

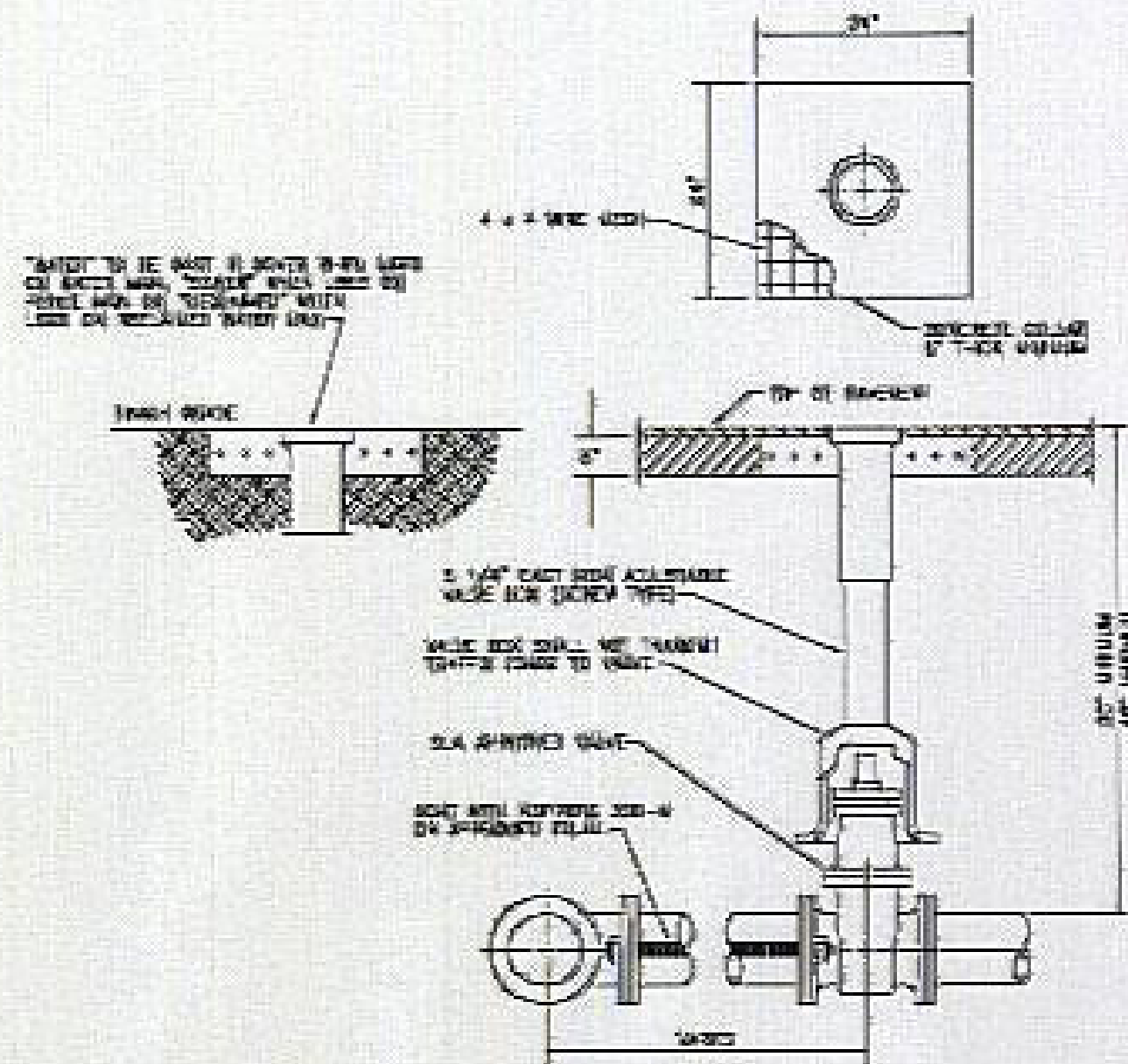
ALL THRUST BLOCKS SHALL BE FORMED, LAD FORMS SHALL BE INSPECTED BY SQA PRIOR TO THE POURING OF CONCRETE AND SHALL ALSO BE INSPECTED BY SQA PRIOR TO COVERING. TYPICAL LOCATIONS WHICH REQUIRE CONCRETE THROUST BLOCKS, FOR PRESSURE MAINS FOUR INCHES (4") AND GREATER CONCRETE SHALL HAVE 2500 P.S.I. MINIMUM STRENGTH AT TWENTY EIGHT (28) DAYS AND BEAR AGAINST UNDISTURBED STABLE SOILS. AREA OF CONTACT SHALL BE GOVERNED BY PIPE SIZE, WORKING PRESSURE IN PIPE, AND BEARING CAPACITY OF SOIL. PROTECT FITTINGS, BOLDS, ETC. BY COVERING WITH WOODEN OR OTHER ACCEPTABLE MATERIAL. CONCRETE SHALL BE A MINIMUM OF TWELVE (12") THICK.

PIPE	THROUST BLOCK SIZE (MINIMUM AREA REQUIRED)	PIPE	THROUST BLOCK SIZE (MINIMUM AREA REQUIRED)	REMARKS
4"	6.25 SQ. FT.	10"	30.00 SQ. FT.	
6"	4.00 SQ. FT.	20"	37.50 SQ. FT.	
8"	6.40 SQ. FT.	24"	33.00 SQ. FT.	THROUST ARE FOR 20" BEND, BASED ON BEND RADIUS BEING 180" AND PIPE PRESSURE AT 50 PSI. USE FULL TOP SAFETY COVER FOR 20" DIA. AND 24" DIA.
10"	10.00 SQ. FT.	30"	30.00 SQ. FT.	
12"	14.40 SQ. FT.	36"	36.00 SQ. FT.	
14"	19.60 SQ. FT.	36"	36.00 SQ. FT.	
16"	25.60 SQ. FT.			

\* THE LOCATION OF THROUST SHALL BE LOCATED THE DIST. OF THE THROUST REQUIRED AS WELL AS ANY INSTALLATION WHICH IS NOT COVERED BY THIS TABLE.

### Thrust Blocks

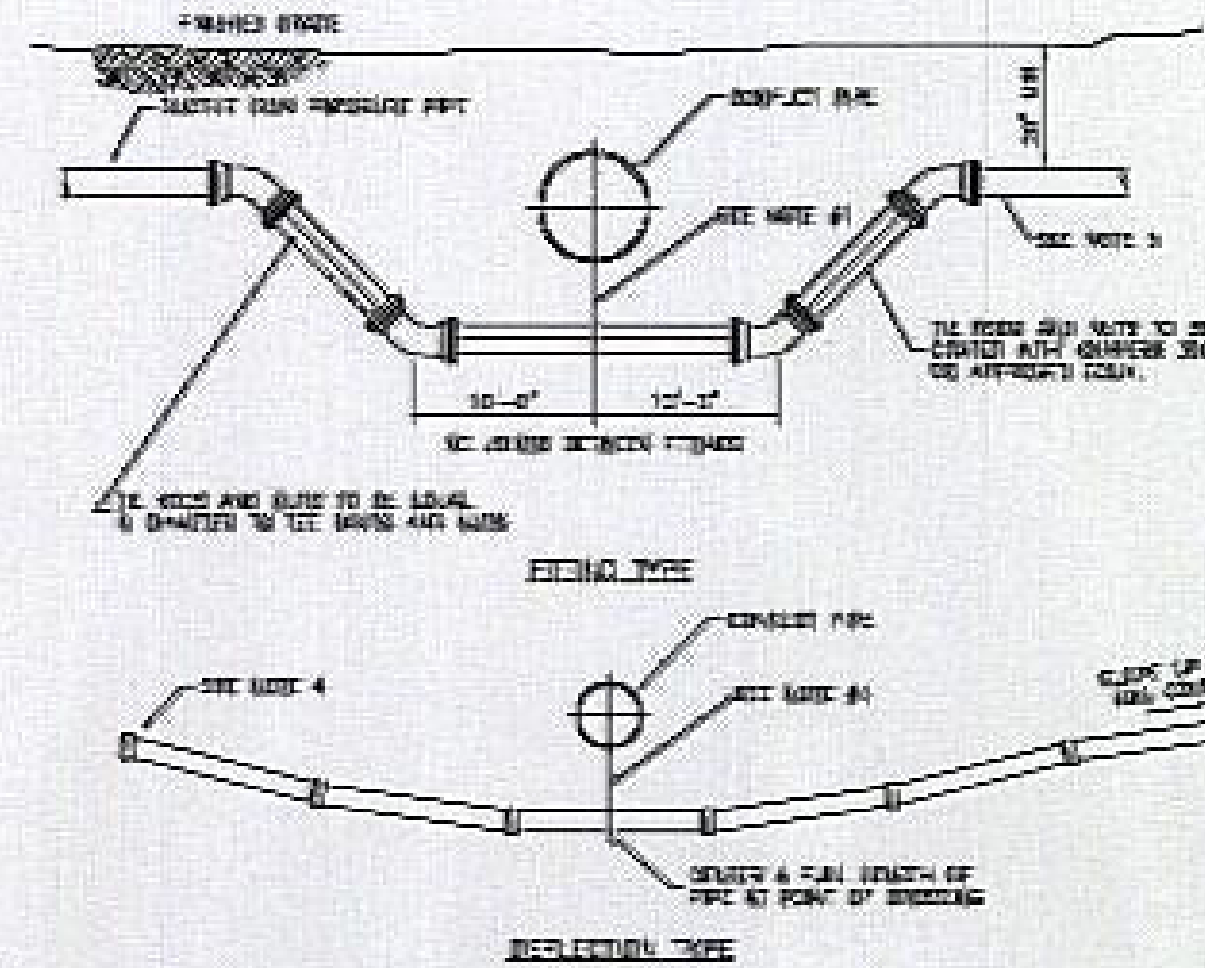
Approved May 22, 2002



- NOTES:
- CONCRETE THROUST MAY NOT BE REQUIRED IN BACKFILL AREA IF PAVED SURFACE IS FINISHED PRIOR TO VALVE INSTALLATION AND GROUND SURF IS 6" TO 8" THICK TO GRADE.
  - WHEN VALVE IS OFFSET FROM THE CENTERLINE OF THE PIPE, THE THROUST SHALL BE LOCATED TO THE OUTSIDE OF THE VALVE.
  - IF VALVE IS OFFSET FROM THE CENTERLINE OF THE PIPE, THE THROUST SHALL BE LOCATED TO THE OUTSIDE OF THE VALVE.
  - IF VALVE IS OFFSET FROM THE CENTERLINE OF THE PIPE, THE THROUST SHALL BE LOCATED TO THE OUTSIDE OF THE VALVE.

### Typical Underground Valve Installation

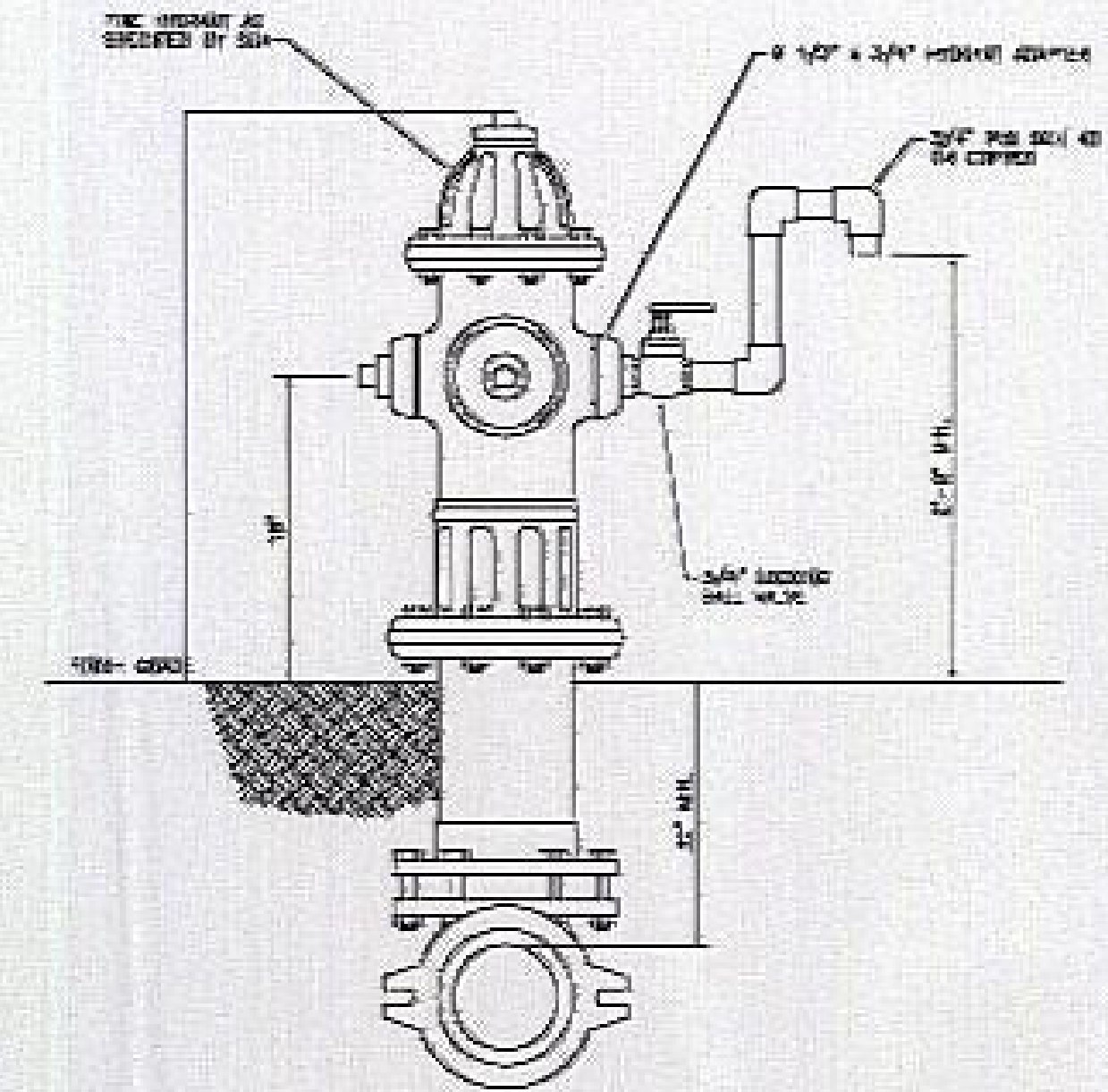
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- NOTES:
- FOR VERTICAL SECTIONS SEE 'VALVE', 'VALVE BOX' AND 'VALVE DETAIL' FOR CONNECTION DETAIL.
  - TOP OF THE FOLLOWING FORMS OF RESTRAINT SHALL BE USED FROM GRADE TO FINISH:
    - APPROVED PIPE-TO-PIPE DETAIL (SEE DETAIL 1).
    - CONCRETE THROUST BLOCK (SEE DETAIL 2).
    - CONCRETE THROUST BLOCK (SEE DETAIL 3).
  - THE RESTRAINT TYPE SHOWN IS PROPOSED BUT AN ALTERNATE SHALL BE USED IF THE RESTRAINT IS NOT AS SHOWN AND APPROVED.
  - DO NOT EXCEED THE MAXIMUM DEFLECTIONS SPECIFIED WITHIN EACH CONNECTION DETAIL.
  - PIPE SHALL BE RESTRAINED FOR A MINIMUM DISTANCE OF 20 FEET EACH SIDE OF CONNECTION SEE 'PIPE RESTRAINT' DETAIL FOR ADDITIONAL RESTRAINT CONNECTIONS FOR PIPE 12" AND LARGER.

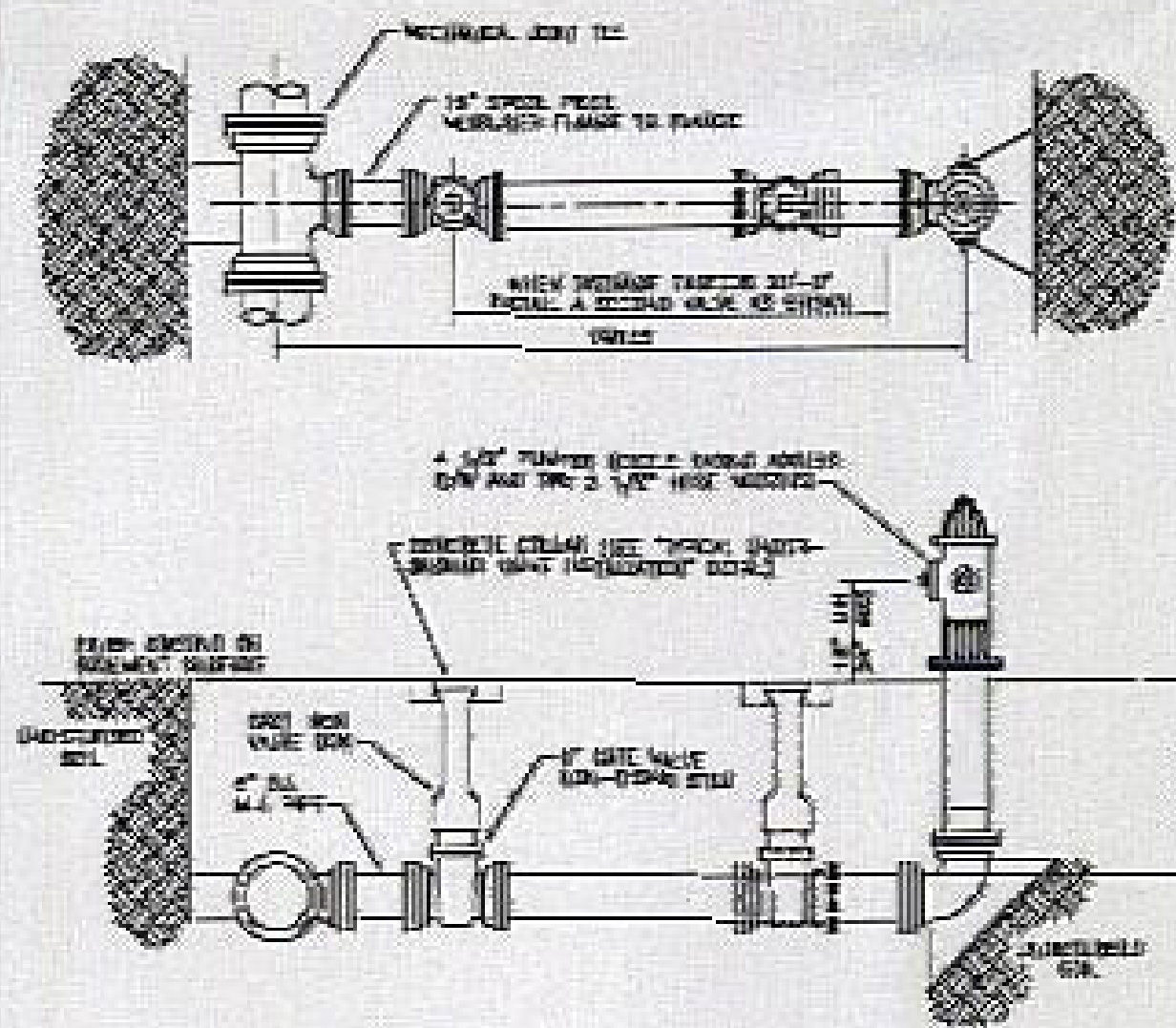
### Pressure Pipe Deflection

Approved May 22, 2002



### Sample Point - Fire Hydrant

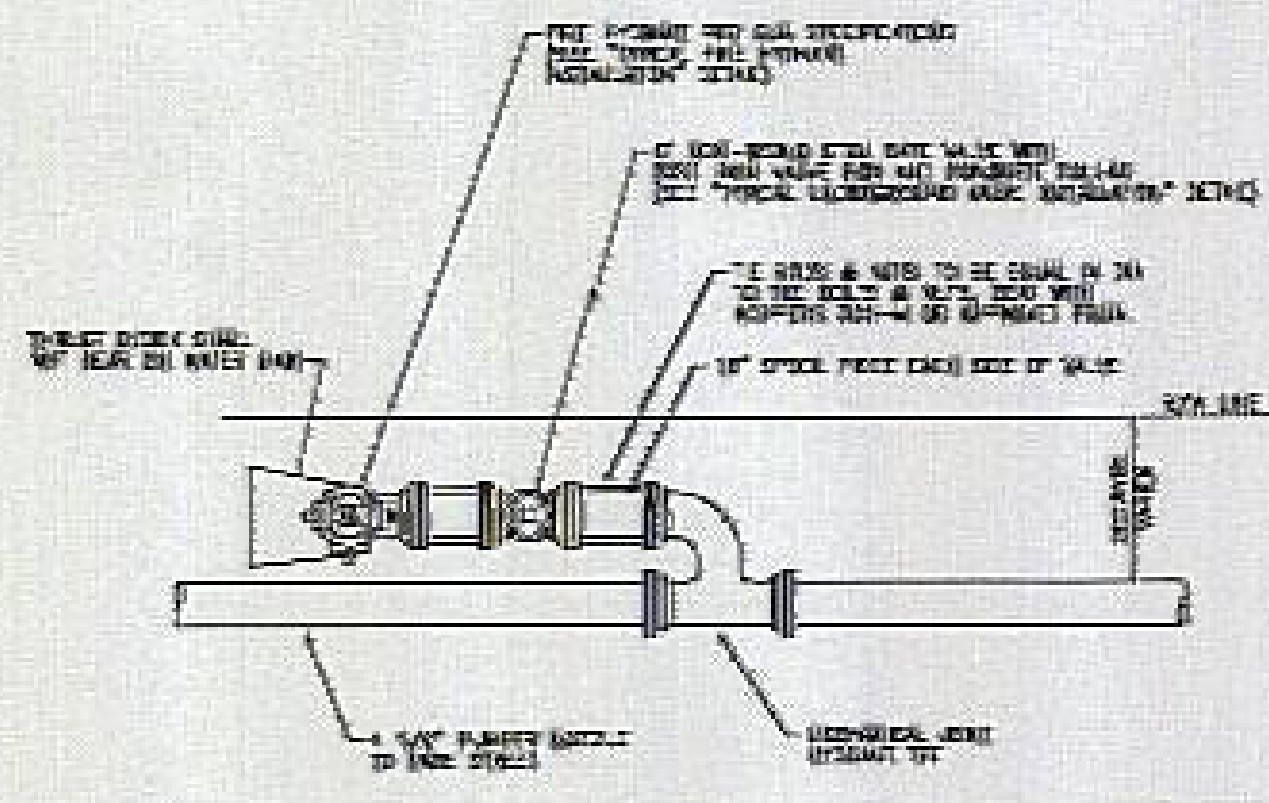
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- NOTES:
- DRIVE OR BUMP HOLES OR HOLES SHALL BE PLUGGED.
  - THE HYDRANT SHALL BE INSTALLED PLUMB AND TRUE.
  - THE HYDRANT SHALL BE INSTALLED TO REST ON UNDISTURBED SOIL.
  - NO PIPE JOINTS SHALL BE PLACED IN EXPOSURE.
  - THE ONLY FIRE HYDRANT ACCESSIBLE ARE:
    - CONCRETE 12" DIA.
    - CONCRETE 18" DIA.
    - CONCRETE 24" DIA.
    - CONCRETE 30" DIA.
    - CONCRETE 36" DIA.

### Typical Fire Hydrant Installation

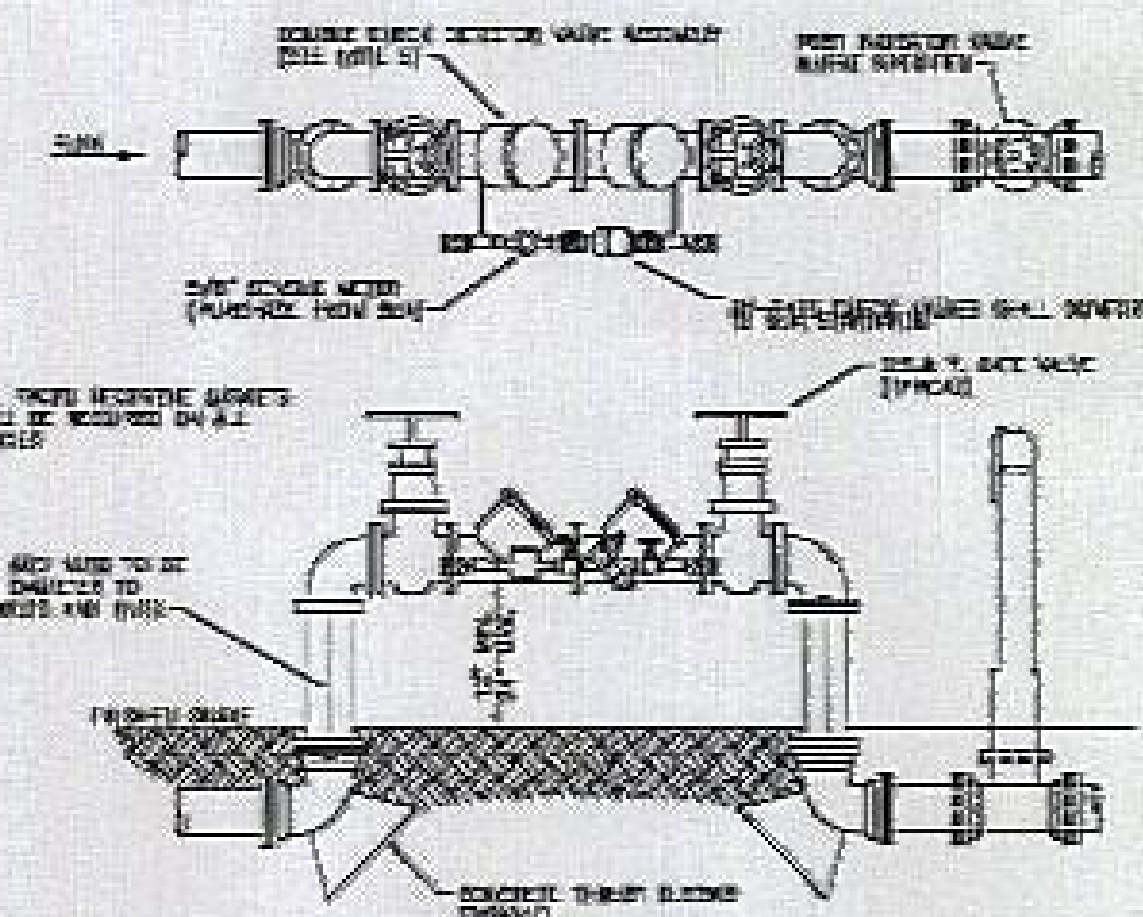
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- NOTES:
- MECHANICAL JOINT CONNECTIONS TO THE HYDRANT SHALL BE USED ONLY UPON APPROVAL OF SQA.

### Fire Hydrant Installation with Hydrant Tee

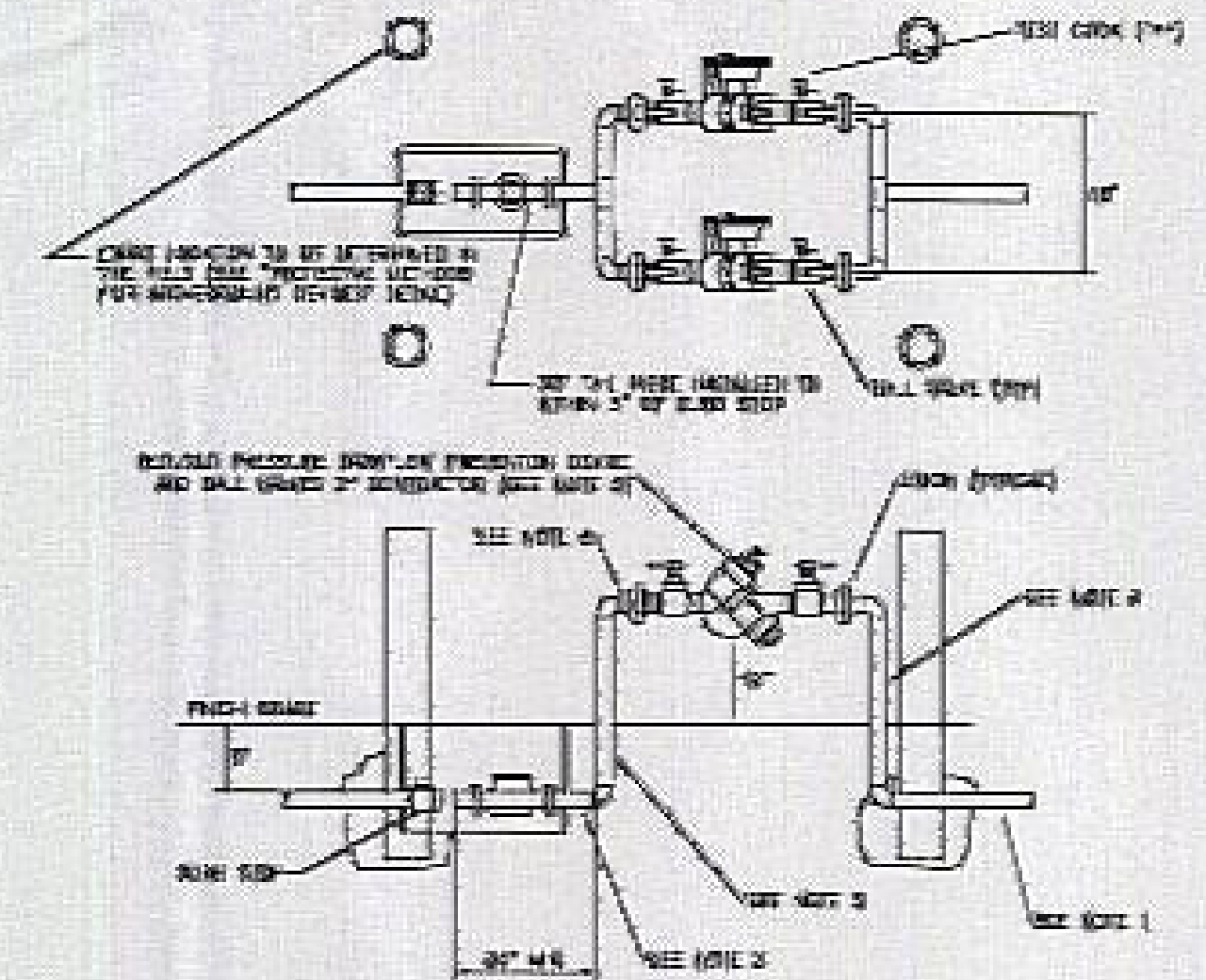
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- NOTES:
- VALVE AND VALVE FITTINGS SHALL BE INSTALLED UNDERGROUND AND FINISHED FITTINGS FOR ABOVE GRADE USE. NO ABOVEGROUND FITTINGS.
  - THE HYDRANT SHALL BE INSTALLED PLUMB AND TRUE.
  - THE HYDRANT SHALL BE INSTALLED TO REST ON UNDISTURBED SOIL.
  - NO PIPE JOINTS SHALL BE PLACED IN EXPOSURE.
  - THE ONLY FIRE HYDRANT ACCESSIBLE ARE:
    - CONCRETE 12" DIA.
    - CONCRETE 18" DIA.
    - CONCRETE 24" DIA.
    - CONCRETE 30" DIA.
    - CONCRETE 36" DIA.
  - CONCRETE PIPE PROTECTION SYSTEMS USING ORIGINAL PLUMBING SHALL BE INSTALLED TO USE A TENSILE STRENGTH OF 100,000 P.S.I. AND SHALL BE INSTALLED TO REST ON UNDISTURBED SOIL.
  - ALL TOP PORTS SHALL BE PLUGGED WITH BRASS PLUGS.

### Aboveground Fireline

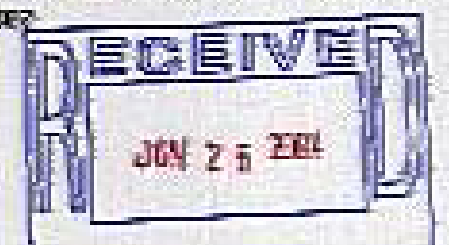
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- NOTES:
- TYPE 'M' COPPER TUBING (SOFT DRAWN) OR PHOSPHOR BRONZE TUBING SHALL BE USED FOR ALL TUBING.
  - IF THE TUBING IS TYPE 'M' A 1/2" DIA. COPPER TUBING SHALL BE PERMITTED.
  - PIPE JOINTS SHALL BE TYPE 'M' COPPER TUBING (SOFT DRAWN) WITH CONFORMING SOCKET FITTING AND BRASSICE. SOFT LEAD FREE SOLDER AND FLUX SHALL BE PERMITTED.
  - 1/2" AND 3/4" METAL JOINTS SHALL BE COVERED WITH LEADING CAPS AND METAL FRAMES.
  - APPROVED BACKFLOW PREVENTION DEVICES WITH EXISTING BACKFLOW DEVICES SHALL BE USED:
    - VALVE MODEL: 1/2" TO 3/4" DIA.
    - VALVE MODEL: 1/2" TO 3/4" DIA.
    - VALVE MODEL: 1/2" TO 3/4" DIA.
  - WHEN THE DEVICE IS INSTALLED TO REST ON A CONCRETE WALL, THE DEVICE SHALL BE 4" MIN. ABOVE THE TOP OF THE DEVICE AND THE DEVICE WALL.
  - CONCRETE PREVENTION DEVICES SHALL BE COVERED WITH 2" DIA. CAPS.
  - CONCRETE PREVENTION DEVICES SHALL BE SUBMITTED AS WITH BARS WITH EXISTING WALL MATERIAL. IT SHALL BE INSTALLED TO REST ON UNDISTURBED SOIL. INSTALLATION SHALL BE INSTALLED TO REST ON UNDISTURBED SOIL. ALL CONNECTIONS SHALL BE INSTALLED TO REST ON UNDISTURBED SOIL.
  - CONCRETE PREVENTION DEVICES SHALL BE 4" MIN. ABOVE 2" FROM BACK OF WALL.

### Water Meter and Dual Backflow Device - 3/4" - 2"

Approved May 22, 2002



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PROPOSED MIXED USE DEVELOPMENT  
**ONE PARK PLACE**  
 PARK AVENUE  
 LAKE PARK, FLORIDA

DATE: 07-14-02  
 SCALE: AS SHOWN  
 DRAWN: JAC/JVA  
 JOB: PARK AVE  
 SHEET: 106 OF 8 SHEETS