

# Construction Plans For MITCHELL DRIVE WATER AND SEWER IMPROVEMENTS

## Village of Elk Rapids - Antrim County - Michigan

### Sections 20 & 21, Township 29N, Range 09W

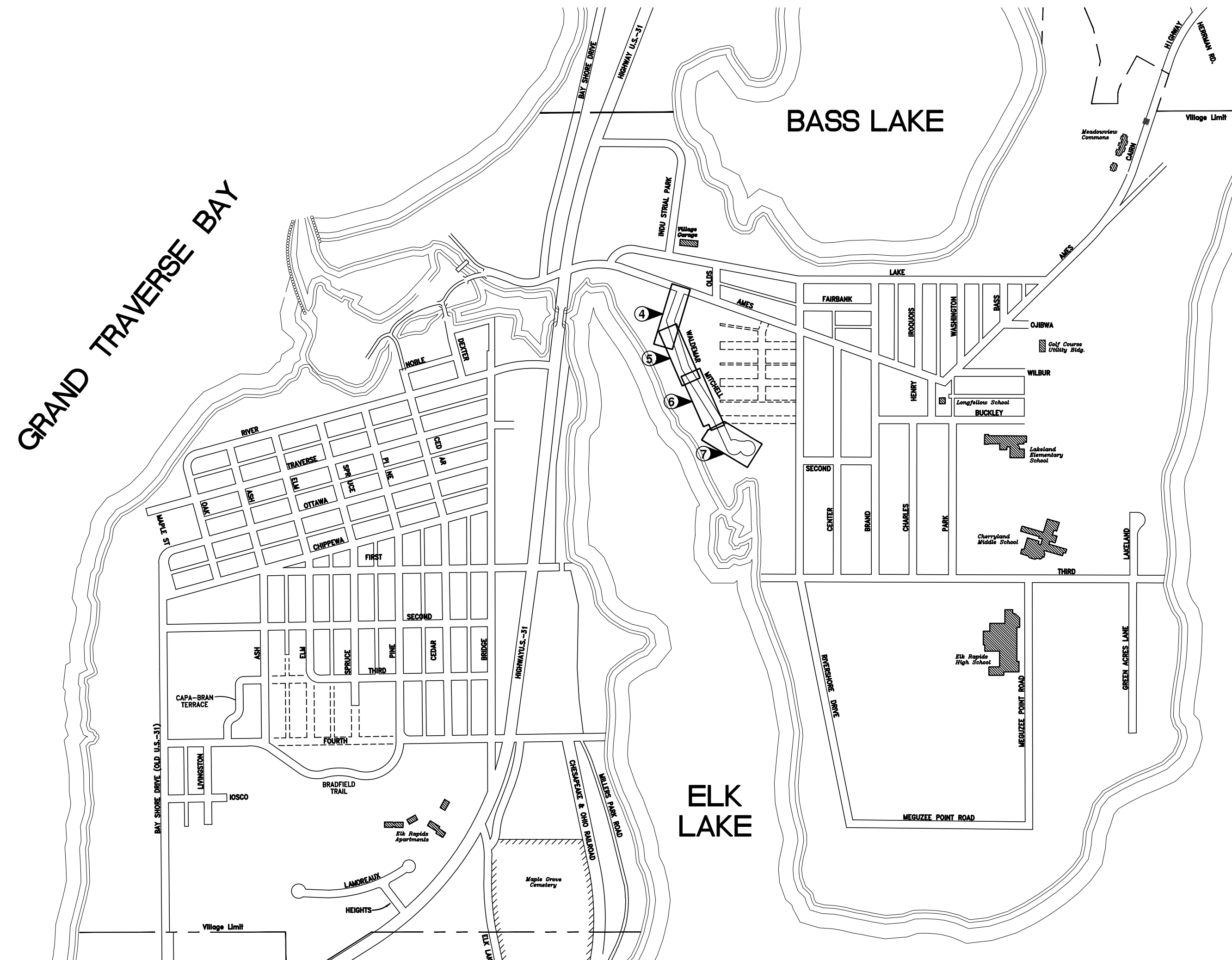
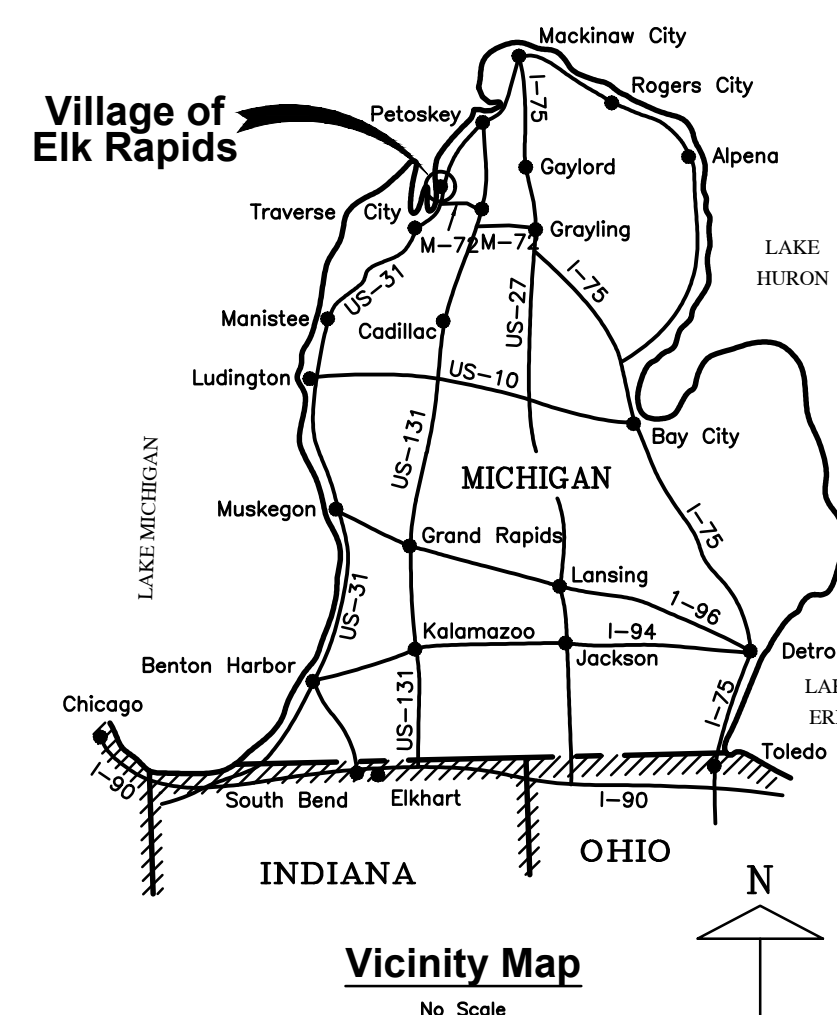
#### Owner

VILLAGE OF ELK RAPIDS  
MANAGER: John B. Matthews  
P.O. BOX 398  
315 BRIDGE STREET  
ELK RAPIDS, MICHIGAN 49629  
(231) 264-9971 - (231) 264-9274  
vllg398@elkrapids.org



#### Engineer

GOSLING CZUBAK  
ENGINEERING SCIENCES, INC.  
1280 BUSINESS PARK DRIVE  
TRAVERSE CITY, MICHIGAN 49686-8607  
(231) 946-9191 - (800) 968-1062  
Fax : (231) 941-4603  
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Village of Elk Rapids  
Site Location Map

SCALE: 1" = 600'

#### PUBLIC UTILITIES

THE EXISTING UTILITIES LISTED BELOW AND SHOWN ON THESE PLANS REPRESENT THE BEST INFORMATION AVAILABLE. THIS INFORMATION DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO BE SATISFIED AS TO ITS ACCURACY AND THE LOCATION OF EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY "MISS DIG" (1-800-482-7171) THREE WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.

#### DTE ENERGY COMPANY GAS DISTRIBUTION

MR. MATT LOGAN  
1294 NORTH U.S. 31  
PETOSKEY, MI 49770  
231-258-3785

#### DTE ENERGY COMPANY HIGH PRESSURE GAS TRANSMISSION

MR. SCOTT D. STRINGER  
250 MICHCON LN.,  
KALKASKA, MI 49646  
231-499-7648

#### CHARTER COMMUNICATIONS VILLAGE OF ELK RAPIDS DPW

MR. DAN FOX  
701 S. AIRPORT RD.  
TRAVERSE CITY, MI 49686  
231-929-7012 EXT. 102

#### CONSUMERS ENERGY

MS. AMANDA HALL  
821 HASTINGS  
TRAVERSE CITY, MI 49686  
231-929-6244

MR. ALEX PRAY  
315 BRIDGE STREET  
P.O. BOX 398  
ELK RAPIDS, MI 49629  
231-264-9971

#### AT&T

MS. KATHY DOHM-BIESER  
142 E. STATE STREET  
TRAVERSE CITY, MI 49684  
231-941-2707

#### SHEET LIST

- 1 COVER
- 2 GENERAL AND SESC NOTES
- 3 PAVEMENT DEMOLITION PLAN
- 4 STA. 0+00 TO STA. 0+400
- 5 STA. 4+00 TO STA. 8+00
- 6 STA. 8+00 TO STA. 13+00
- 7 STA. 13+00 TO STA. 17+21
- 8 DETAILS 1
- 9 DETAILS 2
- 10 DETAILS 3



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ORIGINAL SHEET SIZE IS 22x34 - HALF SCALE SHEET IS 11x17

MITCHELL DR. WATER AND SEWER IMPROVEMENTS

Issue Date  
2/21/2024

Project No.  
202115002

Sheet

1

CIVIL ENGINEERING  
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P:\2021\15002\01\CAD\CHARTER\202115002\_101\_COVER.dwg 101\_COVER.dwg 2/21/2024 12:29 PM. Plotted by: Tim Kozminski 2/21/2024 1:01 PM

PROPOSED FEATURES LEGEND

- Proposed sanitary cleanout, Proposed sanitary structure, Proposed sanitary line, Proposed sanitary forcemain, Proposed sanitary service, Proposed sanitary shut off valve, Proposed water line, Proposed water hydrant, Proposed water system valve, Proposed asphalt removal, Proposed asphalt

SITE PLAN NOTES

- 1. DESIGN SUBJECT TO VERIFICATION OF SITE CONDITIONS. 2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL PUBLIC AND PRIVATE UTILITY LOCATIONS. 3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY ALL PERTINENT VERTICAL CONTROL DATA. 4. INSTALL SESC MEASURES AS FIRST STEP BEFORE ANY CONSTRUCTION ACTIVITIES BEGIN. 5. ALL TOPSOIL SHALL BE STRIPPED FROM AREAS TO BE OCCUPIED BY FILL, STRUCTURES, OR IMPROVED SURFACES. 6. ALL DISTURBED AREAS SHALL BE TOPSOILED, SEEDED, FERTILIZED, AND MULCHED. 7. ANY AREAS UTILIZED BY CONTRACTOR FOR MATERIAL LAYDOWN SHALL BE RESTORED WITH TOPSOIL, SEED, FERTILIZER, AND MULCH. 8. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF SESC PERMIT. 9. PAVEMENT STRIPING SHALL MEET PROJECT SPECIFICATIONS.

SITE UTILITY NOTES

- 1. WATER AND SEWER IMPROVEMENTS TO MEET CURRENT VILLAGE OF ELK RAPIDS, PLUMBING, AND MECHANICAL CODE REQUIREMENTS. 2. MAINTAIN 10 FEET OF HORIZONTAL AND 18 INCH OF VERTICAL CLEARANCE BETWEEN WATER AND SEWER. 3. CONTRACTOR TO PERFORM ALL CHLORINATION AND DISINFECTION PROCEDURES ON THE NEW WATER SYSTEM TO ALL OUTLET LOCATIONS. 4. CONTRACTOR TO COORDINATE FORCEMAIN SERVICE LOCATION INSTALLATIONS WITH THE VILLAGE AND INDIVIDUAL PROPERTY OWNERS. 5. SANITARY SEWER GRAVITY - MINIMUM COVER ON ALL BURIED SEWER LINES, 6'-0" UNLESS OTHERWISE NOTED SERVICES. 6. WATER - MINIMUM COVER ON ALL BURIED WATER LINES, 6'-0" UNLESS OTHERWISE NOTED

SOIL BORING LEGEND

- Paving, Fill, No description, Poorly graded sand, Poorly graded clayey silty sand, Ground water level

SOIL EROSION & SEDIMENTATION CONTROL NOTES

- 1. ALL WORK SHALL COMPLY WITH THE APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL (SESC) RULES AND REGULATIONS... 2. SOIL EROSION AND SEDIMENTATION CONTROL SHALL PROTECT AGAINST LOSS OF SOIL BY THE ACTION OF WATER, ICE, AND WIND. 3. THE CONTRACTOR IS REQUIRED TO FOLLOW THE CONDITIONS OUTLINED IN THE SOIL EROSION AND SEDIMENTATION CONTROL PERMIT. 4. THE CONTRACTOR SHALL IMPLEMENT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED BY THE PROJECT'S SESC PLAN... 5. BASIC PRINCIPLES OF THE SOIL EROSION AND SEDIMENTATION CONTROL PLAN ARE AS FOLLOWS: 6. THE CONTRACTOR SHALL INSTALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES PRIOR TO OR UPON COMMENCEMENT TO EARTHWORK ACTIVITIES. 7. THE CONTRACTOR WILL PERFORM SWEEPING AS NEEDED TO REMOVE ANY SEDIMENT TRACKED OFF SITE. 8. THE CONTRACTOR WILL PERFORM DUST CONTROL AS NEEDED BASED ON SITE CONDITIONS. 9. DISTURBED AREAS THAT WILL REMAIN IDLE DURING CONSTRUCTION MUST BE TEMPORARILY STABILIZED, INCLUDING SOIL STOCKPILES, USING DTMB SESC BEST MANAGEMENT PRACTICES. 10. ALL DISTURBED SURFACE AREAS (INCLUDING UTILITY TRENCHES) SHALL BE TEMPORARILY GRADED AND/OR DITCHED TO DIRECT WATER RUNOFF FROM SUCH AREAS TO SEDIMENTATION CONTROL DEVICES WHICH WILL PREVENT DISTURBING ERODED WATER CARRYING SOIL FROM ENTERING A WATERCOURSE, SEWER, OR ADJACENT LANDS...

DTMB SESC KEY LEGEND

Table with 4 columns: Code (E5, E6, E9, E8, SS1, SS8), Measure Name (DUST CONTROL, MULCH, MULCH BLANKETS, PERMANENT SEEDING, SILT FENCE, STORM INLET PROTECTION), Image, and Description.

□ DENOTES PERMANENT MEASURE ○ DENOTES TEMPORARY MEASURE

TEMPORARY SANITARY SERVICE

- 1. PROVIDE TEMPORARY SANITARY FORCE MAIN SERVICE TO CUSTOMERS SOUTH OF STATION 12+50. 2. MINIMUM FORCE MAIN SIZE 2-INCH ID. 3. TEMPORARY SANITARY SERVICE PIPING TO MEET MINIMUM MATERIAL SPECIFICATIONS. 4. MAINTAIN CONTINUOUS ACCESS TO PROPERTY OWNERS HOMES AND BUSINESSES. 5. CUSTOMERS IDENTIFIED FOR TEMPORARY SERVICE INCLUDE THE FOLLOWING ADDRESSES: 5.1. 126 MITCHELL 5.2. 130 MITCHELL 5.3. 131 MITCHELL 5.4. 132 MITCHELL 5.5. 134 MITCHELL 5.6. 136 MITCHELL 5.7. 138 MITCHELL 5.8. 153 MITCHELL 6. COORDINATE TEMPORARY SERVICE CONNECTIONS WITH SEWER CUSTOMERS. 7. TEMPORARY SEWER SERVICE TO BE USED ONLY WHEN TEMPERATURES ARE ABOVE FREEZING. PERMANENT SEWER TO BE INSTALLED AND ALL SERVICES CONNECTED BEFORE FREEZING TEMPERATURES ENCOUNTERED.

DEWATERING

- 1. DEWATERING SYSTEM SHALL BE CAPABLE OF LOWERING THE STATIC WATER TABLE A MINIMUM OF 12 INCHES BELOW ALL EXCAVATIONS. 2. DEWATERING SYSTEM SHALL BE FILTERED AND DISCHARGED TO THE SANITARY SEWER SYSTEM FOR TREATMENT AT THE OWNER'S WASTEWATER TREATMENT PLANT (WWTP). 3. COORDINATE CONNECTION TO SANITARY SEWER LOCATION WITH OWNER. 4. DEWATERING WATER SHALL NOT BE DISCHARGED TO GRADE OR BODY OF WATER. 5. COORDINATE DEWATERING FLOW RATE WITH OWNER TO PREVENT SEWER BACKUPS OR EXCEEDANCE OF PUMP STATION CAPACITY AND WWTP LOADING.



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Table for revision and date tracking with columns for No., Date, Revision, and By.

GENERAL AND SESC NOTES MITCHELL DR WATER AND SEWER IMPROVEMENTS VILLAGE OF ELK RAPIDS

Table containing project metadata: Date Issued, Date Surveyed, Designed By, Drawn By, Checked By, Scale, Location, Project Number, and Sheet number 2.



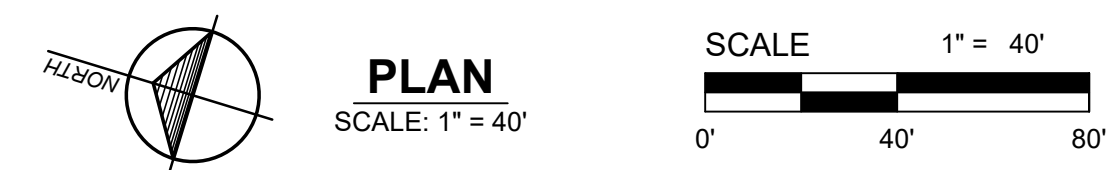
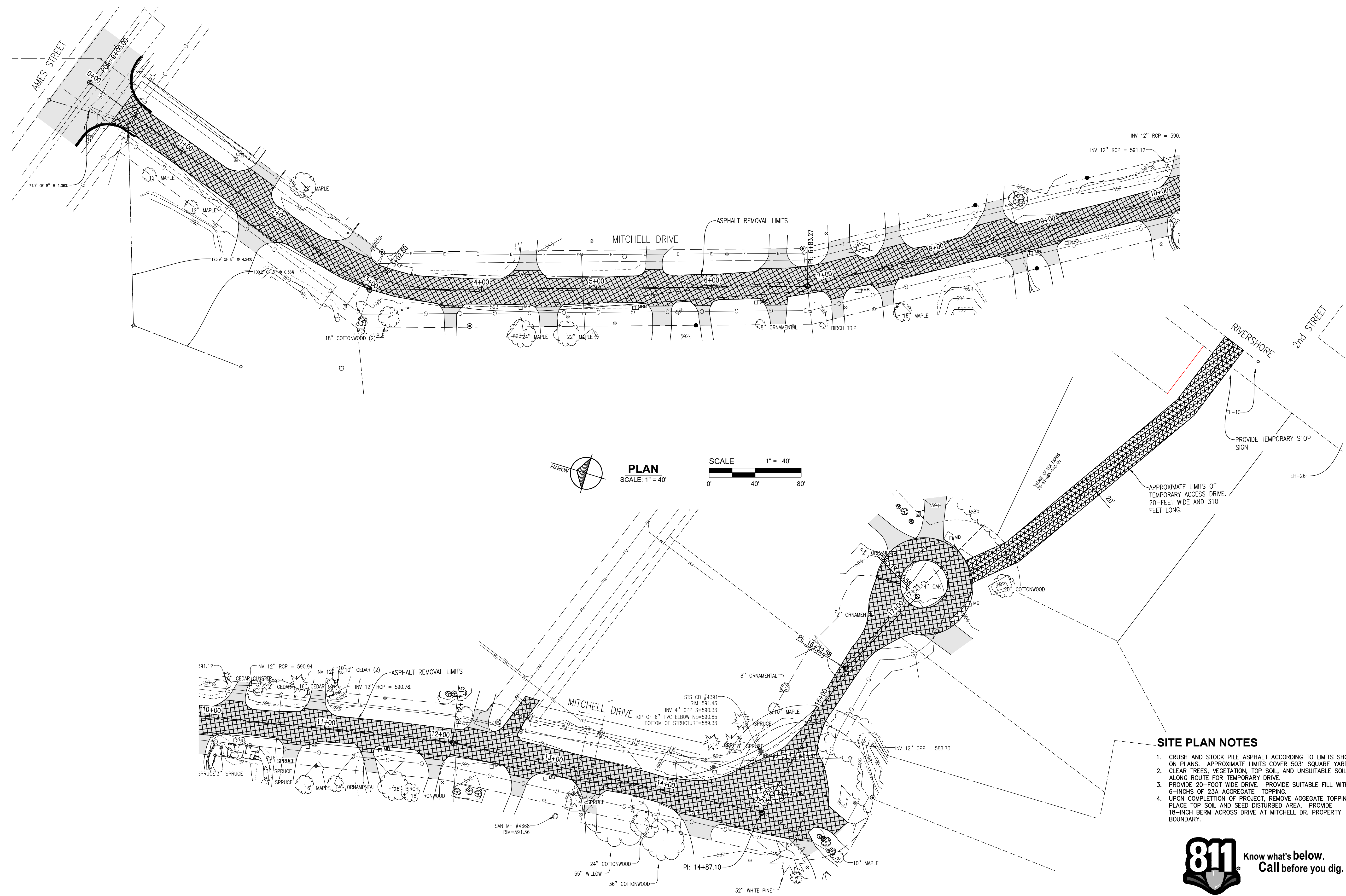
No.	Date	Revision	By

**PAVEMENT DEMOLITION PLAN  
 MITCHELL DR WATER AND SEWER IMPROVEMENTS  
 VILLAGE OF ELK RAPIDS**

Date Issued: 2/21/2024  
 Date Surveyed: 12/3/2021  
 Designed By: TNK  
 Drawn By: TNK  
 Checked By: MJH  
 Scale: AS NOTED

Original sheet size is 22x34  
 Location: T29N R09W S21  
 VILLAGE OF ELK RAPIDS  
 ANTRIM COUNTY  
 MICHIGAN

Project Number: 2021150002  
 Sheet:



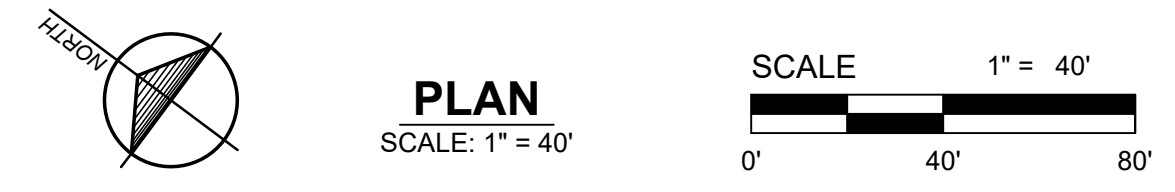
**PLAN**  
 SCALE: 1" = 40'

**SITE PLAN NOTES**

1. CRUSH AND STOCK PILE ASPHALT ACCORDING TO LIMITS SHOWN ON PLANS. APPROXIMATE LIMITS COVER 5031 SQUARE YARDS.
2. CLEAR TREES, VEGETATION, TOP SOIL, AND UNSUITABLE SOILS ALONG ROUTE FOR TEMPORARY DRIVE.
3. PROVIDE 20-FOOT WIDE DRIVE. PROVIDE SUITABLE FILL WITH 6-INCHES OF 23A AGGREGATE TOPPING.
4. UPON COMPLETION OF PROJECT, REMOVE AGGREGATE TOPPING, PLACE TOP SOIL AND SEED DISTURBED AREA. PROVIDE 18-INCH BERM ACROSS DRIVE AT MITCHELL DR. PROPERTY BOUNDARY.

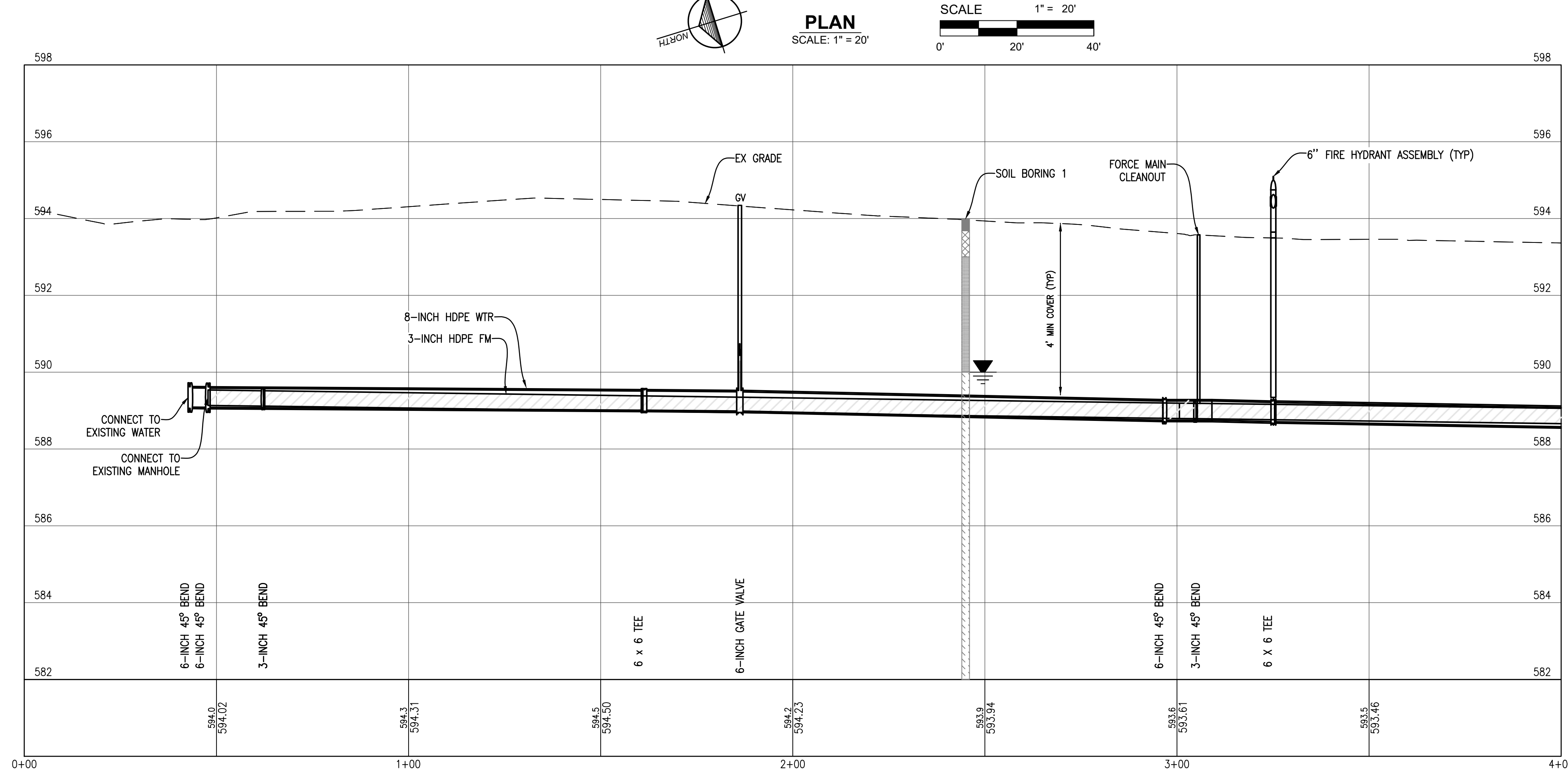
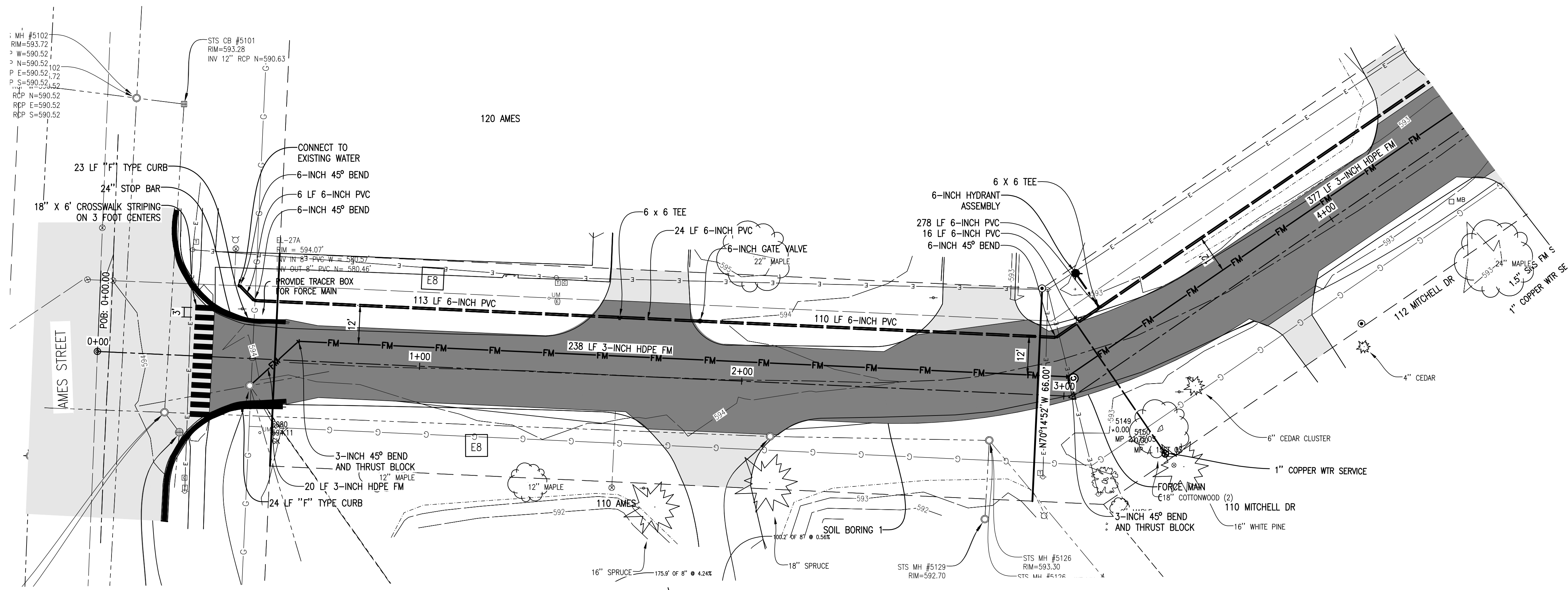


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**PLAN**  
 SCALE: 1" = 40'





**PROFILE**  
 HORIZONTAL SCALE: 1" = 20'  
 VERTICAL SCALE: 1" = 2'

No.	Date	Revision	By

**STA. 0+00 TO STA. 0+400**  
**MITCHELL DR WATER AND SEWER IMPROVEMENTS**  
**VILLAGE OF ELK RAPIDS**

Date Issued: 2/21/2024  
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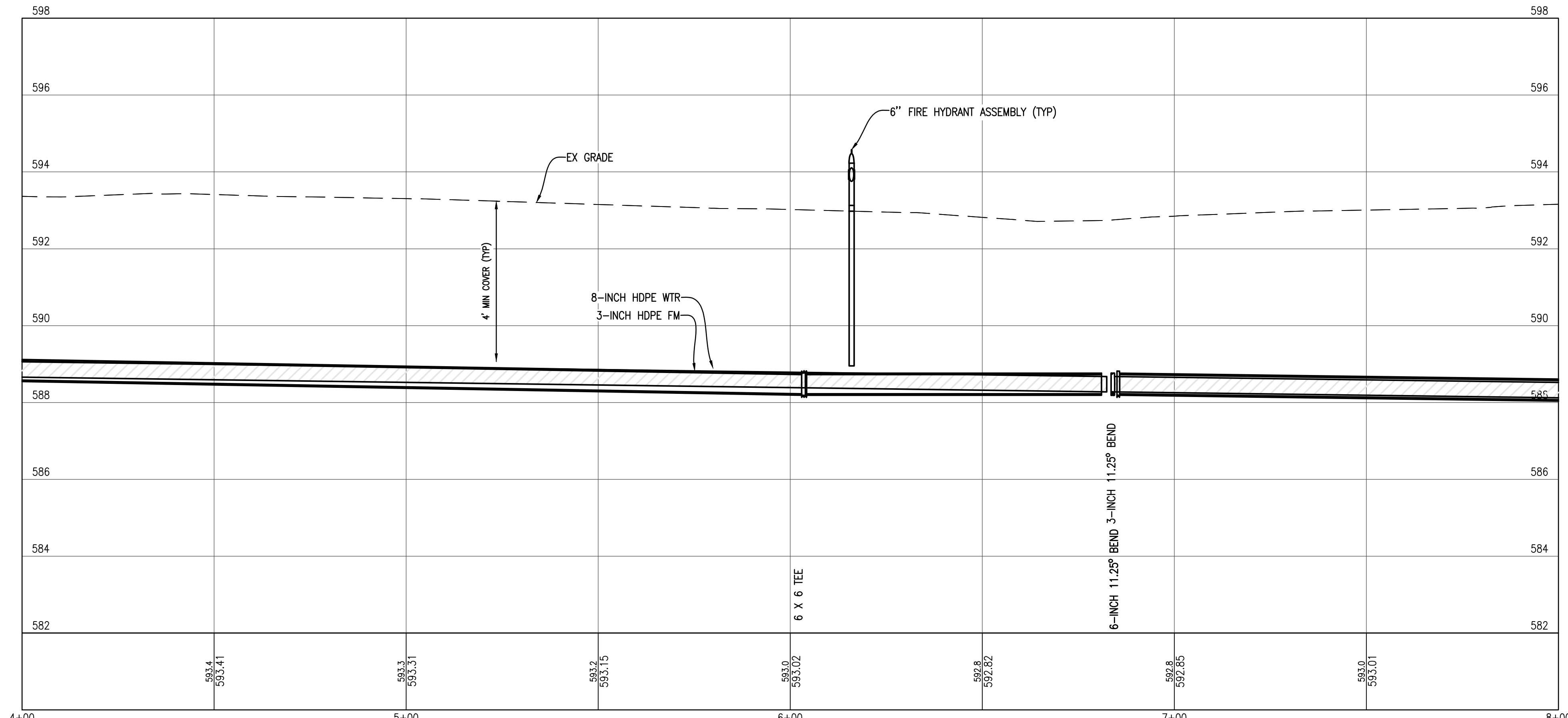
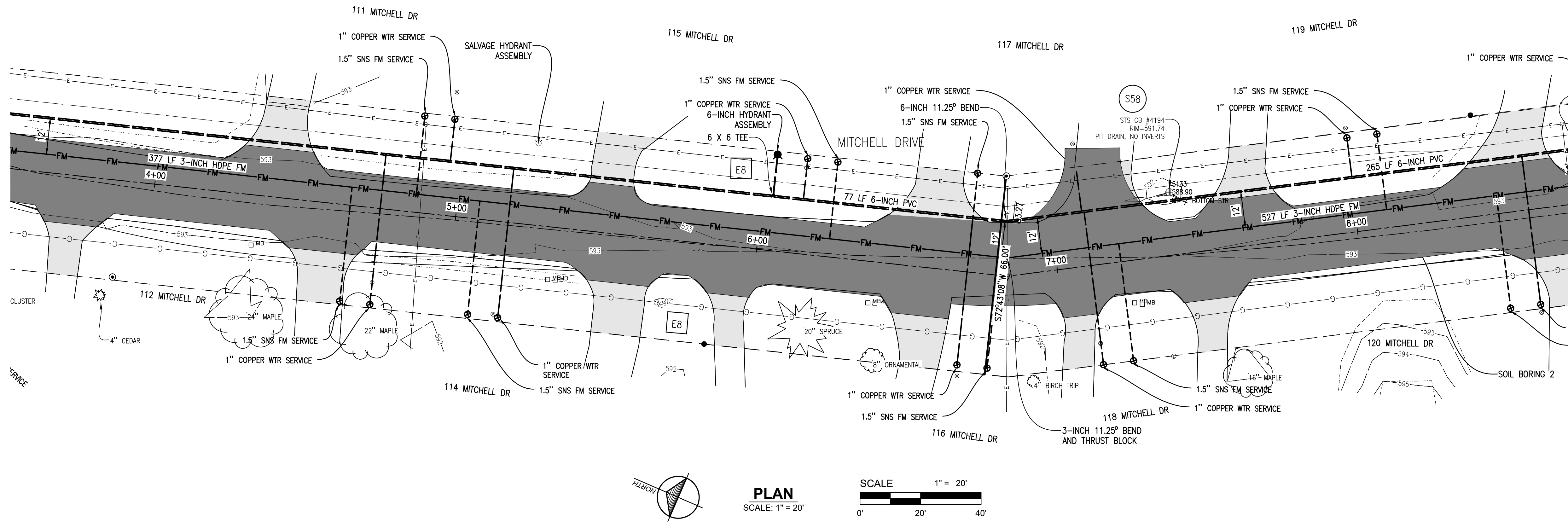
Location:  
 T29N R09W S21  
 VILLAGE OF ELK RAPIDS  
 ANTRIM COUNTY  
 MICHIGAN

Project Number:  
 2021150002

Sheet:  
**4**



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 VERTICAL SCALE: 1" = 2'

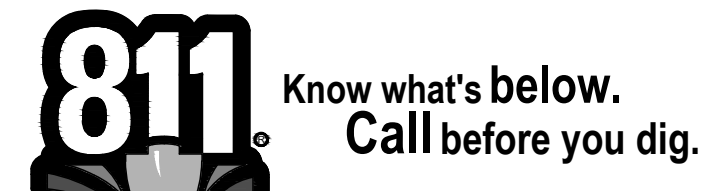
No.	Date	Revision	By

**STA. 4+00 TO STA. 8+00  
 MITCHELL DR WATER AND SEWER IMPROVEMENTS  
 VILLAGE OF ELK RAPIDS**

Date Issued: 2/21/2024  
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 Designed By: TNK  
 Drawn By: TNK  
 Checked By: MJH  
 Scale: AS NOTED  
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 Location: T29N R09W S21  
 VILLAGE OF ELK RAPIDS  
 ANTRIM COUNTY  
 MICHIGAN

Project Number:  
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Sheet:  
**5**

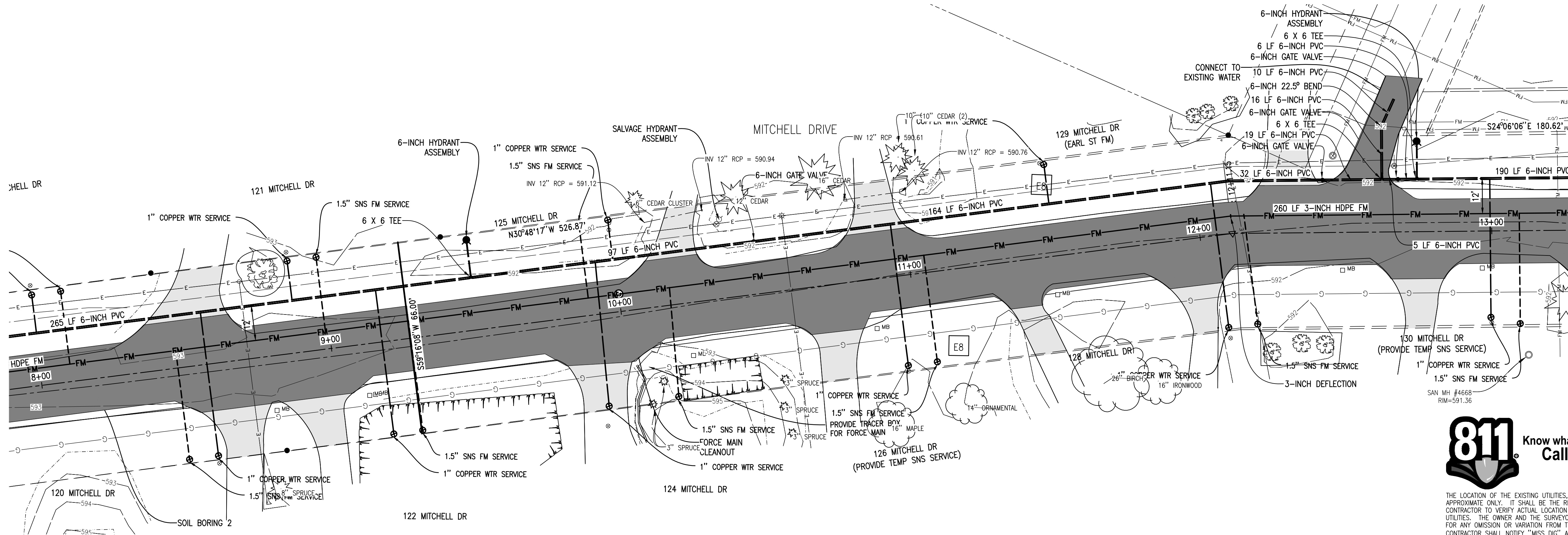


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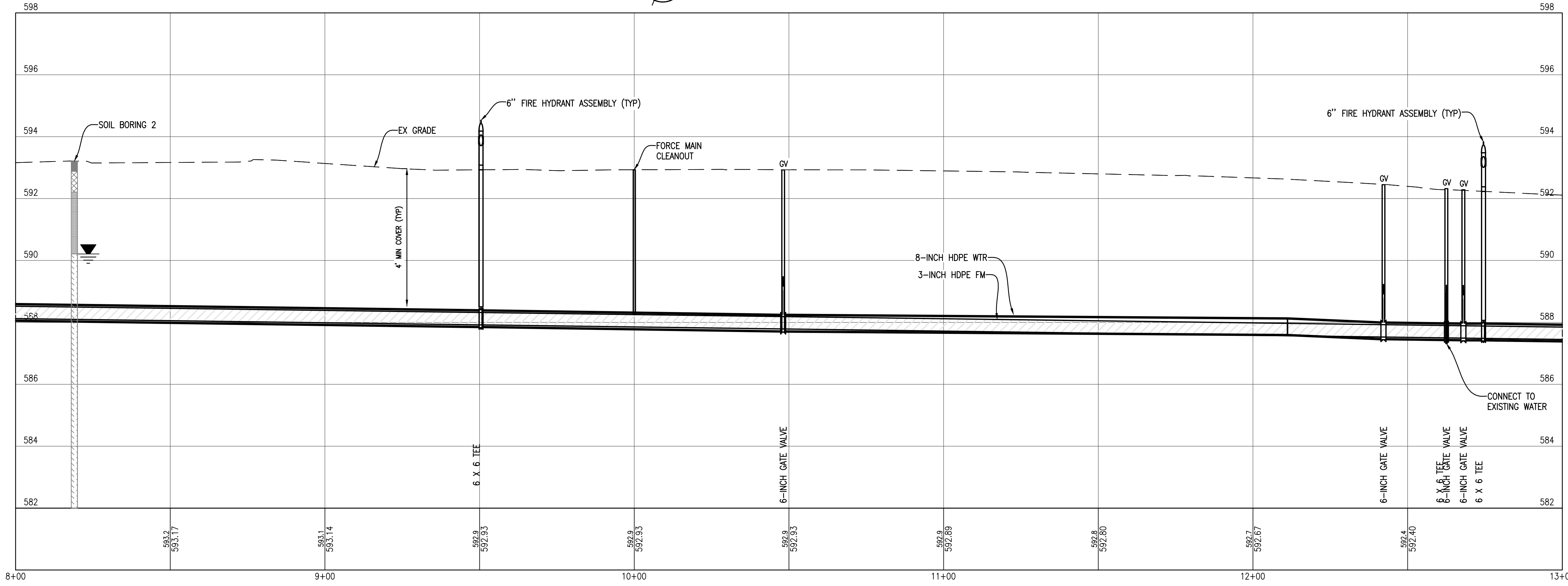
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**PLAN**  
 SCALE: 1" = 20'



**PROFILE**  
 HORIZONTAL SCALE: 1" = 20'  
 VERTICAL SCALE: 1" = 2'

No.	Date	Revision	By

**STA. 8+00 TO STA. 13+00**  
**MITCHELL DR WATER AND SEWER IMPROVEMENTS**  
**VILLAGE OF ELK RAPIDS**

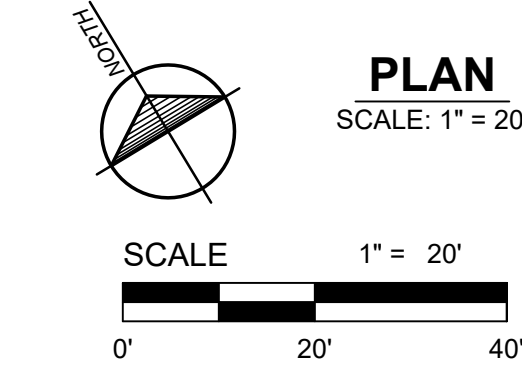
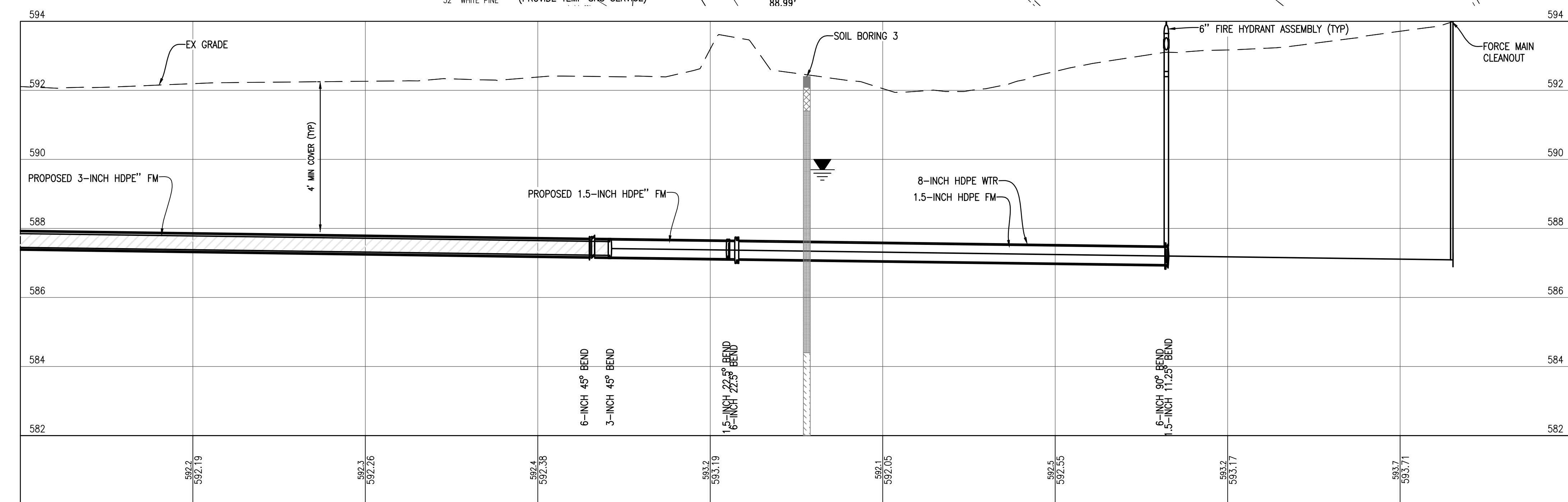
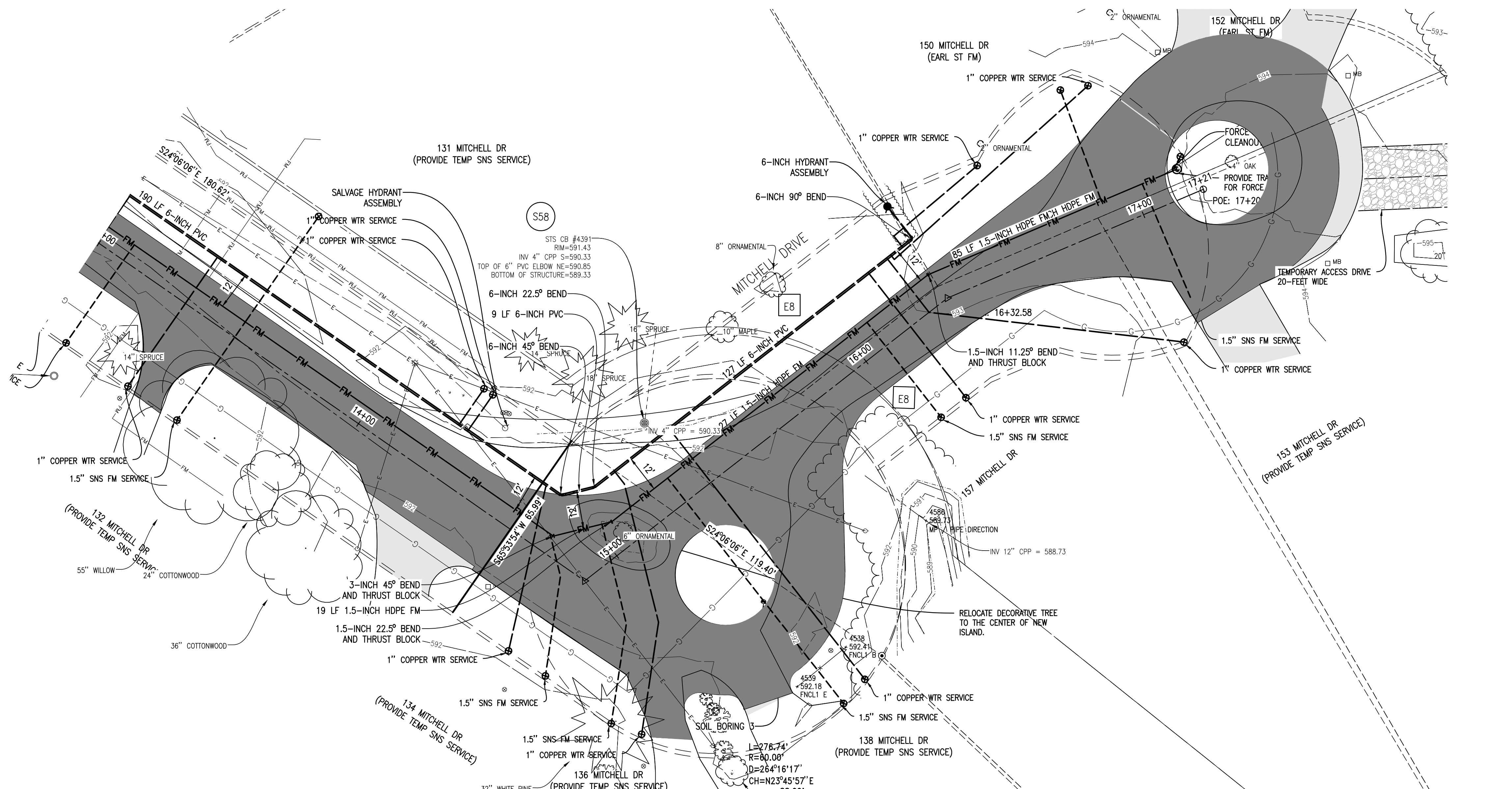
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 VILLAGE OF ELK RAPIDS  
 ANTRIM COUNTY  
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 Project Number: 2021150002  
 Sheet: **6**





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**PROFILE**  
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 VERTICAL SCALE: 1" = 2'

No.	Date	Revision	By

**STA. 13+00 TO STA. 17+21  
 MITCHELL DR WATER AND SEWER IMPROVEMENTS  
 VILLAGE OF ELK RAPIDS**

Date Issued:	2/21/2024
Date Surveyed:	12/3/2021
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Drawn By:	TNK
Checked By:	MJH
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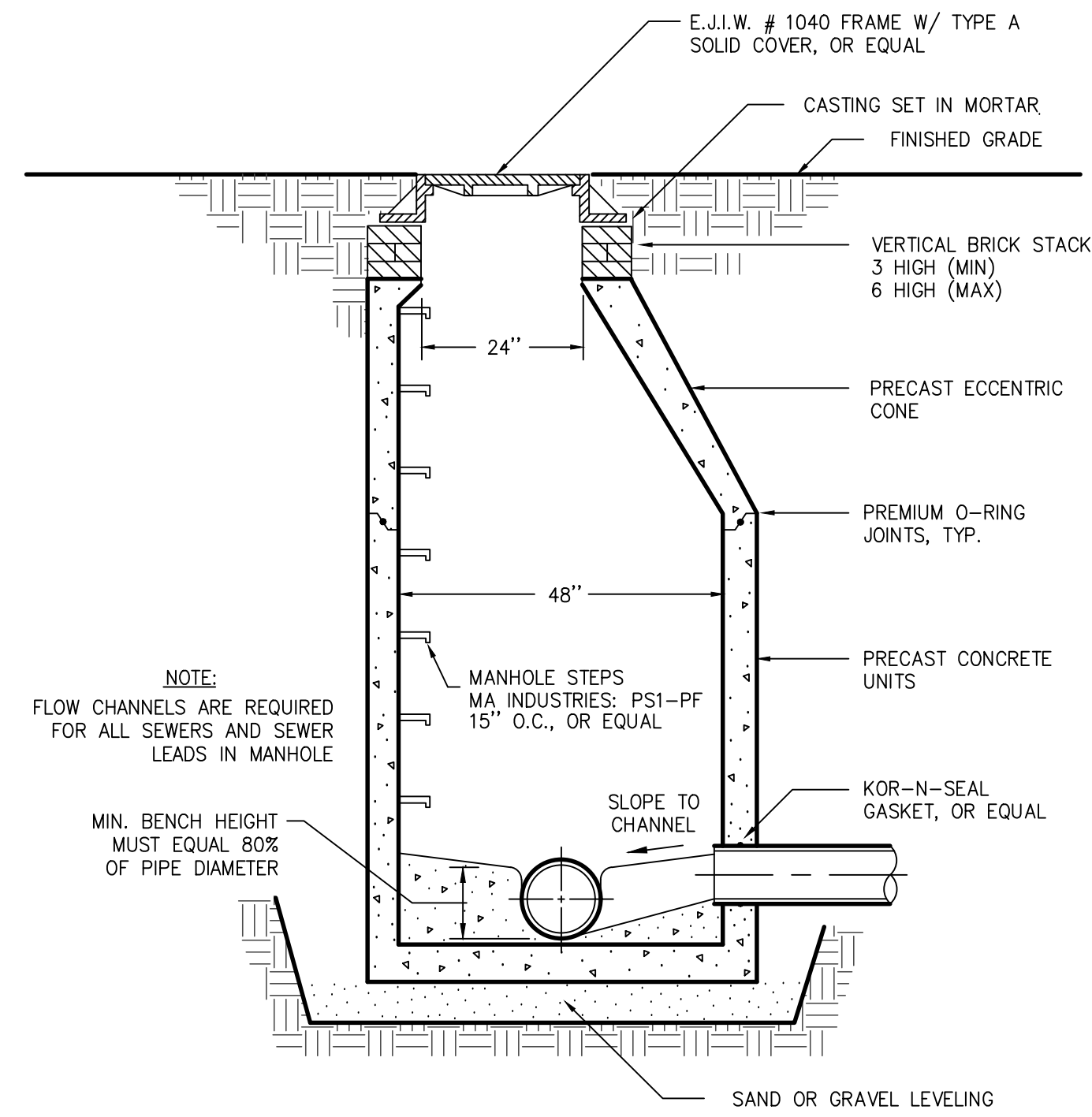


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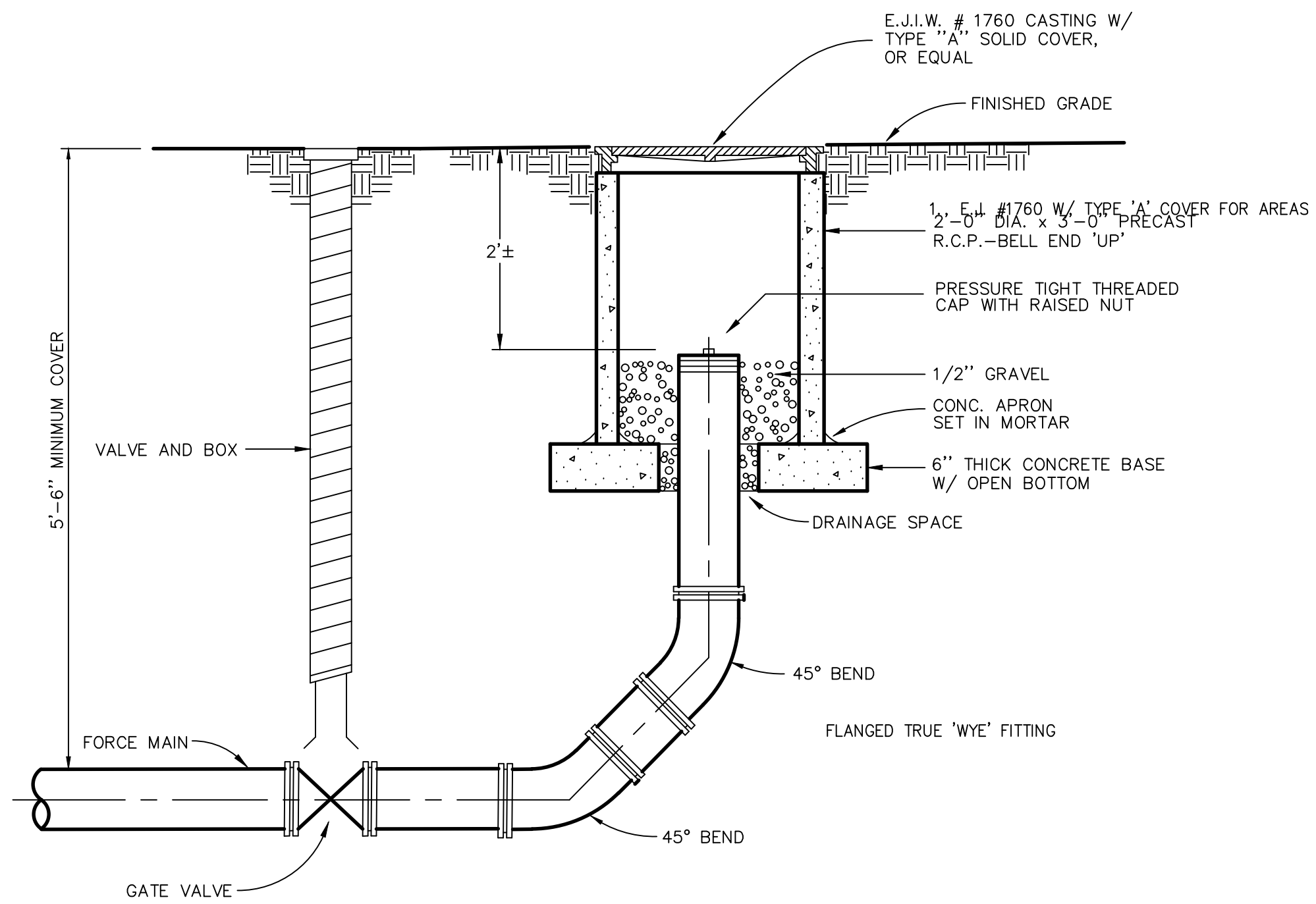
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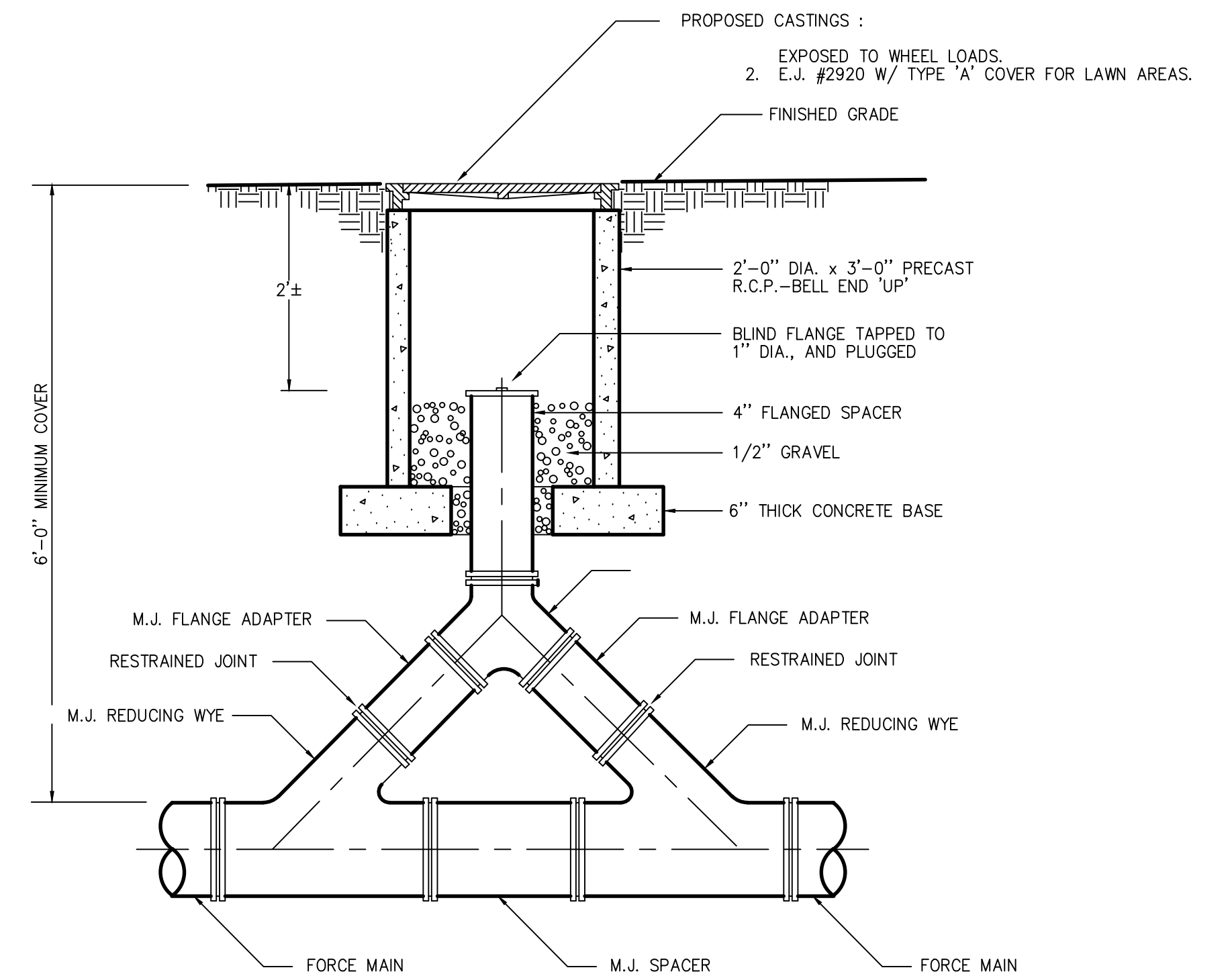
**SANITARY MANHOLE DETAIL**

NOT TO SCALE



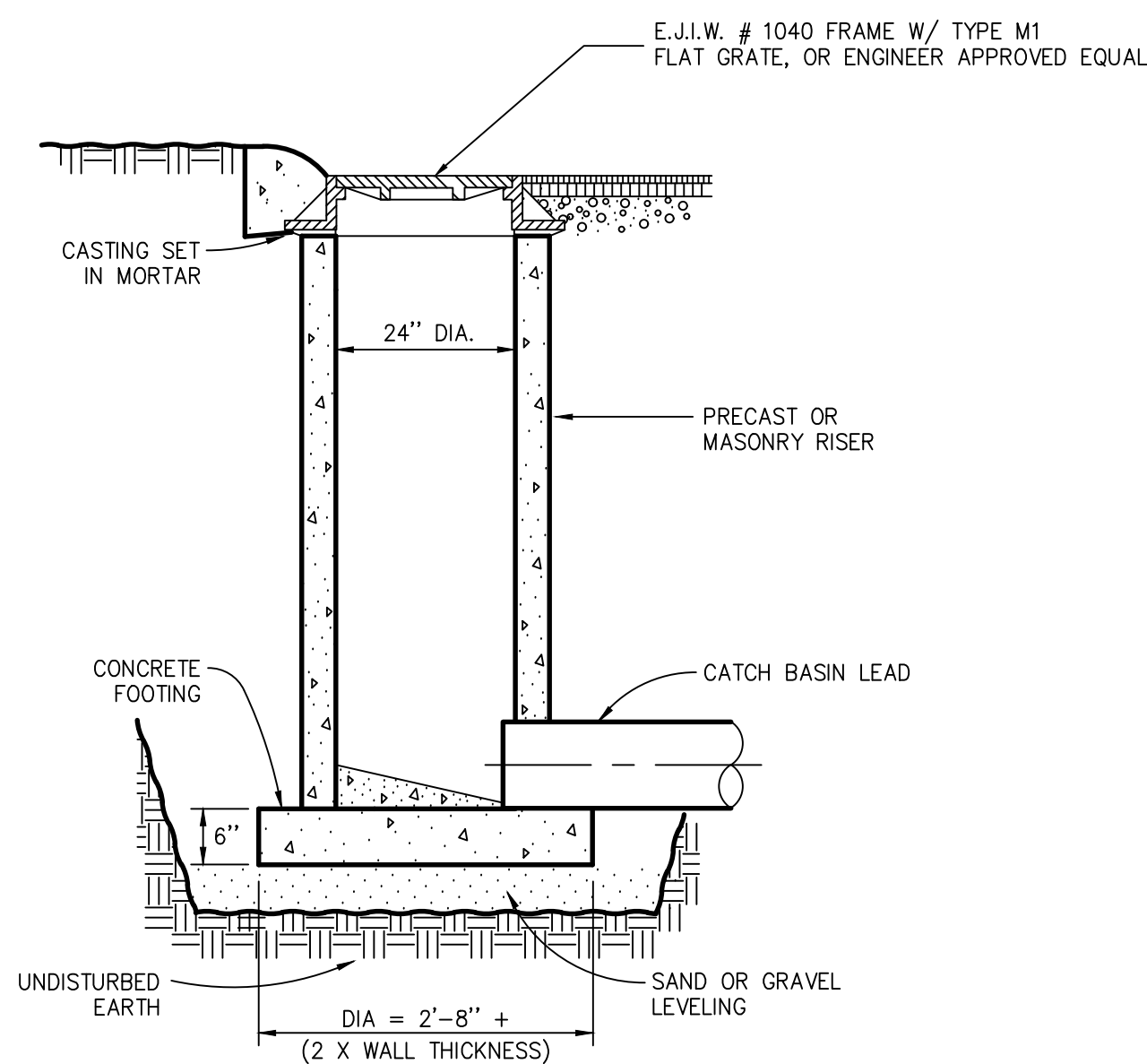
**FORCE MAIN CLEANOUT DETAIL**

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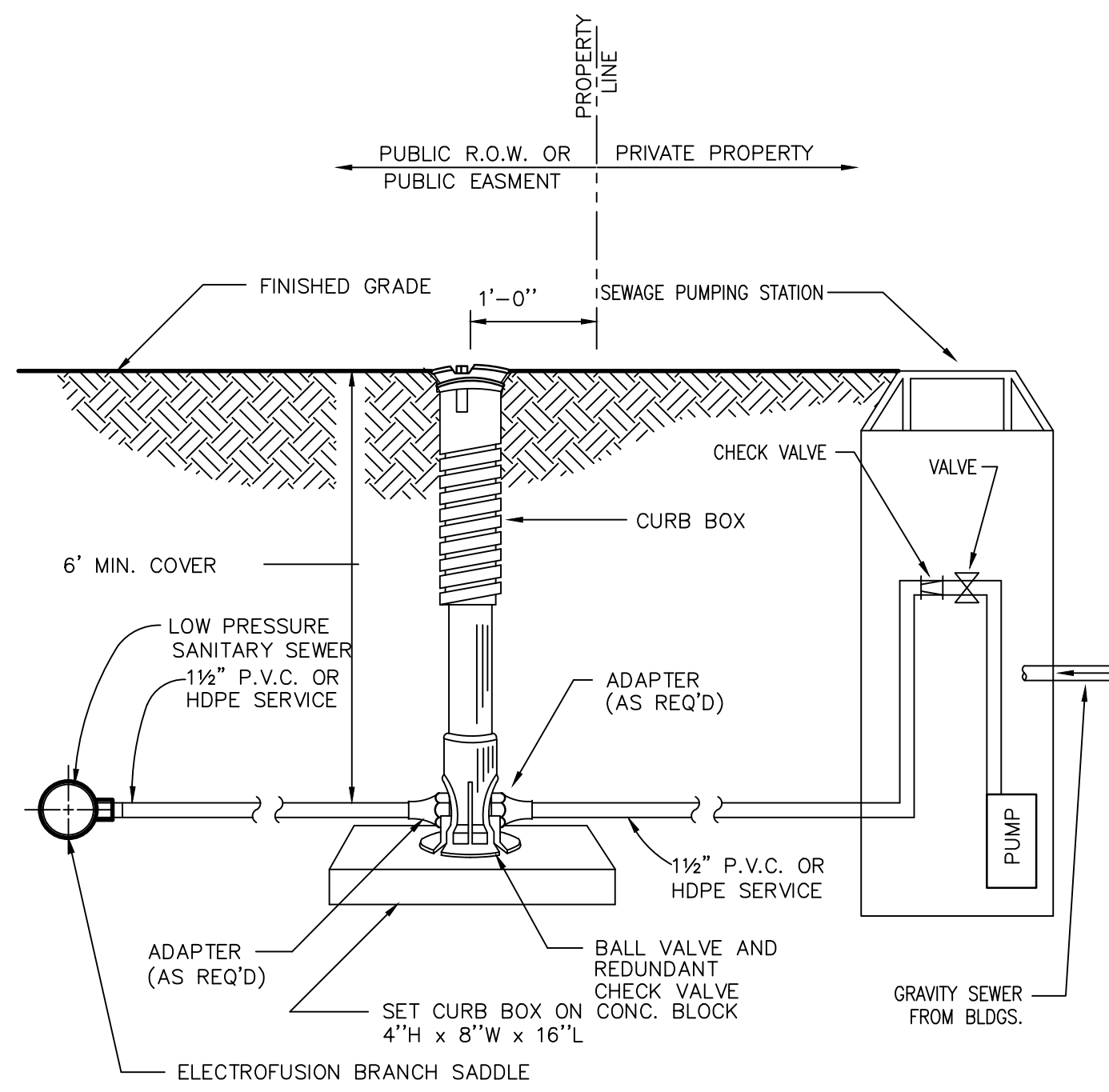
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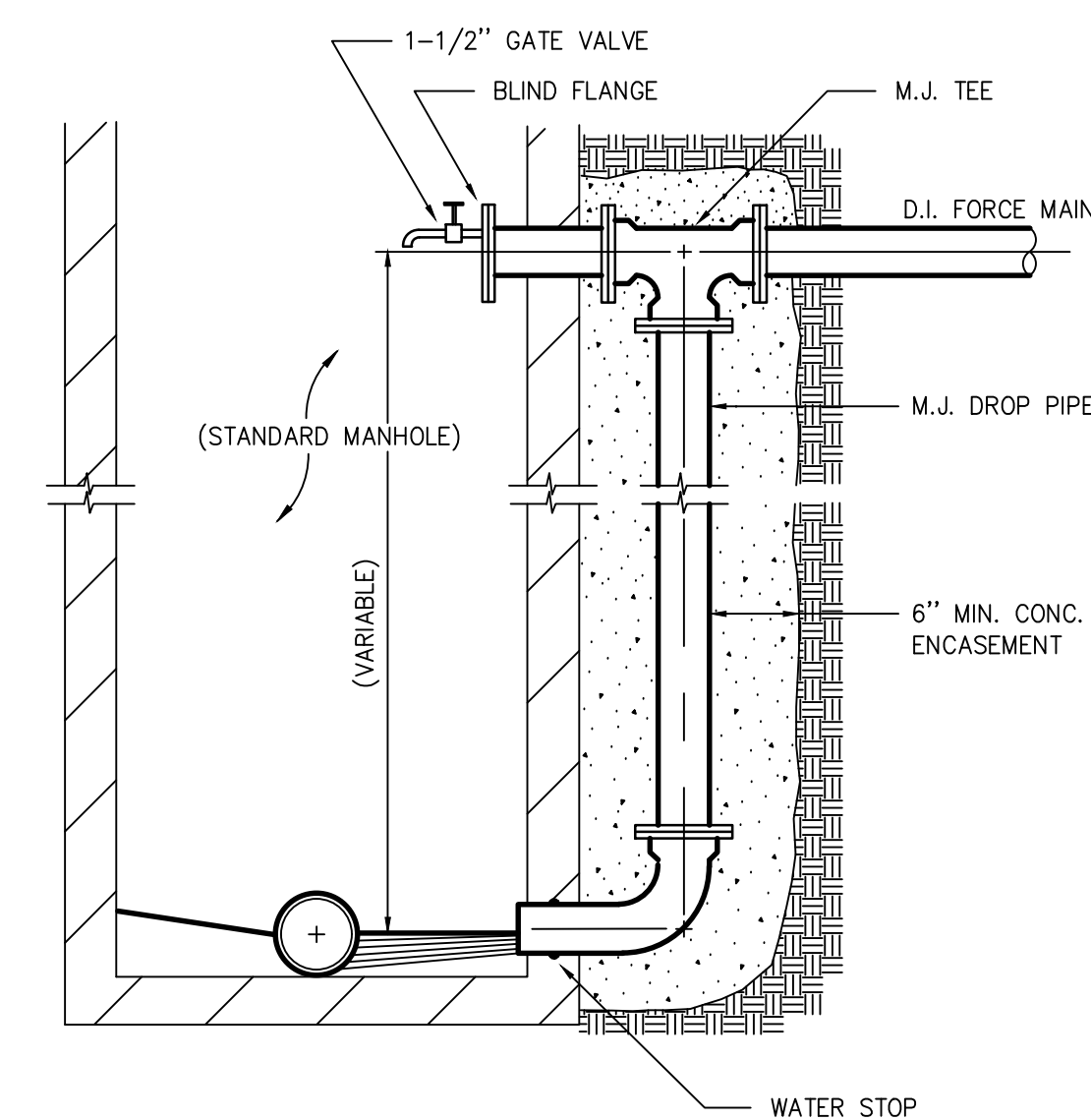
**STORM INLET DETAIL**

NOT TO SCALE



**PRESSURE SEWER SERVICE CONNECTIONS**

NOT TO SCALE



**FORCE MAIN OUTLET DETAIL**

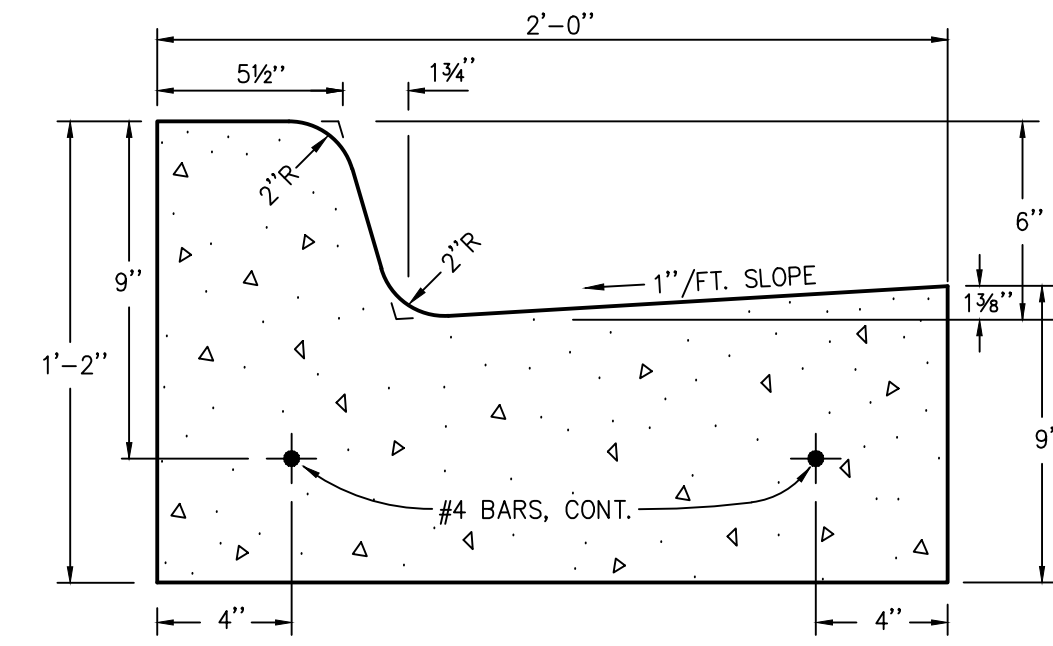
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 NOTE: TRANSITION TO D.I. FORCEMAIN A MIN. OF 10' OUTSIDE OF MANHOLE

No.	Date	Revision	By

**DETAILS 1  
 MITCHELL DR WATER AND SEWER IMPROVEMENTS  
 VILLAGE OF ELK RAPIDS**

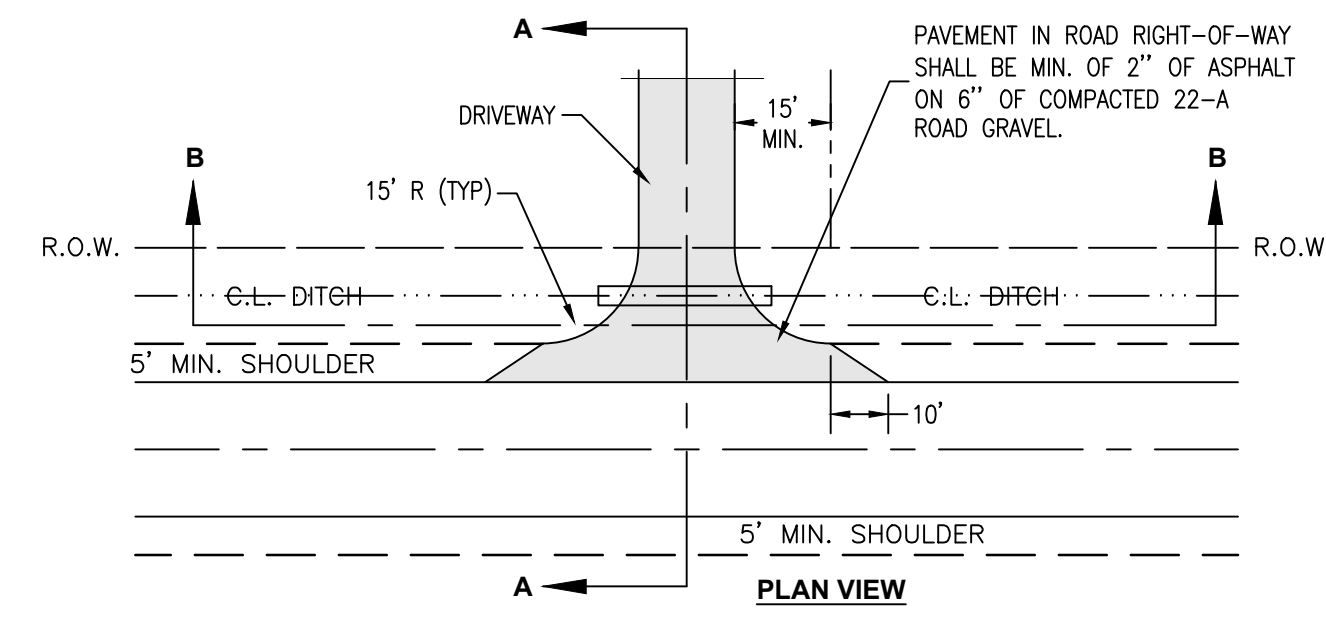
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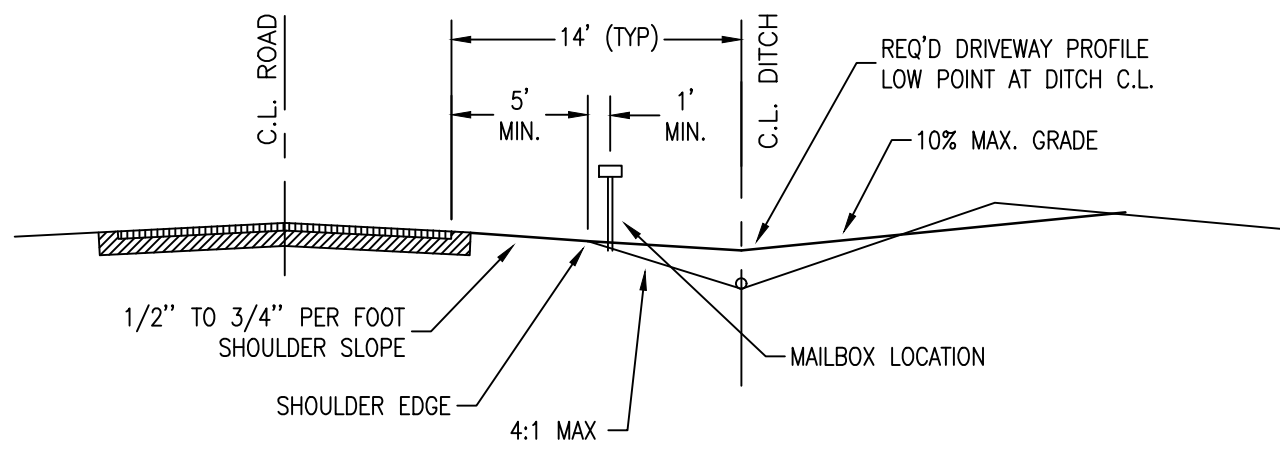


**STANDARD M.D.O.T. "F4"  
 CONCRETE CURB & GUTTER DETAIL**

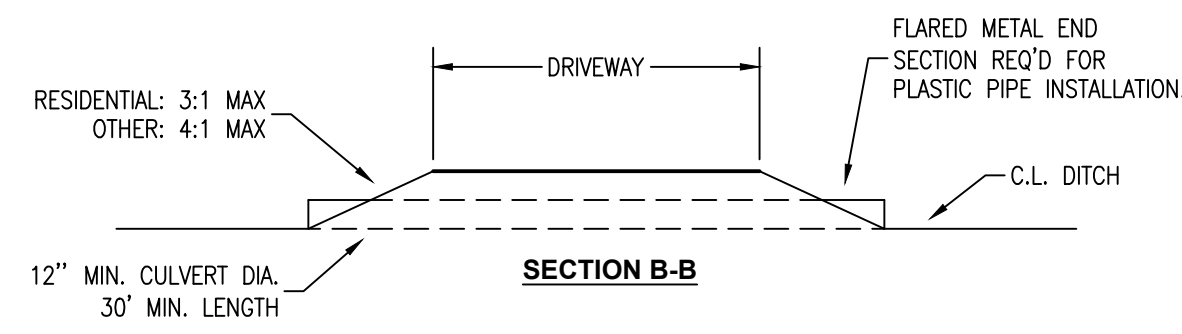
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**PLAN VIEW**



**SECTION A-A**

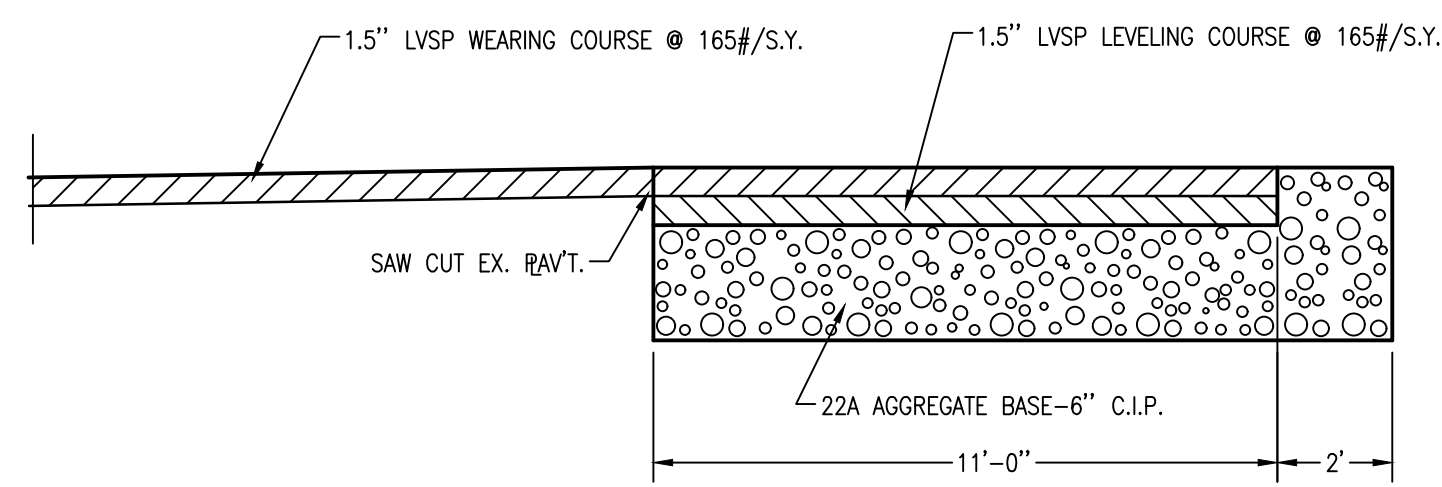


**SECTION B-B**

**RESIDENTIAL DRIVEWAY  
 APPROACH DETAIL**

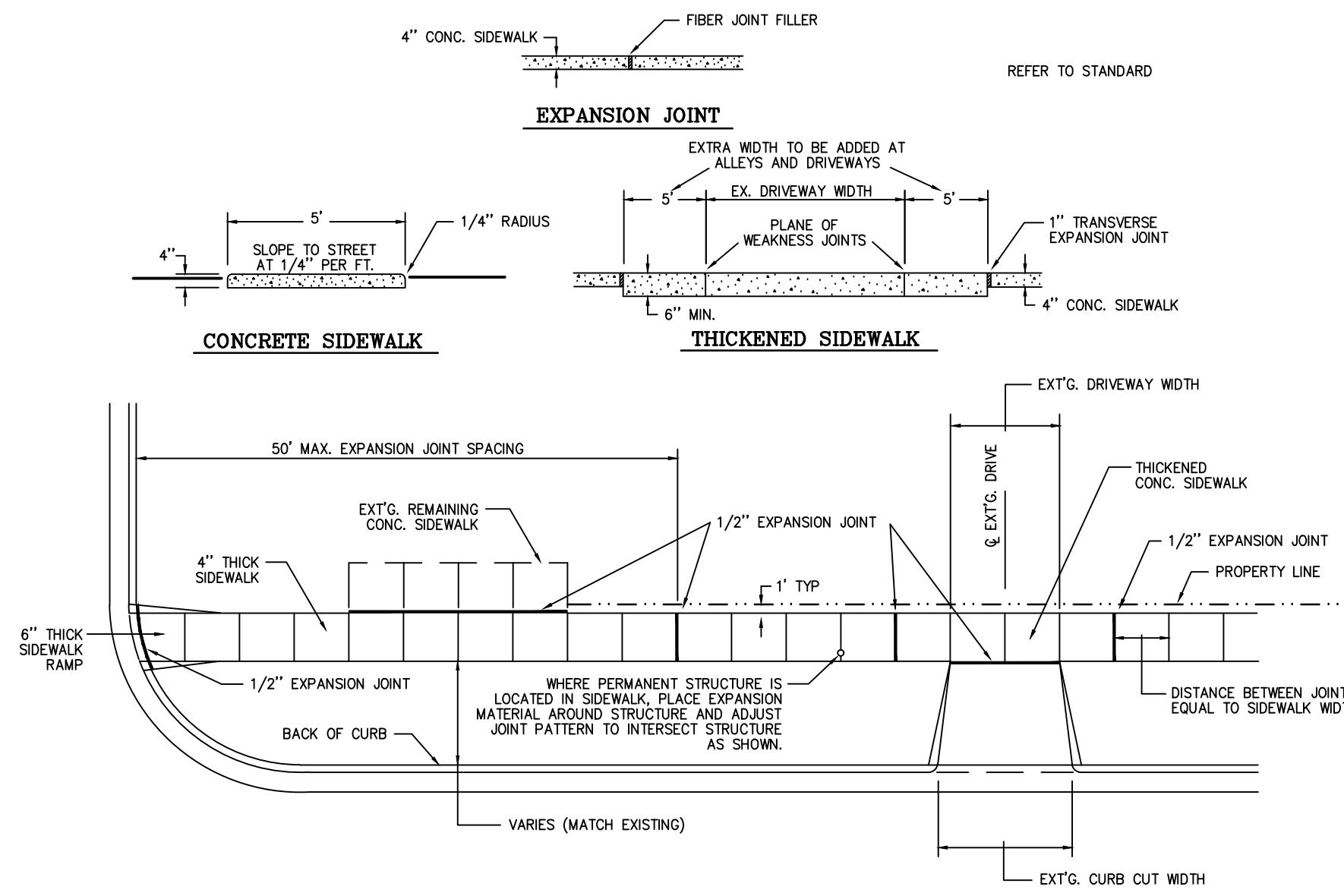
NOT TO SCALE

NOTE: THIS DETAIL APPLIES TO SINGLE FAMILY AND DUPLEX HOMES. ALL COMMERCIAL DRIVEWAYS AND MULTIPLE FAMILY DRIVEWAYS SHALL COMPLY WITH MDOT STANDARDS.



**TYPICAL SECTION PAVEMENT**

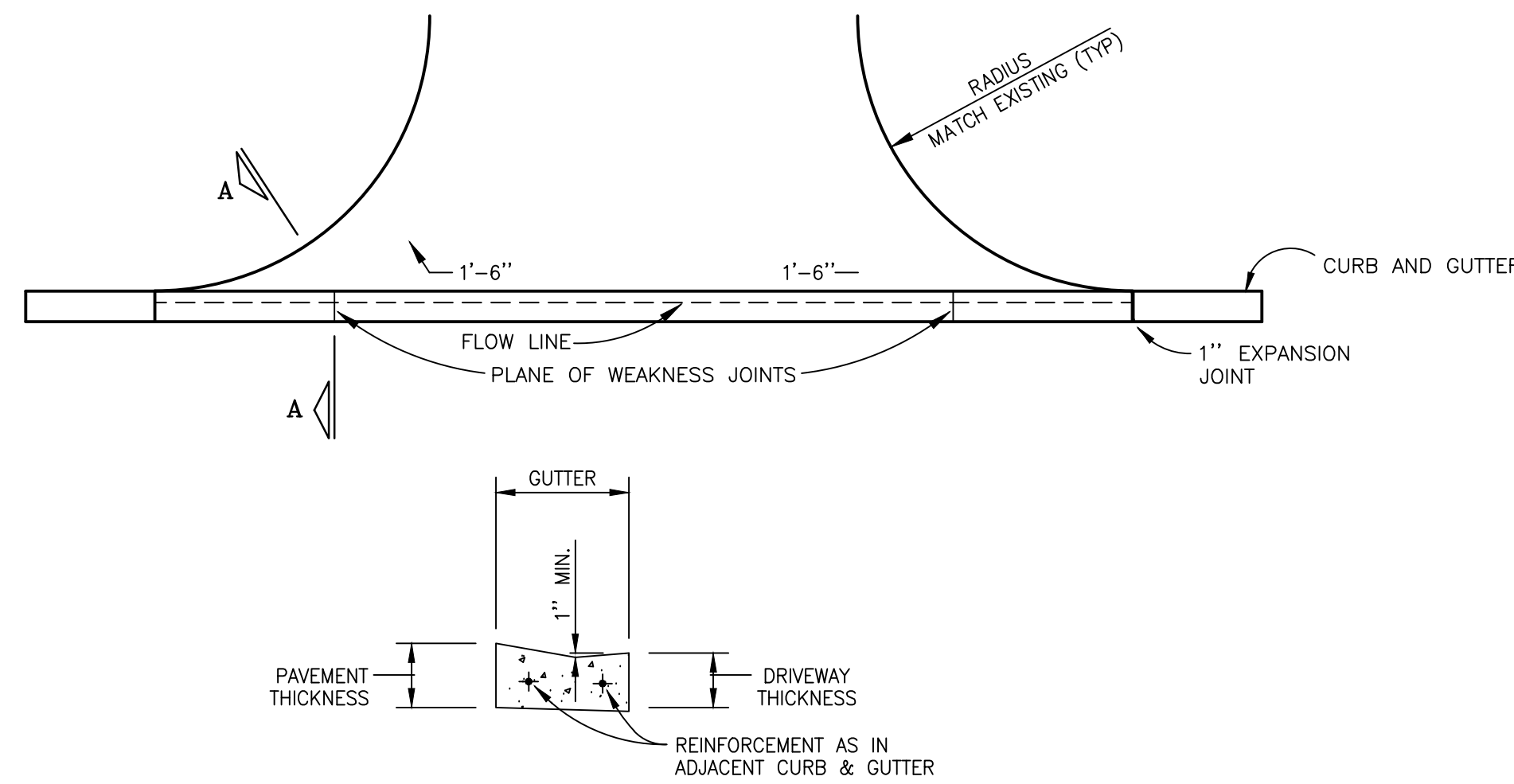
NOT TO SCALE



**TYPICAL SIDEWALK JOINT LAYOUT**

**CONCRETE SIDEWALK DETAILS**

NOT TO SCALE



**SECTION A-A**

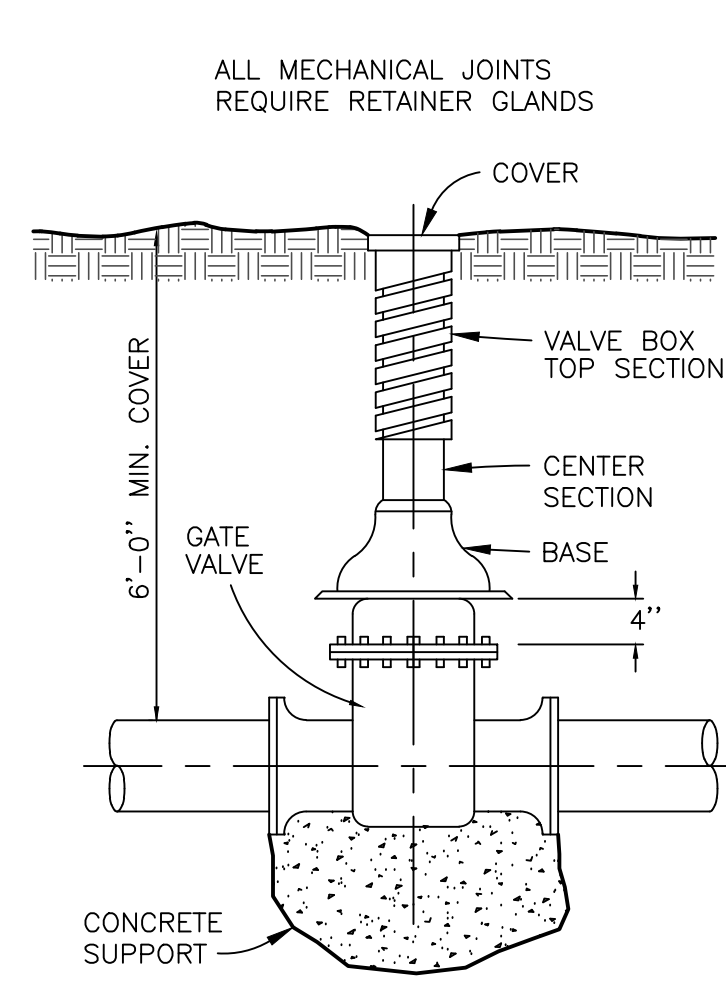
**DETAIL DRIVE OPENING**

NOT TO SCALE

No.	Date	Revision	By

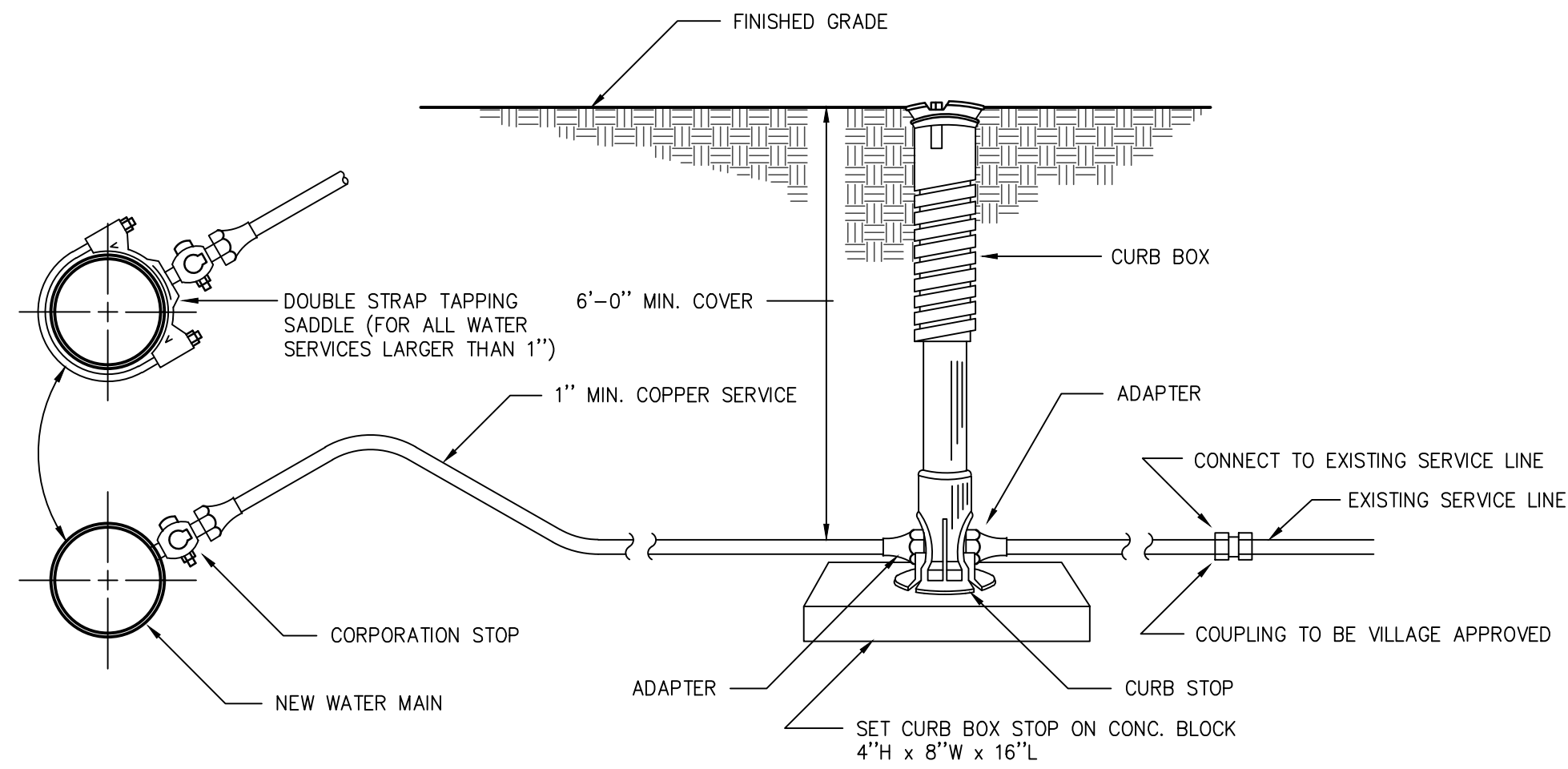
**DETAILS 2  
 MITCHELL DR WATER AND SEWER IMPROVEMENTS  
 VILLAGE OF ELK RAPIDS**

Date Issued:	2/21/2024
Date Surveyed:	12/3/2021
Designed By:	TNK
Drawn By:	TNK
Checked By:	MJH
Scale:	AS NOTED
Original sheet size is 22x34	
Location: T29N R09W S21 VILLAGE OF ELK RAPIDS ANTRIM COUNTY MICHIGAN	
Project Number: 2021150002	
Sheet: <b>9</b>	



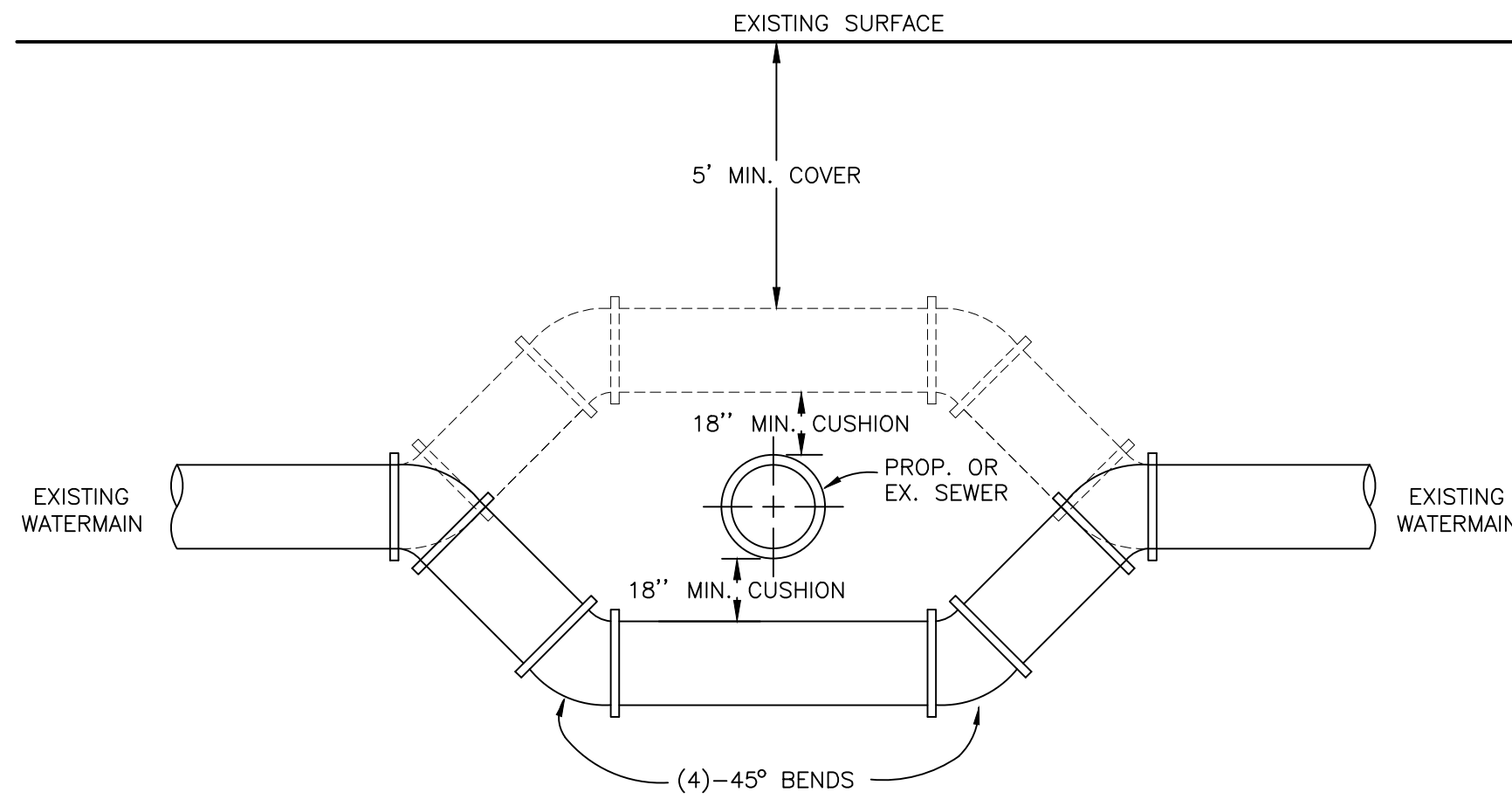
**VALVE BOX INSTALLATION DETAIL**

NOT TO SCALE



**WATER MAIN SERVICE CONNECTIONS**

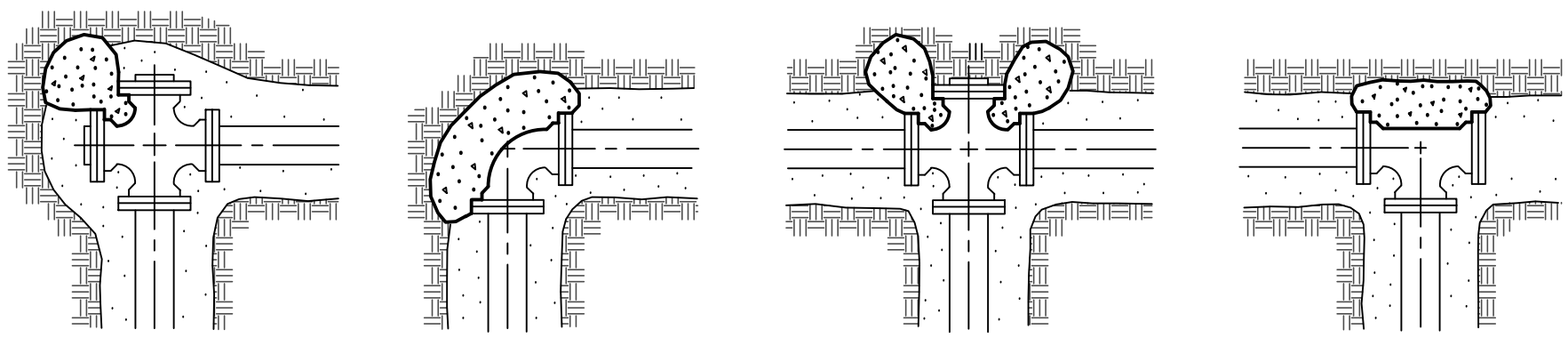
NOT TO SCALE



**WATER MAIN OFFSET DETAIL**

NOT TO SCALE

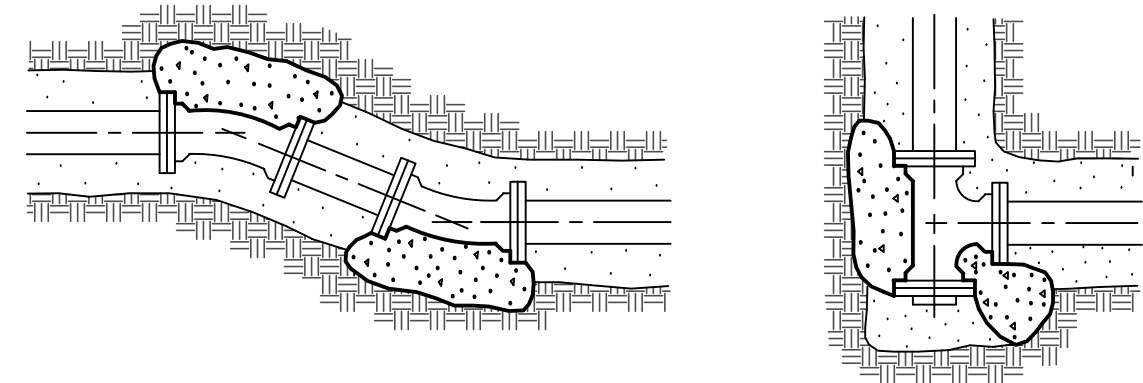
- NOTES:
1. WHEN MINIMUM CLEARANCE AND COVER CANNOT BE OBTAINED, THE WATERMAIN IS TO BE OFFSET UNDER THE SEWER.
  2. JOINT RESTRAINT SHALL BE OBTAINED BY RESTRAINED JOINT PIPE OR MEGA-LUG CONSTRUCTION.
  3. THIS DETAIL ALSO USED FOR CROSSING COUNTY DRAINS.



THE MINIMUM BEARING AREA, AGAINST UNDISTURBED EARTH, OF THE VARIOUS THRUST BLOCKS, SHALL BE AS FOLLOWS:

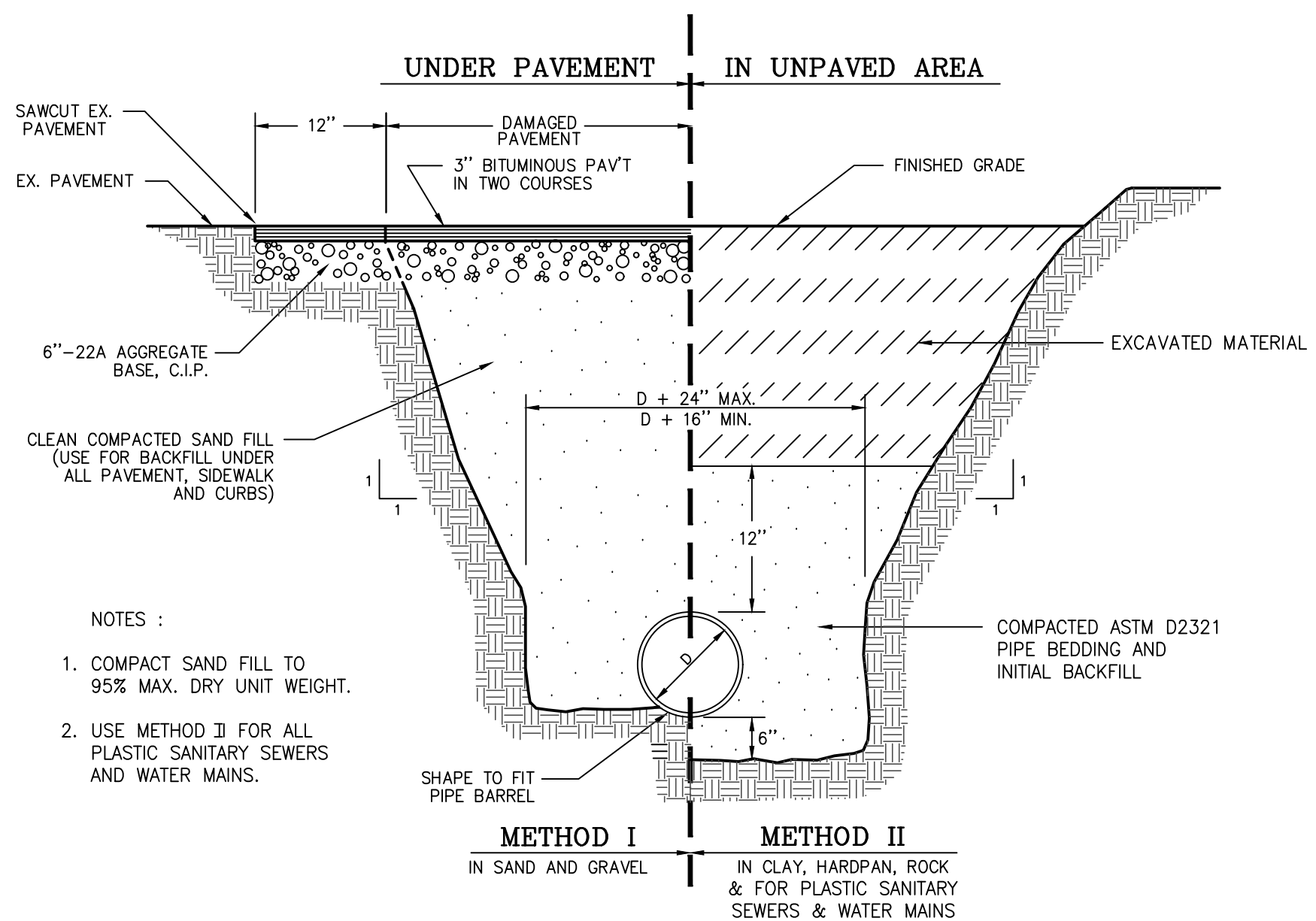
6" WATER MAIN	2.0 S.F.
8" WATER MAIN	3.0 S.F.
10" WATER MAIN	7.0 S.F.
12" WATER MAIN	8.0 S.F.

(BASED ON AN ALLOWED BEARING PRESSURE OF 2500 P.S.F.)  
 ALL THRUST BLOCKS ARE TO BE 3000 P.S.I. HIGH EARLY STRENGTH CONCRETE POURED AGAINST UNDISTURBED EARTH



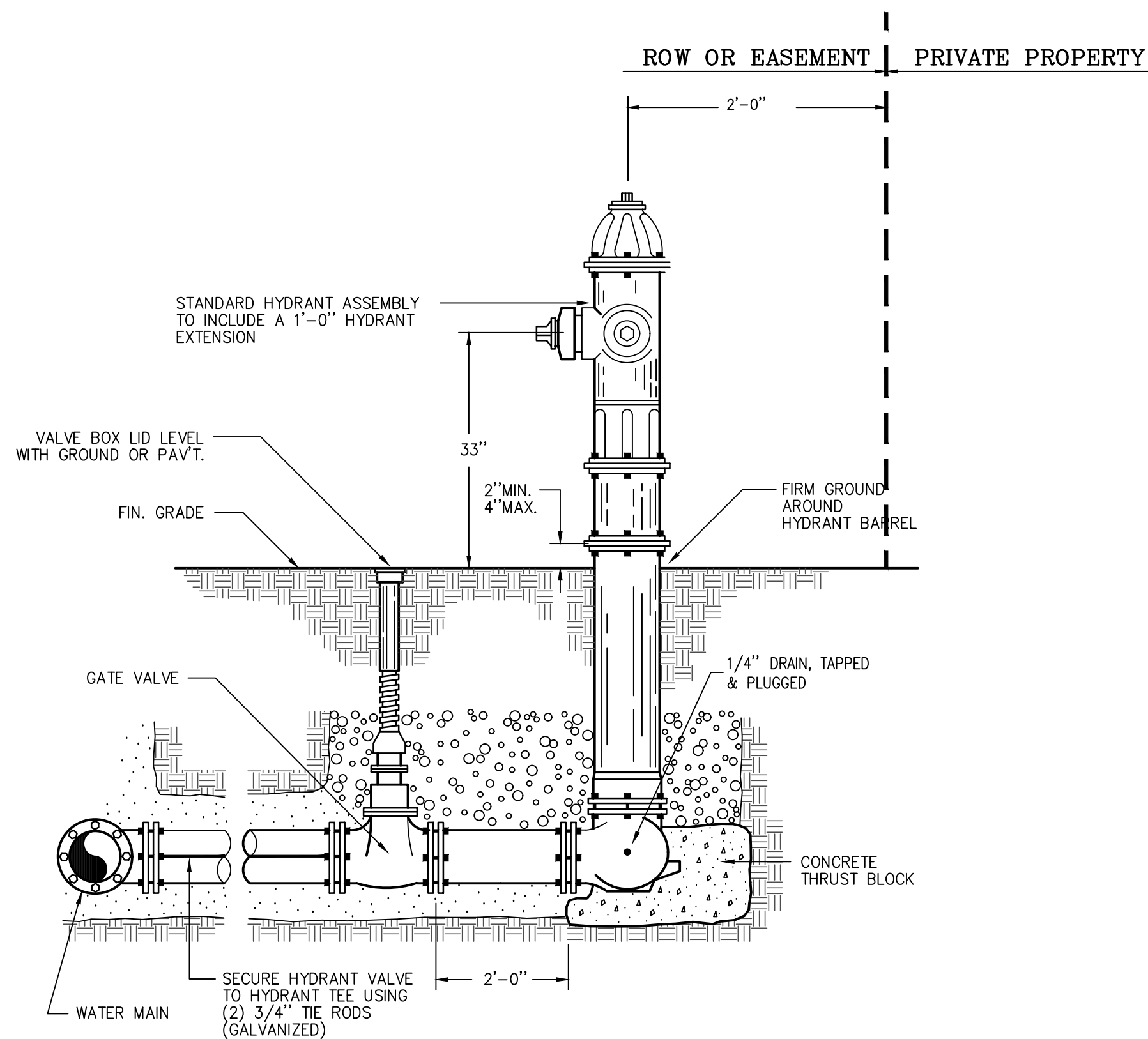
**TYPICAL THRUST BLOCK DETAILS**

NO SCALE



**TRENCH DETAIL**

NOT TO SCALE



**DETAIL-HYDRANT INSTALLATION**

NOT TO SCALE

No.	Date	By	Revision

**DETAILS 3**  
**MITCHELL DR WATER AND SEWER IMPROVEMENTS**  
**VILLAGE OF ELK RAPIDS**

Date Issued:	2/21/2024
Date Surveyed:	12/3/2021
Designed By:	TNK
Drawn By:	TNK
Checked By:	MJH
Scale:	AS NOTED
Original sheet size is 22x34	
Location:	T29N R09W S21 VILLAGE OF ELK RAPIDS ANTRIM COUNTY MICHIGAN
Project Number:	2021150002
Sheet:	10