

STANDARD GUIDELINES AND DETAILS

FOR

WATER & SEWER

CONSTRUCTION DRAWINGS

2002

# **INTRODUCTION TO DRAWING STANDARDS**

## **SECTION 1**

**DUE TO RICHMOND'S ENORMOUS GROWTH, IT HAS BECOME APPARENT THAT RICHMOND UTILITIES IS IN NEED OF DRAWING STANDARDS.**

**UTILITY CONSTRUCTION DRAWINGS REPRESENT AN IMPORTANT PART OF RICHMOND UTILITIES BUSINESS. ALL FUTURE WATER, SANITARY SEWER AND GAS UTILITY DRAWINGS, THAT ARE PART OF THE RICHMOND UTILITIES SERVING AREA WILL EVENTUALLY BE FILED AS "AS-BUILT" DRAWINGS.**

**RICHMOND UTILITIES IS NOW IN THE PROCESS OF UPDATING THE EXISTING AS-BUILT ARCHIVES AS WELL AS UTILISING THESE NEW DRAWING STANDARDS FOR FUTURE PROJECTS IN ORDER TO INCORPORATE AND UTILISE THE NEW GEOGRAPHIC INFORMATION SYSTEM (GIS) HARDWARE. THIS WILL ENABLE RICHMOND UTILITIES TO BETTER SERVE THE COMMUNITY :**

- 1. TO LOCATE EXISTING UTILITIES DURING EMERGENCY UTILITY LINE BREAKS OR STOPPAGES,**
- 2. TO LOCATE EXISTING UTILITIES DURING CONSTRUCTION, TO AVOID UNNECESSARY UTILITY BREAKS,**
- 3. TO ASSIST RICHMOND UTILITIES FOR FUTURE DESIGN AND DEVELOPMENT PROJECTS.**


**WITH THIS IN MIND, ON FUTURE PROJECTS, IT WILL BE NECESSARY FOR THE DEVELOPERS ENGINEER TO DEVELOP AND GENERATE COMPUTERISED DRAWINGS IN A STANDARDIZED FORMAT THAT IS COMPATIBLE WITH RICHMOND UTILITIES HARDWARE AND SOFTWARE.**

**IN ORDER TO INCORPORATE THESE STANDARDS FOR FUTURE PROJECTS, RICHMOND UTILITIES WILL FURNISH THE RICHMOND PLANNING AND ZONING COMMISSION HARDCOPIES FOR DISTRIBUTION TO THE DEVELOPERS AS THE PLANNING AND ZONING COMMISSION DEEMS NECESSARY. AT WHICH TIME THE DEVELOPER OR THE DEVELOPERS ENGINEER CAN CONTACT RICHMOND UTILITIES FOR STANDARDS ON COMPUTERIZED DISK.**

**PROJECTS REQUIRING MORE THAN 3 SHEETS WILL BE REQUIRED TO INCLUDE A MASTER DRAWING PLAN (SEE SECTION 3 DRAWING LAYOUT). THE MASTER PLAN WILL BE USED TO CROSS REFERENCE THE SUBJECT PROJECT, WATER, SANITARY SEWER AND/OR GAS DRAWINGS.**

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DATE	REVISION	
		RICHMOND UTILITIES BOARD RICHMOND, KENTUCKY
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**NOTES:**

\*TOP SOIL SHALL BE STRIPPED AND STORED AT BEGINNING OF CONSTRUCTION. IT SHALL BE REPLACED ON TOP 12 INCHES OF ALL TRENCHES AND/OR AREAS DISTURBED BY CONSTRUCTION.

\*ALL SEWERS SHALL HAVE LOW PRESSURE AIR TEST, DEFLECTION TEST, AND VACUUM TESTED PER SPECIFICATIONS. VIDEO TAPING MAY OR MAY NOT BE REQUIRED.

\*SEWERS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE.

\*SURFACE DRAINAGE SHALL BE MAINTAINED ON A DAY-BY-DAY BASIS.

\*THE CONTRACTOR WILL BE REQUIRED TO DISPOSE OF ALL EXCESS EXCAVATED MATERIAL FROM THE SEWER LINE CONSTRUCTION.

\*THE SANITARY INLET SHALL BE AT A MINIMUM OF 6 INCHES ABOVE THE TOP OF BOTH OF THE ADJACENT SANITARY MANHOLES.

\*IN THE EVENT IT IS NOT POSSIBLE TO MAINTAIN THE INLET 6 INCHES ABOVE THE ADJACENT MANHOLES. THE DEVELOPER AND/OR BUILDER SHALL PROVIDE AN ADEQUATE MEANS TO PUMP TO PUBLIC SANITARY SEWER. THIS SHALL BE DETERMINED BY THE ENGINEER.

**\*NOTE: TYPICAL JOINT BETWEEN DIFFERENT PIPE TYPES**

A FLEXIBLE NEOPRENE BOOT COUPLING WITH STAINLESS STEEL CONTRACTING CLAMPS IS REQUIRED TO CONNECT DIFFERENT TYPES OF PIPE

\*EXACT SIZES, DEPTHS, MATERIALS AND LOCATIONS OF EXISTING UTILITIES ARE UNKNOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF THESE FAR ENOUGH IN ADVANCE OF THE PIPELINE OPERATION SO AS NOT TO CAUSE ANY UNNECESSARY DELAYS. RELOCATION OF EXISTING UTILITIES FOUND TO BE IN DIRECT CONFLICT WITH THIS CONTRACT SHALL BE ACCOMPLISHED BY THE OWNER OF THE UTILITIES INVOLVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITY COMPANIES HAVING PROPERTY IN THE AREA PRIOR TO EXCAVATION. CONTINUOUS COMMUNICATIONS ON A DAY TO DAY BASIS WILL BE REQUIRED. THE UTILITY COMPANIES ARE AS FOLLOWS:


ELECTRIC COMPANIES CONTACT-  
BLUEGRASS ELECTRIC CO-OP CORP.,  
KENTUCKY UTILITIES COMPANY, OR  
CLARK ENERGY.

TELEPHONE CONTACT-  
SOUTH CENTRAL BELL

GAS CONTACT-  
RICHMOND UTILITIES BOARD, COLUMBIA  
GAS OR DELTA GAS.

WATER CONTACT-  
RICHMOND UTILITIES BOARD

KENTUCKY STATUTES (KRS 367.4901 THRU 367.4917) REQUIRE THAT ALL EXCAVATORS PLANNING EXCAVATION OR DEMOLITION WORK SHALL CALL ALL UTILITY COMPANIES IN THE AREA AND AN UNDERGROUND PROTECTION SERVICE SUCH AS "BUD" (1-800-752-6007) AT LEAST TWO (2) WORKING DAYS BEFORE COMMENCING WORK TO NOTIFY UTILITY COMPANIES IN THE AREA WITH UNDERGROUND FACILITIES OF THE PLANNED EXCAVATION OR DEMOLITION ACTIVITIES.

DATE	REVISION	RICHMOND UTILITIES BOARD RICHMOND, KENTUCKY	
2/02			
 <b>RICHMOND UTILITIES</b>		SANITARY SEWER GENERAL CONSTRUCTION NOTES	
		JUNE, 1996	DWG. NO. S1

# INTRODUCTION TO DRAWING STANDARDS

## FIGURE 1

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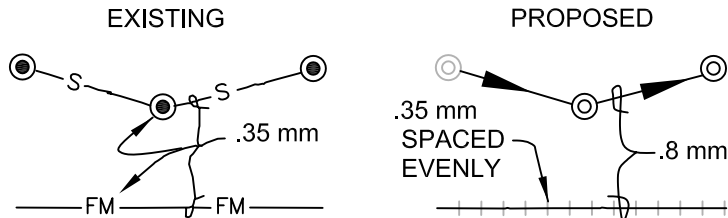
PROJECTS REQUIRING MORE THAN 3 SHEETS WILL BE REQUIRED TO INCLUDE A MASTER DRAWING PLAN (SEE FIGURE 3 DRAWING LAYOUT). THE MASTER PLAN WILL BE USED TO CROSS REFERENCE THE SUBJECT PROJECT, WATER, SANITARY SEWER AND/OR GAS DRAWINGS.

DATE	REVISION	
		RICHMOND UTILITIES BOARD RICHMOND, KENTUCKY
 <span style="font-size: 2em; font-weight: bold; vertical-align: middle;">RICHMOND UTILITIES</span>		SECTION 1 INTRODUCTION

# RICHMOND UTILITIES SUGGESTED LEGEND

<u>EXISTING</u>			<u>PROPOSED</u>		
DIA. OR LG. x W.	DESCRIPTION		DIA. OR LG. x W.	DESCRIPTION	
1/8", 1/16"	MANHOLE	⊙	1/8", 1/16"	MANHOLE	⊙
7/64	POWER POLE	⊗	7/64	POWER POLE	⊗
3/32	ANCHOR	⌞	3/32	ANCHOR	⌞
3/32	WATER METER	⊕	3/32	WATER METER	⊕
3/32	GAS VALVE	⊗	3/32	GAS VALVE	⊗
3/32	WATER VALVE	●	3/32	WATER VALVE	○
1/8" X 1/8"	SURVEY STATION	□	1/8" X 1/8"	SURVEY STATION	□
1/8", 1/16"	FIRE HYDRANT W/VALVE	⊕	1/8", 1/16"	FIRE HYDRANT W/VALVE	⊕
7/64" X 7/64"	BENCH MARK	▲	7/64" X 7/64"	BENCH MARK	▲
7/64" X 7/64"	CATCH BASIN	▩	7/64" X 7/64"	CATCH BASIN	▩
3/32	GAS METER	⊗	3/32	GAS METER	⊗
1/8", 1/16"	OUTSIDE DROP MANHOLE	⊙	1/8", 1/16"	OUTSIDE DROP MANHOLE	⊙

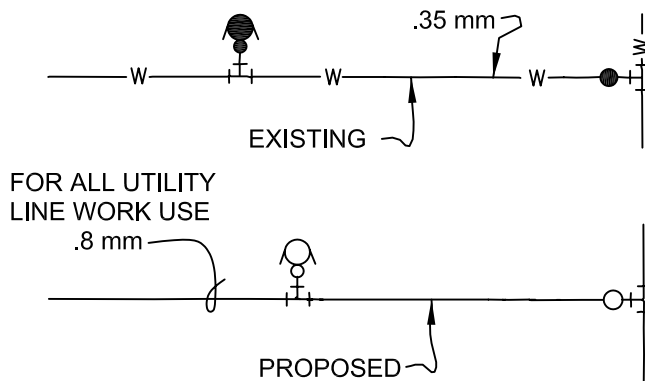
### SEWER LINE WORK



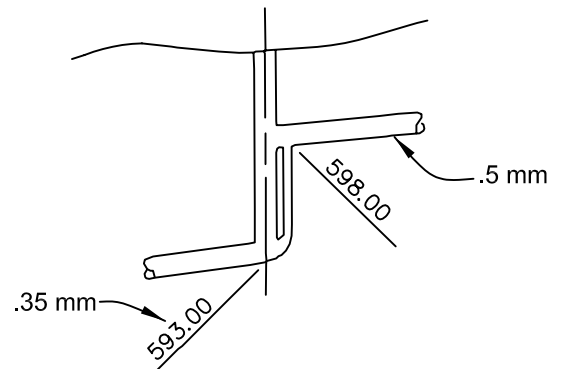
### OUTSIDE DROP MANHOLE IN PLAN



### WATER LINE WORK



### OUTSIDE DROP MANHOLE IN PROFILE

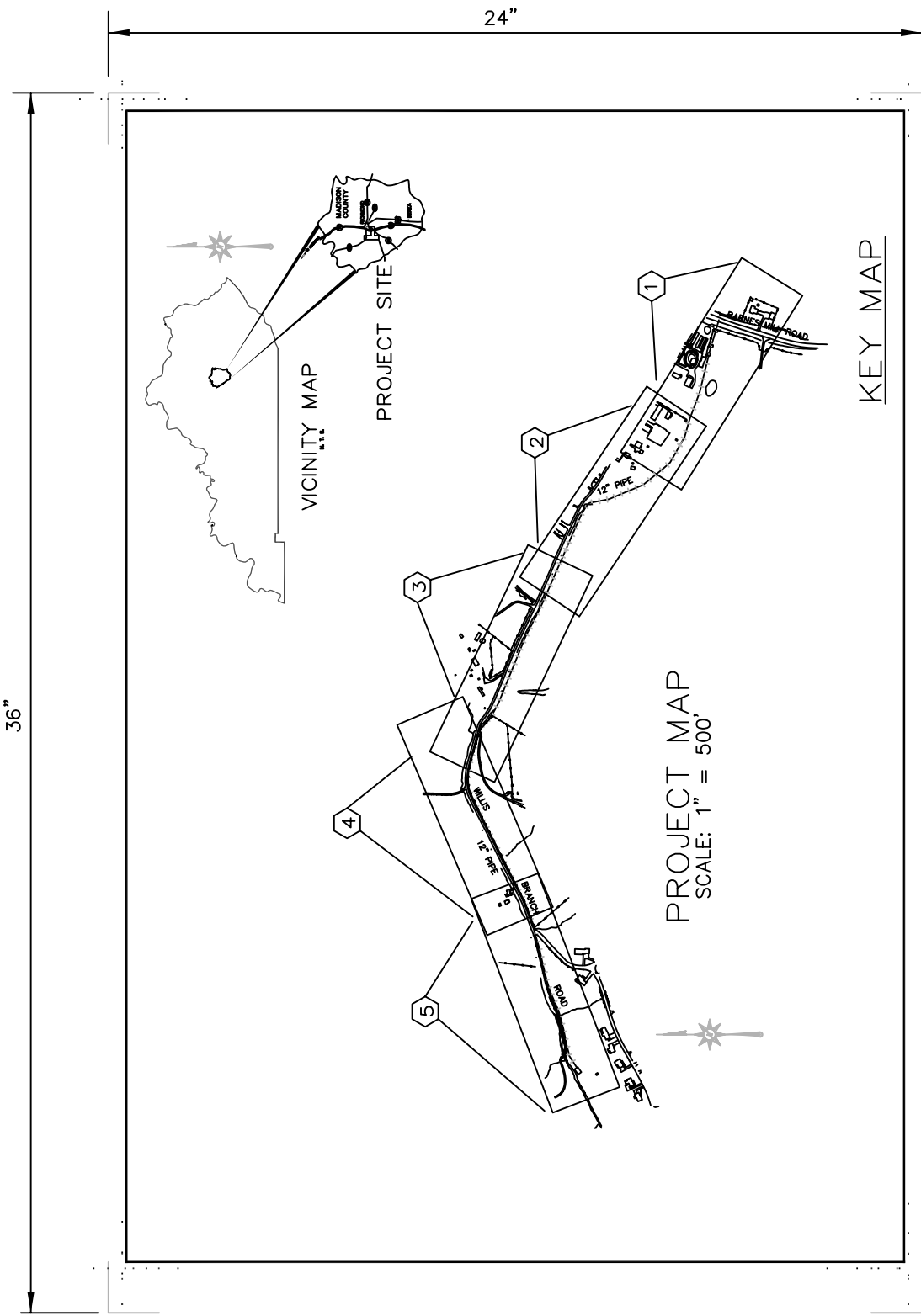


FOR ALL UTILITY  
LINE WORK USE

.8 mm

PROPOSED

DATE	REVISION	RICHMOND UTILITIES BOARD RICHMOND, KENTUCKY
<span style="font-size: 2em; font-weight: bold; vertical-align: middle;">RICHMOND UTILITIES</span>		FIGURE 2 DRAWING LEGEND



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RICHMOND UTILITIES BOARD  
RICHMOND, KENTUCKY



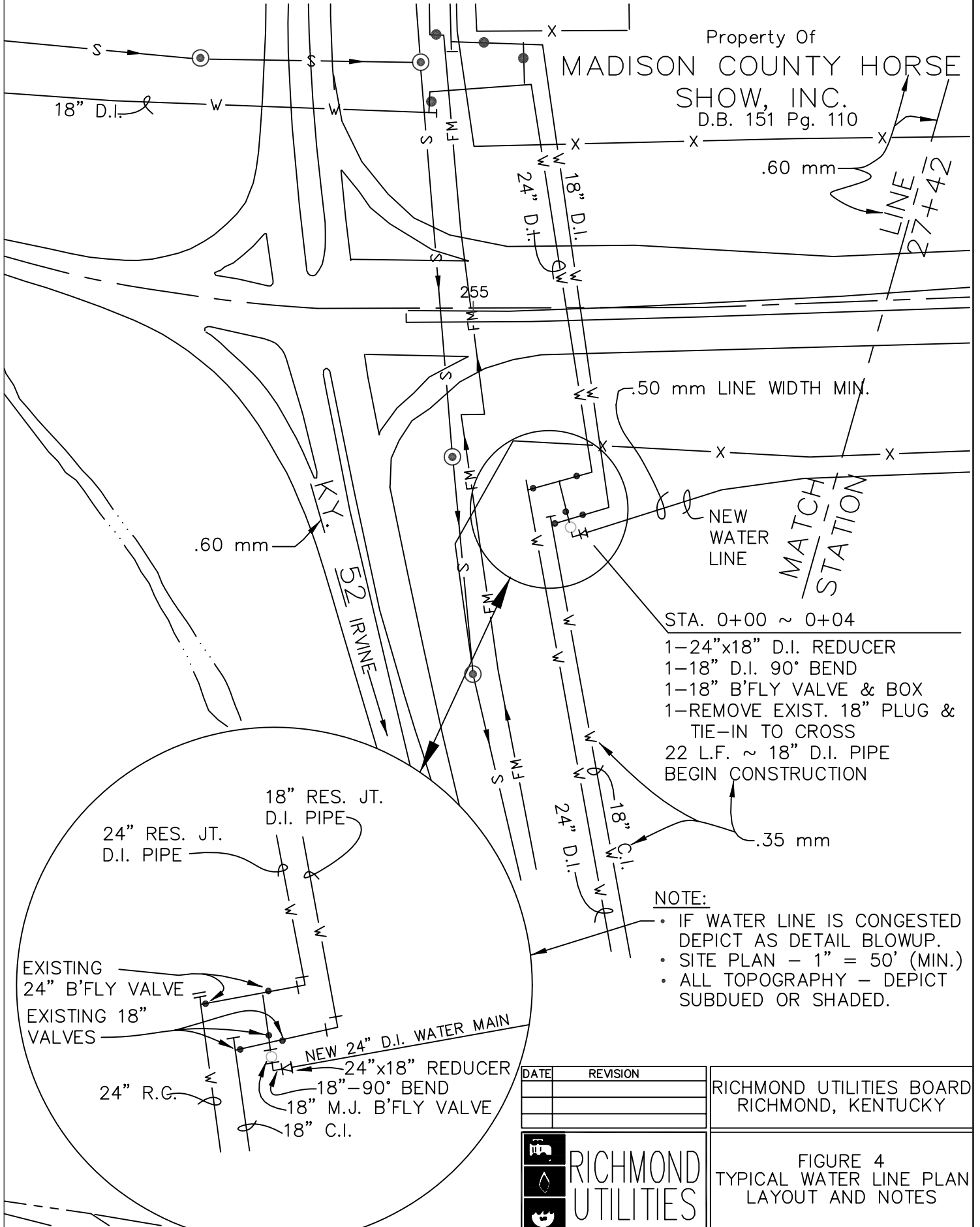
FIGURE 3  
DRAWING LAYOUT  
MASTER KEY PLAN



# TYPICAL WATER LINE PLAN LAYOUT AND NOTES

FOR STANDARD TEXT HEIGHTS PER DRAWING SCALE~SEE SECTION 6

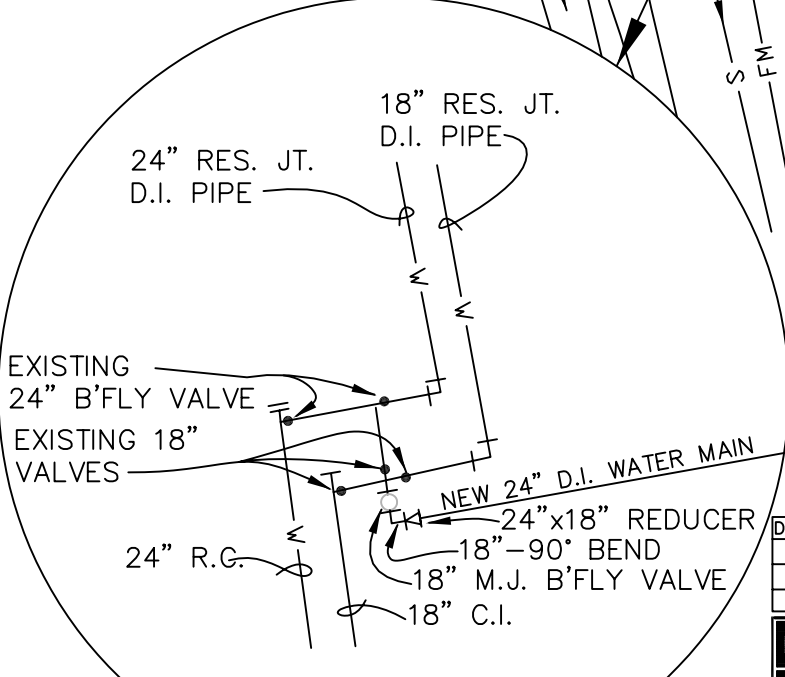
Property Of  
**MADISON COUNTY HORSE  
SHOW, INC.**  
D.B. 151 Pg. 110



.50 mm LINE WIDTH MIN.

- STA. 0+00 ~ 0+04
- 1-24"x18" D.I. REDUCER
  - 1-18" D.I. 90° BEND
  - 1-18" B'FLY VALVE & BOX
  - 1-REMOVE EXIST. 18" PLUG & TIE-IN TO CROSS
  - 22 L.F. ~ 18" D.I. PIPE
  - BEGIN CONSTRUCTION

- NOTE:**
- IF WATER LINE IS CONGESTED DEPICT AS DETAIL BLOWUP.
  - SITE PLAN - 1" = 50' (MIN.)
  - ALL TOPOGRAPHY - DEPICT SUBDUED OR SHADED.



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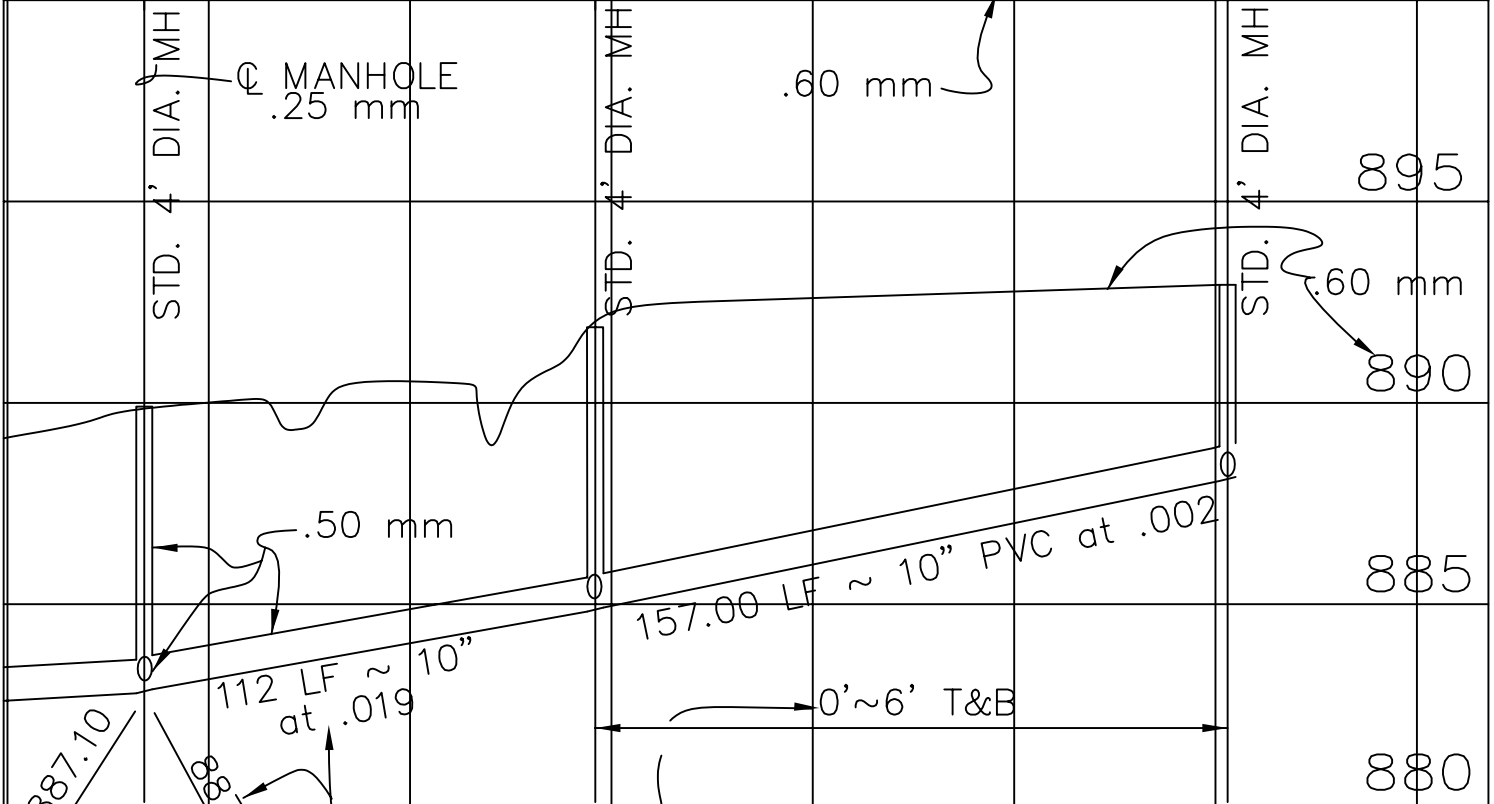
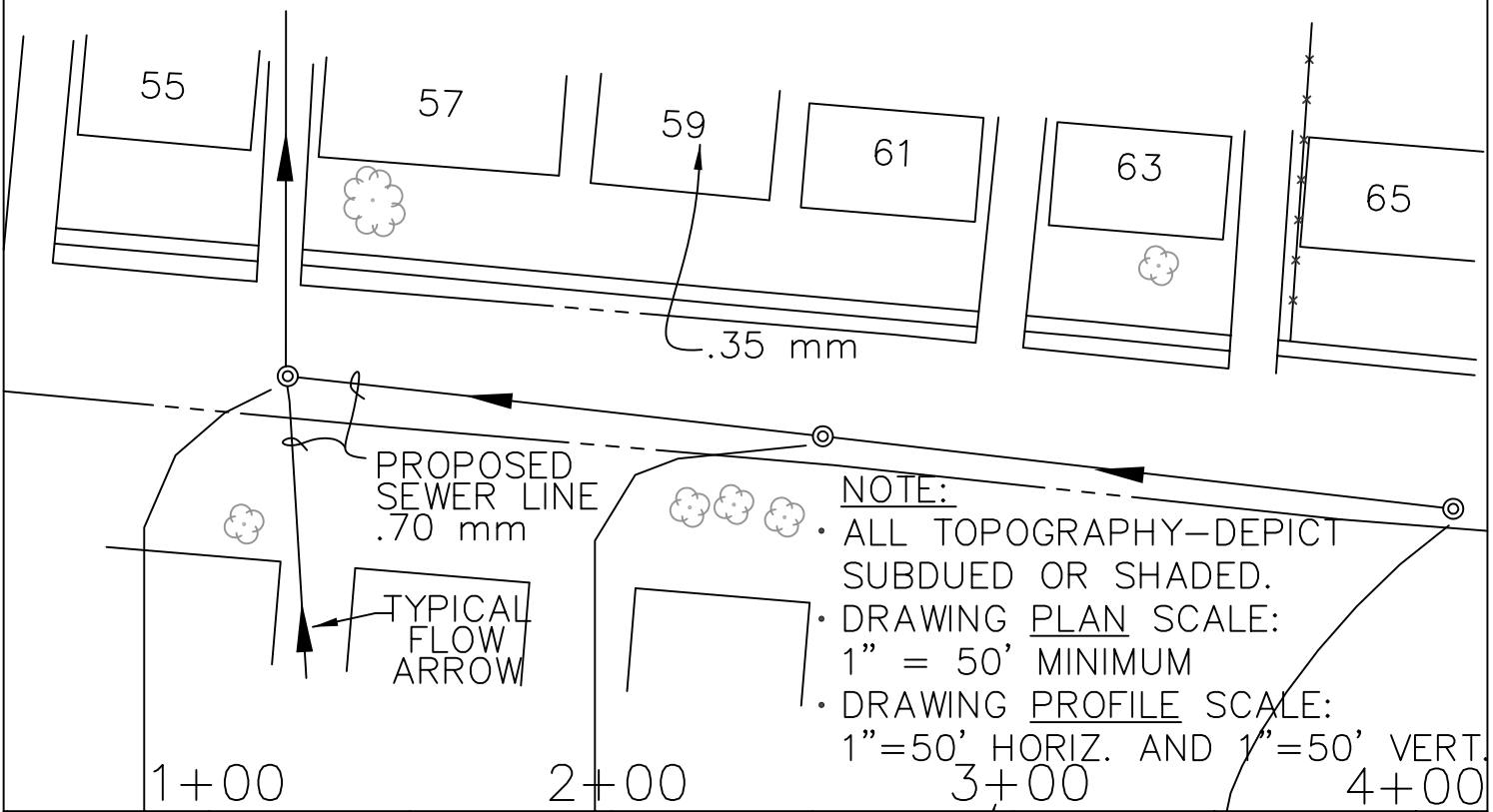
**RICHMOND UTILITIES**

RICHMOND UTILITIES BOARD  
RICHMOND, KENTUCKY

FIGURE 4  
TYPICAL WATER LINE PLAN  
LAYOUT AND NOTES

# TYPICAL SEWER LINE PLAN LAYOUT AND NOTES

FOR STANDARD TEXT HEIGHTS PER DRAWING SCALE~SEE SECTION 6



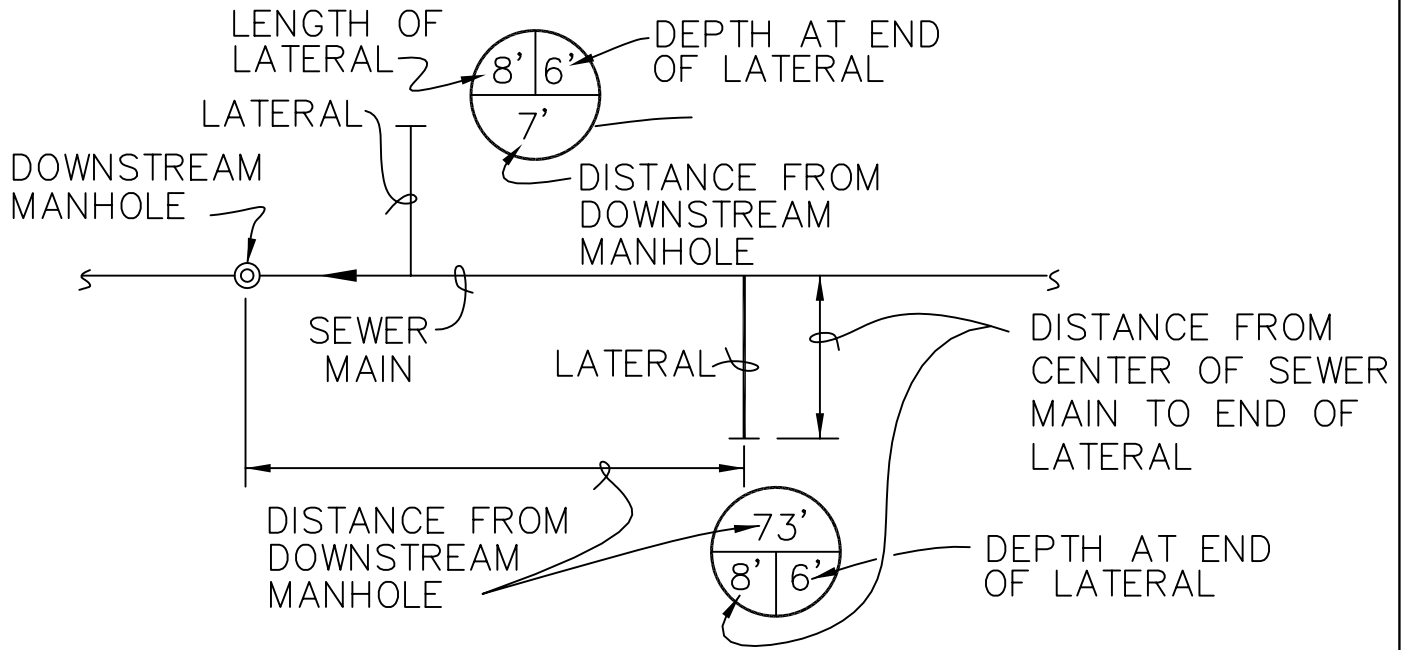
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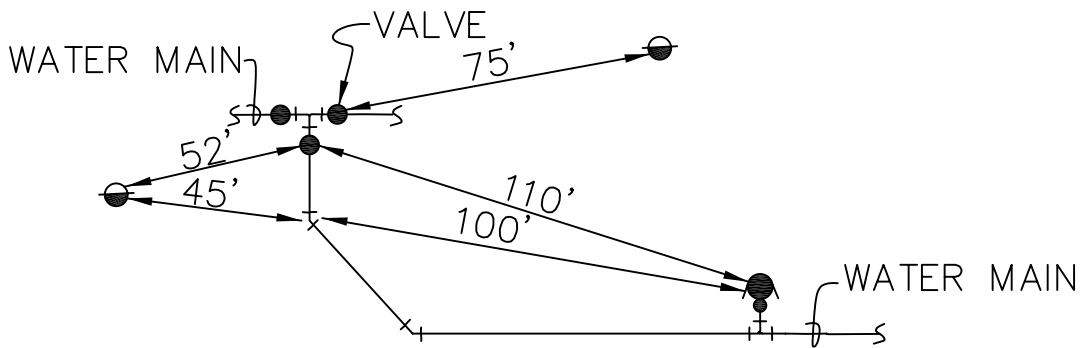


FIGURE 5  
TYPICAL SEWER LINE PLAN  
LAYOUT AND NOTES

# TYPICAL "RECORD DRAWING" EXAMPLES



SEWER AS BUILTS (LATERALS)



WATER MAIN "AS BUILTS" DIMENSIONING

NOTE:  
ALL VALVES & FITINGS  
LOCATE FROM TWO (2)  
REFERENCES POINTS, SUCH  
AS HYDRANTS, POWER  
POLES, ETC.

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RICHMOND, KENTUCKY

FIGURE 6  
TYPICAL "RECORD DRAWING"  
GUIDELINES

# STANDARD TEXT HEIGHTS

THE FOLLOWING TEXT SIZES ARE STANDARD FOR A 1" = 1" DRAWING

NOTE

SUBTITLE

TITLE

1/8"

11/64"

5/16"

## ENGINEERING

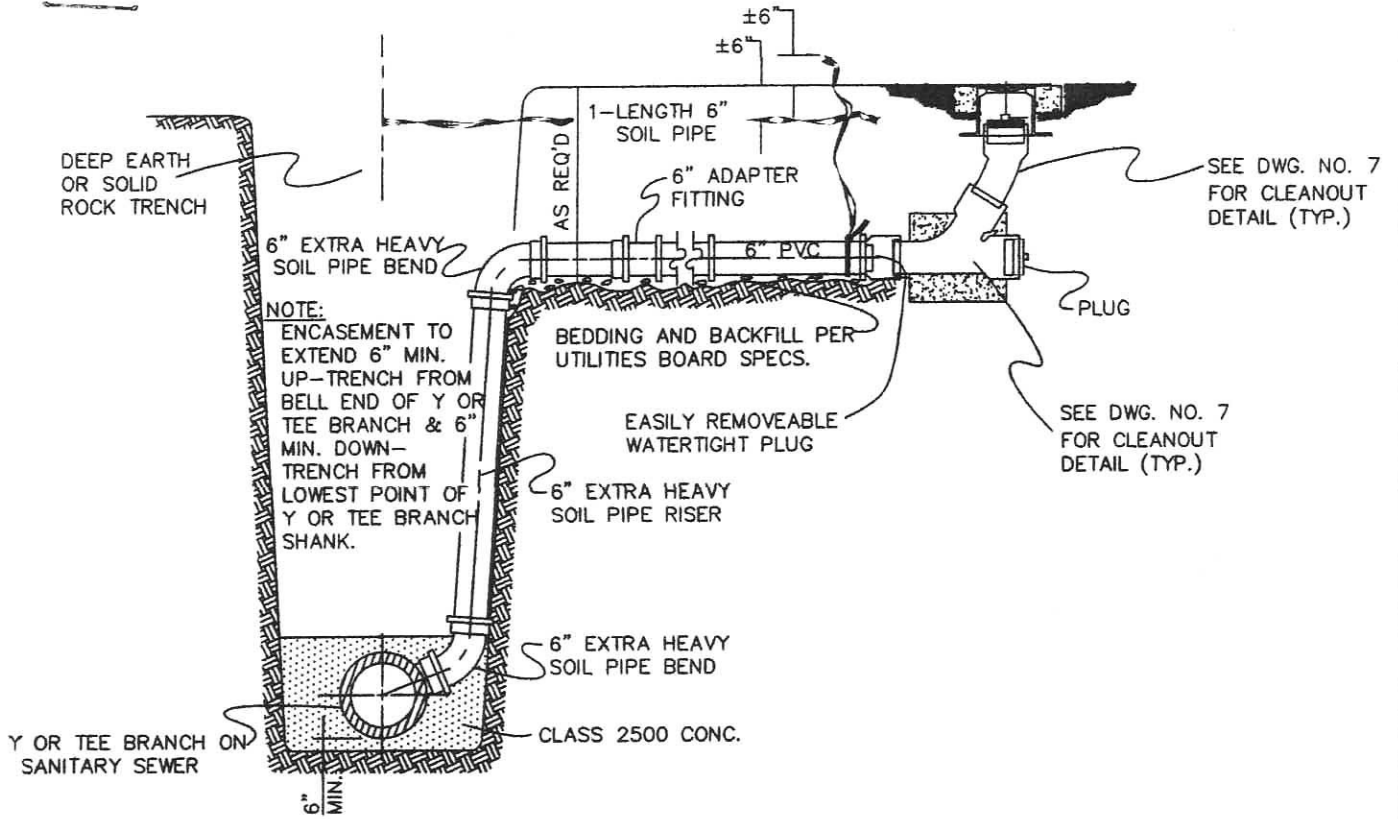
DWG. SCALE	NOTE	SUBTITLE	TITLE
1=5	5/8"	7/8"	1 9/16"
1=10	1 1/4"	1 3/4"	3 1/8"
1=20	2 1/2"	3 1/2"	6 1/4"
1=30	3 3/4"	5 1/4"	9 3/8"
1=40	5"	7"	12 1/2"
1=50	6 1/4"	8 3/4"	15 5/8"
1=100	12 1/2"	17 1/2"	31 1/4"
1=200	25"	35"	62 1/2"

DATE	REVISION

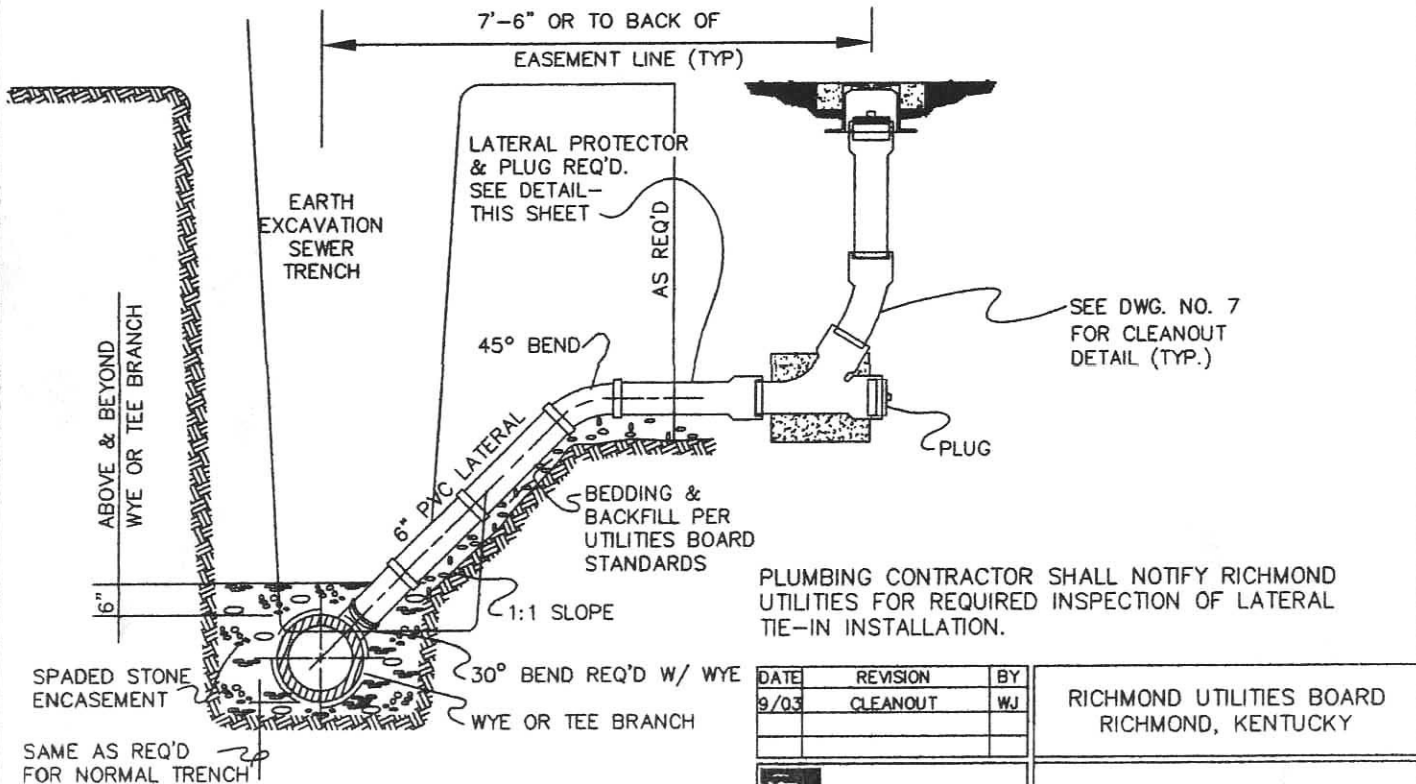
RICHMOND UTILITIES BOARD  
RICHMOND, KENTUCKY



FIGURE 7  
STANDARD TEXT HEIGHTS



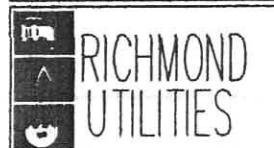
TYPICAL DETAIL SEWER LATERALS  
IN DEEP TRENCHES  
( NARROW R OF W &/OR SOLID ROCK )



TYPICAL DETAIL SEWER LATERALS

N T S

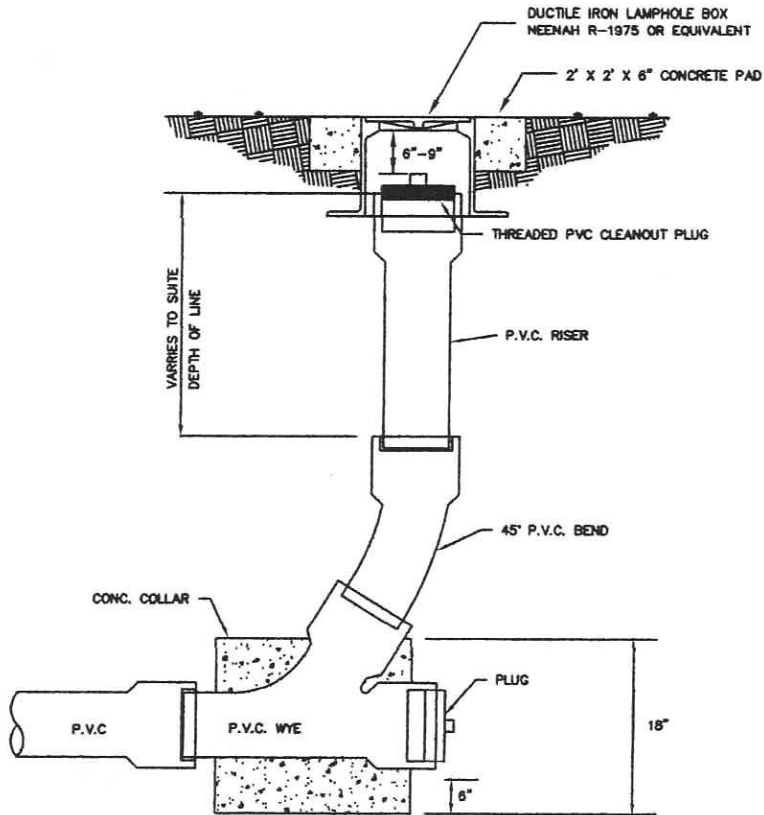
DATE	REVISION	BY
9/03	CLEANOUT	WJ



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SANITARY SEWER  
LATERALS

JUNE, 1996 DWG. NO. S3



LAMP HOLE CLEANOUT

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9/03	

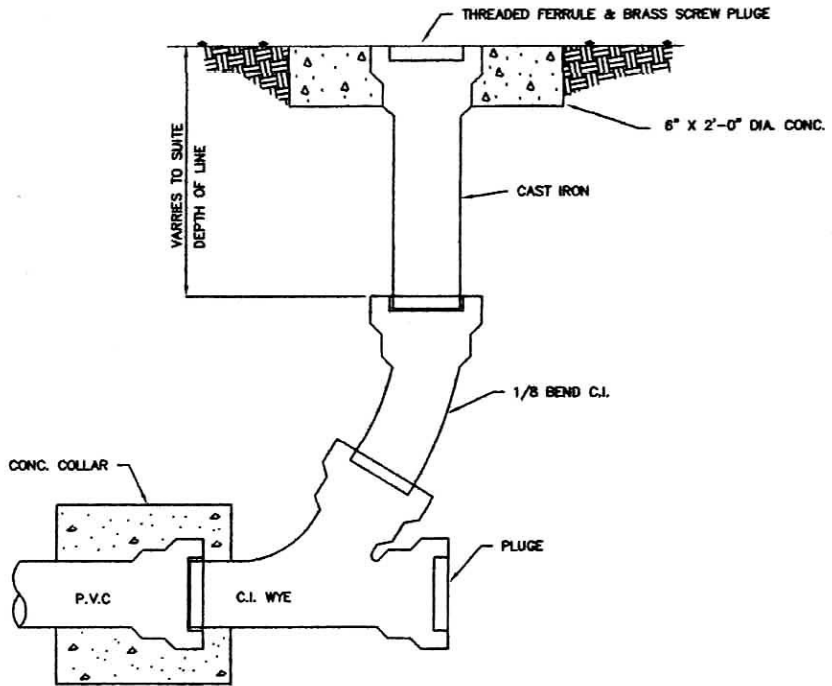
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RICHMOND, KENTUCKY

SANITARY SEWER  
LAMP HOLE CLEANOUT

SEPT. 2003

DWG. NO. 7



CLEANOUT – TRAFFIC LOCATION

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RICHMOND UTILITIES BOARD  
RICHMOND, KENTUCKY



SANITARY SEWER  
CLEANOUT – TRAFFIC AREA

SEPT. 2003

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