



STANDARD DETAILS BOOKLET

Revised April 30, 2018

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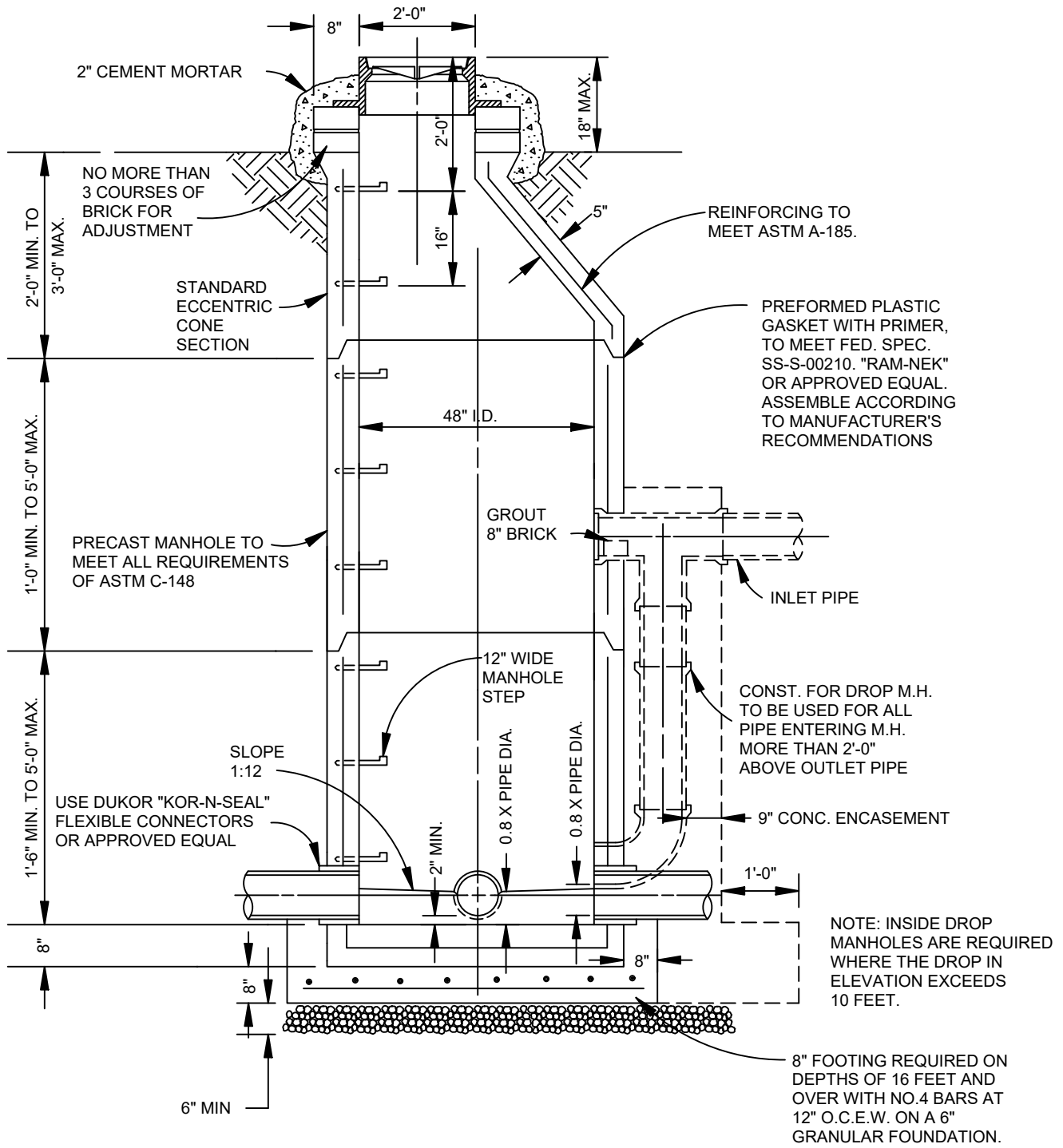
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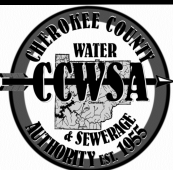
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NOTES:

1. MANHOLE RIMS ARE TO BE FLUSH WITH PAVEMENT IN PAVED AREAS.
2. MANHOLE RIMS ON OUTFALL LINES ARE TO BE 18" ABOVE GROUND.
3. MANHOLE RIMS IN FUTURE STREETS ARE TO BE 48" ABOVE GROUND.



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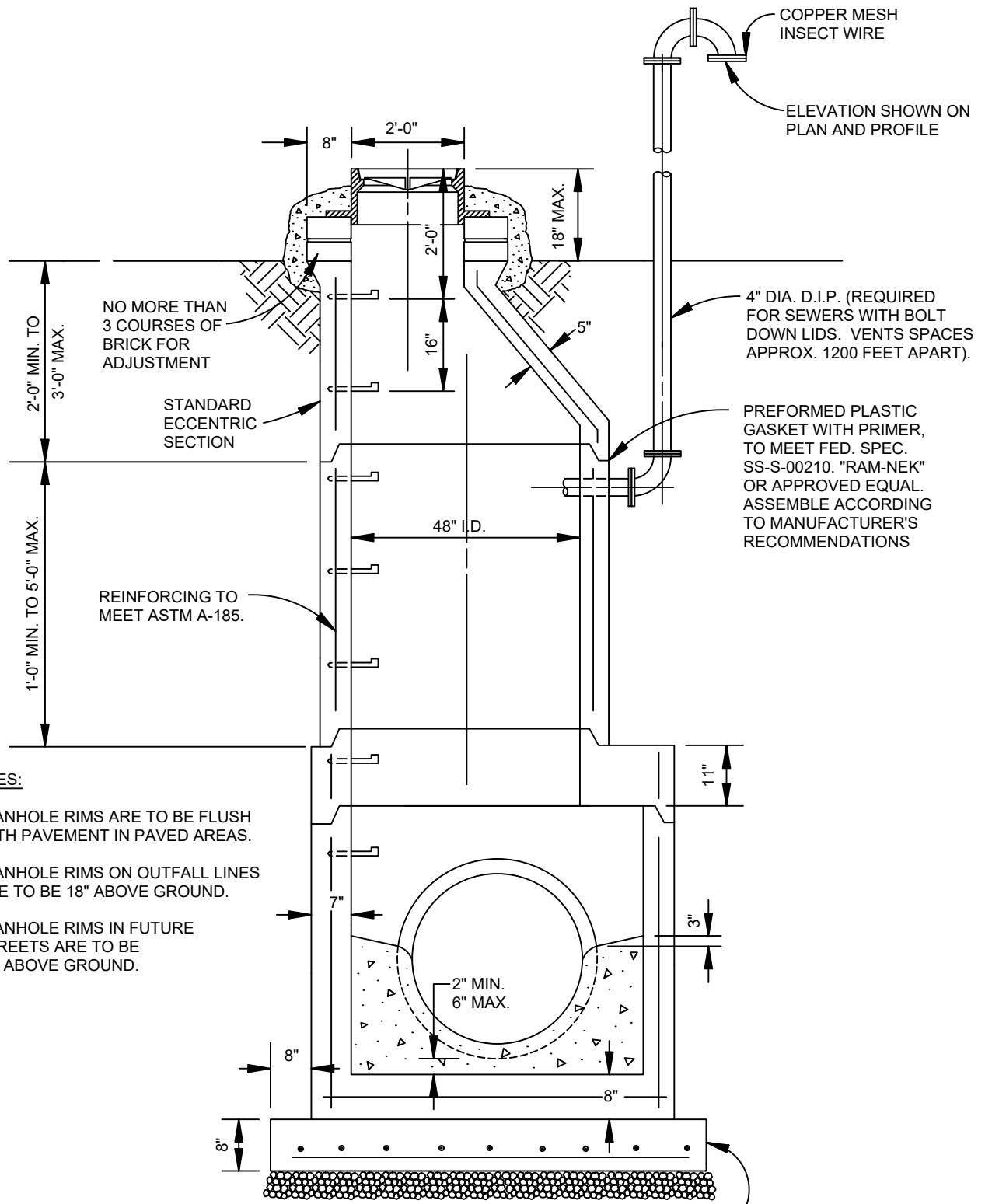


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Precast
Concrete Manhole**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-01

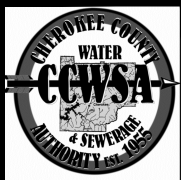


NOTES:

1. MANHOLE RIMS ARE TO BE FLUSH WITH PAVEMENT IN PAVED AREAS.
2. MANHOLE RIMS ON OUTFALL LINES ARE TO BE 18" ABOVE GROUND.
3. MANHOLE RIMS IN FUTURE STREETS ARE TO BE 48" ABOVE GROUND.

8" FOOTING REQUIRED ON DEPTHS OF 16 FEET AND OVER WITH NO.4 BARS AT 12" O.C.E.W. ON A 6" GRANULAR FOUNDATION.

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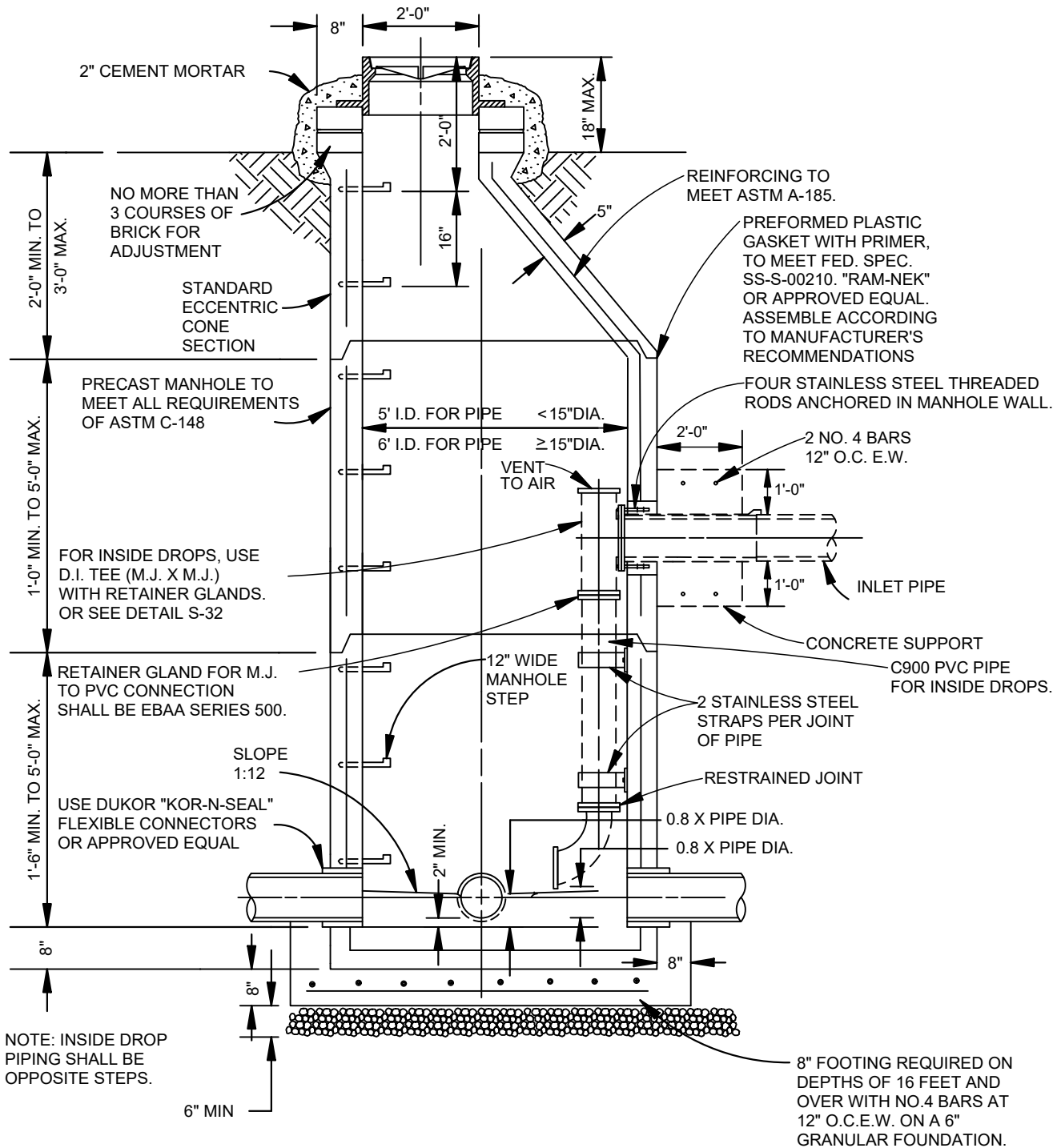
**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Standard
Vented Manhole**
(FOR PIPE LARGER THAN 18")
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-02

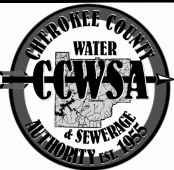
NOTES:

1. MANHOLE RIMS ARE TO BE FLUSH WITH PAVEMENT IN PAVED AREAS.
2. MANHOLE RIMS ON OUTFALL LINES ARE TO BE 18" ABOVE GROUND.
3. MANHOLE RIMS IN FUTURE STREETS ARE TO BE 48" ABOVE GROUND.



(REQUIRED WHERE DROP IN ELEVATION EXCEEDS 10 FEET.)

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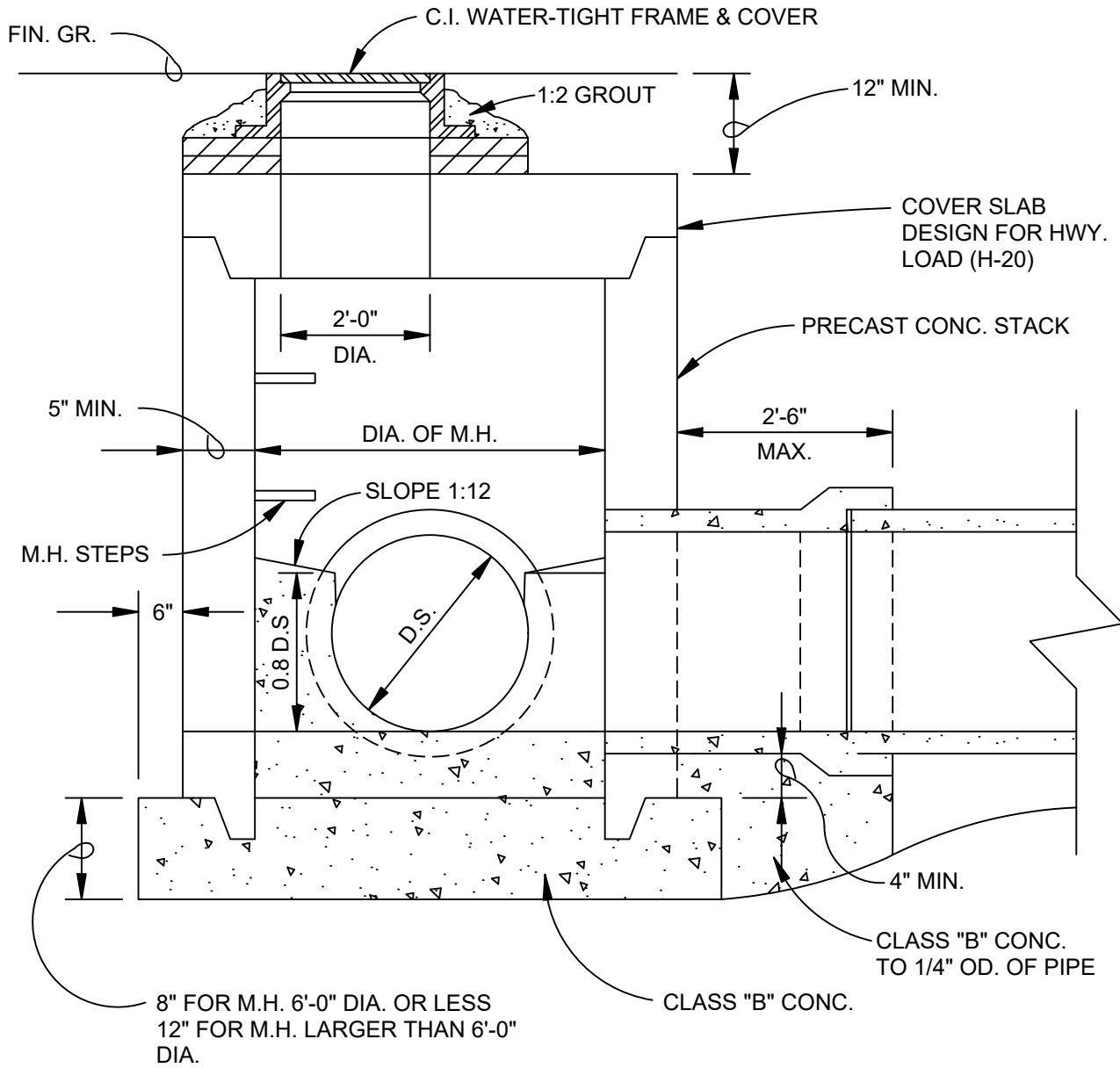


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AUTHORITY**

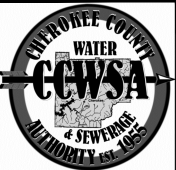
**Inside Drop
Manhole**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-03



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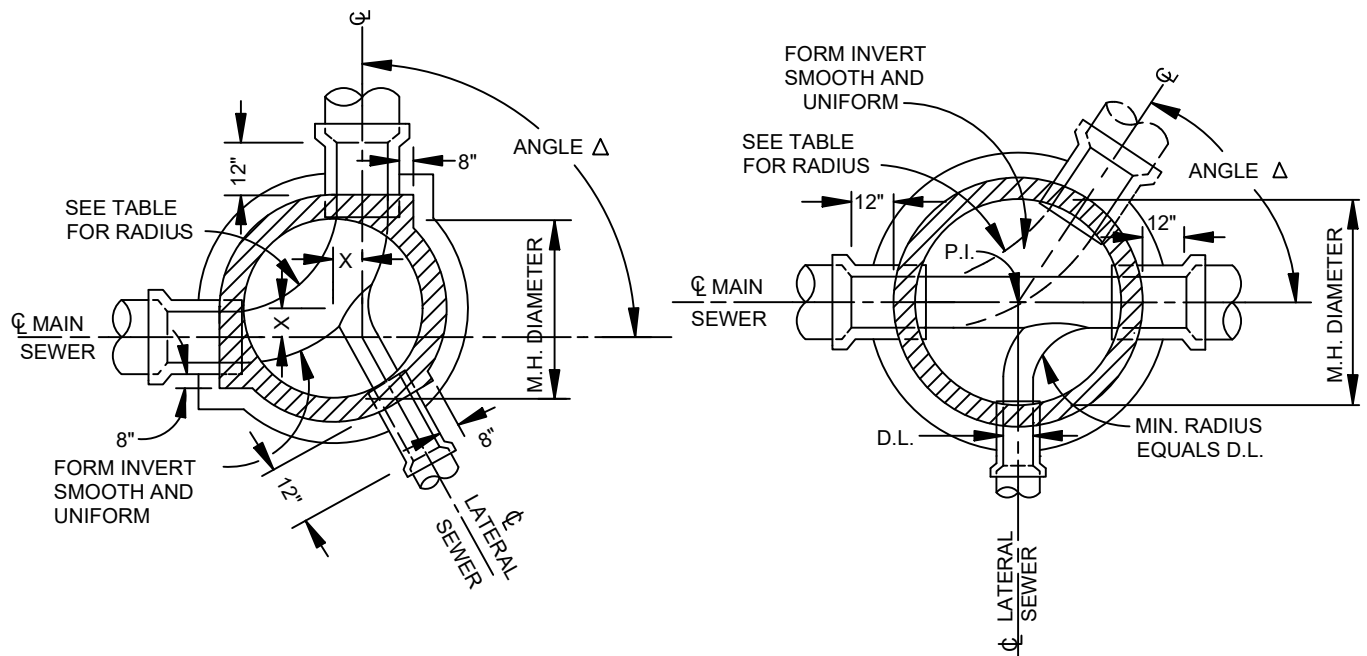


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**Shallow
Manhole**

CONSTRUCTION STANDARD

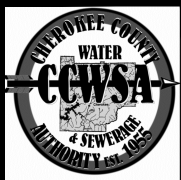
STANDARD
DETAIL
NO.
S-04



**STANDARD MANHOLE
SCHEDULE OF GOVERNING DIMENSIONS**

PIPE SIZE	ANGLE Δ	MANHOLE DIAMETER	"R"	"X"
8" TO 18"	0° TO 90°	4'-0"	2'-0"	0"
21" & 24"	0° TO 60°	4'-0"	2'-0"	6"
21" & 24"	60° TO 70°	5'-0"	2'-0"	6"
21" & 24"	70° TO 80°	5'-0"	2'-0"	7 1/2"
21" & 24"	80° TO 90°	5'-0"	2'-0"	10 1/2"
30" & 36"	0° TO 60°	5'-0"	3'-0"	8"
30" & 36"	60° TO 70°	6'-0"	3'-0"	10"
30" & 36"	70° TO 80°	6'-0"	3'-0"	13"
30" & 36"	80° TO 90°	6'-0"	3'-0"	16"
42"	0° TO 35°	6'-0"	3'-0"	3"
42"	35° TO 50°	6'-0"	6'-0"	6"
42"	50° TO 90°	7'-0"	6'-0"	0"
48" & 54"	0° TO 35°	6'-0" & 7'-0"	6'-0"	0"
48" & 54"	35° TO 90°	8'-0"	6'-0"	0"

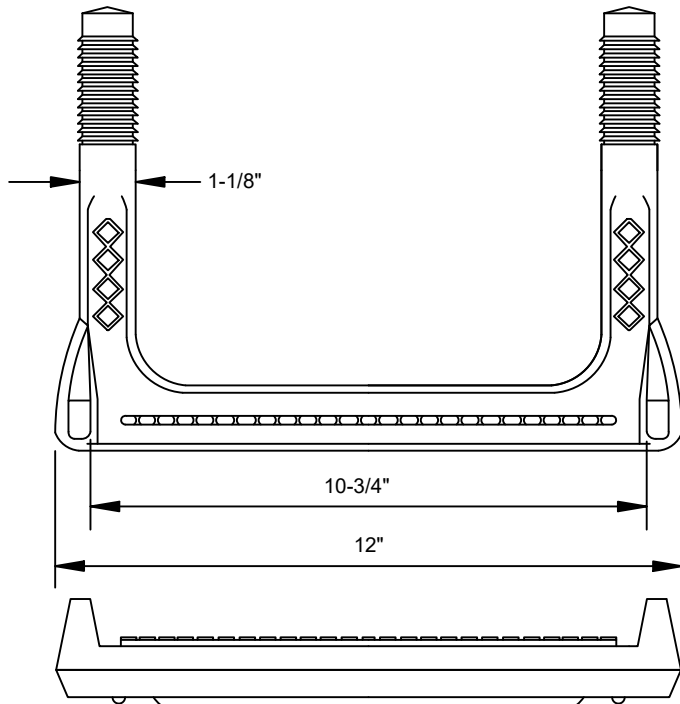
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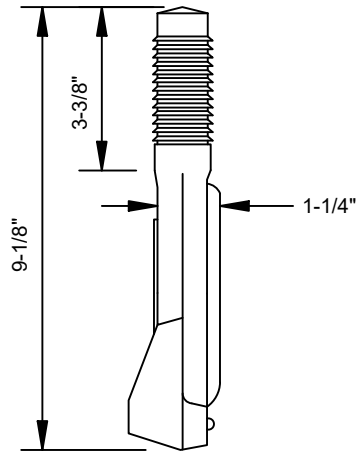
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AUTHORITY**

**Standard
Manhole Plans**
CONSTRUCTION STANDARD

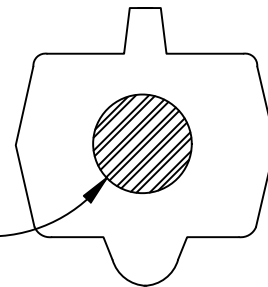
STANDARD
DETAIL
NO.
S-05



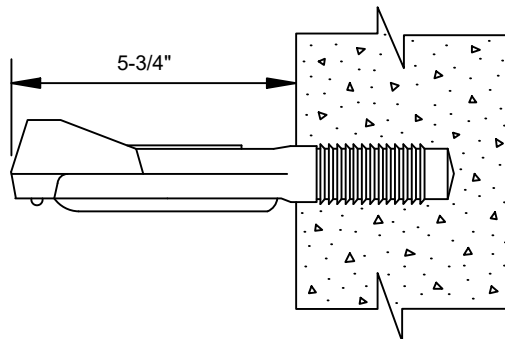
POLYPROPYLENE PLASTIC



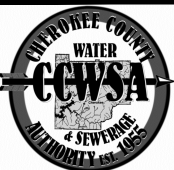
1/2" GRADE 60 STEEL REINFORCEMENT



SECTION



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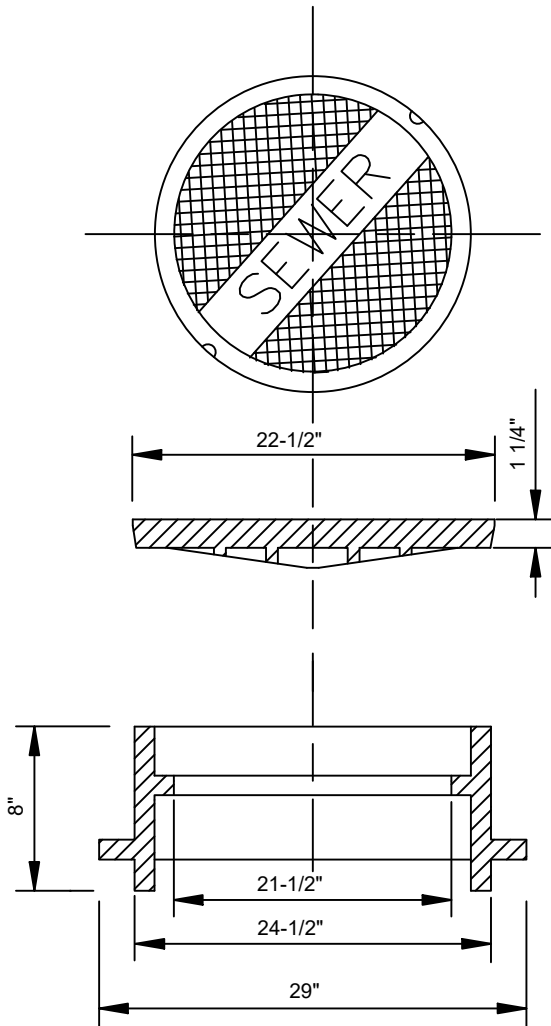


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AUTHORITY**

**Manhole
Step**

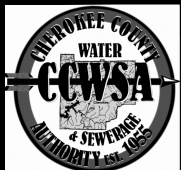
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-06



NOTE: PICK HOLES SHALL NOT PENETRATE THE COVER.

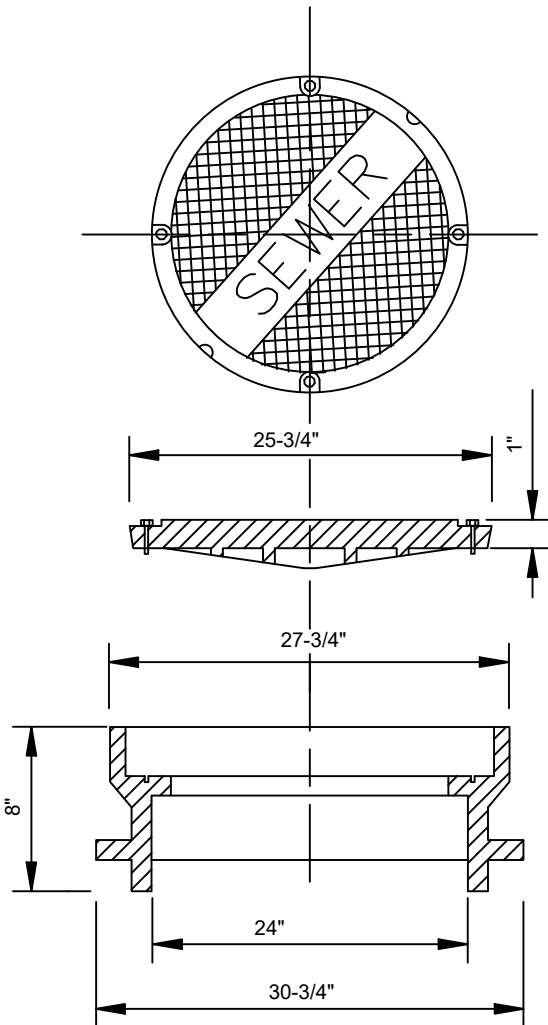
April 2018



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WATER & SEWERAGE
AUTHORITY**

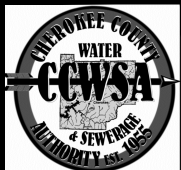
**Standard
Manhole
Frame & Cover**
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-07



NOTE: PICK HOLES SHALL NOT
PENETRATE THE COVER.

April 2018

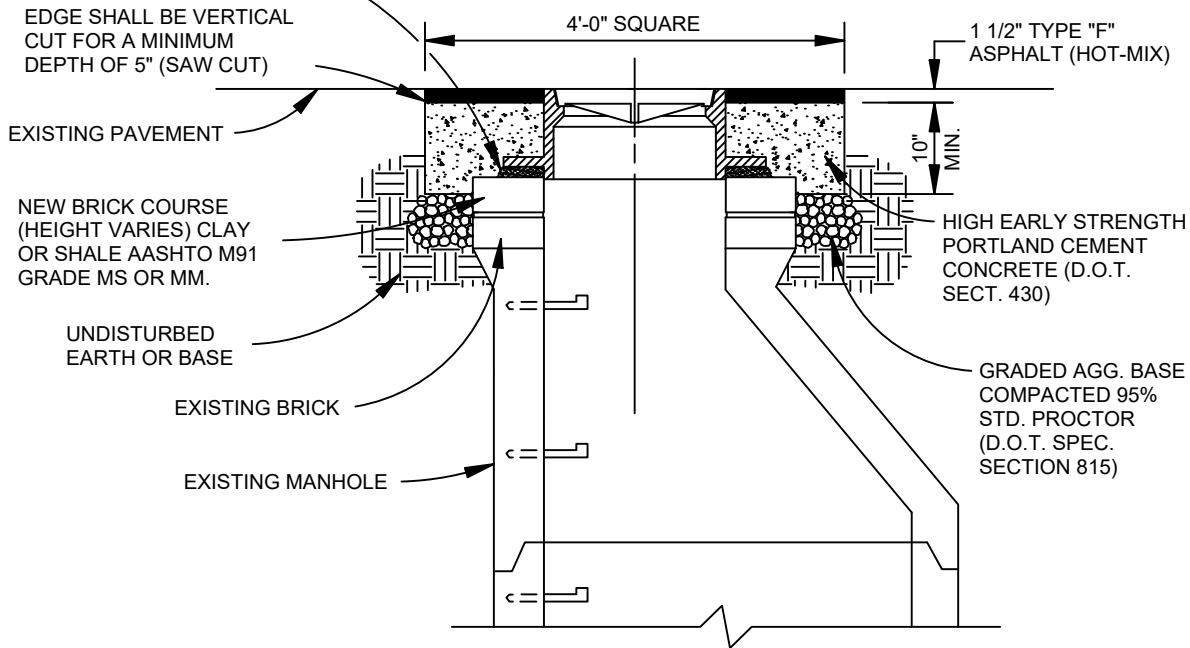


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Water-Tight
Manhole
Frame & Cover**
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-08

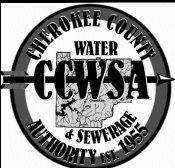
PLACE FOUR STEEL SHIMS (4" X 2") EQUALLY SPACED AROUND BOTTOM OF MH FRAME. THICKNESS SHALL BE AS REQUIRED TO MAKE COVER FLUSH WITH PAVEMENT. SURROUND SHIMS WITH CEMENT. WHEN THICKNESS IS LESS THAN 1/2", USE CONCRETE MORTAR INSTEAD. WHEN THICKNESS IS GREATER THAN 2", USE BRICKS. (NOT TO EXCEED 2 COURSES.)



NOTES:

1. PORTLAND CONCRETE FOR COLLAR SHALL BE A MIN. OF 10" THICK AND SHALL EXTEND FROM THE LAST FULL COURSE OF BRICK TO 1 1/2" BELOW THE EXISTING PAVEMENT.
2. THE CONTRACTOR HAS THE OPTION OF USING PORTLAND CONCRETE FOR THE FULL DEPTH (FROM THE ASPHALT TO UNDISTURBED EARTH) OR AS SHOWN ABOVE.
3. THE CONCRETE SHALL BE LEFT WITH A RAKED FINISH TO PROVIDE A ROUGH SURFACE FOR THE ASPHALT TO BOND TO BITUMINOUS TACK AND ASPHALT SHALL BE PLACED PER CURRENT D.O.T. SPECIFICATIONS.
4. STEEL PLATES MAY BE REQUIRED BY THE AUTHORITY IN HIGH TRAFFIC AREAS TO PROTECT THE FRESH CONCRETE FOR A MINIMUM OF 40 HOURS. IN THESE HIGH TRAFFIC AREAS BARRICADES, CONES, ETC. WILL NOT BE ALLOWED.
5. BEFORE WORKING IN AN AREA, THE CONTRACTOR SHALL NOTIFY THE AUTHORITY.

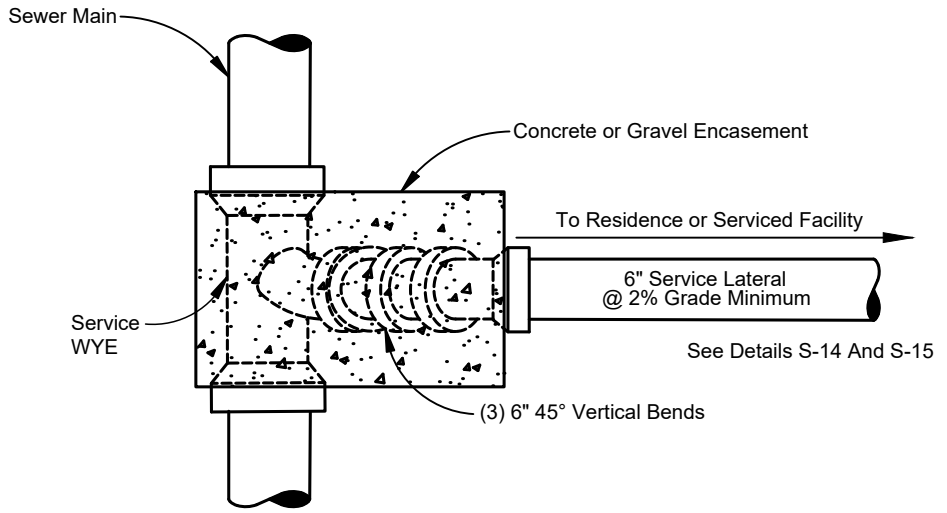
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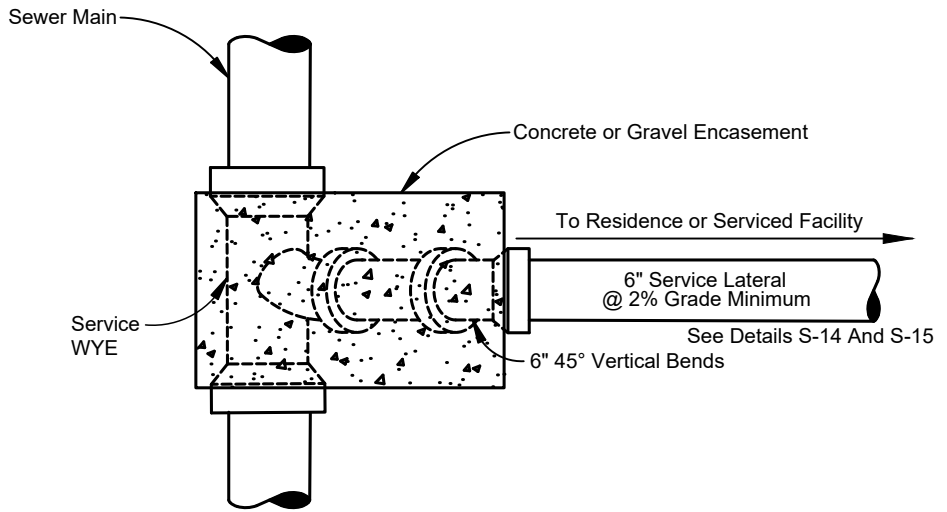
**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Manhole
Frame-Grade
Adjustment**
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-09



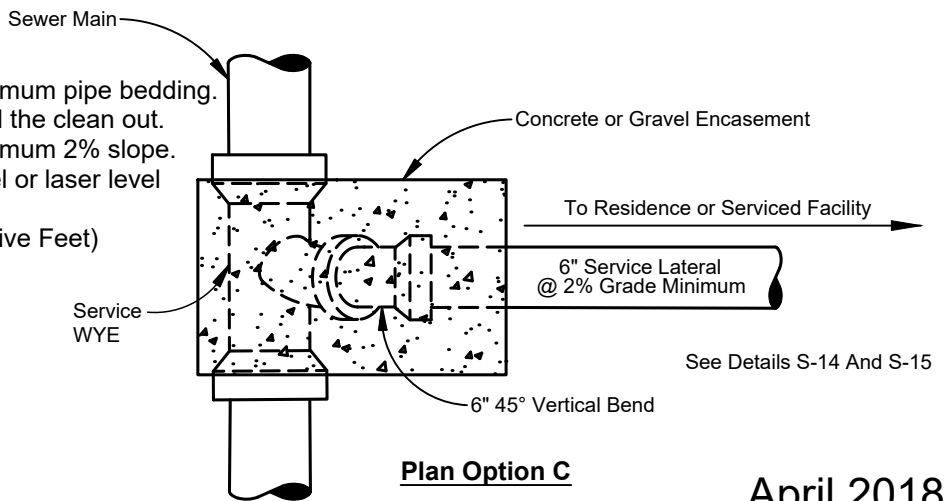
Plan Option A



Plan Option B

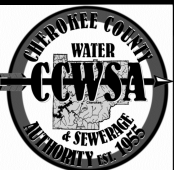
Note:

- 1.) All sewer laterals shall have minimum pipe bedding. From sewer main to 1'-6" beyond the clean out.
- 2.) All sewer laterals shall have minimum 2% slope. Contractor must use a slope level or laser level when installing all laterals.
- 3.) No Structure shall be within 5' (Five Feet) of Clean Out.



Plan Option C

April 2018



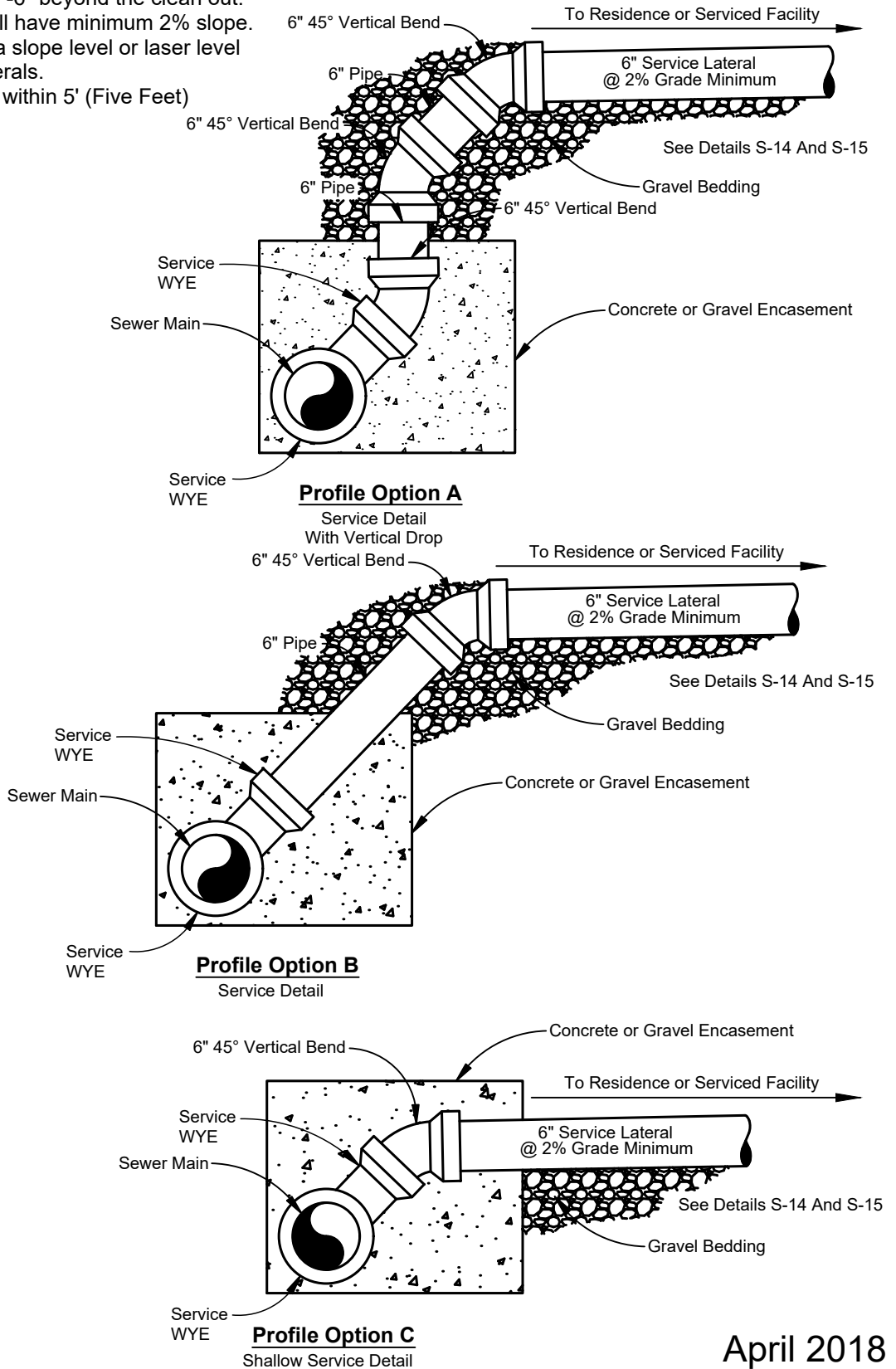
**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Sewer Service
Location Plans**
CONSTRUCTION STANDARD

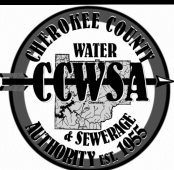
STANDARD
DETAIL
NO.
S-10

Note:

- 1.) All sewer laterals shall have minimum pipe bedding.
From sewer main to 1'-6" beyond the clean out.
- 2.) All sewer laterals shall have minimum 2% slope.
Contractor must use a slope level or laser level
when installing all laterals.
- 3.) No Structure shall be within 5' (Five Feet)
of Clean Out.



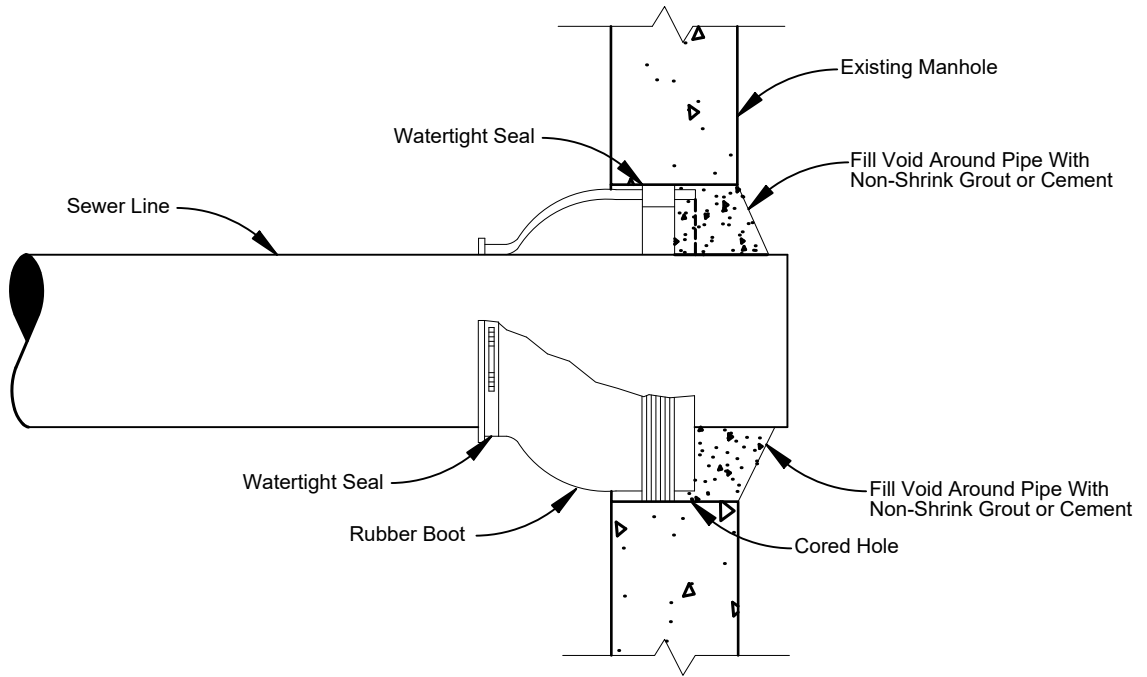
April 2018



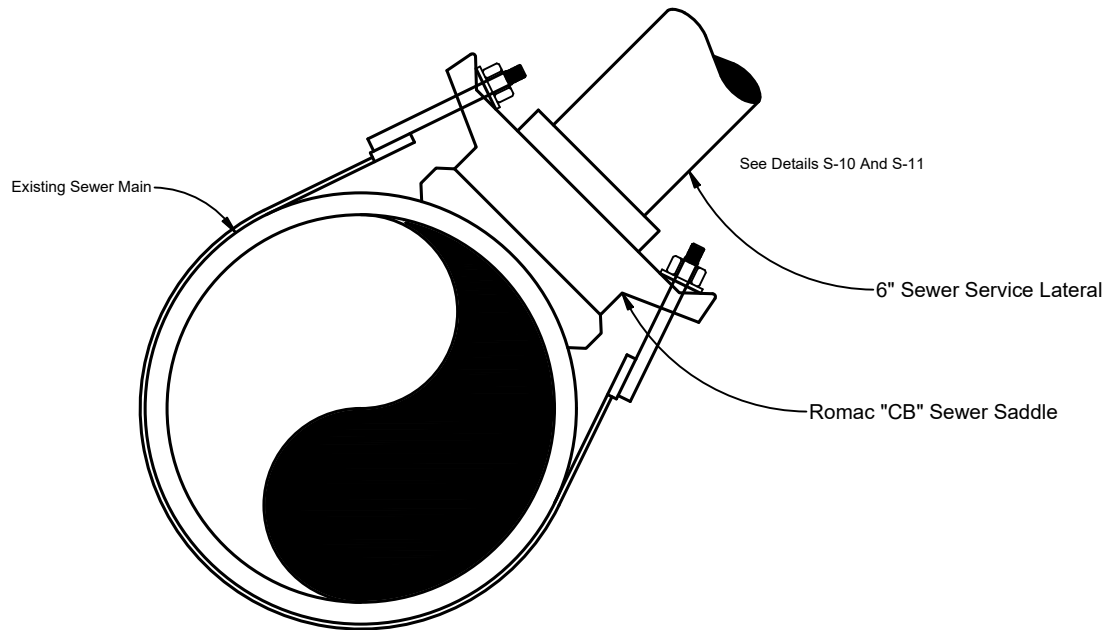
**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Sewer Service
Location Profiles**
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-11

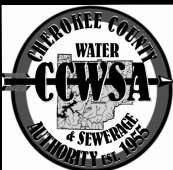


Core and Boot



Existing Sewer Main Tap

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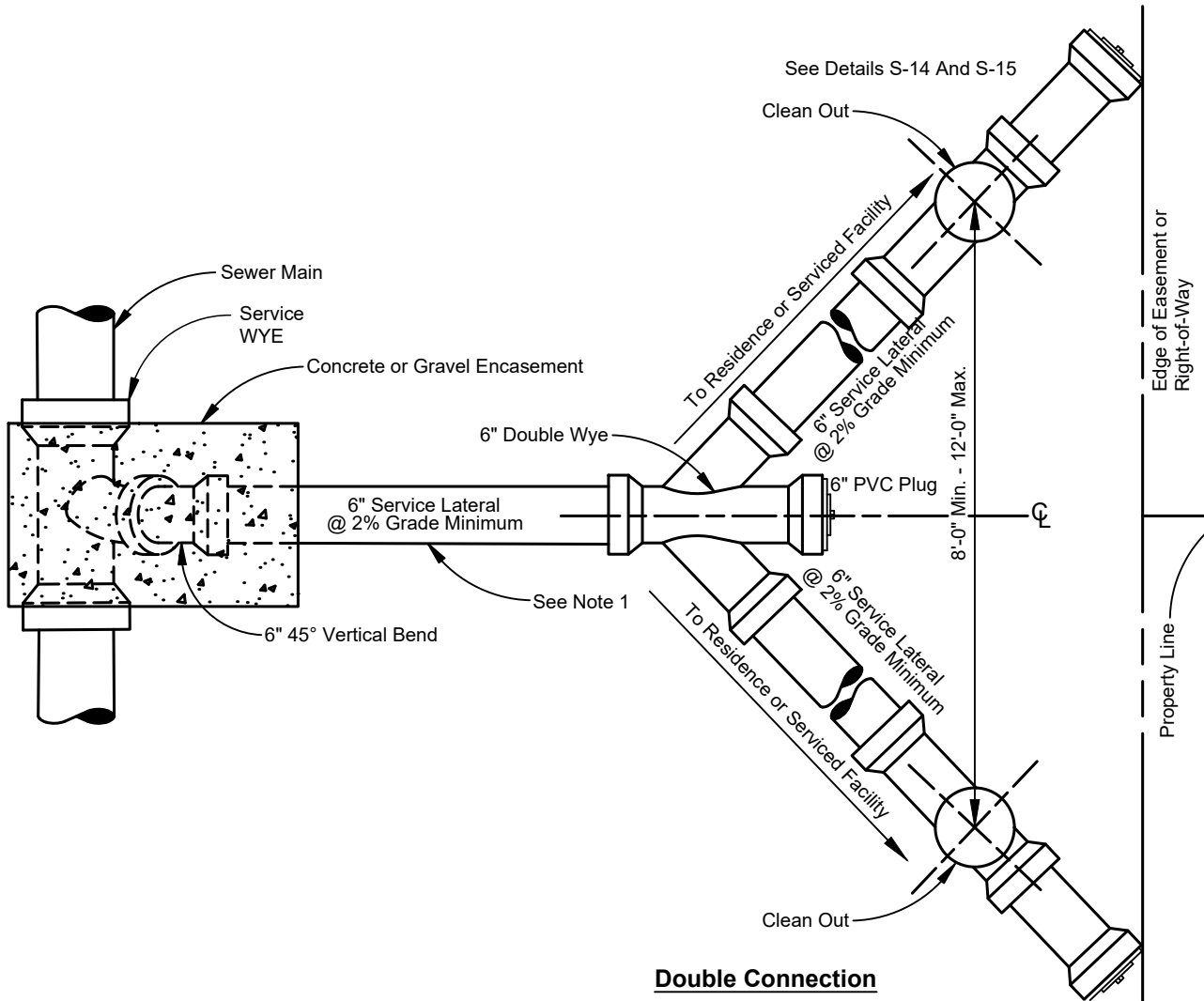


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Sewer Service
Lateral Connection**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-12



Double Connection

SEWER CLEANOUT SHALL NOT BE OUTSIDE THE R/W OR EASEMENT.

- Note:
- 1.) 6" Double WYE shall be centered on property line.
 - 2.) All sewer laterals shall have minimum pipe bedding. From sewer main to 1'-6" beyond the clean out.
 - 3.) All sewer laterals shall have minimum 2% slope. Contractor must use a slope level or laser level when installing all laterals.
 - 4.) No Structure shall be within 5' (Five Feet) of Clean Out.

See Details S-14 And S-15

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**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Sewer Service
Double Lateral**
CONSTRUCTION STANDARD

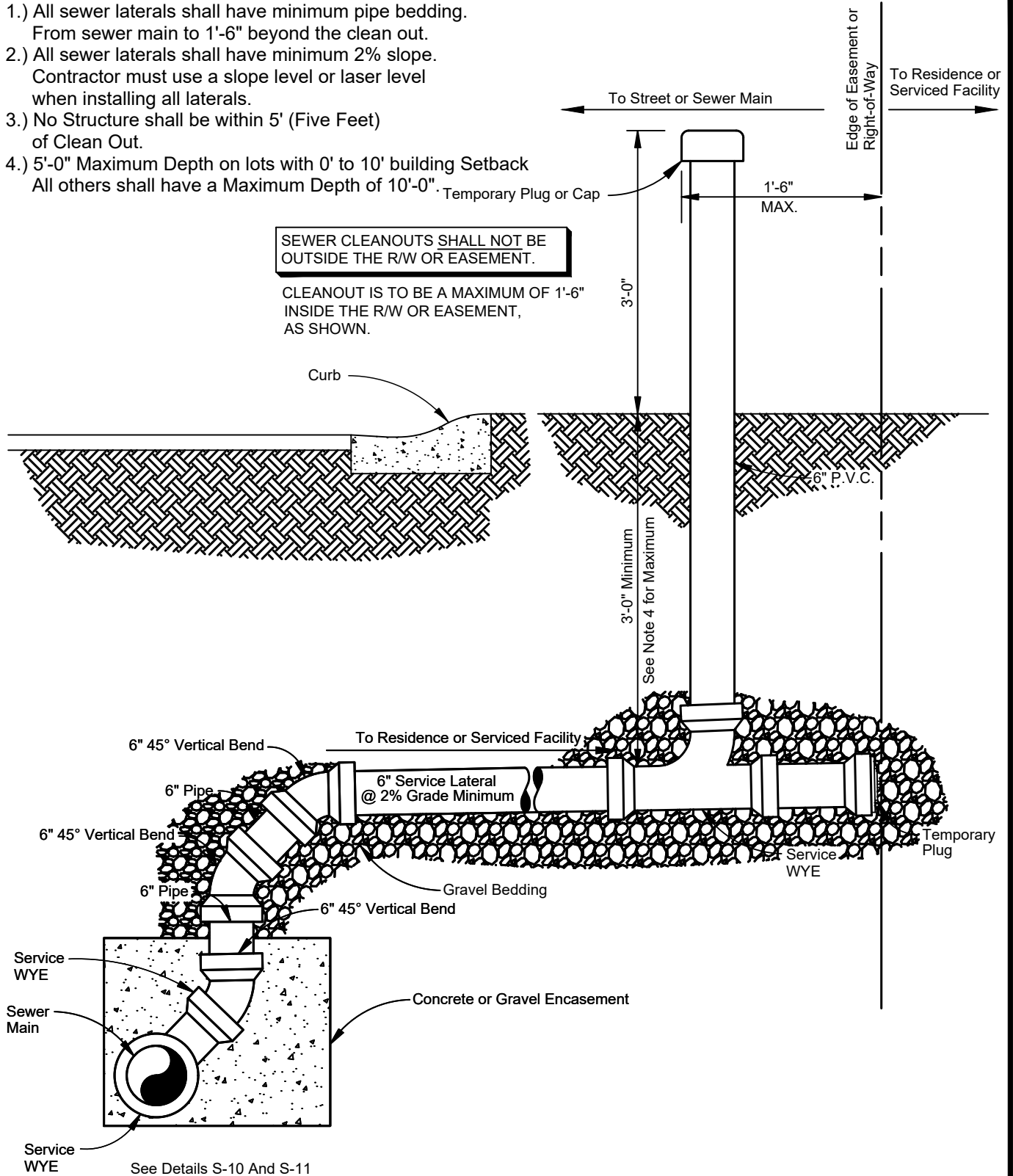
STANDARD
DETAIL
NO.
S-13

Note:

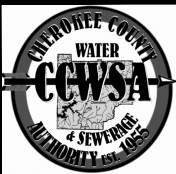
- 1.) All sewer laterals shall have minimum pipe bedding.
From sewer main to 1'-6" beyond the clean out.
- 2.) All sewer laterals shall have minimum 2% slope.
Contractor must use a slope level or laser level when installing all laterals.
- 3.) No Structure shall be within 5' (Five Feet) of Clean Out.
- 4.) 5'-0" Maximum Depth on lots with 0' to 10' building Setback
All others shall have a Maximum Depth of 10'-0".

SEWER CLEANOUTS SHALL NOT BE OUTSIDE THE R/W OR EASEMENT.

CLEANOUT IS TO BE A MAXIMUM OF 1'-6" INSIDE THE R/W OR EASEMENT, AS SHOWN.



April 2018



**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Sewer Service
Location**
(BY SEWER CONTRACTOR)
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-14

Note:

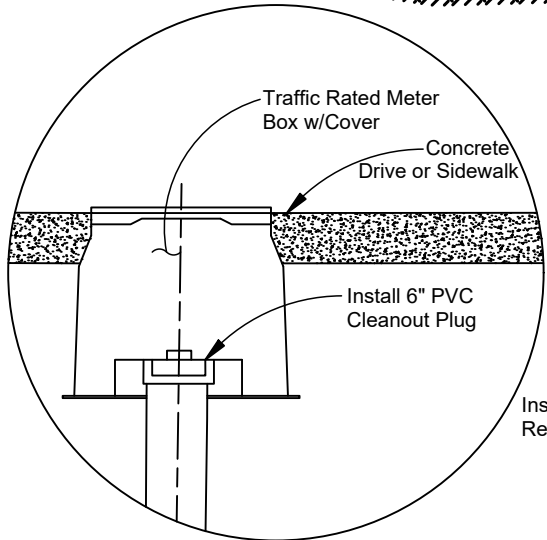
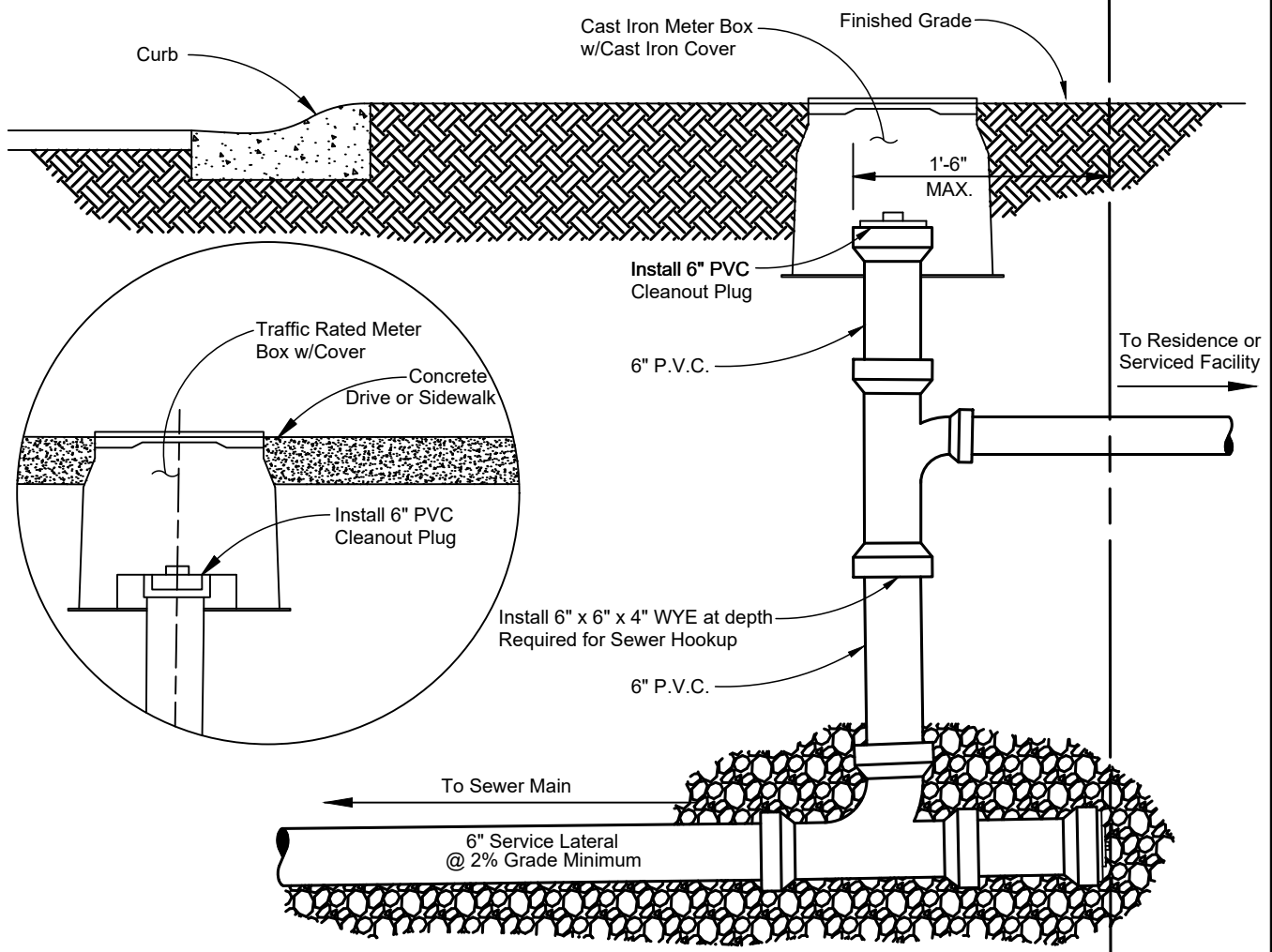
- 1.) If Cleanout is located in driveway or sidewalk. Lid shall be traffic rated.
- 2.) Cleanout shall be supported with compacted soil, gravel, etc. to keep top of box from settling below finished grade.
- 3.) No Structure shall be within 5' (Five Feet) of Clean Out.
- 4.) All sewer laterals shall have minimum pipe bedding. From sewer main to 1'-6" beyond the clean out.
- 5.) All sewer laterals shall have minimum 2% slope. Contractor must use a slope level or laser level when installing all laterals.

← To Street or Sewer Main

Edge of Easement or Right-of-Way

SEWER CLEANOUT SHALL NOT BE OUTSIDE THE R/W OR EASEMENT.

CLEANOUT IS TO BE A MAXIMUM OF 1'-6" INSIDE THE R/W OR EASEMENT, AS SHOWN.



See Details S-10 And S-11

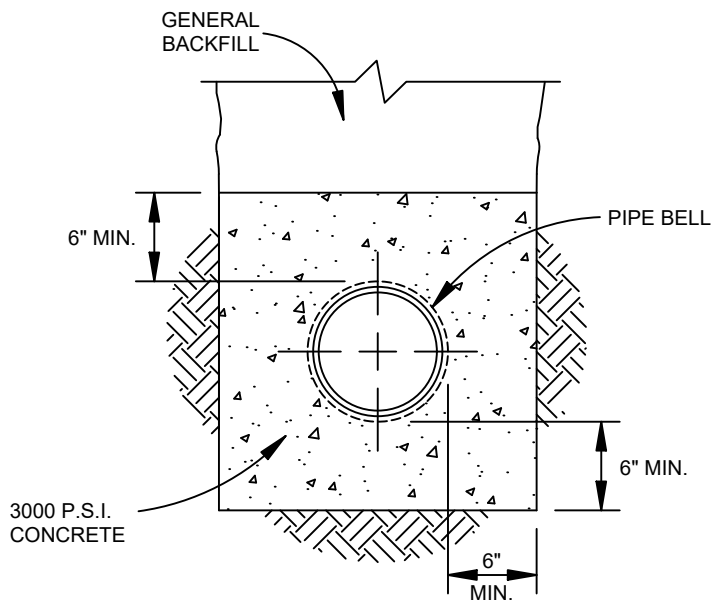
April 2018



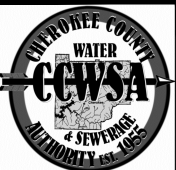
**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Cleanout
Detail**
(BY BUILDER)
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-15



April 2018

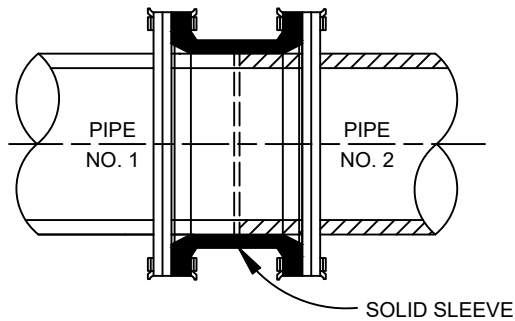


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Concrete
Encasement**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-16

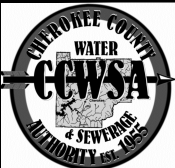


PIPE ADAPTER
JOINING DIFFERENT TYPES OF PIPE

NOTES:

1. FOR PIPE CONNECTIONS UP TO 12", USE A HARCO ADAPTER.
2. FOR PIPE CONNECTIONS GREATER THAN 12", USE A SOLID SLEEVE.
3. WHERE THE REQUIRED PIPE SIZES ARE DIFFERENT, INSTALL ONE SIZE OF D.I.P. FROM MANHOLE TO MANHOLE.

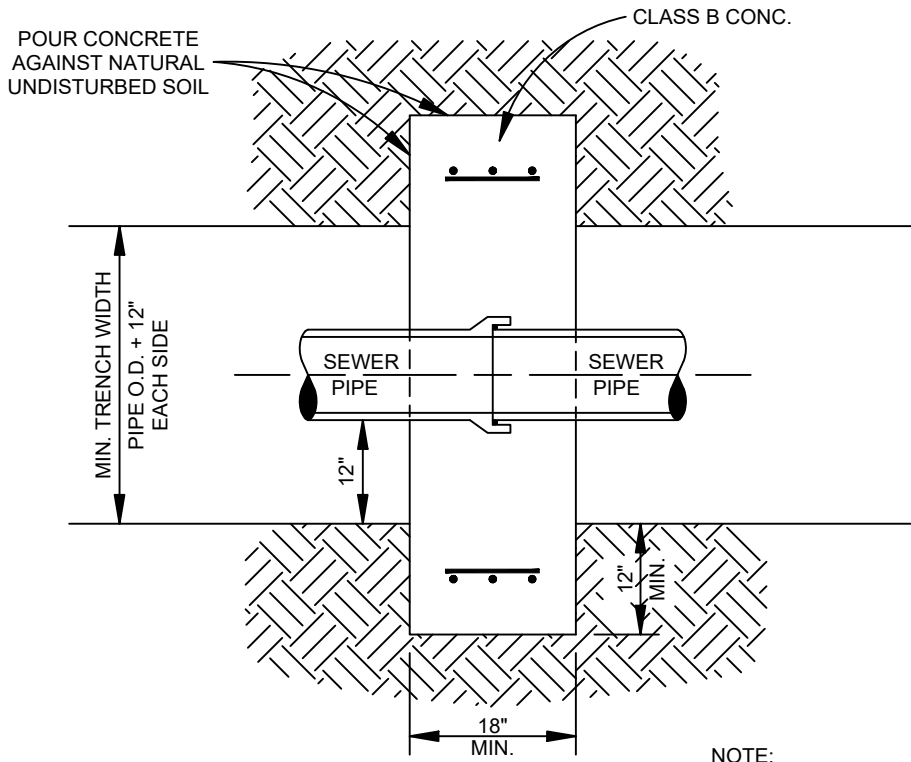
April 2018



CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY

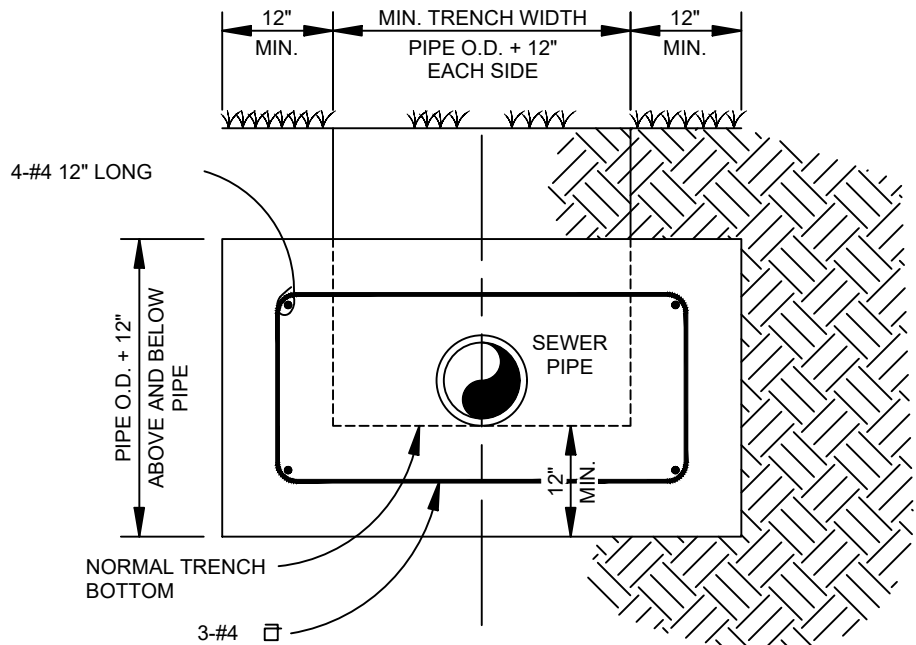
Typical
Pipe Adapter
 CONSTRUCTION STANDARD

STANDARD
 DETAIL
 NO.
S-17



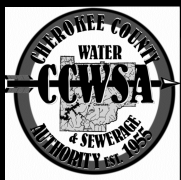
PLAN

NOTE:
1. COLLAR REQUIRED AT EVERY PIPE JOINT.



SECTION

April 2018

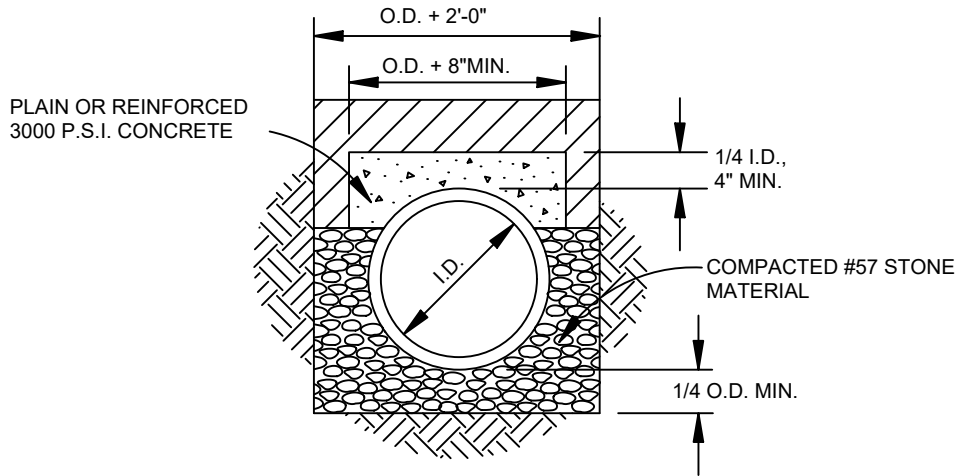


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AUTHORITY**

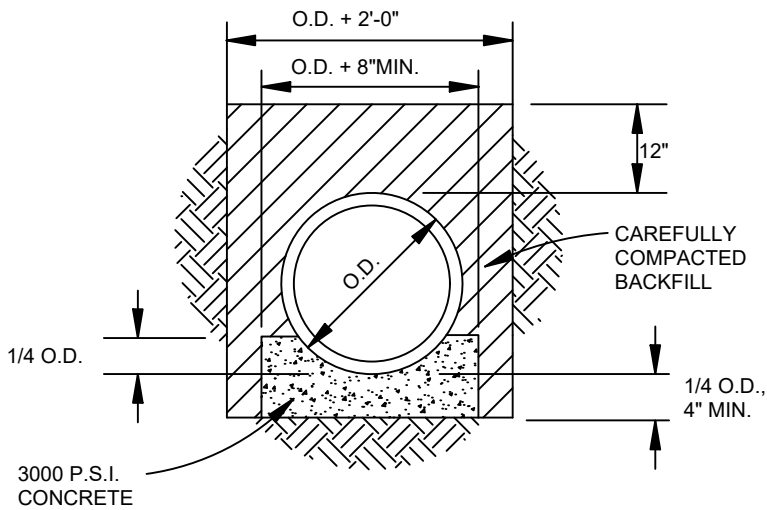
**Sewer Pipe Anchor
Slopes 20% or more**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-18

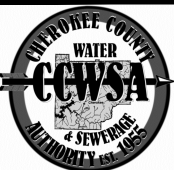


CONCRETE ARCH



CONCRETE CRADLE

April 2018

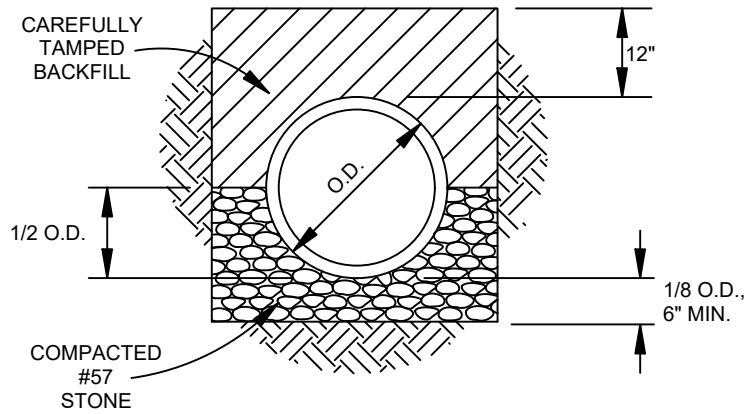


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Pipe Class "A"
Bedding**

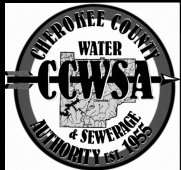
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-19



**COMPACTED GRANULAR BEDDING
LOAD FACTOR 1.9**

April 2018

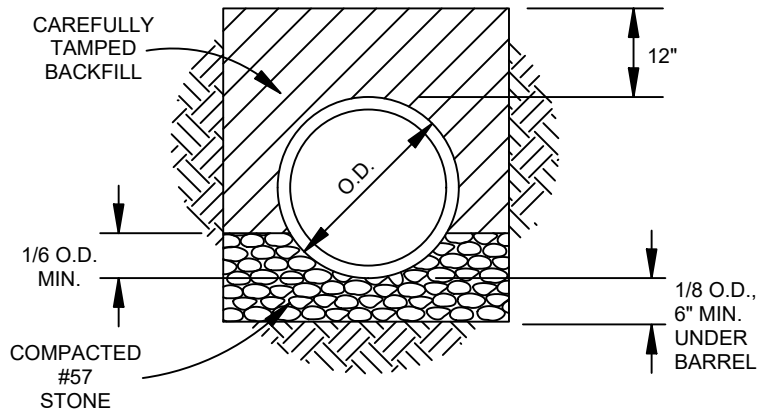


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Pipe Class "B"
Bedding**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-20



**GRANULAR BEDDING
LOAD FACTOR 1.5**

April 2018

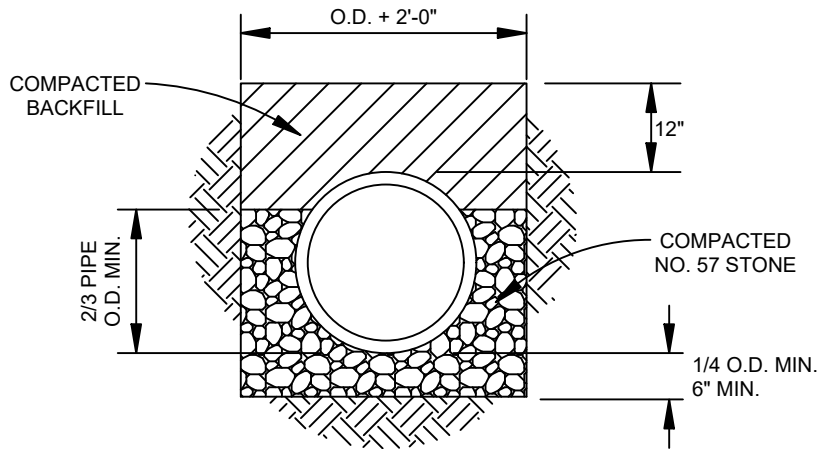


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Pipe Class "C"
Bedding**

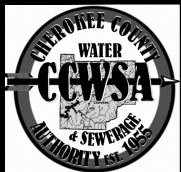
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-21



NOTE: IF PVC SANITARY SEWER LINE IS CONSTRUCTED IN 100 YEAR FLOOD PLAIN OR BELOW GROUNDWATER TABLE, COMPACTED CLASS 1 MATERIAL IS REQUIRED TO THE TOP OF THE PIPE.

April 2018

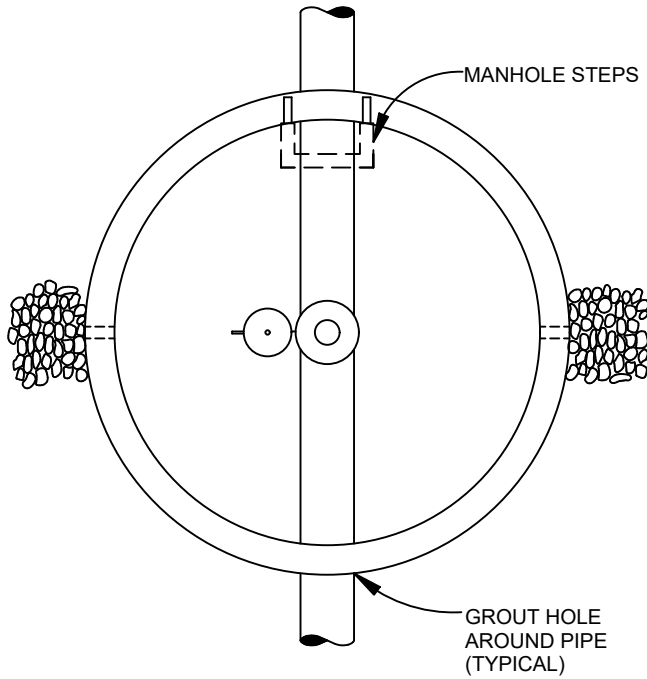


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Minimum P.V.C.
Pipe Bedding**

CONSTRUCTION STANDARD

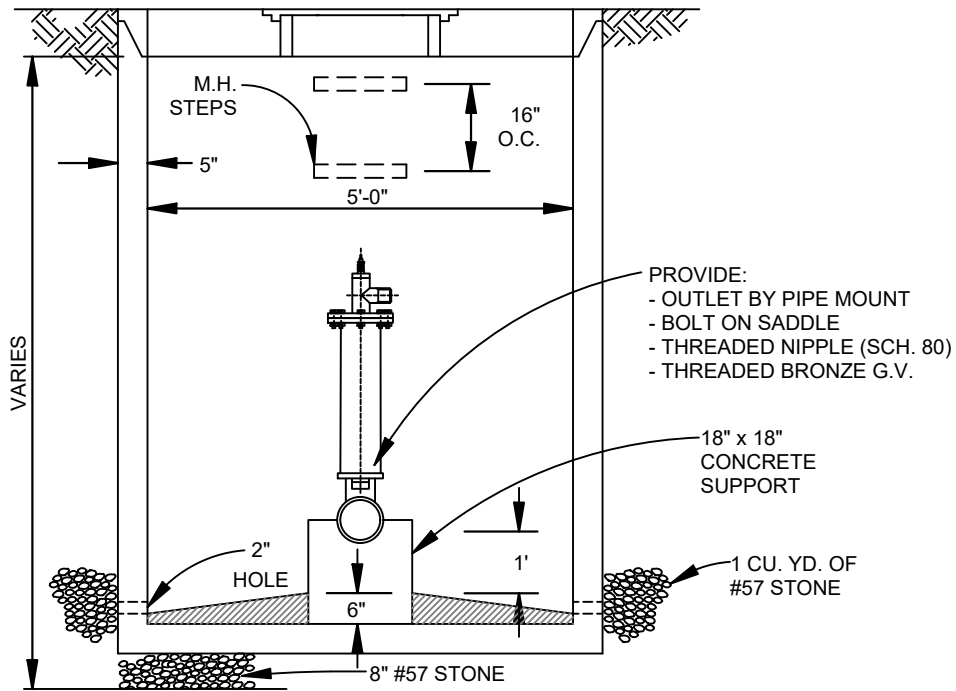
STANDARD
DETAIL
NO.
S-22



PLAN

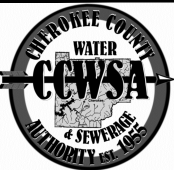
NOTES:

1. NO PIPE JOINTS ALLOWED WITHIN MANHOLE.
2. ALL MANHOLES IN ROAD RIGHT-OF-WAY SHALL BE FLUSH WITH GRADE



SECTION

April 2018

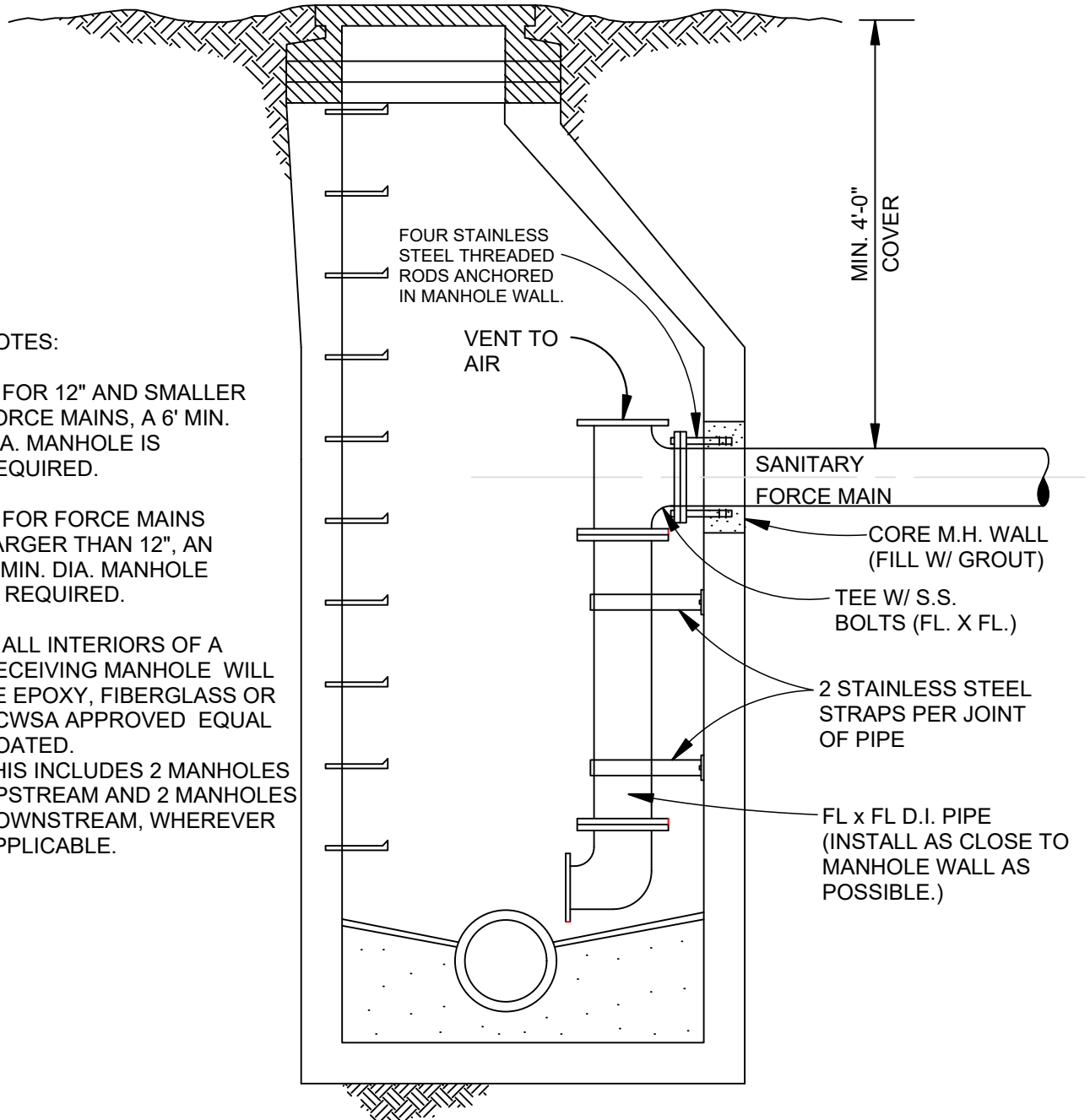


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Sewer Air & Vacuum
Valve Assembly**

CONSTRUCTION STANDARD

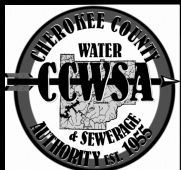
STANDARD
DETAIL
NO.
S-23



NOTES:

1. FOR 12" AND SMALLER FORCE MAINS, A 6' MIN. DIA. MANHOLE IS REQUIRED.
2. FOR FORCE MAINS LARGER THAN 12", AN 8' MIN. DIA. MANHOLE IS REQUIRED.
3. ALL INTERIORS OF A RECEIVING MANHOLE WILL BE EPOXY, FIBERGLASS OR CCWSA APPROVED EQUAL COATED. THIS INCLUDES 2 MANHOLES UPSTREAM AND 2 MANHOLES DOWNSTREAM, WHEREVER APPLICABLE.

April 2018



**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

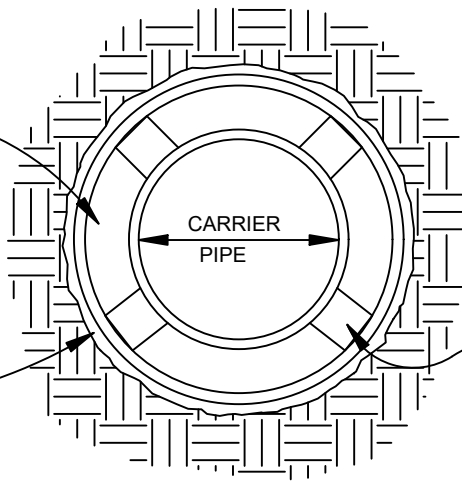
**Force Main Connection
To Manhole**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-24

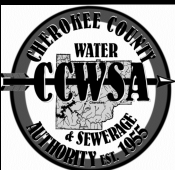
GROUT ANNULAR SPACE
BETWEEN CARRIER PIPE
AND LINER

GROUT BETWEEN
EARTH AND CASING



CASING SPACERS SHALL BE
INSTALLED TO SECURE THE
PIPE AT THE PROPER
GRADE AND ELEVATION
THROUGHOUT THE CASING
AND TO PREVENT MOVEMENT
OF THE PIPE DURING GROUTING.

April 2018

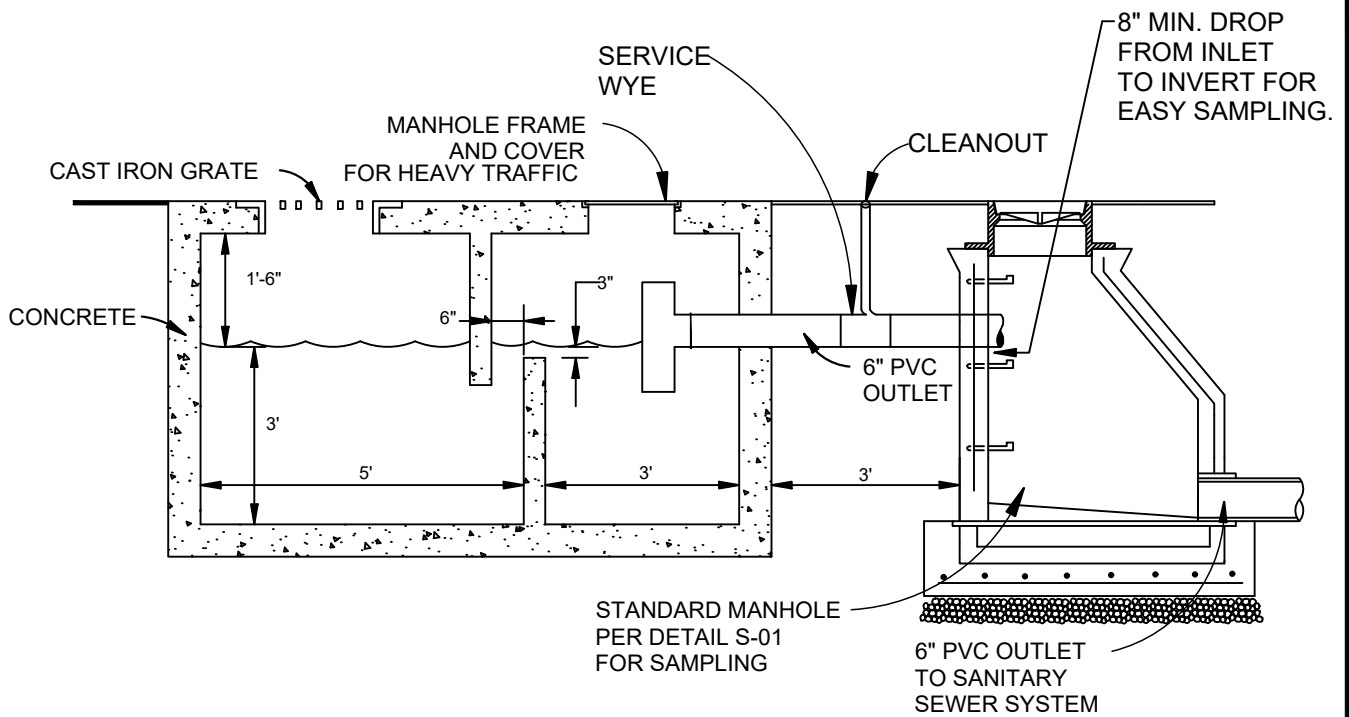


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Sewer Casing
Spacer**

CONSTRUCTION STANDARD

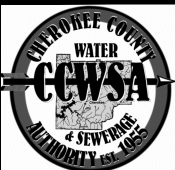
STANDARD
DETAIL
NO.
S-25



MINIMUM SIZE: 1,500 GALLONS

NOTE:
 SIZE AND DIMENSIONS OF COMBINATION SAND/OIL TRAP AND PIPING
 DEPENDENT ON QUANTITY OF FLOW. DESIGN ENGINEER
 SHALL SUBMIT CALCULATIONS TO SUPPORT DESIGN SIZE.

April 2018



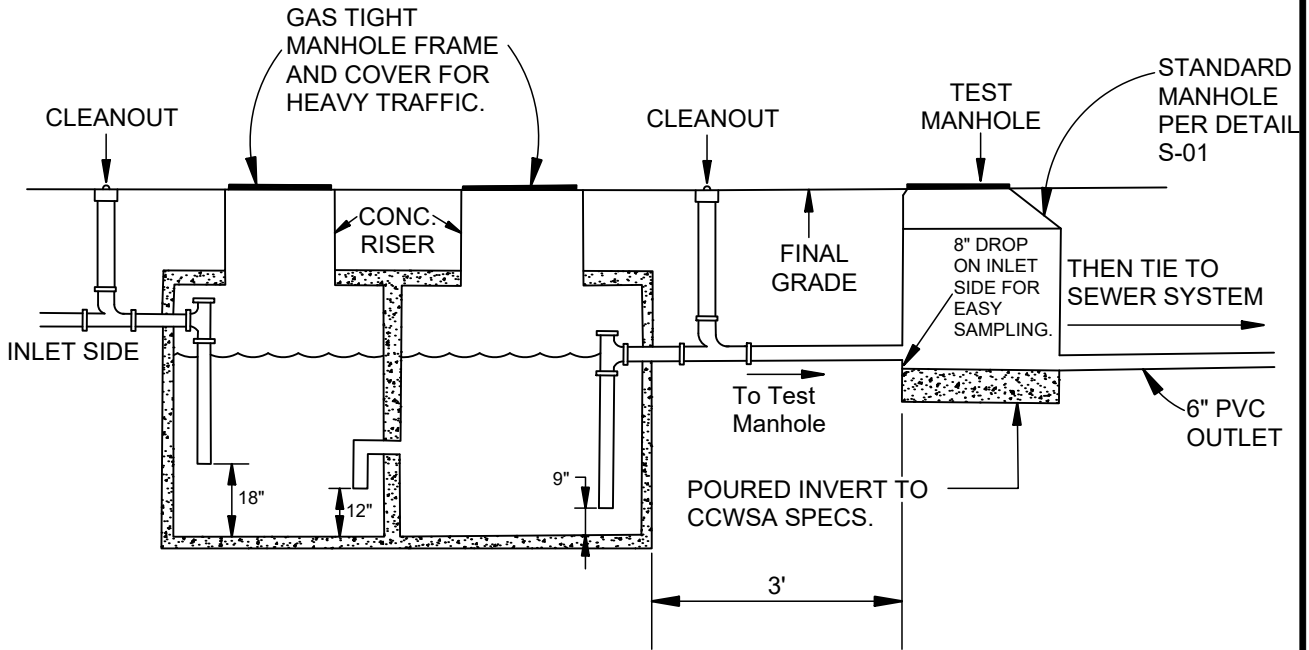
**CHEROKEE COUNTY
 WATER & SEWERAGE
 AUTHORITY**

**Typical Combination
 Sand/Oil Trap**

CONSTRUCTION STANDARD

STANDARD
 DETAIL
 NO.
S-26

CCWSA STANDARD 1500 GALLON GREASE TRAP



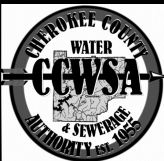
NOTES:

1. MIN. OF 4" P.V.C. Piping From Business To Test Manhole.
2. MIN. SIZE: 1,500 GALLONS

Eating establishments/restaurants shall have a 1500 gallon grease trap for an occupancy of 75 seats or less. Eating establishments/restaurants shall have two (2) 1500 gallon grease traps in series for an occupancy of 76 seats or more. The Authority shall determine the size(s) and the number of grease traps for establishments/restaurants with more than 150 seats or 150 person occupancy. All grease traps shall be installed according to the Authority's Typical Grease Trap Detail. Authority approval shall be required for any connection varying from this.

3. Size And Dimensions of Grease Trap and Piping dependent on Flow from Restaurant. Designer shall submit Calculations to Support Design Size.
4. Only The Flow From The Grease Trap is Allowed To Enter The Test Manhole.
5. All Dumpsters Must be routed through the Inlet Side of The Grease Trap.
6. No Restroom Sewerage is Allowed to Flow Through the Grease Trap.

April 2018



**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

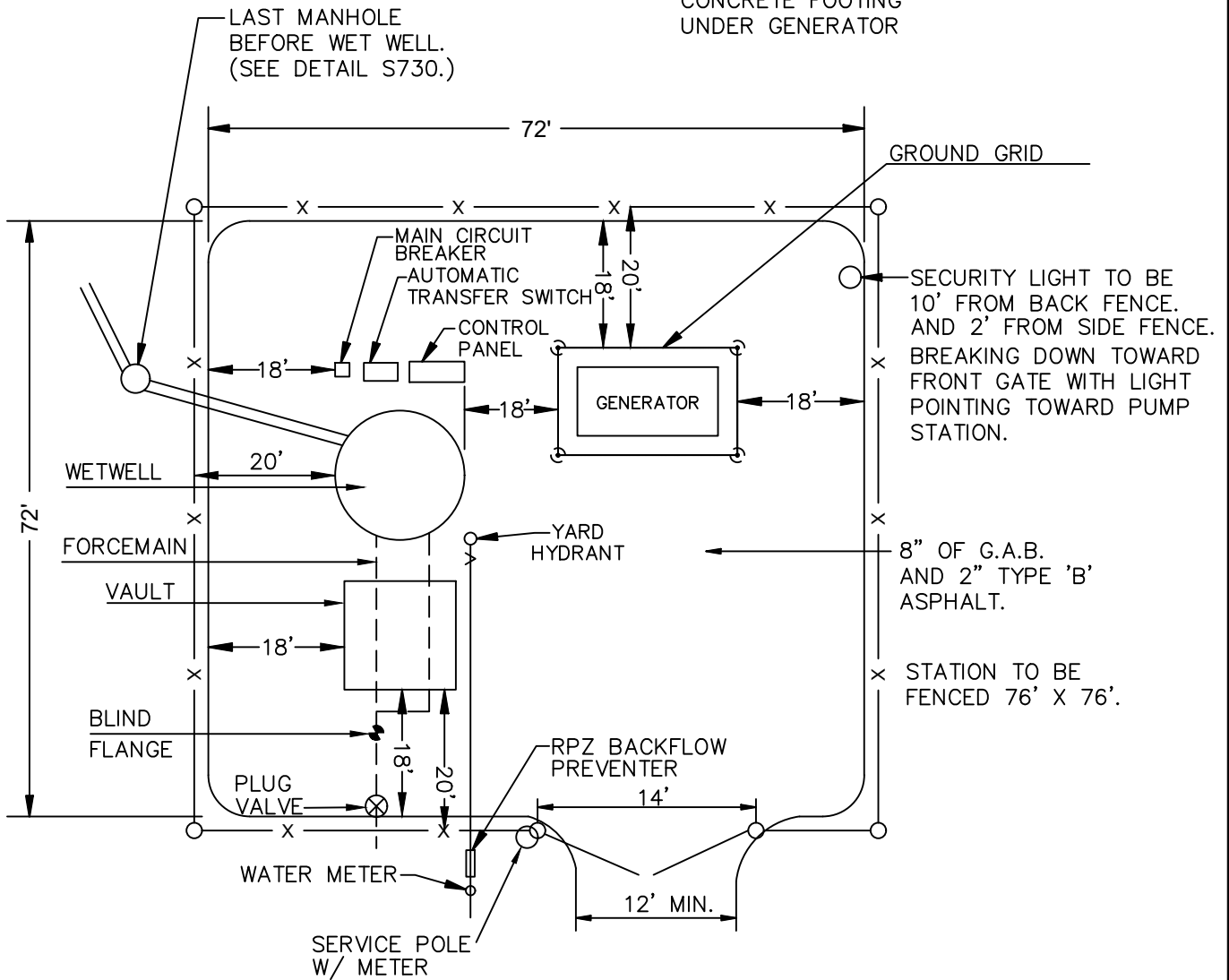
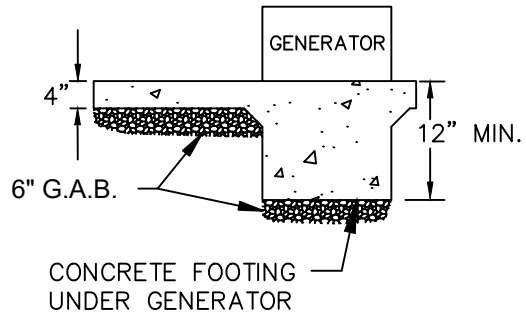
**Typical
Grease Trap**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-27

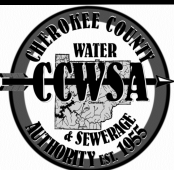
NOTES:

1. FLOOR OF CHECK VALVE VAULT TO BE SLOPED TO DRAIN WET WELL.
2. FLOOR DRAIN SHALL HAVE P-TRAP TO BLOCK GASES FROM WET WELL.
3. GENERATOR AND CONTROL PANEL TO BE FIELD LOCATED BY CCWSA.



NOTE: THIS IS A GENERAL SCHEMATIC LAYOUT. LOCATIONS MAY VARY ACCORDING TO EQUIPMENT SIZE AND SITE REQUIREMENTS. NEED TO BE ABLE TO GET A TRUCK ON BOTH SIDES OF WET WELL AND GENERATOR. FOR DETAILED REQUIREMENTS, SEE SECTION S-400 OF SANITARY SEWER STANDARDS.

April 2018

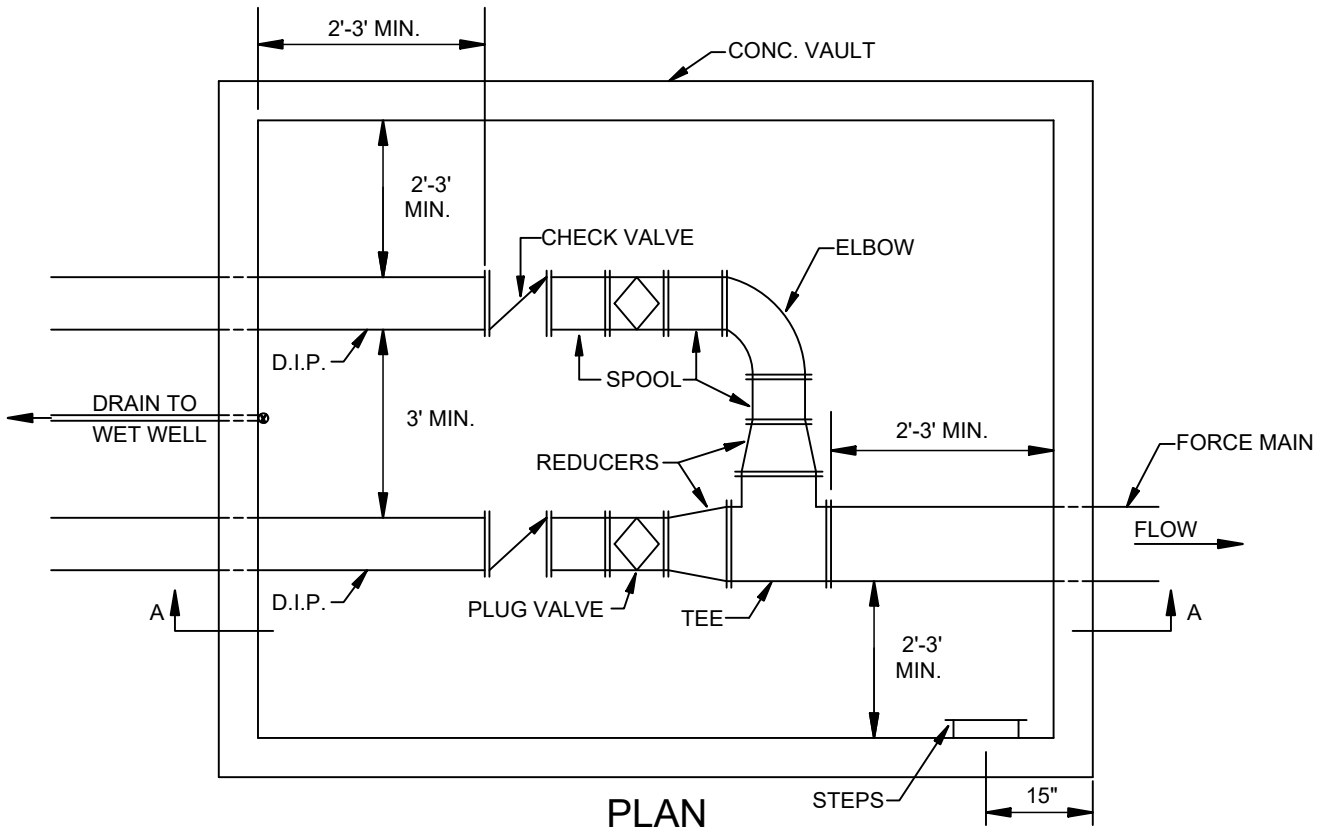


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

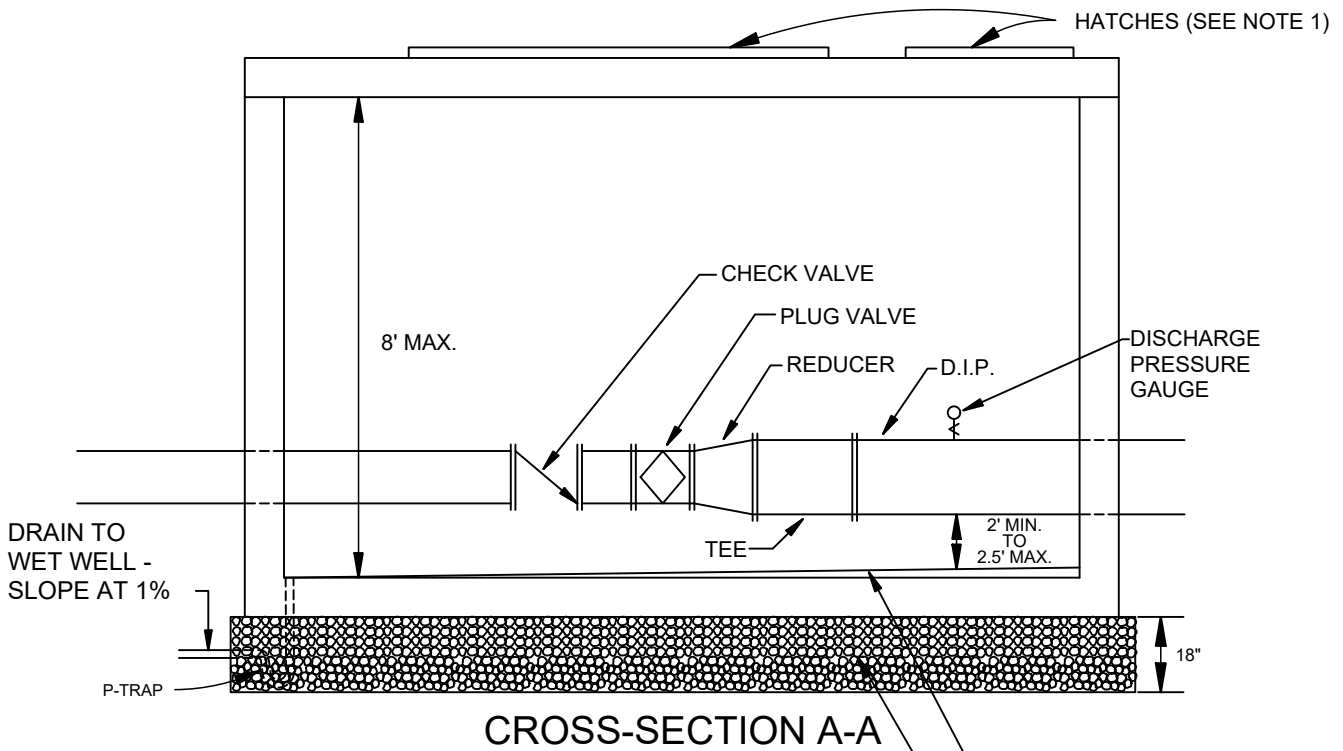
**Lift Station Site
Layout Plan**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-28



PLAN



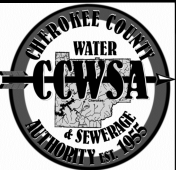
CROSS-SECTION A-A

- NOTES:
1. HATCH OPENINGS INTO VAULT SHALL BE APPROVED BY THE CCWSA.
 2. PIPE SUPPORTS REQ'D. UNDER ALL VALVES, TEES AND BENDS.
 3. ALL VALVES AND FITTINGS SHALL BE FL. X FL.
 4. SURGE RELIEF VALVE MAY BE REQ'D. DOWNSTREAM OF THE TEE DEPENDING UPON OPERATING PRESSURE OF THE SYSTEM.

GROUT SLOPE AT 2%

#57 STONE
NON-YIELDING
FOUNDATION

April 2018

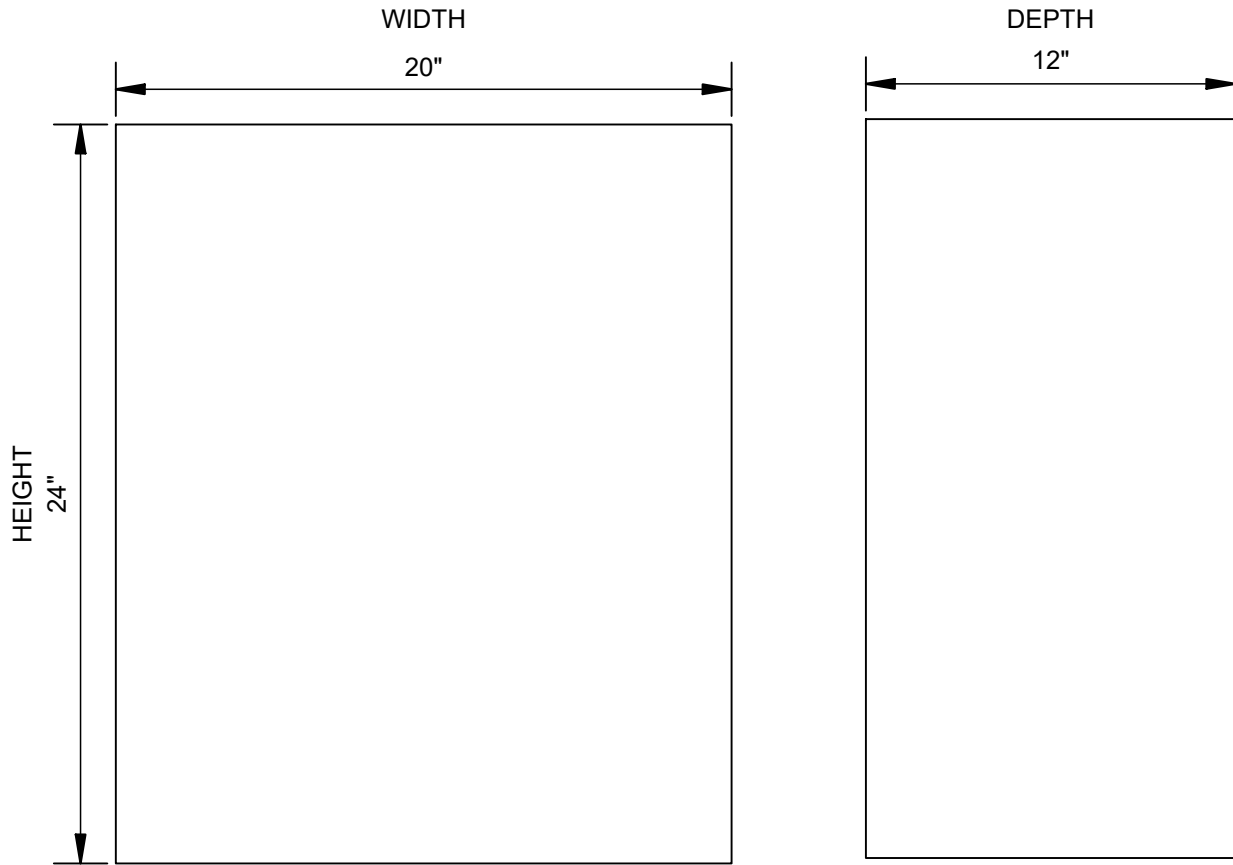


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Lift Station
Valve Pit**

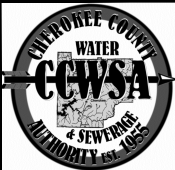
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-29



ROOM NEEDED IN CONTROL PANEL FOR SCADA

April 2018



**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**SCADA
RTU Panel**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
S-30

GROUND CONDUCTOR
IN 3/4" CONDUIT.
SIZE PER N.E.C.

#2 BARE STRANDED COPPER
CONDUCTOR (TYPICAL)

TO MAIN
CIRCUIT
BREAKER
ENCLOSURE

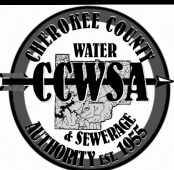
GENERATOR
ON CONCRETE
PAD

GROUND GRID 24"
BELOW GRADE

3/4"Øx10'
COPPERWELD
GROUND ROD
(TYP. FOR 4)

CADWELD ALL
CONNECTIONS (TYP.)

April 2018

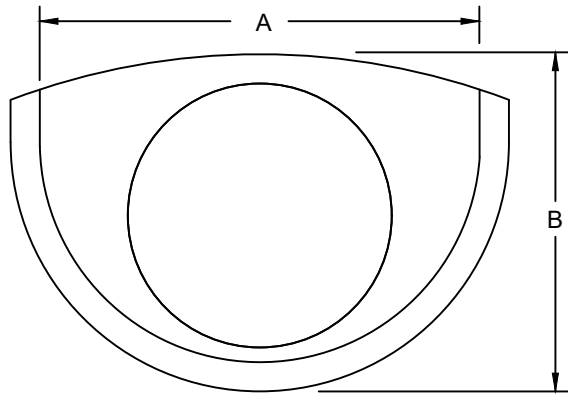


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

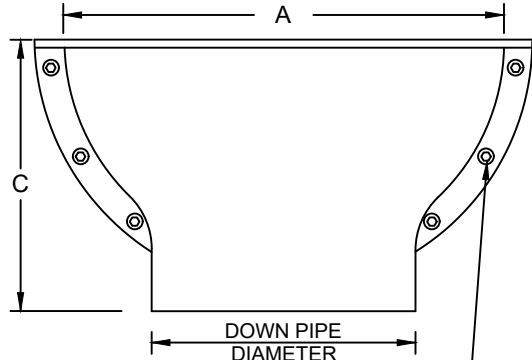
**Lift Station
Grounding**

CONSTRUCTION STANDARD

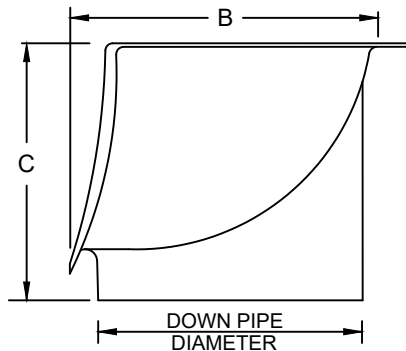
STANDARD
DETAIL
NO.
S-31



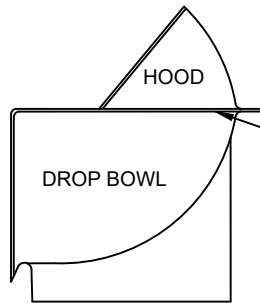
DROP BOWL TOP VIEW



DROP BOWL FRONT VIEW



DROP BOWL SIDE VIEW



OPTIONAL FORCE LINE HOOD

DROP BOWL MOUNTS TO WALL WITH RELINER STAINLESS STEEL ANCHOR BOLT ASSEMBLIES

HOOD BOLTS TO DROP BOWL WITH INCLUDED STAINLESS STEEL BOLTS

INCOMING PIPE

RELINER DROP BOWL

FLEXIBLE PIPE COUPLER

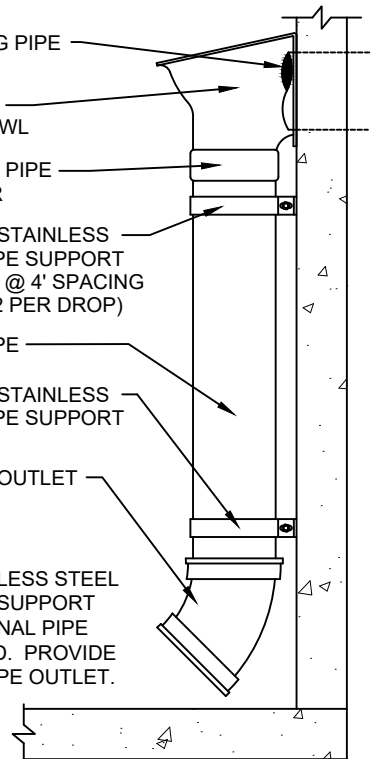
RELINER STAINLESS STEEL PIPE SUPPORT BRACKET @ 4' SPACING (MIN. OF 2 PER DROP)

DOWN PIPE

RELINER STAINLESS STEEL PIPE SUPPORT BRACKET

BEND AT OUTLET

USE RELINER STAINLESS STEEL PIPE BRACKETS TO SUPPORT DOWN PIPE. EXTERNAL PIPE COUPLER REQUIRED. PROVIDE SWEEP AT DOWN PIPE OUTLET.



TYPICAL INSTALLATION

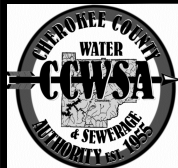
DROP BOWL SELECTION CHART

DOWN PIPE DIAMETER	MANHOLE DIAMETER					
	FLAT WALL	4' DIA	5' DIA	6' DIA	7-8' DIA	9-12' DIA
4"	A4FDB	A4DB	A4DB	A4R96	A4R96	A4R96
6"	A6FDB	A6DB	A6DB	A6R96	A6R96	A6R96
8"	B8FDB	B8DB	B8DB	B8DBR84	B8DBR84	B8R144
10"	B10FDB	B10DB	B10DB	B10R96	B10R96	B10R144
12"	24/12FDB	24/12R60	24/12R60	24/12R60	24/12R96	24/12R144
15"	24/15FDB	24/15R60	24/15R60	24/15R60	24/15R96	24/15R144
18"	30/18FDB		30/18R60	30/18R60	30/18R96	30/18R144
21"	36/21FDB		36/21R60			36/21R144
24"	48/24FDB			48/24R72	48/24R96	48/24R144

DROP BOWL DIMENSIONS

SERIES	DOWN PIPE DIAMETER			ANCHOR BOLT QUANTITY & TYPE
	WIDTH "A"	DEPTH "B"	HEIGHT "C"	
A4	4"	12"	9.5"	4 - 1" TAMP-IN
A6	6"	12"	11.1"	4 - 1" TAMP-IN
B8	8"	18"	13.0"	4 - 1" TAMP-IN
B10	10"	18"	13.5"	4 - 1" TAMP-IN
24/12	12"	24"	16.5"	6 - 1" TAMP-IN
24/15	15"	24"	19.3"	6 - 1" TAMP-IN
30/18	18"	30"	23.5"	6 - 1" TAMP-IN
36/21	21"	36"	31.6"	8 - 3" WEDGE
48/24	24"	48"	30.5"	10 - 3" WEDGE

April 2018



**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Inside Drop
Bowl**

CONSTRUCTION STANDARD

STANDARD
NO.
S-32

CHEROKEE COUNTY WATER & SEWERAGE AUTHORITY
SANITARY SEWER SYSTEM

GENERAL CONSTRUCTION NOTES

- 1.) All sanitary sewer system construction must follow the current Cherokee County Water and Sewerage Authority Sanitary Sewer System Standards.
- 2.) For D.I.P. sewer lines, the minimum wall thickness shall be Class 50 and the interior lining shall be Protecto 401 ceramic epoxy. Wall thicknesses greater than the minimum called for above may be required due to greater depths or varying bedding requirements. Class C bedding is the minimum allowed.
- 3.) All Polyvinyl Chloride (PVC) sewers 6" to 15" in diameter shall meet the requirements for minimum wall thickness as specified under SDR 35 in ASTM D3034, latest revision. PVC sewers that are 18" and larger in diameter shall have a minimum wall thickness as specified under T-1 in ASTM F679, latest revision. PVC sewers with more than 12' of cover may require wall thicknesses greater than SDR 35 or T-1. PVC is not allowed for sewers greater than 24" in diameter or more than 16' of cover.
- 4.) Ductile Iron Pipe or CCWSA approved equal is required for sanitary sewer lines:
 - A.) Crossing storm sewers or other utilities with less than 2' of clearance
 - B.) Crossing water mains
 - C.) Crossing all streams and vegetative buffers
 - D.) For all cross country locations with less than 3' of cover
 - E.) For all locations in roadways with less than 5' of cover
 - F.) For all locations with 16' or more of cover
 - G.) With 20% or greater slope
 - H.) Inside all casings
 - I.) Installed in subdivision easements between lots
 - J.) Adjacent to all drop manholes.
 - K.) For all installations in fill material
 - L.) At all other locations designated by the CCWSA
- 5.) Information regarding underground utilities on these plans is not guaranteed as to accuracy or completeness. Prior to beginning work, the Contractor shall request a field location through the utilities protection center and any utility owners thought to have facilities in the area. The Contractor shall promptly compare these field-marked locations with the project plans and then notify the designer of any anticipated problems or need for design changes. It is the Contractor's responsibility to excavate or cause the utility owner to excavate for the purpose of determining exact elevations or locations at utility crossings and other critical locations well in advance of the work under this contract. Damage to existing utilities resulting from the Contractor's negligence shall be repaired at the Contractor's expense. The Developer and/or the Developer's Contractor is responsible for verifying the exact location, size, and material of any existing water or sanitary sewer facility proposed for connection or use by this project.
- 6.) All sewer service laterals shall have a minimum diameter of 6" and a minimum grade of 2%. All sewer laterals shall be installed using a laser level or slope level. All laterals shall have minimum pipe bedding. Laterals "SHALL" be located per CCWSA Standard Details S-13, S-14 and S15. Clean out shall not be located outside of Right-of-Way or Easement. No structure can within 5' (five feet) of a sewer clean out. Including, but not limited to any type of building, porches, foundations, stairs, signs, fences, retaining wall, other types of walls, etc.....
- 7.) The Developer shall obtain a land disturbance permit from Cherokee County governing all items related to erosion control.
- 8.) This project is located in Land Lots _____, in the _____ District of Cherokee County, Georgia.

- 9.) Clearing will be kept to an absolute minimum. Vegetation and mulch will be applied to applicable areas immediately after grading is complete. Land disturbing will be scheduled to limit exposure of bare soils to erosive elements.
- 10.) Construction activities will be performed in compliance with all applicable laws and regulations.
- 11.) All marketable timber will be salvaged. Top soil will be salvaged, stock piled and spread on areas to be vegetated. Trees outside of the clearing line will be protected from damage by appropriate markings.
- 12.) Contractor is responsible for staking the alignment of the proposed pipeline prior to pipe installation. If a conflict should arise, the contractor shall notify the designer at that time.
- 13.) All excavated dirt shall be placed on the high side of the trench away from any creeks.
- 14.) Any fill dirt over the pipe shall be graded to prevent ponding.
- 15.) The right-of-way or construction easement represents the limits of clearing for the complete job. The contractor shall not clear beyond this limit.
- 16.) A copy of the approved construction plans must be kept on the job site at all times that construction is underway.
- 17.) No bury pits are allowed.
- 18.) Topographic ground elevations along all sewer lines, gravity and force mains, are from field-run surveys, not aerial photographs.
- 19.) All easements must be acquired prior to the preconstruction meeting with the Chief Inspector.
- 20.) The Developer/Contractor shall meet with the Chief Inspector at least 24 hours before beginning construction. The Contractor shall notify the Chief Inspector or his designated representative by 8:30 AM of each workday when work is scheduled unless authorized otherwise.
- 21.) Sanitary sewer force mains shall be installed so that the top of the pipe is a minimum of four feet below final grade, four feet below the edge of the pavement, or four feet below the ditch paralleling the road, whichever is deepest.
- 22.) Type 4 bedding is required at all restrained pipe installations.
- 23.) Contractor must show proof of insurance in the amount specified by the CCWSA. See Detail M-04
- 24.) A horizontal separation of at least 10 feet is required between existing or proposed water mains and existing or proposed sanitary sewer lines.
- 25.) A vertical separation of at least 18 inches is required where a sewer line crosses an existing or proposed water main. A full joint of sanitary sewer pipe is required to be centered at the water main crossing. See **Section S316.2**
- 26.) No portion of this project is being constructed on or near an existing landfill, abandoned landfill, or any other site used for waste disposal.
- 27.) Potable water and sanitary sewer structures are not allowed within a dam. Utility pipelines and structures must be a minimum of 30 feet outside the toe of slope of the dam.
- 28.) Existing County roads shall **"NOT"** be open cut unless permission is granted by the Cherokee County Department of Public Transportation.

- 29.) Plan approval is valid for 12 months without beginning construction. Plans shall be subject to beginning the process of review and approval if 12 months expire prior to the start of construction.
- 30.) As-Built drawings of water and sanitary sewer facilities are required to be submitted to the CCWSA upon completion of the project.
- 31.) If construction plans are stamped for a full project, and then the Developer revises the plans to build the development in phases, no construction or field inspection will be allowed to begin until the revised, phased plans are re-approved and stamped for the phased construction.
- 32.) All streams and protective buffers shall be crossed in accordance with current County and State regulations.
- 33.) Inside of steel casings, pipe joints shall be restrained using Fast-Grip gaskets or approved equal.
- 34.) Concrete footings are required for all manholes that are 16' in depth or more and for all manholes installed in fill material.
- 35.) Sanitary sewers in roadways shall be installed with a minimum of 7' of cover where laterals are located in order to obtain a minimum cover of 3' over the lateral at the R/W limit, or DIP laterals are required.
- 36.) The CCWSA shall not be responsible for any building that is built too low to be served by the sanitary sewer system.
- 37.) The CCWSA shall not be responsible for any sanitary sewer services covered or buried by construction.
- 38.) Soil adjacent to all manholes located in roadways will be tested for 95% compaction. The CCWSA must receive a copy of the results of the testing before the final plat will be signed.
- 39.) When transitioning from DIP to PVC, the Contractor must utilize solid sleeves or "Harco" fittings.
- 40.) All angles between "in" lines and "out" lines for manholes shall be labeled. Acute angles (angles < 90 degrees) are not allowed for sewer mains or sewer services.
- 41.) Sewer lines that have slopes greater than 20% shall be DIP and shall be provided with concrete anchors (CCWSA Standard Detail S-18).
- 42.) Manholes located in future streets must be installed to be 48" or higher above grade.
- 43.) Manholes that are located outside of roadways shall be installed to be at least 18" above grade and shall be provided with self-sealing, bolt-down covers.
- 44.) For any new project connecting to an existing manhole, the Contractor shall core and boot the existing manhole at an elevation that is 2 feet or less from the existing invert out.
- 45.) Inside drop manholes shall be 5 feet in diameter and shall be built in accordance with CCWSA Standard Detail S-03.
- 46.) All force mains paralleling water mains shall be encased in green polyethylene tubing so as to identify the force main as sanitary sewer.
- 47.) Locator wire must be installed above all sewer lateral lines.

- 48.) Sanitary sewer cleanouts shall be installed for all service laterals at the edge of the sewer easement or right-of-way. See CCWSA Standard Details S-13, S-14 and S-15. CCWSA shall maintain the sewer mains and sewer laterals to the County, City or State Right-Of-Way or to the edge of an easement dedicated to CCWSA. If sewer main is located within a private ingress-egress or a blanket utility easement, CCWSA shall maintain sewer mains and laterals from back of curb to back of curb. In the event of zero building setback adjacent to a Right-Of-Way, CCWSA will maintain sewer mains and laterals from back of curb to back of curb. Clean out shall not be located outside of Right-of-Way or Easement. No structure can be within 5' (five feet) of a sewer clean out. Including, but not limited to any type of building, porches, foundations, stairs, signs, fences, retaining wall, other types of walls, etc.....
- 49.) Horizontal locations will be referenced to Georgia State Plane Coordinate System NAD 83 West Zone Feet.
- 50.) Vertical locations will be referenced to North American Vertical Datum (NAVD 88).
- 51.) Orthometric locations will be referenced to GEOID 99/03
- 52.) No landscaping or structures will be allowed inside CCWSA easements.
- 53.) Must show all street lights within development.
- 54.) Must show 911 address for each lot or parcel.

Street Light Ordinance

Pole Specifications:

- 30 Foot Poles Only
- Wood or Fiberglass Only
- Arms must be 2 ½' to 6' long
 - Roadway Fixtures

Street light plans are submitted by the Power Companies to the Street Light Coordinator. All power pole contributions must be paid by the Developer **before** the release of water meter sales.

The above does not apply to subdivisions that are located inside city limits.

Any further questions please call:
Street Light Coordinator at (770) 479-9107

R/W

R/W

PROP. D.I.P. WATER MAIN

CONCRETE BLOCK

THREADED ROD 4'-0"

TEE

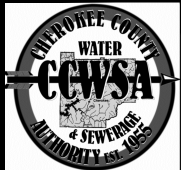
6" GATE VALVE

FIRE HYDRANT

PLUG

CONC. BLOCKING AS REQ'D.

April 2018

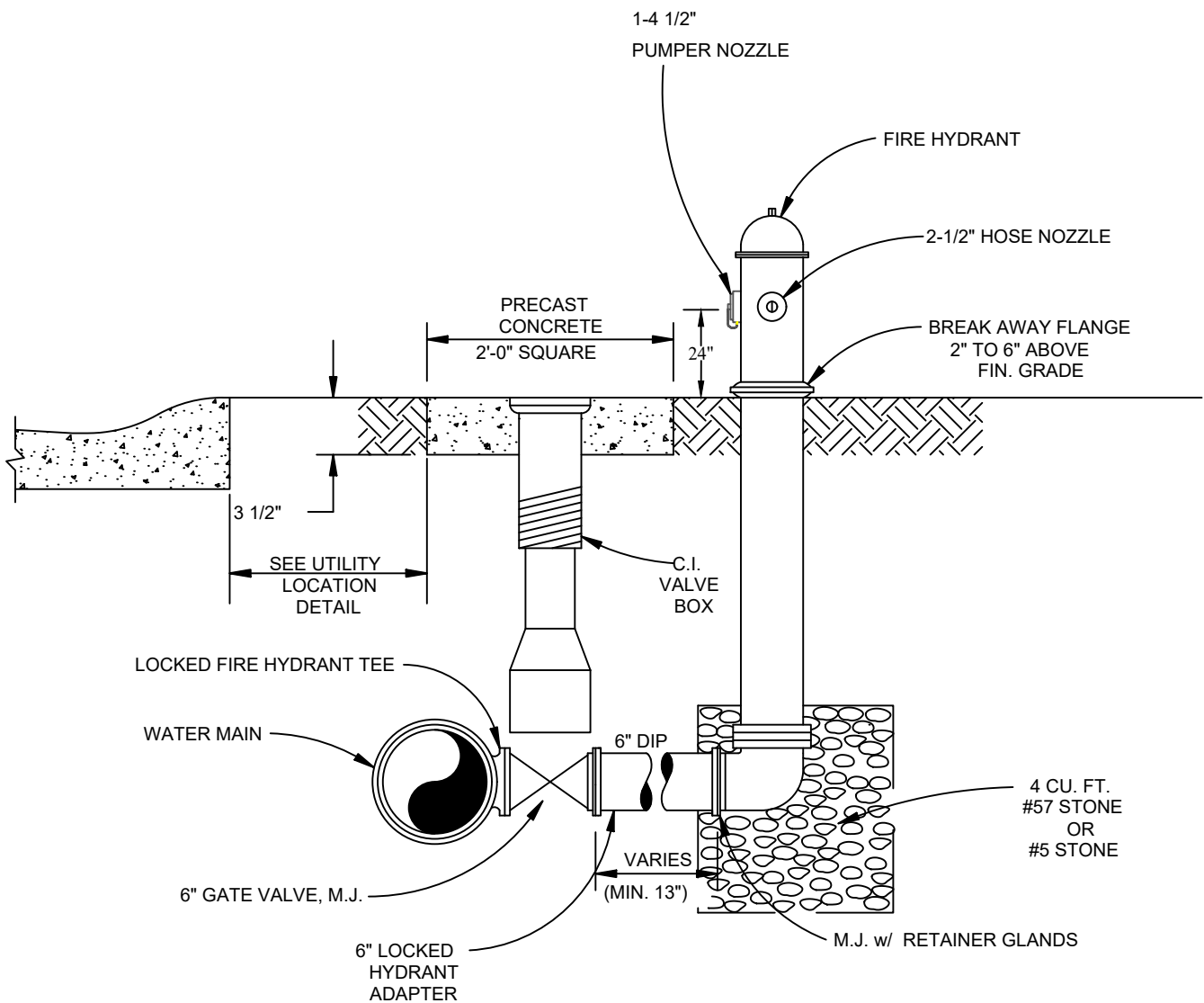


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Typical Water Main
At Cul de sac**

CONSTRUCTION STANDARD

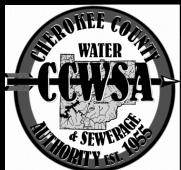
STANDARD
DETAIL
NO.
W-01



NOTES:

1. 4 1/2" PUMPER NOZZLE TO FACE STREET
2. HYDRANT NOT TO BE SET ON STREET SIDE OF WATER MAIN
3. VALVE BOX TO BE ADJUSTED TO GRADE
4. CONCRETE COLLAR AROUND VALVE BOX IF NOT IN PAVED AREA
5. GRAVEL TO BE PLACED AROUND HYDRANT DRAIN, MINIMUM DIMENSIONS 20" x 20" x 20"

April 2018



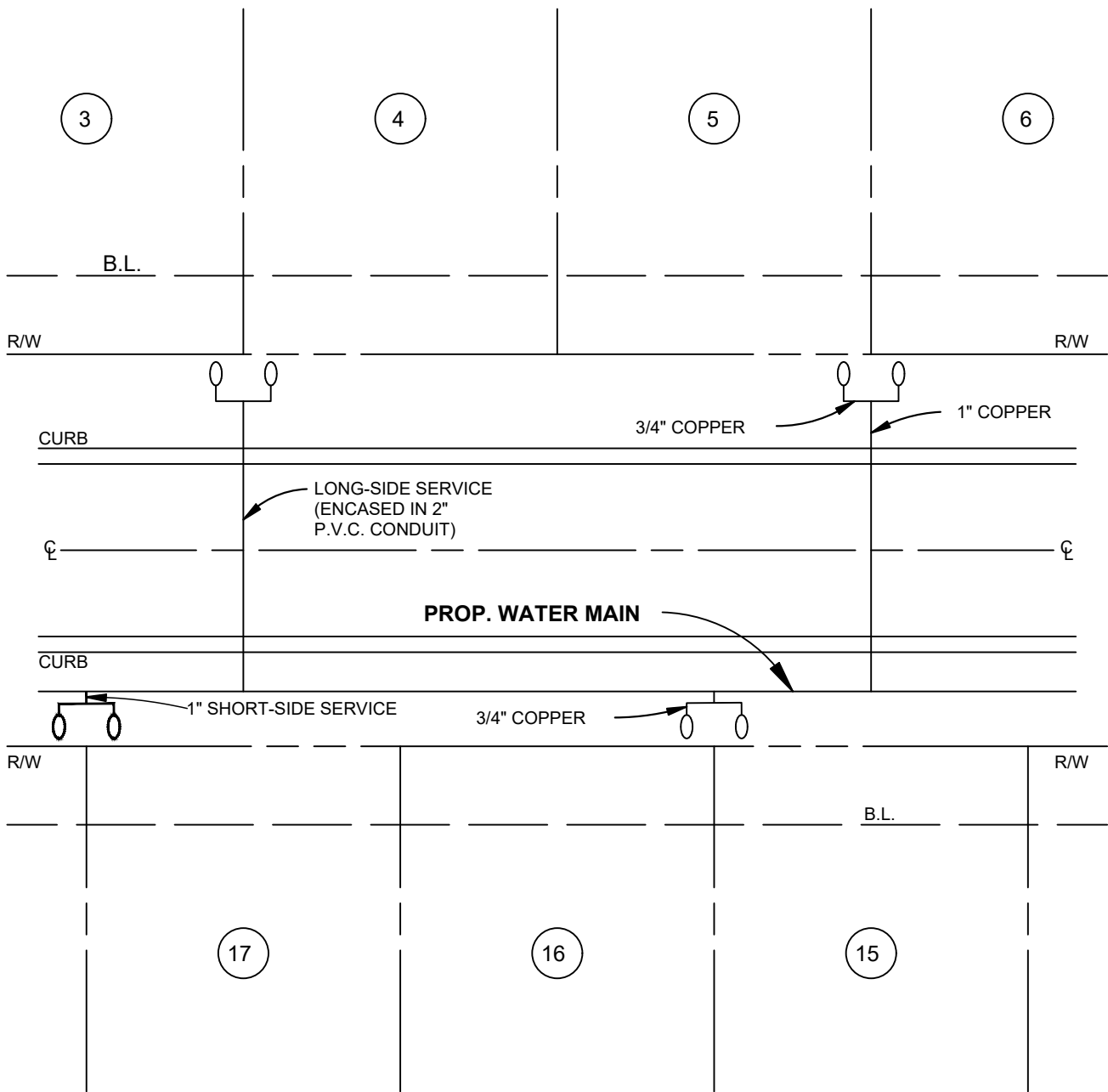
**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Typical Fire Hydrant
Installation**

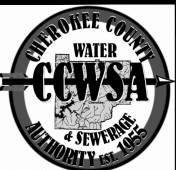
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
W-02

No structure or landscaping shall be within 10' of water meter.



April 2018

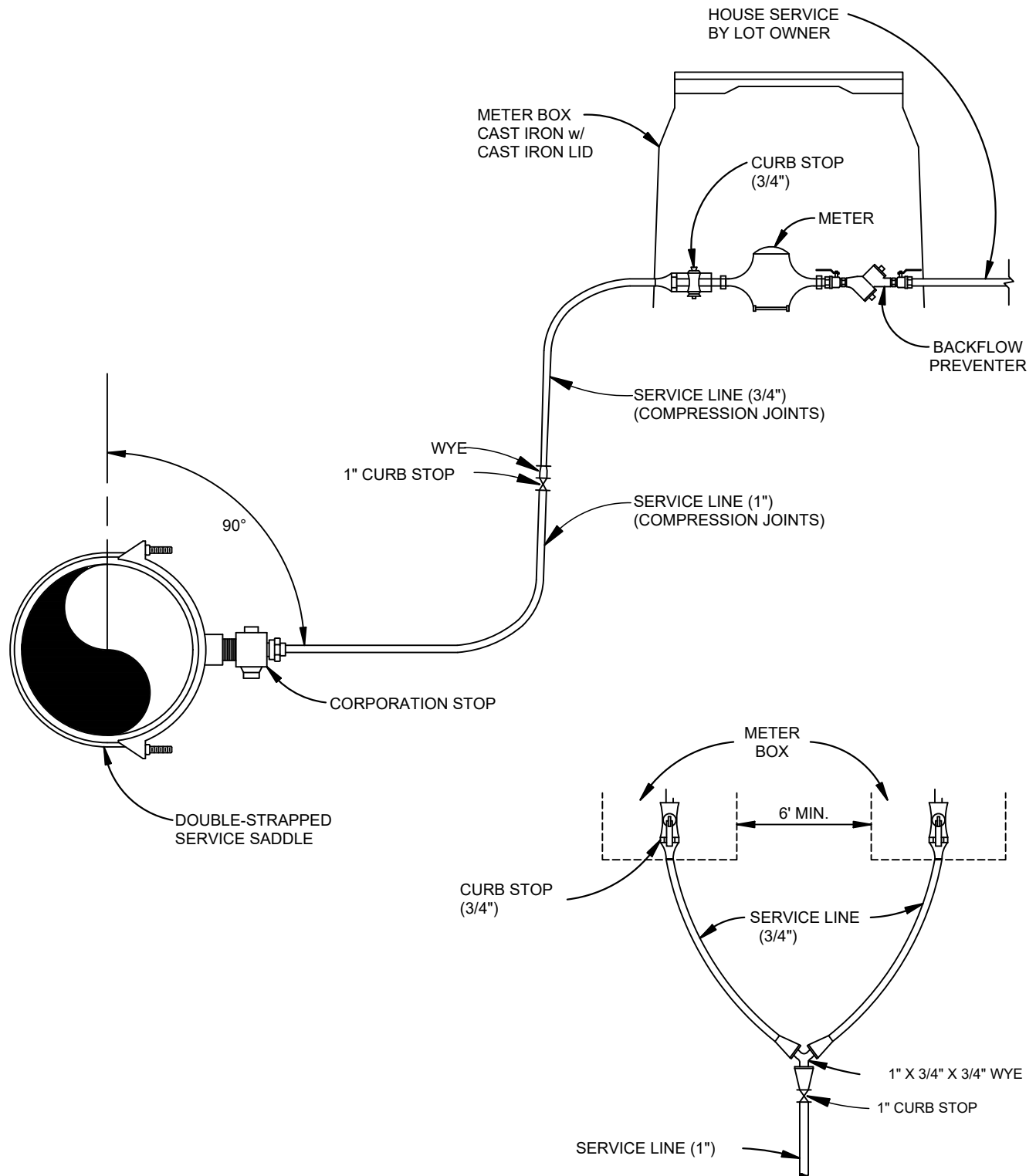


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**3/4" Water Meter
Location**
(FOR SUBDIVISIONS)
CONSTRUCTION STANDARD

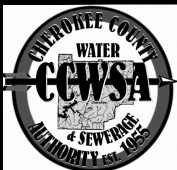
STANDARD
DETAIL
NO.
W-03

No structure shall or landscaping shall be within 10' of water meter.



PLAN FOR WYE

April 2018

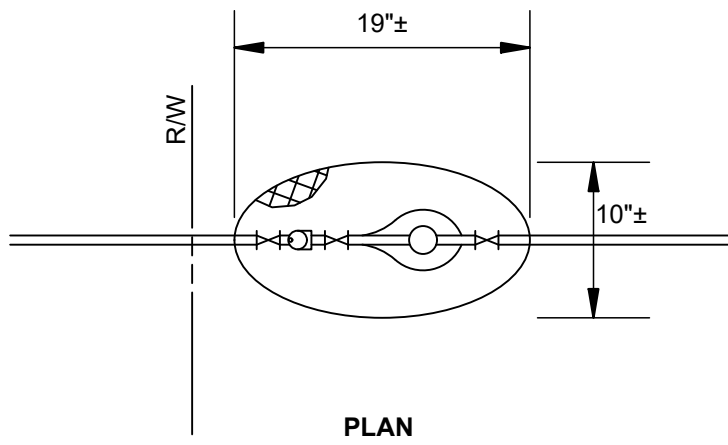


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

Residential Water Meter Installation

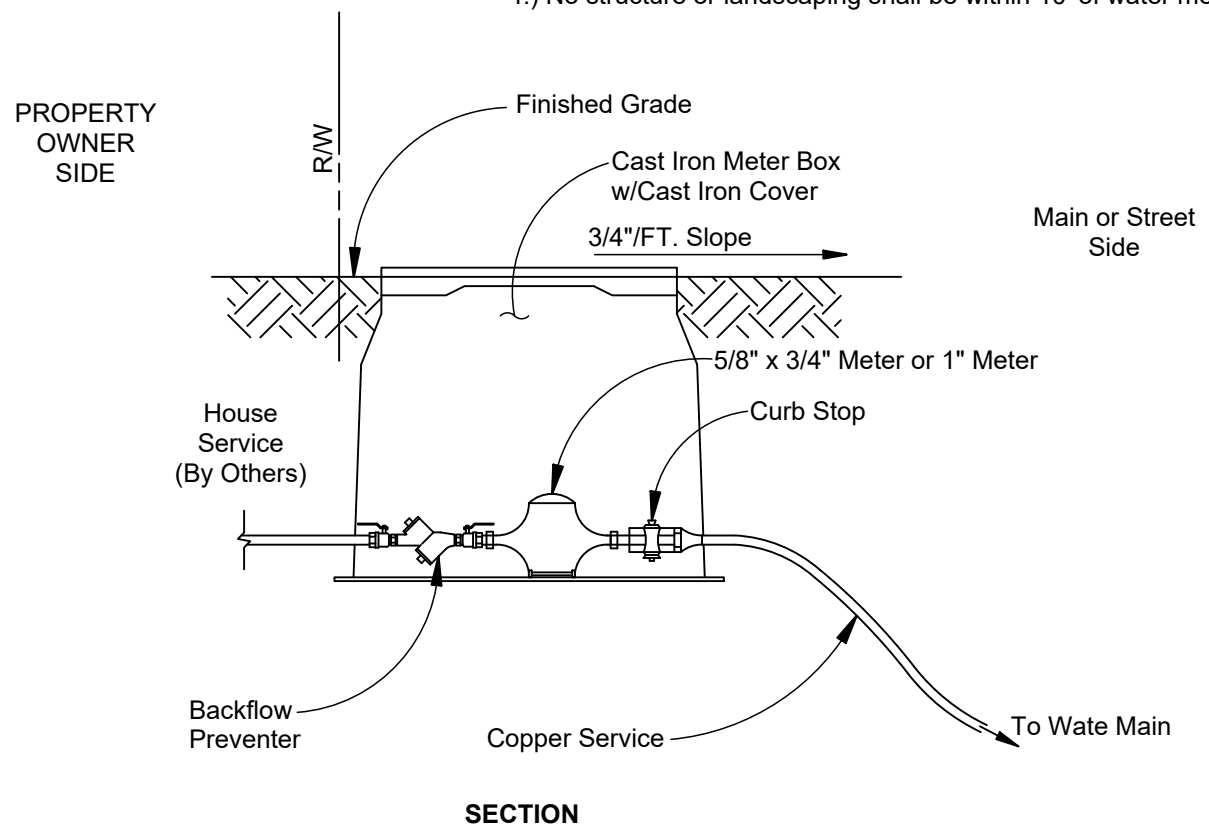
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
W-04

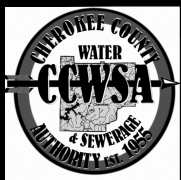


Note:

- 1.) If Meter Box is located in driveway or sidewalk. Meter Box and lid shall be traffic rated.
- 2.) Easement is required for Meter Box located outside of Right of Way.
- 3.) Meter Box shall be supported with compacted soil, gravel, etc. to keep top of box from settling below finished grade.
- 4.) No structure or landscaping shall be within 10' of water meter.



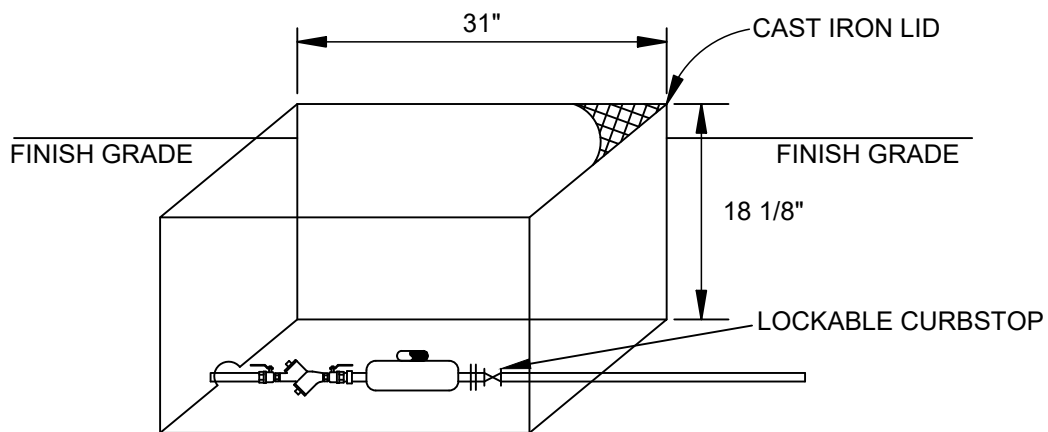
April 2018



**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Meter Box For
5/8" or 1" Meter**
CONSTRUCTION STANDARD

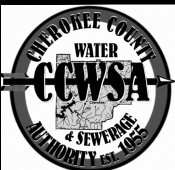
STANDARD
DETAIL
NO.
W-05



Note:

- 1.) If Meter Box is located in driveway or sidewalk.
Meter Box and lid shall be traffic rated.
- 2.) Easement is required for Meter Box located outside of Right of Way.
- 3.) Meter Box shall be supported with compacted soil, gravel, etc. to keep top of box from settling below finished grade.
- 4.) Jumbo boxes are to be used with meters larger than 1" and smaller than 3". (1.5" and 2" meter)
- 5.) A two bolt flange is required for the connection of these size meters.
- 6.) All meters larger than 3/4" must have a lockable curbstop.
- 7.) Meter Box: Sigma (MBX-5A) or equal acceptable by the Authority.
- 8.) No structure or landscaping shall be within 10' of water meter.

April 2018



**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

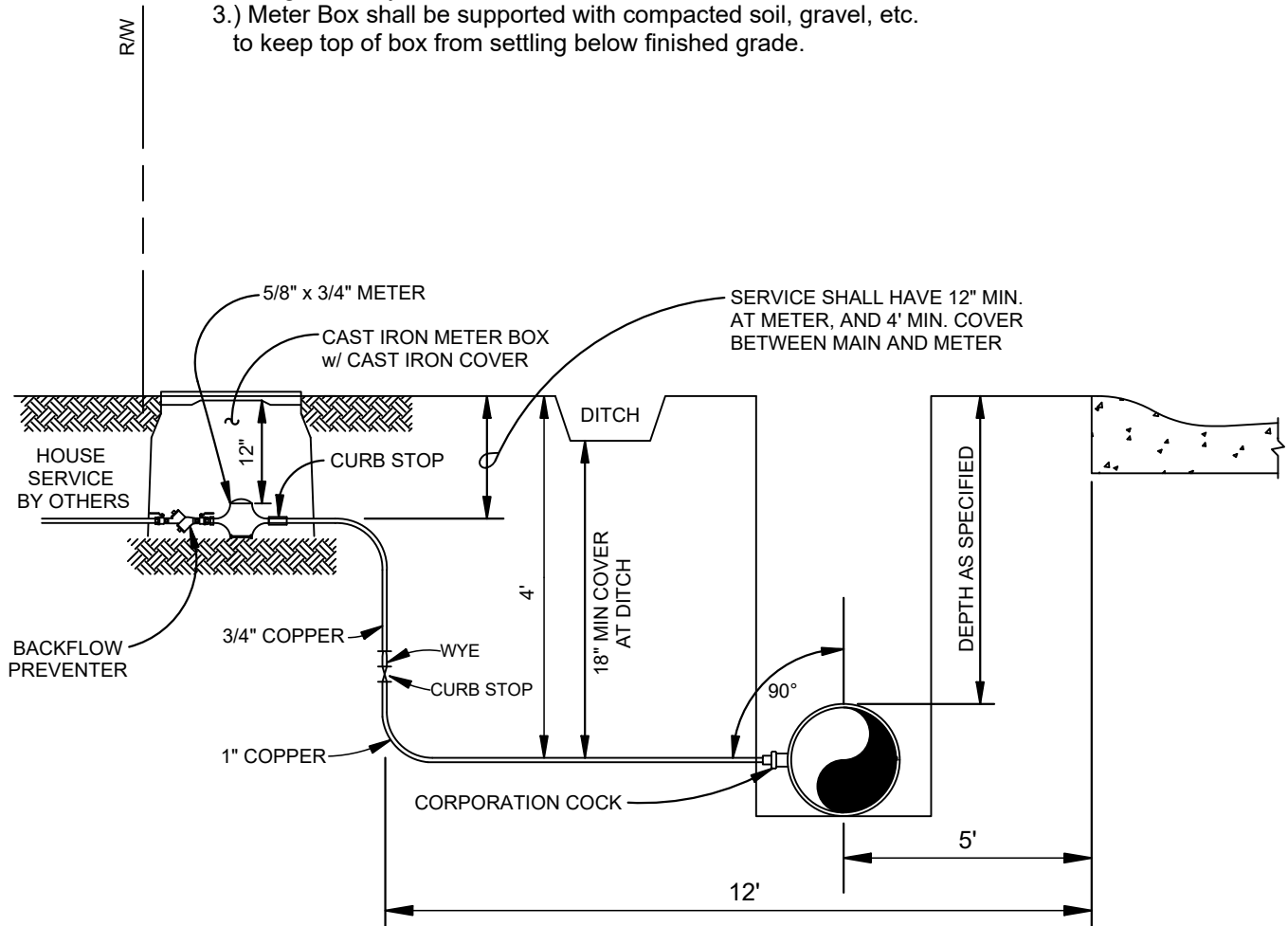
**Standard Jumbo Cast
Iron Meter Box**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
W-06

Note:

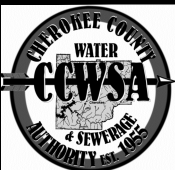
- 1.) If Meter Box is located in driveway or sidewalk.
Meter Box and lid shall be traffic rated.
- 2.) Easement is required for Meter Box located outside
of Right of Way.
- 3.) Meter Box shall be supported with compacted soil, gravel, etc.
to keep top of box from settling below finished grade.



NOTES:

1. SERVICE LINE SHALL BE 3/4" FROM MAIN WHEN
ONLY ONE 3/4" SERVICE IS REQUIRED.
2. USE ALL COMPRESSION JOINTS.
3. INSTALLATION SHALL ALLOW ADEQUATE ROOM TO
REMOVE AND/OR REPAIR METER.
4. NO STRUCTURE OR LANDSCAPING SHALL BE WITHIN 10' OF WATER METER.

April 2018

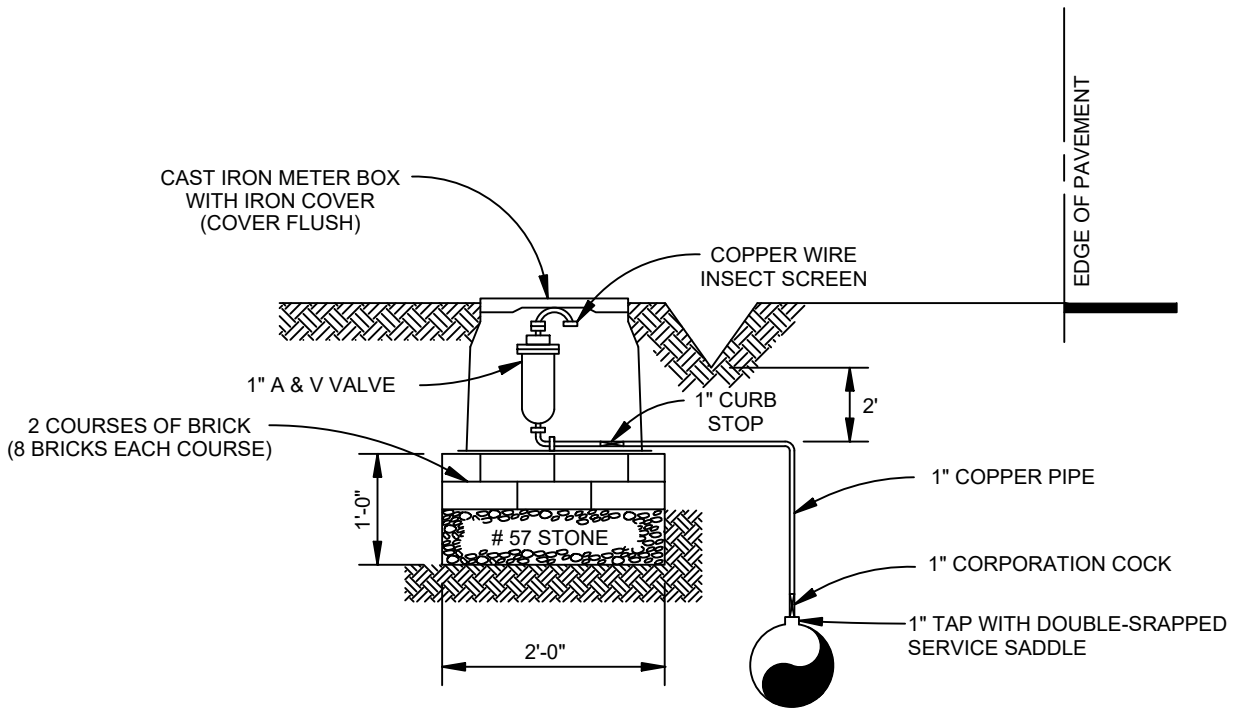


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**House Service
Installation**

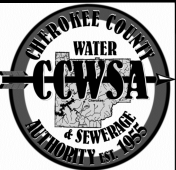
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
W-07



NOTES: 1. VALVE MARKER REQUIRED.

April 2018

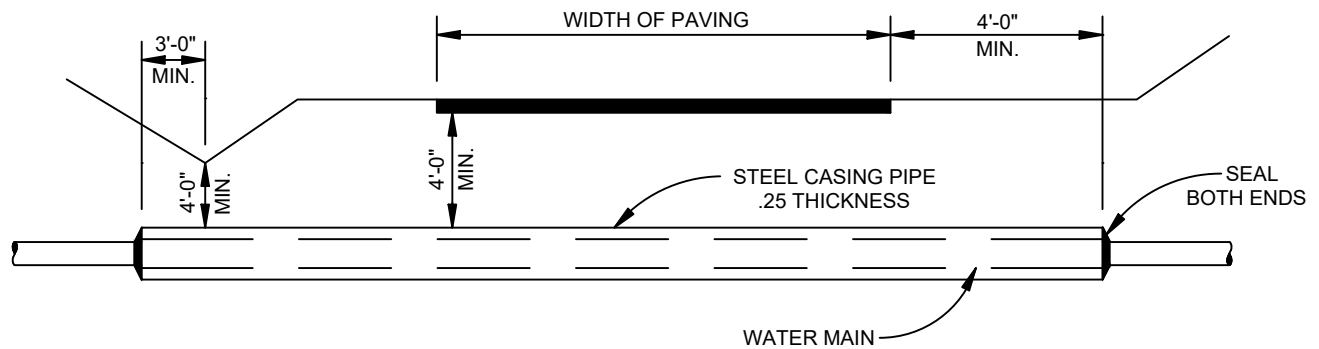


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Water A&V Release
Valve Assembly**

CONSTRUCTION STANDARD

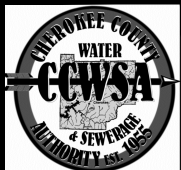
STANDARD
DETAIL
NO.
W-08



NOTES:

1. CASING PIPE SHALL EXTEND A MINIMUM OF 3' BEYOND TOE OF FILL SLOPES OR DITCH LINES AND 4' BEYOND EDGE OF PVMT. AND BACK OF CURB.

April 2018



**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Typical Road Crossing
Water Main**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
W-09

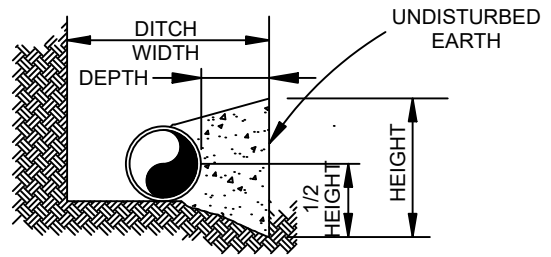
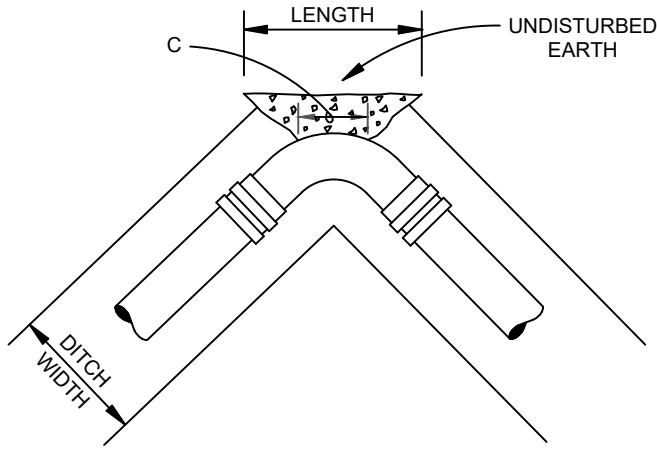


TABLE FOR CONCRETE BLOCKING
(250 PSI TEST PRESSURE)

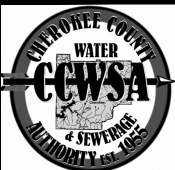
MINIMUM DIMENSIONS OF BLOCKING

FITTING	SIZE	DEPTH (FT.)	LENGTH (FT.)	"C" (IN.)	HEIGHT (FT.)	VOLUME (C.Y.)	THRUST (LB.)
11 1/4° BEND	6"	1.0	2.0	6	1.0	0.04	1,385
11 1/4° BEND	8"	1.0	2.0	7	1.0	0.05	2,465
11 1/4° BEND	10"	1.0	2.0	9	1.0	0.07	3,850
11 1/4° BEND	12"	1.0	2.5	11	1.5	0.12	5,550
11 1/4° BEND	16"	2.0	2.5	12	2.1	0.26	9,860
11 1/4° BEND	20"	2.0	3.5	15	2.5	0.48	15,406
11 1/4° BEND	24"	2.0	4.0	18	3.0	0.70	22,185
22 1/2° BEND	6"	1.0	2.0	6	1.0	0.04	2,760
22 1/2° BEND	8"	1.0	2.0	7	1.5	0.06	4,905
22 1/2° BEND	10"	1.0	2.0	9	2.0	0.10	7,665
22 1/2° BEND	12"	1.0	3.0	11	2.0	0.16	11,040
22 1/2° BEND	16"	2.0	3.5	12	3.0	0.45	19,625
22 1/2° BEND	20"	2.0	4.0	15	4.0	0.74	30,665
22 1/2° BEND	24"	3.0	5.0	18	4.5	1.47	44,160
45° BEND	6"	1.0	2.0	6	1.5	0.06	5,415
45° BEND	8"	1.0	2.5	7	2.0	0.10	9,625
45° BEND	10"	2.0	3.5	9	2.5	0.31	15,040
45° BEND	12"	2.0	3.5	11	3.0	0.41	21,655
45° BEND	16"	3.0	5.0	12	4.0	1.45	38,495
45° BEND	20"	4.0	6.0	15	5.0	2.05	60,145
45° BEND	24"	4.0	7.5	18	6.5	3.35	91,610
90° BEND	6"	1.0	2.5	12	2.0	0.13	10,005
90° BEND	8"	2.0	3.0	14	3.0	0.38	17,785
90° BEND	10"	2.5	4.5	18	3.0	0.74	27,785
90° BEND	12"	3.0	5.0	20	4.0	1.24	40,000
90° BEND	16"	4.0	6.5	26	5.5	2.91	71,125
90° BEND	20"	4.0	8.0	32	7.0	4.68	111,135
90° BEND	24"	5.0	10.0	40	8.0	8.50	160,035

NOTES:

1. SOIL BEARING STRENGTH OF 2000 PSI IS ASSUMED IN THE CALCULATIONS ABOVE. ENGINEER SHALL VERIFY.
2. COVER GLANDS AND BOLTS WITH POLYETHYLENE BEFORE PLACING CONCRETE.
3. ALLOW CONCRETE TO SET UP A MINIMUM OF 6 HOURS BEFORE PLACING BACKFILL.
4. CONCRETE SHALL BE 3000 PSI, CLASS A.
5. ALL IRON FITTINGS SHALL BE BLOCKED AND SUPPORTED AS SHOWN ABOVE.
6. VERTICAL BENDS WITH AN UPWARD THRUST SHALL BE RESTRAINED AS SHOWN IN STANDARD W-12.
7. VERTICAL BENDS WITH A DOWNWARD THRUST SHALL BE RESTRAINED AS SHOWN IN STANDARD W-13.

April 2018



**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Concrete Blocking
For Bends**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
W-10

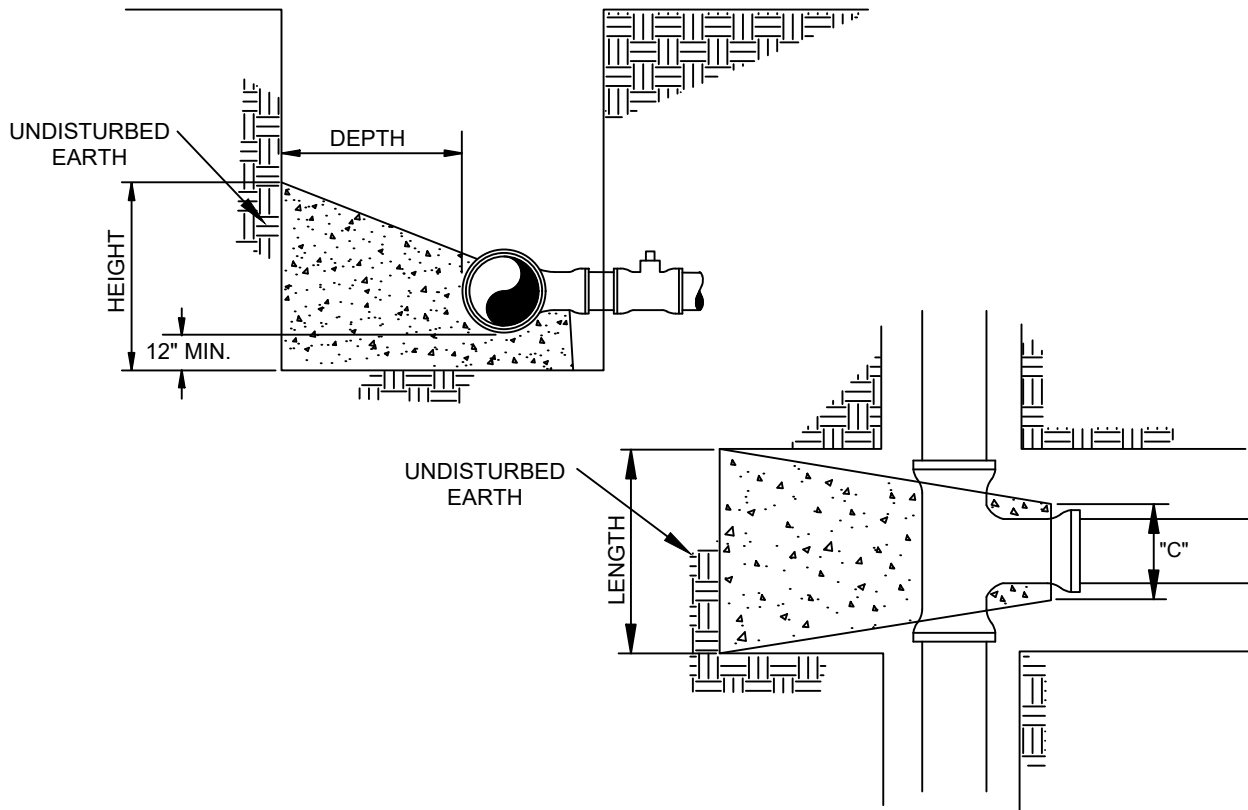


TABLE FOR CONCRETE BLOCKING
(250 PSI TEST PRESSURE)

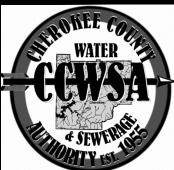
MINIMUM DIMENSIONS OF BLOCKING

SIZE	DEPTH (FT.)	LENGTH (FT.)	"C" (IN.)	HEIGHT (FT.)	VOLUME (C.Y.)	THRUST (LB.)
6"	1.0	2.5	12	1.5	0.10	7,070
8"	1.7	3.25	14	2.0	0.27	12,565
10"	2.0	4.0	18	2.5	0.50	19,635
12"	2.5	4.5	20	3.25	0.91	28,275
16"	3.0	5.0	26	5.0	1.77	50,265
20"	4.0	7.0	32	5.75	3.69	78,540
24"	6.0	9.0	40	6.5	7.94	113,100

NOTES:

1. SOIL BEARING STRENGTH OF 2000 PSI IS ASSUMED IN THE CALCULATIONS ABOVE. ENGINEER SHALL VERIFY.
2. COVER GLANDS AND BOLTS WITH POLYETHYLENE BEFORE PLACING CONCRETE.
3. ALLOW CONCRETE TO SET UP A MINIMUM OF 6 HOURS BEFORE PLACING BACKFILL.
4. CONCRETE SHALL BE 3000 PSI, CLASS A.
5. ALL IRON FITTINGS SHALL BE BLOCKED AND SUPPORTED AS SHOWN ABOVE.

April 2018



**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Concrete Blocking
For Tee's & Plugs**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
W-11

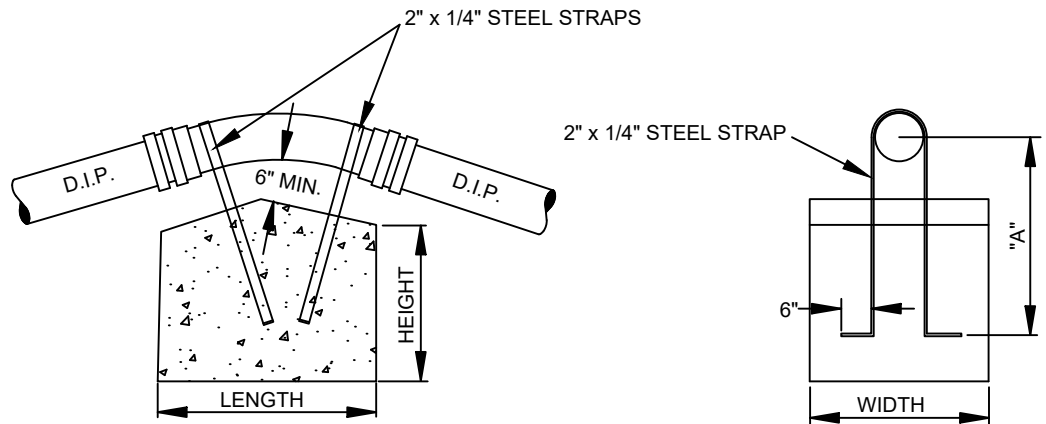


TABLE FOR CONCRETE BLOCKING
(250 PSI TEST PRESSURE)

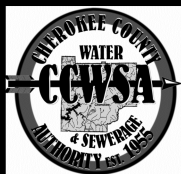
FITTING	SIZE	MINIMUM DIMENSIONS OF BLOCKING				VOLUME (C.Y.)	"A" (IN.)	LENGTH OF STRAP (IN.)
		HEIGHT (FT.)	LENGTH (FT.)	WIDTH (FT.)				
11 1/4° BEND	6"	2.0	2.0	2.5	0.37	24	69.5	
11 1/4° BEND	8"	3.0	2.2	2.5	0.61	24	72.5	
11 1/4° BEND	10"	3.0	3.0	3.0	1.00	26	80.0	
11 1/4° BEND	12"	3.0	4.0	3.0	1.33	30	91.0	
11 1/4° BEND	16"	3.0	5.0	4.5	2.50	30	97.0	
11 1/4° BEND	20"	3.3	6.0	5.0	3.67	36	115.0	
11 1/4° BEND	24"	4.0	6.5	5.5	5.30	36	122.0	
22 1/2° BEND	6"	2.5	3.0	2.5	0.69	24	69.5	
22 1/2° BEND	8"	3.1	3.5	3.0	1.21	24	72.5	
22 1/2° BEND	10"	3.2	4.0	4.0	1.90	26	80.0	
22 1/2° BEND	12"	3.5	5.0	4.5	2.92	30	91.0	
22 1/2° BEND	16"	4.7	5.5	5.0	4.79	36	109.0	
22 1/2° BEND	20"	6.0	6.0	5.7	7.60	45	133.0	
22 1/2° BEND	24"	8.0	5.7	6.5	10.98	60	170.0	

NOTES:

1. COVER GLANDS AND BOLTS WITH POLYETHYLENE BEFORE PLACING CONCRETE.
2. ALLOW CONCRETE TO SET UP A MINIMUM OF 6 HOURS BEFORE PLACING BACKFILL.
3. CONCRETE SHALL BE 3000 PSI, CLASS A.
4. ALL IRON FITTINGS SHALL BE BLOCKED AND SUPPORTED AS SHOWN ABOVE.

CONCRETE BLOCKING-VERTICAL BENDS-UPWARD THRUST

April 2018

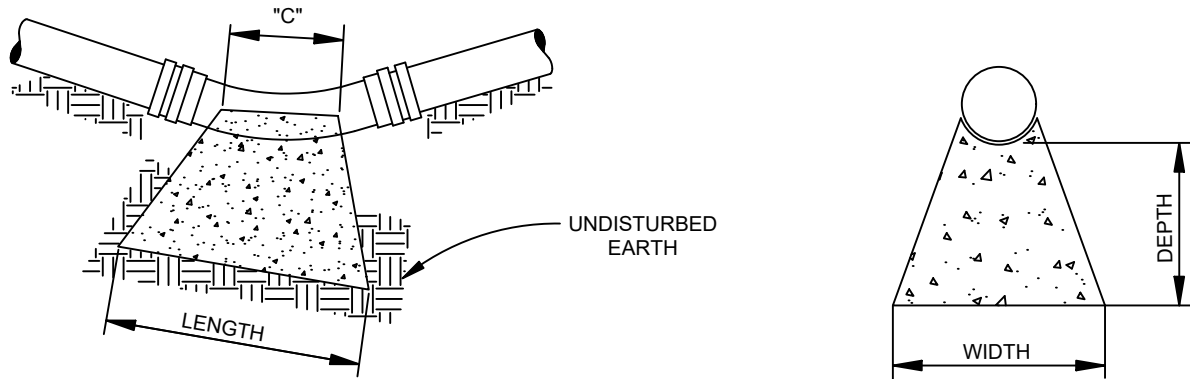


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Concrete
Blocking**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
W-12



**TABLE FOR CONCRETE BLOCKING
(250 PSI TEST PRESSURE)**

MINIMUM DIMENSIONS OF BLOCKING

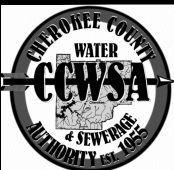
<u>FITTING</u>	<u>SIZE</u>	<u>DEPTH (FT.)</u>	<u>LENGTH (FT.)</u>	<u>"C" (IN.)</u>	<u>WIDTH (FT.)</u>	<u>VOLUME (C.Y.)</u>	<u>THRUST (LB.)</u>
11 1/4° BEND	6"	1.0	2.0	6	1.0	0.04	1,385
11 1/4° BEND	8"	1.0	2.0	7	1.0	0.05	2,465
11 1/4° BEND	10"	1.0	2.0	9	1.0	0.07	3,850
11 1/4° BEND	12"	1.0	2.5	11	1.5	0.12	5,550
11 1/4° BEND	16"	2.0	2.5	12	2.1	0.26	9,860
11 1/4° BEND	20"	2.0	3.5	15	2.5	0.48	15,406
11 1/4° BEND	24"	2.0	4.0	18	3.0	0.70	22,185
22 1/2° BEND	6"	1.0	2.0	6	1.0	0.04	2,760
22 1/2° BEND	8"	1.0	2.0	7	1.5	0.06	4,905
22 1/2° BEND	10"	1.0	2.0	9	2.0	0.10	7,665
22 1/2° BEND	12"	1.0	3.0	11	2.0	0.16	11,040
22 1/2° BEND	16"	2.0	3.5	12	3.0	0.45	19,625
22 1/2° BEND	20"	2.0	4.0	15	4.0	0.74	30,665
22 1/2° BEND	24"	3.0	5.0	18	4.5	1.47	44,160
45° BEND	6"	1.0	2.0	6	1.5	0.06	5,415
45° BEND	8"	1.0	2.5	7	2.0	0.10	9,625
45° BEND	10"	2.0	3.5	9	2.5	0.31	15,040
45° BEND	12"	2.0	3.5	11	3.0	0.41	21,655
45° BEND	16"	3.0	5.0	12	4.0	1.45	38,495
45° BEND	20"	4.0	6.0	15	5.0	2.05	60,145
45° BEND	24"	4.0	7.5	18	6.5	3.35	91,610
90° BEND	6"	1.0	2.5	12	2.0	0.13	10,005
90° BEND	8"	2.0	3.0	14	3.0	0.38	17,785
90° BEND	10"	2.5	4.5	18	3.0	0.74	27,785
90° BEND	12"	3.0	5.0	20	4.0	1.24	40,000
90° BEND	16"	4.0	6.5	26	5.5	2.91	71,125
90° BEND	20"	4.0	8.0	32	7.0	4.68	111,135
90° BEND	24"	5.0	10.0	40	8.0	8.50	160,035

NOTES:

1. SOIL BEARING STRENGTH OF 2000 PSI IS ASSUMED IN THE CALCULATIONS ABOVE. ENGINEER SHALL VERIFY.
2. COVER GLANDS AND BOLTS WITH POLYETHYLENE BEFORE PLACING CONCRETE.
3. ALLOW CONCRETE TO SET UP A MINIMUM OF 6 HOURS BEFORE PLACING BACKFILL.
4. CONCRETE SHALL BE 3000 PSI, CLASS A.
5. ALL IRON FITTINGS SHALL BE BLOCKED AND SUPPORTED AS SHOWN ABOVE.

CONCRETE BLOCKING-VERTICAL BENDS-DOWNWARD THRUST

April 2018

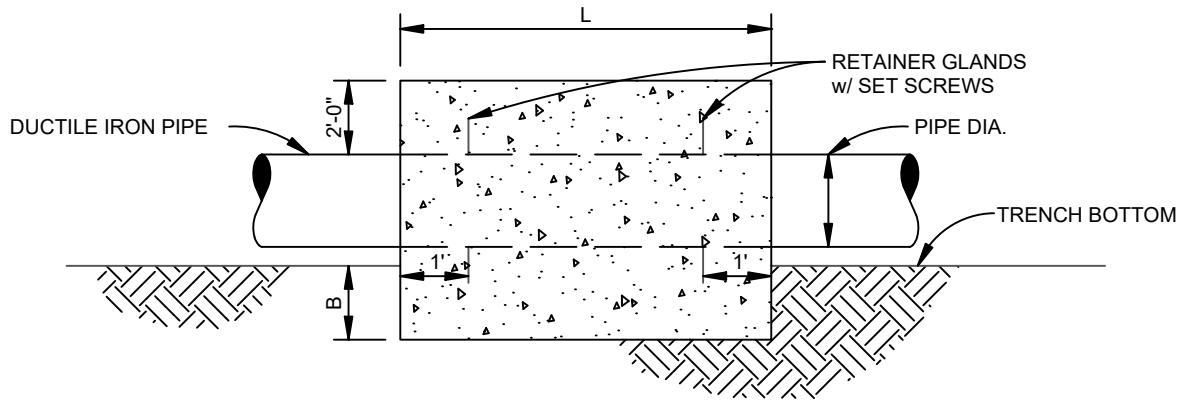


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Concrete
Blocking**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
W-13

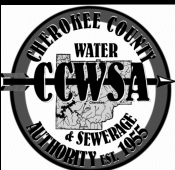


PROFILE VIEW

PIPE DIA.	L	B
6"	4'	1'
8"	4'	1'
10"	4'	1'
12"	4'	1'
16"	4'	2'

NOTE:
 CONCRETE COLLAR WIDTH EQUALS THE WIDTH
 OF THE TRENCH PLUS FOUR FEET (TWO FEET
 ON EACH SIDE OF THE TRENCH).

April 2018

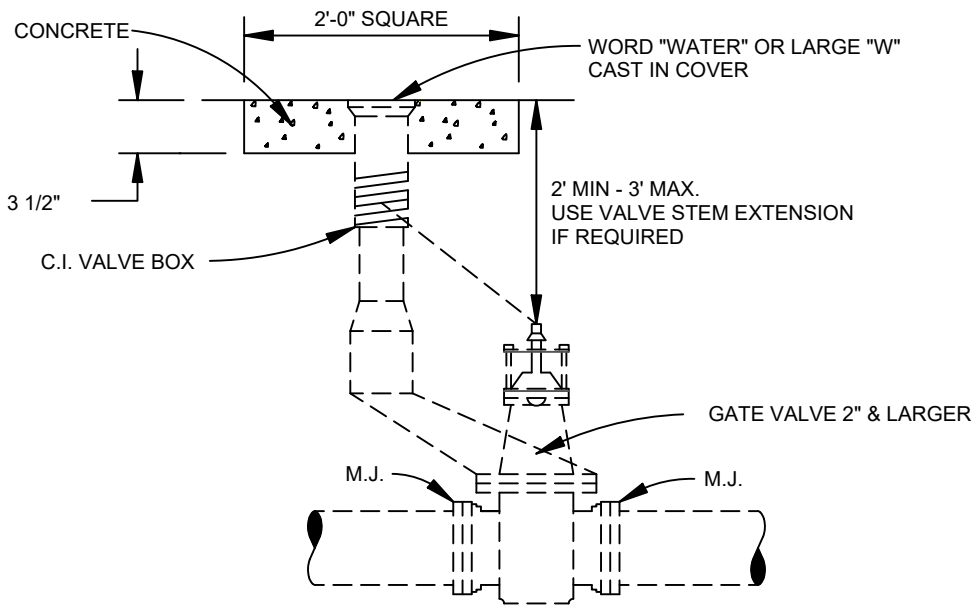


**CHEROKEE COUNTY
 WATER & SEWERAGE
 AUTHORITY**

**Concrete Thrust
 Collar**

CONSTRUCTION STANDARD

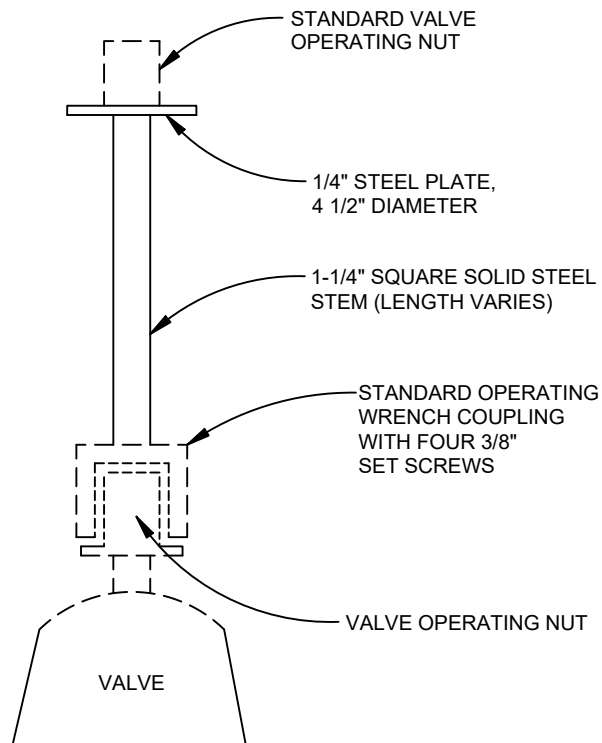
STANDARD
 DETAIL
 NO.
W-14



VALVE INSTALLATION

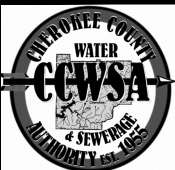
NOTES:

1. TOP OF EXTENSION SHALL BE NO MORE THAN THREE FEET BELOW FINAL GRADE.
2. CONTRACTOR IS RESPONSIBLE FOR IN FIELD MEASUREMENT OF DEPTH OF PIPE COVER TO DETERMINE NEED FOR VALVE STEM EXTENSION.



VALVE STEM EXTENSION

April 2018

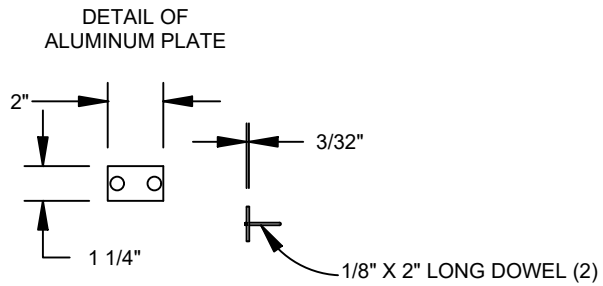
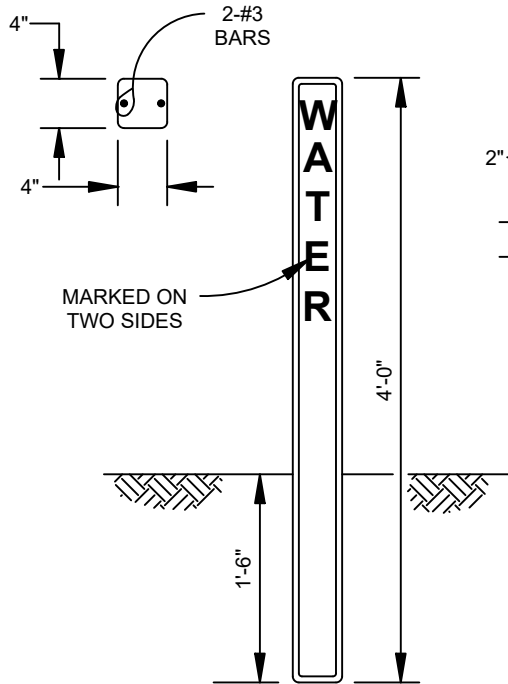


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Typical Valve
Installation**

CONSTRUCTION STANDARD

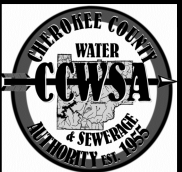
STANDARD
DETAIL
NO.
W-15



NOTES:

1. ALUMINUM PLATE CAST IN SIDE OF MARKER POST.
2. DISTANCE (NEAREST FOOT) FROM ϕ OF POST TO ϕ OF VALVE BOX AND DIRECTION ARROW TO BE STAMPED INTO PLATE WITH STEEL DIE AFTER MARKER IS SET.

April 2018

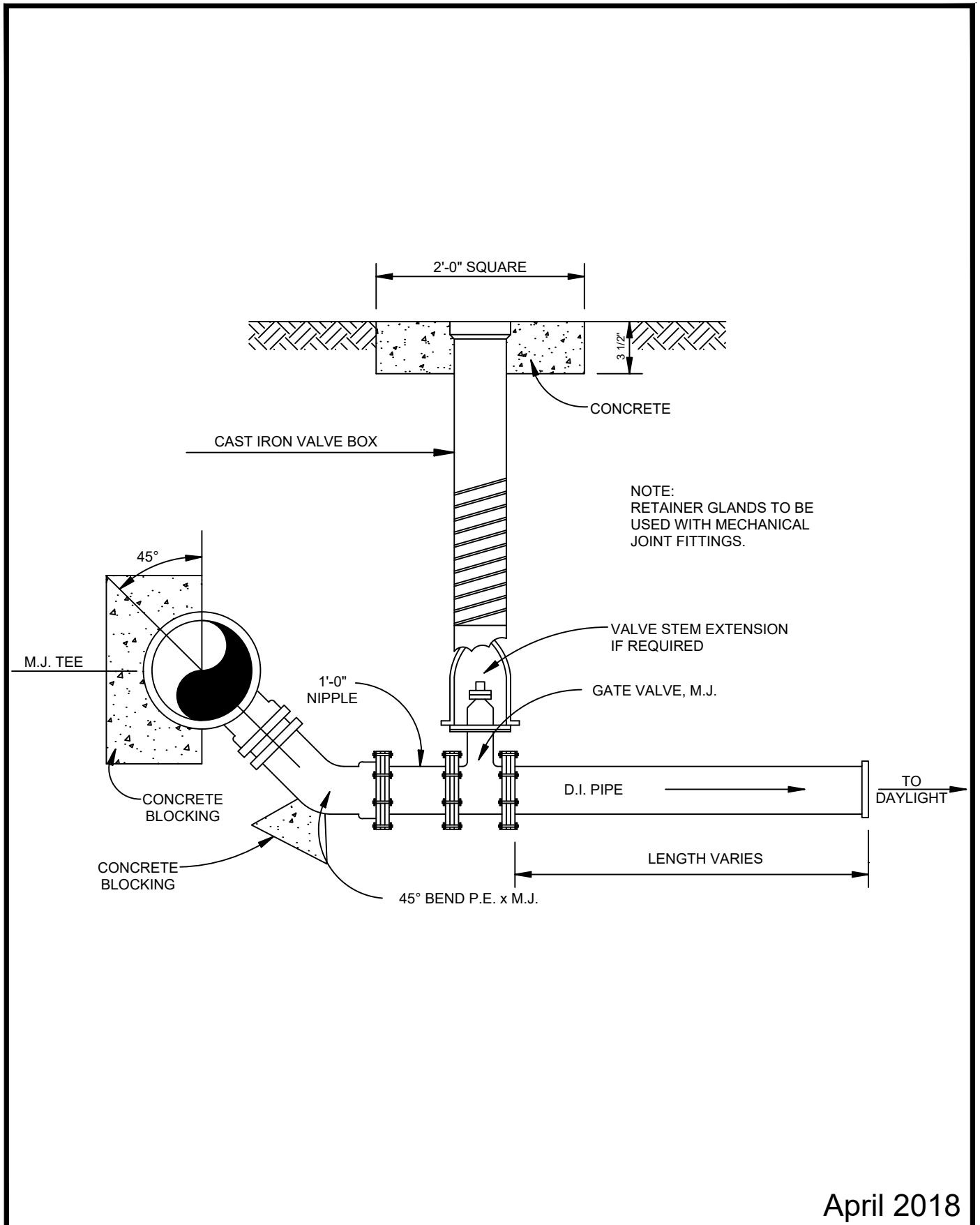


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

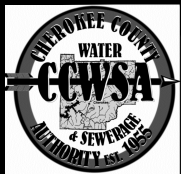
**Concrete
Valve Marker**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
W-16



April 2018

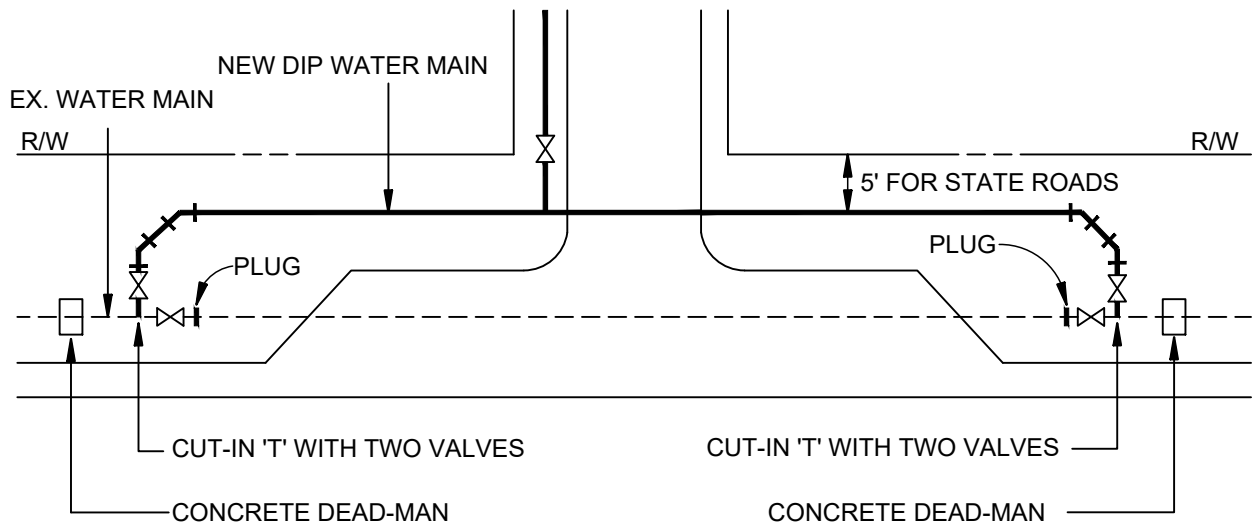


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Blow Off
Assembly**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
W-17



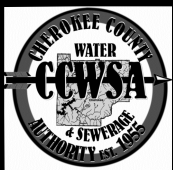
4 DAY NOTICE TO ALL CUSTOMERS

THE SECTION OF WATER MAIN THAT REMAINS UNDER ANY IMPERVIOUS SURFACE.

- =EX. MAIN
- =PROP. MAIN
- ⊗ =VALVE

- NOTES:
1. THE LOCATION OF THE NEW DIP WATER MAIN IS DEPENDENT ON WHETHER THE ROAD IS A STATE ROUTE OR A COUNTY ROAD.
 2. SOME VALVES MAY BE ELIMINATED DEPENDING UPON FLOWS.
 2. DEVELOPER HAS THE OPTION TO REMOVE OR GROUT THE SECTION OF WATERMAIN THAT REMAINS UNDER ANY IMPERVIOUS SURFACE. (SEE DETAIL W-20 FOR APPROVED GROUT METHOD)

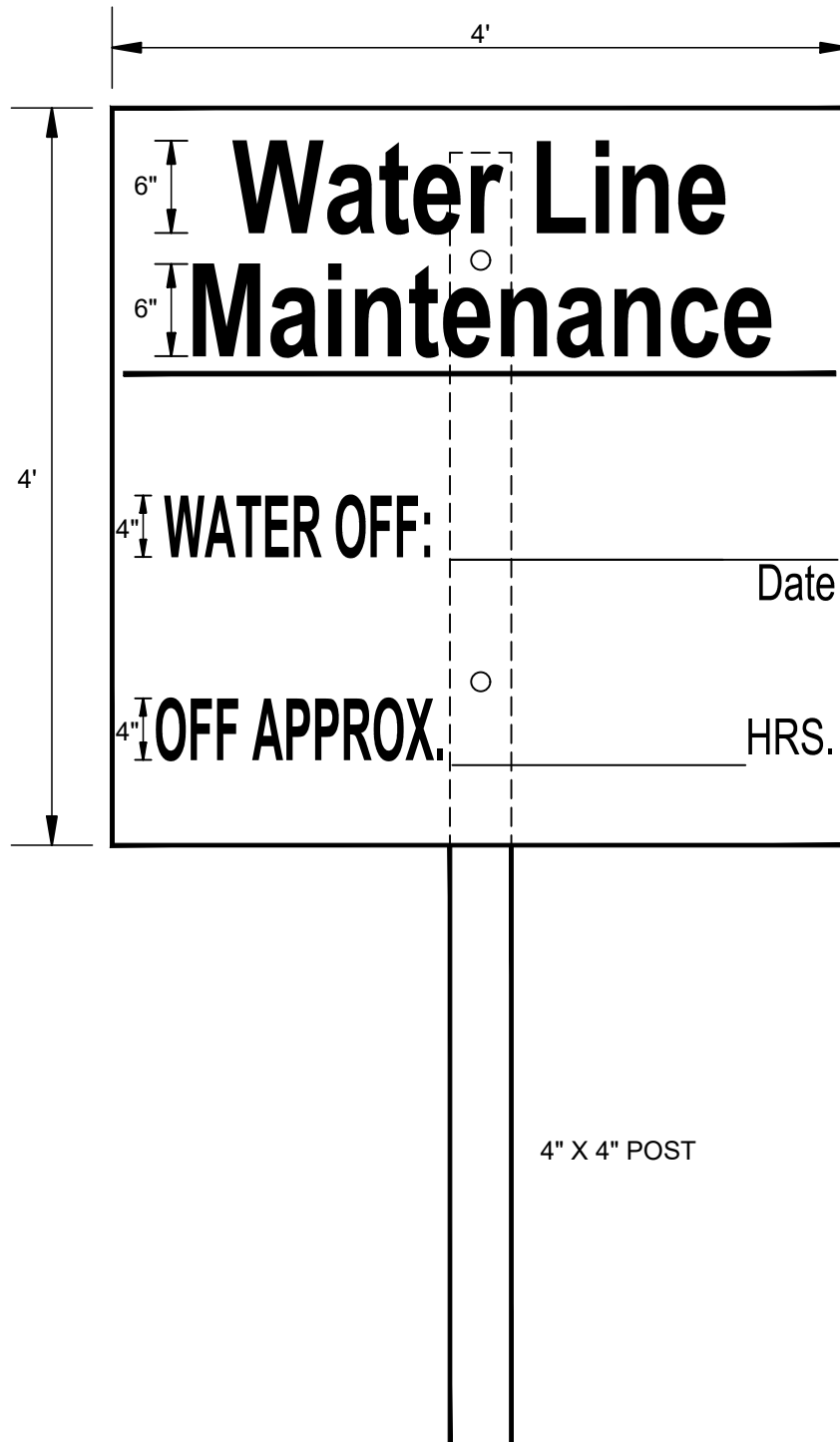
April 2018



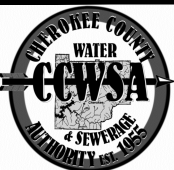
**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Turn Lane
Relocation**
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
W-18



April 2018

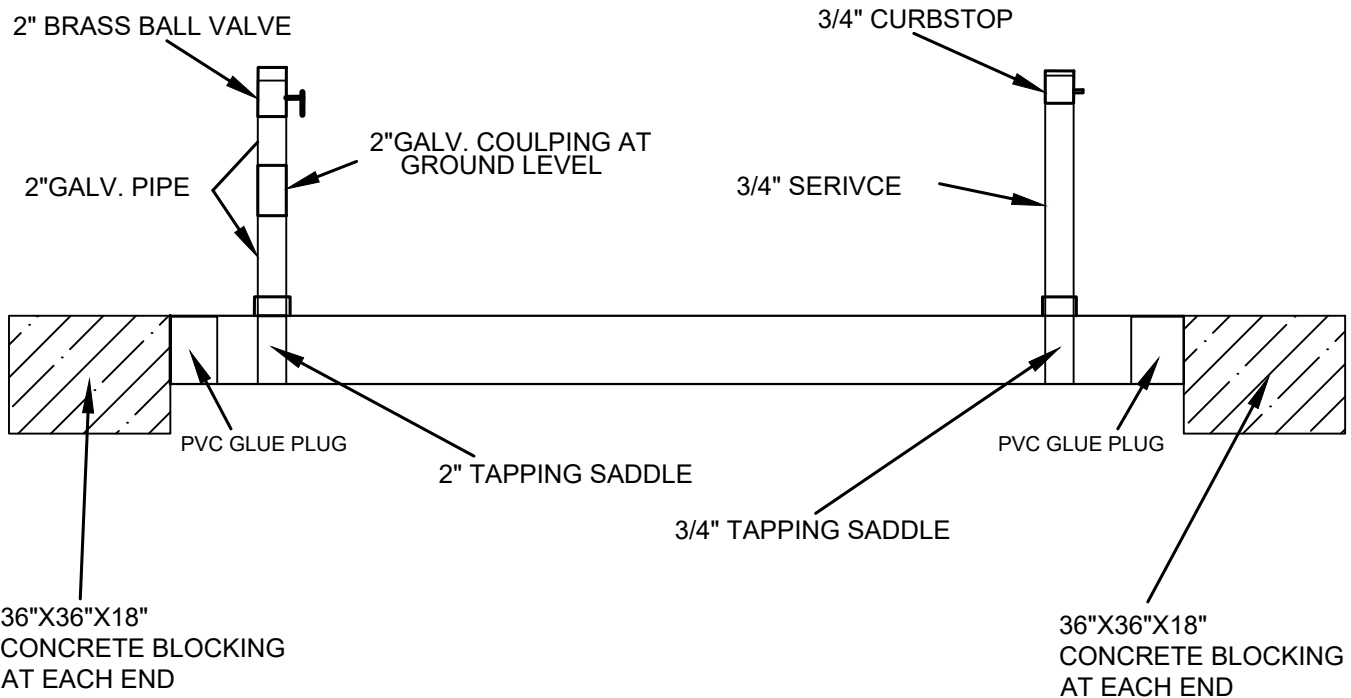


**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

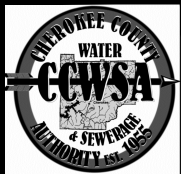
**Water Line
Maintenance Sign**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
W-19



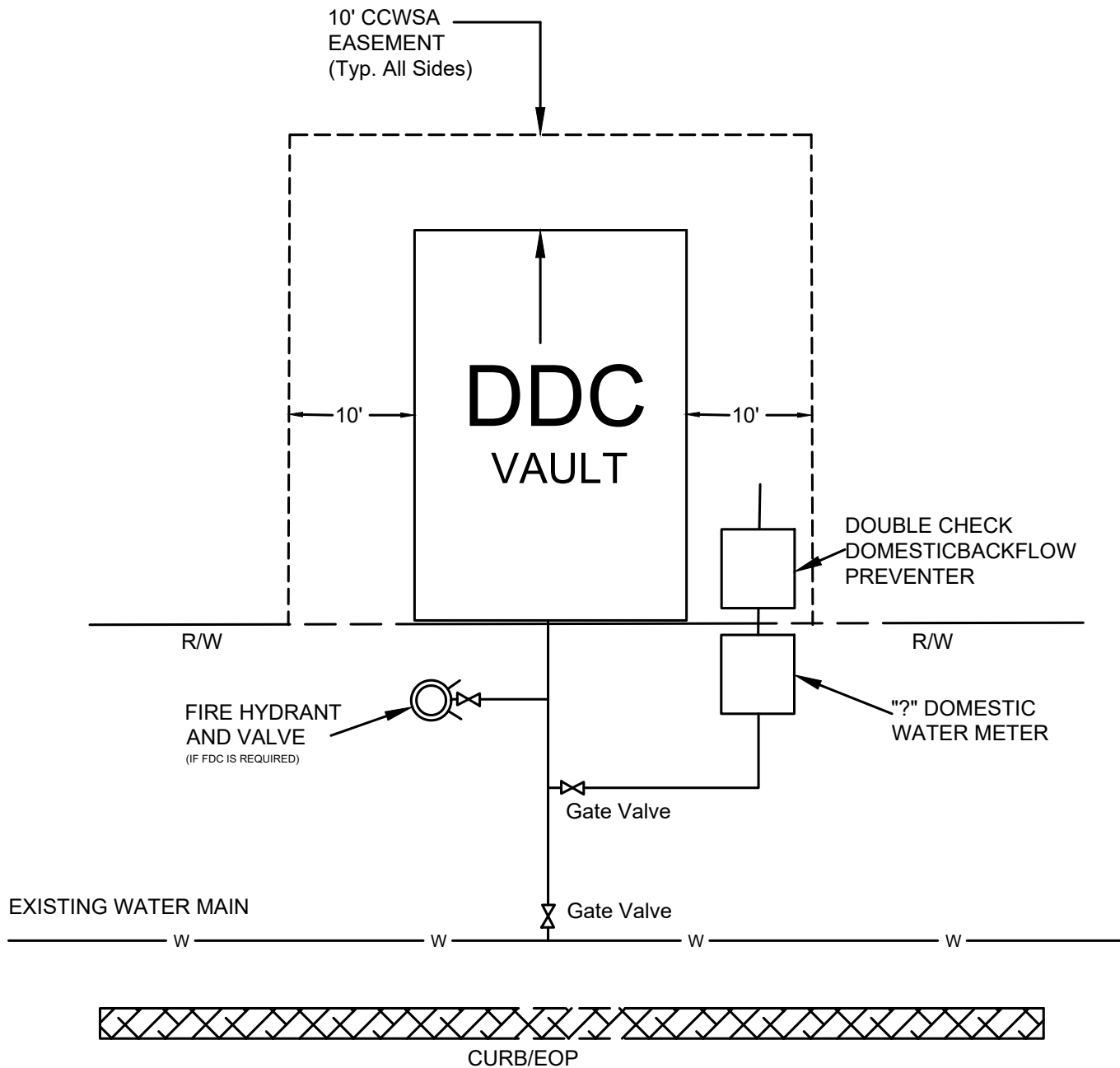
April 2018



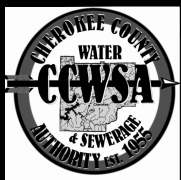
**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Water Line
Grout**
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
W-20



April 2018



**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Backflow and
Easement**
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
W-21

CHEROKEE COUNTY WATER & SEWERAGE AUTHORITY
POTABLE WATER SYSTEM

GENERAL CONSTRUCTION NOTES

- 1.) All potable water system construction must follow the current Cherokee County Water & Sewerage Authority Water Main Standards.
- 2.) All water mains shall be ductile iron pipe, except where the Construction Manager approves otherwise. Ductile iron pipe shall be thickness Class 50 or Class 350, designed in accordance with AWWA C150 and manufactured in accordance with AWWA C151. All ductile iron pipe shall have an outside bituminous coating per AWWA C151 and an inside standard cement lining with bituminous seal coat per AWWA C104. All references to AWWA standards shall mean latest revisions published.
- 3.) Inside of developments with curb and gutter, the Contractor shall cut a "V" into the top of the curb for all water valves (line valves and hydrant valves) with the point of the "V" aimed at the valve.
- 4.) A concrete valve marker is to be placed directly above the plug on all dead-end water mains.
- 5.) Information regarding underground utilities on these plans is not guaranteed as to accuracy or completeness. Prior to beginning work, the Contractor shall request a field location through the utilities protection center and any utility owners thought to have facilities in the area. The Contractor shall promptly compare these field-marked locations with the project plans and then notify the Designer of any anticipated problems or need for contract changes. It is the Contractor's responsibility to excavate or cause the utility owner to excavate for the purpose of determining exact elevations or locations at utility crossings and other critical locations well in advance of the work under this contract. Damage to existing utilities resulting from the Contractor's negligence shall be repaired at the Contractor's expense.
- 6.) All service lines under pavement shall be encased in Schedule 40 PVC casing with a minimum diameter of 2", extending a minimum of 3 feet beyond the pavement and/or sidewalk on each side of the road. 2" services shall be encased in 4" PVC casings. All water service laterals 2" and smaller shall be Type K copper tubing with compression fittings as specified in the Water Standards.
- 7.) Concrete thrust blocking shall be placed at all bends, tees, valves, reducers and all other fittings. Prior to blocking, fittings shall be wrapped with polyethylene film.
- 8.) The Developer/Contractor shall meet with the Chief Inspector at least 24 hours before beginning construction. The Contractor shall notify the Chief Inspector or his designated representative by 8:30 AM of each workday when work is scheduled unless authorized otherwise.
- 9.) Water mains shall be installed so that the top of the pipe is a minimum of four feet below final grade, four feet below the edge of the pavement, or four feet below the ditch paralleling the road, whichever is deepest.
- 10.) Contractor shall place a vertical piece of 2" PVC pipe on top of the water main at all tees, bends, fittings, elevation transitions, and every fifty feet along the length of the main for the purpose of collecting elevation data for record drawings. The top of the 2" PVC shall be capped or taped to prevent dirt and other debris from clogging the 2" pipe before the depth can be measured.
- 11.) All fittings and valves are to be mechanical joint with retainer glands unless otherwise approved. Retainer glands shall be EBAA Mega-Lug or approved equal.
- 12.) Type 4 bedding is required at all restrained pipe installations.

- 13.) Contractor must show proof of insurance in the amount specified by the CCWSA.
- 14.) All backflow preventer devices are to be tested by a CCWSA approved tester. A list of testers is available from the CCWSA. Any tester not on the list is subject to approval by the CCWSA. Contact the Backflow Coordinator with the CCWSA for more information.
- 15.) All meters, backflow preventers and double detector check valve assemblies are to be purchased from the CCWSA.
- 16.) A horizontal separation of at least 10 feet is required between existing or proposed water mains and existing or proposed sanitary sewer lines.
- 17.) A vertical separation of at least 18 inches is required where a water main crosses an existing or proposed sanitary sewer line. A full joint of water main is required to be centered at the sanitary sewer line crossing.
- 18.) No portion of this project is being constructed on or near an existing landfill, abandoned landfill, or any other site used for waste disposal.
- 19.) Potable water and sanitary sewer structures are not allowed within a dam. Utility pipelines and structures must be a minimum of 30 feet outside the toe of slope of the dam.
- 20.) Hydrant flow tests are valid for one year and only apply to a single phase of this project.
- 21.) Existing County roads shall not be open cut unless permission is granted by the Cherokee County Department of Public Transportation.
- 22.) Plan approval is valid for 12 months without beginning construction. Plans shall be subject to beginning the process of review and approval if 12 months expire prior to the start of construction.
- 23.) As-Built drawings of water and sanitary sewer facilities are required to be submitted to the CCWSA upon completion of the project.
- 24.) If construction plans are stamped for a full project, and then the Developer revises the plans to build the development in phases, no construction or field inspection will be allowed to begin until the revised, phased plans are re-approved and stamped for the phased construction.
- 25.) If an existing water main is to be paved over by a new entrance or accel/decel lanes, the water main is to be abandoned and replaced with a new DIP water main located five feet or more behind the new back of curb.
- 26.) New water mains installed within 80 feet of steel gas main crossings, or in any wetland areas must be encased in polyethylene tubing (Polywrap 8 mil).
- 27.) All streams and protective buffers shall be crossed in accordance with current County and State regulations.
- 28.) Fire hydrants shall be designed to be placed within 200 feet of new entrances, in all cul-de-sacs, and at every proposed intersection.
- 29.) New fire hydrants shall be Mueller Super Centurion 250, M&H AWWA C502 Style 129 Traffic Model. or EJ Watermaster 5CD 250. All hydrants shall be rated for 250 psi working pressure and shall be equipped with a 5¼" valve opening, two 2½" hose nozzles and one 4½" pumper nozzle.
- 30.) Inside of steel casings, pipe joints shall be restrained using Fast-Grip gaskets or approved equal.

- 31.) All new water mains must pass leakage testing and disinfection testing witnessed by a CCWSA representative before a project is released and accepted.
- 32.) All water meter vaults and DDCV assembly vaults are to be located off of the road right-of-way in a permanent easement dedicated to the CCWSA. The easement shall be dimensioned to be 10 feet off each corner of the vault. Smaller domestic use meters adjacent to a DDCV assembly can be located within the 10-foot spacing between the vault and the edge of the easement.
- 33.) The report stating the results of the hydrant flow test and the 24 hour pressure recording chart shall be shown within the plans for this project.
- 34.) Horizontal locations will be referenced to Georgia State Plane Coordinate System (NAD 83 West Zone Feet).
- 35.) Vertical locations will be referenced to North American Vertical Datum (NAVD 88).
- 36.) Orthometric locations will be referenced to GEOID 99/03
- 37.) No landscaping or structures will be allowed inside CCWSA easements.
- 38.) Contractor shall provide meter stubs.
- 39.) Must show all street lights within development
- 40.) Must show 911 addresses for each lot or parcel
- 41.) Developers are required to comply with CCWSA specifications in section W314 with respect to irrigation of large landscapes.

Street Light Ordinance

Pole Specifications:

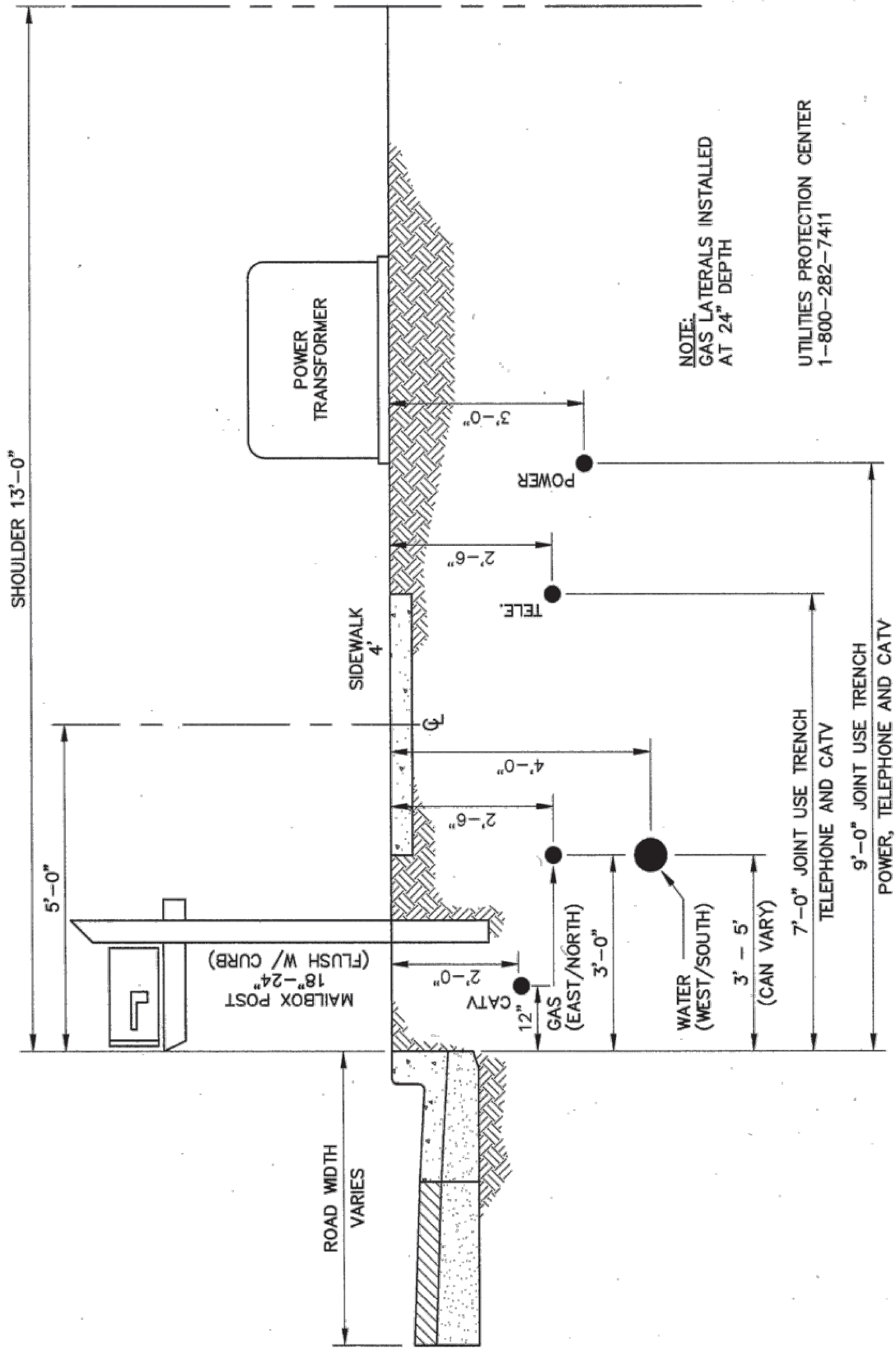
- 30 Foot Poles Only
- Wood or Fiberglass Only
- Arms must be 2 ½' to 6' long
 - Roadway Fixtures

Street light plans are submitted by the Power Companies to the Street Light Coordinator. All power pole contributions must be paid by the Developer **before** the release of water meter sales.

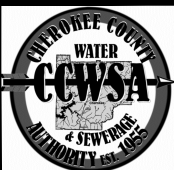
The above does not apply to subdivisions that are located inside city limits.

Any further questions please call:
Street Light Coordinator at (770) 479-9107

UTILITY PLACEMENT DETAIL



April 2018



**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Utility
Placement**
CONSTRUCTION STANDARD

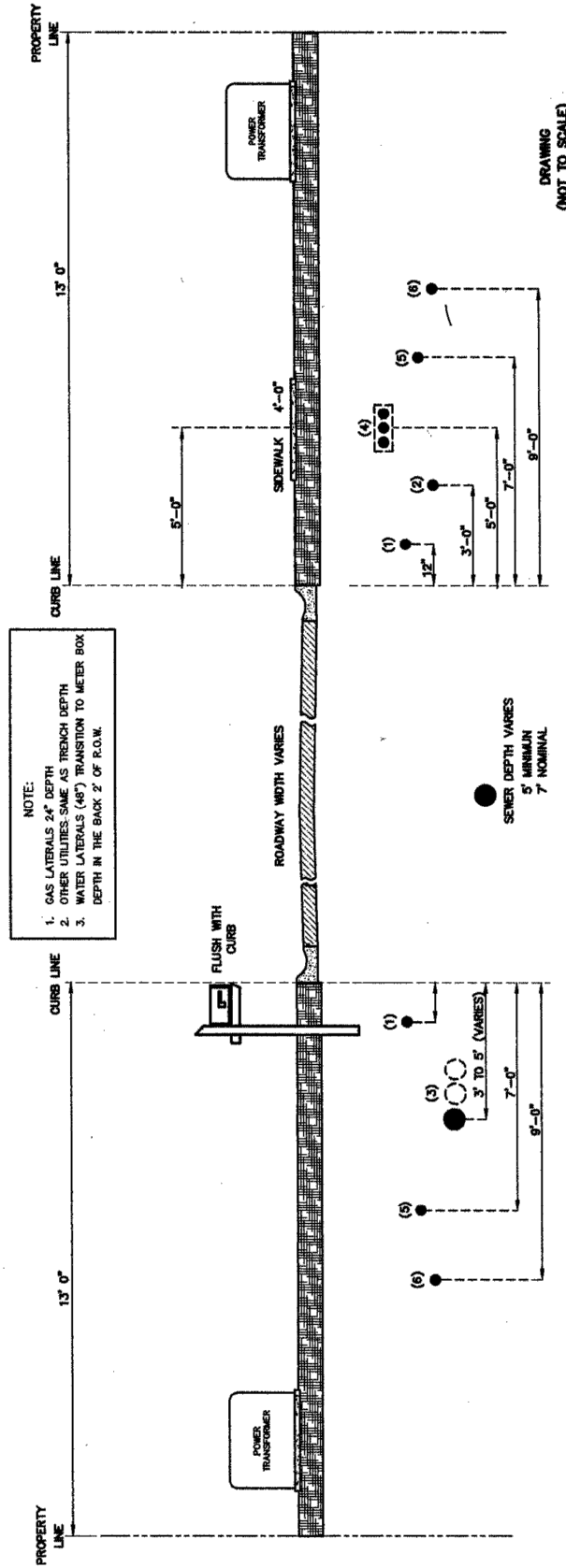
STANDARD
DETAIL
NO.
M-01

CHEROKEE COUNTY
 UTILITY PLACEMENT DETAIL 208-A
 RURAL STREET SECTION
 SEE ATTACHMENT "A"



CALL BEFORE YOU DIG
 1-800-282-7411

DRAWING
 (NOT TO SCALE)

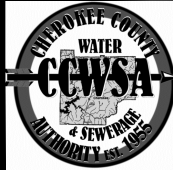


NOTE:
 1. GAS LATERALS 24" DEPTH
 2. OTHER UTILITIES SAME AS TRENCH DEPTH
 3. WATER LATERALS (48") TRANSITION TO METER BOX DEPTH IN THE BACK 2' OF R.O.W.

DRAWING
 (NOT TO SCALE)

<p>(1) CATV CURB DIST - 1' DEPTH - 24" BOTH SIDES ROADWAY</p>	<p>(2) GAS CURB DIST - 3' DEPTH - 36" EAST OR NORTH SIDE OF STREET AS DETERMINED AT SUBD. ENTRANCE</p>	<p>(3) WATER CURB DIST - 3' TO 5' DEPTH - 48" WEST OR SOUTH SIDE OF STREET AS DETERMINED AT SUBD. ENTRANCE</p>	<p>(4) MULTI-DUCT CONDUIT CURB DIST - 5' DEPTH - 18" REQUIRES SPECIAL PERMIT UTILITIES PROTECTION CENTER 1-800-282-7411 METRO (770) 823-4344</p>	<p>(5) TELEPHONE CURB DIST - 7' DEPTH - 30" BOTH SIDES OF ROAD JOINT TRENCH LOCATION FOR: TELEPHONE, CATV</p>	<p>(6) POWER CURB DIST - 9' DEPTH - 36" BOTH SIDES OF ROAD JOINT TRENCH LOCATION FOR: PWR, TELE, CATV</p>	<p>NOTE: THE BACK (4) FEET OF THE R.O.W. IS RESERVED FOR THE PLACEMENT OF POLES, PEDESTALS, PULL BOXES, METERS, AND OTHER UTILITY DEVICES.</p>
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April 2018



CHEROKEE COUNTY
 WATER & SEWERAGE
 AUTHORITY

Utility
 Placement
 CONSTRUCTION STANDARD

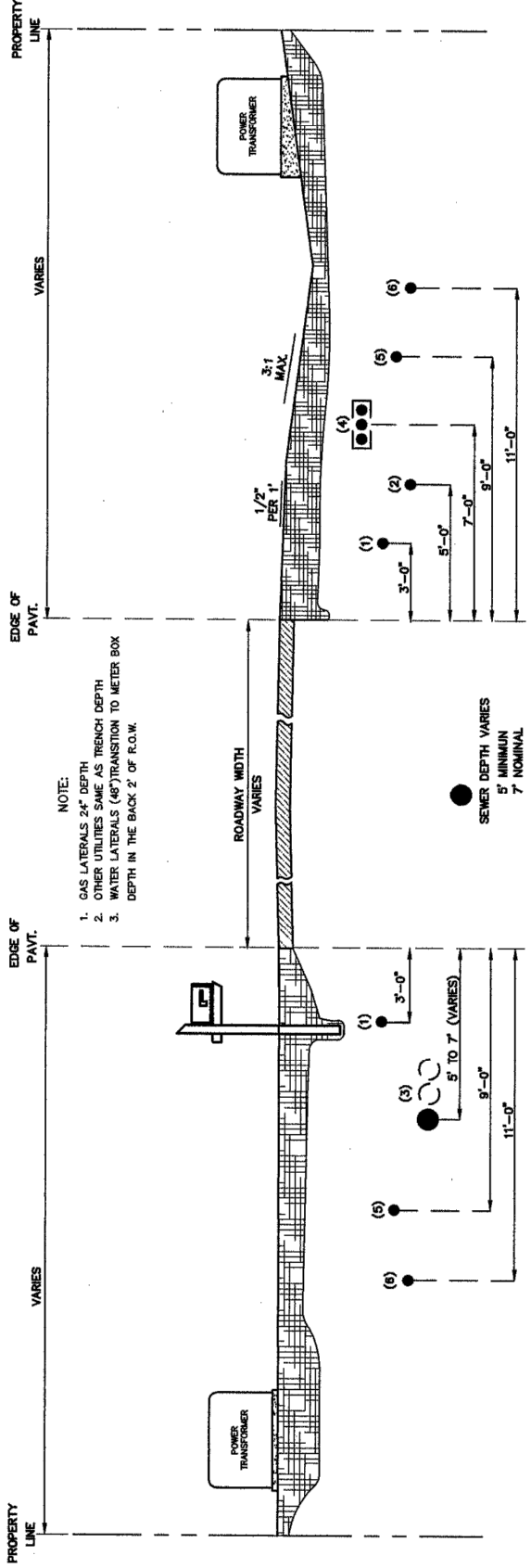
STANDARD
 DETAIL
 NO.
 M-02



CALL BEFORE YOU DIG
1-800-282-7411

CHEROKEE COUNTY
UTILITY PLACEMENT DETAIL 208-B
RURAL STREET SECTION
SEE ATTACHMENT "A"

NOTE:
NO UNDER-GROUND UTILITIES TO BE
INSTALLED PRIOR TO ROADWAY AND SLOPE GRADING

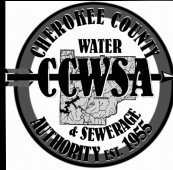


NOTE:
1. GAS LATERALS 24" DEPTH
2. OTHER UTILITIES SAME AS TRENCH DEPTH
3. WATER LATERALS (48") TRANSITION TO METER BOX
DEPTH IN THE BACK 2' OF R.O.W.

SEWER DEPTH VARIES
5" MINIMUM
7" NOMINAL

<p>(1) CATV PAVT. DIST. - 3' DEPTH - 24" BOTH SIDES ROADWAY</p>	<p>(2) GAS PAVT. DIST. - 5' DEPTH - 36" EAST OR NORTH SIDE OF STREET AS DETERMINED AT SUBD. ENTRANCE</p>	<p>(3) WATER PAVT. DIST. - 5' TO 7' DEPTH - 48" WEST OR SOUTH SIDE OF STREET AS DETERMINED AT SUBD. ENTRANCE</p>	<p>(4) MULTI-DUCT CONDUIT PAVT. DIST. - 7' DEPTH - 18" REQUIRES SPECIAL PERMIT UTILITIES PROTECTION CENTER 1-800-282-7411 METRO (770) 623-4344</p>	<p>(5) TELEPHONE PAVT. DIST. - 9' DEPTH - 30" BOTH SIDES OF ROAD JOINT TRENCH LOCATION FOR: TELEPHONE, CATV</p>	<p>(6) POWER PAVT. DIST. - 11' DEPTH - 36" BOTH SIDES OF ROAD JOINT TRENCH LOCATION FOR: PWR, TELE, CATV</p>	<p>NOTE: THE BACK (4) FEET OF THE R.O.W. IS RESERVED FOR THE PLACEMENT OF POLES, PEDESTALS, PULL BOXES, METERS, AND OTHER UTILITY DEVICES.</p>
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April 2018



CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY

Utility
Placement
CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
M-03



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

04/12/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Insurance Agent/Broker Name Insurance Agent/Broker Street Address or P.O. Box Insurance Agent/Broker City, State & Zip Code Contact & Phone Number	CONTACT NAME: Agent/Broker Representative Name
	PHONE (A/C, No, Ext): Agent/Broker Phone Number FAX (A/C, No): Agent/Broker Fax
	E-MAIL ADDRESS: Agent Broker Email Address
	INSURER(S) AFFORDING COVERAGE
	INSURER A : Name of Insurance Company Enter NAIC
INSURED Vendor/Contractor Name Vendor/Contractor Street Address or P.O. Box Vendor/Contractor City, State & Zip Code	INSURER B : Name of Insurance Company (if applicable) Enter NAIC
	INSURER C : Name of Insurance Company (if applicable) Enter NAIC
	INSURER D : Name of Insurance Company (if applicable) Enter NAIC
	INSURER E : Name of Insurance Company (if applicable) Enter NAIC
	INSURER F : Name of Insurance Company (if applicable) Enter NAIC

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual <input checked="" type="checkbox"/> XCU-Explosion, Undrgrnd Collap GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:	Y	N	Enter Policy #	Eff. Date	Exp. Date	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 Fire Damage-Any Fire \$ 50,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input checked="" type="checkbox"/> ALL OWNED AUTOS <input checked="" type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS	Y	N	Enter Policy #	Eff. Date	Exp. Date	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 10,000	Y	N	Enter Policy #	Eff. Date	Exp. Date	EACH OCCURRENCE \$ 4,000,000 AGGREGATE \$ 4,000,000 \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	N/A	Enter Policy #	Eff. Date	Exp. Date	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
	OTHER POLICIES			Enter Policy #	Eff. Date	Exp. Date	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Cherokee County Water And Sewerage Authority is additional insured.
 This/These certificate(s) of insurance conform(s) to all terms and conditions (including coverage of the indemnity agreement) contained in Contract w/CCWSA.
 Insert Contract, Customer Account, and/or Purchase Order # (Job Description, if Applicable)

CERTIFICATE HOLDER **CANCELLATION**

Cherokee County Water And Sewerage Authority Attn: Risk Dpt. P.O. Box 5000 140 West Main Street Canton, GA 30114	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE Endorsement/Signature The policies shall be endorsed. Certificate holder shall be additional insured.
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**COLOR CODES
FOR
UTILITY LOCATING**

RED ELECTRIC

YELLOW GAS-OIL

ORANGE TELEPHONE/CATV

BLUE WATER

GREEN SEWER

IF YOU DIG GEORGIA

CALL US FIRST !

1-800-282-7411

It's The Law !

Utilities Protection Center, Inc.

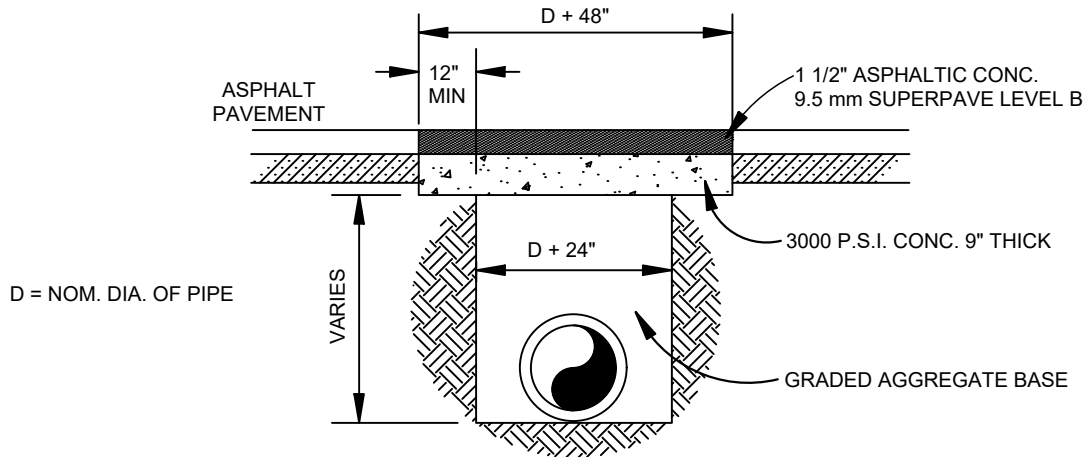
**THREE WORKING DAYS
BEFORE
YOU DIG GEORGIA
CALL**

**Utilities Protection
Center, Inc.**



1-800-282-7411

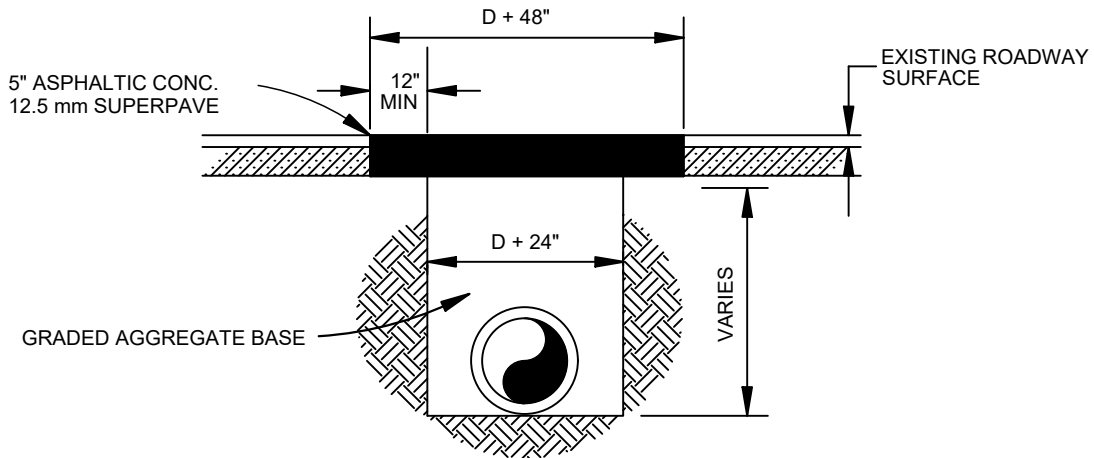
It's The Law !



D = NOM. DIA. OF PIPE

STATE OR STATE-AID ROADS

(If required by road inspector)

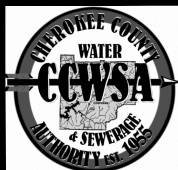


NOTES:

1. PERMISSION MUST BE OBTAINED FROM CHEROKEE COUNTY TO OPEN CUT EXISTING ROADS.
2. ROADWAYS WILL GENERALLY BE BORED OR TUNNELED FROM DITCH LINE TO DITCH LINE.
3. IF CONCRETE PAVEMENT, REPLACE WITH ORIGINAL THICKNESS (MINIMUM 8"), FLUSH WITH EXISTING PAVEMENT.
4. COMPACTION REQUIREMENTS: 95% STD. PROCTOR FROM PIPE BEDDING TO 1' BELOW GRADE. 100% STD. PROCTOR FOR TOP 1' OF TRENCH.
5. NEW PAVEMENT SHALL BE BONDED TO EXISTING PAVEMENT USING INFRARED ASPHALT REPAIR METHOD.

COUNTY ROADS

April 2018

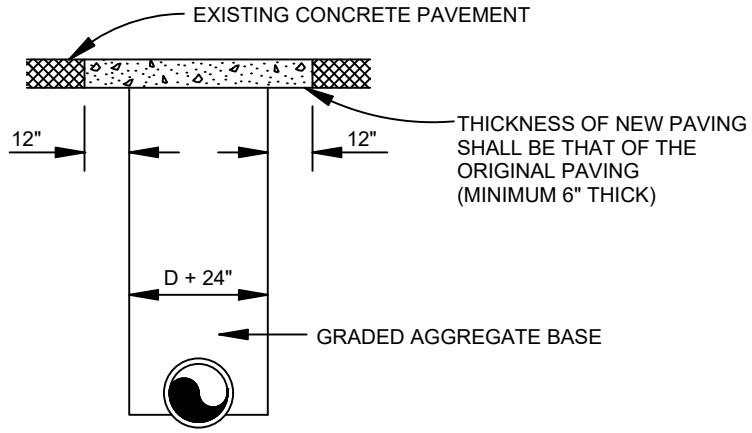


CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY

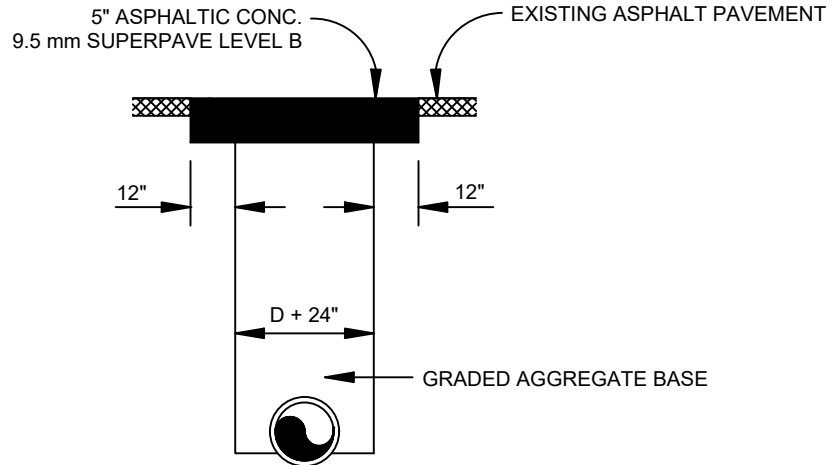
Typical Street Cut Repair

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
M-06



CONCRETE DRIVEWAY

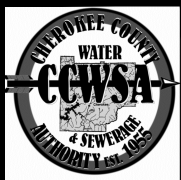


ASPHALT DRIVEWAY

NOTES:

1. PERMISSION MUST BE OBTAINED FROM CHEROKEE COUNTY TO OPEN CUT EXISTING ROADS.
2. ROADWAYS WILL GENERALLY BE BORED OR TUNNELED FROM DITCH LINE TO DITCH LINE.
3. IF CONCRETE PAVEMENT, REPLACE WITH ORIGINAL THICKNESS (MINIMUM 8"), FLUSH WITH EXISTING PAVEMENT.
4. COMPACTION REQUIREMENTS: 95% STD. PROCTOR FROM PIPE BEDDING TO 1' BELOW GRADE.
100% STD. PROCTOR FOR TOP 1' OF TRENCH.
5. NEW PAVEMENT SHALL BE BONDED TO EXISTING PAVEMENT USING INFRARED ASPHALT REPAIR METHOD.

April 2018



**CHEROKEE COUNTY
WATER & SEWERAGE
AUTHORITY**

**Typical Driveway
Cut Repair**

CONSTRUCTION STANDARD

STANDARD
DETAIL
NO.
M-07

Return to:
Cherokee County Water & Sewerage Authority
P.O. Box 5000
Canton, Georgia 30114
Attn: Jeffery Hooper

**State of Georgia
County of Cherokee**

Grant of Utility Easement

This grant of easement made this _____ day of _____, 20____, from _____ of the State of Georgia, and County aforesaid, hereinafter called Grantor, to **CHEROKEE COUNTY WATER & SEWERAGE AUTHORITY**, a Political Subdivision of the State of Georgia, herein called the Grantee.

WITNESSETH, the Grantor for and in consideration of the sum of \$1.00 and other valuable considerations in hand paid, at and before the sealing and delivery of these presents, does grant, bargain, sell, and convey unto Grantee an easement and perpetual right-of-way over, upon, through, under and/or across the property of the Grantor in Land Lot(s) _____, of _____ District, 2nd Section, Cherokee County, Georgia, and being a strip of land more particularly described and shown on the plat attached hereto as Exhibit "A" and entitled _____ (Subdivision Name, Phase, Unit and/or Pod, _____ Lot Number _____) made a part hereof showing the dimensions and location of this easement. The permanent, exclusive easement covered by this instrument is _____ feet wide, with the permission to use an additional _____ feet wide during construction, unless otherwise shown on Exhibit "A", the center of said permanent, exclusive easement shall be the center line of the utility pipeline hereinafter installed over, upon, unless otherwise shown on Exhibit "A", through, under and/or across said lands. The easement begins and ends where the said pipeline enters and leaves the property line as indicated above, and totals approximately _____ feet in length.

The permanent, exclusive easement covered by this instrument is for the purpose of a water line/main, sewer line/main and/or utility installation together with the right to go upon said land to install said utility pipeline and installations with the continuous right from time to time to go in and upon said right of way and to construct, install, operate, maintain, inspect, reconstruct, repair, renew, and replace therein the utility pipeline and other installations as may be necessary; also the right to clear, keep clear, remove and dispose of all undergrowth, trees and other obstructions, objects and structures on said right of way, which are inconsistent with the rights of the Grantee and which may interfere with or endanger the construction, operation and maintenance of said water line/main and other installations; also the right of ingress and egress to and from said right of way over roads, if any, existing at the time for such ingress and egress, for the purpose of constructing, operating, maintaining, repairing, renewing, replacing said utility pipeline and installations. Said right of way easement may be used by the owners of said land, or their assigns, provided such use is not inconsistent with the rights sought to be condemned and further that such use does not interfere with, injure or endanger said utility pipeline and other installations and the construction, repairing, renewal and replacement thereof and the uses for the purposes hereinbefore stated.

Grantor for both itself and its heirs and assigns understands and agrees in connection with this conveyance that any and all construction, digging, grubbing, clearing, filling, or other earth moving or construction activities within or in the easement area conveyed herein are prohibited without the express written permission from the Cherokee County Water & Sewerage Authority.

The Grantor does hereby covenant that they are lawfully seized and possessed of the real estate above described, that Grantor does have good and lawful right to convey the said property, and said property is free from all encumbrances, and that they will forever warrant and defend title thereto against the claims of all persons whomsoever.

IN WITNESS WHEREOF, said GRANTOR hereunder set his hand and affixed his seal on the date written above.

WITNESS

GRANTOR(S)

Witness (Printed Name)

Grantor (Printed Name)

Witness (Signature)

Grantor (Signature)

Grantor (Printed Name)

Grantor (Signature)

Sworn to and subscribed before me

This the _____ day of _____, 20 _____.

(SEAL)
Notary Public

Return to:
Cherokee County Water & Sewerage Authority
P.O. Box 5000
Canton, Georgia 30114
Attn: Jeffery Hooper

State of Georgia
County of Cherokee

Grant of Easement
Utility Meter Vault

This grant of easement made this _____ day of _____, 20____, from _____ of the State of Georgia, and County aforesaid, hereinafter called Grantor, to **CHEROKEE COUNTY WATER & SEWERAGE AUTHORITY**, a Political Subdivision of the State of Georgia, herein called the Grantee.

WITNESSETH, that Grantor for and in consideration of the sum of \$1.00 and other valuable considerations in hand paid, at and before the sealing and delivery of these presents, does grant, bargain, sell, and convey unto Grantee an easement and perpetual right-of-way over, upon, through, under and/or across the property of the Grantor in Land Lot(s) _____, of _____ District, 2nd Section, Cherokee County, Georgia, and being a strip of land more particularly described and shown on the plat attached hereto as Exhibit "A" and entitled _____ (Subdivision Name, Phase, Unit and/or Pod, _____ Lot Number _____) made a part hereof showing the dimensions and location of this easement.

The actual utility meter vault easement area may differ from the description shown on Exhibit "A". The actual meter easement shall be a _____ foot wide by _____ foot long square area surrounding the meter as actually installed, the meter being the center of said area.

The permanent, exclusive utility meter easement conveyed herein by Grantor is for the purpose of a utility meter vault and includes the rights to enter upon Grantor's property to install the utility meter vault to be situated within the said easement, and to inspect, maintain, replace, or repair the same, as may from time to time be necessary, or whenever Grantee deems fit, with all rights, members and appurtenances to said easement and right-of-way in anywise appertaining or belonging thereto.

Grantor for both itself and its heirs and assigns understands and agrees in connection with this conveyance that any and all construction, digging, grubbing, clearing, filling, or other earth moving or construction activities within or in the easement area conveyed herein are prohibited without the express written permission from the Cherokee County Water & Sewerage Authority.

The Grantor does hereby covenant that they are lawfully seized and possessed of the real estate above described, that Grantor does have good and lawful right to convey the said property, and said property is free from all encumbrances, and that they will forever warrant and defend title thereto against the claims of all persons whomsoever.

IN WITNESS WHEREOF, said GRANTOR hereunder set his hand and affixed his seal on the date written above.

WITNESS

GRANTOR(S)

Witness (Printed Name)

Grantor (Printed Name)

Witness (Signature)

Grantor (Signature)

Grantor (Printed Name)

Grantor (Signature)

Sworn to and subscribed before me

This the _____ day of _____, 20 _____.

Notary Public (SEAL)

Cherokee County Water & Sewerage Authority

P.O. Box 5000 Canton, Georgia 30114
Phone: (770) 479-1813

New Project Requirements & Maintenance Bond Notification (2018)

This is a list of some of the requirements that need to be met before obtaining water and/or sewer service in Cherokee County.

- A pre-construction meeting with water and/or sewer contractor and C.C.W.S.A inspector before work begins. (770) 479-9107
- Contractor must have approved plans stamped by C.C.W.S.A before water or sewer work begins.
- There are certain fees, depending on type of project, which must be paid to C.C.W.S.A. before getting service. Some of which are:

Plan Review Fees:

Water \$600.00

Sewer \$850.00

Combined Water & Sewer \$1200.00

Lift Station \$10,000.00

Easement Fee \$200.00 (required per parcel for all off site easements)

Water Flow Test \$400.00

(Fees must be paid before flow test can be ordered or plan review meeting scheduled)

(FEES ARE SUBJECT TO CHANGE)

Water Meter Deposit - If meter is larger than 2" meter must have a by-pass. Contact: Special Projects Coordinator (770) 479-1813 All fees paid before tapping.

Sewer Tap Fee - Contact: Special Projects Coordinator (770) 479-1813 All fees paid before tapping.

Back-Flow Device - When testable device is required we also must have test results by approved tester before setting of meter. Contact: Back-Flow Coordinator (770) 479-9107

As-Builts - Four (4) sets of As-Built Plans & Electronic Data (On State Plane Coordinates) must be submitted to G.I.S. Department for all projects. Contact: Plan Review Coordinator (770) 479-1813

Maintenance Bond Notification - The owner/developer of this project understands there shall be a maintenance bond or letter of credit posted for this project. The bond shall be for a period of twelve (12) months from the date of acceptance by the Cherokee County Water & Sewerage Authority. The As-Builts will "NOT" be signed and released, nor will a Clean Out Inspection or a Clean Out approval be issued until maintenance bond or letter of credit has been posted.

All sanitary sewer manholes in streets shall be required to be @ 95% compaction under the first foot of top grade. Compaction tests shall be at all 4' lifts on 2 sides of each manhole within a 2' diameter of the manhole. Test results shall be faxed to C.C.W.S.A. Inspection Department (770) 704-0053 or emailed to the Inspector before any G.A.B. shall be placed on sub-grade.

- Any and all final tests on water and sewer, and all fees paid, before final plat can be signed or release of meters.
- Maintenance Bonds must be posted.
- Once job is released, owner/developer will be responsible for one-year warranty period.
- Project will not be released for meter sales until C.C.W.S.A. G.I.S. Department receives one copy of recorded final plat along with a PDF file.
- At end of one year a re-inspection will be done.
- If water has to be cut off, work needs to be scheduled 4 to 5 days ahead of time. Phone: (770) 479-9107
- CANNOT ENCROACH ON ANY BUFFERS, OWNER/DEVELOPER & ENGINEER WILL BE RESPONSIBLE FOR OBTAINING VARIANCES. (Must have in writing where variance was obtained)

Signature _____ Date _____

Cherokee County Water & Sewerage Authority
Final Plat Notes:

- 1.) Cherokee County Water & Sewerage Authority shall maintain the sewer mains and sewer laterals to the County, City or State Right-of-Way or to the edge of an easement dedicated to CCWSA. If sewer main is located within a private ingress-egress or a blanket utility easement, Cherokee County Water & Sewerage Authority shall maintain sewer mains and laterals from back of curb to back of curb. In the event of zero building setback adjacent to a Right-of-Way, CCWSA will maintain sewer mains and laterals from back of curb to back of curb.

- 2.) Clean out shall not be located outside of the Right-of-Way or easement. No structure can be within 5' (five feet) of any sewer clean out. Including, but not limited to any type of building, porches, foundations, stairs, signs, fences, retaining wall, or other types of wall, etc..

3.) **Street Light Ordinance**

Pole Specifications:

- 30 Foot Poles Only
- Wood or Fiberglass Only
- Arms must be 2 ½' to 6' long
- Roadway Fixtures

Street light plans are submitted by the Power Companies to the Street Light Coordinator. All power pole Contributions must be paid by the Developer **before** the release of water meter sales. The above does not apply to subdivision that are located inside the city limits.

*CERTIFICATE OF CHEROKEE COUNTY WATER & SEWERAGE
AUTHORITY "PURSUANT" TO ALL REQUIREMENTS OF THE
CHEROKEE COUNTY WATER AND SEWERAGE AUTHORITY
HAVING BEEN FULFILLED, THIS FINAL PLAT IS APPROVED
FOR RECORDING.*

Cherokee County Water & Sewerage Authority

Date

Gravity Sewer Points

Example

Point #	Northing	Easting	Rim Elev	Description	Invert Out	Size	Type	Invert In "A"	Size	Type	Invert In "B"
1	1520566.19	2179707.88	914.60	BM-9	897.10	10"	DIP	897.30			
2	1520237.99	2179603.81	916.50	BM-9A	898.58	10"	DIP	898.58			
3	1520111.98	2179601.85	915.82	BM5-10	907.95	8"	PVC	908.15	8"	PVC	908.15
4	1520094.83	2179503.51	919.39	BM5-10-1	911.52	8"	PVC	911.72			
5	1520099.67	2179362.96	929.52	BM5-10-2	921.65	8"	SDR26	921.85			
6	1520099.37	2179222.41	938.39	BM5-10-3	924.79	8"	SDR26	930.72	8"	PVC	924.99
7	1519989.36	2179220.79	933.21	BM5-10-3-1	925.54	8"	PVC				
8	1520102.42	2179100.26	947.71	BM5-10-4	939.84	8"	PVC	940.04			
9	1520106.95	2178878.35	965.21	BM5-10-5	954.25	8"	PVC				
10	1519705.34	2179208.63	920.89	BM5-12A	912.61	8"	PVC	912.61	8"	PVC	912.61
11	1519737.17	2179152.99	931.55	BM5-12A-1	916.88	8"	PVC	923.88			
12	1519736.59	2179044.42	934.53	BM5-12A-2	926.66	8"	PVC	926.86			
13	1519780.05	2178946.31	941.09	BM5-12A-3	933.22	8"	PVC	933.42			
14	1519865.20	2178755.30	959.90	BM5-12A-4	952.23	8"	PVC				
15	1519989.36	2179220.79	933.21	CO-1	925.54	6"	PVC				
16	1520106.95	2178878.35	965.21	CO-2	954.25	6"	PVC				
*Description Assigned By CCWSA											
**Point files to be submitted electronically in "Excel" format. (CD)											

Sewer Force Main Points

Example

Point #	Northing	Easting	Ground Elevation	Top of Pipe	Description	Invert Out	Size	Type
1	1520566.19	2179707.88	914.60	910.60	Force Main	897.10	4"	DIP
2	1520237.99	2179603.81	916.50	912.50	Force Main	898.58	4"	DIP
3	1520111.98	2179601.85	915.82	911.82	Force Main	907.95	4"	PVC
4	1520094.83	2179503.51	919.39	915.39	Force Main	911.52	4"	HDPE
5	1520099.67	2179362.96	929.52	925.52	Force Main	921.65	4"	PVC

* Ascii files to be submitted electronically. (On Disk)

**Point files to be submitted electronically in "Excel" format. (CD)

Water Points

Example

Point #	Northing	Easting	Ground Elevation	Top of pipe	Description
1	1486214.11	2208022.51	993.782	990.45	FH Valve
2	1486212.03	2208022.49	994.238	990.91	Fire Hydrant
3	1486205.20	2208339.26	983.7	980.37	8"x8"x6" FH Tee
4	1486203.56	2208538.41	974.78	971.45	8"x8"x8" Tee
5	1486069.28	2208674.33	969.04	965.71	90 Deg Bend
6	1486597.13	2208271.37	965.03	961.70	8"x8"x8" Tee
7	1486590.98	2208275.55	964.7	961.37	45 Deg Bend
8	1486615.58	2207777.36	992.78	989.45	8"x8"x8" Tee
9	1486692.03	2208401.58	962.48	959.15	22.5 Deg Bend
10	1486226.59	2208599.10	973.41	970.08	8"x8"x8" Tee
11	1486493.64	2207820.70	993.189	989.86	90 Geg Bend
12	1486428.37	2207978.29	984.196	980.87	FH Valve
13	1486426.32	2207978.55	984.248	980.92	8" DIP
14	1486473.22	2207844.45	991.996	988.67	8" DIP
15	1486069.28	2208674.33	969.04	965.71	8" PVC
16	1486445.55	2208076.94	984.622	981.29	3/4" Water Meter
17	1486502.35	2208155.49	978.006	974.68	1" Water Meter
18	1486575.49	2208171.30	973.398	970.07	2" Water Meter
19	1486593.15	2208272.97	964.822	961.49	8" Gate Valve
20	1486473.22	2207844.45	991.996	988.67	NE Vault Corner
21	1486431.75	2207918.55	990.141	986.81	SE Vault Corner
22	1486427.22	2207946.25	989.534	986.20	SW Vault Corner
23	1486428.37	2207978.29	984.196	980.87	NW Vault Corner

* Elevations for Vault Corners to be Top of Vault and Floor of Vault

**Point files to be submitted electronically in "Excel" format. (CD)

Street Light Points

Example

Point #	Northing	Easting	Ground Elevation	Address	Type	Arm Length
1	1486035.93	2208586.45	970.77	128 Maple Street	Wood	2.5'
2	1486069.28	2208674.33	969.04	129 Maple Street	Wood	2.5'
3	1486692.03	2208401.58	962.48	134 Maple Street	Wood	6'
4	1486703.85	2208469.55	962.02	135 Maple Street	Wood	6'
5	1486428.37	2207978.29	984.196	141 Maple Street	Fiberglass	2.5'
6	1486426.32	2207978.55	984.248	142 Maple Street	Fiberglass	2.5'
7	1486481.79	2207920.84	989.138	143 Maple Street	Fiberglass	6'
8	1486503.71	2207886.23	991.298	144 Maple Street	Fiberglass	6'
*Point files to be submitted electronically in "Excel" format. (CD)						

911 Addresses

Example

Lot Number	Street Number	Street Name	Subdivision Phase/Section/Pod/Unit
1	123	Maple Street	Maple Grove Phase 1, Unit 2 etc....
2	124	Maple Street	Maple Grove Phase 1, Unit 2 etc....
3	125	Maple Street	Maple Grove Phase 1, Unit 2 etc....
4	126	Maple Street	Maple Grove Phase 1, Unit 2 etc....
5	127	Maple Street	Maple Grove Phase 1, Unit 2 etc....

*Point files to be submitted electronically in "Excel" format. (CD)