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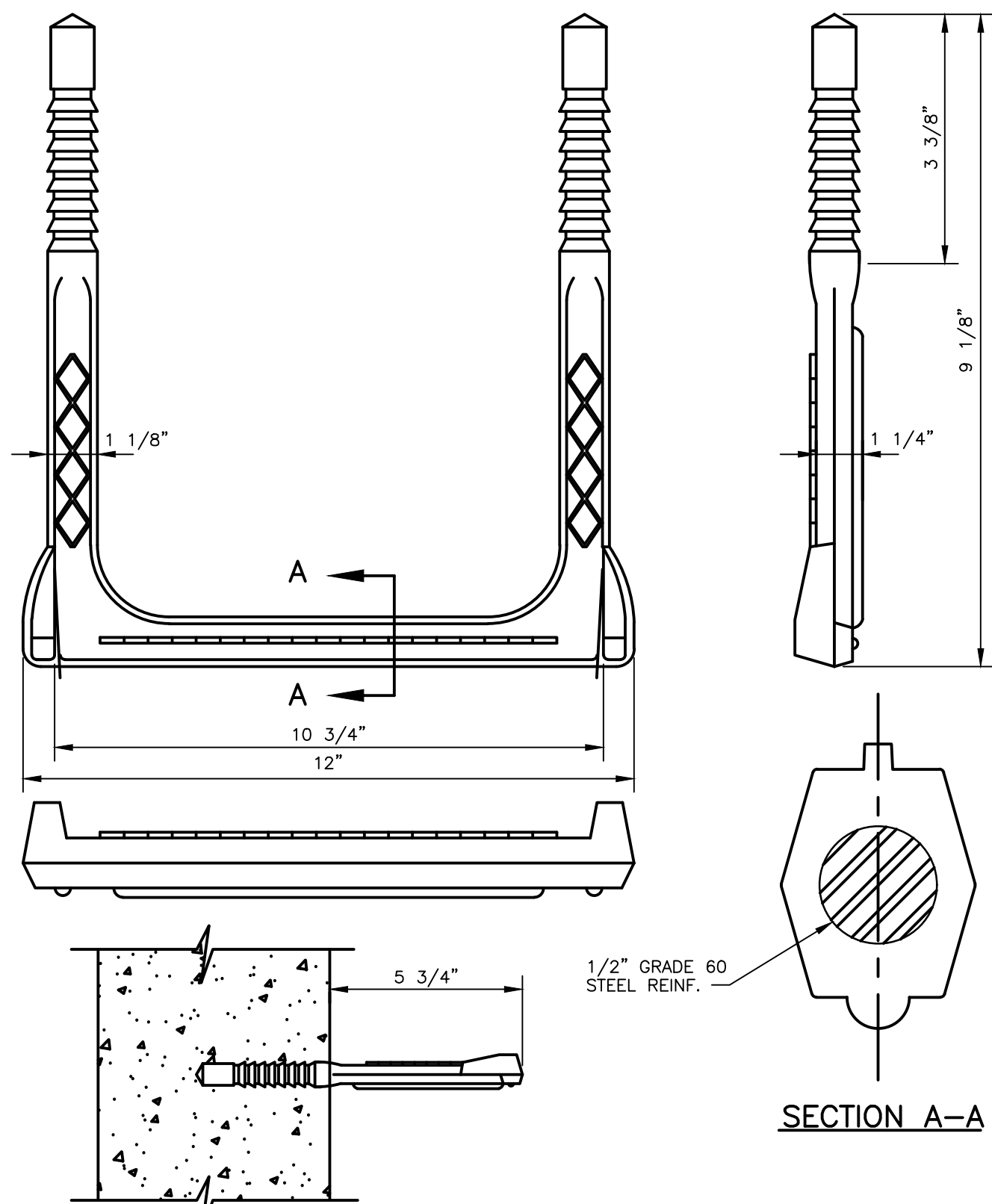
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CITY OF JACKSON
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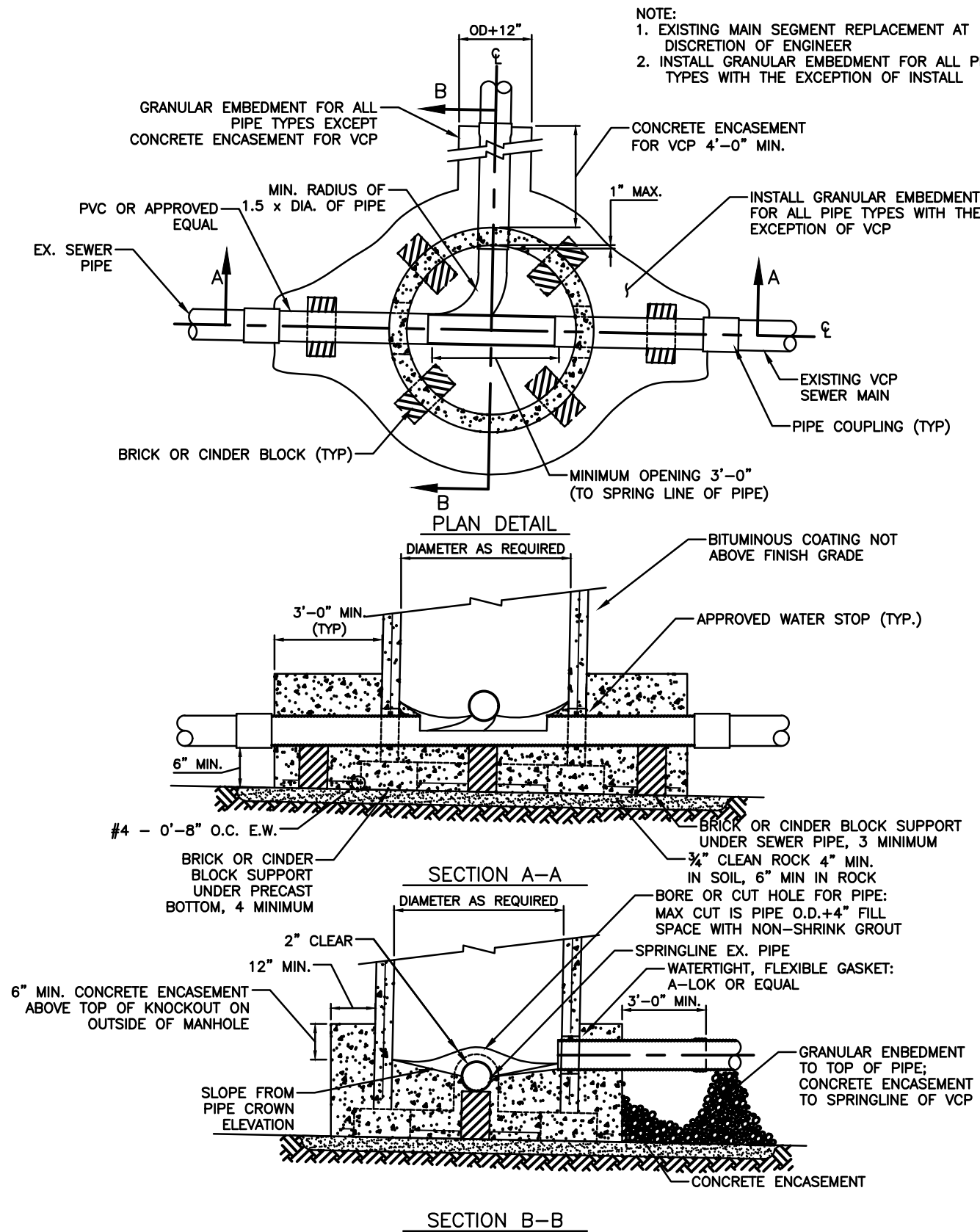
CITY OF JACKSON
SANITARY STANDARDS

SHEET
NUMBER: 1



COPOLYMER POLYPROPYLENE PLASTIC
PER ASTM C 478

MANHOLE STEP FOR PRECAST MANHOLE S-09

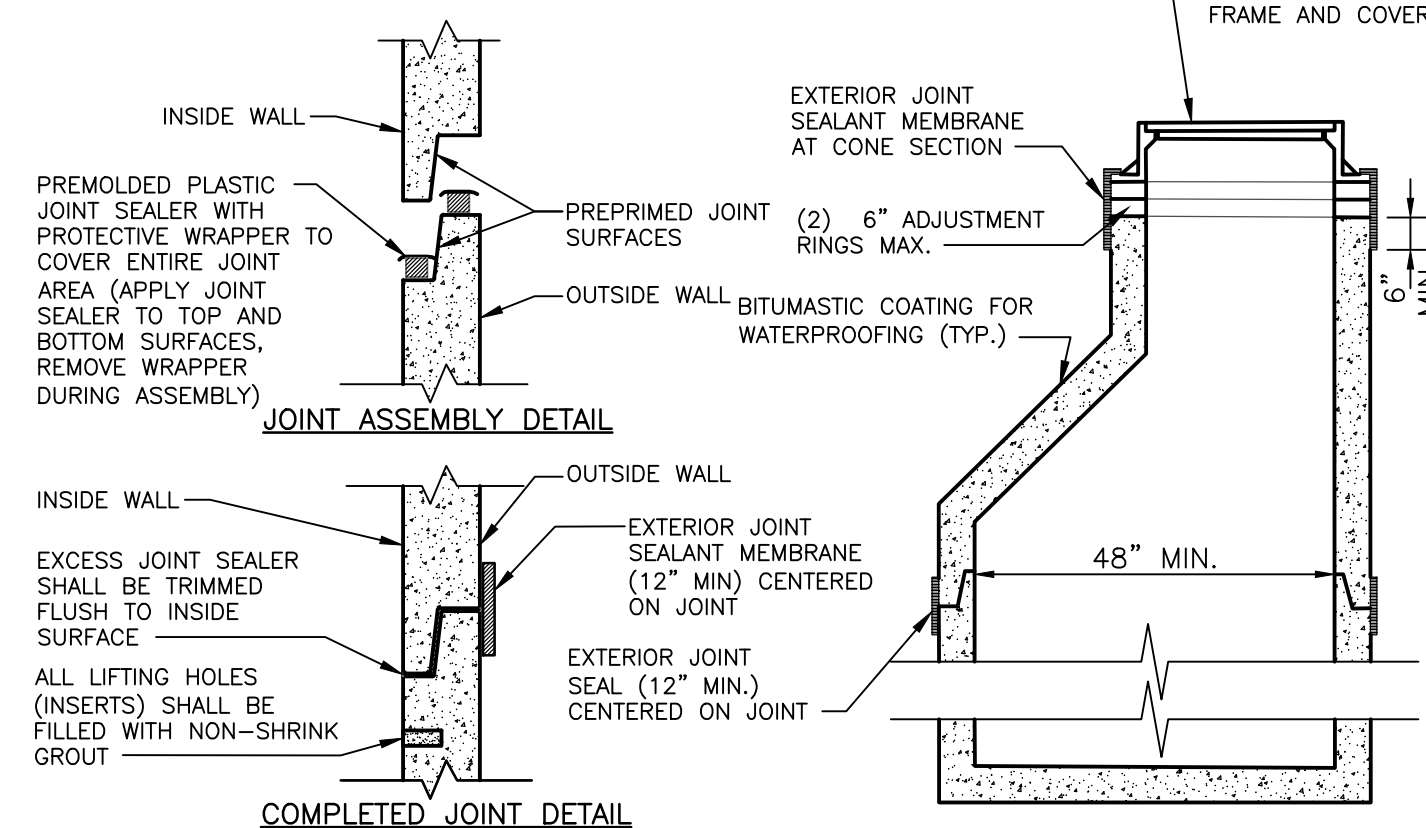


DOGHOUSE MANHOLE S-10

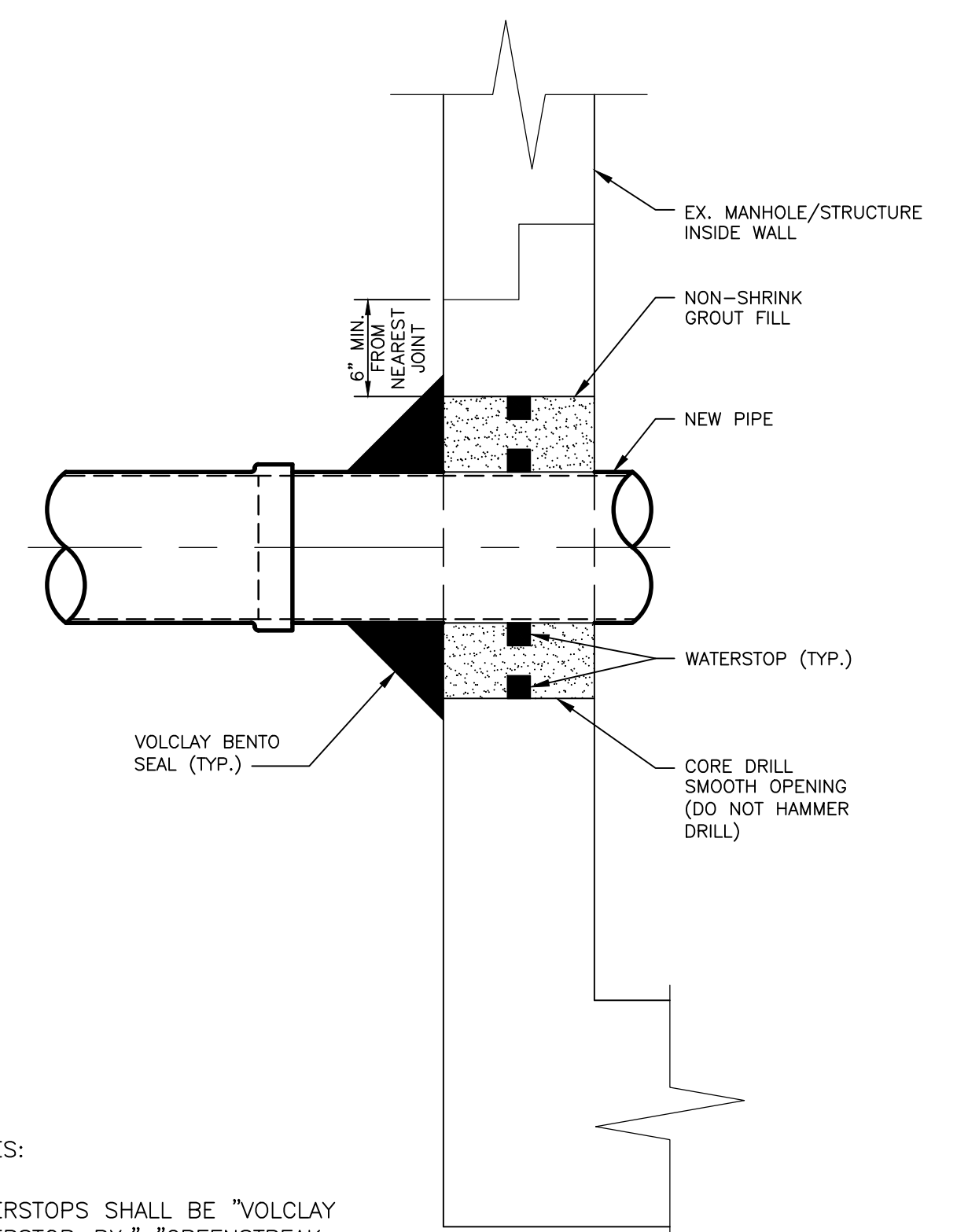
JOINT SEALANT AND AN EXTERIOR JOINT SEAL SHALL BE INSTALLED ON ALL SANITARY PRECAST CONCRETE MANHOLES AND PUMP STATIONS JOINTS AS DETAILED ON THIS SHEET TO PREVENT GROUNDWATER INFILTRATION.

1. JOINT SEALANT - CLEAN ALL JOINT SURFACES (REMOVE ALL DIRT, OIL, DEBRIS AND OTHER FOREIGN ITEMS) AND PROVIDE ADDITIONAL PRIMER IF RECOMMENDED BY JOINT SEALANT MANUFACTURER. THE APPROVED JOINT SEALANT MATERIAL AND MANHOLE SURFACES SHALL BE DRY DURING INSTALLATION. JOINT SEALANT SHALL BE APPLIED TO BOTH TOP AND BOTTOM JOINT SURFACES. THE JOINT SEALANT SHALL BE INSTALLED CONTINUOUSLY AROUND ALL JOINTS WITH THE ENDS PLACED BUTT TO BUTT (NOT OVERLAPPED) AND NO OPEN GAPS BETWEEN SEALANTS. THE EXCESS JOINT SEALANT SHALL BE TRIMMED FLUSH TO BOTH INSIDE AND OUTSIDE SURFACES OF THE MANHOLE. TWO ROWS OF JOINT SEALANT SHALL BE APPLIED BETWEEN FRAME AND PRECAST SECTION.
2. EXTERNAL JOINT SEAL - THE EXTERNAL JOINT SEALS SHALL BE MAR MAC EXTERNAL JOINT SEALERS AS MANUFACTURED BY MAR MAC CONSTRUCTION PRODUCTS, INC. OR APPROVED EQUAL. EXTERNAL JOINT SEALS SHALL CONSIST OF A COLLAR A MINIMUM 12" WIDE WITH AN OUTER LAYER OF POLYETHYLENE, WITH A MINIMUM TENSILE STRENGTH OF 4000 PSI AND A MINIMUM TEAR RESISTANCE OF 1,500 PSI, AND AN UNDER LAYER OF RUBBERIZED MASTIC THAT IS REINFORCED WITH A WOVEN POLYPROPYLENE FABRIC. TWO 5/8" INCH STEEL STRAPS WITH SELF-CONTAINED TENSIONING RATCHETS SHALL BE LOCATED WITHIN THE COLLAR 1-INCHES FROM EACH EDGE. THE STRAPS SHALL BE CONFINED IN TUBES THAT ISOLATE THEM FROM THE MASTIC AND ALLOW THEM TO SLIP FREELY WHEN MECHANICALLY TIGHTENED AROUND MANHOLE. THE COLLAR SHALL BE FURNISHED WITH A MINIMUM 6" INCH OVERLAP AND A CLOSING FLAP TO COVER ANY REMAINING EXPOSED STRAP.
3. EXTERNAL CHIMNEY SEAL - THE EXTERNAL CHIMNEY SEAL SHALL BE MAR MAC CHIMNEY WRAP AS MANUFACTURED BY MAR MAC CONSTRUCTION PRODUCTS, INC. OR APPROVED EQUAL. CHIMNEY SEAL SHALL CONSIST OF A COLLAR A MINIMUM 14" WIDE WITH TWO LAYERS OF WOVEN POLYPROPYLENE FABRIC CONFORMING TO ASTM D-1682 AND RUBBERIZED MASTIC. THREE STAINLESS STEEL HOSE CLAMPS SHALL BE CONFINED IN TUBES THAT ISOLATE THEM FROM THE MASTIC AND ALLOW THEM TO SLIP FREELY WHEN MECHANICALLY TIGHTENED AROUND MANHOLE. A SECOND LAYER OF RUBBERIZED MASTIC SHALL COVER THE ENTIRE INTERNAL SURFACE OF COLLAR. THE COLLAR SHALL BE FURNISHED WITH A LOCK MECHANISM TO SECURE BAND.
4. INTERNAL CHIMNEY SEAL (ALTERNATE) - TO BE USED WHEN EXTERNAL CHIMNEY SEAL IS LOCATED ABOVE GRADE OR WHEN PRECAST/FRAME CONFIGURATION DOES NOT ALLOW FOR PROPER INSTALLATION OF EXTERNAL CHIMNEY SEAL (I.E. FLAT TOP MANHOLE WHERE THE OUTSIDE DIAMETER DIFFERENCES EXCEED MANUFACTURER'S RECOMMENDED LIMITS) OR AS APPROVED BY DISTRICT. THE INTERNAL CHIMNEY SEAL SHALL BE LESS INTERNAL CHIMNEY SEAL AS MANUFACTURED BY CRETEX SPECIALTY PRODUCTS OR APPROVED EQUAL. THE CHIMNEY SEAL SLEEVE SHALL BE MOLDED FROM HIGH GRADE RUBBER CONFORMING TO ASTM C-923, WITH A 1,500 PSI TENSILE STRENGTH. EXPANSION BANDS SHALL BE INTEGRALLY FORMED FROM 16 GA. 304 STAINLESS STEEL WITH A LOCK MECHANISM TO SECURE BAND.

ALL SEALS SHALL BE SIZED SPECIFICALLY FOR STRUCTURES BY MANUFACTURER TO ENSURE COMPRESSION BANDS ARE PROPERLY PLACED TO MAKE A WATER TIGHT SEAL.



JOINT SEALANT AND EXTERIOR JOINT SEALANT MEMBRANE S-11



NOTES:

WATERSTOPS SHALL BE "VOLCLAY WATERSTOP-RX," "GREENSTREAK HYDROTITE," OR EQUAL PLACED IN CONTINUOUS STRIPS ALL AROUND PIPE/OPENING.

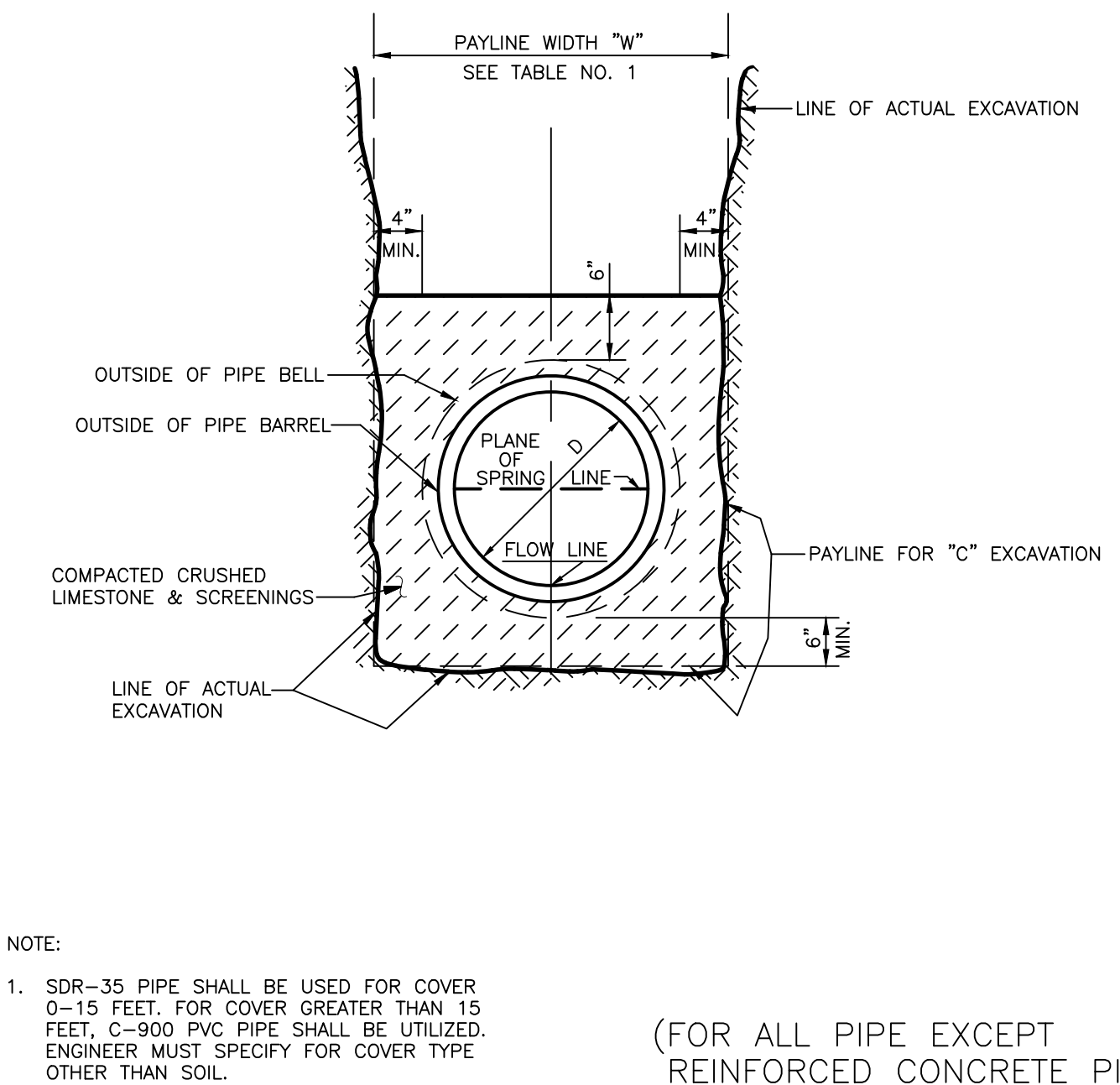
TYPICAL SECTION

NEW PIPE CONNECTION TO EXISTING MANHOLE / STRUCTURE S-12

ROUND PIPE			
"D" INSIDE DIAMETER OF PIPE (INCHES)	"W" PAYLINE WIDTH OF TRENCH (INCHES)	"W" PAYLINE WIDTH OF TRENCH (FEET)	PAY VOLUMES CU. FT. PER FT. CONCRETE ENCASEMENT
4	30	2.50	3.28
6	30	2.50	3.59
8	30	2.50	3.87
10	30	2.50	4.09
12	30	2.50	4.25
15	36	3.00	5.55
18	36	3.00	5.77
21	39	3.25	6.61
24	42	3.50	7.39
27	45	3.75	8.18
30	49	4.08	9.30
33	53	4.42	10.53
36	56	4.67	11.43
39	DISCONTINUED		
42	63	5.25	13.38
48	70	5.83	15.67
54	77	6.42	18.15
60	84	7.00	20.73

TABLE 1

PAYLINE WIDTHS OF TRENCH & PAY-QUANTITIES OF CONCRETE S-13

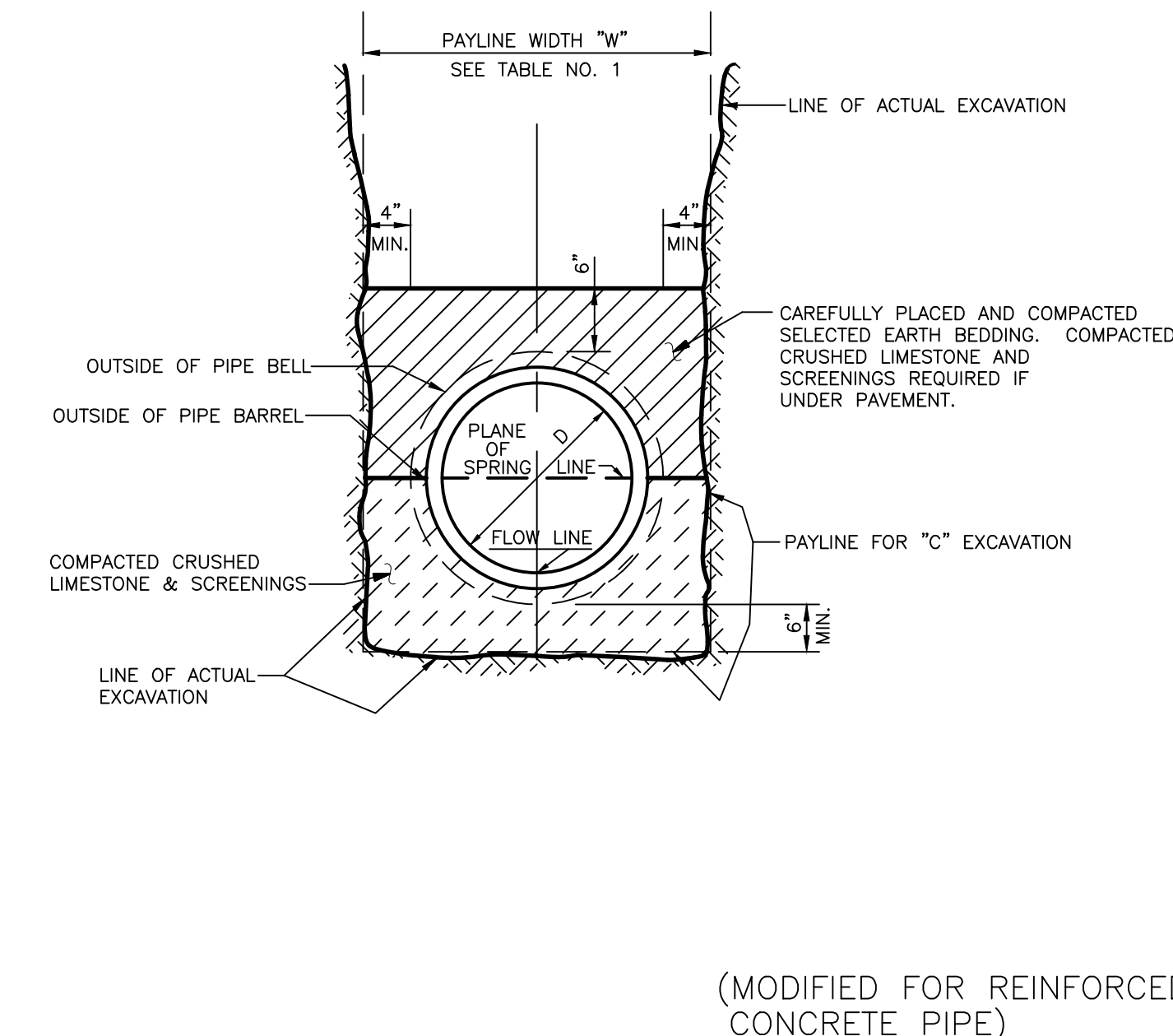


NOTE:

1. SDR-35 PIPE SHALL BE USED FOR COVER 0-15 FEET. FOR COVER GREATER THAN 15 FEET, C-900 PVC PIPE SHALL BE UTILIZED. ENGINEER MUST SPECIFY FOR COVER TYPE OTHER THAN SOIL.

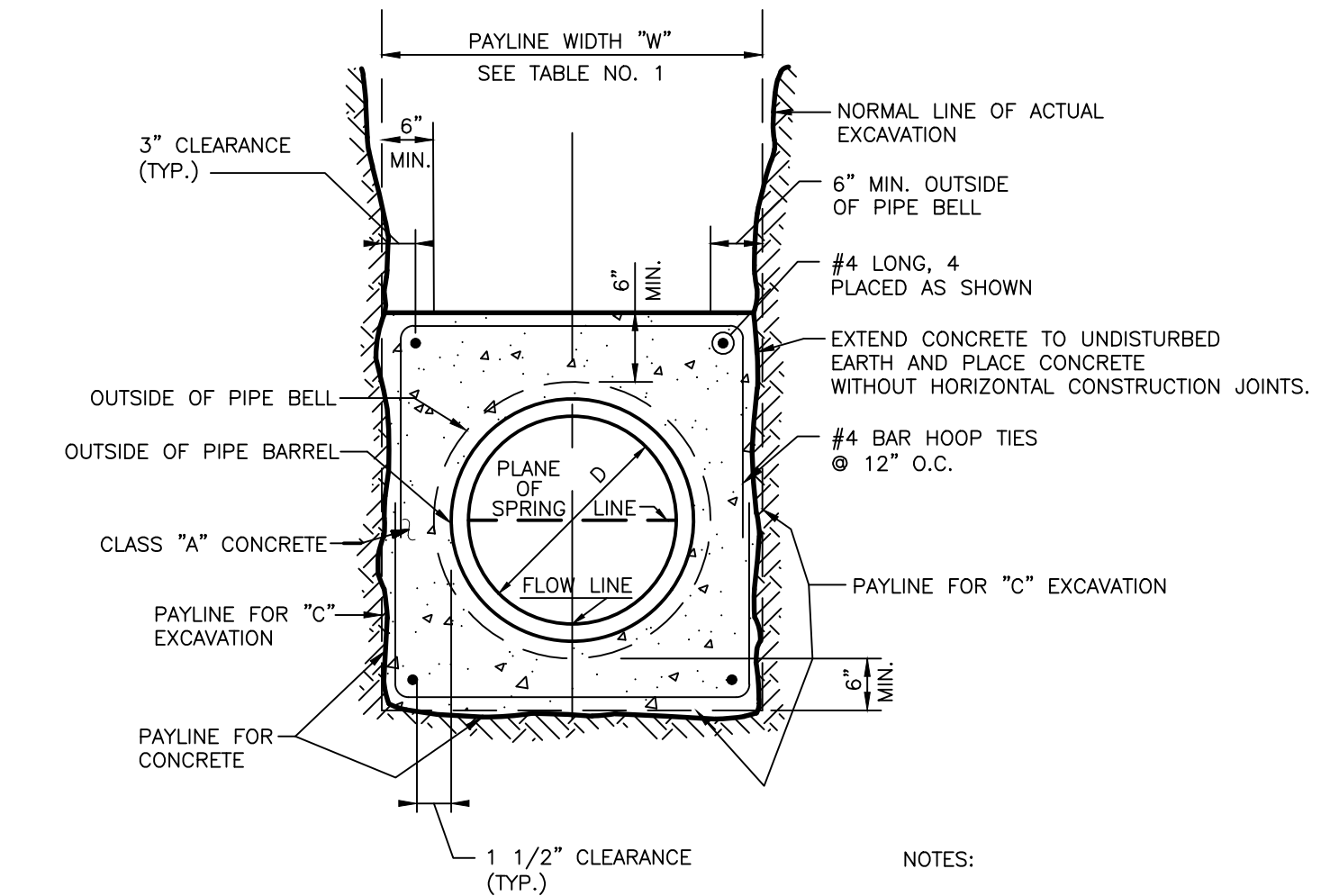
(FOR ALL PIPE EXCEPT REINFORCED CONCRETE PIPE)

PIPE BEDDING CLASS "C" S-14



(MODIFIED FOR REINFORCED CONCRETE PIPE)

PIPE BEDDING CLASS "C" S-15



NOTES:

1. SUPPORT PIPE TO PREVENT DISPLACEMENT DURING PLACEMENT OF CONCRETE
2. PLACE CONCRETE AGAINST EITHER SOLID FORM WORK OR UNDISTURBED EARTH

CONCRETE ENCASEMENT S-16

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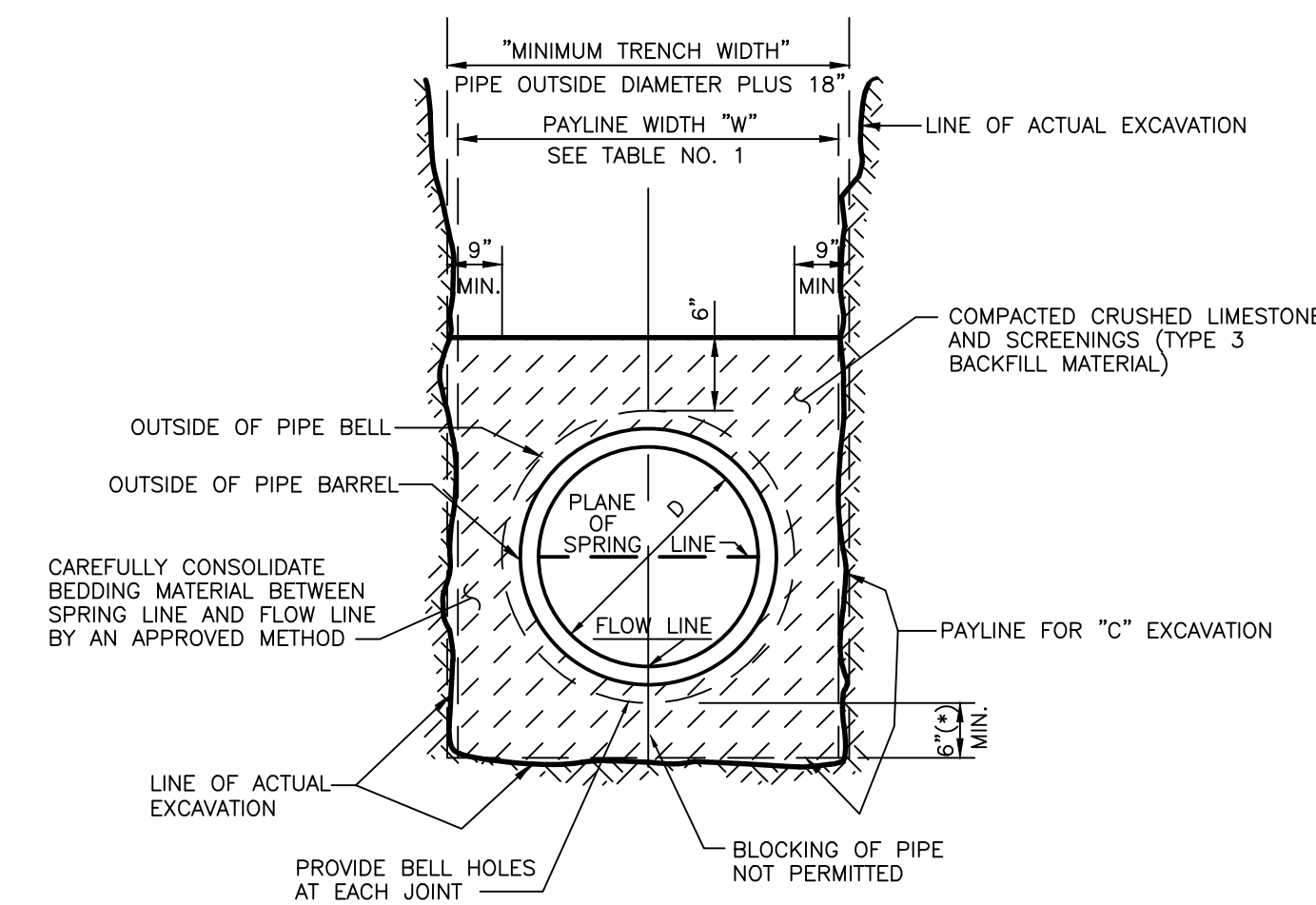
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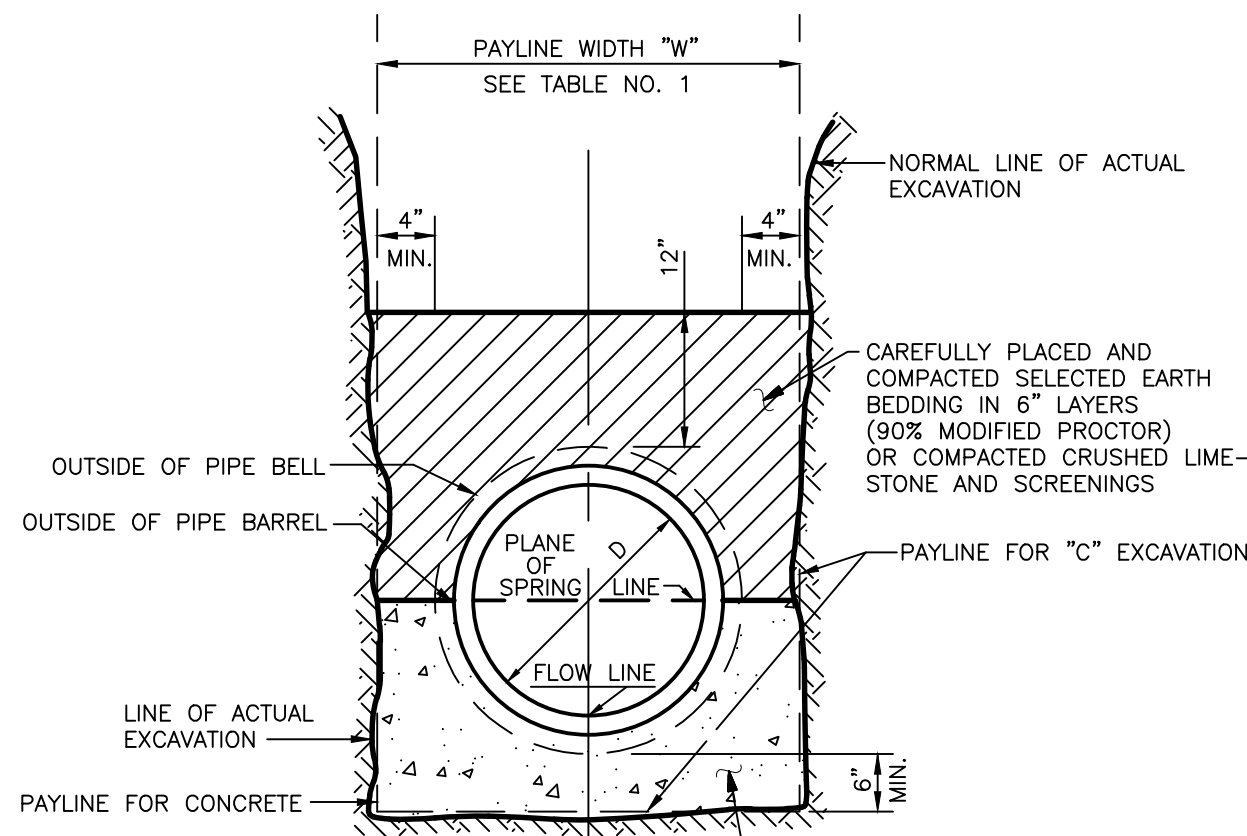
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* IN HIGHLY ORGANIC OR OPENLY FLOWING SOILS, THIS DEPTH SHALL BE INCREASED AS REQUIRED BY THE DIRECTOR.

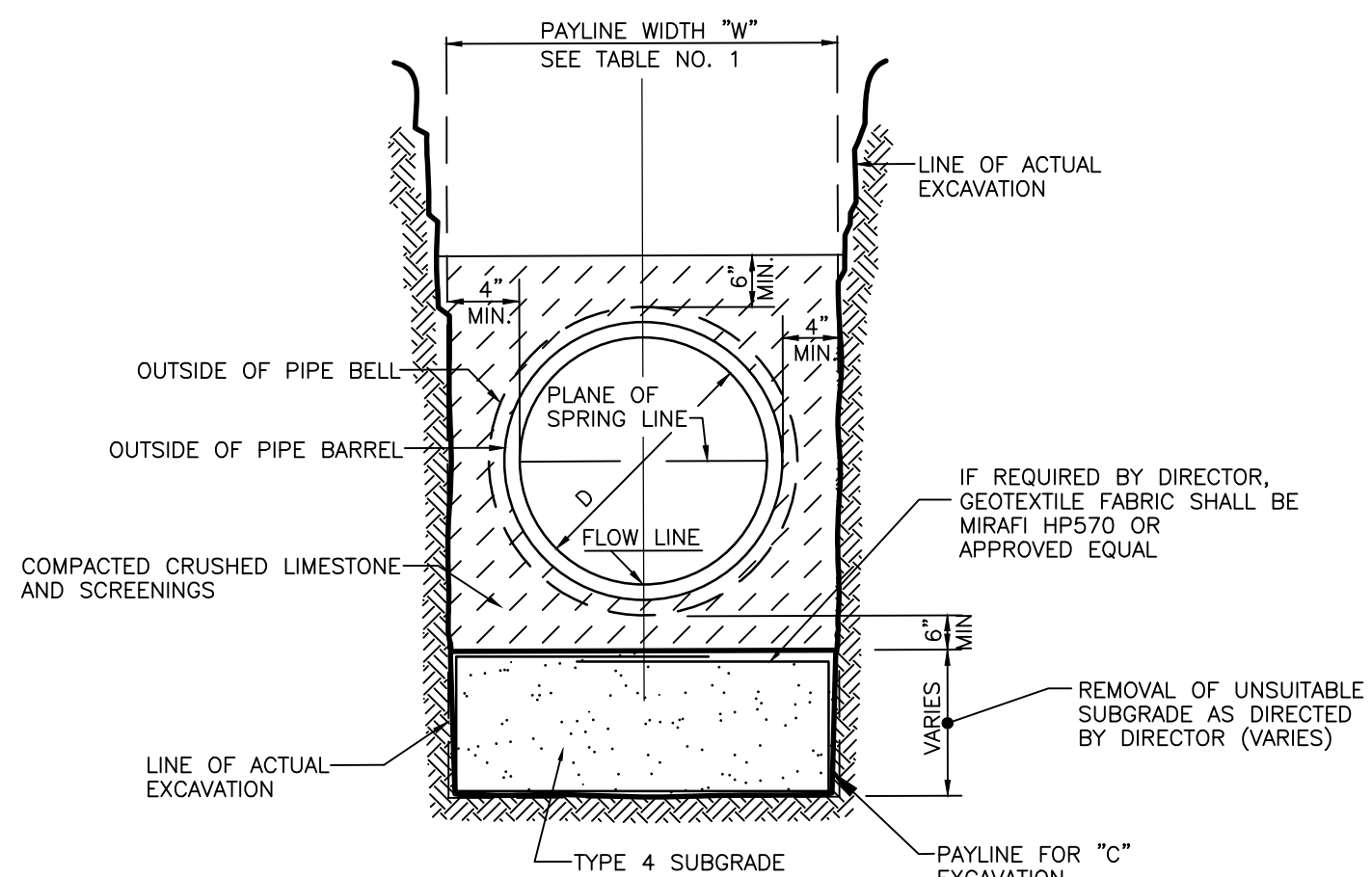
- NOTES:
- CHECK GRADE OF PIPE AFTER COMPACTION TO INSURE THE DESIRED FLOWLINE HAS NOT CHANGED.
 - ANY TRENCH BRACING USED BELOW THE TOP OF PIPE SHALL BE LEFT IN PLACE.
 - FOR INSTALLATIONS IN HIGHLY ORGANIC OR OPENLY FLOWING SOILS, THE ENTIRE PERIMETER OF THE PIPE BEDDING SHALL BE WRAPPED WITH AN APPROVED FILTER FABRIC OR THE "MINIMUM TRENCH WIDTH" SHALL BE EXPANDED BY INCREASING THE DISTANCE BETWEEN THE SIDE OF THE PIPE AND THE LINE OF ACTUAL EXCAVATION OR TRENCH BRACING TO A MINIMUM OF ONE PIPE DIAMETER.

PIPE BEDDING FOR FLEXIBLE PIPE (18" TO 48" DIAMETER) S-17

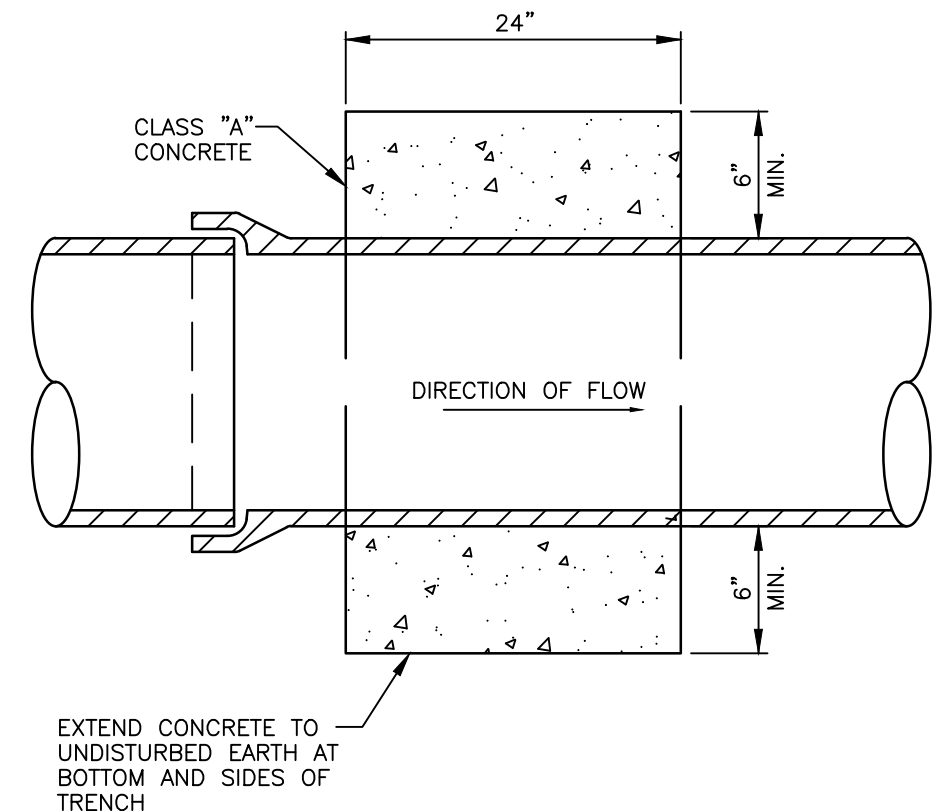


ALSO FOR PIPE SEWERS ON GRADES 25% TO 50% INCLUSIVE. FOR GRADES EXCEEDING 50% SEE PROJECT SPECIFICATIONS.

CONCRETE CRADLE (CLASS "A" BEDDING") S-18

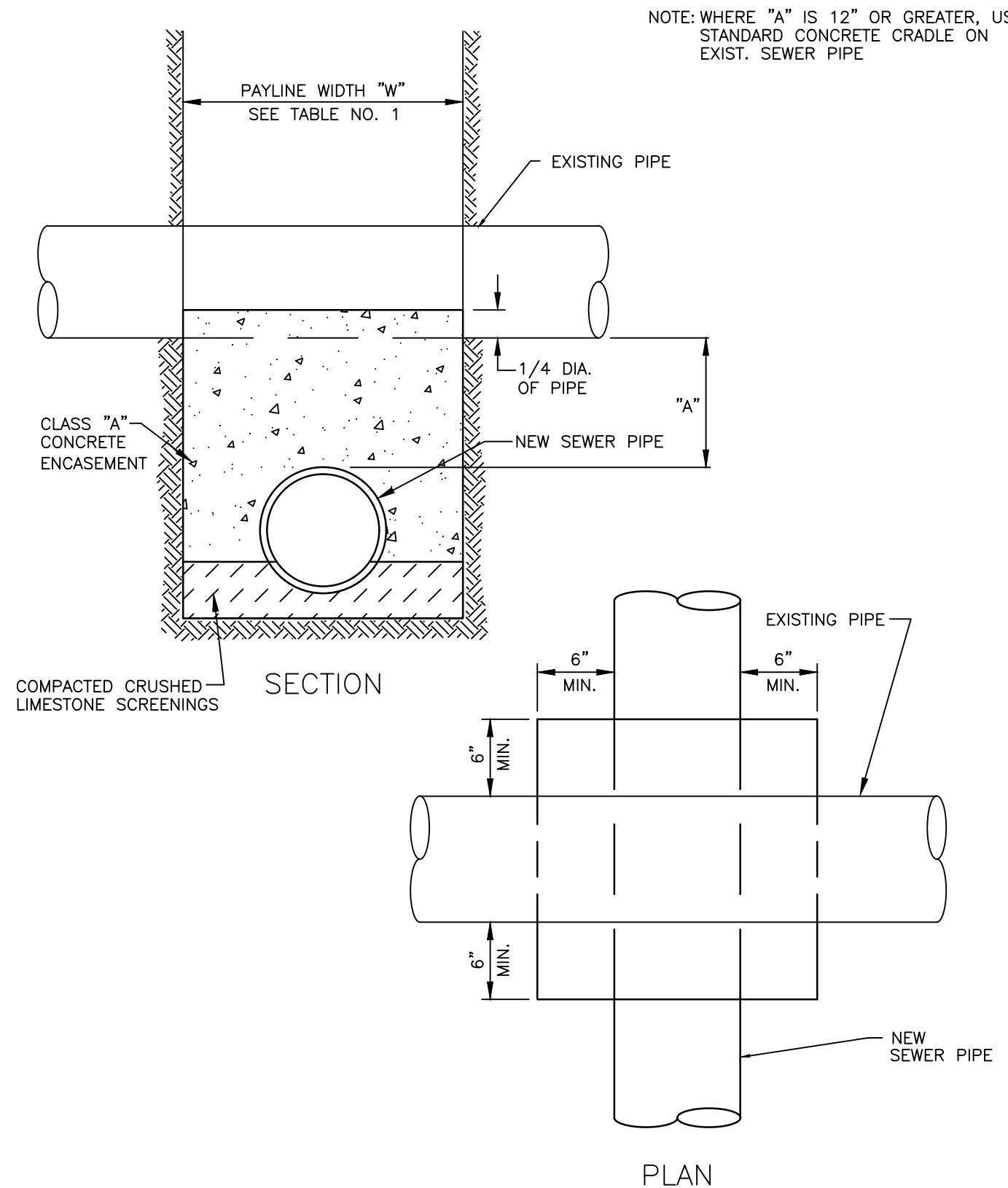


BEDDING OF PIPE LAID ON UNSUITABLE SUBGRADE S-19

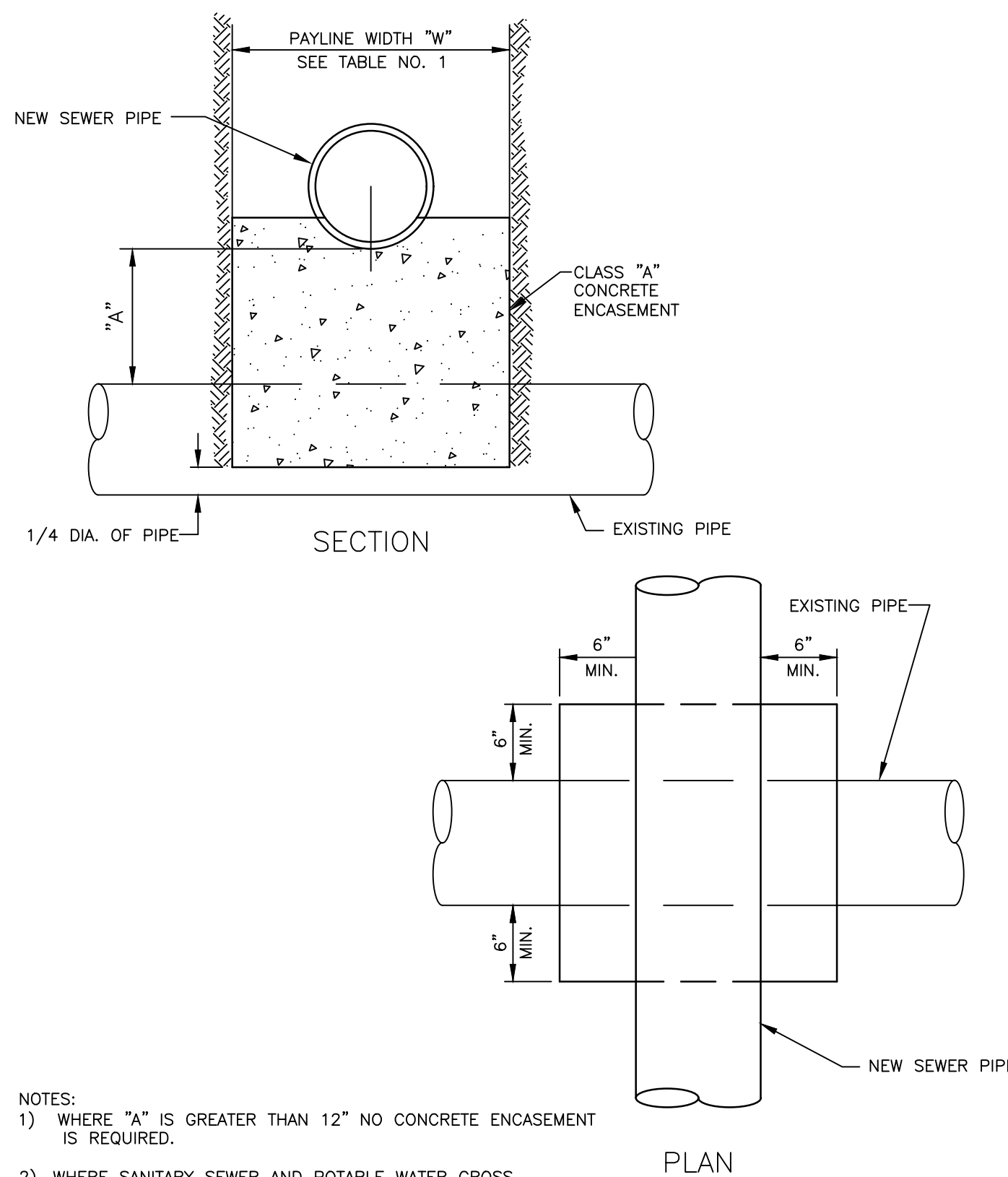


DETAIL OF CONCRETE COLLAR N.T.S.

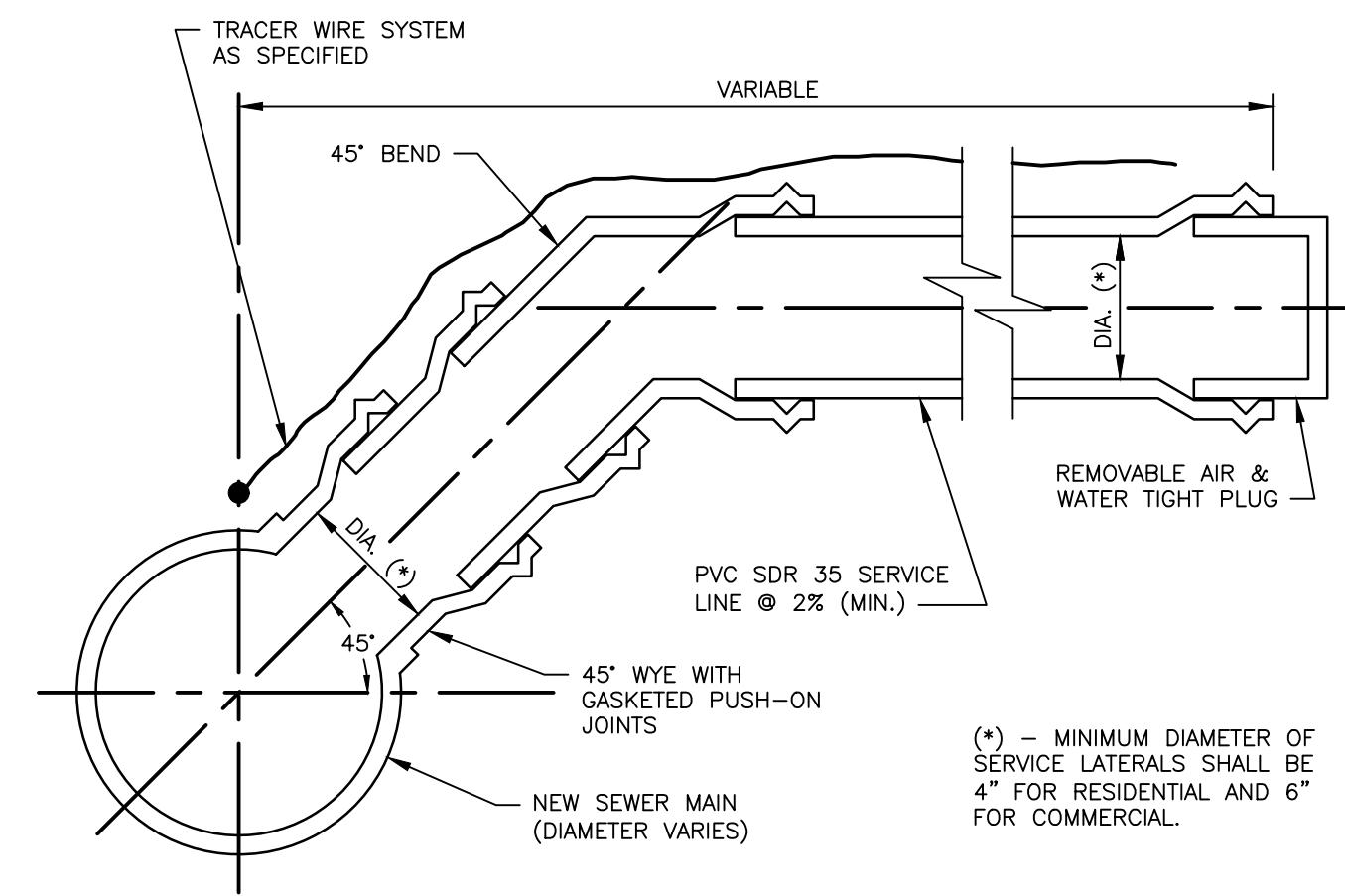
CONCRETE COLLAR S-20



PIPE ENCASEMENT FOR NEW SAN. PIPE UNDER EX. PIPE S-21

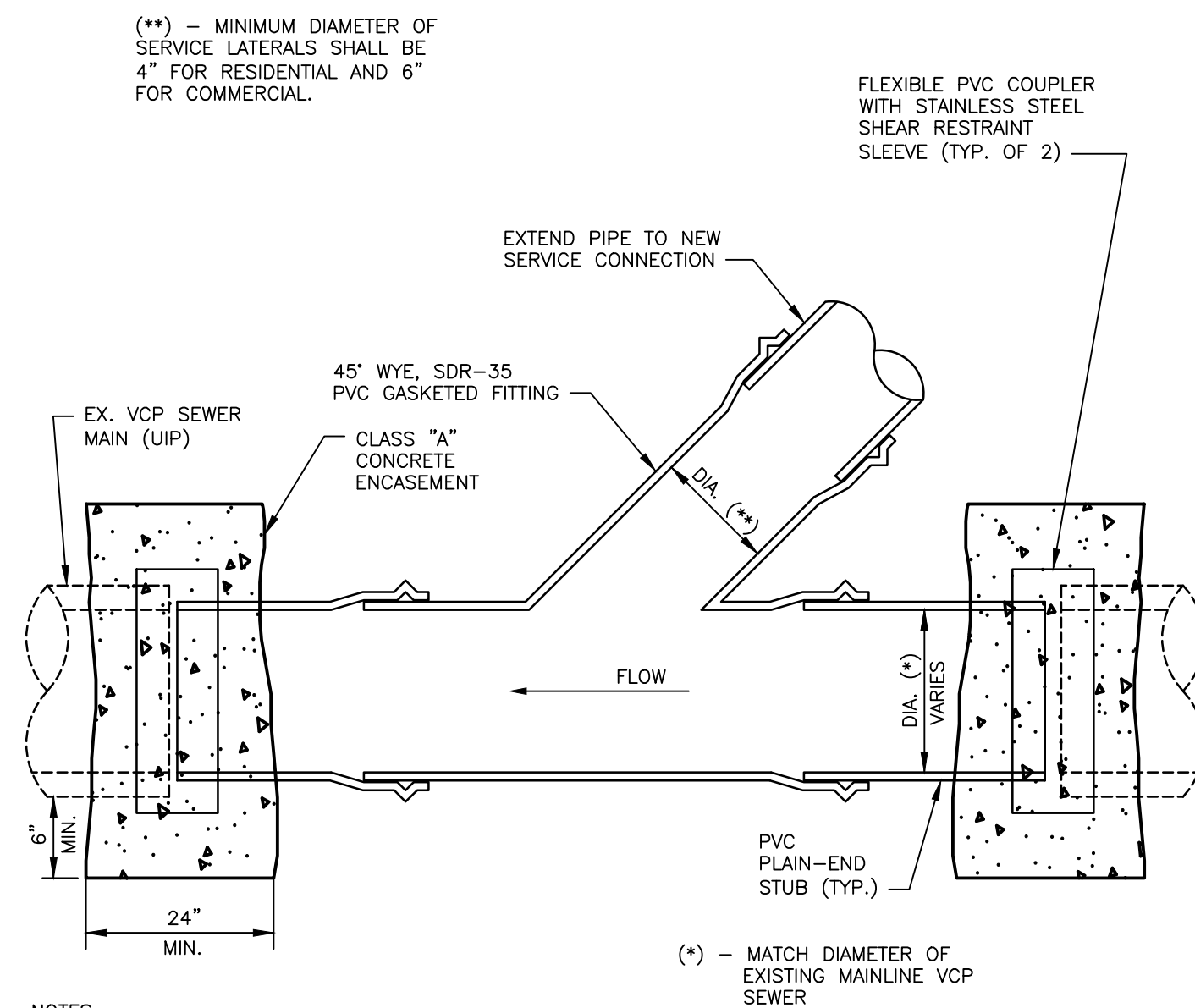


PIPE ENCASEMENT FOR NEW SAN. PIPE OVER EX. PIPE S-22



- SDR-35 PVC WITH GASKETED PUSH-ON JOINT.
- SEWER MAIN SHALL BE MIN 8" PVC SDR-35 UNLESS APPROVED BY DIRECTOR.
- A CLEAN, DRY BEDDING MATERIAL IS REQUIRED AROUND THE COMPLETED CONNECTION BEFORE BACK FILLING. THE BEDDING MATERIAL FOR THE CONNECTION AND LATERAL PIPE SHALL BE TYPE 1 INSTALLED PER THE TYPE C TRENCH DETAIL.
- LATERAL TAPS TO NEW CONSTRUCTION SHALL EXTEND 10 FEET BEYOND RIGHT OF WAY OR EASEMENT ONTO LOT TO BE SERVICED.
- SERVICE WYE AND SERVICE LINE TO BE THE SAME MATERIAL AS MAIN UNLESS APPROVED BY DIRECTOR.
- END OF SERVICE LINE SHALL HAVE A REMOVABLE AIR/WATER TIGHT PLUG.

NEW SEWER MAIN WITH LATERAL S-23



- NOTES:
- LATERAL CONNECTIONS TO EXISTING VCP SEWER MAIN SHALL BE MADE AS FOLLOWS: FLUSH CUT EXISTING VCP ON EITHER SIDE OF THE INTENDED CONNECTION. INSTALL SDR-35 COMPRESSION-JOINT PVC WYE WITH SDR-35 PVC STUBS BETWEEN BOTH ENDS OF THE VCP MAIN, ROTATED AXIALLY 45° FROM CENTER. CONNECT PVC STUBS TO EX. VCP WITH SHEAR-RESISTANT SHIELDED FLEXIBLE PVC COUPLER WITH STAINLESS STEEL SHEAR RESTRAINT.
 - COUPLING SHALL BE FERNCO 300 SERIES OR EQUAL. MATERIALS SHALL CONFORM TO ASTM C1173, ASTM C1460, AND ASTM 5926. ENCASE COUPLERS WITH CLASS "A" CONCRETE AS SHOWN.
 - WHEN A CONNECTION IS ALLOWED LARGER THAN 6" DIAMETER, OR WHEN APPROVED BY THE DIRECTOR, A SADDLE MAY BE USED IF THE I.D. OF THE CONNECTION PIPE IS NOT GREATER THAN ONE-HALF OF THE I.D. OF THE MAIN SEWER. SADDLE SHALL BE FERNCO TSPK-46 PRESSURE KIT, PIPECONX SADDLE WITH SHIELD, OR EQUAL. MATERIALS SHALL CONFORM TO ASTM C1173 AND ASTM C5926.

LATERAL CONNECTION TO EXISTING VCP SEWER MAIN S-24

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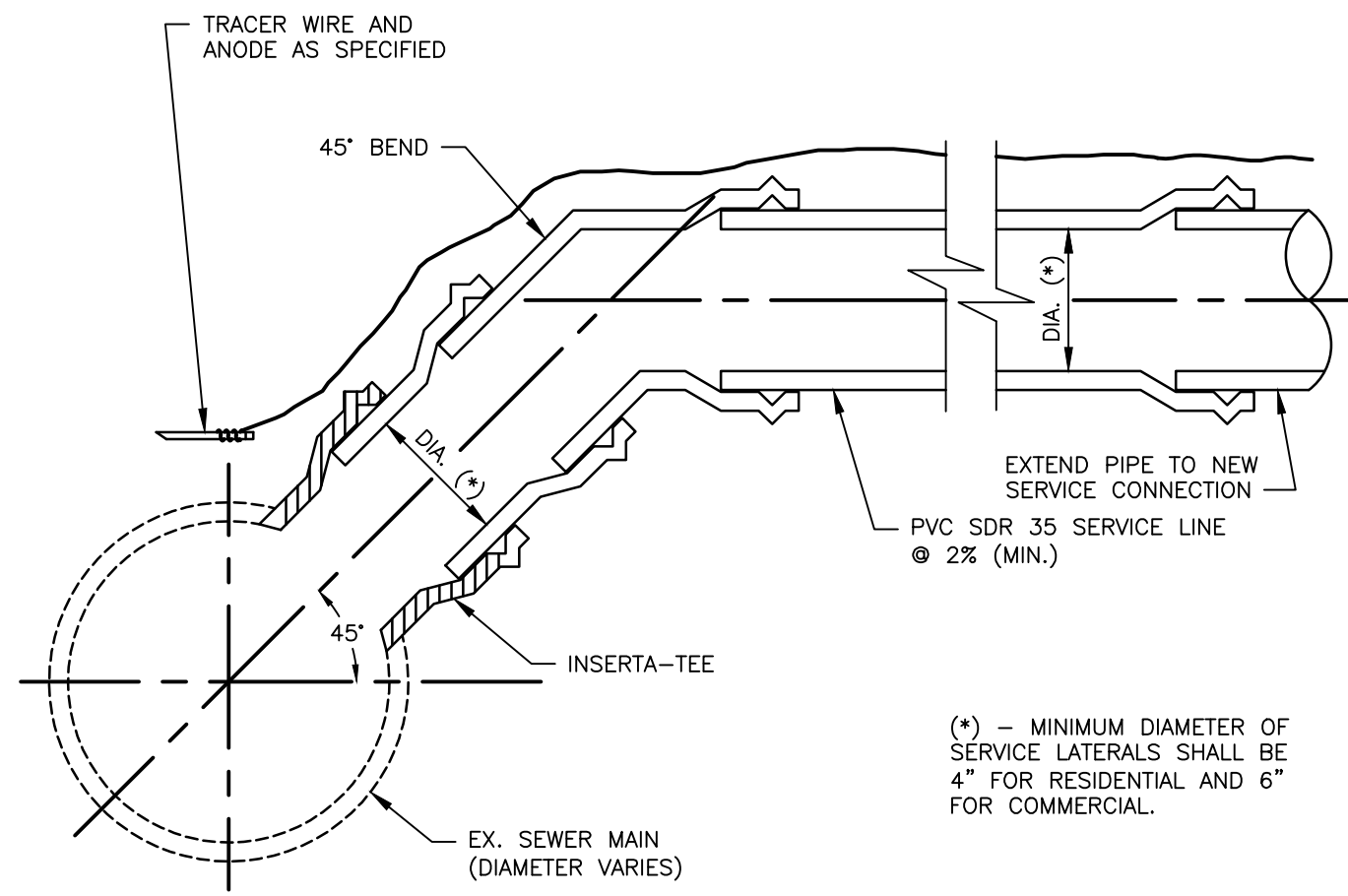
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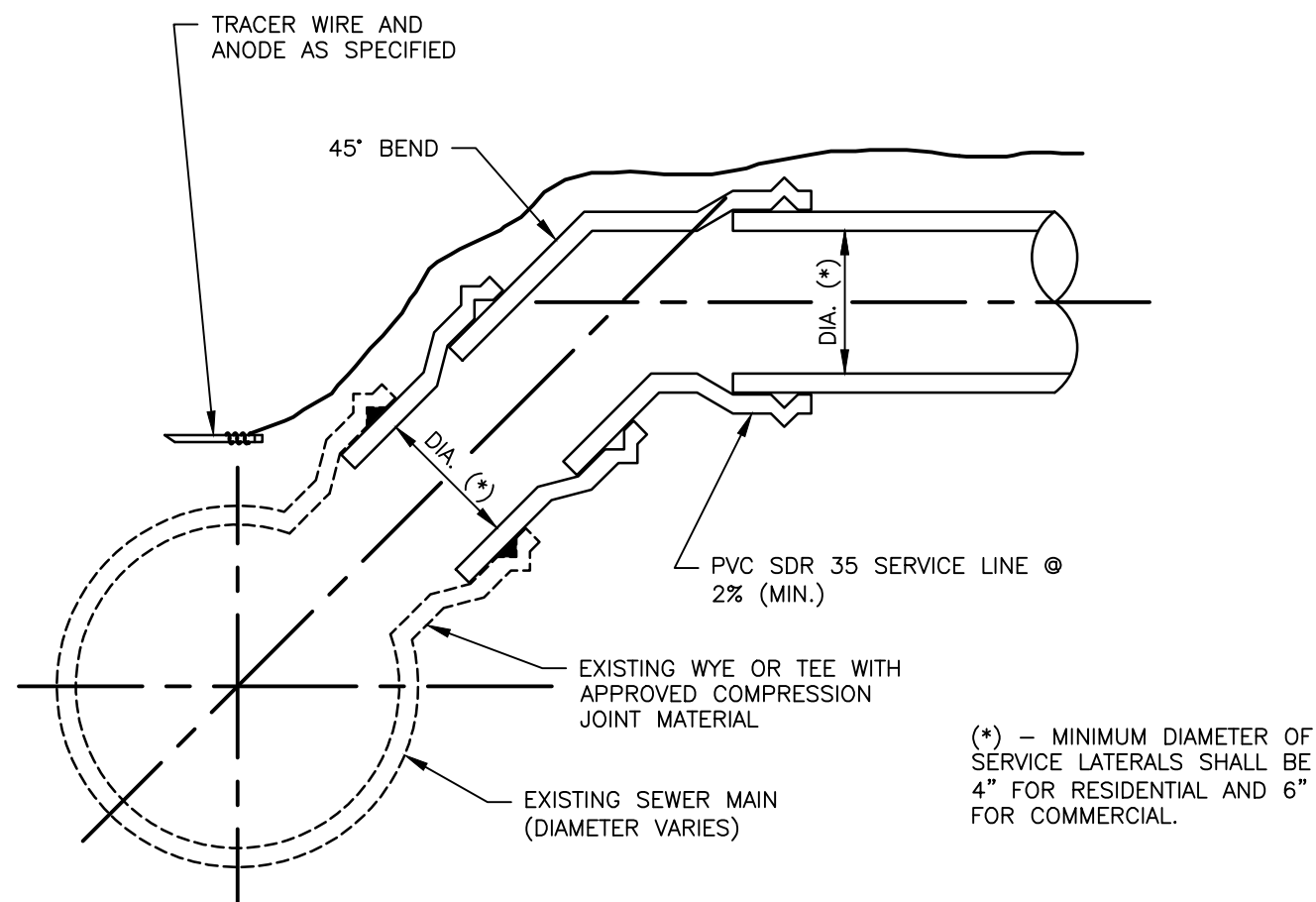
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NOTES:

- A NEW LATERAL CONNECTION TO EXISTING PVC SEWER MAIN, OR OTHER DIRECTOR APPROVED PIPE MATERIAL, SHALL BE MADE WITH AN "INSERT-A-TEE" FITTING. INSTALLATION OF THE INSERT-A-TEE SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- INSERT-A-TEES SHALL NOT BE INSTALLED ON EXISTING VITRIFIED CLAY PIPE (VCP), UNLESS VCP HAS BEEN PREVIOUSLY LINED WITH CURED-IN-PLACE PIPE (CIPP) AND INSTALLATION IS APPROVED BY THE DIRECTOR.
- NEW LATERAL PIPE AND FITTINGS SHALL BE PVC, SDR-35 WITH GASKETED JOINTS, UNLESS OTHERWISE APPROVED BY THE DIRECTOR. AN EXISTING 4" LATERAL PIPE MAY BE CONNECTED TO THE NEW 6" PVC PIPE USING A 4" X 6" PVC REDUCER. CONNECTION BETWEEN THE EXISTING PIPE AND NEW PIPE SHALL BE MADE WITH A DIRECTOR APPROVED FLEXIBLE PVC COUPLER WITH STAINLESS STEEL SHEAR RESTRAINT SLEEVE ENCASED IN CONCRETE.
- A CLEAN DRY BEDDING IS REQUIRED AROUND THE COMPLETED CONNECTION BEFORE BACKFILLING. THE BEDDING MATERIAL FOR CONNECTION AND LATERAL PIPE SHALL BE TYPE 1 INSTALLED PER THE TYPE C TRENCH DETAIL.

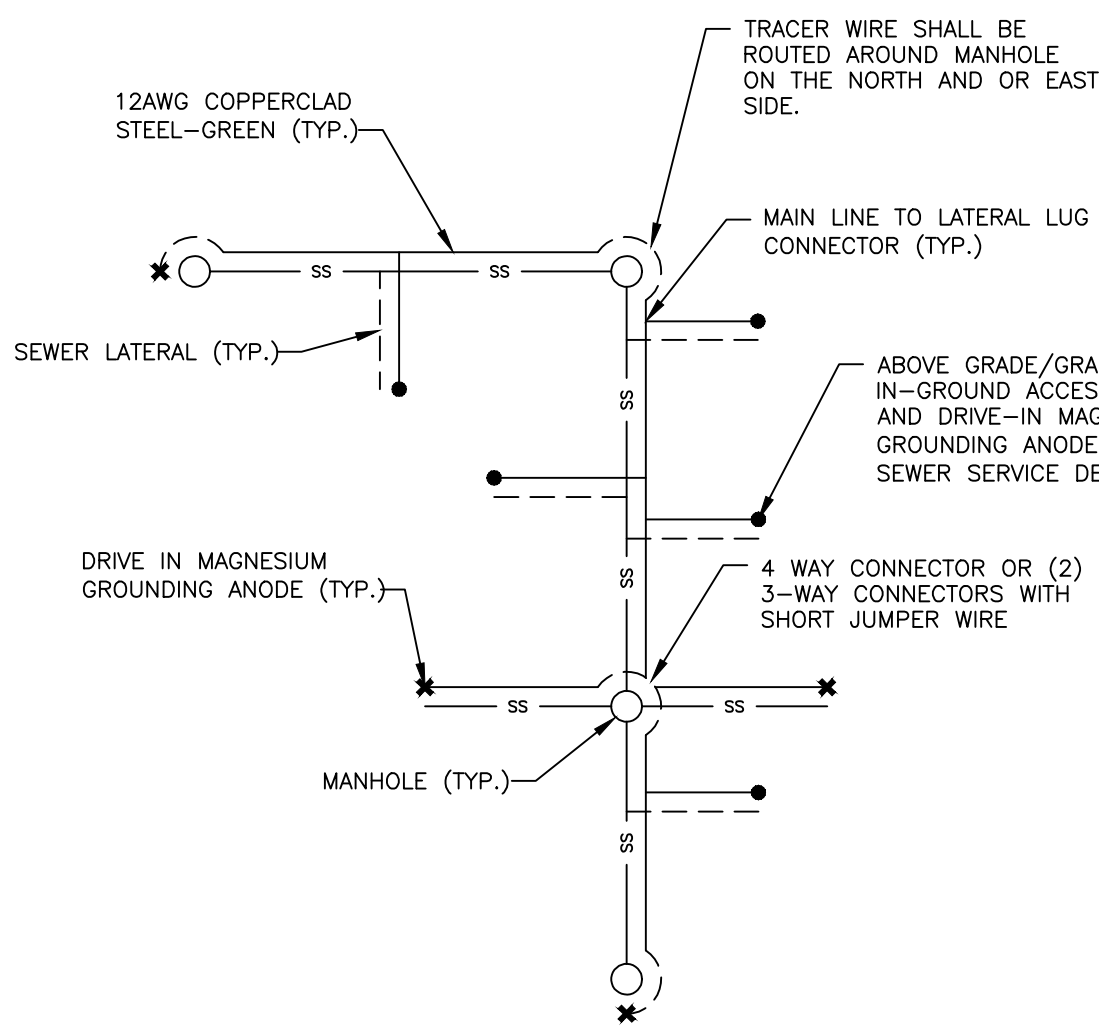
LATERAL CONNECTION TO EXISTING SEWER MAIN S-25



NOTES:

- WHEN APPROVED BY THE DIRECTOR, EXISTING WYE OR TEE MAY BE UTILIZED TO CONNECT A NEW SERVICE LATERAL TO THE EXISTING SEWER MAIN.
- CONNECTION TO EXISTING WYE OR TEE SHALL BE MADE WITH DIRECTOR APPROVED COMPRESSION JOINT MATERIAL THAT MATCHES THE SIZE AND MATERIAL OF THE EXISTING WYE OR TEE.
- NEW LATERAL PIPE AND FITTINGS SHALL BE PVC, SDR-35 WITH GASKETED JOINTS, UNLESS OTHERWISE APPROVED BY THE DIRECTOR. AN EXISTING 4" LATERAL PIPE MAY BE CONNECTED TO THE NEW 6" PVC PIPE USING A 4" X 6" PVC REDUCER. CONNECTION BETWEEN THE EXISTING PIPE AND NEW PIPE SHALL BE MADE WITH A DIRECTOR APPROVED FLEXIBLE PVC COUPLER WITH STAINLESS STEEL SHEAR RESTRAINT SLEEVE ENCASED IN CONCRETE.
- A CLEAN DRY BEDDING IS REQUIRED AROUND THE COMPLETED CONNECTION BEFORE BACKFILLING. THE BEDDING MATERIAL FOR CONNECTION AND LATERAL PIPE SHALL BE TYPE 1 INSTALLED PER THE TYPE C TRENCH DETAIL.

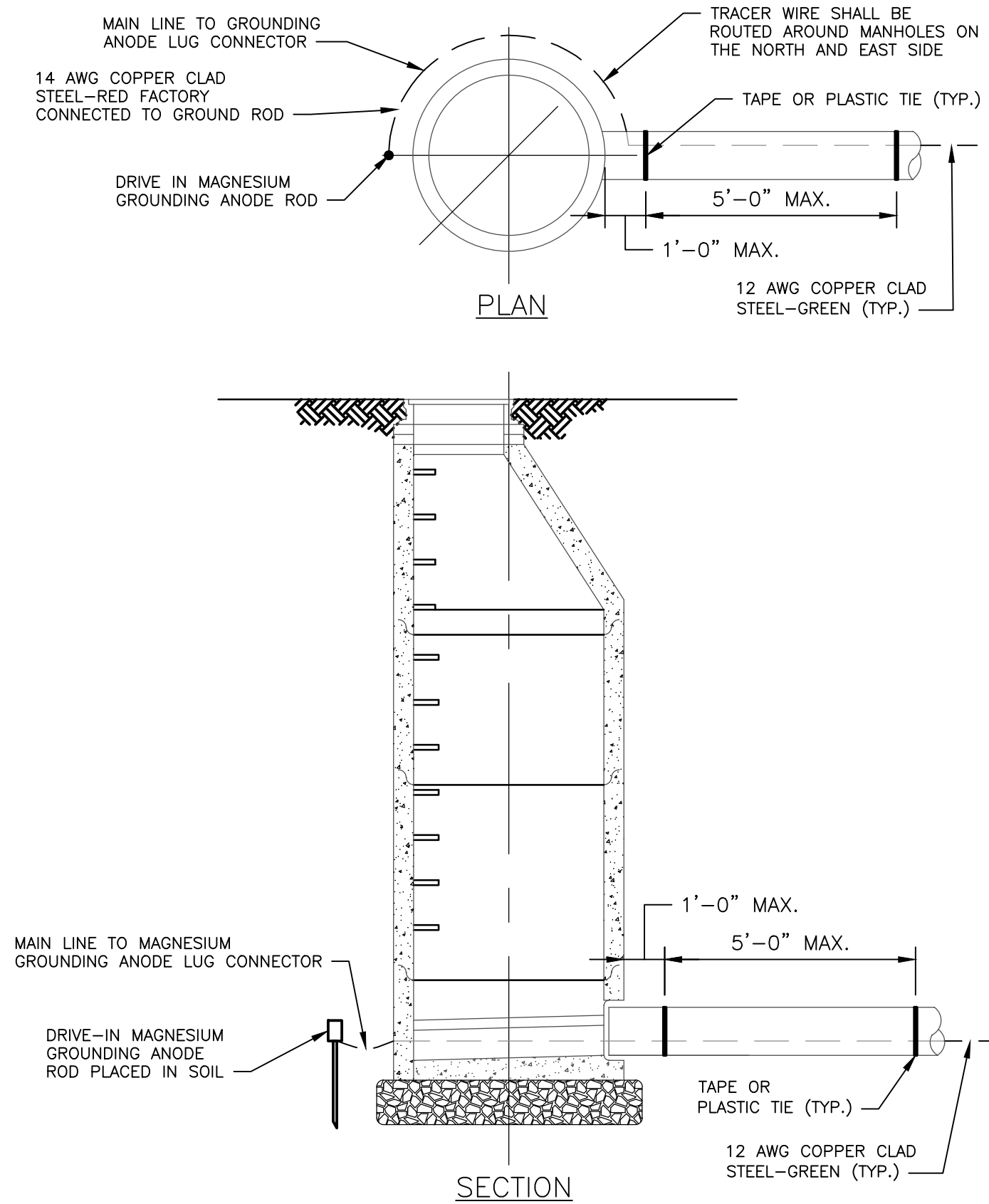
LATERAL CONNECTION TO EXISTING WYE OR TEE S-26



NOTES:

- WIRE SHOWN AWAY FROM PIPE FOR CLARITY. WIRE SHALL BE INSTALLED ON THE BOTTOM SIDE OF THE PIPE BELOW THE SPRING LINE. THE WIRES SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5' INTERVALS.

TRACER WIRE PLAN (NEW MAIN SEWER SYSTEM) S-29



TRACER WIRE AT MANHOLE (NEW MAIN SEWER SYSTEM) S-30

MATERIALS

GENERAL

- ALL TRACE WIRE AND TRACE WIRE PRODUCTS SHALL BE DOMESTICALLY MANUFACTURED IN THE U.S.A.
- ALL TRACE WIRE SHALL HAVE HDPE INSULATION INTENDED FOR DIRECT BURY, GREEN COLOR COATED PER APWA STANDARD FOR SANITARY SEWER AND FORCE MAIN.

TRACE WIRE

- OPEN TRENCH - TRACE WIRE SHALL BE #12 AWG COPPER CLAD STEEL, HIGH STRENGTH WITH MINIMUM 450 LB. BREAK LOAD, WITH MINIMUM 30 MIL HDPE INSULATION THICKNESS.
- DIRECTIONAL DRILLING/BORING - TRACE WIRE SHALL BE #12 AWG COPPER CLAD STEEL, EXTRA HIGH STRENGTH WITH MINIMUM 1,150 LB. BREAK LOAD, WITH MINIMUM 30 MIL HDPE INSULATION THICKNESS.
- TRACE WIRE - PIPE BURSTING/SLIP LINING - TRACE WIRE SHALL BE 7 X 7 STRANDED COPPER CLAD STEEL, EXTREME STRENGTH WITH 4,700 LB. BREAK LOAD, WITH MINIMUM 50 MIL HDPE INSULATION THICKNESS.

CONNECTORS

- ALL MAINLINE TRACE WIRES MUST BE INTERCONNECTED IN INTERSECTIONS, AT MAINLINE TEES AND MAINLINE CROSSES, AT TEES, THE THREE WIRES SHALL BE JOINED USING A SINGLE 3-WAY LOCKABLE CONNECTOR. AT CROSSES, THE FOUR WIRES SHALL BE JOINED USING A 4-WAY CONNECTOR. USE OF TWO 3-WAY CONNECTORS WITH A SHORT JUMPER WIRE BETWEEN THEM IS AN ACCEPTABLE ALTERNATIVE.
- DIRECT BURY WIRE CONNECTORS - SHALL INCLUDE 3-WAY LOCKABLE CONNECTORS AND MAINLINE TO LATERAL LUG CONNECTORS SPECIFICALLY MANUFACTURED FOR USE IN UNDERGROUND TRACE WIRE INSTALLATION. CONNECTORS SHALL BE DIELECTRIC SILICON FILLED TO SEAL OUT MOISTURE AND CORROSION, AND SHALL BE INSTALLED IN A MANNER SO AS TO PREVENT ANY UNINSULATED WIRE EXPOSURE.
- NON LOCKING FRICTION FIT, TWIST ON OR TAPED CONNECTORS ARE PROHIBITED.

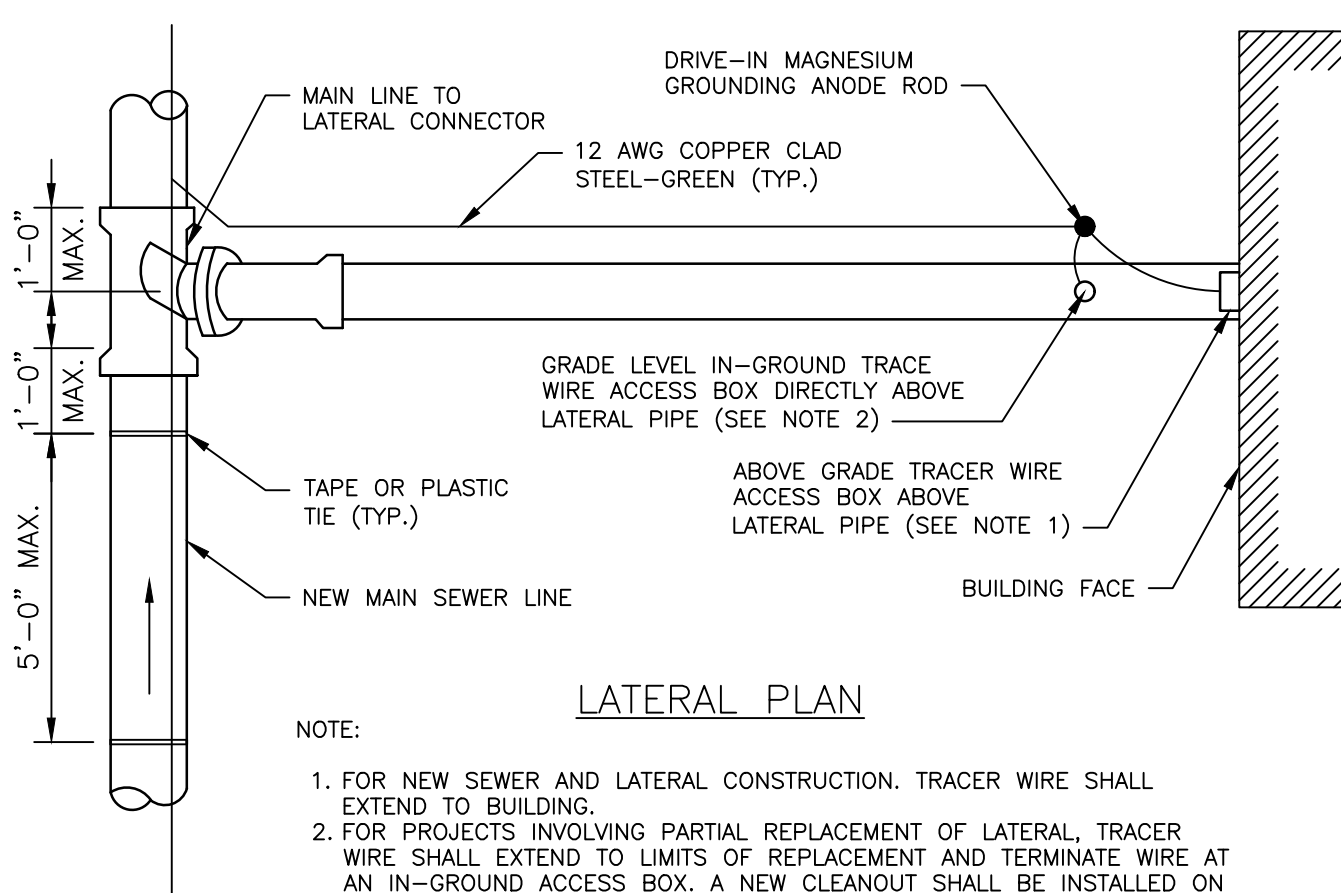
TERMINATION/ACCESS

- ALL TRACE WIRE TERMINATION POINTS MUST UTILIZE AN APPROVED TRACE WIRE ACCESS BOX (ABOVE GROUND ACCESS BOX OR GRADE LEVEL/IN-GROUND ACCESS BOX AS APPLICABLE), SPECIFICALLY MANUFACTURED FOR THIS PURPOSE.
- ALL GRADE LEVEL/IN-GROUND ACCESS BOXES SHALL BE APPROPRIATELY IDENTIFIED WITH "SEWER" CAST INTO THE CAP AND BE COLOR CODED GREEN.
- A MINIMUM OF 2 FT. OF EXCESS/SLACK WIRE IS REQUIRED IN ALL TRACE WIRE ACCESS BOXES AFTER MEETING FINAL ELEVATION.
- ALL TRACE WIRE ACCESS BOXES MUST INCLUDE A MANUALLY INTERRUPTIBLE CONDUCTIVE/CONNECTIVE LINK BETWEEN THE TERMINAL(S) FOR THE TRACE WIRE CONNECTION AND THE TERMINAL FOR THE GROUNDING ANODE WIRE CONNECTION.
- GROUNDING ANODE WIRE SHALL BE CONNECTED TO THE IDENTIFIED (OR BOTTOM) TERMINAL ON ALL ACCESS BOXES.
- SERVICE LATERALS - TRACE WIRE MUST TERMINATE AT AN APPROVED ABOVE-GROUND TRACE WIRE ACCESS BOX, AFFIXED TO THE BUILDING EXTERIOR DIRECTLY ABOVE WHERE THE UTILITY ENTERS THE BUILDING, AT AN ELEVATION NOT GREATER THAN 5 VERTICAL FEET ABOVE FINISHED GRADE, OR TERMINATE AT AN APPROVED GRADE LEVEL/IN-GROUND TRACE WIRE ACCESS BOX, LOCATED WITHIN 2 LINEAR FEET OF THE BUILDING BEING SERVED BY THE DISTRICT.
- LONG-RUNS, IN EXCESS OF 500 LINEAR FEET WITHOUT SERVICE LATERALS - TRACE WIRE ACCESS MUST BE PROVIDED UTILIZING AN APPROVED GRADE LEVEL/IN-GROUND TRACE WIRE ACCESS BOX, LOCATED AT THE EDGE OF THE ROAD, RIGHT-OF-WAY, AND OUT OF THE ROADWAY. THE GRADE LEVEL/IN-GROUND TRACE WIRE ACCESS BOX SHALL BE DELINEATED USING A MINIMUM 48" POLYETHYLENE MARKER POST, COLOR CODED GREEN PER APWA STANDARD.

GROUNDING

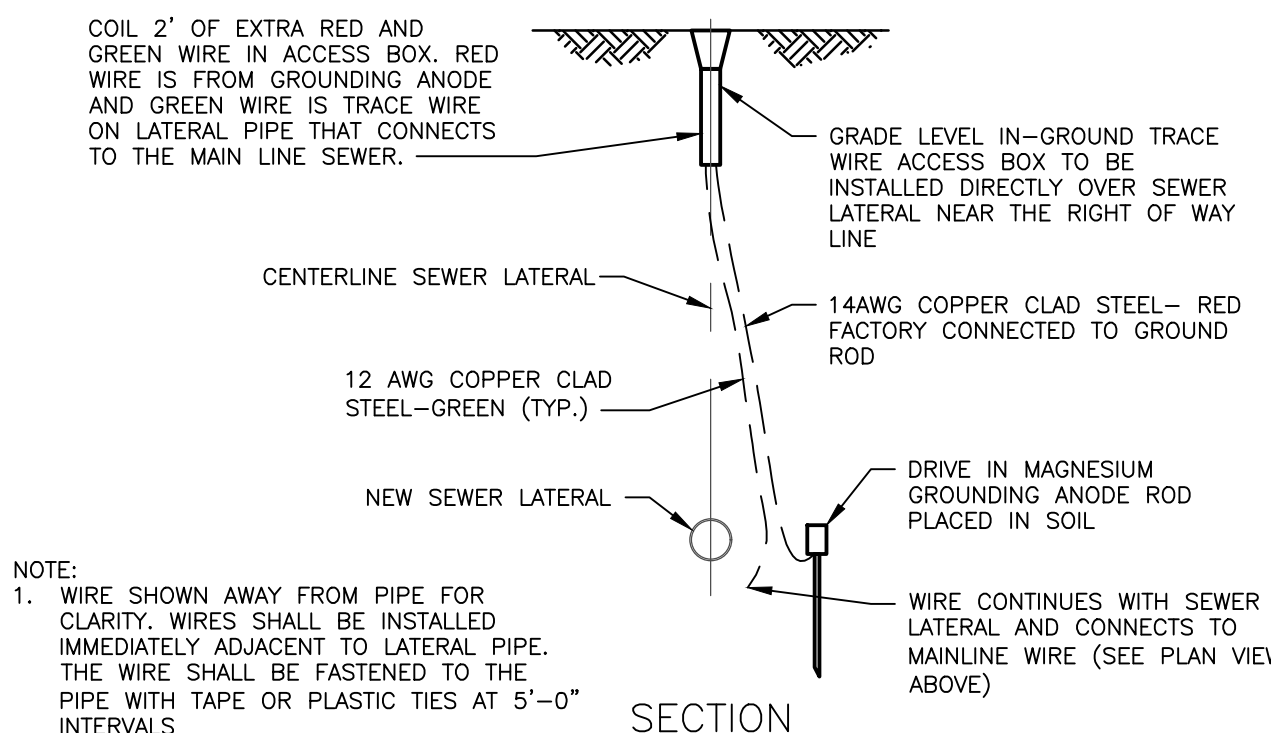
- TRACE WIRE MUST BE PROPERLY GROUNDING AT ALL DEAD ENDS/STUBS.
- GROUNDING OF TRACE WIRE SHALL BE ACHIEVED BY USE OF A DRIVE-IN MAGNESIUM GROUNDING ANODE ROD WITH A MINIMUM OF 20 FT. OF #14 RED HDPE INSULATED COPPER CLAD STEEL WIRE CONNECTED TO ANODE (MINIMUM 1.5 LB.) SPECIFICALLY MANUFACTURED FOR THIS PURPOSE, AND BURIED AT THE SAME ELEVATION AS THE SEWER PIPE OR FORCE MAIN.
- WHEN GROUNDING THE TRACE WIRE AT DEAD ENDS/STUBS, THE GROUNDING ANODE SHALL BE INSTALLED IN A DIRECTION 180 DEGREES OPPOSITE OF THE TRACE WIRE, AT THE MAXIMUM POSSIBLE DISTANCE.
- WHEN GROUNDING THE TRACE WIRE IN AREAS WHERE THE TRACE WIRE IS CONTINUOUS AND NEITHER THE MAINLINE TRACE WIRE OR THE GROUNDING ANODE WIRE WILL BE TERMINATED AT/ABOVE GRADE, INSTALL GROUNDING ANODE DIRECTLY BENEATH AND IN-LINE WITH THE TRACE WIRE. DO NOT COIL EXCESS WIRE FROM GROUNDING ANODE. IN THIS INSTALLATION METHOD, THE GROUNDING ANODE WIRE SHALL BE TRIMMED TO AN APPROPRIATE LENGTH BEFORE CONNECTING TO TRACE WIRE WITH A MAINLINE TO LATERAL LUG CONNECTOR.
- WHERE THE ANODE WIRE WILL BE CONNECTED TO A TRACE WIRE ACCESS BOX, A MINIMUM OF 2 FT. OF EXCESS/SLACK WIRE IS REQUIRED AFTER MEETING FINAL ELEVATION.

TRACER WIRE SPECIFICATIONS (1) S-27



NOTE:

- FOR NEW SEWER AND LATERAL CONSTRUCTION, TRACER WIRE SHALL EXTEND TO BUILDING.
- FOR PROJECTS INVOLVING PARTIAL REPLACEMENT OF LATERAL, TRACER WIRE SHALL EXTEND TO LIMITS OF REPLACEMENT AND TERMINATE WIRE AT AN IN-GROUND ACCESS BOX. A NEW CLEANOUT SHALL BE INSTALLED ON LATERAL AT THIS LOCATION.



NOTE:

- WIRE SHOWN AWAY FROM PIPE FOR CLARITY. WIRES SHALL BE INSTALLED IMMEDIATELY ADJACENT TO LATERAL PIPE. THE WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5'-0" INTERVALS.

TRACER WIRE AT LATERAL (NEW MAIN SEWER SYSTEM) S-31

INSTALLATION

GENERAL

- TRACE WIRE INSTALLATION SHALL BE PERFORMED IN SUCH A MANNER THAT ALLOWS PROPER ACCESS FOR CONNECTION OF LINE TRACING EQUIPMENT, PROPER LOCATING OF WIRE WITHOUT LOSS OR DETERIORATION OF LOW FREQUENCY (512HZ) SIGNAL FOR DISTANCES IN EXCESS OF 1,000 LINEAR FEET, AND WITHOUT DISTORTION OF SIGNAL CAUSED BY MULTIPLE WIRES BEING INSTALLED IN CLOSE PROXIMITY TO ONE ANOTHER.
- TRACE WIRE SYSTEMS MUST BE INSTALLED AS A SINGLE CONTINUOUS WIRE, EXCEPT WHERE USING APPROVED CONNECTORS. NO LOOPING OR COILING OF WIRE IS ALLOWED.
- ANY DAMAGE OCCURRING DURING INSTALLATION OF THE TRACE WIRE MUST BE IMMEDIATELY REPAIRED BY REMOVING THE DAMAGED WIRE, AND INSTALLING A NEW SECTION OF WIRE WITH APPROVED CONNECTORS. TAPING AND/OR SPRAY COATING SHALL NOT BE ALLOWED.
- TRACE WIRE SHALL BE INSTALLED AT THE BOTTOM HALF OF THE PIPE AND SECURED (TAPED/TIED) AT 5' INTERVALS.
- TRACE WIRE MUST BE PROPERLY GROUNDING AS SPECIFIED.
- TRACE WIRE ON ALL SERVICE LATERALS/STUBS MUST TERMINATE AT AN APPROVED TRACE WIRE ACCESS BOX LOCATED DIRECTLY ABOVE THE SEWER PIPE. (SEE TRACE WIRE TERMINATION/ACCESS)
- AT ALL MAINLINE DEAD-ENDS, TRACE WIRE SHALL GO TO GROUND USING AN APPROVED CONNECTION TO A DRIVE-IN MAGNESIUM GROUNDING ANODE ROD, BURIED AT THE SAME DEPTH AS THE TRACE WIRE. (SEE GROUNDING)
- MAINLINE TRACE CONDUCTIVE PIPES TREAT AS A MAINLINE DEAD-END, GROUND USING AN APPROVED WATERPROOF CONNECTION TO A GROUNDING ANODE BURIED AT THE SAME DEPTH AS THE TRACE WIRE.
- ALL SERVICE LATERAL TRACE WIRES SHALL BE A SINGLE WIRE, CONNECTED TO THE MAINLINE TRACE WIRE USING A MAINLINE TO LATERAL LUG CONNECTOR, INSTALLED WITHOUT CUTTING/SPRINGING THE MAINLINE TRACE WIRE.
- IN OCCURRENCES WHERE AN EXISTING TRACE WIRE IS ENCOUNTERED ON AN EXISTING UTILITY THAT IS BEING EXTENDED OR TIED INTO, THE NEW TRACE WIRE AND EXISTING TRACE WIRE SHALL BE CONNECTED USING APPROVED SPLICE CONNECTORS, AND SHALL BE PROPERLY GROUNDING AT THE SPLICE LOCATION AS SPECIFIED.
- A MAINLINE TRACE WIRE MUST BE INSTALLED, WITH ALL SERVICE LATERAL TRACE WIRES PROPERLY CONNECTED TO THE MAINLINE TRACE WIRE, TO ENSURE FULL TRACING/LOCATING CAPABILITIES FROM A SINGLE CONNECTION POINT.
- LAY MAINLINE TRACE WIRE CONTINUOUSLY, BY-PASSING AROUND THE OUTSIDE OF MANHOLES/STRUCTURES ON THE NORTH OR EAST SIDE.
- TRACE WIRE ON ALL SANITARY SERVICE LATERALS MUST TERMINATE AT AN APPROVED TRACE WIRE ACCESS BOX COLOR CODED GREEN AND LOCATED DIRECTLY ABOVE THE SERVICE LATERAL.

PROHIBITED PRODUCTS AND METHODS

THE FOLLOWING PRODUCTS AND METHODS SHALL NOT BE ALLOWED OR ACCEPTABLE

- UNINSULATED TRACE WIRE
- TRACE WIRE INSULATIONS OTHER THAN HDPE
- TRACE WIRES NOT DOMESTICALLY MANUFACTURED
- NON LOCKING, FRICTION FIT, TWIST ON OR TAPED CONNECTORS
- BRASS OR COPPER GROUND RODS
- WIRE CONNECTIONS UTILIZING TAPING OR SPRAY-ON WATERPROOFING
- LOOPED WIRE OR CONTINUOUS WIRE INSTALLATIONS, THAT HAS MULTIPLE WIRES LAID SIDE-BY-SIDE OR IN CLOSE PROXIMITY TO ONE ANOTHER
- TRACE WIRE WRAPPED AROUND THE CORRESPONDING UTILITY
- BRASS FITTINGS WITH TRACE WIRE CONNECTION LUGS
- WIRE TERMINATIONS WITHIN THE ROADWAY, I.E. IN VALVE BOXES, CLEANOUTS, MANHOLES, ETC.
- CONNECTING TRACE WIRE TO EXISTING CONDUCTIVE UTILITIES

TESTING

- ALL NEW TRACE WIRE INSTALLATIONS SHALL BE LOCATED BY CONTRACTOR USING TYPICAL LOW FREQUENCY (512HZ) LINE TRACING EQUIPMENT AND WITNESSED BY THE DISTRICT PRIOR TO ACCEPTANCE OF OWNERSHIP.
- THIS VERIFICATION SHALL BE PERFORMED UPON COMPLETION OF ROUGH GRADING AND AGAIN PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
- CONTINUITY TESTING IN LIEU OF ACTUAL LINE TRACING SHALL NOT BE ACCEPTED.

ACCEPTABLE PRODUCTS

TRACE WIRE PRODUCTS SHALL BE AS FOLLOWS OR DIRECTOR APPROVED EQUIV:

COPPER CLAD STEEL (CCS) TRACE WIRE

- OPEN TRENCH - COPPERHEAD #12 HIGH STRENGTH PART # 1230-HS
- DIRECTIONAL DRILLING/BORING - COPPERHEAD EXTRA HIGH STRENGTH PART # 1245*EHS
- PIPE BURSTING/SLIP LINING - COPPERHEAD SOLOSHOT EXTREME STRENGTH 7 X 7 STRANDED PART # PBX-50

CONNECTORS

- COPPERHEAD 3-WAY LOCKING CONNECTOR PART # LSC1230*
- DRYCON 3-WAY DIRECT BURY LUG: COPPERHEAD PART # 3WB-01

BOXES TO BE PROVIDED WITH 2-TERMINAL CONNECTION LID WHERE BOTH GROUND AND TRACE WIRES ARE PRESENT, COPPERHEAD PART # SP-LID-2

NON-ROADWAY ACCESS BOXES APPLICATIONS: TRACE WIRE ACCESS BOXES GRADE LEVEL COPPERHEAD ADJUSTABLE LITE DUTY PART # LD14*TP

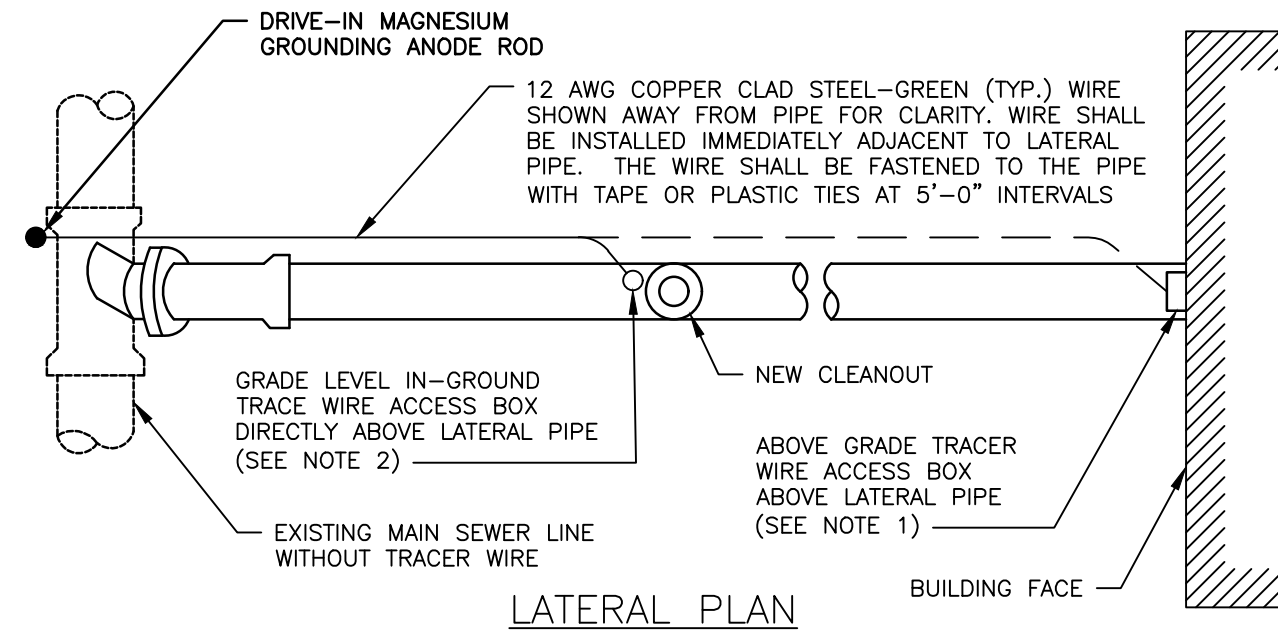
CONCRETE / DRIVEWAY ACCESS BOX APPLICATIONS: TRACE WIRE ACCESS BOXES GRADE LEVEL COPPERHEAD PART # CD14*TP 14"

ROADWAY ACCESS BOX APPLICATIONS: TRACE WIRE ACCESS BOXES GRADE LEVEL COPPERHEAD PART # RB14*TP

GROUNDING

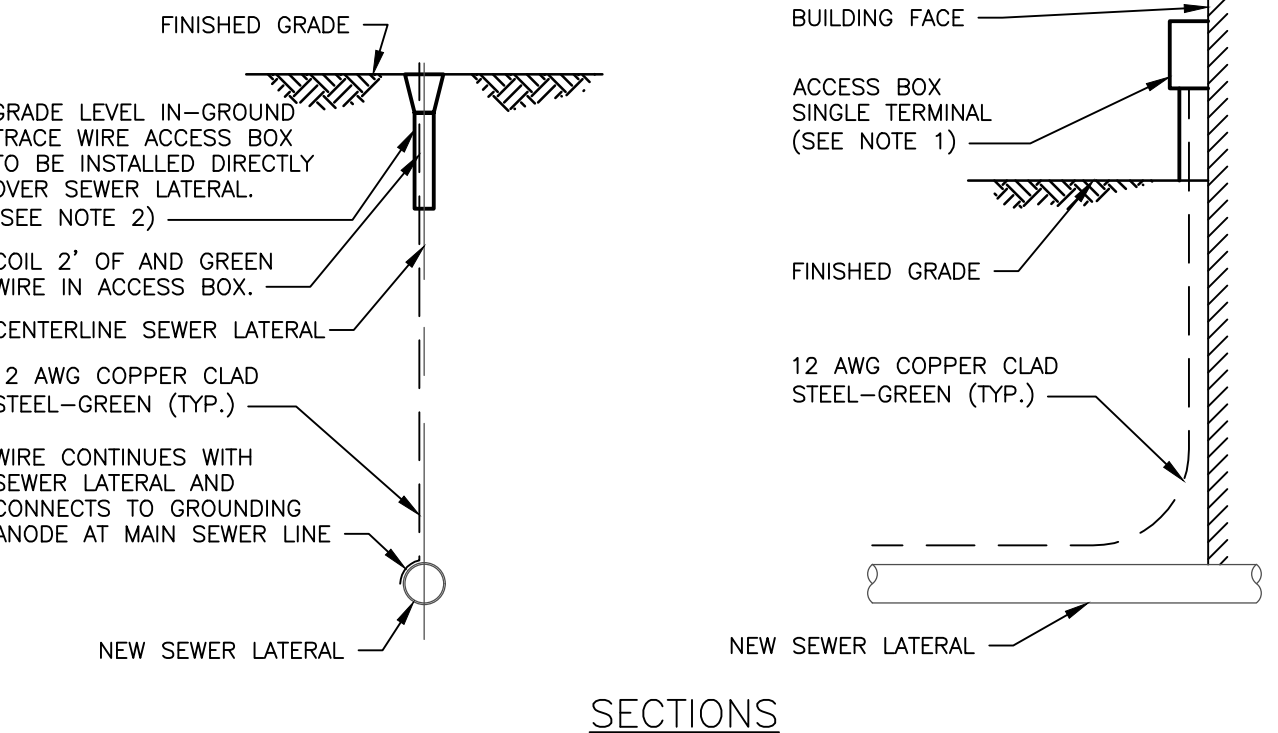
- ABOVE GRADE ACCESS BOX: COPPERHEAD PART # T2
- DRIVE IN MAGNESIUM ANODE: COPPERHEAD PART # ANO-1005 (1.5 LB)

TRACER WIRE SPECIFICATIONS (2) S-28



NOTES:

- FOR NEW LATERAL CONSTRUCTION, TRACER WIRE SHALL EXTEND TO BUILDING.
- FOR PROJECTS INVOLVING PARTIAL REPLACEMENT OF LATERAL, TRACER WIRE SHALL EXTEND TO LIMITS OF REPLACEMENT AND TERMINATE WIRE AT AN IN-GROUND ACCESS BOX. A NEW CLEANOUT SHALL BE INSTALLED ON LATERAL AT THIS LOCATION.



SECTIONS

TRACER WIRE AT LATERAL (EX. MAIN SEWER LINE) S-32

NO.	DATE	REVISIONS	BY

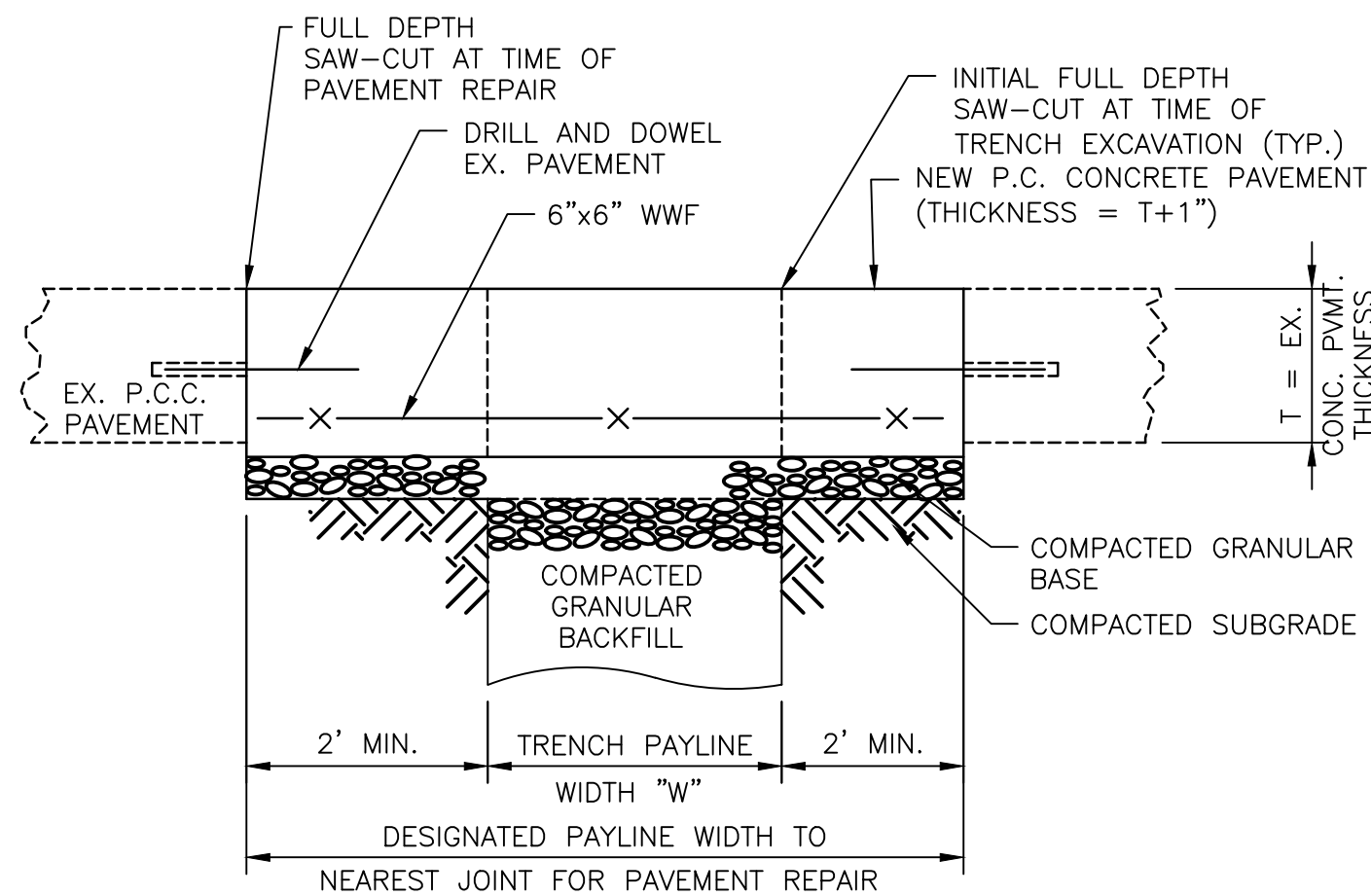
CHECKED BY: KAP
SCALE: N.T.S.

DATE: 4/8/2021
VERT. N.T.S.

CITY OF JACKSON
101 COURT STREET, JACKSON, MISSOURI
WASTEWATER DIVISION

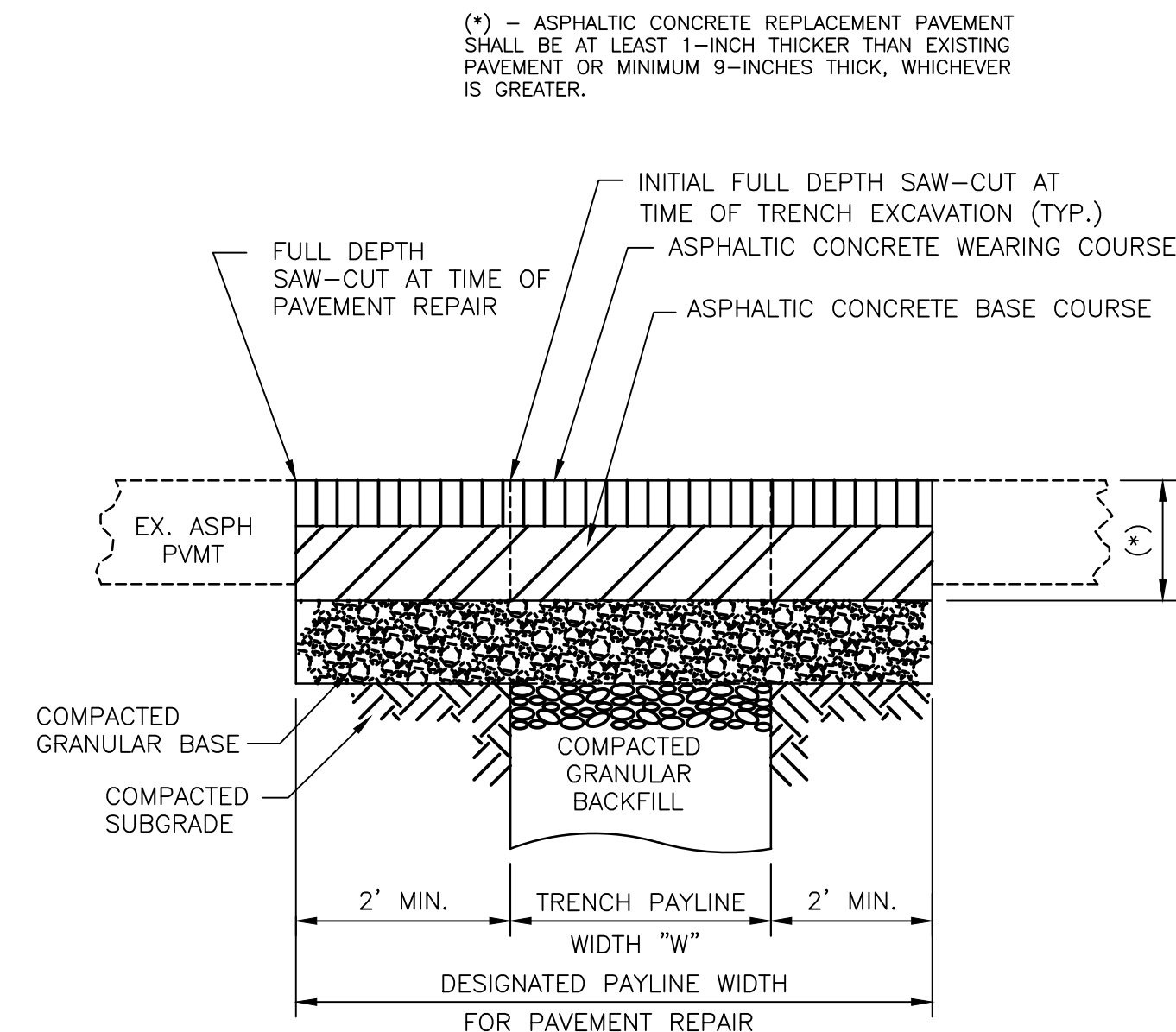
CITY OF JACKSON
SANITARY STANDARDS

SHEET
NUMBER: 4



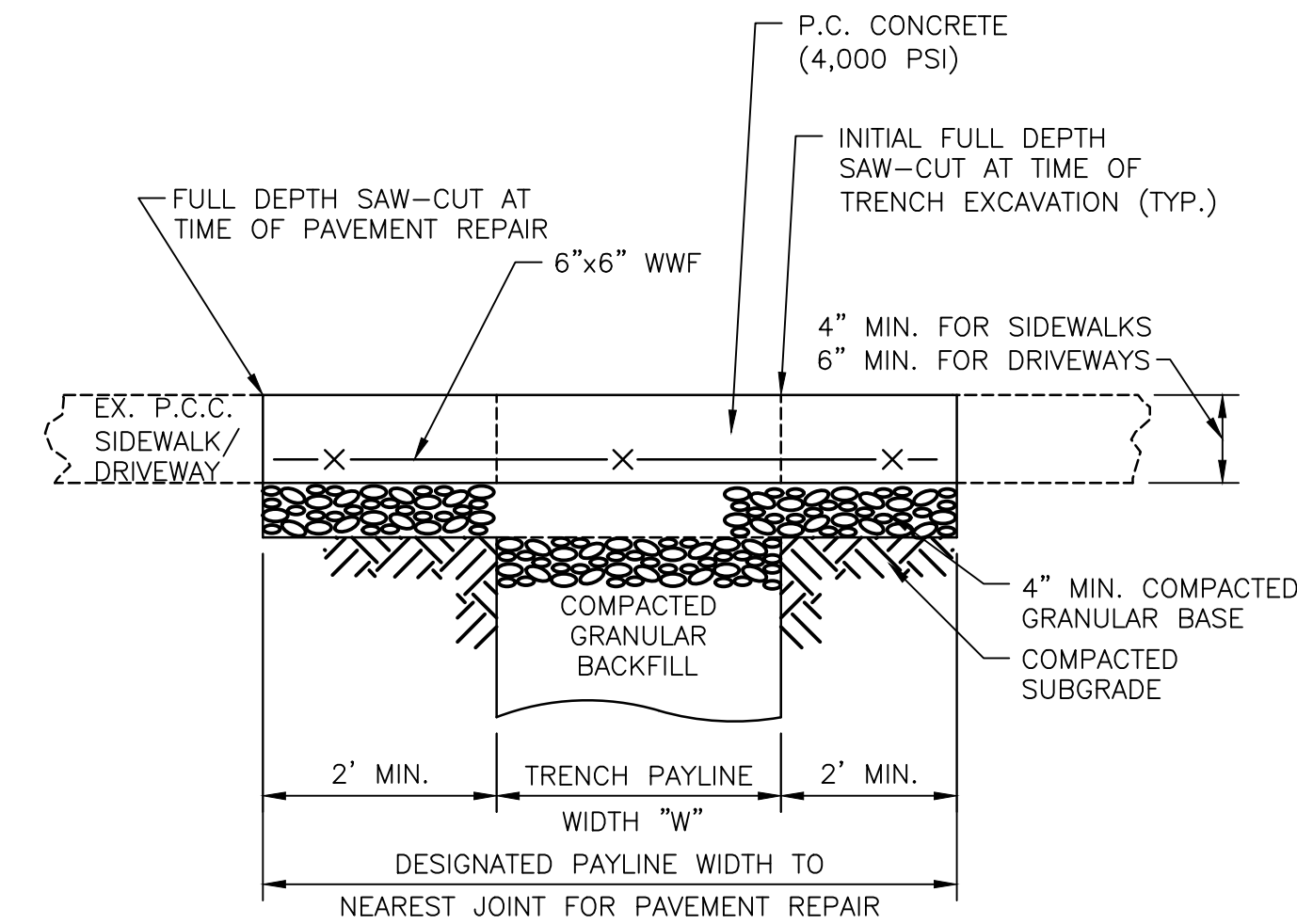
- NOTES:
1. ALL PAVEMENT REPLACEMENT REPAIRS AND MATERIALS TO BE IN ACCORDANCE WITH THE CITY OF JACKSON STANDARD SPECIFICATIONS FOR STREET IMPROVEMENTS

PAYLINE LIMITS FOR CONCRETE STREET PAVEMENT REPAIR S-33



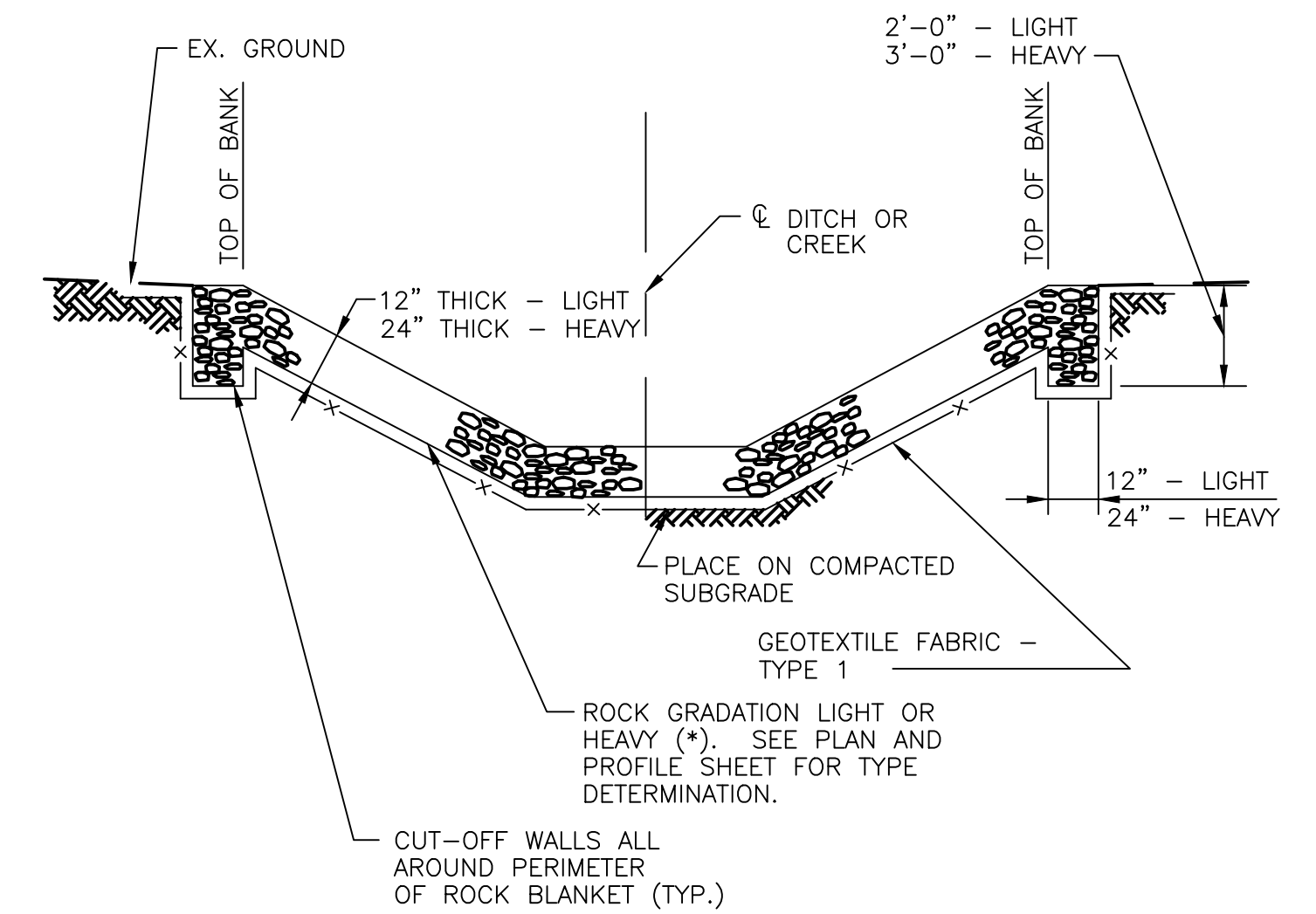
- NOTES:
1. EXISTING ASPHALT PAVEMENT DAMAGED BY CONTRACTOR'S OPERATIONS, OUTSIDE THE DESIGNATED PAYLINE WIDTH, SHALL BE REMOVED AND REPLACED AS DETAILED AT NO ADDITIONAL COST TO OWNER.
 2. ALL PAVEMENT REPLACEMENT, REPAIRS AND MATERIALS TO BE IN ACCORDANCE WITH THE CITY OF JACKSON STANDARD SPECIFICATIONS FOR STREET IMPROVEMENTS

PAYLINE LIMITS FOR ASPHALT CONCRETE STREET PAVEMENT REPAIR S-34



- NOTES:
1. ALL PAVEMENT REPLACEMENT, REPAIRS AND MATERIALS TO BE IN ACCORDANCE WITH THE CITY OF JACKSON STANDARD SPECIFICATIONS FOR STREET IMPROVEMENTS

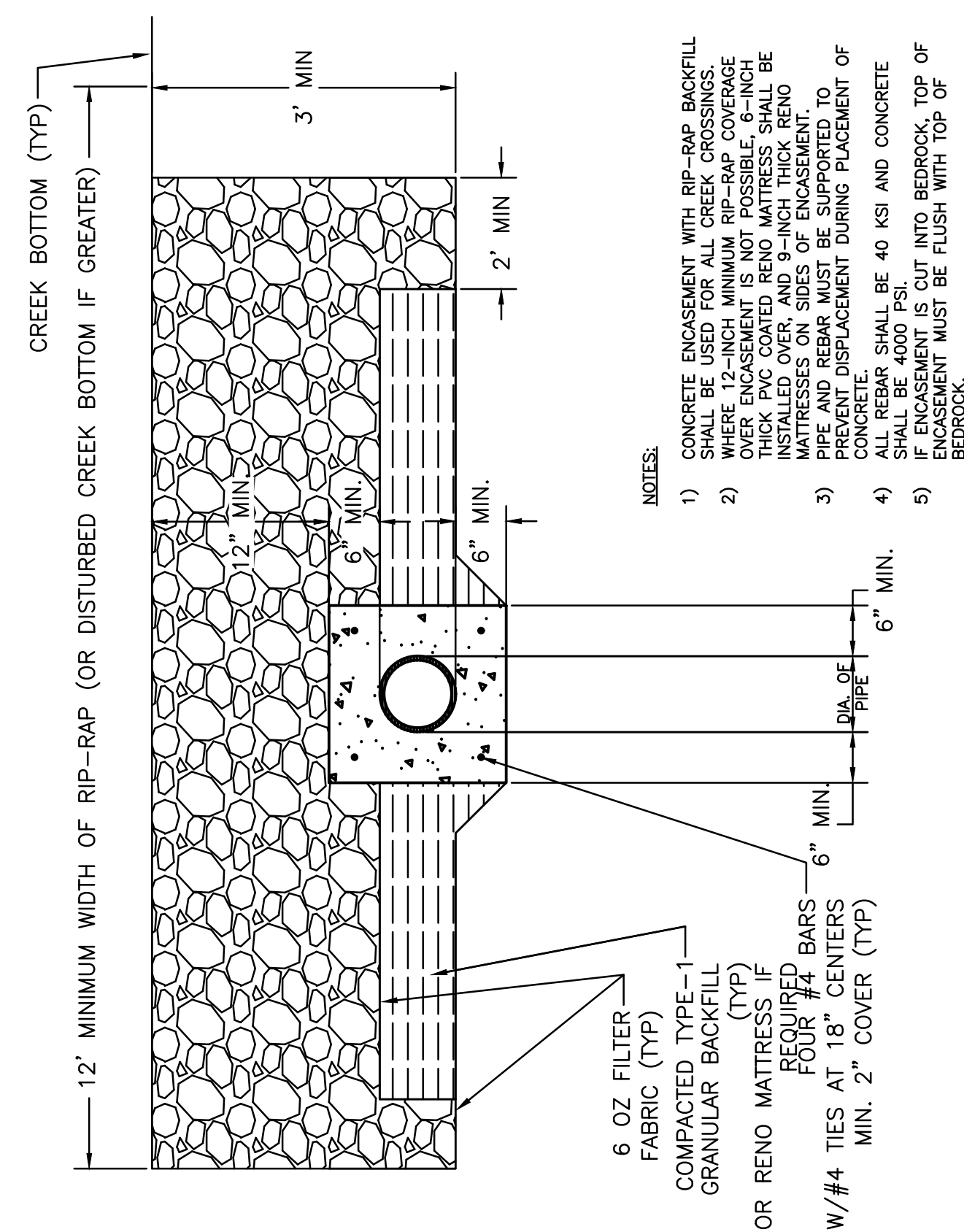
PAYLINE LIMITS FOR CONCRETE SIDEWALK / DRIVEWAY REPAIR S-35



- (*) SEE SPECIFICATIONS FOR LIGHT AND HEAVY GRADATIONS.

NOTE:
DO NOT PLACE ROCK BLANKET IN FLOWLINE OF LIMESTONE CREEK BOTTOMS.

TYPICAL ROCK BLANKET DETAIL S-36



CREEK CROSSING S-37

NO.	DATE	REVISIONS	BY

CHECKED BY: KAP
SCALE: N.T.S.

DATE: 4/8/2021
VERT. N.T.S.

CITY OF JACKSON
101 COURT STREET, JACKSON, MISSOURI
WASTEWATER DIVISION

CITY OF JACKSON
SANITARY STANDARDS

SHEET NUMBER: 5