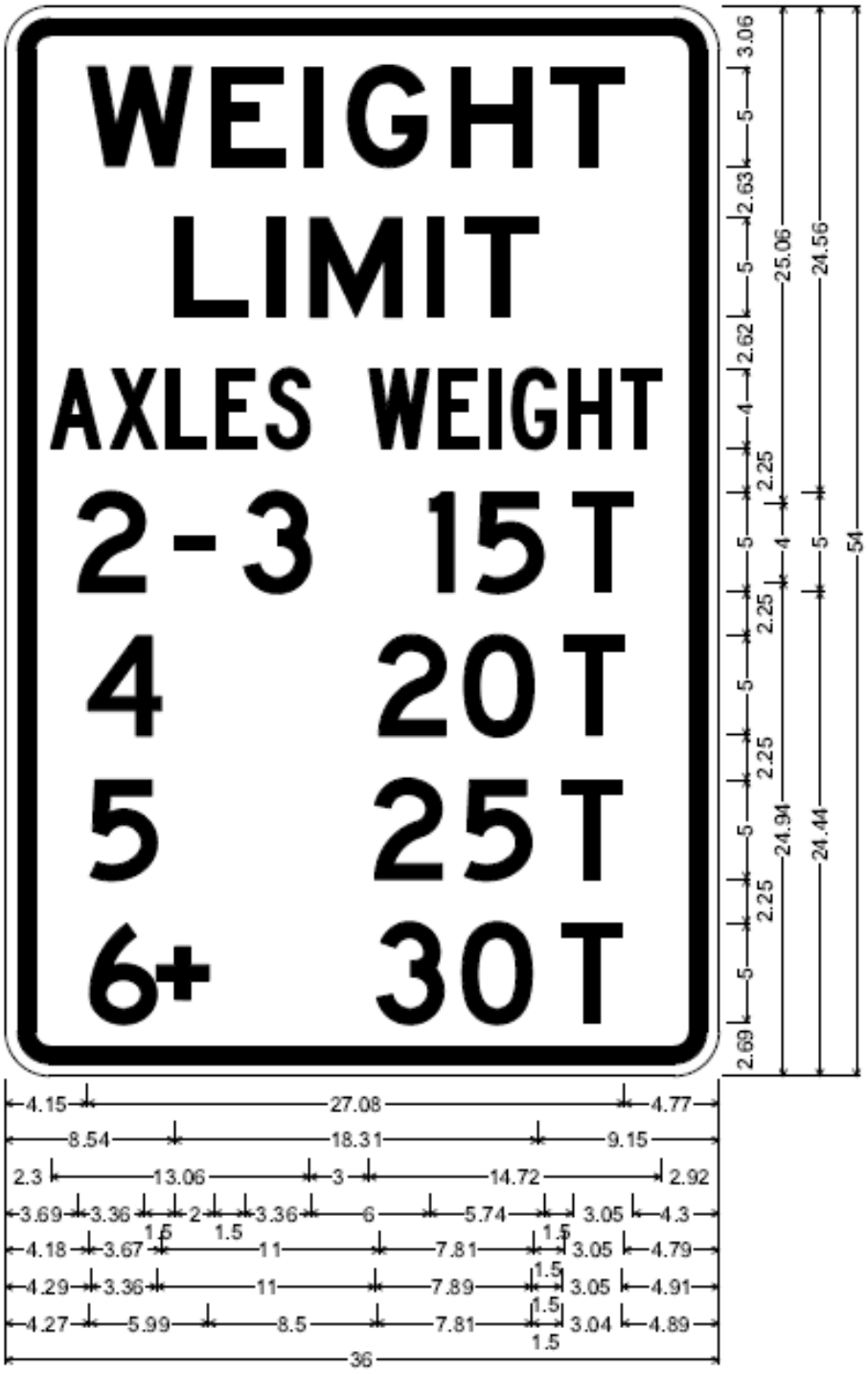
30” x 42”



1.50" Radius, 0.63" Border, 0.38" Indent, Black on White;
"WEIGHT" E; "LIMIT" E; "AXLES" C; "WEIGHT" C; "2 - 3" D; "15 T" D;
"4" D; "20 T" D; "5" D; "25 T" D; "6+" D; "30 T" D;

R12-Y5c

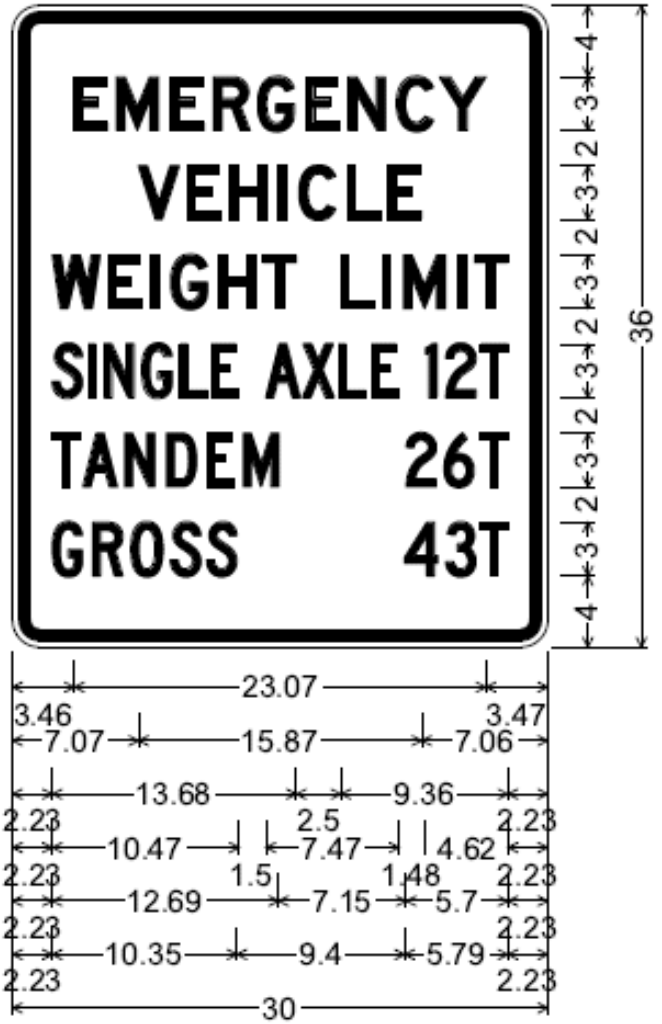
36” x 54”



2.25" Radius, 0.88" Border, 0.63" Indent, Black on White;
"WEIGHT" E; "LIMIT" E; "AXLES" C 75% spacing;
"WEIGHT" C 75% spacing; "2 - 3" D; "15 T" D; "4" D; "20 T" D; "5" D;
"25 T" D; "6+" D; "30 T" D;

R12-7

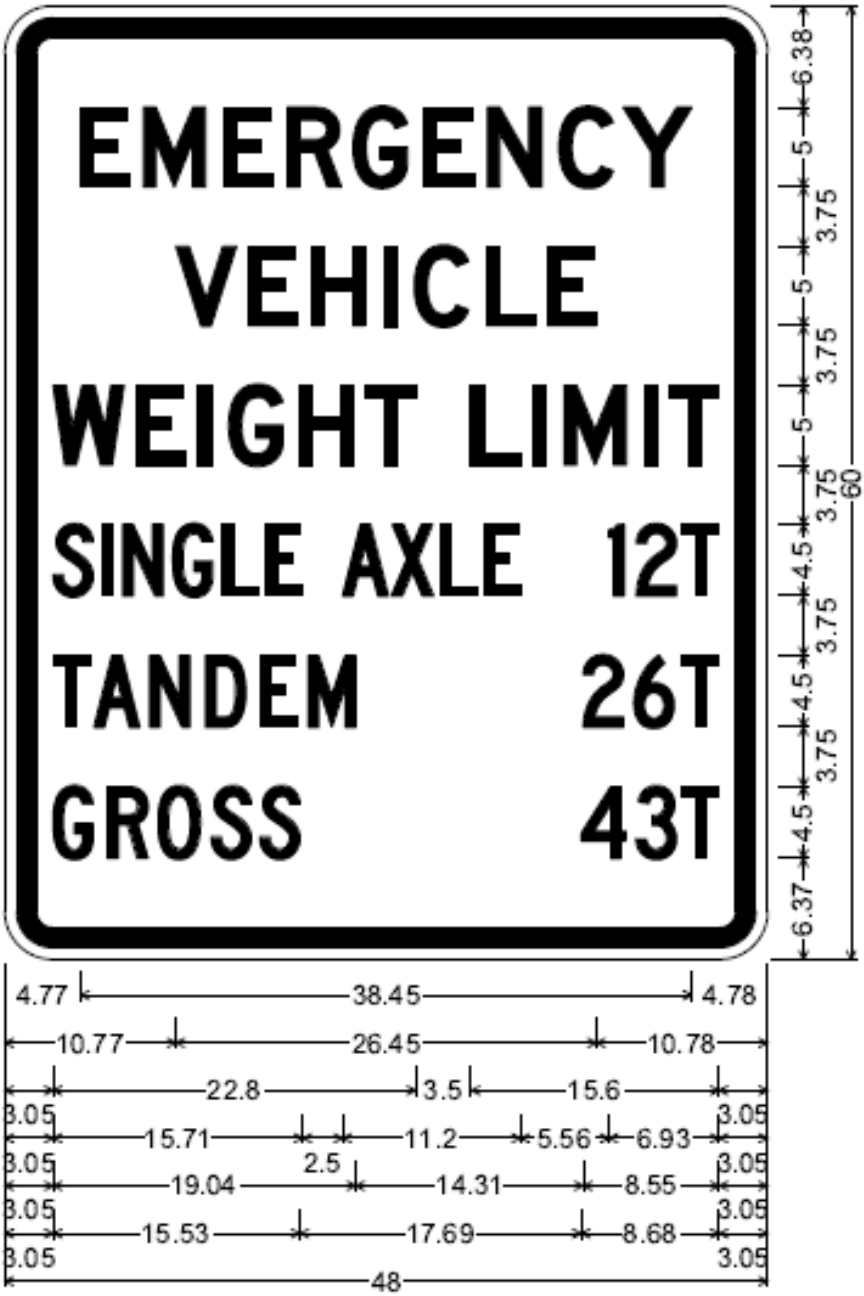
30” x 36”



1.50" Radius, 0.63" Border, 0.38" Indent, Black on White;
"EMERGENCY", D 2K;
"VEHICLE", D 2K;
"WEIGHT LIMIT", D 2K;
"SINGLE AXLE", C 2K 70% spacing;
"12T", C 2K; "TANDEM", C 2K;
"26T", C 2K; "GROSS", C 2K;
"43T", C 2K;

R12-7

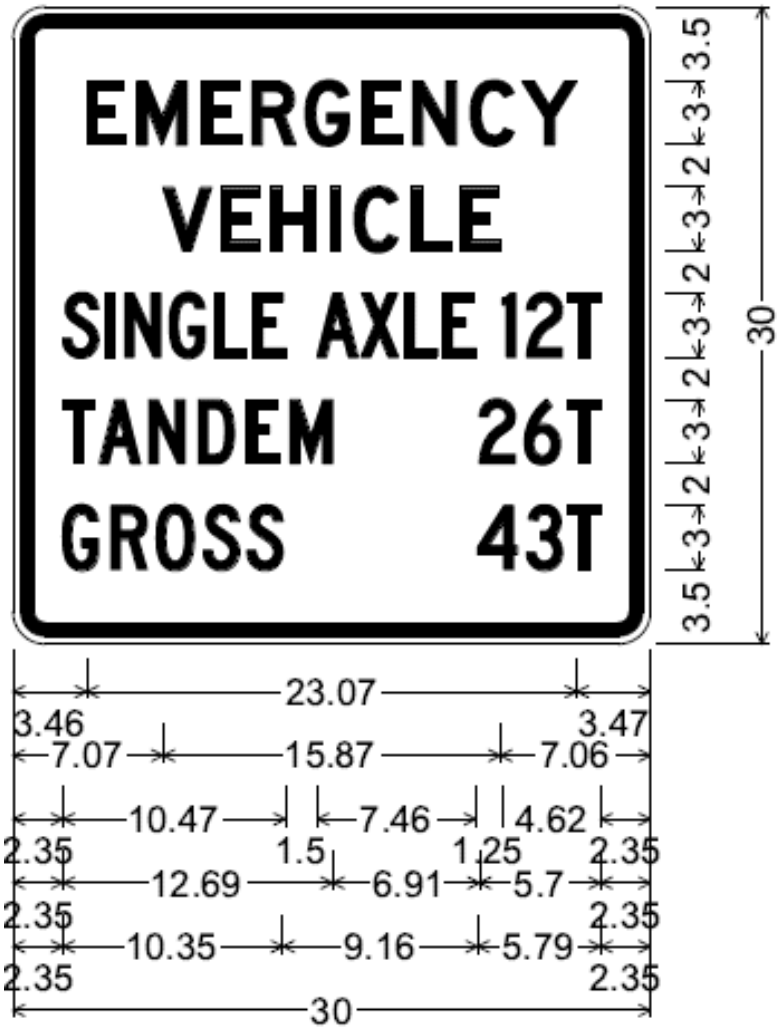
48” x 60”



3.00" Radius, 1.25" Border, 0.75" Indent, Black on White;
"EMERGENCY", D 2K; "VEHICLE", D 2K;
"WEIGHT LIMIT", D 2K;
"SINGLE AXLE", C 2K 70% spacing; "12T", C 2K;
"TANDEM", C 2K; "26T", C 2K; "GROSS", C 2K;
"43T", C 2K;

R12-7aP

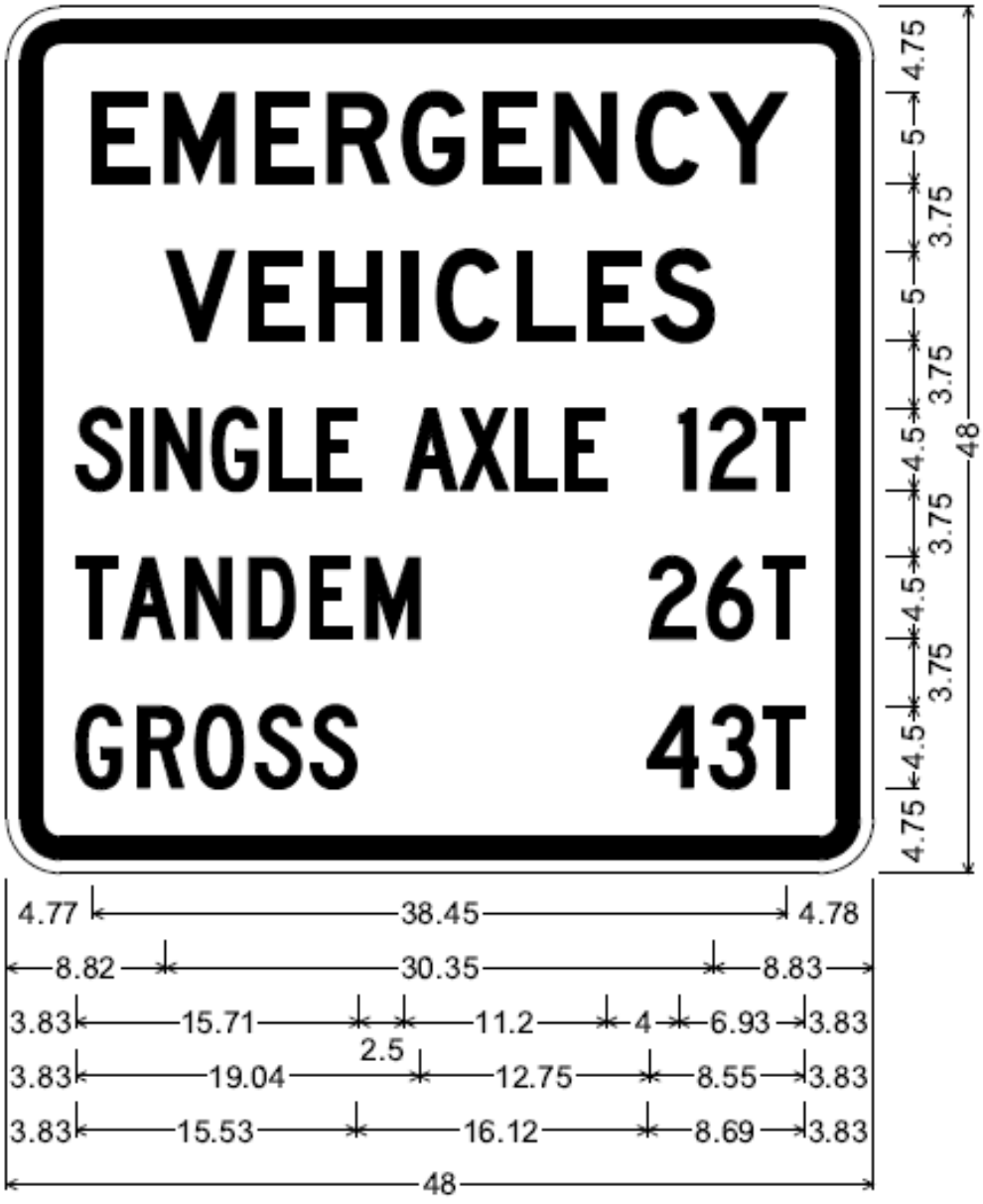
30” x 30”



1.50" Radius, 0.63" Border, 0.38" Indent, Black on White;
"EMERGENCY", D 2K;
"VEHICLE", D 2K;
"SINGLE AXLE", C 2K 70% spacing;
"12T", C 2K; "TANDEM", C 2K;
"26T", C 2K; "GROSS", C 2K;
"43T", C 2K;

R12-7aP

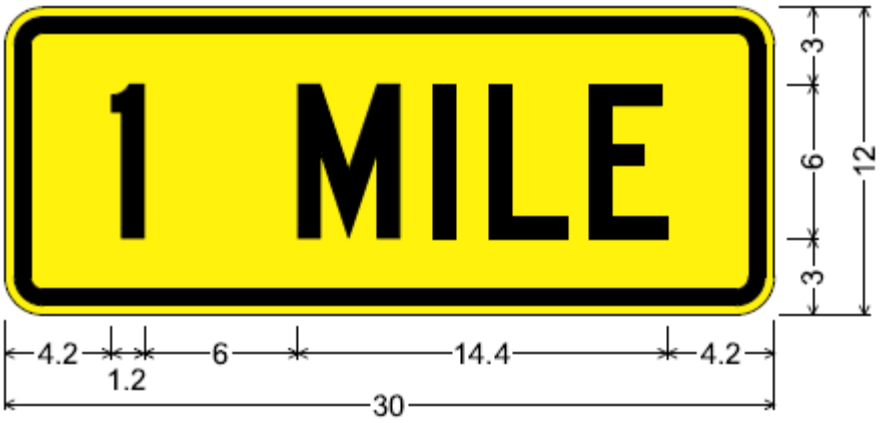
48” x 48”



3.00" Radius, 1.25" Border, 0.75" Indent, Black on White;
"EMERGENCY", D 2K; "VEHICLES", D 2K;
"SINGLE AXLE", C 2K 70% spacing; "12T", C 2K;
"TANDEM", C 2K; "26T", C 2K; "GROSS", C 2K;
"43T", C 2K;

W16-3aP

30” x 12”,



W16-3aP_30x12;
1.5" Radius, 0.6" Border, 0.4" Indent, Black on Fluorescent yellow;
"1 MILE", C 2K;

LOAD AND RESISTANCE FACTOR (LRFR) METHOD

Generalized live load factors for the Strength I limit state are given in **Table 6A.4.4.2.3c-1** for use with LRFD multi-lane distribution factors or with refined methods of analysis for the load rating for emergency vehicles specified in FAST Act Emergency Vehicles Application on structures other than buried structures. The load factors have been calibrated for EV2 and EV3 based upon site traffic conditions and the estimated number of EV crossings per day.

If, in the Engineer's judgment, an increase in the live load factor is warranted due to conditions or situations not accounted for in the research (NCHRP 20-07 Task 410) when determining the safe legal load, the Engineer may increase the factors in **Table 6A.4.4.2.3c-1**.

Table 6A.4.4.2.3c-1 - Generalized Live Load Factors γ_L for FAST Act Emergency Vehicles

EV Frequency	Traffic Volume (One Direction)	Live Load Distribution	EV2	EV3
10 EV crossings per day	ADTT < 1000 free flowing	Two or more lanes DF[a]	1.10	1.10
	ADTT > 6000 free flowing		1.40	1.10
	ADTT > 6000 congested		1.50	1.20
10 EV crossings per day	ADTT < 1000 free flowing	From Refined Analysis	1.20	1.15
	ADTT > 6000 free flowing		1.50	1.35
	ADTT > 6000 congested		1.65	1.45
1 EV crossing per day	ADTT < 1000 free flowing	Two or more lanes DF[a]	1.10	1.10
	ADTT > 6000 free flowing		1.20	1.10
	ADTT > 6000 congested		1.30	1.10
1 EV crossing per day	ADTT < 1000 free flowing	From Refined Analysis	1.20	1.10
	ADTT > 6000 free flowing		1.30	1.20
	ADTT > 6000 congested		1.45	1.30

Notes:
[a] DF = LRFD-distribution factor. When one-lane distribution factor is used, the built-in multiple presence factor should be divided out.

When bridges crossed by Emergency Vehicles are evaluated using a refined analysis, the same live load factor given in **Table 6A.4.4.2.3c-1** shall be applied on the Emergency Vehicle and on the governing AASHTO or state legal truck placed in the adjacent lane (with only one EV and legal truck on the span). Lane load is not required for simple spans up to 300 ft. A lane load equal to 0.20 klf is applied for all continuous spans in combination with only one EV on one span of the entire bridge in one lane and only one governing legal truck in the second lane. No lane load is applied in the second lane with the legal truck. The dynamic amplification factor is applied on the total live load effect.

Load factors given in **Table 6A.4.4.2.3c-1** shall also be used for the load rating of floor beams and transverse members.

LOAD FACTOR RATING (LFR) METHOD

Operating level load factors to be used for the load factor method for load rating FAST Act Emergency Vehicles are provided in **Table 6B.4.3-1.**

Table 6B.4.3-1 Operating Level Live Load Factors for FAST Act Emergency Vehicles

EV Frequency	Traffic Volume (One Direction)	Live Load Distribution	EV2	EV3
10 EV crossings per day	ADTT < 1000 free flowing	Two or more lanes DF[b]	1.10	1.10
	ADTT > 6000 free flowing		1.40	1.10
	ADTT > 6000 congested		1.50	1.20
1 EV crossing per day	ADTT < 1000 free flowing	Two or more lanes DF[b]	1.10	1.10
	ADTT > 6000 free flowing		1.20	1.10
	ADTT > 6000 congested		1.30	1.10

[b] = AASHTO STD Specs.