

# 2024 WHITE PINE WATER MAIN AND ROADWAY IMPROVEMENTS

## VILLAGE OF BUFFALO GROVE

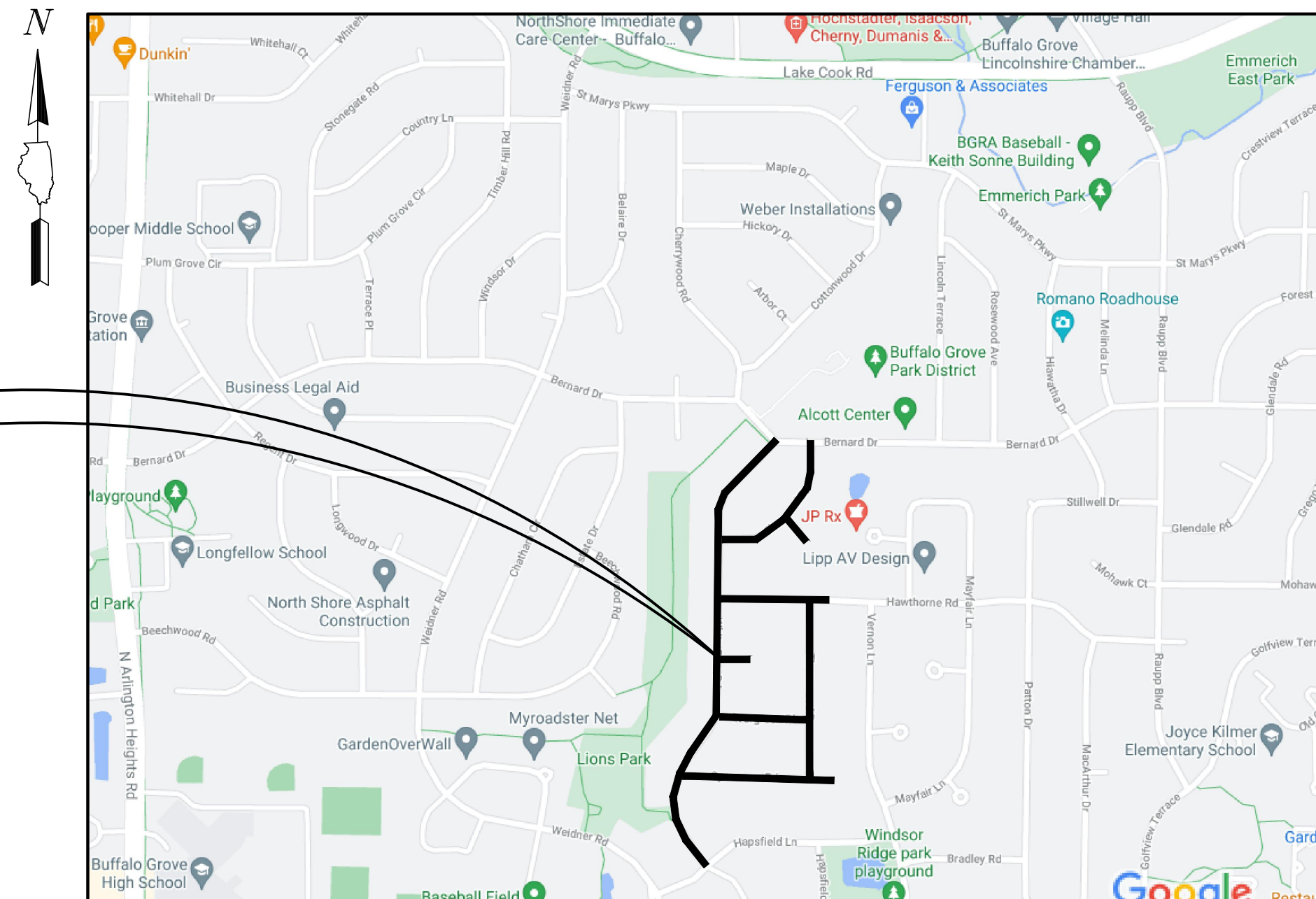
### BUFFALO GROVE, ILLINOIS 60089

#### STANDARD SYMBOLS

FEATURE	EXISTING	PROPOSED
BUFFALO BOX		
BUSH/SHRUB		
CATCH BASIN		
CLEANOUT		
COMBINE SEWER LINE		
CONTOUR		
CULVERT		
DITCH/SWALE		
ELECTRIC LINE		
ELECTRIC MANHOLE		
FENCE		
FIRE HYDRANT		
FLARED END SECTION		
GAS LINE		
GAS MANHOLE		
GAS VALVE		
INLET		
LIGHT POLE		
OVERHEAD WIRES		
POWER POLE		
R.O.W LINE		
R.O.W MARKER		
SANITARY FORCEMAIN LINE		
SANITARY SEWER LINE		
SANITARY SEWER MANHOLE		
SIGN		
SPOT ELEVATION		
STORM SEWER LINE		
STORM SEWER MANHOLE		
TELEPHONE LINE		
TELEPHONE MANHOLE		
TELEPHONE BOX/PEDESTAL		
TREE-CONIFEROUS (SIZE/TAG#)		
TREE-DECIDUOUS (SIZE/TAG#)		
VALVE BOX		
VALVE VAULT		
WATER VALVE		
WATERMAIN LINE		

#### PROJECT LOCATION

ELMWOOD DRIVE, WHITE PINE ROAD  
 RED OAK COURT, HAWTHORNE ROAD  
 THORNWOOD DRIVE, POPLAR COURT  
 EVERGREEN ROAD, SYCAMORE ROAD  
 BERNARD DRIVE, HAPSFIELD LANE  
 VILLAGE OF BUFFALO GROVE, IL



LOCATION MAP  
(Not to Scale)

#### SHEET INDEX

1. TITLE SHEET
2. GENERAL NOTES
3. SUMMARY OF QUANTITIES
4. TYPICAL SECTIONS
5. WHITE PINE RD STA. 1+00 - 7+00
6. WHITE PINE RD STA. 7+00 - 16+50
7. WHITE PINE RD STA. 16+50 - BERNARD DR
8. ELMWOOD DR STA. 13+00 - BERNARD DR
9. ELMWOOD DR STA. 10+80 - 13+00 & POPLAR CT
10. HAWTHORNE RD & EVERGREEN PL
11. THORNEWOOD DR
12. SYCAMORE RD
13. ADA CROSSINGS
14. ADA CROSSINGS
15. ADA CROSSINGS
16. DETAILS
17. DETAILS
18. DETAILS
19. BUFFALO GROVE DETAILS

#### PLANS PREPARED FOR:

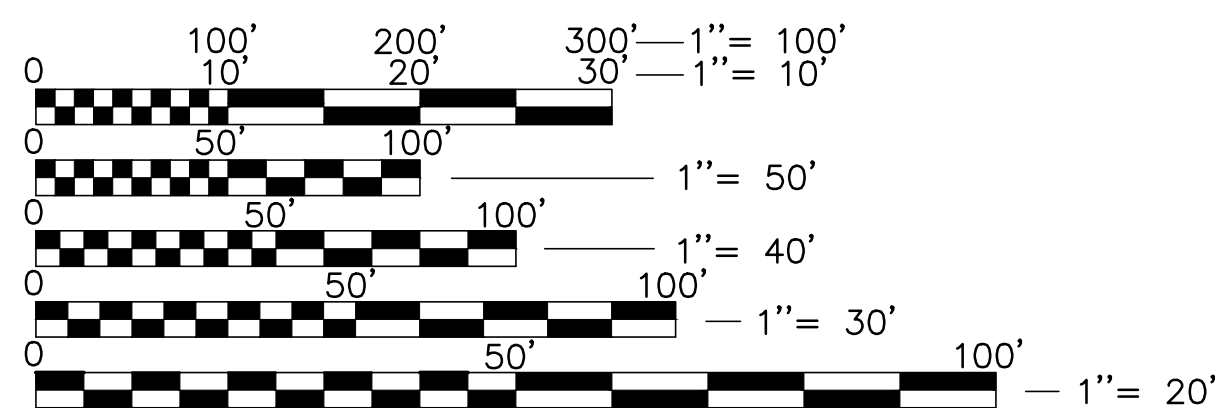
VILLAGE OF BUFFALO GROVE  
 50 RAUPP BOULEVARD  
 BUFFALO GROVE, ILLINOIS 60089  
 TELEPHONE: 847-459-2500

#### TOPOGRAPHIC SURVEY BY:

GEWALT HAMILTON ASSOCIATES, INC.  
 625 FOREST EDGE DRIVE  
 VERNON HILLS, ILLINOIS 60061  
 TELEPHONE: 847-478-9700

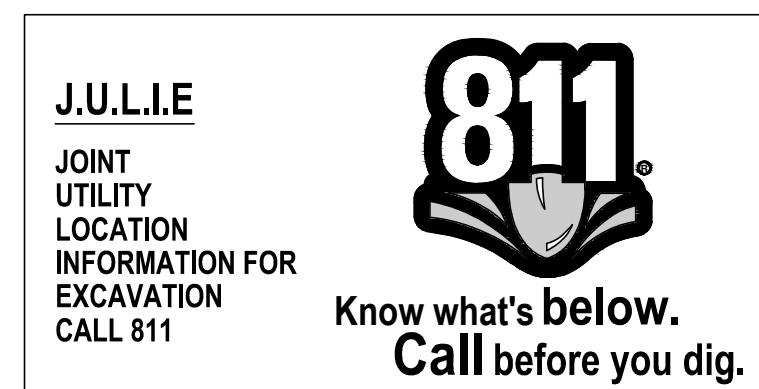
#### COORDINATING/PERMITTING AGENCIES:

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY PUBLIC WATER SUPPLY 217-782-1724  
 ILLINOIS ENVIRONMENTAL PROTECTION AGENCY WATER POLLUTION CONTROL 217-782-3397  
 VILLAGE OF BUFFALO GROVE (ENGINEERING DEPARTMENT) 847-459-2523  
 COOK COUNTY



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

NOTE: CONSTRUCTION MEANS, METHODS AND JOB SITE SAFETY IS THE SOLE AND EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR



SIGNED: \_\_\_\_\_ P.E.

PETER C. LIND

DATE: \_\_\_\_\_

ILLINOIS LICENSE NO.: 062-072045

EXPIRATION DATE: NOVEMBER 30, 2023

ISSUED FOR PERMIT

**GHA** GEWALT HAMILTON ASSOCIATES, INC.  
 625 Forest Edge Drive ■ Vernon Hills, IL. 60061  
 TEL 847.478.9700 ■ FAX 847.478.9701

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TITLE SHEET  
 2024 WHITE PINE WATER MAIN AND ROADWAY IMPROVEMENTS  
 VILLAGE OF BUFFALO GROVE  
 BUFFALO GROVE, ILLINOIS 60089

NO.	BY	DATE	REVISION	NO.	BY	DATE	REVISION

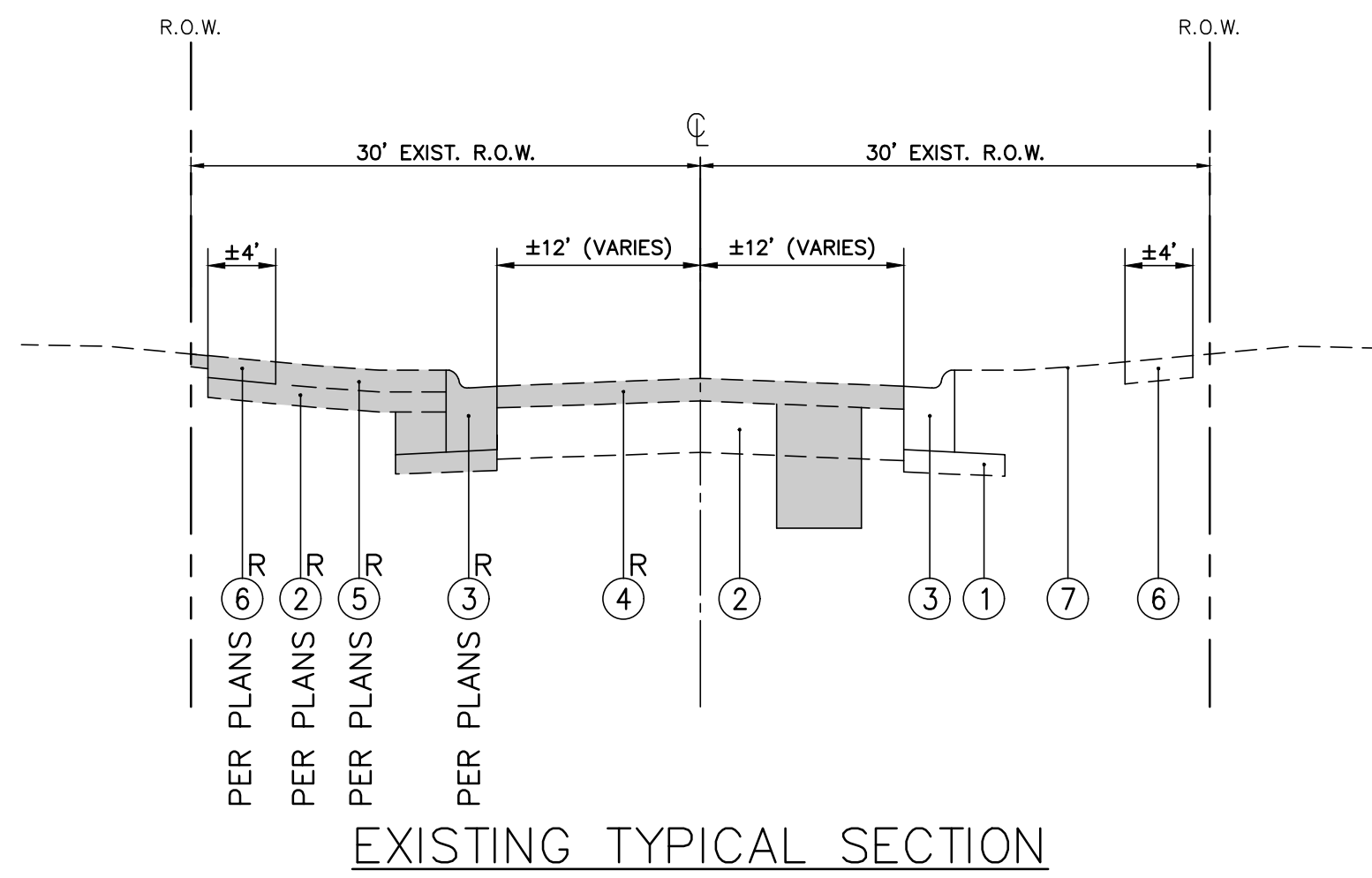
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DATE: 11.02.2023	4798.072
CHECKED BY: PCL	SCALE:
DATE: 11.02.2023	N.T.S.
	OF 19 SHEETS





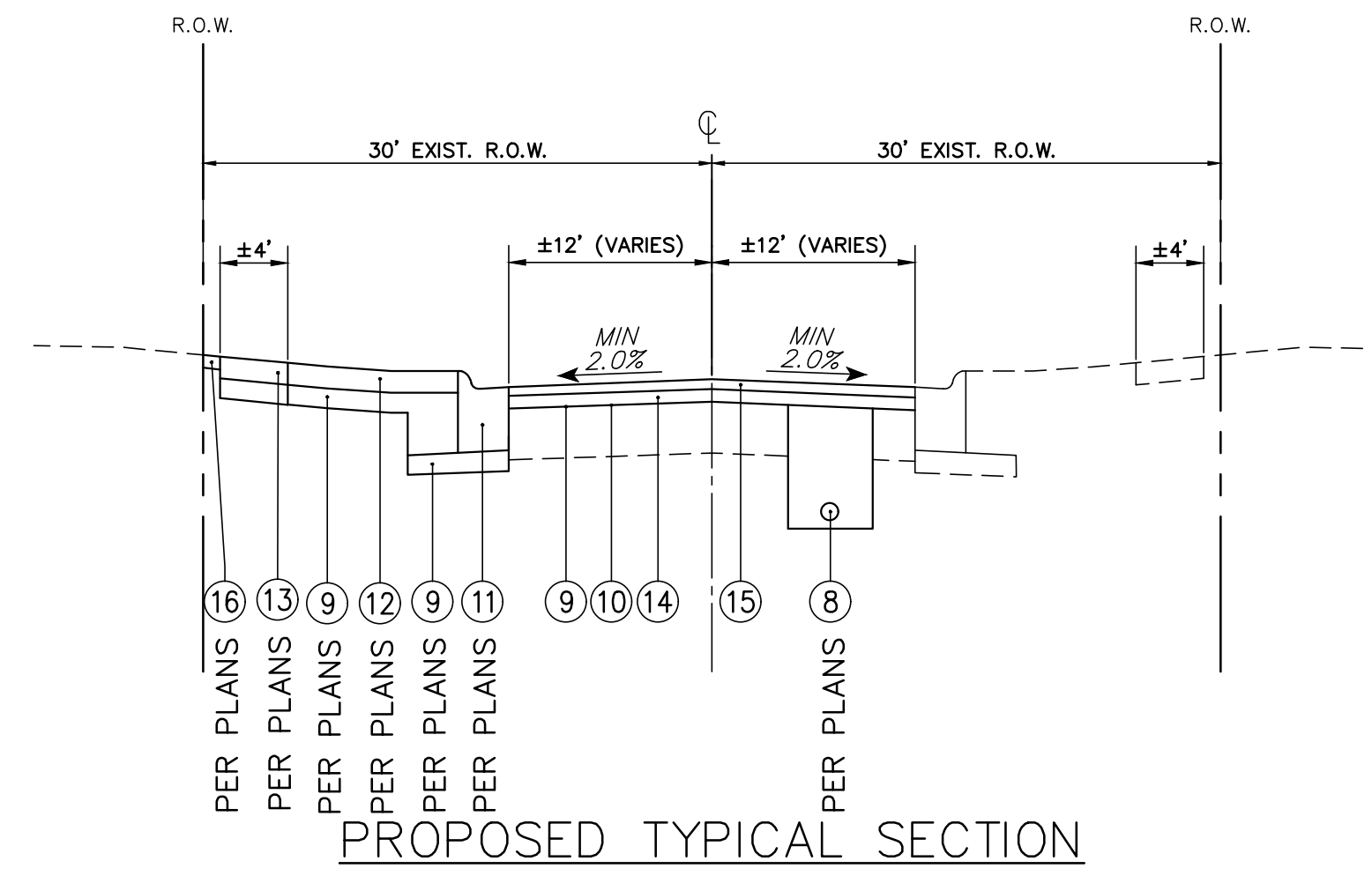
**LEGEND:**

- ① EXISTING AGGREGATE SUB-BASE
- ② EXISTING AGGREGATE BASE COURSE, 2.5"-20.75"
- ③ EXISTING COMBINATION CONCRETE CURB & GUTTER
- ④ EXISTING BITUMINOUS PAVEMENT, 2.5"-10.0"
- ⑤ EXISTING DRIVEWAY
- ⑥ EXISTING SIDEWALK
- ⑦ EXISTING GROUND
- ⑧ PROPOSED DIP CL 52 WATER MAIN (VARIES)
- ⑨ PROPOSED AGGREGATE BASE COURSE, TYPE B, AS REQUIRED
- ⑩ PROPOSED PREPARATION OF BASE; AGGREGATE BASE COURSE, TYPE B, VARIES, AS REQUIRED
- ⑪ PROPOSED COMBINATION CONCRETE CURB AND GUTTER
- ⑫ PROPOSED P.C.C. DRIVEWAY PAVEMENT, 6"/HMA DRIVEWAY PAVEMENT, 3"
- ⑬ PROPOSED P.C.C. SIDEWALK, 5" (6" THRU DRIVEWAYS)
- ⑭ PROPOSED HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2.5"
- ⑮ PROPOSED HOT-MIX ASPHALT SURFACE COURSE, MIX "D", IL-9.5, N50, 2"
- ⑯ PROPOSED RESTORATION: VARIABLE DEPTH TOPSOIL, SEEDING 1A, MULCH METHOD 3A
- ⑰ PROPOSED CLASS D PATCH, 5" (FINISHED)
- <sup>R</sup> ITEM TO BE REMOVED/RECYCLED



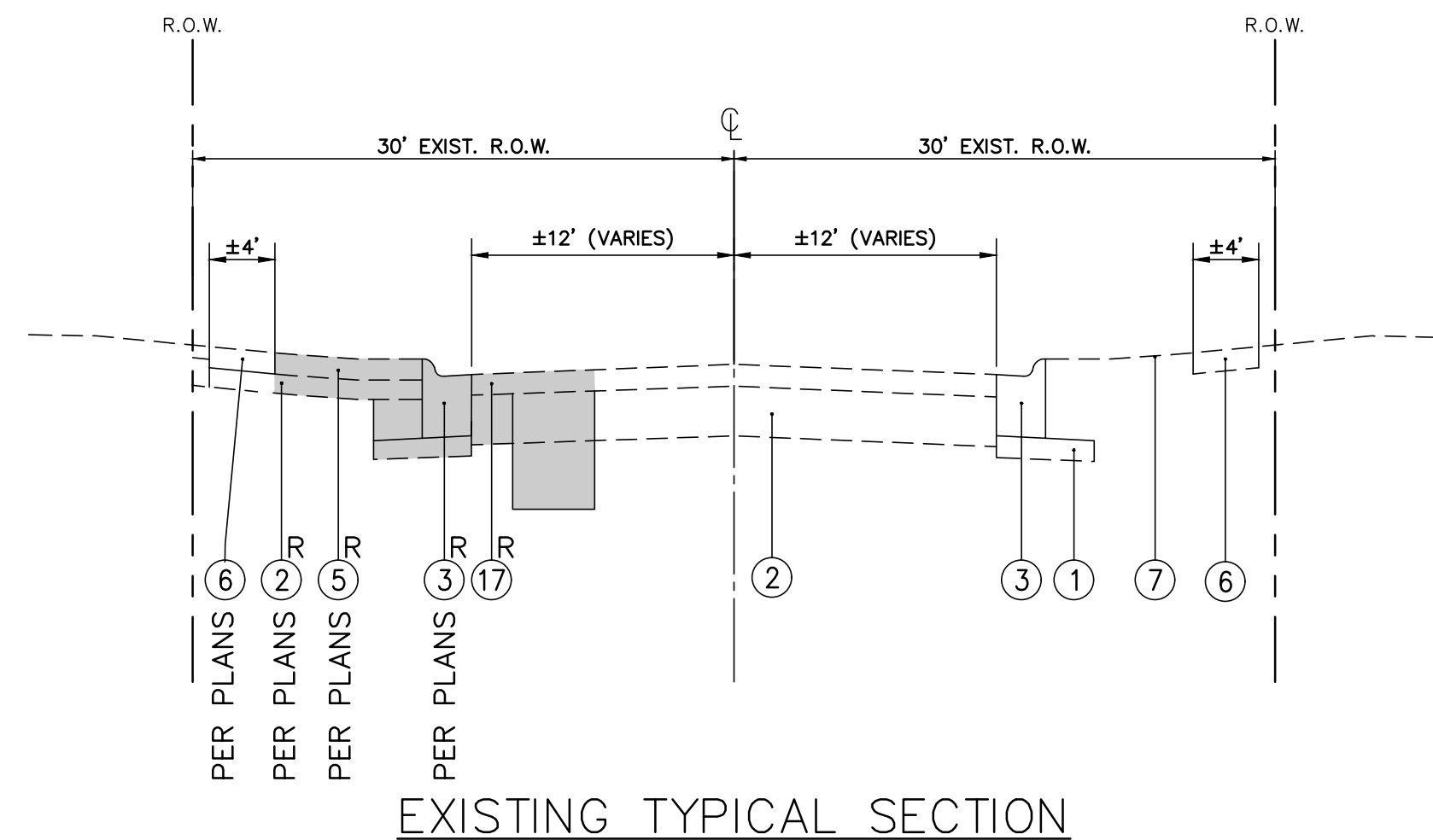
EXISTING TYPICAL SECTION

ELMWOOD DRIVE  
 RED OAK COURT  
 WHITE PINE ROAD  
 HAWTHORNE ROAD  
 POPLAR COURT  
 EVERGREEN ROAD  
 SYCAMORE ROAD



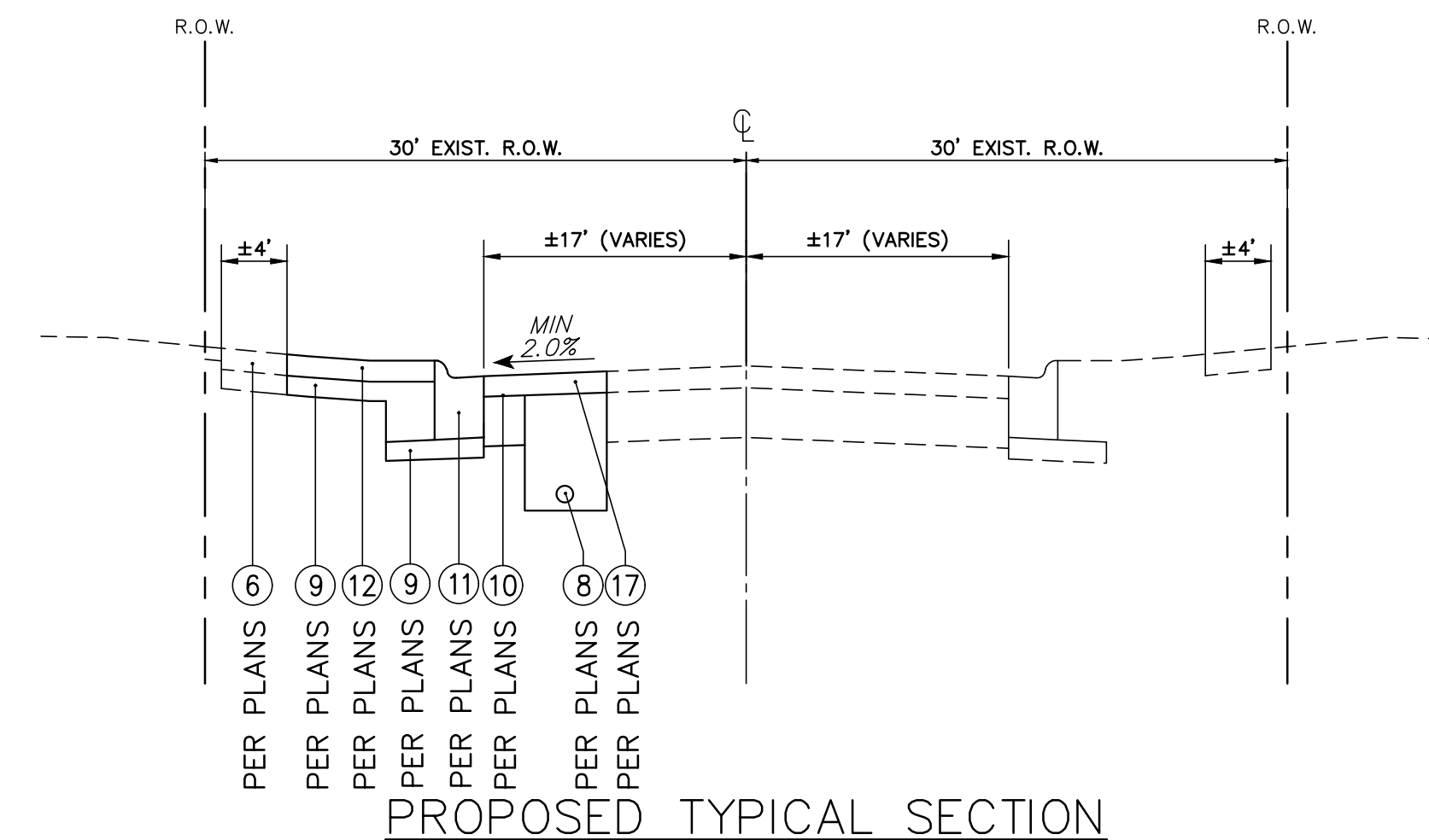
PROPOSED TYPICAL SECTION

ELMWOOD DRIVE  
 RED OAK COURT  
 WHITE PINE ROAD  
 HAWTHORNE ROAD  
 POPLAR COURT  
 EVERGREEN ROAD  
 SYCAMORE ROAD



EXISTING TYPICAL SECTION

HAPSFIELD LANE



PROPOSED TYPICAL SECTION

HAPSFIELD LANE

NOTE:

PROPOSED PCC SIDEWALK THRU DRIVEWAY LOCATIONS SHALL BE 6" AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQ.FT. FOR PCC SIDEWALK 5".

HOT-MIX ASPHALT MIXTURE REQUIREMENTS	
MIXTURE TYPE	AIR VOIDS @ Ndes
<b>RECONSTRUCTION</b>	
HOT-MIX ASPHALT SURFACE COURSE, MIX "D", IL-9.5, N50, 2"	3.5% @ 50 GYR
HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2.5"	3.5% @ 50 GYR

THE UNIT WEIGHT USED TO CALCULATE ALL HMA SURFACE MIXTURE QUANTITIES IS 112 LBS/SQ.YD./IN.

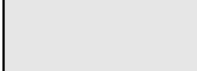





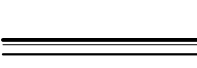
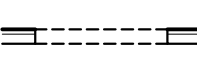
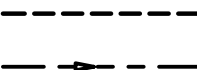
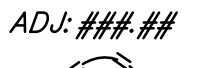


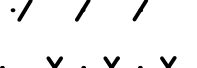


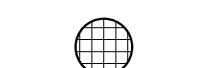

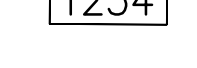




THE "AC TYPE" SHALL BE "PG 64-22" UNLESS MODIFIED BY DISTRICT ONE SPECIAL PROVISIONS.

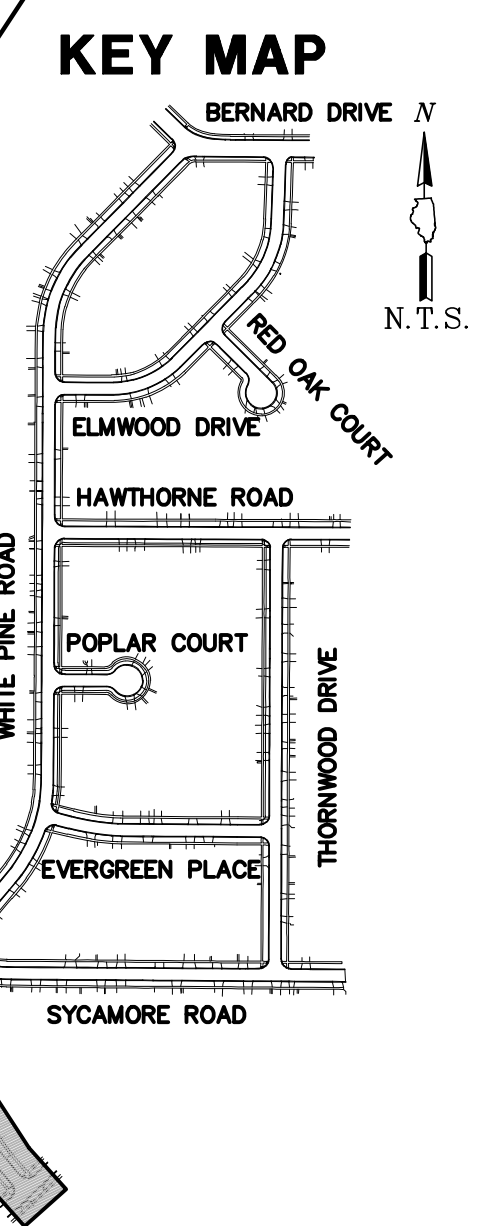
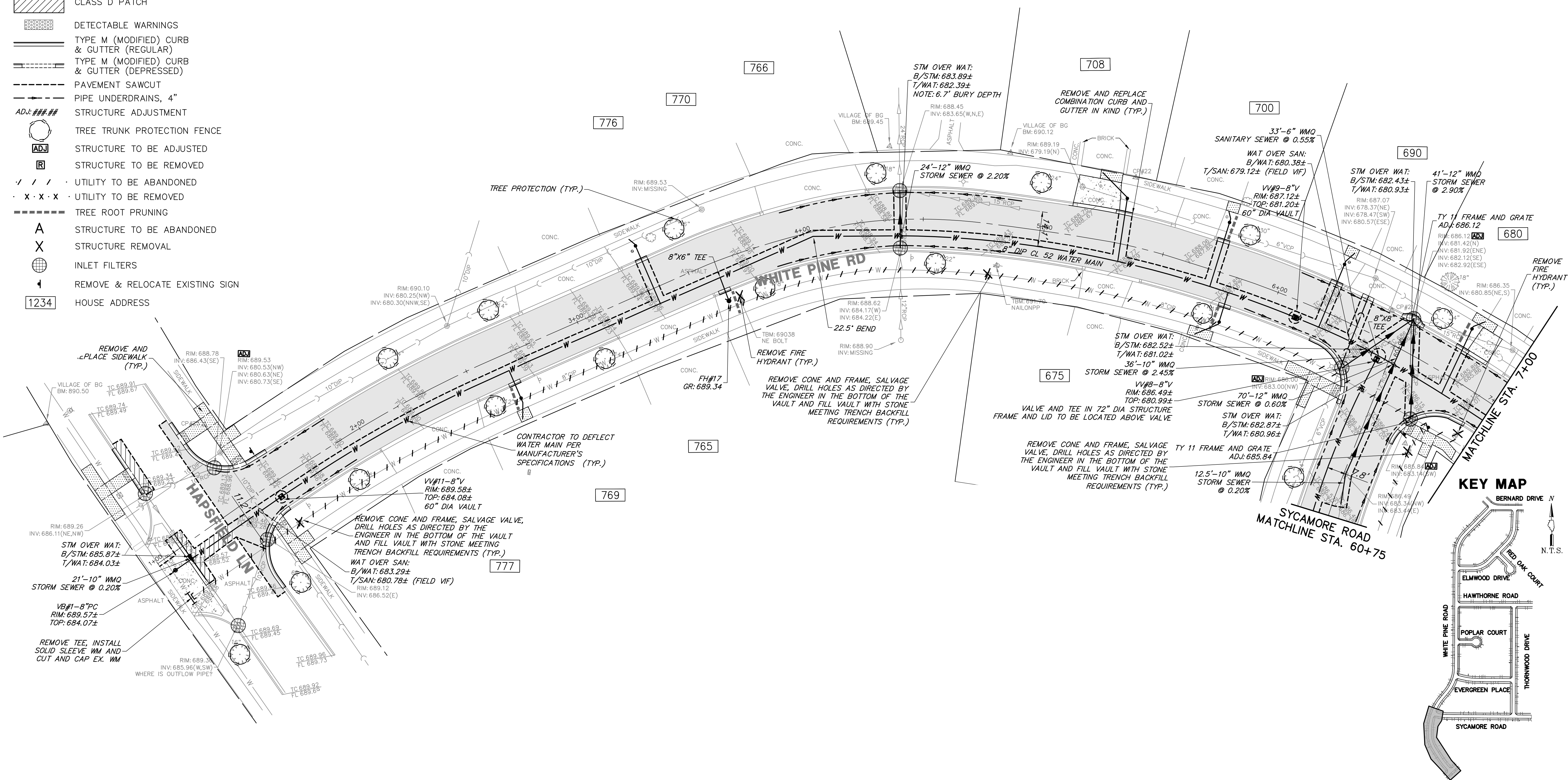
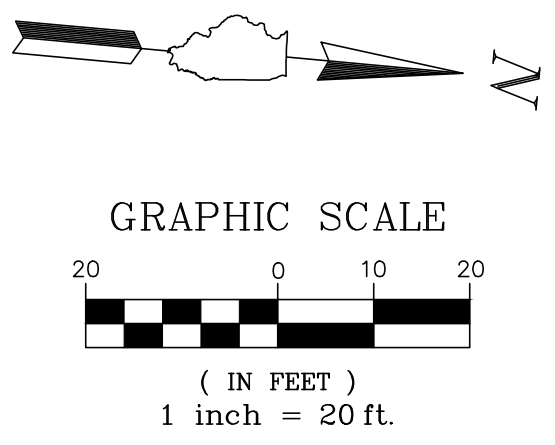
FOR USE OF RECYCLED MATERIALS SEE SPECIAL PROVISIONS.

NO.	BY	DATE	REVISION	NO.	BY	DATE	REVISION

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**PROPOSED LEGEND**

-  HMA RECONSTRUCTION
-  PCC PAVEMENT
-  HMA DRIVEWAY PAVEMENT
-  PCC SIDEWALK
-  CLASS D PATCH
-  DETECTABLE WARNINGS
-  TYPE M (MODIFIED) CURB & GUTTER (REGULAR)
-  TYPE M (MODIFIED) CURB & GUTTER (DEPRESSED)
-  PAVEMENT SAWCUT
-  PIPE UNDERDRAINS, 4"
-  STRUCTURE ADJUSTMENT
-  TREE TRUNK PROTECTION FENCE
-  STRUCTURE TO BE ADJUSTED
-  STRUCTURE TO BE REMOVED
-  UTILITY TO BE ABANDONED
-  UTILITY TO BE REMOVED
-  TREE ROOT PRUNING
-  STRUCTURE TO BE ABANDONED
-  STRUCTURE REMOVAL
-  INLET FILTERS
-  REMOVE & RELOCATE EXISTING SIGN
-  HOUSE ADDRESS



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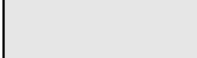





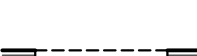
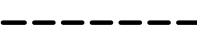
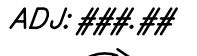


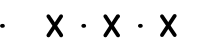



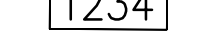






**WHITE PINE ROAD STA. 1+00 TO STA. 7+00**  
**2024 WHITE PINE WATER MAIN AND ROADWAY IMPROVEMENTS**  
**VILLAGE OF BUFFALO GROVE**  
**BUFFALO GROVE, ILLINOIS 60089**

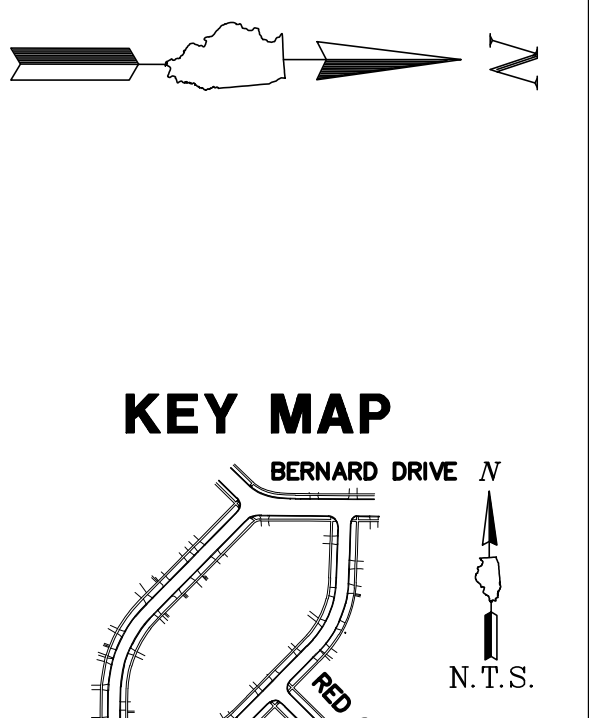
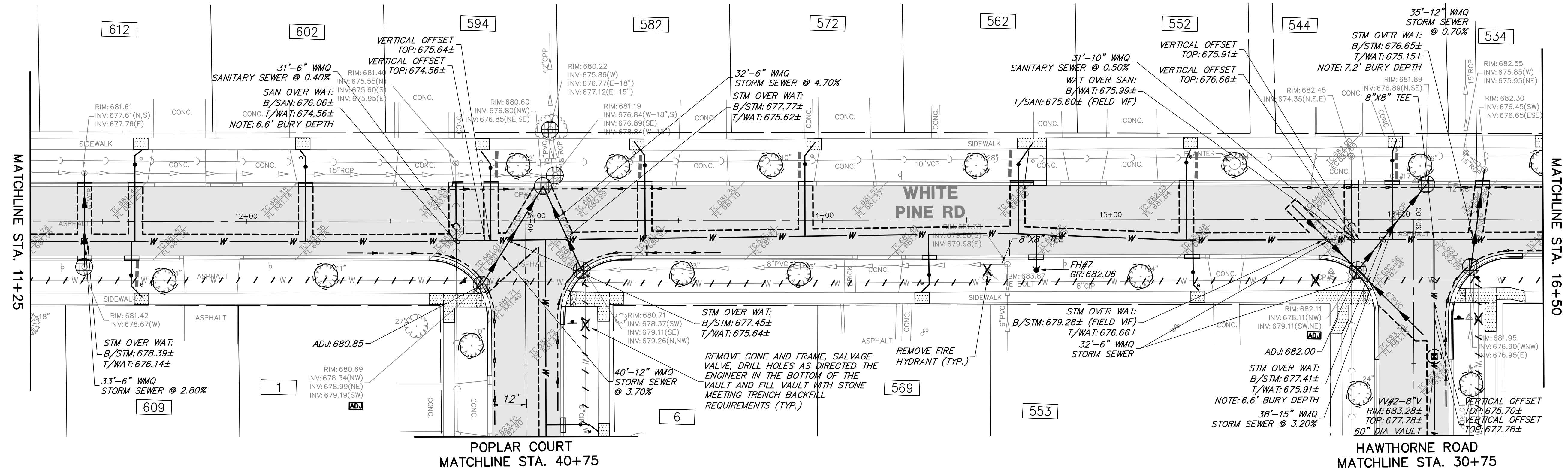
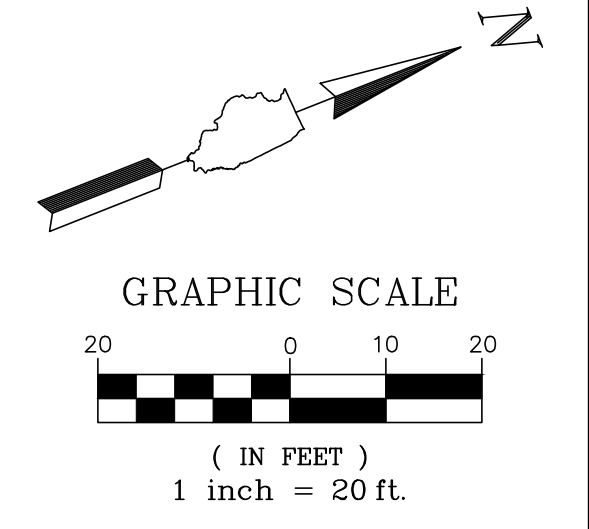
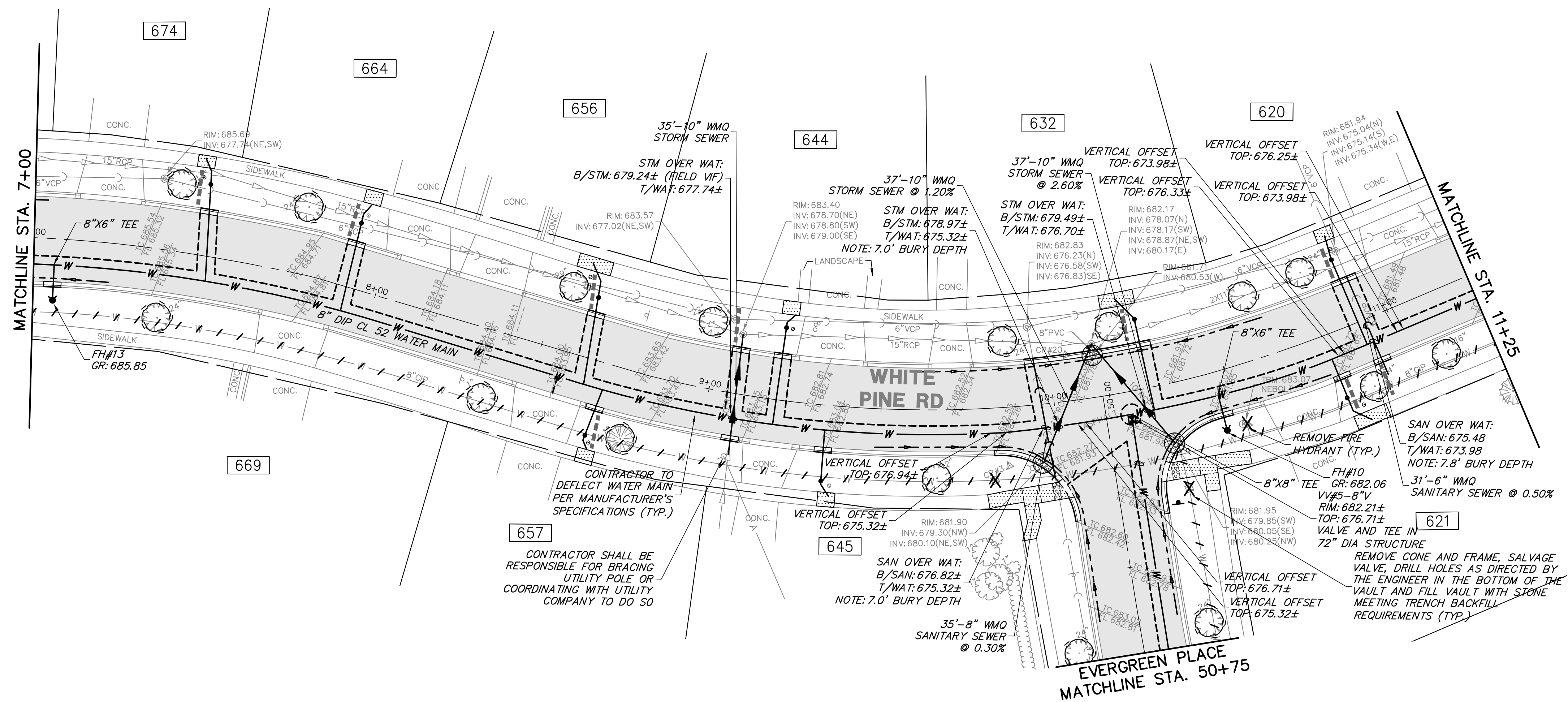
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FILE: 4798.072-PR4.dwg	SHEET NUMBER:
DRAWN BY: SHY	GHA PROJECT #
DATE: 11.02.2023	4798.072
CHECKED BY: PCL	SCALE:
DATE: 11.02.2023	1"=20'
	OF 19 SHEETS

8:42024.028-BUFFALO GROVE WATER & STREET IMPROVEMENTS 4798.072-PR4.DWG 10/21/2024 4:22 PM

**PROPOSED LEGEND**

-  HMA RECONSTRUCTION
-  PCC PAVEMENT
-  HMA DRIVEWAY PAVEMENT
-  PCC SIDEWALK
-  CLASS D PATCH
-  DETECTABLE WARNINGS
-  TYPE M (MODIFIED) CURB & GUTTER (REGULAR)
-  TYPE M (MODIFIED) CURB & GUTTER (DEPRESSED)
-  PAVEMENT SAWCUT
-  PIPE UNDERDRAINS, 4"
-  STRUCTURE ADJUSTMENT
-  TREE TRUNK PROTECTION FENCE
-  STRUCTURE TO BE ADJUSTED
-  STRUCTURE TO BE REMOVED
-  UTILITY TO BE ABANDONED
-  UTILITY TO BE REMOVED
-  TREE ROOT PRUNING
-  STRUCTURE TO BE ABANDONED
-  STRUCTURE REMOVAL
-  INLET FILTERS
-  REMOVE & RELOCATE EXISTING SIGN
-  HOUSE ADDRESS



**GHA GEWALT HAMILTON ASSOCIATES, INC.**  
 625 Forest Edge Drive ■ Vernon Hills, IL. 60061  
 TEL 847.478.9700 ■ FAX 847.478.9701

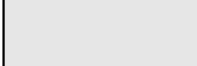




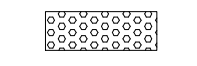

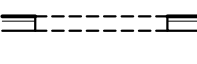
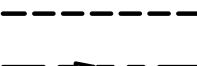
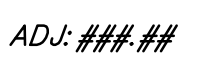

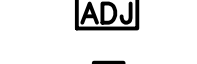

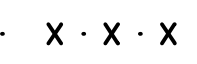




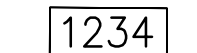



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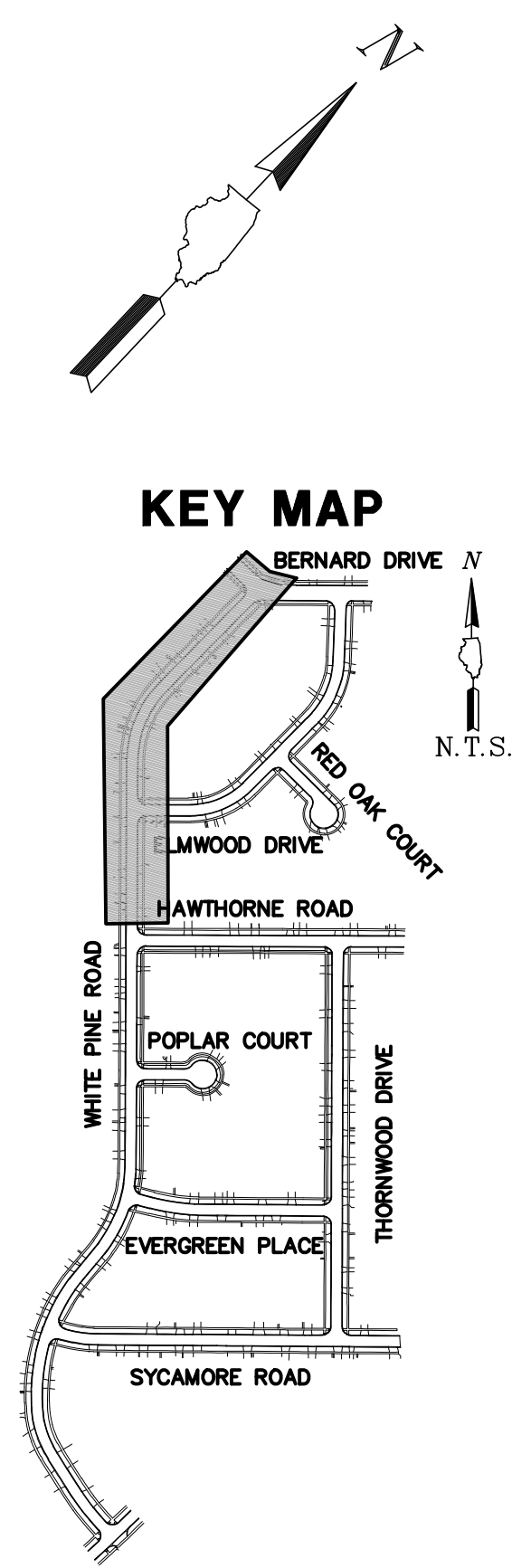
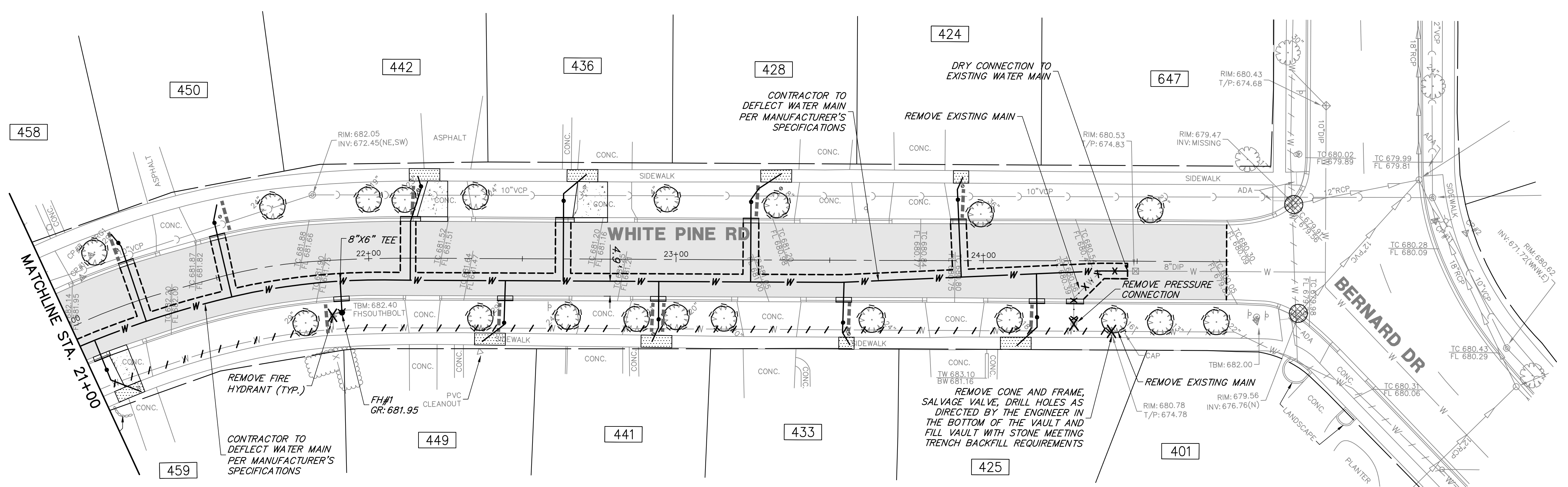
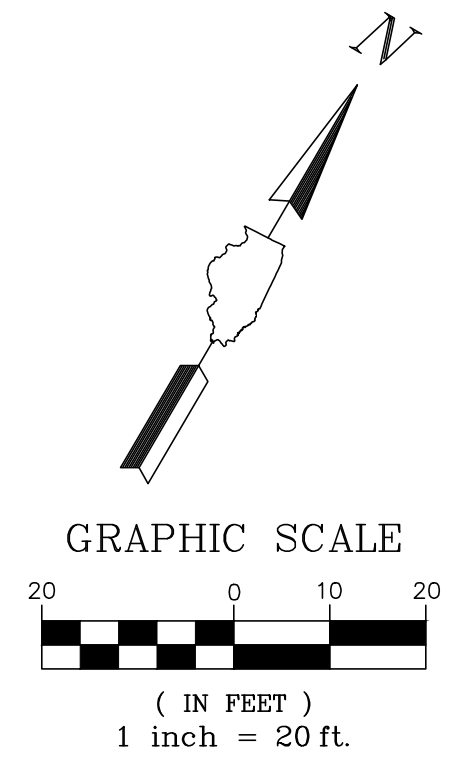
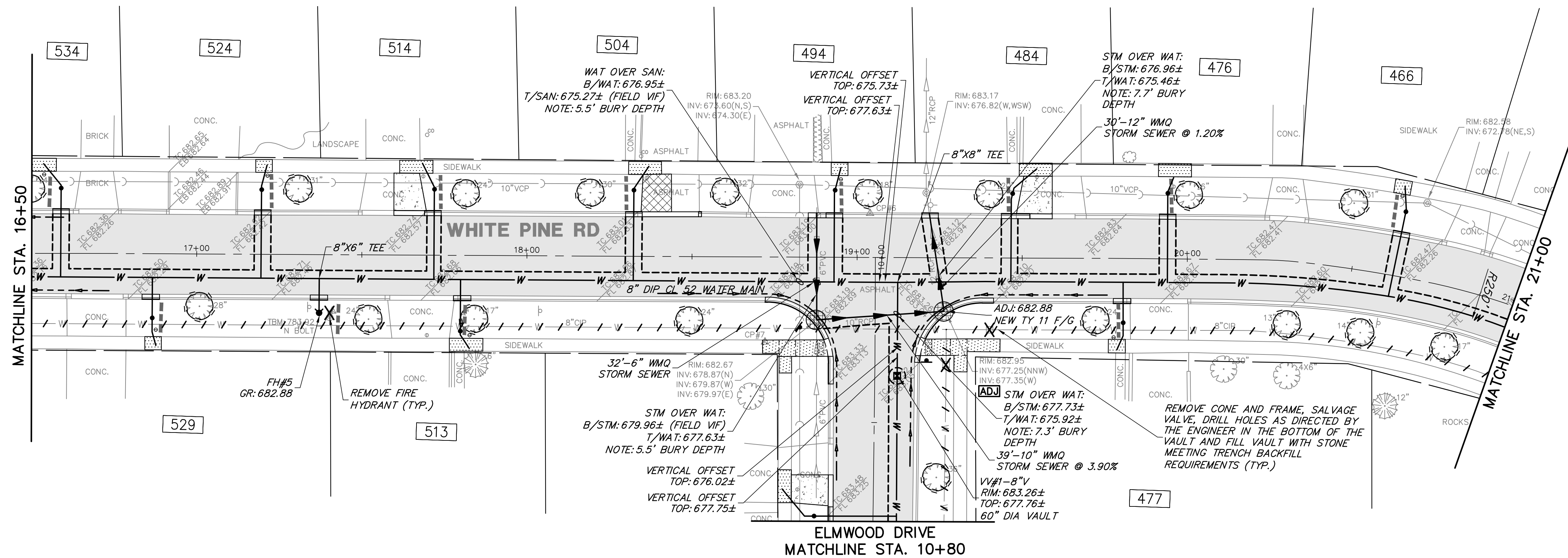
**WHITE PINE ROAD STA. 7+00 TO STA. 16+50**  
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**VILLAGE OF BUFFALO GROVE**  
**BUFFALO GROVE, ILLINOIS 60089**

NO.	BY	DATE	REVISION

FILE 4798.072-PR4.dwg	SHEET NUMBER: <b>6</b>
DRAWN BY: SHY	GHA PROJECT # 4798.072
DATE: 11.02.2023	
CHECKED BY: PCL	SCALE: 1"=20'
DATE: 11.02.2023	
	OF 19 SHEETS

**PROPOSED LEGEND**

-  HMA RECONSTRUCTION
-  PCC PAVEMENT
-  HMA DRIVEWAY PAVEMENT
-  PCC SIDEWALK
-  CLASS D PATCH
-  DETECTABLE WARNINGS
-  TYPE M (MODIFIED) CURB & GUTTER (REGULAR)
-  TYPE M (MODIFIED) CURB & GUTTER (DEPRESSED)
-  PAVEMENT SAWCUT
-  PIPE UNDERDRAINS, 4"
-  ADJ:#### STRUCTURE ADJUSTMENT
-  TREE TRUNK PROTECTION FENCE
-  [ADJ] STRUCTURE TO BE ADJUSTED
-  [R] STRUCTURE TO BE REMOVED
-  / / / UTILITY TO BE ABANDONED
-  x · x · x UTILITY TO BE REMOVED
-  - - - - - TREE ROOT PRUNING
-  A STRUCTURE TO BE ABANDONED
-  X STRUCTURE REMOVAL
-  [Globe] INLET FILTERS
-  [Sign] REMOVE & RELOCATE EXISTING SIGN
-  [1234] HOUSE ADDRESS



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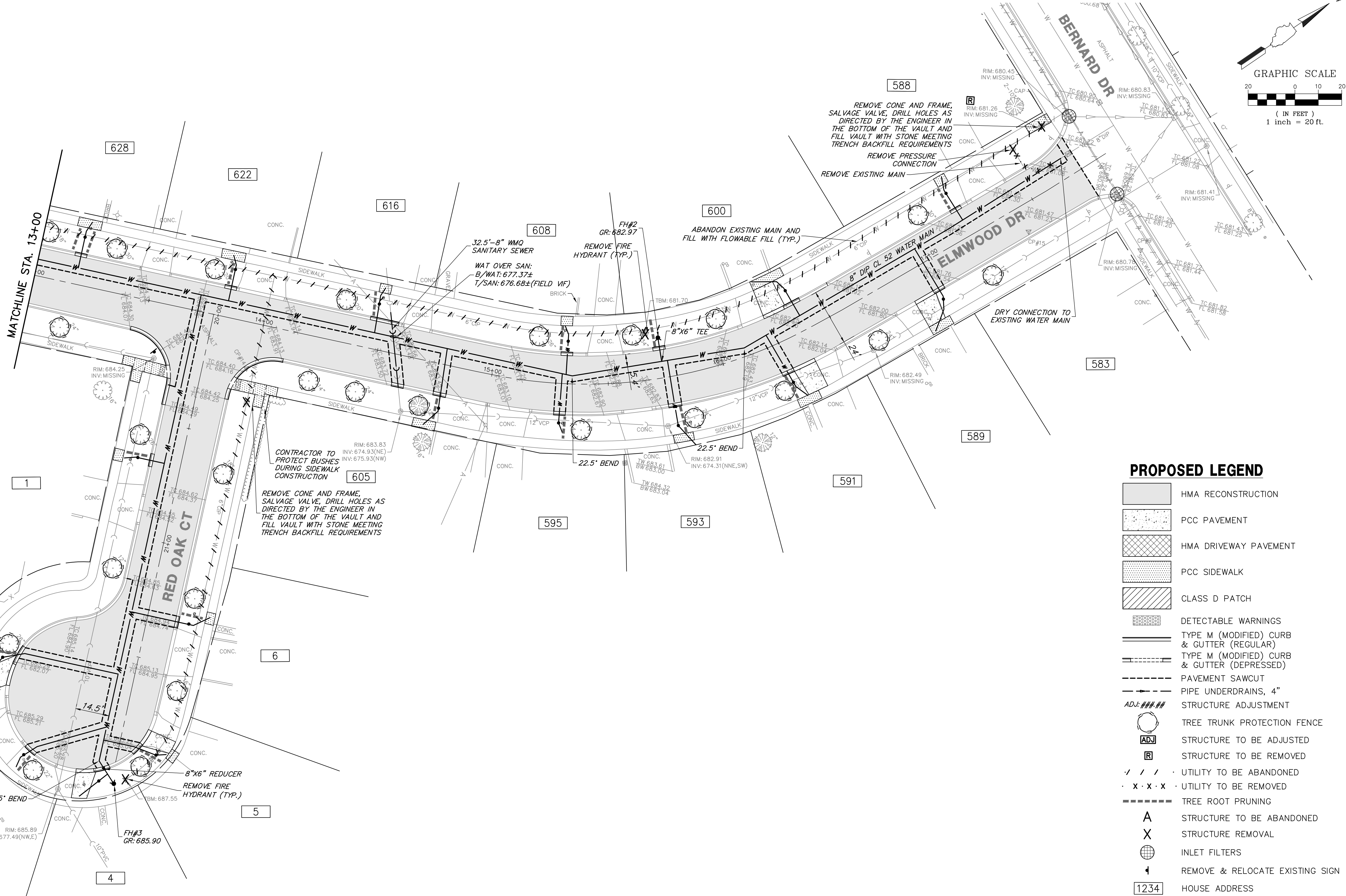
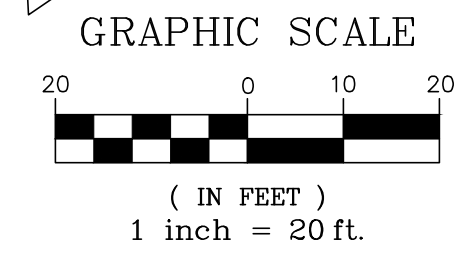
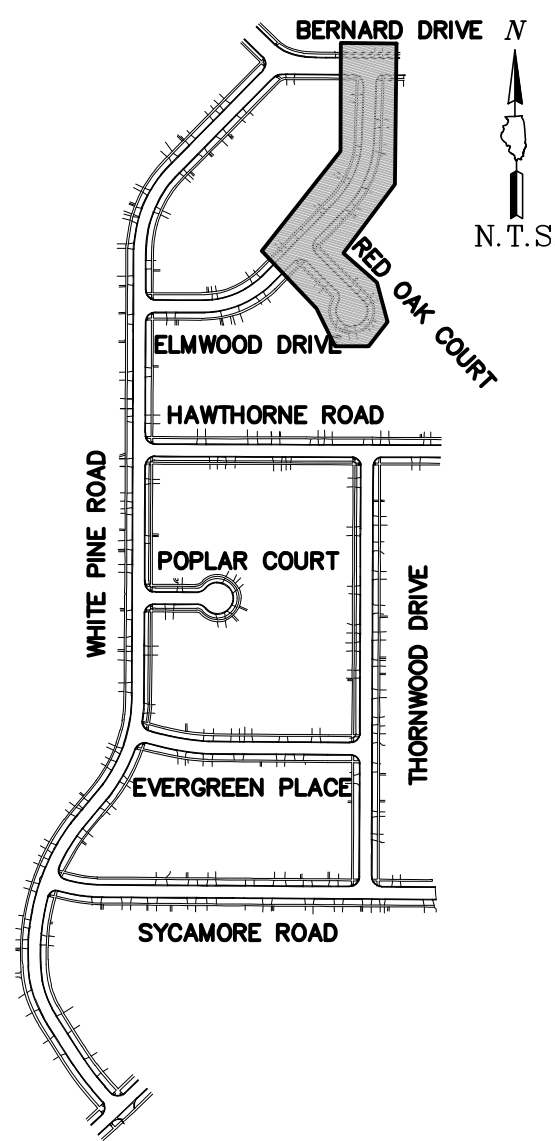
**WHITE PINE ROAD STA. 16+50 TO BERNARD DR**  
**2024 WHITE PINE WATER MAIN AND ROADWAY IMPROVEMENTS**  
**VILLAGE OF BUFFALO GROVE**  
**BUFFALO GROVE, ILLINOIS 60089**

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DATE: 11.02.2023	1"=20'
	OF 19 SHEETS

**7**

**KEY MAP**



**PROPOSED LEGEND**

- HMA RECONSTRUCTION
- PCC PAVEMENT
- HMA DRIVEWAY PAVEMENT
- PCC SIDEWALK
- CLASS D PATCH
- DETECTABLE WARNINGS
- TYPE M (MODIFIED) CURB & GUTTER (REGULAR)
- TYPE M (MODIFIED) CURB & GUTTER (DEPRESSED)
- PAVEMENT SAWCUT
- PIPE UNDERDRAINS, 4"
- STRUCTURE ADJUSTMENT
- TREE TRUNK PROTECTION FENCE
- STRUCTURE TO BE ADJUSTED
- STRUCTURE TO BE REMOVED
- UTILITY TO BE ABANDONED
- UTILITY TO BE REMOVED
- TREE ROOT PRUNING
- STRUCTURE TO BE ABANDONED
- STRUCTURE REMOVAL
- INLET FILTERS
- REMOVE & RELOCATE EXISTING SIGN
- HOUSE ADDRESS

**GHA GEWALT HAMILTON ASSOCIATES, INC.**  
 625 Forest Edge Drive ■ Vernon Hills, IL. 60061  
 TEL 847.478.9700 ■ FAX 847.478.9701

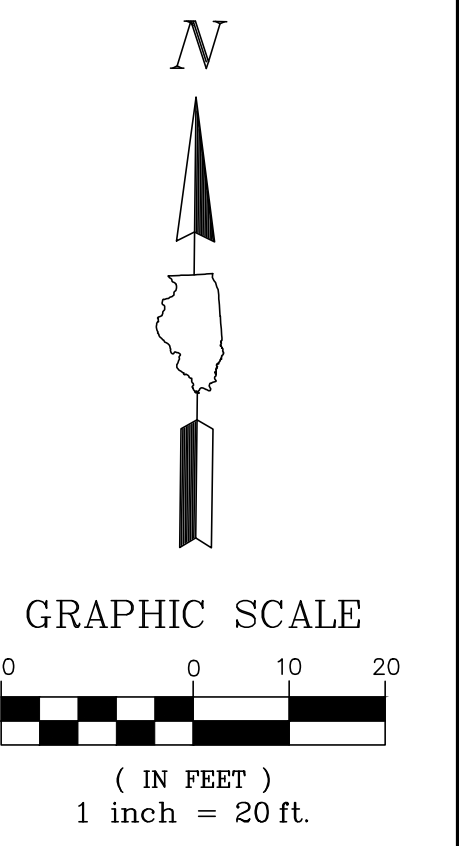
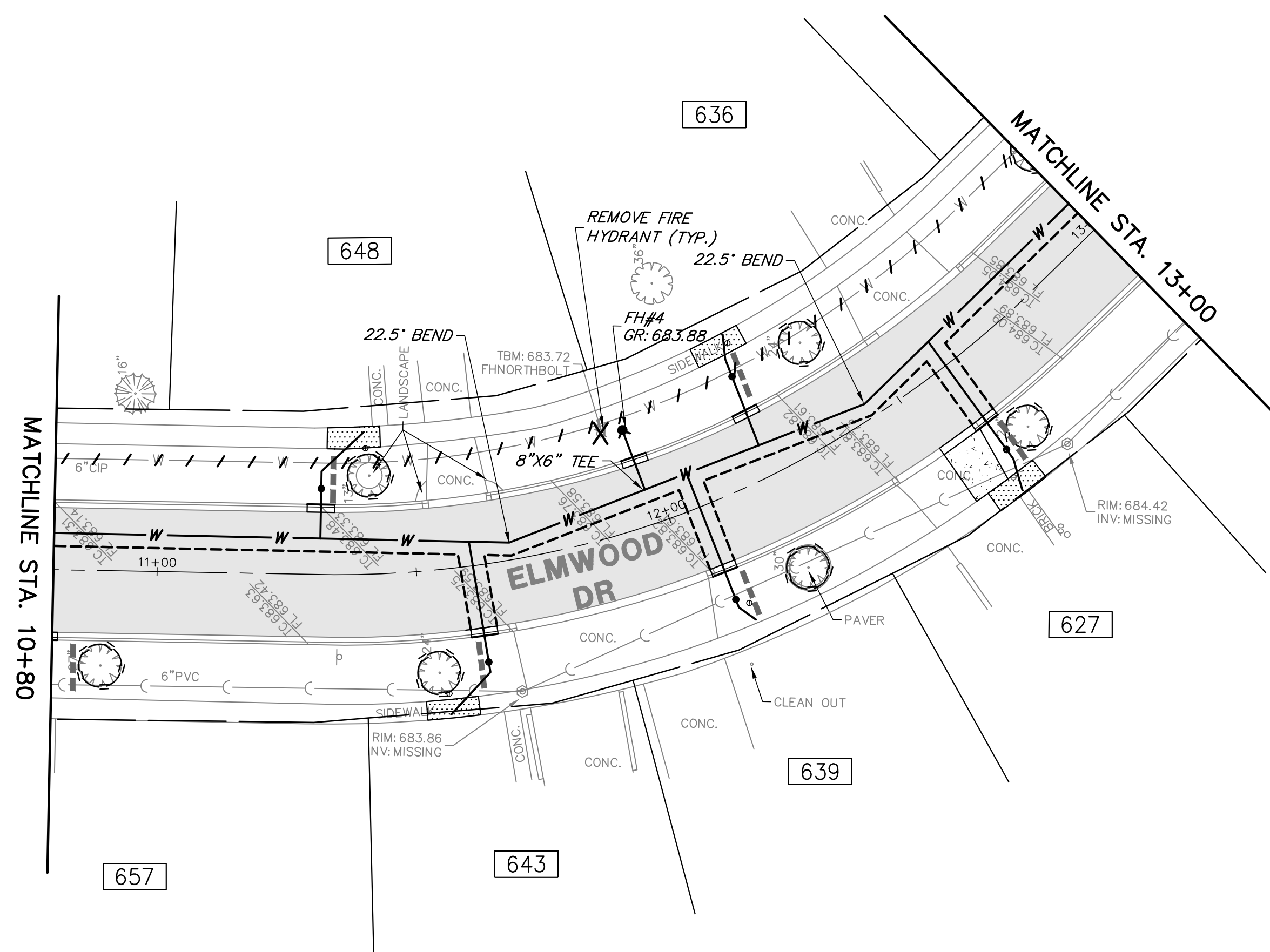
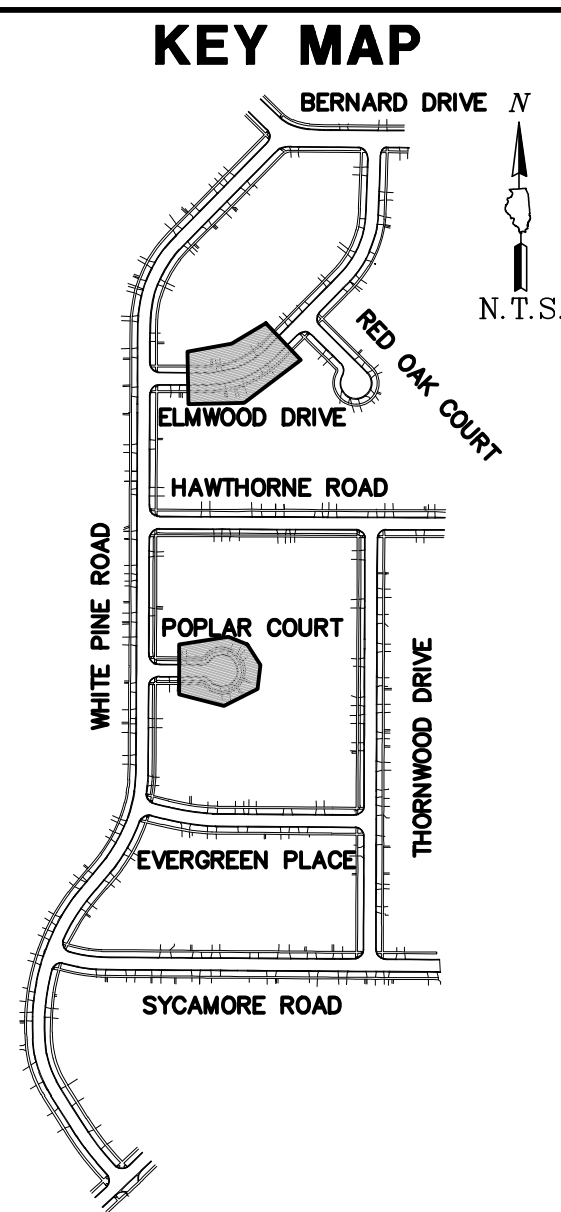
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**ELMWOOD DRIVE STA. 13+00 TO BERNARD DRIVE**  
**2024 WHITE PINE WATER MAIN AND ROADWAY IMPROVEMENTS**  
**VILLAGE OF BUFFALO GROVE**  
**BUFFALO GROVE, ILLINOIS 60089**

NO.	BY	DATE	REVISION

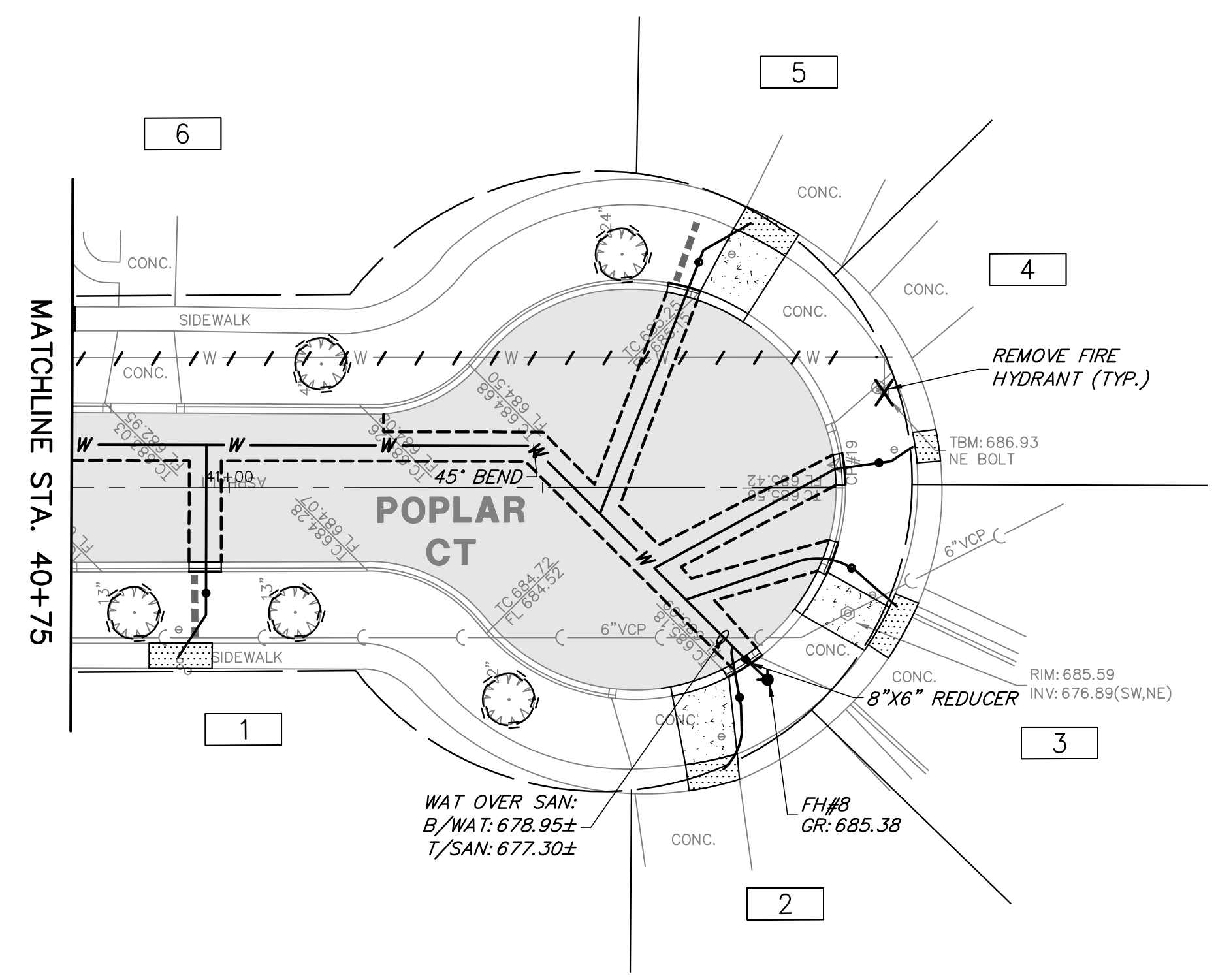
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DATE: 11.02.2023	4798.072
CHECKED BY: PCL	SCALE:
DATE: 11.02.2023	1"=20'
	8
	OF 19 SHEETS





### PROPOSED LEGEND

- HMA RECONSTRUCTION
- PCC PAVEMENT
- HMA DRIVEWAY PAVEMENT
- PCC SIDEWALK
- CLASS D PATCH
- DETECTABLE WARNINGS
- TYPE M (MODIFIED) CURB & GUTTER (REGULAR)
- TYPE M (MODIFIED) CURB & GUTTER (DEPRESSED)
- PAVEMENT SAWCUT
- PIPE UNDERDRAINS, 4"
- STRUCTURE ADJUSTMENT
- TREE TRUNK PROTECTION FENCE
- STRUCTURE TO BE ADJUSTED
- STRUCTURE TO BE REMOVED
- UTILITY TO BE ABANDONED
- UTILITY TO BE REMOVED
- TREE ROOT PRUNING
- STRUCTURE TO BE ABANDONED
- STRUCTURE REMOVAL
- INLET FILTERS
- REMOVE & RELOCATE EXISTING SIGN
- HOUSE ADDRESS



CALSTRONG 2798 BUFFALO GROVE 4798.072-PR4.DWG - 10/21/2023 4:28 PM

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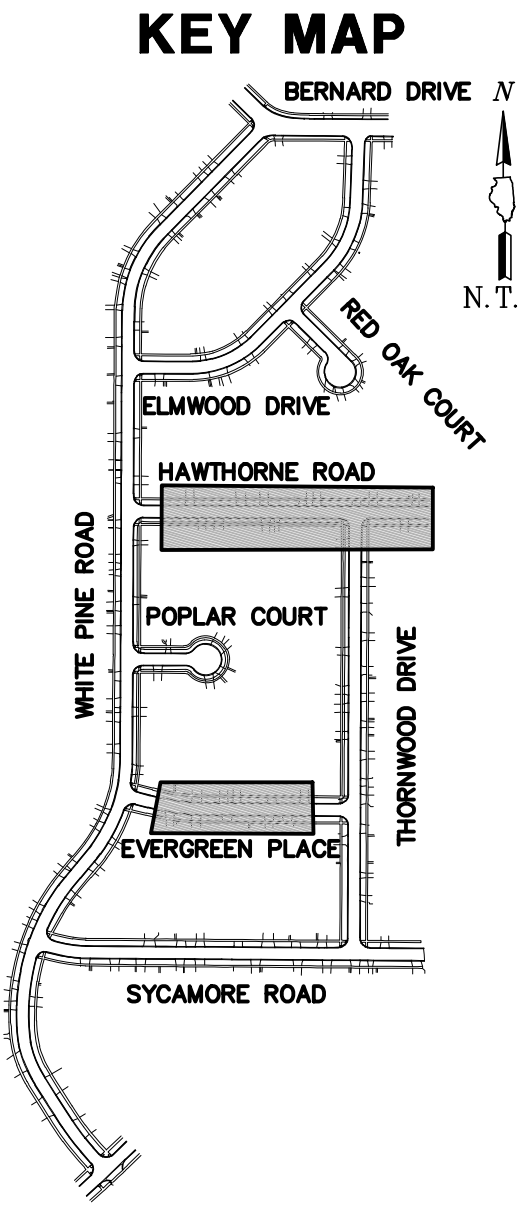
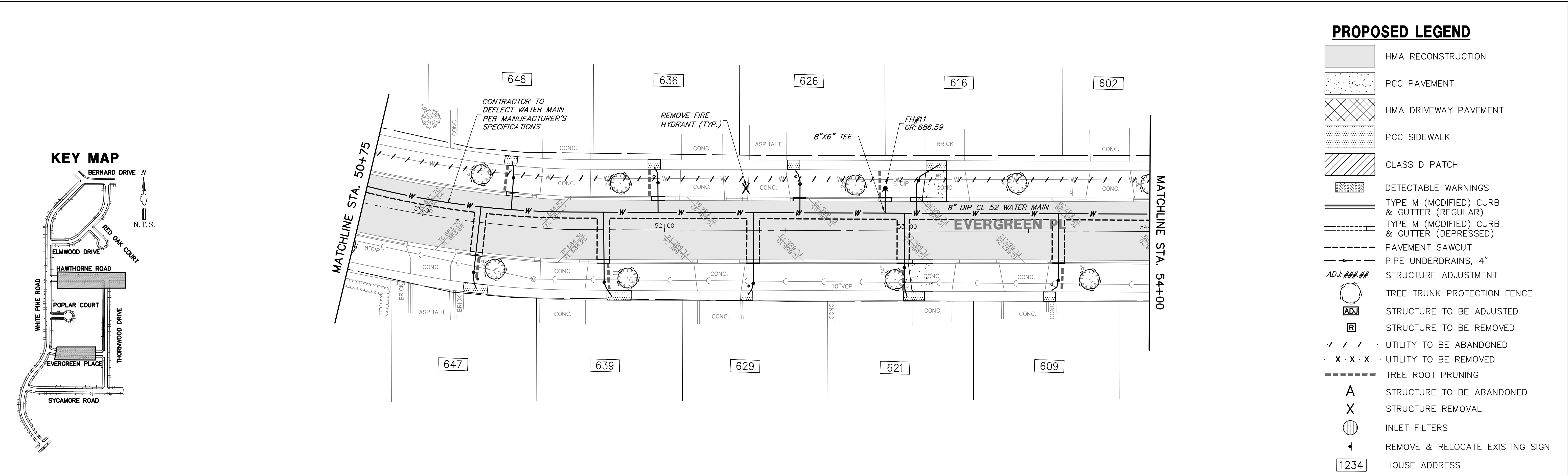
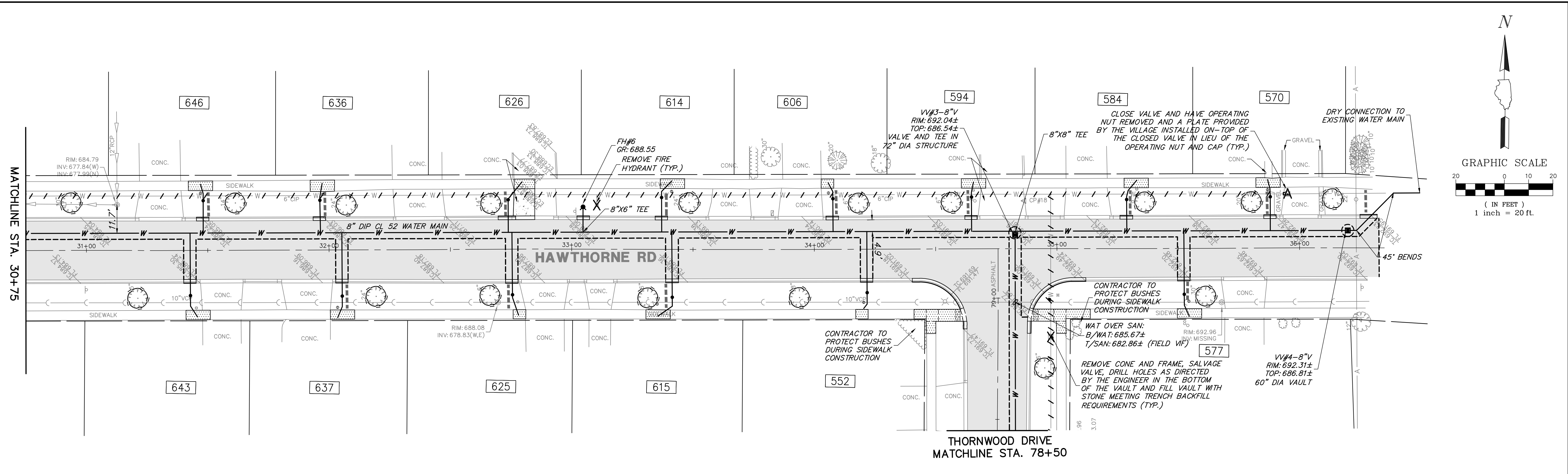
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**ELMWOOD DR STA. 10+80 - 13+00 & POPLAR CT**  
**2024 WHITE PINE WATER MAIN AND ROADWAY IMPROVEMENTS**  
**VILLAGE OF BUFFALO GROVE**  
**BUFFALO GROVE, ILLINOIS 60089**

NO.	BY	DATE	REVISION	NO.	BY	DATE	REVISION

FILE: 4798.072-PR4.dwg	SHEET NUMBER:
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DATE: 11.02.2023	4798.072
CHECKED BY: PCL	SCALE:
DATE: 11.02.2023	1"=20'

**9**  
OF 19 SHEETS



**PROPOSED LEGEND**

- HMA RECONSTRUCTION
- PCC PAVEMENT
- HMA DRIVEWAY PAVEMENT
- PCC SIDEWALK
- CLASS D PATCH
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625 Forest Edge Drive ■ Vernon Hills, IL. 60061  
TEL 847.478.9700 ■ FAX 847.478.9701

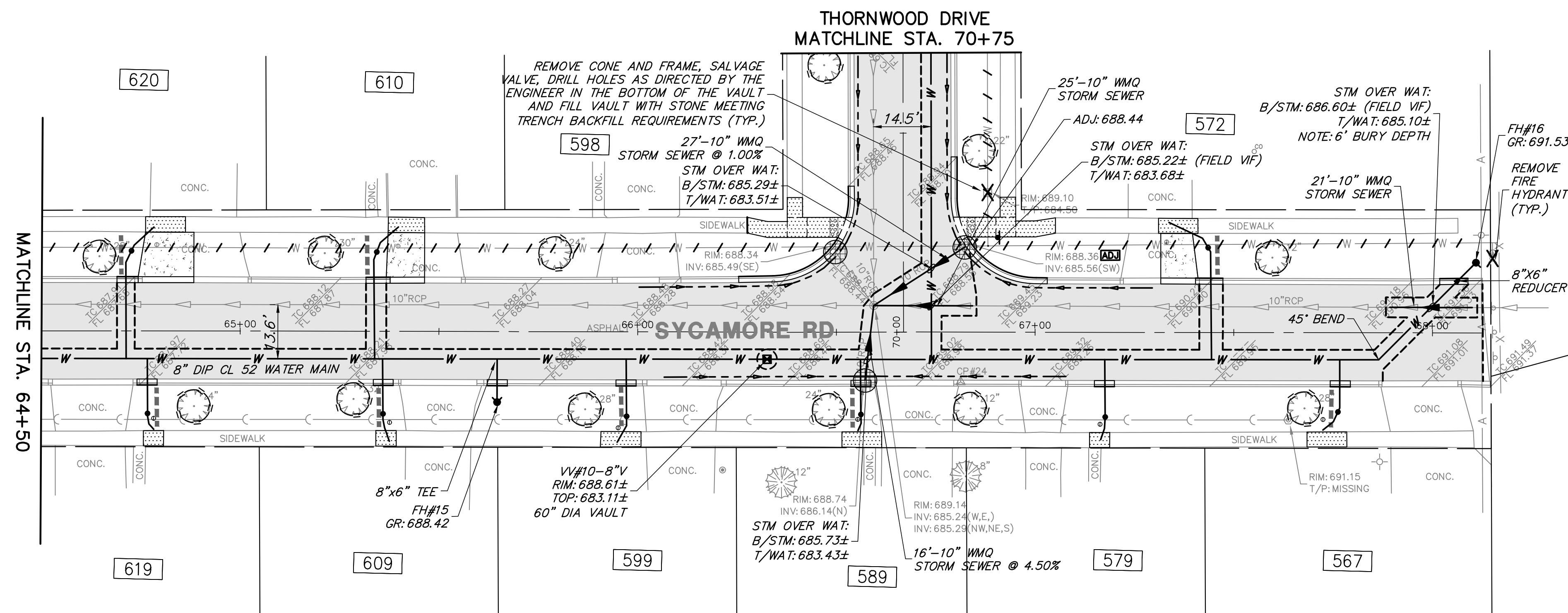
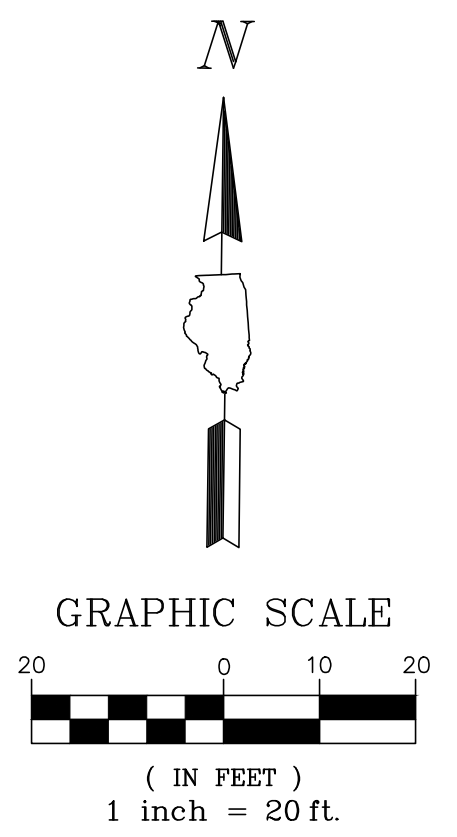
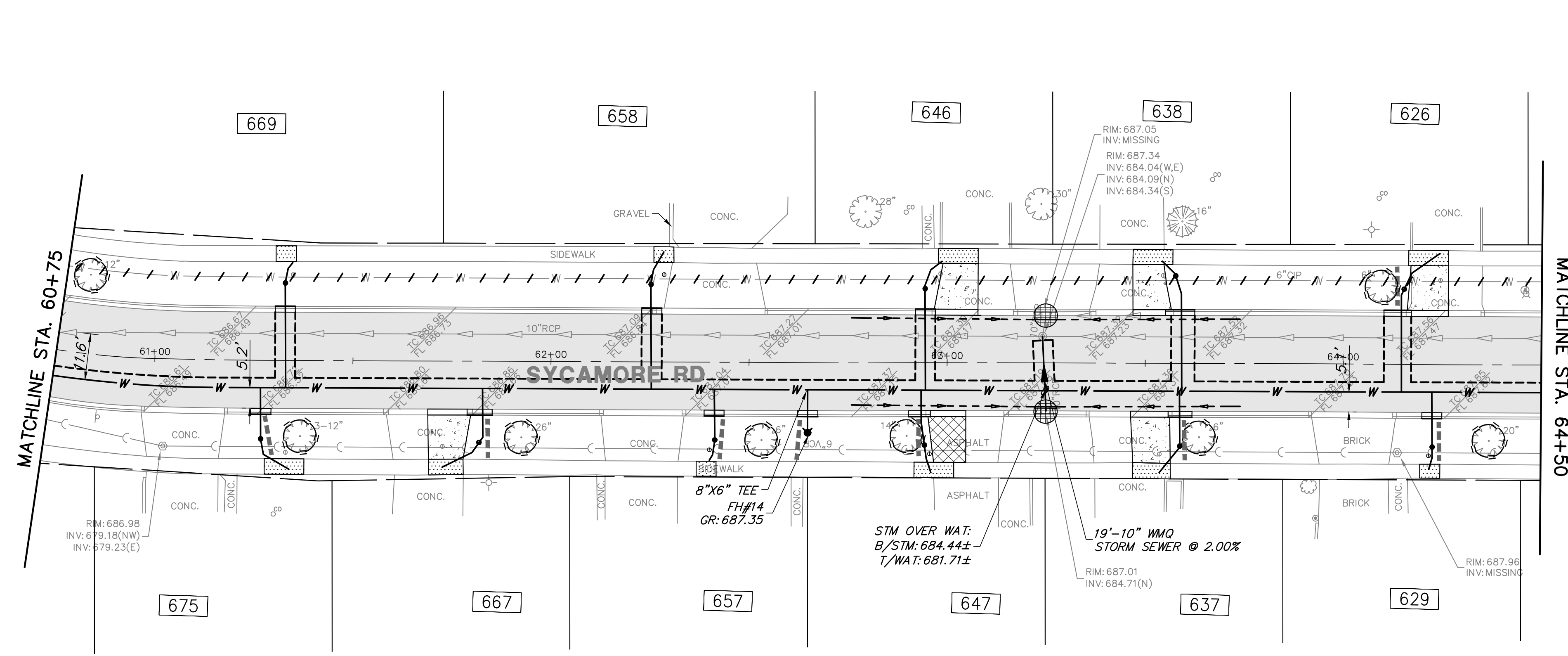
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**HAWTHORNE ROAD & EVERGREEN PLACE**  
**2024 WHITE PINE WATER MAIN AND ROADWAY IMPROVEMENTS**  
**VILLAGE OF BUFFALO GROVE**  
**BUFFALO GROVE, ILLINOIS 60089**

NO.	BY	DATE	REVISION	NO.	BY	DATE	REVISION

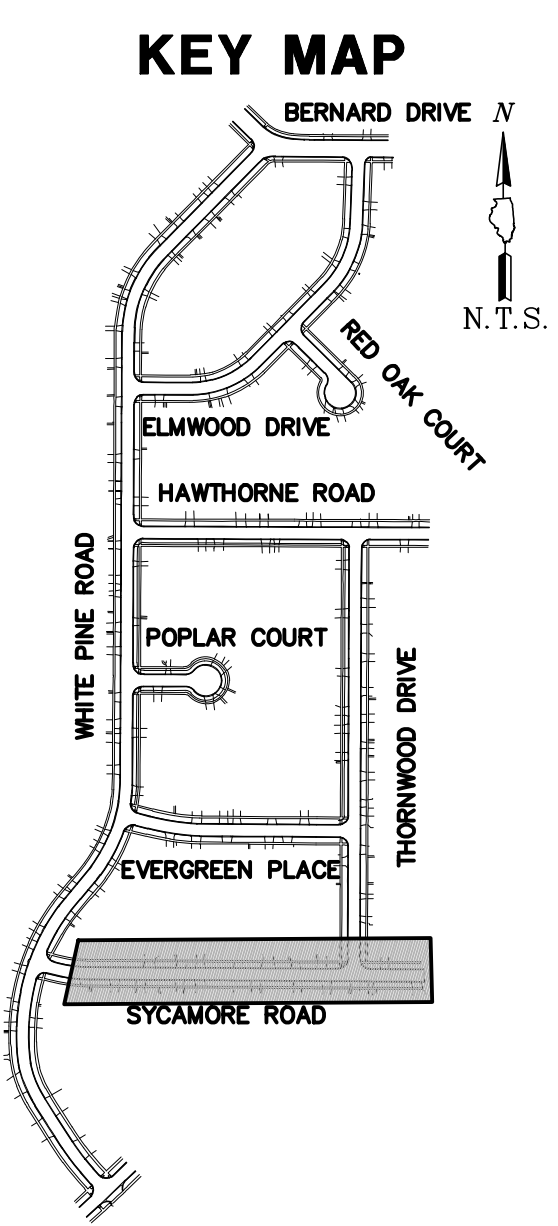
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CHECKED BY: PCL DATE: 11.02.2023	SCALE: 1"=20'
	<b>10</b> OF 19 SHEETS





**PROPOSED LEGEND**

- HMA RECONSTRUCTION
- PCC PAVEMENT
- HMA DRIVEWAY PAVEMENT
- PCC SIDEWALK
- CLASS D PATCH
- DETECTABLE WARNINGS
- TYPE M (MODIFIED) CURB & GUTTER (REGULAR)
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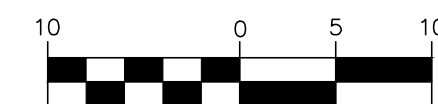
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**SYCAMORE ROAD**  
**2024 WHITE PINE WATER MAIN AND ROADWAY IMPROVEMENTS**  
**VILLAGE OF BUFFALO GROVE**  
**BUFFALO GROVE, ILLINOIS 60089**

NO.	BY	DATE	REVISION

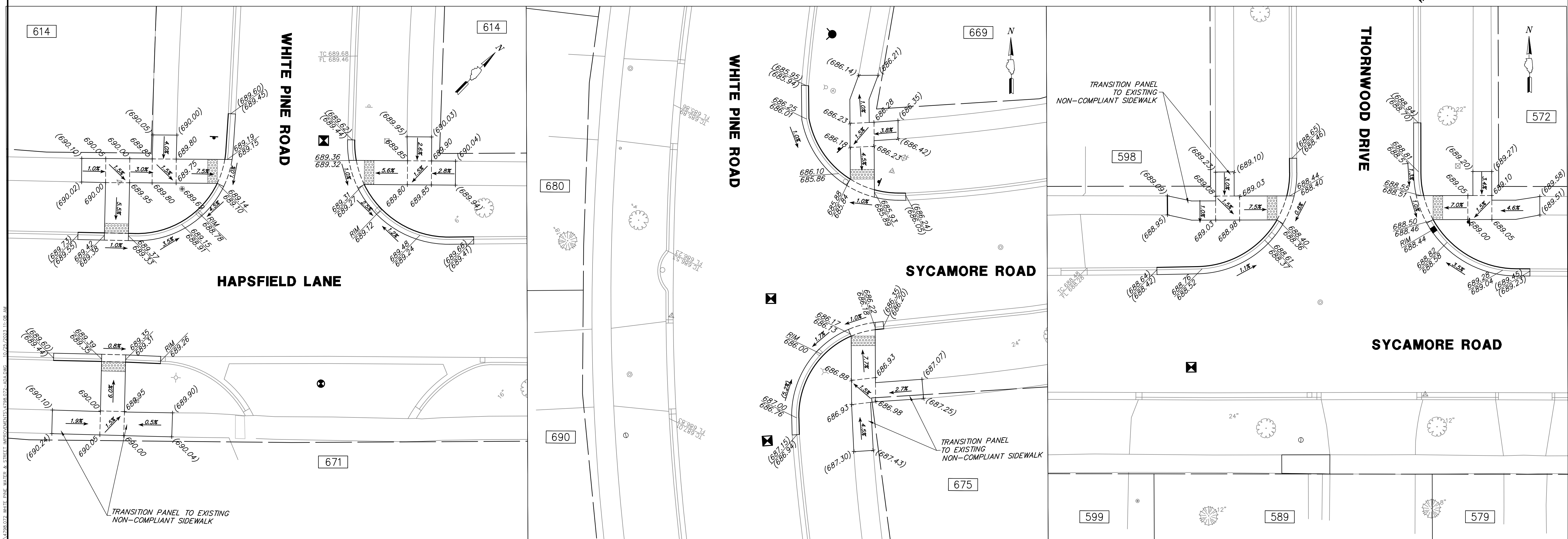
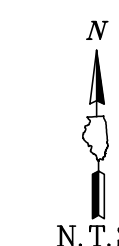
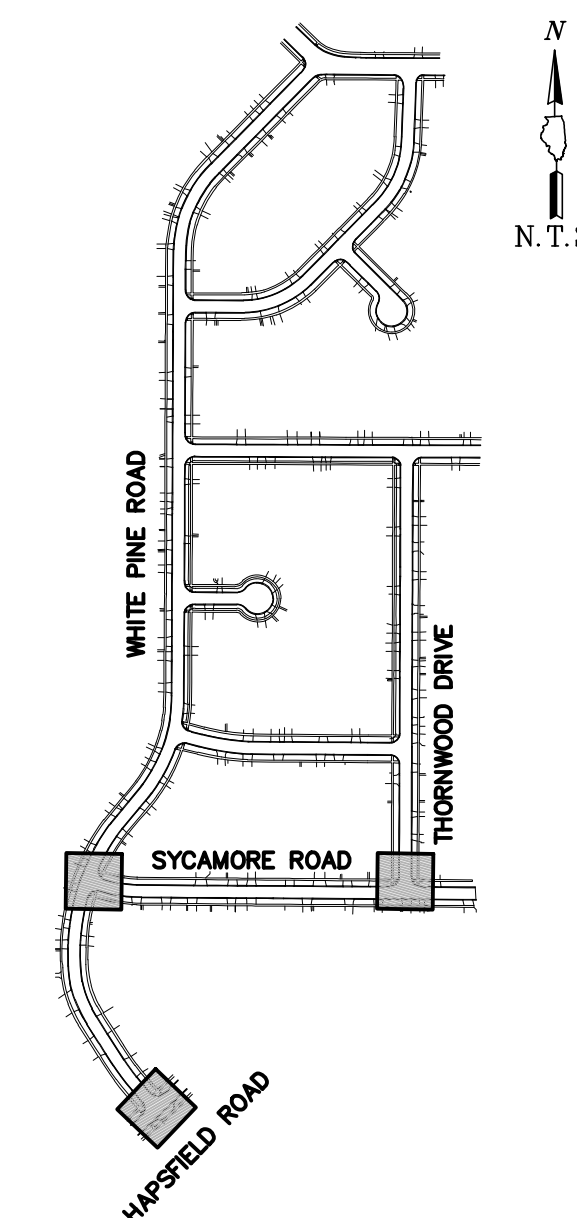
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DRAWN BY: SHY	GHA PROJECT #
DATE: 11.02.2023	4798.072
CHECKED BY: PCL	SCALE:
DATE: 11.02.2023	1"=20'
	OF 19 SHEETS

**12**



( IN FEET )  
1 inch = 10 ft.

KEY MAP



6/23/2024 12:58 PM BUFFALO GROVE WATER MAIN & STREET IMPROVEMENTS 4798.072-ADA.dwg 10/25/2024 11:08 AM

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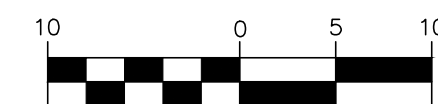
**DETAILED ADA CROSSINGS**  
**WHITE PINE WATER MAIN AND ROADWAY IMPROVEMENTS**  
**VILLAGE OF BUFFALO GROVE**  
**BUFFALO GROVE, ILLINOIS 60089**

NO.	BY	DATE	REVISION	NO.	BY	DATE	REVISION

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DATE: 11.02.23	4798.072
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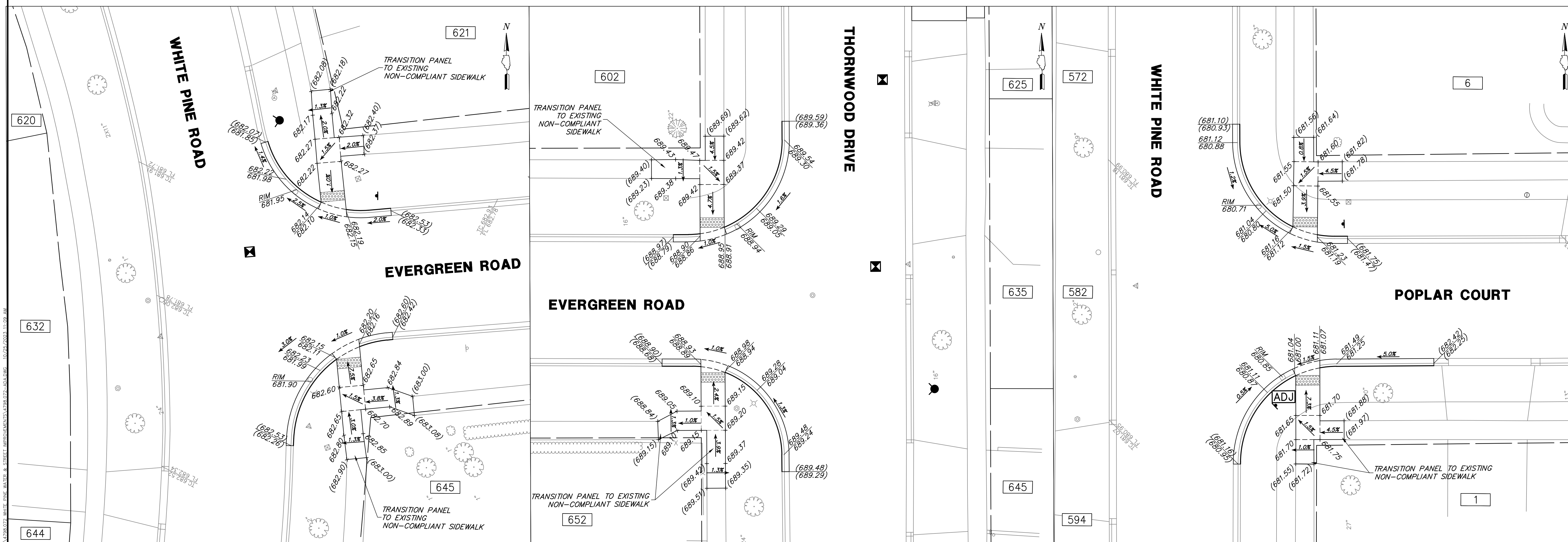
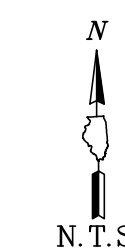
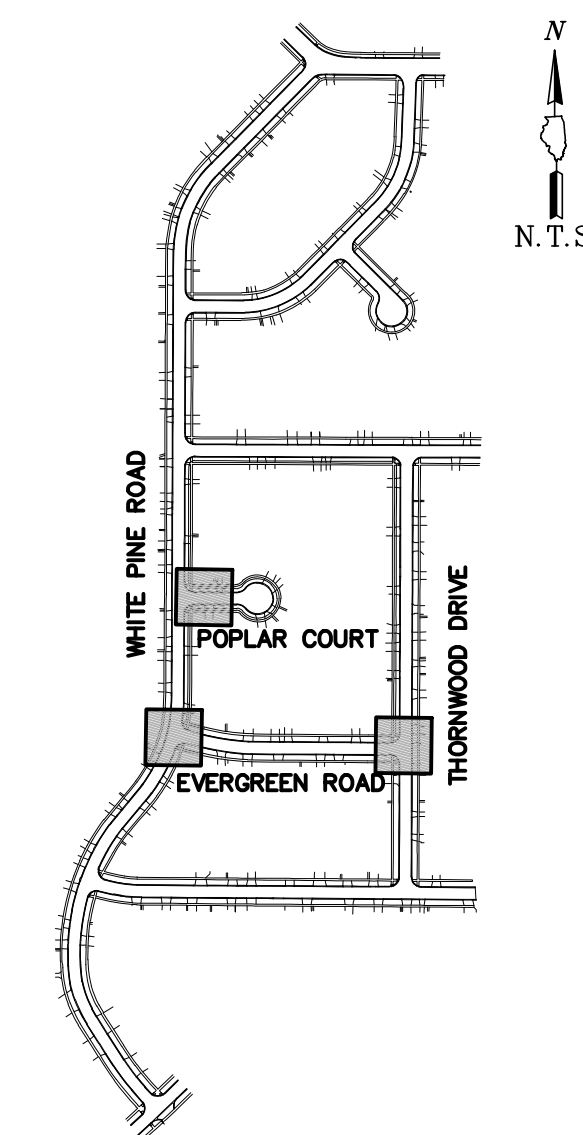
**13**

GRAPHIC SCALE



( IN FEET )  
1 inch = 10 ft.

KEY MAP



**GHA** GEWALT HAMILTON ASSOCIATES, INC.

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**DETAILED ADA CROSSINGS**  
**WHITE PINE WATER MAIN AND ROADWAY IMPROVEMENTS**  
**VILLAGE OF BUFFALO GROVE**  
**BUFFALO GROVE, ILLINOIS 60089**

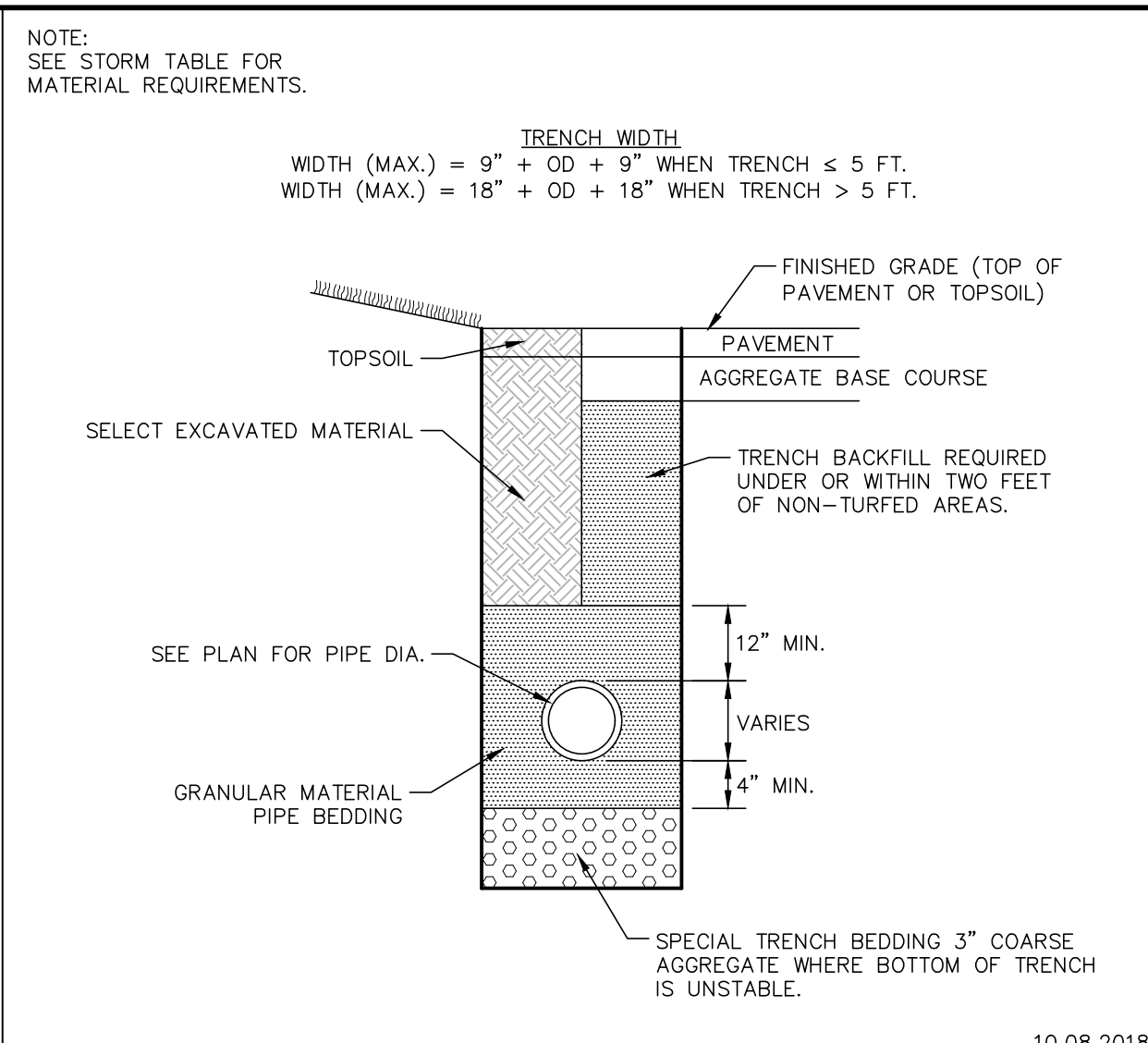
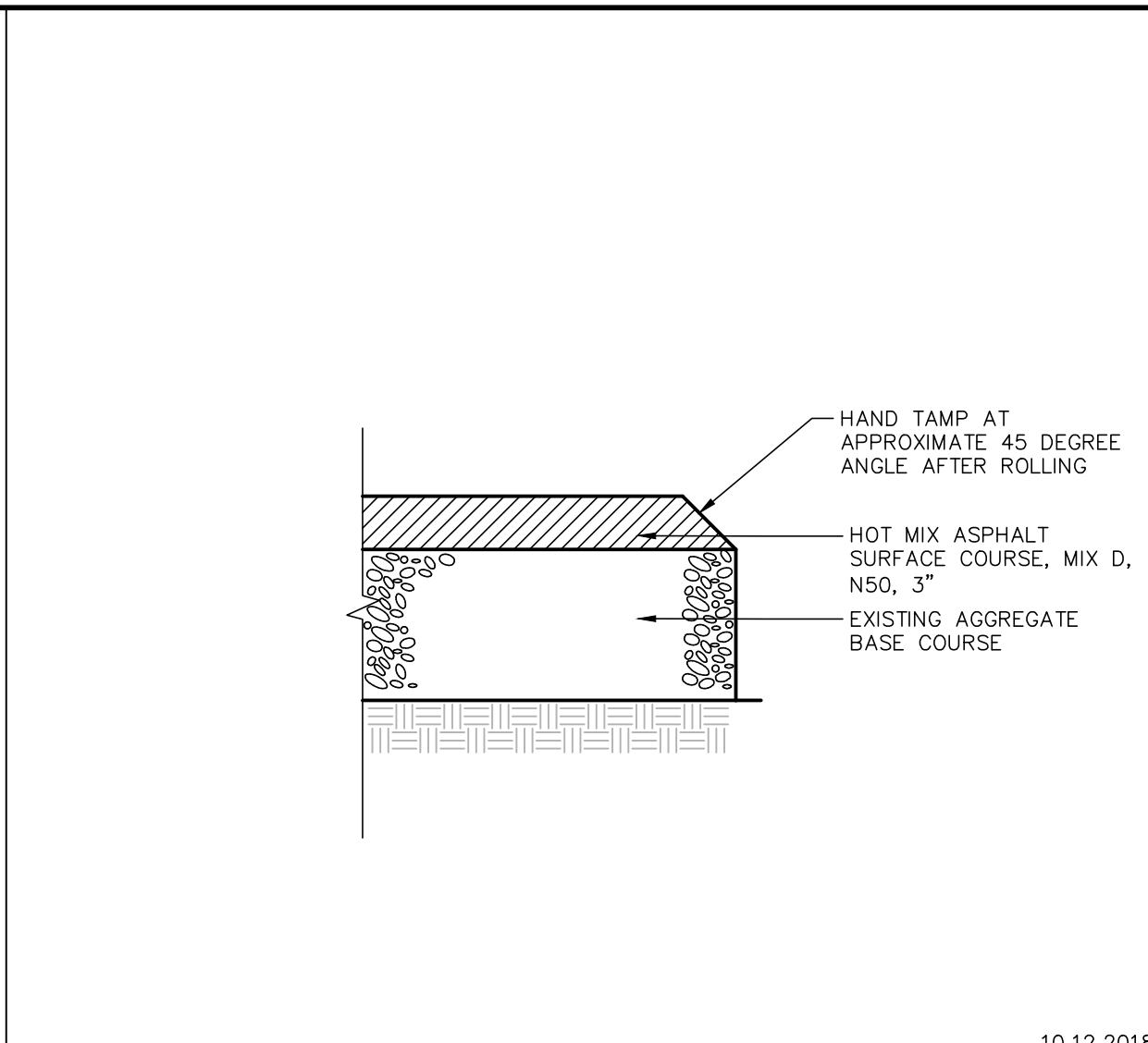
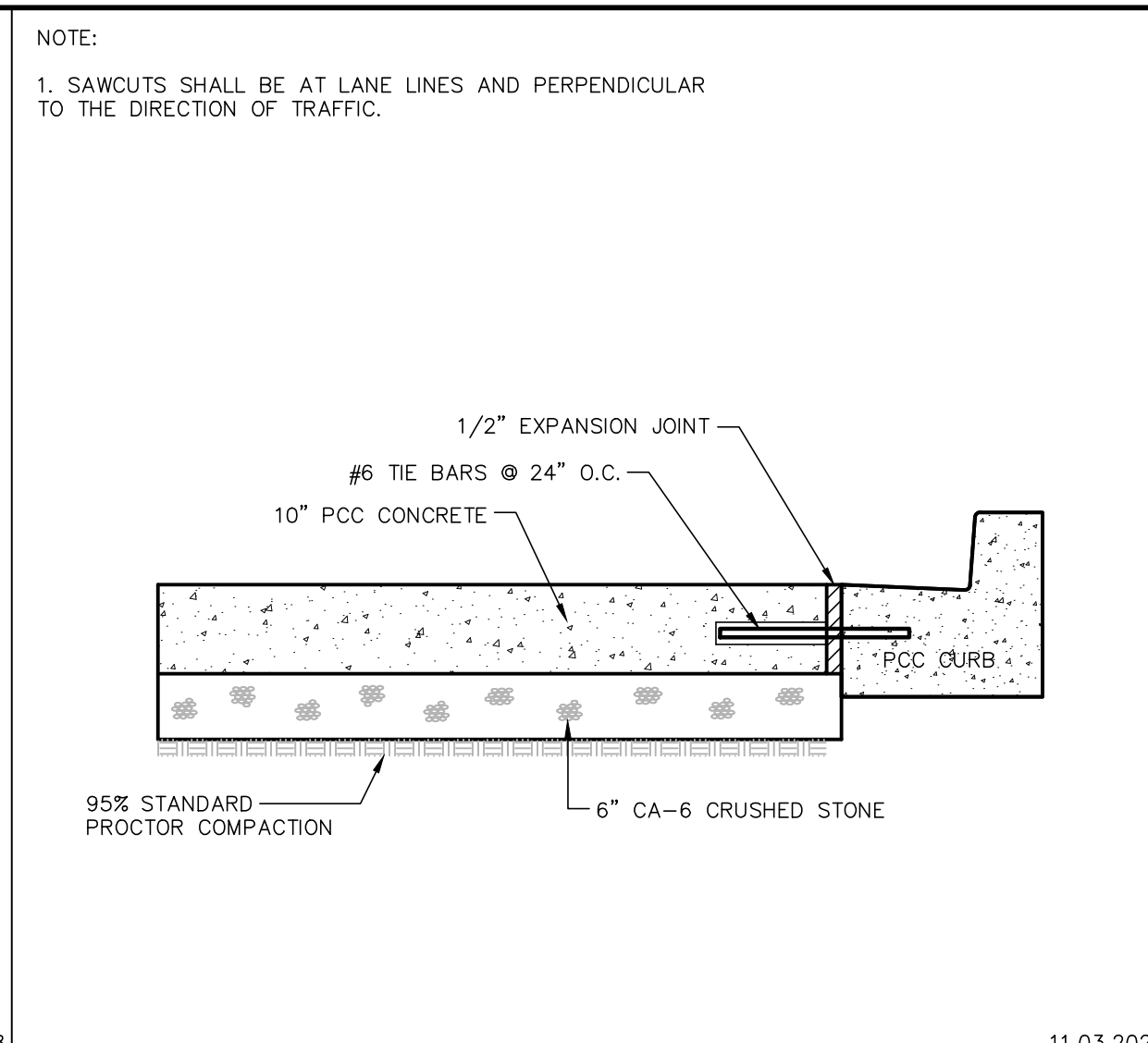
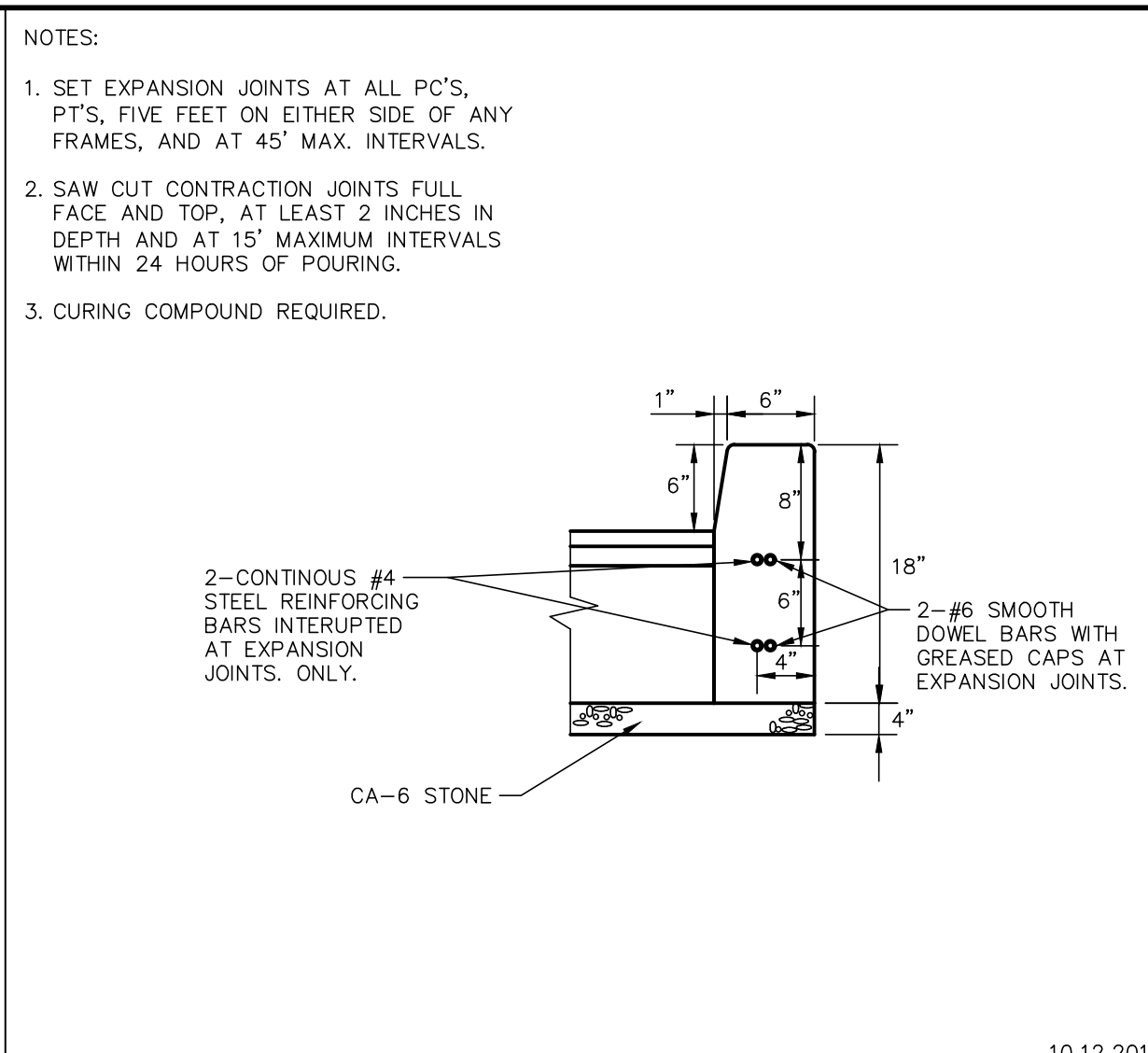
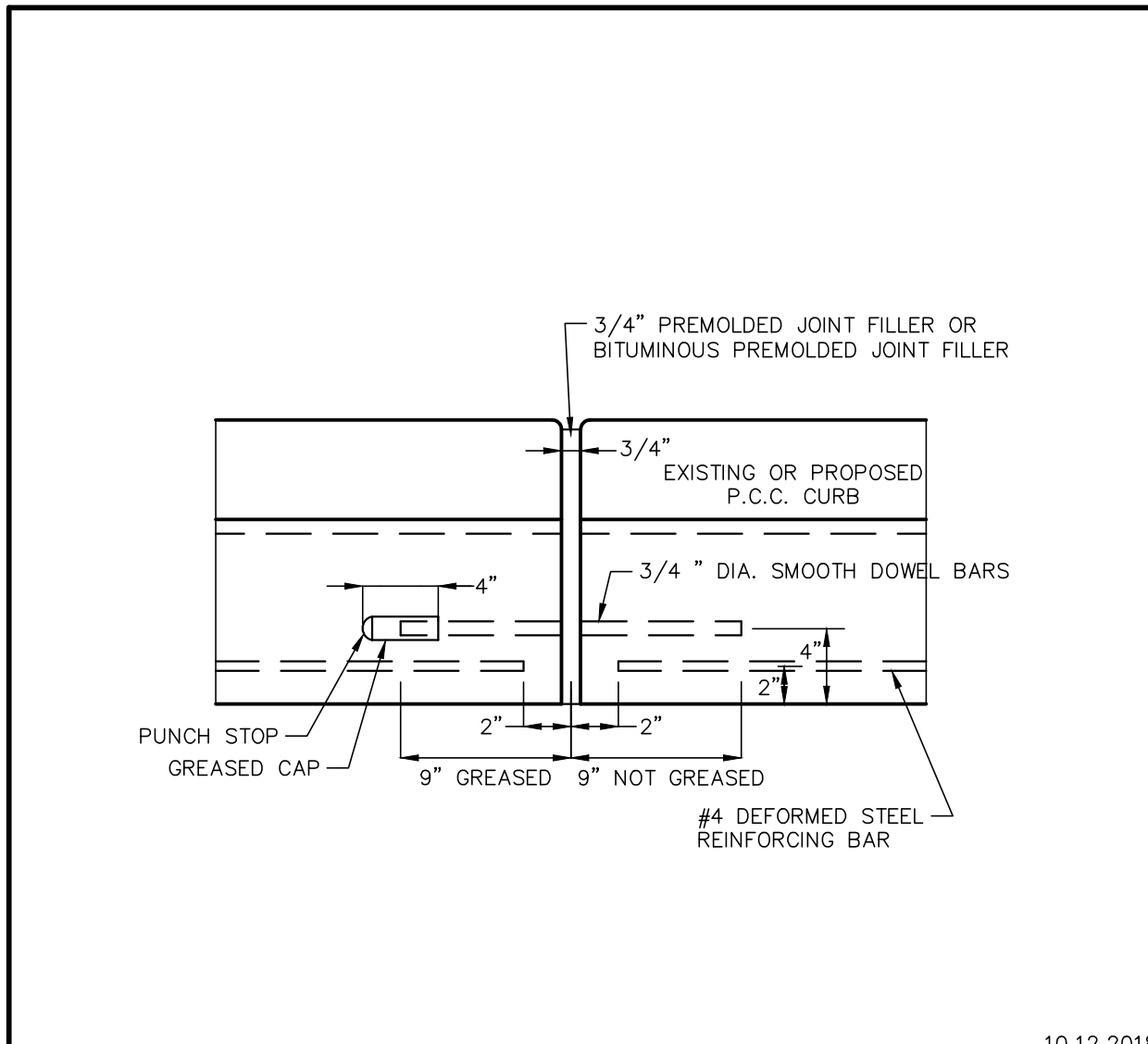
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 CHECKED BY: PCL  
 DATE: 11.02.23  
 SCALE: 1"=10'

SHEET NUMBER:  
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 OF 19 SHEETS

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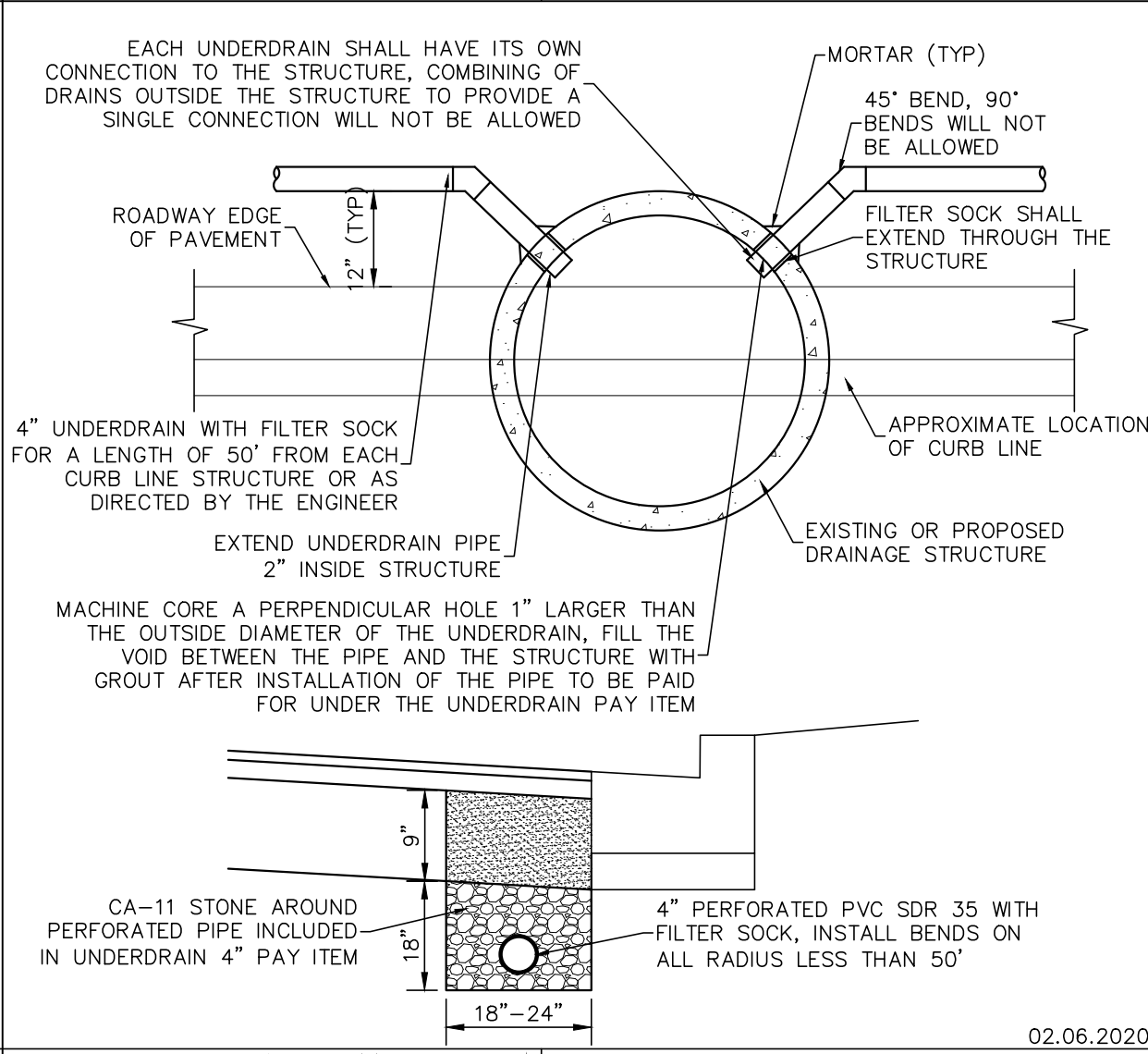
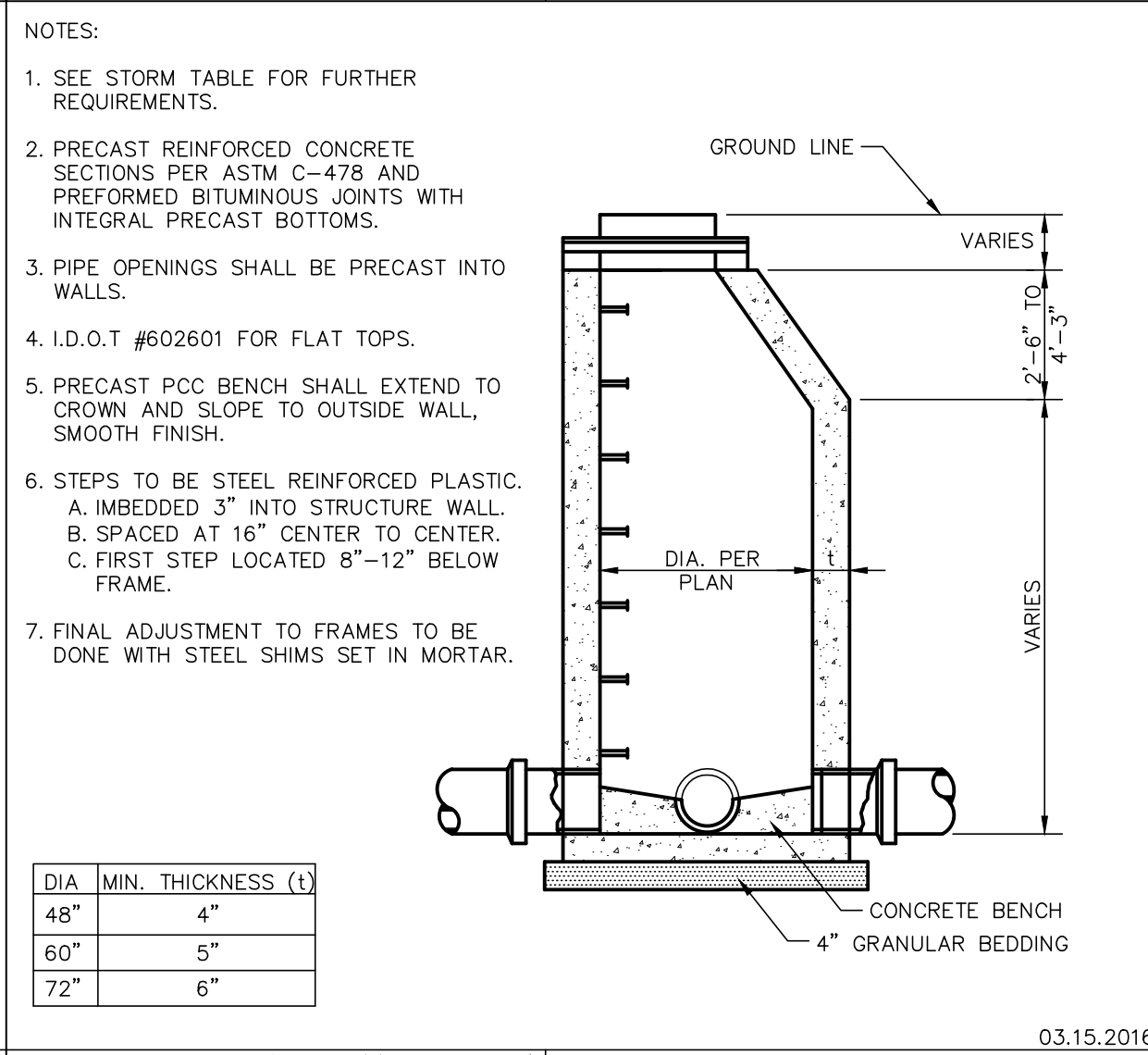
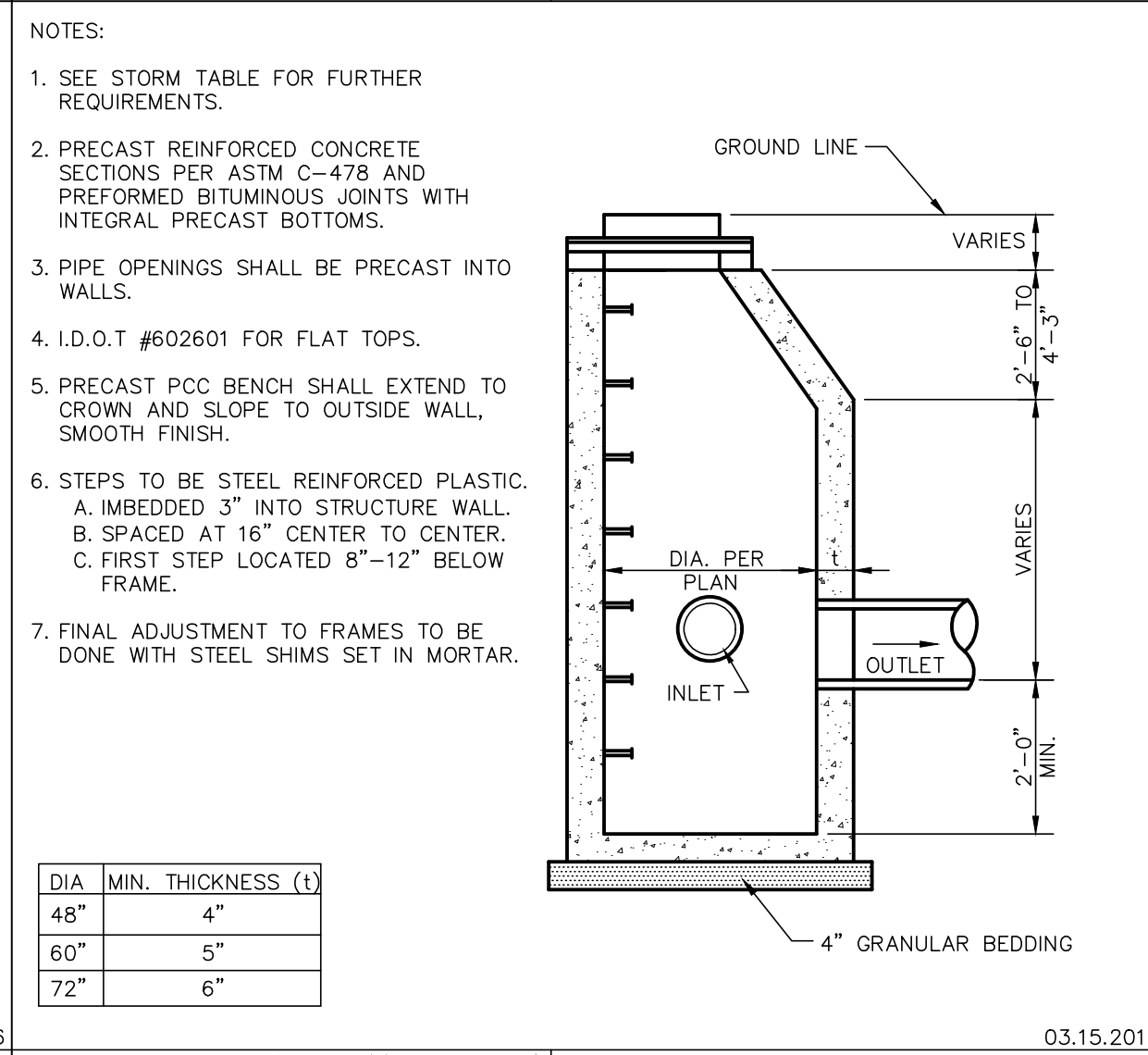
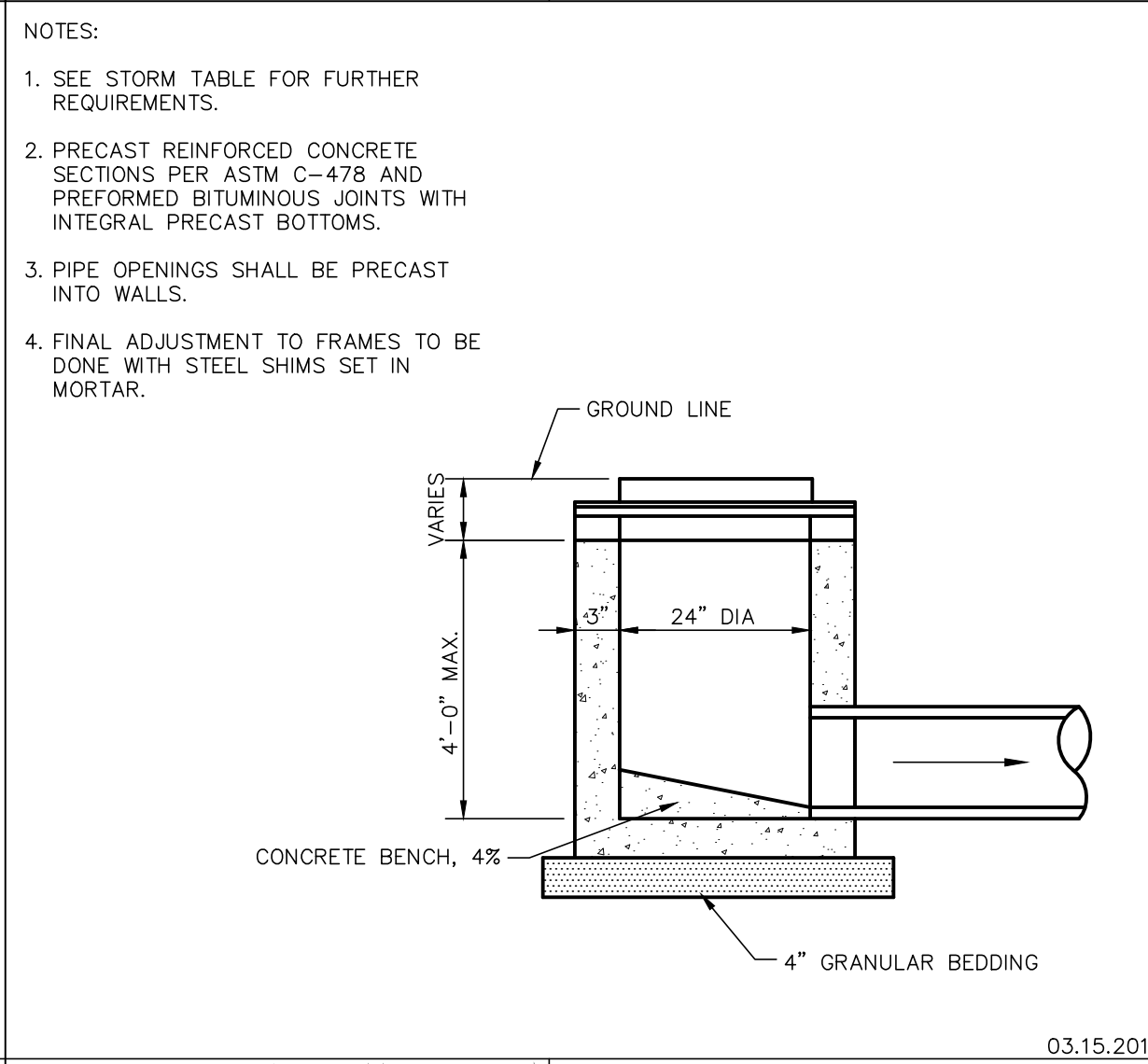
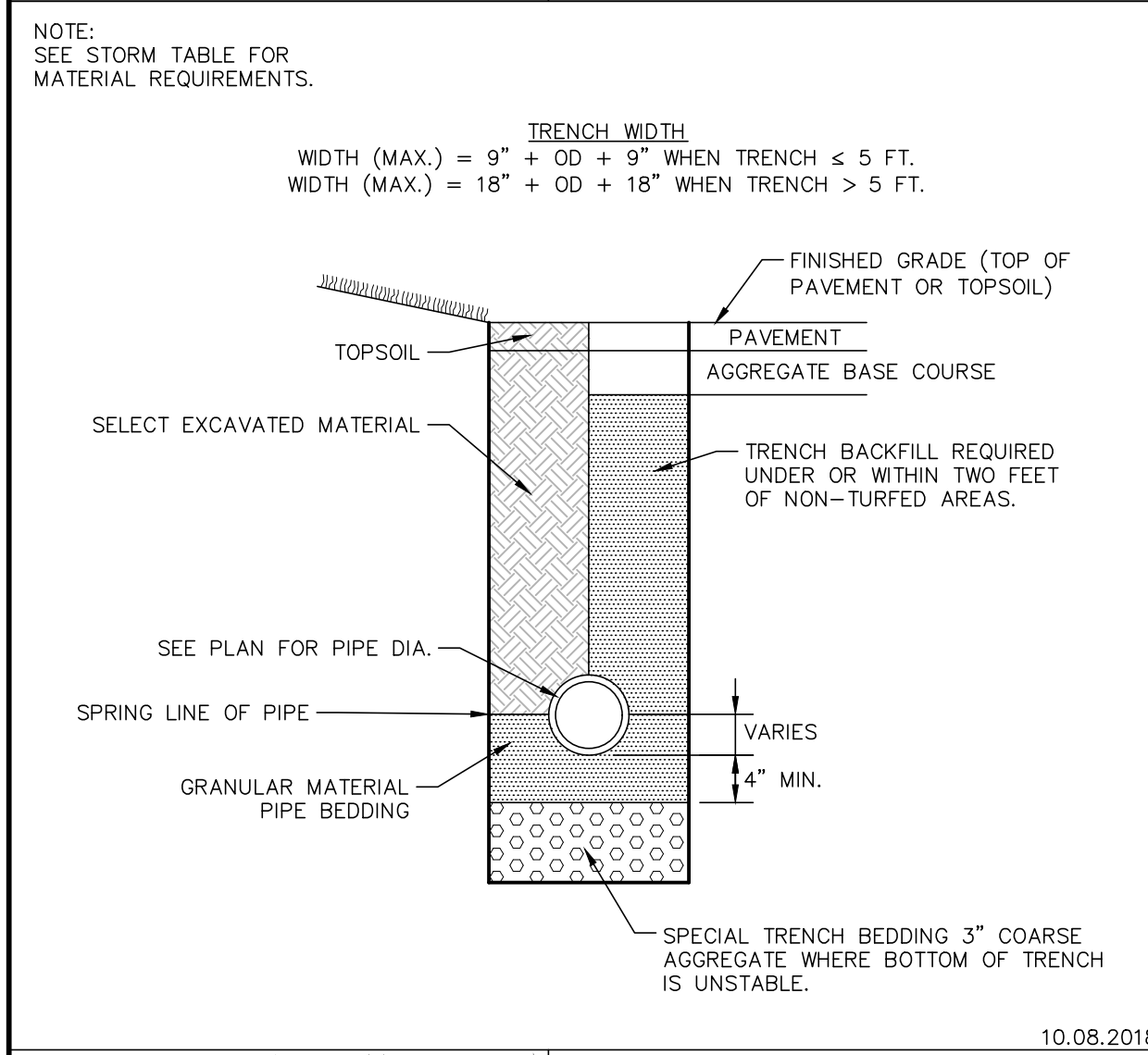
**GEWALT HAMILTON ASSOCIATES, INC.** EXPANSION JOINT DETAIL 10.12.2018

**GEWALT HAMILTON ASSOCIATES, INC.** VERTICAL CURB 10.12.2018

**GEWALT HAMILTON ASSOCIATES, INC.** PCC PAVEMENT DETAIL 11.03.2021

**GEWALT HAMILTON ASSOCIATES, INC.** HMA DRIVEWAY PAVEMENT DETAIL 10.12.2018

**GEWALT HAMILTON ASSOCIATES, INC.** STORM TRENCH DETAIL FLEXIBLE PIPE INSTALLATION 10.08.2018



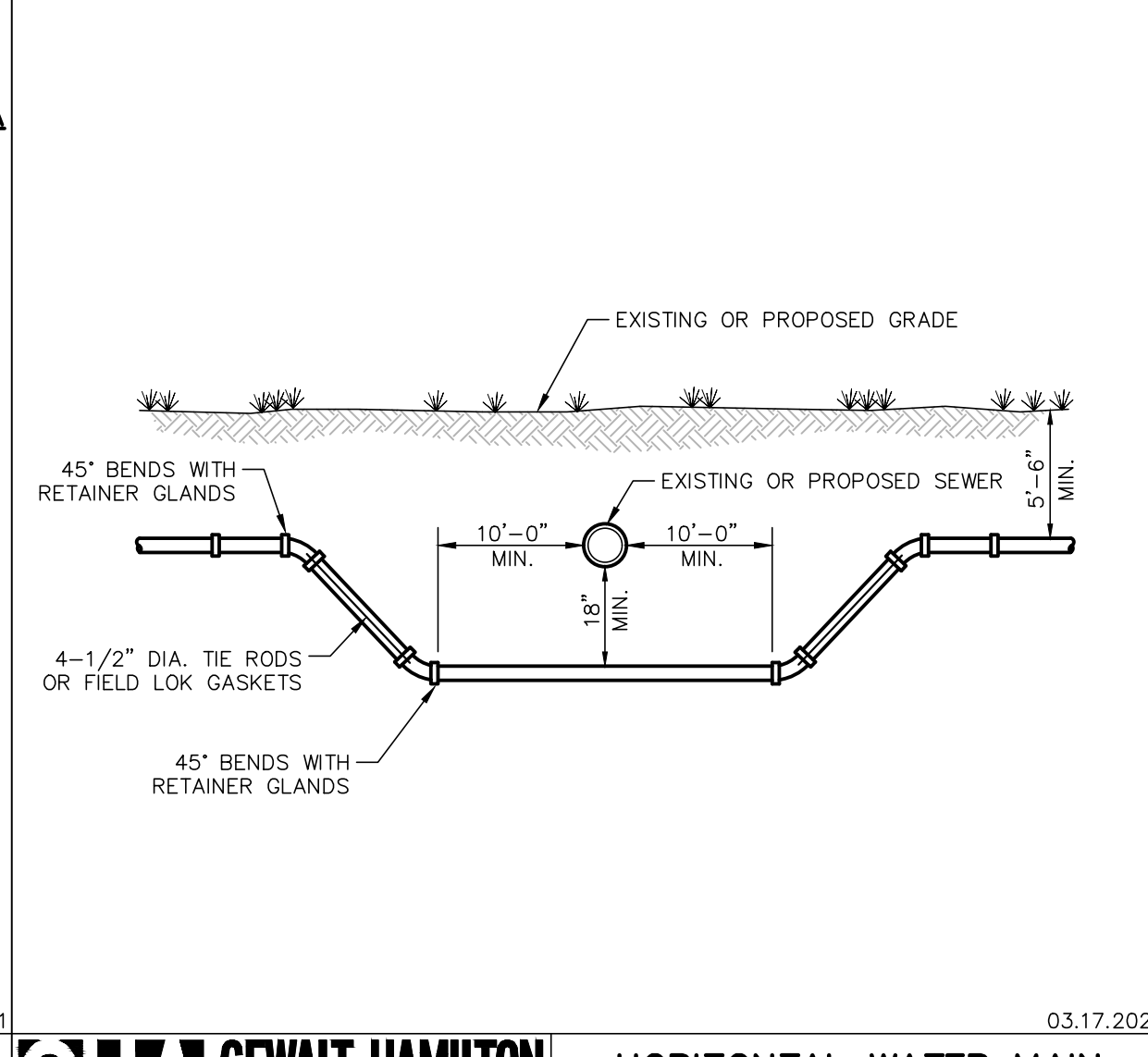
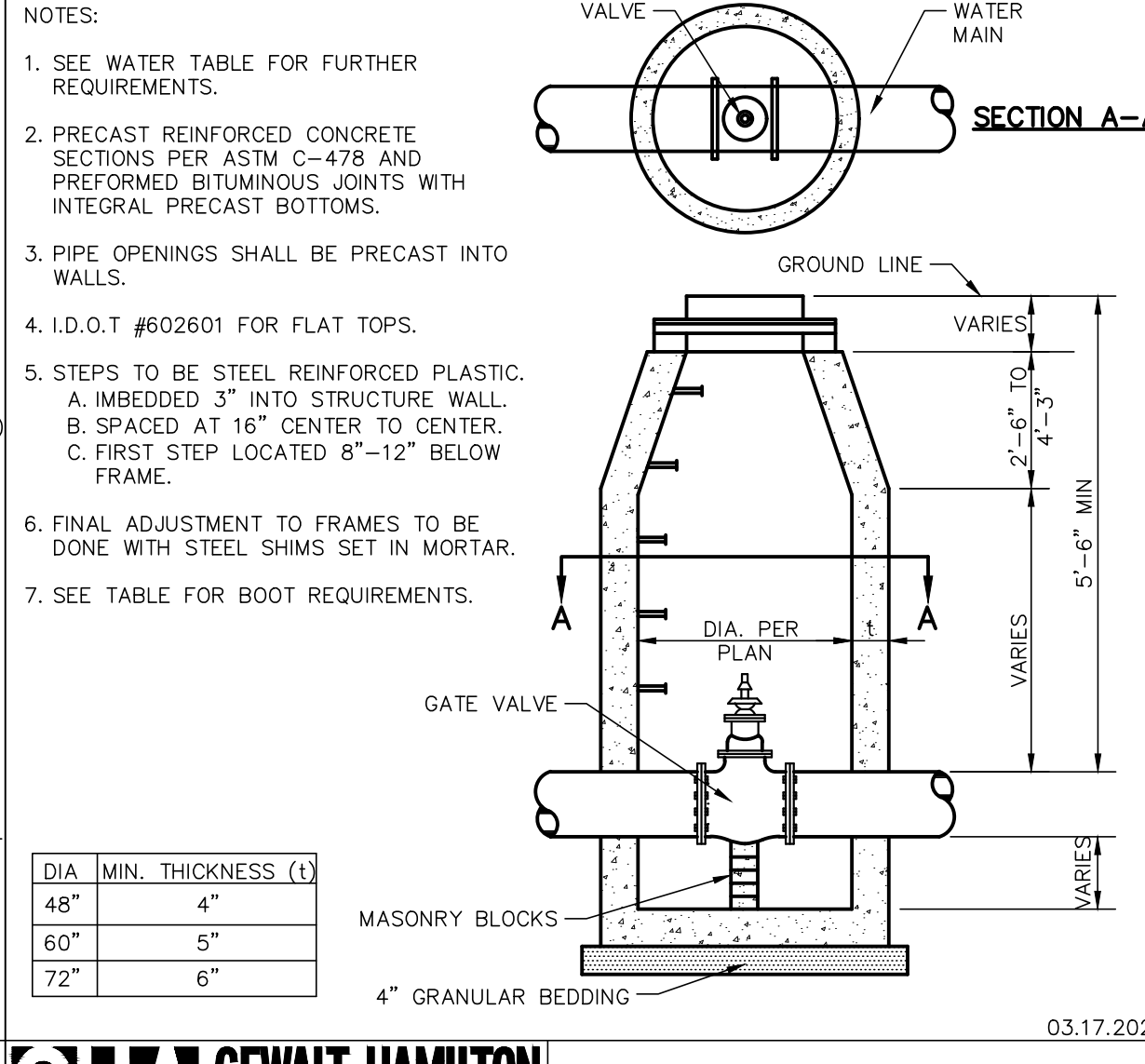
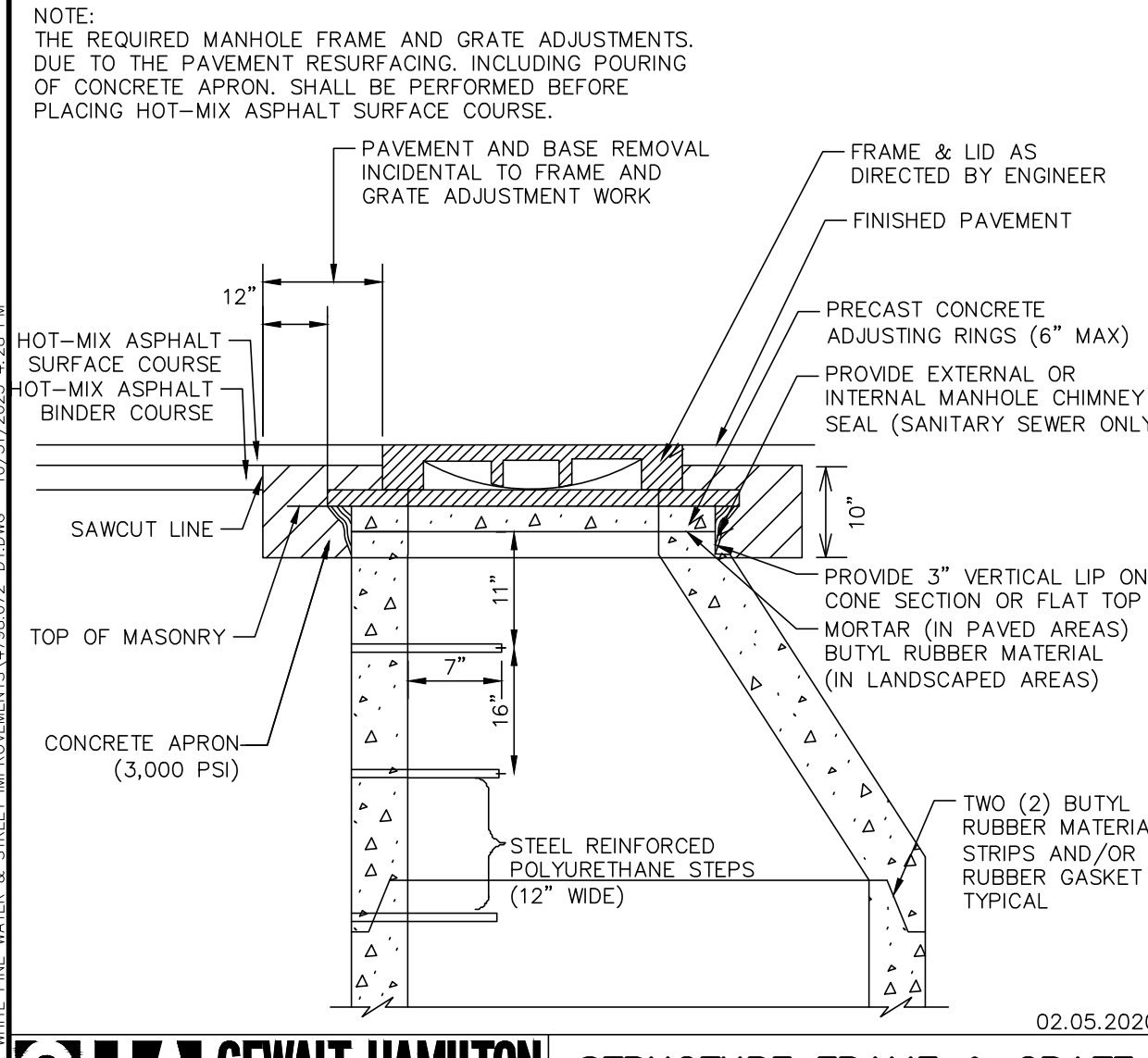
**GEWALT HAMILTON ASSOCIATES, INC.** STORM TRENCH DETAIL RIGID PIPE INSTALLATION 10.08.2018

**GEWALT HAMILTON ASSOCIATES, INC.** INLET TYPE A 03.15.2016

**GEWALT HAMILTON ASSOCIATES, INC.** CATCH BASIN TYPE A 03.15.2016

**GEWALT HAMILTON ASSOCIATES, INC.** STORM MANHOLE TYPE A 03.15.2016

**GEWALT HAMILTON ASSOCIATES, INC.** UNDERDRAIN IN FRONT OF CURB INSTALLATION 02.06.2020



**VERTICAL SEPARATION REQUIREMENTS**

CROSSING	REQUIRED VERTICAL SEPARATION	ADDITIONAL REQUIREMENTS (SELECT ONE)
WATER OVER SEWER	WATER INVERT 18" ABOVE CROWN OF SEWER.	<b>VERTICAL SEPARATION &lt; 18"</b> 1. WATER OR SEWER TO BE ENCASED FOR A MINIMUM DISTANCE OF 10' FROM THE EDGE OF PIPE, ON EITHER SIDE, PERPENDICULAR TO THE CROSSING. 2. SEWER TO BE WATERMAIN CLASS PIPE FOR A DISTANCE OF 10' FROM THE EDGE OF PIPE ON EITHER SIDE PERPENDICULAR TO THE CROSSING.
SEWER OVER WATER	SEWER INVERT 18" ABOVE CROWN OF WATER.	<b>VERTICAL SEPARATION &lt; 18" (NEVER ALLOWED)</b> 1. WATER OR SEWER TO BE ENCASED FOR A MINIMUM DISTANCE OF 10' FROM THE EDGE OF PIPE ON EITHER SIDE PERPENDICULAR TO THE CROSSING. 2. SEWER TO BE WATERMAIN CLASS PIPE FOR A DISTANCE OF 10' FROM THE EDGE OF PIPE ON EITHER SIDE PERPENDICULAR TO THE CROSSING.

**HORIZONTAL SEPARATION REQUIREMENTS**

REQUIRED HORIZONTAL SEPARATION	ADDITIONAL REQUIREMENTS
10' OF LATERAL SEPARATION FROM EDGE OF PIPE TO EDGE OF PIPE.	<b>HORIZONTAL SEPARATION &lt; 10'</b> 1. WATER INVERT 18" ABOVE CROWN OF SEWER. <b>HORIZONTAL SEPARATION &lt; 10' &amp; VERTICAL SEPARATION &lt; 18"</b> 2. SEWER CONSTRUCTED WITH WATERMAIN CLASS PIPE (SEE VERTICAL SEPARATION REQUIREMENTS) AND PRESSURE TESTED TO THE MAXIMUM EXPECTED SURCHARGE PRIOR TO BACKFILLING.

**RESTRAINED LENGTH TABLE**

TYPE OF FITTING	RESTRAINED LENGTH (EACH WAY)
TEE AND PLUG	LENGTH OF TEE
90° BEND	18'-0"
45° BEND	8'-0"
22 1/2° BEND	4'-0"
11 1/4° BEND	2'-0"

**LOCKING GASKET LENGTH TABLE**

TYPE OF BEND/FITTING	DISTANCE FROM BEND/FITTING (EACH WAY)
45° HORIZONTAL BEND	15'-0"
22.5° HORIZONTAL BEND	10'-0"
45° VERTICAL OFFSET	25'-0"
TEES	PROVIDE THRUST BLOCK
PRESSURE CONNECTION	PROVIDE THRUST BLOCK
END CAPS	PROVIDE THRUST BLOCK

**GEWALT HAMILTON ASSOCIATES, INC.** VALVE VAULT 03.17.2021

**GEWALT HAMILTON ASSOCIATES, INC.** HORIZONTAL WATER MAIN SEPARATION 03.17.2021

**GEWALT HAMILTON ASSOCIATES, INC.** WATER MAIN INSTALLATION AND SEPARATION REQUIREMENTS 03.17.2021

**GEWALT HAMILTON ASSOCIATES, INC.** STRUCTURE FRAME & GRATE ADJUSTMENT DETAIL 02.05.2020

**GEWALT HAMILTON ASSOCIATES, INC.**  
625 Forest Edge Drive ■ Vernon Hills, IL. 60061  
TEL 847.478.9700 ■ FAX 847.478.9701

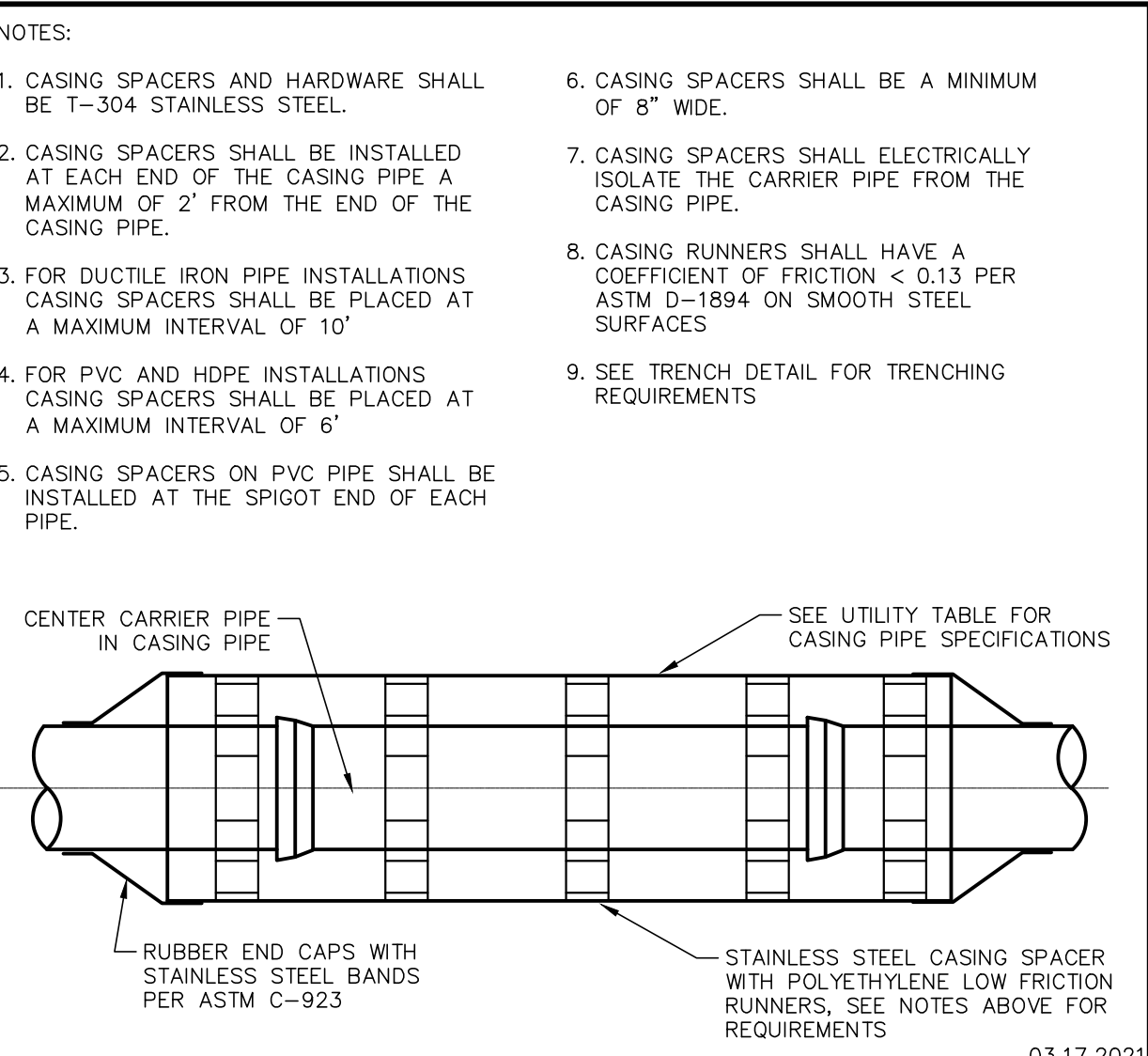
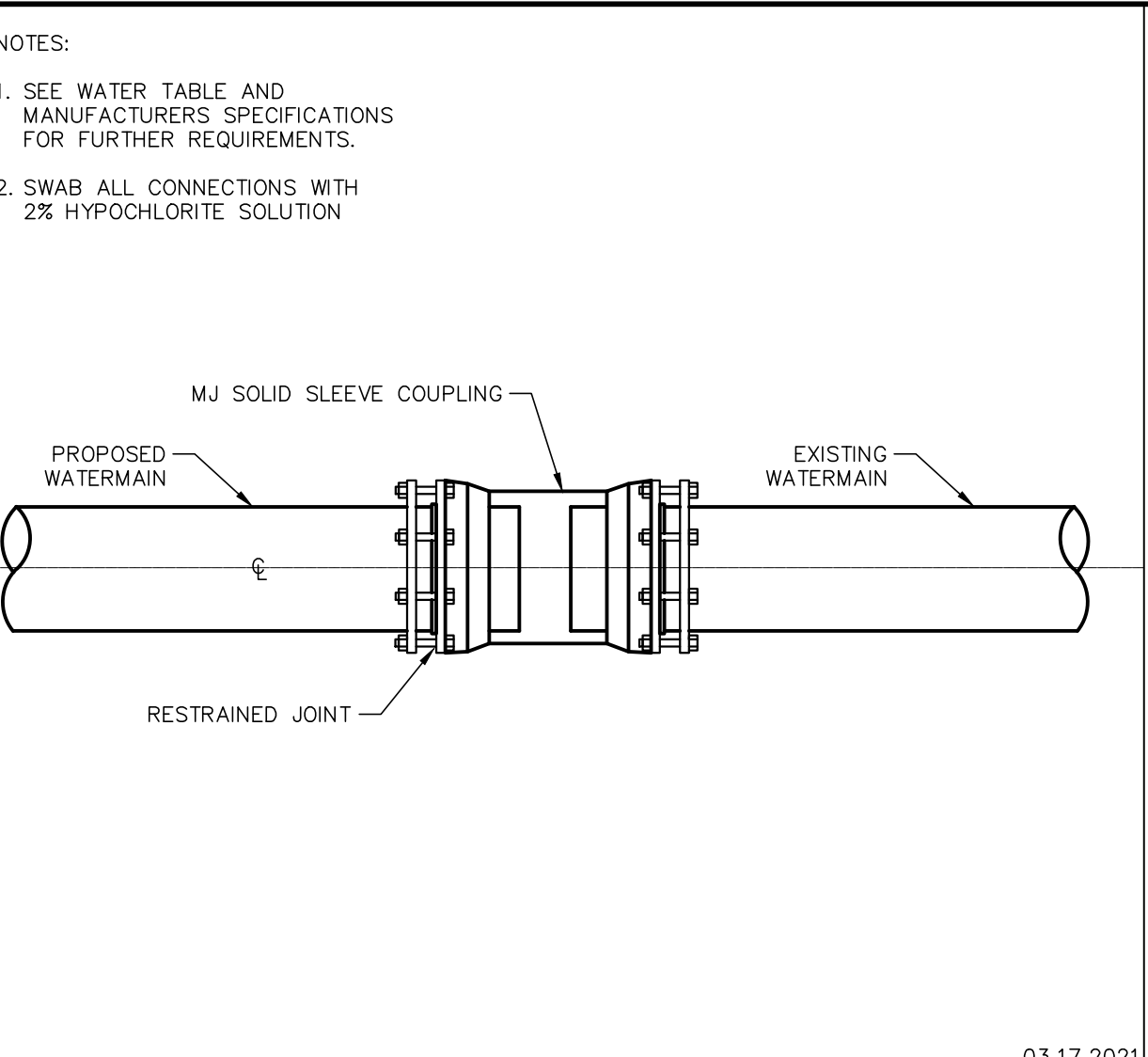
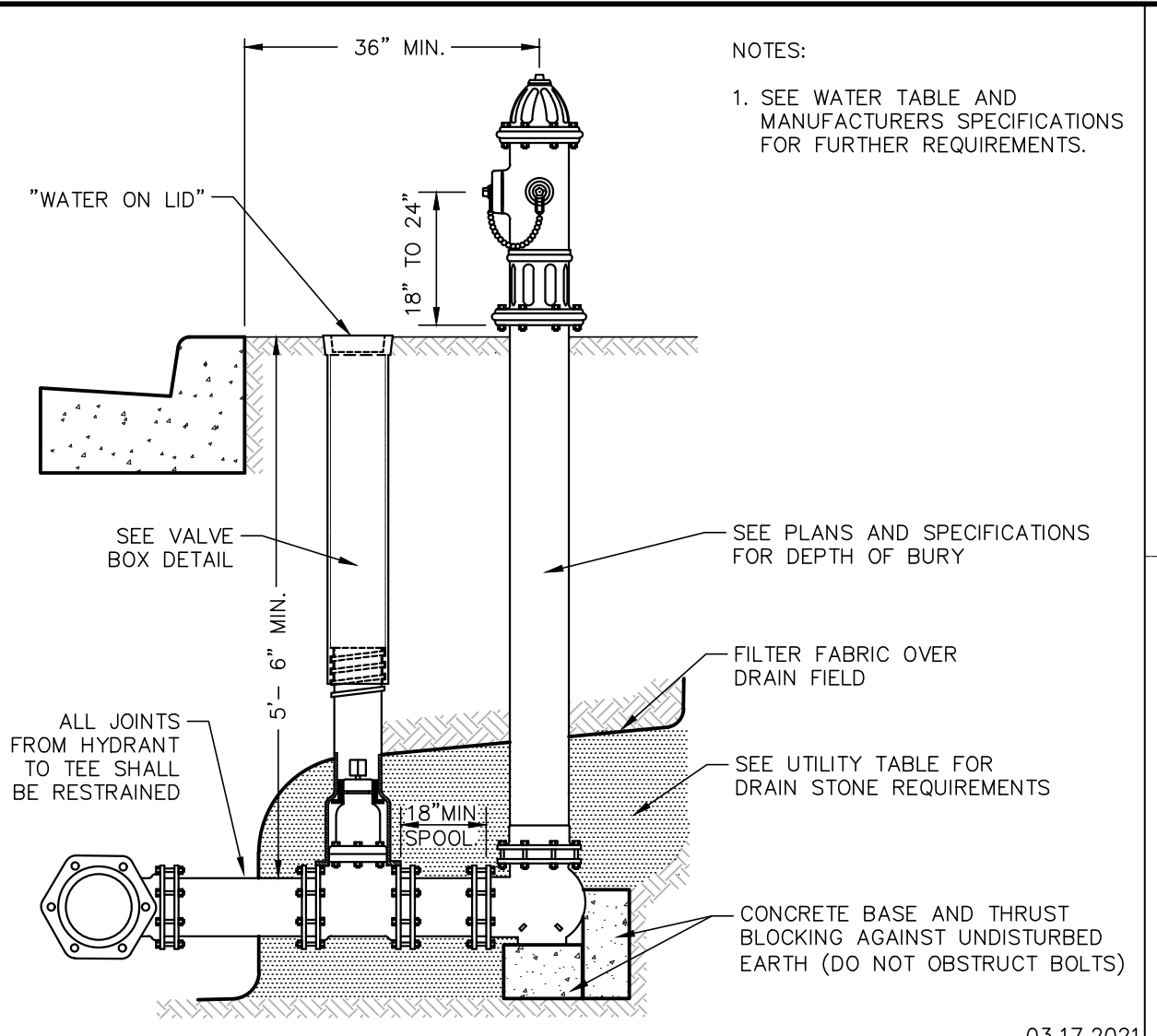
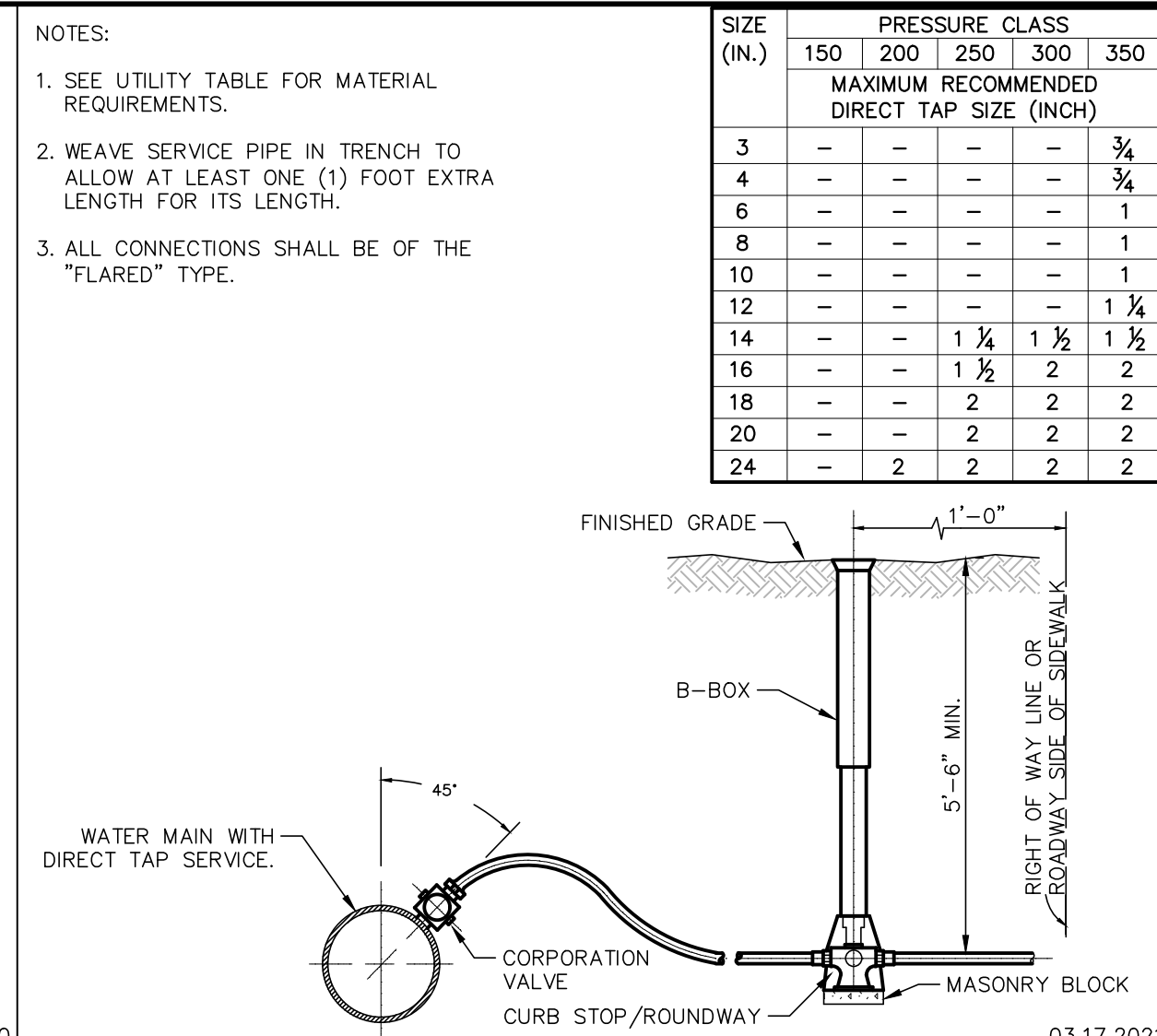
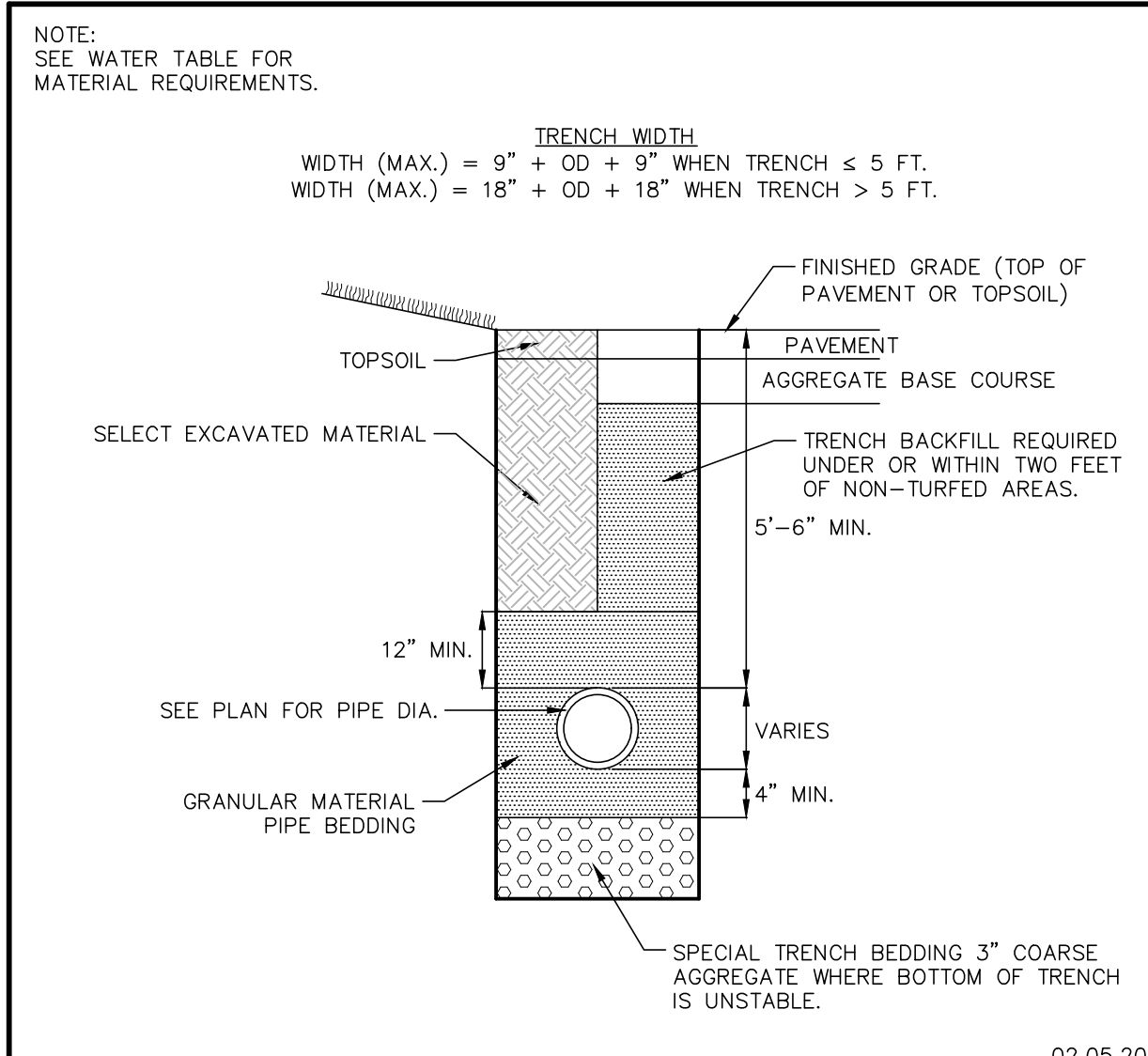
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**DETAILS**  
**2024 WHITE PINE WATER MAIN AND ROADWAY IMPROVEMENTS**  
**VILLAGE OF BUFFALO GROVE**  
**BUFFALO GROVE, ILLINOIS 60089**

NO.	BY	DATE	REVISION

FILE: 4798.072-DT.dwg  
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DATE: 11.02.2023  
GHA PROJECT #: 4798.072  
CHECKED BY: PCL  
DATE: 11.02.2023  
SCALE: N.T.S.  
SHEET NUMBER: **16**  
OF 19 SHEETS





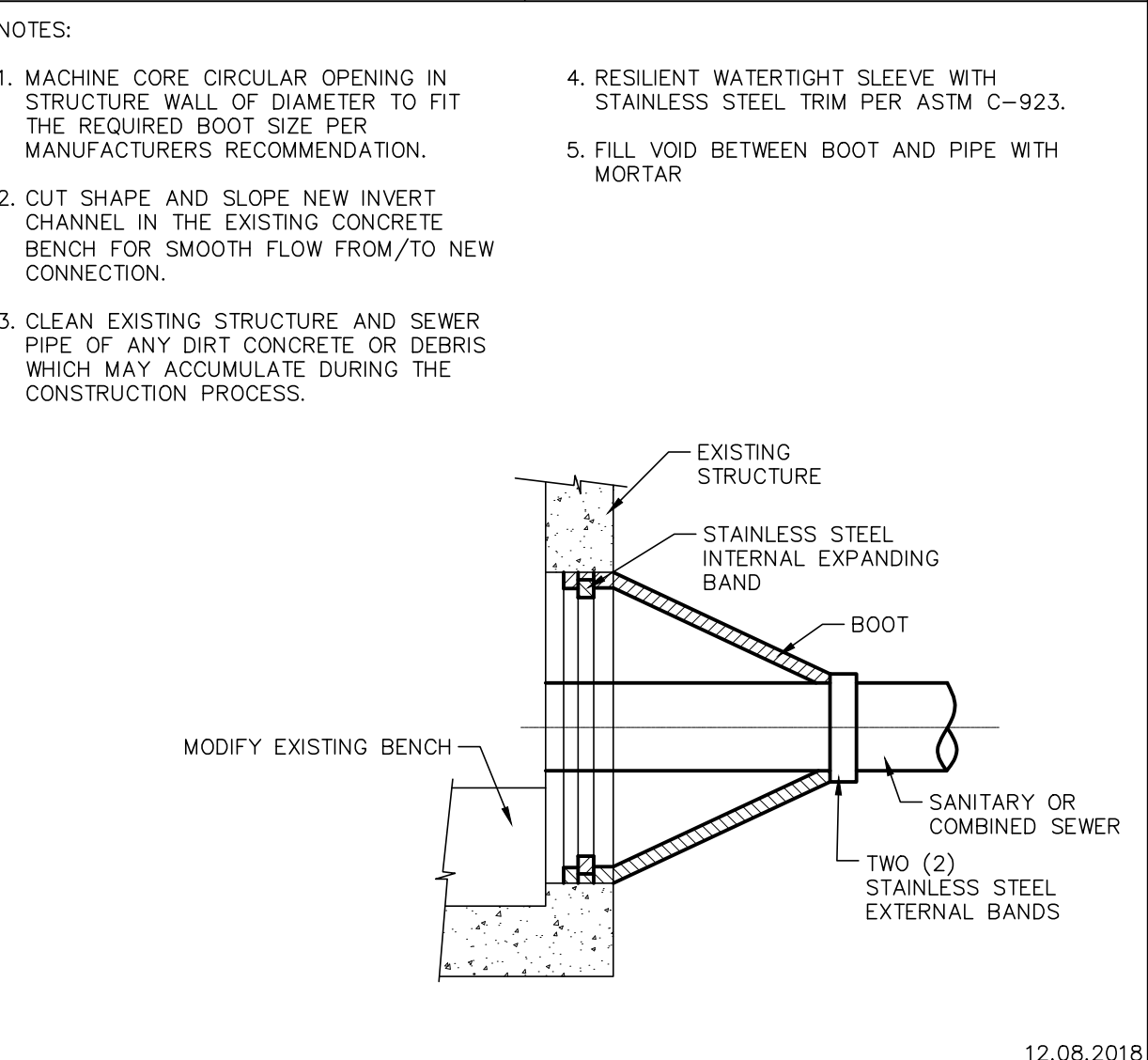
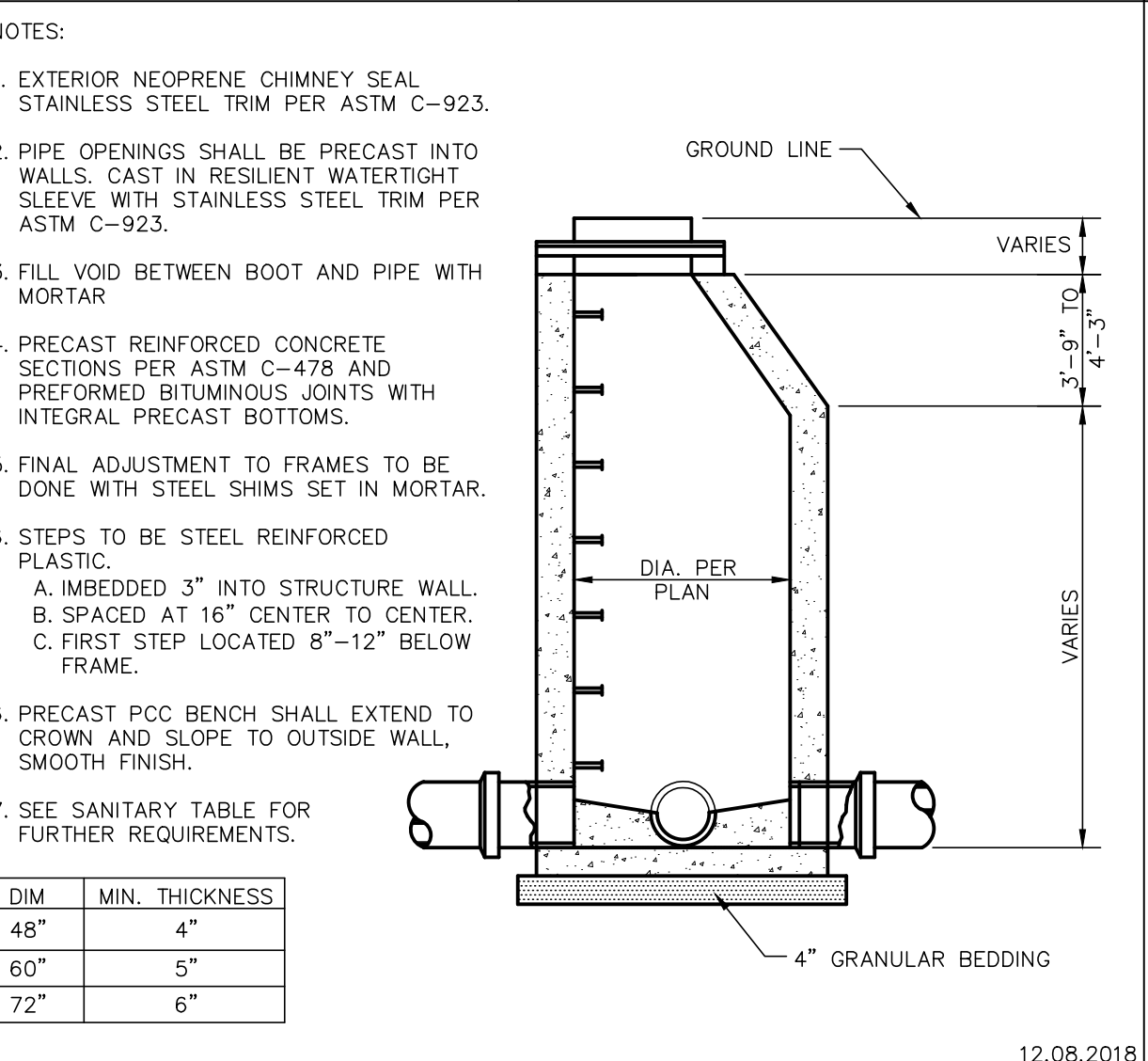
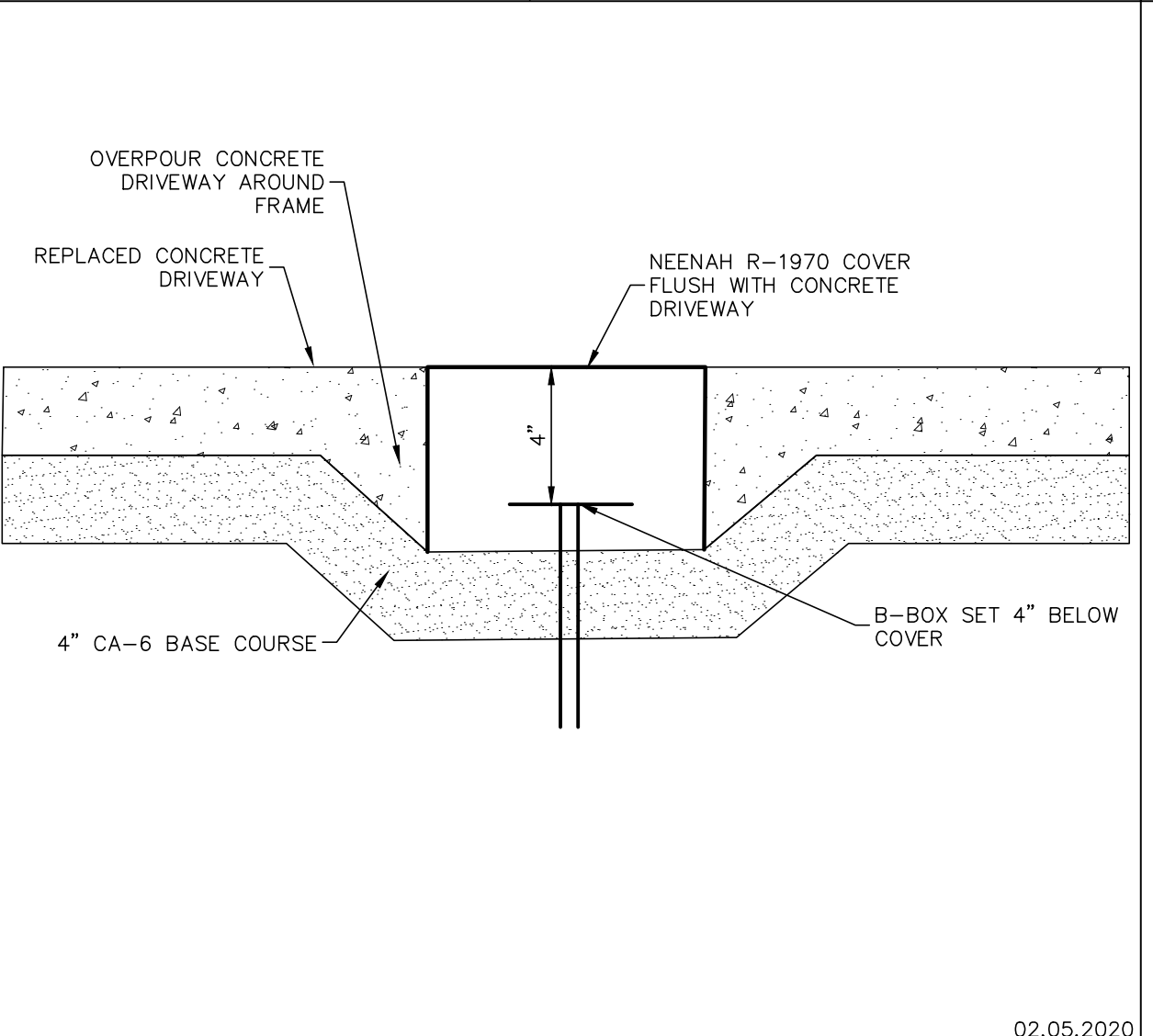
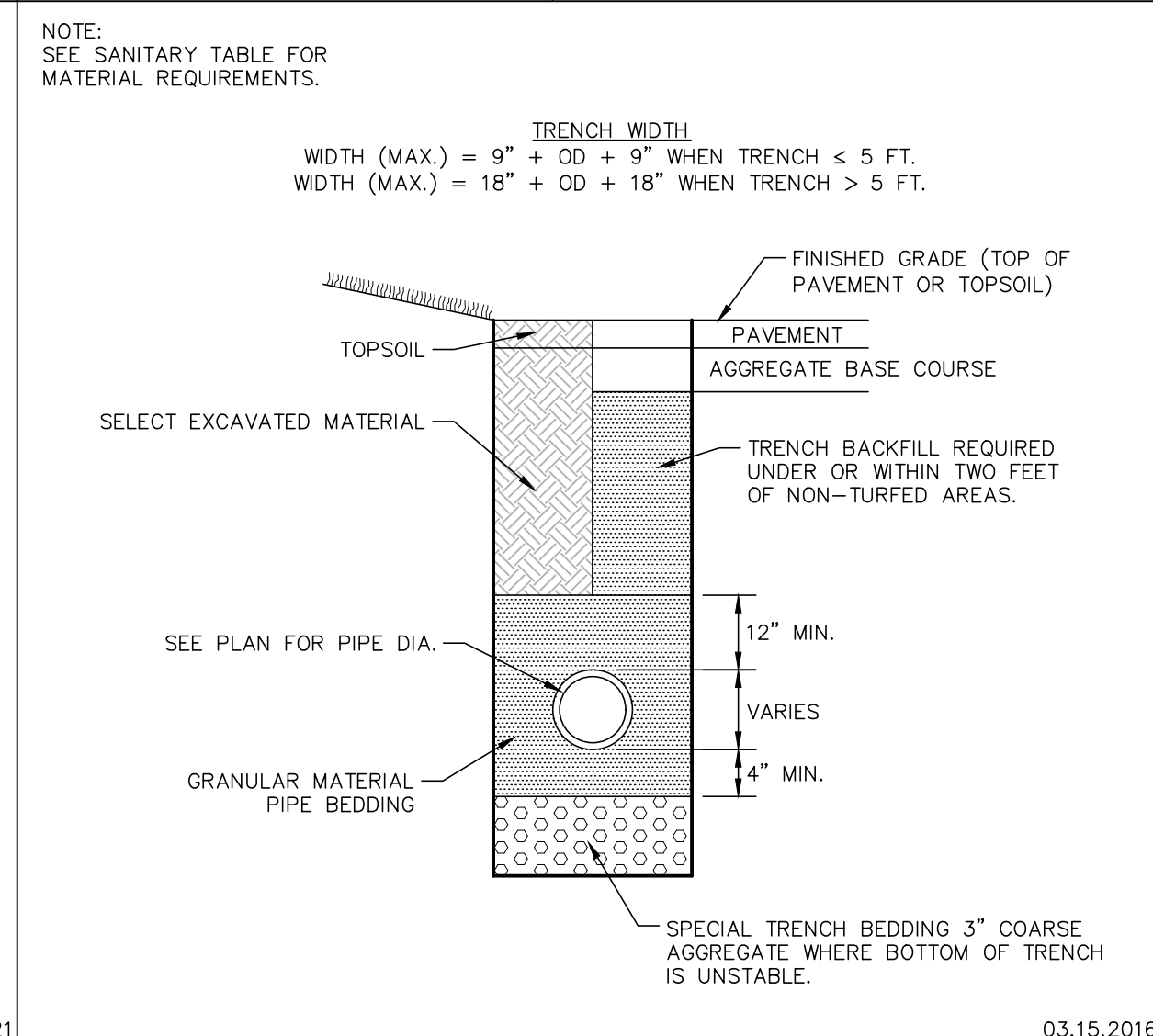
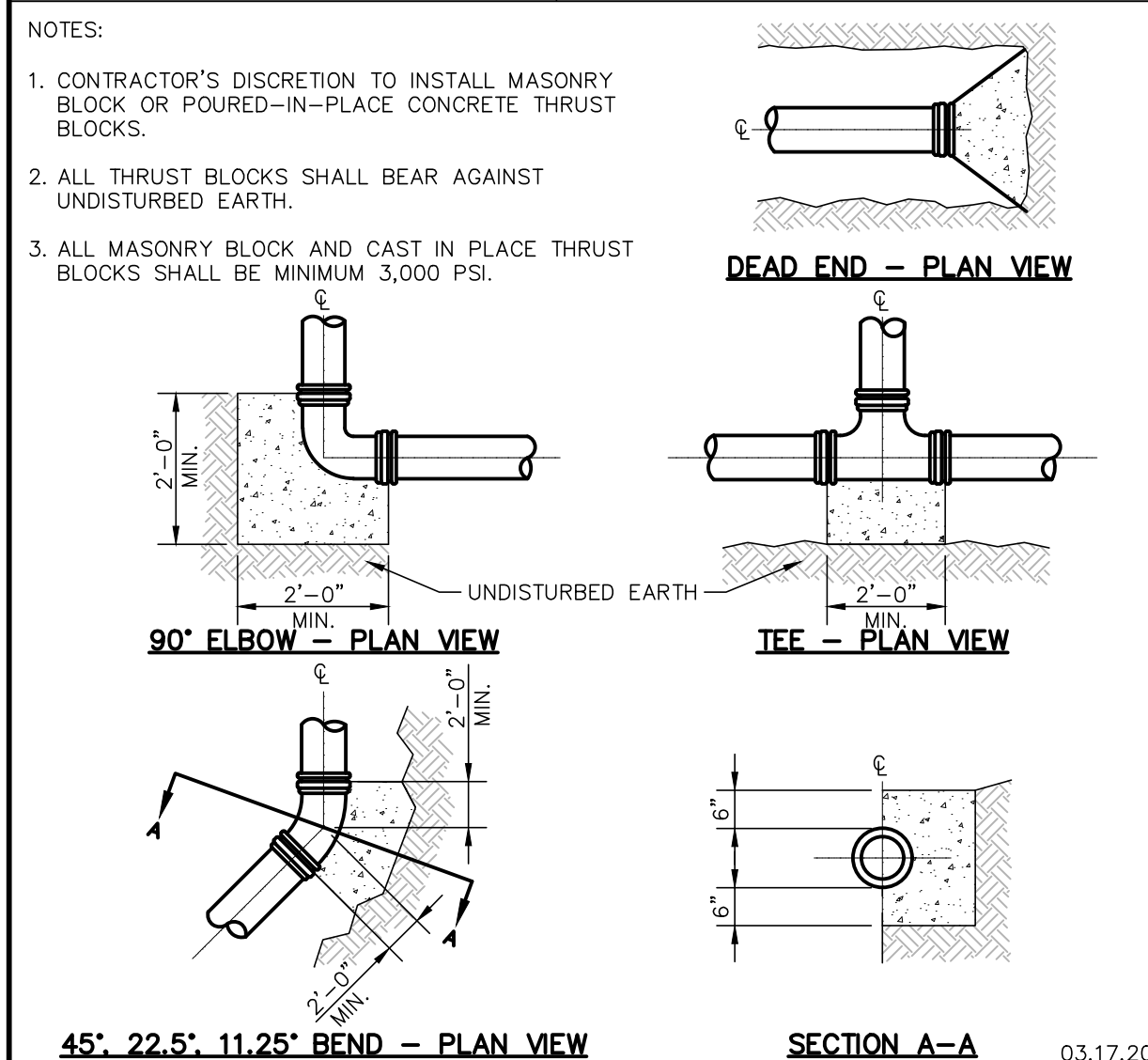
**GHA GEWALT HAMILTON ASSOCIATES, INC.** WATER MAIN TRENCH DETAIL

**GHA GEWALT HAMILTON ASSOCIATES, INC.** WATER SERVICE

**GHA GEWALT HAMILTON ASSOCIATES, INC.** FIRE HYDRANT

**GHA GEWALT HAMILTON ASSOCIATES, INC.** SOLID SLEEVE CONNECTION TO EXISTING WATER MAIN

**GHA GEWALT HAMILTON ASSOCIATES, INC.** PIPE CASING FOR WATER MAIN SEPARATION REQUIREMENTS



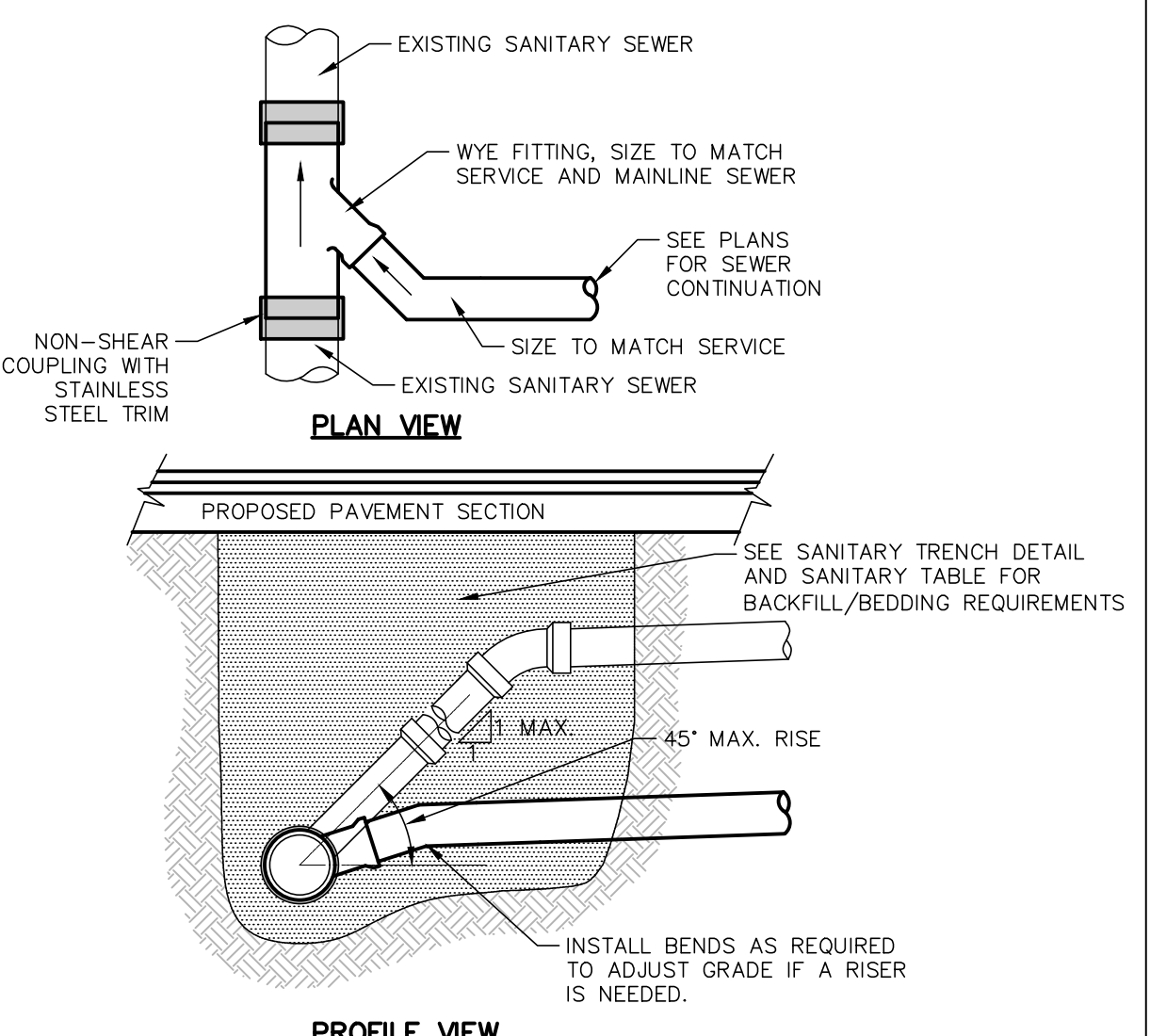
**GHA GEWALT HAMILTON ASSOCIATES, INC.** THRUST BLOCKING

**GHA GEWALT HAMILTON ASSOCIATES, INC.** SANITARY TRENCH DETAIL

**GHA GEWALT HAMILTON ASSOCIATES, INC.** WATER SERVICE IN DRIVEWAY DETAIL

**GHA GEWALT HAMILTON ASSOCIATES, INC.** SANITARY MANHOLE

**GHA GEWALT HAMILTON ASSOCIATES, INC.** SANITARY OR COMBINED SEWER PIPE CONNECTION TO EXISTING STRUCTURE DETAIL



**GHA GEWALT HAMILTON ASSOCIATES, INC.** THRUST BLOCKING

**GHA GEWALT HAMILTON ASSOCIATES, INC.** SANITARY TRENCH DETAIL

**GHA GEWALT HAMILTON ASSOCIATES, INC.** WATER SERVICE IN DRIVEWAY DETAIL

**GHA GEWALT HAMILTON ASSOCIATES, INC.** SANITARY MANHOLE

**GHA GEWALT HAMILTON ASSOCIATES, INC.** SANITARY OR COMBINED SEWER PIPE CONNECTION TO EXISTING STRUCTURE DETAIL

**GHA GEWALT HAMILTON ASSOCIATES, INC.**  
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TEL 847.478.9700 ■ FAX 847.478.9701

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**DETAILS**  
**2024 WHITE PINE WATER MAIN AND ROADWAY IMPROVEMENTS**  
**VILLAGE OF BUFFALO GROVE**  
**BUFFALO GROVE, ILLINOIS 60089**

NO.	BY	DATE	REVISION	NO.	BY	DATE	REVISION

FILE: 4798.072-DT.dwg  
DRAWN BY: KRM GHA PROJECT # 4798.072  
DATE: 11.02.2023  
CHECKED BY: PCL SCALE: N.T.S.  
DATE: 11.02.2023  
SHEET NUMBER: **17**  
OF 19 SHEETS

S:\2024\2024 BUFFALO GROVE WATER & STREET IMPROVEMENTS\4798.072-DT.dwg - 10/31/2023 4:58 PM



