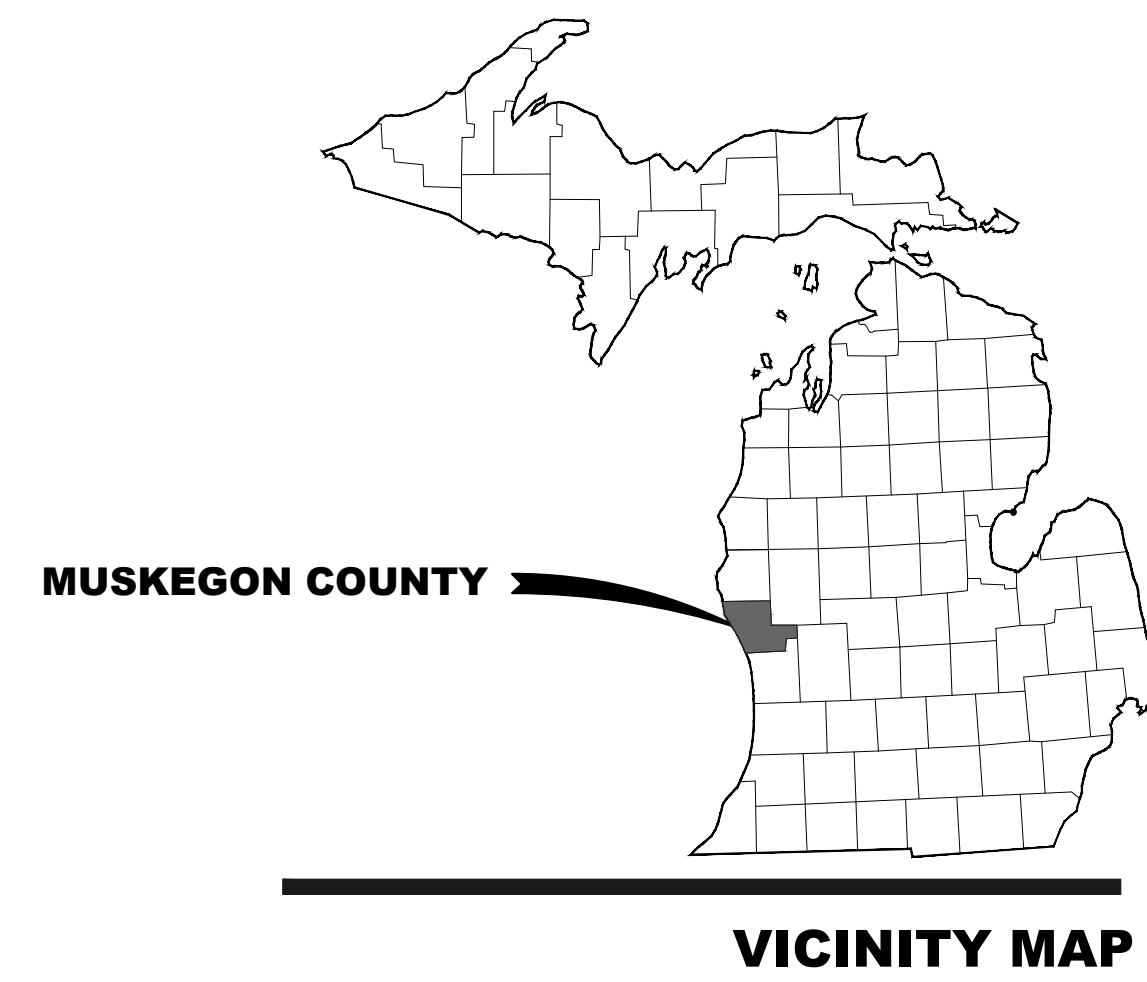


CITY OF MUSKEGON MUSKEGON COUNTY, MICHIGAN

AMITY AVENUE IMPROVEMENTS

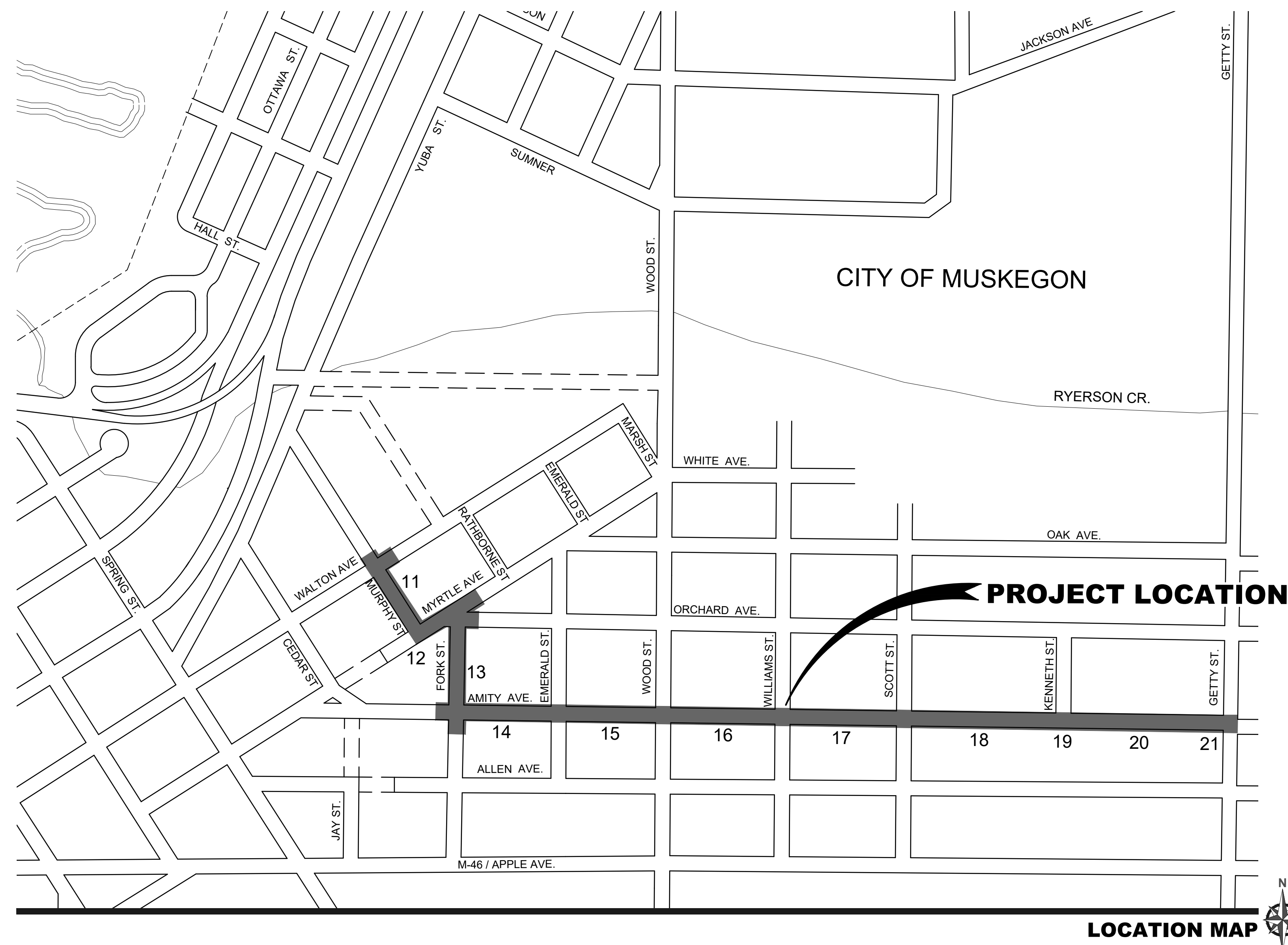
JUNE 2020

DWRF PROJECT NUMBER 7466-01
SRF PROJECT NUMBER 5679-01



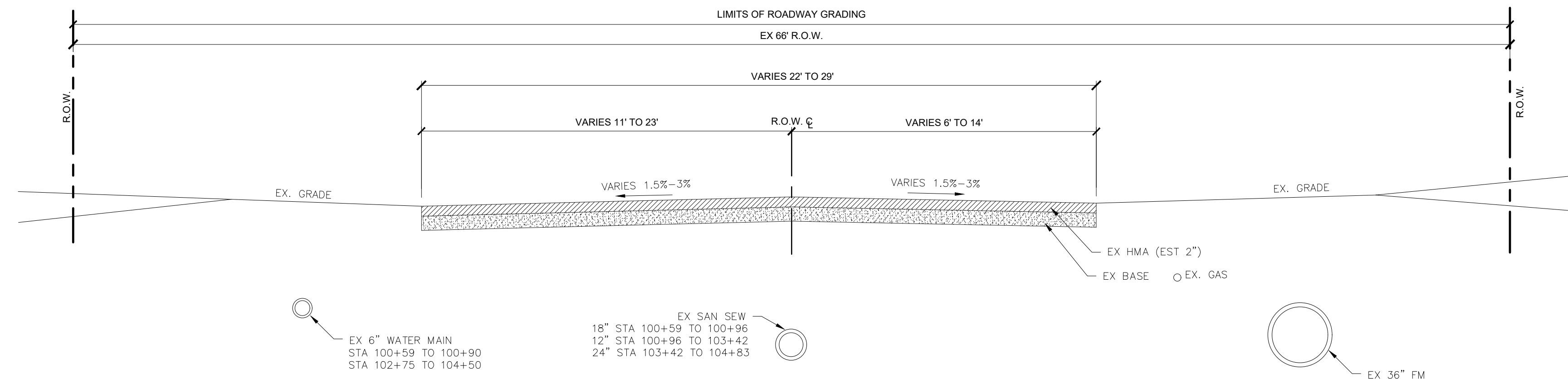
INDEX OF DRAWINGS

DESCRIPTION	SHEET NO.
COVER SHEET	1
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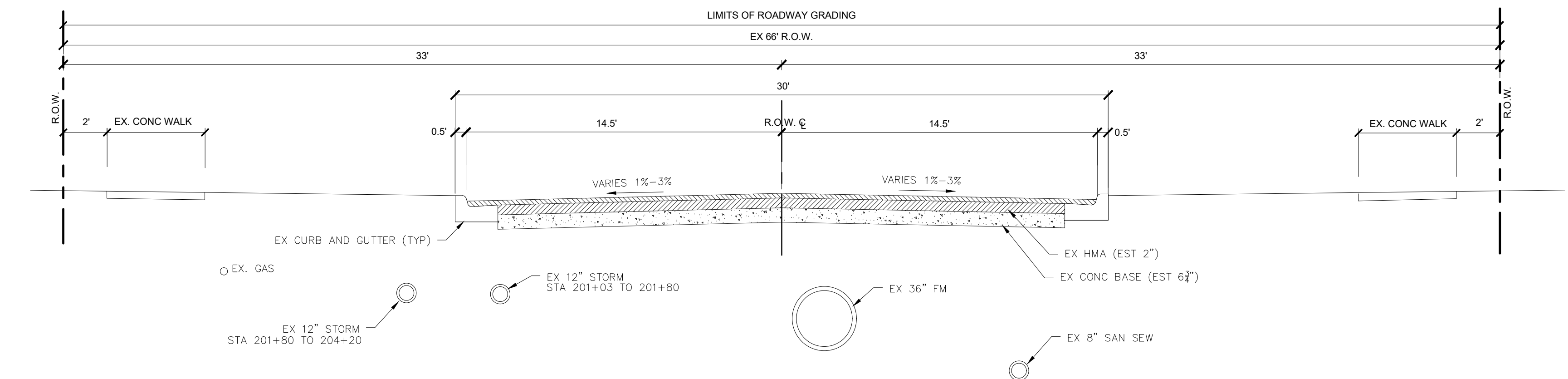


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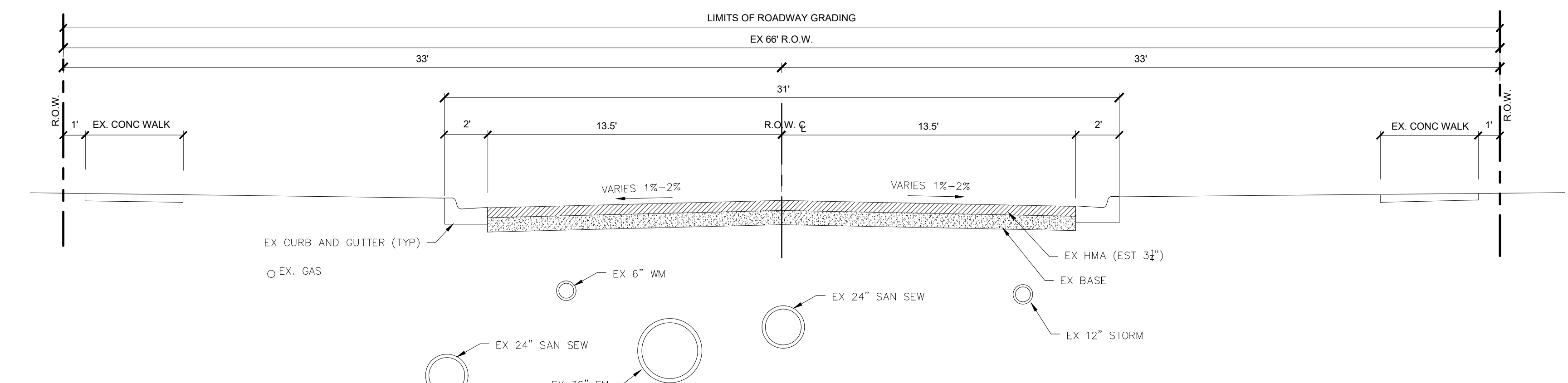
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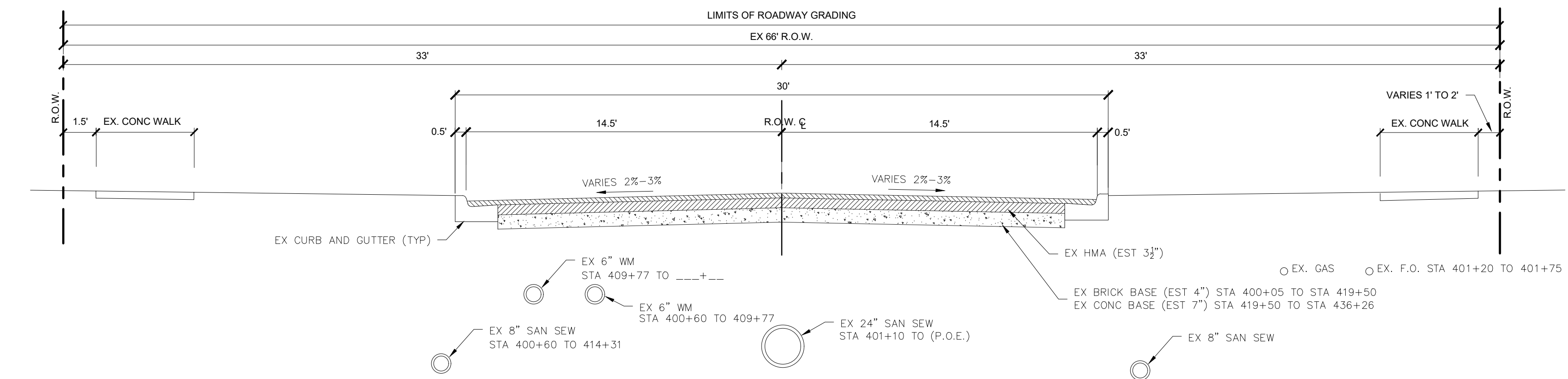
MURPHY STREET (EXISTING)
STA 100+59 TO STA 104+65
SCALE: 1"=4'



MYRTLE AVENUE (EXISTING)
STA 200+65 TO STA 204+20
SCALE: 1"=4'



FORK STREET (EXISTING)
STA 300+51 TO STA 304+49
SCALE: 1"=4'



AMITY AVENUE (EXISTING)
STA 400+05 TO STA 436+45
SCALE: 1"=4'

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 SATISFY HIMSELF AS TO THEIR ACCURACY OR OF HIS RESPONSIBILITY IN CASE UTILITIES HAVE BEEN CONSTRUCTED OR REMOVED.

GAS	VINCE DUCA DTE ENERGY 2359 OLTHOFF DRIVE MUSKEGON, MI 49444 231.726.0488 DUCAV@DTEENERGY.COM	WATER & SEWER	CITY OF MUSKEGON ENGINEERING DEPARTMENT 1350 E. KEATING AVENUE MUSKEGON, MI 49442 231.724.6920 LEO.EVANS@SHORELINECITY.COM
TELEPHONE	CHRIS BEISEL/CINDY WHITEMAN FRONTIER COMMUNICATIONS 860 TERRACE STREET MUSKEGON, MI 49440 231.727.1642 CINDY.WHITEMAN@FTR.COM	ELECTRIC	MICHELE PETERSON CONSUMERS ENERGY 2021 HOYT STREET MUSKEGON HEIGHTS, MI 49444 231.727.6501 MICHELE.PETERSON@CMSENERGY.COM
CABLE TV/ INTERNET	JIM ZAWACKI COMCAST NETWORK SERVICES 2900 PATTERSON AVE SE GRAND RAPIDS, MI 49512 JIM_ZAWACKI@CABLE.COMCAST.COM		

THE CONTRACTOR SHALL EXPOSE AND VERIFY LOCATION AND DEPTH OF EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION OF NEW UTILITY. CONFLICTS IN GRADES SHALL BE REPORTED TO ENGINEER AND ADJUSTMENTS SHALL BE MADE.

THE OWNERS OF EXISTING SERVICE FACILITIES THAT ARE WITHIN THE GRADING OR STRUCTURE LIMITS WILL MOVE THEM TO LOCATIONS DESIGNATED BY THE ENGINEER OR WILL REMOVE THEM ENTIRELY FROM THE ROAD RIGHT-OF-WAY. OWNERS OF PUBLIC UTILITIES WILL NOT BE REQUIRED TO MOVE ADDITIONAL POLES OR STRUCTURES IN ORDER TO FACILITATE THE OPERATION OF CONSTRUCTION EQUIPMENT UNLESS IT IS DETERMINED BY THE ENGINEER THAT SUCH POLES OR STRUCTURES CONSTITUTE A HAZARD TO THE PUBLIC OR ARE EXTRAORDINARILY DANGEROUS TO THE CONTRACTOR'S OPERATIONS.

TREE REMOVAL

TREE REMOVAL WHERE DIRECTED BY ENGINEER MUST BE CONDUCTED BETWEEN OCTOBER 1, 2020 AND MARCH 31, 2021. IF THE WORK IS NOT CONDUCTED IN THIS TIME FRAME THE CONTRACTOR IS RESPONSIBLE FOR ALL ADDITIONAL COSTS AND PENALTIES INCURRED AS WELL AS ANY APPLICABLE LIQUIDATED DAMAGES.

MISCELLANEOUS QUANTITIES
THE FOLLOWING ITEMS OF WORK SHALL BE DONE AS THEY APPLY THROUGHOUT THE PROJECT. THESE ITEMS ARE NOT DETAILED OR INCLUDED ON THE PLAN AND PROFILE SHEETS BUT ARE TO BE USED AS DIRECTED BY THE ENGINEER, WHERE REQUIRED.

QUANTITY	UNIT	DESCRIPTION
1	LSUM	MOBILIZATION, BONDS, AND INSURANCE, MAX 5%
1	LSUM	PRE-CONSTRUCTION VIDEO SURVEY
1	LSUM	TRAFFIC CONTROL
1	LSUM	FLAG CONTROL
1	LSUM	SOIL EROSION CONTROL
1	LSUM	BYPASS PUMPING
4	EA	TREE, REM, 6" TO 18"
3	EA	TREE, REM, 19" TO 36"
100	CYD	SUBGRADE UNDERCUTTING, TYPE II
50	CYD	TRENCH UNDERCUT AND BACKFILL
1	EA	MONUMENT PRESERVATION
1	EA	MONUMENT BOX
1	EA	MONUMENT BOX, ADJUST
8	EA	8" x 45" BEND
8	EA	6" x 45" BEND
94	EA	WATER SERVICE RESTORATION, PRIVATE PROPERTY
1	EA	RELOCATE 6" WATERMAIN
1	EA	RELOCATE 8" WATERMAIN
1	EA	RELOCATE 12" WATERMAIN
1	EA	RELOCATE 16" WATERMAIN
250	SYD	REMOVE CONCRETE SIDEWALK
1000	SFT	SIDEWALK, CONC, 4"
3000	DLR	IRRIGATION REPAIR (ALLOWANCE)
4000	DLR	PRIVATE PROPERTY LANDSCAPE REPAIR (ALLOWANCE)

COURSE	TYPE	ITEM	EST. YIELD	BINDER GRADE	AWI	REMARKS
①	LEVELING	HMA, LVSP	220 LBS/SYD	PG 58-28	-	
②	SURFACE	HMA, LVSP	220 LBS/SYD	PG 58-28	220	

NOTE: BOND COAT SHALL BE APPLIED BETWEEN SUCCESSIVE COURSES OF HMA (PAYMENT INCLUDED IN HMA MIX). APPLICATION RATE 0.15 GAL/SYD SS-IH OR AS DIRECTED BY ENGINEER.

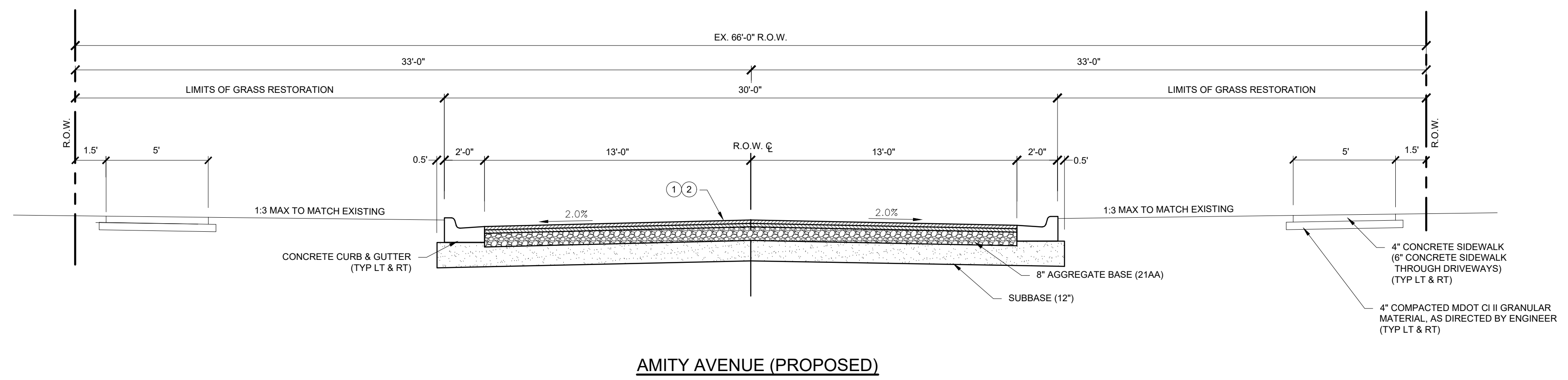
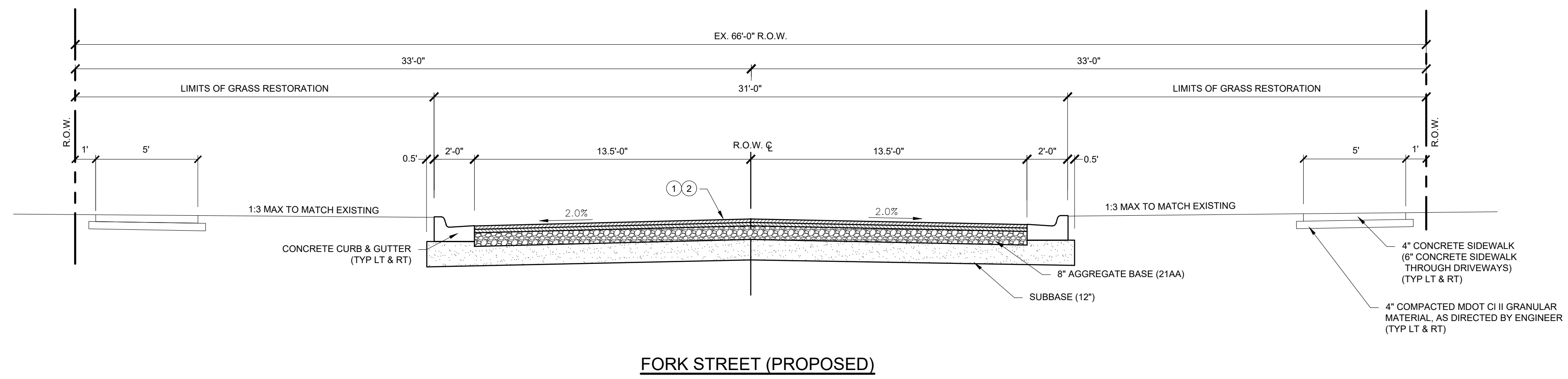
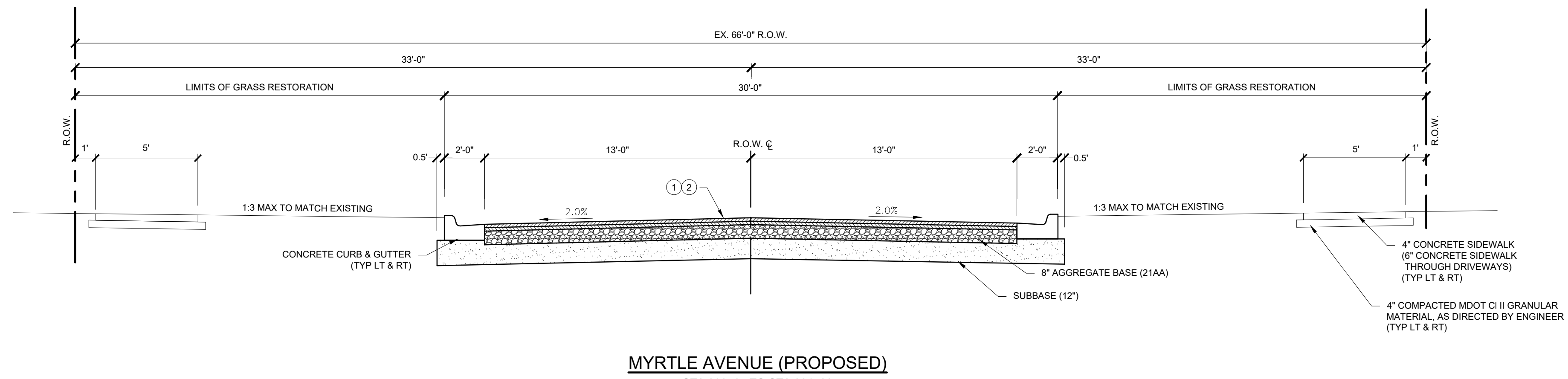
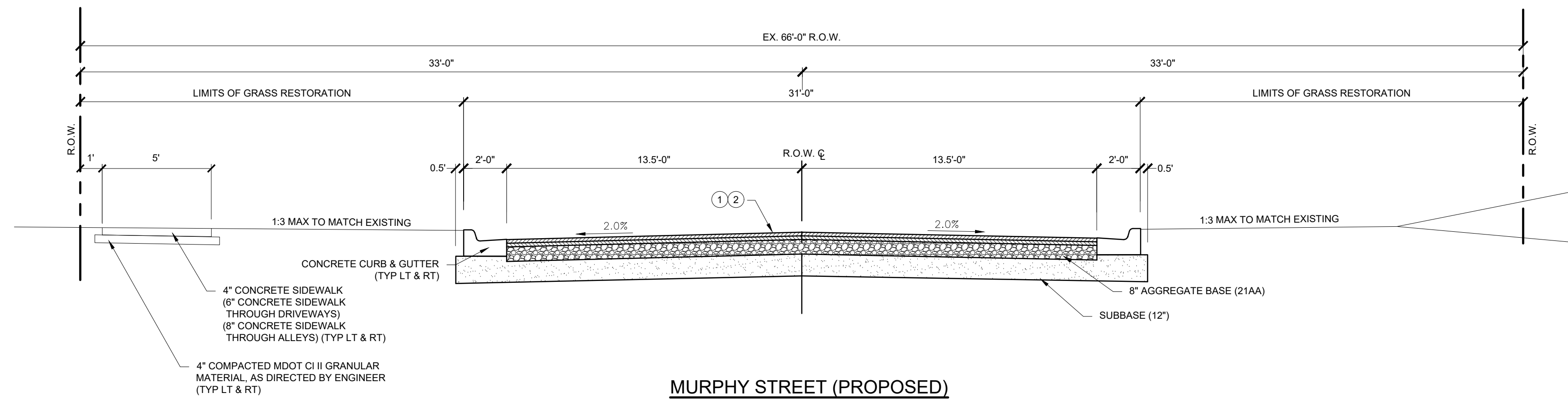
EXISTING FEATURES LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	TREE (DECIDUOUS)		CABLE BOX		SURVEY CONTROL POINT
	BUSH		TELEPHONE RISER		BENCHMARK
	TREE (CONIFEROUS)		TELEPHONE MANHOLE		SECTION CORNER
	DEAD TREE		TELEPHONE HANDHOLE		BOUNDARY LINE
	STUMP		ELECTRICAL RISER		PROPERTY LINE
	MANHOLE		ELECTRICAL MANHOLE		WATERMAIN
	SANITARY CLEANOUT		ELECTRICAL HANDHOLE		SANITARY SEWER
	RD. CATCH BASIN		POWER POLE		CULVERT (UNDER 10")
	SQ. CATCH BASIN		LIGHT POLE		CULVERT (24" AND UP)
	FIRE HYDRANT		GUY POLE		CABLE T.V.
	WATER VALVE		GUY ANCHOR		TELEPHONE
	CURB STOP & BOX		PED CROSSING SIGNAL		ELECTRIC
	WELL		YARD LIGHT		GAS
	WATER MANHOLE		SIGN		OVERHEAD LINES
	WATER METER		MAILBOX		GUARDRAIL
	SOIL BORING		GUARD POST		FENCE
	MONITORING WELL		FOUND CONC. MONUMENT		WOODLINE
			FOUND IRON ROD		
			SET IRON ROD		

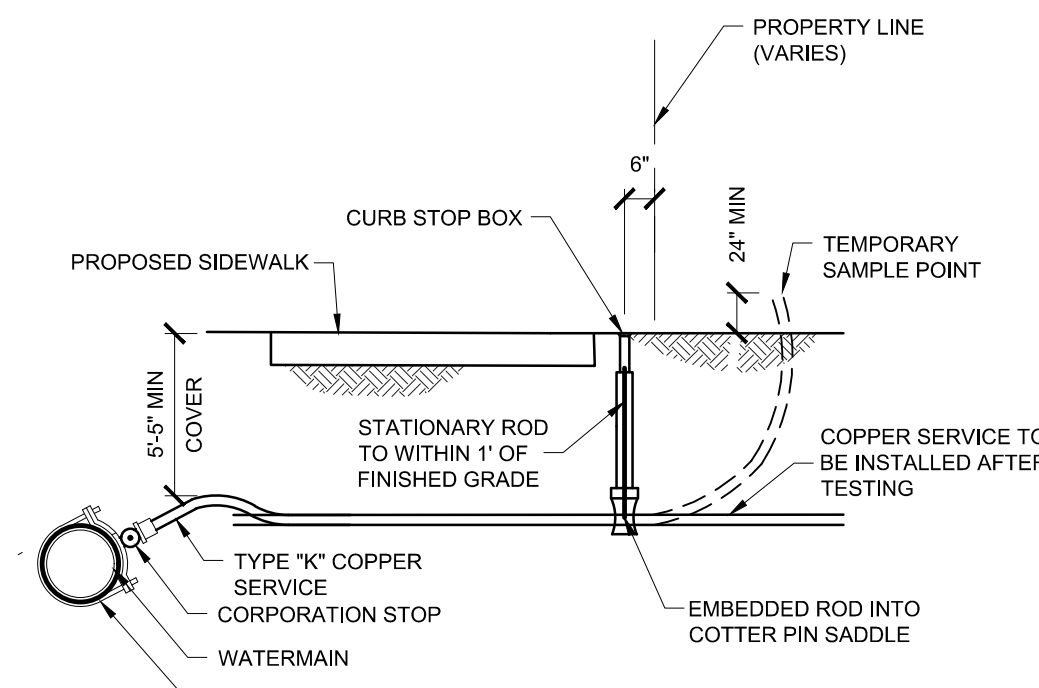
NOTE: ALL ITEMS LISTED ON THE LEGEND MAY NOT BE PRESENT ON DRAWING.

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REVISION:

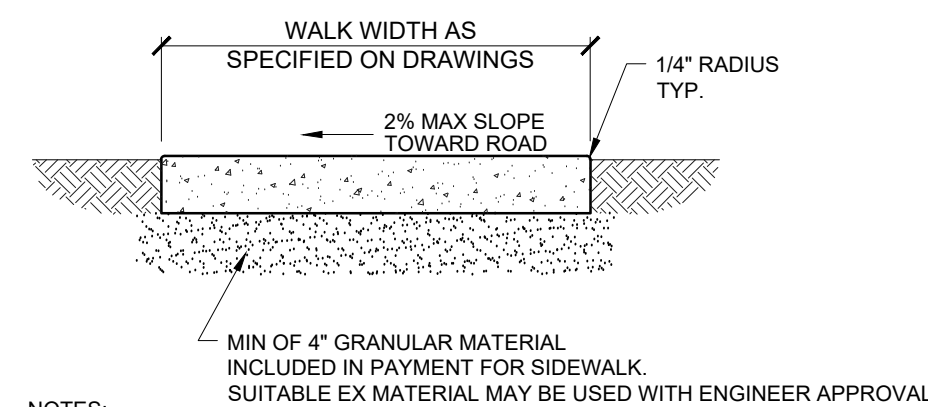


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- NOTES:
1. SAMPLE POINT TO BE USED FOR FUTURE SERVICE LEAD.
 2. NO TAP SHALL BE MADE CLOSER THAN 18" TO ANY COUPLING OR JOINT IN THE PIPE.
 3. STATIONARY ROD REQUIRED IN AREAS OF HIGH GROUNDWATER.
 4. CURB STOP BOX SHALL HAVE PENTAGON PLUG REMOVED, GREASED WITH FOOD GRADE GREASE, AND REINSTALLED SO THAT THE TOP THREADS ARE FLUSH WITH THE HOLE.

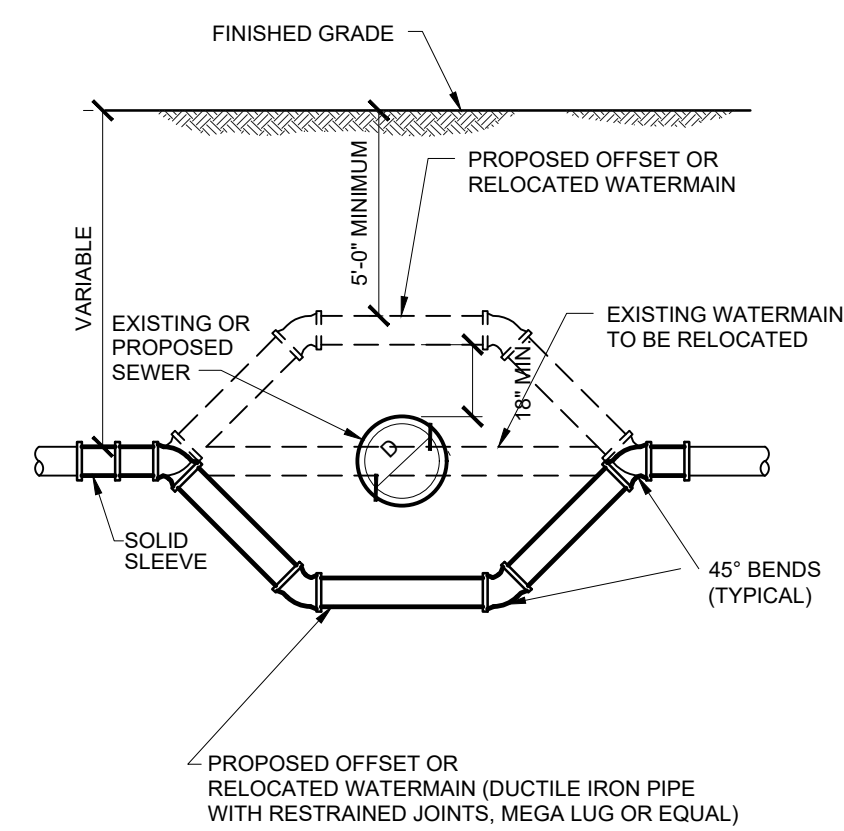
COPPER SERVICE LEAD CONNECTION/SAMPLE POINT



- NOTES:
1. 1/2" EXPANSION JOINTS SHALL BE MAXIMUM OF 50' ON CENTER
 2. 1/2" EXPANSION JOINT MATERIAL SHALL BE PLACED BETWEEN SIDEWALK AND RIGID STRUCTURES.
 3. INsofar AS POSSIBLE, SIDEWALK SHALL BE DIVIDED INTO SQUARE UNIT AREAS BY MEANS OF HAND TOOLED JOINTS OF SIMILAR AREA NOT MORE THAN 36 SFT OR LESS THAN 16 SFT.
 4. SIDEWALK SHOWN ON THE PLAN PLACED THROUGH DRIVEWAYS SHALL BE 6" THICK AND EXTEND 5' BEYOND DRIVEWAY EDGE.
 5. SIDEWALK SHOWN ON THE PLAN PLACED THROUGH ALLEYS SHALL BE 8" THICK AND EXTEND 5' BEYOND APPROACH EDGE.

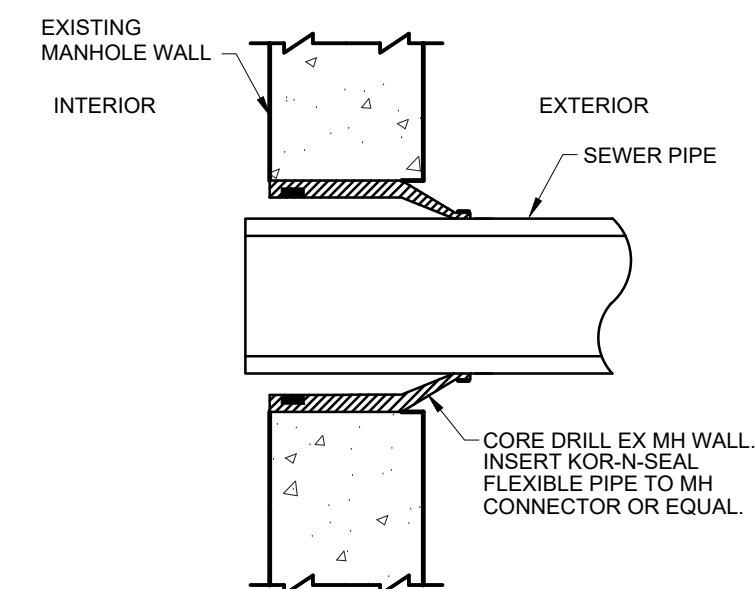
SIDEWALK, CONC, 6 inch DETAIL

NOT TO SCALE

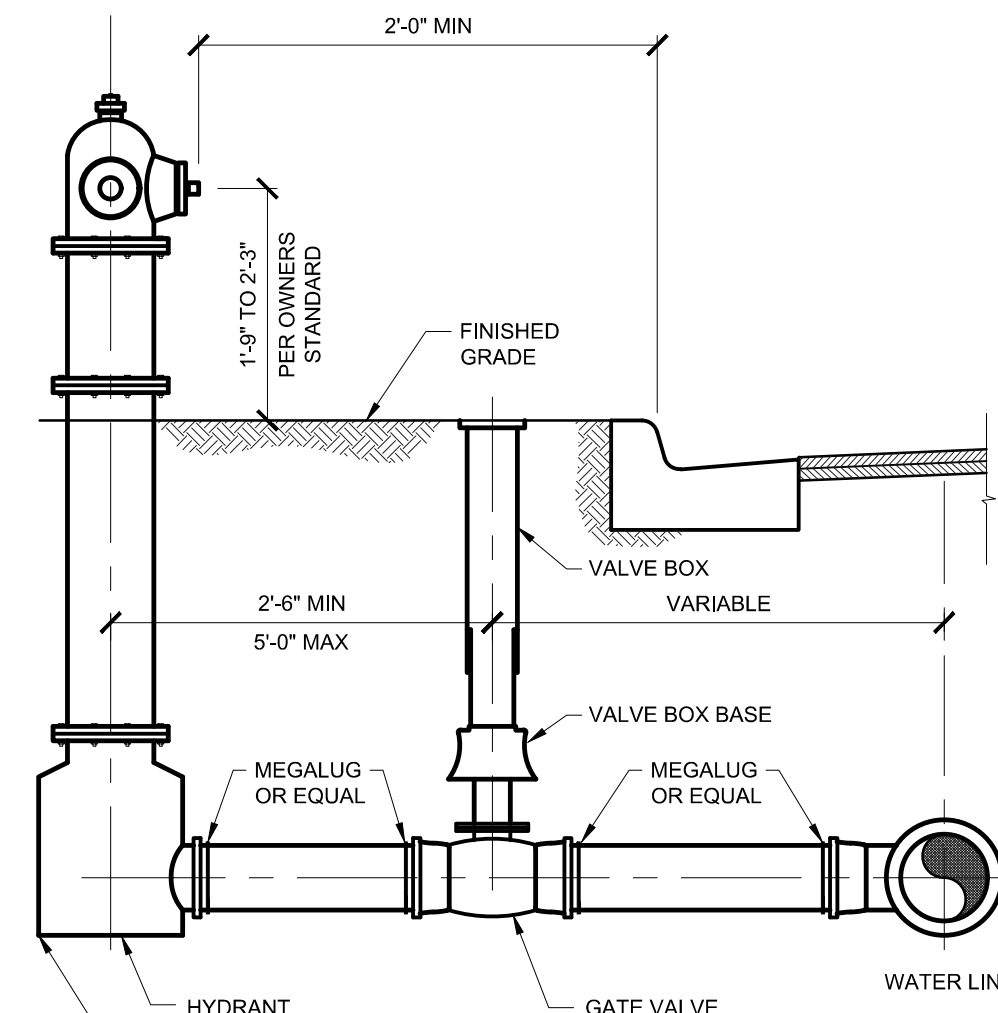


NOTE: WHEN THE MINIMUM CLEARANCE AND COVER CAN BE OBTAINED, THE WATERMAIN IS TO BE RELOCATED ABOVE THE SEWER.

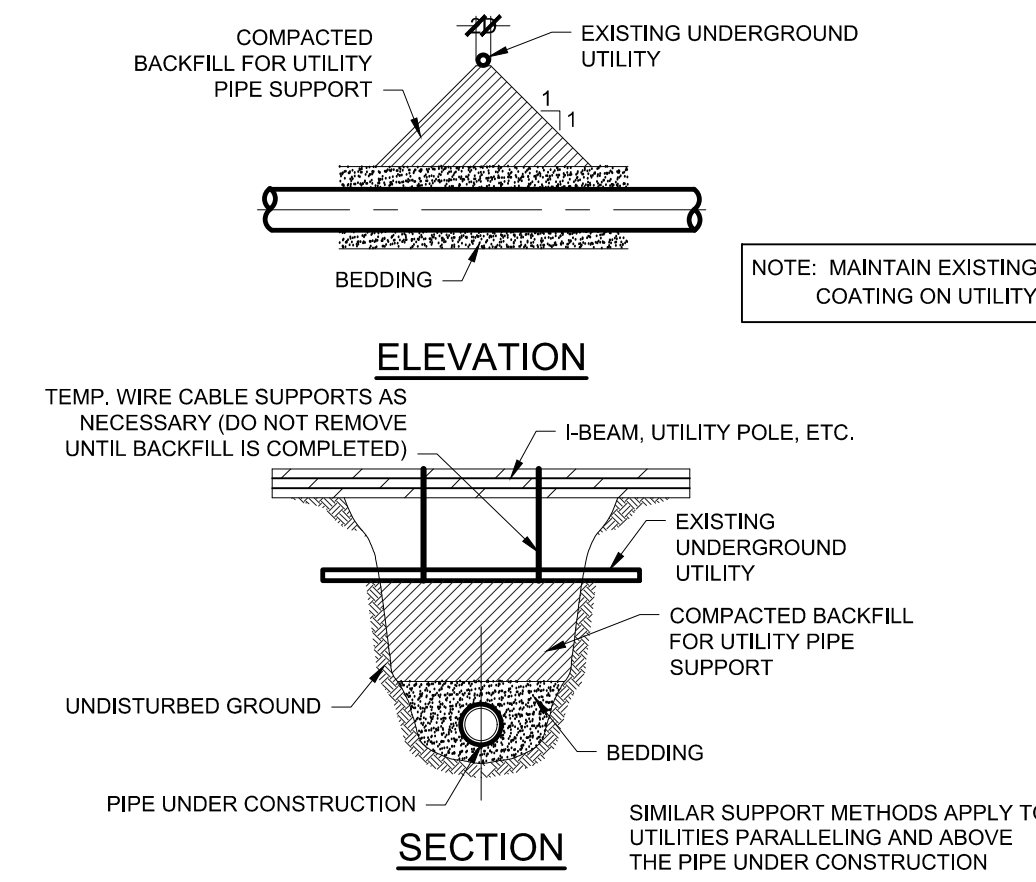
WATERMAIN OFFSET / RELOCATION DETAIL



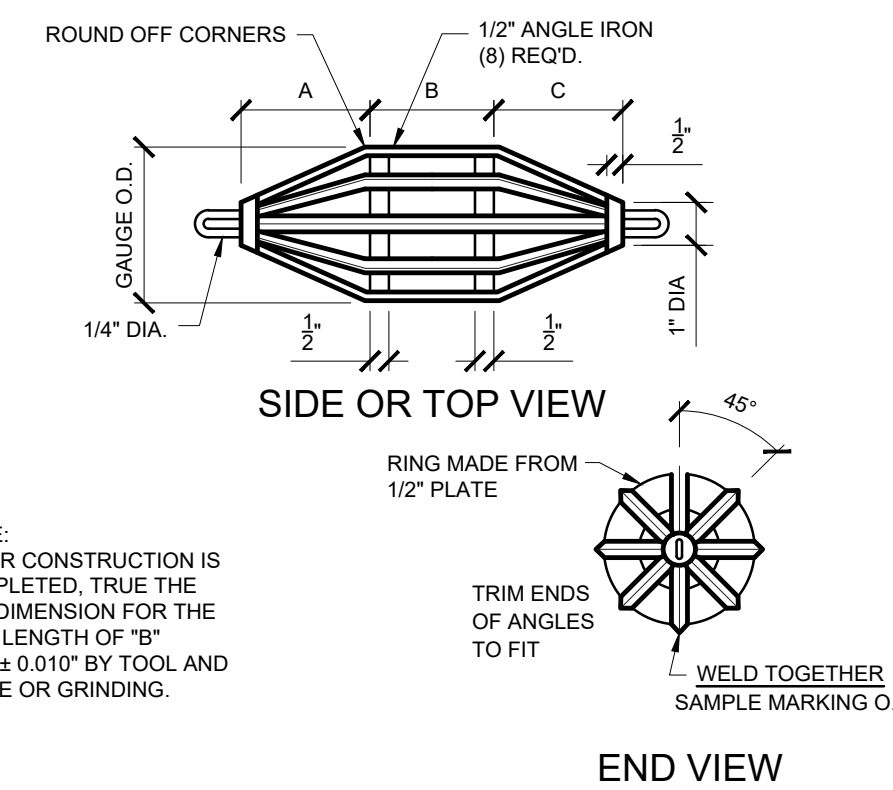
EXISTING MANHOLE PIPE CONNECTION



HYDRANT ASSEMBLY



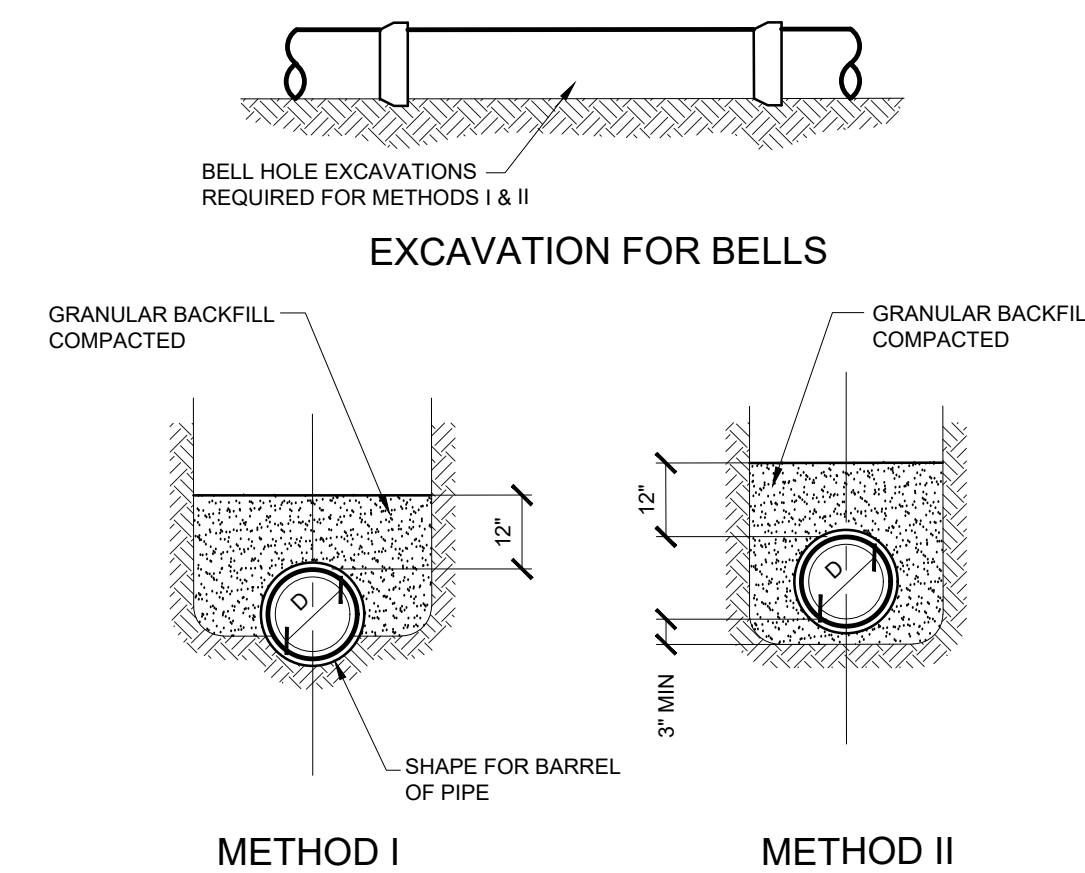
SPECIAL SUPPORTS FOR UNDERGROUND UTILITIES



PIPE SIZE	A	B	GAUGE O.D.
6"	4.0"	4"	95% OF MFRS. ACTUAL INSIDE DIAMETER
8"	5.3"	6"	
10"	6.7"	8"	
12"	8.0"	10"	
15"	10.0"	12"	

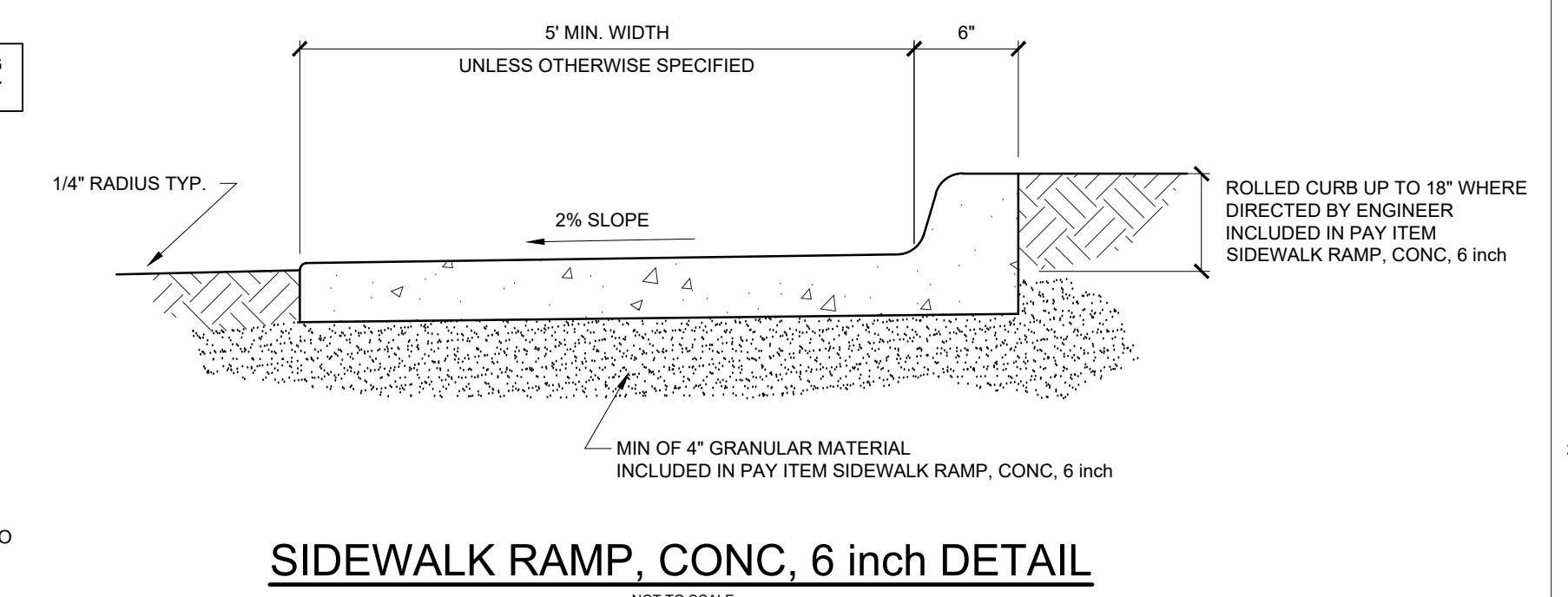
OTHER SIZES TO BE DETERMINED BY ENGINEER

GO, NO-GO GAUGE FOR PLASTIC PIPE

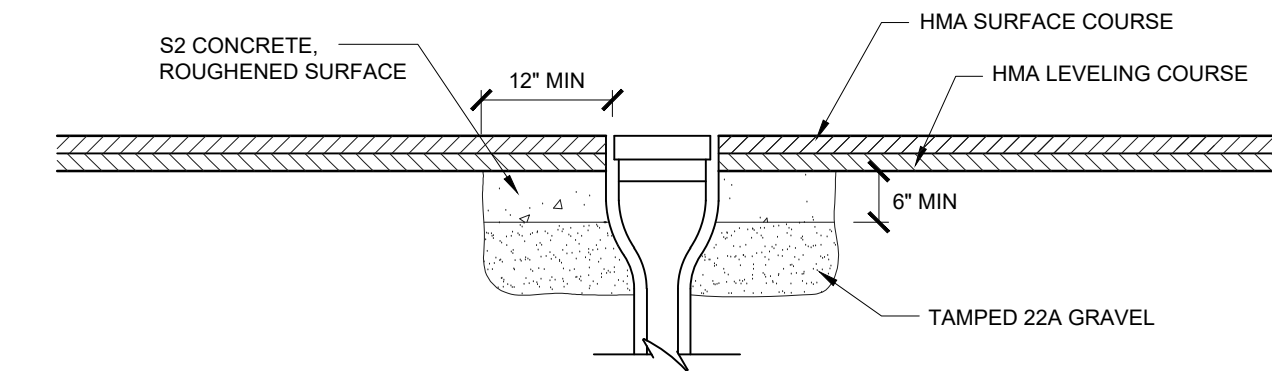


- NOTES:
1. METHOD I: IN AREAS OF UNCONSOLIDATED SOILS (SAND, GRAVEL, ETC.)
 2. METHOD II: IN AREAS OF CONSOLIDATED SOILS (CLAY, HARDPAN, ROCK, ETC.)

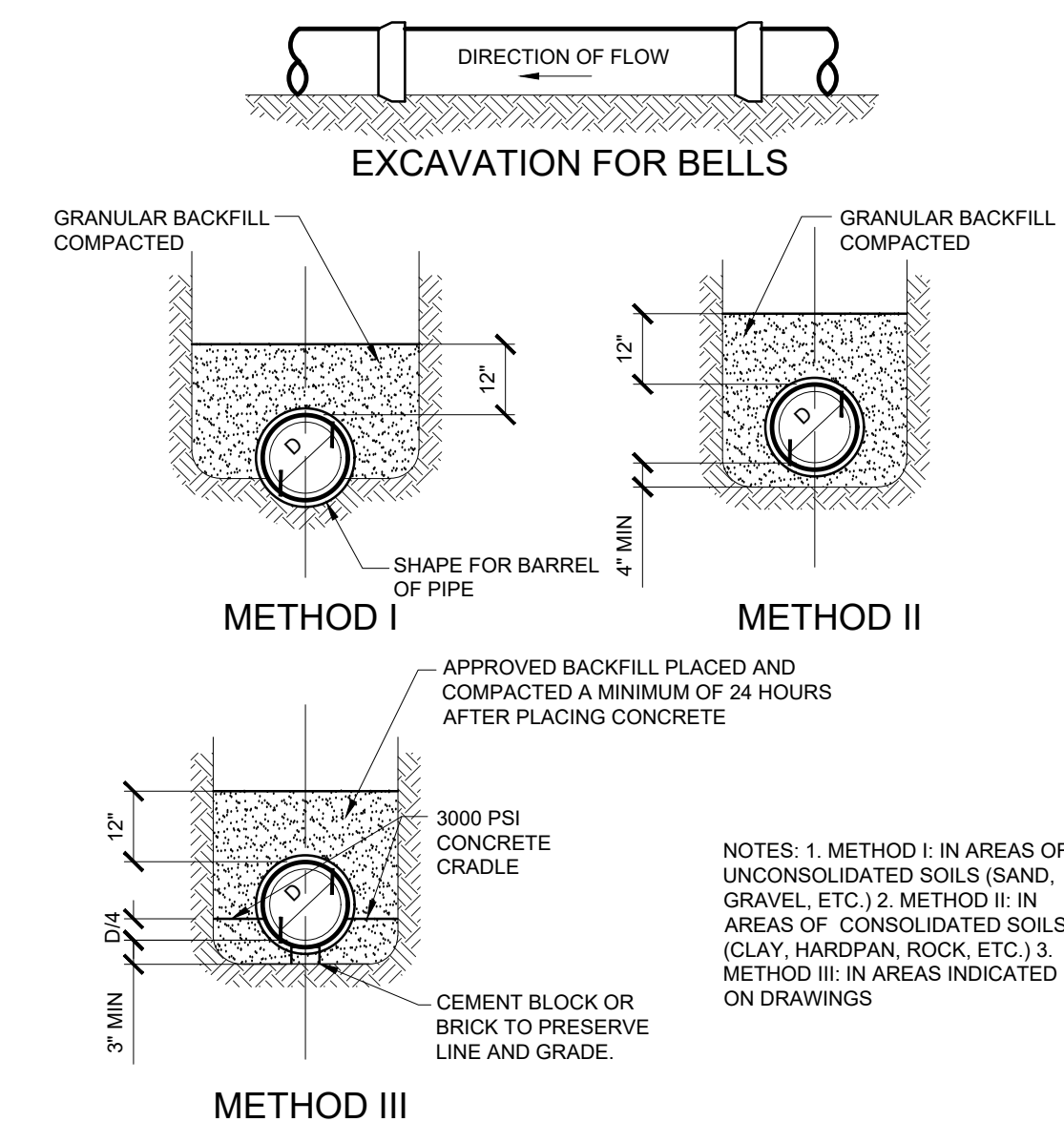
METHODS OF BEDDING PRESSURE PIPE



SIDEWALK RAMP, CONC, 6 inch DETAIL

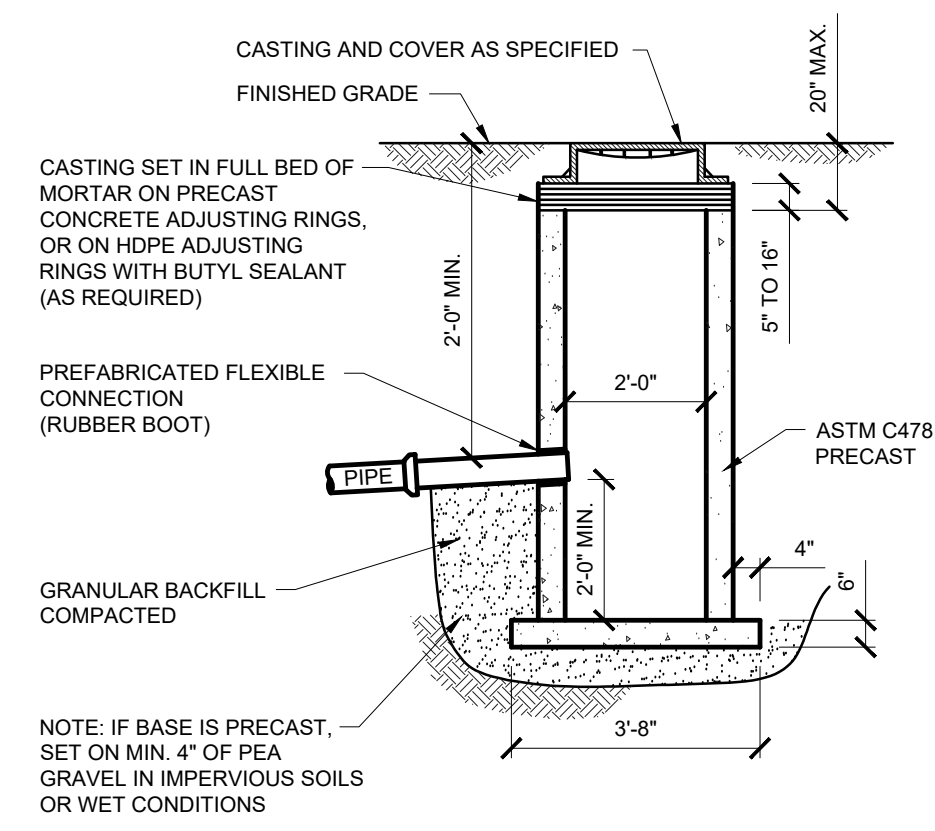


GATE BOX ADJUSTMENT DETAIL
 (APPLIES TO ALL NEW & EXISTING VALVE BOXES IN THE ROADWAY)
 NOT TO SCALE

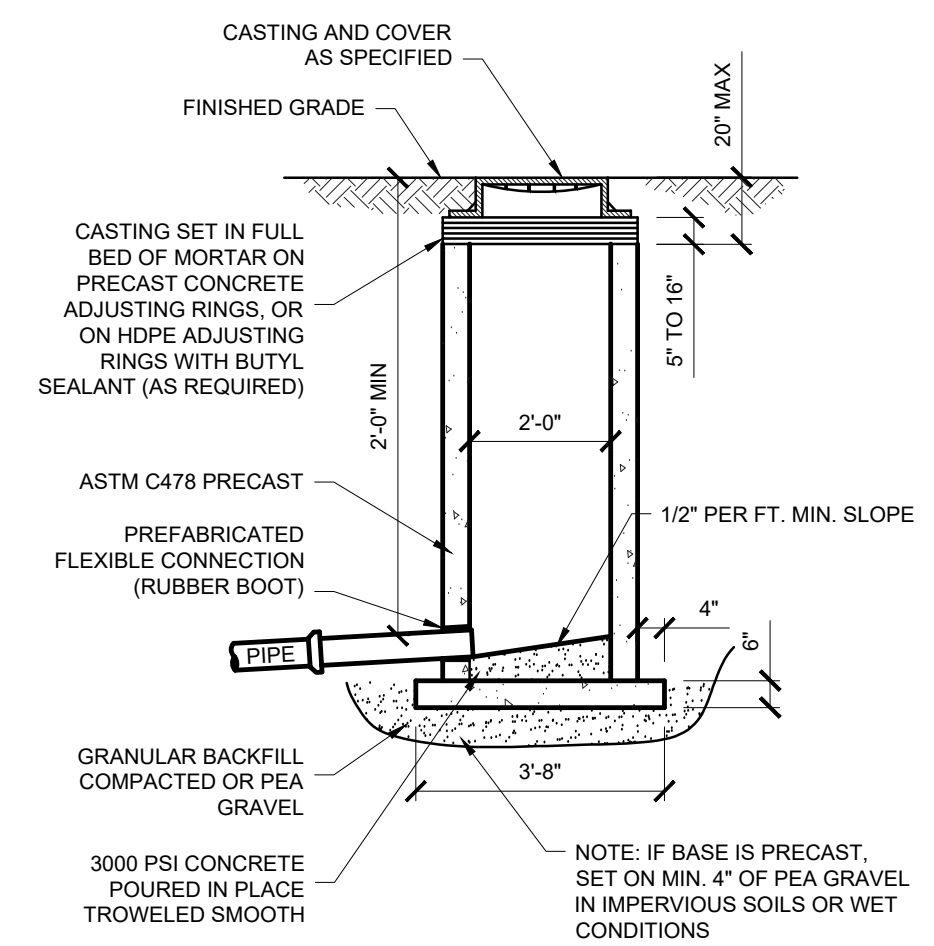


METHODS OF BEDDING GRAVITY PIPE

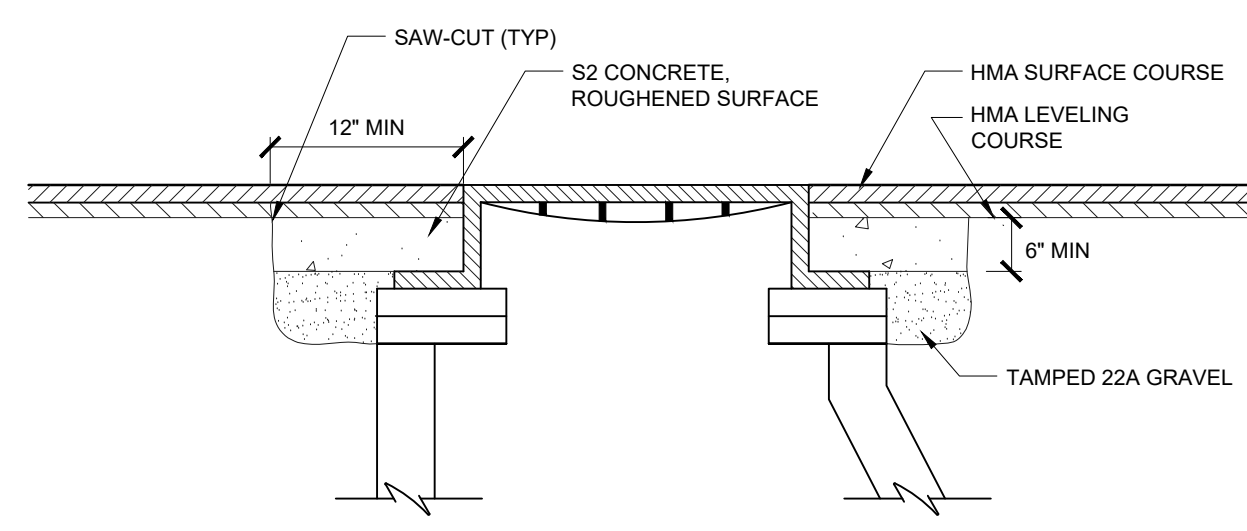
- NOTES: 1. METHOD I: IN AREAS OF UNCONSOLIDATED SOILS (SAND, GRAVEL, ETC.) 2. METHOD II: IN AREAS OF CONSOLIDATED SOILS (CLAY, HARDPAN, ROCK, ETC.) 3. METHOD III: IN AREAS INDICATED ON DRAWINGS



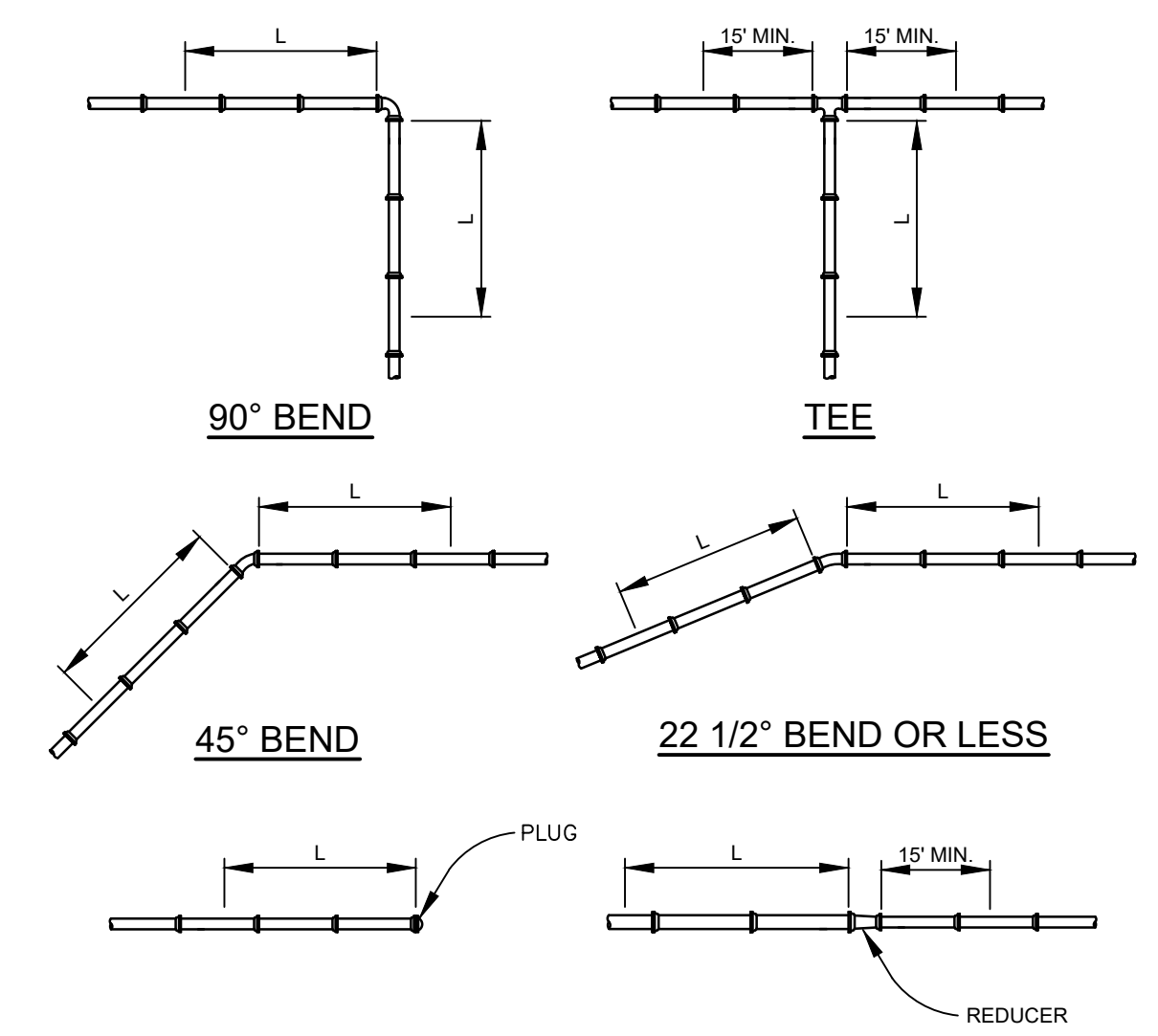
2' DIA. CATCH BASIN WITH SUMP



2' DIA. CATCH BASIN WITHOUT SUMP



DR STRUCTURE COVER ADJUSTMENT DETAIL
(APPLIES TO ALL NEW & EXISTING MANHOLES IN THE ROADWAY)
NOT TO SCALE



PIPE RESTRAINT CHART [LENGTH IN FEET]

SIZES(in)	11 1/4"	22 1/2"	45°	90°/TEE*	DEAD END
4	3	6	12	29	22
6	4	8	17	42	31
8	5	11	23	54	41
10	7	13	28	67	50
12	8	16	33	79	59
16	10	21	43	104	78

* MINIMUM RESTRAINT REQUIRED EACH WAY OF TEE IS 15 FT. RESTRAINT REQUIRED FOR BRANCH TEE IS SHOWN IN CHART.
** TEES WITH EQUAL DIAMETER RUN AND THROUGH SHALL BE RESTRAINED 15' ON EACH LEG OF THE TEE

PIPE RESTRAINT CHART

REDUCERS (in)	LENGTH**
16 x 12	33
16 x 10	46
16 x 8	57
16 x 6	66
12 x 10	17
12 x 8	31
12 x 6	43
12 x 4	52
10 x 8	17
10 x 6	31
10 x 4	41
8 x 6	17
8 x 4	29
6 x 4	16

RESTRAINED MECHANICAL JOINT REQUIREMENTS
SHALL APPLY TO BOTH WATERMAIN AND SANITARY FORCEMAIN

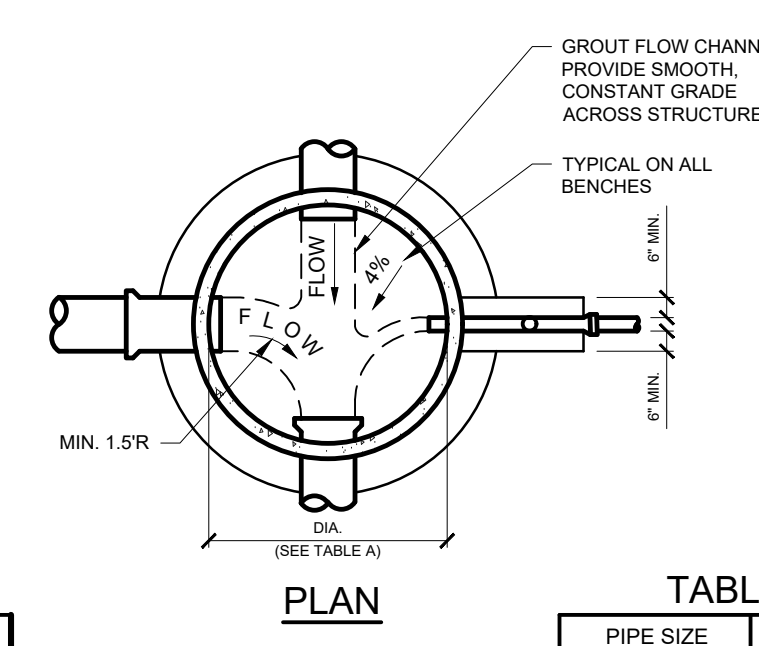


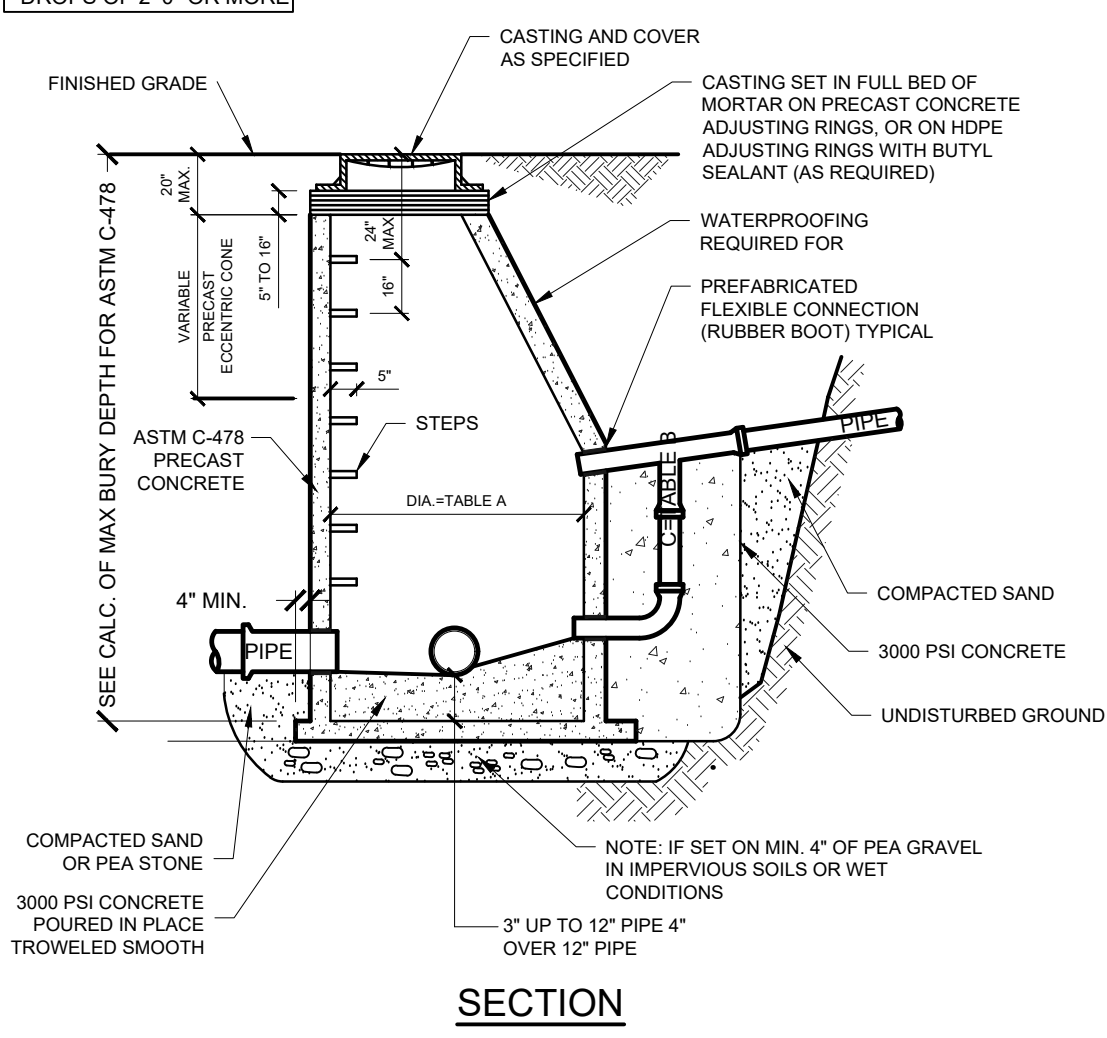
TABLE A

PIPE SIZE	DIA.
8" TO 24"	4'-0"
27" TO 33"	5'-0"
36" TO 42"	6'-0"

USE DROP CONNECTION DETAIL FOR INVERT DROPS OF 2'-0" OR MORE

TABLE B

PIPE SIZE (INCOMING)	DROP SIZE C
8" THRU 12"	8"
15" THRU 18"	10"
21" THRU 27"	12"
30" THRU 36"	15"



STANDARD SANITARY MANHOLE
(OUTSIDE DROP CONNECTION)

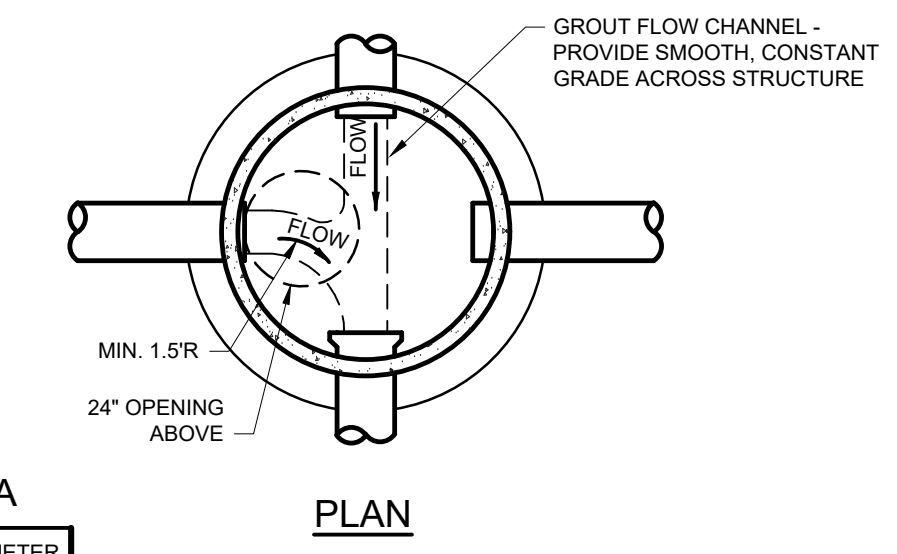
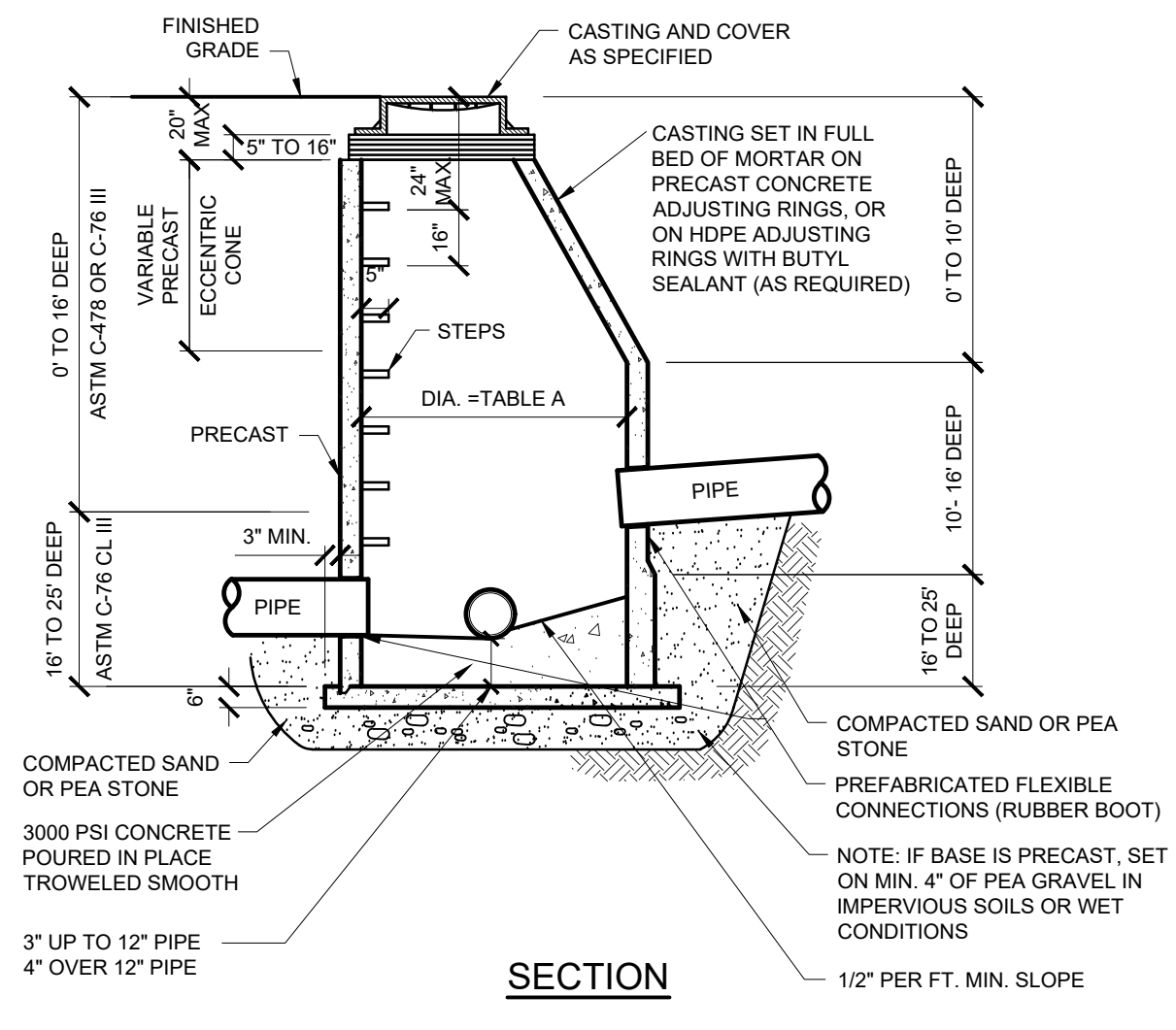
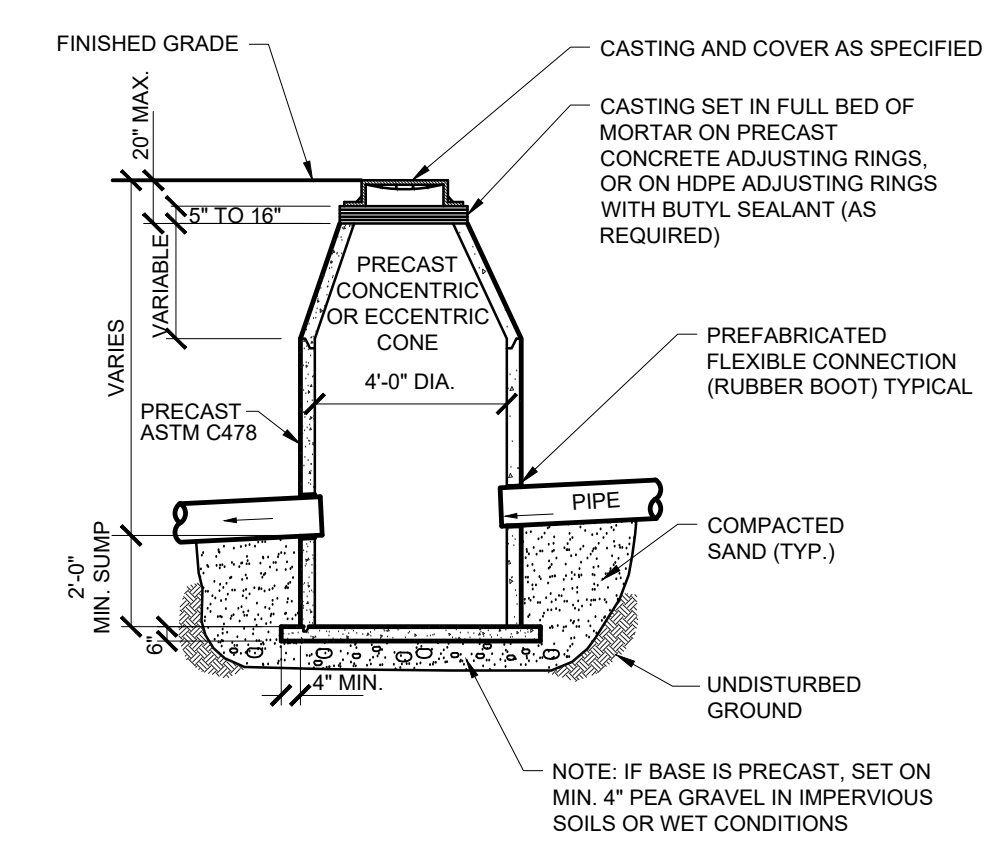


TABLE A

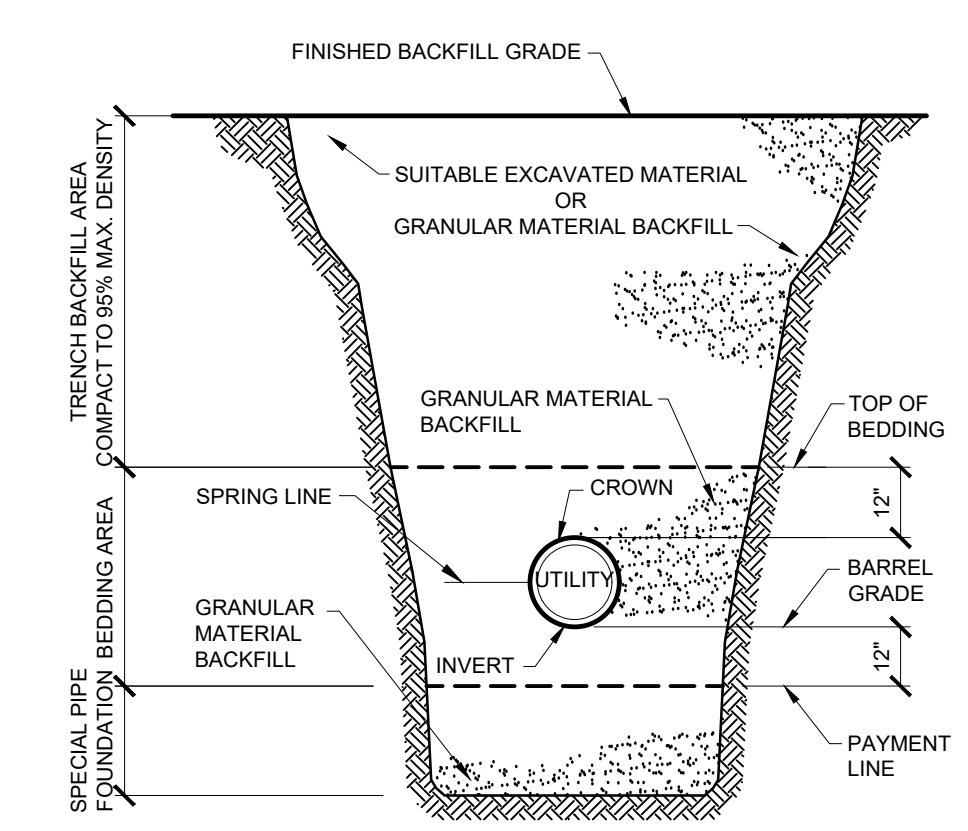
PIPE SIZE	DIAMETER
8" TO 24"	4'-0"
27" TO 33"	5'-0"
36" TO 42"	6'-0"



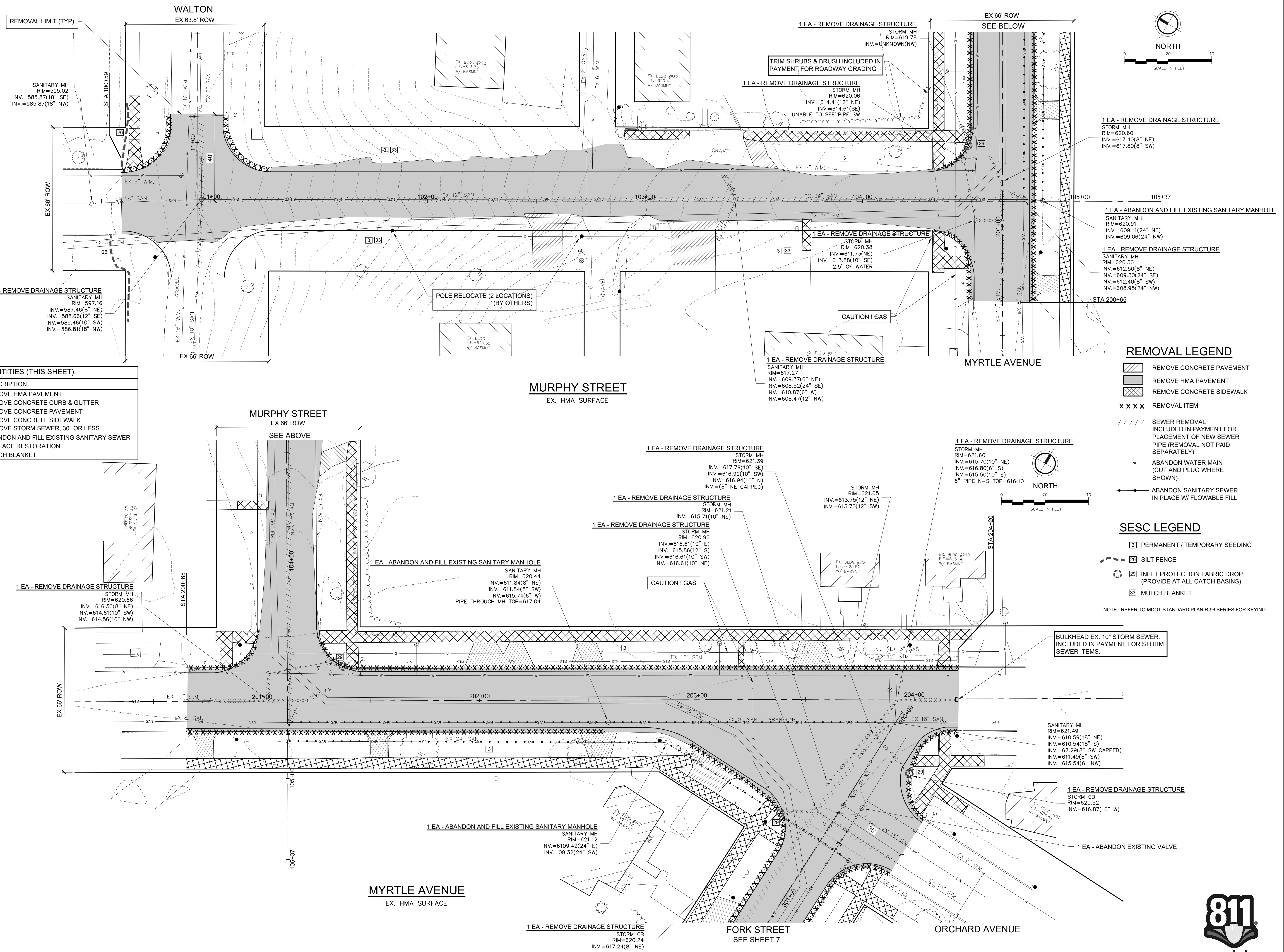
STANDARD STORM MANHOLE



STANDARD CATCH BASIN



UTILITY TRENCHING, EXCAVATING AND BACKFILLING TERMINOLOGY



QUANTITIES (THIS SHEET)

QUANTITY	UNIT	DESCRIPTION
3100	SYD	REMOVE HMA PAVEMENT
900	FT	REMOVE CONCRETE CURB & GUTTER
350	SYD	REMOVE CONCRETE PAVEMENT
500	SYD	REMOVE CONCRETE SIDEWALK
220	FT	REMOVE STORM SEWER, 30" OR LESS
515	FT	ABANDON AND FILL EXISTING SANITARY SEWER
2800	SYD	SURFACE RESTORATION
1000	SYD	MULCH BLANKET

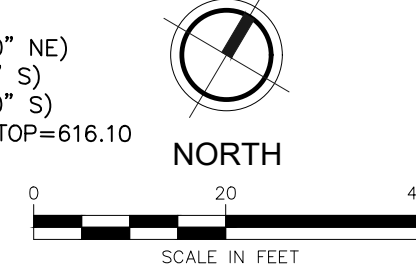
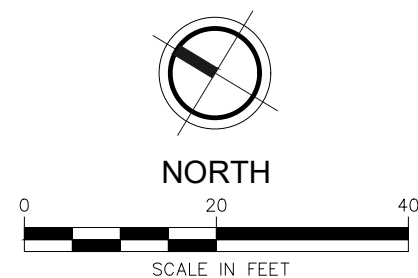
REMOVAL LEGEND

- REMOVE CONCRETE PAVEMENT
- REMOVE HMA PAVEMENT
- REMOVE CONCRETE SIDEWALK
- X X X X** REMOVAL ITEM
- SEWER REMOVAL INCLUDED IN PAYMENT FOR PLACEMENT OF NEW SEWER PIPE (REMOVAL NOT PAID SEPARATELY)
- ABANDON WATER MAIN (CUT AND PLUG WHERE SHOWN)
- ABANDON SANITARY SEWER IN PLACE W/ FLOWABLE FILL

SESC LEGEND

- PERMANENT / TEMPORARY SEEDING
- SILT FENCE
- INLET PROTECTION FABRIC DROP (PROVIDE AT ALL CATCH BASINS)
- MULCH BLANKET

NOTE: REFER TO MDOT STANDARD PLAN R-96 SERIES FOR KEYING.



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Know what's below.
Call before you dig.

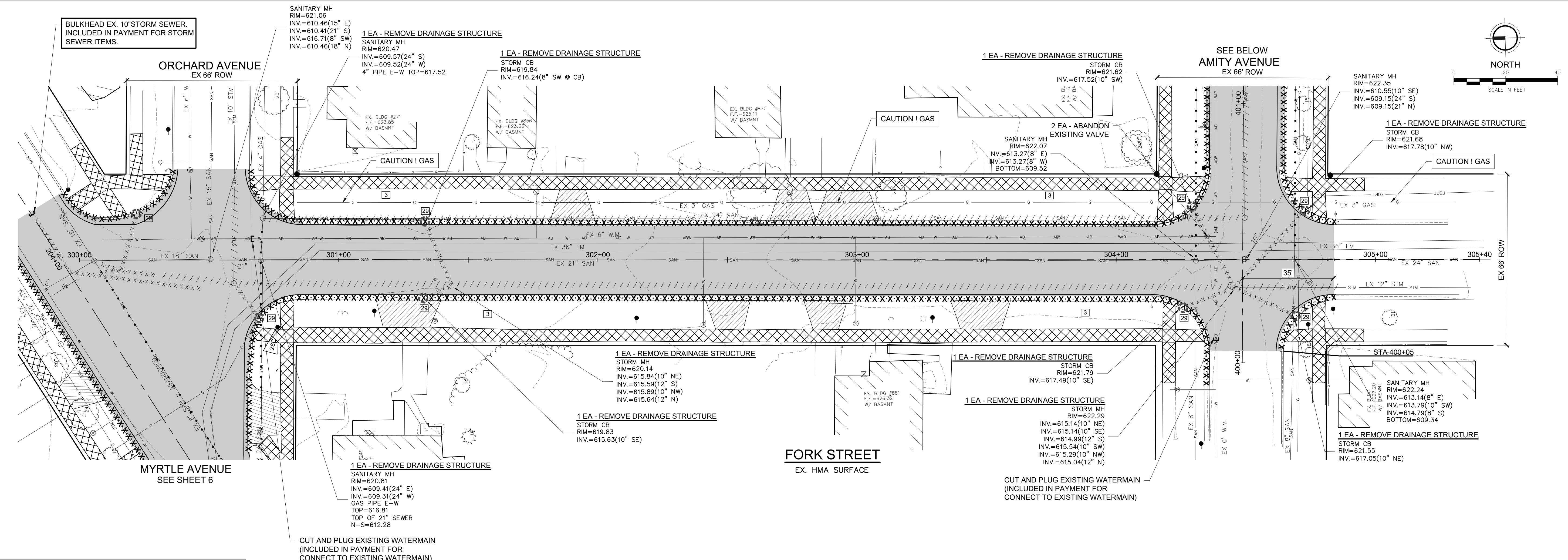
REVISION:

CITY OF MUSKOGON
MUSKOGON COUNTY, MICHIGAN
AMITY AVENUE IMPROVEMENTS
SESC AND REMOVAL PLAN

PROJ MGR: SMD
DESIGNED BY: RT
DRAWN BY: PAD
CHECK BY: DJD 6/11/20
DRAWING INFORMATION:
842440_REMOVALS
062420 plotted

JUNE 2020
F&V PROJECT NO.
842440

7



QUANTITIES (THIS SHEET)

QUANTITY	UNIT	DESCRIPTION
2770	SYD	REMOVE HMA PAVEMENT
1700	FT	REMOVE CONCRETE CURB & GUTTER
400	SYD	REMOVE CONCRETE PAVEMENT
1050	SYD	REMOVE CONCRETE SIDEWALK
180	FT	REMOVE STORM SEWER, 30" OR LESS
846	FT	ABANDON AND FILL EXISTING SANITARY SEWER
2700	SYD	SURFACE RESTORATION

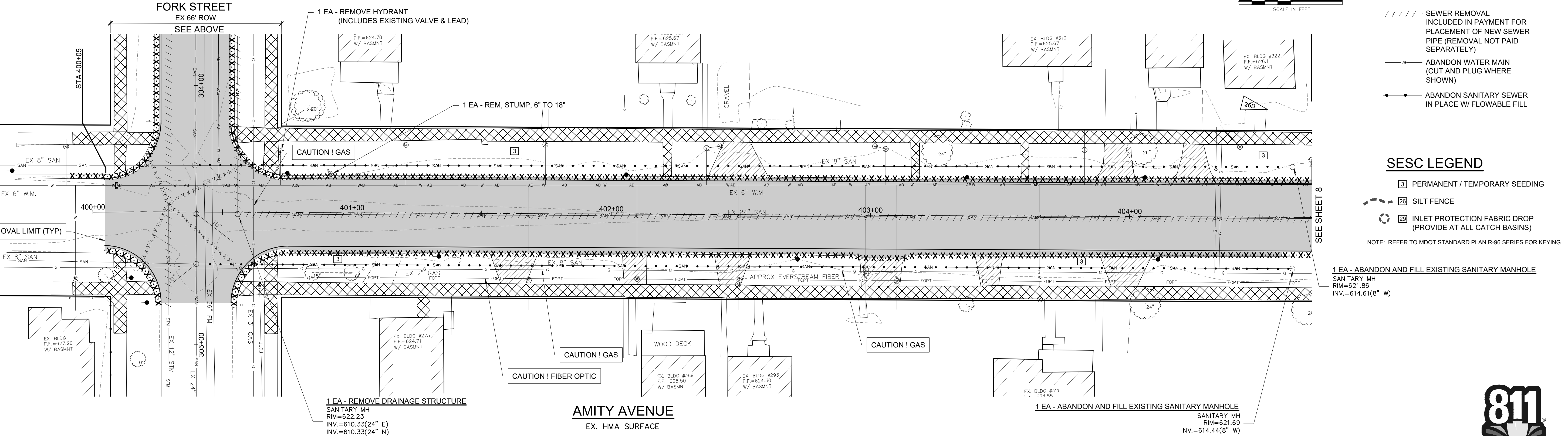
REMOVAL LEGEND

- REMOVE CONCRETE PAVEMENT
- REMOVE HMA PAVEMENT
- REMOVE CONCRETE SIDEWALK
- REMOVAL ITEM
- SEWER REMOVAL INCLUDED IN PAYMENT FOR PLACEMENT OF NEW SEWER PIPE (REMOVAL NOT PAID SEPARATELY)
- ABANDON WATER MAIN (CUT AND PLUG WHERE SHOWN)
- ABANDON SANITARY SEWER IN PLACE W/ FLOWABLE FILL

SESC LEGEND

- PERMANENT / TEMPORARY SEEDING
- SILT FENCE
- INLET PROTECTION FABRIC DROP (PROVIDE AT ALL CATCH BASINS)

NOTE: REFER TO MDT STANDARD PLAN R-96 SERIES FOR KEYING.



AMITY AVENUE
EX. HMA SURFACE

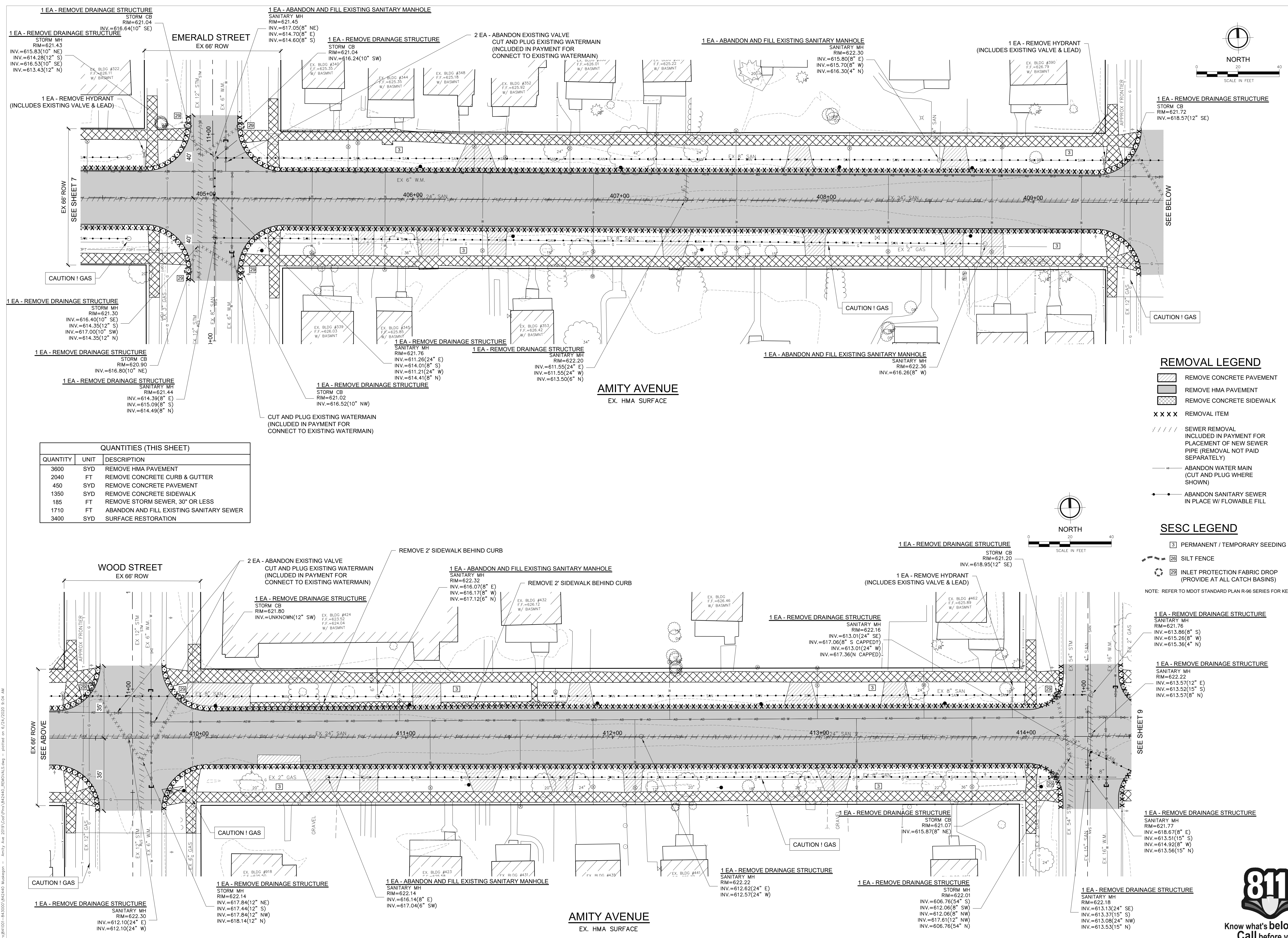


Know what's below.
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Know what's below.
Call before you dig.

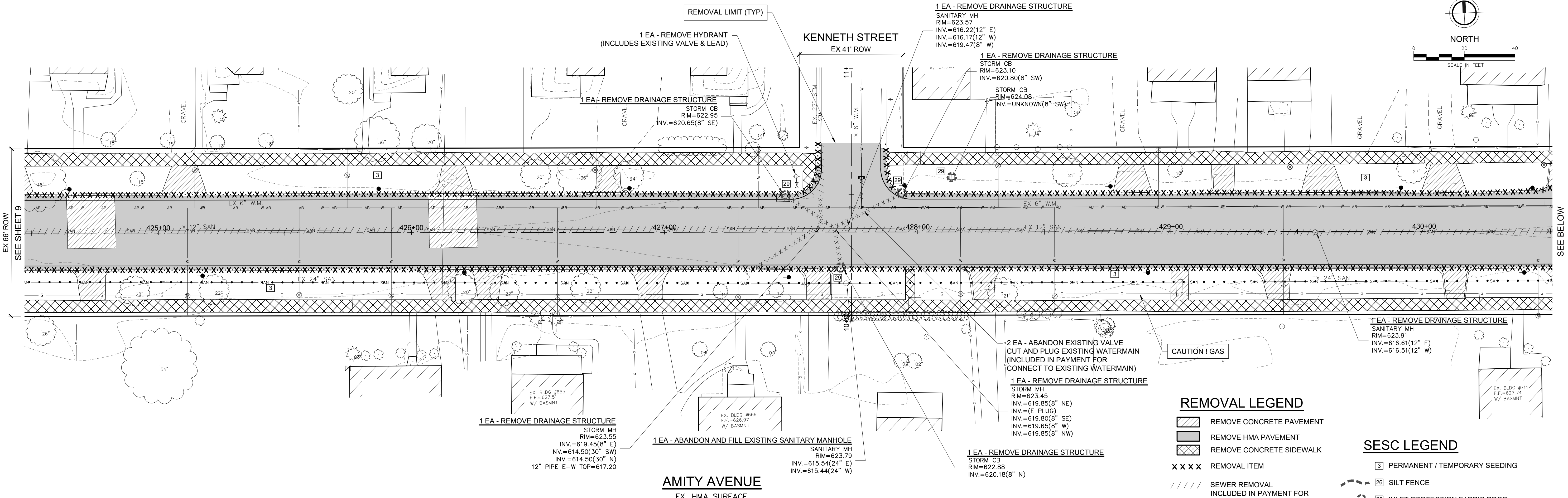


QUANTITIES (THIS SHEET)

QUANTITY	UNIT	DESCRIPTION
3600	SYD	REMOVE HMA PAVEMENT
2040	FT	REMOVE CONCRETE CURB & GUTTER
450	SYD	REMOVE CONCRETE PAVEMENT
1350	SYD	REMOVE CONCRETE SIDEWALK
185	FT	REMOVE STORM SEWER, 30" OR LESS
1710	FT	ABANDON AND FILL EXISTING SANITARY SEWER
3400	SYD	SURFACE RESTORATION

- REMOVAL LEGEND**
- REMOVE CONCRETE PAVEMENT
 - REMOVE HMA PAVEMENT
 - REMOVE CONCRETE SIDEWALK
 - REMOVAL ITEM
 - SEWER REMOVAL INCLUDED IN PAYMENT FOR PLACEMENT OF NEW SEWER PIPE (REMOVAL NOT PAID SEPARATELY)
 - ABANDON WATER MAIN (CUT AND PLUG WHERE SHOWN)
 - ABANDON SANITARY SEWER IN PLACE W/ FLOWABLE FILL
- SESC LEGEND**
- PERMANENT / TEMPORARY SEEDING
 - SILT FENCE
 - INLET PROTECTION FABRIC DROP (PROVIDE AT ALL CATCH BASINS)
- NOTE: REFER TO MDT STANDARD PLAN R-96 SERIES FOR KEYING.

U:\Projects\842440\842440_842440_REMOVALS.dwg - plotted on 6/24/2020 9:04 AM



QUANTITIES (THIS SHEET)

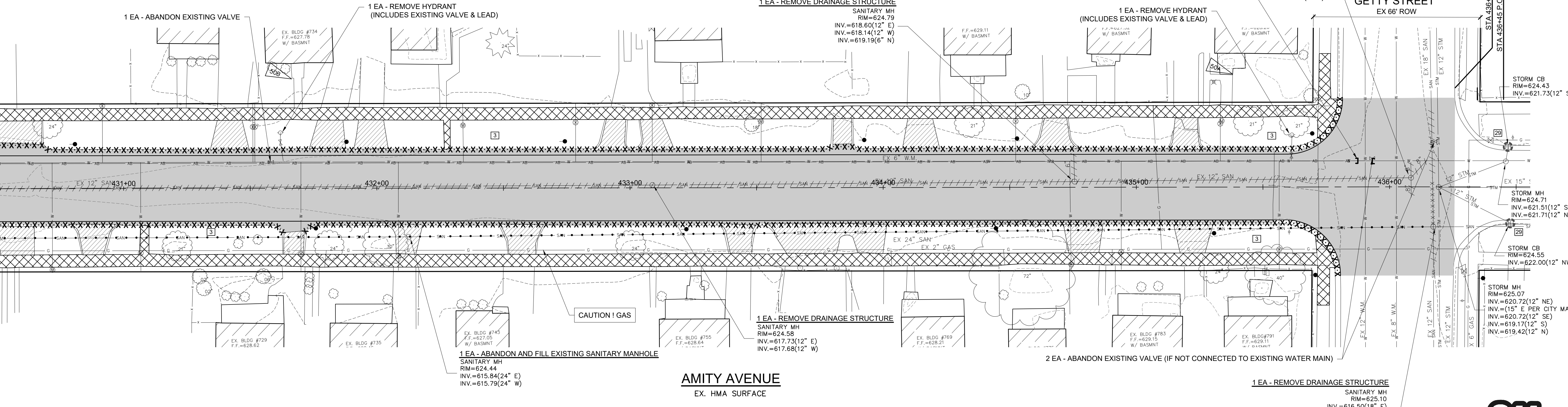
QUANTITY	UNIT	DESCRIPTION
4000	SYD	REMOVE HMA PAVEMENT
2200	FT	REMOVE CONCRETE CURB & GUTTER
650	SYD	REMOVE CONCRETE PAVEMENT
1300	SYD	REMOVE CONCRETE SIDEWALK
120	FT	REMOVE STORM SEWER, 30" OR LESS
1200	FT	ABANDON AND FILL EXISTING SANITARY SEWER
3800	SYD	SURFACE RESTORATION

REMOVAL LEGEND

- REMOVE CONCRETE PAVEMENT
- REMOVE HMA PAVEMENT
- REMOVE CONCRETE SIDEWALK
- X X X X** REMOVAL ITEM
- SEWER REMOVAL INCLUDED IN PAYMENT FOR PLACEMENT OF NEW SEWER PIPE (REMOVAL NOT PAID SEPARATELY)
- ABANDON WATER MAIN (CUT AND PLUG WHERE SHOWN)
- ABANDON SANITARY SEWER IN PLACE W/ FLOWABLE FILL

SESC LEGEND

- PERMANENT / TEMPORARY SEEDING
 - SILT FENCE
 - INLET PROTECTION FABRIC DROP (PROVIDE AT ALL CATCH BASINS)
- NOTE: REFER TO MDOT STANDARD PLAN R-96 SERIES FOR KEYING.



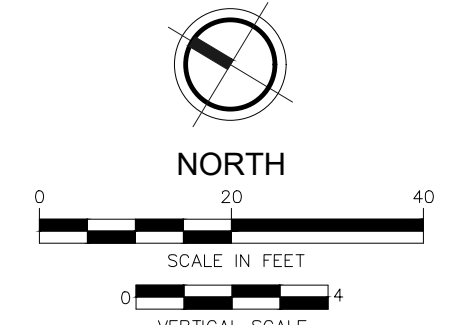
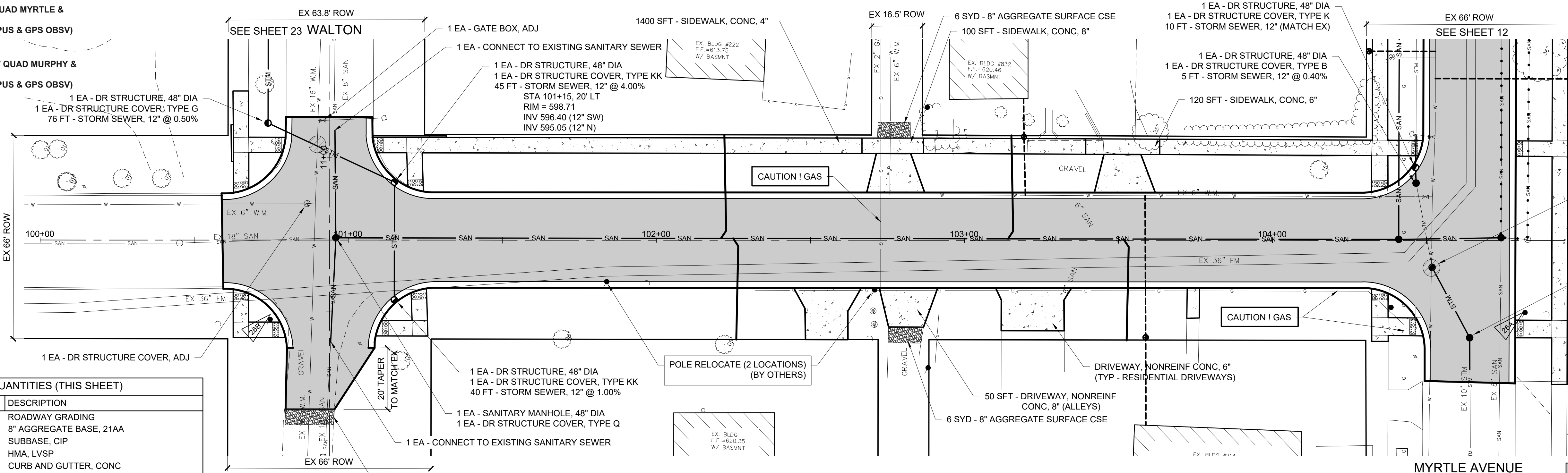
Know what's below.
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U:\Proj\842440-842440-REM\842440_REMOVALS.dwg - plotted on 6/24/2020 9:07 AM

ISSUED FOR BID 06/26/2020

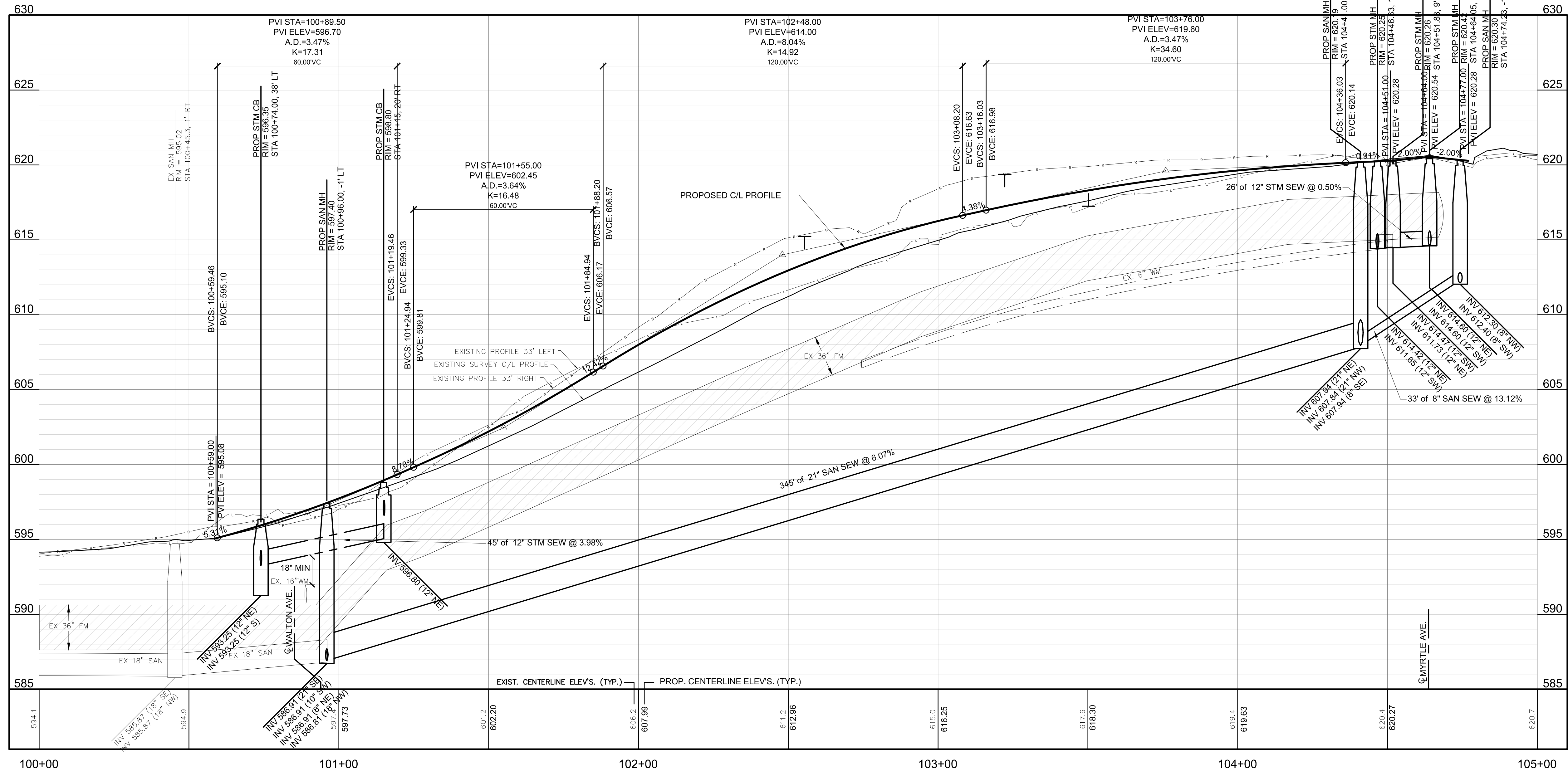
BM #26A EL. 621.71'
RR SPIKE N FACE PP @ SW QUAD MYRTLE & MURPHY
(NAVD88 GEIOD18 VIA VRS OPUS & GPS OBSV)

BM #26B EL. 597.51'
RR SPIKE IN E FACE PP @ NW QUAD MURPHY & WALTON
(NAVD88 GEIOD18 VIA VRS OPUS & GPS OBSV)



QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	DESCRIPTION
4.0	STA	ROADWAY GRADING
1550	SYD	8\"/>
620	CYD	SUBBASE, CIP
375	TON	HMA, LVSP
840	FT	CURB AND GUTTER, CONC
100	SYD	DRIVEWAY, NONREINF, CONC, 6\"/>
65	FT	1\"/>
2	EA	1\"/>
41	FT	1\"/>
2	EA	WATER SERVICE, BUILDING CONNECTION
4	EA	21\"/>
132	FT	6\"/>
4	EA	RECONNECT SANITARY LATERAL

- LEGEND**
- PROPOSED HMA PAVEMENT
 - PROPOSED CONCRETE PAVEMENT
 - PROPOSED CONCRETE CURB & GUTTER
 - DRIVEWAY ELEVATIONS AT R.O.W. (LT SIDE)
 - DRIVEWAY ELEVATIONS AT R.O.W. (RT SIDE)
 - PROVIDE 18\"/>
- NOTE: 1. INTERSECTION SIDEWALK RAMP QUANTITIES SHOWN ON SHEET 22



FLEISCHMANN
DESIGN. BUILD. OPERATE.

316 Morris Avenue, Suite 230
Muskegon, MI 49440
P: 231.726.1000
F: 231.726.2200

REVISION:

CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN
AMITY AVENUE IMPROVEMENTS

PLAN & PROFILE

DESIGN TEAM:	PROJ MGR:	SIB
	DESIGNED BY:	RT
	DRAWN BY:	PAD
	CHECK BY:	DJD
	DRAWING INFORMATION:	842440_PPT
	REV PROJECT NO:	061120
		dated



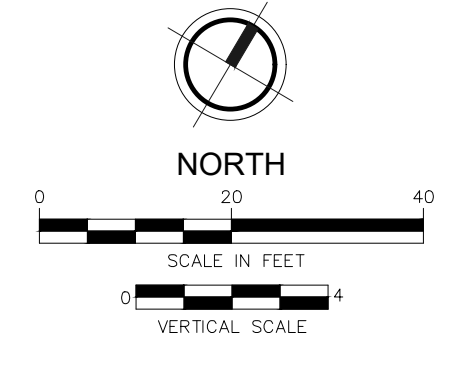
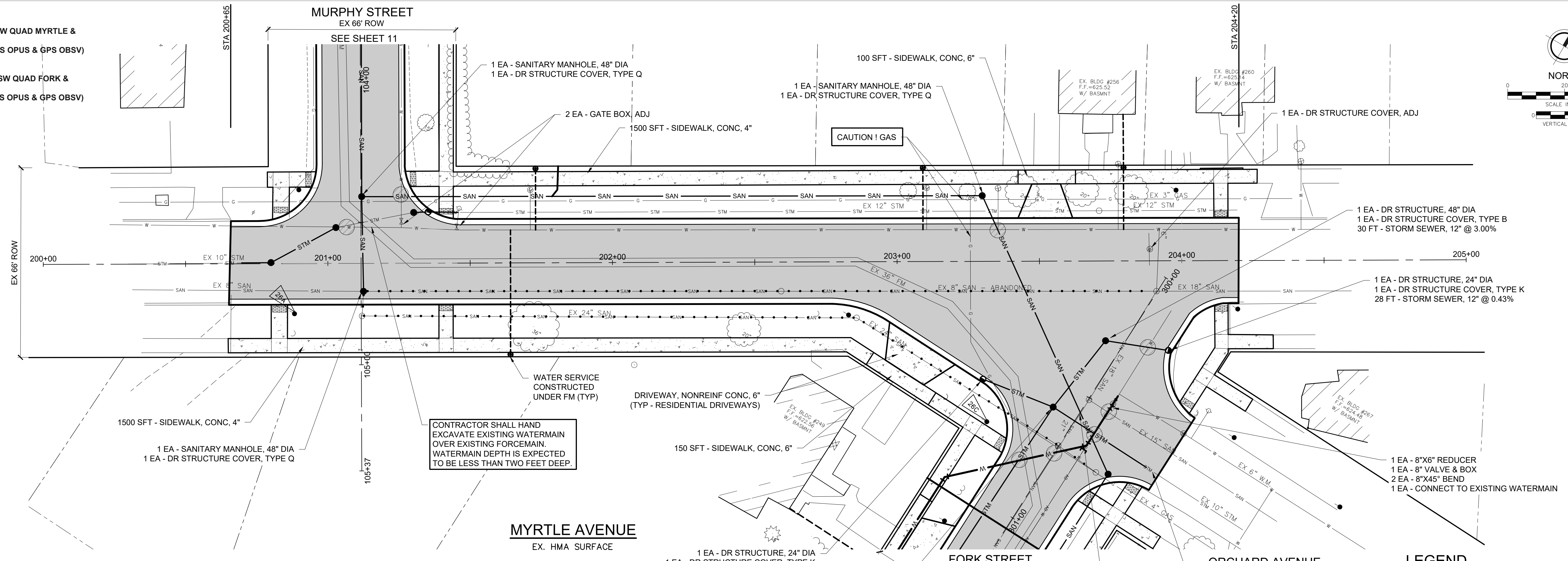
JUNE 2020
842440

11

U:\Projects\842440-842440_Muskegon - Amity Ave 2019\CAD\Plan\842440_PPT.dwg - plotted on 6/24/2020 8:10 AM

BM #26A EL. 621.71'
RR SPIKE N FACE PP @ SW QUAD MYRTLE & MURPHY
(NAVD88 GEOID18 VIA VRS OPUS & GPS OBSV)

BM #26C EL. 621.64'
30D NAIL NE FACE PP @ SW QUAD FORK & ORCHARD
(NAVD88 GEOID18 VIA VRS OPUS & GPS OBSV)

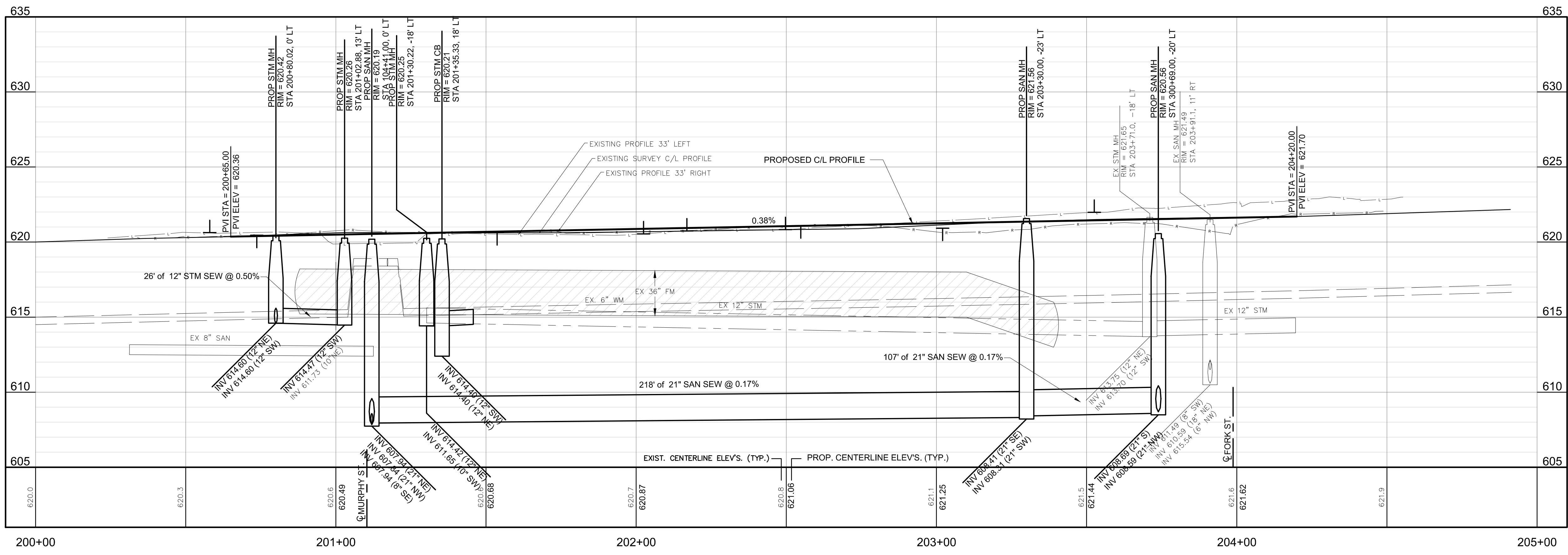


QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	DESCRIPTION
3.6	STA	ROADWAY GRADING
1600	SYD	8\"/>

LEGEND

- PROPOSED HMA PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONCRETE CURB & GUTTER
- DRIVEWAY ELEVATIONS AT R.O.W. (LEFT SIDE)
- DRIVEWAY ELEVATIONS AT R.O.W. (RIGHT SIDE)
- PROVIDE 18\"/>

NOTE: 1. INTERSECTION SIDEWALK RAMP QUANTITIES SHOWN ON SHEET 22



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REVISION:

CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN
AMITY AVENUE IMPROVEMENTS
PLAN & PROFILE

DESIGN TEAM: PROJ MGR: SHB
DESIGNED BY: RT
DRAWN BY: PAD
CHECK BY: DJD 6/11/20
DRAWING INFORMATION: 842440_PP2
062320 daniels

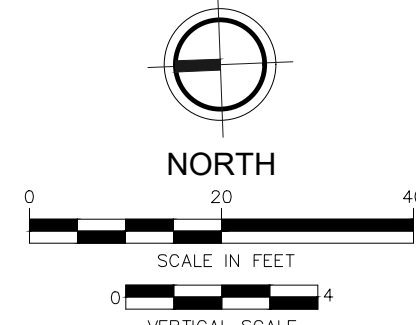
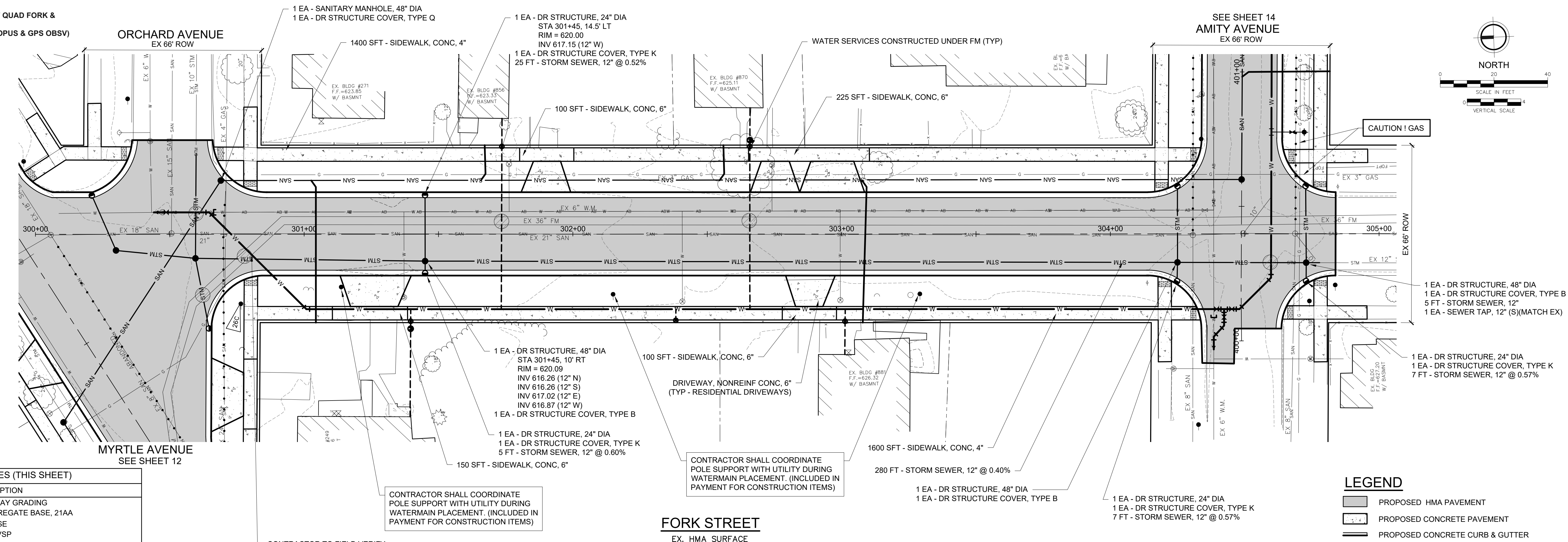
JUNE 2020
F&V PROJECT NO: 842440



12

U:\Proj\84101-842000\842440_Plan\842440_PP2.dwg - plotted on 6/21/2020 8:12 AM

BM #26C EL. 621.64'
 30D NAIL NE FACE PP @ SW QUAD FORK &
 ORCHARD
 (NAVD88 GEOID18 VIA VRS OPUS & GPS OBSV)



QUANTITIES (THIS SHEET)

QUANTITY	UNIT	DESCRIPTION
4.0	STA	ROADWAY GRADING
1320	SYD	8" AGGREGATE BASE, 21AA
520	CYD	SUBBASE
300	TON	HMA, LVSP
800	FT	CURB AND GUTTER, CONC
175	SYD	DRIVEWAY, NONREINF, CONC, 6"
420	FT	8" WATERMAIN
107	FT	1" WATER SERVICE
5	EA	1" CORP STOP, CURB STOP & BOX
103	FT	1" WATER SERVICE, PRIVATE PROPERTY
4	EA	WATER SERVICE, BUILDING CONNECTION
2	EA	METER PIT
4	EA	21"X6" LATERAL CONNECTION
132	FT	6" SANITARY LATERAL
4	EA	RECONNECT SANITARY LATERAL

CONTRACTOR SHALL COORDINATE POLE SUPPORT WITH UTILITY DURING WATERMAIN PLACEMENT. (INCLUDED IN PAYMENT FOR CONSTRUCTION ITEMS)

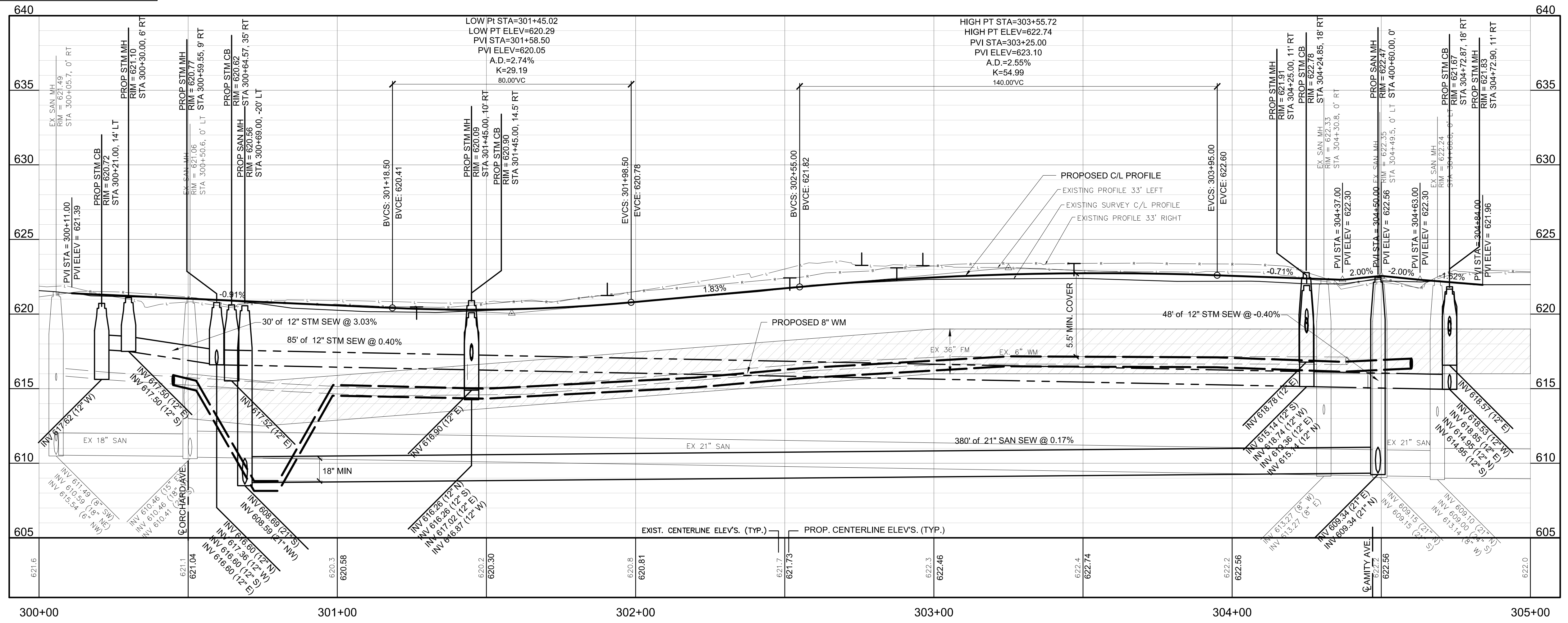
FORK STREET
 EX. HMA SURFACE

WATERMAIN CROSSINGS

STATION	CROSSING	CROSSING INVERT	WM INVERT	CLEAR DISTANCE (FT)
301+51	EX 15" SAN	610.46	615.00	3.3
301+60	12" STM	617.16	612.50	4.0
301+61	21" SAN	608.54	612.00	1.7
301+70	EX 21" SAN	610.34	608.15	1.5
301+80	EX 36" FM	612.58	608.15	3.8
301+83	12" STM	616.50	609.08	6.8

CONTRACTOR TO FIELD VERIFY DEPTHS AND MAINTAIN 18" MIN CLEARANCE BETWEEN PROPOSED WM, EXISTING SANITARY, EXISTING FM AND PROPOSED STORM

- LEGEND**
- PROPOSED HMA PAVEMENT
 - PROPOSED CONCRETE PAVEMENT
 - PROPOSED CONCRETE CURB & GUTTER
 - DRIVEWAY ELEVATIONS AT R.O.W. (LEFT SIDE)
 - DRIVEWAY ELEVATIONS AT R.O.W. (RIGHT SIDE)
 - PROVIDE 18" MIN. CLEARANCE BETWEEN PROP. WATER MAIN & SEWER
- NOTE: 1. INTERSECTION SIDEWALK RAMP QUANTITIES SHOWN ON SHEET 22



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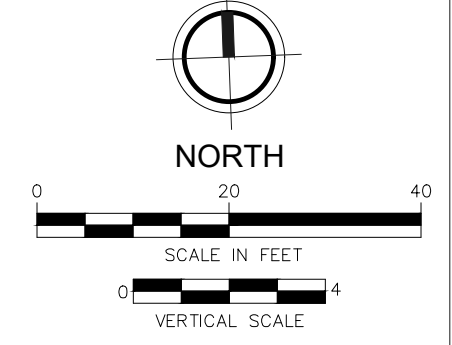
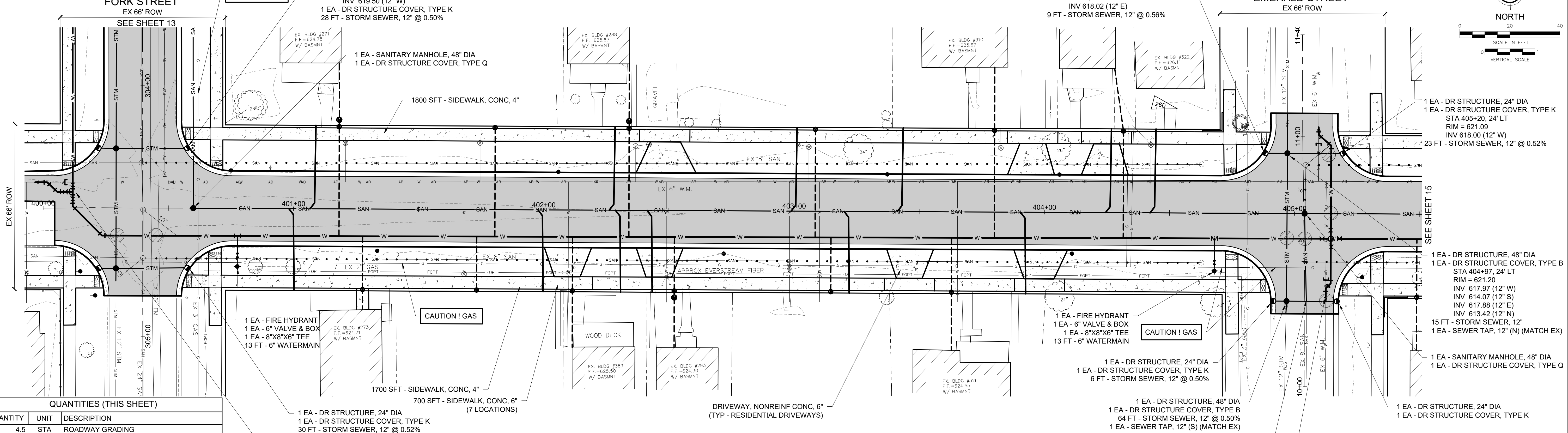
CITY OF MUSKEGON
 MUSKEGON COUNTY, MICHIGAN
AMITY AVENUE IMPROVEMENTS
PLAN & PROFILE

DESIGN TEAM: PROJ MGR: SMD
 DESIGNED BY: RT
 DRAWN BY: PAD
 CHECK BY: DJD 6/11/20
 DRAWING INFORMATION:
 842440_PPS
 063020.danell



JUNE 2020
 F&V PROJECT NO.
 842440
13

BM #26D EL. 623.42'
SE COR BOTTOM STEP HSE #322 AMITY
(NAVD85 GEOD18 VIA VRS OPUS & GPS OBSV)



QUANTITIES (THIS SHEET)

QUANTITY	UNIT	DESCRIPTION
4.5	STA	ROADWAY GRADING
1450	SYD	8" AGGREGATE BASE, 21AA
570	CYD	SUBBASE
330	TON	HMA, LVSP
900	FT	CURB AND GUTTER, CONC
175	SYD	DRIVEWAY, NONREINF, CONC, 6"
613	FT	8" WATERMAIN
244	FT	1" WATER SERVICE
13	EA	1" CORP STOP, CURB STOP & BOX
260	FT	1" WATER SERVICE, PRIVATE PROPERTY
9	EA	WATER SERVICE, BUILDING CONNECTION
3	EA	METER PIT
12	EA	21"X6" LATERAL CONNECTION
396	FT	6" SANITARY LATERAL
12	EA	RECONNECT SANITARY LATERAL

- 1 EA - DR STRUCTURE, 24" DIA
- 1 EA - DR STRUCTURE COVER, TYPE K
- 30 FT - STORM SEWER, 12" @ 0.52%
- 3 EA - 8" VALVE & BOX
- 1 EA - 8"X8"X6" TEE
- 1 EA - 8"X6" REDUCER
- 8 EA - 8"X45" BEND
- 1 EA - CONNECT TO EXISTING WATERMAIN

- 1700 SFT - SIDEWALK, CONC, 4"
- 700 SFT - SIDEWALK, CONC, 6" (7 LOCATIONS)
- 1 EA - DR STRUCTURE, 24" DIA
- 1 EA - DR STRUCTURE COVER, TYPE K
- 30 FT - STORM SEWER, 12" @ 0.52%

- 1 EA - DR STRUCTURE, 24" DIA
- 1 EA - DR STRUCTURE COVER, TYPE K
- 6 FT - STORM SEWER, 12" @ 0.50%
- 1 EA - DR STRUCTURE, 48" DIA
- 1 EA - DR STRUCTURE COVER, TYPE B
- 64 FT - STORM SEWER, 12" @ 0.50%
- 1 EA - SEWER TAP, 12" (S) (MATCH EX)

- 1 EA - DR STRUCTURE, 24" DIA
- 1 EA - DR STRUCTURE COVER, TYPE K
- 1 EA - DR STRUCTURE, 48" DIA
- 1 EA - DR STRUCTURE COVER, TYPE B
- 64 FT - STORM SEWER, 12" @ 0.50%
- 1 EA - SEWER TAP, 12" (S) (MATCH EX)
- 2 EA - CONNECT TO EXISTING WATERMAIN

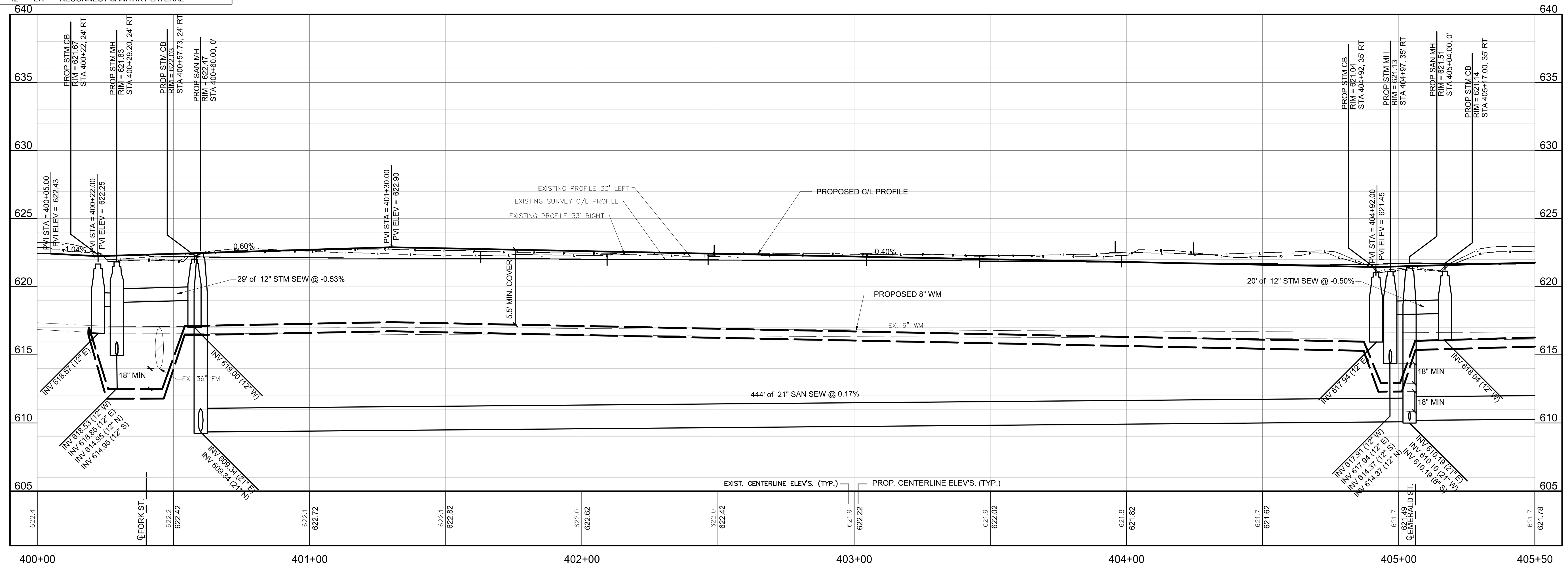
- 1 EA - DR STRUCTURE, 24" DIA
- 1 EA - DR STRUCTURE COVER, TYPE K
- 23 FT - STORM SEWER, 12" @ 0.52%
- 1 EA - DR STRUCTURE, 48" DIA
- 1 EA - DR STRUCTURE COVER, TYPE B
- STA 404+97, 24" LT
- RIM = 621.20
- INV 617.97 (12" W)
- INV 614.07 (12" S)
- INV 617.88 (12" E)
- INV 613.42 (12" N)
- 15 FT - STORM SEWER, 12"
- 1 EA - SEWER TAP, 12" (N) (MATCH EX)
- 1 EA - SANITARY MANHOLE, 48" DIA
- 1 EA - DR STRUCTURE COVER, TYPE Q

AMITY AVENUE
EX. HMA SURFACE

LEGEND

- PROPOSED HMA PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONCRETE CURB & GUTTER
- DRIVEWAY ELEVATIONS AT R.O.W. (LEFT SIDE)
- DRIVEWAY ELEVATIONS AT R.O.W. (RIGHT SIDE)
- PROVIDE 18" MIN. CLEARANCE BETWEEN PROP. WATER MAIN & SEWER

NOTE: 1. INTERSECTION SIDEWALK RAMP QUANTITIES SHOWN ON SHEET 22



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DESIGN, BUILD, OPERATE

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CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN
AMITY AVENUE IMPROVEMENTS
PLAN & PROFILE

DESIGN TEAM: PROJ MGR: SHD
DESIGNED BY: RT
DRAWN BY: PAD
CHECK BY: DJD 6/11/20
DRAWING INFORMATION: 842440_PP4
6/11/20 posted

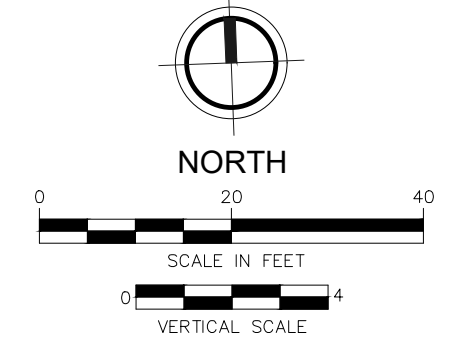
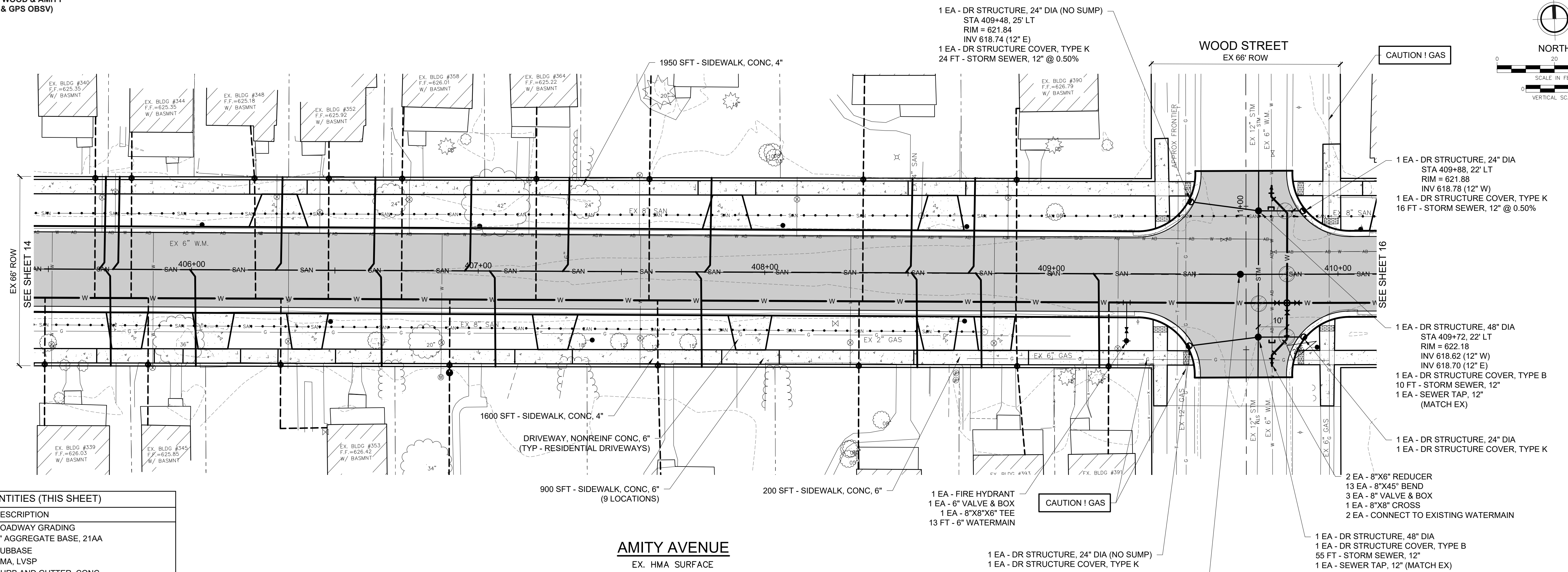


Know what's below.
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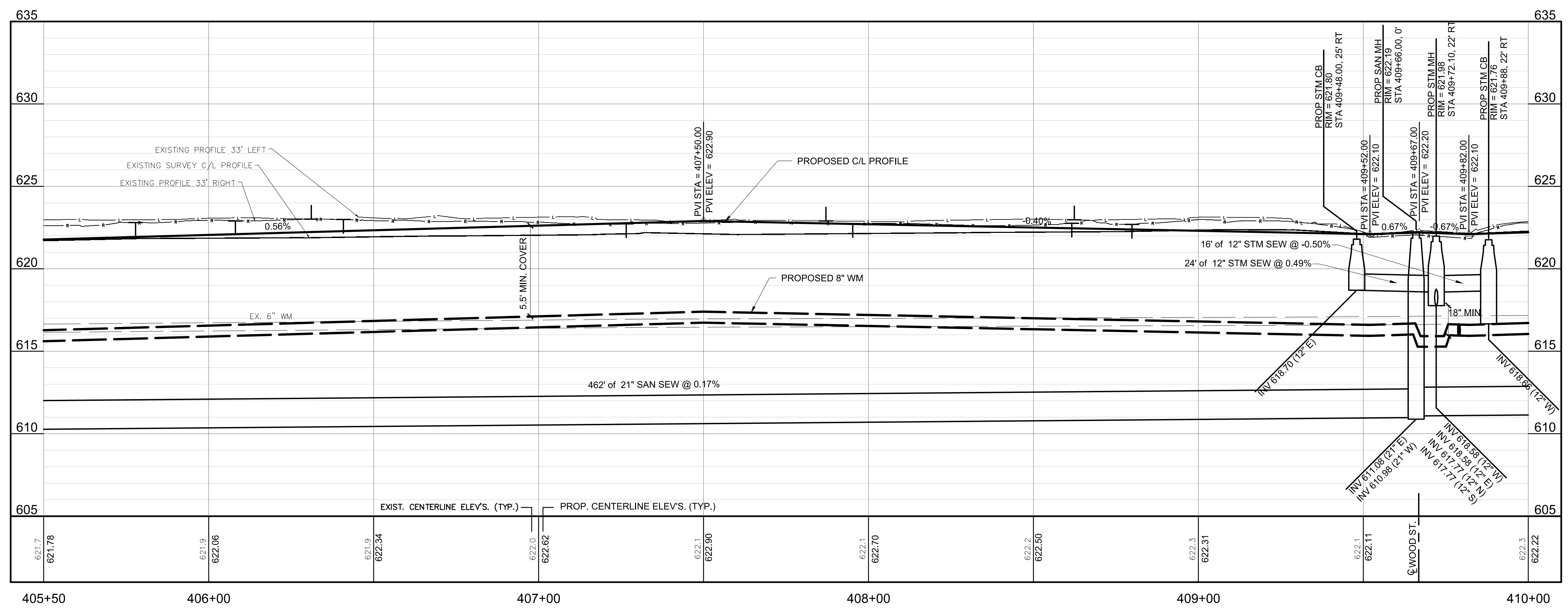
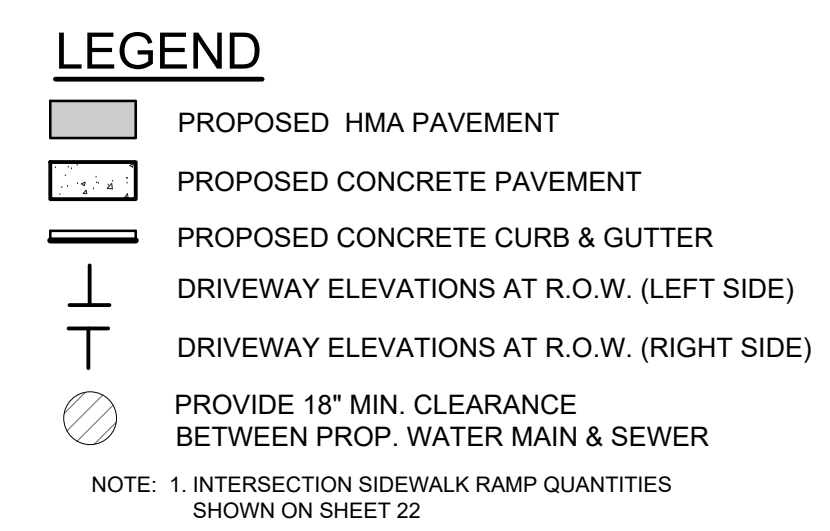
JUNE 2020
F&V PROJECT NO:
842440

14

BM #26E EL. 623.34'
 30D NAIL N FACE PP @ SW QUAD WOOD & AMITY
 (NAVD88 GEOD18 VIA VRS OPUS & GPS OBSV)



QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	DESCRIPTION
5.0	STA	ROADWAY GRADING
1800	SYD	8\"/>



FLEISCHMANN
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 Muskegon, MI 49440
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 F: 231.726.2200

REVISION:
CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN
AMITY AVENUE IMPROVEMENTS
PLAN & PROFILE

DESIGN TEAM: PROJ MGR: SIB
 DESIGNED BY: RT
 DRAWN BY: PAD
 CHECK BY:
 DJD 6/11/20
 DRAWING INFORMATION:
 842440_PP5
 062420 plotted



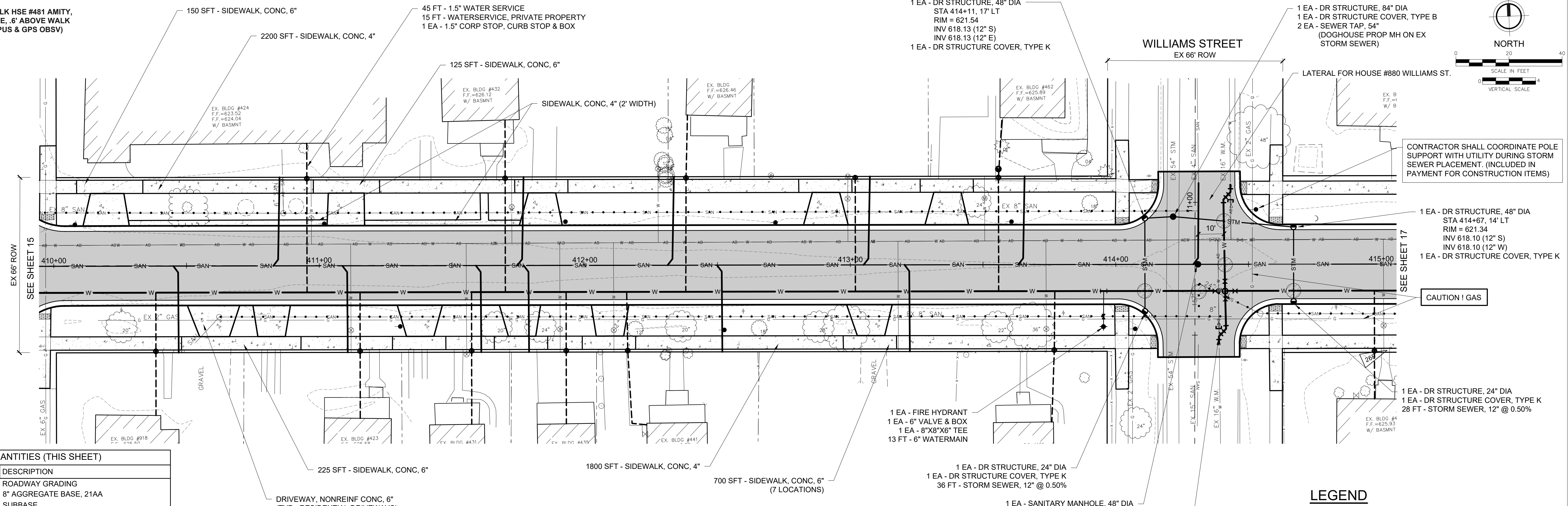
Know what's below.
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JUNE 2020
 P&V PROJECT NO.
 842440

15

U:\Projects\842440-842440-0000\842440-0000\842440_PP5.dwg - plotted on 6/10/2020 1:45 PM

BM #26F EL. 622.99'
 NE COR BOTTOM STEP @ WALK HSE #481 AMITY,
 5' BEYOND CHAIN LINK FENCE, 6' ABOVE WALK
 (NAVD88 GEOD18 VIA VRS OPUS & GPS OBSV)



CONTRACTOR SHALL COORDINATE POLE SUPPORT WITH UTILITY DURING STORM SEWER PLACEMENT. (INCLUDED IN PAYMENT FOR CONSTRUCTION ITEMS)

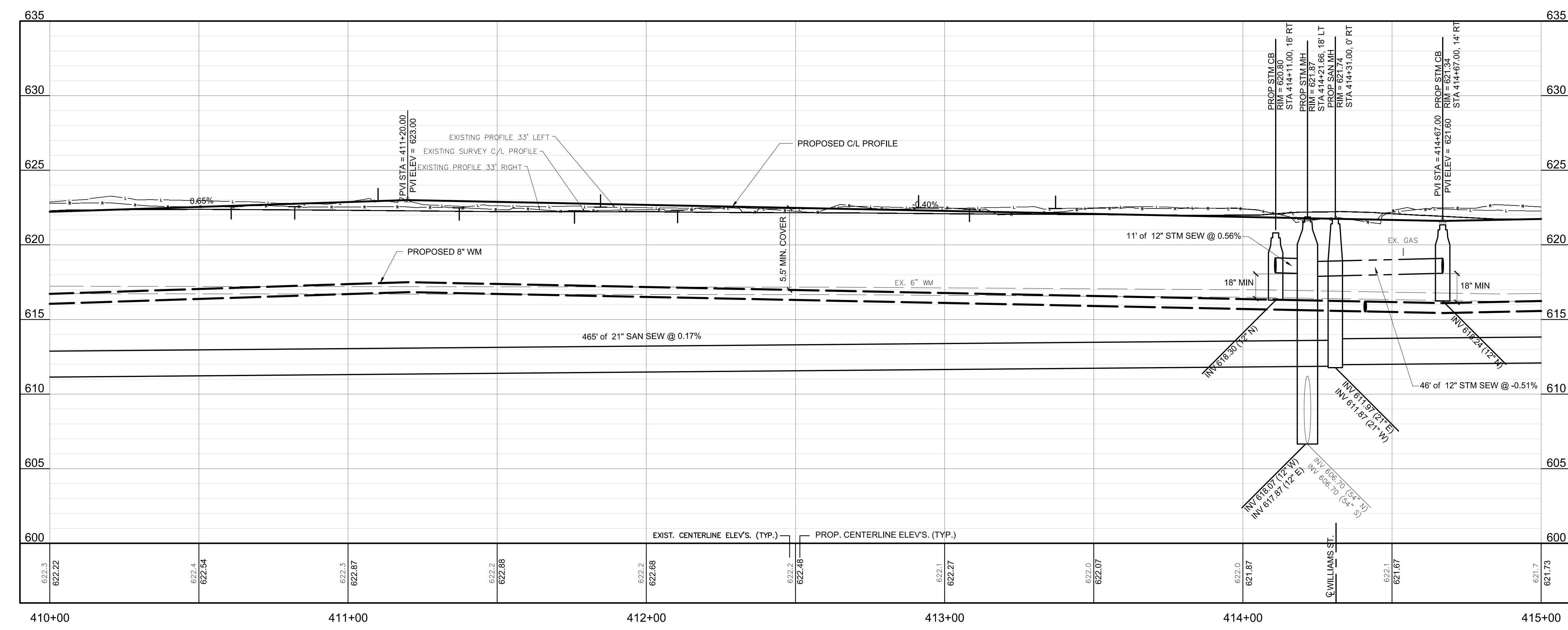
CAUTION! GAS

QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	DESCRIPTION
5.0	STA	ROADWAY GRADING
1800	SYD	8" AGGREGATE BASE, 21AA
710	CYD	SUBBASE
450	TON	HMA, LVSP
1040	FT	CURB AND GUTTER, CONC
250	SYD	DRIVEWAY, NONREINF, CONC, 6"
500	FT	8" WATERMAIN
285	FT	1" WATER SERVICE
11	EA	1" CORP STOP, CURB STOP & BOX
336	FT	1" WATER SERVICE, PRIVATE PROPERTY
11	EA	WATER SERVICE, BUILDING CONNECTION
1	EA	METER PIT
12	EA	21"x6" LATERAL CONNECTION
396	FT	6" SANITARY LATERAL
12	EA	RECONNECT SANITARY LATERAL

AMITY AVENUE
 EX. HMA SURFACE

LEGEND

- PROPOSED HMA PAVEMENT
 - PROPOSED CONCRETE PAVEMENT
 - PROPOSED CONCRETE CURB & GUTTER
 - DRIVEWAY ELEVATIONS AT R.O.W. (LEFT SIDE)
 - DRIVEWAY ELEVATIONS AT R.O.W. (RIGHT SIDE)
 - PROVIDE 18" MIN. CLEARANCE BETWEEN PROP. WATER MAIN & SEWER
- NOTE: 1. INTERSECTION SIDEWALK RAMP QUANTITIES SHOWN ON SHEET 22



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 F: 231.726.2200

ISSUED FOR BID 06/26/2020

REVISION:
CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN
AMITY AVENUE IMPROVEMENTS
PLAN & PROFILE

DESIGN TEAM: PROJ MGR: SMD
 DESIGNED BY: RT
 DRAWN BY: PAD
 CHECK BY: DJD 6/11/20
 DRAWING INFORMATION:
 842440_PP6
 063020 daniel



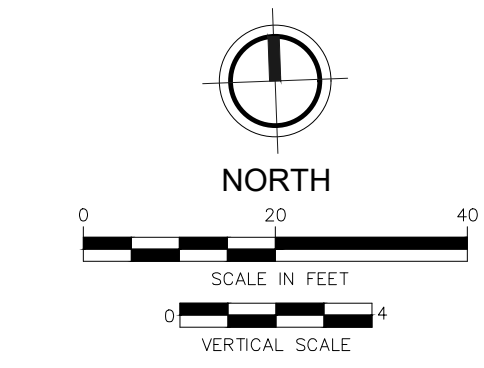
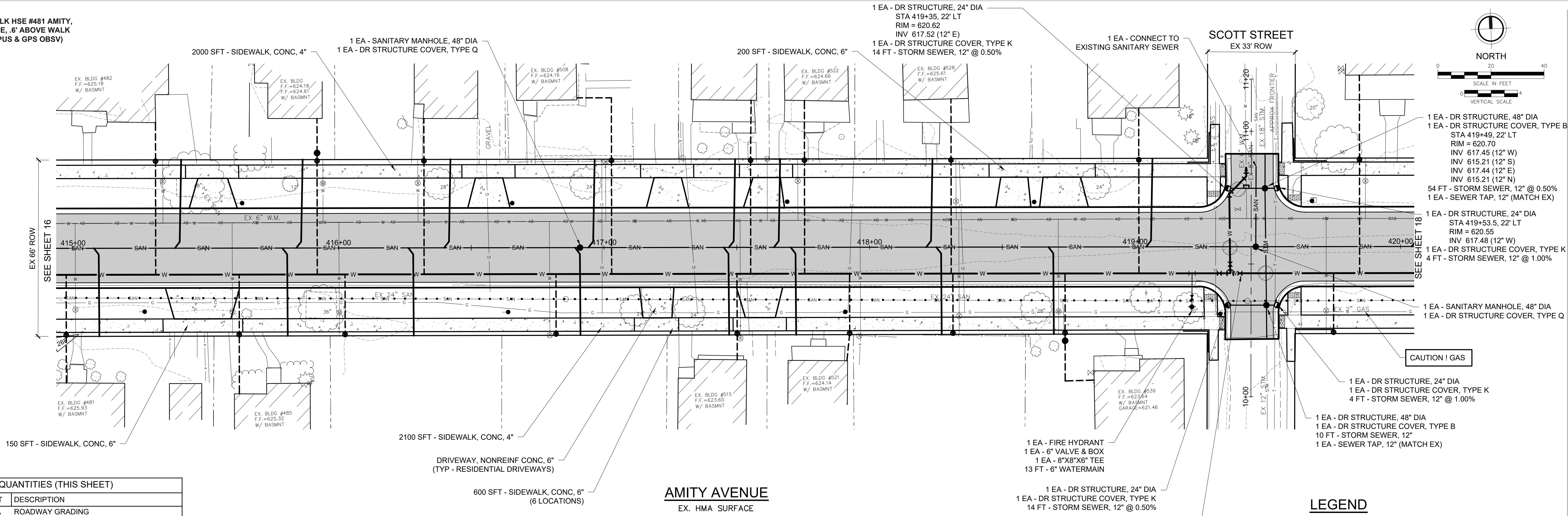
Know what's below.
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JUNE 2020
 F&V PROJECT NO.
 842440

16

U:\Projects\842440-842440\842440_Muskegon - Amity Ave 2019\CAD\Plan\842440_PP6.dwg - plotted on 6/20/2020 1:59 PM

BM #26F EL. 622.99'
 NE COR BOTTOM STEP @ WALK HSE #481 AMITY,
 5' BEYOND CHAIN LINK FENCE, .6' ABOVE WALK
 (NAVD88 GEOD18 VIA VRS OPUS & GPS OBSV)



FLEISCHMANN
 DESIGN, BUILD, OPERATE

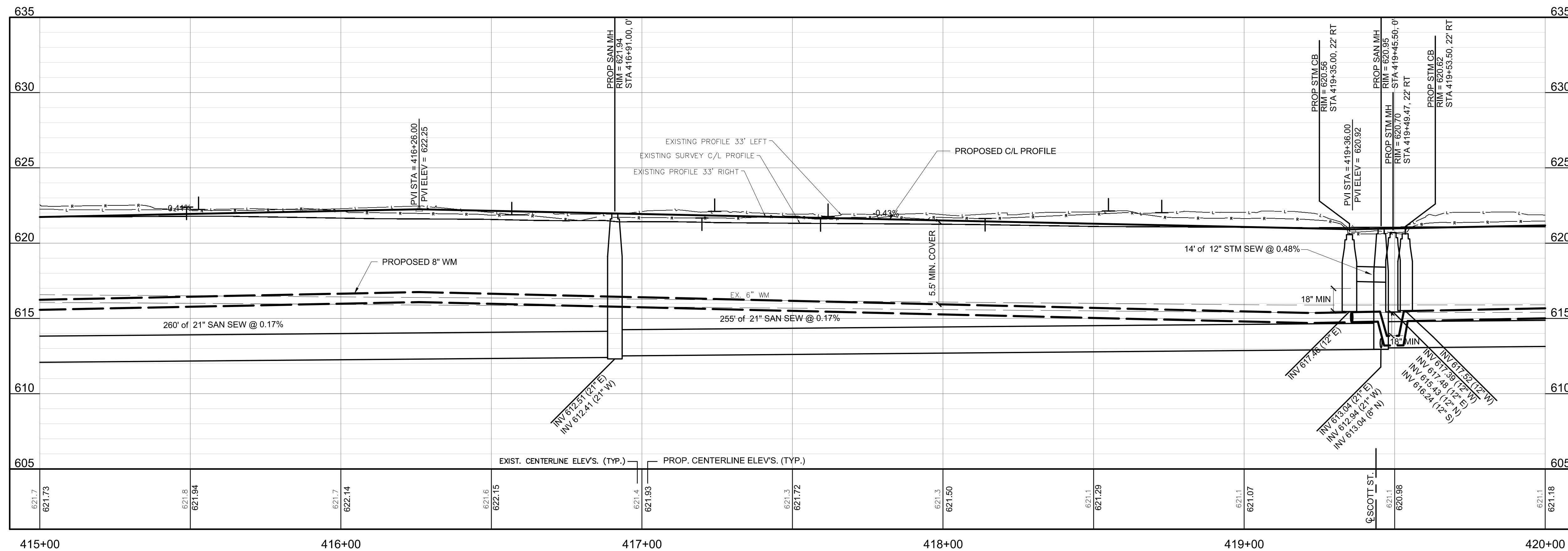
316 Morris Avenue, Suite 230
 Muskegon, MI 49440
 P: 231.726.1000
 F: 231.726.2200

QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	DESCRIPTION
5.0	STA	ROADWAY GRADING
1750	SYD	8" AGGREGATE BASE, 21AA
700	CYD	SUBBASE
400	TON	HMA, LVSP
1040	FT	CURB AND GUTTER, CONC
250	SYD	DRIVEWAY, NONREINF, CONC, 6"
542	FT	8" WATERMAIN
452	FT	1" WATER SERVICE
17	EA	1" CORP STOP, CURB STOP & BOX
389	FT	1" WATER SERVICE, PRIVATE PROPERTY
13	EA	WATER SERVICE, BUILDING CONNECTION
2	EA	METER PIT
16	EA	21"X6" LATERAL CONNECTION
528	FT	6" SANITARY LATERAL
16	EA	RECONNECT SANITARY LATERAL

AMITY AVENUE
 EX. HMA SURFACE

LEGEND

- PROPOSED HMA PAVEMENT
 - PROPOSED CONCRETE PAVEMENT
 - PROPOSED CONCRETE CURB & GUTTER
 - DRIVEWAY ELEVATIONS AT R.O.W. (LEFT SIDE)
 - DRIVEWAY ELEVATIONS AT R.O.W. (RIGHT SIDE)
 - PROVIDE 18" MIN. CLEARANCE BETWEEN PROP. WATER MAIN & SEWER
- NOTE: 1. INTERSECTION SIDEWALK RAMP QUANTITIES SHOWN ON SHEET 22



REVISION:

CITY OF MUSKEGON
 MUSKEGON COUNTY, MICHIGAN
AMITY AVENUE IMPROVEMENTS
PLAN & PROFILE

DESIGN TEAM: PROJ MGR: SIB; DESIGNED BY: RT; DRAWN BY: PAD; CHECK BY: DJD 6/11/20; DRAWING INFORMATION: 842440_PPT 06/11/20 plotted



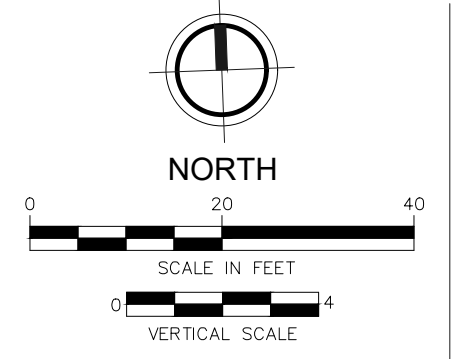
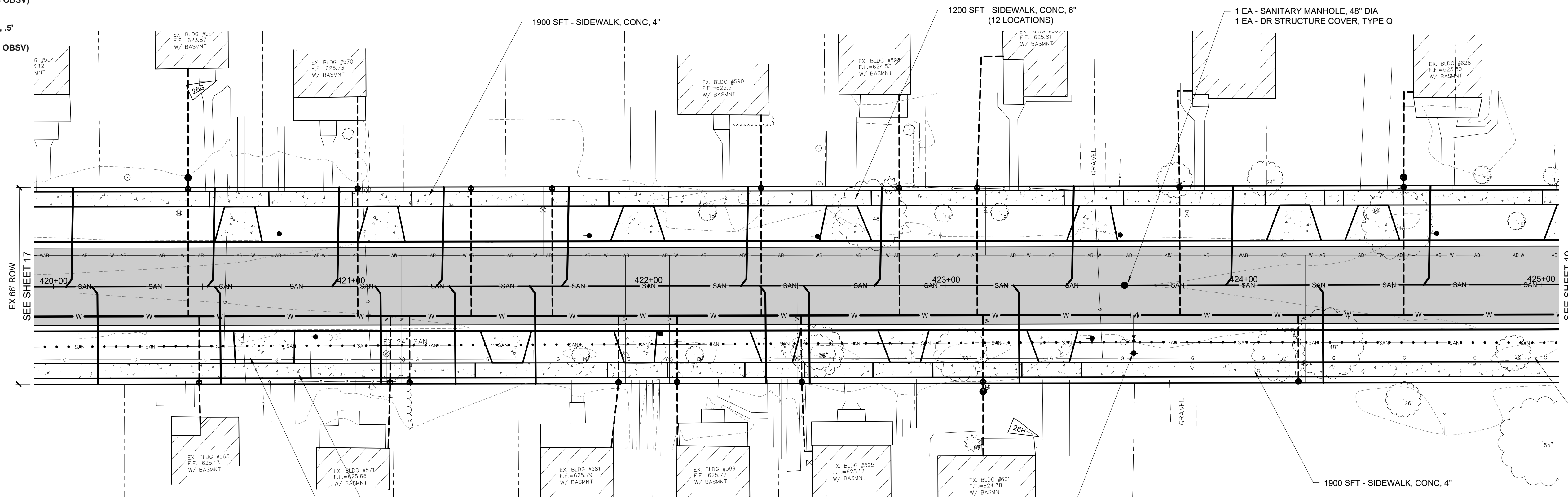
JUNE 2020
 P&V PROJECT NO. 842440

17

U:\Projects\841001-842000\842440_Muskegon - Amity Ave 2019\CAD\Plan\842440_PPT.dwg - plotted on 6/11/2020 9:21 AM

BM #26G EL. 623.12'
SE COR CONC STOOP HSE #564 AMITY, .5' ABOVE WALK
(NAVD88 GEOID18 VIA VRS OPUS & GPS OBSV)

BM #26H EL. 623.02'
NE COR BOTTOM STEP HSE #601 AMITY, .5' ABOVE WALK
(NAVD88 GEOID18 VIA VRS OPUS & GPS OBSV)



QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	DESCRIPTION
5.0	STA	ROADWAY GRADING
1600	SYD	8" AGGREGATE BASE, 21AA
640	CYD	SUBBASE
370	TON	HMA, LVSP
1000	FT	CURB AND GUTTER, CONC
375	SYD	DRIVEWAY, NONREINF, CONC, 6"
500	FT	8" WATERMAIN
452	FT	1" WATER SERVICE
17	EA	1" CORP STOP, CURB STOP & BOX
467	FT	1" WATER SERVICE, PRIVATE PROPERTY
13	EA	WATER SERVICE, BUILDING CONNECTION
3	EA	METER PIT
19	EA	21"X6" LATERAL CONNECTION
627	FT	6" SANITARY LATERAL
19	EA	RECONNECT SANITARY LATERAL

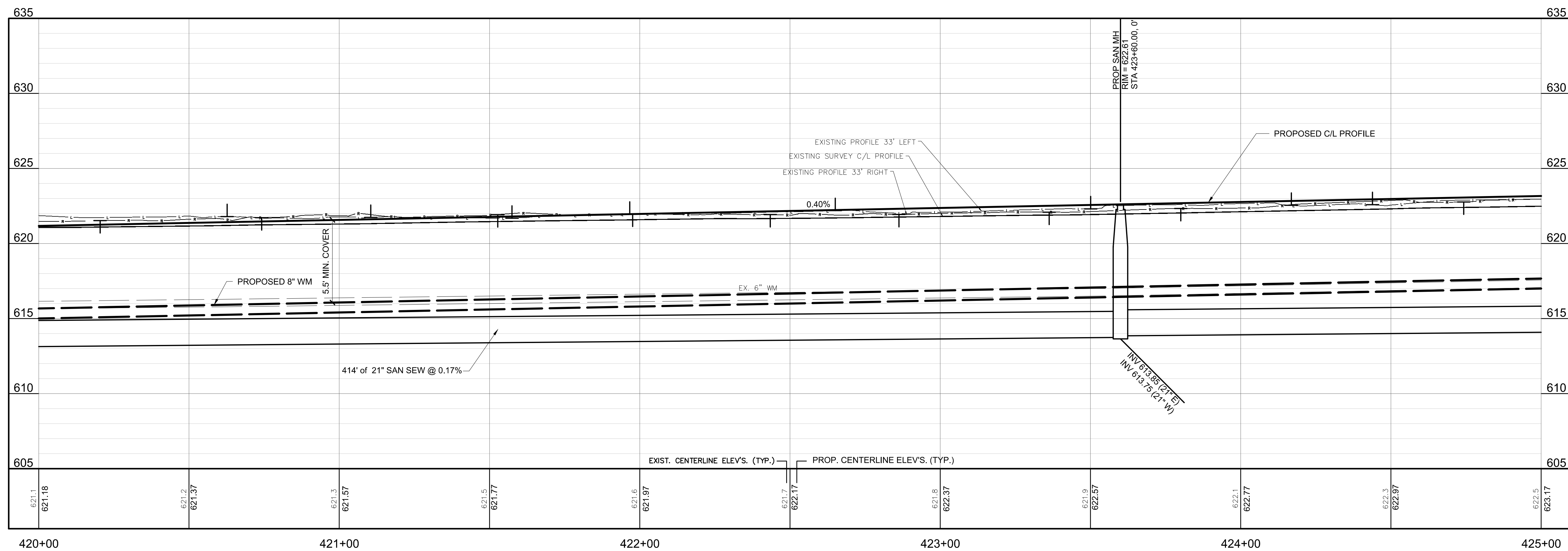
150 SFT - SIDEWALK, CONC, 6"
DRIVEWAY, NONREINF CONC, 6"
(TYP - RESIDENTIAL DRIVEWAYS)

1 EA - FIRE HYDRANT
1 EA - 6" VALVE & BOX
1 EA - 8"X8"X6" TEE
13 FT - 6" WATERMAIN

AMITY AVENUE
EX. HMA SURFACE

LEGEND

- PROPOSED HMA PAVEMENT
 - PROPOSED CONCRETE PAVEMENT
 - PROPOSED CONCRETE CURB & GUTTER
 - DRIVEWAY ELEVATIONS AT R.O.W. (LEFT SIDE)
 - DRIVEWAY ELEVATIONS AT R.O.W. (RIGHT SIDE)
 - PROVIDE 18" MIN. CLEARANCE BETWEEN PROP. WATER MAIN & SEWER
- NOTE: 1. INTERSECTION SIDEWALK RAMP QUANTITIES SHOWN ON SHEET 22



316 Morris Avenue, Suite 230
Muskegon, MI 49440
P: 231.726.1000
F: 231.726.2200

ISSUED FOR BID 06/26/2020

REVISION:
CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN
AMITY AVENUE IMPROVEMENTS
PLAN & PROFILE

DESIGN TEAM: PROJ MGR: SIB
DESIGNED BY: RT
DRAWN BY: PAD
CHECK BY: DJD 6/11/20
DRAWING INFORMATION:
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062420 plotted

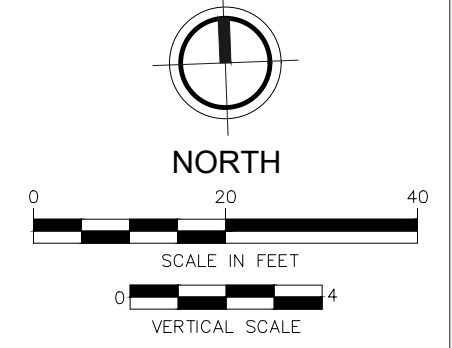
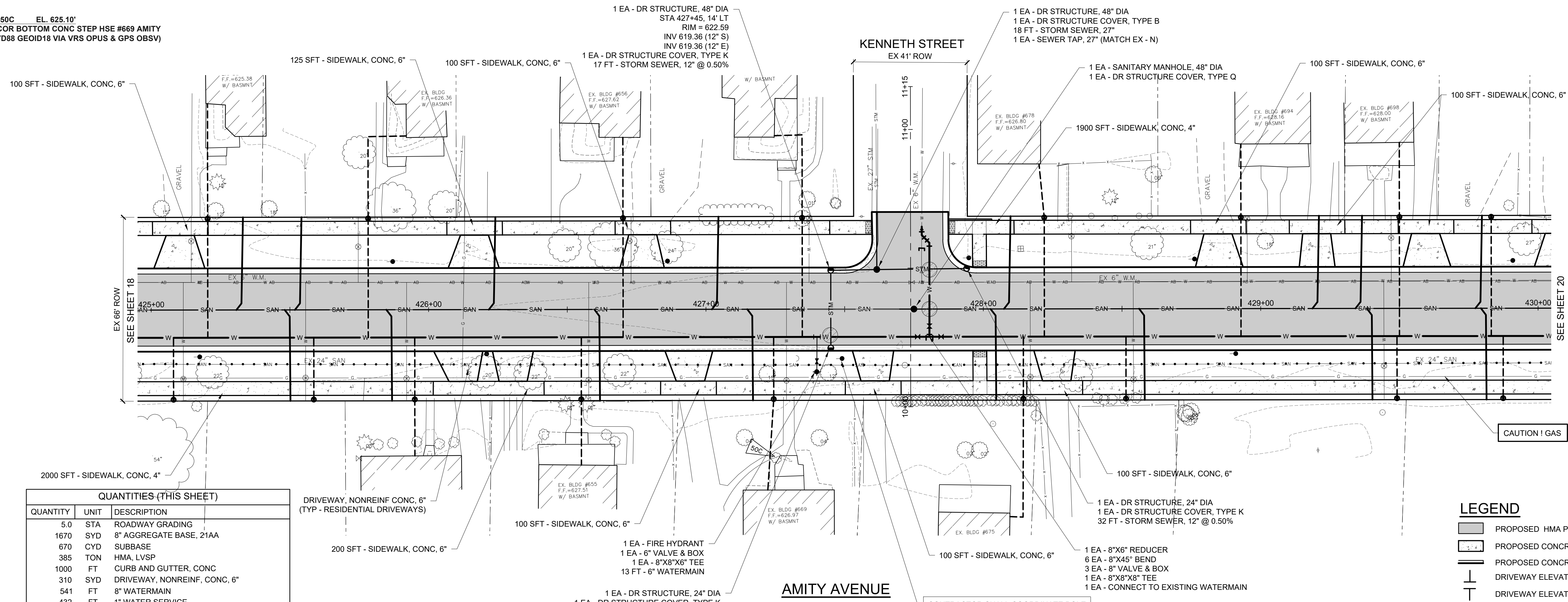
JUNE 2020
F&V PROJECT NO.
842440



18

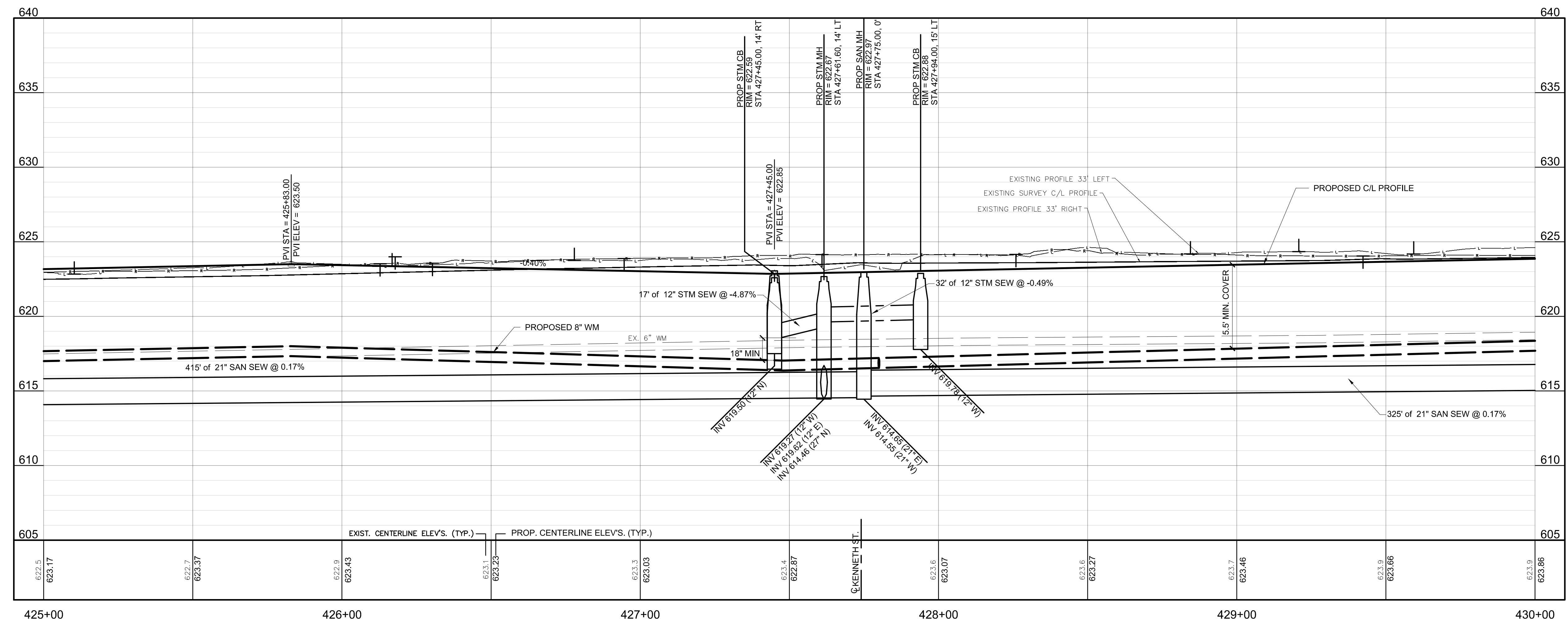
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BM #50C EL. 625.10'
 NW COR BOTTOM CONC STEP HSE #669 AMITY
 (NAVD88 GEOD18 VIA VRS OPUS & GPS OBSV)



QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	DESCRIPTION
5.0	STA	ROADWAY GRADING
1670	SYD	8" AGGREGATE BASE, 21AA
670	CYD	SUBBASE
385	TON	HMA, LVSP
1000	FT	CURB AND GUTTER, CONC
310	SYD	DRIVEWAY, NONREINF. CONC, 6"
541	FT	8" WATERMAIN
432	FT	1" WATER SERVICE
17	EA	1" CORP STOP, CURB STOP & BOX
419	FT	1" WATER SERVICE, PRIVATE PROPERTY
11	EA	WATER SERVICE, BUILDING CONNECTION
16	EA	21"x6" LATERAL CONNECTION
528	FT	6" SANITARY LATERAL
16	EA	RECONNECT SANITARY LATERAL

- LEGEND**
- PROPOSED HMA PAVEMENT
 - PROPOSED CONCRETE PAVEMENT
 - PROPOSED CONCRETE CURB & GUTTER
 - DRIVEWAY ELEVATIONS AT R.O.W. (LEFT SIDE)
 - DRIVEWAY ELEVATIONS AT R.O.W. (RIGHT SIDE)
 - PROVIDE 18" MIN. CLEARANCE BETWEEN PROP. WATER MAIN & SEWER
- NOTE: 1. INTERSECTION SIDEWALK RAMP QUANTITIES SHOWN ON SHEET 22



FLEISCHMANN
 DESIGN. BUILD. OPERATE.

316 Morris Avenue, Suite 230
 Muskegon, MI 49440
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ISSUED FOR BID 06/26/2020

REVISION:

CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN
AMITY AVENUE IMPROVEMENTS
PLAN & PROFILE

DESIGN TEAM: PROJ MGR: SIB
 DRAWN BY: PAD
 CHECK BY: DJD 6/11/20
 DRAWING INFORMATION: 842440_PP9
 06/24/20 plotted



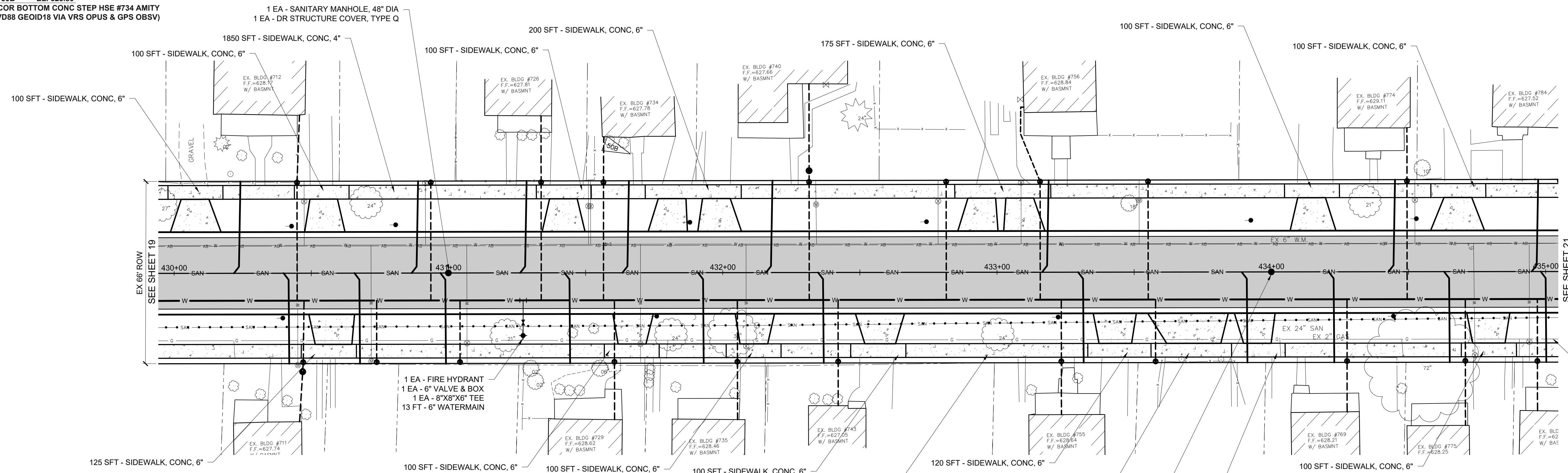
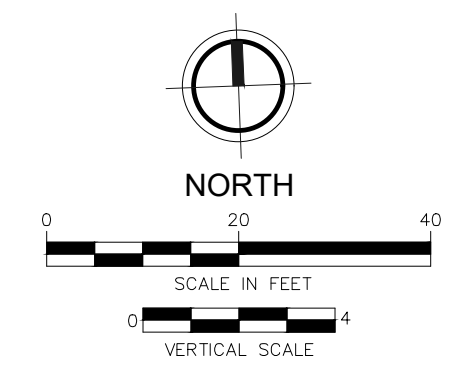
Know what's below.
 Call before you dig.

JUNE 2020
 P&V PROJECT NO.
 842440

19

U:\Projects\842440-842440-000\842440-000\842440_PP9.dwg - plotted on 6/21/2020 9:30 AM

BM #50B EL. 625.80'
 SW COR BOTTOM CONC STEP HSE #734 AMITY
 (NAVD88 GEOID18 VIA VRS OPUS & GPS OBSV)



CAUTION I GAS

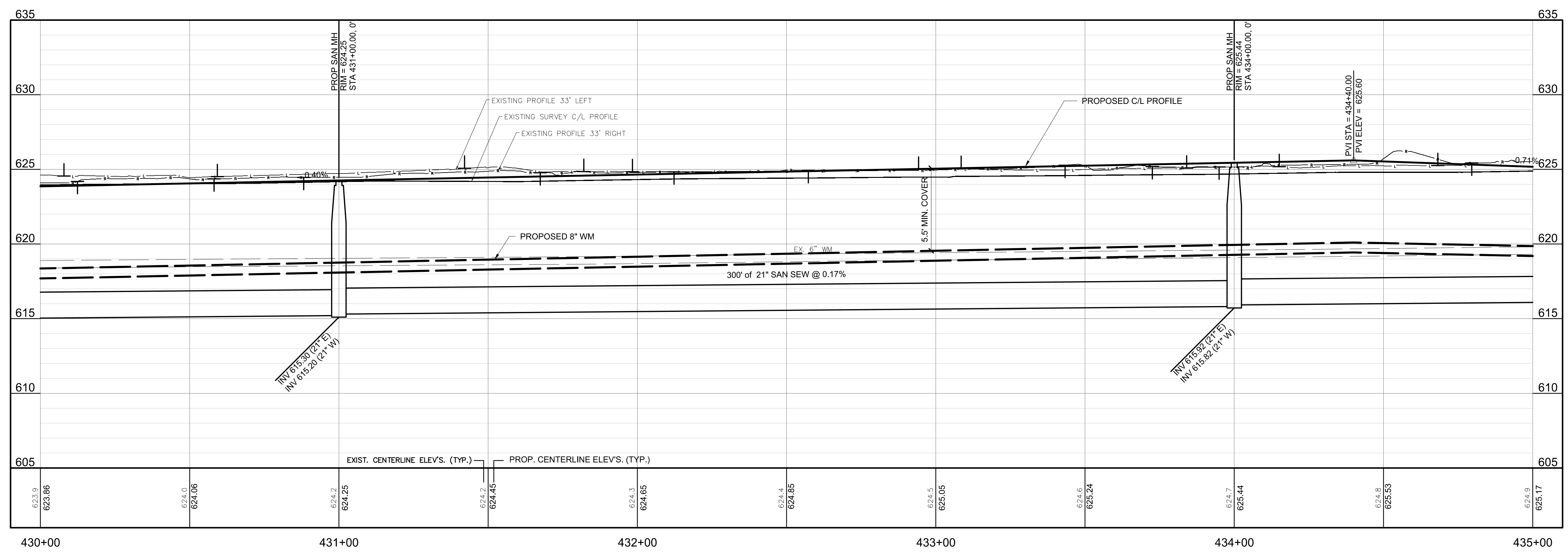
QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	DESCRIPTION
5.0	STA	ROADWAY GRADING
1600	SYD	8" AGGREGATE BASE, 21AA
640	CYD	SUBBASE
370	TON	HMA, LVSP
1000	FT	CURB AND GUTTER, CONC
480	SYD	DRIVEWAY, NONREINF, CONC, 6"
500	FT	8" WATERMAIN
500	FT	1" WATER SERVICE
20	EA	1" CORP STOP, CURB STOP & BOX
402	FT	1" WATER SERVICE, PRIVATE PROPERTY
14	EA	WATER SERVICE, BUILDING CONNECTION
2	EA	METER PIT
19	EA	21"X6" LATERAL CONNECTION
627	FT	6" SANITARY LATERAL
19	EA	RECONNECT SANITARY LATERAL

AMITY AVENUE
 EX. HMA SURFACE

LEGEND

- PROPOSED HMA PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONCRETE CURB & GUTTER
- DRIVEWAY ELEVATIONS AT R.O.W. (LEFT SIDE)
- DRIVEWAY ELEVATIONS AT R.O.W. (RIGHT SIDE)
- PROVIDE 18" MIN. CLEARANCE BETWEEN PROP. WATER MAIN & SEWER

NOTE: 1. INTERSECTION SIDEWALK RAMP QUANTITIES SHOWN ON SHEET 22



FLEISCHMANN
 DESIGN. BUILD. OPERATE.

316 Morris Avenue, Suite 230
 Muskegon, MI 49440
 P: 231.726.1000
 F: 231.726.2200

ISSUED FOR BID 06/26/2020

REVISION:

CITY OF MUSKEGON
 MUSKEGON COUNTY, MICHIGAN
AMITY AVENUE IMPROVEMENTS
PLAN & PROFILE

PROJ MGR: SIB
 DESIGN: RT
 DRAWN BY: PAD
 CHECK BY: DJD 6/11/20
 DRAWING INFORMATION:
 842440_PP10
 062420 plotted

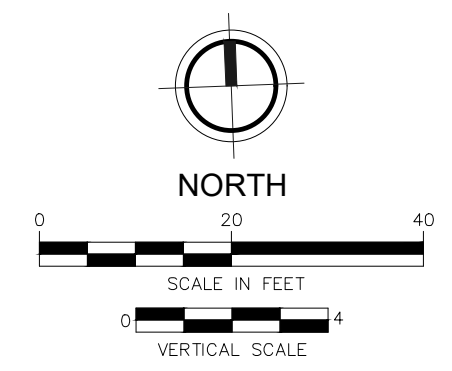
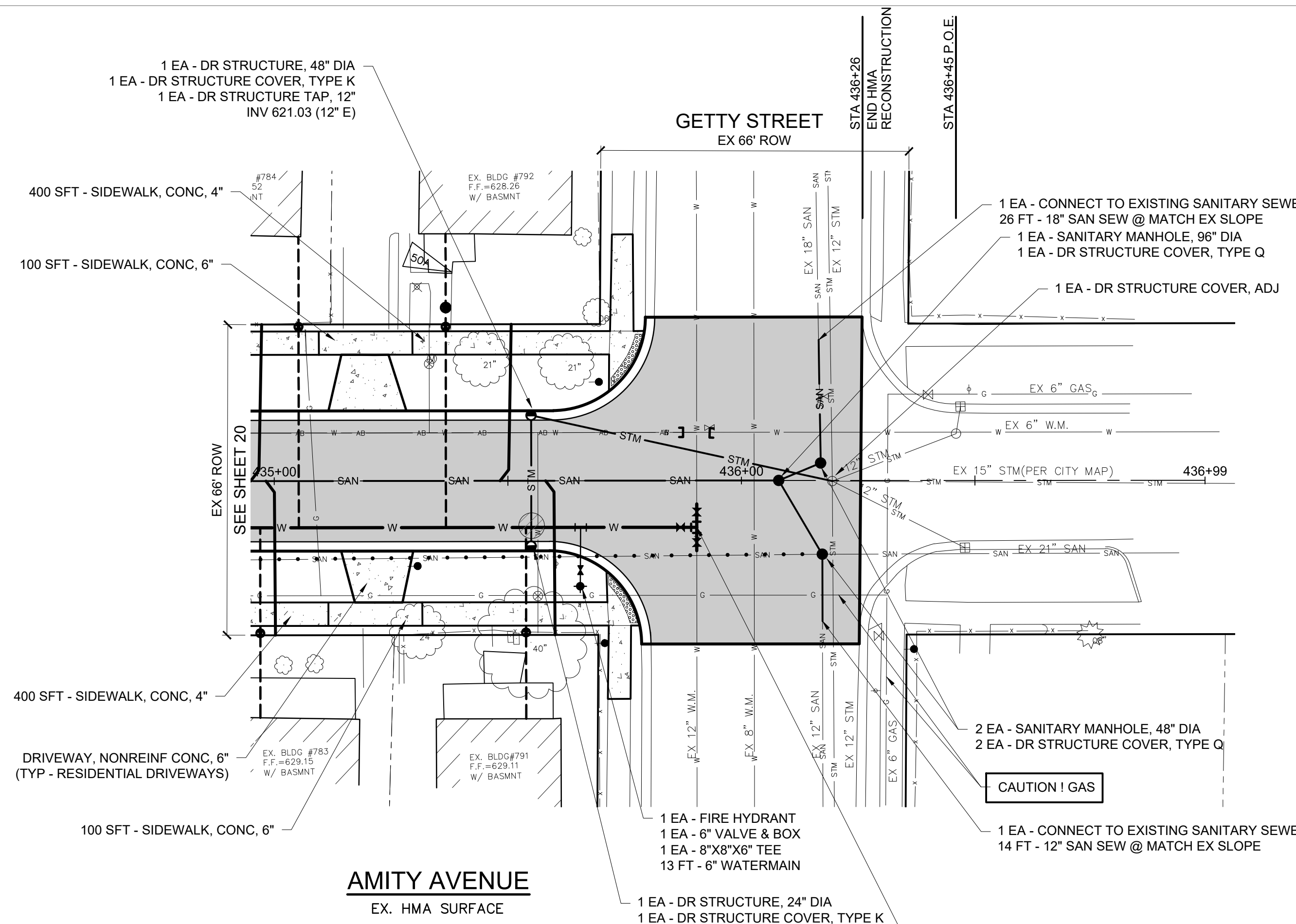
JUNE 2020
 P&V PROJECT NO.
 842440



Know what's below.
 Call before you dig.

20

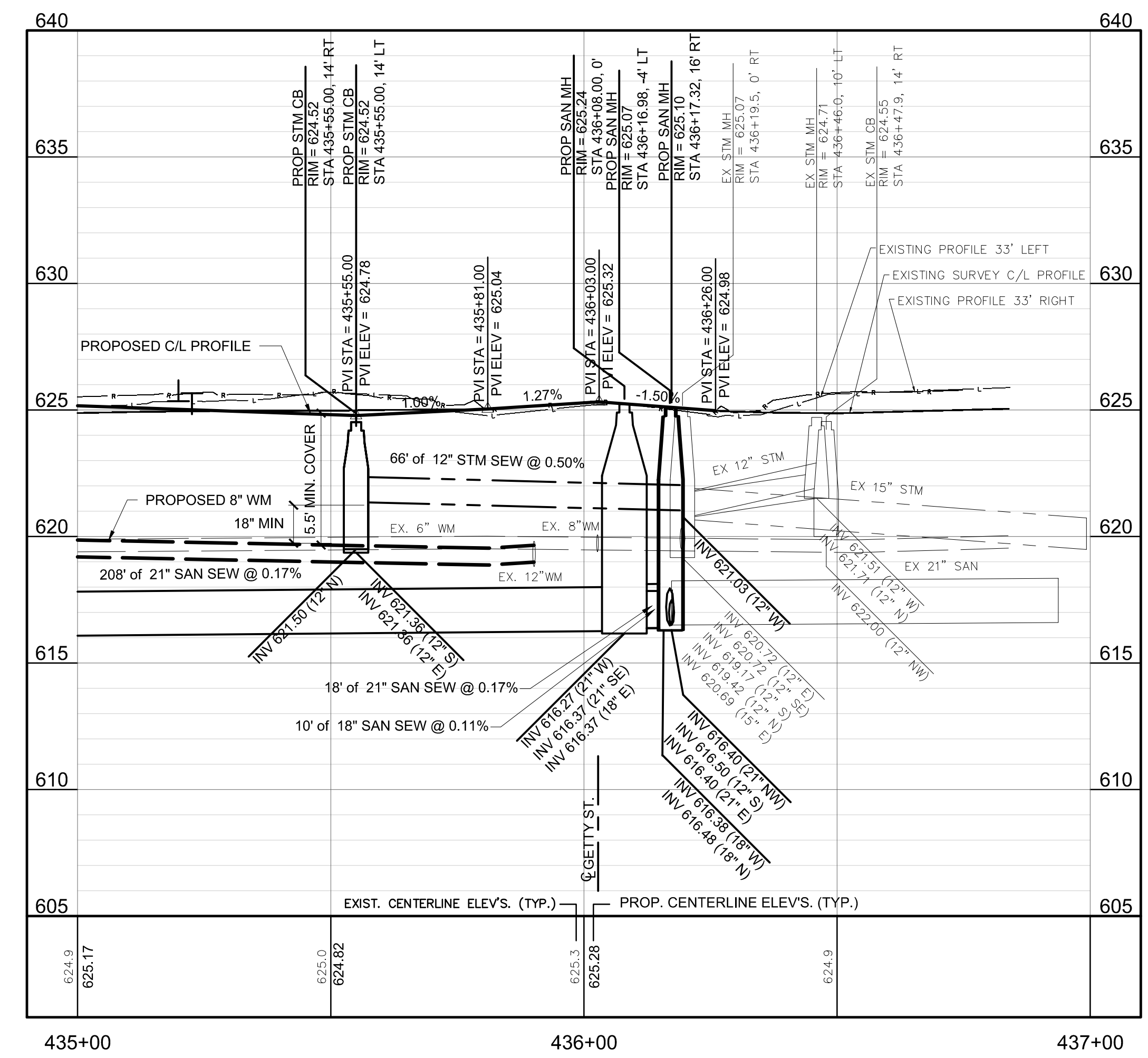
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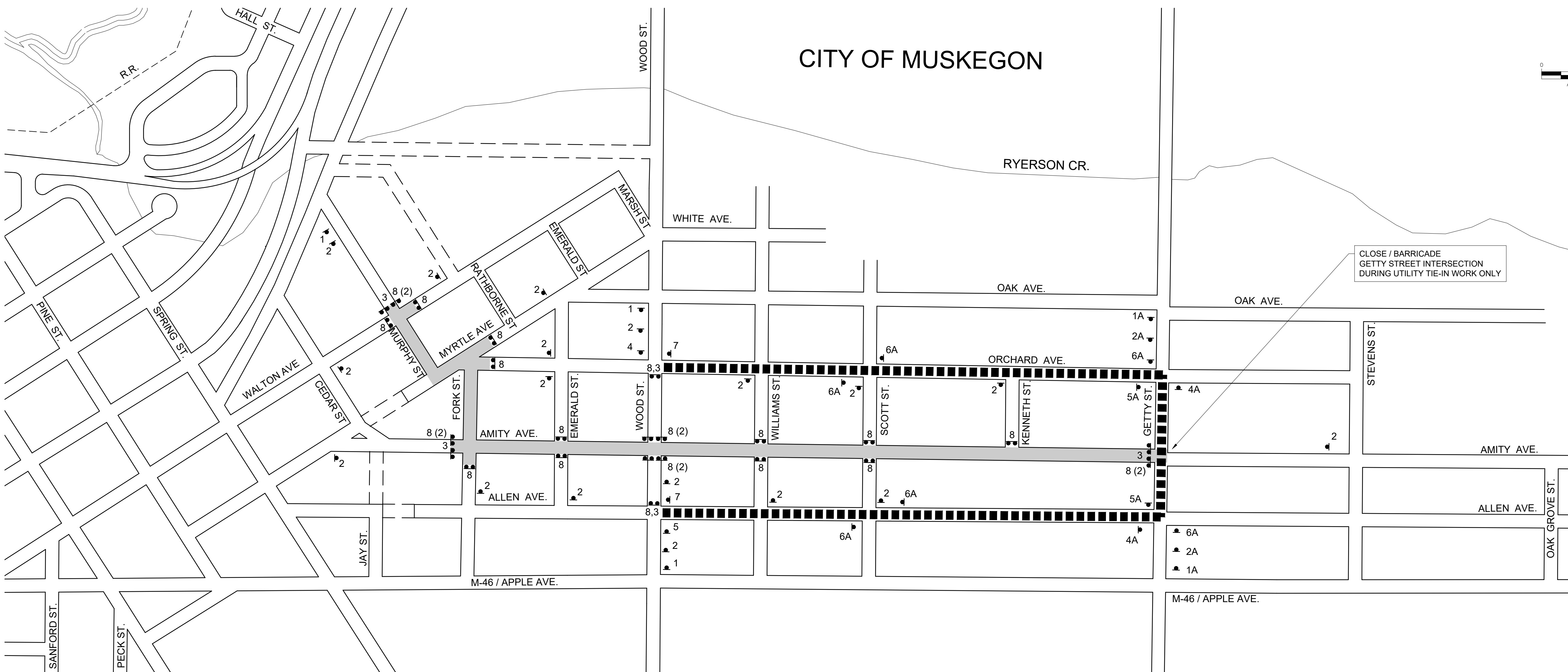
LEGEND

- PROPOSED HMA PAVEMENT
 - PROPOSED CONCRETE PAVEMENT
 - PROPOSED CONCRETE CURB & GUTTER
 - DRIVEWAY ELEVATIONS AT R.O.W. (LEFT SIDE)
 - DRIVEWAY ELEVATIONS AT R.O.W. (RIGHT SIDE)
 - PROVIDE 18" MIN. CLEARANCE BETWEEN PROP. WATER MAIN & SEWER
- NOTE: 1. INTERSECTION SIDEWALK RAMP QUANTITIES SHOWN ON SHEET 22

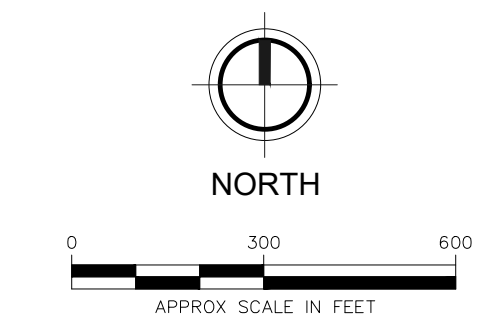
QUANTITIES (THIS SHEET)		
QUANTITY	UNIT	DESCRIPTION
1.3	STA	ROADWAY GRADING
740	SYD	8" AGGREGATE BASE, 21AA
300	CYD	SUBBASE
170	TON	HMA, LVSP
200	FT	CURB AND GUTTER, CONC
50	SYD	DRIVEWAY, NONREINF, CONC, 6"
90	FT	8" WATERMAIN
88	FT	1" WATER SERVICE
3	EA	1" CORP STOP, CURB STOP & BOX
77	FT	1" WATER SERVICE, PRIVATE PROPERTY
3	EA	WATER SERVICE, BUILDING CONNECTION
1	EA	METER PIT
2	EA	21"X6" LATERAL CONNECTION
66	FT	6" SANITARY LATERAL
2	EA	RECONNECT SANITARY LATERAL



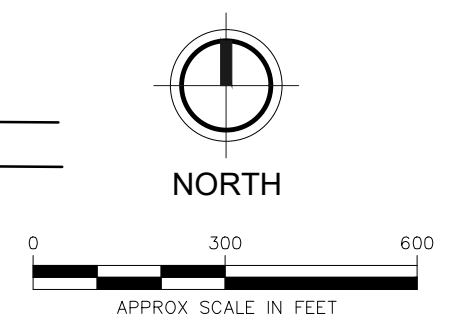
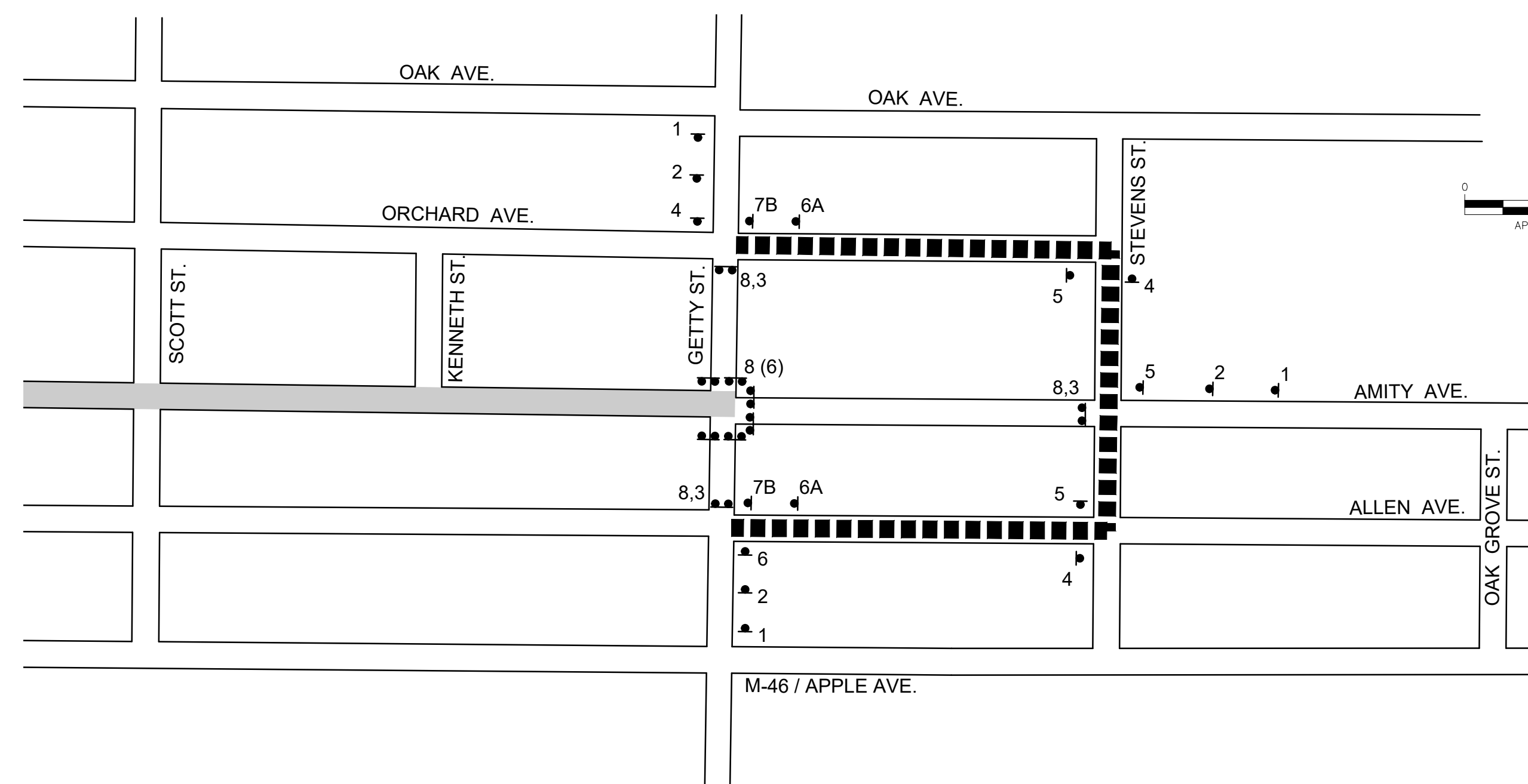
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CITY OF MUSKEGON



DETOUR ROUTE - INTERSECTION WORK AT WOOD STREET



DETOUR ROUTE - INTERSECTION WORK AT GETTY STREET

LEGEND

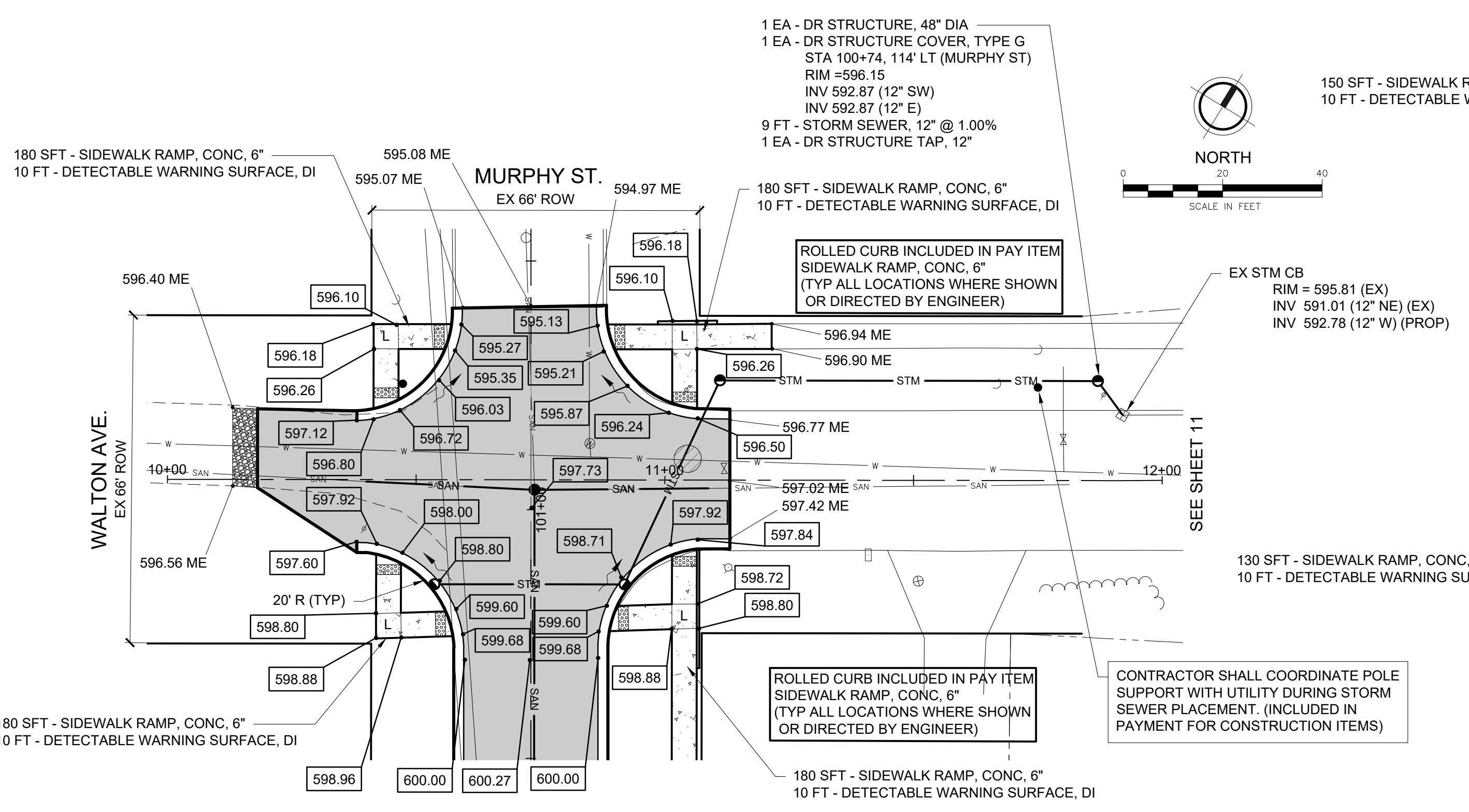
- ■ ■ ■ ■ DETOUR ROUTE
- ▬ PROJECT LOCATION
- ▲ SIGN
- ▲▲ BARRICADE, TYPE III, HIGH INTENSITY, LIGHTED, DOUBLE SIDED

CONSTRUCTION NOTES

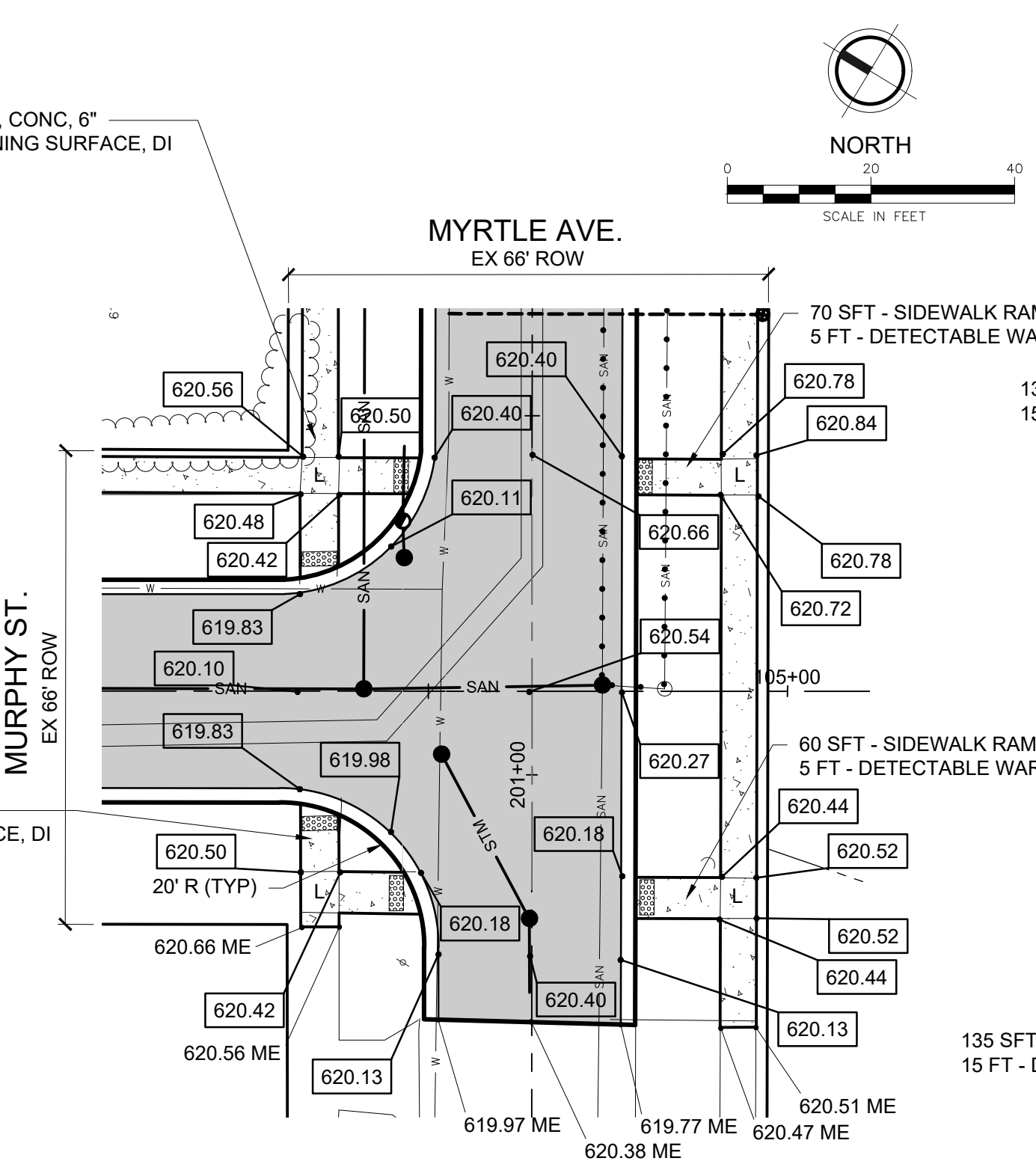
1. STAKING FOR TEMPORARY CONSTRUCTION SIGN PLACEMENT AND MISS DIG NOTIFICATION SHALL BE PROVIDED BY THE CONTRACTOR. SIGN LOCATIONS SHOWN IN THE PLANS ARE SCHEMATIC. THE CONTRACTOR SHALL STAKE SIGN LOCATIONS BASED ON STANDARD OFFSETS WITH SPACINGS MODIFIED TO AVOID OBSTRUCTIONS FOR REVIEW BY THE ENGINEER AND ADJUSTMENT AS NEEDED BY THE CONTRACTOR PRIOR TO CONTACTING MISS DIG.
2. DURING CONSTRUCTION, MAINTAIN LOCAL TRAFFIC TO ALL RESIDENCES WITHIN PROJECT LIMITS. PROVIDE 24 HOUR NOTICE IF ANY INTERRUPTION IS ANTICIPATED.
3. CONTRACTOR TO PLACE "ROAD CLOSED AHEAD" SIGNS ON ALL CROSS STREETS WHERE SHOWN AND AS DIRECTED BY ENGINEER.
4. INTERSECTION WORK IN AMITY AVENUE TO BE CONDUCTED SUCH THAT ACCESS BY CROSS TRAFFIC SHALL NOT BE CLOSED IN CONSECUTIVE INTERSECTIONS AT ANY TIME.
5. INTERSECTION WORK IN GETTY STREET SHALL BE CONDUCTED IN OFF-PEAK HOURS TO THE GREATEST EXTENT POSSIBLE AND SHALL NOT BE COMMENCED WITHOUT CITY OF MUSKEGON APPROVAL.

DETOUR SIGNAGE

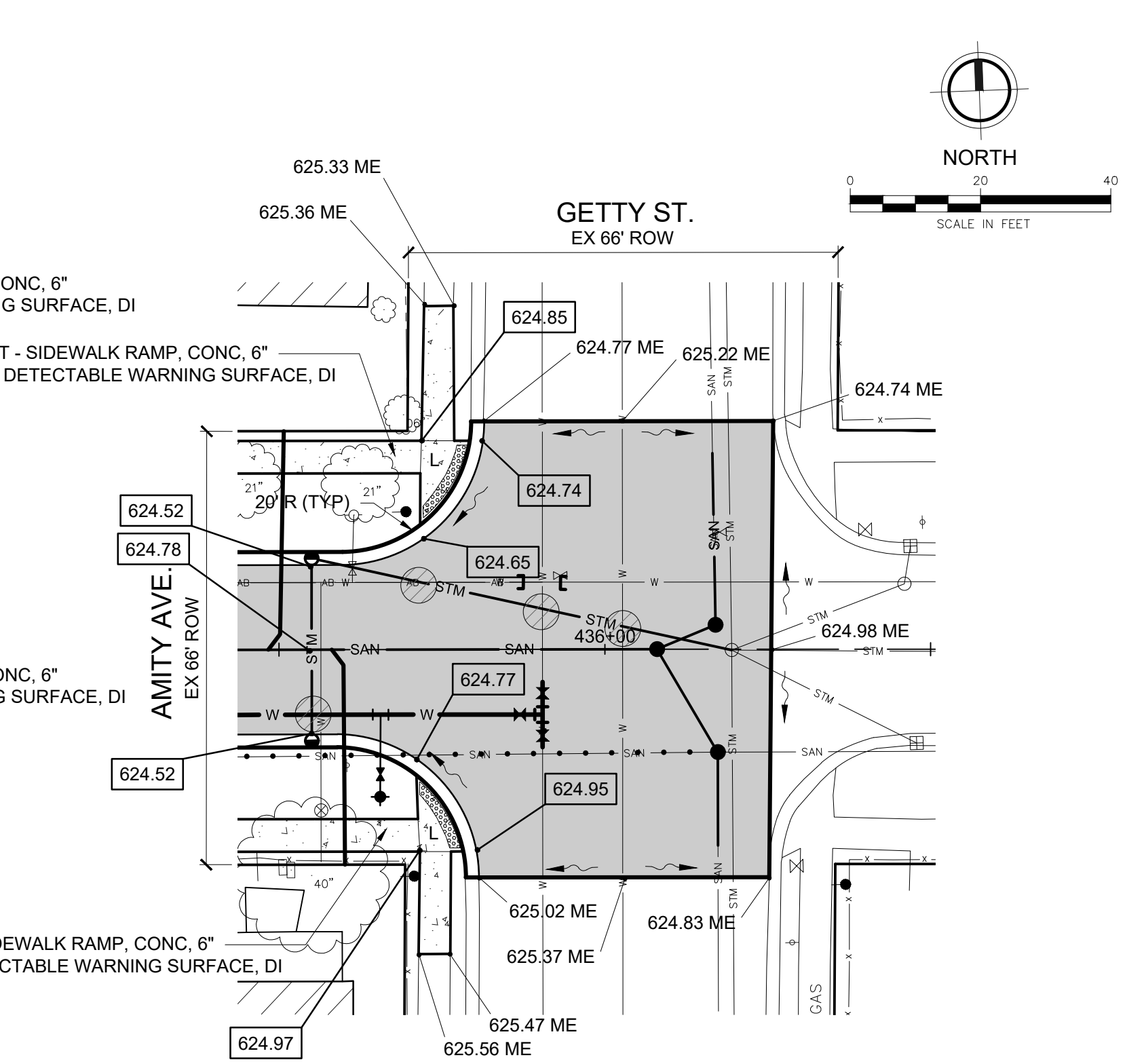
- | | | |
|---|--|--|
| 1 | | W20-2 (48"x48")
16 SR TYPE III B SIGN |
| 2 | | W20-3 (48"x48")
16 SR TYPE III B SIGN |
| 3 | | R11-4 (60" x 30")
12.5 SR TYPE III B SIGN
MOUNT ON SEPARATE POSTS ABOVE AND BEHIND BARRICADE |
| 4 | | M4-9L (30"x24")
5 SR TYPE III B SIGN |
| 5 | | M4-9R (30"x24")
5 SR TYPE III B SIGN |
| 6 | | M4-9 (30"x24")
5 SR TYPE III B SIGN |
| 7 | | BARRICADE, TYPE III, LIGHTED
M4-8a (24"x18")
3 SR TYPE III B SIGN |
| 8 | | BARRICADE, TYPE III, HIGH INTENSITY LIGHTED, DOUBLE SIDED |
| A | | D3-1 (36" x 12")
3 SR TYPE III B SIGN |
| B | | D3-1 (36" x 12")
3 SR TYPE III B SIGN |



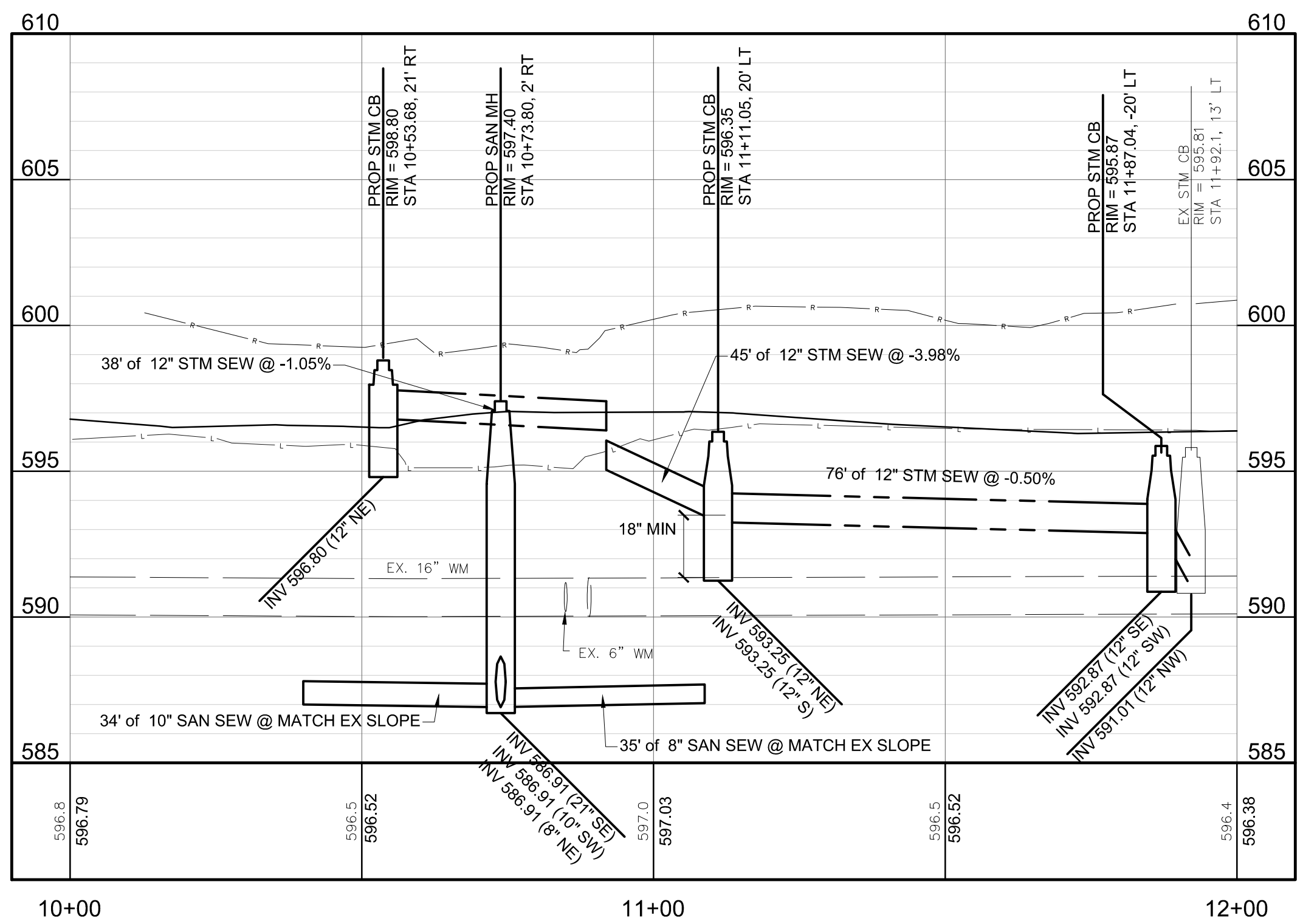
WALTON AVENUE & MURPHY STREET



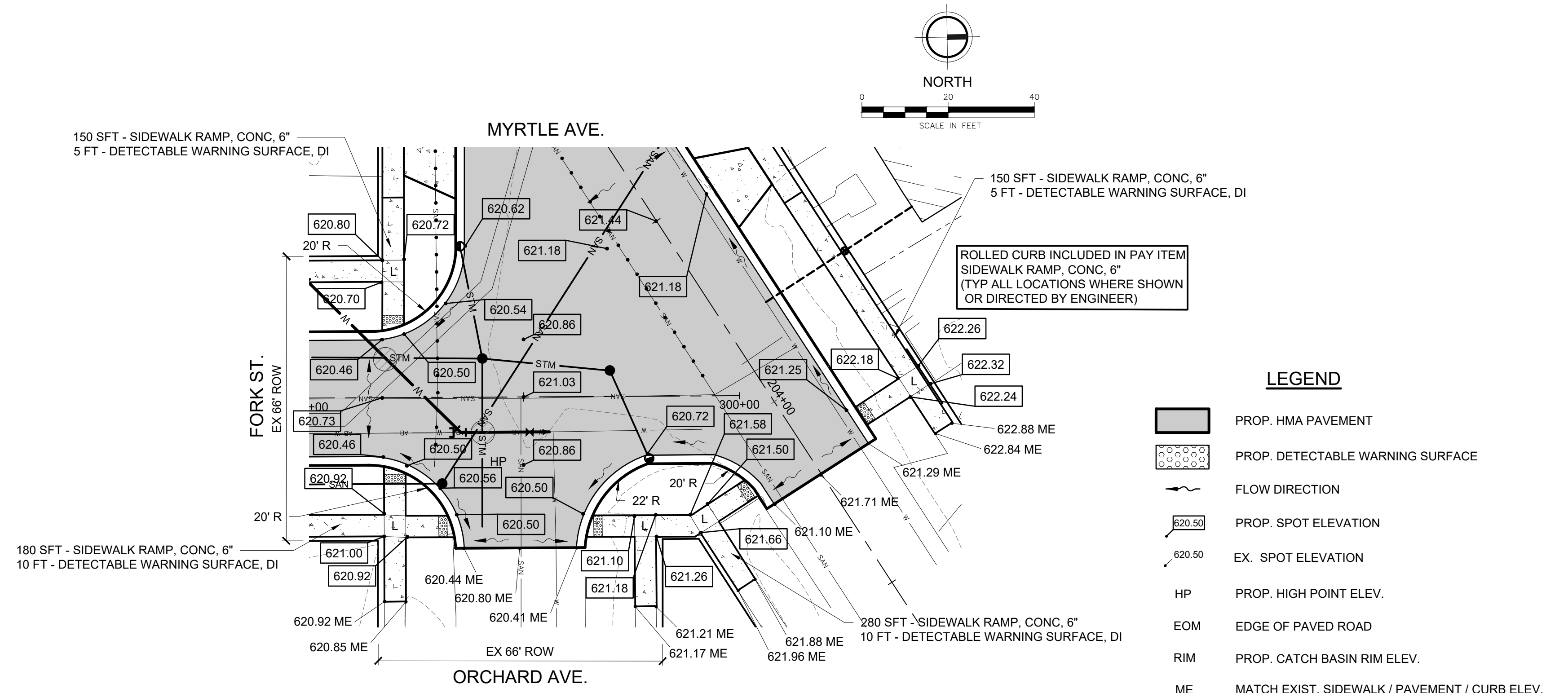
MURPHY STREET & MYRTLE AVENUE



AMITY AVENUE & GETTY STREET



WALTON AVENUE & MURPHY STREET



FORK STREET & MYRTLE AVENUE

- LEGEND**
- PROP. HMA PAVEMENT
 - PROP. DETECTABLE WARNING SURFACE
 - FLOW DIRECTION
 - 620.50 PROP. SPOT ELEVATION
 - 620.50 EX. SPOT ELEVATION
 - HP PROP. HIGH POINT ELEV.
 - EOM EDGE OF PAVED ROAD
 - RIM PROP. CATCH BASIN RIM ELEV.
 - ME MATCH EXIST. SIDEWALK / PAVEMENT / CURB ELEV.
 - L LANDING
 - R RAMP
 - + LANDING, MAXIMUM 2% SLOPE IN THE DIRECTION OF TRAVEL, MINIMUM LANDING DIMENSION IS 5'X5'
 - ⊗ PROVIDE 18" MIN. CLEARANCE BETWEEN PROP. WATER MAIN & SEWER

NOTE: ALL RAMPS SHALL MEET MDOT SIDEWALK RAMP DETAILS R-28-J SPECIFICATIONS INCLUDED IN THE CONTRACT DOCUMENTS.

ALL LANDINGS ARE MIN 5' x 5' UNLESS OTHERWISE SHOWN.

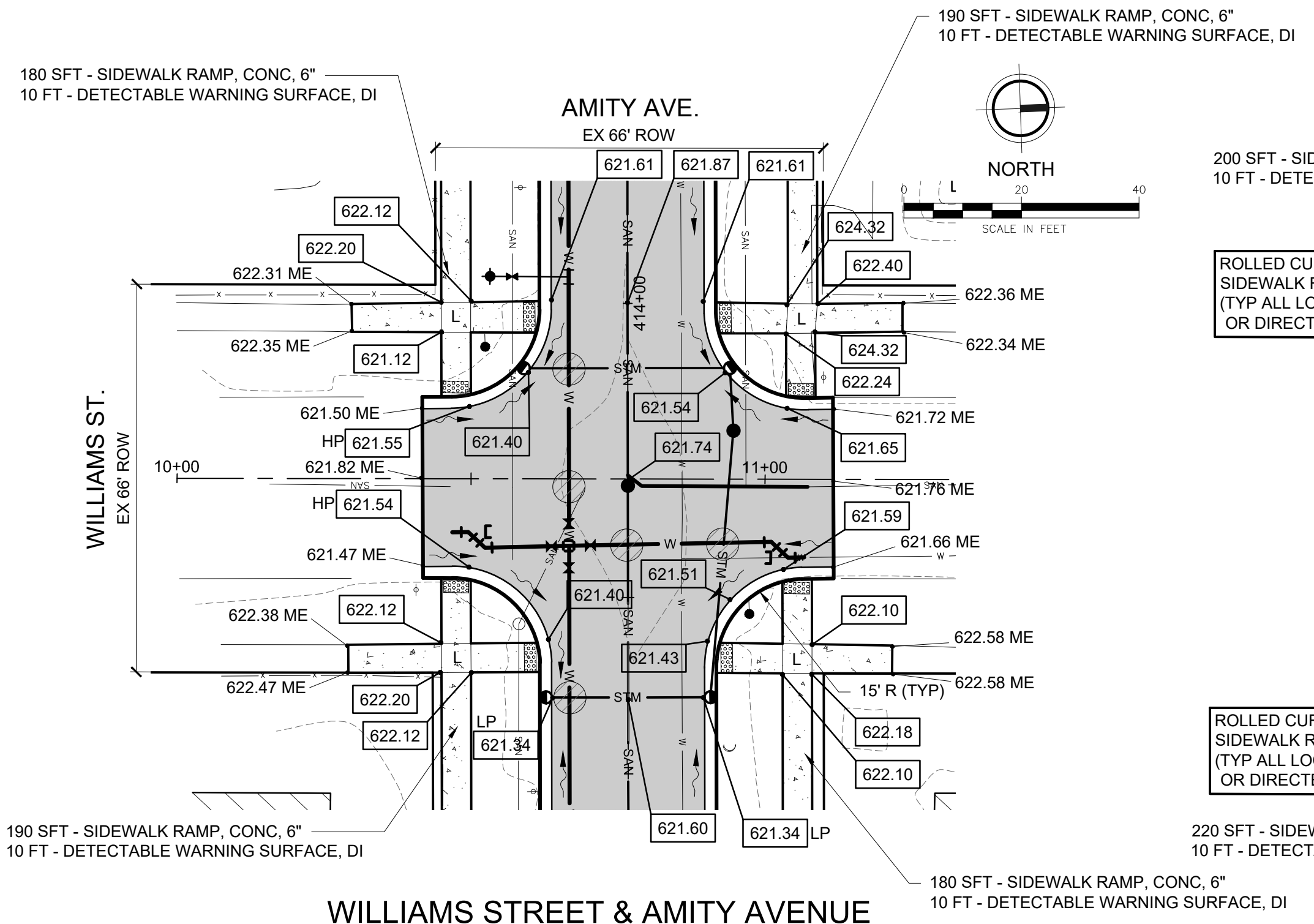
ALL SIDEWALK IS MIN 5' WIDTH UNLESS OTHERWISE SHOWN.

REVISION:

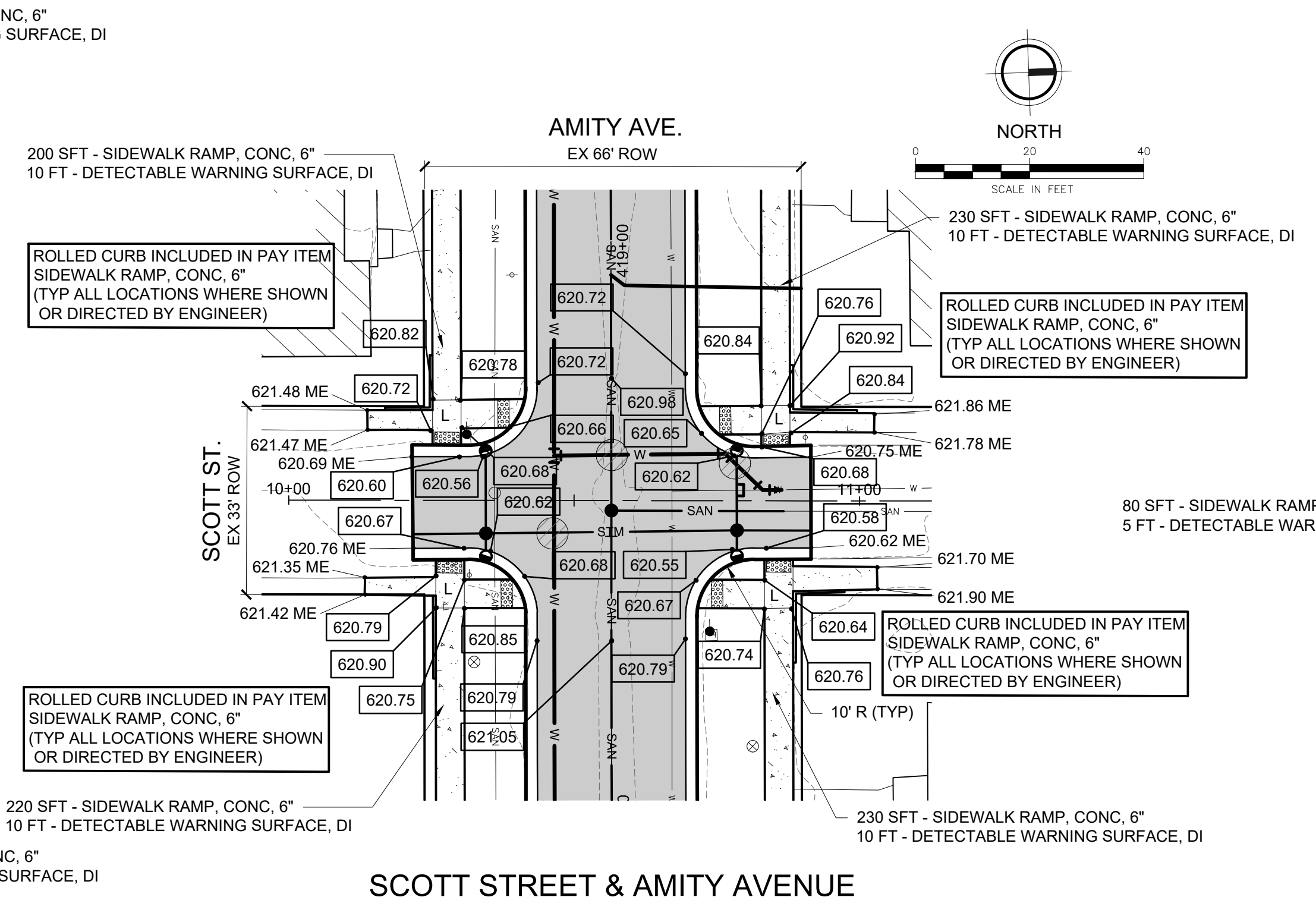
CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN
AMITY AVENUE IMPROVEMENTS
INTERSECTION DETAILS

DESIGN TEAM: []
PROJECT MGR: SMB
DESIGNED BY: RWT
DRAWN BY: JAD
CHECK BY: DJD 6/11/20
DRAWING INFORMATION:
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062420_peted

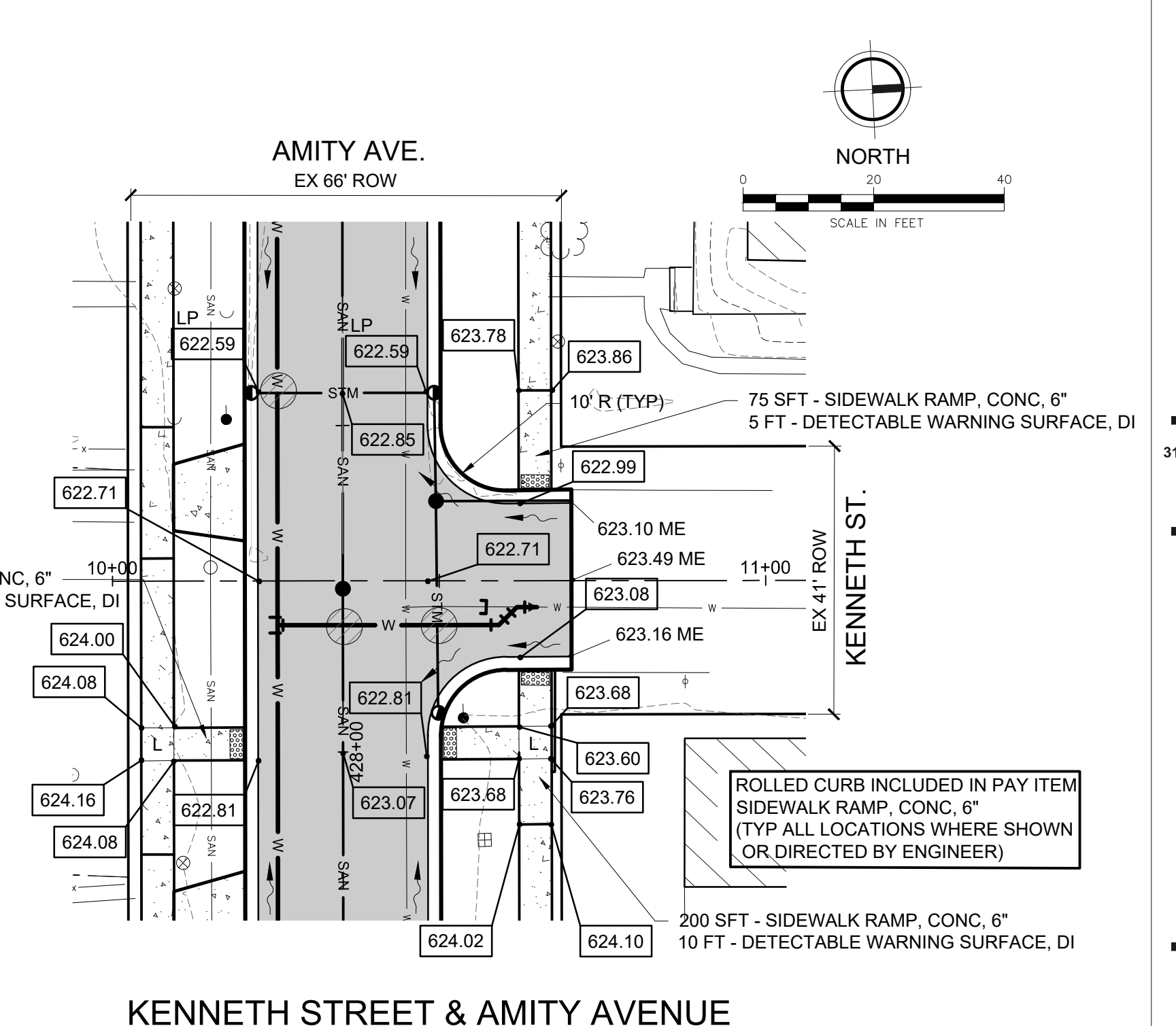
JUNE 2020
REV PROJECT NO.
842440



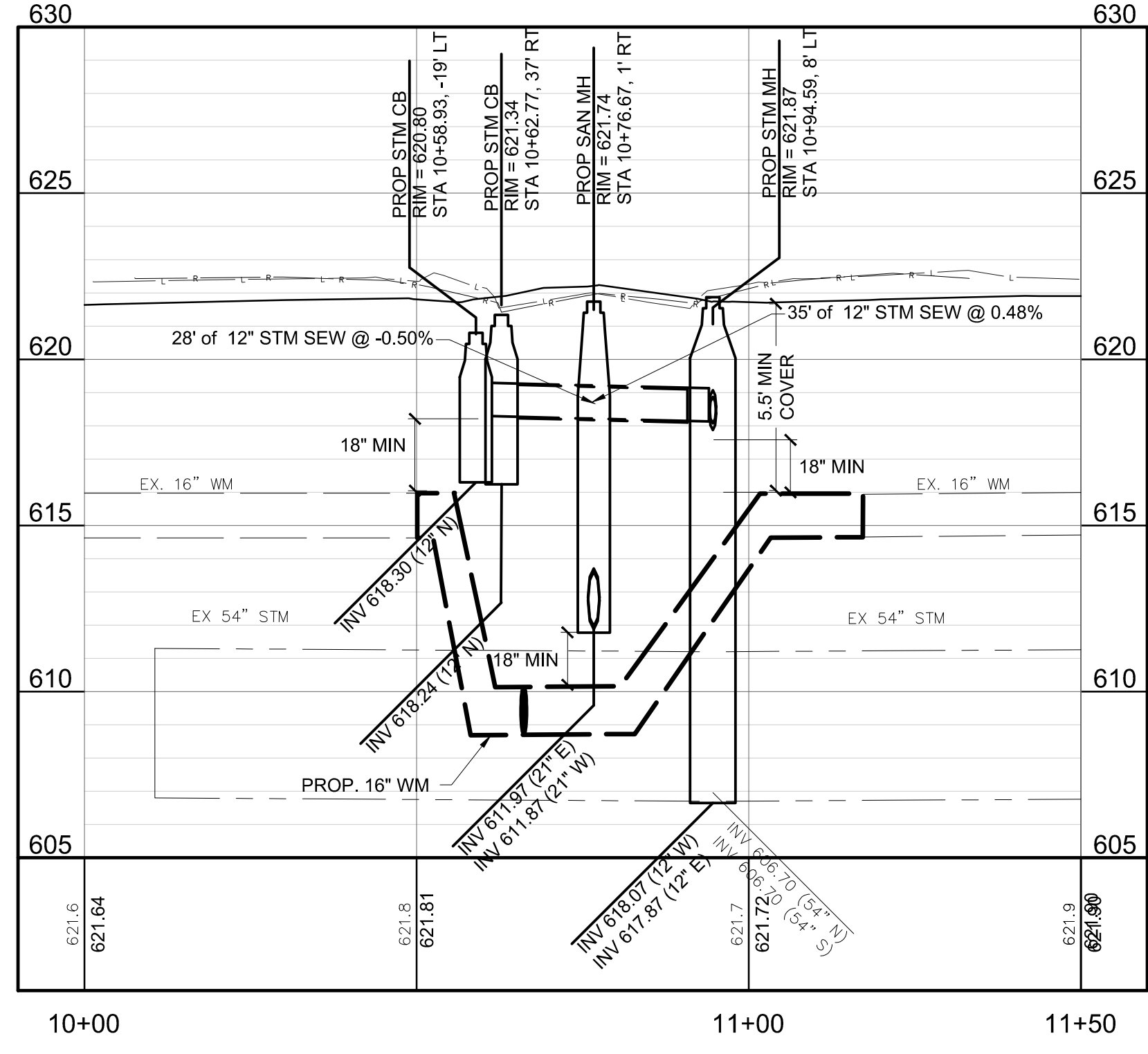
WILLIAMS STREET & AMITY AVENUE



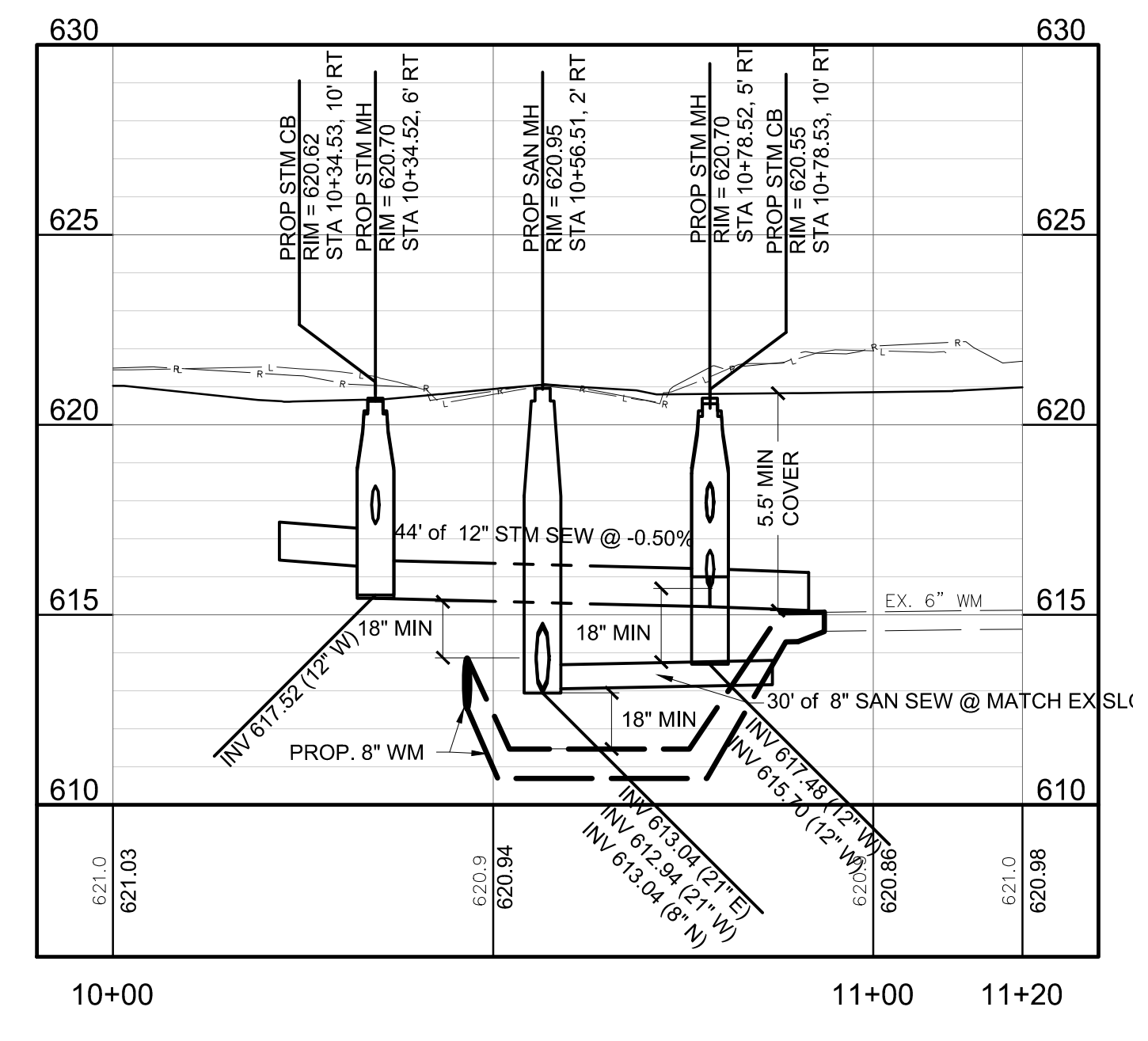
SCOTT STREET & AMITY AVENUE



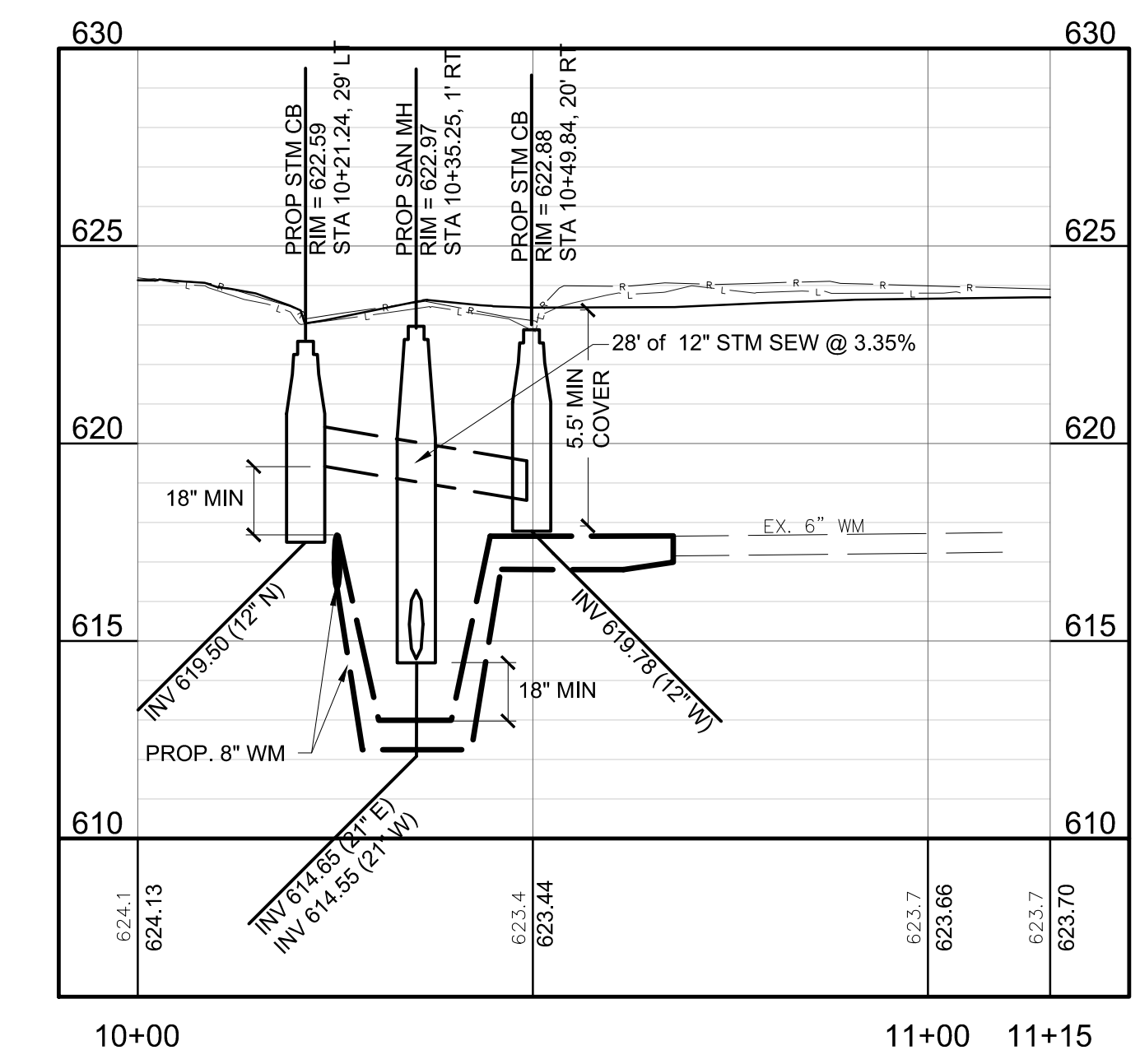
KENNETH STREET & AMITY AVENUE



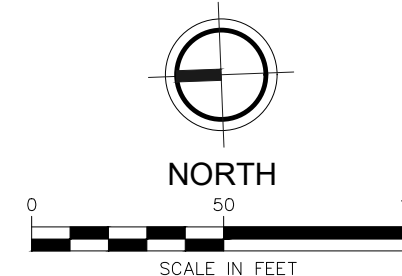
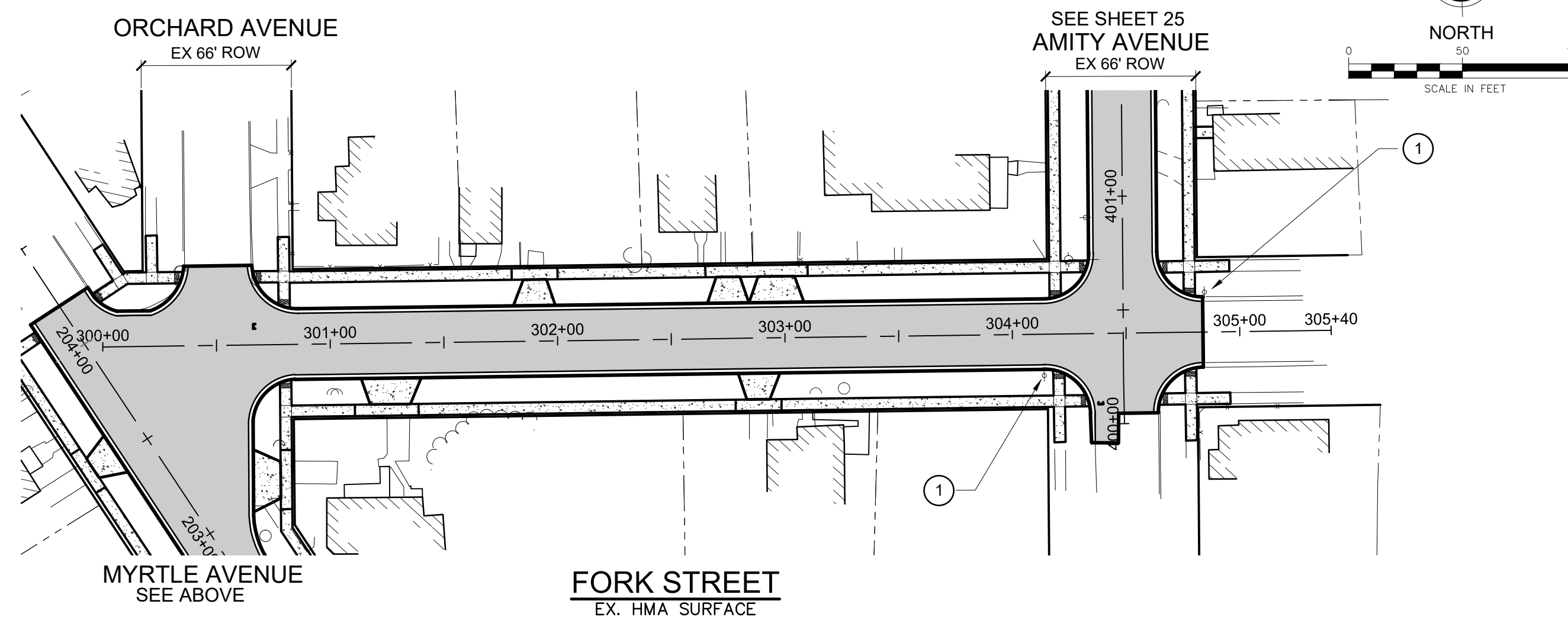
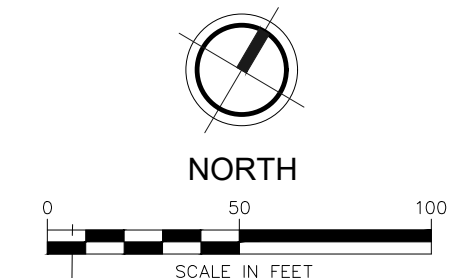
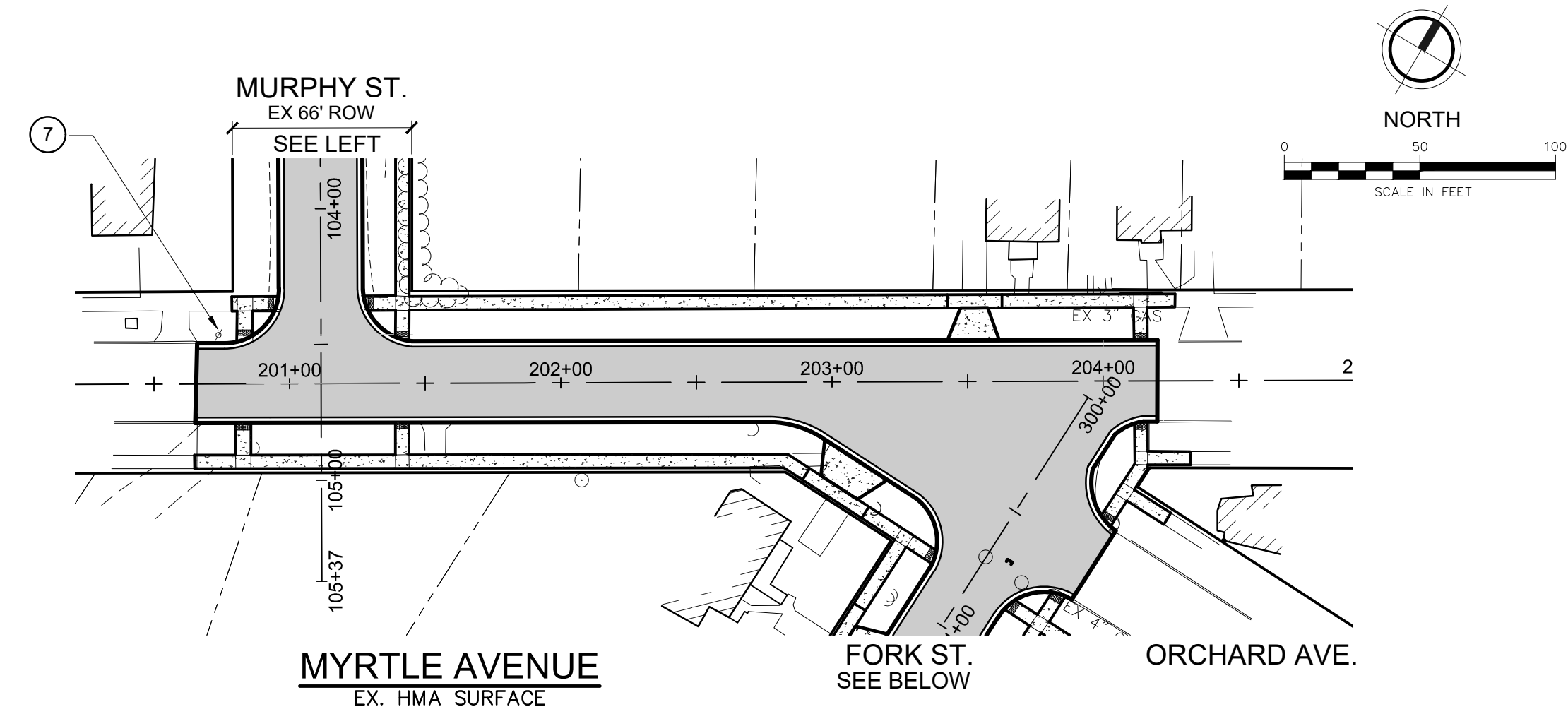
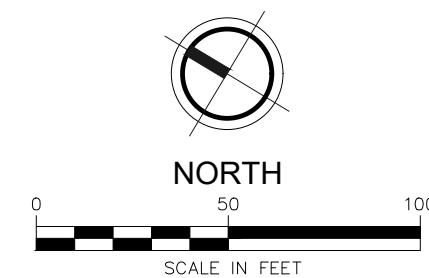
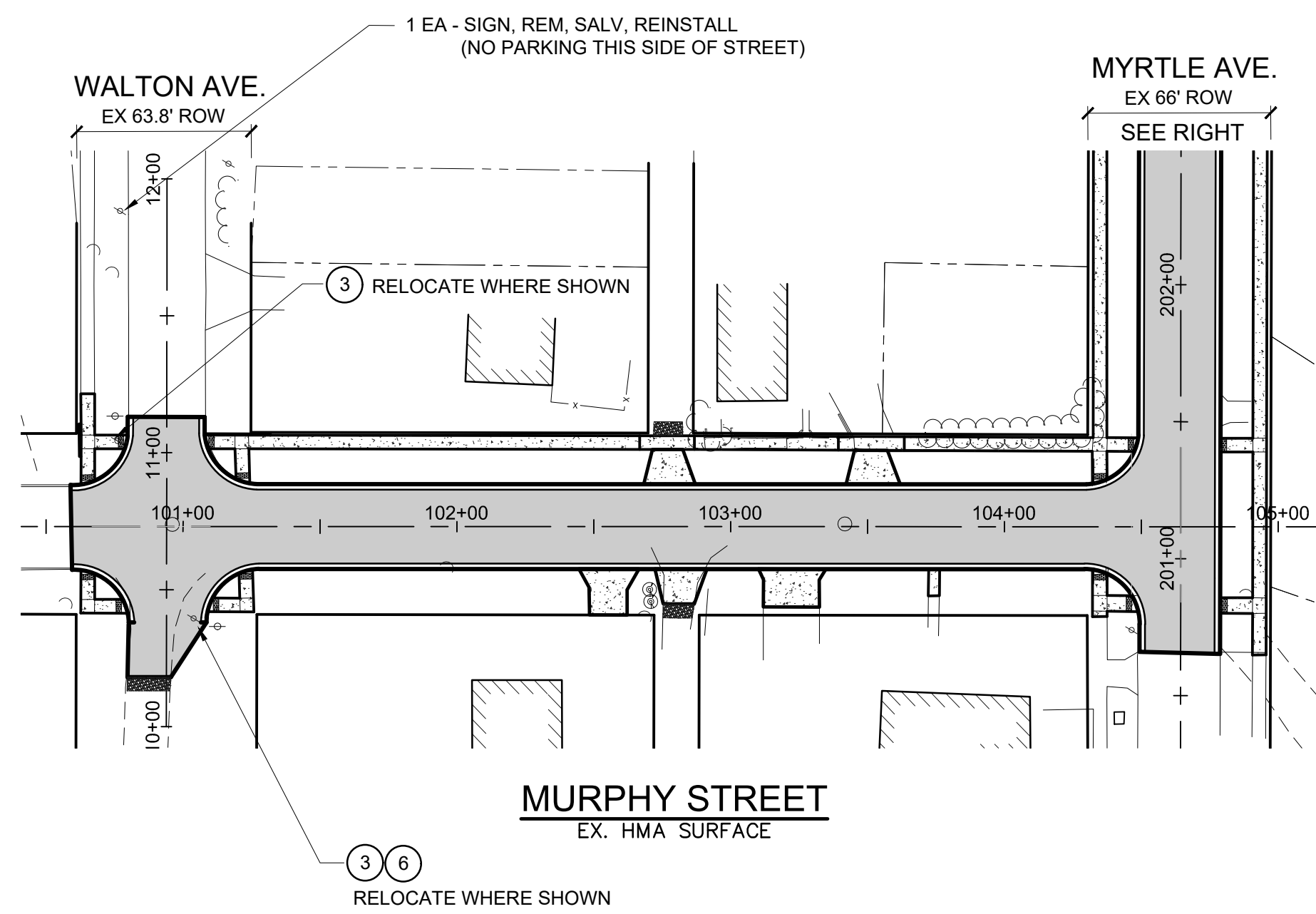
WILLIAMS STREET & AMITY AVENUE





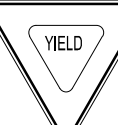





SCOTT STREET & AMITY AVENUE

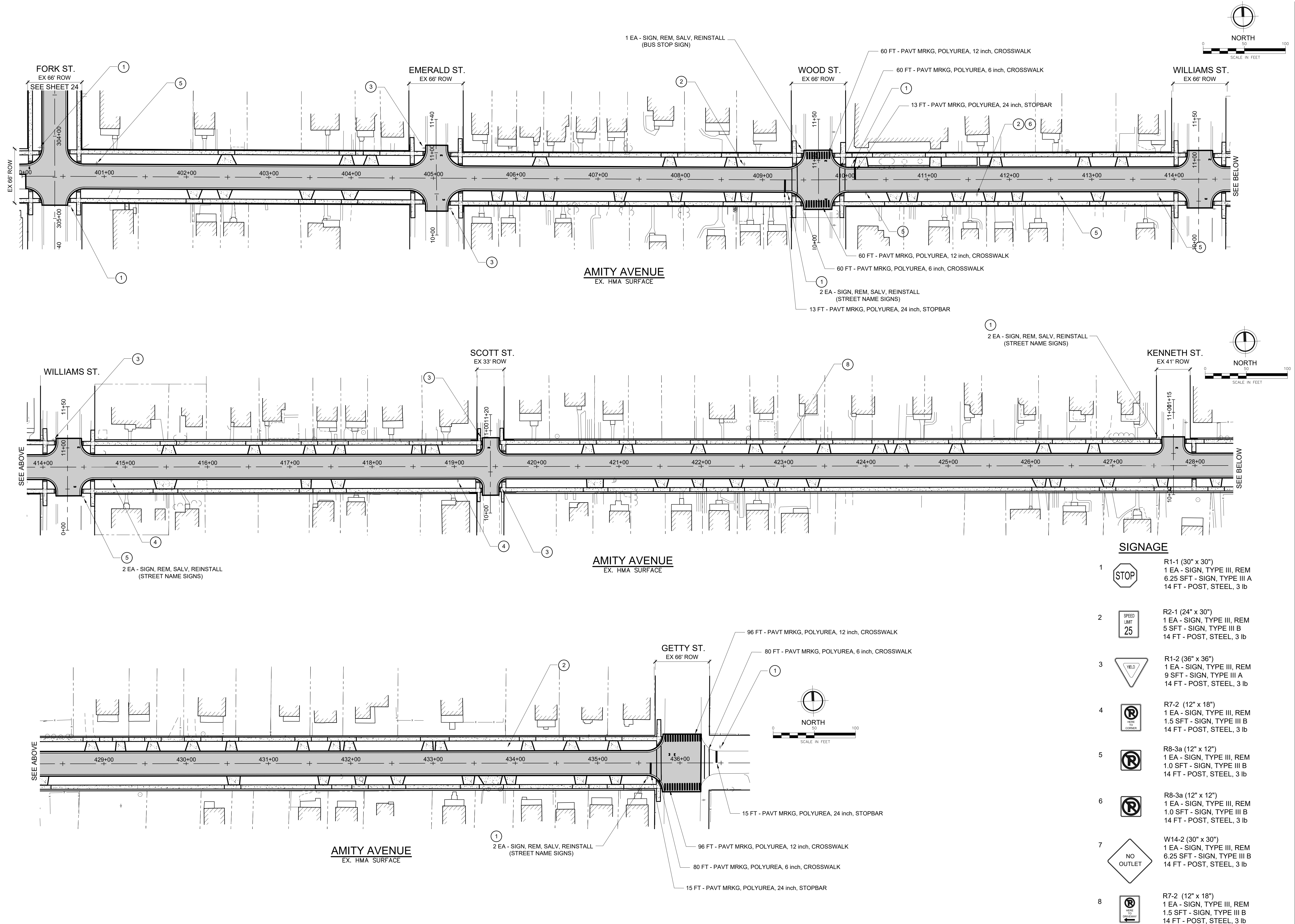


KENNETH STREET & AMITY AVENUE



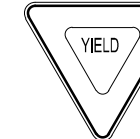







SIGNAGE

- 1  R1-1 (30" x 30")
1 EA - SIGN, TYPE III, REM
6.25 SFT - SIGN, TYPE III A
14 FT - POST, STEEL, 3 lb
- 2  R2-1 (24" x 30")
1 EA - SIGN, TYPE III, REM
5 SFT - SIGN, TYPE III B
14 FT - POST, STEEL, 3 lb
- 3  R1-2 (36" x 36")
1 EA - SIGN, TYPE III, REM
9 SFT - SIGN, TYPE III A
14 FT - POST, STEEL, 3 lb
- 4  R7-2 (12" x 18")
1 EA - SIGN, TYPE III, REM
1.5 SFT - SIGN, TYPE III B
14 FT - POST, STEEL, 3 lb
- 5  R8-3a (12" x 12")
1 EA - SIGN, TYPE III, REM
1.0 SFT - SIGN, TYPE III B
14 FT - POST, STEEL, 3 lb
- 6  R8-3a (12" x 12")
1 EA - SIGN, TYPE III, REM
1.0 SFT - SIGN, TYPE III B
- 7  W14-2 (30" x 30")
1 EA - SIGN, TYPE III, REM
6.25 SFT - SIGN, TYPE III B
14 FT - POST, STEEL, 3 lb
- 8  R7-2 (12" x 18")
1 EA - SIGN, TYPE III, REM
1.5 SFT - SIGN, TYPE III B
14 FT - POST, STEEL, 3 lb



SIGNAGE

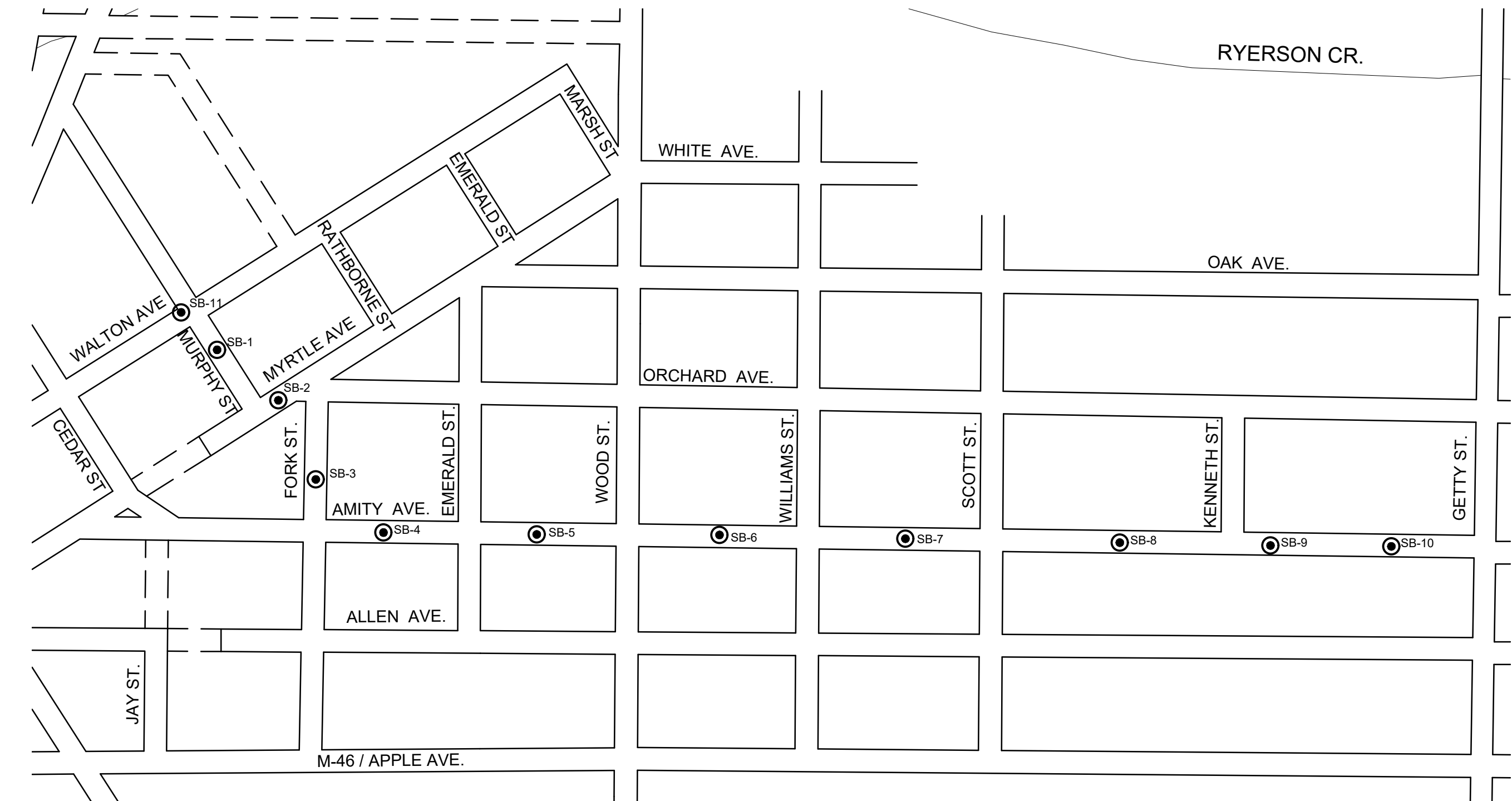
- 1  R1-1 (30" x 30")
1 EA - SIGN, TYPE III, REM
6.25 SFT - SIGN, TYPE III A
14 FT - POST, STEEL, 3 lb
- 2  R2-1 (24" x 30")
1 EA - SIGN, TYPE III, REM
5 SFT - SIGN, TYPE III B
14 FT - POST, STEEL, 3 lb
- 3  R1-2 (36" x 36")
1 EA - SIGN, TYPE III, REM
9 SFT - SIGN, TYPE III A
14 FT - POST, STEEL, 3 lb
- 4  R7-2 (12" x 18")
1 EA - SIGN, TYPE III, REM
1.5 SFT - SIGN, TYPE III B
14 FT - POST, STEEL, 3 lb
- 5  R8-3a (12" x 12")
1 EA - SIGN, TYPE III, REM
1.0 SFT - SIGN, TYPE III B
14 FT - POST, STEEL, 3 lb
- 6  R8-3a (12" x 12")
1 EA - SIGN, TYPE III, REM
1.0 SFT - SIGN, TYPE III B
14 FT - POST, STEEL, 3 lb
- 7  W14-2 (30" x 30")
1 EA - SIGN, TYPE III, REM
6.25 SFT - SIGN, TYPE III B
14 FT - POST, STEEL, 3 lb
- 8  R7-2 (12" x 18")
1 EA - SIGN, TYPE III, REM
1.5 SFT - SIGN, TYPE III B
14 FT - POST, STEEL, 3 lb

SOILS & STRUCTURES Borehole ID: TB-07 Sheet 1 of 1

Project Name: Amity Avenue Improvements Project Number: 2020.0021
 Project Location: Muskegon, Michigan Logged By: C Prell Reviewed By: R Beering
 Client: Fleis & VandenBrink Survey Datum: NAD 1983 StatePlane Michigan South Hole Depth: 15.00
 Date Started: Jan 29 2020 Completed: Jan 29 2020 Northing: 638154.8 Easting: 12626527.1 Elevation: 621.16
 Drilling Method: 3-1/4" Hollow Stem Auger Ground Water Levels
 Equipment: Diedrich D-50
 Hammer Type: Manual Hammer End of Drilling: Jan 29 2020 - Water Not Encountered

Depth	Graphic	Material Description	Cautionary Condition	Sample Type	Number	Recovery %	Blow Counts	N-Value	Shear Strength	Moisture Content (%)	Atterberg Limits	USCS
						RSD			(kN)	Liquid Limit	Plasticity Index	
1		ASPHALT - 1.00in										
2		CONCRETE - 5.0in										
3		AGGREGATE BASE (5.0 in) - Medium to Coarse Gravelly SAND, brown		SPT-A	67	3-4-4	8					SP
4		SAND - compact brown fine to coarse with a trace of gravel										
5				SPT-B	7	7-7-7	14					SP
6		SAND - slightly compact brown fine to coarse										
7				SPT-C	100	3-3-4	7					SP
8		SAND - compact brown fine to medium										
9				SPT-D	100	6-8-11	19					SP
10												
11				SPT-E	100	4-5-9	14					SP
12												
13												
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30												

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SOIL BORINGS LOCATION MAP NORTH N.T.S.

SOILS & STRUCTURES Borehole ID: TB-08 Sheet 1 of 1

Project Name: Amity Avenue Improvements Project Number: 2020.0021
 Project Location: Muskegon, Michigan Logged By: C Prell Reviewed By: R Beering
 Client: Fleis & VandenBrink Survey Datum: NAD 1983 StatePlane Michigan South Hole Depth: 15.00
 Date Started: Jan 29 2020 Completed: Jan 29 2020 Northing: 638140.3 Easting: 12627051.1 Elevation: 621.41
 Drilling Method: 3-1/4" Hollow Stem Auger Ground Water Levels
 Equipment: Diedrich D-50
 Hammer Type: Manual Hammer End of Drilling: Jan 29 2020 - Water Not Encountered

Depth	Graphic	Material Description	Cautionary Condition	Sample Type	Number	Recovery %	Blow Counts	N-Value	Shear Strength	Moisture Content (%)	Atterberg Limits	USCS
						RSD			(kN)	Liquid Limit	Plasticity Index	
1		ASPHALT - 3.5in										
2		AGGREGATE BASE (10.0in) - Coarse Sandy GRAVEL, gray										
3		SAND - brown with a trace of gravel and silt		SPT-A	100	4-3-3	6					SP
4		SAND - slightly compact brown fine to coarse with a trace of gravel										
5		SAND - compact brown fine		SPT-B	67	4-5-4	9					SP
6												
7				SPT-C	100	5-5-6	11					SP
8												
9				SPT-D	100	4-5-6	11					SP
10												
11												
12												
13												
14												
15				SPT-E	100	3-7-7	14					SP
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												

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SOILS & STRUCTURES Borehole ID: TB-09 Sheet 1 of 1

Project Name: Amity Avenue Improvements Project Number: 2020.0021
 Project Location: Muskegon, Michigan Logged By: C Prell Reviewed By: R Beering
 Client: Fleis & VandenBrink Survey Datum: NAD 1983 StatePlane Michigan South Hole Depth: 15.00
 Date Started: Jan 29 2020 Completed: Jan 29 2020 Northing: 638118.3 Easting: 12627796.2 Elevation: 623.71
 Drilling Method: 3-1/4" Hollow Stem Auger Ground Water Levels
 Equipment: Diedrich D-50
 Hammer Type: Manual Hammer End of Drilling: Jan 29 2020 - Water Not Encountered

Depth	Graphic	Material Description	Cautionary Condition	Sample Type	Number	Recovery %	Blow Counts	N-Value	Shear Strength	Moisture Content (%)	Atterberg Limits	USCS
						RSD			(kN)	Liquid Limit	Plasticity Index	
1		ASPHALT - 1.5in										
2		CONCRETE - 7.0in										
3		AGGREGATE BASE (4.0in) - Medium to Coarse Sandy GRAVEL, dark brown		SPT-A	53	3-2-2	4					SP
4		SAND - loose brown fine to coarse										
5		SAND - slightly compact brown fine		SPT-B	100	3-3-3	6					SP
6												
7		SAND - compact brown fine to coarse		SPT-C	100	5-5-6	11					SP
8												
9				SPT-D	100	5-7-8	15					SP
10												
11												
12												
13												
14		SAND - very compact brown fine to coarse										
15				SPT-E	67	6-8-13	21					SP
16												
17												
18												
19												
20												
21												
22												
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SOILS & STRUCTURES Borehole ID: TB-10 Sheet 1 of 1

Project Name: Amity Avenue Improvements Project Number: 2020.0021
 Project Location: Muskegon, Michigan Logged By: C Prell Reviewed By: R Beering
 Client: Fleis & VandenBrink Survey Datum: NAD 1983 StatePlane Michigan South Hole Depth: 15.00
 Date Started: Jan 29 2020 Completed: Jan 29 2020 Northing: 638105.5 Easting: 12628233.7 Elevation: 624.55
 Drilling Method: 3-1/4" Hollow Stem Auger Ground Water Levels
 Equipment: Diedrich D-50
 Hammer Type: Manual Hammer End of Drilling: Jan 29 2020 - Water Not Encountered

Depth	Graphic	Material Description	Cautionary Condition	Sample Type	Number	Recovery %	Blow Counts	N-Value	Shear Strength	Moisture Content (%)	Atterberg Limits	USCS
						RSD			(kN)	Liquid Limit	Plasticity Index	
1		ASPHALT - 1.5in										
2		CONCRETE - 6.0in										
3		AGGREGATE BASE (2.0in) - Medium to Coarse Sandy GRAVEL, dark brown		SPT-A	100	2-3-3	6					SP
4		SAND - slightly compact brown fine to coarse with a trace of gravel										
5		SAND - compact brown fine to coarse with a trace of gravel		SPT-B	67	2-2-3	5					SP
6												
7		SAND - slightly compact to compact fine		SPT-C	0	5-6-6	12					SP
8												
9				SPT-D	53	2-3-4	7					SP
10												
11												
12												
13												
14												
15				SPT-E	53	4-5-6	11					SP
16												
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SOILS & STRUCTURES Borehole ID: TB-11 Sheet 1 of 1

Project Name: Amity Avenue Improvements Project Number: 2020.0021
 Project Location: Muskegon, Michigan Logged By: C Prell Reviewed By: R Beering
 Client: Fleis & VandenBrink Survey Datum: NAD 1983 StatePlane Michigan South Hole Depth: 15.00
 Date Started: Jan 28 2020 Completed: Jan 28 2020 Northing: 638272.3 Easting: 12624425.3 Elevation: 594.97
 Drilling Method: 3-1/4" Hollow Stem Auger Ground Water Levels
 Equipment: Diedrich D-50
 Hammer Type: Manual Hammer End of Drilling: 3.50 on Jan 28 2020

Depth	Graphic	Material Description	Cautionary Condition	Sample Type	Number	Recovery %	Blow Counts	N-Value	Shear Strength	Moisture Content (%)	Atterberg Limits	USCS
						RSD						