L. Kersling

JOINT MEETING

TROY CITY COUNCIL
and
TROY PLANNING COMMISSION

June 4, 1991
7:30 p.m.
Lower Level Conference Room

AGENDA

I. Proposed Zoning Ordinance Text Amendment - Commercial Vehicle Parking Provisions in Residential Districts

II. Proposed Revision to Engineering Design Standards - Street Widening and Passing Lane Requirements

III. Adjourn

May 22, 1991

TO: Troy City Planning Commission

FROM: Laurence G. Keisling, Planning Director

SUBJECT: June 1991 Meeting Schedule

As indicated at the May 14, 1991 Regular Meeting, there will be no Special/Study Meeting on Tuesday May 28, 1991. The next meeting will be a Special/Joint Meeting with the City Council on Tuesday evening June 4, 1991, at 7:30 P.M., in the Lower Level Conference Room. The two subjects to be discussed at that time are as follows:

1. PROPOSED ZONING ORDINANCE TEXT AMENDMENT - Commercial Vehicle Parking Provisions in Residential Districts

   You will recall the extensive discussions and Public Hearings held regarding this matter, and what was then the companion matter related to "Outdoor Storage in Residential Districts". The City Council chose to take no action on the text proposals at that time.

   The discussion at the Joint Meeting is intended to relate only to the provisions covering the "Parking of Commercial Vehicles in Residential Districts". The proposed text, as most recently considered, is attached to the enclosed memorandum of March 15, 1991. The particular area or subject of concern is proposed Section 40.66.00 of the Zoning Ordinance.

2. ACCELERATION/DECELERATION AND PASSING LANE REQUIREMENTS

   John Robbins, our Transportation Engineer, was present at the March 26, 1991 Study Meeting in order to discuss this matter with you. The enclosed excerpt from the minutes of that meeting, along with John's memorandum of February 19, 1991, provide background for the discussion which is proposed to occur at the Joint Meeting.

The Joint Meeting will, of course, occur on the evening normally scheduled for your Study Meeting. The next Planning Commission Regular Meeting will then be held on June 14, 1991.

Respectfully,

Larry Keisling

Laurence G. Keisling
Planning Director

copies: Frank Gerstenecker, City Manager
John Szerlag, Assistant City Manager

March 15, 1991

TO: Frank Gerstenecker, City Manager

FROM: Laurence G. Keisling, Planning Director

SUBJECT: Separation of "Commercial Vehicle Parking" Provisions from "Outdoor Storage" Provisions in Residential Districts

In my previous memorandum of February 20, 1991, I summarized the considerable discussion and the Public Hearings which have occurred in relation to the proposed Zoning Ordinance Text Amendments dealing with outdoor storage of various kinds of vehicles, boats, etc., on residential property, as well as the provisions dealing with the parking of Commercial Vehicles in Residential Districts. In the course of many discussions of these matters, it has become clear that many people are confusing the two types of restrictions or provisions which are being discussed. The provisions related to the parking of Commercial Vehicles discuss only the carrying capacity or gross vehicle weight of such vehicles, along with their definition, and contain no restrictions as to where on a residential parcel these vehicles can be parked. On the other hand, the locational criteria relate only to the outdoor storage or parking of items such as boats, trailers, motor homes, etc.

In an effort to clarify this matter, I am recommending that, as the City Council continues to consider these matters, they do so on the basis of a further revised text which would separate the outdoor storage provisions from those related to commercial vehicle parking. In this regard, the proposed series of Zoning Ordinance Text Amendments, including the recommendations previously made by staff, would read as indicated on the attached page dated March 14, 1991.

The separation of subjects as indicated in this text will hopefully help to make future discussions of this matter more effective. Please advise as to any further information or assistance which I might provide regarding this proposal.

Respectfully submitted,

Laurence G. Keisling
Planning Director

LGK/eb

copies: John Szerlag, Assistant City Manager
Gary Shripka, Chief Building Inspector
Peter Letzmann, City Attorney

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PROPOSED ZONING ORDINANCE TEXT AMENDMENT
(As Recommended by City Staff)

Amend Section 40.65.00, and Succeeding Sub-Sections, as follows: (Underlining, other than Section Titles, denotes changes.)

40.65.00 OUTDOOR STORAGE IN RESIDENTIAL DISTRICTS:
The outdoor storage or parking of any airplane, antique or racing automobile, boat, float, trailer, trailer coach, camping trailer, motorized home, demountable travel equipment of any type adaptable to light duty trucks, and other equipment or vehicles of a similar nature, shall be prohibited for a period greater than ~~forty-eight (48)~~ seventy-two (72) hours ~~in~~ within any ninety-six (96) hour time period in all Residential Districts, except where expressly permitted by other provisions of this Chapter. ~~unless~~ Storage of the above vehicles and/or equipment is permitted for a period greater than seventy-two (72) hours if the following minimum conditions are met:

40.65.02 All such vehicles or equipment shall be placed within a completely enclosed building or located behind ~~the front face of the principal building~~ any and all faces of the principal building facing any front yard, but not closer than three (3) feet to any side or rear lot line.

40.63.03 Storage or parking shall be limited to a lot or parcel of land upon which is located an inhabited dwelling unit and the vehicle or equipment is owned by the occupant.

40.65.04 Trailer coaches and other vehicles or equipment intended or adaptable for sleeping purposes shall remain unoccupied and shall not be connected to sanitary sewer facilities, or have a fixed connection to electricity, water or gas.

~~40.65.05 Parking of not more than one Commercial Vehicle of a rated capacity not to exceed one ton is permitted.~~

40.66.00 PARKING OF COMMERCIAL VEHICLES IN RESIDENTIAL DISTRICTS

Parking of not more than one Commercial Vehicle, within or outside of a building is permitted on a residential lot or parcel. However, in no instance shall a Commercial Vehicle having a Gross Vehicle Weight Rating in excess of five (5) tons be permitted to be parked or stored in a Residential District. The Gross Vehicle Weight Rating is the total maximum weight of the vehicle, it's equipment, passengers and cargo.

Amend Section 04.20.32 to read as follows:

04.20.32 COMMERCIAL VEHICLE:
Commercial Vehicle includes all motor vehicles used for the transportation of passengers for hire, or constructed and used for commercial business or service, or for the commercial transportation of goods, wares or merchandise, and/or all motor vehicles designed and used for drawing other vehicles and not so constructed as to carry any load thereon.

Re-number present Sections 04.20.32 and 04.20.33 to become Sections 04.20.33 and 04.20.34, respectively.

March 20, 1991

TO: Frank Gerstenecker, City Manager

FROM: John Szerlag, Assistant City Manager/Services

SUBJECT: Operational Definition "Commercial Vehicle" for Proposed Zoning Ordinance Text Amendment

Section 40.65.05 of our current Outdoor Storage and Commercial Vehicle Ordinance reads as follows: "Parking of not more than one commercial vehicle of a rated capacity not to exceed one (1) ton, within or outside of a building, is permitted." This one (1) ton limitation was increased from a half (1/2) ton rated capacity in the mid 1970's. The term one half (1/2) ton or one (1) ton capacity used to refer to the maximum cargo weight a truck could carry, i.e., a one (1) ton truck could carry one (1) ton of cargo.

The rated capacity of commercial vehicles by tonnage is obsolete. Instead, auto manufacturers use the Gross Vehicle Weight Rating of vehicles, known as GVWR. The Gross Vehicle Weight Rating is operationally defined as the total maximum weight of the vehicle, its equipment, passengers and cargo.

The Planning and Building Departments propose an Ordinance text amendment which replaces the obsolete tonnage capacity with the Gross Vehicle Weight Rating. The proposed text indicates that commercial vehicles having a Gross Vehicle Weight Rating in excess of five (5) tons are not permitted to be parked or stored in a residential district.

The problem facing us from an enforcement perspective is that there is not a direct relationship between a so-called "tonnage capacity" and a specific Gross Vehicle Weight Rating. Thus a truck currently defined as a one (1) ton vehicle by our Building Department can have a GVWR ranging from 8600 pounds to 15,000 pounds depending on type of suspension and braking system.

Allow me to further elaborate by example. Attachment I is a brochure for the 1991 Ford F-350 and E-350 lines; models considered by our Building Department as having a one (1) ton rated capacity. Shown in this brochure is a tow truck, stake truck, step van and ambulance. These vehicles have a GVWR range from 9,400 pounds to 11,500 pounds. While not indicated in the brochure, the F-350 is also available in a dump truck model. (The F-350 on page four is the stake truck.)

Attachment II is a brochure for the 1991 compact and full-size Chevy trucks. Attachment III is the Chevy truck brochure for 1991 commercial vehicles. Page 40 of this brochure uses the old terminology of tonnage for models indicated on this page. The 3500 Series is considered a "one (1) ton vehicle."

The three-page, fold-out spreadsheet contained in Attachment III delineates the Gross Vehicle Weight restriction range for each type of Chevy commercial vehicle. For ease of comparison, I had the Building

Department indicate their interpretation of tonnage capacity for each type of vehicle listed. As can be seen, one (1) ton vehicles have a GVWR ranging from 8600 pounds to 14,100 pounds, excluding motor homes which have a GVWR of 16,000 pounds.

What this all boils down to is that a given style truck can have a GVWR of less than 10,000 pounds and an identical style of truck can have a GVWR greater than 10,000 pounds, depending on suspension and brake system. Thus modification of Commercial Vehicle Ordinance from a "one (1) ton" capacity to a GVWR of not greater than 10,000 pounds is more restrictive than our current Ordinance. However, it is important to note that some pick-up trucks in Attachments II and III can be listed as a one half (1/2) ton, three quarter (3/4) ton or one (1) ton truck. Was it the intent of the Zoning Ordinance to allow for one (1) ton pick-up trucks at the exclusion of one-ton dump trucks, tow trucks, stake trucks and step vans?

I do not have an answer for the above question and therefore recommend returning this matter to the Planning Commission for further consideration. However, I recommend that we proceed with that portion of the Proposed Ordinance Text Amendment pertaining to Outdoor Storage of Recreational Vehicles.

Respectfully submitted,

John Szerlag
Assistant City Manager/Services

cc: L. G. Keisling
G. A. Shripka

#279-JS/ACM:gl

April 8, 1991

TO: John Szerlag, Assistant City Manager

FROM: Laurence G. Keisling, Planning Director

SUBJECT: One (1) Ton Limit on the Parking of Commercial Vehicles

You have inquired as to when the limit on the parking of commercial vehicles in residential districts was increased from it's previous level to the present one (1) ton limit.

Review of our records indicates that on July 11, 1977 the City Council adopted a series of amendments to the text of the Zoning Ordinance under the broad category of "Commercial Districts and Related Provisions" (Resolution 77-638). Among the provisions included in this amendment was the addition of what was then Section 40.47.04 to the Zoning Ordinance. That Section established the language which is currently in place as follows:

"40.47.04 Parking of not more than one commercial vehicle of a rated capacity not to exceed one (1) ton is permitted."

Prior to that time the Zoning Ordinance limitation on such vehicles was established only through the "Private Garage" definition. Enforcement through a definition was and is felt to be improper. The previous definition read as follows:

"02.20.65 GARAGE, PRIVATE: An accessory building for parking or storage of not more than that number of vehicles as may be required in connection with the permitted use of the principal building. In residential areas the storage of not more than one commercial vehicle of a rated capacity not exceeding three fourths (3/4) ton is permitted."

Following the July 1977 action, the rated capacity limit was thus increased from three fourths (3/4) ton to the present one (1) ton limit.

Respectfully,

Larry Keisling

Laurence G. Keisling
Planning Director

LGK/eb

copies: Frank Gerstenecker, City Manager
Peter Letzmann, City Attorney
Gary Shripka, Chief Building Inspector

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6. ACCELERATION/DECELERATION AND PASSING LANE REQUIREMENTS

Mr. Keisling explained that the City Council is presently considering proposals to modify and clarify the standards or requirements related to the provision of acceleration/deceleration and left-turn or passing lanes. The major concerns relate to the development of standards which would properly and reasonably indicate those situations under which these types of road improvements will be required. The City is also interested in assuring that the requirements take into consideration potential as well as present conditions, land uses, etc.

Following discussion of this matter at their regular meeting of March 18, 1991, the City Council referred the matter to the Planning Commission for review and comment. It is intended that this matter will be further discussed at the proposed Joint City Council-Planning Commission meeting, now scheduled for June 4, 1991.

John Robbins, City Transportation Engineer, reviewed the history of his efforts in attempting to develop standards for the placement of acceleration, deceleration and passing lanes. He noted the relatively simply approach used by the State and Oakland County, and indicated that part of the purpose of the proposed revised standards were to simplify the language. He then cited some examples where the current standards would not require approach improvements, which might otherwise be felt to be necessary.

The Commission discussed various portions of the proposed standards, and some of their impressions as to the effects of acceleration/deceleration and passing lanes.

P/C
3-26

May 28, 1991

TO: Frank Gerstenecker, City Manager

FROM: John E. Robbins, Transportation Engineer

SUBJECT: Additional Comments - Proposed Engineering Design Standards Revision for Acceleration/Deceleration and Left Turn Passing Lane Widenings

The current Engineering Design Standard for lane widening as approved by Council Resolution #87-49 and dated January 19, 1987 is subject to various interpretations. In addition, the language exempts a number of major streets by specifying laneage and volume, plus it does not consider future growth. The ordinance is not clear on what constitutes the peak hour. It could be the peak hour of the street or the peak hour of the traffic generator. For example, the peak hour on Big Beaver from Adams to Livernois is from 5:00 p.m. to 7:00 p.m. when vehicles are exiting the generators of traffic, not entering. In the case of left turn lane widening the ordinance states, . . . peak hour left turns into the site.

The ordinance also specifies the 85th percentile (85P) of speed. This is the speed generally used to establish speed limits. However, it is unlikely that the required 85th percentile of speed threshold of 40 mph will be achieved on any major street during the peak street traffic volume. Technically all streets would then be exempted from the ordinance.

Examples of variations in peak hour of street traffic vs. generator traffic were expressed in a previous memo on February 19, 1991.

Under the current ordinance, the following streets are exempt from the ordinance due to traffic volume.

Coolidge Road, Maple to South Boulevard
Crooks Road, Big Beaver to I-75
Crooks Road, Square Lake to Bridge Park
Livernois, Big Beaver to Wattles
Rochester Road, 14 Mile to Stephenson Highway
John R, Big Beaver to Long Lake
Dequindre Road, Big Beaver South for Approximately 1000 Feet
Dequindre Road, North and South of Maple Road for Approximately 1000 Feet
Long Lake Road, East and West of Rochester Road for Approximately 1000 Feet

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The existing ordinance also specifies the peak hour trips generated by the site but does not differentiate between inbound and outbound trips. The lane widening is generally related to the inbound trip. The attached excerpt from the ITE Site Impact Traffic Evaluation is an example that clarifies some of the questions raised in the existing City ordinance. The numbers cited can be modified to the needs of local jurisdiction. However, the parking space requirement in the proposed ordinance is subject to the least interpretation.

Respectfully submitted,

John E. Robbins, P.E.
Transportation Engineer

JER/ct

cc: John Szerlag, Assistant City Manager
Neall Schroeder, City Engineer

INGRESS LANES:

1. Ingress Left-Turn Lane Requirements: A twelve-foot wide left-turn lane with appropriate storage and transition shall be provided at each driveway where peak hour inbound left-turn volume is thirty (30) vehicles or more.

2. Ingress Right-Turn Lanes: For any development, a twelve-foot wide right-turn lane with appropriate storage and transition shall be provided at each driveway where the street average daily traffic exceeds 10,000 vehicles per day, posted speeds are 35 miles per hour or greater, and driveway volumes exceed 1,000 vehicles per day with at least 40 right-turn movements during peak periods. For any development, a right-turn lane as described in this sub-paragraph shall be provided at each driveway where right-turn ingress volumes exceed 75 vehicles per peak hour.

The trip generation created by the development shall be based on the current Institute of Transportation Engineers Trip Generation factors.

February 19, 1991

TO: Frank Gerstenecker, City Manager

FROM: John E. Robbins, Transportation Engineer

SUBJECT: Proposed Engineering Design Standards Revision for Acceleration/Deceleration and Left Turn Passing Lane Widenings

The current Engineering Design Standards for lane widening as approved by Council Resolution #87-49 and dated January 19, 1987 is somewhat ambiguous and subject to various interpretations.

As example, on two lane highways there is a requirement that there must be 8,000 vehicles per day before the ordinance takes affect. It does not specify if this relates to a two-way or one-way street. In the case of a four or more lane highway, it does not indicate if it relates to a standard pavement cross section or a boulevard cross section.

More importantly, neither of these values relate to the future traffic, only what exists today. In theory, a development could be approved on a major street (highway) with volumes less than required and, when developed, generate enough traffic to exceed the ordinance value. This certainly does not produce the desired results for improving traffic flow.

The development traffic values, in accordance with the ordinance, are based on the anticipated traffic. These values are given in published information from the Institute of Transportation Engineers and applied to the development size, parking spaces, employees, etc. to determine the generated traffic. The peak hour traffic generation of the development does not necessarily relate to the peak hour traffic on the street or highway. The ordinance relates to the 24 hour street traffic volume. While some generation rates coincide with peak street traffic, others do not.

An example would be a medical office building. The AM peak generated traffic is 2.773 trips per 1,000 GFA; the AM peak based on adjacent street traffic between 7-9AM (which is not necessarily the peak hour) is 1.663 trips per 1,000 GFA. Another example would be a church. The hourly trip rate per 1,000 GFA weekdays is 0.108 between 7-9AM, 0.641 between 4-6PM, 1.0 for weekday AM peak hour of the generator (church), 1.107 for the PM peak, 4.903 on Saturdays, and 8.359 on Sunday. In this case, the peak hour value would be 8.359 trips per 1,000 GFA. Therefore, a church of 2,393

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square feet of GFA would fall under the ordinance if the street traffic exceeded 8,000 or 30,000 vehicles per day on Sunday. The ordinance, through the trip tables, does not speak to the number of cars in the parking lot, seating capacity, etc. It relates only to the projected traffic that can be generated based on the gross floor area. Generally this ordinance is applied to new developments and only rarely to an existing development.

The ambiguity of the language can cause confusion. I am therefore suggesting that the requirements for lane widening be subject to the number of parking spaces, not generation rates or volumes, and that it apply only to the major roads as listed.

The Michigan Department of Transportation standards for driveway permits require lane widening at all new developments with more than 25 parking spaces.

The proposed changes are attached for your review and recommendation.

Respectfully submitted,

John E. Robbins, P.E.
Transportation Engineer

JER/ct

cc: John Szerlag, Assistant City Manager
Neall Schroeder, City Engineer

REVIEWED AND RECOMMENDED

John Szerlag
Assistant City Manager

REQUIRED ACCELERATION/DECELERATION/LEFT TURN LANES

PROPOSED
REVISED ENGINEERING DESIGN STANDARDS

March 8, 1991

PROPOSED ENGINEERING DESIGN STANDARDS REVISION FOR WIDENING LANES/ACCEL-DECEL AND LEFT TURN PASSING LANES

Widening Lanes

1. Any property which will contribute traffic flow to the public thoroughfare system by land use change, new or existing street and drive improvements or on-site development, shall be required to provide for this traffic in an approved manner. The following will be applied to determine the appropriate improvement:

   a. Standards for Acceleration/Deceleration Lanes on the following streets:

Adams	Livernois
Big Beaver	Long Lake
Chicago	Maple
Coolidge	Maplelawn
Corporate	New King
Crooks	Rankin
Cunningham	Rochester
Dequindre	Stephenson
Fourteen Mile	South Boulevard
Golfview	Square Lake
John R	Tower
Kirts	Troy Center
Lakeview	Wattles

      i. A twelve foot (12') wide acceleration and deceleration lane is required when at least one of the following conditions exist:

         1) A driveway serves a parking lot of 25 or more parking spaces.

         2) Development is such that the drive thru design (such as gasoline stations) generates more than 20 peak hour trips at the peak hour of the generator.

         3) Any street opening. A street opening is defined as any public/private street connection to any of the streets listed above.

   b. A left turn passing lane shall be provided on any street listed above when those streets consist of a two lane wide, two way facility.

   c. These standards shall not apply to boulevarded pavements six (6) lanes or more in width, unless the development served has a parking lot of more than 100 parking spaces.

   d. All construction shall be in accordance with the Engineering Standards of the City of Troy and the plan sketch which is attached hereto.

2. Sites at locations having limited right-of-way:

   a. In situations where sufficient public right-of-way does not exist for construction of standard acceleration/deceleration lanes or left turn passing lanes, the owner or builder will:

i. Complete the improvement in the configuration complying hereto so as to accommodate traffic, said improvement to be treated as an extension of the private driveway and situated in part or entirely, upon private property:

OR

ii. Dedicate right-of-way to the City sufficient to accommodate the improvement which will be constructed at the cost of the developer in a configuration complying hereto.

b. In situations where required improvements extend beyond the ownership of the subject site(s) and public right-of-way is insufficient, the owner will deposit the cost of providing these lanes with the City Treasurer. These funds will be used at a later date when right-of-way becomes available to place the required lanes. As an alternative, these funds may be used at a later date as a contribution toward an adjacent larger project. If deemed appropriate by the City Manager and City Assessor, an agreement to be in favor of a future special assessment project for road improvements may be substituted for the cash deposit.

3. Required improvements to the thoroughfare system may include widening lanes, turning lanes, acceleration/deceleration lanes, passing lanes, realigned pavements, base drainage, storm drainage, signing and all other items necessary to the construction of a durable pavement.

4. Required improvements may be caused to extend beyond the limits of the site of developing property in order to provide for adequate capacity and safety.

5. The City Manager or his designee may require improvements to precede site development where construction traffic would be detrimental to the capacity of the street and detrimental to the safety of the traveling public.

6. Site improvement plans are to be submitted to the Engineering Department illustrating the following:

a. All improvements required by these Standards.

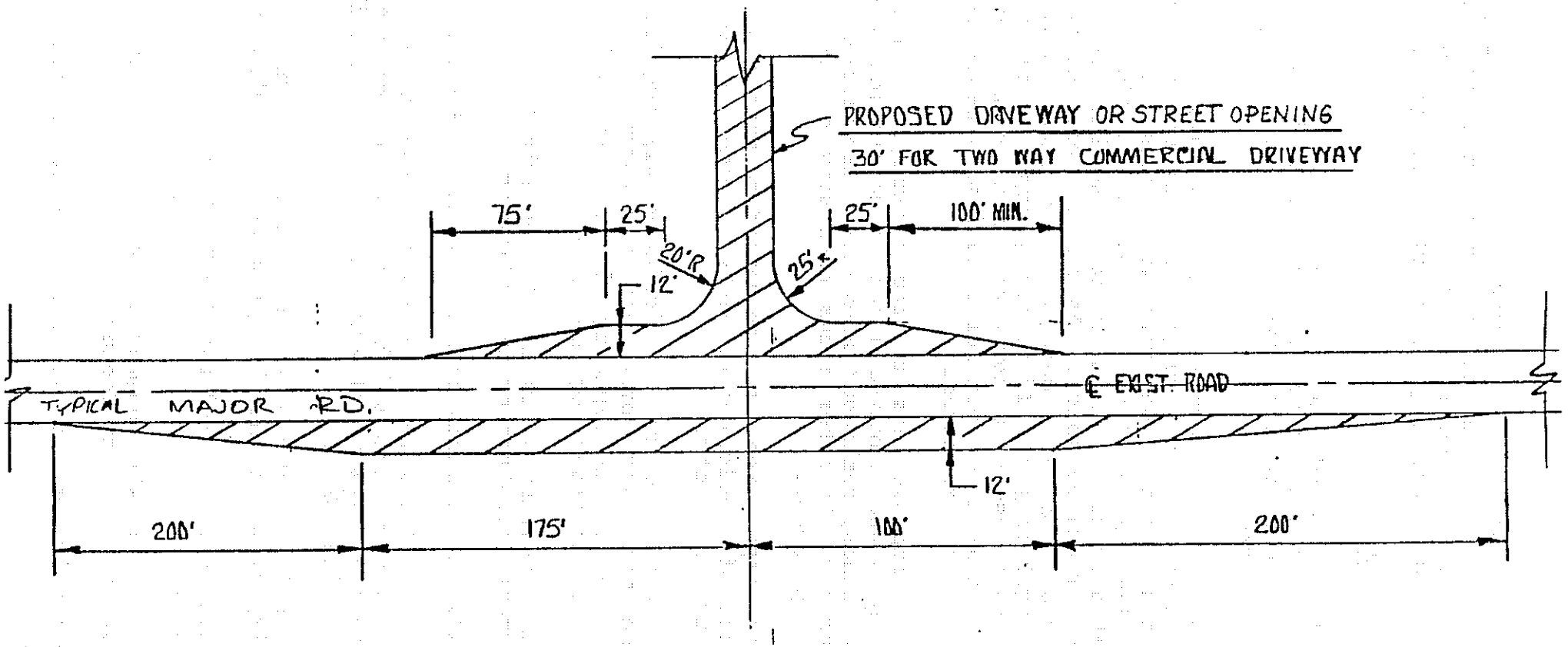
b. Proposed treatment of drive entrances and exits to and from public streets and highways which comply with the attached typical drawing of acceleration, deceleration and left turn passing lanes.

c. Public right-of-way throughout the extension of proposed improvements and that proposed for dedication, if any.

7. Concrete shall be used for widening lanes if existing pavement is concrete.

8. Full depth asphalt pavement may be used in other locations with the approval of the City Engineer.

9. These requirements apply to all streets listed in 1,a above.


PROPOSED DRIVEWAY OR STREET OPENING
30' FOR TWO WAY COMMERCIAL DRIVEWAY
75'
25'
20'R
12'
25'
25'
100' MIN.
℄ EXIST. ROAD
TYPICAL MAJOR RD.
12'
200'
175'
100'
200'

NO SCALE

EXISTING
ENGINEERING DESIGN STANDARDS
with Revisions Highlighted

Capital Letters = New Language
Lower Case Letters = Existing Language

. WIDENING LANES

1. Any property which will contribute to traffic flow to the public thoroughfare system by land use change, new or existing street and drive improvements or on-site development, shall be required to provide for this traffic in an approved manner. The following ~~standards~~ will be applied to determine the appropriate improvement:

~~a. Standards for Two (2) Lane Highways:~~

~~1) Right Turn Lanes, 2-Lane Highways~~

~~Right turn acceleration and deceleration lanes will be installed on the major thoroughfare when all of the following conditions are met:~~

~~i. The daily traffic volume on the major thoroughfare exceeds 8,000 vehicles.~~

~~ii. The 85th percentile speed on the major thoroughfare equals or exceeds 40 mph.~~

~~iii. Peak hour trips generated by the site are equal to or greater than 20 as contained in the table of Trip Generation Rates below.~~

~~2) Left Turn Passing Lanes, 2-Lane Highways~~

~~Left turn passing lanes will be installed on the major thoroughfare when all of the following conditions are met:~~

~~i. The daily traffic volume on the major thoroughfare exceeds 8,000 vehicles.~~

~~ii. The 85th percentile speed on the major thoroughfare equals or exceeds 40 mph.~~

~~iii. Peak hour left turns into the site equal or exceed 20 as contained in the table of Trip Generation Rates below. A passing lane will also be required when the peak hour left turns into the site equal or exceed 10 and the daily traffic volume exceeds 20,000.~~

~~b. Standards for Highways of Four (4) or More Lanes:~~

~~Right turn acceleration and deceleration lanes will be installed on major thoroughfares having 4 or more lanes of pavement when all of the following conditions are met:~~

~~1) The daily traffic volume on a major thoroughfare exceeds 30,000 vehicles.~~

~~2) The 85th percentile speed on the major thoroughfare equals or exceeds 40 mph.~~

~~3) Peak hour trips generated by the site are equal to or greater than 20 as contained in the trip table of Trip Generation Rates below.~~

a. STANDARDS FOR ACCELERATION/DECELERATION LANES ON THE FOLLOWING STREETS:

ADAMS	LIVERNOIS
BIG BEAVER	LONG LAKE
CHICAGO	MAPLE
COOLIDGE	MAPLELAWN
CORPORATE	NEW KING
CROOKS	RANKIN
CUNNINGHAM	ROCHESTER
DEQUINDRE	STEPHENSON
FOURTEEN MILE	SOUTH BOULEVARD
GOLFVIEW	SQUARE LAKE
JOHN R	TOWER
KIRTS	TROY CENTER
LAKEVIEW	WATTLES

i. A TWELVE FOOT (12') WIDE ACCELERATION AND DECELERATION LANE IS REQUIRED WHEN AT LEAST ONE OF THE FOLLOWING CONDITIONS EXIST:

1) A DRIVEWAY SERVES A PARKING LOT OF 25 OR MORE PARKING SPACES.

2) DEVELOPMENT IS SUCH THAT THE DRIVE THRU DESIGN (SUCH AS GASOLINE STATIONS) GENERATES MORE THAN 20 PEAK HOUR TRIPS AT THE PEAK HOUR OF THE GENERATOR.

3) ANY STREET OPENING. A STREET OPENING IS DEFINED AS ANY PUBLIC/PRIVATE STREET CONNECTION TO ANY OF THE STREETS LISTED ABOVE.

b. A LEFT TURN PASSING LANE SHALL BE PROVIDED ON ANY STREET LISTED ABOVE WHEN THOSE STREETS CONSIST OF A TWO LANE WIDE, TWO WAY FACILITY.

c. THESE STANDARDS SHALL NOT APPLY TO BOULEVARDED PAVEMENTS SIX (6) LANES OR MORE IN WIDTH, UNLESS THE DEVELOPMENT SERVED HAS A PARKING LOT OF MORE THAN 100 PARKING SPACES.

d. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ENGINEERING STANDARDS OF THE CITY OF TROY AND THE PLAN SKETCH WHICH IS ATTACHED HERETO.

2. Sites at Locations Having Limited Right-of-Way:

   a. In situations where sufficient public right-of-way does not exist for construction of standard acceleration/deceleration lanes or LEFT TURN passing lanes, the owner or builder will:

      i. Complete the improvement in the configuration complying hereto so as to accommodate traffic, said improvement to be treated as an extension of the private driveway and situated in part or entirely, upon private property:

      OR

      ii. Dedicate right-of-way to the City sufficient to accommodate the improvement which will be constructed at the cost of the developer in a configuration complying hereto.

   b. In situations where required improvements extend beyond the ownership of the subject site(s) and public right-of-way is insufficient, the owner will deposit the cost of providing these lanes with the City Treasurer. These funds will be used at a later date when right-of-way becomes available to place the required lanes. As an alternative, these funds may be used at a later date as a contribution toward ~~a~~ AN ADJACEN larger project. If deemed appropriate by the City Manager an City Assessor, an agreement to be in favor of a future special assessment project for road improvements may be substituted for the cash deposit.

3. Required improvements to the thoroughfare system may include ~~ultimate alignment~~, widening lanes, turning lanes, ACCELERATION/ DECELERATION LANES, passing lanes, realigned pavements, base drainage, storm drainage, signing and all other items necessary to the construction of a durable pavement.

4. Required improvements may be caused to extend beyond the limits of the site of developing property in order to provide ~~both~~ FOR ADEQUATE capacity and safety.

5. The City Manager or his designee may require improvements to precede site development where construction traffic would be detrimental to the capacity of the street and detrimental to the safety of the traveling public.

6. Site improvement plans are to be submitted to the Engineering Department illustrating the following:

   a. All improvements required by these Standards.

   b. Proposed treatment of drive entrances and exits to and from public streets and highways which comply with the attached typical drawing of acceleration, deceleration and LEFT TURN passing lanes.

   c. Public right-of-way throughout the extension of proposed improvements and that proposed for dedication, if any.

7. Concrete shall be used for widening lanes if existing pavement is concrete.

8. Full depth asphalt pavement may be used in other locations with the approval of the City Engineer.

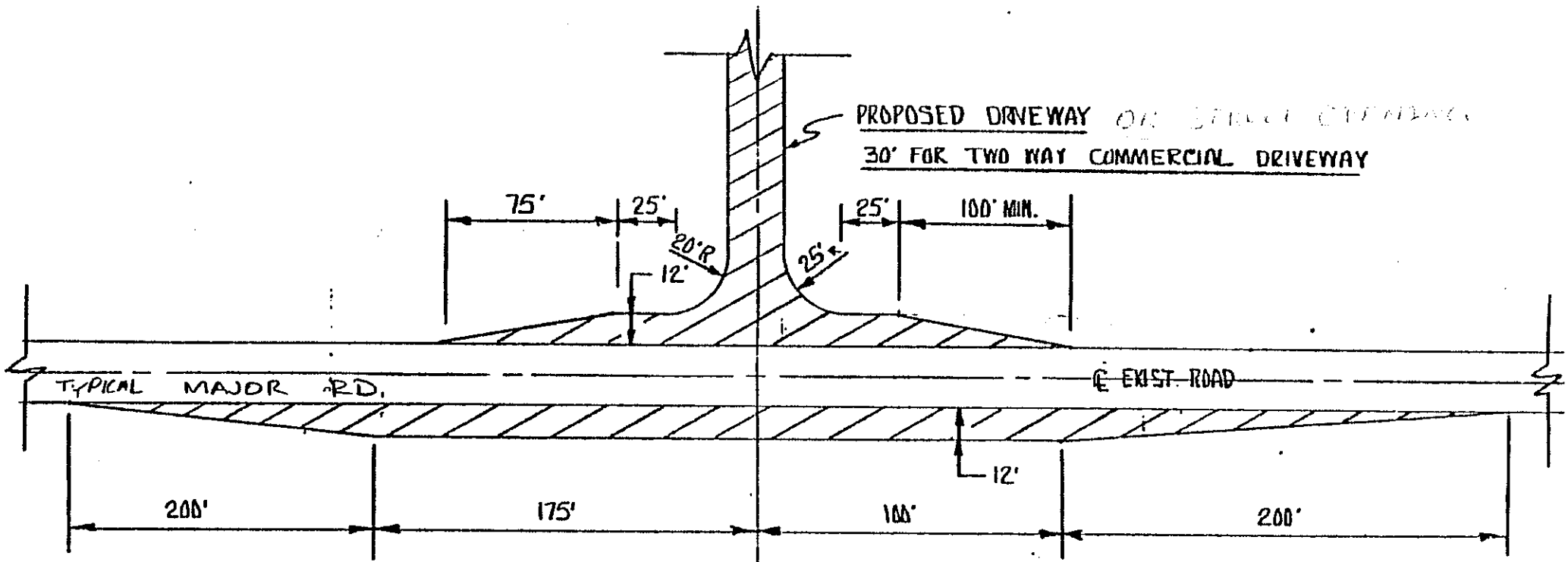
9. These requirements apply to all ~~thoroughfares within the corporate limits of the City of Troy~~ STREETS LISTED IN 1.a. ABOVE.

~~10. The following Trip Generation Rate Table will be used for purposes of calculating trips for proposed sites:~~

		PEAK HOURS			
USE	UNIT	AM-IN	AM-OUT	PM-IN	PM-OUT
OFFICE	1,000 s.f.*	3.00	.40	.50	2.6
SHOPPING CENTER	1,000 s.f.*				
Under 50,000 s.f.		.91	.80	5.77	5.81
50,000 - 99,999 s.f.		1.4	1.3	3.2	3.4
100,000 - 199,999 s.f.		.9	.8	2.9	3.1
200,000 - 299,999 s.f.		.4	.2	2.1	2.2
300,000 - 399,999 s.f.		1.6	.7	3.1	3.3
400,000 - 499,999 s.f.		.3	.2	1.9	1.9
500,000 - 999,999 s.f.		.38	.23	1.59	1.65
1,000,000 - 1,249,999 s.f.				1.4	1.9
Over 1,250,000 s.f.		.36	.13	1.10	1.41
CONVENIENCE STORE	1,000 S.F.*			30	30
FAST FOOD RESTAURANT	1,000 s.f.*	15	15	40	40
APARTMENTS AND CONDO	DWELLING UNIT	0.4	0.60	0.5	0.2
HOTEL-MOTEL	ROOM	0.2	0.5	0.5	0.?
INGLE FAMILY	DWELLING UNIT	.21	.55	.63	.37
LIGHT INDUSTRIAL	EMPLOYEE	.71	.13	.27	.55
BAR/RESTAURANT	1,000 s.f.*			11	10
MEDICAL OFFICE	1,000 s.f.*	.64	.21	2.0	3.5
DRIVE-IN BANK	1,000 s.f.*			16	16

*FLOOR AREA IS (G.F.A.)

~~FOR RESIDENTIAL STREETS ALSO~~



NO SCALE