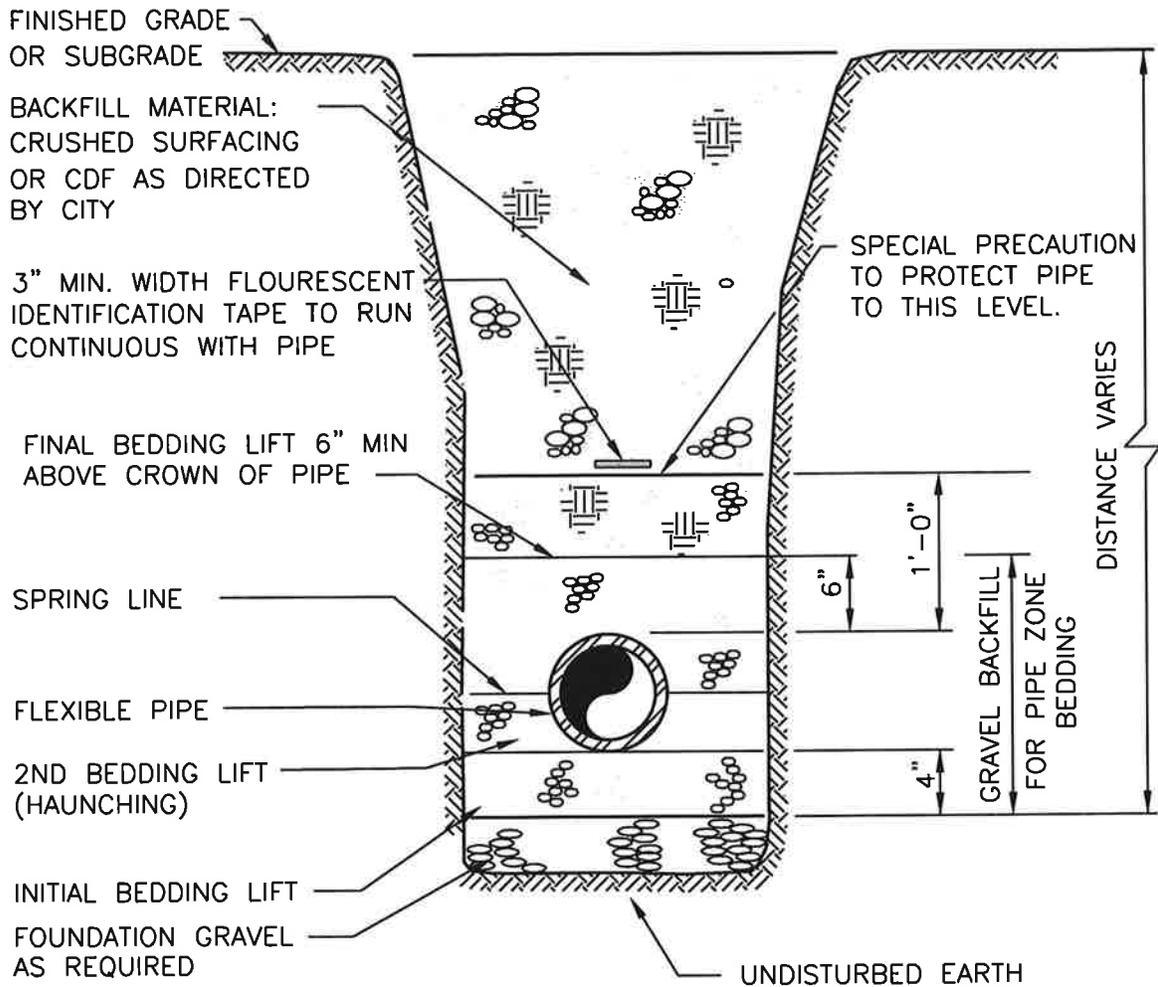


SANITARY SEWER DETAILS

L:\ALGONA\15432 PW Standards\Sewer\SSTS\FLEXP.dwg, 4/27/2015 4:56:52 PM, mngel



NOTE:

BACKFILL MATERIAL AND COMPACTION SHALL BE IN CONFORMANCE WITH CITY STANDARDS AND/OR THE STATE OR COUNTY PERMIT REQUIREMENTS (AS MAY BE APPLICABLE);

MINIMUM REQUIREMENTS:

ALL GRANULAR BACKFILL SHALL BE COMPACTED TO 95% MODIFIED PROCTOR, ASTM D1557



CITY OF ALGONA

TRENCH SECTION FOR FLEXIBLE PIPE

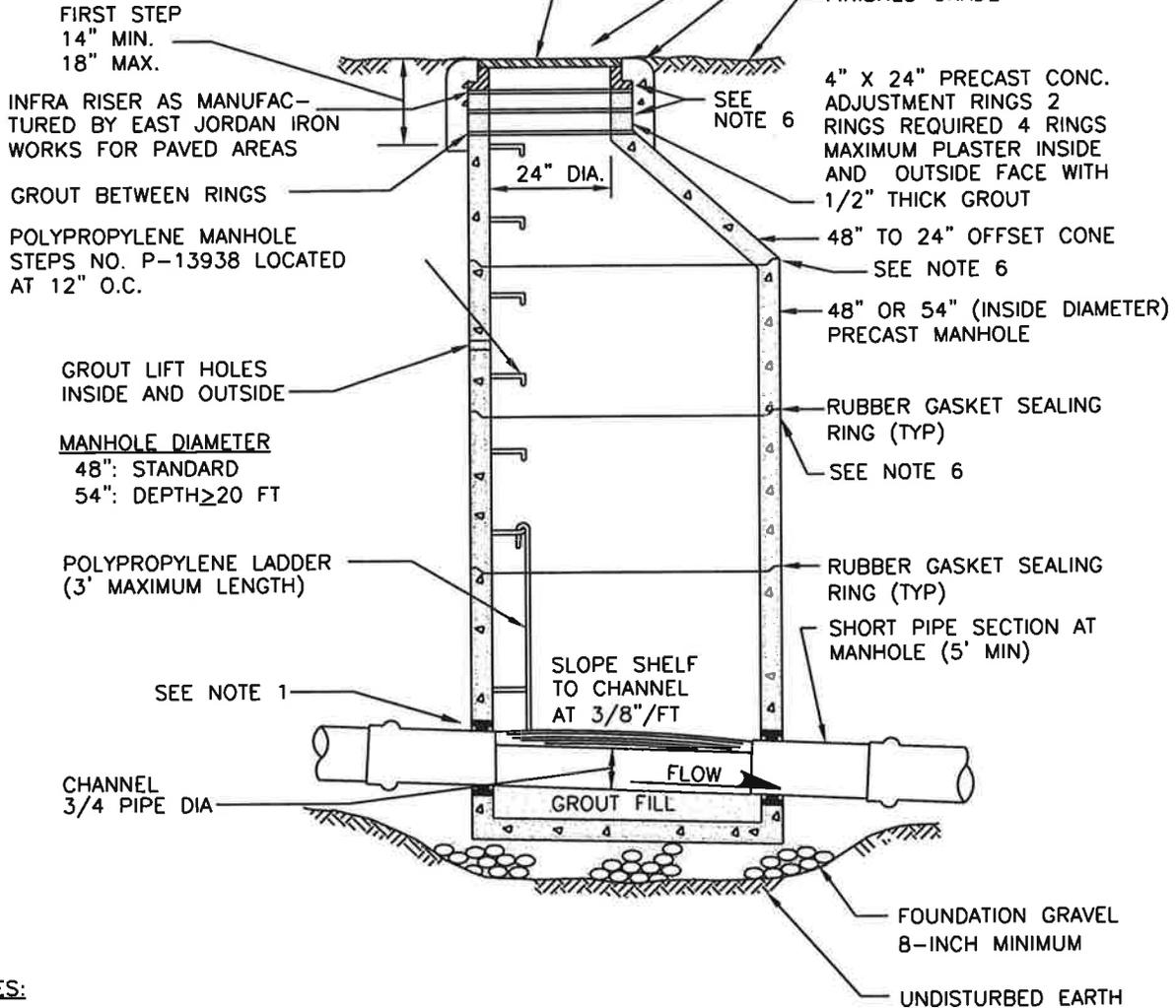
APPROVED:

DATE: 04/06/2015

DWG. NO.

SSTS FLEXP

MANHOLE FRAME & COVER WITH "SEWER"
 CAST ON COVER WITH 3" HIGH RAISED
 LETTERS (NON-SKID PATTERN) AS
 MANUFACTURED BY EAST JORDAN
 IRONWORKS, ERGO 24. 3 HOLE LOCKING
 FRAME AND COVER. ONE (1) BOLT HOLE
 TO BE CENTERED OVER LADDER



NOTES:

1. FOR PIPE CONNECTIONS TO MANHOLES, CORE THE MANHOLE AND CONNECT SEWER PIPE WITH A WATER TIGHT FLEXIBLE RUBBER BOOT IN MANHOLE WALL, KOR-N-SEAL BOOT OR EQUAL.
2. DROP OF GRADE THRU MANHOLE SHALL BE 0.10' (SLOPE=3/8"/FT) (48" MANHOLE) UNLESS OTHERWISE APPROVED BY THE CITY.
3. LARGER MANHOLES WILL BE REQUIRED AT THE DISCRETION OF THE CITY ENGINEER BASED ON PIPE SIZE, NUMBER AND ORIENTATION OF PIPE(S).
4. INSTALL CONCRETE COLLAR IN UNPAVED AREAS. SEE DETAIL.
5. PRE-CHANNELED MANHOLES ARE NOT ACCEPTABLE.
6. THE INSIDE AND OUTSIDE OF ALL JOINTS SHALL BE THOROUGHLY COATED WITH EPOXY GROUT (OR EQUAL) TO BE APPLIED ACCORDING TO MANUFACTURERS SPECIFICATIONS.



CITY OF ALGONA

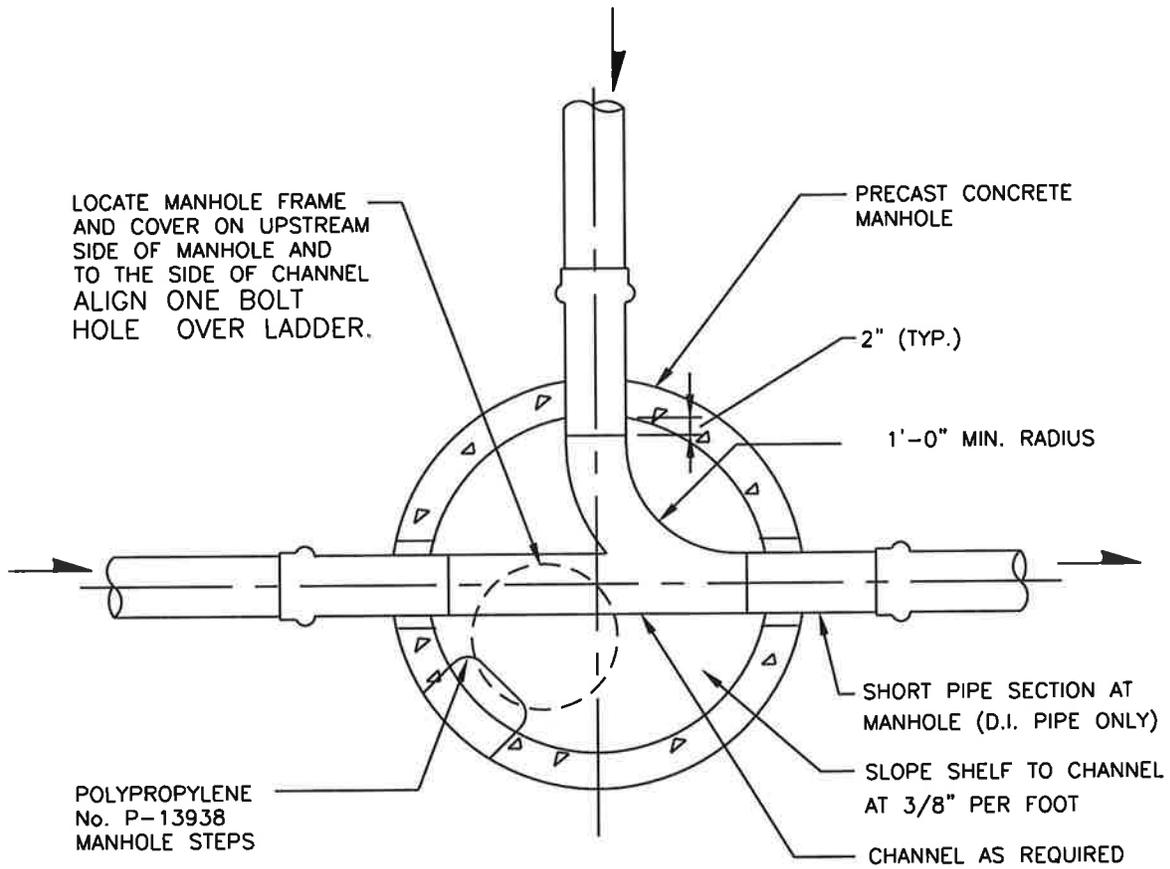
TYPICAL PRECAST MANHOLE

APPROVED: _____

DATE: 04/06/2015

DWG. NO.

TPMH



NOTES:

1. FOR PIPE CONNECTIONS TO MANHOLES, CORE THE MANHOLE AND CONNECT SEWER PIPE WITH A WATER TIGHT FLEXIBLE RUBBER BOOT IN MANHOLE WALL, KOR-N-SEAL BOOT OR EQUAL.
2. ALL CONNECTIONS TO EXISTING MANHOLES SHALL BE MADE WITH A CONCRETE CORING MACHINE UNLESS OTHERWISE APPROVED BY THE CITY.



CITY OF ALGONA

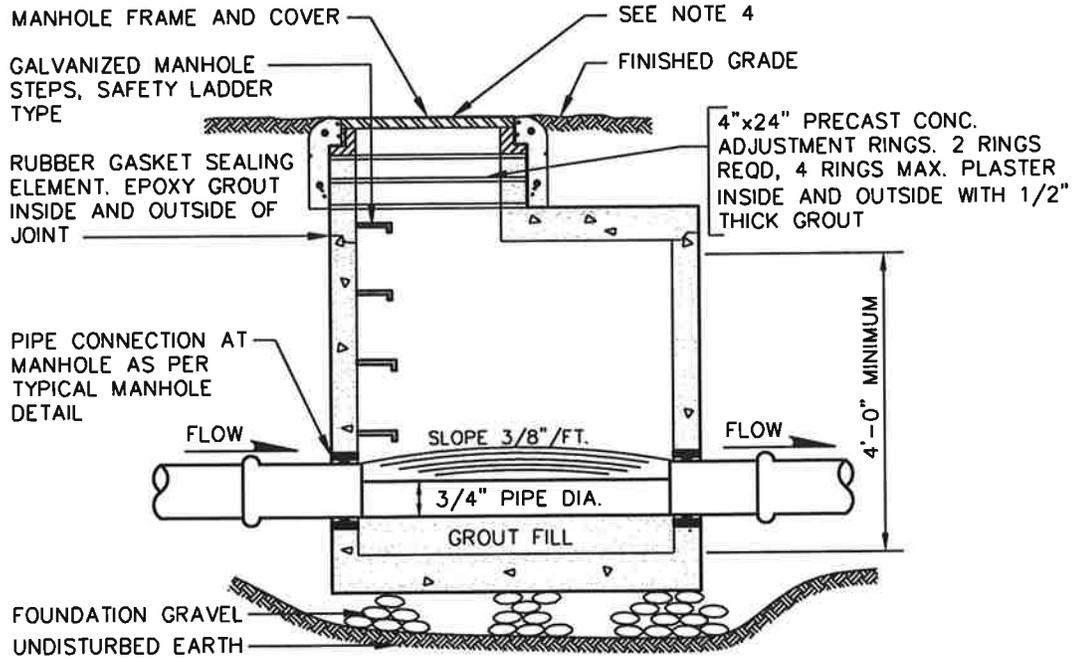
TYPICAL MANHOLE PLAN VIEW

APPROVED:

DATE: 04/06/2015

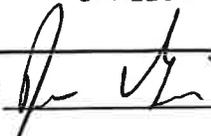
DWG. NO.

TMHP



NOTES:

1. FOR PIPE CONNECTIONS TO MANHOLES CORE THE MANHOLE AND CONNECT SEWER PIPE WITH A WATER TIGHT FLEXIBLE RUBBER BOOT IN MANHOLE WALL, KOR-N-SEAL BOOT OR EQUAL. ALL CONNECTIONS TO EXISTING MANHOLES SHALL BE MADE WITH A CONCRETE CORING MACHINE UNLESS OTHERWISE APPROVED BY THE CITY.
2. DROP OF GRADE THRU MANHOLE SHALL BE 0.10'.
3. PRE-CHANNELED MANHOLES ARE NOT ACCEPTABLE.
4. CONSTRUCT CONCRETE COLLAR IN UNPAVED AREAS PER DETAIL.
5. THE INSIDE AND OUTSIDE OF ALL JOINTS SHALL BE THOROUGHLY COATED WITH EPOXY GROUT (OR EQUAL) TO BE APPLIED ACCORDING TO MANUFACTURERS SPECIFICATIONS.

 <h2 style="margin: 0;">CITY OF ALGONA</h2> <p style="margin: 0;">SHALLOW PRECAST MANHOLE</p>	
<p>APPROVED: </p> <p>DATE: 04/06/2015</p>	<p>DWG. NO. TS-PMH</p>

MANHOLE FRAME & COVER WITH "SEWERS"
 CAST ON COVER WITH 3" HIGH RAISED
 LETTERS (NON-SKID PATTERN) AS
 MANUFACTURED BY EAST JORDAN IRON
 WORKS, ERGO 24. 3 HOLE LOCKING
 FRAME AND COVER. ONE (1) BOLT HOLE TO
 BE CENTERED OVER LADDER

FIRST STEP
 14" MIN.
 18" MAX.

GROUT BETWEEN RINGS

POLYPROPYLENE MANHOLE
 STEPS NO. P-13938 LOCATED
 AT 12" O.C.

GROUT LIFT HOLES
 INSIDE AND OUTSIDE

POLYPROPYLENE LADDER
 (3' MAXIMUM LENGTH)

CUT OUT EXISTING PIPE,
 MAKE SMOOTH INVERT &
 CHANNEL AFTER NEW LINE
 IS ACCEPTED.

CAST IN PLACE
 CHANNEL & SHELF,
 3500# PSI CONCRETE

12" MINIMUM

SEE NOTE 3

FINISHED GRADE

4" X 24" PRECAST CONC.
 ADJUSTMENT RINGS
 2 RINGS REQUIRED
 4 RINGS MAXIMUM
 PLASTER INSIDE AND
 OUTSIDE FACE WITH 1/2"
 THICK GROUT

SEE NOTE 6

48" TO 24" OFFSET CONE

PRECAST MANHOLE

RUBBER GASKET SEALING
 RING (TYP)

SEE NOTE 6

SEE NOTE 6

SHORT PIPE SECTION
 AT MANHOLE (5' MIN.)

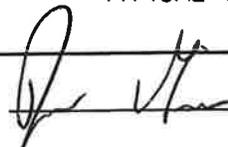
SEE NOTE 5

FOUNDATION GRAVEL
 8-IN MINIMUM

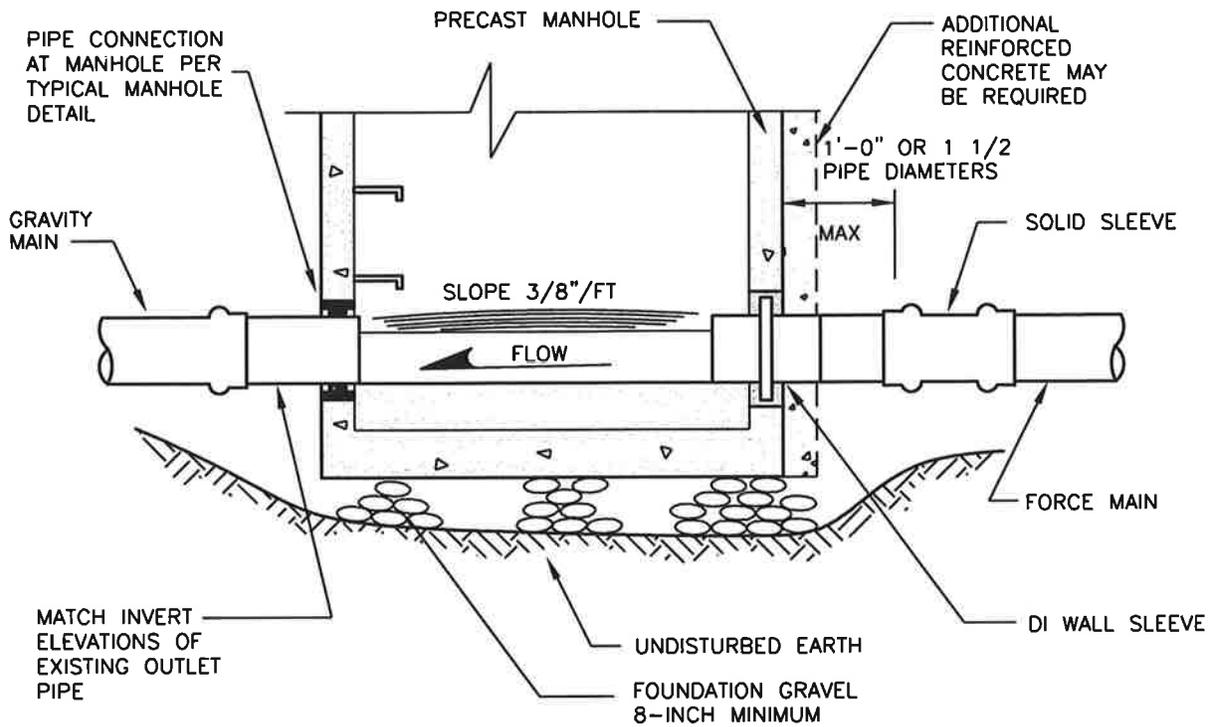
UNDISTURBED EARTH

NOTES:

1. FOR PIPE CONNECTIONS TO MANHOLES, CORE THE MANHOLE AND CONNECT SEWER PIPE WITH A WATER TIGHT FLEXIBLE RUBBER BOOT IN MANHOLE WALL, KOR-N-SEAL BOOT OR EQUAL.
2. DROP OF GRADE THRU MANHOLE SHALL BE 0.10' (SLOPE=3/8"/FT) (48" MANHOLE) UNLESS OTHERWISE APPROVED BY CITY INSPECTOR.
3. LARGER MANHOLES WILL BE REQUIRED AT THE DISCRETION OF THE CITY ENGINEER BASED ON PIPE SIZE, NUMBER AND ORIENTATION OF PIPE(S).
4. INSTALL CONCRETE COLLAR IN UNPAVED AREAS. SEE DETAIL.
5. PRE-CHANNELED MANHOLES ARE NOT ACCEPTABLE.
6. THE INSIDE AND OUTSIDE OF ALL JOINTS SHALL BE THOROUGHLY COATED WITH EPOXY GROUT (THOROC OR EQUAL) TO BE APPLIED ACCORDING TO MANUFACTURERS SPECIFICATIONS.

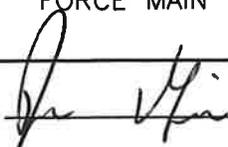
 <h2 style="margin: 0;">CITY OF ALGONA</h2> <p style="margin: 0;">TYPICAL SADDLE MANHOLE</p>	
<p>APPROVED: </p> <p>DATE: 04/06/2015</p>	<p>DWG. NO.</p> <p>TSMH</p>

L:\ALGONA\15432 PW Standards\Sewer\TSMH.dwg, 4/13/2015 5:27:55 PM, rmgel

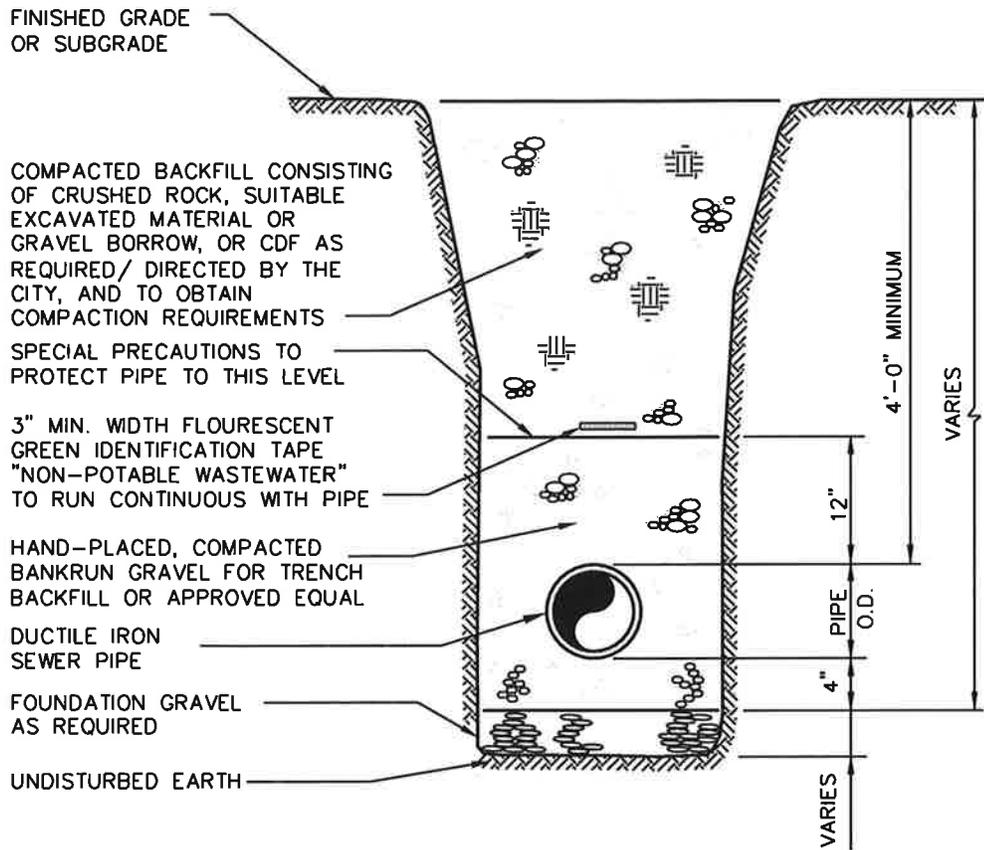


NOTES:

1. FOR PIPE CONNECTIONS TO MANHOLES, CORE THE MANHOLE AND CONNECT SEWER PIPE WITH A WATER TIGHT FLEXIBLE RUBBER BOOT IN MANHOLE WALL, KOR-N-SEAL BOOT OR EQUAL.
2. DROP OF GRADE THRU MANHOLE SHALL BE 0.10' (MIN), UNLESS OTHERWISE APPROVED.
3. ALIGN FORCE MAIN DISCHARGE WITH OUTLET PIPE.

	<h2 style="margin: 0;">CITY OF ALGONA</h2> <p style="margin: 0;">FORCE MAIN DISCHARGE MANHOLE</p>
APPROVED: 	DWG. NO. FMDMH
DATE: 04/06/2015	

L:\ALGONA\15432 PW Standards\Sewer\PLFMTTS.dwg, 4/13/2015 5:29:56 PM, mmagel



NOTES:

1. BACKFILL MATERIAL AND COMPACTION SHALL BE IN CONFORMANCE WITH THE CITY STANDARDS AND/OR THE STATE OR COUNTY PERMIT REQUIREMENTS, (AS MAY BE APPLICABLE)
2. FORCE MAIN MAY BE HDPE OR PVC OF THE SIZE AND CLASS APPROVED BY CITY IF CONDITIONS WARRANT SAME (AND AS REQUIRED AND DIRECTED BY CITY). WHEN HDPE OR PVC IS APPROVED, BEDDING SHALL EXTEND FROM 4" BELOW PIPE TO 4" ABOVE PIPE.



CITY OF ALGONA

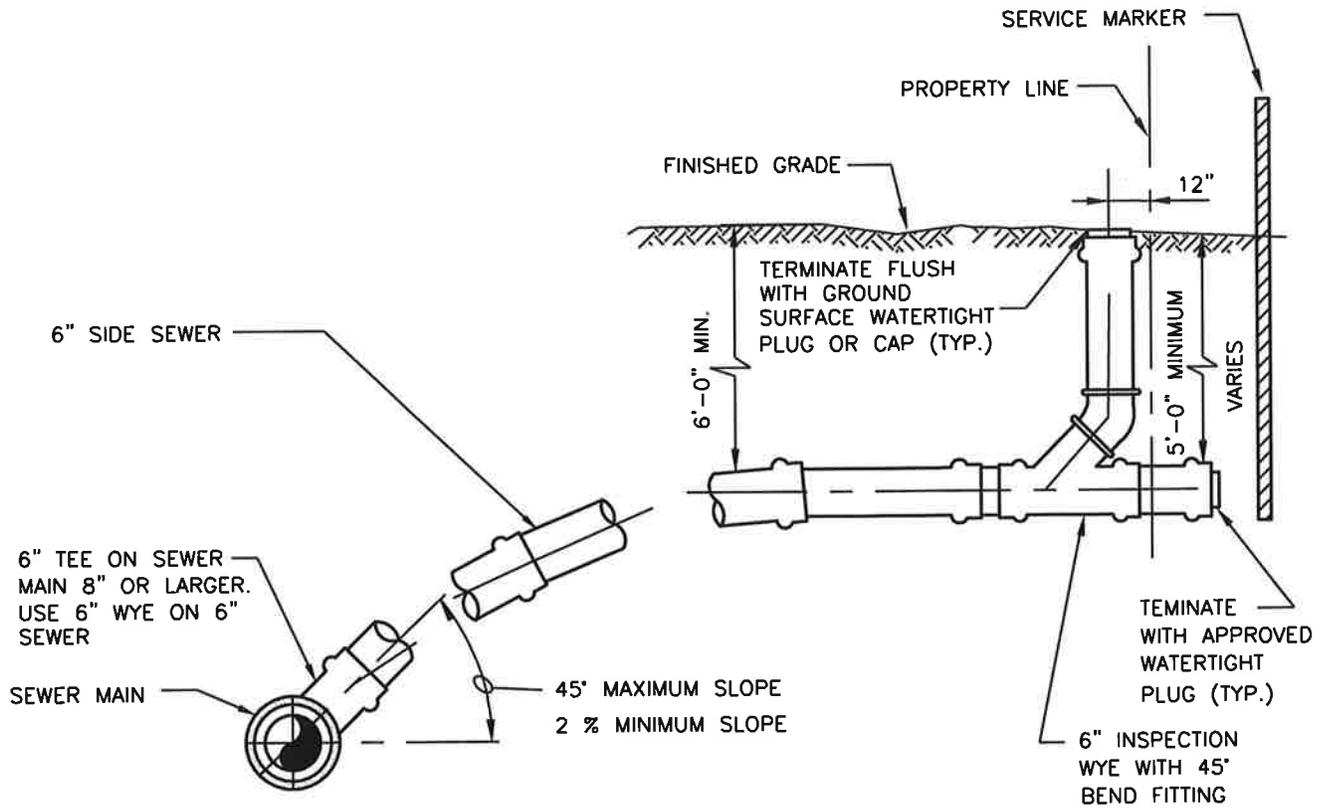
PRESSURE LINE AND FORCE MAIN
TYPICAL TRENCH SECTION

APPROVED:

DATE: 04/06/2015

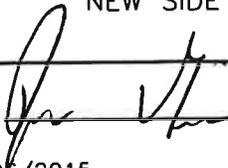
DWG. NO.

PLFMTTS

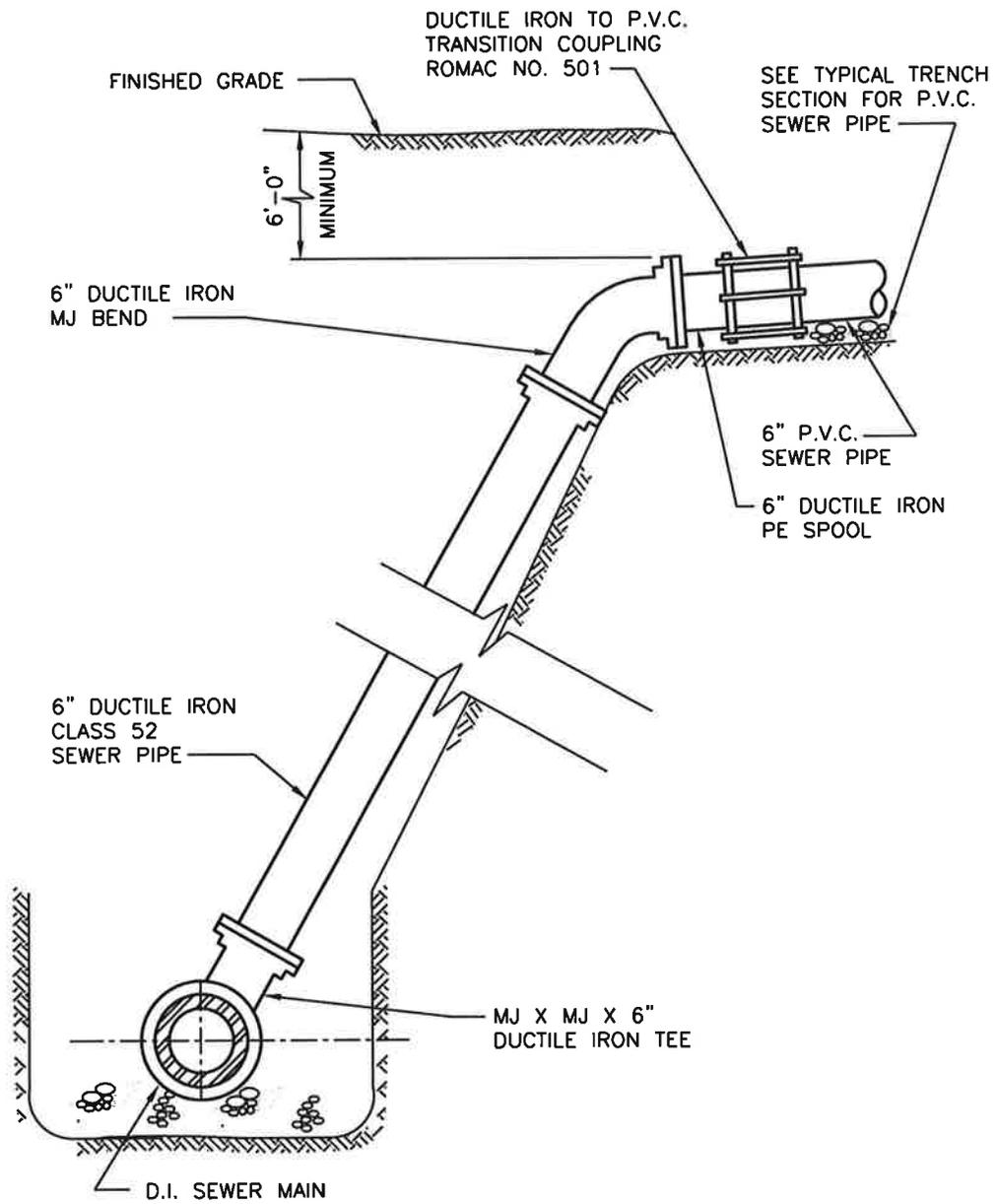


NOTE:

1. PAINT PORTION OF SERVICE MARKER THAT IS ABOVE FINISHED GRADE WITH WHITE PAINT. STENCIL WITH BLACK LETTERS "S/S" USING 3" HIGH LETTERS. LOCATE SERVICE MARKER AT END OF EACH SERVICE. STENCIL TOTAL LENGTH OF 2x4.
2. TAP EXISTING SEWER MAIN WITH APPROVED CITY SADDLE. INSTALL NEW SIDE SEWER TEE ON NEW MAIN LINES.
3. WHEN TAPPED SERVICE IS PERMITTED, CONTRACTOR SHALL PROVIDE SEWER MAIN COUPON TO CITY STAFF.
4. PROVIDE PEA GRAVEL PIPE BEDDING SEE TRENCH SECTION DETAIL.

 <h2 style="margin: 0;">CITY OF ALGONA</h2> <p style="margin: 0;">NEW SIDE SEWER SERVICE</p>	
APPROVED: 	DWG. NO. SSD
DATE: 04/06/2015	

L:\ALGONA\1543z PW Standards\Sewer\SSS.dwg, 4/28/2015 8:05:46 AM, mmagel



NOTE:

SEE TYPICAL TRENCH SECTION FOR DUCTILE IRON SEWER PIPE FLEXIBLE OR RIGID PIPE AS APPROPRIATE



CITY OF ALGONA

STANDING SIDE SEWER

APPROVED: _____

DATE: 04/06/2015

DWG. NO.

SSS

MANHOLE FRAME & COVER WITH "SEWERS"
 CAST ON COVER WITH 3" HIGH RAISED
 LETTERS (NON-SKID PATTERN) AS
 MANUFACTURED BY EAST JORDAN IRON
 WORKS, ERGO24. 3 HOLE LOCKING FRAME
 AND COVER. ONE (1) BOLT HOLE TO BE
 CENTERED OVER LADDER

FIRST STEP
 14" MIN.
 18" MAX.

GROUT BETWEEN RINGS

POLYPROPYLENE MANHOLE
 STEPS NO. P-13938 LOCATED
 AT 12" O.C.

GROUT LIFT HOLES
 INSIDE AND OUTSIDE

TAG AIR AND VACUUM
 UNIT NON POTABLE
 TRANSMISSION LINE

2" GATE VALVE
 TH X TH

POLYPROPYLENE LADDER

6" COMPANION BLIND
 FLANGE TAPPED FOR
 2" AIR & VACUUM UNIT

SLOPE TO DRAIN

MJ TEE SIZE AS REQ'D
 WITH 6" FLANGE ON BRANCH

2" 90° BASE ELL W/
 2" PIPE SUPPORT

FINISHED GRADE

4" X 24" PRECAST CONC.
 ADJUSTMENT RINGS
 2 RINGS REQUIRED
 4 RINGS MAXIMUM
 PLASTER INSIDE AND
 OUTSIDE FACE WITH 1/2"
 THICK GROUT

48" DIA. X 8" THICK
 CONCRETE SLAB

48" MIN. INSIDE DIAMETER
 PRECAST MANHOLE

RUBBER GASKET SEALING
 ELEMENT

COMBINATION SEWAGE AIR AND
 VACUUM VALVE. TAG VALVE
 "NON-POTABLE TRANSMISSION
 LINE". SEE NOTE 3

UNION FOR REMOVAL

SEE NOTE 1

TO STORM
 DRAINAGE

6" DIAMETER PVC DRAIN
 PIPE TO DAYLIGHT
 @ 2% SLOPE

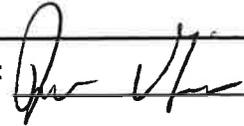
FOUNDATION GRAVEL (8" MIN)

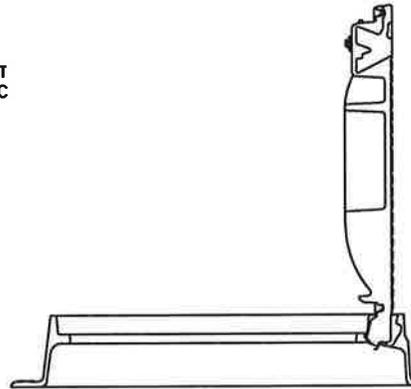
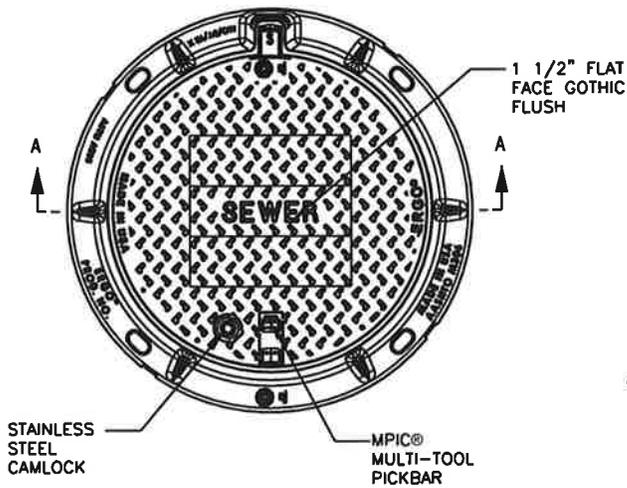
UNDISTURBED EARTH

NOTES:

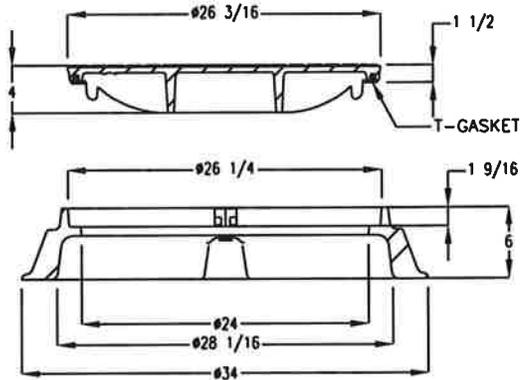
1. FOR PIPE CONNECTIONS TO STORM DRAINAGE MANHOLES, CORE THE MANHOLE AND CONNECT SEWER PIPE WITH A WATER TIGHT FLEXIBLE RUBBER BOOT IN MANHOLE WALL, KOR-N-SEAL BOOT OR EQUAL.
2. DROP OF GRADE THRU MANHOLE SHALL BE 0.10', UNLESS OTHERWISE APPROVED.
3. "APCO, CRISPIN OR VALMATIC" HEAVY-DUTY COMBINATION AIR AND VACUUM VALVE W/ STAINLESS STEEL INTERNALS & EPOXY COATING. SEATS SHALL BE SUPPLIED FOR THE FOLLOWING WORKING PRESSURES: 20 PSI, 20-150 PSI W/ FLUSHING ATTACHMENTS.
4. PROVIDE ADEQUATE VERTICAL CLEARANCE TO REMOVE VALVE COMPONENTS W/O DISASSEMBLY.

L:\ALGONA\15432 PW Standards\Sewer\AVRA.dwg, 4/15/2015 11:33:27 AM, mnagel

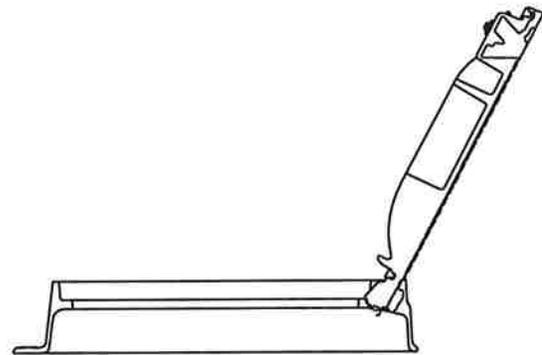
 <h2 style="margin: 0;">CITY OF ALGONA</h2> <p style="margin: 0;">VACUUM RELIEF ASSEMBLY</p>	
APPROVED: 	DWG. NO. AVRA
DATE: 04/06/2015	



SAFETY LOCK ● 90°



SECTION A-A

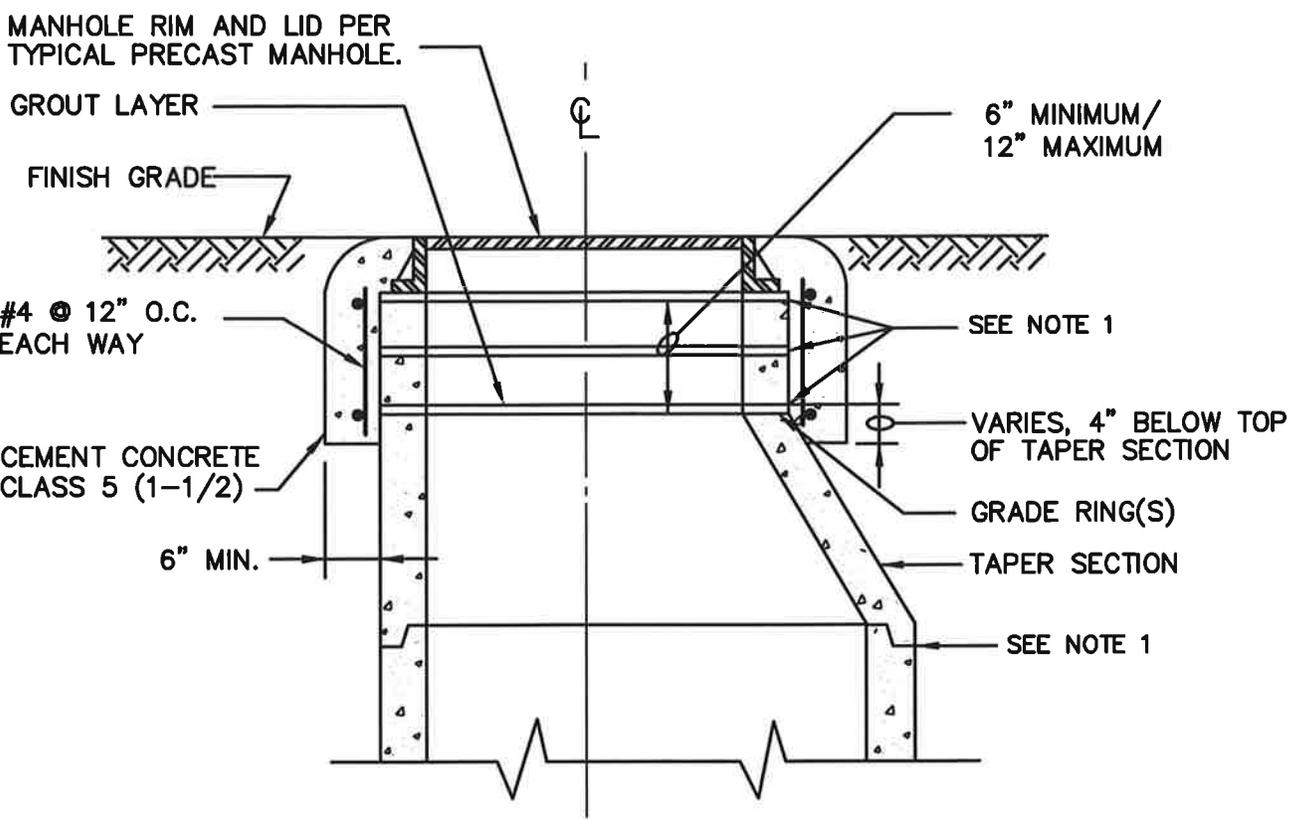


FULLY OPENED ● 120°

EAST JORDAN IRON WORKS
MODEL NO. 00104043L04

	<h2>CITY OF ALGONA</h2> <p>MANHOLE FRAME AND COVER</p>	
	<p>APPROVED: </p> <p>DATE: 04/06/2015</p>	<p>DWG. NO. SSMH COVER - ERGO</p>

L:\ALGONA\I...+32 PW Standards\Sewer\MHCLAR.dwg, 4/27/2015 3:16:30 PM, wperki...



SECTION

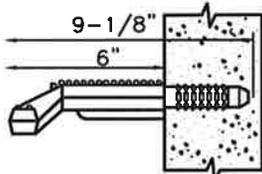
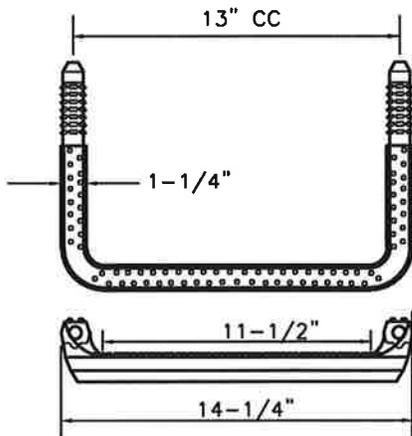
NOTE:
CONSTRUCT CONCENTRIC CONCRETE COLLARS AROUND ALL MANHOLE FRAMES LOCATED OUTSIDE OF PAVEMENT AREAS

MANHOLE FRAME COLLAR

NOTE:
1. THE INSIDE AND OUTSIDE OF ALL JOINTS SHALL BE THOROUGHLY COATED WITH EPOXY GROUT (THOROC OR EQUAL) TO BE APPLIED ACCORDING TO MANUFACTURERS SPECIFICATIONS.

	<p>CITY OF ALGONA</p> <p>MANHOLE FRAME COLLAR</p>	
	<p>APPROVED: </p> <p>DATE: 04/06/2015</p>	<p>DWG. NO.</p> <p>MHCLAR</p>

L:\ALGONA\15432 PW Standards\Sewer\PLMHS.dwg, 4/28/2015 8:00:29 AM, mngel



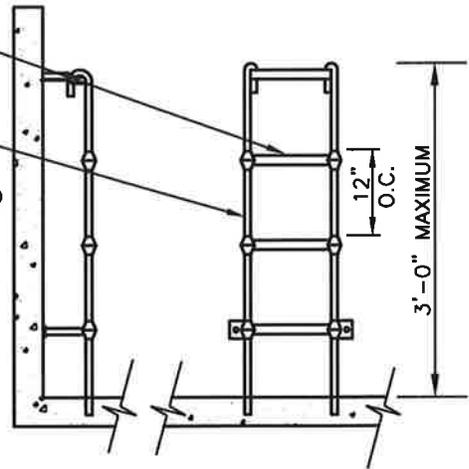
POLYPROPYLENE STEP, LANE NO. P-13938 OR EQUAL

POLYPROPYLENE MANHOLE STEPS

RUNG
1/2" GRADE 60



RAIL
9/16" ROUND BAR



LADDER SHALL CONFORM TO
POLYPROPYLENE ASTM D-4101
1/2" GRADE 60 REINFORCING
BAR A-615 9/16" COLD DRAWN
BAR C-1018

POLYPROPYLENE LADDER



CITY OF ALGONA

POLYPROPELENE LADDER AND
MANHOLE STEPS

APPROVED: _____

DATE: 04/06/2015

DWG. NO.
PLMHS