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Residential Connection Checklist

Commercial Connection Checklist

INTRODUCTION:

The Section 32 Sewer Authority was incorporated in 1984 to acquire, own, improve, enlarge, extend and operate a sewage disposal system located approximately 2.5 miles northwest of Wakefield, Michigan. The two municipalities which comprise the Authority are Wakefield Township, Michigan and Gogebic County, Michigan.

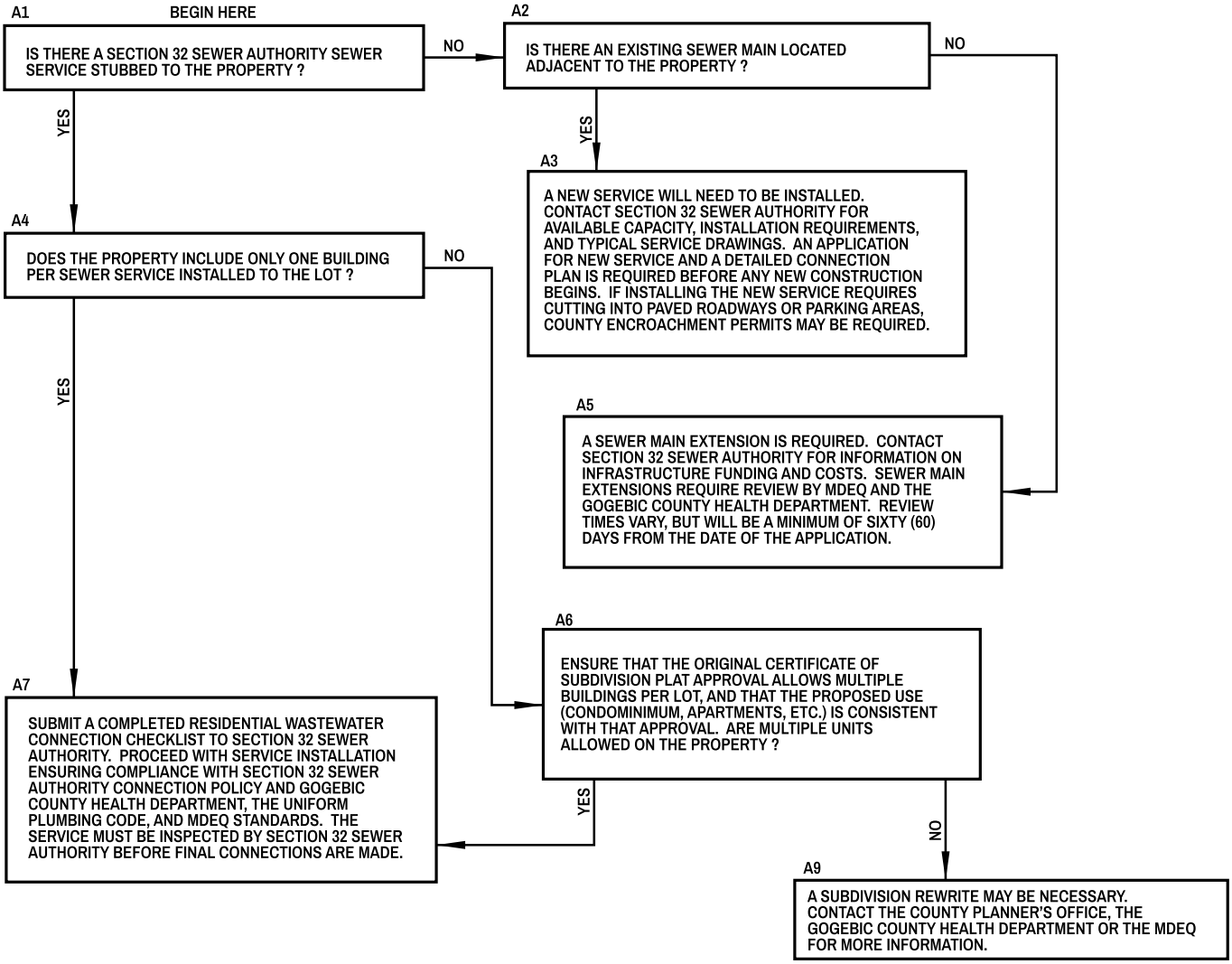
The sewage disposal system is the Wastewater Stabilization Lagoon facility located at 500 Indianhead Mountain Road, Wakefield, Michigan 49968. The facility consists of two stabilization ponds; the primary pond and the secondary pond.

Currently the system serves 27 users (April 1, 2010). The system is designed to accommodate for future growth and residents wishing to connect to the system must follow this design guide.

This document has been prepared to assist design engineers, architects, developers, contractors, or other interested individuals with the preparation of plans and specifications for Section 32 Sewer Authority infrastructure improvements and extensions so that they will be compatible with the characteristics of the existing system. This policy has been created using the Recommended Standards for Wastewater Facilities (2004 Edition) and is not an all-inclusive design manual. All work shall comply with applicable Michigan Department of Natural Resources and Environment (MDNRE) standards and the Gogebic County Health Department regulations. All connections to Section 32 Sewer System will be subject to review and approval by the appropriate agencies and the Authority prior to any construction of infrastructure.

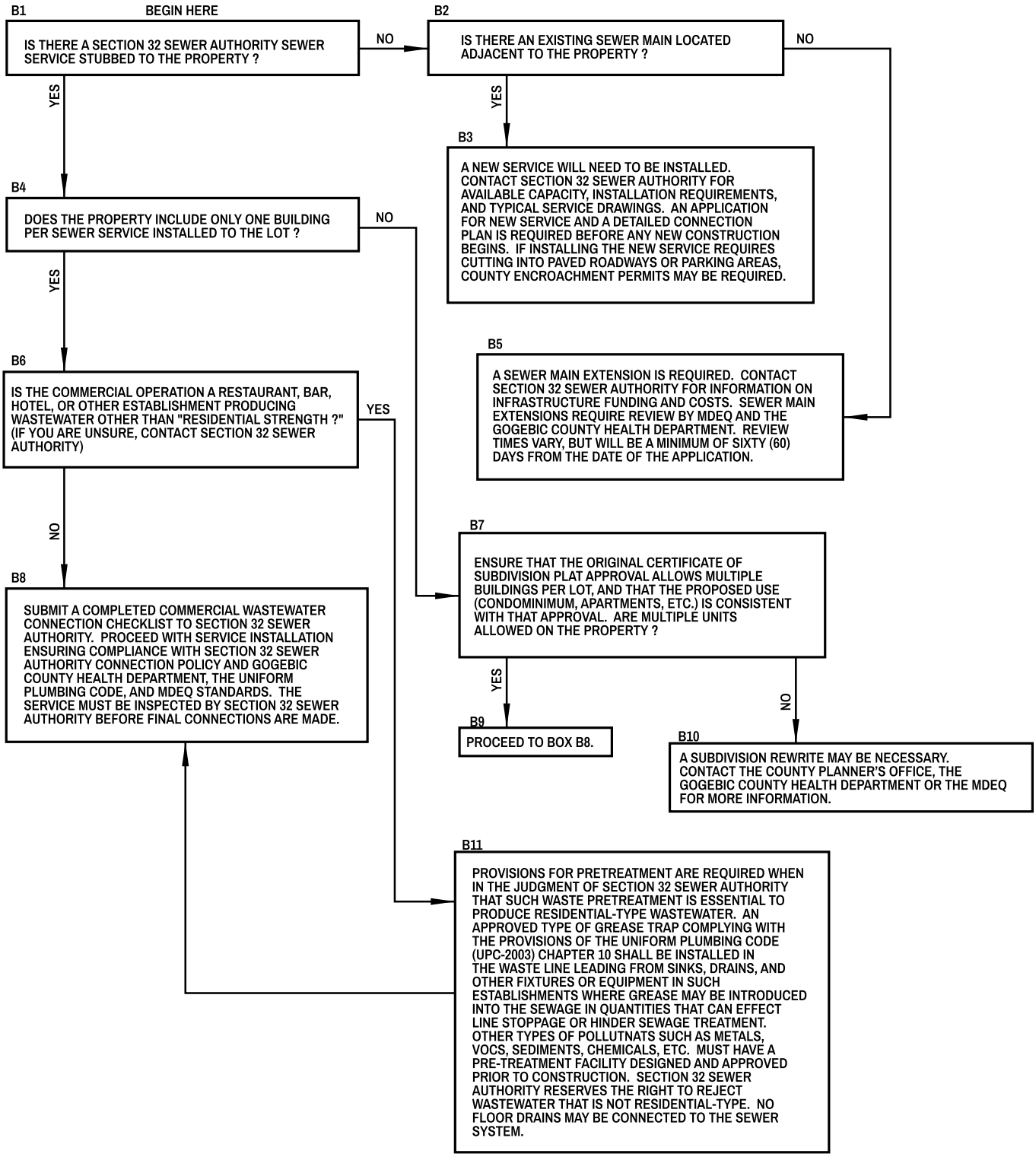
Section 32 Sewer Authority
P.O. Box 47
Wakefield, MI 49968

RESIDENTIAL CONNECTION PROCESS FLOW CHART
SECTION 32 SEWER AUTHORITY



COLEMAN ENGINEERING COMPANY
635 CIRCLE DRIVE - IRON MOUNTAIN, MICHIGAN 49801 (906) 774-3440
200 EAST AYER STREET - IRONWOOD, MICHIGAN 49938 (906) 932-5048

COMMERCIAL CONNECTION PROCESS FLOW CHART
SECTION 32 SEWER AUTHORITY



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635 CIRCLE DRIVE - IRON MOUNTAIN, MICHIGAN 49801 (906) 774-3440
200 EAST AYER STREET - IRONWOOD, MICHIGAN 49938 (906) 932-5048

CONNECTION GUIDELINES:

All connections to the Section 32 Sewer Authority Sewer System must conform to the following guidelines:

1. The owner is responsible for the cost of the sewer service from the building to the lateral stub at the property line.

2. The owner and contractor are responsible for obtaining all necessary permits prior to construction.

3. The owner or their contractor is responsible for finding the sewer lateral stub but the owner/contractor may contact Section 32 for assistance in locating the stub.

4. The owner and contractor are solely responsible for damage to sewer infrastructure related to sewer service installation.

5. All underground plumbing must be done by licensed plumbers.

6. All connection to the Section 32 Sewer System shall be to the sewer lateral stub at the lot line. If a sewer lateral stub have not been placed to the lot line, then the Owner will be responsible for the cost of installing a lateral from the main line to the property line. Shop drawings must be submitted by the contractor and approved by Section 32 Sewer Authority for connection to any sewer main line.

7. All sewer laterals must be constructed and laid in accordance with the Michigan Department of Natural Resources and Environment (MDNRE) Standards, the Gogebic County Health Department Regulations, and the Section 32 Sewer Authority Standard Specifications.

8. Provision for pre-treatment are required when in the judgment of the Section 32 Sewer Authority that such waste pretreatment is essential to produce residential-type wastewater. An approved type of grease trap complying with the provisions in the Uniform Plumbing Code shall be installed in the wastewater line leading from sinks, drains and other fixtures or equipment in establishments such as restaurants, bars, hotels, or other establishments where grease may be introduced into the sewage system. A grease trap is generally not required for individual residential dwelling units. Other types of pollutants such as metals, VOCs, sediments, chemicals, etc. must have a pre-treatment facility designed and approved prior to construction. The Section 32 Sewer Authority has the right to reject wastewater that is not residential-type.

9. No floor drains, sump pumps, footing drains, and/or roof gutters may be connected to the sewer system.

10. All sewer laterals must be inspected by a representative from the Section 32 Sewer Authority prior to backfilling over the sewer service.

11. The sewer lateral contractor will make accommodations for the Section 32 Sewer Authority representatives for the safe inspection of the work and must give at least one (1) business day advance notice when the laterals are ready for inspection and connection to the public sewer system.

12. In areas where groundwater conditions necessitate dewatering, the contractor shall use appropriate dewatering equipment and comply with all local and state regulations. The contractor shall not allow groundwater to enter any part of the sewer collection system.

13. The contractor is responsible for the removal of any mud, sand, or other debris which enters the sewer system piping as a result of the lateral installation procedure.

14. The sewer lateral contractor is responsible for any damages or disturbance to the public right-of-way and roads. Restoration of the public right-of-way and/or roads will be the responsibility of the sewer lateral contractor. The restoration work must be completed in a manner that is satisfactory to all parties involved and a 2-year written warranty relating to trench backfill and asphalt pavement shall be issued.

15. Sewer laterals shall have a minimum of 8-feet of horizontal and 6-inches of vertical separation between any water services.

16. As-built drawings showing the locations of sewer services lines shall be provided to the Section 32 Sewer Authority prior to service initiation. The as-built drawing shall be legible on a minimum, 8.5” x 11” page and include pipe types, sizes, slopes, cleanouts, distances from building corners or to other permanent improvements, and any other applicable information.

DESIGN CRITERIA:

General

All additions or modifications to the Section 32 Sewer Authority wastewater system will be designed in accordance with the criteria set forth in this Policy. All additions to the wastewater system will also be designed and installed in accordance with Michigan Department of Natural Resources and Environment (MDNRE) Standards and the Gogebic County Health Department Regulations.

A master sewer plan may be required by the Section 32 Sewer Authority for major developments prior to new sewer system approval. Requirements of a master sewer plan include, but are not limited to, an overall plan of the development showing additional areas served by the new sewer system and a design report; prepared by a licensed professional engineer in the State of Michigan.

Sanitary sewer lines to serve residential areas shall be designed to accommodate an average daily flow rate of 100 gallons per person per day. Sanitary sewer lines for new residential developments shall be designed based on anticipated property usage.

Sanitary sewer lines to serve commercial areas shall be designed to accommodate the average daily flows using the multiplier as indicated in Table 1; User Charge Units, or as approved by the Section 32 Sewer Authority. All commercial sewer lines and services will require pre-treatment to ensure that the wastewater entering the system is residential strength.

Sewer depth should be a minimum of 6 feet, all sewers which have shallow construction shall be insulated to prevent freezing, see Standard Drawing C-4.

Sanitary Sewer and Water mains and services shall maintain 10-foot horizontal separation and 18-inch vertical separation.

A 12'-wide all-weather gravel access road shall be constructed to provide access to all sanitary sewer appurtenances not located within a public or private street or parking lot.

Public road disturbance and reconstruction may require County Road Permits and must conform to Gogebic County Requirements.

Sanitary Sewer Gravity Main

Gravity sewer mains shall be sized for flow, with a minimum mean velocity 2.0 feet per second (f/s) when flowing full. A Manning's friction factor of 0.013 shall be used when designing new sewers.

New gravity sewer mains shall be sized to flow at no more than 75 percent of full capacity at peak hour conditions upon the full build out of the development. The effects

of the proposed sewer loading on the existing system shall be analyzed. The minimum diameter of a gravity sewer main is 8-inches.

PVC pipe shall be used for all gravity flow sewer mains unless other materials are specifically approved. PVC sewer pipe shall meet ASTM 01784, "Rigid Polyvinyl Chloride Compounds" requirements and ASTM 03034, "Standard Specifications for Polyvinyl Chloride Sewer pipe and Fittings", with an SDR of 35 for 4"-15" diameters.

Manholes

Manholes shall be precast concrete, as shown in Standard Drawing C-1 and shall meet ASTM C478 standards. Frames and covers shall be East Jordan Iron Works 1040 or engineer approved equal.

Manholes shall be installed at the end of each line; at changes in grade, size, or alignment of the sanitary sewer main; at all intersections, and at the following maximum distances:

SEWER PIPE SIZE	MAXIMUM DISTANCE
8" to 15"	400'
8" to 30"	500'

Manholes shall have a minimum inside diameter of 48 inches, with a minimum access diameter of 24 inches.

Manhole flow channels shall conform to the connecting sewer mains in shape and slope. The channel walls should match the crown of the outlet sewer. When a smaller main is being connected to a lager main at a manhole, the manhole inverts shall be set so that the 8/10 depth of flow of each main is equal in elevation. The minimum drop across a manhole (invert in to invert out) is 0.1', with the exception of manholes placed on an existing sewer. A drop across the manhole of 0.2' is recommended where grade permits.

Sanitary Sewer Forcemain

PVC pipe shall be used for all forcemains unless other materials are specifically approved. PVC sewer pipe shall have and SDR of 21 and meet ASTM D2241, "Standard Specification for Polyvinyl Chloride (PVC) Pressure Rated Pipe" requirements and ASTM F477, "Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe".

All forcemain must have restrained joints or thrust blocking at bends, fittings and valves.

All connections from forcemain to gravity sewer main shall include a check valve or backflow preventer.

Sanitary Sewer Pumping Stations

Sanitary sewer pumping stations may be wet well/drywell, submersible, suction lift or

screw pump construction.

Sanitary sewer pumping station structures shall be watertight pre-cast concrete structures. Wall penetrations into the structures shall be watertight.

Sanitary pumping stations for individual structures shall contain an Orenco Biotube filter, an Orenco High Head Effluent Pump, and minimum 24-inch diameter access riser and lid, or approved equal.

Lift stations, other structures or basic design characteristics may be reviewed by the Section 32 Sewer Authority on a case by case basis.

Pumping Station controls shall be Orenco, or approved equal, and installed within sight of the station on a post or mounted on an exterior wall, no less than 36-inches and no more than 60-inches above ground.

Sanitary Sewer Services

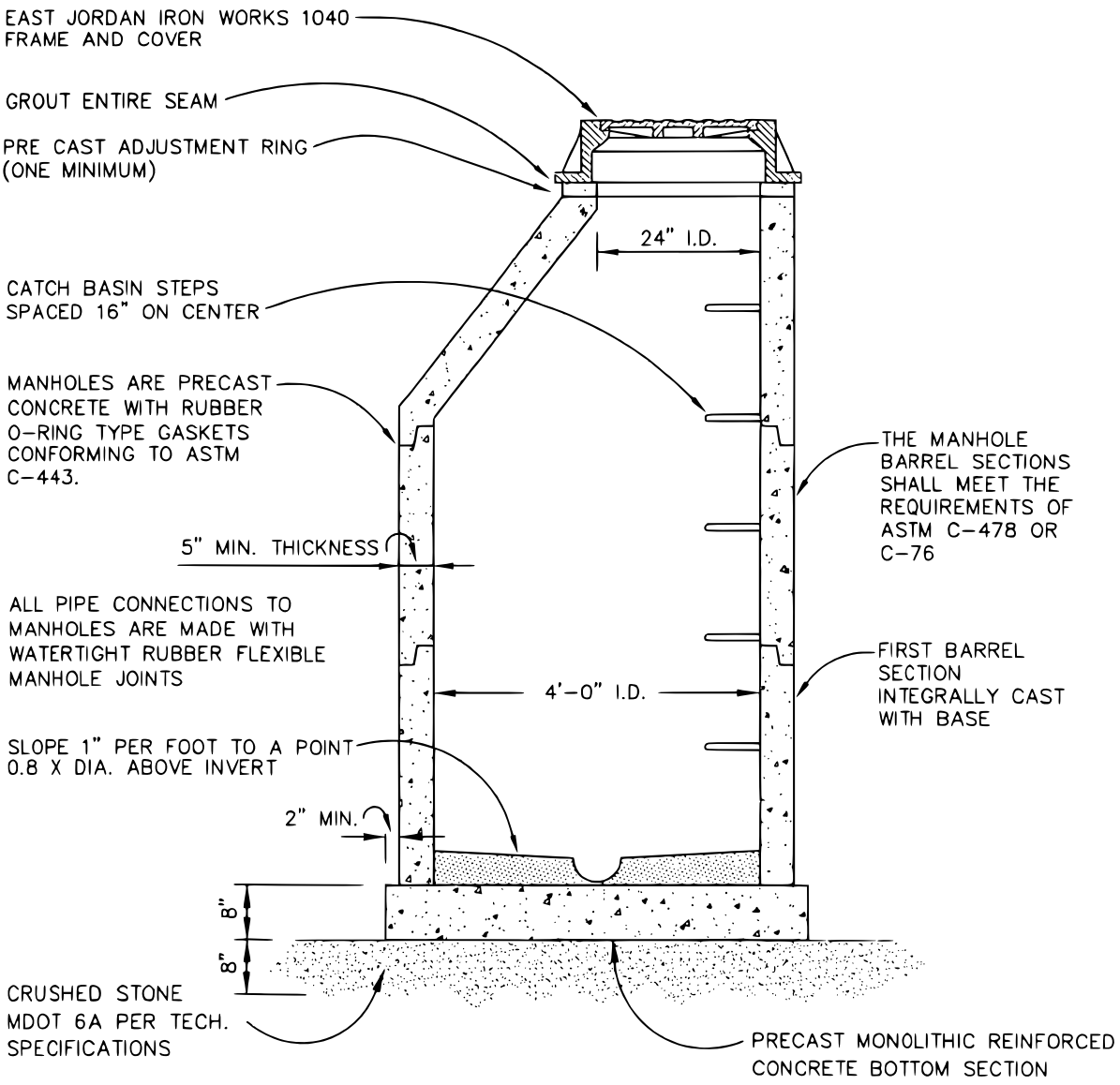
The minimum diameter of a service is 4-inch. Service pipe shall be SDR 35, PVC pipe conforming to ASTM 03404. Services shall connect to the gravity sanitary sewer main with in-line gasketed wyes for new services or cut in wyes with a saddle gasket and stainless steel straps for new services connecting to existing sanitary sewer mains. The service line stub, from the main to the property line or easement line, shall be installed with a maximum slope of 1/2-inch per foot if this maximum cannot be met, elevations changes may be met using vertical 45 degree bends. The minimum slope of a 4-inch service stub is 1/4-inch per foot. The minimum slope of a 6-inch service line stub is 1/8-inch per foot. Services are to be installed perpendicular to the main except at end of main locations such as cul-de-sacs. Sanitary sewer services shall be installed in accordance with Standard Drawing C-2.

Sanitary sewer service cleanouts shall be installed for long sewer services and located at not more than 100-foot intervals. See Standard Drawing C-3.

TABLE 1

OCCUPATION/USE	UNITS	UNIT FACTOR
Single Family Residence	1.00	per residence
Auto Dealers - New and/or Used	1.00	Per premise plus 0.25 per 1,000 sq. ft. of building, including service area
Auto Repair/Collision	1.00	Per premise plus 0.25 per 1,000 sq. ft. of building, including service area
Auto Wash		
Coin Operated Do-It-Yourself 10 gallons or less per car	1.00	Per stall
Mechanical - Over 10 gallons per car, not recycled	10.00	Per stall or production line including approach and drying area
Mechanical - Over 10 gallons per car, recycled	5.00	Per stall or production line including approach and drying area
Barber Shop	1.00	Per shop plus 0.1 per chair after 2
Bar	4.00	per 1,000 sq. ft.
Beauty Shops	1.00	per shop plus 0.1 per booth
Bowling Alleys (no Bar)	1.00	per premise plus 0.2 per alley
Churches	0.25	per 1,000 sq. ft. - minimum 1.0 unit
Cleaners		
Pick Up Only	1.00	per shop
Cleaning and Pressing Facilities	1.00	per premise plus 0.5 per 500 sq. ft.
Clinics (Medical or Dental)	1.00	per premise plus 0.5 per exam room
Convalescent or Boarding Homes	1.00	per premise plus 0.25 per bedroom
Convents	1.00	per premise plus 0.25 per bedroom
Country Clubs and Athletic Clubs	1.50	per 1,000 sq. ft. of clubhouse plus restaurant and bar
Drug Stores	1.00	per premise plus snack bar
Factories (Office and Production)	0.75	per 1,000 sq. ft.
Wet Process		based on metered sewage flow
Funeral Home	1.50	per 1,000 sq. ft. plus residence to be computed separately
Grocery Stores and Super Markets	1.00	per premise plus 0.8 per 1,000 sq. ft.
Hospitals	1.10	per bed
Hotels and Motels	0.50	per bedroom plus restaurant and bar
Laundry (Self Serve)	1.00	per premise plus 0.5 per washer
Two Family Residential	1.00	per unit

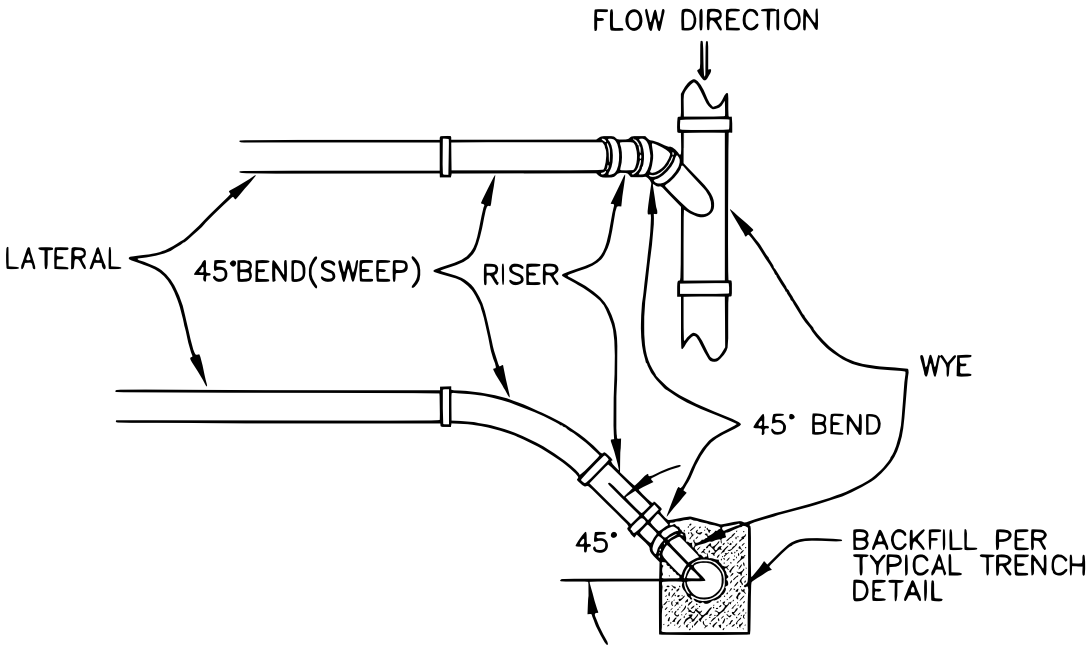
OCCUPATION/USE	UNITS	UNIT FACTOR
Mobile Homes		
Free Standing	1.00	per unit
Parks or Subdivisions	0.75	per pad or site at indiirect connection rate plus laundry, community buildings and office to be computed separately per schedule
Multiple Family Residence		
Duplex or Row Houses	1.00	per dwelling unit
Apartments	1.00	per dwelling unit
Professional Office	0.25	per 500 sq. ft. - minimum 1.0
Public Institutions	0.75	per 1,000 sq. ft.
Restaurants		
Meals Only	2.50	per 1,000 sq. ft.
Meals and Drinks	6.50	per 1,000 sq. ft.
Auxillary Dining Rooms - when used less than 20 hours per week	2.00	per 1,000 sq. ft.
Schools	1.00	per classroom
Service Stations	1.50	per 1,000 sq. ft. of building area
Snack Bars, Drive-Ins, etc.	2.50	per 1,000 sq. ft.
Retail Store (other than listed)	1.00	per premise plus 0.1 per 1,000 sq. ft.
Theaters		
Seated	0.04	per seat
Drive-in	0.04	per car space
Post Office	1.00	per 1,000 sq. ft.
Warehouse and Storeage	0.20	per 1,000 sq. ft.
Veterinary		
Facility	1.50	per facility
Facility with Kennel	1.50	per facility plus 0.5 per 5 kennels



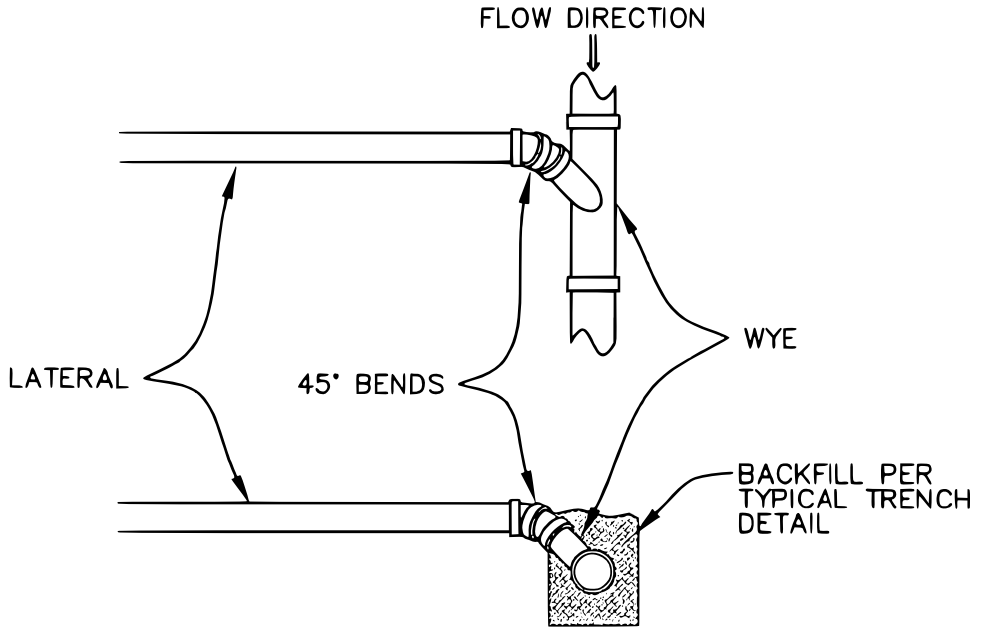
TYPICAL SANITARY MANHOLE
STANDARD DRAWING C-1
SECTION 32 SEWER AUTHORITY

COLEMAN ENGINEERING COMPANY
635 CIRCLE DRIVE - IRON MOUNTAIN, MICHIGAN 49801 (906) 774-3440
200 EAST AYER STREET - IRONWOOD, MICHIGAN 49938 (906) 932-5048

DATE 4-5-2010
JOB NO. 10017
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CONNECTION WITH RISER

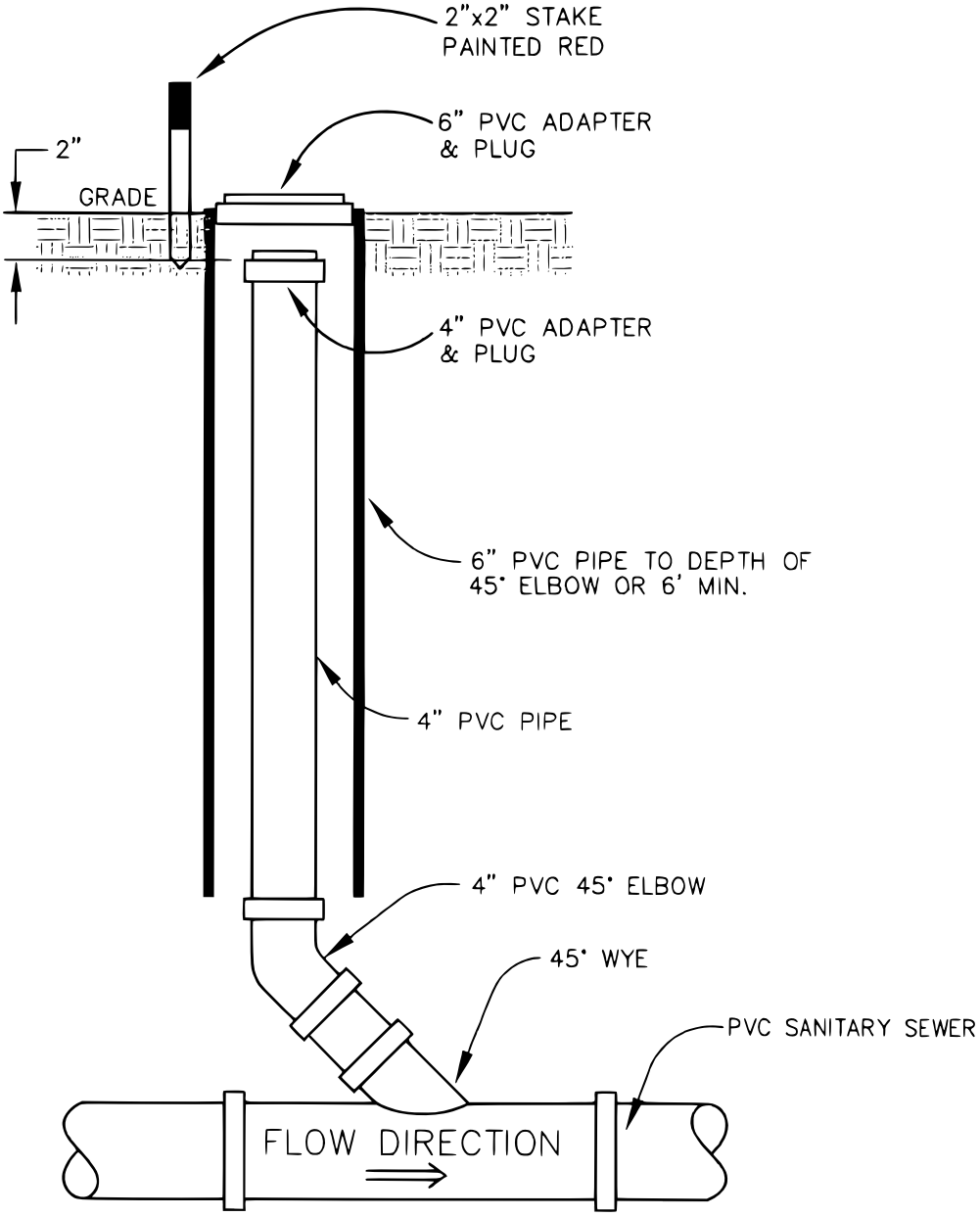


CONNECTION WITHOUT RISER

TYPICAL SANITARY SEWER SERVICE CONNECTION
STANDARD DRAWING C-2
SECTION 32 SEWER AUTHORITY

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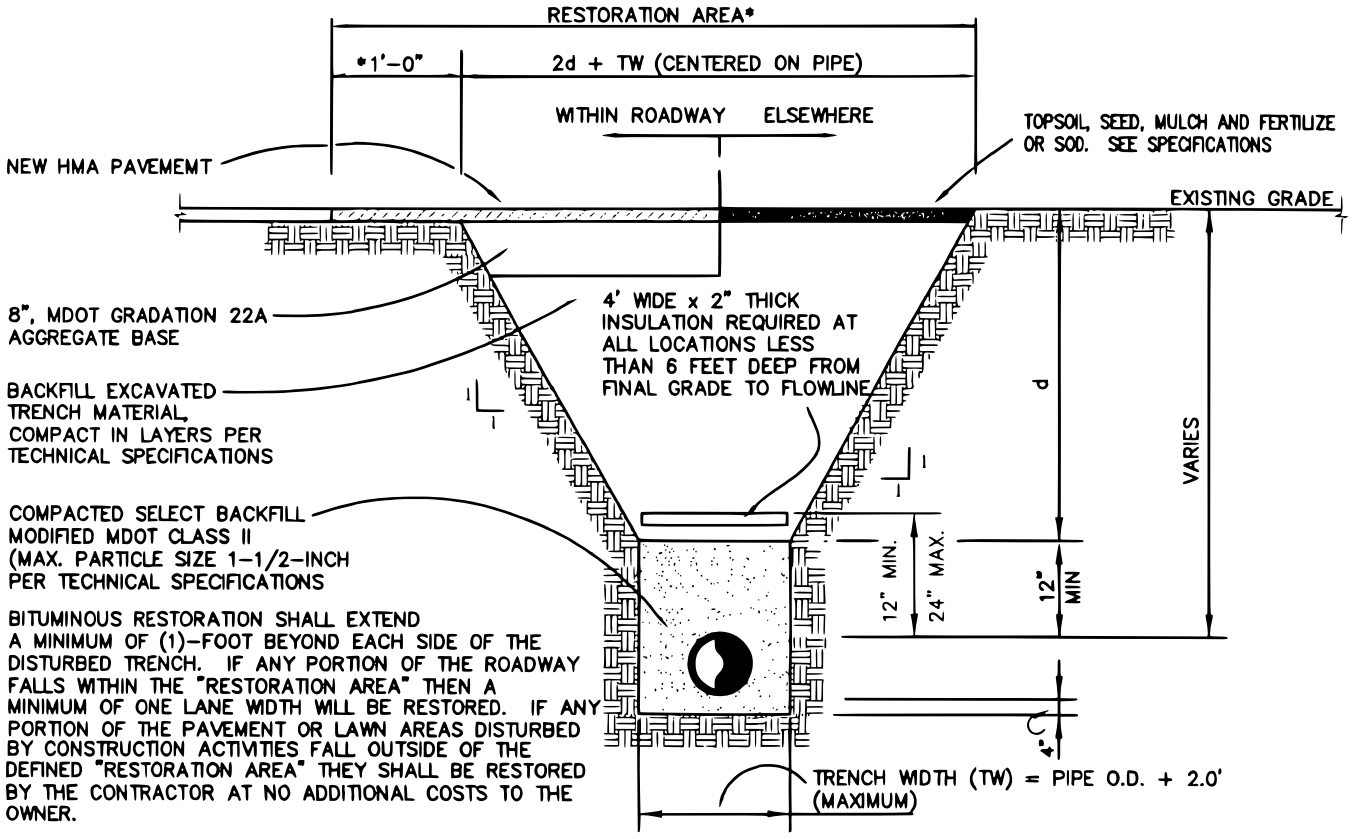
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SANITARY SEWER SERVICE LATERAL CLEANOUT
STANDARD DRAWING C-3
SECTION 32 SEWER AUTHORITY

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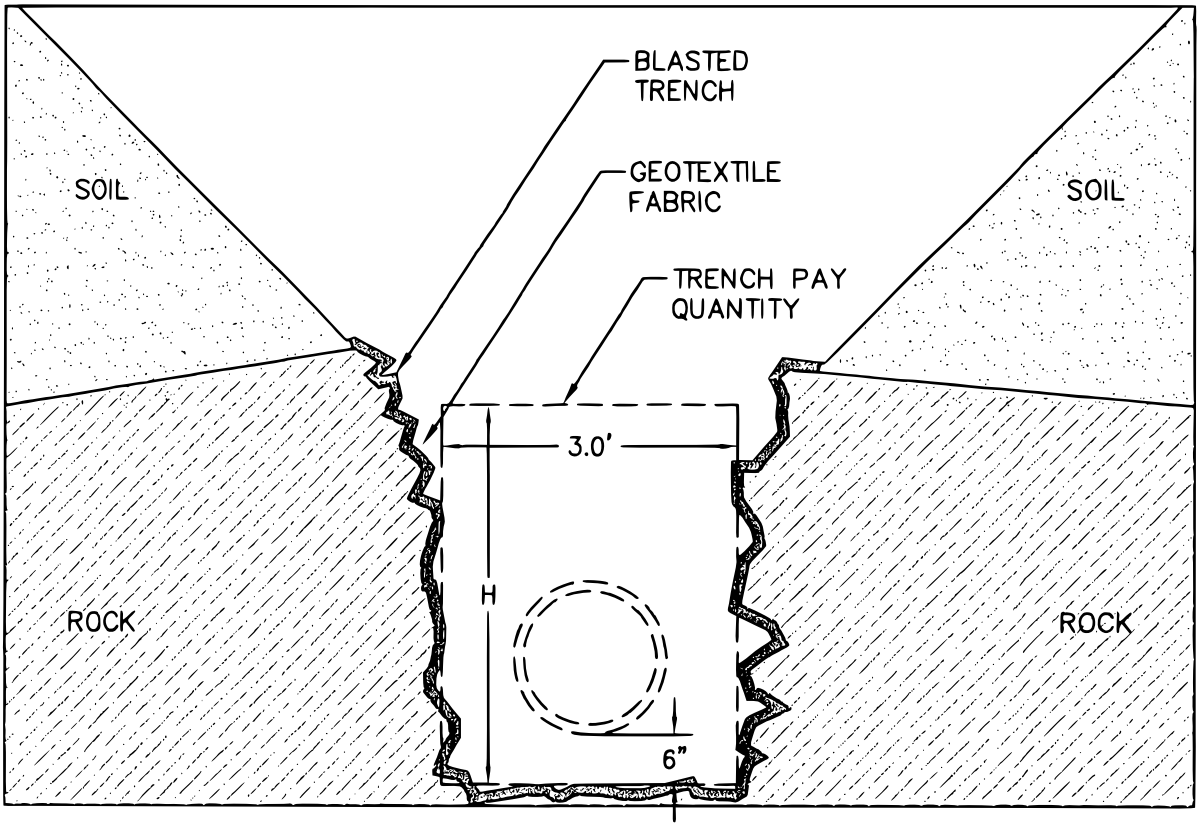
DATE 4-5-2010
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TYPICAL TRENCH DETAIL
STANDARD DRAWING C-4
SECTION 32 SEWER AUTHORITY

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DATE 4-5-2010
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TYPICAL BLASTED TRENCH DETAIL
STANDARD DRAWING C-5
SECTION 32 SEWER AUTHORITY

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DATE 4-5-2010
JOB NO. 10017
CADD FILE CAD10017

SECTION 32 SEWER AUTHORITY
P.O. Box 47 · Wakefield, MI 49968

RESIDENTIAL SERVICE CONNECTION CHECKLIST

Address: _____

Owner: _____ Phone: _____

Applicant: _____ Phone: _____

☐	☐	Service installed from sewer main to lot/parcel.
☐	☐	One sewer service per building
☐	☐	Cleanout placed within 3 feet of building
☐	☐	Cleanouts every 100 feet in compliance with Uniform Plumbing Code
☐	☐	Cleanouts placed at 45-degree or greater bends
☐	☐	Cleanouts placed at pipe size transition points
☐	☐	All cleanouts readily accessible and brought to grade
☐	☐	All underground plumbing performed by licensed plumbers
☐	☐	Minimum pipe slope of ¼” per foot (2.0%) on service laterals
☐	☐	Pipe bedded 4-inches under service lateral and 12-inches over service lateral using MDOT Class II Material
☐	☐	Minimum 18” vertical separation at water crossings
☐	☐	Minimum 10-foot horizontal separation between water and sewer
☐	☐	Section 32 Wastewater Authority notified at least one (1) business day in advance when the service is ready for inspection and connection to the public wastewater system
☐	☐	As-built drawing provided (minimum 8.5” x 11” paper)

SECTION 32 SEWER AUTHORITY
P.O. Box 47 · Wakefield, MI 49968

COMMERCIAL SERVICE CONNECTION CHECKLIST

Address: _____

Owner: _____ Phone: _____

Applicant: _____ Phone: _____

☐	☐	Service installed from sewer main to lot/parcel.
☐	☐	One sewer service per building
☐	☐	Cleanout placed within 3 feet of building
☐	☐	Cleanouts every 100 feet in compliance with Uniform Plumbing Code
☐	☐	Cleanouts placed at 45-degree or greater bends
☐	☐	Cleanouts placed at pipe size transition points
☐	☐	All cleanouts readily accessible and brought to grade
☐	☐	All underground plumbing performed by licensed plumbers
☐	☐	Minimum pipe slope of ¼” per foot (2.0%) on service laterals
☐	☐	Pipe bedded 4-inches under service lateral and 12-inches over service lateral using MDOT Class II Material
☐	☐	Minimum 18” vertical separation at water crossings
☐	☐	Minimum 10-foot horizontal separation between water and sewer
☐	☐	Section 32 Wastewater Authority notified at least one (1) business day in advance when the service is ready for inspection and connection to the public wastewater system
☐	☐	Appropriate pre-treatment device installed if required
☐	☐	No floor drains are connected to the sewer service
☐	☐	As-built drawing provided (minimum 8.5” x 11” paper)