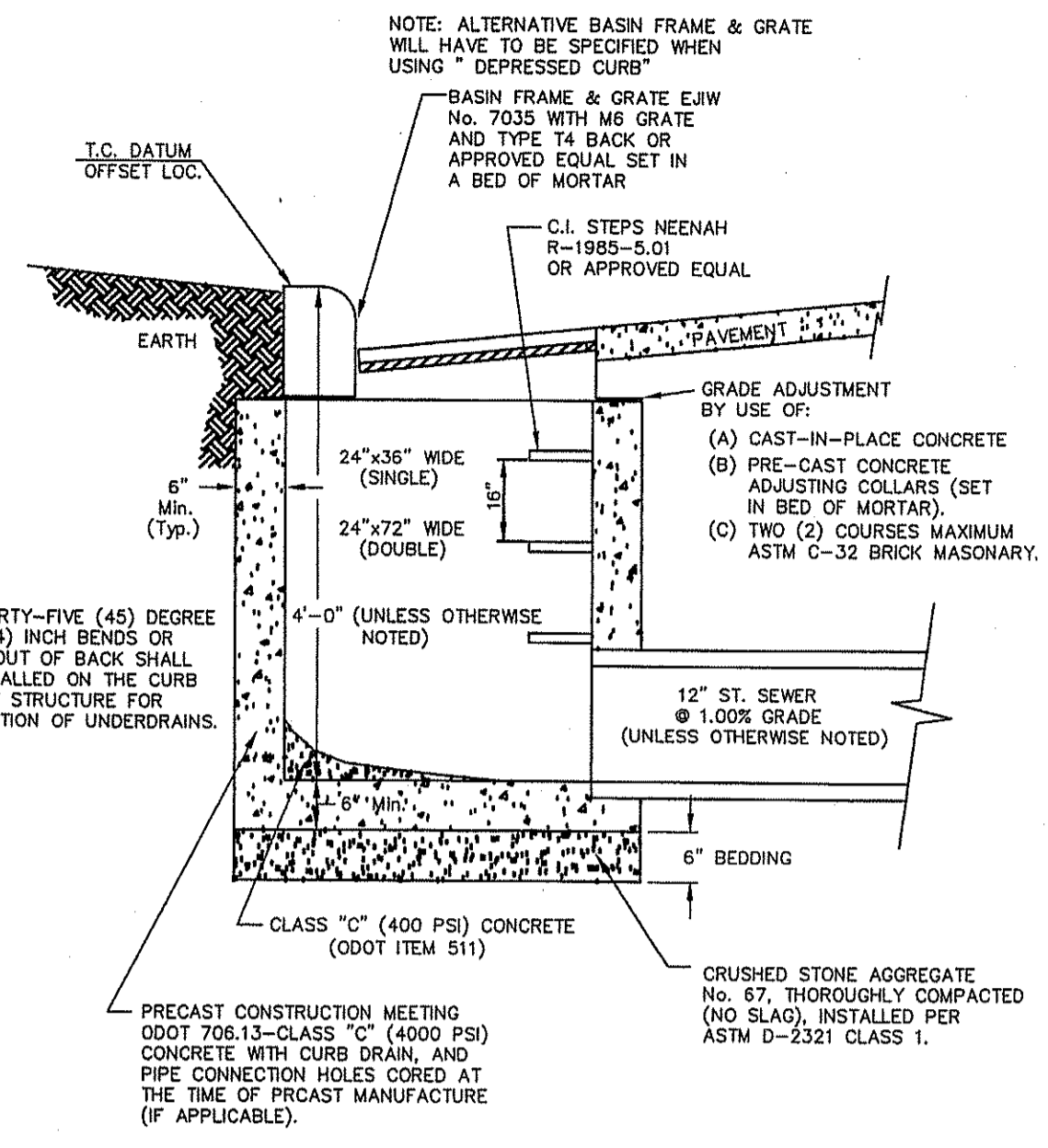


COUNTY OF SUMMIT ENGINEER GENERAL NOTES

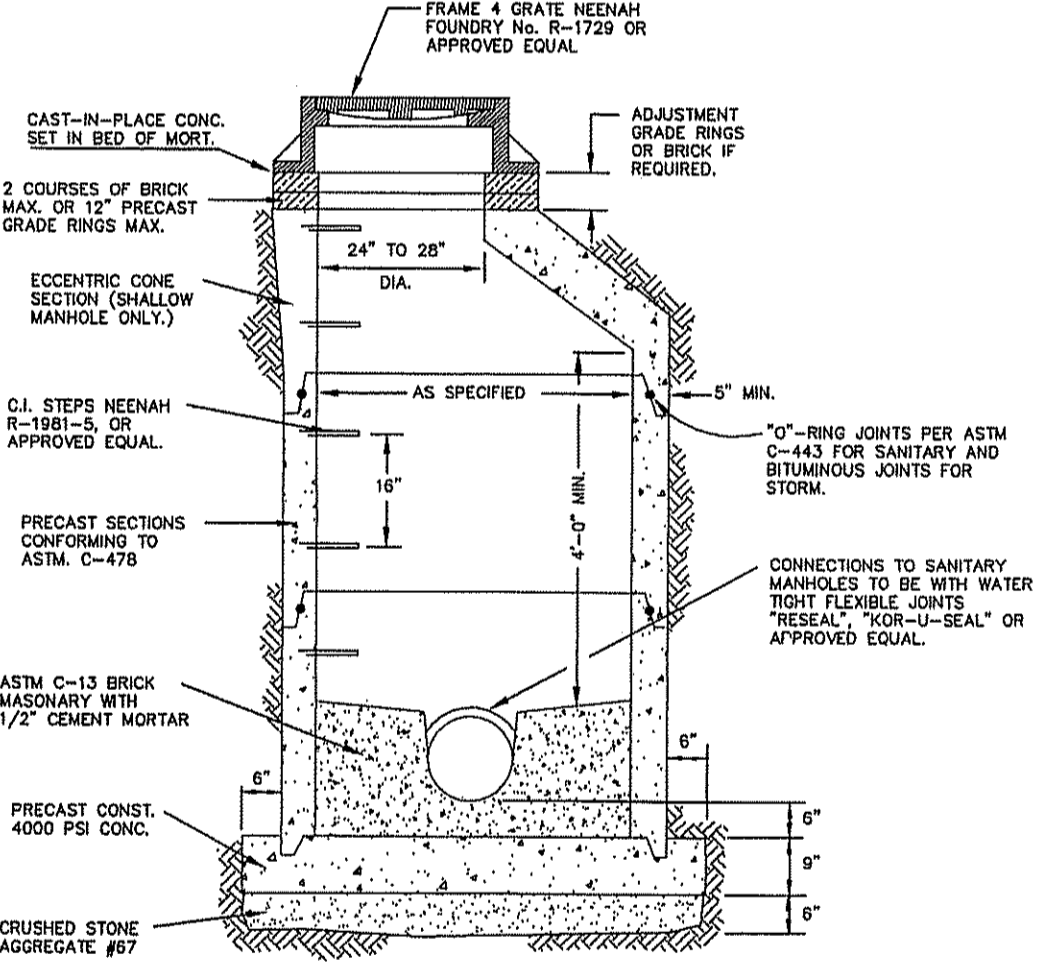
- All construction and materials included on this project shall be in accordance with the latest edition of the State of Ohio Department of Transportation Construction and Material Specifications and the Specifications and Details of the County of Summit Engineer. Where conflicts occur in the above, the County of Summit Engineer shall determine the governing authority.
- Any defects in the construction including materials or workmanship shall be replaced or corrected by removal and replacement or other approved method prior to acceptance by the County of Summit Engineer.
- The County of Summit Engineer shall not be held liable for damages of any type which may occur as a result of error and/or omissions in the engineering design data presented by the developer's engineer, nor shall the County of Summit Engineer be liable for damages resulting from the developer's contractor not complying with the approved plans or by using construction methods or materials not approved by the County of Summit Engineer.
- The developer's engineer certifies that all design data and calculations pertaining to these improvement plans, where applicable, are correct and conform to the current design criteria.
- The County of Summit Engineer in approving these plans and dedication plat thereof, does not, in any way relieve the developer's engineer of his responsibility for accurate and complete engineering design relative to the plans.
- All road surfaces, easements or Rights-of-Way disturbed by construction of any part of this improvement are to be restored completely to the before construction condition or better when ordered by the County of Summit Engineer and/or the Summit County D.O.E.S.
- The locations of all buried utility and gas lines are to be determined by the contractor. Existing appurtenances such as utility poles, valve boxes, etc. are to be safeguarded by the contractor during construction.
- The Contractor shall not commence with any form of construction without notifying the County of Summit Engineer forty-eight (48) hours prior to starting construction (330/643-2850).
- The contractor shall contact the utilities protection service, 1-800-362-2764 at least forty-eight (48) hours before any underground work is commenced in existing streets.
- All lawn areas removed or disturbed shall be replaced by seeding and mulching, including topsoil where needed, in accordance with Item 659 of ODOT specification, and shall be reseeded and mulched, when requested if satisfactory re-establishment of lawn does not occur.
- All disturbed signs, guardrail, mail and/or paper boxes, drives and drive culverts shall be repaired and/or replaced as directed by the County of Summit Engineer.
- All disturbed and/or damaged storm sewer pipes, storm sewer appurtenances, pavements, berms and ditches shall be repaired and/or replaced as directed by the County of Summit Engineer.
- The Contractor shall be responsible for temporary soil erosion and sediment control in accordance with ODOT Item 207, Summit Soil and Water Conservation District and the County of Summit Engineer. Erosion control measures must be in place before any other construction commences on this site. The contractor shall, on a daily basis, clean all existing streets of mud and dirt during the construction phase.
- All storm sewers construction within right-of-way limits shall conform with ODOT Item 603. Conduit may be Concrete, Corrugated Aluminum Alloy Metal Pipe and/or Plastic Pipe, as listed on the Plan & Profile Sheets of the Approved Improvement Plans. Reinforced Concrete Pipe with bituminous joints shall meet the pipe requirements of ASTM C-76, Class III minimum per Section 706.02 as specified in the ODOT Construction and Material Specifications, Current Edition unless otherwise noted on plans. Corrugated Aluminum Alloy Metal Pipe shall meet ODOT 707.21 or 707.22. Plastic Pipe shall be Corrugated Polyethylene Smooth Lined Pipe per ODOT 707.33.
- Storm manholes shall be constructed in accordance with the details provided in this document. In addition, storm manholes shall be precast sections which conform to ASTM C-478 with a bituminous type joint or "O" rings, with the cylindrical section of the manhole to be extended vertically from invert shelf a minimum of 4'-0". Manholes shall have a minimum diameter of 48" for pipes less than or equal to 30", 60" for pipe sizes more than 30" but less than or equal to 36" and for pipes of larger size increase the manhole of diameter accordingly to maintain a minimum of 6" between adjacent holes measured along the inside perimeter. Adjustment to the manhole casting to grade shall be by the use of precast concrete adjusting rings or new solid clay or shale brick ASTM C-32 (two (2) courses maximum and/or twelve (12) inch maximum adjustment).
- Catch basins and/or inlet basins shall be 24"x36" wide (single) or 24"x72" (double) rectangular structure installed in accordance with ODOT Item 604. Catch basins shall have a 30" or 18" minimum sump (See Standard Drawing On Sheet 25/29 & 25a/29). Structures shall have ODOT Item 603.08, Type A (Item 304 subbase material) backfill on all four sides. Two forty-five (45) Degree four (4) inch bends or a tee out of back shall be installed on the curb side of structure for connection of underdrains. Adjustment of the catch basin casting to grade shall be by the use of cast-in-place concrete, precast concrete adjusting collars, or new solid clay or shale brick per ASTM C-32. The inlet basin shall have a poured concrete paved invert floor. Catch basins shall be placed in the system prior to storm sewer. Yard basins having a pipe inlet and outlet will be required to have an 18" sump.
- Underdrains shall be constructed in accordance with ODOT Item 605, conduit shall be a minimum of four (4) inch diameter pipe AND conforming to ODOT Specification 707.33, 707.41, 707.42 or 707.45 with NO. 8 aggregate on four (4) inch bedding. The Underdrain shall be modified with four (4) rows of perforations. See detail drawing on Sheet # 25 /29.
- Where sewer and/or water main intersections have less than eighteen (18) inch vertical separation encase the lower and monolithically cradle the upper pipe in 2500 PSI concrete for the width of the trench.
- All inspection and testing shall be done by an experienced and qualified firm engaged in this type of work. Video tapes and written reports of all inspection and testing shall be submitted to the owner and the County of Summit Engineer for approval. All storm sewer systems must be flushed and have a color television inspection in accordance with the County of Summit Engineer specifications. The videotape must be submitted, reviewed and approved prior to release of the Performance Bond. If the installation fails to meet the requirement of these tests and inspections, the contractor shall repair or replace defects and retest the installation.
- The intent is to video tape pipes not easily accessible for visual inspection. For example:
 - A culvert under a road that can be visually checked is exempt from video taping.
 - A system of pipes with manholes and catch basins will be required to be video taped.
 - The County of Summit Engineer will determine if a pipe can be visually checked or if a video tape is required. For a baseline, pipes sixty (60) inches in diameter and larger are exempt from video taping provided visual inspection is possible.
- Storm sewer laterals shall be PVC (SDR 35). All pipes shall have preformed wyes for house lateral connections of six (6) inch diameter for storm sewers. Storm sewer connections may be performed by mechanically tapping the sewer main, installing a rubber boot or cast iron saddle. All wyes and laterals for downspout drains shall be installed when the storm sewer is installed.
- The line and grade of sewer mains shall be controlled during the sewer construction by use of an approved laser device. The line and grade of the laser shall be "checked" from line and grade stakes at a maximum of one hundred (100) feet intervals.
- All sewer/utility construction conduit bedding, pipe cover and backfill shall be as noted in General Note #25 and on the Typical Utility Trench Detail on Sheet #24/29.
- All backfill of excavations (for trenches and structures) under berm, pavement areas, existing walk and drive areas, or within a 45' influence line from the edge of pavement, shall be ODOT Item 304. Crushed slag, granulated slag, weaker aggregates and recycled concrete is not permitted. Additional material testing may be required on ODOT 304 Crushed Aggregate to verify that it meets the ODOT Specification 703.17. Additional materials may be reviewed for use upon a written submittal by the contractor. This request must be submitted, reviewed and approved prior to the start of construction. The backfill and compaction requirements are detailed on the Trench Detail on Sheet # 24/29.
- Wherever unstable soil conditions are encountered that are not indicated on the plans, the work shall be discontinued until the County of Summit Engineer approves the method and material to be incorporated into the work, as all conduits shall be installed on a firm bed for its full length in accordance with ODOT Item 603.03 unless otherwise specified.
- All filled areas, excluding trenches, within right-of-way areas shall be compacted in accordance with ODOT Item 203. In addition, for any fill in excess of two (2) feet, nuclear compaction tests shall be performed by an approved testing company in accordance with ODOT Item 203. These tests shall be approved by the County of Summit Engineer before any pavement construction commences and shall meet the compaction requirements listed on the Trench Detail on Sheet # 24 /29.
- Before acceptance of the sub-grade by the County of Summit Engineer, a forty (40) ton proffroll shall be required on all areas to be paved. The subgrade and proffroll must be in accordance with ODOT Item 204. In lieu of using the equipment under Item 204.06, a tandem dump truck with a gross weight of 60,000 pounds may be substituted.



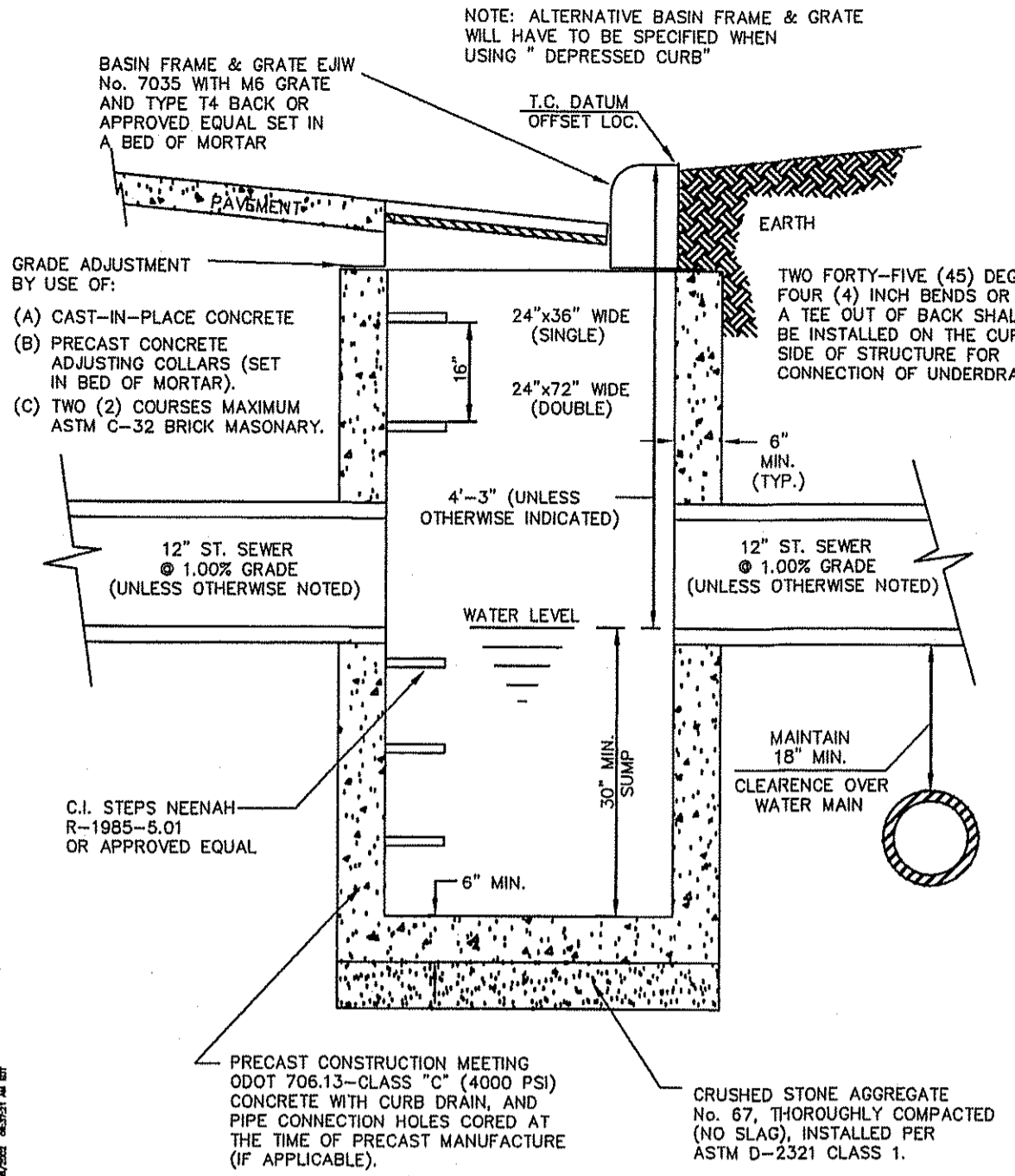
I.B. DETAIL
NOT TO SCALE

MINIMUM MANHOLE DIAMETERS
REFER TO PLAN FOR SPECIFIC SIZING REQUIREMENTS

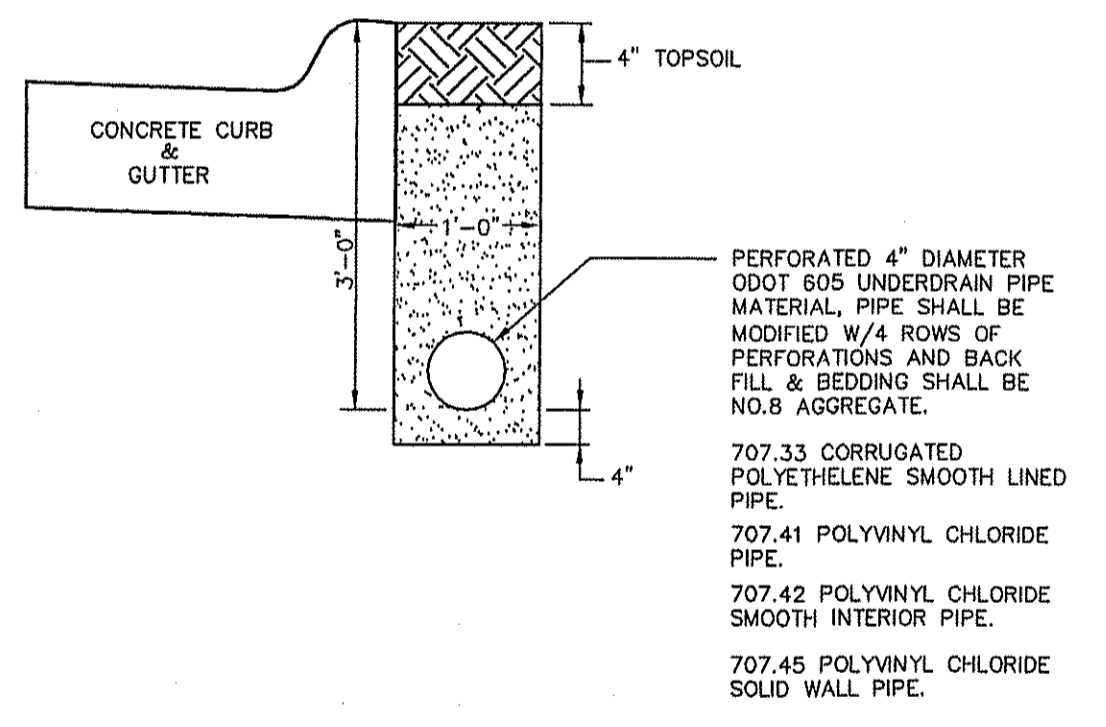
MH Inside Dia. (in.)	Max. Pipe Dia. (in.)
48	30
60	36 to 42
72	48
84	54
90	60
96	60



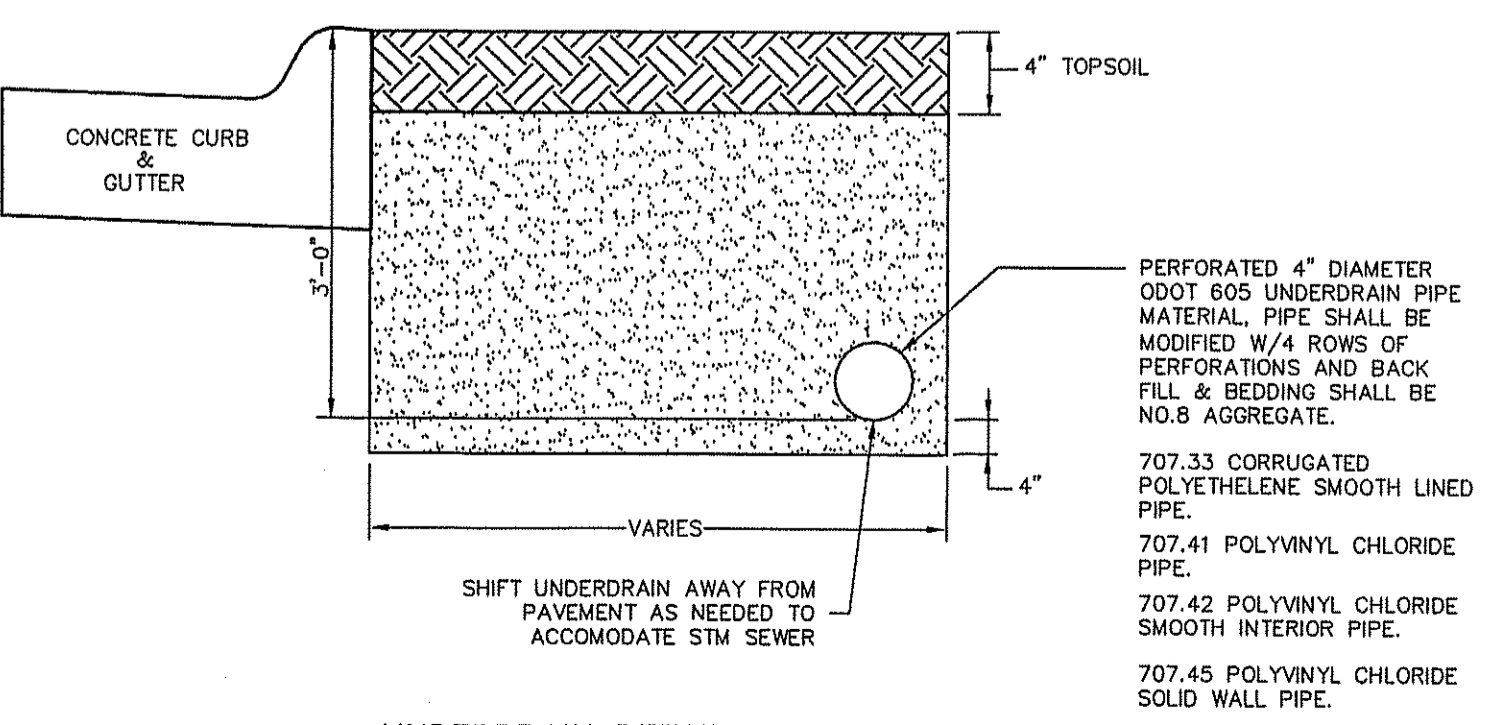
STORM SEWER
MANHOLE DETAIL
NOT TO SCALE



C.B. DETAIL
NOT TO SCALE



UNDERDRAIN DETAIL
NOT TO SCALE



UNDERDRAIN DETAIL
NOT TO SCALE OPTION TO ACCOMMODATE STM. SWR.

THE JUMBERT CONSTRUCTION CO.
LIONS PARK ALLOTMENT & CONDOMINIUMS
MARION AVE, SPRINGFIELD TOWNSHIP, OHIO

SCALE: HOR: N.T.S. VER: N.T.S.

DRAWN: MWR CHECKED: BKR DATE: 08-17-04

DATE: 11/19/04 3 SUMMIT ENG COMMENTS 07-18-05 1 SUMMIT ENG COMMENTS

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