ITEM NO. 834
Fire Hydrants

834.1 DESCRIPTION: This item shall consist of fire hydrant installations using joint restraints in accordance with these specifications and as directed by the Engineer.

834.2 REFERENCED STANDARDS Reference standards cited in this Specification Item No. 834 refer to the current reference standard published at the time of the latest revision date logged at the end of this Specification Item No. 834, unless a date is specifically cited.

1. San Antonio Water System (SAWS):
   a. Specifications for Water and Sanitary Sewer Construction
   b. SAWS Materials Specifications

2. City of San Antonio (COSA) Standard Specification for Construction

3. Texas Commission of Environmental Quality (TCEQ)
   a. TCEQ 290 Rules and Regulations for Public Regulations for Public Water Systems

4. American Water Works Association (AWWA)
   a. AWWA C 502 – Standard for Dry Barrel fire Hydrants
   b. AWWA C 550 - Standard for Protective Epoxy Interior Coatings for Valves and Hydrants

5. Society of Protective Coatings
   a. SSPC SP2 - Hand Tool Cleaning
   b. SSPC SP3 - Power Tool Cleaning
   c. SSPC SP10 - Near-White Blast Cleaning
   d. SSPC SP11 - Power Tool Cleaning to Bare Metal
   e. SSPC 36 – Two-Component Weatherable Aliphatic Polyurethane Topcoat, performance based
   f. SSPC 42 – Epoxy Polyamide/Polyamidoamine Primer, performance based

   1. PVC pipe is not allowed.
   2. Stems shall be stainless steel.

834.4 CONSTRUCTION: Hydrants shall be connected to mains as shown in the contract documents or as directed by the Engineer.
   1. Hydrants shall be installed in accordance with Standard Drawings DD-834 Drawing Series.
   2. See drawings for required depth and offsets detail.
3. Hydrants shall also be installed in a location where there is accessibility and
in a safe location where there is a minimum possibility of damage from vehicles
or injury to pedestrians.
4. One (1) foot fire valve extension is allowed.
5. In situations where hydrants are placed directly behind curbs, hydrant barrels
shall be set so that no portion of the hydrant will be less than 12 inches nor more
than 7 feet from the back of the curb.
6. Where hydrants are set in the lawn spaces between the curb and the sidewalk or
between the sidewalk and the property line, no portion of the hydrant or nozzle
cap shall be within 6 inches of the sidewalk.
7. Setting final grade of fire hydrants to match proposed or existing field
conditions is the responsibility of Contractor.
8. Hydrants shall be set in accordance with Standard Drawings DD-834-Drawing
Series and shall be set plumb and shall have their nozzles parallel with, or at right
angles to, the curb with the pumper nozzle facing the curb.
9. Drainage and concrete pads shall be provided at the base of hydrants as specified.
10. No fire hydrant drainage system or pit shall be connected to a storm or sanitary
sewer.
11. The Contractor shall install anchored or flanged style fittings in accordance with
Standard Drawings DD-834 Drawing Series.
12. Restrained Joints: Restrained mechanical joints that require field welding or
groove cuts into the pipe barrel for restraint will not be accepted. Restrained
joints shall be furnished for pipe at all changes in direction as indicated in the
contract documents, or as directed by the Engineer. Restrained mechanical joints
shall be locked mechanical joints. All joints shall conform to the San Antonio
Water System Material Specification Item No. 95-10, “Pipe Joint Restraint
Systems.” The restraint system shall be capable of a test pressure twice the
maximum sustained working pressure of 350 psi for ductile iron pipe.
13. Replacing and Relocating Existing Fire Hydrants: When existing fire hydrants
are to be replaced or relocated, the work shall be accomplished by either of the
following:
   a. Cutting or installing a tee of the size and type as indicated in the contract
documents or as directed by the Engineer.
   b. Using a tapping sleeve and valve of the size and type as indicated in the
contract documents to install a new fire hydrant to an existing or new water
main. Size on size taps will not be permitted.
   c. Relocating the existing fire hydrant by closing the existing fire hydrant
branch valve, removing the existing fire hydrant, extending the fire
hydrant branch and installing the existing fire hydrant as specified
herein.
   d. Solid sleeve will be required for all relocating of branches.
   e. The Contractor shall salvage the existing fire hydrants and other materials
as designated in the field by the Inspector and shall deliver this material to
the SAWS materials storage yard indicated on the contract documents.
f. Fire hydrant branches shall be abandoned by cutting and capping or plugging the fire hydrant cast iron tee at the service main and the surface restored to its original condition.

g. After a fire hydrant has been set, hydrants shall be painted with a suitable primer and finished with reflective oil-based aluminum paint from the top of the hydrant to a point 18-20 inches below the center line of the pumper nozzle and applied to all exposed metal surfaces above the hydrant base flange.

14. Installation on Water Mains: Ductile iron pipe, cast iron and ductile iron fittings, and valves used in the placement of fire hydrants and connections to the main will be considered part of the fire hydrant installation and not a part of the main construction.

a. No separate payment will be made for this pipe. Hydrants shall be connected to the mains as shown in the contract documents or as directed by the Engineer.

b. Hydrants shall also be installed in a location where there is accessibility and in a safe location where there is a minimum possibility of damage from vehicles or injury to pedestrians.

15. Operation of hydrant shall be full closed or full open. Throttling is prohibited.

834.5 MEASUREMENT: Standard Fire Hydrants with 6 inch Valve and Box will be measured by the unit of each fire hydrant, valve, and box installed. Relocate Fire Hydrants will be measured by the unit of each fire hydrant relocated.

1. Standard Fire Hydrants with Tapping Sleeve, 6 inch Valve, and Box will be measured by the unit of each fire hydrant, including the various sizes of tapping sleeves, valves and boxes installed.

834.6 PAYMENT: Payment of the following bid pay items shall include: excavation, backfill, selected material, anti-corrosion embedment when specified, hauling and disposition of surplus excavated materials, backfill, branch line pipe, nipples, and fittings exclusive of the tee from the main line pipe, polyethylene sleeve where required, asphalted material for ferrous surfaces, joint restraints, concrete pad, guard post, restoration of existing fire hydrant sites and removal and relocation of existing fire hydrant as specified.

1. Fire hydrant painting shall be subsidiary to all fire hydrant payment item(s). No separate payment will be made for fire hydrant painting.

2. Plugging, capping, removal of existing fire hydrant, painting fire hydrant are incidental to work performed for a fire hydrant.

PAY ITEM No. 834.1 – Fire Hydrant: Installation of a new fire hydrant as specified in the contract documents and as specified herein for a fire hydrant with 6 inch valve and box.

PAY ITEM No. 834.2 – Tapped Fire Hydrant: Payment for installation of a new fire hydrant by tapping an existing or new water main as specified in the contract...
documents and as specified herein for a Fire Hydrant with tapping sleeve, 6 inch valve and box.

**PAY ITEM No. 834.3** – Relocate Fire Hydrant: Payment for Relocate Fire Hydrant shall include relocating an existing fire hydrant to a new location as specified in the contract documents and as specified herein. Restoration of the existing fire hydrant site shall be inclusive to this line item.

**End of Specification**
NOTE:
Use:
(A) Anchoring Tee with M.J. Fitting or M.J. Valve
(B) Stul. M.J. Tee with Anchoring Coupling or Anchoring Fitting
NOTE:
Polywrap Below Ground

Optional Extension for Grade Adjustment, Maximum of 1 @ 6 Inch or 12 Inch.

PREFERRED INSTALLATION
Profile Shown without Horizontal Bend

Concrete Pad 16"x16"x4"

Pipe Diameter X 6" Tee

Joint Restraints

6" Gate Valve, M.J.
with Box *

NOTE: Operation of Fire Hydrant shall be Full Opened or Full Closed Throttling is Prohibited.

ALTERNATE INSTALLATION
Plan View Shown with Bend

* Resilient Seat

6" ½ Bend, M.J.

DD-834-01 SHEET 1 OF 3

PROPERTY OF
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS

FIRE HYDRANT INSTALLATION (JOINT RESTRAINT)

APPROVED
MAY 2013

REVISED
AUG 2019
NOTE: Operation of Hydrant shall be Full Opened or Full Closed Throttling is Prohibited.

NOTE: No Extensions Allowed
Fire Hydrant:

- Property Line
- 7' - 0" Max.
- 12" Min.
- 2' Min.

6" Gate Valve & Box should be installed in the street

- 6" or 8" D.I. Nipple, P.E. x M.J. Anchor with Reaction Stop Ring in center

- Cast Coupling

- Reaction Block

- 3,000 psi Concrete Base
  - 16" x 16" x 4"

Curb Face

* Resilient Seat

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PROPERTY OF
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS

FIRE HYDRANT
INSTALLATION AT
CUL-DE-SAC

APPROVED
MARCH 2008

REVISED
AUG 2019

DD-834-03

SHEET 1 OF 2
Property Line

Curb Face

7'-0" Max.  2' Min.

12' Min.

6" Or 8" D. I. Nipple, Plain End At Both Sides

6" Gate Valve, M. J. W/Box * Should Be Installed In Street

3,000 psi Concrete Pad 16" x 16" x 4"

Restrained Lengths To Be Determined By Design Engineer.

* RESILIENT SEAT

PROPERTY OF
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS

FIRE HYDRANT INSTALLATION
AT CUL-DE-SAC
(JOINT RESTRAINT)

APPROVED
MARCH 2008

REVISED
AUG 2019

DD-834-03

SHEET 2 OF 2