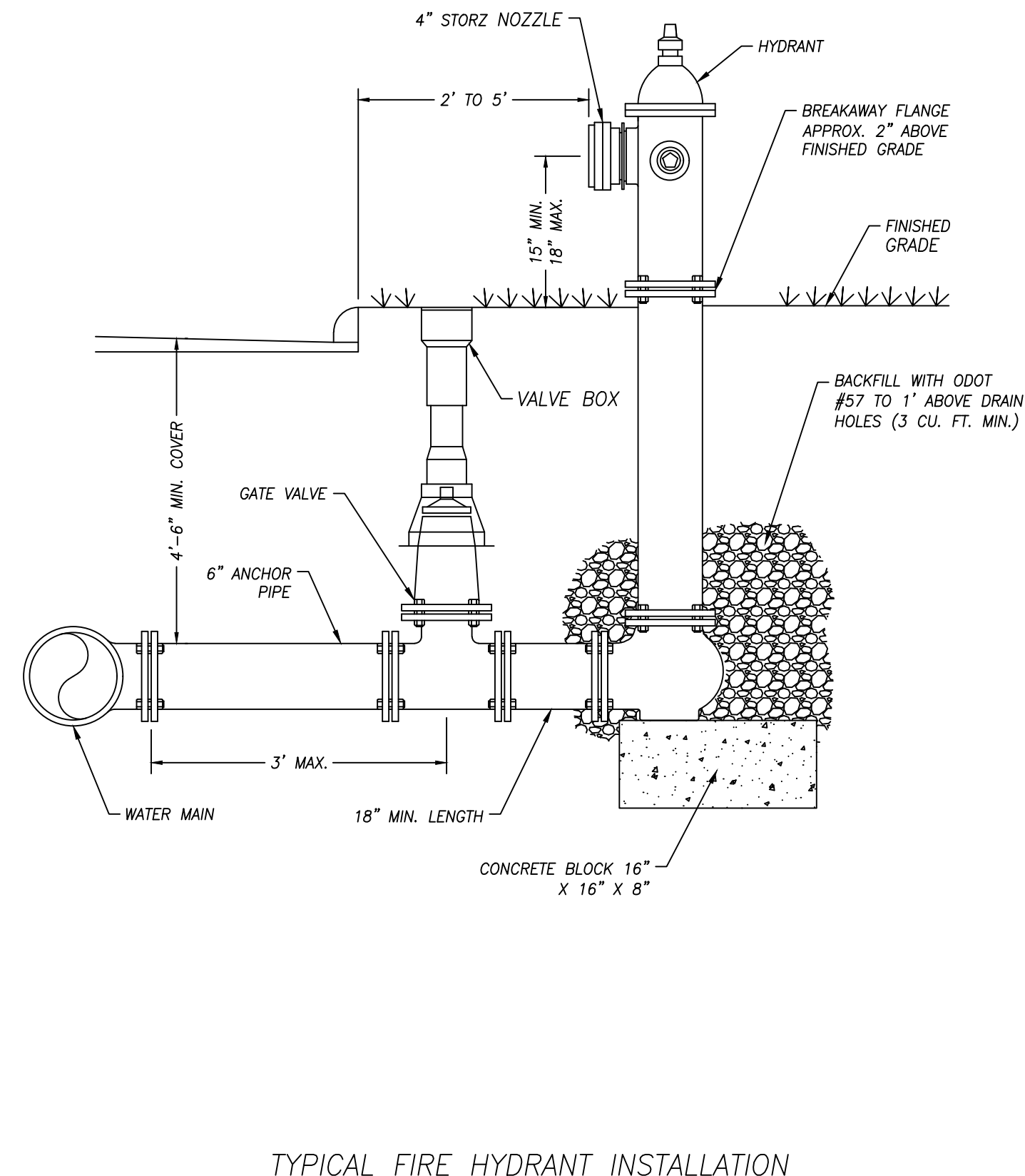


|                  |     |
|------------------|-----|
| DESIGNED BY:     | TBD |
| CONSTRUCTED BY:  | TBD |
| START DATE:      | TBD |
| COMPLETION DATE: | TBD |

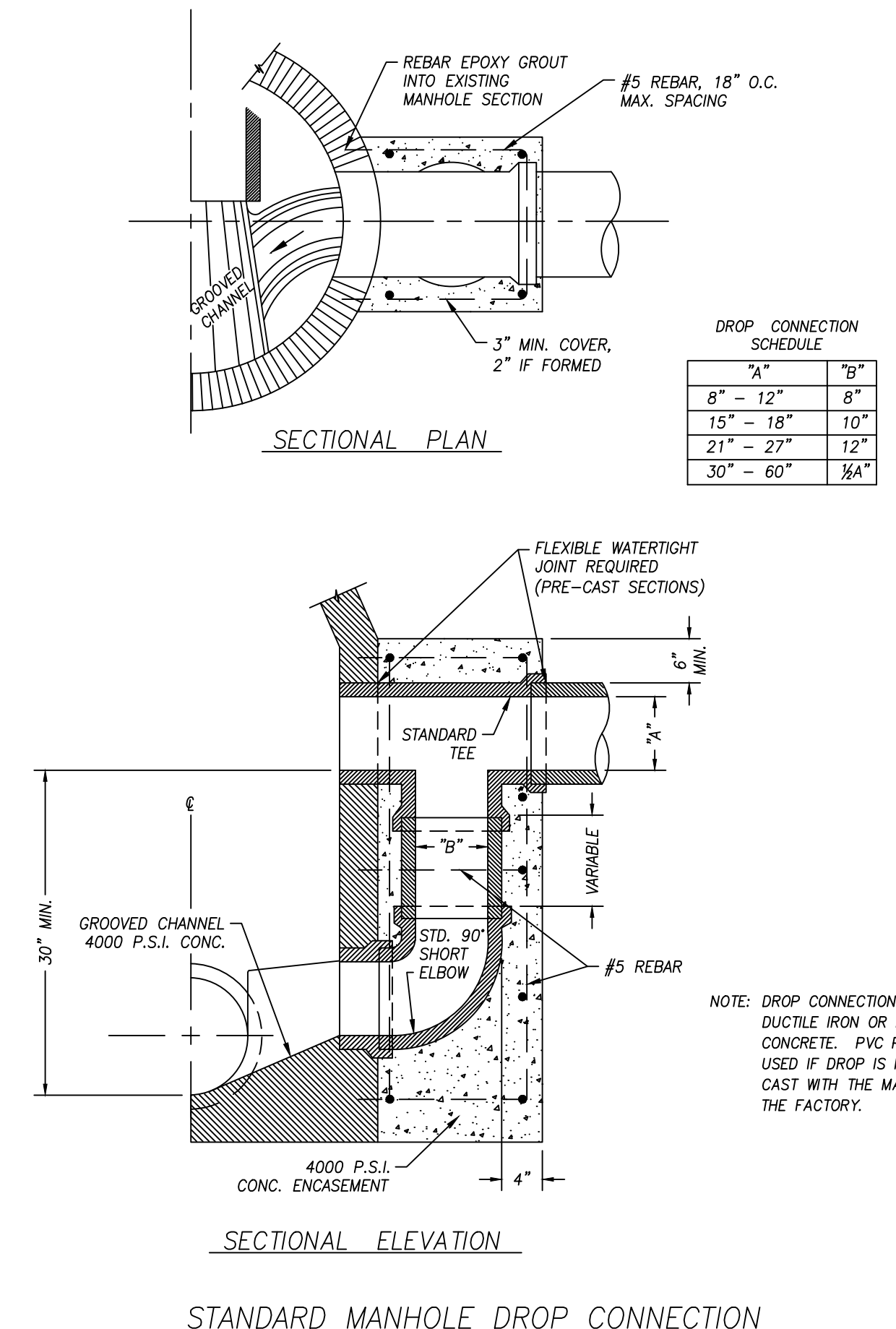
| No. | DATE | DESCRIPTION | SUBMITTAL/REVISION RECORD |         |
|-----|------|-------------|---------------------------|---------|
|     |      |             | DATE                      | APPROV. |
|     |      |             |                           |         |
|     |      |             |                           |         |
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|     |      |             |                           |         |

**GENERAL NOTES**

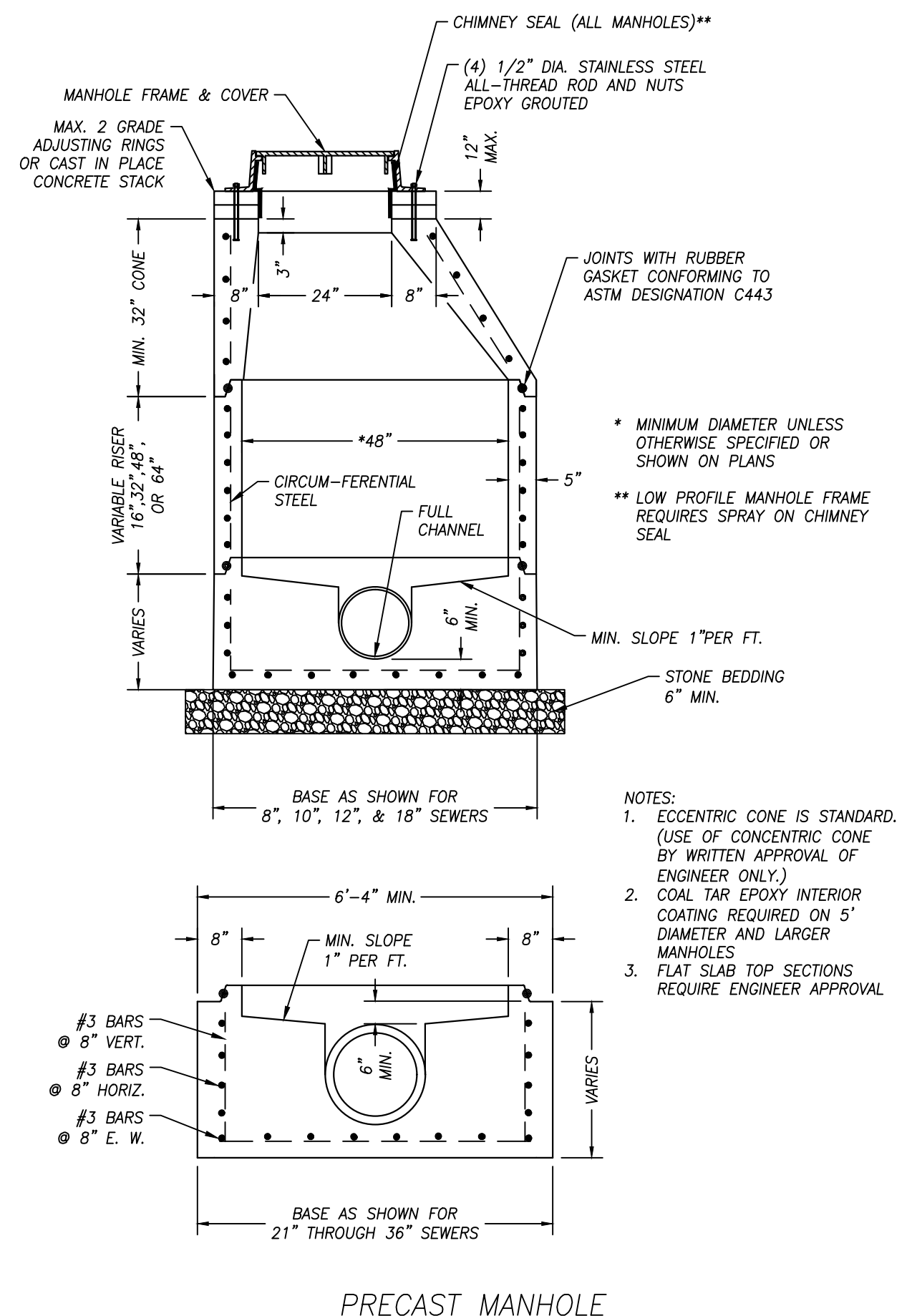
- ALL SANITARY SEWERS AND/OR WATER LINES AND APPURTENANCES SHALL BE CONSTRUCTED ACCORDING TO MONTGOMERY COUNTY ENVIRONMENTAL SERVICES SPECIFICATIONS, DATED JANUARY, 2019, (EFFECTIVE NOVEMBER, 2019), OR LATEST REVISION THEREOF.
- NO ADDITIONS, DELETIONS OR REVISIONS TO THE SANITARY SEWER AND/OR WATER FACILITIES ARE TO BE MADE WITHOUT PRIOR WRITTEN APPROVAL BY THE MONTGOMERY COUNTY ENVIRONMENTAL SERVICES.
- NO CONSTRUCTION SHALL COMMENCE UNTIL MONTGOMERY COUNTY ENVIRONMENTAL SERVICES PERMITS HAVE BEEN ISSUED, AND TWO (2) WORKING DAYS NOTICE HAS BEEN GIVEN TO THE INSPECTION DIVISION (781-2650).
- ALL UTILITY TRENCHES WITHIN THE EXISTING OR PROPOSED RIGHT-OF-WAY OR UNDER PAVED AREAS SHALL BE BACKFILLED WITH COMPACTED GRANULAR MATERIAL CONFORMING TO ODOT 703.11 TYPE 2 IN ACCORDANCE WITH THE MONTGOMERY COUNTY ENVIRONMENTAL SERVICES SPECIFICATIONS.
- NO SANITARY SEWER AND/OR WATER MAIN LINE PERMITS SHALL BE ISSUED UNTIL PERMITS TO WORK IN THE PUBLIC ROAD RIGHT OF WAY (STREET CUT PERMITS) OR THE STATE OF OHIO HIGHWAY PERMIT HAS BEEN OBTAINED (AS APPLICABLE).
- ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS ACCORDING TO THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL NOTIFY THE MONTGOMERY COUNTY ENVIRONMENTAL SERVICES AT 1-800-362-2764 AND ALL OTHER UTILITY COMPANIES 48 HOURS PRIOR TO CONSTRUCTION TO OBTAIN FIELD LOCATIONS OF SAID EXISTING UNDERGROUND UTILITIES (811).
- NO SERVICE CONNECTIONS SHALL BE MADE TO THE WATER MAIN OR SANITARY SEWER UNTIL THE MAIN LINE HAS BEEN INSPECTED, TESTED, DISINFECTED AND RELEASED FOR TAPS AND ON-PREMISE.
- ROOF DRAINS, FOUNDATION DRAINS OR OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.
- SANITARY MANHOLES SHALL BE PRE-CAST CONFORMING TO ASTM C-478, OR MONOLITHIC CONSTRUCTED OF CLASS "A" 4200 PSI CONCRETE. MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH ASTM C-1244. JOINTS BETWEEN PRE-CAST SANITARY MANHOLE SECTIONS SHALL CONFORM TO ASTM C-443. CHIMNEY SEALS SHALL BE PROVIDED BETWEEN THE CASTING AND CONE SECTION. ECCENTRIC CONES SHALL BE USED.
- SANITARY MANHOLE BOTTOMS TO BE FULLY CHANNELED.
- SANITARY SEWER PIPE AND FITTINGS SHALL BE PVC OR EXTRA STRENGTH VITRIFIED CLAY. PVC PIPE AND FITTINGS SHALL MEET OR EXCEED ALL THE REQUIREMENTS OF ASTM D-3034, SDR26 AND HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI. EXTRA STRENGTH VITRIFIED CLAY PIPE AND FITTINGS SHALL MEET OR EXCEED ALL THE REQUIREMENTS OF ASTM C-700. THE CONTRACTOR MAY HAVE HIS CHOICE OF THESE MATERIALS (PRIOR TO ISSUANCE OF MAINLINE PERMITS) UNLESS OTHERWISE SPECIFIED IN THE PLANS AND SPECIFICATIONS. PVC PIPE SHALL MEET THE REQUIREMENTS FOR DEFLECTION TESTING PER MCEs STANDARD SPECIFICATIONS.
- SANITARY SEWER PIPE JOINTS SHALL CONFORM AS FOLLOWS: PVC PIPE JOINTS SHALL CONFORM TO ASTM D-3212 (ELASTOMERICALLY GASKETED). CLAY PIPE JOINTS SHALL CONFORM TO ASTM C - 425, O-RING GASKET.
- THE CONTRACTOR SHALL NOT MAKE ANY PHYSICAL CONNECTION TO THE EXISTING SANITARY SEWER UNTIL THE REMAINING SEWER, EXCLUDING THE FIRST SPAN HAS BEEN INSPECTED, TESTED AND RELEASED.
- THE INFILTRATION/EXFILTRATION TEST FOR THE SANITARY SEWER SHALL NOT EXCEED 50 GAL./IN.-DIA./MI./DAY.
- THE WATER MAIN INSTALLATION WILL BE INSPECTED BY MONTGOMERY COUNTY ENVIRONMENTAL SERVICES, AREAS NORTH OF US-35 MAY BE INSPECTED BY THE CITY OF DAYTON, IF REQUIRED.
- WATER MAINS, BENDS AND FITTING SHALL BE DUCTILE CAST IRON PIPE AND CONFORM TO ANSI A - 21.51 (AWWA C - 151), CLASS 51.
- WATER MAINS SHALL HAVE 4'-6" MINIMUM COVER.
- ONLY MONTGOMERY COUNTY ENVIRONMENTAL SERVICES PERSONNEL SHALL OPERATE MAIN LINE WATER VALVES.
- FIRE HYDRANTS (CLOSEST POINT) SHALL BE LOCATED 2' FROM AND WITHIN 5' OF THE CURB OR EDGE OF PAVEMENT AND 4" STORZ OPENING TO FACE THE STREET.
- WATER LINES CROSSING ANY AND ALL SEWERS SHALL HAVE A MINIMUM VERTICAL SEPARATION OF 18" BETWEEN THE OUTSIDES OF THE WATER MAIN PIPE AND THE SEWER PIPE. ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING SUCH THAT BOTH JOINTS WILL BE EQUIDISTANT AND AS FAR FROM THE SEWER AS POSSIBLE. IF WATER CROSSES BELOW SANITARY SEWERS, THE SEWER MUST BE WATER MAIN MATERIAL FOR THAT SPAN.
- ALL GATE VALVES ARE TO BE LOCATED AT TEES OR CROSSES WITH A ONE FOOT, (3') MAXIMUM NIPPLE BETWEEN TEE OR CROSS AND VALVE. ALL PLUGS ARE TO BE CONNECTED TO VALVES EXCEPT WHERE SHOWN ON PLANS.
- ANY CONSTRUCTION OF, OR CONNECTION TO PRE-STRESSED CONCRETE WATER MAINS WILL REQUIRE A MEETING WITH MONTGOMERY COUNTY ENVIRONMENTAL SERVICES BEFORE ORDERING THE PIPE FOR THE PROJECT.
- ALL FIRE HYDRANTS AND/OR VALVES NOTED TO BE RELOCATED SHALL BE INSPECTED PRIOR TO BEING PLACED BACK INTO SERVICE. ONLY FIRE HYDRANTS MEETING THE CURRENT SPECIFICATIONS WILL BE PLACED BACK INTO SERVICE. ALL VALVES THAT ARE NOT RESTRAINED OR ANCHORED SHALL BE REPLACED.
- ALL WATER SERVICES AND SANITARY SERVICES NOTED TO BE ABANDONED SHALL BE ABANDONED AT THE MAIN.



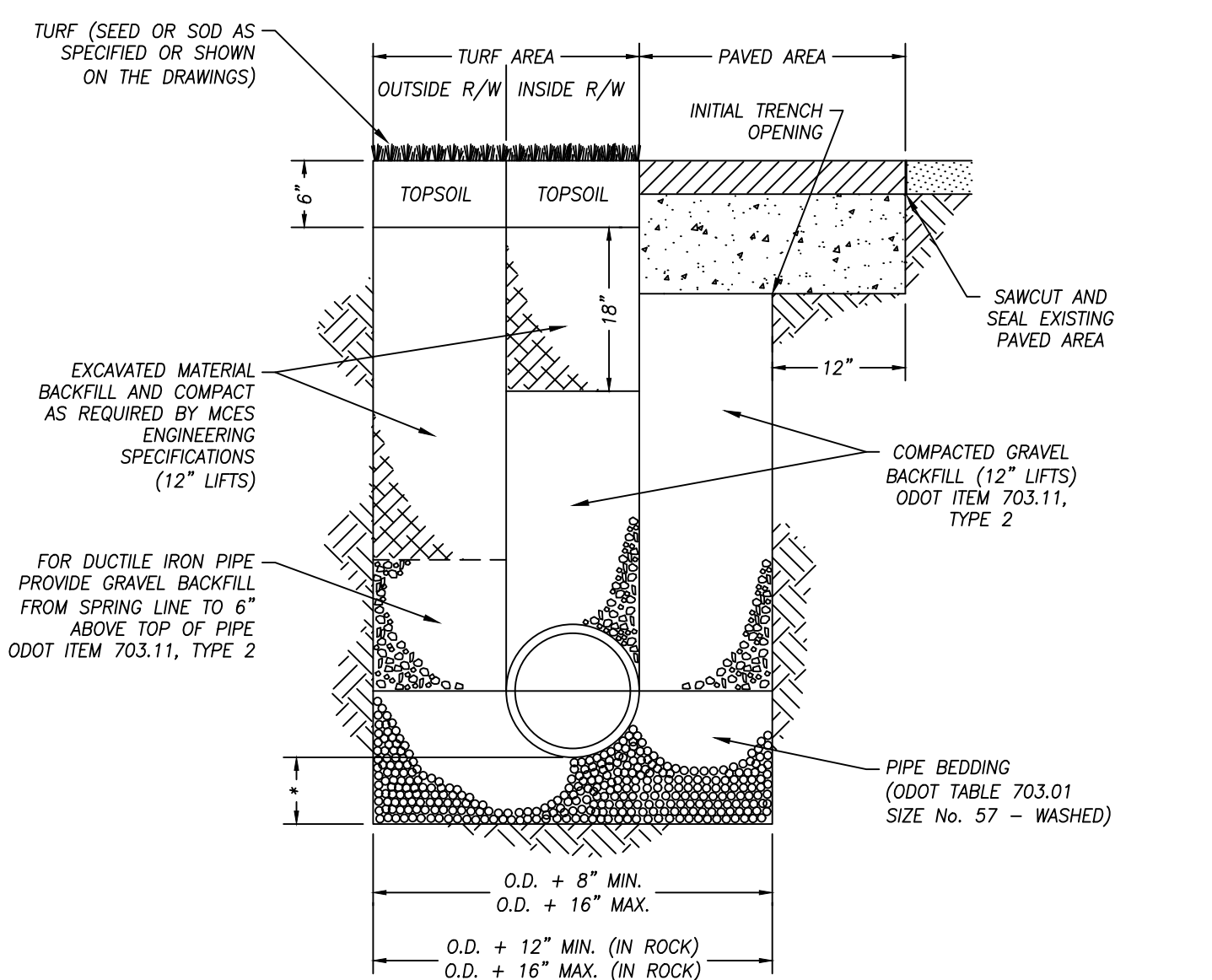
TYPICAL FIRE HYDRANT INSTALLATION



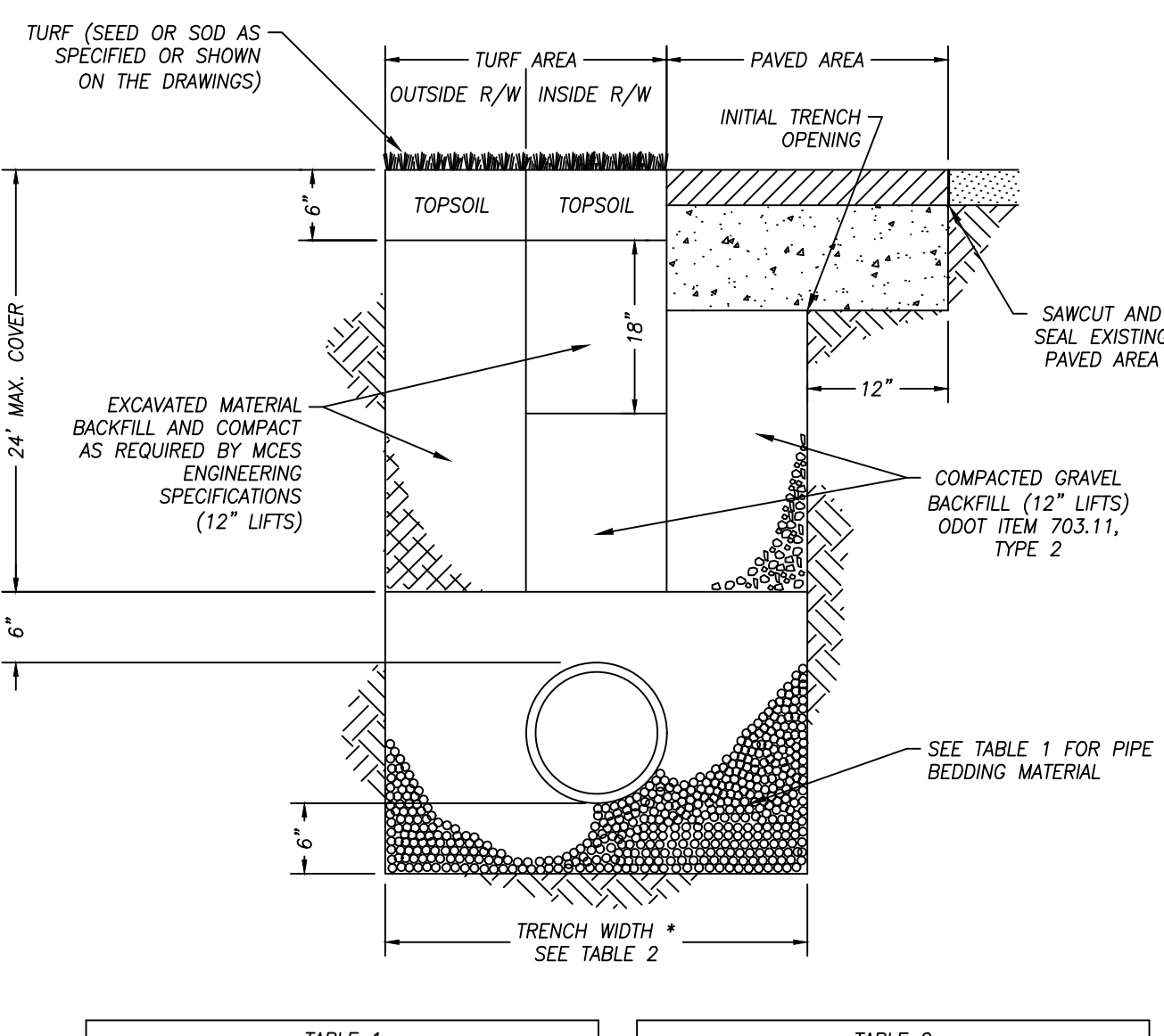
STANDARD MANHOLE DROP CONNECTION



PRECAST MANHOLE



FOR RIGID PIPE\*\*



FOR THERMOPLASTIC PIPE

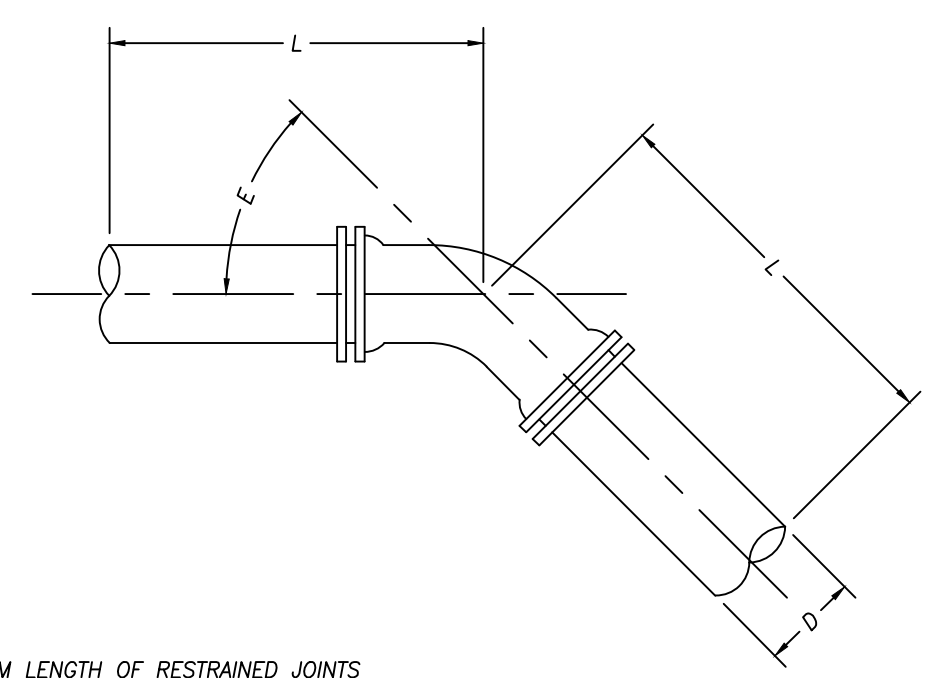
| PIPE DIAMETER    | ODOT TABLE 703.01 SIZE  |
|------------------|-------------------------|
| LESS THAN 15"    | #7 OR #8 - 100% CRUSHED |
| 15"-30"          | #67 - 100% CRUSHED      |
| GREATER THAN 30" | #57 - 100% CRUSHED      |

| PIPE DIAMETER    | TRENCH WIDTH *      |
|------------------|---------------------|
| LESS THAN 15"    | O.D. + 16"          |
| GREATER THAN 15" | (O.D. x 1.25) + 12" |

NOTES:  
FOR PAVEMENT AND TURF RESTORATION SEE MONTGOMERY COUNTY ENVIRONMENTAL SERVICES DEPARTMENT STANDARD SPECIFICATIONS SECTION 02512  
ALL RESTORATION MUST COMPLY WITH THE REQUIREMENTS OF THE LOCAL JURISDICTION

BEDDING DETAILS

| DEGREE OF DEFLECTION ("E") | DIAMETER OF PIPE ("D") |     |      |      |
|----------------------------|------------------------|-----|------|------|
|                            | 6"                     | 8"  | 12"  | 16"  |
| 11 1/4'                    | 6'                     | 8'  | 12'  | 15'  |
| 22 1/2'                    | 13'                    | 17' | 24'  | 31'  |
| 45'                        | 26'                    | 35' | 50'  | 65'  |
| 90'                        | 64'                    | 84' | 120' | 156' |



"L" = MINIMUM LENGTH OF RESTRAINED JOINTS  
"D" = DIAMETER OF PIPE  
"E" = DEGREE OF DEFLECTION  
LENGTHS CALCULATED USING DIPRA THRUST RESTRAINT CALCULATOR WITH THE FOLLOWING ASSUMPTIONS:  
VERTICAL BEND DOWN  
POLYWRAPPED PIPE  
PRESSURE = 150 PSI  
SAFETY FACTOR = 1.5  
SOIL TYPE = COHESIVE GRANULAR  
DEPTH OF COVER = 4.5 FEET  
LAYING CONDITIONS = TYPE 4 BEDDING

JOINT RESTRAINT FOR BENDS