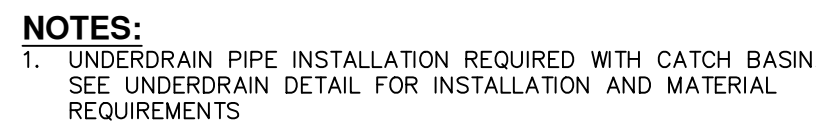


MANHOLE FRAME & COVER
NOT TO SCALE



PAVEMENT

CASTING E.J.I.W. 1040 M1

3 - 5 BRICK COURSES

3500 PSI PRECAST CONCRETE CATCH BASIN - REINFORCEMENT TO CONFORM TO CITY OF HIGHLAND PARK ENGINEERING DEPARTMENT

6"

4'-0"

8" PVC SCH. 40

SCREW IN PLUG

8"x8"x8" TEE

OUTLET PIPE
8" PVC SCH. 40

12"

24"

6"

MDOT 6A ANGULAR MATERIAL OR ANGULAR CRUSHED STONE BACKFILL

PLAN VIEW

6'

6'

INSTALL SAWCUT CONTROL JOINT (TYP.) SEE DETAIL A

TRAFFIC FLOW

INSTALL BOND BREAKER

CONTROL JOINT

2 1/2"

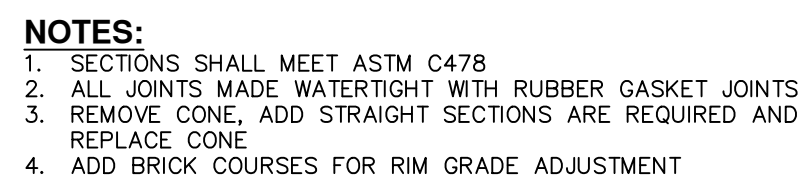
1/4"

1/2"

1/8" SAWCUT

HOT POURED RUBBER ASPHALT SEALANT (1/4" x 1/2")

WWF 2.9X2.9-6XB



SECTION B-B

NOTES:

1. SECTIONS SHALL MEET ASTM C478
2. ALL JOINTS MADE WATER TIGHT WITH RUBBER GASKET JOINTS
3. CONE TO BE ECCENTRIC TYPE

SECTION A-A

MANHOLE FRAME SET IN 1 1/2" OF MORTAR

MINIMUM OF 3 BRICK COURSES TOP OF TRANSITION SECTION FOR GRADE ADJUSTMENT

MANHOLE STEPS 16" MAX. ON CENTER

SEE SCHEDULE

24" DIA. MIN.

15"

RUBBER SEALED JOINT

5"

4' DIA.

5"

5" TYP.

CHANNEL TO BE 3500 PSI CONCRETE POURED TO SPRINGLINE AND TROWELED

PRECAST BOTTOM SHALL BE 3500 PSI CONCRETE WITH 4"x4" WIRE MESH

4" MIN.

8" MIN.

6' DIA.

5" MIN.

PARALLEL WITH CURB

IN PARKING LOT

USE APPROPRIATE FRAME AND COVER

10'-0" MIN. OR AS CALLED FOR IN PLANS

2'-0" MIN./8'-0" MAX.

1'-0" MIN.

5" THICK PRECAST CONCRETE A.S.T.M. C-478 APPROVED STRUCTURE

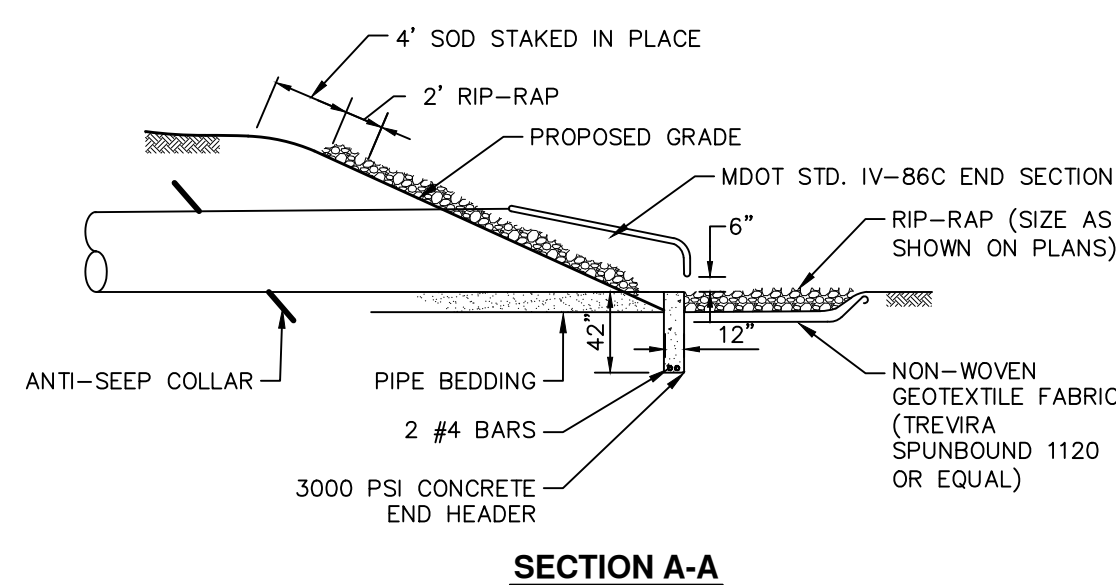
CATCH BASIN OR INLET STRUCTURE

PLUG - AS RECOMMENDED BY MANUFACTURER

6" DIA. PERFORATED UNDER DRAIN PIPE WITH GEOTEXTILE MATERIAL WRAP TO BE INSTALLED WITH EACH STRUCTURE

NOTES:

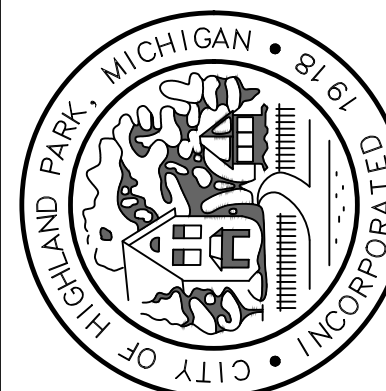
1. UNDERDRAIN BACKFILL SHALL MEET MDO. REQUIREMENTS FOR 8G OPEN GRADED DRAINAGE COURSE AGGREGATES. THIS BACKFILL SHALL EXTEND 4" BELOW PIPE, 1' ABOVE, AND FOR FULL WIDTH OF TRENCH



NOTES:

1. EXTENT OF RIP-RAP SHALL BE AS SHOWN HERE OR AS SHOWN ON PLANS, WHICHEVER IS GREATEST
2. RIP-RAP THICKNESS AS SHOWN ON PLANS

STEPS ARE TO BE INSTALLED AT THE PLANT BY THE MANUFACTURER OF THE STRUCTURE. THE STEPS ARE TO BE 16 INCHES ON CENTER, MADE OF POLYPROPYLENE, AND A.S.T.M. C-478 APPROVED. STEPS ARE TO BE LOCATED AT 90 DEGREES TO THE CENTERLINE OF THE MAIN SEWER LINE. THE BOTTOM STEP SHOULD BE LOCATED A MAXIMUM OF 24 INCHES ABOVE THE FLOOR.



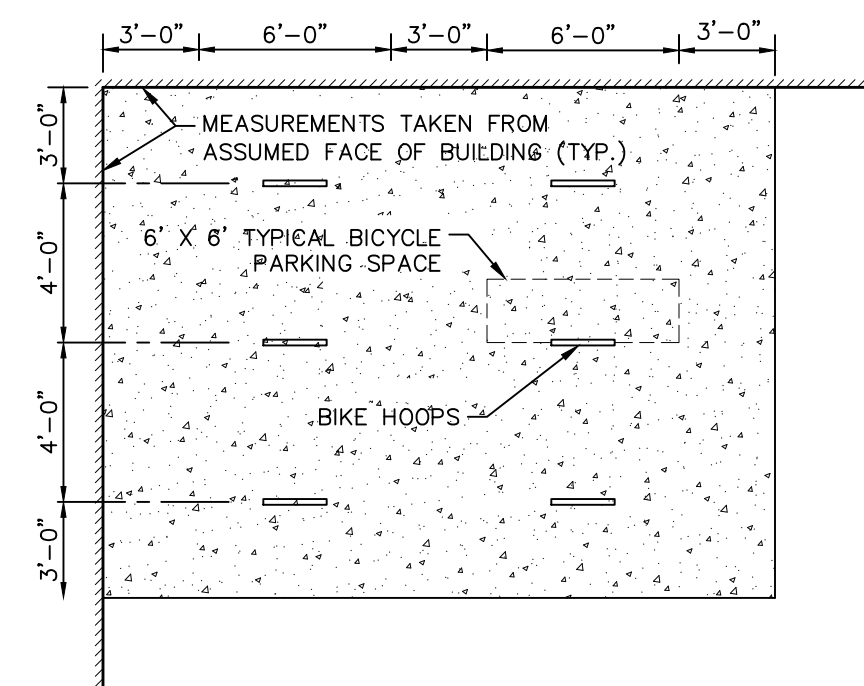
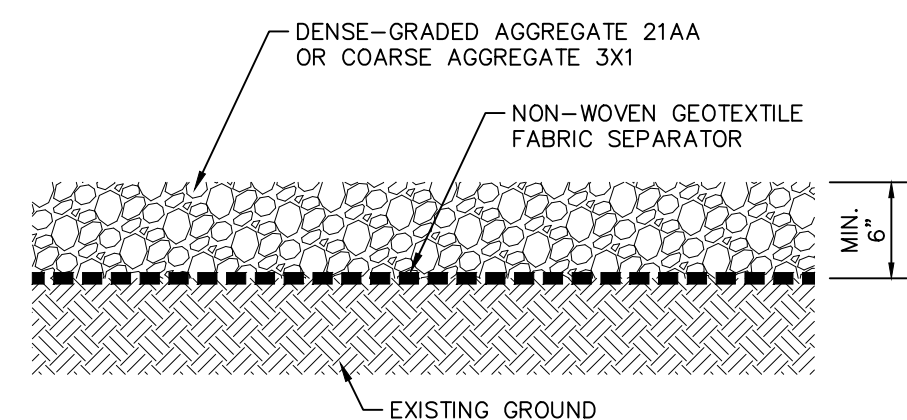


Diagram illustrating the profile view of the gravel access approach. The diagram shows a cross-section of the road and approach. Key features labeled include:

- EXISTING GROUND (indicated by a hatched area on the left)
- LENGTH PER PLAN (indicated by a dimension line above the road profile)
- EXISTING ROAD (indicated by a hatched area on the right)
- GRAVEL ACCESS APPROACH - REFER TO SECTION BELOW (indicated by a line pointing to the gravel area)

PROFILE



	<u>4" FENCE</u>	<u>6" FENCE</u>	<u>8" FENCE</u>	<u>12" FENCE</u>
NOMINAL PIPE SIZES (HEIGHT)				
TERMINAL, TURNING, OR GATE POST	1 1/2" (2.72#/LF)	2 1/2" (5.79#/LF)	3 1/2" (9.11#/LF)	3 1/2" (9.11#/LF)
LINE POST	1 1/4" (2.27#/LF)	2" (3.65#/LF)	2" (3.65#/LF)	2" (3.65#/LF)
TOP RAIL	1" (1.68#/LF)	1 1/4" (2.27#/LF)	1 1/4" (2.27#/LF)	1 1/4" (2.27#/LF)
MIDDLE RAIL	NONE	NONE	1 1/4" (2.27#/LF)	1 1/4" (2.27#/LF)
BOTTOM RAIL	NONE	1 1/4" (2.27#/LF)	1 1/4" (2.27#/LF)	1 1/4" (2.27#/LF)
BRACE RAIL	1" (1.68#/LF)	1 1/4" (2.27#/LF)	1 1/4" (2.27#/LF)	1 1/4" (2.27#/LF)
FOOTING DIAMTERS				
TERMINAL, TURNING, OR GATE POST	12"	18"	18"	18"
LINE POST	9"	12"	12"	12"

3" ROUNDED CONCRETE DOME

PAINT ONE COAT RUST PREVENTATIVE & (2) COATS "TRAFFIC" YELLOW

6" DIAMETER X 8'-0" LONG SCHEDULE 40 STEEL PIPE, WALL THICKNESS 0.280 INCH, FILL POST WITH MIN. 3000 PSI CONCRETE

PROVIDE 1/4" WIDE EXPANSION JOINT

NEW PAVEMENT SECTION

CONCRETE FOOTING - MIN. 3000 PSI

Dimensions: 3", 4'-0", 46", 40", 8", 8", 16" DIA. MIN.

3" 3" ROUNDED CONCRETE DOME

PAINT ONE COAT RUST PREVENTATIVE & (2) COATS "TRAFFIC" YELLOW

6" DIAMETER X 8'-0" LONG SCHEDULE 40 STEEL PIPE, WALL THICKNESS 0.219 INCH, FILL POST WITH MIN. 3000 PSI CONCRETE

PROVIDE 1/4" WIDE EXPANSION JOINT

NEW PAVEMENT SECTION

CONCRETE FOOTING - MIN. 3000 PSI

Dimensions: 3", 5'-0", 8'-4", 40", 46", 6", 12", 12", 24" DIA. MIN.

FOAM STRIPS TO BE APPLIED PRIOR TO COVER

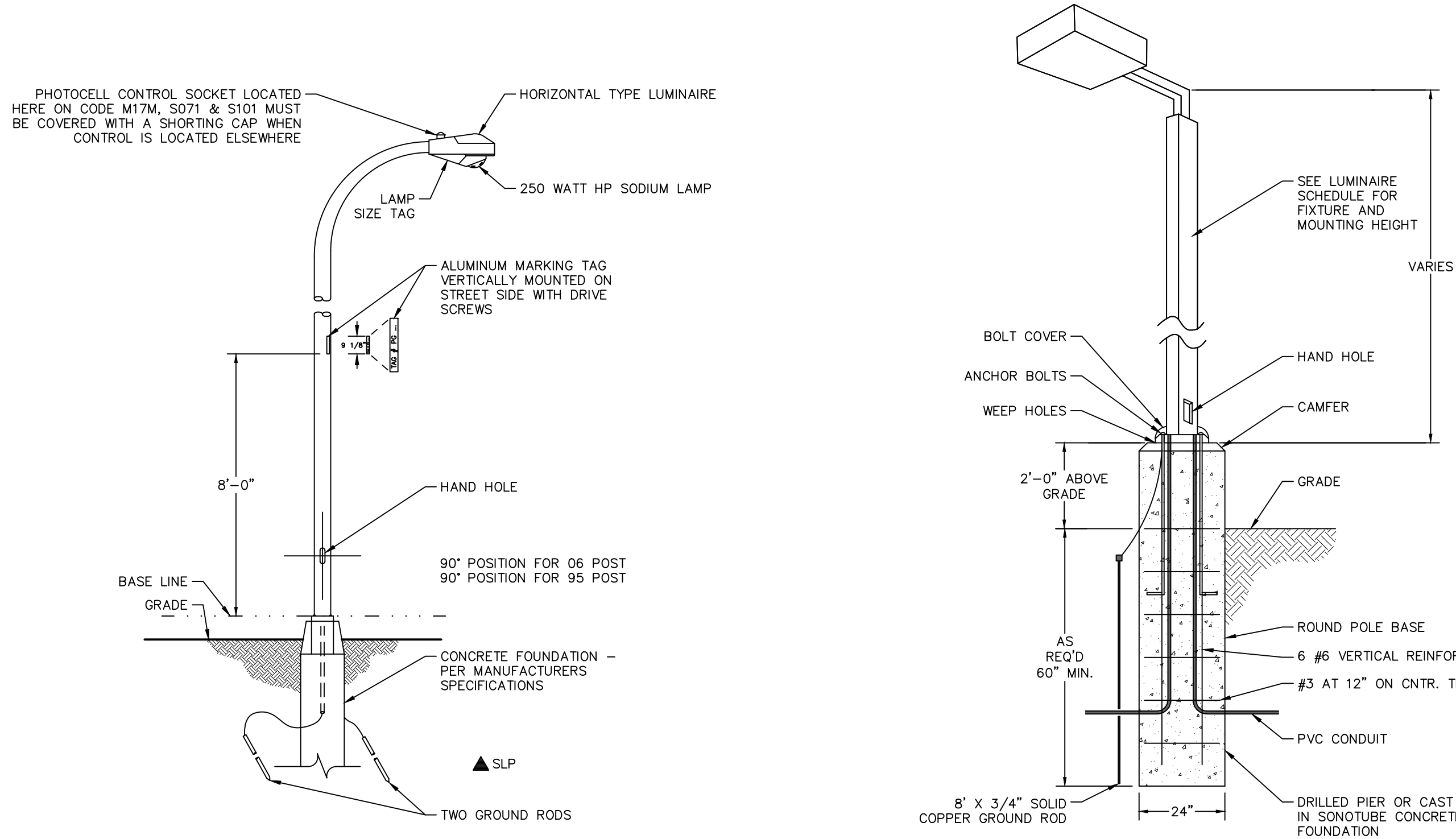
POST GUARD SIZES

- 4.5" DIA. X 52"
- 4.5" DIA. X 64"
- 7" DIA. X 60"
- 7" DIA. X 72"
- 8 7/8" DIA. X 52"
- 10 7/8" DIA. X 60"

POST GUARD PROTECTIVE SLEEVE MADE OF SOLID MOLDED PLASTIC

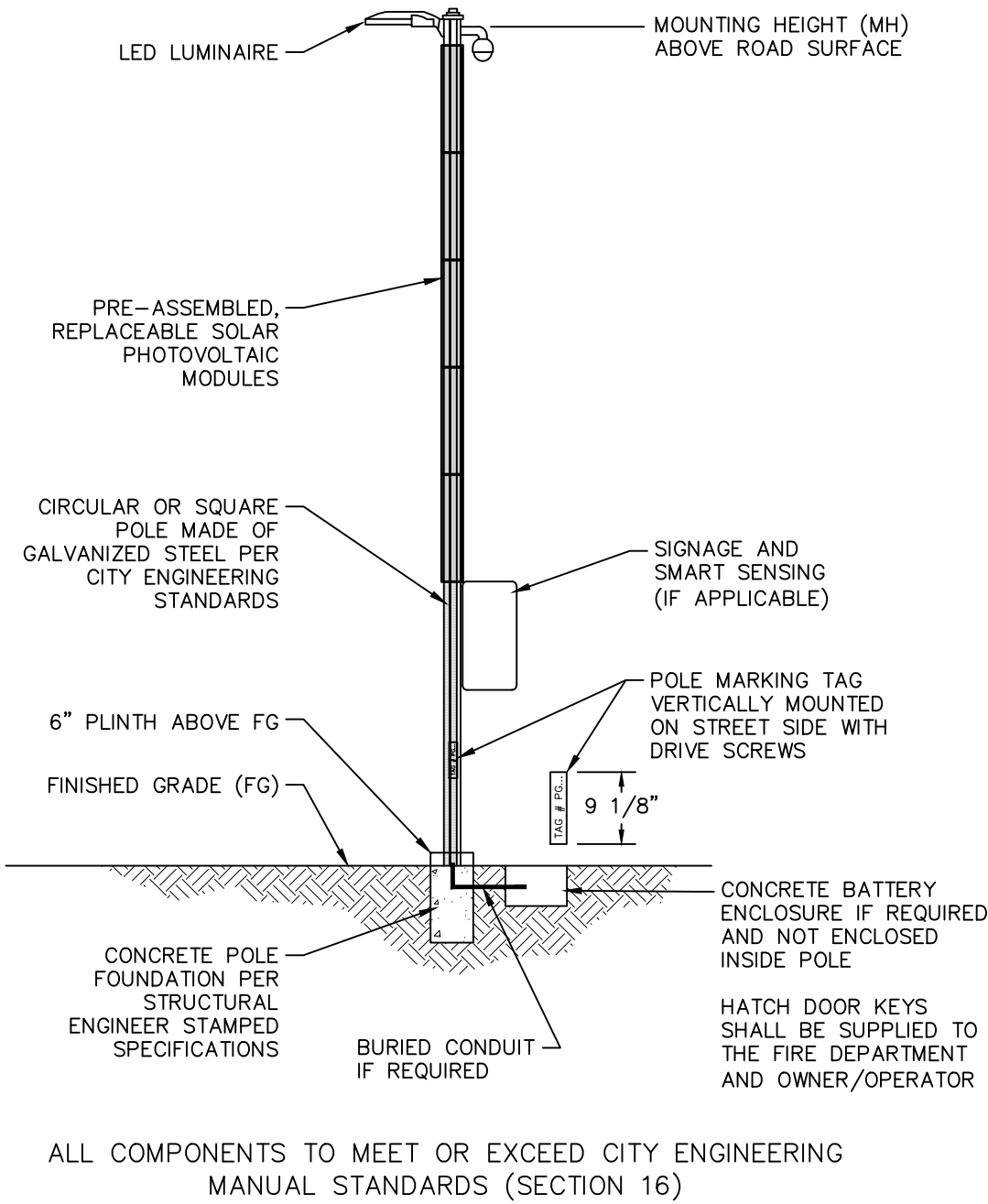
MATERIAL COLOR TO BE SELECTED BY OWNER

SW1



STREET LIGHT DETAIL
NOT TO SCALE

LIGHT POST DETAIL
NOT TO SCALE



SOLAR STREETLIGHT (OFF GRID)
NOT TO SCALE

SOLAR STREETLIGHT (OFF-GRID) TABLE				
LOCATION	MOUNTING HEIGHT (MH)	LIGHT POWER	ILLUMINANCE LUX (fc)	BASE DETAIL (Site Work 2)
PARKING LOTS	24 FEET	45 W CONTINUOUS (MINIMUM)	5 (0.5)	LIGHT POST
RESIDENTIAL ROADS	24 FEET	45 W CONTINUOUS (MINIMUM)	5 (0.5)	STREET LIGHT
PARKS	18 FEET	27 W CONTINUOUS (MINIMUM)	5 (0.5)	STREET LIGHT

- NOTES:
- SOLAR STREETLIGHT POLES MUST BE EITHER STEEL OR ALUMINUM, WITH ANY SURFACES AND MATERIALS THAT ARE SUBJECT TO CORROSION COATED OR PAINTED TO EXTEND THE LIFE OF THE POLE.
 - SOLAR STREETLIGHT POLES MUST BE CIRCULAR OR SQUARE IN CROSS SECTION, WITH DISTINCT REPLACEABLE UNITS OF SOLAR PHOTOVOLTAIC CELLS THAT ARE MOUNTED FIRMLY ON THE UPPER PORTION OF THE POLE ("WRAPPED" ON THE VERTICAL PORTION OF THE POLE).
 - IF INSTALLED IN THE PUBLIC RIGHT-OF-WAY, SOLAR STREETLIGHT POLE INSTALLATION SHOULD GENERALLY BE:
 - INSTALLED BETWEEN BACK OF CURB (OR EDGE OF PAVED ROAD) AND THE SIDEWALK.
 - WHEN POSSIBLE, INSTALLED ON OR NEAR THE PROPERTY LINE BETWEEN RESIDENTIAL LOTS.
 - SEPARATED FROM ANY OTHER STREETLIGHT OR SOLAR STREETLIGHT ALONG A ROAD BY 2.5 TO 4.5 MOUNTING HEIGHT LENGTHS.
 - HOWEVER, THE PLACEMENT OF POLES WILL OFTEN REQUIRE ADJUSTMENTS TO AVOID CONFLICTING TREES AND ROOTS, FACILITIES, STRUCTURES, AND BURIED UTILITIES (E.G. GAS, ETC.).
 - "STANDARD" SOLAR STREETLIGHT POLES DESIGNATE THOSE THAT DO NOT INCLUDE A SIGNIFICANT SUITE OF AVAILABLE ADD-ON "SMART" TECHNOLOGIES. EXAMPLES OF THESE TECHNOLOGIES INCLUDE BUT ARE NOT LIMITED TO: MOTION SENSING DIMMING, WIRELESS REMOTE MONITORING OR DATA LOGGING, INTEGRATED WIFI HOTSPOT, OR INTEGRATED CELLULAR NETWORK NODES.
 - "SMART" SOLAR STREETLIGHT POLES DESIGNATE THOSE WHICH DO INCLUDE ADVANCED TECHNOLOGIES AND ADDITIONAL NON-LIGHT-PRODUCING SERVICES TO THE COMMUNITY. THESE "SMART" STREETLIGHT POLES WILL BE APPROVED FOR INSTALLATION ON A CASE-BY-CASE OR PROJECT-BY-PROJECT BASIS. MOST "SMART" FEATURES RESULT IN ADDITIONAL UP-FRONT COSTS AND ADDITIONAL OPERATIONS AND MAINTENANCE COSTS. THESE TECHNOLOGIES ALSO DRAW DOWN THE ENERGY IN THE BATTERY FASTER THAN THE LUMINARY ALONE. HOWEVER, THE VALUE PROVIDED BY SOME "SMART" TECHNOLOGIES MAY JUSTIFY THE ADDITIONAL COSTS IN SOME LOCATIONS.

ISSUED FOR:


DATE:

REV:

CITY OF HIGHLAND PARK

STANDARD SITE WORK DETAILS AND NOTES


SITE WORK-2



MCA JOB #:1039-18-8756

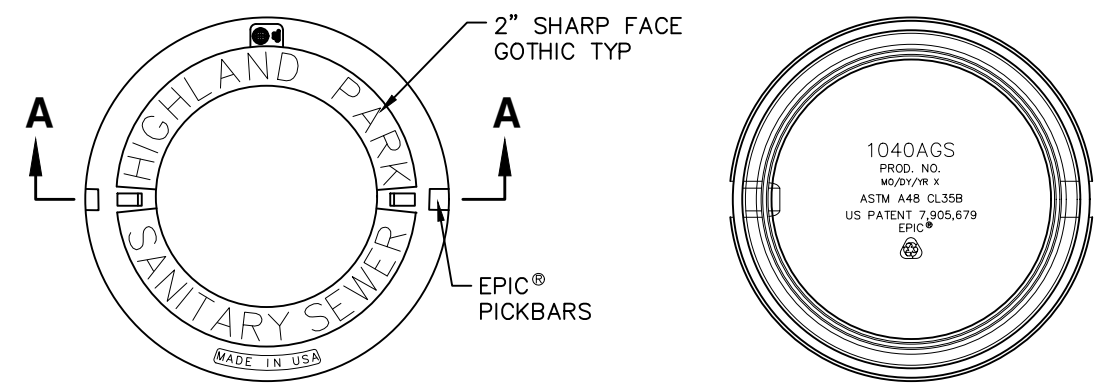
DATE: 06.19.2023

SCALE: AS SHOWN PER DETAIL

DRAWN BY:

Dynamic. Daring. Diverse. DIFFERENT.

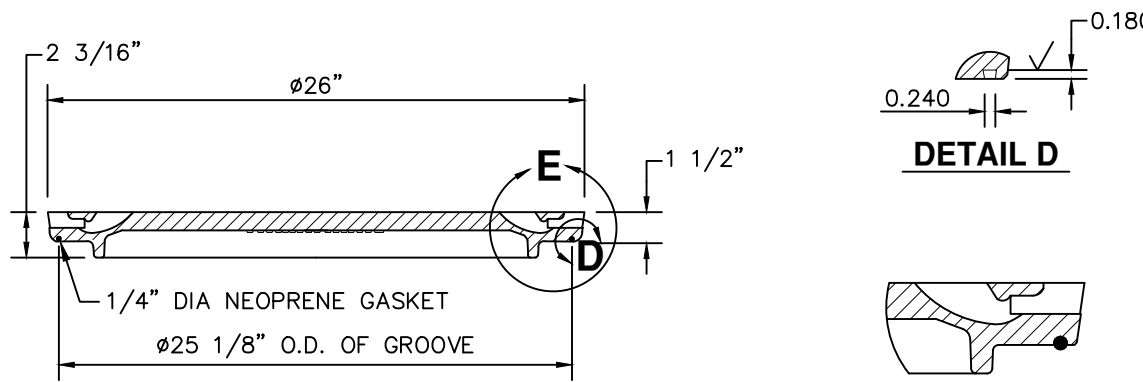
COUNTY: WAYNE

SHEET: SW2



TOP VIEW OF COVER

BOTTOM VIEW OF COVER

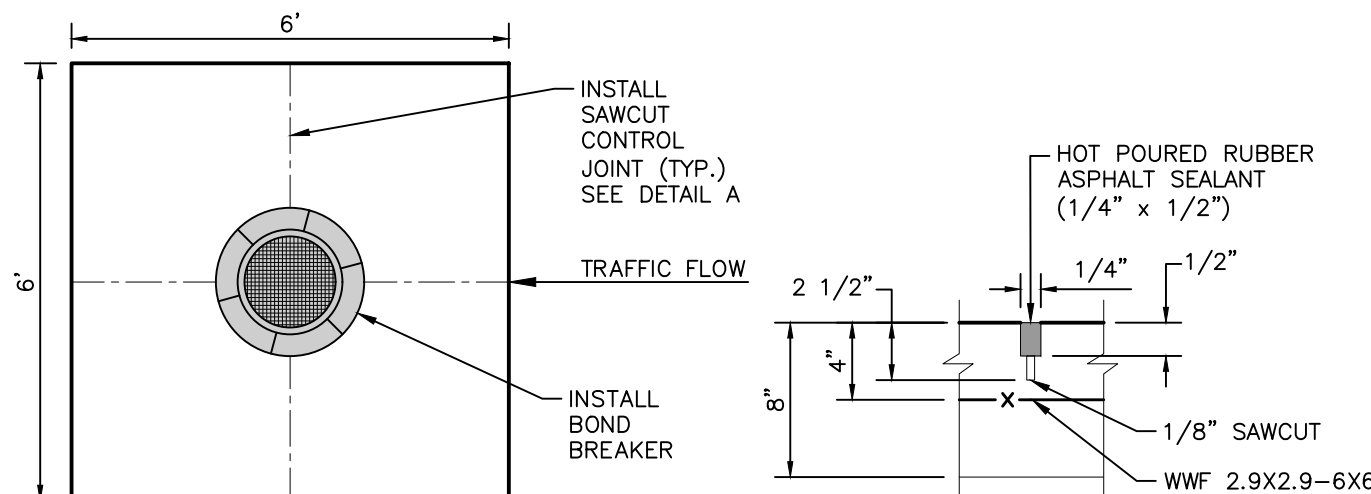


SECTION A-A

EPIC® DETAIL E

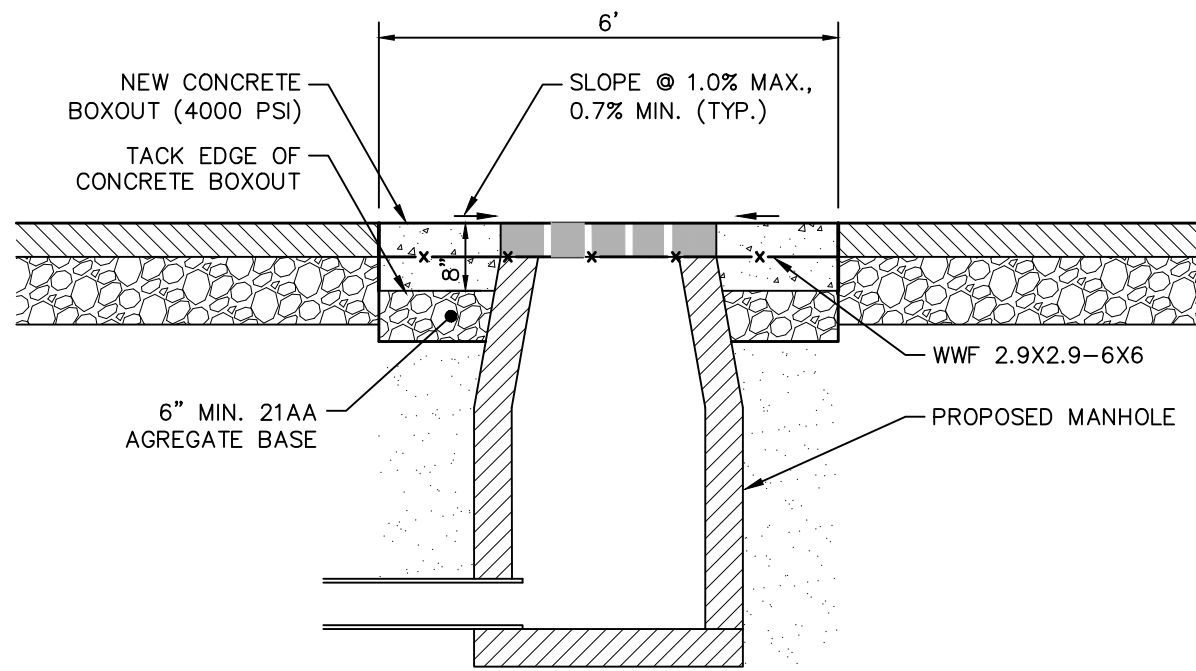
NOTES:
CATALOG NO. 1040AGS
EST. WEIGHT COVER: 150 LBS.
MAT'L SPEC.: COVER- GRAY IRON ASTM A48 CL35B
LOAD RATING: HEAVY DUTY
COATING: DIPPED

MANHOLE FRAME AND COVER
NOT TO SCALE



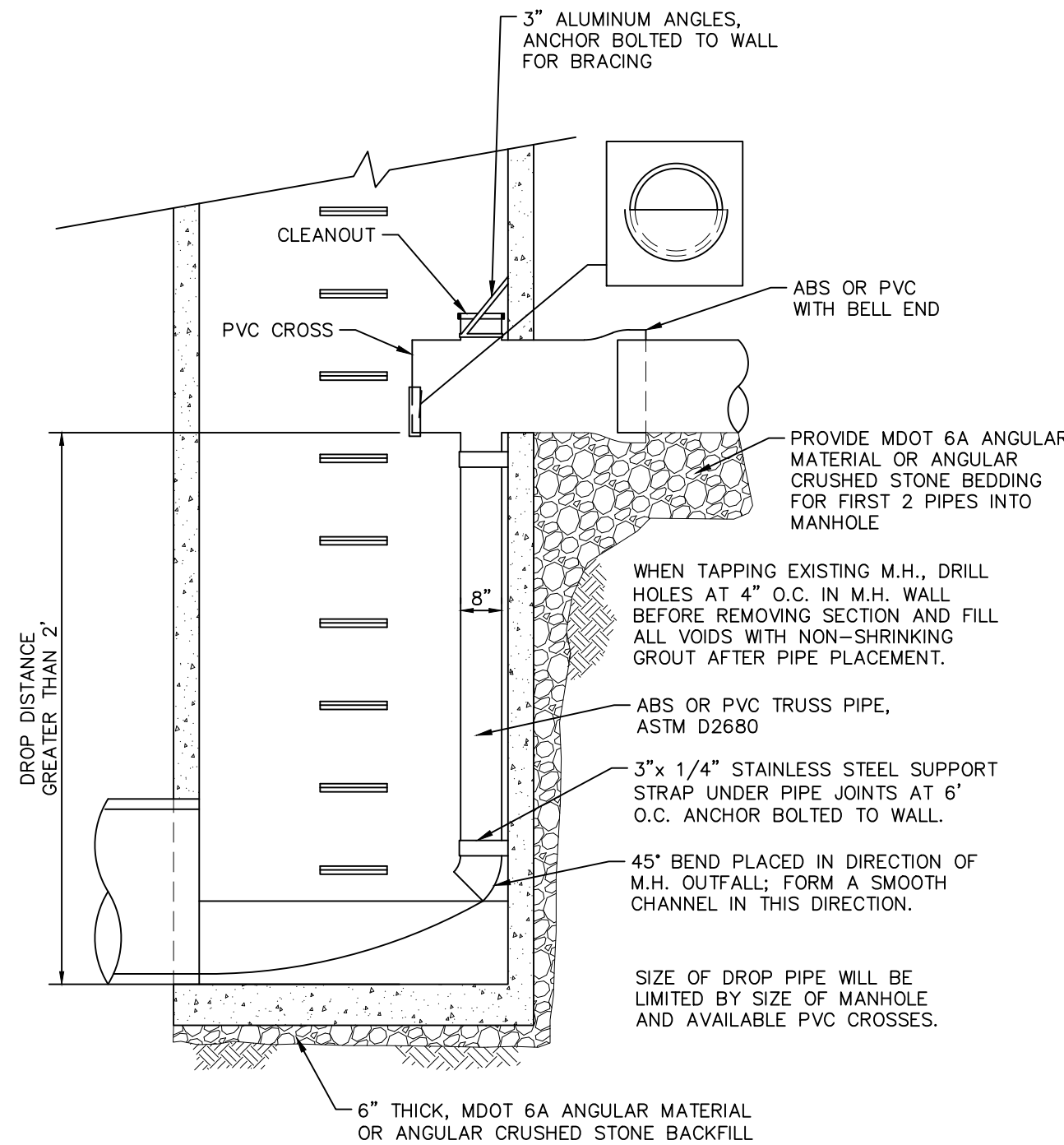
PLAN VIEW

CONTROL JOINT

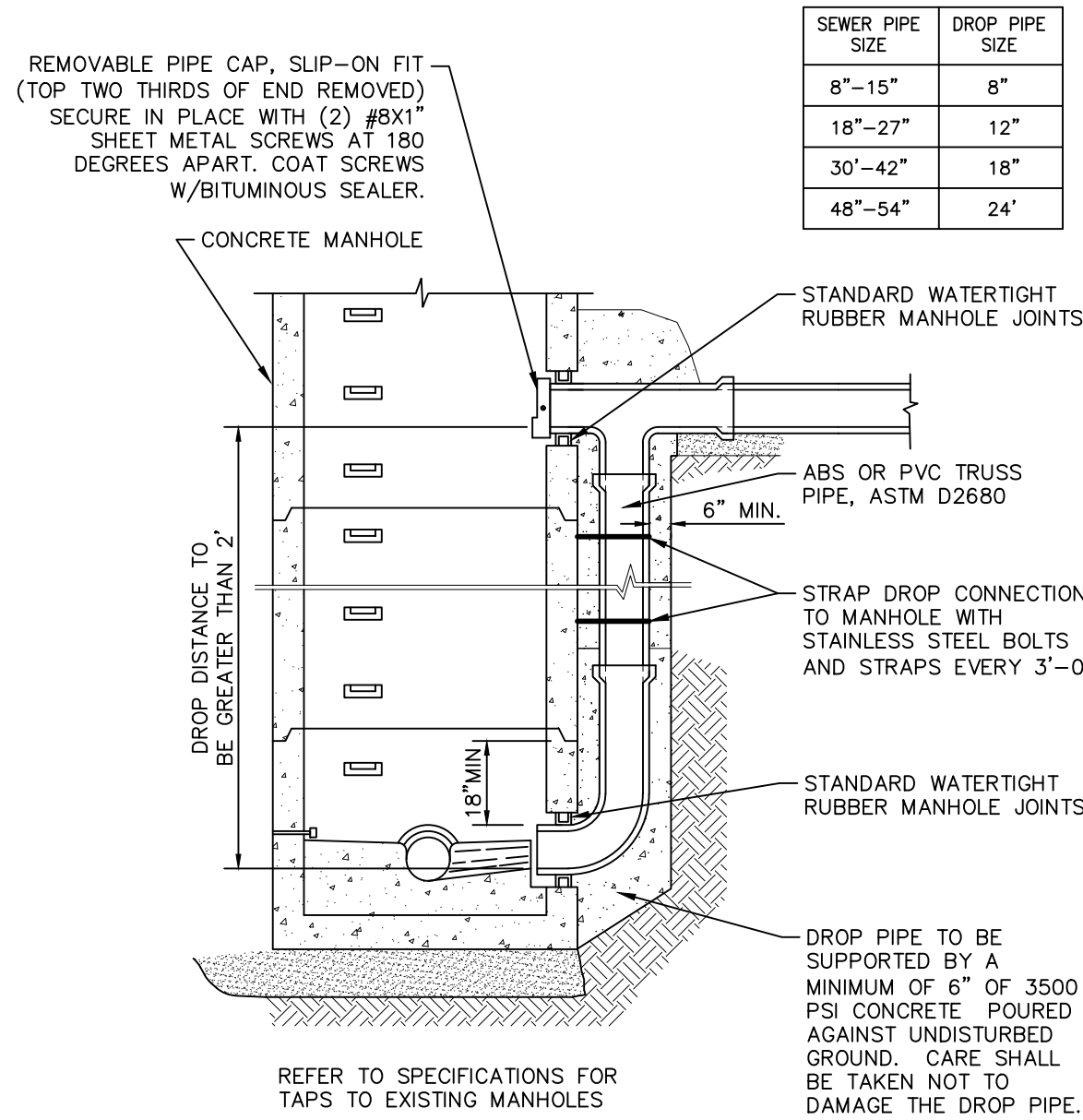


CROSS SECTION

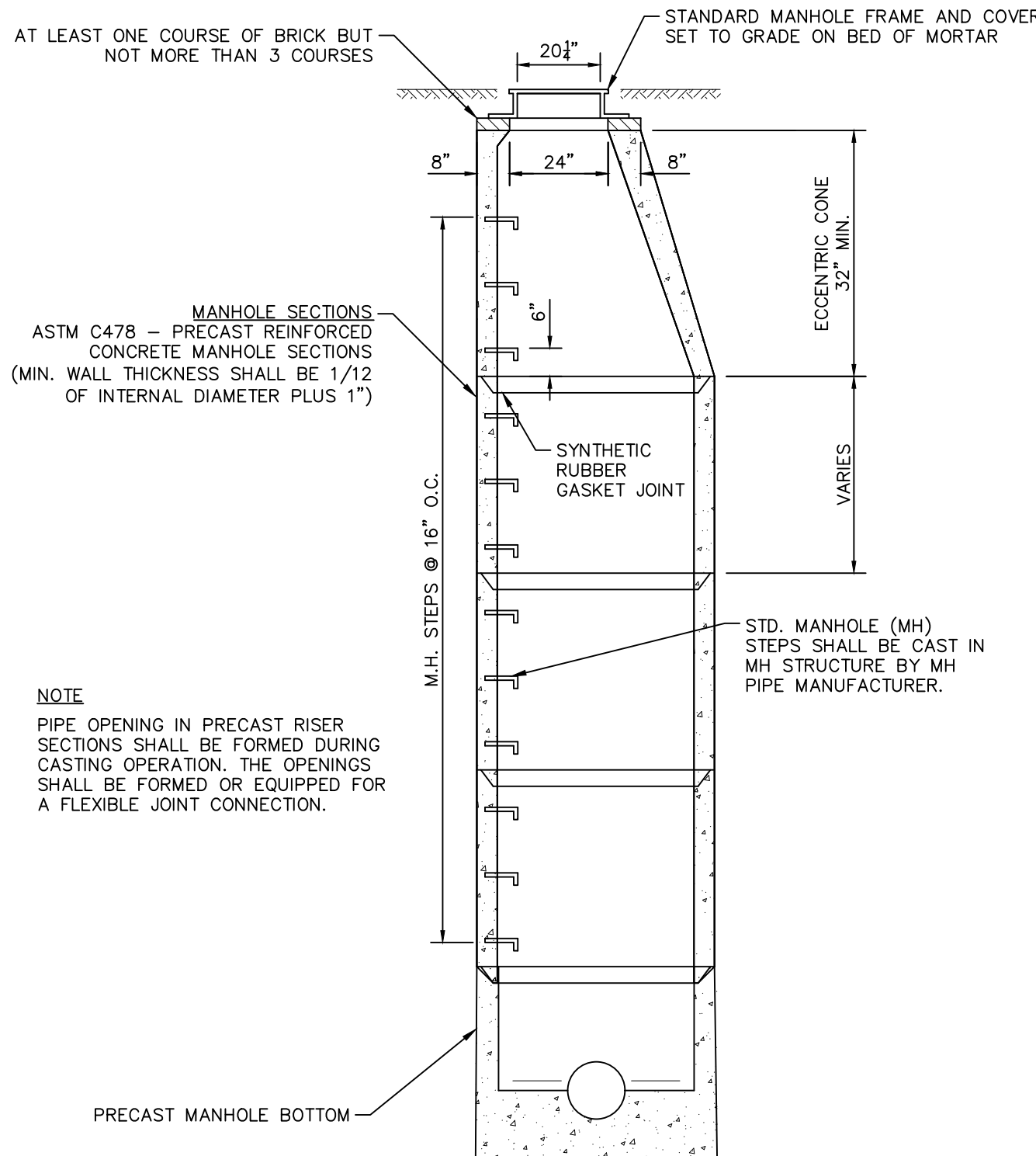
CONCRETE BOXOUT PLAN - SECTION
NOT TO SCALE



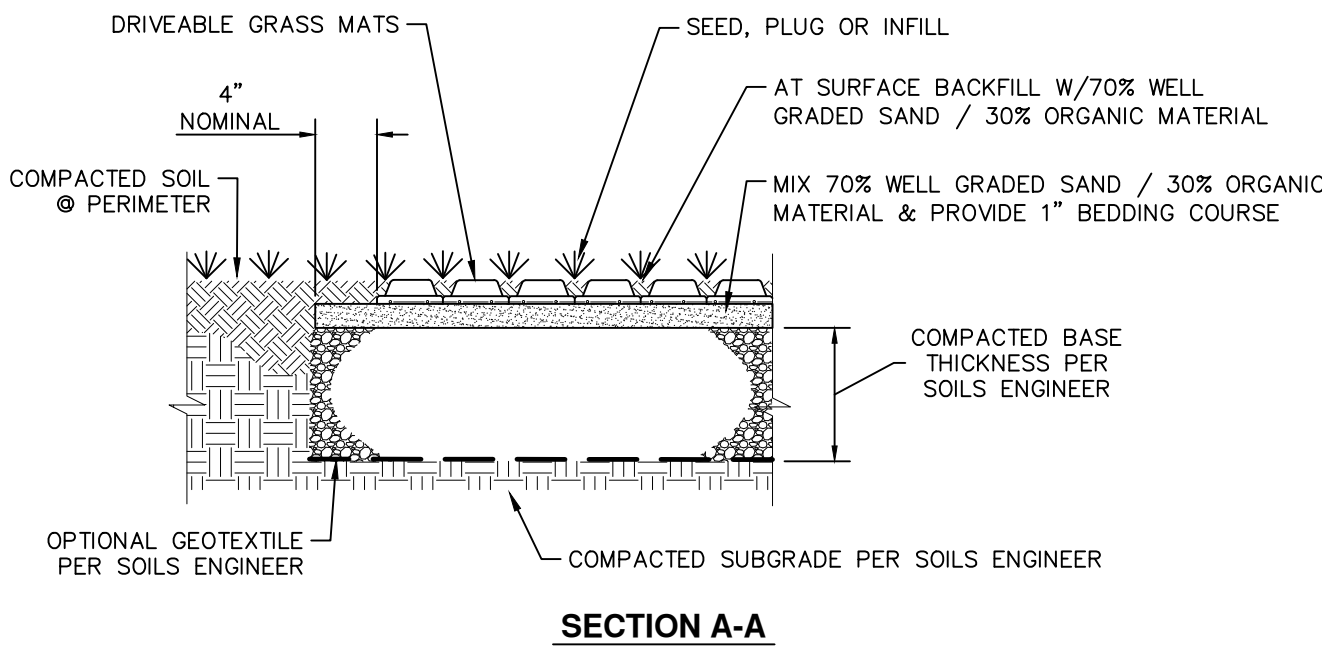
MANHOLE, INTERIOR DROP
NOT TO SCALE



MANHOLE, EXTERIOR DROP
NOT TO SCALE

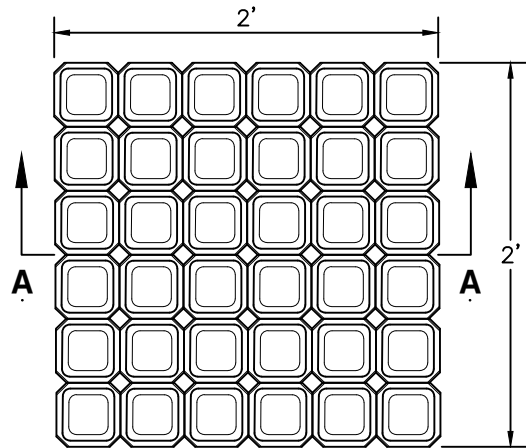


MANHOLE, PRECAST
NOT TO SCALE



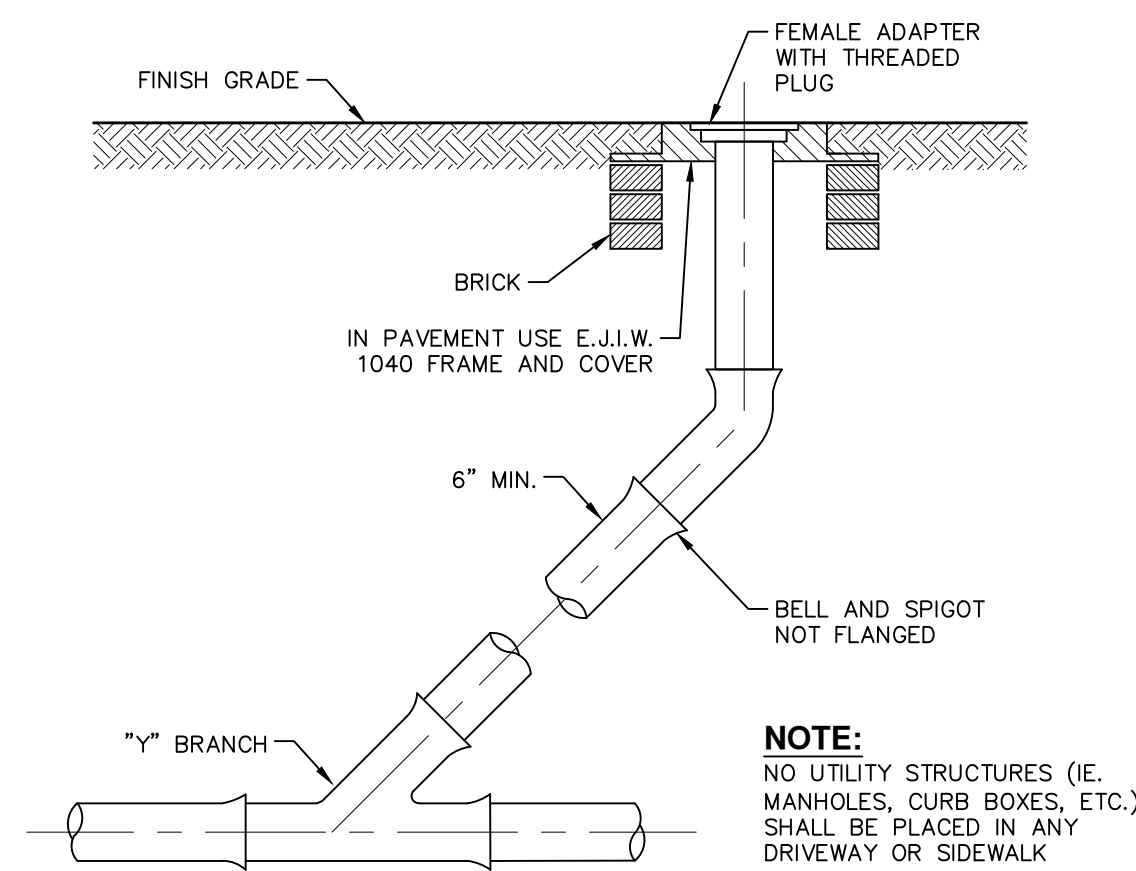
SECTION A-A

NOTE:
FOR STORMWATER MANAGEMENT APPLICATIONS INCLUDING STORAGE AND INFILTRATION, ALTERNATE INFILLS, BASE MATERIAL, AND DRAINAGE MAY BE REQUIRED

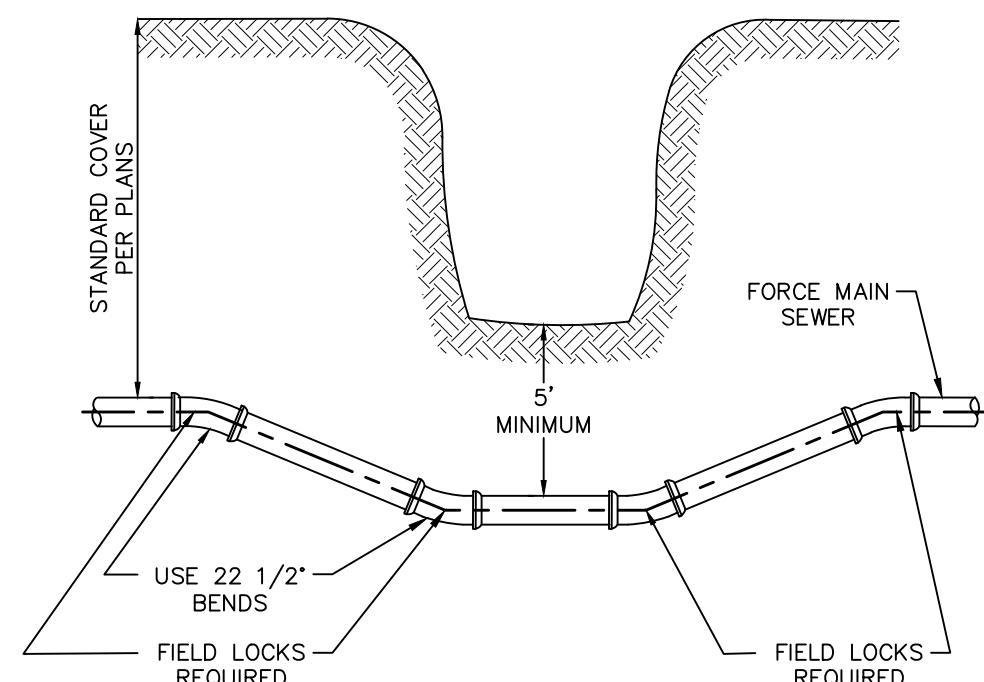


PLAN VIEW

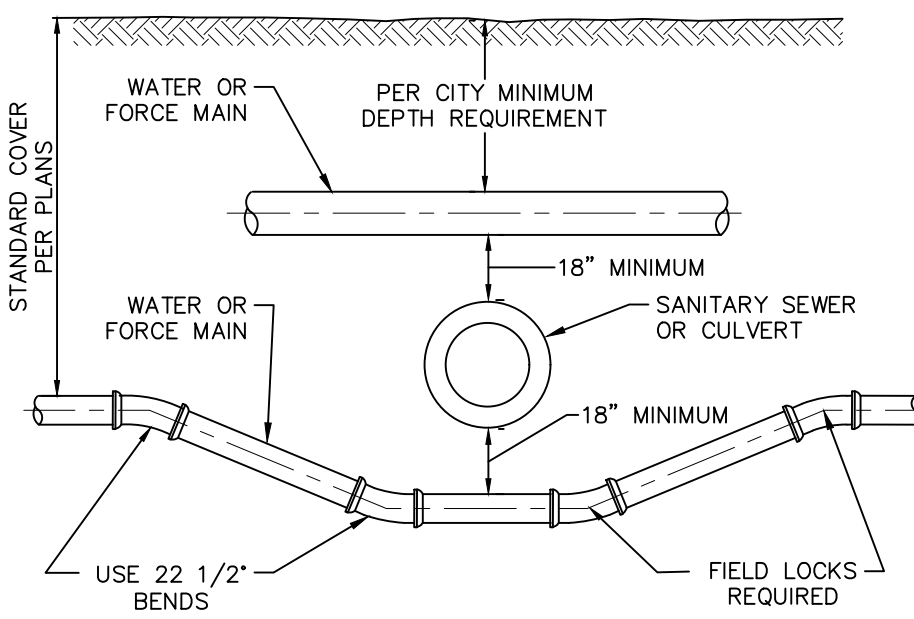
TYPICAL HEAVY TRAFFIC DRIVABLE GRASS DETAIL
NOT TO SCALE



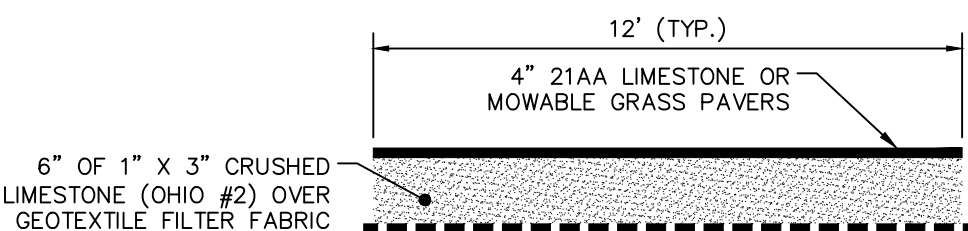
SANITARY SEWER CLEANOUT
NOT TO SCALE



DITCH AND STREAM CROSSING
NOT TO SCALE



SEWER OR CULVERT CROSSING
NOT TO SCALE



SANITARY SEWER ACCESS PATH
NOT TO SCALE

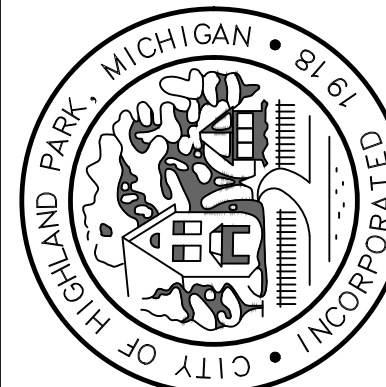
CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.



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CITY OF HIGHLAND PARK
STANDARD SANITARY SEWER DETAILS AND NOTES
SANITARY SEWER-1



MCA JOB #:1039-18-8756

DATE: 06.19.2023

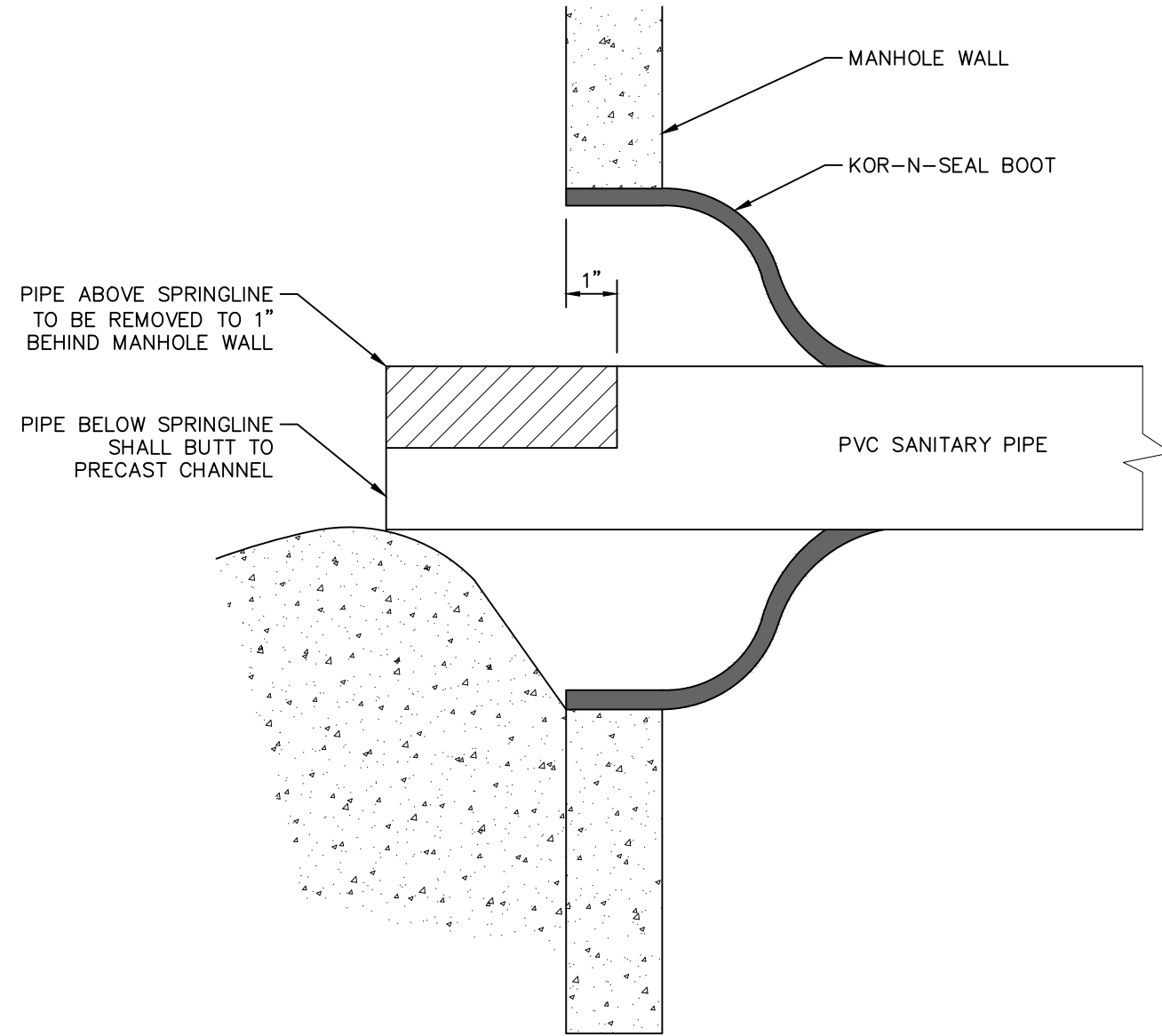
SCALE: AS SHOWN PER DETAIL

DRAWN BY:
Metro Consulting
Associates
Dynamic. Daring. Diverse. DIFFERENT.

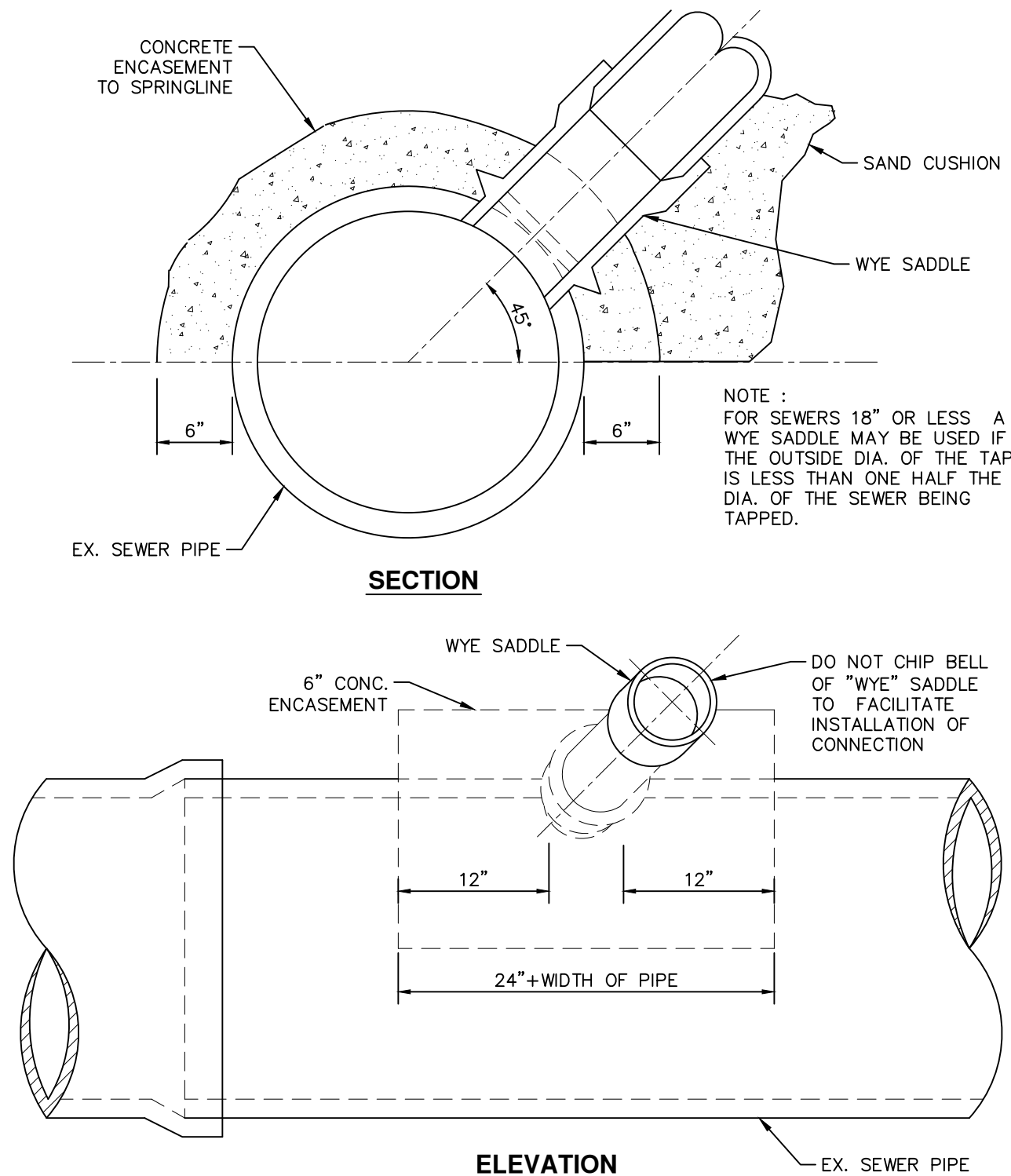
COUNTY: WAYNE

SHEET:

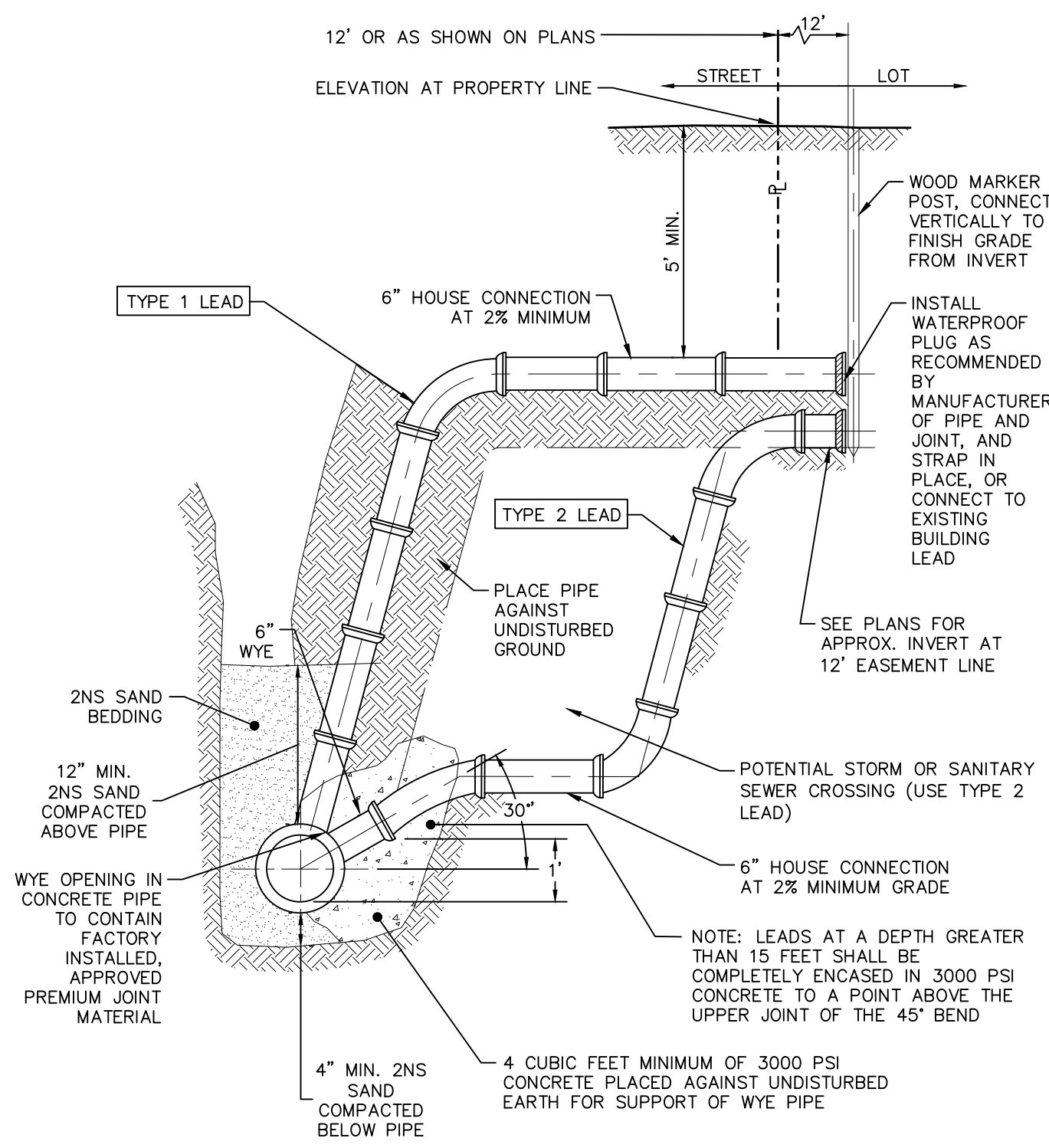
SAN1



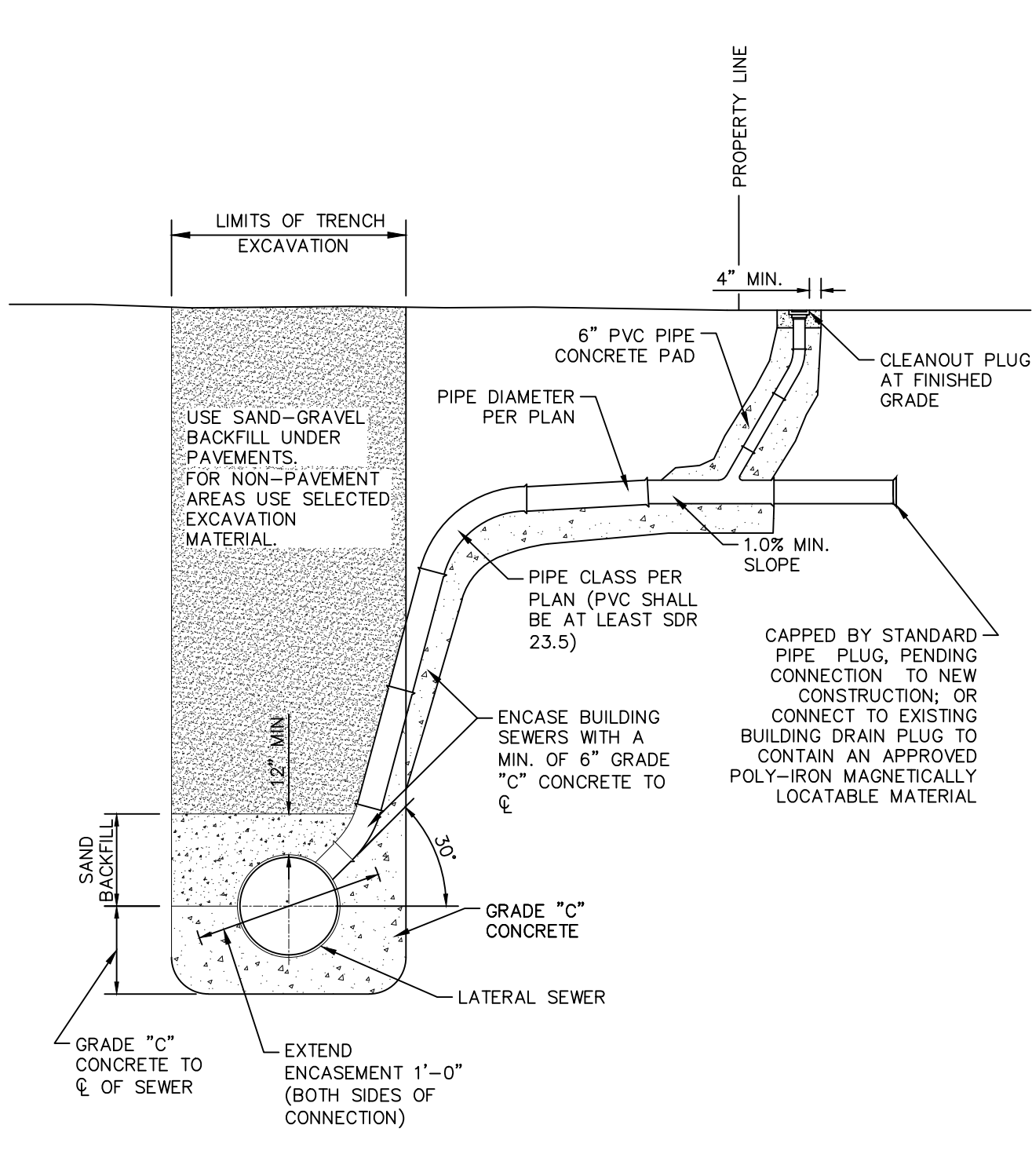
SANITARY PIPE PENETRATION
NOT TO SCALE



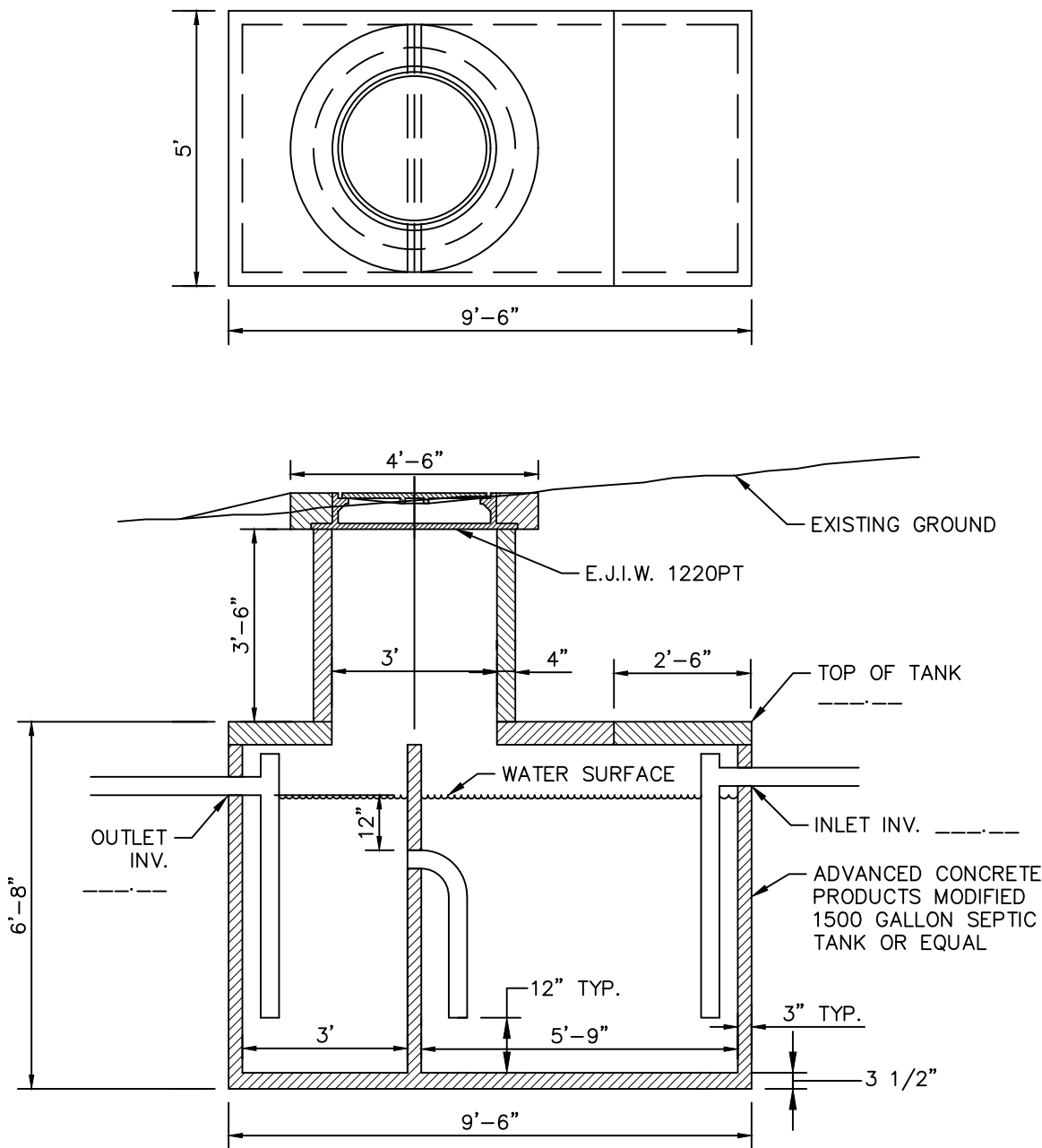
CONNECTION SADDLE TO LATERAL SEWER
NOT TO SCALE



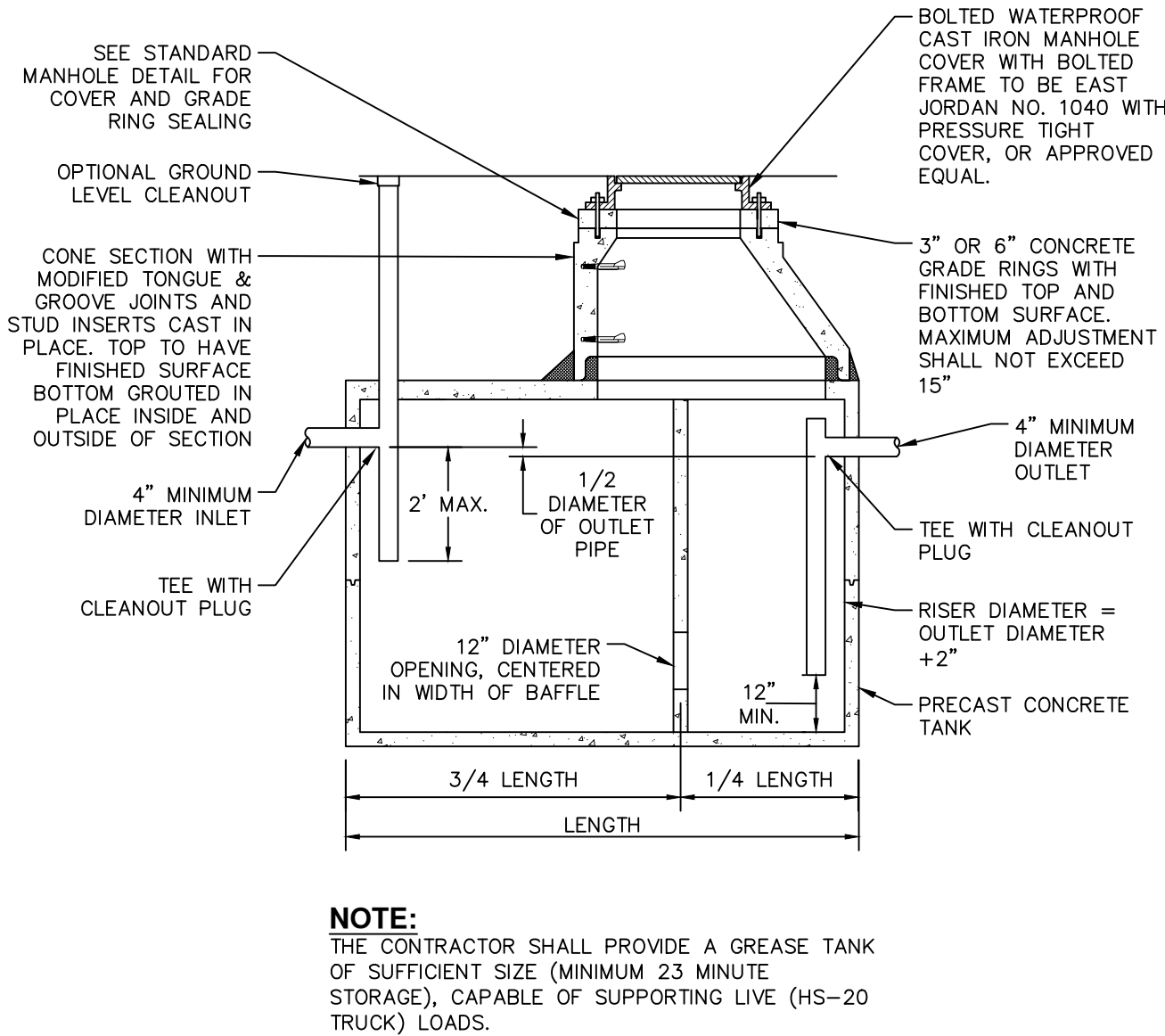
SANITARY SEWER SERVICE & RISER CONNECTION DETAIL
NOT TO SCALE



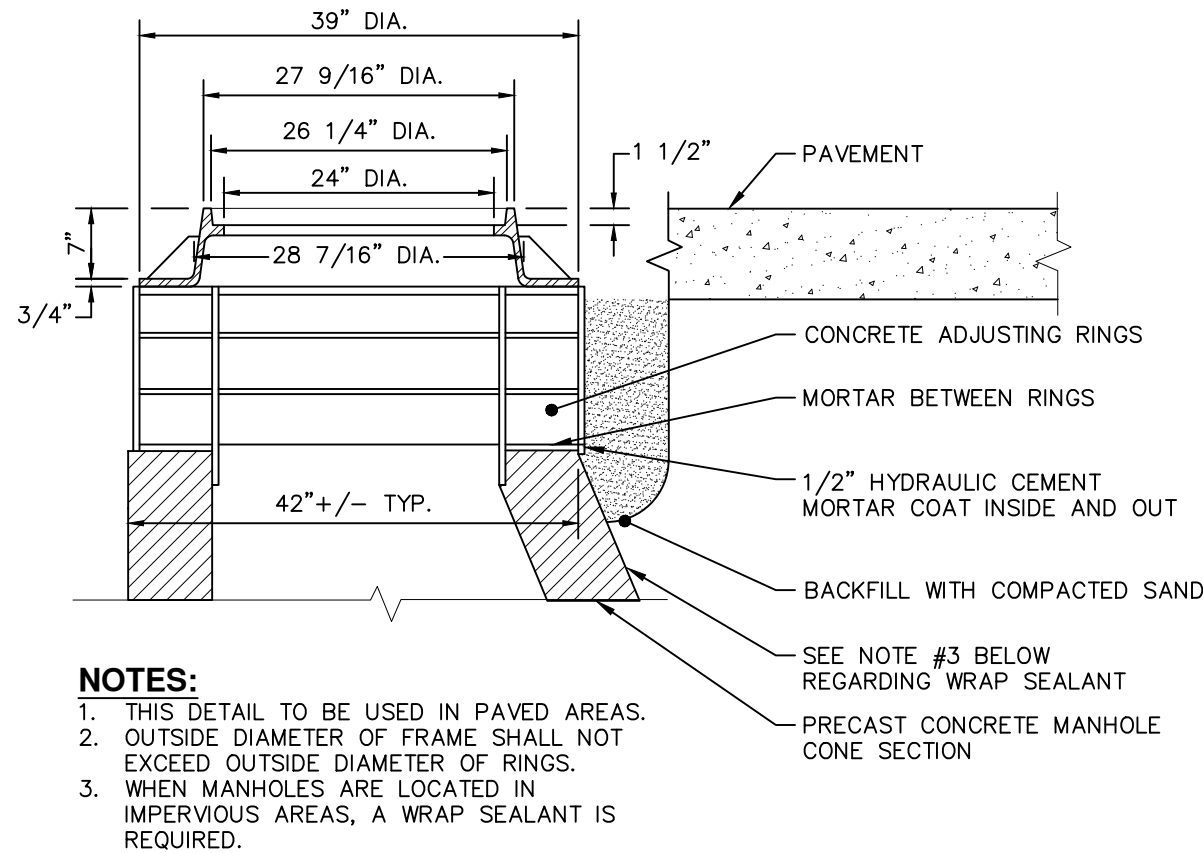
WYE CONNECTION AND EXTENSION
NOT TO SCALE



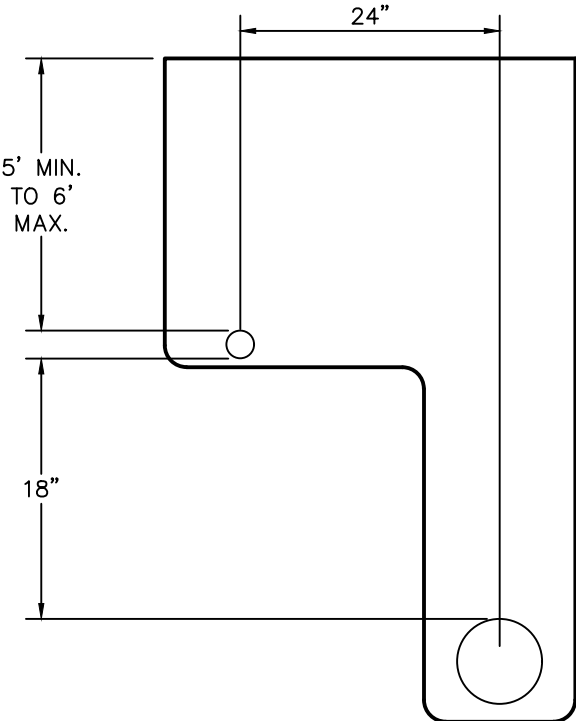
GREASE TRAP
NOT TO SCALE



DOUBLE-COMPARTMENT GREASE INTERCEPTOR TANK
NOT TO SCALE



EXTERNAL FRAME SEAL
NOT TO SCALE



TYPICAL L TRENCH DETAIL HOUSE LEADS
NOT TO SCALE

CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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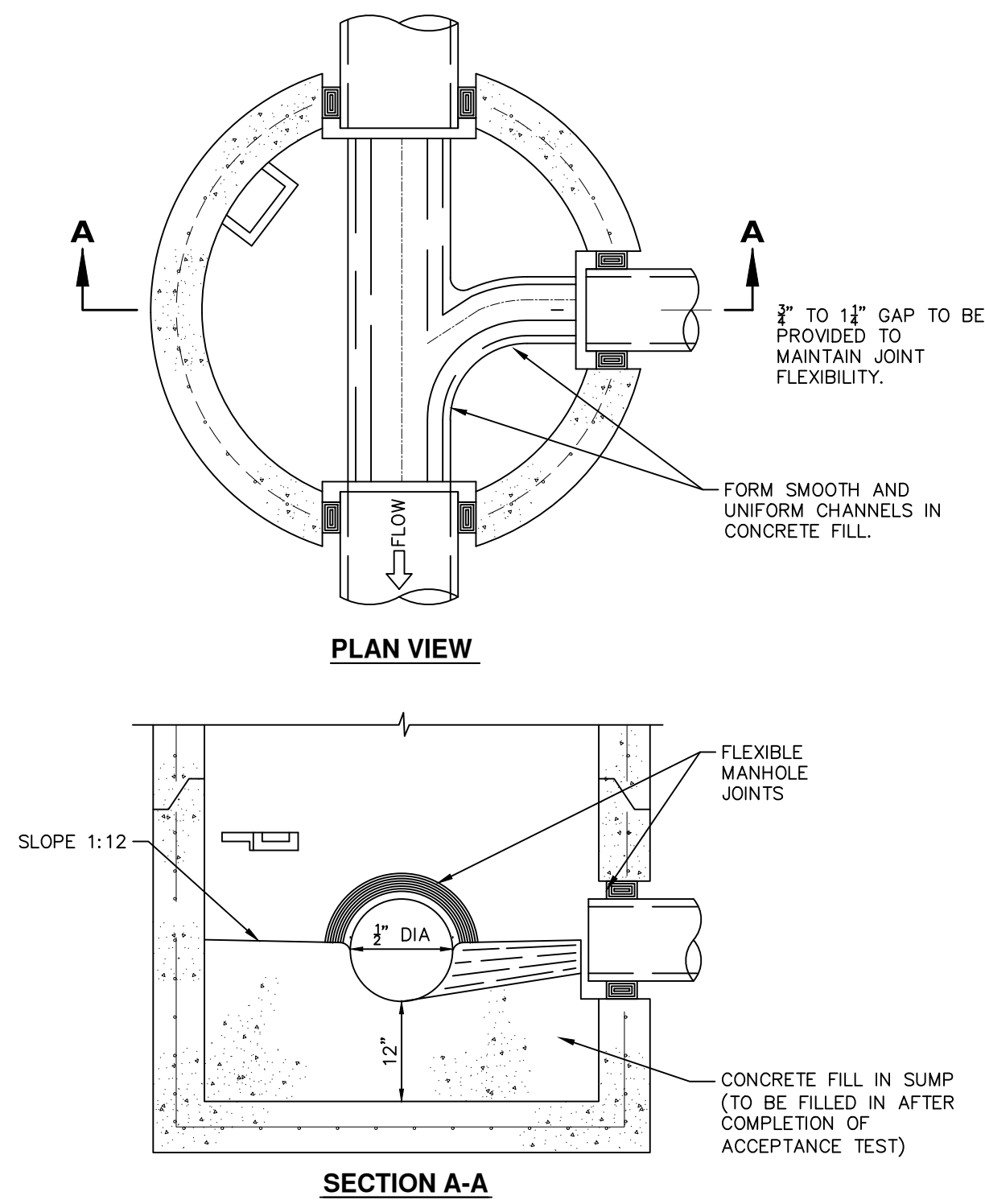
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ISSUED FOR:	
DATE:	
REV:	

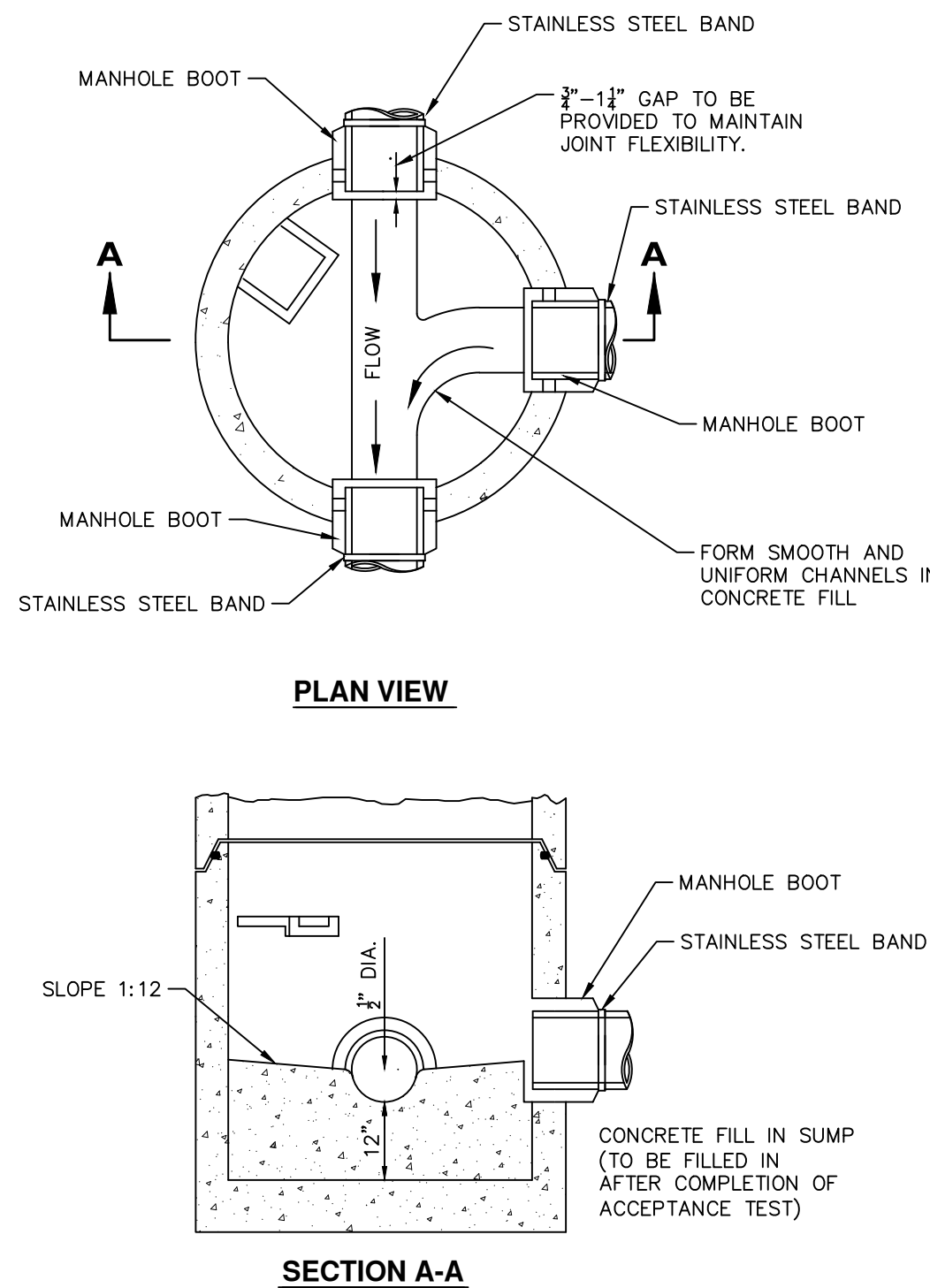
CITY OF HIGHLAND PARK
STANDARD SANITARY SEWER DETAILS AND NOTES
SANITARY SEWER-2



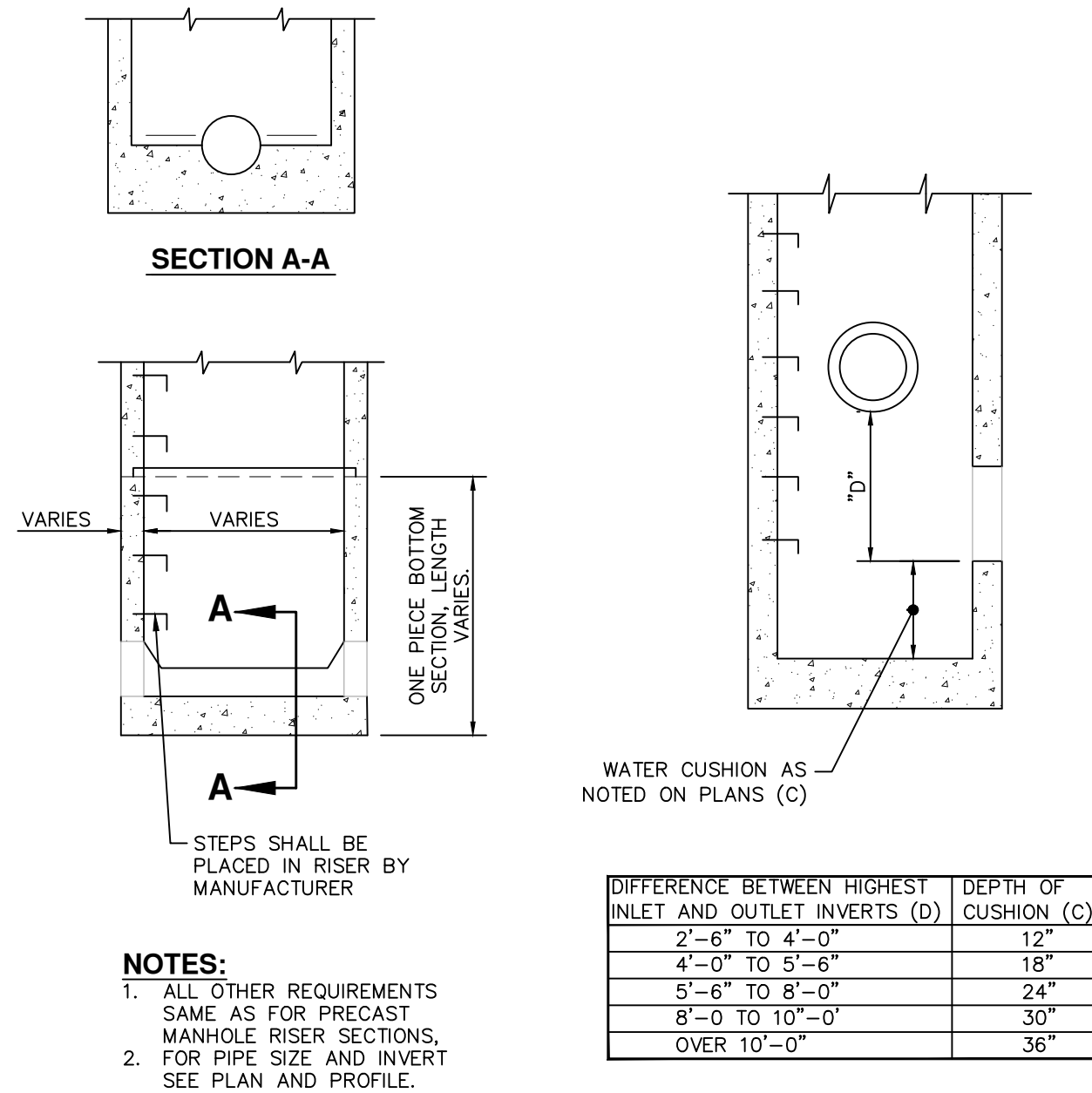
MCA JOB #:	1039-18-8756
DATE:	06.19.2023
SCALE:	AS SHOWN PER DETAIL
DRAWN BY:	Metro Consulting Associates
COUNTY:	WAYNE
SHEET:	SAN2



MANHOLE, SUMP WITH FLEXIBLE JOINT
NOT TO SCALE



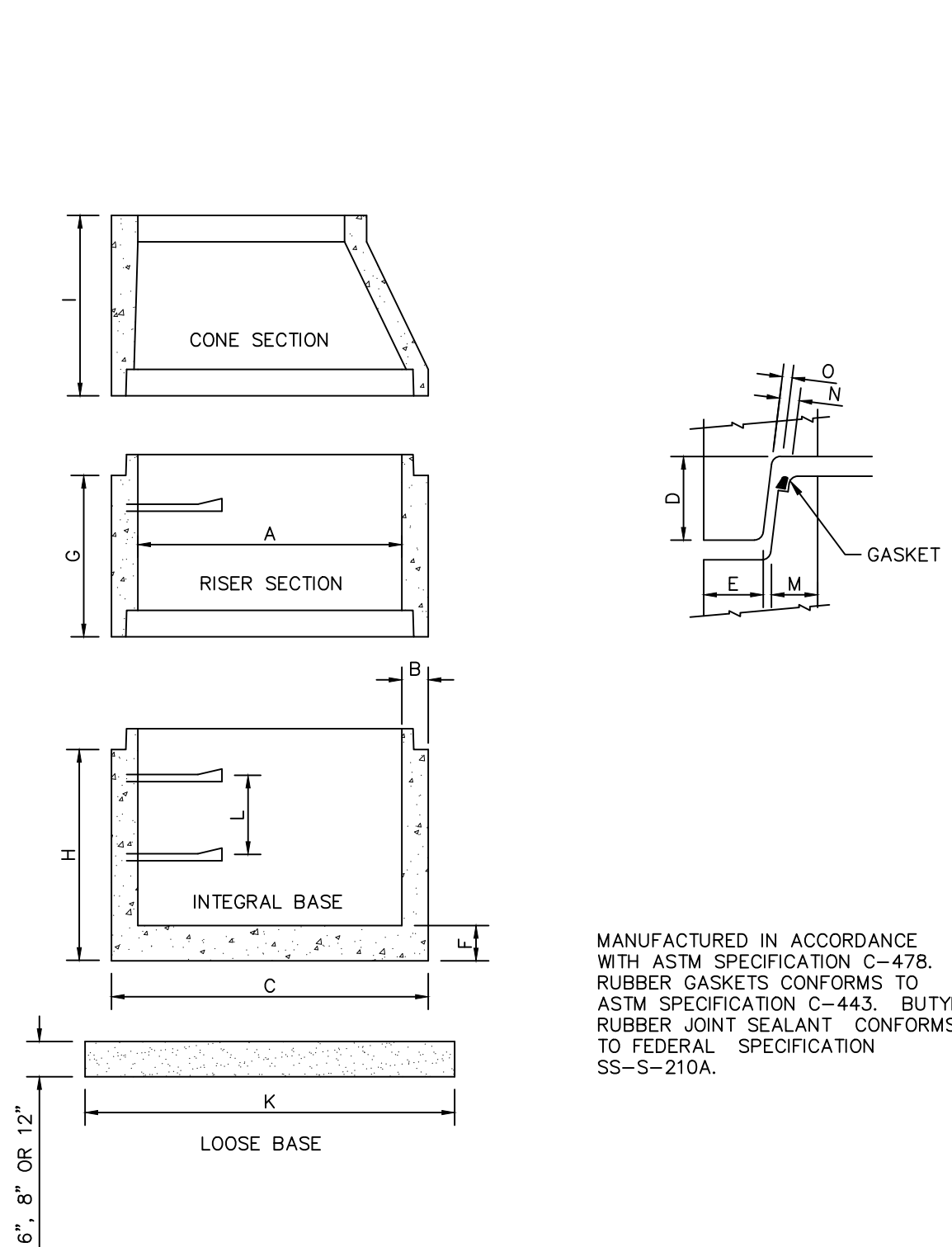
MANHOLE, SUMP WITH BOOT & STAINLESS STEEL BAND
NOT TO SCALE



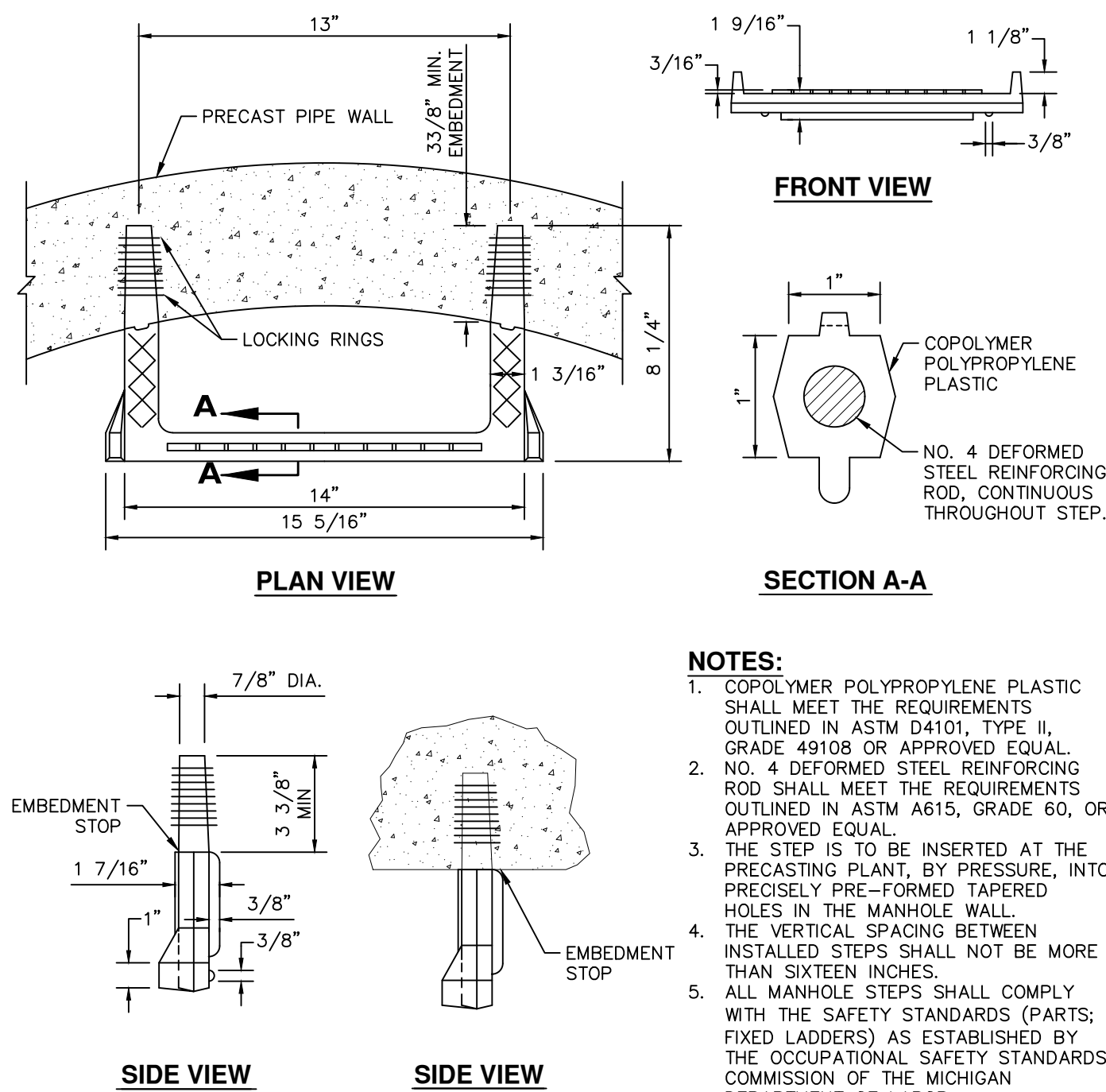
MANHOLE, PRECAST BOTTOMS & WATER CUSHION
NOT TO SCALE

DIAMETER INSIDE	WITHOUT BOOTS		GENERAL INFORMATION
	MAXIMUM PIPE SIZE FOR STRAIGHT THRU INSTALLATION	MAXIMUM PIPE SIZE FOR RIGHT ANGLE INSTALLATION	
48"			ALL DIMENSIONS ARE FOR CONCRETE PIPE
60"			
72"			6" MINIMUM SPACING BETWEEN OPENINGS
84"			
96"			REFER TO MANHOLE SIZING CHART WITH FOR-N-SEAL CONNECTORS FOR DIAMETER OF MANHOLE REQUIRES WHEN USING BOOTS

MANHOLE SIZING CHART
NOT TO SCALE



MANHOLE, ASSEMBLY
NOT TO SCALE



MANHOLE, STEP FOR COPOLYMER POLYPROPYLENE PLASTIC
NOT TO SCALE

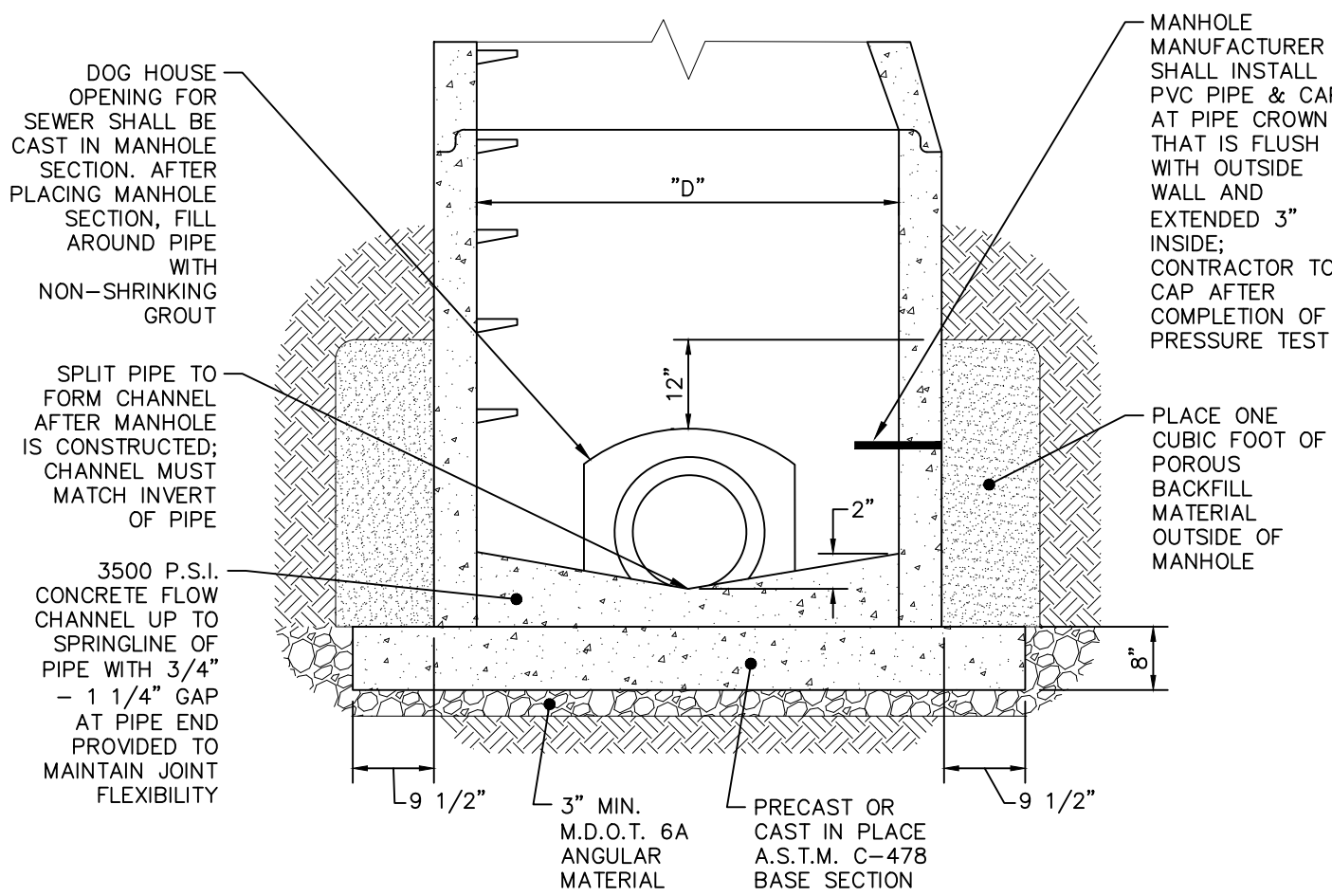
MANHOLES ASTM C-478												
WEIGHTS AND DIMENSIONS - US CUSTOMARY												
A RISER DIAMETER	IN	24	48	60	72	84	96	108	120			
B WALL THICKNESS	IN	3	5	6	7	8	9	9	10			
C OUTSIDE DIAMETER	IN	30	58	72	86	100	114	126	140			
D JOINT DEPTH	IN	2.75	2.75	4.75	5	5	5	5.25	7.5			
E BELL THICKNESS	IN	1.31	2.75	3.28	3.88	4.48	4.93	5	4.5			
F INTEGRAL BASE	IN	6	8	8	8	8	8	8	8			
G RISER HEIGHTS	FT	2	1.33	1.33	1.33							
	FT	3	2.67	2.67	2.67	2.67	2.67	2.67	2.67			
	FT		4	4	4	4	4	4	4			
	FT		5.33	5.33	5.33	5.33	5.33	5.33	5.33			
	FT			8	8	8	8	8	8			
H BASE HEIGHT RISER HEIGHTS CAN ALSO BE USED AS BASE SECTIONS	FT	2		2	2	2	2	2	2			
	FT	3		3	3	3	3	3	3			
	FT	4	3.33	3.33	3.33	3.33	3.33	3.33	3.33			
	FT	4.5	3.67	3.67	3.67	3.67	3.67	3.67	3.67			
	FT	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67			
I CONE HEIGHT TO 24"	FT											
	FT			2.5	3							
	FT			Con.	Con.							
	FT			3								
	FT			4								
K LOOSE BASE - 6" THK. OUTSIDE DIA.	IN	44										
	IN	48	72	84	96							
	IN			84	96	108	120		156			
L STEP SPACING	IN		16	16	16	16	16	16	16			
M SPIGOT THICKNESS	IN	1.5	2.5	2.65	3.06	3.57	3.88	2.75	3.5			
N GASKET ANNULAR SPACE	IN	0.19	0.706	0.56	0.56	0.46	0.56	N/A	0.56			
O CONCRETE ANNULAR SPACE	IN	0.19	0.453	0.09	0.09	0.09	0.12	0.50	0.50			
APPROX. WEIGHT / FT.	LB	264	867	1295	1811	2409	3090	3400	4200			

NOTE:
SOME DIMENSIONS MAY VARY BY MANUFACTURER.
DESIGN ENGINEER SHALL ENSURE DETAIL MEETS AGENCY REQUIREMENTS.

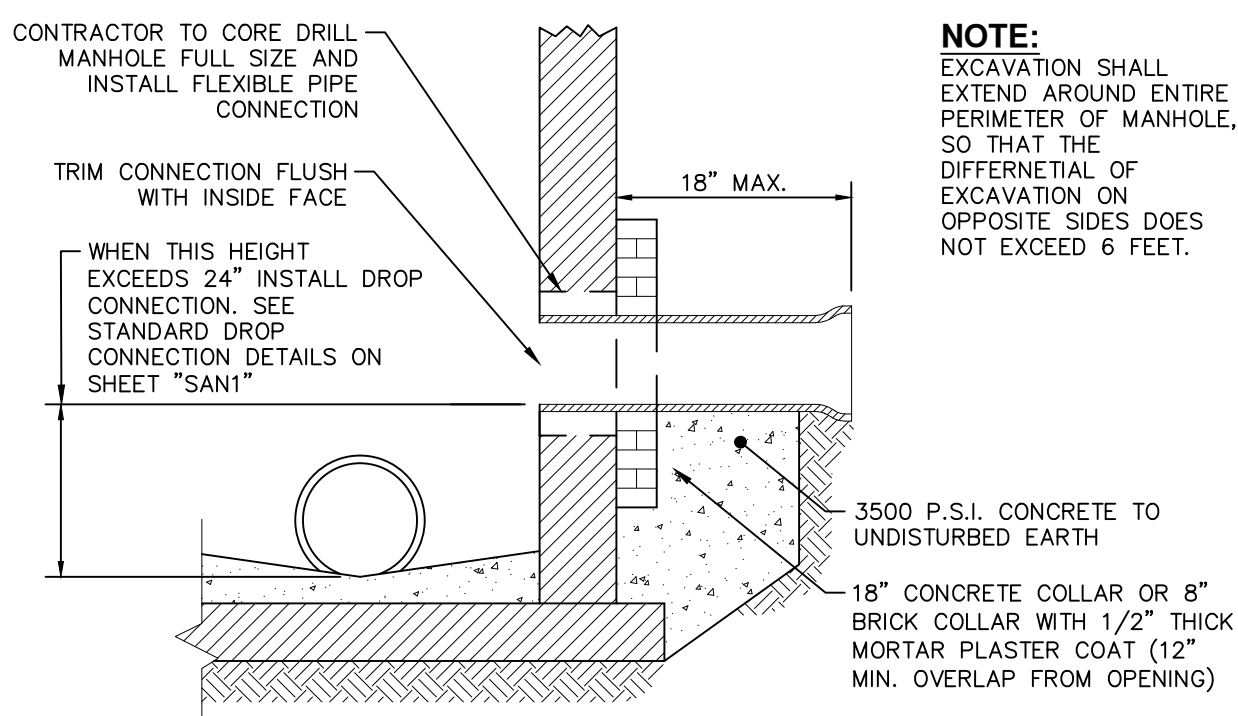
MANHOLE, ASSEMBLY SPECIFICATIONS
NOT TO SCALE

DOG HOUSE CUT OUT SIZES:

- 8" THROUGH 10": 17 1/2" MAX. CUT OUT SIZE
- 12" THROUGH 15": 20" MAX. CUT OUT SIZE
- "D" = 4'-0" DIA. FOR 8" TO 18" SEWER
- "D" = 5'-0" DIA. FOR 21" TO 42" SEWER



MANHOLE INSTALLED ON EXISTING SEWER
NOT TO SCALE



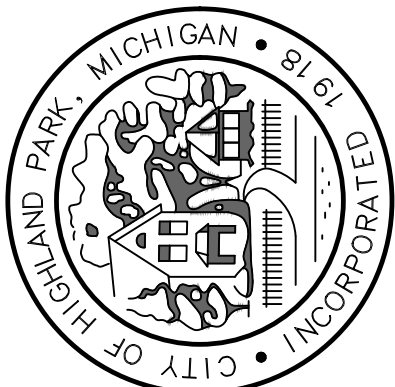
STANDARD CONNECTION TO EXISTING MANHOLE
NOT TO SCALE

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MCA JOB #:1039-18-8756

DATE: 06.19.2023

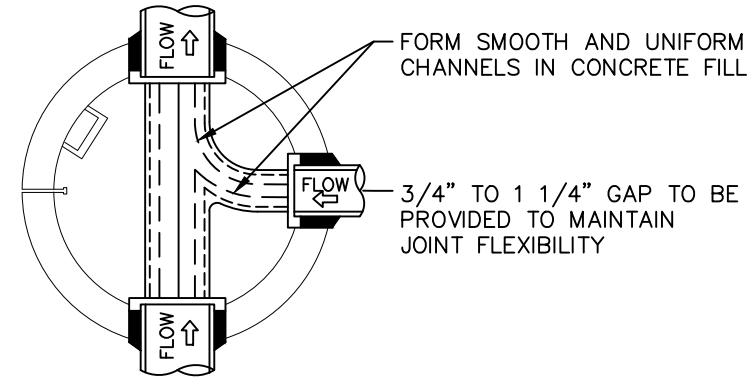
SCALE: AS SHOWN PER DETAIL

DRAWN BY:
Metro Consulting Associates
Dynamic Design. Diverse. Different.

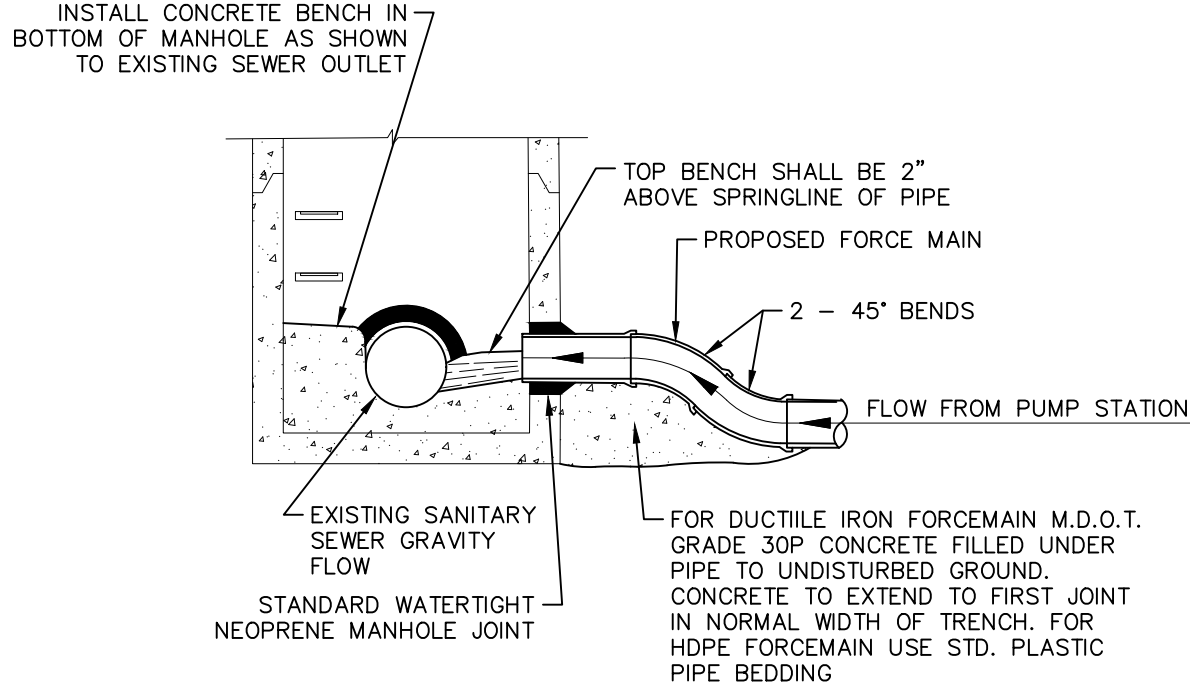
COUNTY: WAYNE

SHEET:

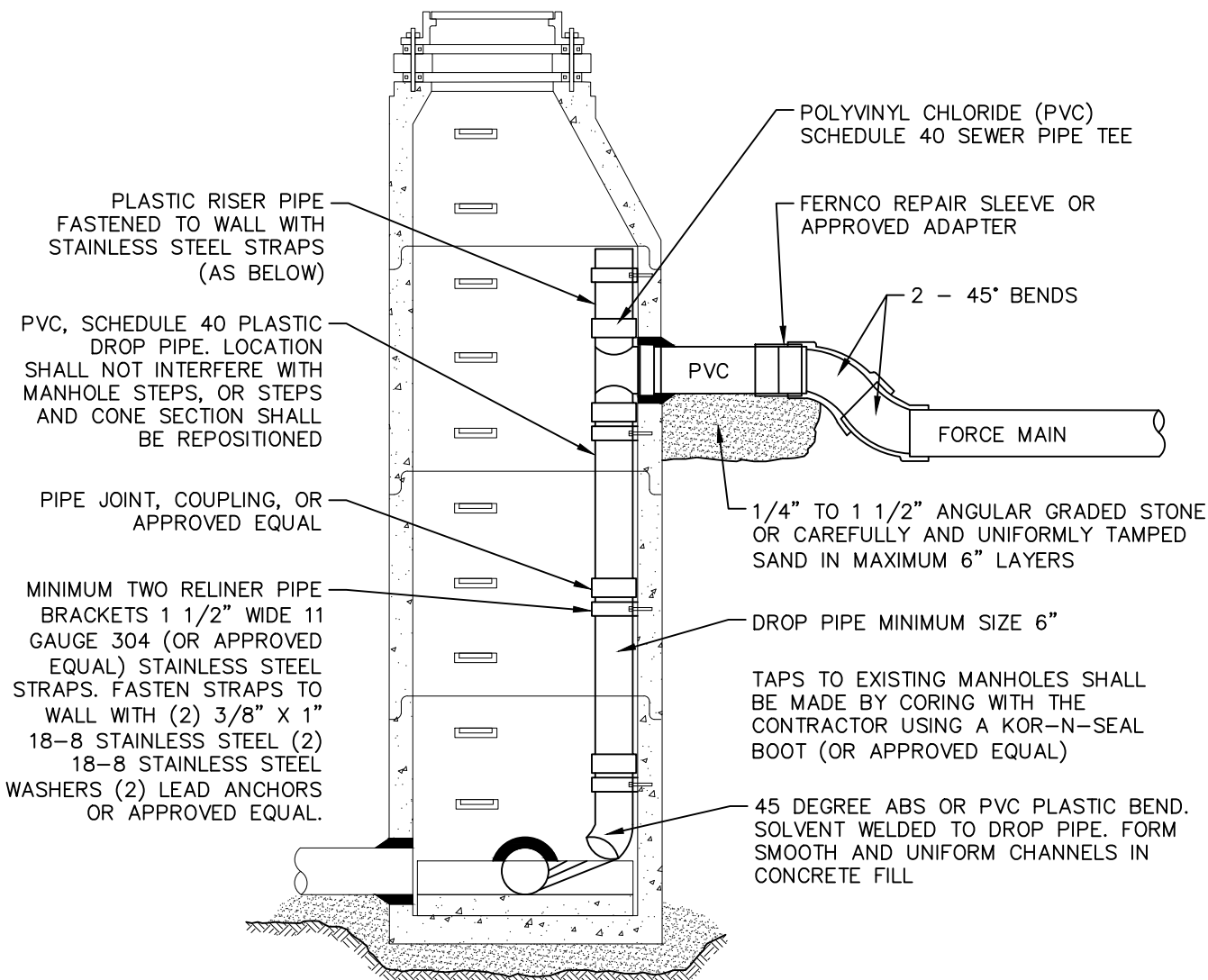
SAN3



NOTE:
TAPS TO EXISTING MANHOLES SHALL BE MADE BY CORING AND USING A KOR-N-SEAL BOOT (OR APPROVED EQUAL)

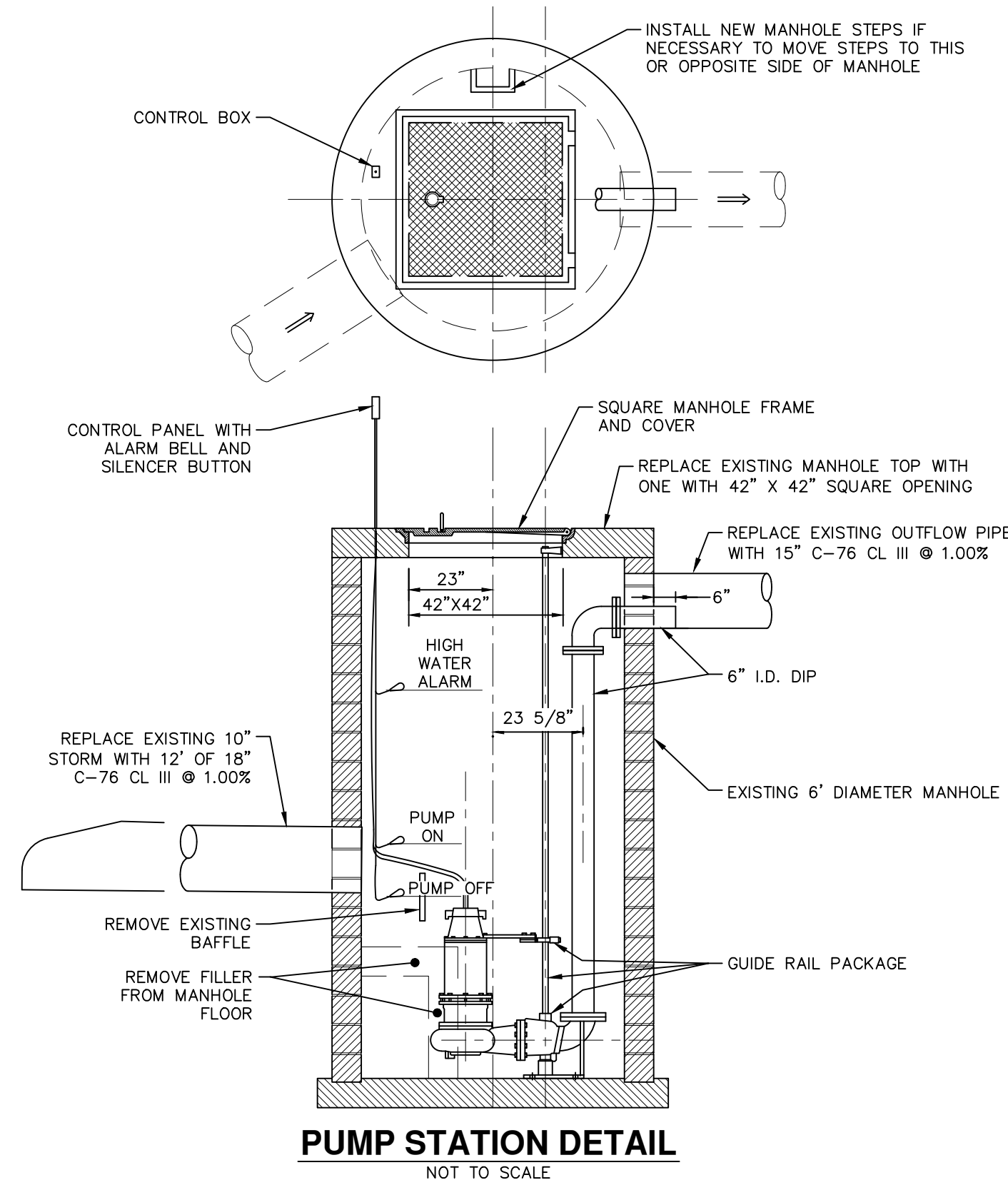


FORCEMAIN DISCHARGE TO GRAVITY SEWER MANHOLE
NOT TO SCALE

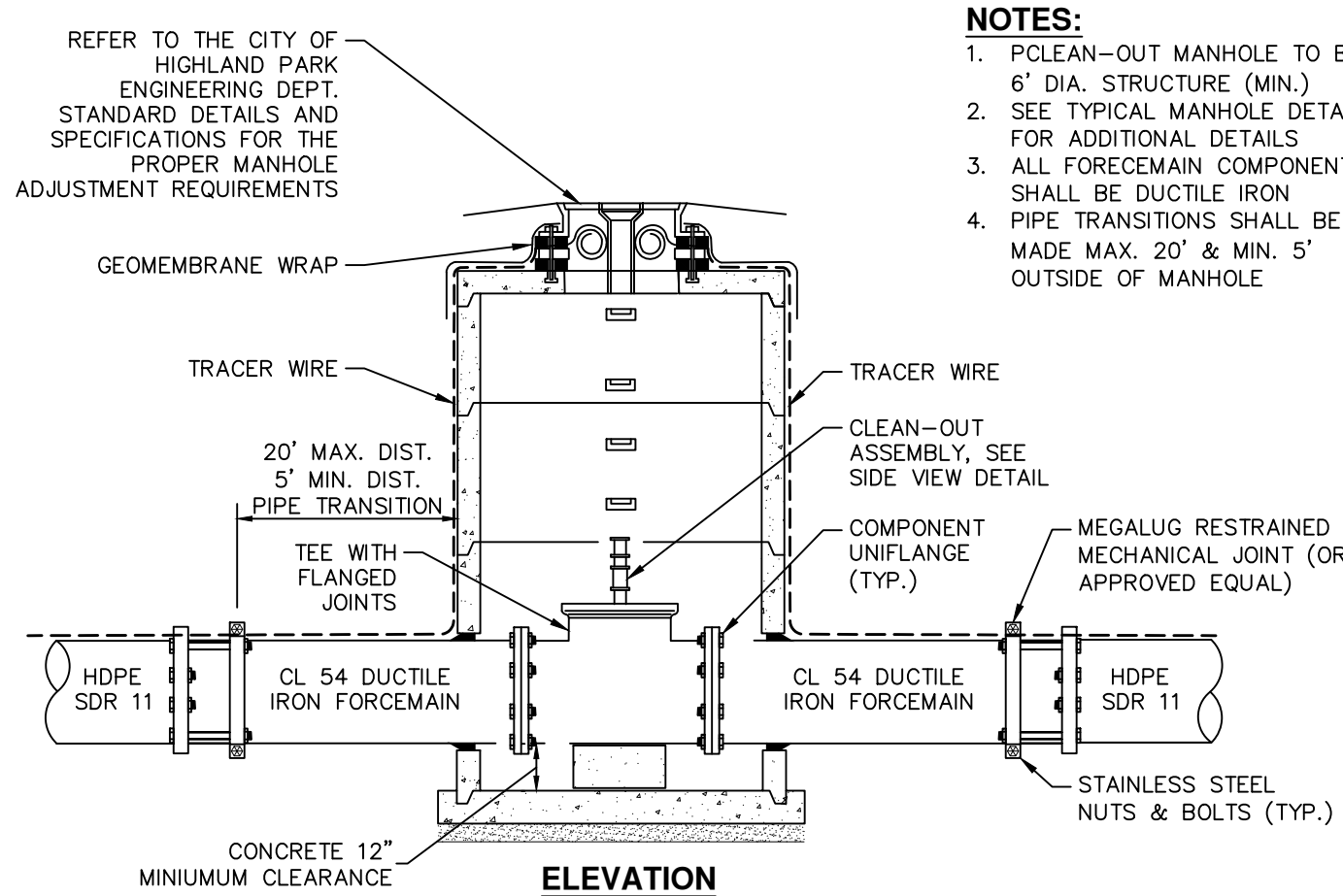


NOTE:
TO BE USED ONLY WHERE SPECIFICALLY AUTHORIZED AND NOT IN ANY MANHOLE IN WHICH AN INTERIOR DROP CONNECTION ALREADY EXISTS. TYPICAL DROP PIPE DIAMETER IS ONE SIZE SMALLER THAN FORCE MAIN DIAMETER.

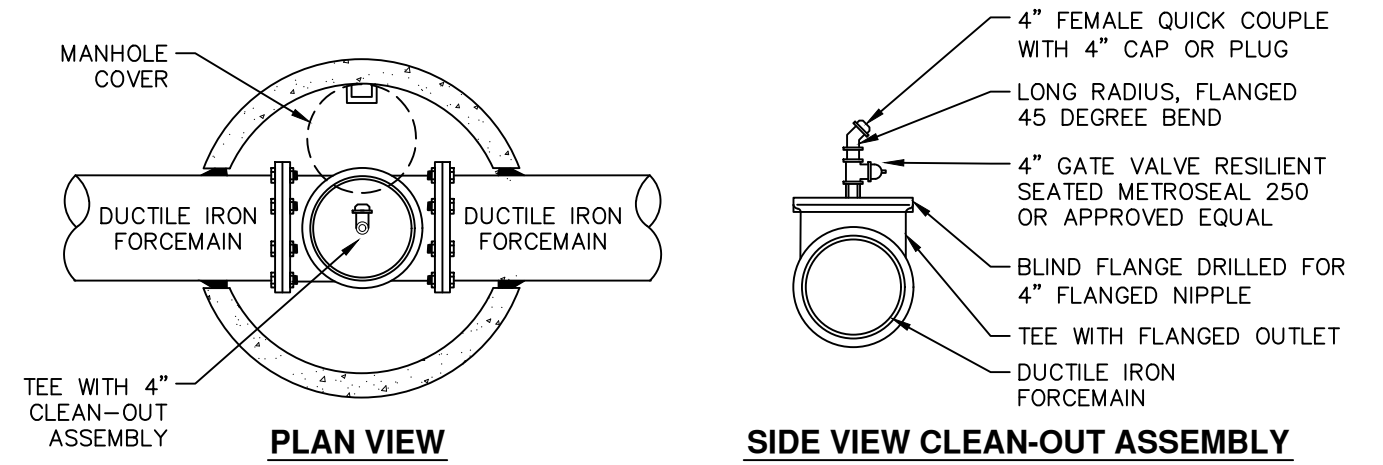
FORCEMAIN INTERIOR DROP CONNECTION
NOT TO SCALE



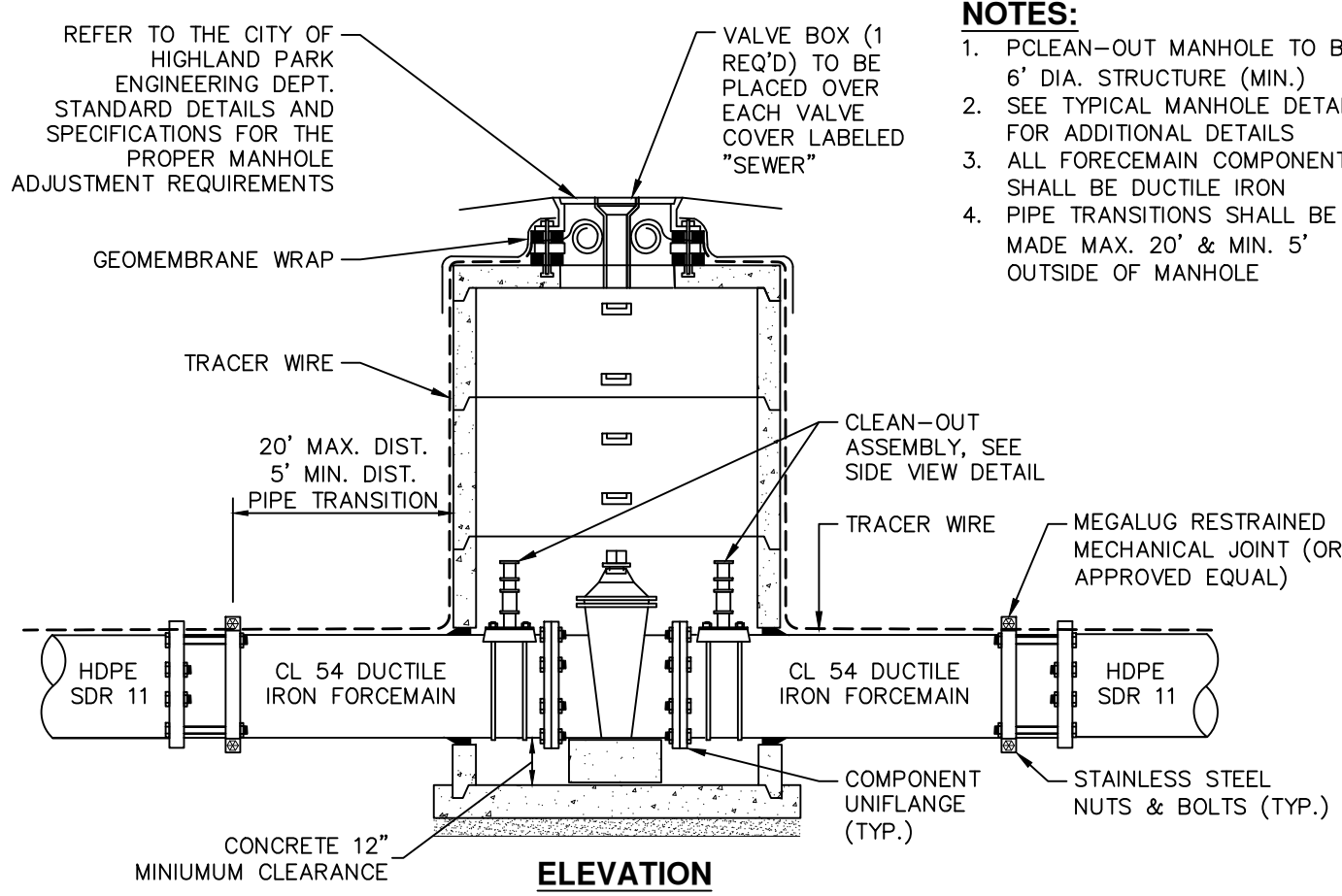
PUMP STATION DETAIL
NOT TO SCALE



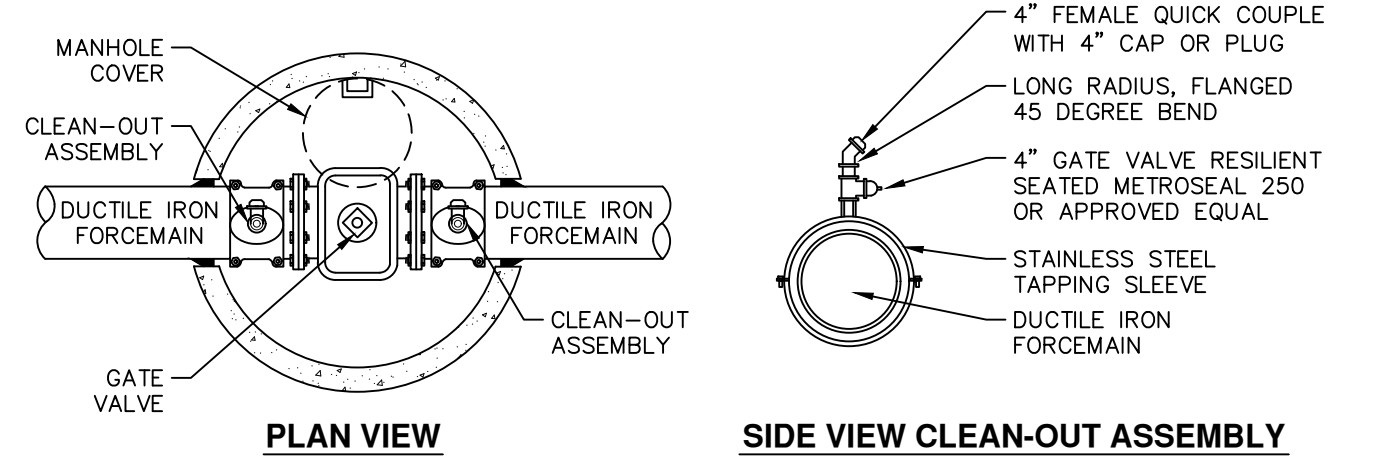
NOTES:
1. PCLEAN-OUT MANHOLE TO BE 6\"/>



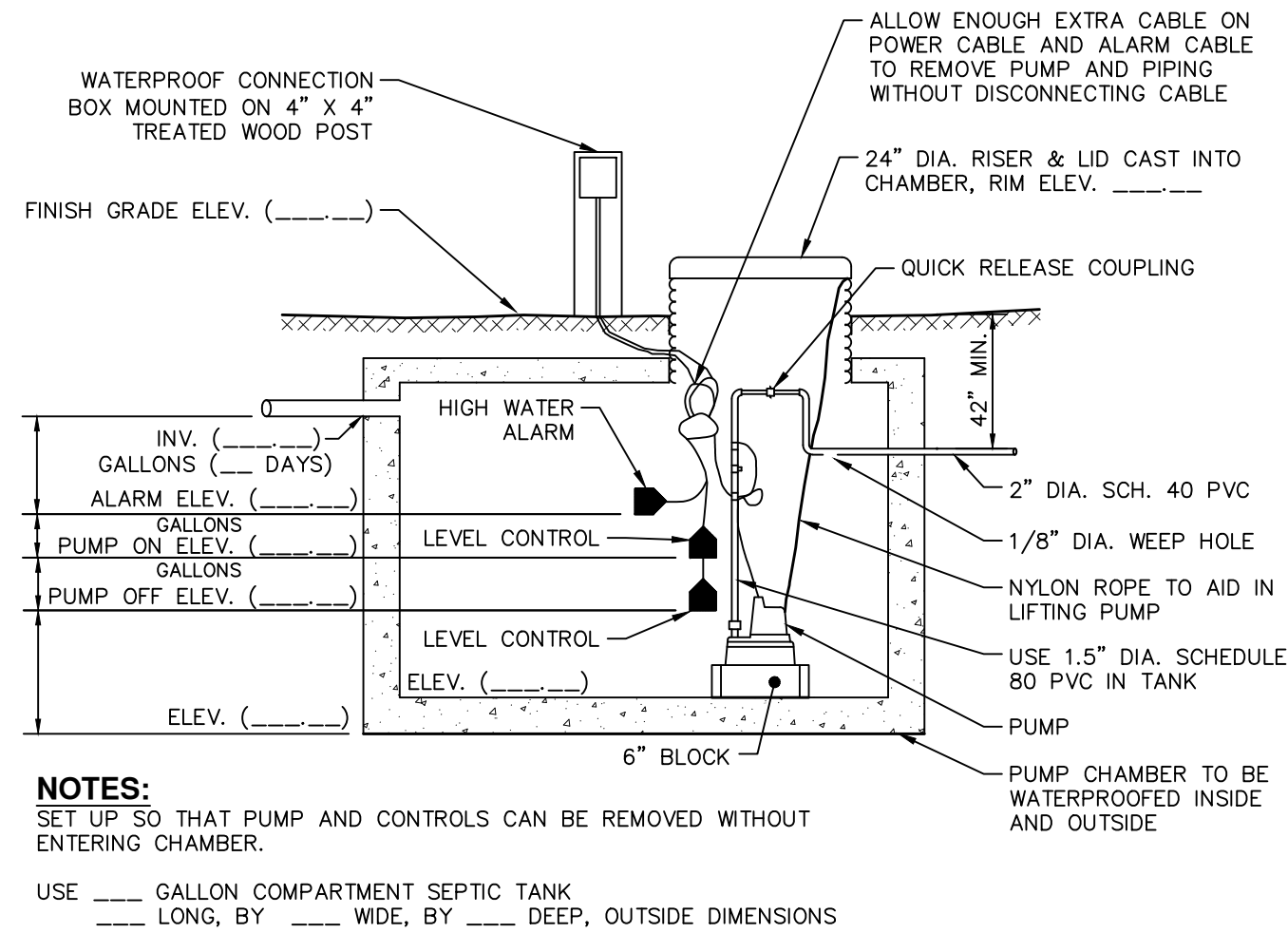
12 INCH AND LARGER FORCEMAIN CLEAN-OUT ASSEMBLY
NOT TO SCALE



NOTES:
1. PCLEAN-OUT MANHOLE TO BE 6\"/>

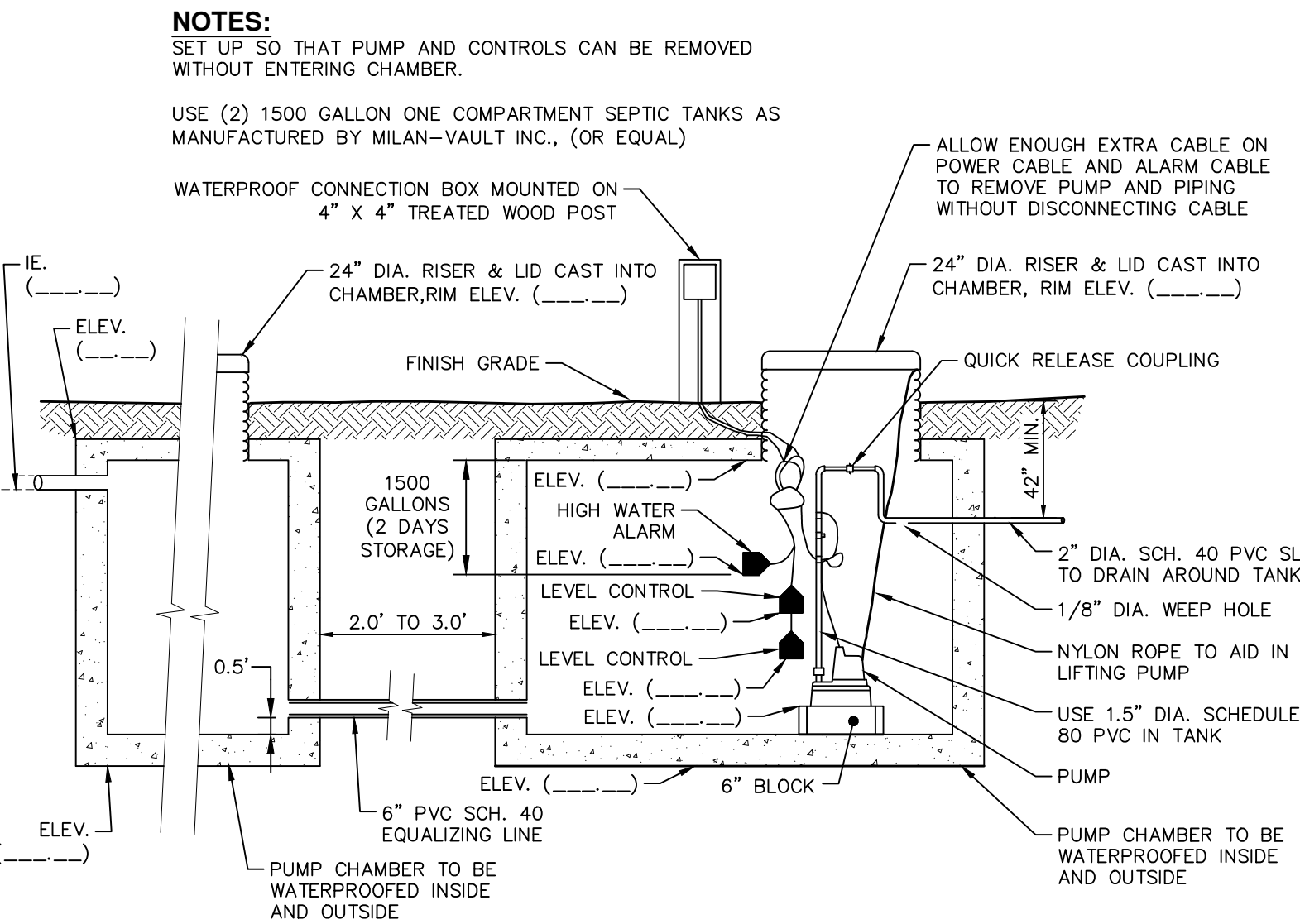


12 INCH AND LARGER FORCEMAIN FLUSHING ASSEMBLY
NOT TO SCALE



NOTES:
SET UP SO THAT PUMP AND CONTROLS CAN BE REMOVED WITHOUT ENTERING CHAMBER.
USE ____ GALLON COMPARTMENT SEPTIC TANK
____ LONG, BY ____ WIDE, BY ____ DEEP, OUTSIDE DIMENSIONS

PUMP CHAMBER DETAIL
NOT TO SCALE



PUMP CHAMBER - 2 TANK DETAIL
NOT TO SCALE

CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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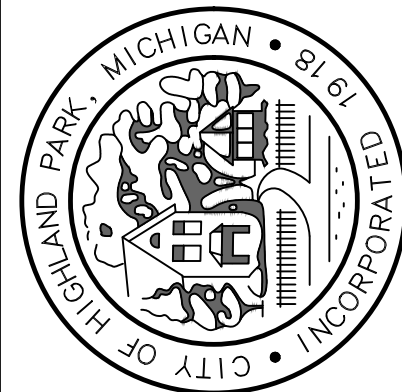
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ISSUED FOR:

DATE:

REV:

CITY OF HIGHLAND PARK
STANDARD SANITARY SEWER DETAILS AND NOTES
SANITARY SEWER-4



MCA JOB #:1039-18-8756

DATE: 06.19.2023

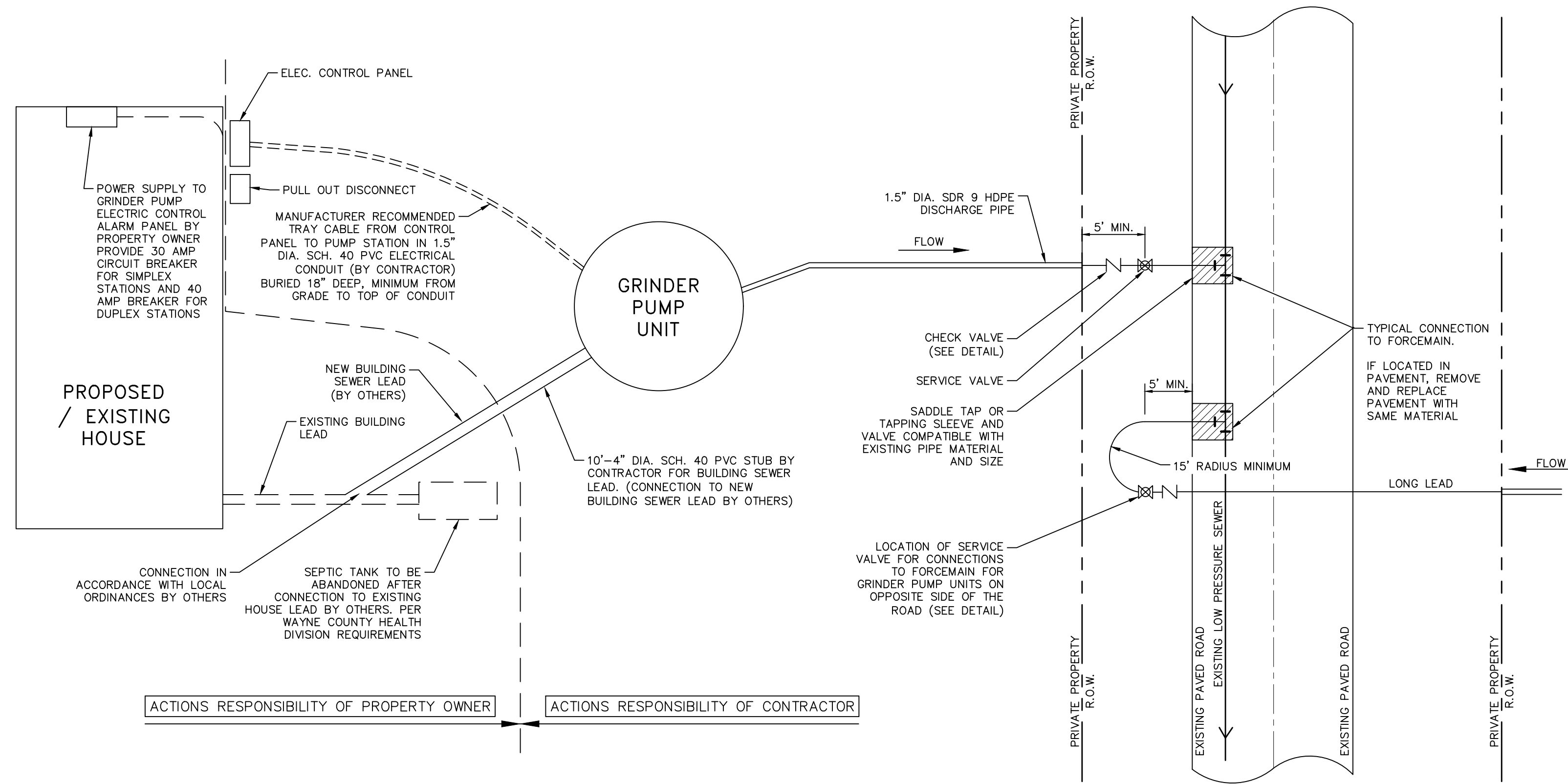
SCALE: AS SHOWN PER DETAIL

DRAWN BY:
Metro Consulting Associates
Dynamic. Daring. Diverse. DIFFERENT.

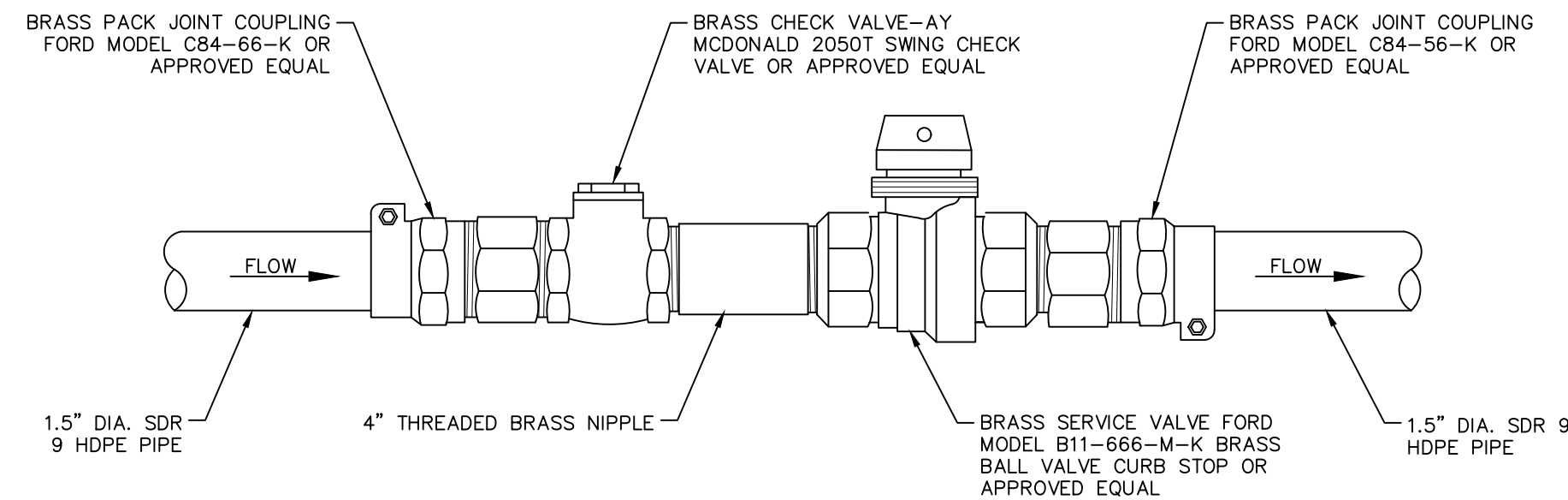
COUNTY: WAYNE

SHEET:

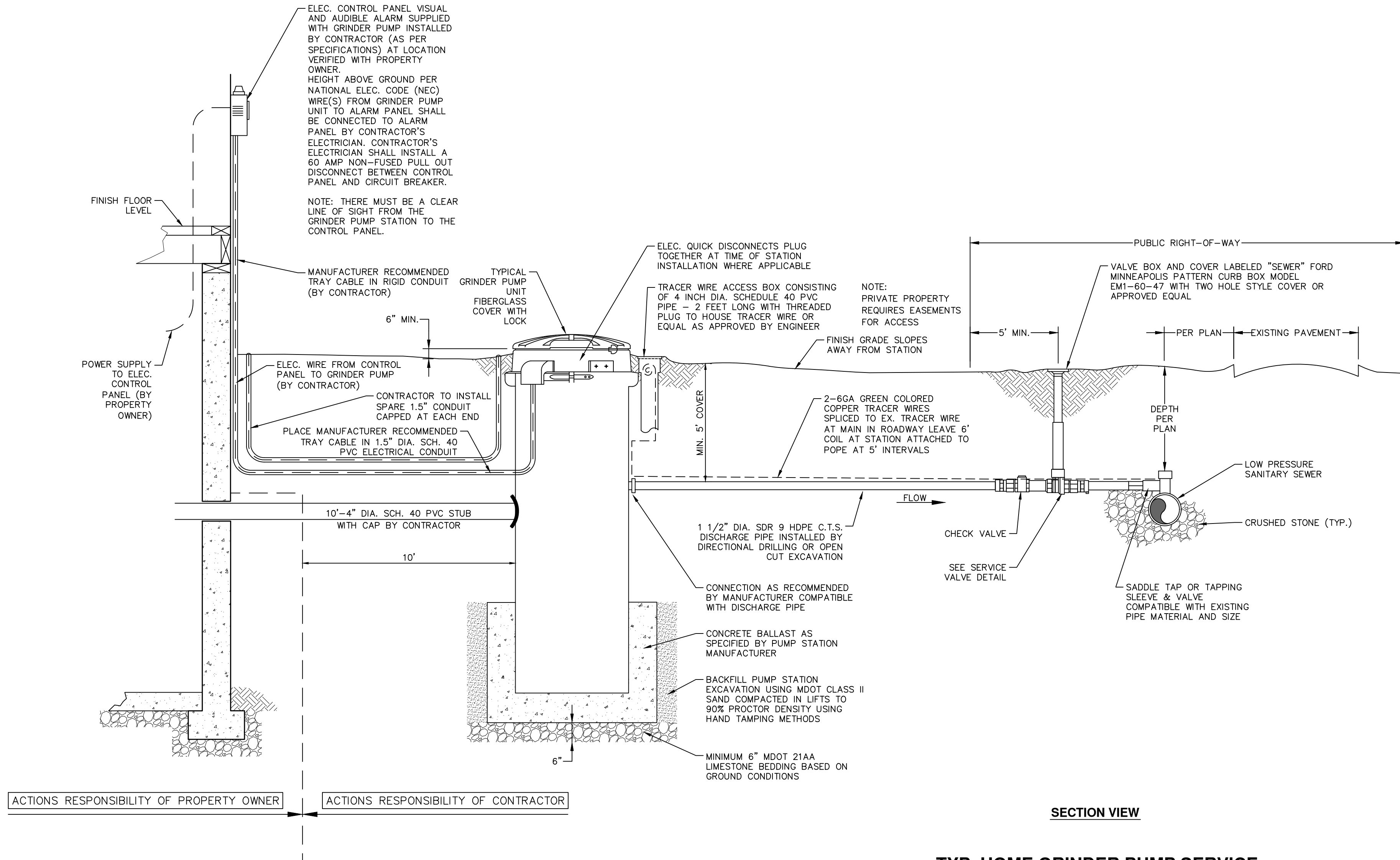
SAN4



PLAN VIEW



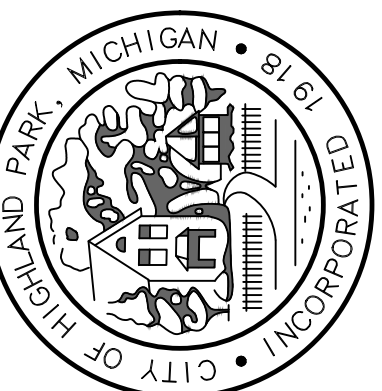
SERVICE VALVE DETAIL



SECTION VIEW

TYP. HOME GRINDER PUMP SERVICE
NOT TO SCALE

CITY OF HIGHLAND PARK
STANDARD SANITARY SEWER DETAILS AND NOTES
SANITARY SEWER-3



MCA JOB #:1039-18-8756
DATE: 06.19.2023
SCALE: AS SHOWN PER DETAIL
DRAWN BY:
Metro Consulting Associates
Dynamic. Daring. Diverse. DIFFERENT.
COUNTY: WAYNE
SHEET: **SAN3**

CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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1. TREE SHALL BEAR SAME RELATION TO FINISH GRADE AS IT BORE ORIGINALLY OR SLIGHT HIGHER THAN FINISH GRADE UP TO 6" ABOVE GRADE, IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOIL AREAS.
2. PLANT TREE SO THAT TOP OF ROOT FLARE IS EVEN WITH FINISH GRADE.
3. REMOVE ROOT BALL DIRT TO EXPOSE ROOT FLARE, IF NECESSARY, AND CUT ANY GIRDLING ROOTS.
4. DO NOT PRUNE TERMINAL LEADER. PRUNE ONLY DEAD OR BROKEN BRANCHES.
5. REMOVE ALL TAGS, STRING, PLASTICS AND OTHER MATERIALS THAT ARE UNSIGHTLY OR COULD CAUSE GIRDLING.
5. GUY DECIDUOUS TREES ABOVE 3" CAL.; STAKE DECIDUOUS TREES BELOW 3" CAL.



1. TREE SHALL BEAR SAME RELATION TO FINISH GRADE AS 1" BORE ORIGINALLY OR SLIGHT HIGHER THAN FINISH GRADE UP TO 6" ABOVE GRADE, IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOIL AREAS.
2. PLANT TREE SO THAT TOP OF ROOT FLARE IS EVEN WITH FINISH GRADE.
3. REMOVE ROOT BALL DIRT TO EXPOSE ROOT FLARE, IF NECESSARY, AND CUT ANY GIRDLING ROOTS.
4. DO NOT PRUNE TERMINAL LEADER. PRUNE ONLY DEAD OR BROKEN BRANCHES.
5. REMOVE ALL TAGS, STRING, PLASTICS AND OTHER MATERIALS THAT ARE UNSIGHTLY OR COULD CAUSE GIRDLING.
5. GUY EVERGREEN TREES ABOVE 12' HT.; STAKE EVERGREEN TREES BELOW 12' HT.



1. PLANT TREE SO THAT TOP OF ROOT FLARE IS EVEN WITH FINISH GRADE.
2. REMOVE ROOT BALL DIRT TO EXPOSE ROOT FLARE, IF NECESSARY, AND CUT ANY GIRDLING ROOTS.
3. PRUNE TO REMOVE BROKEN AND DAMAGED BRANCHES, PRUNE OUT CROSS BRANCHES INSIDE TREE.
4. REMOVE ALL TAGS, STRING, PLASTICS AND OTHER MATERIALS THAT ARE UNSIGHTLY OR COULD CAUSE GIRDLING.
5. STAKE 3 LARGEST STEMS, IF TREE HAS MORE THAN 3 LEADERS. SET TREE STAKES VERTICAL AND AT THE SAME HEIGHT.



1. SHRUB SHALL BEAR SAME RELATION TO FINISH GRADE AS IT BORE ORIGINALLY OR SLIGHT HIGHER THAN FINISH GRADE UP TO 4" ABOVE GRADE, IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOIL AREAS.
2. PLANT SHRUB SO THAT TOP OF ROOT FLARE IS EVEN WITH FINISH GRADE.
3. REMOVE ROOT BALL DIRT TO EXPOSE ROOT FLARE, IF NECESSARY, AND CUT ANY GIRDLING ROOTS.
4. PRUNE BRANCHES TO THIN OR MATCH, RETAIN NORMAL PLANT SHAPE. PRUNE DEAD BRANCHES.
5. REMOVE ALL TAGS, STRING, PLASTICS AND OTHER MATERIALS THAT ARE UNSIGHTLY OR COULD CAUSE GIRDLING.



WOODEN FENCE POST

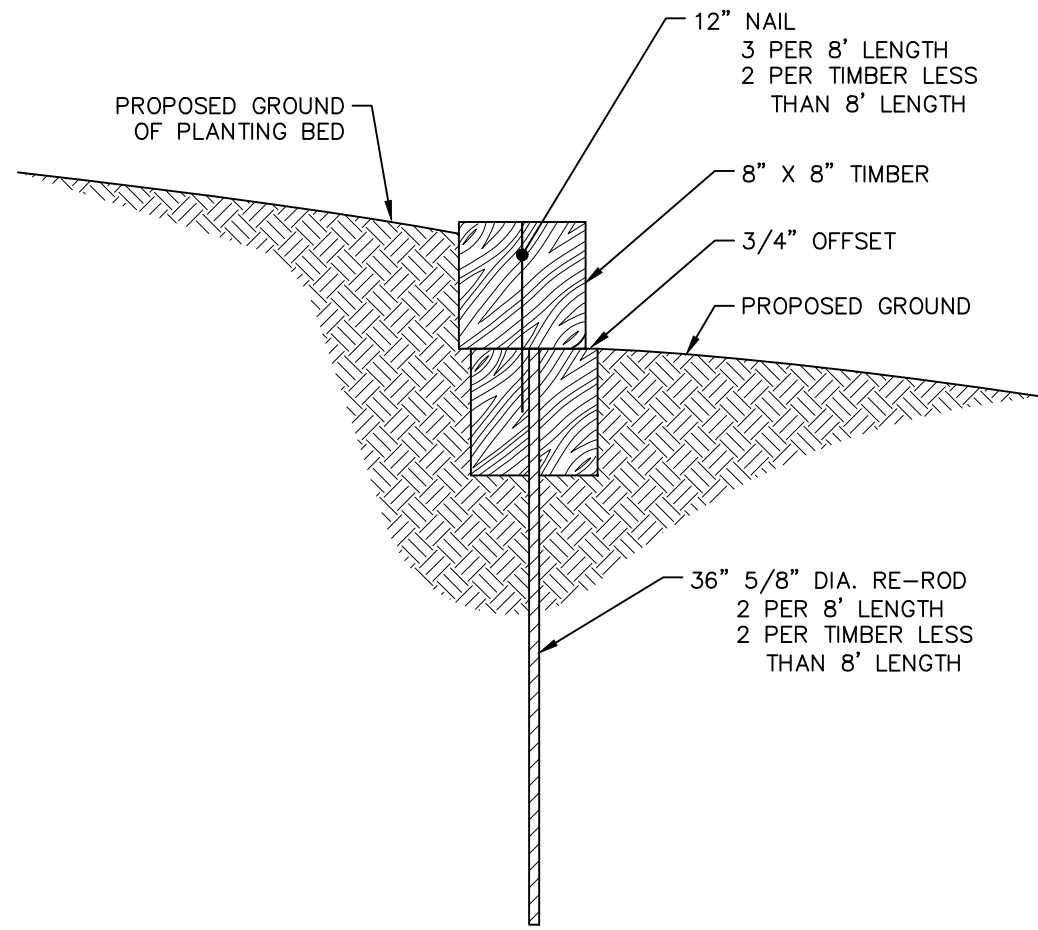
STANDARD 48" HIGH SNOW OR CONSTRUCTION FENCE

1. ALL TREES TO BE REMOVED WILL BE IDENTIFIED BY RED FLAGGING.
2. TREE PROTECTION FENCING IS TO BE ERECTED PRIOR TO ANY EARTHWORK OR CONSTRUCTION AND IS TO REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
3. ALL DEBRIS, FILL, EQUIPMENT OR MATERIAL IS TO BE KEPT CLEAR OF AREA WITHIN PROTECTIVE FENCE. NO CLEANING OF EQUIPMENT OR MATERIAL OR STORAGE OR DISPOSAL OF ANY MATERIAL WITHIN THE DRIP LINE OF ANY TREES TO BE SAVED.

NO
FEN
OUT
OF
CLO
THE

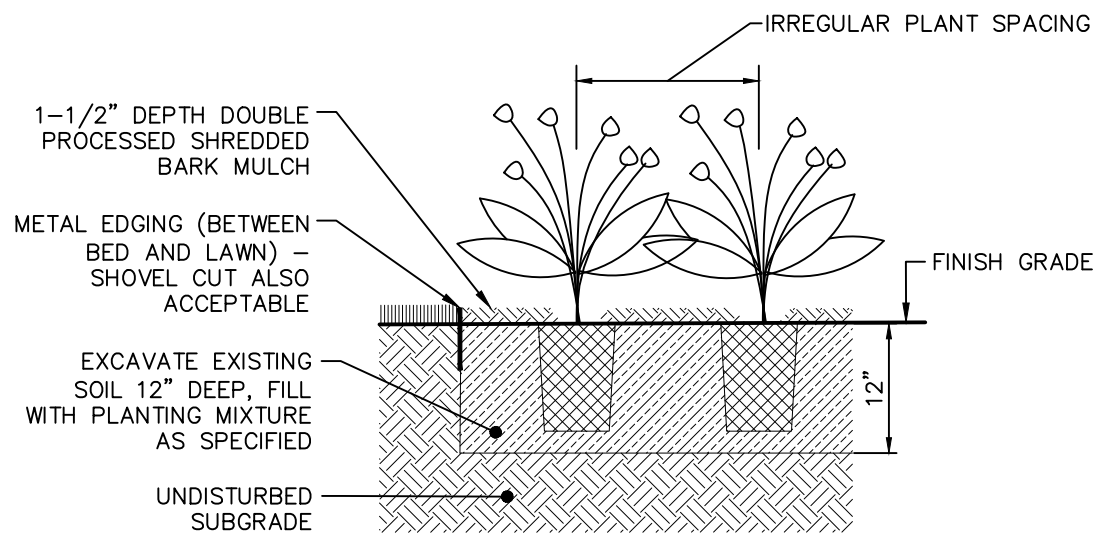
NOT TO SCALE

FENCE SHALL BE LOCATED AT THE OUTER PERIMETER OF THE SPREAD OF THE BRANCHES (DRIP-LINE), OR CLOSER ONLY AT THE DIRECTION OF THE LANDSCAPE ARCHITECT.



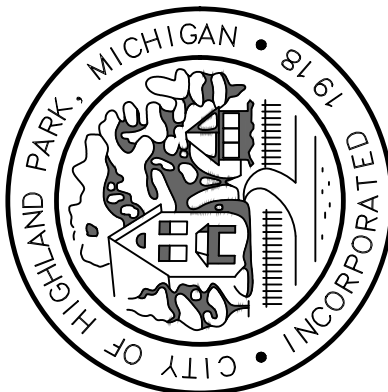
NOT TO SCALE

1. REMOVE ALL FIBER, PLASTIC OR METAL CONTAINERS



NOT TO SCALE

CITY OF HIGHLAND PARK
STANDARD LANDSCAPING DETAILS AND NOTES
LANDSCAPING—1



MCA JOB #: 1039-18-8756

DATE: 06.19.2023

SCALE: AS SHOWN PER DETAIL

DRAWN BY:



COUNTY: WAYNE

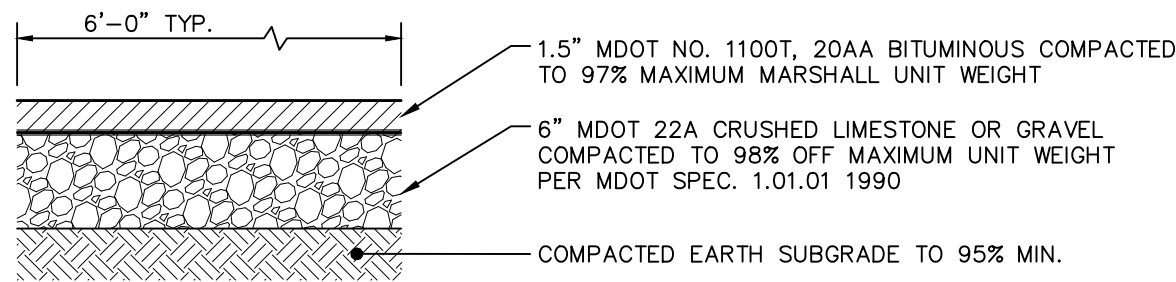
SHEET: 14

211

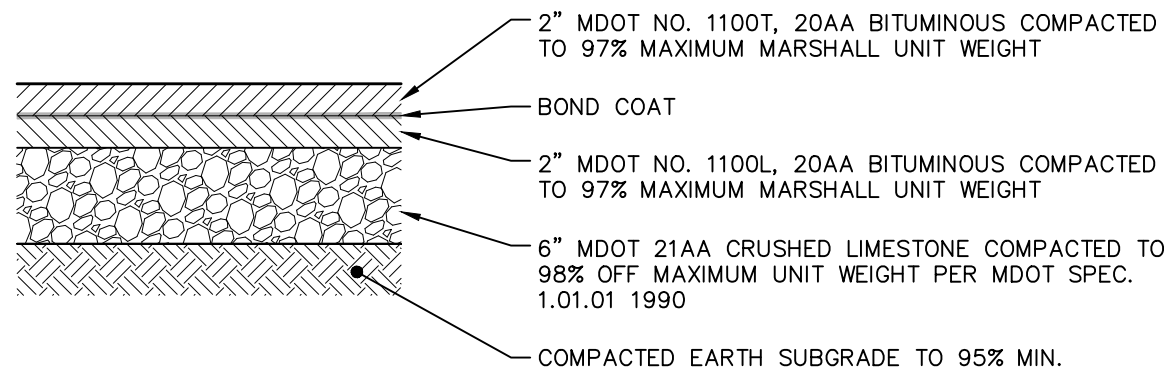
CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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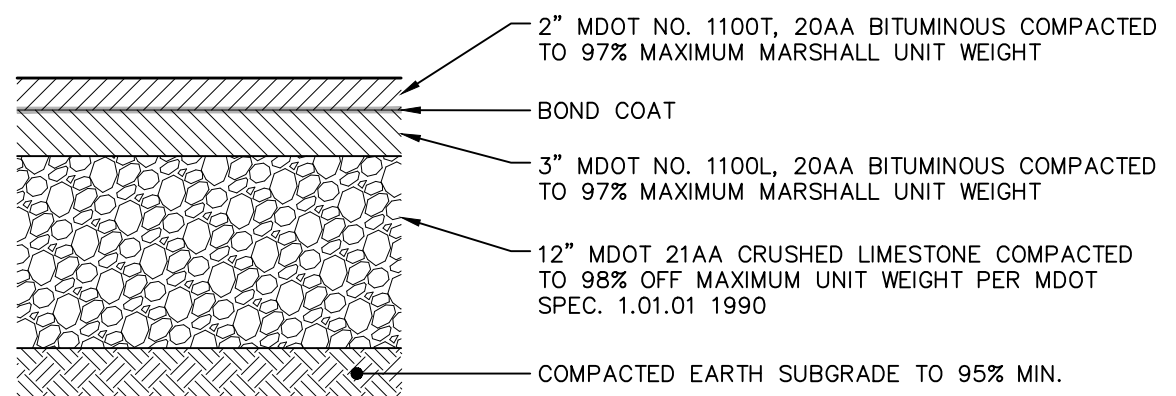




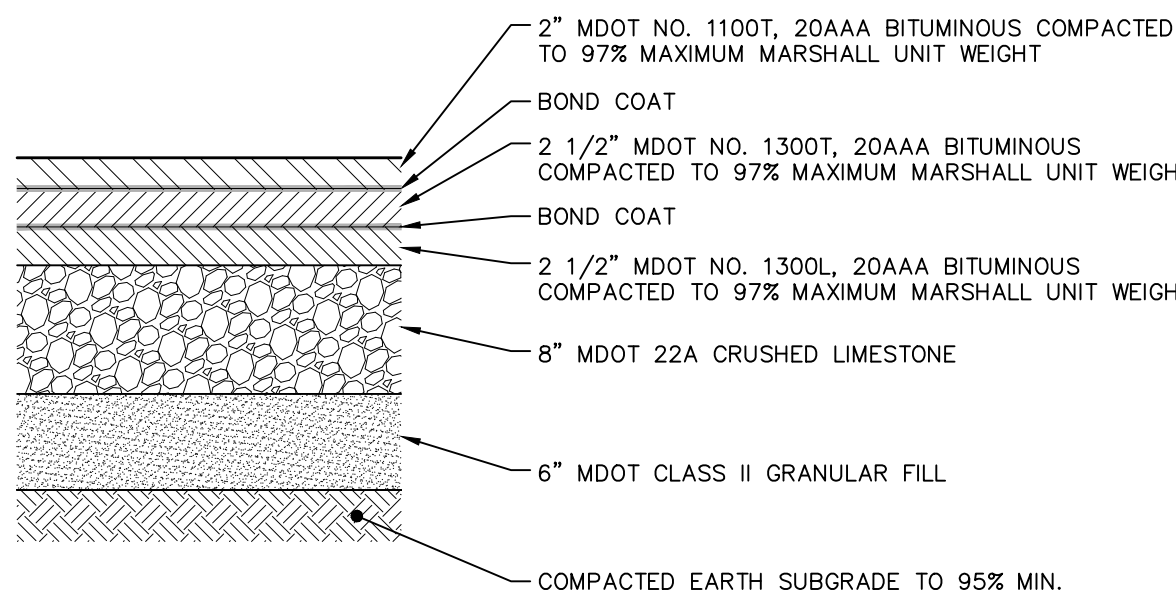
SIDEWALK BITUMINOUS PAVEMENT
NOT TO SCALE



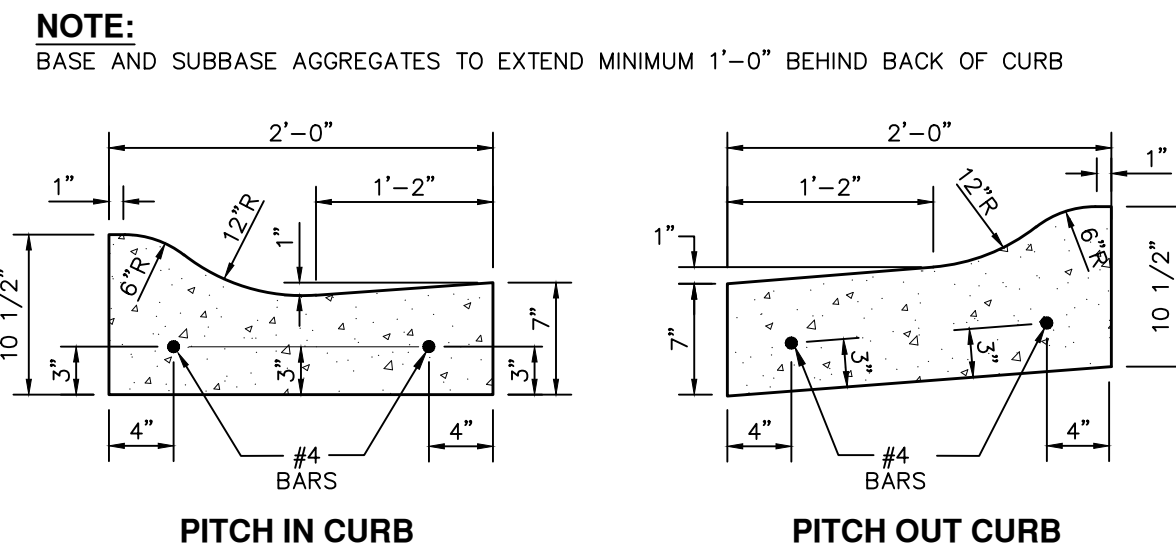
STANDARD PARKING LOT BITUMINOUS PAVEMENT
NOT TO SCALE



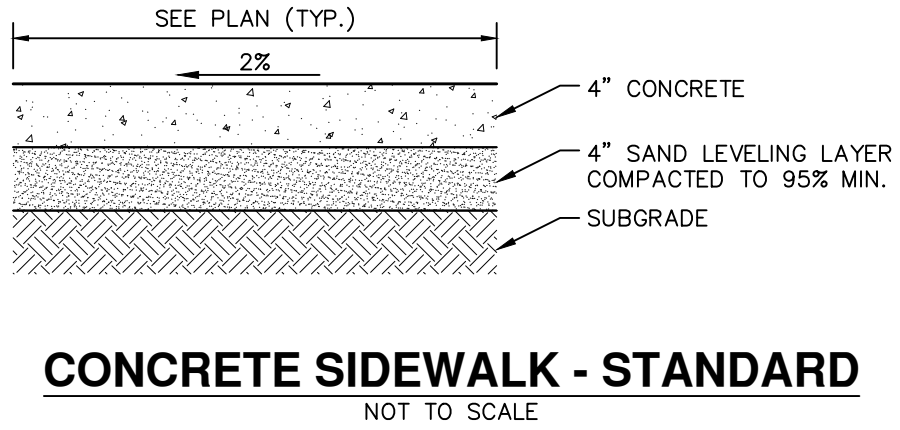
HEAVY DUTY PARKING LOT BITUMINOUS PAVEMENT
NOT TO SCALE



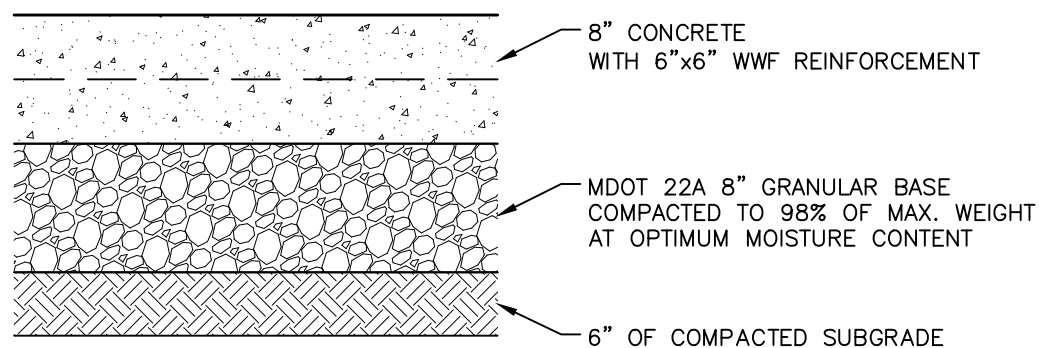
BITUMINOUS ROAD PAVEMENT SECTION
NOT TO SCALE



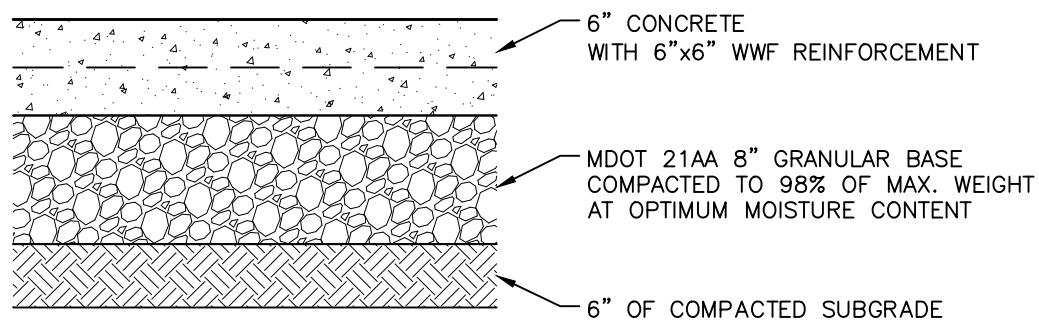
ROLL CONCRETE CURB & GUTTER
NOT TO SCALE



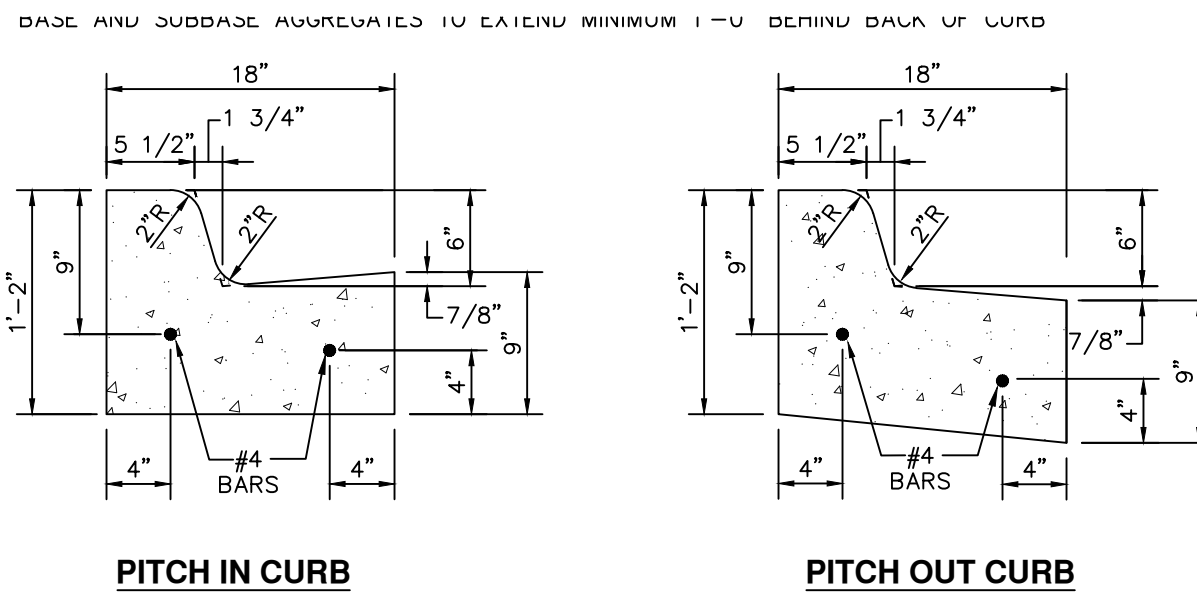
CONCRETE SIDEWALK - STANDARD
NOT TO SCALE



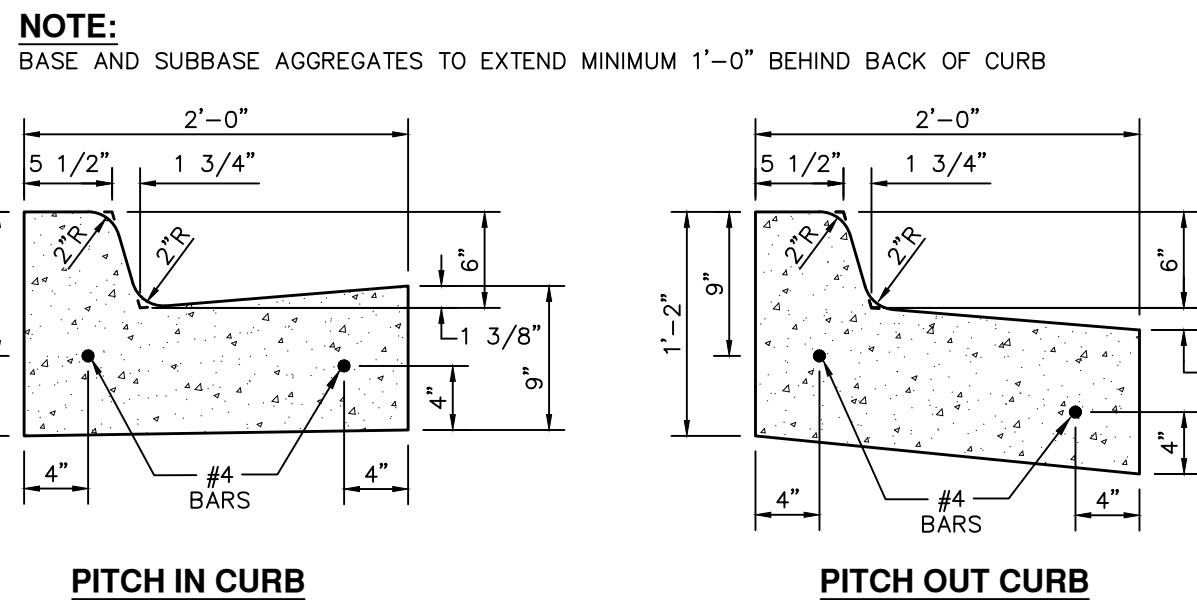
CONCRETE SIDEWALK - HEAVY DUTY
NOT TO SCALE



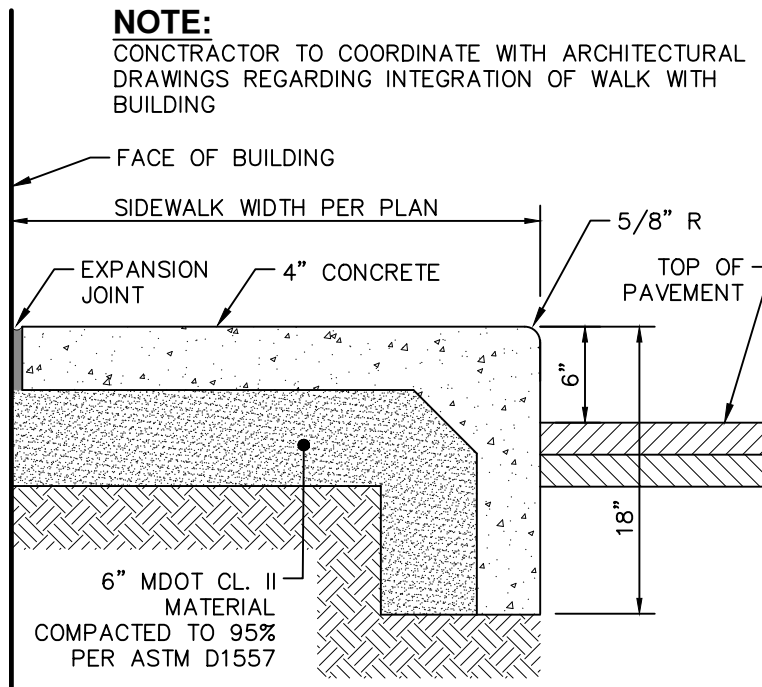
CONCRETE SIDEWALK THROUGH DRIVEWAY
NOT TO SCALE



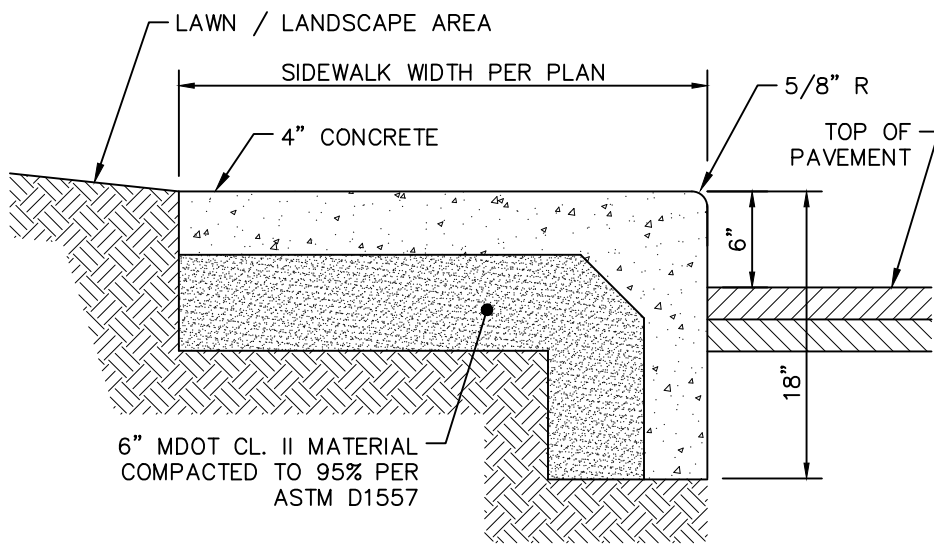
CONCRETE CURB (F2)
NOT TO SCALE



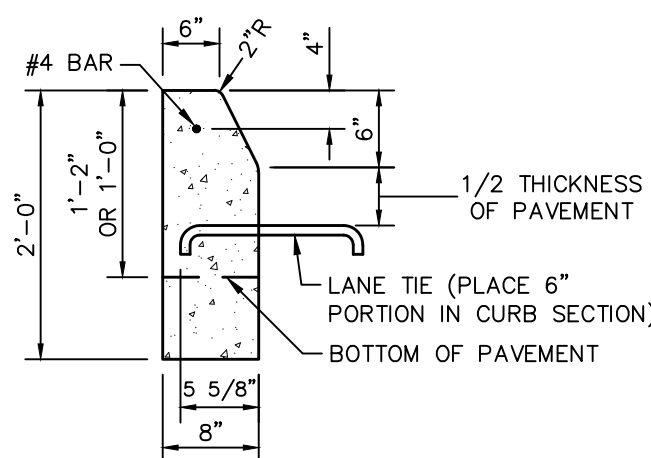
CONCRETE CURB (F4)
NOT TO SCALE



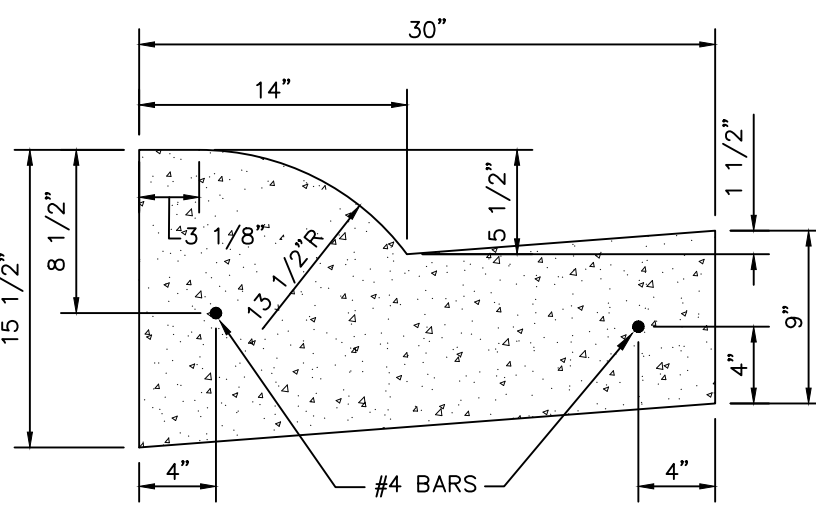
INTEGRAL CONCRETE CURB AND WALK AT BUILDING
NOT TO SCALE



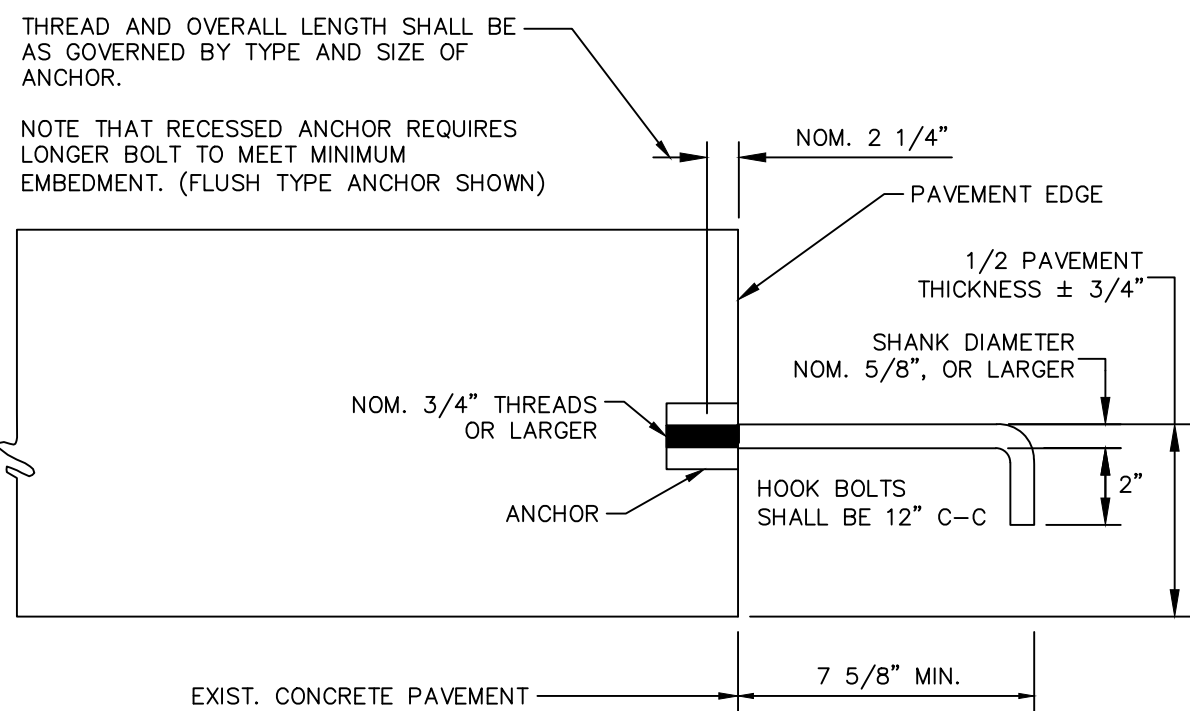
INTEGRAL CONCRETE CURB AND WALK
NOT TO SCALE



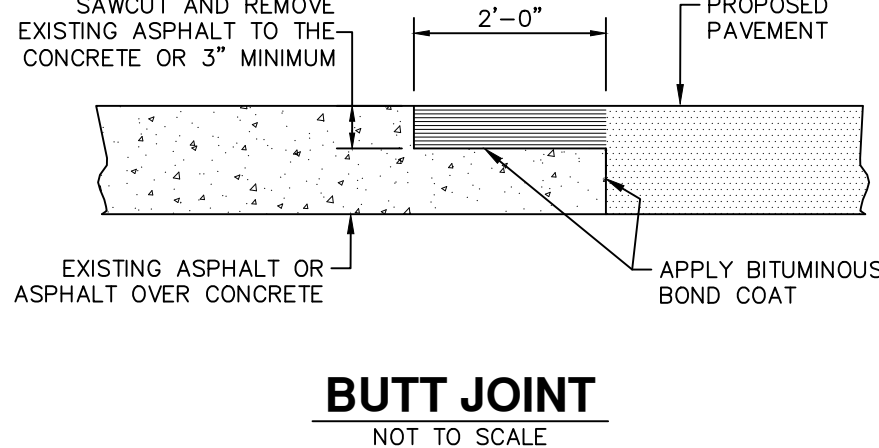
STRAIGHT CONCRETE CURB
NOT TO SCALE



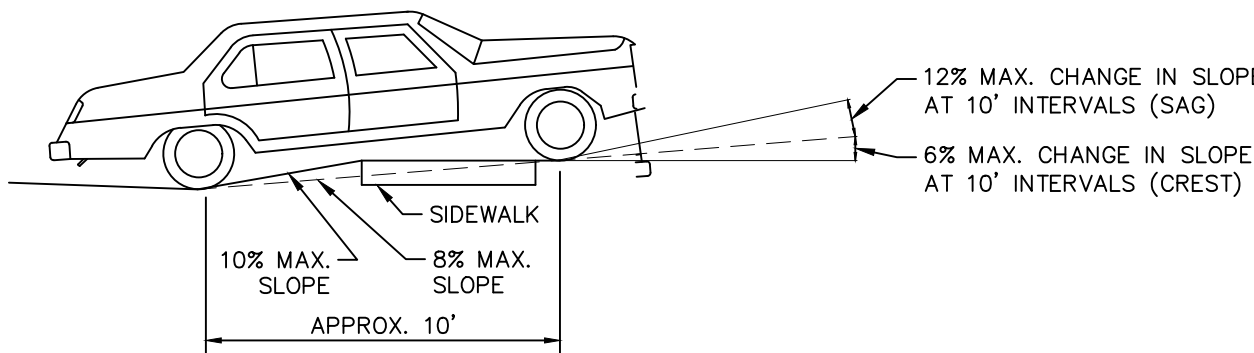
MOUNTABLE CONCRETE CURB & GUTTER (B2)
NOT TO SCALE



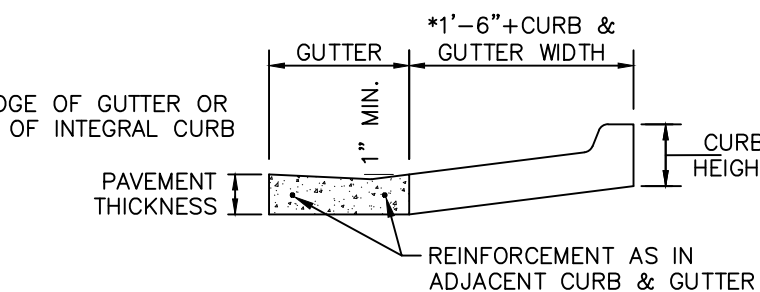
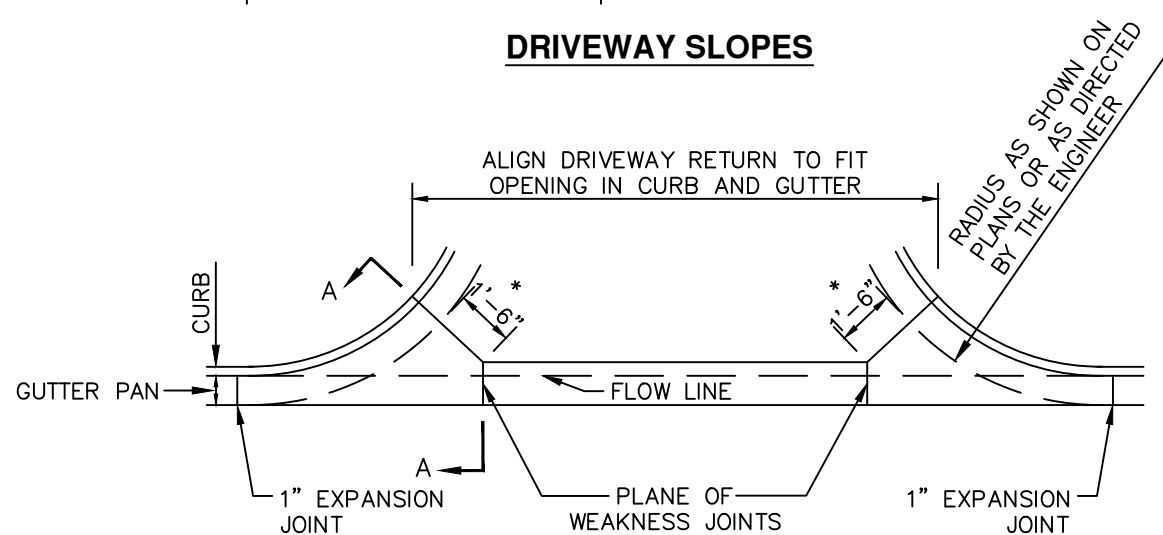
MECHANICAL ANCHOR AND HOOK BOLT SD-R-5
NOT TO SCALE



BUTT JOINT
NOT TO SCALE

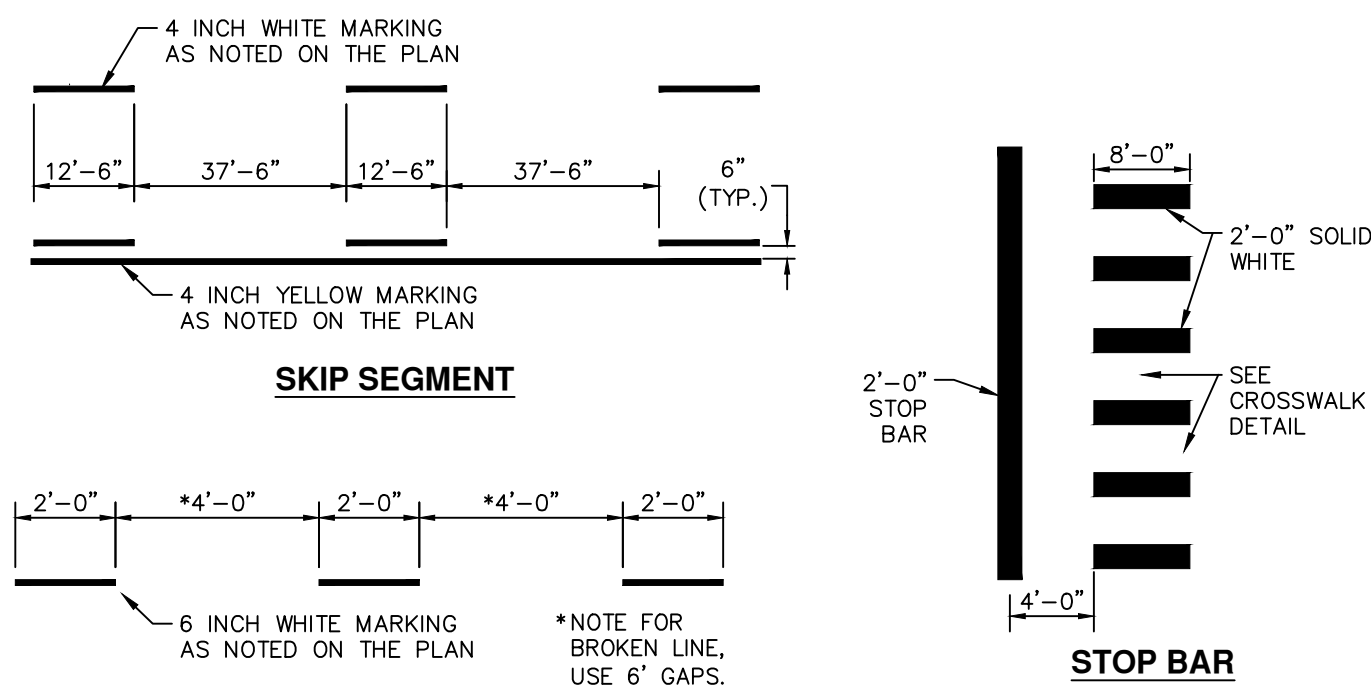


DRIVEWAY SLOPES



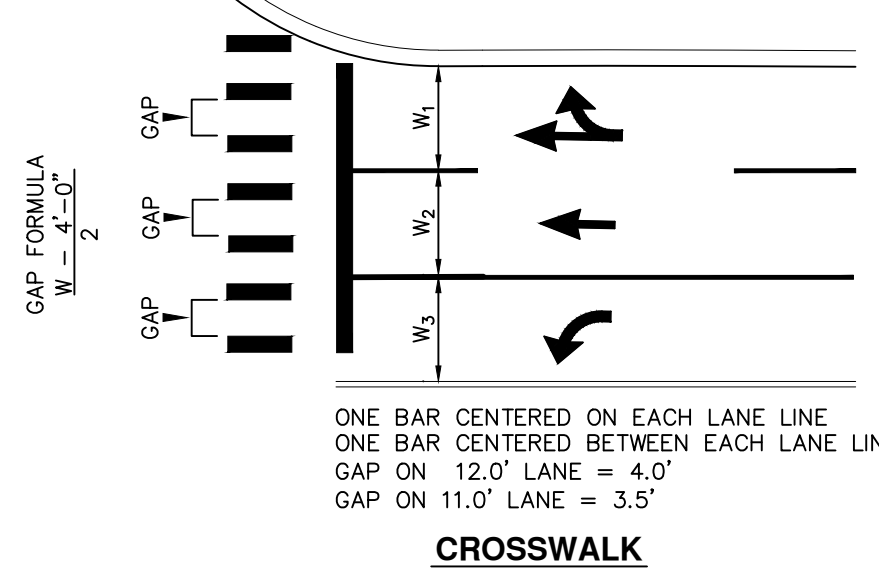
SECTION A-A

DRIVEWAY OPENING AND APPROACH
MDOT DETAIL 11-29E - DETAIL M
NOT TO SCALE

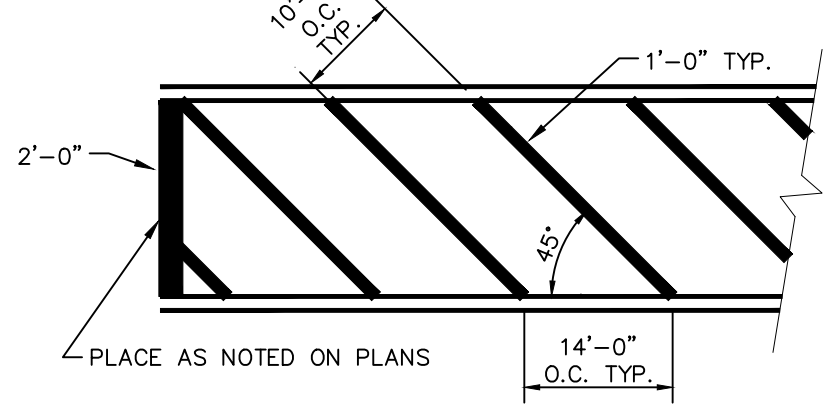


SKIP SEGMENT

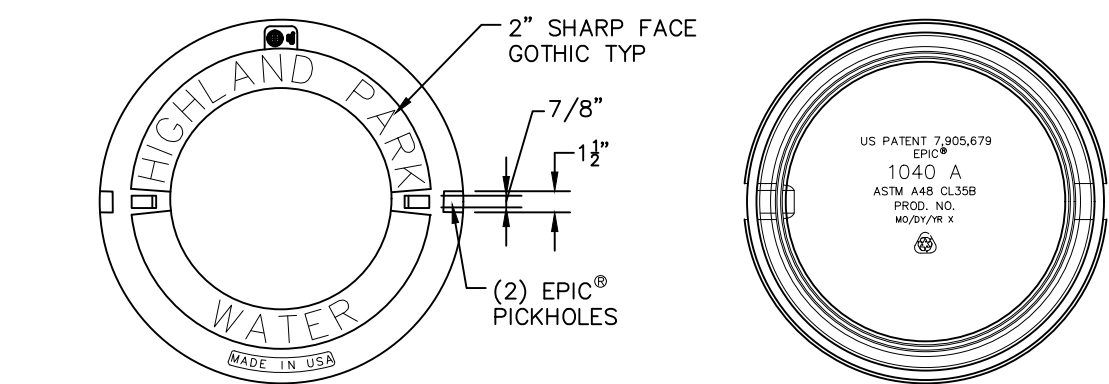
DOTTED LINE



CROSSWALK

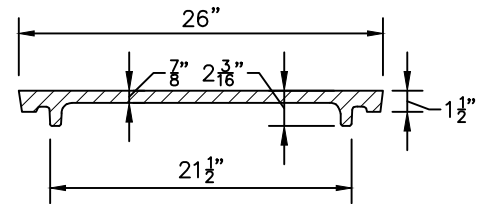


PAVEMENT MARKINGS
NOT TO SCALE

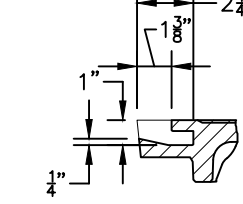


TOP VIEW OF COVER

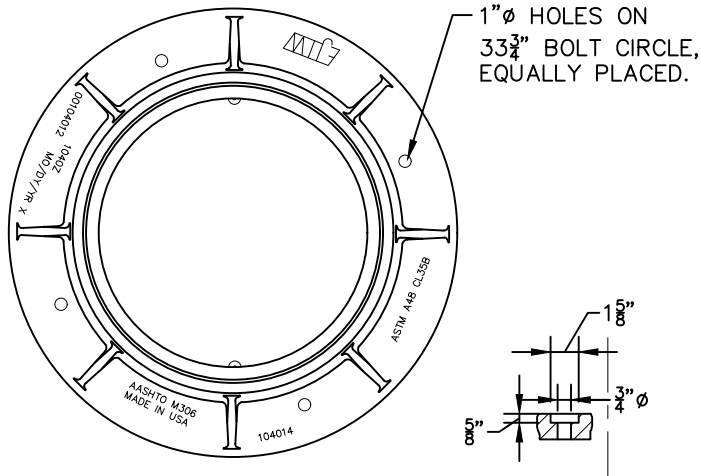
BOTTOM VIEW OF COVER



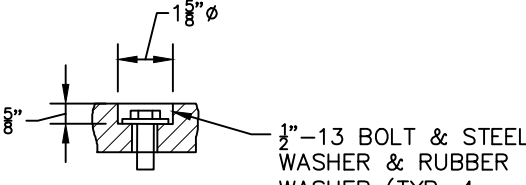
COVER SECTION



PICKHOLE DETAIL



FRAME SECTION



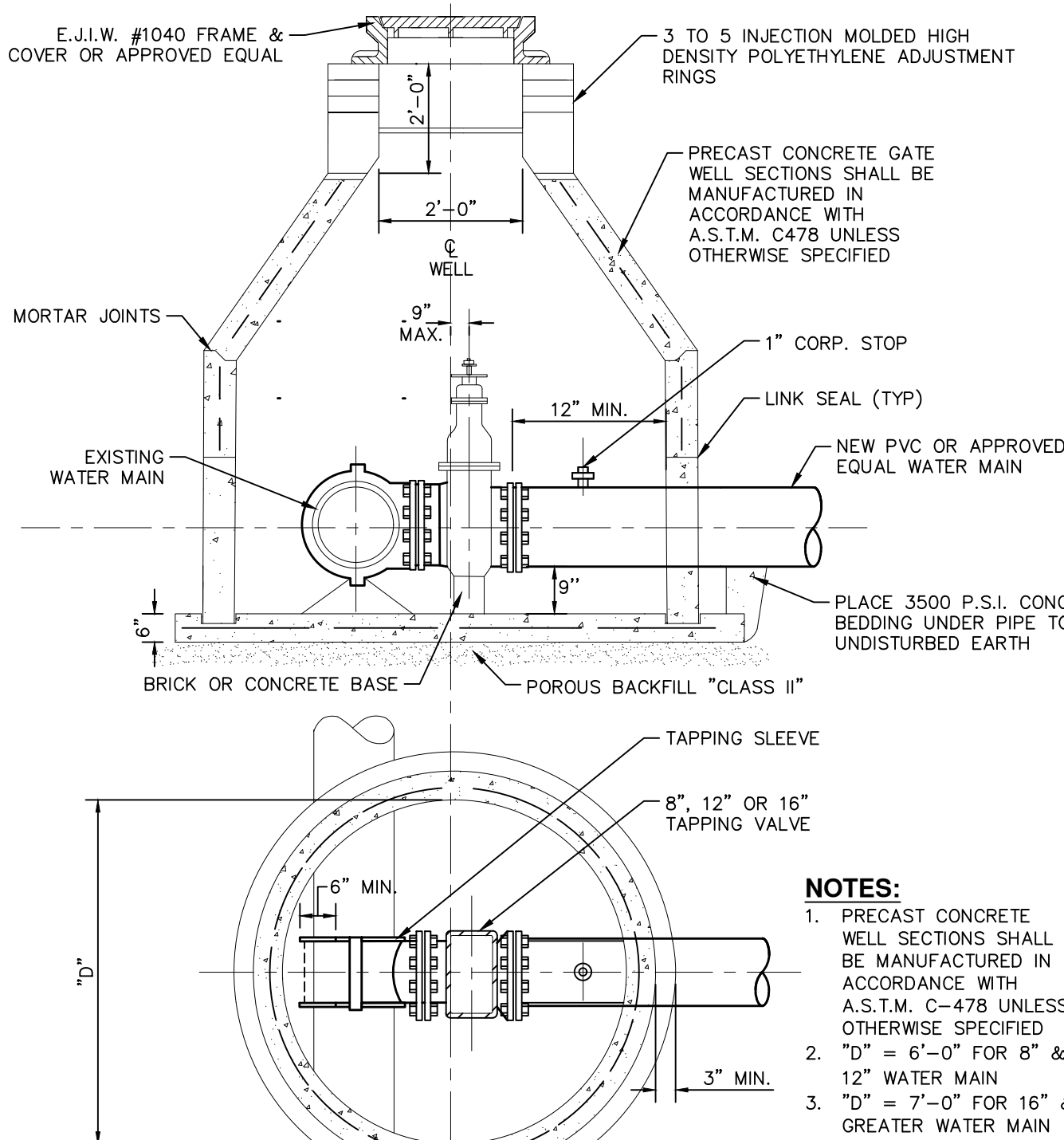
BOLT DETAIL

BOLTHOLE DETAIL

NOTES:
CATALOG NO. 1040 A
EST. WEIGHT COVER: 150 LBS.
MATERIAL SPEC.: COVER- GRAY IRON ASTM A48 CL35B
LOAD RATING: HEAVY DUTY
COATING: DIPPED

GATE WELL FRAME & COVER

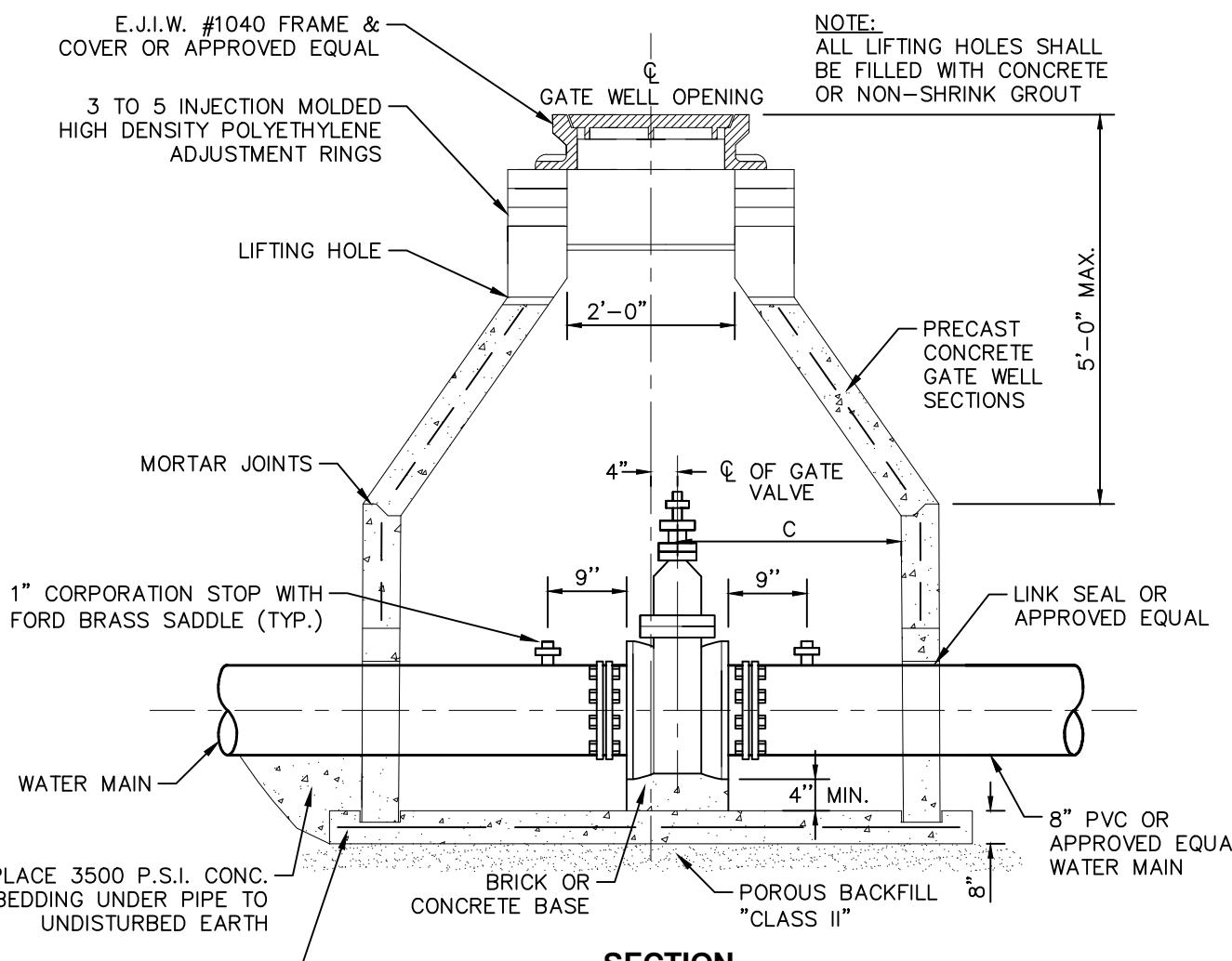
NOT TO SCALE



TAPPING SLEEVE VALVE & WELL

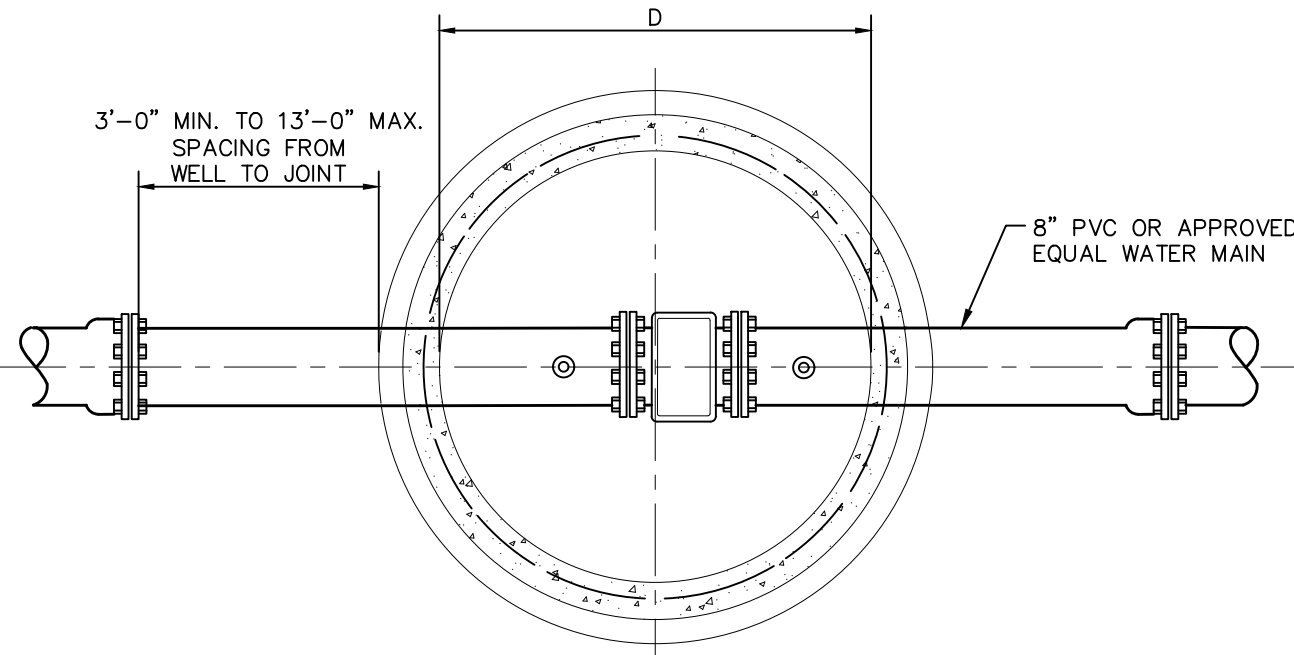
NOT TO SCALE

NOTES:
1. PRECAST CONCRETE WELL SECTIONS SHALL BE MANUFACTURED IN ACCORDANCE WITH A.S.T.M. C-478 UNLESS OTHERWISE SPECIFIED.
2. "D" = 6'-0" FOR 8" & 12" WATER MAIN
3. "D" = 7'-0" FOR 16" & GREATER WATER MAIN
4. ALL LIFTING HOLES SHALL BE SEALED WITH NON-SHRINK GROUT



GATE WELL SECTION

NOT TO SCALE

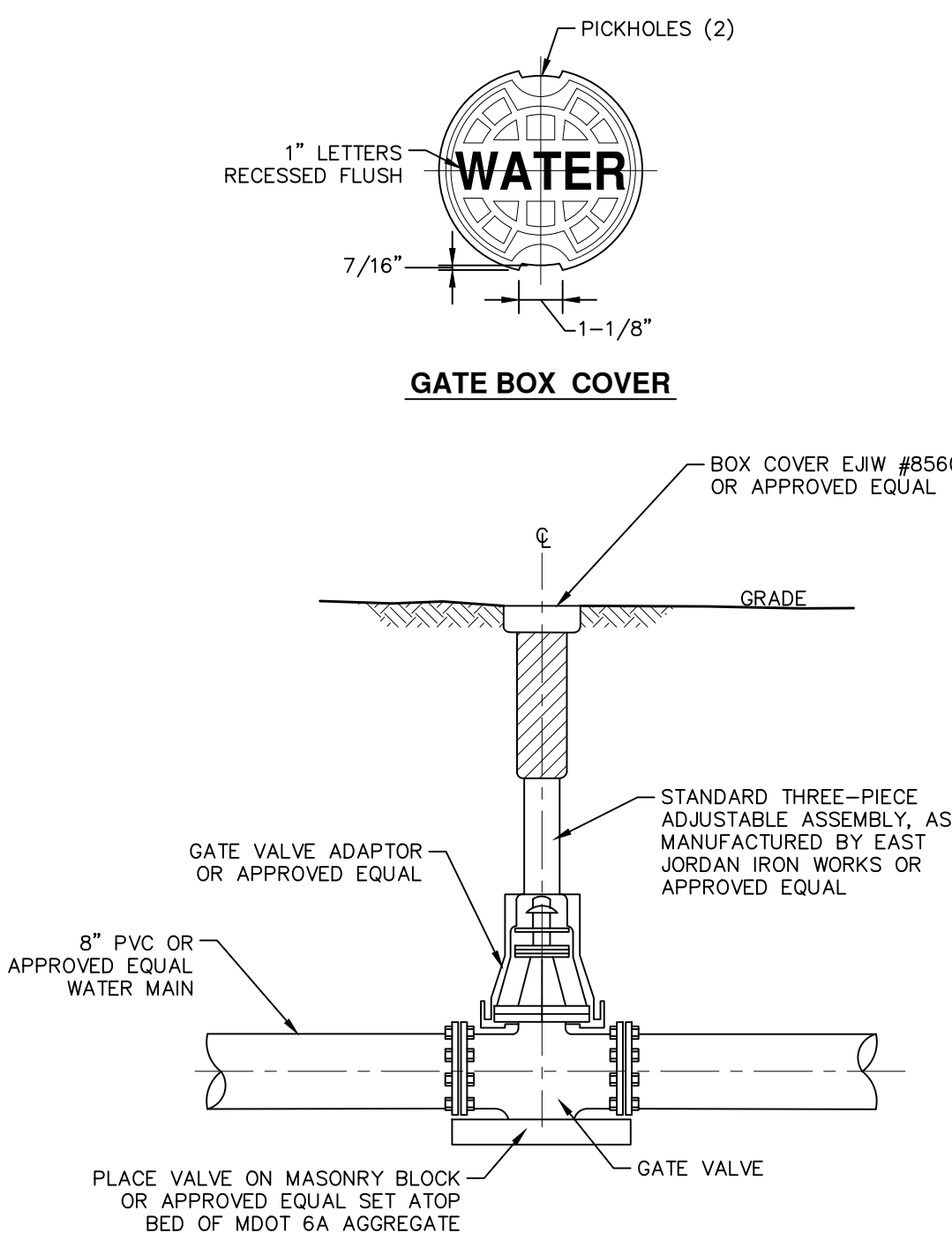


PLAN

NOTES:
1. PRECAST CONCRETE WELL SECTIONS SHALL BE MANUFACTURED IN ACCORDANCE WITH A.S.T.M. C-478 UNLESS OTHERWISE SPECIFIED
2. "D" = 6'-0" FOR 8" & 12" WATER MAIN
3. "D" = 7'-0" FOR 16" & GREATER WATER MAIN
4. ALL LIFTING HOLES SHALL BE SEALED WITH CONCRETE OR NON-SHRINK GROUT

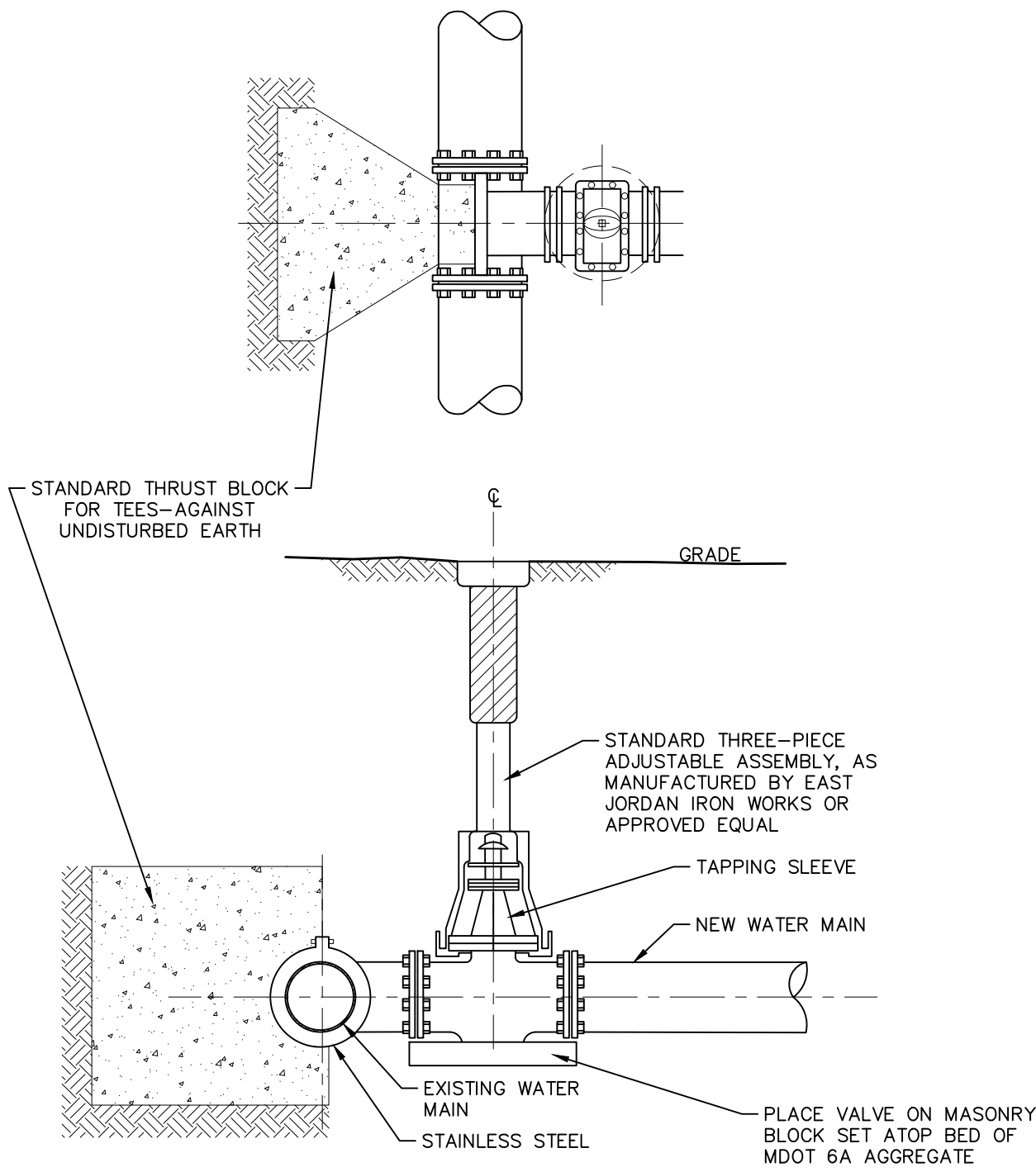
GATE VALVE & WELL

NOT TO SCALE



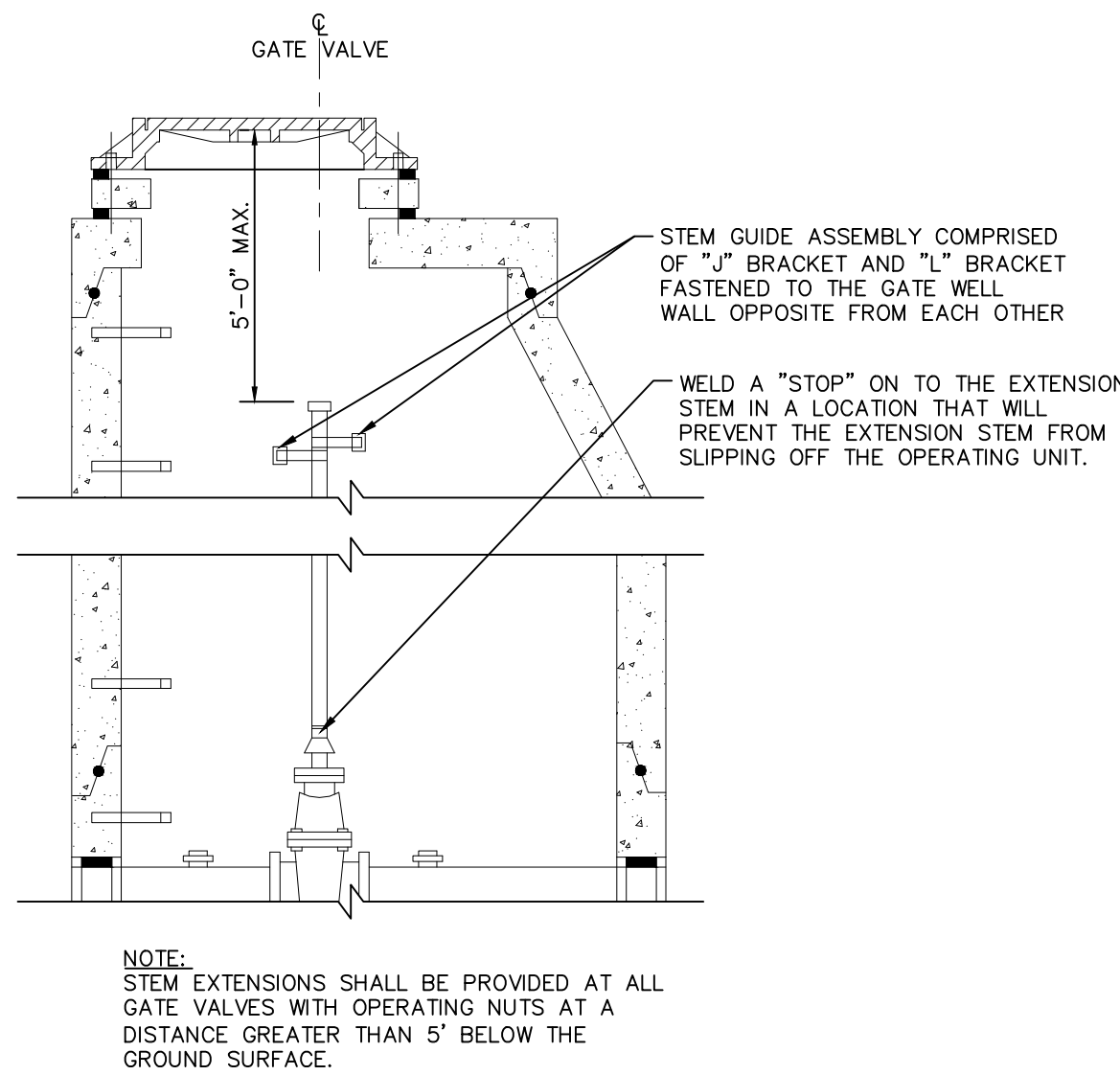
GATE VALVE & BOX

NOT TO SCALE



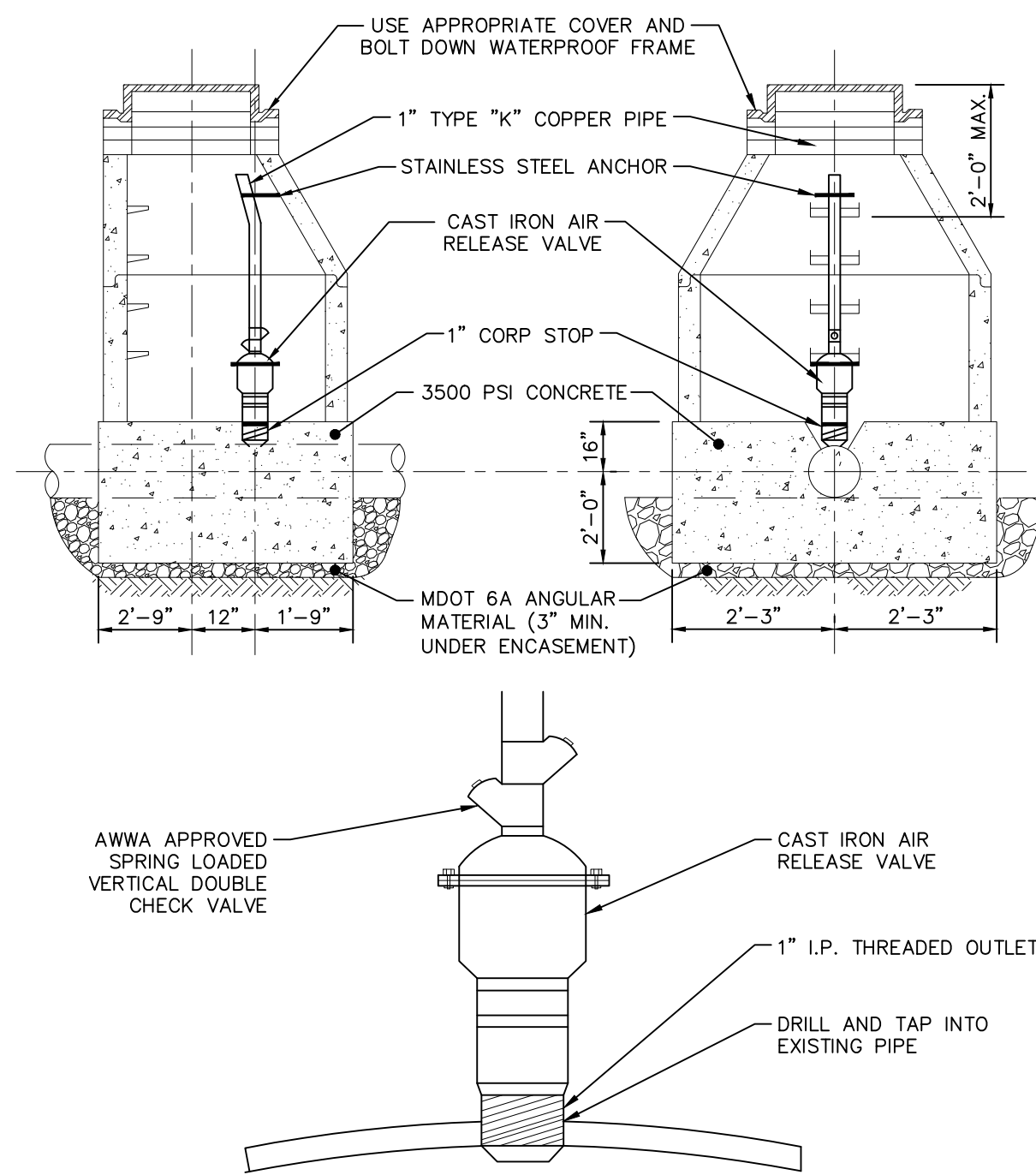
GATE VALVE & BOX WITH THRUST BLOCK

NOT TO SCALE



STEM EXTENSION DETAIL

NOT TO SCALE



AIR RELEASE VALVE AND WELL FOR 12 INCH OR GREATER WATER MAIN

NOT TO SCALE

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CITY OF HIGHLAND PARK
STANDARD WATER MAIN DETAILS AND NOTES
WATER-1



MCA JOB #:1039-18-8756

DATE: 06.19.2023

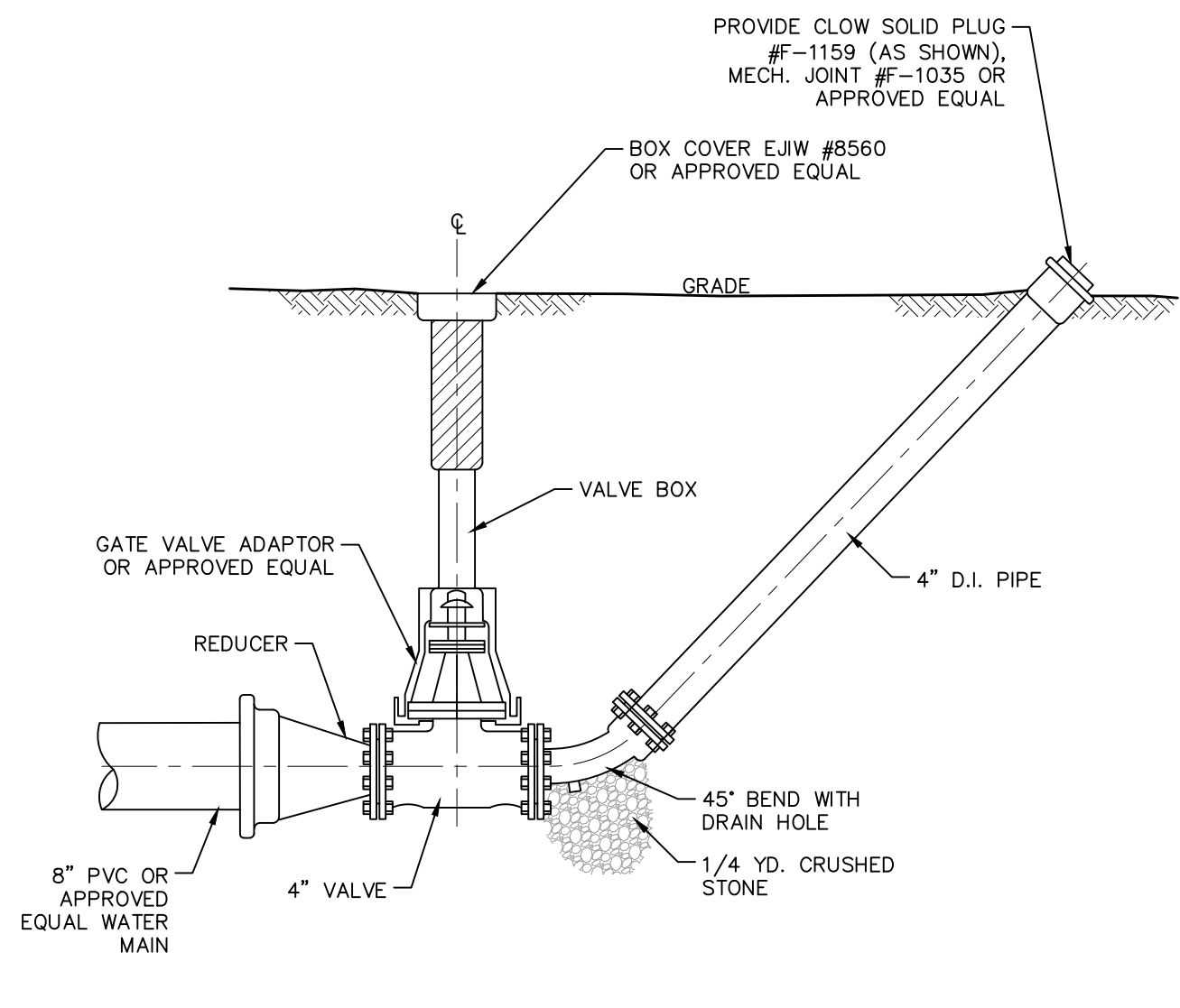
SCALE: AS SHOWN PER DETAIL

DRAWN BY:
Metro Consulting Associates
Dynamic. Daring. Diverse. DIFFERENT.

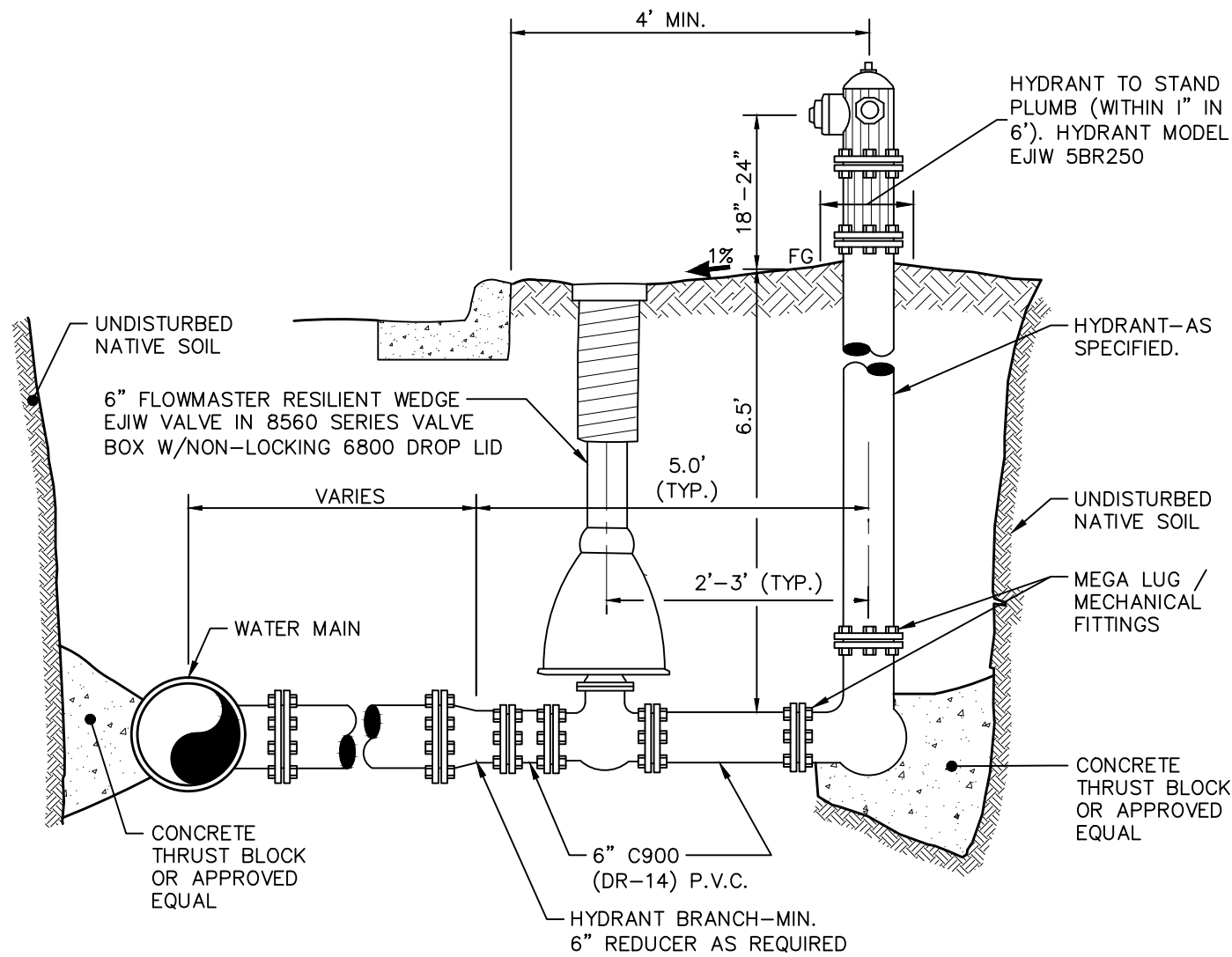
COUNTY: WAYNE

SHEET:

W1

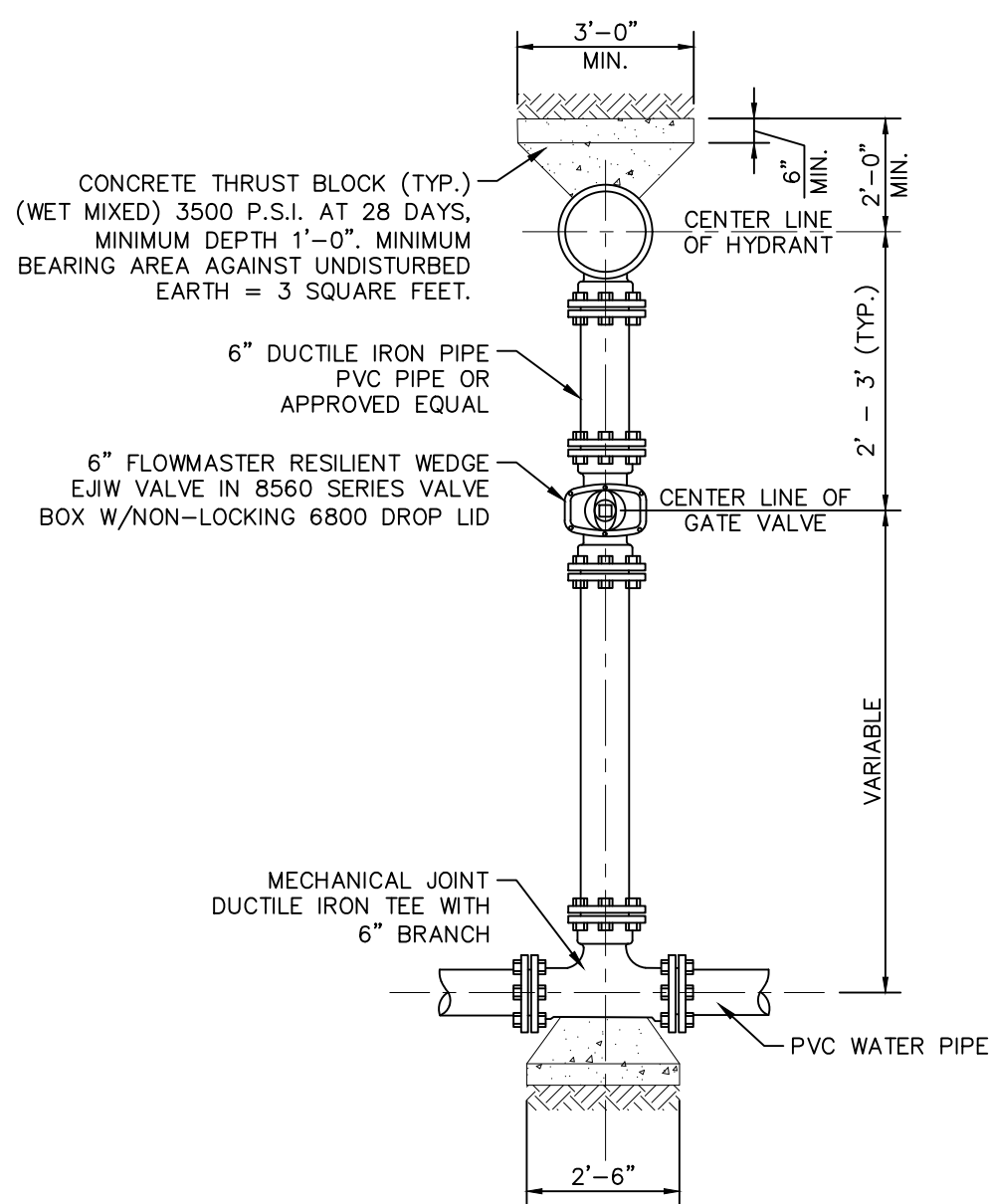


4 INCH BLOWOFF
NOT TO SCALE

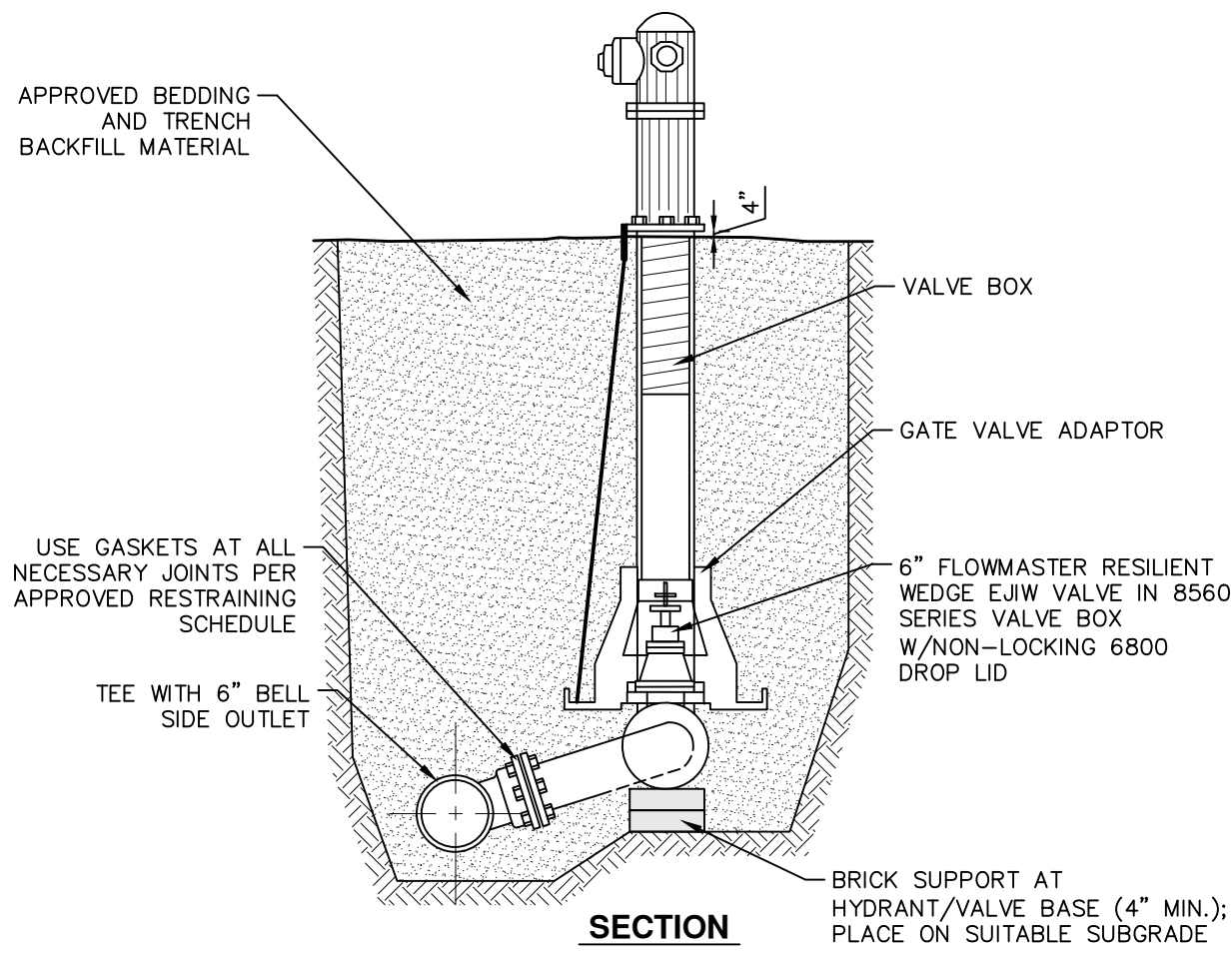


- NOTES:**
1. REFER TO SPECIFICATION FOR HYDRANT AND GATE VALVE (EJW-5BR250)
 2. HYDRANT TO BE A MINIMUM OF 3 FEET - 10 FEET BEHIND CURB.
 3. TRACE WIRE (12 GAUGE OR LARGER) SHALL BE INSTALLED PER SPECIFICATION.
 4. HYDRANT SHALL BE LEFT-TURN OFF.
 5. CONTRACTOR TO INCLUDE ALL NECESSARY MATERIALS TO CONNECT TO EXISTING MAIN.

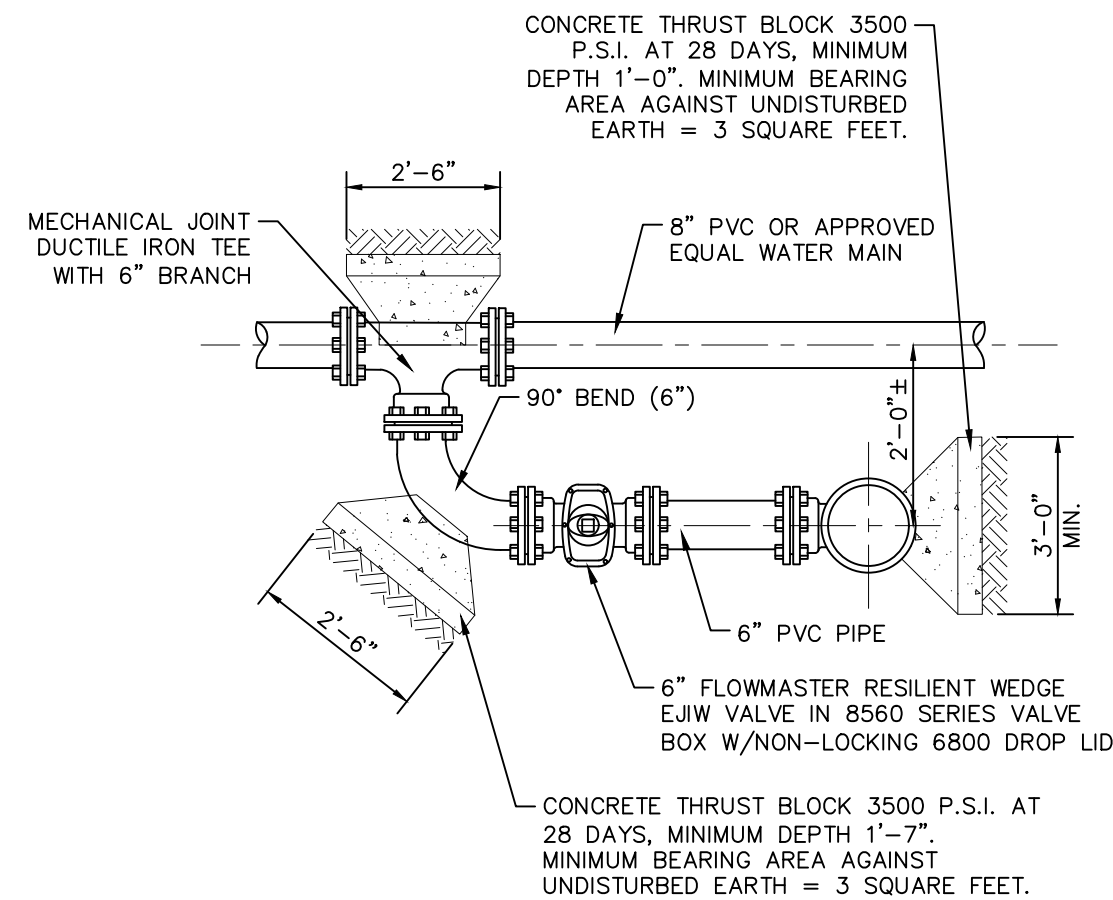
FIRE HYDRANT ASSEMBLY
NOT TO SCALE



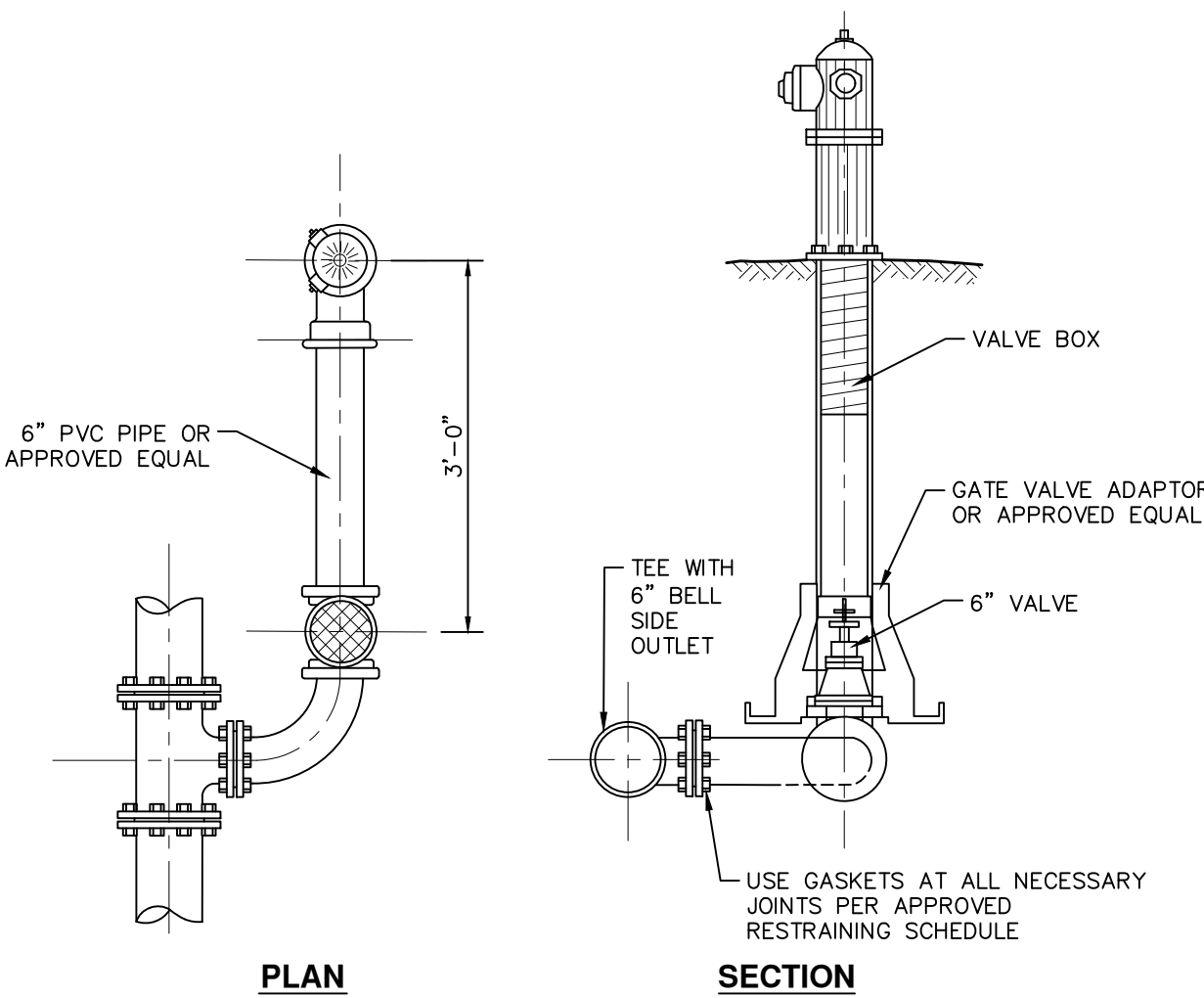
STRAIGHT HYDRANT CONNECTION
NOT TO SCALE



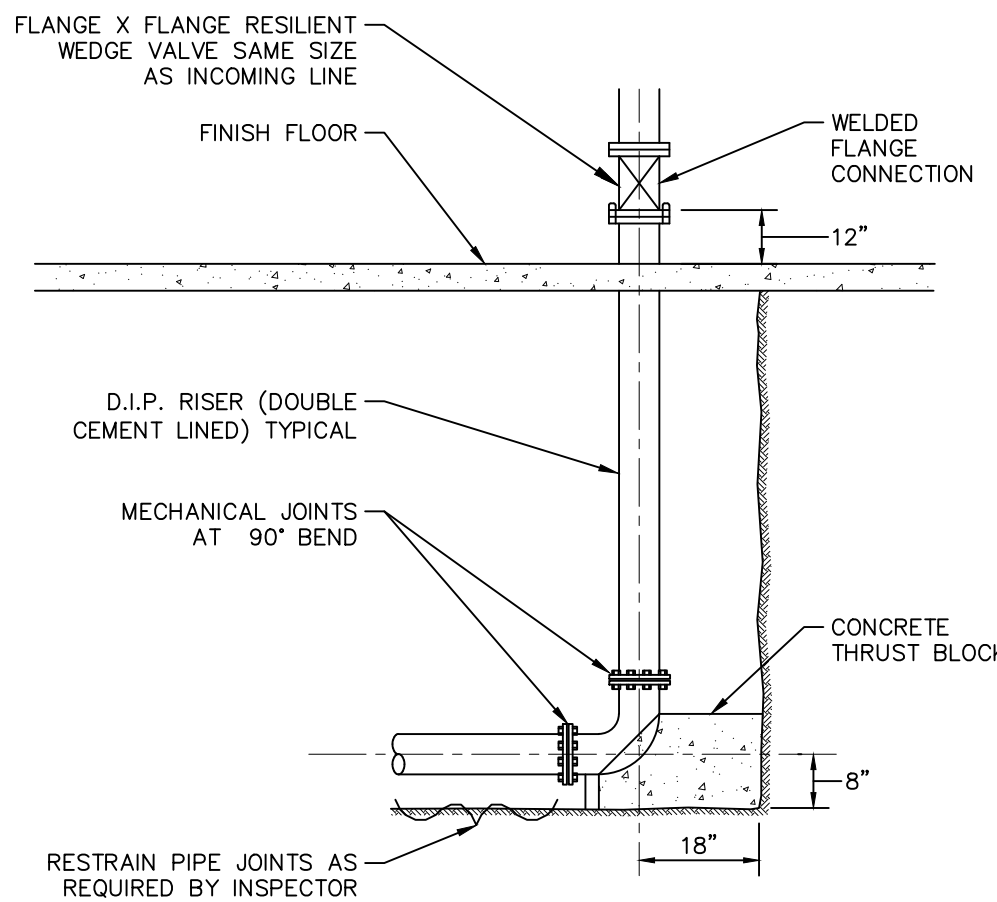
90 DEGREE FIRE HYDRANT ASSEMBLY
NOT TO SCALE



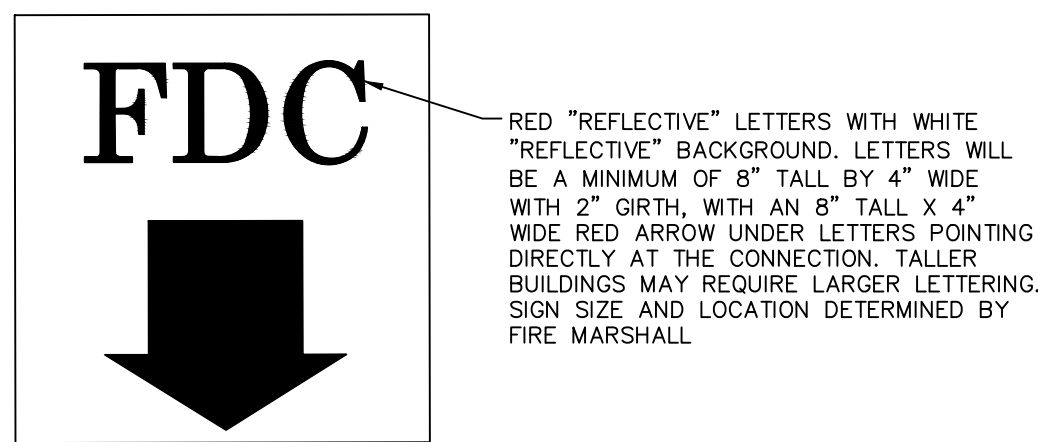
L FIRE HYDRANT ASSEMBLY
NOT TO SCALE



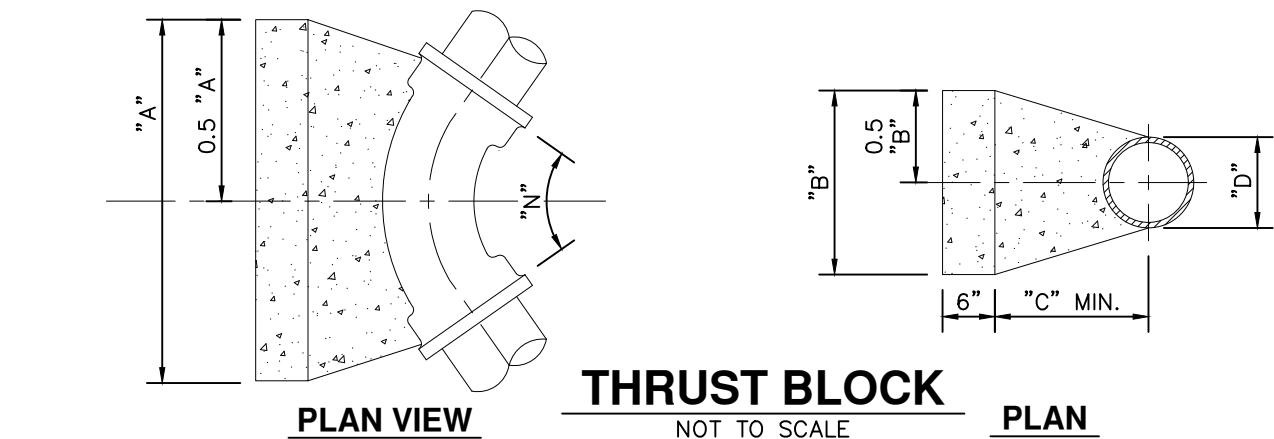
CLOSE COUPLE HYDRANT SETTING
NOT TO SCALE



FIRE PROTECTION RISER
NOT TO SCALE

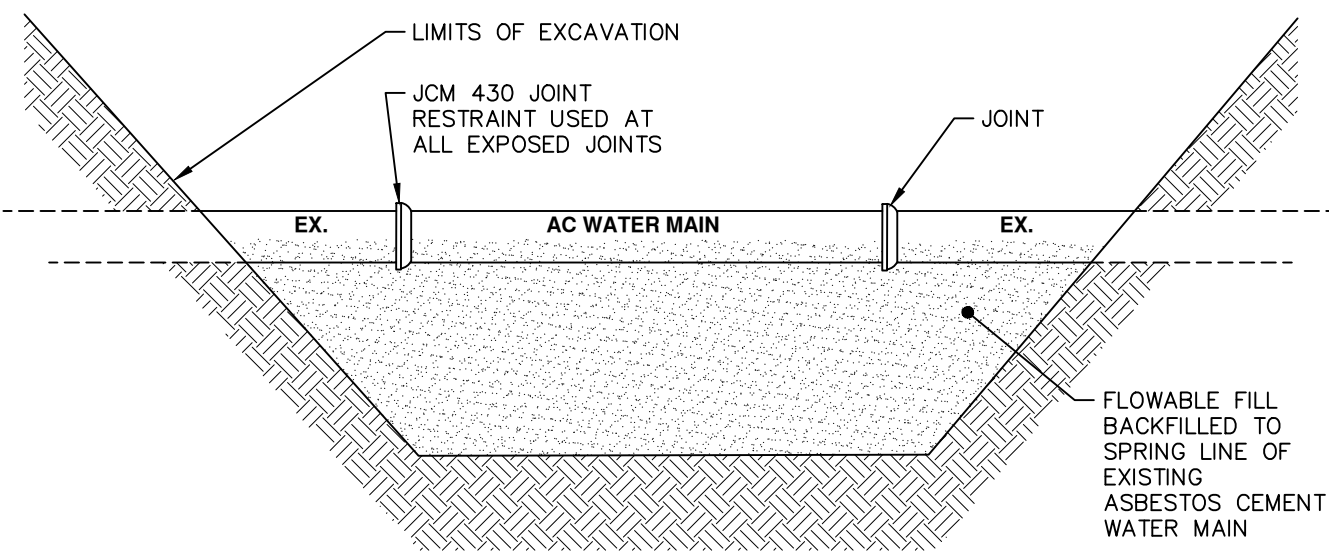


FIRE DEPARTMENT CONNECTION LABEL DETAIL
NOT TO SCALE

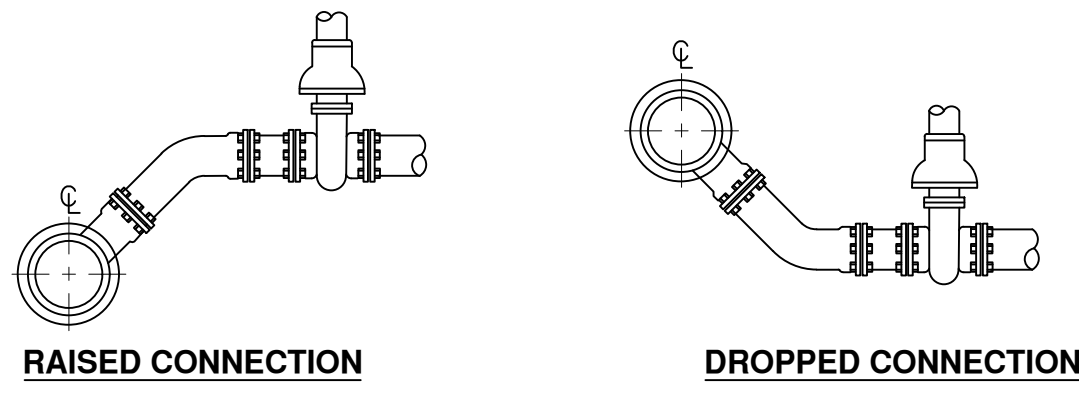


BEND N	THRUST BLOCK DIMENSION	DIMENSION (D) OF WATER MAIN					
		6"	8"	10" & 12"	14" & 16"	18" & 20"	24" +
90°	A	2'-9"	3'-0"	5'-6"	6'-0"	9'-0"	11'-0"
	B	1'-6"	2'-6"	3'-0"	5'-0"	5'-0"	6'-0"
	C	0'-9"	1'-0"	1'-3"	1'-6"	1'-9"	2'-0"
45°	A	2'-0"	2'-0"	3'-6"	5'-6"	6'-6"	7'-0"
	B	1'-6"	2'-0"	2'-6"	3'-0"	4'-0"	5'-0"
	C	1'-0"	1'-3"	1'-6"	1'-9"	1'-9"	2'-0"
22 1/2°	A	1'-6"	1'-9"	3'-0"	4'-0"	4'-0"	4'-0"
	B	1'-0"	1'-3"	1'-6"	2'-0"	3'-0"	4'-6"
	C	1'-0"	1'-0"	1'-3"	1'-6"	1'-9"	2'-0"
11 1/4°	A	2'-0"	2'-6"	4'-0"	5'-0"	8'-0"	9'-0"
	B	1'-6"	2'-0"	3'-0"	4'-0"	4'-0"	5'-0"
	C	0'-9"	1'-0"	1'-3"	1'-6"	1'-9"	2'-0"
TEE	A	2'-0"	2'-6"	4'-0"	5'-0"	8'-0"	9'-0"
	B	1'-6"	2'-0"	3'-0"	4'-0"	4'-0"	5'-0"
	C	0'-9"	1'-0"	1'-3"	1'-6"	1'-9"	2'-0"
PLUG	A	2'-0"	2'-6"	4'-0"	5'-0"	8'-0"	9'-0"
	B	1'-6"	2'-0"	3'-0"	4'-0"	4'-0"	5'-0"
	C	0'-9"	1'-0"	1'-3"	1'-6"	1'-9"	2'-0"

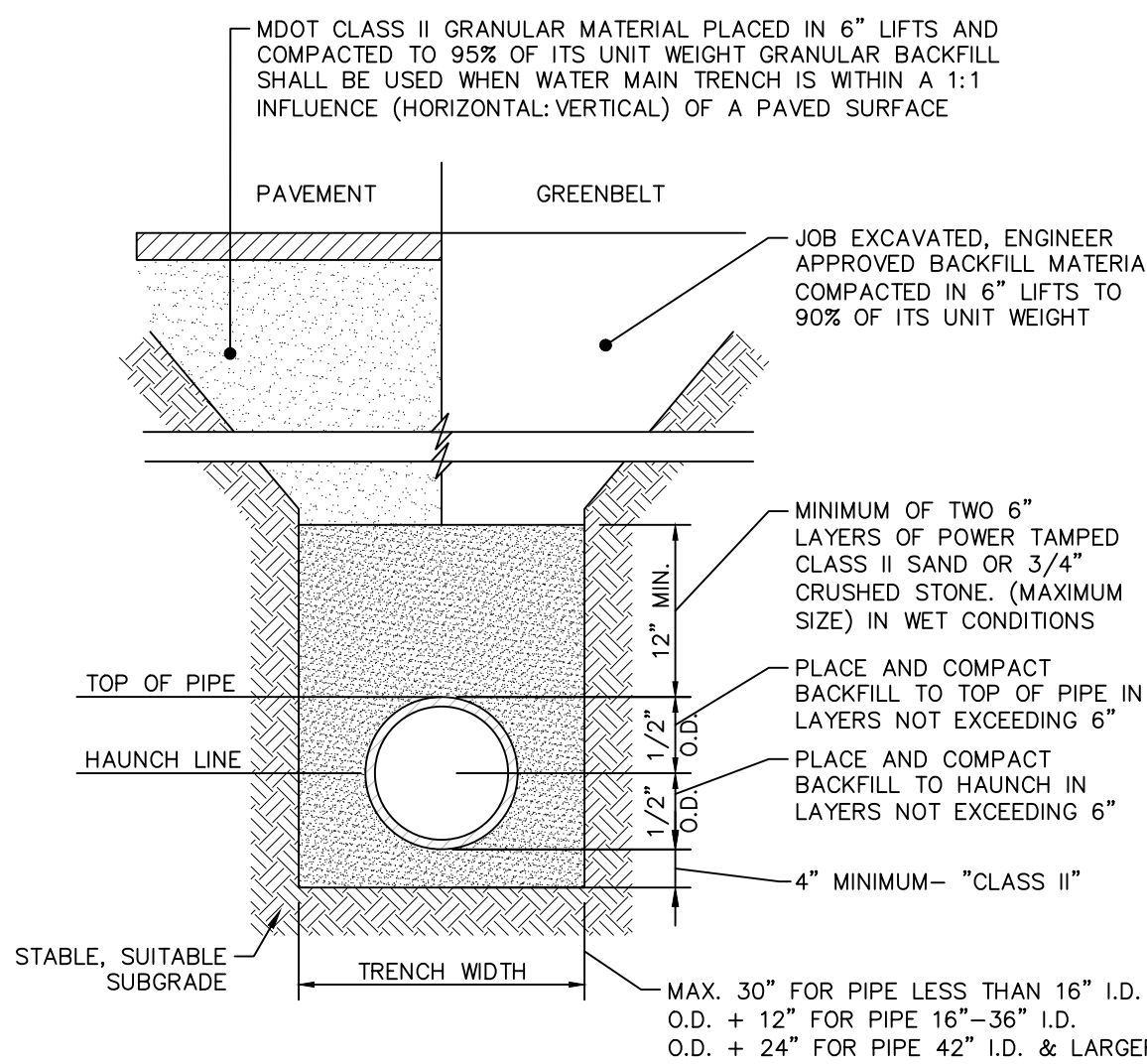
- THRUST BLOCK NOTES:**
1. 3500 P.S.I. CONCRETE POURED AGAINST UNDISTURBED EARTH
 2. WHEN "A" DIMENSION IS 6 FEET OR GREATER, USE #4 RE-BAR AT 12 INCH CENTERS EACH WAY.
 3. THE TABLE IS BASED ON SOIL BEARING OF 1500 P.S.F. THEREFORE, WHEN PLACED IN MUCK, PEAT OR OTHER UNSUITABLE SOILS HAVING A SOIL BEARING LESS THAN 1500 P.S.F., THE CONTRACTOR SHALL PROVIDE SUITABLE ADDITIONAL BLOCKING, ENCASEMENT, OR RESTRAINTS.



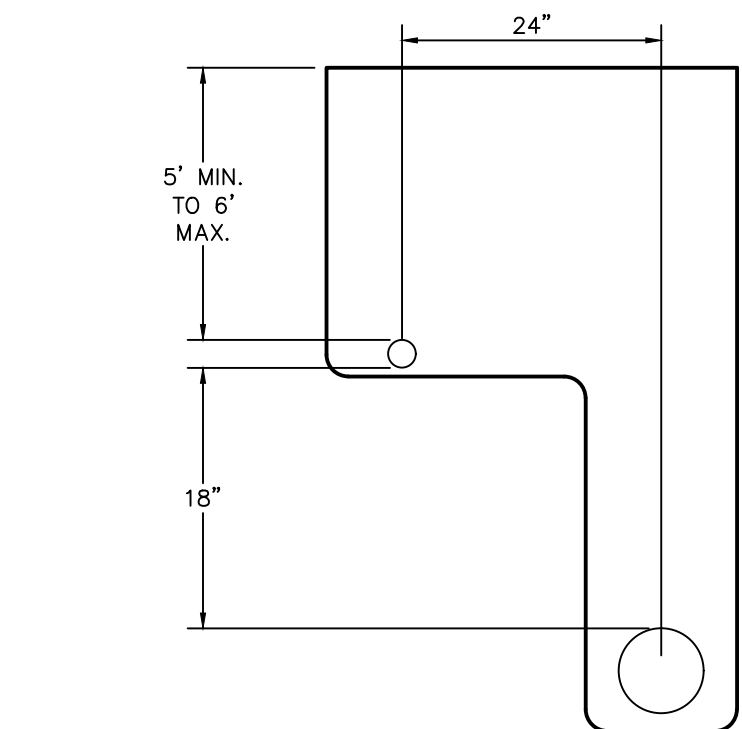
ASBESTOS CEMENT (AC) WATER MAIN
NOT TO SCALE



STANDARD BEDDING FOR WATER MAIN
NOT TO SCALE



STANDARD BEDDING FOR WATER MAIN
NOT TO SCALE



TYPICAL L TRENCH DETAIL HOUSE LEADS
NOT TO SCALE

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CITY OF HIGHLAND PARK
STANDARD WATER MAIN DETAILS AND NOTES
WATER-2



MCA JOB #:1039-18-8756

DATE: 06.19.2023

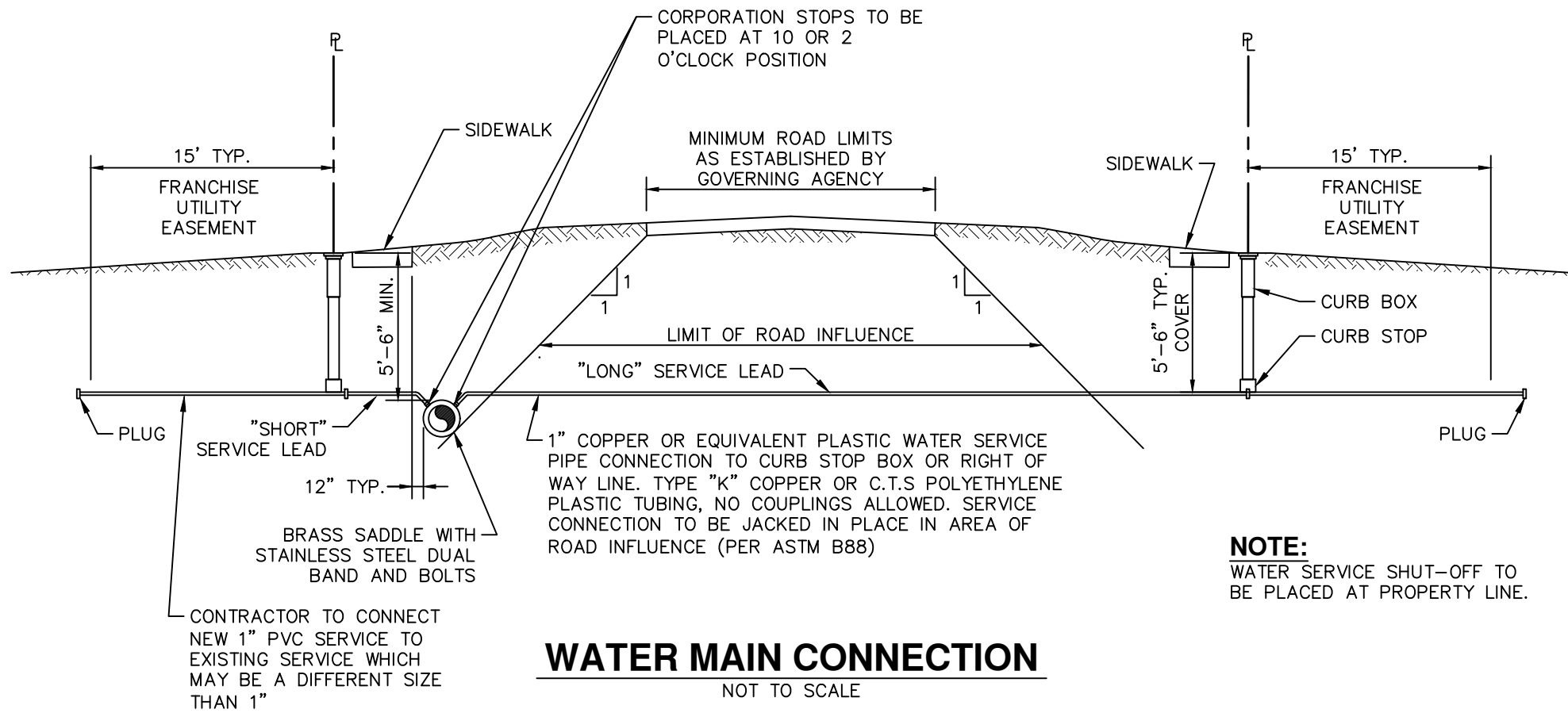
SCALE: AS SHOWN PER DETAIL

DRAWN BY:
Metro Consulting Associates
Dynamic Design, Diverse, Different.

COUNTY: WAYNE

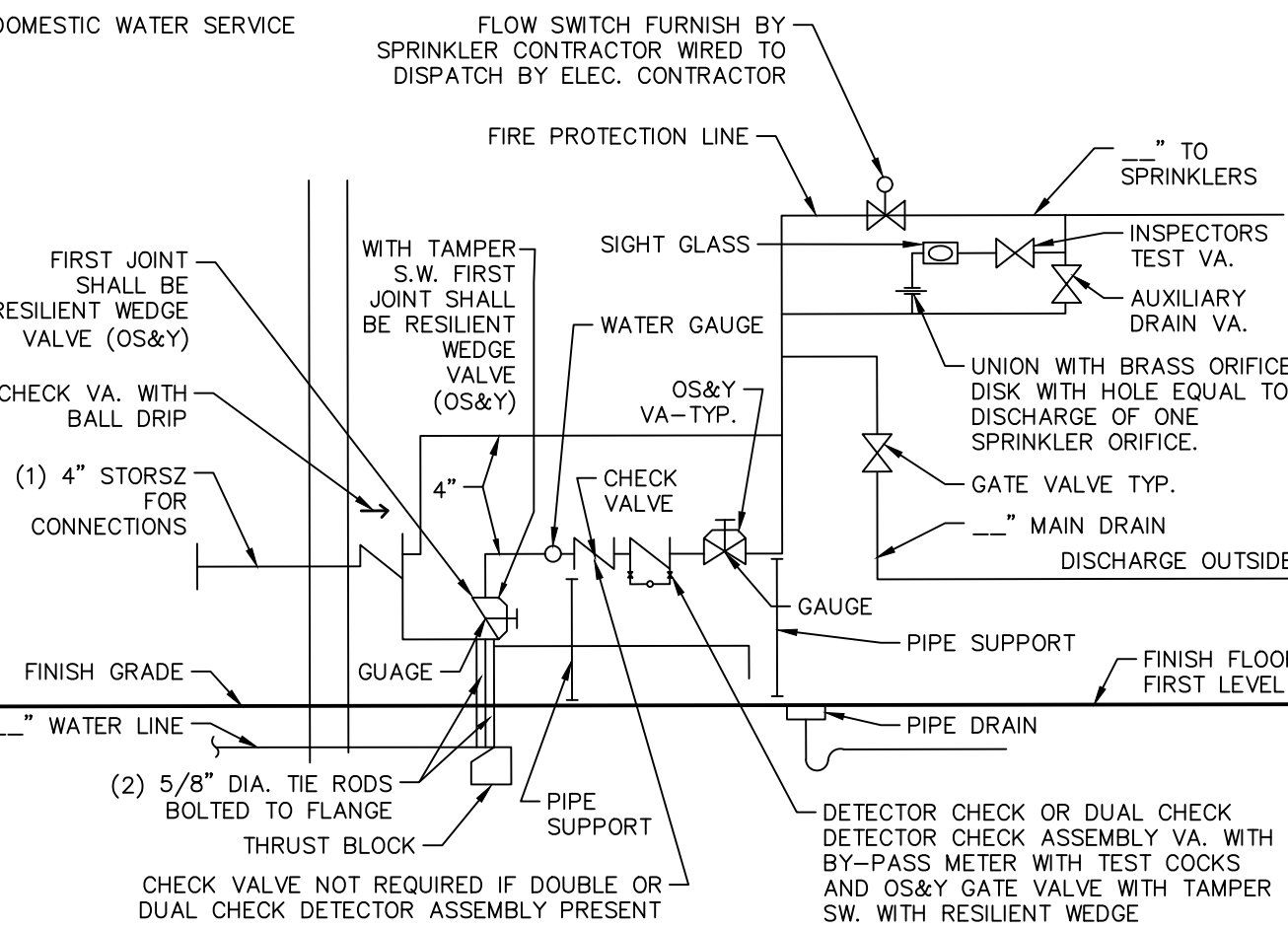
SHEET:

W2

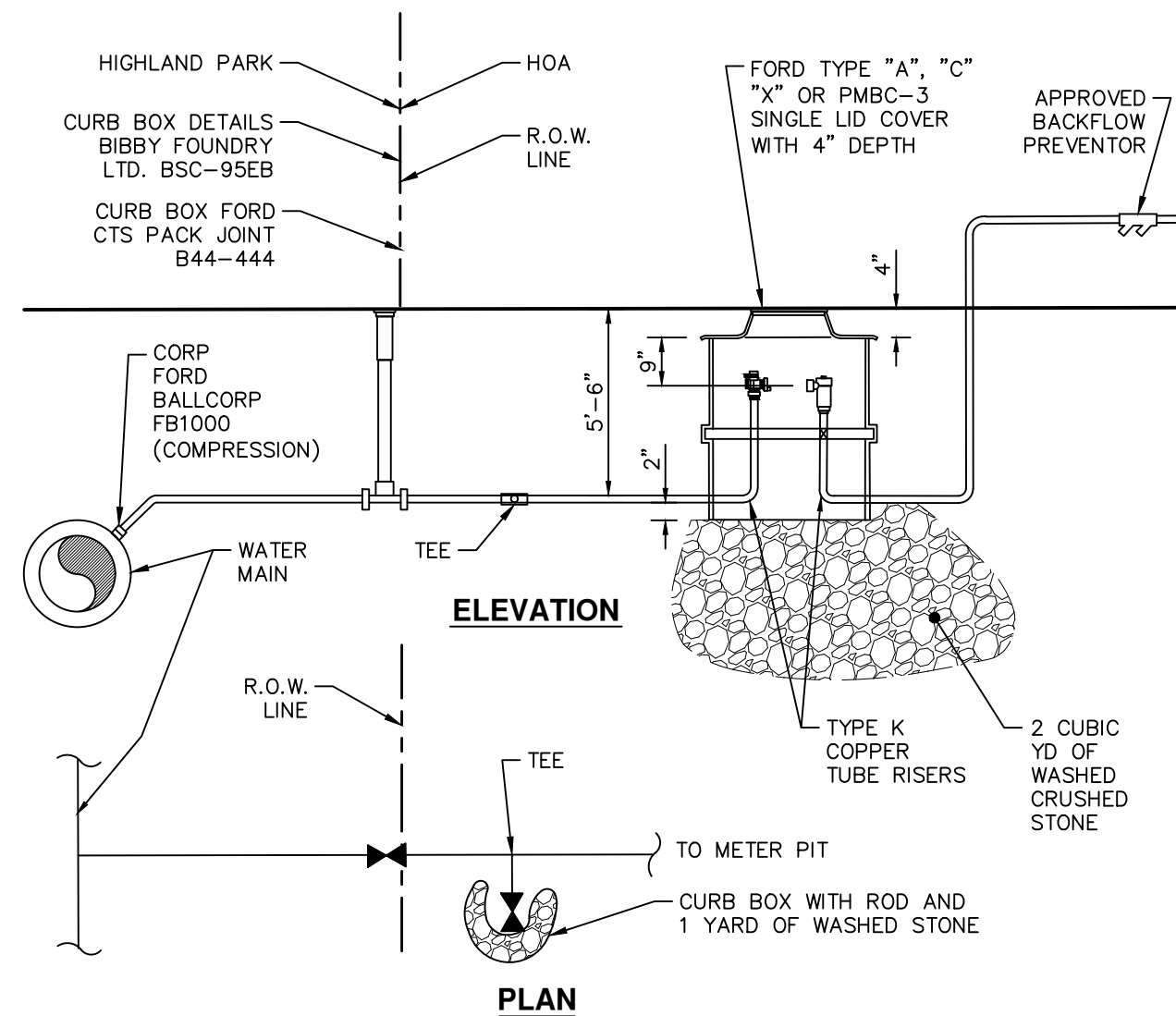


WATER MAIN CONNECTION
NOT TO SCALE

NOTE:
WATER SERVICE SHUT-OFF TO BE PLACED AT PROPERTY LINE.

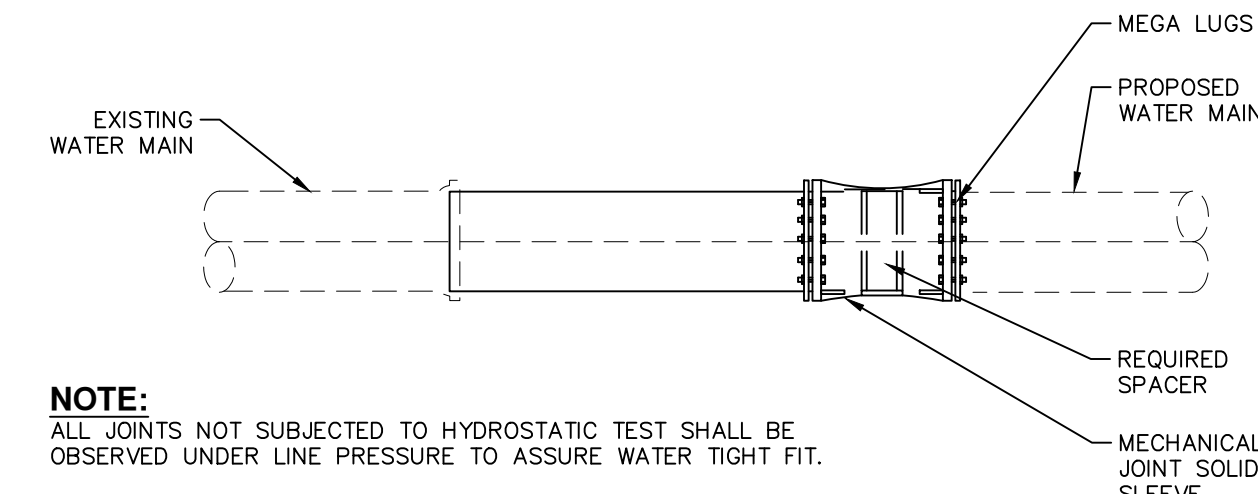


METER ROOM DETAIL
NOT TO SCALE



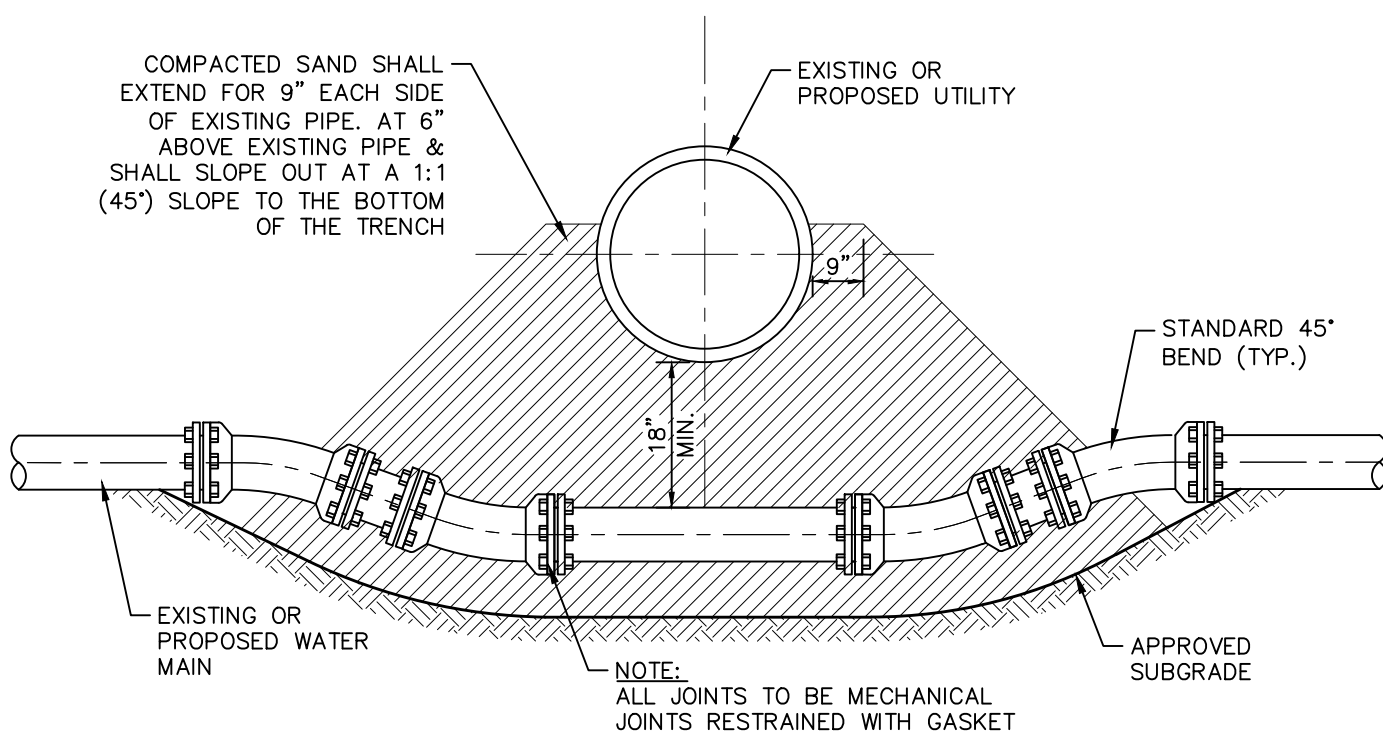
NOTES:
1. SADDLE MAY BE REQUIRED ON MAIN BASED ON LEAD SIZE, MAIN SIZE, AND MAIN PRESSURE.
2. ALL WATER MAIN TAPS AND COMPONENT PARTS SHALL BE APPROVED BY THE CITY OF HIGHLAND PARK ENGINEERING DEPARTMENT PRIOR TO INSTALLATION.
3. INSTALLATION SHALL BE INSPECTED AND APPROVED BY THE CITY OF HIGHLAND PARK ENGINEERING DEPARTMENT.

IRRIGATION METER PIT
NOT TO SCALE



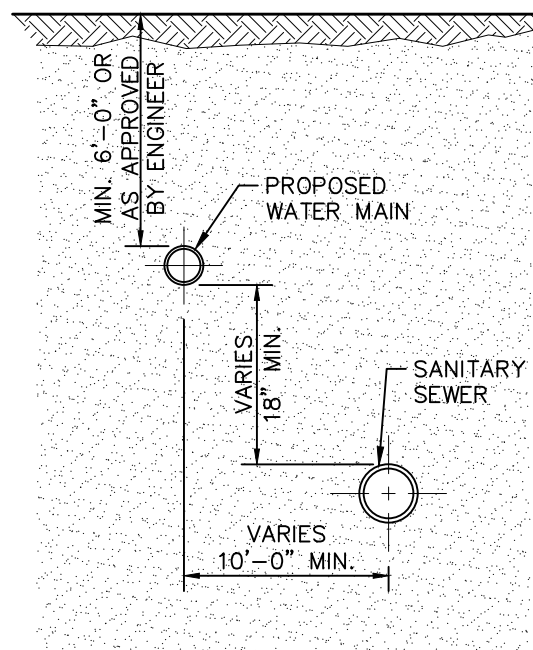
NOTE:
ALL JOINTS NOT SUBJECTED TO HYDROSTATIC TEST SHALL BE OBSERVED UNDER LINE PRESSURE TO ASSURE WATER TIGHT FIT.

COMPLETED CONNECTION TO EXISTING WATER MAIN
NOT TO SCALE

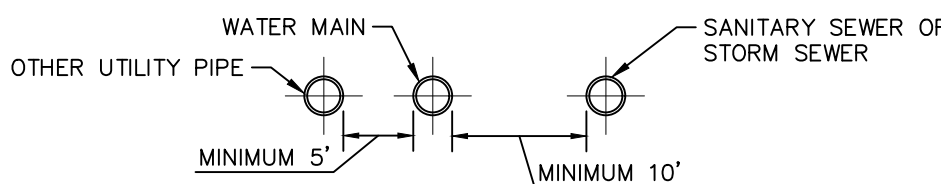


NOTE:
FOR BEDDING OF WATER MAIN, SEE STANDARD BEDDING FOR WATER MAIN DETAIL

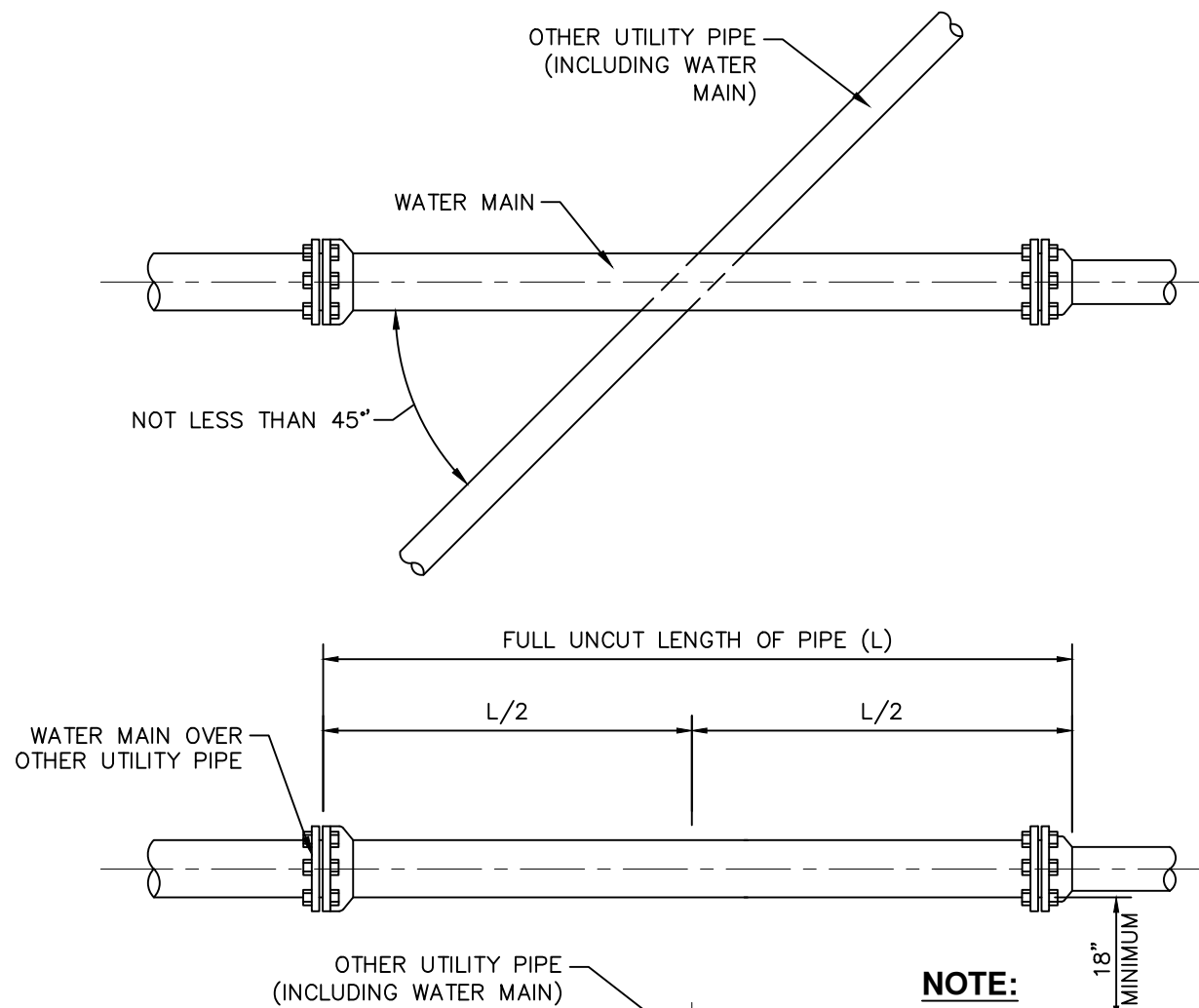
WATER MAIN LOWERING
NOT TO SCALE



WATER & SANITARY CLEARANCE DETAIL
NOT TO SCALE



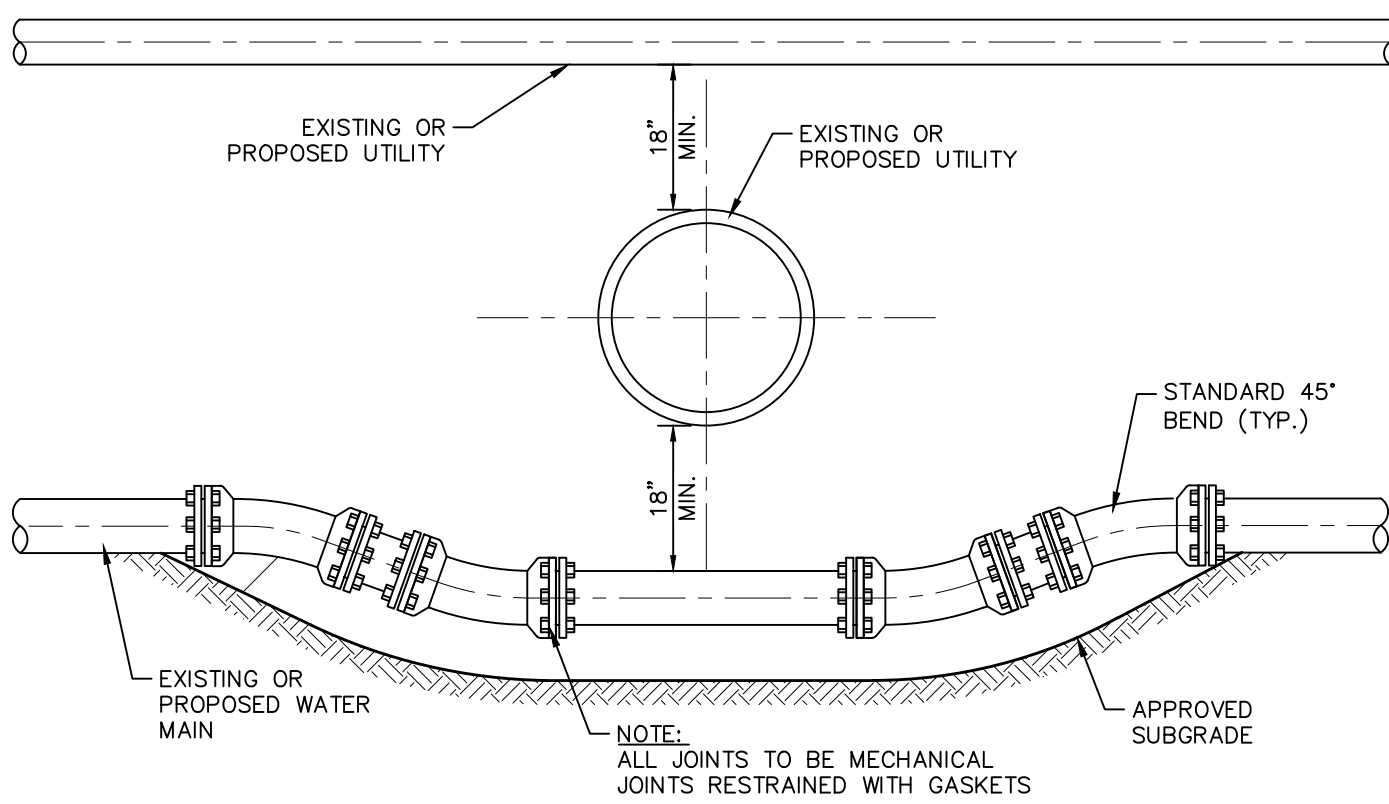
HORIZONTAL SEPARATION



NOTE:
SEPARATION REQUIREMENTS APPLY REGARDLESS OF VERTICAL ALIGNMENTS OF UTILITIES

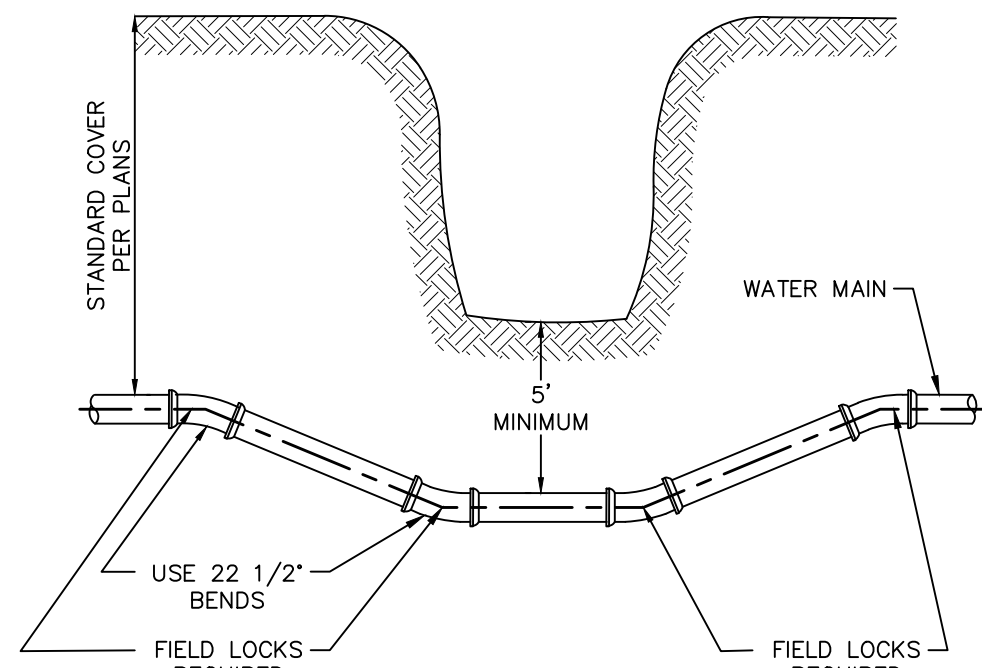
VERTICAL SEPARATION

WATER MAIN CROSSING OTHER UTILITIES
NOT TO SCALE

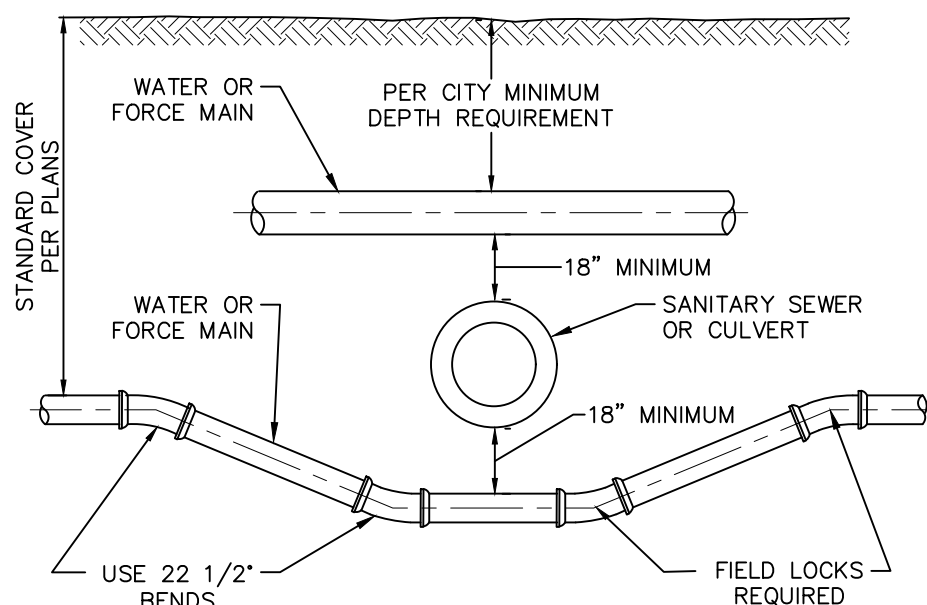


NOTE:
FOR BEDDING OF WATER MAIN, SEE STANDARD BEDDING FOR WATER MAIN DETAIL

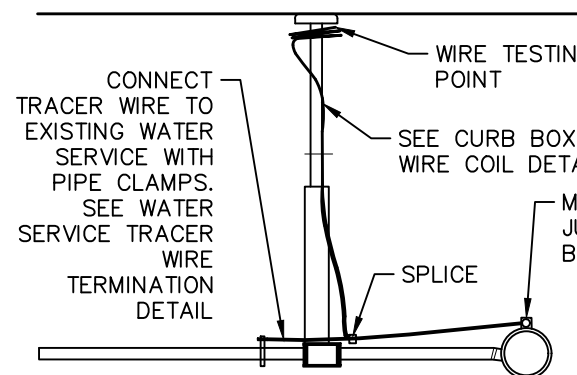
WATER MAIN CROSSING MULTIPLE UTILITIES
NOT TO SCALE



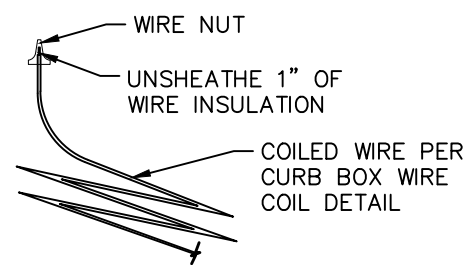
DITCH AND STREAM CROSSING
NOT TO SCALE



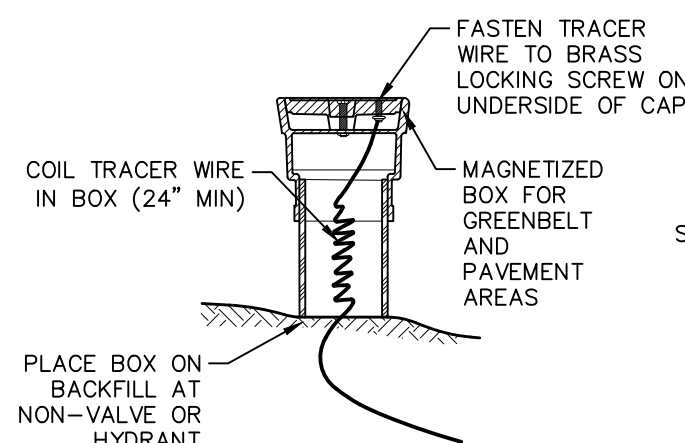
SEWER OR CULVERT CROSSING
NOT TO SCALE



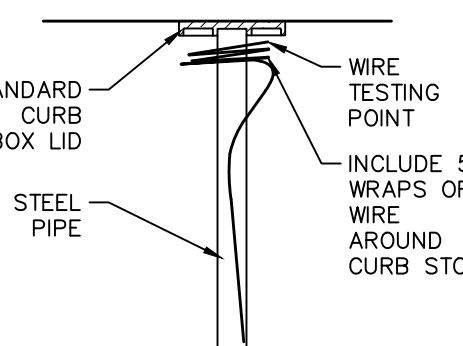
CURB STOP CONNECTION



WIRE TESTING POINT

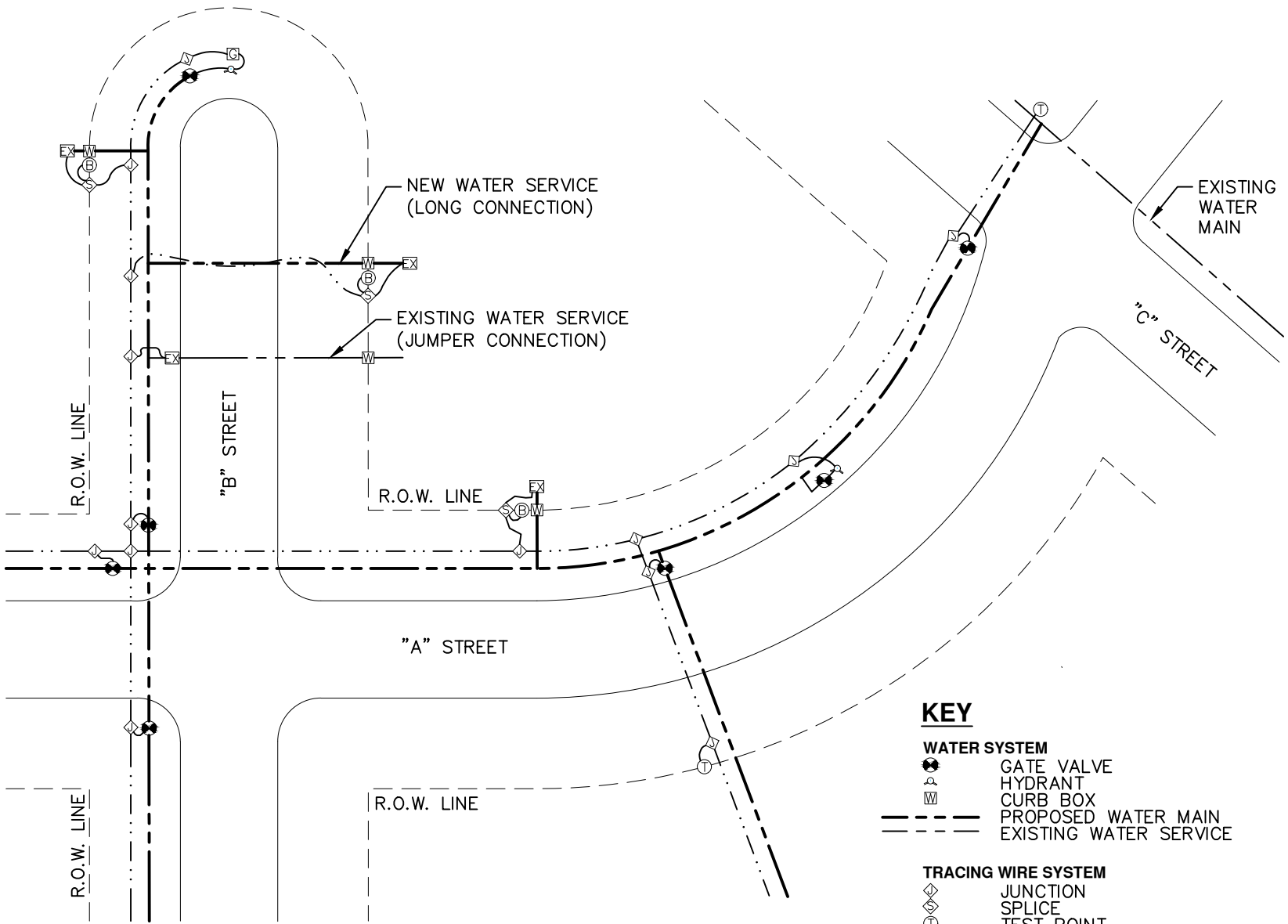


TRACER WIRE TEST POINT



CURB BOX WIRE COIL

WIRE DETAILS
NOT TO SCALE



KEY
WATER SYSTEM
GATE VALVE
HYDRANT
CURB BOX
PROPOSED WATER MAIN
EXISTING WATER SERVICE
TRACING WIRE SYSTEM
JUNCTION
SPLICE
TEST POINT
CURB BOX WIRE COIL
WATER SERVICE TERMINATION
GROUNDING ROD TERMINATION
TRACING WIRE

TRACER WIRE SCHEMATIC
NOT TO SCALE

REV.	DATE	ISSUED FOR:

CITY OF HIGHLAND PARK
STANDARD WATER MAIN DETAILS AND NOTES
WATER-3

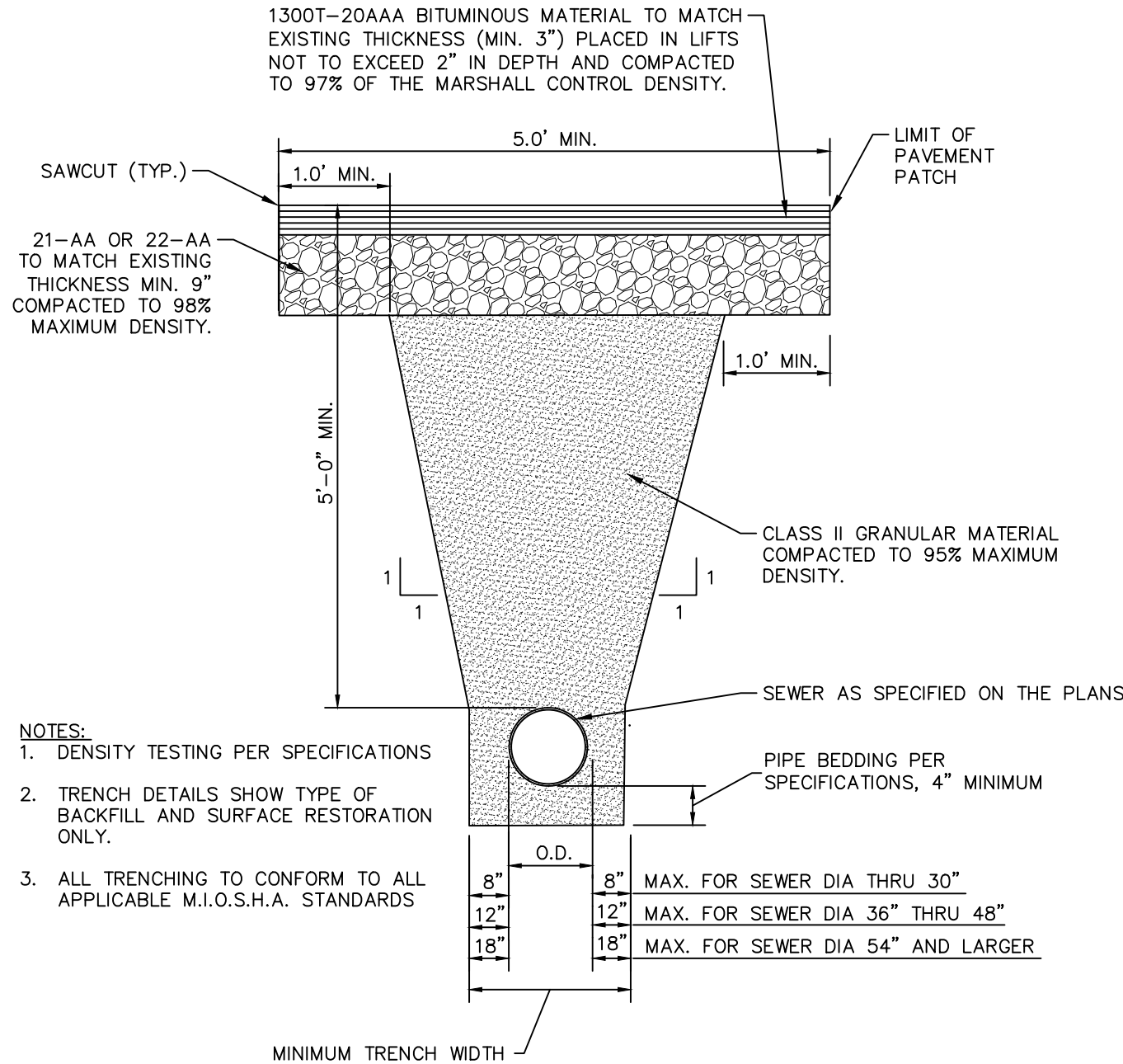


MCA JOB #:1039-18-8756
DATE: 06.19.2023
SCALE: AS SHOWN PER DETAIL
DRAWN BY: Metro Consulting Associates
Dynamic Design, Diverso, DIFFERENT.
COUNTY: WAYNE
SHEET: W3

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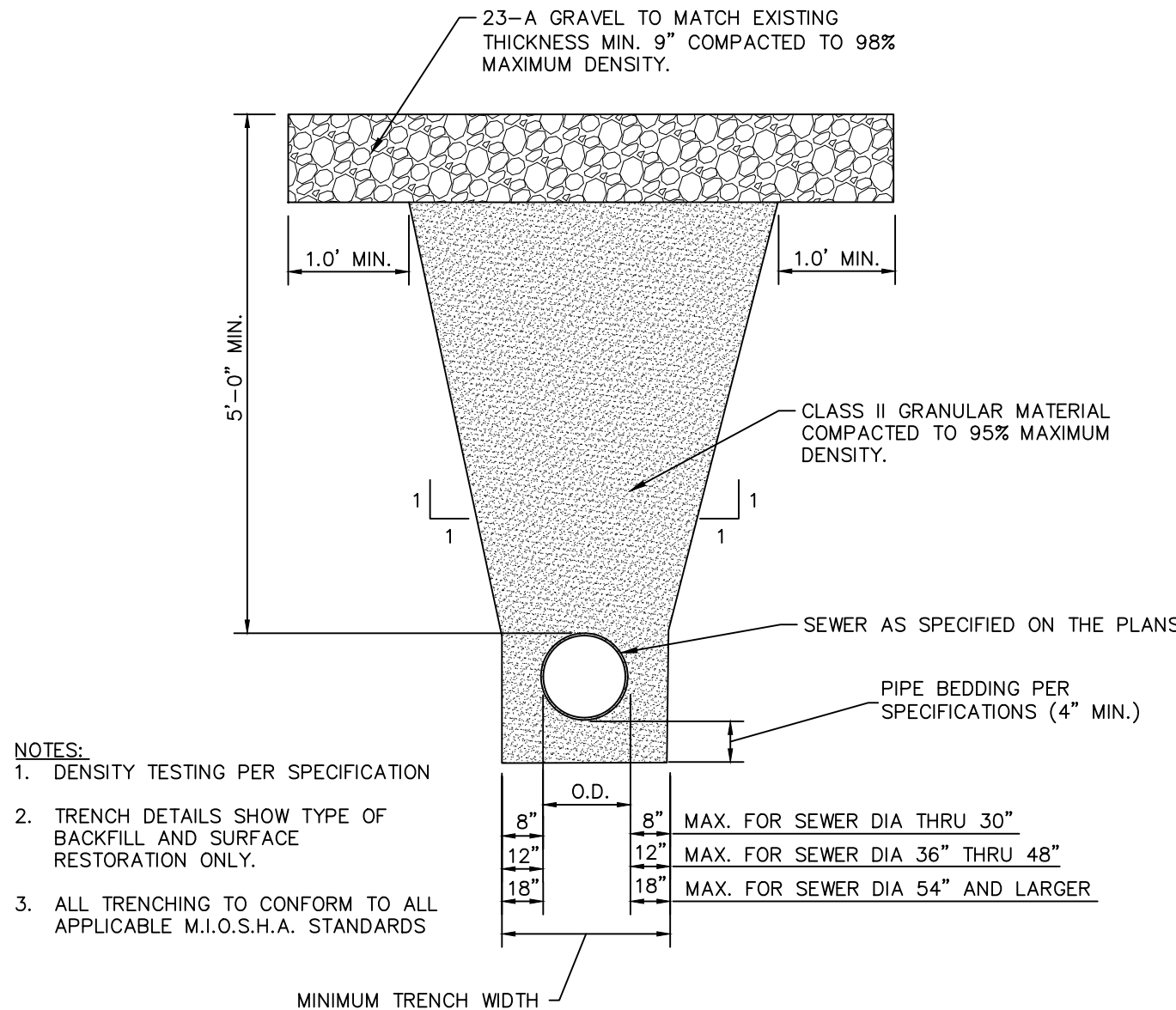
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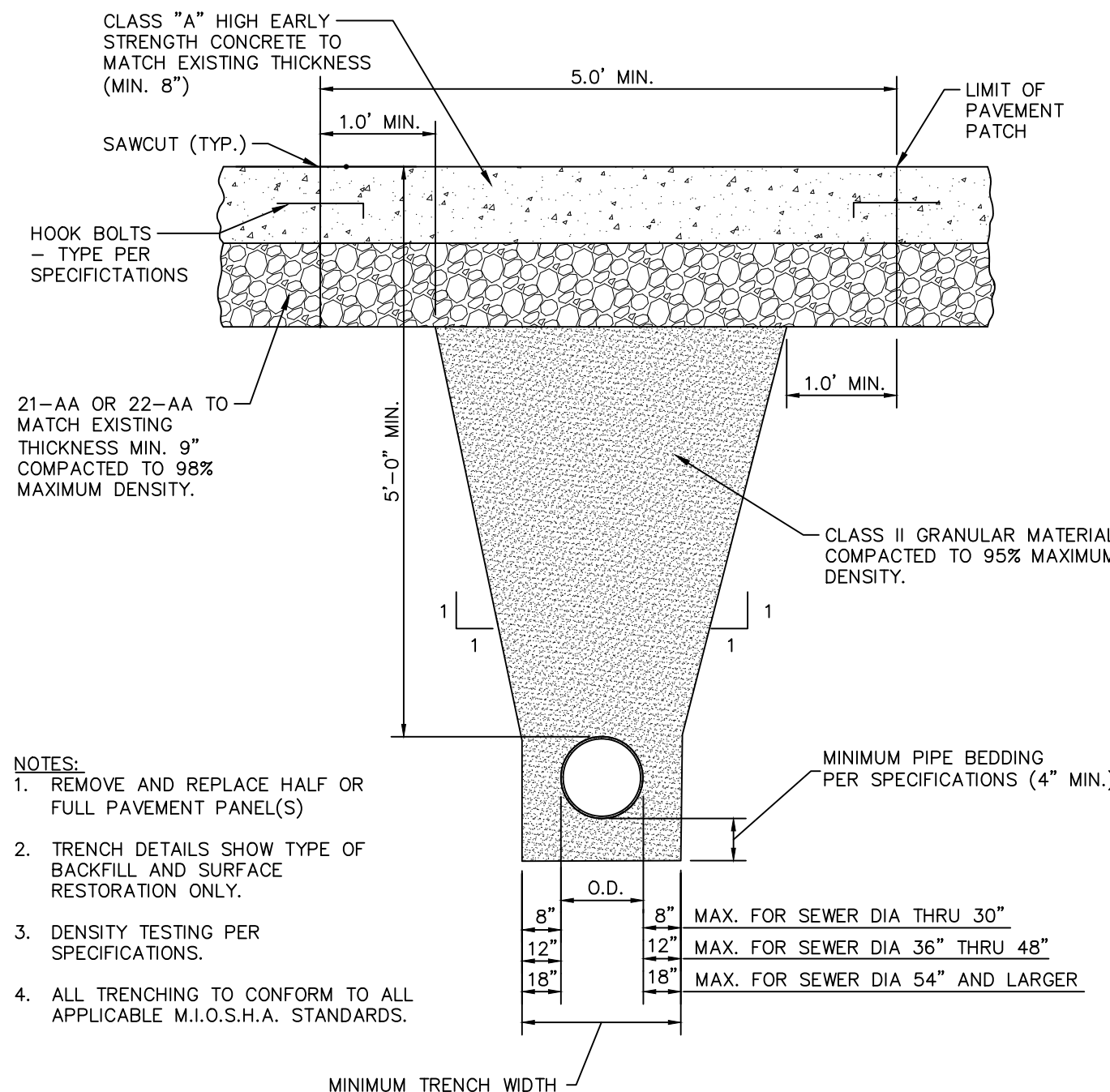
UNDER BITUMINOUS SURFACE

UTILITY TRENCH-TYPE I
NOT TO SCALE



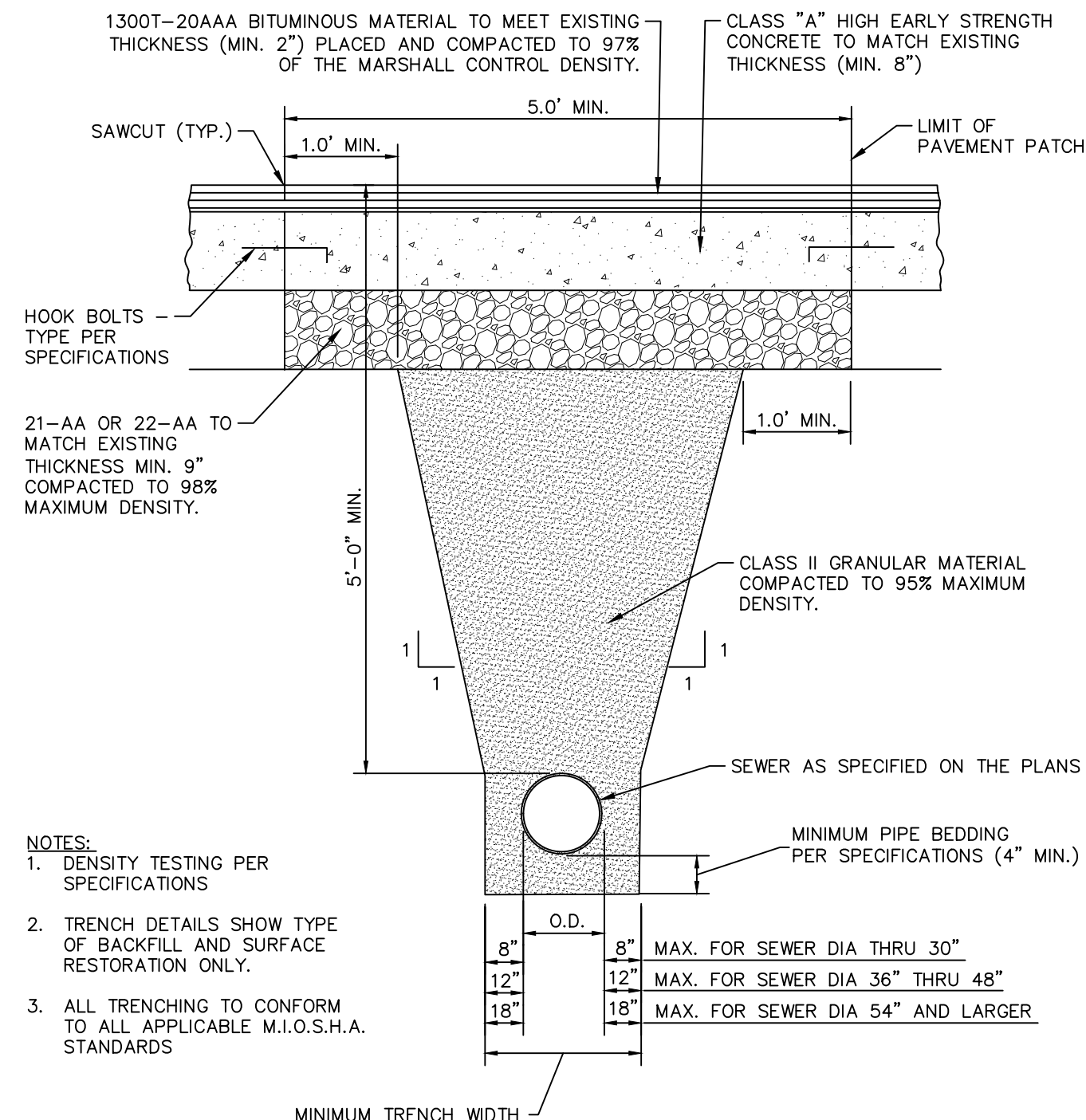
UNDER GRAVEL ROAD

UTILITY TRENCH-TYPE II
NOT TO SCALE



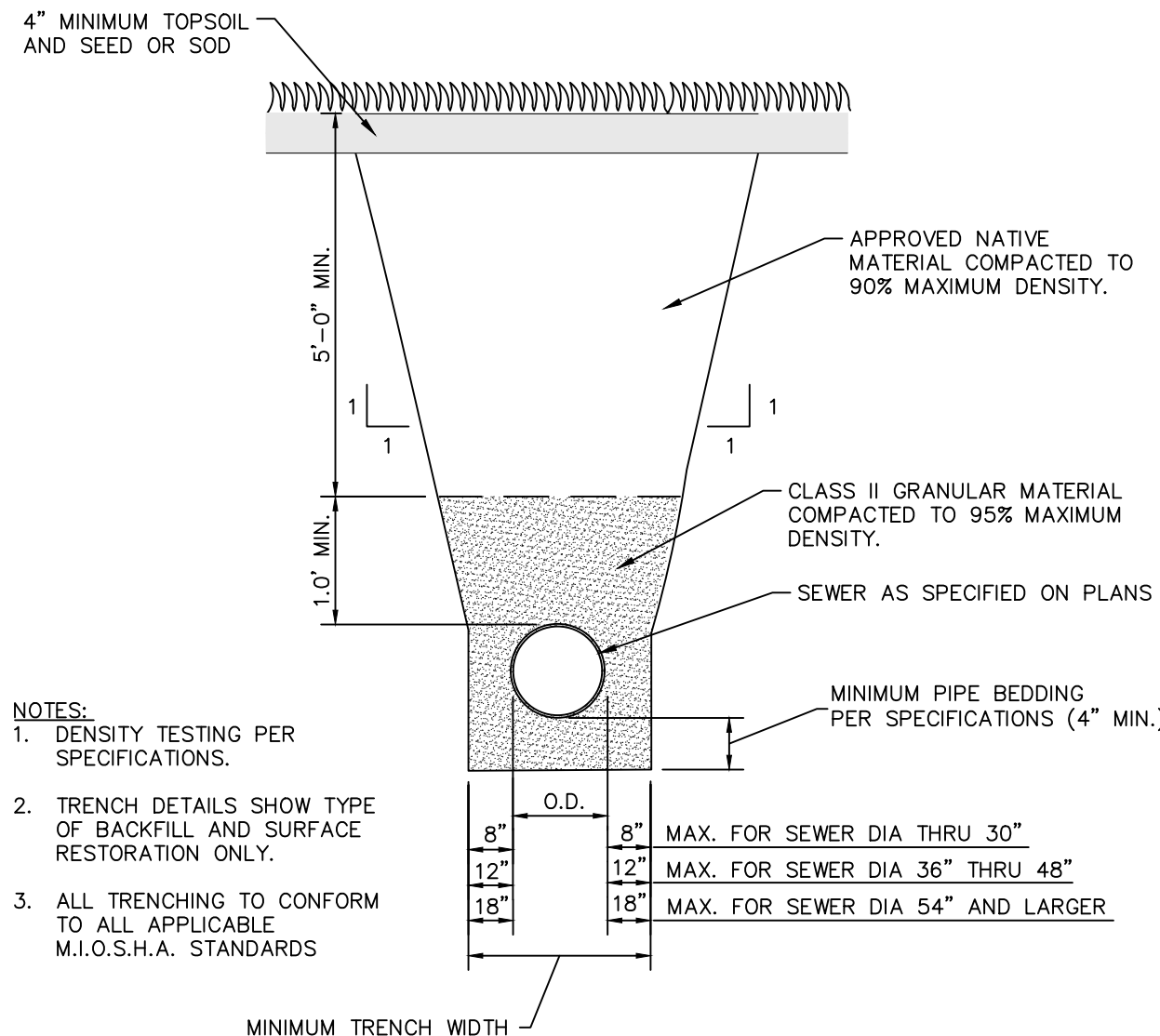
UNDER CONCRETE PAVEMENT

UTILITY TRENCH-TYPE III
NOT TO SCALE



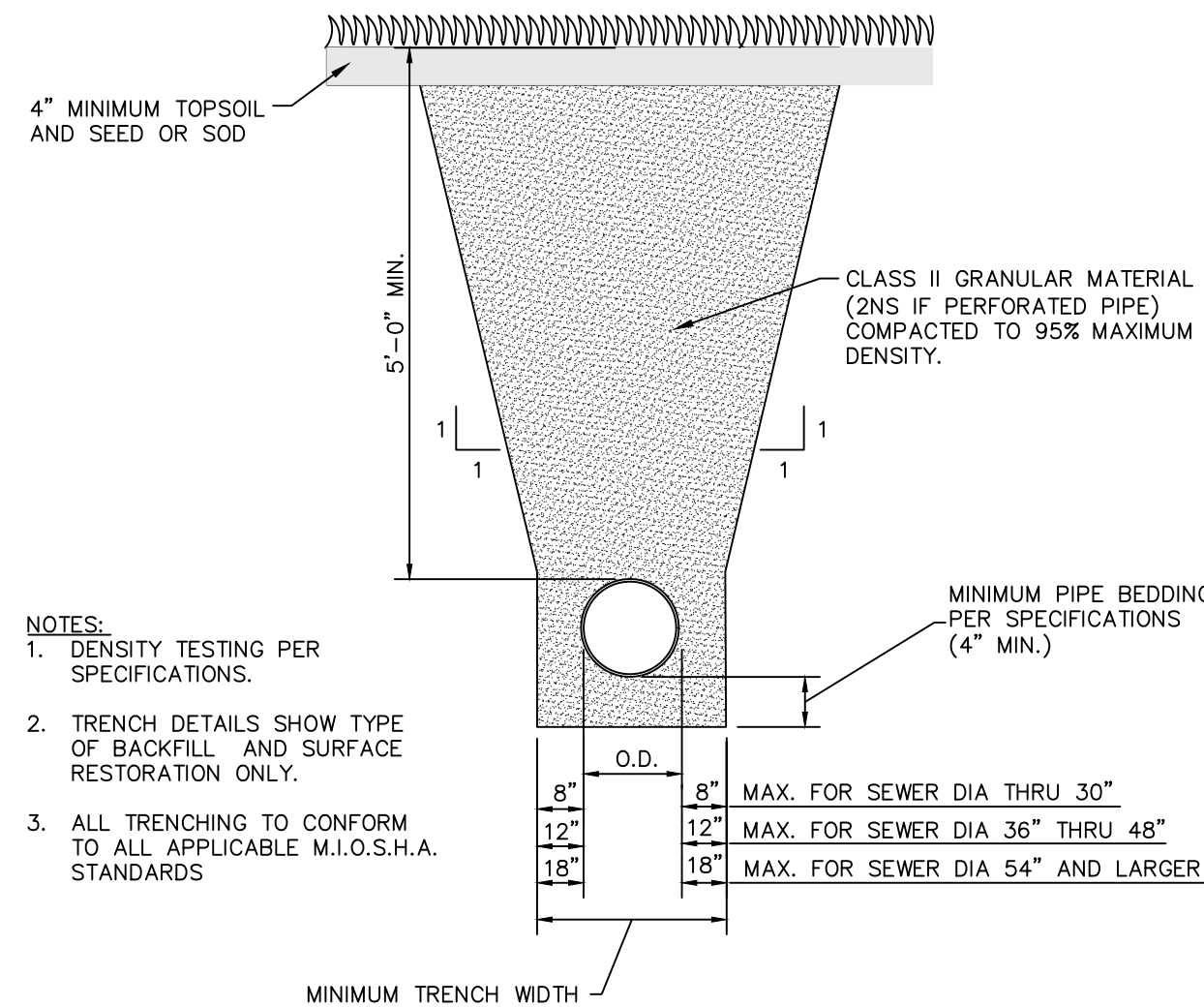
UNDER CONCRETE PAVEMENT WITH BITUMINOUS OVERLAY

UTILITY TRENCH-TYPE IV
NOT TO SCALE



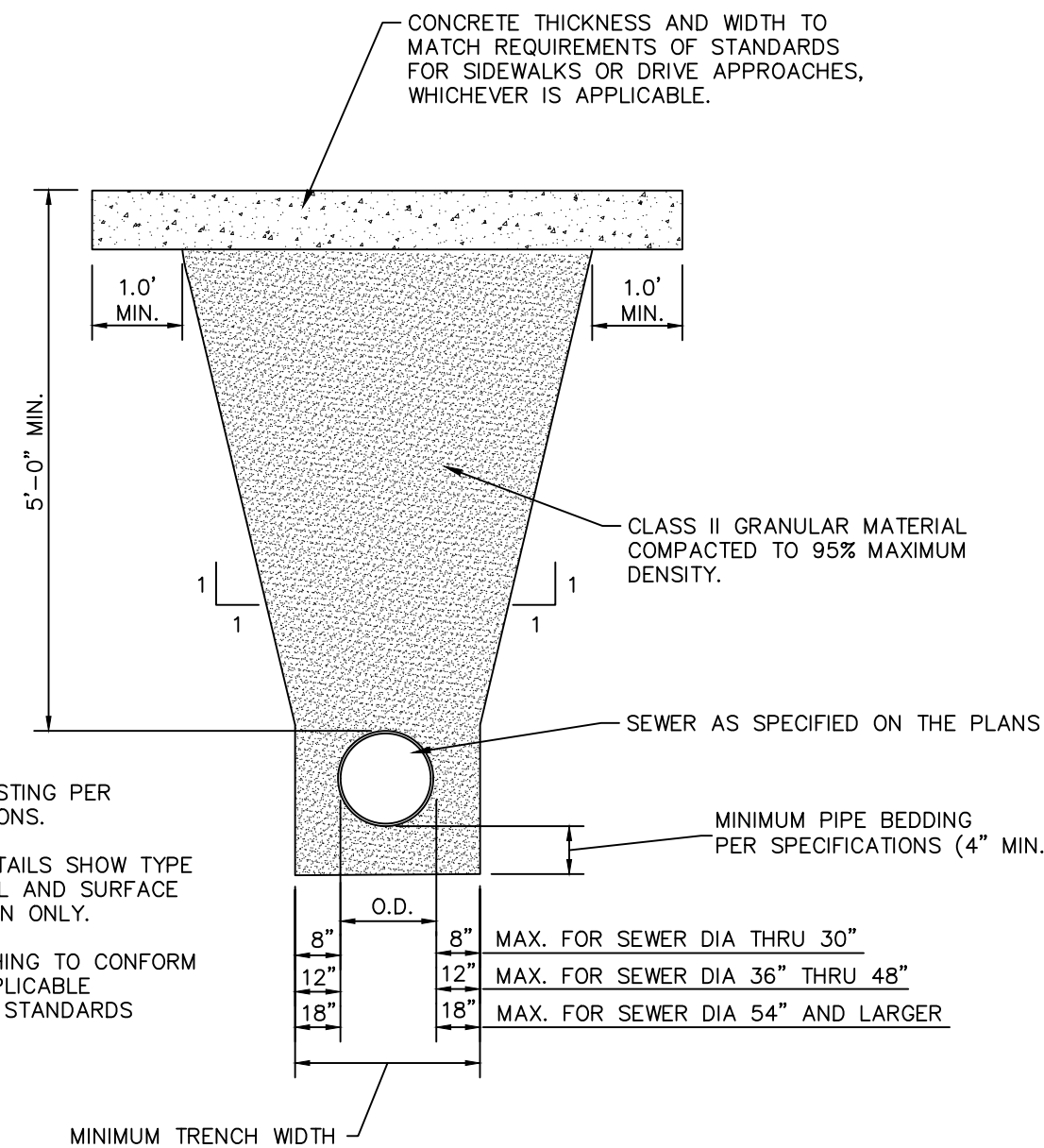
GREENBELT AREA OUTSIDE PAVEMENT INFLUENCE

UTILITY TRENCH-TYPE V
NOT TO SCALE



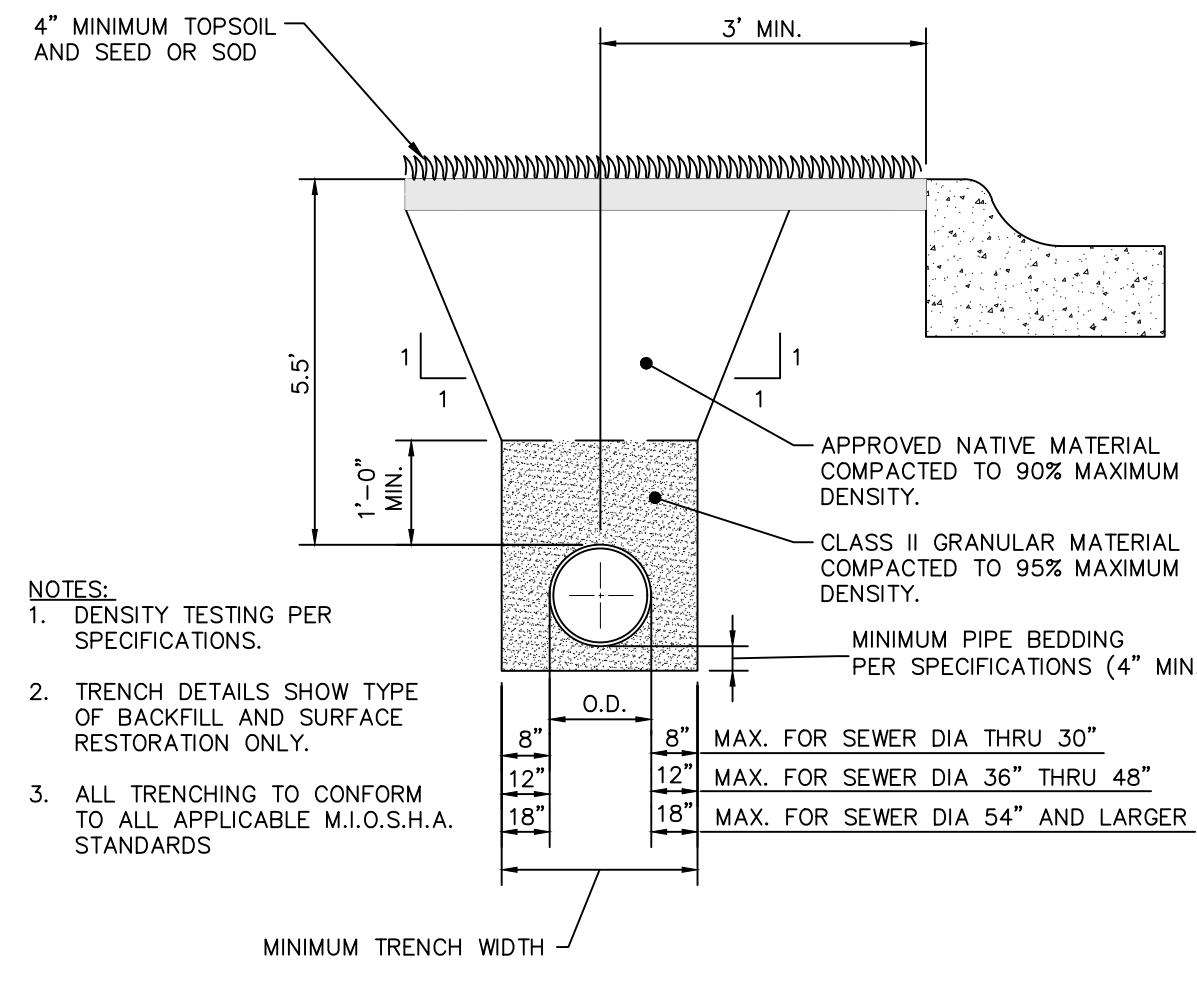
GREENBELT AREA REQUIRING CLASS II BACKFILL

UTILITY TRENCH-TYPE VI
NOT TO SCALE



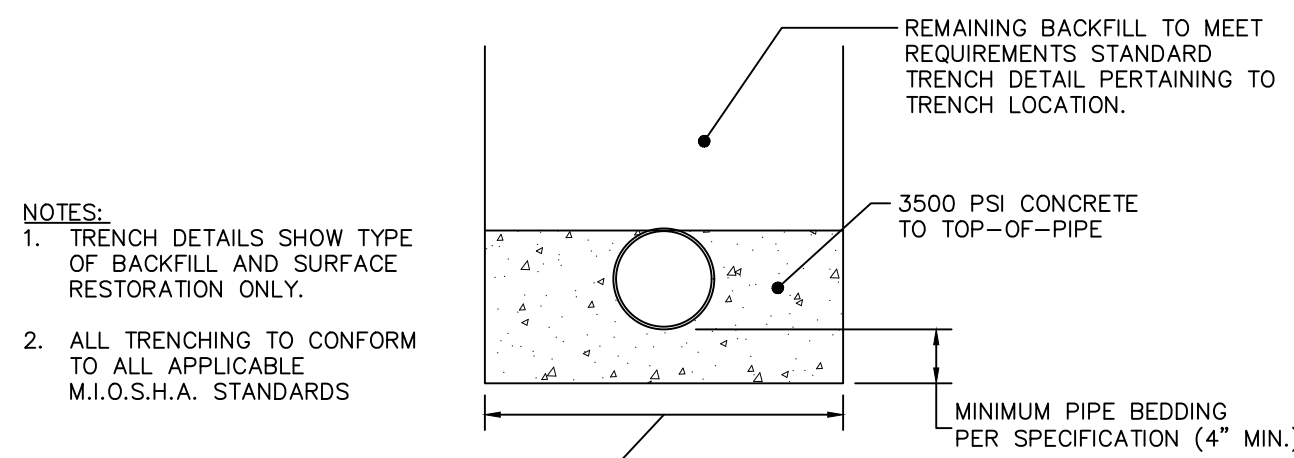
UNDER SIDEWALK OR DRIVE APPROACH

UTILITY TRENCH-TYPE VII
NOT TO SCALE



WATER MAIN AT TYPICAL PARK LOCATION 3' BEHIND BACK/CURB

UTILITY TRENCH-TYPE VIII
NOT TO SCALE



CONCRETE ENCASEMENT

UTILITY TRENCH-TYPE IX
NOT TO SCALE

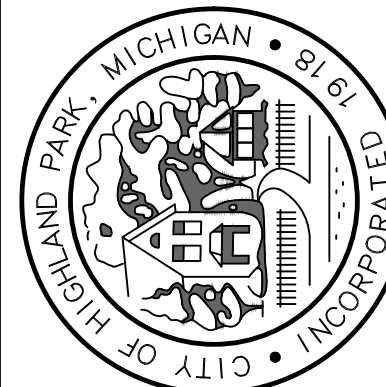
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CITY OF HIGHLAND PARK
STANDARD TRENCH DETAILS AND NOTES
TRENCH-1



MCA JOB #:1039-18-8756

DATE: 06.19.2023

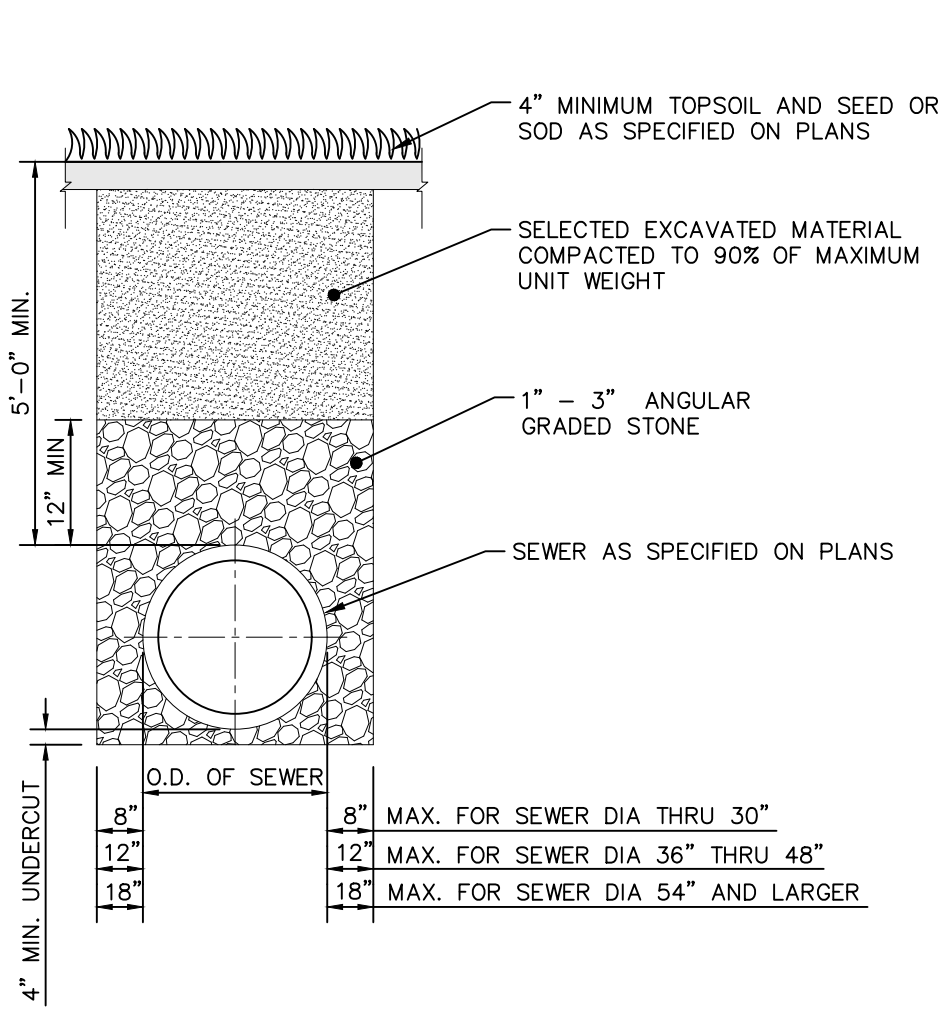
SCALE: AS SHOWN PER DETAIL

DRAWN BY:
Metro Consulting Associates
Dynamic. Daring. Diverse. DIFFERENT.

COUNTY: WAYNE

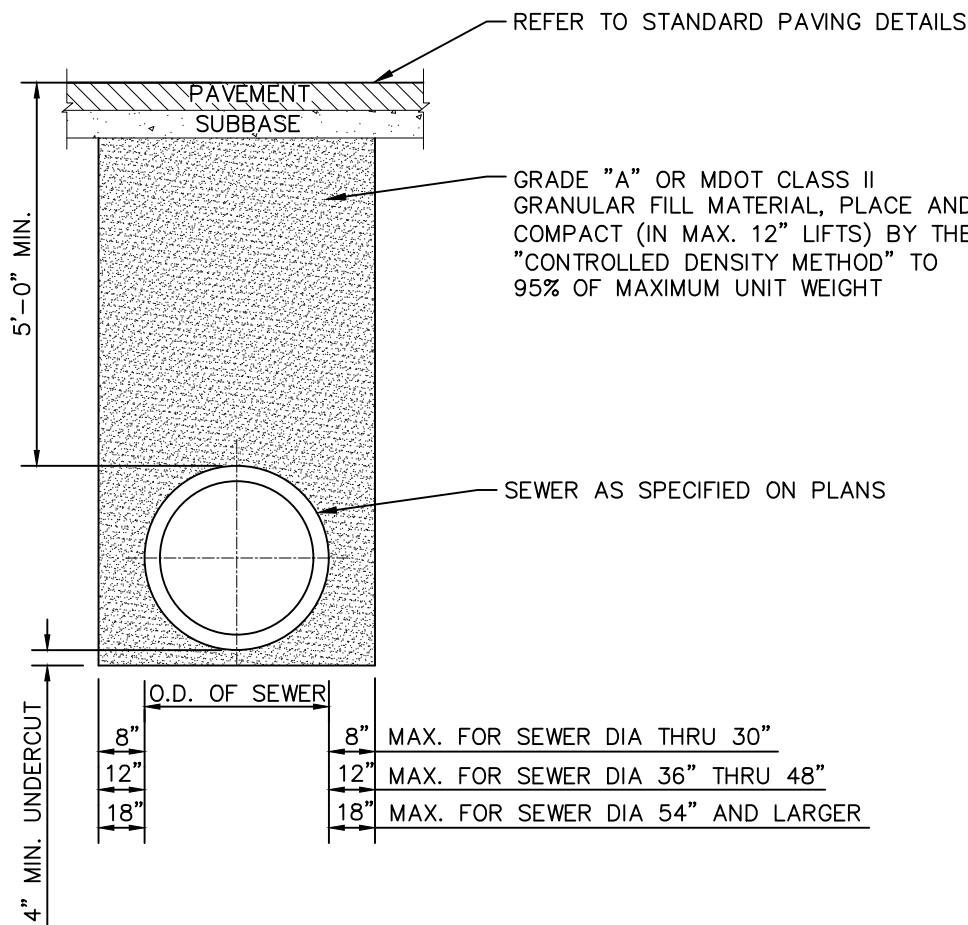
SHEET:

TR1



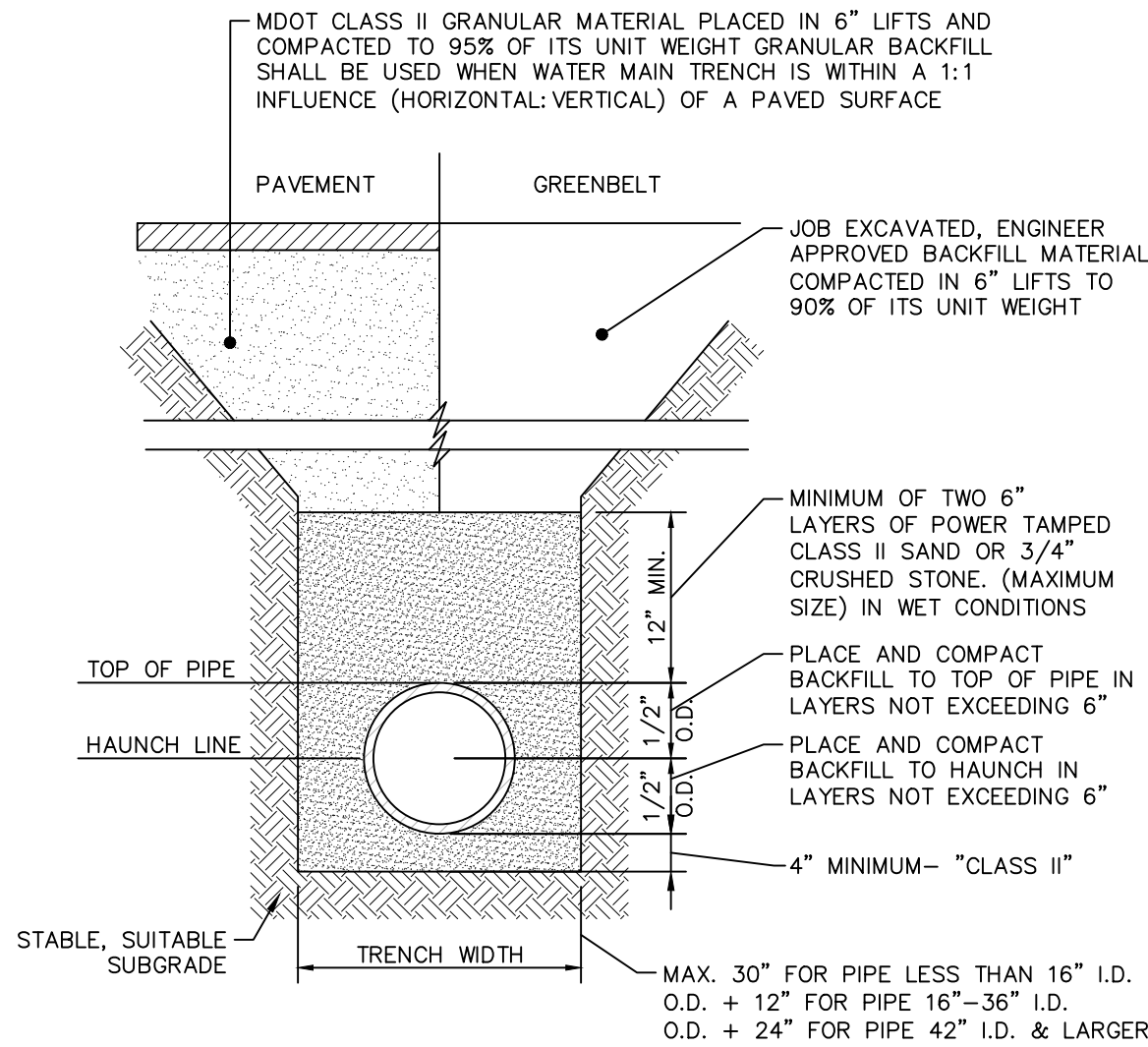
**STANDARD TRENCH DETAIL FOR SEWER
UNDER BERMS, LAWNS, GRASSY AREAS,
(OUTSIDE PAVEMENT INFLUENCE)**

BEDDING PIPE SANITARY SEWER UNDER LANDSCAPE
NOT TO SCALE

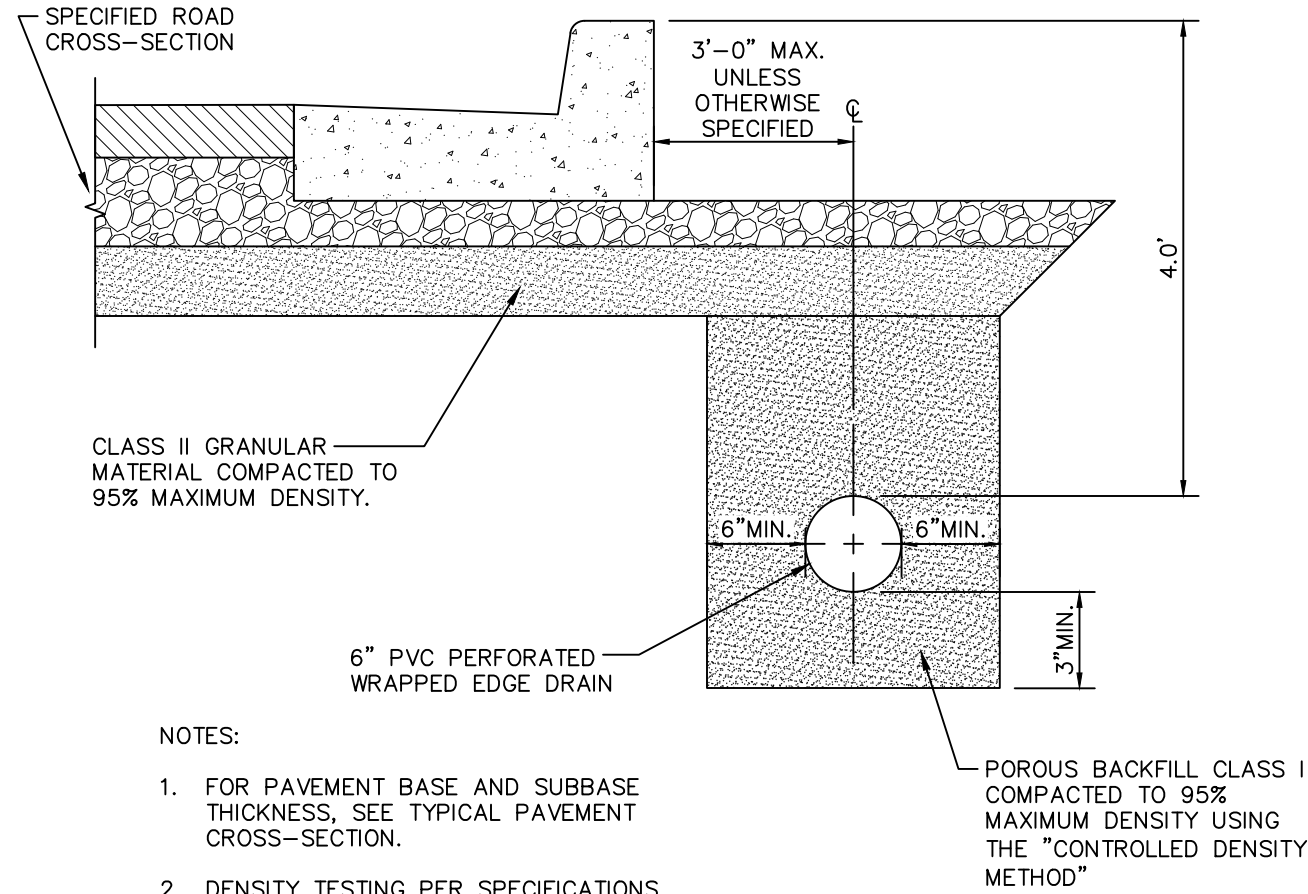


**STANDARD TRENCH DETAIL FOR SEWER
UNDER ROAD BED, PARKING LOTS,
SIDEWALKS, DRIVEWAYS, CURBS,
GRAVEL ROADS, AND ALLEYS**

BEDDING PIPE SANITARY SEWER UNDER PAVEMENT
NOT TO SCALE



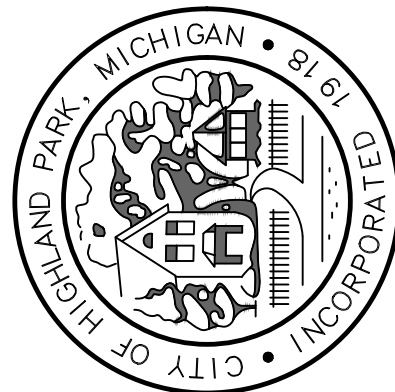
STANDARD BEDDING FOR WATER MAIN
NOT TO SCALE



TYPICAL EDGE DRAIN TRENCH
NOT TO SCALE

- NOTES:
1. FOR PAVEMENT BASE AND SUBBASE THICKNESS, SEE TYPICAL PAVEMENT CROSS-SECTION.
 2. DENSITY TESTING PER SPECIFICATIONS.
 3. TRENCH DETAILS SHOW TYPE OF BACKFILL AND SURFACE RESTORATION, ONLY.
 4. ALL TRENCHING TO CONFORM TO ALL APPLICABLE M.I.O.S.H.A. STANDARDS.

CITY OF HIGHLAND PARK
STANDARD TRENCH DETAILS AND NOTES
TRENCH-2



MCA JOB #:1039-18-8756
DATE: 06.19.2023
SCALE: AS SHOWN PER DETAIL
DRAWN BY:
Metro Consulting Associates
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COUNTY: WAYNE
SHEET: **TR2**

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