DECK

REQUIRED ITEMS FOR DECK APPLICATIONS

Computer-generated plans from local retail home improvement centers will not be accepted due to their lack of sufficient detail.

This handout is designed to help you provide the information required for a timely plan review. Listed below are the documents and plan information needed by the plan examiner.

DOCUMENTS REQUIRED:

- ☐ Completed application form.
- ☐ One copy of a Certificate of Survey or site plan (drawn to scale), indicating the lot dimensions, location, and size of proposed deck and setbacks to property lines. (see Illustration B) Setbacks must be verified by the Planning Department before construction begins.
- ☐ 2 copies of construction plans (drawn to scale), including all of the following information:
  - ☐ Type of wood (treated, cedar, etc.) (See Illustrations M and N)
  - ☐ Size and spacing of footings (See Illustration M)
  - ☐ Size and spacing of posts (See Illustration M)
  - ☐ Size and location of beams (See Illustrations C and M)
  - ☐ Size and spacing of joists (See Illustrations D and M)
  - ☐ Show attachment of deck to house (See Illustrations G and J)
  - ☐ Height of deck off ground (See Illustrations K and L)
  - ☐ Height and design of guardrail/handrail (See Illustrations E and F)
  - ☐ Length and width of deck (See Illustration M)
  - ☐ All side elevations showing existing house and new deck/stairs (See Illustrations K and L)
  - ☐ Cross-section showing footings through guardrail (See Illustration G)

ADDITIONAL INFORMATION

Building Permit

A permit is required for any deck that is attached or adjacent (within 6 feet) to a building and the grade is 30 inches or more below the walking surface of the deck. A permit is not required if the grade is less than 30 inches below the walking surface of the deck and not attached to a structure with frost footings and which is not part of an accessible route.

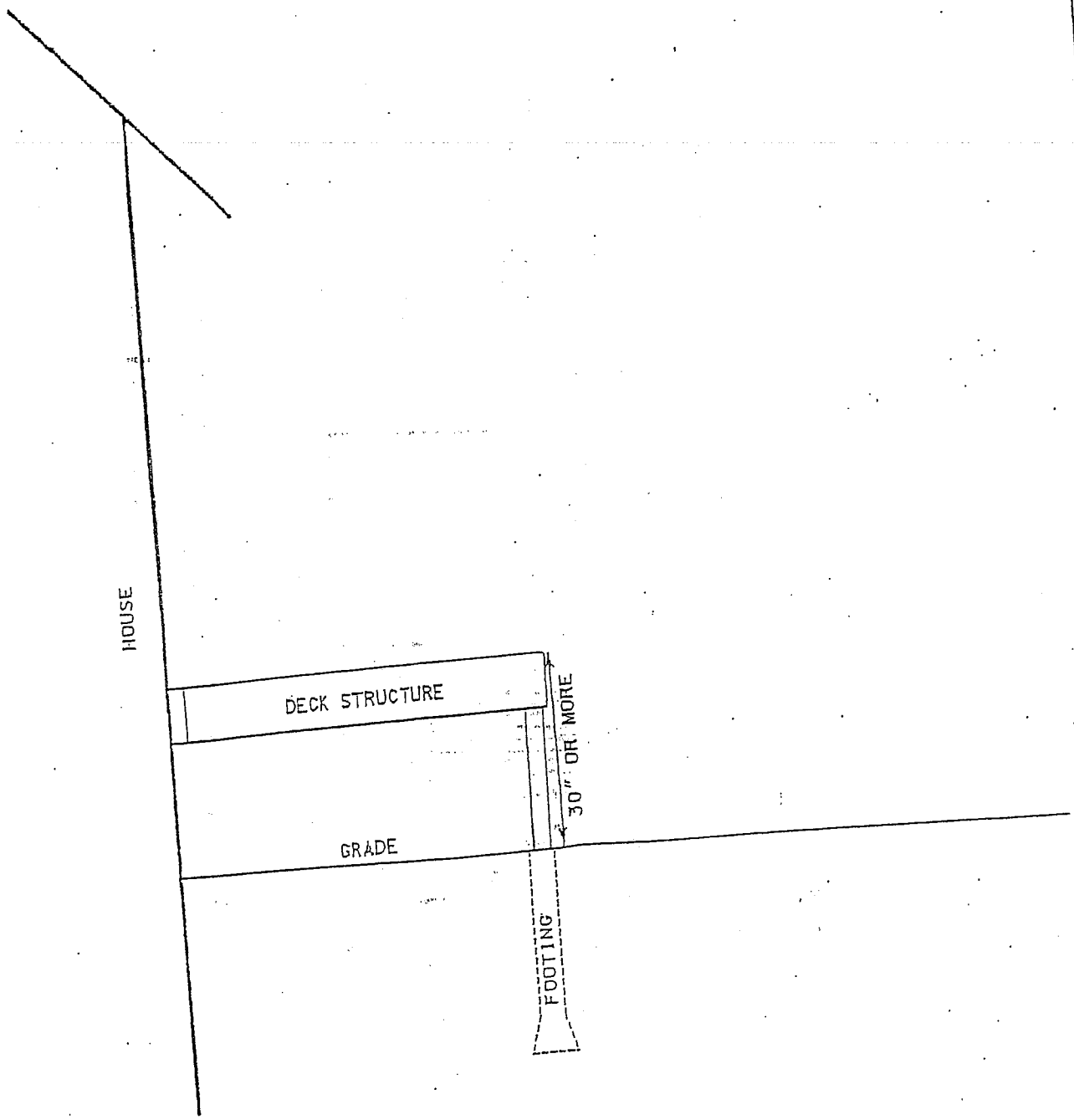
Footings

Footings must be frost protected horizontally and vertically to a depth of 42 inches. To achieve the required protection depth, measure horizontally from edge of hole out 42 inches to lowest grade point. Then measure the vertical difference at lowest grade point to that of grade at the hole and add the difference to the hole to achieve required frost protection. (See Illustration H)

Wood

All wood members exposed to weather conditions must be treated or be of wood that is resistant to decay such as Redwood, Black Locust, or Cedar. Prior approval is required for composite decking and all woods from foreign countries.

GUARDRAILS REQUIRED



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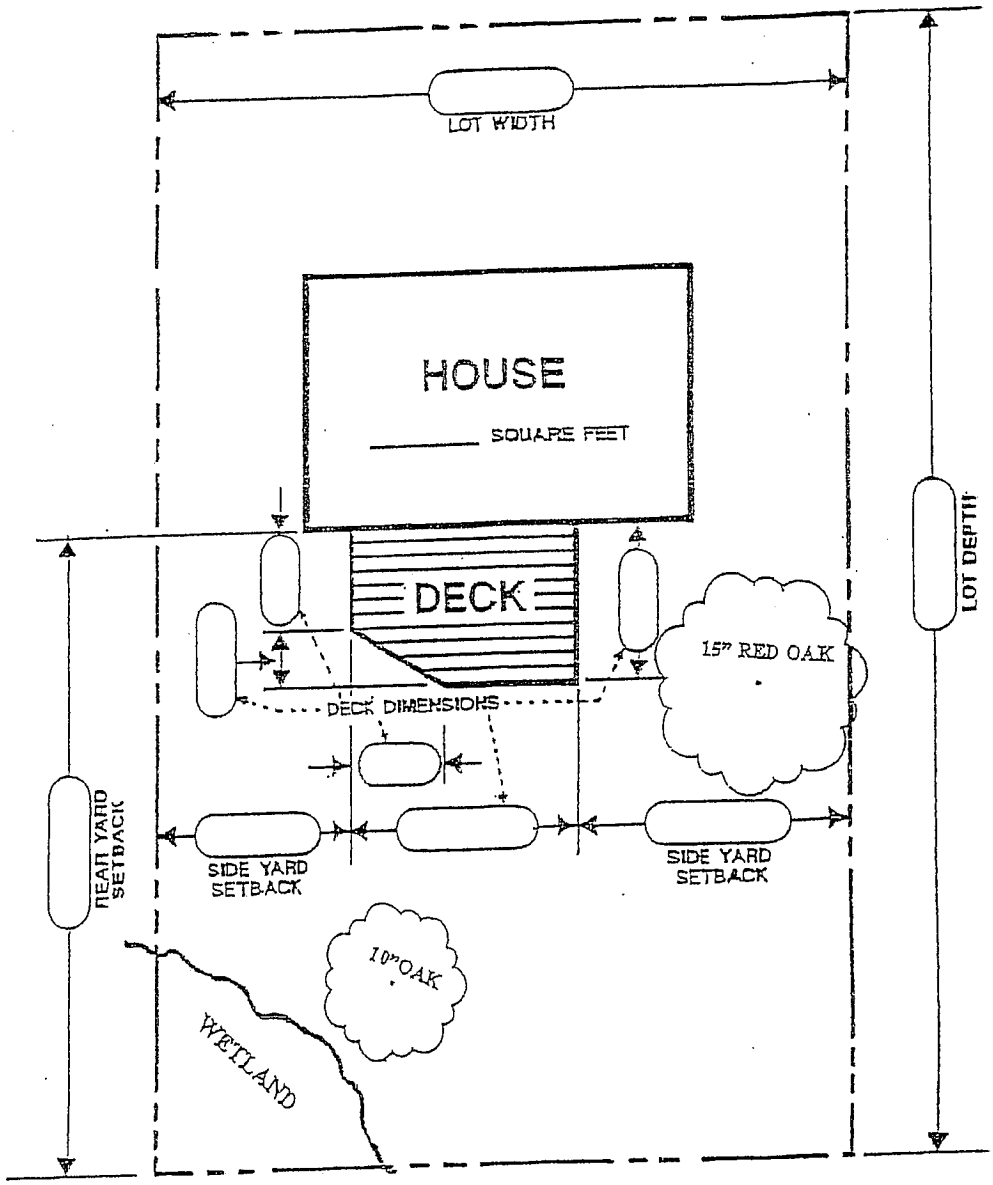
City of	ILLUSTRATION A	SCALE: NTS	STD PLATE NO:
		APPROVED: 9/9/03	
		REVISED:	

EXAMPLE OF SITE PLAN

REQUIRED INFORMATION CHECKLIST:

- ☐ Lot Dimensions
- ☐ Location and size of proposed deck
- ☐ Setbacks to property line
- ☐ Location of any lake, wetland, pond or creek on or adjacent to the property
- ☐ Location of any easements
- ☐ Location of significant trees affected by the deck



City of minnetonka

ILLUSTRATION B

SCALE: NTS | STD PLATE NO:

APPROVED: 2/14/08
REVISED:

Beam Sizes

Based on No.2 or better Ponderosa Pine and Southern Pine
(Treated for weather and/or ground exposure)

Joist Length		Post Spacing 4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'
6'	Southern Pine Beam	1-2x6	1-2x6	1-2x6	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12
	Ponderosa Pine Beam	1-2x6	1-2x6	1-2x8	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12
7'	Southern Pine Beam	1-2x6	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	2-2x12
	Ponderosa Pine Beam	1-2x6	1-2x6	1-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	2-2x12	3-2x10	3-2x10
8'	Southern Pine Beam	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12
	Ponderosa Pine Beam	1-2x6	2-2x6	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12
9'	Southern Pine Beam	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x10
	Ponderosa Pine Beam	1-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12
10'	Southern Pine Beam	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x10
	Ponderosa Pine Beam	1-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm
11'	Southern Pine Beam	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12
	Ponderosa Pine Beam	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm
12'	Southern Pine Beam	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x10	3-2x12
	Ponderosa Pine Beam	2-2x6	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x12	3-2x12	Eng Bm	Eng Bm
13'	Southern Pine Beam	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12
	Ponderosa Pine Beam	2-2x6	2-2x6	2-2x8	2-2x10	2-2x12	2-2x12	2-2x12	3-2x12	3-2x12	Eng Bm	Eng Bm
14'	Southern Pine Beam	1-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	3-2x10	3-2x12	3-2x12	3-2x12
	Ponderosa Pine Beam	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm	Eng Bm	Eng Bm
15'	Southern Pine Beam	1-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	3-2x10	3-2x12	3-2x12	Eng Bm
	Ponderosa Pine Beam	2-2x6	2-2x8	2-2x8	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12	Eng Bm	Eng Bm	Eng Bm
16'	Southern Pine Beam	1-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	3-2x10	3-2x12	3-2x12	Eng Bm
	Ponderosa Pine Beam	2-2x6	2-2x8	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12	Eng Bm	Eng Bm	Eng Bm

Note: Joist length is total length of joist, including any cantilevers.

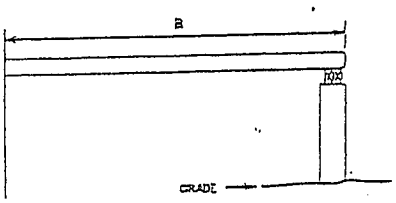
City of minnetonka	ILLUSTRATION C	SCALE: NTS STD PLATE NO: APPROVED: 3/6/08 REVISED:

ased On No.2 or better wood grades.
Design Loan = 40#LL + 10#DL, Deflection =L/360)

	Ponderosa Pine			Southern Pine			Western Cedar		
	12" OC	16" OC	24" OC	12" OC	16" OC	24" OC	12" OC	16" OC	24" OC
x6	9-2	8-4	7-0	10-9	9-9	8-6	9-2	8-4	7-3
x8	12-1	10-10	8-10	14-2	12-10	11-0	12-1	11-0	9-2
x10	15-4	13-3	10-10	18-0	16-1	13-5	15-5	13-9	11-3
-12	17-9	15-5	12-7	21-9	19-0	15-4	18-5	16-0	13-0

Sample Calculations for Using Joist Span, Beam Size

Refer to tables for joist and beam.

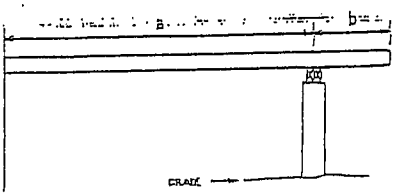


Example: a = 12' ; post spacing = 8'

Use the Joist Span table to find the acceptable joist sizes for a 12' span, 2x8's at 12" OC, 2x10's at 16" OC or 2x12's at 24" OC.

Use the Beam table and find the 8' post spacing column.
With a 12' deck span, the beam may be either two 2x8's or two 2x10's, depending on wood used.

Use "a" to determine joist size and "a" + "b" to determine beam and footing sizes. The length of "b" is restricted by the length of "a" and the size of the joists.

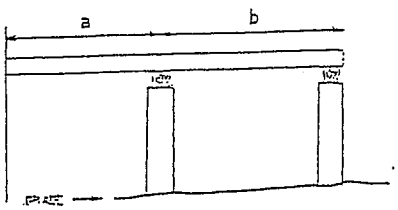


Example: a=8', b=2', post spacing =10'

Refer to the Joist Span table. For an 8' joist span, either 2x8's at 24" OC or 2x6's at 16" OC are acceptable.

For sizing the beam, use a joist length of 10' (8' + 2") and a post spacing of 10'. The Beam table indicates that the beam may be either two 2x10's or two 2x12's, depending on wood used.

Use "a" or "b", whichever is greater, to determing joist size. Use "a" + "b" to determing the size of Beam 1. Use joist length "b" to determine the size of Beam 2.



Example: a=6', b=7', post spacing =9'

Joist size is determined by using the longest span joist (7'). The Joist Span table indicates that 2x6's at 24' OC would be adequate for this span.

For Beam 1 use a joist length of 13' (6' + 7') and a post spacing of 9'. The Beam table indicates that the beam may be two 2x10's or two 2x12's, depending on the wood used.

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STAIRWAYS, HANDRAILS AND GUARDRAILS

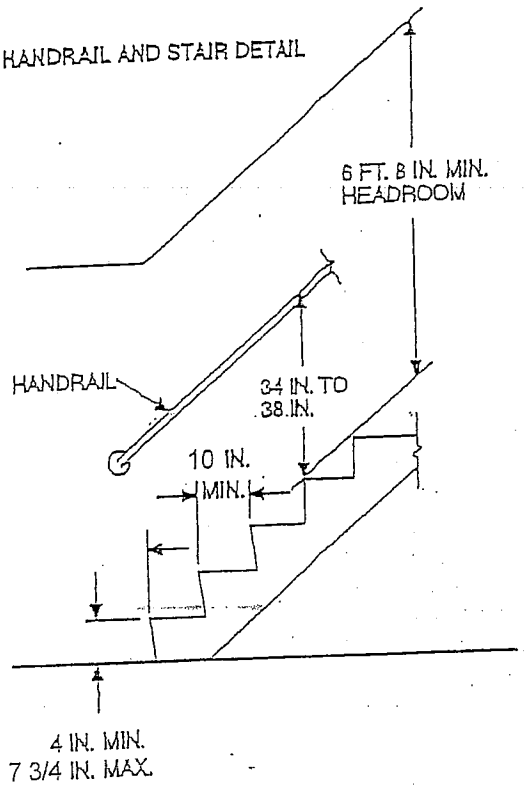
SINGLE FAMILY HOMES ONLY

Steps
Maximum rise of 7 3/4 inches and minimum run of 10 inches with tread run and riser height not to exceed the smallest by more than 3/8 inches. Stairs must be at least 36 inches wide.

Headroom
Every stairway must have headroom clearance of not less than 6 feet 8 inches measured vertically from any point on a diagonal line between the nosing of the treads.

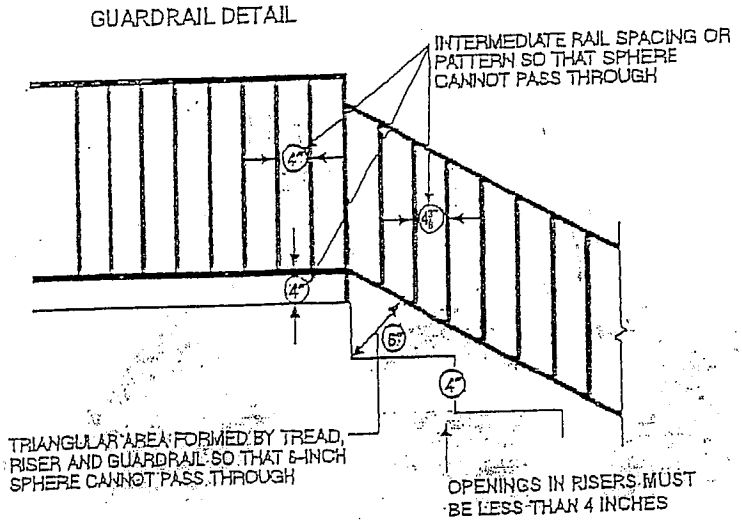
Handrails
The top of the rail shall be placed not less than 34 inches nor more than 38 inches above the nosing of the treads. It shall be continuous the full length of the stairs. Ends shall be returned or terminate into newel posts or safety terminals. The diameter of handgrips shall be between 1 1/4" and 2 3/4" or the shape shall provide and equivalent gripping surface. The handgrip shall have a smooth surface with no sharp corners. Handrails are not required on stairways having less than four risers.

HANDRAIL AND STAIR DETAIL



Guardrails
Guardrails are required when the grade is 30 inches or more below the walking surface of the deck. The guardrail must be at least 36 inches high and spindle spacing must be designed so a 4 inch sphere cannot pass through the opening. (4 3/8 inch on sides of stair treads)

GUARDRAIL DETAIL



City of minnetonka	ILLUSTRATION E	SCALE: NTS	STD PLATE NO:
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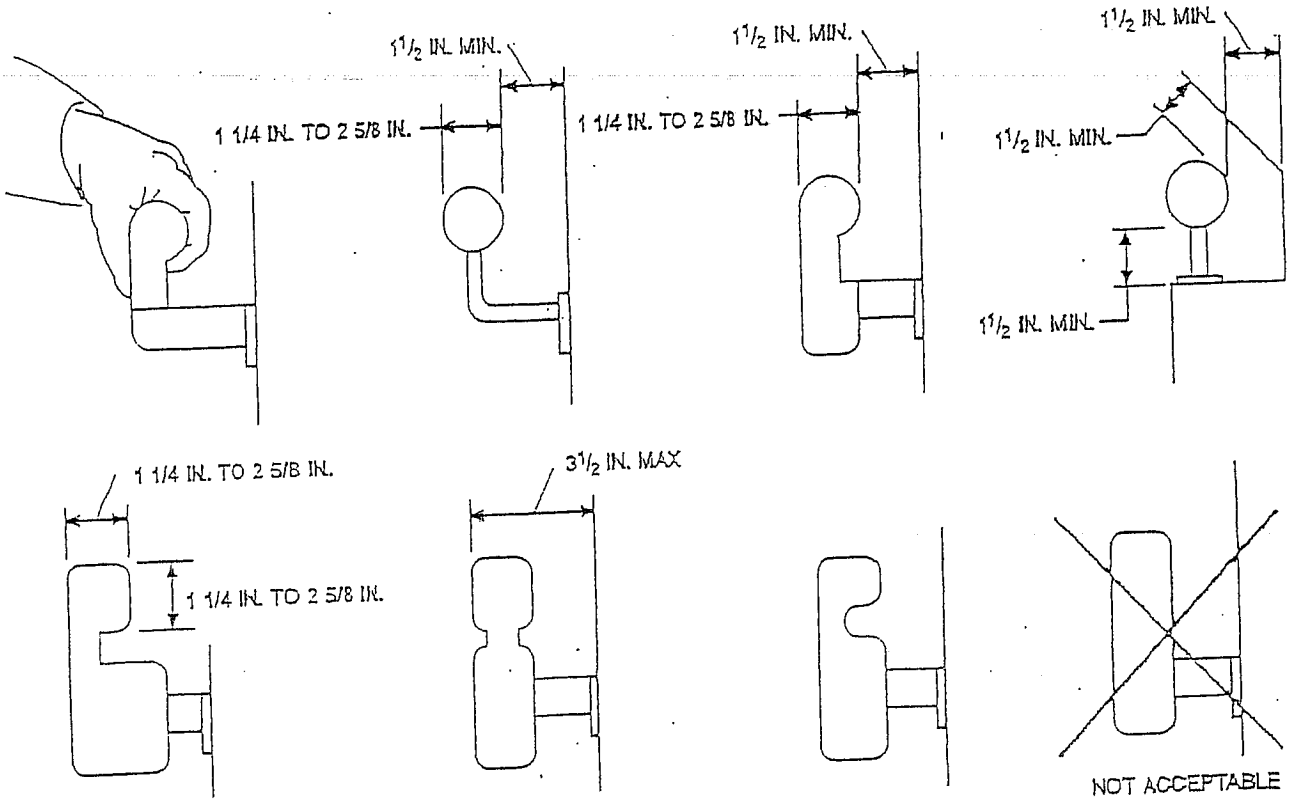
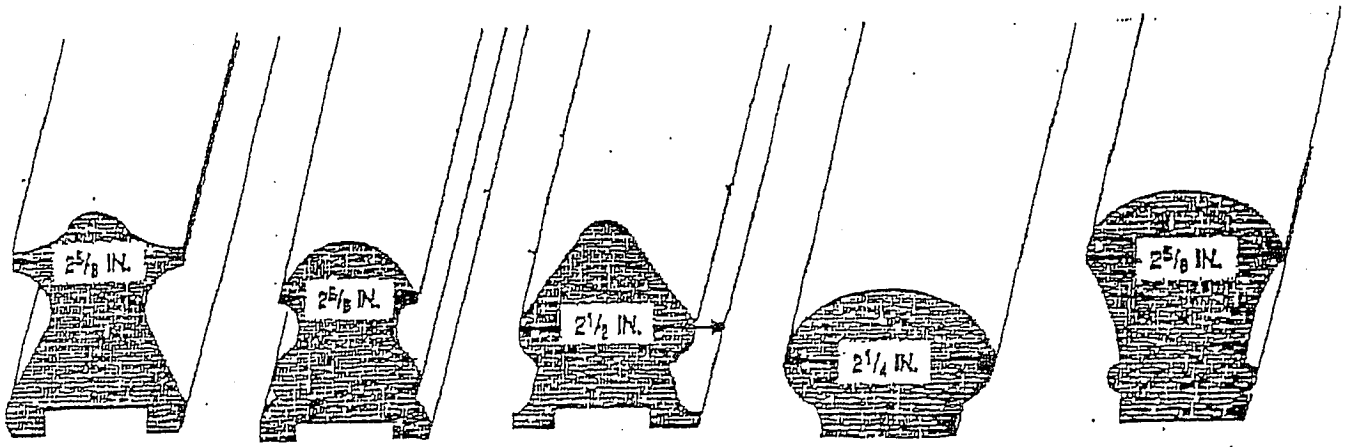
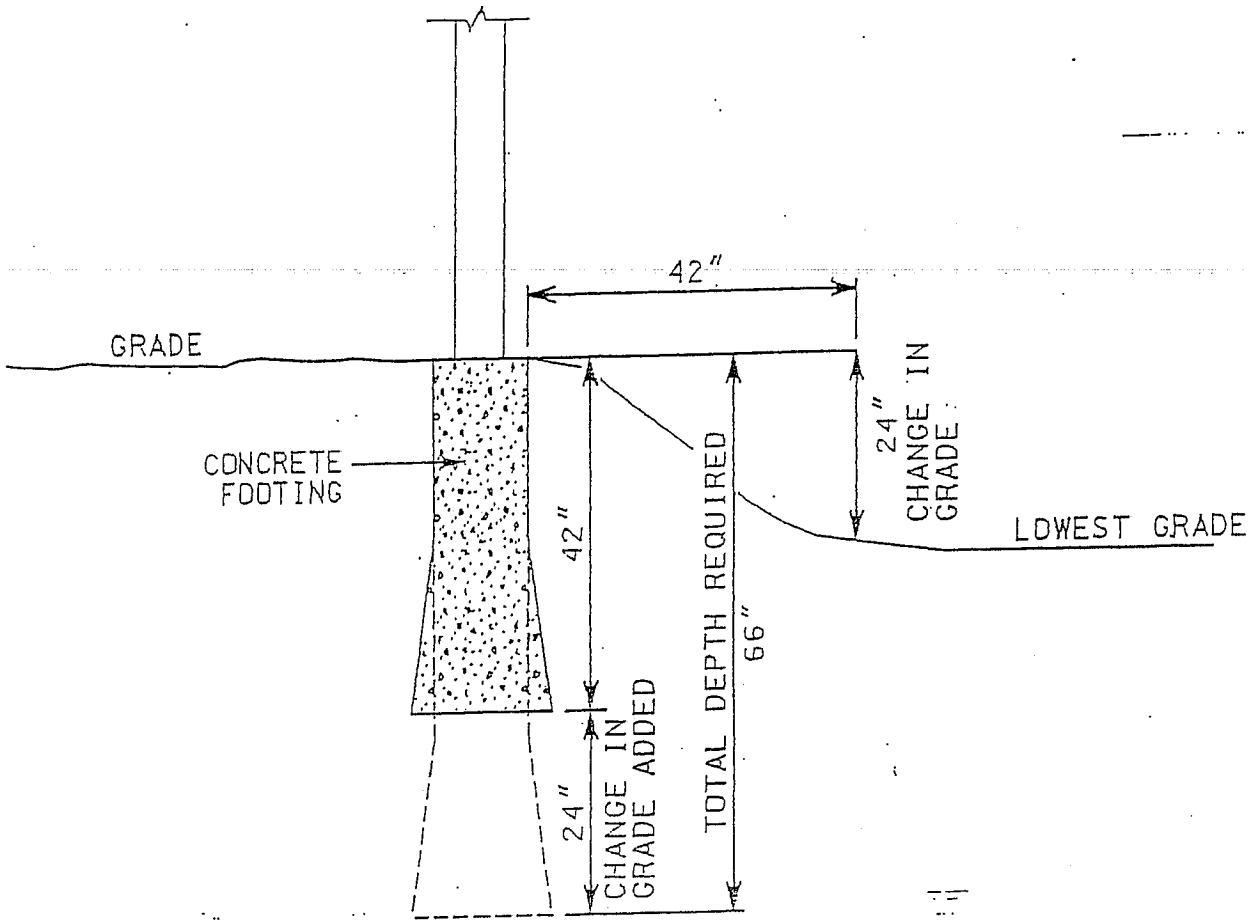
ACCEPTABLE HANDRAIL DETAILS



NOTE: Other shapes may be acceptable if they provide an equivalent gripping surface.



City of	ILLUSTRATION F	SCALE: NTS	STD PLATE NO:



CHANGE IN GRADE WITHIN 42" HORIZONTALLY OF FOOTING MUST BE ADDED TO DEPTH OF FOOTING TO ENSURE FROST PROTECTION BOTH HORIZONTALLY AND VERTICALLY

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City of minnetonka

ILLUSTRATION H

SCALE: NTS | STD PLATE NO:

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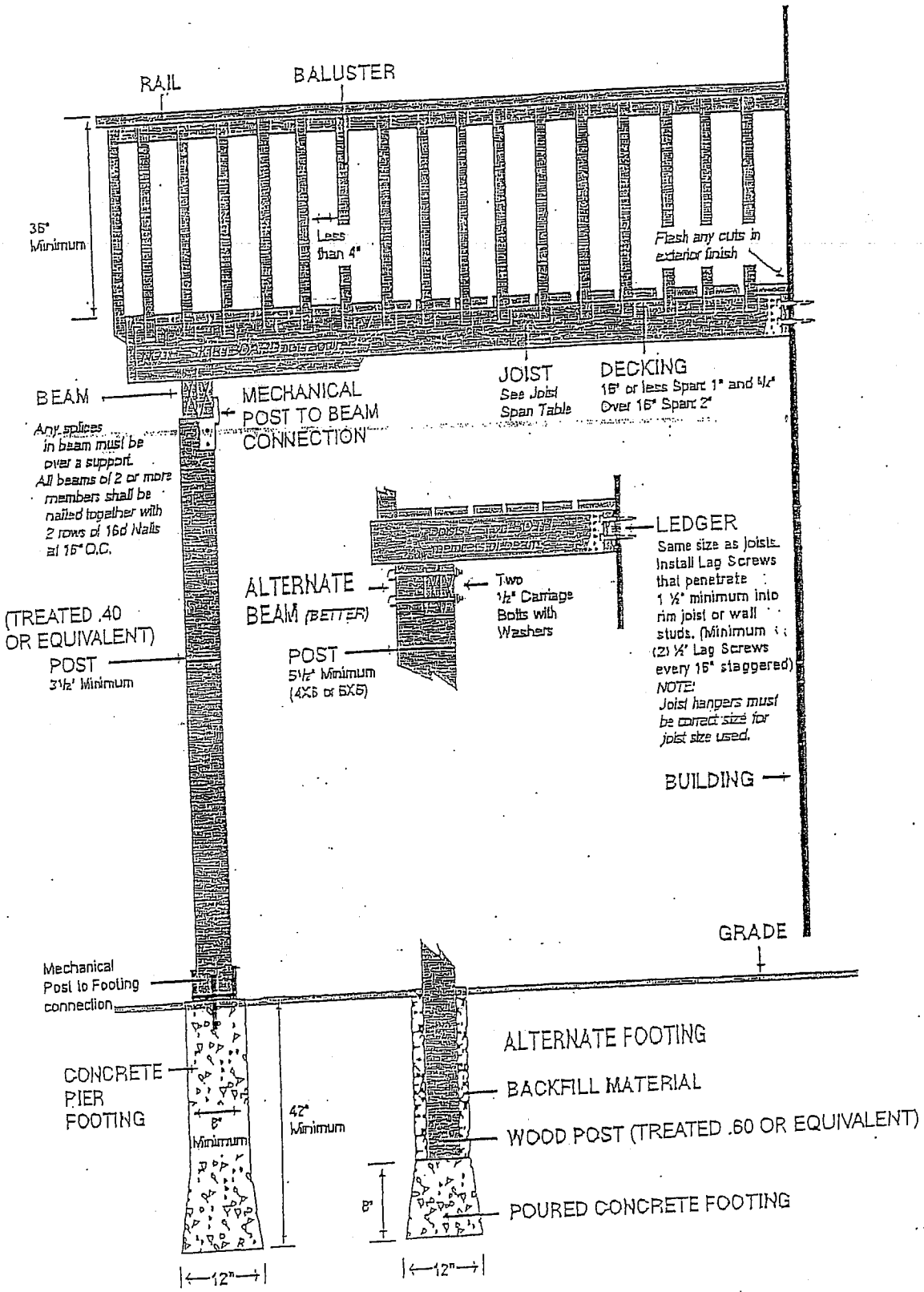

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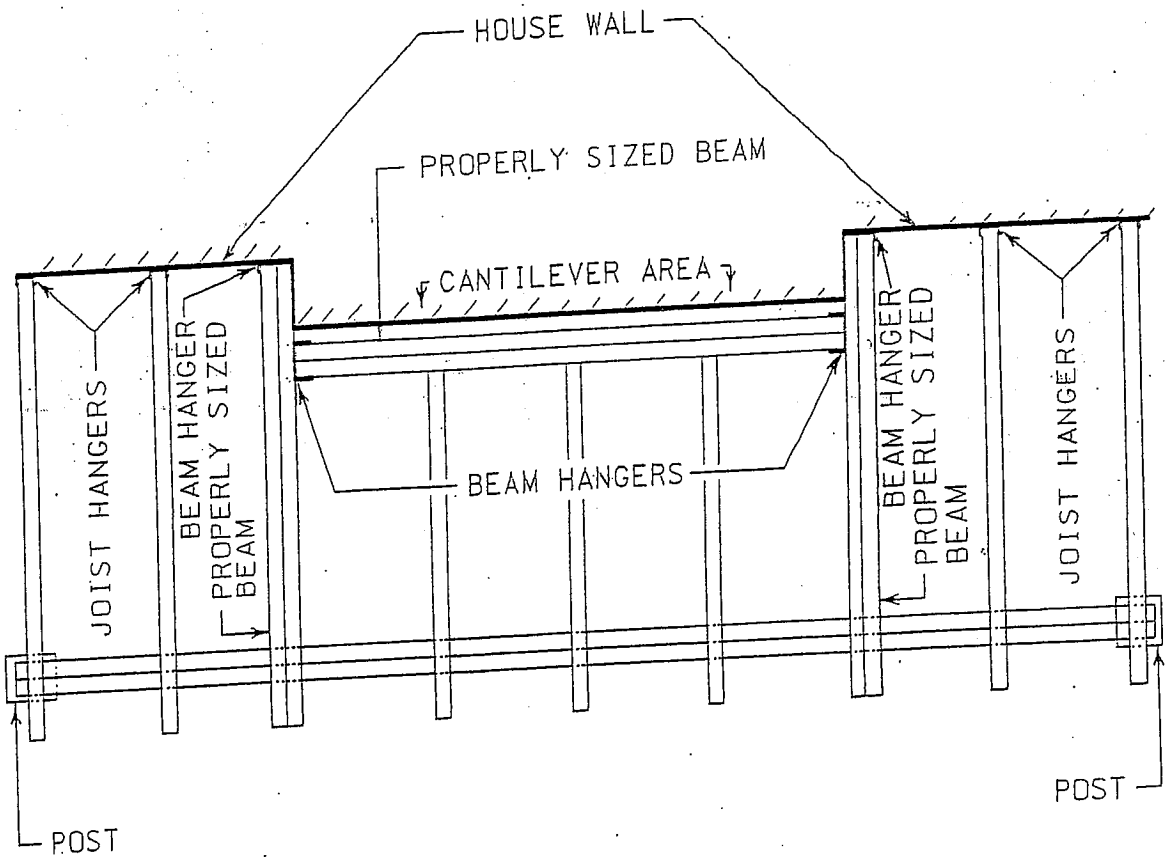
		REVISED: 9/8/2003	



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City of minnetonka

ILLUSTRATION I

SCALE: NTS

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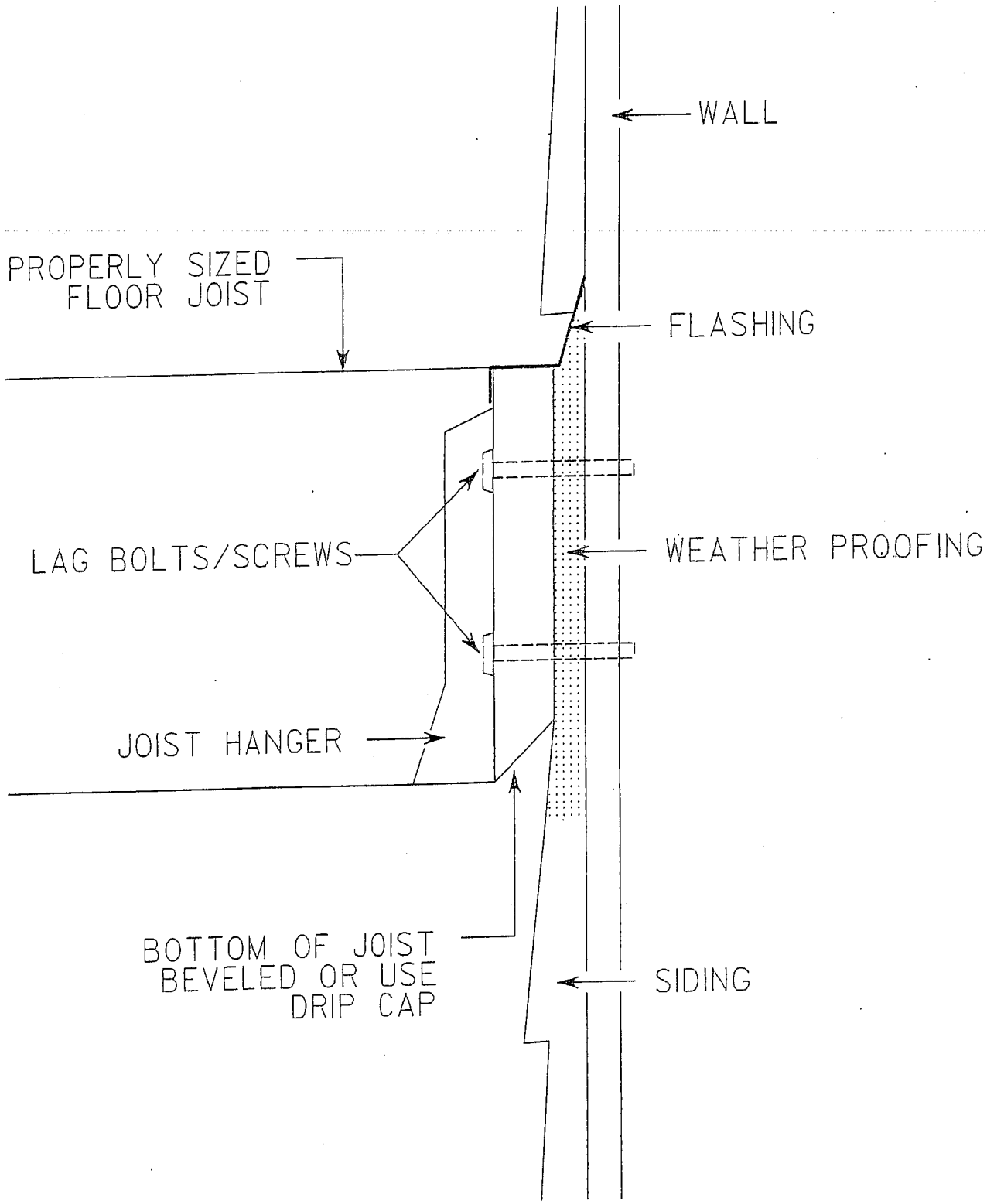

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City of minnetonka

ILLUSTRATION J

SCALE: NTS

STD PLATE NO:

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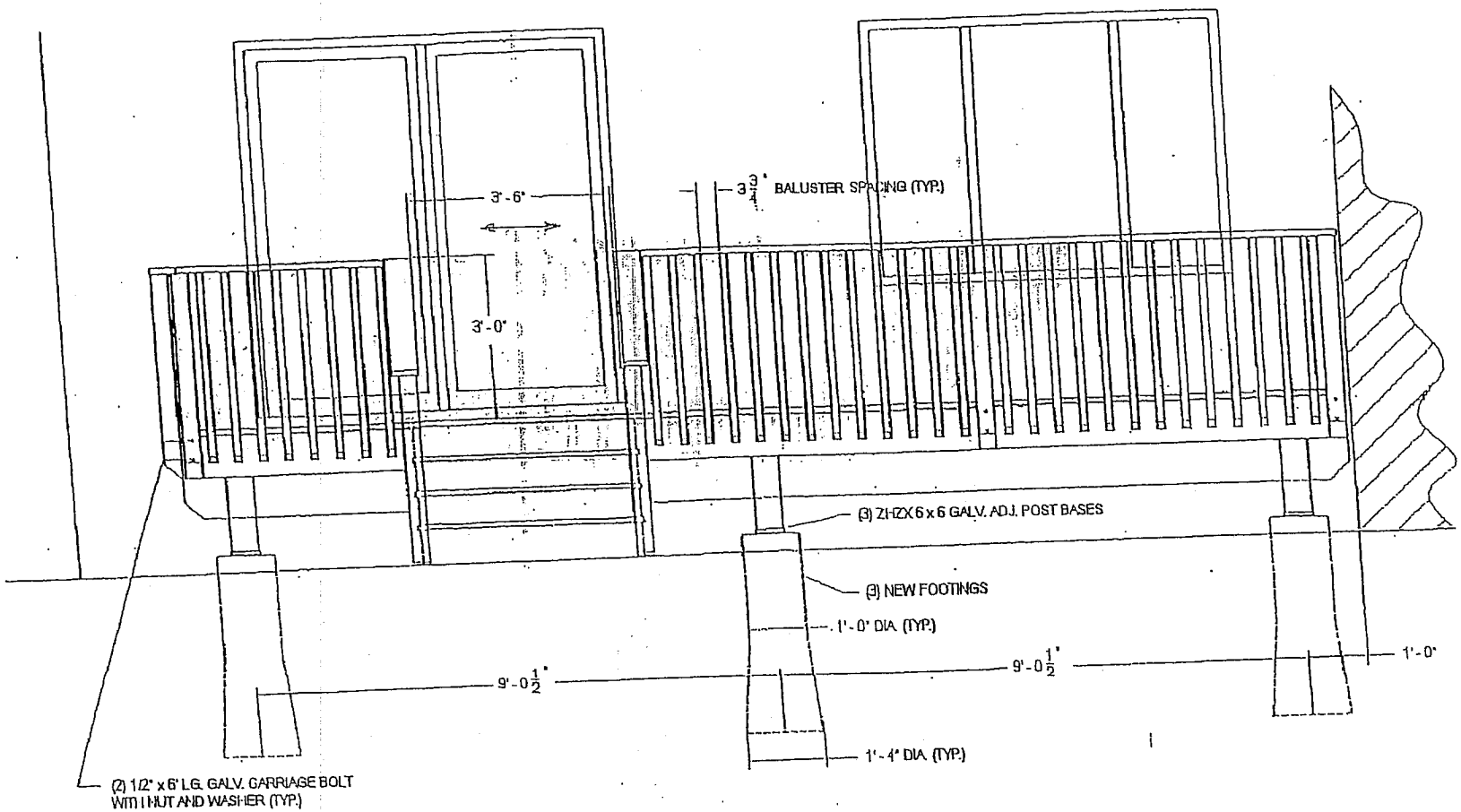

REAR ELEVATION

SCALE: NTS

STD PLATE NO:

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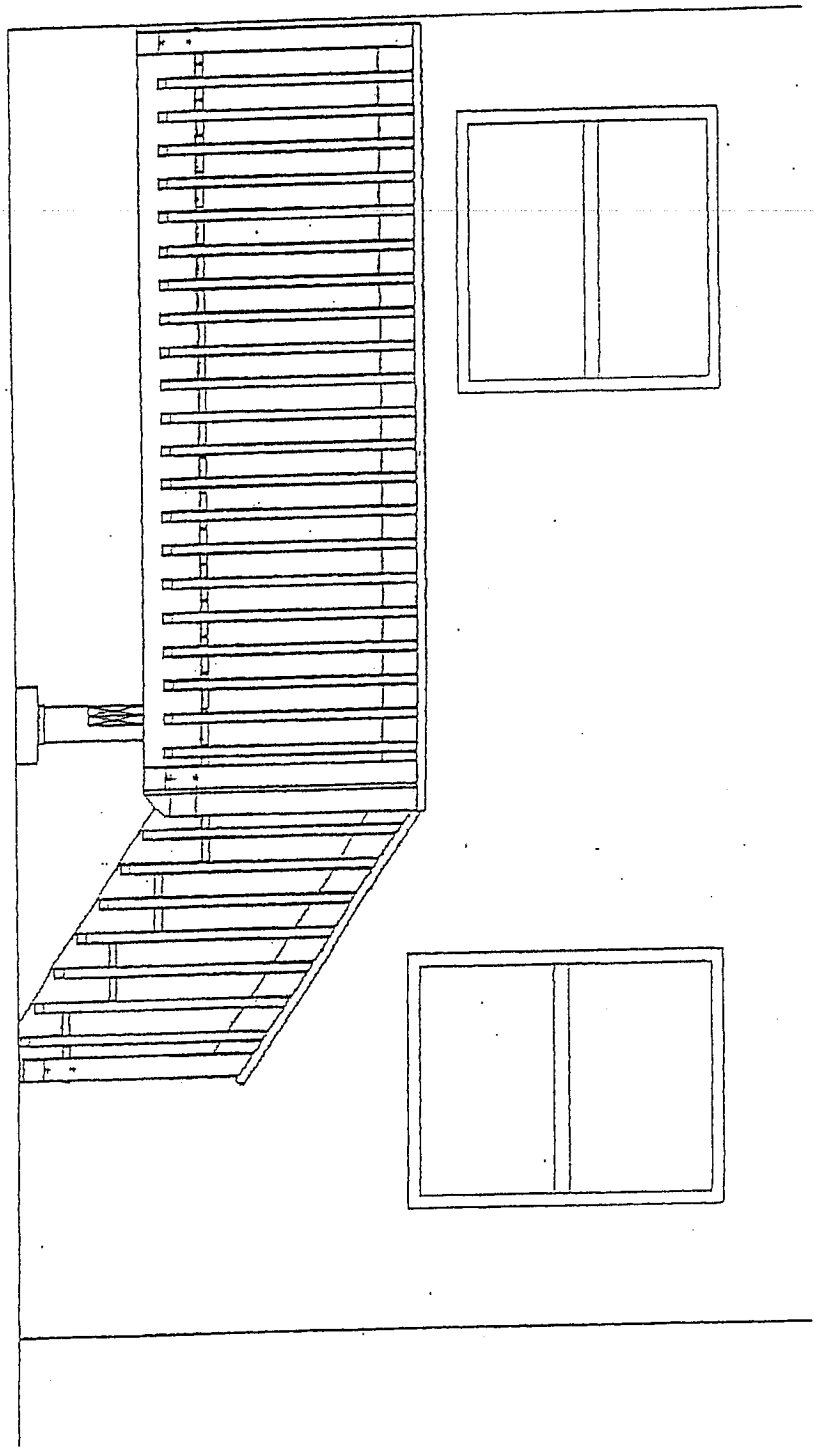
ILLUSTRATION K

City of minnetonka



SIDE ELEVATION

City of minnetonka

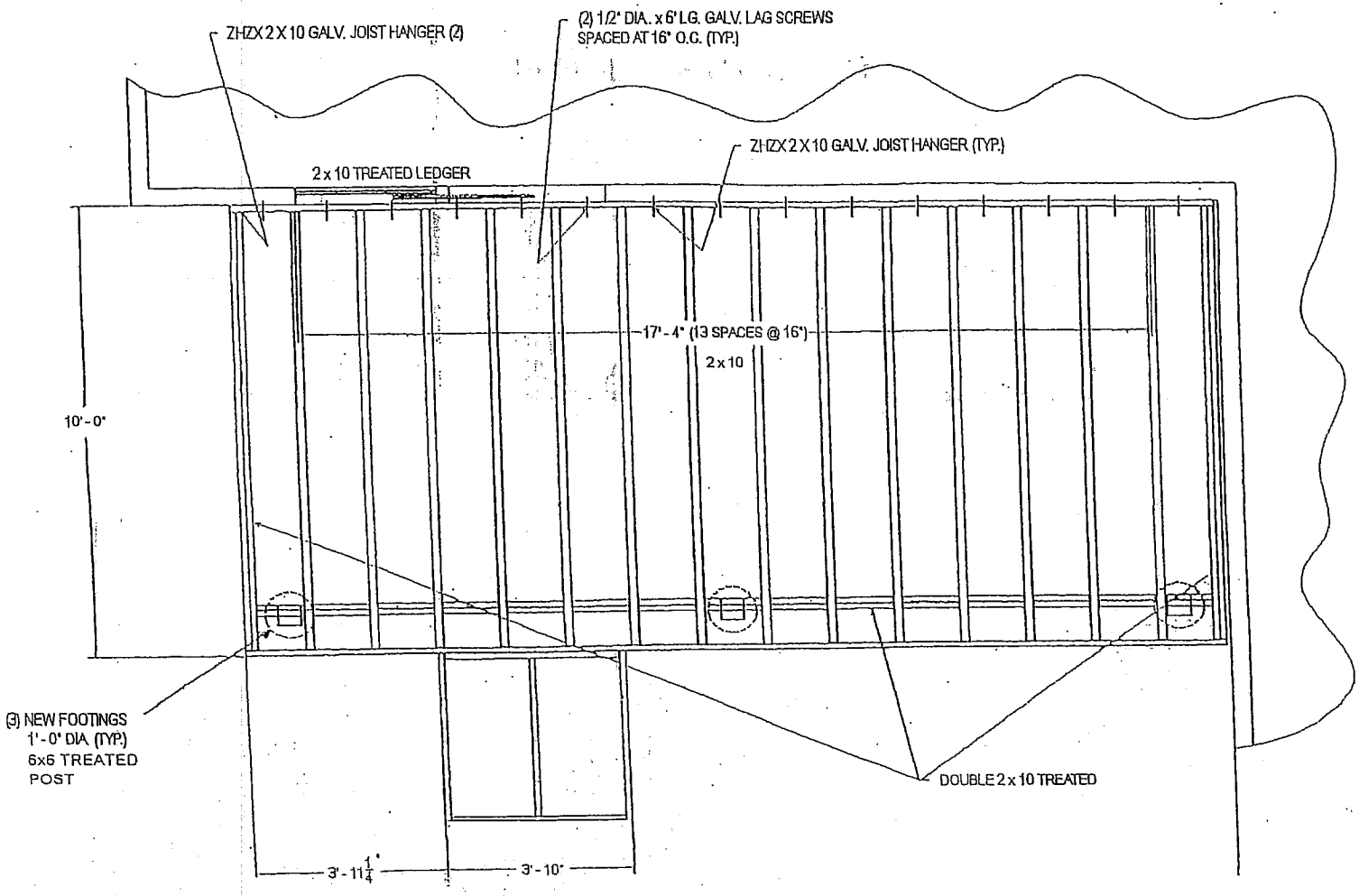
ILLUSTRATION L

SCALE: NTS

STD PLATE NO:

APPROVED: 3/29/01

REVISED:



FOUNDATION / FRAMING PG.

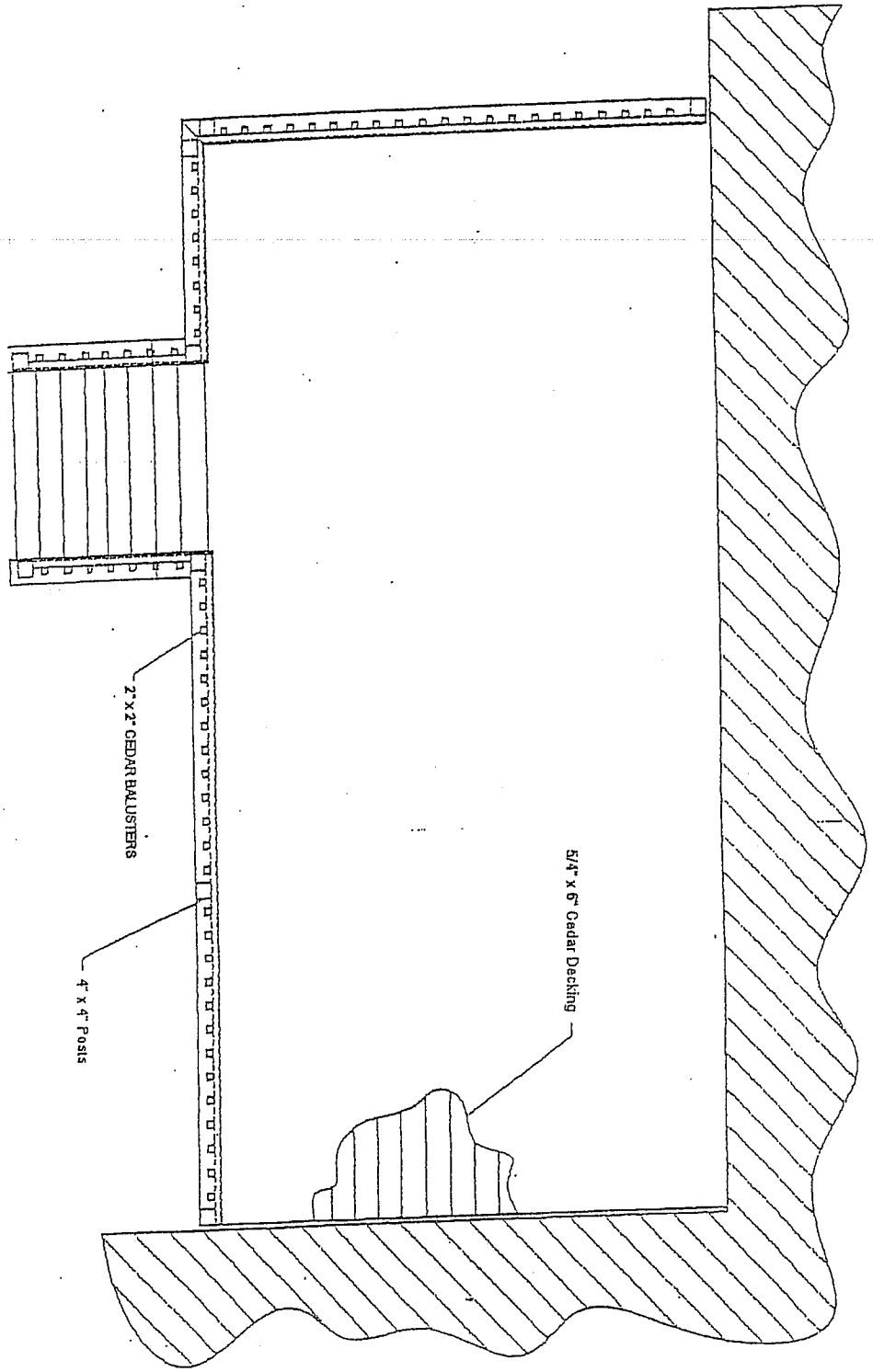
STD PLATE NO:

SCALE: NTS

APPROVED: 3/29/01
REVISED:

ILLUSTRATION M

City of minnetonka



FLOOR / DECKING PG.

City of minnetonka

ILLUSTRATION N

SCALE: NTS

STD PLATE NO:

APPROVED: 3/29/01

REVISED: