1032 S. Perry St.

# City of Napoleon

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**To** John Rosebrock - Rupp-Rosebrock, Inc.

**Fax No.** (419) 533-8704

**From** Adam C. Hoff, P.E. - City Engineer ACH

**Date** 6/26/99

**Subject** Lutheran Home - Alpine Village Plan Review

**Pages** 9, including this one

I have reviewed the plans submitted by Mr. Fred Berning, P.E. For the referenced project and developed the following comments:

**Sht. 2/7:**

1. The requested water main easements are not shown on the site plan. What is the status of this issue? Please refer to my fax of April 15, 1999.
2. Joint restraint needs to be defined for all fittings on the proposed water main. The restraint shall be designed to withstand a test pressure of 150 psi, with a factory of safety no less than 2.0.
3. A fire hydrant needs to be added to the east-west run from Perry Street. The hydrant shall be located approximately 245 l.f. east of the proposed connection to the existing 6" w.m.
4. The proposed crossing on Perry Street (St. Rt. 108) shall be backfilled with digable controlled density fill (CDF), a 9" Class C concrete base shall be provided and 2"-3" of asphalt patch. The concrete base and asphalt shall be roughly 2 feet wider than the trench. We will need to know the schedule for this crossing at least three (3) weeks prior so that we may have ODOT establish the required detours.
5. Will the proposed water service connection enter the south end of the proposed facility? What will be the size of the water service? Will it also serve as a fire line?
6. A gate valve will be required at the connection of each of the proposed water mains to the existing for testing purposes. Also, sample taps and blow-offs will be required for testing.
7. A grease trap of sufficient size to serve the entire facility (Lutheran Home and Alpine Village) shall be added to the proposed sanitary service connection. Please refer to my fax of April 15th.
8. Please note that the Palmer Ditch Interceptor is actually located roughly 10 feet south of the Lutheran Home property, not on their property as shown on this sheet.

255 W. Riverview Ave.
Napoleon, Ohio 43545

(419) 592-4010 Phone
(419) 599-8393 Fax

City of Napoleon

**Sht. 3/7:**

1. The water main profile needs to define a 5 foot minimum cover over the proposed water main.
2. The sanitary sewer crossing needs to be shown in the water main profile. It appears that the two (2) will cross within the minimum 18" vertical separation. If this is correct, the sanitary sewer shall be encased in Class C concrete for a minimum of 10 feet either side of the water main.

**Shts. 4/7 & 5/7:**

1. Following are two (2) standard details for the City. Please note that our fire hydrants are to be place perpendicular to the main. Also, note that a minimum of a 2" corbel shall be provided at the top of the cone sections for the manholes.
2. Please delete all references to Lucas County specifications, as this project will occur within the City of Napoleon, Henry County, Ohio.
3. The current edition (1997) of the ODOT specifications shall be utilized in lieu of the 1967 edition noted.
4. All granular backfill shall be ODOT Item 304, compacted to a minimum of 98% maximum density as determined by Standard Proctor.
5. Valve manholes, sanitary borings, force main manholes, and Type 3 & 4 manholes will not be required.
6. Manhole castings shall be East Jordan 1045, heavy duty, or equal, with ***closed*** pick holes. Chimney seals shall be provided for all sanitary manholes - internal in paved areas, external out of paved areas.

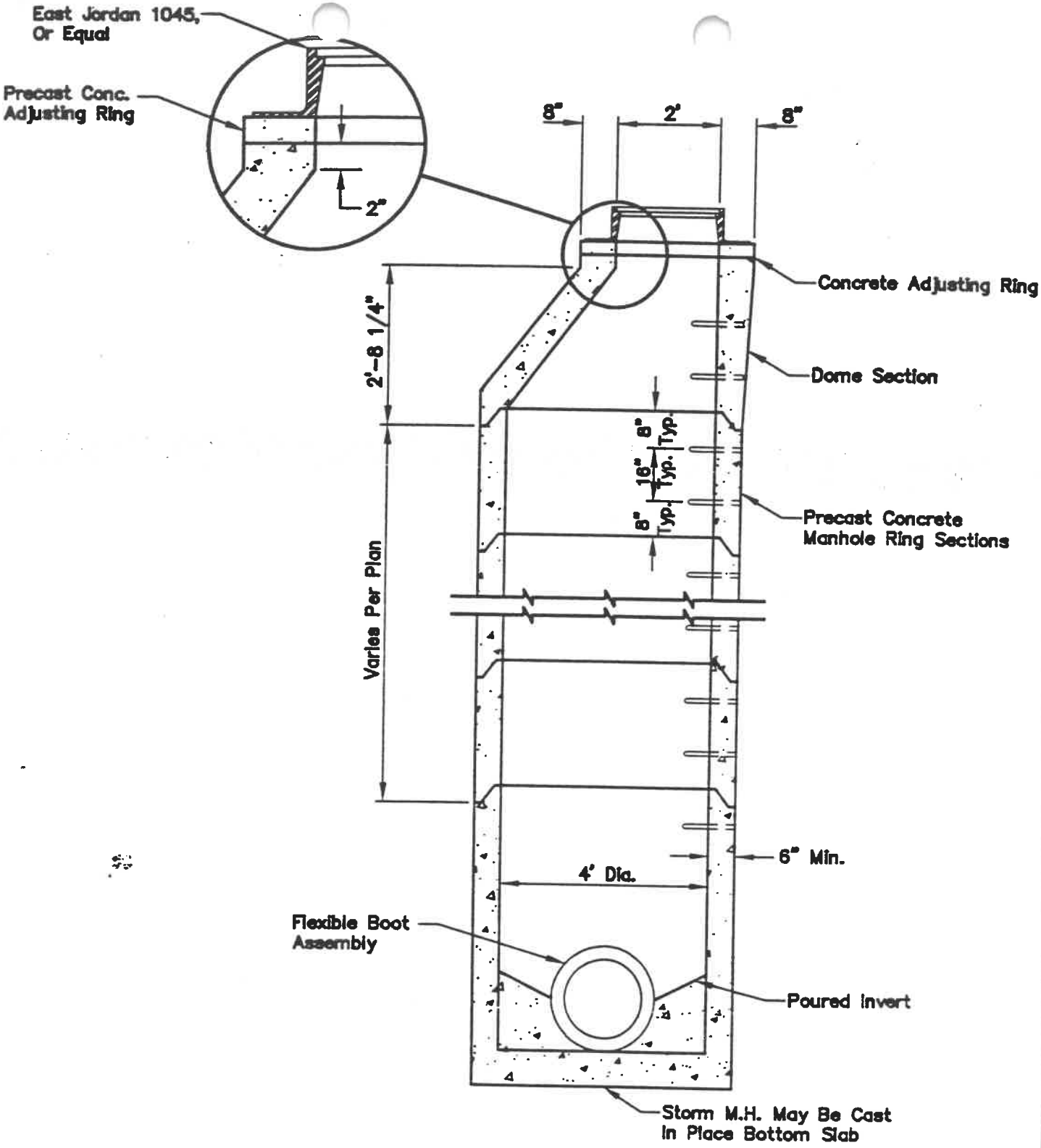
**Sht. 7/7:**

1. Manhole vacuum testing (Para. 9.11.14 of the City of Napoleon Standard Specifications) shall be required. See following sheets.
2. Manhole specifications (Article 11 of the City of Napoleon Standard Specifications) shall be added. See following sheets.

As stated in my fax of April 15, 1999, the Ohio EPA will need to review and approve these plans **prior to commencing with construction.** A Permit to Install application and Antidegredation Addendum will need to be submitted along with four (4) sets of detailed plans and specifications for the sanitary sewer. The fee for this review is $200.00, plus 0.65% of the cost of the sewer. A Water Supply Data Sheet, three (3) sets of plans and specifications and a review fee of $100.00, plus 0.20% of the cost of the water main, will need to be submitted for the water.

If you have any questions, please call me at 592-4010. Thank you.

c: Jon Bisher, Jeff Marihugh, Brent Damman

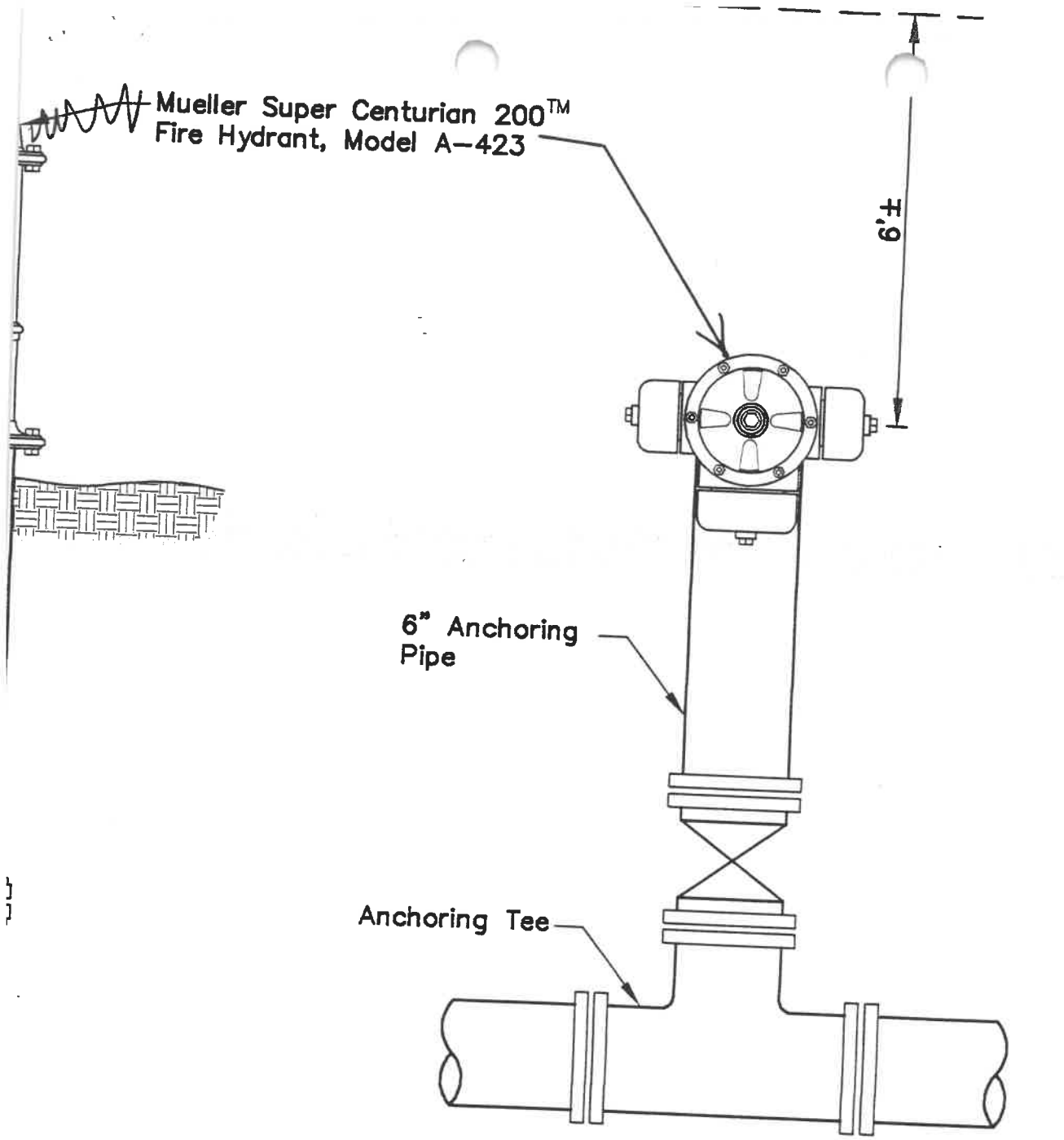



Standard Manhole Detail

CITY OF NAPOLEON
ENGINEERING DEPARTMENT
PO BOX 151 / 255 W. RIVERVIEW AVE.
NAPOLEON, OHIO 43545
PHONE NO. (419) 592-4010
FAX NO. (419) 599-8393

1999 Street
Reconstruction Project
Addendum No. 1

DATE: 04/08/99
DRAWN BY: M.B.S.
APPROVED BY: A.C.H.
SCALE: NTS




Plan View

Hydrant Detail

30" Min

| Pipe Diameter | 100' | 200' | 300' | 400' | 500' | 600' |
|---|---|---|---|---|---|---|
| 30" | 18 min. | 35-3/4 min. | 53-1/2 min. | 71-1/4 min. | 89-1/4 min. | 107 min. |
| 33" | 21-3/4 min. | 43-1/4 min. | 64-3/4 min. | 86-1/4 min. | 107-3/4 min. | 129-1/4 min. |
| 42" | 35 min. | 70 min. | 104-3/4 min. | 139-3/4 min. | 174-1/2 min. | 209-1/2 min. |
| 48" | 45-3/4 min. | 91-1/4 min. | 136-3/4 min. | 182-1/2 min. | 228 min. | 273-1/2 min. |

* - Time for intermediate lengths shall be interpolated.

9.11.9 The CONTRACTOR may air test sections before backfilling the trench as a check for defects and workmanship. Such tests are at the option of the CONTRACTOR and are not a substitute for tests required after backfilling has been completed.

9.11.10 The air test may be dangerous if, because of ignorance or carelessness, a line is improperly prepared. It is extremely important that the various plugs be installed and braced in such a way as to prevent blowouts. Inasmuch as a force of 250 pounds is exerted on an eight (8) inch plug by an internal pipe pressure of five (5) PSI, it should be realized that sudden expulsion of a poorly installed plug or of a plug that is partially deflated before the pipe pressure is released can be dangerous.

9.11.11 As a safety precaution, pressurizing equipment should include a regulator set at perhaps 10 PSI to avoid overpressurizing and damaging an otherwise acceptable line. No one shall be allowed in the manholes during testing.

9.11.12 For sewers thirty (30) inches and greater in diameter, joint testing is an acceptable method of testing. Joint testing shall be accomplished by isolating each joint and applying low pressure air. The line shall be acceptable if each joint passes the air test. The joint will be considered acceptable if the air pressure being applied to the joint drops less than 1 PSI in three (3) minutes. The air pressure applied shall be 4 PSI over and above the groundwater back pressure. Groundwater shall be compensated by increasing the 4 PSI test pressure by 0.433 for each foot of groundwater. It is the CONTRACTOR'S responsibility to determine the groundwater level.

9.11.13 Manholes will be subject to visual inspection with all visual leaks being repaired.

9.11.14 Each manhole shall be tested after assembly and after all lift holes have been plugged with an approved non-shrink grout, and, at the option of the Contractor, before or after backfilling is completed. Testing shall be by drawing a vacuum on the manhole using equipment specifically designed for such testing. All pipes entering the manhole shall be plugged and braced to prevent being drawn into the manhole. A test head with necessary gauges and connections shall be placed at the inside of the top of the cone section and sealed in accordance with the manufacturer's instructions. A vacuum of ten (10) inches of mercury shall then be drawn and the vacuum pump shut off. With valves closed, the time shall be measured for the vacuum to drop to nine (9) inches. The test shall be successful if the time measured meets or exceeds the values indicated in the following table:

**MINIMUM TEST TIMES IN SECONDS**

| MANHOLE DEPTH | MANHOLE DIAMETER | | |
|---|---|---|---|
| | 48" | 60" | 72" |
| 8' | 20 | 26 | 33 |
| 10' | 25 | 33 | 41 |
| 12' | 30 | 39 | 49 |
| 14' | 35 | 46 | 57 |
| 16' | 40 | 52 | 65 |
| 18' | 45 | 59 | 73 |
| 20' | 50 | 65 | 81 |
| 22' | 55 | 72 | 89 |
| 24' | 59 | 78 | 97 |
| 26' | 64 | 85 | 105 |
| 28' | 69 | 91 | 113 |
| 30' | 74 | 98 | 121 |

## 9.12 FIELD DRAIN, SEWER AND WATERLINE CROSSINGS

9.12.1 When a proposed sanitary sewer crosses under an existing storm sewer, sanitary sewer or field drain, the entire trench area under the existing sewer or field drain shall be backfilled with granular bedding material to the top of the existing sewer or field drain.

9.12.2 When a proposed sanitary sewer crosses an existing water main, the water main shall be relocated as shown in detail on the plans or the sanitary sewer shall be encased in concrete for a distance not less than ten (10) feet either side of the water main, per the detail on the plans. Concrete encasement shall be Class C, as defined in Article 17.

9.12.3 Whenever sewers cross within four (4) inches or less of each other, two (2) inches of Dow blue styrofoam shall be placed between them as directed by the AUTHORIZED REPRESENTATIVE.

## 9.13 STORM AND FIELD DRAINS

9.13.1 All storm and field drains interrupted shall be repaired with the correct size and type of PVC.

# 11 MANHOLES, CATCH BASINS, CURB INLETS, INSPECTION WELLS, CHAMBERS, MONUMENTS AND HEADWALLS

## GENERAL - SCOPE

1.) This section includes the furnishing of all labor, materials, equipment, and services necessary for the completion of the Work in accordance with the contract documents.

2.) The Work includes the construction or reconstruction of manholes, catch basins, curb inlets, inspection wells, chambers, monuments and headwalls, or the adjustment of existing castings to grade, as required.

3.) The Work shall be in accordance to ODOT Item 604, as modified below.

## 11.1 SUBMITTALS

11.1.1 The CONTRACTOR shall submit shop drawings with the physical dimensions, concrete strength, type and amount of reinforcement used and joint details for all precast manhole sections, catch basins and curb inlets.

11.1.2 The CONTRACTOR shall submit shop drawings for manhole steps and all manhole, catch basin and curb inlet castings.

## 11.2 PRECAST CONCRETE PIPE MANHOLES

11.2.1 Precast concrete riser sections, concentric cones, eccentric cones, flat top slabs, grade ring and tops used for manhole construction shall conform to specifications for Precast Reinforced Concrete Manhole Sections, ASTM C478, unless otherwise specified or shown on the drawings. Cone sections shall be manufactured such that a minimum of a two (2) inch shoulder is provided at the top.

11.2.2 Flexible manhole sleeves (Kor-N-Seal as manufactured by National Pollution Control Systems, Inc., or equal) shall be provided for all openings into and out of all storm and sanitary manholes.

11.2.3 Pipe manholes shall be furnished in standard lengths and firmly keyed together by means of tongue and groove joints with "O"-ring rubber gaskets conforming to ASTM C443. Shorter lengths may be used, but only as necessary to meet the required vertical dimensions of manholes.

11.2.4 All openings for connecting pipes shall be made by the manufacturer of the manholes pipe immediately after the pipe is removed from the casting form.

11.2.5 Manhole steps shall be placed by the pipe manufacturer immediately after the pipe is removed from the casting form and shall be carefully grouted in place with Portland cement and sand grout to ensure a firm and water tight joint. Steps shall be spaced sixteen (16) inches apart unless otherwise shown on the drawings.

11.2.6 Manhole steps shall be of polypropylene plastic reinforced with a three-eighths (3/8) inch No. 60 grade reinforcing rod.

11.2.7 Manhole bases for storm manholes may be of cast-in-place Class C concrete, as defined in Article 19, or a combination of precast and granular bedding material as shown on the drawings.

11.2.8 All sanitary manholes shall have precast concrete base sections as shown on the drawings.

11.2.9 The invert channel of all manholes shall be the true shape of the lower half of the pipe or sewer.

11.2.10 Unless otherwise shown on the drawings, all manhole frames and covers shall be East Jordan Iron Works 1045, heavy duty, or equal. Both the underside of the cover and the upper surface of the ledge upon which is rests shall be machined so as to prevent rocking on its supporting surface.

11.2.11 Covers for sanitary manholes shall be provided with closed pickholes and rubber gaskets to create a "self-sealing" lid.

11.2.12 Water tight frames and covers shall be provided where shown on the drawings and shall be a separate pay item, as applicable.

11.2.13 Storm manholes shown on the plans with the designation of "w/Open Grate" shall be provided with East Jordan 1045, M1, or equal.

11.2.14 Manhole frames shall have a clear opening of not less than twenty-four (24) inches in diameter and a height of not less than seven (7) inches. Covers shall have strengthening ribs on the underside, and shall have the words "SANITARY SEWER" or "STORM SEWER" as applicable, cast into the top.

11.2.15 Manhole frames and covers shall be set on top of precast concrete adjusting rings with a full leveling bed of cement mortar. Where a manhole is located within a paved area, the manhole frame and cover shall be adjusted such that the surface of the cover shall be made flush with the pavement surface **after the paving operation.** Asphalt shall be removed to no less than twelve (12) inches around the perimeter of the casting. The frame shall be reset in Class C concrete up to the limits of the base course of asphalt, but no less than one and one-half inches (1-1/2) inches from the top of the casting, and the pavement shall be restored with ODOT Item 404 Asphalt Concrete. Manholes set in unpaved areas shall be constructed to elevations as approved by the AUTHORIZED REPRESENTATIVE.

11.2.16 Adjusting rings shall not exceed twelve (12) inches in height, unless otherwise approved by the AUTHORIZED REPRESENTATIVE.

11.2.17 The inside surface of all adjusting rings and manhole frames and covers shall be sealed and made watertight with a Type M, multi-strength mortar.

11.2.18 All sanitary manholes shall be provided with external chimney seals spanning from the cone section to the casting, including extensions as required. External chimney seals shall be a minimum of three-sixteenths (3/16) inches thick rubber conforming to ASTM C-923, with a minimum tensile strength of 1,500 psi, a maximum eighteen percent (18%) compression set and a hardness of 48. The compression bands shall be integrally formed from

sixteen (16) gauge stainless steel meeting the requirements of ASTM A-240, Type 304, and shall have a minimum adjustment range of two (2) diameter inches. All screws, bolts or nuts shall also be Type 304 stainless steel. Chimney seals shall be as manufactured by Cretex Specialty Products, or equal, and shall be installed in strict conformance with manufacturer's recommendations. Payment for chimney seals shall be included in the unit price per lineal foot of the sanitary manholes.

## 11.3 CATCH BASINS AND CURB INLETS

11.3.1 The construction of catch basins and curb inlets shall be done in strict conformance with the details shown on the drawings. The height of any unit may be changed. If the height is changed more than one (1) foot, compensation or deductions for the Work involved, whether increased or decreased, will be provided for in a supplemental agreement.

11.3.2 Six (6) inch minimum precast construction with poured inverts is the only method permitted, unless the structure height is too short for precast sections. In which case, brick and concrete block walls may be used as directed by the AUTHORIZED REPRESENTATIVE.

11.3.3 Brick and concrete block walls, if utilized, shall be eight (8) inches thick. The brick or concrete blocks shall be thoroughly wetted before laying in mortar and shall be laid up with full mortar joints, by experienced brick layers. Exterior surfaces shall be plastered with Portland cement mortar to a minimum thickness of one-half (1/2) inch and all exposed surfaces shall be cured with wet burlap for a period of forty-eight (48) hours or by applying curing membrane.

11.3.4 Iron frames and grates for catch basins shall be East Jordan 5110 or equal. Iron frames and grates for curb inlets shall be East Jordan 7035, or equal. Directional grates shall be provided where indicated on the drawings. All castings shall be set on top of precast adjusting rings and set in a leveling mortar bed.

11.3.5 Payment for catch basins and curb inlets shall include the required casting.

## 11.4 PROTECTION

11.4.1 Adequate precautions shall be taken to prevent concrete and/or mortar from freezing. Brick, concrete block, etc., having a temperature of 40°F or less shall not be set with mortar until heated for a period sufficient to insure a temperature of 50°F to 80°F throughout the entire mass of material.

## 11.5 BRICK AND SOLID CONCRETE BLOCK

11.5.1 Brick used for catch basins and curb inlet construction shall conform to ODOT Item 704.02.

11.5.2 Where precast solid concrete block is to be used, such block shall conform to ODOT Item 704.03.

11.5.3 Bricks and block shall <u>not</u> be used in place of precast concrete adjusting rings.

# LETTER OF TRANSMITTAL

**Farnham, Wirries & Berning**
Professional Registered Engineers & Surveyors:Ohio, Michigan, Indiana
5225 Secor Road, Toledo, Ohio 43623
(419)473-1491 Fax No. (419)473-0506

City of Napoleon
255 W. Riverview
Napeleon, OH 43545

Date 5-24-99 Job No.
Attention: Adam Hoff
Re: Lutheran Housing Napoleon

**WE ARE SENDING YOU THE FOLLOWING ITEMS:**

__X__ Prints ___ Vellums ___ Mylars ___ Disk ___

| COPIES | DESCRIPTION |
|---|---|
| 2 | Improvemnet Plans 7 sheets |

RECEIVED
MAY 26 1999
CITY OF NAPOLEON

**THESE ARE TRANSMITTED as checked below:**

___ For approval ___ For signature ___ Returned for your file
___ For your use ___ Revised as requested ___ For signature and recording
___ As requested __X__ For review and comment ___

**REMARKS:**

**COPY TO:**

**Signed:** Frederick J. Berning, P.S.-P.E.

**Farnham, Wirries & Berning**
Professional Registered Engineers & Surveyors:Ohio, Michigan, Indiana
5225 Secor Road, Toledo, Ohio 43623
(419)473-1491 Fax No. (419)473-0506

# LETTER OF TRANSMITTAL

City of Napoleon
255 W. Riverview
Napoleon, OH 43545

| | |
|---|---|
| Date 5-19-99 | Job No. |
| Attention: Adam Hoff | |
| Re: The Lutheran Home, Napoleon, Ohio | |

**WE ARE SENDING YOU THE FOLLOWING ITEMS:**

___ **Prints** ___ **Vellums** ___ **Mylars** ___ **Disk** ___

| COPIES | DESCRIPTION |
|---|---|
| 2 | Site Plan Review, 5-17-99 rev. - 2 sheets |

RECEIVED
MAY 20 1999
CITY OF NAPOLEON

**THESE ARE TRANSMITTED as checked below:**

___ **For approval** ___ **For signature** ___ **Returned for your file**
___ **For your use** ___ **Revised as requested** ___ **For signature and recording**
___ **As requested** X **For review and comment** ___

**REMARKS:**

**COPY TO:**

**Signed:** Frederick J. Berning, P.S.-P.E.