TRANSPORTATION ADVISORY COMMITTEE
491 E. PIONEER AVE.
HOMER, ALASKA

NOVEMBER 14, 2013
TUESDAY, AT 5:30
COWLES COUNCIL CHAMBERS

SPECIAL MEETING AGENDA
NOTICE OF MEETING

1. CALL TO ORDER

2. APPROVAL OF AGENDA

3. PUBLIC COMMENTS REGARDING ITEMS ON THE AGENDA

4. RECONSIDERATION

5. APPROVAL OF SYNOPSIS

A. Regular Meeting Synopsis of August 20, 2013 **Page 3**

6. VISITORS

A. Shelly Erickson – Opposition of Roundabout (10 minutes)

7. STAFF & COUNCIL REPORT/COMMITTEE REPORTS/BOROUGH REPORTS

8. PUBLIC HEARING

9. PENDING BUSINESS

A. HART Policy Annual Review and Recommendations **Page 9**

10. NEW BUSINESS

A. Design Criteria Manual in Relation to Mattox Street Issues **Page 21**
B. Complete Streets: Best Policy and Implementation Practices document for discussion and Review **Page 85**
C. 2014 Meeting Schedule **Page 103**

11. INFORMATIONAL MATERIALS
12. COMMENTS OF THE AUDIENCE
13. COMMENTS OF THE STAFF
14. COMMENTS OF THE COUNCILMEMBER
15. COMMENTS OF THE CHAIR
16. COMMENTS OF THE COMMITTEE MEMBERS
17. ADJOURNMENT/NEXT REGULAR MEETING IS SCHEDULED FOR FEBRUARY 18, 2014 at 5:30 p.m. in the Homer City Hall Cowles Council Chambers located at 491 E. Pioneer Avenue, Homer, Alaska.

Session 13-03, a Regular Meeting of the Transportation Advisory Committee was called to order at 5:32 p.m. on August 20, 2013 by Chair Francie Roberts at the Homer City Hall Cowles Council Chambers located at 491 E. Pioneer Avenue, Homer, Alaska.

PRESENT: COMMITTEEMEMBERS HIGHLAND, ROBERTS, SMITH, VENUTI, WALKER

STAFF: DEPUTY CITY CLERK KRAUSE

APPROVAL OF AGENDA

Chair Roberts requested for a motion to approve the agenda.

HIGHLAND/SMITH – SO MOVED.

There was no discussion.

The agenda was approved by consensus of the Committee.

PUBLIC COMMENTS REGARDING ITEMS ON THE AGENDA

J.C. Miller, non-resident, but visits Ms. Tornes frequently, commented on the need for traffic calming and protection for pedestrians and children on Mattox Street. She expressed concern regarding the traffic speeds along the roadway. Pointing out that there are numerous children and disabled persons who live on or near that street and since there is no sidewalk or shoulder to accommodate pedestrians are forced to walk in the street. She encouraged the committee to support the recommendations.

Gary Syth, resident, has two young children and pets, commented that the road is very wide and straight down a fairly steep hill, there are motorcyclists that traverse that hill at a high rate a speed sometimes changing gears as many as four times. He compared Mattox Street to a runaway. There are apartments and a trailer park also and many residents walk.

Ginger Tornes, resident, has been working to make the street safe for some time. Nothing has been addressed and it has gotten worse. Residents have even witnessed vehicles racing each other, side by side, up Mattox. She was advocating that the committee support the submitted recommendations and recommend to Council they be implemented.

Keri Syth, resident and PE teacher at Paul Banks and West Homer, applauded how Homer takes care of its kids; they have great schools, great teachers, great parks however there is no safe spot for kids on Mattox Street. There are no sidewalks but the traffic hazards call out for a safe other place for kids at minimal costs to the city, plus she advocated for a sheltered bus stop that would provide some form of safety for the children. There are a large number of kids who take the bus to school and when it gets dark then there are kids waiting in the dark on a dangerous road.

RECONSIDERATION

None.

APPROVAL OF MINUTES

A. Regular Meeting Synopsis of May 21, 2013

HIGHLAND/WALKER – SO MOVED.

There was a brief discussion.

The minutes were approved by consensus of the committee.

VISITORS
A. Ginger Tornes, Mattox Street Neighborhood Association Presentation

Chair Roberts introduced the item in to the record and confirmed that all members on the committee knew the location of the street in question.

Ms. Tornes thanked the members of the committee for their service to the community. She thanked all the contribution of the members of the neighborhood has helped make their neighborhood more livable.

Mr. Tornes stated that in 2008 they were fortunate to have the services of Bob Kneifel, a now retired, traffic engineer from Anchorage and was involved in implementing the Complete Street program there. She noted that the City Manager, former council member Dennis Novak and Shannon McBride, Dan Thorington and a few more members of the community met with Mr. Kneifel and discussed various speed calming measures such as speed bumps, reverse speed bumps, chicanes. Mr. Kneifel expressed that the best solution for all concerned were measures such as what they are recommending tonight.
1. Install a "Gateway Treatment" installed at the head of the Mattox Street and East End Road. This feature would draw attention that their neighborhood is a special place, provide for a bus shelter and facilitate the curb extension for appropriate parking along the road behind it. This could be constructed by local high school shop class and or local welders.
2. Road Narrowing or Chokers could be installed every 200 feet down Mattox Street. This would be a narrowing of the roadway to accommodate two vehicles but would force them to slow down due to the narrowing with planters installed.
3. Traffic Circles - In the intersection of Mattox Street and Aurora has been the site of quite a few accidents and they are recommending installing a traffic circle. This would still allow a large vehicle access by putting one wheel on the apron.

Mr. Smith commented that everything shown so far included concrete curb and gutter and sidewalk and inquired what Mr. Kneifel recommended about that.

Ms. Tornes stated that the plan would be pavement ready. She responded that if there is not enough funding for sidewalks then at minimum a path could be constructed.

Mr. Smith commented on the funding mechanism for a project such as this would require total reconstruction and drainage and then it is more of a LID or HART project. He suggested that the group form an LID and then suggested they could assist with the design process.

Ms. Townes responded that Mr. Kneifel recommended getting on the CIP listing.

There was a brief discussion on the benefits and costs to start an LID for a project such as this and also the input on the design from the group to install the other traffic calming measures. It was noted that the best avenue to get the project completed would be for the neighborhood to apply for a LID. Mr. Smith briefly outlined the process for Ms. Tornes.

Further discussion and comments were made on the following:
- Requirements of the design criteria manual
- Approval of the presented plan
- The amount of work performed by neighborhood group
- The time expended on solving the problem
- using possible grant monies to fund the project
- The city improving streets every year
- The right of way depth is adequate
- If the road narrowing would be allowed as designed

- Conflicts could be supported by the committee to support the project if it went against the design criteria manual.
- The city would pay the bulk of the costs associated with the improvement project and it would be an example to other neighborhoods

Chair Roberts stated that the committee is only advisory to Council and they cannot take action tonight since it is not on the agenda as a discussion item. She noted that the road is not paved and some ideas in the design may not be appropriate but as several members of the committee did point out there are avenues that may help the group. She noted that there is currently adequate funding in the HART fund and it is a good opportunity if that is what citizens want to do. This is a process that definitely helps neighborhoods.

Ms. Tornes stated that there are many benefits and pluses to Homer as a small town, people are friendly, but the streets are not in concert with the rest of the ethic of Homer as they seem mean or hostile. She reiterated that with those recommended improvements it would make life much better.

Mr. Tornes thanked them for their time tonight.

STAFF & COUNCIL REPORT/COMMITTEE REPORTS/BOROUGH REPORTS
There were no staff reports.

Chair Roberts reported that City Council participated in a worksession this past weekend and council discussed extensively what projects would be placed on their list. There will only be five projects placed on their list this year. The Council is leaning towards Public Safety projects and one Transportation related project which would be the continuation of the east-west corridor or Greatland Street Completion. This committee did not get to weigh in on the CIP list this year since they did not meet and Council addressed the CIP earlier this year also.

PUBLIC HEARING
There are no items for public hearing.

PENDING BUSINESS
A. Non-Motorized Transportation and Trails Plan

Chair Roberts asked for comments or changes from the committee.

Discussion was entertained on adding crosswalks at Adams Road, removing the crosswalk at Rochelle on East End Road; adding a crosswalk on Ocean Drive where the Bike lane ended; and Kachemak Drive/Spit Road intersection, plus Mariner Park/Spit Road entrance. Additional signage was recommended for the crosswalk at Poopdeck Street and the Sterling Highway.

SMITH/HIGHLAND - MOVED TO RECOMMEND THE ADDITION OF CROSS WALKS AT ADAMS/EAST END ROAD, KACHEMAK DRIVE/OCEAN DRIVE, MARINER PARK ENTRANCE AND SPIT ROAD AND BELUGA/OCEAN DRIVE.

Brief discussion ensued on refining the locations for crosswalk locations.

Mr. Smith moved to amend his motion to remove the Mariner Park crossing since it was agreed by consensus not to be as detrimental if a crosswalk was put at the Kachemak Drive intersection.

VOTE. YES. NON-OBJECTION. UNAIMOUS CONSENT.

Motion carried.

Chair Roberts noted that this would be included in a memorandum to Council.

Discussion then focused on the recommendation in the manual on page 44, Policy 2.3 Establish and Fill a Non-motorized Trail and Transportation Coordinator staff position. Question was raised by the committee on why this was not implemented and seems to have just fallen into oblivion. It was noted that no new city staff positions have been funded in many years due to what was surely budget constraints and other budget priorities. Question was raised why these duties could not be added to existing staff when comment was added that planning, public works staff probably took on some of these duties already.

VENUTI/HIGHLAND – MOVED TO INCLUDE A RECOMMENDATION TO COUNCIL IN THE MEMORANDUM TO REVISIT IMPLEMENTATION OF A FULL TIME CITY STAFF POSITION FOR A NON-MOTORIZED TRAIL AND TRANSPORTATION COORDINATOR AS OUTLINED IN POLICY 2.3 OF THE NON-MOTORIZED TRAILS AND TRANSPORTATION PLAN OR THE COMMITTEE ALSO SUPPORTS ADDING THE DUTIES TO EXISTING STAFF.

Discussion included the following: that there would be enough for a fulltime staff person to do; budgeting for a full time staff position; the availability of guidance from staff for groups such as the Mattox Street group; Parks and Recreation has been the push behind trails.

VOTE. YES. NON-OBJECTION. UNAIMOUS CONSENT.

Motion carried.

Chair Roberts then brought forward the recommendation to forward a request to the Parks and Recreation Advisory Commission to review the Homer Non-motorized Trails and Transportation Plan.

Chair Roberts requested confirmation from Ms. Krause that they could informally ask the Commission to review the manual and check it out.

The next issue addressed was page 43 of the manual, Policy 2.2, Establish a volunteer organization of non-motorized transportation and trail advocates. It was noted that the recently established Homer Area Trails group would fit this role and Parks and Recreation Advisory Commission could work with this group on the trails.

Chair Roberts encouraged all members to have a copy of this plan and to review and study it.

NEW BUSINESS
A. Greatland Street Right of Way Development

Chair Roberts noted the email and the request from a resident to review Greatland Street.

Chair Roberts then verbally described the proposed construction as discussed by Council to tie Greatland Street to Main Street. The committee reviewed a map produced by Ms. Highland.

Discussion continued on the direction and purpose of the construction; approval of the construction; ridding the area as a hangout for inebriates; the committee has supported this extension before and there was no action required of the committee other than expressing further support and encouraging the implementation of this proposed extension.

There was no further discussion.

INFORMATIONAL MATERIALS
A. AKDOT Project Fact Sheets from the August 5th Open House
B. Resolution 13-078(S)(A), Directing the City manager to Propose Projects that Utilize the Funds in Excess of $3 million in the HART Fund and Funds in Excess of $3 million in the HAWSP Fund for Consideration of the Homer City Council

COMMENTS OF THE AUDIENCE

Joanna Tornes, resident, commented in support of the proposed traffic calming measures presented for Mattox Street, on the proposed Greatland Street connection and the recommendations on crosswalks she commented that they need to be made more visible so cars will stop.

Keri Syth, resident, commented on crossing the highway quite often with a class of kids and that it was very difficult since traffic did not always stop; she next stated that the Homestead Trail was a beautiful $100,000 trail that ended in in a mess and it was sad to see the area trails not taken care of better; She commented on the importance of accessing the trails to improve the health and fitness of the town. Ms. Syth agreed that the roads seemed fairly hostile to cyclists and pedestrians.

Ginger Tornes, resident, commented on the proposed update to the Homer Non-Motorized Trail and Transportation Plan; Ms. Tornes reading from the handout, Complete Streets: Best Policy and Implementation Practices, page 50, starting at the second paragraph, "One of the most helpful tools PennDOT uses to take a proactive approach to complete streets is its Bicycle and Pedestrian Checklist. The checklist is used throughout PennDOT's project planning and programming, scoping, and final design processes, and it ensures that bike and pedestrian accommodations are considered from the very beginning of a project. According to Danielle Spila, director of PennDOT's Policy Office, the checklist is just one of various complete streets–type policies in place throughout PennDOT under the umbrella of its Smart Transportation policy. She stated that maybe they could submit a recommendation to Council who could forward a resolution of support for the State of Alaska to implement a Complete Streets program. She commented that this would provide communities with better tools.

COMMENTS OF THE STAFF

Ms. Krause commented on the initial steps required to start a Special Assessment District (SAD) and recommended that Ms. Tornes visit the City Clerk's Office to discuss establishing a SAD.

COMMENTS OF THE COUNCILMEMBER

None.

COMMENTS OF THE CHAIR

Ms. Roberts stated that first she is always impressed with this committee there are people who have a lot of diverse talent on this committee who bring a lot of skills to the committee so when they have discussion they have a lot of good input and knowledge, historical knowledge or jobs they have done that brings information to the table, it is a great committee; second someone mentioned they like the committee and impressed on what is going on – there are a lot of committees and commissions that have vacancies – there are many ways to contribute to the community.
Ms. Roberts requested to have review of the Design Criteria Manual on the agenda in regards to how it would affect the issues with Mattox Street as suggested by Mr. Smith. Also the Complete Streets: Best Policy and Implementation Practices document for discussion and review; and the Mattox Street Neighborhood – Recommendation for Traffic Calming Measures. Ms. Roberts also noted that they need to finish review of the HART Manual review which was postponed to the November meeting.

COMMENTS OF THE COMMITTEE

Ms. Venuti commented it was a really interesting meeting, appreciated the comments as they must consider the circumstances of all residents whether rich or poor, to make sure they are aware of all things such as trails and parks. She has run across kids who were not aware a trail was there, so she appreciated the public for coming to the meeting and thanked Francie for her help.

Mr. Walker thanked the public present also; he was very surprised that this committee did not have any input on the CIP; he suggested that it would be good to schedule a meeting in the summer so they can

have input for transportation projects. Mr. Walker would have liked to have a bit more information on how the group's project with Old Town got started, it is great to see a project like that come about; talking about tunnels, Mr. Walker mentioned the one planned for under the highway at Diamond Creek, he noted that it is possible and that would be a good option to put at the corner of Saw & Cycle on Ocean Drive, then the cyclists would not have to stop they could keep right on going. The Non-Motorized Trails and Transportation Plan shows a trail around Beluga Lake he wondered if the Mattox neighborhood had public access to that – they responded from the audience that it was all marshland; he also noted that sawhorses make good traffic calming devices; the HAT organization is looking for people to help with trails and he will be available after the meeting if you are interested in any additional information. They are looking for people to help with trail work and; he is also on the Board for the Kachemak Nordic Ski Club, starting to mow the trails so they can be used sooner and if you are interested in helping and learning how to use the new ATV with tracks see him after the meeting.

Mr. Smith commented that looking back to see why they are where they are with roads in this community, it was very expensive to import frost proof road materials and they did not do that; the LID process was actually implemented back in the 1980s and that did bring about a lot of the improved roads that we now have; before that there was no road improvement projects for more than 15 years. Then it was only Pioneer Avenue to East End Road. Mr. Smith commented that Homer has a long history of not having or being focused on sidewalks and pedestrian and transportation issues. Not too much you can do about that now; something he also pointed out was to remember was that this issue is political as well. Mr. Smith stated that with the current governor it will be nearly impossible to get a trail/road project approved it was not like that under Governor Knowles who demanded a separated trail on all projects. It's very political on how money is spent. Mr. Smith was sure Ms. Roberts could testify to this fact. There are not the funding to do want ever you want and no mechanisms in the budget to do a lot of these projects that people want to get done and that explains the need for a strong volunteer effort to get a trail completed. But he commented that with the advent with the recently passed ordinance the City Manager could approve spending money on projects like this and recommended coordinating with the City Manager to fund trail projects such as that; Ms. Roberts interjected that currently the Trails Fund had only a couple of hundred thousand dollars and there has to be in excess of $3 million dollars in those funds before projects could be recommended.

Ms. Highland queried how much was in the fund in regards to funding the Mattox Street project; Ms. Roberts responded that there was approximately $6 million; Ms. Highland continued her comment that now is the time to approach Public Works or the City Manager to get help with their projects. She then commented that the Homestead Trail is actually state and totally done by volunteers and volunteerism is getting to be more the way to go as things get tighter and tighter. It was a very good meeting, thank you everyone.

ADJOURN

There being no further business to come before the Committee Chair Roberts adjourned the meeting at 7:16 p.m. Next regular meeting is scheduled for November 19, 2013 at 5:30 p.m. in the Homer City Hall Cowles Council Chambers located at 491 E. Pioneer Avenue, Homer, Alaska.

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RENEE KRAUSE, CMC, DEPUTY CITY CLERK I

Approved: _____

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To: Transportation Advisory Committee
From: Julie Engebretsen, Planning Technician
Date: November 5, 2013

Subject: Review of the HART program

Review of HART program

Once a year, the City Council reviews the HART program. This memo is a brief introduction for TAC members who are not familiar with the program, and lists the current HART Trails projects.

Things to know:

HART is a voter approved program that levies a ¾ of 1% sales tax to pay for road and trail construction. Currently, 90% of that sales tax goes into a roads account, and 10% into a separate trails account. In 2014, the trails reserve fund should have about $117,000 in revenue, and an ending balance of $344,000. Roads revenue is estimated at $1,068,894, and an ending balance of $6,743,537. The City Council adopted resolution 13-078(S)(A), A RESOLUTION OF THE CITY COUNCIL OF HOMER, ALASKA, DIRECTING THE CITY MANAGER TO PROPOSE PROJECTS THAT UTILIZE THE FUNDS IN EXCESS OF $3 MILLION DOLLARS IN THE HART FUND AND FUNDS IN EXCESS OF $3 MILLION DOLLARS IN THE HAWSP FUND FOR CONSIDERATION OF THE HOMER CITY COUNCIL.

When we're talking about roads vs trails, the HART policy defines them:

A. Sidewalk- the term "sidewalk" means a pedestrian facility associated with a road and generally within a street right of way.

B. Trail – a pedestrian facility detached from a road, or not within a street right of way.

So, a sidewalk is paid for out of the 90% roads money, and a trail out of trail money. For example, the separated pathways along Spruceview, East End Road, and the Homer Spit Trail, would all be 'sidewalks' under the HART program, because they are in the right of way and are associated with a major road construction project.

The main reason for the differentiation between 'sidewalks' and 'trails 'is sidewalks are really expensive – if we built sidewalks out of 'trail' money, there would be very little left for building any other trails!

The HART Trails program is fairly new, and is still evolving. This year (2013-2014) the City has so much construction going on, that we don't have the staff to work on any new trail projects. As projects such as the Old Town improvements, Karen Hornaday Park and the Spit Trail/Harbor improvements are completed, I expect the City will be able to start working again on trail ideas. But for now, lots of construction is happening, including trails along three sides of the Harbor!

As Planning staff, and staff person to the Parks and Recreation Commission, my involvement in this process is to help identify what trail connections you would like to see constructed. Then, when Council reviews that HART program or the annual budget, this list is included and will hopefully be approved by Council. The purpose of a list is so staff can work on getting those projects ready to go, and take advantage of trail grants or other funding opportunities as they come up.

Having a project on this list means staff will move forward with basic work such as cost estimates, easement research, and scope of work. Project approval and funding lies with the City Council through Capital Projects and the annual budget.

Projects Underway:

- Budgeted: $25,000 to fund short stretches of trail on Fairview Ave, Greatland, and across Woodard Creek into Karen Hornaday Park.
- Construction of a trail on Charles Way in old town, connecting Bishops Beach with Main Street. 2014 construction.

- Planned but no funding in place (or needed yet): Future construction of a trail from Forest Glen to Homer Middle School.

Staff recommendation: none. I will be at the meeting to answer any questions about the HART trails fund.

Attachments: HART Program

H.A.R.T. POLICY MANUAL

Homer Accelerated Roads and Trails Program

Adopted September 10, 2007

Produced & Distributed by the City Clerk's Office — 2/19/2008 — rt

H.A.R.T. POLICY MANUAL
(HOMER ACCELERATED ROADS AND TRAILS PROGRAM)

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February 2008

I. PURPOSE and INTENT

1. The H.A.R.T. is a combined local funding source of dedicated sales tax and assessments to upgrade city streets, new city streets and new city non-motorized trails.(Ordinance 06-42(S); Resolution 88-47 #1)

2. The intent of the program is to reconstruct local substandard city roads and/or upgrade existing city roads, construct new city streets and non motorized trails, thereby reducing maintenance cost, improving access, increasing property values and improving the quality of life. (Ordinance 06-42(S); Resolution 88-47 #2)

3. Reconstruction and new construction shall be to City Standards. (Ordinance 06-42(S) Resolution 88-47 #19)

4. The City will not accept a street for full time maintenance until it meets city standards and is shown on the official maintenance map.[1] (Ordinance 85-14 07/01/85; Resolution 88-47 #8)

5. When practical, the intent of the program is to preclude the destruction of existing property improvements in built up areas. (Resolution 88-77(A), be it further Resolved clause.)

6. State maintained roads are not part of this program. (Resolution 88-47 #7)

7. The criteria for the H.A.R.T. shall be reviewed annually by the Transportation Advisory Committee, with recommendations reported to the Homer City Council. (Resolution 88-47 #22)

8. Annexed roads are included as newly eligible roads, as listed on the Official Road Maintenance Map. (Resolution 03-116, 08/25/03)

9. New roads shall be listed on the Official Road Maintenance Map. (Resolution 07-82)

10. New trails shall be listed on a map in the City Clerk's Office. (Resolution 07-82)

II. DEFINITIONS

A. Sidewalk- the term "sidewalk" means a pedestrian facility associated with a road and generally within a street right of way. (Resolution 07-82)

B. Trail – a pedestrian facility detached from a road, or not within a street right of way. (Resolution 07-82)

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[1] 1.Clerk's Note: Done by Ordinance

III. QUALIFYING CRITERIA

A. Roads

The schedule of street improvements and costs developed by the Public Works Department August 87, consisting of Groups I-IV and the annexed roads of the City boundary amendment of Ordinance 02-08(A) and as noted on the Official Road Maintenance Map, are hereby incorporated. (Resolution 05-70, 06/13/05; Ordinance 02-23(A), 06/10/02; Ordinance 02-08(A), 04/08/03; Resolution 03-116, 08/25/03)

Amendments to the schedule can be accomplished only by Council action and are limited to additions to the schedule due to revision of the street map or transfer of state rights-of-ways to the City.

All projects will be authorized only after a public hearing to insure public participation in the process. (Resolution 88-47 #13)

1. The following criteria may be considered for roads qualifying for reconstruction/utility improvements: (Resolution 88-47 #14, Resolution 87-61(S))

a. Life, safety and traffic flow (Resolution 87-61(S), Resolution 88-47);
b. Correct deficiencies of existing systems (Resolution 87-61(S), Resolution 88-47);
c. System wide basis versus local needs (Resolution 87-61(S), Resolution 88-47);
d. Complete traffic circulation pattern (Resolution 87-61(S), Resolution 88-47);
e. Encourage economic development (Resolution 87-61(S), Resolution 88-47);
f. Correct drainage problems (Resolution 87-61(S), Resolution 88-47);
g. Reduce maintenance cost (Resolution 87-61(S), Resolution 88-47);
h. Built to city standards prior to acceptance for maintenance (Resolution 61(S), Resolution 88-47);
i. Reconstruction is a higher priority than new construction projects (Resolution 87-61(S), Resolution 88-47);
j. Property owner contribution through LID process by paying $30 per front foot for gravel and $17 per front foot for paving cost of a residential standard street and the city pays all costs for additional improvements deemed necessary (Resolution 87-61(S); Resolution 88-47, Resolution 94-50; Resolution 95-97)
k. City share can apply to related utilities, sidewalks, street lighting, drainage, paving and/or reconstruction of roads identified on the road maintenance map. (Resolution 88-47, Resolution 04-41(A).);
l. Other factors deemed appropriate by the City Council. (Resolution 87-61(S, Resolution 88-47))

2. The following criteria may be considered for new local roads in addition to applicable criteria in 1:

a. Connectivity to existing road(s), for example completes a traffic pattern.
b. Arterials or thoroughfares;
c. Existing utilities;
d. Contributing funds such as property owner assessments, loans, grants, etc;
e. Level of need. (Resolution 07-82)

B. Trails

New local non motorized trails shall be prioritized according to the following:

a. Project is listed in the HNMTTP or furthers a stated goal of that plan;
b. Solves a safety concern;
c. Creates connectivity to existing trail(s), completes pattern or provides access to a point of interest;
d. Protects an established trail;
e. Creates or improves a trailhead;
f. Has significant scenic or aesthetic value;
g. Existence or potential for contributing funds;
h. Property owner participation. (Resolution 07-82)

IV. FINANCING and ASSESSMENTS

1. The program will utilize an additional dedicated City sales tax not to exceed three quarters of one percent (¾%) supplemental with assessments against adjacent benefited properties. (Ordinance 06-42, Resolution 87-61(S), Resolution 88-47 #3).

2. A three quarters of one percent (¾) dedicated sales tax and will be collected for up to twenty years expiring December 31, 2007 and reauthorizing up to an additional twenty years expiring December 31, 2027 to participate in funding the accelerated roads and trails program (Ordinance 06-42, Resolution 87-61(S), Resolution 88-47 #4). Reauthorized twenty additional years at the October 3, 2006 election (Resolution 06-145(S)) to expire December 31, 2027. Ten percent of the annual revenue shall be used for trail projects.

3. The road improvements will be financed on a combined pay as you go basis as well as sale of revenue bonds in a fifty-fifty ratio. There may be future bond sales as revenues increase. (Resolution 87-47 #6)

4. The City will attempt to obtain long term financing for up to ten years for the private share of funding. (Resolution 88-74 #12, bond change Ordinance 89-17, regarding ten years financing.)

5. Interest, if any, generated from the program will remain with the program funds. (Resolution 88-47 #18)

6. Abutting property owners will share the cost of upgrading a street to residential standards by paying $30 per front foot for gravel and $17 per front foot for paving.[2] (Resolution 87-61(S), Resolution 88-47, Resolution 94-50, Resolution 95-97)

7. The City will pay all costs for any additional improvements required when deemed necessary by the City. Other improvements requested by the benefited property owners will be paid by those same property owners. (Resolution 88-47 #11)

8. The $30/$17 split in front foot assessment stands unless there is 100% agreement on a revised formula for a specific project or the amount is adjusted by the City Council. (Resolution 87-61(S), Resolution 88-47; #21; Resolution 95-97)

9. Road Reconstruction assessment payment date, penalty and interest shall be set as soon as the reconstruction project has been accepted by the Public Works Department regardless if the LID/Assessment district wherein reconstruction has been completed is also scheduled for paving as part of the same LID/Assessment District. Paving assessment payment date, penalty and interest will be set as soon as the paving project has been accepted by the Public Works Department. HCC 17.04.070--110. (Resolution 96-73)

10. New Local Roads may be constructed by 100% program funds when the construction thereof benefits the entire City or when the City owns the property wherein the road is to be constructed. The Road to be constructed must meet the qualifying criteria and be recommended by the Transportation Advisory Committee to the City Council. This expenditure must be approved via Ordinance with justification noted within the body of the Ordinance. Whenever possible, New Local Roads will be constructed using the LID process HCC 17.04 and the assessment methodology as noted in item 6. and 8. (Resolution 07-82)

11. HART funds may be used to leverage outside funds for New Local Roads and Trails. (Resolution 07-82)

12. New Local Trails may be constructed using 100% program funds and follow the procedures listed in item 10. (Resolution 07-82)

13. Sidewalks shall be paid for out of road funds, and trails shall be paid for out of the 10% allocated to trails. (Resolution 07-82)

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[2] Danview/Svedlund and Sabrina/Mark White are grandfathered in at the $20/$11 split per Council action. (Resolution 94-52)

V. UTILITIES

1. Prior to street reconstruction, necessary related non existing water and sewer improvements shall be encouraged whenever possible. (Resolution 88-47 #9)

2. Water and Sewer utility extensions necessary to extend the utilities short distances beyond a construction area will be paid for by the program. (Resolution. 88-47 #10)

3. Water and sewer utility relocations directly caused by reconstruction will be paid for by the Accelerated Roads Program. (Resolution. 88-47 #10)

4. Water and sewer utility upgrades necessary for future capacity that are done concurrently with reconstruction and/or paving will be paid for by the utility (a) fund. (Resolution 88-47 #10)

5. The City shall recover from the property owner the cost of construction of City-provided sewer and water service connections by including the cost of construction of such connections in the service connection fee established under HCC Chapter 14.13. (Resolution. 88-47)

6. Cost of installing stub-outs would be a necessary expense to anyone building on lots requiring sewer and/or water service. Sewer and/or Water funds or other public money was provided to pay the cost of these stub-outs because of the benefit of a quality finished road and the use of stub-outs benefit only those particular lots. Costs will be recouped from benefiting property owners through deferred assessments. The Planning Clerk and Finance Department will maintain a listing of these deferred sewer and/or water service connection fees.

7. Whenever practical street lights shall be included in the construction of new local roads and shall be paid by HART funds. Property owners participating in a road reconstruction and/or paving LID may request street lights. If the project is deemed feasible the property owners shall be assessed for the installation of the street lights on an equal share per parcel methodology. Property owner approval of the street light assessment shall follow the process in HCC 17.04. Once constructed, the City will absorb the utility billing for the street light(s). (Resolution 07-82)

VI. SPECIAL PROVISIONS

1. Additional right-of-way required will be paid by this program, at no additional cost to abutting property owners. (Resolution 88-47 #20)

2. Corner lots are exempt from a double front footage assessment and the total assessed frontage shall not exceed the longest side of the lot. Reconstruction assessments apply to

reconstruction and paving. Corner lot agreement is required after 10/25/94. (Resolution 87-61(S) #15; Resolution. 88-47 #15, Resolution 91-68, Ordinance 94-16(A))

3. Lots having a frontage on two parallel streets, or flag lots having a frontage on two perpendicular streets, are exempt from a double front footage assessment unless actually accessing the lot from both streets either prior to or after reconstruction and/or paving Deferred Assessment Agreement Required pursuant to HCC 17.04.160. (Resolution 88-47 #16)

4. This program includes paving driveway aprons on contracts funded by H.A.R.P. (Resolution 88-47 #17; Resolution 91-48)

5. When at all practical, the center line of rights-of-way will be the established road center line. Where impractical, the center line may be shifted to mitigate improvement encroachments of high cost hillside excavation. (Resolution 88-77(A))

6. In established neighborhoods, where improvements such as housing, carports, lawns or landscaping have been constructed near the right-of-way line and ditching would seriously impact these improvements, alternates to open ditching may be considered. These alternates may include gently sloping ditches back to the lawn, trench drains, standard or rolled curbs and gutter or any other sound engineering practices. The cost of these alternates will be born by the road program unless the residents elect to participate in the curb, gutter and sidewalk programs. (Resolution 88-77(A))

7. Pedestrian amenities shall be included in all new road projects unless exempted by the City Council. (Resolution. 04-41(A))

8. Exempting Certain Lands that will not be Developed due to Conservation Easements or Owned by Organizations that Conserve Land for Public Purpose and/or Habitat Protection from the Homer Accelerated Roads Program and the Homer Accelerated Water and Sewer Program Assessment District Assessments on a Case by Case Basis and that Each Program Shall be Amended to Include this Exemption under Special Provisions. (Resolution 05-50(A).)

9. New Subdivisions may not participate in HART for the construction of subdivision roads or trails.

a. Exception: To encourage trail connectivity, the Subdivider will be required to pay a prorated share of the project cost not to exceed 75% of the cost of public trail construction. (Resolution 07-82)

10. HART funds may be used in accordance with Title 11.04.05. If a development includes a segment of an arterial or collector street as shown on the Master Plan, the

developer shall construct the streets on the alignment adopted in the Master Roads and Streets Plan, and conforming to the respective classification. The developer shall be required to construct the street to a twenty-eight-foot width in accordance with the minimum requirements of a local residential street; provided, however, that the City may, upon direction of the City Council, elect to require construction to the full standards and pay to the developer the cost difference between the required street and the proposed street. (Resolution 07-82)

VII. TRAIL PRIORITIZING CRITERIA AND PLANNING GUIDELINES

A. Trail Prioritizing. The TAC and Parks and Recreation Advisory Commission will review the trail priority list during the annual review of the HART. The list will be presented in a memorandum from staff, and will contain a mix of large and small projects. Generally it will include up to five trail projects that staff has reviewed and found ready for preliminary work. Trails on this list are planned for construction in the near term (one to three year timeframe). Staff will actively work to prepare those projects for construction. (Resolution 07-82)

B. Trail Planning Guidelines

Trail design shall take into account at minimum the following:

1. Use context sensitive design when locating and planning trails to take advantage of scenic resources.

2. Respect the character of trails based on function, setting, and expectation of accessibility.

3. Evaluate the soils, drainage, wetlands, Tsunami zone, flood plain, stream setbacks, historical resources, visual resources, topography, existing and potential land use, zoning and land ownership.

4. Where estimated costs, operating costs and outside funding availability are considerations and important criteria, care should be used to ensure that important trails are not eliminated solely using cost as a determinant.

5. Multi-use trails are encouraged. Design of the trail should include consideration of compatible uses such as pedestrians and bicycles.

6. All trails should be designed to recognize the requirements of ADA standards and guidelines. (Resolution 07-82)

DESIGN CRITERIA MANUAL

FOR

STREETS AND STORM DRAINAGE *

APRIL 1985

REVISED FEBRUARY, 1987

CITY OF HOMER

ORDINANCE 87-6(s)

EFFECTIVE DATE: April 14, 1987

* Prior ordinance history: Ordinance 85-14 (part) 1985

TABLE OF CONTENTS

INTRODUCTION

This manual is authorized and referenced by Chapter 11.04 of the Homer Municipal Code. It has been written to augment Chapter 11.04, entitled "Street Design and Construction Standards," by detailing specific design standards and methods in detail. The manual also provides a format more conducive to discussion and elaboration of design criteria than the municipal ordinance.

Where design criteria are not specifically addressed, in this manual or in Chapter 11.04, the criteria shall be established by reference to generally accepted engineering standards. For example, the primary source of geometric design criteria should be "A Policy on Geometric Design of Highways and Streets" (AASHTO, 1984); supplemental standards may be obtained from "Guidelines for Urban Major Streets" and "Recommended Guidelines for Subdivision Streets", published by the Institute of Transportation Engineers.

SECTION 1.01
SPECIAL CONDITIONS FOR STREET DESIGN
HOMER, ALASKA

Street design in Homer, Alaska must accommodate a number of difficult conditions; special consideration must be given to such conditions in the design phase.

These special conditions may include some combination of the following:

- Steep slopes
- Irregular topography (e.g., low knolls, gullies, etc.)
- Deep, soft, saturated clay (with interbedded coal seams)
- Deep peat layers
- Abundant subsurface seepage
- Springs
- Low soil permeability (backfill, especially trenches for culverts or utility mains may act as "french drains", possibly leading to piping failures or other phenomena)
- Frost heaving and frost "boils"
- Glaciation
- High rates of erosion/sedimentation
- Unavailability of local structural fill material
- Need for snow storage

The City shall require the design engineer to address any or all of these conditions, and any other special problems likely to be encountered on the project site.

ROAD AND STREET DESIGN FACTOR SUMMARY
(Continued)

DESIGN ELEMENT	MAJOR ARTERIAL	MINOR ARTERIAL	COLLECTOR: RESIDENTIAL	COLLECTOR: COMMERCIAL/ INDUSTRIAL	LOCAL
No. of Traffic Lanes	3 - 6	2 - 4	2	2 - 4	2
Min. ROW Width (Ft.)	100	100	60	70	60
Min. Curve Radius (Ft.)	700	600	500	500	150 (120 feet on hilly terrain)
Max. Grade (%)	6 (8<500')	8 (10<500')	10 (8-Curves, 12<500')	8 (6-Curves, 12<500')	10 (8-Curves, 12<500')
Min. Grade (%)	0.30	0.30	0.30	0.30	0.30
Min. Design Speed (MPH)					
Level/Rolling Terrain:	50	45	40	40	25
Hilly Terrain:	50	40	30	30	20
Min. Traveled Way Width (Ft.)	36	24	24	24	22
Min. Shoulder Width (Ft. each side)	8	6	4	4	3

SECTION 1.03
DESIGN REPORTS

A. General

Accompanying all street designs shall be a soils report, prepared according to the stipulations of Section 5.1, and a street design report containing, at minimum, the information detailed below.

B. Design Report Requirements

Design reports shall address, at minimum, the following:

1. Relationship of street to the Master Plan for Roads and Streets (i.e., whether it is shown on the Master Plan map or ties into a street shown on said map).

2. Functional classification of proposed street.

3. Design life of roadway.

4. Design speed.

5. Estimated average daily traffic at end of design life. (Attach trip generation calculations)

6. Proposed roadway length.

7. Cross-section width and number of lanes.

8. Right-of-way width.

9. Maximum grades, and whether these exceed the standards of the City.

10. Approach grades at all intersections and whether these exceed City standards.

11. Maximum curvature, and whether curvature exceeds City standards.

12. Wetland status (i.e., whether Corps of Engineers permit is required).

13. Drainage patterns:

    a. Local drainage only, or, drainageways through the area.
    b. Estimated flows through drainageways and ditches.

c. Method of disposing drainage downstream and mitigating downstream impact.

14. Structural section design calculations.

15. Number and types of traffic control devices required by Alaska Traffic Manual.

16. Illumination level calculations.

17. Design turning vehicles at intersection. (If intersection less than 75^{o}, attach design calculations or graphical superposition of turning template on curve)

18. Maximum and minimum depths of bury of existing or proposed utilities below roadway and/or side ditches.

19. Filter fabric specifications.

20. Pavement design calculation (if pavement is included).

21. Intersection sight distances. (Attach stopping sight distance calculations per Article 5.7.)

SECTION 1.04
DEFINITIONS

ADT - Average daily traffic, in vehicles per day.

Curb Cut - A curb cut is a special sidewalk and curb section that is designed to allow driveway or parking lot access when barrier curb is used.

Curb Return - A curb return is the curved portion of the curb which forms the corner at intersecting streets.

Detention Basin - A detention basin is used to store storm water on a temporary basis to reduce the peak flow.

Filter Fabric - Filter fabric, either woven or nonwoven, is a textile designed primarily to filter fine soil particles from ground water.

Filter Material - Filter material is selected sand or gravel which is used to filter fine soil particles from ground water.

Freeboard - The freeboard is the elevation difference between the design flow water surface and the top of the channel.

Primary Street - The primary street is the most important street usually carrying the heaviest traffic volume at a given intersection. The primary street is often the through street or is a street of higher classification, i.e. a collector or an arterial.

Secondary Street - The secondary street is the least important street at a given intersection usually carrying the lower traffic volume.

Storm Drain - A storm drain is a system of inlets and pipes which collect and transmit surface runoff water.

Subdrain - A subdrain is a perforated pipe system which intercepts and transmits ground water.

SECTION 1.05
STREET DESIGN CRITERIA

Article 5.1 Soils Requirements

A. Testhole Locations

The purpose of testholes is to collect sufficient data to allow the engineer to determine soil conditions on project site as the basis for design. Testholes shall normally be spaced not farther than 300 feet apart. Spacing greater than 300 feet may be approved if field samples indicate uniform soil conditions.

B. Testhole Depth

The depth of testholes shall be 8 to 10 feet below finished grade. Where peat is encountered, the depth of testholes shall be at least 4 feet below the bottom of peat. In areas where permafrost is expected, representative testholes up to 30 feet deep, or as adequate to determine the depth of permafrost, may be required.

C. Soils Report Requirements

Soils reports shall contain the following information:

1. Text

   a. Project location and topography.
   b. Brief geology of area involved.
   c. Exploration method and equipment, including sampling equipment.
   d. A brief description of the laboratory testing program including the name of the testing agency.
   e. Subsurface conditions which include groundwater and seepage conditions, grouping of soils into major types, distribution of soil groups, and frost penetration if exploration was conducted during the freezing period. Soils shall be classified according to frost classification, the Unified Soil Classification System, or the U.S. Department of Agriculture soil type.
   f. Conclusion and recommendations pertinent to the design of the proposed improvements including predicted frost action.

2. Testhole Logs

   a. Date of boring, testhole number, horizontal

location (distance and offset), and elevation. Where the existing ground is flat or of a uniform slope, the elevation requirement may be waived by the Public Works engineer.

b. Ground water level recorded after stabilized and/or 24 hours.

c. Depth to top of each strata and bottom of testhole and/or refusal.

d. Soil moisture content (percent) at each sampling interval as well as the Atterberg Limits of representative samples.

e. Visual soil classification of each strata in accordance with the Unified Soils Classification System. The classification letter designation and frost classification shall be noted.

f. The results of mechanical analysis performed, one for each typical soil group as described in the subsurface conditions section of the text. The testhole number and depth of sample shall be noted.

Article 5.2 Survey Requirements

A. Topographic Features

All topographic features, including trees and shrubs (if these would impact design or construction), shall be located within the area between the right-of-way centerline and a line located 20 feet inside the property line. Buildings and other major topographic features outside of this area shall also be located.

B. Elevations

1. Cross sections are required at 50-foot intervals along the centerline and where the slope of the ground profile changes. Elevations shall be noted to a point 50 feet from the right-of-way centerline and shall include the right-of-way centerline, the property lines and all obvious points where the slope of the ground changes.

2. Elevations are required for all driveways in cases of reconstruction of existing streets. Minimum requirements are elevations of the pavement edge parallel to the right-of-way centerline, elevations at the property line, and garage or carport floor elevations. In critical locations additional information may be required for design purposes. For new streets, future driveway locations should be specified.

Article 5.3 Vertical Design Requirements

A. For purposes of this manual, the following terrain classification system shall apply:

1. Level - grade range of 0 to 8 percent.

2. Rolling - range of 8.1 to 15 percent.

3. Hilly - grade of over 15 percent.

B. Specific Criteria

1. The desirable minimum street grade is 0.40 percent and the absolute minimum grade is 0.30 percent.

2. The desirable maximum street grade is 6.0 percent. Absolute maximum grades are as specified in Chapter 11.04 of the Homer Municipal Code for respective functional/design classifications of streets, except for short distances. The maximum values for short distances (under 500 feet), are specified, but the use of such short sections shall be subject to the City Public Works Engineer's discretionary approval. Their use should be limited to hilly terrain and the steeper reaches of rolling terrain sections. In hilly areas, further increases are possible as specified below.

3. In hilly areas:

   a. Grades up to 15 percent will be allowed on short tangent sections not exceeding 100 feet in length.

   b. The maximum grade through a horizontal curve with a radius less than 150 feet shall not exceed 5.0 percent where the change in horizontal alignment exceeds 120 degrees.

   c. The maximum grade along the uphill tangent from a horizontal curve with a radius less than 150 feet shall not exceed 5.0 percent for at least 100 feet to allow for acceleration and braking.

4. The cross slope to crown on paved streets shall be 2.0 percent, and on gravel streets shall be 3.0 percent, intersections and superelevations excepted.

5. The grade of the primary street through the intersections shall not exceed 7.0 percent, unless otherwise approved by City Public Works Engineer.

6. The grade of the secondary street at intersections shall not exceed 4.0 percent within a distance of 30 feet from the back-of-curb, or edge of shoulder line, of the primary street.

7. The minimum grade around a curb return or other curve radius shall be 0.50 percent.

8. The desirable minimum Portland Cement Concrete valley gutter grade shall be 0.40 percent with an absolute minimum grade of 0.30 percent.

9. The minimum asphalt concrete valley gutter grade shall be 1.0 percent.

10. The desirable minimum ditch grade shall be 0.50 percent with an absolute minimum grade of 0.35 percent.

C. Cut and Fill Slopes

1. Cut slopes shall not be steeper than 2.0 feet horizontal to 1.0 feet vertical.

2. Fill slopes shall not be steeper than 2.0 feet horizontal to 1.0 feet vertical; if embankment height above ditch bottom is less than 5 feet, slope shall be not steeper than 3.0 feet horizontally to 1.0 feet vertically, unless otherwise approved or directed by the City Public Works Engineer.

3. In no case shall slopes exceed the angle of repose for the sloped material.

4. Slopes shall be located within rights-of-way, provided that slopes may be within slope easements if approved by the City Public Works Engineer.

D. Vertical Curves

1. Grade breaks shall be used where the algebraic difference in grade is 1% or less.

2. Changes of grade for an algebraic difference of more than 1% shall be obtained through the use of symmetrical vertical curves. Unless otherwise approved by the City Public Works Engineer, the length of vertical curve shall be determined by the following design speeds (see Figures 3 and 4):

Arterial Street 45 mph

Collector Street	40 mph (may be reduced to 30 mph in hilly areas)
Residential Streets	25 mph (20 mph in hilly areas)

3. Whenever possible, vertical curves shall be separated by a tangent of at least 25 feet.

E. Driveway Grades

Driveway grades shall be designed in accordance with Figure 7, Driveway Requirements, unless otherwise approved by the City Public Works Engineer.

F. Cul-de-sacs

The maximum grade of the cul-de-sac bulb measured in any direction shall not exceed 5 percent.

G. General Controls

The City Public Works Engineer will review each street or road design for conformance with the following "General Controls for Vertical Alignment," developed by the American Association of State Highway and Transportation officials:

1. A smooth grade line with gradual changes should be strived for in preference to a line with numerous breaks and short lengths of grades

2. The "roller-coaster" or the "hidden-dip" type of profile should be avoided. Such profiles generally occur on relatively straight horizontal alignment natural ground line.

3. Undulating grade lines, involving substantial lengths of momentum grades, should be appraised for their effect upon traffic operation. Such profiles permit heavy trucks to operate at higher overall speeds than when an upgrade is not preceded by a downgrade, but may encourage excessive speeds of trucks with attendant hazard to other traffic.

4. A broken-back grade line, two vertical curves in the same direction separated by short section of tangent grades, generally should be avoided, particularly in sags where the full view of both vertical curves is not pleasing.

5. On long grades it may be preferable to place the steepest grades at the bottom and lighten the grades near the top of the ascent, or to break the sustained

grade by short intervals of lighter grade instead of a uniform sustained grade that might be only slightly below the allowable maximum. This is particularly applicable to highways with low design speeds.

6. Where intersections at grade occur on highway sections with moderate to steep grades, it is desirable to reduce the gradient through the intersection. Such a profile change is beneficial for all vehicles making turns and serves to reduce the potential hazards.

The City Public Works Engineer may require adjustment of design vertical alignment to meet these criteria.

Article 5.4 Profile and Specification Requirements

A. Plan and Profile Requirements - General

Street designs must be submitted to the City on 24" x 36" plan and profile paper; details to be presented in the plan and profile shall at minimum conform to the requirements of section (B) and (G) below. The City Public Works Engineer may require that additional information be provided on the plan and profile as he deems necessary.

B. Alignment and Plan View

The plan view shall at minimum present:

1. Point of curvature and point of tangency on all curves.

2. Horizontal curve data.

3. Right-of-way borderlines.

4. Centerline and stationing on centerline.

5. Existing and proposed driveway locations.

6. Existing streams or drainageways.

C. Monuments

All monuments on or near right-of-way, or required to be established in the proposed street(s) to be constructed, shall be shown.

D. Utilities

Plan view shall show the location of all existing buried or overhead utilities within the right-of-way of the street to

be constructed, or within 20 feet of said right-of-way. The plan view shall further locate all public utilities to be constructed prior to road improvements, if the street and utility improvements are phased concurrently. All manholes, valves, cleanouts, keyboxes, pedestals and poles shall be shown.

E. Structures and Culverts

Plan view shall locate all existing structures within 50 feet of the right-of-way of the street to be constructed, and shall fix the location, size, and length of all existing or proposed culverts within the right-of-way.

F. Profile View

Profile view shall show all roadway grades, vertical curve data (including vertical point of curvature and vertical point of tangency), original ground profile at centerline, original ground profile at both right and left right-of-way ~~edge,~~ the profile of all existing water, sewer and storm drain facilities (existing or proposed), and logs of all test borings.

G. Engineer's Stamp

Plans shall be signed and stamped by a civil engineer registered in the State of Alaska prior to approval by the City Public Works Engineer.

H. Specifications

All plans and profiles shall be accompanied by a bound set of project specifications, including all sections of the Municipality of Anchorage Standard Specifications applicable to the project, and including standard modifications as approved or specified by the City of Homer, and special provisions to govern improvement construction.

Article 5.5 Horizontal Design Requirements

A. General

The construction centerline will coincide with the right-of-way centerline unless otherwise approved. Approval to shift the construction centerline may be considered to attain the following objectives:

1. Reduction of retaining wall requirements;

2. Reduction of slope easement requirements;

3. Facilitation of intersection alignment;

4. Reduction of utility relocations.

B. Horizontal Curves

1. The radius of curvature along the centerline of the street shall not normally be less than:

Major Arterial Street	700 feet
Minor Arterial Street	600 feet
Collector Street	500 feet
Residential Street	150 feet

Larger radii may be required in some instances.

2. For steep hillside areas the minimum radius of curvature along the centerline of the residential streets shall be 120 feet with curve widening.

3. Streets shall be superelevated on curves; the superelevation rate shall be as appropriate to maintain design speeds, as listed in the Design Factor Summary. Rates of superelevation are to be obtained from AASHTO's 1984 "Policy on Geometric Design of Highways and Streets." Superelevations shall not exceed 6 percent. As a general rule transition to the superelevation section shall be obtained with 2/3 of the transition on the tangent and 1/3 on the curve. Superelevation transition lengths shall be determined by the degree of curve, design speed, and superelevation rate in accordance with recognized engineering standards.

4. The stopping sight distance shall be considered for horizontal curves (see Figure 6).

C. Curb Radii

Curb radii at intersections shall be specified in accordance with Figure 8, Curb Return Standards.

D. Cul-de-sacs

Cul-de-sacs shall be designed in accordance with Figure 9, Cul-de-sacs.

E. Curb Cuts

1. Curb cuts shall have a minimum curb opening width of 12 feet.

2. Residential areas the maximum curb opening width of a single driveway curb cut is 20 feet.

3. Curb cuts shall be located so that the nearest edge of a driveway fronting on an arterial or collector street is a minimum of 45 feet from the right-of-way line of any intersecting street. The nearest edge of a driveway fronting on a residential street shall be a minimum of 25 feet from the right-of-way line of any intersecting street.

4. Access to arterial or collector streets will be discouraged and may be denied for any parcel of property which also has access onto a residential street.

5. The maximum curb cut width for conmmercial lot access to an arterial or collector street shall be 40 feet.

6. The total width of a curb cut for a lot shall not exceed two-fifths of the lot frontage which faces the street, except for zero lot line development where the combined curb cut shall not exceed two-fifths of the combined lot frontage.

F. Driveways (other than curb cuts)

Geometric standards for driveways are as specified in the DOT manual.

G. Trip Generation Rates

Unless otherwise directed the average daily traffic count (ADT) shall be estimated using the following criteria:

Housing Type	ADT per Unit
Single Family Detached	8.2
Two-Family (duplex, townhouses)	8.0
Multi-Family (townhouses, apartments)	7.3
Mobile Home	5.5

A more comprehensive listing of trip generations is listed in Appendix 1.

H. Utilities

1. Should utility line extensions be necessary within the right-of-way of a paving project to provide service, the utility company shall be contacted in writing during the design phase to coordinate the necessary construction prior to paving.

2. Where water and sewer connection are required for unserviced lots, the property owner(s) shall be contacted by letter during the design phase to coordinate construction prior to paving. In residential areas, connections may be provided to unserved lots. Where development plans are not known, the connections shall be sized in accordance with the recommendations of the City of Homer.

I. General Controls

The City Public Works Engineer will review each road or street design for the following "general controls for horizontal alignment" developed by the American Association of State Highway and Transportation Officials:

1. Alignment should be as directional as possible, but every effort should be made to preserve developed properties and community values. On new urban highways, a flowing line that conforms to the natural contours is preferable aesthetically to one with long tangents that more heavily scar the terrain. With flowing alignment the construction scars can be kept to a minimum and natural slopes and plant growth can be preserved. Such design is desirable both from a construction and maintenance standpoint. In general, the number of short curves should be kept to a minimum. Winding alignment, composed of short curves, should be avoided since it tends to cause erratic operation and accidents.

2. In alignment predicated on a given design speed, use of the maximum degree of curvature for that speed should be avoided wherever possible. The designer should attempt to use generally flat curves, retaining the maximum for the most critical conditions. In general, the central angle of each curve should be as small as the physical conditions permit, so that the highway will be as directional as possible.

3. Consistent alignment should always be sought. Sharp curves should not be introduced at the ends of long tangents. Sudden changes from areas of each curvature to areas of sharp curvature should be avoided. Where sharp curvature must be introduced, every effort should be made to approach it with successively sharper curves.

4. For small, deflection angles, curves should be sufficiently long to avoid the appearance of a kink. Curves should be at least 500 feet long for a central

angle of 5 degrees, and the minimum length should be increased 100 feet for each 1-degree decrease in the central angle.

5. Sharp curvature should be avoided on high, long fills and elevated structures. In the absence of cut slopes, shrubs, trees, etc., above the roadway, it is difficult for drivers to perceive highway alignment and sharpness of curvature and adjust their operation to the conditions.

6. Caution should be exercised in the use of compound circular curves. Preferably their use should be avoided where curves are sharp. Compound curves with large differences in curvature introduce the same problems that arise at a tangent approach to a circular curve. Where topography or right-of-way restrictions make their use necessary, the radius of the flatter circular arc (R_1) should not be more than 50 percent greater than the radius of the sharper circular arc (R_2), (R_1 should not exceed 1.5 R_2). A several-step compound curve on this basis is suitable as a form of transition to sharp curves. A spiral transition between flat curves and sharp curves is even more desirable, although spirals are not normally used in the State of Alaska.

7. Any abrupt reversal in alignment should be avoided. Such a change makes it difficult for a driver to keep within his own lane. Also, it is difficult to superelevate both curves adequately, and erratic operation may result. A reversal in alignment can be designed suitably by including a sufficient length of tangent between the two curves for superelevation runoff, or preferably an equivalent with spiral curves.

8. The "broken back" arrangement of curves (short tangent between two curves in the same direction) should be avoided. Except on circumferential highways, most drivers do not expect succeeding curves to be in the same direction, the preponderant condition of succeeding curves in opposite directions developing a subconscious habit in drivers to follow them. Also, broken back alignment is not pleasing in appearance. Use of spiral transitions wherein there is some degree of continuous superelevation, is preferable for such conditions. The term "broken back" usually is not applied when the connecting tangent is of considerable length, say 1,500 feet or more. But even in this case the alignment will not be of pleasing appearance when both curves are clearly visible for some distance ahead.

9. To avoid the appearance of inconsistent distortion, the horizontal alignment should be coordinated carefully with the profile design. General controls for this coordination are discussed under a following heading of Combination of Horizontal and Vertical Alignment.

The City Public Works Engineer may require adjustment of design horizontal alignment to meet these criteria.

J. Pre-existing Platted Rights-of-Way Less Than 60' Wide

1. (Construction or reconstruction of existing streets in pre-existing platted rights-of-way narrower than those defined in Section 11.04.060(f) shall require dedication of a sufficient construction and maintenance easement on each side of the road to allow the roadway to be constructed in accordance with Chapter 11.20 and the City of Homer Design Criteria Manual.)

Article 5.6 Excavation and Backfill

A. General

1. Except as otherwise described in this section, excavation and backfill requirements shall be in accordance with the Design Criteria Manual and appropriate chapters of the Homer Municipal Code.

2. Where soils investigations show that organic material is present within the proposed roadway prism, the plans shall call for its removal unless surcharging or other provisions have been approved.

B. Structural Design

1. Where frost susceptible soils are encountered in the subgrade, design criteria for frost conditions shall be used to determine the combined thickness of leveling course and subbase. The frost design reference for street improvements is the Corps of Engineers Manual TMS-818-2(EM1110-1-306) Pavement Design for Frost Conditions, May 15, 1962.

The primary basis for design is the Reduced Subgrade Strength Method; however, the results of the Limited Subgrade Frost Penetration Method should be considered for F3 and F4 soils. Design nomographs assume the use of non-frost susceptible material (less than 3% by weight finer than 0.02 mm) as backfill. Where the backfill is frost susceptible material, allowances should be made by the designer.

For design purposes, the frost classification system is as follows:

Group	Description
F1	Gravelly soils containing between 3 and 20 percent finer than 0.02 mm by weight.
F2	Sands containing between 3 and 15 percent finer than 0.02 mm by weight.
F3	(a) Gravelly soils containing more than 20 percent finer than 0.02 mm by weight; (b) sands, except very fine silty sands, containing more than 15 percent finer than 0.02 mm by weight; (c) clays with plasticity indexes of more than 12; (d) varved clays existing with uniform subgrade conditions
F4	(a) All silts including sandy silts; (b) very fine silty sands containing more than 15 percent finer than 0.02 mm by weight; (c) clays with plasticity indexes of less than 12; (d) varved clays existing with nonuniform subgrade conditions.

Method 1: Limited Subgrade Frost Penetration Method

The procedure to determine the design thickness by the Limited Subgrade Frost Penetration Method is as follows:

a. Estimate the average moisture contents in the base and subgrade (see sketch, Figure 12) at the start of the freezing period and the dry weight of the base.

n b. From Figure 11 determine the frost penetration "a" which will occur in a base material of unlimited depth beneath a bituminous pavement kept free of snow and ice. The Air Freezing Index for Homer, based on average daily temperatures for the three coldest winters in 30 years is 1,850 frost degree days.

c. Compute the base thickness "c" (see sketch, Figure 12) required for zero frost penetration into the subgrade.

d. Compute "r" by dividing the water content of the subgrade by the water content of the base. For design purposes the maximum value for "r" is 2.

e. After computing "c" and "r" use Figure 12 to determine the design base thickness "b" and the allowable frost penetration "s". For design purposes "b" should not exceed 72 inches.

1. Where a high water table or a high soil moisture content occur with F3 and F4 soils, a filtration type fabric should be considered at the bottom of the excavation to keep the base from being contaminated by frost susceptible material.

2. Abrupt changes in subbase thickness shall be avoided. Transitions shall be used to minimize tendencies toward step displacement and interference with surface drainage.

Method 2 - Reduced Subgrade Strength

This design criterion assumes frost will penetrate into subgrade, reducing capacity of subgrade during spring breakup. Generally, this method permits less combined depth of pavement and base than Limited Subgrade Frost Penetration Method. Provides sufficient thickness to protect against breakup at that time. For F4 soils it is generally not recommended that this method be used unmodified except in low volume roads; heaving may be excessive.

Minimum frost overlay may be obtained from choosing traffic index and entering chart on Figure 10.

TYPE OF FACILITY	TRAFFIC INDEX
Minor residential streets and cul-de-sacs.	4
Average residential streets.	4.5
Residential collectors and minor or secondary collectors.	5
Major or primary collectors providing for traffic movement between minor collectors and major arterials.	6
Farm-to-market roads providing for the movement of traffic through agricultural areas to major arterials.	5.7
Commercial roads (arterials serving areas which are primarily commercial in nature).	7.9

Connector roads (highways and arterials connecting two areas of relatively high population density).	7.9
Major city streets and thoroughfares.	7.9
Streets and highways carrying heavy truck traffic. This would include streets in heavily industrialized areas.	9+

Alternate Methods (Conventional Design)

The designer may also examine as alternate design methods other generally accepted engineering methods. Examples of such methods (for both subbase and structural pavement design) include the California Bearing Ratio method, the Hveem stabilometer method, AASHTO interim method, Asphalt Institute method, the State of Alaska DOT/PF 1982 method. Each of these design methods includes a design paving thickness as part of the design. If the end product of any of these design methods will be approved as a gravel road, the paving component must be converted to a structural capacity of additional base and surface course equivalent to the structural capacity of the design component of asphalt.

In all cases the design engineer's paramount responsibility is to achieve sound structural designs. While economy is to be encouraged, it shall not provide justification for inferior design. The burden of proof shall be on the design engineer to demonstrate that the structural design method chosen should provide a stable roadbed, and specifically should according to test results and their interpretation via generally accepted engineering methods withstand the deleterious effects of frost penetration, spring thaws and saturated subgrades.

Acceptance of alternate design methodologies is discretionary; approval or disapproval will be made by the City Public Works Engineer based upon the design method presented.

Alternate Design (minimum 24" 2-Inch Crusher Run Gravel

Any alternate design submitted to the Public Works Engineer (utilizing this design method) shall be based upon the following criteria and conditions:

1. In no case shall the thickness of crushed gravel be less than 24" overlaying an approved geotextile fabric.

2. Material shall be crushed aggregate material, with at least 50 percent of the coarse aggregate having mechanically fractured faces, and conforming to the following gradation:

Sieve Size	Percent Passing by Weight
Coarse Aggregate	
2-inches	100
1-1/2-inches	90-100
1-inch	70-100
3/4-inch	60-90
3/8-inch	45-75
Fine Aggregate	
No. 4	30-60
No. 8	22-52
No. 40	8-30
No. 200	0-6

Crushed material shall contain no muck, frozen material, roots, sod or other deleterious matter. It shall have a liquid limit not greater than 25 and plasticity index not greater than 6 as determined by AASHTO T89 and T90.

Quality Control: Ten days prior to the time the material will be required in the work, all tests necessary for the Developer-Contractor to locate an approved source of materials shall be made by the Developer-Contractor, and certified copies of the test results from an approved laboratory shall be furnished to the City's Engineer. Final approval of the aggregate material will be based on tests of material taken from the compacted roadway section.

C. Alternate Design Structural Warranty

Should the Developer choose to utilize a City approved alternate design, the Developer will be responsible for all repair of structural road failures other than routine maintenance through two (2) complete freeze-thaw cycles (24 months from date of finish construction). At the end of the warranty period the City will assume all maintenance responsibility if the road exhibits no structural defects.

Article 5.7 Street Section

Street widths and cross-sections, as specified in Chapter 11.04 of the Homer Municipal Code, are depicted in Figures 1 and 2.

Article 5.8 Paving Requirements

The Developer shall be required to pave all streets constructed and or reconstructed as part of the subdivision development with a minimum depth of 2-inches of design approved asphalt concrete (AC), in accordance with the typical section in Section 1.08, Details, Tables and Nomographs.

Paving shall be subject to the following requirements:

A. Paving shall not be done until the street has completed two (2) complete freeze-thaw cycles and the Developer has sold fifty (50) percent of the available lots.

B. The Developer will be required to post with the City a performance bond or other form of approved surety in sufficient amount to cover the paving costs, as determined by the City Public Works Engineer. The bond or other form of approved surety must be posted, or in effect prior to final acceptance and approval by the City.

C. The paving requirement will be exempted under the following conditions:

1. Sewer and water utilities are not available and therefore not installed as part of the road construction or reconstruction project.

2. The subdivision is located in an area designated rural residential.

3. The subdivision is smaller than five (5) lots.

Article 5.9 Street Lighting

A. General

1. Streets to be constructed shall include roadway lighting in conformance with the standards and methods detailed below.

2. For design standards and criterion not listed below the source of such standards and criteria shall be the "American National Standard Practice for Roadway Lighting," published by the Illuminating Engineering Society.

3. As an overall philosophy, the purpose of roadway lighting is to provide the motorist and the pedestrian adequate night-time visibility for safe, efficient use of the traffic facilities. The location of luminaires at intersections, the uniformity of light on the roadway surface, the effect of glare, and the illumination intensity are of primary importance to the motorist and should constitute the main concern of the designer in establishing a highway illumination system.

B. Techniques of Lighting Design (General Discussion)

Accepted methods of lighting design allow specified illumination levels to be achieved by use of various alternative design elements. Optimal design is achieved by analysis of alternates in lamps, luminaires, mounting heights, pole spacings, power consumption, etc.. The design of street lighting installation is a process of utilizing known photometric characteristics of a selected lamp and luminaire in a trial-and-adjust process of assumed luminaire locations, for which a calculation is made of the average level of illumination and distribution of light over the area to be lighted. For each lamp-luminaire combination, there are manufacturer's photometric data which include footcandle charts showing the contours of various horizontal footcandle values over the area illuminated by that unit. These should be used to check luminaire positions that produce the calculated average illumination and uniformity ratio as related to the distribution of light over a given segment of pavement area (a check of uniformity).

C. Levels of Illumination

1. Generally recommended values for average maintained horizontal footcandles (HFC) of roadway (and abutting sidewalk or bikeway) illumination are as follows:

	Zoning District	
Roadway and Walkway Classification	Commercial or Industrial	Residential
	Average Maintained HFC	
Vehicular Roadways:		
Arterials	2.0	1.0
Collectors	1.2	0.6
Local	0.9	0.4
Sidewalks	1.0	0.4
Bikeways	2.0	0.5

All streets to be constructed within commercial or industrial areas shall be required to meet these standards. In residential areas, the developer may, at his opinion, elect to construct street lights in accordance with standards, provided that street lights

shall be provided at all intersections connecting with arterial or collector streets in accordance with section 3 below.

2. The uniformity ratio, defined as the ratio of average maintained illumination to minimum maintained illumination, shall be no greater (poorer) than 3:1 on commercial or industrial streets, and no greater than 6:1 on residential streets.

3. Illumination within intersection areas (generally the area defined by connecting the points of curvature of the intersection approaches) shall be equal to or greater than the sum of the recommended levels of the two intersection streets, provided that the average illumination level shall be at least 50 percent above the highest average illumination level required on the approach roadways.

D. Operation

Each light, or system of lights operated from a load center, shall be operated by a photoelectric cell as a switching device.

E. Luminaire Heights

The luminaire mounting height (distance from roadway surface to luminaire) is a function of the lamp intensity, refractor distribution, and roadway width. However, no luminaire should be less than 30' above the roadway due to the increased glare at low mounting heights. (The width of roadway is the distance between edges of traveled way including the center median on divided highways) Mounting heights should be in five-foot increments and should be the same (+/- 2 ft.) for each illuminated intersection or walkway. Normal mounting height is 40 feet for most installation.

F. Pole Location

1. Lateral Location of Lighting Unit

Light standards should be placed laterally 15' from the edge of any traveled way but not less than 2' from shoulder or 6' from edge of traveled way unless the right-of-way is of insufficient width for such positioning, in which case the standard should be placed adjacent to the right-of-way line. The luminaire should be over the approximate edge of traveled way to which it applies on uncurbed sections

and over the face of curb on curbed sections.

2. Longitudinal Location of Lighting Units (Intersections)

Lighting units should be placed on the far right of the intersection for the major traffic flow. See Figure 17. Such a location provides an increasing level of illumination through the intersection where conflicts occur. Near right illumination should not be used on any approaches as such a configuration tends to blind the driver and place the actual intersection with its conflicts in relative darkness. Lighting units should be placed equidistant each side of the intersection with sufficient spacing so as to provide the desired level of illumination in the intersection. At channelized intersections, a minimum of two lighting units should be used so that the near left unit provides illumination of curb faces in the intersection.

3. On a case-by-case basis as approved by the City Public Works Engineer, Developers may uitilize standard design wood lighting poles on streets designated as local or residential collector in the Master Roads Plan. Intersections with arterials will require standard design metal poles at the intersection.

G. Design of Luminaires

Luminaires shall be IES Type II or III medium distribution cut-off or semi-cutoff, unless otherwise approved or specified by the City Public Works Engineer.

Article 5.10 Intersection Design

A. Intersection Locations

The philosophy of intersection location differs somewhat between local streets as opposed to collectors, arterials, and some local commercial streets.

1. Local Streets

It is undesirable to encourage through-traffic movement on local streets. Within a subdivision development of local streets, it is desirable to use tee intersections, at spacings not less than 200 feet. However, local streets which terminate on arterials shall be aligned with existing tee intersections, if possible, to form four-way intersections.

2. Collectors and Arterials

Intersections on collectors and arterials should be spaced at even intervals; not less than 600 feet on major arterials, 300 feet on minor arterials and 200 feet on collectors.

As a general note, the number of intersections created by any given subdivision development should be minimized.

B. Sight distance at Intersections

1. Level grades. For two-lane intersecting roadways, the minimum sight distance (defined as available for a vehicle stopped on a cross road to see the approaching vehicle without obstruction, and conversely, the distance of unobstructed view by the approaching vehicle to the vehicle stopped at intersection) is defined as follows:

a. Intersection of local street with local street. Minimum sight distance shall be 150 feet along each approach street on level or rolling terrain (250 feet preferred); minimum sight distance for hilly terrain shall be 125 feet (200 feet preferred).

b. Intersection of local street with collector street. Minimum sight distance along the collector street shall be 325 feet on level or rolling terrain (400 feet preferred), and 200 feet on hilly terrain (300 feet preferred).

c. Intersection of collector street with collector street. Minimum sight distance along each collector street approach shall be 325 feet on level or rolling terrain (520 feet preferred), or 200 feet on hilly terrain (390 feet preferred).

d. Intersection of collector street with minor arterial street. Minimum sight distance along the collector street approach shall be 325 feet level or rolling terrain (520 feet preferred) or 200 feet on hilly terrain (390 feet preferred). Minimum sight distance along minor arterial approach shall be 400 feet on level or rolling terrain (765 feet preferred) or 325 feet on hilly terrain (595 feet preferred).

e. Intersection of minor arterial with minor arterial street. Minimum sight distance along each

approach shall be 400 feet on level or rolling terrain (765 feet preferred) or 325 feet on hilly terrain (595 feet preferred).

NOTE: Preferred sight distances based on time required for design vehicles to cross roadway; minimums are based on stopping sight distance on level grades for vehicles approaching at design speed. The City Public Works Engineer may require that the design be based on preferred sight distance, if found necessary for safety purposes.

For purposes of calculation, the sight distance shall be measured along a straight line from a point described as the intersection of the right-of-way centerlines with a point on the centerline of the approach street for which sight distance is specified.

2. Effects of grades. The design engineer shall be required to provide an increase in minimum sight distance for downgrades approaching an intersection, if the stopping sight distance exceeds minimum specified sight distance. The design engineer shall be required to calculate the stopping sight distances for through-street approaches, or both approaches at local street/local street intersections. The stopping sight distance (SSD) in feet is determined by the formula:

$$SSD = 1.47pv + \frac{v^2}{30\ (f+/-)g)}$$

where:
V = Design speed in miles per hour (determined from design factor summary)
P = Perception-reaction time in seconds (2.0 minimum, 2.5 recommended or required at the City Public Works Engineer's discretion)
f = Coefficient of friction for wet pavement (Note: standard design values are based on paved surfaces. No adjustment is allowable for gravel surface because of the lack of standard data for gravel coefficient of friction and the probability of eventual pavement.)
g = Percent of grade divided by 100 (+ for upgrade; - for downgrade)

For determining "f" values, the following table shall be used:

	Design Speed (mph)						
	20	25	30	35	40	45	50
Coefficient of friction "f"	0.40	0.38	0.35	0.34	0.32	0.31	0.30

3. If an intersection location specified by plat cannot accommodate the sight distances specified above, this shall not constitute grounds for a waiver of said requirements. The City Public Works Engineer may require relocation of the intersection to a location that can accommodate the required sight distances, and require that the subdivision be replatted accordingly, prior to approval of improvements.

C. Corner Radii at Intersections

The minimum corner radius (defined as the radius of the traveled way edge, or the curb return radius if applicable) shall be in accordance with the specifications detailed below:

1. The minimum corner radius for local streets intersecting at ninety degrees shall be 20 feet. If local streets intersect at a skewed angle, the corner radius shall be determined to accommodate the turning path of BUS design vehicles with minimal encroachment on shoulders or opposing lanes.

2. The minimum corner radius for intersections of local streets with collector streets, or for the intersection of two collector streets, shall be 25 feet, if the streets intersect at ninety degrees. If the angle of intersection is not ninety degrees, the corner radius shall be designed to accommodate SU design vehicles with minimal encroachment on shoulders or opposing lanes.

3. The minimum corner radius for intersections of collector streets with arterials shall be 30 feet, if the streets intersect at ninety degrees. If the angle of intersection is not ninety degrees, the corner radius shall be designed to accommodate SU design vehicles with minimal encroachment on opposing lanes; however, in the case of commercial/industrial collectors, the corner radius shall be designed to accommodate WB40 design vehicles, unless otherwise approved by the City Public Works Engineer.

4. The intersections of two arterials shall be designed to accommodate WB50 design turning vehicles with minimal encroachment on shoulders or opposing lanes.

5. The design vehicles referenced in (1) through (4) above are described by the text "A Policy on Geometric Design of Highways and Streets" published by the American Association of State Highway and Transportation Officials (AASHTO), 1984. This reference shall be considered the primary source of design criteria, supplemental to the criteria detailed above, for intersection design.

6. If an intersection is being created by extension of a new street to or from an existing street, the City Public Works Engineer may require that the design engineer submit plan and profile information on the existing street to determine whether the sight distance requirements are met.

Article 5.11 Sidewalks, Curbs and Gutters

A. Gravel

Sidewalks are not a mandatory requirement to accompany street improvements (although such requirements can be specified by the Homer Advisory Planning Commission in some cases, particularly when conditional use permits are required). If sidewalks are constructed on public rights-of-way, they shall meet the standards outlined below.

B. Structural Section

Sidewalks shall consist of 4 inches of nonreinforced portland cement concrete, constructed atop a base consisting of a minimum of 24 inches of classified fill (as defined by the City of Homer). If there is a likelihood that compaction of the base material would, because of moisture conditions cause subgrade material to invade or "pump" into the structural section, a geotextile fabric shall be installed to separate classified fill from subgrade.

C. Construction Requirements

The designer shall specify that construction methods and meterials, unless otherwise specified, shall be in accordance with the City of Homer Standard Specifications.

D. Sidewalk Widths

A minimum width of 5 feet shall be required if sidewalks are installed on local streets, or 6 feet if placed next to curbs. Along collector or arterial streets, the minimum width shall be 6 feet, or 8 feet if placed next to curb.

E. Sidewalk Grades

Sidewalk grades shall not exceed 8% unless otherwise approved by the City Public Works Engineer. A handrail may be required in cases where grades in excess of 8% are allowed.

F. Border Areas (Sidwalk to Traveled Way Edge, and Sidewalk to Property Line)

1. The designer shall allow space between the sidewalk and the abutting property line for placement of shallow-buried utility services, keyboxes, property stakes, construction forms and fences. The amount of space required in many cases will depend on the site topography and the road's backslopes. The border area to be used shall be determined by the City Public Works Engineer in consultation with the design engineer, and the required border thus determined may control the horizontal location of the sidewalk.

G. Sidewalks Outside Right-of-Way

Nothing in these specifications shall prevent the construction of sidewalks inside property lines, provided that, if a sidewalk is parallel and proximal to a public road, the sidewalk should be designed to match the probable location of sidewalks on adjacent properties; the property owner should also dedicate a sidewalk easement.

H. Drainage

If roadway drainage is accomplished by use of open ditches, and drainage modifications would not accompany sidewalk construction, then the sidewalk shall be detached from the roadway, such that the ditch is between the sidewalks and roadway. The City Public Works Engineer may allow the sidewalk to be placed contiguous to or slightly offset from the roadway on such open-ditch roadways (i.e., "rural" street sections) if the sidewalk design does not interfere with the water-shedding function of roadway crown and if the ditch can be relocated farther away from the roadway, such that drainage is not impaired.

In other cases, the street must normally be designed with a curb and gutter section if sidewalks are installed. If curbs and gutters are used, the curb and gutter types shall be as detailed in the City of Homer Standard Construction Practices (Standard Details); however, rolled curb and gutter will be allowed only on local residential streets, subject to approval of the City Public Works Engineer. Ramps shall be provided at all curb returns, in accordance with the City of Homer Standard Construction Practices (Standard Details), unless otherwise specified by the Public Works Engineer.

Article 5.12 Bikeways

A. General

Bicycle paths are not mandatory development requirements.

If they are constructed in public right-of-way, they shall meet the standards outlined below.

B. Structural Design

Bicycle paths shall have a minimum of 1-1/2" AC pavement, atop 2" leveling course per City of Homer Standard Specifications. Depth of subbase shall be designed in accordance with Section 1.05, Article 5.5 of this manual.

C. Geometric Design

Geometric design of bikeways shall be in accordance with the publication entitled "Guide for the Development of New Bicycle facilities" (1981) published by the American Association of State Highway and Transportation Officials. Design shall be subject to City Public Works Engineer's approval.

SECTION 1.06
STORM DRAIN DESIGN CRITERIA

Article 6.1 Drainage Design Criteria

A. Storm Drains

1. Materials used for storm drains shall conform to the Standard Specifications of the City of Homer.

2. The minimum depth of cover shall be four feet measured from the street or ground surface to the top of the pipe. If this requirement cannot be met, measures may be required for pipe diameters less than 30 inches to prevent the development of ice within the conduit.

3. The minimum diameter of any storm drain shall be 12 inches, except the catch basin leads may be 10 inches.

4. Storm drains shall be sized by the use of the Manning equation (see Figure 14).

5. Surcharging of systems will not normally be allowed for the design of storm drains.

6. In no case shall the hydraulic gradient be higher than 0.5 feet below the elevation of inlet grates and manhole covers.

7. The minimum allowable pipe flow velocity shall be 2.0 feet per second.

8. The minimum pipe grade shall be 0.30 percent.

9. The alignment between manholes shall be a straight line. Curves may be allowed for large diameter pipes if approved by the City Public Works Engineer.

10. The maximum allowable pipe flow velocity shall be 13 feet per second.

B. Manholes

1. Manholes shall be located at major junction points, changes in vertical or horizontal alignment, and changes in pipe size or shape.

2. The spacing of manholes shall not exceed 400 feet for pipe 48 inches or less in diameter. For pipes larger than 48 inches the spacing will be handled on an individual basis.

3. The minimum allowable drop between pipe inverts across a manhole shall be 0.05 feet.

4. Manholes located within street right-of-ways shall be located 3.0 feet north or east from the right-of-way centerline. Manholes located within storm drain easements shall be located midway between the center and the north or east boundary of the easement.

C. Inlets

1. The maximum spacing of inlets along the gutter shall be 1,100 feet. Closer spacing may be required to insure that gutter flows do not exceed the gutter capacity.

2. Where storm drains are available to an area, inlets rather than valley gutters will normally be required at intersections.

3. If the standard inlet is of insufficient size to accept design flows, additional inlets may be required. Non-standard inlets of greater capacity may be allowed on an individual basis.

4. Where inlets are installed in unpaved areas, an asphalt concrete pad shall be placed around the inlet. The asphalt pad shal measure at least 2.5 feet from the center of the inlet to the outside of the pad.

D. Subdrains

1. Subsurface drainage facilities shall be provided when in the opinion of the design engineer, or in the opinion ot the City Public Works Engineer, such facilities are necessary.

2. Subdrains shall be constructed of perforated pipe surrounded by filter material. Filter fabric may be allowed between the trench walls and the filter material, and the practice of wrapping filter fabric directly around the pipe will be allowed in road sections.

3. A standard cleanout or manhole shall be provided at the upstream end of all subdrain lines.

4. Storm drains may upon approval of the City Public Works Engineer, be perforated to provide subsurface drainage as a secondary function; however, storm drain shall, in such cases, be oversized in accordance with the direction of the City Public Works Engineer.

5. Although an exact procedure for determining subsurface flow quantity is not established, an estimate of flow should be made by examination of the water table elevation and the ability of the surrounding soils to transmit water at the trench walls.

6. No minimum velocity for flow needs to be maintained in a subdrain unless it also serves as a storm drain in which case the storm drain design criteria will govern.

7. The minimum pipe diameter for subdrains shall be 6 inches.

8. Materials used for subdrains shall conform to the Standard Specifications of the Municipality of Anchorage.

E. Outfalls

1. When the outfall is from a pipe or paved channel to a natural unprotected channel, an energy dissipator may be required for protection against erosion. If the natural channel is subject to flooding, the outfall shall be protected by the use of a headwall, gabions, or other suitable means.

2. The invert elevation of a storm drain outfall shall be a minimum of 1 foot above the normal water surface elevation of streams or lakes to provide storage for icing accumulations unless otherwise approved.

3. Icing control devices may be required for outfalls.

4. A device to remove sediment and separate oil and grease from storm waters is required at storm drain outfalls into lakes, rivers or streams.

F. Culverts

1. Culverts under driveway entrances shall have a minimum inside diameter of 18 inches.

2. Culverts under a public road shall have a minimum inside diameter of 24 inches.

3. Installation of icing control devices may be required.

4. Where possible culverts shall be designed so as to have neither end submerged.

5. Culverts operate under inlet control or outlet control. The size of a culvert shall be computed using both

methods and the larger computed size used for design purposes.

6. Materials used for culverts shall conform to the Standard Specifications of the Municipality of Anchorage.

G. Open Channels

1. The uses of open channels will include the following:

   a. Rerouting or realignment of an existing stream.

   b. When a drainage improvement is to be built in more than one phase, a channel may be allowed on a temporary basis until such time as full drainage improvements are developed.

   c. A road ditch for a rural street section with a minimum depth of two (2) feet.

2. The minimum channel side slope shall be two horizontal to one vertical (2:1) with a minimum invert width of 3 feet. Side slopes shall be seeded from the top of bank down to the normal channel flow depth to help in preventing erosion.

3. The maximum flow velocity allowed in a channel shall be such that no erosion or scouring will occur to the channel side or bottom for flows up to and including the design storm flow. This scour velocity will be determined by soil conditions of the unlined channel. Where channel lining or erosion control devices are used, the design will be evaluated on a case by case basis.

4. Open channels shall be designed by use of the Manning Equation (see Figure 14).

5. The minimum allowable freeboard is 1 foot.

Article 6.2 Runoff Prediction

A. Basis of Runoff Prediction

1. The basis of runoff predictions for major waterways in Homer is the City of Homer's "Drainage Management Plan" (CH2M-Hill, 1979) and "Revised Drainage Management Plan" (Quadra 1982). Drainage facilities for the designated waterways and/or watershed shall be designed to carry the flow quantities specified in these documents.

2. The Rational Method may be used for small areas of 5 acres or less, and for areas where the average basin slope exceeds 20%, in areas not covered by the drainage management plans.

B. Frequency of Occurence

1. Mapped Watercourses

Design calculations for watercourses as designated in the Drainage Management Plan shall be based on a 25-year or 50-year recurrence interval as specified in the reports.

2. 10-Year Storm Facilities

Design calculations for pipes greater than 24 inches shall be based on a minimum 10-year return period, except as specified in (1) above.

3. 5-Year Storm Facilities

Design calculations for pipes 24 inches or smaller shall be based on a minimum 5-year return period, except as specified in (1) above.

4. The design capacity of open ditches shall be determined as follows:

a. When rerouting or realigning existing streams, the channel capacity shall be based on a 100-year return period.
b. A temporary open ditch shall be designed to contain the design flow of the proposed permanent pipe system.
c. The capacity of a roadside ditch shall be based at minimum on a 5-year return period, provided that the minimum ditch standards as specified in the rural section cross-section shall be adhered to.

5. A snowmelt component will not be used when determining design flows for pipe size purposes.

C. Miscellaneous

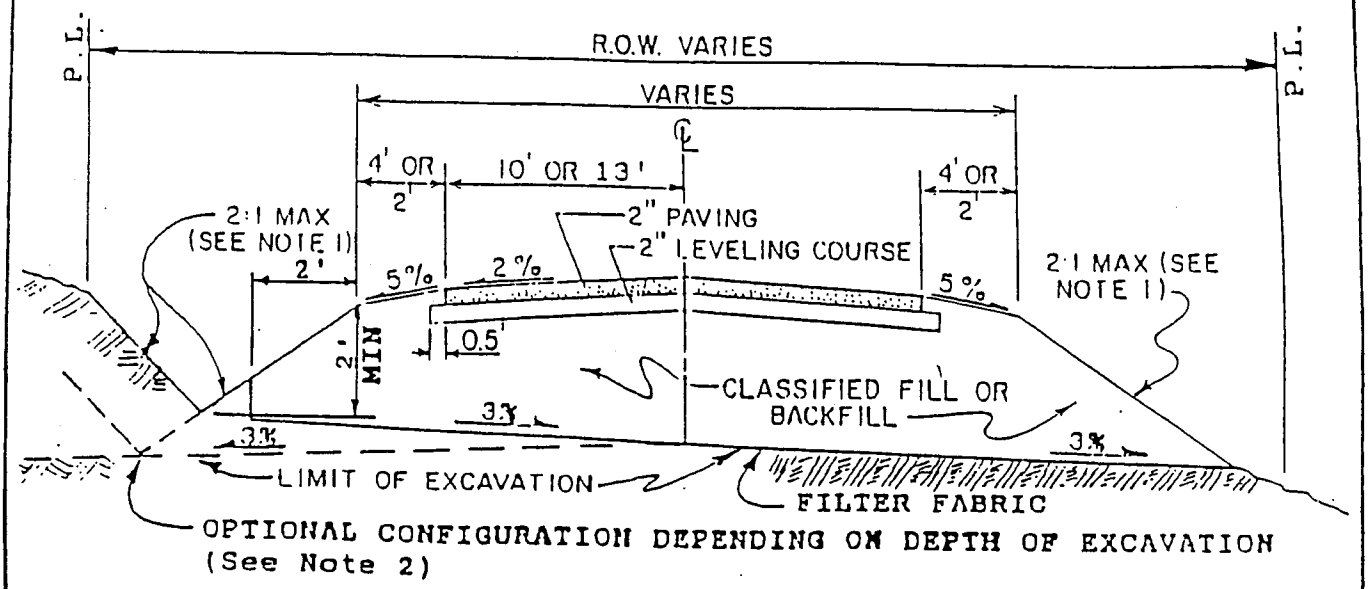
1. A nomograph for determining the time of overland flow is shown as Figure 16.

2. Hydrologic calculations shall be based on accepted engineering procedures.

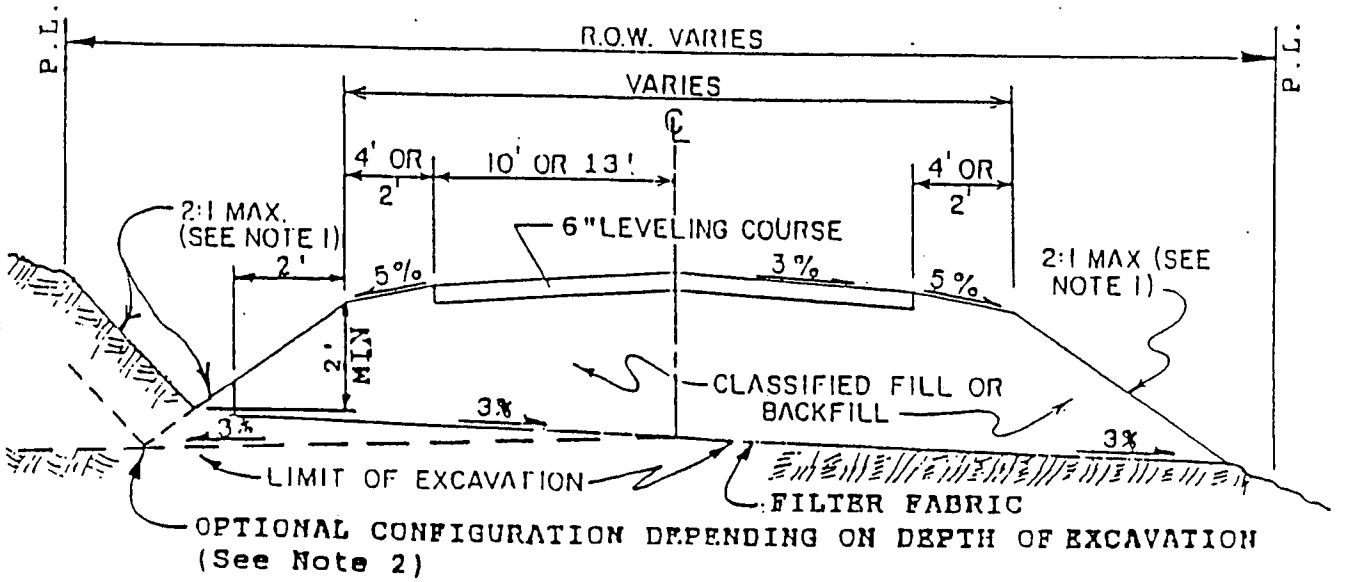
SECTION 1.07
WAIVERS

Municipal design criteria has been established to provide minimum standards for streets and storm water collection facilities. The engineer, however, remains responsible for identifying and resolving the specific problems associated with his design.

The City Public Works Engineer may waive specified design criteria on a case-by-case basis. Requests for waiver shall be in writing and shall include a comprehensive analysis and justification of the proposed design by the professional design engineer for review and subsequent approval or denial by the City Public Works Engineer.



TYPICAL SECTION - 20'/26' STRIP PAVING



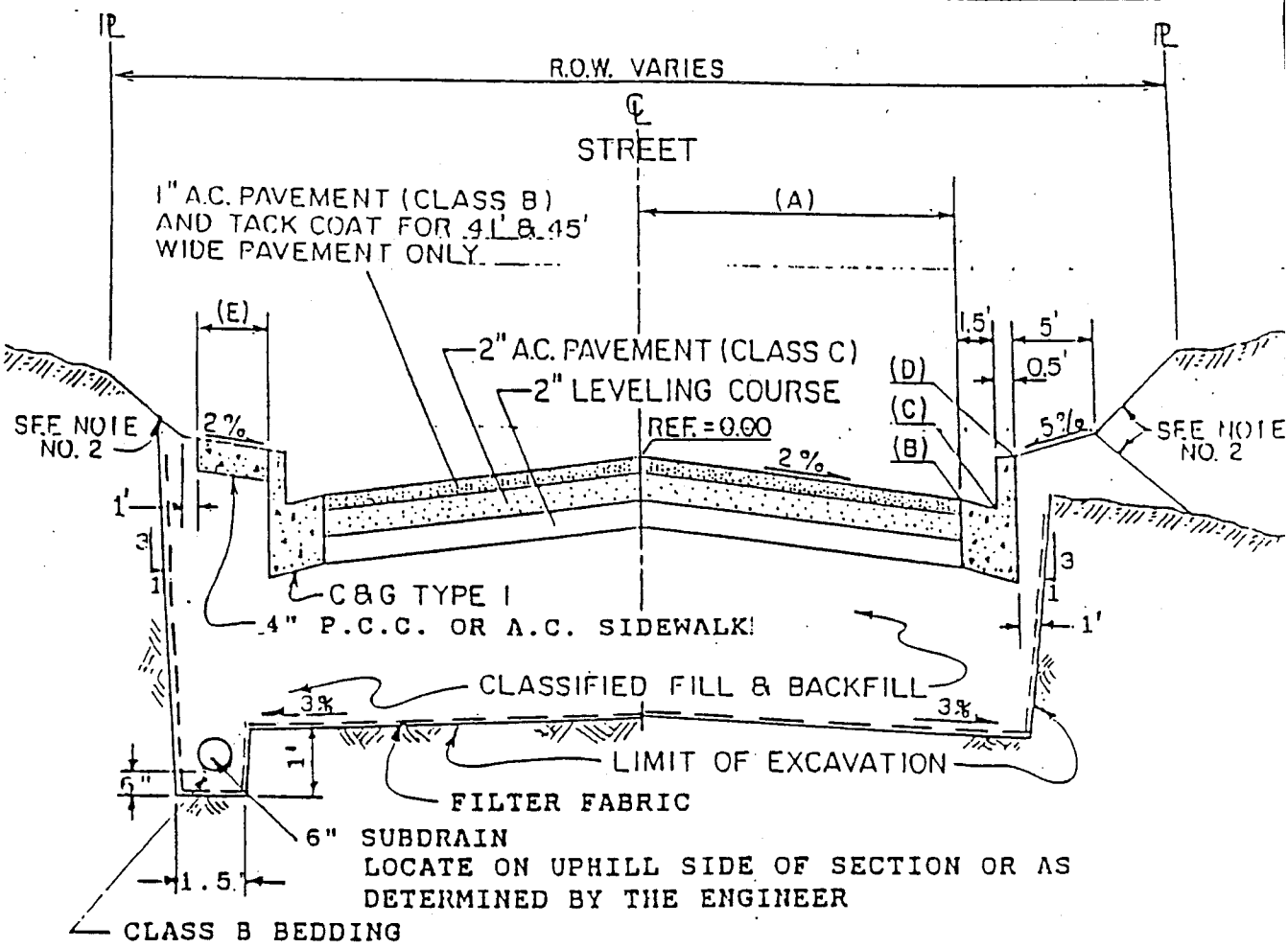
TYPICAL SECTION - 20'/26' GRAVEL STREET

NOTES:

1. MATERIAL TO BE PLACED OR REMOVED AND GRADED IN A NEAT MANNER FROM EXCAVATION LIMITS TO EXISTING ELEVATION AT PROPERTY LINE AS DIRECTED BY THE ENGINEER.
2. DEPTH OF EXCAVATION TO BE DETERMINED BY THE ENGINEER. SEE ARTICLE 5.6 FOR DESIGN METHODS.
3. THE TOP 6" OF CLASSIFIED FILL OR BACKFILL IMMEDIATELY BENEATH THE LEVELING COURSE SHALL BE RESTRICTED TO MINUS 3-INCH MATERIAL.
4. UNLESS OTHERWISE APPROVED, THE ℄ OF STREET WILL BE THE ℄ OF R.O.W.

FIGURE 1 - STREET SECTION "RURAL" DESIGN

Submitted by: COMMITTEE'	Revised:	CITY OF HOMER	Sht No	Scale NONE
Approved by: M.G. HOBBS	4/87.	TYPICAL SECTIONS FOR 20'/26' STRIP PAVING & GRAVEL STREETS		Date 9/85
Drawn by: SJF / Checked by: MGH				File No FIGURE 1



PAVEMENT WIDTH	(A) PAVEMENT	(B) LIP C&G	(C) F.L. C&G	(D) BACK C&G	(E) SIDEWALK WIDTH
32'	16'	-0.32	-0.42	-0.02	4'
36'	18'	-0.36	-0.46	-0.04	4'
41'	20.5'	-0.41	-0.51	-0.01	5'
45'	22.5'	-0.45	-0.55	-0.05	5'

NOTES:

1. ALL DIMENSIONS AND ELEVATIONS AS SHOWN ON THIS DRAWING ARE TYPICAL BUT MAY VARY IN SPECIFIC INSTANCES AS SHOWN ON PLAN - PROFILE DRAWINGS OR AS DETERMINED BY THE ENGINEER.
2. MATERIAL TO BE PLACED OR REMOVED AND GRADED IN A NEAT MANNER FROM EXCAVATION LIMITS TO EXISTING ELEVATION AT PROPERTY LINE AS DIRECTED BY THE ENGINEER. MAXIMUM - 2:1 CUT AND FILL SLOPES.
3. DEPTH OF EXCAVATION TO BE DETERMINED BY THE ENGINEER.
4. UNLESS OTHERWISE APPROVED, THE ℄ OF STREET WILL BE THE ℄ OF R.O.W.

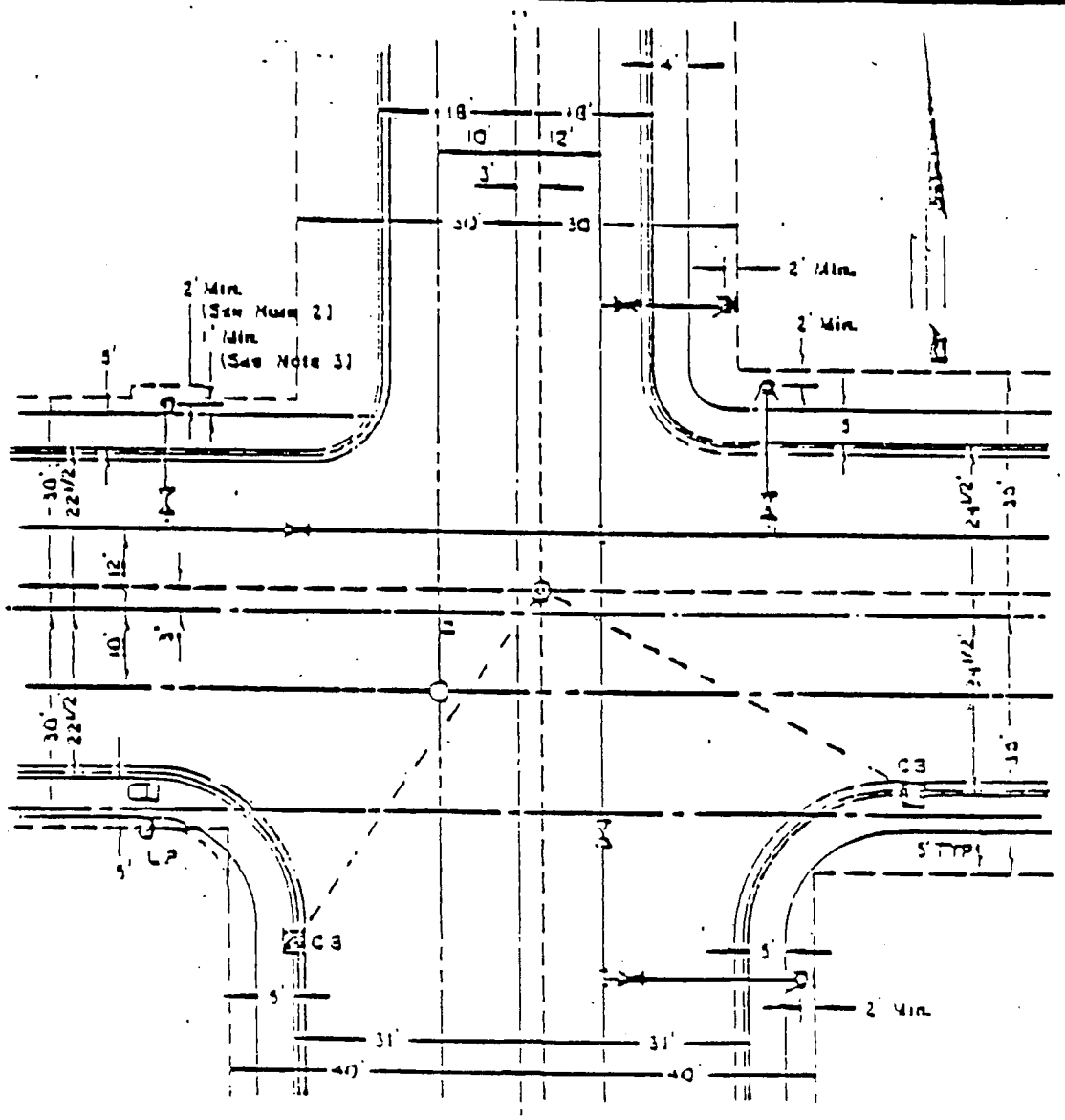
FIGURE 2 - STREET SECTION "URBAN" DESIGN

Submitted by: PWD	Revised:	CITY OF HOMER	Std. No.	Scale: NONE	
Approved by: M.G. HOBBS	1/87	32', 36', 41' & 45' STREETS		Date: 9/85	
Drawn by: SJF Checked by: MGH	64			File No. FIGURE	

FIGURE 3
Utilities in Right-of-Way

CITY OF HOMER
PUBLIC WORKS DEPARTMENT
STANDARD SPECIFICATION

STANDARD LOCATION FOR NEW UTILITYS



WATER
STORM DRAIN
SANITARY SEWER
GAS

NOTES:

1. OFFSETS ARE TO CENTER OF UTILITY.
2. ADDITIONAL RIGHT-OF-WAY MAY BE REQUIRED TO MEET MINIMUM SET-BACKS FOR HYDRANTS
3. HYDRANT MUST BE SET-BACK A MINIMUM OF 5' FROM BACK OF CURB OR 1' FROM EDGE OF SIDEWALK.
4. CURB TO CURB DEMENSIONS SHOWN ARE TYPICAL EXAMPLES ONLY

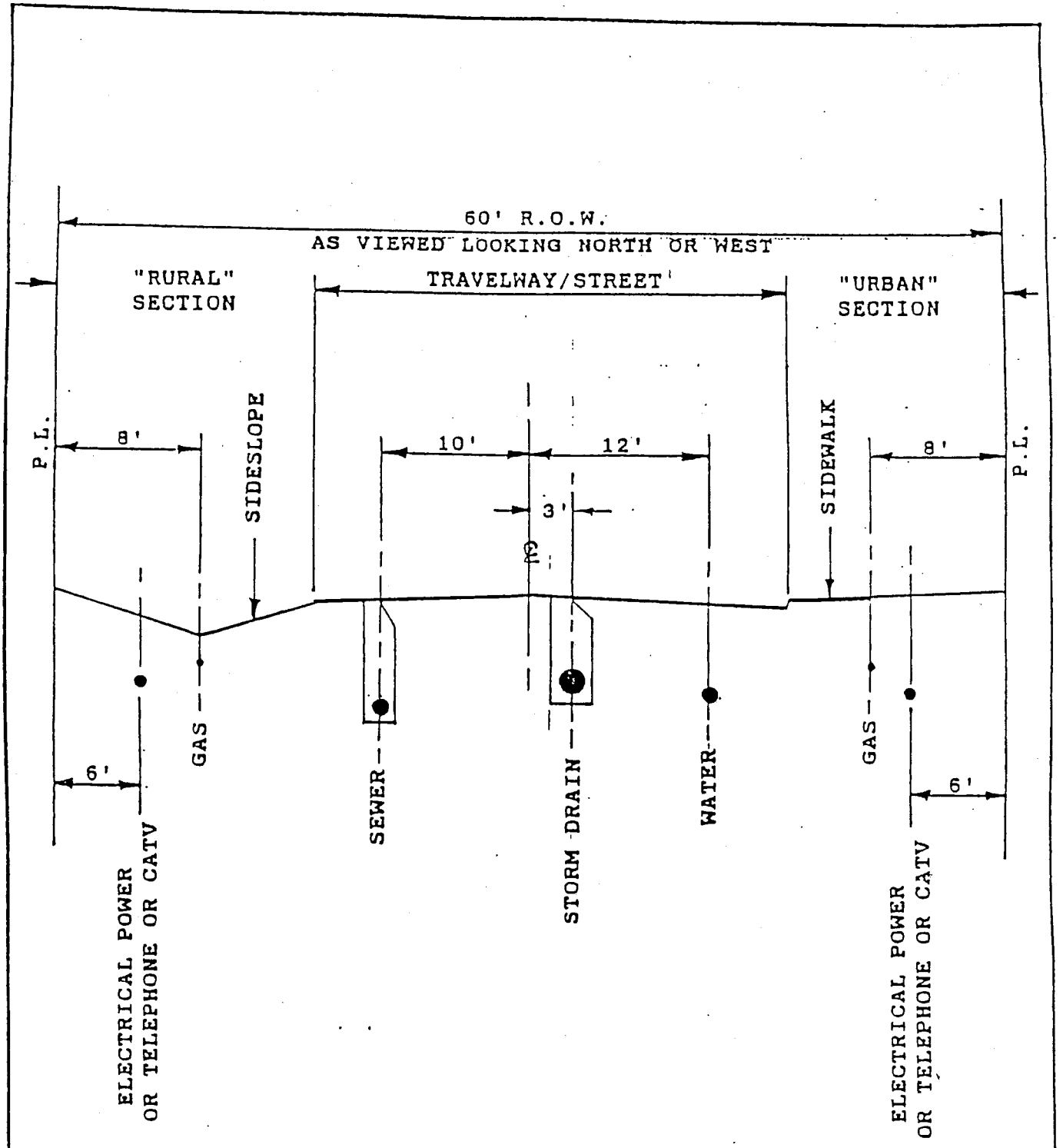


FIGURE 3A-TYPICAL UTILITY LOCATIONS

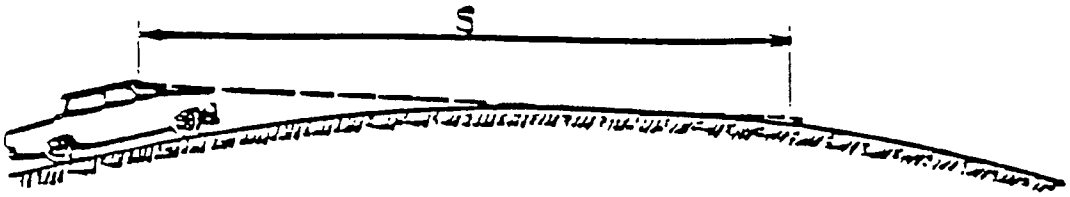
Submitted by: PWD	Revised:	CITY OF HOMER	Sht. No.	Scale: NONE
Approved by: M.G. HOBBS		TYPICAL UTILITY LOCATIONS		Date: 1/87
Drawn by: SJF / Checked by: MGH				File No. FIGURE 3A

FIGURE 4

Stopping Sight Distance on Crest Vertical Curve

DESIGN SPEED M.P.H.	SIGHT DISTANCE FEET
30	200
35	275
40	350
45	425
50	500
55	575
60	650
65	730
70	820

HEIGHT OF EYE = 3.75 Feet
HEIGHT OF OBJECT = 0.50 Feet



L = Curve Length (Feet)
S = Sight Distance (Feet)
A = Algebraic Grade Difference (%)
V = Design Speed (M.P.H. for "S")

When S>L, $L = 2S - \frac{1398}{A}$

When S<L, $L = \frac{AS^2}{1398}$

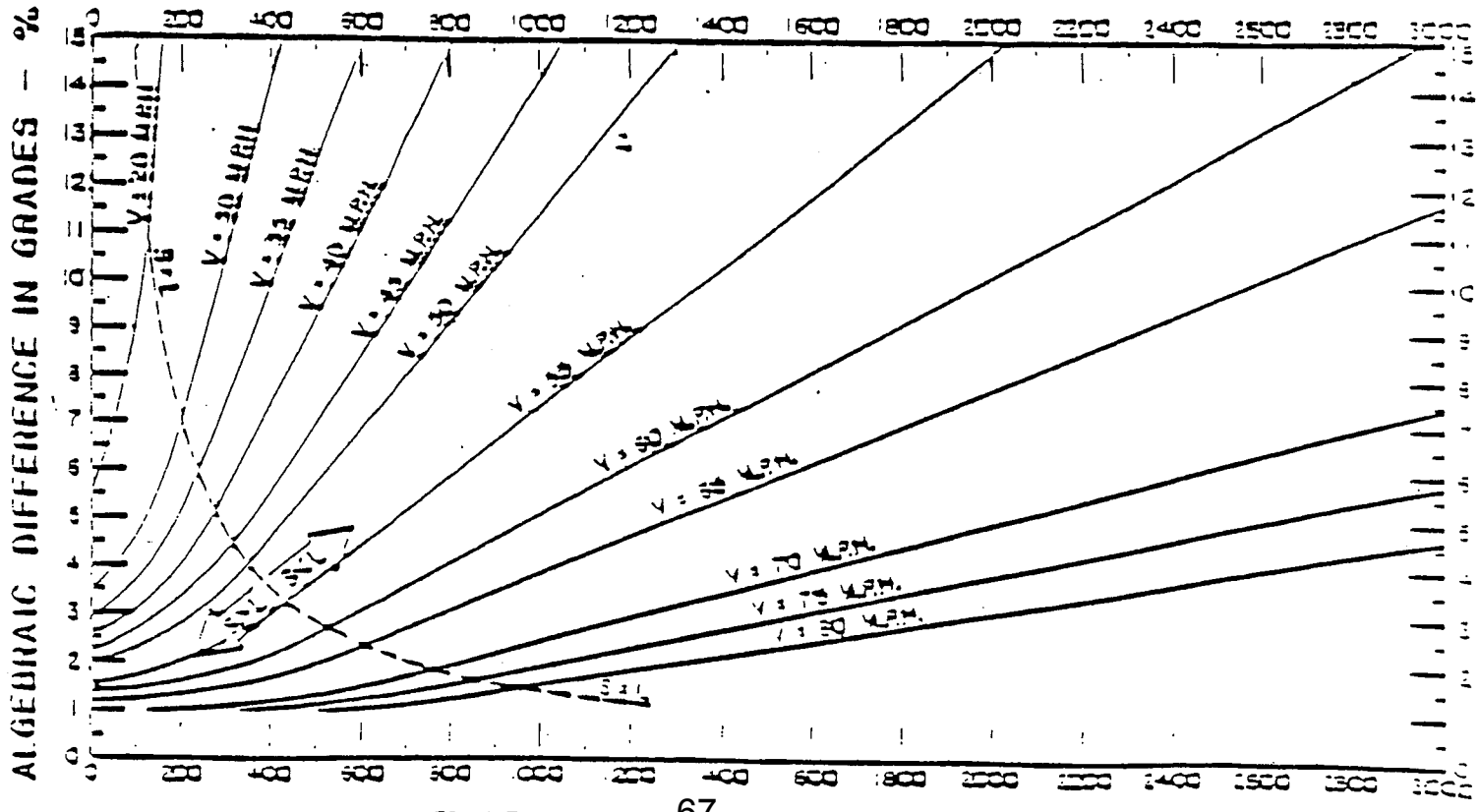
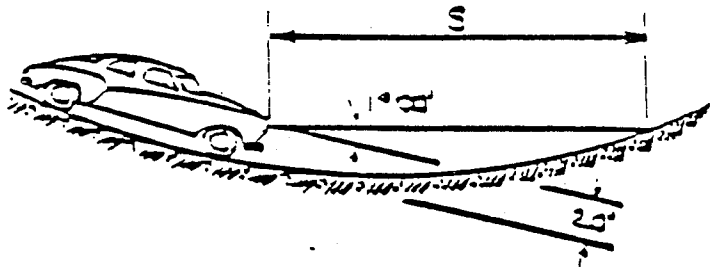


FIGURE 5

Stopping Sight Distance on Sag Vertical Curve



DESIGN SPEED M.P.H.	SIGHT DISTANCE FEET
30	200
35	250
40	300
45	350
50	400
55	450
60	500
65	550
70	600

L = Curve Length (Feet)
S = Sight Distance (Feet)
A = Algebraic Grade Difference (%)
V = Design Speed (M.P.H. for "S")

When S>L, $L = 2S - \frac{400 + 3.5S}{A}$

When S<L, $L = \frac{AS^2}{400 + 3.5S}$

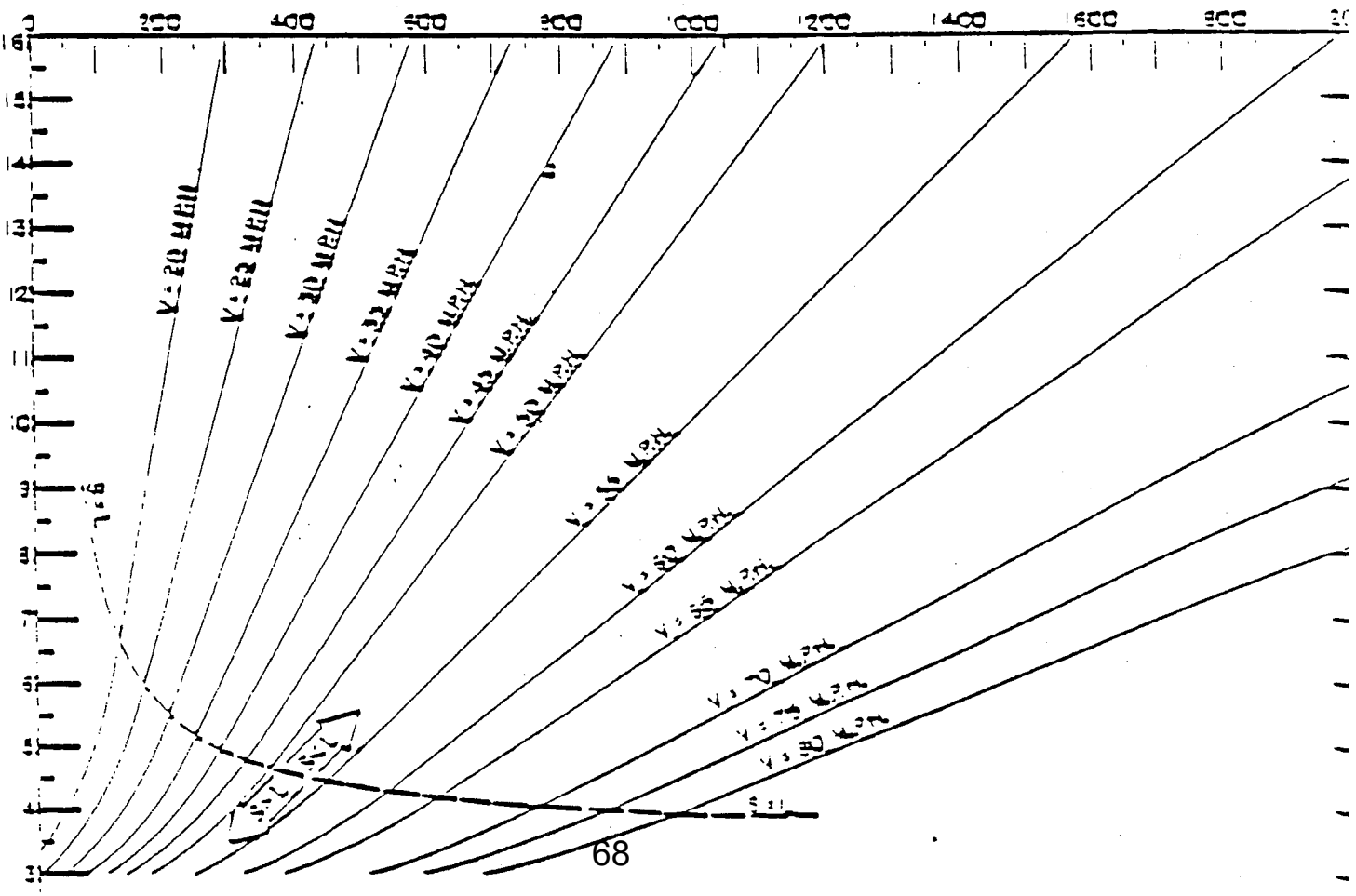
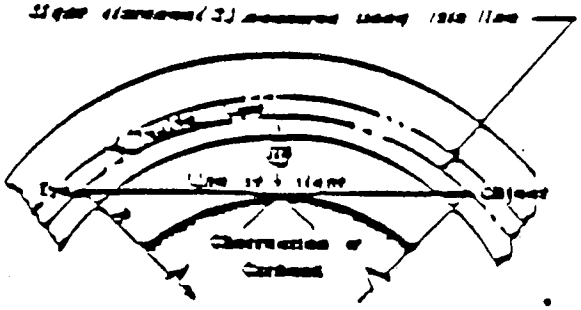


FIGURE 6

Stopping Sight Distance on Horizontal Curve



S = SIGHT DISTANCE IN FEET
R = RADIUS OF ℄ INSIDE LANE IN FEET
m = DISTANCE FROM ℄ INSIDE LANE IN FEET
V = DESIGN SPEED FOR S IN MPH

Angle is expressed in degrees.

$$m = R\left[1 - \cos\left(\frac{28.65S}{R}\right)\right]$$

$$S = \frac{R}{28.65}\left[\cos^{-1}\left(\frac{R-m}{R}\right)\right]$$

Formula applies only when S is equal to or less than length of curve.

DESIGN SPEED (mph)	SIGHT DISTANCE (ft)

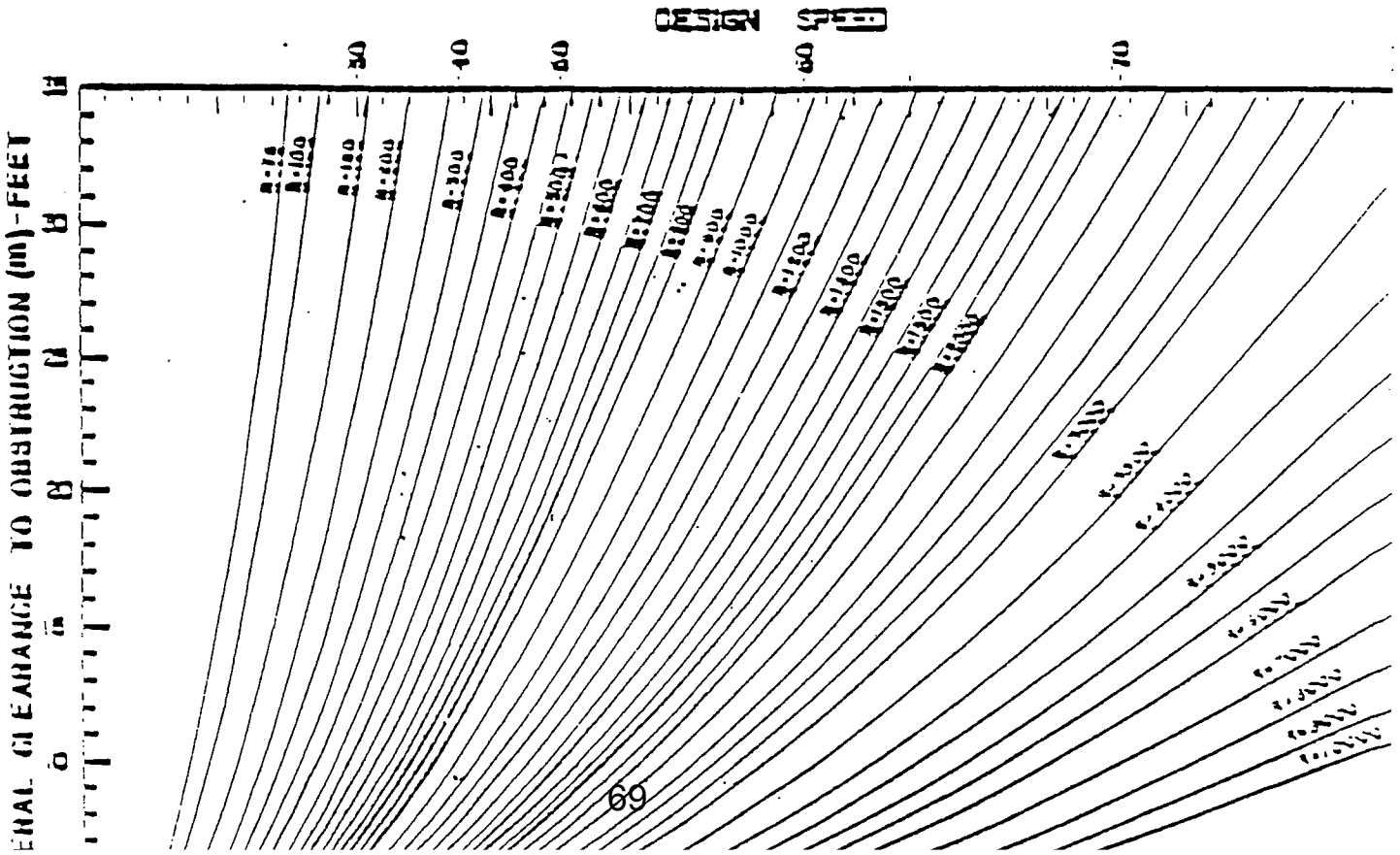
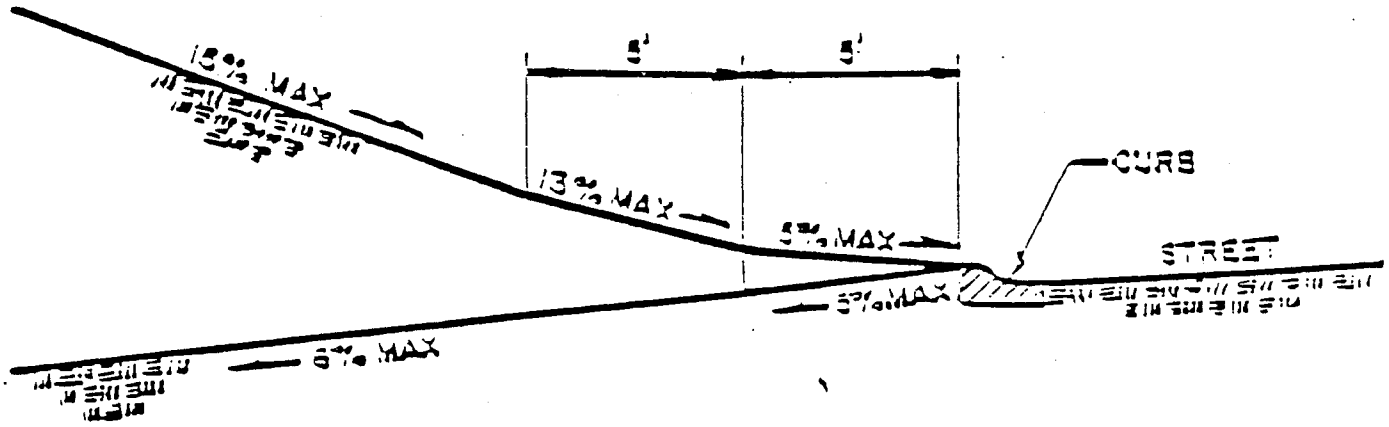


FIGURE 7

Driveway Requirements

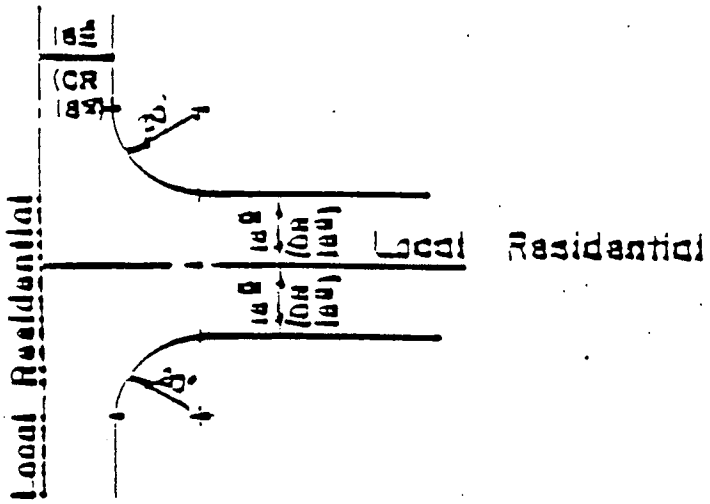
REQUIREMENTS FOR DRIVEWAYS WITHIN PUBLIC R/W

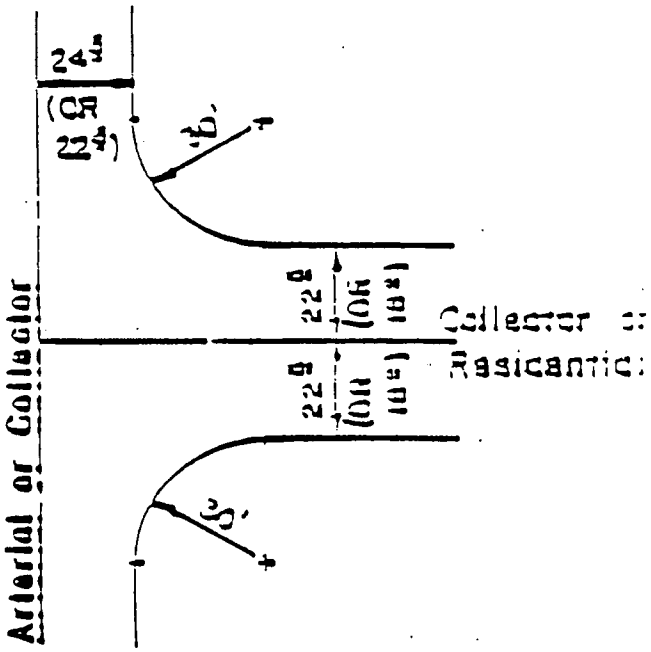


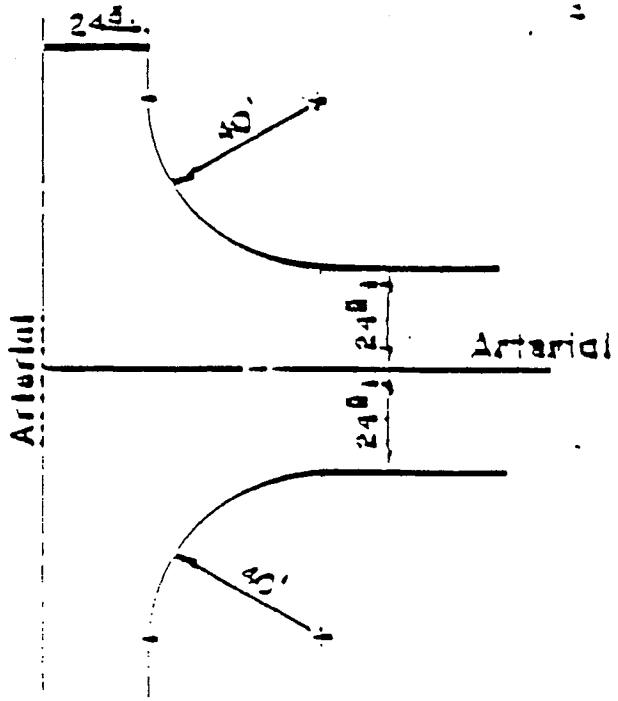
1. IN ALL AREAS WITH EXISTING CURB, THE DRIVEWAYS SHALL BE CONSTRUCTED WITH A MAXIMUM OF 5% SLOPE 5 FT. WIDE ADJACENT TO THE CURB. IN AREAS WITHOUT CURBS A 5% 5 FT. AREA SHALL BE PROVIDED FOR AND IT SHALL BE LOCATED BETWEEN 18 FT. AND 23 FT. FROM THE ℄ OF THE STREET WHERE APPLICABLE.

FIGURE 8

Curb Return Standards



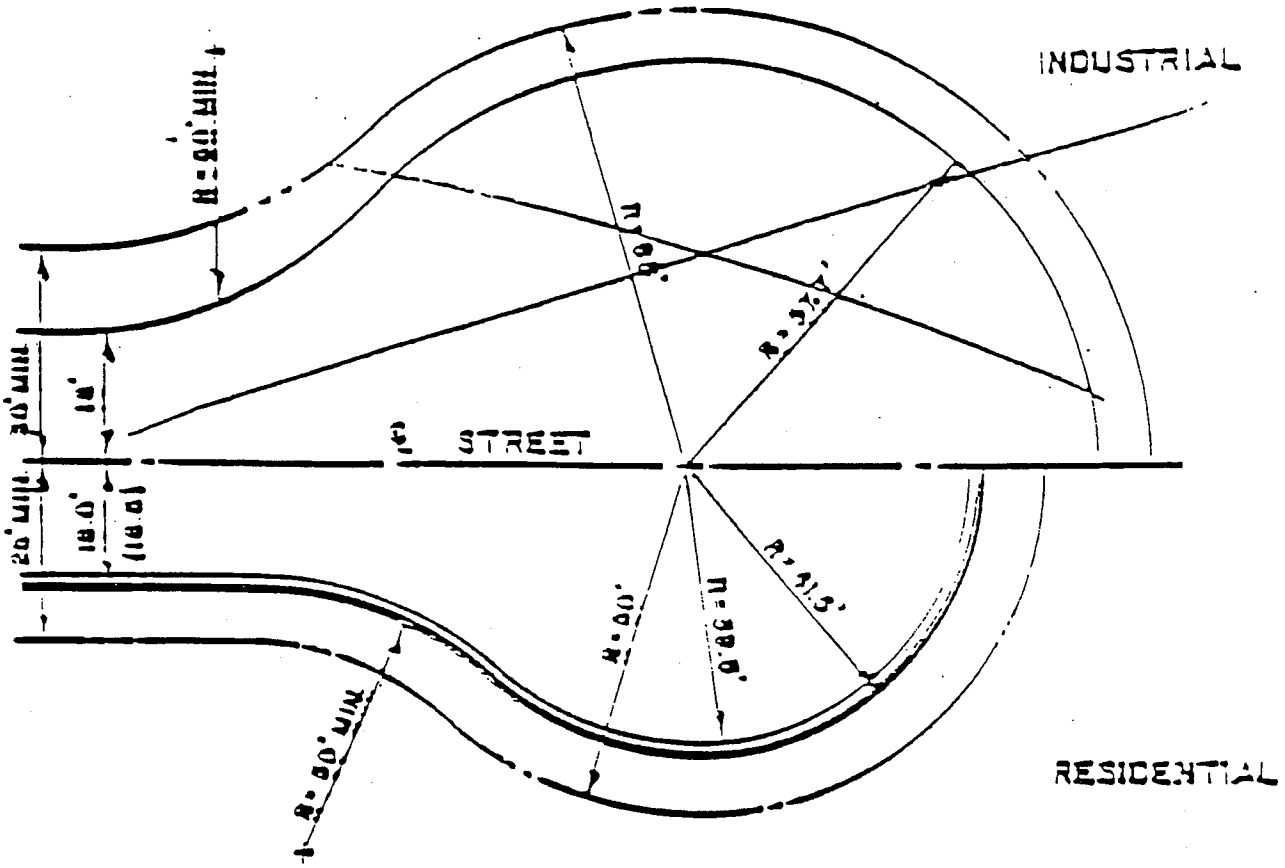




NOTE:

INCREASE RADIUS TO NEXT HIGHER CLASSIFICATION, UP TO 40' R MAXIMUM, TO ACCOMMODATE HEAVY WB-60 VEHICLES IN COMMERCIALLY OR INDUSTRIALLY ZONED AREAS.

FIGURE 9 cul-de-sacs



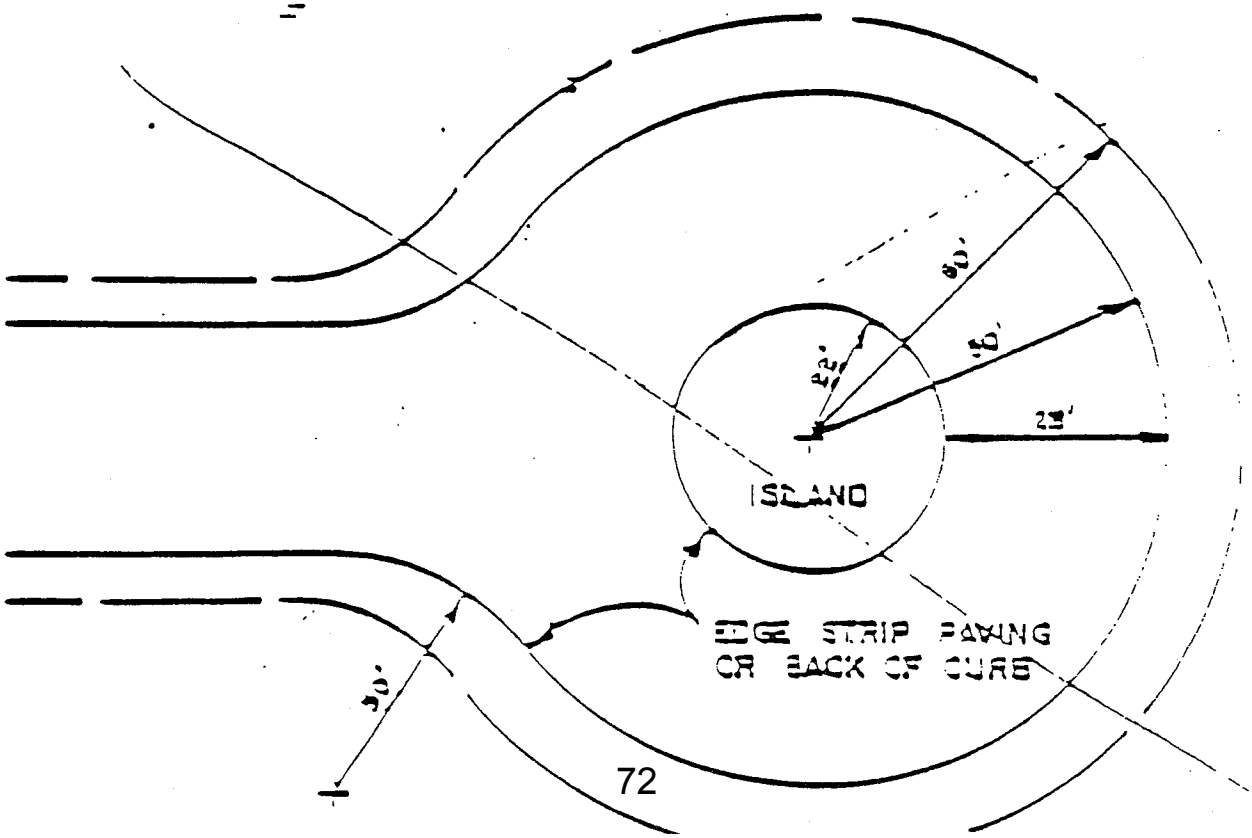


FIGURE 10

REDUCED SUBGRADE STRENGTH DESIGN CURVES
FOR FLEXIBLE BITUMINOUS PAVEMENTS

Ref: Corps of Engineers, TMS-813-2

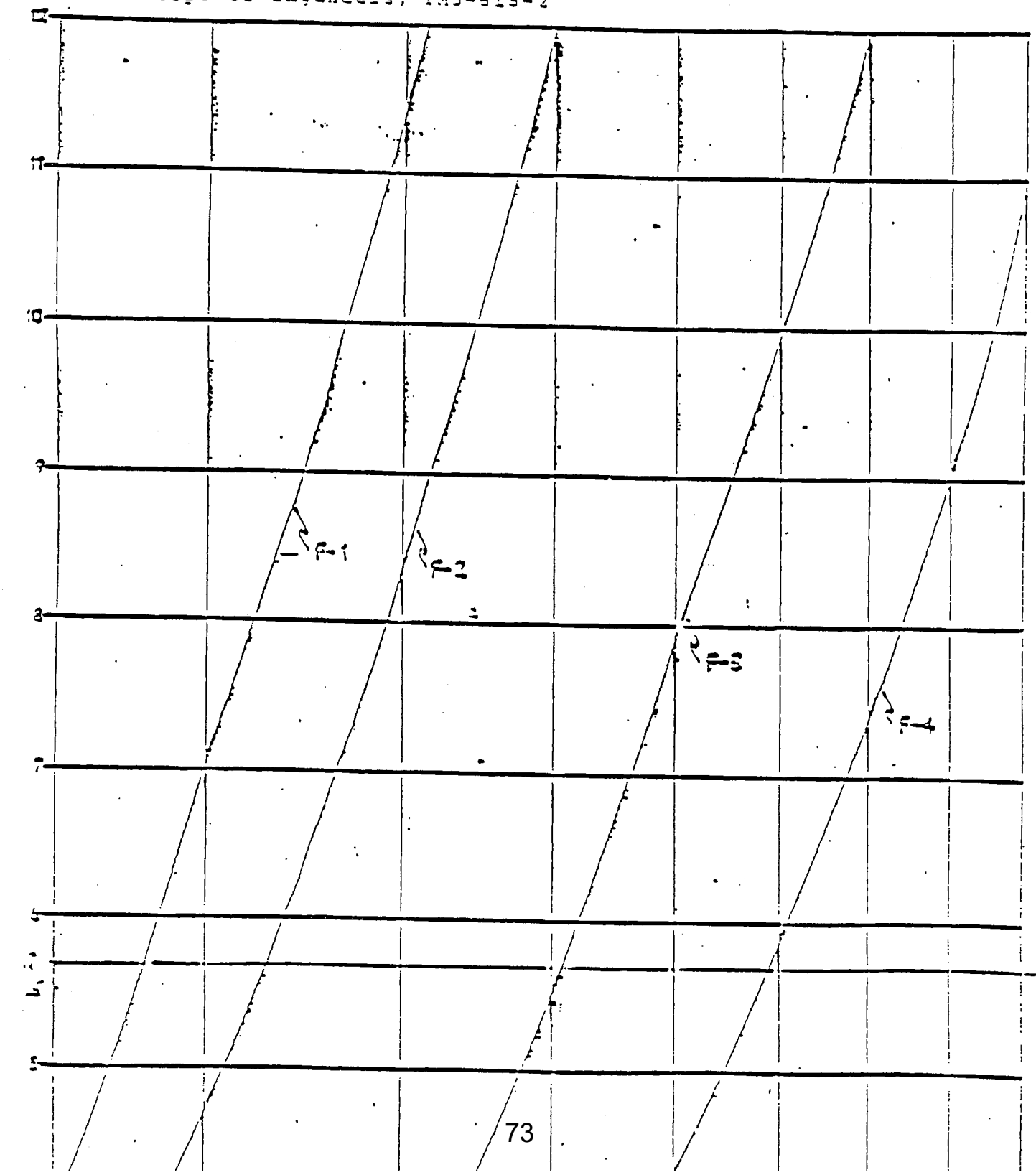
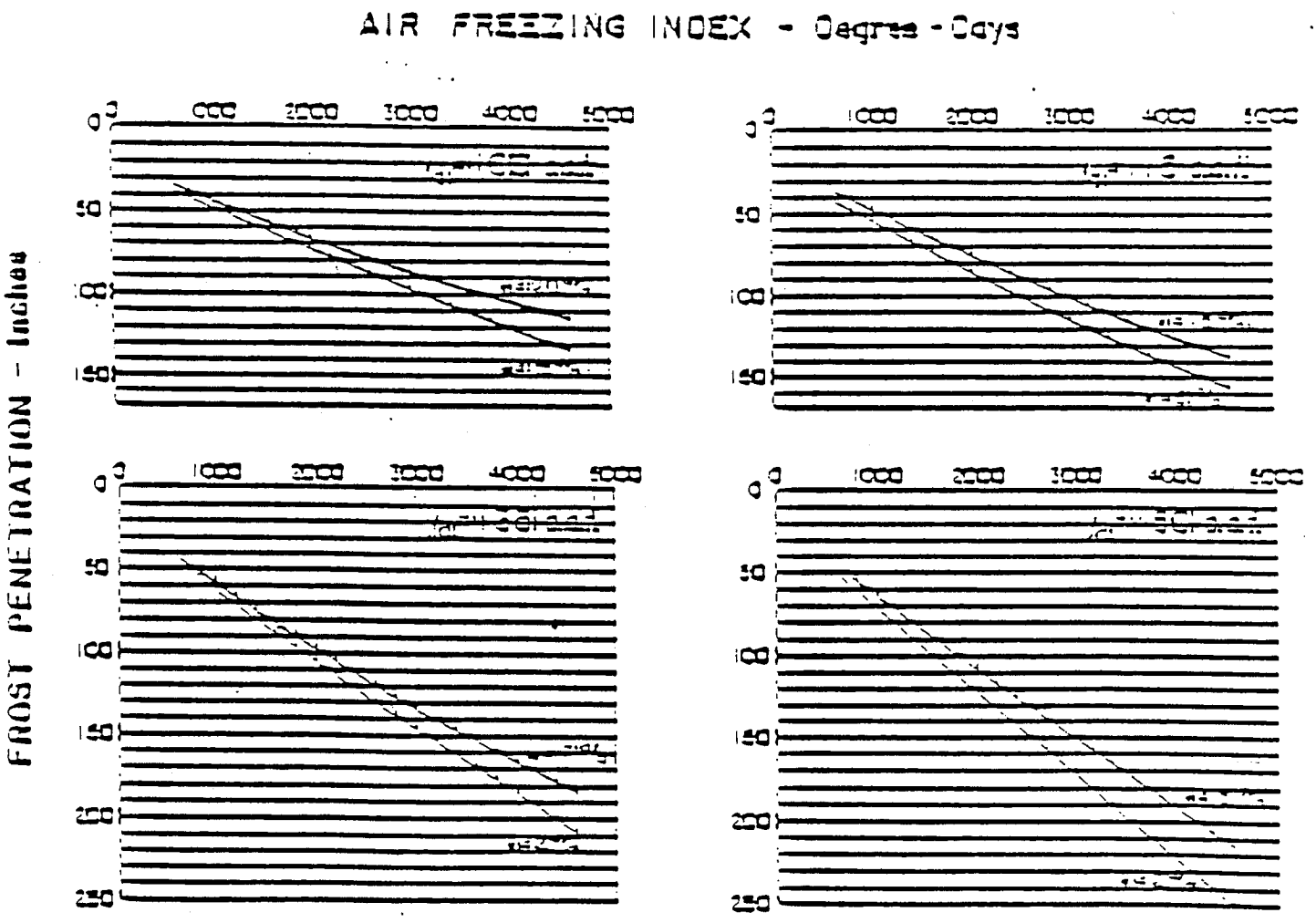


FIGURE 11

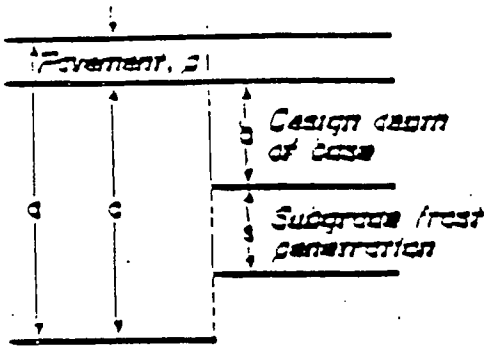
Air-Freezing Index vs. Frost Penetration



NOTE: GRAPHS ASSUME GRANULAR, NON-FROST-SUSCEPTIBLE SOIL BENEATH PAVEMENTS KEPT FREE OF SNOW AND ICE

FIGURE 12

Design Depth -
Limited Subgrade Frost Penetration Method



d = Combined thickness of pavement and nonfrost - susceptible base for zero frost penetration into subgrade.

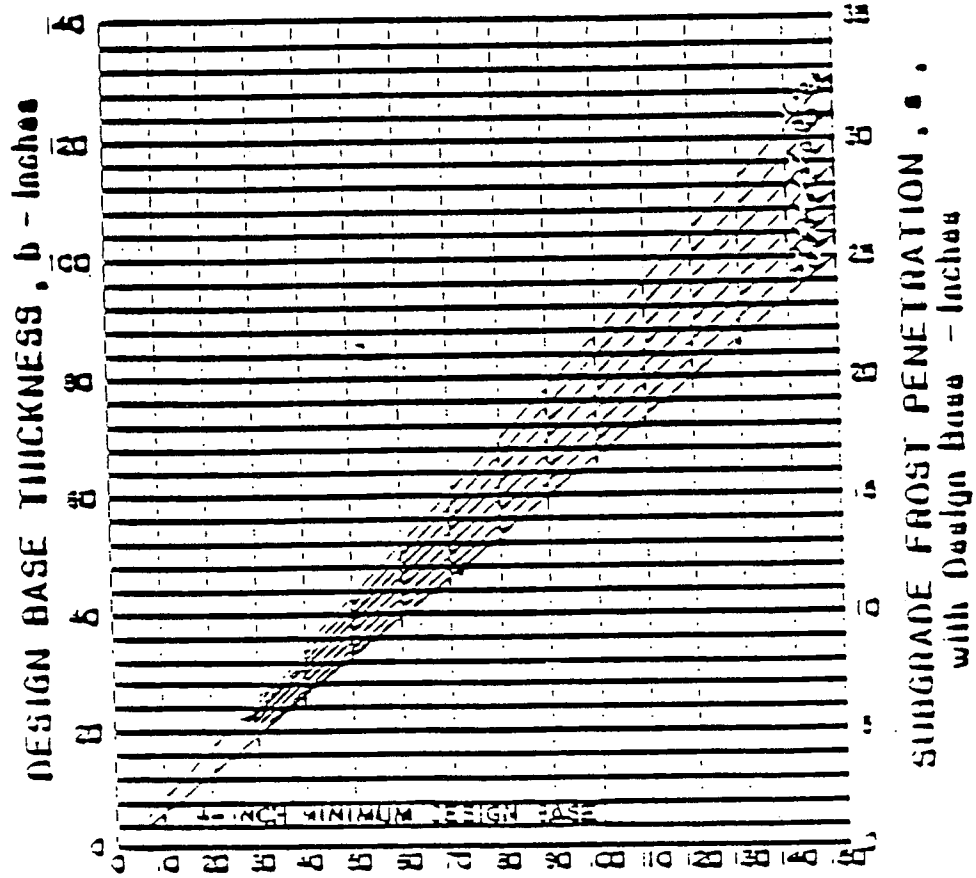
$b = d - s$

w_b = Water content of base.

w_s = Water content of subgrade.

$r = \frac{w_b}{w_s}$, Not to exceed 2.0.

Example: If $d = 60"$ and $r = 2.0$, then
$b = 40"$ and $s = 10"$



BASE THICKNESS FOR ZERO FROST PENETRATION INTO SUBGRADE, d - Inches

NOTE: DESIGN THICKNESS ASSUMES THE USE OF

FIGURE 13
FROST DESIGN
SOIL CLASSIFICATION

Frost group	Kind of Soil	Percentage Finer than 0.02 mm by Weight	Typical Soil Types Under Unified Soil Classification Syste
1	Gravelly soils	3 to 10	GW, GP, GW-GM, GP-GM
2	a. Gravelly soils	10 to 20	GM, GW-GM, GP-GM
	b. Sands	3 to 15	SW, SP, SM, SW-SM, S
3	a. Gravelly soils	Over 20	GM, GC
	b. Sands, except very fine silty sands	Over 15	SM, SC
	c. Clays, PI 12	—	C, CH
4	a. All silts	—	ML, MH
	b. Very fine silty sands	Over 15	SM
	c. Clays, PI 12	—	C, C-ML
	d. Varved clays and other fine-grained, banded sediments	—	C and ML; C, ML, and SM; C, CH, and ML; C, CH, ML, and SM

FIGURE 14

Manning Equation Nomograph

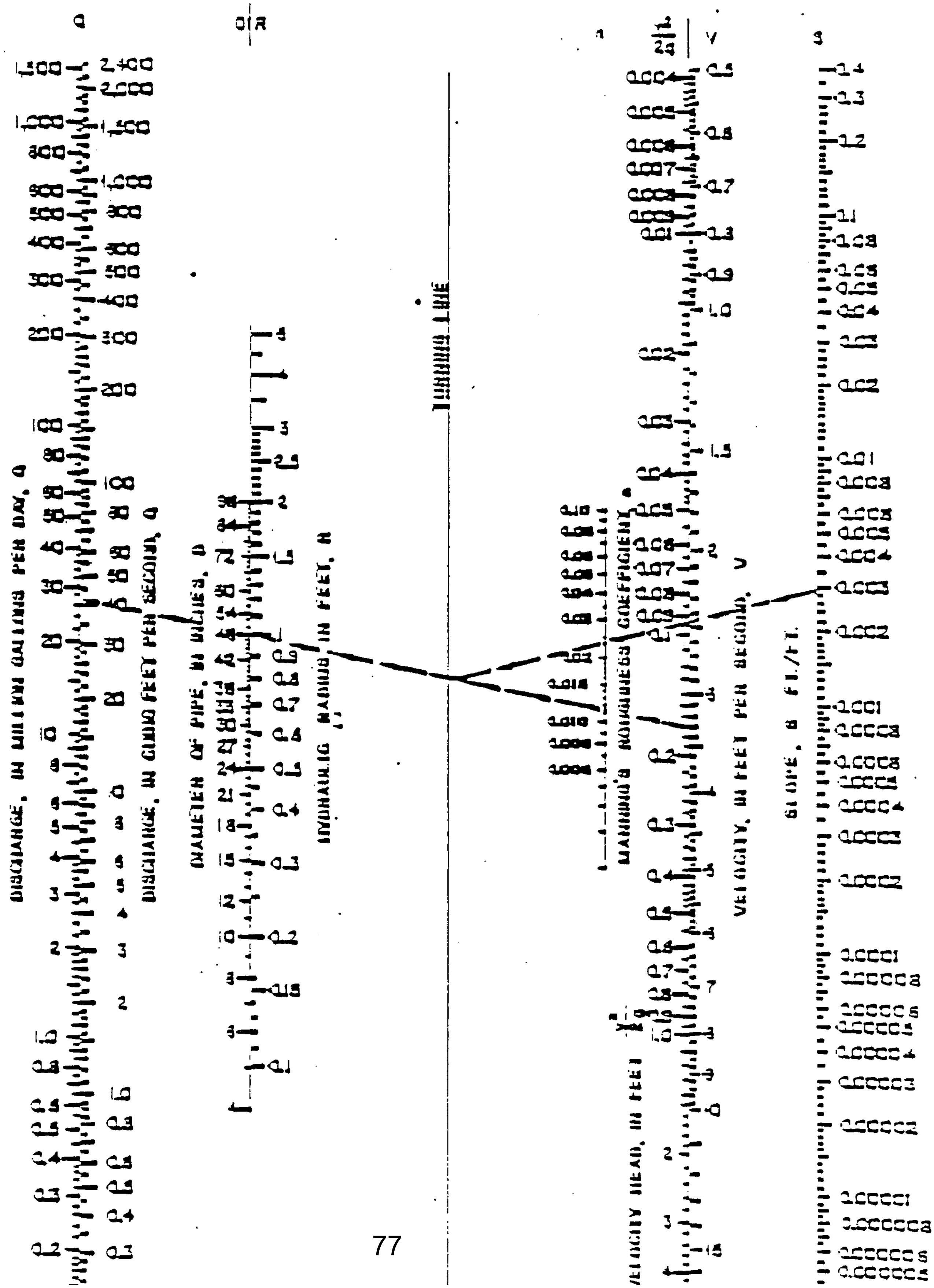


FIGURE 15

ESTIMATING VALUES FOR
IMPERVIOUS AREAS CONTRIBUTING
TO STORM DRAIN FLOW

Source: Water Quality Management Plan, Municipality of Anchor

LAND USE CATEGORY	IMPERVIOUS PERCENT AREA		
	Directly Connected	Indirectly Connected	Total
Parks & Open Space	0	0	0
Public Lands & Institutions	35	10	45
Commercial	70	20	90
Commercial/Industrial	70	10	80
Industrial	50	20	70
Residential (by dwelling units per acre)			
less than 3	5	15	20
3 to 6	17	12	30
7 to 10	25	10	35
11 to 20	30	10	40
21 to 30	35	10	45
greater than 30	40	15	55

Note: These percentages are based on the recommendations of the 208 Water Quality Management Plan and assume that roof drains are not normally connected directly to the storm drain. In most instances the Land Use Category is that shown in the Anchorage Bowl Comprehensive Development Plan.

FIGURE 16

Overland Flow Time

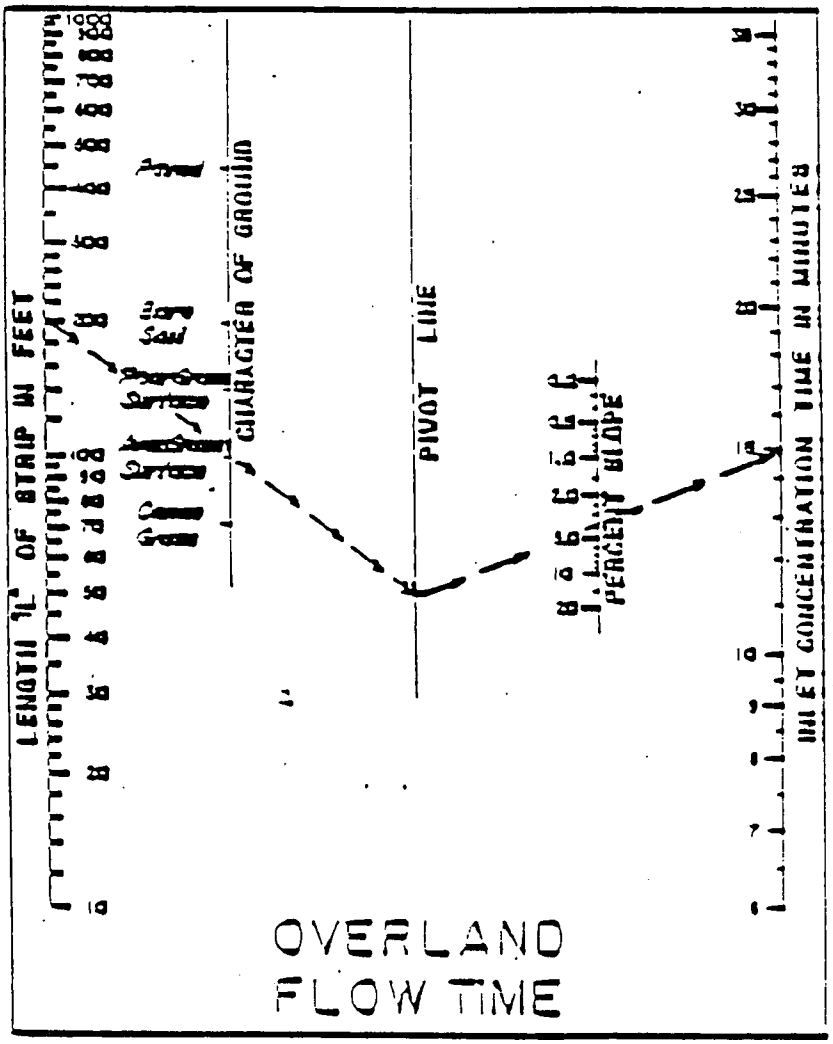
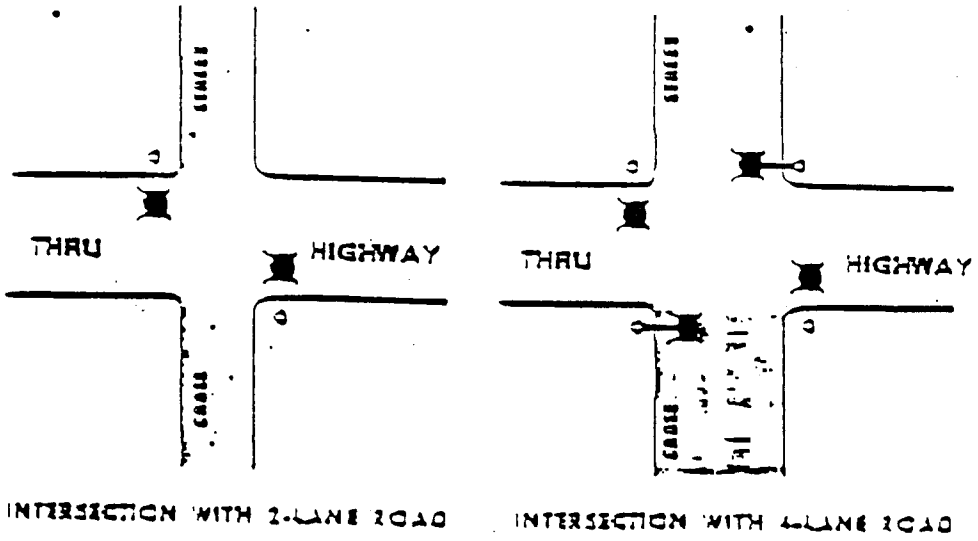


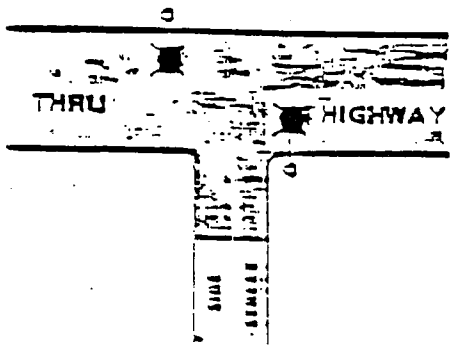
FIGURE 1

Typical Lighting at Non-Channelized Intersections



INTERSECTION WITH 2-LANE ROAD

INTERSECTION WITH 4-LANE ROAD



TEE INTERSECTION

TYPICAL LIGHTING AT NON-CHANNELIZED INTERSECTIONS

SECTION 1.09

APPENDICES

APPENDIX I

TABLE 10-12
Vehicle Trip Generation of Urban Land Use

Trip Generator	Daily Trips In + Out			A.M. Peak Hour Trips		P.M. Peak Hour Trips		Peak Hour of Trip Generation		
	Min.	Avg.	Max.	In	Out	In	Out	In	Out	Time of Day
Shopping center (1000 gross ft²)										
3–49,999 ft²	21.5	115.8	270.9	1.1	0.9	7.2	7.2	7.6	7.8	P.M.
50,000–99,000 ft²	23.3	79.1	161.3	2.9		2.4	2.7	9.1		P.M.
100,000–199,000 ft²	32.1	80.4	103.7	—		2.6	2.9	3.0	3.3	P.M.
200,000–299,000 ft²	18.0	49.9	92.0			2.1	2.3	2.7	2.5	P.M.
300,000–399,000 ft²	16.0	40.4	58.4	—		5.2		5.2		P.M.
400,000–499,000 ft²	29.0	47.6	90.0	—		5.7		5.0		P.M.
500,000–999,000 ft²	17.3	34.5	51.2	0.6	0.3	1.2	1.3	2.2	1.9	P.M.
1,000,000–1,249,000 ft²	16.4	31.1	57.0			1.4	1.8	0.7	4.2	P.M.
1,250,000 ft² and over	18.9	25.5	35.7	0.4	0.2	1.1	1.5	1.4	1.7	P.M.
Discount store										
75,000–150,000 ft²	29.8	54.6	127.1	1.4	1.9	2.5	2.4			
Hardware or paint store										
1000 gross ft²	43.6	51.3	74.1	1.1		4.9		5.2		P.M.
Employee	45.9	53.2	58.2	5.1		5.1		5.4		P.M.
Employee (Sat.)	52.3	55.6	34.1							
Acre	467.0	546.0	906.0	11.6		51.8		55.6		P.M.
Supermarket										
1000 gross ft²	51.7	125.5	270.5			3.7	3.3	6.0	7.4	P.M.
Convenience market—24-hour										
1000 gross ft²	480.0	577.5	699.2							
Restaurant—quality										
Seat		1.2		0.0	0.0	0.1	0.1	0.2	0.2	P.M.
1000 gross ft²		56.3		0.8	0.5	2.8	1.7	5.1	4.4	P.M.
Restaurant—sit-down										
1000 gross ft²	47.9	164.4	551.2	—		9.9	4.0	13.0	9.2	P.M.
Restaurant—drive-in										
1000 gross ft²	37.6	55.3	32.3			17.0	14.6	44.4	41.9	Noon
New-car sales										
Site				13.0	19.5	19.0	40.5			
Service station										
Station	620.0	748.0	100.0	22.0		25.0		31.0		P.M.
Pump	103.0	133.0	170.0							
Car wash										
Site								59.6		Sat.
Highway oasis										
Site				34.0	43.0	27.0	35.5	40.0	54.5	P.M.
Truck stop										
Site				31.5	32.5	39.0	48.5	50.5	52.5	P.M.
Bank—walk-in										
1000 gross ft²		169.0		4.4		13.8		13.3		P.M.
Employee		46.5		1.2		9.4		8.7		P.M.
Bank—drive-in										
1000 gross ft²	160.0	192.0	270.0	5.4		6.5	12.3	18.3	12.3	P.M.
Employee	12.0	117.4	92.0	1.2		2.3	4.4	6.5	4.3	P.M.
Window	207.0	297.0	330.0	5.0		20.0	26.0	44.0		P.M.
Savings and loan—walk-in										
1000 gross ft²		61.0		1.3		5.3		9.		A.M.
Employee		30.5		0.7		2.7		4.8		P.M.
Savings and loan—drive-in										
1000 gross ft²		74.0		1.0		6.3		9.7		P.M.
Employee		49.0		0.7		4.6		6.4		P.M.
Window		445.0		6.0		41.0		58.0		P.M.
Insurance										
1000 gross ft²	10.1	11.5	12.5	2.3		2.4		2.4		P.M.
Employee	2.4	2.4	2.5	0.5		0.5		0.5		P.M.
Acre		91.8		18.3		17.9		18.3		A.M.
General office building										
Employee	2.4	3.6	11.2	0.6		0.6		0.6		P.M.
1000 gross ft²	3.6	12.3	43.5	1.9	0.4	0.3	1.9	1.9	0.4	A.M.
Acre	51.0	240.1	239.7	9.2		18.0				
Medical office										
1000 gross ft²	28.0	75.0	99.0						3.4	P.M.
Government office										
Employee		12.0		0.8	0.2			1	0.5	P.M.
1000 gross ft²		68.9		4.9	1.0			3.2	2.3	P.M.

TABLE 10-42 (Continued)
Vehicle Trip Generation of Urban Land Use

Trip Generator	Daily Trips In + Out			A.M. Peak Hour Trips		P.M. Peak Hour Trips		Peak Hour of Trip Generation		
	Min.	Avg.	Max.	In	Out	In	Out	In	Out	Time of Day
Civic center										
Employee		6.1		0.5	0.1	0.2	0.5			
1000 gross ft²		25.0		2.0	0.2	0.9	2.0			
Office park										
Employee	2.9	3.3	3.5	0.6		0.5		0.6		
1000 gross ft²	9.4	22.6	30.3	9.4	0.3	0.3	1.8	2.0	0.3	A.M.
Acre		276.6		52.7		44.7		52.7		A.M.
Research center										
Employee	2.0	3.1	5.3	0.5		0.5		0.7		P.M.
1000 gross ft²	4.3	9.3	9.8	1.3		1.5		1.6		P.M.
Acre		37.7		7.3		8.4		8.4		P.M.
Commercial airport										
Employee	11.6	16.8	25.6	1.0	0.7	1.4	1.5	0.5	0.6	A.M.
Flights/day	2.6	11.8	50.7	0.2	0.1	0.2	0.2	1.9	2.1	P.M.
Commercial flights/day		77.9	84.6	3.0	2.0	4.2	4.4	2.7	2.9	P.M.
General aviation airport										
Employee		4.5	122.0	—	—	—	—	0.2	0.3	P.M.
Flights/day	1.0	3.1	10.3	0.2	0.2			0.2	0.4	P.M.
Truck terminals										
Employee	4.2	47.3	7.0	0.3	0.4	0.3	0.3	0.3	0.4	A.M.
1000 gross ft²		9.9		0.4	0.5	0.4	0.5	0.4	0.5	
Acre	56.2	81.9	100.1	3.1	4.6	3.0	3.4	3.1	4.6	
Industrial—general										
Employee	1.4	3.0	15.7	0.5		0.6		0.6		P.M.
1000 gross ft²	0.5	3.4	52.0	0.8		1.0		1.0		P.M.
Acre	3.5	59.9	441.2	9.3		12.0		11.5		A.M.
General light industrial										
Employee	1.5	3.2	4.5	0.7	0.1	0.3	0.5	0.3	0.5	P.M.
1000 gross ft²	1.6	5.5	16.9	0.8	0.2	0.3	0.6	0.3	0.7	
Acre	5.2	52.4	159.4	18.2	3.3	6.9	13.6	6.9	13.3	
General heavy industrial										
Employee	0.7	0.8	1.8	0.4		0.6		0.3		A.M.
1000 gross ft²	0.4	1.5	1.8	0.5		0.2		0.7		A.M.
Industrial park										
Employee	1.4	3.9	8.8	0.5	0.2	0.6		0.2	0.5	P.M.
1000 gross ft²	0.9	7.3	37.0	1.0		1.2			0.9	P.M.
Acre	13.9	58.1	441.2	7.9	2.8	10.0			8.0	P.M.
Manufacturing										
Employee	0.6	2.0	6.7	0.4		0.2	0.2	0.4		A.M.
1000 gross ft²	0.5	4.0	52.0	0.8		0.8		0.8		A.M.
Acre	2.5	38.3	396.0	7.3		8.4		9.0		A.M.
Warehousing										
Employee	3.0	4.3	15.7	0.5		1.4		1.4		P.M.
1000 gross ft²	1.5	5.0	17.0	0.6		1.5		1.5		P.M.
Acre	42.5	62.0	256.0	9.8		20.2		20.0		P.M.
Military base										
Employee	1.0	1.3	4.1							
Vehicle	0.6	0.9	2.3							
Elementary school										
Employee	4.5	13.1	28.4	2.9		0.3		0.4		A.M.
Student	0.5	1.0	1.8	0.2		0.0		0.3		A.M.
High school										
Student	0.7	1.4	2.5	0.3		0.2				
Employee	4.0	455.0	937.0					0.3		P.M.
Junior/community college								0.5		
Student	0.9	1.6	2.9	0.2	0.0	0.0	0.1	0.2	0.0	A.M.
University										
Student	1.4	2.4	3.9							P.M.
Library										
Employee	36.8	51.0	81.9					2.8	3.4	P.M.
1000 gross ft²		44.8						3.0	3.7	P.M.
Hospital										
Employee	2.2	5.5	11.1					0.3	0.4	P.M.
Bed	3.0	12.2	32.3					0.5	0.9	P.M.
1000 gross ft²		16.9						2.3		
Nursing home										
Bed	1.9	2.7	4.0	0.1		0.2		0.4		P.M.
Clinic (research and special cases)										
Employee		5.9							0.6	P.M.

Complete Streets:
Best Policy and Implementation Practices

Barbara McCann and Suzanne Rynne, Editors

American Planning Association

Planning Advisory Service
Report Number 559

Complete Streets: Best Policy and Implementation Practices is the result of a collaborative partnership among the American Planning Association (APA), the National Complete Streets Coalition (NCSC), and the National Policy and Legal Analysis Network to Prevent Childhood Obesity (NPLAN). Funding was provided by the Federal Highway Administration, the National Association of Realtors, Blue Cross Blue Shield of Minnesota, the Ruth Mott Foundation, and NPLAN, a project of the Robert Wood Johnson Foundation.

The report was developed under the auspices of the Green Communities Research Center, one of APA's National Centers for Planning. The Center engages in research, policy, outreach, and education that advance green communities through planning. For more information, visit www.planning.org/nationalcenters/green/index.htm. APA's National Centers for Planning conduct policy-relevant research and education involving community health, natural and man-made hazards, and green communities. For more detail, visit www.planning.org/nationalcenters/index.htm.

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The authors thank the many other individuals who contributed to or supported this project, particularly the planners, engineers, elected officials, and citizens in the case-study communities who participated in interviews, shared documents and images, and reviewed drafts of the case studies. Special thanks also goes to the report reviewers, Michael Ronkin, Lynn Weigand, Susan Handy, John LaPlante, and Hugh Morris, AICP, smart growth program representative at the National Association of Realtors, as well as the scoping symposium participants: Susan Handy; Randy Kline, staff attorney at NPLAN; John LaPlante; Jana Lynott, AICP, strategic policy advisor at AARP; Michael Ronkin; Lynn Weigand; and Paul Zykofsky, AICP, director of land use and transportation programs at the Local Government Commission. Thanks also to Michael Huber of the Center for Prevention of Blue Cross Blue Shield of Minnesota for his help with the scoping symposium; Bill Klein, AICP, director of research at APA, who provided valuable input and leadership throughout the project; Ann Dillemuth, who took the lead on the copyediting; Lisa Jacobson, fellow at NCSC, who helped coordinate the scoping symposium and did policy research; NCSC staff members Stephanie Potts and Randy Neufeld, for their contributions; and NPLAN staff members and outside reviewers who provided input and review of the model policies, particularly Marice Ashe, executive director; Manel Kappagoda, deputy director; and Heather Wooten, planning and policy associate.

Cover design by Lisa Barton

Cover photo: Ninth Avenue in Manhattan, after complete streets improvements; image courtesy New York City Department of Transportation

The Planning Advisory Service is a subscription service offered by the Research Department of the American Planning Association. Four reports are produced each year. Subscribers also receive *PAS Memo* and *PAS QuickNotes*, and they have access to the Inquiry Answering Service and other valuable benefits.
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Planning Advisory Service Reports are produced in the Research Department of APA. Timothy Mennel, Editor; Lisa Barton, Design Associate

APA's publications office is at 122 S. Michigan Ave., Suite 1600, Chicago, IL 60603.
APA headquarters office is at 1776 Massachusetts Ave., NW, Suite 400, Washington, DC 20036.

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COMPLETE STREETS:
BEST POLICY AND IMPLEMENTATION PRACTICES

Barbara McCann and Suzanne Rynne, AICP, Editors

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CHAPTER 3

Elements of a Complete Streets Policy

Complete streets policies come in many shapes and sizes. City councils have quickly passed simple resolutions directing their transportation agencies to consider the needs of all users. State departments of transportation have gone through extensive public input processes to rewrite their design manuals. Planning departments have worked with community members to include complete streets goals in comprehensive plans. Directors of transportation agencies have written internal memorandums outlining policy changes and implementation steps. And policy makers at both the state and local levels have passed complete streets laws and ordinances.

Some policies have been developed very quickly, often using the resources of the National Complete Streets Coalition or the U.S. DOT Guidance on Accommodating Bicycle and Pedestrian Travel. In other cases, communities have engaged in an extensive development process (see Rochester, Minnesota, sidebar, p. 15).

In many cases, policy development may involve many steps beyond the initial adoption of a resolution or vision statement. For example, in Massachusetts, a two-sentence law eventually led the state highway department to create an award-winning new design manual that firmly entrenches complete streets into project development and design (see sidebar, p. 83). In Seattle, the initial inclusion of a complete streets requirement in a bond measure led to a well-crafted ordinance, followed by the formation of a steering committee to further define what the ordinance means. Such gradual processes allow communities to create policies that work in their particular contexts.

Taking into consideration all of these permutations, the National Complete Streets Coalition has identified 10 elements that should appear in a comprehensive complete streets policy document. A good complete streets policy:

- Includes a vision for how and why the community wants to complete its streets.
- Specifies that "all users" includes pedestrians, bicyclists, and transit passengers of all ages and abilities, as well as automobile drivers and transit-vehicle operators.
- Encourages street connectivity and aims to create a comprehensive, integrated, connected network for all modes.
- Is adoptable by all relevant agencies to cover all roads.
- Applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right-of-way.
- Makes any exceptions specific and sets a clear procedure that requires high-level approval of exceptions.
- Directs the use of the latest and best design standards while recognizing the need for flexibility in balancing user needs.
- Directs that complete streets solutions will complement the context of the community.
- Establishes performance standards with measurable outcomes.
- Includes specific next steps for implementing the policy.

SET A VISION

A strong vision statement can keep a community focused on its purpose in calling for complete streets—and that purpose can vary considerably. Some communities, especially those that pass resolutions, may list many reasons for complete streets policy adoption, but it is helpful to be clear about the primary purpose. For example, Rochester, Minnesota, included no less than four "whereas" clauses clearly designating "active living" as the primary reason behind its policy adoption. In all cases, the vision statement can help guide the inevitable difficult choices that must be made in striking a balance that provides for the needs of a variety of users along a single right-of-way. For more information about developing a complete streets vision, see Chapter 4.

INCLUDE ALL USERS

The complete streets movement initially arose within the bicycle advocacy community as a response to the absence of space for bicyclists and pedestrians along too many roads. But a sidewalk without curb ramps is useless to someone who uses a wheelchair (and is difficult to use for parents with strollers and travelers with suitcases). An awkwardly placed bus stop that does not provide a safe and convenient way to cross the street can endanger transit riders. A true complete streets policy does not simply call for the addition of bicycle and pedestrian facilities but rather inspires a careful consideration of the needs of all travelers. Is there a senior center along the road? A school? A heavily used bus route? The consideration of such features and facilities can help identify the transportation needs of road users and the design elements that will be most useful to complete those streets.

The Massachusetts Project Development and Design Guide gives an almost comprehensive list, going beyond pedestrians and bicyclists to specify "people requiring mobility aids, drivers and passengers of transit vehicles, trucks, automobiles and motorcycles." However, it leaves out concern for age. This is a common omission, but it is particularly important to consider the mobility needs of older adults and children. These populations are more likely to be killed or injured in a crash, and children and many older people do not have the option to drive.

The Community Transportation Plan of Decatur, Georgia, does make specific mention of age, stating that the complete streets policy "is especially beneficial to the City's most vulnerable populations such as low income households, children and older adults, all of who experience differing physical, mental and financial challenges to mobility." The plan goes on to discuss complete streets in the context of Universal Design principles—the idea that homes and other places should be designed for "universal" use, not just for able-bodied people. The AARP

SHAPING COMPLETE STREETS THROUGH A COMMUNITY TRANSPORTATION PLAN: DECATUR, GEORGIA

The City of Decatur, Georgia, has long been interested in providing travel choices, especially for pedestrians. Inspired by recent studies demonstrating the link between the built environment and health, Decatur has committed itself to active living by increasing opportunities for nonmotorized modes of transportation for people of all ages and abilities. The city's interest in promoting active living through good transportation design is embodied in the 2008 Community Transportation Plan (CTP).

Community input shaped the CTP's goals, setting a clear vision and ensuring that the plan would be widely supported. Over a period of eight months, the project team held two general public meetings; four group meetings for audiences including older adults, local institutions, and low-income populations; and four workshops on topics such as traffic calming and health. A telephone survey developed by project staff, and a private firm was used to seek public input on a variety of transportation issues and gauge support for a complete streets policy. The survey findings showed that 61 percent of respondents supported a complete streets policy.

City of Decatur, Georgia

Figure 3.1. *A midblock crossing in downtown Decatur*

Throughout the planning process, more than 700 public comments were collected through formal meetings and via letter or email. These comments emphasized the importance of walking and bicycling and the need to accommodate all users, especially vulnerable groups such as older adults and those with disabilities.

To help identify the transportation networks for various travel modes, the city conducted four technical studies: latent demand score (LDS), level of service (LOS), street typology, and policy and regulatory audits. The LDS predicted citywide bicyclist and pedestrian demand if facilities for those users existed near destinations, such as schools, public transportation stops, and employment centers. The results will allow decision makers to better prioritize projects based on the demand for bike and pedestrian trips, as well as have a better understanding of the types of facilities necessary.

Decatur used traditional measures to evaluate LOS for automobiles but also based its approach on National Cooperative Highway Research Program Report 616 (TRB NCHRP 2008), which will be included in the 2010 edition of the Highway Capacity Manual. This method measures the quality of travel for pedestrians and bicyclists, accounting for comfort, sense of safety, and adjacent land use, rather than throughput and speed.

(continued on page 26)

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The street typology study used a new classification system that added land-use relationships to typical functional classifications. With this system, future roadway designs can better match the uses of the street. Each new type caters to different levels of need for various travelers, by foot, bike, or car. The typology can better guide investment decisions when balancing the needs of all users in construction and reconstruction projects.

Last, Decatur's existing plans, policies, codes, and practices were audited to identify potential challenges when implementing the CTP. Recommendations included updating city codes and landscaping ordinances to incorporate more specific details and designs for complete streets, as well as adding standards for minimum and maximum parking requirements.

Given the largely supportive community and a history of investment in multiple modes of transportation, city staff had few barriers to overcome. In addition to extensive public support, elected officials have stood solidly behind the CTP.

A built-out community, Decatur did not look to acquire or construct new rights-of-way but instead focused on reallocating existing roadways more efficiently. Most important, following the clear community goal meant changing the planning approach: taking a comprehensive look at all users of the road rather than focusing on moving automobiles. The project team was able to create a comprehensive package of designs and recommendations that promote health, safety, mobility, and access.

Following adoption of the CTP, Planning Director Amanda Thompson reports that Decatur is thinking beyond pedestrians and automobiles. Before, the city always thought about building sidewalks and adding street trees but gave little consideration to bike lanes or bike racks. Despite having solid public transportation within the city, staff did not always consider how better bus stops or improving access to train stations could improve the street environment. "We truly cover all modes now," she says.

The CTP includes detailed plans for five intersections and seven corridors, chosen for their key locations, the public's input, and their impact on health. These designs involve a variety of approaches, including narrowed and reduced travel lanes, widened sidewalks, and improved crossings. They also include ideas on how to make room for public transportation users and vehicles on the right-of-way. The broad definition of complete streets allows them to remain adaptable to the local context.

By first establishing networks, the project team had considerable flexibility in street design. Each of the selected areas is given a section in the CTP where opportunities, needs, and challenges are addressed. Conceptual drawings of the specific recommendations accompany each intersection and new cross-sections are shown for each corridor. Such details allow the city to better envision its transportation goals and ensure that all future projects, regardless of size or scope, contribute to the visions specified by the CTP. Thus, the complete streets goal can be implemented in phases and as funding allows.

Decatur has taken the CTP's implementation steps to heart. The city's recreation department now has a full-time staff dedicated to administering the Safe Routes to School program and an Active Living Advisory Board. Some front-yard parking for downtown businesses has been replaced with pedestrian seating. Nearby businesses initially resisted the loss of parking but now see the improved street life. Several of the plan's projects have been funded, including two intersection improvements, a bicycle lane, and streetscape improvements. The city also adopted a bicycle parking ordinance.

Decatur does face several hurdles in implementing the CTP. This small city does not directly conduct any transportation work beyond regular maintenance and repair; it uses Georgia Department of Transportation (GDOT) grant funding for all larger projects. Decatur's complete streets vision is in conflict with GDOT standards, and therefore every project, from street tree to bike lane, requires variances. GDOT also controls the main routes connecting the city to the surrounding Atlanta region, and because GDOT rarely considers context Decatur's main roads are addressed in the same manner as roads through any other community. Decatur works through this situation by submitting variances and working to educate GDOT staff on Decatur's vision and reasoning. City staff also try to influence state policy by working with elected officials. Despite these challenges, Thompson firmly believes their approach is great for small governments often at the mercy of larger agencies. The CTP is "a communication tool to build what the community wants."

Final design of the CTP's concepts can also be troublesome. Working within existing rights-of-way constrains Decatur's ability to provide all the facilities it might. But by depending on the bicycle and pedestrian networks established through the planning process, staff is better able to balance needs across the system. They can determine the type of facility that is most important in each location and ensure its inclusion, then discuss additional features. Determining the right type of facility is also a challenge. This is especially true for bicycle facilities, where deciding among bike lanes, off-street paths, and "share the road" markings can be difficult.

Transportation project cost is often a barrier. Decatur's transportation funding has not increased appreciably since adopting the CTP, and so plan implementation is a reflection of what the city can afford each year. To make the most of those funds, the city tries to be creative in pursuing low-cost options and prioritizes projects to reflect the network needs established in the CTP. "The general feeling in Decatur," says Thompson, "is that investing public funds into sustainable transportation, rather than the status quo, is a better investment of those funds." To aid in addressing these issues, the city held a complete streets workshop in April 2008. Nationally known experts spent a day with elected officials, planners, and engineers, building a base of support for the CTP as well as determining how best to tackle its goals. The community, city commissioners, and city employees agree that Decatur has much reason to be proud of CTP implementation and progress toward complete streets.

The CTP is at www.decaturga.com/cgs_citysvcs_dev_transportationplan.aspx.

report *Planning Complete Streets for an Aging America* is a good source of strategies to integrate the needs of older adults into street planning.

Automobile drivers are also an important part of the equation. Maintaining acceptable vehicle movement will be a primary concern of many of those charged with implementing complete streets policies, and traffic volume will influence what treatments are used for other transportation modes. For example, a major debate during the development of Seattle's complete streets ordinance concerned the treatment of freight. The final policy reads, "Because freight is important to the basic economy of the City and has unique right-of-way needs to support that role, freight will be the major priority on streets classified as Major Truck Streets. Complete Street improvements that are consistent with freight mobility but also support other modes may be considered on these streets." Pedestrian and bicycle advocates are still not happy with the clause, but the city felt such language was necessary to gain the support of the freight community.

When preparing to undertake street design changes to better accommodate other modes, planners need to measure the impact on drivers, decide what to do, and communicate the change. In some communities, the vision for complete streets deemphasizes automobility, so explaining to the public the changes and new mobility options available is important. In other cases, the changes may actually improve traffic flow, but this may often be counterintuitive and should be communicated clearly. See Chapter 5 for a discussion of balancing the needs of automobiles with other users.

CREATE A NETWORK

The ultimate intent of a complete streets policy is to ensure that roadways provide complete transportation networks for all modes. Often the fastest way to make progress is to focus on opportunities to close gaps: filling in missing sidewalk segments or finding a good way for bicyclists to negotiate a narrow bottleneck. The connectivity of the roadway network is an especially important feature for pedestrians, who are much more reluctant to take indirect routes. The transportation plan of Champaign, Illinois, contains a succinct phrasing of this objective: "Provide a dense, interconnected network of local and collector streets that supports walking, bicycling, and transit use, while avoiding excessive traffic in residential neighborhoods."

A network orientation is also helpful in balancing transportation needs. Trying to accommodate every traveler on every street is a feat that physical constraints can make nearly impossible. Instead, planners and engineers can provide high-quality access for everyone through the creation of interwoven networks in which certain streets emphasize different modes. For example, "bicycle boulevards" in Portland, Oregon, allow bicyclists to travel along lower-traffic streets, avoiding arterials designed primarily for cars. In its new Urban Street Design Guidelines, Charlotte, North Carolina, has created a street classification system in which "parkways" are designed primarily for cars, "main streets" emphasize business uses, and "avenues" serve diverse needs. See Chapter 7 for more information on design approaches. In such systems, it is still important to provide a basic level of safe access on all streets, and no users should be required to take long detours.

COVER ALL ROADS

Creating networks of complete streets is difficult because streets are not controlled by a single agency. Roads are built and maintained by a patchwork of state, county, and city agencies, with private developers often responsible for building roads in new developments. Typically, complete streets policies cover a single jurisdiction; examples include an internal policy adopted by a state DOT or a goal or policy in a city's comprehensive plan. One notable

PAVING THE WAY FOR A COMPREHENSIVE COMPLETE STREETS NETWORK: OREGON

When the Oregon State Legislature passed the "bike bill" (ORS 366.514) in 1971, no one was using the phrase "complete streets." Now, after nearly four decades on the books, this trailblazing state law is acknowledged as a primary inspiration for the complete streets movement.

Section 366.514 of the Oregon State Statutes requires that all roadway construction and reconstruction must include bicycle and pedestrian facilities. Additionally, at least 1 percent of all state funding received by local governments must be spent on bicycle and pedestrian improvements.

The bike bill became law around the same time that Oregon's innovative land-use planning laws were taking shape. Don Stathos, a conservative legislator from southern Oregon, secured approval for the measure by a single vote, using the argument that bicycle and pedestrian facilities were necessary to ensure that schoolchildren had safe routes to school.

Dan Burden, the Walkable and Livable Communities Institute, Inc.

Figure 3.2. *Oregon state law mandates bicycle and pedestrian accommodation, as evidenced by this Portland intersection.*

According to Michael Ronkin, former pedestrian and bicycle program manager for Oregon's Department of Transportation, for the first 20 years local transportation departments applied the law unevenly. Although there was nothing in the measure that specifically limited the requirement to ODOT roads, the bill had been codified in a chapter dealing with highway funds. As a consequence, many local governments simply ignored the requirements.

The real turning point for the bike bill came when advocates from the Bicycle Transportation Alliance sued the City of Portland for noncompliance in 1992. The court's decision upheld Stathos's original idea that the law applied to all road projects. Ronkin and his colleagues wrote an official interpretation of the bike bill, clarifying that all construction and reconstruction must accommodate bicyclists and pedestrians.

Although opponents of the law often pointed to cost as a barrier for compliance, Ronkin contends that the battle over cost was more hype than substance. The bike bill does not say how road builders should pay for bicycle and pedestrian facilities. Instead, the measure assumes that transportation authorities and developers will plan for necessary improvements upfront and pay for them out of the same pots of money used for all surface transportation facilities.

Adding the required improvements up front is much cheaper than a retrofit. Ronkin explains that just as people understand that insulation is a necessary component of any housing project, transportation authorities and developers in Oregon understand that the up-front costs of compliance with the bike bill are just a normal part of the road building process.

For additional information about Oregon's Bicycle and Pedestrian Program and to read the text of ODOT's bike bill interpretation, see www.oregon.gov/odot/hwy/bikeped.

exception is Oregon's state law, which states that "footpaths and bicycle trails … shall be provided wherever a highway, road or street is being constructed, reconstructed, or relocated." In 1992, the Oregon Court of Appeals ruled that this law applied to all roads in public use, and therefore state and municipal governments, as well as private entities building roads in new developments, are subject to its provisions (see sidebar). Complete streets elements should ideally extend to subdivision regulations governing streets built by private developers. See Chapter 4 for more information on this.

INCLUDE ALL PROJECTS

For many years in most communities, multimodal streets have been treated as special projects requiring extra planning, funding, and effort. The complete streets approach is different. It is perhaps best stated in the updated policy adopted by Caltrans, California's DOT: "The Department views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system." Under this approach, even repaving projects can be an opportunity to make small adjustments to better accommodate all travelers, such as shifting stripes to provide more room for bicyclists. A strong complete streets policy will integrate complete streets planning into all phases of all types of projects, including new construction, reconstruction, rehabilitation, repair, and maintenance. See Chapters 5 and 6 for suggestions on integration of complete streets into all projects.

SPECIFY EXCEPTIONS

An important element of practical policy implementation is the creation of a process for handling exceptions to requirements that all

modes be accommodated in all projects. The FHWA guidance on accommodating bicycle and pedestrian travel, issued in 2000, listed three exceptions, which have become commonly used in complete streets policies. The first states that accommodation is not necessary on corridors where nonmotorized use is prohibited, such as a freeway.

The second exception involves project cost. The FHWA Guidance recommends that exceptions be allowed "when the cost of accommodation ... is excessively disproportionate to the need or probable use." The FHWA Guidance includes a set percentage threshold for disproportionate cost, but some communities have discarded this as arbitrary and make decisions on a case-by-case basis. See Chapter 6 for discussion of this provision.

The third exception is a documented absence of need—now and in the future. The future clause is important. Many corridors are unfriendly to pedestrian travel because past development has discouraged walking, but redevelopment under new standards could change that. Also, the increasing mobility of people with disabilities means that people who use wheelchairs or have visual impairments will need more street networks conducive to their safe travel.

Many communities have included additional exceptions. One of the most common excepts ordinary maintenance and repairs, which reassures planners and engineers that basic maintenance work will not trigger a full reconstruction. A few policies, such as the law passed by the Illinois legislature in 2007, make exceptions for repaving projects. But the law also includes a clause to help agencies take advantage of repaving opportunities when appropriate: "Bicycle and pedestrian ways may be included in pavement resurfacing projects when local support is evident or bicycling and walking accommodations can be added within the overall scope of the original roadwork."

Another relatively common exception is for safety. This should be defined very carefully. A common reaction to an unsafe environment for nonmotorized users is to prohibit bicycling or walking along the corridor. But paths beaten into the grass along arterials show that pedestrian travel is often not optional. High-speed, high-traffic roads that present the greatest danger to nonmotorized users may be the roads that most desperately need facilities.

Barbara McCann

Figure 3.3. *Beaten paths are often indicators of routes that pedestrians find convenient to use despite their lack of safety.*

CHANGING BUSINESS AS USUAL: VIRGINIA DEPARTMENT OF TRANSPORTATION

Since 2004, Virginia's Department of Transportation (VDOT) has had a policy for routine consideration of the need for accommodating bicyclists and pedestrians in all state- and federally funded transportation projects. The policy represents a major sea change in the commonwealth, and its impacts are most profound in VDOT's day-to-day operations.

In most of the commonwealth, counties are the default unit of local government. Because only two counties in Virginia operate and maintain their own roads, VDOT maintains the third most miles of road of any state in the country. Consequently, it is the single most important entity for implementing complete streets in rural and suburban areas statewide.

Changing the course of an agency as large as VDOT has not been easy. For years, VDOT was slow to react to changing development patterns. The agency had traditionally focused on building roads to carry vehicular traffic at high speeds over long distances, but as previously rural parts of the commonwealth became more urbanized, communities across Virginia as well as voices within the transportation agency itself called for reform.

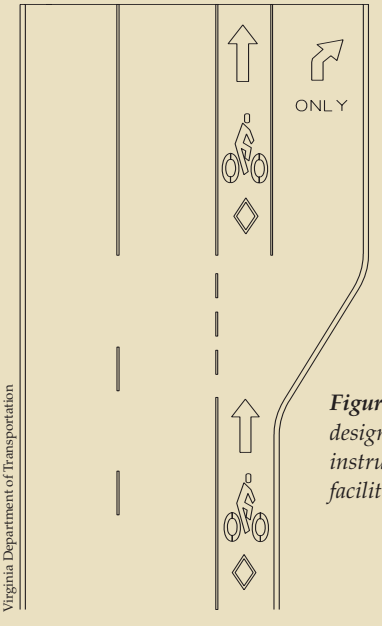


Figure 3.4. *VDOT's design manuals include instruction for bicycle facilities.*

In 2004, the Commonwealth Transportation Board, which oversees transportation policies in Virginia, promulgated the "Policy for Integrating Bicycle and Pedestrian Accommodations." This internal policy statement outlines a basic decision-making process to ensure that appropriate accommodations are considered for all VDOT projects. The policy requires all state- and federally funded projects to accommodate pedestrians and bicyclists except when bikes and pedestrians are not allowed by law, when there is a scarcity of population, when there are environmental or social impacts that discourage accommodation, when the total cost of accommodation is disproportionate to the benefit, or when the project purpose is in conflict with accommodation.

(continued on page 31)

Many policies make the head of the transportation department responsible for approving exceptions, while others require approval by an elected body, such as the city council. In Rochester, Minnesota, the final responsibility for deciding exceptions is divided among the city council and the heads of the planning and public works departments, depending on the type of exception. Because an exceptions process can be complex, another strategy is to use broad exceptions language in the policy and then allow the transportation agency to design an exceptions approval process as part of the implementation plan. See Chapter 5 for more information about creating an effective exceptions process.

ADDRESS DESIGN STANDARDS

When the subject of complete streets comes up, the conversation often heads straight to design standards. Engineers in particular are likely to view the creation of streets for all users as primarily an issue of modifying standards; they assume that a complete streets policy will include such specific modifications. However, design specifics are often less important at first than the political will to choose different priorities in transportation planning and the leadership and confidence to move away from rigid adherence to doing things "by the book."

Some communities have specified new design standards, such as Louisville, Kentucky, or Fort Collins, Colorado. Another approach is to make reference within the policy to existing design guidance while emphasizing flexibility. This is the case with the State of Virginia's policy: "The accommodations will be designed and built, or installed, using guidance from VDOT and AASHTO publications, the MUTCD, and the *Americans with Disabilities Act Accessibility Guidelines (ADAAG)*. Methods for providing flexibility within safe design parameters, such as context sensitive solutions and design, will be considered."

COMPLEMENT CONTEXT

Sensitivity to the community context is essential to an effective complete streets policy. Being clear about this in the initial policy statement can allay common fears that a complete streets policy will require inappropriately wide roads in quiet neighborhoods or miles of little-used sidewalks in rural areas. The Context Sensitive Solutions movement has been moving highway design in this direction for well over a decade. A strong statement about context can also help bridge the traditional divide between transportation and land-use planning.

The best examples of context statements can be found in transportation master plans. Charlotte's plan states, "The City will promote context-sensitive streets (i.e., by designing transportation projects within the context of adjacent land uses to improve safety and neighborhood livability, promote transportation choices and meet land use objectives), consistent with the City's Urban Street Design Guidelines." The guidelines include a six-step process for designing complete streets—and the first step is determining the land-use context. Arlington County, Virginia, sets out three components of a complete street, and the first is context (see sidebar on p. 32). The streets element of the master transportation plan includes this definition:

> The context of a street includes the buildings and sites adjacent to the street, or right-of-way. This area is described in terms of land use—residential, commercial, and industrial. It is also described in terms of physical form—such as office buildings, single-family detached homes, and townhouses. Intensity (low-, medium- or high-density development) also affects how an area is described. A street's surroundings are the major factors that define the character of the corridor.

ESTABLISH PERFORMANCE MEASURES

The traditional performance measure for transportation planning has been vehicular level of service—a measure

(continued from page 30)

Perhaps the most important tools for battling business as usual at VDOT have been the agency's new project scoping forms and decision tree. In 2006, VDOT added a new section to its scoping forms for new construction and maintenance activities to ensure that the state's accommodation policy was considered for each project. According to Jakob Helmboldt, AICP, VDOT's bicycle and pedestrian program coordinator, the scoping forms follow the Federal Highway Administration approach of mainstreaming the accommodation policy. Ensuring that each project contains appropriate bicycle and pedestrian facilities has become a routine element to check off in the scoping process. To supplement the forms, VDOT has also created a simple flowchart that helps individuals in charge of scoping see whether or not each project is exempted for any of the reasons outlined in the policy statement.

Helmboldt says that mainstreaming the policy has kept VDOT from getting too caught up in budgeting for bicycle and pedestrian improvements. The policy has a built-in safety valve in the form of a "cost disproportionate to the need" exemption. If the cost of accommodation is more than 10 percent of the total project and if the project is not on a designated bike/ped plan, the project is exempt from compliance. If the project is on a plan, the cost threshold for exemption goes up to 20 percent.

In Helmboldt's view, project costs can be a red herring. "Overengineering leads to cost problems," he says. Sometimes costs balloon when someone wants to make changes that may represent the gold standard in accommodation but ignores other lower-cost alternatives.

Aside from new projects, VDOT's nine highway construction districts each have a goal of using 2 percent of maintenance funds for shoulder paving in rural areas to improve bicycling conditions. Because paved shoulders stabilize the pavement edge and reduce crashes, adding the extra pavement has not faced much resistance in areas not traditionally thought of as bike friendly.

Cross-jurisdictional cooperation in Virginia took a major leap forward in 2006 with the enactment of new legislation that requires more VDOT involvement in local land-use decisions. Section 15.2-2222.1 requires VDOT to review all new or amended local comprehensive plans and traffic impact statements for activities that will substantially affect transportation on state roads. The legislation ensures that VDOT is aware of new plans for bicycle and pedestrian improvements.

Recognizing that private developers have a major impact on road networks in Virginia, the commonwealth adopted new secondary-street acceptance requirements in 2009. According to Nick Donohue, Virginia's assistant secretary of transportation, the new requirements were an outgrowth of the governor's initiative to improve the coordination of transportation and land use. Prior to that policy, VDOT accepted streets for perpetual public maintenance without considering the overall public benefit the new roads provided. Developers built the roads, and the state accepted maintenance responsibilities as long as the roads were built to adequate geometric standards.

"Travel distance, which is influenced by street connectivity, has a big impact on whether you decide to walk or not," says Donohue. For that reason, the new acceptance requirements require greater connectivity of the street network along with sidewalks or other pedestrian features and narrower streets to help reduce vehicle speeds. In Donohue's view, the requirements work hand-in-glove with VDOT's accommodation policy. While the latter applies to all VDOT projects (new roads, road expansion, or maintenance) as well as any locally administered project using state or federal money, the new acceptance standards deal exclusively with local streets built by private developers.

VDOT's "Bicycling and Walking in Virginia" page, available at www.virginiadot.org/programs/bk-default.asp, contains links to the accommodation policy, the project scoping forms, and the decision tree. For Virginia's Secondary Street Acceptance Requirements, see www.virginiadot.org/projects/ssar/default.asp.

TYING TOGETHER A LEGACY OF INNOVATIVE PLANNING POLICIES: ARLINGTON COUNTY, VIRGINIA

Though Arlington County, Virginia, has only recently adopted an official complete streets policy, these principles are nothing new. For more than 30 years, this municipality of nearly 210,000 people and 26 square miles in the metropolitan Washington, D.C., area has been a leader in smart growth, transit-oriented development (TOD), and innovative pedestrian, bicycle, and transit policies.

"[Complete streets] had been the policy, before it had officially been adopted. Over the past 10 years we've been moving towards complete streets without calling it that," says Richard Viola, county planning supervisor for transportation planning.

Implementation of complete streets was called out as one of the most important guiding themes for Arlington County in the 2007 update to its Master Transportation Plan. During the revision process, a group of local cutting-edge transportation-planning leaders met and decided to draft a complete streets policy that would formalize 10 years of pedestrian, bicycle, and transit planning efforts in the county.

The complete streets concept gives good transportation planning an identity. While Arlington County has received a lot of attention for TOD, the complete streets policy solidifies and formalizes the county's multimodal commitment and brings attention to its many bicycle and pedestrian improvements, campaigns, and other promotional activities. Furthermore, the complete streets policy provides the county with a more systematic approach to transportation and development projects. It requires any development project that has an impact on transportation infrastructure to consider all necessary transportation modes needed to accommodate all users.

The revision of the Master Transportation Plan and the adoption of its complete streets policy was a result of a community planning process which included the county board, elected officials, a plenary group, two dozen citizens representing various committees and advisory groups from across the county, and transportation planning staff. According to Viola, the county board and the community have been very supportive of the complete streets policy, largely because of Arlington County's legacy of TOD and managed growth.

Despite this legacy, a car-dominated infrastructure is still present in much of the county. But since the official adoption of the policy in November 2007, limited retrofits to existing streets are occurring as financial and staff resources permit, and complete streets principles are being addressed more systematically in the conception or initial design of a development project rather than during later review stages. The policy has contributed to more cost-effective investment of public funds.

Some challenges faced by the county include community parking demand and state design controls. In some neighborhoods, the demand for on-street parking can present a significant barrier to implementing innovative uses of limited rights-of-way on arterial and neighborhood streets. "Residents are reluctant to give up their free curbside parking. This translates into fewer trees, fewer bike lanes, etc., and ultimately limits choices," says David Patton, bicycle and pedestrian planner for the county. In addition, changes to many arterial streets in the county require explicit approval from the Virginia Department of Transportation (VDOT). VDOT design standards have often prioritized the needs of the automobile, above the needs of other street users, and have frustrated county intentions for greater multimodalism. However, as VDOT works to better implement its own bicycle and pedestrian accommodation policy (see p. 30), such conflicts should ease.

Arlington County

Figure 3.5. *Pedestrian safety is emphasized in Arlington County's Master Transportation Plan.*

On July 1, 2008, the county implemented a 0.12 percent property tax on commercial property for transportation improvements. This extra revenue has allowed the county to update streetscapes and transit stations and purchase new buses, among other things. Arlington County is a model example of how transportation planners can use the complete streets concept to highlight synergies among multiple planning efforts and outcomes, including TOD, smart growth, bicycle and pedestrian improvements, improved property values, and more transportation options.

For more information about the county's complete streets policy, visit www.arlingtonva.us/Departments/EnvironmentalServices/dot/planning/mplan/mtp/MTP_Draft.aspx.

For more information about the transportation planning in the county, visit www.arlingtonva.us/Departments/EnvironmentalServices/dot/planning/EnvironmentalServicesPlanning.aspx.

of automobile congestion. Complete streets planning requires taking a broader look at how the system is serving all users. Some communities, such as Louisville, Kentucky, have gone so far as to create their own metrics that measure transportation performance in terms of bicycle or pedestrian friendliness.

Few policies have established performance measures within the original policy document; in most cases, performance measures are dealt with as a later implementation step. An exception is Roanoke, Virginia, which lists a series of simple performance measures as part of its three-page complete streets policy:

- Total miles of on-street bicycle routes defined by streets with clearly marked or signed bicycle accommodation
- Linear feet of new pedestrian accommodation
- Number of new curb ramps installed along city streets
- Number of new street trees planted along city streets

Such simple quantitative performance measures can be a powerful way to communicate the intent of the new policy to the community, but in the workshops offered by the National Complete Streets Coalition it has become clear that people want to also measure qualitative outcomes. Health, safety, the economy, and user satisfaction are mentioned most often.

The performance measures developed by a community may also refer back to the vision statement included in the policy document. For more information on performance measures, see Chapter 5.

CREATING COMPLETE STREETS THROUGH NEW STREET DESIGN GUIDELINES: ROANOKE, VIRGINIA

Thanks to new street design guidelines and a collaborative approach to project scoping, Roanoke, Virginia, is putting its recent commitment to complete streets into action. In 2001—seven years before the city adopted a formal complete streets policy—Roanoke's comprehensive plan set a goal of creating an integrated, multimodal transportation system for automobiles, bicycles, pedestrians, and transit. The plan called for new street design guidelines based on a classification system that would balance the purpose of the roadway with the impacts on surrounding areas.

To implement this directive, the city formed an interdisciplinary team to draft the guidelines. Participants included staff from the city's planning, engineering, and transportation departments, as well as an urban forester, a park planner, and a representative from the local MPO. Eventually, after many drafts and multiple reviews, the city planning commission adopted new street design guidelines in 2007 as an internal guidance document.

According to Cristina Finch, the manager of the project team, the guidelines take a different approach to street design. In Virginia, every area has a street classification system determined by the state DOT. Finch and her colleagues took this preexisting street hierarchy and then simplified it. Instead of being classified as major or minor, roads were simply arterials, collectors, or local streets. The bulk of the guidelines look at how these street types relate to different character districts. For example, Finch says her team looked at what a collector street would look like as it went through a suburban neighborhood versus in a traditional neighborhood versus in a downtown.

Ian Shaw, City of Roanoke

Figure 3.6. *Roanoke's street design guidelines call for bicycle accommodation.*

The guidelines present examples of cross-sections for various street types based on the character of the area they are in. The illustrations depict different widths and facilities for seven distinct roadway zones (travel, parking, gutter/drainage, curb, planter/utilities, pedestrian, and right-of-way edge), depending on where the local or collector street section is located.

The city council issued a formal endorsement of the street design guidelines with its Complete Streets Resolution in 2008. This resolution recommends that the guidelines developed by Finch's team be used in the planning, funding, design, operation, and maintenance of new and modified streets. The new policy also requires a written explanation to the city manager if accommodations cannot be made.

To help implement the new complete streets policy, Roanoke formed a street design team to make sure that new projects contain the appropriate pedestrian, bicycle, and transit accommodations. The interdepartmental team has representatives from the departments of planning, building, and development, parks and recreation, and neighborhood services, as well as from the transportation and engineering divisions of the public works department.

"I think that the complete streets policy has helped unify the city in terms of visioning and its communication about streets," says Finch. "With the street design team we now have folks regularly talking about our streets, whereas before, for example, the Transportation Division would previously work with the state DOT, but other divisions weren't necessarily being coordinated with to give input."

(continued on page 34)

(continued from page 33)

Having a street design team ensures that repaving and restriping projects are now routinely considered as a method for providing accommodations. Because Roanoke is a built-out city where major street projects are rare, this design input into routine maintenance activities is important. Redesign of existing streets (such as reallocation of existing pavement with striping) is where Roanoke has the most impact on accommodating all street users.

According to Senior Planner Ian Shaw, his department has also brought the complete streets approach into the neighborhood planning process. Shaw and his colleagues have developed a scoring system for major streets in each neighborhood. The system looks first at safety and then at connectivity and design. The scoring also considers whether or not the available right-of-way can accommodate a complete street, the ability to locate street trees within the right-of-way, and the potential for stormwater and drainage issues. So far, the city has scored 30 streets and hopes to have all major streets scored with each neighborhood plan update.

Roanoke's Street Design Guidelines and the city's complete streets policy are both available at www.roanokeva.gov.

PROVIDE IMPLEMENTATION STEPS

Taking a complete streets policy from paper to practice is not easy, but providing some specific implementation steps can help build momentum. For example, Seattle's complete streets ordinance made clear that a systematic review of the city's practices was in order. Section 2 states: "SDOT will incorporate Complete Streets principles into: the Department's Transportation Strategic Plan; Seattle Transit Plan; Pedestrian and Bicycle Master Plans; Intelligent Transportation System Strategic Plan; and other SDOT plans, manuals, rules, regulations and programs as appropriate."

The internal policy updated by Caltrans in 2008 takes a different approach. It specifies the responsibilities of each position in the agency in implementing the plan—from the chief deputy director down to the division chiefs and general employees. Other communities have established task forces or commissions to work toward policy implementation. For more information, see Chapter 5.

# of special interest

Planning for Street Connectivity

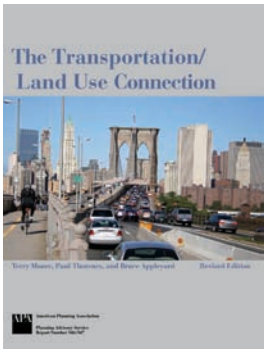
PAS 515. Susan Handy, Robert G. Patterson, and Kent Butler. 2003. 95 pp. $48.

The authors provide an overview of efforts by communities across the U.S. to increase street connectivity. They look at the motivation behind such efforts, the wide variety of issues these efforts have raised, and the different approaches that communities have taken to resolve them. Planners, decision makers, and residents will gain a better understanding of the concept of connectivity as well as ideas on how best to address the goal of connectivity in their own communities.

Integrating Planning and Public Health

PAS 539/540. Marya Morris, ed. 2006. 132 pp. $60.

Is the form of American cities to blame for the shape of Americans? With obesity rates climbing ever higher, planners are reconsidering how the built environment affects public health—not only obesity, but also asthma, cardiovascular disease, water quality, air pollution, pedestrian safety, and mental health. This report examines collaborations between planners and public-health professionals committed to building healthy communities. It outlines the five strategic points of intervention at which planners and public-health professionals can coordinate their efforts: visioning and goal setting, plans and planning, implementation tools, site design and development, and public facility siting and capital spending. Case studies illustrate the specific tools—including health impact assessments—used in such collaborations. It also examines the role of universal design in creating healthy communities.



The Transportation/Land Use Connection

PAS 546/547. Terry Moore and Paul Thorsnes, with Bruce Appleyard. 2007. 376 pp. $60.

Communities that integrate transportation and land-use policies are better able to manage growth, improve the efficiency of travel, and contain infrastructure costs. Highways have shaped America's growth, but they have a big problem: congestion. Building more roads doesn't solve this problem for long, but changes in the way we approach transportation and land-use planning might. This report examines the need for public-sector investment in land-use and transportation development and presents the tools and techniques planners can use to integrate transportation and land use.

Transportation Infrastructure

PAS 557. Marlon G. Boarnet, ed. 2009. 128 pp. $60.

Transportation infrastructure is one of the most pressing issues for planners and communities today. In the short term, stimulus funding is being used to create jobs and fix critical systems; in the long run, communities are struggling to determine how best to restructure transport networks to encourage better land use and to foster reductions in greenhouse gas emissions. This report was compiled with an eye to the urgency and severity of the challenges that we now face. Some of the leading researchers, scholars, and practitioners in transportation planning put forth fresh best practices and visionary ideas.

$60.00
ISBN 978-1-932364-83-5
56000>
9 781932 364835

American Planning Association
Making Great Communities Happen

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M E M O R A N D U M

TO: COUNCIL'S ADVISORY BODIES

FROM: JO JOHNSON, CITY CLERK

DATE: OCTOBER 30, 2013

SUBJECT: 2014 MEETING SCHEDULE

Please review the 2014 meeting schedule for your Advisory Body and approve with or without amendments. The draft resolution includes the entire 2014 meeting schedule. The resolution will be presented to Council on December 9, 2013 for adoption.

A memo or excerpt from the meeting minutes noting the action by your advisory body is requested. Please return this to the City Clerk by December 3, 2013.

Thank you!

CITY OF HOMER
HOMER, ALASKA

City Clerk

RESOLUTION 13-xx

A RESOLUTION OF THE CITY COUNCIL OF HOMER, ALASKA, ESTABLISHING THE 2014 REGULAR MEETING SCHEDULE FOR THE CITY COUNCIL, ECONOMIC DEVELOPMENT ADVISORY COMMISSION, LIBRARY ADVISORY BOARD, PARKS AND RECREATION ADVISORY COMMISSION, ADVISORY PLANNING COMMISSION, PORT AND HARBOR ADVISORY COMMISSION, LEASE COMMITTEE, PERMANENT FUND COMMITTEE, PUBLIC ARTS COMMITTEE AND TRANSPORTATION ADVISORY COMMITTEE.

WHEREAS, Pursuant to Homer City Code Section 1.14.020, the City Council annually sets the schedule for regular and some special meetings, noting the dates, times and places of the City Council, Advisory Commissions, and the Library Advisory Board meetings; and

WHEREAS, The public is informed of such meetings through the kiosks located at Captain's Coffee, Harbormaster's Office, Redden Marine Services of Homer, and the City Clerk's Office, Clerk's Calendar on KBBI, the City Clerk's Home Page on the Internet, and postings at the Clerk's Office at City Hall, and the Public Library; and

WHEREAS, HCC 1.14.020 - 040 states that meetings may be advertised in a local paper of general circulation at least three days before the date of the meeting and that special meetings should be advertised in the same manner or may be broadcast by local radio at least twice a day for three consecutive days or two consecutive days before the day of the meeting plus the day of the meeting; and

WHEREAS, HCC 1.14.010 notes that the notice of meetings applies to the City Council and all commissions, boards, committees, subcommittees, task forces and any sub-unit of the foregoing public bodies of the City, whether meeting in a formal or informal meeting; that the failure to give the notice provided for under this chapter does not invalidate or otherwise affect any action or decision of a public body of the City; however, this sentence does not change the consequences of failing to give the minimum notice required under State Statute; that notice will ordinarily be given by the City Clerk; and that the presiding officer or the person or persons calling a meeting are responsible for notifying the City Clerk of meetings in sufficient time for the Clerk to publish notice in a newspaper of general circulation in the City; and

WHEREAS, This Resolution does not preclude additional meetings such as emergency meetings, special meetings, worksessions, and the like; and

WHEREAS, Council adopted Resolution 06-144 on October 9, 2006 establishing the Regular Meeting site for all bodies to be the City Hall Cowles Council Chambers.

NOW, THEREFORE, BE IT RESOLVED by the Homer City Council, that the 2014 meeting schedule is established for the City Council, Economic Development Advisory Commission, Library Advisory Board, Parks and Recreation Advisory Commission, Advisory Planning Commission, Port and Harbor Advisory Commission, Lease Committee, Permanent Fund Committee, Public Arts Committee and Transportation Advisory Committee of the City of Homer, Alaska, as follows:

Holidays - City Offices closed:

January 1*, New Year's Day, Wednesday	February 17*, Presidents' Day, the third Monday	March 31*, Seward's Day, last Monday	May 26*, Memorial Day, last Monday	July 4*, Independence Day, Friday	September 1*, Labor Day, first Monday
October 17*, Alaska Day, Friday	November 11*, Veterans Day, Tuesday	November 27* Thanksgiving Day, Thursday	November 28*, Friday, the day after Thanksgiving	December 25*, Christmas, Thursday	

*Indicates holidays - City offices closed.
**If on a Sunday, the following Monday is observed as the legal holiday; if on a Saturday, the preceding Friday is observed as the legal holiday pursuant to the City of Homer Personnel Rules and Regulations.

CITY COUNCIL (CC)

January 13, 27	February 10, 24	March 10, 24*	April 14, 28	May 12, 27*	June 9, 23
July 14***, 28	August 11, 25	September 8, 22	October 7 Election	October 13, 27, for Oath of Office 20	Canvass Board October 10 or 13
November 4 Run- Off Election	November 10**, 24	December 8****	December 15**** if needed		

City Council's Regular Committee of the Whole Meetings at 5:00 p.m. to no later than 5:50 p.m. prior to every Regular Meeting which are held the second and fourth Monday of each

month at 6:00 p.m. ***The City Council traditionally reschedules regular meetings that fall on holidays or High School Graduation days, for the following Tuesday. Council will not conduct a First Regular Meeting in July.

AML Annual Conference Week is tentatively scheduled for November 17 – 21, 2014.
*Tuesday meeting due to Seward's Day/Memorial Day/Veterans Day.
**There will be no First Regular Meeting in July or November.
**** The City Council traditionally cancels the last regular meeting in December and holds the first regular meeting and one to two Special Meetings as needed. Generally the second Special Meeting the third week of December, will not be held.

ECONOMIC DEVELOPMENT ADVISORY COMMISSION (EDC)

January 14	February 11	March 11	April 8	May 13	June 10
July 10	August 12	September 9	October 14	November 11	December 9

Economic Development Advisory Commission Regular Meetings are held on the second Tuesday of each Month at 6:00 p.m.

LIBRARY ADVISORY BOARD (LAB)

January 7	February 4	March 4	April 1	May 6	June 3
July 1	August 5	September 2	October 7	November 4	December 2

Library Advisory Board Regular Meetings are held on the first Tuesday of each month at 5:00 p.m.

PARKS AND RECREATION ADVISORY COMMISSION (P/R)

January 16	February 20	March 20	April 17
May 15	June 19	July 17	August 21
September 18	October 16	November 20	

Parks and Recreation Advisory Commission Regular Meetings are held on the third Thursday of each month, with the exception of December, at 5:30 p.m.

PLANNING COMMISSION (P/C)

January 2*, 15	February 5, 19	March 5, 19	April 2, 16	May 7, 21	June 4, 18
July 16**	August 6, 20	September 3, 17	October 1, 15	November 5**	December 3**

Advisory Planning Commission Regular Meetings are held on the first and third Wednesday of each month at 6:30 p.m. *Thursday meeting due to New Year's Day. **There will be no First Regular Meeting in July or Second Regular Meetings in November and December.

PORT AND HARBOR ADVISORY COMMISSION (P/H)

January 22	February 26	March 26	April 23	May 28	June 25
July 23	August 27	September 24	October 22	November 19	December 17

Port and Harbor Advisory Commission Regular Meetings are held on the fourth Wednesday of each month at 5:00 p.m., with the exception of May, June, July and August meetings that are held at 6:00 p.m. The Regular Meetings in the months of November and December are traditionally scheduled for the third Wednesday of the month.

LEASE COMMITTEE (LC)

January 9	April 10	July 10	October 9

Lease Committee Regular Meetings are held quarterly on the second Thursday of each month at 3:00 p.m.

PERMANENT FUND COMMITTEE (PFC)

February 13	May 8	August 14	November 13

Permanent Fund Committee Regular Meetings are held quarterly on the second Thursday of the months of February, May, August, and November at 5:15 p.m.

PUBLIC ARTS COMMITTEE (PAC)

February 20	May 15	August 21	November 20

Public Arts Committee Regular Meetings are held quarterly on the third Thursday of the months of February, May, August, and November at 5:00 p.m.

TRANSPORTATION ADVISORY COMMITTEE (TAC)

February 18	May 20	August 19	November 18

Transportation Advisory Committee Regular Meetings are held quarterly on the third Tuesday of the months of February, May, August, and November at 5:30 p.m.

PASSED AND ADOPTED by the Homer City Council this 9th day of December, 2013.

CITY OF HOMER

_____
MARY E. WYTHE, MAYOR

ATTEST:

_____
JO JOHNSON, MMC, CITY CLERK

Fiscal Impact: Adverting of meetings in regular weekly meeting ad and advertising of any additional meetings.