Village of Romeoville
Department of Public Works

Standard Drawings – July 2006

Engineering Submittal Requirements

Concept Plan Submittal

- ❑ Conceptual Site Plan with location map
- ❑ Existing Topography
- ❑ ALTA Survey
- ❑ Aerial Photo
- ❑ Copy of NWI Maps and any other wetland information
- ❑ Copy of FEMA Maps

Site Plan Submittal

- ❑ Preliminary Site Plan with suspect wetlands and FIRM lines shown
- ❑ Preliminary Grading Plan
- ❑ Preliminary Utility Layout
- ❑ Preliminary Cost Estimate
- ❑ Turning Templates (B-40 and largest expected delivery vehicle)
- ❑ Existing topography with overland flow routes (including a minimum of 100' in all directions
- ❑ IEPA Water and Sewer Permits (unsigned) – *recommended but not required*
- ❑ Notice of Intent (NOI) – *recommended but not required*
- ❑ Preliminary Stormwater Management Report – use Will County Stormwater Management Committee Technical Guidance Manual
  - ❑ Preliminary Detention Calculations
  - ❑ Pond Volume Provided Calculations
  - ❑ Preliminary analysis of Depressional Storage
  - ❑ Preliminary Compensatory Storage Calculations
  - ❑ Floodplain Submittal - if unstudied zone A is shown within 100' of site
- ❑ Preliminary Landscape Plan
- ❑ Additional Preliminary Engineering Calculations
  - ❑ Preliminary PE Calculations

Final Engineering Submittal

- ❑ Final Engineering Drawings
  - ❑ Existing conditions
  - ❑ Geometrics & Paving
  - ❑ Grading
  - ❑ Site Plan
  - ❑ Utilities
  - ❑ Erosion Control
  - ❑ Construction Specifications and Details
- ❑ Final Cost Estimate
- ❑ Plat of Easement
- ❑ Stormwater Pollution Prevention Plan

- ❑ NOI
- ❑ Field Tile Survey
- ❑ Photometrics Plan
- ❑ Final Stormwater Management Report
    - ❑ Off-site tributary areas
    - ❑ Floodplain and floodway analysis
    - ❑ Detention Calculations
    - ❑ Pond Drawdown Time Calculation
    - ❑ Release rate calculations
    - ❑ Tc calculations
    - ❑ Orifice calculations
    - ❑ Overflow Weir calculations
    - ❑ Depressional Storage Analysis
    - ❑ Runoff Calculations
    - ❑ Compensatory Storage Calculations
    - ❑ Storm sewer Calculations (10-year HGL and EGL)
    - ❑ Overland Drainage Calculations
- ❑ IEPA Water and Sewer Permits (signed by Engineer and Developer)
- ❑ Additional Final Engineering Calculations:
    - ❑ Final PE Calculations
    - ❑ Manhole Sizing
- ❑ Turning Templates (B-40 and largest expected delivery vehicle) if changed
- ❑ Identification of on-site wetlands and floodplain/floodway
- ❑ Tree Survey
- ❑ Traffic Study
- ❑ Archaeological Survey
- ❑ Endangered Species Consultation Action Report (IDNR)
- ❑ Final Landscape Plan
- ❑ Copies of Additional Permits
    - ❑ IDNR
    - ❑ US Army Corps of Engineer
    - ❑ Will, South Cook Soil Conservation District (if applicable)

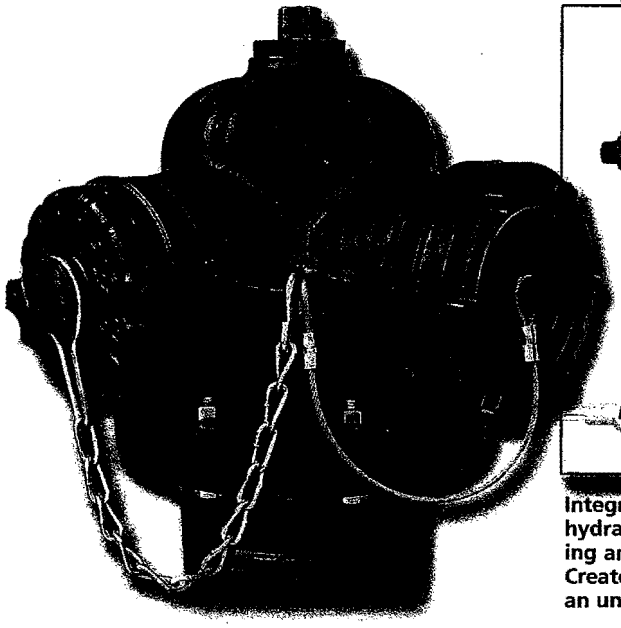
Fight the Fire . . . Not the Connections™!

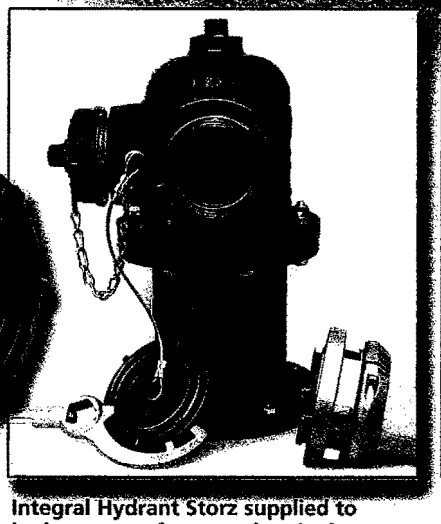
Harrington Integral Hydrant Storz™

Harrington's Integral Hydrant Storz (patent pending) permits firefighters to connect fire hose to your hydrant in seconds. The Integral Hydrant Storz literally becomes an integral part of your hydrant. We machine any manufacturer's brass nipple insert to accept the hydrant Storz and lock it in. We can accommodate whatever size hose your fire department uses.

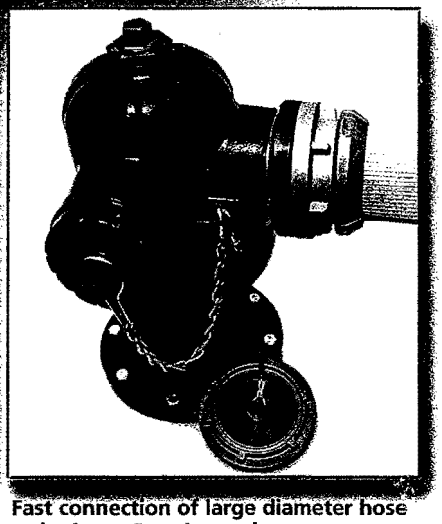
Since fire departments across the country are demanding faster hose-to-hydrant connection systems, Harrington's is widely regarded as the most efficient available. The company works with hydrant manufacturers, municipalities and fire departments to make the transition to the Harrington Integral Hydrant Storz connection system as smooth as possible.

The end result enables firefighters to fight fires [illegible] it takes just 1/4 turn to connect the hose to hydrant.





Integral Hydrant Storz supplied to hydrant manufacturer, thereby becoming an integral part of the hydrant. Creates an internal connection and an uninterrupted brass waterway.



Fast connection of large diameter hose to hydrant. Requires only one-quarter turn to create water-tight connections . . . seconds, not minutes.

Quick Connection	• Saves time, lives, money, water and aggravation
Internal Connection	• Minimizes extension from the hydrant
Uninterrupted Brass Waterway	• Minimizes flow loss • Maintains AWWA standards • Resists corrosion • Maximizes flow rate
Brass Metal Face Seal	• Minimizes maintenance • Maximizes seal life
Shortest Extension Length Available	• Reduces damage risk • Maximizes hydrant clearance • Less installation space
Highest Strength for Hydrant Life	• Exceeds AWWA pressure testing standards • Assures long-term field reliability • Resists abrasion and damage from tools and field use
Tamper-proof Cap Removal	• Safeguards against unauthorized removal, vandalism and theft • Requires Storz Spanner Wrench

Specify Harrington's Integral Hydrant Storz fro

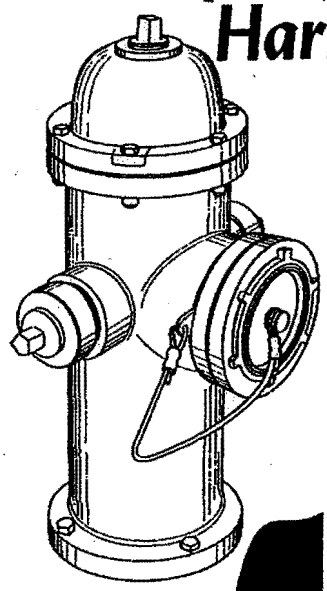
Harrington, Inc.
Fire Protection Specialists
2630 West 21st Street, Erie, PA 16506
Phone: 1.800.553.0078 • Fax: 814.838.7339
www.harrinc.com • E-mail: info@harrinc.com

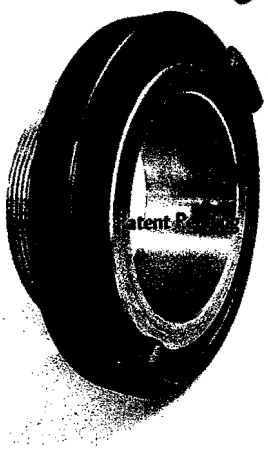
Fo
Ha
Ca

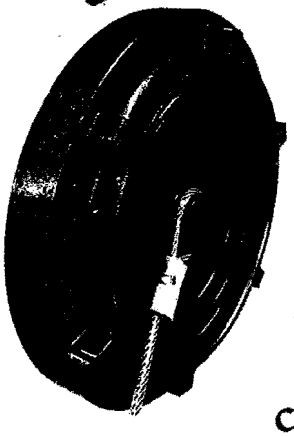
Harrington, Inc.
LDH System Specialists
2630 West 21st Street • Erie, PA 16506 • 814-838-3957
Website: www.harrinc.com • E-Mail address: info@harrinc.com
800-553-0078 • FAX 814-838-7339

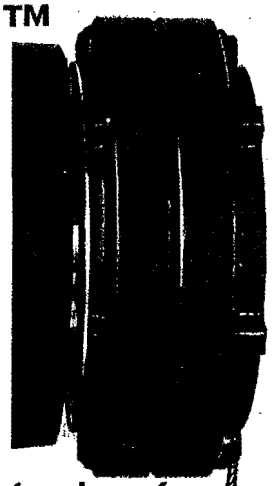
MARY STECK ROZYCKI
Cellular (734) 646-2972

Specifications & Dimensions for HIHS™ Harrington Integral Hydrant Storz™



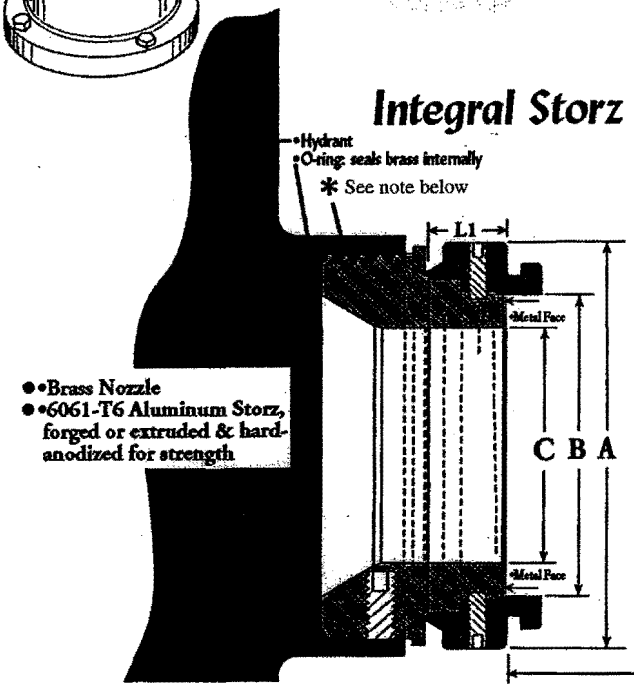




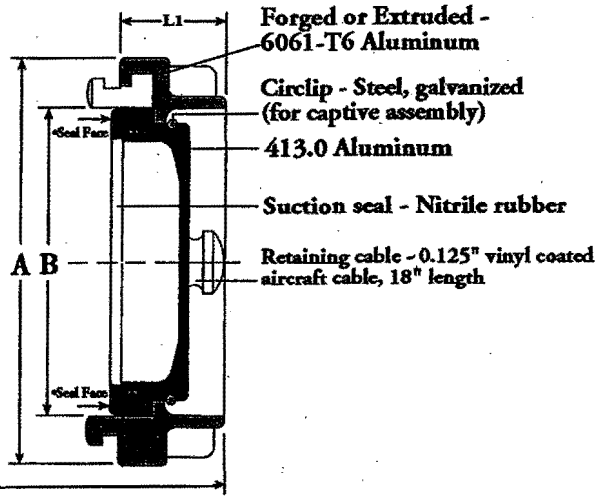


Cap extension from brass face:
- 4" HIHS™ = 1.50"
- 5" HIHS™ = 1.68"

Integral Storz



Storz Blind Cap



Nominal Dimensions (in inches)

Hydrant Storz	A	B	C	E	L1
4" Storz	6.14	4.53	3.54	1.50	1.12
5" Storz	7.71	5.84	4.54	1.68	1.19

- •Hydrant connection: Brass
- •Storz Lugs & Ramps: Aluminum
- •Finish: Hardcoat anodized to Mil-A-8625f, Type 3, dark gray
- •Main sealing face: Brass

Nominal Dimensions (in inches)

Storz Cap	A	B	L1
4" Storz	6.13	4.53	1.44
5" Storz	7.71	5.84	1.63

- •Storz Lugs & Ramps: Aluminum
- •Finish: Hardcoat anodized to Mil-A-8625f, Type 3, dark gray
- •Requirements: Torque to install or remove to be a minimum of 18 ft.-lb., maximum of 30 ft.-lb.

* Connection methods of the brass nozzle on current hydrant models vary. A thread type (as shown above) or a lug type are used. No two hydrant manufacturers use identical connection methods. Harrington offers HIHS™ for all current hydrants.

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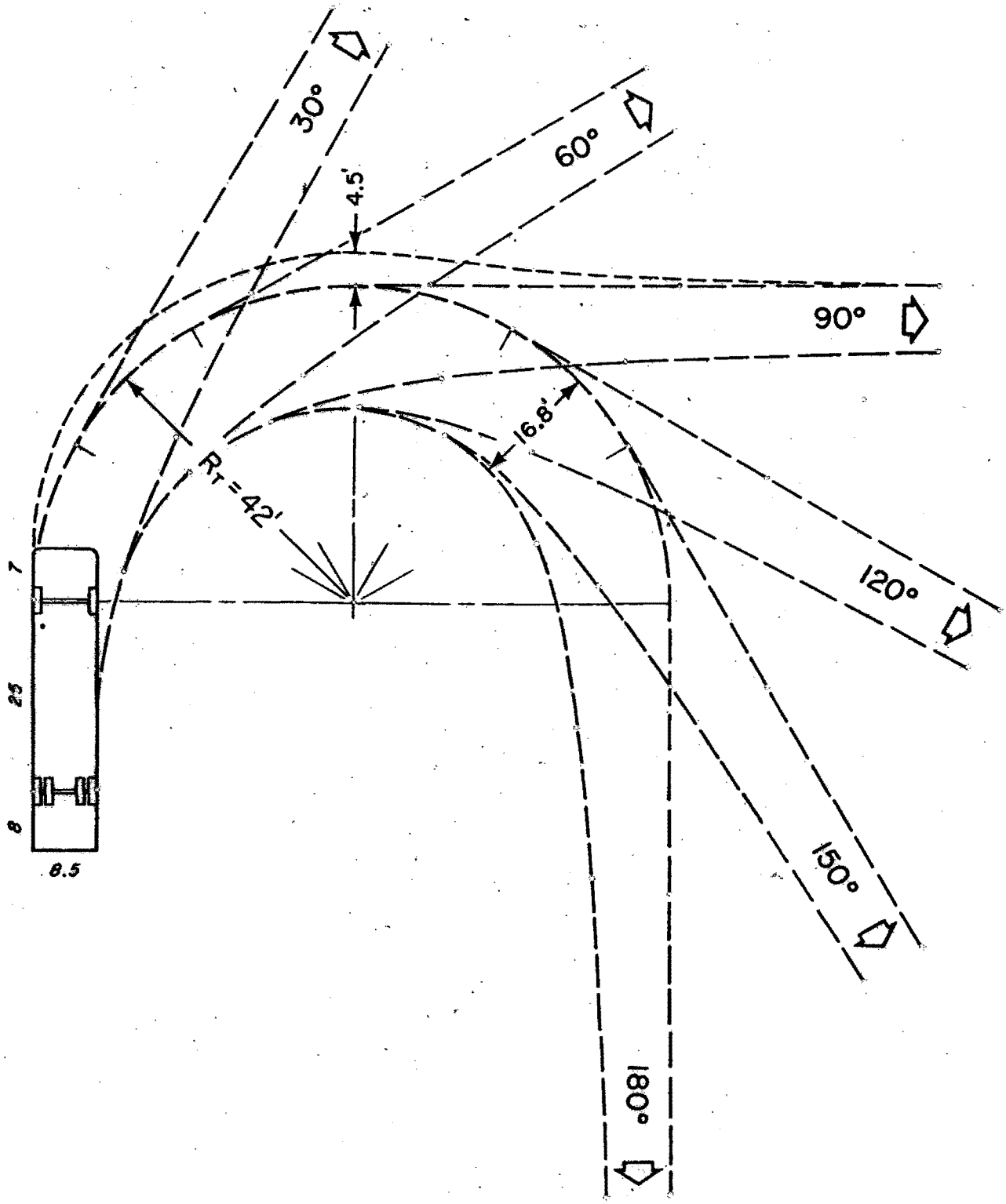
AHA 5M 08/02

$R_T = 42'$

SCALE
1" = 20'

B-40



Developed by
JACK E. LEISCH

BASIC DESIGN VEHICLE - AASHTO

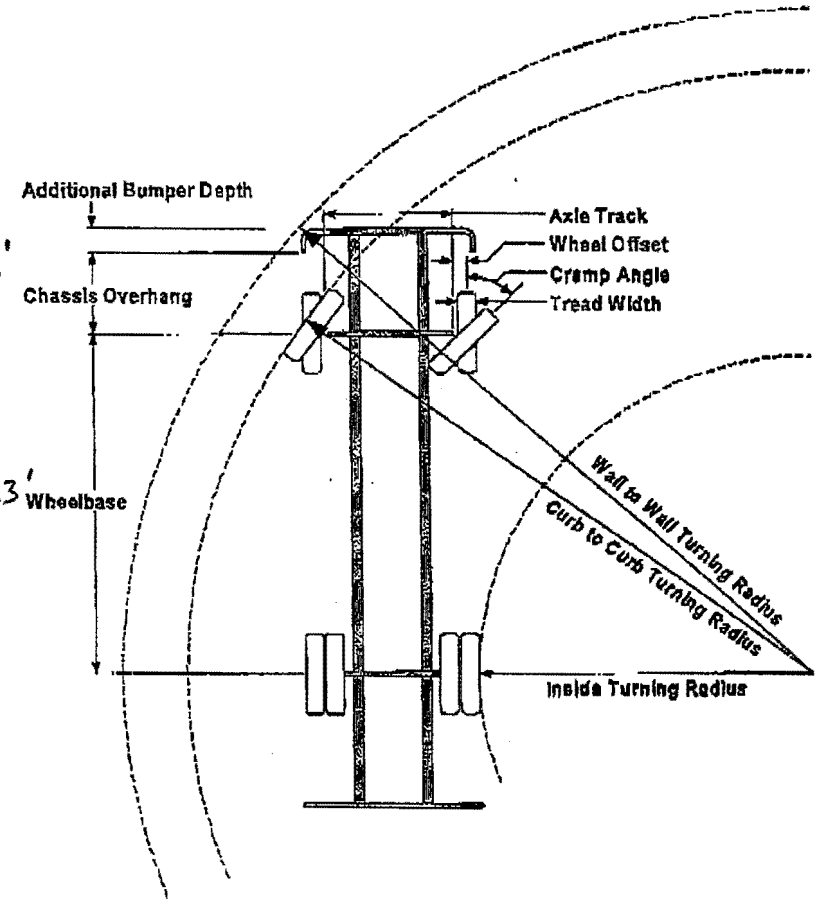
Turning Performance Analysis

4/27/2004

B-40

7' vs 7.3'

25' vs 21.3'



Parameters:

Inside Cramp Angle:	45.00 °
Axle Track:	81.92 in. - 6.8
Wheel Offset:	5.30 in.
Tread Width:	19.10 in.
Chassis Overhang:	65.99 in. (7.3)
Additional Bumper Depth	22.00 in.
Front Overhang	147.60 in.
Wheelbase:	256.00 in. (21')

Calculated Turning Radii:

Inside Turn:		20 ft. 1 in.
Curb to Curb:	42' (B-40)	36 ft. 7 in.
Wall to Wall:		44 ft. 8 in.

Comments:

Aerial Application

Attn Tony Ponzi 815-836-3546 2 pages

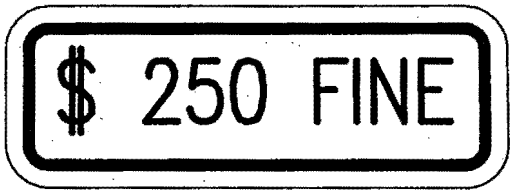
Components	PRIDE #	Description
Front Wheels	0019618	Wheels, Frt, Alum, Alcoa, 22.50" x 13.00" (425/445)
Front Tires	0090915	Tires, Michelin, 445/65R22.50 20 ply XZY tread (24K "IS")
Chassis	0070220	Dash-2000, Chassis, PAP/SkyArm/Midmount
Front Bumper	0012246	Bumper, 22" extended - all chassis'
Aerial Device	0022160	Aerial, 100' Pierce Platform

Notes:

Actual Inside Cramp Angle may be less due to highly specialized options.

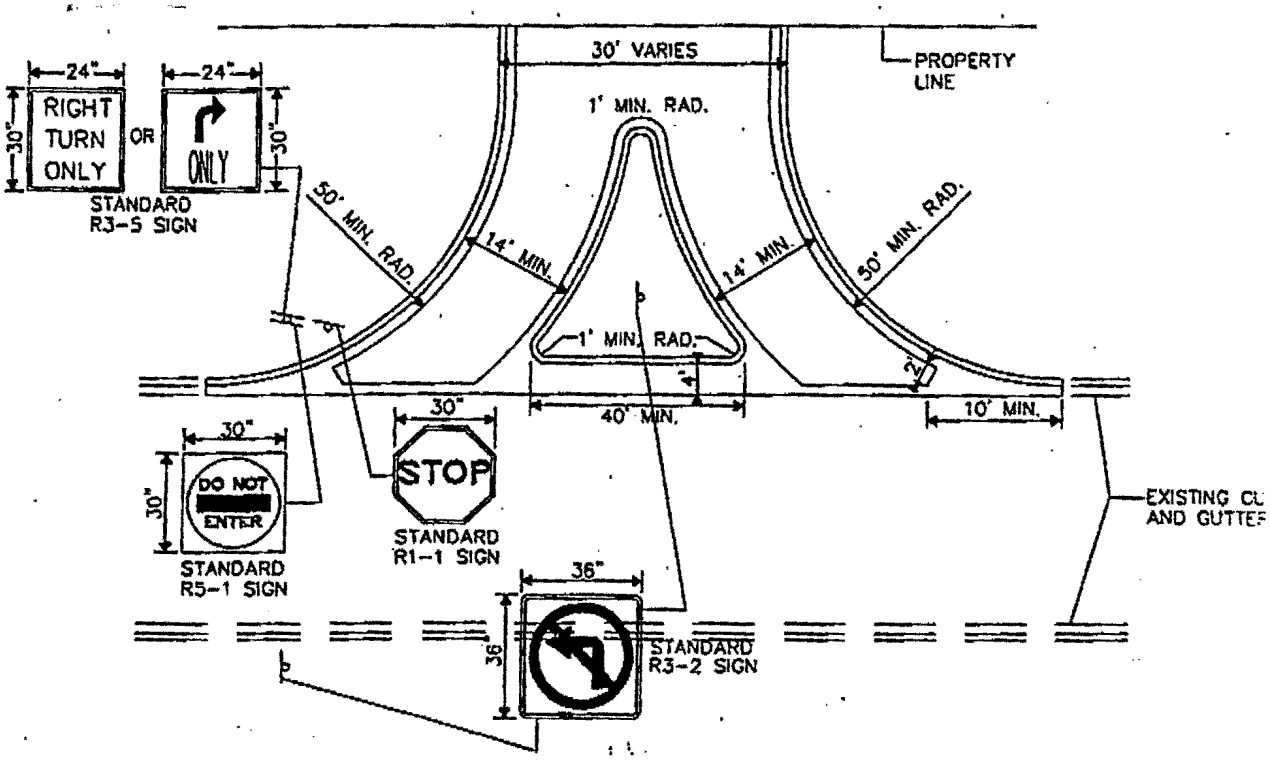
Curb to Curb turning radius calculated for a 9.00 inch curb.

Reduce turning radius by 33% if vehicle is equipped with all-wheel steer.



ACCESSIBLE PARKING SIGN
WITH $250 FINE SIGN
MUTCD R7-8, 12"x18"
IL. STD. R7-1101, 12"x6"

ACESSIBLE PARKING SIGN



STD IDOT DETAIL

COUNTY OF WILL
MAJOR ACCESS
RIGHT IN / RIGHT OUT

PERMIT NO: E????

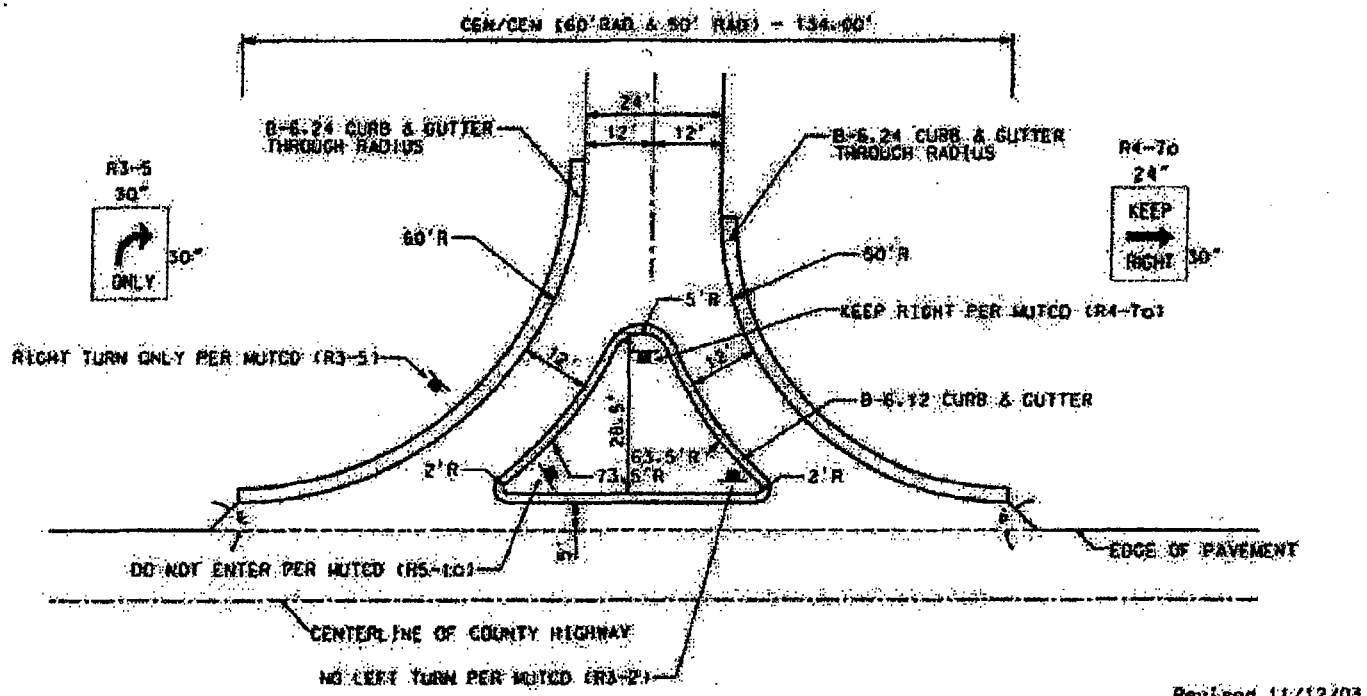
NOT TO SCALE

NOTE: ALL CONSTRUCTION TO BE DONE ACCORDING TO STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION"

MEDIAN AREA TO BE BACKFILLED WITH COURSE AGGREGATE FILL AND CAPPED WITH 4" CONCRETE MEDIAN SURFACE ACCORDING TO I.D.O.T. STANDARDS

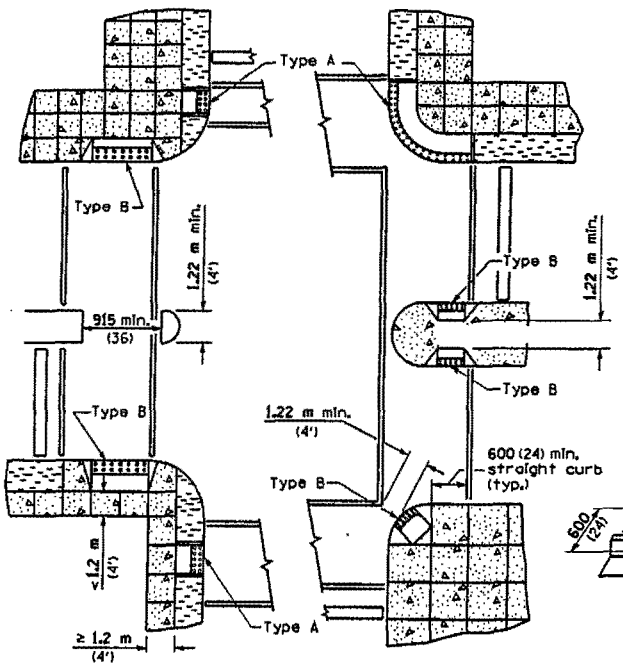
ALL DISTURBED GROUND WITHIN THE COUNTY RIGHT-OF-WAY SHALL BE RE-SEEDED, FERTILIZED, AND EXCELSIOR BLANKET INSTALLED TO THE SATISFACTION OF THE WILL COUNTY DEPARTMENT OF HIGHWAYS.

ALL PAVEMENT WITHIN COUNTY RIGHT OF WAY SHALL CONSIST OF 4" AGGREGATE SUB-BASE, 8" BITUMINOUS BASE COURSE, 2½" OF BITUMINOUS BINDER, AND 1½" BITUMINOUS SURFACE COURSE

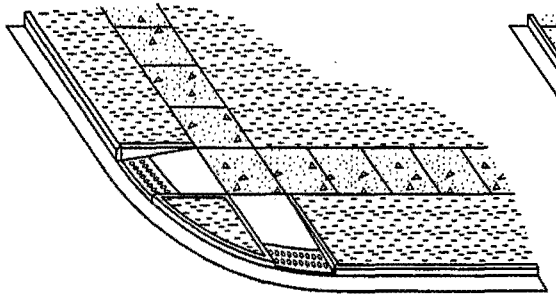


Revised 11/12/03

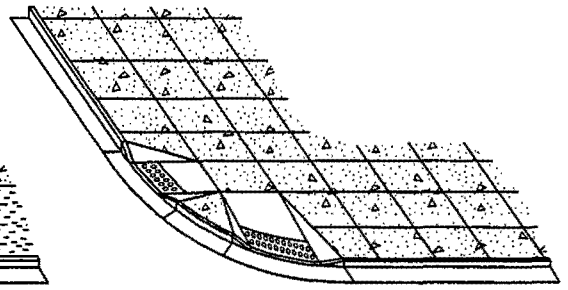
EXHIBIT 9-J



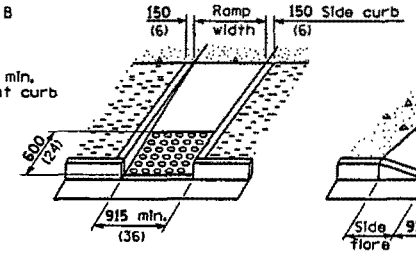
RECOMMENDED LOCATION OF RAMPS



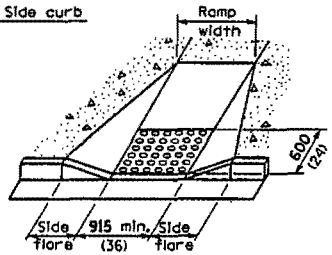
TYPE A RAMPS



TYPE B RAMPS

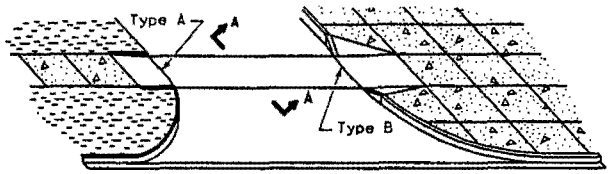


TYPE A

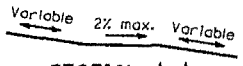


TYPE B

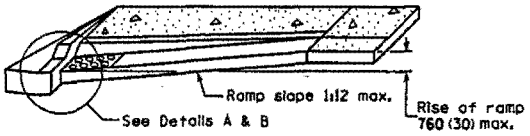
DETAILS OF RAMPS



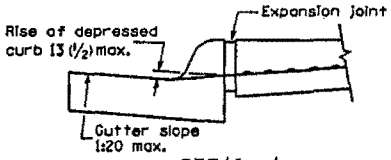
RAMPS AT ALLEYS OR ENTRANCES



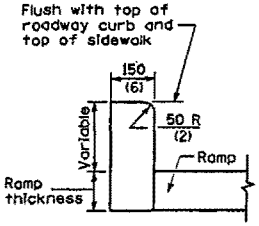
SECTION A-A



RAMP PROFILE

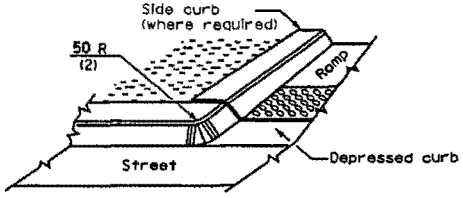


DETAIL A



DETAIL OF SIDE CURB

(Side curb may be constructed monolithically with ramp)



DETAIL B

LEGEND

- Sidewalk
- Ramp
- Detectable Warnings
- Non walking area

GENERAL NOTES

Detectable warnings shall be installed at curb ramps, medians and pedestrian refuge islands, at-grade railroad crossings, transit platform edges, and other locations where pedestrians are required to cross a hazardous vehicular way. Detectable warnings shall also be installed at alleys and commercial entrances when permanent traffic control devices are present.

The maximum slope of the side flare for Type B ramps shall be 1:10; however, if the width of the landing area between the top of the ramp and an obstruction is less than 1.2 m (4'-0") then the maximum slope shall be 1:12.

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation

PASSED August 1, 2005
ENGINEER OF POLICY AND PROCEDURES

APPROVED August 1, 2005
ENGINEER OF DESIGN AND ENVIRONMENT

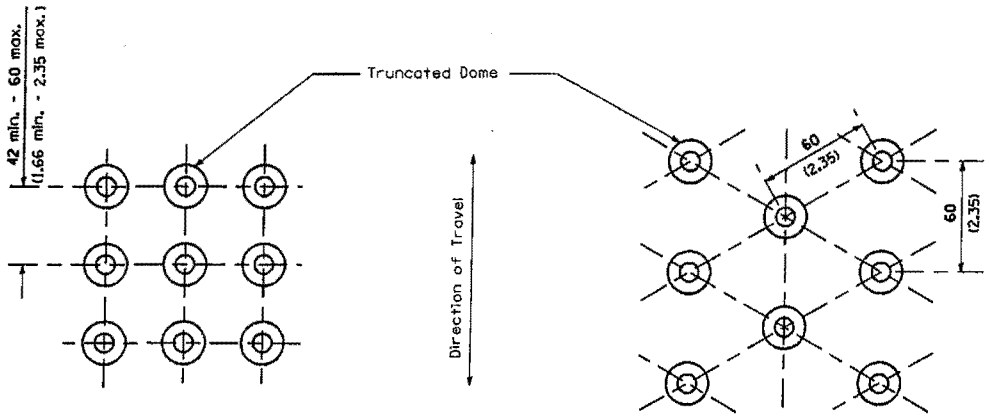
ISSUED 1-1-97

DATE	REVISIONS
8-1-05	Revised placement of detectable warnings
1-1-04	Added detectable warnings and changed title.

CURB RAMPS FOR SIDEWALKS

(Sheet 1 of 2)

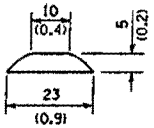
STANDARD 424001-04



SQUARE PATTERN
(Parallel Alignment)

TRIANGULAR PATTERN

DETECTABLE WARNINGS DETAIL



TRUNCATED DOME DETAIL

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation

PASSED August 1, 2006
ENGINEER OF POLICY AND PROCEDURES

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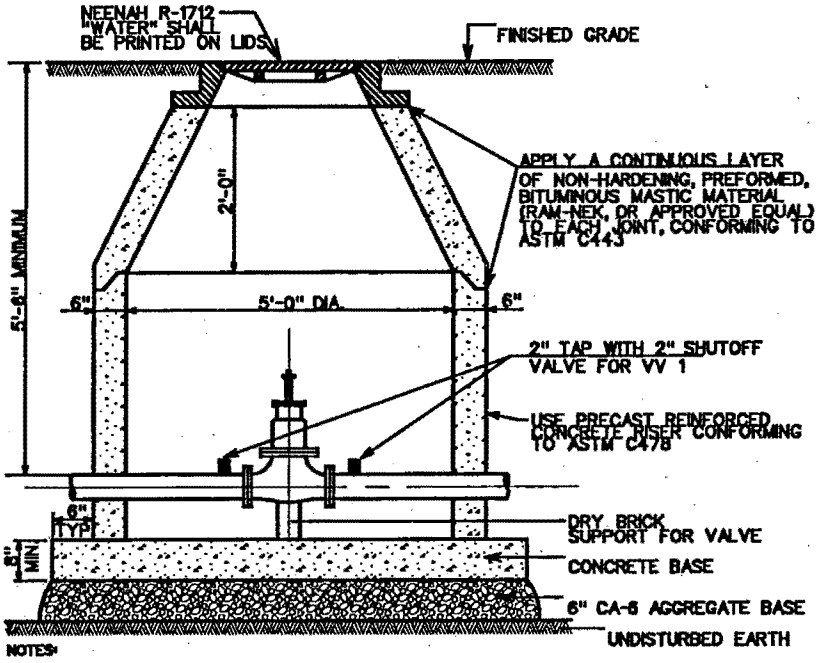
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

CURB RAMPS FOR SIDEWALKS

(Sheet 2 of 2)

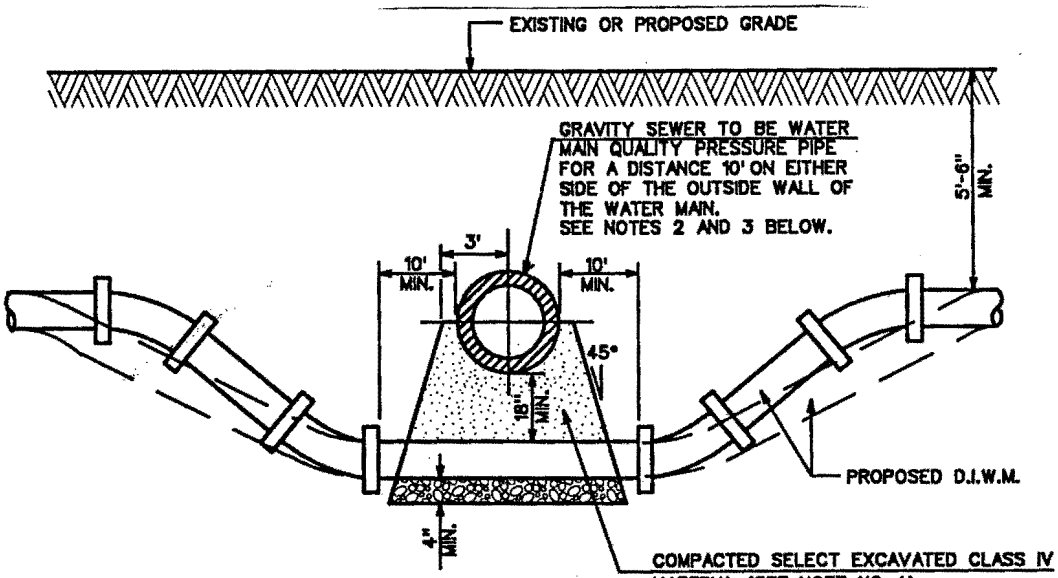
STANDARD 424001-04



NOTES:

1. ADJUSTMENTS TO ELEVATION OF FRAME SHALL BE ACCOMPLISHED WITH PRECAST. NO MORE THAN THREE CONCRETE ADJUSTING RINGS WITH A MINIMUM TOTAL HEIGHT OF 2-INCHES AND MAXIMUM TOTAL HEIGHT OF 12-INCHES ARE TO BE USED. NO MORE THAN ONE 2-INCH CONCRETE ADJUSTING RING SHALL BE USED. NO 1-INCH CONCRETE ADJUSTING RINGS SHALL BE USED. THE TOP RING UNDER PAVED AREAS MUST BE RUBBER.
2. VALVES AND HYDRANTS ARE TO BE SPECIFIED AS FOLLOWS: ALL VALVES SMALLER THAN 12-INCHES SHALL BE AWWA C509, CAST IRON BODY, EPOXYCOATED HOUSING, STAINLESS-STEEL BOLTS, BRONZE FITTED, MODIFIED WEDGE DISC RESILIENT SEAT TYPE WITH NON-RISING STEM AND O-RING PACKING DESIGNED FOR 200 POUND WORKING PRESSURE. ALL VALVES 12-INCHES AND LARGER SHALL BE BUTTERFLY VALVES AND SHALL OPEN COUNTER-CLOCKWISE WITH NON-RISING STEM. VALVES SHOULD BE EAST JORDAN OR AMERICAN FLOW UNLESS OTHERWISE APPROVED BY THE VILLAGE OF ROMEOVILLE WATER SUPERINTENDANT.
3. 6" AND 10" VALVES SHALL BE IRON BODY RESILIENT SEAT GATE VALVES, (WATEROUS)
4. ALL VALVES SHALL OPEN COUNTER CLOCKWISE.
5. ALL BOLTS SHALL BE STAINLESS STEEL CONFORMING WITH ASTM A 193, TYPE 304. NUTS ARE TO BE SERIES 300 STAINLESS STEEL, OTHER THAN SERIES 304, CONFORMING WITH ASTM A 194.

VALVE VAULT (WATER TIGHT)



NOTES:

1. CONTRACTOR MAY BEND WATER MAIN PIPE UNIFORMLY UNDER SEWERS WITHOUT USING FITTINGS PROVIDED THAT JOINT DEFLECTION DOES NOT EXCEED 5 DEGREES PER JOINT FOR PIPE UNDER 14" IN SIZE AND 3 DEGREES PER JOINT FOR PIPE 14" AND OVER IN SIZE. IF FITTINGS ARE USED, CONTINUOUS STRAPPING WITH RODS, STRAPS, NUTS AND BOLTS BELOW NORMAL WATER MAIN DEPTH ARE REQUIRED OR RETAINER GLANDS MAY BE USED IN LIEU OF STRAPPING.

2. ALL SANITARY SEWER (INCLUDING SERVICES) CROSSINGS WHERE THE WATER MAINS OR WATER SERVICES ARE LESS THAN 18" ABOVE THE SEWER VERTICALLY SHALL BE POLYVINYL CHLORIDE PRESSURE PIPE AND SHALL CONFORM WITH THE LATEST REVISION OF ASTM SPECIFICATION D 2241 SDR 26, (160 PSI). JOINTS SHALL CONFORM TO ASTM D 3139 AND ELASTOMERIC GASKETS SHALL CONFORM TO ASTM F 477. THE SAME PIPE AND JOINT MATERIAL SHALL BE USED WHENEVER WATER MAIN CROSSES BELOW THE SEWER.

3. ALL STORM SEWER (INCLUDING SERVICES) CROSSINGS WHERE THE WATER MAINS OR WATER SERVICES ARE LESS THAN 18" ABOVE THE SEWER VERTICALLY SHALL BE REINFORCED PRECAST CONCRETE SEWER PIPE, ASTM C76 OR C361 PIPE WITH ASTM C443 JOINTS. THE SAME PIPE AND JOINT MATERIAL SHALL BE USED WHENEVER WATER MAIN CROSSES BELOW THE SEWER.

4. COMPACTED MATERIAL BELOW SEWER SHALL CONFORM TO STANDARD SPECS.

5. HORIZONTAL AND VERTICAL SEPARATION BETWEEN WATER MAINS AND SEWERS SHALL COMPLY WITH SECTION 652.03 OF THE STANDARD SPECIFICATIONS FOR SEWERS AND WATER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION.

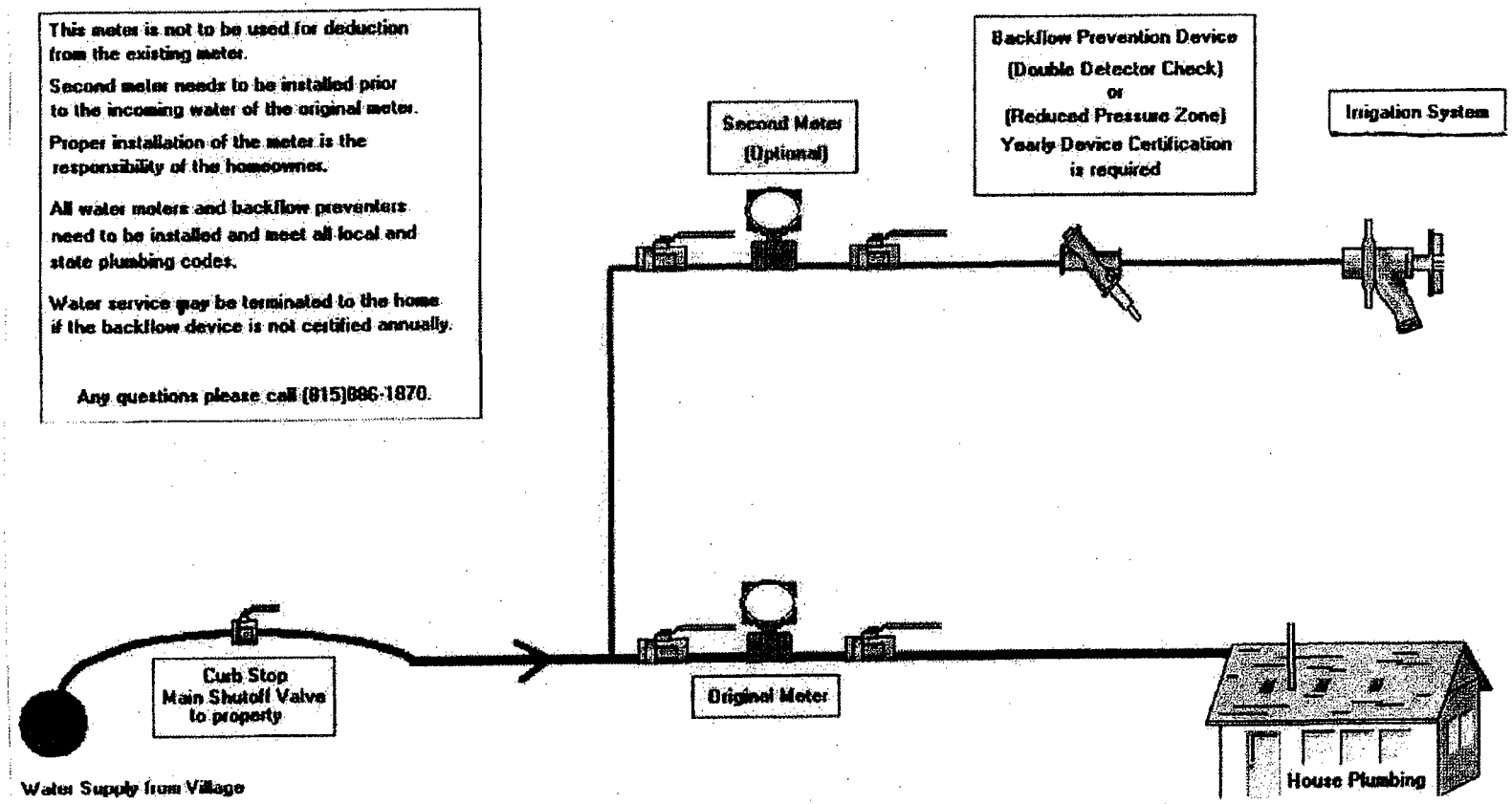
WATER MAIN CROSSING DETAIL

Village of Romeoville - Minimum chlorination standards:

a. Gas chlorine must be used for disinfection.
b. The chlorination contractor must call 815-886-1870 a minimum of 24-hours in advance to schedule chlorination.
c. Only Village of Romeoville employees shall operate water system valves and turn on/off sampling whips while samples are being collected.
d. All chlorination and safety equipment must meet or exceed the standards and recommendations set by The Chlorine Institute, Inc.
e. The chlorinator must be a licensed plumber or certified Illinois water operator with a minimum of 5 years experience working with chlorine disinfection of water supply lines.
f. The chlorination contractor must have two people present top chlorinate. One to monitor the cylinder and one to monitor in the field.
g. The chlorination contractor must be bonded and insured, and have proof of both on file with the Village.
h. The chlorination contractor must have updated 24-hour emergency phone numbers on file with the Village.
i. The chlorination contractor must comply with state and federal regulations regarding transportation and handling of chlorine cylinders:
    - Shipping and emergency papers for every job location
    - Proof of insurance for hauling and handling chlorine gas
    - Commercial driver's license with Hazmat endorsement and medical card
    - Copy of Emergency Response Guidebook in vehicle
    - Hazmat certificate of registration
    - Hazardous materials placard displayed on vehicle
    - Cylinder strapped upright in truck
j. Under no circumstances will chlorine contractors be allowed to apply heat to the chlorine cylinder (i.e. hot baths, propane torches, etc.). While the cylinder is being used it must be in a vertical position, as well as being affixed to a solid object.
k. Prior to chlorination, the chlorination contractor must provide a detailed written chlorination and flushing plan to the Village for review and written approval.
l. At any time, the Village or its authorized representative may ask for proof of any or all of the above information. Please contact the Village of Romeoville Public Works Department (815-886-1870) with any questions.

RESIDENTIAL IRRIGATION METER/ RPZ DIAGRAM

- The meter for the irrigation system is **not** to be installed as a deduction from the existing meter.
- Second meter needs to be installed prior to the incoming water of the main meter.
- Proper installation of the meter is the responsibility of the homeowner.
- All water meters and backflow devices need to be installed in accordance with and meet all local and state plumbing codes.
- Water service may be terminated to the home if the backflow device is not certified annually.



Any Questions, Please contact the Public Works Department at 815-886-1870.

WATER MAIN PROTECTION FROM SEWERS AND DRAINS

Submitted by Roger Selburg, Illinois Environmental Protection Agency - Division of Public Water Supplies, on behalf of the CECI/IEPA Liaison Committee

ANSWERS TO FREQUENTLY ASKED QUESTIONS (FAQs)

As potable water is transported after treatment to the user, opportunities exist for unwanted substances to contaminate it. Water supplies must protect the water from contamination in the distribution system by maintaining a minimum pressure of at least 20 psi, providing a chlorine residual, developing and implementing a cross-connection control program, and providing separation from sources of sanitary contamination including sanitary sewers, storm sewers, drains, private sewage disposal systems and sources of hydrocarbons.

This FAQ document has been developed by the Bureau of Water of the Illinois Environmental Protection Agency in order to increase awareness of the water main protection requirements from sewers by answering frequently asked questions. Water mains must be protected from sanitary sewers, storm sewers, combined sewers, house sewer service connections, drains, and septic fields according to the requirements stated in the Agency Rules For Public Water Supplies (formerly Technical Policy Statements); the formal citation is: Title 35, Subtitle F, Chapter II, Parts 651-654). *Call the CECI office for a fax or e-mail copy of the applicable sections.*

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1. Does the water main have to be separated ten feet horizontally from the sewer, if the sewer is constructed with water main equivalent pipe?
Yes, unless local conditions prevent it. The water main must be located at least ten feet horizontally from any existing or proposed drain, storm sewer, sanitary sewer, combined sewer, or sewer service connection, unless local conditions prevent a lateral separation of ten feet.

2. If local conditions prevent a lateral separation of ten feet, what alternatives are available?
If it is not possible to obtain ten feet separation the Agency may approve construction in which the water main invert must be 18 inches above the crown of the sewer. In parallel situations where it is not possible to obtain the lateral or vertical separation, then the Agency may approve construction in which the sewer is constructed of water main equivalent pipe and pressure tested to the maximum expected surcharge head before backfilling.

3. How is the distance between pipes measured?
The distance between pipes is measured edge to edge.

4. When local conditions prevent ten feet of horizontal separation can a casing pipe be used?
No, casing pipe can only be used at crossings where the vertical separation requirement is not met.

5. If local conditions prevent a separation of ten feet between a water main and a forcemain can the two pipes be located closer together?
The exception criteria for gravity sewers generally do not apply to forcemains. There may be some very limited instances when the Agency may consider closer installation under extreme circumstances if the forcemain can be shown to be free of leaks at all times.

6. How is Agency approval obtained for deviations from the horizontal and vertical separation requirements?
Agency approval is obtained during the construction permit application process. The construction documents must clearly show those locations where the required horizontal and vertical separation cannot be provided. On the back of the Schedule B - Water Main Construction form or on an attached sheet indicate the location(s) where the separation requirements are not met, the reason that proper separation cannot be provided, and how the water main will be protected. The construction permit, which lists the approved plans that clearly detail the situation(s) and indicate the alternative protection, serves as the Agency's acceptance of the deviation(s).

7. If the invert of the sewer is 18 inches above the crown of the water main, is the water main properly protected?
No, when the water main crosses below a sewer, the sewer must be constructed with water main equivalent pipe or else either pipe must be installed in a casing. The protection must extend on each side of the crossing until the normal distance from the water main to the sewer or drain is at least ten feet. In addition, the water main must be located at least 18 inches below the sewer. This 18 inches is a structural protection to prevent the sewer from settling and breaking the water main.

8. What type of casing pipe is acceptable at water and sewer crossings?
If the invert of the water main is not 18 inches above the crown of the sewer when the pipes cross, a casing pipe can be installed around either the water main or sewer in lieu of constructing the sewer with water main equivalent pipe. The casing pipe must be a material that is approved for use as water main. Concrete is not an acceptable encasement. The casing must extend on each side of the crossing until the normal distance from the water main to the sewer or drain is at least ten feet. For example, 30 feet of casing would be required for a 6-inch water main crossing an 8-inch sewer at a 45 degree angle.

Continued on page 6

FAQ: Water Main Protection from Sewers and Drains
Continued from page 5

9. Can the storm sewer be constructed with reinforced concrete pipe with a flexible gasket joint meeting ASTM C361 or ASTM C443 as an alternative to constructing the storm sewer with water main equivalent pipe at locations where it is not possible to meet the separation requirements?
In parallel situations where local conditions prevent a ten foot separation the answer is no. At crossings, the answer is yes. Storm sewer constructed with reinforced concrete pipe is not an approvable alternative when the storm sewer is parallel to a water main. At crossings when the invert of the water main is not 18 inches above the crown of the storm sewer, the storm sewer can be constructed with reinforced concrete pipe using flexible gaskets instead of providing a casing pipe or constructing the storm sewer with water main equivalent pipe.

10. Can the water main and sewer be installed in the same casing pipe when boring under roads, railroad tracks, streams, or other similar situations?
No, the water main and sewer must be installed in separate casing pipes, at least ten feet apart, to meet the sanitary protection requirements.

11. Does the water main have to be ten feet from a manhole?
No, the water main should be located as far as possible from manholes. The water main must not pass through or come into contact with a manhole.

12. What is the separation requirement between water mains and septic fields?
Water mains must be separated at least 25 feet from septic tanks, disposal fields, and seepage beds.

13. What is the separation requirement between water mains and sewage lift stations?
Water mains must be separated at least 25 feet from a sewage lift station.

14. Do the same horizontal and vertical separation requirements apply to water service lines?
Yes; locate water service taps on a water main so that either the ten foot horizontal separation or 18 inch vertical separation above sanitary sewers, storm sewers, combined sewers, drains, and sewer service connections is provided. For additional information on protection of water service lines refer to the Illinois Plumbing Code or contact the Illinois Department of Public Health.

15. Does a polyethylene pipe have to be protected from sewers when using a directional drilling technique to install the water main at least 18 inches below a sewer, if the material between the invert of the sewer and the crown of the water main is not disturbed?
Yes; the water main protection requirements still apply, regardless of the technique used to install the water main.

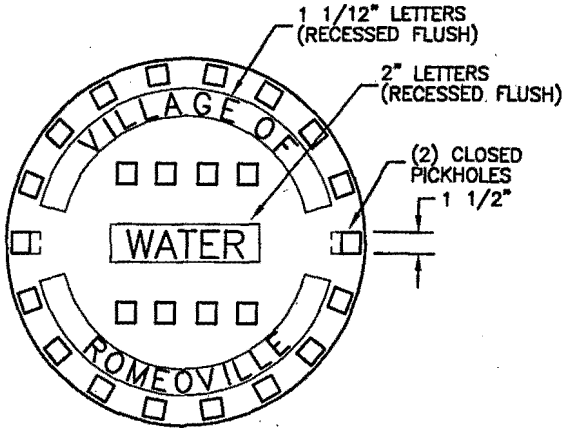
16. What action must be taken if, during the course of construction, existing utilities, water or sewer lines, are uncovered in unexpected locations which would interfere with the permitted and approved construction?
The water main protection requirements still apply. Take necessary action to provide the protection options as described in the Agency rules at part 653.119. (See below) Protective measures as detailed in the 'Standard Specifications for Water and Sewer Main Construction in Illinois' are also generally acceptable.

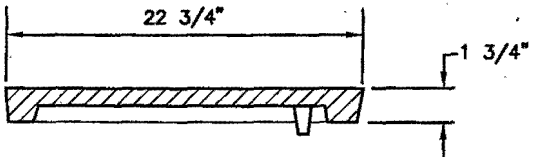
For further information, please contact the IEPA, Division of Public Water Supplies, Permit Section.

Ralph Wehner recognized

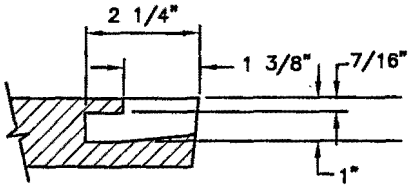
Retiring Illinois State Toll Highway Executive Director Ralph Wehner was recognized recently with a Distinguished Service Award, "For his service to the people of the State of Illinois as Executive Director of the Illinois State Toll Highway Authority; for his exemplary Professional Engineering leadership; and for serving as Co-chairman of the CECI/ISTHA Liaison Committee and his commensurate commitment to public and private sector partnering."

Shown presenting the Award are (left to right), David E. Kennedy, CECI Executive Director, Wehner, Paul McNamee, Beling Consultants, Chairman of the CECI/ISTHA Liaison Committee, and Tom Cuculich, new Executive Director of the Tollway.

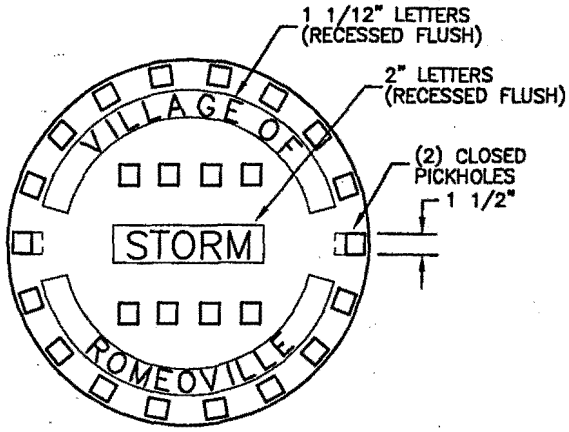


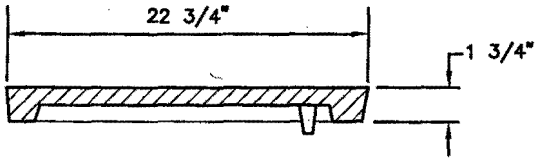


CROSS SECTION



PICKHOLE DETAIL





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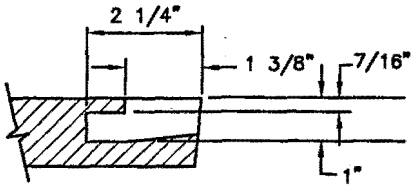

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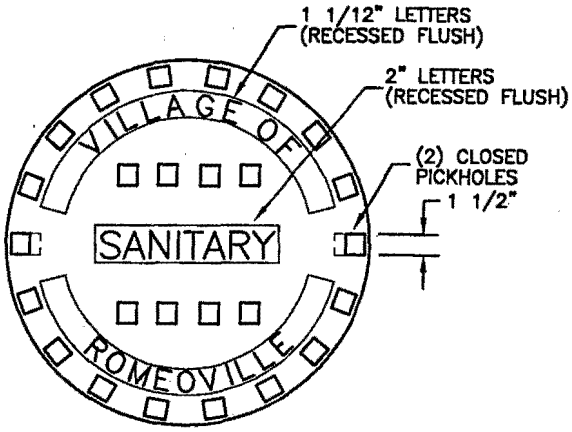

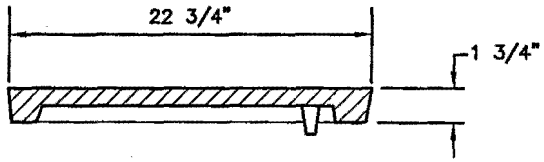

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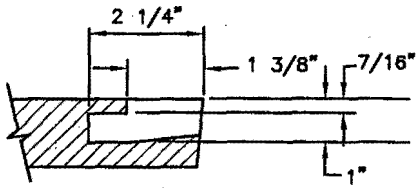
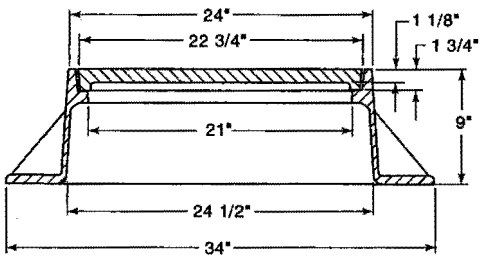


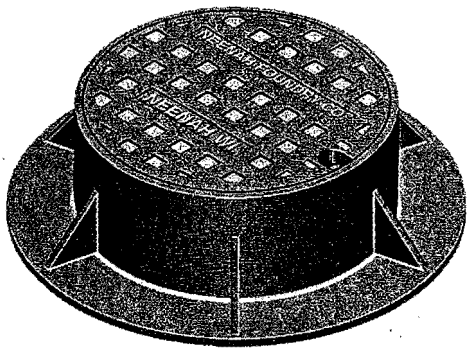
PICKHOLE DETAIL

ROMEOVILLE LIDS

R-1713
Manhole Frame, Solid Lid

Heavy Duty

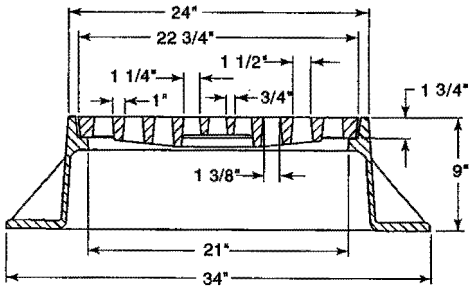


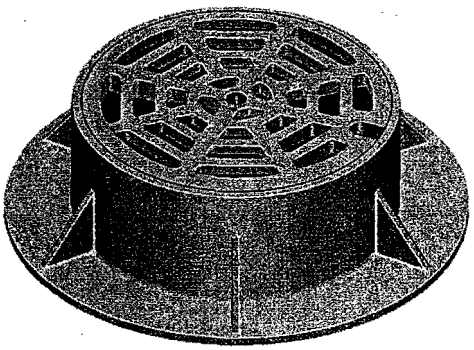


PG 40

R-2504
Catch Basin Frame and Grate

Heavy Duty





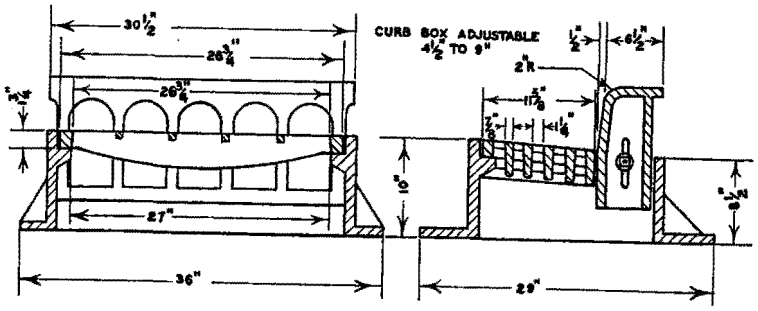
Uses R-1713 frame.

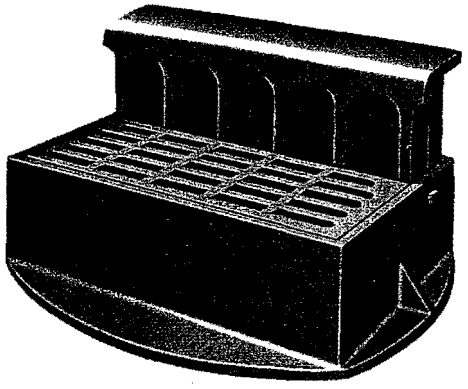
PG 92

R-3281-A
Curb Inlet Frame, Grate and Curb Box

Heavy Duty

Also available with open curb box (no bars), or with flat curb plate instead of curb box. (See **R-3246-1**)





PG 156

NOTE: When specifying/ordering grates, refer to "CHOOSING THE PROPER INLET GRATE" on pages 108-109. For FREE OPEN AREAS of Neenah Grates, refer to pages 326-330.

R-4340 Series
Round Beehive Grates

Light Duty–For Ditch Drainage Construction

May be used in vitrified clay pipe bell, on a concrete catch basin, or in a cast iron frame as shown below. Effective where debris may interfere with drainage, such as at a roadside or in a median strip.

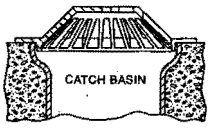
Bell and spigot vitrified clay and concrete pipe are made under many specifications and dimensions vary. Check the grate sizes in the table to be sure they will fit the pipe you are using.

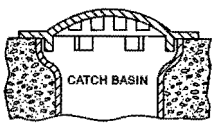
Specify:

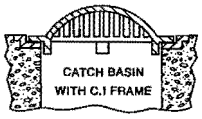
1. Catalog number.
2. Cast iron frame if required.

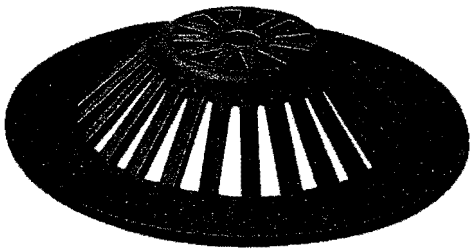
	Dimensions in Inches							
Catalog No.	O Dia.	O.D. Lugs	Dia. Bhv	Ht. Bhv	No. Lugs	Size Bars	Size Op.	Pipe Size
R-4340-A	34	26 1/4	23 7/8	6	*	1	1 1/2	24
R-4340-B	33	23	23	3	6	1 1/2	2	24
R-4340-C	33	29	23	5 3/4	4	1 1/4	1	24
R-4340-F	33	28	25	5	4	1	1	24
R-4340-F1**	25 1/2	21 3/4	17	3	4	1	1	18
R-4340-G**	28	18	19	3	3	2	1 3/4	15
R-4340-H	25	15	17	3	3	1 3/4	1 5/8	12

*Furnished with ring instead of lugs.
**Do not have frame available.

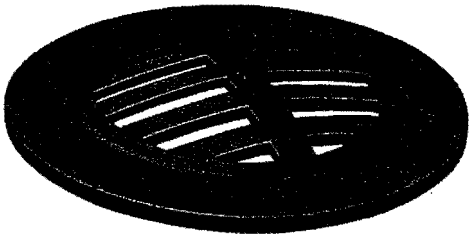




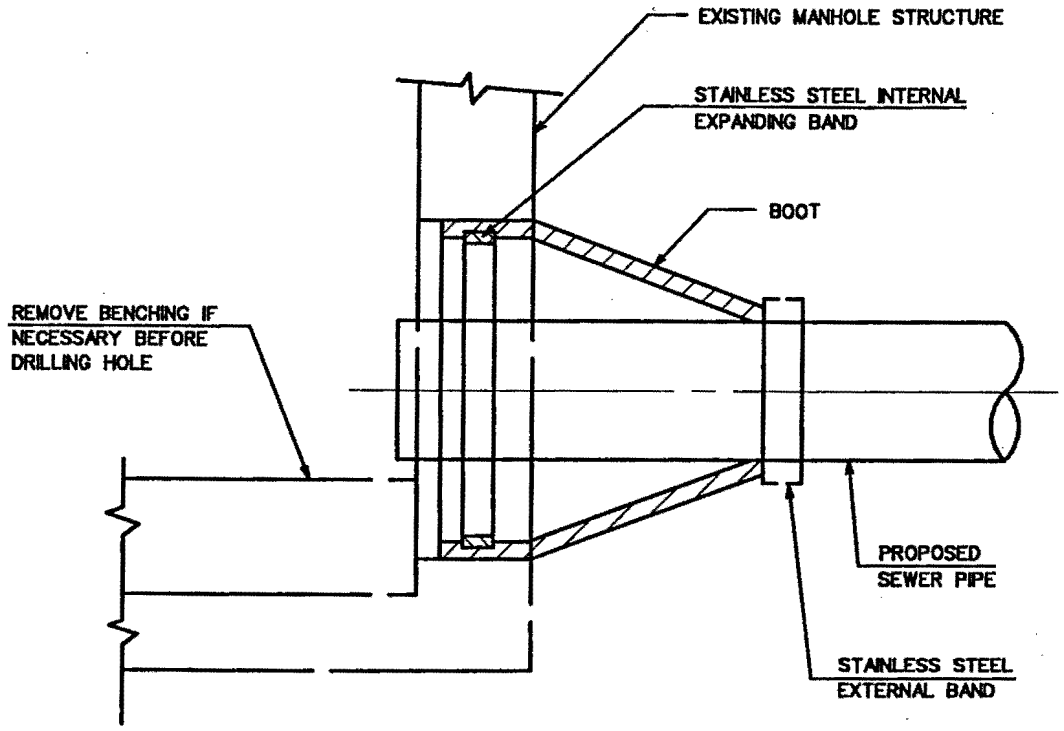




Illustrating R-4340-A



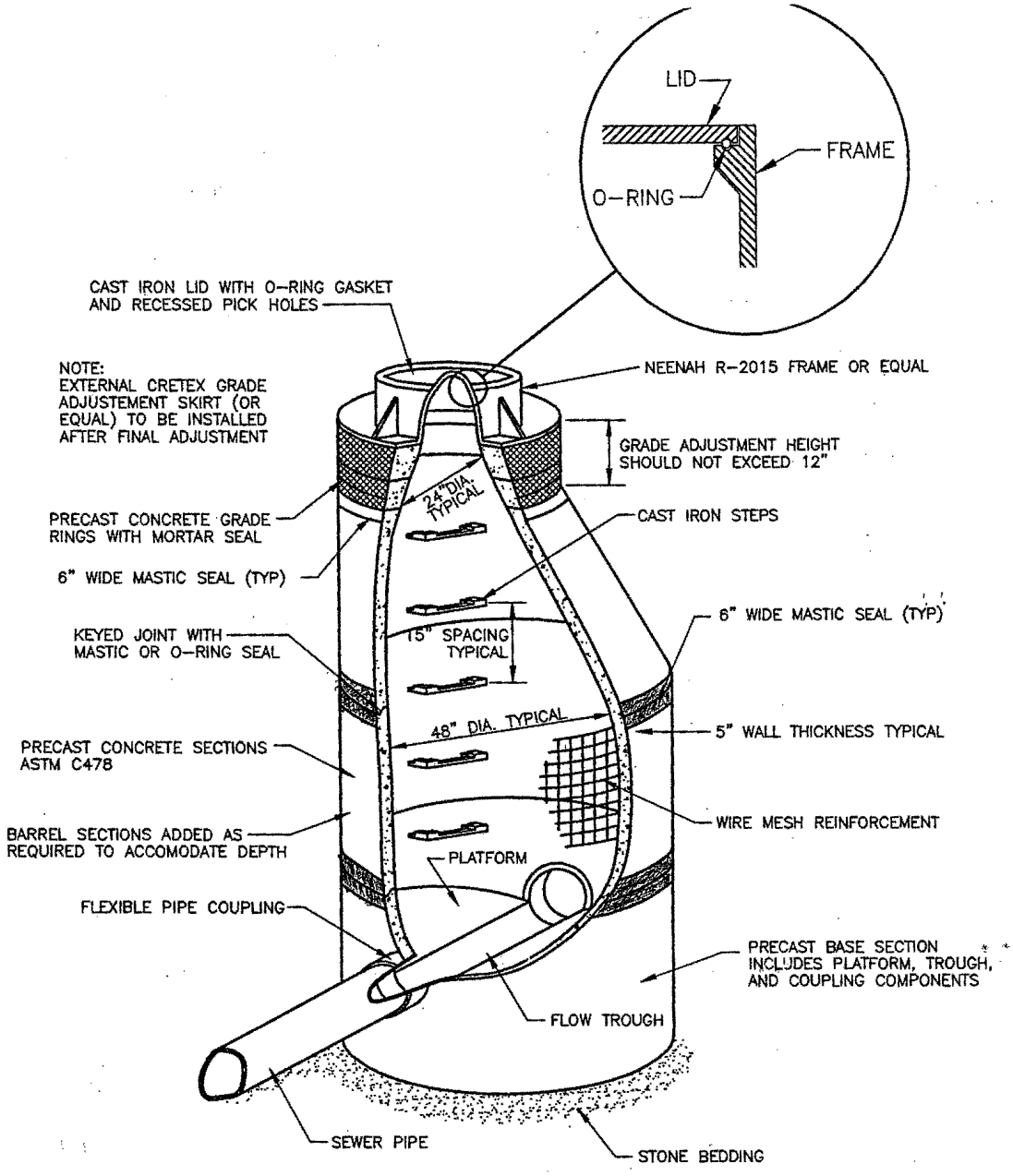
Illustrating R-4340-B



NOTES:

1. CORE-DRILL CIRCULAR OPENING IN MANHOLE WALL OF DIAMETER TO FIT THE REQUIRED BOOT SIZE.
2. KOR-N SEAL FLEXIBLE RUBBER BOOT (MANUFACTURED BY NATIONAL POLLUTION CONTROL SYSTEMS, INC.) OR APPROVED EQUAL SHALL BE USED FOR WATERTIGHT CONNECTION.
3. CUT, SHAPE AND SLOPE NEW INVERT CHANNEL IN THE EXISTING CONCRETE BENCH FOR SMOOTH FLOW FROM NEW SANITARY SEWER CONNECTION.
4. CLEAN EXISTING MANHOLE OF ANY DIRT, CONCRETE OR DEBRIS WHICH MAY ACCUMULATE DURING THE CONSTRUCTION PROCESS.

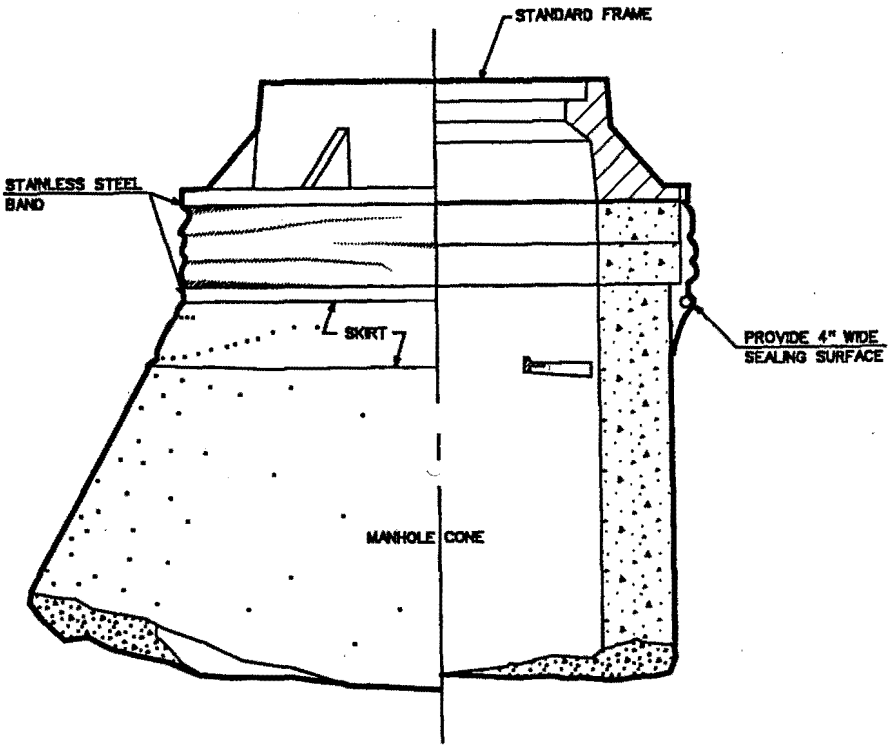
ANITARY SEWER CONNECTION TO EXISTING MANHOLE



DETAIL OF TYPICAL SANITARY MANHOLE
N.T.S.

NOTES

1. ALL SANITARY MANHOLE CASTINGS, ADJUSTING RINGS AND MANHOLE SECTIONS SHALL BE SET IN BUTYL ROPE OR APPROVED EQUAL. EACH MANHOLE BASE-TO-BARREL, BARREL-TO-BARREL, AND BARREL-TO-CONE SECTION JOINT SHALL ALSO BE EXTERNALLY SEALED SEALED WITH 6" WIDE SEALING BAND OF RUBBER AND MASTIC. THE BAND SHALL HAVE AN OUTER LAYER OF RUBBER OR POLYTHYLENE WITH AN UNDER LAYER OF RUBBERIZED MASTIC MEETING REQUIREMENTS OF ASTM C-77-02 (STANDARD SPECIFICATION FOR EXTERNAL SEALING BANDS FOR CONCRETE PIPE, MANHOLES, AND PRECAST BOX SECTIONS)
2. PIPE CONNECTION TO NEW AND EXISTING MANHOLES THROUGH OPENINGS(CAST OR CORE-DRILLED) SHALL BE PROVIDED WITH A FLEXIBLE RUBBER WATERTIGHT CONNECTOR CONFORMING TO ASTM C-923 (STANDARD SPECIFICATIONS FOR RESILIENT CONNECTIONS BETWEEN REINFORCED CONCRETE MANHOLE STRUCTURES AND PIPES)"



NOTES :

1. CHIMNEY SEALS SHALL BE INSTALLED ON ALL SANITARY SEWERAGE SYSTEM MANHOLES AND GREASE TRAP CATCH BASIN.
2. "CRETEX" EXTERNAL OR INTERNAL SEALS ARE RECOMENDED. OTHER PRODUCTS OR OTHER DESIGN SOLUTIONS SHALL REQUIRE THE APPROVAL OF THE VILLAGE ENGINEER.
3. CHIMNEY SEALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

EXTERNAL CHIMNEY SEAL

Final Acceptance and Testing of Sanitary Sewer

Before final acceptance, the sanitary sewers shall be tested in accordance with Section 31-1.11 of the "Standard Specifications for Water and Sewer Main Construction in Illinois". Specifically, all pipelines constructed of flexible materials shall be subject to air exfiltration tests, televising test, and deflection test. The deflection test shall be performed no sooner than thirty (30) days of the backfilling operation and shall consist of measuring the pipe for vertical ring deflection. Maximum ring deflection of the pipeline under load shall be limited to five (5) percent of the internal pipe diameter. All pipe exceeding this deflection shall be considered to have reached the limit of its serviceability and shall be re-laid or replaced by the developer. Deflection testing shall be accomplished by pulling a mandrel, sphere, or pin-type "go / no-go" device, with a diameter equal to ninety-five (95) percent of the undeflected inside diameter of the flexible pipe, through the pipeline. In addition, all sanitary sewer having a diameter of eight (8) inches or greater shall be televised. Copies of all video tapes must be submitted to the Village of Romeoville.

Final Testing of Sanitary Sewer Manholes

Vacuum Testing shall be carried out immediately after assembly and prior to backfilling of manholes that are up to seventy-two (72) inches in diameter. All lift holes shall be plugged with a non-shrink grout, or rubber plug. The manhole frame and adjusting rings and chimney seals shall be in place before testing. No grout shall be placed in the horizontal joints. All pipes entering the manhole shall be plugged, taking care to securely brace the plugs from being drawn into the manhole with the vacuum testing. Vacuum testing shall test all manholes for leakage. A vacuum of ten (10) inches of mercury shall be placed on the manhole and the time measured for the vacuum to drop to nine (9) inches of mercury. The vacuum drop shall not exceed the requirements shown in Table 1 of ASTM C1244-02. If testing fails, developer shall seal all leaks and retest until acceptable. The testing shall be completed prior to backfilling (whenever possible) so that any leaks can be found and fixed externally, and to give the horizontal manhole joints an opportunity to tighten.

Flow Monitoring prior to Acceptance

The developer will be required to monitor the flowrate from the site for a period of two months (encompassing at least two major storm events) to identify any excessive inflow/infiltration occurring in the system. The data must be submitted to the Village of Romeoville prior to acceptance of the public improvements.

Village of Romeoville Policy on Use of Best Management Practices

The project shall employ Best Management Practices (BMP) to protect water quality and minimize impacts of stormwater on aquatic resources. A written narrative shall be included with notification, which describes how the BMP hierarchy above was used in determining the water quality protection practices selected for the project site. BMP(s) may be located in upland buffers adjacent to wetlands and other waters of the U.S.

To the maximum extent practicable, the applicant shall incorporate the following into the preparation of development plans: 1) Preservation of natural resource features such as floodplains, streams, lakes, steep slopes, significant wildlife areas, wetlands, prairies, woodlands, sensitive aquifers and their recharge areas and native soils; 2) Site development shall conform to the existing topography and soil so as to create the least potential for vegetation loss and site disturbance and, 3) Site design shall maintain natural drainage patterns and watercourses. In addition, the design elements utilized by the applicant shall include an appropriate combination of those provided on the list below:

1) Utilize permeable areas to allow more infiltration of runoff into the ground through the use of:

    a. Biofiltration;
    b. Filter strips;
    c. Swales;
    d. Infiltration trenches;
    e. Green roofs;
    f. Permeable pavement; and
    g. Native vegetated open space.

2) Direct runoff to permeable areas and/or utilize storm water storage for reuse by:

    a. Directing roof runoff towards permeable surfaces, drywells, French Drains, vegetated swales, or other BMPs instead of driveways or other non-permeable surfaces;
    b. Grading impervious surfaces to direct runoff to permeable areas, utilizing level spreaders or other methods to distribute the impervious runoff onto pervious surfaces;
    c. Using cisterns, retention structures or rooftops to store precipitation or runoff for reuse; and
    d. Removing or designing curbs and berms in order to direct water to permeable or landscaped areas.

3) Improve water quality of storm water leaving the site through the use of:

    a. Emergent vegetation in retention basins (wetland bottom basins);
    b. Installation of pre-settlement basins or mechanical storm water treatment units prior to discharge of storm water into primary detention basins; and
    c. Wet basins that facilitate settling of sediments.

The narrative shall describe in detail the BMPs that will be utilized and permanently maintained, and the entity responsible for maintenance of the BMP's. A management and monitoring plan will be required for all approved BMP's. The plan shall be designed on a case-by case basis and shall include performance standards such as the BMP's ability to function as designed, percent coverage of vegetation, stabilized soils, and corrective measures to bring areas into compliance, etc.

Illinois Department of Transportation

Memorandum

To: ALL BUREAU CHIEFS AND DISTRICT ENGINEERS

From: Ralph E. Anderson

Subject: Transportation Legislation - Public Act 86-616

Date: May 30, 1990

Reference is made to my memorandum of January 30, 1990, which advised of the passage of Public Act 86-616 which gives highway agencies additional approval authority over the construction of drainage facilities which detain water and the construction of earthen berms which are adjacent to highway right-of-way.

The attached sketches have been prepared to assist in the interpretation of whether a drainage facility or a berm falls within the provisions of the new law. Six situations are presented showing how to measure the depth of the drainage facility and the point of measurement for determining the distance from the right-of-way.

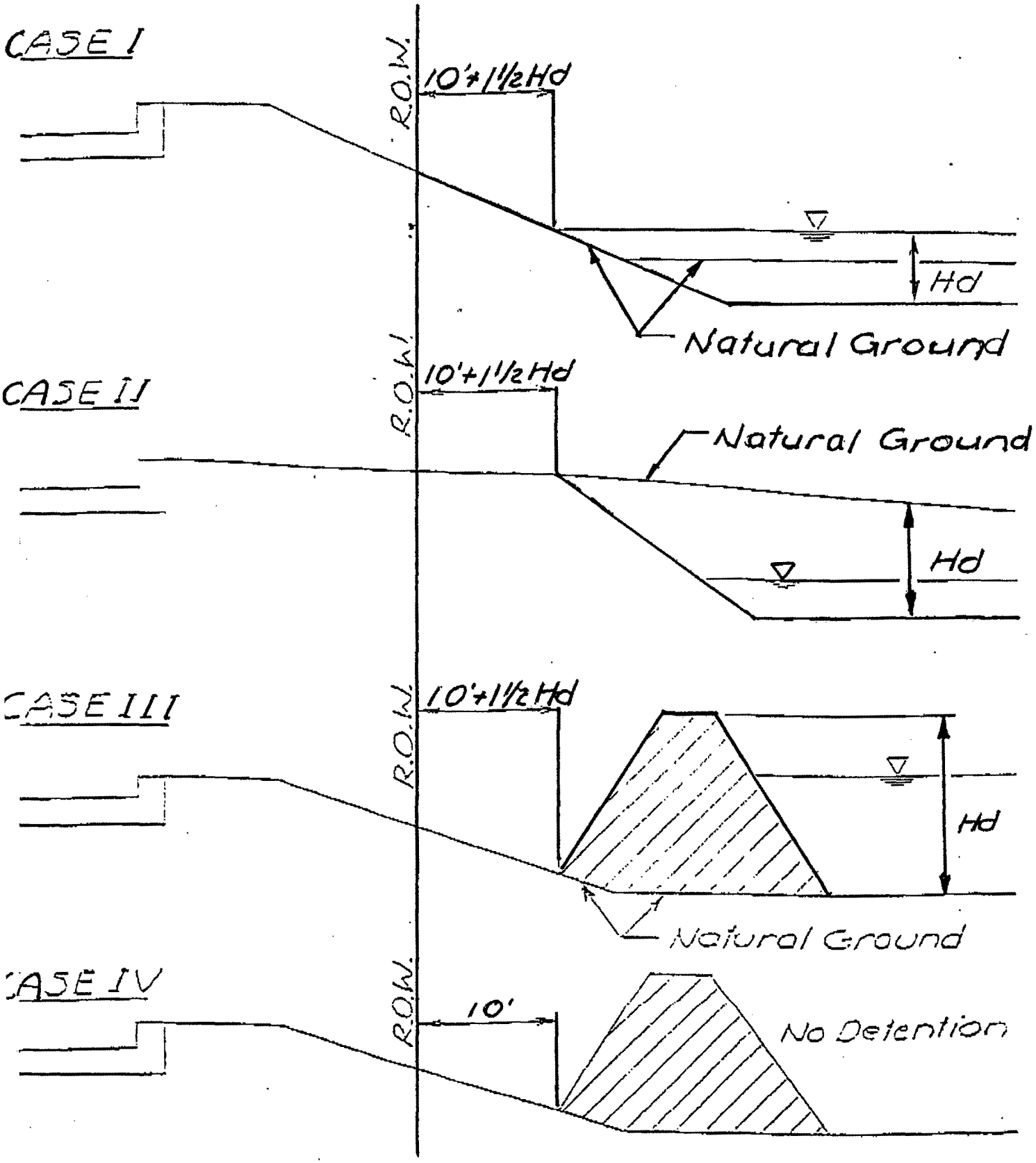
These sketches should be used with the guidelines given in the January 30, 1990 memorandum for consistency in implementing Public Act 86-616.

Ralph E. Anderson

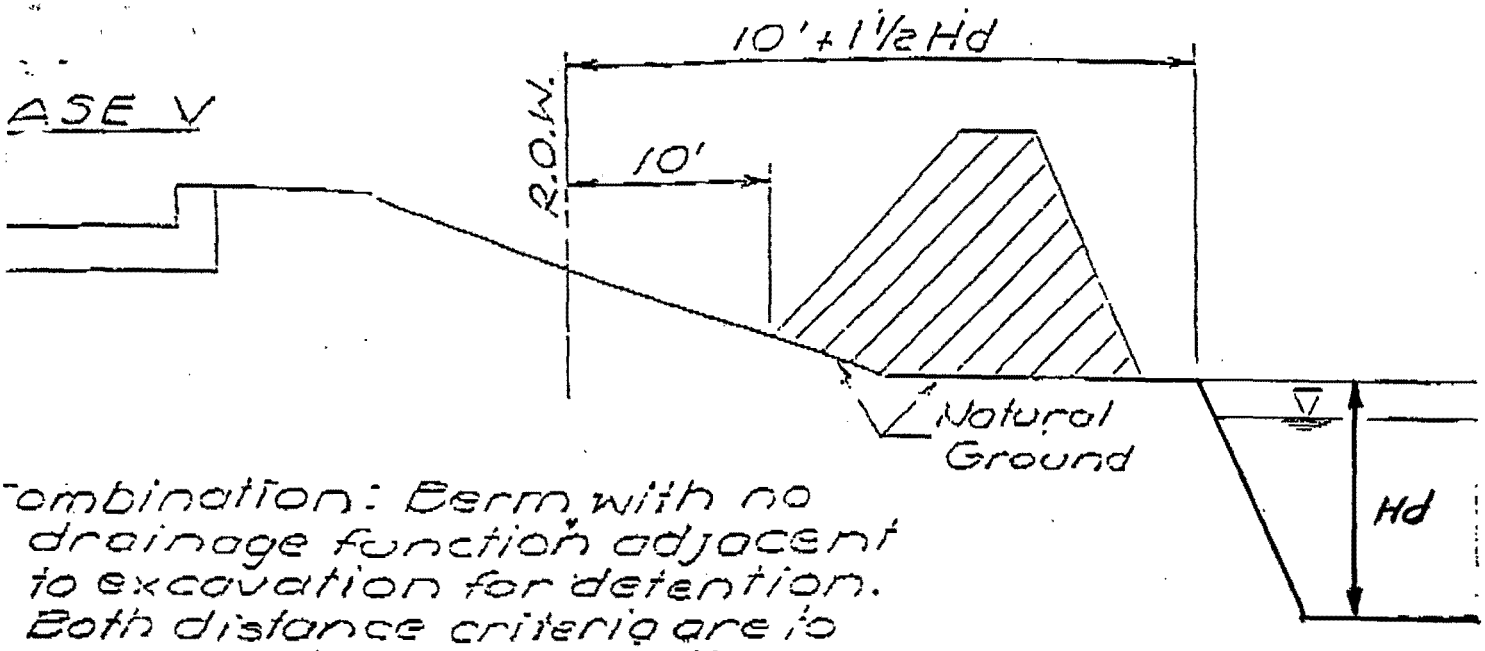
DGG/bb
cc- R. C. Wehner
6243E

605 ILCS 5/9-115.1) Sec. 9-115.1. It is unlawful for any person to construct or cause to be constructed any drainage facility for the purpose of the detention or retention of water within a distance of 10 feet plus one and one-half times the depth of any drainage facility adjacent to the right-of-way of any public highway without the written permission of the highway authority having jurisdiction over the public highway. It is unlawful for any person to construct or cause to be constructed any earthen berm such that the toe of such berm will be nearer than 10 feet to the right-of-way of any public highway without the written permission of the highway authority having jurisdiction over the public highway. (Source: P.A. 86-616.)

DRAINAGE FACILITIES CRITERIA CONSTRUCTED ADJACENT TO THE HIGHWAY R.O.W.

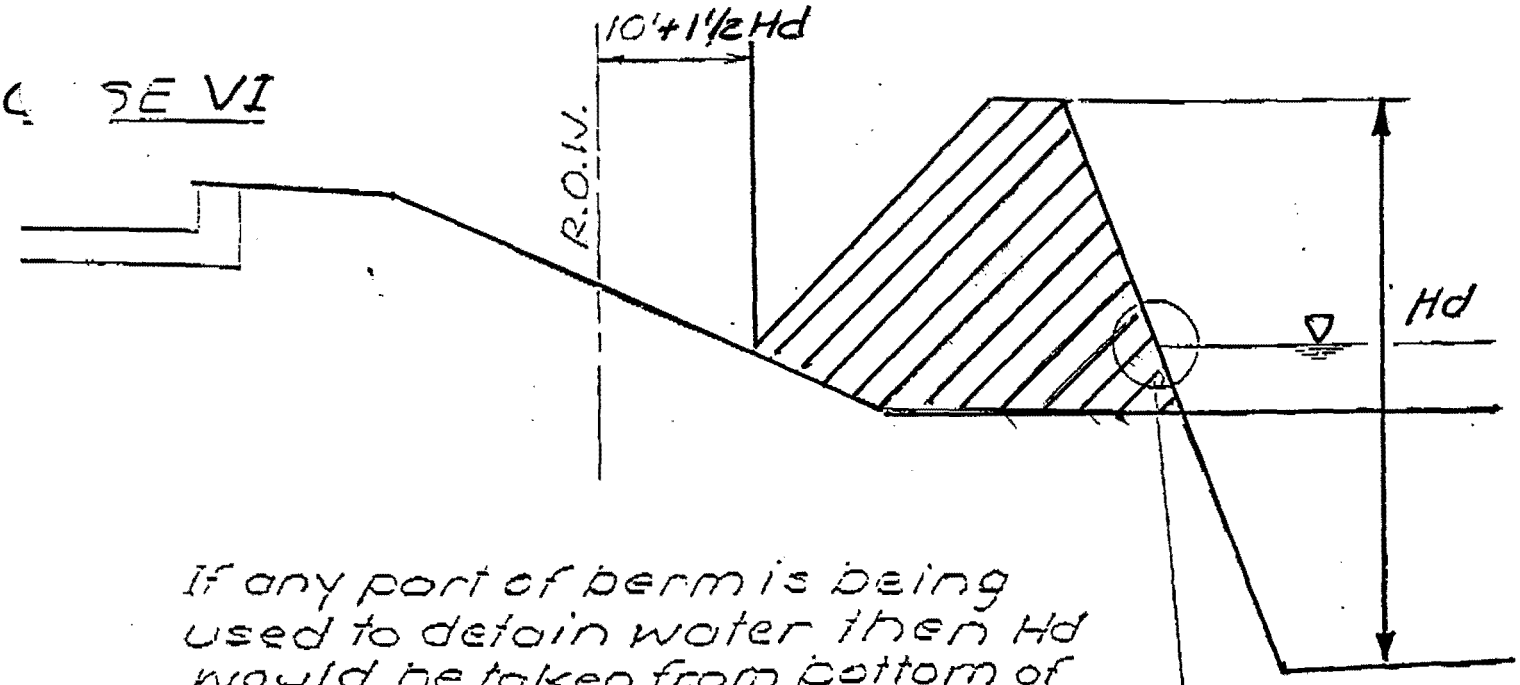


ASE V



ombination: Berm with no drainage function adjacent to excavation for detention. Both distance criteria are to be applied independently.

SE VI



If any part of berm is being used to detain water then Hd would be taken from bottom of basin to top of berm & 10+1½Hd applied to the toe of berm, adjacent to R.O.W.

J. Diller

- Top of Berm to NWL

Village of Romeoville Stormwater Basin Design Requirements

The following criteria are proposed as moderately conservative standards for design of stormwater basins within the Village of Romeoville. If a developer wishes to exceed the standards, they (via their landscape contractor/designer) bear the burden of proof that the landscape will be successful. The following limits of acceptable fluctuation and drawdown times are based on best professional judgment for landscape treatments typical these types of stormwater basin designs.

1. Wet Bottom Pond

   Minimum Area: 1.0 acre at NWL

   Maximum Area: No maximum

   Depth: Over 25 percent of the bottom area at least 10.0 ft. deep

   Maximum Bounce: 100-year: 4.0 ft. – Residential (Industrial/Commercial may be greater based on approval by Administrator)
   2-year: 1.0 ft.

   Maximum Drawdown Time:
   100-year: above NWL by 0.5 ft. for $\leq$ 72 hrs
   2-yr: above NWL by 0.5 ft. for $\leq$ 36 hrs

   Maximum Slopes: Freeboard elevation to 2-yr water level: 4:1
   2-yr water level to NWL: 8:1
   NWL to 1.5 ft. below NWL: 20:1 (safety shelf)
   >1.5 ft. below NWL: 2:1
   Freeboard to 1.5 ft. below NWL: 5:1 avg. max.

   Safety Shelf: 0.5 to 1.5 ft. inundation at NWL, 10.0 ft. avg. width (variable 8.0 to 12.0 ft.), with 25 percent of the shoreline 2.0 ft. shorter than maximum width

   Shoreline Protection: Natural vegetation (shall be used unless otherwise approved); armoring (conditioned upon Village review and approval); biotechnical stabilization (depending on site-specific conditions); erosion control measures

   Water Quality Enhancements: Maximize distance between inlets and outlets; no low-flow channel to be provided; energy dissipation measures at outlets; measures such as aerators, cascading streams, water falls, etc. are recommended for aesthetic appeal and to promote water circulation and aeration

   Landscape Options: Natural, ornamental hybrid, low maintenance turf, and turfgrass (depending on site conditions and adjacent/adjoining land uses); public access via stone outcroppings, groomed areas, etc. are recommended

2. Naturalized Detention Basin

   Minimum Area: 8,000 s.f. at NWL

   Maximum Area: No maximum

   Depth: Ranging from 0.5 to 5.0 ft. (average 3.0 ft.); at least 5 percent of the area below NWL having pockets up to 5.0 ft. deep

Maximum Bounce: 100-year: 5.0 ft. Residential (Industrial/Commercial may be greater based on approval by Administrator)
2-year: 1.0 ft.

Maximum Drawdown Time:
100-year: above NWL by 0.5 ft. for $\leq$ 72 hrs
2-yr: above NWL by 0.5 ft. for $\leq$ 36 hours

Maximum Slopes: Freeboard elevation to 2-yr water level: 4:1
2-yr water level to 0.5 ft. below NWL: 8:1
0.5 to 1.5 ft. below NWL: variable 8:1 to 12:1 (safety ledge)
>1.5 ft. below NWL: 2:1
Freeboard to 1.5 ft. below NWL: 5:1 avg. max.

Shoreline Protection: Natural vegetation; biotechnical stabilization (depending on site-specific conditions); erosion control measures

Water Quality Enhancements: Maximize distance between inlets and outlets; no low-flow channel to be provided; energy dissipation measures at outlets; measures such as aerators, cascading streams, water falls, etc. are strongly recommended to maintain cooler water temperatures, promote water circulation and aeration, and provide aesthetic appeal

Landscape Options: Natural, ornamental hybrid, and low maintenance turf; public access via stone outcroppings, groomed areas, etc. are recommended. A planting and maintenance report, provided by a recognized wetlands firm, must be submitted and approved.

3. Dry Basin Design

Minimum Area:	No minimum
Maximum Area:	8,000 s.f., unless approved by the Administrator
Safety Shelf:	Not applicable
Maximum Bounce:	4.0 ft. Residential (Industrial/Commercial may be greater based on approval by Administrator)

VILLAGE OF ROMEOVILLE

RECORD DRAWINGS CHECKLIST

PART I GENERAL

Record drawings are required to provide a means of schematic verification that the intent of the approved engineering design has been met, thereby substantiating that the health, safety, and welfare aspects of the engineering design have been adequately provided by the construction of the project. Secondly, record drawings serve as a reference tool for future location and maintenance operations. The following requirements will be applied to each set of Record Drawings developed for the Village of Romeoville.

1.1 GENERAL RECORD DRAWING REQUIREMENTS

A. The first sheet of the set will have a vicinity map in the upper right hand corner.

B. Record drawings shall be submitted as revisions shown on the original Engineering Plans and as AutoCAD (version 2004) files. Record drawings will have the original data lined through and the Record data added to the drawing. At no time will the original data be accepted as the Record data.

C. All record drawings for major projects are required to be 24" x 36" and shall bear the name, address, and telephone number of the firm preparing the drawing and the date the record data is added to the original via the revision block.

D. Surveyor's/Engineer's statement (with embossed or wet seal and with original signature on each sheet) shall verify that the record drawings reflect the true conditions in the field.

E. Contractor's statement (with original signature on each sheet) shall verify that all construction specifications and product qualities have been met or exceeded.

F. "Record Drawing" shall be labeled on each sheet in 1-inch high letters.

G. Street names shall be shown on all streets.

H. If the utility system is to be private (not to be dedicated to local authority), then indicate on each sheet.

I. The location and elevation of the benchmarks referenced will be shown on the drawing. If the referenced benchmarks are not within the project limits, then complete descriptions of locations must be provided.

J. Show all easements within the project limits on the record drawings

K. All as-constructed elevations must be referenced to the same bench mark datum as the original approved design plans.

1.2 WATER SYSTEM RECORD DRAWING REQUIREMENTS

A. Locate valves, fittings, services (b-boxes), shut-off valves, and fire hydrants in two directions (station and offset).

1. Locations shall be perpendicular to the right-of-way and parallel to the water main.

a. Lot lines may be used to locate water services.

b. Permanent structures that are properly located may also be used.

c. Radial ties are not acceptable.

2. All horizontal distances shall be shown to the nearest foot. All vertical distances shall be shown to the nearest tenth of a foot.

B. Show all materials, sizes, and types of valves, pipes, and fittings.

C. Elevations shall be given for the top of all manhole covers and for top of pipe.

D. Special detail drawings will be required where installations are not shown on approved engineering drawings for whatever reason or where required for clarity.

E. Show location and elevations for pipes and fittings where changes in direction occur.

F. Show linear distances along watermain from appurtenance to appurtenance (i.e., valve vault to tee, tee to bend, bend to valve, etc.)

G. Details for water services deviating from typical installation details of the approved engineering plans shall be noted on the record drawings.

1.3 SANITARY SEWER SYSTEM RECORD DRAWING REQUIREMENTS

A. All piping, wyes, tees, valves, cleanouts, manholes and special cases shall be located in two directions, in the same manner as water locations.

B. Horizontal dimensions shall be to the nearest foot. Vertical elevations shall be to the nearest hundredth of a foot.

C. Identify the length, size, material, and slope of all pipeing(i.e., 300 feet of 8" PVC SDR 35 at 0.4%).

D. Elevations shall be given for the top of all manhole covers and for the inverts of all pipes entering/exiting each manhole.

E. Service laterals are to be identified with location of end service / plug (station and offset measured upstream).

F. Details for drop manholes deviating form the details on the approved engineering plans shall be indicated on the record drawings.

G. Provide copies of all testing records and video tapes of all sanitary lines.

1.4 FORCE MAINS RECORD DRAWING REQUIREMENTS

A. Locate all valves, fittings, etc. in two directions in the same manner as water locations.

B. Locations of fittings shall be shown at all changes in direction.

C. Elevations shall be given for the top of all manhole covers and for the inverts of all pipes entering/exiting each manhole.

D. Show all sizes, materials, and types of valves, fittings, pipe, etc.

E. Special detail drawings will be required where installations are not as shown on the approved drawings for whatever reason.

1.5 PUMP STATION RECORD DRAWING REQUIREMENTS

A. Wetwell size and location shall be shown along with high and low water levels.

B. Elevations for top, bottom, inverts, adjacent ground and type and size of lines and fittings for all lines entering or leaving the wetwell.

C. All schedules which show pump, motor and electrical data shall be amended and shall be submitted with wetwell drawings.

D. All improvements within the pump station boundaries shall be located horizontally and vertically to the nearest tenth of a foot (i.e., valve pit, pump-out, water spigot, wetwell, control panel, bends, fittings, etc.).

E. Copies of all Operation and Maintenance Manuals (three copies minimum) including pump curves.

1.6 DRAINAGE SYSTEM RECORD DRAWING REQUIREMENTS

A. All drainage structures shall be located by station and offset from right-of-way line.

B. Elevations shall be given for the top of all manhole covers and for the inverts of all pipes entering/exiting each manhole.

C. Per the Will County Storm Water Ordinance, any on-site field tiles which remain on-site must be identified on record drawings.

D. Identify size, material, and slope of all piping.

E. Provide spot elevations and cross sectional information, as well as slope, on all ditches, canals, etc.

F. "Record" information required on storm water basins shall consist of:

1. Topographic map of the detention area.

2. Spot elevation on top of bank to confirm minimum design bank elevation.

3. Observed water elevation at date of the record drawing for wet bottom basins.

4. Include record detail of the outlet control structure including elevations of the top of the control structure, throat, faces, orifices, or underdrain.

5. Location of top of bank and existing water edges at time and date of taking elevations.

6. Spot elevations on the bottom of dry bottom basins, or, if requested by the Village Engineer for wet bottom basins.

7. A stage/storage table showing the design and as-constructed pond volumes and release rates.

8. A signed/sealed statement by a Profession Engineer that the detention pond(s) provides the required detention storage and does not exceed the allowable outflow rate(s) per the approved construction plans and hydrology study. If significantly different than the approved drawings (as determined by the Village Engineer), the engineer must submit a revised hydrology study using the as-constructed conditions in order to document this statement.

9. Provide copies of all testing records and video tapes of all storm lines.

1.7 GRADING RECORD DRAWING REQUIREMENTS

A. Include elevations for property corners, the high or low points, or major break points on all lot lines, and swales.

B. Include spot elevations on the side property lines at the front and rear lines of the structure extended.

C. Show contours at a one-foot contour interval. Flat grading may require intermediate contour lines to define swales and drainage patterns.

D. Locate the lowest adjacent grades (LAGs) to any openings along rear-yard and side-yard swales.

E. Provide cross-sections, at a maximum spacing of 50 feet, along all 100-year overland flood routes located outside street pavements.

1.8 STRUCTURE RECORD DRAWING REQUIREMENTS

A. Include as-constructed top of foundation elevations, including all steps in the foundation.

B. Include as-constructed elevations of basements or walk-outs if present.

1.9 STREET LIGHTING RECORD DRAWING REQUIREMENTS

A. Provide horizontal ties for light foundations and control cabinets as referenced to the approved plan stationing or coordinates.

B. Service cables and service transformers shall be depicted in schematic form.

1.10 ELECTRONIC FILE RECORD DRAWING REQUIREMENTS

A. Include AutoCAD (v.2004) compatible version of all record information.

B. Provide separate layers for all utilities.

1.11 ACCEPTANCE OF RECORD DRAWING

A. No final occupancy permits, or acceptance of the public utilities by the Village of Romeoville will proceed until the record drawings have been submitted and approved by the Village Engineer.

END OF SECTION

LOCATION STANDARDS FOR PLANT MATERIAL ON THE RIGHT-OF-WAY

I. TREES PLANTED ON THE RIGHT-OF-WAY

A. Minimum Distances from Intersections, Alleys and Driveways (as measured from the property line and along the property lines)

1. Intersections - No trees should be located within fifty (50) feet on the near side and twenty (20) feet on the far side (see Figure 1). Trees on medians should be located a minimum of fifty (50) feet from intersections.

2. Alleys - No trees should be located within twenty (20) feet on the near side and ten (10) feet on the far side.

3. Driveways -
   a) Commercial - No trees should be located within twenty (20) feet on the near side and ten (10) feet on the far side.
   b) Residential - No trees should be located within ten (10) feet.

B. Minimum Distances from Walks, Curbs, Utilities and Structures*

1.	Sidewalks and carriage walks	3 feet
2.	Access or courtesy walks	5 feet
3.	Face of curb	4 feet
4.	Manholes and catch basins	10 feet
5.	Fire hydrants	10 feet
6.	Underground utility mains and services	5 feet
7.	Street lights	Refer to basal clearance
8.	Existing trees	Refer to spacing standards

*From face of curb or center of utility to edge of tree, as measured horizontally.

9. Overhead wires - No ascending shade trees will be planted under overhead wires.
10. Railroad crossings - One hundred (100) feet, written approval from the railroad is required to plant within one hundred (100) feet of railroad.
11. Other structures - Thirty (30) feet, or as directed.

C. Minimum Basal Clearance between Trees and Structures

1. Basal Clearance - Defined as the distance from the center of the tree to the structure or object involved.

2. Minimum basal clearance between trees and between trees and structures located on parkways, medians or other areas of the right-of-way.

   a) Trees with spreading crowns must have a minimum basal clearance of fifteen (15) feet.
   b) Trees with global or pyramidal crowns must have a minimum basal clearance of twelve (12) feet.

c) Trees with fastigiate or columnar crowns must have a minimum basal clearance of ten (10) feet.
d) No trees will be planted in areas where basal clearance is less than ten (10) feet without written permission from the Bureau of Maintenance, Roadside Development Unit.
e) The Department shall determine the form classification of a given tree or species of tree.

D. Spacing of Trees within Parkways

1. Trees with spreading crowns will be spaced at a minimum of thirty (30) feet.

2. Trees with global or pyramidal crowns will be spaced at a minimum of twenty-five (25) feet.

3. Trees with fastigiate or columnar crowns will be spaced at a minimum distance of twenty (20) feet.

E. Spacing between Trees within Median or other Right-of-Way Areas

1. Spacing will follow the same standards given for spacing between trees within parkways with the following exception: If the median is concrete, paving or other hard surface material, tree planting must have written approval of the specific proposal from the Bureau of Maintenance, Roadside Development Unit.

2. Spacing of trees located on other right-of-way must be approved by the Bureau of Maintenance, Roadside Development Unit.

F. Width of Parkway, Medians and other Public Ways

1. Landscape designs must be so arranged to provide a sufficiently wide, clear and safe pedestrian walkway. The required width shall in no case be less than six (6) feet wide, measured from a line one (1) foot within the right-of-way.

2. Minimum width of parkways:

a) No trees will be planted on any parkway that is less than six (6) feet in width, except when specific permission is granted by the Bureau of Maintenance, Roadside Development Unit.
b) No trees will be planted on any commercial or industrial sidewalk or cut out in sidewalk that is less than sixteen (16) feet in width, except when specific permission is granted by the Bureau of Maintenance, Roadside Development Unit.

3. Minimum width of medians - No trees will be planted on any median that is less than ten (10) feet in width, except when specific permission is granted by the Bureau of Maintenance, Roadside Development Unit.

4. Minimum width of other right-of-way - No trees will be planted on any right-of-way that is less than twenty-six (26) feet in width, except when specific permission is granted by the Bureau of Maintenance, Roadside Development Unit.

G. Lateral Location of Trees within Parkways, Medians and Right-of-Way Areas

1. The lateral location of trees being planted should reflect the ultimate pavement width of arterial streets.

2. Where possible, trees planted in parkways will be planted in the lateral center of the parkway or as close to it as possible, unless specifically approved otherwise.

3. Trees planted in medians shall be spaced and located according to their crown form, basal clearance and the recommendations of the Bureau of Maintenance, Roadside Development Unit.

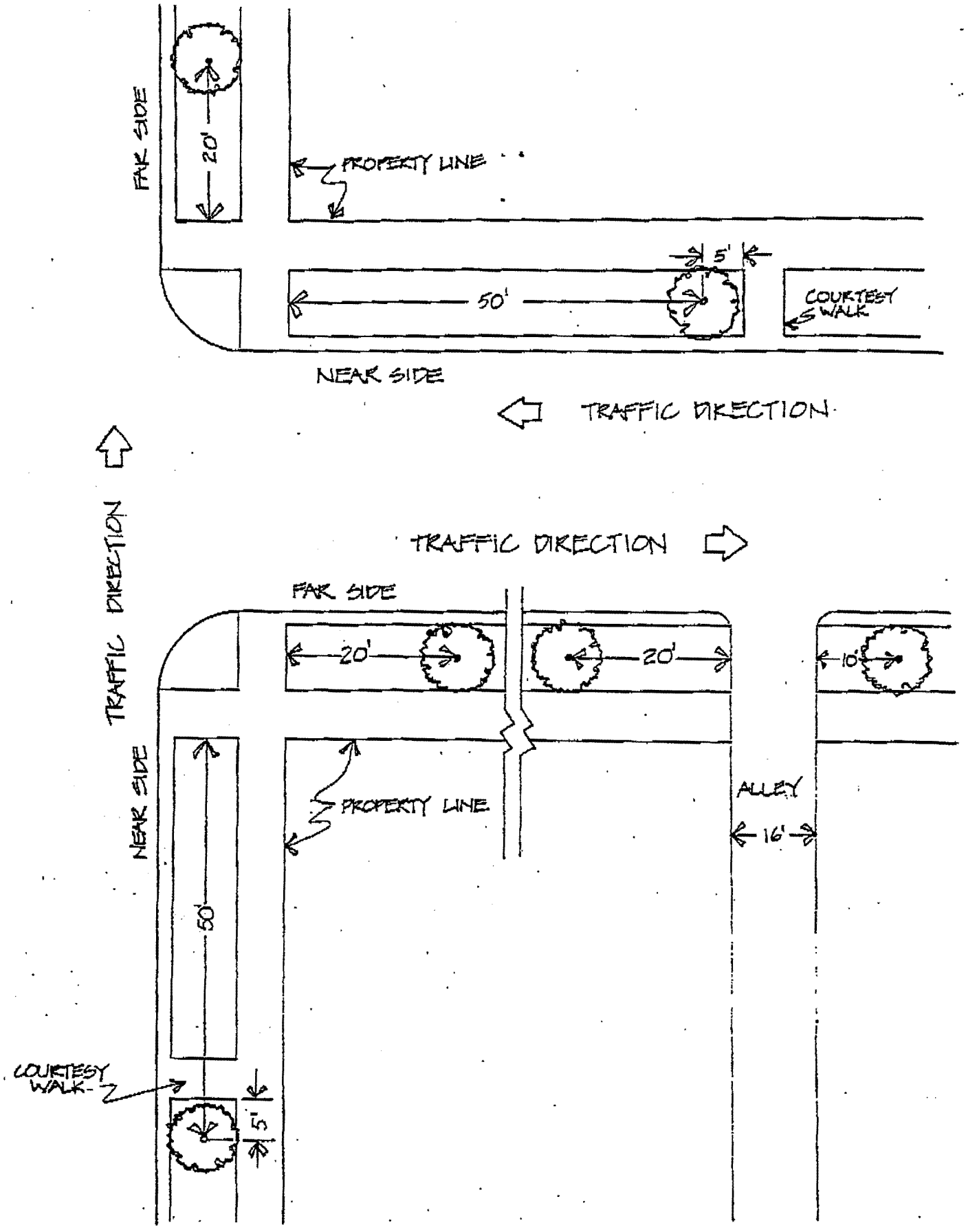


FIGURE 1 : MINIMUM PLANTING DISTANCES FROM INTERSECTIONS

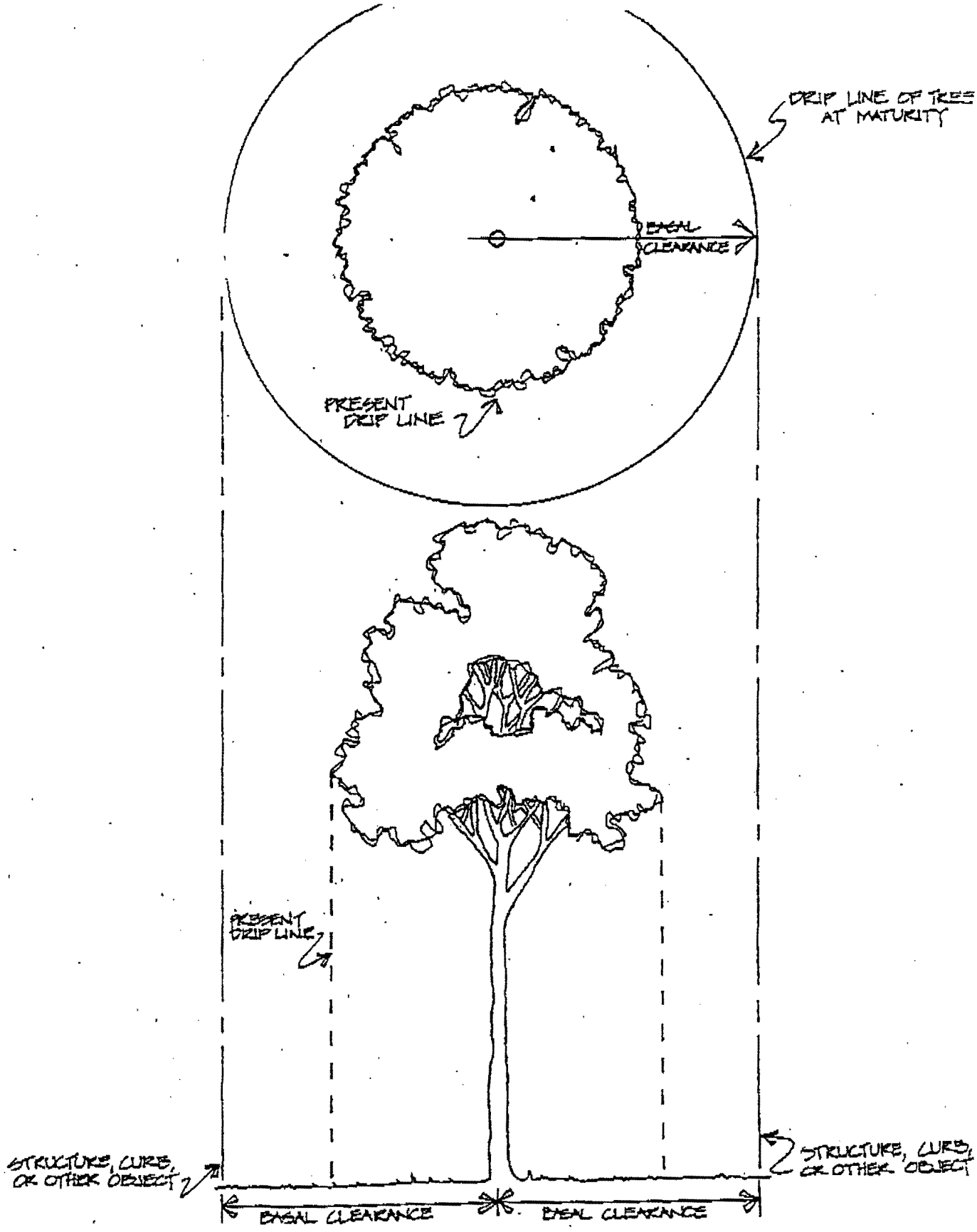
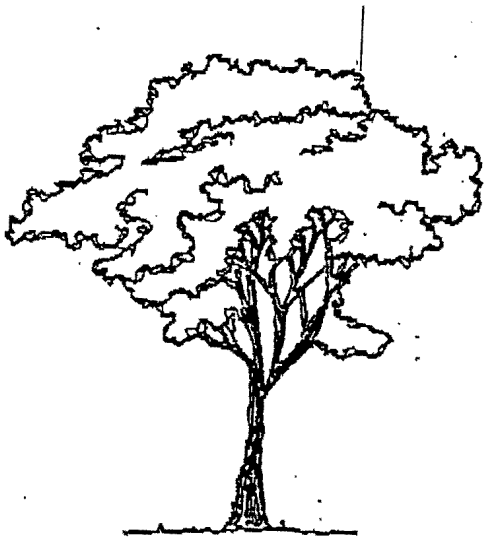
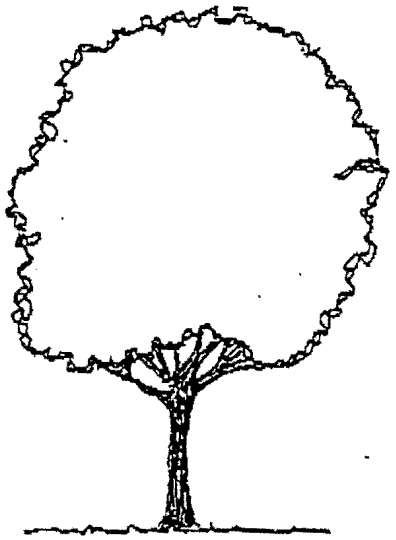


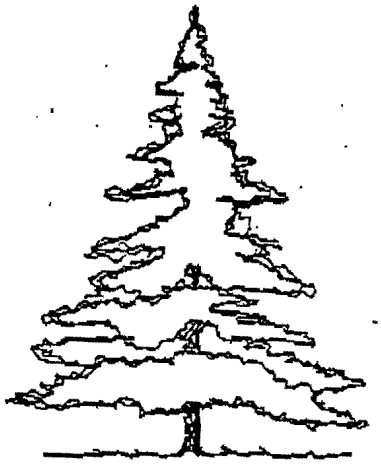
FIGURE 2: BASAL CLEARANCE



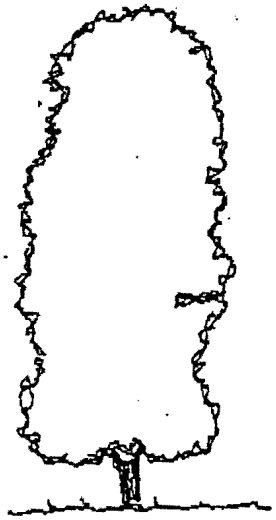
SPREADING



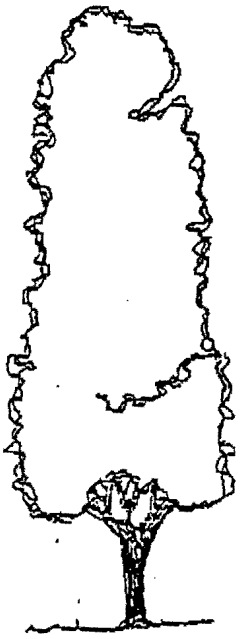
GLOBAL



PYRAMIDAL

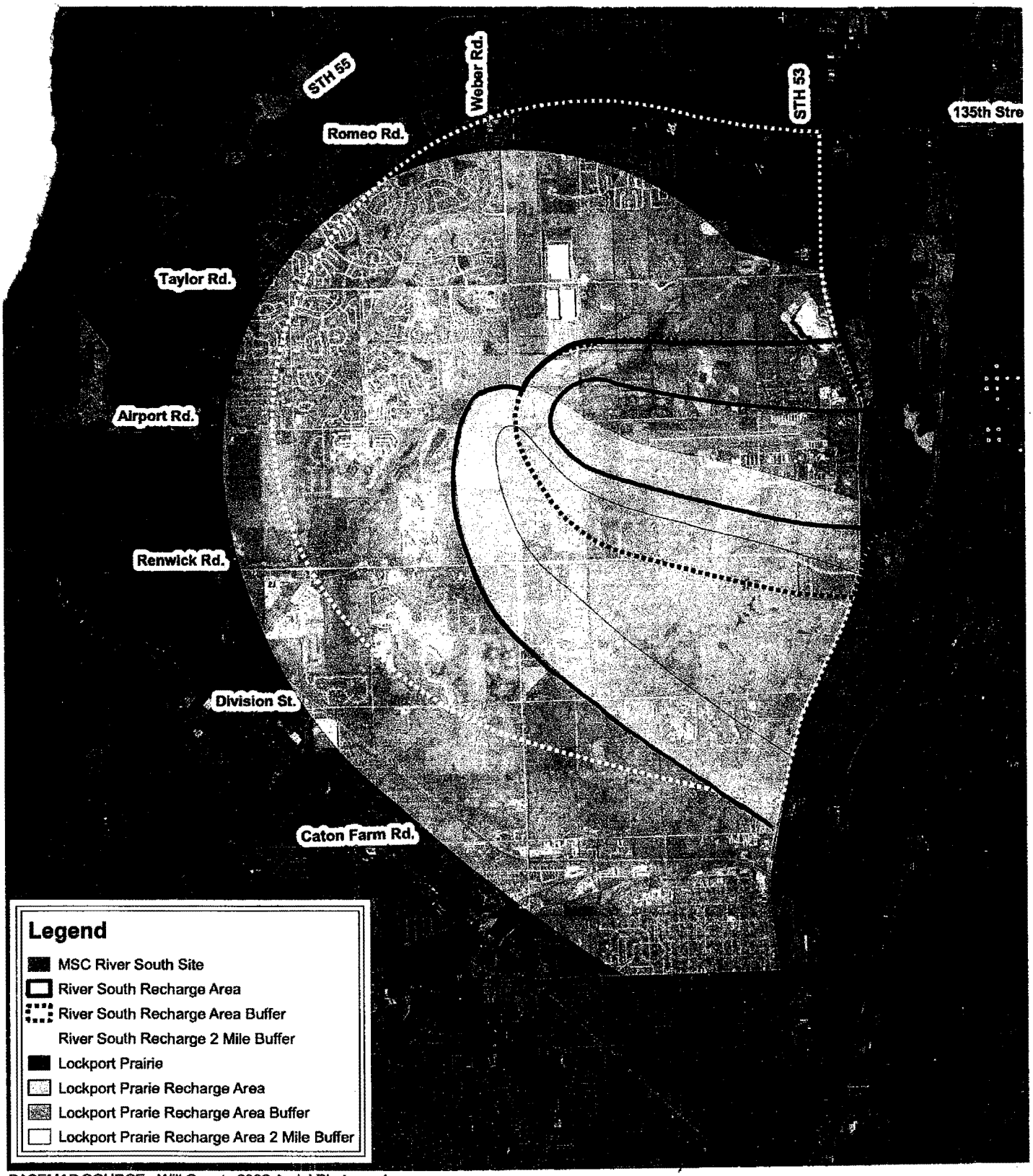


FASTIGIATE



COLUMNAR

FIGURE 3: REPRESENTATIVE FORM CLASSES



BASEMAP SOURCE: Will County 2002 Aerial Photography

N
W E
S

Recharge Areas and Buffers

Lockport Prairie Nature Preserve and
MSC River South Site
Will County, Illinois

Miles
0 0.5 1 2

PROJECT NUMBER:	2005-0307
DATE:	9/19/2004
PROJECT MGR:	GBP
DRAWN BY:	RGD
REVISED:	

GRAEF ANHALT SCHLOEMER and Associates Inc

L:\Jobs2005\20050307\GIS\Maps\2005_0307_FIG_002_0.mxd

FIGURE

Jonathon Zabrocki

From: Jeffrey_Mengler@fws.gov
Sent: Tuesday, August 29, 2006 3:30 PM
To: Steven I. Apfelbaum; Mike Melton; Josh Quinn; Gary O'Toole; Sara.Race@exeloncorp.com; rsliwinski@cbbel.com; JWozniak@MWGen.com; Brian Bub; Brad M. Herrick; bill@appliedeco.com; DraudtWa@lewisu.edu; ccraigmile@rehamilton.org; rhudson@hanson-inc.com; DRobson@fpdwc.org; Jonathon Zabrocki; Marian Gibson
Subject: Recharge area map

Attachments: HED both recharge exhibit.pdf

HED both recharge exhibit.pdf ...

Attached is a pdf of the most current estimates of the recharge area for both River South and Lockport Prairie, that was discussed in our last HCP meeting. Apparently, some folks still had only the exhibit showing the estimated recharge area and buffers for Lockport Prairie, and had not benefitted from this newer exhibit.

Note that the 2-mile buffers were an attempt to estimate the area of influence from a high capacity well on each respective recharge area. The estimated recharge area and the smaller buffers for each HED site, are the areas of primary concern to us with regard to infiltration, development practices, etc.

My apologies that you all did not have this sooner.

(See attached file: HED both recharge exhibit.pdf)

Jeff

****
Jeffrey L. Mengler
Botanist/Wetland Ecologist
Chicago Illinois Field Office
U.S. Fish and Wildlife Service
1250 South Grove, Suite 103
Barrington, IL 60010
847-381-2253 x226 847-381-2285 fax
jeffrey_mengler@fws.gov
http://midwest.fws.gov/chicago

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chicago Ecological Services Field Office
1250 South Grove Avenue, Suite 103
Barrington, Illinois 60010
Phone: (847) 381-2253 Fax: (847) 381-2285

IN REPLY REFER TO:
FWS/AES-CIFO/6-2414

September 25, 2006

[redacted]

Dear [redacted]

This responds to a phone conversation between yourself and Ms. Cathy Pollack of my staff on September 22, 2006. You have requested information on endangered or threatened species for a proposed residential/commercial development (Spaceco / approximately 78 acres) located at T36N, R10E, Section 9 in the City of Romeoville, Lockport Township, Will County, Illinois.

Habitat of the federally endangered Hine's emerald dragonfly (*Somatochlora hineana*) has been documented within two miles of the proposed project site. Recent information indicates that the proposed project site is within the buffer to an estimated groundwater recharge area to the known Hine's site. Both the recharge area and its buffer are determined to be essential to the habitat of the federally endangered Hine's emerald dragonfly *(Somatochlora hineana)*. The recharge area is the area of the drainage basin in which water infiltrating into the ground has the best potential for supplying water to the parcel where the Hine's emerald dragonfly larval habitat is located, in the form of seeps and shallow groundwater. The recharge area buffer defines the furthest estimate of the area of recharge that may be influenced by projects that withdraw groundwater or reduce infiltration.

The proposed project involves the construction of new structures and parking infrastructures which could increase impervious surface area. In addition, if the future water supply needed by the project is supplied by municipal or on site wells, water withdrawals could also reduce the amount of water available for the dragonfly. Additional impervious surfaces could affect groundwater recharge, which may adversely affect suitable habitat for this federally endangered species by decreasing the quantity of water infiltrating into the ground or by increasing pollutants within the groundwater. Project design should address how the project would affect water quality and quantity infiltrating into the ground, including any effects from future developments made possible by the proposed project.

[redacted] 2

Post project infiltration should be greater than or equal to pre project infiltration plus post project groundwater withdrawal. We recommend designing the proposed project to meet that goal. The design should include measures to maximize infiltration during precipitation events, and should minimize the need to use ground water. The project should incorporate features that maximize water infiltration. Landscaping should not require routine watering. Indoor plumbing features should be designed to conserve water. Stormwater facilities should ensure that polluted water does not enter the groundwater and does not runoff into nearby wetlands. These measures can include best management practices such as wetland detention basins, native prairie landscaping, bioinfiltration swales, infiltration vaults, and permeable paving. Please submit any detailed plans and analysis for this project that address these issues for our review.

This letter only addresses federally listed species; the Illinois Department of Natural Resources should be contacted for information on State-listed species. Any impacts to wetlands or waters of the United States may require a permit from the U.S. Army Corps of Engineers. This letter does not preclude separate evaluation and comment by the U.S. Fish and Wildlife Service on wetland impacts proposed for section 404, Clean Water Act authorization.

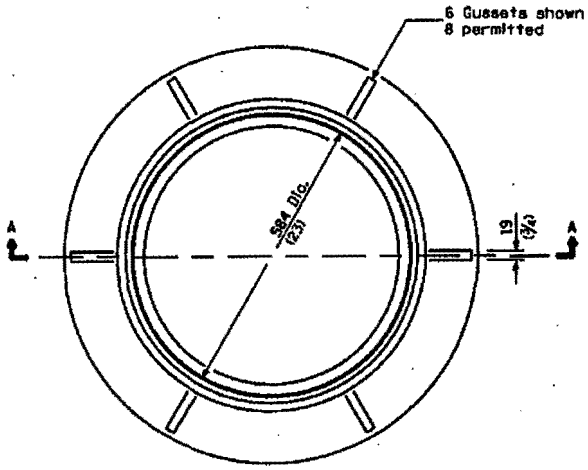
If you have any questions pertaining to the endangered species information, please contact Ms. Cathy Pollack at 847/381-2253 ext. 239, or Ms. Karla Kramer at 847/381-2253 ext. 230.

Sincerely,

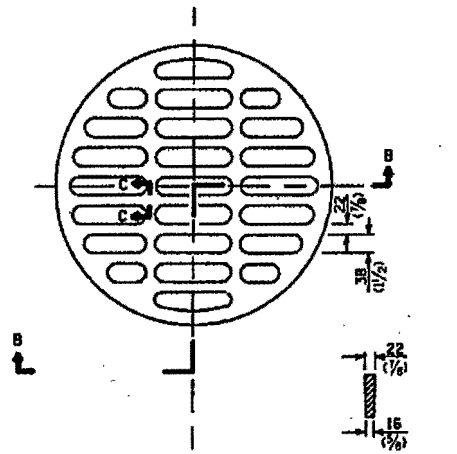
John D. Rogner

John D. Rogner
Field Supervisor

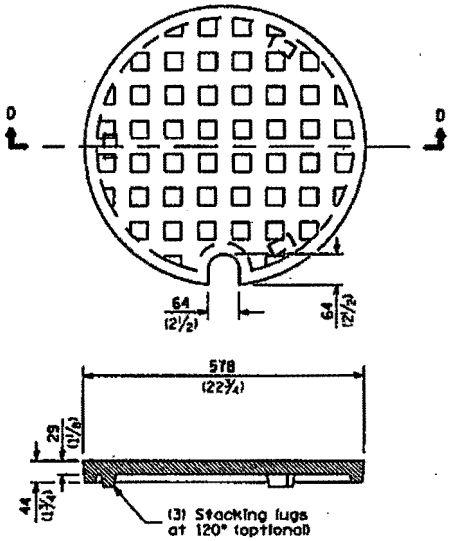
Cc: WCFPD, Michael Pasteris
Village of Romeoville, Marion Gibson
Robinson Engineering, Jonathon Zabrocki



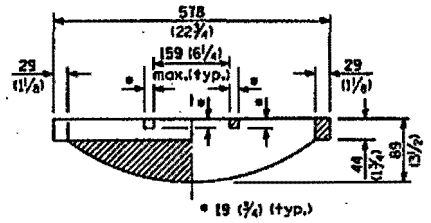
CAST FRAME



SECTION C-C



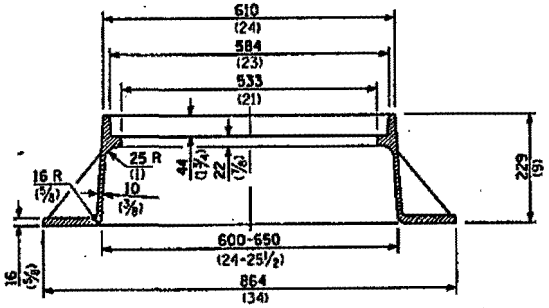
SECTION D-D



SECTION B-B

CAST OPEN LID

CAST CLOSED LID
Gray Iron Lid



SECTION A-A
Gray Iron

All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation

PASSED _____ January 1, 2004
ENGINEER OF POLICY AND PROCEDURES
Michael Bergen

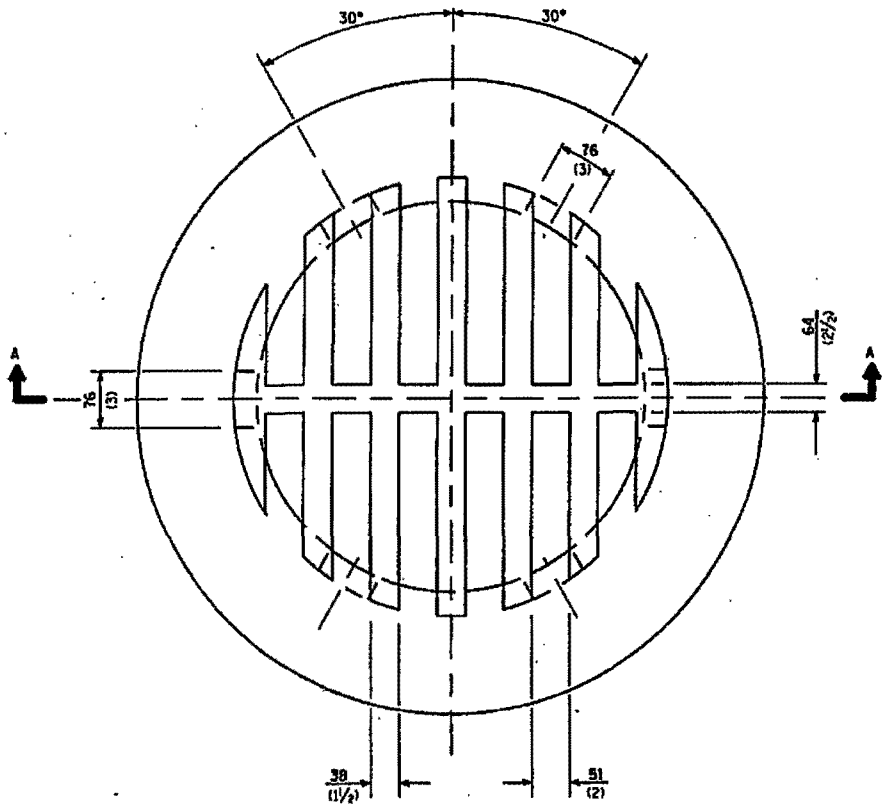
APPROVED _____ January 1, 2004
ENGINEER OF BUREAU OF BRIDGES AND ENVIRONMENT
Michael J. Hine

ILLINOIS

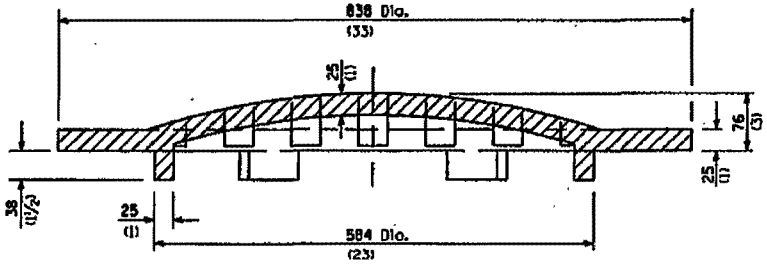
DATE	REVISIONS
1-1-04	Removed weights.
1-1-02	Changed wall thickness
	from 5/8 to 3/8.

FRAME AND LIDS TYPE 1

STANDARD 604001-02



CAST GRATE



SECTION A-A

All dimensions are in millimeters (inches) unless otherwise shown.

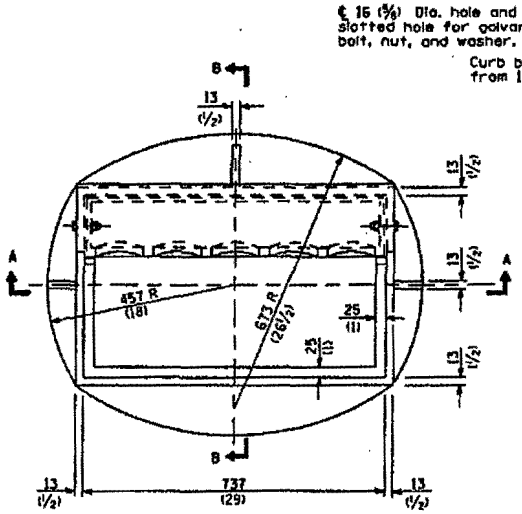
Illinois Department of Transportation

PASSED JANUARY 1, 2004
ENGINEER OF POLICY AND PROCEDURES
APPROVED JANUARY 1, 2004
ENGINEER OF DESIGN AND ENVIRONMENT

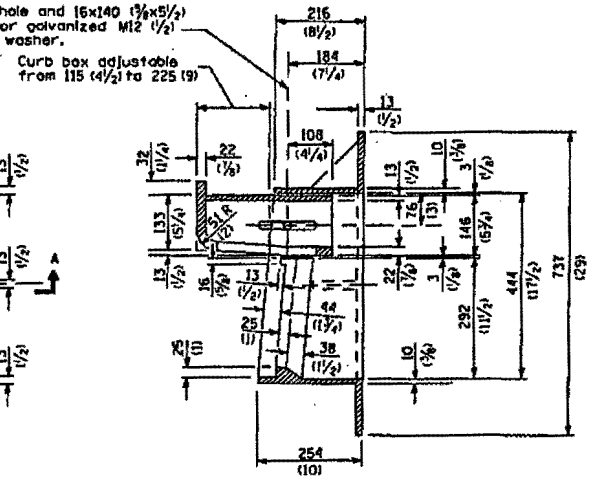
DATE	REVISIONS
1-1-04	Removed weights.
1-1-97	Renum. Standard 2217-4.

GRATE TYPE 8

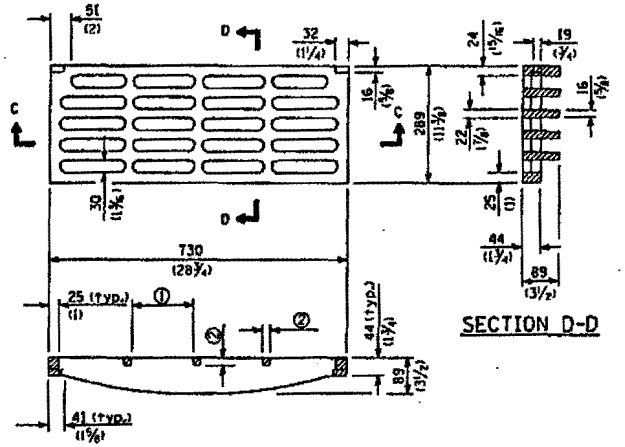
STANDARD 604036-01



CAST FRAME



SECTION B-B

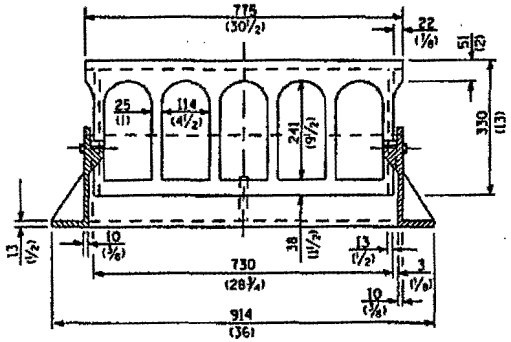


SECTION D-D

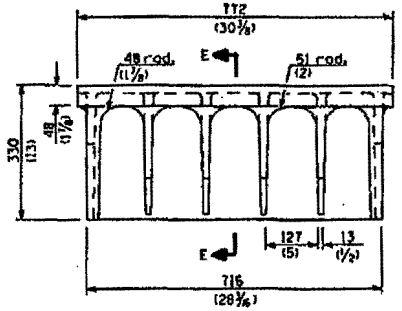
SECTION C-C

① = 159 (6 1/4) max. (typ.)
② = 19 (3/4) min. (typ.)

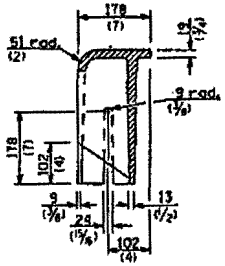
CAST GRATE



SECTION A-A



ALTERNATE CURB BOX



SECTION E-E

All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation

PASSED Feb 1, 2006
ENGINEER OF POLICY AND PROCEDURES

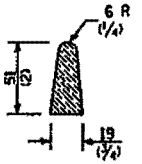
APPROVED Feb 1, 2006
ENGINEER OF BUREAU OF DESIGN AND ENVIRONMENT

ISSUED 1-1-04

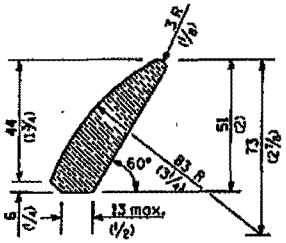
DATE	REVISIONS
4-1-06	Added alternate curb box.
1-1-04	Revised frame and removed weights.

FRAME AND GRATE TYPE 11

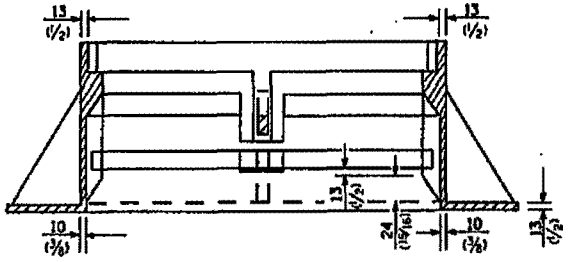
STANDARD 604051-02



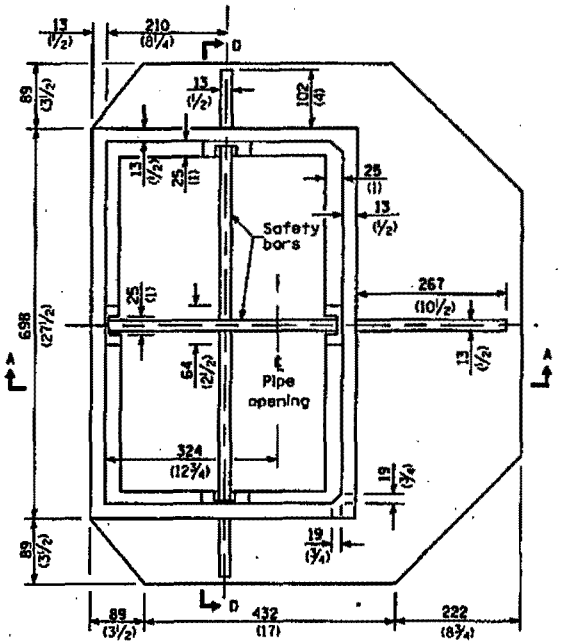
DETAIL A



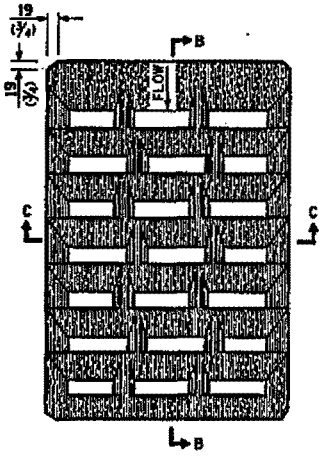
DETAIL B



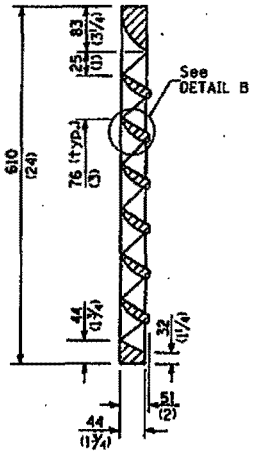
SECTION D-D



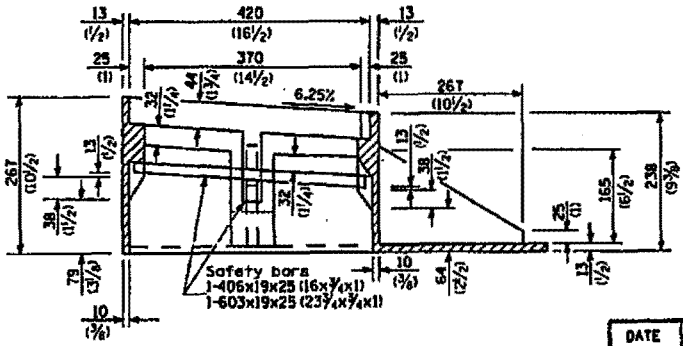
PLAN - FRAME



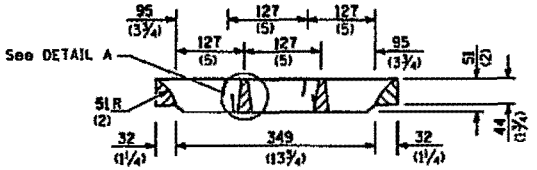
GRATE



SECTION B-B



SECTION A-A



SECTION C-C

All dimensions are in millimeters (inches) unless otherwise shown.

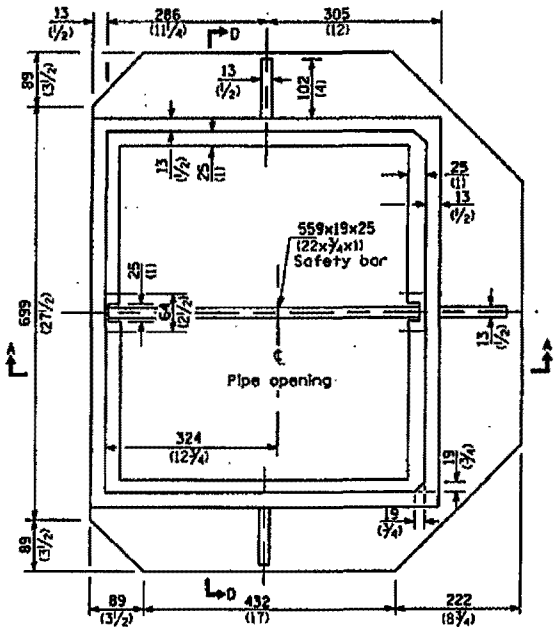
Illinois Department of Transportation

PASSED January 1, 2004
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2004
ENGINEER OF BRIDGES AND STRUCTURES

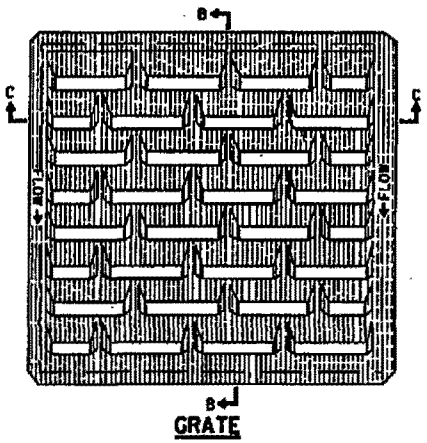
DATE	REVISIONS
1-1-04	Revised frame and
	removed weights.
1-1-97	Renum. Standard 2423-1.

FRAME AND GRATE TYPE 23

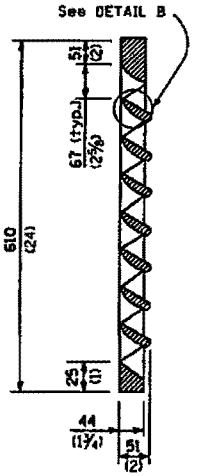
STANDARD 604086-01



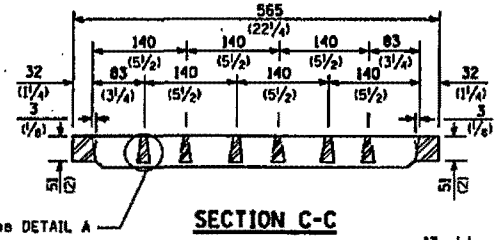
PLAN - FRAME



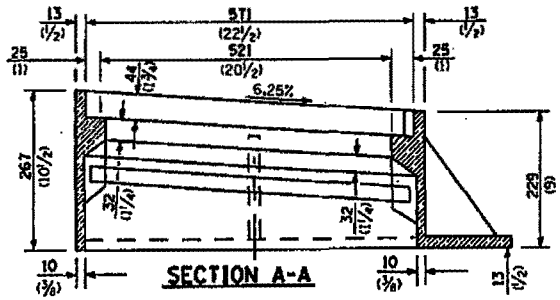
GRATE



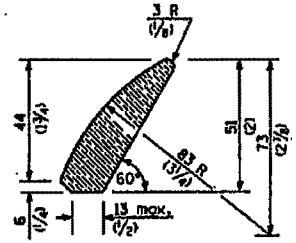
SECTION B-B



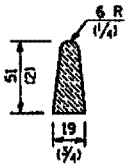
SECTION C-C



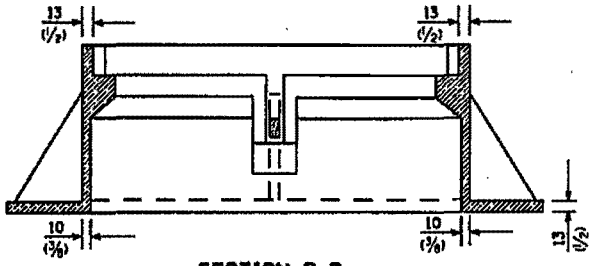
SECTION A-A



DETAIL B



DETAIL A



SECTION D-D

All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation

PASSED January 1, 2004
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2004
ENGINEER OF DESIGN AND ENVIRONMENT

DATE	REVISIONS
1-1-04	Revised frame and removed weights.
1-1-97	Renum. Standard 2424-1.

FRAME AND GRATE TYPE 24

STANDARD 604091-01