

CITY OF DECATUR
CONSTRUCTION STANDARDS
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WATER

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W-04	FIRE HYDRANT INSTALLATION
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NOTE:

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WASTE WATER

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
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WW-10	MANHOLE ABANDONMENT
WW-11	CONCRETE ENCASEMENT

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ROADWAY

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
RD-01	CONCRETE PAVING
RD-02	CONCRETE PAVING JOINT DETAILS
RD-03	CONCRETE PAVING JOINT SEALANTS
RD-04	PAVEMENT INTERSECTION JOINT SPACING
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RD-12	COMMERCIAL-INDUSTRIAL DRIVEWAY
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RD-18	CONCRETE VALLEY GUTTER
RD-19	CONCRETE STREET HEADER

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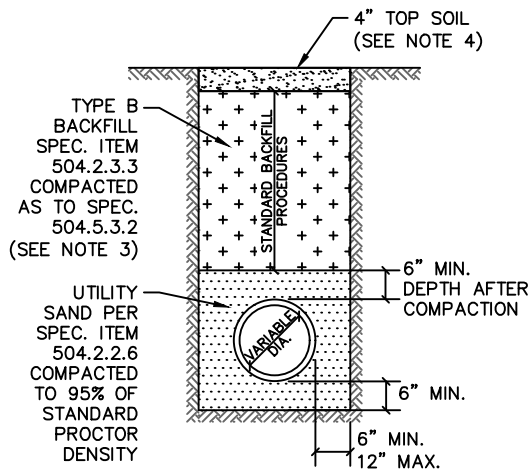
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STORM SEWER

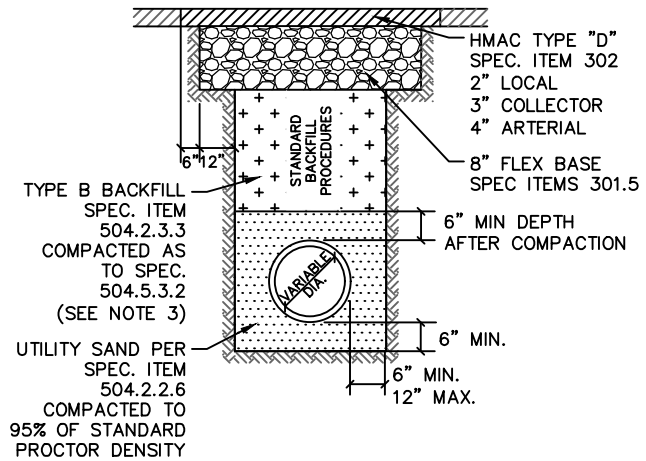
<u>SHEET NO.</u>	<u>DESCRIPTION</u>
SD-01A	STANDARD STORM DRAIN EMBEDMENT AND BACKFILL
SD-01B	STANDARD STORM DRAIN EMBEDMENT AND BACKFILL
SD-01C	STANDARD STORM DRAIN EMBEDMENT AND BACKFILL
SD-02A	STANDARD STORM DRAIN CURB INLET
SD-02B	STANDARD CURB INLET THROAT
SD-03A	RECESSED CURB INLET
SD-03B	RECESSED CURB INLET THROAT
SD-04	CENTER SUPPORT BEAM FOR INLETS
SD-05	STORM DRAIN INLET GENERAL NOTES
SD-06	STANDARD DROP INLET
SD-07	STANDARD 4-FOOT SQUARE STORM DRAIN MANHOLE
SD-08	MANHOLE COVER
SD-09	REINFORCED CONCRETE COLLAR AND MISCELLANEOUS DETAILS
SD-10	STORM DRAIN FLUME AND PILOT CHANNELS

NOTE:

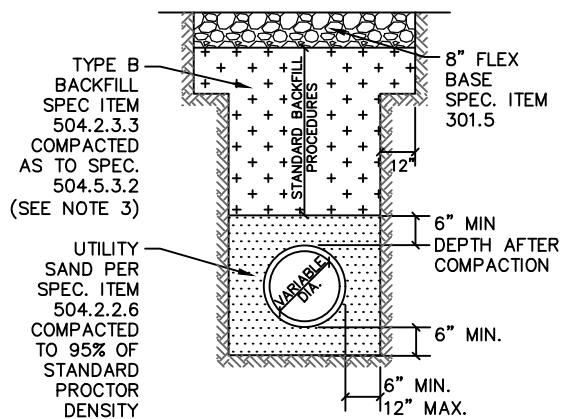
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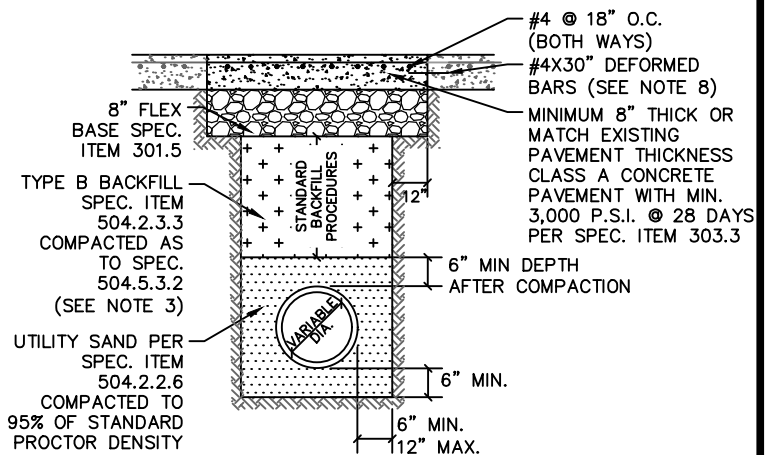
UNPAVED AREA



ASPHALT PAVEMENT



GRAVEL SURFACE

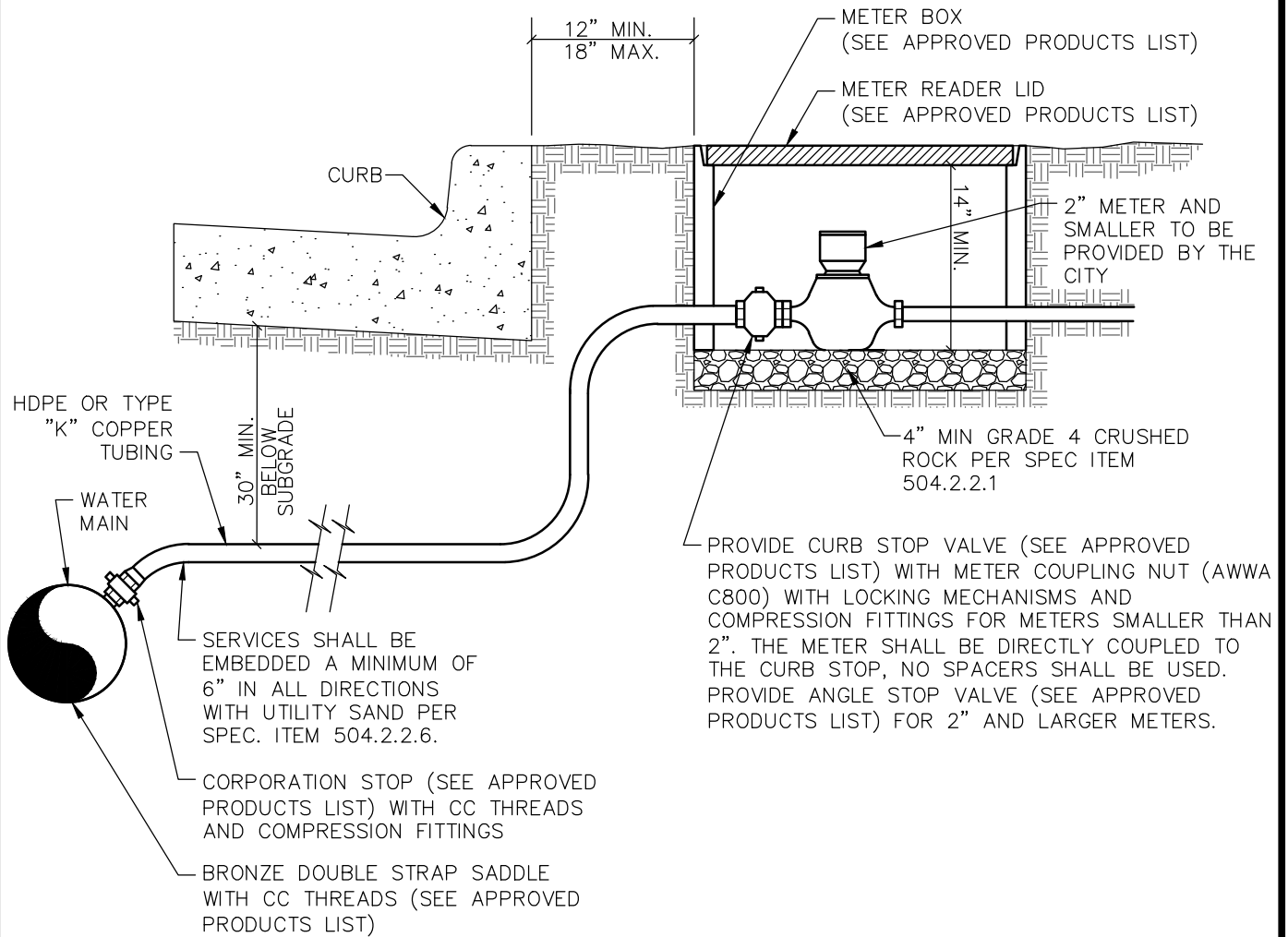


CONCRETE PAVEMENT

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2. AT THE END OF EACH WORK DAY ALL SPOILS SHALL BE REMOVED FROM THE CITY R.O.W. UNLESS PRIOR WRITTEN PERMISSION IS OBTAINED FROM THE CITY TO STORE SPOILS IN DESIGNATED SPOIL STORAGE AREAS THAT DO NOT OBSTRUCT AUTOMOBILE OR PEDESTRIAN TRAFFIC.
3. ROCKS GREATER THAN 4" IN DIAMETER SHALL BE REMOVED FROM ANY NATIVE MATERIAL USED AS BACKFILL.
4. TOPSOIL SHALL BE 4" IN DEPTH AND SHALL BE LOOSE AND FREE OF ROCKS OR CLODS GREATER THAN 1/4" IN DIAMETER. ALL TOPSOIL SHALL BE APPROVED BY THE CITY PRIOR TO INSTALLATION.
5. ALL PAVEMENT SHALL BE REMOVED ALONG NEAT SAW CUT LINES PER SPEC. ITEM 402.3.
6. COATED TRACER WIRE SHALL BE INSTALLED IN THE EMBEDMENT MATERIAL ABOVE THE PVC PIPE WITH THE TRACER WIRE TERMINATING IN IN-LINE GATE VALVE BOXES ACCESSIBLE BY CITY STAFF. BLUE UNDERGROUND WATER LINE WARNING TAPE OF MIN 4" WIDTH SHALL BE INSTALLED ABOVE THE EMBEDMENT MATERIAL.
7. A MAXIMUM OF 50 FT OF OPEN TRENCH WILL BE ALLOWED AT ANY TIME, UNLESS APPROVED BY THE CITY.
8. DEFORMED BARS DOWELED AND EPOXYED MIN. 15" INTO EXISTING PAVEMENT @ 18" O.C. (TYP).





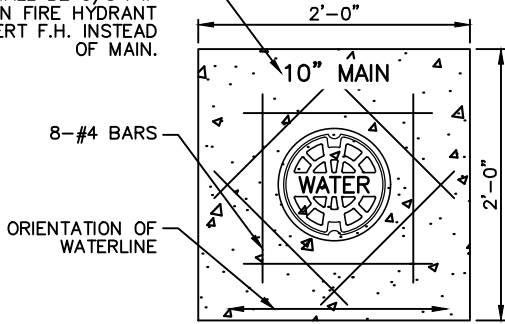
METER SERVICE LAYOUT

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2. SERVICE LINE TO BE SIZED TO MATCH METER SIZE.
3. METER BOX SHALL BE H-20 RATED IF IN DRIVEWAY.



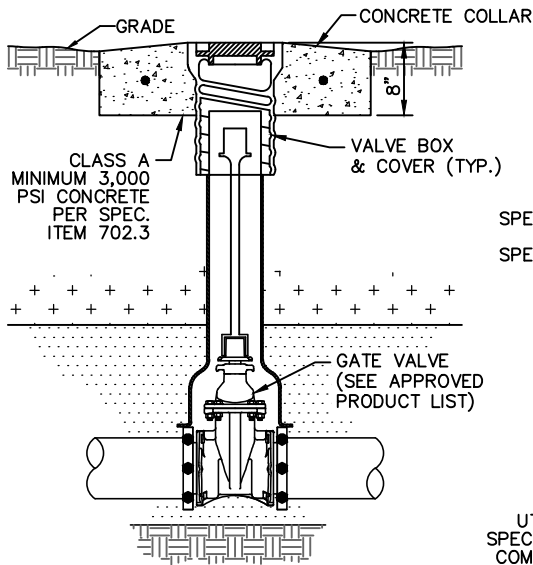
LETTERS TO BE 3" HIGH, 2" WIDE, AND IMPRESSED 1/4" INTO CONCRETE. STROKE WIDTH SHALL BE 3/8". IF VALVE IS ON FIRE HYDRANT LEAD, INSERT F.H. INSTEAD OF MAIN.



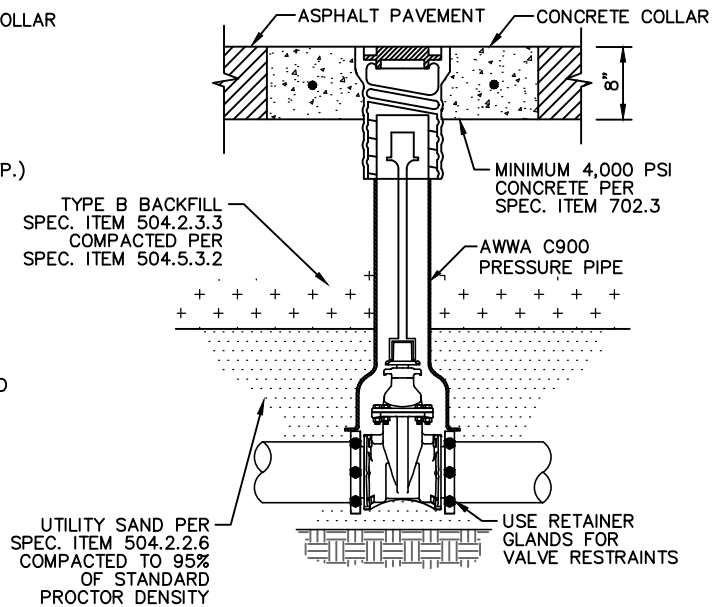
CONCRETE COLLAR

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2. GATE VALVE SHALL BE RESILIENT SEAT TYPE WITH A NON RISING STEM, A 2-INCH SQUARE OPERATOR, AND A FULLY ENCAPSULATED WEDGE. RESILIENT SEAT GATE VALVE SHALL CONFORM TO AWWA C509.
3. THE VALVE AND JOINT ASSEMBLIES SHALL BE WRAPPED IN POLYETHYLENE ACCORDING TO AWWA C105.
4. THE JOINT TYPE SHALL BE MECHANICAL JOINT UNLESS OTHERWISE SPECIFIED IN THE PLANS.
5. STEM EXTENSIONS ARE REQUIRED WHEN THE DEPTH TO THE TOP OF THE OPERATING NUT EQUALS OR EXCEEDS 3 FEET.
6. BOX TOP INSETS ARE REQUIRED IN ALL BOX INSTALLATIONS.
7. 16" AND LARGER GATE VALVES REQUIRE CONCRETE BLOCK UNDER THE VALVE BODY. CONCRETE BLOCK SHALL BE 12"x12"x6" CLASS B MINIMUM 2,000 P.S.I. CONCRETE BASE PER SPEC. ITEM 702.3.
8. GATE VALVE SHALL BE OPEN LEFT, COUNTER-CLOCKWISE.
9. CONCRETE COLLARS ARE NOT REQUIRED IN CONCRETE PAVEMENT.
10. ALL VALVE COVERS SHALL BE PAINTED BLUE.
11. A "V" SHALL BE SAW CUT IN THE CURB AT ALL VALVE LOCATIONS.

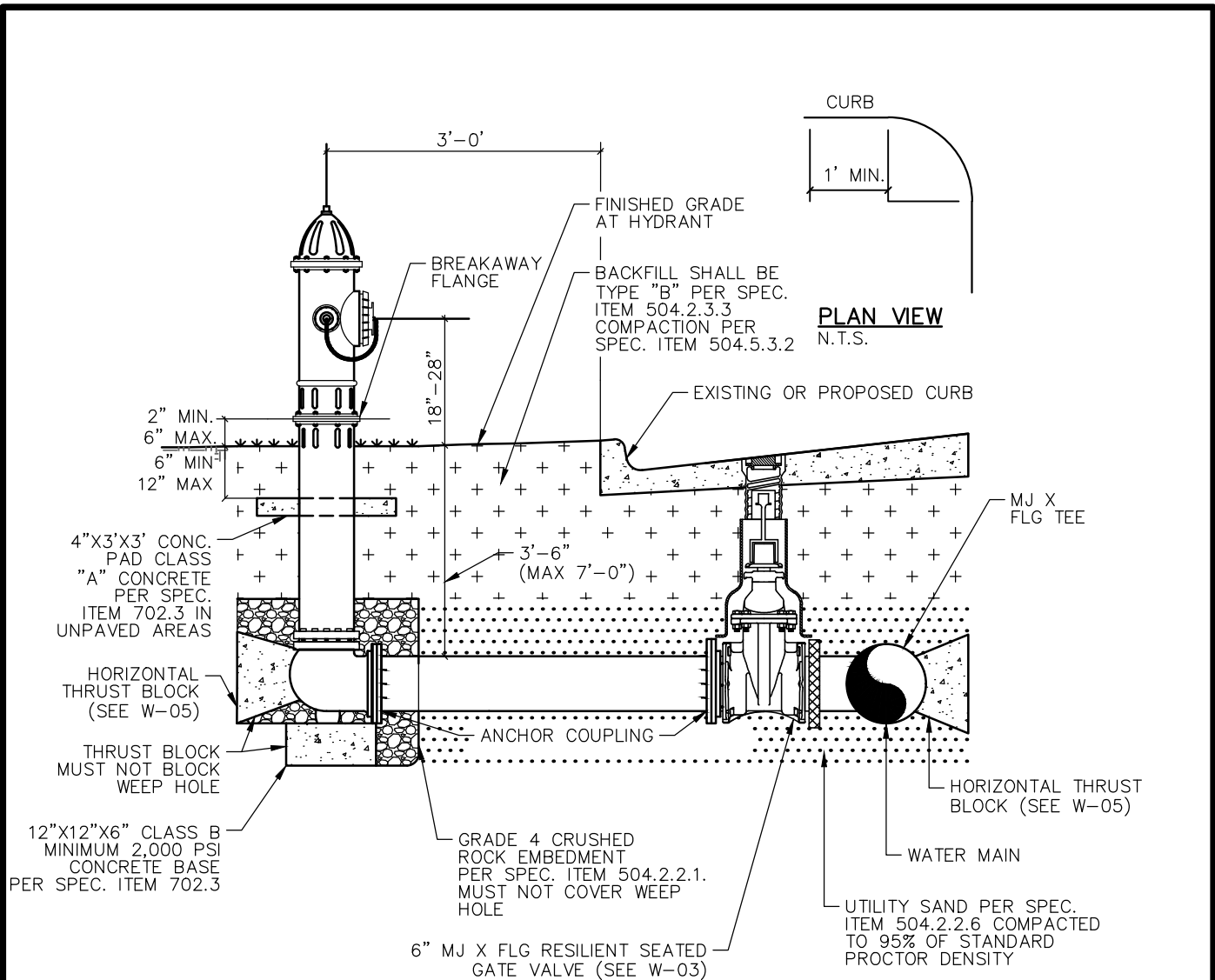


VALVES IN YARDS OR OTHER AREAS NOT SUBJECT TO TRAFFIC



VALVES WITHIN ROADWAYS OR OTHER PAVED OR SURFACED AREAS





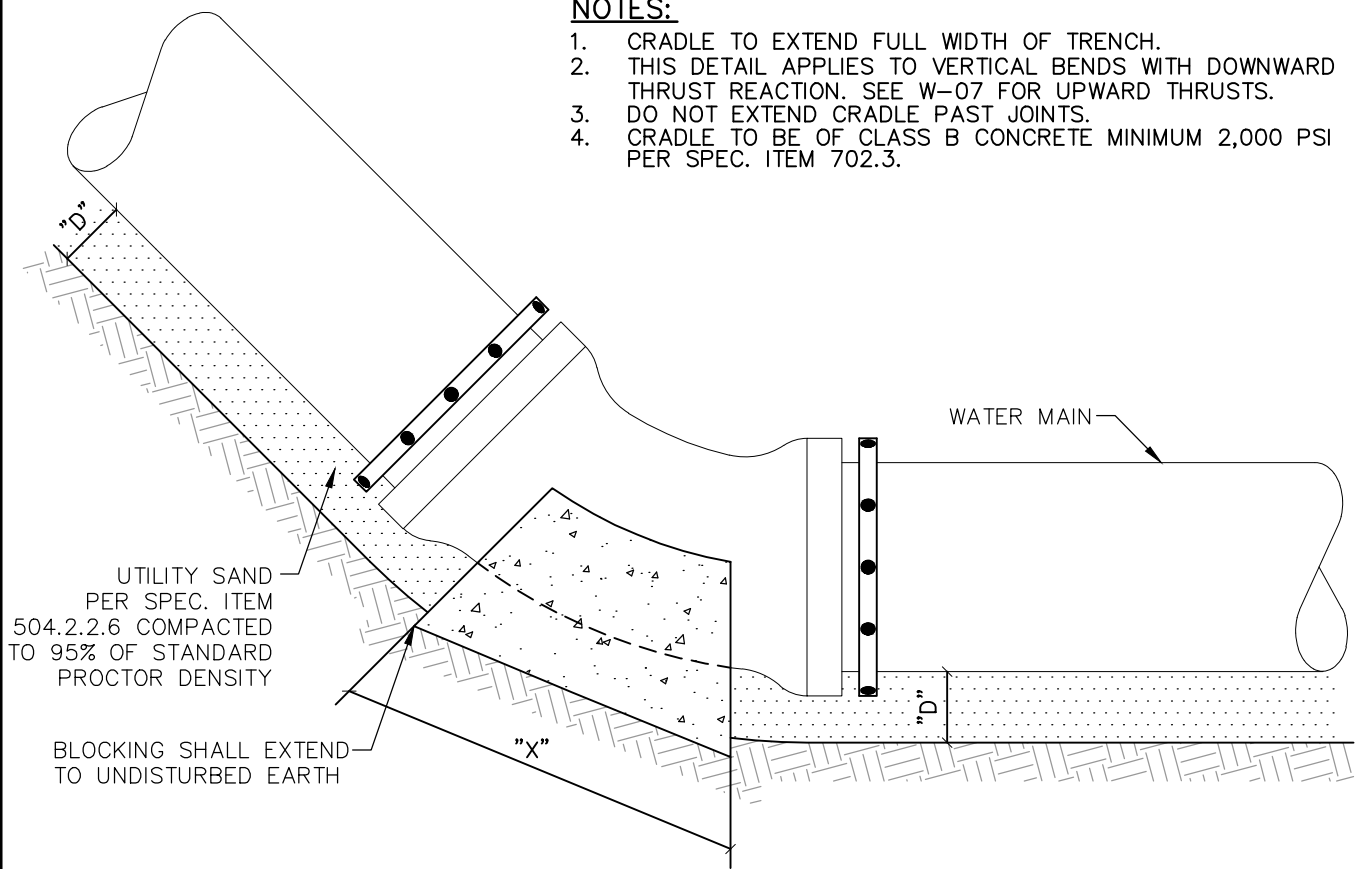
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2. ALL FIRE HYDRANTS SHALL CONFORM TO AWWA C502. FIRE HYDRANTS SHALL HAVE A 5 1/4" MIN VALVE OPENING AND AN INSIDE BARREL DIAMETER OF APPROXIMATELY 7". ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE.
3. ALL BELOW GROUND IRON ASSEMBLES SHALL BE WRAPPED IN POLYETHYLENE ACCORDING TO AWWA C105.
4. FIRE HYDRANT LEADS GREATER THAN A SINGLE PIPE JOINT REQUIRE JOINT THRUST RETAINERS.
5. FIRE HYDRANT SHALL BE PLACED ON THE EXTENDED LOT LINE WHEN POSSIBLE.
6. FIRE HYDRANT SHALL BE LOCATED A MINIMUM 1 FT. OUTSIDE OF THE AREA BETWEEN THE P.C.'S OF THE CORNER TURNING RADIS AT THE INTERSECTIONS. (SEE PLAN VIEW)
7. FIRE HYDRANT NO CLOSER THAN 18" TO EXISTING OR PROPOSED SIDEWALKS.
8. ALL FIRE HYDRANTS SHALL BE AT LEAST 42 INCHES FROM ANY ABOVE GROUND OBSTRUCTIONS, SUCH AS GUARDRAILS, RETAINING WALLS, BOLLARDS, ETC.
9. SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE FIRE HYDRANT MANUFACTURERS, FIRE HYDRANT PAINT MANUFACTURERS, AND FIRE HYDRANT COLOR.
10. FIRE HYDRANT PAINT MUST BE BRUSHED ON, IT MAY NOT BE SPRAYED. SEE APPROVED PRODUCTS LIST.
11. FIRE HYDRANT SHALL BE OPEN LEFT, COUNTER-CLOCKWISE. A CLEARLY VISIBLE CURVED ARROW AND THE WORD "OPEN" SHALL BE CAST IN RELIEF ON TOP OF THE HYDRANT TO INDICATE THE DIRECTION OF OPENING.



NOTES:

1. CRADLE TO EXTEND FULL WIDTH OF TRENCH.
2. THIS DETAIL APPLIES TO VERTICAL BENDS WITH DOWNWARD THRUST REACTION. SEE W-07 FOR UPWARD THRUSTS.
3. DO NOT EXTEND CRADLE PAST JOINTS.
4. CRADLE TO BE OF CLASS B CONCRETE MINIMUM 2,000 PSI PER SPEC. ITEM 702.3.



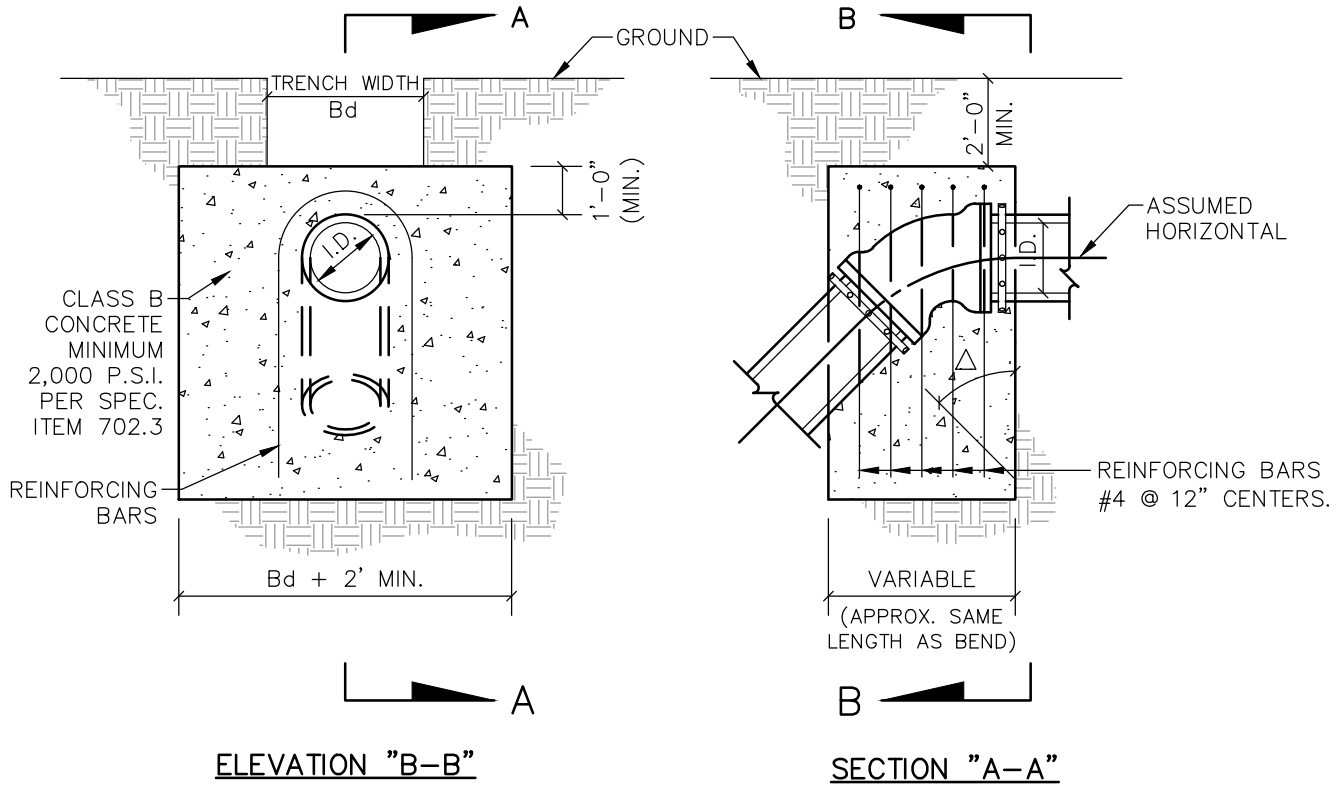
CONCRETE CRADLE TABLE

"D" = 6" MINIMUM OR TO UNDISTURBED SOIL

PIPE SIZE	90° BENDS		45° BENDS		22.50° BENDS		11.25° BENDS	
	"X"	MIN. AREA (sf)	"X"	MIN. AREA (sf)	"X"	MIN. AREA (sf)	"X"	MIN. AREA (sf)
6"	2'-1"	4.50	1'-7"	2.43	1'-1"	1.24	1'-0"	1.00
8"	2'-10"	8.00	2'-1"	4.33	1'-6"	2.21	1'-1"	1.11
10"	3'-6"	12.50	2'-7"	6.76	1'-10"	3.45	1'-4"	1.73
12"	4'-3"	17.99	3'-1"	9.74	2'-3"	4.96	1'-7"	2.49
16"	5'-8"	31.99	4'-2"	17.31	3'-0"	8.83	2'-2"	4.43

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2. BEARING AREAS SHOWN ARE BASED ON 225 PSI TEST PRESSURE, 3,000 PSF ALLOWABLE SOIL BEARING PRESSURE, AND 1.5 SAFETY FACTOR.
3. THE ENGINEER SHALL PROVIDE A SEPARATE BLOCKING TABLE WHEN THE CONDITIONS DO NOT MEET THE ABOVE ASSUMPTIONS.
4. WRAP ALL BELOW GROUND IRON ASSEMBLIES IN POLYETHYLENE ACCORDING TO AWWA C105.
5. ALL TEES, BENDS, PLUGS, ETC. SHALL BE MECHANICALLY RESTRAINED BY MEGALUG OR APPROVED EQUAL.
6. BLOCKING FOR LINES LARGER THAN 16" SHALL BE DESIGNED FOR THE SPECIFIC LOCATION AND SHOWN ON THE DRAWINGS.

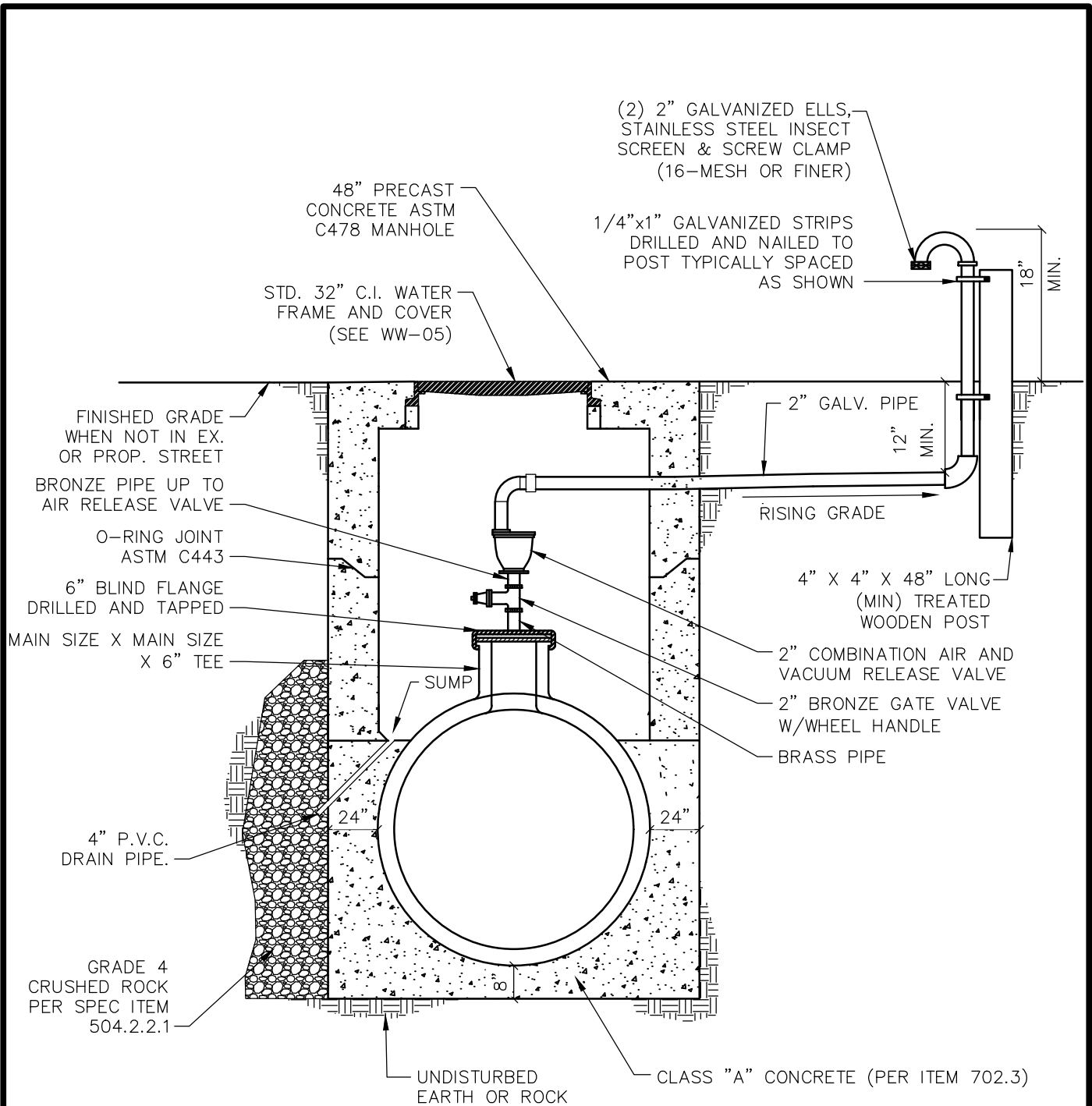


VERTICAL THRUST BLOCK TABLE

△ →	11.25°		22.50°		45.00°		90.00°	
I.D. (IN.)	MIN #4 BARS	VOL. (C.Y.)	MIN #4 BARS	VOL. (C.Y.)	MIN #4 BARS	VOL. (C.Y.)	MIN #4 BARS	VOL. (C.Y.)
6	1	0.5	1	1.0	1	1.8	2	2.5
8	1	0.5	1	1.0	2	1.8	3	2.5
10	1	1.1	2	2.2	3	4.0	5	5.7
12	1	1.1	2	2.2	4	4.0	7	5.7
16	1	2.5	4	4.9	7	9.0	12	12.7

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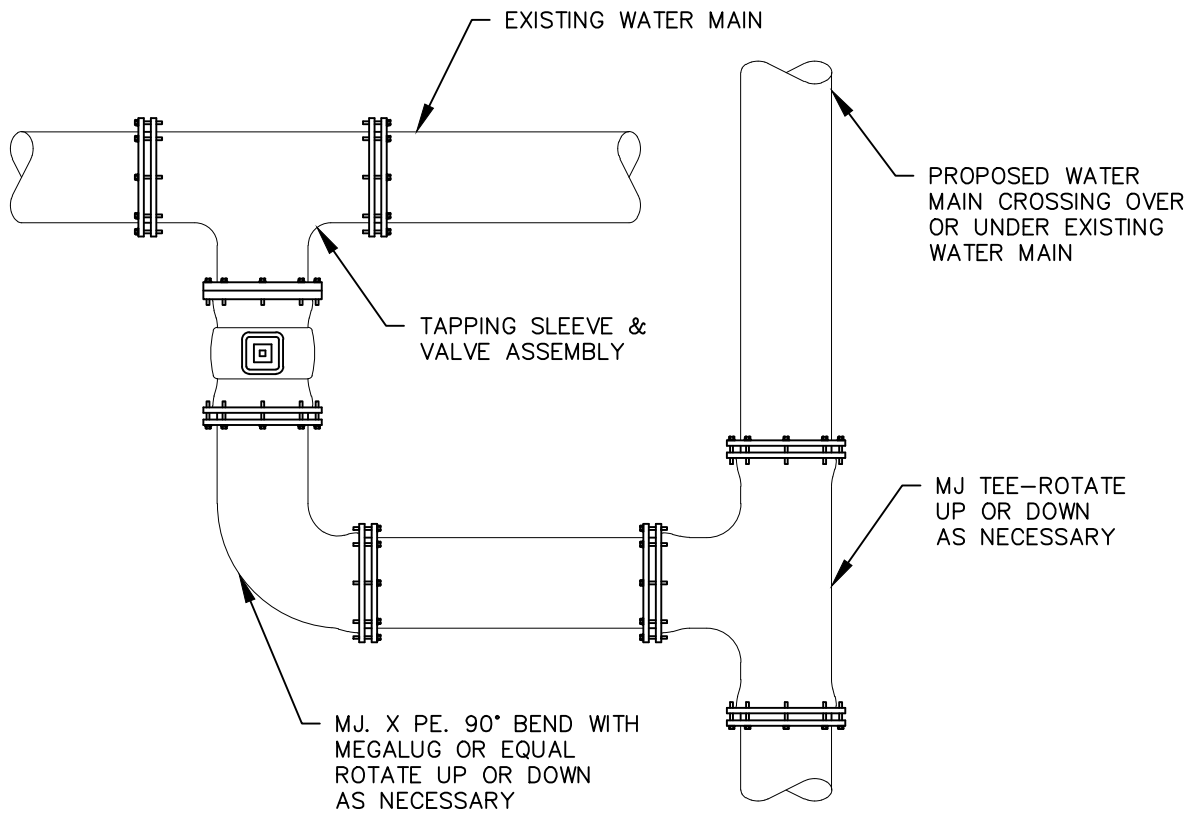
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2. CONCRETE VOLUMES SHOWN ARE BASED ON 225 PSI TEST PRESSURE, 3,000 PSF ALLOWABLE SOIL BEARING PRESSURE, AND 1.5 SAFETY FACTOR.
3. BAR QUANTITIES ARE BASED ON 30 KSI #4 STEEL REINFORCEMENT BAR AND A SAFETY FACTOR OF 1.5.
4. THE ENGINEER SHALL PROVIDE A SEPARATE BLOCKING TABLE WHEN THE CONDITIONS DO NOT MEET THE ABOVE ASSUMPTIONS.
5. WRAP ALL BELOW GROUND IRON ASSEMBLIES IN POLYETHYLENE ACCORDING TO AWWA C105.
6. ALL TEES, BENDS, PLUGS, ETC. SHALL BE MECHANICALLY RESTRAINED.
7. BLOCKING FOR LINES LARGER THAN 16" SHALL BE DESIGNED FOR THE SPECIFIC LOCATION AND SHOWN ON THE DRAWINGS.



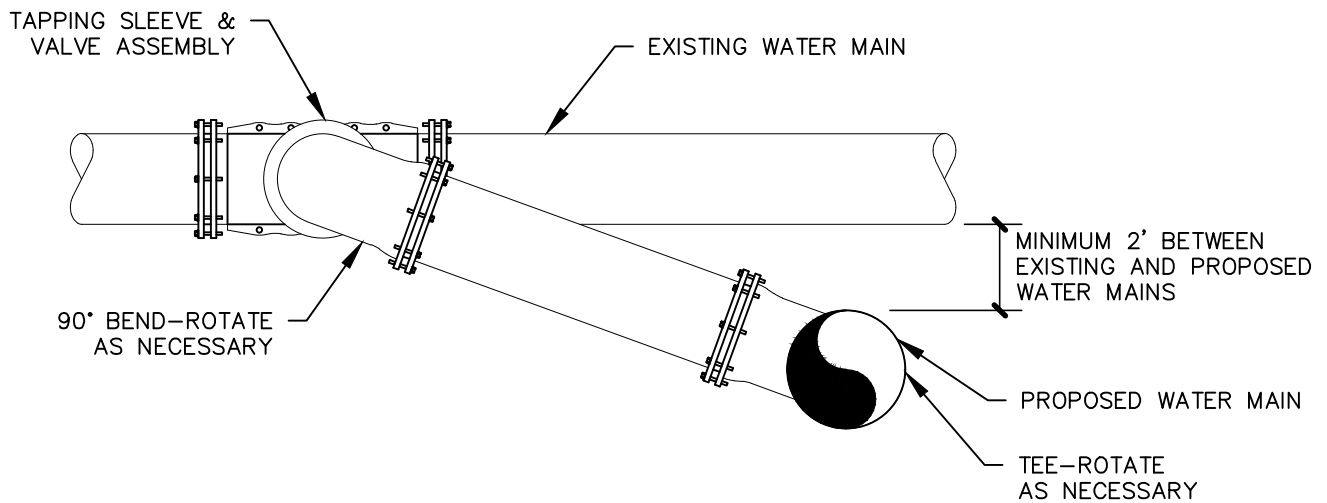
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2. AIR RELEASE VALVES SHALL BE IN ACCORDANCE WITH AWWA C512 AND AWWA M51.
3. SEE APPROVED PRODUCT LIST FOR ACCEPTABLE AIR RELEASE VALVE MANUFACTURERS.





PLAN

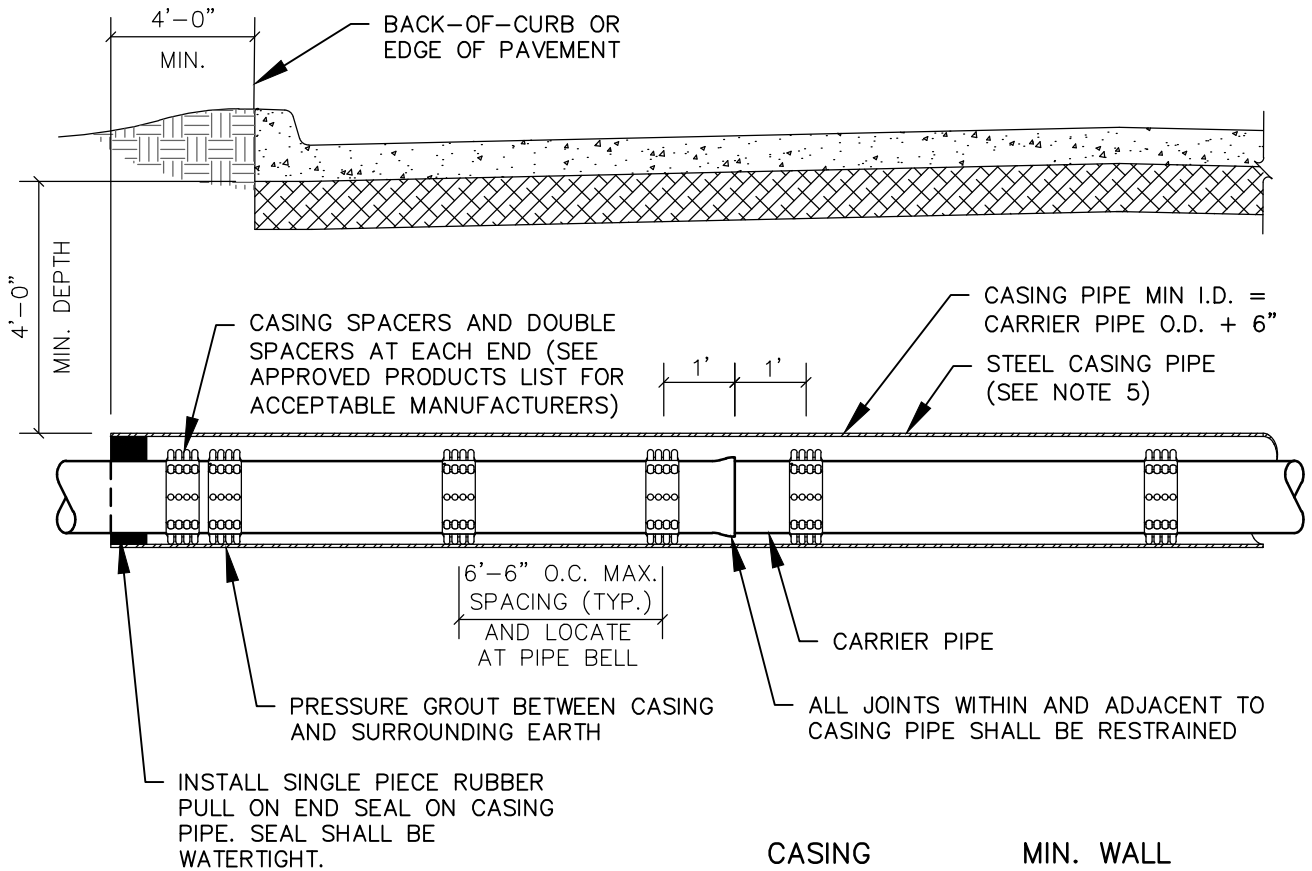


SECTION

NOTES:

1. ALL VALVES, JOINTS, AND FITTINGS TO BE MECHANICALLY RESTRAINED.
2. WRAP ALL BELOW GROUND ASSEMBLIES IN POLYETHYLENE ACCORDING TO AWWA C105.
3. THE DIAMETER OF THE CONNECTING PIPE BETWEEN THE PROPOSED AND EXISTING WATER MAINS SHALL HAVE A DIAMETER EQUAL TO THE SMALLER OF THE TWO MAINS TO BE CONNECTED THROUGH THE PROPOSED RING CONNECTION.



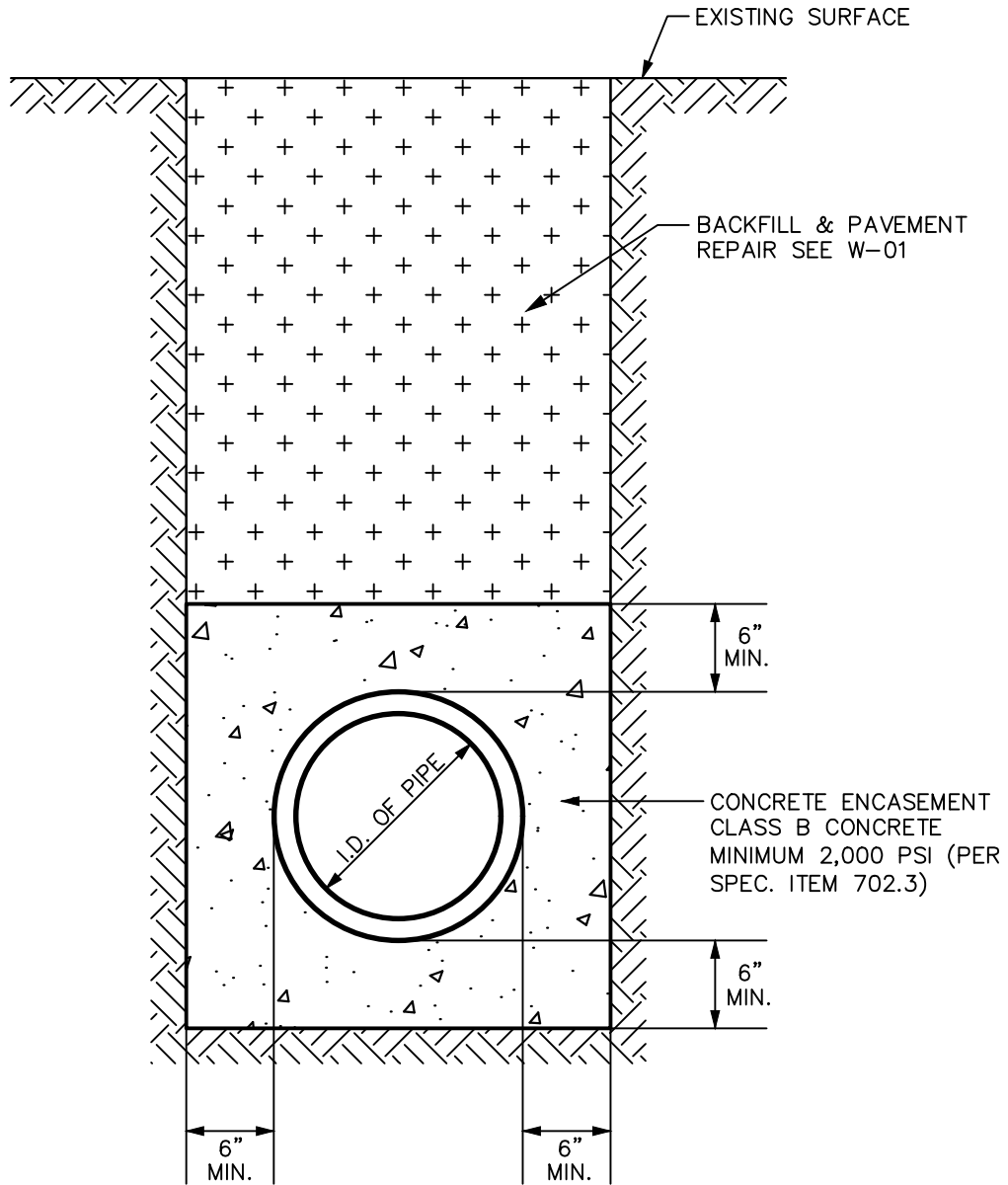


CASING DIAMETER	MIN. WALL THICKNESS
LESS THAN 12"	0.25"
14" - 18"	0.3125
20" - 24"	0.375"
26" - 32"	0.50"
34" - 42"	0.625"
GREATER THAN 42"	DESIGN BY ENGINEER

NOTES:

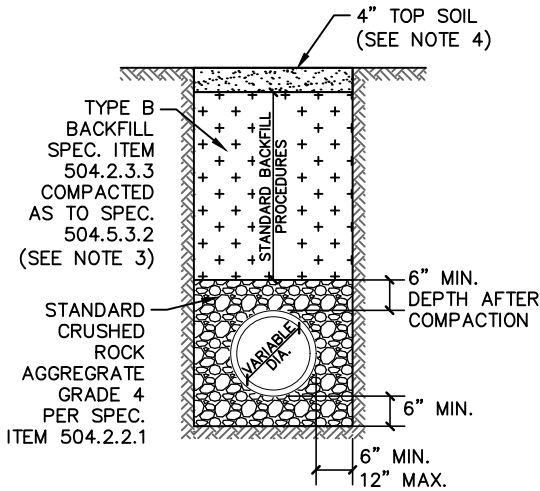
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- BORE PIT SHALL MEET OSHA AND STATE REQUIREMENTS.
- WHERE A BORE IS TO BE PARTIALLY OR COMPLETELY ABANDONED, SAID BORE SHALL BE COMPLETELY FILLED WITH HYDRAULICALLY PLACED CEMENT GROUT.
- THE EDGE OF BORE PIT SHALL BE A MINIMUM OF 4' BEHIND THE BACK OF CURB OR EDGE OF PAVEMENT.
- STEEL CASING PIPE SHALL BE MINIMUM 35 KSI ASTM A139, GRADE B CARBON STEEL, AND SHALL HAVE A TAR-COAL EXPOXY COATING IN ACCORDANCE WITH AWWA C210.
- CASING PIPE SHALL BE PLACED AT THE SAME SLOPE AS THE CARRIER PIPE TO ENSURE THAT THE CARRIER PIPE IS PLACED ALONG THE SPECIFIED GRADE. IF THE PROPER SLOPE CANNOT BE MAINTAINED, THE CASING SPACERS SHALL BE ADJUSTED SO THAT THE CARRIER PIPE IS PLACED AT THE SPECIFIED GRADE.



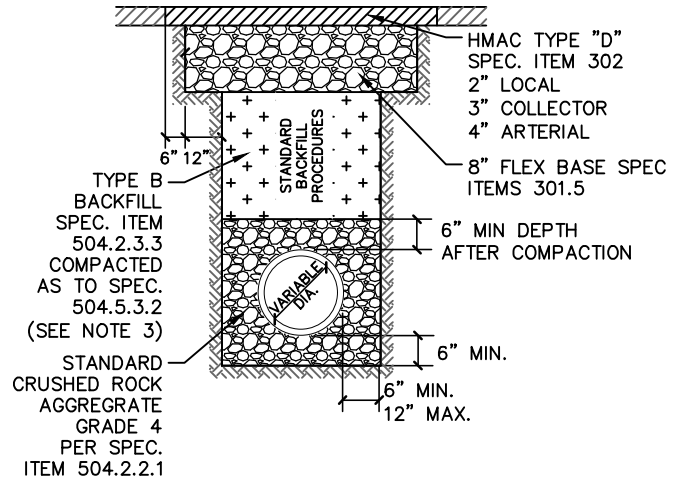


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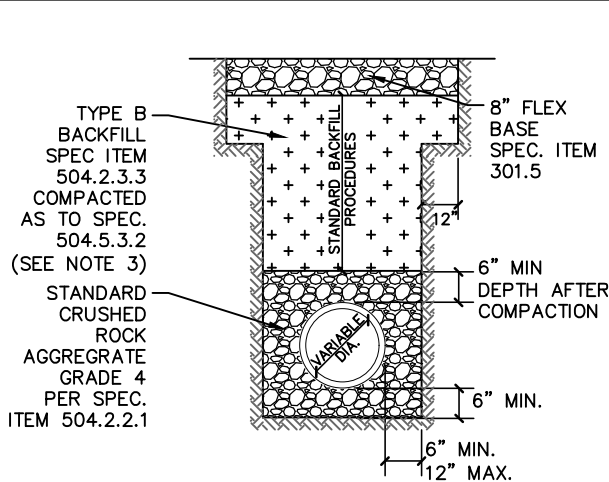
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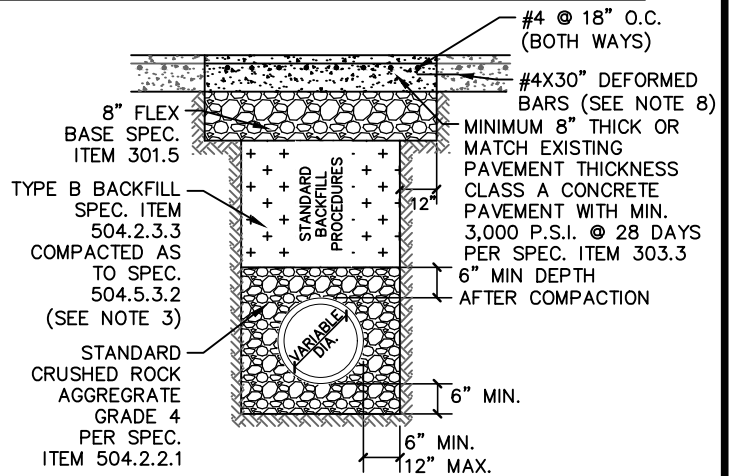
UNPAVED AREA



ASPHALT PAVEMENT



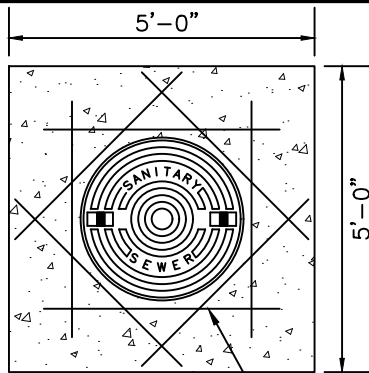
GRAVEL SURFACE



CONCRETE PAVEMENT

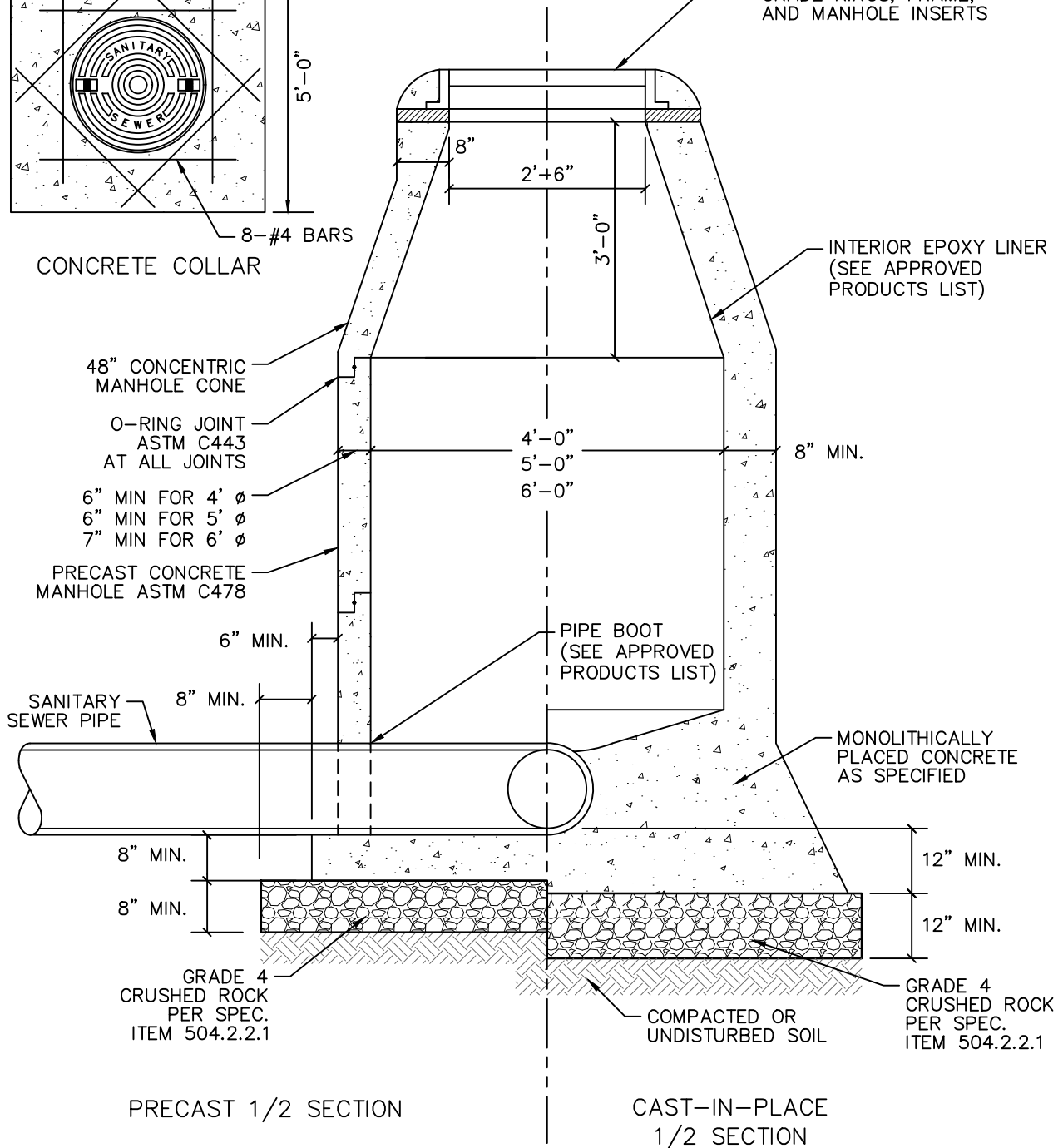
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3. ROCKS GREATER THAN 4" IN DIAMETER SHALL BE REMOVED FROM ANY NATIVE MATERIAL USED AS BACKFILL.
4. TOPSOIL SHALL BE 4" IN DEPTH AND SHALL BE LOOSE AND FREE OF ROCKS OR CLODS GREATER THAN 1/4" IN DIAMETER. ALL TOPSOIL SHALL BE APPROVED BY THE CITY PRIOR TO INSTALLATION.
5. ALL PAVEMENT SHALL BE REMOVED ALONG NEAT SAW CUT LINES PER SPEC. ITEM 402.3.
6. SEWER LINE WARNING TAPE OF MIN 4" WIDTH SHALL BE INSTALLED ABOVE THE EMBEDMENT MATERIAL.
7. A MAXIMUM OF 50 FT OF OPEN TRENCH WILL BE ALLOWED AT ANY TIME, UNLESS APPROVED BY THE CITY.
8. DEFORMED BARS DOWELED AND EPOXYED MIN. 15" INTO EXISTING PAVEMENT @ 18" O.C. (TYP).



8-#4 BARS
CONCRETE COLLAR

SEE DETAIL WW-04 FOR PLACEMENT OF GRADE RINGS, FRAME, AND MANHOLE INSERTS



48" CONCENTRIC MANHOLE CONE

O-RING JOINT
ASTM C443
AT ALL JOINTS

6" MIN FOR 4' Ø
6" MIN FOR 5' Ø
7" MIN FOR 6' Ø

PRECAST CONCRETE MANHOLE ASTM C478

6" MIN.

SANITARY SEWER PIPE

8" MIN.

8" MIN.

8" MIN.

GRADE 4 CRUSHED ROCK PER SPEC. ITEM 504.2.2.1

PRECAST 1/2 SECTION

PIPE BOOT (SEE APPROVED PRODUCTS LIST)

INTERIOR EPOXY LINER (SEE APPROVED PRODUCTS LIST)

MONOLITHICALLY PLACED CONCRETE AS SPECIFIED

GRADE 4 CRUSHED ROCK PER SPEC. ITEM 504.2.2.1

COMPACTED OR UNDISTURBED SOIL

CAST-IN-PLACE 1/2 SECTION

NOTES:

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2. MANHOLES SHALL BE CONCENTRIC UNLESS OTHERWISE APPROVED BY THE CITY.
3. 4'X4' PAVEMENT INSERTS OF 6" 3000 PSI CONCRETE SHALL BE PROVIDED FOR MANHOLE LIDS.
4. INVERTS SHALL BE EQUAL TO OR GREATER THAN THE PIPE DIAMETER.

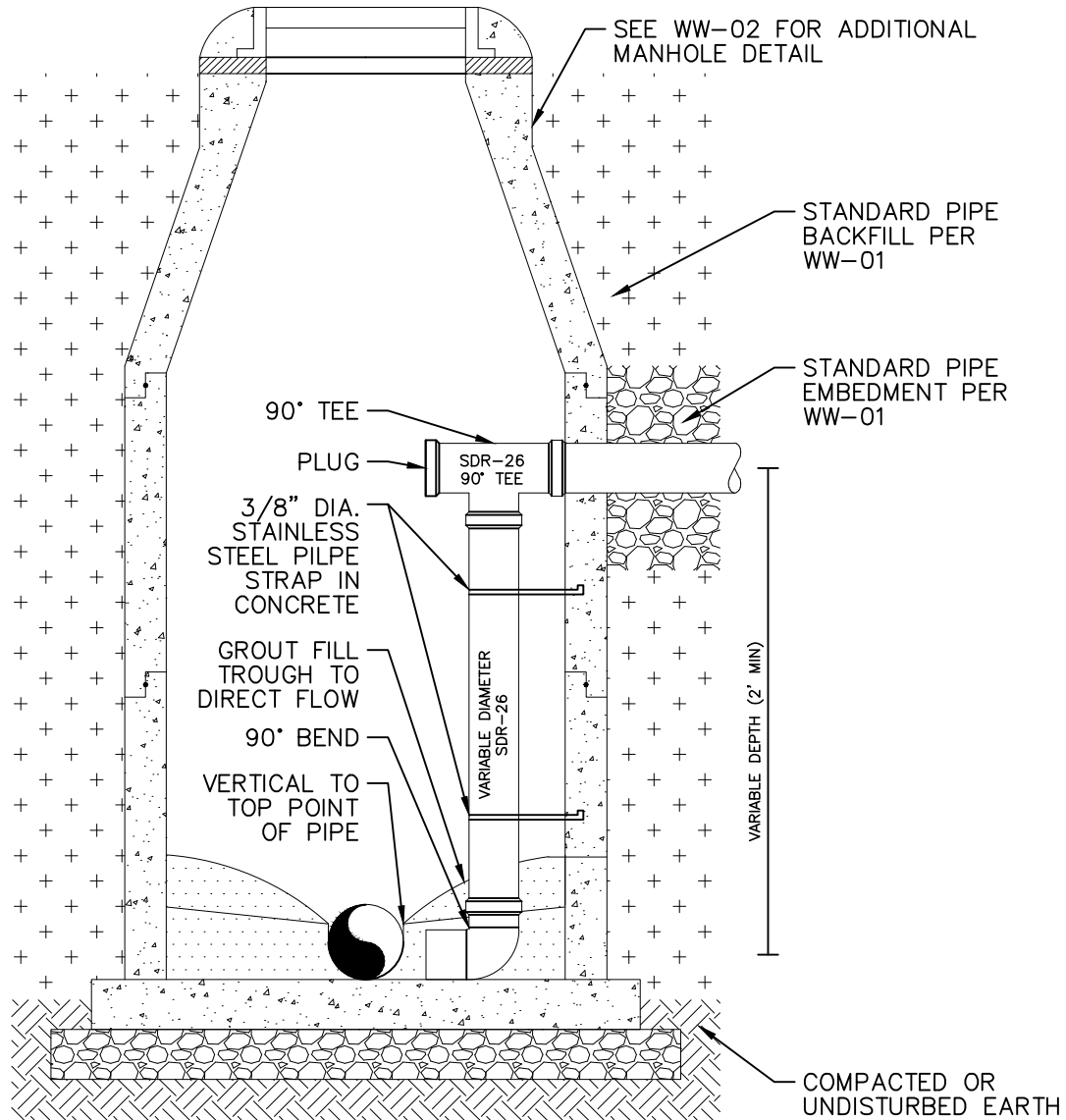


City of Decatur
Construction Standards

PRECAST AND CAST-IN-PLACE
SANITARY SEWER MANHOLE

REVISED
AUG 2022

WW-02

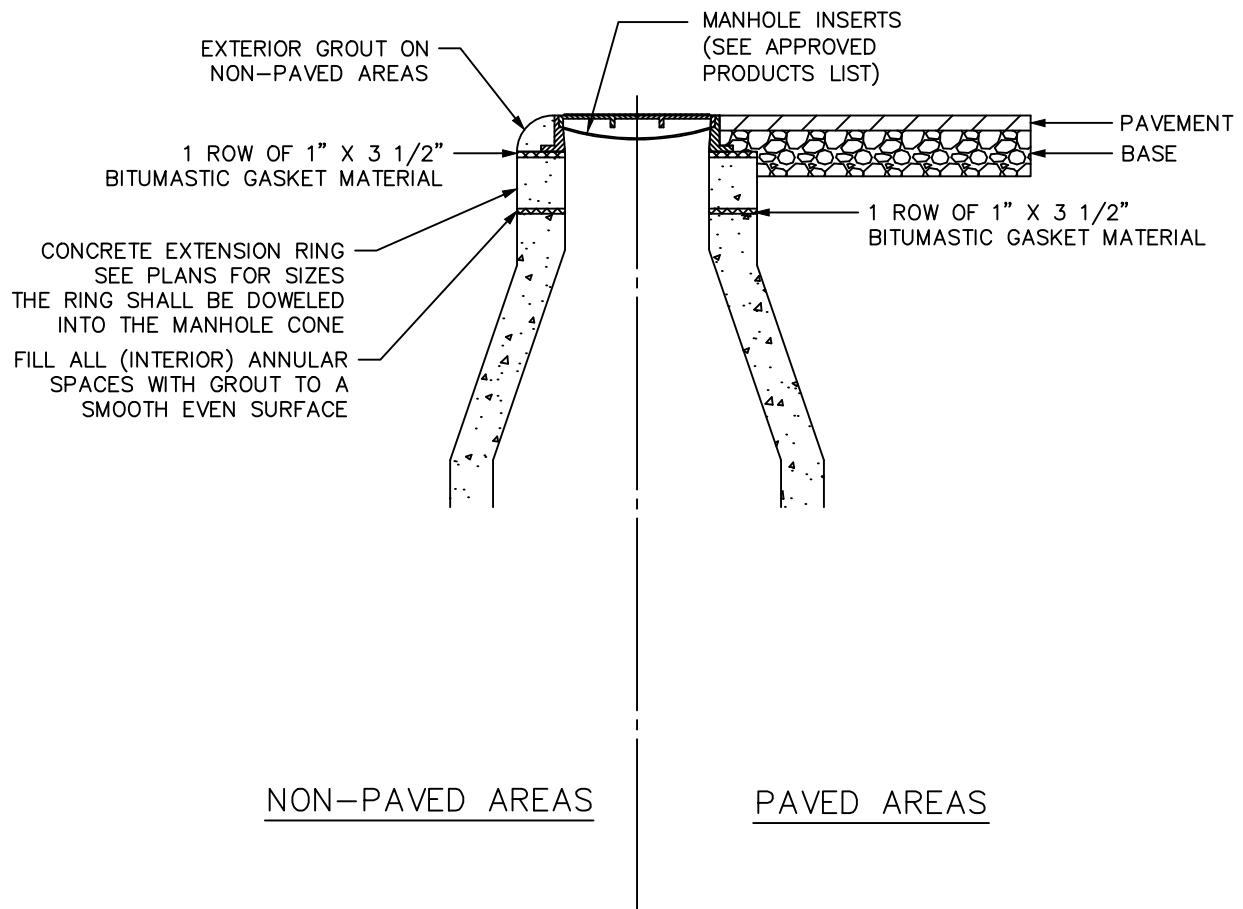


ELEVATION A

NOTES:

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2. LOCATE FLOWLINE OF DROP LINE AT TOP OF EXISTING WASTEWATER LINE UNLESS NOTED OTHERWISE ON PLANS.

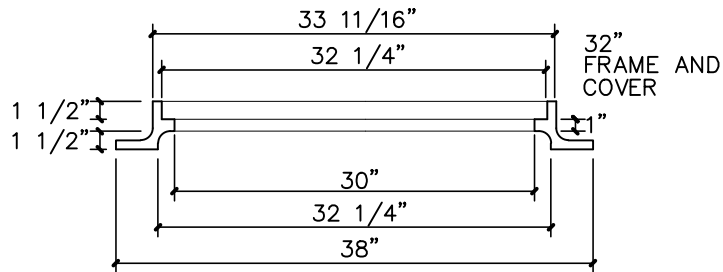
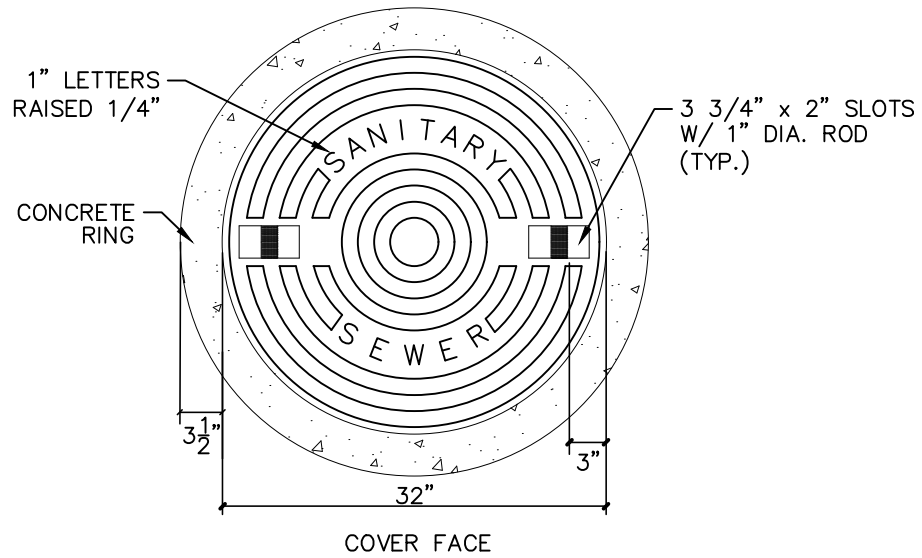




NOTES:

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2. NO GAPS WILL BE ALLOWED IN BITUMASTIC GASKET.
3. MANHOLE OPENING SHALL BE A MINIMUM OF 30".
4. THERE SHALL BE A SMOOTH TRANSITION BETWEEN THE FRAME AND CONE OR GRADE RING, OR THE GRADE RING AND THE CONE.
5. CONCRETE EXTENSION RINGS MAY BE PRECAST OR CAST-IN-PLACE. BRICK EXTENSION RINGS WILL NOT BE ALLOWED.
6. STANDARD EXTENSIONS SHALL BE 2", 3", 4", 6", AND 12". EXTENSIONS SHALL BE SIZED TO MINIMIZE THE NUMBER REQUIRED TO RAISE THE MANHOLE. NO MORE THAN 1-2" EXTENSION WILL BE ALLOWED ON ANY MANHOLE.





CLEANOUT CASTING OPENING TO BE INSTALLED CENTERED OVER THE CENTERLINE OF THE CLEANOUT STACK EXTENDED TO GROUND LEVEL

CLEANOUT CASTING

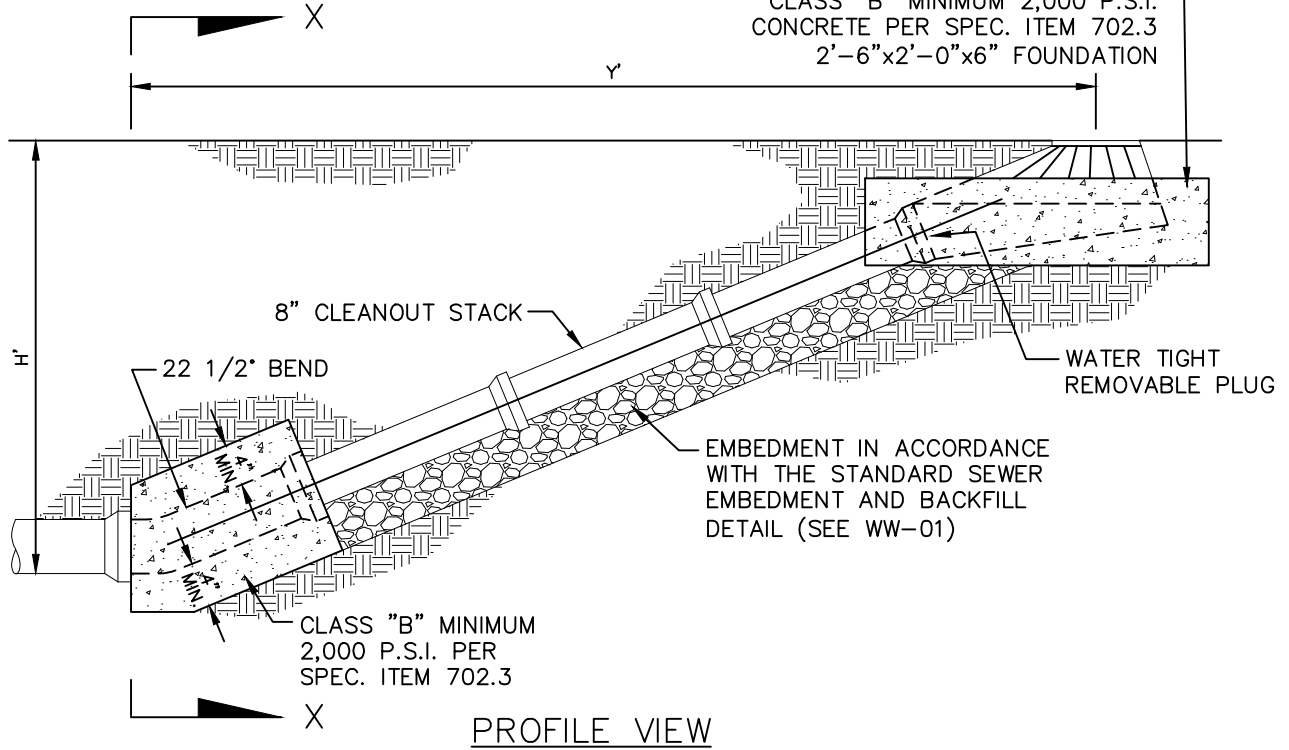
WATER TIGHT REMOVABLE PLUG

CLASS "B" MINIMUM 2,000 P.S.I. PER SPEC. ITEM 702.3

CLASS "B" MINIMUM 2,000 P.S.I. CONCRETE PER SPEC. ITEM 702.3

SECTION "X-X"

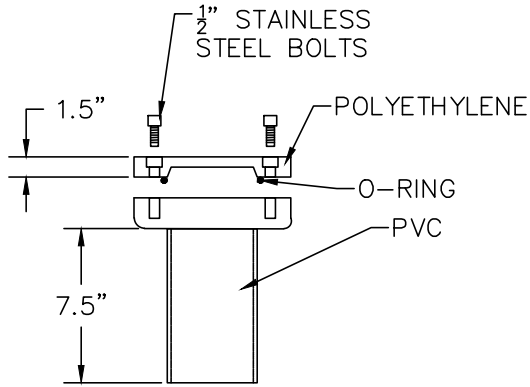
CLASS "B" MINIMUM 2,000 P.S.I. CONCRETE PER SPEC. ITEM 702.3
2'-6"x2'-0"x6" FOUNDATION



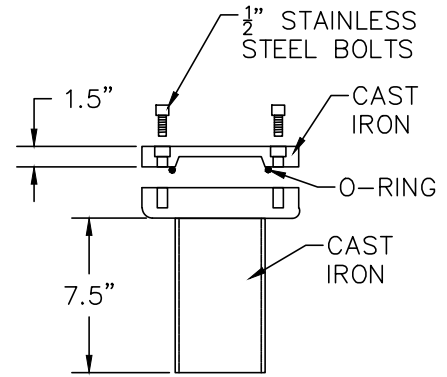
H'	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	H'
Y'	10	12	14	17	19	22	24	27	29	31	34	36	39	41	43	46	48	Y'

NOTES:

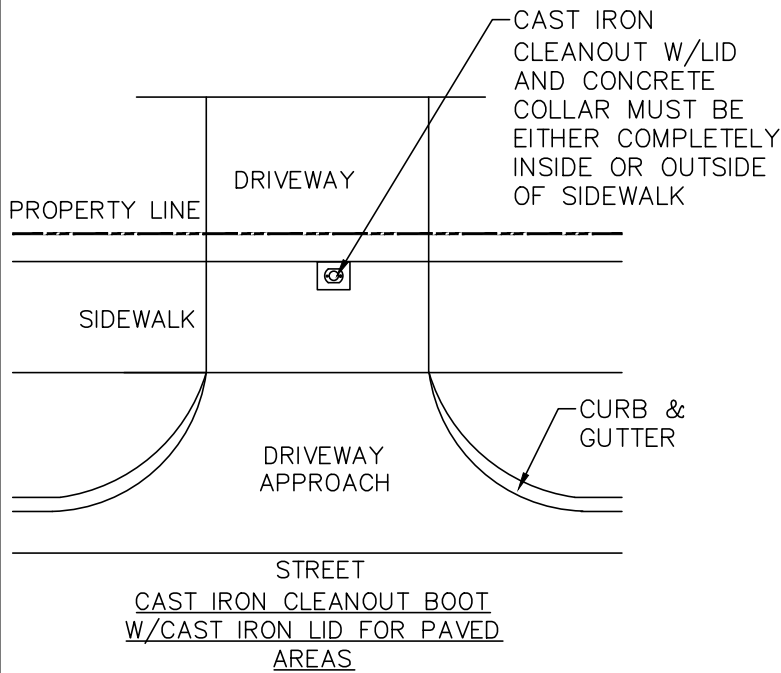
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2. TO BE UTILIZED FOR TEMPORARY END OF LINE INSTALLATIONS. PERMANENT END OF LINE INSTALLATIONS REQUIRE A MANHOLE.
3. IF CLEAN OUT IS PLACE IN ADVANCE OF PLACEMENT PLACE SAND AROUND CLEANOUT CASTING IN LIEU OF CLASS "B" CONCRETE PER ITEM 702.3.



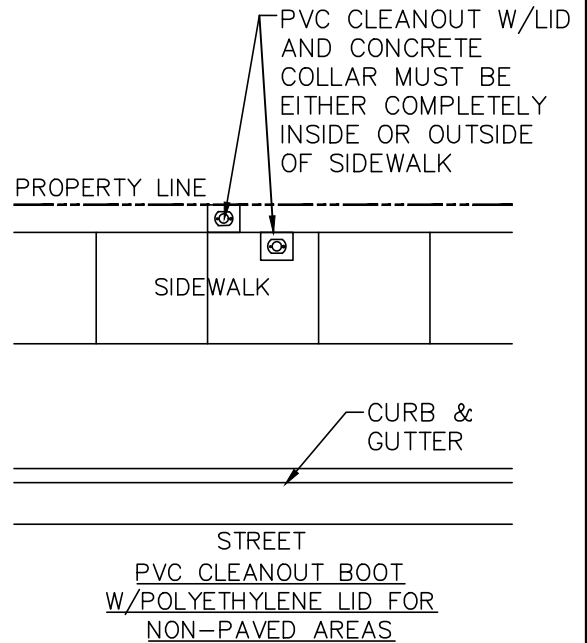
PVC CLEANOUT W/S.S. BOLTS
AND POLYETHYLENE LID
FOR UN-PAVED AREAS



CAST IRON CLEANOUT W/S.S.
BOLTS AND C.I. LID
FOR PAVED AREAS

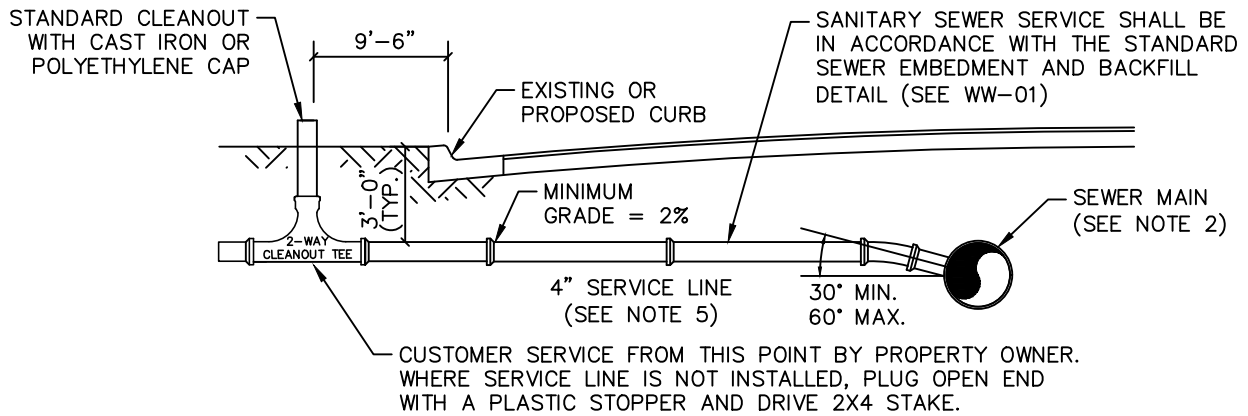


CAST IRON CLEANOUT BOOT
W/CAST IRON LID FOR PAVED
AREAS

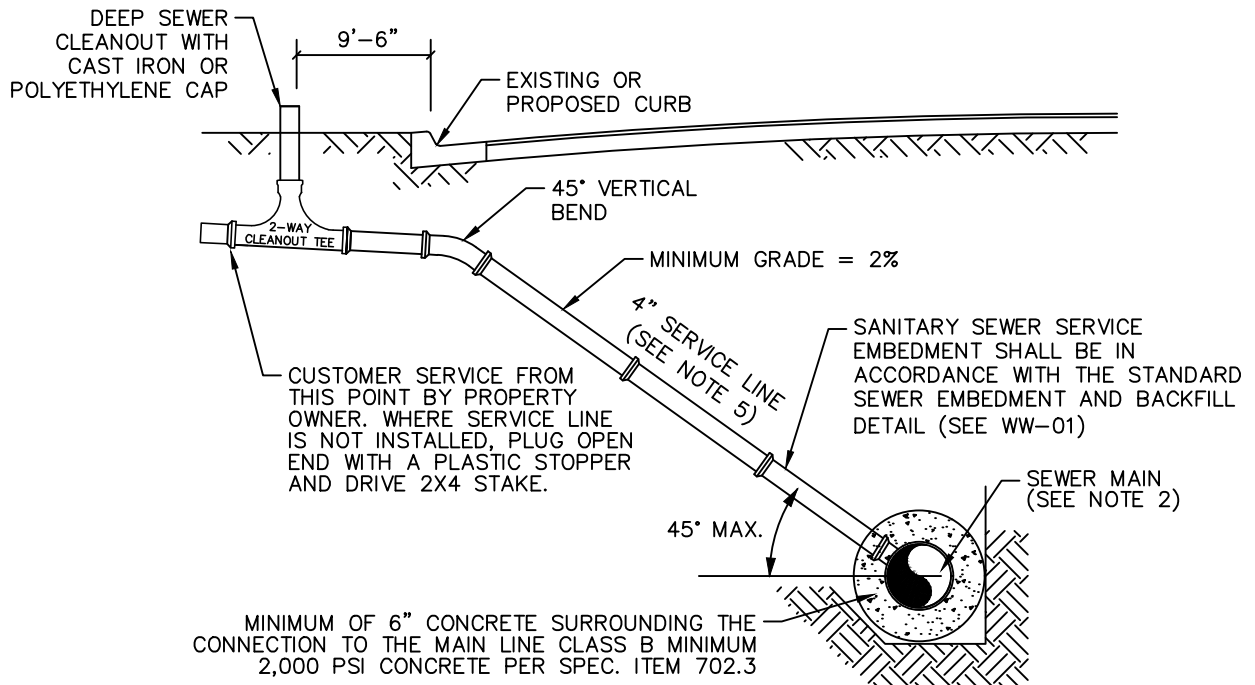


PVC CLEANOUT BOOT
W/POLYETHYLENE LID FOR
NON-PAVED AREAS





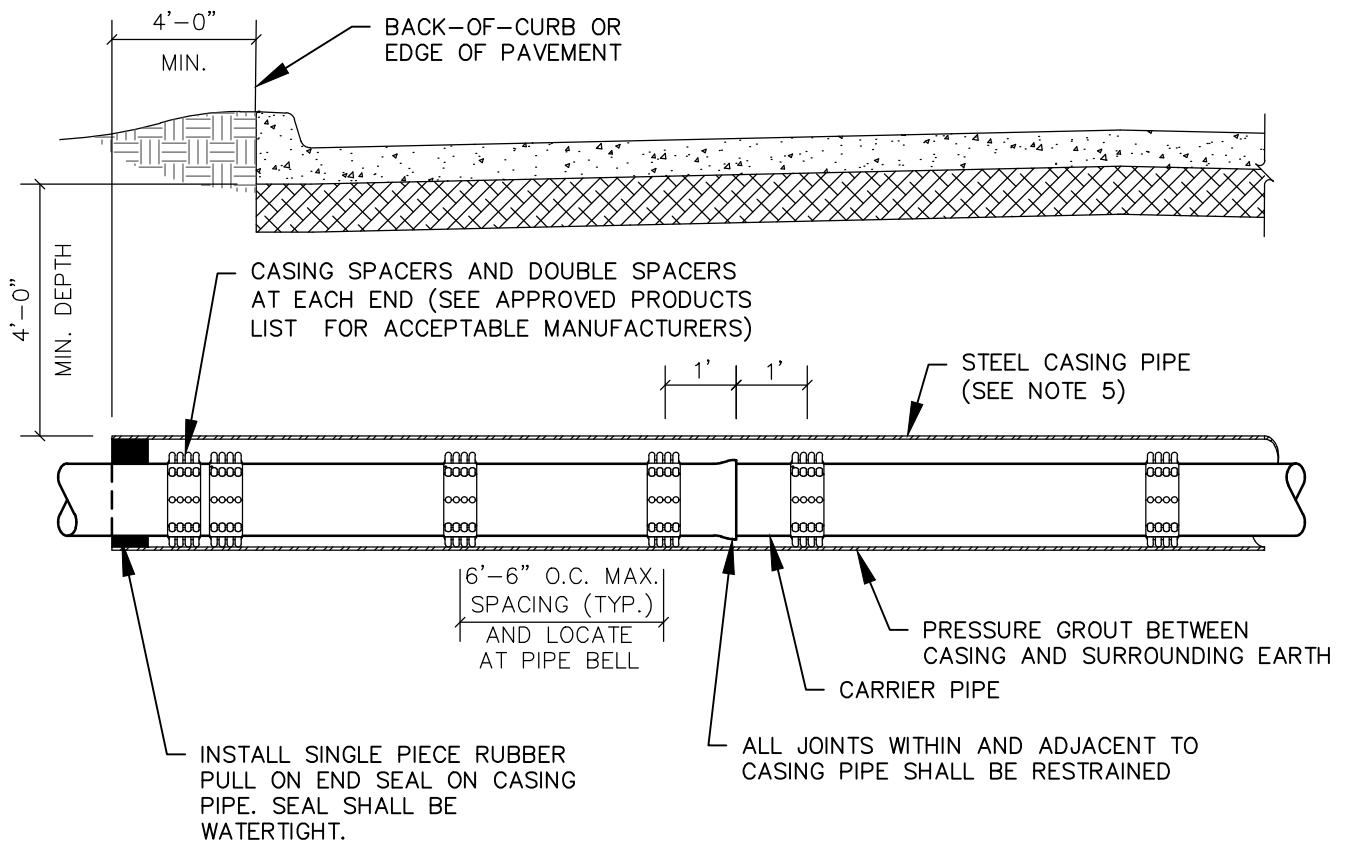
STANDARD SEWER SERVICE DETAIL



DEEP SEWER SERVICE DETAIL

NOTES:

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2. EITHER A WYE FITTING OR A TEE WYE FITTING MAY BE USED FOR CONNECTION TO SEWER MAIN. NO TEES OR WYE SADDLES WILL BE ALLOWED. ALL CONNECTIONS TO BE MADE AT THE TWO O'CLOCK OR TEN O'CLOCK POSITION.
3. CONNECTIONS TO SEWER MAINS FROM 0' TO 7' DEEP SHALL CONFORM TO THE STANDARD SEWER CONNECTION DETAIL. CONNECTIONS TO SEWER MAINS DEEPER THAN 7' SHALL CONFORM TO THE DEEP SEWER CONNECTION DETAILS.
4. MARK SEWER SERVICE LINE LOCATION WITH RED VINYL TAPE AT LEAST 3" WIDE AND 10 MIL THICK. ATTACH TAPE TO THE END OF THE SERVICE AND EXTEND THROUGH THE BACKFILL AT THE POINT OF THE HOUSE SERVICE CONNECTION BEHIND THE CURB.
5. A 6" SERVICE LINE IS REQUIRED FOR SERVICES OTHER THAN A SINGLE FAMILY RESIDENCE.



CASING DIAMETER	MIN. WALL THICKNESS
LESS THAN 12"	0.25"
14" - 18"	0.3125
20" - 24"	0.375"
26" - 32"	0.50"
34" - 42"	0.625"

GREATER THAN 42" DESIGN BY ENGINEER

NOTES:

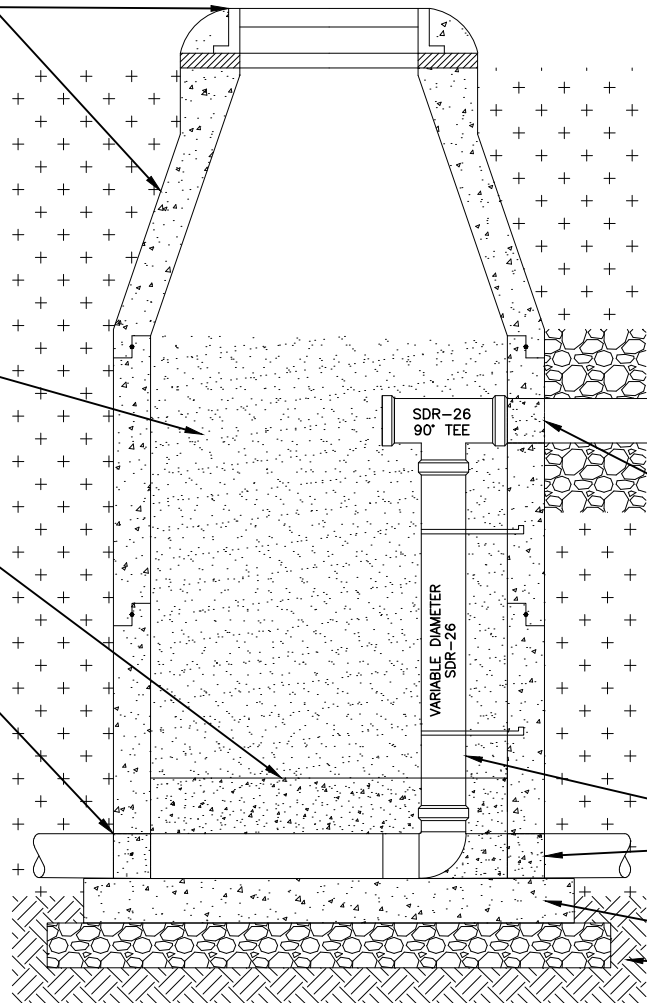
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- BORE PIT SHALL MEET OSHA AND STATE REQUIREMENTS.
- WHERE A BORE IS TO BE PARTIALLY OR COMPLETELY ABANDONED, SAID BORE SHALL BE COMPLETELY FILLED WITH HYDRAULICALLY PLACED CEMENT GROUT.
- THE EDGE OF BORE PIT SHALL BE A MINIMUM OF 4' BEHIND THE BACK OF CURB OR EDGE OF PAVEMENT.
- STEEL CASING PIPE SHALL BE MINIMUM 35 KSI ASTM A139, GRADE B CARBON STEEL, AND SHALL HAVE A COAL-TAR EXPOXY COATING IN ACCORDANCE WITH AWWA C210.
- CASING PIPE SHALL BE PLACED AT THE SAME SLOPE AS THE CARRIER PIPE, TO ENSURE THAT THE CARRIER PIPE IS PLACED ALONG THE SPECIFIED GRADE. IF THE PROPER SLOPE CANNOT BE MAINTAINED, THE CASING SPACERS SHALL BE ADJUSTED SO THAT THE CARRIER PIPE IS PLACED AT THE SPECIFIED GRADE.

EXISTING MANHOLE
FRAME, COVER & CONE
TO BE REMOVED AND
DISPOSED OF AND
BACKFILL IN
ACCORDANCE WITH
WW-01

UTILITY SAND PER W-01
OR CRUSHED ROCK PER
WW-01 COMPACTED TO
90% (95% UNDER
PAVEMENT) STANDARD
PROCTOR DENSITY

POUR CLASS B CONCRETE
MINIMUM 2,000 P.S.I. (PER
SPEC. ITEM 702.3) TO 6"
ABOVE TOP OF PIPE

PLUG WITH CLASS "B"
CONCRETE MINIMUM 2,000
P.S.I. (PER SPEC. ITEM
702.3) PRIOR TO POURING
2,000 PSI CONCRETE



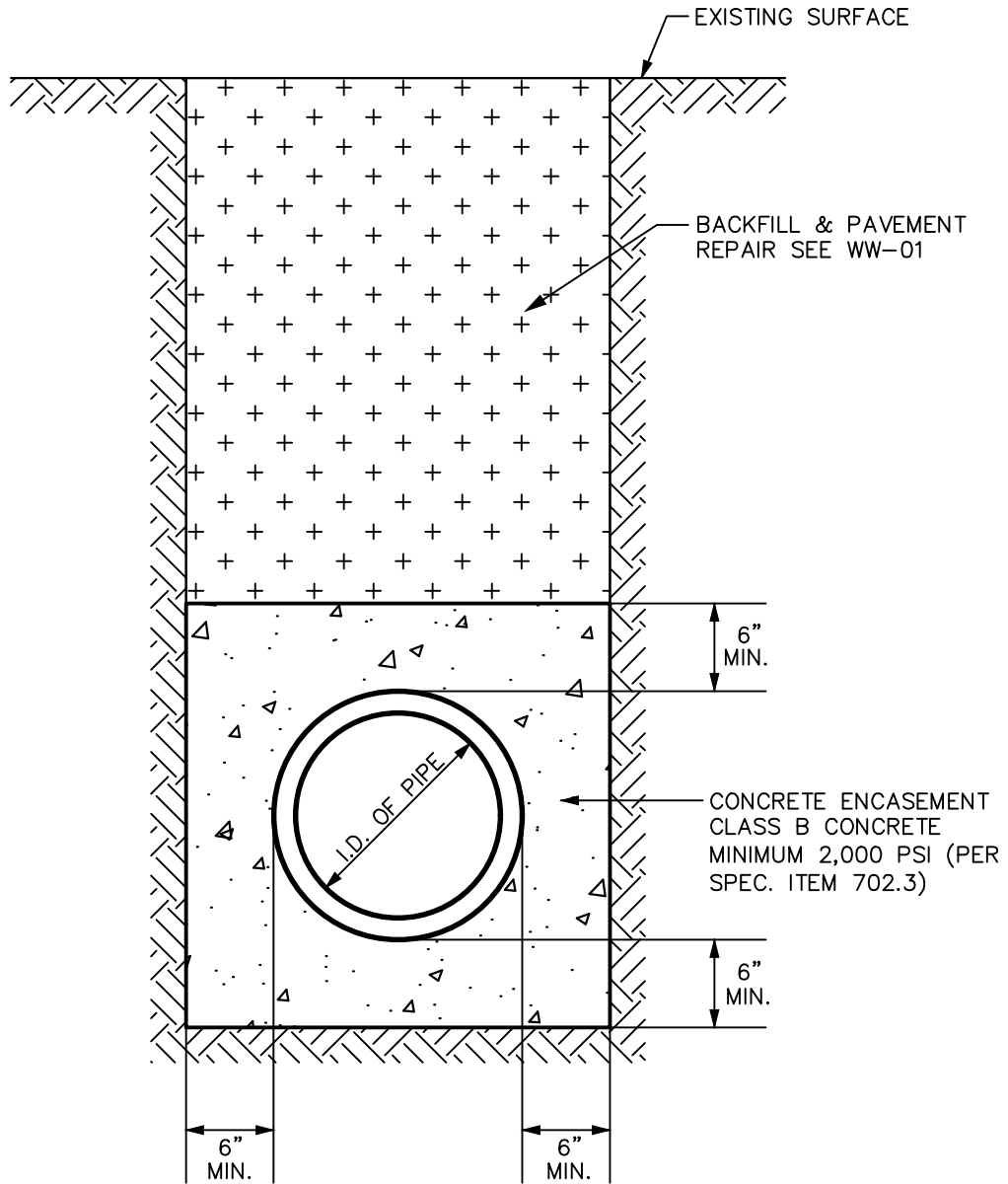
PLUG WITH CLASS "B"
CONCRETE MINIMUM
2,000 PSI (PER SPEC.
ITEM 702.3)

EXISTING SEWER PIPE
TO BE PLUGGED PRIOR
TO POURING 2,000 PSI
CONCRETE

EXISTING CONCRETE BASE
EXISTING GROUND

NOTES:

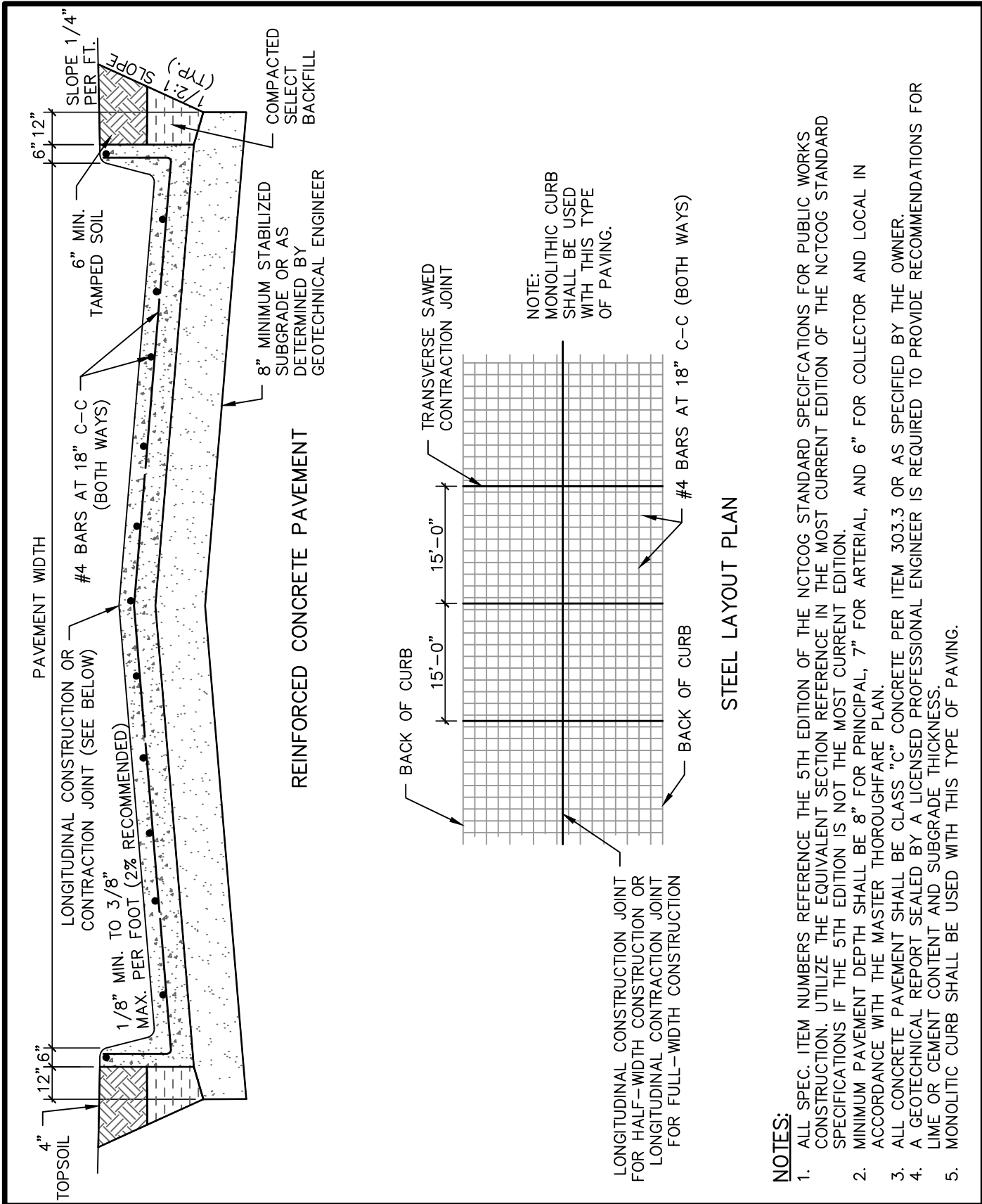
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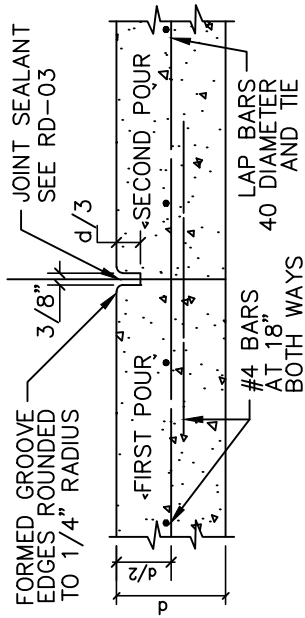
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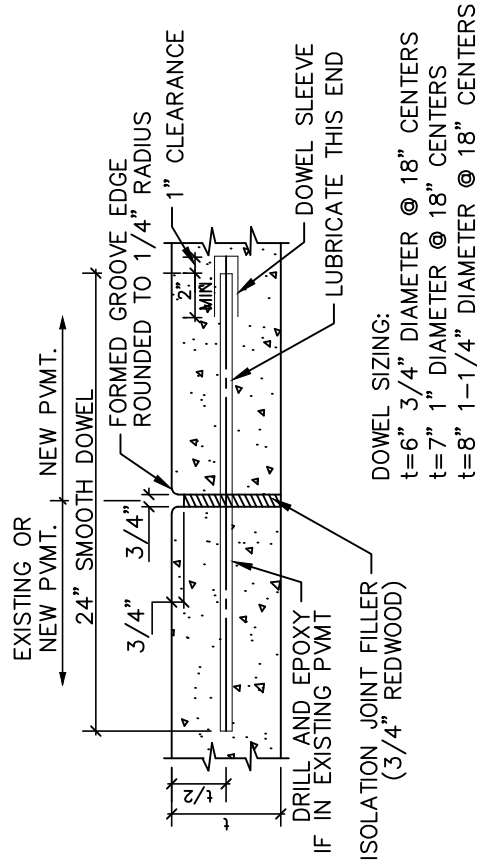


NOTES:

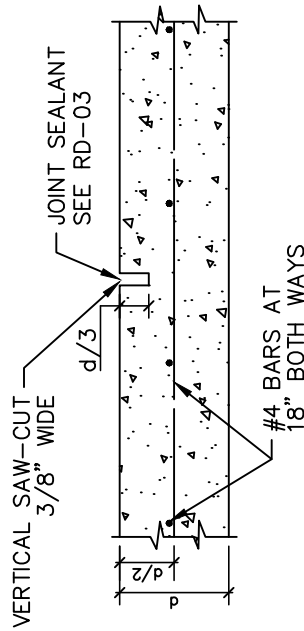
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2. MINIMUM PAVEMENT DEPTH SHALL BE 8" FOR PRINCIPAL, 7" FOR ARTERIAL, AND 6" FOR COLLECTOR AND LOCAL IN ACCORDANCE WITH THE MASTER THOROUGHFARE PLAN.
3. ALL CONCRETE PAVEMENT SHALL BE CLASS "C" CONCRETE PER ITEM 303.3 OR AS SPECIFIED BY THE OWNER.
4. A GEOTECHNICAL REPORT SEALED BY A LICENSED PROFESSIONAL ENGINEER IS REQUIRED TO PROVIDE RECOMMENDATIONS FOR LIME OR CEMENT CONTENT AND SUBGRADE THICKNESS.
5. MONOLITHIC CURB SHALL BE USED WITH THIS TYPE OF PAVING.



TRANSVERSE OR LONGITUDINAL
CONSTRUCTION JOINT



EXPANSION JOINT



TRANSVERSE OR LONGITUDINAL
SAWED CONSTRUCTION JOINT

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2. ALL ISOLATION JOINTS SHALL EXTEND THROUGH THE CURB SECTION.
3. THE SAW-CUT OF ALL TRANSVERSE CONSTRUCTION JOINTS SHALL EXTEND THROUGH THE CURB SECTION.
4. AT ALL TRANSVERSE CONSTRUCTION JOINTS THE CURB SECTION SHALL BE SAW-CUT.
5. APPROVED DOWEL SUPPORT BASKET SHALL BE PROVIDED TO ENSURE SPECIFIED DEPTH AND ORIENTATION FOR EXPANSION JOINTS.
6. EXPANSION JOINTS SHALL BE SPACED AT 600' MAX.

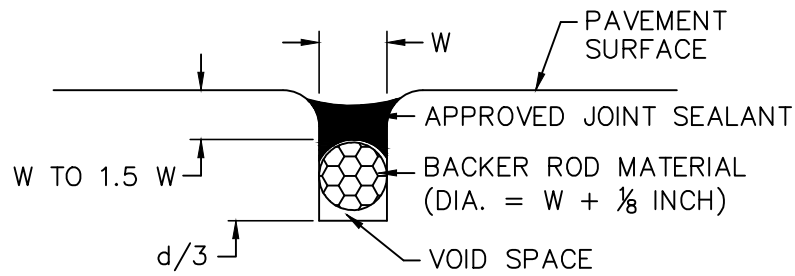
DOWEL SIZING:

t=6" 3/4" DIAMETER @ 18" CENTERS

t=7" 1" DIAMETER @ 18" CENTERS

t=8" 1-1/4" DIAMETER @ 18" CENTERS



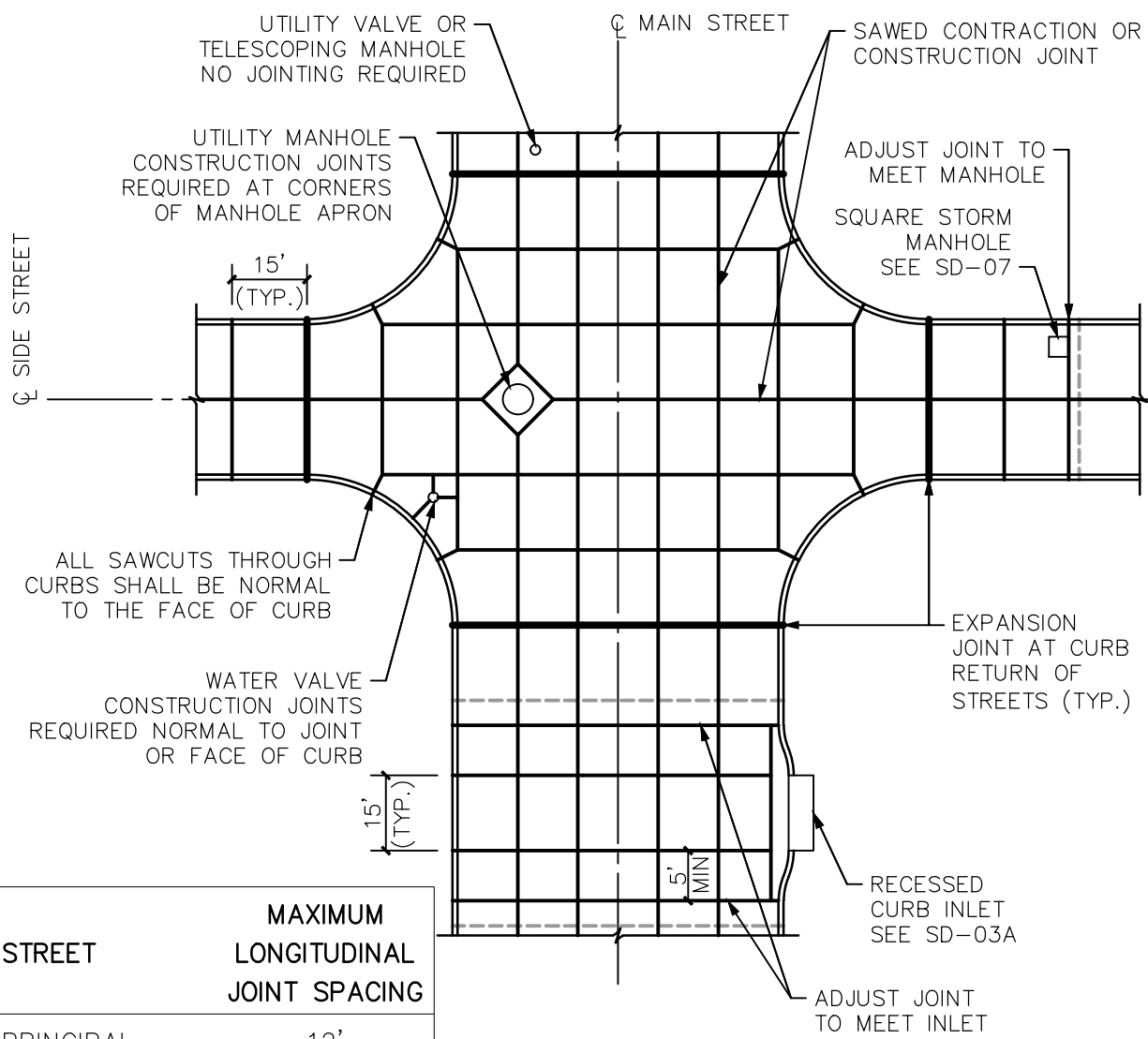


NOTES:

1. d = THICKNESS OF PAVEMENT
2. METHODS AND MATERIALS FOR JOINT CLEANING AND SEALING TO FOLLOW TXDOT ITEM SPECIFICATION 713.
3. TXDOT CLASS 8 JOINT SEALANT TO BE USED PER TXDOT DMS-6310.

SILICONE JOINT SEALANT (COLD POUR)

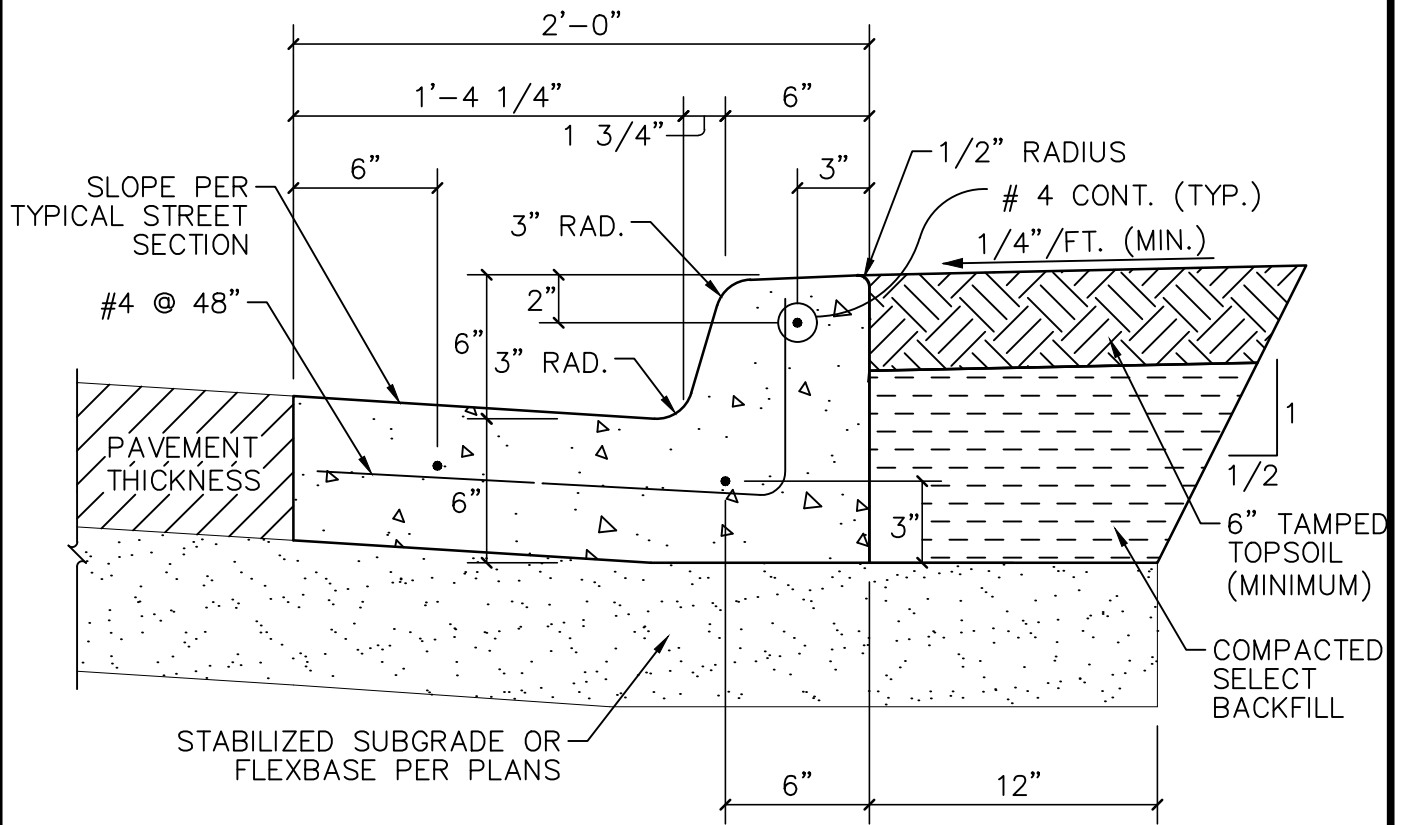




STREET	MAXIMUM LONGITUDINAL JOINT SPACING
PRINCIPAL	12'
ARTERIAL	13'
COLLECTOR/LOCAL	15'

NOTES:

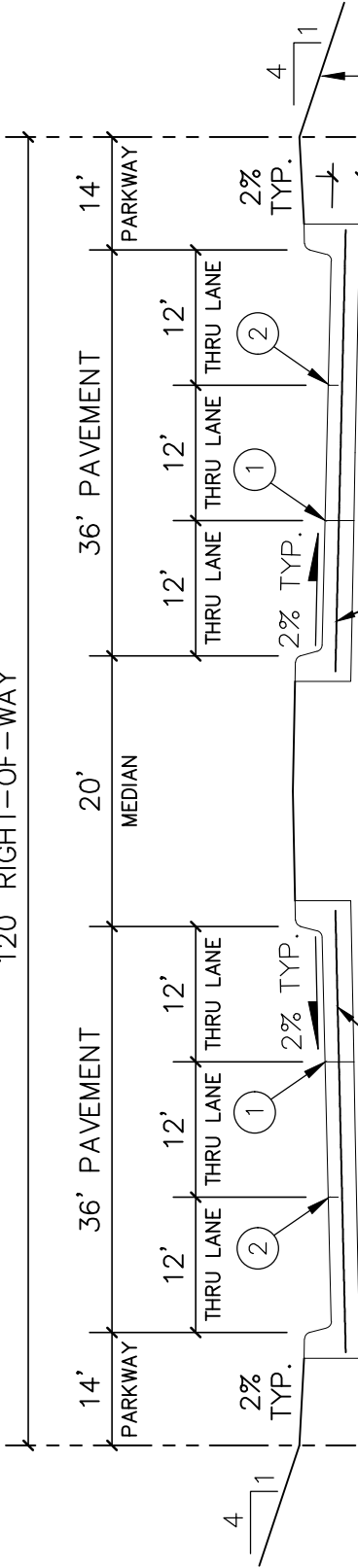
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2. REFER TO RD-01 AND NCTCOG ITEM 303.3 FOR CONCRETE PAVEMENT.
3. MAXIMUM TRANSVERSE JOINT SPACING IS 15'.
4. LONGITUDINAL JOINT SPACING SHALL MATCH LANE LINES UNLESS NOTED OTHERWISE.
5. ALL PAVEMENT JOINTS SHALL BE SEALED IN ACCORDANCE WITH RD-03.
6. MINIMUM 5' JOINT SPACING.



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2. ROCKS GREATER THAN 4" IN DIAMETER SHALL BE REMOVED FROM ANY NATIVE MATERIAL USED AS BACKFILL.

120' RIGHT-OF-WAY



SECTION

MINIMUM #4 BARS @ 18" C-C BOTH WAYS.

MINIMUM #4 BARS @ 8" C-C BOTH WAYS.

FILL SECTION ONLY. ALTERNATE REVERSE SLOPE ACCEPTABLE NOT TO EXCEED 4:1

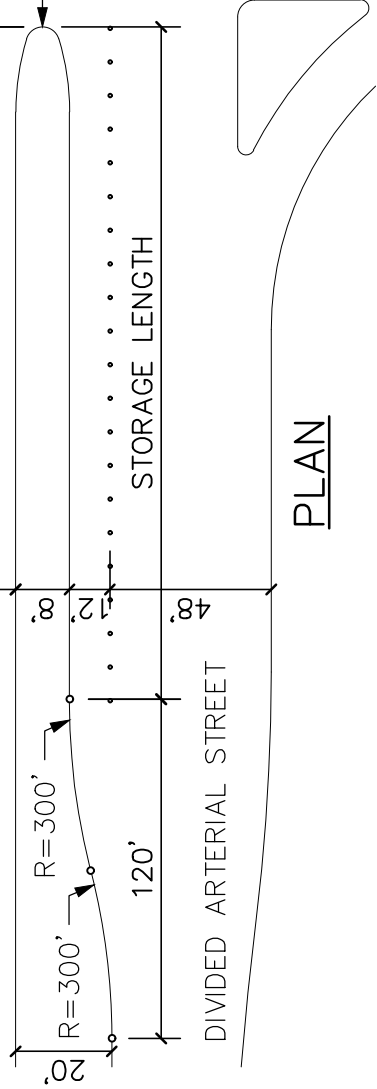
- ① LONGITUDINAL CONSTRUCTION JOINT
- ② LONGITUDINAL SAWED CONTRACTION JOINT

CROSS STREET	MINIMUM STORAGE LENGTH
PRINCIPAL	200'
ARTERIAL	150'
COLLECTOR	150'
LOCAL	100'

CROSS STREET

10' MIN.

MONOLITHIC MEDIAN NOSE
SEE RD-08 AND RD-09

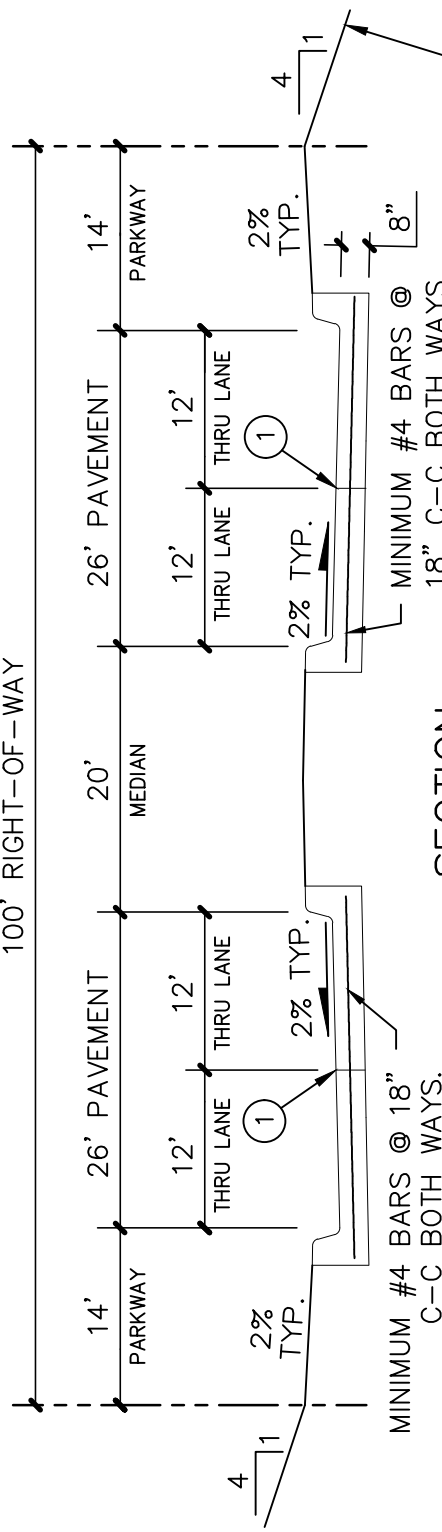


PLAN

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2. REFER TO RD-01 AND NCTCOG ITEM 303.3 FOR CONCRETE PAVEMENT.
3. MIN. CURB HEIGHT AND WIDTH SHALL BE 6" OR AS SPECIFIED BY OWNER.

100' RIGHT-OF-WAY

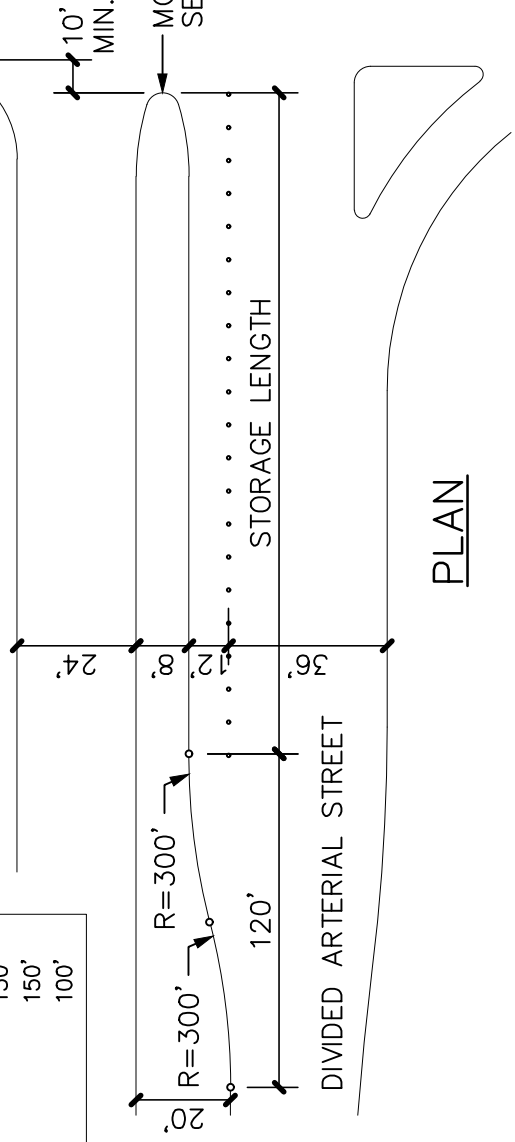


FILL SECTION ONLY. ALTERNATE REVERSE SLOPE ACCEPTABLE NOT TO EXCEED 4:1

SECTION

CROSS STREET	MINIMUM STORAGE LENGTH
PRINCIPAL ARTERIAL	200'
ARTERIAL	150'
COLLECTOR	150'
LOCAL	100'

CROSS STREET

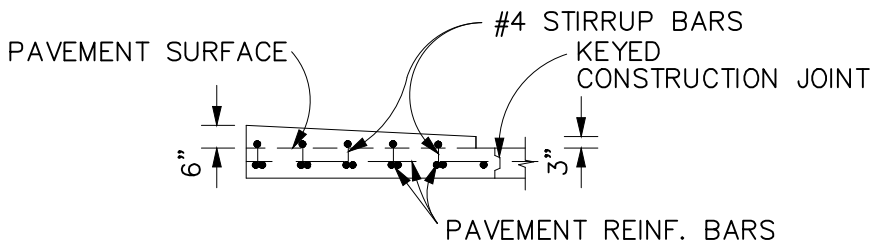
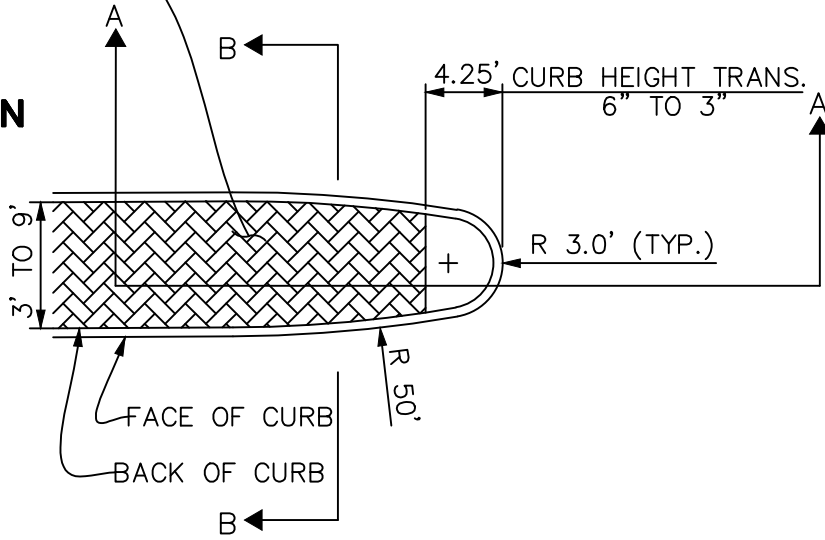


NOTES:

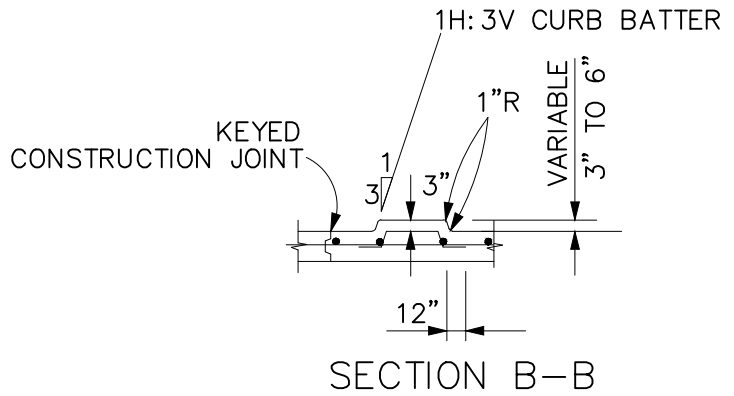
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2. REFER TO RD-01 AND NCTCOG ITEM 303.3 FOR CONCRETE PAVEMENT.
3. MIN. CURB HEIGHT AND WIDTH SHALL BE 6" OR AS SPECIFIED BY OWNER.

4" STAMPED CONC.
SEE RD-10

PLAN



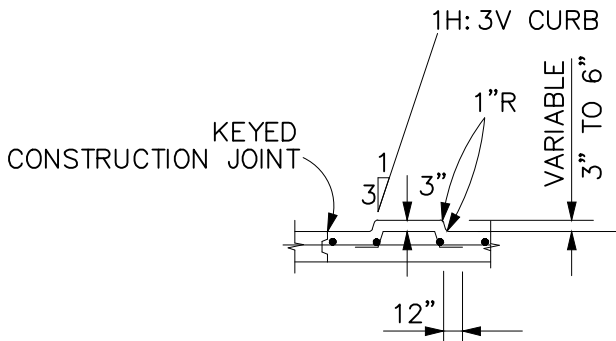
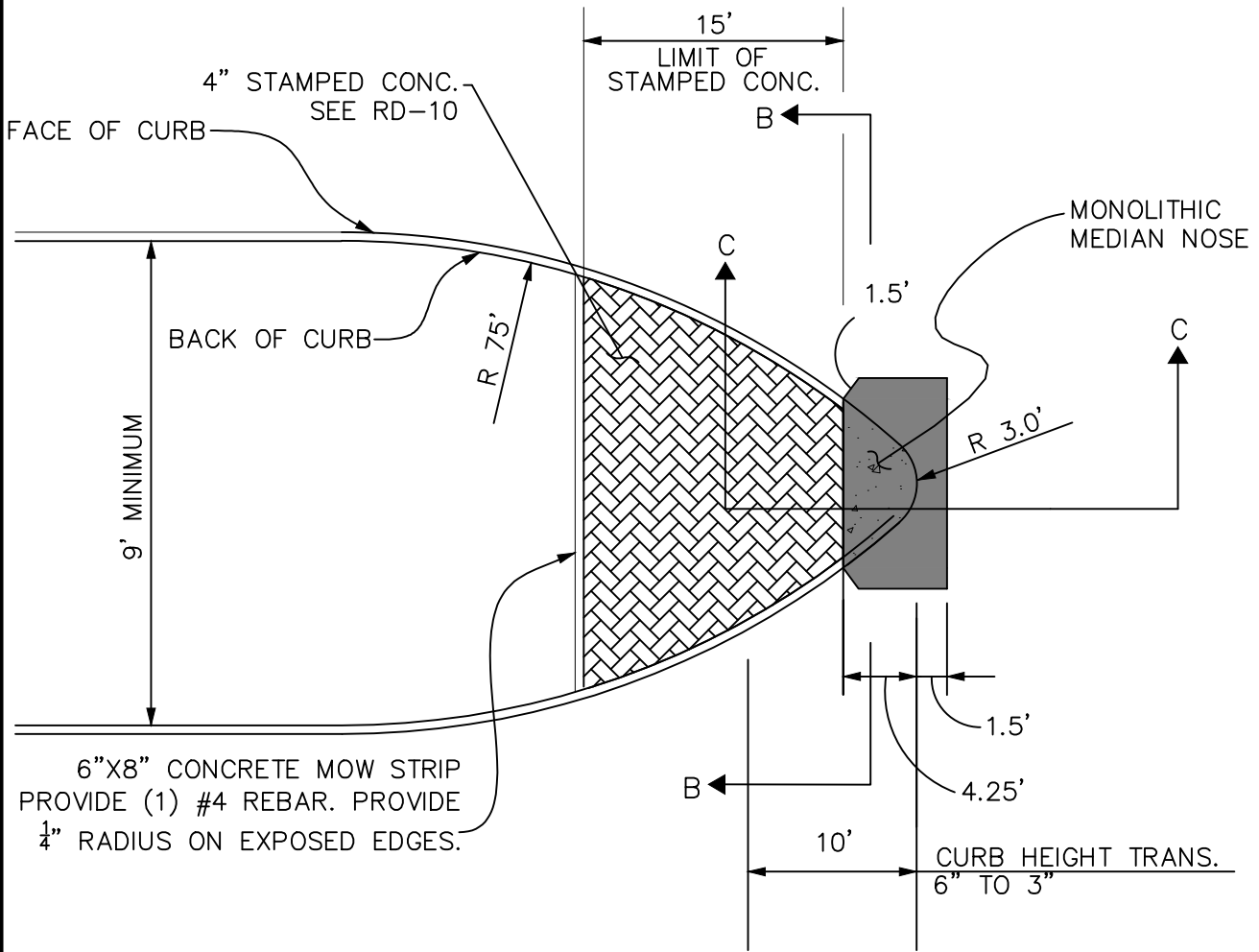
SECTION A-A



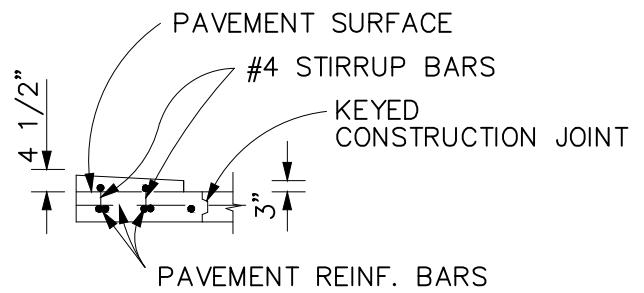
SECTION B-B



PLAN

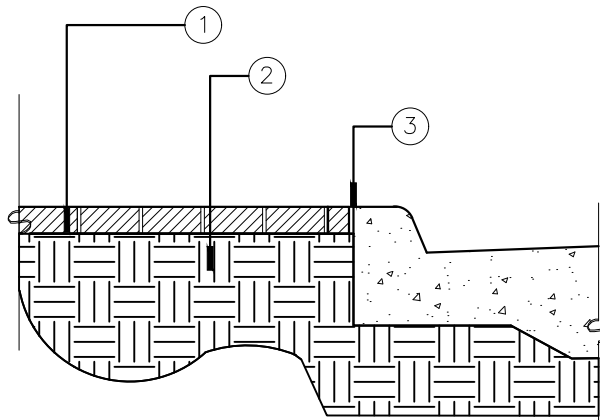


SECTION B-B



SECTION C-C





- ① 4" CLASS "A" CONCRETE PAVEMENT REINFORCED WITH #4 BARS @ 18" SPACING
- ② IN SITU MATERIAL COMPACTED TO 95% PROCTOR DENSITY
- ③ EXPANSION JOINT (SEE RD-02) WITH JOINT SEALER (SEE RD-03)

COLORED TEXTURED CONCRETE

PLACE COLORED TEXTURED CONCRETE USING STAMPS.

PATTERN ONLY THE CONCRETE ISLANDS, REFERENCE THIS SHEET AND CITY OF DECATUR STANDARD MONOLITHIC MEDIAN NOSE DETAIL. DIMENSIONS SHOWN ARE NOMINAL. BASE ACTUAL DIMENSIONS ON TEXTURE MODULES.

TEXTURED SURFACES SHALL HAVE AN ANTIQUE FINISH ATTAINED BY APPLICATION OF CONCRETE COLORS OF TEXAS LLC INTEGRAL COLOR AND ANTIQUING RELEASE*.

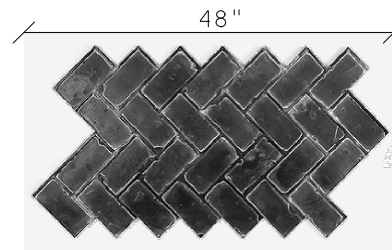
BASE COLOR SHALL BE ATTAINED WITH CONCRETE COLORS OF TEXAS LLC INTEGRAL COLOR, SEE DETAIL FOR COLOR. ANTIQUE BY APPLYING ANTIQUING RELEASE, SEE DETAIL FOR COLOR.

SEAL ALL COLORED TEXTURED CONCRETE WITH A CLEAR SEALER APPROVED BY THE COLOR HARDENER MANUFACTURER.

- FOR CONTRACTORS INFORMATION ONLY.
- * OR APPROVED EQUAL.

INTEGRAL COLORED AND TEXTURED CONCRETE MOUNTABLE CURB STAMP TOOL

- Scofield LITHOTEX Pavecrafters Skins
- Used Brick Herringbone Pattern - 2570*
- For contractors information only.
- * Or approved equal.



INTEGRAL COLORED AND TEXTURED COLOR PALETTE

SPLITTER ISLANDS AT ROUNDABOUT

- CONCRETE COLORS OF TEXAS LLC INTEGRAL COLOR*: 201 - 1 DOESKIN
- CONCRETE COLORS OF TEXAS LLC ANTIQUING RELEASE*: 108 - B PORTEBELLO
- SCOFIELD CURESEAL-W SEMIGLOSS*

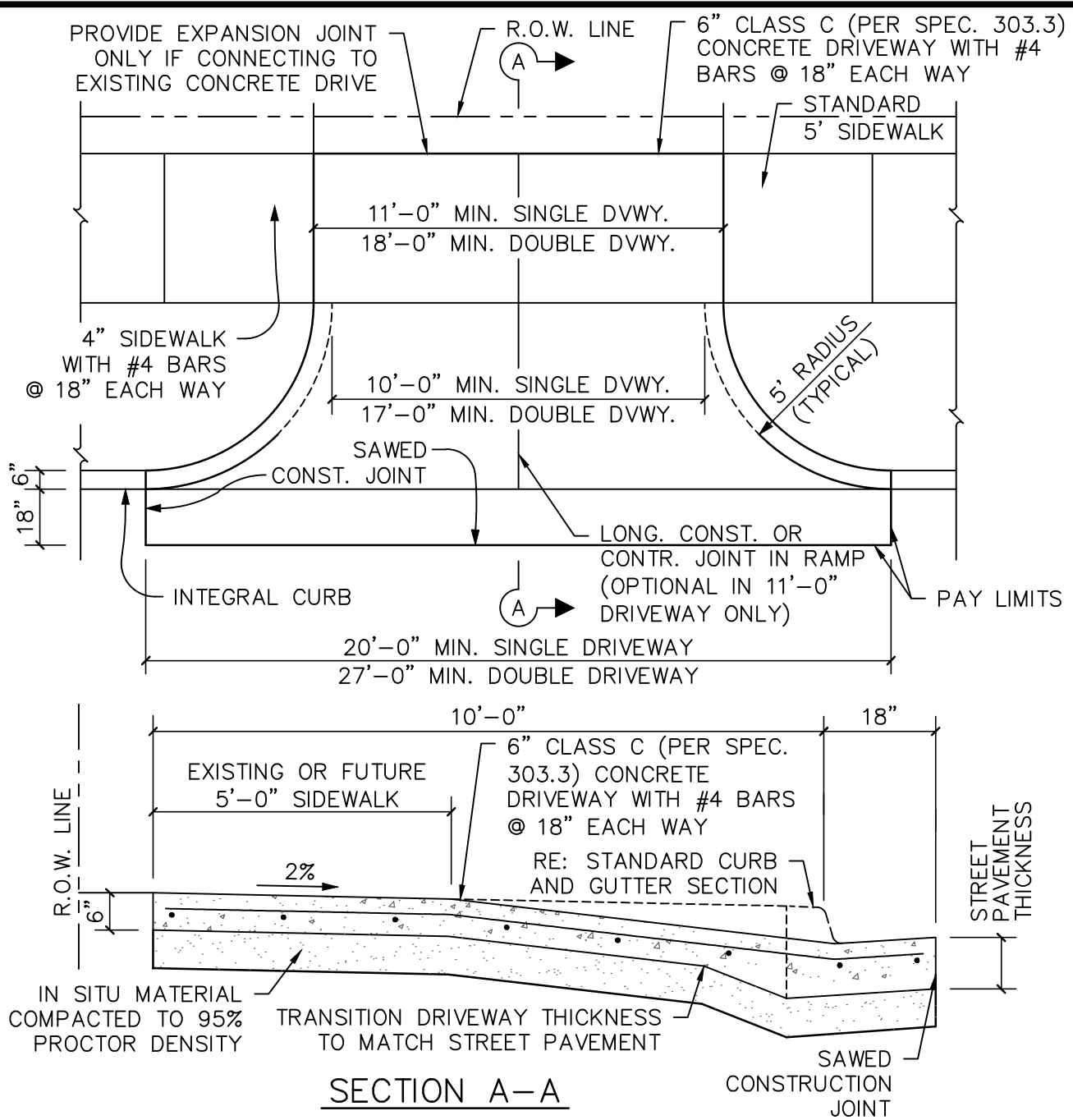
TUCK APRON

- HELIX COLOR SYSTEMS*: DECATUR RED
- RELEASE: N/A
- SCOFIELD CURESEAL-W SEMIGLOSS*

OTHER SPLITTER ISLANDS

- HELIX COLOR SYSTEMS*: DECATUR RED
- RELEASE*: BASALT GRAY RL
- SCOFIELD CURESEAL-W SEMIGLOSS*

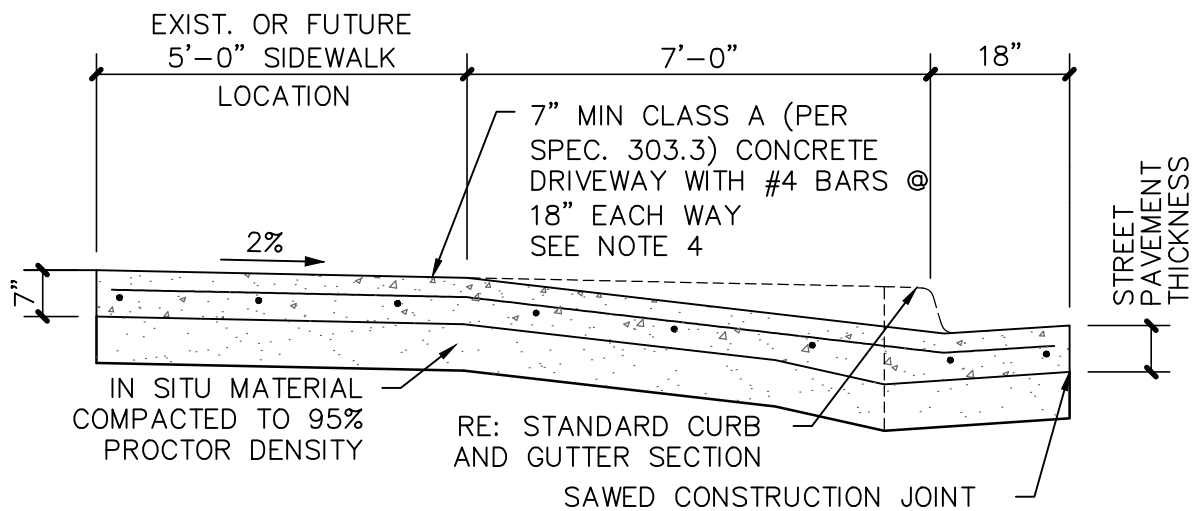
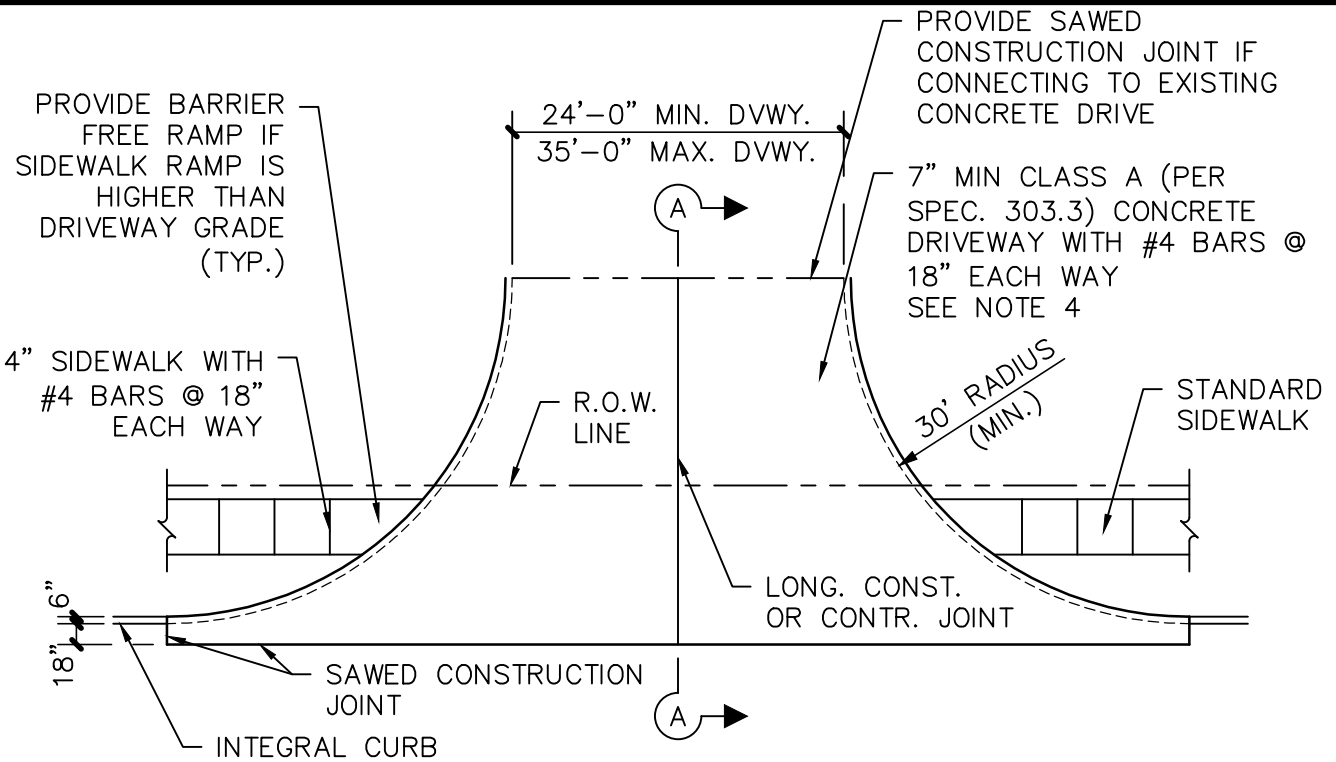
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2. SIDEWALK SECTION THROUGH DRIVEWAY SHALL BE POURED SAME THICKNESS AS DRIVEWAY APPROACH (EXISTING SIDEWALK, IF ANY, SHALL BE REMOVED AND REPLACED).
3. EXISTING CURB AND GUTTER SHALL BE VERTICALLY SAWCUT. HORIZONTAL SAWCUTTING OF CURB NOT ALLOWED.



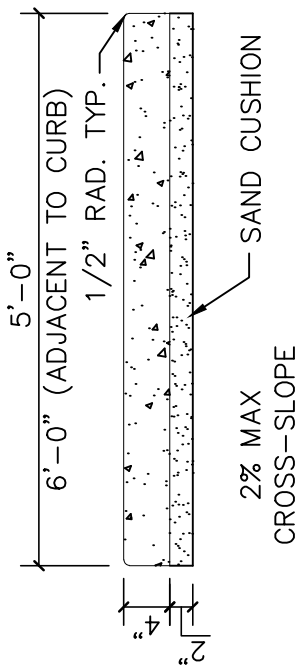


SECTION A-A

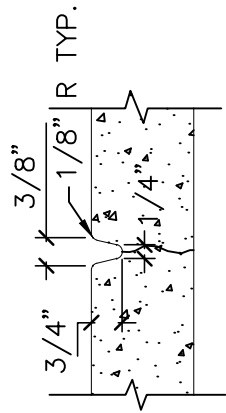
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2. EXISTING CURB AND GUTTER SHALL BE VERTICALLY SAWCUT. HORIZONTAL SAWCUTTING OF CURB NOT ALLOWED
3. SIDEWALK SECTION THROUGH DRIVEWAY SHALL BE POURED SAME THICKNESS AS DRIVEWAY APPROACH (EXISTING SIDEWALK, IF ANY, SHALL BE REMOVED AND REPLACED).
4. MATCH EXISTING DRIVEWAY THICKNESS OR AS DICTATED BY GEOTECHNICAL REPORT.

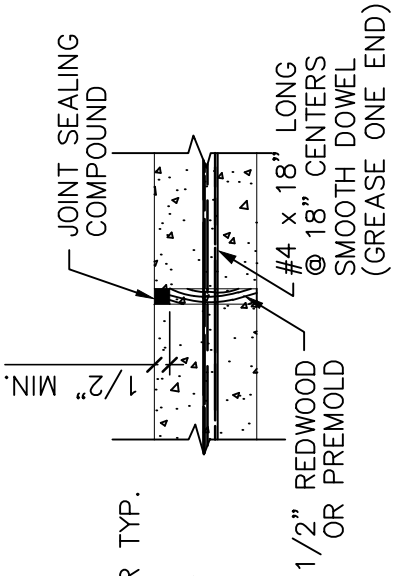




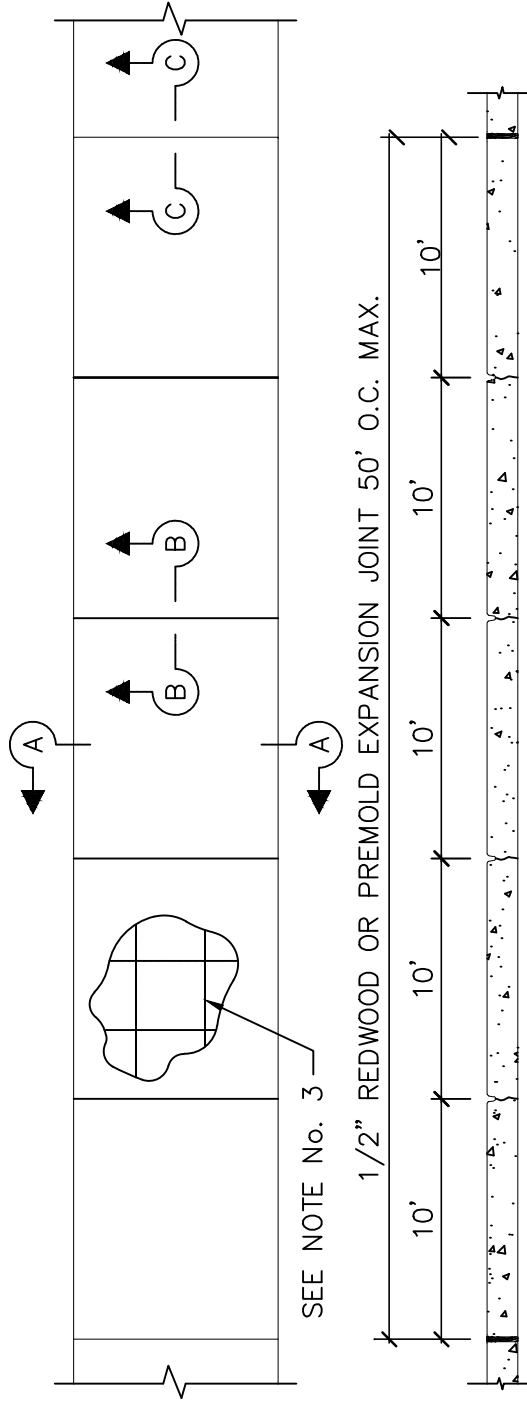
SECTION A-A



SECTION B-B

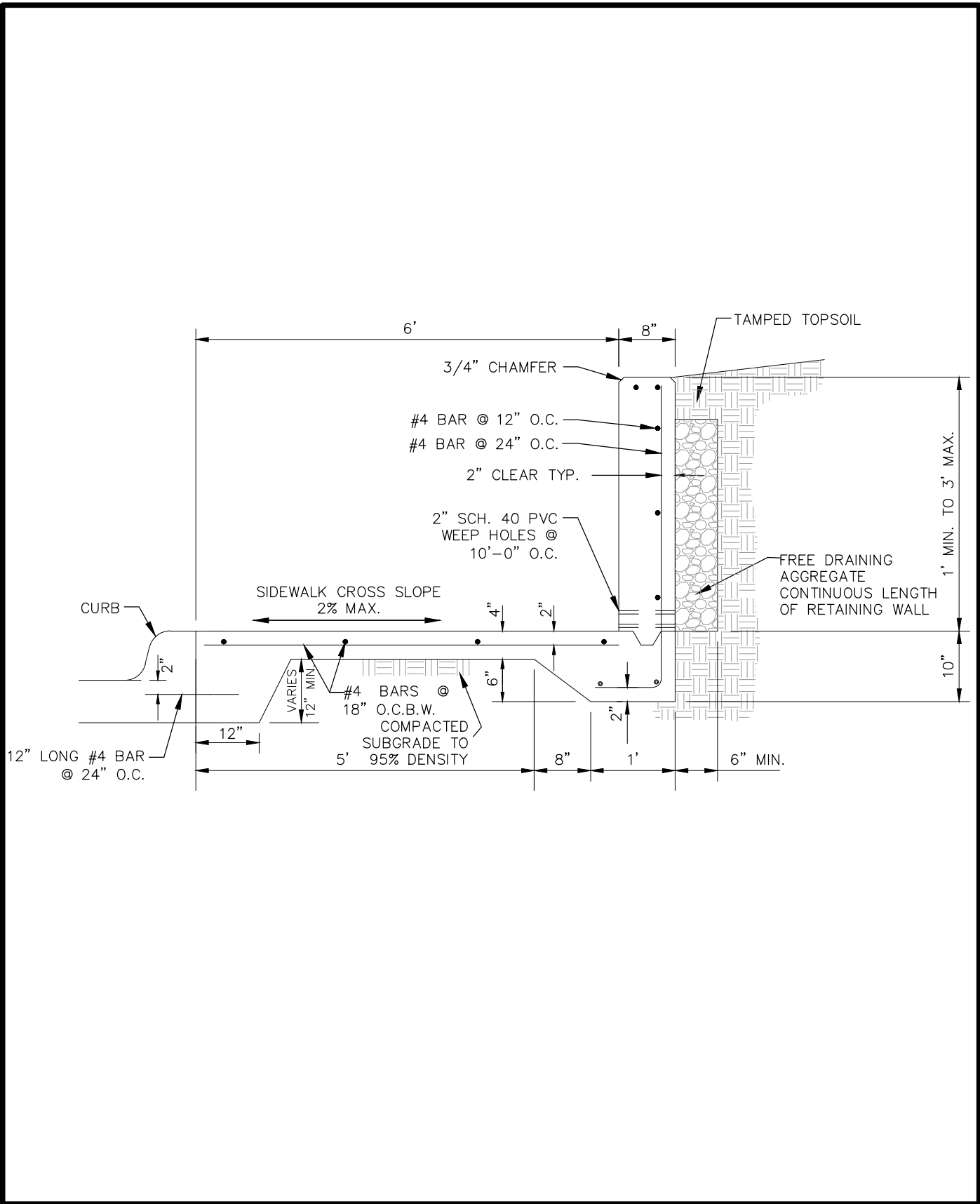


SECTION C-C

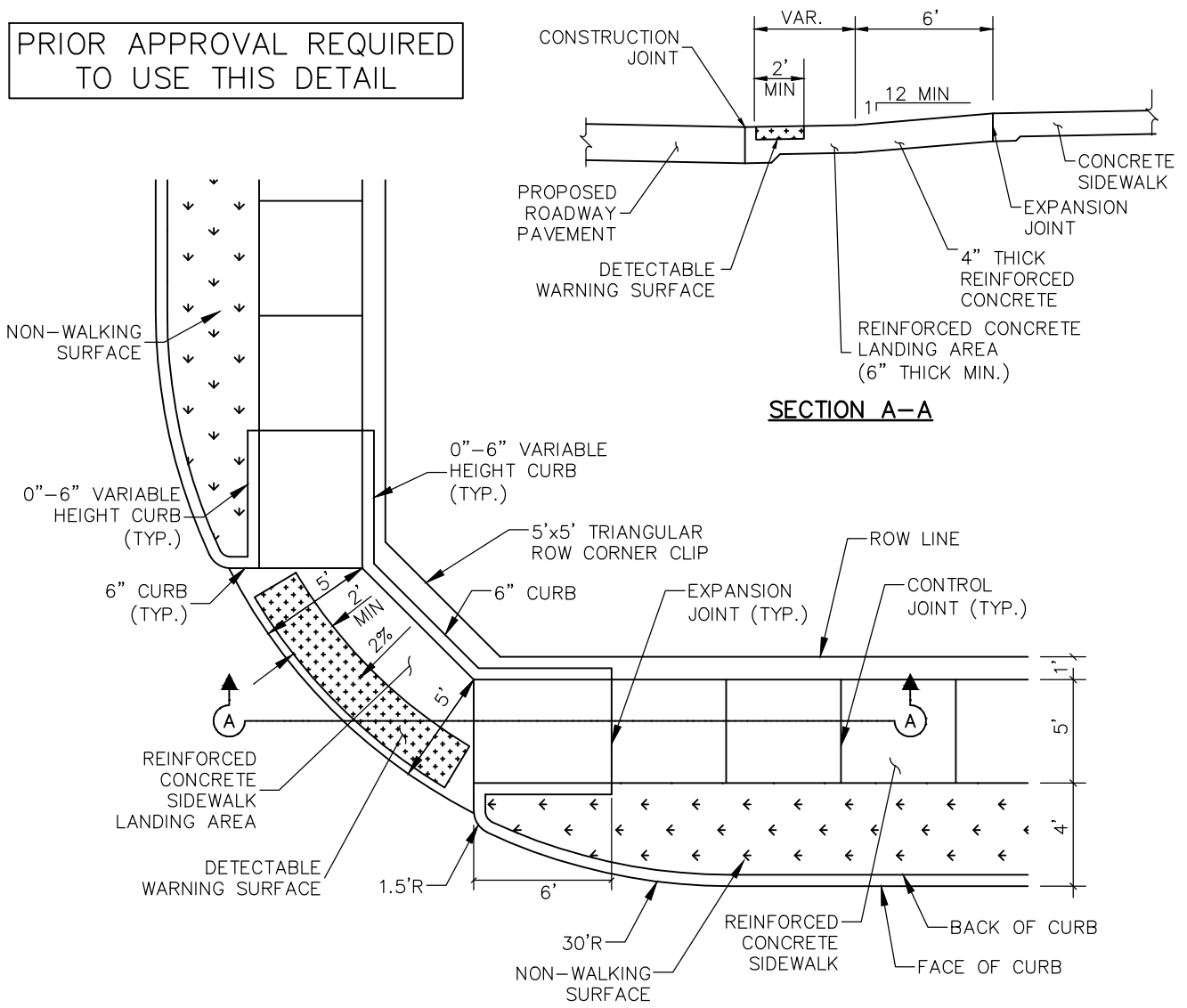


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2. CONCRETE SHALL BE CLASS "A", 3000 PSI PER SPEC. ITEM 303.3.
3. REINFORCEMENT SHALL BE #4 BARS @ 18" EACH WAY.
4. PROVIDE EXPANSION JOINTS ALSO WHEN CONNECTING TO EXISTING SIDEWALKS, DRIVEWAYS, CURBS, AND GUTTER.

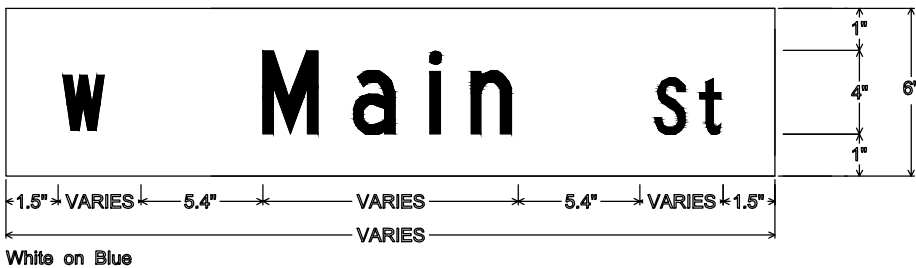
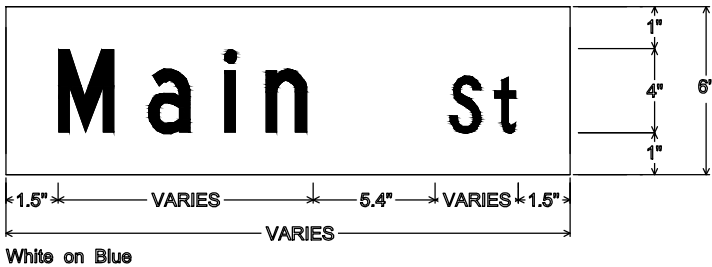
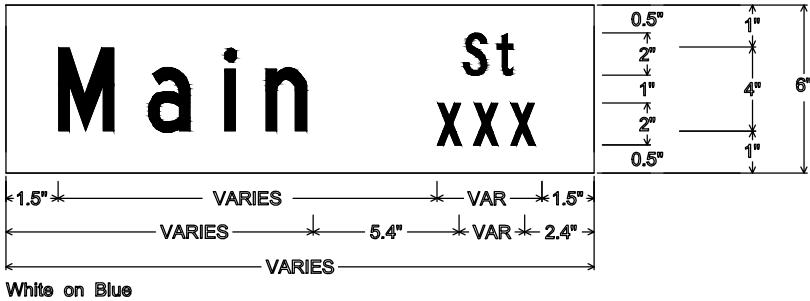
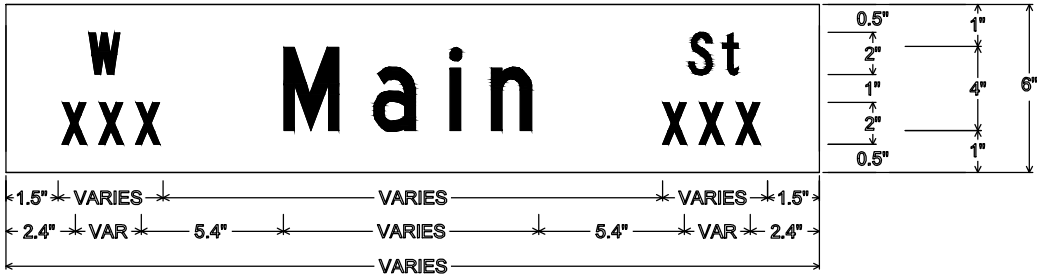


PRIOR APPROVAL REQUIRED
TO USE THIS DETAIL



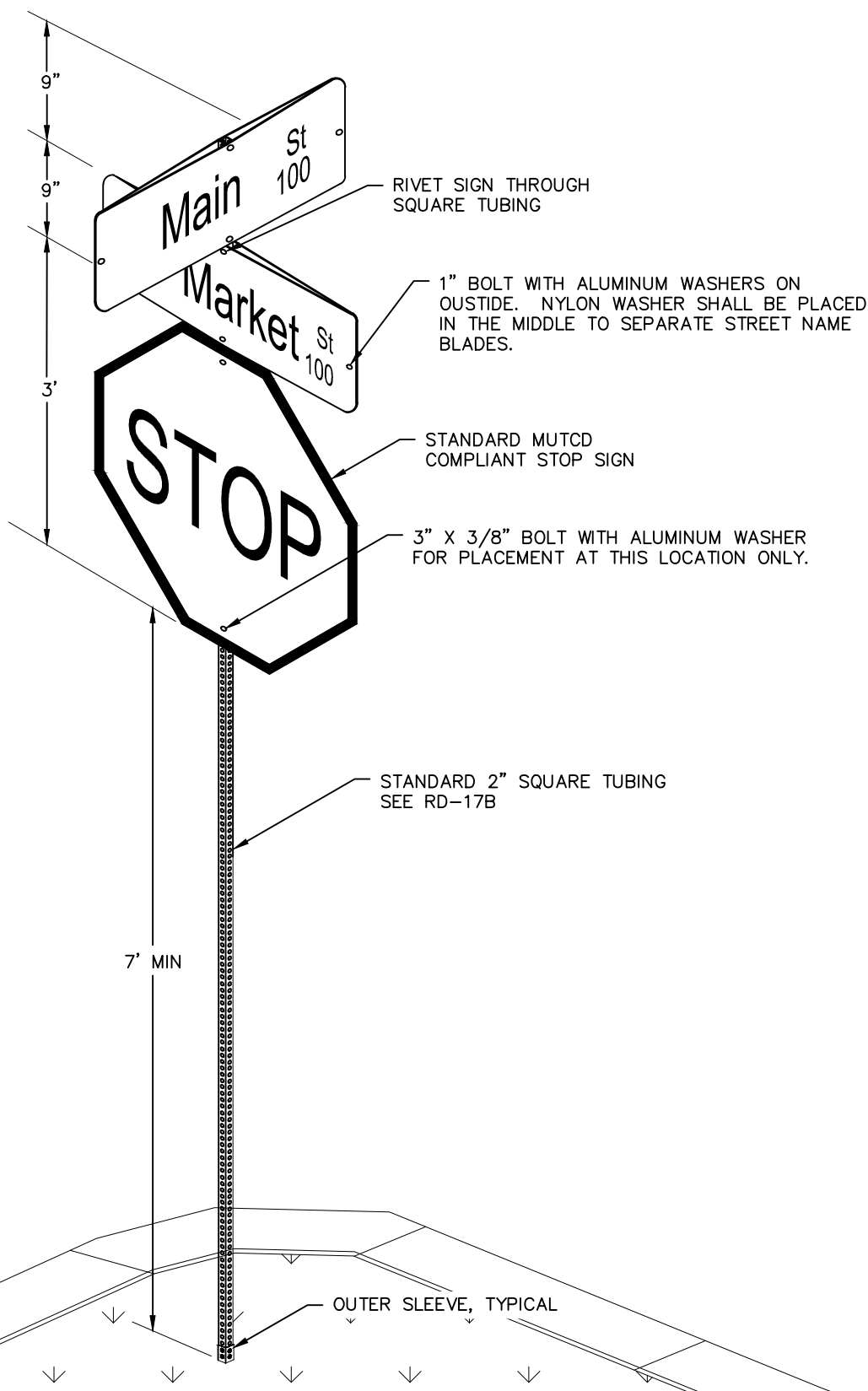
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2. CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 705 OF THE TAS.



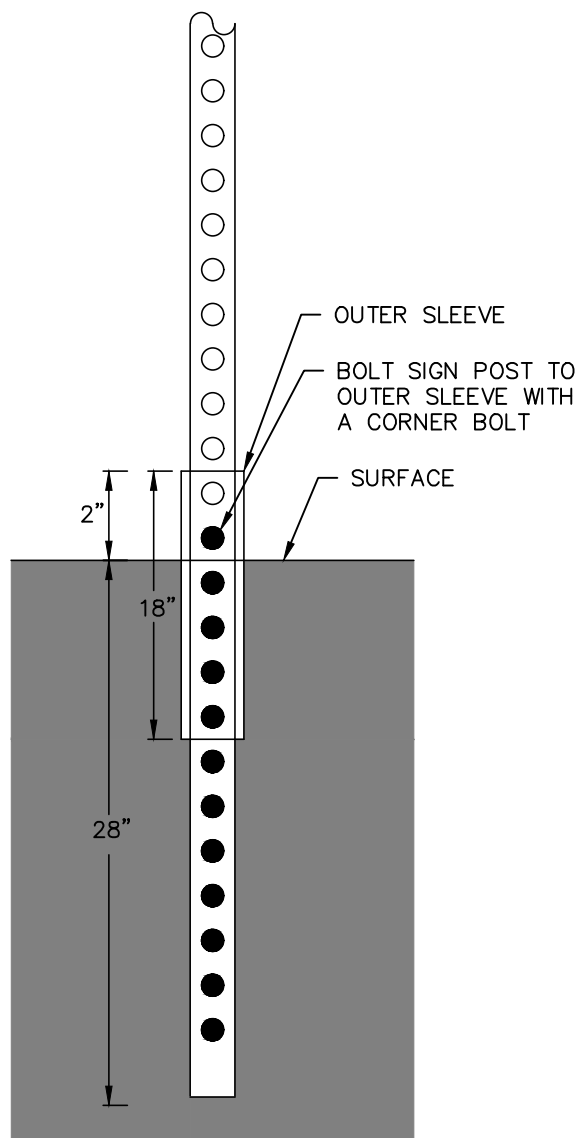
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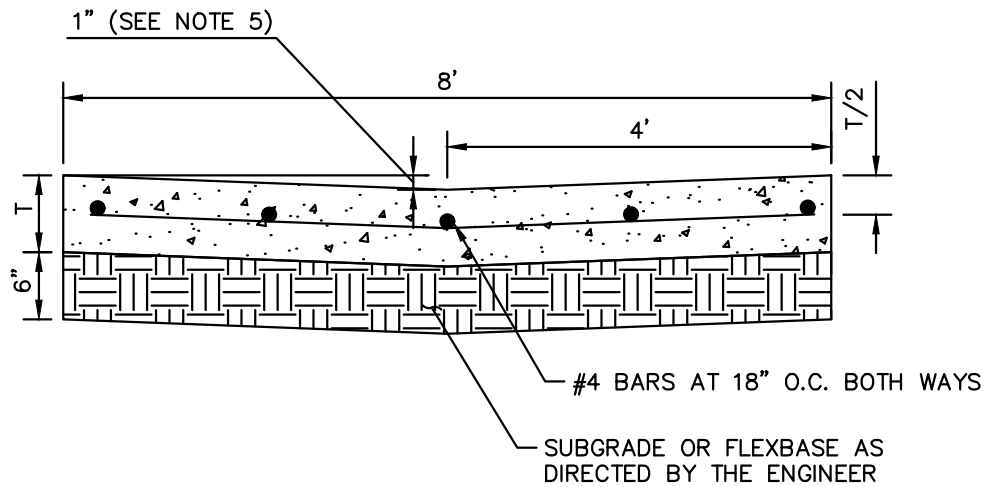
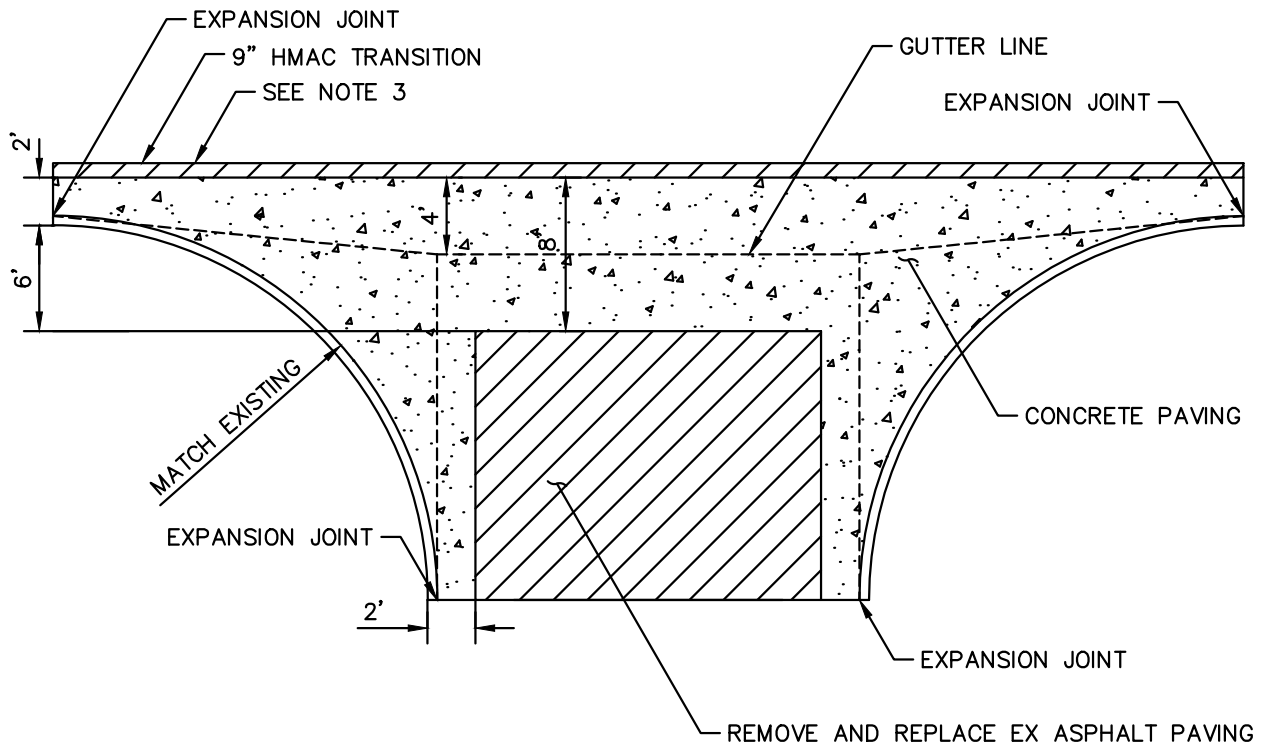
1. SIGN BLANK FOR 2 INCH POST INSTALL: 0.08 FEDERAL SPEC. ALUM. (LP/SP INSTALL 0.125 UNDRILLED)
2. FONT: HIGHWAY GOTHIC 'C' OR 'B' (DEPENDING ON LENGTH OF NAME)
3. STREET NAME SIGN SHEETING SHALL BE WHITE 3M DIAMOND GRADE CUBED (DG3) WITH GREEN ELECTRO-CUT (EC) TRANSPARENT FILM AS AN OVERLAY OR AN APPROVED EQUAL.
4. REFER TO DETAIL D3-1G OF THE TEXAS STANDARD HIGHWAY SIGN DESIGN MANUAL FOR ADDITIONAL SPACING REQUIREMENTS.



NOTES:

1. ALL POSTS AND ANCHORS SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR HOT ROLLED CARBON SHEET STEEL, STRUCTURAL QUALITY ASTM DESIGNATION A570-79.
2. ALL POSTS AND ANCHORS SHALL CARRY MINIMUM CERTIFIABLE 60,000 PSI YIELD STRENGTH.
3. ALL POSTS AND ANCHORS SHALL BE MANUFACTURED FROM RAW STEEL, FORMED AND WELDED ON THE CORNER PRIOR TO RECEIVING A TRIPLE COAT PROTECTION OF INLINE HOT-DIPPED, GALVANIZED ZINC PER AASHTO M-120 (0.8 OZ. PER SQUARE FOOT) FOLLOWED BY A CHROMATE CONVERSION COATING AND A CROSS-LINKED POLYURETHANE ACRYLIC EXTERIOR COATING. THE INTERIOR SHALL RECEIVE A DOUBLE COAT OF ZINC BASED ORGANIC COATING, TESTED IN ACCORDANCE WITH ASTM B-117.
4. ALL TOP POSTS MUST BE CAPABLE OF FRACTURING AT THE POINT OF CONNECTION WITH A SINGLE ANCHOR, WHEN IMPACTED, IN SUCH A MANNER THAT THE PIECE INSIDE OF THE ANCHOR CAN BE REMOVED SO AS TO ALLOW TO RECEIVE A NEW TOP POST.
5. THE SHAPE OF ALL POSTS AND ANCHORS SHALL BE SQUARE AND STRAIGHT WITH SMOOTH TUBING WELDED IN ONE CORNER WITH A TOLERANCE THAT PERMITS TELESCOPING OF THE NEXT LARGER OR SMALL SIZE, IN $\frac{1}{4}$ " INCREMENTS.
6. ALL ANCHORS SHALL BE 12 GAUGE WITH HOLES THAT ARE FULLY PERFORATED $\frac{7}{16}$ " DIAMETER ON 1" CENTERS FOR AT LEAST THE TOP 4" OF THE ANCHOR WHILE BEING TRULY ALIGNED IN THE CENTER OF THE SECTION.
7. ALL TOP POSTS SHALL BE 14 GAUGE WITH HOLES THAT ARE PRE PUNCHED ON 1" CENTERS FOR THE ENTIRE LENGTH OF THE POST AND TRULY ALIGNED IN THE CENTER OF SECTION.
8. STANDARD OUTSIDE CORNER RADII SHALL BE $\frac{5}{32}$ " PLUS OR MINUS $\frac{1}{32}$ ".
9. SIGNS TO BE ATTACHED TO POST AT THE DESIRED HEIGHT WITH BOLTS.

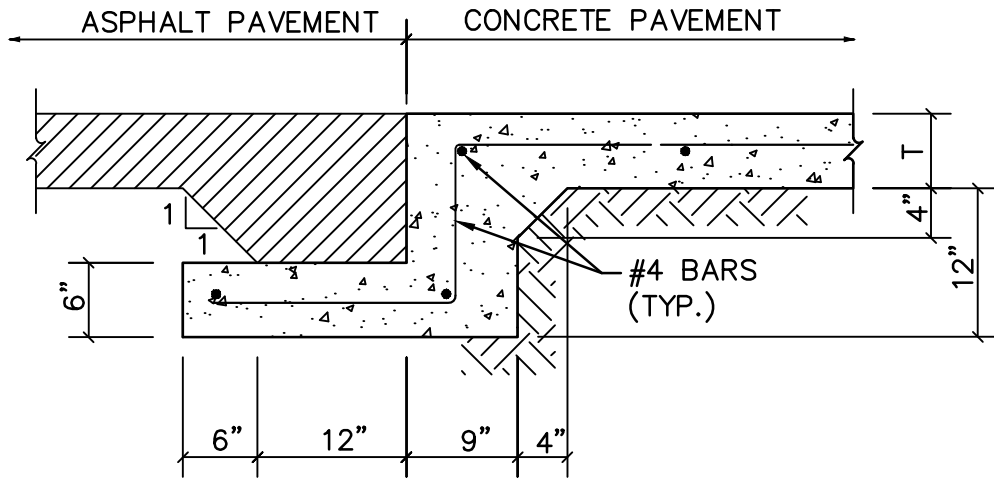




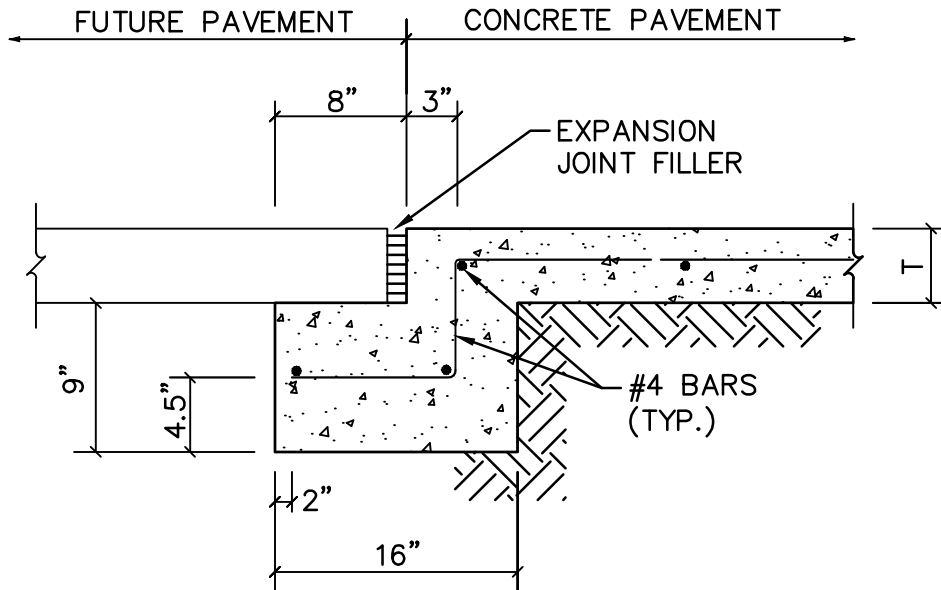
NOTES:

1. MINIMUM PAVEMENT DEPTH SHALL BE 8".
2. REFER TO RD-01 AND NCTCOG ITEM 303.3 FOR CONCRETE PAVEMENT.
3. 9" AND 24" HMAC TRANSITION SUBSIDIARY TO CONCRETE VALLEY GUTTER.
4. GUTTER TO BE SHAPED TO CONFORM WITH CONCRETE VALLEY (OR PAVEMENT).
5. IF VALLEY GUTTER IS ADJACENT TO BARRIER FREE RAMPS, CROSS SLOPE SHALL BE ADA COMPLIANT.



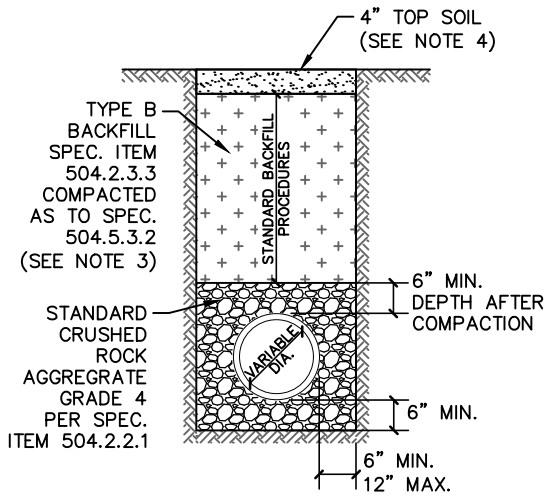


ASPHALT TO CONCRETE HEADER

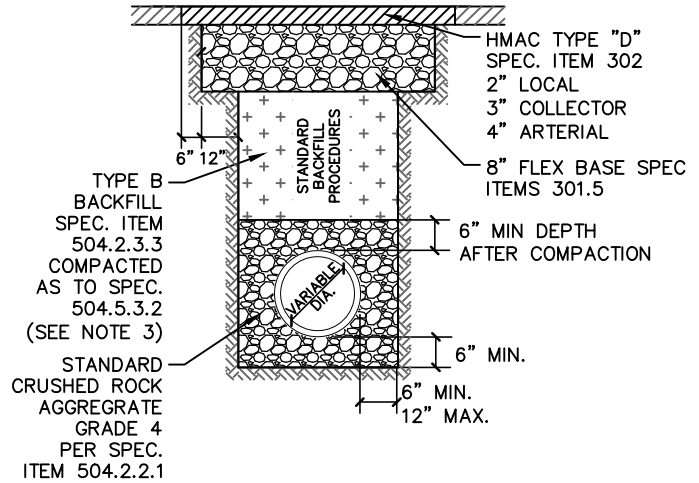


STREET HEADER FOR FUTURE PAVEMENT

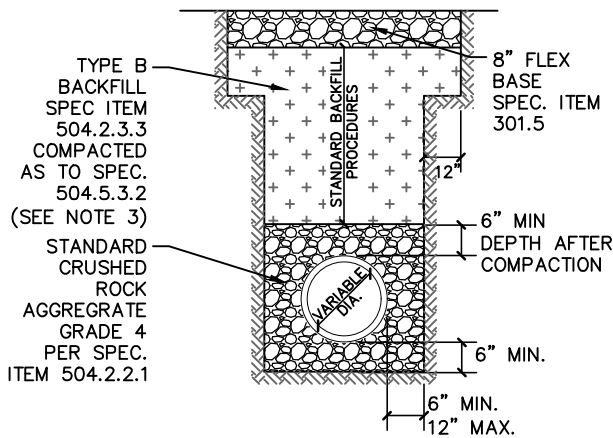




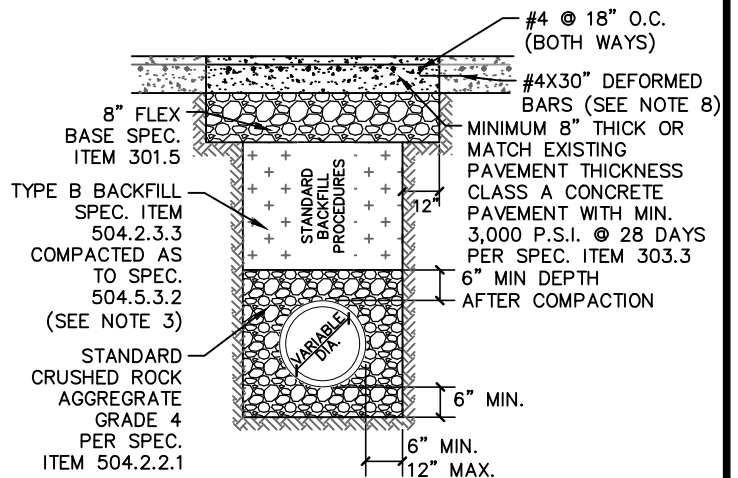
UNPAVED AREA



ASPHALT PAVEMENT



GRAVEL SURFACE

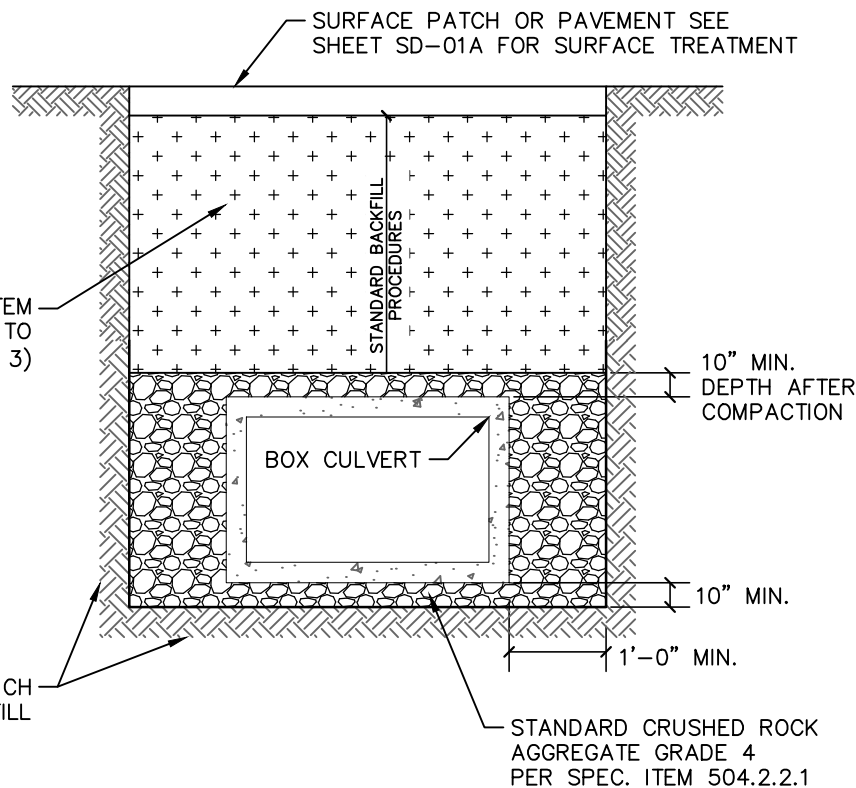


CONCRETE PAVEMENT

NOTES:

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2. AT THE END OF EACH WORK DAY ALL SPOILS SHALL BE REMOVED FROM THE CITY R.O.W. UNLESS PRIOR WRITTEN PERMISSION IS OBTAINED FROM THE CITY TO STORE SPOILS IN DESIGNATED SPOIL STORAGE AREAS THAT DO NOT OBSTRUCT AUTOMOBILE OR PEDESTRIAN TRAFFIC.
3. ROCKS GREATER THAN 4" IN DIAMETER SHALL BE REMOVED FROM ANY NATIVE MATERIAL USED AS BACKFILL.
4. TOPSOIL SHALL BE 4" IN DEPTH AND SHALL BE LOOSE AND FREE OF ROCKS OR CLODS GREATER THAN 1/4" IN DIAMETER. ALL TOPSOIL SHALL BE APPROVED BY THE CITY PRIOR TO INSTALLATION.
5. ALL PAVEMENT SHALL BE REMOVED ALONG NEAT SAW CUT LINES PER SPEC. ITEM 402.3.
6. STORM LINE WARNING TAPE OF MIN 4" WIDTH SHALL BE INSTALLED ABOVE THE EMBEDMENT MATERIAL.
7. A MAXIMUM OF 50 FT OF OPEN TRENCH WILL BE ALLOWED AT ANY TIME, UNLESS APPROVED BY THE CITY.
8. DEFORMED BARS DOWELED AND EPOXYED MIN. 15" INTO EXISTING PAVEMENT @ 18" O.C. (TYP).



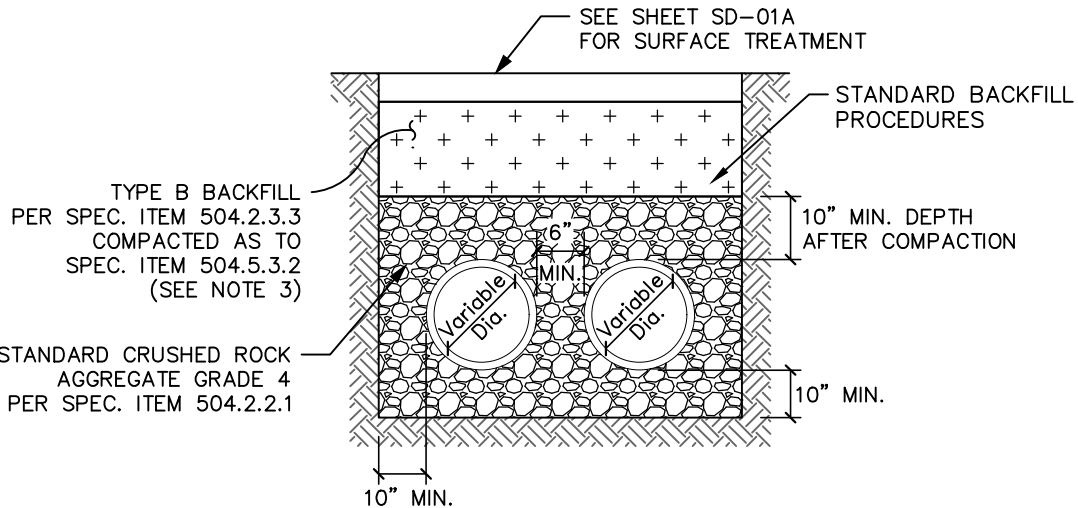


BOX EMBEDMENT

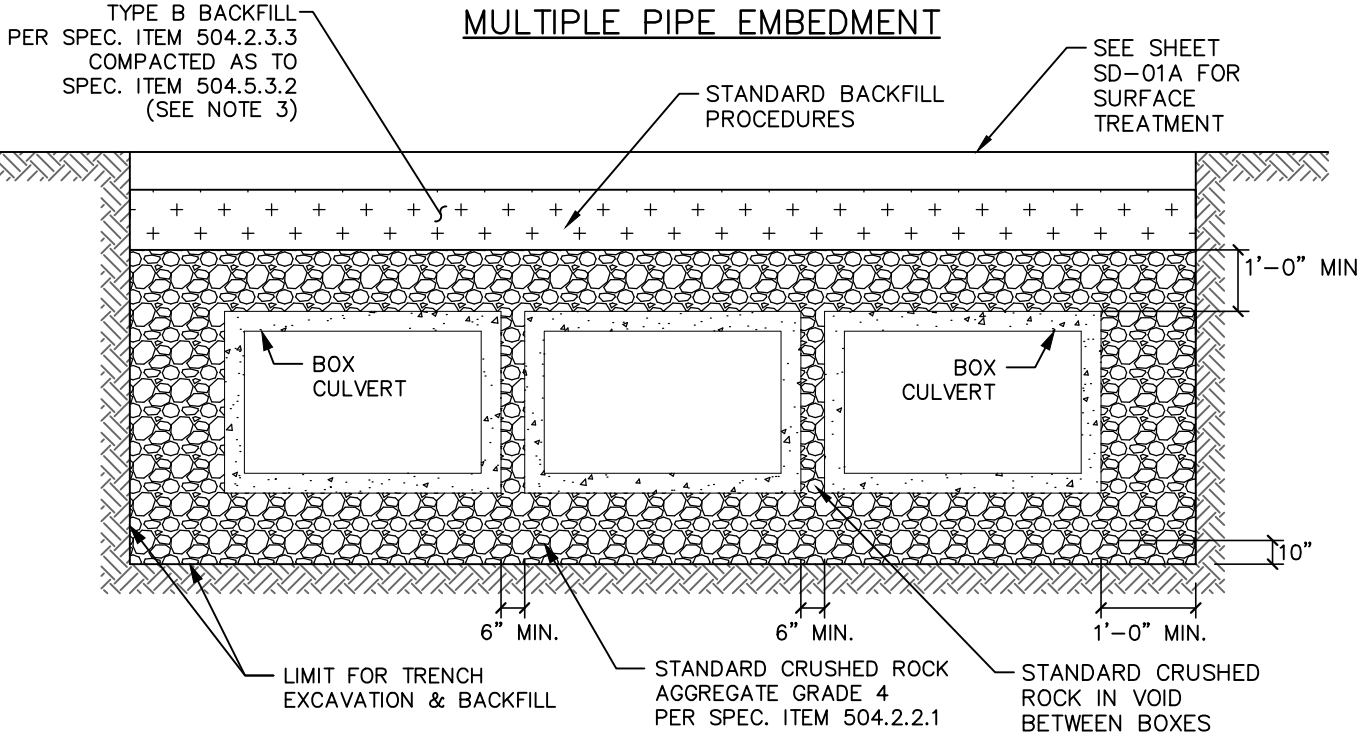
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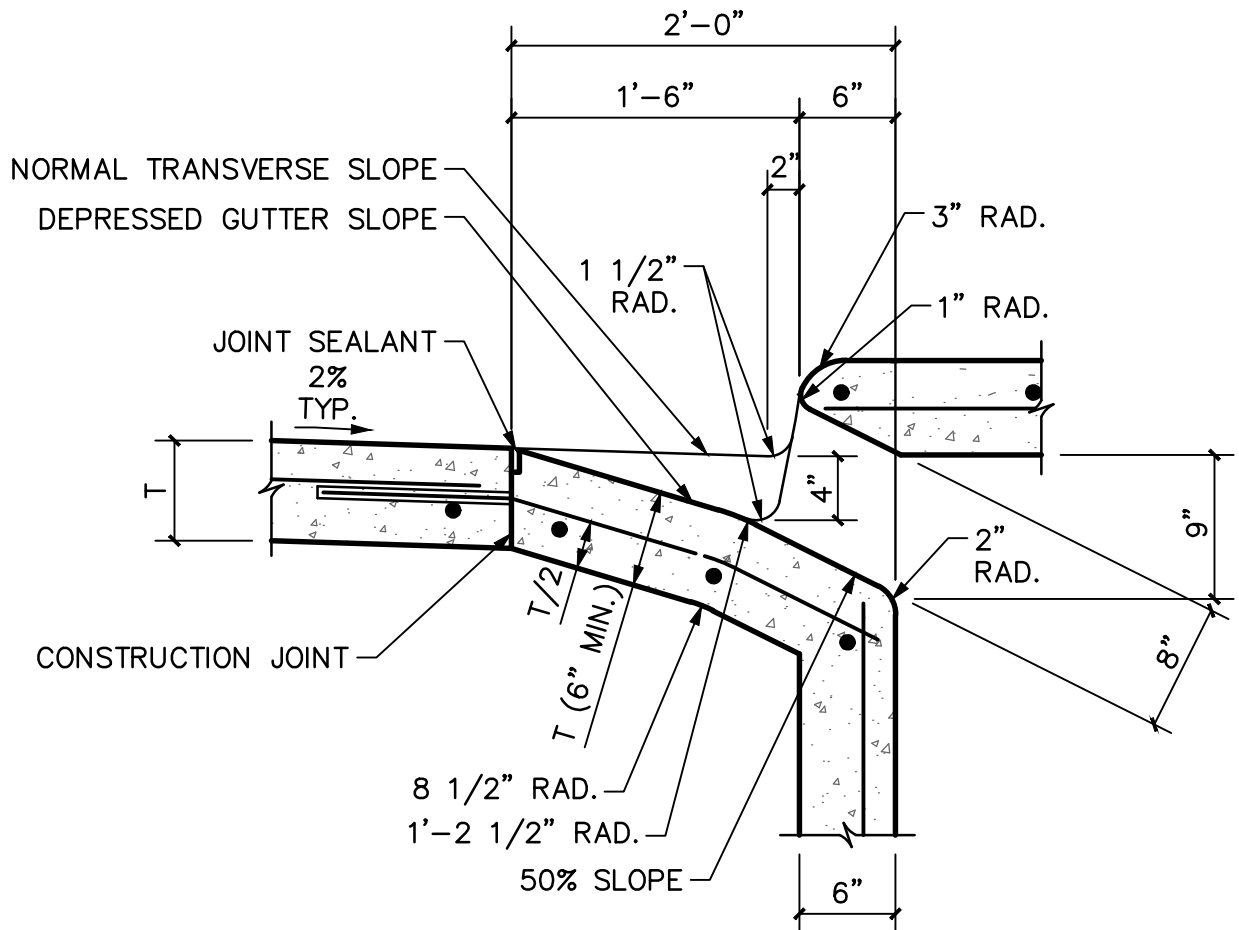
MULTIPLE PIPE EMBEDMENT

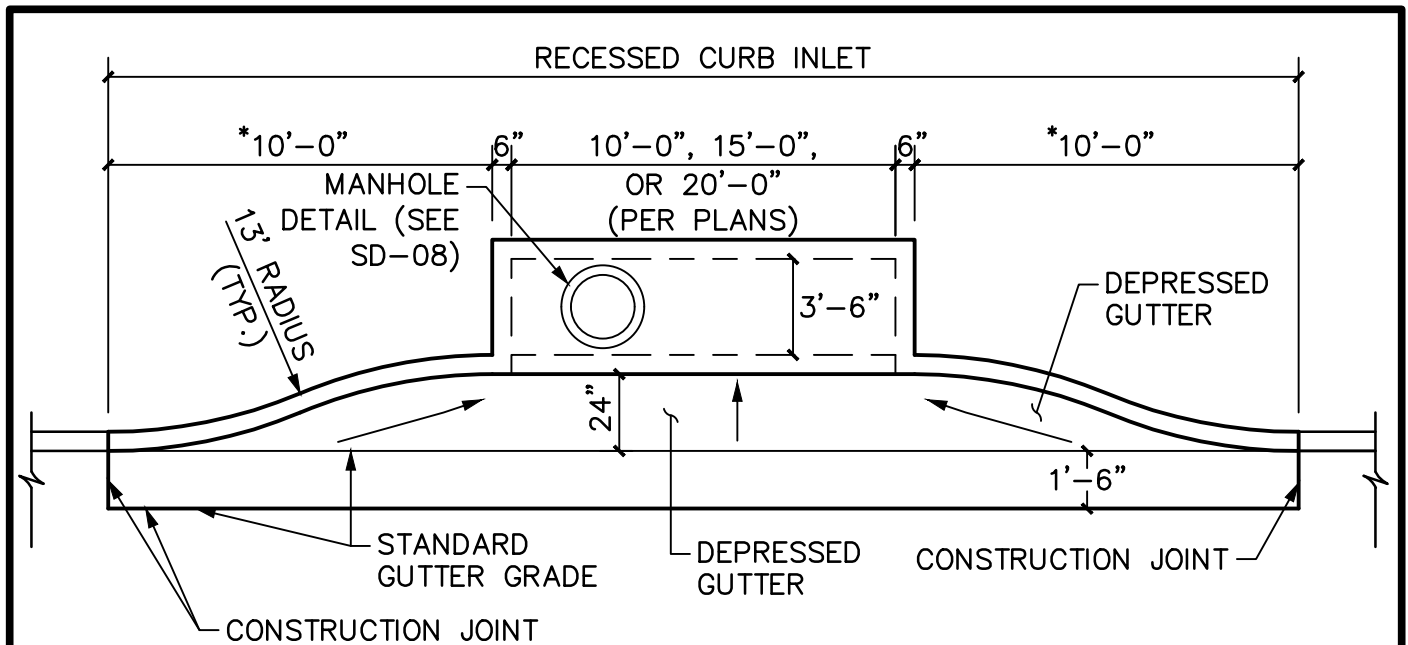


MULTIPLE BOX EMBEDMENT

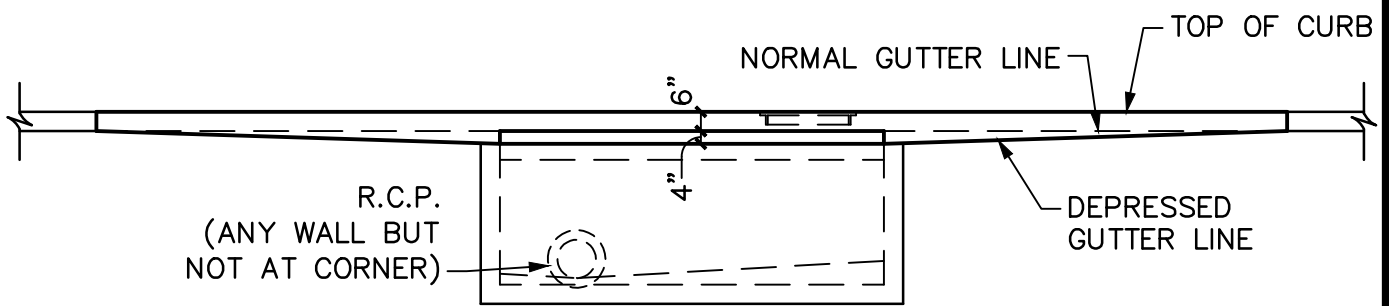
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3. ROCKS GREATER THAN 4" IN DIAMETER SHALL BE REMOVED FROM ANY NATIVE MATERIAL USED AS BACKFILL.
4. TOPSOIL SHALL BE 4" IN DEPTH AND SHALL BE LOOSE AND FREE OF ROCKS OR CLODS GREATER THAN 1/4" IN DIAMETER. ALL TOPSOIL SHALL BE APPROVED BY THE CITY PRIOR TO INSTALLATION.
5. ALL PAVEMENT SHALL BE REMOVED ALONG NEAT SAW CUT LINES PER SPEC. ITEM 402.3.
6. STORM LINE WARNING TAPE OF MIN 4" WIDTH SHALL BE INSTALLED ABOVE THE EMBEDMENT MATERIAL.
7. A MAXIMUM OF 50 FT OF OPEN TRENCH WILL BE ALLOWED AT ANY TIME, UNLESS APPROVED BY THE CITY.





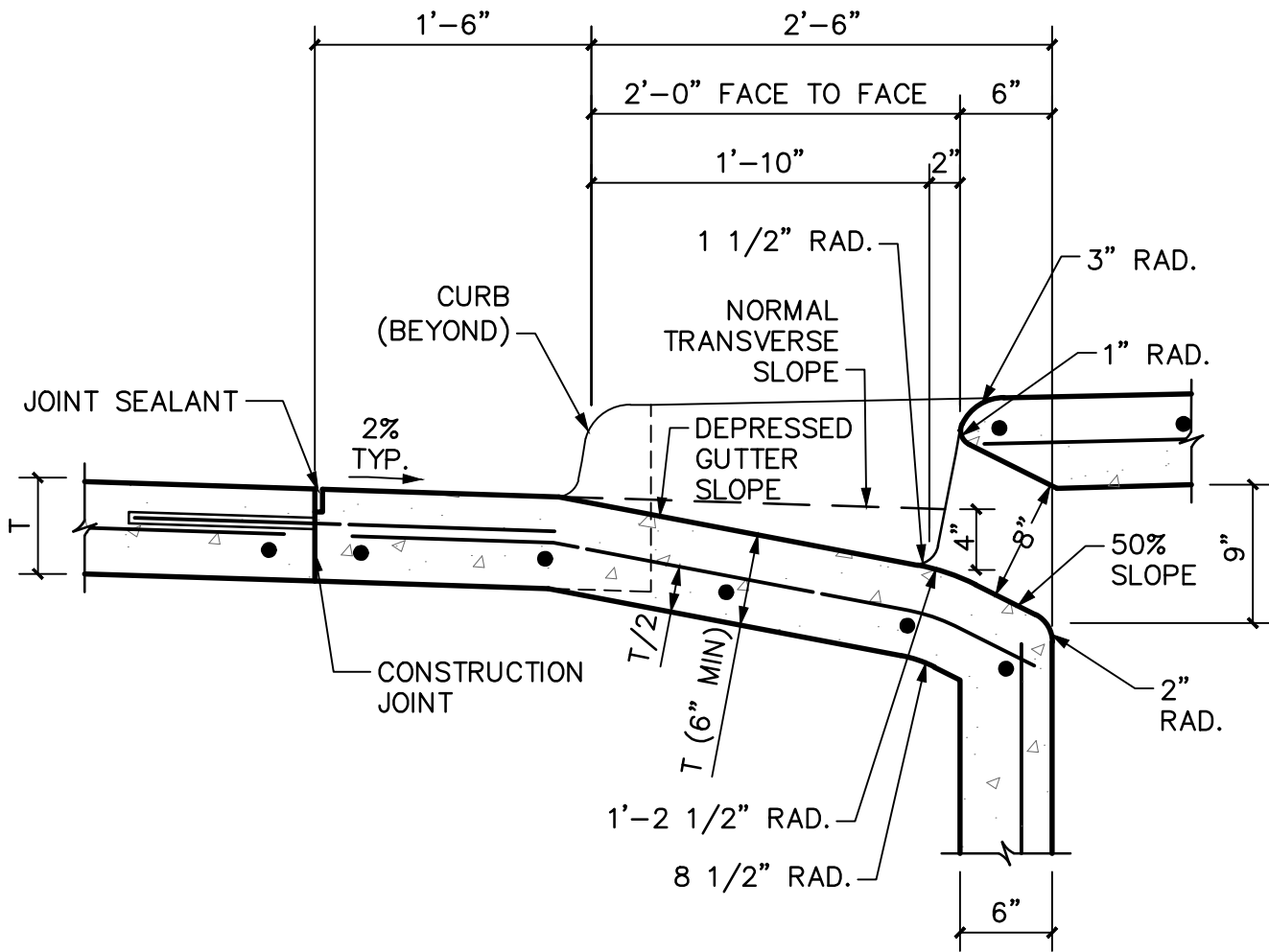
PLAN

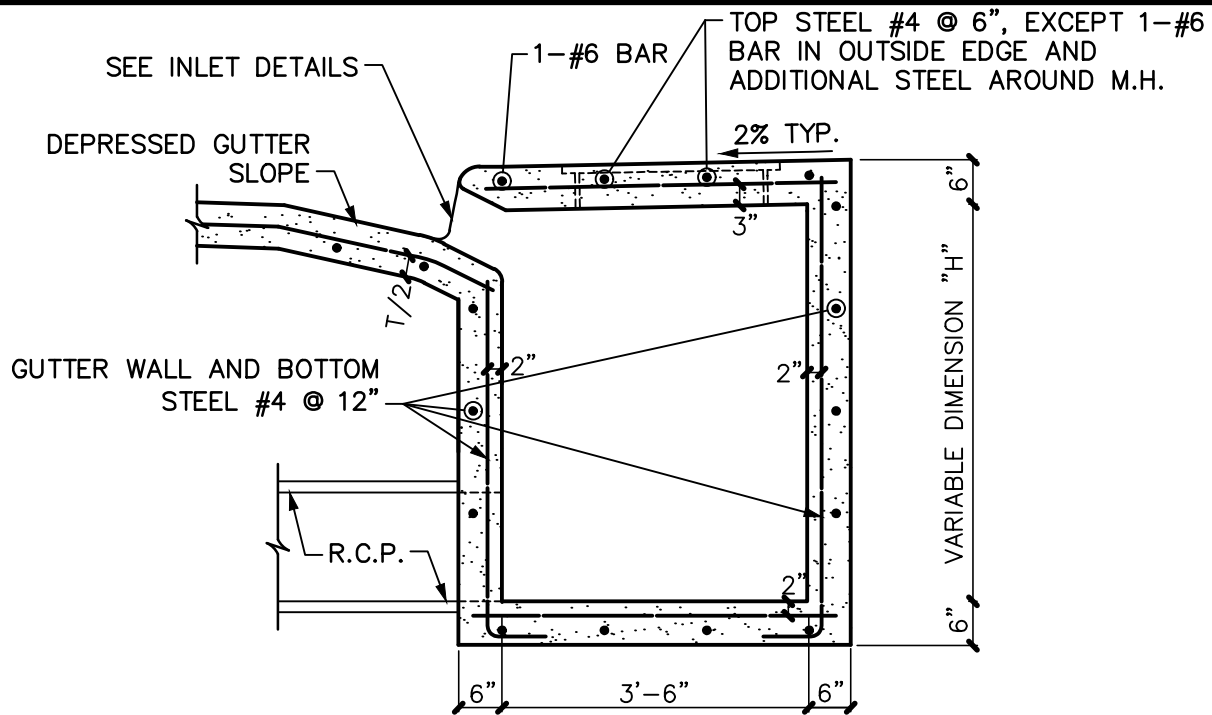


PROFILE

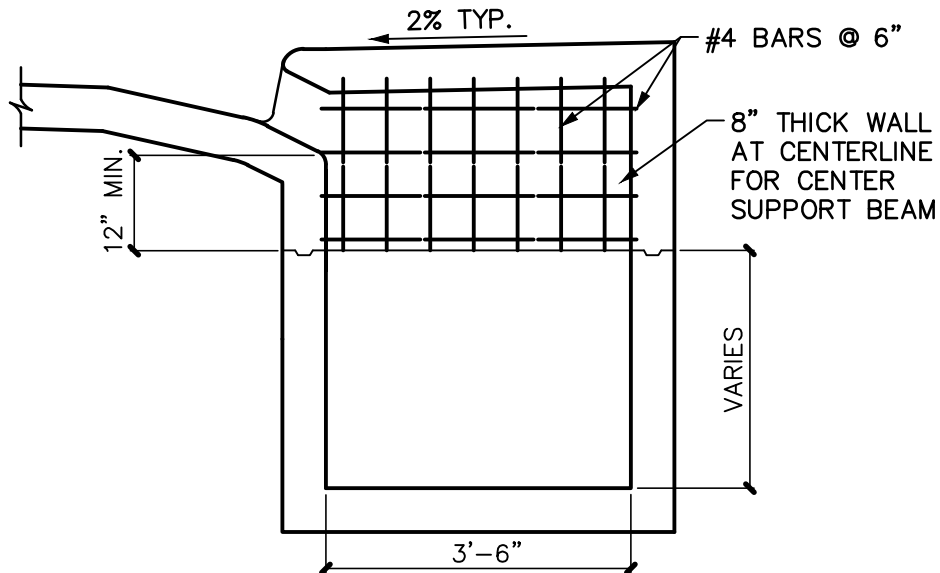
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2. CONCRETE SHALL BE 4,200 PSI, CLASS F (PER SPEC. 702.3).
3. TOP OF INLET TO SLOPE 2% TOWARDS STREET OR PER PLAN.
4. CENTER SUPPORT BEAM REQUIRED FOR 15' AND 20' STANDARD CURB INLETS.
5. ADDITIONAL REINFORCING STEEL TO BE PLACED AROUND MANHOLE OPENING.
6. WING LENGTH MAY BE DECREASED BASED UPON SITE SPECIFIC CONDITIONS. CITY MUST APPROVE SHORTER LENGTH.
7. MANHOLE COVERS INSIDE OPENING SHALL BE 30". INLET TOP WILL NEED TO BE CAST IN PLACE IN ORDER TO ACCOMMODATE 30" OPENING/COVER.
8. TWO MANHOLES ARE REQUIRED ON 15' AND 20' INLETS.





INLET SECTION FOR RECESSED AND STANDARD INLETS



CENTER SUPPORT BEAM FOR 15' AND 20' RECESSED AND STANDARD INLETS

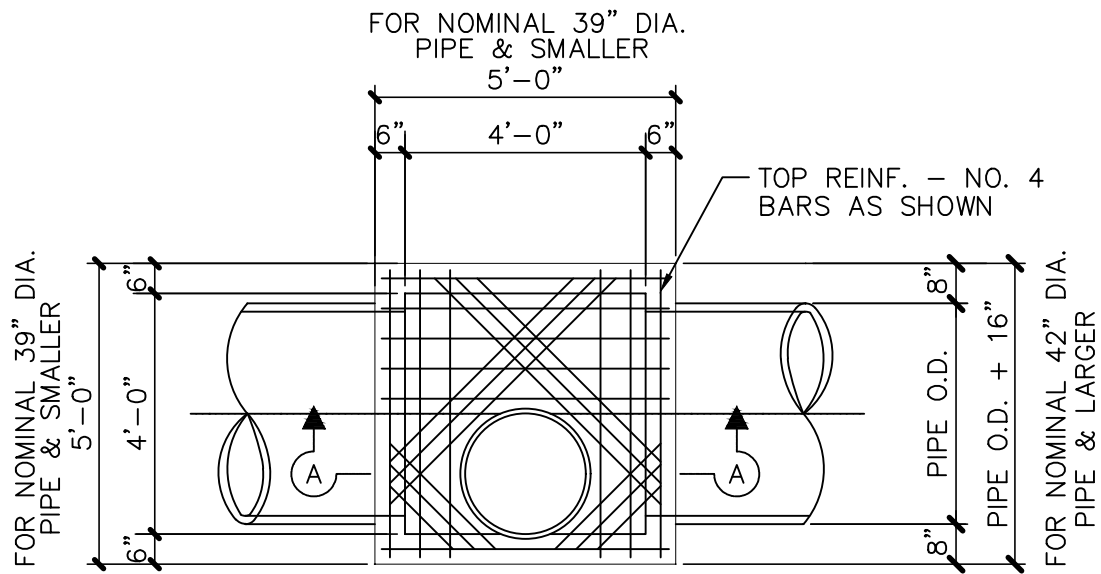
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2. CONCRETE SHALL BE 4,200 PSI, CLASS F (PER SPEC. 702.3).
3. TOP OF INLET TO SLOPE 2% TOWARDS STREET OR PER PLAN.
4. REINFORCING STEEL LAYOUT APPLICABLE TO BOTH RECESSED AND ON-GRADE CURB INLETS.

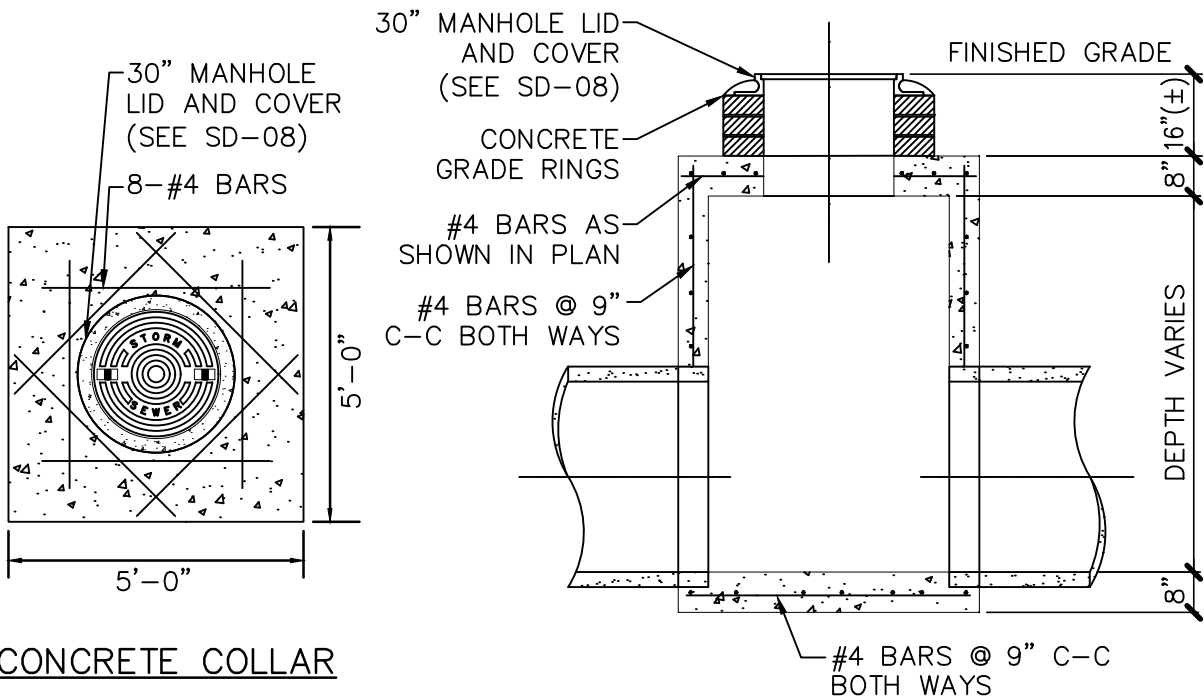


NOTES:

1. IN GENERAL, INLET REINFORCING STEEL SHALL BE #4 BARS ON 12" CENTERS BOTH WAYS FOR GUTTER, BOTTOM SLAB ENDS, FRONT AND BACK WALLS, AND #4 BARS ON 6" CENTERS BOTH WAYS FOR TOP SLABS. AN ADDITIONAL #6 BAR SHALL BE PLACED IN THE FRONT EDGE OF THE TOP SLAB IN THE INLETS AND ADDITIONAL REINFORCING STEEL SHALL BE PLACED AROUND MANHOLES AS SHOWN.
2. ALL REINFORCING STEEL SHALL BE GRADE 60.
3. ALL CONCRETE SHALL BE CLASS "A" MIN. 3000 PSI 28-DAY STRENGTH. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
4. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 2" TO THE CENTERS OF THE BARS.
5. 10'-0" OF EXISTING CURB AND GUTTER UPSTREAM AND 10'-0" OF EXISTING CURB AND GUTTER DOWNSTREAM SHALL BE REMOVED AND REPOURED INTEGRALLY WITH EACH INLET.
6. ALL BACK FILLING SHALL BE IN ACCORDANCE WITH SPEC. ITEM 504.2.3.3 COMPACTED AS TO 95% STANDARD PROCTOR DENSITY.
7. CENTER BEAM IS REQUIRED FOR ALL INLET OPENINGS GREATER THAN 10'-0".
8. TWO MANHOLE FRAMES AND COVERS ARE REQUIRED WHEN INLET OPENING IS GREATER THAN 10'-0".
9. ALL INLET FLOORS ARE TO HAVE A 2% SLOPE TOWARDS THE OUTLET PIPE.
10. MINIMUM INLET OPENING SIZE IS 5'-0".
11. MAXIMUM INLET OPENING SIZE IS 20'-0".
12. OUTLET PIPE TO BE PLACED AT LOWEST END OF FLOOR INLET. MANHOLE COVER TO BE PLACED AT OUTLET END OF INLET.
13. SEE APPROVED PRODUCTS LIST FOR MANHOLE COVER AND LID MANUFACTURERS.
14. MANHOLE COVERS SHALL HAVE CHAINS ATTACHED TO PREVENT COVERS FROM BEING WASHED AWAY DURING FLOOD CONDITIONS.



PLAN VIEW



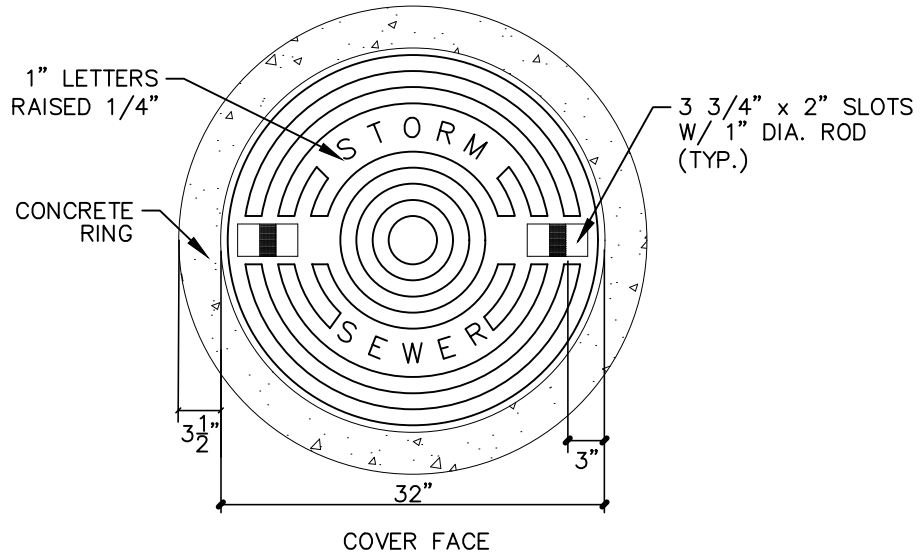
CONCRETE COLLAR

SECTION A-A

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2. CONCRETE SHALL BE CLASS F (PER SPEC. ITEM 702.3).
3. 5'X5' CONCRETE COLLAR OF 6" 3600 PSI CLASS "C" CONCRETE SHALL BE PROVIDED FOR MANHOLE LIDS LOCATED IN ASPHALT PAVING OR OUTSIDE OF PAVING LIMITS.

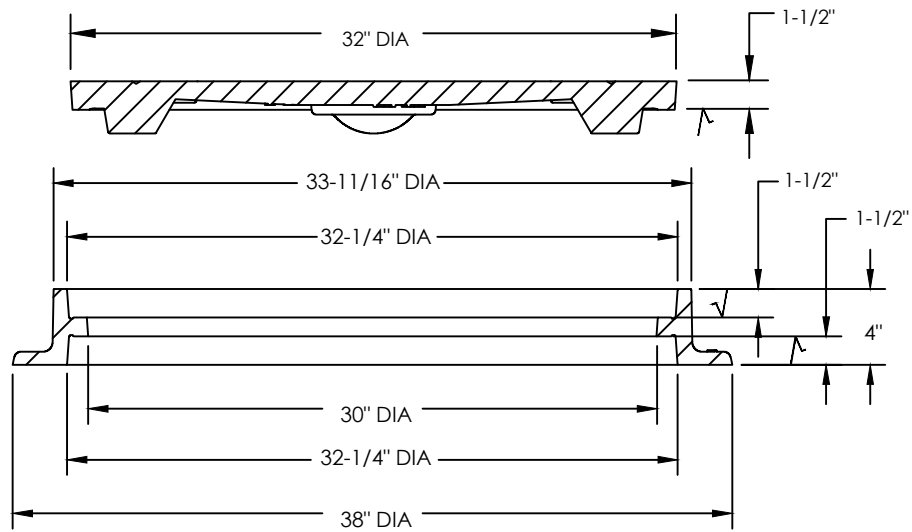




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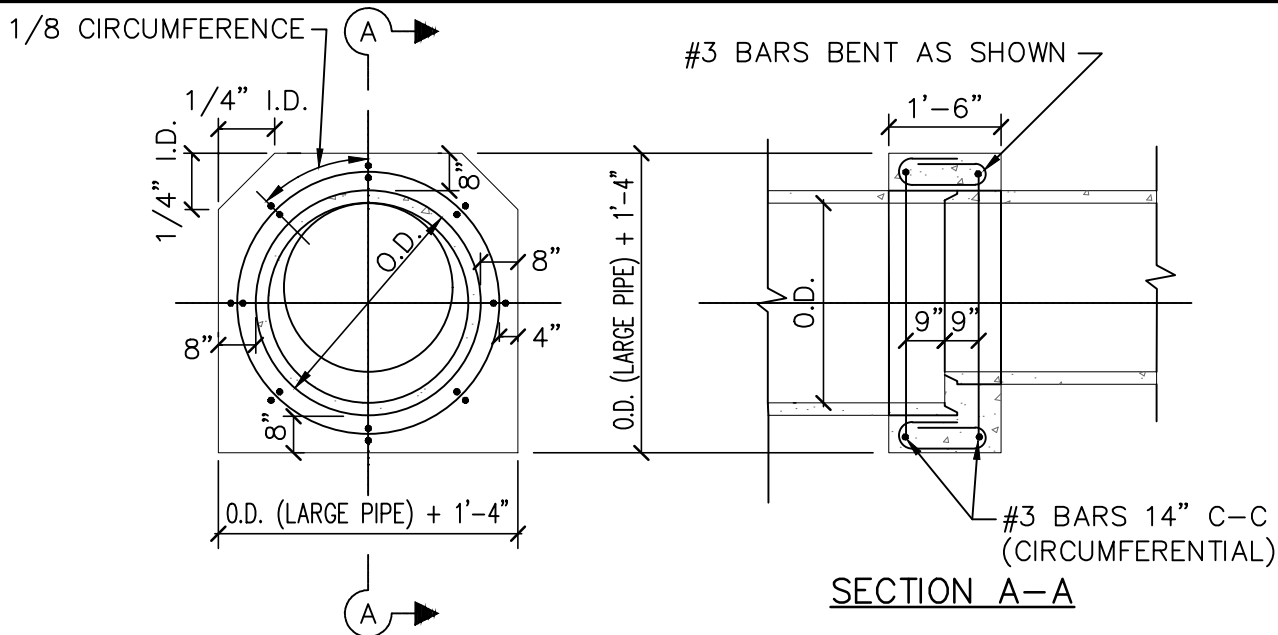
1. SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE STORM DRAIN LID AND COVER MANUFACTURERS.

TOP VIEW



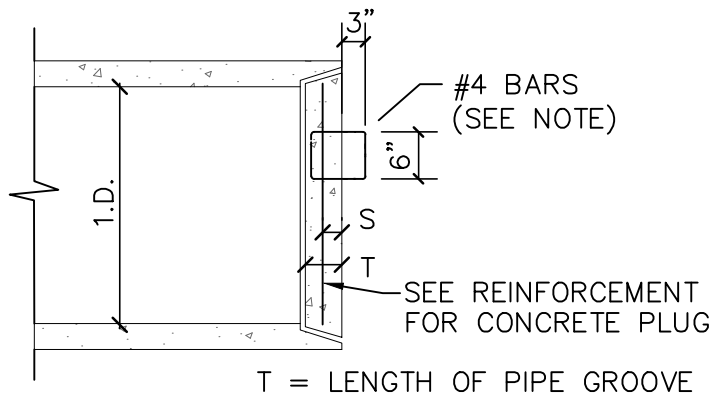
SECTION VIEW





REINFORCED CONCRETE COLLAR

PIPE SIZE	REINF. BAR	DISTANCE C-C BOTH WAYS	S
18"–33"	# 3	12"	1/2 T
36"–54"	# 3	12"	1/3 T
60"–84"	# 4	12"	1/4 T

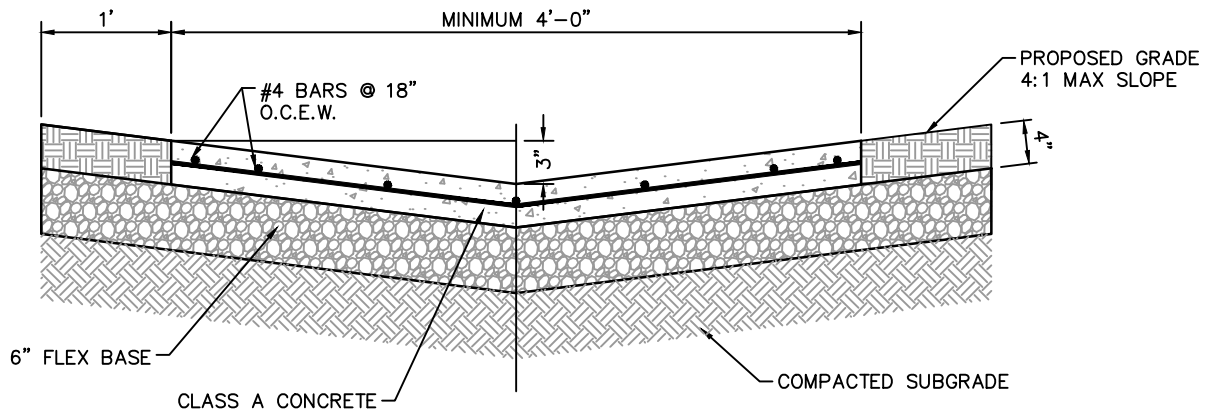


REINFORCED CONCRETE PIPE PLUG

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2. CONCRETE SHALL BE CLASS A (PER SPEC. ITEM 702.3).
3. STEEL HANDLE FOR REINFORCED CONCRETE PIPE PLUG SHALL BE LOCATED 1/4 I.D. ABOVE CENTER POINT OF PLUG. TWO (2) STEEL HANDLES WILL BE REQUIRED ON PLUGS OF 36" DIA. PIPES OR LARGER AND SHALL BE PLACED 1/4 I.D. APART AND 1/4 I.D. ABOVE CENTER OF PLUG.
4. COLLARS MAY ONLY BE USED TO REDUCE THE DIAMETER ONE PIPE SIZE. A JUNCTION BOX IS REQUIRED FOR REDUCING MORE THAN ONE PIPE SIZE.





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2. SIDE SLOPES TO BE HYDROMULCHED.
3. PROVIDE CONSTRUCTION JOINT EVERY 10' AND EXPANSION JOINTS EVERY 50' IN ACCORDANCE WITH RD-02. SEAL ALL JOINTS.

