

# CITY OF DAYTON

## STANDARD DETAIL PLATES

NOTES:

1. STANDARD DETAILS PLATES ARE UPDATE ANNUALLY. LATEST VERSION WILL BE ENFORCED.
2. REFERENCE ON CITY PLATES ARE TO MNDOT 2020 EDITION SPECIFICATIONS.



COVER

LAST REVISION:  
DEC 2024

PLATE NO.  
COVER-01

CITY  
PLATE  
NO.

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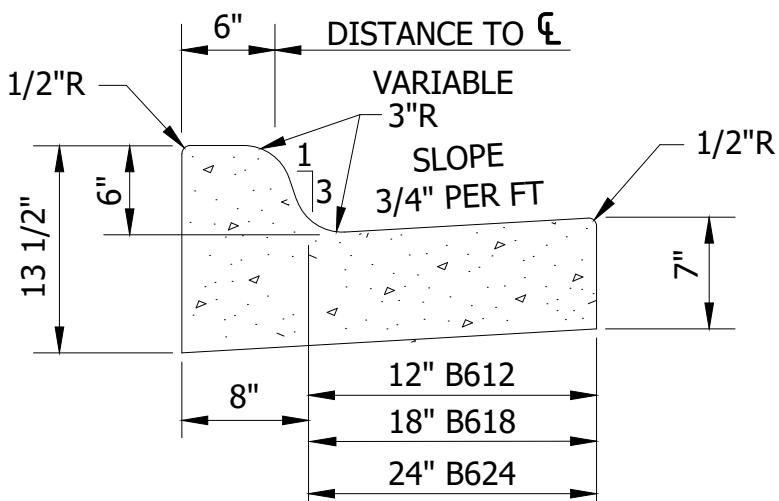
PLATE NO.  
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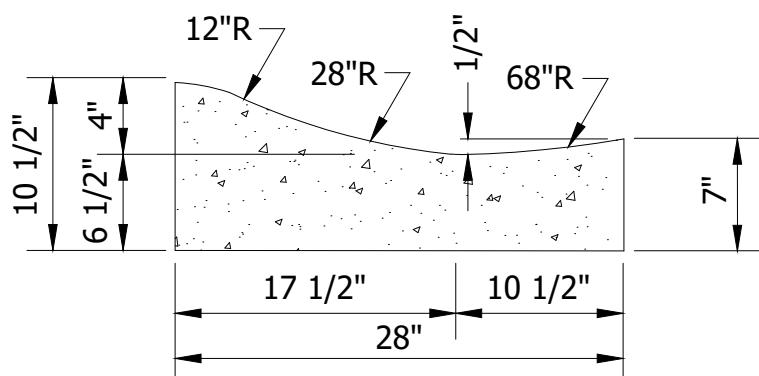
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SECTION 8 - GENERAL (CONT.)

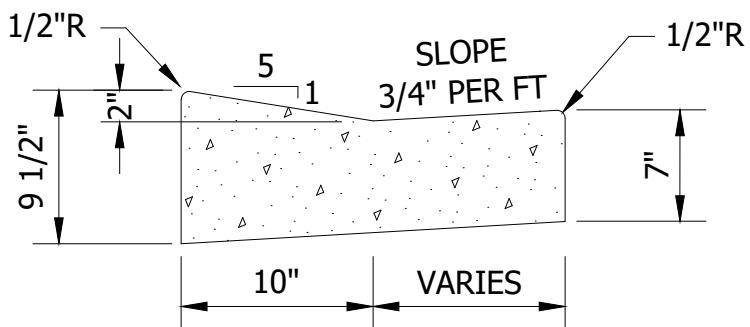
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MNDOT B612  
MNDOT B618  
MNDOT B624



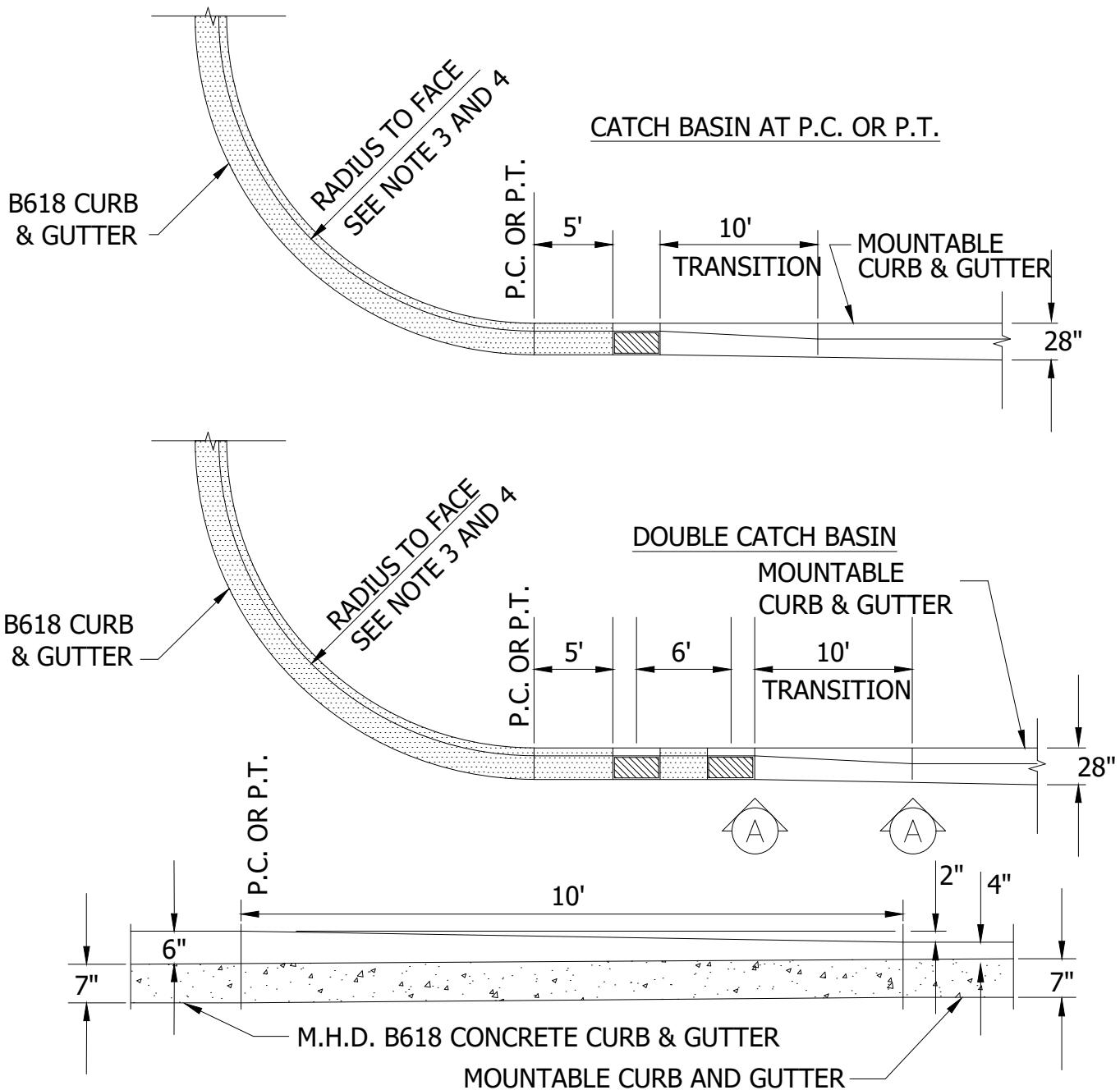
MOUNTABLE



STANDARD SECTION  
THROUGH DRIVEWAY

NOTE:

- ① PLACE A "W" , "S" , AND "CO" STAMP PER CITY PLATE #STR-23 ON FACE OF CURB WHERE CURB & GUTTER CROSSES A WATER OR SEWER SERVICE.

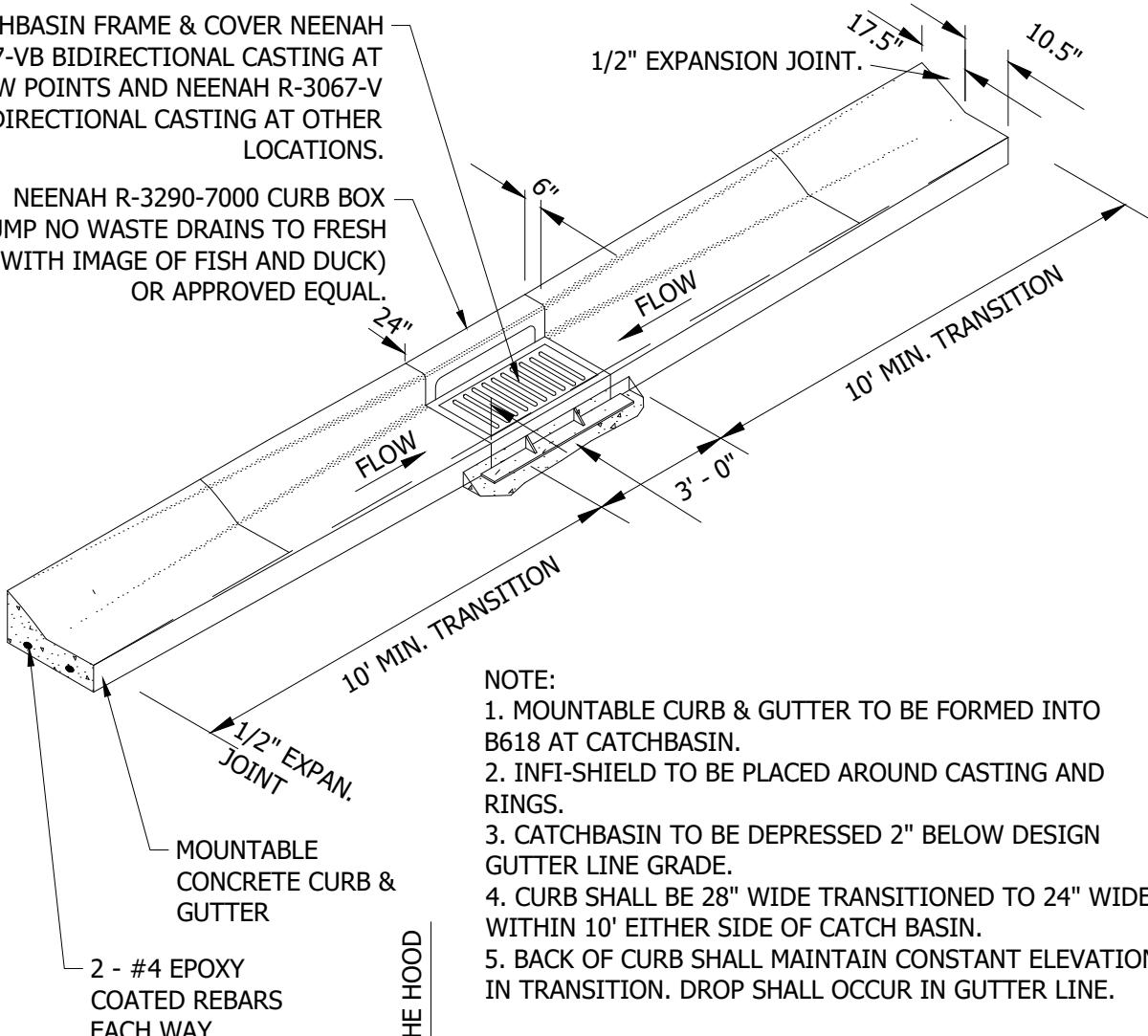


**NOTE:**

1. ALL RADII ARE MEASURED TO FACE OF CURB.
2. NO CATCH BASINS WILL BE CONSTRUCTED IN THE INTERSECTION RADII.
3. 30' RADII WILL BE REQUIRED AT INTERSECTIONS OF ALL COLLECTOR TO RESIDENTIAL STREETS.
4. 20' RADII WILL BE REQUIRED AT INTERSECTIONS OF ALL RESIDENTIAL TO RESIDENTIAL STREETS.

CATCHBASIN FRAME & COVER NEENAH  
R-3067-VB BIDIRECTIONAL CASTING AT  
LOW POINTS AND NEENAH R-3067-V  
UNIDIRECTIONAL CASTING AT OTHER  
LOCATIONS.

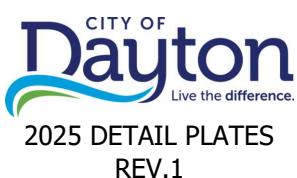
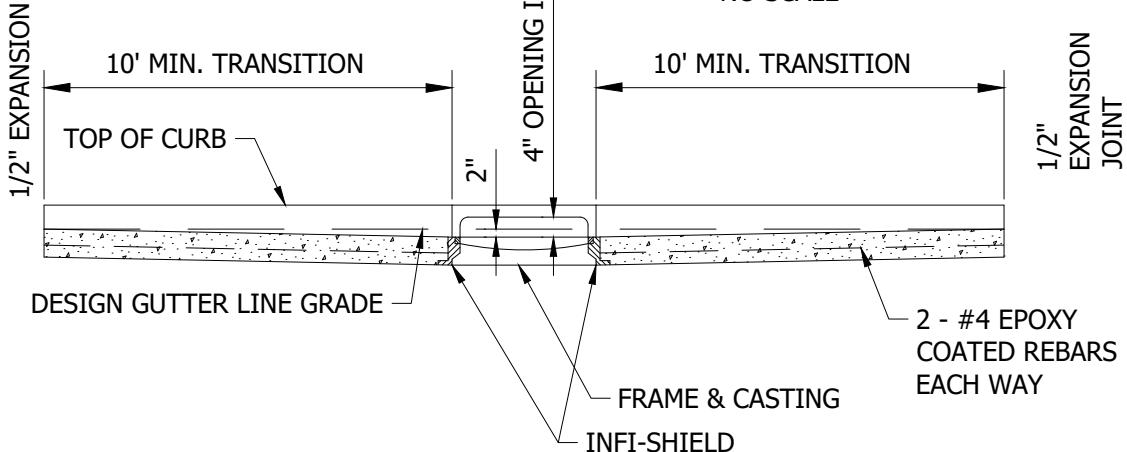
NEENAH R-3290-7000 CURB BOX  
("DUMP NO WASTE DRAINS TO FRESH  
WATER" WITH IMAGE OF FISH AND DUCK)  
OR APPROVED EQUAL.



**NOTE:**

1. MOUNTABLE CURB & GUTTER TO BE FORMED INTO B618 AT CATCHBASIN.
2. INFI-SHIELD TO BE PLACED AROUND CASTING AND RINGS.
3. CATCHBASIN TO BE DEPRESSED 2" BELOW DESIGN GUTTER LINE GRADE.
4. CURB SHALL BE 28" WIDE TRANSITIONED TO 24" WIDE WITHIN 10' EITHER SIDE OF CATCH BASIN.
5. BACK OF CURB SHALL MAINTAIN CONSTANT ELEVATION IN TRANSITION. DROP SHALL OCCUR IN GUTTER LINE.

## NO SCALE



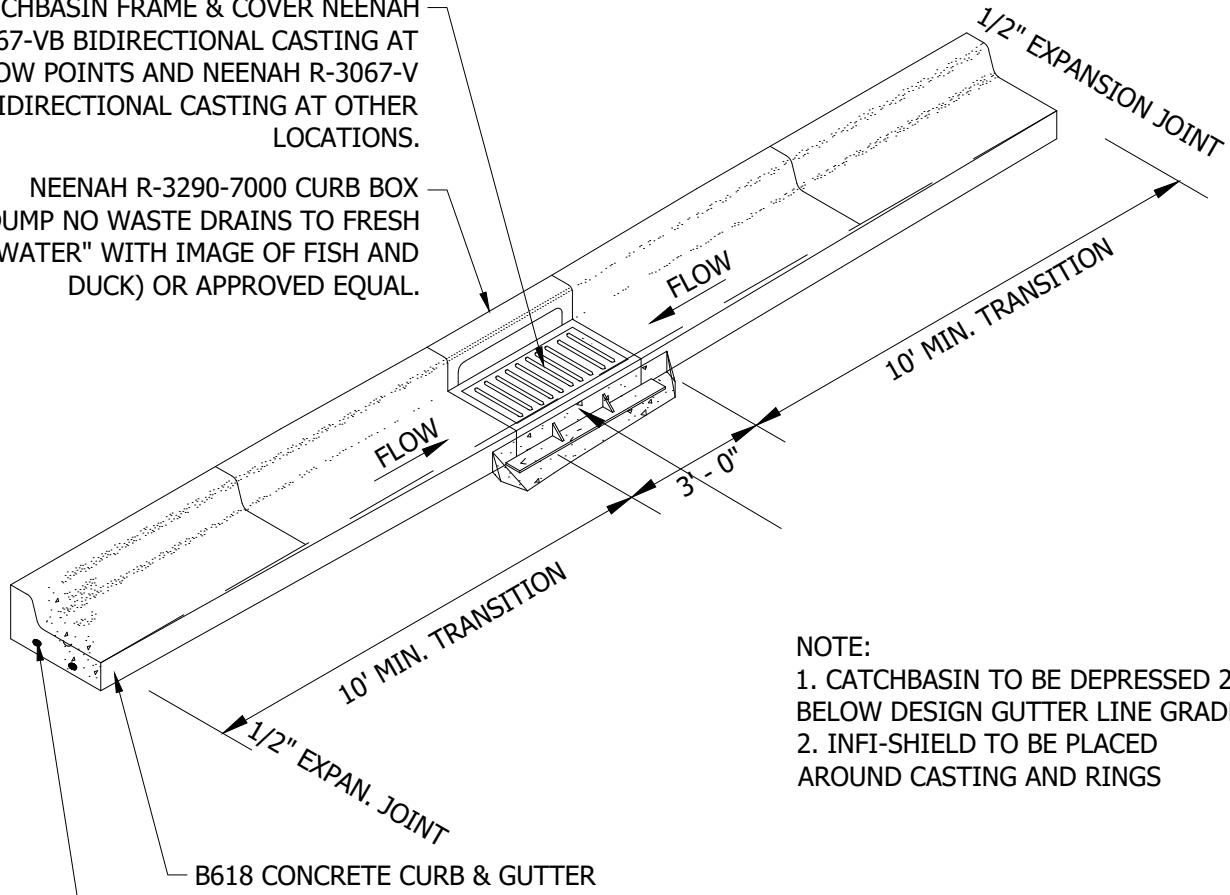
## MOUNTABLE CURB & GUTTER CONSTRUCTION AT CATCH BASIN

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DEC. 2024

PLATE NO.  
**STR-03**

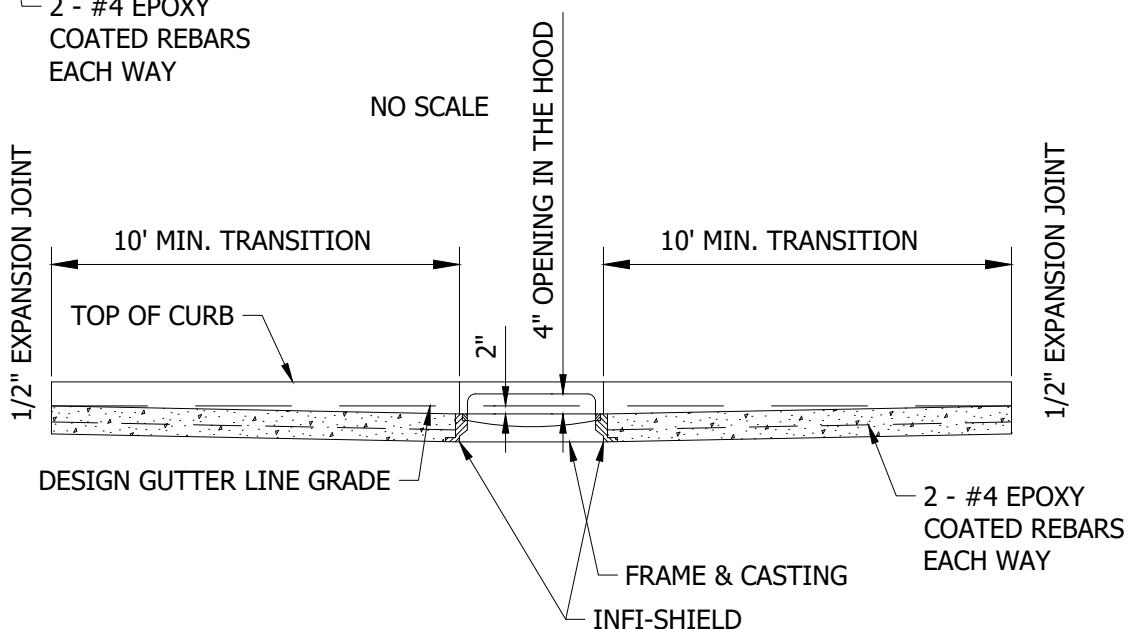
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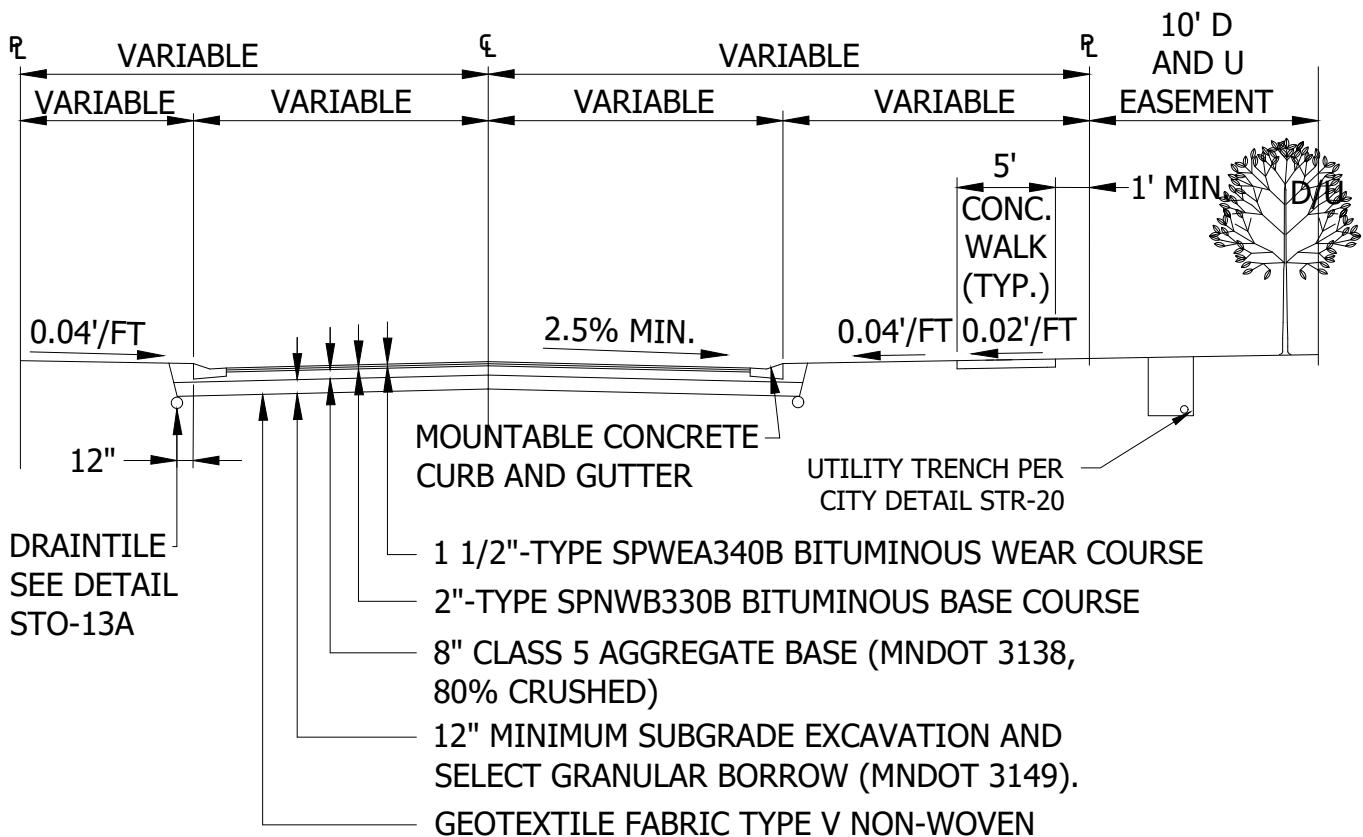
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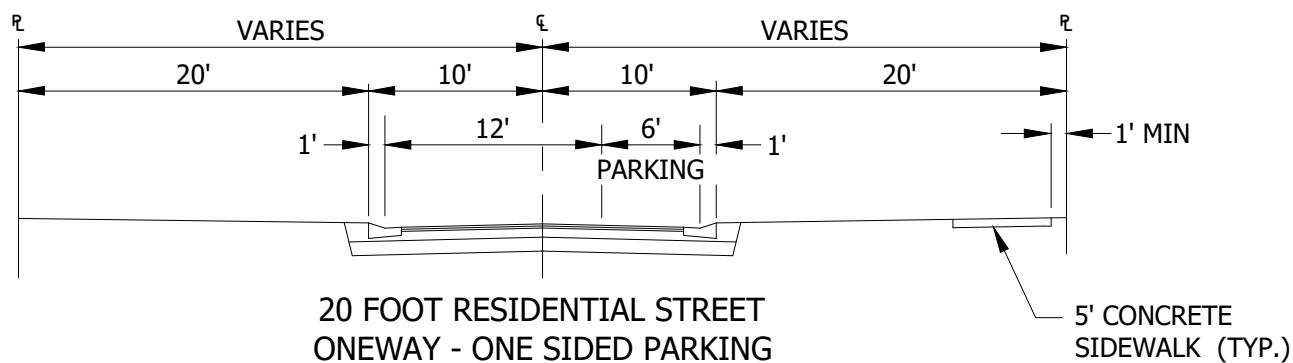
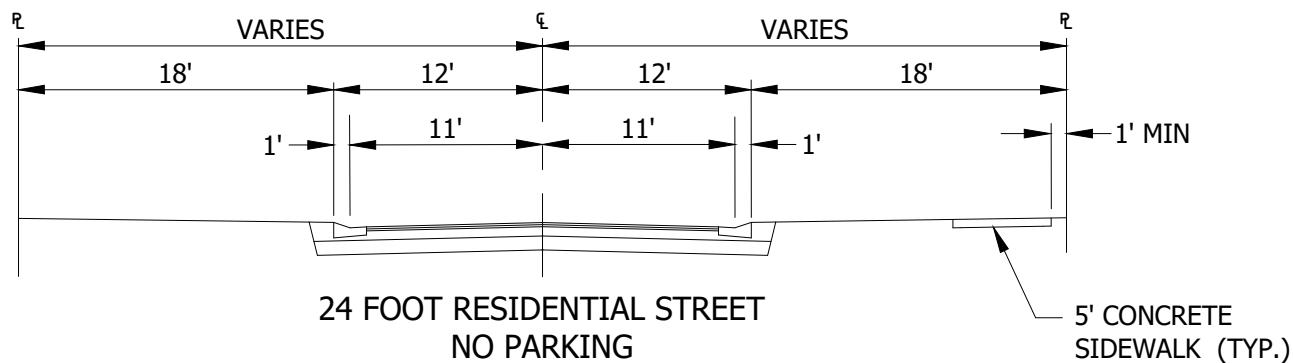
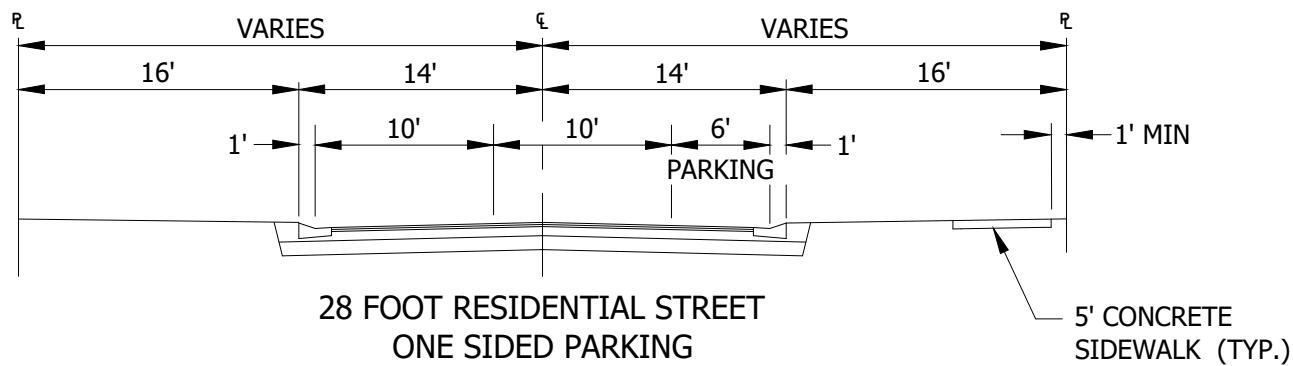
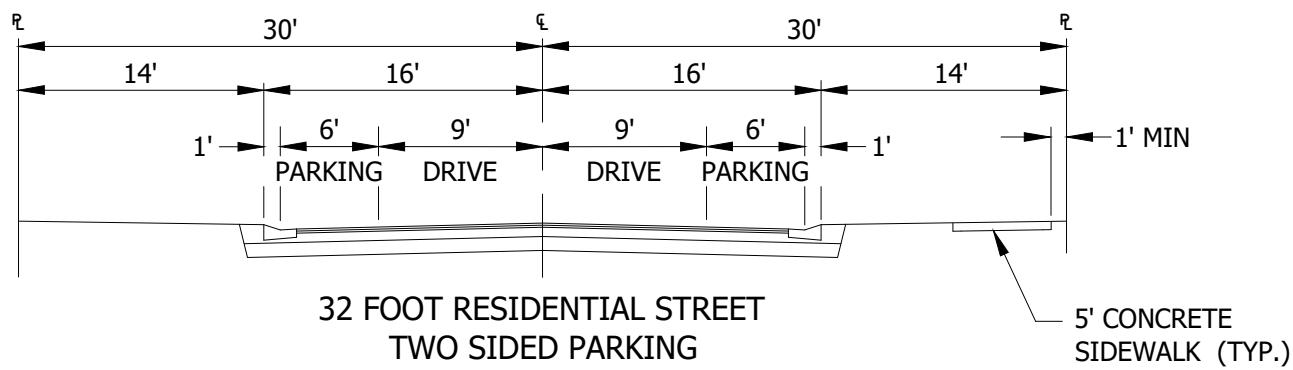
1. CATCHBASIN TO BE DEPRESSED 2" BELOW DESIGN GUTTER LINE GRADE.
2. INFI-SHIELD TO BE PLACED AROUND CASTING AND RINGS

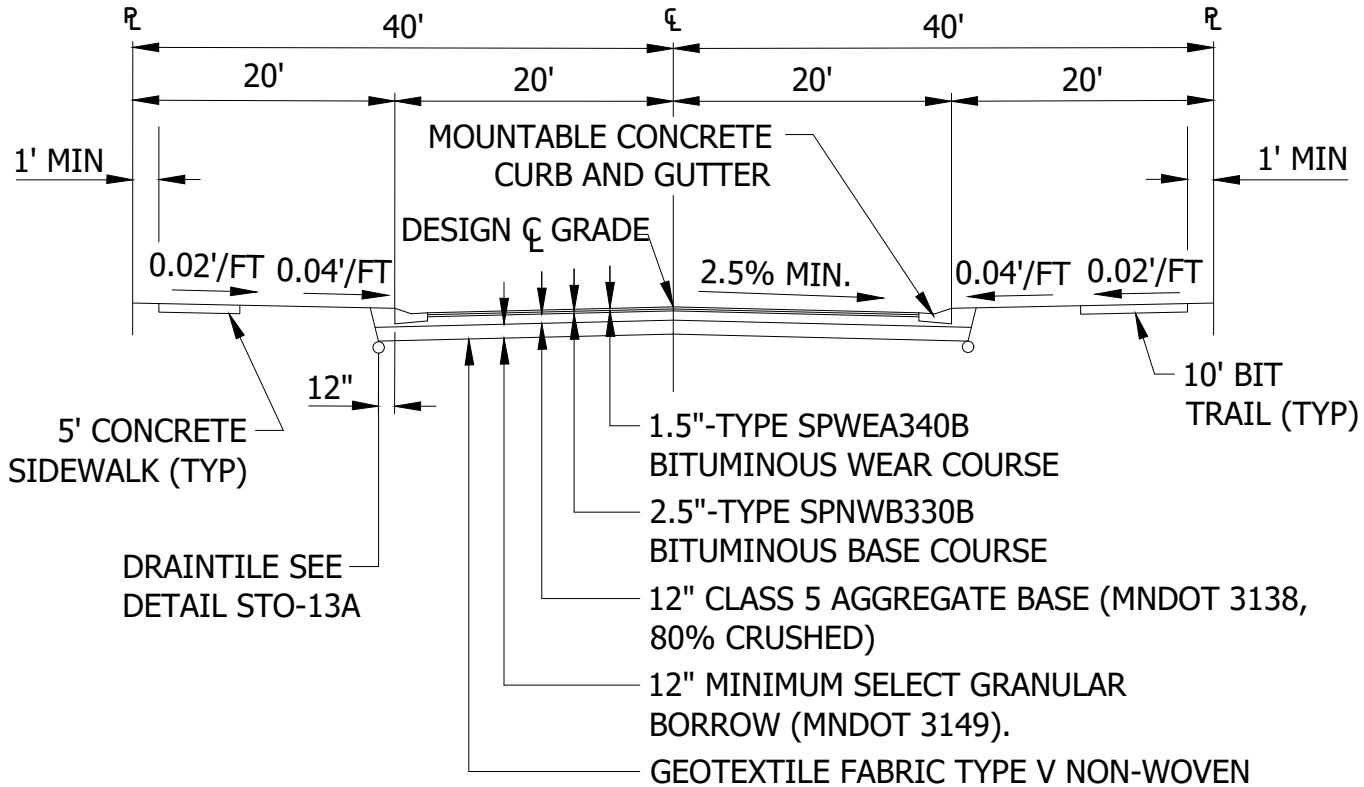




NOTE:

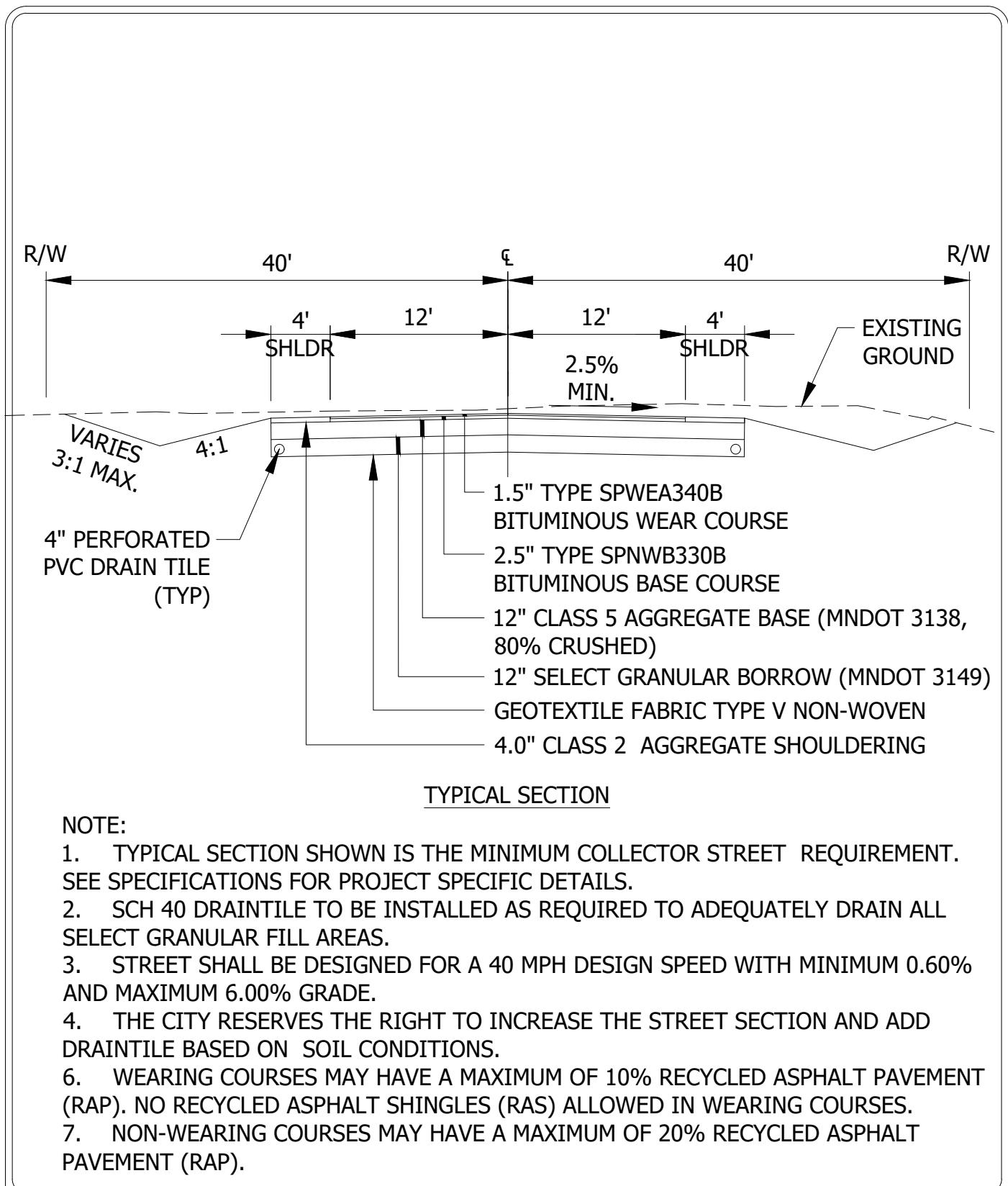
1. TYPICAL SECTION SHOWN IS THE MINIMUM RESIDENTIAL STREET REQUIREMENT. SEE SPECIFICATIONS FOR PROJECT SPECIFIC DETAILS.
2. SCH 40 DRAINTILE SHALL BE INSTALLED BEHIND CURB. DRAINTILE TO BE INSTALLED AS REQUIRED TO ADEQUATELY DRAIN ALL SELECT GRANULAR FILL AREAS.
3. STREET SHALL BE DESIGNED FOR A 30 MPH DESIGN SPEED WITH MINIMUM 0.60% AND MAXIMUM OF 6.00% GRADE.
4. THE CITY RESERVES THE RIGHT TO INCREASE THE STREET SECTION AND ADD DRAINTILE BASED ON SOIL CONDITIONS.
5. SAW & SEAL ACCORDING TO MNDOT SPEC. 3725, AS DIRECTED BY CITY ENGINEER.
6. CITY ENGINEER TO DETERMINE WIDTHS, MINIMUM WIDTHS SHOW ON STR-05A.
7. WEARING COURSES MAY HAVE A MAXIMUM OF 10% RECYCLED ASPHALT PAVEMENT (RAP). NO RECYCLED ASPHALT SHINGLES (RAS) ALLOWED IN WEARING COURSES.
8. NON-WEARING COURSES MAY HAVE A MAXIMUM OF 20% RECYCLED ASPHALT PAVEMENT (RAP).

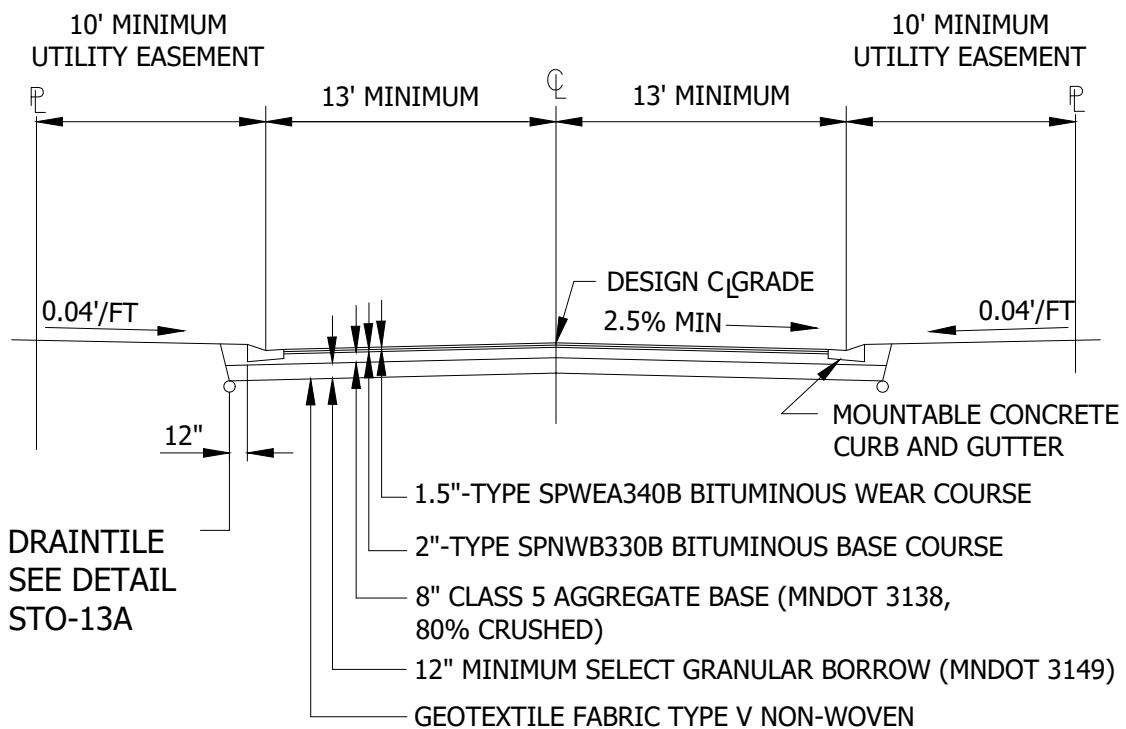




NOTE:

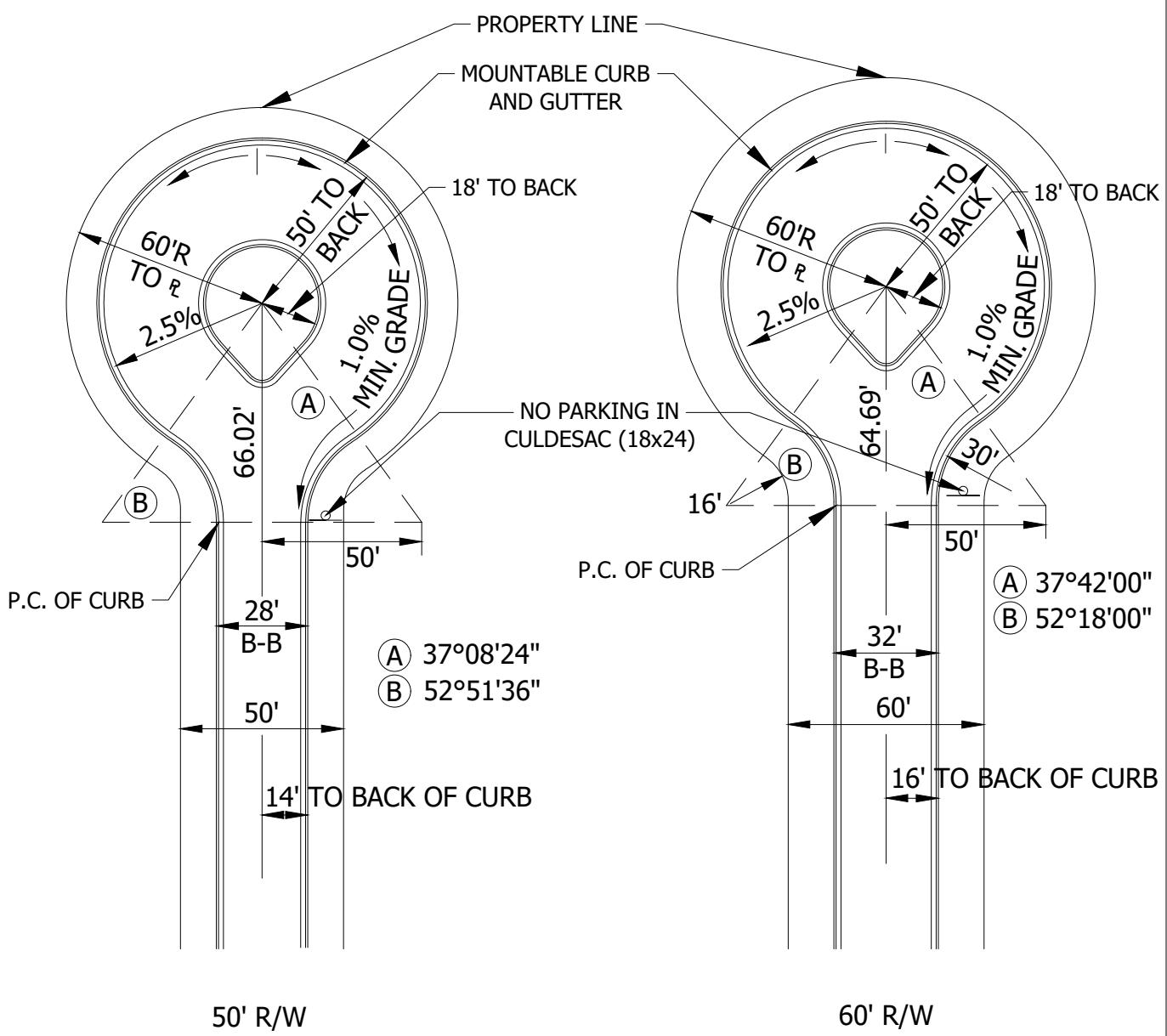
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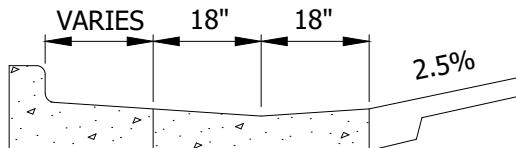
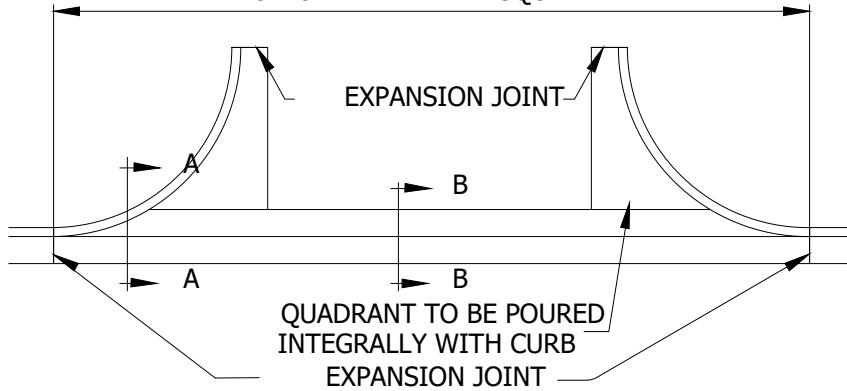
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4. THE CITY RESERVES THE RIGHT TO INCREASE THE STREET SECTION AND ADD DRAINTILE BASED ON SOIL CONDITIONS.
5. CITY ENGINEER TO DETERMINE WIDTHS.
6. WEARING COURSES MAY HAVE A MAXIMUM OF 10% RECYCLED ASPHALT PAVEMENT (RAP). NO RECYCLED ASPHALT SHINGLES (RAS) ALLOWED IN WEARING COURSES.
7. NON-WEARING COURSES MAY HAVE A MAXIMUM OF 20% RECYCLED ASPHALT PAVEMENT (RAP).



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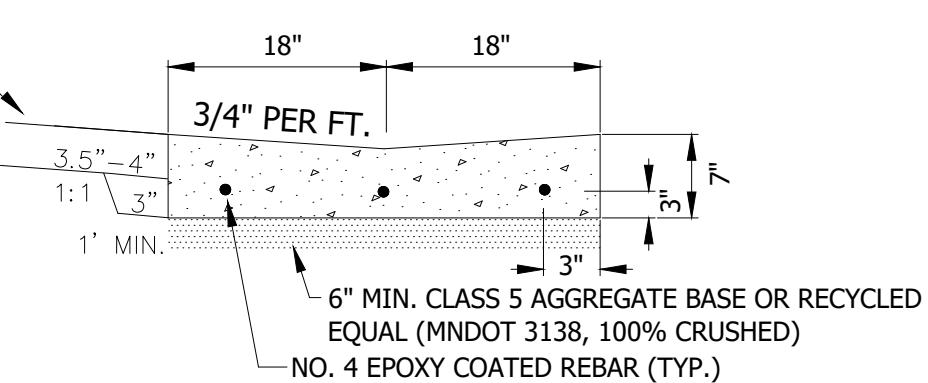
1. ALL RADIUS MEASUREMENTS TAKEN FROM THE FACE OF CURB UNLESS OTHERWISE STATED.
2. ALL CENTER ISLAND SURFACES MUST BE APPROVED BY THE CITY AND PRIVATELY MAINTAINED.
3. SEE STR-27 FOR ADDITIONAL REQUIREMENTS.
4. ON STREETS LONGER THAN 500' ENDING IN A CULDESAC, A "NO OUTLET" (W14-2) SIGN IS REQUIRED AT THE START OF THE STREET.

MEASUREMENT FOR PAYMENT  
METHOD OF PAYMENT BY SQUARE FEET

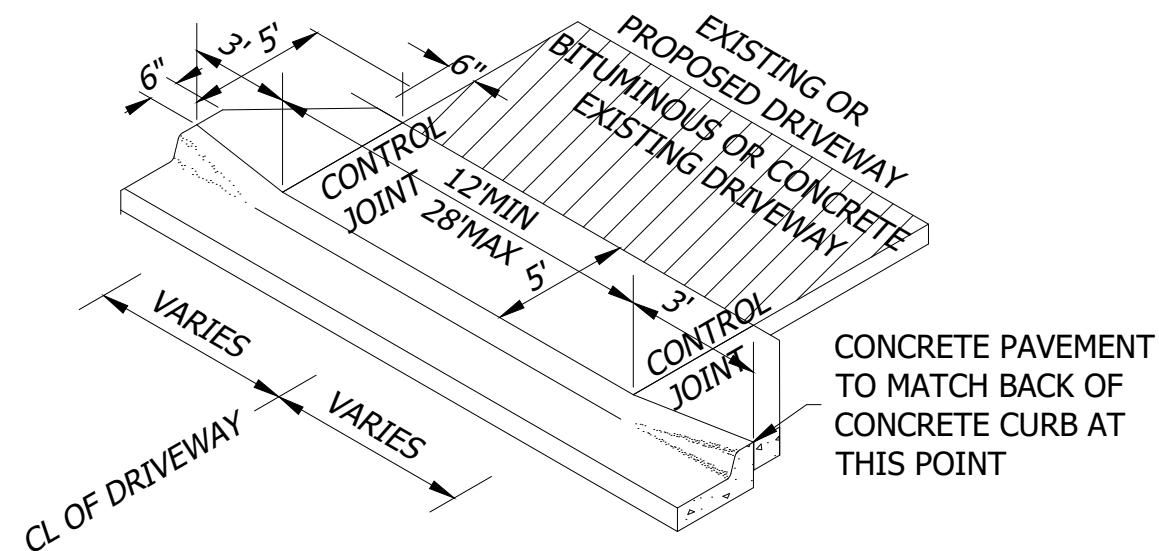
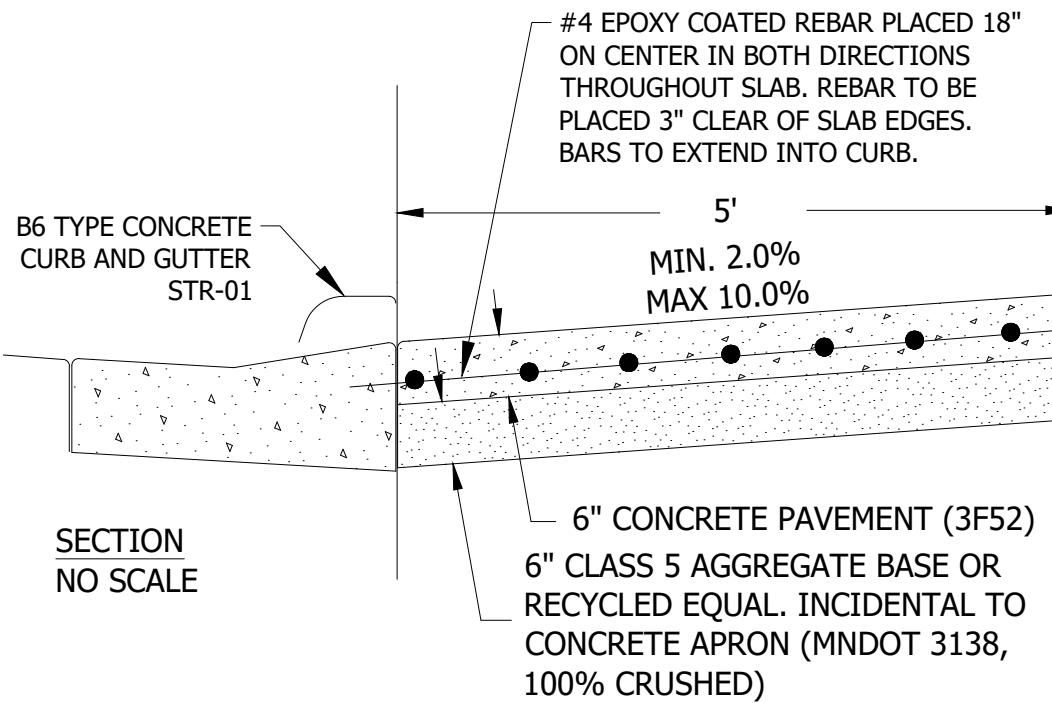


SECTION A-A  
THRU B618 C & G

THIS DETAIL IS THE  
SAME FOR BOTH SIDES  
OF THE VALLEY GUTTER

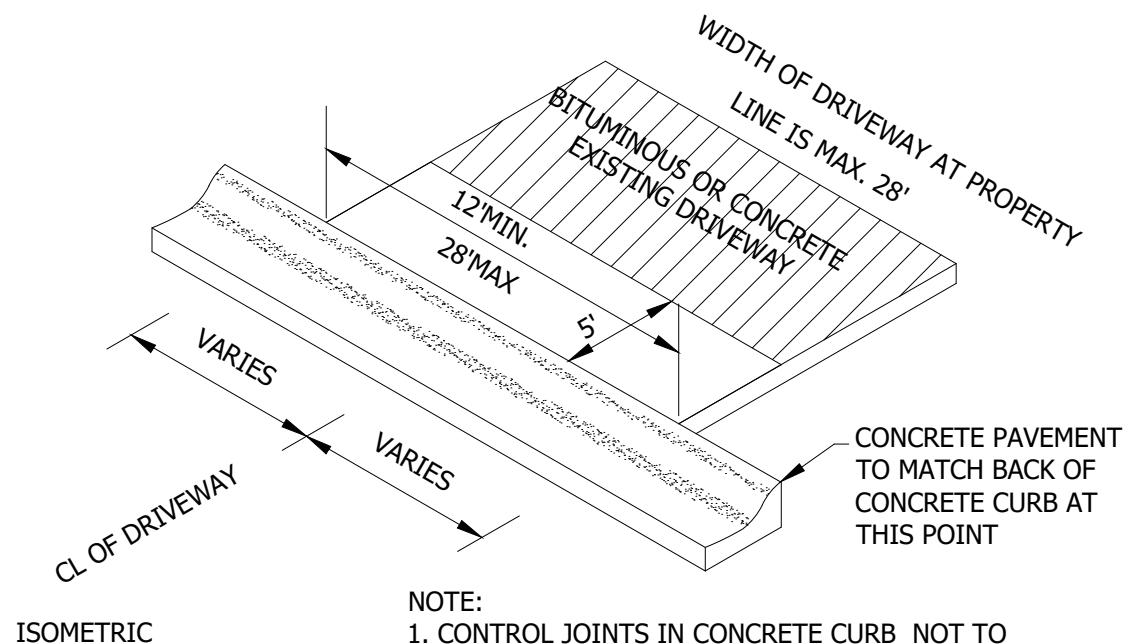
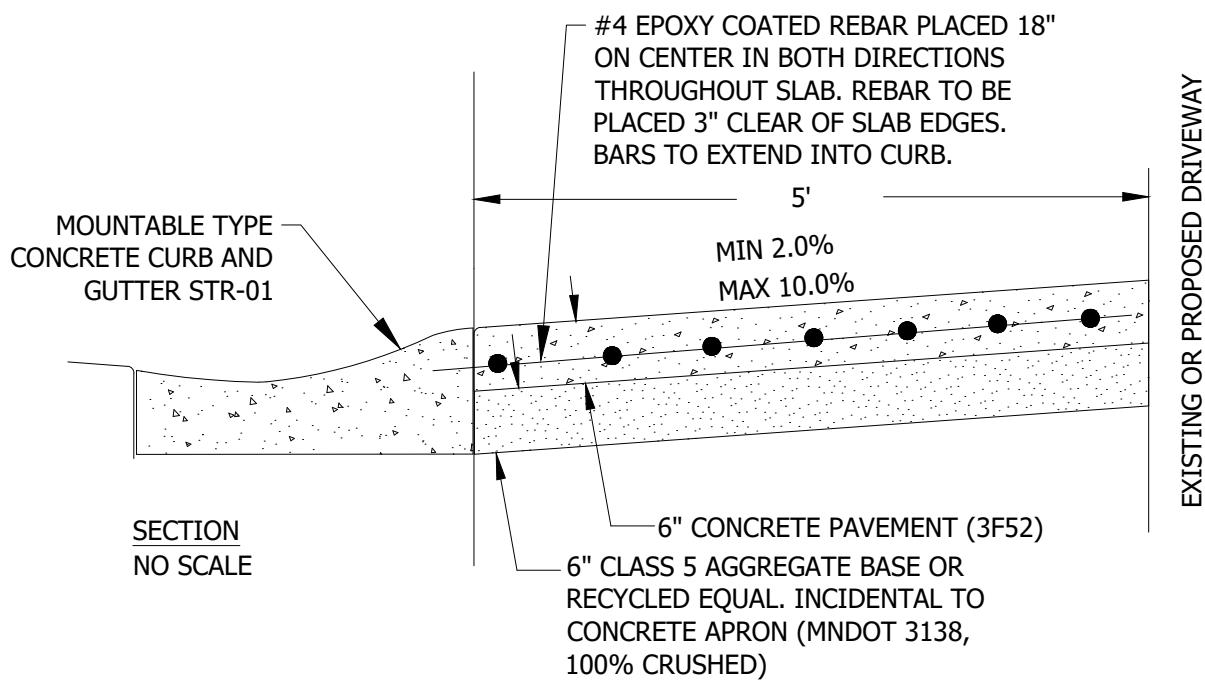


SECTION B-B THRU  
CONCRETE GUTTER



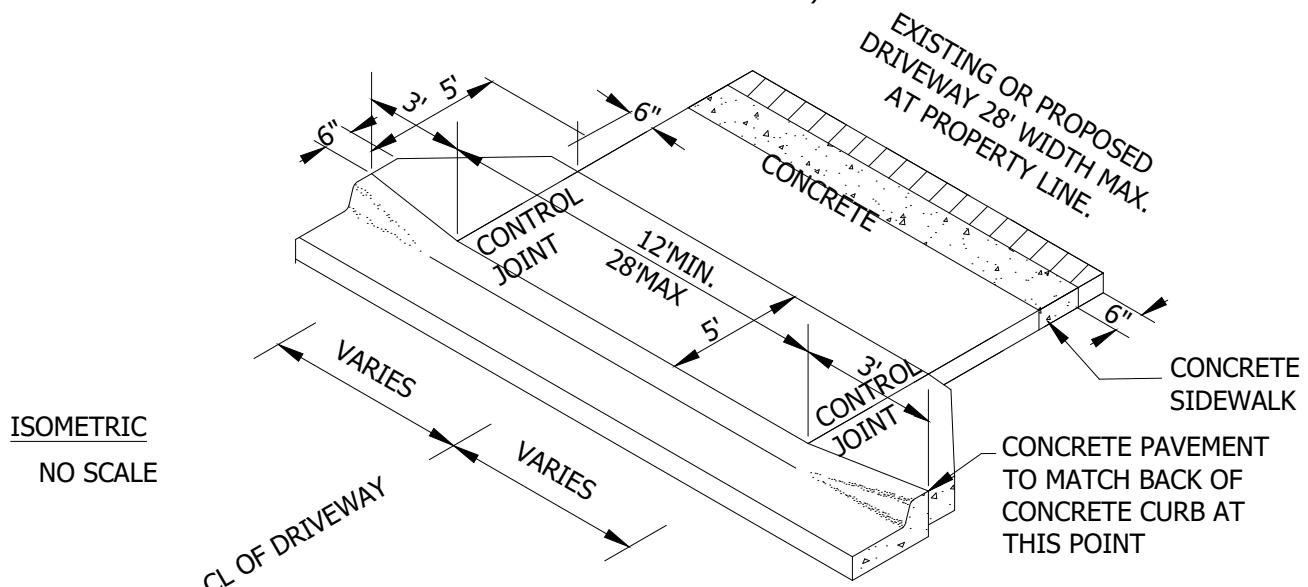
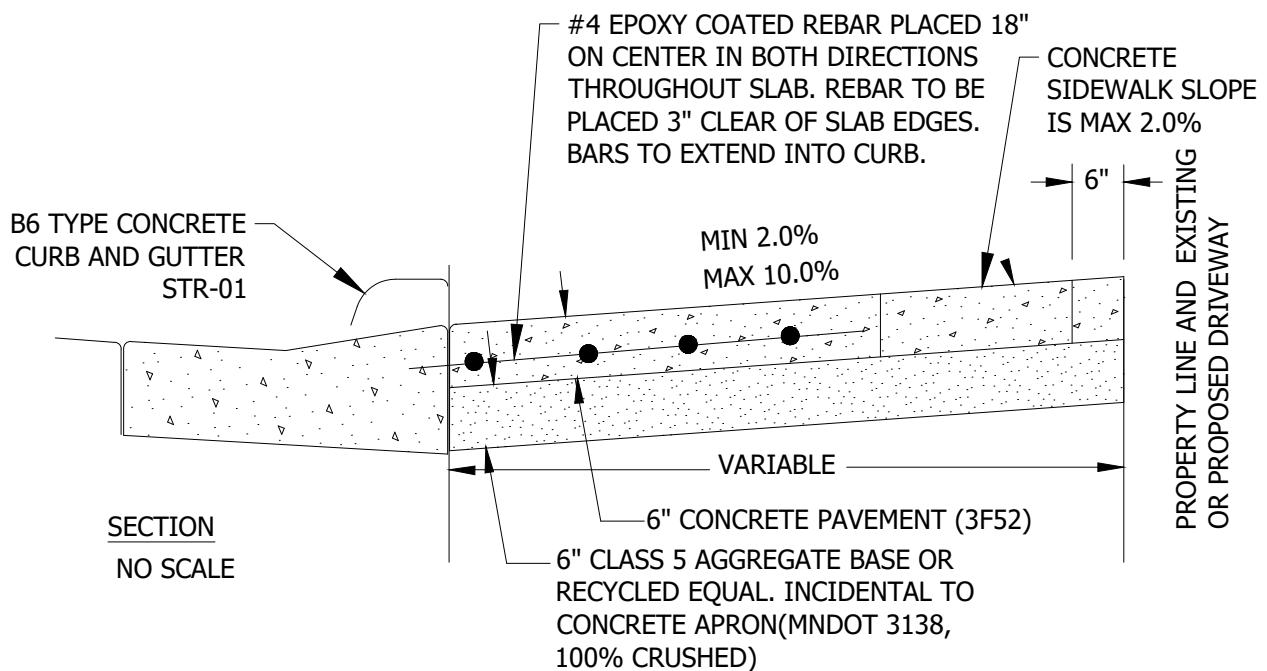
NOTE:

1. CONTROL JOINTS IN CONCRETE CURB NOT TO EXCEED 10' SPACING THROUGH DRIVEWAY SECTION.
2. DRIVEWAY WINGS ARE REQUIRED WITH THE B6 STYLE CURBING. THE MAXIMUM DRIVEWAY WIDTH AT THE CURB IS 28' PLUS THE WIDTH OF THE WINGS. MAXIMUM WIDTH OF DRIVEWAY AT THE PROPERTY LINE IS ALSO 28'.



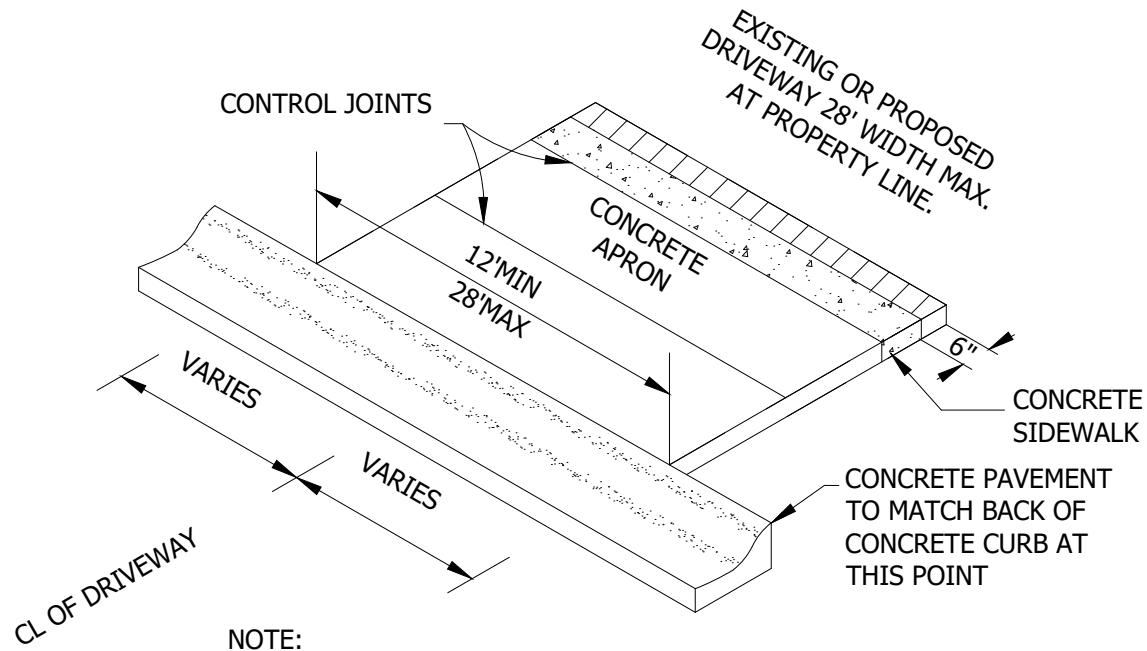
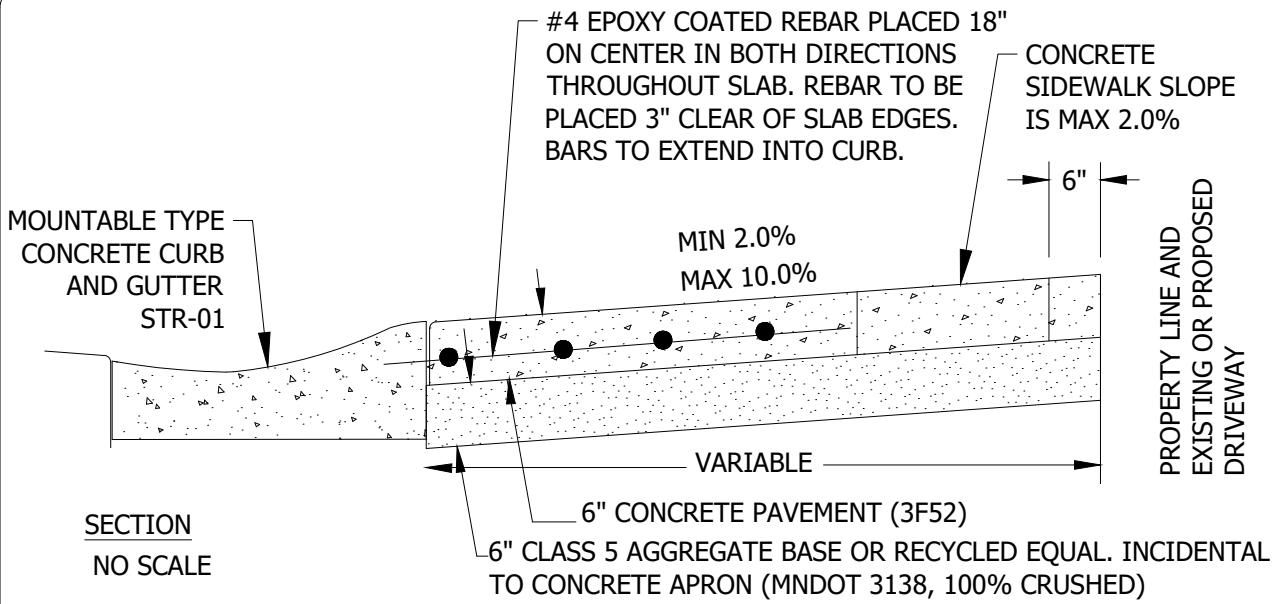
NOTE:

1. CONTROL JOINTS IN CONCRETE CURB NOT TO EXCEED 10' SPACING THROUGH DRIVEWAY SECTION.
2. DRIVEWAY WINGS ARE NOT REQUIRED WITH THE MOUNTABLE STYLE CURBING. THE MAXIMUM DRIVEWAY WIDTH AT THE CURB IS 28'. MAXIMUM WIDTH OF DRIVEWAY AT THE PROPERTY LINE IS ALSO 28'.



NOTE:

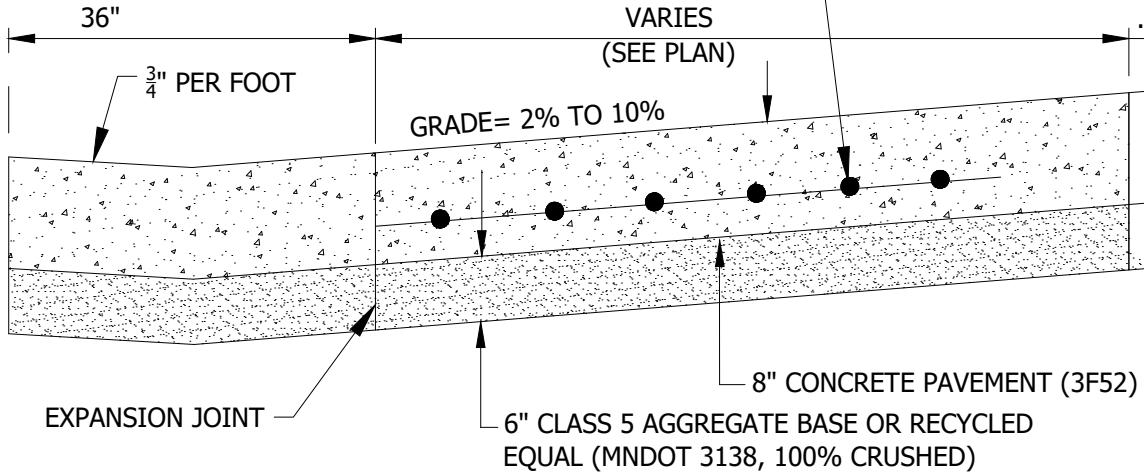
1. CONTROL JOINTS IN CONCRETE CURB NOT TO EXCEED 10' SPACING THROUGH DRIVEWAY SECTION.
2. CONCRETE MUST BE CONSTRUCTED BETWEEN SIDEWALK AND DRIVEWAY APRON.
3. CONCRETE SIDEWALK THROUGH DRIVEWAY IS 6" THICK.
4. DRIVEWAY WINGS ARE REQUIRED WITH THE B6 STYLE CURBING. THE MAXIMUM DRIVEWAY WIDTH AT THE CURB IS 28' PLUS THE WIDTH OF THE WINGS. MAXIMUM WIDTH OF DRIVEWAY AT THE PROPERTY LINE IS ALSO 28'.



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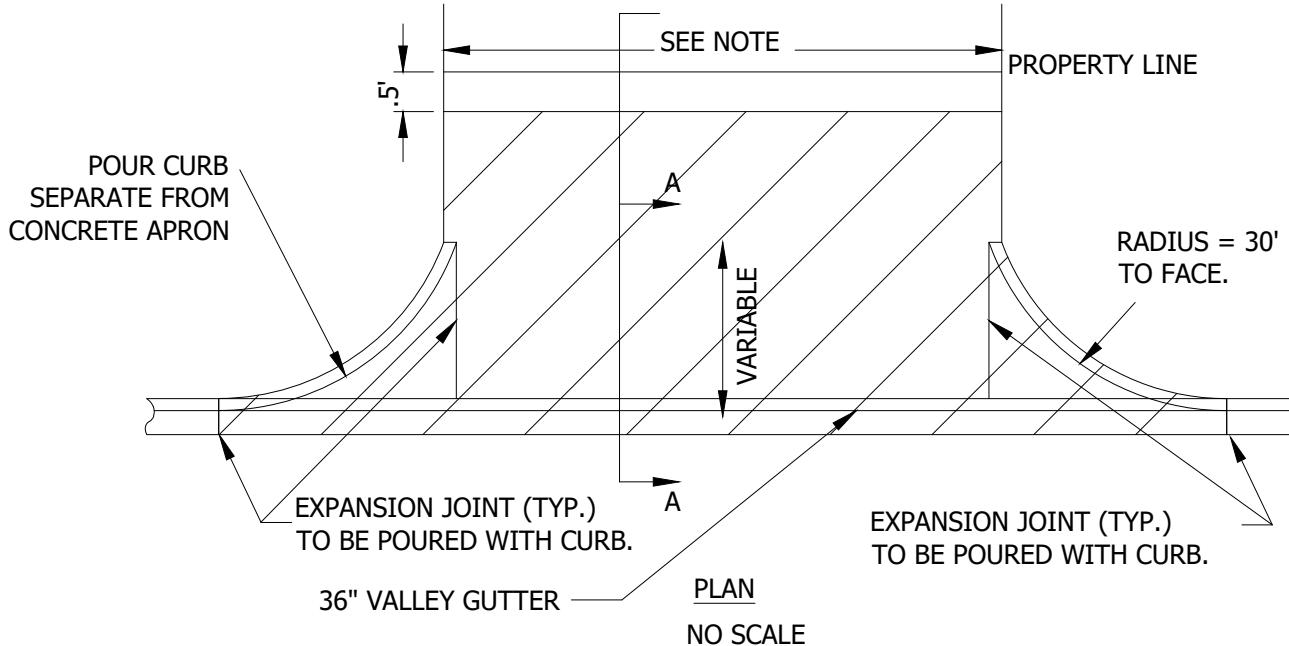
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#4 EPOXY COATED REBAR PLACED 10" ON CENTER IN BOTH DIRECTIONS  
THROUGHOUT SLAB. REBAR TO BE PLACED 3" CLEAR OF SLAB EDGES.



SECTION A-A

NO SCALE



NOTES:

1. MAX COMMERCIAL DRIVEWAY WIDTH TO BE 32' AT RIGHT-OF-WAY.
2. APRON SHALL BE CONCRETE TO 1' PAST END OF CURB RADIUS OR 0.5' FROM PROPERTY LINE, WHICHEVER IS FURTHER FROM THE STREET.

#4 EPOXY COATED REBAR PLACED 10" ON CENTER IN BOTH DIRECTIONS  
THROUGHOUT SLAB. REBAR TO BE PLACED 3" CLEAR OF SLAB EDGES.

3/4" PER FOOT

36"

VARIABLE  
(SEE PLAN)

GRADE = 2% TO 10%

SIDEWALK  
SLOPE  
2.00%  
MAXIMUM

PROPERTY  
LINE

EXPANSION JOINT

8" CONCRETE PAVEMENT (3F52)

6" CLASS 5 AGGREGATE BASE OR RECYCLED EQUAL.  
INCIDENTAL TO CONCRETE APRON (MNDOT 3138, 100%  
CRUSHED)

SECTION A-A

NO SCALE

SEE NOTE

PROPERTY LINE

SIDEWALK  
1/2" THICK - 8" HIGH  
EXPANSION JOINT MATERIAL

RADIUS = 30'  
TO FACE.

POUR CURB SEPARATE  
FROM CONCRETE APRON

EXPANSION JOINT (TYP.)  
TO BE POURED WITH CURB.

EXPANSION JOINT (TYP.)  
TO BE POURED WITH CURB.

36" VALLEY GUTTER

PLAN

NO SCALE

NOTE:

MAX COMMERCIAL DRIVEWAY WIDTH TO BE 32' AT RIGHT-OF-WAY

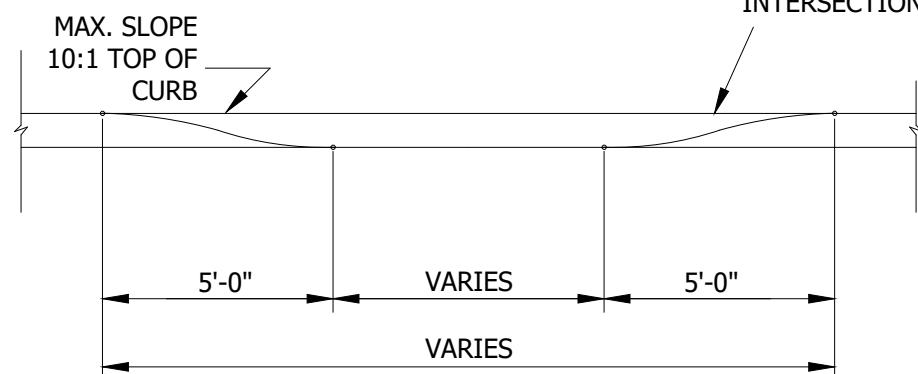
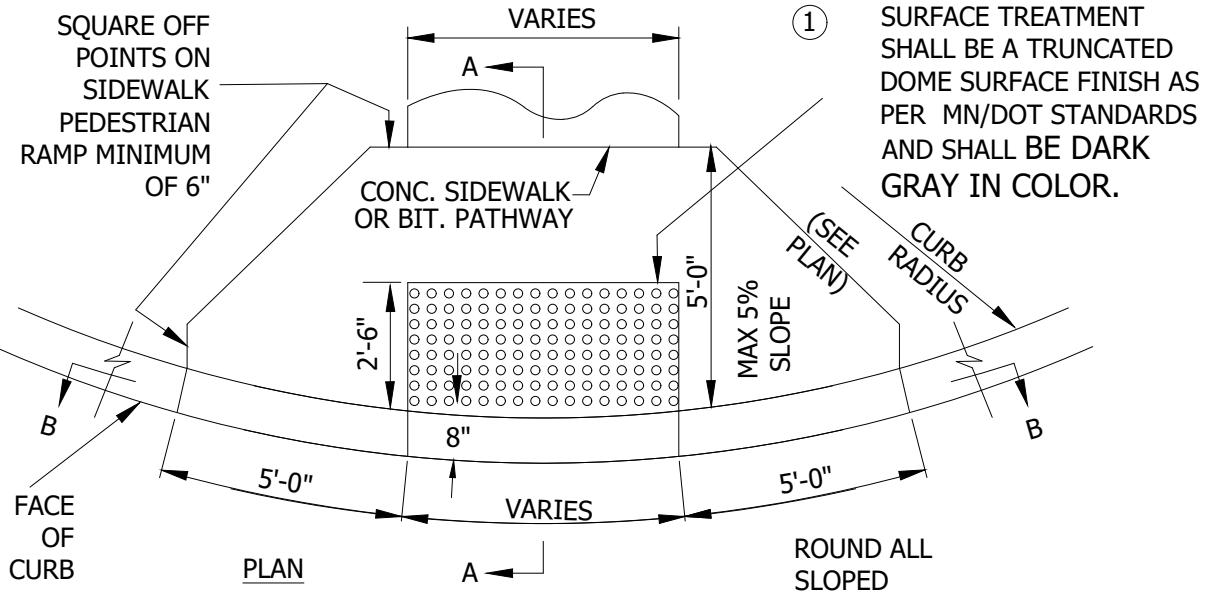
CITY OF  
**Dayton**  
Live the difference.

2025 DETAIL PLATES  
REV.1

COMMERCIAL CONCRETE DRIVEWAY  
APRON WITH SIDEWALK

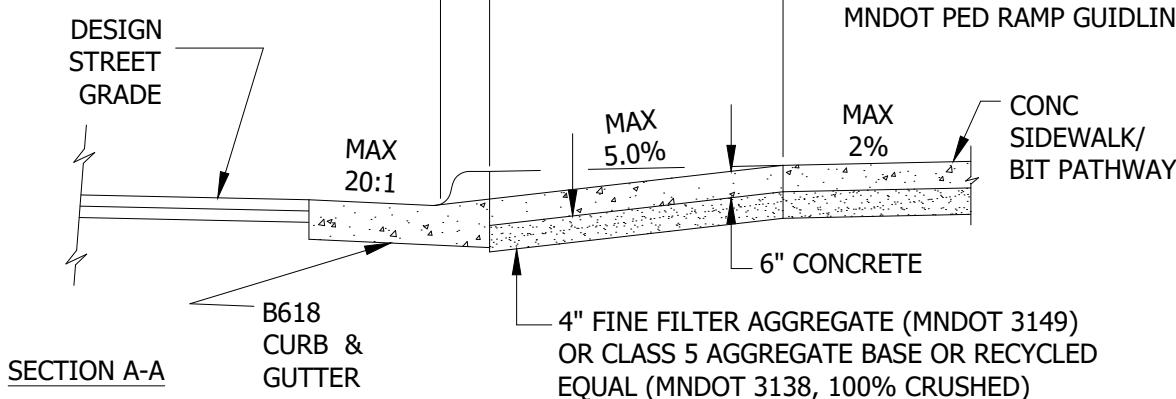
LAST REVISION:  
OCT 2024

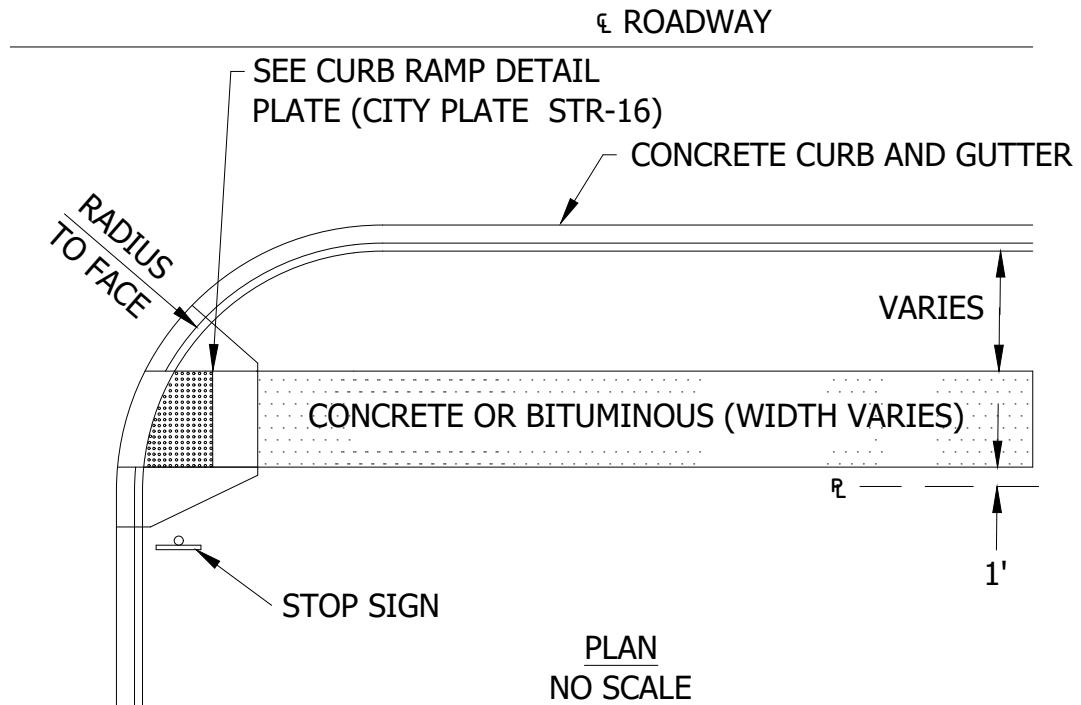
PLATE NO.  
**STR-15**



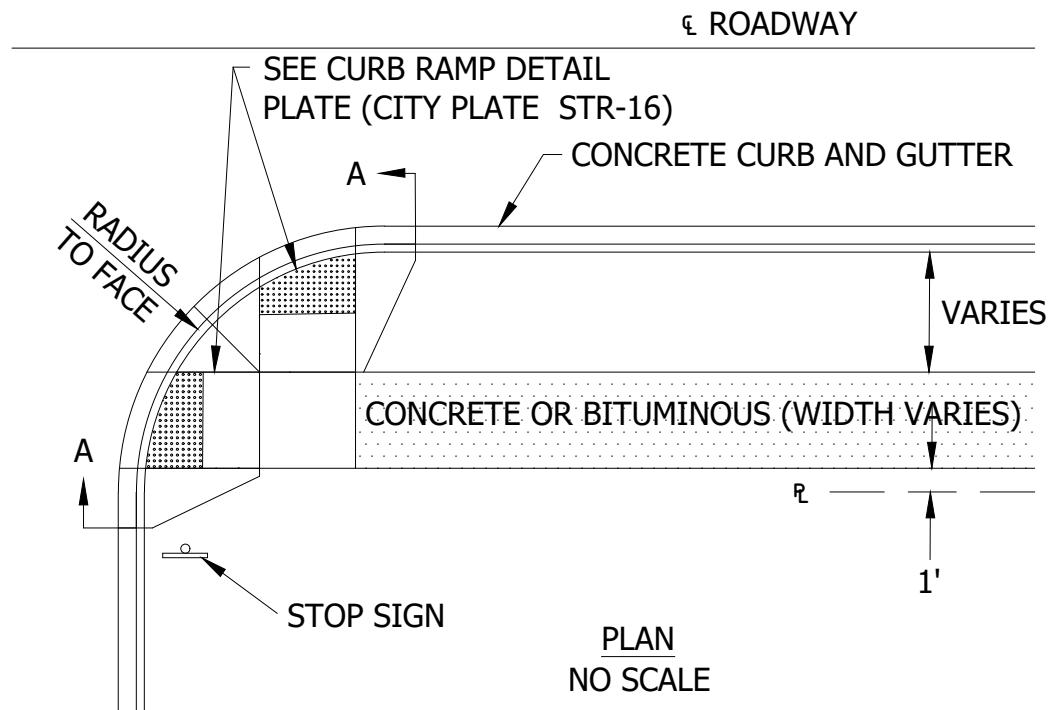
SECTION B-B

② ALL PEDESTRIAN RAMPS SHALL BE DESIGNED AND CONSTRUCTED TO MEET THE LATEST ADA REQUIREMENTS AND CONFORM TO THE LATEST MNDOT PED RAMP GUIDELINES

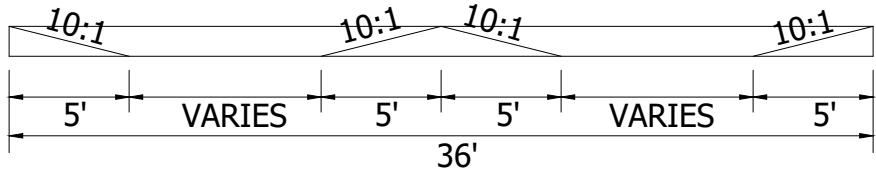




NOTE: DIMENSIONS DEPEND ON TYPE OF PATHWAY OR SIDEWALK.

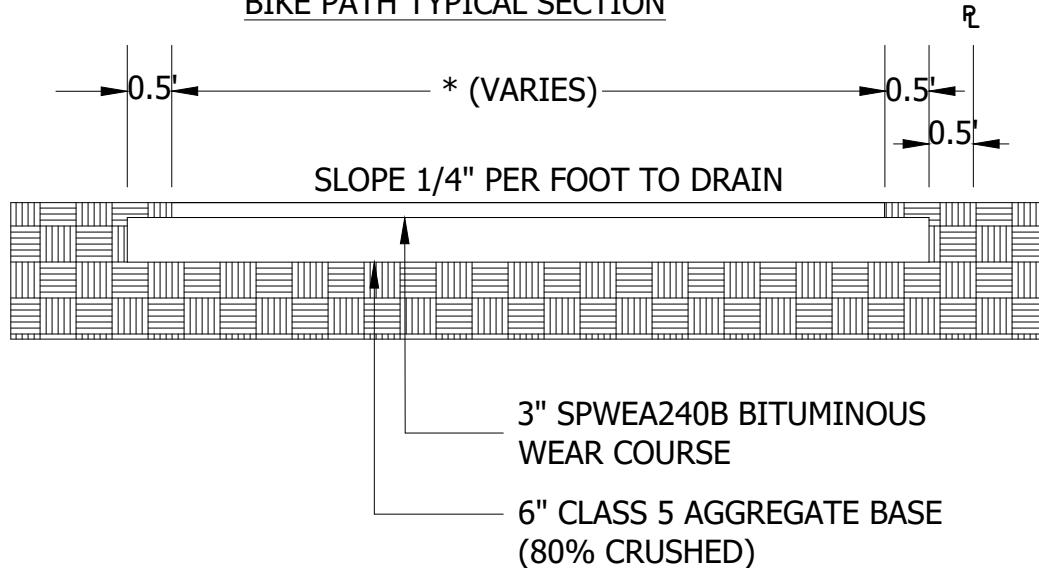


CITY ENGINEER MAY DETERMINE THAT RADIAL DOMES ARE NECESSARY IF TRANSITION DISTANCE BETWEEN TWO LANDING AREAS IS NOT SUFFICIENT OR IF DETERMINED NECESSARY BY ENGINEER.



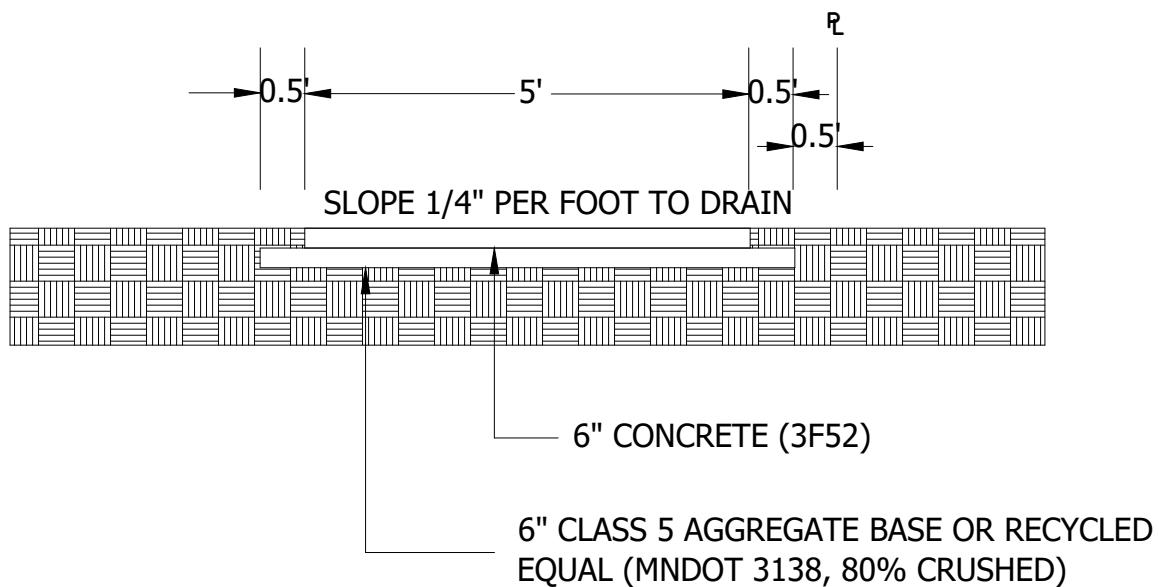
SECTION A-A  
PROFILE  
NO SCALE

### BIKE PATH TYPICAL SECTION



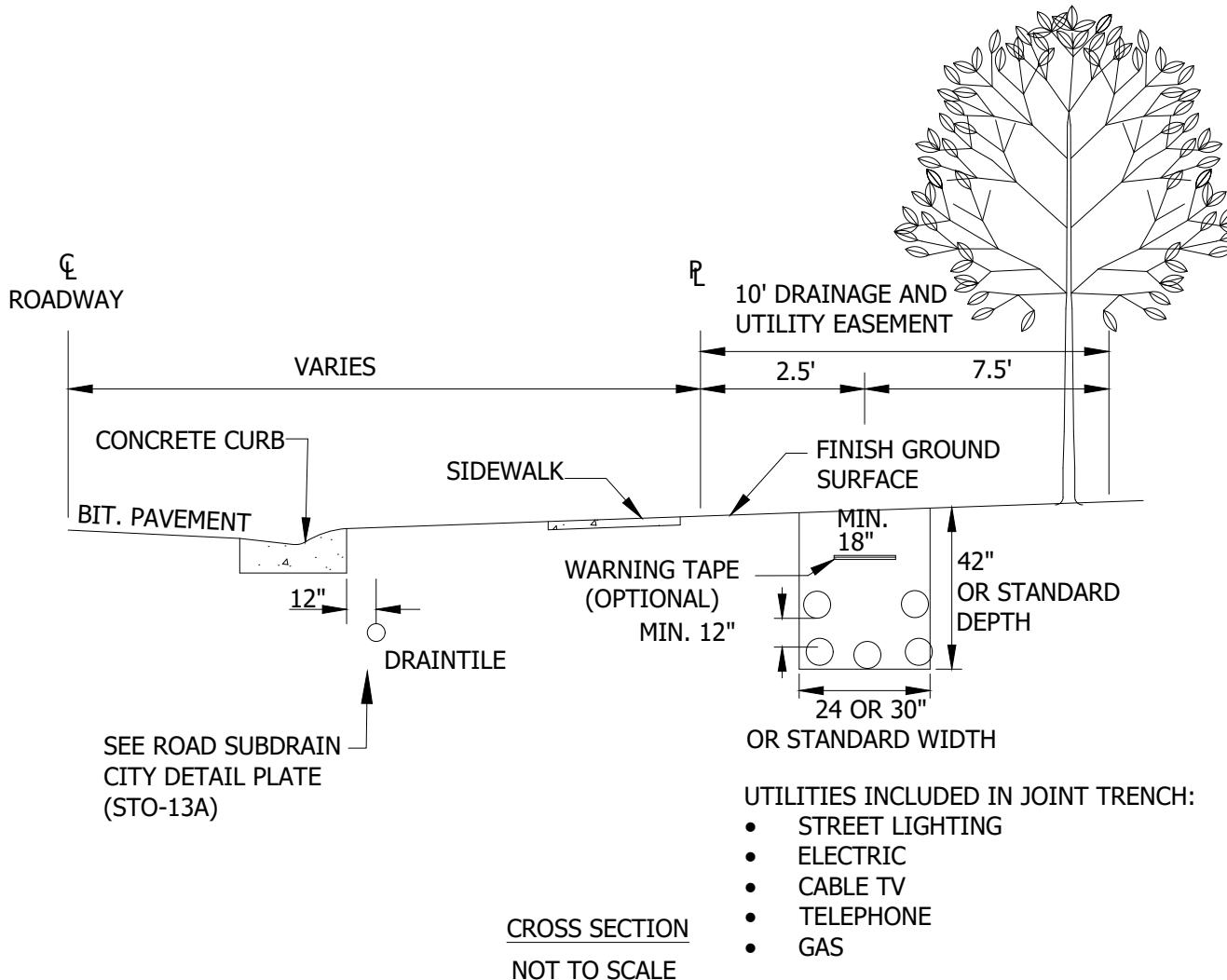
\* TRAIL WIDTH VARIES AS DIRECTED BY ENGINEER

### SIDEWALK TYPICAL SECTION



#### NOTE:

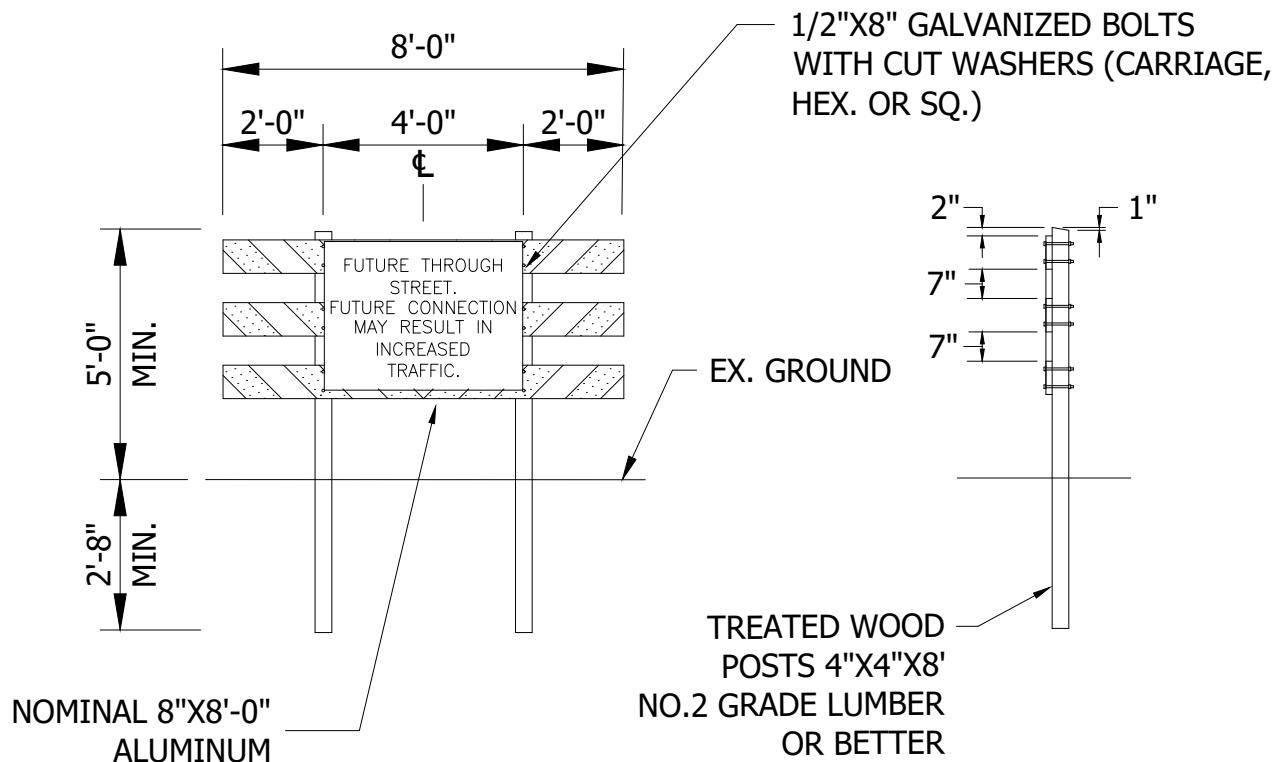
1. RUNNING SLOPE OF TRAILS, SIDEWALKS, OR PATHS MUST COMPLY WITH CURRENT ADA GUIDELINES.
2. SIDEWALK TO BE PRIVATELY MAINTAINED.
3. UP TO 10% RECYCLED MATERIAL SHALL BE ALLOWED IN BITUMINOUS WEAR COURSE.



NOTE:

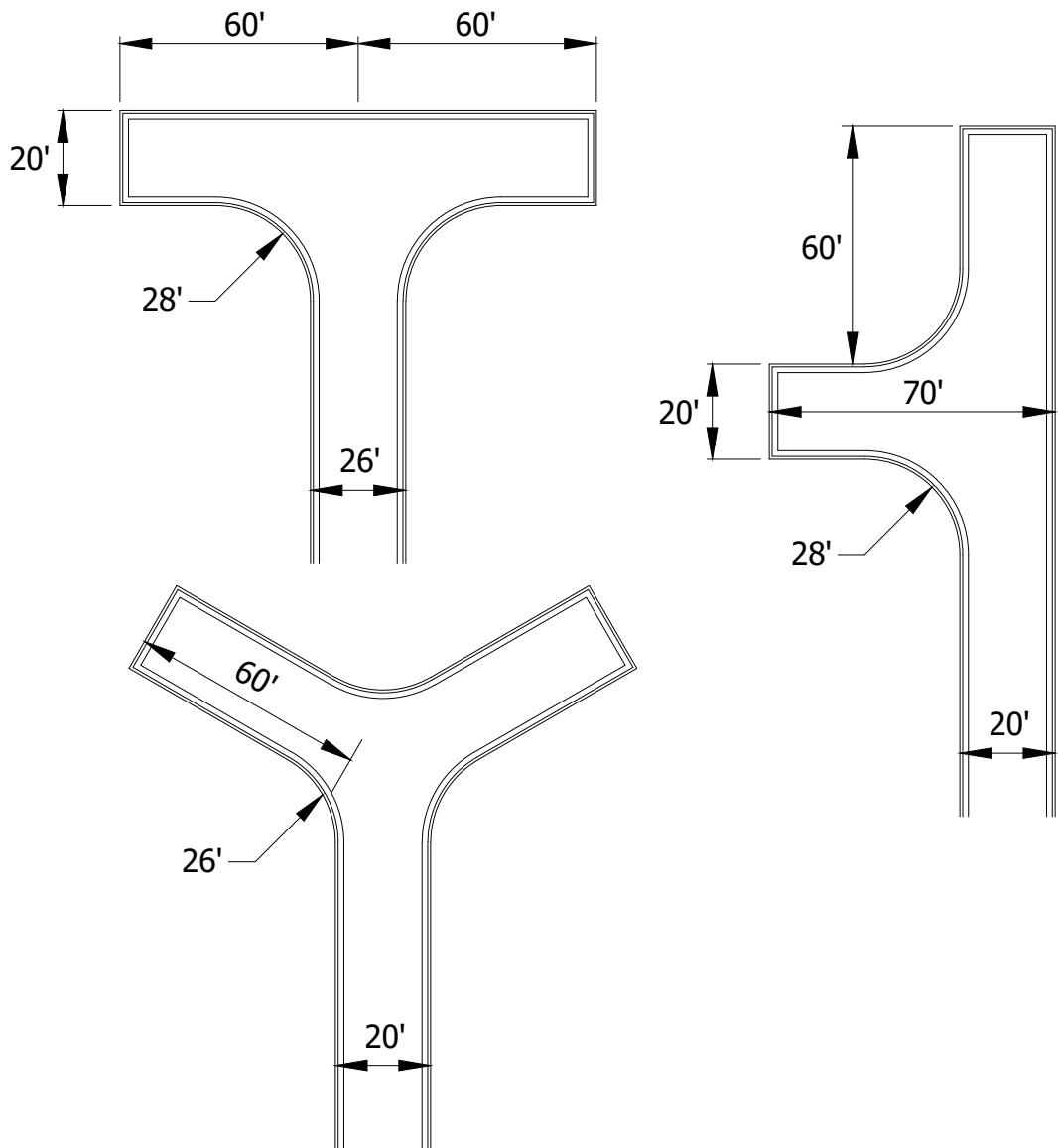
1. ALL CONDUIT CROSSINGS UNDER ROADWAYS SHALL BE THE CONTRACTORS RESPONSIBILITY TO INSTALL THE CORRECT SIZE AND NUMBER FOR ALL UTILITIES. THE CONTRACTOR SHALL ALSO INSTALL ONE ADDITIONAL CONDUIT CROSSING FOR FUTURE USE.
2. THE CITY REQUIRES JOINT TRENCHING FOR INSTALLATION OF UTILITIES WITHIN CITY UTILITY EASEMENTS. ALL TRENCHES SHALL BE COMPACTED.
3. ALL CURB STOPS AND BOXES WILL BE LOCATED 9' FROM THE PROPERTY LINE WITHIN THE DRAINAGE AND UTILITY EASEMENT.
4. STREET LIGHTS SHALL BE PLACED AS CLOSE TO 300' INTERVALS AS POSSIBLE IN RESIDENTIAL AREAS AND LOCATED ON PROPERTY CORNERS. ALL STREET LIGHT ELECTRICAL LINES SHALL BE RUGGEDIZED TYPE WIRING OR ENCASED IN CONDUIT AND PLACED WITHIN THE JOINT TRENCH.
5. ALL UTILITY BOXES SHALL BE PLACED ON COMMON PROPERTY CORNERS ON BACK SIDE OF DRAINAGE AND UTILITY EASEMENT.

NOTE: BARRICADE AS PER DAYTON  
STANDARD DETAIL PLATE STR-31



NOTES:

1. DESIGN SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY ENGINEER.
2. SIGN SHALL BE REFLECTORIZED AS PER MNDOT 3352.2A.3B
3. SIGN SHALL BE CONSTRUCTED OF ALUMINUM PER MNDOT 3352.2A.1, BLACK ON WHITE WITH 4" LETTERS.

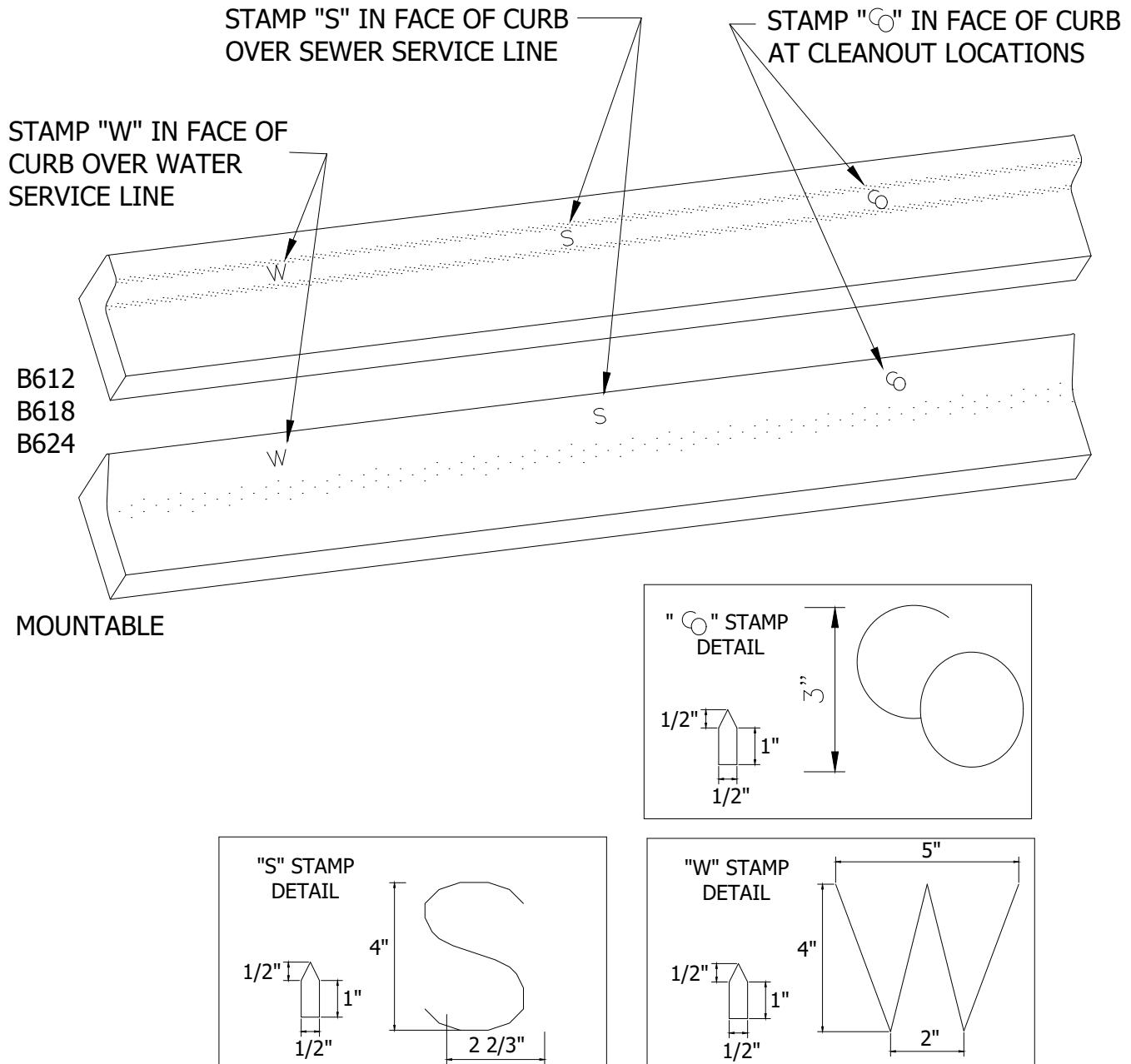


NOTES:

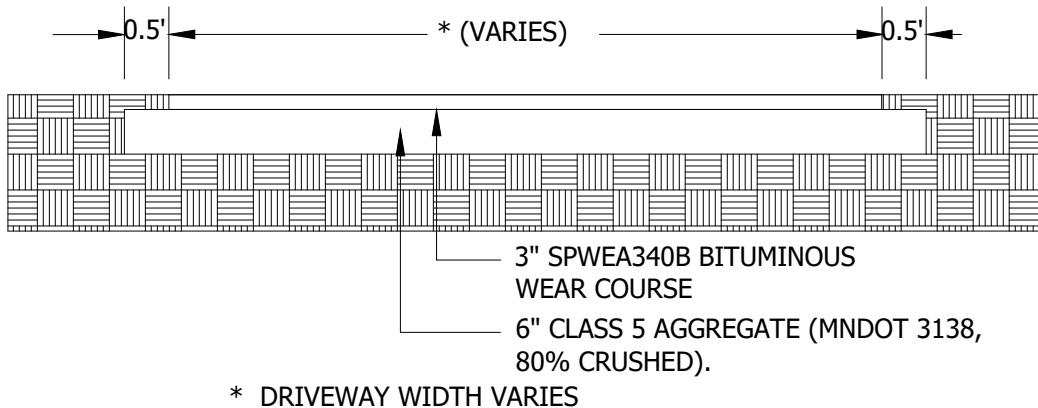
1. FIRE DEPARTMENT REQUIREMENTS FOR APPROVED ALTERNATE TURNAROUNDS ON FIRE DEPARTMENT ACCESS ROADS, AS REQUIRED BY MINNESOTA STATE FIRE CODE, 2020 EDITION.
2. TURNAROUNDS MAY BE SUBSTITUTED FOR CUL-DE-SACS IN PRIVATE DEVELOPMENTS WITH THE CITY ENGINEER'S APPROVAL.
3. CUL-DE-SAC TO BE CONSTRUCTED WITH A 45' RADIUS (MINIMUM).
4. NO BUILDING PERMITS SHALL BE ALLOWED UNTIL TURNAROUND HAS BEEN INSTALLED.
5. CURB & GUTTER SURROUNDING MAY BE ELIMINATED AT THE DISCRETION OF THE ENGINEER.

NOTES:

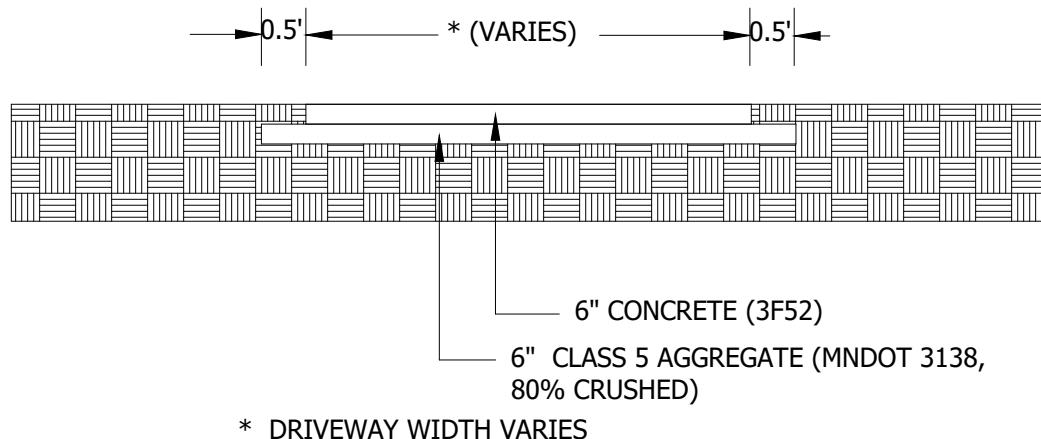
1. ALL NEW AND EXISTING WATER, SEWER SERVICE, AND CLEANOUT LOCATIONS SHALL BE MARKED IN CURB AS SHOWN. STAMPING OF SERVICE LOCATIONS SHALL BE CONSIDERED INCIDENTAL TO THE PRICE OF THE CURB.
2. STAMPS MAY BE BORROWED FROM THE CITY FOR A REFUNDABLE SECURITY DEPOSIT OF \$250 EACH.
3. W'S, S'S, AND C's NOT PLACED BY SPECIFIED STAMP WILL NOT BE ACCEPTED AND THAT SECTION OF CURB MUST BE REMOVED AND REPLACED.



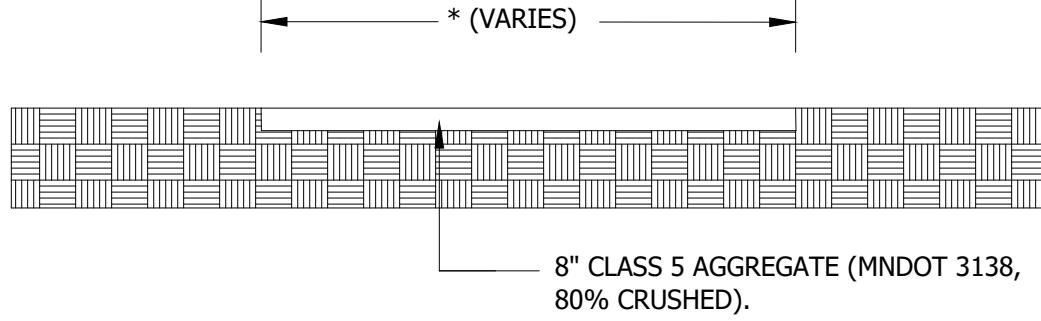
BITUMINOUS DRIVEWAY TYPICAL SECTION

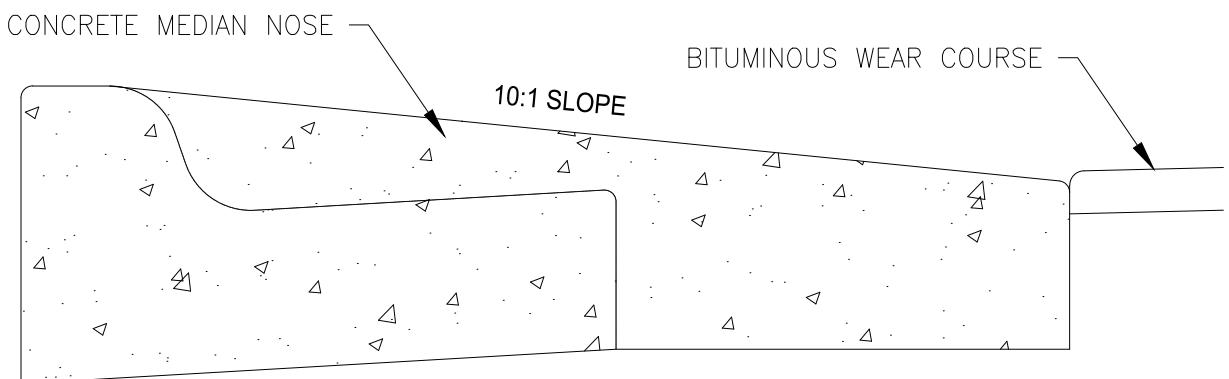


CONCRETE DRIVEWAY TYPICAL SECTION

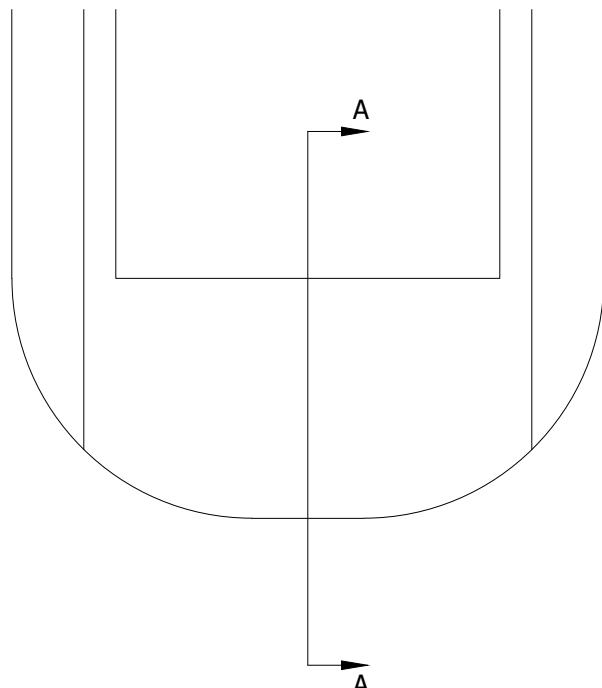


AGGREGATE DRIVEWAY TYPICAL SECTION





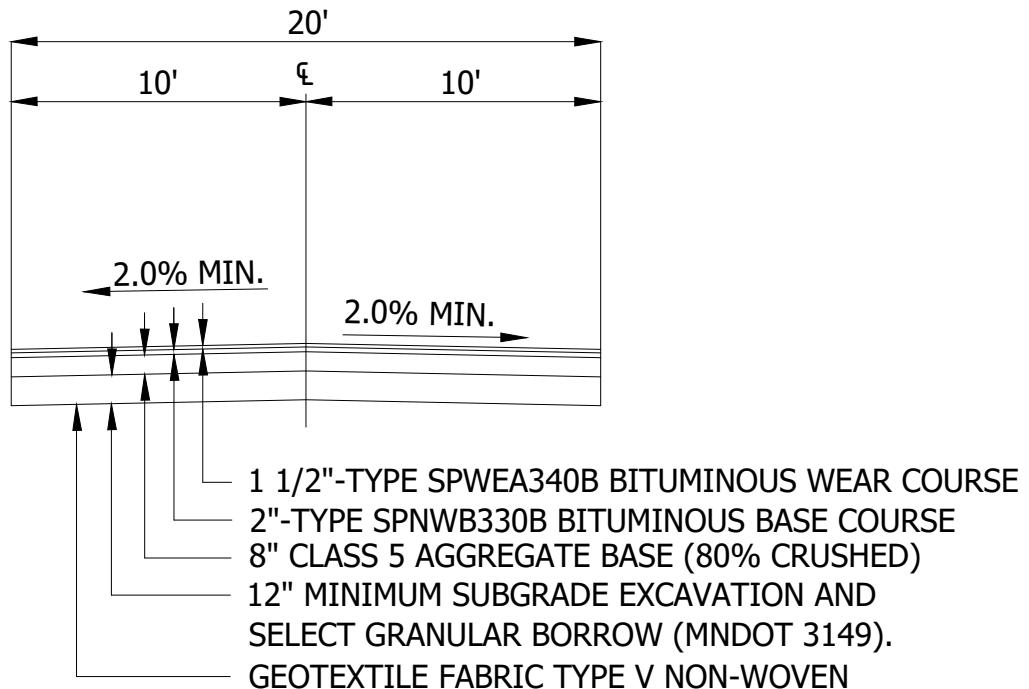
SECTION A-A



NOTES:

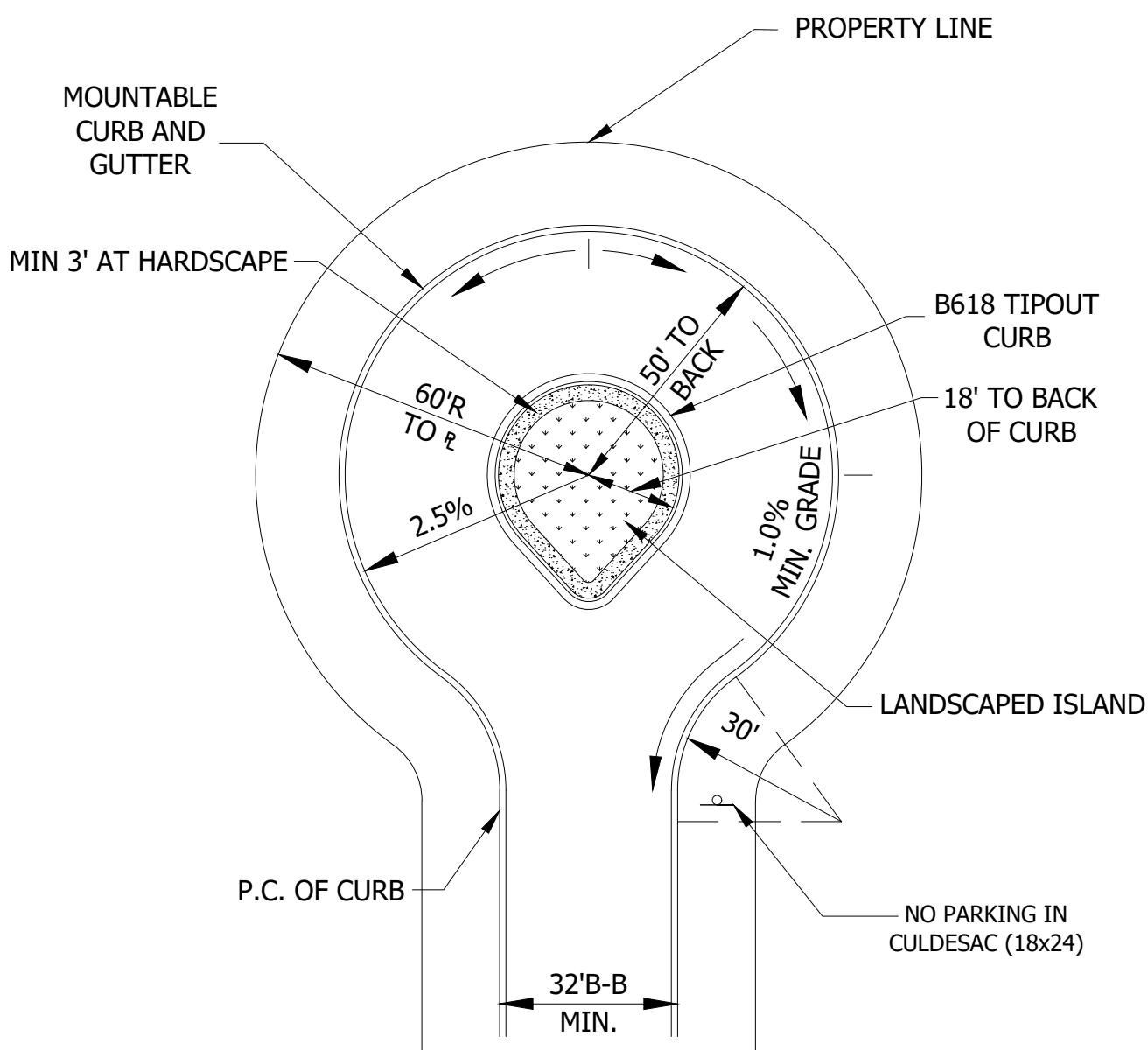
1. RADIUS WILL VARY BASED ON ISLAND SIZE.
2. CONCRETE MEDIAN NOSE TO BE USED WHEN CENTER MEDIAN ARE PRESENT. COORDINATE WITH CITY ENGINEER.

PLAN



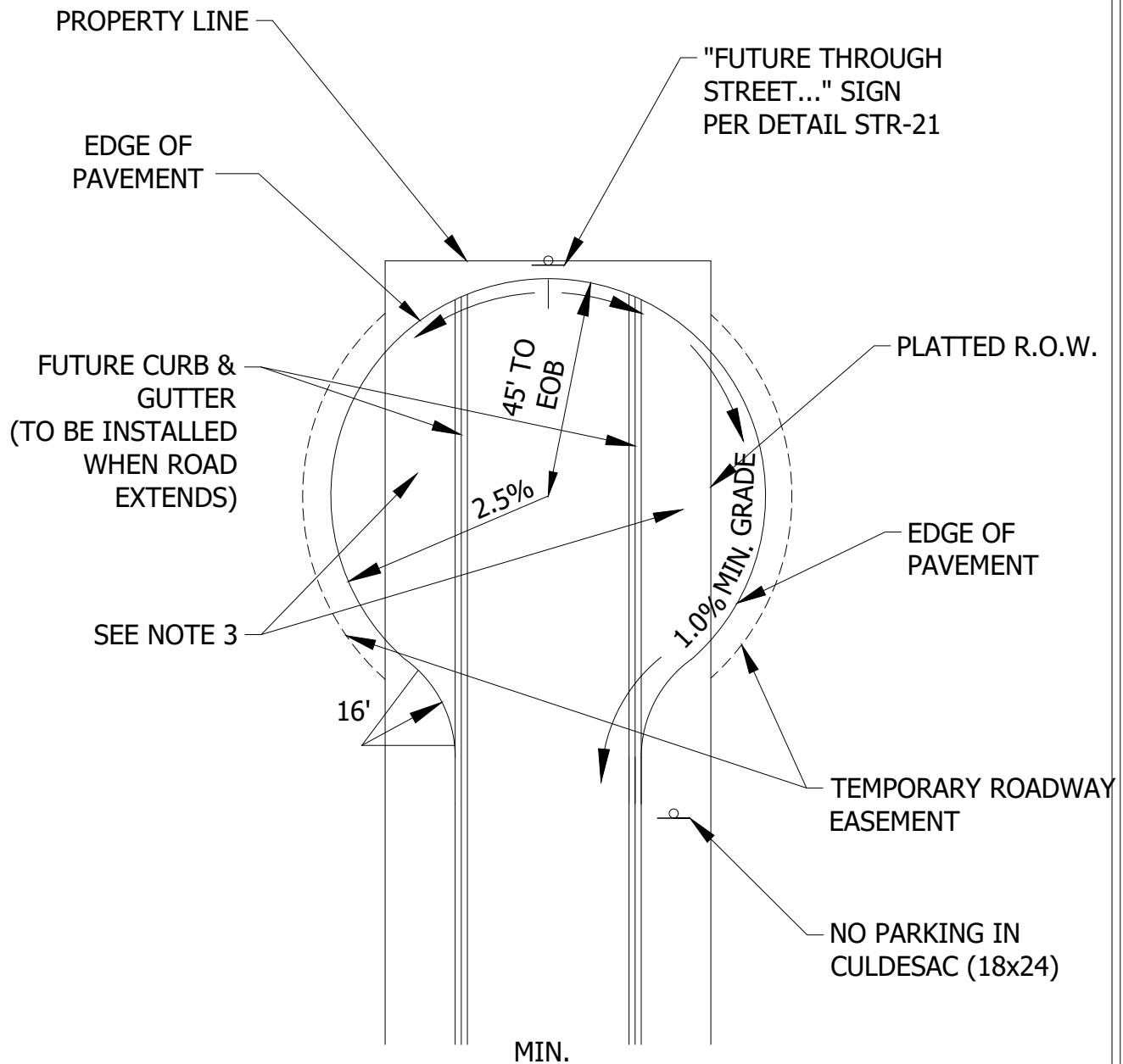
NOTE:

1. TYPICAL SECTION SHOWN IS THE MINIMUM FIRE LANE REQUIREMENT. SEE SPECIFICATIONS FOR PROJECT SPECIFIC DETAILS.
2. APPLICANT MAY ELECT TO REPLACE 12" SELECT GRANULAR BORROW WITH 6" CLASS 5 AGGREGATE BASE (100% CRUSHED) WITH CITY APPROVAL.
3. DEMONSTRATE THAT TURN RADIUS REQUIREMENTS SET BY MINNESOTA STATE FIRE CODE, 2020 EDITION ARE MET.
4. THE CITY RESERVES THE RIGHT TO INCREASE THE ACCESS ROAD SECTION BASED ON SOIL CONDITIONS.



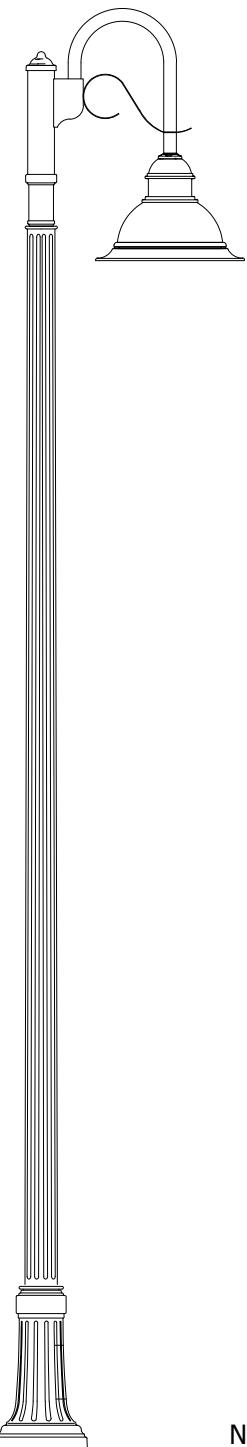
NOTE:

1. ALL RADIUS MEASUREMENTS TAKEN FROM FACE OF CURB UNLESS OTHERWISE STATED.
2. ALL CENTER ISLAND SURFACES MUST BE APPROVED BY THE CITY AND PRIVATELY MAINTAINED.
3. ON STREETS LONGER THAN 500' ENDING IN CULDESAC, A "NO OUTLET" (W14-2) SIGN IS REQUIRED AT THE START OF THE STREET.



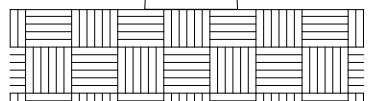
NOTE:

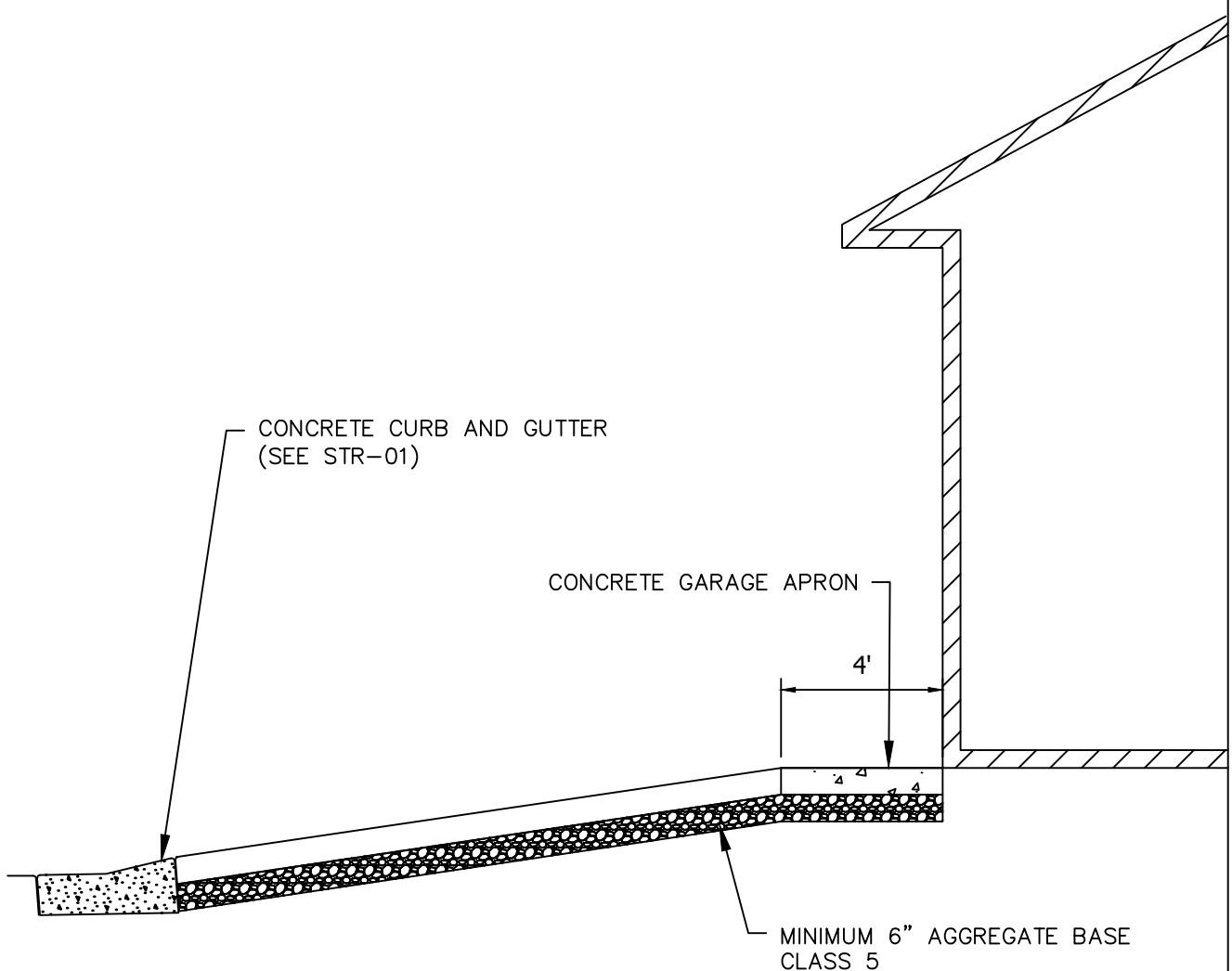
1. ALL RADIUS MEASUREMENTS TAKEN FROM FACE OF CURB.
2. NO BUILDING PERMIT WILL BE ALLOWED UNTIL TEMPORARY TURNAROUND IS INSTALLED.
3. TYPICAL SECTION FOR PAVED AREA OF TEMPORARY CUL-DE-SAC OUTSIDE OF FUTURE STREET SECTION TO BE 3" OF BITUMINOUS AND 12" OF AGGREGATE.



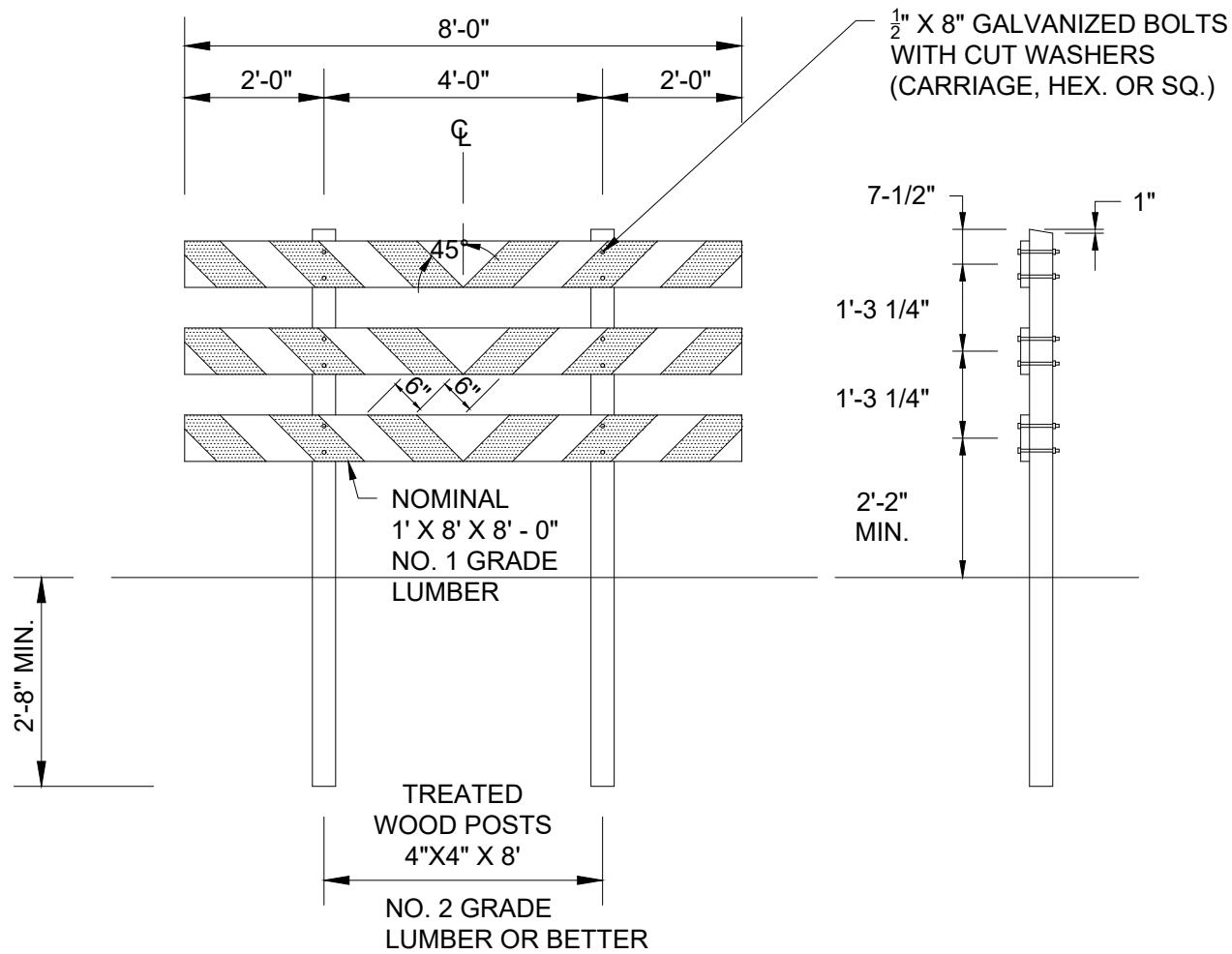
NOTES:

1. PROVIDE LIGHTING PLAN WITH IDENTIFIED PROPOSED LOCATION OF LIGHTS.
2. LIGHTING ACCESSORIES MAYBE ADDED BY THE CITY ENGINEER.
3. DOMUS STYLE LIGHTING WILL BE REQUIRED.





1. PANEL WIDTH SHALL NOT EXCEED 10 FEET WITHOUT A CONTRACTION JOINT.
2. JOINTING TO MATCH INTO DRIVEWAY JOINTING IF APPLICABLE.
3. MAXIMUM DRIVEWAY WIDTH = 28'.
4. MINIMUM DISTANCE FROM LOT LINE = 5' AS MEASURED FROM THE BACK OF CURB.
5. ALL DRIVEWAYS MUST BE AT LEAST 60' FROM INTERSECTIONS MEASURED FROM C-C TO CENTER OF DRIVEWAY.



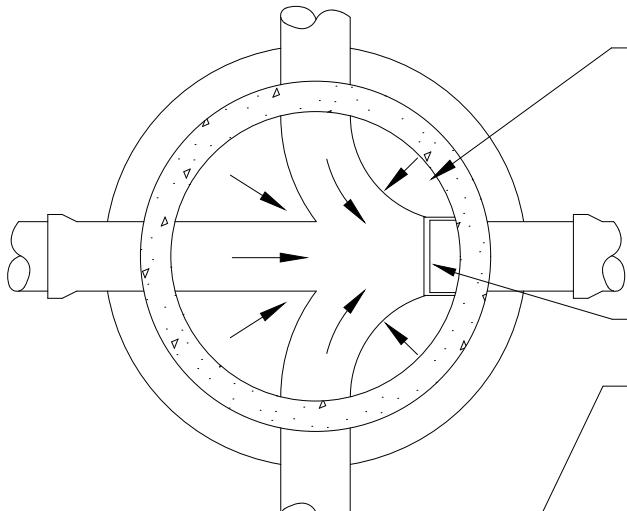
NOTE

THE BARRICADE BOARD FACE SURFACES SHALL BE FULLY REFLECTORIZED IN ALTERNATE SILVER-WHITE AND RED STRIPING, USING A REFLECTIVE SHEETING CONFORMING TO THE REQUIREMENTS OF SPEC. 3352.2A2B, STANDARD NO. 2.

PRIOR TO INSTALLING THE REFLECTIVE SHEETING, THE BARRICADE BOARDS SHALL BE GIVEN A COMPLETE COATING OF WHITE WOOD PRIMER PAINT FOLLOWED BY A SECOND COAT OF WHITE EXTERIOR APPLIED ONLY TO THE SURFACES NOT COVERED WITH REFLECTIVE SHEETING.

THE BARRICADE BOARDS SHALL BE COMPLETELY PAINTED AND REFLECTORIZED SHEETING APPLIED BEFORE BEING INSTALLED ON THE POSTS.

THE PLACEMENT OF THE BARRICADE SHALL BE 10'-0" FROM THE END OF THE BITUMINOUS ROAD WITH THE BARRICADE CENTERED ON THE ROADWAY FACING THE FLOW OF TRAFFIC.



PRECAST INVERT MUST BE 1/2 DIAMETER OF PIPE AND BENCHES SHOULD BE SLOPED 2" TOWARD INVERT.

CASTING	A	B
R1642	27"	7"

MANHOLE STEPS SHALL BE PLACED SO THAT OFFSET VERTICAL PORTION OF CONE IS FACING DOWNSTREAM.

NEENAH FRAME AND COVER OR EQUAL LETTERED "SANITARY SEWER" WITH 2 CONCEALED PICK HOLES  
MORTAR SHALL BE AIR ENTRAINED UNDERGROUND UTILITY MORTAR WHICH MEETS OR EXCEEDS ASTM C270 AND ASTM 387.

ONLY PLASTIC SHIMS SHALL BE ALLOWED IF NEEDED.

MINIMUM OF 4" AND MAXIMUM OF 12" OF CONCRETE ADJUSTMENT RINGS. THE TOP TWO RINGS MUST BE 2" RINGS. BETWEEN EACH RING THERE MUST BE A FULL BED OF MORTAR. 1 RING WITH MORTAR = 0.2'. INSTALL INTERIOR I & I BARRIER EULL'S OR APPROVED EQUAL.

MANHOLE STEPS, NEENAH R1981J OR EQUAL, 16" ON CENTER.

GATOR WRAP SHALL BE REQUIRED ON BOTTOM JOINT AT A MINIMUM AND HIGHER PER DIRECTION OF THE ENGINEER.

ALL JOINTS IN MANHOLE TO HAVE "O" RING RUBBER GASKETS.

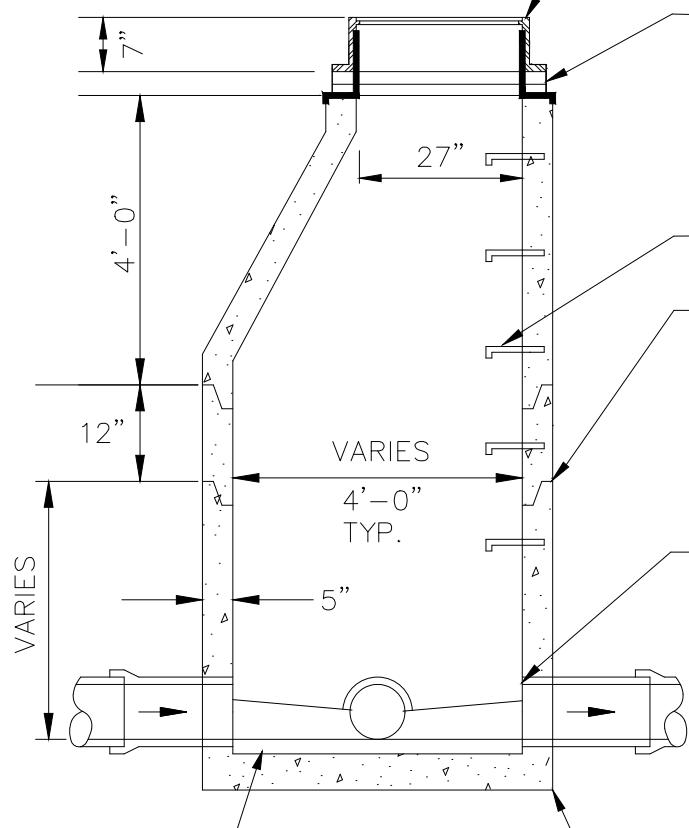
PLACE  $\frac{3}{4}$ " RAM-NEK ON ALL SECTION JOINTS IF DIRECTED BY ENGINEER

PIPE SHALL BE CUT OUT FLUSH WITH INSIDE FACE OF WALL.

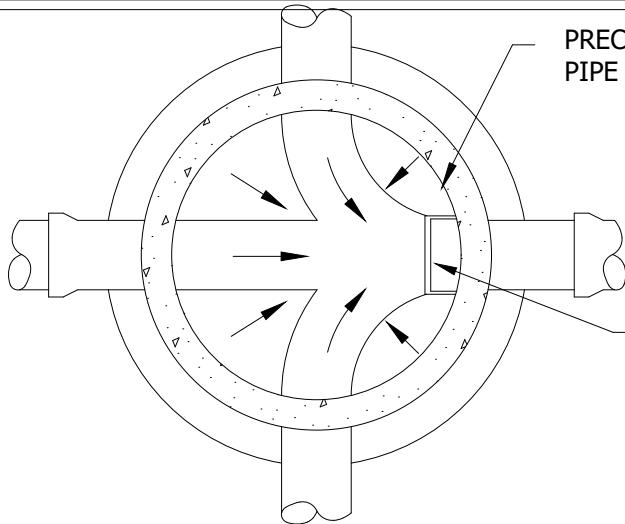
PRECAST INVERT REQUIRED.

KOR-N-SEAL MANHOLE OR APPROVED EQUAL CONSIDERED ACCEPTABLE ALTERNATE.

DOGHOUSES SHALL BE GROUTED ON INSIDE. AN A-LOCK GASKET SHALL BE USED AND NO EXTERNAL DOGHOUSE IS REQUIRED.



MINIMUM THICKNESS OF PRECAST BASE IS 6" FOR STRUCTURES 14' DEEP OR LESS, AND INCREASES 1" IN THICKNESS FOR EVERY 4' OF DEPTH GREATER THAN 14'.



PRECAST INVERT MUST BE 1/2 DIAMETER OF THE PIPE AND THE BENCHES SLOPED 2" TOWARD INVERT.

CASTING	A	B
R1642	27"	7"

MANHOLE STEPS SHALL BE PLACED SO THAT OFFSET VERTICAL PORTION OF CONE IS FACING DOWNSTREAM.

MORTAR SHALL BE AIR ENTRAINED UNDERGROUND UTILITY MORTAR WHICH MEETS OR EXCEEDS ASTM C270 AND ASTM 387. ONLY PLASTIC SHIMS SHALL BE ALLOWED IF NEEDED.

NEENAH FRAME AND COVER OR EQUAL, LETTERED "SANITARY SEWER", WITH 2 CONCEALED PICK HOLES.

MINIMUM OF 4" AND MAXIMUM OF 12" OF CONCRETE ADJUSTMENT RINGS. THE TOP TWO RINGS MUST BE 2" RINGS. BETWEEN EACH RING THERE MUST BE A FULL BED OF MORTAR. 1 RING WITH MORTAR = 0.2'. INSTALL INTERIOR I & I BARRIER EULL'S OR APPROVED EQUAL.

GATOR WRAP SHALL BE REQUIRED ON BOTTOM JOINT AT A MINIMUM OR HIGHER PER DIRECTION OF THE ENGINEER.

MANHOLE STEPS, NEENAH R1981J OR EQUAL, 16" ON CENTER.

ALL JOINTS IN MANHOLE TO HAVE "O" RING RUBBER GASKETS.

PLACE  $\frac{3}{4}$ " RAM-NEK ON ALL SECTION JOINTS IF DIRECTED BY ENGINEER.

PIPE SHALL BE CUT OUT FLUSH WITH INSIDE FACE OF WALL.

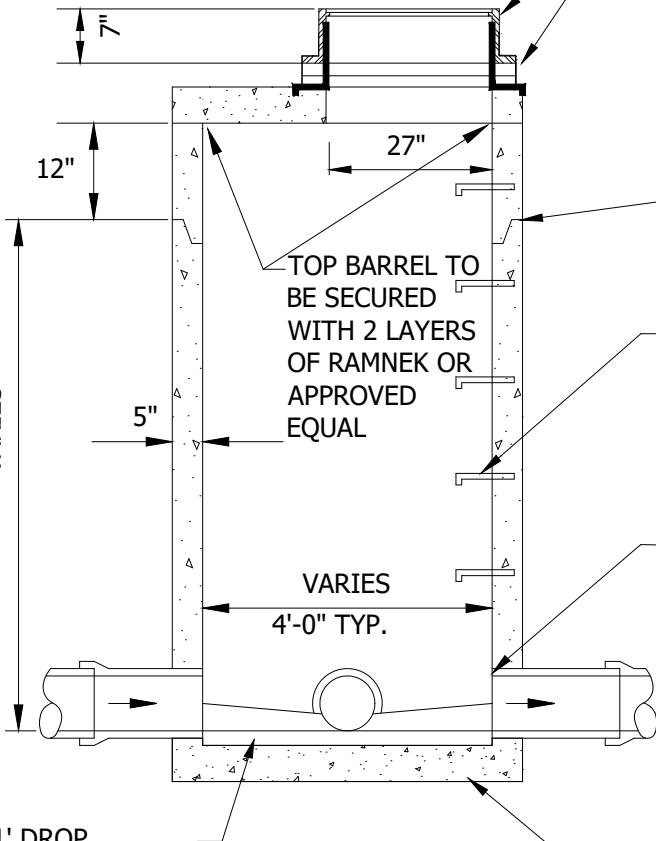
PRECAST INVERT IS REQUIRED.

NOTE: KOR-N-SEAL MANHOLE OR APPROVED EQUAL CONSIDERED ACCEPTABLE ALTERNATE.

DOGHOUSES SHALL BE GROUTED ON INSIDE. A LOCK GASKET SHALL BE USED AND NO EXTERNAL DOGHOUSE IS REQUIRED.

VARIABLES

0.1' DROP  
BETWEEN  
INVERTS



MINIMUM THICKNESS OF PRECAST BASE IS 6" FOR STRUCTURES 14' DEEP OR LESS, AND INCREASES 1" FOR EVERY 4' OF DEPTH GREATER THAN 14' DEEP.

SECTION

### INSIDE OF MANHOLE

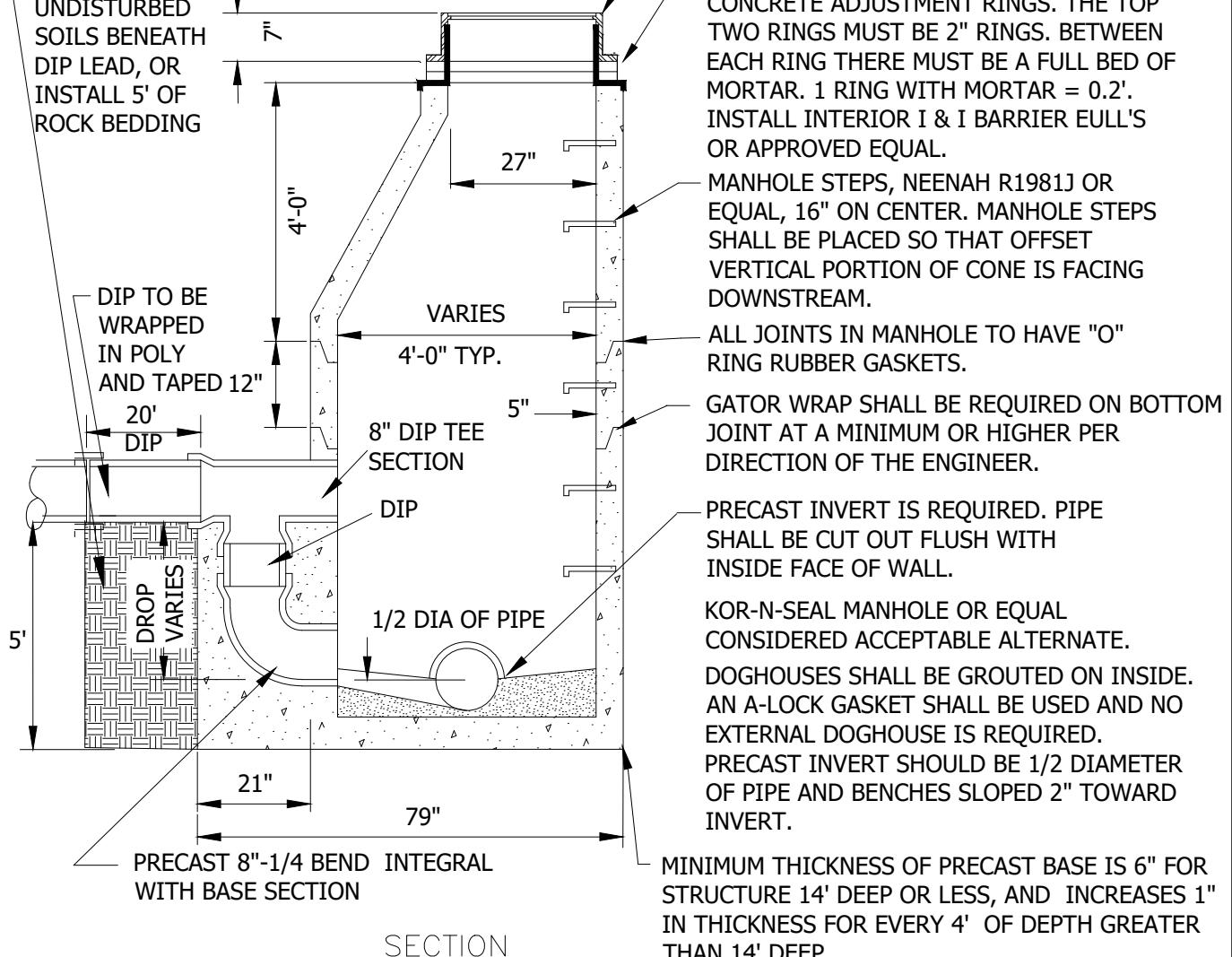
INSIDE OF MANHOLE SHALL BE LINED WITH GSE STUDLINE, T-LOCK OR EQUIVALENT LINER. MORTAR SHALL BE AIR ENTRAINED UNDERGROUND UTILITY MORTAR WHICH MEETS OR EXCEEDS ASTM C270 AND ASTM 387. ONLY PLASTIC SHIMS SHALL BE ALLOWED IF NEEDED.

DIP TO BE MADE IN USA OR CANADA, FITTINGS TO BE EPOXY BONDED, ALL DIP TO BE LINED WITH PROTECTO 401 LINER OR APPROVED EQUAL

MAINTAIN 5' OF UNDISTURBED SOILS BENEATH DIP LEAD, OR INSTALL 5' OF ROCK BEDDING

DIP TO BE WRAPPED IN POLY AND TAPE 12"

20' DIP



CASTING	A	B
R1642	27"	7"

DROP INLET IS REQUIRED WHEN THE DROP IS 2FT OR GREATER

NEENAH FRAME AND COVER OR EQUAL, LETTERED "SANITARY SEWER", WITH 2 CONCEALED PICK HOLES.

MINIMUM OF 4" AND MAXIMUM OF 12" OF CONCRETE ADJUSTMENT RINGS. THE TOP TWO RINGS MUST BE 2" RINGS. BETWEEN EACH RING THERE MUST BE A FULL BED OF MORTAR. 1 RING WITH MORTAR = 0.2'. INSTALL INTERIOR I & I BARRIER EULL'S OR APPROVED EQUAL.

MANHOLE STEPS, NEENAH R1981J OR EQUAL, 16" ON CENTER. MANHOLE STEPS SHALL BE PLACED SO THAT OFFSET VERTICAL PORTION OF CONE IS FACING DOWNSTREAM.

ALL JOINTS IN MANHOLE TO HAVE "O" RING RUBBER GASKETS.

GATOR WRAP SHALL BE REQUIRED ON BOTTOM JOINT AT A MINIMUM OR HIGHER PER DIRECTION OF THE ENGINEER.

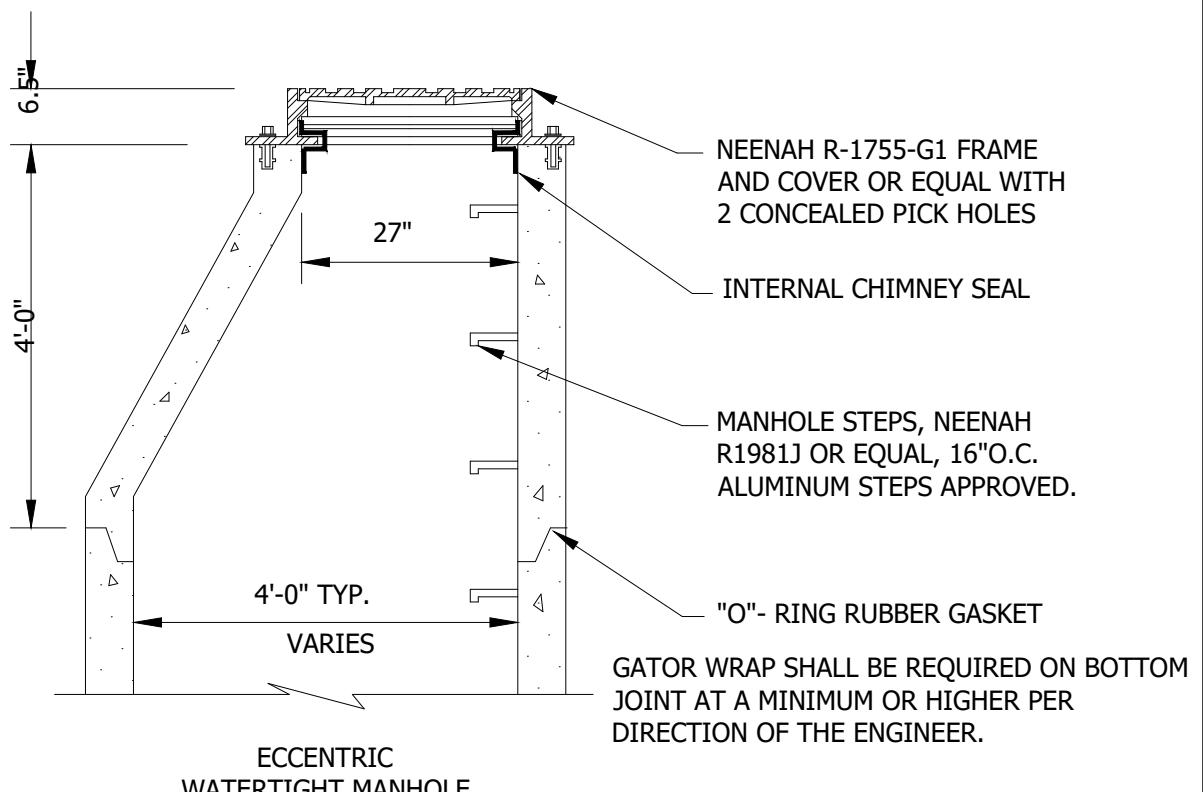
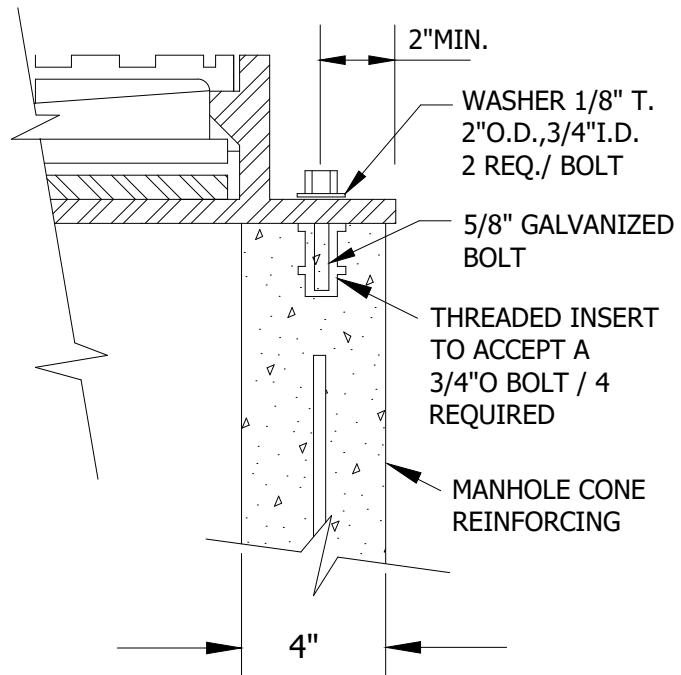
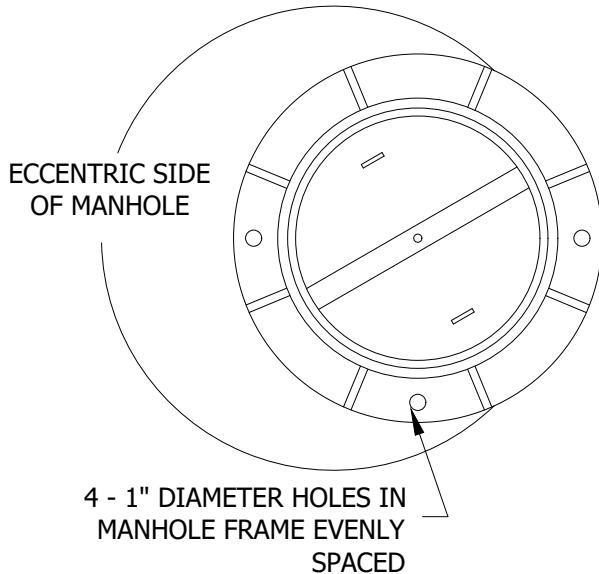
PRECAST INVERT IS REQUIRED. PIPE SHALL BE CUT OUT FLUSH WITH INSIDE FACE OF WALL.

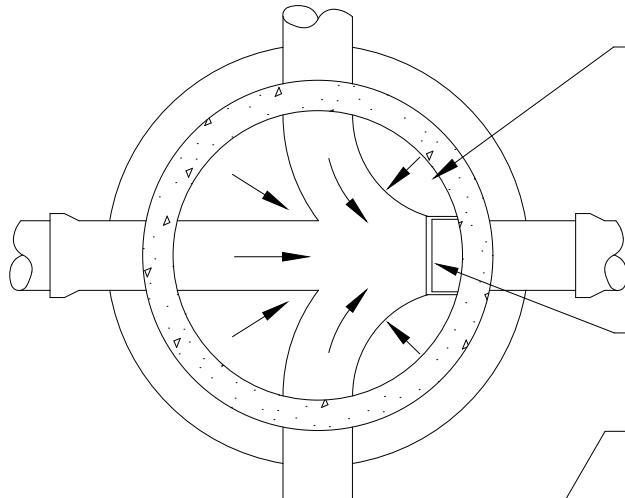
KOR-N-SEAL MANHOLE OR EQUAL CONSIDERED ACCEPTABLE ALTERNATE.

DOGHOUSES SHALL BE GROUTED ON INSIDE. AN A-LOCK GASKET SHALL BE USED AND NO EXTERNAL DOGHOUSE IS REQUIRED.

PRECAST INVERT SHOULD BE 1/2 DIAMETER OF PIPE AND BENCHES SLOPED 2" TOWARD INVERT.

MINIMUM THICKNESS OF PRECAST BASE IS 6" FOR STRUCTURE 14' DEEP OR LESS, AND INCREASES 1" IN THICKNESS FOR EVERY 4' OF DEPTH GREATER THAN 14' DEEP.

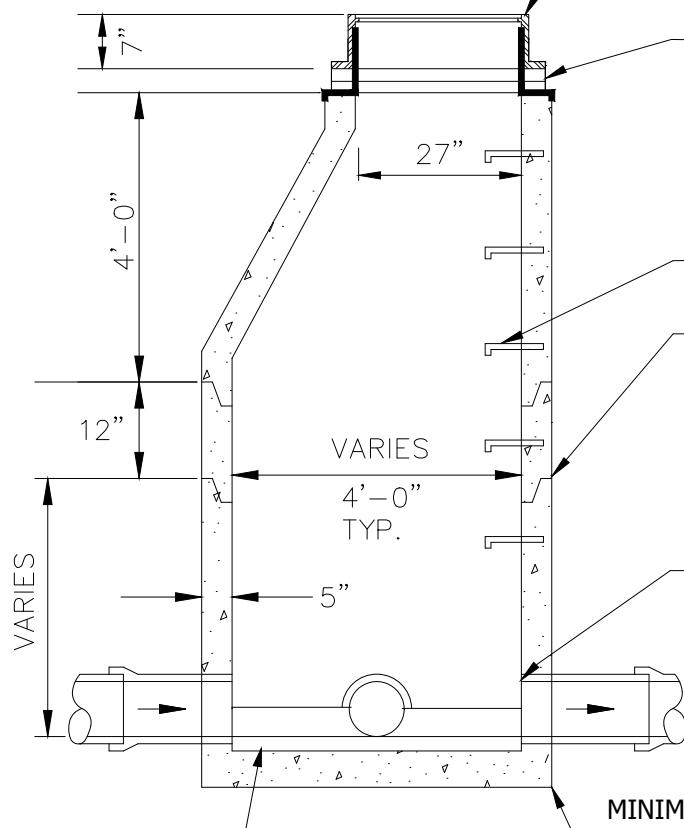




HEIGHT OF THE BENCH MUST EQUAL THE DIAMETER OF THE PIPE AND BENCHES SHOULD BE SLOPED 2" TOWARD INVERT.

CASTING	A	B
R1642	27"	7"

PLAN



NO DROP BETWEEN INVERTS WHERE PIPES ARE GREATER THAN 120° APART.

SECTION

MANHOLE STEPS SHALL BE PLACED SO THAT OFFSET VERTICAL PORTION OF CONE IS FACING DOWNSTREAM.

NEENAH FRAME AND COVER OR EQUAL LETTERED "SANITARY SEWER" WITH 2 CONCEALED PICK HOLES

MORTAR SHALL BE AIR ENTRAINED UNDERGROUND UTILITY MORTAR WHICH MEETS OR EXCEEDS ASTM C270 AND ASTM 387. ONLY PLASTIC SHIMS SHALL BE ALLOWED IF NEEDED.

MINIMUM OF 4" AND MAXIMUM OF 12" OF CONCRETE ADJUSTMENT RINGS. THE TOP TWO RINGS MUST BE 2" RINGS. BETWEEN EACH RING THERE MUST BE A FULL BED OF MORTAR. 1 RING WITH MORTAR = 0.2'. INSTALL INTERIOR I & I BARRIER FULL'S OR APPROVED EQUAL.

MANHOLE STEPS, NEENAH R1981J OR EQUAL, 16" ON CENTER.

GATOR WRAP SHALL BE REQUIRED ON BOTTOM JOINT AT A MINIMUM AND HIGHER PER DIRECTION OF THE ENGINEER.

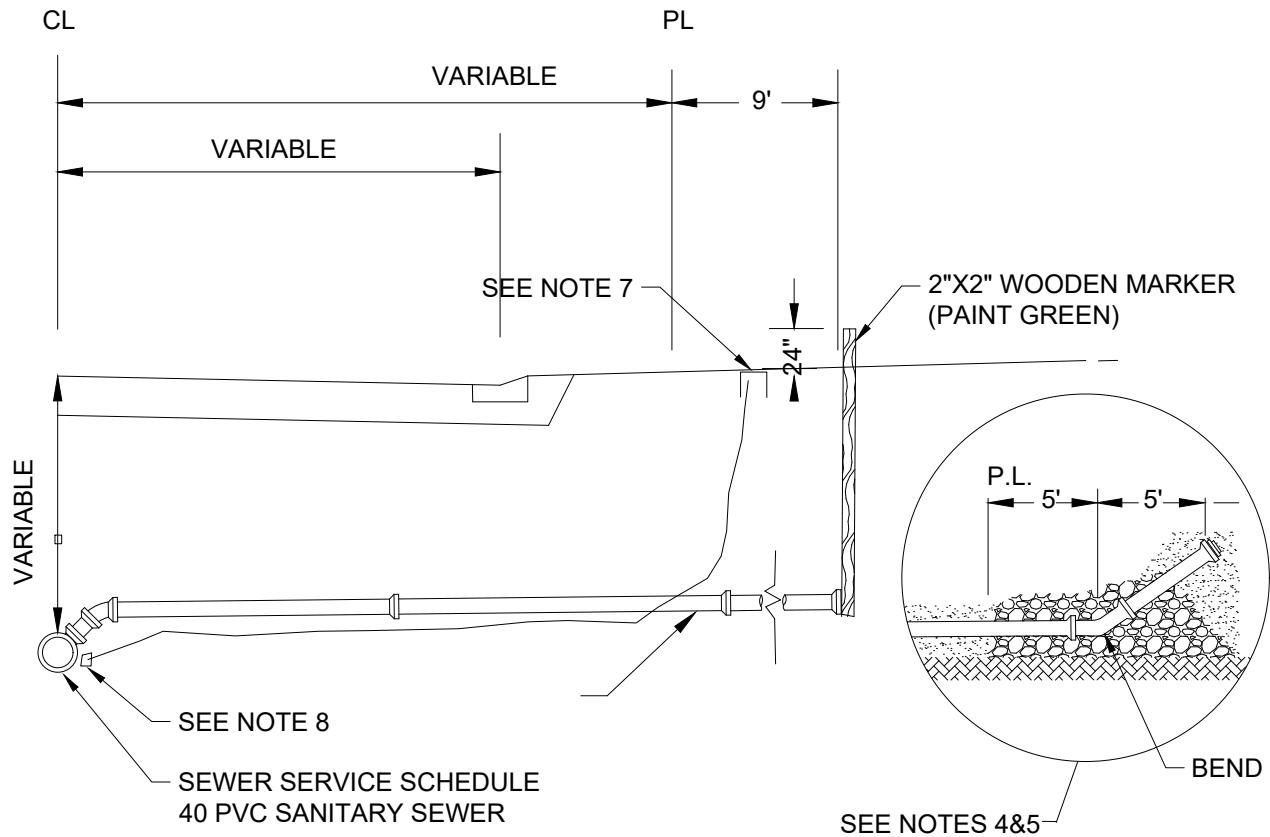
ALL JOINTS IN MANHOLE TO HAVE "O" RING RUBBER GASKETS.

PLACE  $\frac{3}{4}$ " RAM-NEK ON ALL SECTION JOINTS IF DIRECTED BY ENGINEER

PRECAST INVERT REQUIRED. PIPE SHALL BE CUT OUT FLUSH WITH INSIDE FACE OF WALL. KOR-N-SEAL MANHOLE OR APPROVED EQUAL CONSIDERED ACCEPTABLE ALTERNATE.

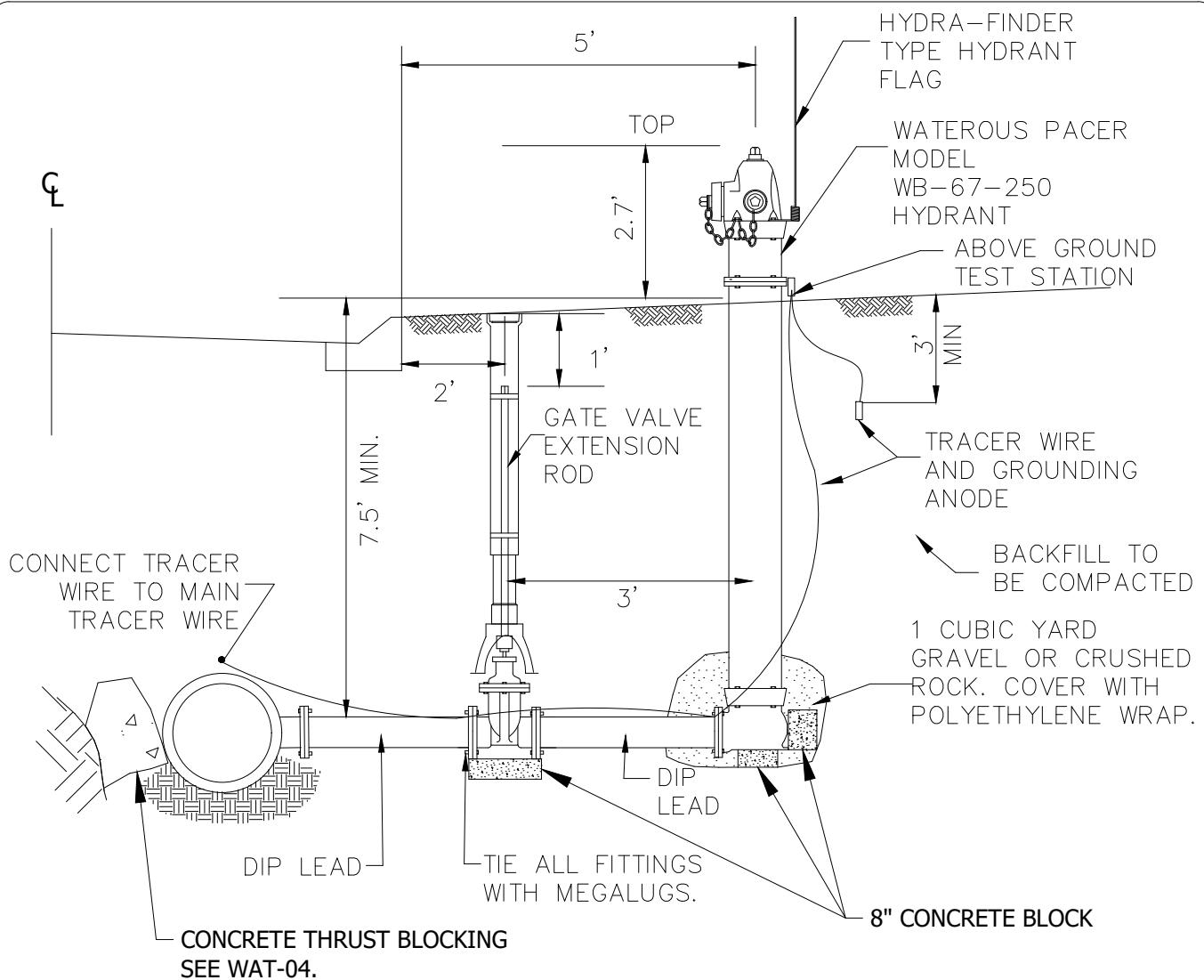
DOGHOUSES SHALL BE GROUTED ON INSIDE. AN A-LOCK GASKET SHALL BE USED AND NO EXTERNAL DOGHOUSE IS REQUIRED.

MINIMUM THICKNESS OF PRECAST BASE IS 6" FOR STRUCTURES 14' DEEP OR LESS, AND INCREASES 1" IN THICKNESS FOR EVERY 4' OF DEPTH GREATER THAN 14'. VARIANCE TO THIS REQUIREMENT MAY BE CONSIDERED IF SIGNED OFF BY CERTIFIED STRUCTURAL ENGINEER.



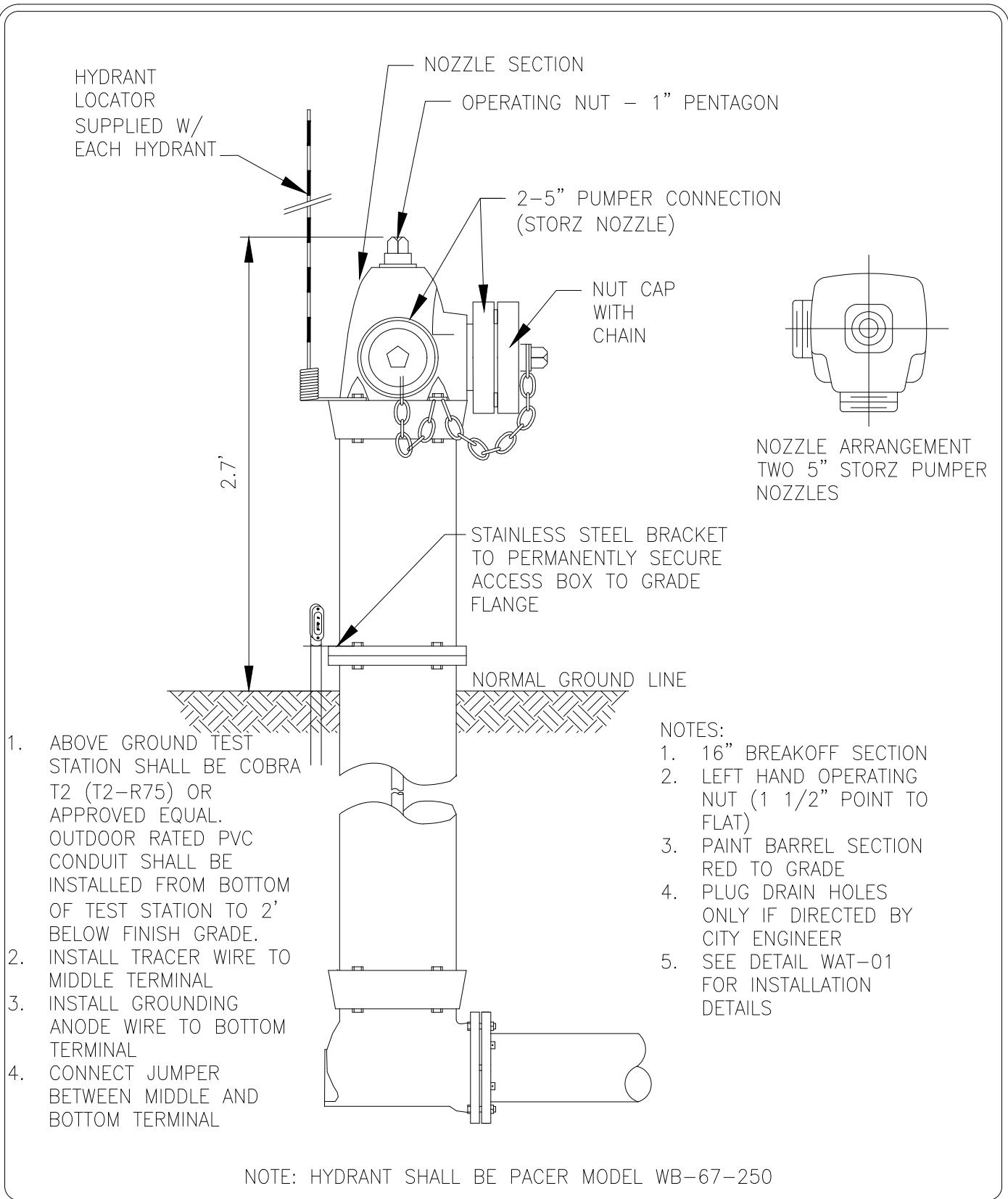
NOTES:

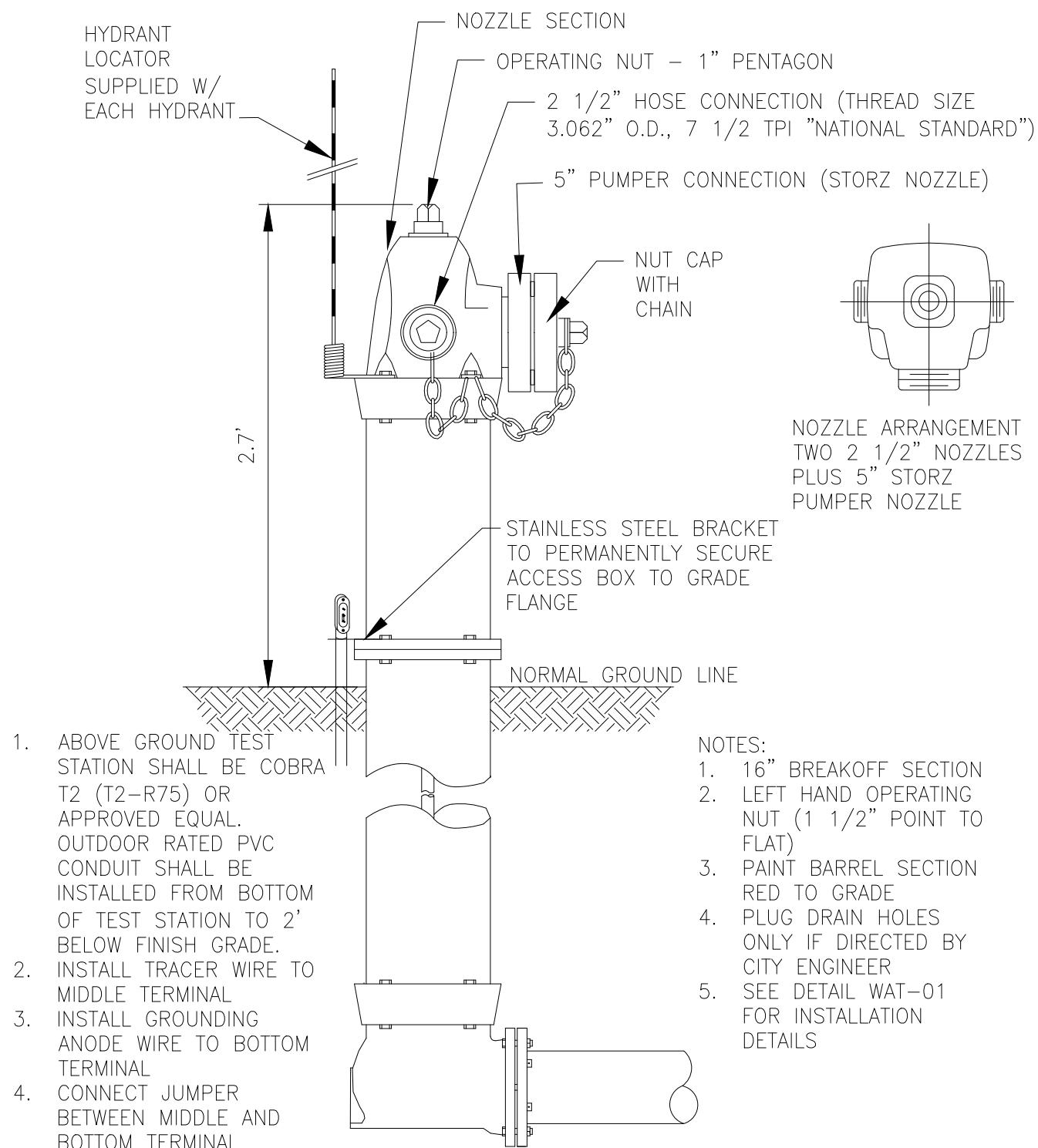
1. SEWER SERVICES. 4" (UNLESS OTHERWISE SPECIFIED ON PLANS) SCHEDULE 40 PVC SEWER PIPE
2. PIPE JOINTS SHALL BE NON GASKETED, SOLVENT WELD TYPE.
3. SLOPE  $\frac{1}{4}$ " PER FOOT MINIMUM.
4. ALL PIPE SHALL BE BEDDED IN GRANULAR BORROW 3149.2B1 EXCEPT THE LAST TEN FEET WHERE COARSE FILTER AGGREGATE (3149.2H) WILL BE REQUIRED.
5. 45 DEGREE BENDS SHALL BE USED AT THE END OF THE SERVICE IF DEPTH EXCEEDS 8' TO BRING SANITARY SERVICE INVERT TO CURBSTOP ELEVATION.
6. INSTALL SANITARY RISER TO MATCH CURB STOP ELEVATION.
7. TRACER WIRE SHALL BE BROUGHT UP ALONG WATERMAIN CURB STOP. INSTALL VALVCO, SNAKEPIT, OR APPROVE EQUAL TRAFFIC RATED TRACER WIRE ACCESS BOX WITH 2 LUGS.
8. MIN OF 1 LB. DRIVE IN ANODES WITH MIN 20' WIRE LEAD ARE TO BE INSTALLED AT EVERY SANITARY SERVICE WYE.
9. TRACER WIRE SHALL BE 12 AWG COPPER CLAD STEEL ORE WIRE WITH MIN BREAK LOAD OF 450 LB FOR OPEN CUT INSTALLATION RATED FOR 30 VOLTS. MIN 45 MIL HMWPE JACKET
10. TRACER WIRE CONNECTOR SHALL BE DRY CONN DIRECT BURY LUG AQUA, PRO-TRACE DB OR APPROVED EQUAL.



NOTE:

1. FACTORY INSTALLED PLUGS REQUIRED WHENEVER HYDRANTS ARE INSTALLED IN AREAS WITH HIGH GROUNDWATER LEVEL, AS DETERMINED BY DEWATERING REQUIREMENTS AND THE CITY ENGINEER. THE MAIN NOZZLE SHALL BE PAINTED BLUE FOR ALL HYDRANTS WITH PLUGGED DRAIN HOLES.
2. ALL DUCTILE IRON WATERMAIN FITTINGS SHALL BE FUSION BONDED EPOXY COATED, POLYWRAPPED, AND TAPED.
3. HYDRANTS SHALL BE MARKED WITH STAINLESS STEEL TAG FROM FACTORY.
4. CONTRACTOR SHALL SUPPLY TWO HYDRANT FLAGS, ONE TO BE INSTALLED ON THE HYDRANT AND THE SECOND DELIVERED TO THE DAYTON PUBLIC WORKS FACILITY.
5. ALL HYDRANT LEADS ARE TO BE CONSTRUCTED WITH POLYWRAPPED DIP, CLASS 52.
6. ALL WATERMAIN BOLTS SHALL BE COR-BLUE OR APPROVED EQUAL.
7. HYDRANTS SHALL BE PAINTED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE: FLOW RATE OF 1,000 GPM OR MORE - GREEN; FLOW RATE BETWEEN 500 GPM AND 1000 GPM - YELLOW; FLOW RATE OF 500 GPM OR LESS - RED.
8. TRACER WIRE SHALL BE #12 AWG COPPER CLAD STEEL CORE WIRE WITH MIN. BREAK LOAD OF 450 LBS FOR OPEN CUT INSTALL RATED FOR 30 VOLTS. 45 MIL HMWPE JACKET.
9. ABOVE GROUND TEST STATION SHALL BE COBRA T3 OR APPROVED EQUAL. OUTDOOR RATED PVC CONDUIT SHALL BE INSTALLED FROM BOTTOM OF TEST STATION TO 2' BELOW FINISH GRADE. SEE DETAIL WAT-01A AND WAT-01B FOR CONNECTION DETAILS.
10. MIN 1 LB. DRIVE IN ANODE WITH MIN. 20' WIRE LEAD.
11. CONNECTORS SHALL BE DRYCONN DIRECT BURY LUG AQUA, PRO-TRACE DB, OR APPROVED EQUAL.
12. CONTRACTOR SHALL SUPPLY 1 HYDRANT WRENCH FOR EVERY PHASE OR EVERY 5 HYDRANTS INSTALLED, WHICHEVER IS GREATER.





NOTE: HYDRANT SHALL BE PACER MODEL WB-67-250



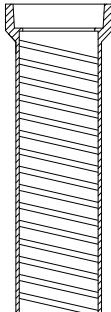
DROP LID  
WATER  
TYLER  
MUELLER  
BIBBY-STE-CROIX  
EJ

NO. 6860  
NO. H-10361  
NO. B-5160  
NO. 3669A1

GATE VALVE BOX COMPONENTS TO BE WRAPPED IN POLYWRAP.

7.5' MINIMUM COVER REQUIRED OVER TOP OF WATER MAIN.

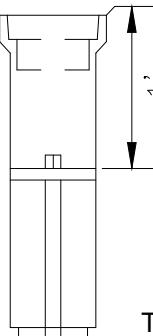
ADJUST TOP TO 1/2" BELOW GRADE. BOX TO BE SET TO PROVIDE 12" OF ADJUSTMENT.



TOP  
TYLER  
MUELLER  
BIBBY-STE-CROIX  
EJ

NO. 6860  
NO. H-10361  
NO. VB502  
NO. 8560

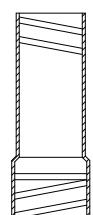
GRADE



EXTENSIONS ARE REQUIRED ON ALL GATE VALVES.

EXTENSIONS SHALL BE WITHIN 1-2' OF FINISHED GRADE

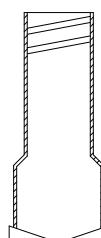
ALL GATE VALVES SHALL BE MANUFACTURED IN THE US, OR CANADA



EXTENSION  
TYLER  
MUELLER  
BIBBY-STE-CROIX  
VB520  
VB521  
VB522  
VB523  
EJ

NO. 58  
NO. 59  
NO. 60  
NO. 58  
NO. 59  
NO. 57  
NO. 58  
NO. 59  
NO. 60  
NO. 8560

14"  
18"  
24"  
14"  
20"  
9"  
14"  
20"  
26"



BOTTOM  
TYLER  
MUELLER  
BIBBY-STE-CROIX  
EJ

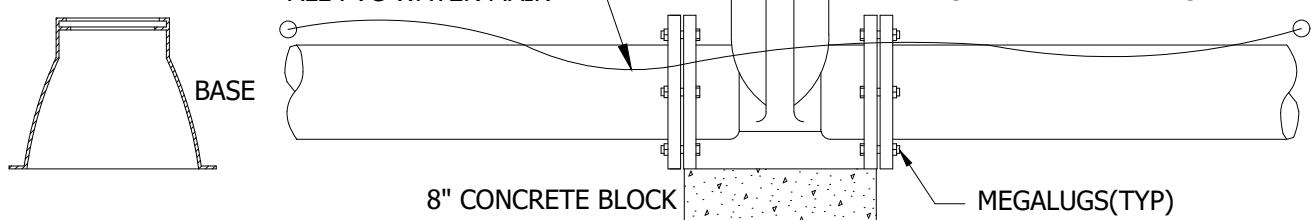
NO. 6860  
NO. H-10361  
NO. VB516  
NO. 8560

TYLER NO. 6860 MUELLER NO. H-10357  
BIBBY-STE-CROIX B-5001 GATE VALVE  
BOX, SCREW TYPE, 3 PIECE, 5 1/4"  
SHAFT, SIZE G BOX, 7'-6" EXTENDED,  
#6 ROUND BASE  
ALL VALVE BOX COMPONENTS SHALL BE  
MANUFACTURED IN THE U.S. OR  
CANADA, OR AS APPROVED BY THE CITY  
ENGINEER.  
RESILIENT WEDGE VALVE CONFORMING  
TO AWWA C-509-80 STANDARDS  
INSTALLED WITH A VALVE BOX ADAPTER  
TYPE II.

ADAPTOR REQUIRED ON ALL GATE  
VALVES (INCIDENTAL)

GATE VALVE ADAPTOR 1/4"  
STEEL WITH PROTECTIVE  
COATING

1/2" RUBBER GASKET INSTALLED  
BETWEEN THE GATE VALVE AND  
GATE VALVE ADAPTOR



NOTE: ALL WATERMAIN BOLTS ARE TO BE CORE-BLUE OR AN APPROVED EQUAL



2025 DETAIL PLATES  
REV.1

## GATE VALVE AND BOX INSTALLATION

LAST REVISION:  
OCT 2024

PLATE NO.  
WAT-02

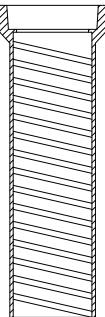
NOTE: ALL BUTTERFLY VALVES SHALL BE INDIVIDUALLY HYDROSTATICALLY TESTED AGAINST BOTH SIDES OF VALVE



DROP LID  
TYLER NO. 6850 OR 6860  
MUELLER NO. H-10361  
BIBBY-STE-CROIX NO.B-5160

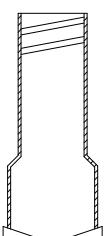


TOP  
TYLER NO. 6850  
MUELLER NO. H-10361  
BIBBY-STE-CROIX NO. VB502



GRADE

EXTENSION  
TYLER NO. 58 14"  
NO. 59 18"  
NO. 60 24"  
MUELLER NO. 58 14"  
NO. 59 20"  
BIBBY-STE-CROIX VB520 NO. 57 9"  
VB521 NO. 58 14"  
VB522 NO. 59 20"  
VB523 NO. 60 26"



BOTTOM  
TYLER NO. 6850 65"  
MUELLER NO. H-10361 65"  
BIBBY-STE-CROIX NO. VB516 60"

COR-BLUE OR STAINLESS STEEL BOLTS REQUIRED FOR ALL MECHANICAL FITTINGS.

PROVIDE POLYWRAP AND TAPE AROUND ALL DIP WATERMAIN AND VALVE BOX.  
7.5' MINIMUM COVER REQUIRED OVER TOP OF WATER MAIN.

RESTRAIN TEE AND VALVE WITH MEGALUG (OR EQUAL) THRUST RESTRAINTS.

ALL VALVES AND VALVE BOXES SHALL BE MADE IN THE US OR CANADA.

EXTENSION SHALL BE WITHIN 1-2' OF FINISHED GRADE

ALL VALVE BOLTS TO BE STAINLESS STEEL.

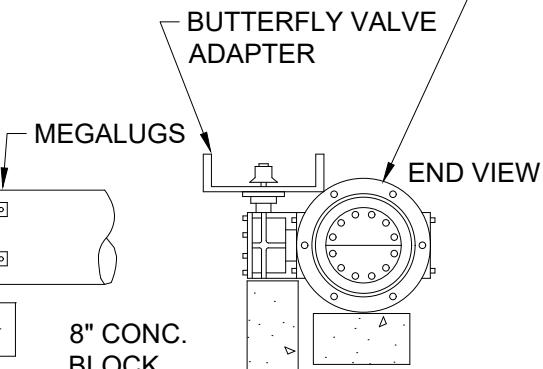
ADJUST TOP TO 1/2" BELOW GRADE. BOX TO BE SET TO PROVIDE 12" OF ADJUSTMENT.

TYLER NO. 6850  
MUELLER NO. H-10357  
BIBBY-STE-CROIX B-5001  
GATE VALVE BOX, SCREW TYPE,  
3 PIECE, 5 1/4" SHAFT, SIZE  
G BOX, 7'-6" EXTENDED.

EXTENSIONS REQUIRED ON ALL BUTTERFLY VALVES  
EXTENSION SHALL BE WITHIN 1-2' OF FINISHED GRADE

ADAPTOR REQUIRED ON ALL BUTTERFLY VALVES

BUTTERFLY VALVE (>12") DEZURIK OR APPROVED EQUAL



2025 DETAIL PLATES  
REV.1

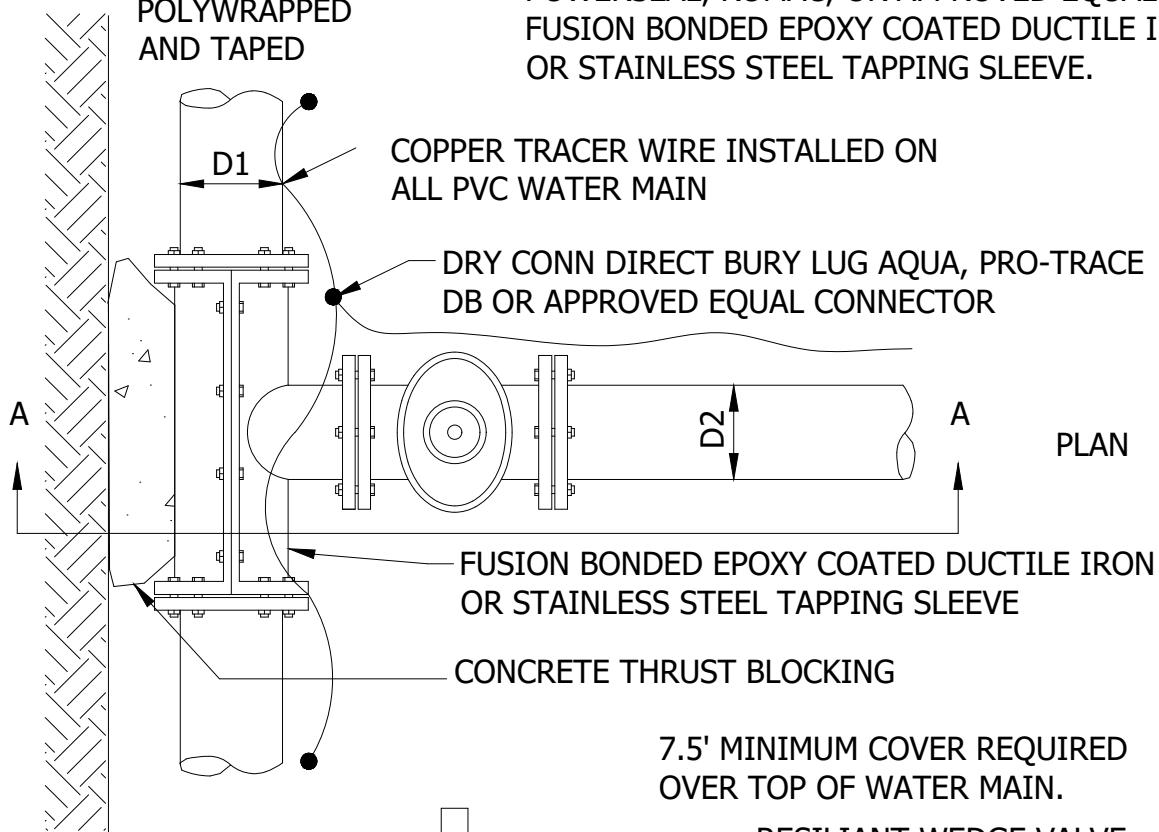
## BUTTERFLY VALVE AND BOX INSTALLATION

LAST REVISION:  
DEC 2024

PLATE NO.  
WAT-02A

ALL FITTINGS  
SHALL BE  
POLYWRAPPED  
AND TAPE

POWERSEAL, ROMAC, OR APPROVED EQUAL  
FUSION BONDED EPOXY COATED DUCTILE IRON  
OR STAINLESS STEEL TAPPING SLEEVE.



FUSION BONDED EPOXY COATED DUCTILE IRON  
OR STAINLESS STEEL TAPPING SLEEVE

CONCRETE THRUST BLOCKING

7.5' MINIMUM COVER REQUIRED  
OVER TOP OF WATER MAIN.

RESILIANT WEDGE VALVE  
CONFORMING TO AWWA  
C-509-80 STANDARDS  
PER WAT-02

MEGALUGS(TYP)

SECTION A-A

COMPACTED GRANULAR BACKFILL

UNDISTURBED EARTH

CONCRETE THRUST BLOCKING

8" CONCRETE BLOCK

NOTE: ALL WATERMAIN BOLTS SHALL BE CORE-BLUE OR AN APPROVED EQUAL



2025 DETAIL PLATES  
REV.1

WATER MAIN WETTAP

LAST REVISION:  
**OCT 2024**

PLATE NO.  
**WAT-03**

NOTES:

1. SHAPE OF BACK OF BUTTRESS MAY VARY AS LONG AS POURED AGAINST FIRM UNDISTURBED EARTH.
2. DIMENSION C1,C2,C3 SHOULD BE LARGE ENOUGH TO MAKE ANGLE  $\theta$  EQUAL TO OR LARGER THAN 45°.
3. DIMENSION A1,A2,A3 SHOULD BE AS LARGE AS POSSIBLE WITHOUT INTERFERING WITH MJ BOLTS.
4.  $\theta = 45^\circ$  MINIMUM.
5. PLACE POLYETHYLENE BETWEEN CONCRETE & PIPE.

6. MEGALUGS SHALL BE INSTALLED ON ALL BENDS.

7. ALL WATER MAIN BOLTS SHALL BE COR-BLUE OR APPROVED EQUAL.

BUTTRESS DIMENSIONS

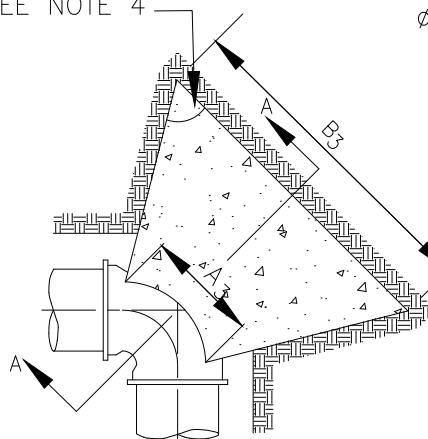
PIPE SIZE	22 1/2° BEND		45° BEND		90° BEND	
	B <sub>1</sub>	D <sub>1</sub>	B <sub>2</sub>	D <sub>2</sub>	B <sub>3</sub>	D <sub>3</sub>
6"	1'-5"	1'-5"	1'-5"	1'-5"	2'-1"	1'-6"
8"	1'-5"	1'-5"	2'-1"	1'-6"	2'-8"	2'-0"
12"	1'-10"	1'-10"	3'-4"	2'-0"	4'-9"	2'-6"
16"	3'-0"	2'-0"	3'-10"	3'-0"	6'-2"	3'-6"
20"	3'-6"	2'-8"	5'-6"	3'-4"	8'-4"	4'-0"
24"	4'-4"	3'-0"	6'-10"	3'-10"	9'-8"	5'-0"
30"	-	-	9'-3"	6'-0"	17'-0"	6'-0"

ALL DUCTILE IRON FITTINGS TO BE FUSION BONDED EPOXY COATED.

ALL DUCTILE IRON PIPE AND FITTINGS TO BE WRAPPED IN POLY AND TAPE.

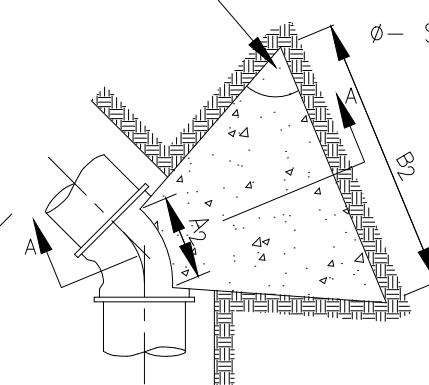
ALL DUCTILE IRON PIPES AND FITTINGS TO BE MANUFACTURED IN US OR CANADA, OR AS APPROVED BY THE CITY ENGINEER.

Ø - SEE NOTE 4



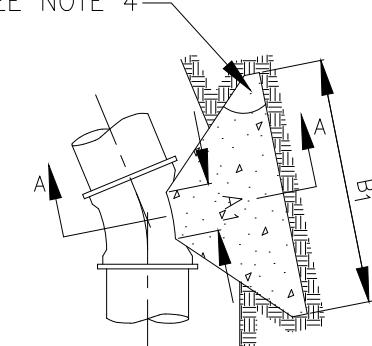
PLAN 90° BENDS

Ø - SEE NOTE 4



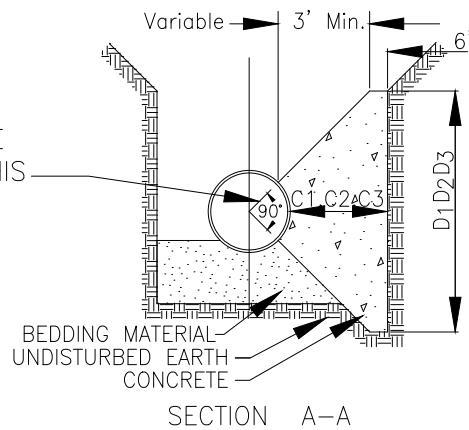
PLAN 45° BENDS

Ø - SEE NOTE 4



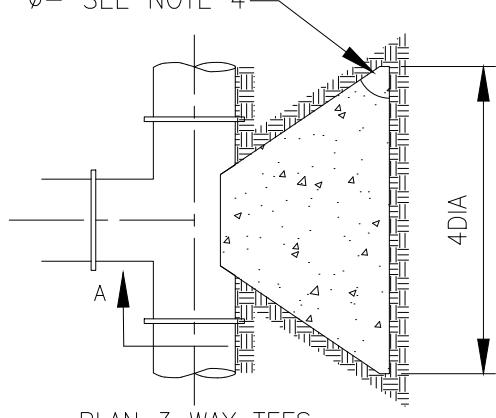
PLAN 22 1/2° BENDS

CONCRETE SHALL BE IN CONTACT WITH THIS QUADRANT OF PIPE

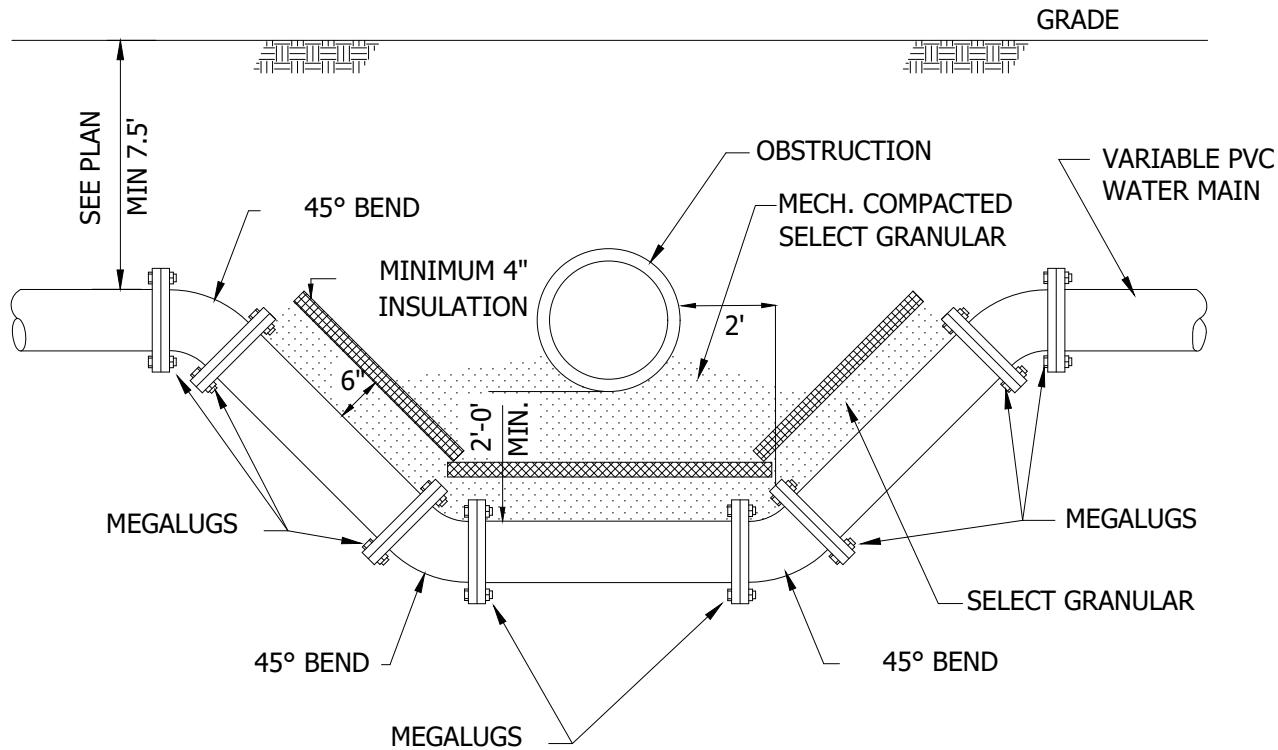


SECTION A-A

Ø - SEE NOTE 4

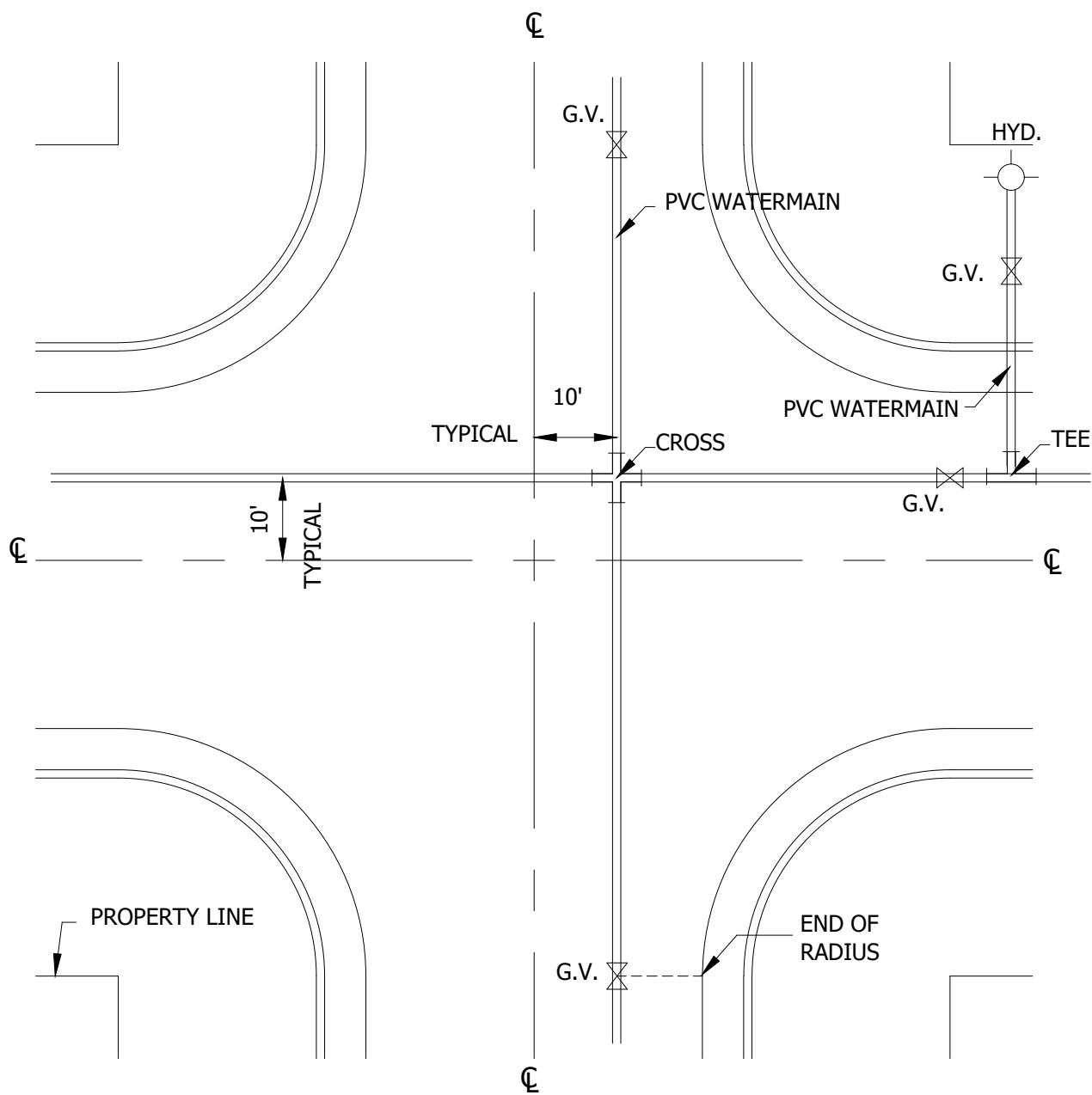


PLAN 3 WAY TEES



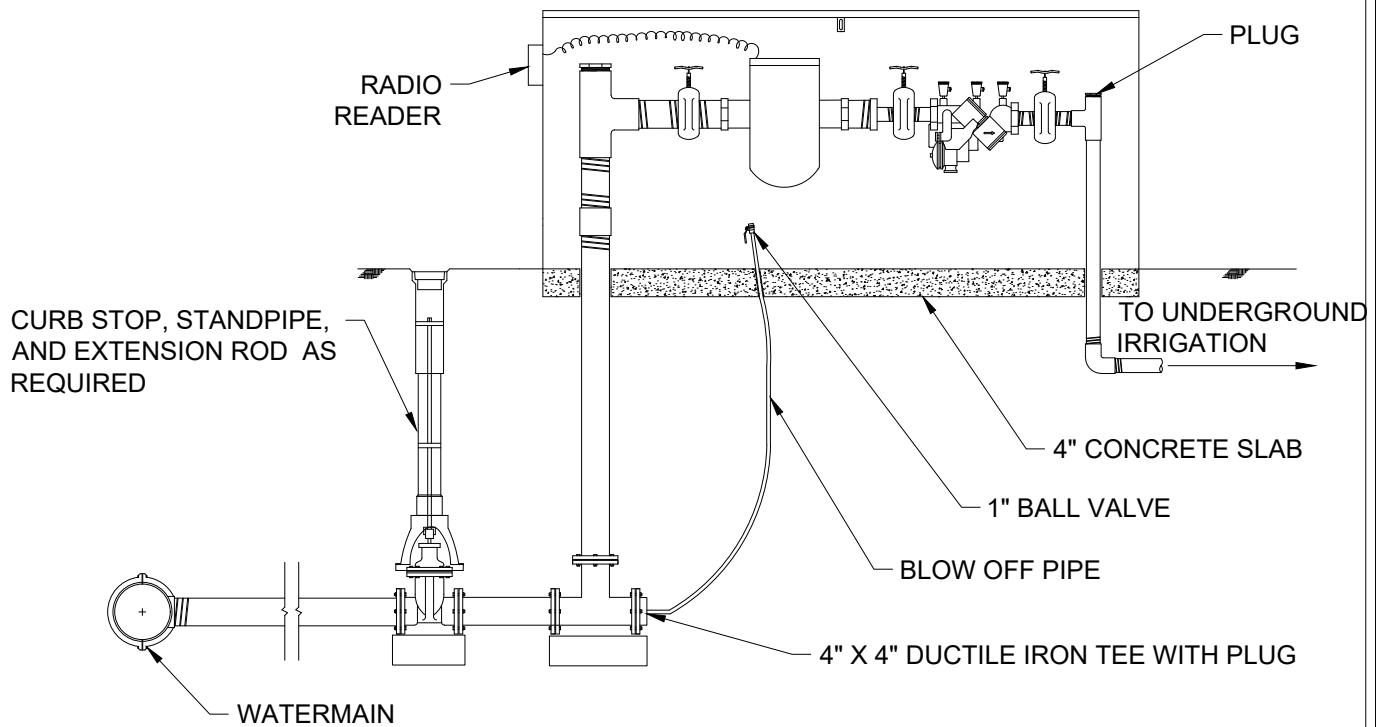
NOTE:

1. ALL FITTINGS SHALL BE FUSION BONDED EPOXY COATED DUCTILE IRON TO MEET OR EXCEED ANSI/AWWA C550 AND C116/A21.116 REQUIREMENTS.
2. MEGALUGS WILL NOT BE ALLOWED ON ANY CIP WATER MAIN.
3. SELECT GRANULAR WILL BE REQUIRED BETWEEN INSULATION, WATER MAIN, AND OBSTRUCTION.
4. ALL BENDS SHALL HAVE MEGALUGS WITH BLOCKING IN ACCORDANCE WITH STANDARD PLATE WAT-04.
5. COPPER TRACER WIRE SHALL BE USED ON PVC WATER MAIN
6. ALL WATER MAIN BOLTS SHALL BE CORE-BLUE OR APPROVED EQUAL.
7. ALL DIP FITTINGS SHALL BE POLY WRAPPED AND TAPE.
8. ALTERNATIVE OFFSET STRATEGIES MAY BE ALLOWED AT THE DISCRETION OF THE ENGINEER.
9. INSULATION AND BACKFILL REQUIREMENTS SHALL APPLY TO ALL CROSSINGS WITH MINIMAL SEPARATION. IF LESS THAN 2' OF SEPARATION IS PRESENT, ADDITIONAL INSULATION WILL BE REQUIRED AT THE DISCRETION OF THE CITY ENGINEER.



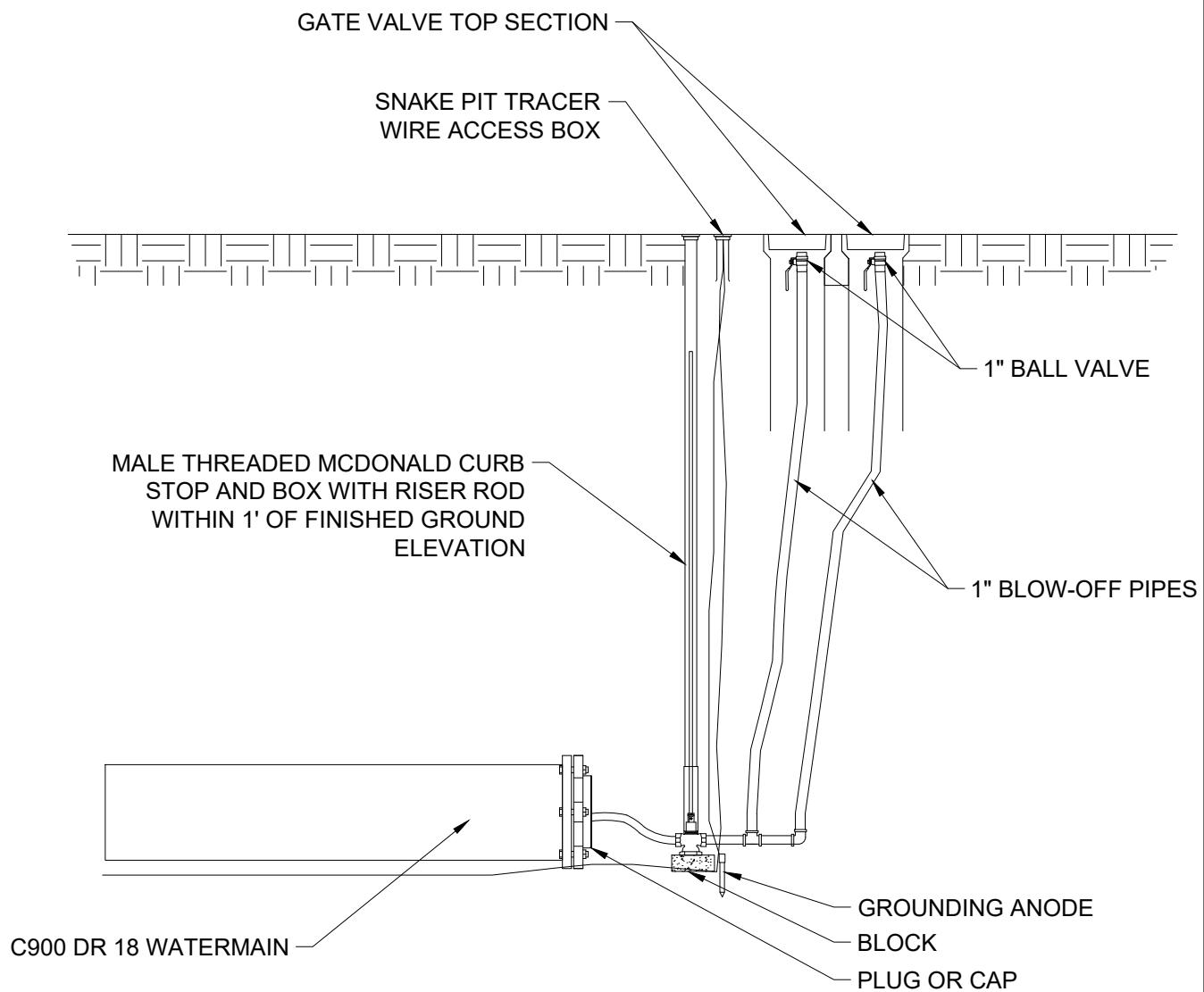
NOTE:

1. SEE DETAIL PLATE WAT-01 FOR TYPICAL HYDRANT AND GATE VALVE LAYOUT.
2. SEE DETAIL PLATE SER-01 FOR TYPICAL WATER SERVICE CONNECTION.
3. ALL WATERMAIN SHALL BE PLACED NORTH AND EAST OF THE CENTER LINE OF ROAD.
4. ALL DUCTILE IRON WATERMAIN FITTINGS SHALL BE FUSION BONDED EPOXY COATED, POLYWRAPPED, AND TAPED.
5. ALL PVC WATERMAIN SHALL HAVE A COPPER TRACER WIRE.
6. TRACER WIRE CONNECTOR SHALL BE DRY CONN DIRECT BURY LUG AQUAL, PRO-TRACE DB OR APPROVED EQUAL.
7. ALL VALVES TO HAVE 3' OF PIPE MINIMUM BETWEEN TEES, CROSSES, & HYDRANTS.

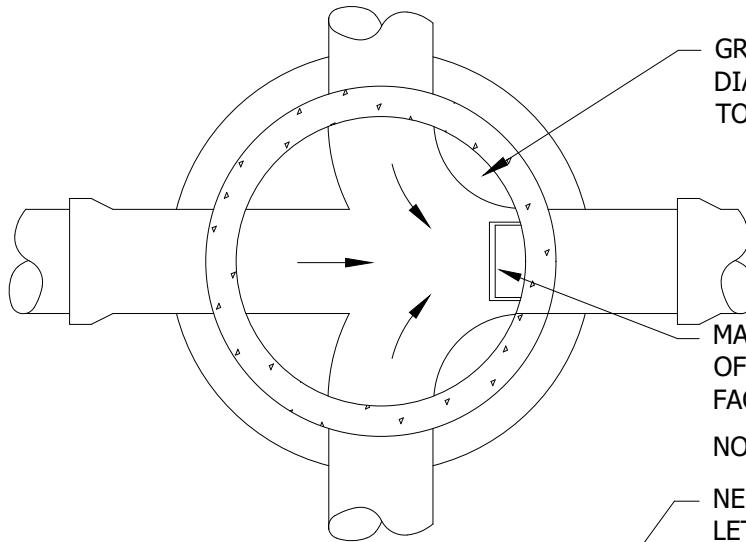


NOTE:

1. TO WINTERIZE, REMOVE AND DRAIN METER, SIPHON WATER FROM FEED LINE, BLOW OUT IRRIGATION LINES AND REINSTALL METER.
2. SECURITY BOX MUST BE MAINTENANCE FREE VANDELPROOF ENCLOSURE, WITH HINGED TOP.



NOTE: 1" PIPE AND FITTINGS TO BE COPPER FOR DEVELOPMENTS IN WHICH COPPER HAS BEEN PREVIOUSLY INSTALLED. HDPE FOR ALL OTHER PROJECTS AND NEW DEVELOPMENTS.



GROUT BOTTOM OF MANHOLE TO 1/2 DIAMETER AT PIPE AND SLOPE GROUT 2" TOWARD INVERT.

CASTING	A	B
R1642	27"	7"

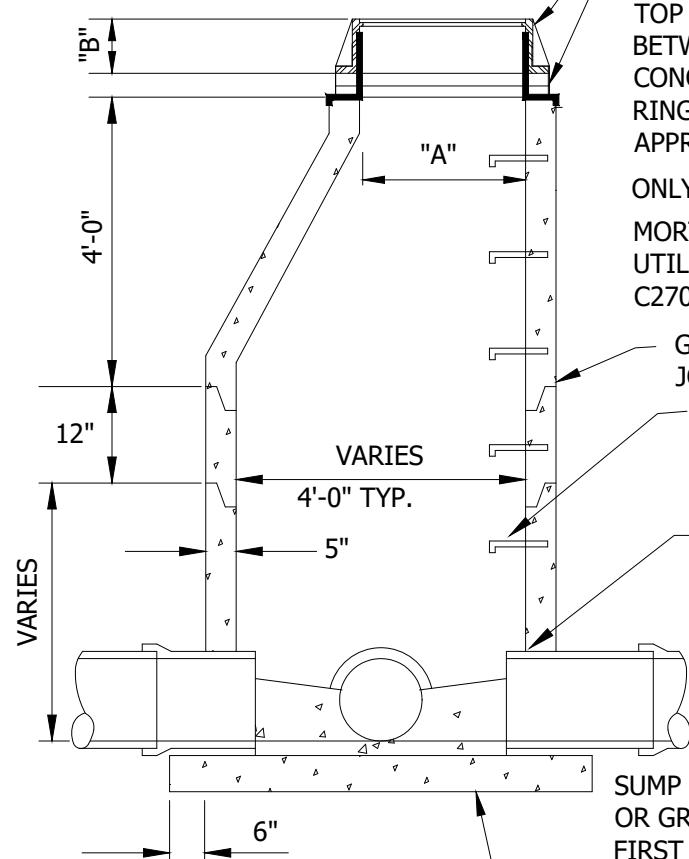
MANHOLE STEPS SHALL BE PLACED SO THAT OFFSET VERTICAL PORTION OF CONE IS FACING DOWNSTREAM.

NO BLOCK STRUCTURES ARE ALLOWED.

NEENAH FRAME AND COVER OR EQUAL, LETTERED, "STORM SEWER", WITH 2 CONCEALED PICK HOLES.

MINIMUM OF 4" AND MAXIMUM OF 12" OF CONCRETE ADJUSTMENT RINGS. 2" RINGS MUST BE USED FOR THE TOP TWO RINGS. A FULL BED OF MORTAR MUST BE BETWEEN EACH RING. 1 RING WITH MORTAR = 0.2'. CONCRETE COLLAR REQUIRED AROUND ALL ADJUSTING RINGS. INSTALL INTERIOR I & I BARRIER EULL'S OR APPROVED EQUAL.

ONLY PLASTIC SHIMS SHALL BE ALLOWED IF NEEDED. MORTAR SHALL BE AIR ENTRAINED UNDERGROUND UTILITY MORTAR WHICH MEETS OR EXCEEDS ASTM C270 AND ASTM C387.



GATOR WRAP REQUIRED ON TOP JOINT. ALL OTHER JOINTS TO BE WRAPPED AS DIRECTED BY ENGINEER

MANHOLE STEPS, COPOLYMER POLYPROPYLENE PLASTIC WITH  $\frac{1}{2}$ " GRADE 60 STEEL REINFORCEMENT OR EQUAL. 16" ON CENTER

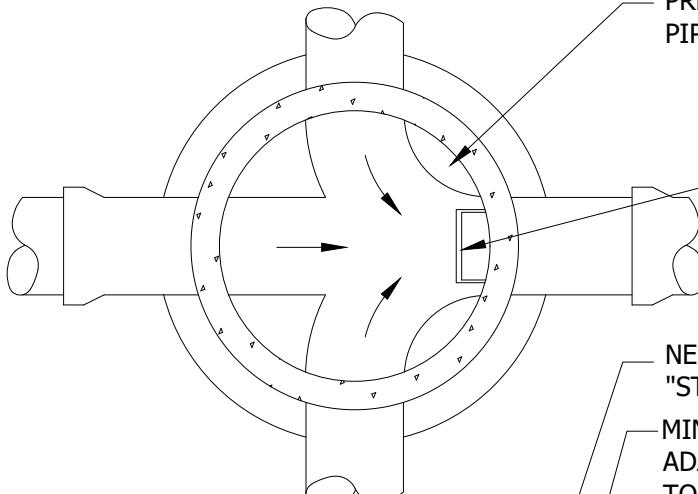
PIPE SHALL BE CUT OFF 2" FROM INSIDE FACE OF WALL.

ALL JOINTS IN MANHOLE TO HAVE "O" RING RUBBER GASKETS.

NOTE:  
KOR-N-SEAL MANHOLE OR EQUAL  
CONSIDERED ACCEPTABLE ALTERNATE.

SUMP MANHOLE REQUIRED WHEN THERE IS A 1.5' OR GREATER DROP BETWEEN INVERTS, AND THE FIRST STRUCTURE UPSTREAM FROM PIPE OUTLET.

MINIMUM SLAB THICKNESS IS 6" FOR STRUCTURES 14' IN DEPTH OR LESS. INCREASE THICKNESS 1" FOR EVERY 4' OF DEPTH GREATER THAN 14', AND REINFORCE WITH 6" X 6" 10/10 MESH.



PRECAST INVERT SHOULD BE 1/2" DIAMETER OF PIPE AND BENCHES SLOPED 2" TOWARD INVERT.

CASTING	A	B
R1642	27"	7"

MANHOLE STEPS SHALL BE PLACED SO THAT OFFSET VERTICAL PORTION OF CONE IS FACING DOWNSTREAM.

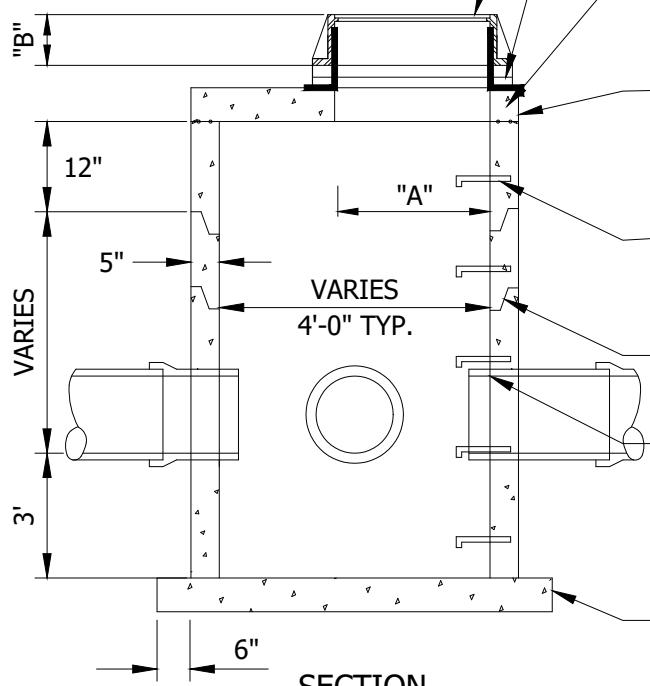
NO BLOCK STRUCTURES ARE ALLOWED.

NEENAH FRAME AND COVER OR EQUAL LETTERED, "STORM SEWER", WITH 2 CONCEALED PICK HOLES.

MINIMUM OF 4" AND MAXIMUM OF 12" OF CONCRETE ADJUSTMENT RINGS. 2" RINGS MUST BE USED FOR THE TOP TWO RINGS. A FULL BED OF MORTAR MUST BE BETWEEN EACH RING. 1 RING WITH MORTAR = 0.2'. INSTALL INSIDE I&I BARRIER EULL'S OR APPROVED EQUAL

ONLY PLASTIC SHIMS SHALL BE ALLOWED IF NEEDED. MORTAR SHALL BE AIR ENTRAINED UNDERGROUND UTILITY MORTAR WHICH MEETS OR EXCEEDS ASTM C270 AND ASTM C387.

6" PRECAST REINFORCED CONCRETE MANHOLE SLAB WITH #4 BARS AT 5" O.C. EACH WAY AND 2-#4 BARS AT ALL SIDES OF OPENING.



TOP OF BARREL SECTION BELOW TOP SLAB TO HAVE FLAT TOP EDGE SEALED WITH 2 BEADS OF RAMNEK OR APPROVED EQUAL. EXTERIOR TO HAVE NEOPRENE WRAP (INFI-SHIELD OR APPROVED EQUAL)

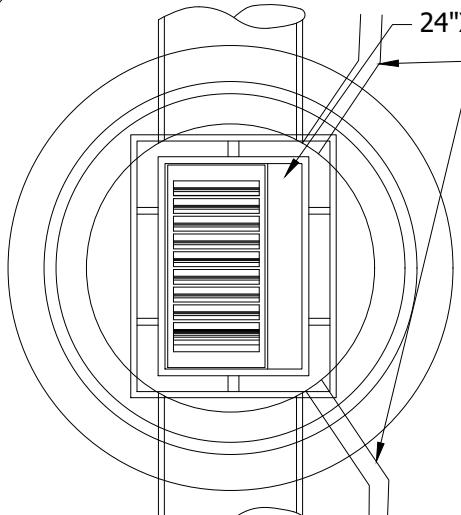
MANHOLE STEPS, COPOLYMER POLYPROPYLENE PLASTIC, WITH 1/2" GRADE 60 STEEL REINFORCEMENT OR APPROVED EQUAL. 16" ON CENTER

ALL JOINTS IN MANHOLE TO HAVE "O" RING RUBBER GASKETS.

PIPE SHALL BE CUT OFF 2" FROM INSIDE FACE OF WALL.

DOGHOUSES MUST BE GROUTED BOTH INSIDE AND OUTSIDE.

MINIMUM SLAB THICKNESS IS 6" FOR STRUCTURE 14' IN DEPTH OR LESS. INCREASE THICKNESS 1" FOR EVERY 4' OF DEPTH GREATER THAN 14', AND REINFORCE WITH 6" X 6" 10/10 MESH.

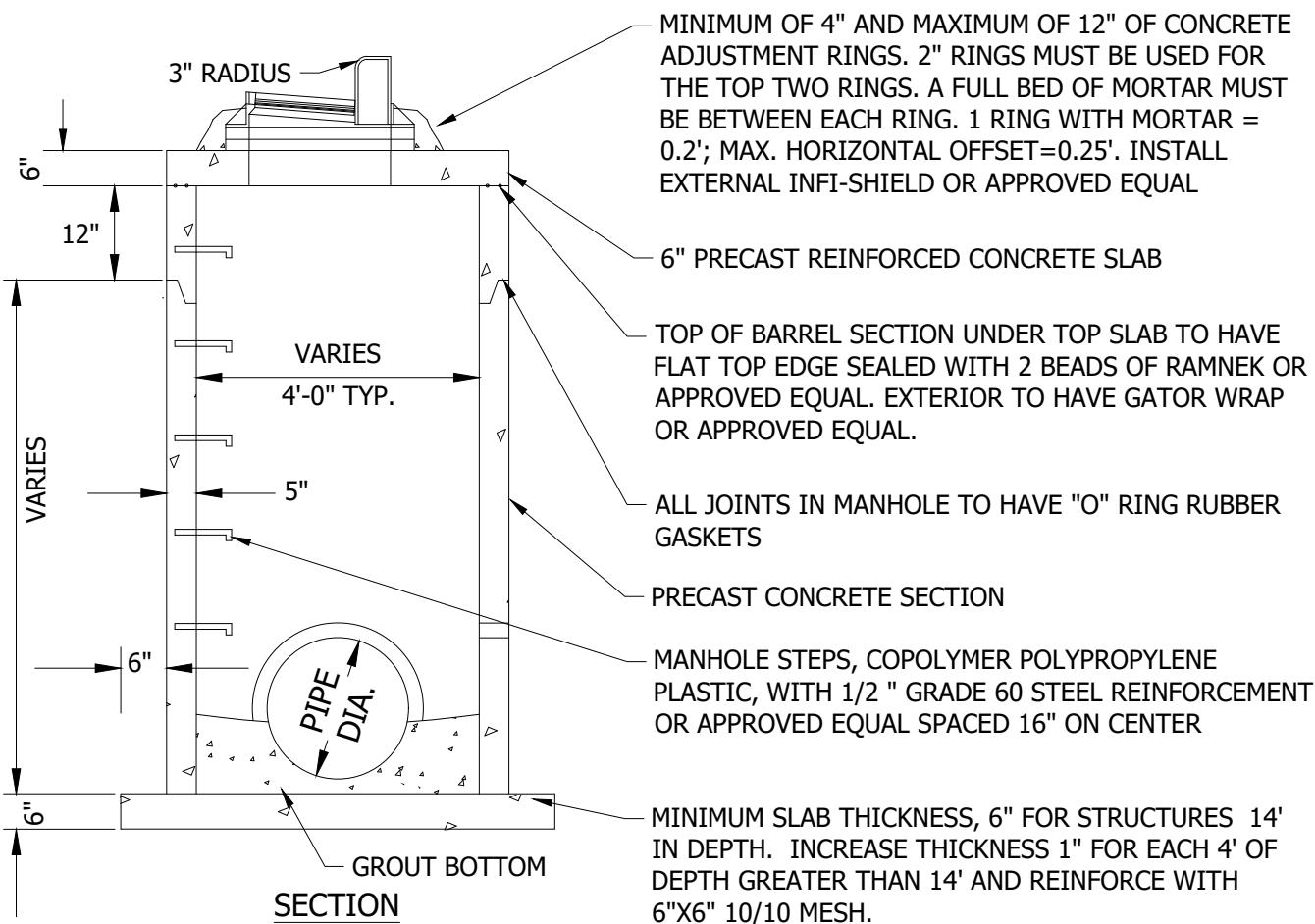


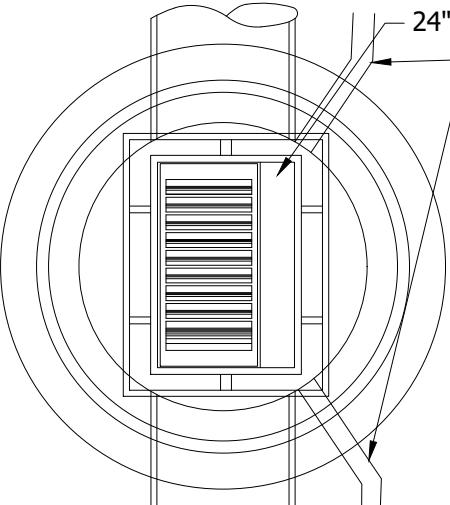
PLAN

24"X36" SLAB OPENING FOR NEENAH R3067V OR EQUAL  
 TYPICAL DRAINTILE CONNECTIONS. NO BENDS GREATER THAN 45°  
 SHALL BE ALLOWED.  
 DIMENSION FROM BACK OF CURB TO CENTER OF PIPE. 4' DIA. MH  
 - 9" IN FROM BACK OF CURB 5' DIA. MH - 3" IN FROM BACK OF  
 CURB 6' DIA. MH - 3" BEHIND BACK OF CURB 7' DIA. MH - 9"  
 BEHIND BACK OF CURB 8' DIA. MH - 15" BEHIND BACK OF CURB

NOTES:

1. CATCHBASIN FRAME & COVER NEENAH R-3067-VB BIDIRECTIONAL CASTING AT LOW POINTS AND NEENAH R-3067-V UNIDIRECTIONAL CASTING AT OTHER LOCATIONS. NEENAH R-3290-7000 ("DUMP NO WASTE DRAINS TO FRESH WATER" WITH IMAGE OF FISH AND DUCK) OR APPROVED EQUAL CURB BOX.
2. NO BLOCK STRUCTURES ARE ALLOWED.
3. ONLY PLASTIC SHIMS SHALL BE ALLOWED IF NEEDED.
4. MORTAR SHALL BE AIR-ENTRAINED UNDERGROUND UTILITY MORTAR WHICH MEETS OR EXCEEDS ASTM C270 AND ASTM C387.
5. DOGHOUSES SHALL BE GROUTED ON BOTH THE OUTSIDE AND THE INSIDE.

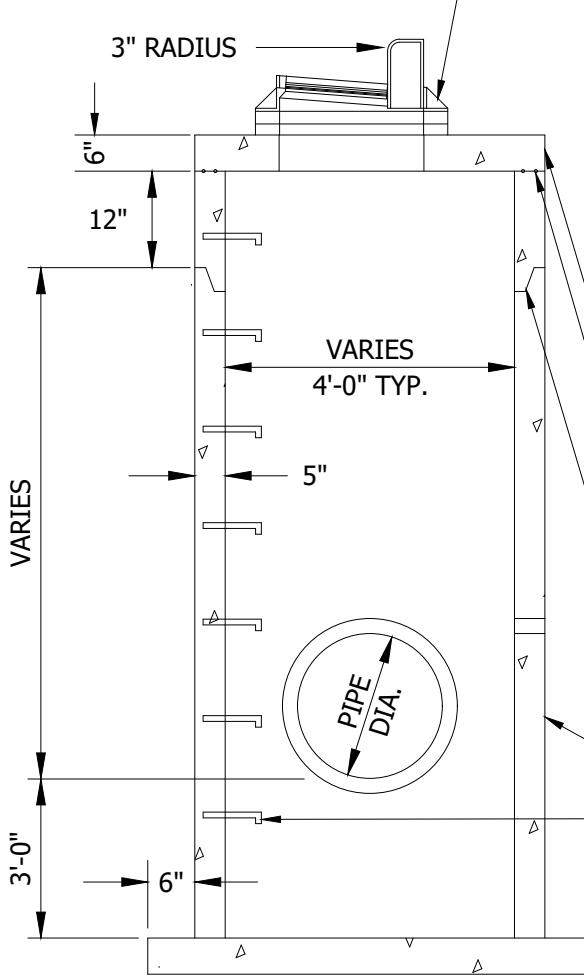




24"X36" SLAB OPENING FOR NEENAH R3067V OR EQUAL  
TYPICAL DRAINTILE CONNECTIONS. NO BENDS GREATER THAN 45°  
SHALL BE ALLOWED.

DIMENSION FROM BACK OF CURB TO CENTER OF PIPE. 4' DIA. MH  
- 9" IN FROM BACK OF CURB 5' DIA. MH - 3" IN FROM BACK OF  
CURB 6' DIA. MH - 3" BEHIND BACK OF CURB 7' DIA. MH - 9"  
BEHIND BACK OF CURB 8' DIA. MH - 15" BEHIND BACK OF CURB

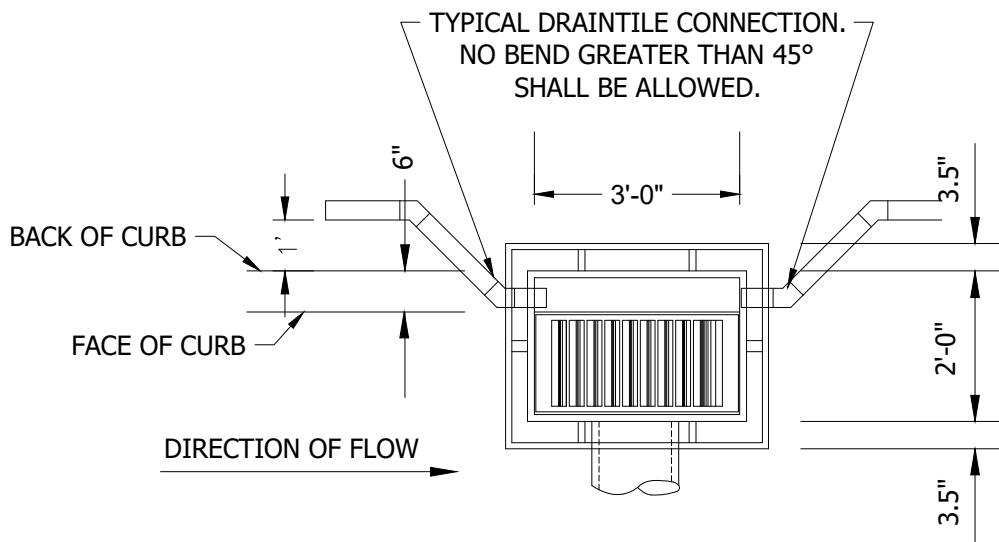
MINIMUM OF 4" AND MAXIMUM OF 12" OF CONCRETE  
ADJUSTMENT RINGS. 2" RINGS MUST BE USED FOR THE TOP TWO  
RINGS. A FULL BED OF MORTAR MUST BE BETWEEN EACH RING. 1  
RING WITH MORTAR = 0.2'; MAX. HORIZONTAL OFFSET=0.25'.  
INSTALL EXTERNAL INFI-SHIELD OR APPROVED EQUAL



NOTES:

1. SUMP MANHOLE REQUIRED WHEN THERE IS A 1.5' OR GREATER DROP BETWEEN INVERTS, AND THE FIRST STRUCTURE UPSTREAM FROM PIPE OUTLET.
2. CATCHBASIN FRAME & COVER NEENAH R-3067-VB BIDIRECTIONAL CASTING AT LOW POINTS AND NEENAH R-3067-V UNIDIRECTIONAL CASTING AT OTHER LOCATIONS. NEENAH R-3290-7000 ("DUMP NO WASTE DRAINS TO FRESH WATER" WITH IMAGE OF FISH AND DUCK) OR APPROVED EQUAL CURB BOX.
3. NO BLOCK STRUCTURES ARE ALLOWED.
4. ONLY PLASTIC SHIMS SHALL BE ALLOWED IF NEEDED.
5. MORTAR SHALL BE AIR-ENTRAINED UNDERGROUND UTILITY MORTAR WHICH MEETS OR EXCEEDS ASTM C270 AND ASTM C387.
6. DOGHOUSES SHALL BE GROUTED ON BOTH THE OUTSIDE AND THE INSIDE.
7. NO TEES WILL BE ALLOWED FOR DRAINTILE FITTINGS.

6" PRECAST REINFORCED CONCRETE SLAB  
TOP OF BARREL SECTION UNDER TOP SLAB TO HAVE FLAT TOP EDGE SEALED WITH 2 BEADS OF RAMNEK OR APPROVED EQUAL. EXTERIOR TO HAVE GATOR WRAP OR APPROVED EQUAL.  
ALL JOINTS IN MANHOLE TO HAVE "O" RING RUBBER GASKETS  
PRECAST CONCRETE SECTION  
MANHOLE STEPS, COPOLYMER POLYPROPYLENE PLASTIC, WITH 1/2 " GRADE 60 STEEL REINFORCEMENT OR APPROVED EQUAL SPACED 16" ON CENTER  
MINIMUM SLAB THICKNESS, 6" FOR STRUCTURES 14' IN DEPTH. INCREASE THICKNESS 1" FOR EACH 4' OF DEPTH GREATER THAN 14' AND REINFORCE WITH 6"X6" 10/10 MESH



CATCHBASIN CASTING NEENAH R-3067-V (OR R-3501) OR APPROVED EQUAL WITH NEENAH R-3290-7000 ("DUMP NO WASTE DRAINS TO FRESH WATER" WITH IMAGE OF FISH AND DUCK) OR APPROVED EQUAL CURB BOX.

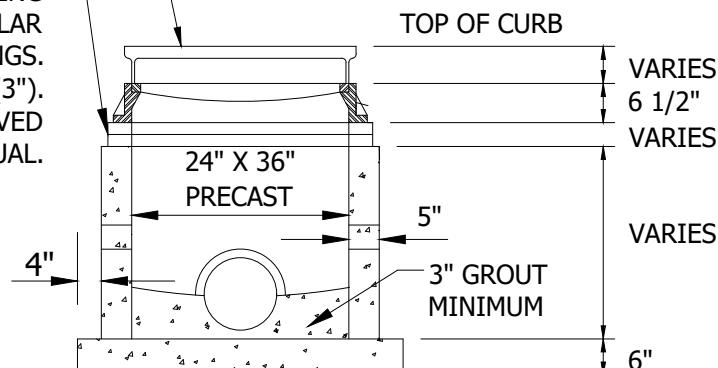
### PLAN

NO BLOCK STRUCTURES ARE ALLOWED.

MINIMUM OF 4" AND MAXIMUM OF 12" OF CONCRETE ADJUSTMENT RINGS. 2" RINGS MUST BE USED FOR THE TOP TWO RINGS. A FULL BED OF MORTAR MUST BE BETWEEN EACH RING. 1 RING WITH MORTAR = 0.2'. CONCRETE COLLAR REQUIRED AROUND ALL ADJUSTING RINGS. MAXIMUM HORIZONTAL OFFSET=0.25' (3").  
INSTALL EXTERNAL INFI-SHIELD OR APPROVED EQUAL.

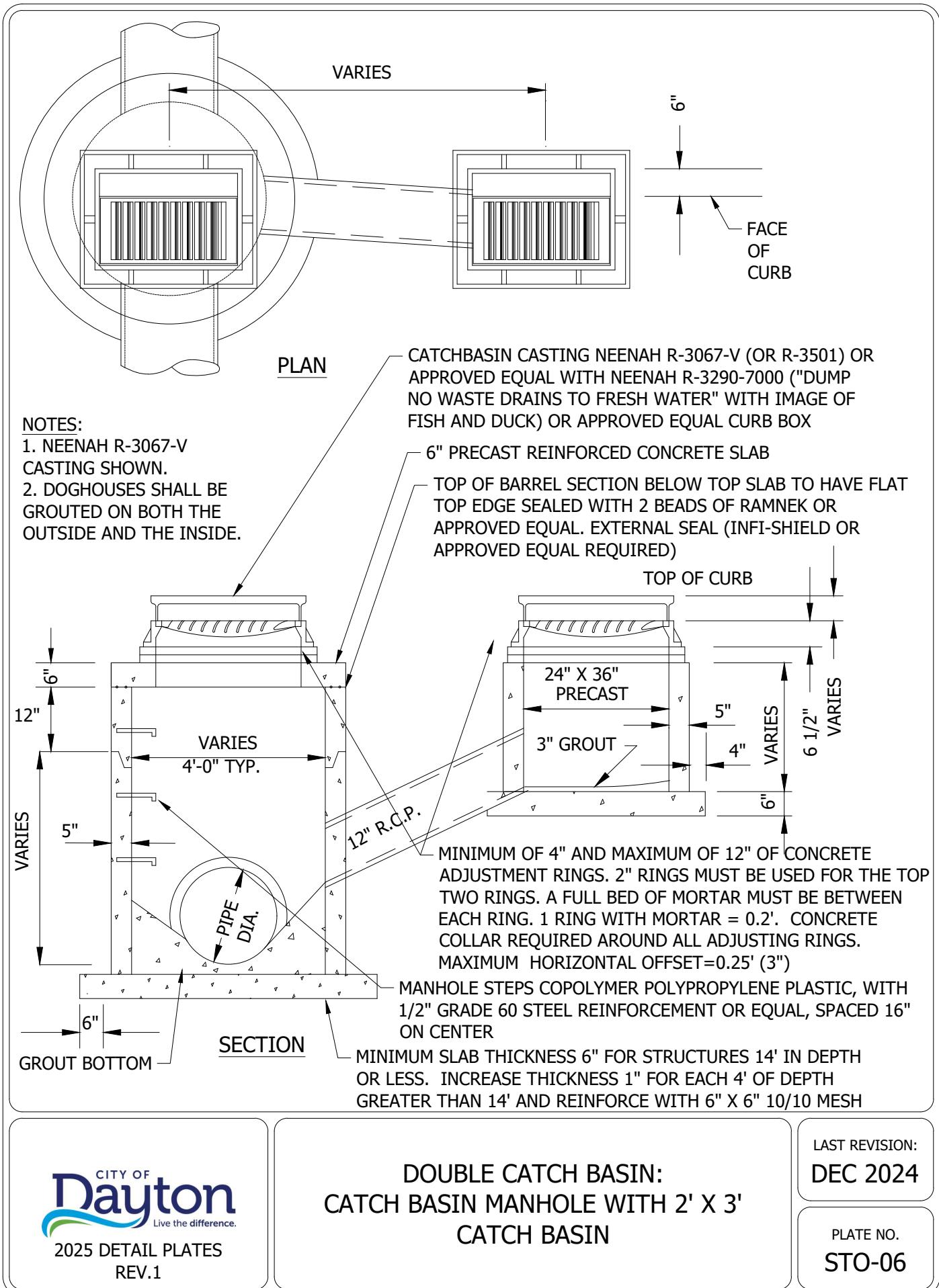
ONLY PLASTIC SHIMS SHALL BE ALLOWED IF NEEDED.

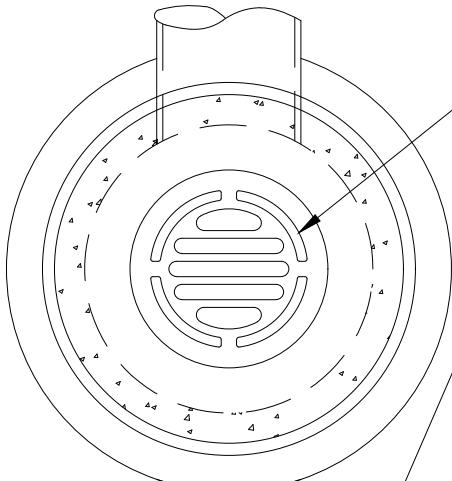
MORTAR SHALL BE AIR ENTRAINED UNDERGROUND UTILITY MORTAR WHICH MEETS OR EXCEEDS ASTM C270 AND ASTM C387.



### SECTION

DOGHOUSES SHALL BE GROUTED ON BOTH THE INSIDE AND OUTSIDE.





NEENAH R-4342 CASTING OR EQUAL

NO BLOCK STRUCTURES ARE ALLOWED.

MINIMUM OF 4" AND MAXIMUM OF 12" OF CONCRETE ADJUSTMENT RINGS. 2" RINGS MUST BE USED FOR THE TOP TWO RINGS. A FULL BED OF MORTAR MUST BE BETWEEN EACH RING. INSTALL EXTERIOR I & I OR APPROVED EQUAL. 1 RING WITH MORTAR=0.2'; MAX HORIZONTAL OFFSET=.25'(3").

PLAN

3" RADIUS

12"

6"

VARIABLES  
4'-0" TYP.

5"

VARIABLES

6"

6"

SECTION

6" PRECAST REINFORCED CONCRETE SLAB.

TOP OF BARREL SECTION UNDER TOP SLAB TO HAVE FLAT TOP EDGE SEALED WITH 2 BEADS OF RAMNEK OR APPROVED EQUAL. EXTERNAL SEAL (GATOR WRAP OR APPROVE EQUAL)

ALL JOINTS IN MANHOLE TO HAVE "O" RING RUBBER GASKETS.

PRECAST CONCRETE SECTION

DOGHOUSES SHALL BE GROUTED ON BOTH THE OUTSIDE AND INSIDE.

MANHOLE STEPS, NEENAH R1981J OR EQUAL, 15" O.C., ALUMINUM STEPS APPROVED.

MINIMUM SLAB THICKNESS, 6" FOR STRUCTURES 14" IN DEPTH OR LESS. INCREASE THICKNESS 1" FOR EACH 4' OF DEPTH GREATER THAN 14', AND REINFORCE WITH 6"X6" 10/10 MESH.

GROUT BOTTOM



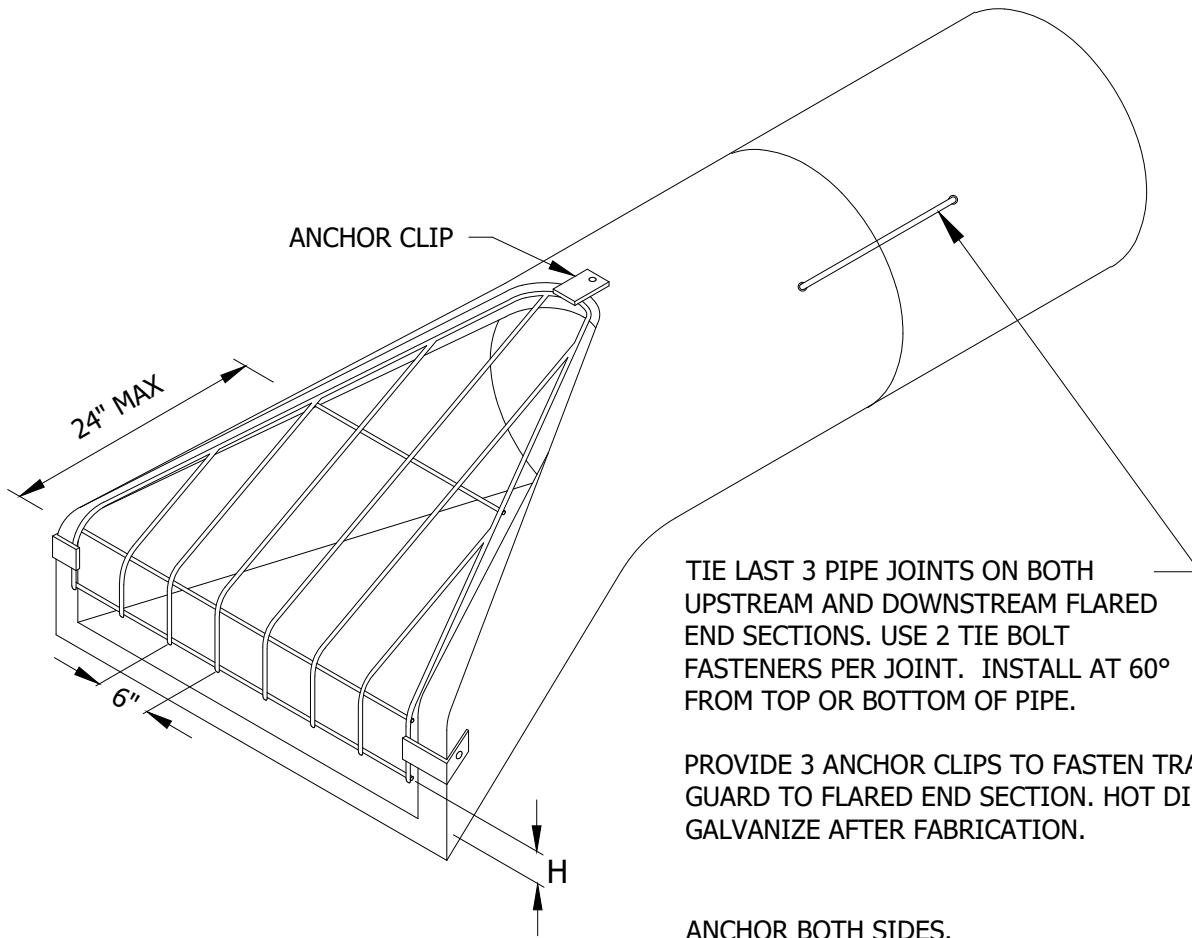
2025 DETAIL PLATES  
REV.1

## CATCH BASIN MANHOLE IN GREENSPACE

LAST REVISION:  
DEC 2024

PLATE NO.  
STO-07

SEE CITY PLATE NO. STO-09 FOR  
RIPRAP PLACEMENT.



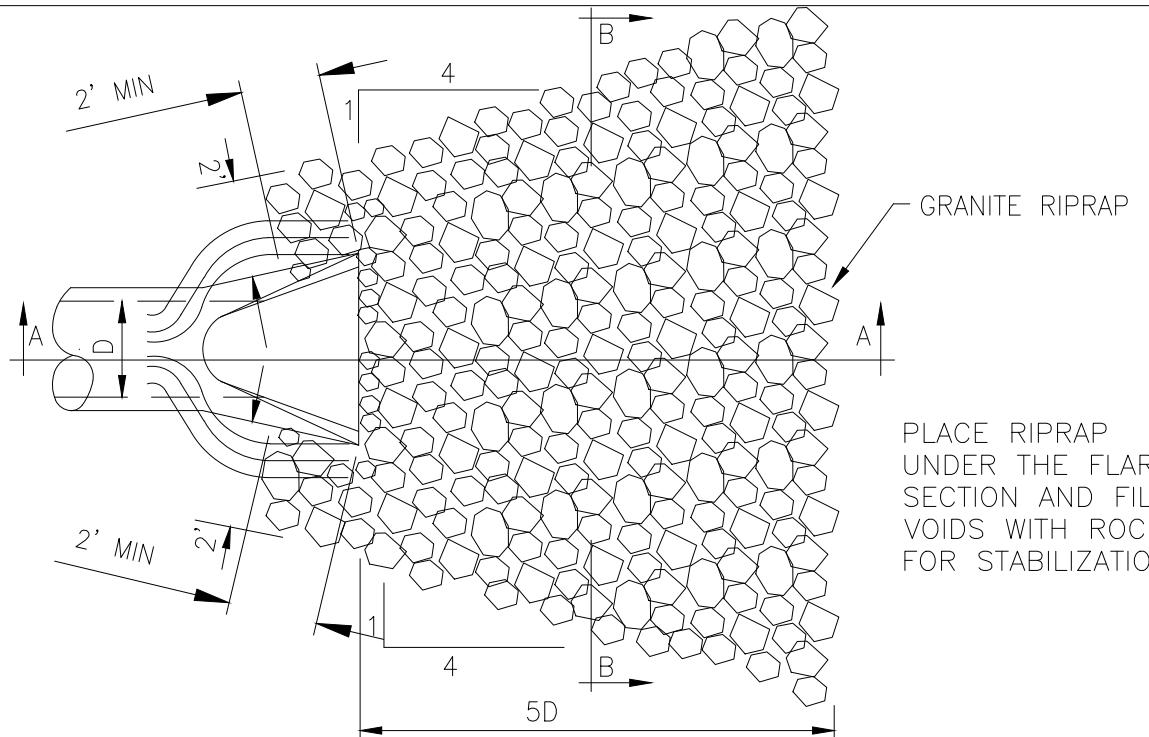
ISOMETRIC

TRASH GUARD SIZING

PIPE SIZE	BARS	'H'	BOLTS
12"-18"	3/4"Ø	4"	5/8"
21"-42"	1"Ø	6"	3/4"
48"-72"	1 1/4"Ø	12"	1"

NOTES:

1. SEE DETAIL STO-09A FOR FLARED END INSTALLATION IN SANDY MATERIAL.
2. INSTALL TRASH GUARD FOR ALL INLET FLARES AND FOR ALL FLARES LESS THAN 42"

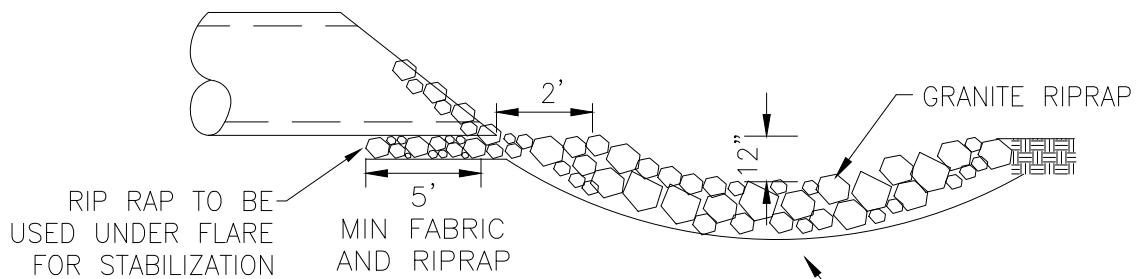


**RIPRAP REQUIREMENTS**

12" TO 18"	8-10 CUBIC YARDS CL.3
21" TO 27"	12-14 CUBIC YARDS CL.3
30" TO 36"	16-24 CUBIC YARDS CL.3
42" TO 48"	30-38 CUBIC YARDS CL.3
54" AND UP	62&UP CUBIC YARDS CL.4

**PLAN**

(ONE CUBIC YARD IS APPROXIMATELY 2,800 LBS.)

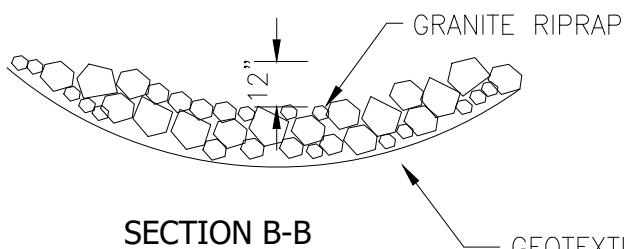


**NOTES:**

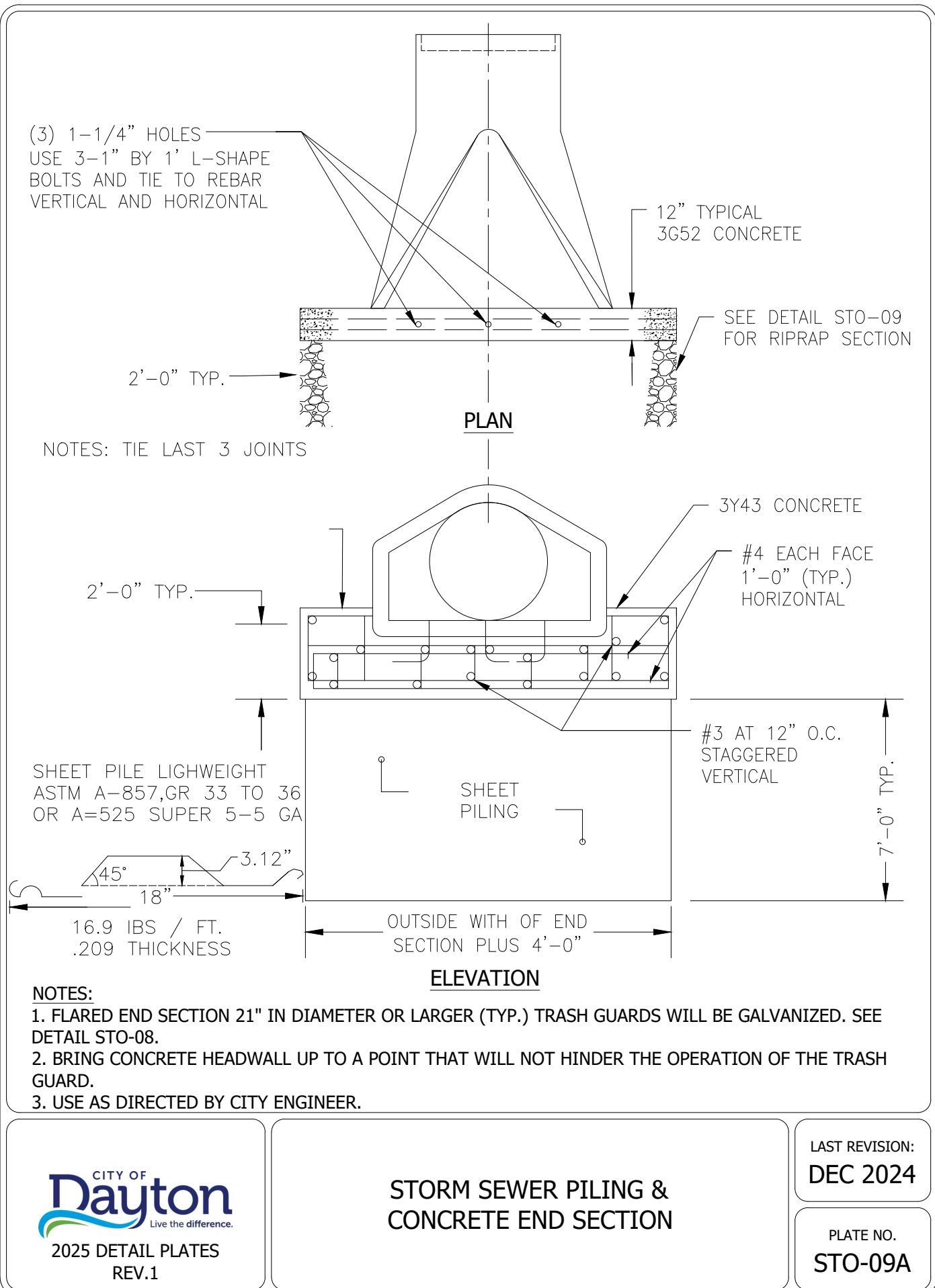
1. FILTER BLANKET REQUIRED UNDER RIPRAP OR 2 LAYERS OF 500X MIRAFI FABRIC OR EQUAL.
2. ONLY GRANITE RIPRAP TO BE USED AT OUTLETS.
3. GRADE A SWALE ADJACENT TO BOTH SIDES OF PIPE TO DIRECT WATER AWAY FROM FES.

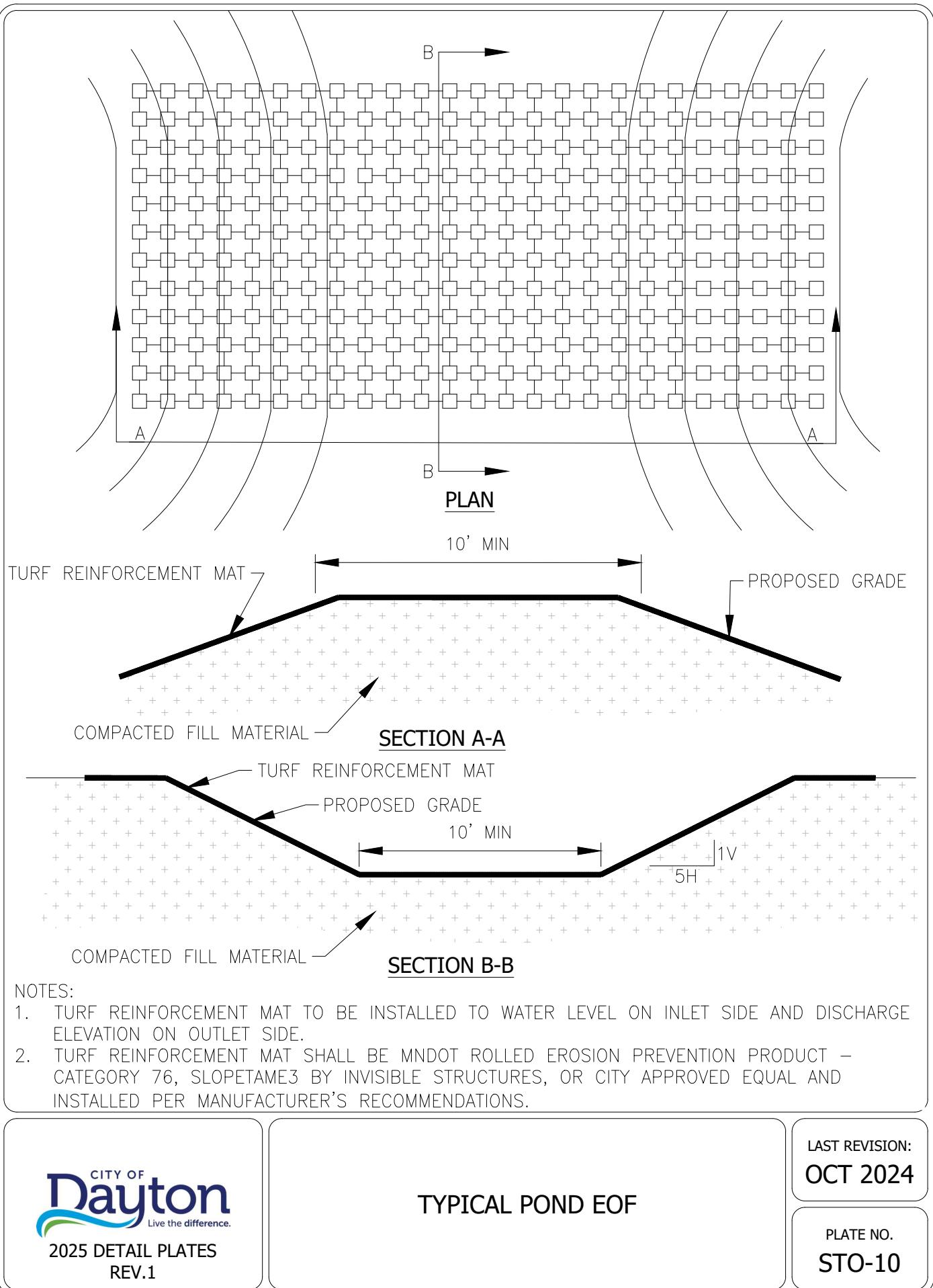
**SECTION A-A**

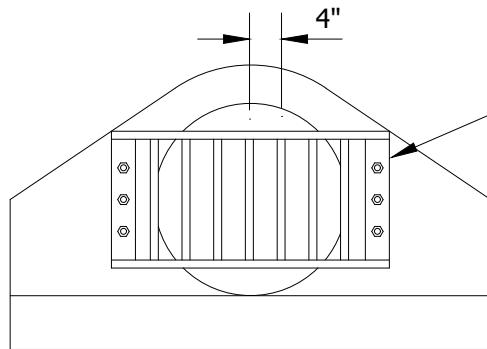
GEOTEXTILE FILTER-TYPE IV



**RIPRAP AT OUTLETS**

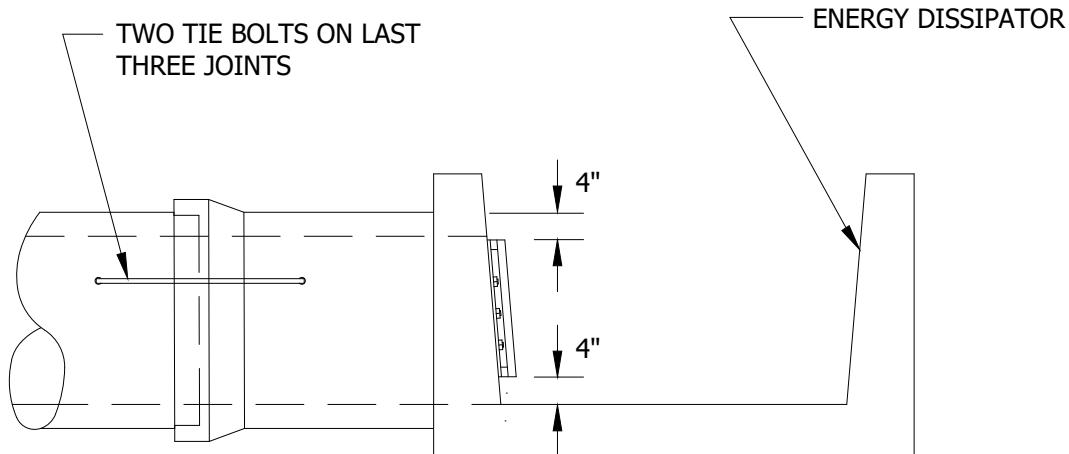






STEEL PLATE - BOLT TO CONCRETE WITH STAINLESS STEEL BOLTS. HOT DIP GALVANIZE AFTER FABRICATION.

FRONT VIEW

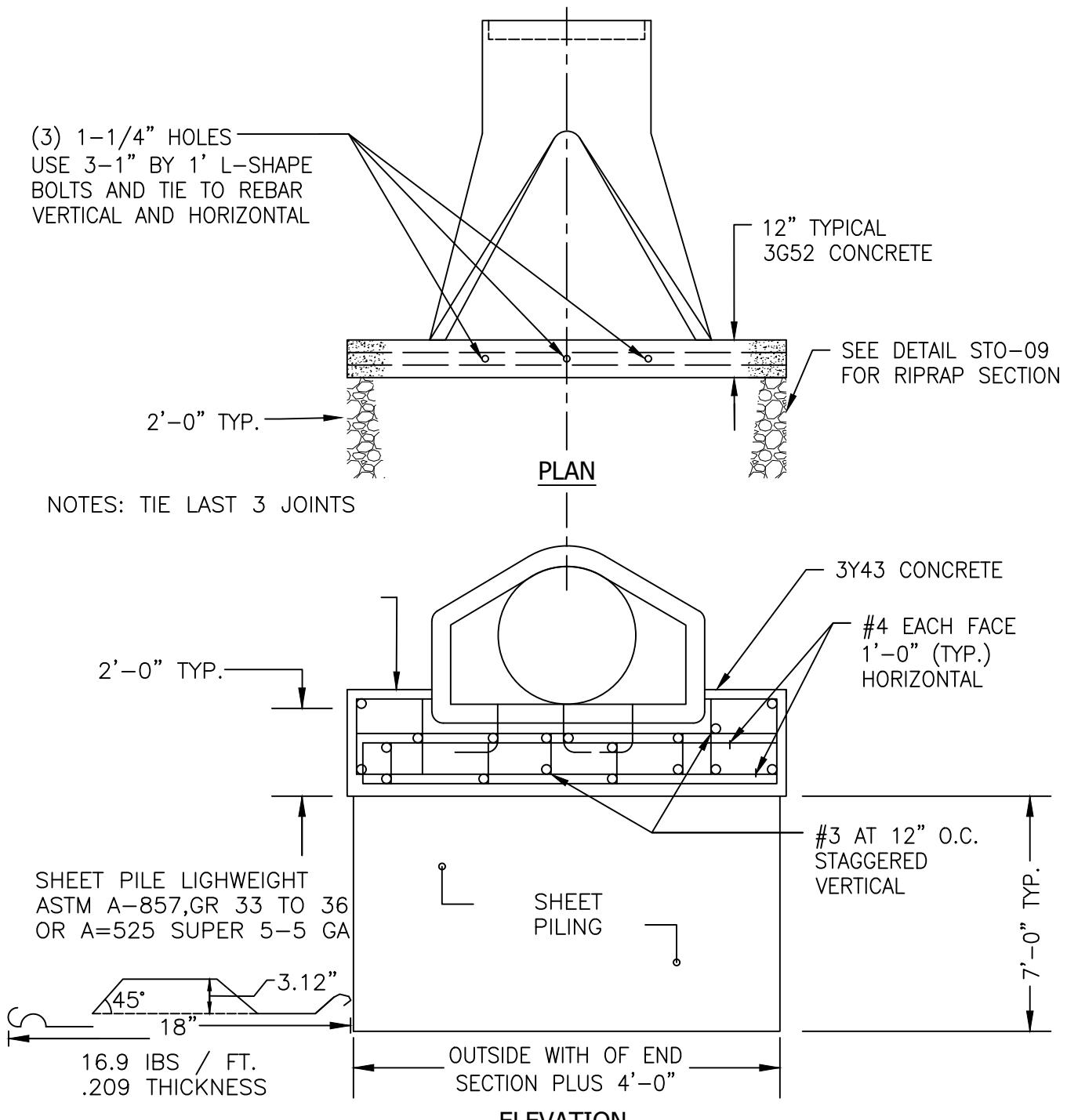


SIDE VIEW

SIZE OF PIPE	SIZE OF PLATE	BARS	BOLTS
12" TO 18"	1/4" X 2"	3/4"Ø	2-5/8"Ø
21" TO 48"	1/4" X 3"	1"Ø	3-3/4"Ø

NOTE:

TIE LAST 3 JOINTS. USE 2 TIE BOLT FASTENERS PER JOINT  
INSTALLED AT 60Ø FROM TOP OR BOTTOM OF PIPE.



NOTES:

1. FLARED END SECTION 21" IN DIAMETER OR LARGER (TYP.) TRASH GUARDS WILL BE GALVANIZED. SEE DETAIL STO-08.
2. BRING CONCRETE HEADWALL UP TO A POINT THAT WILL NOT HINDER THE OPERATION OF THE TRASH GUARD.
3. USE AS DIRECTED BY CITY ENGINEER.



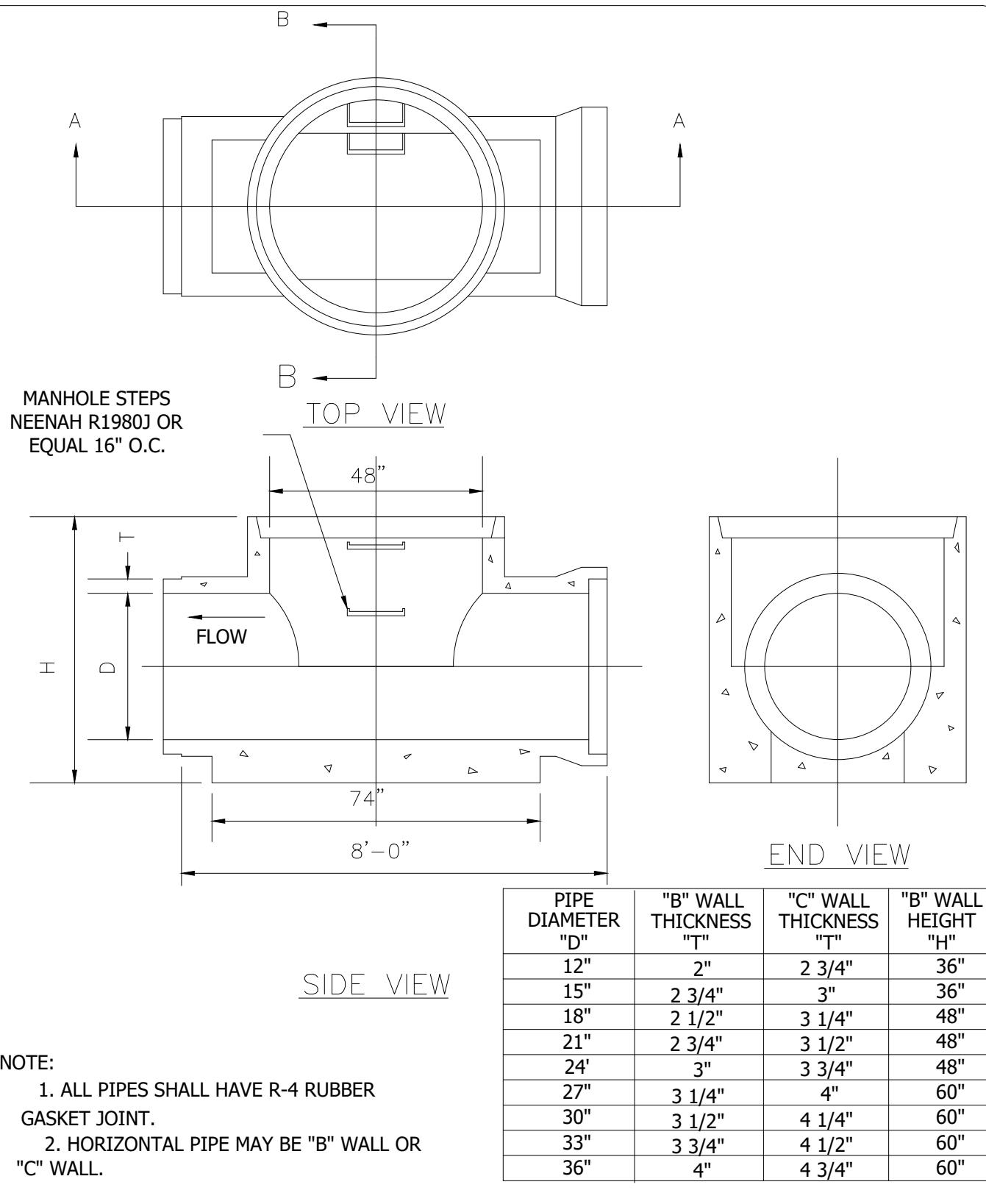
2025 Standard Detail Plates

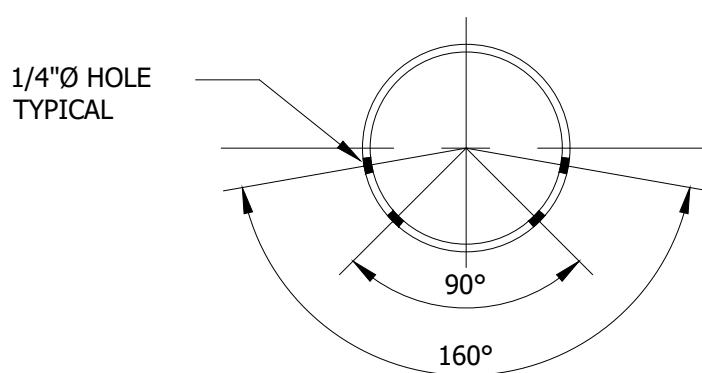
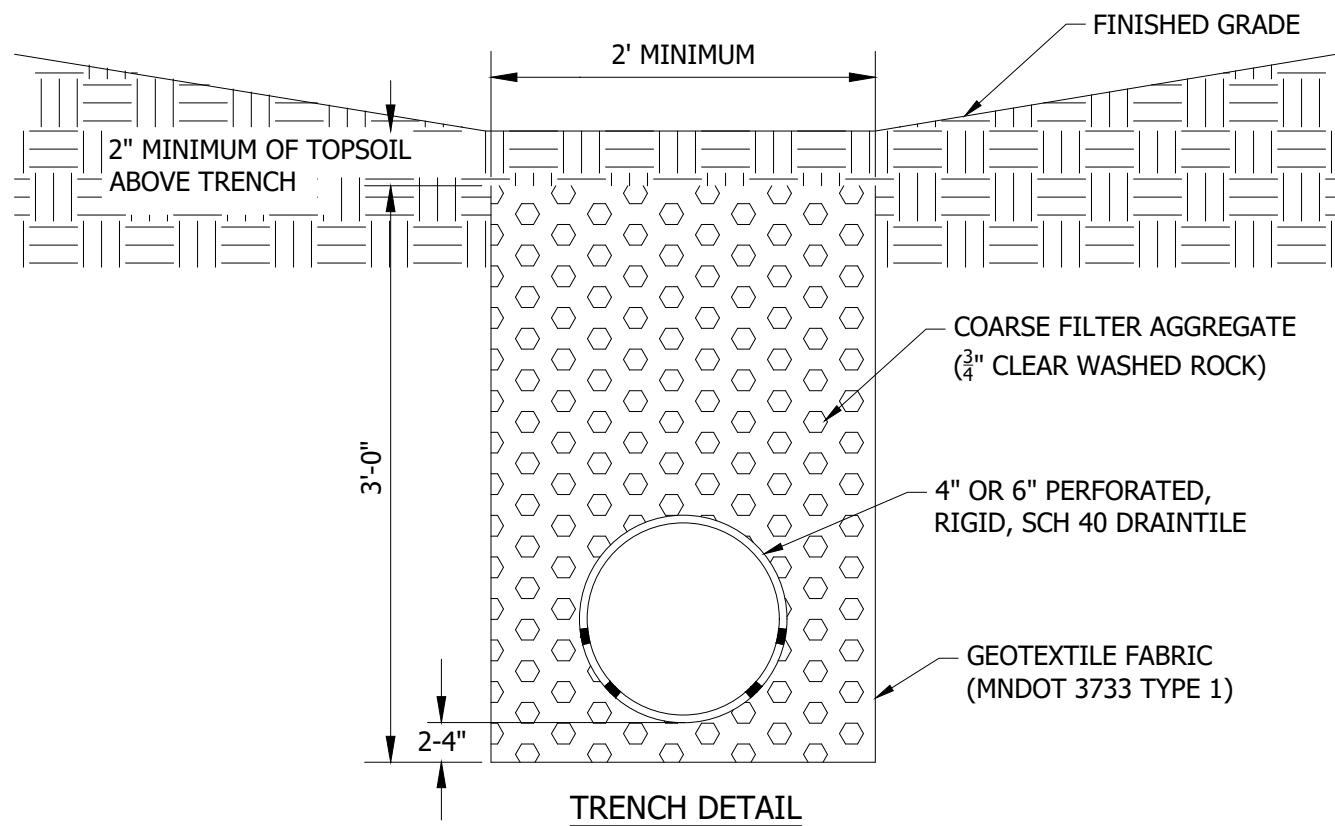
STORM SEWER PILING & CONCRETE  
END SECTION

LAST REVISION:  
01/02/2025



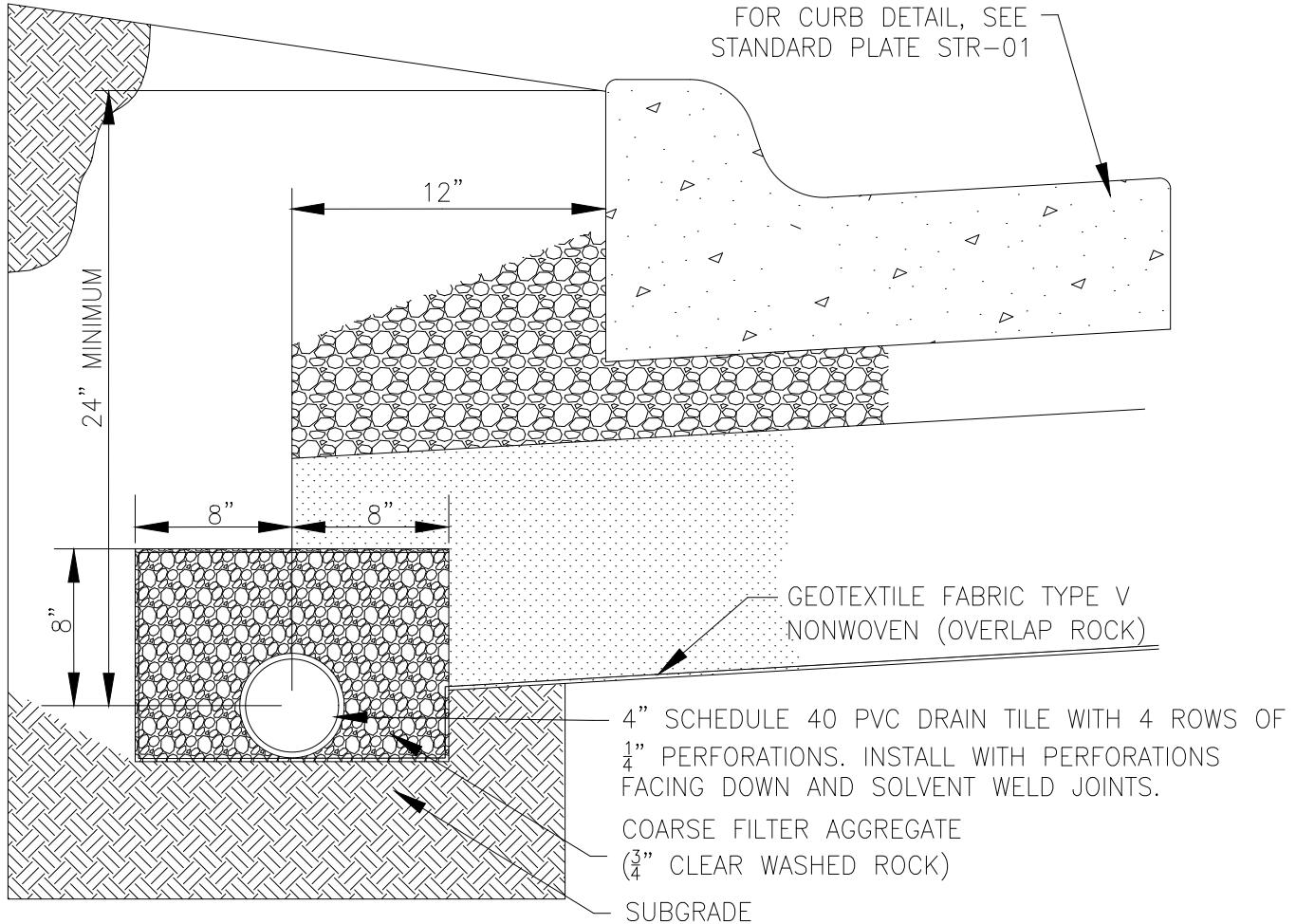
PLATE NO.  
STO-11A





**NOTES:**

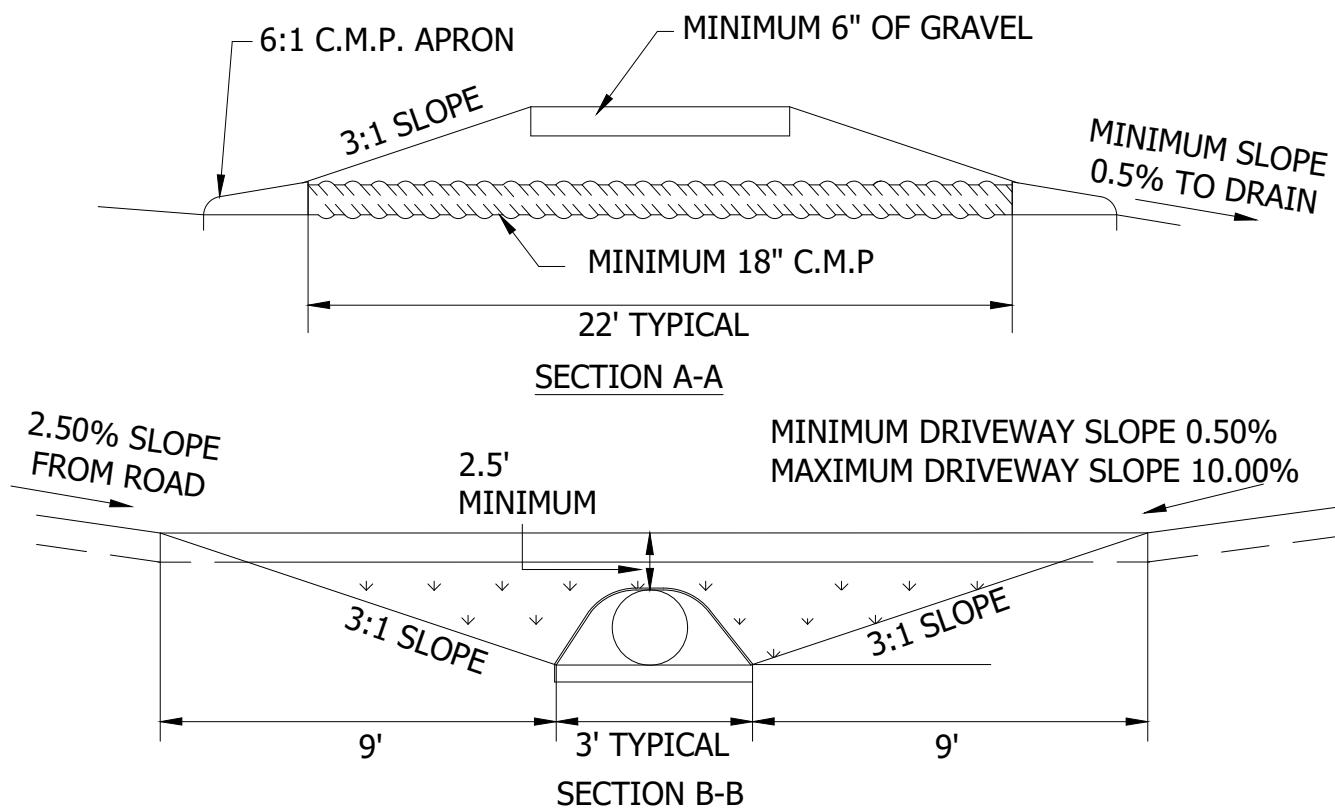
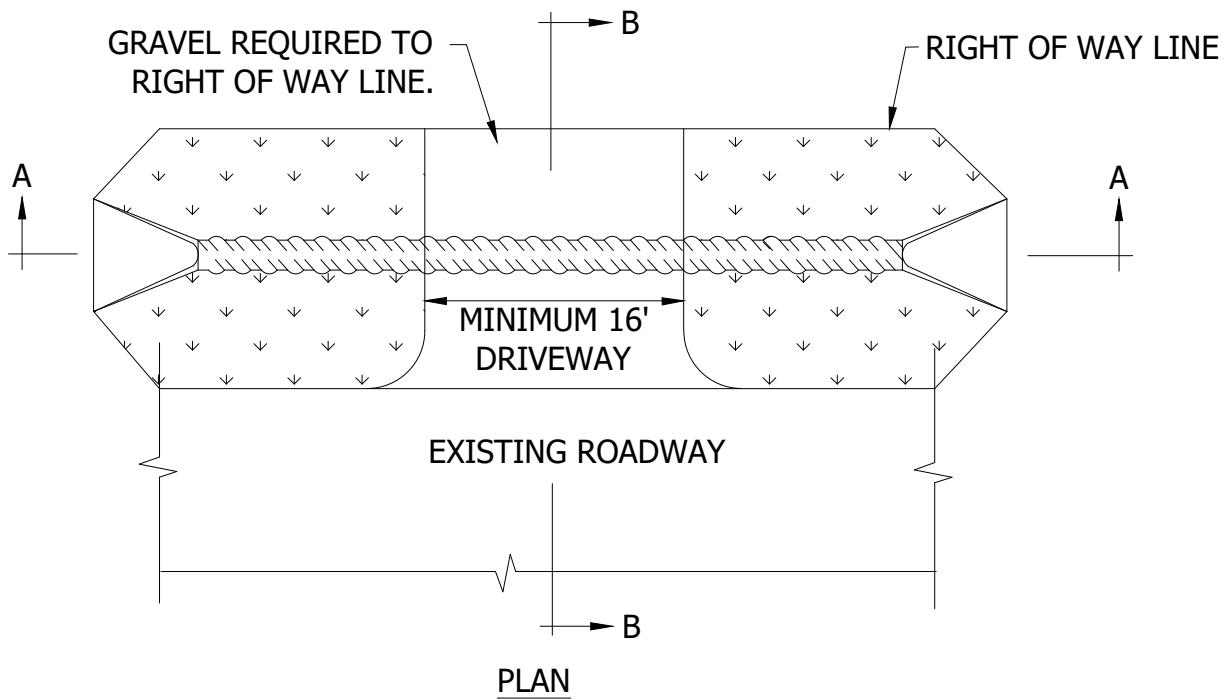
1. FABRIC TO BE WRAPPED ON THE SIDES OF AND UNDER THE FILTER AGGREGATE. DO NOT WRAP FABRIC OVER TOP OF AGGREGATE.
2. PLACE HOLES UP WHEN SUMP PUMP LATERALS ARE PRESENT.
3. DO NOT USE FILTER SOCK AROUND PIPE.

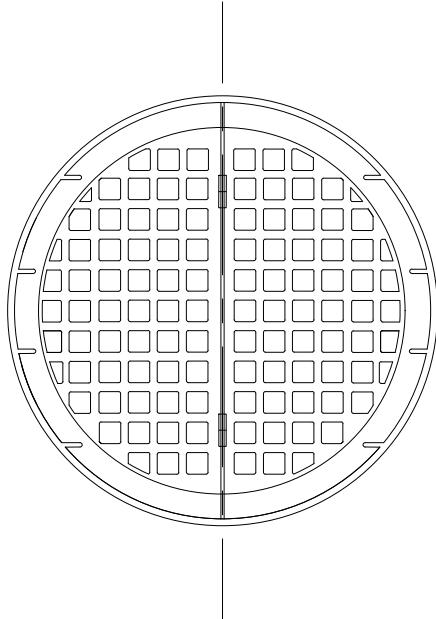


#### TRENCH DETAIL

##### NOTES:

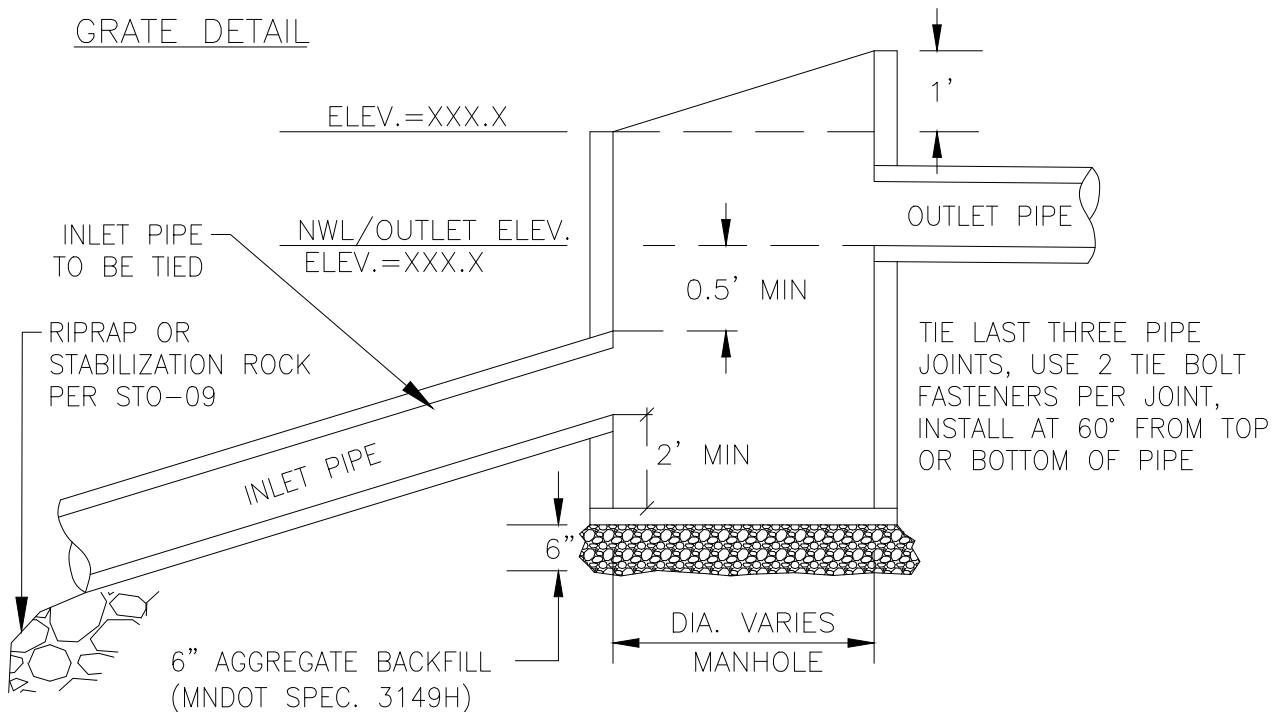
1. PLACE SUB-DRAIN BEHIND ALL CURB & GUTTER 250 LF IN EACH DIRECTION FROM CATCH BASINS LOCATED AT LOCALIZED LOW POINTS AND 150 LF UPSTREAM FROM CATCH BASINS LOCATED IN THE MID-SLOPE.
2. CONNECT SUB-DRAIN TO NEAREST CATCH BASIN. CONNECTION TO BE CORE-DRILLED. DOGHOUSES MUST BE GROUTED ON BOTH THE INSIDE AND OUTSIDE OF THE STRUCTURE.
3. ALL STREETS WITH GRADES LESS THAN 1% WILL REQUIRE STREET DRAIN TILE.
4. SLOPE SUB-DRAIN TO CATCH BASIN.
5. SUB-DRAIN MAY BE DAYLIGHT TO DITCH AS APPROVED BY CITY ENGINEER
6. CLEANOUTS ARE REQUIRED AT A MAXIMUM OF 300 FOOT INTERVALS, AT BENDS, AND AT THE END OF THE RUN. SEE DETAIL STO-18 FOR CLEANOUT FABRICATION.
7. CLEANOUTS TO BE LOCATED AT PROPERTY CORNERS.
8. IF CLEANOUT IS TO BE LOCATED WITHIN 50' OF CATCH BASIN REMOVE CLEANOUT AND TIE DRAIN TILE INTO THE CATCH BASIN.
9. CONTRACTOR TO TELEVISE DRAIN TILE PRIOR TO ACCEPTANCE OF STREET. DRAIN TILE TO BE TELEVISED IN THE PRESENCE OF THE CITY AFTER PRIVATE UTILITIES ARE INSTALLED.





HAALA POND  
SKIMMER PLATE  
STYLE OR  
APPROVED EQUAL.

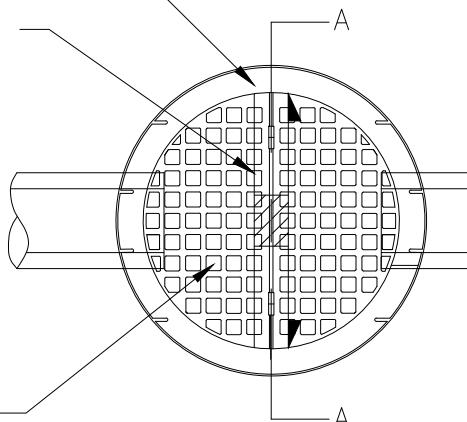
GRATE DETAIL



2"X6" KEYWAY  
CAST INTO  
WALL BY  
SUPPLIER

BAFFLE WALL  
CONSTRUCTED  
IN FIELD BY  
CONTRACTOR

FOR GRATE  
DESIGN SEE  
STO-16



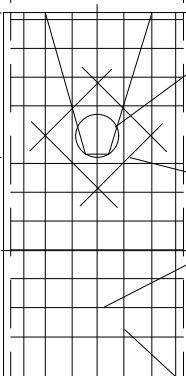
### SKIMMER GRATE

2.5' TYP 2.5' TYP

ELEV.= XXX.X

ELEV.= XXX.X

ELEV.= XXX.X



XX" Ø HOLE IN  
BAFFLE WALL

ADDITIONAL #4'S  
X 4'-0" LONG

#4 @ 12"  
HORIZONTAL

#4 @ 12"  
VERTICAL

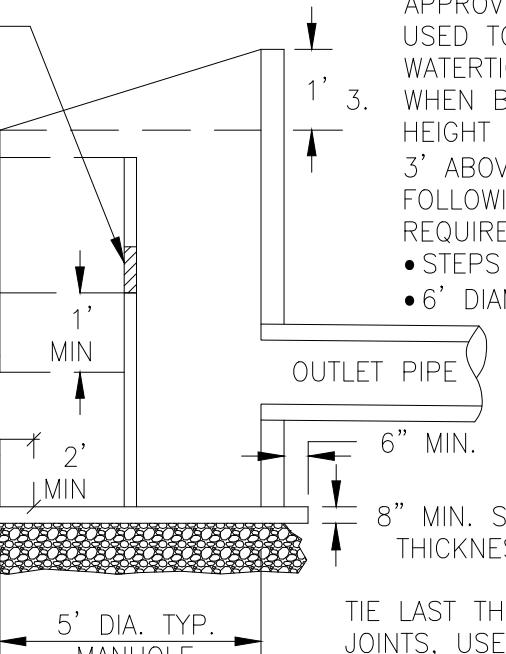
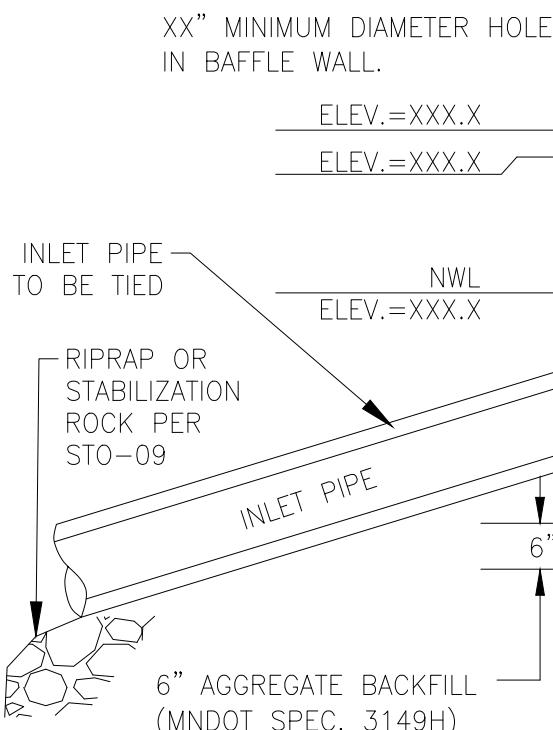
### SECTION A-A

### CONCRETE BAFFLE WALL

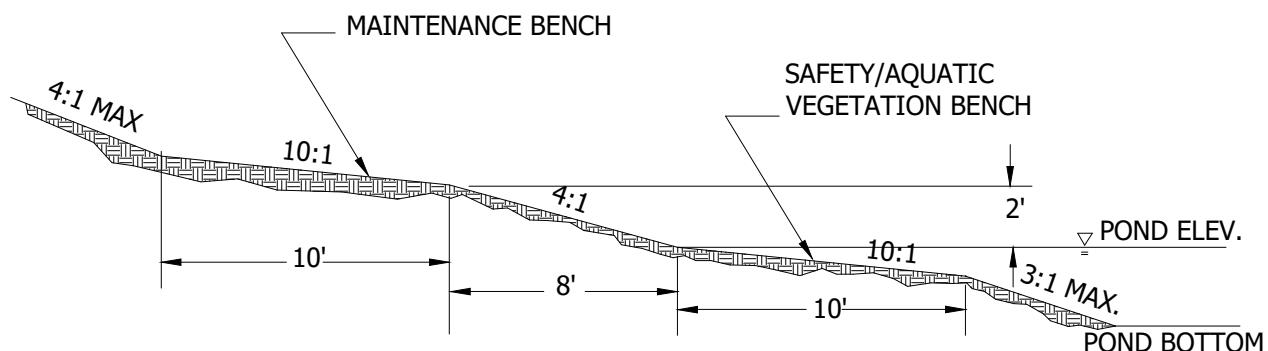
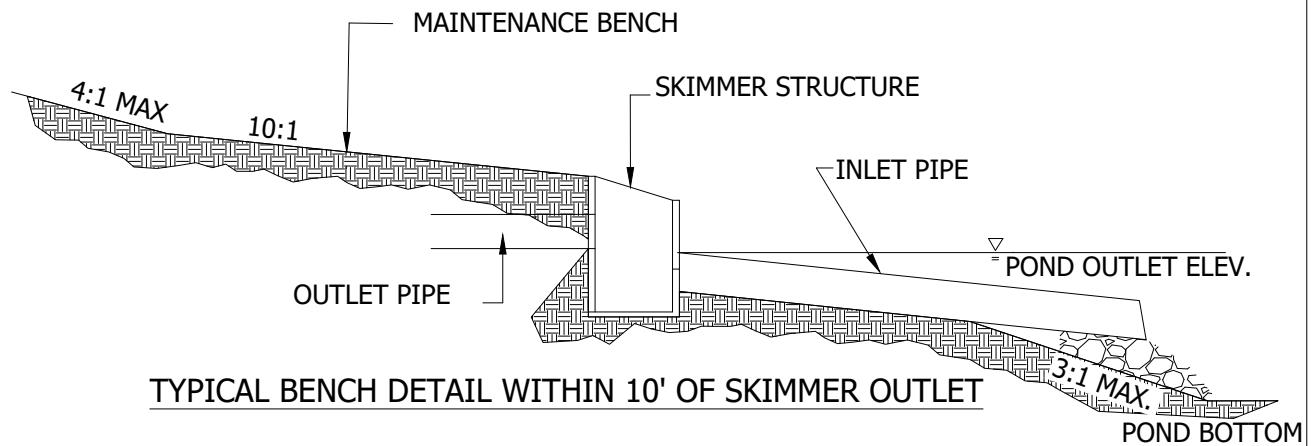
WHEN FEASIBLE, SET INVERT FOR OUTLET PIPE BELOW  
NWL TO IMPROVE PIPE COVER AND MINIMIZE SLOPE  
AROUND SKIMMER

#### NOTE:

1. BAFFLE WALL TO BE  
SINGLE PIECE AND  
WATERTIGHT.
2. SIKAFLX SEALANT OR  
APPROVED EQUAL TO BE  
USED TO MAKE  
WATERTIGHT.
3. WHEN BAFFLE WALL  
HEIGHT IS GREATER THAN  
3' ABOVE NWL THE  
FOLLOWING SHALL BE  
REQUIRED:
  - STEPS
  - 6' DIAMETER MH

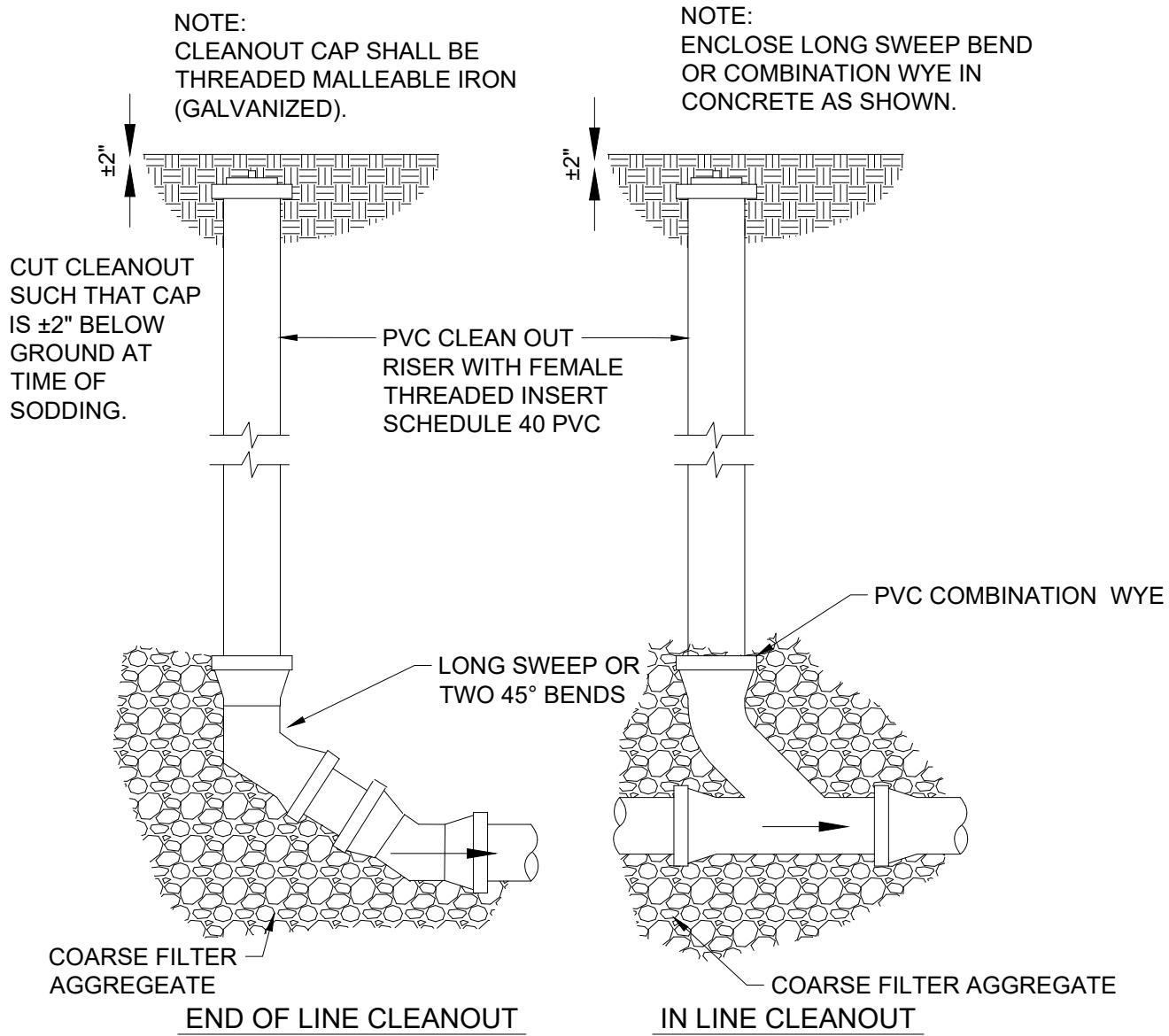


TIE LAST THREE PIPE  
JOINTS, USE 2 TIE BOLT  
FASTENERS PER JOINT,  
INSTALL AT 60° FROM TOP  
OR BOTTOM OF PIPE



NOTES:

1. SEE CITY PLATE STO-15 OR STO-16 FOR SPECIFIC SKIMMER STRUCTURE DETAILS.
2. INLET PIPE SHALL BE TIED AT ALL JOINTS AND ATTACHED TO THE STRUCTURE.

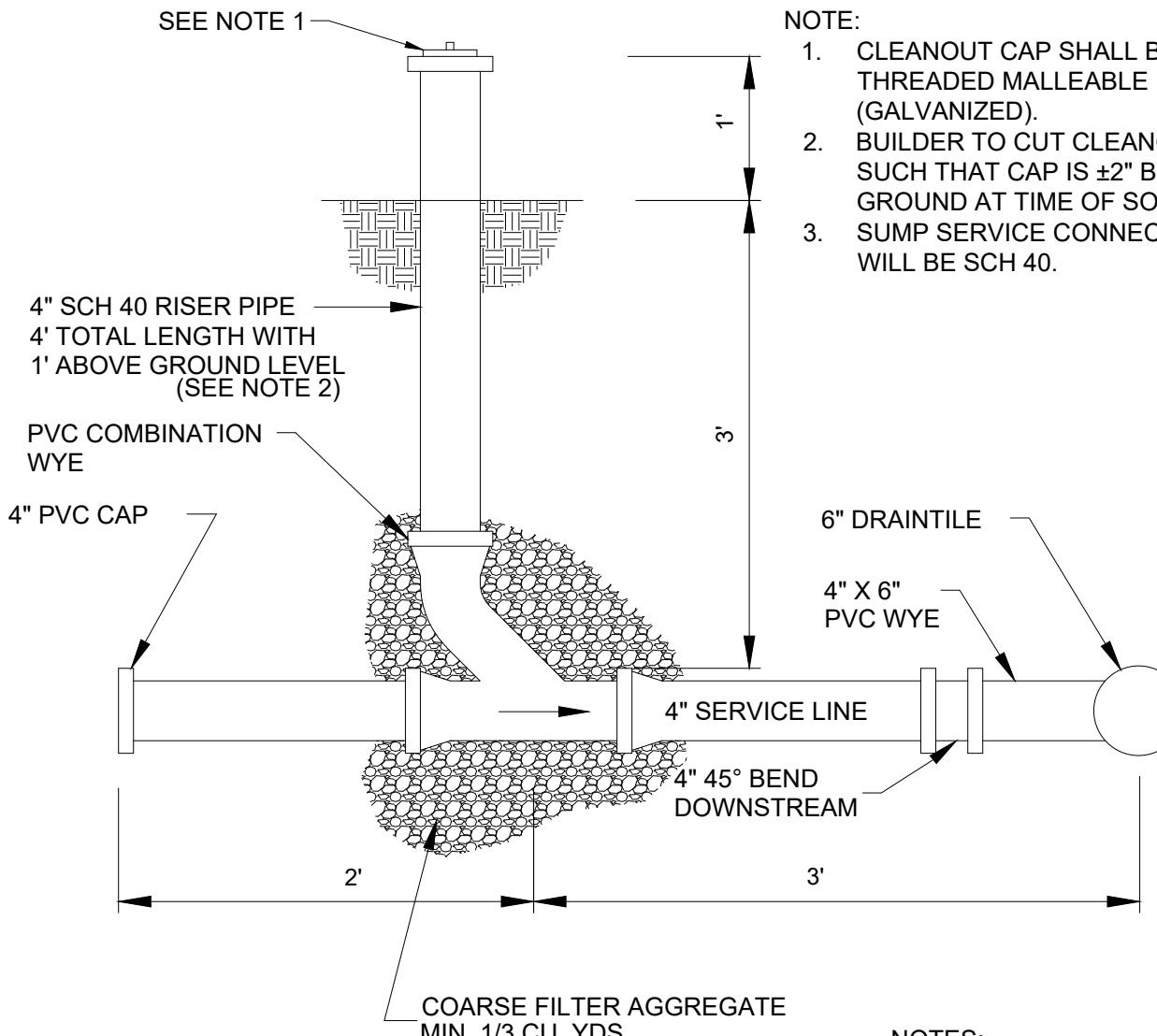


NOTE:

1. IF CLEANOUT IS IN DRIVEWAY, CONTRACTOR MUST INSTALL FORD A-1 CASTING, MARKED WITH "SEWER" ON LID.
2. IF CLEANOUT IS IN ROADWAY, CONTRACTOR MUST INSTALL TOP SECTION OF A VALVE BOX WITH LID MARKED "SEWER".

**REAR-YARD DRAIN TILE NOTES:**

1. CLEANOUTS ARE REQUIRED AT MAXIMUM 300' INTERVALS, AT BENDS, AND AT THE END OF THE RUN. IF CLEANOUT IS LOCATED WITHIN 50' OF CATCHBASIN, TIE DRAINTILE INTO CATCHBASIN
2. CLEANOUTS TO BE INSTALLED AT PROPERTY CORNERS.
3. ADDITIONAL CLEANOUTS TO BE INSTALLED AS DIRECTED BY ENGINEER.

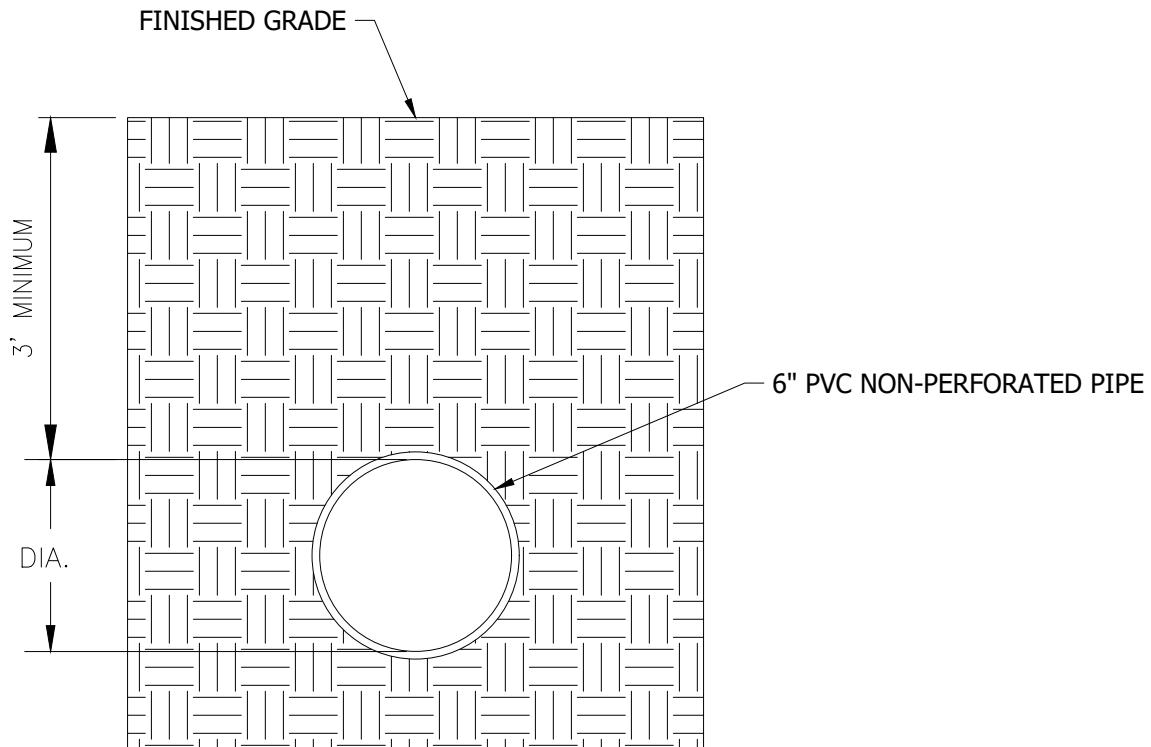


NOTE:

1. CLEANOUT CAP SHALL BE THREADED MALLEABLE IRON (GALVANIZED).
2. BUILDER TO CUT CLEANOUT SUCH THAT CAP IS  $\pm 2$ " BELOW GROUND AT TIME OF SODDING.
3. SUMP SERVICE CONNECTION WILL BE SCH 40.

NOTES:

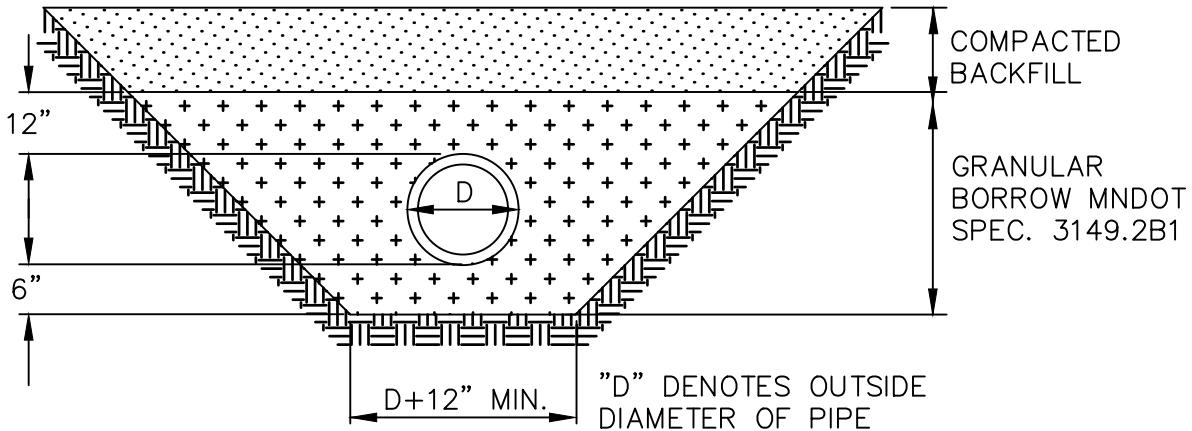
1. MIN COVER OF 3' TO TOP OF DRAINTILE FROM FINISH GRADE
2. DRAINAGE SWALES THAT HAVE LESS THAN 2% SLOPE SHALL USE DETAIL STO-13
3. MAINTAIN MINIMUM 2% SLOPE ON SERVICE PIPE TO MAIN.



### TRENCH DETAIL

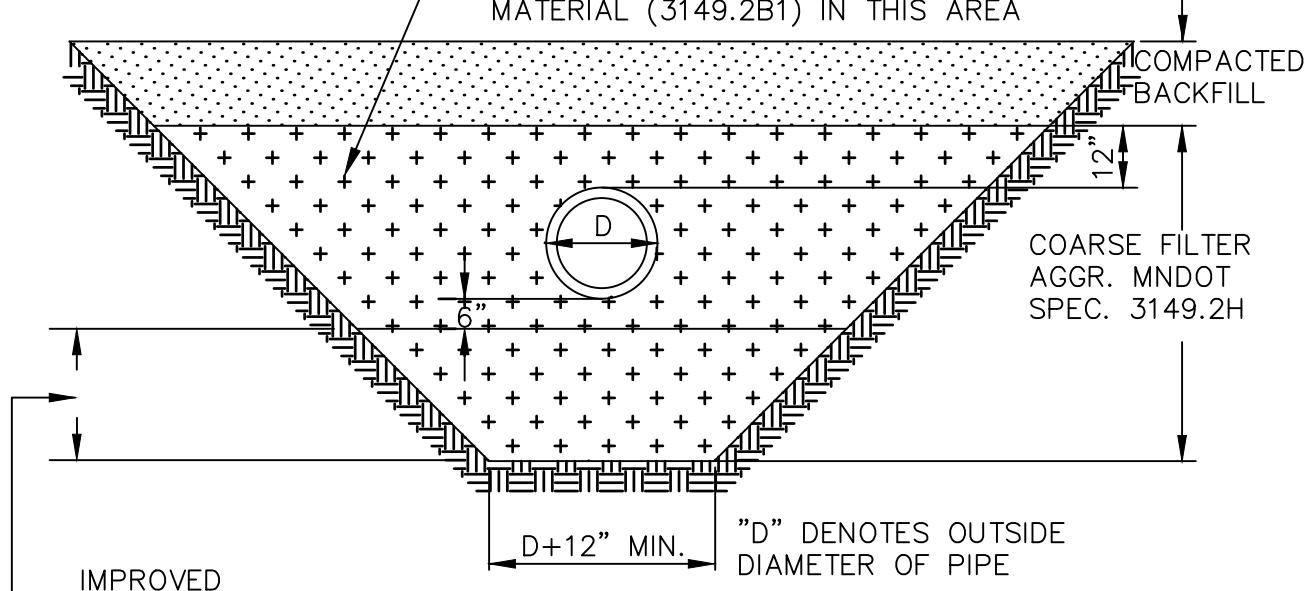
#### NOTES:

1. MINIMUM COVER OF 3' TO TOP OF DRAINTILE FROM FINISHED GRADE.
2. DRAINAGE SWALES THAT HAVE LESS THAN 2% SLOPE SHALL USE DETAIL STO-13.
3. MAINTAIN MINIMUM 2% SLOPE ON SERVICE PIPE TO MAIN.
4. CONNECTION PER STO-19.



PIPE FOUNDATION & BEDDING IN GOOD SOILS

PIPE FOUNDATION IMPROVEMENT MATERIAL (3149.2H) CONSIDERED INCIDENTAL WITH COST OF PIPE AND GRANULAR BORROW MATERIAL (3149.2B1) IN THIS AREA

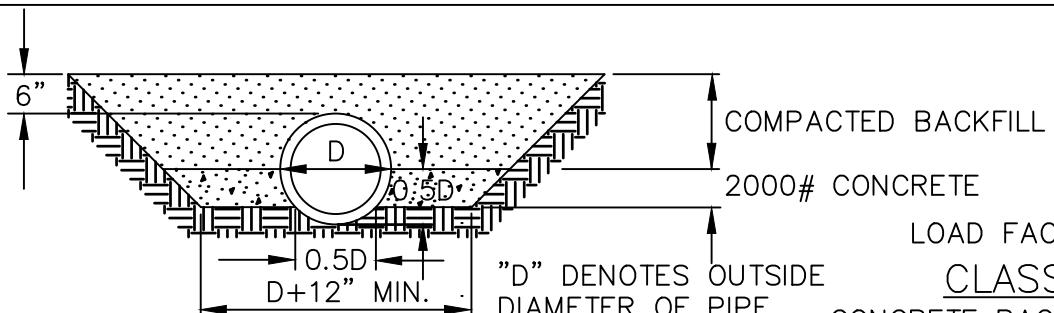


IMPROVED PIPE FOUNDATION

PIPE FOUNDATION & BEDDING IN POOR SOILS

NOTE:

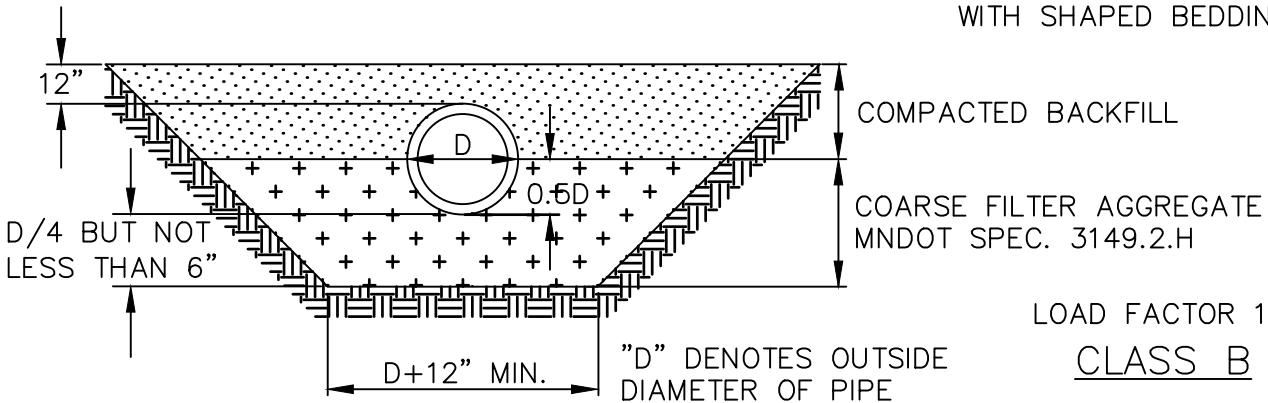
1. SDR-26 SHALL BE USED FOR PIPE DEPTHS 16'-25'. FOR PIPE DEPTHS EXCEEDING 25' C-900 IS TO BE USED.
2. REFERENCE GEN-12 FOR PIPE MATERIAL VS. DEPTH PERFORMANCE.



LOAD FACTOR 2.3

CLASS A

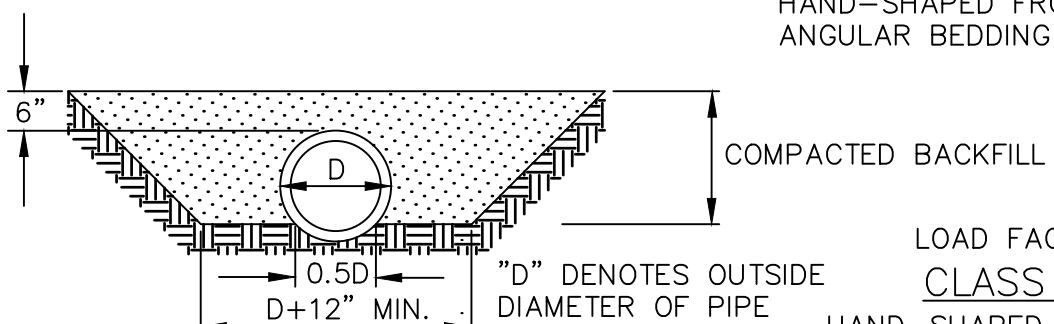
CONCRETE BACKFILL TO 0.5 OF OUTSIDE DIAMETER WITH SHAPED BEDDING.



LOAD FACTOR 1.9

CLASS B

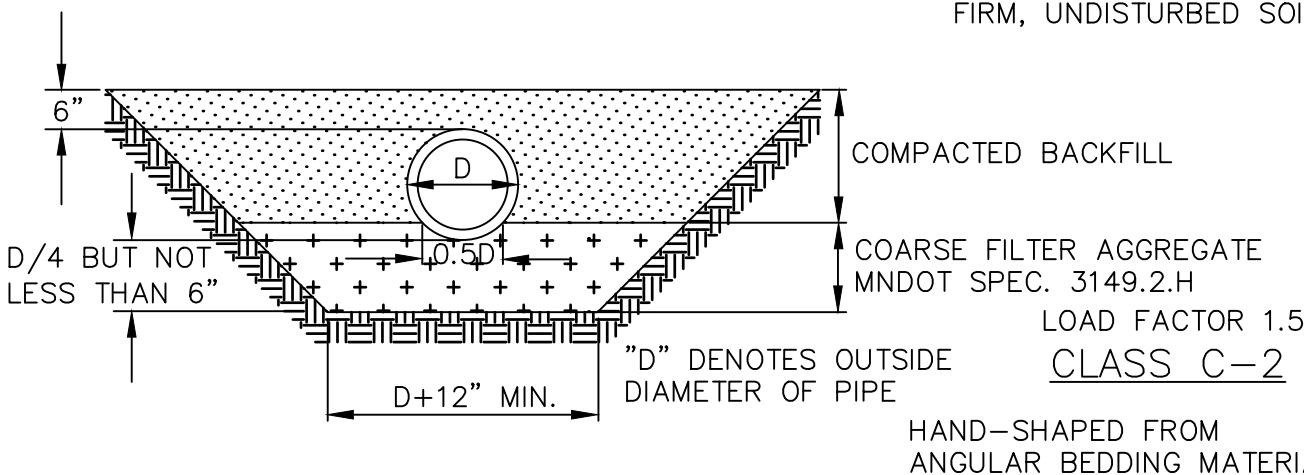
HAND-SHAPED FROM ANGULAR BEDDING MATERIAL



LOAD FACTOR 1.5

CLASS C-1

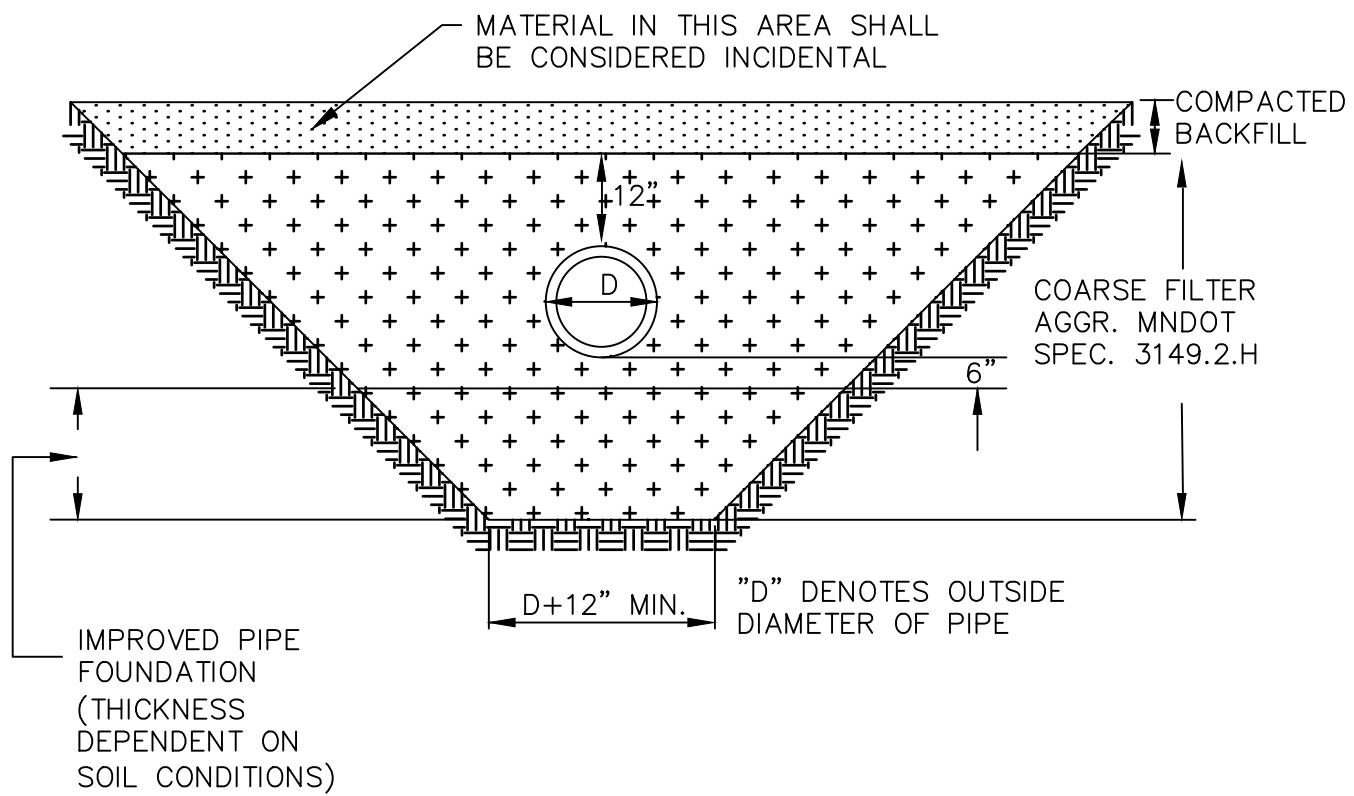
HAND-SHAPED FROM FIRM, UNDISTURBED SOIL



LOAD FACTOR 1.5

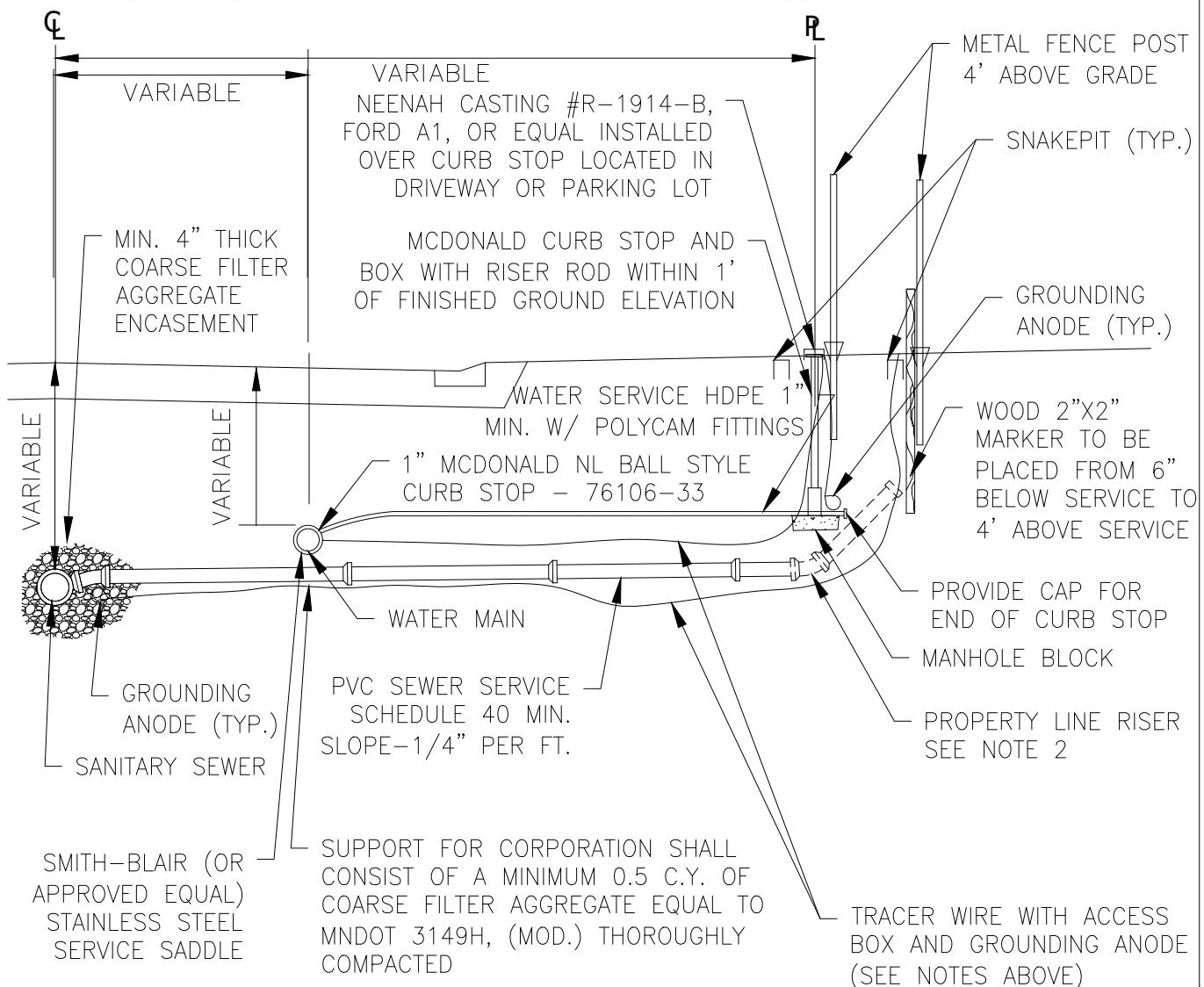
CLASS C-2

HAND-SHAPED FROM ANGULAR BEDDING MATERIAL



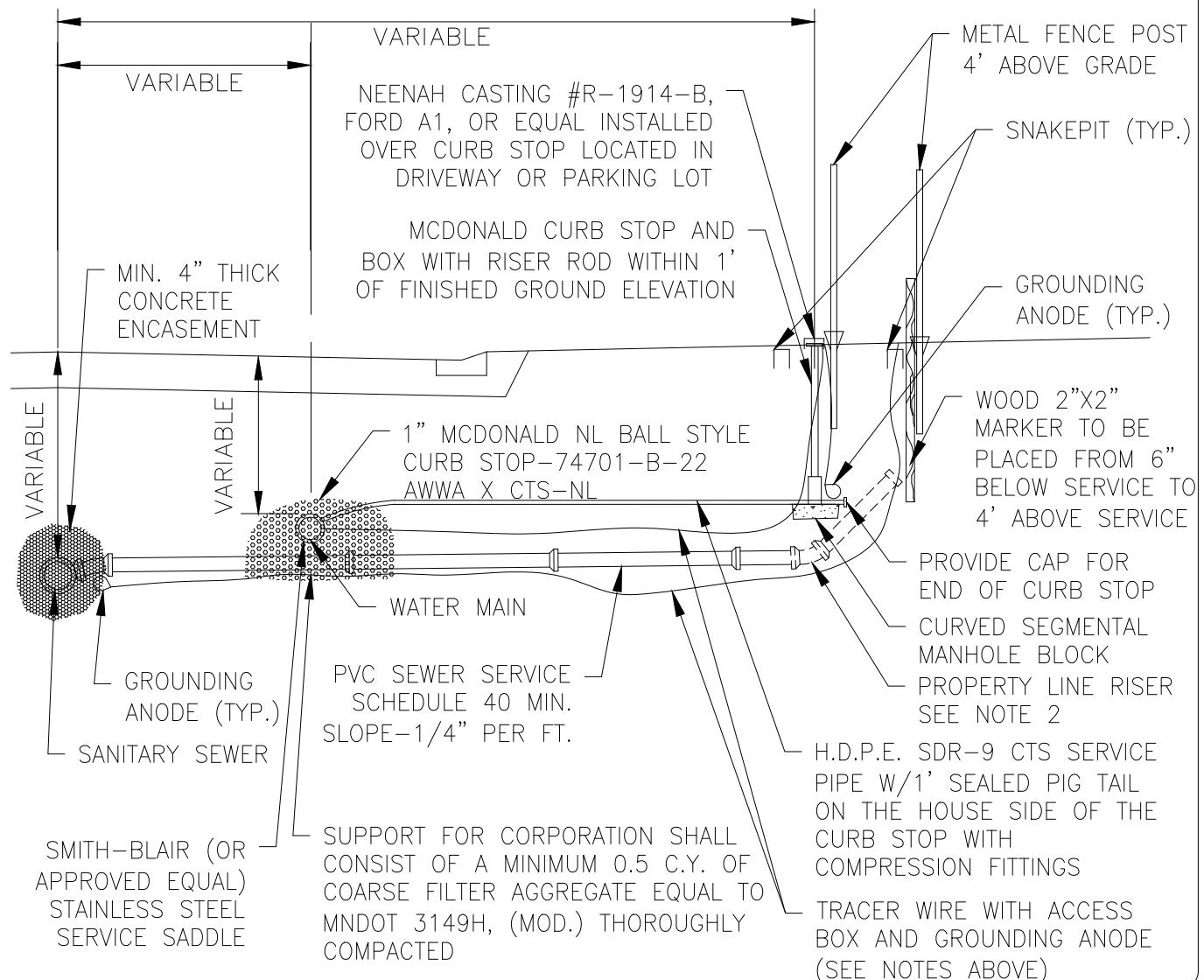
NOTES:

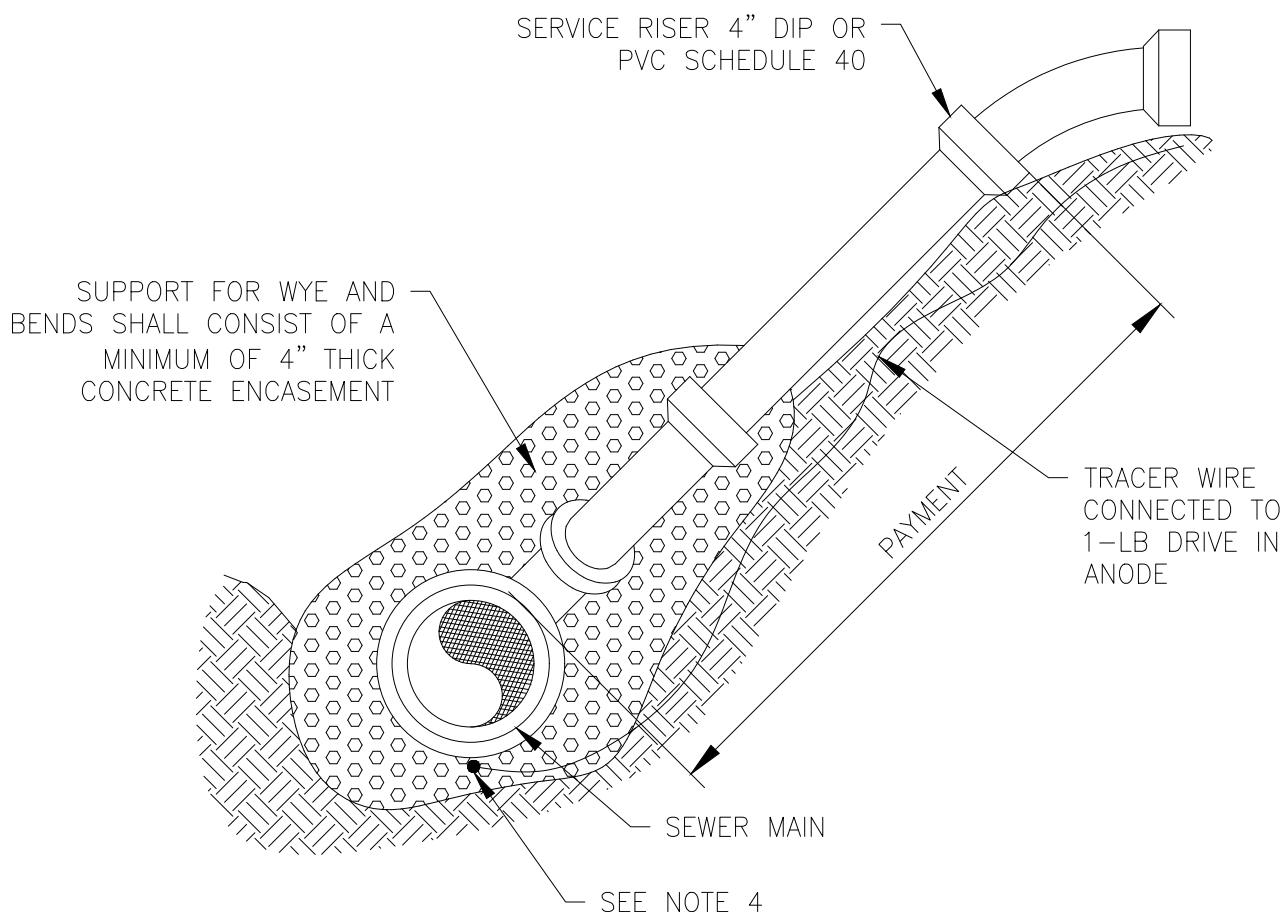
1. ALL NEW CURB BOXES MUST HAVE RISER RODS. WHEN AN EXISTING CURB BOX IS ON A CONSTRUCTION OR RECONSTRUCTION PROJECT, RISER RODS SHALL BE INSTALLED TO ALL CURB BOXES ON THAT PROJECT.
2. INSTALL SERVICE LINES WITH A 45° RISER TO 6' BELOW FINISHED GROUND.
3. PLACEMENT OF CURB STOP AND BOX ON PRIVATE STREETS SHALL BE 9' OUTSIDE OF THE RIGHT OF WAY.
4. TRACER WIRE SHALL BE BROUGHT TO SURFACE ALONG WATERMAIN CURB STOP. INSTALL SNAKEPIT, OR APPROVED EQUAL TRAFFIC RATED TRACER WIRE ACCESS BOX.
5. MIN OF 1 LB. DRIVE IN ANODES WITH MIN 20' WIRE LEAD ARE TO BE INSTALLED AT EVERY TRACER WIRE ACCESS BOX.
6. TRACER WIRE SHALL BE 12 AWG COPPER CLAD STEEL CORE WIRE WITH MIN BREAK LOAD OF 450 LB FOR OPEN CUT INSTALLATION RATED FOR 30 VOLTS. MIN 45 MIL HMWPE JACKET.
7. TRACER WIRE CONNECTOR SHALL BE DRY CONN DIRECT BURY LUG AQUAL, PRO-TRACE DB OR APPROVED EQUAL.
8. SER-01A TO BE USED ON ANY CONSTRUCTION WITH PREVIOUSLY INSTALLED HDPE FUSED FITTINGS. SER-01B SHALL BE USED ON ANY NEW CONSTRUCTION WHERE FUSED FITTINGS HAVE NOT BEEN INSTALLED IN PREVIOUS PHASING OR CONTAINING PREVIOUSLY INSTALLED COMPRESSION FITTINGS



NOTES:

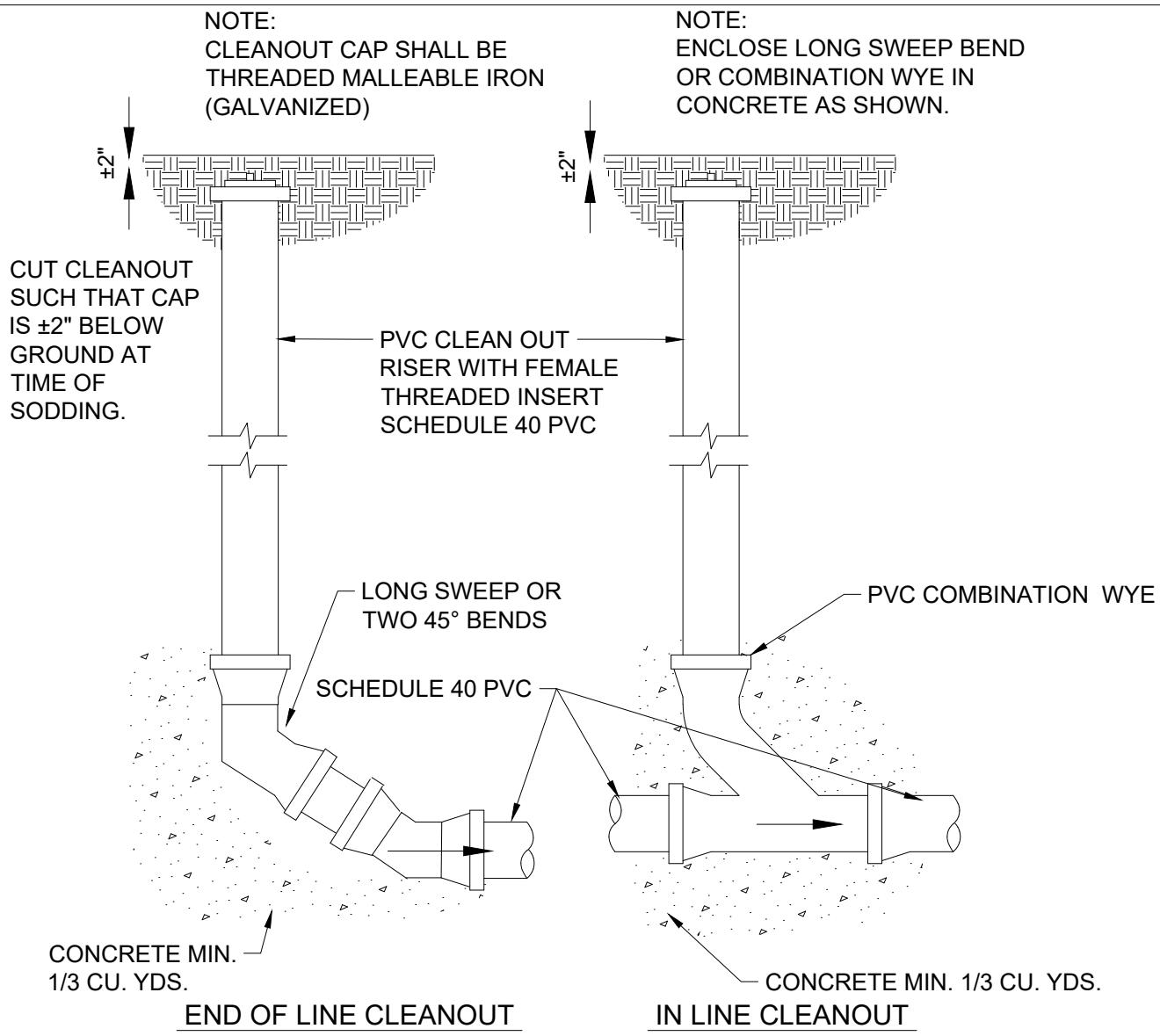
1. ALL NEW CURB BOXES MUST HAVE RISER RODS. WHEN AN EXISTING CURB BOX IS ON A CONSTRUCTION OR RECONSTRUCTION PROJECT, RISER RODS SHALL BE INSTALLED TO ALL CURB BOXES ON THAT PROJECT.
2. INSTALL SERVICE LINES WITH A 45° RISER TO 6' BELOW FINISHED GROUND.
3. PLACEMENT OF CURB STOP AND BOX ON PRIVATE STREETS SHALL BE 9' OUTSIDE OF THE RIGHT OF WAY.
4. TRACER WIRE SHALL BE BROUGHT TO SURFACE ALONG WATERMAIN CURB STOP. INSTALL SNAKEPIT, OR APPROVED EQUAL TRAFFIC RATED TRACER WIRE ACCESS BOX.
5. MIN OF 1 LB. DRIVE IN ANODES WITH MIN 20' WIRE LEAD ARE TO BE INSTALLED AT EVERY TRACER WIRE ACCESS BOX.
6. TRACER WIRE SHALL BE 12 AWG COPPER CLAD STEEL CORE WIRE WITH MIN BREAK LOAD OF 450 LB FOR OPEN CUT INSTALLATION RATED FOR 30 VOLTS. MIN 45 MIL HMWPE JACKET.
7. TRACER WIRE CONNECTOR SHALL BE DRY CONN DIRECT BURY LUG AQUAL, PRO-TRACE DB OR APPROVED EQUAL.
8. WATER SERVICE MUST BE CONTINUOUS WITH NO JOINTS AND STIFFENERS ON ALL FLEXIBLE PLASTIC CONNECTIONS





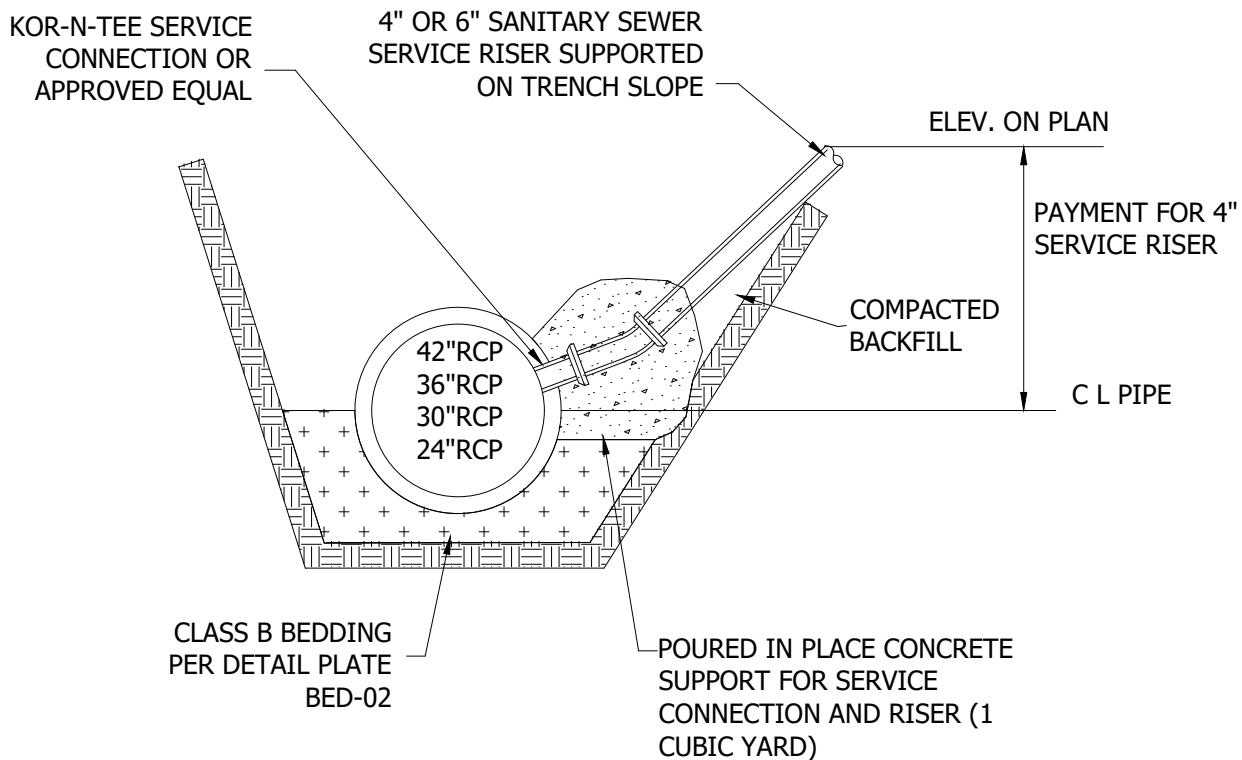
NOTES:

1. WHERE THE SANITARY MAIN IS DEEPER THAN 14.5', SERVICE RISERS SHALL BE REQUIRED.
2. SEE DETAIL SER 1 FOR INFORMATION ON TRACER WIRE AND CONNECTORS.
3. 2' MINIMUM RISER.
4. MIN OF 1 LB. DRIVE IN ANODES WITH 20' WIRE LEAD ARE TO BE INSTALLED AT EVERY SANITARY SERVICE WYE.
5. SEWER DEPTHS OVER 25' AND ALL TRUNK SEWER LINES SHALL USE DUCTILE IRON TEES AND RISERS IN PLACE OF PVC WYES UNLESS OTHERWISE APPROVED BY ENGINEER.
6. WHERE DUCTILE IRON TEE IS USED IN PLACE OF PVC WYE, RISERS TO BE DIP, DIP TO PVC TRANSITION FITTINGS TO BE USED AT TOP OF RISER.
7. ALL SEWER DUCTILE IRON FITTINGS TO BE EPOXY BONDED, ALL SEWER DUCTILE IRON PIPES AND FITTINGS TO HAVE PROTECTO 401 LINER. ALL MATERIALS TO BE AMERICAN MADE.
8. ALL DUCTILE IRON PIPES AND FITTINGS TO BE WRAPPED IN POLY AND TAPE.



NOTE:

1. CLEANOUT IS REQUIRED FOR EVERY 100 FEET OF SERVICE LENGTH, OR AT BENDS IN SERVICE.
2. IF CLEANOUT IS IN DRIVEWAY, CONTRACTOR MUST INSTALL FORD A-1 CASTING, MARKED WITH "SEWER ON LID".
3. IF CLEANOUT IS IN ROADWAY, CONTRACTOR MUST INSTALL TOP SECTION OF A VALVE BOX WITH LID MARKED "SEWER".
4. CLEANOUT CAPS SHALL BE GALVANIZED, THREADED MALLEABLE IRON.
5. ENCLOSE LONG SWEEP BEND OR COMBINATION WYE IN CONCRETE AS SHOWN ABOVE.
6. THE CONTRACTOR IS RESPONSIBLE FOR TELEVISING DRAINTILE AFTER THE INSTALLATION OF SMALL UTILITIES.
7. TELEVISING VIDEO AND REPORT TO BE SUBMIT TO THE ENGINEER VIA EMAIL AND HARD COPY.



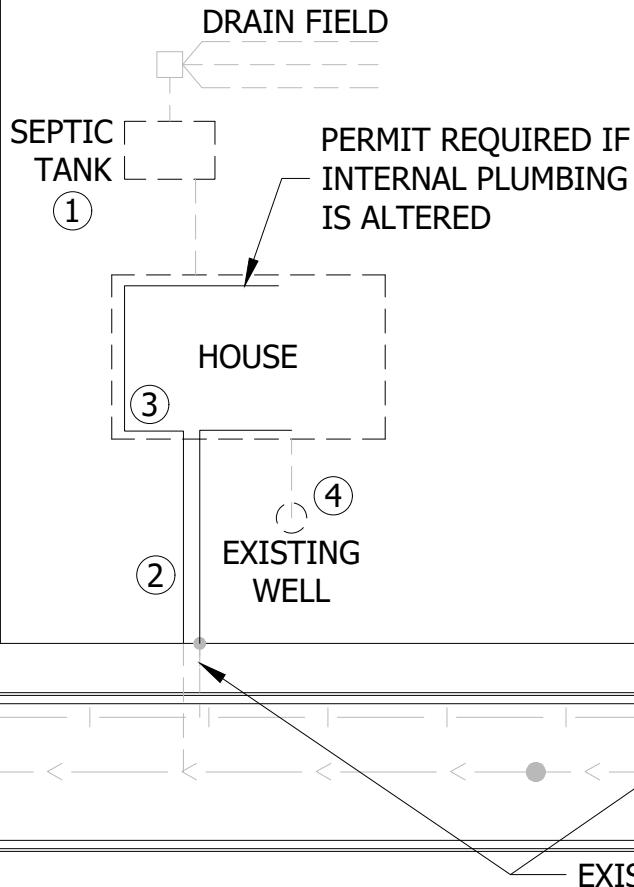
NOTE:

SERVICE CONNECTIONS TO BE AT 2:00 OR 10:00 POSITION.

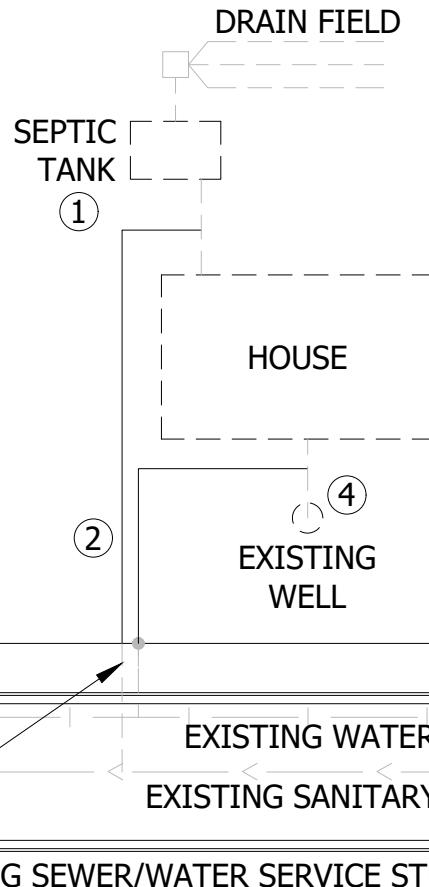
PERMITS REQUIRED

- ① ABANDON SEPTIC TANK - SEE PROCEDURES BELOW
- ② CONNECTION FROM THE BUILDING TO STUB- LICENSED PIPE LAYER REQUIRED
- ③ NEW INTERNAL PLUMBING - LICENSED MASTER PLUMBER REQUIRED
- ④ ABANDON WELL - HENNEPIN COUNTY (SEE ATTACHED INFORMATION)

REPLUMBING REQUIRED INTERNALLY



NO REPLUMBING REQUIRED INTERNALLY

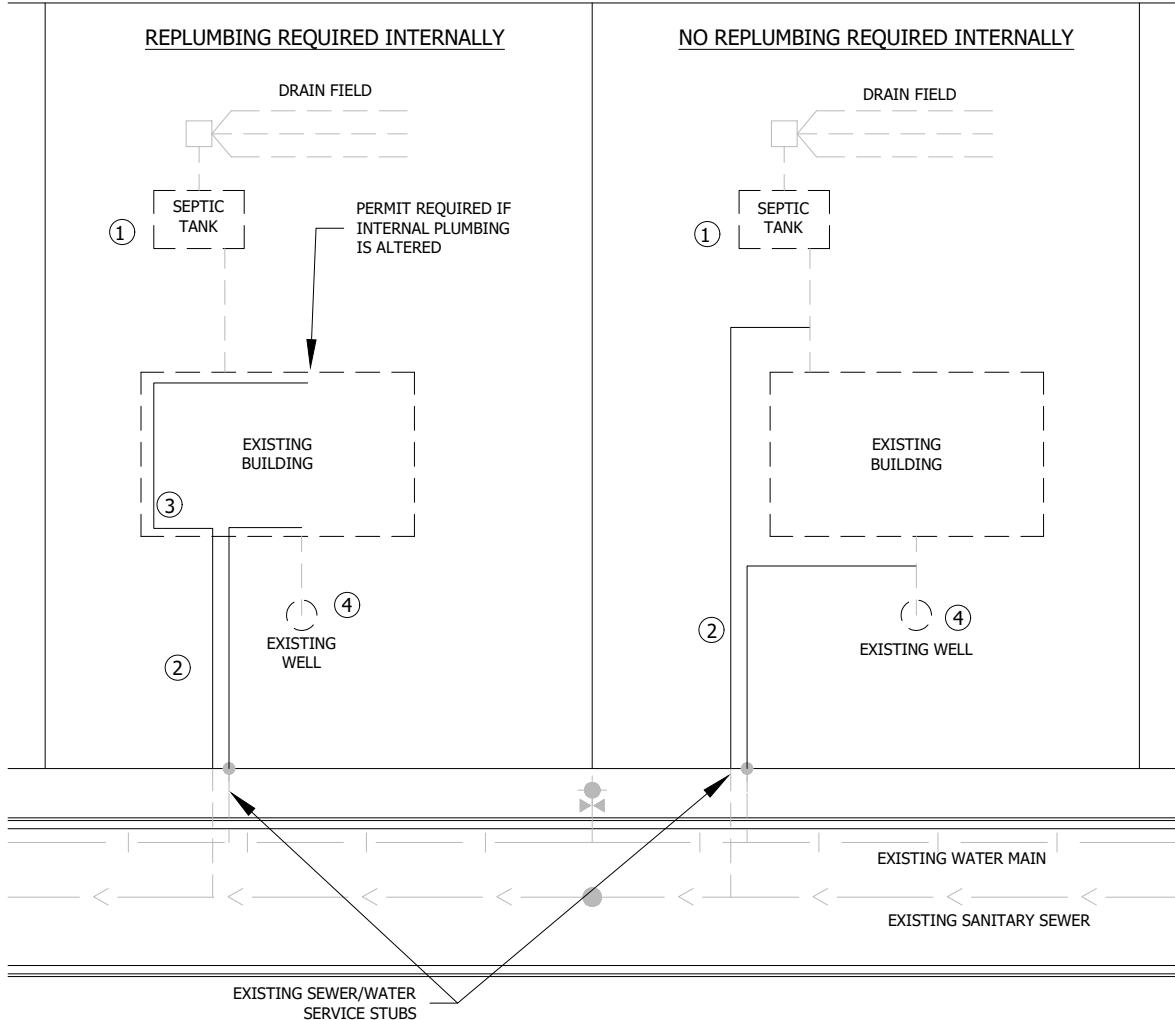


NOTES

1. CURB BOX SHALL NOT BE LOCATED IN DRIVEWAY.
2. ALL SYSTEMS WITH NO FUTURE INTENT FOR USE MUST BE ABANDONED. ALL SOLIDS AND LIQUIDS MUST BE DISPOSED OF ACCORDINGLY BY A LICENSED MAINTENANCE BUSINESS. ALL ELECTRICAL DEVICES AND DEVICES CONTAINING MERCURY MUST BE REMOVED AND DISPOSED OF ACCORDING TO APPLICABLE REGULATIONS. ABANDONED TANKS OR ANY OTHER UNDERGROUND CAVITIES MUST BE REMOVED OR REMAIN IN PLACE AND CRUSHED WITH THE REMAINING CAVITY FILLED WITH SOIL OR ROCK MATERIAL. ACCESS FOR FUTURE DISCHARGE TO THE SYSTEM MUST BE PERMANENTLY DENIED.
3. SANITARY SEWER SERVICE SHALL BE 4" PVC SCHEDULE 40.
4. WATER SERVICE SHALL BE INSTALLED WITH TRACER WIRE.
5. COMPLY WITH MINNESOTA DEPARTMENT OF HEALTH SEPARATION REQUIREMENTS.

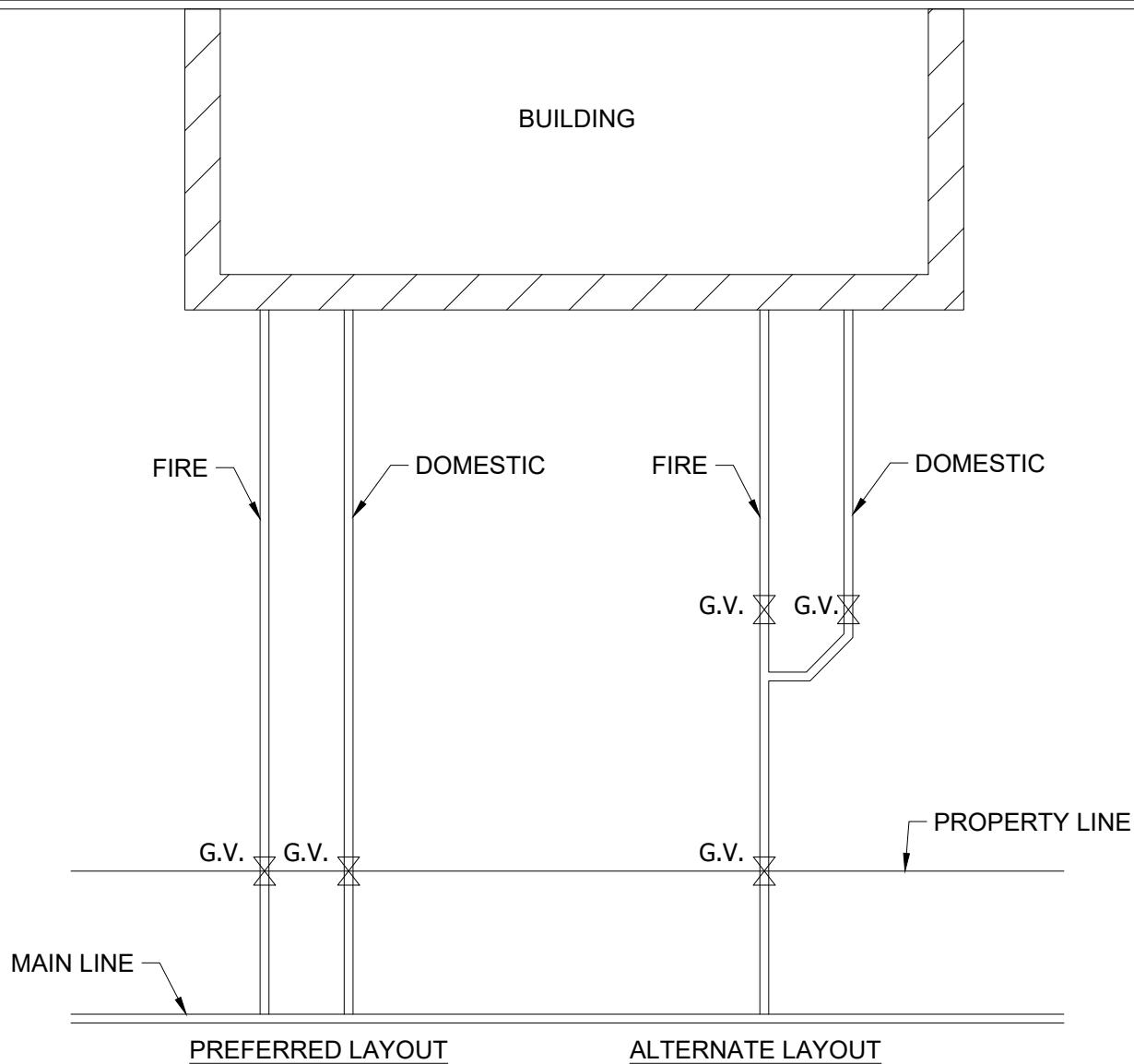
PERMITS REQUIRED

- ① ABANDON SEPTIC TANK - SEE PROCEDURES BELOW
- ② CONNECTION FROM THE BUILDING TO STUB- LICENSED PIPE LAYER REQUIRED
- ③ NEW INTERNAL PLUMBING - LICENSED MASTER PLUMBER REQUIRED
- ④ ABANDON WELL - HENNEPIN COUNTY (SEE ATTACHED INFORMATION)



NOTES

1. GATE VALVE SHALL NOT BE LOCATED IN DRIVEWAY.
2. ALL SYSTEMS WITH NO FUTURE INTENT FOR USE MUST BE ABANDONED. ALL SOLIDS AND LIQUIDS MUST BE DISPOSED OF ACCORDINGLY BY A LICENSED MAINTENANCE BUSINESS. ALL ELECTRICAL DEVICES AND DEVICES CONTAINING MERCURY MUST BE REMOVED AND DISPOSED OF ACCORDING TO APPLICABLE REGULATIONS. ABANDONED TANKS OR ANY OTHER UNDERGROUND CAVITIES MUST BE REMOVED OR REMAIN IN PLACE AND CRUSHED WITH THE REMAINING CAVITY FILLED WITH SOIL OR ROCK MATERIAL. ACCESS FOR FUTURE DISCHARGE TO THE SYSTEM MUST BE PERMANENTLY DENIED.
3. SANITARY SEWER SERVICE SIZE SHALL BE BASED ON FLOW USAGE
4. WATER SERVICE SIZE SHALL BE BASED ON USAGE/FIRE PROTECTION.
5. WATER SERVICE SHALL BE INSTALLED WITH TRACER WIRE.
6. COMPLY WITH MINNESOTA DEPARTMENT OF HEALTH SEPARATION REQUIREMENTS.



**NOTE:**

1. PREFERRED LAYOUT TO BE USED EXCEPT WHEN THERE IS ONLY ONE EXISTING SERVICE IS AVAILABLE.
3. SEE DETAIL PLATE WAT-02 FOR INFORMATION ON GATE VALVE INSTALLATION.
4. ALL VALVES TO HAVE 3' OF PIPE MINIMUM BETWEEN TEES, CROSSES, & HYDRANTS.
5. ALL DUCTILE IRON WATERMAIN FITTINGS SHALL BE FUSION BONDED EPOXY COATED, POLYWRAPPED, AND TAPED.

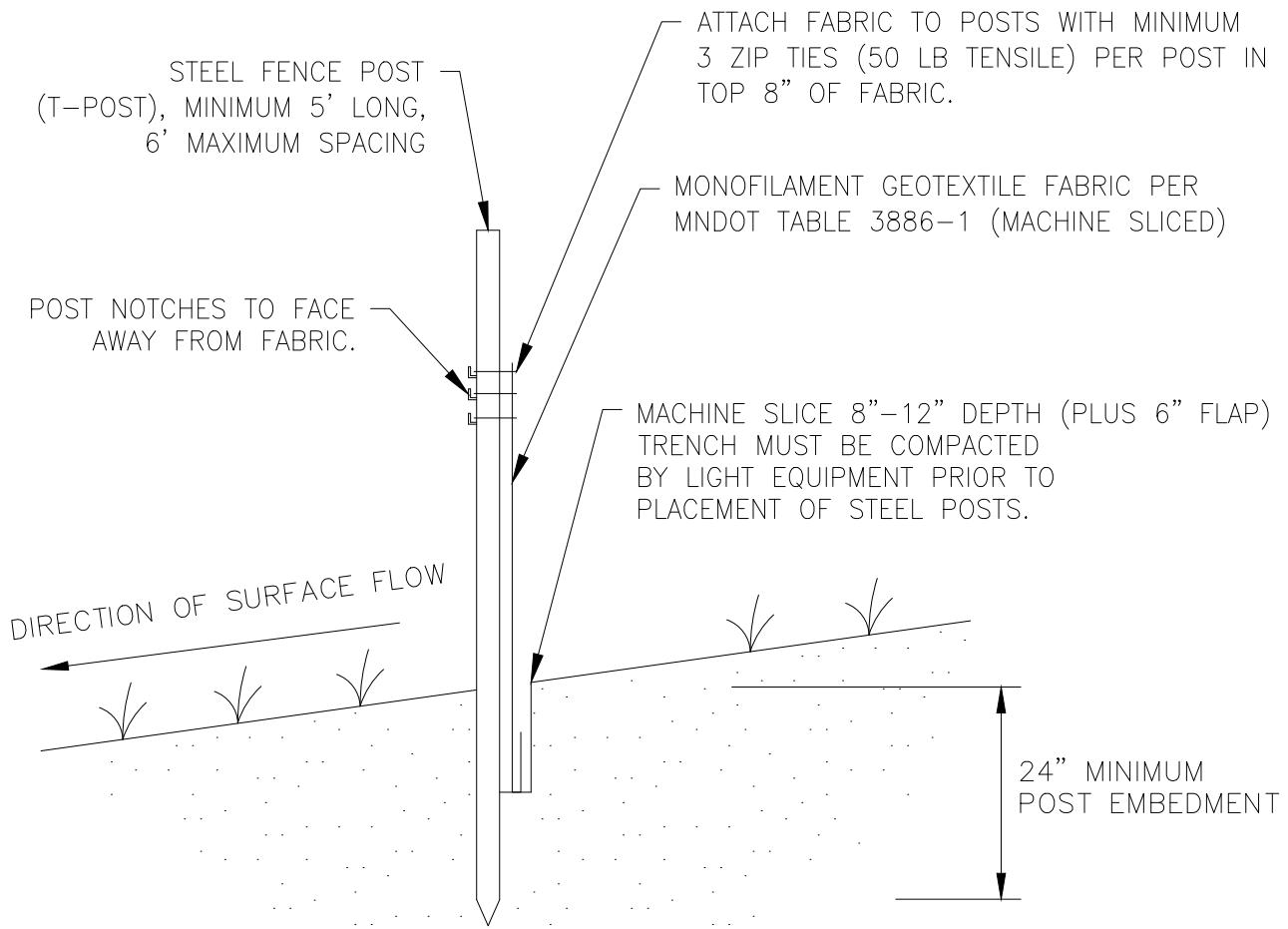


2025 DETAIL PLATES  
REV.1

WATER SERVICE LAYOUT FOR BUILDINGS  
REQUIRING FIRE SUPPRESSION

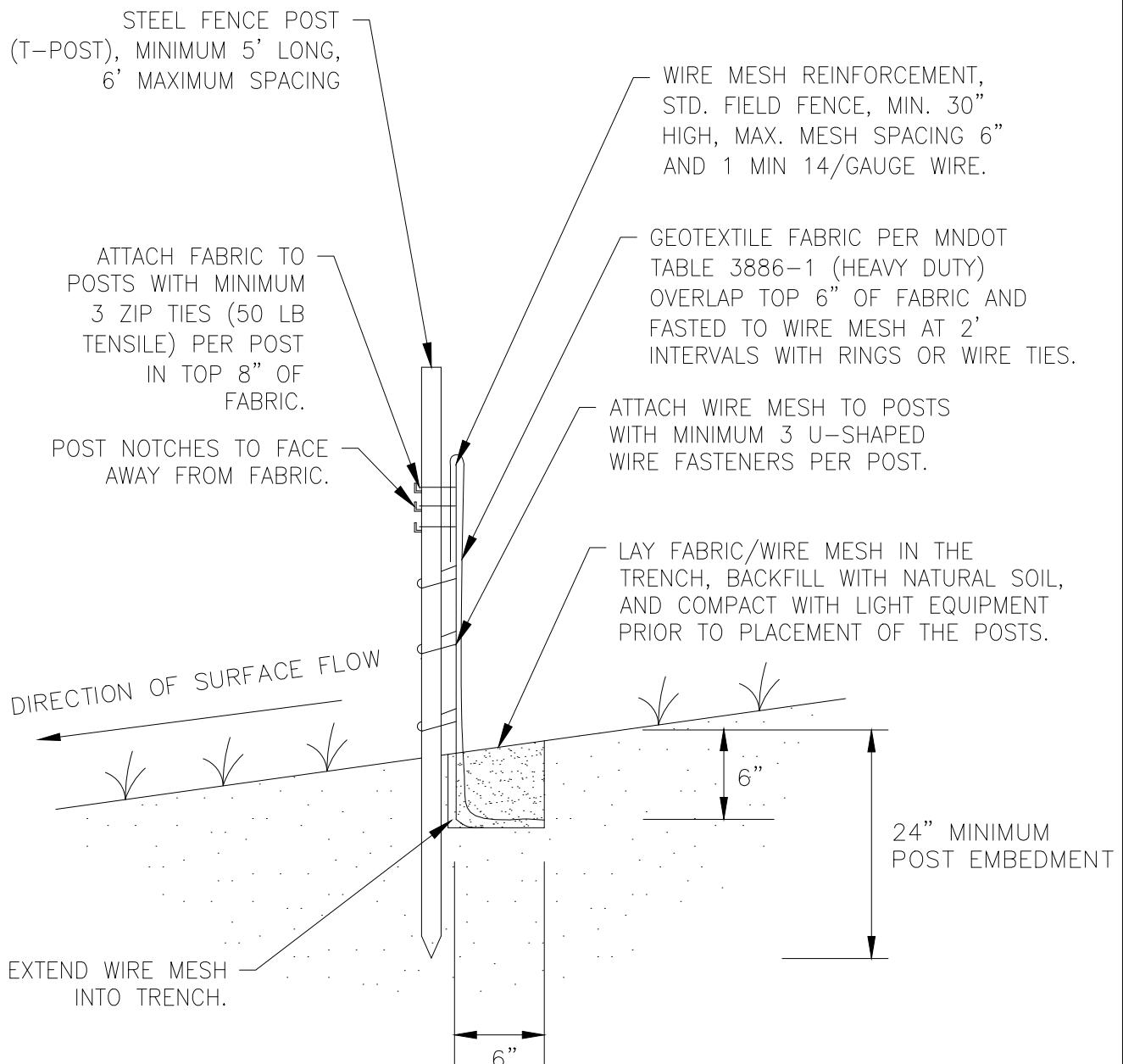
LAST REVISION:  
OCT 2024

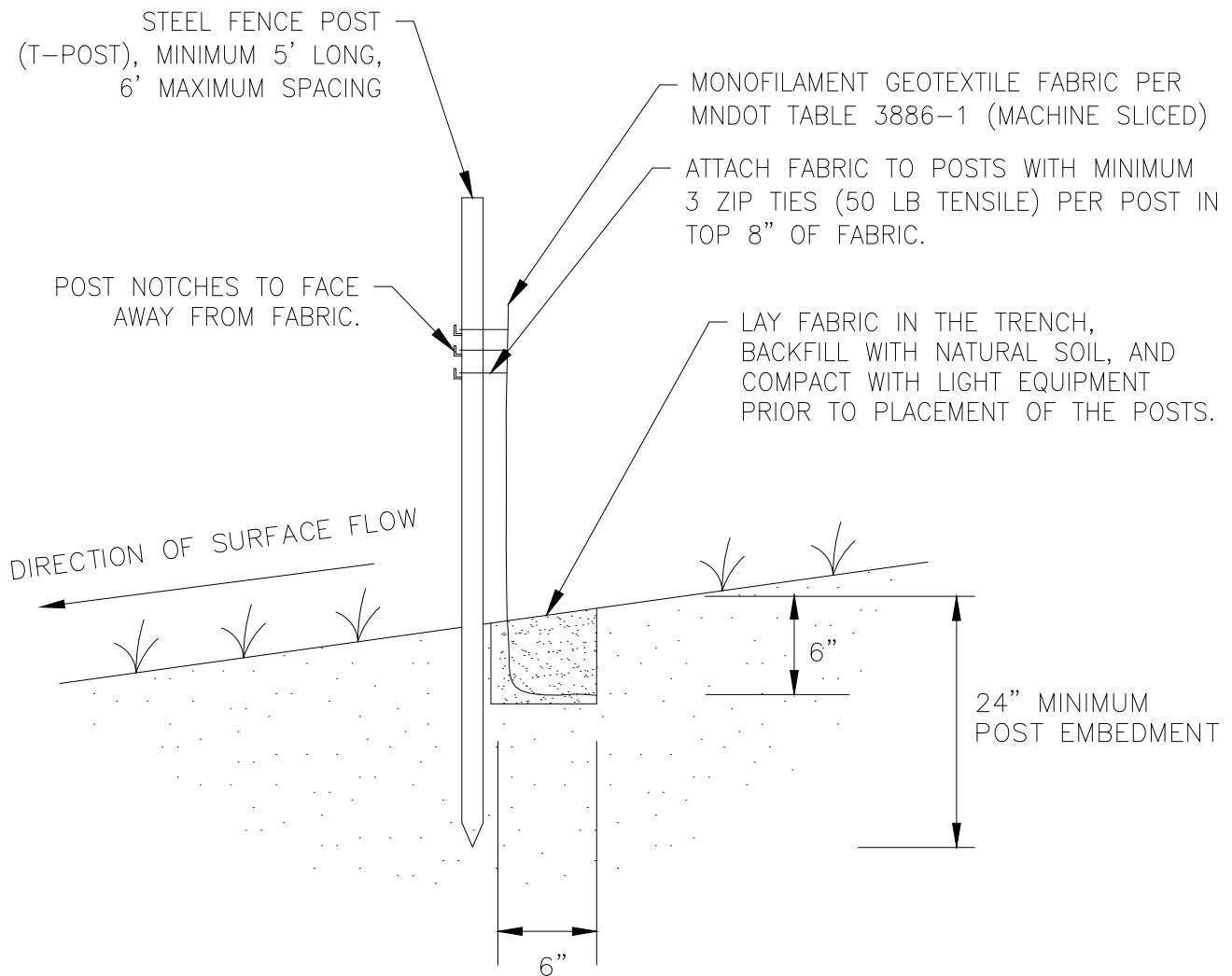
PLATE NO.  
SER-07



NOTE:

THE MACHINE SLICED METHOD (THIS DETAIL) IS THE STANDARD SILT FENCE INSTALLATION METHOD. HEAVY-DUTY (ERO-1B) OR STANDARD (ERO-1C) SILT FENCE INSTALLATION METHODS SHOULD ONLY BE USED WHEN APPROVED OR DIRECTED BY THE CITY.

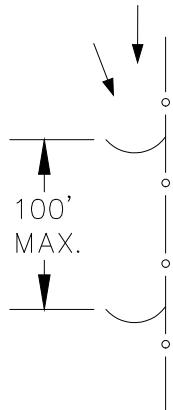




PLAN VIEW

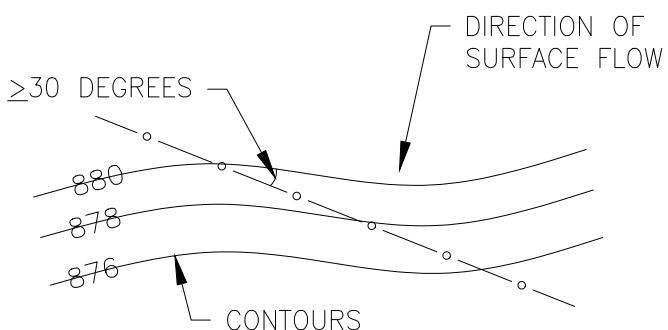
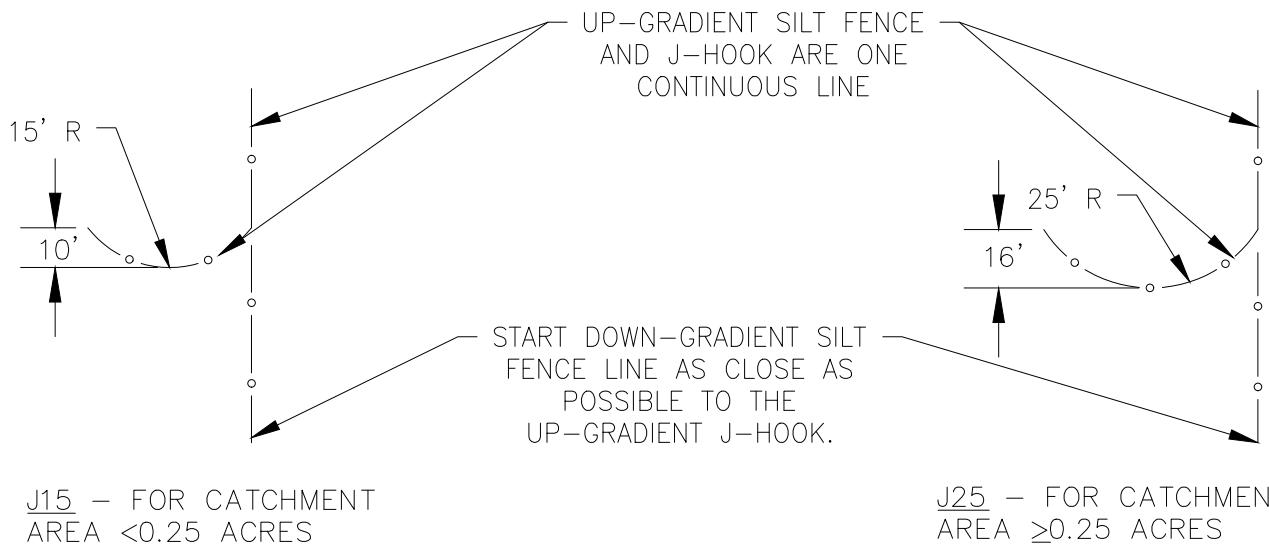
I. SPACING REQUIREMENTS

DIRECTION OF SURFACE FLOW

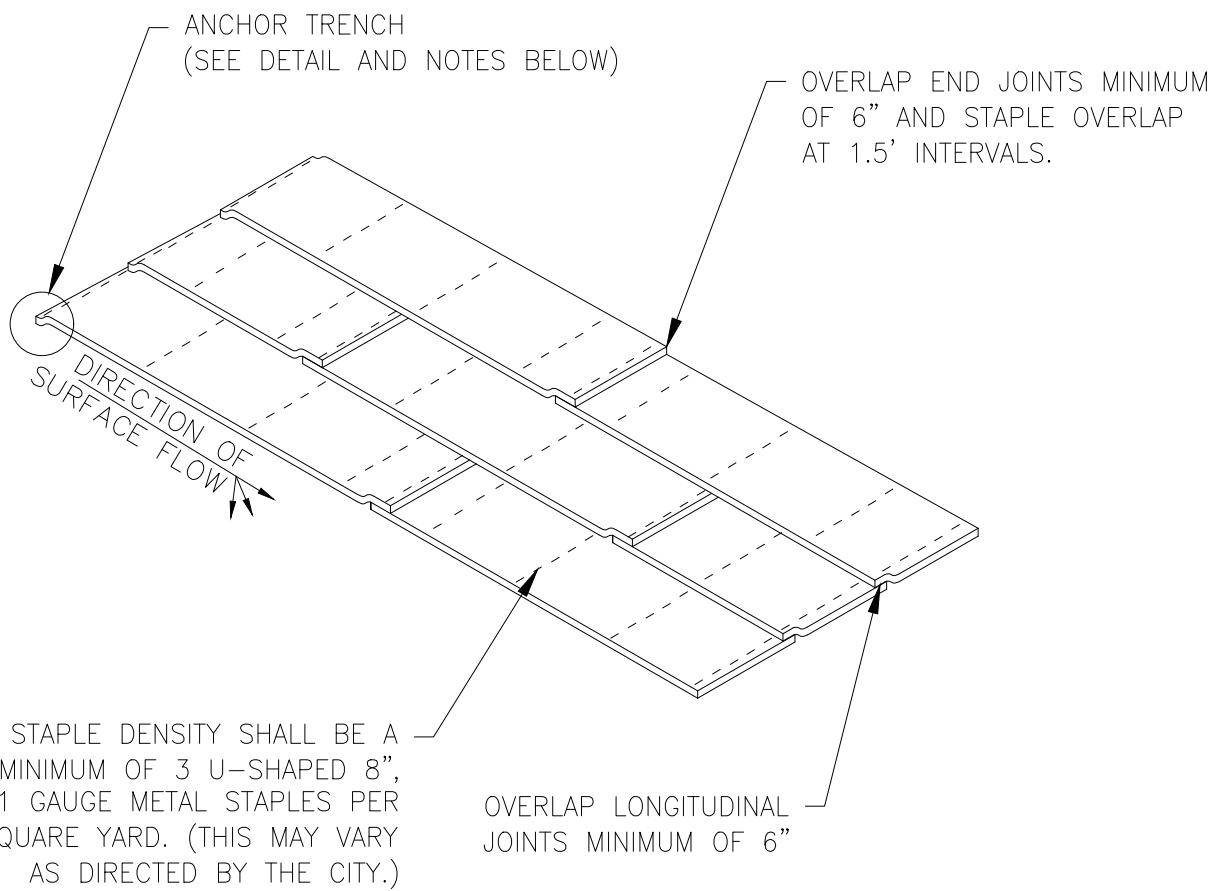


NOTE: SPACING DISTANCES WILL VARY, BUT ARE NOT TO EXCEED 100 FEET.

II. SIZING REQUIREMENTS: J15, J25

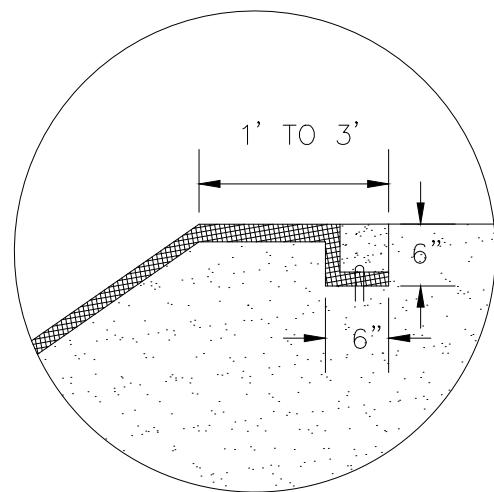


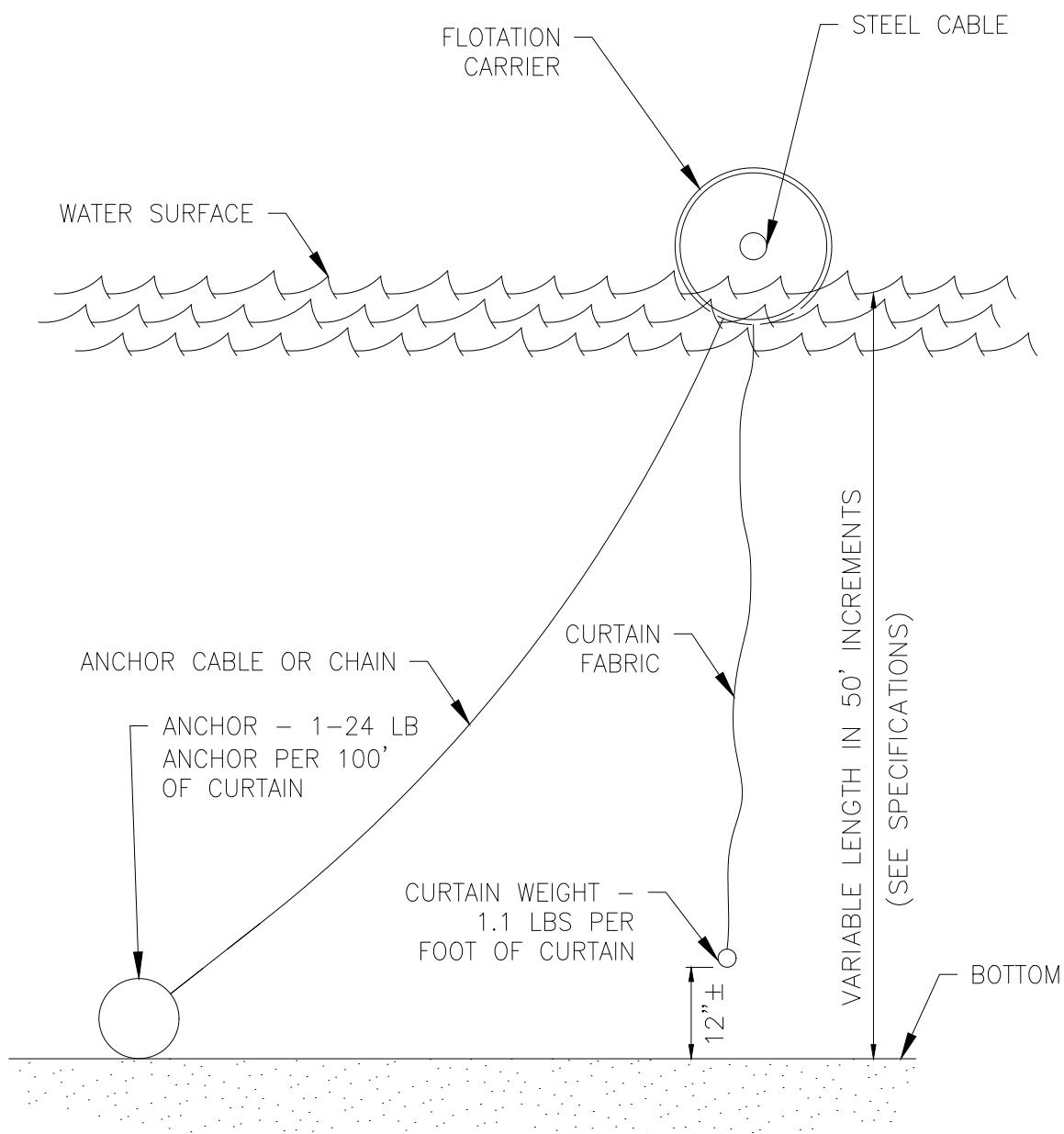
NOTE:  
J-HOOKS SHALL BE USED WHEN THE SILT FENCE IS INSTALLED AT AN ANGLE OF 30 DEGREES OR GREATER FROM PARALLEL TO THE CONTOURS.



#### ANCHOR TRENCH

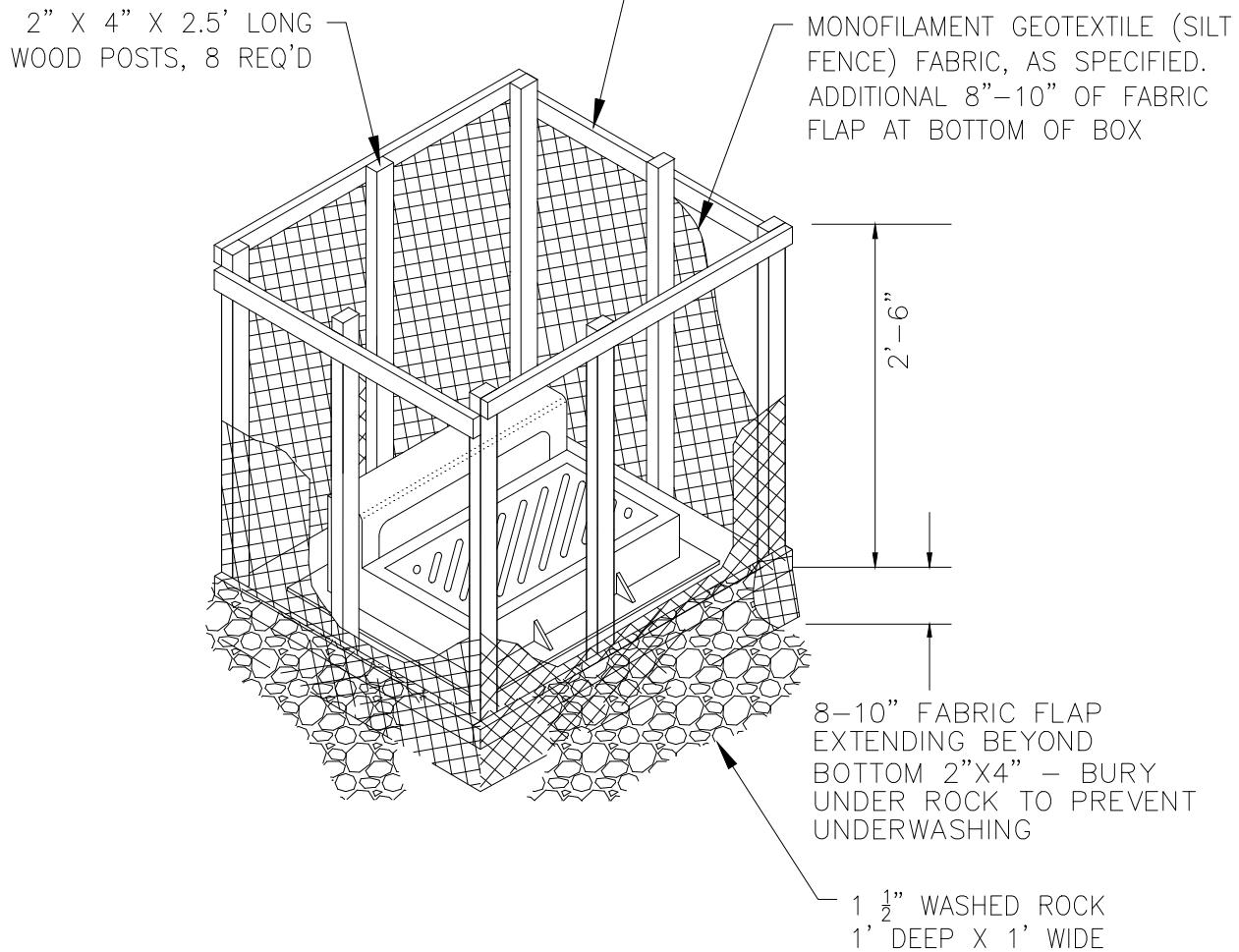
1. DIG 6" X 6" TRENCH
2. LAY BLANKET IN TRENCH
3. STAPLE AT 1.5' INTERVALS
4. BACKFILL WITH NATURAL SOIL AND COMPACT





NOTE: DOUBLE SILT CURTAINS SHOULD BE SPACED 10' APART.

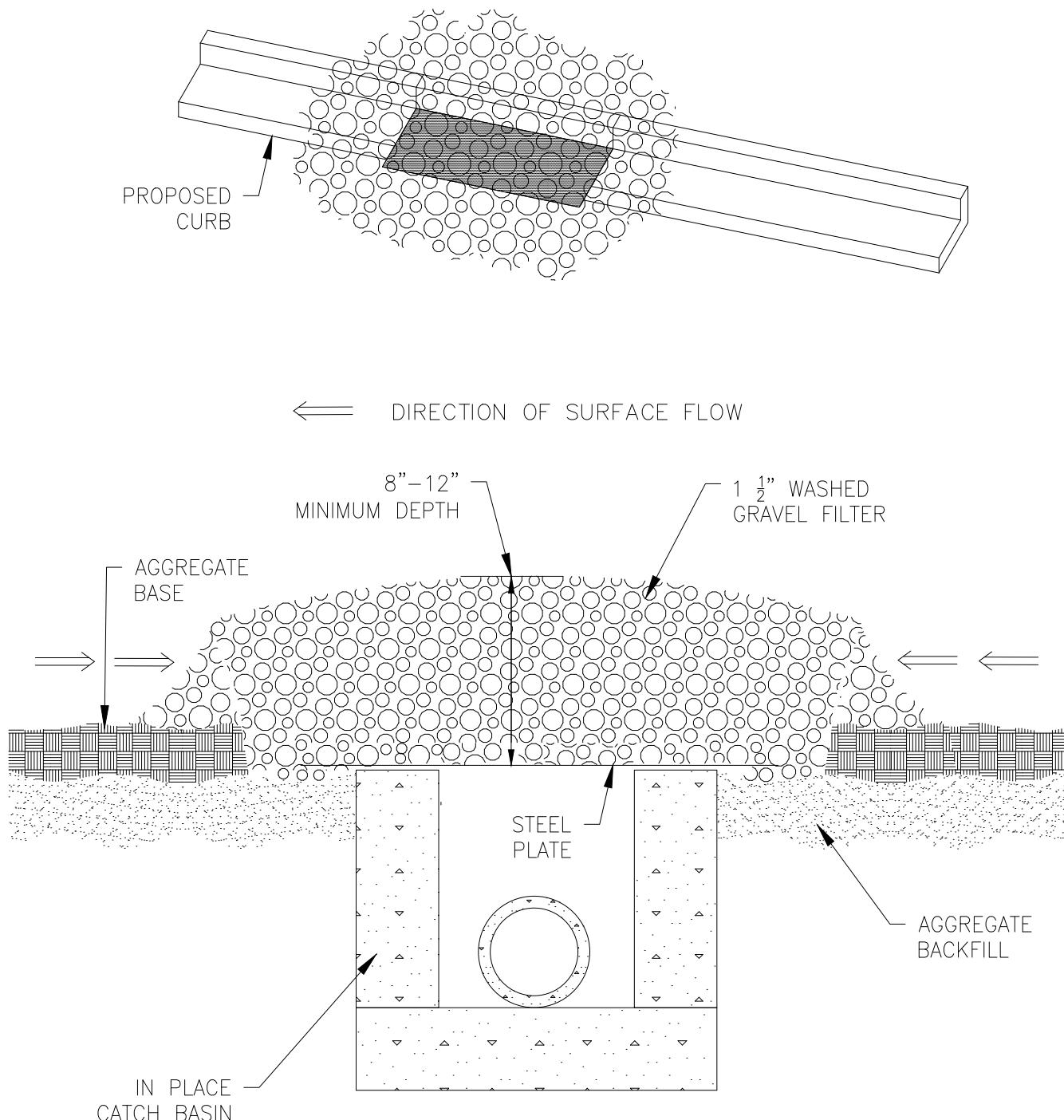
WOODEN LATH SHALL BE NAILED SECURELY TO THE POST MEMBER TO SECURE FILTER FABRIC.

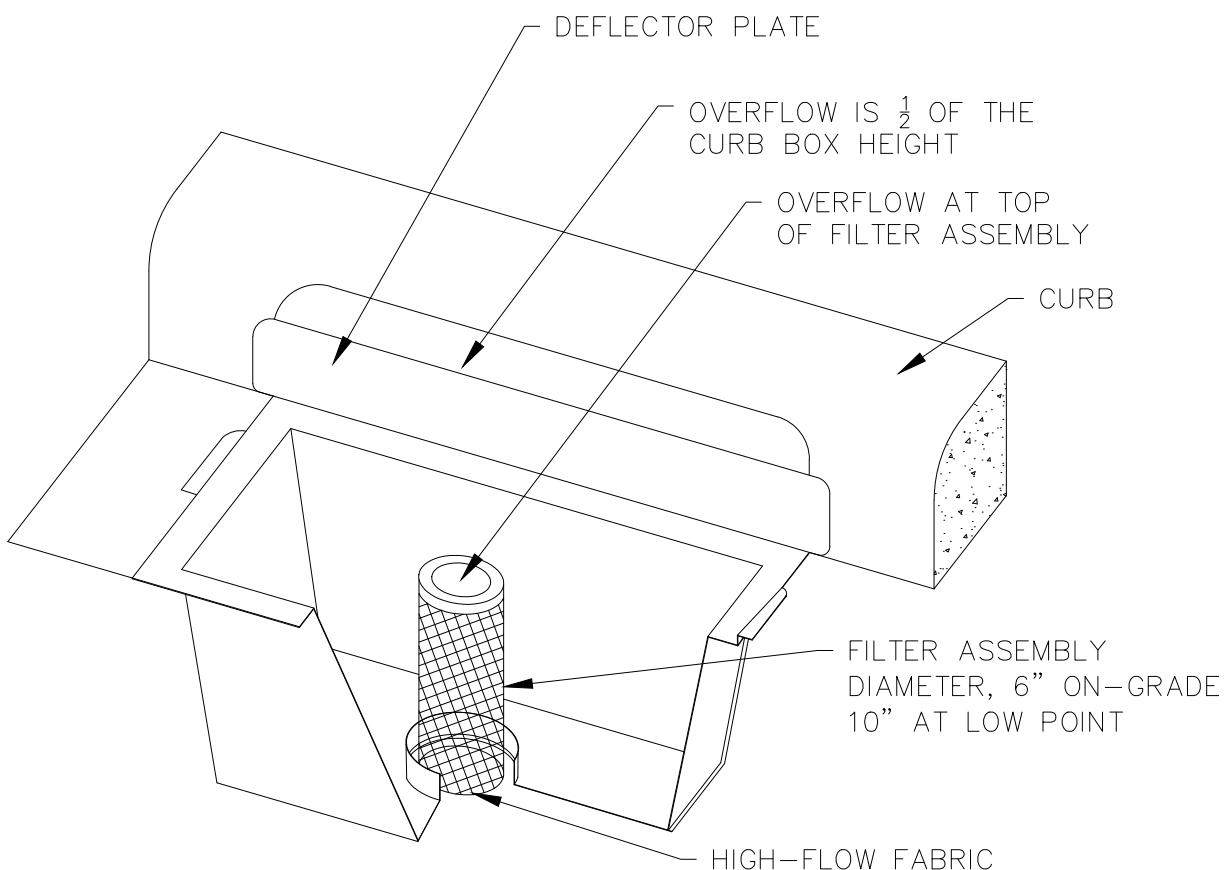
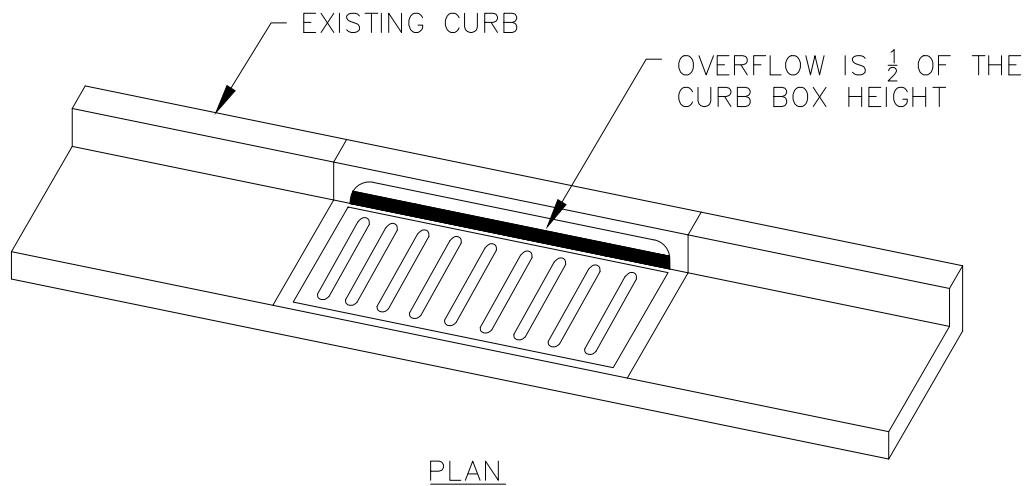


NOTES:

CONTRACTOR SHALL CONSTRUCT SILT BOX TO FIT AROUND THE INLET STRUCTURE WITH 6" MINIMUM CLEARANCE TO EDGES OF STRUCTURE. SILT BOX TO BE PLACED ON AN EVEN SURFACE 6" BELOW STRUCTURE OPENING. TOP OF SILT BOX TO EXTEND 18" MINIMUM ABOVE EXISTING GRADE.

PLAN





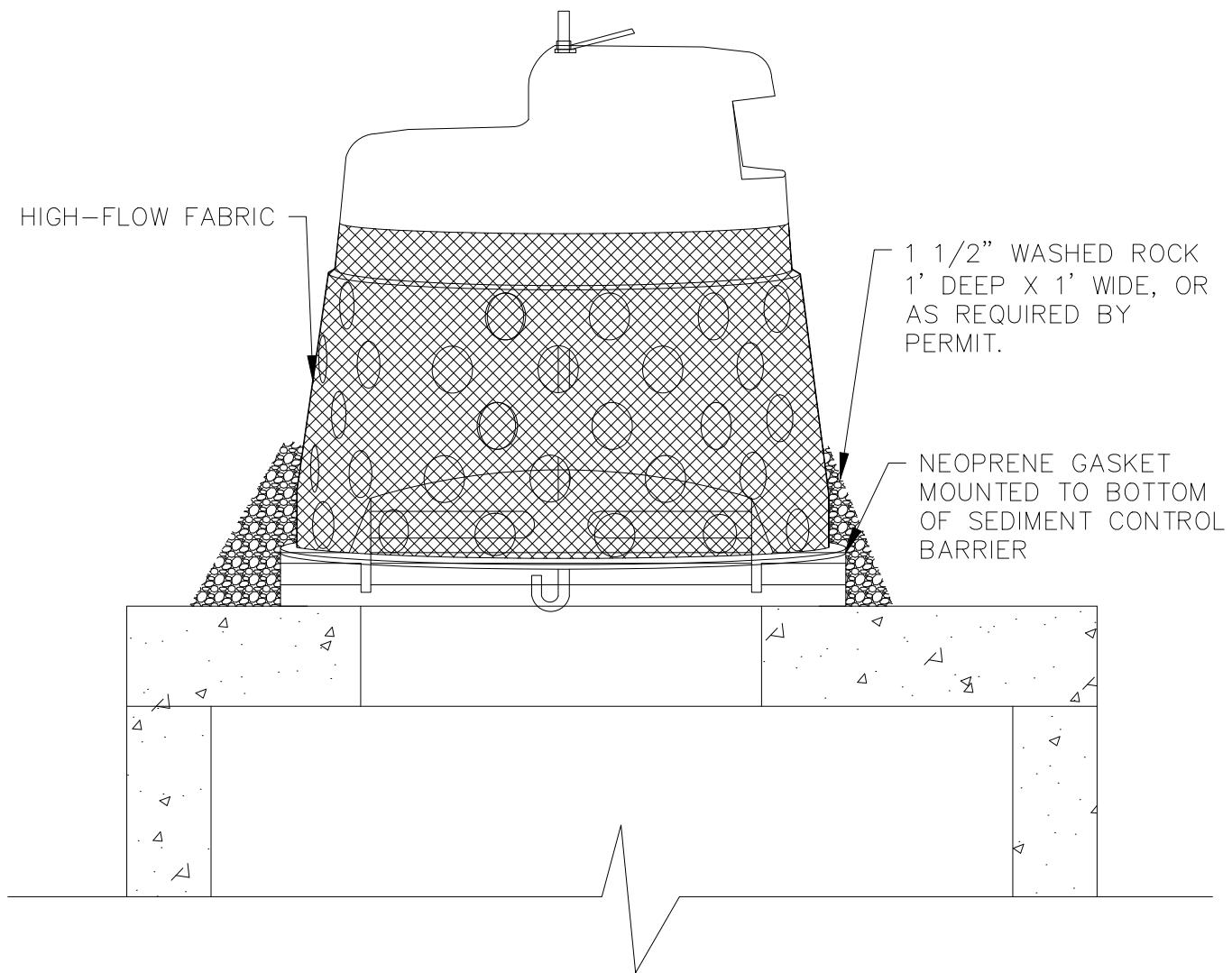
WIMCO ROAD DRAIN CG-3067 HIGH FLOW  
INLET PROTECTION CURB AND GUTTER  
MODEL OR CITY-APPROVED EQUAL.

CITY OF  
**Dayton**  
Live the difference.  
2025 DETAIL PLATES  
REV.1

INLET PROTECTION  
CATCH BASIN INSERT  
AFTER PAVING

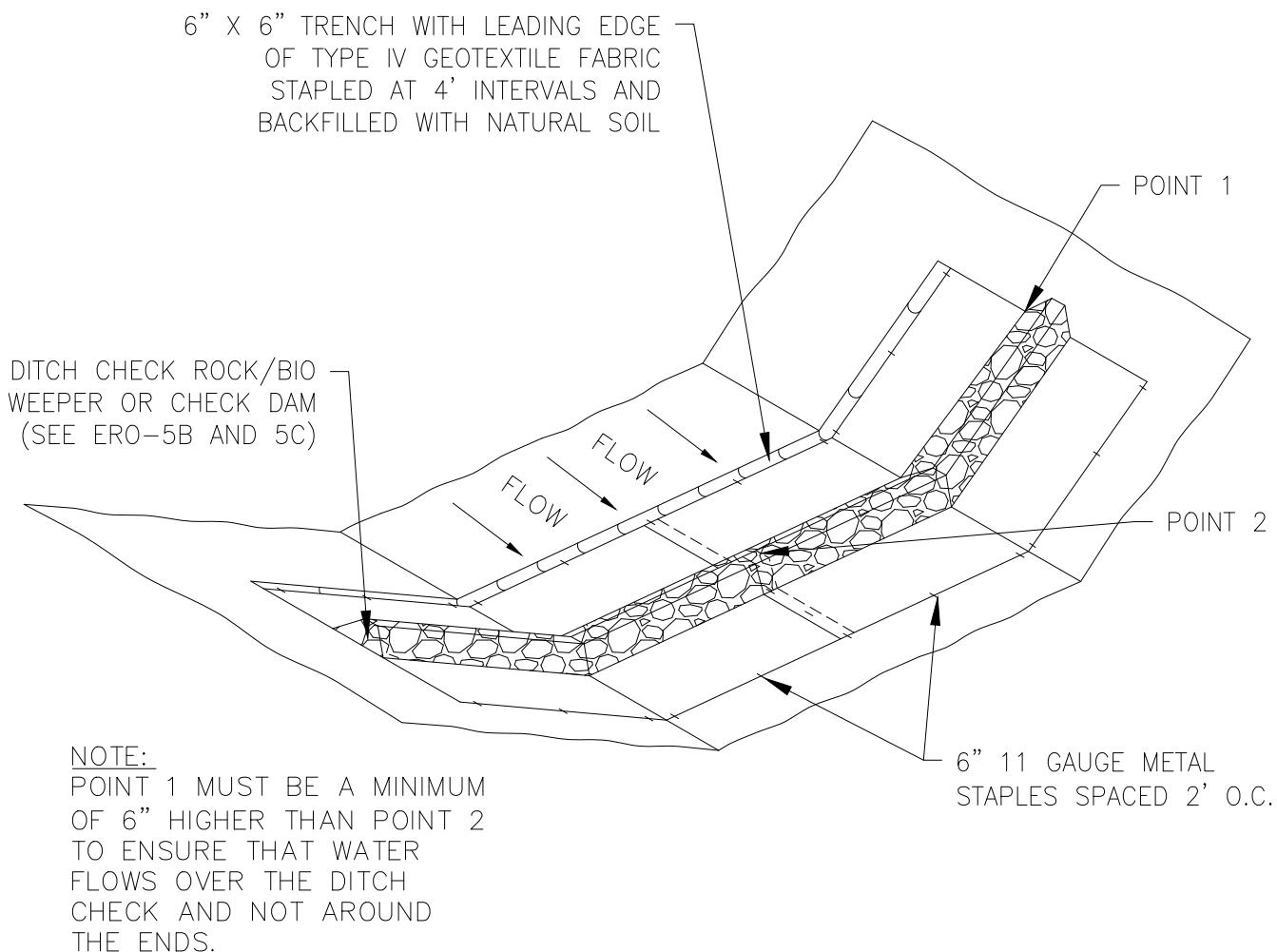
LAST REVISION:  
**OCT 2024**

PLATE NO.  
**ERO-04C**



NOTES:

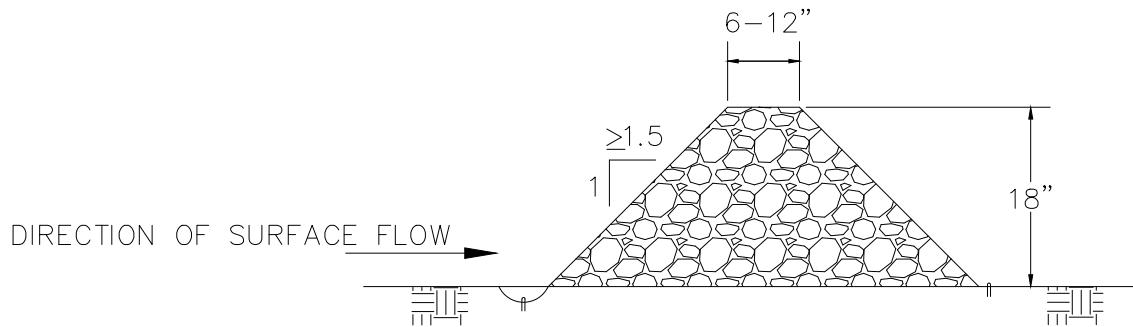
INFRASAFE SEDIMENT CONTROL BARRIER OR CITY-APPROVED EQUAL



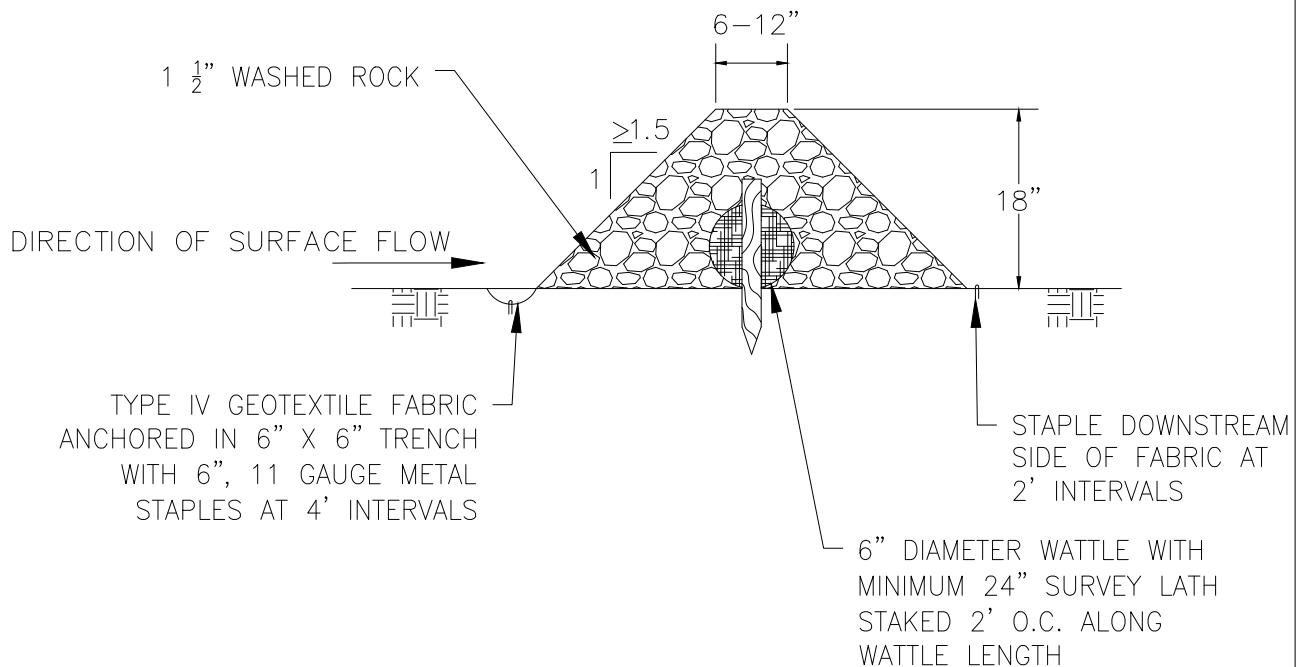
DITCH CHECK SPACING  
(USE FOR DETAILS ERO-5B, 5C, 5D, AND 5E)

DITCH GRADE (%)	INTERVAL (FT)
2	100
4	75
6	50
8	40
10	25
10+	25

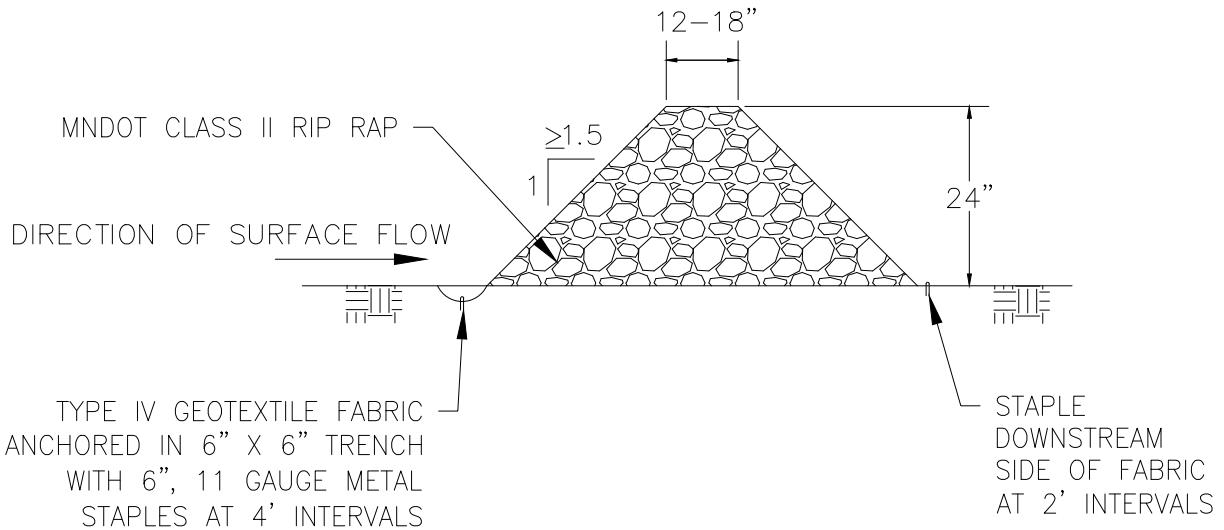
## I. ROCK WEEPER



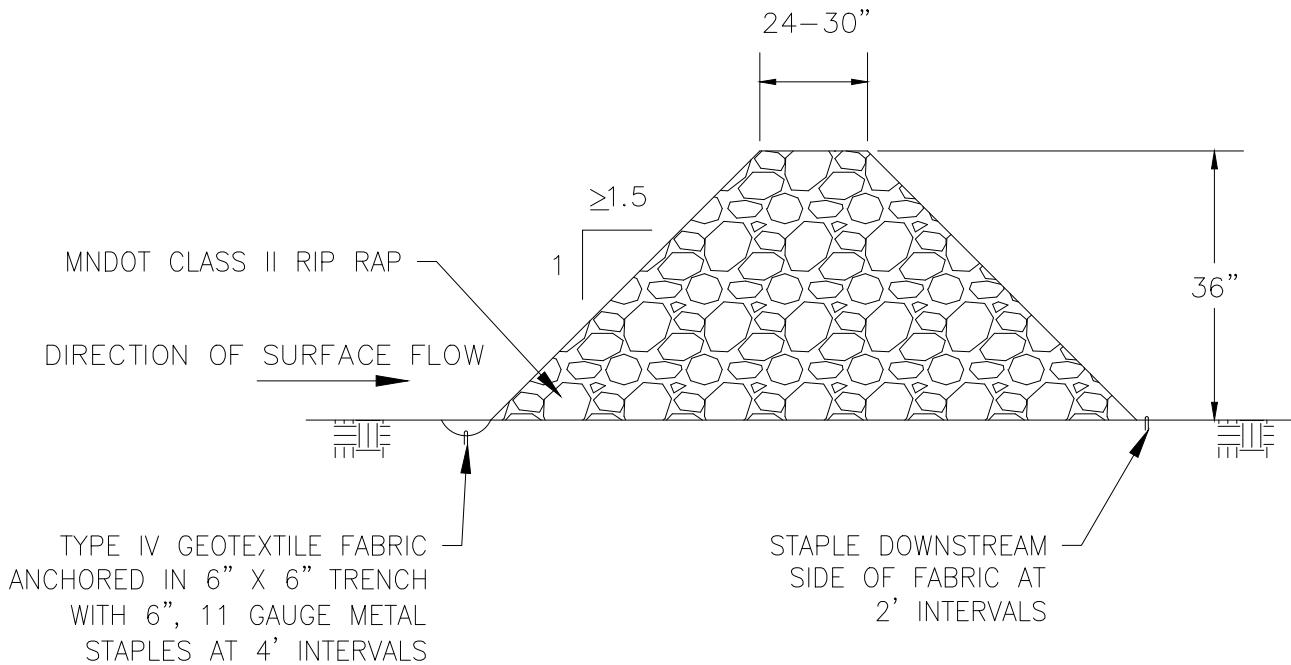
## II. BIO WEEPER



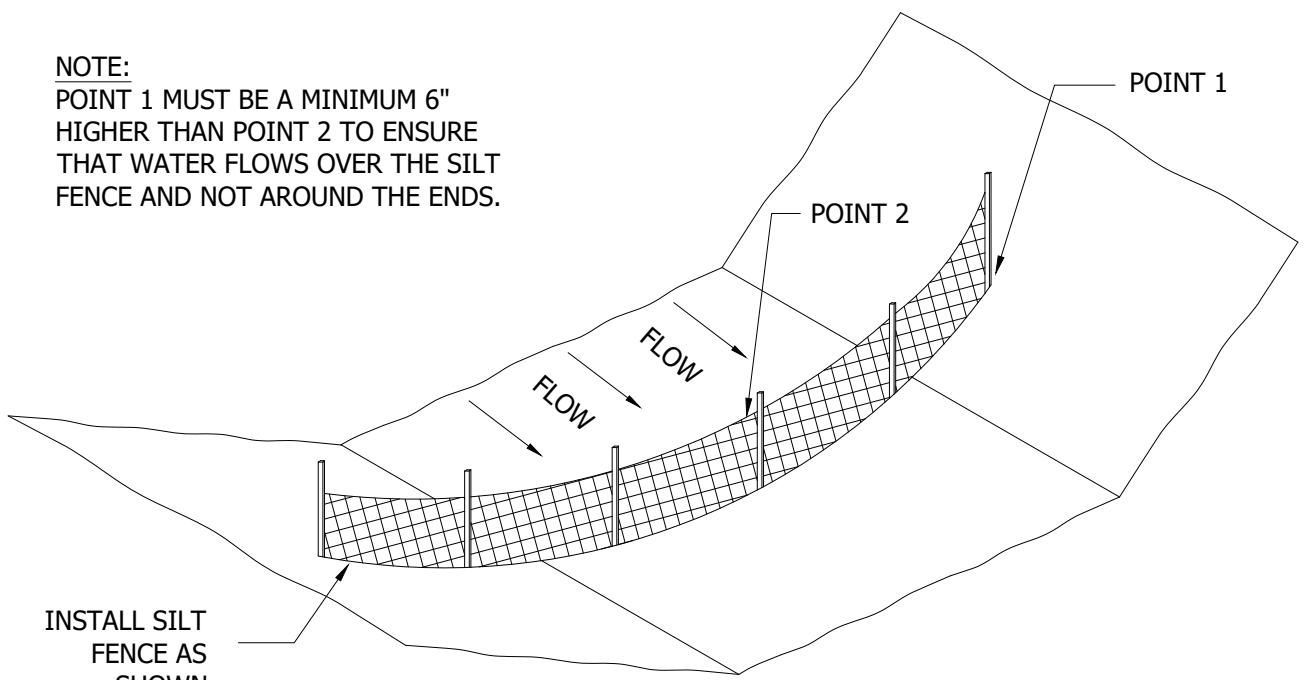
## I. SMALL CHECK DAM



## II. LARGE CHECK DAM



NOTE:  
POINT 1 MUST BE A MINIMUM 6"  
HIGHER THAN POINT 2 TO ENSURE  
THAT WATER FLOWS OVER THE SILT  
FENCE AND NOT AROUND THE ENDS.



INSTALL SILT  
FENCE AS  
SHOWN  
BELOW

STEEL FENCE POST (T-POST),  
MINIMUM 5' LONG,  
4' MAXIMUM SPACING.

POST NOTCHES  
TO FACE AWAY  
FROM FABRIC.

DIRECTION OF  
SURFACE FLOW

ATTACH FABRIC TO POSTS  
WITH MINIMUM 3 ZIP TIES  
(50 LB. TENSILE) PER POST  
IN TOP 8" OF FABRIC.

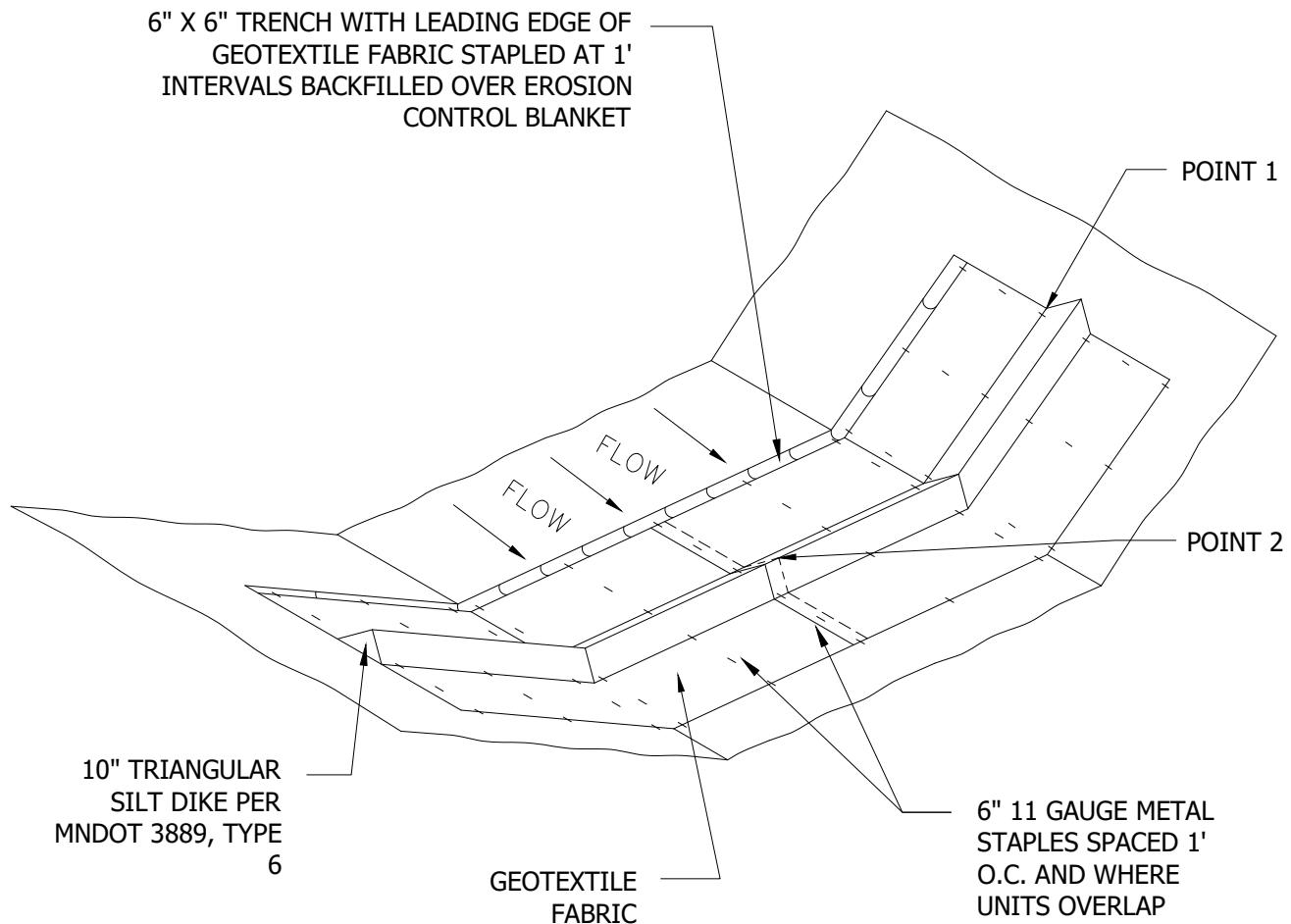
MONOFILAMENT GEOTEXTILE  
FABRIC AS PER MNDOT TABLE  
3886-1 (MACHINE SLICED).

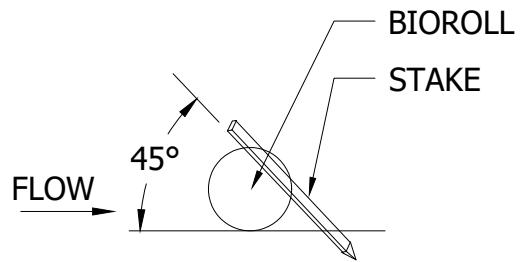
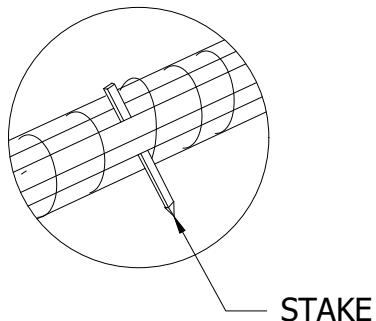
MACHINE SLICE  
8"-12" DEPTH (PLUS 6" FLAP)  
TRENCH MUST BE COMPACTED  
BY LIGHT EQUIPMENT PRIOR TO  
PLACEMENT OF STEEL POSTS.

24" MINIMUM  
POST  
EMBEDMENT

NOTE:

POINT 1 MUST BE A MINIMUM OF 6"  
HIGHER THAN POINT 2 TO ENSURE  
THAT WATER FLOWS OVER THE DIKE  
AND NOT AROUND THE ENDS.

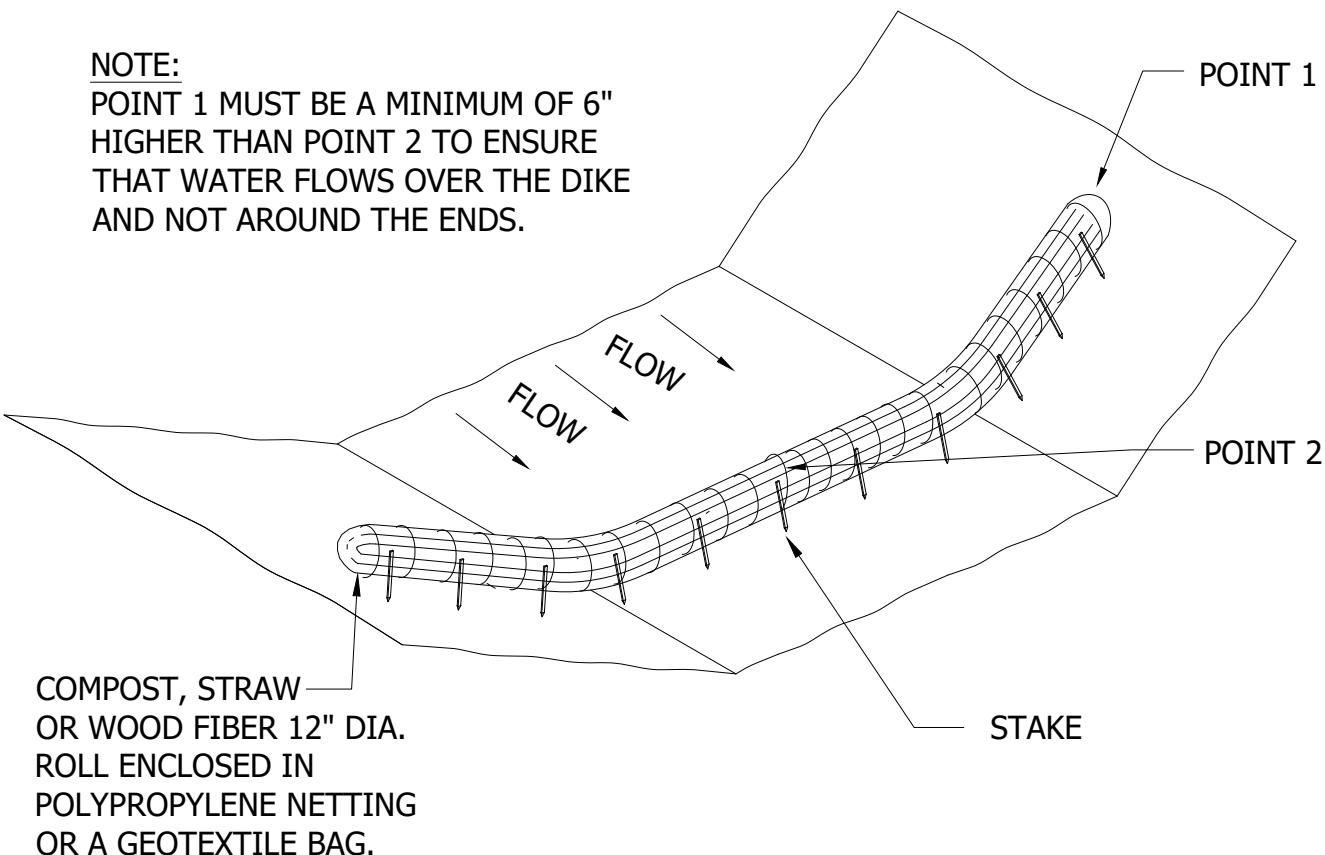


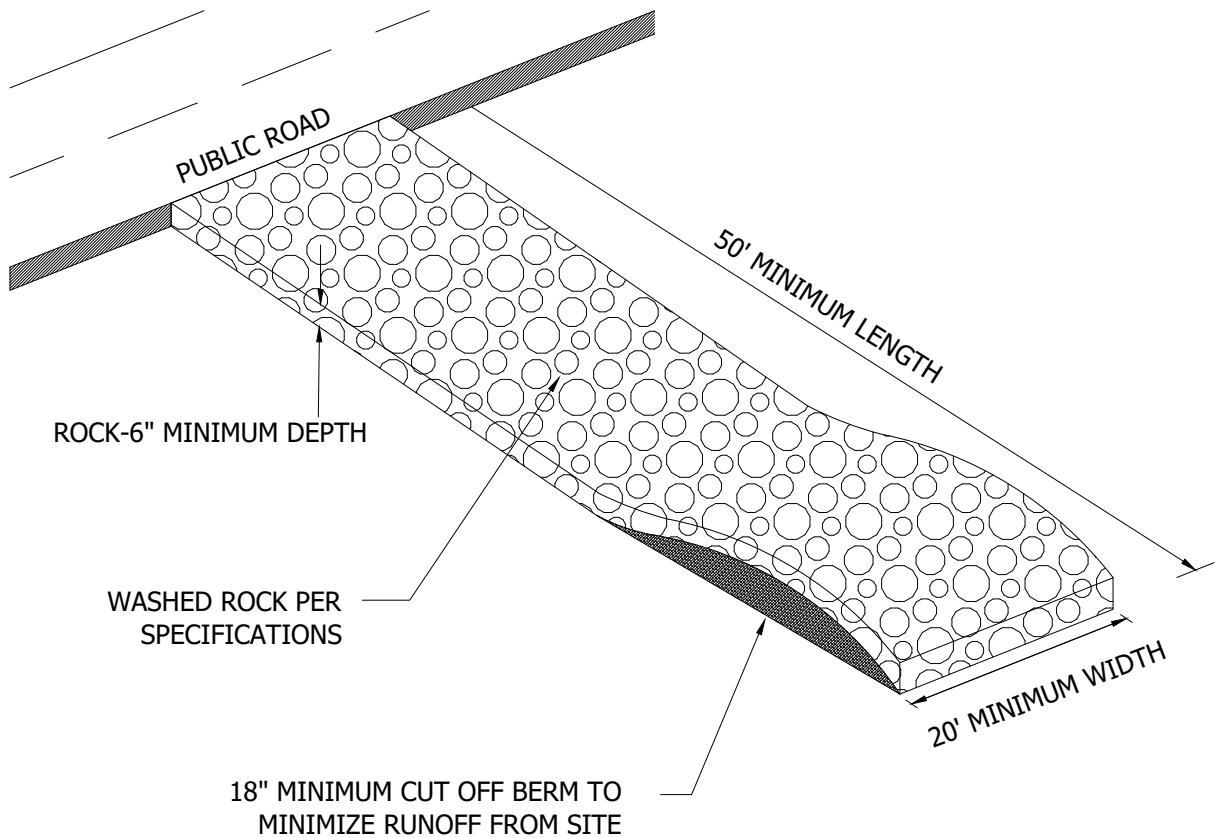


2" x 2" x 16" LONG WOODEN STAKES  
AT 1'-0" SPACING . STAKES SHALL BE  
DRIVEN THROUGH THE BACK HALF OF  
THE FILTER LOG AT AN ANGLE OF 45°  
WITH THE TOP OF THE STAKE  
POINTING UPSTREAM.

NOTE:

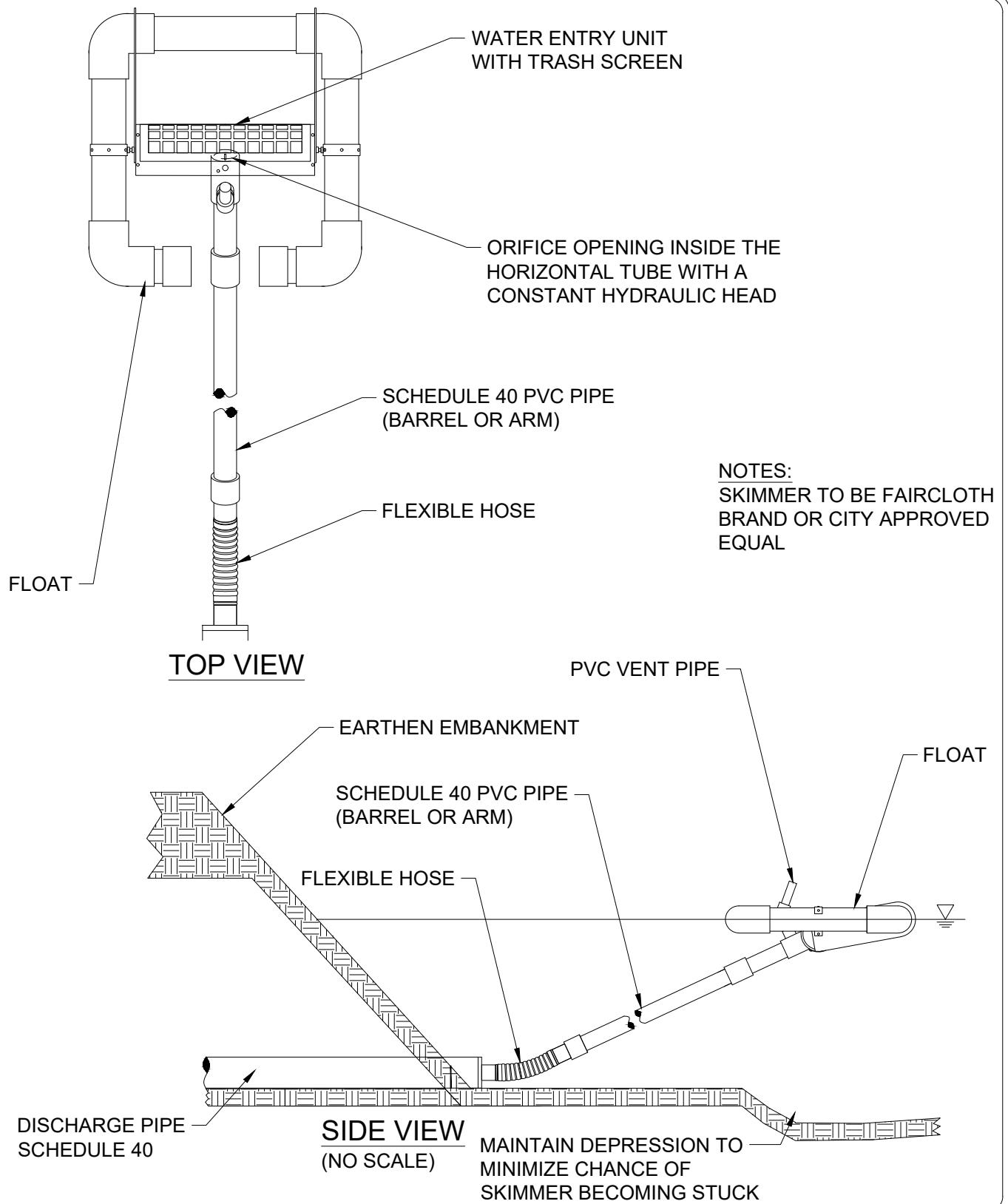
POINT 1 MUST BE A MINIMUM OF 6"  
HIGHER THAN POINT 2 TO ENSURE  
THAT WATER FLOWS OVER THE DIKE  
AND NOT AROUND THE ENDS.





NOTES:

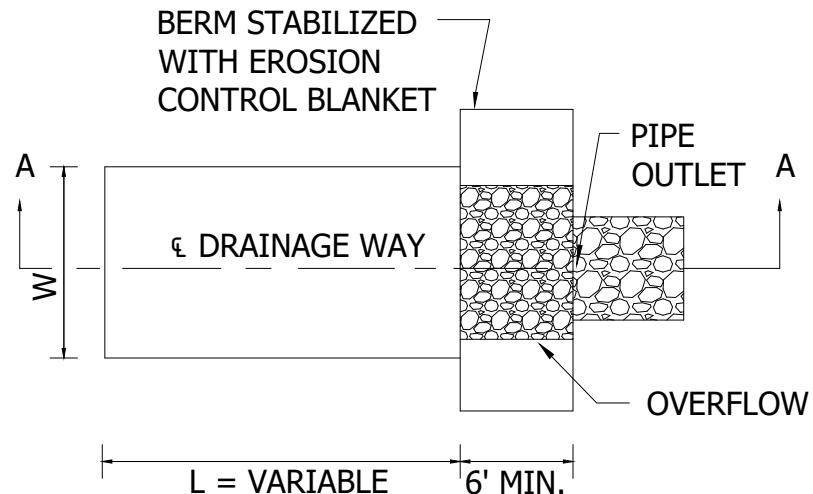
FILTER FABRIC SHALL BE PLACED UNDER ROCK TO  
STOP MUD MIGRATION THROUGH ROCK.  
ENTRANCE MUST BE MAINTAINED REGULARLY TO  
PREVENT SEDIMENTATION ON PUBLIC ROADWAYS.



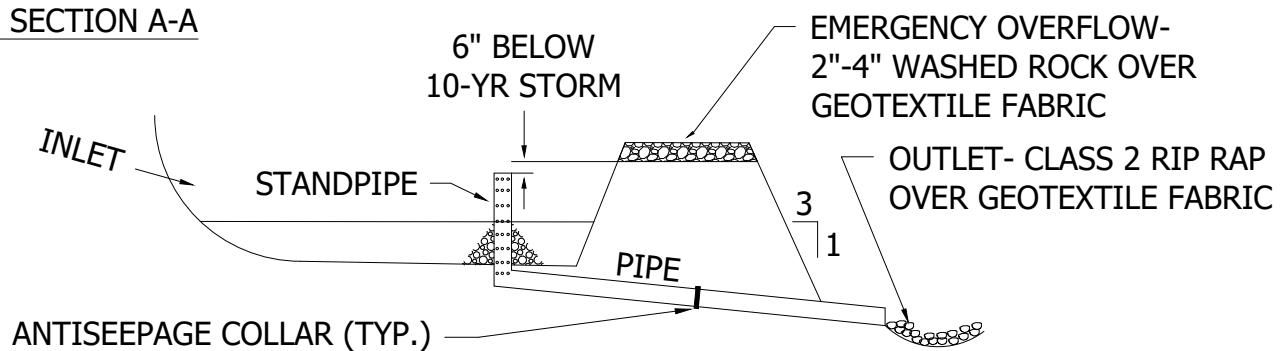
## I. PLAN VIEW

### NOTES:

BASIN USED FOR 10 ACRES DRAINAGE AREA OR MORE. DESIGN RUNOFF VOLUME IS FROM A 2-YR, 24-HR STORM PER ACRE DRAINED TO THE BASIN. BASIN VOLUME MUST BE A MIN. OF 1800 CUBIC FEET/ACRE. SEE PLANS/SPECIFICATIONS FOR BASIN DIMENSIONS AND PIPE SIZE AND SLOPE.



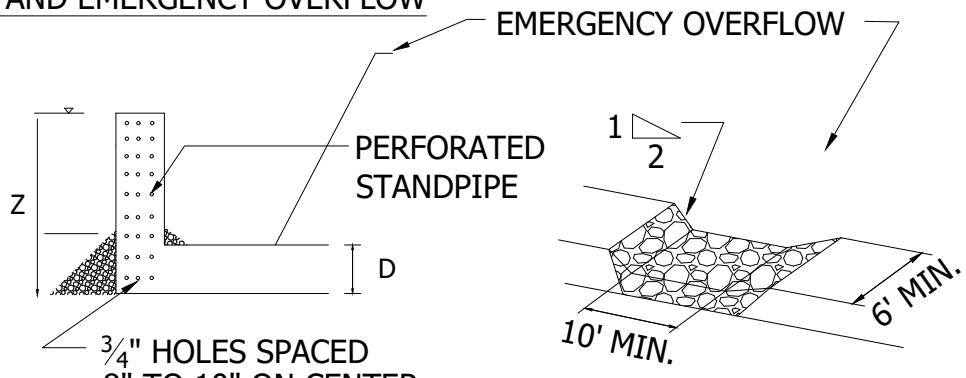
## II. SECTION A-A



## III. BASIN STANDPIPE AND EMERGENCY OVERFLOW

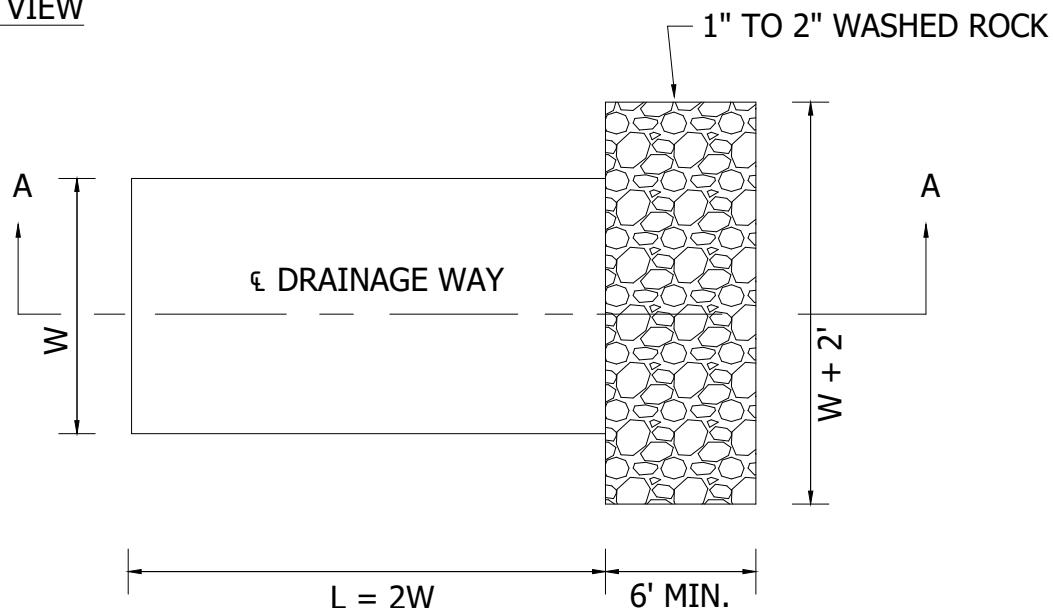
1"-2" DIAM. ROCK,  
CONE EQUAL TO  $\frac{1}{3} Z$

NOTE:  
PIPE MATERIAL  
SHOULD BE RIGID

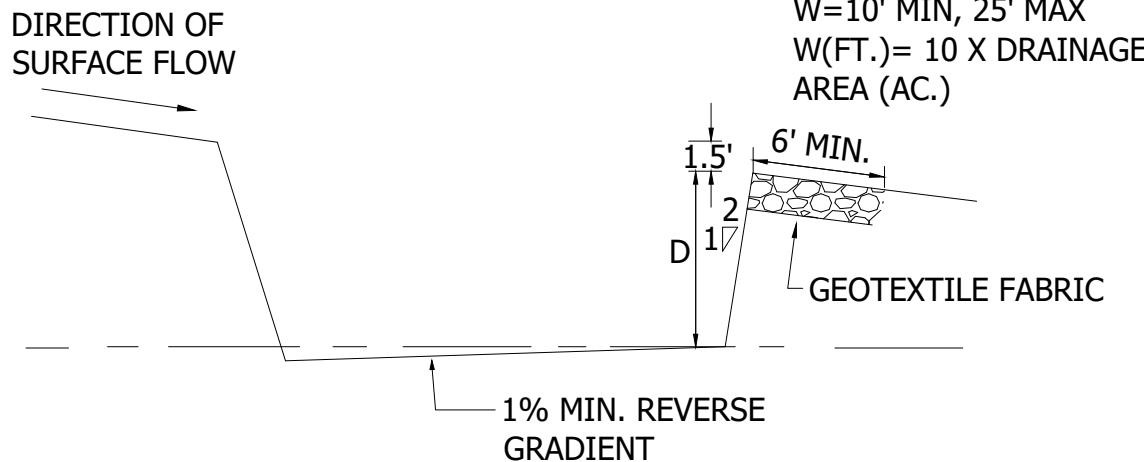


D = DIAMETER OF STANDPIPE  
EQUAL TO DIAMETER OF PIPE

### I. PLAN VIEW



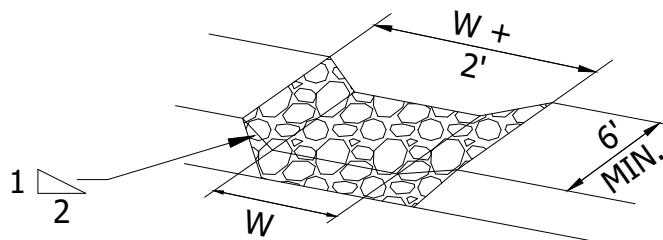
### II. SECTION A-A



NOTE:

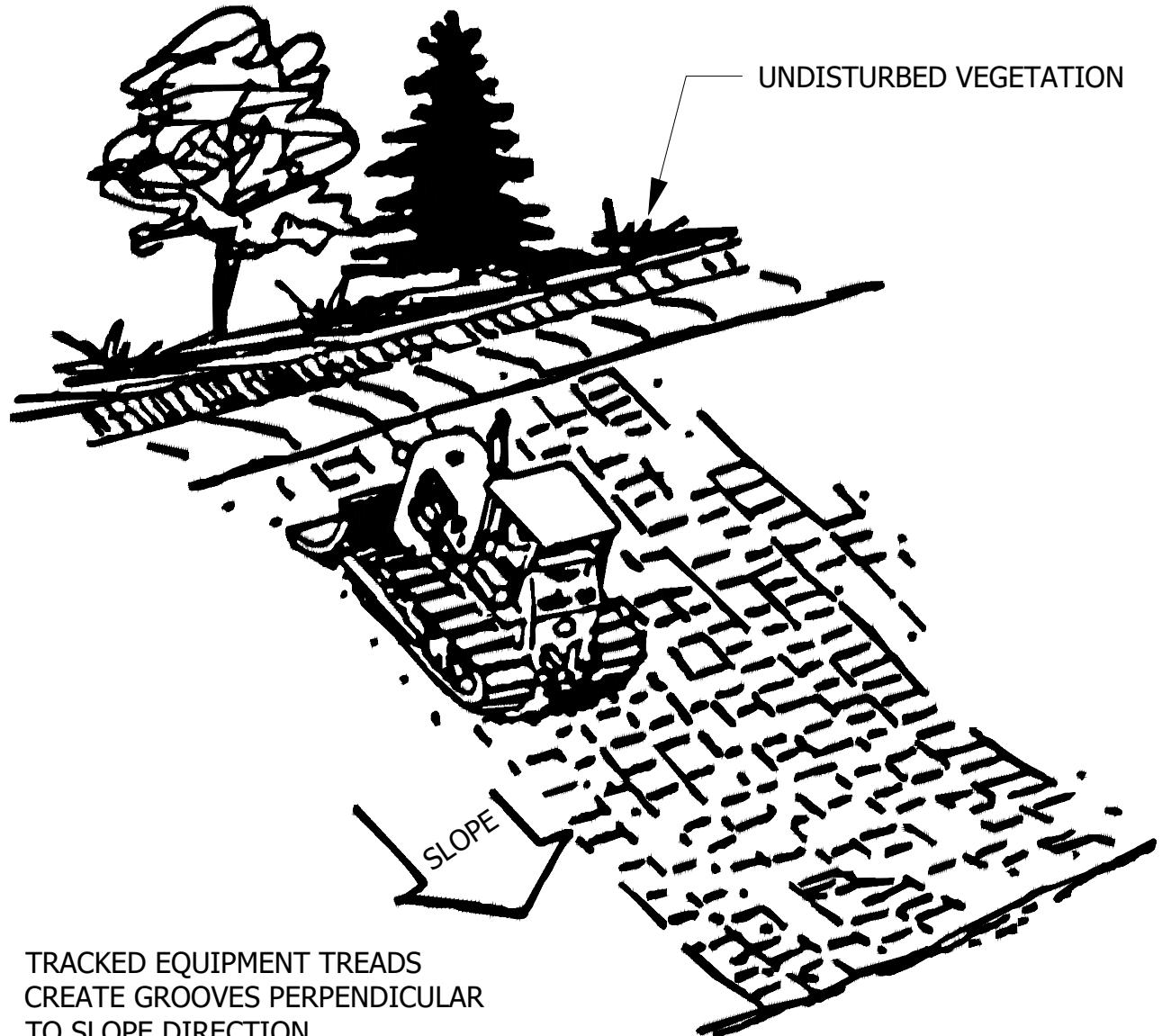
D=3' MIN, 5' MAX  
W=10' MIN, 25' MAX  
W(FT.)= 10 X DRAINAGE AREA (AC.)

### III. TRAP OUTLET



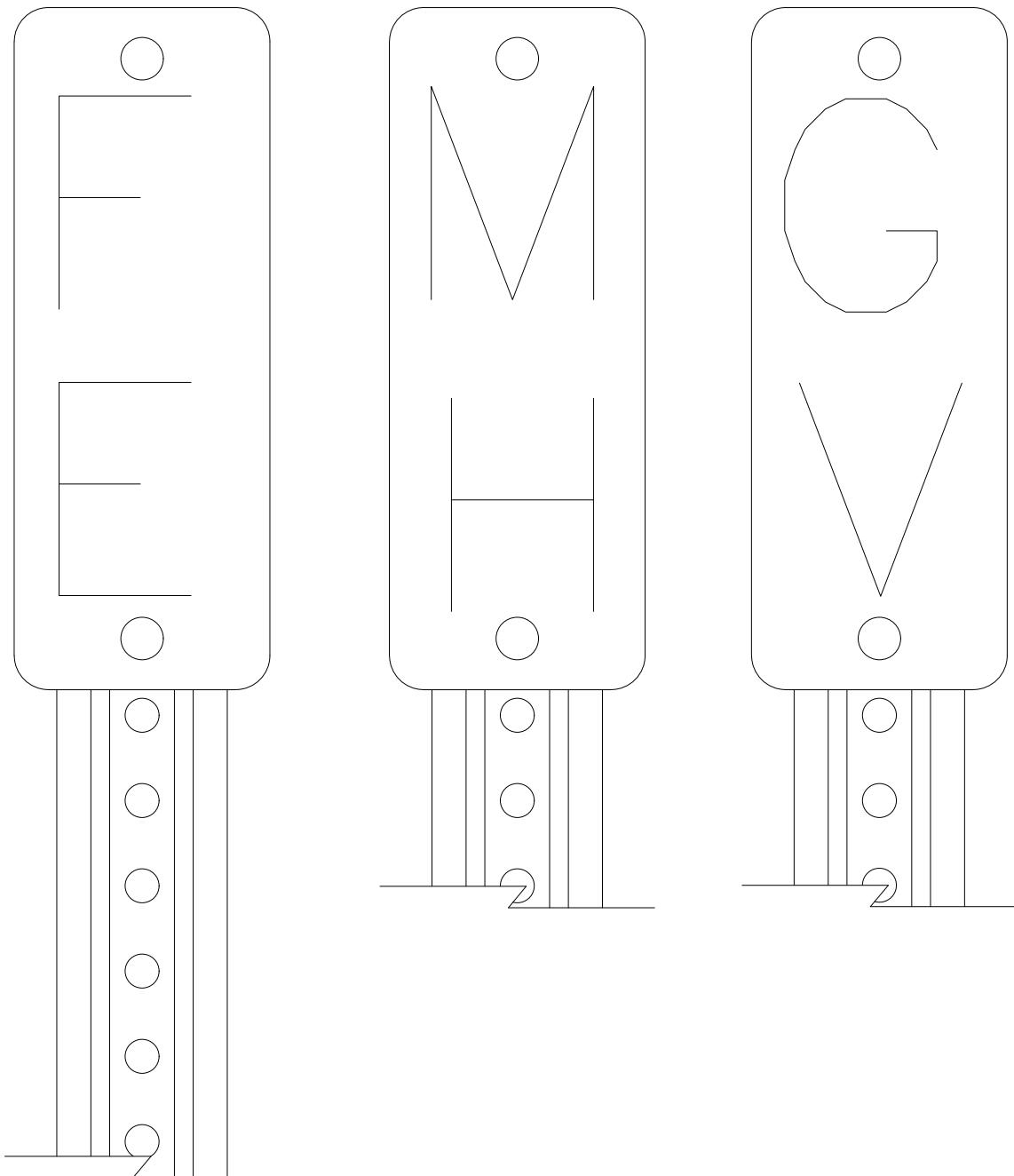
NOTES:

TRAP USED FOR 2.5 ACRES DRAINAGE AREA OR LESS. DESIGN VOLUME IS A MINIMUM OF 1800 CUBIC FEET PER ACRE OF CONTRIBUTING DRAINAGE AREA.

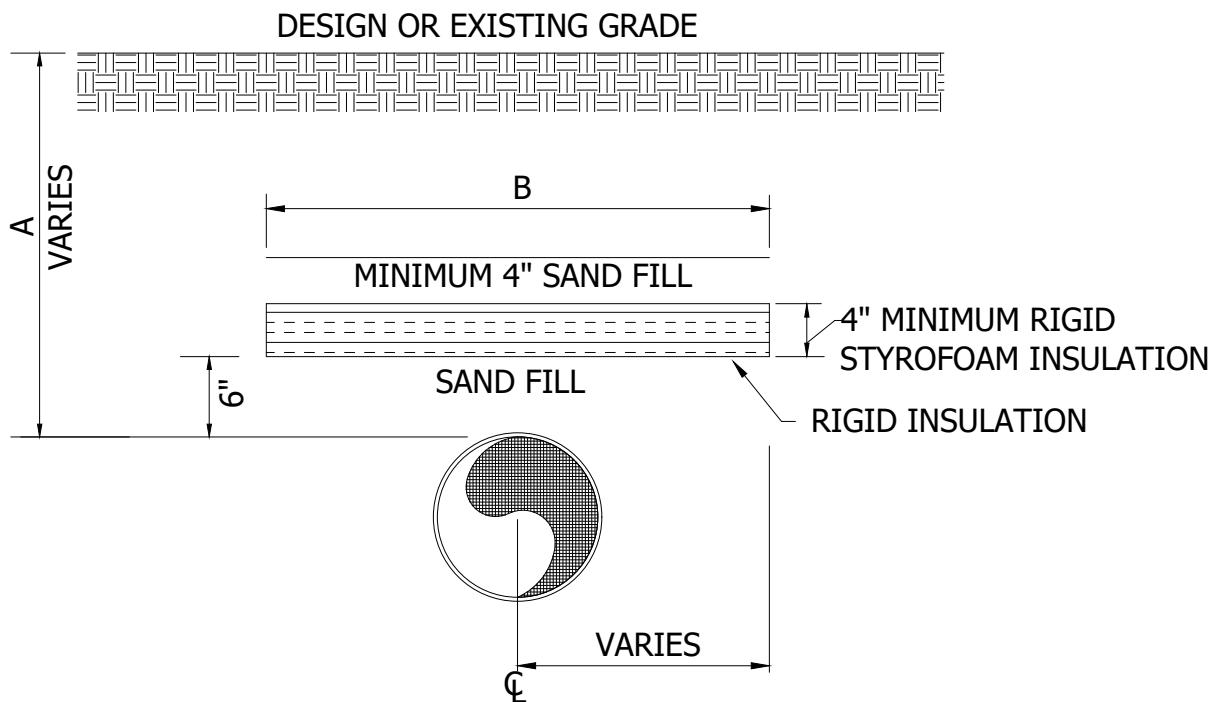


**NOTE:**

ALL SLOPES WITH A GRADE EQUAL TO OR STEEPER THAN 3:1 REQUIRE SLOPE TRACKING. SLOPES WITH A GRADE MORE GRADUAL THAN 3:1 REQUIRE SLOPE TRACKING IF THE STABILIZATION METHOD IS EROSION CONTROL BLANKET OR HYDROMULCH.



0.063" THICK ALUMINUM SIGN. BLACK LETTERS ON WHITE HIGH INTENSITY REFLECTORIZED BACKGROUND U-CHANNEL POST MINIMUM 3LB/FT 6-6" LONG, PAINTED GREEN. PLACED AS DIRECTED BY CITY ENGINEER.



NOTE: PIPE SHALL BE CENTERED UNDER INSULATION UNLESS OTHERWISE SPECIFIED.

COVER OVER PIPE - A

5'

6'

WIDTH OF INSULATING BOARD - B

8'

4'

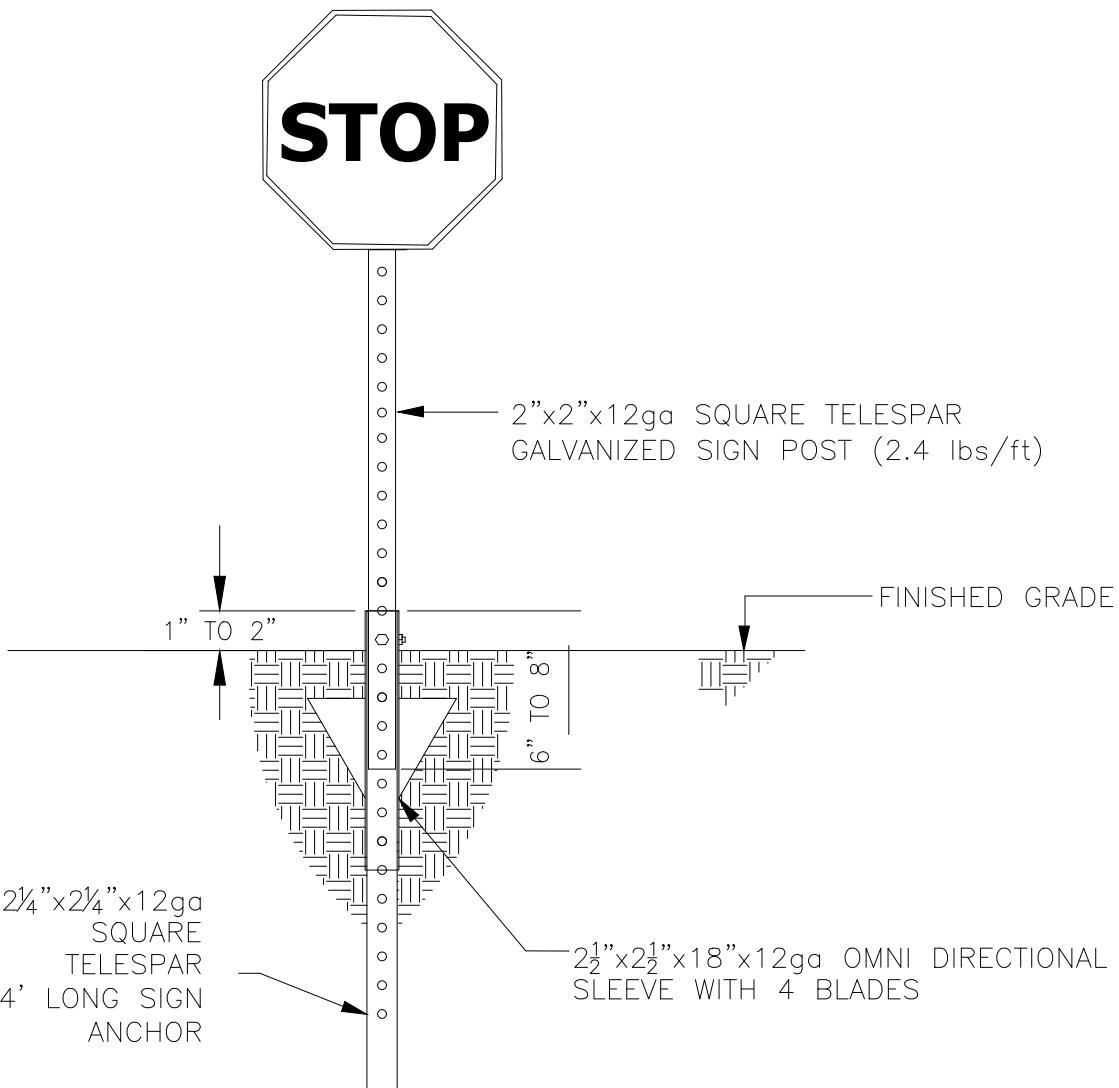
NO PARKING BY  
ORDER OF  
PUBLIC WORKS  
DEPARTMENT  
SEAL COATING  
PROJECT

DATE: \_\_\_\_\_

WOOD LATHE

NOTE: SIGNS TO BE INSTALLED AT 100' SPACING ON BOTH SIDES OF THE STREET.

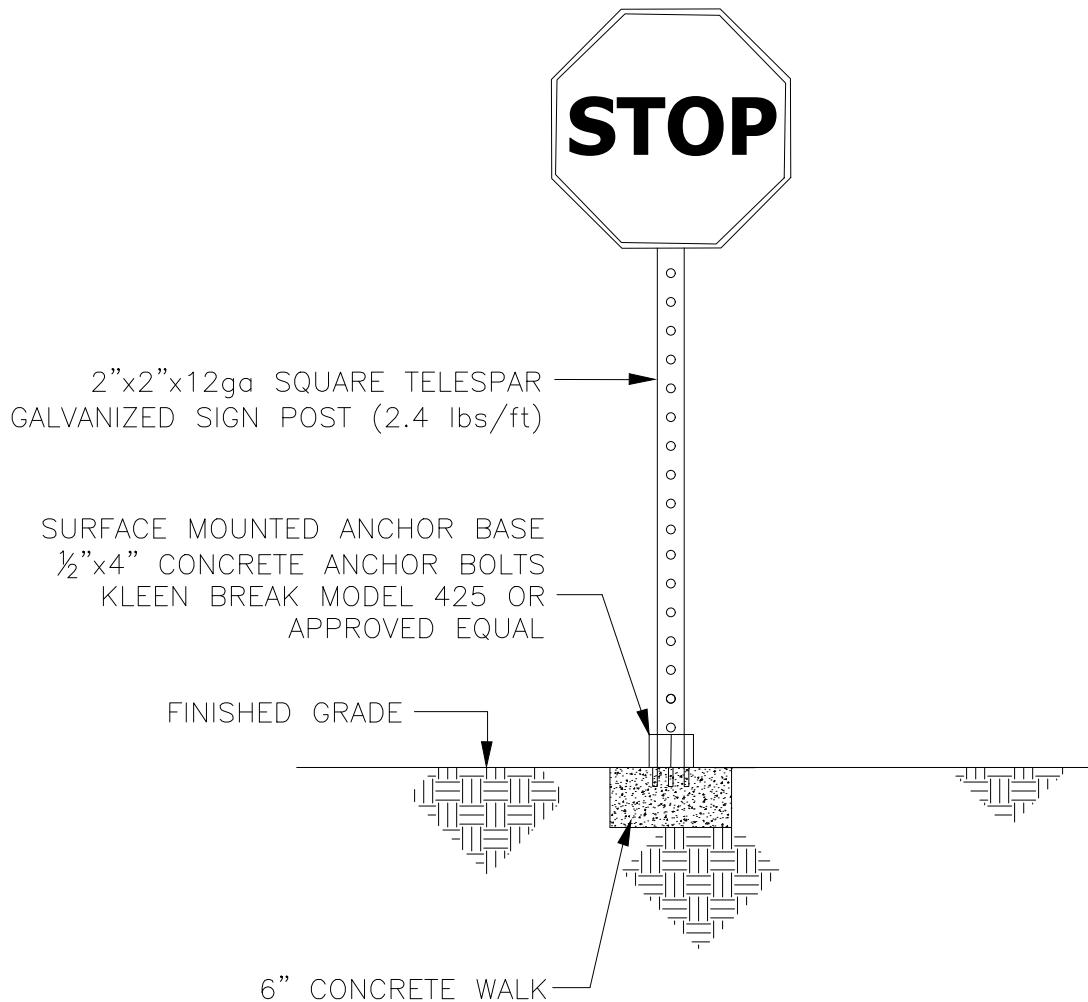
SIGN NAME	DESIGNATION	SIZE
STOP	R1-1	30"X30"
YIELD	R1-2	36"X36"X36"
SPEED LIMIT	R2-1	24"X30"



NOTE:

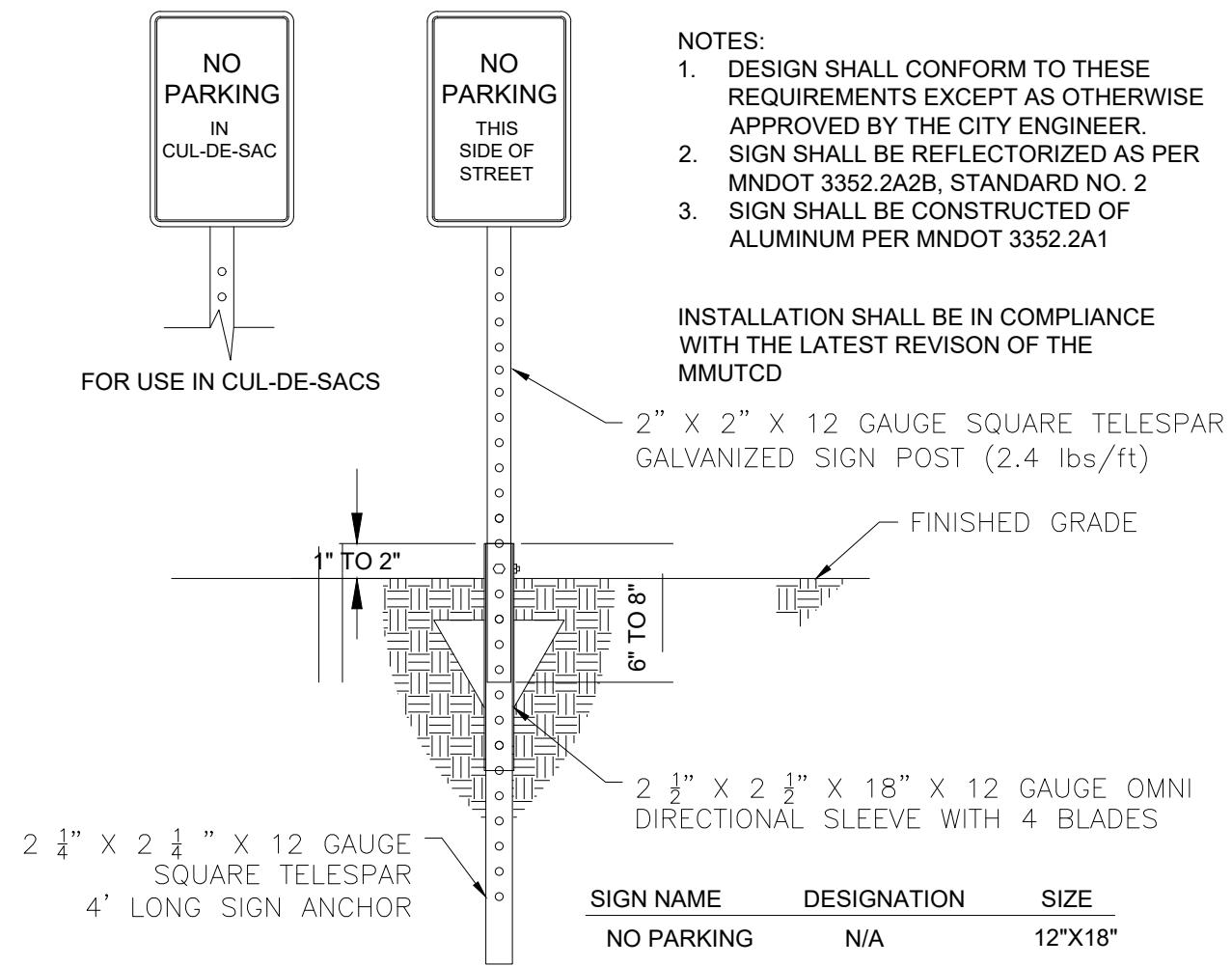
1. DESIGN SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY ENGINEER.
2. SIGN SHALL BE REFLECTORIZED AS PER MNDOT 3352.2A2B, STANDARD NO. 2.
3. SIGN SHALL BE CONSTRUCTED OF ALUMINUM PER MNDOT 3352.2A1.
4. INSTALLATION SHALL BE IN COMPLIANCE WITH THE LATEST VERSION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

SIGN NAME	DESIGNATION	SIZE
STOP	R1-1	30"X30"
YIELD	R1-2	36"X36"
SPEED LIMIT	R2-1	24"X30"



**NOTE:**

1. DESIGN SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY ENGINEER.
2. SIGN SHALL BE REFLECTORIZED AS PER MNDOT 3352.2A2B, STANDARD NO. 2.
3. SIGN SHALL BE CONSTRUCTED OF ALUMINUM PER MNDOT 3352.2A1.
4. INSTALLATION SHALL BE IN COMPLIANCE WITH THE LATEST VERSION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.



NOTE:

1. INSTALLATION SHALL BE IN COMPLIANCE WITH THE LATEST VERSION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. FOR STREETS WITH SPEED LIMIT GREATER THAN 30 MPH, A 0.75' SIGN WITH 0.5' LETTERS IS REQUIRED.
3. NO PARKING SIGNS TO BE INSTALLED PER APPROVED SIGNAGE PLAN.
4. SIGN SHALL BE CONSTRUCTED OF ALUMINUM PER MNDOT 3352.2A1.
5. WHEN INSTALLED IN CONCRETE USE SURFACE MOUNTED ANCHOR BASE  $\frac{1}{2}'' \times 4''$  CONCRETE ANCHOR BOLTS KLEEN BREAK MODEL 425 OR APPROVED EQUAL. (SEE DETAIL GEN-04A)
6. ALL NO PARKING SIGNS TO BE INSTALLED BACK-TO-BACK.



ALL BRACKETS SHALL BE GOPHER SIGN CO., G-100 SERIES BRACKETS OR APPROVED EQUAL. BRACKET COLOR SHALL BE GREEN ENAMEL.

2 3/8" O.D. GALVANIZED STEEL POST, 10' LONG, 3' TO BE BURIED IN CONCRETE.

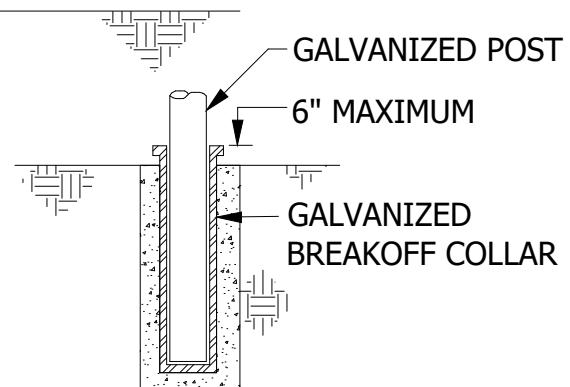
FINISHED GRADE

CONCRETE BASE  
= 3000 PSI  
COMPRESSIVE  
STRENGTH.

ABBREVIATIONS ARE AS FOLLOWS:

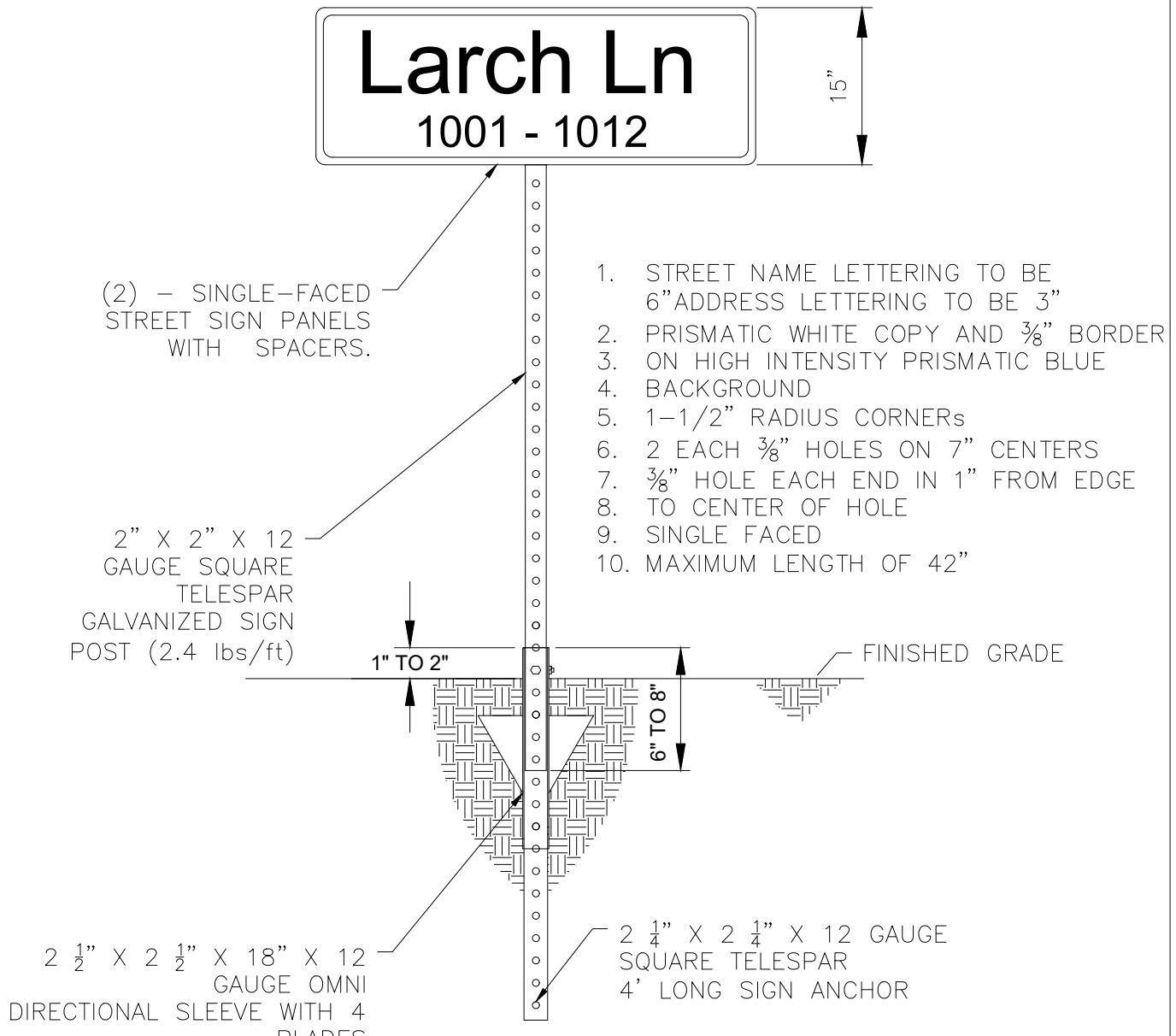
AVENUE = AVE  
PATH = PATH  
STREET = ST  
COURT = CT  
WAY = WAY  
TRAIL = TRL  
PLACE = PLACE  
CIRCLE = CIR  
DRIVE = DR  
LANE = LN  
BOULEVARD = BLVD  
ROAD = ROAD  
EAST = E

HEIGHT OF SIGN = 0.5 FT.  
HEIGHT OF LETTERS = 0.29 FT.  
LENGTH OF SIGN = MAXIMUM 42 IN.



NOTE:

1. NUMBERED STREETS ARE TO BE WRITTEN OUT WHEN THE NUMBER IS NINETEENTH OR LESS.
2. INSTALLATION SHALL BE IN COMPLIANCE WITH THE LATEST VERSION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
3. ON STREETS WITH SPEED LIMIT GREATER THAN 30 MPH, A 9" SIGN WITH 6" LETTERS IS REQUIRED.
4. SIGN SHALL BE ALUMINUM PLATE WITH REFLECTORIZED WHITE LETTERS ON A GREEN BACKGROUND WITH TYPE AP BORDER STYLE.
5. TYPICALLY INSTALLED AT SOUTHWEST CORNER OF INTERSECTION. ALL EQUALS MUST BE APPROVED BY CITY ENGINEER BEFORE INSTALLATION.
6. SIGN SHALL BE CONSTRUCTED OF ALUMINUM PER MNDOT 3352.2A1.



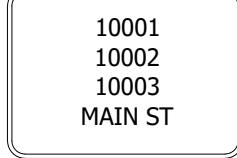
NOTE:

1. INSTALLATION SHALL BE IN COMPLIANCE WITH THE LATEST VERSION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. SIGNS SHALL BE CONSTRUCTED OF ALUMINUM PER MNDOT 3352.2A1.

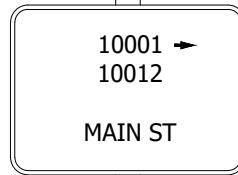
(2) - SINGLE-FACED  
STREET SIGN PANELS  
WITH SPACERS



1. 6" C U/C & L/C HIGH INTENSITY
2. PRISMATIC WHITE COPY AND  $\frac{3}{8}$ " BORDER ON HIGH INTENSITY PRISMATIC BLUE
3. BACKGROUND
4. 1-1/2" RADIUS CORNERS
5. 2 EACH  $\frac{3}{8}$ " HOLES ON 7" CENTERS
6.  $\frac{3}{8}$ " HOLE EACH END IN 1" FROM EDGE
7. TO CENTER OF HOLE
8. SINGLE FACED
9. MAXIMUM LENGTH OF 42"



OR  
RANGE  
WHEN >10



1" TO 2"

2" X 2" X 12 GAUGE SQUARE  
TELESPAR  
GALVANIZED SIGN POST (2.4  
lbs/ft)

FINISHED GRADE

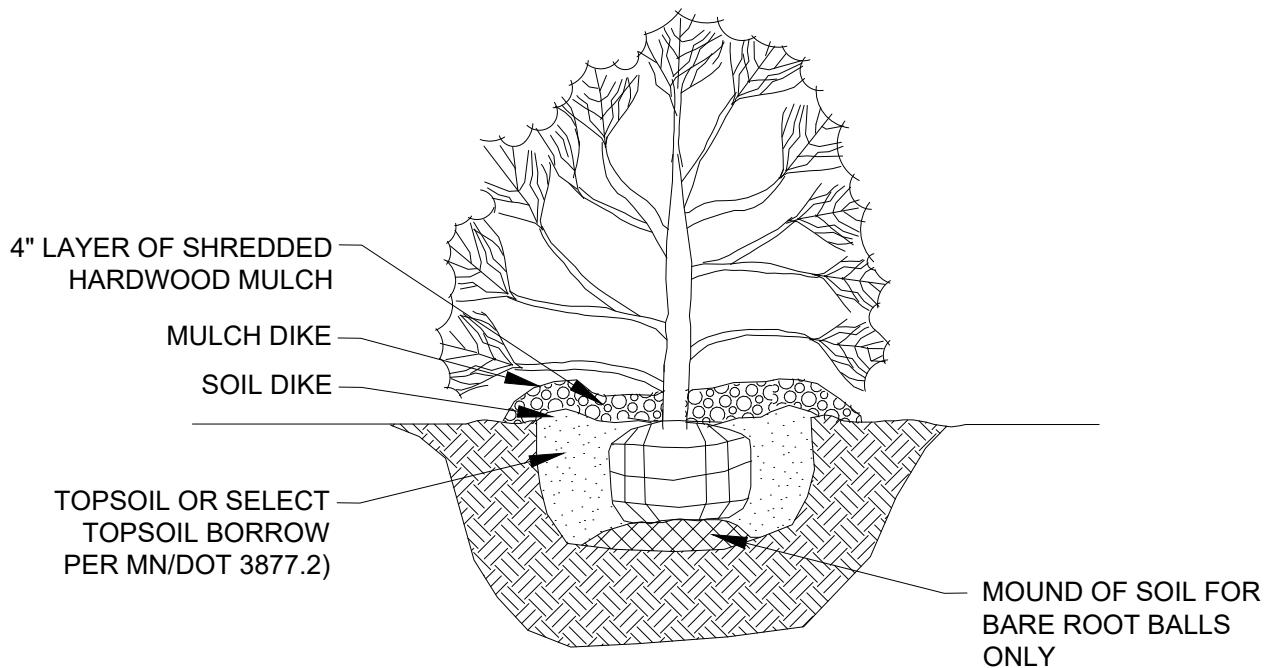
2  $\frac{1}{4}$ " X 2  $\frac{1}{4}$ " X 12 GAUGE  
SQUARE TELESPAR  
4' LONG SIGN ANCHOR

24" x 9" 500-01396  
30" x 9" 500-01573  
36" x 9" 500-01750  
42" x 9" 500-01923

OPTIONAL: 2  $\frac{1}{2}$ " X 2  $\frac{1}{2}$ " X  
18" X 12 GAUGE OMNI  
DIRECTIONAL SLEEVE WITH 4  
BLADES

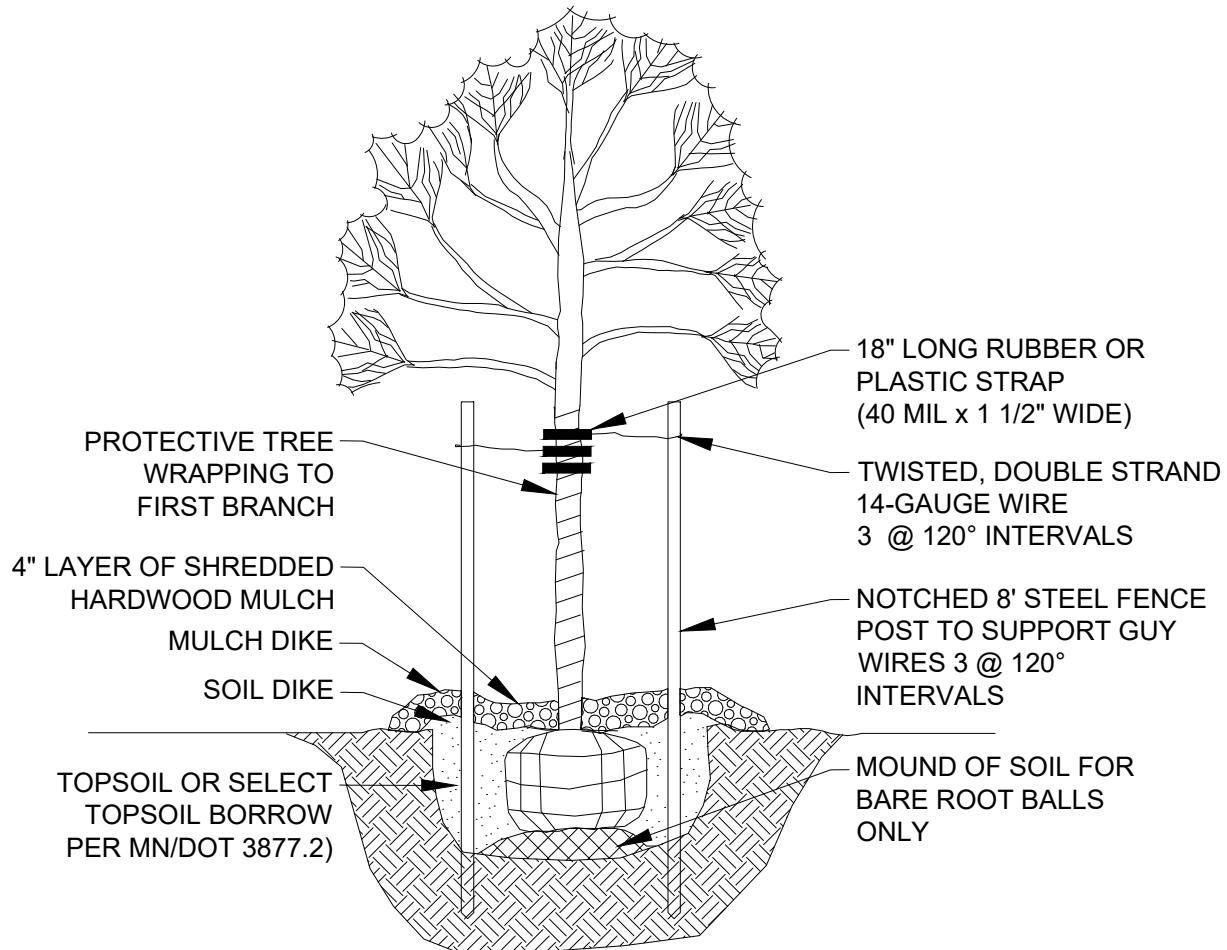
NOTE:

1. INSTALLATION SHALL BE IN COMPLIANCE WITH THE LATEST VERSION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. FOR STREETS WITH SPEED LIMIT GREATER THAN 30 MPH, A 0.75' SIGN WITH 0.5' LETTERS IS REQUIRED.
3. SIGNS SHALL BE CONSTRUCTED OF ALUMINUM PER MNDOT 3352.2A1.



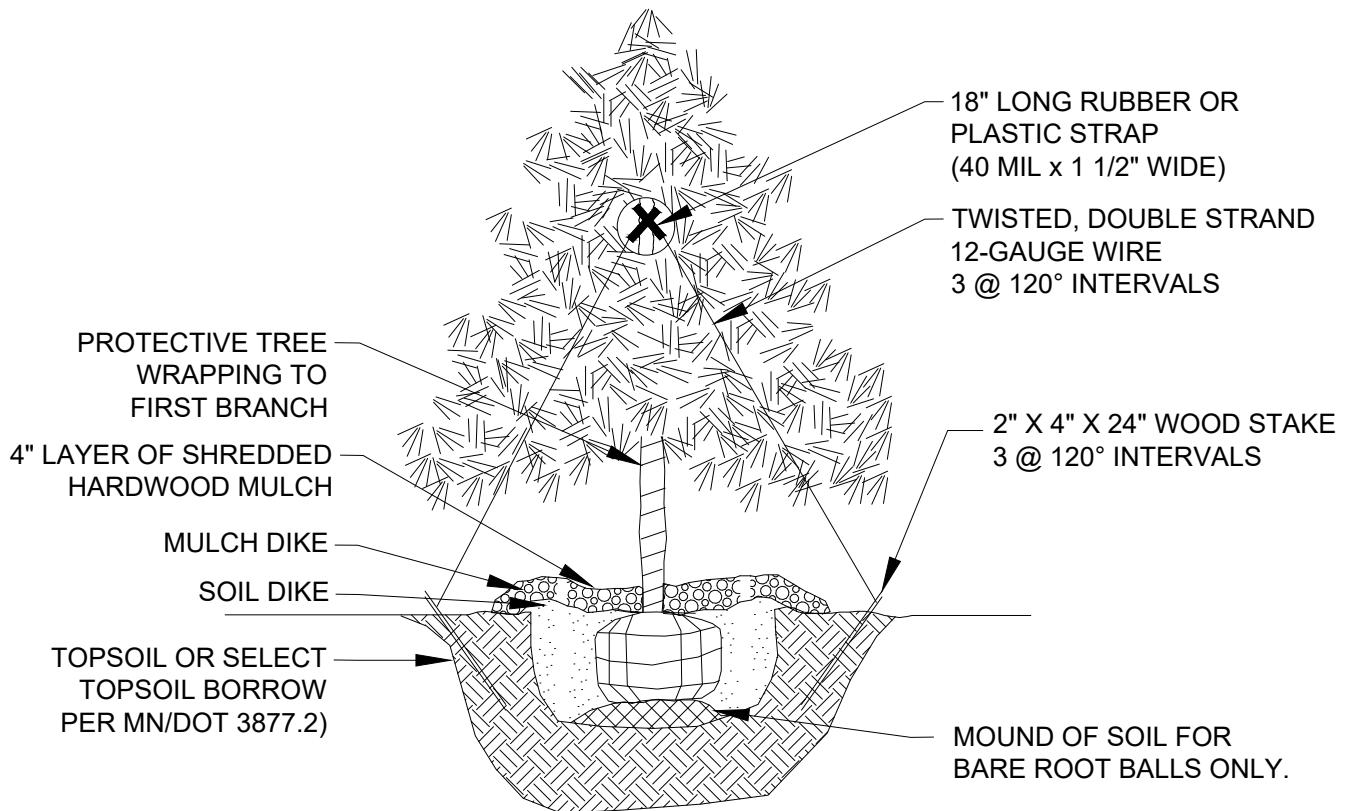
NOTES:

1. PLANTS TO BE INSTALLED AS PER THE AMERICAN ASSOCIATION OF NURSEYMAN (AAN) STANDARD PLANTING PRACTICES.
2. PROVIDE & INSTALL PLANT MATERIALS THAT ARE THE SIZE, TYPE, AND SPECIES INDICATED IN PLANS.
3. BEFORE PLANTING, REMOVE DEAD OR DAMAGED BRANCHES.
4. DIG HOLE TWO TIMES ROOT BALL WIDTH AND 6" DEEPER THAN BALL HEIGHT.
5. SCARIFY BOTTOM OF HOLE.
6. LOOSEN BURLAP COVERING ON ROOT BALL. REMOVE TOP OF BURLAP ON BALLED & BURLAPPED MATERIALS.
7. IF BARE ROOTED, SET BARE ROOT CROWN ON MOUND & SPREAD ROOTS OVER & DOWN SIDES OF MOUND.
8. PLANT TREE SO TOP OF ROOT BALL IS FLUSH WITH TOP OF SOIL.
9. FILL HOLE  $\frac{2}{3}$  FULL OF SOIL & TAMP.
10. FILL REMAINING SPACE WITH WATER AND WAIT FOR IT TO SETTLE.
11. FINISH FILLING HOLE WITH SOIL AND MAKE A SOIL DIKE AROUND ROOT BALL.
12. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO DIGGING AND PLANT INSTALLATION.



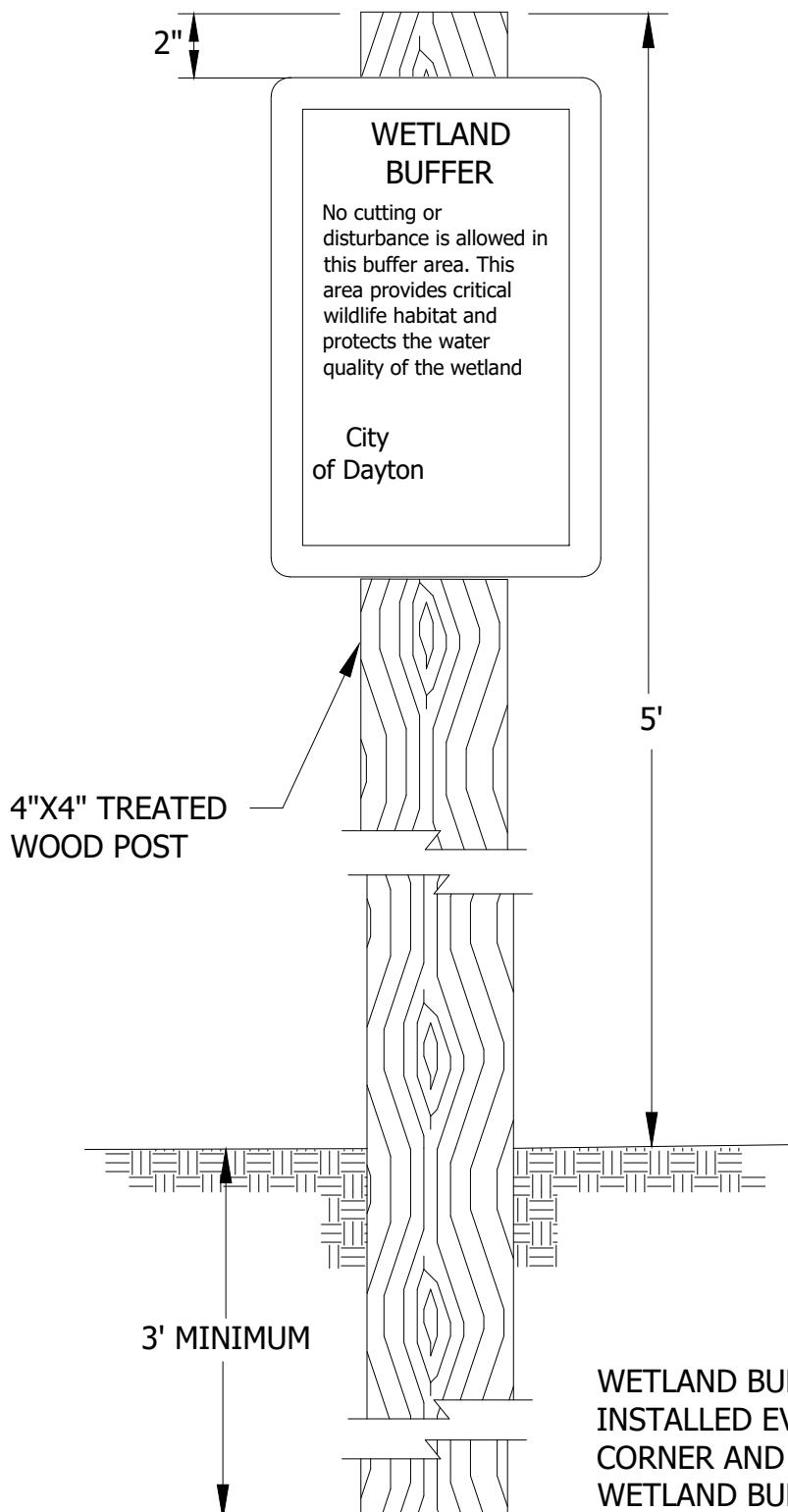
NOTES:

1. PLANTS TO BE INSTALLED AS PER THE AMERICAN ASSOCIATION OF NURSERYMAN (AAN) STANDARD PLANTING PRACTICES.
2. PROVIDE & INSTALL PLANT MATERIALS THAT ARE THE SIZE, TYPE, AND SPECIES INDICATED IN PLANS.
3. BEFORE PLANTING, REMOVE DEAD OR DAMAGED BRANCHES.
4. DIG HOLE 12" LARGER THAN ROOT BALL ON ALL SIDES.
5. SCARIFY BOTTOM OF HOLE.
6. LOOSEN BURLAP COVERING ON ROOT BALL. REMOVE TOP OF BURLAP ON BALLED & BURLAPPED MATERIALS.
7. IF BARE ROOTED, SET BARE ROOT CROWN ON MOUND & SPREAD ROOTS OVER & DOWN SIDES OF MOUND.
8. PLANT TREE SO TOP OF ROOT BALL IS FLUSH WITH TOP OF SOIL.
9. FILL HOLE  $\frac{2}{3}$  FULL OF SOIL & TAMP.
10. FILL REMAINING SPACE WITH WATER AND WAIT FOR IT TO SETTLE.
11. FINISH FILLING HOLE WITH SOIL AND MAKE A SOIL DIKE AROUND ROOT BALL.
12. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UTILITIES PRIOR TO DIGGING AND PLANT INSTALLATION.



NOTES:

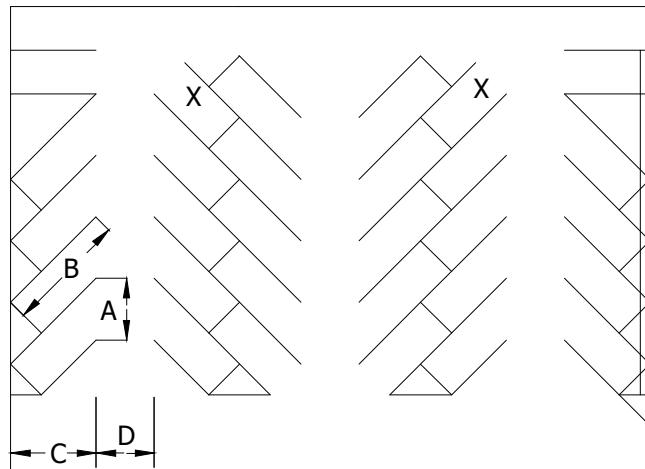
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2. PROVIDE & INSTALL PLANT MATERIALS THAT ARE THE SIZE, TYPE, AND SPECIES INDICATED IN PLANS.
3. BEFORE PLANTING, REMOVE DEAD OR DAMAGED BRANCHES.
4. DIG HOLE TWO TIMES ROOT BALL WIDTH AND 6" DEEPER THAN BALL HEIGHT.
5. SCARIFY BOTTOM OF HOLE.
6. LOOSEN BURLAP COVERING ON ROOT BALL. REMOVE TOP OF BURLAP ON BALLED & BURLAPPED MATERIALS.
7. IF BARE ROOTED, SET BARE ROOT CROWN ON MOULD & SPREAD ROOTS OVER & DOWN SIDES OF MOULD.
8. PLANT TREE SO TOP OF ROOT BALL IS FLUSH WITH TOP OF SOIL.
9. FILL HOLE  $\frac{2}{3}$  FULL OF SOIL & TAMP.
10. FILL REMAINING SPACE WITH WATER AND WAIT FOR IT TO SETTLE.
11. FINISH FILLING HOLE WITH SOIL AND MAKE A SOIL DIKE AROUND ROOT BALL.
12. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UTILITIES PRIOR TO DIGGING AND PLANT INSTALLATION.



NOTE: ALL SIGNS SHALL BE OBTAINED AT CITY HALL

### STALL DETAILS

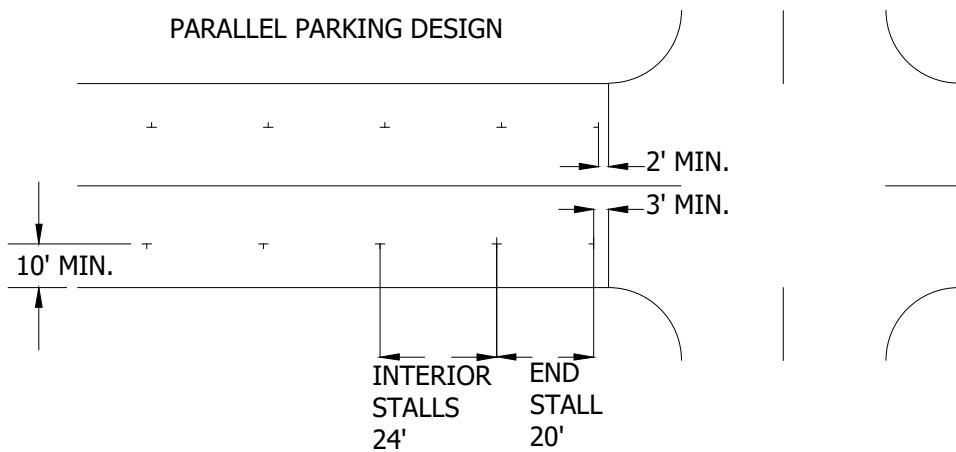
X = STALL  
NOT  
ACCESSIBLE IN  
CERTAIN  
LAYOUTS



PARKING LAYOUT DIMENSIONS (IN FEET)  
FOR 9-FT STALLS AT VARIOUS ANGLES

	ON DIAGRAM	PARKING ANGLE			
		30	45	60	90
STALL WIDTH, PARALLEL TO AISLE	A	18.0	12.7	10.5	10.0
STALL LENGTH OF LINE	B	15.1	17.3	18.2	20.0
STALL DEPTH, TO WALL	C	17.4	19.9	21.0	20.0
AISLE WIDTH, ONE-WAY	D	12.0	13.0	18.0	24.0
AISLE WIDTH, TWO-WAY	-	24.0	24.0	24.0	24.0

### PARALLEL PARKING DESIGN



MANDREL SIZE

SDR 35 (DEPTH < 16')				
PIPE SIZE (IN)	DEFLECTION TEST		AIR TEST	
	BASE I.D. (IN)	5% DEFLECTION (IN)	PRESSURE* (PSIG)	TIME (MIN)
4	3.874	3.68	4	2
6	5.742	5.45	4	3
8	7.665	7.28	4	4
10	9.563	9.08	4	5
12	11.361	10.79	4	6
15	13.898	13.20	4	7.5

PS 46 (DEPTH < 16')				
PIPE SIZE (IN)	DEFLECTION TEST		AIR TEST	
	BASE I.D. (IN)	5% DEFLECTION (IN)	PRESSURE* (PSIG)	TIME (MIN)
18	16.976	16.13	4	9
21	20.004	19.00	4	10.5
24	22.480	21.36	4	12
27	25.327	24.06	4	13.5

SDR 26 (16' < DEPTH < 25')				
PIPE SIZE (IN)	DEFLECTION TEST		AIR TEST	
	BASE I.D. (IN)	5% DEFLECTION (IN)	PRESSURE* (PSIG)	TIME (MIN)
6	5.612	5.33	4	3
8	7.488	7.12	4	4
10	9.342	8.87	4	5
12	11.102	10.54	4	6
15	13.575	12.90	4	7.5

PS 115 (DEPTH < 16')				
PIPE SIZE (IN)	DEFLECTION TEST		AIR TEST	
	BASE I.D. (IN)	5% DEFLECTION (IN)	PRESSURE* (PSIG)	TIME (MIN)
18	16.586	15.76	4	9
21	19.545	18.57	4	10.5
24	21.964	20.87	4	12
27	24.744	23.51	4	13.5
30	28.763	27.32	4	15

C-900 DR 18 (DEPTH > 25')				
PIPE SIZE (IN)	DEFLECTION TEST		AIR TEST	
	BASE I.D. (IN)	5% DEFLECTION (IN)	PRESSURE* (PSIG)	TIME (MIN)
6	5.934	5.49	4	3
8	7.754	7.37	4	4
10	9.487	9.01	4	5
12	11.265	10.70	4	6
14	13.050	12.40	4	7
16	14.831	14.09	4	8
18	16.609	15.78	4	9
20	18.386	17.47	4	10
24	21.940	20.84	4	12

NOTE: SEE GEN-13 FOR SANITARY SEWER TESTING REQUIREMENTS

GENERAL TESTING NOTES:

1. PIPE MATERIAL AND TESTING REQUIREMENTS MAY CHANGE DEPENDING ON SOIL CONDITIONS AND OTHER FACTORS.
2. ALL TESTING TO OCCUR BEFORE BUILDING PERMITS ARE ISSUED OR CONSTRUCTION OF WEAR COURSE PAVEMENT.
3. CITY TO BE NOTIFIED MINIMUM 48 HOURS BEFORE ANY UTILITY TESTING OR BUILDING PERMIT.

SANITARY SEWER TESTING NOTES:

1. A MINIMUM WAITING TIME PERIOD OF 30 DAYS AFTER INSTALLATION IS REQUIRED BEFORE DEFLECTION TEST MAY BE PERFORMED. (SEE GEN-12)
2. TRACER WIRE TEST TO BE PERFORMED ON ALL SANITARY SEWER AND SANITARY SEWER SERVICES BY METROTECH OR APPROVED EQUAL.
3. AIR TEST WILL BE PERFORMED AT A PRESSURE OF 4.0 PSIG GREATER THAN THE AVERAGE BACKPRESSURE OF ANY GROUND WATER PRESENT.
6. \*IF GROUNDWATER IS PRESENT, FOR EVERY FOOT OF GROUND WATER ABOVE THE PIPE SPRING LINE, INCREASE THE GAGE TEST PRESSURE BY 0.43 PSI (TO COMPENSATE FOR WATER BACK PRESSURE). (SEE GEN-12)
7. THE SEWER LINE WHICH IS BEING TESTED WILL BE ACCEPTED AS PASSING THE AIR TEST IF THE PRESSURE DOES NOT DROP MORE THAN 0.0 PSI IN LESS TIME THAN 30 SECONDS PER INCH IN DIAMETER OF THE PIPE BEING TESTED.
8. TELEVISING SHALL BE PERFORMED ON ALL NEWLY INSTALLED GRAVITY SEWER FOLLOWING ALL OTHER SUCCESSFUL TESTING.
9. SANITARY SEWER TO BE JETTED PRIOR TO TELEVISING.
6. ALL PROXIMATE STORM SEWER MUST BE INSTALLED BEFORE WATERMAIN TESTING BEGINS.

FORCEMAIN TESTING NOTES:

1. FORCEMAIN HYDROSTATIC TEST PROCEDURE AS FOLLOWS:
  - 1.1. PUMP SYSTEM TO MINIMUM 75 PSI.
  - 1.2. THE FORCEMAN SYSTEM WILL BE ACCEPTED AS PASSING IF THE PRESSURE HAS NO DROP IN PRESSURE IN 2 HOURS.
2. GAUGE TO BE USED WILL BE AN ASHCROFT, MODEL 1082, 4 1/2" DIAMETER IN ONE PSI INCREMENTS OR APPROVED EQUAL.
3. TRACER WIRE TEST REQUIRED FOR ALL FORCEMAIN TRACER WIRE

WATERMAIN TESTING NOTES:

1. WATERMAIN TESTING TO INCLUDE ALL CURB STOPS AND HYDRANT LEADS.
2. HYDROSTATIC PRESSURE TEST PROCEDURE AS FOLLOWS:
  - 2.1. PUMP SYSTEM TO MINIMUM 150 PSI.
  - 2.2. THE WATERMAIN SYSTEM WILL BE ACCEPTED AS PASSING IF THE PRESSURE HAS NO DROP IN PRESSURE IN 2 HOURS.
  - 2.3. ALL BUTTERFLY VALVES TO BE INDIVIDUALLY HYDROSTATICALLY TESTED AGAINST BOTH SIDES OF VALVE.
3. BACTERIA TEST (MINIMUM 2 SETS)
  - 3.1. 1 TEST FOR EVERY 1200 LF
  - 3.2. 1ST SET OF TESTS 24 HOURS AFTER INITIAL FLUSHING.
  - 3.3. SECOND SET OF TESTS TO BE TAKEN AFTER PASSING RESULTS FROM FIRST TEST, MINIMUM 24 HOURS AFTER FIRST TEST.
4. TRACER WIRE TEST TO BE PERFORMED BY A METROTECH OR APPROVED EQUAL. TRACER ENTIRE LINE/ALL SERVICES TO CURB STOPS.
5. WATERMAIN TESTING TO MEET MINNESOTA DEPARTMENT OF HEALTH STANDARDS.
6. ALL PROXIMATE STORM SEWER MUST BE INSTALLED BEFORE WATERMAIN TESTING BEGINS.

STORM SEWER TESTING NOTES:

1. TELEVISING SHALL BE PERFORMED ON ALL NEWLY INSTALLED STORM SEWER.
2. TELEVISING SHALL BE PERFORMED ON ALL DRAINTILE AFTER WEAR COURSE AND AFTER PRIVATE UTILITIES ARE INSTALLED.
3. TELEVISING SHALL BE PERFORMED ON ALL REAR YARD DRAINTILE AFTER RESTORATION IS COMPLETE.
4. ALL TELEVISING TAPES TO BE EMAILED TO CITY REPRESENTATIVE.

#### RESIDENTIAL BUILDING PERMIT GRADING REQUIREMENTS

LAND SURVEYS/CERTIFICATES OF SURVEY MUST BE PREPARED BY A MINNESOTA LICENSED LAND SURVEYOR. IT IS RECOMMENDED THAT LAND SURVEYS MEET THE STANDARDS OF THE AMERICAN LAND TITLE ASSOCIATION (ALTA) AND AMERICAN CONGRESS OF SURVEYING AND MAPPING (ASCM). COMPLETE AND ACCURATE INFORMATION WILL EXPEDITE THE PLAN REVIEW PROCESS.

##### 1. CERTIFICATE OF SURVEY

A CERTIFICATE OF SURVEY IS REQUIRED TO OBTAIN A BUILDING PERMIT FOR NEW CONSTRUCTION AND MAY BE REQUIRED FOR BUILDING OR ACCESSORY STRUCTURE ADDITIONS OR SIGNIFICANT GRADING CHANGES WHEN A LAND SURVEY IS NOT IN CITY RECORDS.

##### 2. GRADING AS-BUILT

A GRADING AS-BUILT IS REQUIRED TO RELEASE ESCROW HELD ON THE LOT DURING CONSTRUCTION. FOR NEW CONSTRUCTION AND WHEN OTHERWISE REQUIRED BY THE CITY, AFTER FINAL GRADING, A LAND SURVEY OF EXISTING/"AS-BUILT" CONDITIONS MUST BE PREPARED AND SUBMITTED SHOWING CONFORMANCE WITH REQUIRED BUILDING SETBACKS, LOCATIONS, ELEVATIONS, AND GRADING.

#### PROPOSED SURVEYS MUST SHOW

##### CERTIFICATION

\*LAND SURVEYOR CERTIFICATION      \*SCALE AND NORTH ARROW  
\*LEGAL DESCRIPTION      \*PREPARATION DATE AND REVISION DATES  
\*PERMANENT SURVEY MONUMENT AND DESCRIPTION

##### FEATURES

\*FOUNDATION TYPE (FULL BASEMENT, WALKOUT, LOOKOUT, ETC.)  
\*LOT DIMENSIONS  
\*BUILDING SETBACKS  
\*PROPERTY AND EASEMENT LINES  
\*ADJACENT SIDEWALKS, CURBS, AND STREETS  
\*DELINEATED WETLAND EDGE  
\*EDGE OF WETLAND BUFFER WITH BUFFER SIGN LOCATIONS  
\*DRIVeways, TRAILS, AND PATHWAYS  
\*TREE LINES/EDGE OF CANOPY  
\*WELL, SEPTIC SYSTEMS, TANKS  
\*LOCATIONS AND DIMENSIONS OF EXISTING AND PROPOSED STRUCTURES  
\*WETLANDS, PONDS, LAKES, STREAMS, DRAINAGE SWALES, ETC.  
\*SETBACKS TO OHW/NHW CONTOUR, WETLANDS, PONDS, LAKES, RIVERS  
\*100-YEAR HWL, AND D AND U (NOTE: D AND U TO ENCOMPASS ALL DRAINAGE)  
\*WATERMAINS, SANITARY AND STORM SEWER, DRAINTILE AND DRAINTILE CLEANOUTS, CATCHBASINS, AND MANHOLES  
\*DRAINAGE OUTLETS, OUTLET CONTROL STRUCTURES, AND EMERGENCY OVERFLOWS  
\*VISIBLE AND UNDERGROUND COMPONENTS OF PUBLIC AND PRIVATE UTILITIES INCLUDING WATER AND SEWER STUBS AND SIZES  
\*LANDSCAPING AS SHOWN ON APPROVED LANDSCAPING PLANS. RETAINING WALLS AND FENCES

##### ELEVATIONS

\*LOT CORNER ELEVATIONS, EXISTING LOT ELEVATIONS, AND PROPOSED ELEVATIONS AND CONTOURS PER APPROVED GRADING PLAN  
\*SPOT ELEVATIONS AT THE MINIMUM REQUIREMENTS OF 25' OR GROUND BREAKS SHOWING A MINIMUM OF 2% DRAINAGE AND A MAXIMUM OF 25% (4:1) SLOPES IN MAINTAINED AREAS. A MAXIMUM GRADE OF 33% (3:1) SLOPES IN NON-MAINTAINED AREAS SUCH AS BUFFERS ARE ALLOWED OR APPROVED BY CITY ENGINEER: LOWEST GROUND ELEVATION ADJACENT TO THE BUILDING, LOT CORNERS, HIGH POINT DRAINAGE BREAKS, WHERE DRAINAGE SWALES INTERSECT LOT LINES, AND WHERE PONDING EASEMENTS INTERSECT LOT LINES.  
\*THE GROUND ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY AT A MINIMUM OF 5% (0.5' OF DROP) FOR THE FIRST 10'.  
\*CENTER OF CITY STREET AND TOP OF CURB ELEVATIONS  
\*PROPOSED DRIVE/ROAD GRADE IN % SLOPE (MINIMUM 2%, NOT TO EXCEED 10%)  
\*LOWEST FLOOR, LOWEST OPENING, TOP OF FOUNDATION, AND GARAGE FLOOR ELEVATIONS  
\*DRAINAGE DIRECTION ARROWS ON ALL SIDES AND PROPOSED DRAINAGE PATHS  
\*DRAINAGE OUTLETS, OUTLET CONTROL STRUCTURES, AND EMERGENCY OVERFLOWS  
\*TOTAL AREA OF EXISTING AND PROPOSED IMPERVIOUS SURFACE  
\*WATER BODIES ID AND ELEVATIONS SHOWING NORMAL WATER LEVEL, HIGH WATER LEVEL, FLOODWAY, FLOODPLAIN, AND ORDINARY HIGH WATER LEVEL ELEVATIONS  
\*UTILITY PEDESTALS (GRADING AS-BUILT ONLY)  
\*TREES (GRADING AS-BUILT ONLY)  
\*TOP AND BOTTOM OF RETAINING WALL ELEVATIONS

ELEVATIONS MUST BE SHOWN AS SEA LEVEL MEASUREMENTS. FOR AS-BUILT CONSTRUCTION AND GRADING SURVEYS, ELEVATIONS MUST BE CROSS-REFERENCED WITH APPROVED ELEVATIONS.

#### MINIMUM REQUIRED BUILDING ELEVATIONS

##### BUILDING OPENINGS AND FLOOR ELEVATIONS

ALL OPENINGS AND FLOOR ELEVATIONS MUST BE CONSTRUCTED AT LEAST TWO (2) FEET ABOVE 100-YEAR FLOOR ELEVATION AND TWO (2) FEET ABOVE HIGHEST ANTICIPATED WATER LEVEL (HWL) ELEVATION AS ESTABLISHED BY THE APPROVED PLANS AND THE CITY ENGINEER.

##### BUILDING AND GARAGE OPENINGS

ALL LOW ADJACENT GRADE AND GARAGE FLOOR ELEVATIONS MUST BE AT LEAST ONE (1) FOOT ABOVE ALL EMERGENCY OVERFLOWS.

THIS INFORMATIONAL DOCUMENT MAY NOT COMPREHENSIVELY ADDRESS ALL LAWS RELATED TO THE SUBJECT ADDRESSED. IT IS PROVIDED TO SERVE ONLY AS A HELPFUL GUIDE. SITE PREPARATION OR PERMITTED WORK IS NOT ALLOWED UNTIL PERMITS HAVE BEEN ISSUED BY THE CITY OF DAYTON.



2025 DETAIL PLATES  
REV.1

## CERTIFICATE OF SURVEY AND GRADING AS-BUILT REQUIREMENTS

LAST REVISION:  
DEC 2024

PLATE NO.  
GEN-14