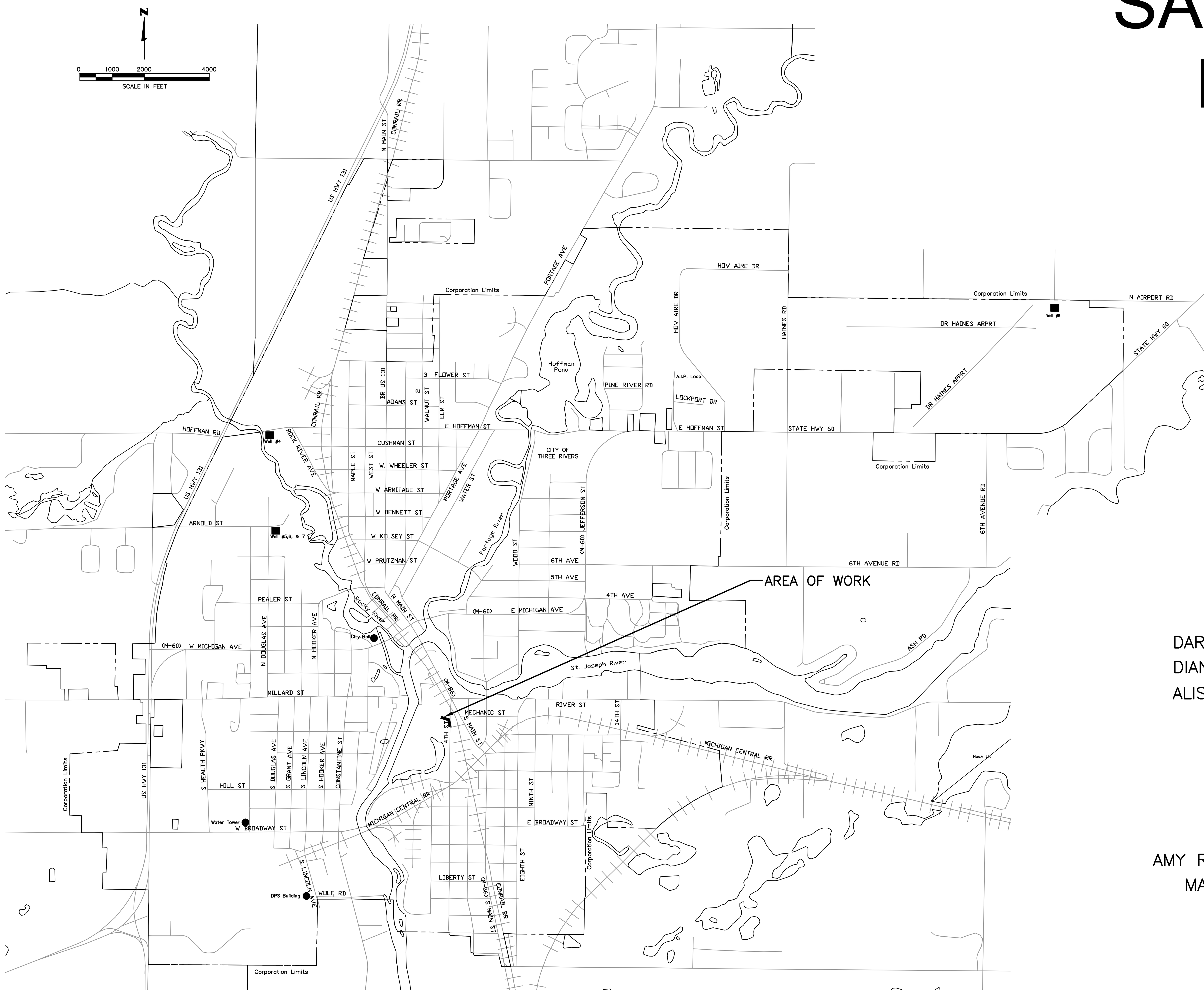
CITY OF THREE RIVERS, MICHIGAN

SANITARY SEWER RELOCATION

CONTRACT 13

2016



LOCATION MAP

THOMAS J. LOWRY – MAYOR

MEMBERS OF COMMISSION

DARYL L. GRIFFITH
DIANE HALEY–CLAY
ALISON HAIGH
CAROLYN McNARY
JARED HOFFMASTER
JANELL HART

JOSEPH A. BIPPUS – CITY MANAGER
AMY ROTH – DEPARTMENT OF PUBLIC SERVICES DIRECTOR
MARK GLESSNER – WATER SYSTEM SUPERINTENDENT

UTILITY OWNERS

WATER SANITARY SEWER LOCAL CITY ROADWAY	City of Three Rivers DPS Director 269–273–1845
LOCAL COUNTY ROADWAY	St. Joseph County Road Commission Chris Minger 269–467–6393
POWER	AEP (Indiana – Michigan Power) Rick Demars 269–506–9526
NATURAL GAS	SEMCO Energy Gas Company Mike Kessler 616–638–4893
TELEPHONE	Frontier Communications Scott Macfarlane 269–273–0383
CABLE	Comcast Ron Hofstra 269–506–1569

72 HOURS
(3 WORKING DAYS)
BEFORE YOU DIG
CALL MISS DIG
800-482-7171
(TOLL-FREE)

In Case of Emergency, Including A Complete Roadway Closure, Contractor Shall Contact Central Dispatch At 269–467–4195

Jones & Henry Engineers, Ltd.
www.jheng.com
Fluid Thinking.™

ISSUED FOR BID
SEPTEMBER 2016

STRUCTURAL LEGEND

- 6" Gravel Drive
- 4" Concrete Walk
- 6" Concrete Walk And Drive
- 8" Concrete Walk And Drive
- Asphalt Pavement
- Seeding
- Curb
- Truncated Domes
- ADA Sidewalk Replacement

REMOVAL LEGEND

- Removal

TOPOGRAPHY LEGEND

TOPOGRAHY LINES:

- Center Line
- Fence Line
- Property Line
- Permanent Easement
- Construction Easement

UTILITY LINES:

- Cable (Underground)*
- Electrical (Underground)*
- Gas Line
- Sanitary Sewer
- Signal (Underground)*
- Storm Sewer
- Telephone (Underground)*
- Water Line
- Proposed Water Line
- Large Diameter Lines (Any Type)

CONSTRUCTION LINES:

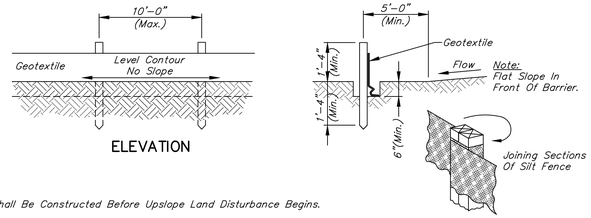
- Construction Limits

Alpha Designation Refers To Utility Type, Numerical Designation Refers To Pipe Nominal Diameter. Lines With No Numerical Designation Are Of Unknown Size.

* Aerial Lines, If Shown, Are Designated With Lower Case Letters

SYMBOLS:

- Sign
- Sanitary & Storm Manhole
- Water Manhole
- Power Pole
- Telephone Pole
- Guy Wire
- Light Pole
- FH, YH — Fire Hydrant Or Yard Hydrant
- Valve
- Gas Valve
- CO — Clean Out
- PB — Pole Box
- IP — Iron Pin (Or Labeled Post, Marker Etc.)
- Inlet or Catch Basin (Square)
- Inlet or Catch Basin (Round)
- B-1 — Soil Boring
- Tree
- Evergreen
- Bush
- MB — Mail Box
- WM — Water Meter
- Culvert
- CB — Curb Box
- Telephone Power Box
- Fence Post
- Proposed Water Manhole
- Control Point



ELEVATION

Notes:

1. Silt Fence Shall Be Constructed Before Upslope Land Disturbance Begins.
2. All Silt Fence Shall Be Placed As Close To The Contour As Possible So That Water Will Not Concentrate At Low Points In The Fence And So That Small Swales Or Depressions Which May Carry Small Concentrated Flows To The Silt Fence Are Dissipated Along Its Length.
3. To Prevent Water Ponded By The Silt Fence From Flowing Around The Ends, Each End Shall Be Constructed Upslope So That The Ends Are At A Higher Elevation.
4. Where Possible, Silt Fence Shall Be Placed On The Flattest Area Available.
5. Where Possible, Vegetation Shall Be Preserved For 5 Ft. (Or As Much As Possible) Upslope From The Silt Fence. If Vegetation Is Removed, It Shall Be Reestablished Within 7 Days From The Installation Of The Fence.
6. Soil Stockpiles Or Other Sources Of Sediment Shall Have Silt Fence Protection.
7. The Silt Fence Shall Be Placed In A Trench Cut A Minimum Of 6" Deep. The Trench Shall Be Cut With A Trencher, Cable Laying Machine, Or Other Suitable Device Which Will Ensure An Adequately Uniform Trench Depth.
8. The Silt Fence Shall Be Placed With The Stakes On The Down Slope Side Of The GEOTEXTILE And So That 8" Of Cloth Are Below The Ground Surface. Excess Material Shall Lay On The Bottom Of The 6" Deep Trench. The Trench Shall Be Back filled And Compacted.
9. Seams Between Sections Of Silt Fence Shall Be Overlapped With The End Stakes Of Each Section Wrapped Together Before Driving Into The Ground.
10. Maintenance-- Silt Fence Shall Allow Runoff To Pass Only As Diffuse Flow Through The GEOTEXTILE. If Runoff Over Tops The Silt Fence, Flows Under Or Around The Ends, Or In Any Other Way Becomes A Concentrated Flow, One Of The Following Shall Be Performed, As Appropriate:
    - A. The Layout Of The Silt Fence Shall Be Changed.
    - B. Accumulated Sediment Shall Be Removed.
    - C. Other Practices Shall Be Installed.

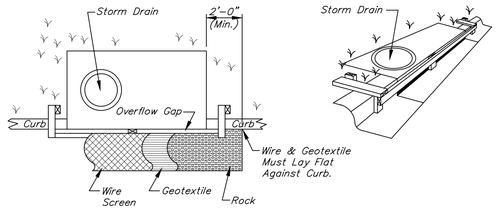
Criteria For Silt Fence Materials:

1. Fence Posts - The Length Shall Be A Minimum Of 32" Long. Wood Post Will Be 2" X 2" Hardwood Of Sound Quality. The Maximum Spacing Between Posts Shall Be 10 Ft.
2. Silt Fence Fabric (See Chart Below):

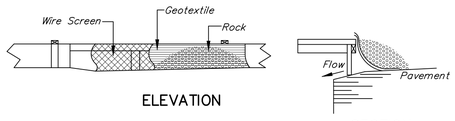
FABRIC PROPERTIES	VALUES	TEST METHOD
Grab Tensile Strength	90 Lb. Minimum	ASTM D 1682
Mullen Burst Strength	190 P.S.I. Minimum	ASTM D 3786
Slurry Flow Rate	0.3 Gal./Min./ft.² Max.	
Equivalent Opening Size	40-80	US Std. Sieve CW-02215
Ultraviolet Radiation Stability	90% Minimum	ASTM-G-26

SILT FENCE (SF)

NTS



PLAN



ELEVATION

SECTION

NOTES:

1. Inlet Protection Shall Be Constructed Either Before Upslope Land Disturbance Begins Or Before The Storm Drain Becomes Operational.
2. The Wooden Frame Is To Be Constructed Of 2x4 Construction Grade Lumber. The End Spacers Shall Be A Minimum Of 1 Ft. Beyond Both Ends Of The Throat Opening. The Anchors Shall Be Nailed To 2x4 Stakes Driven On The Opposite Side Of The Curb.
3. The Wire Mesh Shall Be Of Sufficient Strength To Support Fabric And Stone. It Shall Be A Continuous Piece With A Minimum Width Of 30" And 4 Ft. Longer Than The Throat Length Of The Inlet, 2 Ft. On Each Side.
4. GEOTEXTILE Cloth Shall Have An Equivalent Opening Size (Eos) Of 20-40 Sieve And Be Resistant To Sunlight. It Shall Be At Least The Same Size As The Wire Mesh
5. The Wire Mesh And GEOTEXTILE Cloth Shall Be Formed To The Concrete Gutter And Against The Face Of The Curb On Both Sides Of The Inlet And Securely Fastened To The 2x4 Frame.
6. 2" Stone Shall Be Placed Over The Wire Mesh And GEOTEXTILE In Such A Manner As To Prevent Water From Entering The Inlet Under Or Around The GEOTEXTILE Cloth.

CURB INLET PROTECTION

SHEET INDEX

DETOUR ROUTE AND LANE/ROADWAY CLOSURES

1. Access For Emergency Vehicles Must Be Provided At All Times
2. Access for Local Traffic and School Traffic Must Be Provided At All Times
3. The St. Joseph County Central Dispatch Shall Be Notified, Via Their Non-Emergency Number, Of All Lane Closures At Least 48 Business Hours Prior To The Closure. Contractor Shall Indicate The Closure Duration When Contacting Central Dispatch At (269) 467-4195.
4. If Complete Roadway Closure Is Required, Contractor Shall Contact The St. Joseph County Central Dispatch At Least 24 Business Hours Prior To The Closure. Contractor Shall Receive Approval Of The Closure From The St. Joseph County Central Dispatch Prior To Moving Forward With The Closure.

Note:
All Notes On The Drawings Bear The Same Importance. Some Notes And Dimensions Are Bold To Aid In Reading The Drawings In Areas Of High Graphic Density.

NOTE:
ACCURACY OF EXISTING ELEVATIONS AND DIMENSIONS IS NOT GUARANTEED. FIELD VERIFY BEFORE CONSTRUCTION.

THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE

CITY OF THREE RIVERS, MICHIGAN
SANITARY SEWER RELOCATION
CONTRACT 13

NO.	DATE	REVISIONS AFTER ISSUED FOR BID	BY
5			
4			
3			
2			
1			

STATUS:	DESIGNED	DRAWN	CHECKED
ISSUED FOR BID	CKK	WBL	PSR
DATE: SEPTEMBER 2016			

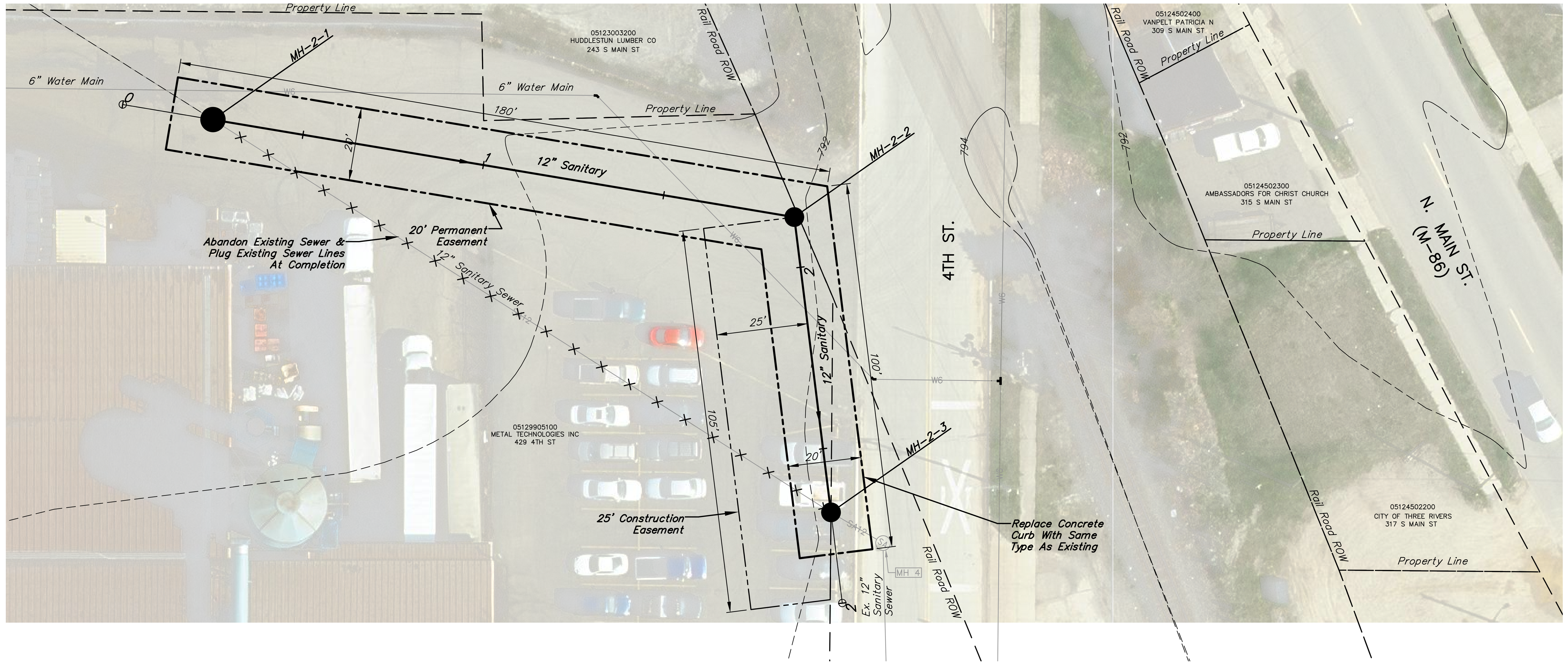
LEGENDS & INDEX

JOB NO. 487-7187.001
SCALE NONE

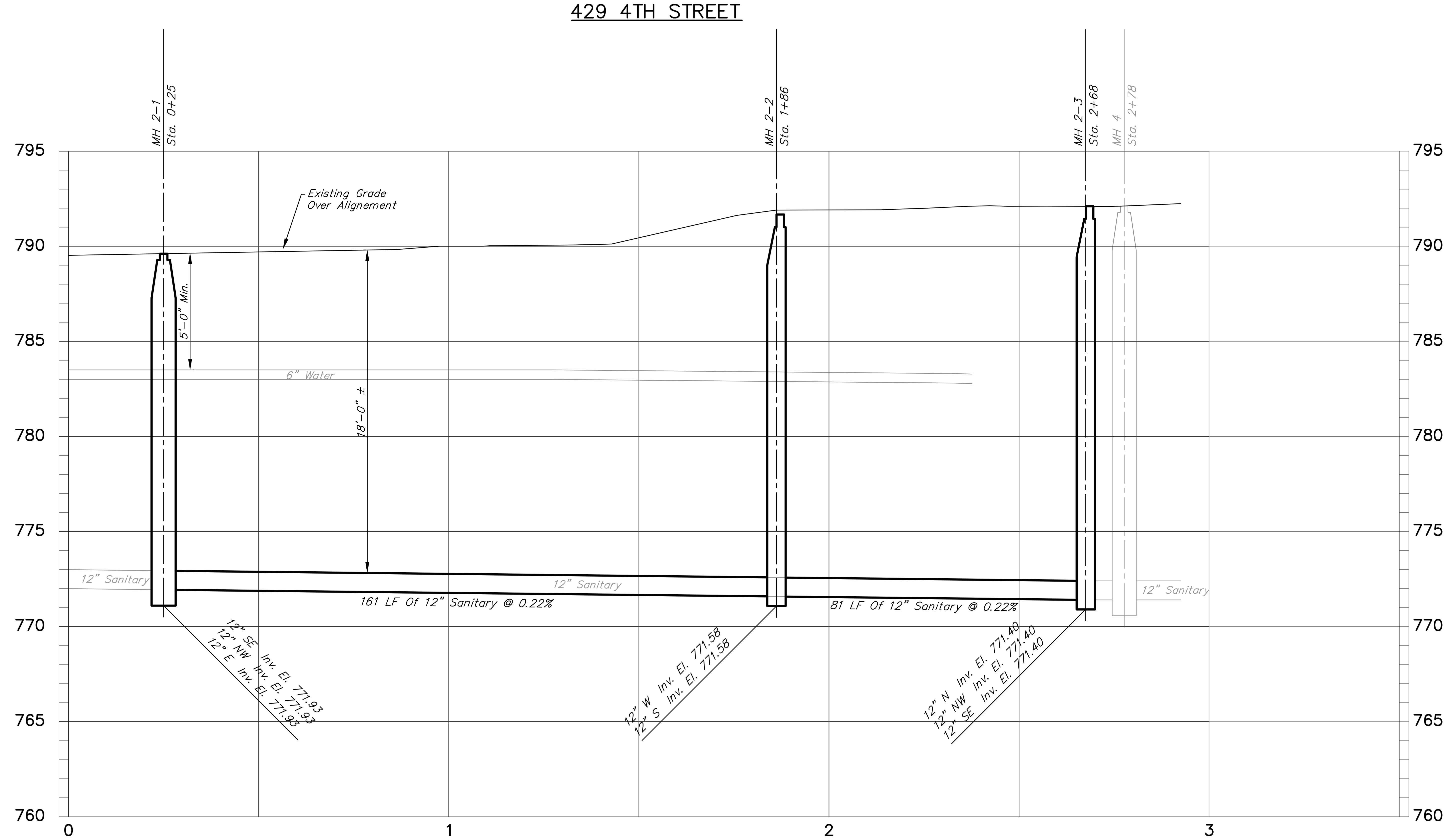
Jones & Henry Engineers, Ltd.
www.jheng.com
Fluid Thinking.™

SHEET NO. 1
1 OF 3

SHR-7187001LEG
09/20/16 01-V20



429 4TH STREET



Note:
Contractor Shall Field Verify All Utilities For Location And Grade Prior To Construction.

EXISTING STRUCTURE DATA		
Name	Type	Data
MH 4	Existing Sanitary Manhole	Casting El. 792.12 12" NW Inv. El. 771.40 12" S Inv. El. 771.40

MANHOLE SCHEDULE					
No.	Northing	Easting	Type	Casting El.	Pipe Data
2–1	162,731.42	12,779,503.76	Type I Manhole 4' Dia.	789.6	12" SE Inv. El. 771.93 12" NW Inv. El. 771.93 12" E Inv. El. 771.93
2–2	162,704.76	12,779,662.73	Type I Manhole 4' Dia.	791.7	12" W Inv. El. 771.58 12" S Inv. El. 771.58
2–3	162,624.04	12,779,672.77	Type I Manhole 4' Dia.	792.1	12" N Inv. El. 771.40 12" NW Inv. El. 771.40 12" SE Inv. El. 771.40

MANHOLE SCHEDULES

SHR-7187001PP01A-1
09/20/16 01-V20
XREF: 7187001SURVA

THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE

CITY OF THREE RIVERS, MICHIGAN
SANITARY SEWER RELOCATION
CONTRACT 13

NO.	DATE	REVISIONS AFTER ISSUED FOR BID	BY
5			
4			
3			
2			
1			

STATUS: PRELIMINARY	DESIGNED	DRAWN	CHECKED
DATE: 09/20/16	CKK	WBL	PSR

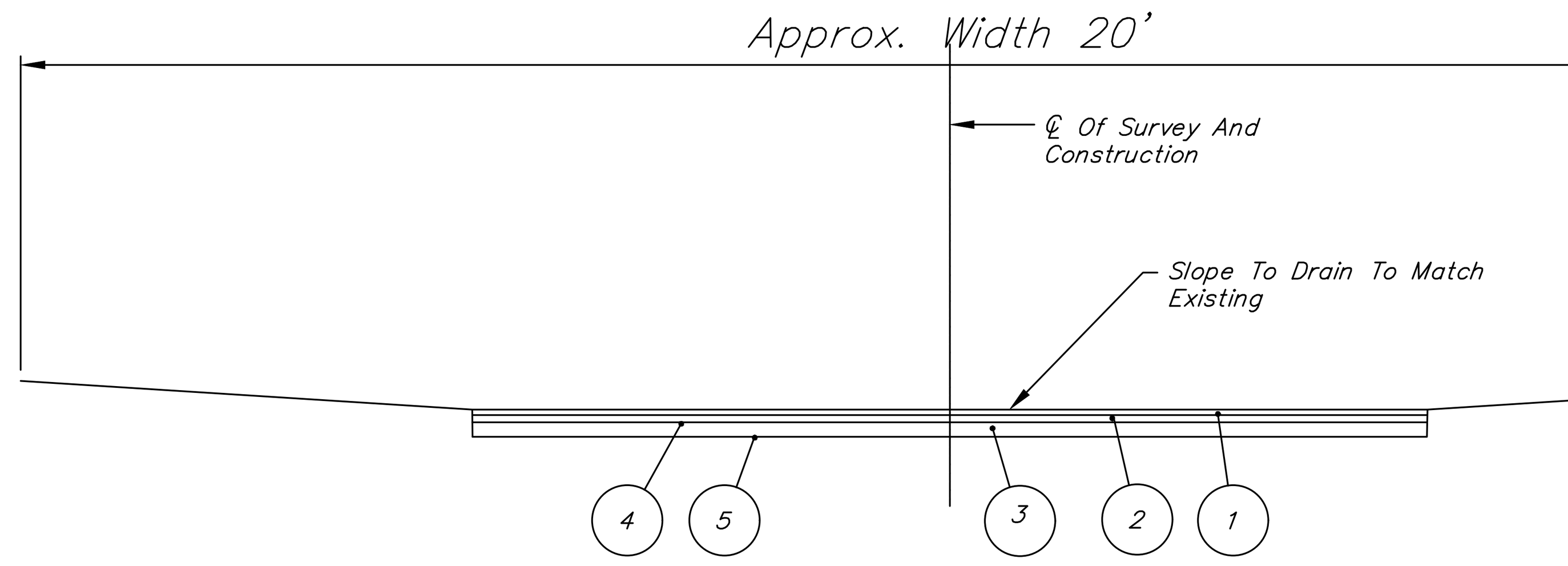
429 4TH STREET SANITARY SEWER RELOCATE PLAN AND PROFILE STA. 0+00 TO 3+00

JOB NO. 487–7187.001
SCALE 1"=20' HOR. 1"=4' VERT.

Jones & Henry Engineers, Ltd.
www.jheng.com
Fluid Thinking™

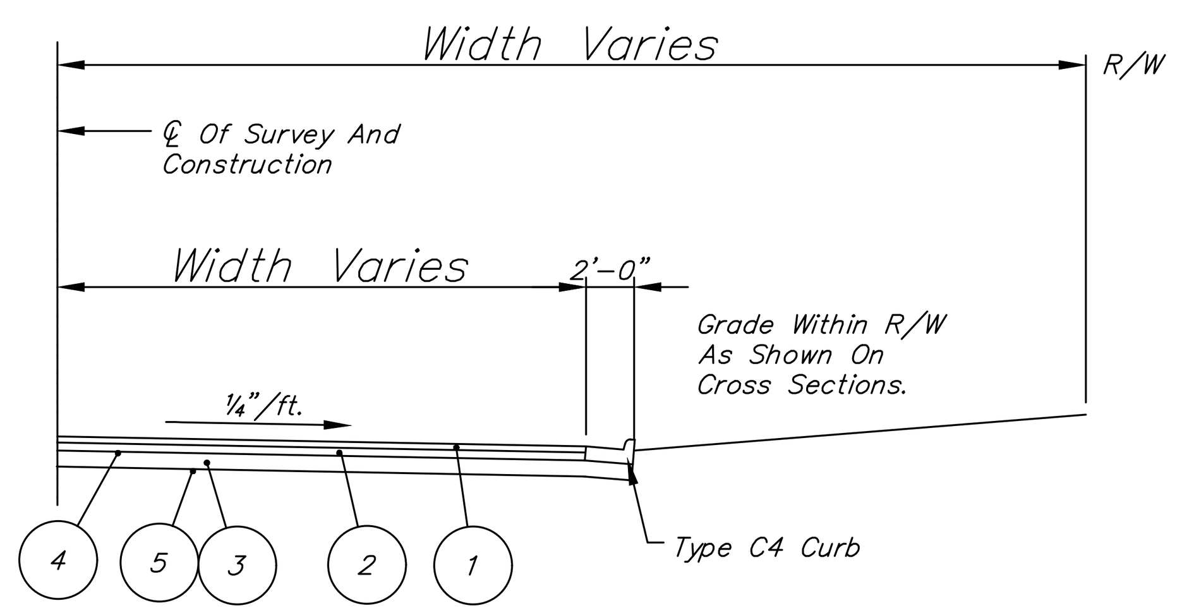
SHEET NO. 2

1. 2" Asphalt Concrete Surface Course -13AA
2. 2" Asphalt Concrete Leveling Course -13AA
3. 8" Aggregate Or Milled Asphalt Base
4. Prime Coat 0.40 Gal/Sq.Yd.
5. Compacted Subgrade

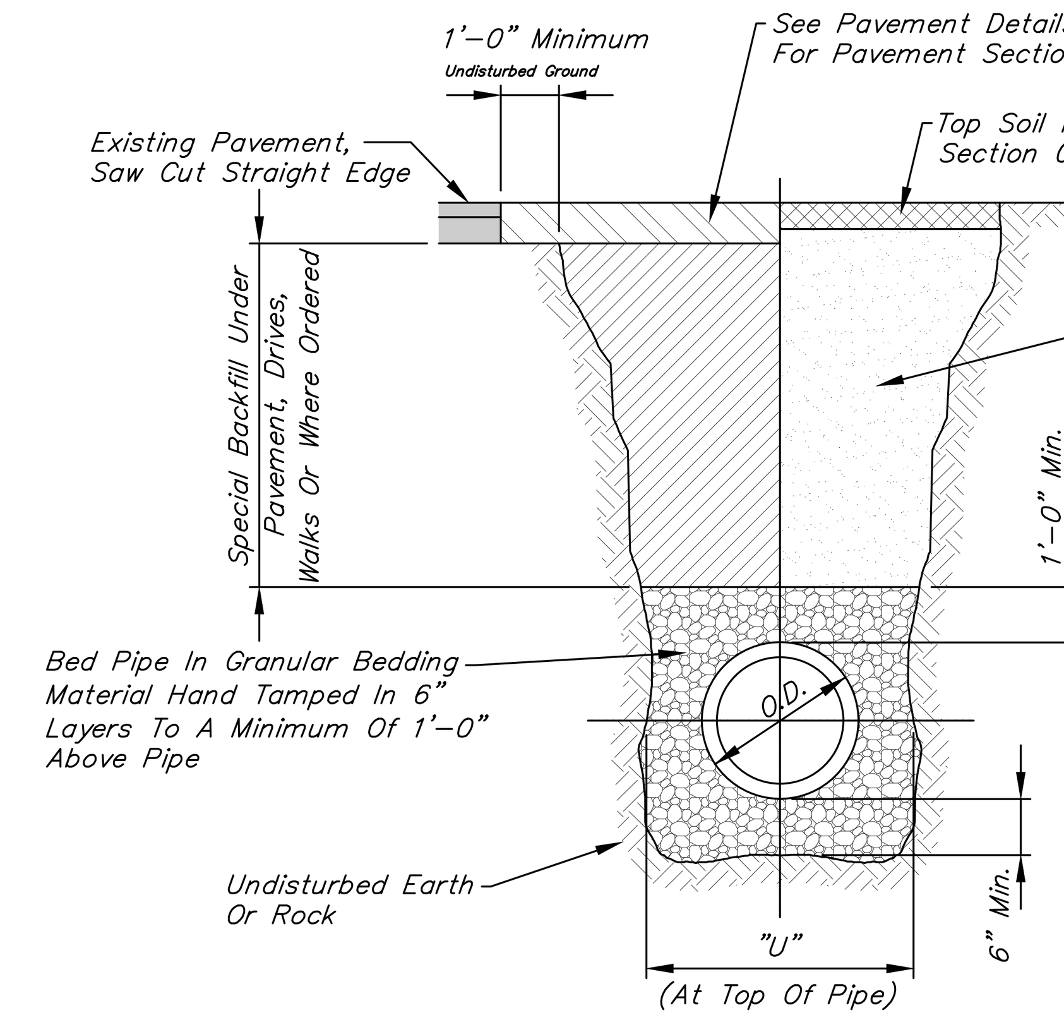


PARKING LOT PAVEMENT WIDTH REPLACEMENT SECTION
NTS

1. 4" Unreinforced Concrete Surface Course -13AA
2. 8" Asphalt Concrete Leveling Course -13AA In 2" Lifts
3. 4" Aggregate Or Milled Asphalt Base
4. Prime Coat 0.40 Gal/Sq.Yd.
5. Compacted Subgrade



ROADWAY PAVEMENT REPLACEMENT SECTION
NTS

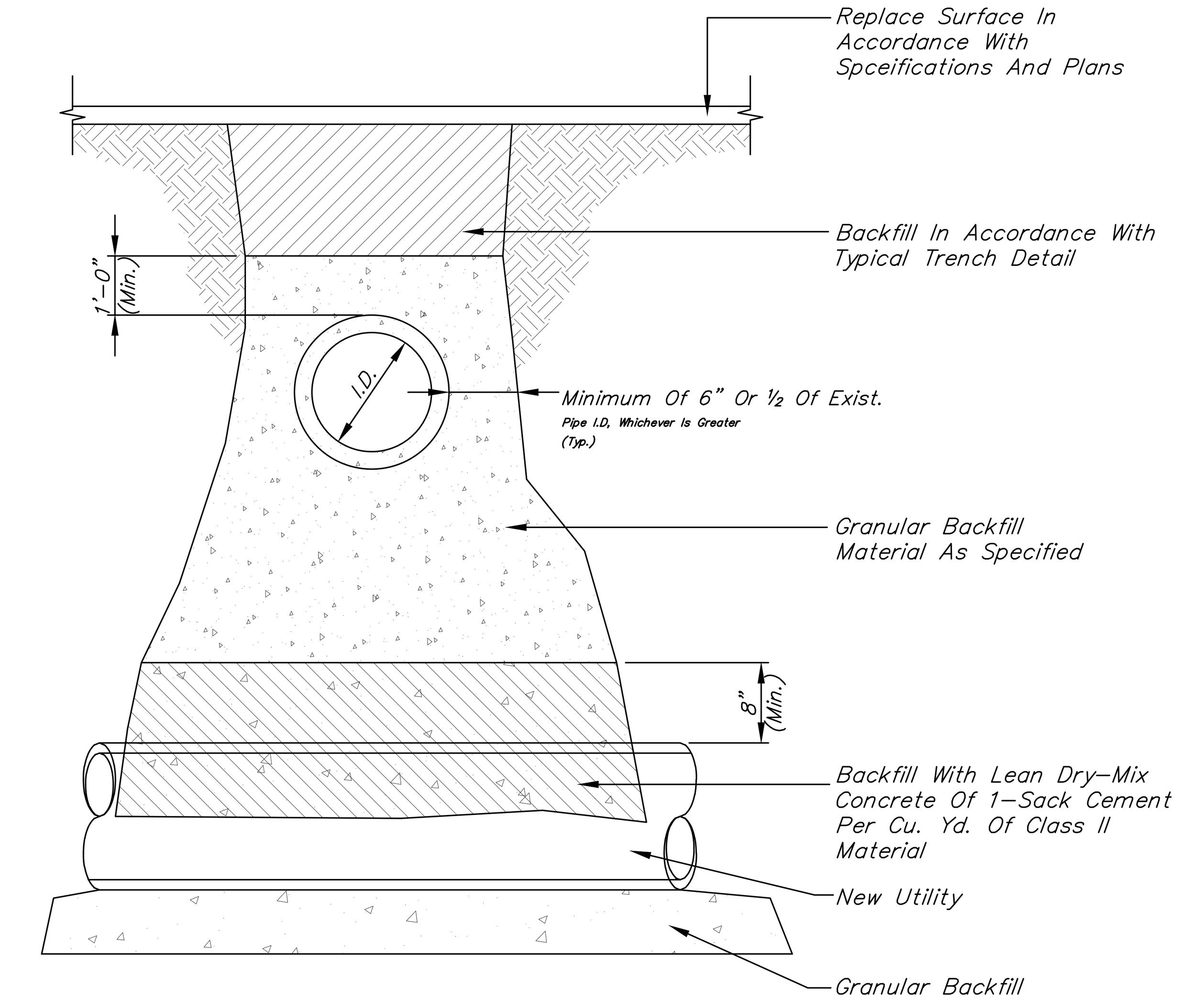


Note:
Under Existing Sewers, Water Lines, Gas Lines, Telephone Cable And Electrical Conduits, Backfill With Granular Bedding Material To The Centerline Of The Existing Utility Lines.

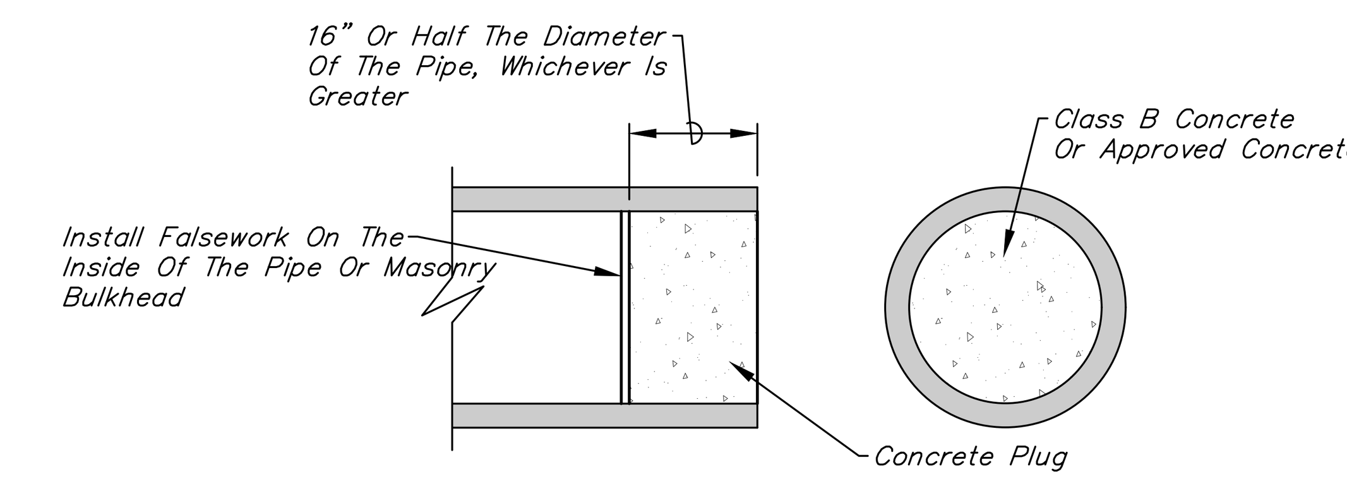
PIPE OD	"U"*
0" To 14"	OD+16"
14.1" To 28"	OD+20"
28.1" To 48"	OD+24"
48.1" To 70"	OD+30"

TRENCH SCHEDULE
* Note:
"U" Is The Minimum Width For Flexible Pipes In Accordance With ASTM D-2321 And D-2774.

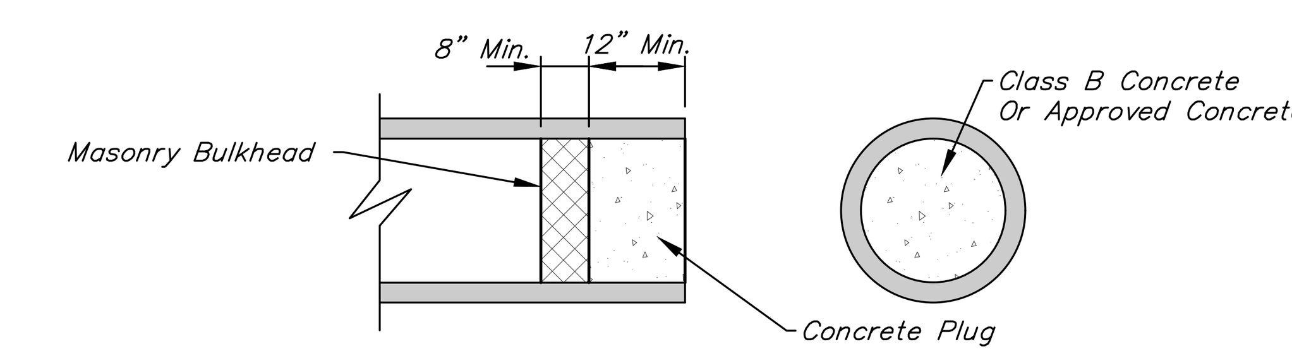
TRENCH DETAIL FOR FLEXIBLE PIPE
NTS



UTILITY CROSSING DETAIL
NTS

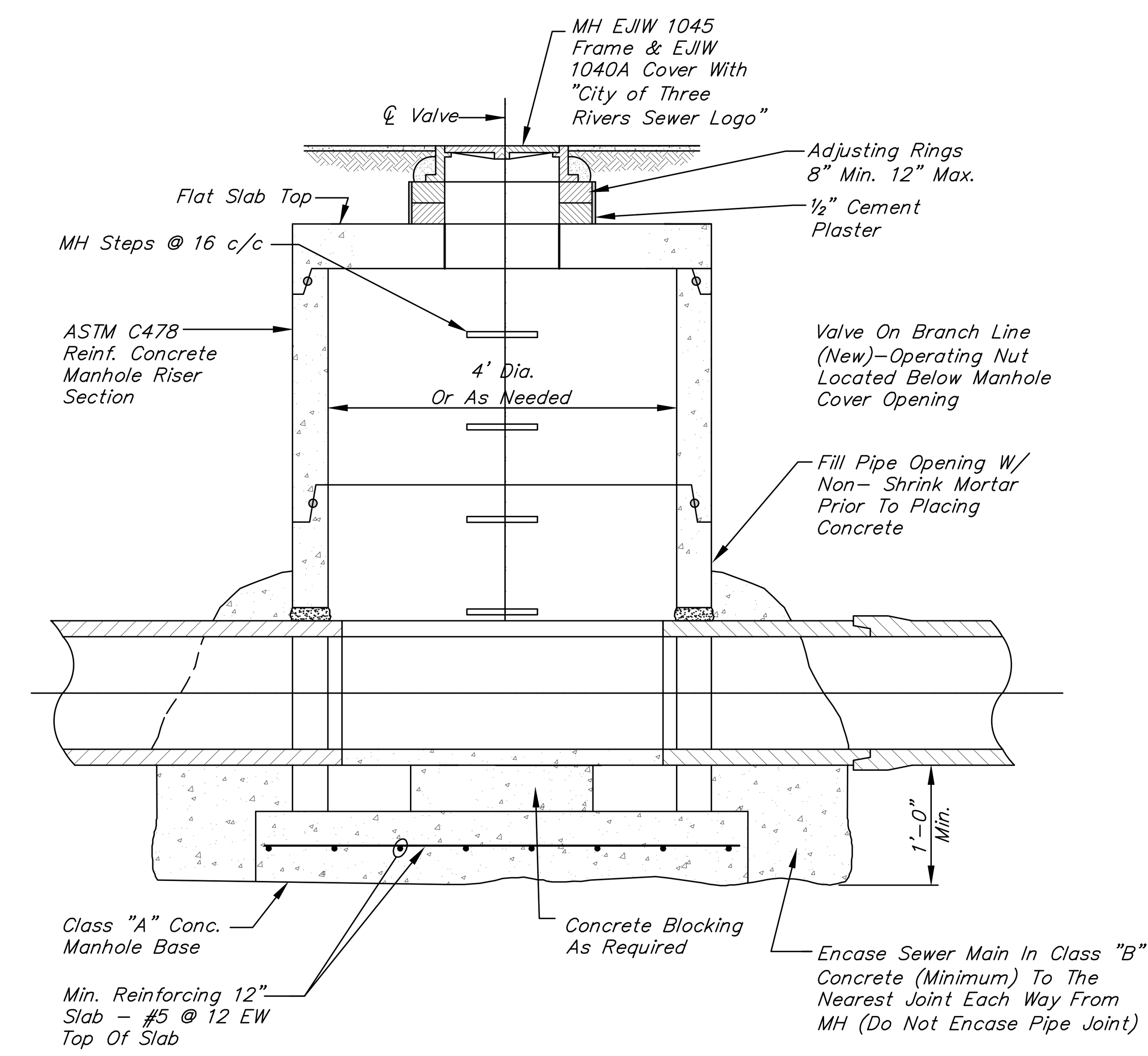


SEWERS OVER 18" DIAMETER



SEWERS 18" AND SMALLER

STANDARD SEWER PLUGS
(For Sewers To Be Abandoned) ½"=1'-0"

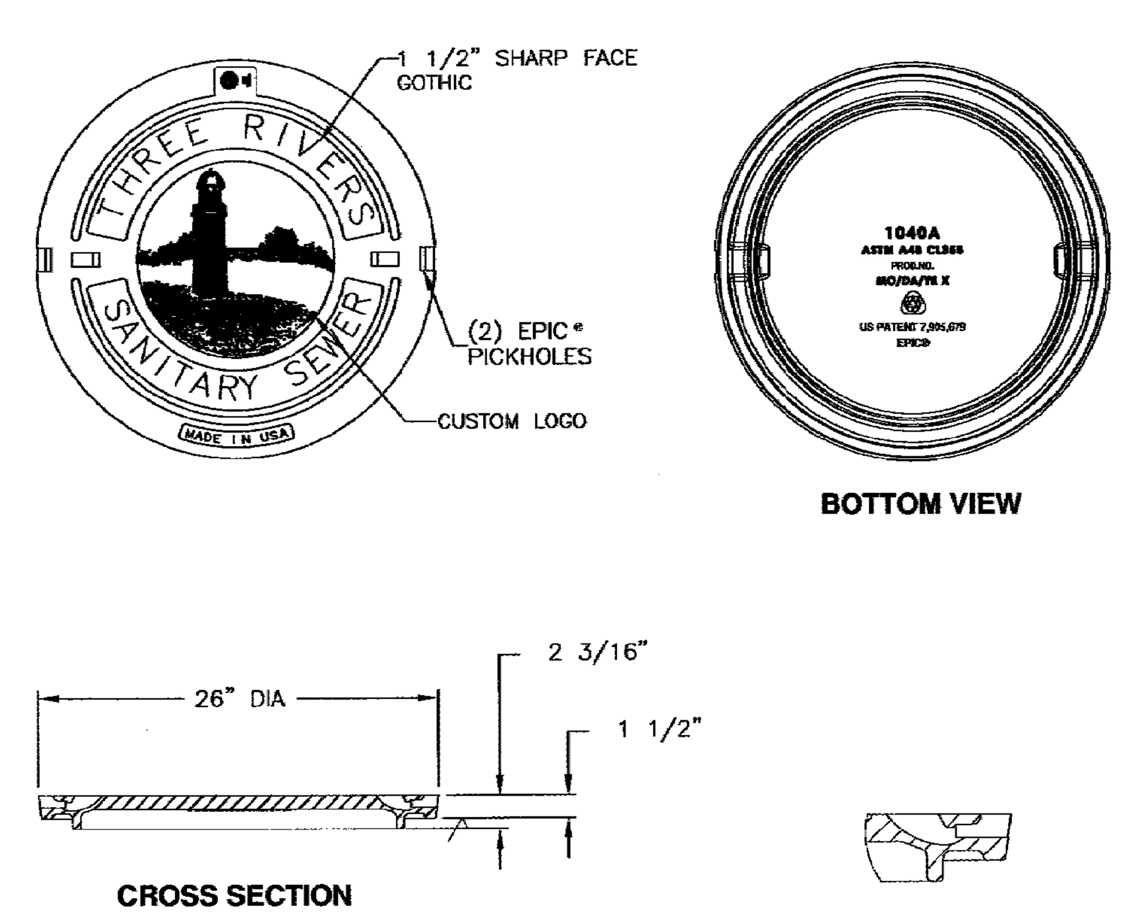


DOGHOUSE MANHOLE
NTS

Note:
Xypex Water Proofing Additive Is To Be Added To A Concrete Product In The Production Of The Precast Manholes.

1040A Cover

ej



Product Number
00104054
Design Features
-Materials
Gray Iron
-Design Load
Heavy Duty
-Open Area
-Coating
Dipped
-√ Designates Machined Surface

Certification
-ASTM A48
-Country of Origin:USA

Drawing Revision
Designer: MAH
Revised By:

Disclaimer

Contact
800 626 4653
ejco.com

THIS LINE SCALES 1" WHEN PLOTTED TO NOTED SCALE

CITY OF THREE RIVERS, MICHIGAN
SANITARY SEWER RELOCATION
CONTRACT 13

NO.	DATE	REVISIONS AFTER ISSUED FOR BID	BY
5			
4			
3			
2			
1			

STATUS:	ISSUED FOR BID	DESIGNED	DRAWN	CHECKED
DATE:	SEPTEMBER 2016	CKK	WBL	PSR

MISCELLANEOUS DETAILS

JOB NO. 487-7187.001
SCALE AS NOTED

Jones & Henry Engineers, Ltd.
www.jheng.com
Fluid Thinking.

SHEET NO. 3
3 of 3