

REDWOOD ROCHESTER HILLS

E. AVON ROAD
ROCHESTER HILLS, MI 48307
OAKLAND COUNTY



7510 E. PLEASANT VALLEY RD
INDEPENDENCE, OH 44131



Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.
7050 West Saginaw Hwy.
Suite 200
Lansing, MI 48917

office: 517.272.9835
fax: 517.272.9836

www.bergmannpc.com

DATE	DESCRIPTION
11/16/2018	PUD REVIEW
02/04/2019	REV. PER CITY COMMENTS
03/21/2019	2ND REV. PER CITY COMMENTS
06/02/2019	3RD REV. PER CITY COMMENTS
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05/06/2020	ENGINEERING RESUBMITTAL
06/09/2020	ENGINEERING RESUBMITTAL
07/06/2020	ENGINEERING RESUBMITTAL

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Project Manager: P. FURTAW, PE	Checked By: P. FURTAW, PE
Designed By: I. GRAHAM, PE	Drawn By: I. GRAHAM, PE
Date Revisd: NOVEMBER 9, 2018	Project Number: 12963.00

SOUTH WATERMAIN PLAN

C115

CITY FILE #18-022 SECTION 13

BENCHMARKS:

- TOP OF NORTHWEST BOLT ON HYDRANT, ELEVATION = 675.33 (NAVD88)
- TOP OF NORTHWEST BOLT ON HYDRANT, ELEVATION = 682.29 (NAVD88)
- TOP OF NORTHWEST BOLT ON HYDRANT, ELEVATION = 683.50 (NAVD88)

TOTAL WATER MAIN QUANTITIES

MATERIAL	QUANTITY
8" CL 54 D.I. WATER MAIN	4,242 LF
6" CL 54 D.I. WATER MAIN	90 LF
8" GATE VALVE AND WELL	11
TAPPING SLEEVE AND VALVE	2
6" VALVED HYDRANT ASSEMBLY	11
16"X8" TEE	2
8"X6" REDUCER	4
CURB AND STOP BOX (INSTALLED BY CITY)	26
1" COPPER SERVICE LINE (INSTALLED BY CITY)	516 LF
1.5" COPPER SERVICE LINE (INSTALLED BY CITY)	312 LF
2" COPPER SERVICE LINE (INSTALLED BY CITY)	156 LF

KEYNOTES:

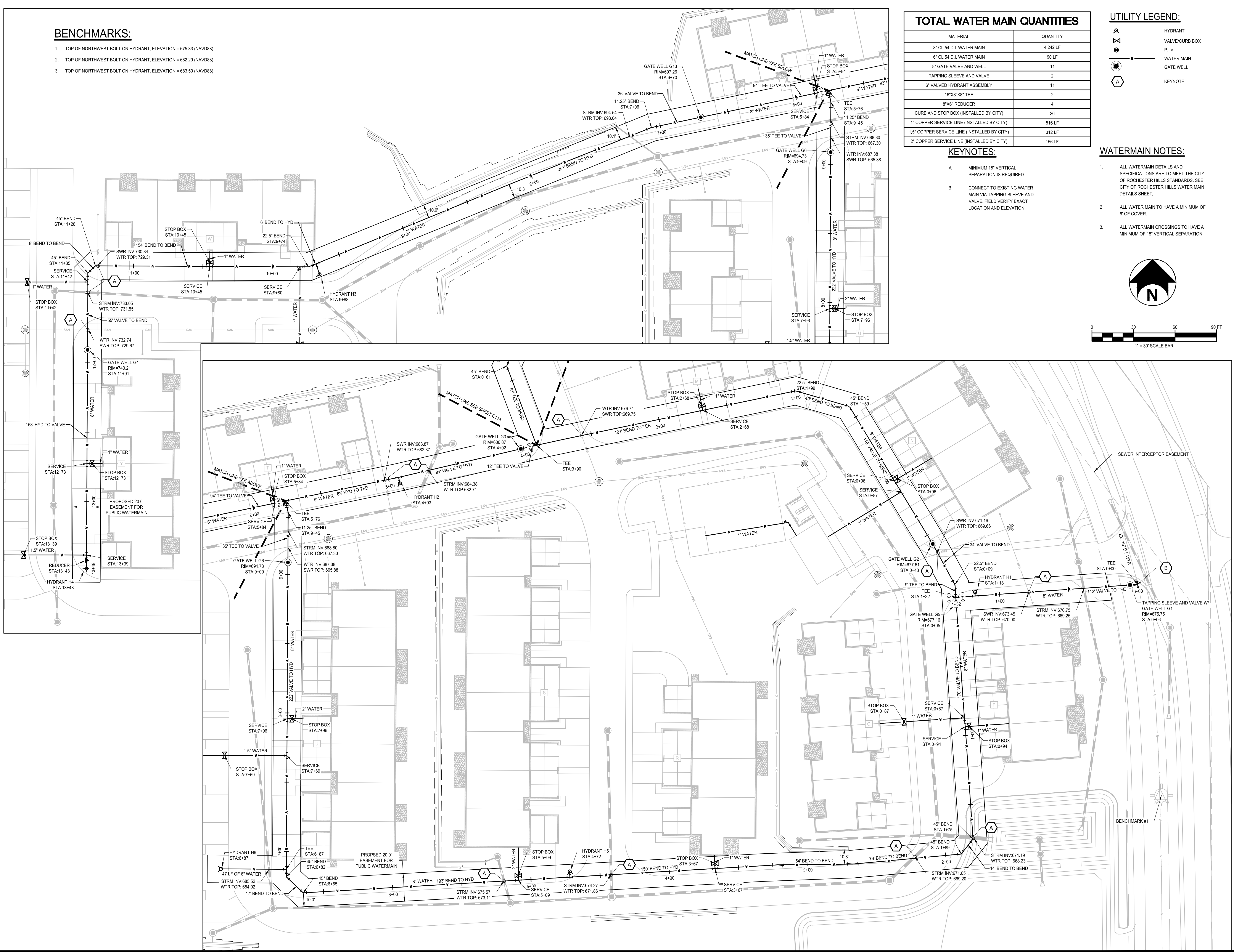
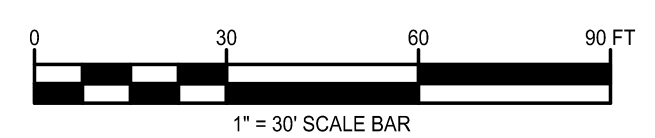
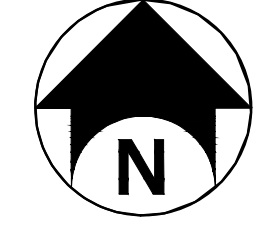
- MINIMUM 18" VERTICAL SEPARATION IS REQUIRED
- CONNECT TO EXISTING WATER MAIN VIA TAPPING SLEEVE AND VALVE. FIELD VERIFY EXACT LOCATION AND ELEVATION

UTILITY LEGEND:

- HYDRANT
- VALVE/CURB BOX
- P.I.V.
- WATER MAIN
- GATE WELL
- KEYNOTE

WATERMAIN NOTES:

- ALL WATERMAIN DETAILS AND SPECIFICATIONS ARE TO MEET THE CITY OF ROCHESTER HILLS STANDARDS. SEE CITY OF ROCHESTER HILLS WATER MAIN DETAILS SHEET.
- ALL WATER MAIN TO HAVE A MINIMUM OF 6' OF COVER.
- ALL WATERMAIN CROSSINGS TO HAVE A MINIMUM OF 18" VERTICAL SEPARATION.



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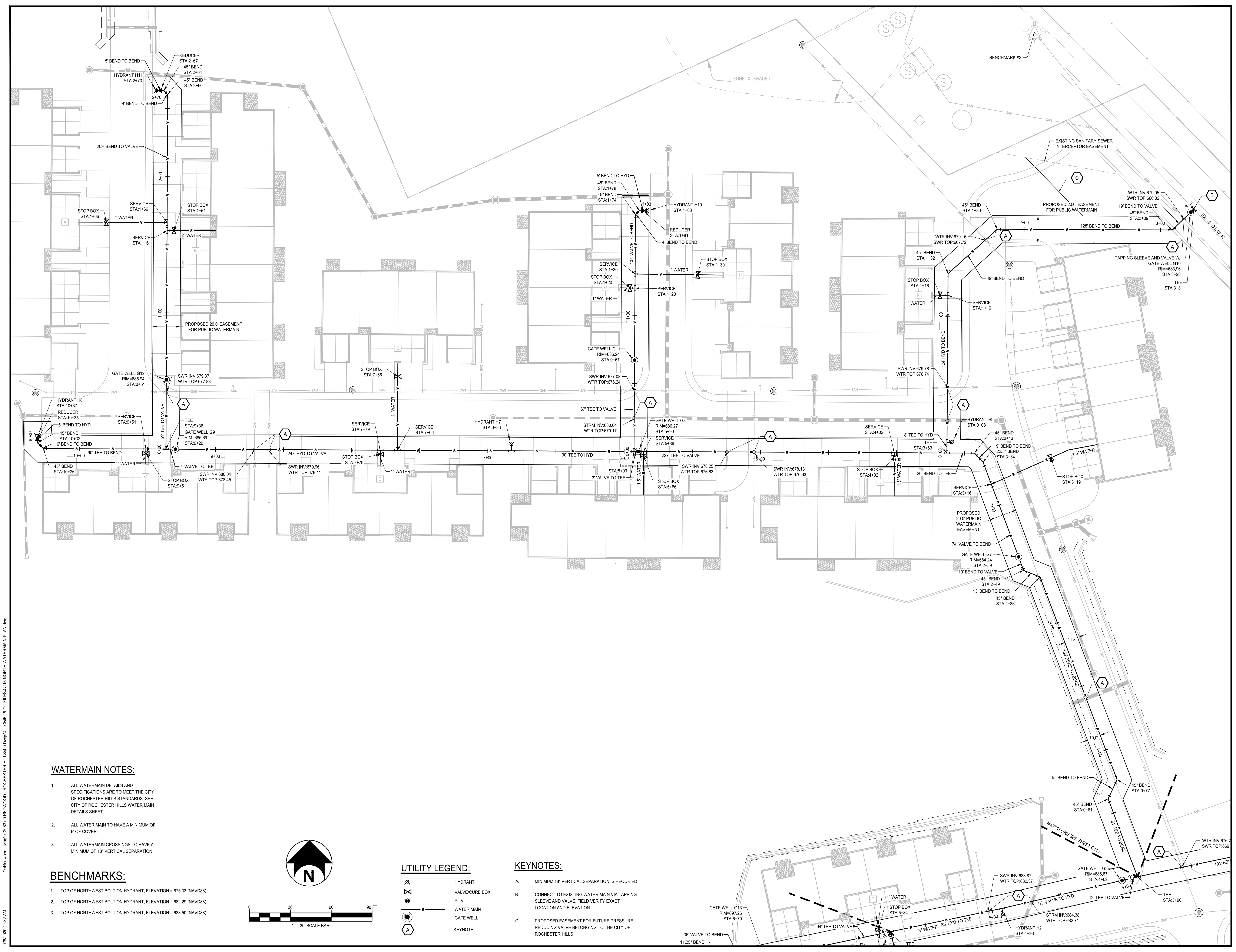


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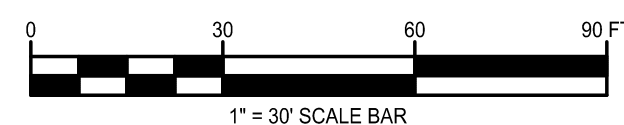
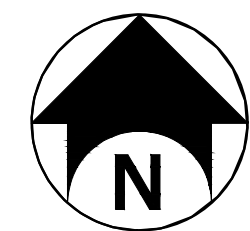


WATERMAIN NOTES:

- ALL WATERMAIN DETAILS AND SPECIFICATIONS ARE TO MEET THE CITY OF ROCHESTER HILLS STANDARDS. SEE CITY OF ROCHESTER HILLS WATER MAIN DETAILS SHEET.
- ALL WATER MAIN TO HAVE A MINIMUM OF 6" OF COVER.
- ALL WATERMAIN CROSSINGS TO HAVE A MINIMUM OF 18" VERTICAL SEPARATION.

BENCHMARKS:

- TOP OF NORTHWEST BOLT ON HYDRANT, ELEVATION = 675.33 (NAVD88)
- TOP OF NORTHWEST BOLT ON HYDRANT, ELEVATION = 682.29 (NAVD88)
- TOP OF NORTHWEST BOLT ON HYDRANT, ELEVATION = 683.50 (NAVD88)



UTILITY LEGEND:

- HYDRANT
- VALVE/CURB BOX
- P.I.V.
- WATER MAIN
- GATE WELL
- KEYNOTE

KEYNOTES:

- MINIMUM 18" VERTICAL SEPARATION IS REQUIRED
- CONNECT TO EXISTING WATER MAIN VIA TAPPING SLEEVE AND VALVE. FIELD VERIFY EXACT LOCATION AND ELEVATION
- PROPOSED EASEMENT FOR FUTURE PRESSURE REDUCING VALVE BELONGING TO THE CITY OF ROCHESTER HILLS

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Project Manager: P. FURTAW, PE	Checked By: P. FURTAW, PE
Designed By: I. GRAHAM, PE	Drawn By: I. GRAHAM, PE
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NORTH WATERMAIN PLAN

C116

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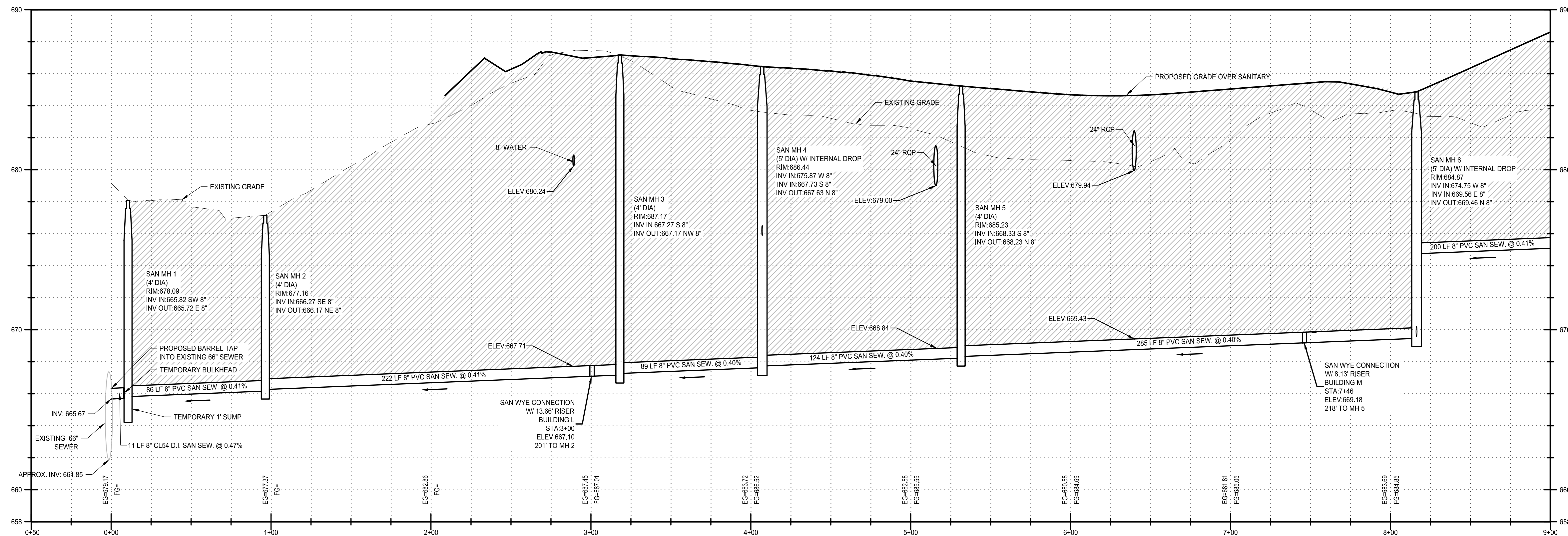
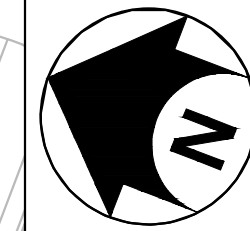
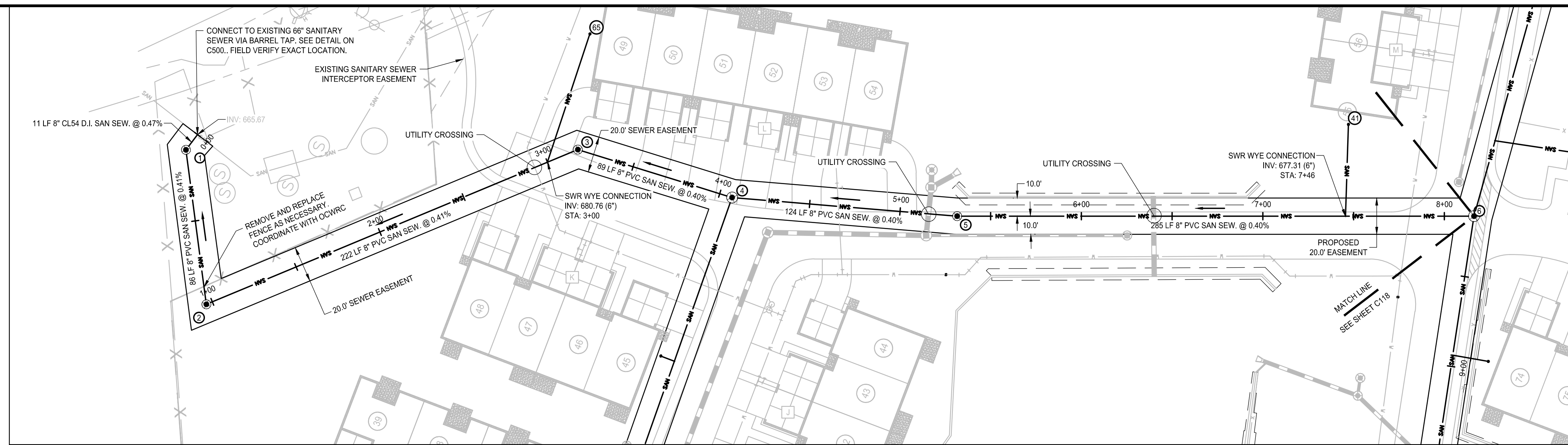


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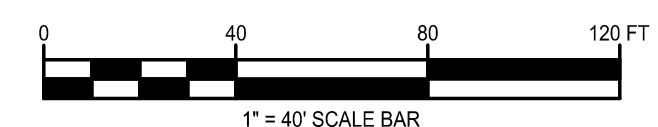
SANITARY SEWER NOTES:

- ALL SANITARY SEWER DETAILS AND SPECIFICATIONS ARE TO CONFORM TO THE CITY OF ROCHESTER HILLS STANDARDS.
- ALL SANITARY SEWER TO BE PVC TRUSS.
- ALL SANITARY SEWER LEADS ARE TO BE WYE CONNECTIONS. NO LEADS ARE TO CONNECT DIRECTLY TO MANHOLES.

UTILITY LEGEND:

- SANITARY SEWER
- SANITARY SEWER MANHOLE
- CLEANOUT
- SAND BACKFILL REQUIRED

TOTAL SEWER MAIN QUANTITIES	
MATERIAL	QUANTITY
8" D.I. SEWER MAIN	11 LF
8" PVC SEWER MAIN	2744 LF
6" SCH 40 PVC SEWER LATERAL	1300 LF
4" DIA SEWER MANHOLE	11
5" DIA SEWER MANHOLE	7
SEWER LATERAL CLEAN OUT	27



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SANITARY SEWER PLAN AND PROFILE

C117

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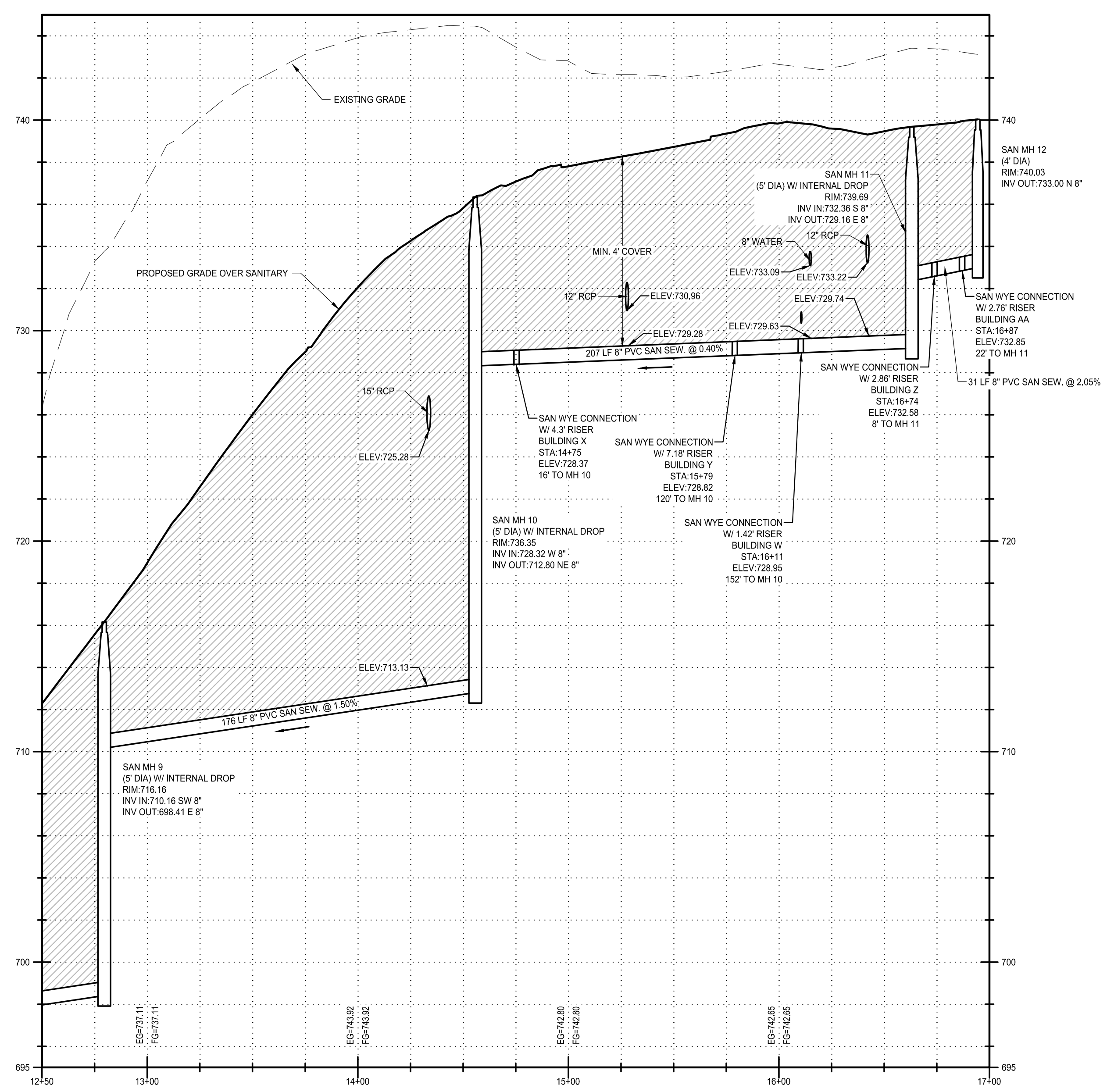
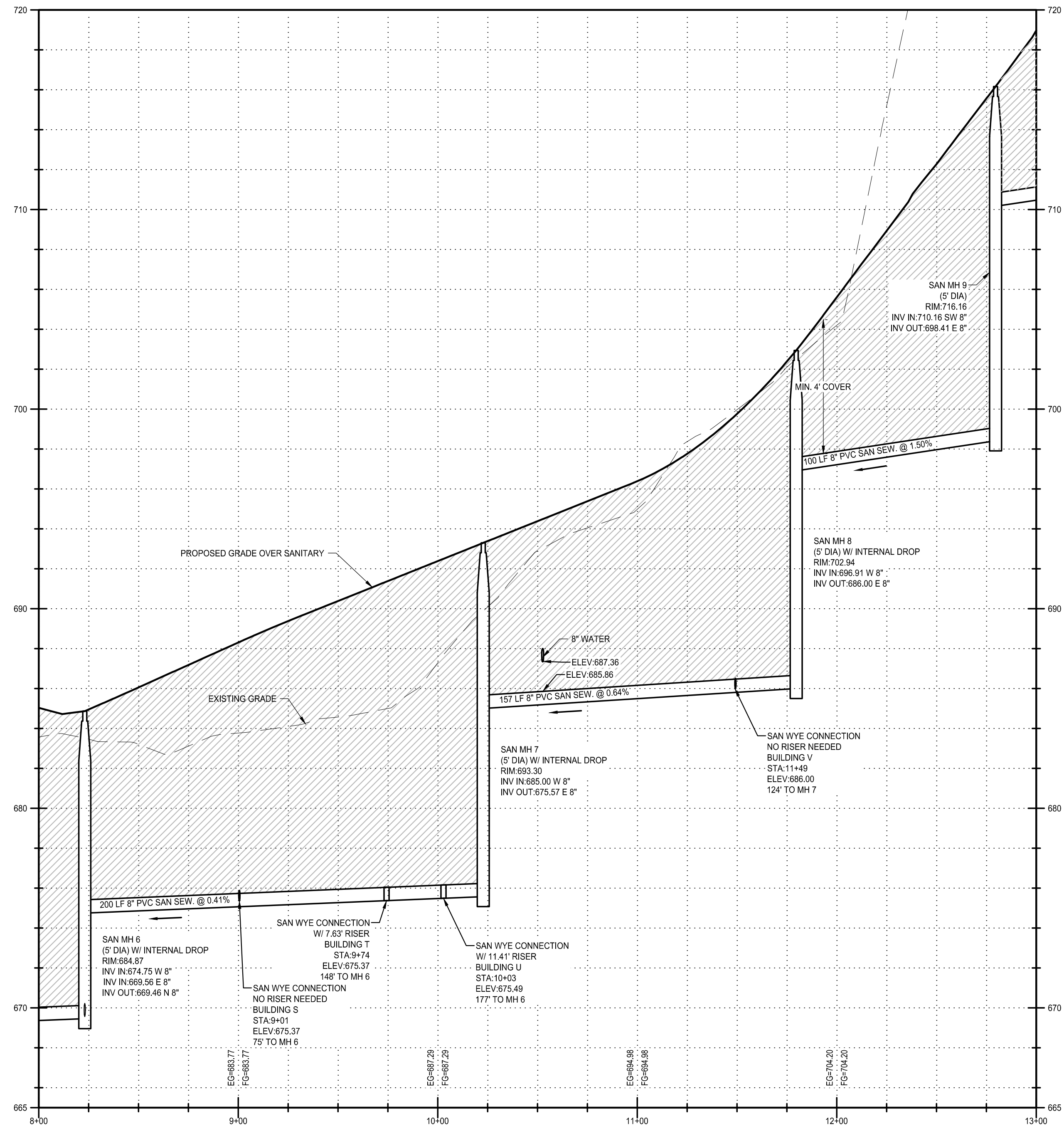
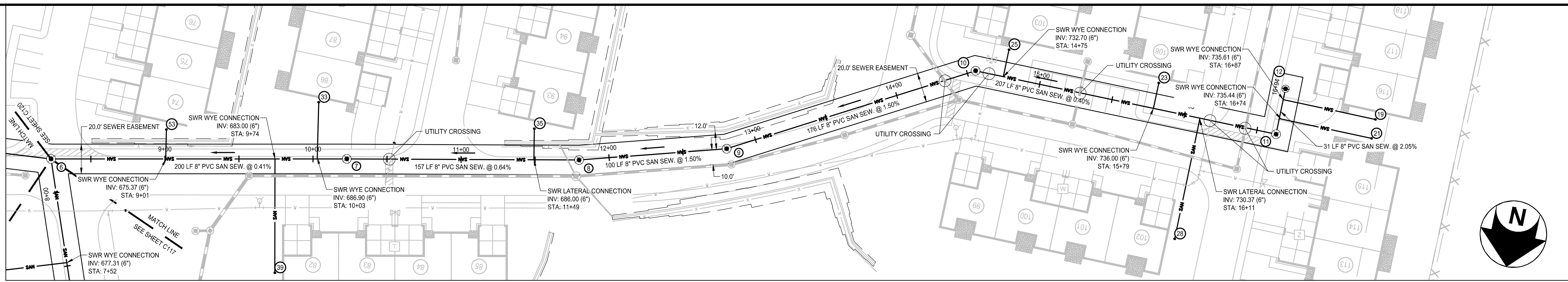


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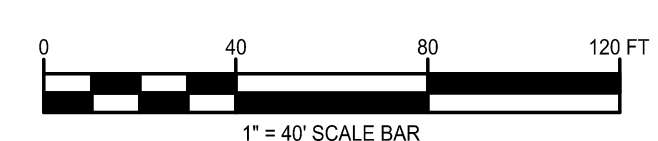
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UTILITY LEGEND:

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- CLEANOUT
- SAND BACKFILL REQUIRED



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SANITARY SEWER PLAN AND PROFILE

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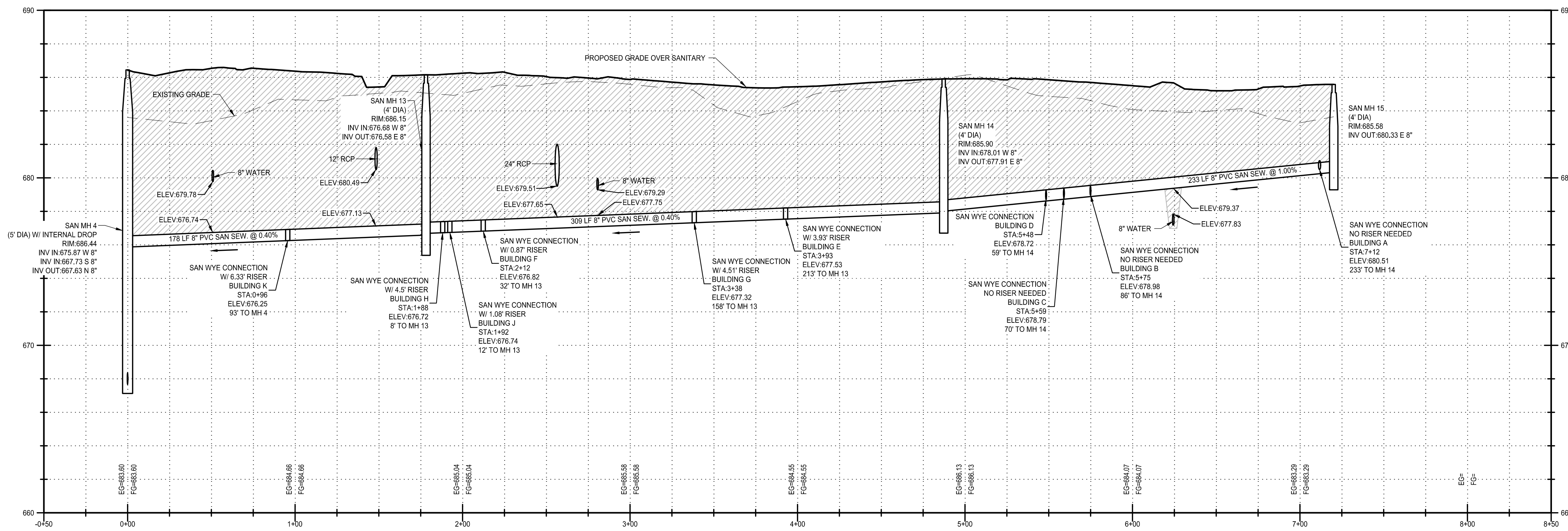
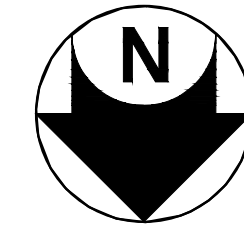
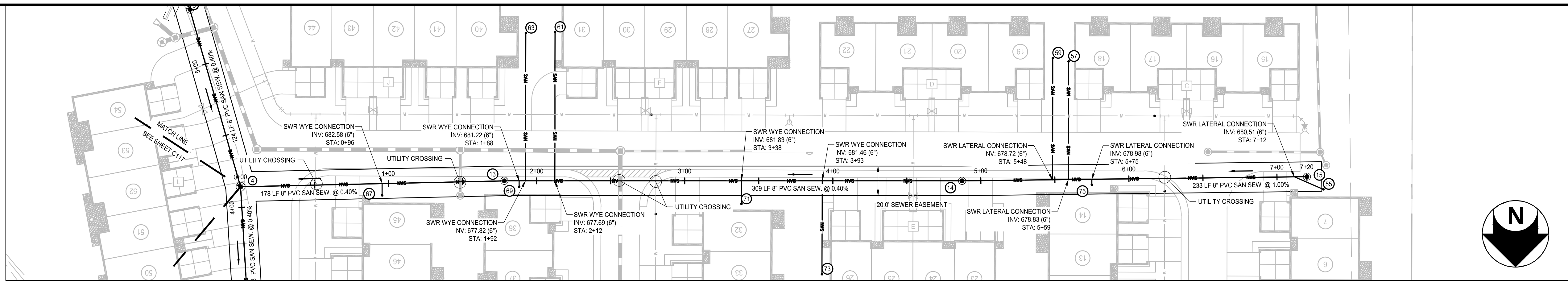


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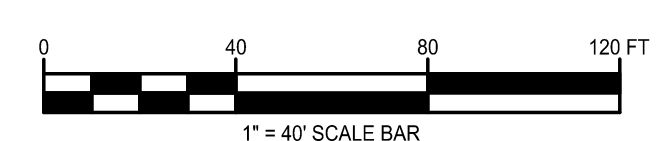
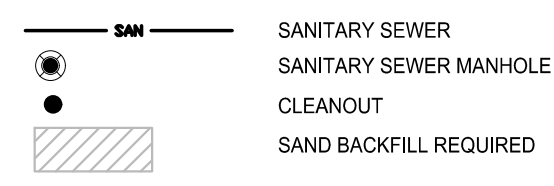
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SEWER 4-15 PROFILE
1" = 4' VERTICAL
1" = 40' HORIZONTAL

UTILITY LEGEND:



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**SANITARY SEWER PLAN AND
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C119

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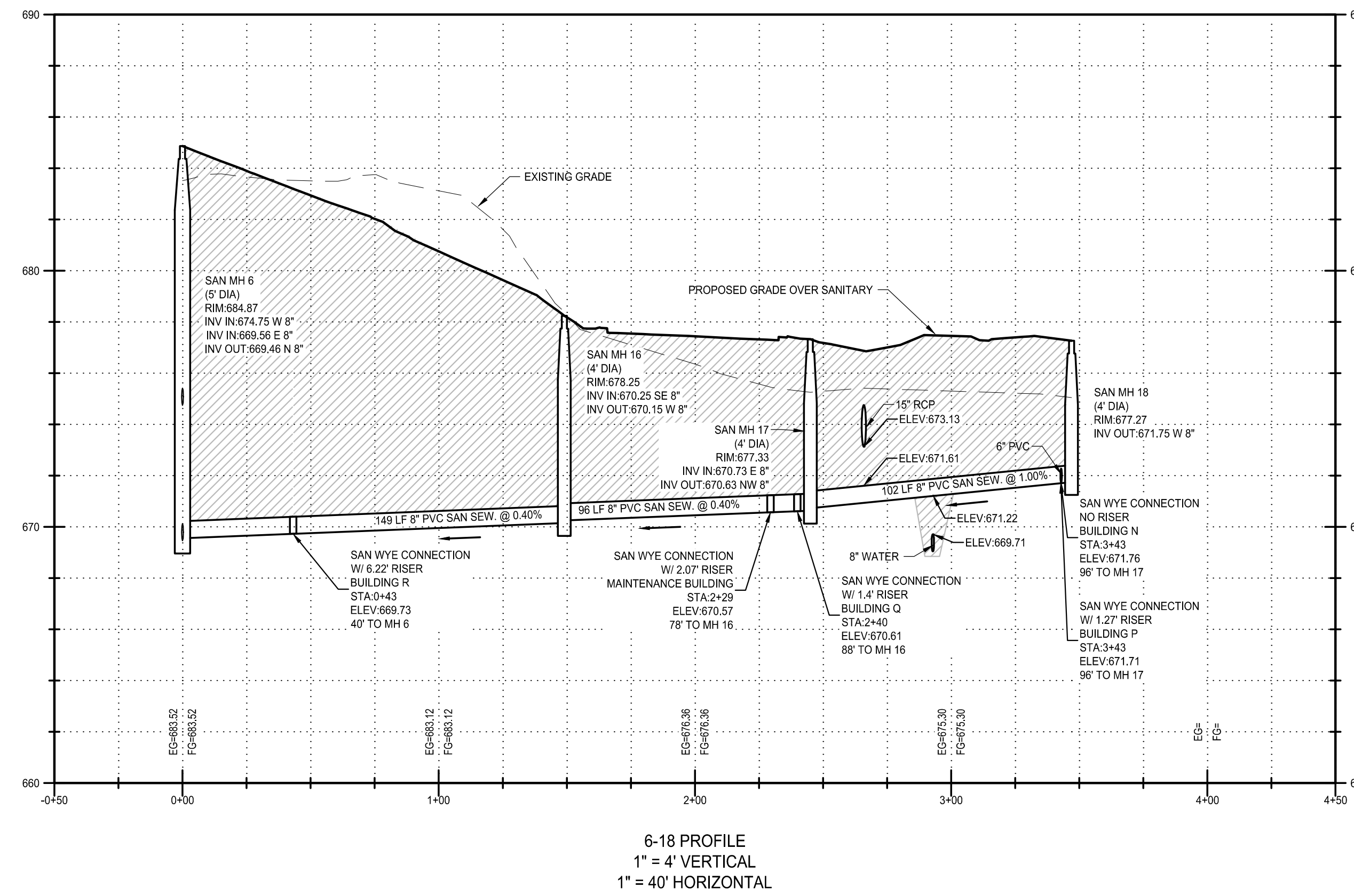
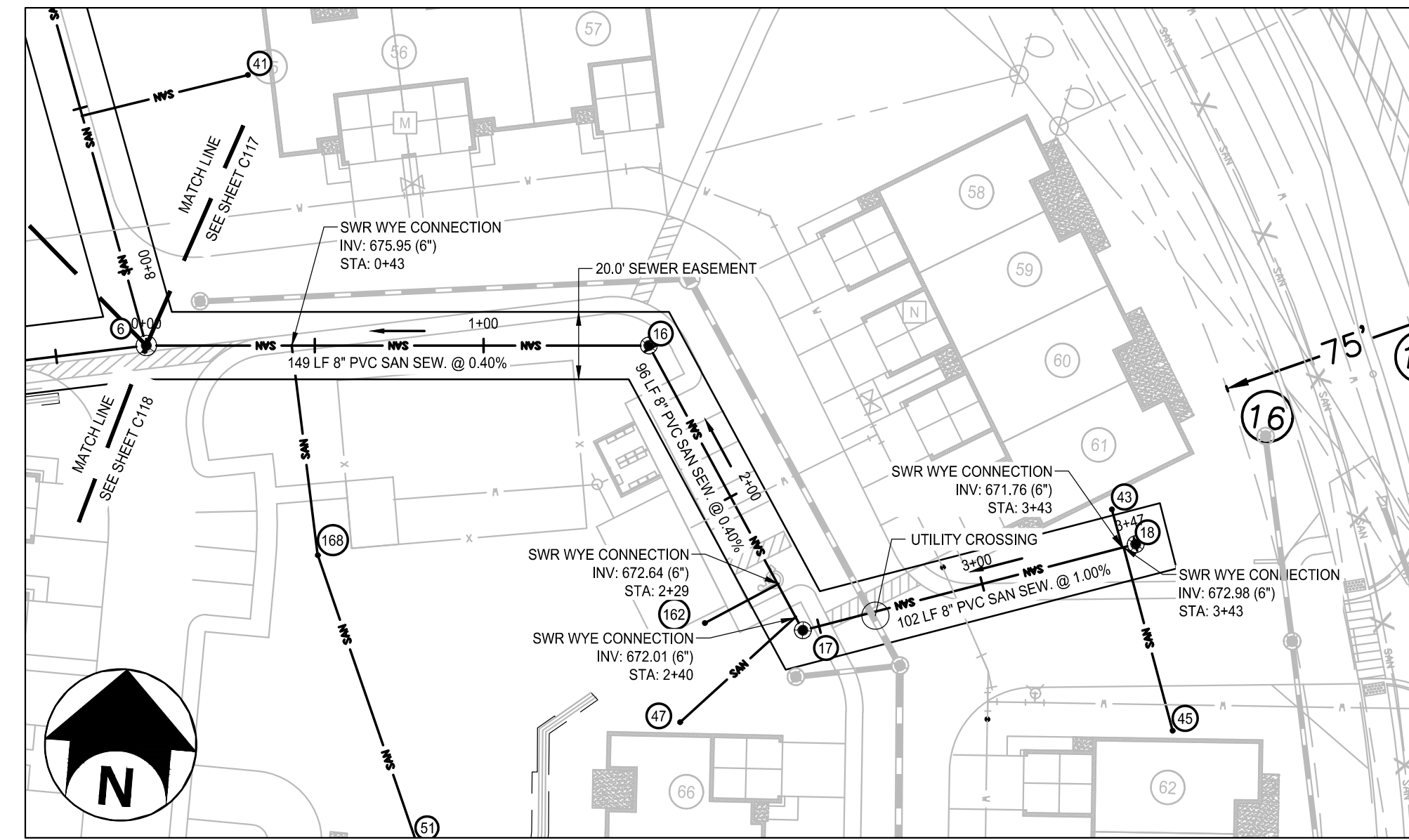


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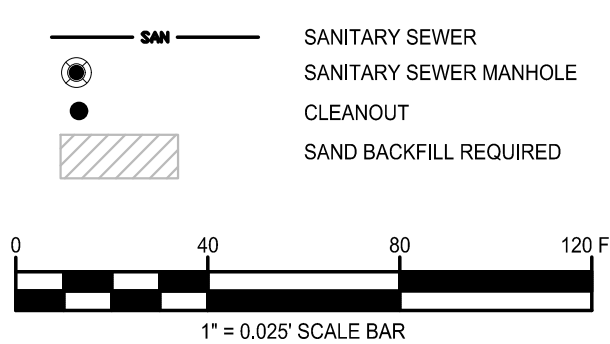


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**SANITARY SEWER PLAN AND
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