

NOTES:

1. H.M.A.C. SHOWN IN THIS DETAIL IS SEPARATE FROM ANY ADDITIONAL THICKNESS CREATED BY ANY OVERLAY ITEM IN CONTRACT.
2. THE CONTRACTOR SHALL SAW CUT, REMOVE AND REPLACE EXISTING PAVEMENT A MINIMUM OF 6" BEYOND EITHER THE EDGE OF THE STORM SEWER TRENCH OR THE POINT WHERE EXISTING PAVEMENT IS DAMAGED DUE TO TRENCHING OPERATIONS, WHICHEVER IS GREATER.
3. INSTALLATION OF BACKFILL, SAW CUTTING AND REMOVAL OF EXISTING PAVEMENT AND SURFACE PATCH, SHALL NOT BE PAID FOR SEPARATELY. COSTS FOR THESE ITEMS SHALL BE INCLUDED IN UNIT PRICE BIDS FOR STORM SEWER PIPE.
4. THE CONTRACTOR SHALL PROVIDE STEEL PLATES TO SPAN THE TRENCH AS NECESSARY OR TO ALLOW BACKFILL TO CURE. SUCH PLATES SHALL BE SUITABLE FOR VEHICLE PASSAGE OVER THE TRENCH AND SHALL BE SATISFACTORILY ANCHORED IN PLACE. COSTS FOR THIS ITEM SHALL BE INCLUDED IN UNIT PRICE BIDS FOR STORM SEWER PIPE.
5. ALL TRENCHING AND TRENCH SAFETY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

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APPROVED

MAY 24, 2011

DATE

THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

**STORM SEWER LINE
BEDDING DETAIL
(EXISTING PAVED SURFACE)**

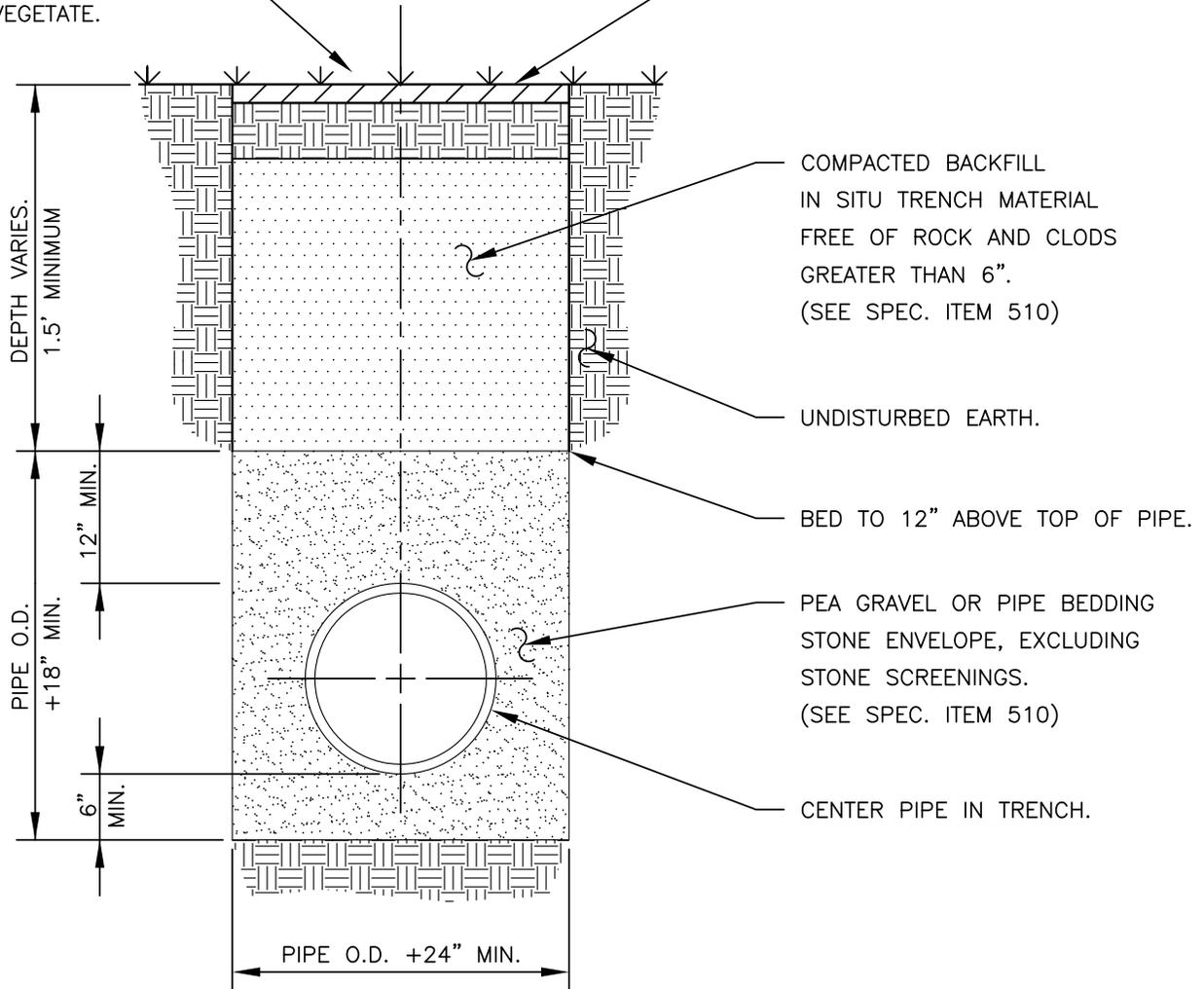
DRAWING NO:

DR-01



IN AREAS NOT TO BE
PAVED, PROVIDE 4" TOPSOIL
AND REVEGETATE.

FINISHED GROUND OR SUBGRADE.



COMPACTED BACKFILL
IN SITU TRENCH MATERIAL
FREE OF ROCK AND CLODS
GREATER THAN 6".
(SEE SPEC. ITEM 510)

UNDISTURBED EARTH.

BED TO 12" ABOVE TOP OF PIPE.

PEA GRAVEL OR PIPE BEDDING
STONE ENVELOPE, EXCLUDING
STONE SCREENINGS.
(SEE SPEC. ITEM 510)

CENTER PIPE IN TRENCH.

NOTE:

ALL TRENCHING AND TRENCH SAFETY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

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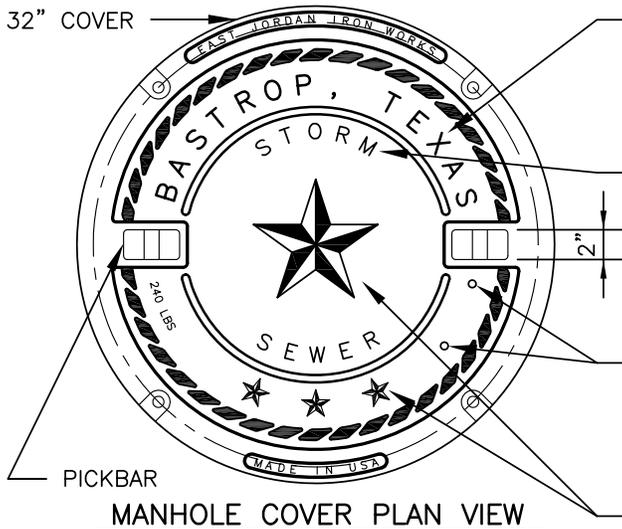
THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

**STORM SEWER LINE
BEDDING DETAIL
(NON-PAVED SURFACE)**

DRAWING NO:
DR-02





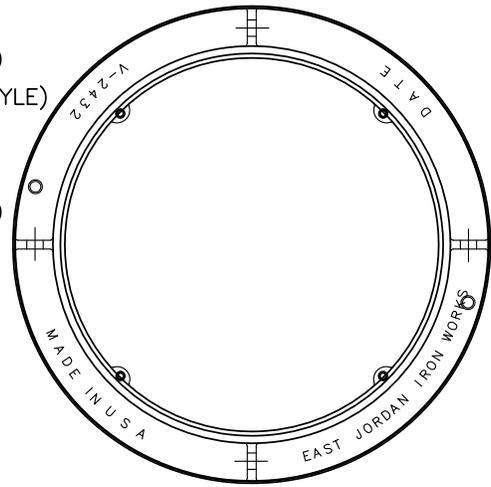
MANHOLE COVER PLAN VIEW

1 1/2" LETTERS
(RECESSED FLUSH)
(BOOKMAN OLD STYLE)

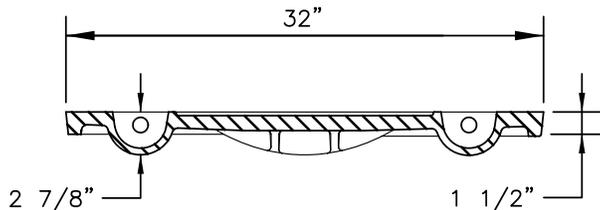
1" LETTERS
(RECESSED FLUSH)
(BOOKMAN OLD STYLE)

DRILL HOLES FOR
NUMBER PLATE
(SEE NOTE #13)

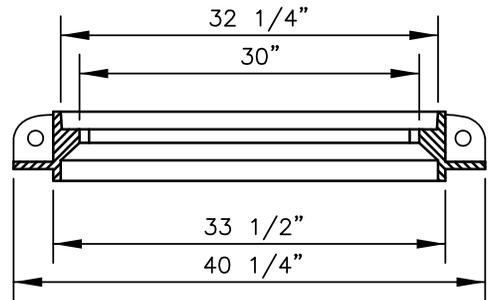
PROVIDE ETCHING
AROUND ALL STARS



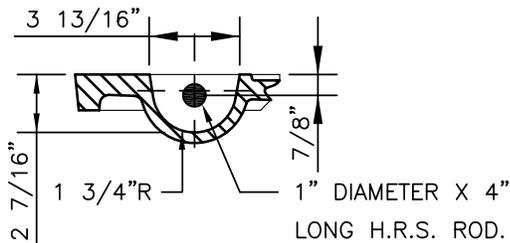
MANHOLE FRAME PLAN VIEW



MANHOLE COVER SECTION VIEW

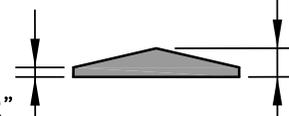


MANHOLE FRAME SECTION VIEW



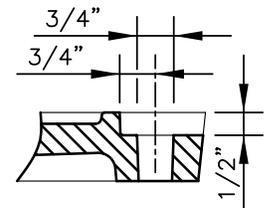
PICKBAR DETAIL

MIN. 3/32"
MAX. 1/8"



STAR SECTION VIEW

MIN. 1/4"
MAX. 3/8"



BOLT HOLE SECTION

NOTES:

- COVER AND FRAME SHALL COMPLY WITH STANDARD SPECIFICATIONS FOR DRAINAGE, SEWER, UTILITY AND RELATED CASTINGS: AASHTO DESIGNATION M306-04.
- MANHOLE COVER SHALL BE MODEL NUMBER: V-2432-3, AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
- MANHOLE FRAME SHALL BE MODEL NUMBER: V-2432, AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
- MANHOLE COVER AND FRAME ASSEMBLY, IF ORDERED AS A SET, SHALL BE MODEL NUMBER: V-2432, AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
- ALL CORNERS AND EDGES SHALL HAVE A 1/16" MINIMUM AND 1/8" MAXIMUM RADIUS.
- MANHOLE COVERS SHALL BE CAST WITH TWO 1" DIAMETER STEEL PICKBARS.
- MANHOLE COVER WEIGHT SHALL BE 240 LBS. FOR CAST IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM OF COVER.
- MANUFACTURER SHALL CERTIFY THAT EACH MANHOLE COVER MEETS HS-20 LOADING.
- FILLETS SHALL BE 1/4" RADIUS UNLESS OTHERWISE SPECIFIED.
- MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.
- COVER SHALL BE DIPPED IN A WATER-BASED ASPHALTIC COATING, PRIOR TO SHIPMENT FROM FOUNDRY.
- BOLTS SHALL BE 5/8"-11NC X 2" LONG HEX STAINLESS STEEL WITH WASHER.
- MANUFACTURER SHALL DRILL 2-3/16"x1/2" DEEP HOLES FOR A MANHOLE NUMBER PLATE TO BE PROVIDED BY THE CITY OF BASTROP. THE TOP HOLE SHALL BE DRILLED 1" O.C. FROM THE BOTTOM OF THE PICKBAR AND THE BOTTOM HOLE SHALL BE DRILLED 4" O.C. FROM THE TOP HOLE.

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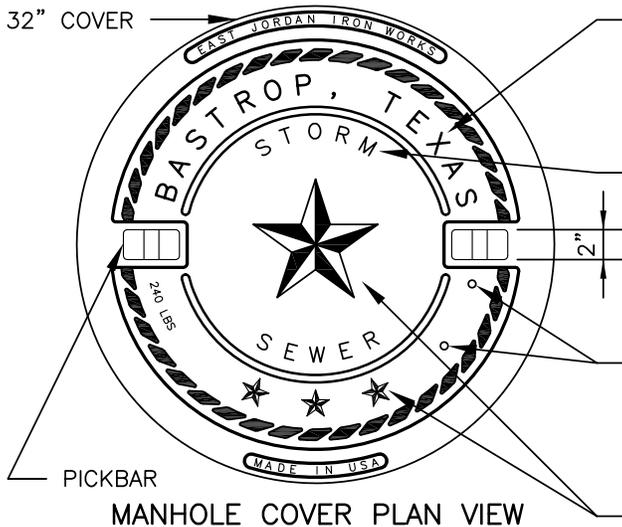
THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

**BOLTED STORMSEWER MANHOLE
COVER AND FRAME DETAIL**

DRAWING NO:
DR-05





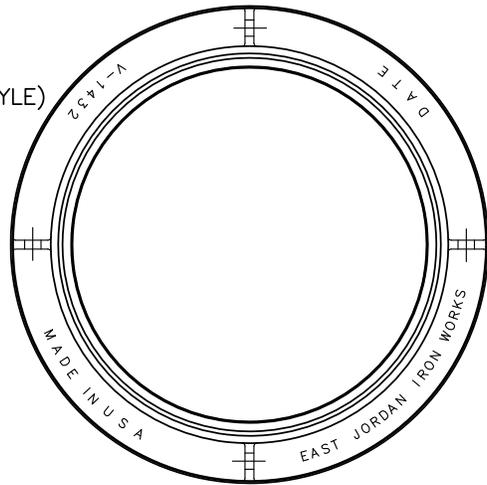
MANHOLE COVER PLAN VIEW

1 1/2" LETTERS
(RECESSED FLUSH)
(BOOKMAN OLD STYLE)

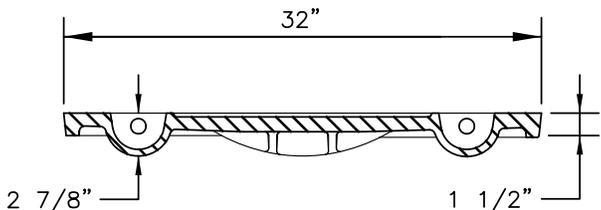
1" LETTERS
(RECESSED FLUSH)
(BOOKMAN OLD STYLE)

DRILL HOLES FOR
NUMBER PLATE
(SEE NOTE #12)

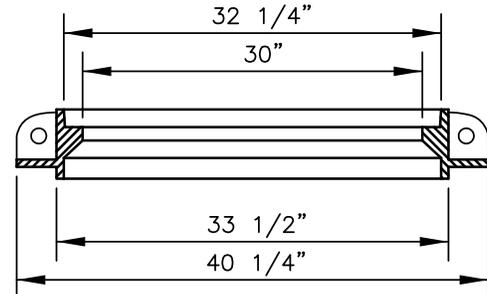
PROVIDE ETCHING
AROUND ALL STARS



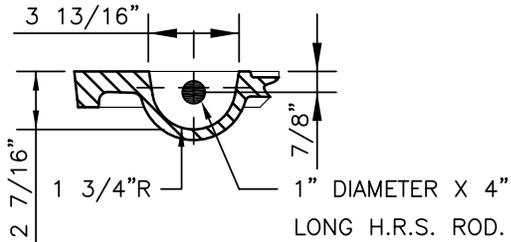
MANHOLE FRAME PLAN VIEW



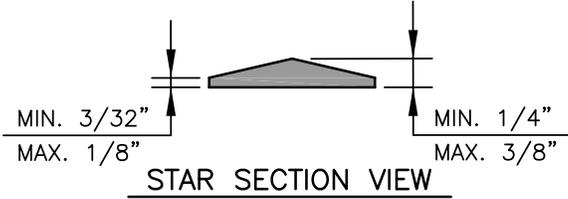
MANHOLE COVER SECTION VIEW



MANHOLE FRAME SECTION VIEW



PICKBAR DETAIL



STAR SECTION VIEW

NOTES:

- COVER AND FRAME SHALL COMPLY WITH STANDARD SPECIFICATIONS FOR DRAINAGE, SEWER, UTILITY AND RELATED CASTINGS: AASHTO DESIGNATION M306-04.
- MANHOLE COVER SHALL BE MODEL NUMBER: V-1432-3, AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
- MANHOLE FRAME SHALL BE MODEL NUMBER: V-1432, AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
- MANHOLE COVER AND FRAME ASSEMBLY, IF ORDERED AS A SET, SHALL BE MODEL NUMBER: V-1432, AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
- ALL CORNERS AND EDGES SHALL HAVE A 1/16" MINIMUM AND 1/8" MAXIMUM RADIUS.
- MANHOLE COVERS SHALL BE CAST WITH TWO 1" DIAMETER STEEL PICKBARS.
- MANHOLE COVER WEIGHT SHALL BE 240 LBS. FOR DUCTILE IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM OF COVER.
- MANUFACTURER SHALL CERTIFY THAT EACH MANHOLE COVER MEETS HS-20 LOADING.
- FILLETS SHALL BE 1/4" RADIUS UNLESS OTHERWISE SPECIFIED.
- MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.
- COVER SHALL BE DIPPED IN A WATER-BASED ASPHALTIC COATING, PRIOR TO SHIPMENT FROM FOUNDRY.
- MANUFACTURER SHALL DRILL 2-3/16"x1/2" DEEP HOLES FOR A MANHOLE NUMBER PLATE TO BE PROVIDED BY THE CITY OF BASTROP. THE TOP HOLE SHALL BE DRILLED 1" O.C. FROM THE BOTTOM OF THE PICKBAR AND THE BOTTOM HOLE SHALL BE DRILLED 4" O.C. FROM THE TOP HOLE.

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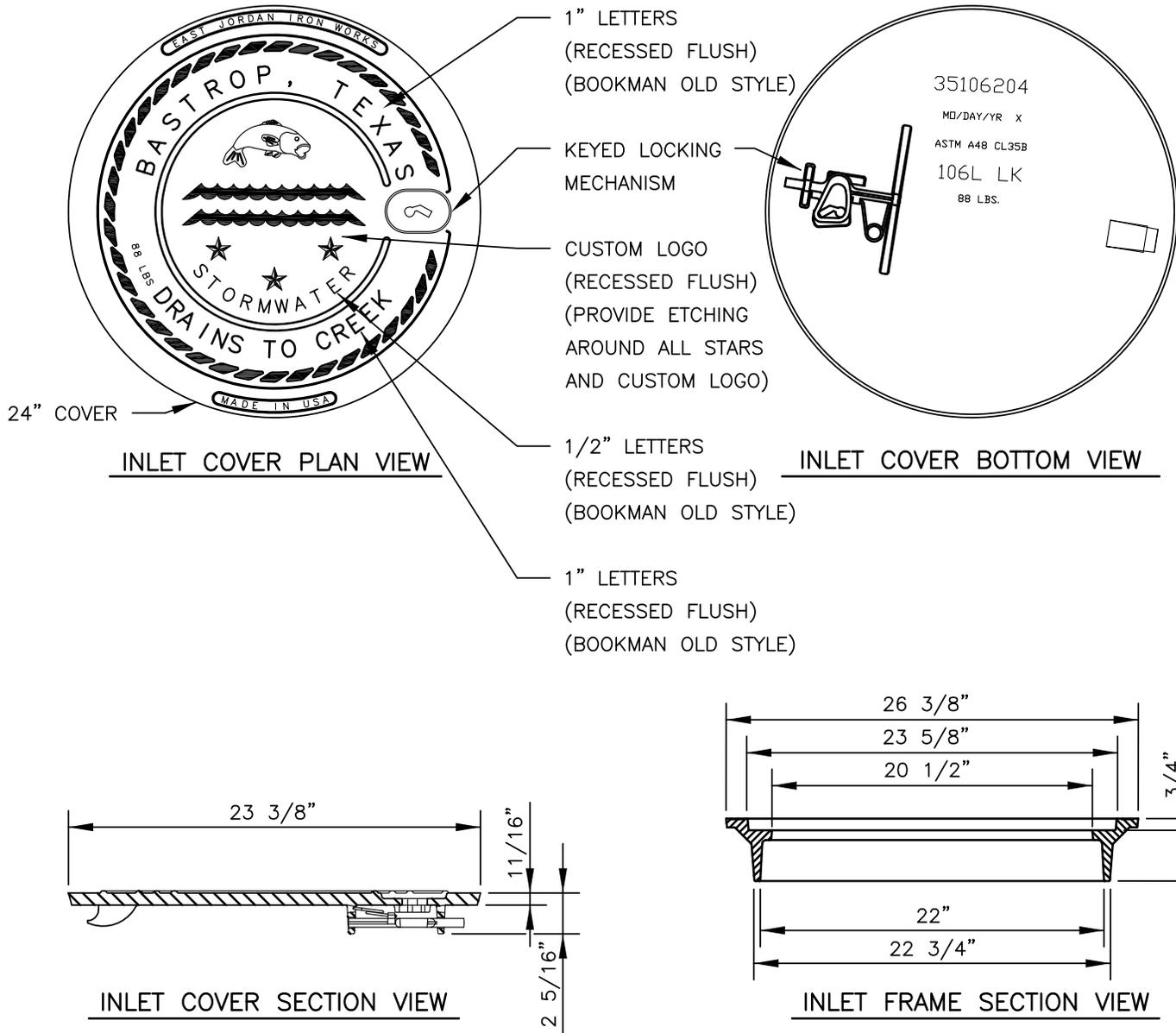
**MAY 24, 2011
DATE**

THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

**NON-BOLTED STORMSEWER MANHOLE
COVER AND FRAME DETAIL**

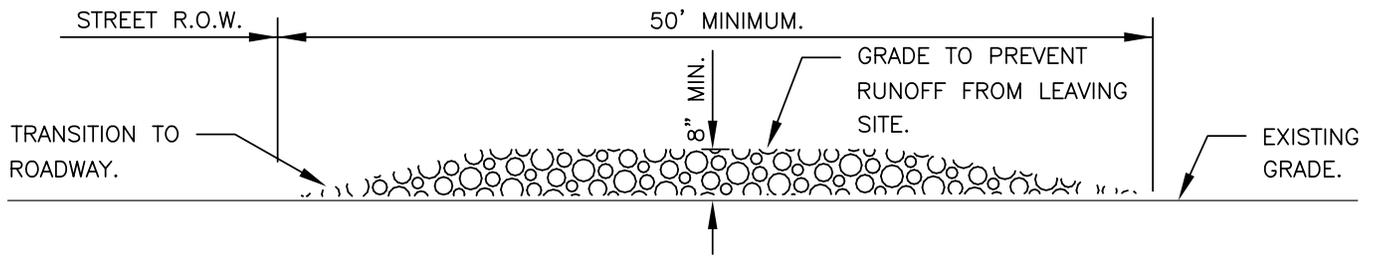
DRAWING NO:
DR-06



NOTES:

1. COVER AND FRAME SHALL COMPLY WITH STANDARD SPECIFICATIONS FOR DRAINAGE, SEWER, UTILITY AND RELATED CASTINGS: AASHTO DESIGNATION M306-04.
2. INLET COVER SHALL BE MODEL NUMBER: 106L LK, AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
3. INLET FRAME SHALL BE MODEL NUMBER: 106L LK, AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
4. INLET COVER AND FRAME ASSEMBLY, IF ORDERED AS A SET, SHALL BE MODEL NUMBER: 106L-4L LK, AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
5. ALL CORNERS AND EDGES SHALL HAVE A 1/16" MINIMUM AND 1/8" MAXIMUM RADIUS.
6. INLET COVER WEIGHT SHALL BE 88 LBS. FOR DUCTILE IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM OF COVER.
7. FILLETS SHALL BE 1/4" RADIUS UNLESS OTHERWISE SPECIFIED.
8. MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.
9. INLET COVER SHALL BE DIPPED IN A WATER-BASED ASPHALTIC COATING, PRIOR TO SHIPMENT FROM FOUNDRY.

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NOTES:

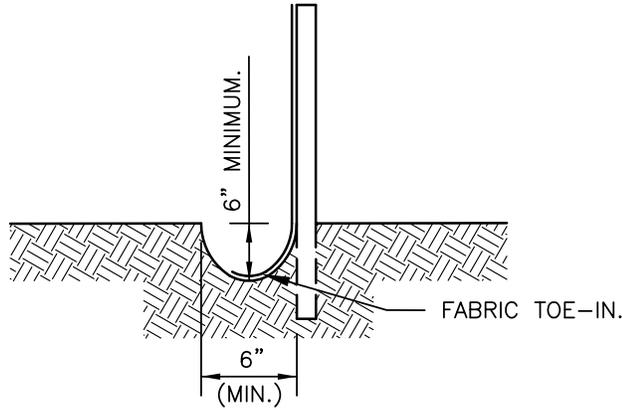
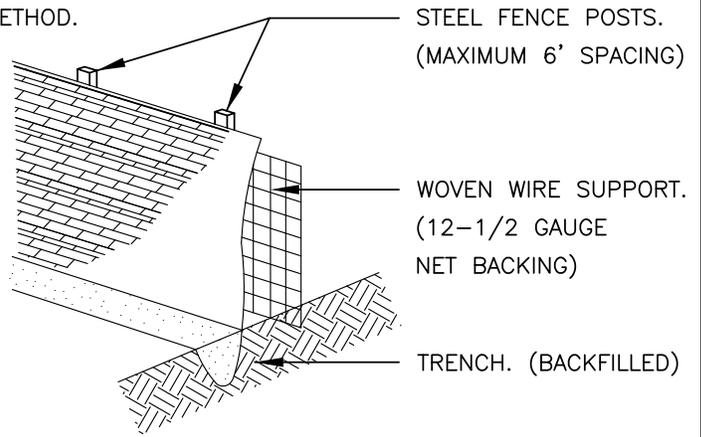
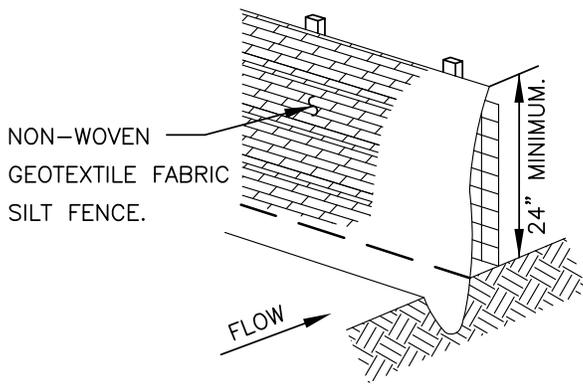
1. A STABILIZED CONSTRUCTION ENTRANCE APPLIES TO ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO A PUBLIC RIGHT OF WAY, STREET, ALLEY, SIDEWALK, OR PARKING AREA.
2. STONE SIZE SHALL BE 4" – 8" OPEN GRADED ROCK.
3. THICKNESS OF CRUSHED STONE PAD TO BE NOT LESS THAN 8".
4. LENGTH SHALL BE A MINIMUM OF 50' FROM ACTUAL ROADWAY, AND WIDTH NOT LESS THAN FULL WIDTH OF INGRESS/EGRESS.
5. ENTRANCE SHALL BE PROPERLY GRADED TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY BY CONTRACTOR.

AS NECESSARY, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.

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<p><u>MAY 24, 2011</u> DATE</p>	<h2>STABILIZED CONSTRUCTION ENTRANCE DETAIL</h2>	
<p>THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.</p>		

RECOMMENDED TOE-IN METHOD.

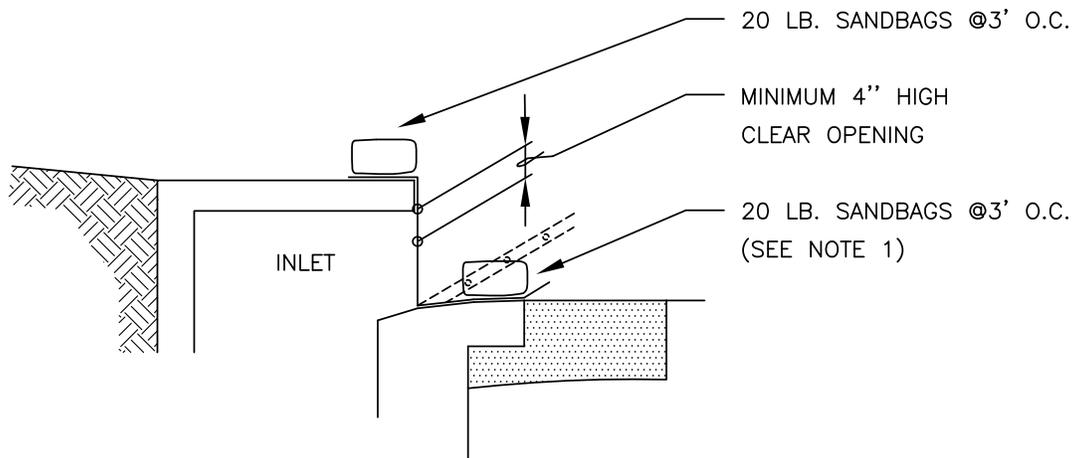
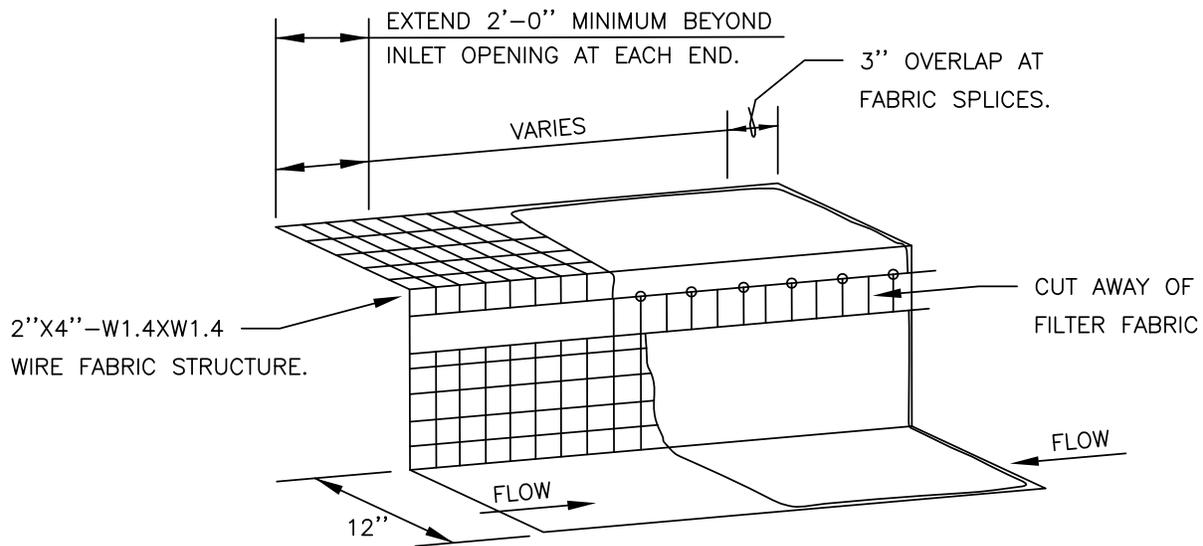


TRENCH CROSS-SECTION

NOTES:

1. SILT FENCE SHALL CONFORM TO CITY OF BASTROP SPECIFICATION 642.
2. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MIN. OF ONE (1') FOOT.
3. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G. PAVEMENT) WEIGHT FABRIC FLAP WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
4. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
5. SILT FENCE SHALL BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS SECURELY FASTENED TO THE STEEL FENCE POSTS.
6. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
7. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
8. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

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<p><u>MAY 24, 2011</u> DATE</p> <p>THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.</p>	<h2>SILT FENCE DETAIL</h2>	



NOTES:

1. WHERE MINIMUM CLEARANCES CAUSE TRAFFIC TO DRIVE IN THE GUTTER, THE CONTRACTOR MAY SUBSTITUTE A 1" X 4" BOARD SECURED WITH CONCRETE NAILS 3' O.C. NAILED INTO THE GUTTER IN LIEU OF SANDBAGS TO HOLD THE FILTER DIKE IN PLACE. UPON REMOVAL, CLEAN ANY DIRT/DEBRIS FROM NAILING LOCATIONS, APPLY CHEMICAL SANDING AGENT AND APPLY NON-SHRINK GROUT FLUSH WITH SURFACE OF GUTTER.
2. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL OR AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION.
3. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
4. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTIONS IF THE STORM-WATER BEGINS TO OVERTOP THE CURB.
5. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

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MAY 24, 2011

DATE

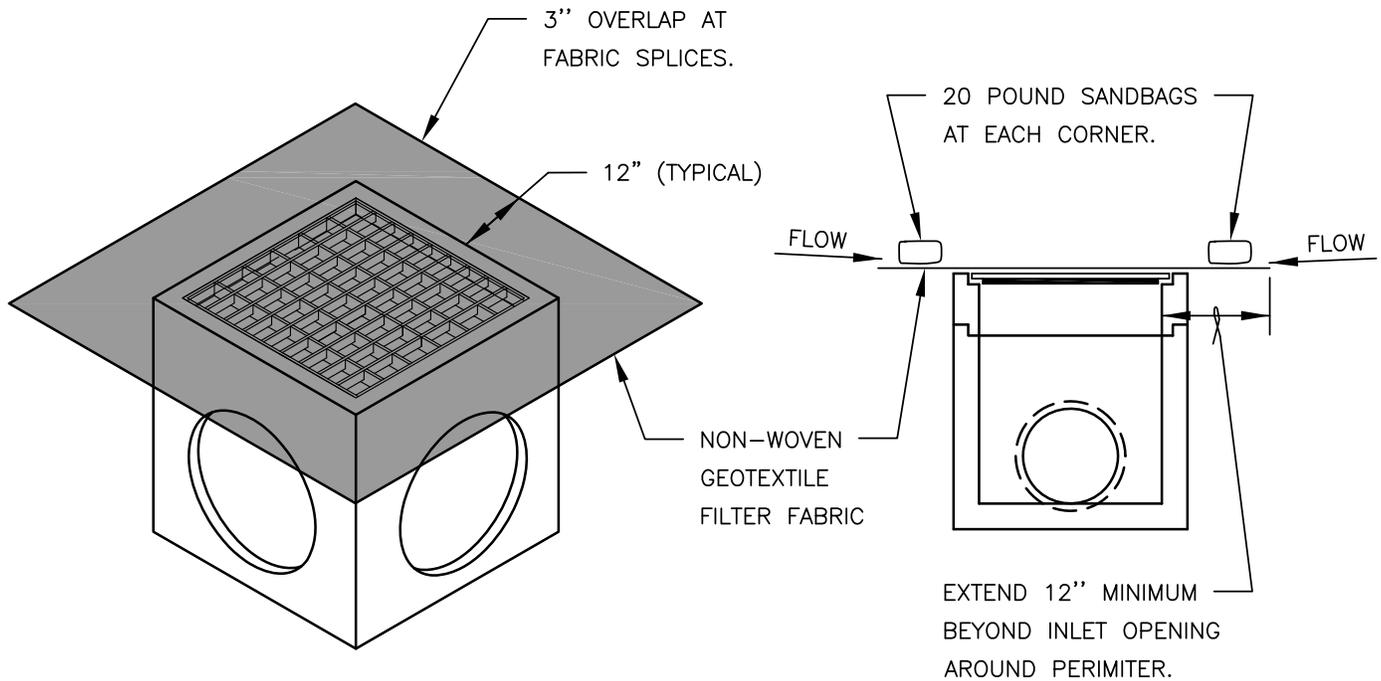
THE ARCHITECT/ENGINEER ASSUMES
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CITY OF BASTROP

CURB INLET PROTECTION DETAIL

DRAWING NO:
EC-03





NOTES:

1. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
2. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY CLEAN THE INLET PROTECTION IF EXCESSIVE PONDING OCCURS.
3. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

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CITY OF BASTROP
AREA INLET PROTECTION DETAIL

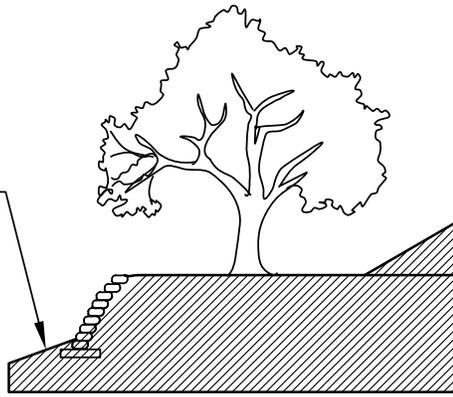
DRAWING NO:
EC-04


1. ALL TREES NOT LOCATED WITHIN THE LIMITS OF CONSTRUCTION AND OUTSIDE OF DISTURBED AREAS SHALL BE PRESERVED. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL TREES TO BE PRESERVED FROM HIS ACTIVITIES.
2. ALL TREES SHOWN TO BE RETAINED WITHIN THE LIMITS OF CONSTRUCTION ON THE PLANS, SHALL BE PROTECTED DURING CONSTRUCTION WITH FENCING. **SEE: TREE PROTECTION TREE WELLS (EC-06), TREE PROTECTION TREE LOCATION (EC-07) AND TREE PROTECTION FENCE-CHAIN LINK (EC-08).**
3. TREE PROTECTION FENCES SHALL BE ERECTED ACCORDING TO CITY STANDARDS FOR TREE PROTECTION, INCLUDING TYPES OF FENCING AND SIGNAGE.
4. TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING, OR GRADING) AND SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROJECT.
5. EROSION AND SEDIMENTATION CONTROL BARRIERS SHALL BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILD-UP WITHIN TREE DRIPLINES.
6. FENCES SHALL COMPLETELY SURROUND THE TREE OR CLUSTERS OF TREES, LOCATED AT THE OUTERMOST LIMITS OF THE TREE BRANCHES (DRIPLINE) AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT IN ORDER TO PREVENT THE FOLLOWING:
 - A) SOIL COMPACTION IN DRIPLINE AREA RESULTING FROM VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT OR MATERIAL.
 - B) DRIPLINE DISTURBANCES DUE TO GRADE CHANGES OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE FORESTRY MANAGER.
 - C) WOUNDS TO EXPOSED ROOTS, TRUNK, OR LIMBS BY MECHANICAL EQUIPMENT
 - D) OTHER ACTIVITIES DETRIMENTAL TO TREES SUCH AS CHEMICAL STORAGE, CONCRETE TRUCK CLEANING, AND FIRES.
7. EXCEPTIONS TO INSTALLING TREE FENCES AT THE TREE DRIPLINES MAY BE PERMITTED IN THE FOLLOWING CASES:
 - A) WHERE THERE IS TO BE AN APPROVED GRADE CHANGE, IMPERMEABLE PAVING SURFACE, OR TREE WELL;
 - B) WHERE PERMEABLE PAVING IS TO BE INSTALLED, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA.
 - C) WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE NO CLOSER THAN 6 FEET TO THE BUILDING.
 - D) WHERE THERE ARE SEVERE SPACE CONSTRAINTS DUE TO TRACT SIZE, OR OTHER SPECIAL REQUIREMENTS, CONTACT THE FORESTRY MANAGER TO DISCUSS ALTERNATIVES.
8. WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN A FENCE THAT IS CLOSER THAN 5 FEET TO A TREE TRUNK, THE TRUNK SHALL BE PROTECTED BY STRAPPED-ON PLANKING TO A HEIGHT OF 8 FEET (OR TO THE LIMITS OF LOWER BRANCHING) IN ADDITION TO THE REDUCED FENCING PROVIDED.
9. WHERE ANY OF THE ABOVE EXCEPTIONS RESULT IN AREAS OF UNPROTECTED ROOT ZONES UNDER THE DRIPLINE. THOSE AREAS SHOULD BE COVERED WITH 4 INCHES OF ORGANIC MULCH TO MINIMIZE SOIL COMPACTION.
10. ALL GRADING WITHIN DRIPLINE AREAS SHALL BE DONE BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE. PRIOR TO GRADING, RELOCATE PROTECTIVE FENCING TO 2 FEET BEHIND THE GRADE CHANGE AREA.
11. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL AND BACKFILLED WITH GOOD QUALITY TOP SOIL WITHIN TWO DAYS. IF EXPOSED ROOT AREAS CANNOT BE BACKFILLED WITHIN 2 DAYS, AN ORGANIC MATERIAL WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES WATER LOSS DUE TO EVAPORATION SHALL BE PLACED TO COVER THE ROOTS UNTIL BACKFILL CAN OCCUR.
12. PRIOR TO EXCAVATION OR GRADE CUTTING WITHIN TREE DRIPLINES, A CLEAN CUT SHALL BE MADE WITH A ROCK SAW OR SIMILAR EQUIPMENT, IN A LOCATION AND TO A DEPTH APPROVED BY THE DIRECTOR OF PLANNING AND DEVELOPMENT, TO MINIMIZE DAMAGE TO REMAINING ROOTS.
13. TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES WILL BE WATERED DEEPLY ONCE A WEEK DURING PERIODS OF HOT, DRY WEATHER. TREE CROWNS ARE TO BE SPRAYED WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON LEAVES.
14. WHEN INSTALLING CONCRETE ADJACENT TO THE ROOT ZONE OF A TREE, A PLASTIC VAPOR BARRIER SHALL BE PLACED BEHIND THE CONCRETE TO PROHIBIT LEACHING OF LIME INTO THE ROOT ZONE.
15. ANY TRENCHING REQUIRED FOR THE INSTALLATION OF LANDSCAPE IRRIGATION SHALL BE PLACED AS FAR FROM EXISTING TREE TRUNKS AS POSSIBLE.
16. NO LANDSCAPE TOPSOIL DRESSING GREATER THAN FOUR (4) INCHES SHALL BE PERMITTED WITHIN THE DRIPLINE. NO TOPSOIL IS PERMITTED ON ROOT FLARES OF ANY TREE.
17. PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC, AND CONSTRUCTION EQUIPMENT SHALL TAKE PLACE BEFORE CONSTRUCTION BEGINS. ALL PRUNING MUST BE DONE ACCORDING TO CITY STANDARDS AND AS OUTLINED IN LITERATURE PROVIDED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA PRUNING TECHNIQUES).
18. ALL OAK TREE CUTS, INTENTIONAL OR UNINTENTIONAL, SHALL BE SEALED WITH AN APPROVED PRUNING SEALER IMMEDIATELY (WITHIN 10 MINUTES). TREE PAINT MUST BE KEPT ON SITE AT ALL TIMES.
19. THE CITY INSPECTOR HAS THE AUTHORITY TO REQUIRE ADDITIONAL TREE PROTECTION BEFORE OR DURING CONSTRUCTION.
20. TREES APPROVED FOR REMOVAL SHALL BE REMOVED IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED.
21. DEVIATIONS FROM THE ABOVE REQUIREMENTS AND NEGLIGENT DAMAGE TO TREES MAY BE CONSIDERED AS ORDINANCE VIOLATIONS.

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE DIRECTOR OF PLANNING AND DEVELOPMENT.

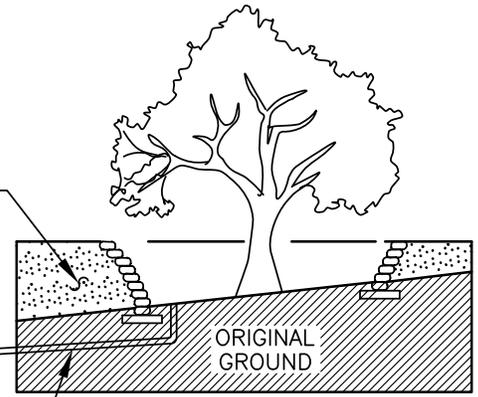
<p style="text-align: center;">RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED</p>	<h1>CITY OF BASTROP</h1>	<p>DRAWING NO: EC-05</p>
<p style="text-align: center;">MAY 24, 2011 DATE</p>	<h2>TREE PROTECTION NOTES</h2>	
<p>THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.</p>		

PROPOSED CUT
AND FILL SLOPE.



PERMANENT PROTECTIVE WALL

FILL



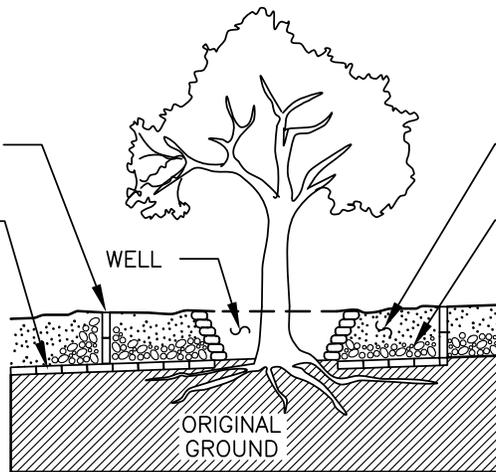
ORIGINAL
GROUND

OPEN TREE WELL

PROVIDE DRAIN AS NECESSARY TO
PREVENT WATER PONDING AFTER A
RAINFALL EVENT CEASES.

VERTICAL TILES. (TYPICAL)

DRAIN TILES. (TYPICAL)

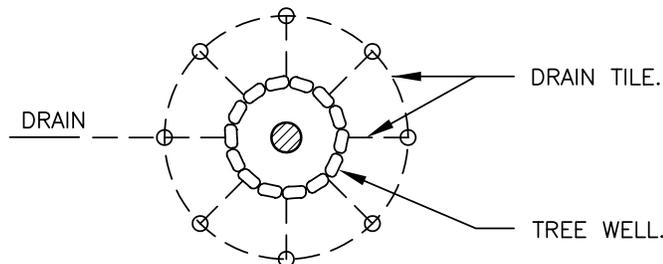


WELL

ORIGINAL
GROUND

FILL (TYPICAL)

LOOSE STONE. (TYPICAL)



DRAIN TILE.

DRAIN

TREE WELL.

TREE WELL WITH RAISED GRADE

NOTE:

LOCATION, TYPE, DEPTHS AND CONSTRUCTION SPECIFICATIONS OF FILL, DRAINS AND WALLS SHALL BE SUBJECT TO THE APPROVAL OF THE CITY ENGINEER.

FOR QUESTIONS CONCERNING THIS DETAIL,
PLEASE CONTACT THE CITY ENGINEER.

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MAY 24, 2011

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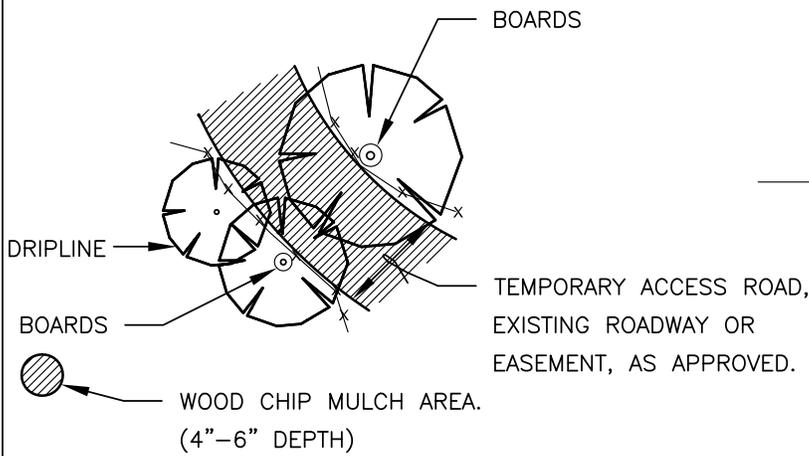
THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

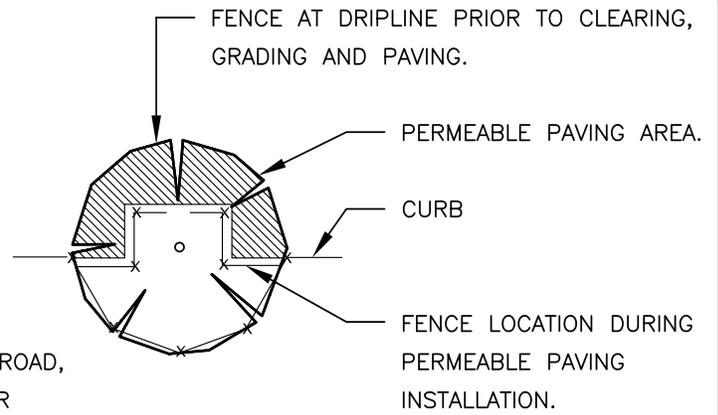
TREE PROTECTION TREE WELLS

DRAWING NO:
EC-06

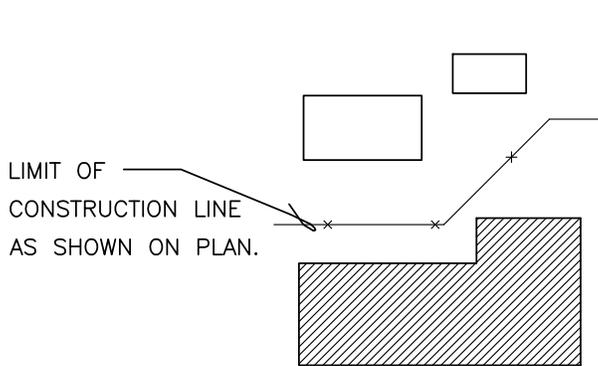




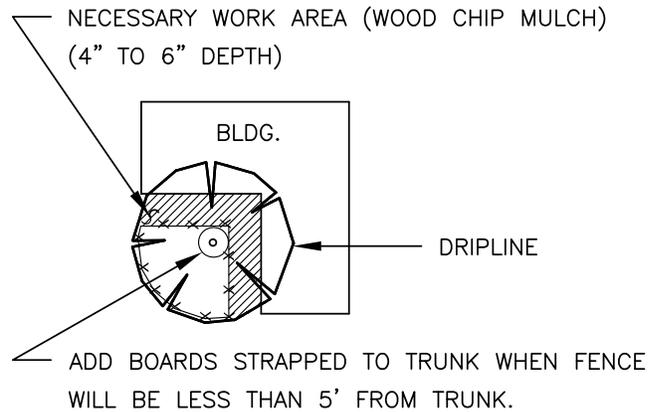
LINEAR CONSTRUCTION THROUGH TREES



TREES IN PAVING AREA



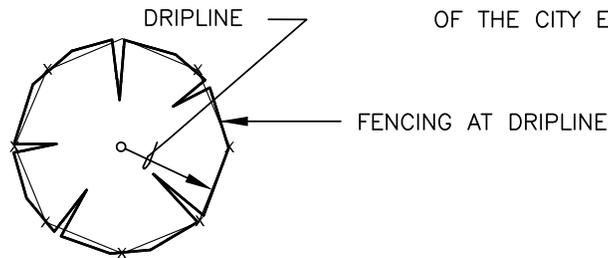
NATURAL AREAS



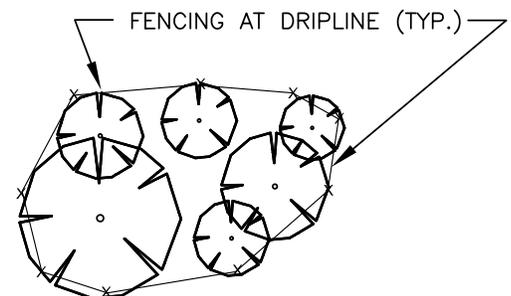
TREES NEAR CONSTRUCTION ACTIVITY

NOTE:

LIMITS OF MULCH AREAS AND DISTANCE FROM TRUNKS TO WORK/
PERMEABLE PAVING AREAS SHALL BE SUBJECT TO THE APPROVAL
OF THE CITY ENGINEER.



INDIVIDUAL TREE



GROUP OF TREES

FOR QUESTIONS CONCERNING THIS DETAIL,
PLEASE CONTACT THE CITY ENGINEER.

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MAY 24, 2011
DATE

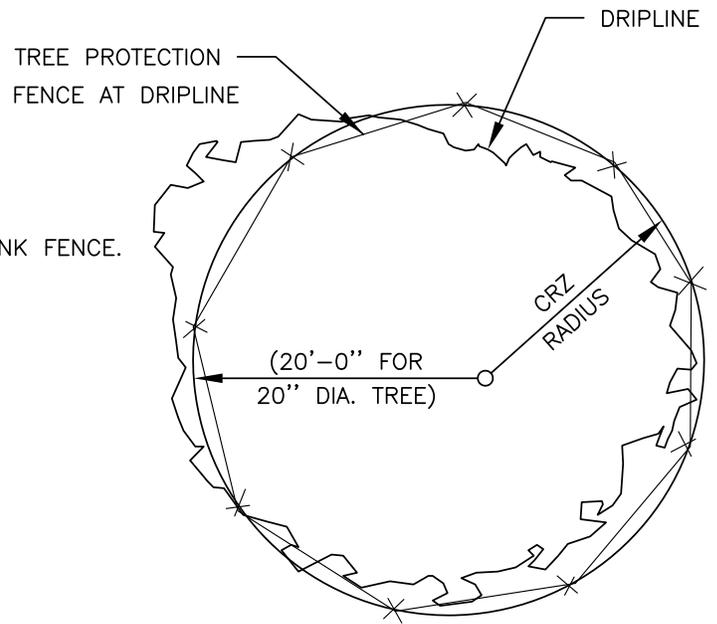
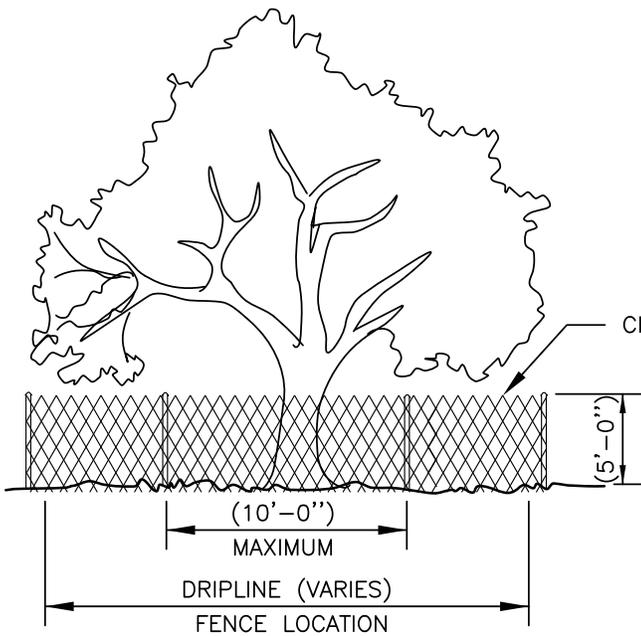
THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

TREE PROTECTION FENCE LOCATIONS

DRAWING NO:
EC-07

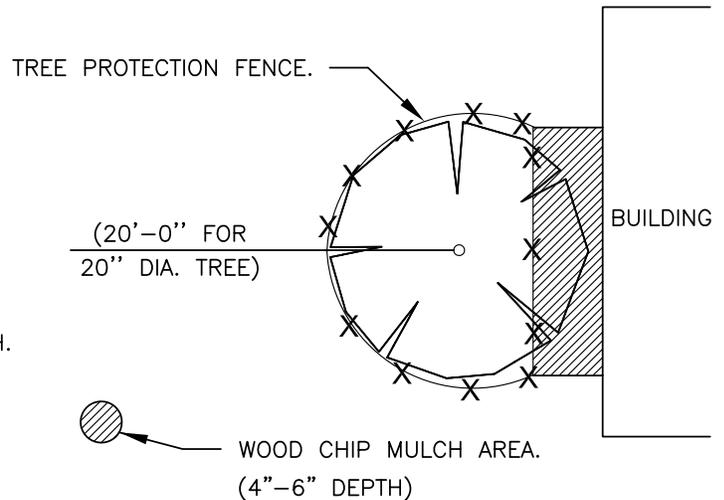
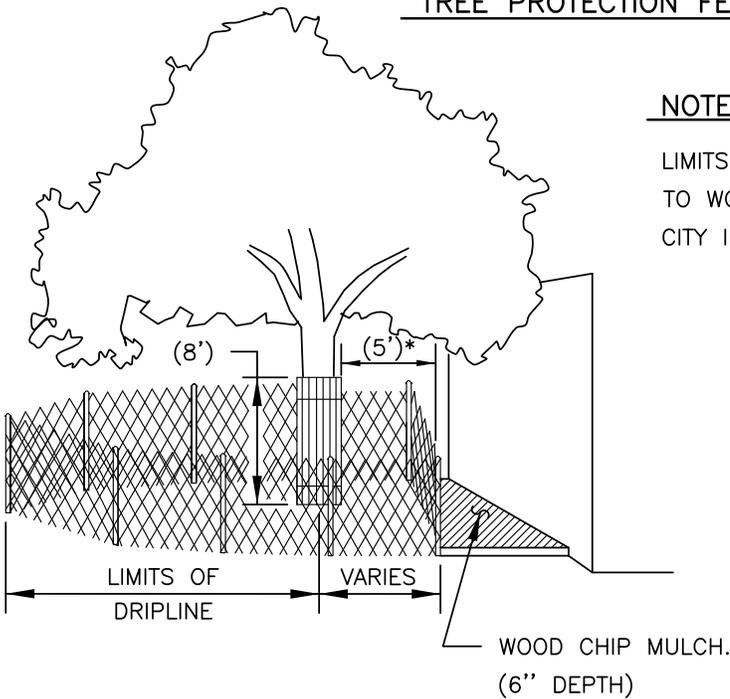




TREE PROTECTION FENCE – CHAIN LINK

NOTE:

LIMITS OF WOOD CHIP MULCH AREA AND DISTANCE FROM TRUNK TO WORK AREA SHALL BE SUBJECT TO THE APPROVAL OF THE CITY INSPECTOR.



*AS NEEDED TO PROVIDE NECESSARY WORK SPACE. IF LESS THAN 5', THEN ADD BOARDS STRAPPED TO TRUNK.

TREE PROTECTION FENCE (MODIFIED) – CHAIN LINK

FOR QUESTIONS CONCERNING THIS DETAIL, PLEASE CONTACT THE CITY ENGINEER.

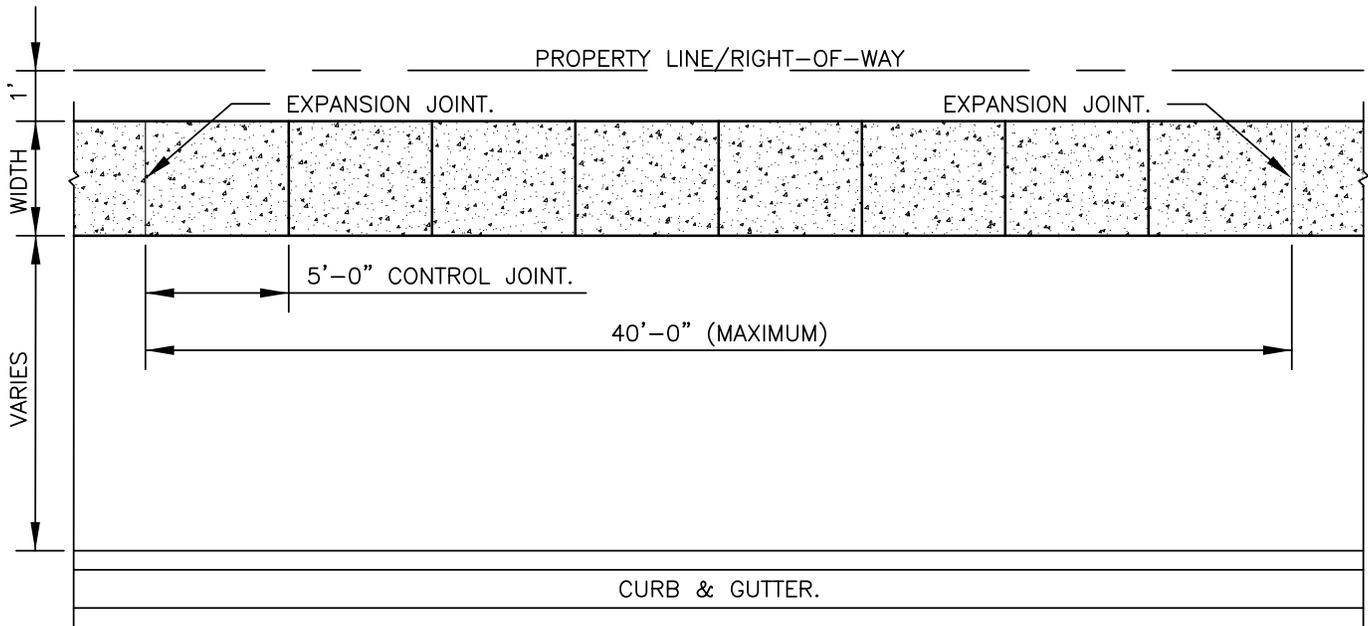
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MAY 24, 2011
DATE
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USE OF THIS DETAIL.

CITY OF BASTROP

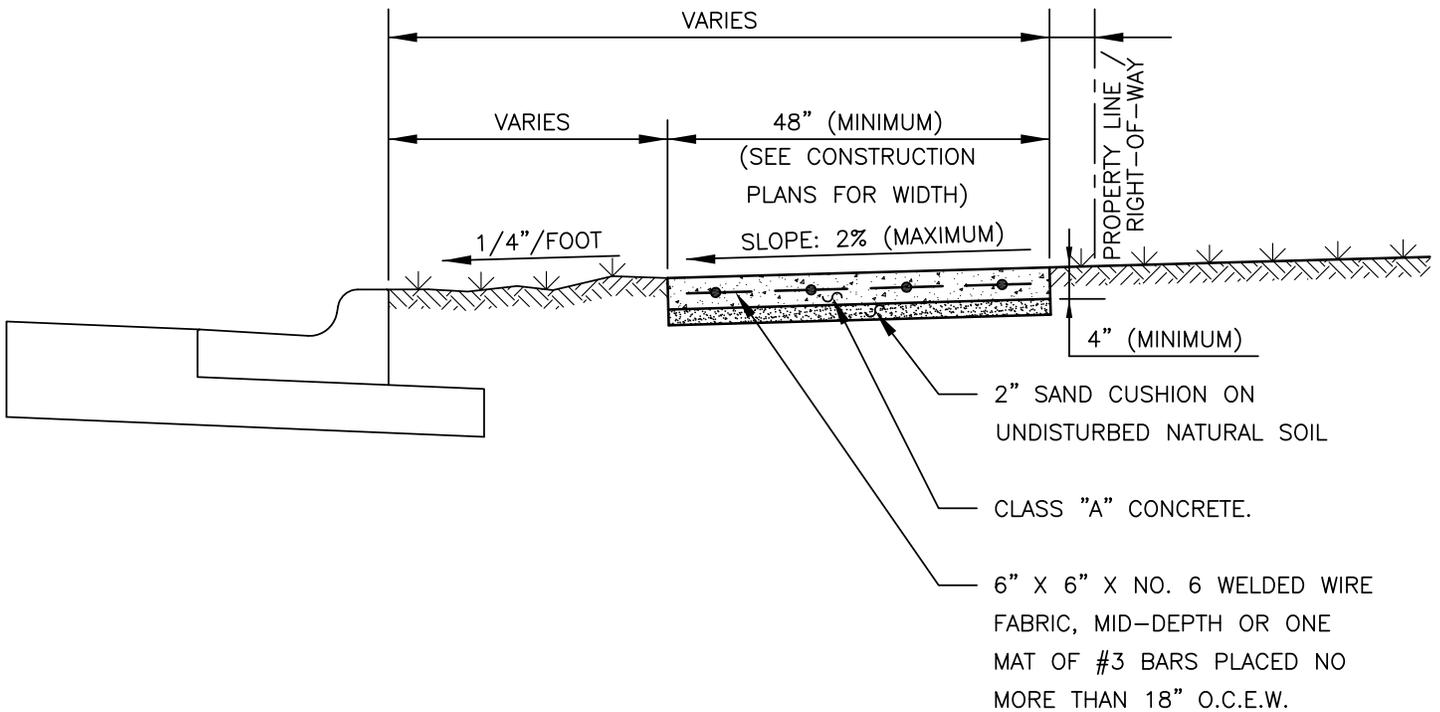
DRAWING NO:
EC-08

TREE PROTECTION FENCE-CHAIN LINK





PLAN



SECTION

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MAY 24, 2011

DATE

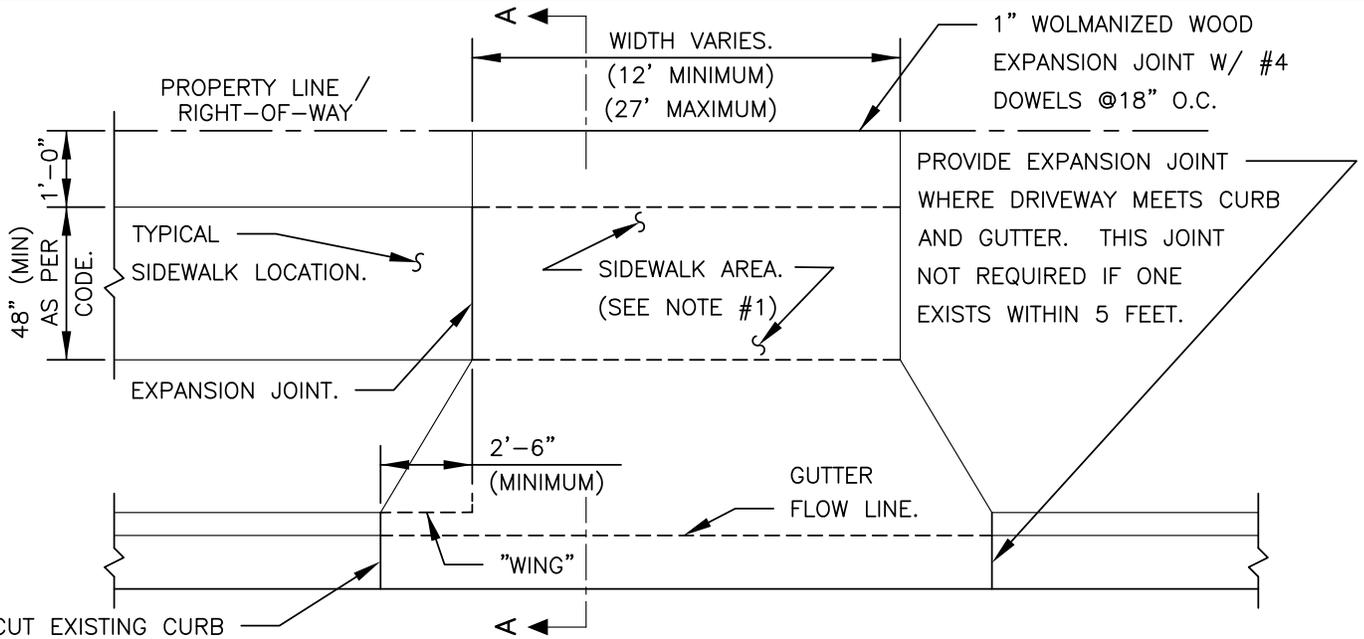
THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

SIDEWALK DETAIL

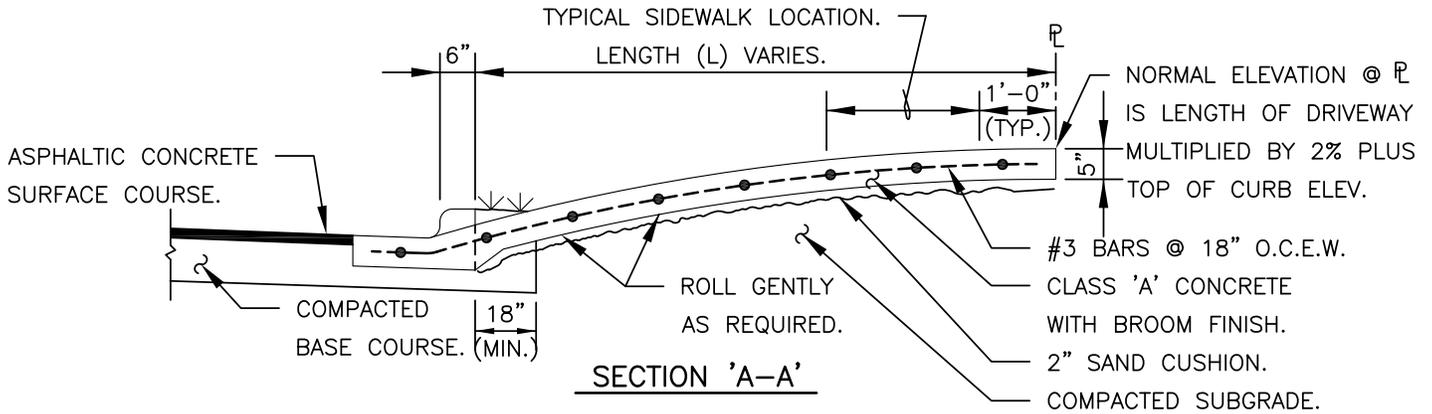
DRAWING NO:
ST-01



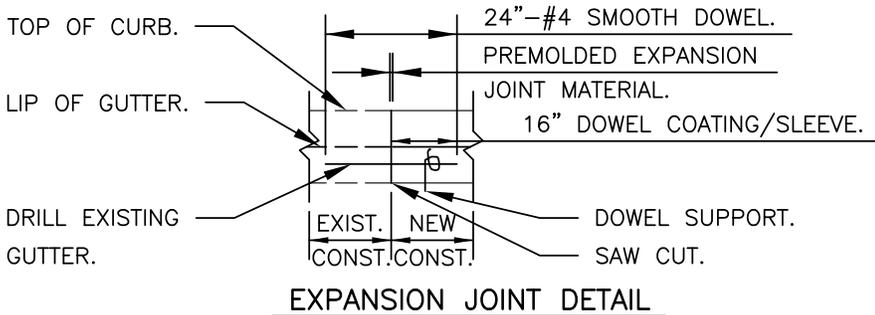


SAW CUT EXISTING CURB AND GUTTER SECTION AT PROPOSED DRIVEWAY. IF NEAREST EXPANSION JOINT IS 5 FEET OR LESS FROM DRIVEWAY WING, EXISTING CURB AND GUTTER SECTION SHALL BE REMOVED AND REPLACED TO THE NEAREST EXPANSION JOINT.

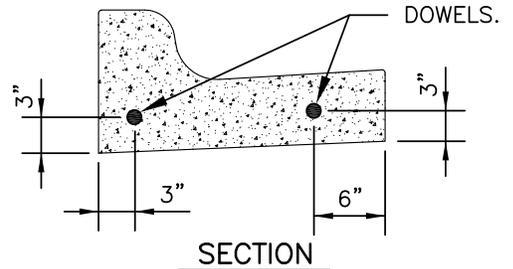
PLAN



SECTION 'A-A'



EXPANSION JOINT DETAIL



SECTION

NOTE:

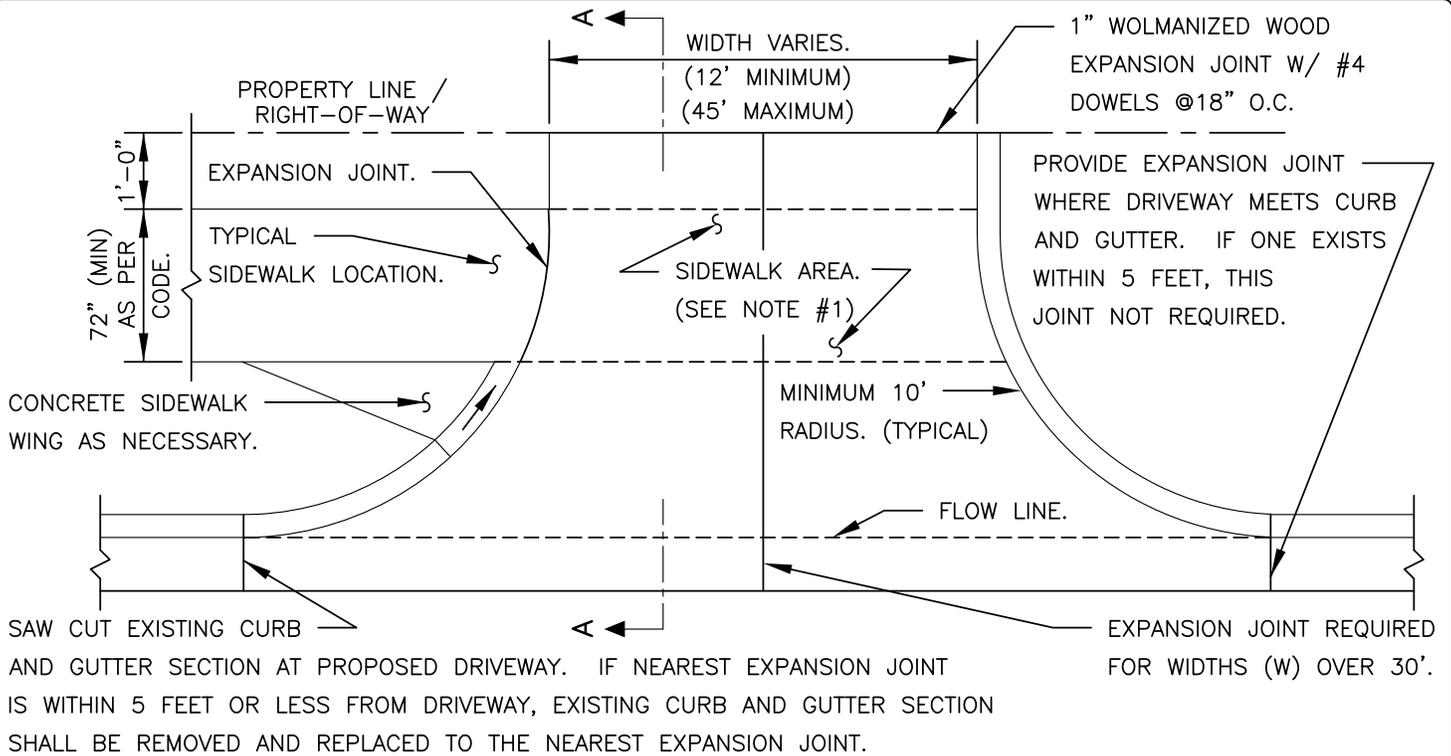
1. THE SIDEWALK AREA OF THE DRIVEWAY SHALL SLOPE TOWARD THE STREET PAVING AT NO MORE THAN 2%.

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MAY 24, 2011
DATE
THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

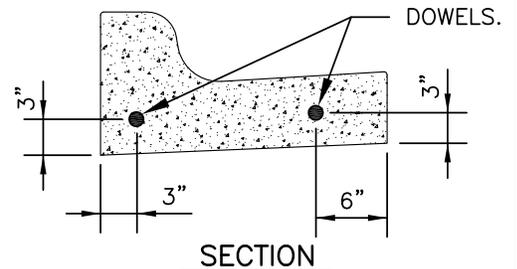
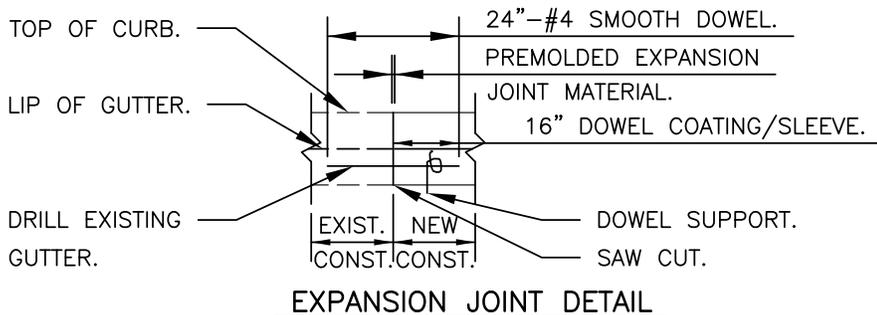
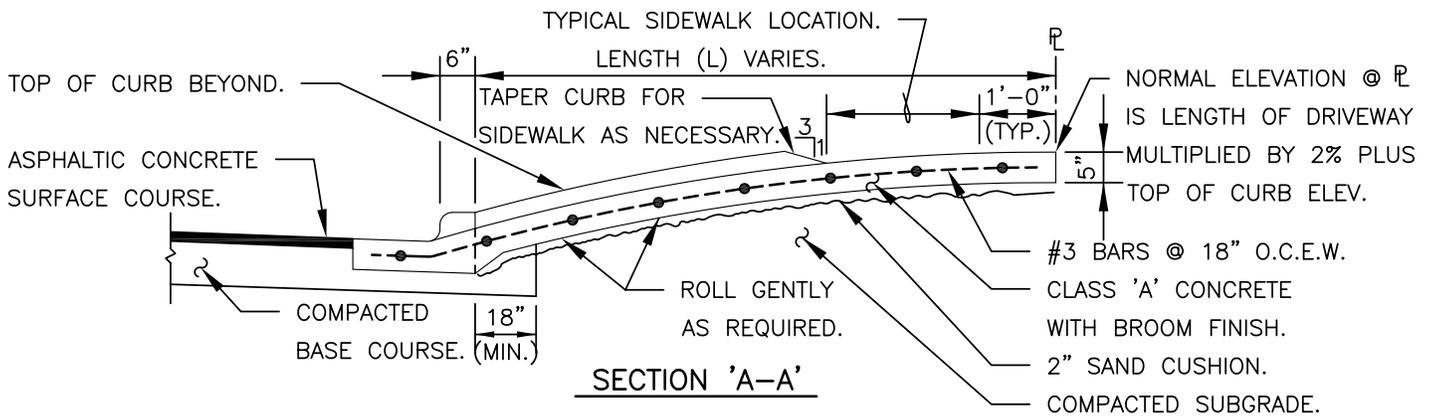
CITY OF BASTROP
CONCRETE DRIVEWAY DETAIL
(RESIDENTIAL)

DRAWING NO:
ST-02





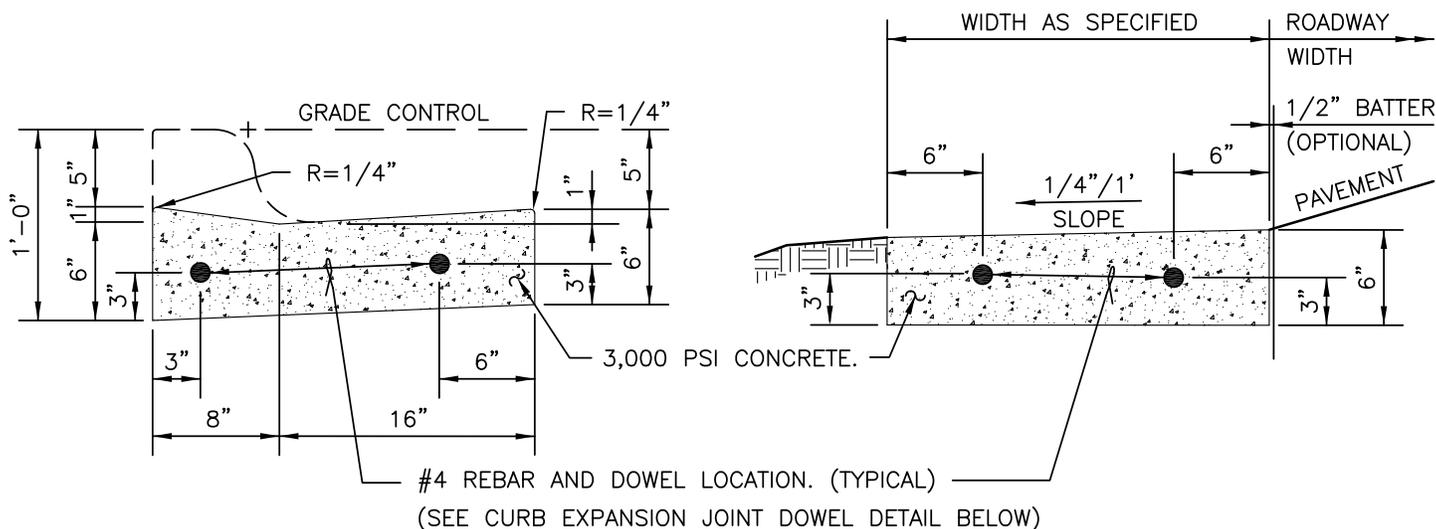
PLAN



NOTE:

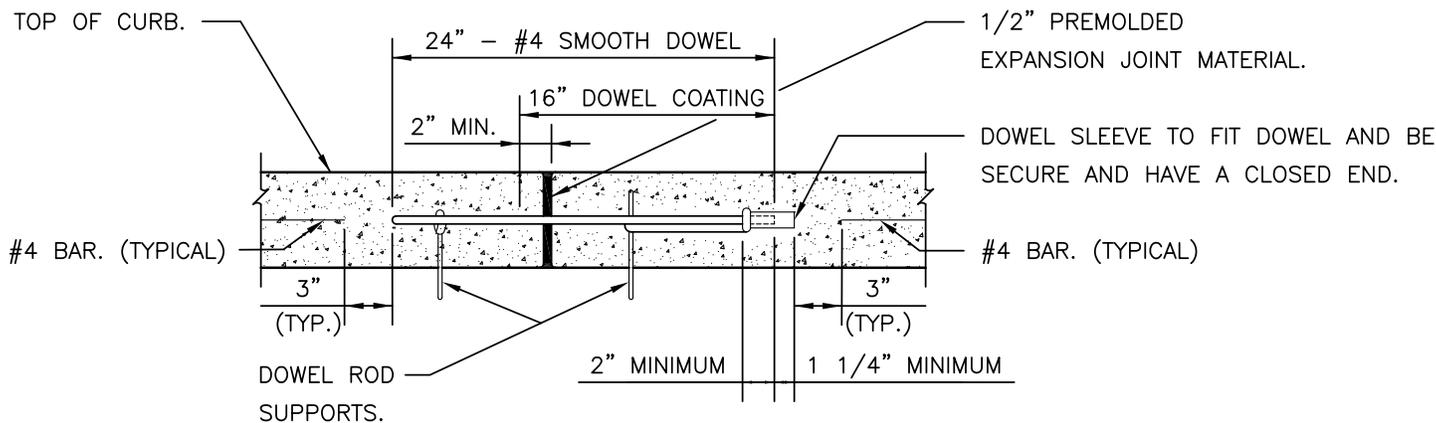
1. THE SIDEWALK AREA OF THE DRIVEWAY SHALL SLOPE TOWARD THE STREET PAVING AT NO MORE THAN 2%.

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<p>MAY 24, 2011 DATE</p> <p>THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.</p>	<h2>CONCRETE DRIVEWAY DETAIL (COMMERCIAL OR MULTI-FAMILY)</h2>	



LAY DOWN CURB

RIBBON CURB

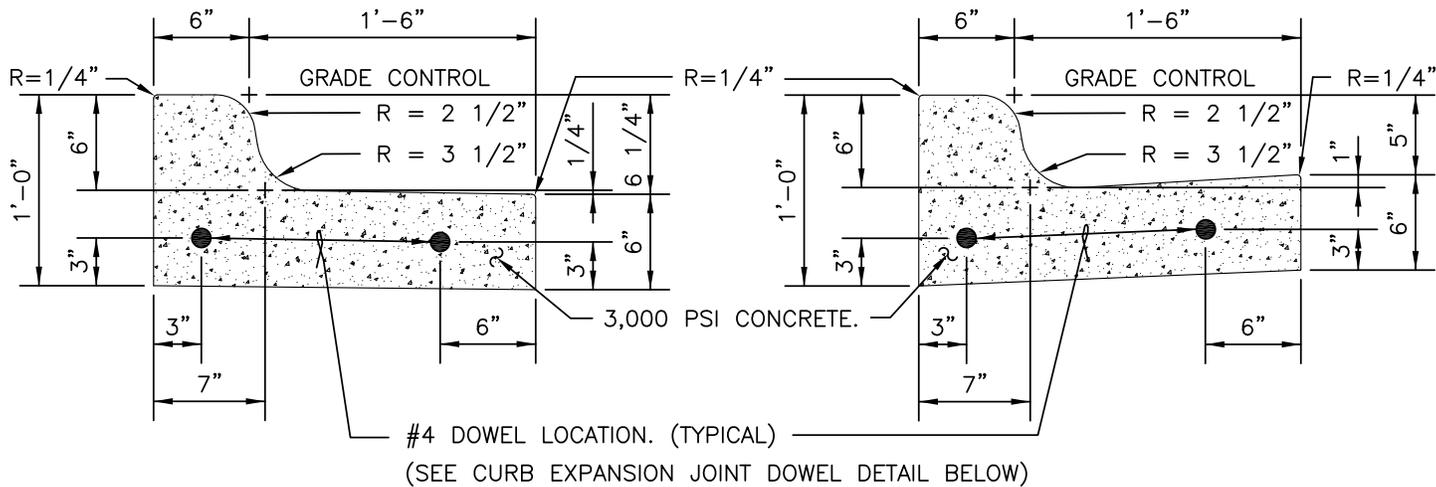


CURB EXPANSION JOINT DOWEL DETAIL

NOTES:

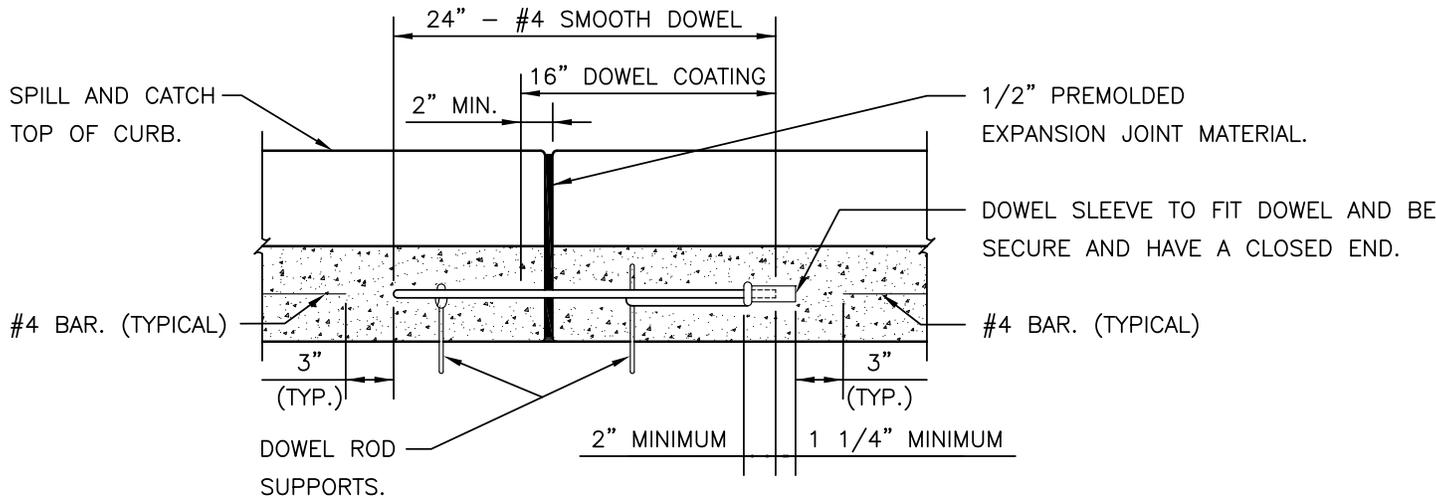
1. ALL WORK AND MATERIAL SHALL CONFORM TO ASTM A615, A615M, C309 AND D1752. BROOM FINISH EXPOSED SURFACE.
2. CONTROL JOINT SPACING SHALL NOT EXCEED 10'-0".
3. EXPANSION JOINTS AS PER STANDARD ASTM D-1752.
4. EXPANSION JOINT INTERVALS NOT TO EXCEED 40'-0" FOR ALL CURBS AND CONSTRUCTION METHODS.
5. ALL CURBS SHALL HAVE A MINIMUM OF 4" OF COMPACTED FLEXIBLE BASE BETWEEN BOTTOM OF CURB AND TOP SUBGRADE THAT SHALL EXTEND A MINIMUM OF 18" BEHIND BACK OF CURB. TOTAL DEPTH OF FLEXIBLE BASE UNDER AND BEHIND CURB SHALL BE: (TOTAL DEPTH OF FLEXIBLE BASE) LESS (6-INCHES).
6. ALL CURBS SHALL CONFORM TO THESE DETAILS INDEPENDANT OF THE CONSTRUCTION METHODS USED.

<p style="text-align: center;">RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED</p>	<h1 style="margin: 0;">CITY OF BASTROP</h1> <h2 style="margin: 0;">LAYDOWN AND RIBBON CURB DETAIL (WITH CURB EXPANSION JOINT DOWEL DETAIL)</h2>	<p style="text-align: center;">DRAWING NO: ST-04</p>
<p style="text-align: center;">MAY 24, 2011 DATE</p>		
<p style="font-size: small;">THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.</p>		



SPILL CURB

CATCH CURB



CURB EXPANSION JOINT DOWEL DETAIL

NOTES:

1. ALL WORK AND MATERIAL SHALL CONFORM TO ASTM A615, A615M, C309 AND D1752. BROOM FINISH EXPOSED SURFACE.
2. CONTROL JOINT SPACING SHALL NOT EXCEED 10'-0".
3. EXPANSION JOINTS AS PER STANDARD ASTM D-1752.
4. EXPANSION JOINT INTERVALS NOT TO EXCEED 40'-0" FOR ALL CURBS AND CONSTRUCTION METHODS.
5. ALL CURBS SHALL HAVE A MINIMUM OF 4" OF COMPACTED FLEXIBLE BASE BETWEEN BOTTOM OF CURB AND TOP SUBGRADE THAT SHALL EXTEND A MINIMUM OF 18" BEHIND BACK OF CURB. TOTAL DEPTH OF FLEXIBLE BASE UNDER AND BEHIND CURB SHALL BE: (TOTAL DEPTH OF FLEXIBLE BASE) LESS (6-INCHES).
6. ALL CURBS SHALL CONFORM TO THESE DETAILS INDEPENDANT OF THE CONSTRUCTION METHODS USED.

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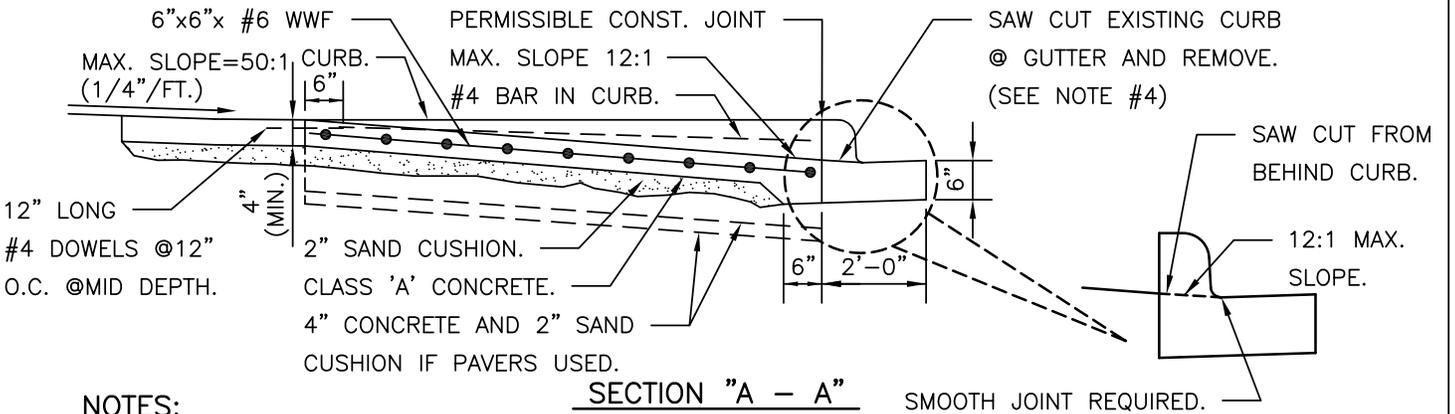
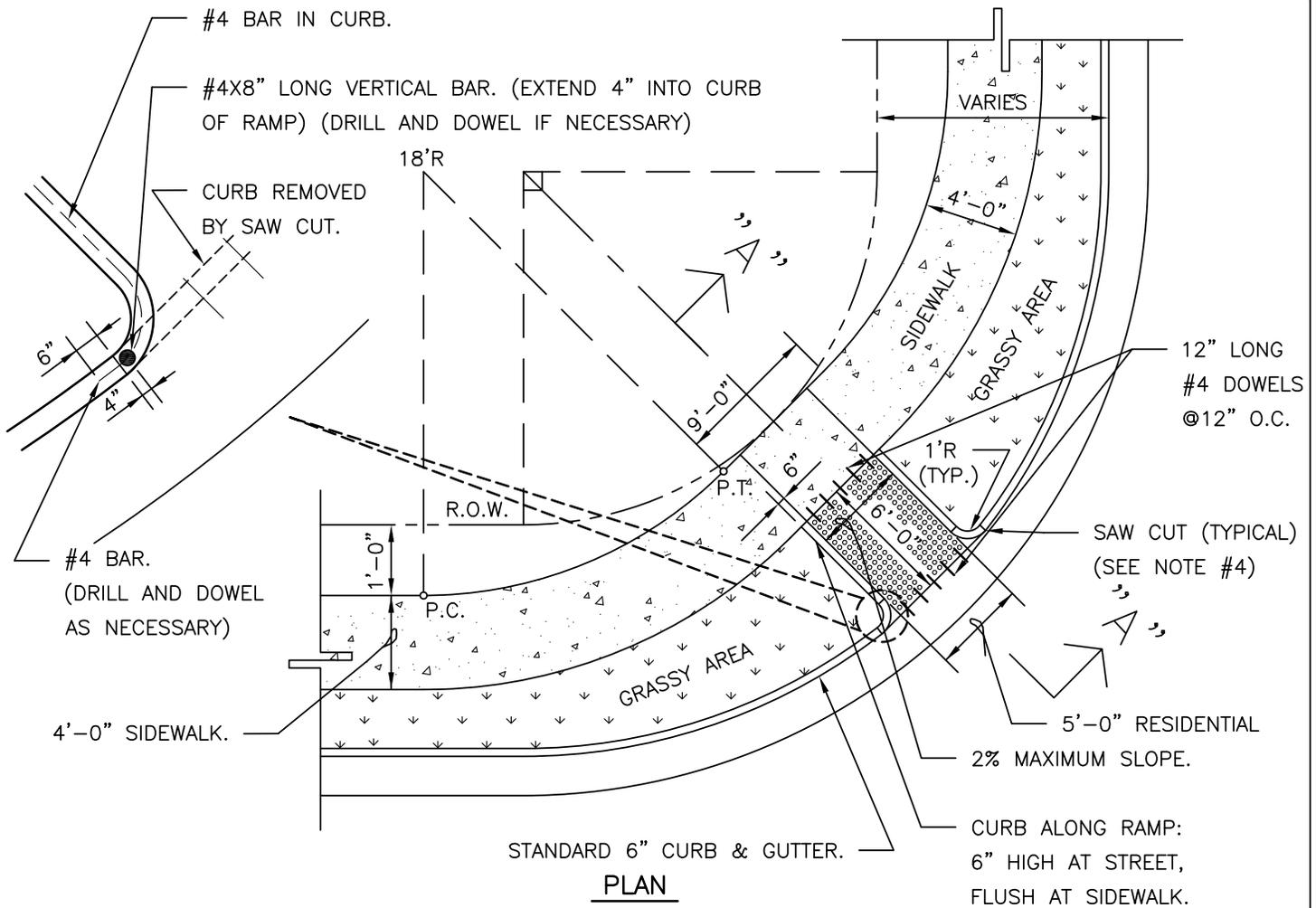
THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

**SPILL AND CATCH CURB DETAIL
(WITH CURB EXPANSION
JOINT DOWEL DETAIL)**

DRAWING NO:
ST-05





NOTES:

1. SIDEWALKS SHALL BE A MINIMUM OF 4'-0" WIDE IN RESIDENTIAL AREAS AND 6'-0" WIDE IN COMMERCIAL AREAS.
2. THE RAMP SHALL HAVE A DETECTABLE WARNING AND CONTRASTING COLORED SURFACE. THE RAMP SHALL BE STAMPED AND DYED CONCRETE OR APPROVED EQUAL.
3. THE POSITION OF THE RAMP MAY BE ALTERED IN THE FIELD BY THE DESIGN ENGINEER, BUT ONLY WITH THE APPROVAL OF THE CITY INSPECTOR.
4. SAW CUTTING IS APPLICABLE FOR INSTALLATION WHERE THE CURB LAYDOWN FOR THE RAMP IS NOT PROVIDED.
5. THE SIDEWALK PEDESTRIAN RAMP SHALL MEET ALL APPLICABLE A.D.A. REQUIREMENTS.

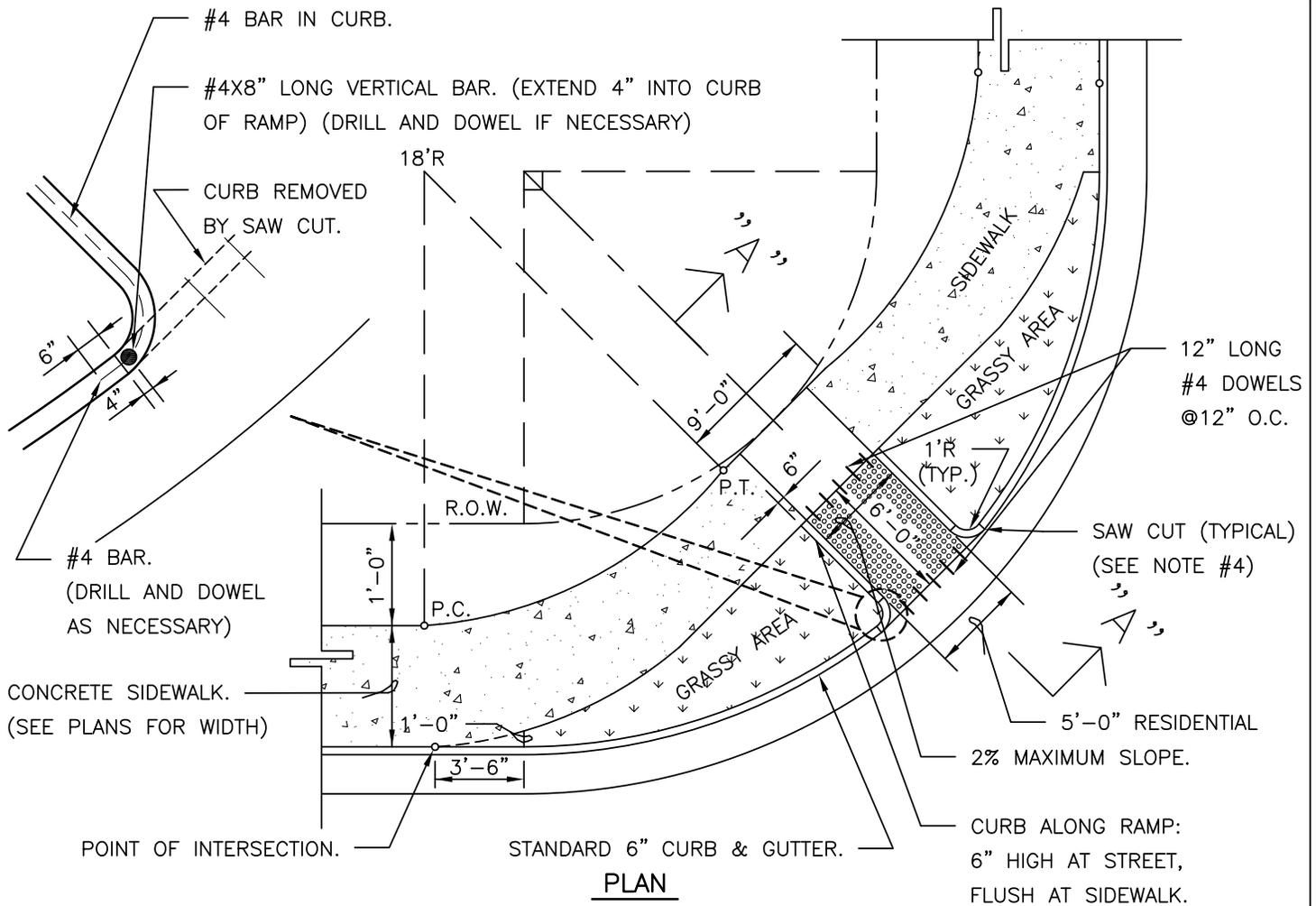
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USE OF THIS DETAIL.

CITY OF BASTROP

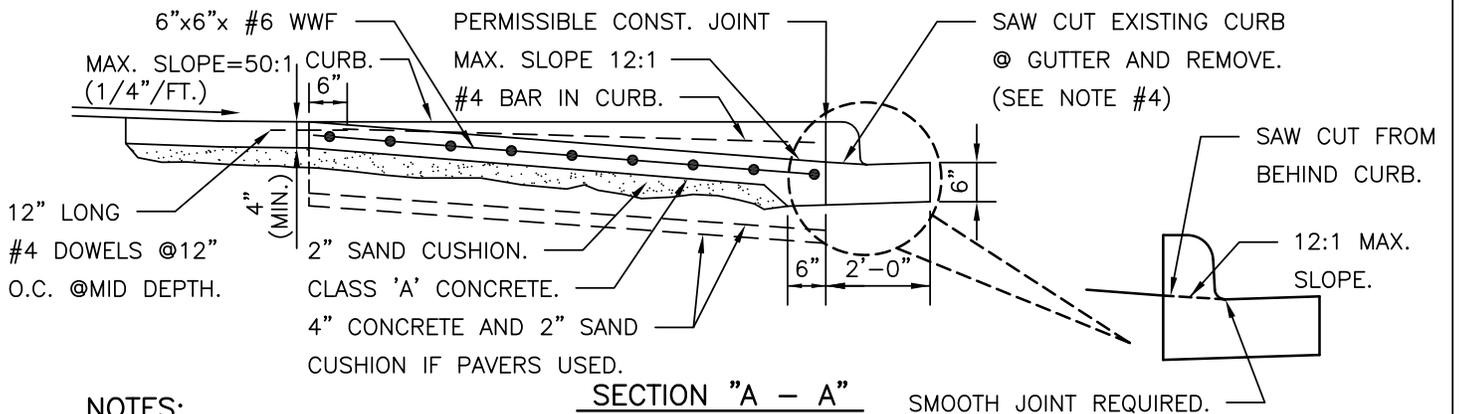
**SIDEWALK PEDESTRIAN RAMP DETAIL
(TYPE 1)**

DRAWING NO:
ST-07





PLAN



NOTES:

1. SIDEWALKS SHALL BE A MINIMUM OF 4'-0" WIDE IN RESIDENTIAL AREAS AND 6'-0" WIDE IN COMMERCIAL AREAS.
2. THE RAMP SHALL HAVE A DETECTABLE WARNING AND CONTRASTING COLORED SURFACE. THE RAMP SHALL BE STAMPED AND DYED CONCRETE OR APPROVED EQUAL.
3. THE POSITION OF THE RAMP MAY BE ALTERED IN THE FIELD BY THE DESIGN ENGINEER, BUT ONLY WITH THE APPROVAL OF THE CITY INSPECTOR.
4. SAW CUTTING IS APPLICABLE FOR INSTALLATION WHERE THE CURB LAYDOWN FOR THE RAMP IS NOT PROVIDED.
5. THE SIDEWALK PEDESTRIAN RAMP SHALL MEET ALL APPLICABLE A.D.A. REQUIREMENTS.

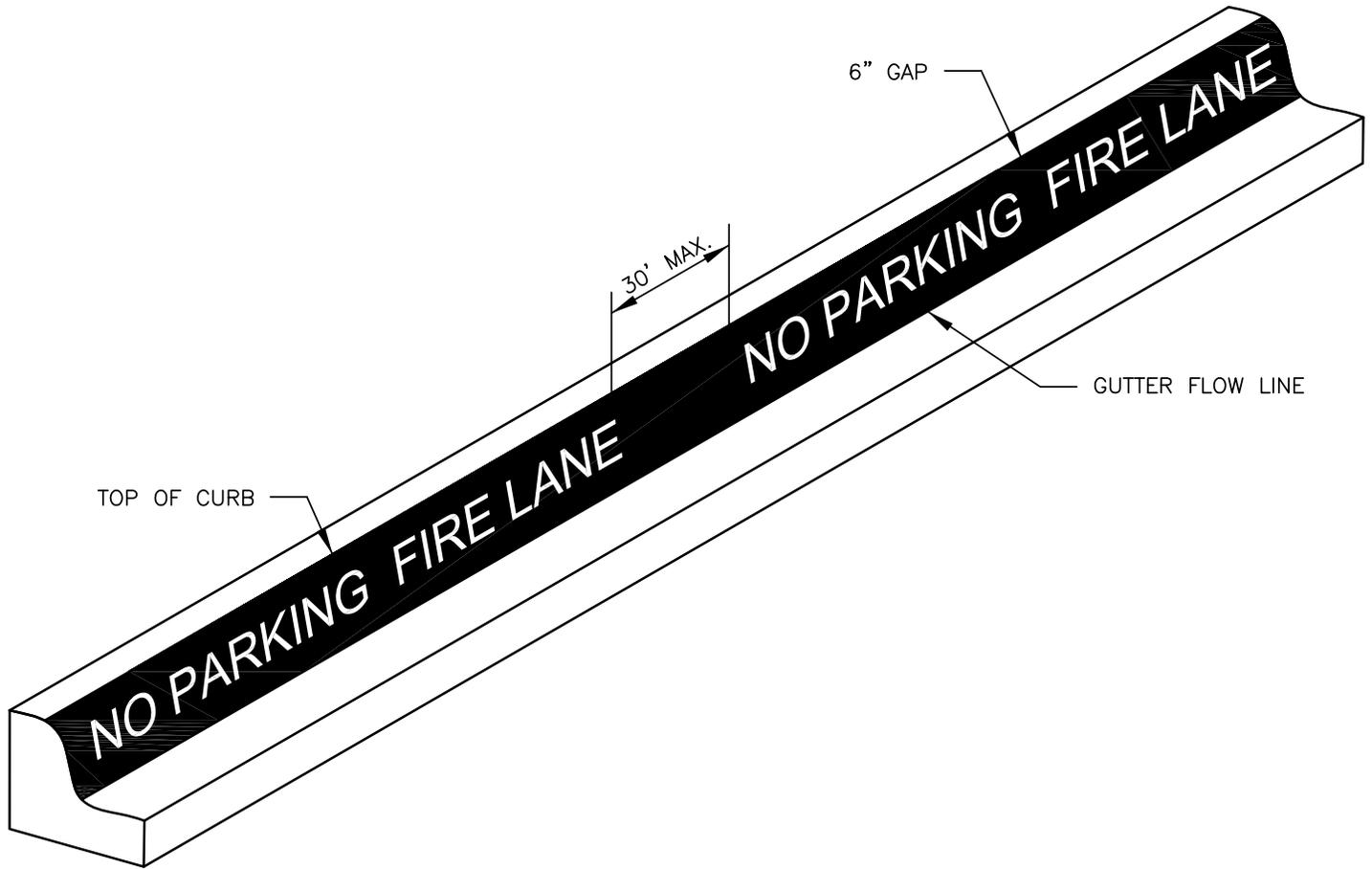
SECTION "A - A"

SMOOTH JOINT REQUIRED.

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THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP
SIDEWALK PEDESTRIAN RAMP DETAIL
(TYPE 2)

DRAWING NO:
ST-08

NOTES:

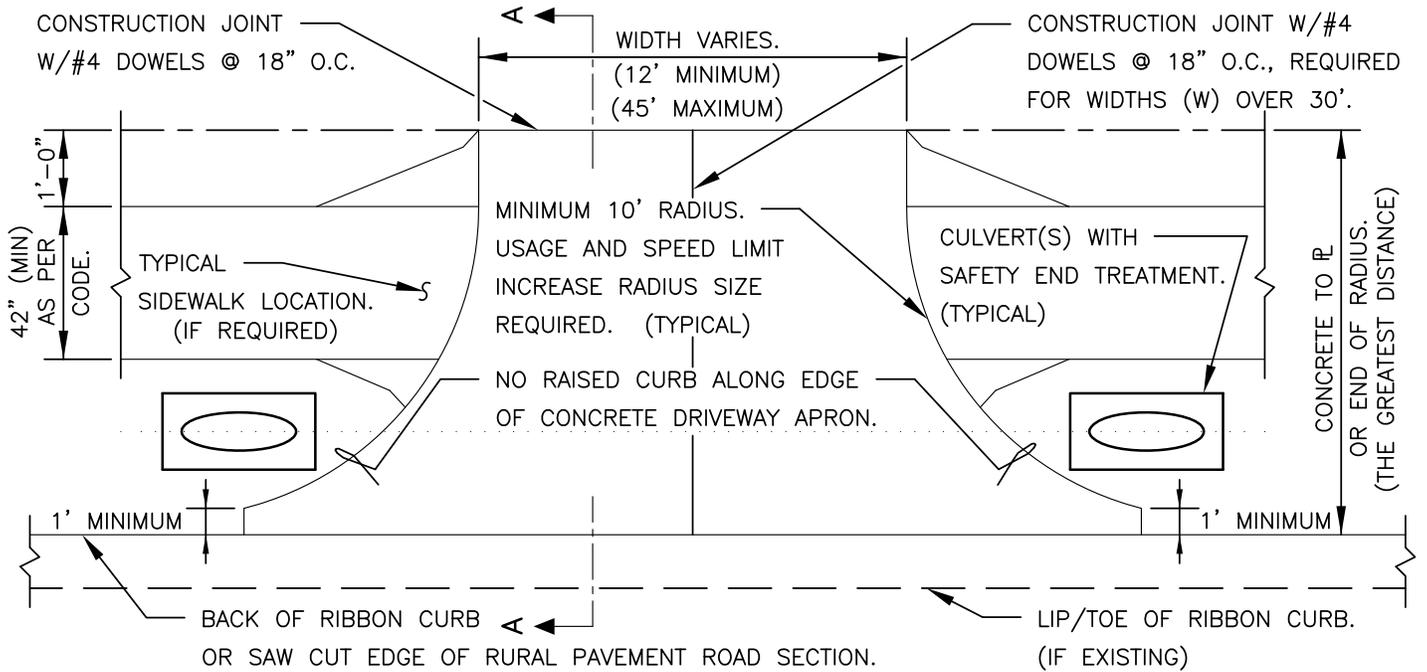
FIRE LANE STRIPING TO BE 6" WIDE RED PAINT WITH "NO PARKING FIRE LANE" IN 4" TALL WHITE LETTERS. WORDING MAY NOT BE SPACED GREATER THAN 30' APART. STRIPING TO BE PAINTED ON THE FACE OF CURB WHEN PRESENT AND PAINTED FLAT ON THE PARKING SURFACE WHEN IT IS NOT.

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<p><u>MAY 24, 2011</u></p> <p>DATE</p>
<p>THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.</p>

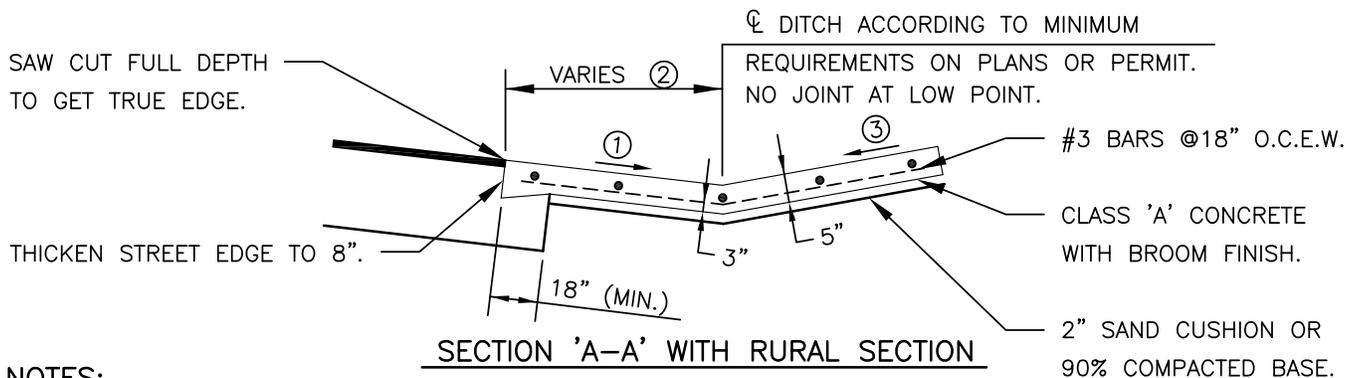
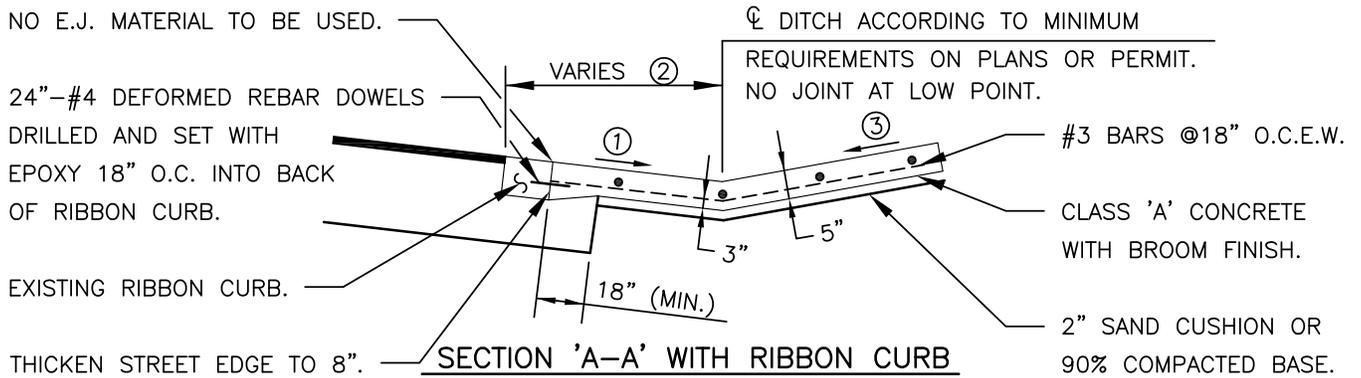
CITY OF BASTROP

FIRE LANE MARKING DETAIL

DRAWING NO:
ST-13



PLAN



NOTES:

- ① NEW DRIVEWAY MUST ACCEPT STORM WATER RUNOFF FROM ROADWAY PAVEMENT, GRADING AWAY FROM PAVEMENT AT MINIMUM -2%, MAXIMUM -12%.
- ② GRADE BACK DISTANCES MUST BE AT A MINIMUM OF 12' OR ☉ OF BAR DITCH IF GREATER THAN 12' OR TO THE DISTANCE REQUIRED IN THE ACCEPTED CONSTRUCTION PLANS. (SHORTER OR LONGER)
- ③ GRADE OF DRIVEWAY PAST THE 12' POINT MAY CHANGE MULTIPLE TIMES AND BE POSITIVE OR NEGATIVE TO THE BACK SIDE OF THE APRON, BUT CAN BE NO GREATER THAN 2% IN THE AREA WHERE THE SIDEWALK IS TO CROSS.

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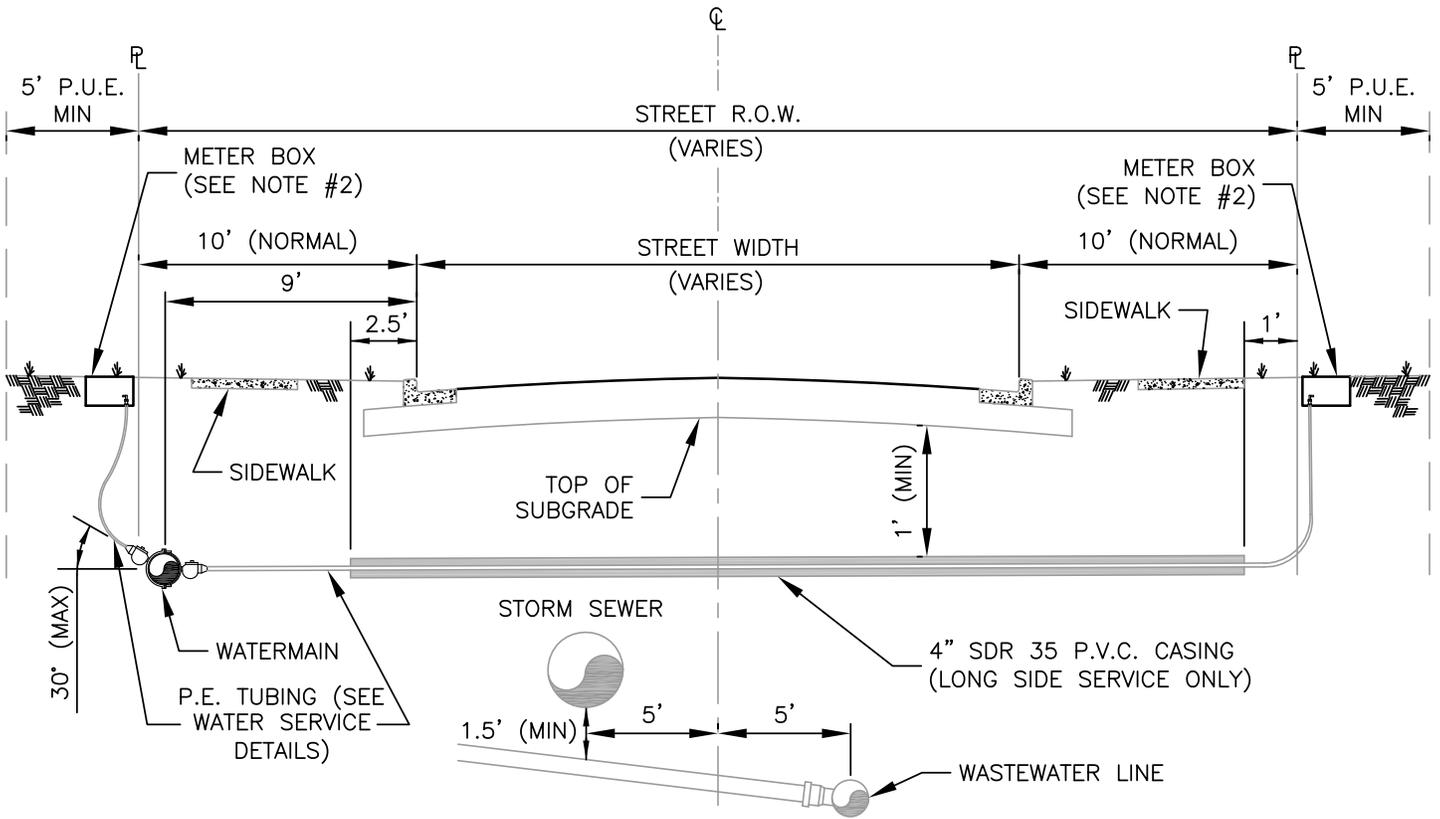
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.

CITY OF BASTROP

CONCRETE DRIVEWAY DETAIL (RIBBON CURB OR RURAL SECTION)

DRAWING NO:
ST-14





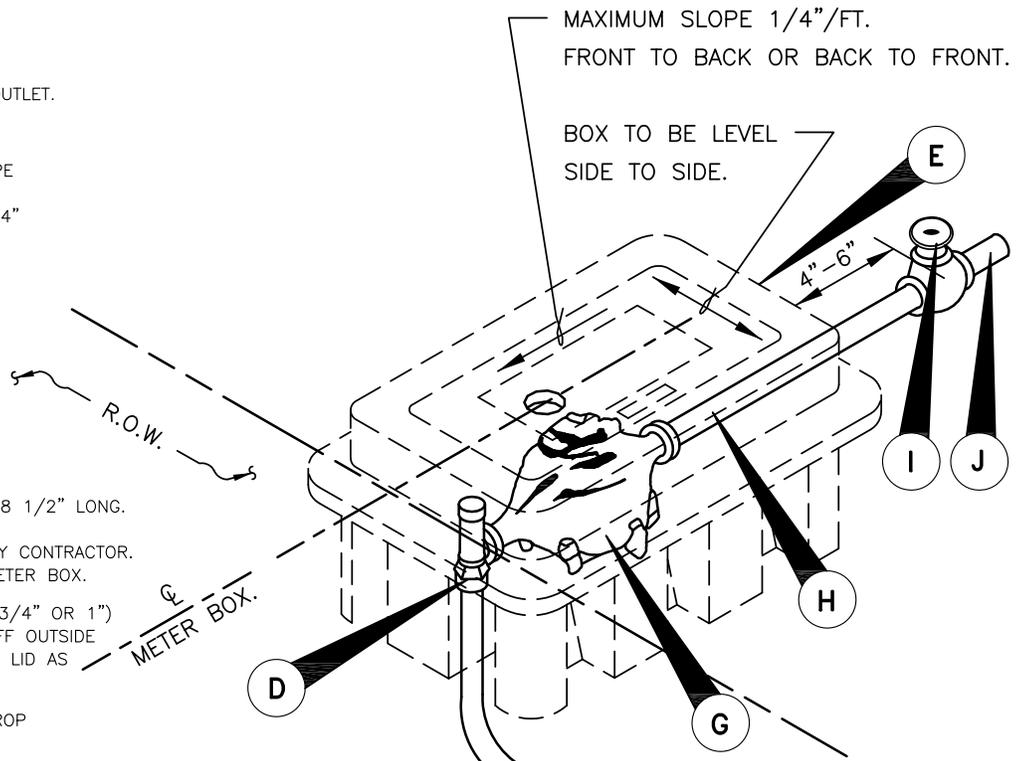
NOTES:

1. REFER TO STANDARD DETAILS WT-02, WT-03 OR WT-04 FOR SERVICE SPECIFICS.
2. METER BOXES SHALL BE SET AS CLOSE TO R.O.W. (R) AS POSSIBLE, WITH NO PART OF BOX WITHIN R.O.W. METER BOXES SHALL BE LEVEL FROM SIDE TO SIDE AND NO MORE THAN 1/4"/FT. SLOPE FROM FRONT TO BACK (OR BACK TO FRONT). GRADING IN P.U.E. AROUND METER BOX SHALL BE 3:1 MAXIMUM AND SHALL BLEND TO OTHER UTILITY APPURTENANCES WITHOUT ABRUPT ELEVATION CHANGES.

<p style="text-align: center;">RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED</p>	<h1 style="margin: 0;">CITY OF BASTROP</h1>	<p style="text-align: center;">DRAWING NO: WT-01</p>
<p style="text-align: center;">MAY 24, 2011 DATE</p>	<h2 style="margin: 0;">WATER SERVICE CASING DETAIL</h2>	
<p style="font-size: small;">THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL. (NOT TO SCALE)</p>		

MATERIAL LIST

- A. SERVICE CLAMP REQUIRED.
- B. 1" CORPORATION STOP - SERVICE PIPE OUTLET.
- C. 1" SERVICE PIPE.
- D. LOCKING ANGLE METER STOP; SERVICE PIPE INLET X SWIVEL COUPLING NUT OUTLET:
- FOR 5/8" AND 3/4" METERS: 1" X 3/4"
- FOR 1" METERS: 1" X 1"
- E. PLASTIC RECTANGULAR METER BOX. (SEE TABLE BELOW)
- F. PIPE CASING WHERE APPLICABLE. (AS PER DETAIL WT-01)
- G. WATER METER, CENTERED IN BOX. (SEE TABLE BELOW)
- H. WATER METER COUPLING; MALE I.P.T. X SWIVEL COUPLING NUT:
- FOR 5/8" AND 3/4" METERS: 3/4" X 8 1/2" LONG.
- FOR 1" METERS:
LENGTH OF PIPE TO BE DETERMINED BY CONTRACTOR.
EXTEND PIPE TO 4"-6" OUTSIDE OF METER BOX.
- I. BRONZE GATE VALVE: NON-RISING STEM (3/4" OR 1") FEMALE I.P.T. (PROPERTY OWNERS CUT-OFF OUTSIDE METER BOX IN SEPARATE VALVE CAN WITH LID AS PER CITY OF BASTROP STANDARDS).
- J. 3/4" OR 1" PIPE MEETING CITY OF BASTROP PLUMBING CODE REQUIREMENTS.

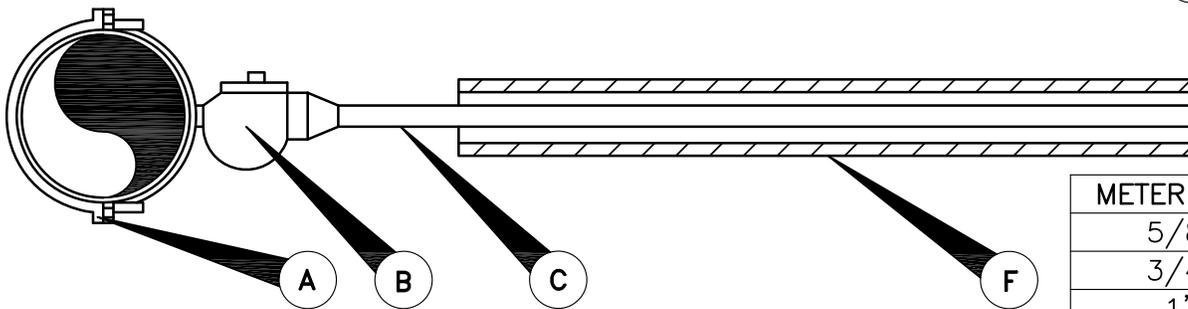


NOTES:

1. SERVICE PIPE SHALL BE HIGH PRESSURE POLYETHYLENE AWWA C901 CLASS 200 PSI BLACK COLORED HAVING A DIMENSION RATIO OF 9 (DR9).
2. SERVICE SADDLES SHALL BE WRAPPED COMPLETELY WITH 8 MIL. POLYETHYLENE FILM.
3. TOP OF BOXES SHALL BE 1" ABOVE FINISHED GRADE.
4. PIPING AND TUBING SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 510.3 OF THE STANDARD SPECIFICATIONS. SPECIAL ATTENTION IS CALLED TO "PIPE BEDDING ENVELOPE" AND "BACKFILLING", SECTIONS 510.3 (14) AND 510.3 (25), RESPECTIVELY.
5. AXIS OF METER ASSEMBLY (LINE THROUGH METER STOP, METER, PIPING AND OWNERS CUTOFF) SHALL BE 10" BELOW TOP OF BOX.
6. SLOTS PROVIDED IN METER BOX TO ACCOMMODATE PIPING INTO AND OUT OF BOX, SHALL NOT BE MODIFIED.
7. LOCATION OF METER BOXES SHALL BE SUBJECT TO THE APPROVAL OF THE CITY OF BASTROP.

PART NUMBER	SERIES	SIZE	HEIGHT	WIDTH	LENGTH
DFW36C-BODY*	36C	STANDARD	12-1/4"	TOP = 13-3/4"	TOP = 19"
DFW36C-SBSM*	36C	STANDARD	12-1/4"	BASE = 10"	BASE = 18-1/4"
DFW36C-SBSM-LID*	36C	STANDARD	1-3/4"	LID = 10"	LID = 15"

* ROTEC BY DFW PLASTICS INCORPORATED OR APPROVED EQUAL.



METER SIZE	LENGTH
5/8"	7 3/4"
3/4"	9"
1"	11"

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**MAY 24, 2011
DATE**

THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

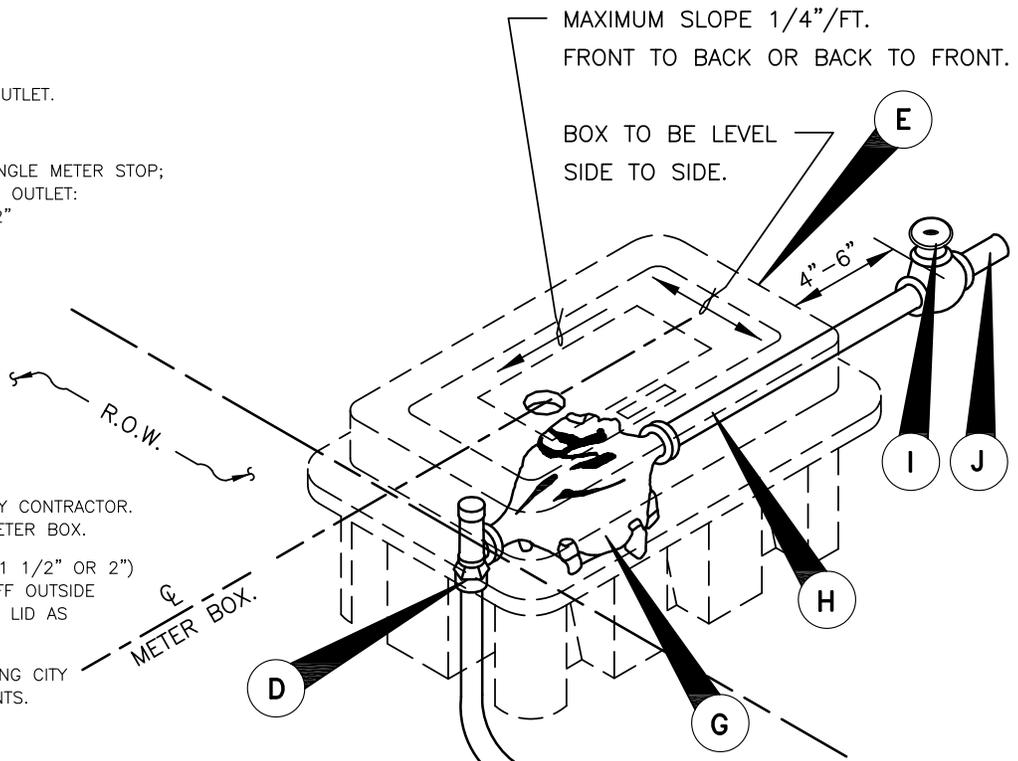
SINGLE 5/8", 3/4" OR 1" WATER METER DETAIL

DRAWING NO:
WT-02



MATERIAL LIST

- A. SERVICE CLAMP REQUIRED.
- B. 1" CORPORATION STOP - SERVICE PIPE OUTLET.
- C. 1" SERVICE PIPE.
- D. BUSHING (IF NECESSARY) AND LOCKING ANGLE METER STOP;
SERVICE PIPE INLET X FLANGED COUPLING OUTLET:
- FOR 1 1/2" METERS: 1 1/2" X 1 1/2"
- FOR 2" METERS: 2" X 2"
- E. PLASTIC RECTANGULAR METER BOX.
(SEE TABLE BELOW)
- F. PIPE CASING WHERE APPLICABLE.
(AS PER DETAIL WT-01)
- G. WATER METER, CENTERED IN BOX.
(SEE TABLE BELOW)
- H. WATER METER COUPLING;
MALE I.P.T. X FLANGED COUPLING NUT:
- LENGTH OF PIPE TO BE DETERMINED BY CONTRACTOR.
- EXTEND PIPE TO 4"-6" OUTSIDE OF METER BOX.
- I. BRONZE GATE VALVE: NON-RISING STEM (1 1/2" OR 2")
FEMALE I.P.T. (PROPERTY OWNERS CUT-OFF OUTSIDE
METER BOX IN SEPARATE VALVE CAN WITH LID AS
PER CITY OF BASTROP STANDARDS).
- J. BUSHING (IF NECESSARY) AND PIPE MEETING CITY
OF BASTROP PLUMBING CODE REQUIREMENTS.

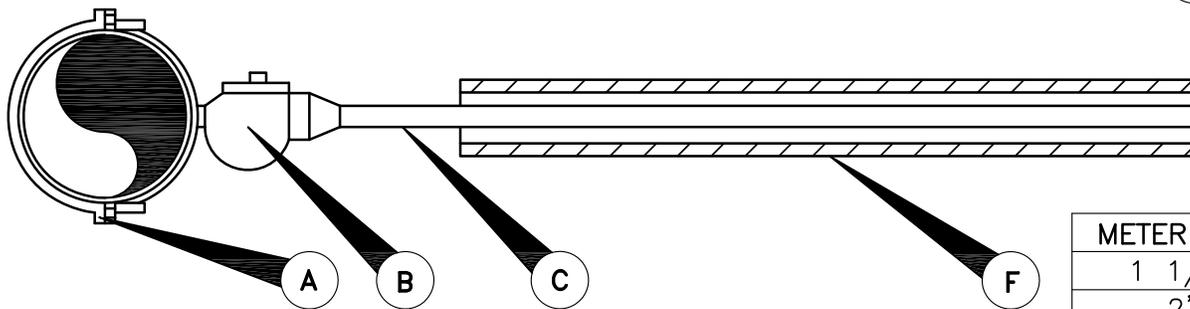


NOTES:

1. SERVICE PIPE SHALL BE HIGH PRESSURE POLYETHYLENE AWWA C901 CLASS 200 PSI BLACK COLORED HAVING A DIMENSION RATIO OF 9 (DR9).
2. SERVICE SADDLES SHALL BE WRAPPED COMPLETELY WITH 8 MIL. POLYETHYLENE FILM.
3. TOP OF BOXES SHALL BE 1" ABOVE FINISHED GRADE.
4. PIPING AND TUBING SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 510.3 OF THE STANDARD SPECIFICATIONS. SPECIAL ATTENTION IS CALLED TO "PIPE BEDDING ENVELOPE" AND "BACKFILLING", SECTIONS 510.3 (14) AND 510.3 (25), RESPECTIVELY.
5. AXIS OF METER ASSEMBLY (LINE THROUGH METER STOP, METER, PIPING AND OWNERS CUTOFF) SHALL BE 10" BELOW TOP OF BOX.
6. SLOTS PROVIDED IN METER BOX TO ACCOMODATE PIPING INTO AND OUT OF BOX, SHALL NOT BE MODIFIED.
7. LOCATION OF METER BOXES SHALL BE SUBJECT TO THE APPROVAL OF THE CITY OF BASTROP.

PART NUMBER	SERIES	SIZE	HEIGHT	WIDTH	LENGTH
DFW65C-12-BODY*	65C	JUMBO	12"	TOP = 18-3/4"	TOP = 30-1/2"
DFW65C-12-BDSM*	65C	JUMBO	12"	BASE = 16"	BASE = 27"
DFW65C-BDSM-LID*	65C	JUMBO	1-3/4"	LID = 15-1/4"	LID = 27"

* ROTEC BY DFW PLASTICS INCORPORATED OR APPROVED EQUAL.



METER SIZE	LENGTH
1 1/2"	13"
2"	17"

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CITY OF BASTROP

SINGLE 1 1/2" OR 2" WATER METER DETAIL

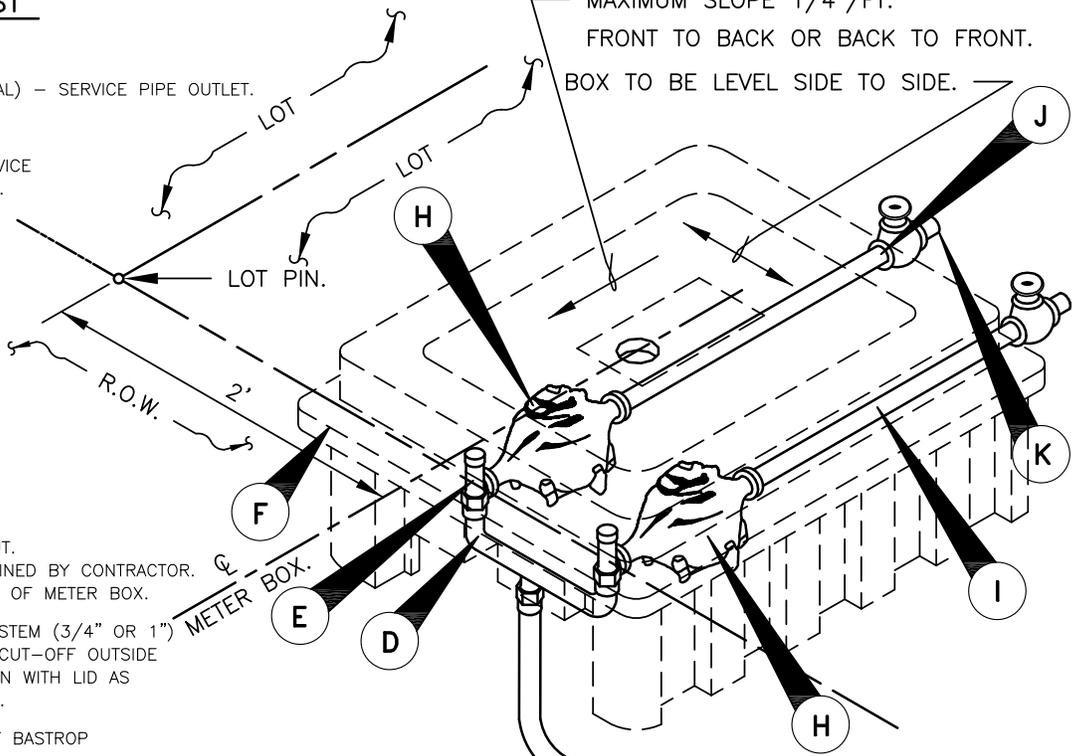
DRAWING NO:
WT-03



MATERIAL LIST

- A. SERVICE CLAMP REQUIRED.
- B. 1 1/2" CORPORATION STOP (TYPICAL) – SERVICE PIPE OUTLET.
- C. 1 1/2" SERVICE PIPE (TYPICAL).
- D. BRANCH CONNECTION: 1 1/2" SERVICE PIPE INLET AND 2 3/4" MALE I.P.T. OUTLETS 7 1/2" O.C.
- E. 3/4" LOCKING ANGLE METER STOP; FEMALE I.P.T. INLET AND SWIVEL COUPLING NUT OUTLET.
- F. PLASTIC RECTANGULAR METER BOX. (SEE TABLE BELOW)
- G. PIPE CASING WHERE APPLICABLE. (AS PER DETAIL WT-01)
- H. WATER METERS, CENTERED IN BOX. (SEE TABLE BELOW)
- I. WATER METER COUPLING; MALE I.P.T. X SWIVEL COUPLING NUT. – LENGTH OF PIPE TO BE DETERMINED BY CONTRACTOR. – EXTEND PIPE TO 4"-6" OUTSIDE OF METER BOX.
- J. BRONZE GATE VALVE: NON-RISING STEM (3/4" OR 1") FEMALE I.P.T. (PROPERTY OWNERS CUT-OFF OUTSIDE METER BOX IN SEPARATE VALVE CAN WITH LID AS PER CITY OF BASTROP STANDARDS).
- K. 3/4" OR 1" PIPE MEETING CITY OF BASTROP PLUMBING CODE REQUIREMENTS.

MAXIMUM SLOPE 1/4"/FT.
FRONT TO BACK OR BACK TO FRONT.
BOX TO BE LEVEL SIDE TO SIDE.

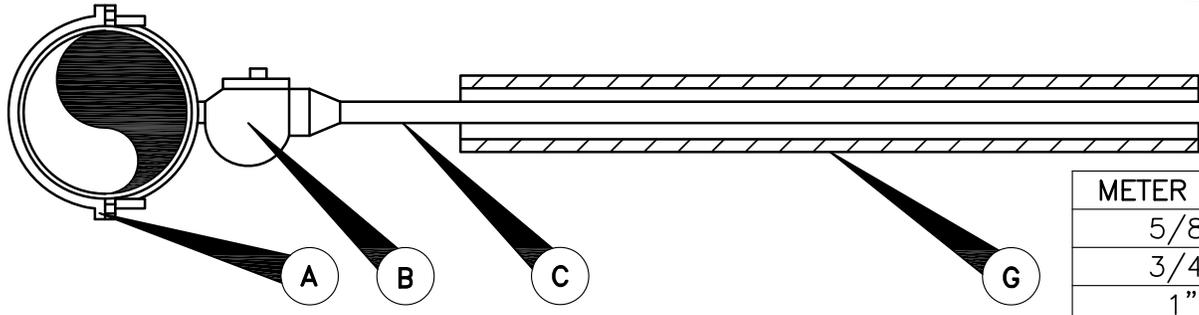


NOTES:

1. SERVICE PIPE SHALL BE HIGH PRESSURE POLYETHYLENE AWWA C901 CLASS 200 PSI BLACK COLORED HAVING A DIMENSION RATIO OF 9 (DR9).
2. SERVICE SADDLES SHALL BE WRAPPED COMPLETELY WITH 8 MIL. POLYETHYLENE FILM.
3. TOP OF BOXES SHALL BE 1" ABOVE FINISHED GRADE.
4. PIPING AND TUBING SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 510.3 OF THE STANDARD SPECIFICATIONS. SPECIAL ATTENTION IS CALLED TO "PIPE BEDDING ENVELOPE" AND "BACKFILLING", SECTIONS 510.3 (14) AND 510.3 (25), RESPECTIVELY.
5. AXIS OF METER ASSEMBLY (LINE THROUGH METER STOP, METER, PIPING AND OWNERS CUTOFF) SHALL BE 10" BELOW TOP OF BOX.
6. SLOTS PROVIDED IN METER BOX TO ACCOMODATE PIPING INTO AND OUT OF BOX, SHALL NOT BE MODIFIED.
7. BRANCH CONNECTION AND BOTH ANGLE METER STOPS MUST BE INSTALLED PRIOR TO FIRST METER INSTALLATION EVEN THOUGH THE SECOND PROPERTY MAY NOT BE READY FOR SERVICE.
8. LOCATION OF METER BOXES SHALL BE SUBJECT TO THE APPROVAL OF THE CITY OF BASTROP.

PART NUMBER	SERIES	SIZE	HEIGHT	WIDTH	LENGTH
DFW38C-14-BODY*	38C	LARGE	14-1/4"	TOP = 21-1/4"	TOP = 22"
DFW38C-14-SBSM*	38C	LARGE	14-1/4"	BASE = 17-1/4"	BASE = 18"
DFW38C-SBSM-LID*	38C	LARGE	2"	LID = 17"	LID = 18"

* ROTEC BY DFW PLASTICS INCORPORATED OR APPROVED EQUAL.



METER SIZE	LENGTH
5/8"	7 3/4"
3/4"	9"
1"	11"

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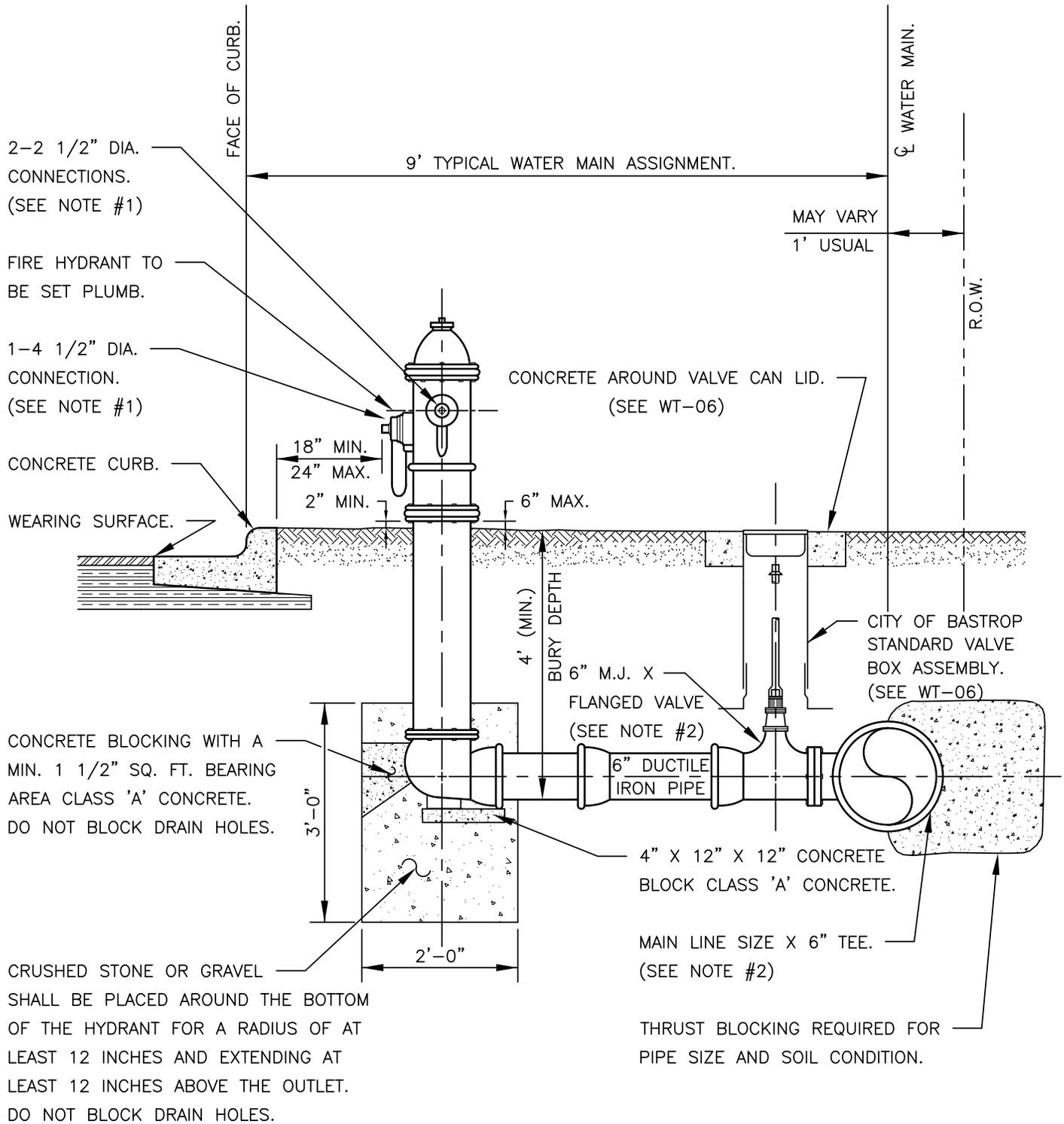
THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

DUAL 5/8", 3/4" OR 1" WATER METERS DETAIL

DRAWING NO:
WT-04





NOTES:

1. THREADS ON OUTLET NOZZLES SHALL BE COMPATIBLE WITH CITY OF BASTROP FIRE DEPARTMENT EQUIPMENT.
2. TEE MAY HAVE FLANGED OUTLET FOR M.J. X FLANGED GATE VALVE OR, ANCHOR (SWIVEL) TEE MAY BE USED WITH M.J. X M.J. GATE VALVE.

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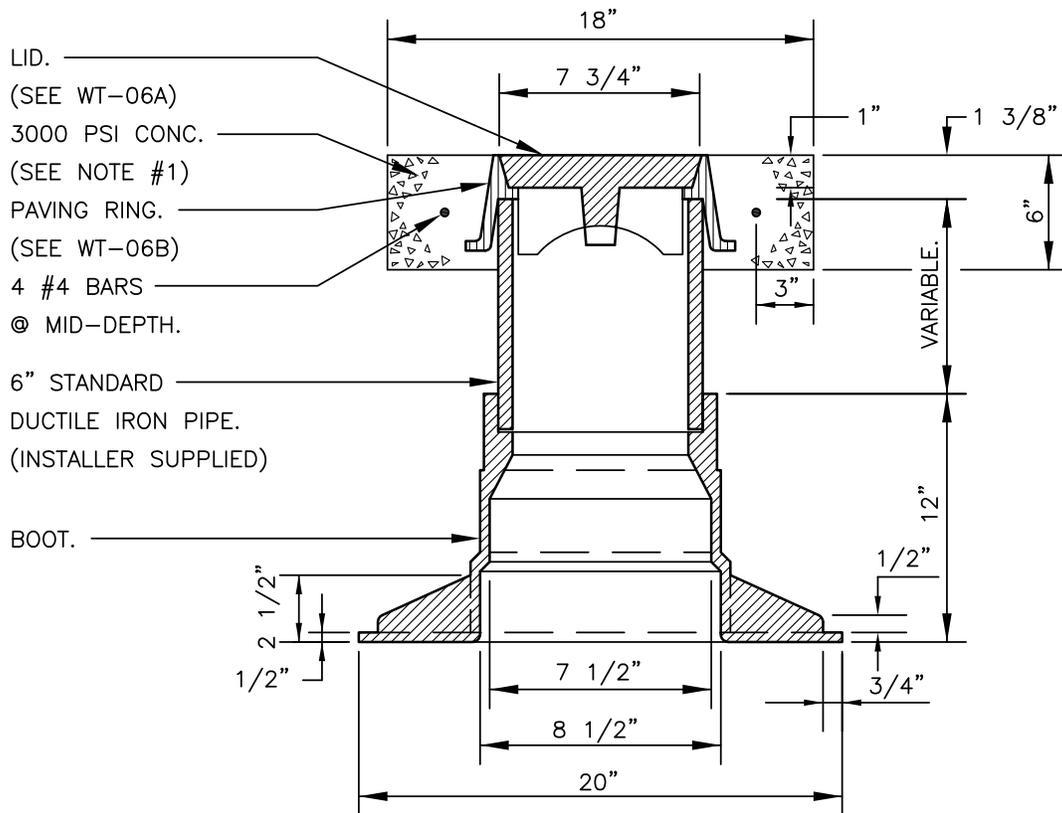
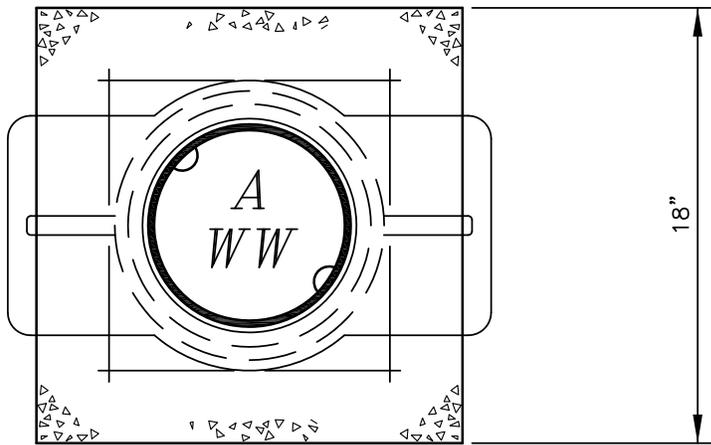
THE ARCHITECT/ENGINEER ASSUMES
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CITY OF BASTROP

FIRE HYDRANT ASSEMBLY DETAIL

DRAWING NO:
WT-05





NOTE:

1. DELETE CONCRETE & REBAR WHEN VALVE IS WITHIN PAVED STREET.

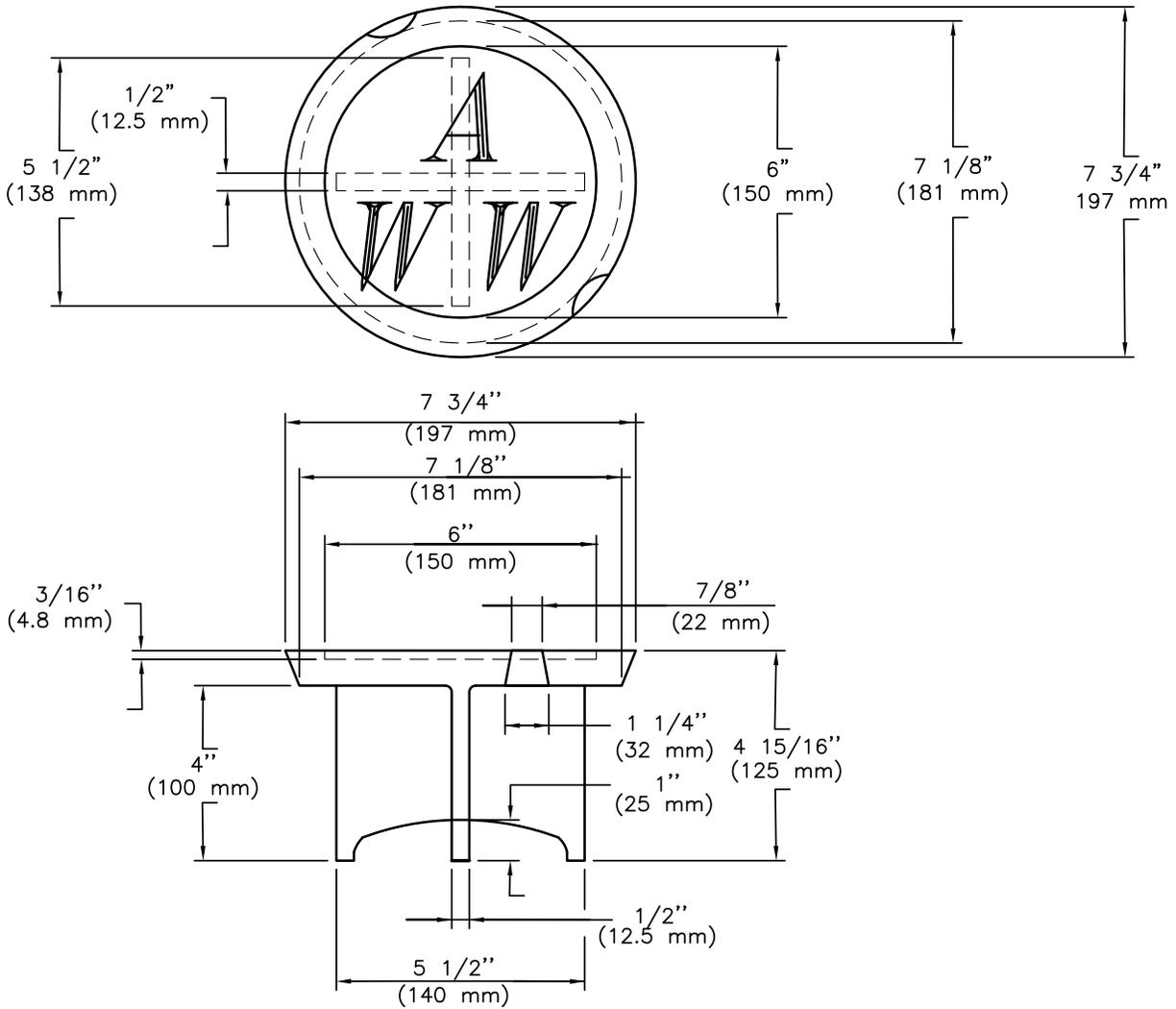
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 USE OF THIS DETAIL.

CITY OF BASTROP

VALVE BOX ASSEMBLY DETAIL

DRAWING NO:
 WT-06





NOTES:

1. MATERIAL SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. TYPICAL FILLET IS 4.8 mm (3/16 ") RADIUS
3. LETTERING SHALL BE 38 mm (1 1/2 ") HEIGHT AND LOCATED AS SHOWN.
4. THIS LID REQUIRES TWO (2) PICK SLOTS.
5. THE MANUFACTURER'S IDENTIFICATION AND CASTING NUMBER, AND THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH LID.
6. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORD WITH NORMAL FOUNDRY PRACTICE.
7. FINISH BY REMOVING FINS AND FLASHING; PAINT WITH BLACK ASPHALT COATING.
8. WEIGHT: APPROXIMATELY 6 KG (13 LBS).

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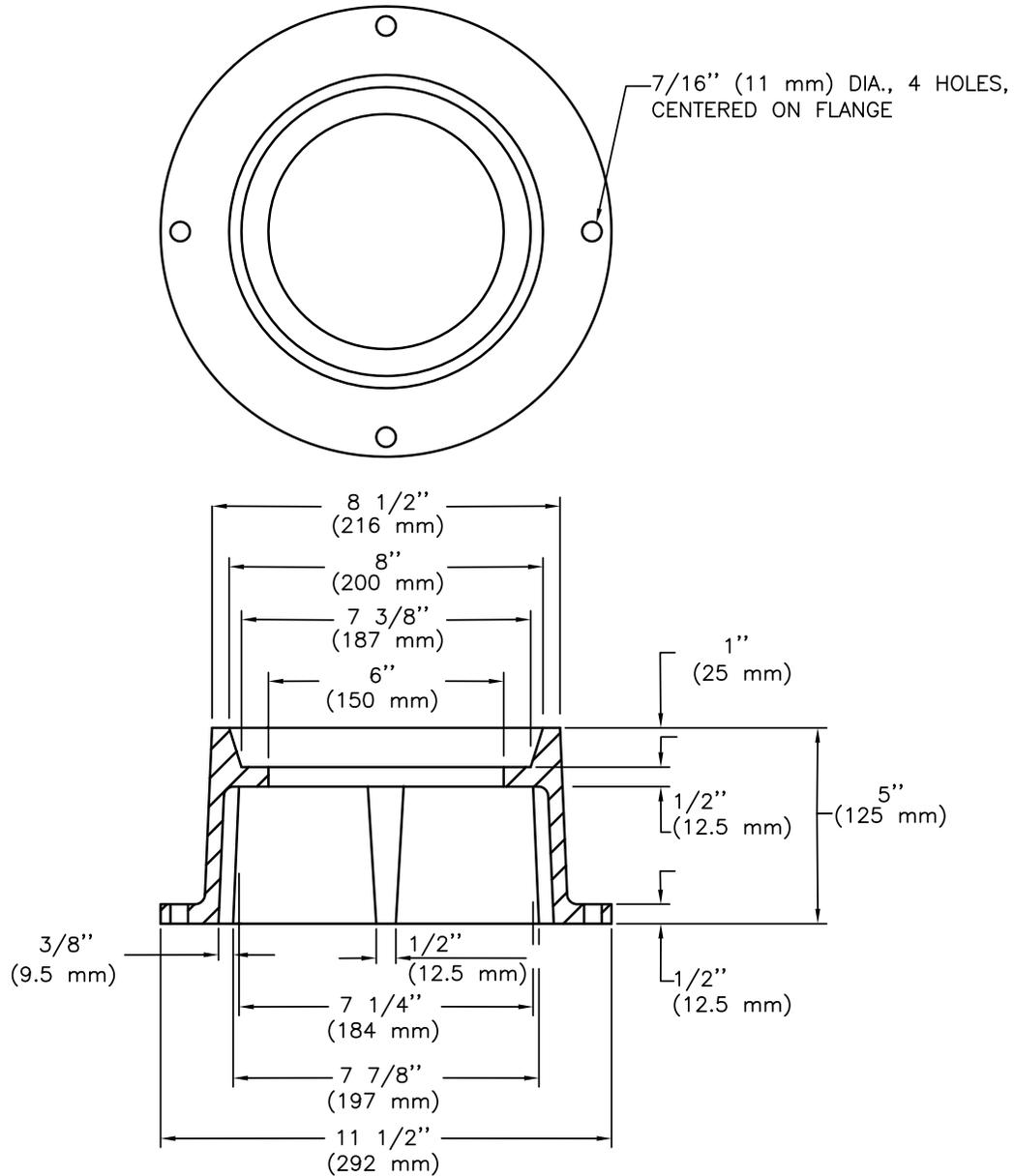
THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

VALVE BOX CASTING LID

DRAWING NO:
WT-06A





NOTES:

1. MATERIALS SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. THE MANUFACTURER'S IDENTIFICATION & CASTING NUMBER & THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH RING.
3. DRAFT & SHRINKAGE ALLOWANCE SHALL BE IN ACCORD WITH NORMAL FOUNDRY PRACTICE.
4. FINISH BY REMOVING FINS & FLASHING; PAINT WITH BLACK ASPHALT COATING.
5. WEIGHT: APPROXIMATELY 10.5 KG (23 LBS).

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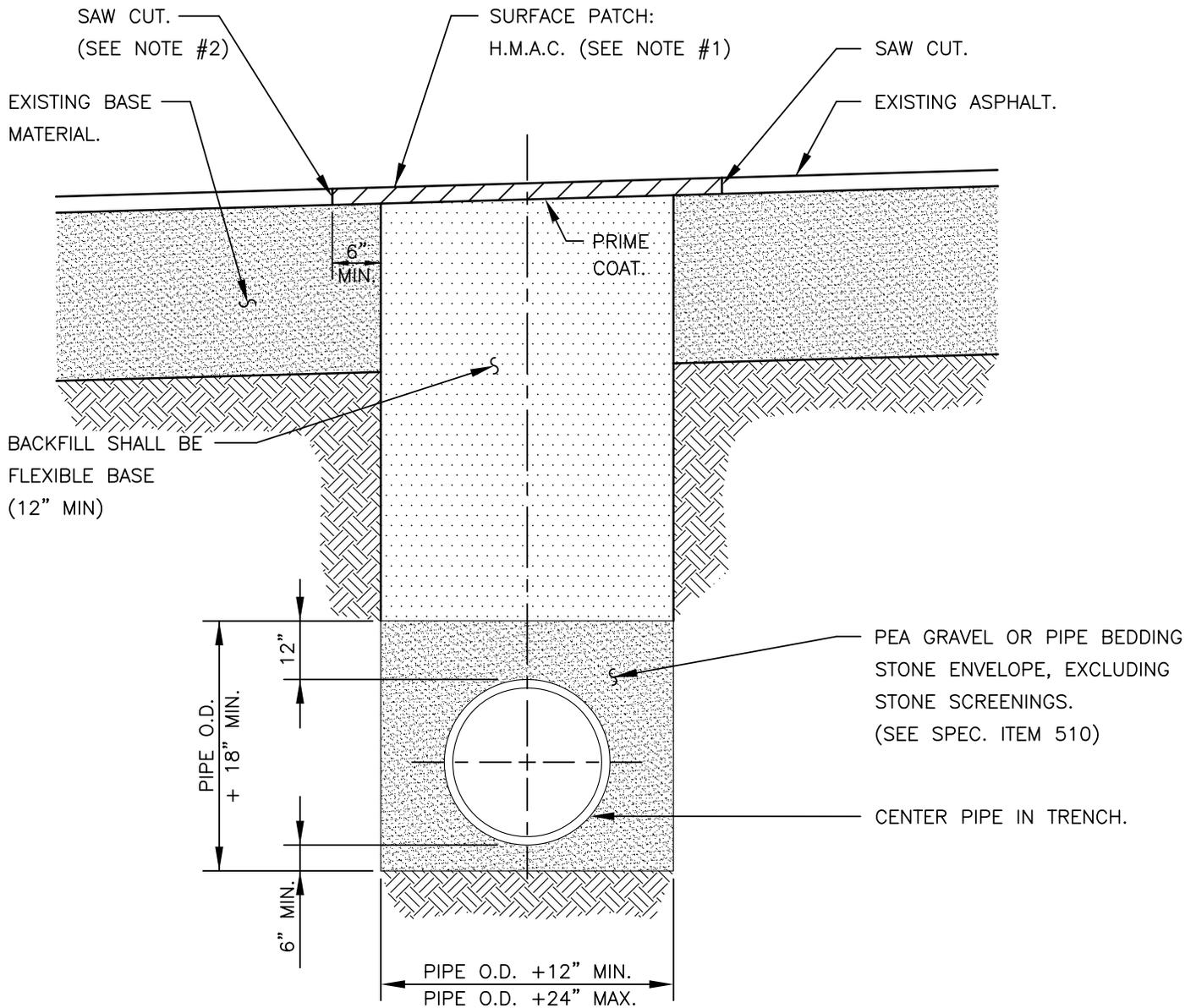
THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

VALVE BOX CASTING PAVING RING

DRAWING NO:
WT-06B





NOTES:

1. H.M.A.C. THICKNESS SHALL MATCH EXISTING ASPHALT THICKNESS AND NO LESS THAN 2".
2. THE CONTRACTOR SHALL SAW CUT, REMOVE AND REPLACE EXISTING PAVEMENT A MINIMUM OF 6" BEYOND EITHER THE EDGE OF THE WATERLINE TRENCH OR THE POINT WHERE EXISTING PAVEMENT IS DAMAGED DUE TO TRENCHING OPERATIONS, WHICHEVER IS GREATER. FINISHED PATCH SHALL BE NEAT AND UNIFORM.
3. INSTALLATION OF BACKFILL, SAW CUTTING AND REMOVAL OF EXISTING PAVEMENT, AND SURFACE PATCH SHALL NOT BE PAID FOR SEPARATELY. COSTS FOR THESE ITEMS SHALL BE INCLUDED IN UNIT PRICE BID FOR WATERLINE PIPE.
4. THE CONTRACTOR SHALL PROVIDE STEEL PLATES TO SPAN THE TRENCH AS NECESSARY OR TO ALLOW BACKFILL TO CURE. SUCH PLATES SHALL BE SUITABLE FOR VEHICLE PASSAGE OVER THE TRENCH AND SHALL BE SATISFACTORILY ANCHORED IN PLACE. COSTS FOR THIS ITEM SHALL BE INCLUDED IN UNIT PRICE BID FOR WATERLINE PIPE.
5. ALL TRENCHING AND TRENCH SAFETY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

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CITY OF BASTROP

**WATERLINE BEDDING
AND PAVEMENT REPAIR DETAIL
(EXISTING PAVED SURFACE)**

DRAWING NO:
WT-07

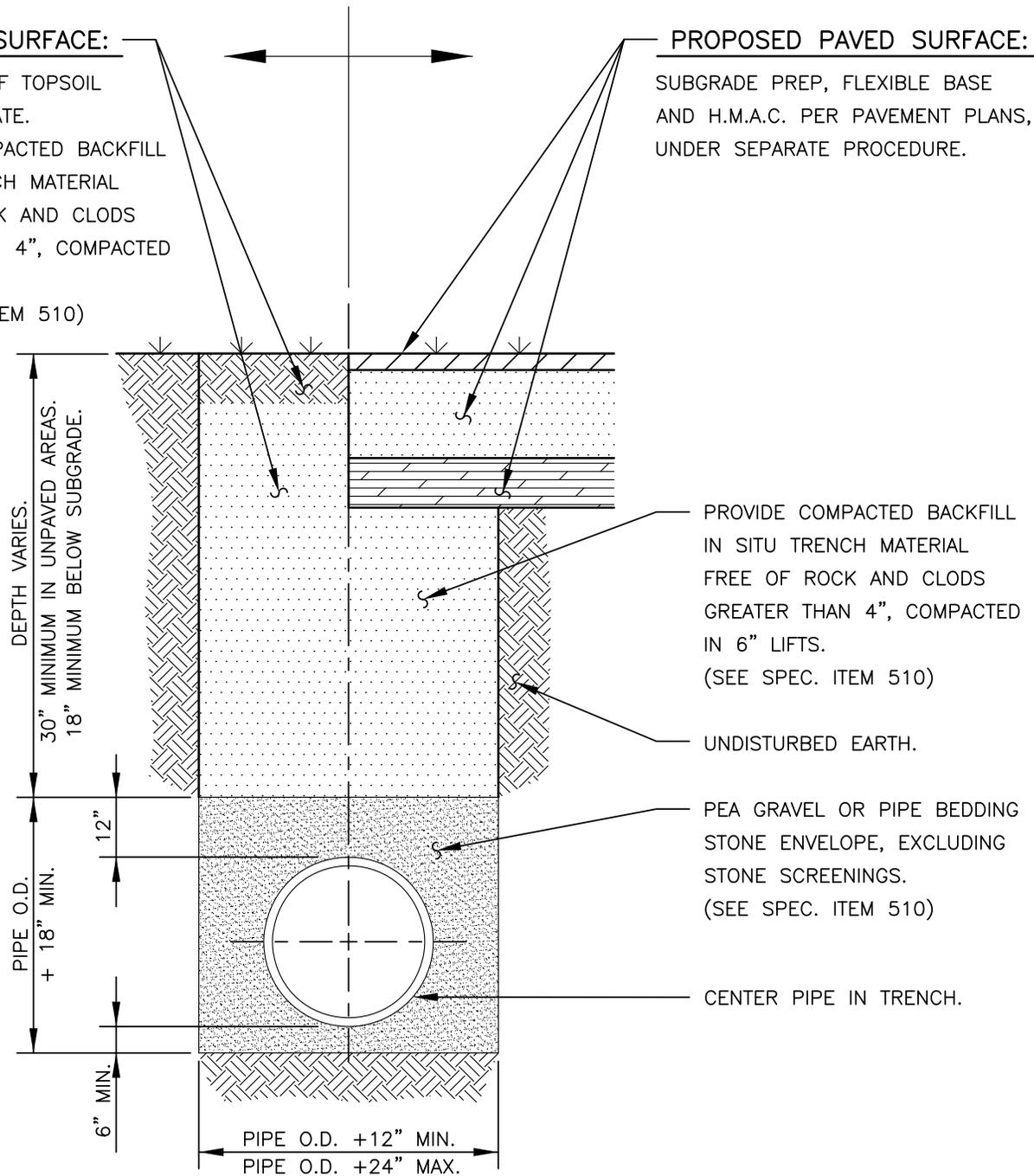


NON-PAVED SURFACE:

- (A) PROVIDE 4" OF TOPSOIL AND REVEGETATE.
 - (B) PROVIDE COMPACTED BACKFILL IN SITU TRENCH MATERIAL FREE OF ROCK AND CLODS GREATER THAN 4", COMPACTED IN 6" LIFTS.
- (SEE SPEC. ITEM 510)

PROPOSED PAVED SURFACE:

SUBGRADE PREP, FLEXIBLE BASE AND H.M.A.C. PER PAVEMENT PLANS, UNDER SEPARATE PROCEDURE.



NOTE:

ALL TRENCHING AND TRENCH SAFETY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

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RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

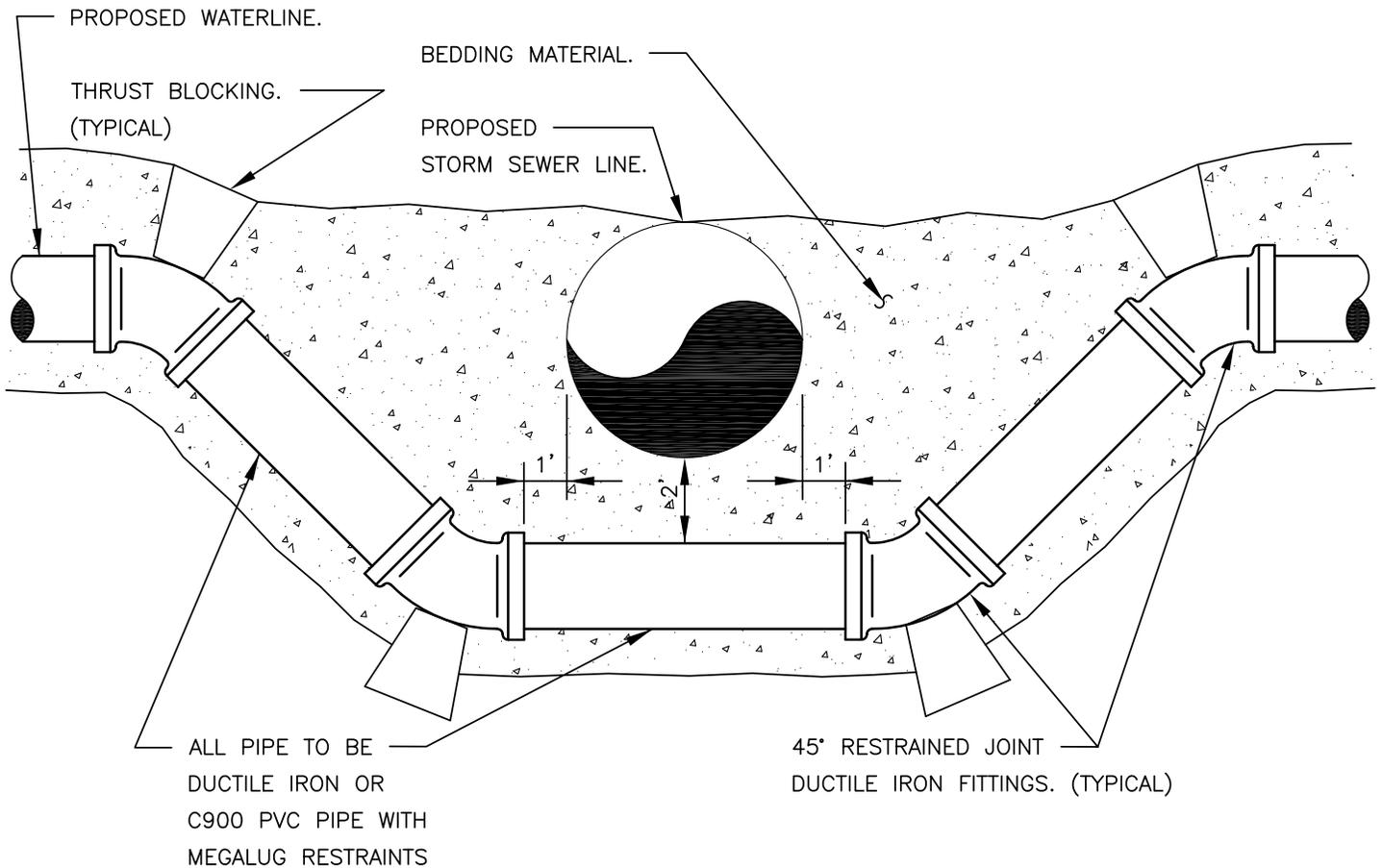
**WATERLINE BEDDING
AND SURFACE REPAIR DETAIL**

(NON-PAVED & PROPOSED PAVED SURFACES)

DRAWING NO:

WT-08

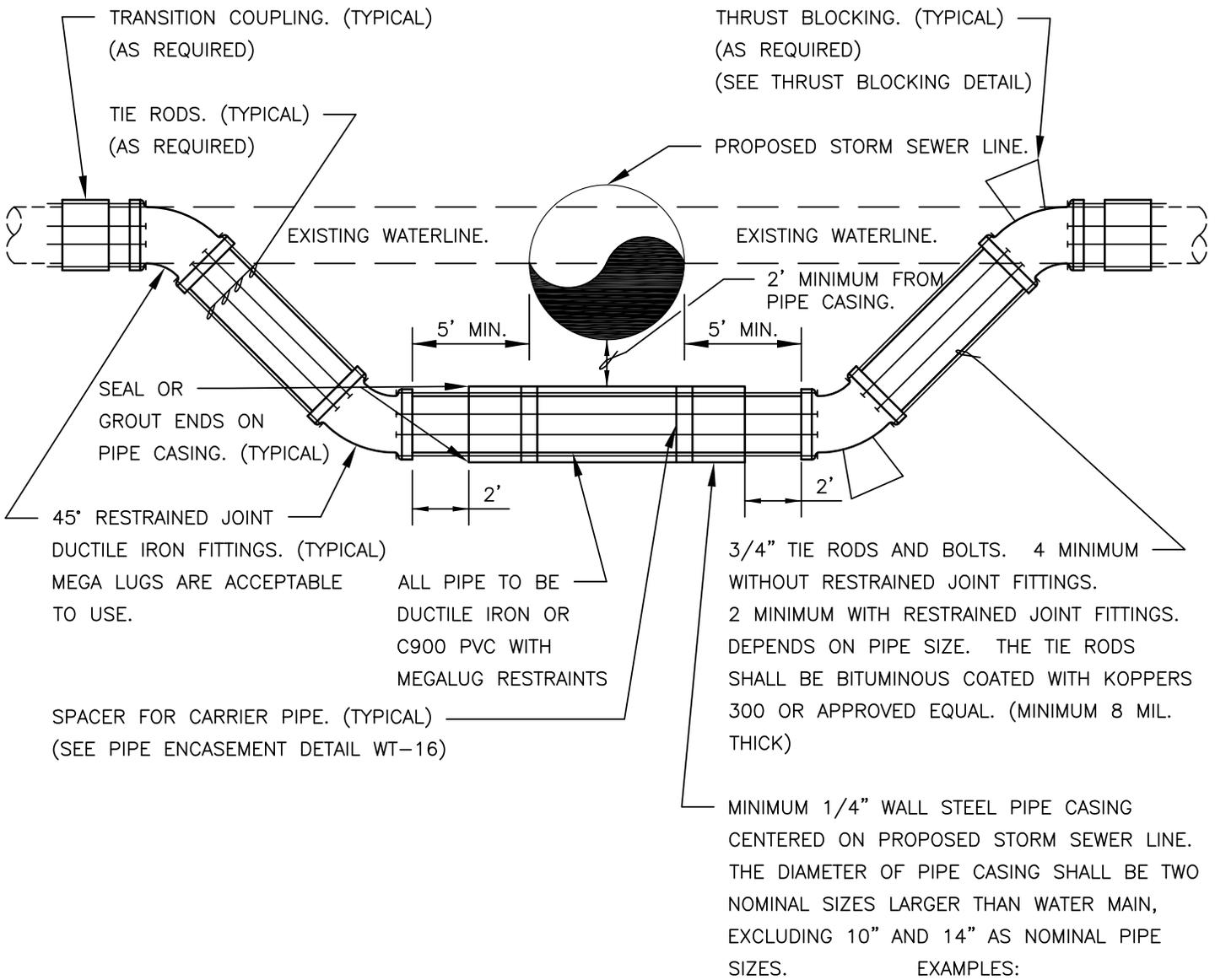




NOTES:

1. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE WRAPPED WITH MINIMUM 8 MIL POLYETHYLENE (BLACK POLY) AND OPEN ENDS/SEAMS SEALED WITH DUCT TAPE.
2. ALL FITTINGS SHALL BE BLOCKED WITH CONCRETE BLOCKING.

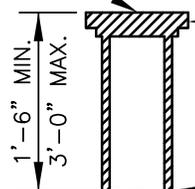
<p style="text-align: center;">RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED</p>	<h1 style="margin: 0;">CITY OF BASTROP</h1> <h2 style="margin: 0;">WATERLINE AND STORM SEWER LINE CROSSING DETAIL (TYPE 1)</h2>	<p>DRAWING NO: WT-09</p>
<p style="text-align: center;"><u>MAY 24, 2011</u> DATE</p>		
<p style="font-size: small;">THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.</p>		



- 6" MAIN: 12" CASING
- 8" MAIN: 16" CASING
- 12" MAIN: 20" CASING

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<p><u>MAY 24, 2011</u> DATE</p>		
<p>THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.</p>		

TOP OF BOX LID TO BE
FLUSH WITH FINISHED SURFACE.



CITY OF BASTROP STANDARD
VALVE BOX RING (WT-06B) & LID (WT-06A).

STEM EXTENSION AS REQUIRED.
FASTEN TO OPERATING NUT.

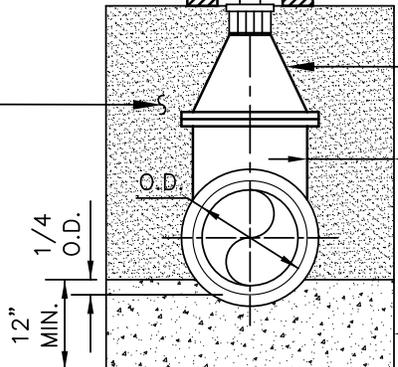
6" DUCTILE IRON PIPE
CENTERED ON OPERATING NUT.

CITY OF BASTROP
STANDARD VALVE CASING.

COMPACT BACKFILL AROUND
VALVE BOX. REFERENCE SECTION
510.3 (25) OF STANDARD SPECIFICATIONS.

STANDARD BEDDING
MATERIAL.

VERTICAL VALVE WRAPPED WITH
8-MIL. POLYETHYLENE FILM.



12" MIN.
12" MIN.
1/4
O.D.
CONCRETE CRADLE. (MIN. 2000 LB.)
USE ON ALL SIZE 12" VALVES AND LARGER.

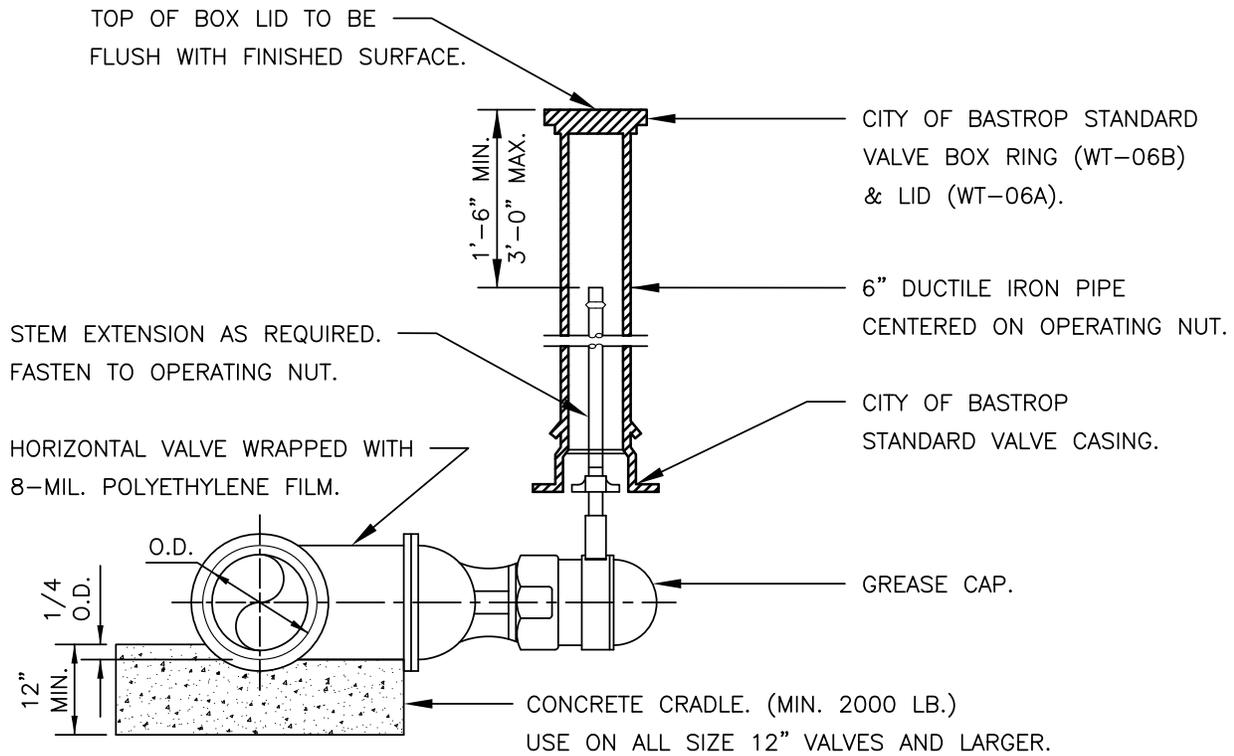
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CITY OF BASTROP

VERTICAL VALVE INSTALLATION DETAIL

DRAWING NO:
WT-11





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CITY OF BASTROP

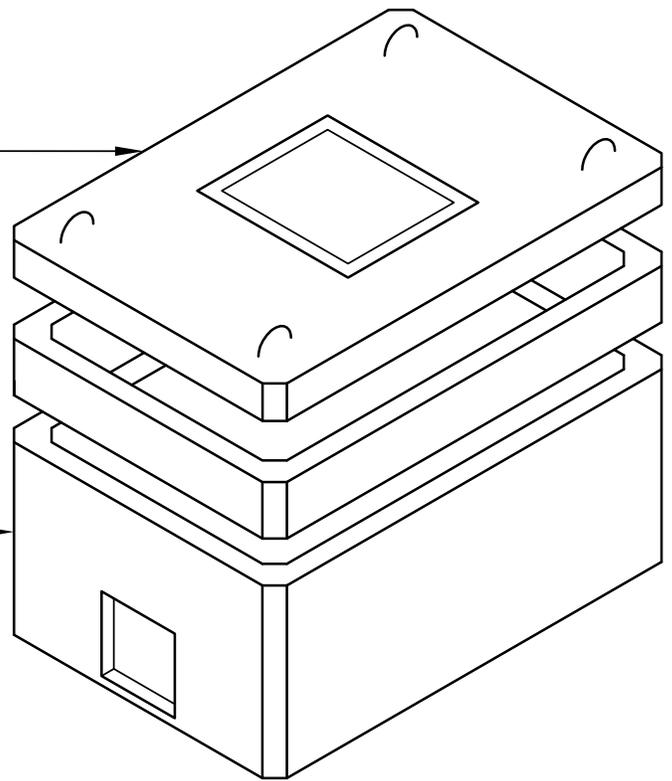
HORIZONTAL VALVE
INSTALLATION DETAIL

DRAWING NO:
WT-12



LID

4000 TO 4500 P.S.I. CONCRETE, 28 DAY STRENGTH.
RECESSED VALVE OPENING KNOCKOUTS.
30"X30" DOOR CAST INTO LID.
REINFORCING FOR H-20 LOADING.
LID AS MANUFACTURED BY CONCRETE PRODUCTS,
INCORPORATED, OR APPROVED EQUAL.

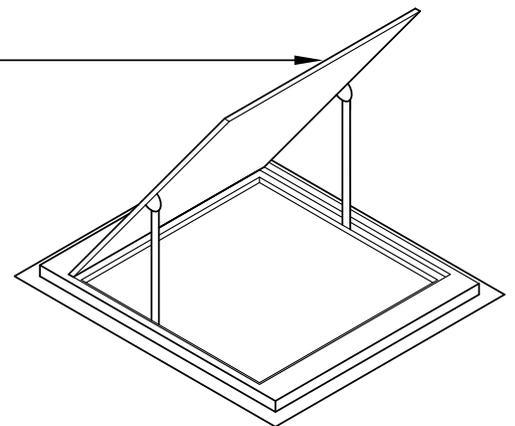


VAULT

4000 TO 4500 P.S.I. CONCRETE, 28 DAY STRENGTH.
18"X18" PIPE KNOCKOUTS.
REINFORCING FOR H-20 LOADING TO DEPTH OF 6".
BASE WITHOUT FLOOR.
12" EXTENSION FOR BASE.
6" WALLS, WITH OPTIONAL 8" WALLS FOR DEPTH TO 10".
VAULT AS MANUFACTURED BY CONCRETE PRODUCTS,
INCORPORATED, OR APPROVED EQUAL.

HATCH

SPRING ASSISTED STEEL HATCH WITH MANUAL LID LOCKOUTS.
CAST FLUSH TO TOP OF LID.
30"X30" OPENING AREA.
H-20 STEEL DOOR.
DOOR AS MANUFACTURED BY CONCRETE PRODUCTS,
INCORPORATED, OR APPROVED EQUAL.



NOTE:

THE METER VAULT SHALL BE LARGE ENOUGH, SO THAT THE FITTED METER ASSEMBLY CAN BE EASILY MAINTAINED.

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CITY OF BASTROP

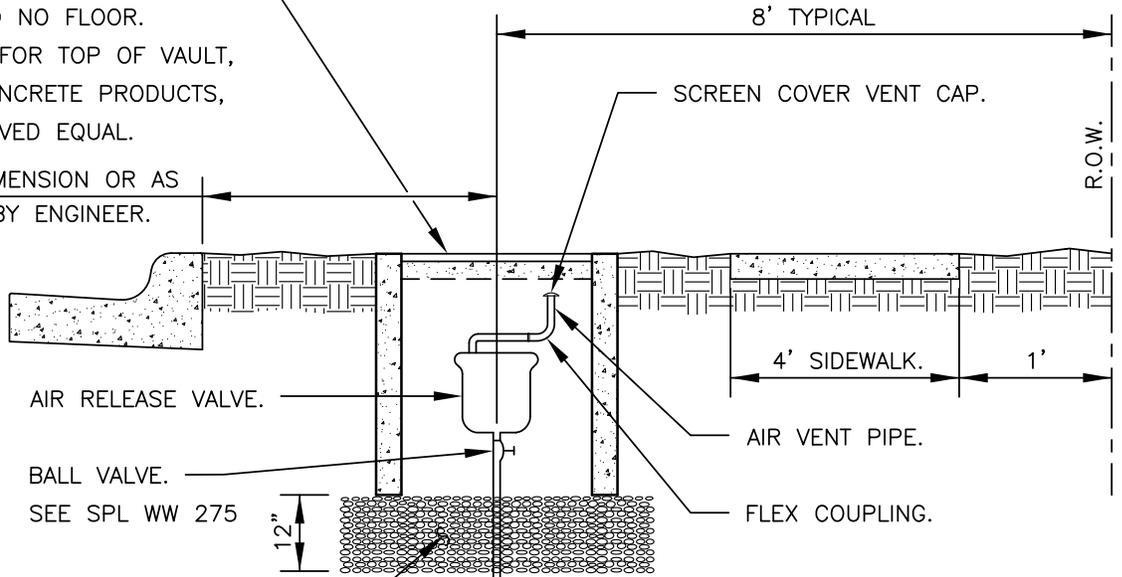
**COMPOUND WATER METER
VAULT DETAIL**

DRAWING NO:
WT-13

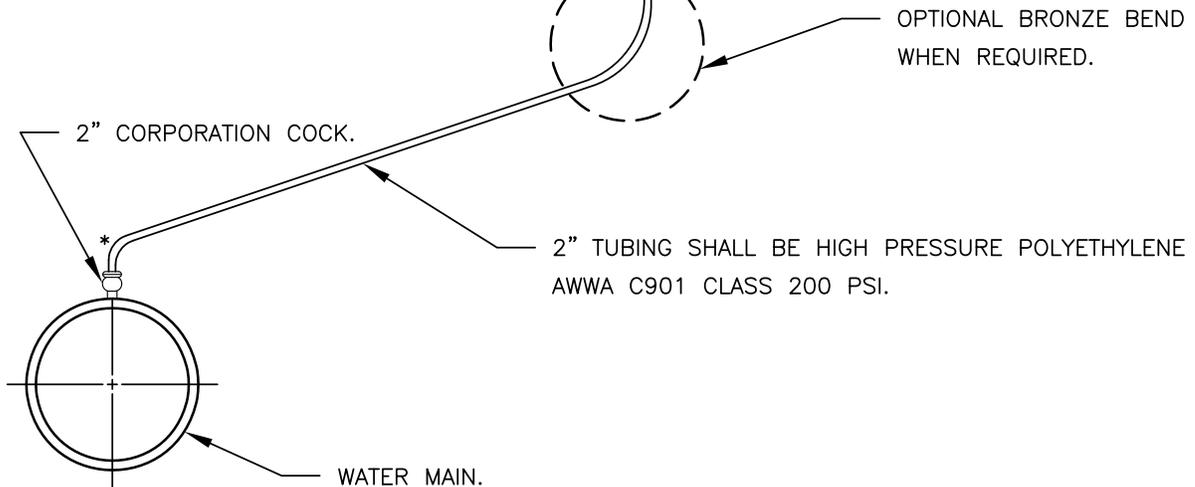


PRECAST CONCRETE VAULT (36"X36" INSIDE)
WITH 4" THICK WALLS AND NO FLOOR.
PROVIDE 1/4" METAL LID FOR TOP OF VAULT,
AS MANUFACTURED BY CONCRETE PRODUCTS,
INCORPORATED, OR APPROVED EQUAL.

PER PLAN DIMENSION OR AS
DETERMINED BY ENGINEER.



BED PRECAST CONCRETE VAULT ON 3/4" WASHED
ROCK GRAVEL OR OTHER CRUSHED STONE ACCEPTABLE
TO THE CITY OF BASTROP.



* THREAD TO COMPRESSION BRASS
ELBOW ALLOWED IF NECESSARY
DUE TO DEPTH LIMITATIONS.

GALVANIZED IRON PIPE	
AIR VALVE	GATE VALVE
1"	1"
2"	2"

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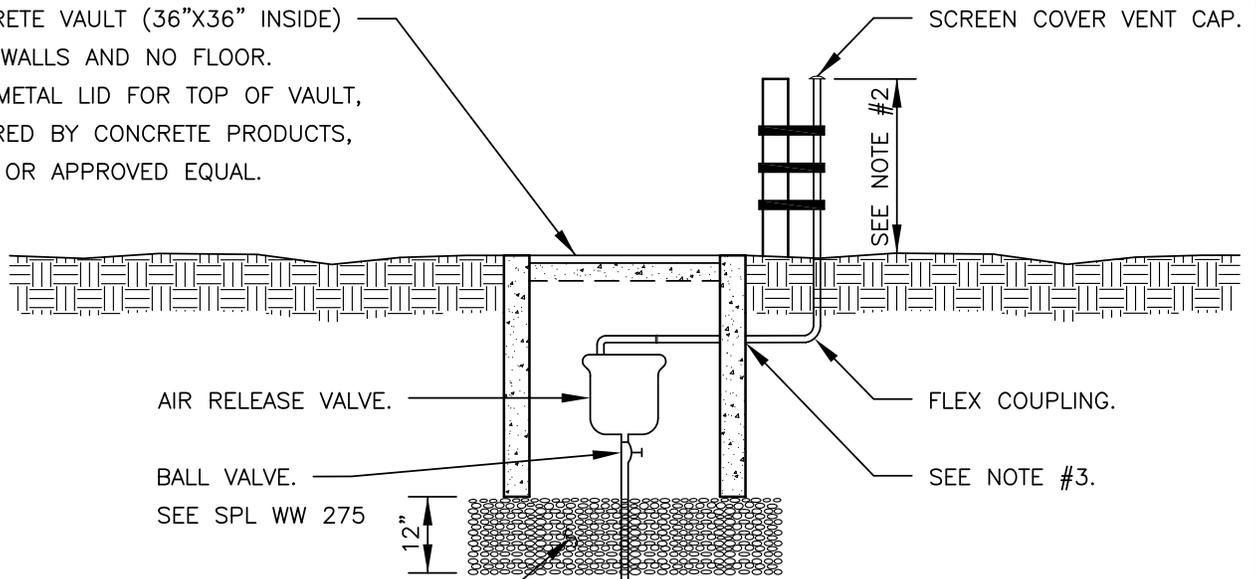
CITY OF BASTROP

1" THRU 2" AIR RELEASE VALVE INSTALLATION DETAIL (DEVELOPED AREAS)

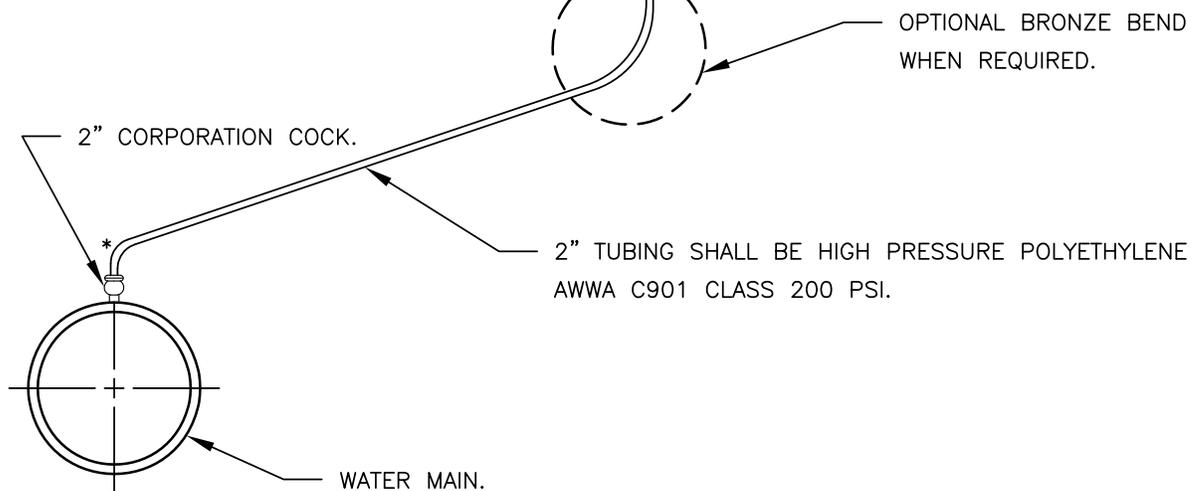
DRAWING NO:
WT-14



PRECAST CONCRETE VAULT (36"X36" INSIDE) WITH 4" THICK WALLS AND NO FLOOR. PROVIDE 1/4" METAL LID FOR TOP OF VAULT, AS MANUFACTURED BY CONCRETE PRODUCTS, INCORPORATED, OR APPROVED EQUAL.



BED PRECAST CONCRETE VAULT ON 3/4" WASHED ROCK GRAVEL OR OTHER CRUSHED STONE ACCEPTABLE TO THE CITY OF BASTROP.



* THREAD TO COMPRESSION BRASS ELBOW ALLOWED IF NECESSARY DUE TO DEPTH LIMITATIONS.

GALVANIZED IRON PIPE	
AIR VALVE	GATE VALVE
1"	1"
2"	2"

NOTES:

1. EXTERIOR SURFACES OF EXPOSED AIR VENT PIPE AND STEEL SUPPORT PIPE SHALL BE CLEANED, PREPPED, PRIMED AND PAINTED WITH RUST-OLEUM SAFETY BLUE ACRYLIC #5225402 PAINT, OR APPROVED EQUAL.
2. THE AIR VENT PIPE SHALL BE 5' MINIMUM IN HEIGHT AND SHALL BE SUPPORTED BY A 4" STEEL PIPE, WHICH IS TO BE SET IN 2500 P.S.I. CONCRETE, FILLED WITH CONCRETE AND SUPPOTED WITH 3 STAINLESS STEEL CLAMPS.
3. CONCRETE VAULT PENETRATION SHALL BE CORE BIT DRILLED. VOID SHALL BE FILLED BY PRESS-SEAL GASKET CORP. PSX RESILIENT CONNECTOR MEETING ASTM C923, OR APPROVED EQUAL.

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MAY 24, 2011
DATE
 THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.

CITY OF BASTROP
1" THRU 2" AIR RELEASE VALVE INSTALLATION DETAIL (UNDEVELOPED AREAS)

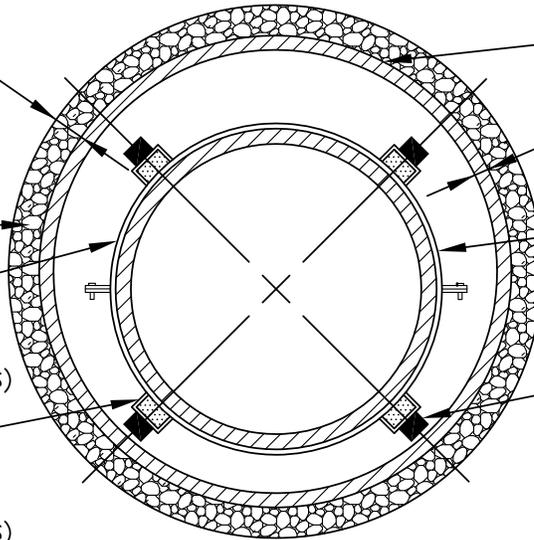
DRAWING NO:
 WT-15


FILL SPACE BETWEEN EXCAVATED BORE AND ENCASEMENT WITH CEMENT GROUT.

EXCAVATED BORE.

T-304 STAINLESS STEEL SPACER BODY. (MINIMUM 14 GAUGE THICKNESS)

WELDED T-304 STAINLESS STEEL RISERS. (MINIMUM 10 GAUGE THICKNESS)



STEEL ENCASEMENT PIPE.

THICKNESS AS SPECIFIED IN PLANS (MIN. 1/4").

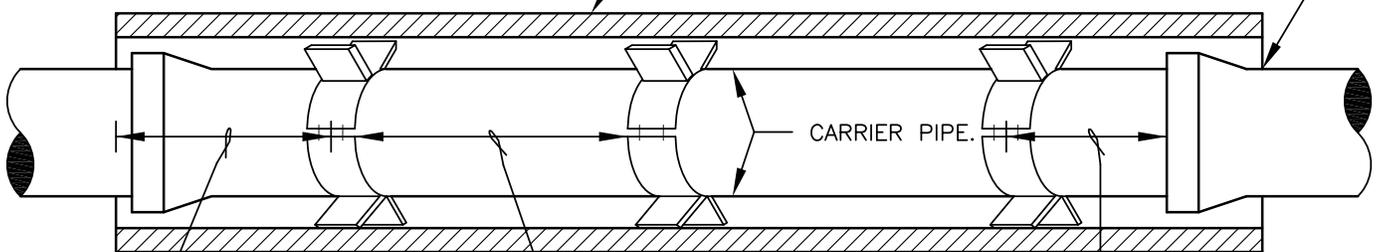
CARRIER PIPE. 90° MAXIMUM

ULTRA HIGH MOLECULAR WEIGHT POLYMER RUNNERS. (2" MINIMUM HEIGHT)

PIPE SIZE-CARRIER (DIAMETER)	PIPE SIZE-CASING (DIAMETER) (MIN.)	MINIMUM PIPE THICKNESS (INCHES)	
6"	16"	1/4	0.2500
8"	18"	1/4	0.2500
10"	20"	5/16	0.3125
12" ~ 14"	24"	3/8	0.3750
16" ~ 18"	30"	7/16	0.4375
20"	36"	1/2	0.5000
24"	42"	1/2	0.5000
30"	48"	1/2	0.5000

SMOOTH STEEL ENCASEMENT PIPE. (MINIMUM 35,000 P.S.I. YIELD STRENGTH)

SEAL ENDS WITH CASCADE WATERWORKS MANUFACTURING COMPANY, MODEL CCES END SEALS, OR APPROVED EQUAL. (EACH END)



A SPACER SHALL BE 18" FROM EACH END OF ENCASEMENT PIPE.

SPACING AS PER MANUFACTURER'S RECOMMENDATION, MINIMUM 6' OR 10'. (MINIMUM 3 SPACERS PER JOINT)

FIRST SPACER SHALL BE 18" FROM END OF JOINT.

NOTES:

- CASING SPACER CONFIGURATION AND SPACING SHALL BE AS SHOWN ON MANUFACTURER'S DRAWINGS FOR SPECIFIC WORK; THESE MUST BE ACCEPTABLE TO THE CITY OF BASTROP
- CASING SPACER SHALL BE AS MANUFACTURED BY CASCADE WATERWORKS MANUFACTURING COMPANY, MODEL CCS, OR APPROVED EQUAL.

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MAY 24, 2011 DATE

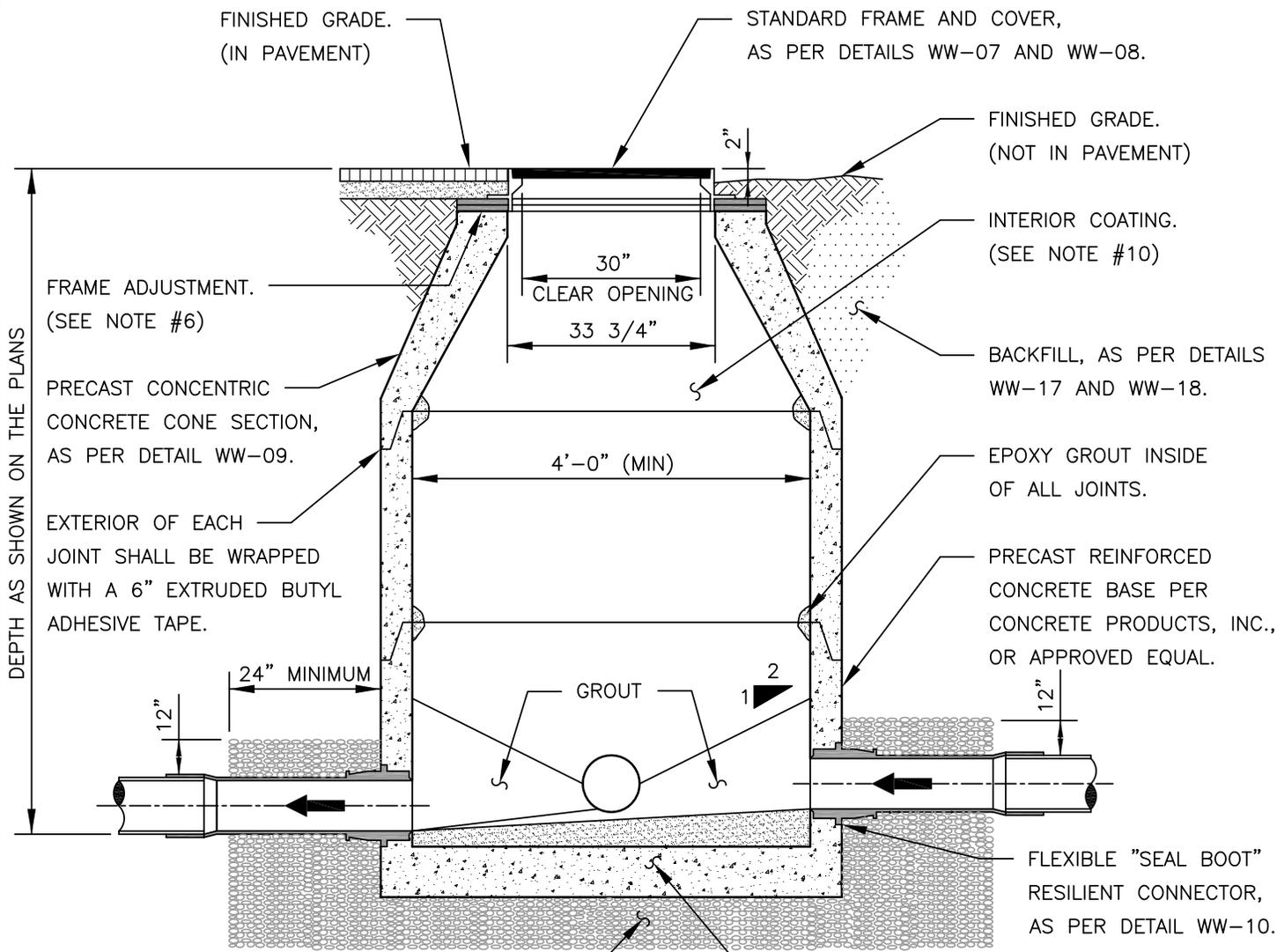
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.

CITY OF BASTROP

PIPE ENCASEMENT DETAIL

DRAWING NO: WT-16





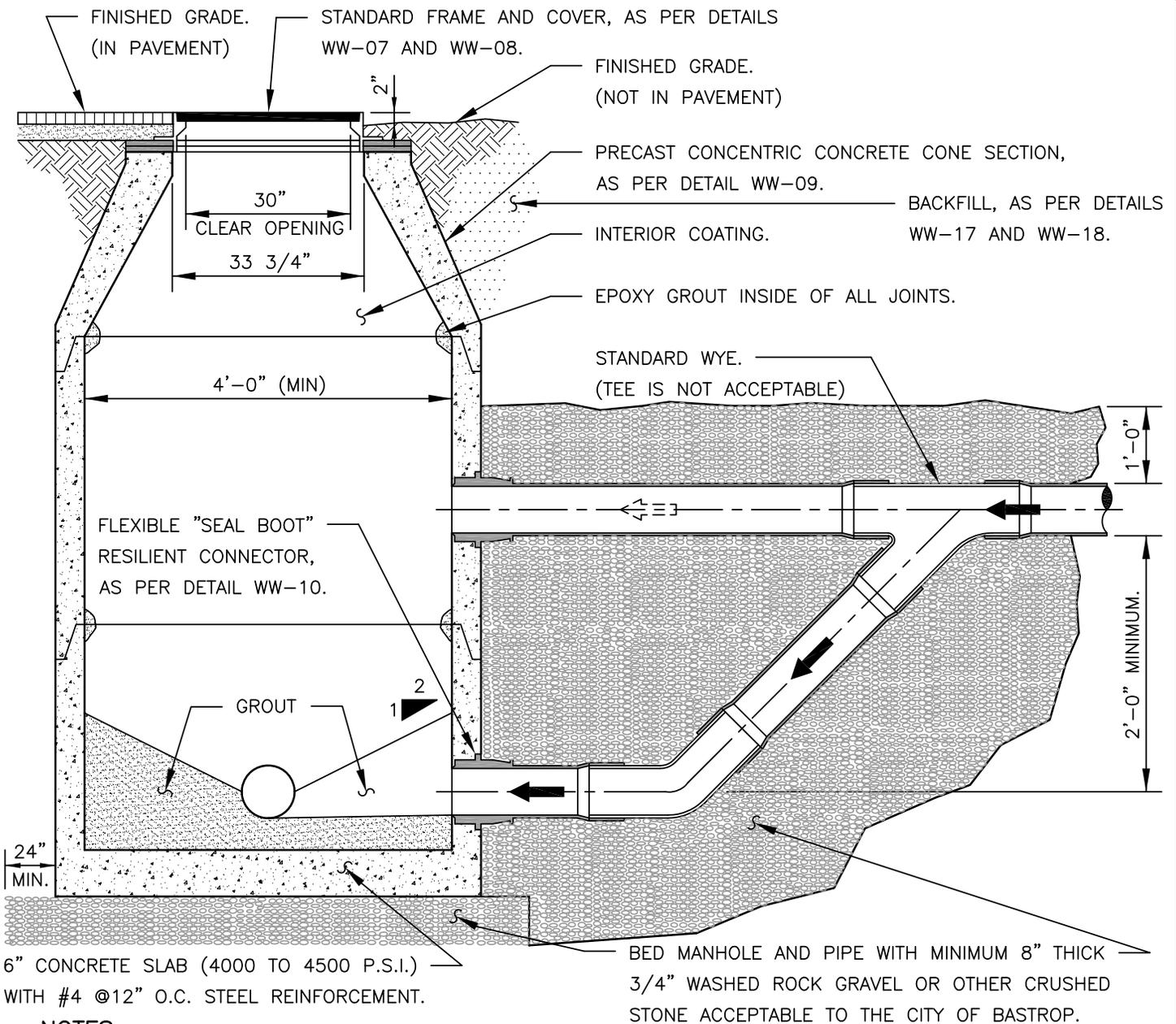
BED MANHOLE AND PIPE WITH MINIMUM 8" THICK 3/4" WASHED ROCK GRAVEL OR OTHER CRUSHED STONE ACCEPTABLE TO THE CITY OF BASTROP.

6" CONCRETE SLAB (4000 TO 4500 P.S.I.) WITH #4 @12" O.C. STEEL REINFORCEMENT.

NOTES:

1. IF DROP IS SIX INCHES (6") TO TWO FEET (2'-0"), CONSTRUCTION OF DROP SHALL PROVIDE AN OVERSIZED INVERT TO EXTEND UNDER THE DROP CONNECTION.
2. SEE CONSTRUCTION PLANS FOR MANHOLE SIZE, LOCATION, CONFIGURATION, TYPE OF TOP SECTION, VENTING REQUIREMENTS, PIPE SIZES AND TYPES.
3. MANHOLES SHALL BE PRECAST ASTM C478 BELL AND SPIGOT WITH "O" RING JOINTS.
4. MANHOLES TO BE DESIGNED TO RESIST LATERAL AND VERTICAL SOIL FORCES RESULTING FROM MANHOLE DEPTH. ADDITIONALLY, MANHOLES LOCATED IN PAVEMENT TO BE DESIGNED FOR H20 TRAFFIC LOADING.
5. ALL MANHOLE COVERS SHALL BE BOLTED AND GASKETED, WHEN MANHOLES ARE LOCATED OUTSIDE OF PAVEMENT.
6. FRAME ADJUSTMENT HEIGHT SHALL CONSIST OF FIVE INCHES (5") MINIMUM TO EIGHTEEN INCHES (18") MAXIMUM. GRADE RINGS SHALL BE WRAPPED WITH A HEAT-SHRINK THERMO-PLASTIC MATERIAL. HDPE GRADE RINGS, AS MANUFACTURED BY LABTECH, INCORPORATED, OR APPROVED EQUAL, MAY BE USED IN PAVEMENT AREAS ONLY.
7. FOR MANHOLES TO BE VENTED, SEE DETAILS WW-05 AND WW-06.
8. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MANHOLE TO DIRECT INFLUENT INTO THE FLOW STREAM. ALL P.V.C. PIPE SHALL BE REMOVED FROM INVERT.
9. BASE SECTION SHALL BE DESIGNED FOR H20 LOADING, PLUS EARTH LOAD AT 130 PCF.
10. ENTIRE INTERIOR OF WASTEWATER MANHOLES TO BE COATED WITH RAVEN 405, OR APPROVED EQUAL, WITH A UNIFORM THICKNESS OF 124 MILS AND A MINIMUM THICKNESS OF 100 MILS, APPLIED AFTER MANHOLE HAS PASSED THE VACUUM TEST.

<p style="text-align: center;">RECORD SIGNED COPY ON FILE AT PUBLIC WORKS APPROVED</p>	<h1 style="margin: 0;">CITY OF BASTROP</h1> <h2 style="margin: 0;">PRECAST CONCRETE WASTEWATER MANHOLE DETAIL</h2>	<p style="text-align: center;">DRAWING NO: WW-01</p>
<p style="text-align: center;">MAY 24, 2011 DATE</p>		
<p style="font-size: small;">THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.</p>		



NOTES:

1. DROP CONNECTIONS SHALL BE REQUIRED WHENEVER AN INFLUENT SEWER IS LOCATED MORE THAN TWO FEET (2'-0") ABOVE THE MAIN INVERT CHANNEL.
2. SEE CONSTRUCTION PLANS FOR MANHOLE SIZE, LOCATION, CONFIGURATION, TYPE OF TOP SECTION, VENTING REQUIREMENTS, PIPE SIZES AND TYPES.
3. MANHOLES SHALL BE PRECAST ASTM C478 BELL AND SPIGOT WITH "O" RING JOINTS.
4. MANHOLES TO BE DESIGNED TO RESIST LATERAL AND VERTICAL SOIL FORCES RESULTING FROM MANHOLE DEPTH. ADDITIONALLY, MANHOLES LOCATED IN PAVEMENT TO BE DESIGNED FOR H2O TRAFFIC LOADING.
5. ALL MANHOLE COVERS SHALL BE BOLTED AND GASKETED, WHEN MANHOLES ARE LOCATED OUTSIDE OF PAVEMENT.
6. FRAME ADJUSTMENT HEIGHT SHALL CONSIST OF FIVE INCHES (5") MINIMUM TO EIGHTEEN INCHES (18") MAXIMUM. GRADE RINGS SHALL BE WRAPPED WITH A HEAT-SHRINK THERMO-PLASTIC MATERIAL. HDPE GRADE RINGS, AS MANUFACTURED BY LABTECH, INCORPORATED, OR APPROVED EQUAL, MAY BE USED IN PAVEMENT AREAS ONLY.
7. FOR MANHOLES TO BE VENTED, SEE DETAILS WW-05 AND WW-06.
8. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MANHOLE TO DIRECT INFLUENT INTO THE FLOW STREAM. ALL P.V.C. PIPE SHALL BE REMOVED FROM INVERT.
9. BASE SECTION SHALL BE DESIGNED FOR H2O LOADING, PLUS EARTH LOAD AT 130 PCF.
10. ENTIRE INTERIOR OF WASTEWATER MANHOLES TO BE COATED WITH RAVEN 405, OR APPROVED EQUAL, WITH A UNIFORM THICKNESS OF 124 MILS AND A MINIMUM THICKNESS OF 100 MILS, APPLIED AFTER MANHOLE HAS PASSED THE VACUUM TEST.
11. WHEN P.V.C. PIPE IS USED IN SANITARY SEWER LINES, SOLVENT TYPE JOINT P.V.C. FITTINGS MAY BE UTILIZED IN THE DROP ASSEMBLY ONLY.

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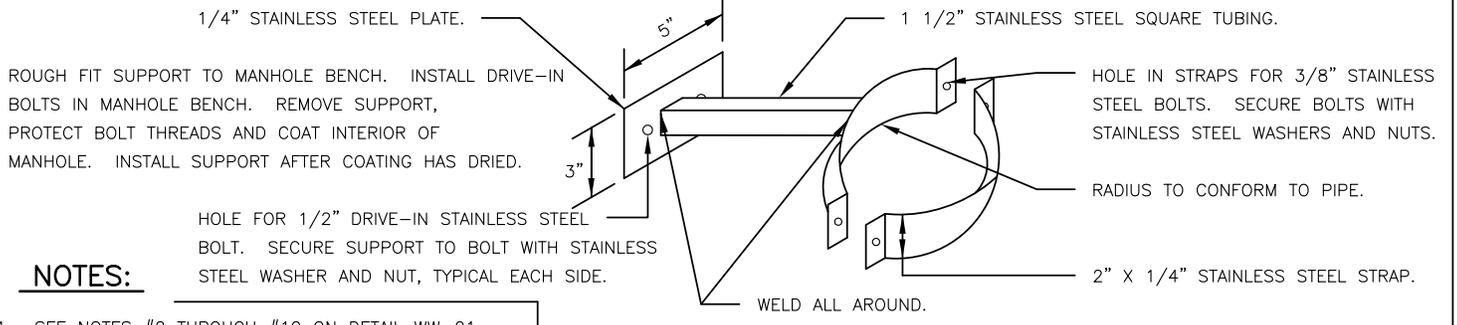
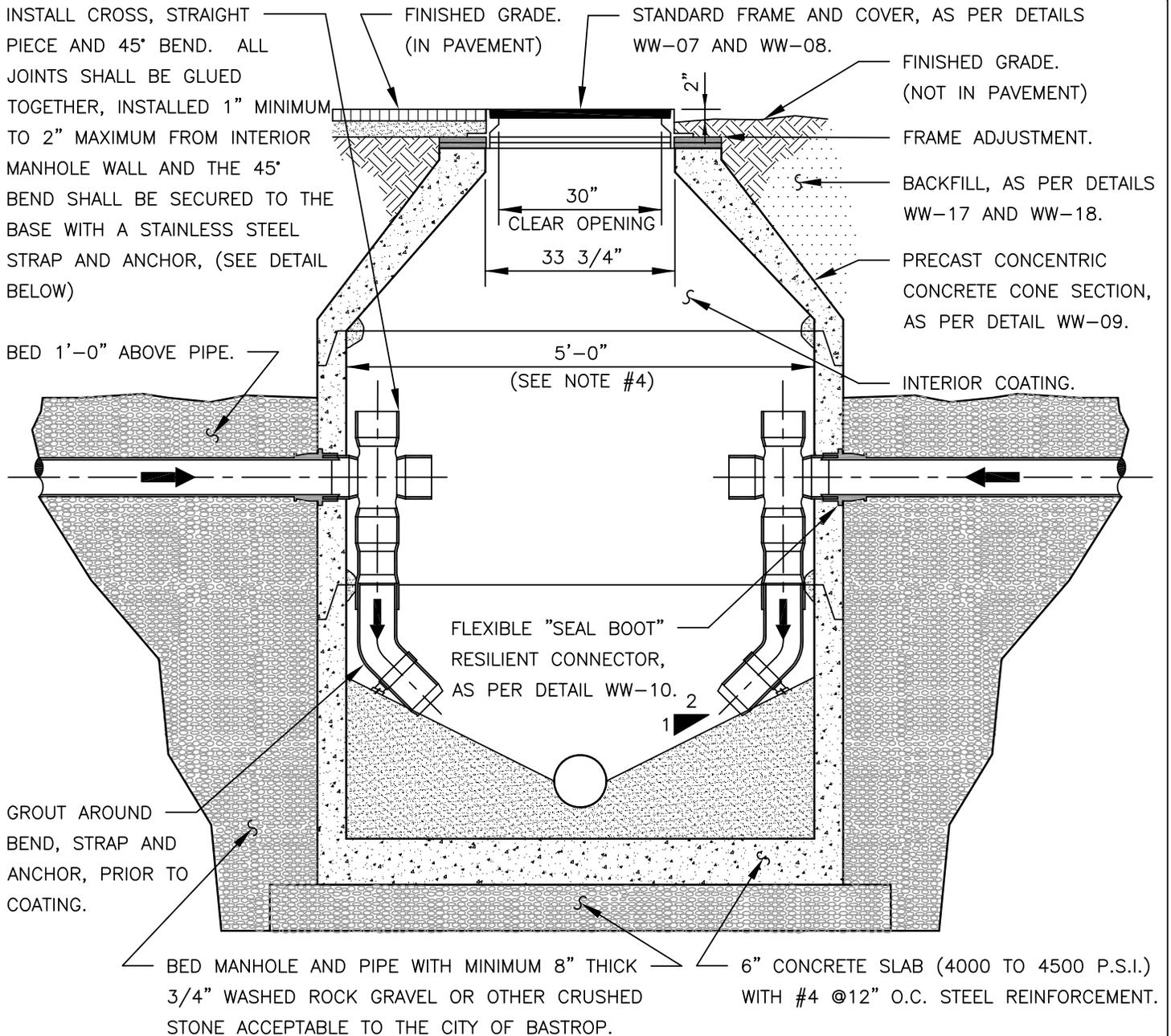
**MAY 24, 2011
DATE**

THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

**PRECAST CONCRETE WASTEWATER
MANHOLE WITH DROP CONNECTION
DETAIL**

DRAWING NO:
WW-02



NOTES:

1. SEE NOTES #2 THROUGH #10 ON DETAIL WW-01.
2. DROP SERVICES SHALL BE REQUIRED WHENEVER AN INFLUENT SEWER SERVICE IS LOCATED MORE THAN TWO FEET (2'-0") ABOVE THE MAIN INVERT CHANNEL.
3. WHEN P.V.C. PIPE IS USED IN SANITARY SEWER LINES, SOLVENT TYPE JOINT P.V.C. FITTINGS MAY BE UTILIZED IN THE DROP ASSEMBLY ONLY.
4. A 5'-0" MANHOLE IS REQUIRED FOR 1 OR 2 DROP SERVICES. IF THERE ARE MORE THAN 2 DROP SERVICES, A 6'-0" DIAMETER MANHOLE IS REQUIRED.

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USE OF THIS DETAIL.

CITY OF BASTROP

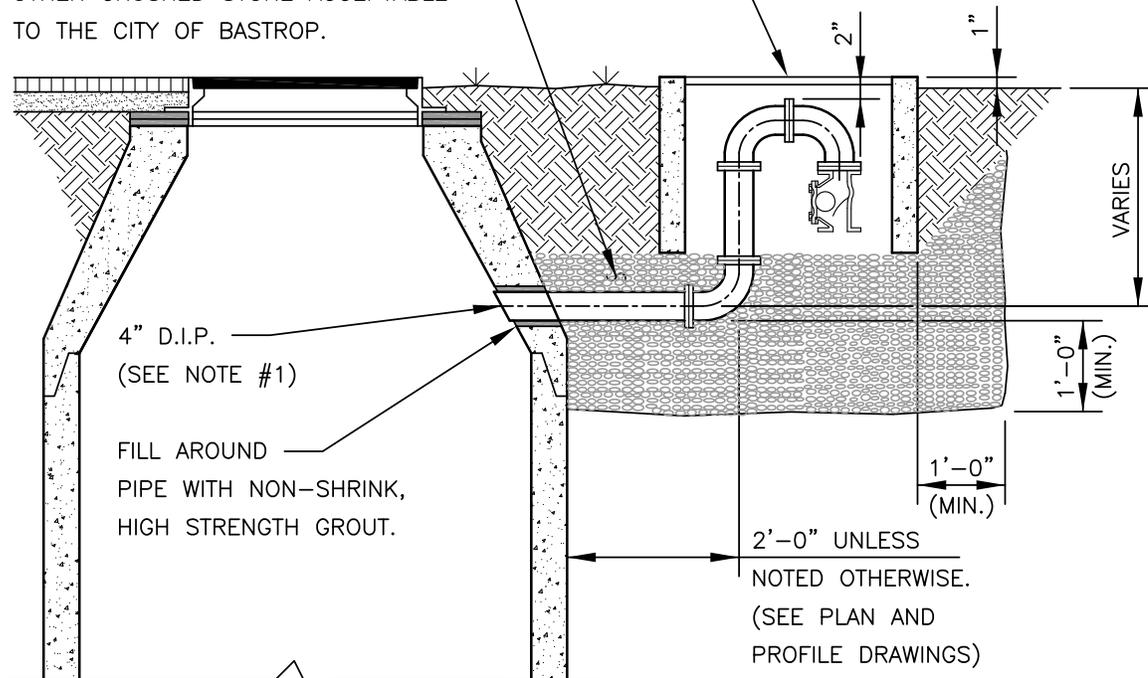
**PRECAST CONCRETE WASTEWATER
MANHOLE WITH DROP SERVICE
DETAIL**

DRAWING NO:
WW-03



PRECAST CONCRETE VAULT (36"X36" INSIDE) WITH 4" THICK WALLS AND NO FLOOR. PROVIDE BOLT DOWN H-20 1/4" METAL LID FOR TOP OF VAULT, AS MANUFACTURED BY CONCRETE PRODUCTS, INCORPORATED, OR APPROVED EQUAL. (6" ABOVE TOP OF CURB, WHERE APPLICABLE)

BED PRECAST CONCRETE VAULT ON 3/4" WASHED ROCK GRAVEL OR OTHER CRUSHED STONE ACCEPTABLE TO THE CITY OF BASTROP.



NOTES:

1. AIR VENT PIPE TO BE 4" D.I.P., CLASS 53 WITH FLANGED CONNECTIONS.
2. ALL FITTINGS TO BE 150 PSIG RATED & ANSI/AWWA C110/A21.10.
3. AIR VENT PIPE RISER SHALL BE INSTALLED TO A MINIMUM DEPTH FROM GROUND SURFACE AS POSSIBLE, PREFERABLY LOCATED IN THE CONCENTRIC CONCRETE CONE.
4. MINIMUM ELEVATION AT THE VENT OPENING SHALL BE 1 FOOT (1'-0") ABOVE THE ULTIMATE 100 YEAR FLOOD PLAIN ELEVATION. IF ELEVATION OF VENT OPENING IS LESS THAN 1 FOOT (1'-0") ABOVE THE ULTIMATE 100 YEAR FLOOD PLAIN ELEVATION, A FLOMATIC MODEL 408, PART #2145 BALL CHECK VALVE, OR APPROVED EQUAL, WITH FLOATING TYPE BALL, SHALL BE INSTALLED AT DOWN TURNED OPENING OF VENT. A 16 MESH 304 STAINLESS STEEL INSECT SCREEN SHALL BE PLACED IN THE OPENING.

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MAY 24, 2011

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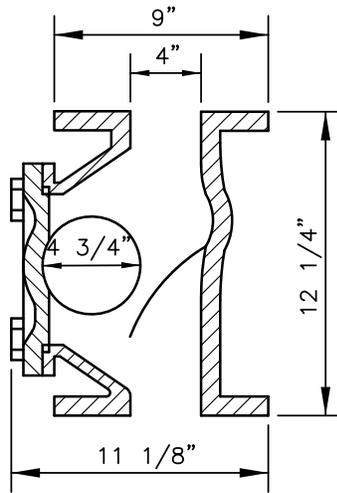
THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

**MANHOLE VENT FOR BELOW
GROUND INSTALLATION DETAIL
(DEVELOPED AREAS)**

DRAWING NO:
WW-05



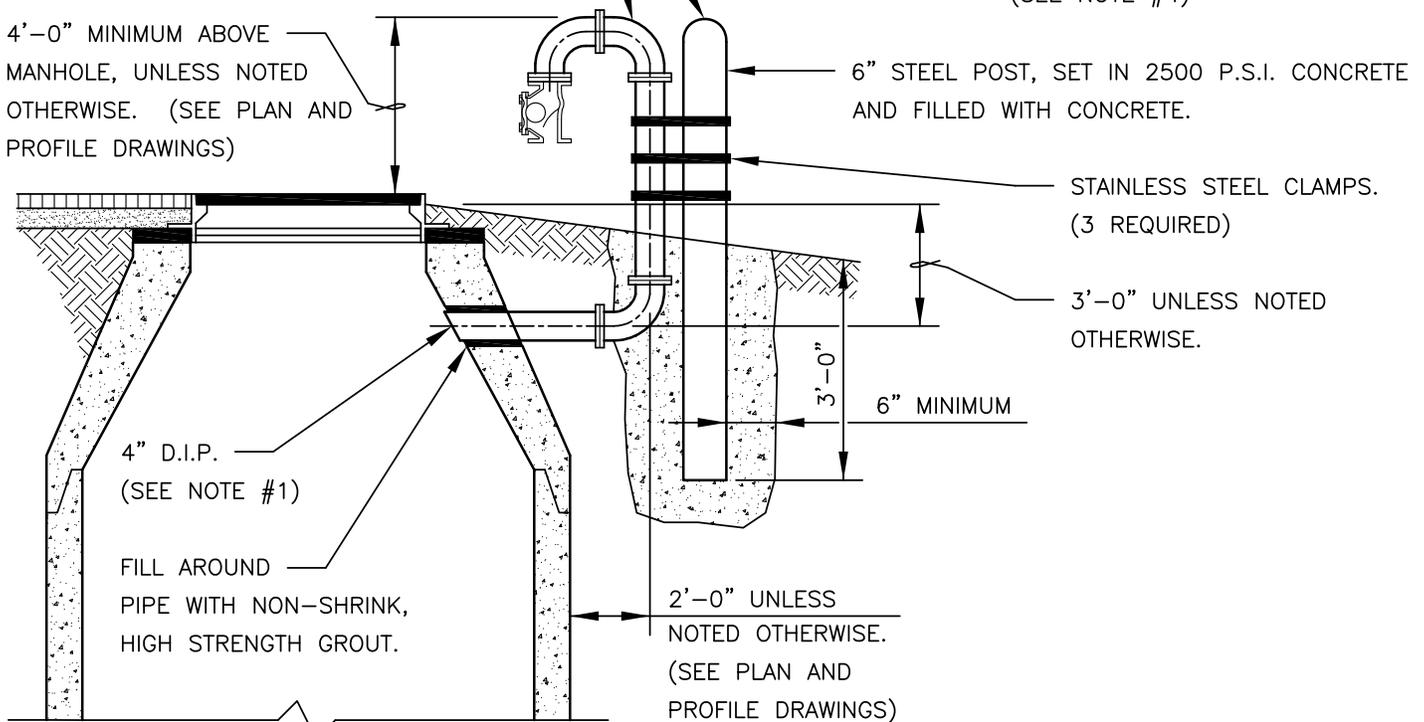


SECTION VIEW
FLOMATIC MODEL 408 BALL CHECK VALVE

(SEE NOTE #4)

EXTERIOR SURFACES OF EXPOSED AIR VENT PIPE AND STEEL SUPPORT POST SHALL BE CLEANED, PREPARED, PRIMED AND PAINTED WITH RUST-OLEUM SAFETY GREEN ACRYLIC #5233402 PAINT, OR APPROVED EQUAL.

4'-0" MINIMUM ABOVE MANHOLE, UNLESS NOTED OTHERWISE. (SEE PLAN AND PROFILE DRAWINGS)



NOTES:

1. AIR VENT PIPE TO BE 4" D.I.P., CLASS 53 WITH FLANGED CONNECTIONS.
2. ALL FITTINGS TO BE 150 PSIG RATED & ANSI/AWWA C110/A21.10.
3. AIR VENT PIPE RISER SHALL BE INSTALLED TO A MINIMUM DEPTH FROM GROUND SURFACE AS POSSIBLE, PREFERABLY LOCATED IN THE CONCENTRIC CONCRETE CONE.
4. MINIMUM ELEVATION AT THE VENT OPENING SHALL BE 1 FOOT (1'-0") ABOVE THE ULTIMATE 100 YEAR FLOOD PLAIN ELEVATION. IF ELEVATION OF VENT OPENING IS LESS THAN 1 FOOT (1'-0") ABOVE THE ULTIMATE 100 YEAR FLOOD PLAIN ELEVATION, A FLOMATIC MODEL 408, PART #2145 BALL CHECK VALVE, OR APPROVED EQUAL, WITH FLOATING TYPE BALL, SHALL BE INSTALLED AT DOWN TURNED OPENING OF VENT. A 16 MESH 304 STAINLESS STEEL INSECT SCREEN SHALL BE PLACED IN THE OPENING.

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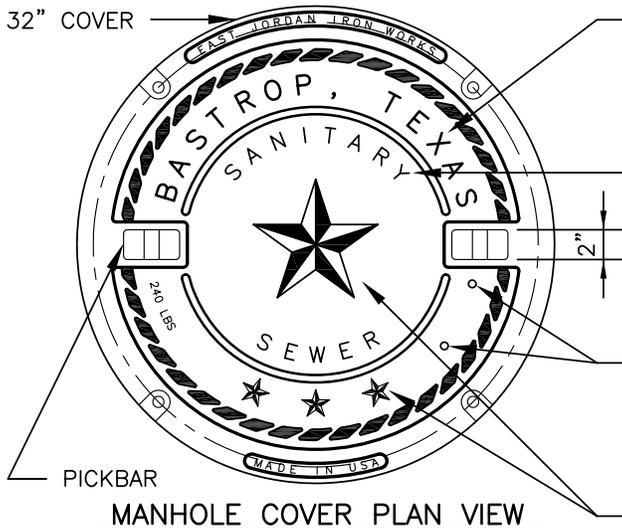
**MAY 24, 2011
 DATE**

THE ARCHITECT/ENGINEER ASSUMES
 RESPONSIBILITY FOR THE APPROPRIATE
 USE OF THIS DETAIL.

CITY OF BASTROP
**MANHOLE VENT FOR ABOVE
 GROUND INSTALLATION DETAIL
 (UNDEVELOPED AREAS)**

DRAWING NO:
 WW-06





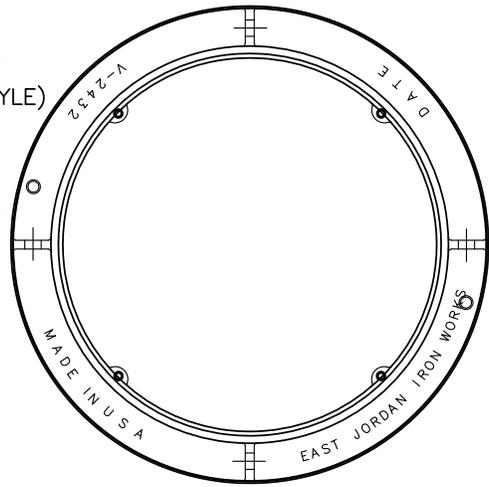
MANHOLE COVER PLAN VIEW

1 1/2" LETTERS
(RECESSED FLUSH)
(BOOKMAN OLD STYLE)

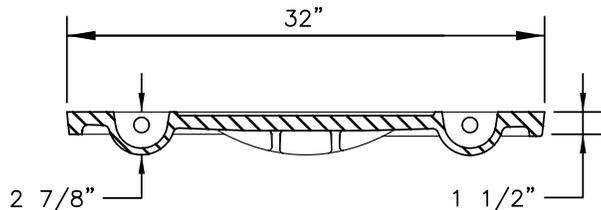
1" LETTERS
(RECESSED FLUSH)
(BOOKMAN OLD STYLE)

DRILL HOLES FOR
NUMBER PLATE
(SEE NOTE #13)

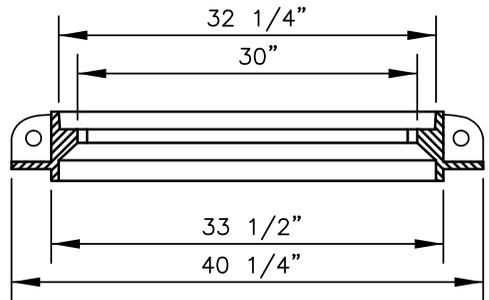
PROVIDE ETCHING
AROUND ALL STARS



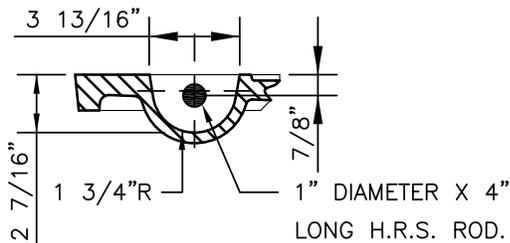
MANHOLE FRAME PLAN VIEW



MANHOLE COVER SECTION VIEW

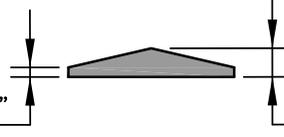


MANHOLE FRAME SECTION VIEW



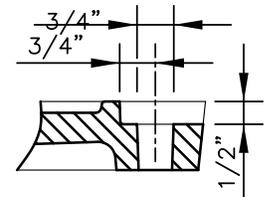
PICKBAR DETAIL

MIN. 3/32"
MAX. 1/8"



STAR SECTION VIEW

MIN. 1/4"
MAX. 3/8"



BOLT HOLE SECTION

NOTES:

- COVER AND FRAME SHALL COMPLY WITH STANDARD SPECIFICATIONS FOR DRAINAGE, SEWER, UTILITY AND RELATED CASTINGS: AASHTO DESIGNATION M306-04.
- MANHOLE COVER SHALL BE MODEL NUMBER: V-2432-3, AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
- MANHOLE FRAME SHALL BE MODEL NUMBER: V-2432, AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
- MANHOLE COVER AND FRAME ASSEMBLY, IF ORDERED AS A SET, SHALL BE MODEL NUMBER: V-2432, AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
- ALL CORNERS AND EDGES SHALL HAVE A 1/16" MINIMUM AND 1/8" MAXIMUM RADIUS.
- MANHOLE COVERS SHALL BE CAST WITH TWO 1" DIAMETER STEEL PICKBARS.
- MANHOLE COVER WEIGHT SHALL BE 240 LBS. FOR DUCTILE IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM OF COVER.
- MANUFACTURER SHALL CERTIFY THAT EACH MANHOLE COVER MEETS HS-20 LOADING.
- FILLETS SHALL BE 1/4" RADIUS UNLESS OTHERWISE SPECIFIED.
- MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.
- COVER SHALL BE DIPPED IN A WATER-BASED ASPHALTIC COATING, PRIOR TO SHIPMENT FROM FOUNDRY.
- BOLTS SHALL BE 5/8"-11NC X 2" LONG HEX STAINLESS STEEL WITH WASHER.
- MANUFACTURER SHALL DRILL 2-3/16"x1/2" DEEP HOLES FOR A MANHOLE NUMBER PLATE TO BE PROVIDED BY THE CITY OF BASTROP. THE TOP HOLE SHALL BE DRILLED 1" O.C. FROM THE BOTTOM OF THE PICKBAR AND THE BOTTOM HOLE SHALL BE DRILLED 4" O.C. FROM THE TOP HOLE.

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MAY 24, 2011
DATE

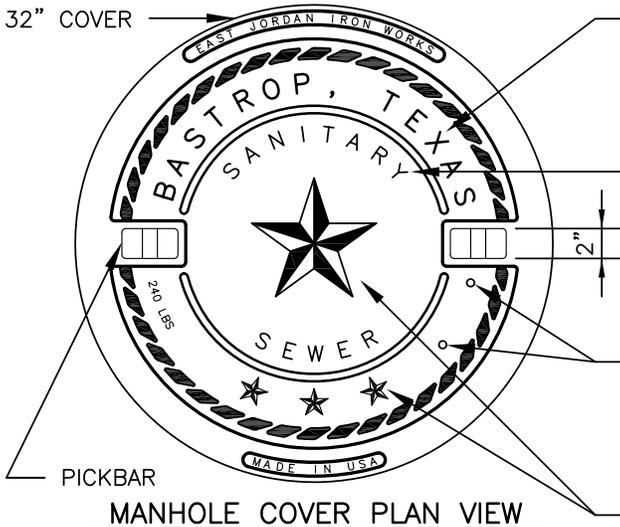
THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

**BOLTED WASTEWATER MANHOLE
COVER AND FRAME DETAIL**

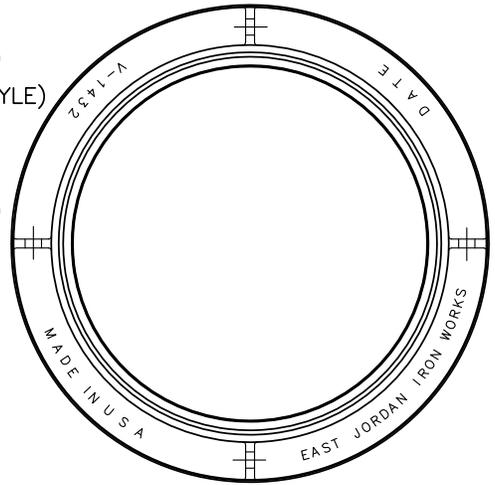
DRAWING NO:
WW-07



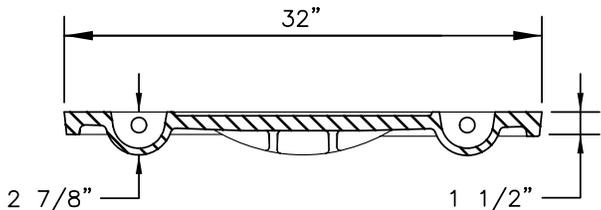


MANHOLE COVER PLAN VIEW

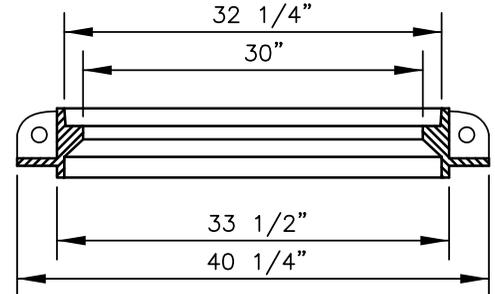
- 1 1/2" LETTERS
(RECESSED FLUSH)
(BOOKMAN OLD STYLE)
- 1" LETTERS
(RECESSED FLUSH)
(BOOKMAN OLD STYLE)
- DRILL HOLES FOR
NUMBER PLATE
(SEE NOTE #12)
- PROVIDE ETCHING
AROUND ALL STARS



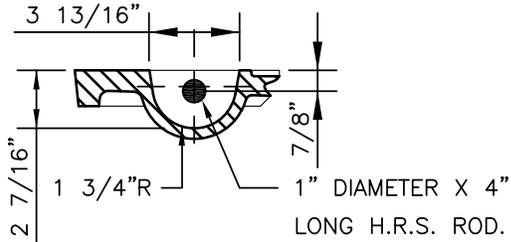
MANHOLE FRAME PLAN VIEW



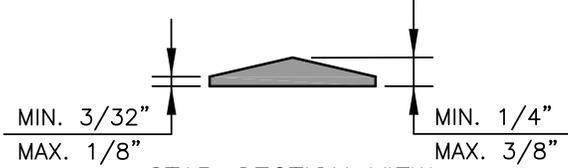
MANHOLE COVER SECTION VIEW



MANHOLE FRAME SECTION VIEW



PICKBAR DETAIL



STAR SECTION VIEW

NOTES:

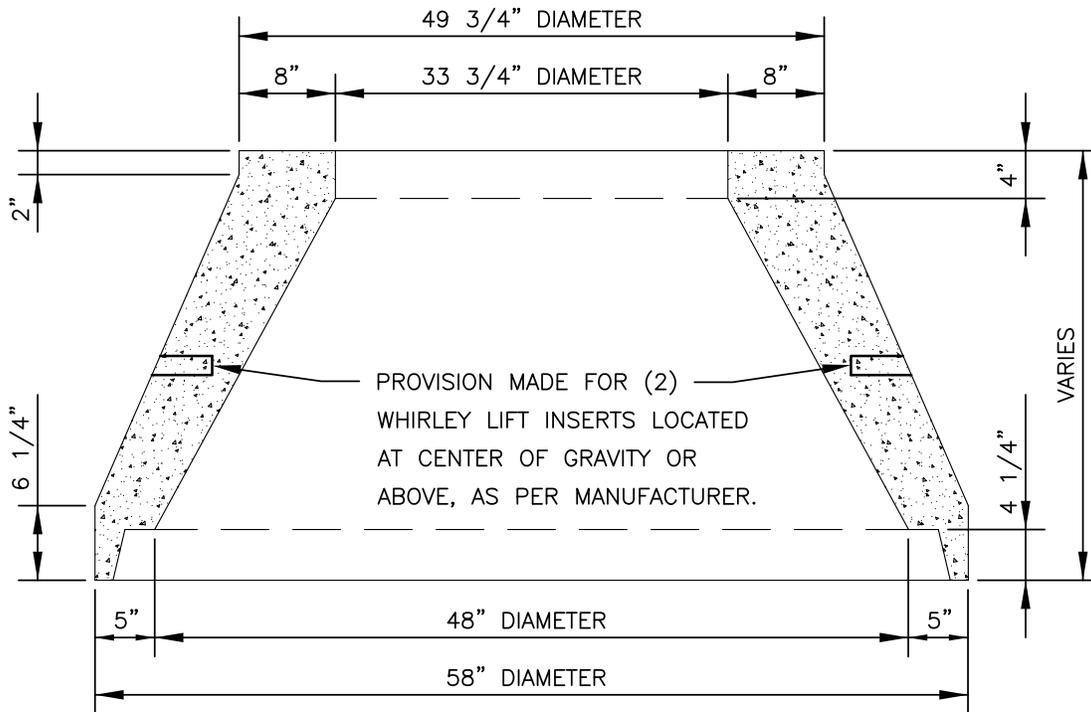
1. COVER AND FRAME SHALL COMPLY WITH STANDARD SPECIFICATIONS FOR DRAINAGE, SEWER, UTILITY AND RELATED CASTINGS: AASHTO DESIGNATION M306-04.
2. MANHOLE COVER SHALL BE MODEL NUMBER: V-1432-3, AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
3. MANHOLE FRAME SHALL BE MODEL NUMBER: V-1432, AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
4. MANHOLE COVER AND FRAME ASSEMBLY, IF ORDERED AS A SET, SHALL BE MODEL NUMBER: V-1432, AS MANUFACTURED BY EAST JORDAN IRON WORKS, INCORPORATED, OR APPROVED EQUAL.
5. ALL CORNERS AND EDGES SHALL HAVE A 1/16" MINIMUM AND 1/8" MAXIMUM RADIUS.
6. MANHOLE COVERS SHALL BE CAST WITH TWO 1" DIAMETER STEEL PICKBARS.
7. MANHOLE COVER WEIGHT SHALL BE 240 LBS. FOR DUCTILE IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM OF COVER.
8. MANUFACTURER SHALL CERTIFY THAT EACH MANHOLE COVER MEETS HS-20 LOADING.
9. FILLETS SHALL BE 1/4" RADIUS UNLESS OTHERWISE SPECIFIED.
10. MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.
11. COVER SHALL BE DIPPED IN A WATER-BASED ASPHALTIC COATING, PRIOR TO SHIPMENT FROM FOUNDRY.
12. MANUFACTURER SHALL DRILL 2-3/16"x1/2" DEEP HOLES FOR A MANHOLE NUMBER PLATE TO BE PROVIDED BY THE CITY OF BASTROP. THE TOP HOLE SHALL BE DRILLED 1" O.C. FROM THE BOTTOM OF THE PICKBAR AND THE BOTTOM HOLE SHALL BE DRILLED 4" O.C. FROM THE TOP HOLE.

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THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR THE APPROPRIATE USE OF THIS DETAIL.

CITY OF BASTROP

NON-BOLTED WASTEWATER MANHOLE COVER AND FRAME DETAIL

DRAWING NO:
WW-08



NOTE:

CONCENTRIC CONCRETE CONE SECTION SHALL BE MANUFACTURED USING 4000 TO 4500 P.S.I. CONCRETE, 28 DAY STRENGTH AND IN ACCORDANCE WITH ASTM C478, AS MANUFACTURED BY CONCRETE PRODUCTS, INCORPORATED, OR APPROVED EQUAL.

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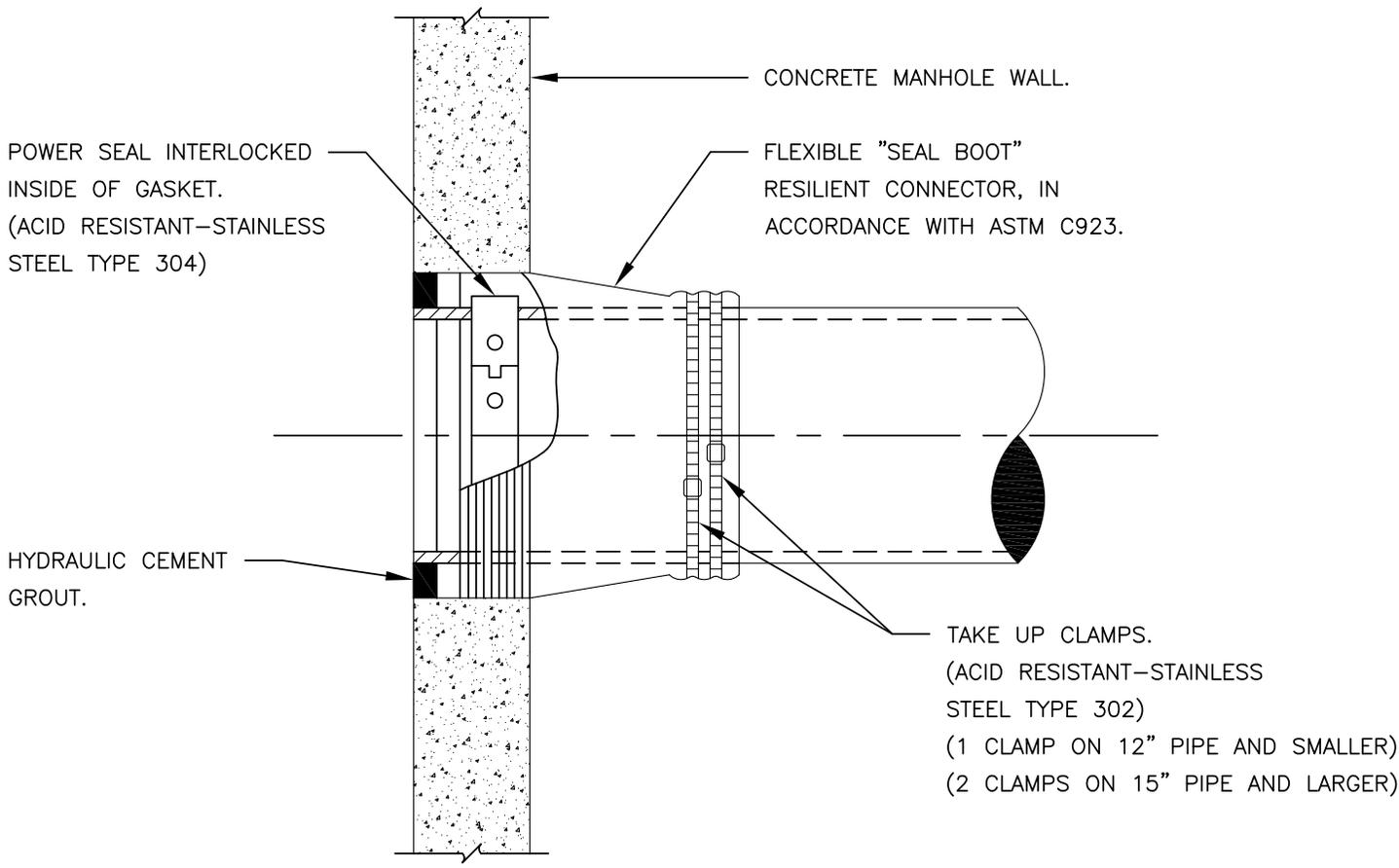
THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

PRECAST 48" CONCENTRIC
CONCRETE CONE SECTION DETAIL

DRAWING NO:
WW-09

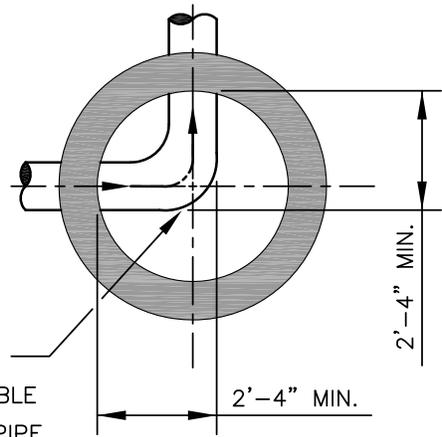
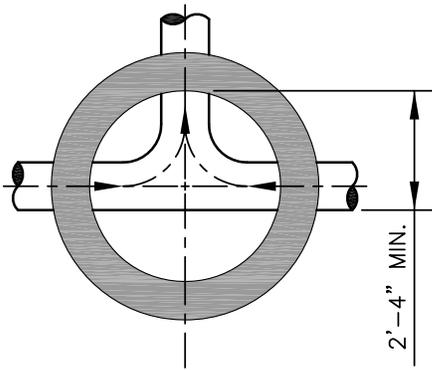




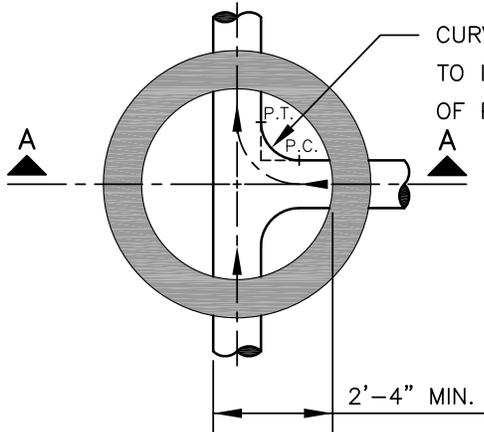
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 MAY 24, 2011
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 USE OF THIS DETAIL.

CITY OF BASTROP
**FLEXIBLE "SEAL BOOT" RESILIENT
 CONNECTOR DETAIL**

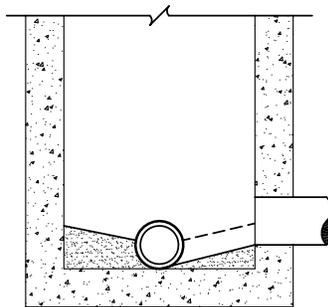
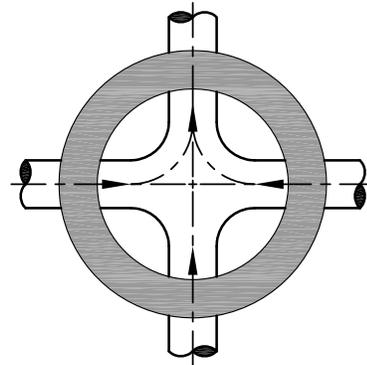
DRAWING NO:
 WW-10

WIDEN CHANNEL WIDTH AT CURVE TO ALLOW ACCESSIBLE CAMERA INSPECTIONS OF PIPE.



CURVES SHALL BE TANGENT TO IMAGINARY EXTENSIONS OF PIPE WALLS.



SECTION "A-A"

NOTES:

1. MINIMUM DROP FROM INLET TO OUTLET OF MANHOLE IS 0.1 FEET AND MAXIMUM DROP IS 2.5 FEET, UNLESS SPECIAL APPROVAL IS OBTAINED FROM THE CITY OF BASTROP.
2. INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS.
3. SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOW.
4. CHANNELS FOR FUTURE CONSTRUCTIONS, SHALL BE CONSTRUCTED WITH PIPE EXTENDING 3' BEYOND EXTERIOR OF MANHOLE WALL, WITH GLUED PLUG.
5. SLOPE MANHOLE BENCH AT 2:1 SLOPE FROM MANHOLE WALL TO CHANNEL.
6. INVERT CHANNEL SHALL BE A MINIMUM OF 1/2 THE DIAMETER OF THE LARGEST PIPE OR FOUR INCHES (4") DEEP.

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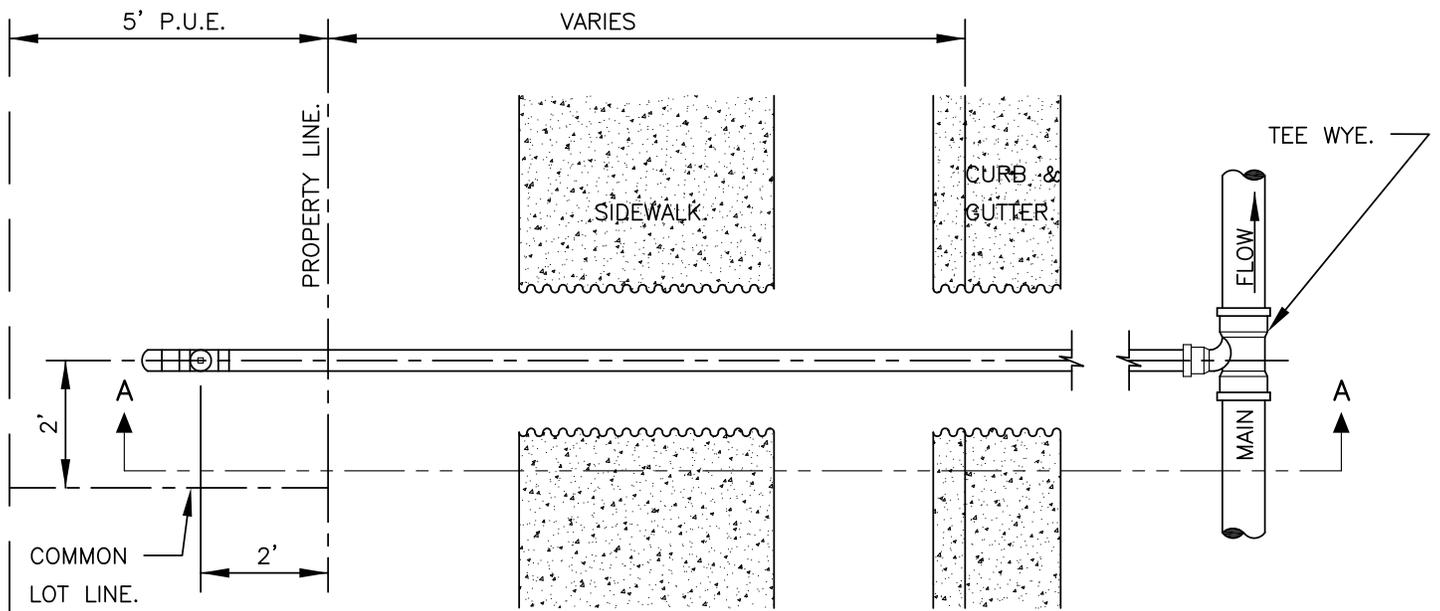
THE ARCHITECT/ENGINEER ASSUMES
RESPONSIBILITY FOR THE APPROPRIATE
USE OF THIS DETAIL.

CITY OF BASTROP

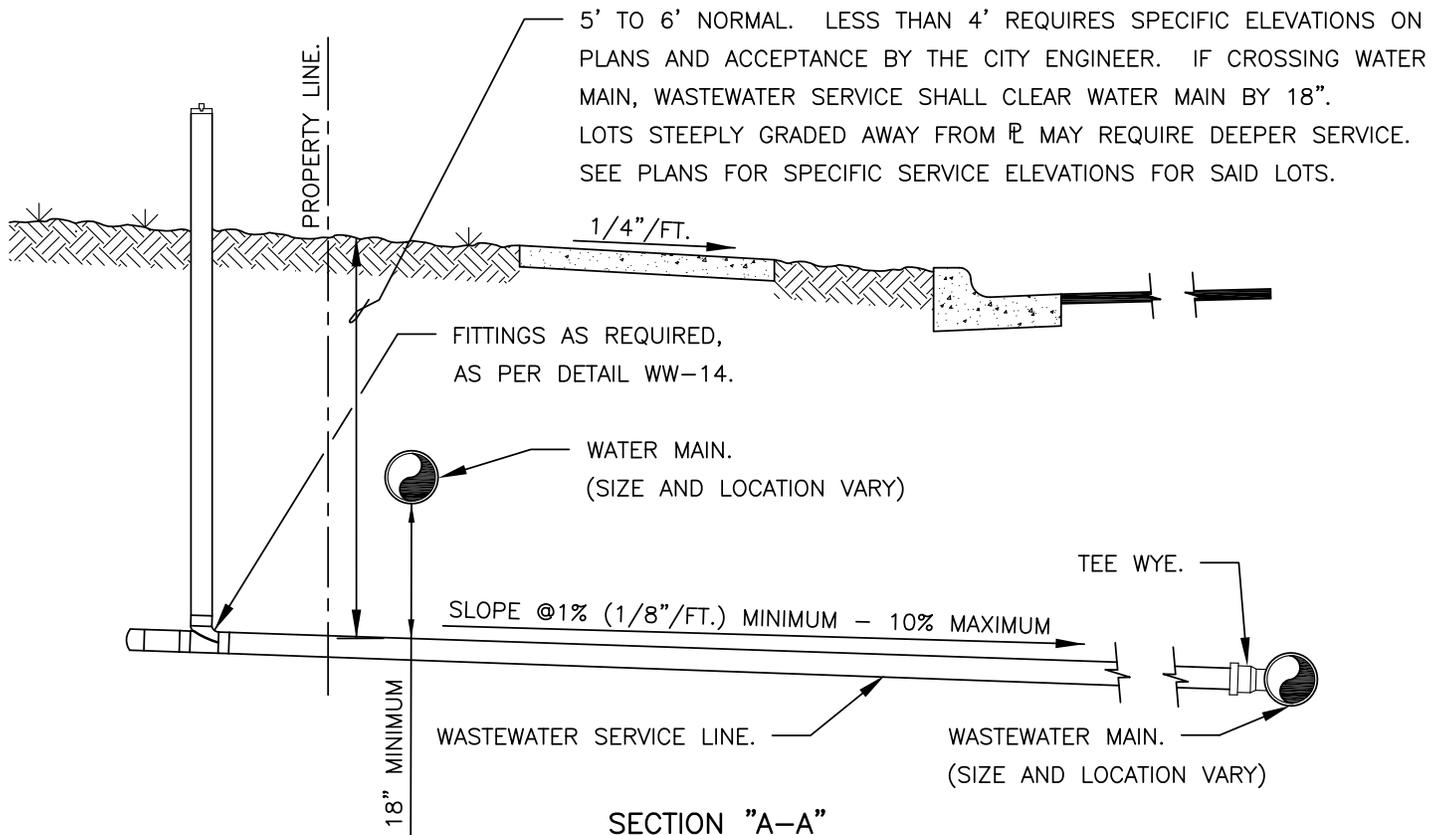
**WASTEWATER FLOW PATTERNS
FOR INVERT CHANNELS DETAIL**

DRAWING NO:
WW-11





PLAN VIEW



SECTION "A-A"

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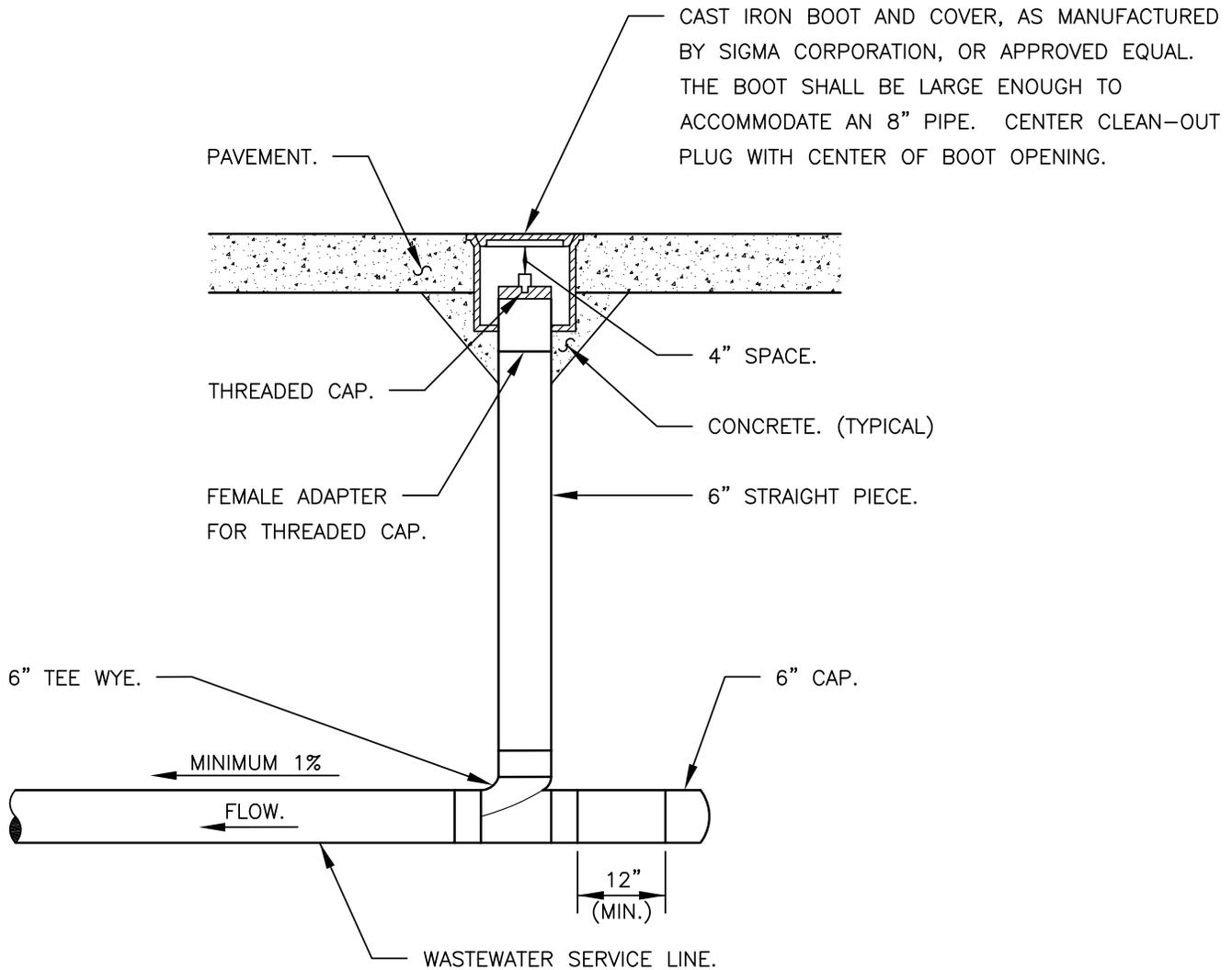
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CITY OF BASTROP

WASTEWATER SERVICE DETAIL

DRAWING NO:
WW-12





PROFILE VIEW

NOTES:

1. ALL PIPE AND FITTINGS TO BE SDR 26.
2. ALL FITTINGS SHALL BE SOLVENT WELD. CLEAR GLUE WILL NOT BE ACCEPTABLE.

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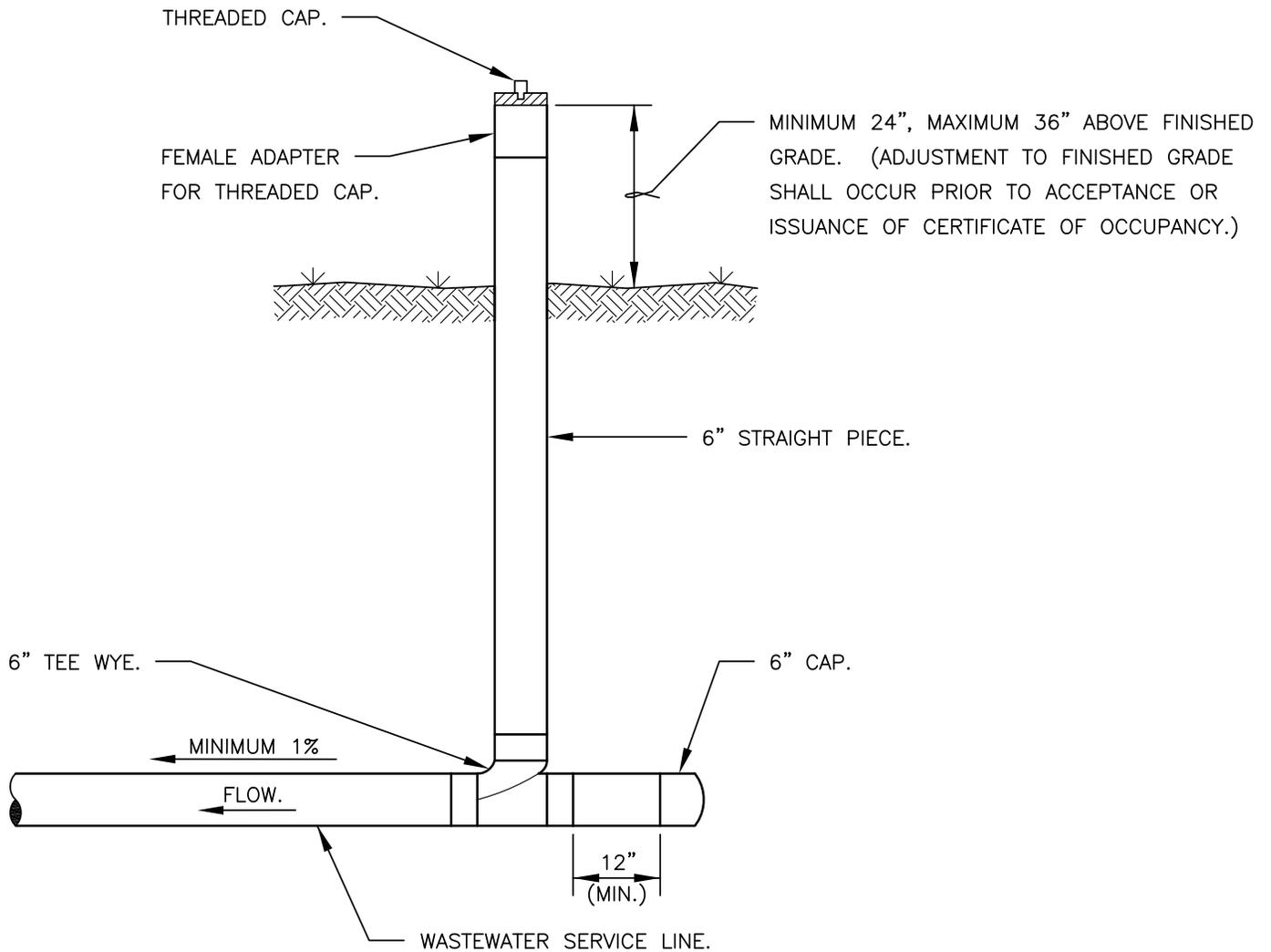
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CITY OF BASTROP

**WASTEWATER CLEAN-OUT DETAIL
(PAVED SURFACE)**

DRAWING NO:
WW-13





PROFILE VIEW

NOTES:

1. ALL PIPE AND FITTINGS TO BE SDR 26.
2. ALL FITTINGS SHALL BE SOLVENT WELD. CLEAR GLUE WILL NOT BE ACCEPTABLE.

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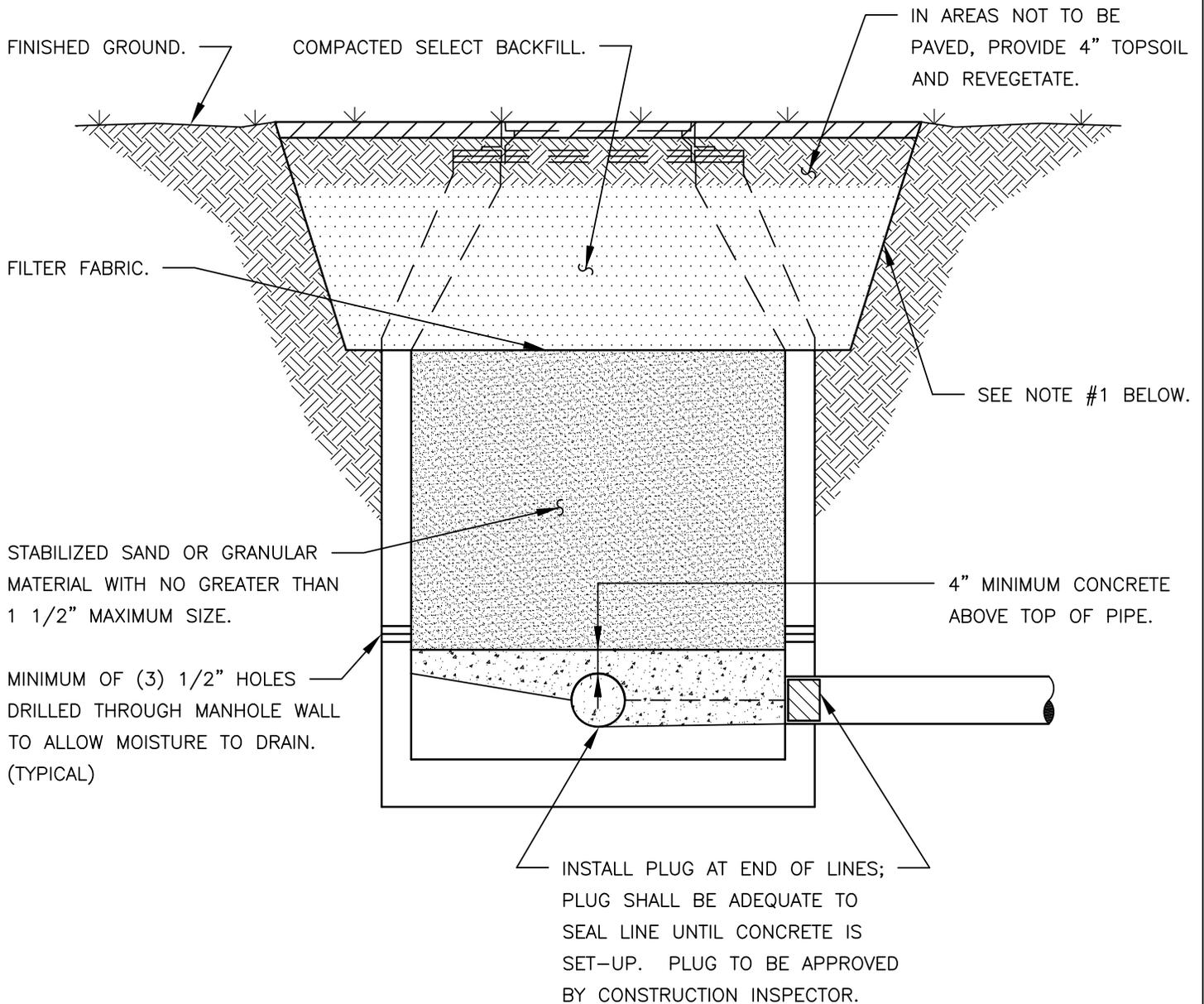
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CITY OF BASTROP

**WASTEWATER CLEAN-OUT DETAIL
(NON-PAVED SURFACE)**

DRAWING NO:
WW-14





NOTES:

1. REMOVE ENTIRE CONE SECTION AND DEMOLISH STRUCTURE TWO FEET (2'-0") MINIMUM BELOW GROUND LEVEL.
2. IF LINE WHICH IS TO ABANDONED IN PLACE, EXTENDS UNDER EXISTING OR PROPOSED STRUCTURE, THEN THE ENTIRE LINE TO THE NEXT MANHOLE SHALL BE GROUTED OR SLURRY FILLED.
3. IF LINE IS NOT LOCATED UNDER A STRUCTURE, ABANDON EXISTING LINE IN PLACE BY PLUGGING BOTH ENDS OF LINE AND GROUTING AROUND PLUGS.
4. THE CONTRACTOR IS TO RECORD AND CERTIFY QUANTITIES OF GROUT OR SLURRY PUMPED. QUANTITIES MUST BE A MINIMUM OF 90% OF CALCULATED EXISTING VOID CAPACITY.

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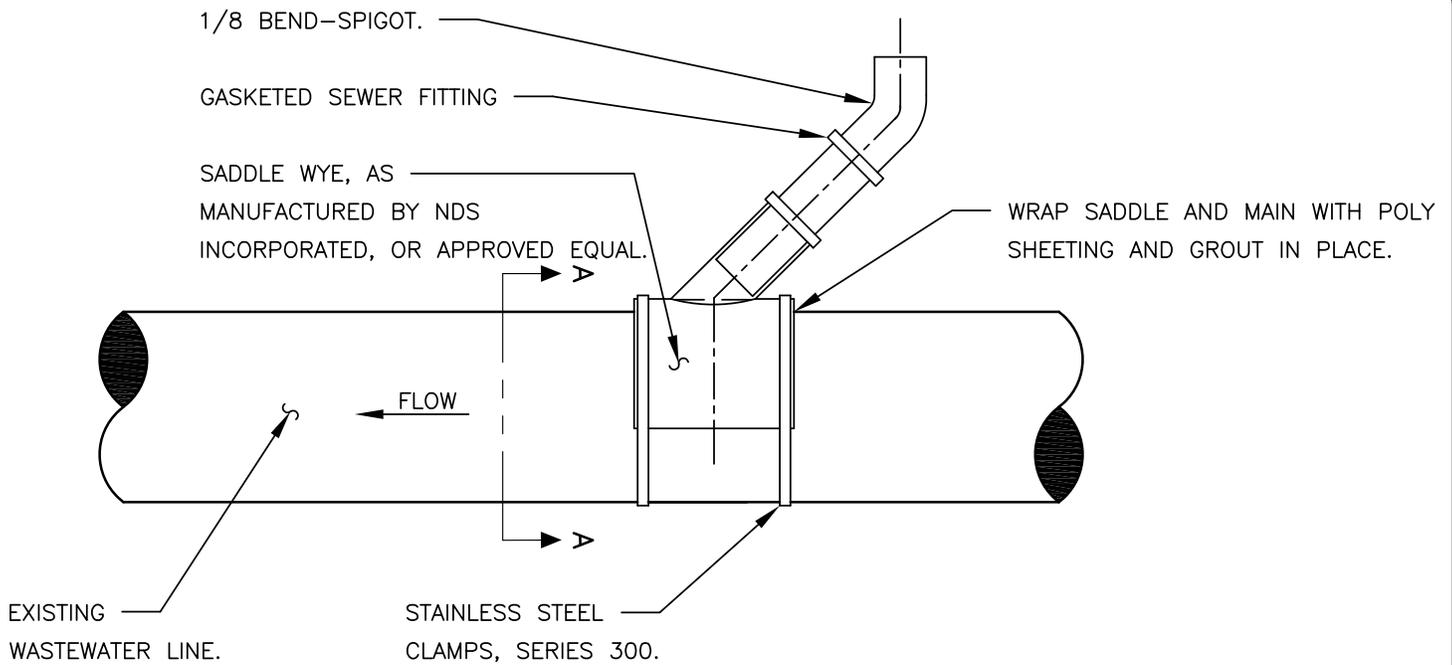
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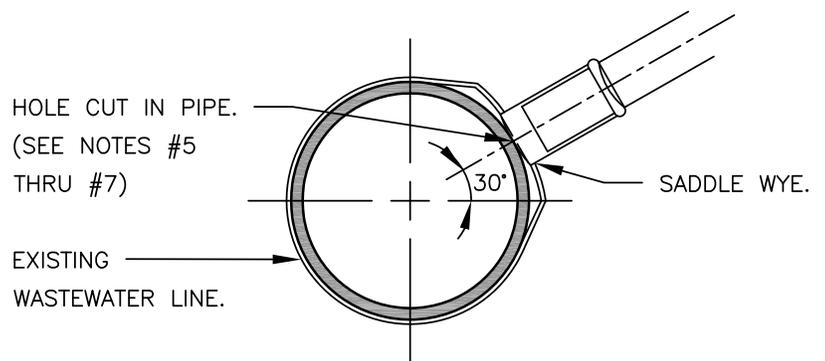
**WASTEWATER MANHOLE
ABANDONMENT DETAIL**

DRAWING NO:
WW-15





PLAN VIEW



SECTION "A-A"

NOTES:

1. FLEXIBLE SADDLE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
2. EXCAVATE AROUND EXISTING WASTEWATER PIPE, EXPOSING SUFFICIENT ROOM FOR STAINLESS STEEL CLAMPS.
3. THOROUGHLY CLEAN AND DRY THE MATING SURFACE.
4. MARK THE SIZE OF THE HOLE TO BE CUT USING THE SADDLE ITSELF AS A TEMPLATE.
5. SAW OUT THE SECTION OF THE PIPE WHERE THE SADDLE WILL BE LOCATED, WITH A SABER OR KEY HOLE SAW. PIPE COUPONS SHALL BE REMOVED FROM EXISTING MAIN AND DISCARDED. PIPE CUTTINGS IN EXCESS OF 1" IN DIAMETER SHALL NOT BE LEFT IN EXISTING MAIN.
6. ENSURE SADDLE FITS HOLE PROPERLY.
7. PLACE GASKET SKIRT AND SADDLE OVER OPENING AND TIGHTEN BAND CLAMPS EVENLY UNTIL SADDLE IS FIRMLY ATTACHED TO THE PIPE. APPLY PRESSURE ON THE SADDLE AGAINST THE PIPE WHILE TIGHTENING THE CLAMPS AS INDICATED ABOVE. DO NOT OVER TIGHTEN, DO NOT STRIP THREAD.
8. SERVICE PIPE SHALL BE INSERTED FULLY TO CONTACT SEAT FORMED IN FITTING.
9. REPLACE THE BEDDING AND BACKFILL IN ACCORDANCE WITH THE TRENCH EMBEDMENT DETAILS (WW-18).

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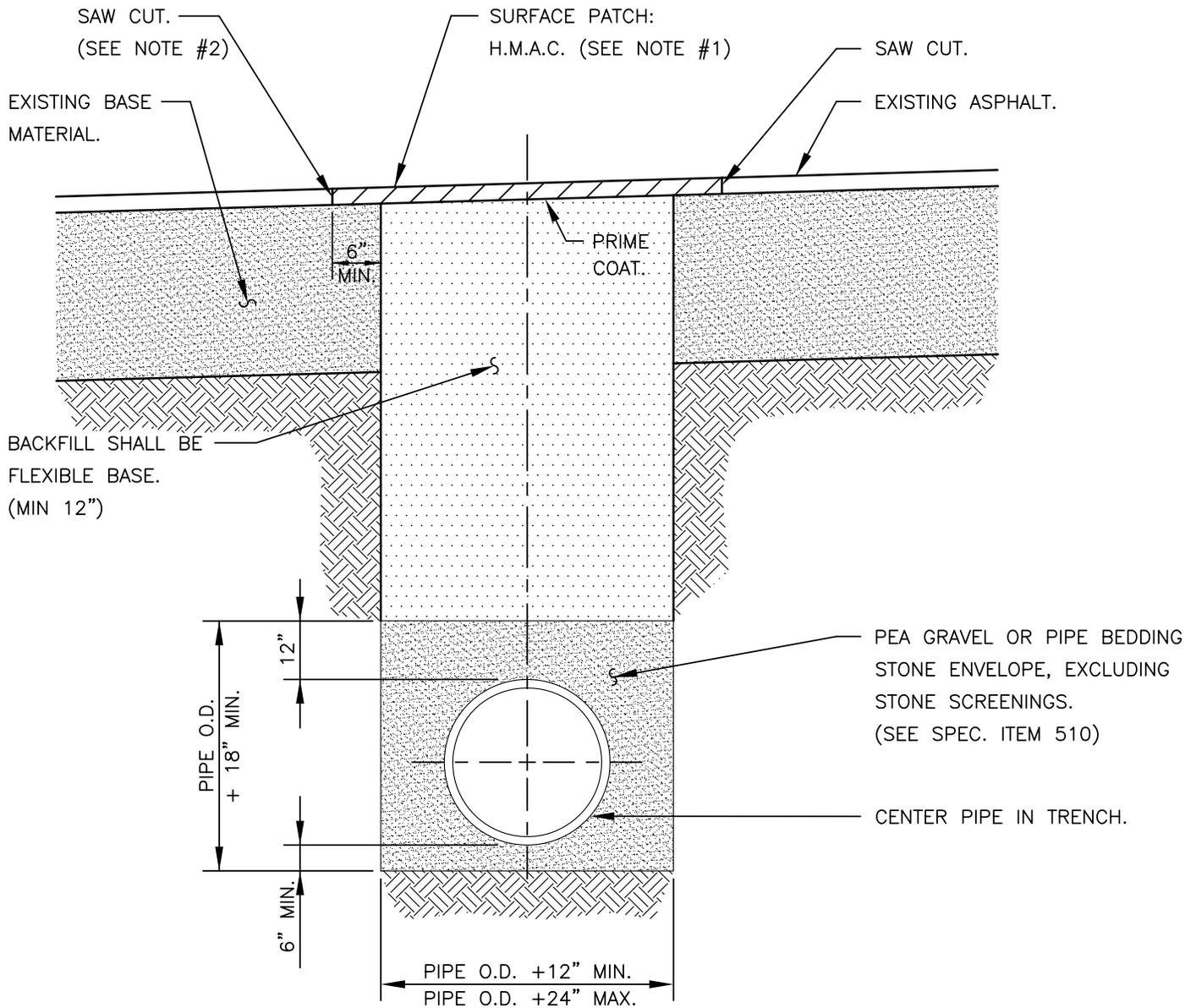
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CITY OF BASTROP

**WASTEWATER LATERAL CONNECTION
TO EXISTING WASTEWATER MAIN
DETAIL**

DRAWING NO:
WW-16





NOTES:

1. H.M.A.C. THICKNESS SHALL MATCH EXISTING ASPHALT THICKNESS AND NO LESS THAN 1 1/2".
2. THE CONTRACTOR SHALL SAW CUT, REMOVE AND REPLACE EXISTING PAVEMENT A MINIMUM OF 6" BEYOND EITHER THE EDGE OF THE WASTEWATER LINE TRENCH OR THE POINT WHERE EXISTING PAVEMENT IS DAMAGED DUE TO TRENCHING OPERATIONS, WHICHEVER IS GREATER. FINISHED PATCH SHALL BE NEAT AND UNIFORM.
3. INSTALLATION OF BACKFILL, SAW CUTTING AND REMOVAL OF EXISTING PAVEMENT, AND SURFACE PATCH SHALL NOT BE PAID FOR SEPARATELY. COSTS FOR THESE ITEMS SHALL BE INCLUDED IN UNIT PRICE BID FOR WASTEWATER PIPE.
4. THE CONTRACTOR SHALL PROVIDE STEEL PLATES TO SPAN THE TRENCH AS NECESSARY OR TO ALLOW BACKFILL TO CURE. SUCH PLATES SHALL BE SUITABLE FOR VEHICLE PASSAGE OVER THE TRENCH AND SHALL BE SATISFACTORILY ANCHORED IN PLACE. COSTS FOR THIS ITEM SHALL BE INCLUDED IN UNIT PRICE BID FOR WASTEWATER PIPE.
5. ALL TRENCHING AND TRENCH SAFETY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

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CITY OF BASTROP

**WASTEWATER LINE BEDDING
AND PAVEMENT REPAIR DETAIL
(EXISTING PAVED SURFACE)**

DRAWING NO:
WW-17

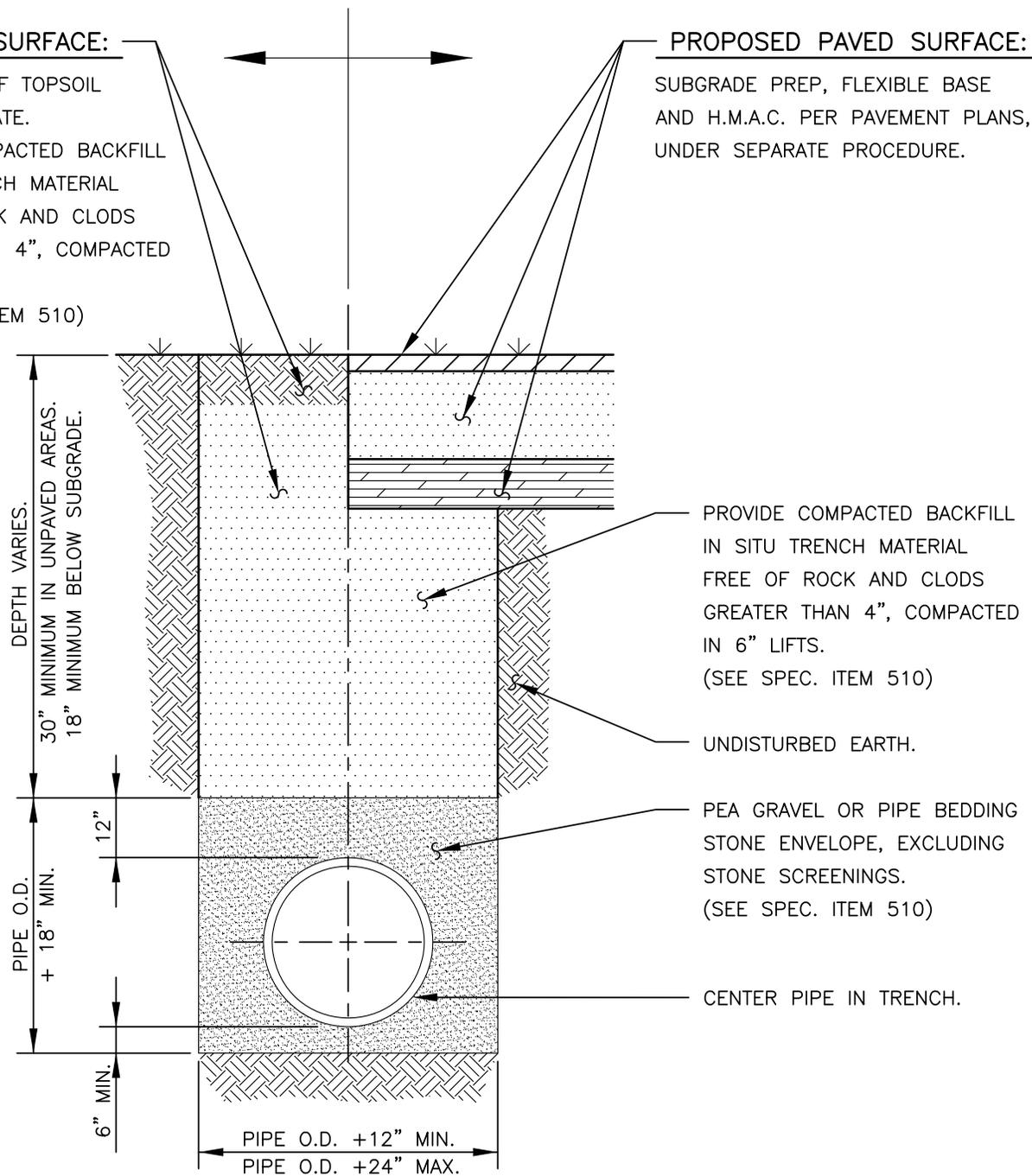


NON-PAVED SURFACE:

- (A) PROVIDE 4" OF TOPSOIL AND REVEGETATE.
 - (B) PROVIDE COMPACTED BACKFILL IN SITU TRENCH MATERIAL FREE OF ROCK AND CLODS GREATER THAN 4", COMPACTED IN 6" LIFTS.
- (SEE SPEC. ITEM 510)

PROPOSED PAVED SURFACE:

SUBGRADE PREP, FLEXIBLE BASE AND H.M.A.C. PER PAVEMENT PLANS, UNDER SEPARATE PROCEDURE.



NOTE:

ALL TRENCHING AND TRENCH SAFETY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

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CITY OF BASTROP

**WASTEWATER LINE BEDDING
AND SURFACE REPAIR DETAIL**

(NON-PAVED & PROPOSED PAVED SURFACES)

DRAWING NO:
WW-18

