

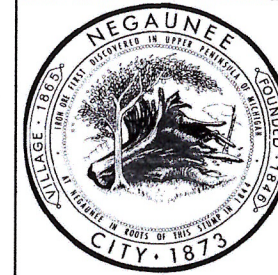
PROJECT LOCATION  
NEGAUNEE, MI



# CITY OF NEGAUNEE

## PLAN OF PROPOSED 2023 WENONAH STREET WATER PROJECT

CITY OF  
NEGAUNEE



319 West Case Street  
Negaunee, MI 49866

### PROJECT DESCRIPTION:

PROJECT CONSISTS OF APPROXIMATELY 363 FEET OF WATER MAIN REPLACEMENT ON WENONAH STREET. THIS PROJECT WILL INCLUDE WATER SERVICE REPLACEMENT, SUBBASE, GRAVEL BASES, HMA PAVING, SIDEWALK, SLOPE RESTORATION, AND TRAFFIC CONTROL.

### SHEET INDEX

1	COVER SHEET
2	TYPICAL SECTIONS
3	PLAN & PROFILE
4	DETAILS
5	DETAILS

2023  
WENONAH WATER PROJECT  
NEGAUNEE, MI 49866

### UTILITY CONTACTS

THE FOLLOWING UTILITIES ARE LOCATED IN OR NEAR THE RIGHT-OF-WAY OF THIS PROJECT:

**WATER/SEWER/STORM:**  
CITY OF NEGAUNEE  
600 CHERRY STREET  
NEGAUNEE, MI 49866  
ATTN: RYAN GIOTTO  
PHONE: 906 475-9991

**ELECTRIC:**  
CITY OF NEGAUNEE  
600 CHERRY STREET  
NEGAUNEE, MI 49866  
ATTN: MARK WAINIO  
PHONE: 906 475-9991

**CABLE:**  
CHARTER COMMUNICATIONS  
359 US-41 EAST  
NEGAUNEE, MI 49866  
ATTN: HERB WALINE  
PHONE: 906 401-0639

**GAS:**  
SEMCO ENERGY, INC  
34 US HWY 41 EAST  
NEGAUNEE, MI 49866  
ATTN: JEFFREY GREGORICH  
PHONE: 906 475-9901, EXT 5170

CONTRACTOR SHALL COORDINATE ALL OF THEIR WORK AND THE UTILITY COMPANIES RELOCATION WORK AT NO ADDITIONAL COST TO THE PROJECT

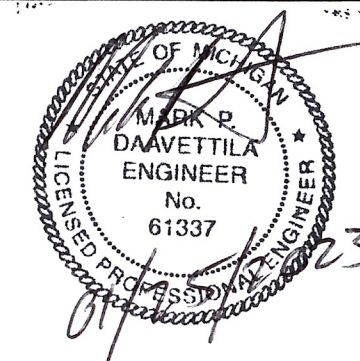
FOR THE PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, 1974, THE CONTRACTOR SHALL CALL TOLL FREE 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS, PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. ALL "MISS DIG" PARTICIPATING MEMBERS WILL BE THUS ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR FROM NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.



DATE ISSUED

PERMIT	01-18-2023
--------	------------

### PROFESSIONAL SEAL

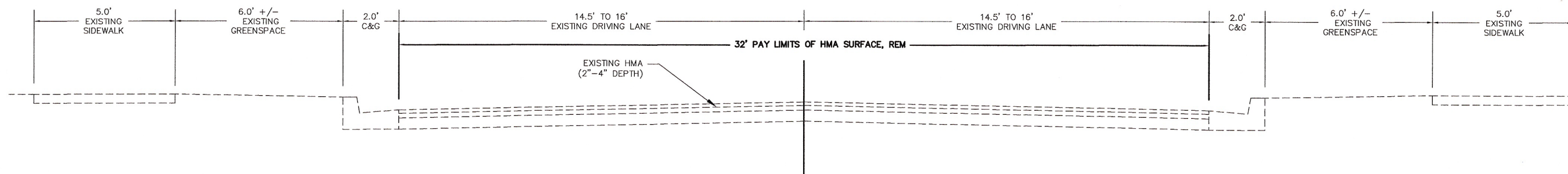


COVER  
SHEET

1

**NOTES:**

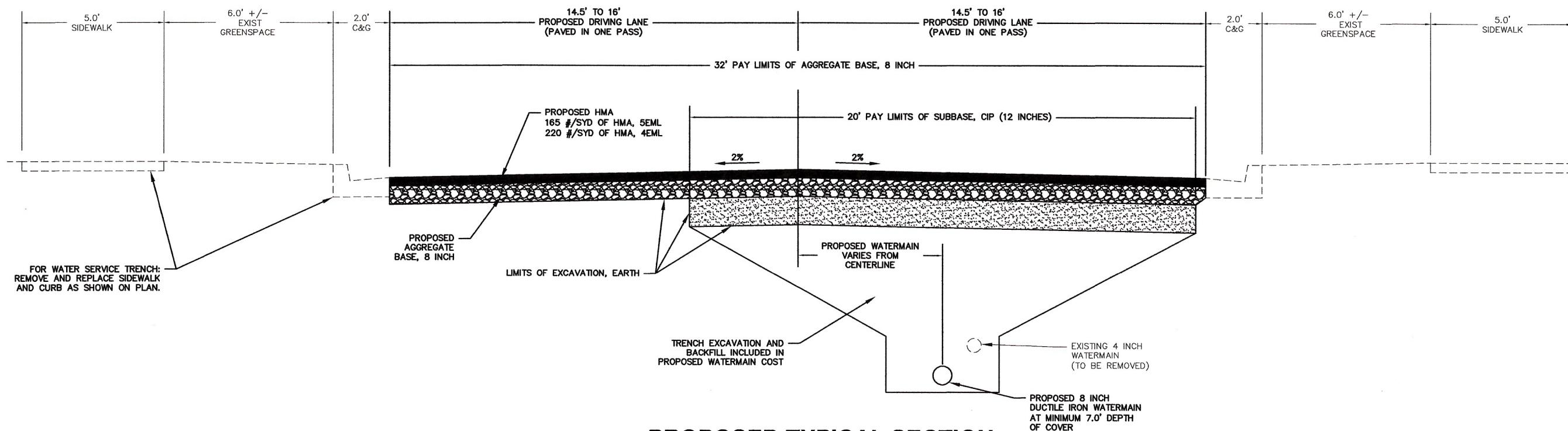
- LOCAL TRAFFIC SHALL BE MAINTAINED DURING CONSTRUCTION
- AGGREGATE BASE MATERIAL SHALL BE 22A, UNLESS OTHERWISE APPROVED BY THE ENGINEER.



**EXISTING TYPICAL SECTION**

STA. 0+00 TO STA. 3+50

EXISTING 4 INCH WATERMAIN (LOCATION VARIES) (TO BE REMOVED)



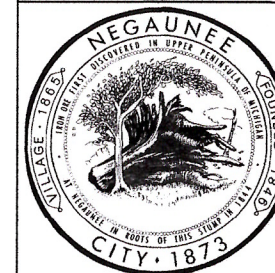
**PROPOSED TYPICAL SECTION**

STA. 0+00 TO STA. 3+50

EXISTING 4 INCH WATERMAIN (TO BE REMOVED)

PROPOSED 8 INCH DUCTILE IRON WATERMAIN AT MINIMUM 7.0' DEPTH OF COVER

CITY OF NEGAUNEE



319 West Case Street  
Negaunee, MI 49866

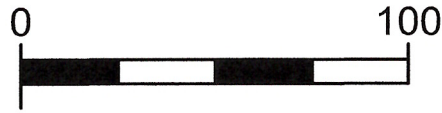
2023  
WENONAH WATER PROJECT  
NEGAUNEE, MI 49866

DATE ISSUED

PERMIT 01-18-2023

TYPICAL SECTIONS

2



- PAY ITEM FOR WATERMAIN INCLUDES ALL OF THE FOLLOWING:**
1. TRENCH EXCAVATION AND BACKFILL, AND PIPE BEDDING
  2. HYDROSTATIC TESTING, DISINFECTION, FLUSHING, AND BACTERIOLOGICAL TESTING
  3. DUCTILE IRON WATER MAIN AND ALL FITTINGS REQUIRED TO CONSTRUCT THE PLANS
  4. ANY BRACING, SHEETING, OR BLOCKING
  5. LIVE TAPPING (IF NECESSARY)
  6. REMOVAL OR ABANDONMENT OF EXISTING WATERMAIN AND EXISTING VALVES
  7. REMOVAL OF EXISTING WATER HYDRANTS, VALVES, BOXES, AND FITTINGS
  8. UTILITY CROSSINGS (ELECTRIC, CABLE, GAS, TELEPHONE)
  9. RESIDENT NOTIFICATION
- PAY ITEM FOR WATERMAIN DOES NOT INCLUDE:**
1. GROUNDWATER DEWATERING OPERATIONS
  2. ROCK EXCAVATION

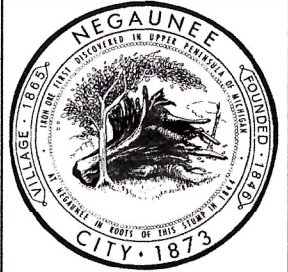
- WATERMAIN ITEMS THIS SHEET**
- 28 Ft Water Main, DI, 8 Inch, Tr Det G
  - 335 Ft Water Main, DI, 8 Inch, Tr Det G
  - 2 Ea Gate Valve and Box, 6 inch
  - 1 Ea Gate Valve and Box, 8 inch
  - 3 Ea Watermain Connection
  - 1 LS Temporary Watermain
  - 1 Ea Sanitary Sewer Crossing

- ROAD ITEMS THIS SHEET**
- 1520 Syd HMA Surface, Rem
  - 788 Cyd Excavation, Earth
  - 280 Cyd Subbase, CIP
  - 1520 Syd Aggregate Base, 8 inch
  - 170 Ton HMA, 4EML
  - 130 Ton HMA, 5EML

- WATER SERVICE ITEMS THIS SHEET**
- 174 Ft Water Service, 1 inch
  - 7 Ea Curb Stop & Box, 1 inch
  - 140 Ft Curb and Gutter, Rem
  - 59 Syd Sidewalk, Rem
  - 525 Sft Sidewalk, Conc, 4 Inch
  - 140 Ft Curb and Gutter, Conc, Det F4
  - 200 Syd Slope Restoration
  - Unk Ea Lead Service Line Replacement

- MISC PROJECT ITEMS**
- 1 LS Mobilization, Max
  - 1 LS Traffic Control
  - 50 Cyd Maintenance Gravel, LM
  - 4 Ea Erosion Control, Inlet Prot, Fabric Drop
  - 100 Ft Erosion Control, Silt Fence

CITY OF NEGAUNEE



319 West Case Street  
Negaunee, MI 49866

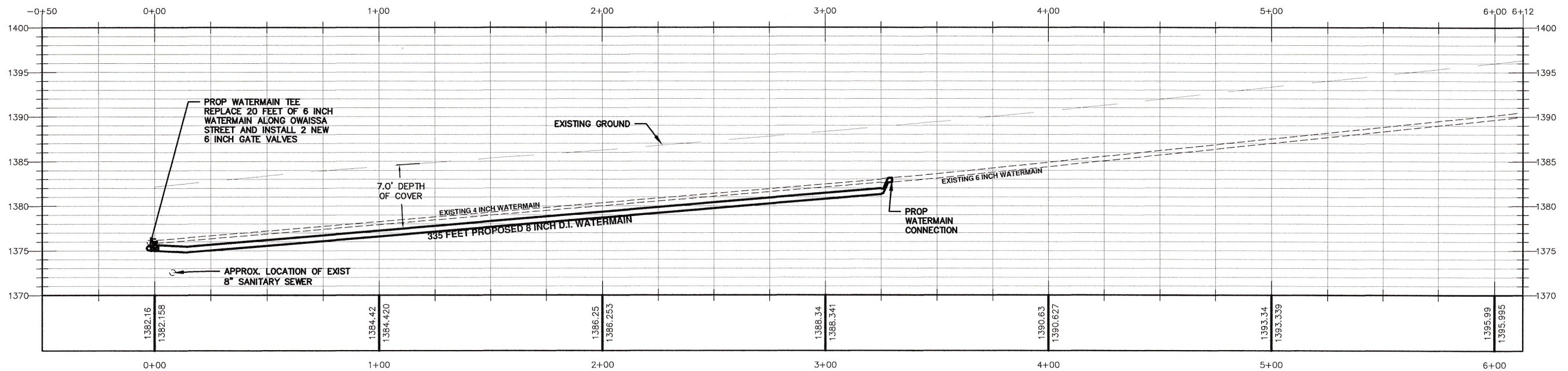
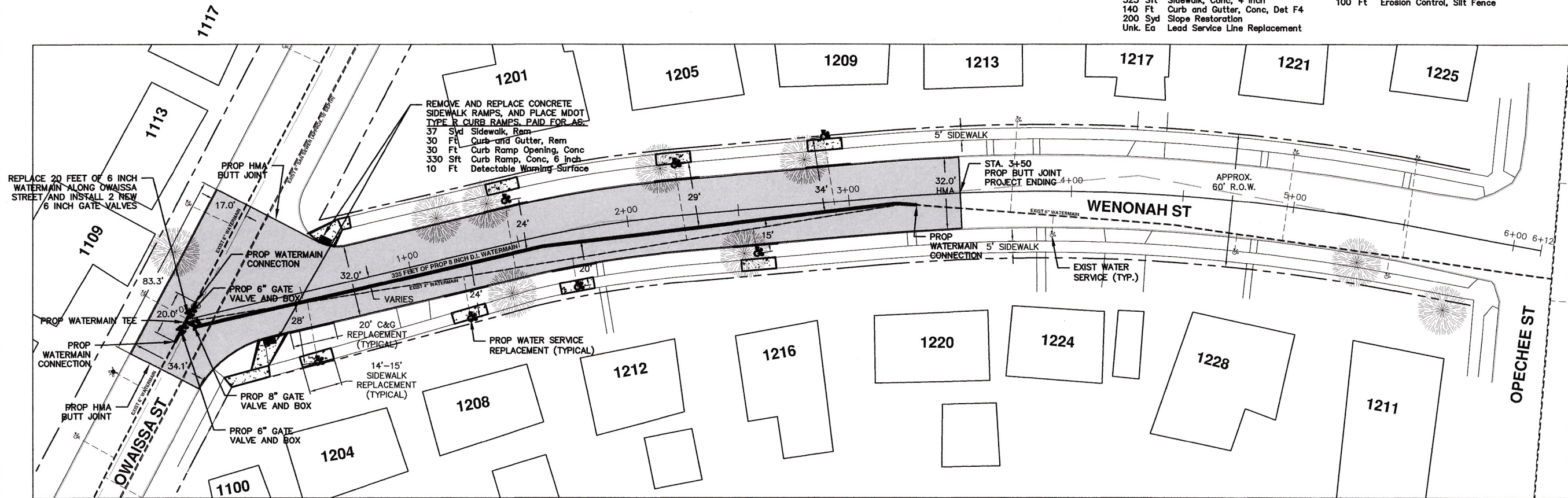
2023  
WENONAH WATER PROJECT  
NEGAUNEE, MI 49866

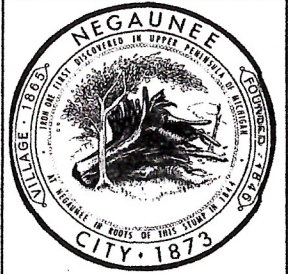
DATE ISSUED

PERMIT 01-18-2023

PLAN & PROFILE

3





319 West Case Street  
Negaunee, MI 49866

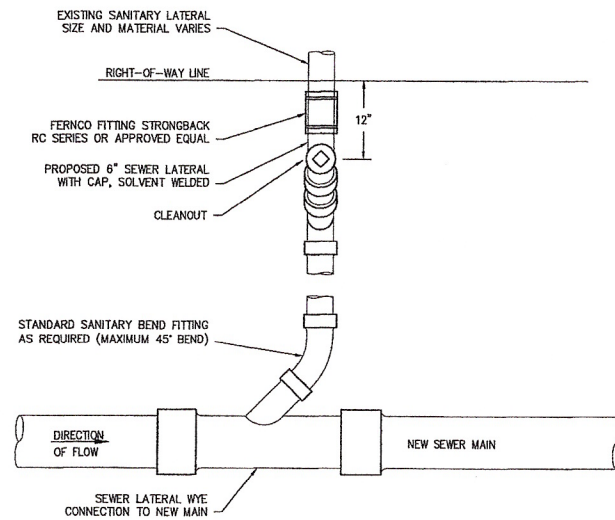
2023  
 WENONAH WATER PROJECT  
 NEGAUNEE, MI 49866

DATE ISSUED

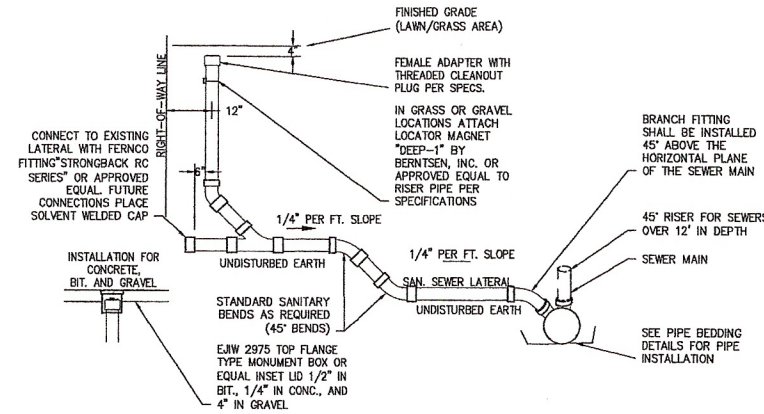
PERMIT 01-18-2023

DETAILS

4



**A4** PLAN VIEW OF SEWER LATERAL  
NOT TO SCALE

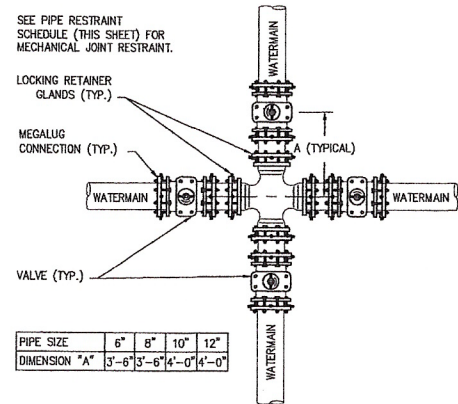


HORIZONTAL RUNS OF SANITARY LATERALS SHALL BE SLOPED AT 1/4" PER FOOT TOWARD THE SEWER MAIN UNLESS OTHERWISE SPECIFIED OR DIRECTED BY THE ENGINEER.

BACKFILLED TRENCH PER SPECIFICATIONS

IN CASES WHERE EXISTING BUILDING SEWER DEPTHS OR UTILITIES INTERFERE WITH THE INSTALLATION, THE WYE BRANCH MAY BE INSTALLED AT LESS THAN 45° (UPON APPROVAL OF THE ENGINEER) BUT NOT LESS THAN 1/4" PER FOOT ABOVE THE HORIZONTAL.

**A1** SANITARY SEWER LATERAL DETAIL  
NOT TO SCALE



PIPE SIZE	6"	8"	10"	12"
DIMENSION "A"	3'-6"	3'-6"	4'-0"	4'-0"

**A3** STANDARD VALVE LOCATION  
NOT TO SCALE

DEF. ANG. PIPE DIA.	LENGTH OF RESTRAINT REQUIRED* (FEET)								DESIGN STRENGTH OF RESTRAINT REND (KIPS)	
	22.5°	33.75°	45°	56.25°	67.5°	78.75°	90°	45°	90° OR TEE	
6"	3	6	11	16	23	29	37	2.0	5.0	
8"	4	8	15	22	31	41	50	3.0	9.0	
12"	6	13	22	33	45	59	73	6.0	20.0	
16"	8	16	28	42	58	77	95	11.0	36.0	

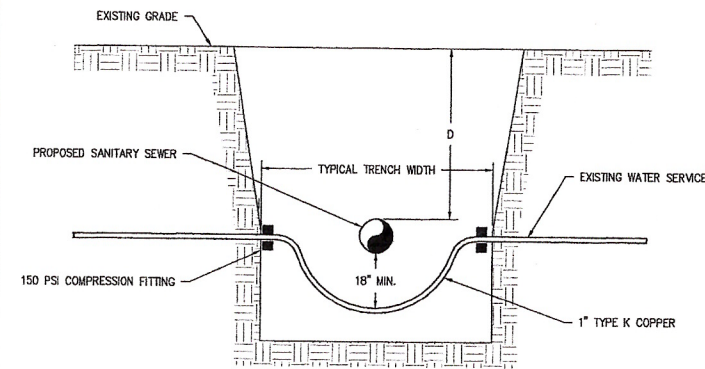
\*IN EACH DIRECTION FROM FITTING DEFLECTION POINT, EXCEPT IN CASES WHERE THERE IS NO CHANGE OF DIRECTION OF FLOW

PIPE RESTRAINT SCHEDULE FOR RETAINER GLANDS ON MECHANICAL JOINTS

GENERAL NOTES:

- WHENEVER SEWERS MUST CROSS UNDER WATERMANS, THE SEWER SHALL BE LAID AT SUCH AN ELEVATION THAT THE TOP OF THE SEWER IS AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATERMAIN. IF EXISTING CONDITIONS PREVENT VERTICAL SEPARATION AS DESCRIBED ABOVE, THE WATERMAIN SHALL BE RELOCATED PURSUANT TO THE DETAIL DRAWINGS.
- WATERMANS SHALL NOT BE RELOCATED OR INSTALLED BELOW SEWER LINES WITHOUT PRIOR APPROVAL OF THE ENGINEER. IF IT IS NECESSARY AS DETERMINED BY THE ENGINEER TO RELOCATE A WATERMAIN BELOW A SEWER LINE, THE SEWER SHALL BE CONSTRUCTED OF SLIP-ON OR MECHANICAL-JOINT DUCTILE IRON PIPE, OR PVC WATERMAIN PRESSURE PIPE. (SDR 18)

**A3** PIPE RESTRAINT SCHEDULE  
NOT TO SCALE



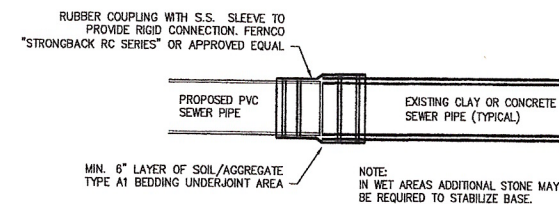
GENERAL NOTES:

MINIMUM SEWER AND WATERMAIN HORIZONTAL SEPARATION IS TEN FEET.

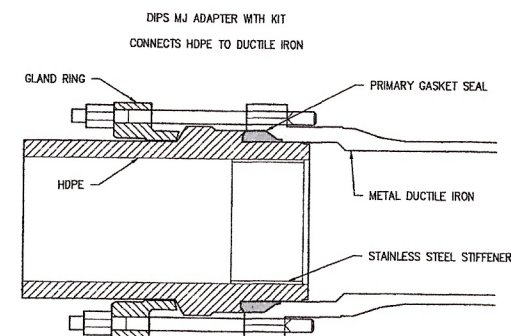
WHENEVER SEWERS MUST CROSS UNDER WATERMANS, THE SEWER SHALL BE LAID AT SUCH AN ELEVATION THAT THE TOP OF THE SEWER IS AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATERMAIN. IF EXISTING CONDITIONS PREVENT VERTICAL SEPARATION AS DESCRIBED ABOVE, THE WATERMAIN SHALL BE RELOCATED PURSUANT TO THE DETAIL DRAWINGS. WATER SERVICE LINES MAY BE RELOCATED OVER SEWER IF THE DEPTH (D) EXCEEDS 7 FEET.

WATERMANS SHALL NOT BE RELOCATED OR INSTALLED BELOW SEWER LINES WITHOUT PRIOR APPROVAL OF THE ENGINEER. IF IT IS NECESSARY AS DETERMINED BY THE ENGINEER TO RELOCATE A WATERMAIN BELOW A SEWER LINE, THE SEWER SHALL BE CONSTRUCTED OF SLIP-ON OR MECHANICAL-JOINT DUCTILE IRON PIPE, OR PVC PRESSURE PIPE WATERMAIN (SDR 18).

**D3** WATER SERVICE RELOCATION  
NOT TO SCALE

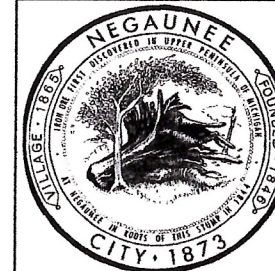


**B3** PIPE CONNECTION DETAIL  
NOT TO SCALE



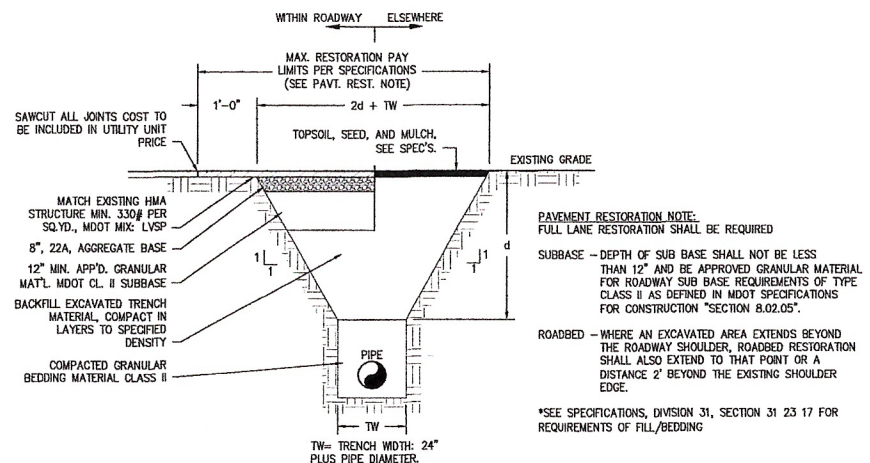
KIT SHALL INCLUDE HOPE ANCHOR FITTING, STANDARD RUBBER GASKET, EXTRA LENGTH T-BOLTS, INTERNAL STAINLESS STEEL STIFFENER, C-153 (2"-12") OR C-110 (1 1/4"-2 1/4") HEAVY BODY DUCTILE IRON GLAND RING.

**D1** TRANSITION DETAIL  
SCALE: NONE

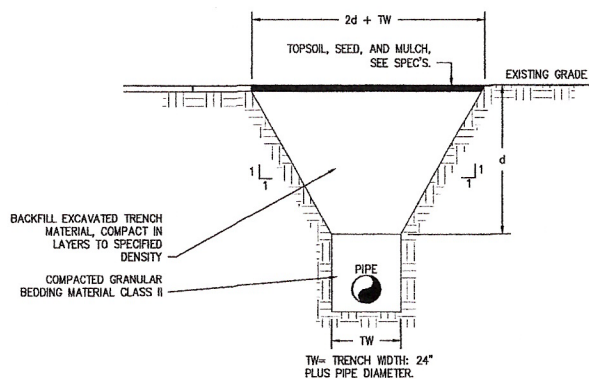


319 West Case Street  
Negaunee, MI 49866

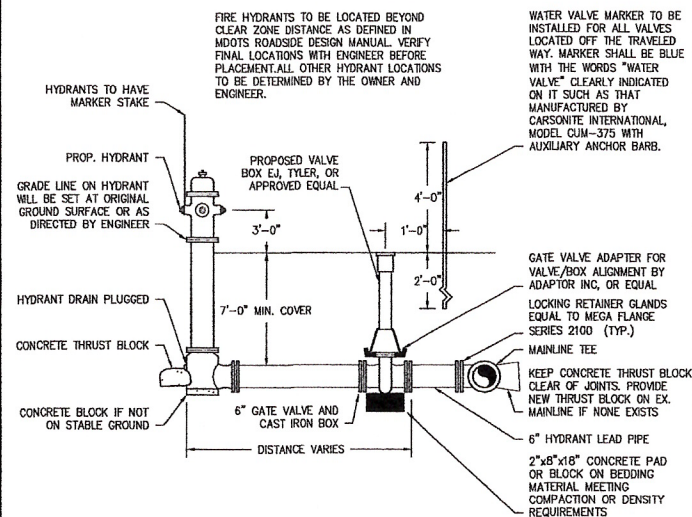
2023  
WENONAH WATER PROJECT  
NEGAUNEE, MI 49866



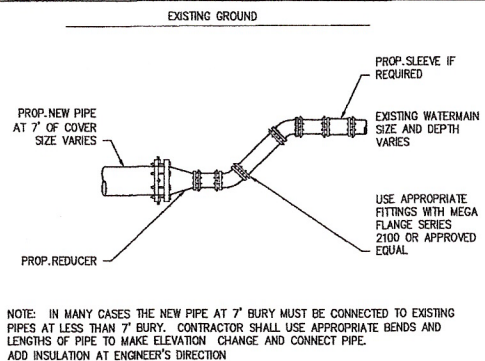
**D1 TYPICAL TRENCH DETAIL UNDER/INFLUENCE ROADBED**  
NOT TO SCALE



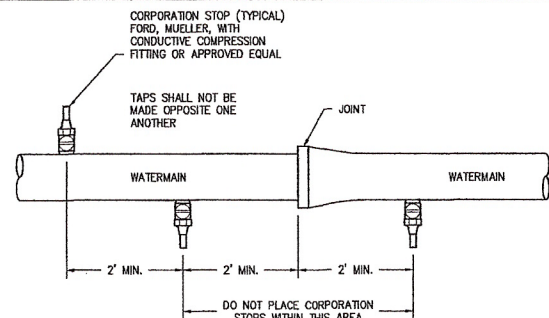
**D3 TYPICAL TRENCH DETAIL - NOT UNDER ROADBED**  
NOT TO SCALE



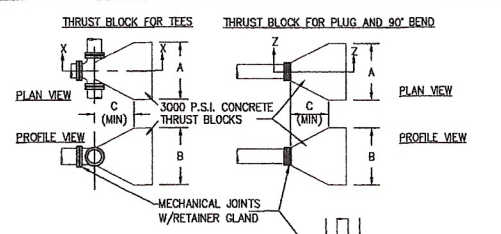
**A4 TYPICAL HYDRANT ASSEMBLY**  
NOT TO SCALE



**B1 TYPICAL CONNECTION DETAIL**  
NOT TO SCALE



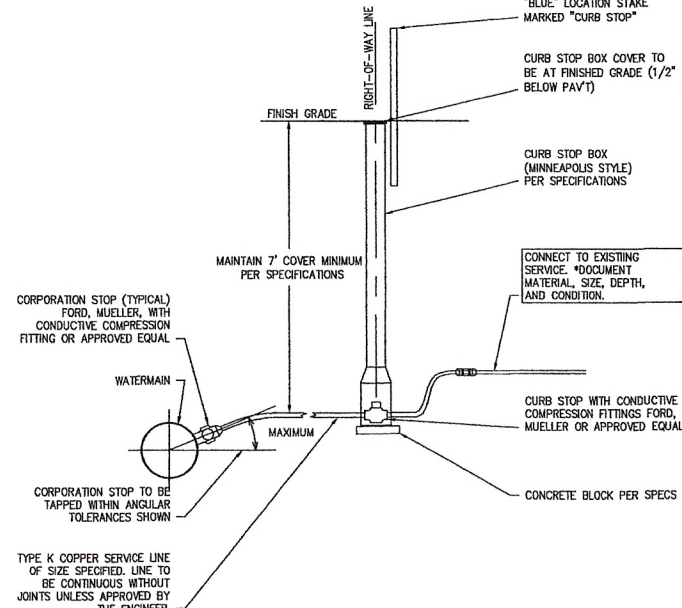
**B3 TAP SPACING ON WATER MAIN**  
NOT TO SCALE



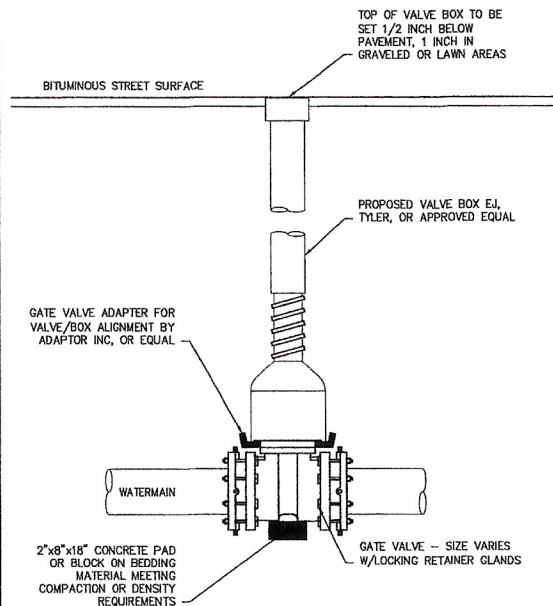
W.M. SIZE	MIN. THRUST BLOCK DIM. A (MIN)	MIN. THRUST BLOCK DIM. B (MIN)	MIN. THRUST BLOCK DIM. C (MIN)	BEARING SQ. FT.
6"	1'-6"	1'-6"	1'-0"	2.25
8"	2'-3"	2'-3"	1'-3"	5.1
10"	2'-6"	2'-6"	1'-6"	6.3
12"	3'-0"	3'-0"	1'-9"	9.0
16"	4'-0"	4'-0"	2'-10"	16.0

1. THE SHAPE OF THE BACK OF THE BLOCK MAY VARY AS LONG AS THE BEARING AREA IS NO LESS THAN THE AREA SHOWN IN THE TABLES AND THE POUR IS AGAINST FIRM UNDISTURBED EARTH.
2. JOINTS SHALL BE KEPT FREE OF CONCRETE AND A NON-ABRASIVE BARRIER APPROVED BY THE ENGINEER SHALL BE PLACED BETWEEN THE THRUST BLOCK AND ALL MECHANICAL JOINTS.
3. DIMENSIONS ARE BASED ON A SURGE PRESSURE OF 150 PSI AND SAFE BEARING LOADS OF 2 TONS PER SQ. FT. IN CLEAN DRY SAND.

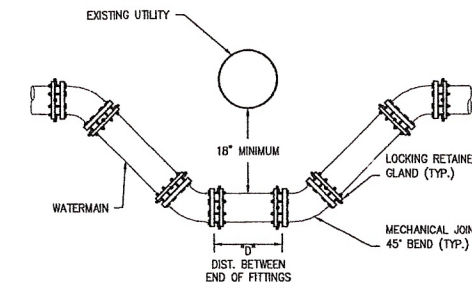
**A1 THRUST BLOCK DETAIL**  
NOT TO SCALE



**C5 TYPICAL SERVICE CONNECTION**  
NOT TO SCALE



**B2 TYPICAL VALVE BOX INSTALLATION**  
NOT TO SCALE



ALL JOINTS TO BE MADE UP USING MECHANICAL JOINT FITTING WITH LOCKING RETAINER GLANDS, EQUAL TO MEGA FLANGE 2100. THE ENGINEER MAY ALLOW OTHER TYPES OF JOINT RESTRAINTS IF CIRCUMSTANCES WARRANT.

MINIMUM 18" OF HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN WATER MAIN AND SEWER MAIN. IN AREAS WHERE THE WATER MAIN MUST BE INSTALLED ABOVE THE SEWER MAIN 18" OF HORIZONTAL SEPARATION IS STILL REQUIRED. INSULATION SHALL BE ADDED AS NEEDED TO PROVIDE THE ADEQUATE FROST PROTECTION.

SEE WATER STANDARD DETAIL. FOR MECHANICAL JOINT RESTRAINT SCHEDULE.

WATERMAIN DIA.	MINIMUM DIMENSION	I.D. EXISTING UTILITY			
		≤12"	≤24"	≤36"	≤48"
6"	D	13"	17"	22"	28"
8"	D	14"	14"	19"	25"
10"	D	14"	14"	16"	22"
12"	D	15"	15"	15"	19"
16"	D	15"	15"	15"	19"

**A2 WATER MAIN CROSSING DETAIL**  
NOT TO SCALE

DATE ISSUED

PERMIT 01-18-2023

DETAILS

5