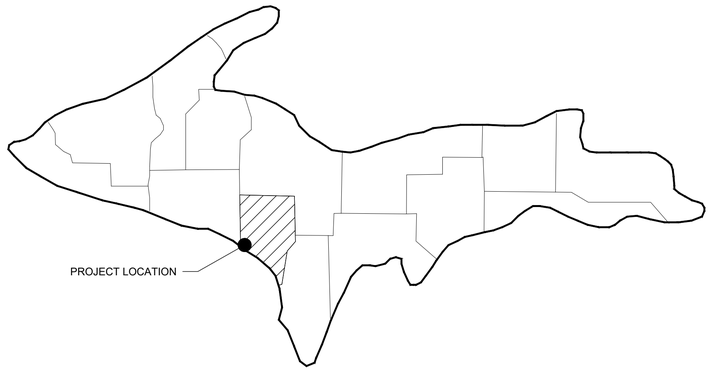
CITY OF KINGSFORD

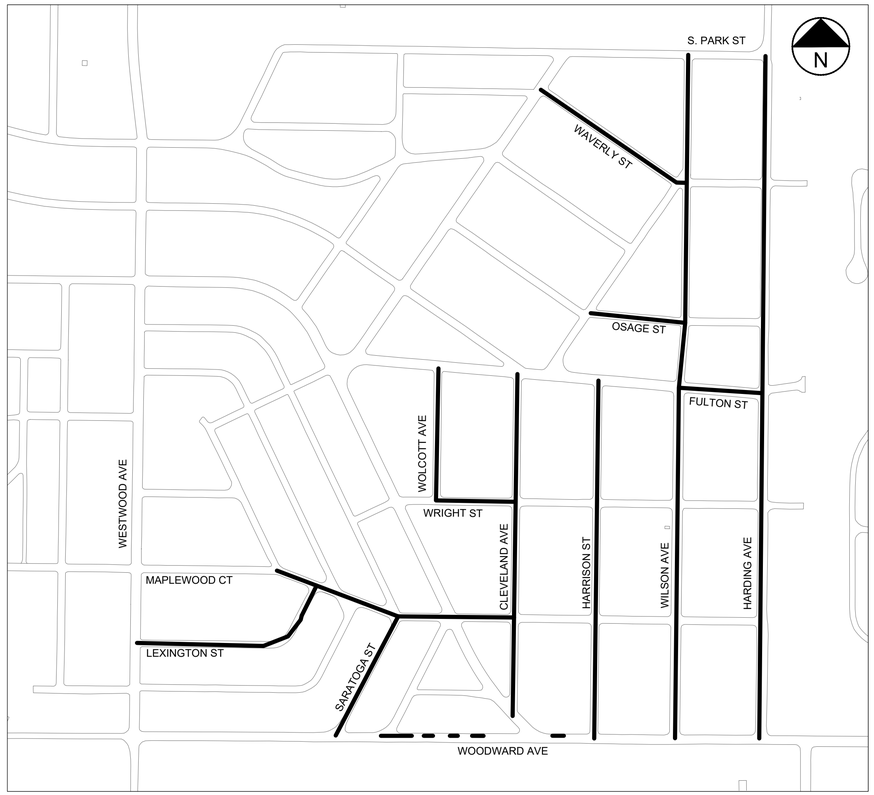
2023 KINGSFORD HEIGHTS WATERMAIN REPLACEMENT

KINGSFORD, MICHIGAN

GEI Consultants
617 N. Stephenson Ave Suite 110
Iron Mountain, MI 49801
906-828-9303
www.geiconsultants.com

GEI PROJECT NO.: 2001888





CITY OF KINGSFORD

CITY MANAGER
MIKE STELMASZEK

SUPERINTENDENT OF PUBLIC WORKS
JEFF DEMURI

NO.	DATE	ISSUE/REVISION	APP
D	03/08/2023	FOR BID	
C	02/28/2023	FOR PERMIT - REV. 1	
B	02/10/2023	FOR PERMIT	
A	12/16/2022	90 PERCENT DRAFT	

DWG. NO. 01-G-01

REV D

ARCHIVE #

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10		MAPLEWOOD COURT WATER REPLACEMENT PLAN AND PROFILE STA. 6+00 - 9+50	02-C-03
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13		WRIGHT STREET WATER REPLACEMENT PLAN AND PROFILE STA. 0+00 - 4+00	02-C-06
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15		SARATOGA STREET WATER REPLACEMENT PLAN AND PROFILE STA. 0+00 - 6+00	02-C-08
16		WOODWARD AVENUE WATER REPLACEMENT PLAN AND PROFILE STA. 0+00 - 4+50	02-C-09
17		HARRISON STREET WATER REPLACEMENT PLAN AND PROFILE STA. 0+00 - 7+50	02-C-10
18		HARRISON STREET WATER REPLACEMENT PLAN AND PROFILE STA. 7+00 - 14+50	02-C-11
19		WILSON AVENUE WATER REPLACEMENT PLAN AND PROFILE STA. 0+00 - 10+00	02-C-12
20		WILSON AVENUE WATER REPLACEMENT PLAN AND PROFILE STA. 10+00 - 18+50	02-C-13
21		WILSON AVENUE WATER REPLACEMENT PLAN AND PROFILE STA. 18+50 - 27+00	02-C-14
22		OSAGE STREET WATER REPLACEMENT PLAN AND PROFILE STA. 0+00 - 4+50	02-C-15
23		WAVERLY STREET WATER REPLACEMENT PLAN AND PROFILE 0+00 - 6+50	02-C-16
24		HARDING AVENUE WATER REPLACEMENT PLAN AND PROFILE STA. 0+00 - 10+00	02-C-17
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Checked By: BSF
Drawn By: JRR
Approved By: JRB

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SHEET 2

ARCHIVE #

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SYMBOLS

WATER SUPPLY SYSTEM

EXISTING	PROPOSED	DESCRIPTION
		FIRE HYDRANT
W	W	MANHOLE WATER
		U.G. WATER VALVE
CS&B	CS&B	CURB STOP & BOX
		POST INDICATOR VALVE
PW	PW	PRODUCTION WELL
MW	MW	MONITORING WELL
WELL	WELL	PRIVATE WELL
SPRINKLER	SPRINKLER	SPRINKLER
M	M	METER PIT
		WATER PLUG
ST	ST	STEAM MANHOLE

SANITARY SEWER SYSTEM

EXISTING	PROPOSED	DESCRIPTION
CO	CO	MANHOLE CLEANOUT
S	S	MANHOLE SANITARY
		TELEVISED LATERAL TAP LOCATION
		TELEVISED CAPPED LATERAL
		SEWER BULKHEAD

DRAINAGE UTILITIES

EXISTING	PROPOSED	DESCRIPTION
		CATCH BASIN (BEEHIVE)
		CATCH BASIN (ROUND)
		CATCH BASIN (SQUARE)
		CATCH BASIN (CURB INLET)
D	D	MANHOLE STORM
		END SECTION
IE	IE	INVERT ELEVATION

ELECTRICAL POWER

EXISTING	PROPOSED	DESCRIPTION
		ELECTICAL PEDESTAL
		LATTICE TOWER
		GUY POLE
		GUY ANCHOR
		LIGHT POLE
E	E	MANHOLE ELECTRIC
		POWER-LIGHT POLE
		POWER POLE
		LIGHT
P	P	POWER TRANSFORMER
		POWER PULLBOX
		SIGNAL LIGHTPOLE
SB	SB	SIGNALBOX PEDESTAL
		TRAFFIC SIGNAL POLE

MISCELLANEOUS

EXISTING	PROPOSED	DESCRIPTION
USPO	USPO	U.S. POST BOX
MB	MB	MAIL BOX
		GUARD POST/BOLLARD
F	F	FLAG POLE
		SIGN POST
GAS	GAS	GAS PUMP
		EROSION BALES
		HANDICAP

COMMUNICATION

EXISTING	PROPOSED	DESCRIPTION
C	C	CABLE PEDESTAL
F	F	FIBER PEDESTAL
T	T	TELEPHONE PEDESTAL
F	F	MANHOLE FIBER
T	T	MANHOLE TELEPHONE
		TELEPHONE POLE
		TELEPHONE BOOTH

NATURAL GAS

EXISTING	PROPOSED	DESCRIPTION
G	G	NATURAL GAS METER
		UG NATURAL GAS VALVE
G	G	NATURAL GAS MANHOLE

VEGETATION

EXISTING	PROPOSED	DESCRIPTION
		BUSH OR SHRUB
		STUMP
		DECIDUOUS TREES
		CONIFEROUS TREES
		Wetlands

LINETYPES

WATER SUPPLY SYSTEM

EXISTING	PROPOSED	DESCRIPTION
X–WS	WS	UG WATER SERVICE X"
EXIST–X–WM	X–DI–WM	UG WATERMAIN X"
ABAN–EX–WM	ABAN–EX–WM	ABANDONED UG WATERMAIN

SANITARY SEWER SYSTEM

EXISTING	PROPOSED	DESCRIPTION
SAN	SAN	UG SANITARY SEWER MAIN (FLOW ARROW)
EX–SAN	X–PVC–SAN	UG SANITARY SEWER MAIN
EXIST–X–FM	PROP–X–FM	UG SANITARY FORCE MAIN - X"
LAT	LAT	UG SANITARY SEWER LATERAL
		SEPTIC TANK OUTLINE
		DRAIN FIELD OUTLINE

DRAINAGE UTILITIES

EXISTING	PROPOSED	DESCRIPTION
STM	STM	UG STORM MAIN
		UNDER DRAIN (DRAIN TILE)
		CULVERT LINE
		BOX CULVERT
		CULVERT HEAD OR WING WALL
		DRAINAGE BASIN OUTLINE
		DRAINAGE BASIN (EDGE OF WATER)

EROSION CONTROL

EXISTING	PROPOSED	DESCRIPTION
		SILT FENCE

ELECTRICAL POWER

EXISTING	PROPOSED	DESCRIPTION
ELEC	ELEC	UG ELECTRICAL
OVHD	OVHD	OVERHEAD ELECTRICAL

NATURAL GAS

EXISTING	PROPOSED	DESCRIPTION
NGAS	NGAS	UG NATURAL GAS

COMMUNICATION

EXISTING	PROPOSED	DESCRIPTION
PHONE	PHONE	UG PHONE
AERIAL_PHONE	AERIAL_PHONE	OVERHEAD PHONE
CATV	CATV	UG CABLE TV
OH_CATV	OH_CATV	OVERHEAD CABLE TV
FIBER	FIBER	UG FIBER OPTIC

MISCELLANEOUS

EXISTING	PROPOSED	DESCRIPTION
X	X	FENCE LINE
		TREE LINE

ABBREVIATIONS

ABUT	ABUTMENTS	HWY	HIGHWAY
AGG	AGGREGATE	HYD	HYDRANT
ASPH	ASPHALT	IE	INVERT ELEVATION
B TO B	BACK TO BACK	IGLD	INTERNATIONAL GREAT LAKES DATUM
BM	BENCH MARK	IL	INLET
BS	BACKSLOPE	IN	INCH
B/C	BACK OF CURB	INSP	INSPECTION
BIT	BITUMINOUS	INTER	INTERSECTION
BR	BRIDGE	LB	POUND
CL	CENTERLINE	LEVCSE	LEVEL COURSE
C&G	CURB & GUTTER	LFT	LINEAL FEET
CB	CATCH BASIN	LLV	LONG LEGNTH VERTICAL
CI	CAST IRON PIPE	LSUM	LUMP SUM
CO	SANITARY SEWER CLEANOUT	LWL	LOW WATER LEVEL
CSP	CORRUGATED STEEL PIPE	MH	MANHOLE
C-C	CENTER TO CENTER	MAINT	MAINTENANCE
CEN	CENTER	MGD	MILLION GALLONS PER DAY
CIP	COMPACTED IN PLACE	MON	MONUMENT
CMP	CORRUGATED METAL PIPE	NGVD	NATIONAL GEODETIC VERTICAL DATUM
CNTY	COUNTY	OC	ON CENTER
COMB	COMBINED	OF	OVERFLOW
COMP	COMPACTED	OH	OVERHEAD
CONC	CONCRETE	PL	PROPERTY LINE
CONST	CONSTRUCT	PP	POWER POLE
COR	CORNER	PAVT	PAVEMENT
CORR	CORRUGATED	PROJ	PROJECT
CR	CREEK	PPTY	PROPERTY
CTE	CONNECT TO EXISTING	PROP	PROPOSED
CULV	CULVERT	RB	ROUND BOTTOM
CYD	CUBIC YARDS	RR	RAILROAD
CS&B	CURB STOP AND BOX	RCP	REINFORCED CONCRETE PIPE
DIP	DUCTILE IRON PIPE	RDY	ROADWAY
DEFL	DEFLECTION	REINF	REINFORCING OR REINFORCEMENT
DET	DETAIL	ROW	RIGHT OF WAY
DR	DRIVE	SG	SUBGRADE
DWY	DRIVEWAY	SW	SIDEWALK
EG	EARTHGRADE	SALV	SALVAGED
EGL	ENERGY GRADE LINE	SAN	SANITARY SEWER
EL	ELEVATION	SXN	SECTION
ELEC	ELECTRIC	SEC	SECTION (LAND SURVEY)
ELEV	ELEVATION	SEW	SEWER
EMB	EMBANKMENT	SFT	SQUARE FEET
ENC	ENCASED	SHLD	SHOULDER
ENG	ENGINEER	SIG	SIGNAL
EX	EXISTING	SPC	SPECIAL
EXC	EXCAVATION	SPEC	SPECIFICATIONS
EXIST	EXISTING	SPECPROV	SPECIAL PROVISIONS
EXP	EXPANSION	STDSPEC	STANDARD SPECIFICATIONS
FL	FLOW LINE	STM	STORM SEWER
FM	FORCE MAIN	SUB	SUBBASE
F/C	FACE CURB	SURF	SURFACE
F-F	FACE TO FACE OF CURB	SYD	SQUARE YARDS
FL	FLOOR	TCSE	TOP COURSE
FT	FOOT/FEET	TDH	TOTAL DYNAMIC HEAD
FTG	FOOTING	TRANS	TRANSMISSION
GDE	GRADE	TWP	TOWNSHIP
GR	GUARD RAIL	TYP	TYPICAL
GAL	GALLONS	UG	UNDERGROUND
GPD	GALLONS PER DAY	UNIF	UNIFORM
GPM	GALLONS PER MINUTE	VFT	VERTICAL FEET
HDW	HEADWALL	VCP	VITRIFIED CLAY PIPE
HGL	HYDRAULIC GRADE LINE	WM	WATER MAIN
HWL	HIGH WATER LEVEL	WS	WATER SERVICE

DRAWING NUMBER DESIGNATION

15-C-1

- STRUCTURE IDENTIFIER
- DISCIPLINE IDENTIFIER
- SHEET REFERENCE NUMBER

DISCIPLINE IDENTIFER

DISCIPLINE	DISCIPLINE IDENTIFIER
GENERAL	G
KEY PLAN	K
INSTRUMENTATION	I
REMOVAL	R
CIVIL	C
STRUCTURAL	S
ARCHITECTURAL	A
MECHANICAL/PROCESS	M
ELECTRICAL	E
PLUMBING	P
DETAILS	D

NOTES:

1. STRUCTURE IDENTIFIER SHALL BE 01 FOR GENERAL PLAN SHEETS.
2. STRUCTURE IDENTIFIER SHALL BE 02 FOR CIVIL UNDERGROUND UTILITY WORK.
3. STRUCTURE IDENTIFIER SHALL BE 99 FOR STANDARD DETAILS.

HATCH LEGEND

MATERIAL DESCRIPTION	PROPOSED WORK PATTERN
ASPHALT PAVEMENT	
CONCRETE SIDEWALK	
SOD/GRASS	
SEED/MULCH/FERTILIZER	
TURF/SOIL/MATERIAL	
COLD MILLING ASPHALT PAVEMENT	
GRAVEL DRIVEWAY / ROAD	

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LEGEND

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Checked By:	BSF
Drawn By:	JRR
Approved By:	JRB

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SHEET 3

ARCHIVE #

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CONSTRUCTION NOTES (APPLICABLE TO ALL SHEETS):

1. ALL PIPING, VALVES, FITTINGS, AND ASSOCIATED APPURTENANCES SHALL BE STOCKPILED SUCH THAT THEY DO NOT INTERFERE WITH THE SAFE AND FREE MOVEMENT OF TRAFFIC. IF EQUIPMENT USES OR OBSTRUCTS ANY PORTION OF PUBLIC ROADWAYS DURING THE PERFORMANCE OF THE WORK, PROPER TRAFFIC CONTROL (INCLUDING FLAG PERSONS) SHALL BE REQUIRED. SEE SPECIFICATION SECTION 01750.

2. AT NO TIME SHALL EXCAVATED MATERIAL(S) OR IMPORTED MATERIAL(S) BE STOCKPILED ON PAVED ROADWAY SURFACES. IF THE PAVED ROADWAY SURFACE IS DAMAGED BY THE CONTRACTOR AS A RESULT OF STOCKPILING EXCAVATED MATERIAL(S) OR IMPORTED MATERIAL(S) ON PAVED ROADWAY SURFACES, THE CONTRACTOR SHALL BE REQUIRED TO REPAIR THE PAVED ROADWAY SURFACE AT NO ADDITIONAL COST TO THE OWNER.

3. AT NO TIME SHALL TRACK EQUIPMENT BE PERMITTED TO TRAVEL ON OR ACROSS PAVED ROADWAY SURFACES WITHOUT PROVIDING ADEQUATE PROTECTION BETWEEN THE TRACKS AND PAVED ROADWAY SURFACE. IF THE PAVED ROADWAY SURFACE IS DAMAGED BY FAILURE TO PROVIDE ADEQUATE PROTECTION BETWEEN THE TRACKS AND PAVED ROADWAY SURFACE, THE CONTRACTOR SHALL BE REQUIRED TO REPAIR THE PAVED ROADWAY SURFACE AT NO ADDITIONAL COST TO THE OWNER.

4. CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORT AND BRACING DURING EXCAVATION, DEWATERING, AND BACKFILLING OPERATIONS TO PROTECT THE STRUCTURAL INTEGRITY OF ALL CURBING, SHOULDERS, SEWERS, PAVED AREAS, AND UTILITIES LOCATED WITHIN THE PUBLIC ROAD RIGHT-OF-WAY. SHEETING AND BRACING SHALL BE REQUIRED WHEN ANY EXCAVATION IS LOCATED WITHIN THE 1-ON-1 SLOPE FROM THE SHOULDER POINT OR BACK OF CURB TO THE BOTTOM OF ANY EXCAVATION.

5. SAFETY REQUIREMENTS SHALL BE CONFORMED TO AND ALL OPERATIONS SHALL BE CONDUCTED SO AS NOT TO DAMAGE, DESTROY, OR ENDANGER THE INTEGRITY OF THE ROADWAY PAVEMENT STRUCTURE. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE CONDUCTED IN ACCORDANCE WITH MIOSHA SAFETY RULES AND REGULATIONS.

6. THE CONTRACTOR SHALL PROVIDE TEMPORARY ACCESS TO PRIVATE DRIVES AND PUBLIC ALLEYS DURING EVENINGS, WEEKENDS, HOLIDAYS, AND DURING ANY OTHER TIME WHEN NO CONSTRUCTION ACTIVITY IS OCCURRING IN THE IMMEDIATE AREA.

7. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS AND BURY DEPTHS OF ALL UTILITY CROSSINGS, INCLUDING WATERMAINS, WATER LATERALS, STORM SEWERS, CULVERTS, UNDERGROUND PHONE LINES, FIBER OPTIC LINES, AND NATURAL GAS LINES. THE LOCATIONS AND DEPTHS SHOWN ON THE PLAN SHEETS ARE APPROXIMATE.

8. REFER TO SECTION 01010 - PROJECT SUMMARY AND WORK SEQUENCE FOR WORK TO BE PERFORMED BY OTHERS UNDER SEPARATE CONTRACT.

9. CONTRACTOR SHALL MAINTAIN ACCESS TO BUSINESSES AND PROVIDE ACCESS TO RESIDENCE WITHIN THE PROJECT INFLUENCE AT ALL TIMES.

10. CROSSINGS ON PLAN AND PROFILE SHEETS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY AND CONTRACTOR SHALL NOT RELY ON ACCURACY. CROSSINGS SHALL BE LOCATED AND VERIFIED VIA THE MISS-DIG SYSTEM.

11. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ATTACHED SPECIFICATION SECTION 02512 - WATER DISTRIBUTION SYSTEM, EGLE CONSTRUCTION PERMIT AND MDOT PERMIT REQUIREMENTS. ANY WORK NOT COVERED IN THE SPECIFICATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST REVISION OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION.

12. QUANTITIES ARE APPROXIMATE AND ARE TO BE USED FOR COMPARING BIDS.

13. TOPSOIL, SEED, AND MULCH ALL DISTRIBUTED AREAS PER SPECIFICATIONS. ALL DISTRIBANCES IN DITCHES SHALL BE RESTORED WITH SOD. CONTRACTOR IS RESPONSIBLE TO WATER GRASS / SOD AND MAINTAIN LANDSCAPING UNTIL IT IS FULLY ESTABLISHED.

14. THE CONTRACTOR SHALL NOT BE PERMITTED TO PERFORM SITE CLEARING AND GRUBBING OUTSIDE OF THE LIMITS INDICATED ON THE DRAWINGS.

15. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS OF SANITARY LATERALS, STORM SEWER LATERALS, AND WATER SERVICES. THE LOCATIONS SHOWN ON THE PLAN SHEETS ARE APPROXIMATE.

16. CONTRACTOR IS RESPONSIBLE TO ESTABLISH A PICKUP LOCATION WITH GARBAGE COLLECTION COMPANY AND ENSURE THAT ALL GARBAGE IS IN SAID LOCATION AT THE PROPER TIME. THIS ONLY APPLIES WHEN ROAD IS UNDER CONSTRUCTION AND THE GARBAGE COLLECTION COMPANY CANNOT ACCESS THE GARBAGE.

SOIL EROSION AND SEDIMENTATION CONTROL NOTES (APPLICABLE TO ALL SHEETS):

1. CONTRACTOR SHALL TAKE ADDITIONAL PRECAUTIONS WITH CONSTRUCTION METHODS, EQUIPMENT, AND MATERIALS TO PREVENT SEDIMENT, CONTAMINATED STORM WATER, AND UNTREATED DEWATERING DISCHARGE FROM ENTERING WATER BODIES.

2. THE CONTRACTOR SHALL INSTALL PROTECTIVE FILTER FABRIC OVER STORM SEWER INLETS IN ALL AREAS OF SOIL DISTURBING ACTIVITIES PRIOR TO CONSTRUCTION AND REMOVE ALL FABRIC AFTER COMPLETION OF THE PROJECT.

3. THE CONTRACTOR SHALL BE REQUIRED TO STRICTLY ADHERE TO THE SOIL EROSION AND SEDIMENTATION CONTROL REQUIREMENTS AS SPECIFIED IN THE PROJECT MANUAL.

4. THE CONTRACTOR SHALL NOT DISPOSE OF ANY MATERIAL, TEMPORARILY OR PERMANENTLY, IN ANY WETLAND, FLOODPLAIN, LAKE, POND, STREAM, OR RIVER.

WATERMAIN CONSTRUCTION NOTES (APPLICABLE TO ALL SHEETS):

1. WHERE SERVICE TO THE EXISTING DISTRIBUTION SYSTEM MUST BE DISRUPTED IN ORDER TO CUT IN TEES OR DO SIMILAR WORK, ARRANGEMENTS WILL BE MADE AT LEAST 48 HOURS IN ADVANCE WITH THE OWNER TO SHUT DOWN THE REQUIRED PORTION OF THE DISTRIBUTION SYSTEM.

2. THE CONTRACTOR WILL BE RESPONSIBLE FOR ASSURING THAT HIS METHODS OF CONSTRUCTION ARE IN ACCORDANCE WITH THE ACCEPTED INDUSTRY PRACTICES AND STANDARDS AS SET FORTH BY THE AMERICAN WATER WORKS ASSOCIATION, THE REQUIREMENTS SET FORTH HEREIN, AND DETERMINATION MADE BY THE ENGINEER.

3. ALL DUCTILE IRON WATERMAIN SHALL HAVE A MINIMUM DEPTH OF BURY OF 7.0' AND ALL PVC OR HDPE WATERMAIN SHALL HAVE A MINIMUM DEPTH OF BURY OF 9.0'. IF THE CONTRACTOR IS NOT ABLE TO ATTAIN A MINIMUM DEPTH OF BURY, CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER TO REDUCE THE DEPTH REQUIREMENTS AND APPLY INSULATION PER THE DETAILS AND SPECIFICATIONS.

4. CONTRACTOR SHALL BE REQUIRED TO MAINTAIN A MINIMUM 10' SEPARATION FROM SANITARY SEWERS AND A 5' SEPARATION FROM STORM SEWERS.

5. CONTRACTOR SHALL PERFORM PRESSURE AND LEAKAGE TESTING, CLEANING, DISINFECTION, AND BACTERIAL TESTING IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

SANITARY/STORM SEWER CONSTRUCTION NOTES (APPLICABLE TO ALL SHEETS):

1. THE CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING SEWERS TO BE CONNECTED TO PRIOR TO CONSTRUCTION STAKING.

2. CONTRACTOR SHALL PROVIDE 48 HOURS NOTICE TO THE ENGINEER PRIOR TO ANY TESTING OF SANITARY SEWERS.

3. MINIMUM VERTICAL SEPARATION BETWEEN ALL UTILITY PIPES SHALL BE EIGHTEEN INCHES (18").

4. SEWER PIPE IS MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE. THEREFORE, DISTANCES INDICATED ON THE PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT AND MANHOLE DIMENSIONS.

5. BEDDING OF SEWER MAIN SHALL CONFORM TO THE TRENCH DETAILS INCLUDED IN THESE DRAWINGS.

6. CONTRACTOR SHALL FURNISH TO THE ENGINEER "AS-BUILT" CONSTRUCTION DRAWINGS UPON CONCLUSION OF THE CONSTRUCTION, SHOWING LOCATION OF ALL WYES AND REPAIR LOCATIONS.

7. MANHOLE RIMS AND/OR CATCH BASINS SHALL BE SET AT AN ELEVATION RELATIVE TO THE PAVEMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING RIM ELEVATIONS PRIOR TO MANHOLE PLACEMENT AND MAKE FINAL ADJUSTMENTS PRIOR TO PLACING HMA PAVEMENT.

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GENERAL NOTES AND SPECIFICATIONS

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SHEET 4

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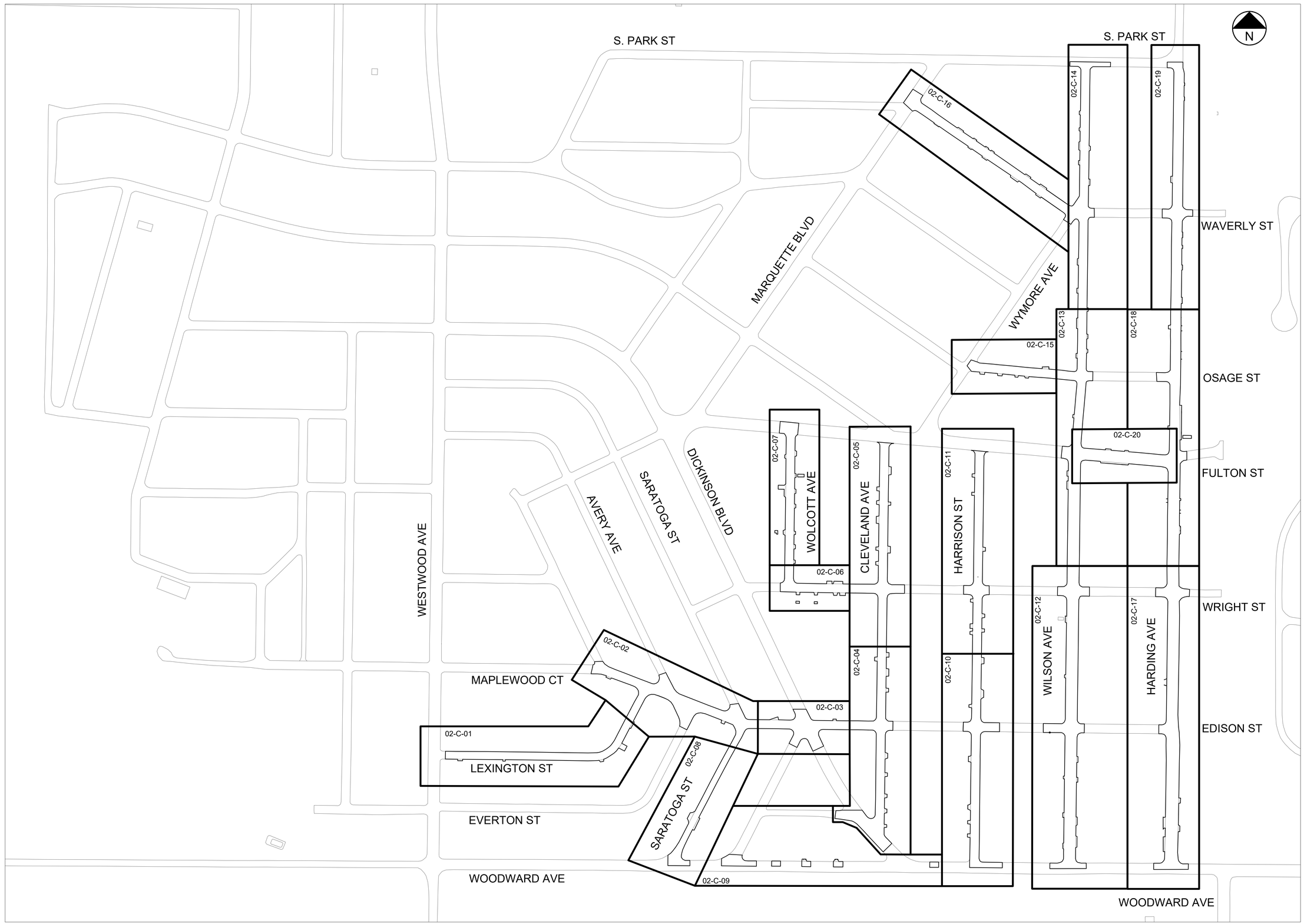

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KEY PLAN

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SHEET 5
ARCHIVE #

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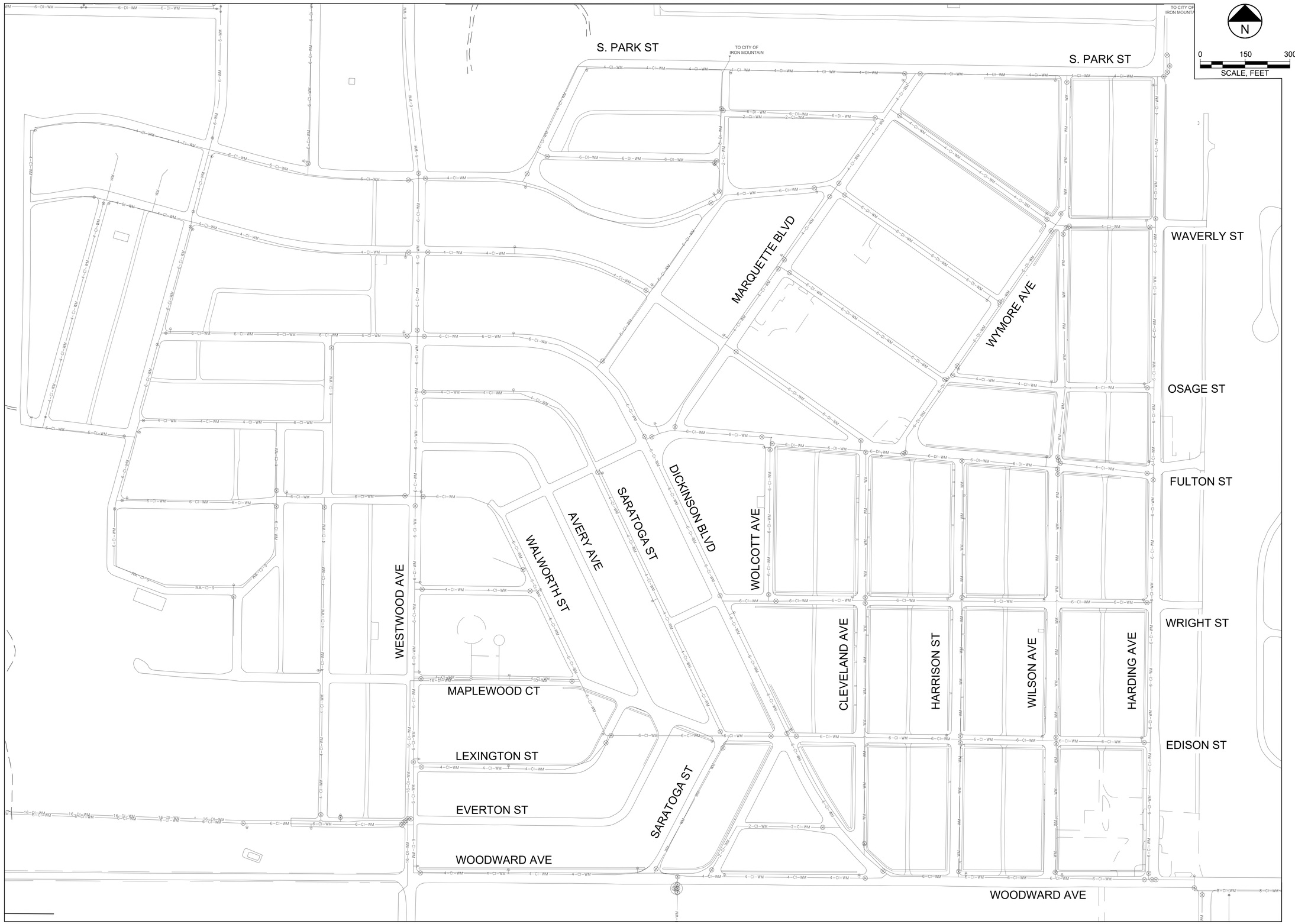

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GEI Consultants
617 N. Stephenson Ave Suite 110
Iron Mountain, MI 49801
906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

EXISTING WATER MAIN AND VALVE MAP

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

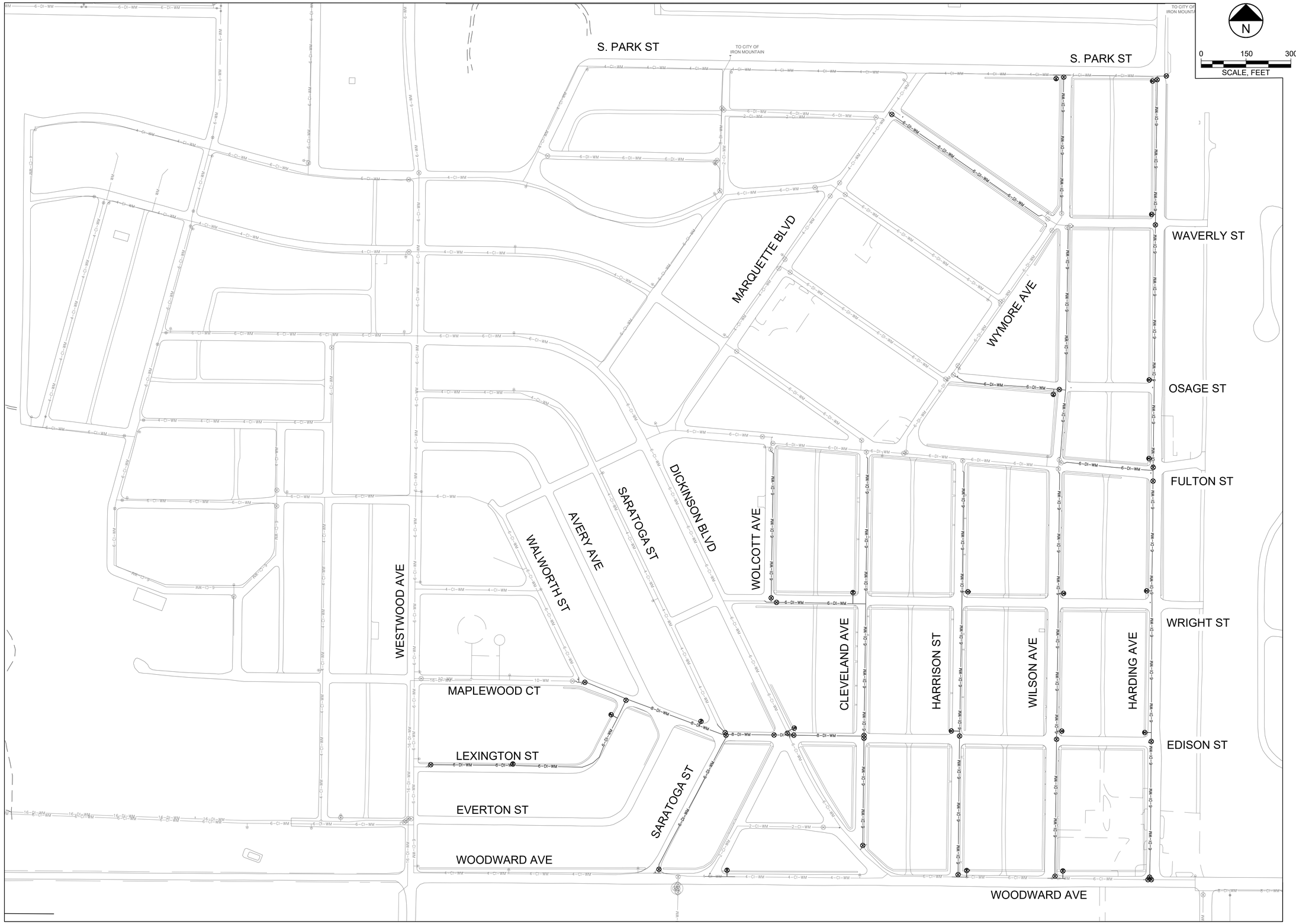
Designed By:	RJM
Checked By:	BSF
Drawn By:	JRR
Approved By:	JRB

GEI PROJECT: 2001888

DWG. NO.
01-K-02

SHEET 6

ARCHIVE #



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GEI Consultants
617 N. Stephenson Ave Suite 110
Iron Mountain, MI 49801
906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

PROPOSED WATER MAIN AND VALVE MAP

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By:	RJM
Checked By:	BSF
Drawn By:	JRR
Approved By:	JRB

GEI PROJECT: 2001888

DWG. NO.
01-K-03

SHEET 7

ARCHIVE #

REMOVAL AND RESTORATION QUANTITIES:

320	SYD	R-0110	REMOVE CONCRETE SIDWALK, RAMP, & DRIVE APPROACH
1470	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
2240	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
234	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
234	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
8	TON	R-0740	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
2850	SFT	R-0910	CONCRETE SIDEWALK
432	SFT	R-0930	CONCRETE DRIVEWAY APPROACH, 6"
1470	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
2240	SYD	R-1095	PAVEMENT REMOVAL
2	EACH	R-1097	RETAINING WALL REMOVAL AND REPLACEMENT
6	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

830	LFT	W-0120	6" WATERMAIN
1	EACH	W-0420	6" RSGV W/BOX
3	EACH	W-0720	6" - 22.5 DEG. BEND
2	EACH	W-0820	6" - 45 DEG. BEND
2	EACH	W-1010	6" X 6" TEE
1	WACH	W-2110	6" X 4" REDUCER
3	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
3	EACH	W-2515	CUT, CAP, ABANDON EXISTING WATERMAIN
1	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
2	EACH	W-2610	HYDRANT ASSEMBLY
2	EACH	W-2620	REMOVE EXISTING HYDRANT
17	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

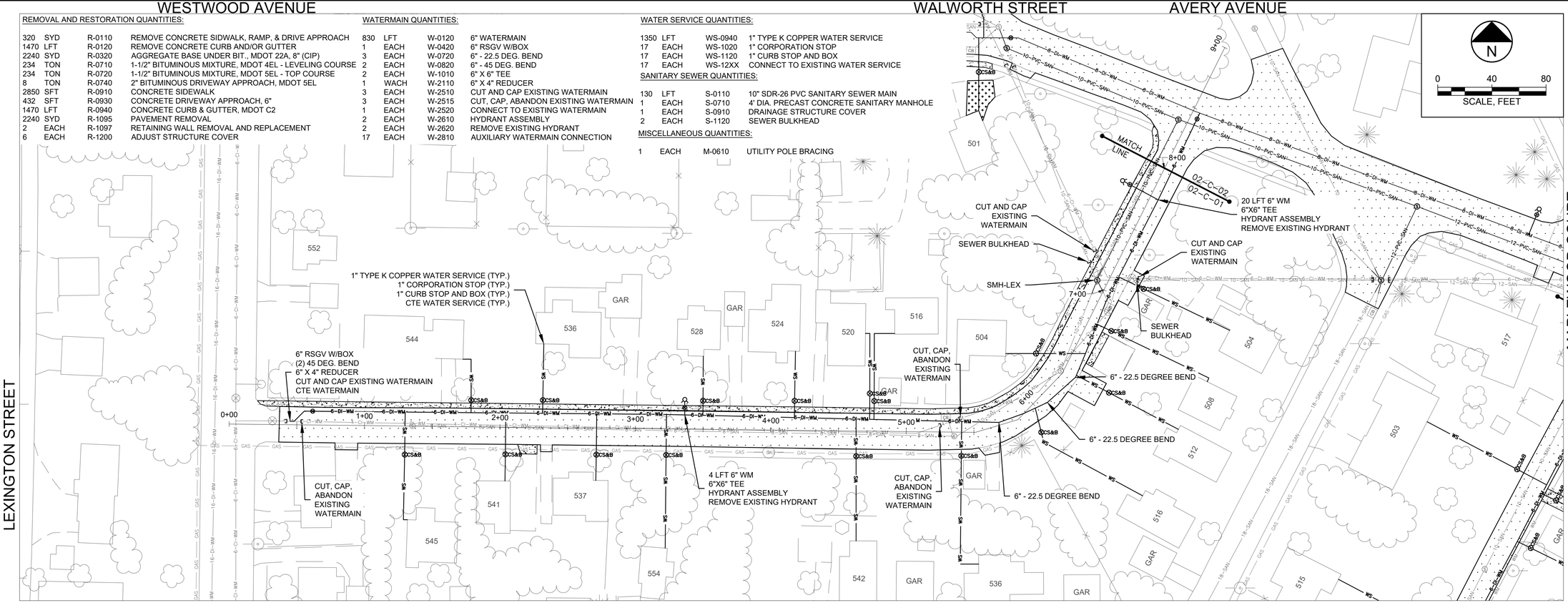
1350	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
17	EACH	WS-1020	1" CORPORATION STOP
17	EACH	WS-1120	1" CURB STOP AND BOX
17	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE

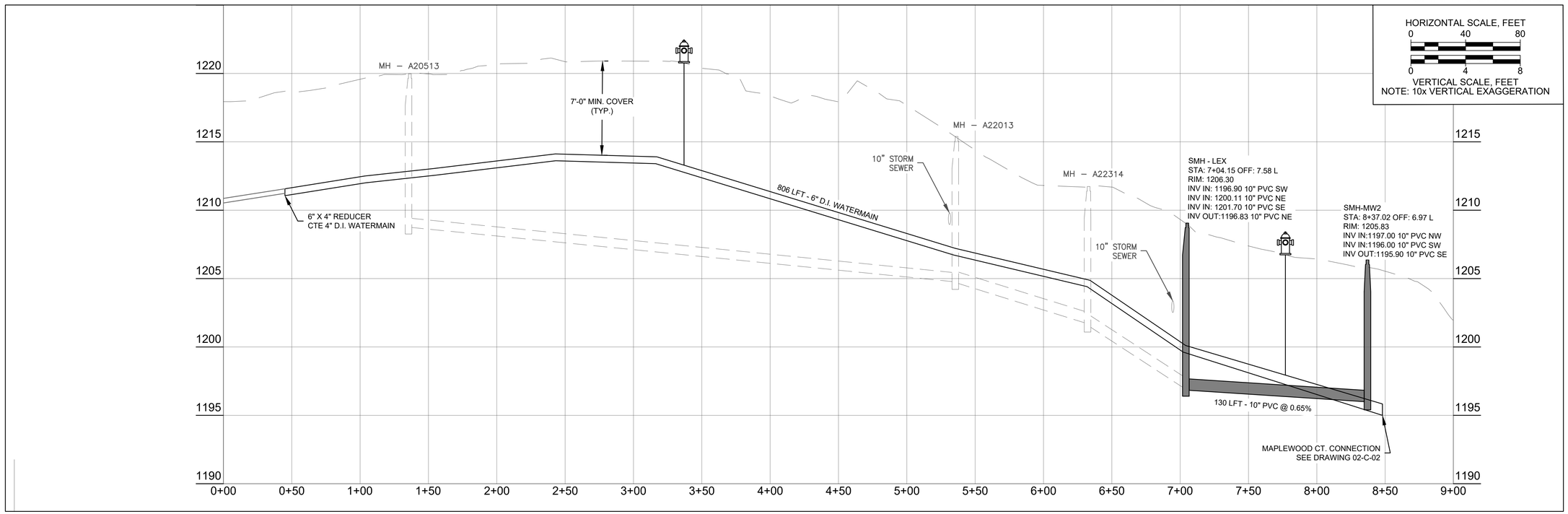
SANITARY SEWER QUANTITIES:

130	LFT	S-0110	10" SDR-26 PVC SANITARY SEWER MAIN
1	EACH	S-0710	4' DIA. PRECAST CONCRETE SANITARY MANHOLE
1	EACH	S-0910	DRAINAGE STRUCTURE COVER
2	EACH	S-1120	SEWER BULKHEAD

MISCELLANEOUS QUANTITIES:

1	EACH	M-0610	UTILITY POLE BRACING





GEI Consultants
617 N. Stephenson Ave Suite 110
Iron Mountain, MI 49801
906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

LEXINGTON STREET
WATER REPLACEMENT
PLAN AND PROFILE
STA. 0+00 - 8+00

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-01

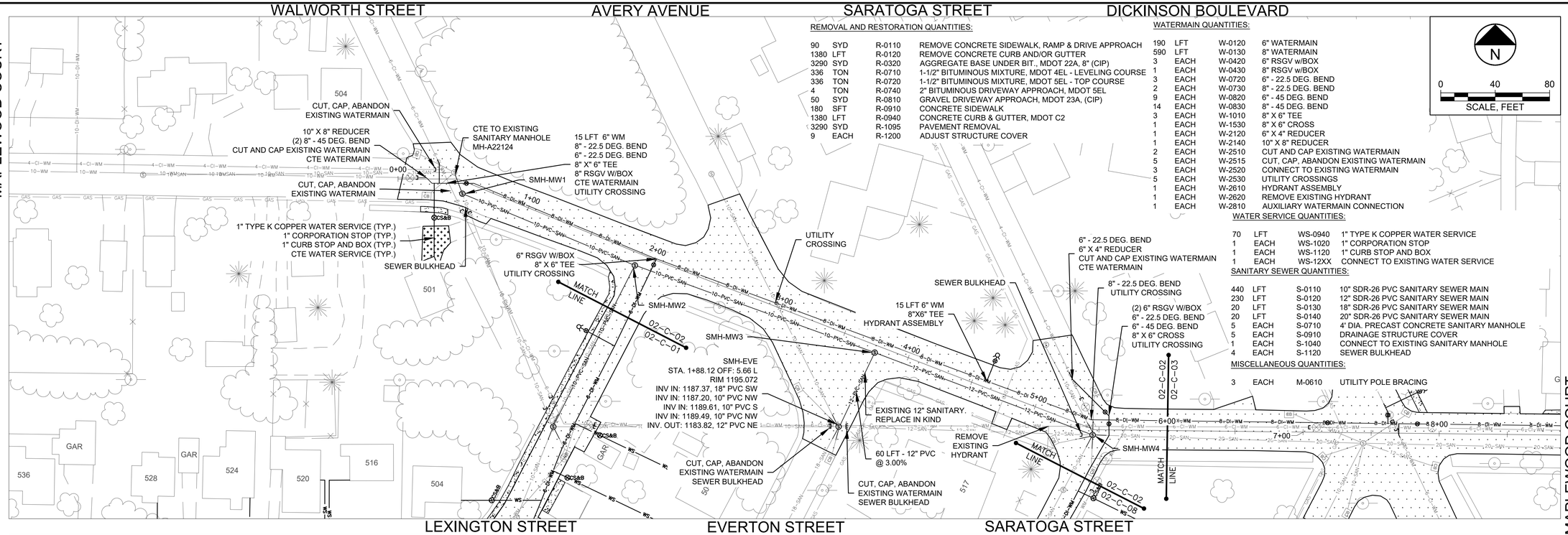
SHEET 8

ARCHIVE #

K:\Kingsford_City\2001888-Kingsford_Heights_Watermain_Replacement\05_CAD\Design\Civil3D\020323 REVIEW\2001888-KINGSFORD_HEIGHTS_LEXINGTON-MAPLEWOOD-EDISON-ST-400.dwg, 3/9/2023 11:41:04 AM, RECK, JOHN, GEI.stb

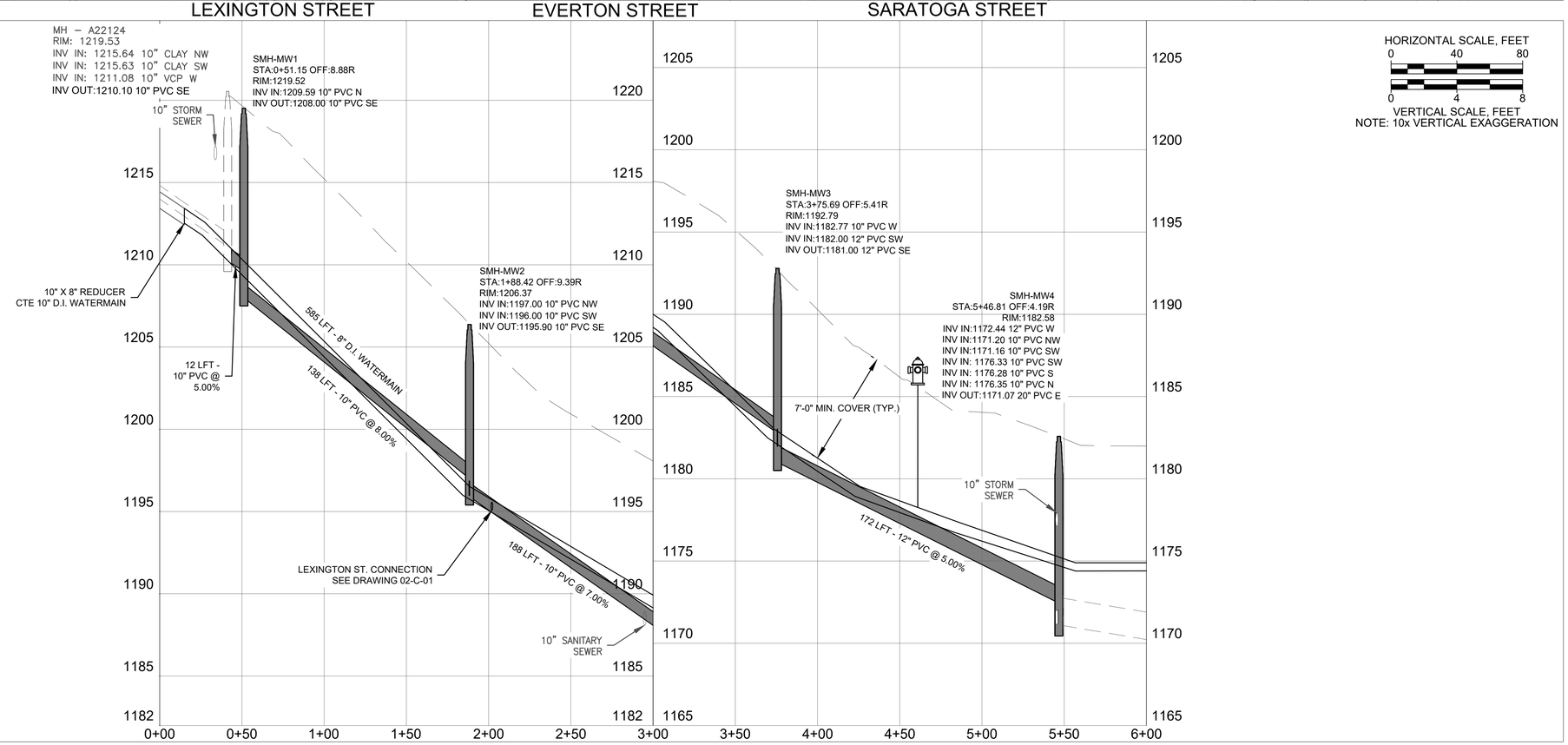
WALWORTH STREET | AVERY AVENUE | SARATOGA STREET | DICKINSON BOULEVARD

MAPLEWOOD COURT



LEXINGTON STREET | EVERTON STREET | SARATOGA STREET

MAPLEWOOD COURT



REMOVAL AND RESTORATION QUANTITIES:

90	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP & DRIVE APPROACH
1380	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
3290	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
336	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
336	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
4	TON	R-0740	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
50	SYD	R-0810	GRAVEL DRIVEWAY APPROACH, MDOT 23A, (CIP)
180	SFT	R-0910	CONCRETE SIDEWALK
1380	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
3290	SYD	R-1095	PAVEMENT REMOVAL
9	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

190	LFT	W-0120	6" WATERMAIN
590	LFT	W-0130	8" WATERMAIN
3	EACH	W-0420	6" RSGV w/BOX
1	EACH	W-0430	8" RSGV w/BOX
3	EACH	W-0720	6" - 22.5 DEG. BEND
2	EACH	W-0730	8" - 22.5 DEG. BEND
9	EACH	W-0820	6" - 45 DEG. BEND
14	EACH	W-0830	8" - 45 DEG. BEND
3	EACH	W-1010	8" X 6" TEE
1	EACH	W-1530	8" X 6" CROSS
1	EACH	W-2120	6" X 4" REDUCER
1	EACH	W-2140	10" X 8" REDUCER
2	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
5	EACH	W-2515	CUT, CAP, ABANDON EXISTING WATERMAIN
3	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
5	EACH	W-2530	UTILITY CROSSINGS
1	EACH	W-2610	HYDRANT ASSEMBLY
1	EACH	W-2620	REMOVE EXISTING HYDRANT
1	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

70	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
1	EACH	WS-1020	1" CORPORATION STOP
1	EACH	WS-1120	1" CURB STOP AND BOX
1	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE

SANITARY SEWER QUANTITIES:

440	LFT	S-0110	10" SDR-26 PVC SANITARY SEWER MAIN
230	LFT	S-0120	12" SDR-26 PVC SANITARY SEWER MAIN
20	LFT	S-0130	18" SDR-26 PVC SANITARY SEWER MAIN
20	LFT	S-0140	20" SDR-26 PVC SANITARY SEWER MAIN
5	EACH	S-0710	4' DIA. PRECAST CONCRETE SANITARY MANHOLE
5	EACH	S-0910	DRAINAGE STRUCTURE COVER
1	EACH	S-1040	CONNECT TO EXISTING SANITARY MANHOLE
4	EACH	S-1120	SEWER BULKHEAD

MISCELLANEOUS QUANTITIES:

3	EACH	M-0610	UTILITY POLE BRACING

GEI Consultants
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906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

MAPLEWOOD COURT WATER REPLACEMENT PLAN AND PROFILE STA. 0+00 - 6+00

Attention: 0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-02

SHEET 9

ARCHIVE #

K:\Kingsford_City\2001888-Kingsford_Heights_Watermain_Replacement\06_CAD\Design\Civil3D\020323 REVIEW\2001888-KINGSFORD_HEIGHTS_LEXINGTON-MAPLEWOOD-EDISON-ST-ADD.dwg, 3/10/2023 9:34:57 AM, REDK, JOHN; GEI.stb

DICKINSON BOULEVARD

CLEVELAND AVENUE

MAPLEWOOD COURT

EDISON STREET

REXFORD AVENUE

DICKINSON BOULEVARD

CLEVELAND AVENUE

REMOVAL AND RESTORATION QUANTITIES:

40	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP, & DRIVE APPROACH
770	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
1820	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
187	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
187	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
2	TON	R-0740	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
110	SFT	R-0910	CONCRETE SIDEWALK
80	SFT	R-0930	CONCRETE DRIVEWAY APPROACH, 6"
770	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
1820	SYD	R-1095	PAVEMENT REMOVAL
6	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

60	LFT	W-0120	6" WATERMAIN
350	LFT	W-0130	8" WATERMAIN
1	EACH	W-0420	6" RSGV W/BOX
2	EACH	W-0430	8" RSGV W/BOX
2	EACH	W-0720	6" - 22.5 DEG BEND
1	EACH	W-1010	6" X 6" TEE
2	EACH	W-1030	8" X 6" TEE
1	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
2	EACH	W-2515	CUT, CAP, ABANDON EXISTING WATERMAIN
2	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
1	EACH	W-2610	HYDRANT ASSEMBLY
1	EACH	W-2620	REMOVE EXISTING HYDRANT
1	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

50	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
1	EACH	WS-1020	1" CORPORATION STOP
1	EACH	WS-1120	1" CURB STOP AND BOX
1	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE

MISCELLANEOUS QUANTITIES:

1	EACH	M-0610	UTILITY POLE BRACING

30 LFT 6" WM
6"X6" TEE
CTE WATERMAIN
HYDRANT ASSEMBLY
REMOVE EXISTING HYDRANT

1" TYPE K COPPER WATER SERVICE (TYP.)
1" CORPORATION STOP (TYP.)
1" CURB STOP AND BOX (TYP.)
CTE WATER SERVICE (TYP.)

8" RSGV W/BOX

CUT AND CAP EXISTING WATERMAIN

8" RSGV W/BOX

15 LFT - 6" WM
6" RSGV W/BOX
6" 22.5 DEG BEND
8" X 6" TEE
CTE WATERMAIN

(2) CUT, CAP, ABANDON EXISTING WATERMAIN

15 LFT - 6" WM
6" 22.5 DEG BEND
8" X 6" TEE
CTE WATERMAIN

MATCH LINE

MATCH LINE

MATCH LINE

02-C-02

02-C-03

02-C-04

02-C-09

6+00

7+00

8+00

9+00

10+00

10+50

GAR

201

204

200

128

124

120

129

125

121

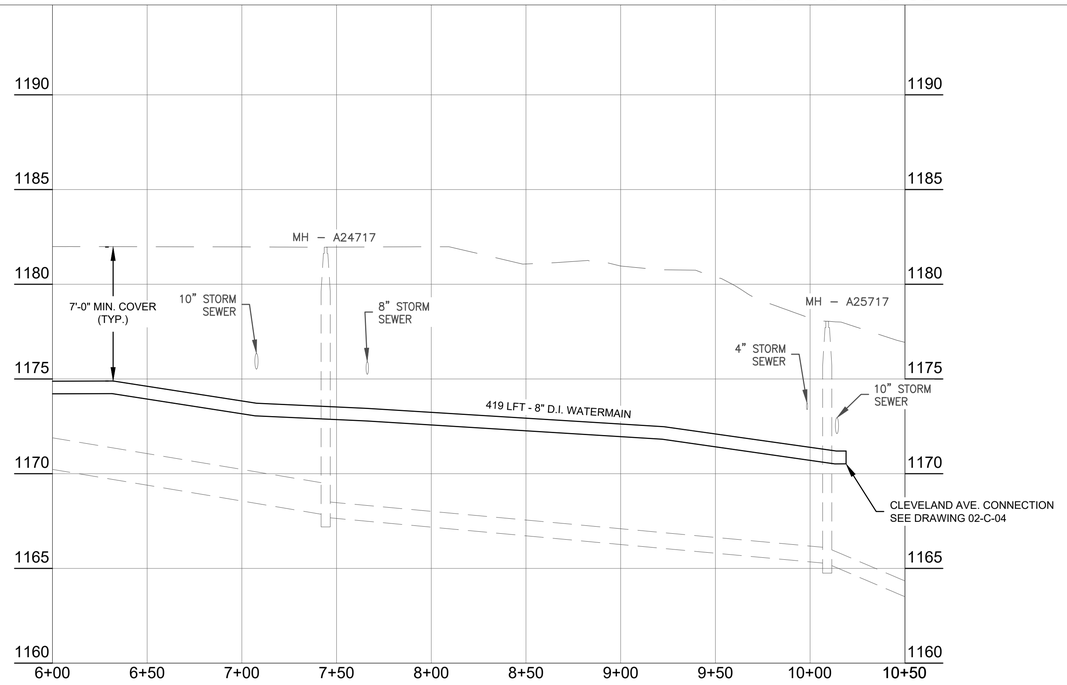
117

N

0 40 80

SCALE, FEET

HORIZONTAL SCALE, FEET
0 40 80
0 4 8
VERTICAL SCALE, FEET
NOTE: 10x VERTICAL EXAGGERATION



GEI Consultants
617 N. Stephenson Ave Suite 110
Iron Mountain, MI 49801
906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

MAPLEWOOD COURT WATER REPLACEMENT
PLAN AND PROFILE
STA. 6+00 - 9+50

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-03

SHEET 10

ARCHIVE #

K:\Kingsford_City\2001888--Kingsford_Heights_Watermain_Replacement\00_CAD\Design\Civil3D\020323 REVIEW\2001888--KINGSFORD_HEIGHTS_LEXINGTON-MAPLEWOOD-EDISON-ST-ADD.dwg, 3/9/2023 11:46:45 AM, RECK, JOHN, GEI.stb

WOODWARD AVENUE | BELL COURT | EDISON STREET

REMOVAL AND RESTORATION QUANTITIES:

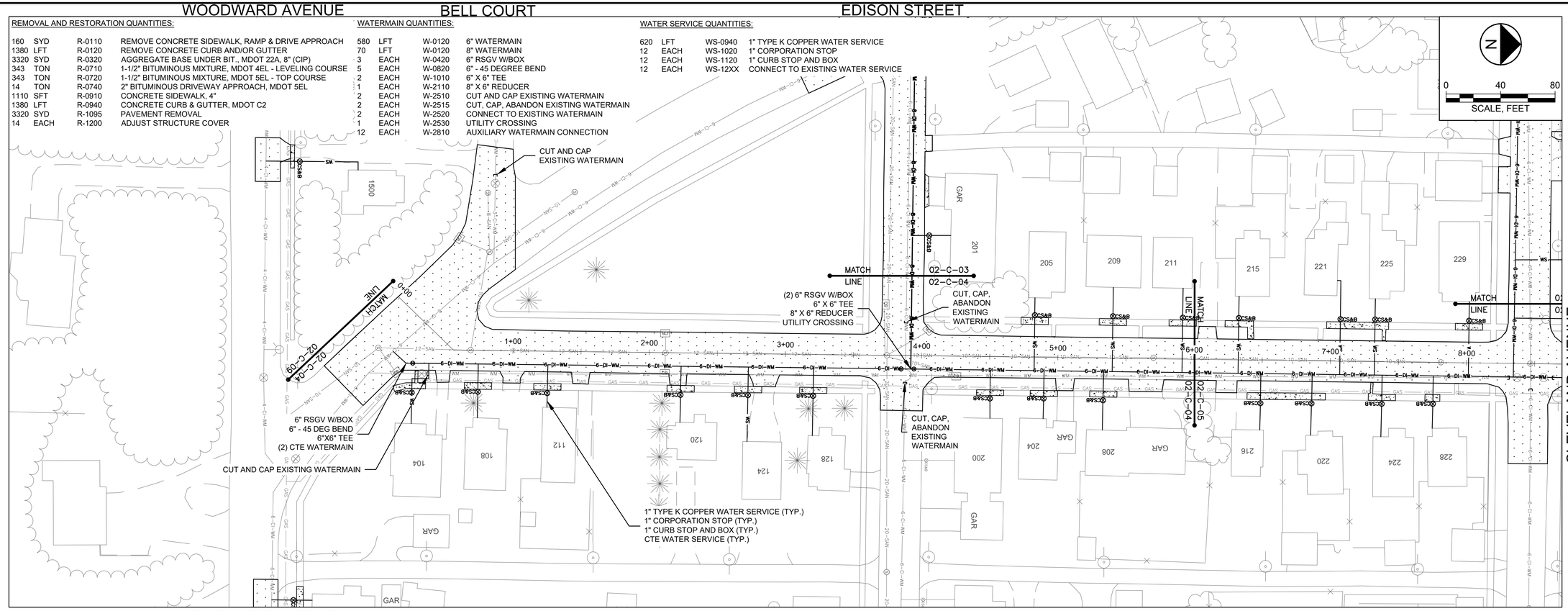
160	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP & DRIVE APPROACH
1380	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
3320	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
343	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
343	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
14	TON	R-0740	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
1110	SFT	R-0910	CONCRETE SIDEWALK, 4"
1380	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
3320	SYD	R-1095	PAVEMENT REMOVAL
14	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

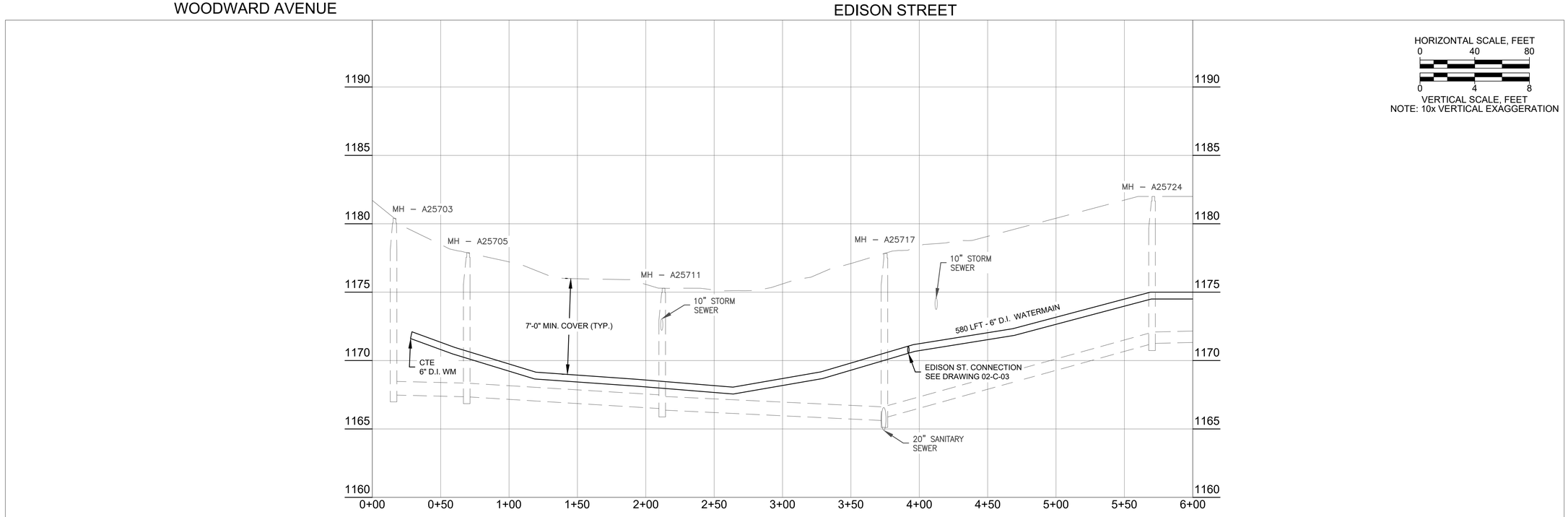
580	LFT	W-0120	6" WATERMAIN
70	LFT	W-0120	8" WATERMAIN
3	EACH	W-0420	6" RSGV W/BOX
5	EACH	W-0820	6" - 45 DEGREE BEND
2	EACH	W-1010	6" X 6" TEE
1	EACH	W-2110	8" X 6" REDUCER
2	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
2	EACH	W-2515	CUT, CAP, ABANDON EXISTING WATERMAIN
2	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
1	EACH	W-2530	UTILITY CROSSING
12	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

620	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
12	EACH	WS-1020	1" CORPORATION STOP
12	EACH	WS-1120	1" CURB STOP AND BOX
12	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE



WOODWARD AVENUE | EDISON STREET



GEI Consultants
617 N. Stephenson Ave Suite 110
Iron Mountain, MI 49801
906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

CLEVELAND AVENUE WATER REPLACEMENT
PLAN AND PROFILE
STA. 0+00 - 6+00

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-04

SHEET 11

ARCHIVE #

K:\Kingsford_City\2001888--Kingsford_Heights_Watermain_Replacement\00_CAD\Design\Civil3D\020323 REVIEW\2001888--KINGSFORD_HEIGHTS_CLEVELAND.dwg; 3/9/2023 11:51:28 AM; REDX, JOHN; GEI.stb

REMOVAL AND RESTORATION QUANTITIES:

330	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP & DRIVE APPROACH
1880	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
3210	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
328	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
328	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
20	TON	R-0740	2" BITUMINOUS MIXTURE, 5EL
2980	SFT	R-0910	CONCRETE SIDEWALK, 4"
1880	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
3210	SYD	R-1095	PAVEMENT REMOVAL
6	EACH	R-1097	RETAINING WALL REMOVAL AND REPLACEMENT
7	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

820	LFT	W-0120	6" WATERMAIN
3	EACH	W-0820	6" - 45 DEG. BEND
2	EACH	W-1010	6" X 6" TEE
3	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
1	EACH	W-2515	CUT, CAP, ABANDON EXISTING WATERMAIN
1	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
1	EACH	W-2610	HYDRANT ASSEMBLY
1	EACH	W-2620	REMOVE EXISTING HYDRANT
24	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

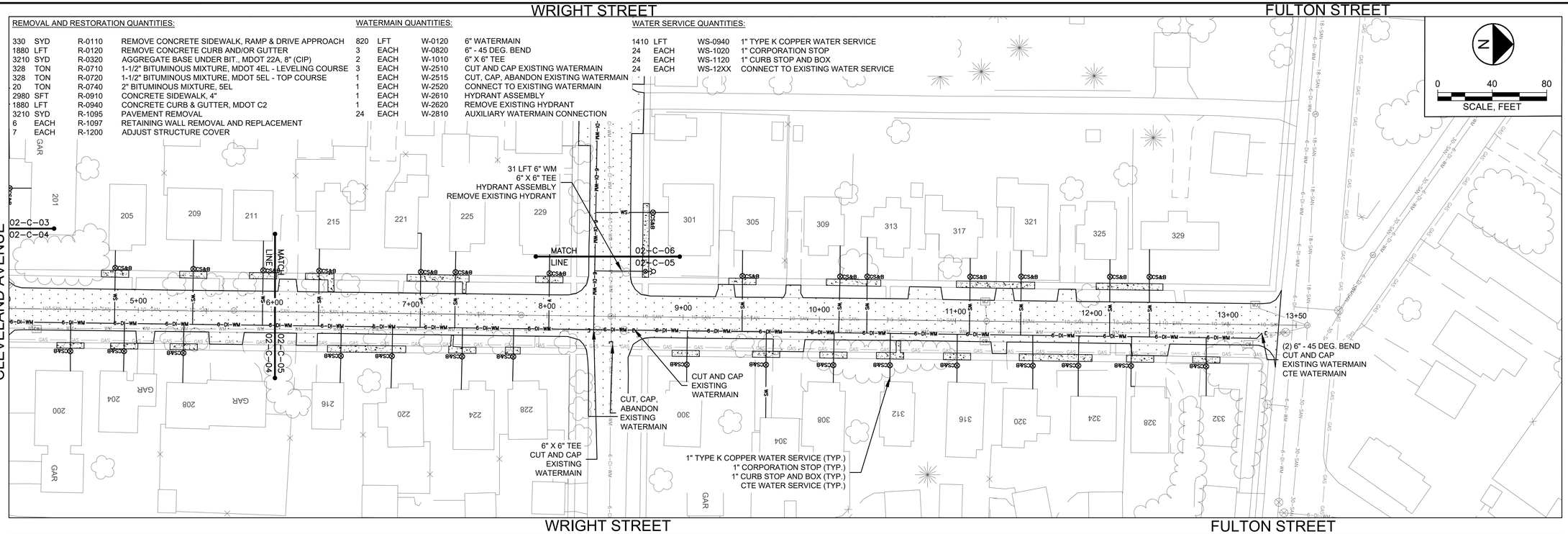
WATER SERVICE QUANTITIES:

1410	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
24	EACH	WS-1020	1" CORPORATION STOP
24	EACH	WS-1120	1" CURB STOP AND BOX
24	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE

WRIGHT STREET

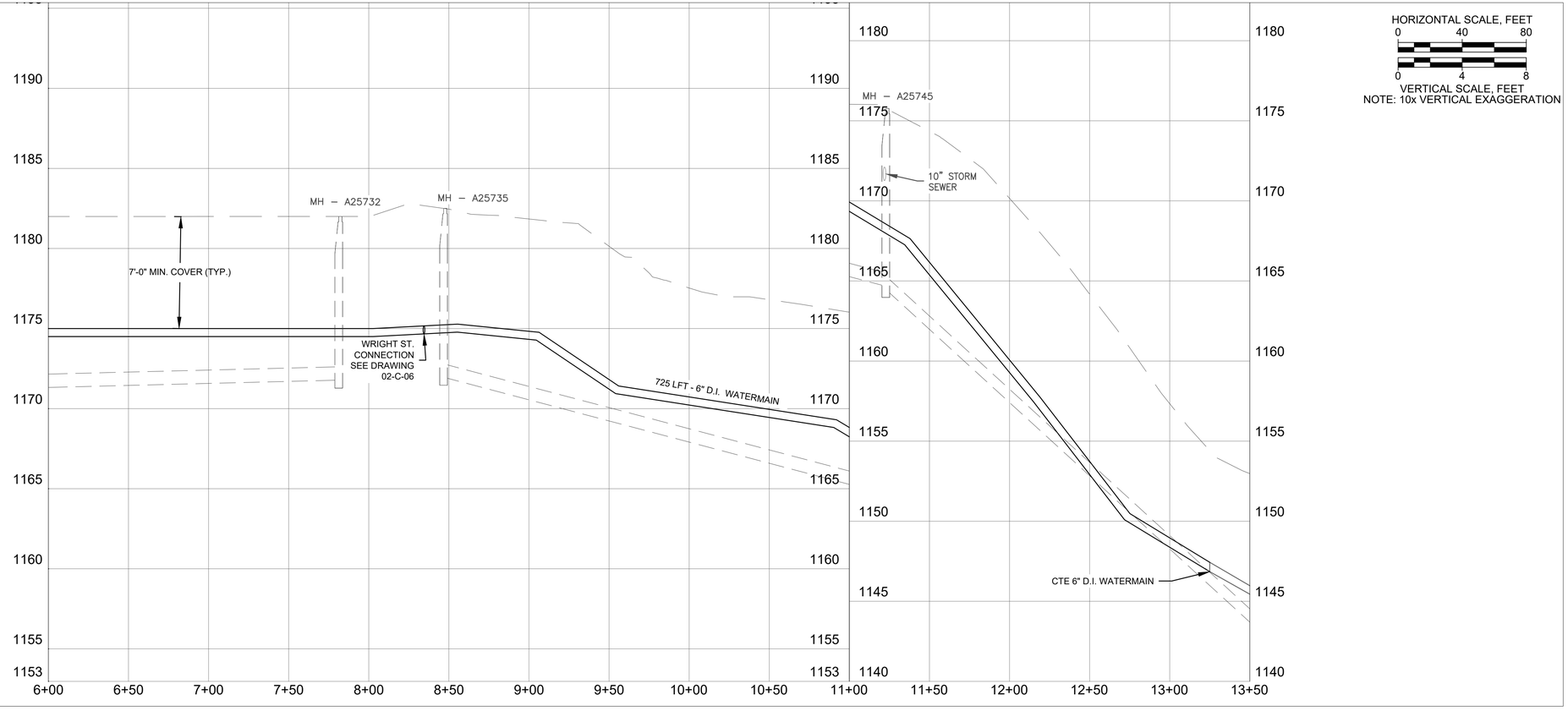
FULTON STREET

CLEVELAND AVENUE



WRIGHT STREET

FULTON STREET



GEI Consultants
617 N. Stephenson Ave Suite 110
Iron Mountain, MI 49801
906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

CLEVELAND AVENUE WATER REPLACEMENT
PLAN AND PROFILE
STA. 6+00 - 13+50

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-05

SHEET 12

ARCHIVE #

K:\Kingsford_City\2001888-Kingsford_Heights_Watermain_Replacement\05_CAD\Design\Civil3D\020323 REVIEW\2001888-KINGSFORD_HEIGHTS_CLEVELAND.dwg, 3/9/2023 11:54:13 AM, REDX, JOHN, GD.stb

DICKINSON BOULEVARD | WOLCOTT AVENUE | ALLEY | CLEVELAND AVENUE

WRIGHT STREET

WRIGHT STREET

REMOVAL AND RESTORATION QUANTITIES:

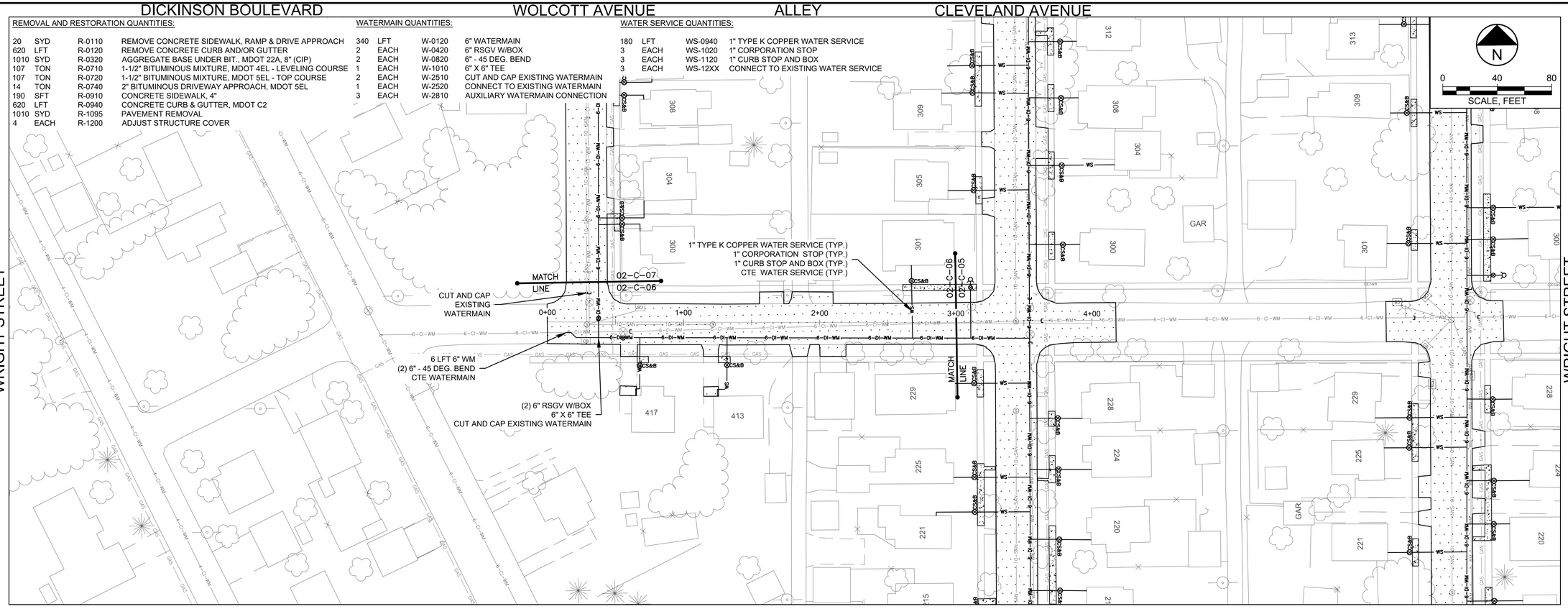
20	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP & DRIVE APPROACH
620	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
1010	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
107	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
107	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
14	TON	R-0740	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
190	SFT	R-0910	CONCRETE SIDEWALK, 4"
620	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
1010	SYD	R-1095	PAVEMENT REMOVAL
4	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

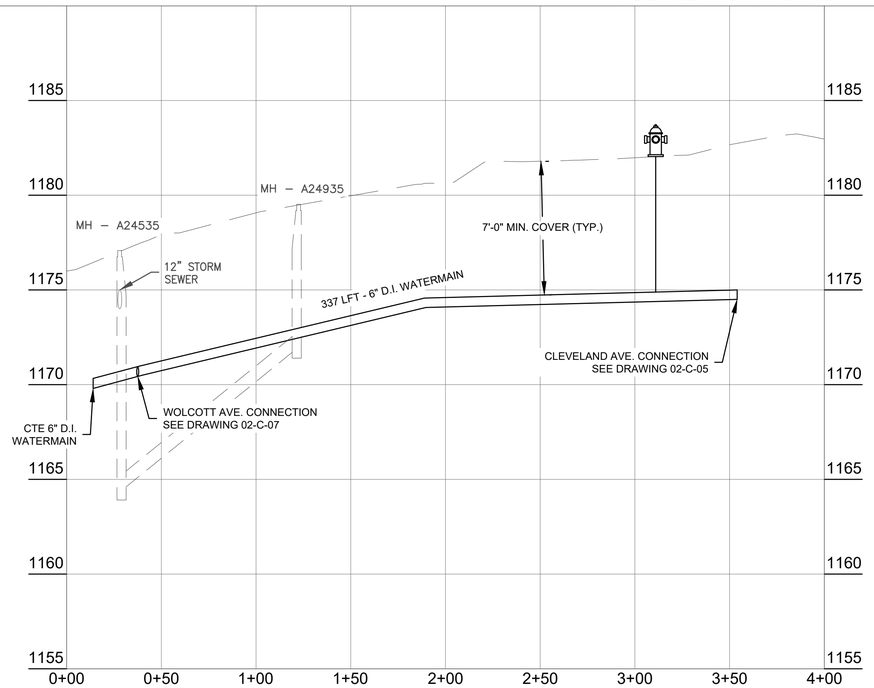
340	LFT	W-0120	6" WATERMAIN
2	EACH	W-0420	6" RSGV W/BOX
2	EACH	W-0820	6" - 45 DEG. BEND
1	EACH	W-1010	6" X 6" TEE
2	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
1	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
3	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

180	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
3	EACH	WS-1020	1" CORPORATION STOP
3	EACH	WS-1120	1" CURB STOP AND BOX
3	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE



DICKINSON BOULEVARD | ALLEY | CLEVELAND AVENUE | HARRISON STREET



HORIZONTAL SCALE, FEET
0 40 80

VERTICAL SCALE, FEET
0 4 8
NOTE: 10x VERTICAL EXAGGERATION

GEI Consultants
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2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

WRIGHT STREET WATER REPLACEMENT
PLAN AND PROFILE
STA. 0+00 - 4+00

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-06

SHEET 13

ARCHIVE #

K:\Kingsford_City\2001888-Kingsford_Heights_Watermain_Replacement\04_CAD\Design\Civil3D\023123 REVIEW\2001888-KINGSFORD_HEIGHTS_HARDING_AVE-ADD.dwg, 3/9/2023 11:56:58 AM, RECK, JOHN, GEI.stb

WRIGHT STREET

FULTON STREET

WOLCOTT AVENUE

WOLCOTT AVENUE

REMOVAL AND RESTORATION QUANTITIES:

170	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP & DRIVE APPROACH
1090	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
2030	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
203	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
203	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
20	TON	R-0740	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
1410	SFT	R-0910	CONCRETE SIDEWALK, 4"
113	SFT	R-0930	CONCRETE DRIVEWAY APPROACH
1090	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
2030	SYD	R-1095	PAVEMENT REMOVAL
5	EACH	R-01097	RETAINING WALL REMOVAL AND REPLACEMENT
7	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

470	LFT	W-0120	6" WATERMAIN
2	EACH	W-0820	6" - 45 DEG. BEND
1	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
1	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
15	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

730	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
15	EACH	WS-1020	1" CORPORATION STOP
15	EACH	WS-1120	1" CURB STOP AND BOX
15	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE

N

0 40 80

SCALE, FEET

1" TYPE K COPPER WATER SERVICE (TYP.)
1" CORPORATION STOP (TYP.)
1" CURB STOP AND BOX (TYP.)
CTE WATER SERVICE (TYP.)

(2) 6" - 45 DEG. BEND
CUT AND CAP EXISTING WATERMAIN
CTE WATERMAIN

MATCH LINE

02-C-06

02-C-07

WRIGHT STREET

FULTON STREET

HORIZONTAL SCALE, FEET
0 40 80

0 4 8
VERTICAL SCALE, FEET
NOTE: 10x VERTICAL EXAGGERATION

MH – A24535

MH – A24546

MH – A24555

12" STORM SEWER

7'-0" MIN. COVER (TYP.)

WRIGHT ST. CONNECTION
SEE DRAWING 02-C-06

505 LFT - 6" D.I. WATERMAIN

12" STORM SEWER

CTE 6" D.I. WATERMAIN

1175
1170
1165
1160
1155
1150
1145
1140

0+00 0+50 1+00 1+50 2+00 2+50 3+00 3+50 4+00 4+50 5+00 5+50

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906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

WOLCOTT AVENUE WATER REPLACEMENT PLAN AND PROFILE STA. 0+00 - 5+50

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-07

SHEET 14

ARCHIVE #

K:\Kingsford_City\2001888--Kingsford_Heights_Watermain_Replacement\06_CAD\Design\Civil3D\020323 REVIEW\2001888--KINGSFORD_HEIGHTS_HARDING_AVE--A00.dwg, 3/9/2023 12:00:01 PM, RICK, JOHN, GEI.stb

REMOVAL AND RESTORATION QUANTITIES:

40	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP, & DRIVE APPROACH
1400	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
145	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
145	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
10	TON	R-0740	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
400	SFT	R-0930	CONCRETE DRIVEWAY APPROACH, 6"
1400	SYD	R-1095	PAVEMENT REMOVAL
1	EACH	R-1097	RETAINING WALL REMOVAL AND REPLACEMENT
3	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

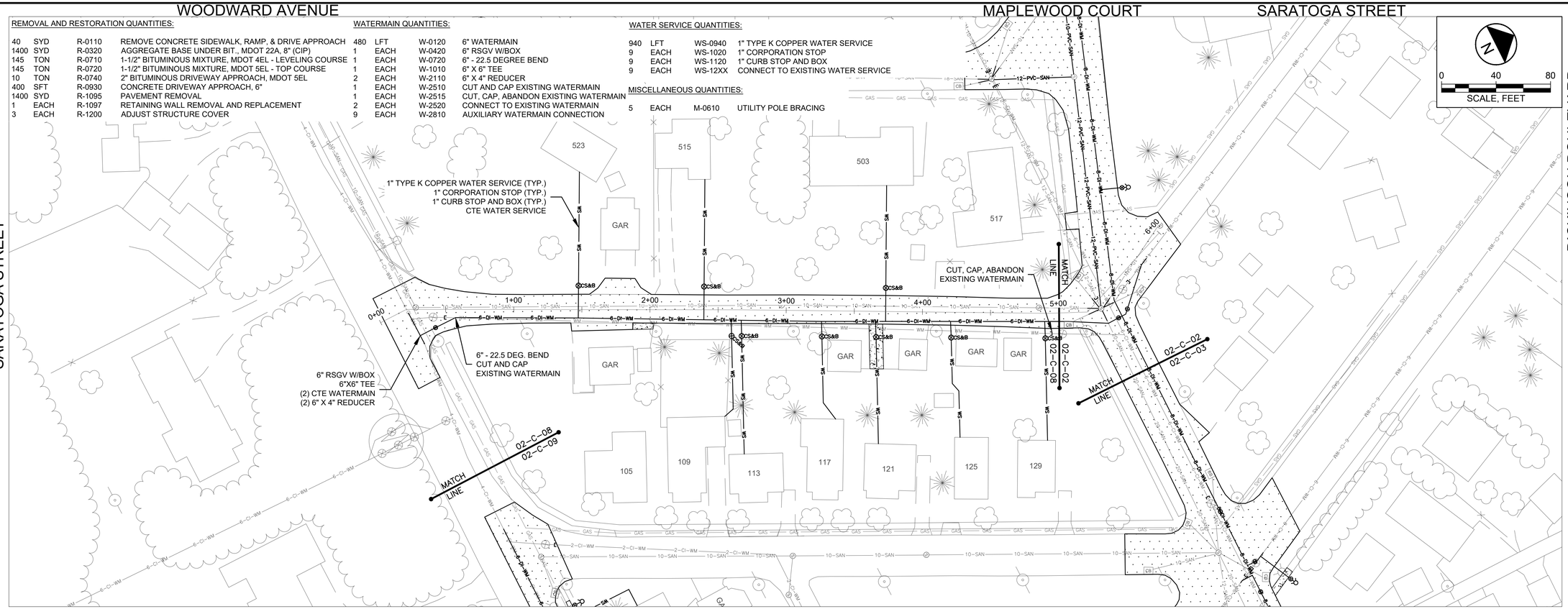
480	LFT	W-0120	6" WATERMAIN
1	EACH	W-0420	6" RSGV W/BOX
1	EACH	W-0720	6" - 22.5 DEGREE BEND
1	EACH	W-1010	6" X 6" TEE
2	EACH	W-2110	6" X 4" REDUCER
1	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
1	EACH	W-2515	CUT, CAP, ABANDON EXISTING WATERMAIN
2	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
9	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

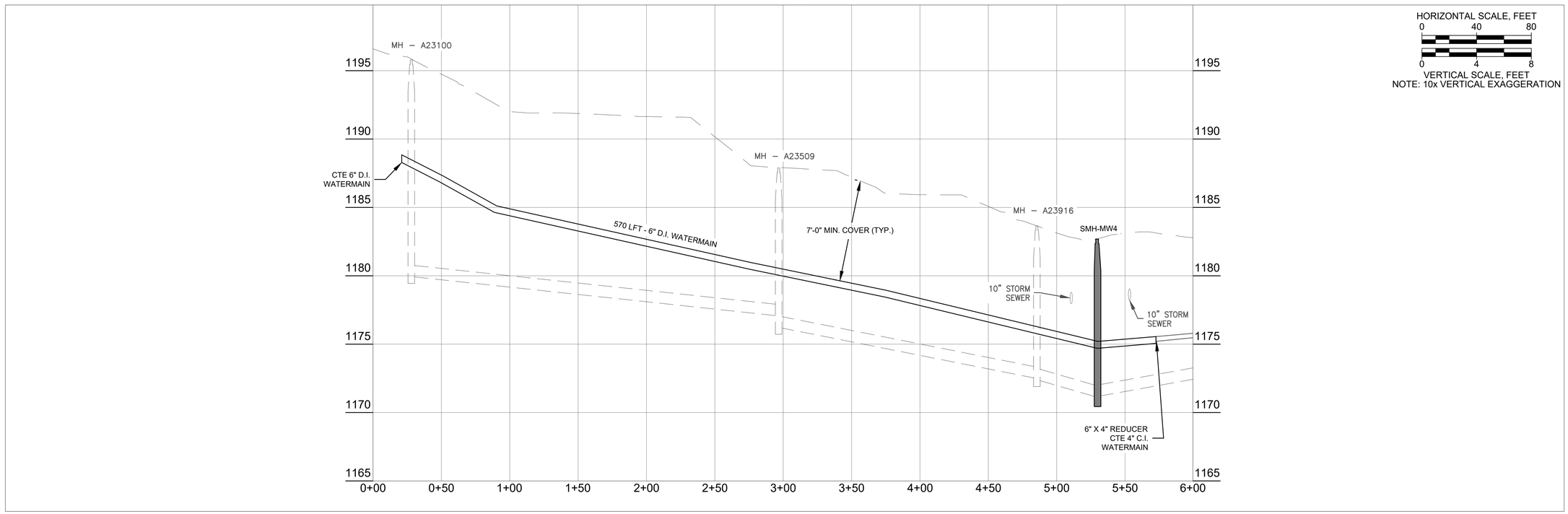
WATER SERVICE QUANTITIES:

940	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
9	EACH	WS-1020	1" CORPORATION STOP
9	EACH	WS-1120	1" CURB STOP AND BOX
9	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE

MISCELLANEOUS QUANTITIES:

5	EACH	M-0610	UTILITY POLE BRACING





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906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

SARATOGA STREET WATER REPLACEMENT PLAN AND PROFILE STA. 0+00 - 6+00

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-08

SHEET 15

ARCHIVE #

K:\Kingsford_City\2001888 - Kingsford_Heights_Watermain_Replacement\06_CAD\Design\Civil3D\020323 REVIEW\2001888 - KINGSFORD_HEIGHTS_SARATOGA.dwg, 3/9/2023 1:01:29 PM, RECK, JOHN, GEI.stb

SARATOGA STREET — REXFORD AVENUE — DICKINSON BOULEVARD — CLEVELAND AVENUE

REMOVAL AND RESTORATION QUANTITIES:

20	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP, & DRIVE APPROACH
250	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
1320	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
136	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
136	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
4	TON	R-0740	2" BITUMINOUS MIXTURE, MDOT 5EL
170	SFT	R-0910	CONCRETE SIDEWALK
250	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
1320	SYD	R-1095	PAVEMENT REMOVAL
2	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

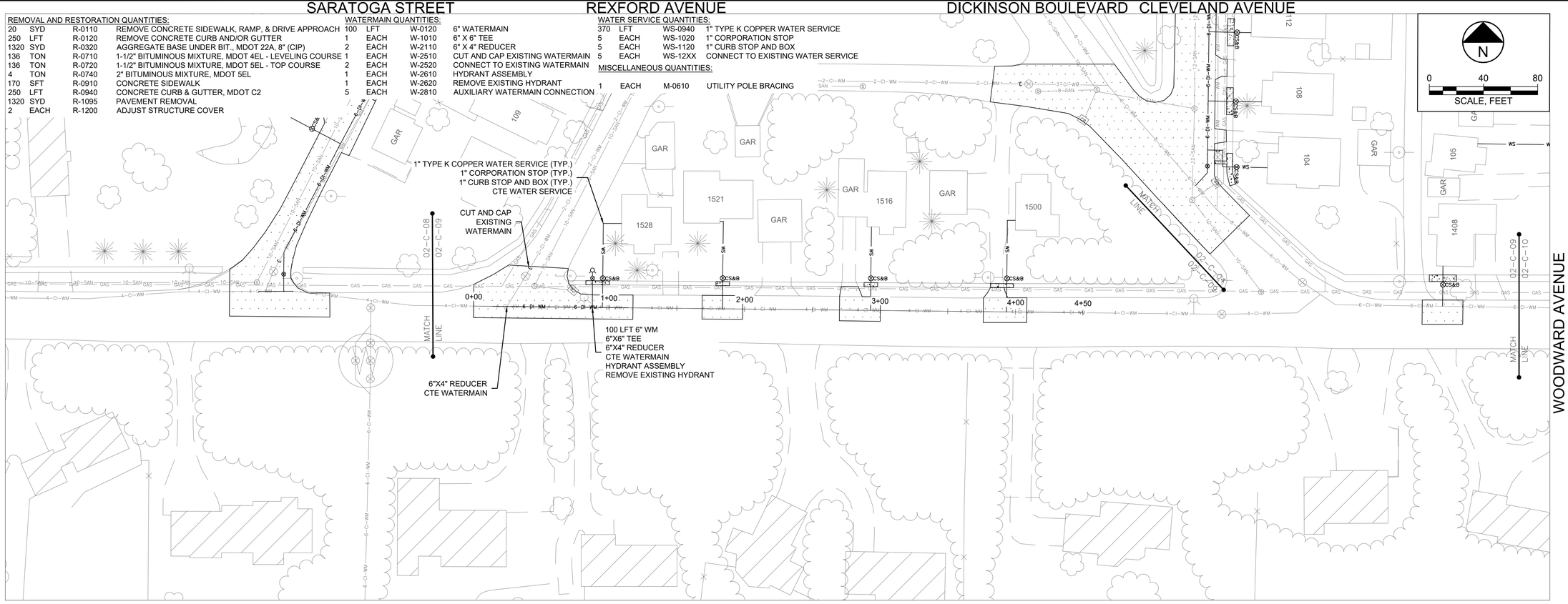
100	LFT	W-0120	6" WATERMAIN
1	EACH	W-1010	6" X 6" TEE
2	EACH	W-2110	6" X 4" REDUCER
1	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
2	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
1	EACH	W-2610	HYDRANT ASSEMBLY
1	EACH	W-2620	REMOVE EXISTING HYDRANT
5	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

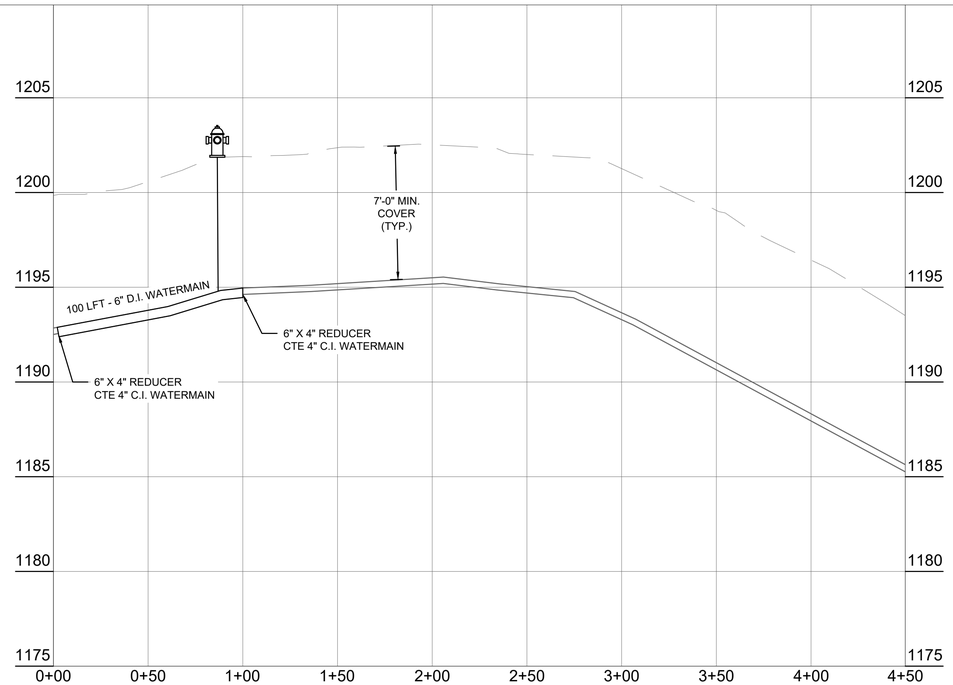
WATER SERVICE QUANTITIES:

370	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
5	EACH	WS-1020	1" CORPORATION STOP
5	EACH	WS-1120	1" CURB STOP AND BOX
5	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE

MISCELLANEOUS QUANTITIES:

1	EACH	M-0610	UTILITY POLE BRACING





HORIZONTAL SCALE, FEET
0 40 80
0 4 8
VERTICAL SCALE, FEET
NOTE: 10x VERTICAL EXAGGERATION

GEI Consultants
617 N. Stephenson Ave Suite 110
Iron Mountain, MI 49801
906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

WOODWARD AVENUE WATER REPLACEMENT
PLAN AND PROFILE
STA. 0+00 - 4+50

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-09

SHEET 16

ARCHIVE #

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WOODWARD AVENUE

EDISON STREET

HARRISON STREET

ALLEY

HARRISON STREET

REMOVAL AND RESTORATION QUANTITIES:

190	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP, & DRIVE APPROACH
1610	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
2900	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
293	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
293	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
14	TON	R-0740	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
1710	SFT	R-0910	CONCRETE SIDEWALK
1610	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
2900	SYD	R-1095	PAVEMENT REMOVAL
1	EACH	R-1097	RETAINING WALL REMOVAL
10	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

750	LFT	W-0120	6" WATERMAIN
2	EACH	W-0420	6" RSGV W/BOX
4	EACH	W-0820	6" - 45 DEG. BEND
3	EACH	W-1010	6" X 6" TEE
2	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
2	EACH	W-2515	CUT, CAP, ABANDON EXISTING WATERMAIN
2	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
1	EACH	W-2530	UTILITY CROSSING
2	EACH	W-2610	HYDRANT ASSEMBLY
2	EACH	W-2620	REMOVE EXISTING HYDRANT
15	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

1020	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
15	EACH	WS-1020	1" CORPORATION STOP
15	EACH	WS-1120	1" CURB STOP AND BOX
15	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE

MISCELLANEOUS QUANTITIES:

1	EACH	M-0610	UTILITY POLE BRACING

N

0 40 80

SCALE, FEET

MATCH LINE 02-C-09 / 02-C-10

1" TYPE K COPPER WATER SERVICE (TYP.)
1" CORPORATION STOP (TYP.)
1" CURB STOP AND BOX (TYP.)
CTE WATER SERVICE

6" RSGV W/BOX
6"X6" TEE
CTE WATERMAIN

18 LFT 6" WM
6"X6" TEE
HYDRANT ASSEMBLY
REMOVE EXISTING HYDRANT

36 LFT - 6" WM
CTE WATERMAIN

CUT AND CAP EXISTING WATERMAIN

CUT, CAP, ABANDON EXISTING WATERMAIN

26 LFT - 6" WM
6"X6" TEE
UTILITY CROSSING
HYDRANT ASSEMBLY
REMOVE EXISTING HYDRANT

6" RSGV W/BOX
CUT, CAP, ABANDON EXISTING WATERMAIN
UTILITY CROSSING

CUT AND CAP EXISTING WATERMAIN

MATCH LINE 02-C-10 / 02-C-11

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00

WOODWARD AVENUE

EDISON STREET

HORIZONTAL SCALE, FEET
0 40 80
0 4 8
VERTICAL SCALE, FEET
NOTE: 10x VERTICAL EXAGGERATION

1180 1175 1170 1165 1160 1155 1150

MH – A26901

MH – A26906

MH – A26917

MH – A26924

CTE 6" D.I. WATERMAIN

10" STORM SEWER

7'-0" MIN. COVER (TYP.)

668 LFT - 6" D.I. WATERMAIN

10" STORM SEWER

0+00 0+50 1+00 1+50 2+00 2+50 3+00 3+50 4+00 4+50 5+00 5+50 6+00 6+50 7+00

GEI Consultants
617 N. Stephenson Ave Suite 110
Iron Mountain, MI 49801
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2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

HARRISON STREET WATER REPLACEMENT
PLAN AND PROFILE
STA. 0+00 - 7+00

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-10

SHEET 17

ARCHIVE #

K:\Kingsford_City\2001888--Kingsford_Heights_Watermain_Replacement\00_CAD\Design\Civil3D\020323 REVIEW\2001888--KINGSFORD_HEIGHTS_HARRISON.dwg; 3/9/2023 1:07:49 PM; REDK, JOHN; GEI.stb

WRIGHT STREET

FULTON STREET

HARRISON STREET

ALLEY

REMOVAL AND RESTORATION QUANTITIES:

310	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP, & DRIVE APPROACH
1,650	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
2,780	SYD	R-0220	SAND SUBBASE - EXISTING MATERIAL, 12" (CIP)
2,780	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
280	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
280	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
16	TON	R-0740	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
2,740	SFT	R-0910	CONCRETE SIDEWALK
1,650	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
2,780	SYD	R-1095	PAVEMENT REMOVAL
4	EACH	R-1097	RETAINING WALL REMOVAL AND REPLACEMENT
9	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

730	LFT	W-0120	6" WATERMAIN
2	EACH	W-0820	6" - 45 DEG. BEND
1	EACH	W-1010	6" X 6" TEE
1	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
3	EACH	W-2515	CUT, CAP, ABANDON EXISTING WATERMAIN
1	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
1	EACH	W-2610	HYDRANT ASSEMBLY
1	EACH	W-2620	REMOVE EXISTING HYDRANT
22	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

1,320	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
22	EACH	WS-1020	1" CORPORATION STOP
22	EACH	WS-1120	1" CURB STOP AND BOX
22	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE

MISCELLANEOUS QUANTITIES:

1	EACH	M-0610	UTILITY POLE BRACING

SCALE, FEET: 0 40 80

1" TYPE K COPPER WATER SERVICE (TYP.)
1" CORPORATION STOP (TYP.)
1" CURB STOP AND BOX (TYP.)
CTE WATER SERVICE

CUT, CAP , ABANDON EXISTING WATERMAIN REMOVE EXISTING HYDRANT

CUT, CAP, ABANDON EXISTING WATERMAIN

CUT AND CAP EXISTING WATERMAIN

MATCH LINE 02-C-10 02-C-11

CUT, CAP, ABANDON EXISTING WATERMAIN

20 LFT 6" WM 6"X6" TEE HYDRANT ASSEMBLY

(2) 6" - 45 DEG. BEND CUT,CAP, ABANDON EXISTING WATERMAIN CTE WATERMAIN

WRIGHT STREET

FULTON STREET

HORIZONTAL SCALE, FEET: 0 40 80
VERTICAL SCALE, FEET: 0 4 8
NOTE: 10x VERTICAL EXAGGERATION

MH – A26927

MH – A26934

7'-0" MIN. COVER (TYP.)

10" STORM SEWER

710 LFT - 6" D.I. WATERMAIN

MH – A27047

MH – A27053

CTE 6" D.I. WATERMAIN

GEI Consultants
617 N. Stephenson Ave Suite 110
Iron Mountain, MI 49801
906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

HARRISON STREET WATER REPLACEMENT
PLAN AND PROFILE
STA. 7+00 - 14+50

Attention: 0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-11

SHEET 18

ARCHIVE #

K:\Kingsford_City\2001888--Kingsford_Heights_Watermain_Replacement\00_CAD\Design\Civil3D\020323 REVIEW\2001888--KINGSFORD_HEIGHTS_HARRISON.dwg; 3/10/2023 4:21:55 PM; REDK, JOHN; GEI.stb

WOODWARD AVENUE — EDISON STREET — WRIGHT STREET

REMOVAL AND RESTORATION QUANTITIES:

260	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP & DRIVE APPROACH
2210	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
5250	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
543	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
543	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
14	TON	R-0740	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
2330	SFT	R-0910	CONCRETE SIDEWALK, 4"
2210	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
5250	SYD	R-1095	PAVEMENT REMOVAL
14	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

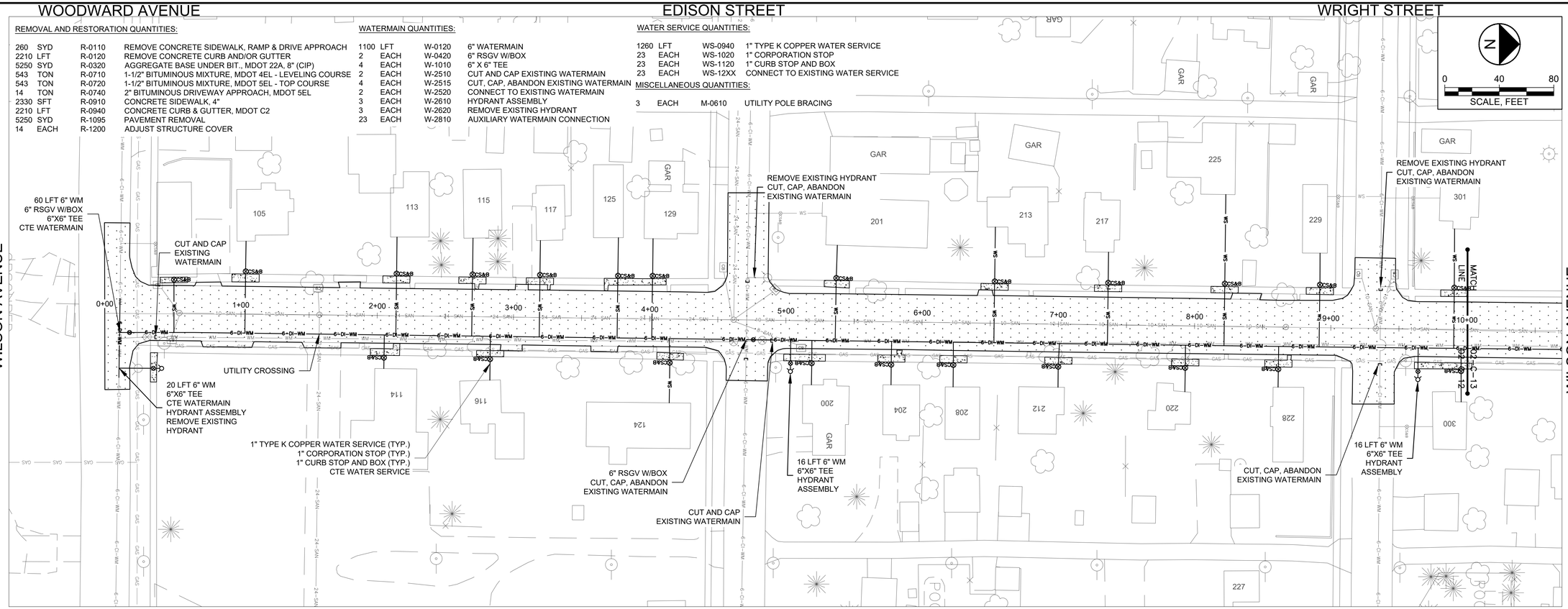
1100	LFT	W-0120	6" WATERMAIN
2	EACH	W-0420	6" RSGV W/BOX
4	EACH	W-1010	6" X 6" TEE
2	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
4	EACH	W-2515	CUT, CAP, ABANDON EXISTING WATERMAIN
2	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
3	EACH	W-2610	HYDRANT ASSEMBLY
3	EACH	W-2620	REMOVE EXISTING HYDRANT
23	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

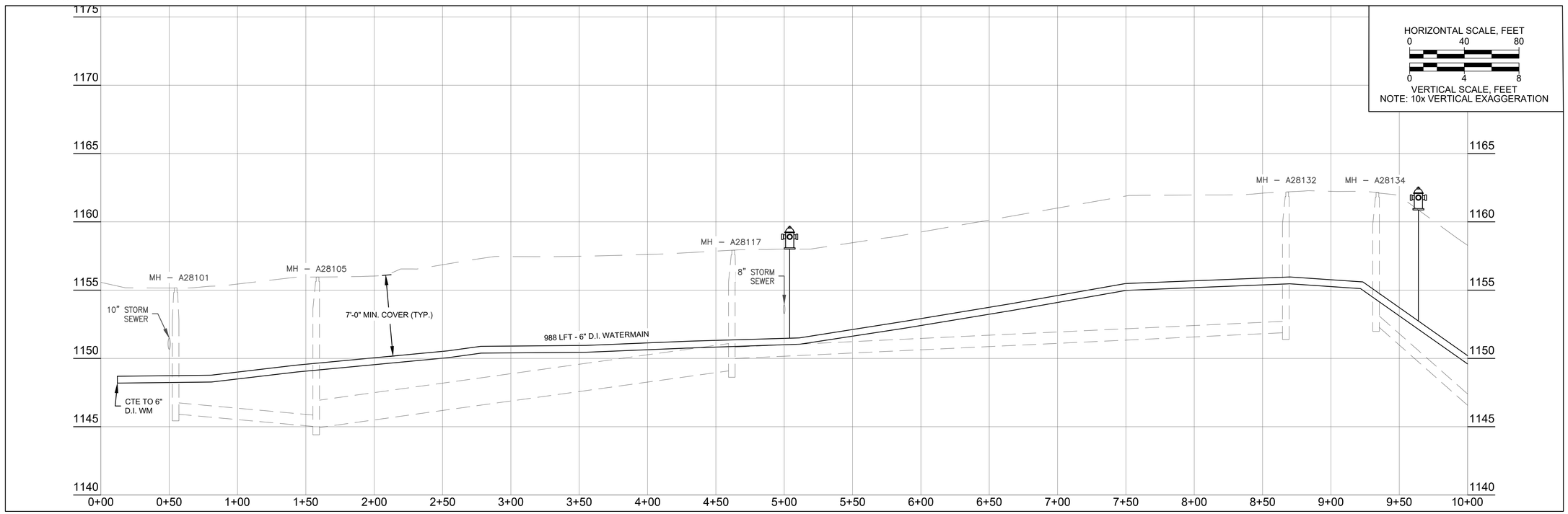
1260	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
23	EACH	WS-1020	1" CORPORATION STOP
23	EACH	WS-1120	1" CURB STOP AND BOX
23	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE

MISCELLANEOUS QUANTITIES:

3	EACH	M-0610	UTILITY POLE BRACING



WOODWARD AVENUE — EDISON STREET — WRIGHT STREET



GEI Consultants
617 N. Stephenson Ave Suite 110
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906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

WILSON AVENUE WATER REPLACEMENT
PLAN AND PROFILE
STA. 0+00 - 10+00

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-12

SHEET 19

ARCHIVE #

K:\Kingsford_City\2001888-Kingsford_Heights_Watermain_Replacement\04_CAD\Design\Civil3D\020323 REVIEW\2001888-KINGSFORD_HEIGHTS_WILSON.dwg, 3/9/2023 1:15:10 PM, RECK, JOHN, GEI.stb

REMOVAL AND RESTORATION QUANTITIES:

180	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP & DRIVE APPROACH
2000	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
4090	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
420	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
420	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
10	TON	R-0740	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
1640	SFT	R-0910	CONCRETE SIDEWALK, 4"
2000	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
4090	SYD	R-1095	PAVEMENT REMOVAL
3	EACH	R-1097	RETAINING WALL REMOVAL AND REPLACEMENT
9	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

950	LFT	W-0120	6" WATERMAIN
1	EACH	W-0420	6" RSGV W/BOX
2	EACH	W-0720	6" - 22.5 DEG. BEND
8	EACH	W-0820	6" - 45 DEG. BEND
2	EACH	W-1010	6" X 6" TEE
2	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
2	EACH	W-2515	CUT, CAP, ABANDON EXISTING WATERMAIN
3	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
1	EACH	W-2530	UTILITY CROSSING
1	EACH	W-2610	HYDRANT ASSEMBLY
1	EACH	W-2620	REMOVE EXISTING HYDRANT
15	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

960	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
15	EACH	WS-1020	1" CORPORATION STOP
15	EACH	WS-1120	1" CURB STOP AND BOX
15	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE

MISCELLANEOUS QUANTITIES:

1	EACH	M-0610	UTILITY POLE BRACING

WRIGHT STREET FULTON STREET OSAGE STREET

WILSON AVENUE

1" TYPE K COPPER WATER SERVICE (TYP.)
1" CORPORATION STOP (TYP.)
1" CURB STOP AND BOX (TYP.)
CTE WATER SERVICE

(2) 6" - 22.5 DEG BEND CUT AND CAP EXISTING WATERMAIN CTE WATERMAIN

(2) 6" - 45 DEG. BEND CUT,CAP, ABANDON EXISTING WATERMAIN CTE WATERMAIN

(2) 6" - 45 DEG. BEND CUT AND CAP EXISTING WATERMAIN CTE WATERMAIN

17 LFT 6" WM 6"X6" TEE HYDRANT ASSEMBLY

REMOVE EXISTING HYDRANT

CUT, CAP ABANDON EXISTING WATERMAIN

6" RSGV W/BOX
6" X 6" TEE
UTILITY CROSSING

MATCH LINE 02-C-12 / 02-C-13

MATCH LINE 02-C-13 / 02-C-20

MATCH LINE 02-C-13 / 02-C-15

MATCH LINE 02-C-13 / 02-C-14

N

0 40 80
SCALE, FEET

WRIGHT STREET FULTON STREET OSAGE STREET

HORIZONTAL SCALE, FEET
0 40 80
0 4 8
VERTICAL SCALE, FEET
NOTE: 10x VERTICAL EXAGGERATION

372 LFT - 6" D.I. WATERMAIN

MH – A28244

7'-0" MIN. COVER (TYP.)

MH – A28252

CTE TO 6" D.I. WM

CTE TO 6" D.I. WM

MH – A28262

12" STORM SEWER

12" STORM SEWER

482 LFT - 6" D.I. WATERMAIN

OSAGE ST. CONNECTION
SEE DRAWING 02-C-15

1160 1155 1150 1145 1140 1135 1130 1125

10+00 10+50 11+00 11+50 12+00 12+50 13+00 13+50 14+00 14+50 15+00 15+50 16+00 16+50 17+00 17+50 18+00 18+50

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906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

WILSON AVENUE WATER REPLACEMENT
PLAN AND PROFILE
STA. 10+00 - 18+50

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-13

SHEET 20

ARCHIVE #

K:\Kingsford_City\2001888--Kingsford_Heights_Watermain_Replacement\00_CAD\Design\Civil3D\020323 REVIEW\2001888--KINGSFORD_HEIGHTS_WILSON.dwg, 3/9/2023 1:17:04 PM, RECK, JOHN, GEI.stb

WYMORE AVENUE

WAVERLY STREET

S PARK STREET

WILSON AVENUE

ALLEY

REMOVAL AND RESTORATION QUANTITIES:

210	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP & DRIVE APPROACH
1,910	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
3,630	SYD	R-0220	SAND SUBBASE - EXISTING MATERIAL, 12" (CIP)
3,630	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
406	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
406	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
12	TON	R-0730	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
1,850	SFT	R-0910	CONCRETE SIDEWALK, 4"
1,910	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
3,630	SYD	R-1095	PAVEMENT REMOVAL
2	EACH	R-1097	RETAINING WALL REMOVAL AND REPLACEMENT
11	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

860	LFT	W-0120	6" WATERMAIN
1	EACH	W-0420	6" RSGV W/BOX
6	EACH	W-0820	6" - 45 DEG. BEND
2	EACH	W-1010	6" X 6" TEE
2	EACH	W-2110	6" X 4" REDUCER
1	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
2	EACH	W-2515	CUT, CAP, ABANDON EXISTING WATERMAIN
4	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
1	EACH	W-2530	UTILITY CROSSING
1	EACH	W-2610	HYDRANT ASSEMBLY
1	EACH	W-2620	REMOVE EXISTING HYDRANT
15	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

860	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
15	EACH	WS-1020	1" CORPORATION STOP
15	EACH	WS-1120	1" CURB STOP AND BOX
15	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE

MISCELLANEOUS QUANTITIES:

1	EACH	M-0610	UTILITY POLE BRACING

N

0 40 80

SCALE, FEET

CUT AND CAP EXISTING WATERMAIN
CTE WATERMAIN

MATCH LINE

02-C-16

02-C-14

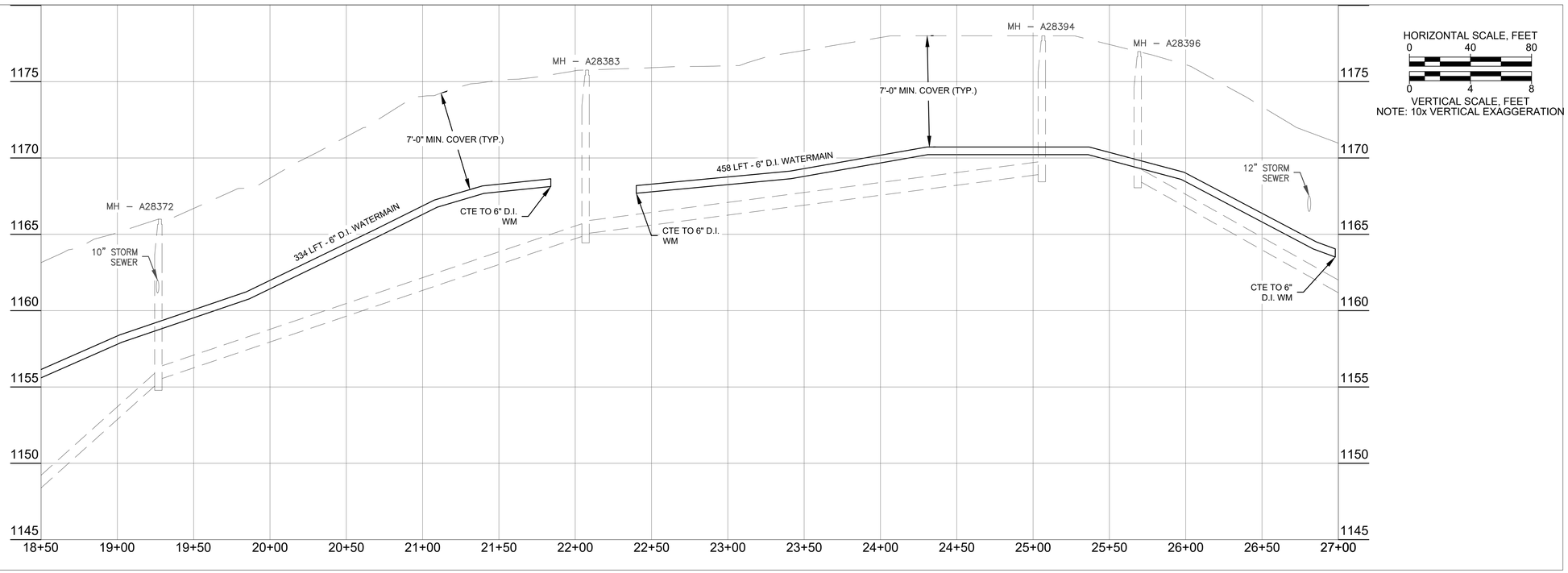
10 LFT 6" WM
6" X 6" TEE
6" X 4" REDUCER
CTE WATERMAIN
HYDRANT ASSEMBLY
REMOVE EXISTING HYDRANT

50 LFT 6" WM
6" RSGV W/BOX
6" X 6" TEE
6"X4" REDUCER
CTE WATERMAIN
UTILITY CROSSING

(2) 6" - 45 DEG. BEND
CUT,CAP, ABANDON
EXISTING WATERMAIN
CTE WATERMAIN

CUT, CAP, ABANDON
EXISTING WATERMAIN

1" TYPE K COPPER WATER SERVICE (TYP.)
1" CORPORATION STOP (TYP.)
1" CURB STOP AND BOX (TYP.)
CTE WATER SERVICE



HORIZONTAL SCALE, FEET
0 40 80

VERTICAL SCALE, FEET
0 4 8
NOTE: 10x VERTICAL EXAGGERATION

GEI Consultants
617 N. Stephenson Ave Suite 110
Iron Mountain, MI 49801
906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

WILSON AVENUE WATER REPLACEMENT
PLAN AND PROFILE
STA. 18+50 - 27+00

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-14

SHEET 21

ARCHIVE #

K:\Kingsford_City\2001888--Kingsford_Heights_Watermain_Replacement\06_CAD\Design\Civil3D\020323 REVIEW\2001888--KINGSFORD_HEIGHTS_WILSON.dwg, 3/10/2023 4:25:00 PM, REDK, JOHN, GEI.stb

WYMORE AVENUE

WILSON AVENUE

OSAGE STREET

OSAGE STREET

WYMORE AVENUE

WILSON AVENUE

HARDING AVENUE

REMOVAL AND RESTORATION QUANTITIES:

30	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP & DRIVE APPROACH
670	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
1060	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
110	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
110	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
6	TON	R-0740	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
270	SFT	R-0910	CONCRETE SIDEWALK, 4"
310	SFT	R-0930	CONCRETE DRIVE APPROACH, 6"
670	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
1060	SYD	R-1095	PAVEMENT REMOVAL
5	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

330	LFT	W-0120	6" WATERMAIN
1	EACH	W-0720	6" - 22.5 DEG. BEND
4	EACH	W-0820	6" - 45 DEG. BEND
1	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
1	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
1	EACH	W-2530	UTILITY CROSSING
3	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

120	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
3	EACH	WS-1020	1" CORPORATION STOP
3	EACH	WS-1120	1" CURB STOP AND BOX
3	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE

MISCELLANEOUS QUANTITIES:

2	EACH	M-0610	UTILITY POLE BRACING

N

0 40 80

SCALE, FEET

MATCH LINE

02-C-14

02-C-13

02-C-15

02-C-13

MATCH LINE

0+00 1+00 2+00 3+00 4+00 4+50

15+00 16+00 17+00 18+00

6" - 22.5 DEG. BEND
CUT AND CAP
EXISTING WATERMAIN
CTE WATERMAIN
UTILITY CROSSING

1" TYPE K COPPER WATER SERVICE (TYP.)
1" CORPORATION STOP (TYP.)
1" CURB STOP AND BOX (TYP.)
CTE WATER SERVICE (TYP.)

MH – A26963

MH – A27562

MH – A27862

MH – A28262

CTE 6" D.I. WM

10" SANITARY SEWER

373 LFT - 6" D.I. WATERMAIN

12" STORM SEWER

7'-0" MIN. COVER (TYP.)

WILSON AVE. CONNECTION
SEE DRAWING 02-C-13

1150 1145 1140 1135 1130 1125 1120

0+00 0+50 1+00 1+50 2+00 2+50 3+00 3+50 4+00 4+50

HORIZONTAL SCALE, FEET
0 40 80

VERTICAL SCALE, FEET
0 4 8

NOTE: 10x VERTICAL EXAGGERATION

GEI Consultants
617 N. Stephenson Ave Suite 110
Iron Mountain, MI 49801
906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

OSAGE STREET WATER REPLACEMENT
PLAN AND PROFILE
STA. 0+00 - 4+50

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-15

SHEET 22

ARCHIVE #

K:\Kingsford_City\2001888-Kingsford_Heights_Watermain_Replacement\00_CAD\Design\Civil3D\020323 REVIEW\2001888-KINGSFORD_HEIGHTS_HARDING_AVE-A00.dwg, 3/9/2023 12:05:35 PM, REDK, JOHN, GEI.stb

S PARK STREET

WILSON AVENUE

WAVERLY STREET

S PARK STREET

MARQUETTE BOULEVARD

WYMORE AVENUE

WILSON AVENUE

REMOVAL AND RESTORATION QUANTITIES:

130	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP & DRIVE APPROACH
1290	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
2370	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
243	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
243	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
14	TON	R-0740	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
1180	SFT	R-0910	CONCRETE SIDEWALK, 4"
1290	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
2370	SYD	R-1095	PAVEMENT REMOVAL
7	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

630	LFT	W-0120	6" WATERMAIN
1	EACH	W-0420	6" RSGV W/BOX
2	EACH	W-0820	6" - 45 DEG. BEND
1	EACH	W-1010	6" X 6" TEE
2	EACH	W-2110	6" X 4" REDUCER
1	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
1	EACH	W-2515	CUT, CAP, ABANDON EXISTING WATERMAIN
3	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
12	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

680	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
12	EACH	WS-1020	1" CORPORATION STOP
12	EACH	WS-1120	1" CURB STOP AND BOX
12	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE

N

0 40 80

SCALE, FEET

1" TYPE K COPPER WATER SERVICE (TYP.)
1" CORPORATION STOP (TYP.)
1" CURB STOP AND BOX (TYP.)
CTE WATER SERVICE (TYP.)

CUT AND CAP EXISTING WATERMAIN

6" RSGV W/BOX
6" X 6" TEE
(2) 6"X4" REDUCER
(2) CTE WATERMAIN

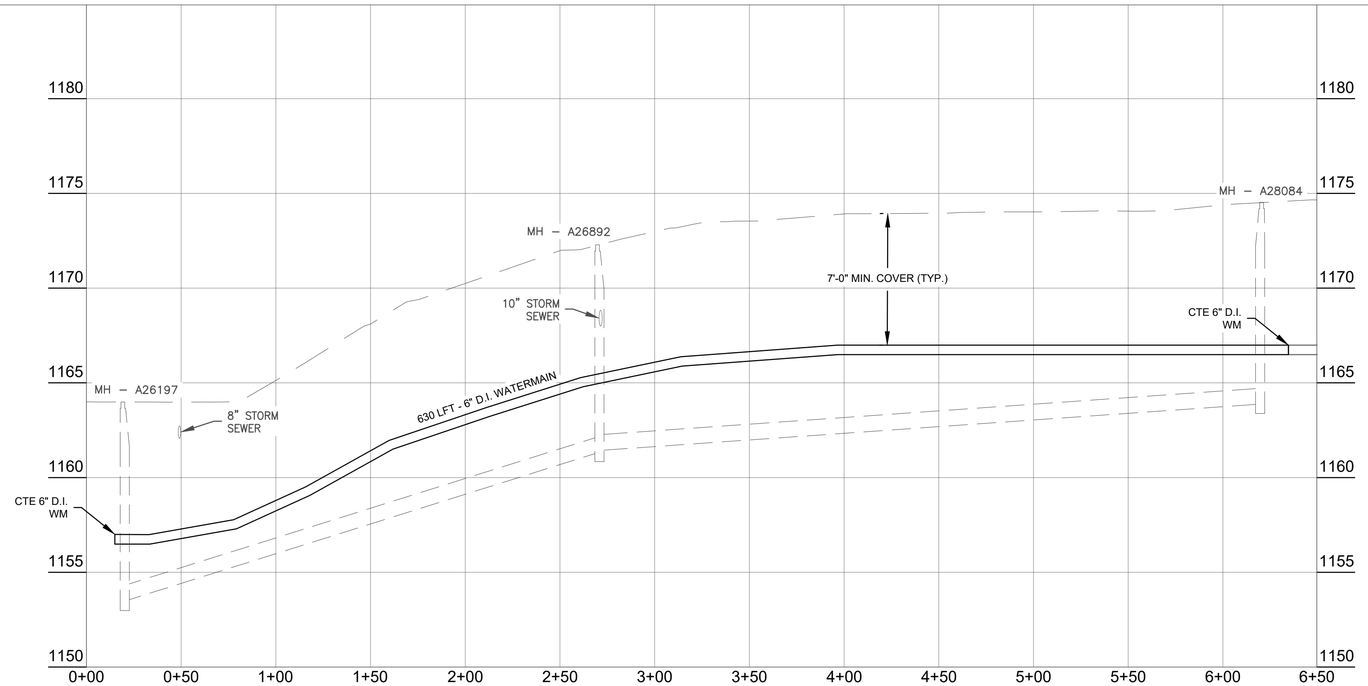
(2) 45 DEG. BEND
CUT, CAP, ABANDON
EXISTING WATERMAIN
CTE WATERMAIN

MATCH LINE

02–C–16

02–C–14

HORIZONTAL SCALE, FEET
0 40 80
0 4 8
VERTICAL SCALE, FEET
NOTE: 10x VERTICAL EXAGGERATION



GEI Consultants
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906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

WAVERLY STREET WATER REPLACEMENT
PLAN AND PROFILE
STA. 0+00 - 6+50

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-16

SHEET 23

ARCHIVE #

K:\Kingsford_City\2001888-Kingsford_Heights_Watermain_Replacement\00_CAD\Design\Civil3D\020323 REVIEW\2001888-KINGSFORD_HEIGHTS_HARDING_AVE-ADD.dwg, 3/9/2023 12:08:03 PM, RECK, JOHN, GEI.stb

WOODWARD AVENUE

EDISON STREET

WRIGHT STREET

HARDING AVENUE

ALLEY

HARDING AVENUE

WOODWARD AVENUE

WRIGHT STREET

REMOVAL AND RESTORATION QUANTITIES:

130	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP & DRIVE APPROACH
1870	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
5060	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
518	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
518	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
14	TON	R-0740	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
940	SFT	R-0910	CONCRETE SIDEWALK, 4"
180	SFT	R-0930	CONCRETE DRIVEWAY APPROACH, 6"
1870	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
5060	SYD	R-1095	PAVEMENT REMOVAL
10	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

1040	LFT	W-0120	6" WATERMAIN
20	LFT	W-0120	8" WATERMAIN
4	EACH	W-0420	6" RSGV W/BOX
3	EACH	W-1010	6" X 6" TEE
1	EACH	W-2130	8" X 6" REDUCER
1	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
2	EACH	W-2515	CUT, CAP, ABANDON EXISTING WATERMAIN
2	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
2	EACH	W-2610	HYDRANT ASSEMBLY
2	EACH	W-2620	REMOVE EXISTING HYDRANT
9	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

630	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
10	EACH	WS-1020	1" CORPORATION STOP
10	EACH	WS-1120	1" CURB STOP AND BOX
10	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE

N

0 40 80

SCALE, FEET

24 LFT - 6" WM
20 LFT - 8" WM
6" X 6" TEE
(3) 6" RSGV W/BOX
8" X 6" REDUCER
CUT AN CAP
EXISTING WATERMAIN
(2) CTE WATERMAIN

CUT,CAP, ABANDON
EXISTING WATERMAIN
REMOVE EXISTING
HYDRANT

20 LFT 6" WM
6" X 6" TEE
CTE WATERMAIN
HYDRANT ASSEMBLY

16 LFT 6" WM
6" X 6" TEE
CTE WATERMAIN
HYDRANT ASSEMBLY

CUT, CAP, ABANDON
EXISTING WATERMAIN
REMOVE EXISTING
HYDRANT

MATCH LINE

1" TYPE K COPPER WATER SERVICE (TYP.)
1" CORPORATION STOP (TYP.)
1" CURB STOP AND BOX (TYP.)
CTE WATER SERVICE (TYP.)

1200 115 125 131 201 211 219 227 303 126 216 232 300

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00

02-C-17 02-C-18

HORIZONTAL SCALE, FEET
0 40 80
0 4 8
VERTICAL SCALE, FEET
NOTE: 10x VERTICAL EXAGGERATION

MH – A29405

MH – A29417

MH – A29434

10" STORM SEWER

975 LFT - 6" D.I. WATERMAIN

CTE 6" D.I. WM

7'-0" MIN. COVER (TYP.)

1155 1150 1145 1140 1135 1130 1125 1120

0+00 0+50 1+00 1+50 2+00 2+50 3+00 3+50 4+00 4+50 5+00 5+50 6+00 6+50 7+00 7+50 8+00 8+50 9+00 9+50 10+00

GEI Consultants
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2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

HARDING AVENUE WATER REPLACEMENT
PLAN AND PROFILE
STA. 0+00 - 10+00

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-17

SHEET 24

ARCHIVE #

K:\Kingsford_City\2001888-Kingsford_Heights_Watermain_Replacement\00_CAD\Design\Civil3D\020323 REVIEW\2001888-KINGSFORD_HEIGHTS_HARDING_AVE-A00.dwg, 3/13/2023 8:54:21 AM, RECK, JOHN, GEI.stb

WRIGHT STREET FULTON STREET OSAGE STREET

REMOVAL AND RESTORATION QUANTITIES:

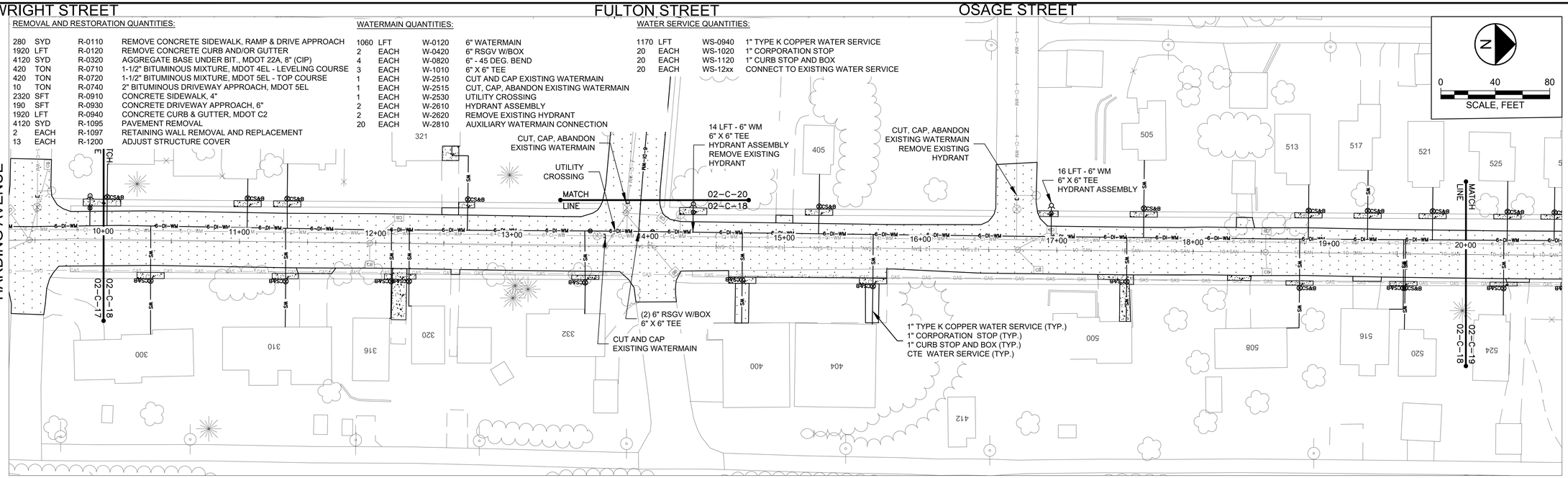
280	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP & DRIVE APPROACH
1920	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
4120	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
420	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
420	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
10	TON	R-0740	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
2320	SFT	R-0910	CONCRETE SIDEWALK, 4"
190	SFT	R-0930	CONCRETE DRIVEWAY APPROACH, 6"
1920	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
4120	SYD	R-1095	PAVEMENT REMOVAL
2	EACH	R-1097	RETAINING WALL REMOVAL AND REPLACEMENT
13	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

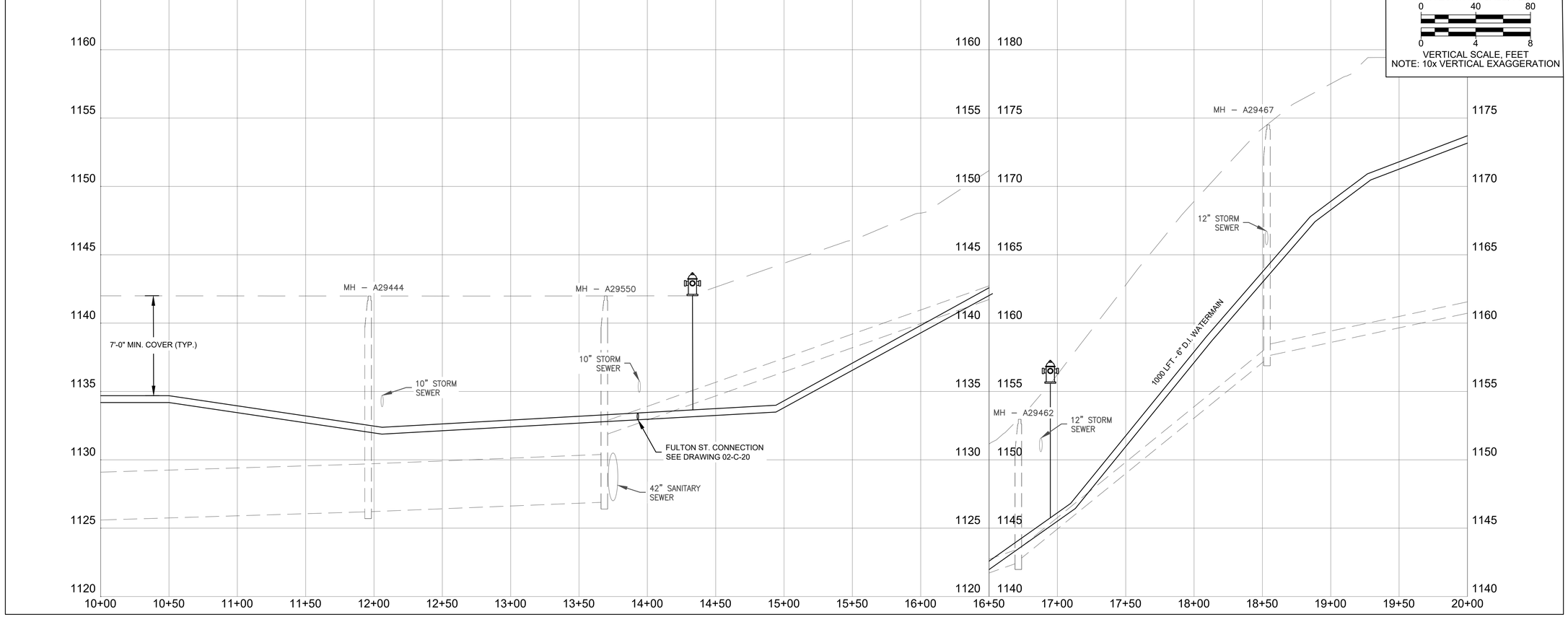
1060	LFT	W-0120	6" WATERMAIN
2	EACH	W-0420	6" RSGV W/BOX
4	EACH	W-0820	6" - 45 DEG. BEND
3	EACH	W-1010	6" X 6" TEE
1	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
1	EACH	W-2515	CUT, CAP, ABANDON EXISTING WATERMAIN
1	EACH	W-2530	UTILITY CROSSING
2	EACH	W-2610	HYDRANT ASSEMBLY
2	EACH	W-2620	REMOVE EXISTING HYDRANT
20	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

1170	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
20	EACH	WS-1020	1" CORPORATION STOP
20	EACH	WS-1120	1" CURB STOP AND BOX
20	EACH	WS-12xx	CONNECT TO EXISTING WATER SERVICE



WRIGHT STREET FULTON STREET



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906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

HARDING AVENUE WATER REPLACEMENT PLAN AND PROFILE STA. 10+00 - 20+00

Attention: 0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-18

SHEET 25

ARCHIVE #

K:\Kingsford_City\2001888-Kingsford_Heights_Watermain_Replacement\05-CAD\Design\Civil3D\020323 REVIEW\2001888-KINGSFORD_HEIGHTS_HARDING_AVE-ADD.dwg, 3/13/2023 8:55:20 AM, RECK, JOHN, GEI.stb

WAVERLY STREET

S PARK STREET

HARDING AVENUE

ALLEY

ALLEY

HARDING AVENUE

REMOVAL AND RESTORATION QUANTITIES:

200	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP & DRIVE APPROACH
1830	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
3670	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
420	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
420	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
10	TON	R-0740	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 13A
1800	SFT	R-0910	CONCRETE SIDEWALK, 4"
1830	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
3670	SYD	R-1095	PAVEMENT REMOVAL
1	EACH	R-1097	RETAINING WALL REMOVAL AND REPLACMENT
3	EACH	R-1200	ADJUST STRUCTURE COVER

WATERMAIN QUANTITIES:

790	LFT	W-0120	6" WATERMAIN
2	EACH	W-0420	6" RSGV W/BOX
3	EACH	W-1010	6" X 6" TEE
1	EACH	W-2110	6" X 4" REDUCER
1	EACH	W-2510	CUT AND CAP EXISTING WATERMAIN
2	EACH	W-2515	CUT, CAP, ABANDON EXISTING WATERMAIN
2	EACH	W-2520	CONNECT TO EXISTING WATERMAIN
2	EACH	W-2610	HYDRANT ASSEMBLY
2	EACH	W-2620	REMOVE EXISTING HYDRANT
1	EACH	W-2660	REMOVE EXISTING VALVEBOX
20	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

1400	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
21	EACH	WS-1020	1" CORPORATION STOP
21	EACH	WS-1120	1" CURB STOP AND BOX
20	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE - CONTRACTOR

MISCELLANEOUS QUANTITIES:

1	EACH	M-0610	UTILITY POLE BRACING

N

0 40 80

SCALE, FEET

CUT, CAP, ABANDON EXISTING WATERMAIN REMOVE EXISTING HYDRANT

12 LFT - 6" WM 6" X 6" TEE HYDRANT ASSEMBLY

14 LFT - 6" WM 6" X 6" TEE HYDRANT ASSEMBLY REMOVE EXISTING HYDRANT

6" RSGV W/BOX 6" X 6" TEE 6"X4" REDUCER CUT, CAP. ABANDON EXISTING WATERMAIN CTE WATERMAIN

CUT AND CAP EXISTING WATERMAIN

1" TYPE K COPPER WATER SERVICE (TYP.) 1" CORPORATION STOP (TYP.) 1" CURB STOP AND BOX (TYP.) CTE WATER SERVICE (TYP.)

42 LFT - 6" WM 6" RSGV W/BOX CTE WATERMAIN

MATCH LINE

02-C-18

02-C-19

19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 27+50

513 517 521 525 529 533 537 601 605 609 613 621 625 633 508 516 520 524 532 536 604 608 616 624 628 632

WAVERLY STREET

HORIZONTAL SCALE, FEET

0 40 80

0 4 8

VERTICAL SCALE, FEET

NOTE: 10x VERTICAL EXAGGERATION

MH – A29582

MH – A49500

7'-0" MIN. COVER (TYP.)

712 LFT - 6" D.I. WATERMAIN

10" STORM SEWER

CTE 6" D.I. WM

1180 1175 1170 1165 1160 1155 1150

20+00 20+50 21+00 21+50 22+00 22+50 23+00 23+50 24+00 24+50 25+00 25+50 26+00 26+50 27+00 27+50

GEI Consultants

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Iron Mountain, MI 49801

906-828-9303

2023 Kingsford Heights Watermain Replacement

City of Kingsford

305 S. Carpenter Ave.

Kingsford, MI 49802

HARDING AVENUE WATER REPLACEMENT PLAN AND PROFILE STA. 20+00 - 27+50

Attention:

0 1"

If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM

Checked By: BSF

Drawn By: JRR

Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.

02-C-19

SHEET 26

ARCHIVE #

K:\Kingsford_City\2001888-Kingsford_Heights_Watermain_Replacement\00_CAD\Design\Civil3D\020323 REVIEW\2001888-KINGSFORD_HEIGHTS_HARDING_AVE-A00.dwg, 3/15/2023 8:45:26 AM, RICK, JOHN, GEI.stb

REMOVAL AND RESTORATION QUANTITIES:

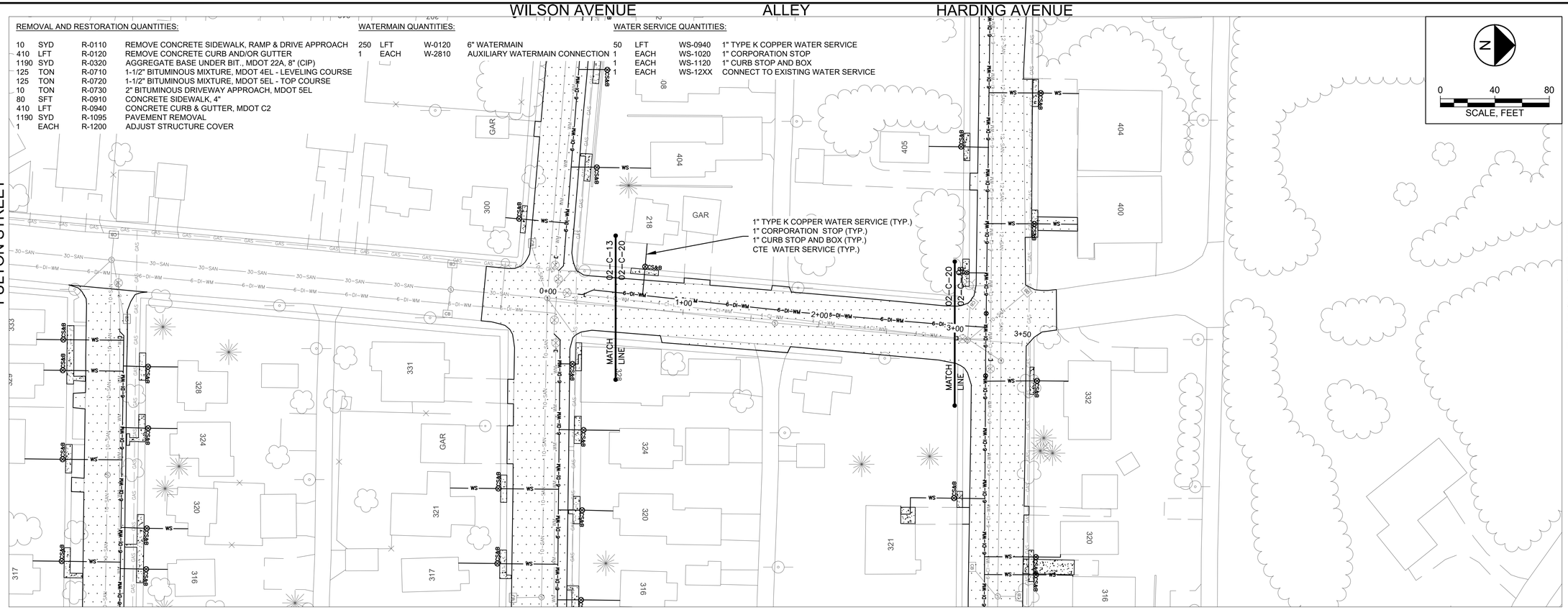
10	SYD	R-0110	REMOVE CONCRETE SIDEWALK, RAMP & DRIVE APPROACH
410	LFT	R-0120	REMOVE CONCRETE CURB AND/OR GUTTER
1190	SYD	R-0320	AGGREGATE BASE UNDER BIT., MDOT 22A, 8" (CIP)
125	TON	R-0710	1-1/2" BITUMINOUS MIXTURE, MDOT 4EL - LEVELING COURSE
125	TON	R-0720	1-1/2" BITUMINOUS MIXTURE, MDOT 5EL - TOP COURSE
10	TON	R-0730	2" BITUMINOUS DRIVEWAY APPROACH, MDOT 5EL
80	SFT	R-0910	CONCRETE SIDEWALK, 4"
410	LFT	R-0940	CONCRETE CURB & GUTTER, MDOT C2
1190	SYD	R-1095	PAVEMENT REMOVAL
1	EACH	R-1200	ADJUST STRUCTURE COVER

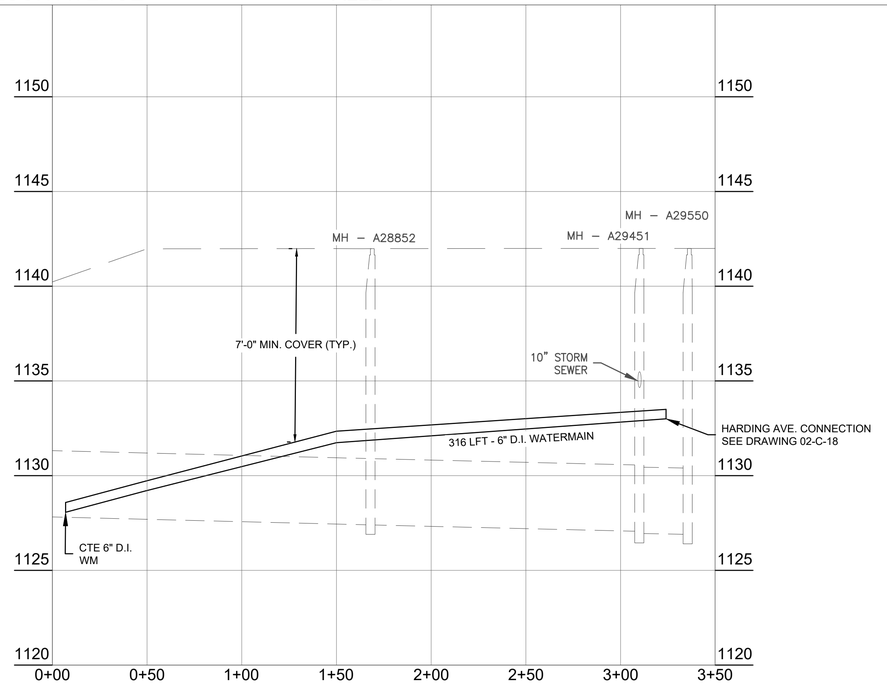
WATERMAIN QUANTITIES:

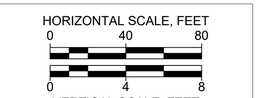
250	LFT	W-0120	6" WATERMAIN
1	EACH	W-2810	AUXILIARY WATERMAIN CONNECTION

WATER SERVICE QUANTITIES:

50	LFT	WS-0940	1" TYPE K COPPER WATER SERVICE
1	EACH	WS-1020	1" CORPORATION STOP
1	EACH	WS-1120	1" CURB STOP AND BOX
1	EACH	WS-12XX	CONNECT TO EXISTING WATER SERVICE







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617 N. Stephenson Ave Suite 110
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906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

FULTON STREET WATER REPLACEMENT
PLAN AND PROFILE
STA. 0+00 - 3+50

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
02-C-20

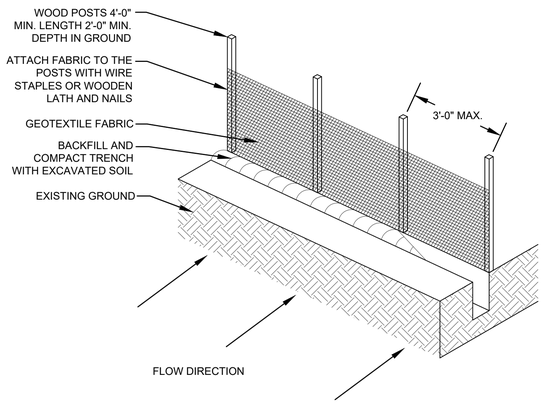
SHEET 27

ARCHIVE #

K:\Kingsford_City\2001888--Kingsford_Heights_Watermain_Replacement\02-CAD\Design\Civil3D\020323 REVIEW\2001888--KINGSFORD_HEIGHTS_HARDING_AVE-ADD.dwg, 3/9/2023 12:22:54 PM, RECK, JOHN, GEI.stb

NOTES:

1. TRENCH SHALL BE MINIMUM OF 4" WIDE AND 6" DEEP TO BURY AND ANCHOR GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
2. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" x 1 1/8" OAK OR HICKORY.
3. THE SOIL EROSION AND SEDIMENTATION CONTROL PERMIT OBTAINED BY THE CONTRACTOR FROM THE LOCAL GOVERNING AGENCY SUPERCEDES THIS DETAIL.

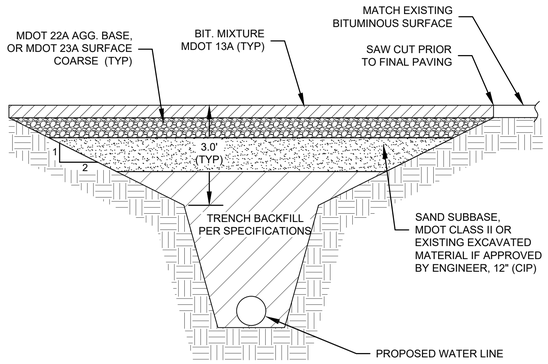


02-001 SILT FENCE

NO SCALE

NOTES:

1. THIS METHOD SHALL BE USED WHEN A WATER LINE IS INSTALLED PERPENDICULAR TO THE ROADWAY.



GRAVEL ROAD AND DRIVEWAY CROSSING

REPLACE EXISTING GRAVEL SURFACE WITH 6" C.I.P. MDOT 23A AGGREGATE SURFACE COURSE WHERE DISTURBED BY CONSTRUCTION.

GRAVEL SHOULDERS

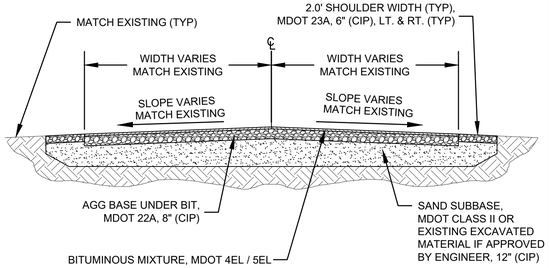
SHOULDERS AND APPROACHES SHALL BE PLACED WHERE EXISTING SHOULDERS AND APPROACHES ARE DISTURBED. REPLACE THICKNESS SHALL BE 6" C.I.P. MDOT 23A.

02-020 TYPICAL PAVED ROAD AND DRIVEWAY CROSSING

NO SCALE

ROAD RECONSTRUCTION REQUIREMENTS:

1. TYPICAL CROSS SECTIONS ARE SHOWN FOR REFERENCE PURPOSES, AND REPRESENT REQUIREMENTS FOR STREET REPAIR OR RECONSTRUCTION.



TYPICAL ROADWAY X-SECTION

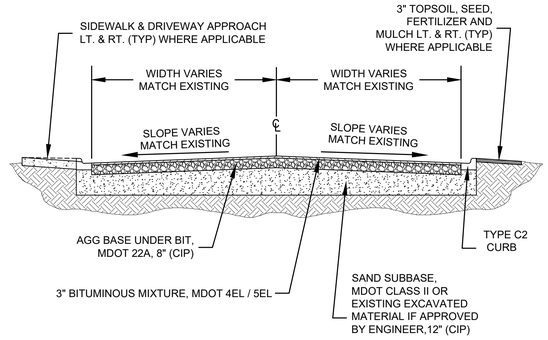
NO SCALE

02-021 REFERENCING GRAVEL SHOULDER AREAS

NO SCALE

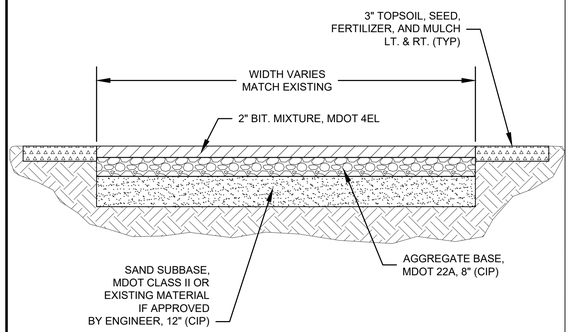
ROAD RECONSTRUCTION REQUIREMENTS:

1. TYPICAL CROSS SECTIONS ARE SHOWN FOR REFERENCE PURPOSES, AND REPRESENT REQUIREMENTS FOR STREET REPAIR OR RECONSTRUCTION.



02-022 TYPICAL ROADWAY X-SECTION WITH CURB

NO SCALE

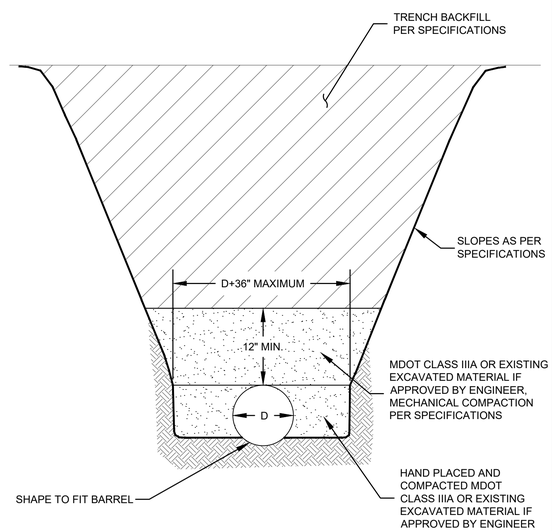


02-050 TYPICAL PAVED DRIVEWAY X-SECTION

NO SCALE

NOTES:

1. THE BACKFILL MATERIALS AND METHODS SHALL CONFORM TO THE SPECIFICATIONS.



METHOD 1

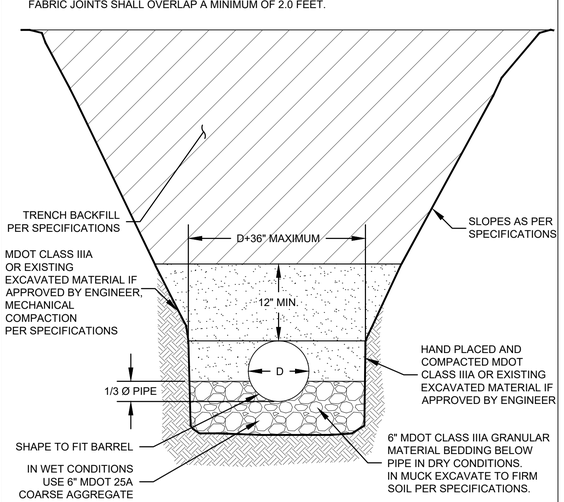
WHERE NATURAL MATERIAL BENEATH PIPE MEETS MDOT CLASS IIIA SPECIFICATIONS.

02-190 PIPE BEDDING DETAIL

NO SCALE

NOTES:

1. THE BACKFILL MATERIALS AND METHODS SHALL CONFORM TO THE SPECIFICATIONS.
2. CONTRACTOR SHALL INSTALL NON-WOVEN 8 OZ/SYD GEOTEXTILE FABRIC ABOVE MDOT 25A STONE FOR ENTIRE TRENCH WIDTH AND LENGTH OF STONE BEDDING WHEREVER UTILIZED. GEOTEXTILE FABRIC JOINTS SHALL OVERLAP A MINIMUM OF 2.0 FEET.



METHOD 2

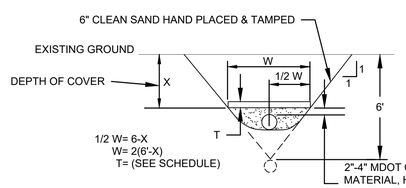
WHERE NATURAL MATERIAL BENEATH PIPE DOES NOT MEET MDOT CLASS IIIA SPECIRICATIONS OR WHERE NATURAL MATERIAL IS UNDERCUT DURING EXCAVATION TO STABALIZE TRENCH BOTTOM

02-192 PIPE BEDDING DETAIL

NO SCALE

NOTES:

1. INSULATION SHALL BE HIGH DENSITY CLOSED CELL RIGID POLYSTRENE WITH A RATING OF R5 PER INCH OR GREATER.



SHALLOW WATERMAIN

THICKNESS SCHEDULE

DEPTH OF COVER	INSULATION THICKNESS
4 1/2'	6"
5'	5"
5 1/2'	4"
6'	3"
6 1/2'	2"
7'	0"

02-195 INSULATION DETAILS

NO SCALE

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906-828-9303

2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

STANDARD DETAILS

Attention: 0 1"

If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
99-D-01

SHEET 28

ARCHIVE #

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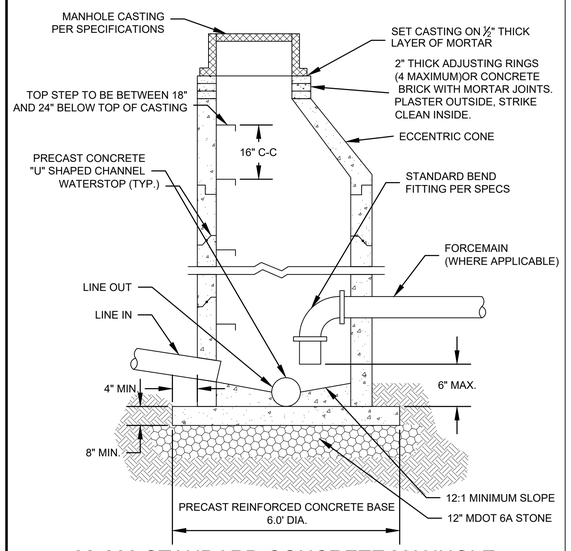
NOTES:

1. SANITARY SEWER MANHOLES SHALL BE PROVIDED WITH PRECAST CONCRETE FLOW CHANNELS.
2. PRECAST CONCRETE FLOW CHANNELS SHALL PROVIDE A SMOOTH FLOW-LINE TRANSITION BETWEEN MANHOLE INLET(S) AND MANHOLE OUTLET.
3. FLOW CHANNEL SHALL BE FORMED TO PROVIDE SMOOTH FLOW FROM FORCEMAIN DISCHARGE PIPE.
4. F.M. DISHCARGE BEND FITTING SHALL BE ANGLED TO PROVIDE SMOOTH FLOW INTO FLOW CHANNEL.

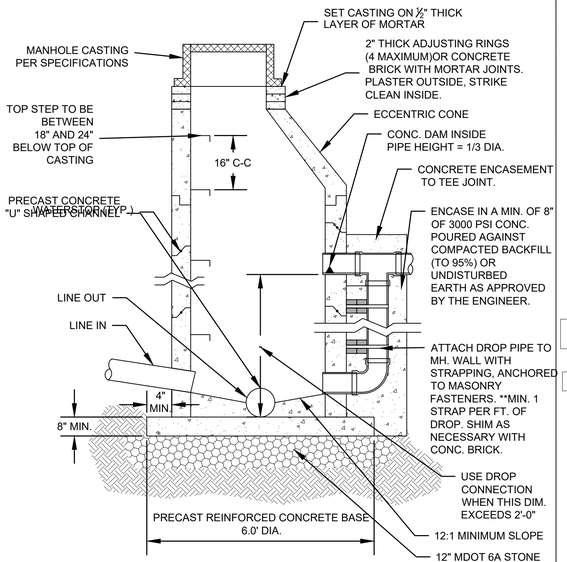


02-200 STANDARD CONCRETE MANHOLE

NO SCALE

NOTES:

1. SANITARY SEWER MANHOLES SHALL BE PROVIDED WITH PRECAST CONCRETE FLOW CHANNELS.
2. PRECAST CONCRETE FLOW CHANNELS SHALL PROVIDE A SMOOTH FLOW-LINE TRANSITION BETWEEN MANHOLE INLET(S) AND MANHOLE OUTLET.

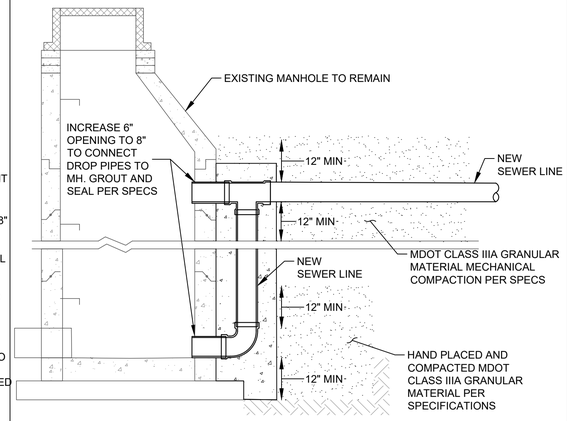


02-202 STANDARD CONCRETE MANHOLE W/OUTSIDE DROP CONNECTION

NO SCALE

NOTES:

1. THE BACKFILL MATERIALS AND METHODS SHALL CONFORM TO THE SPECIFICATIONS

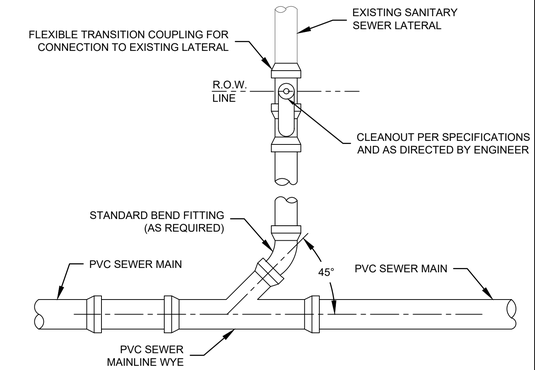


02-207 SANITARY SEWER MAIN CONNECTION TO EXISTING MANHOLE

NO SCALE

NOTES:

1. CONTRACTOR SHALL LOCATE PROPOSED CONNECTIONS TO EXISTING LATERALS PRIOR TO EXTENDING NEW LATERALS IN ORDER TO MINIMIZE UNNECESSARY BENDS.



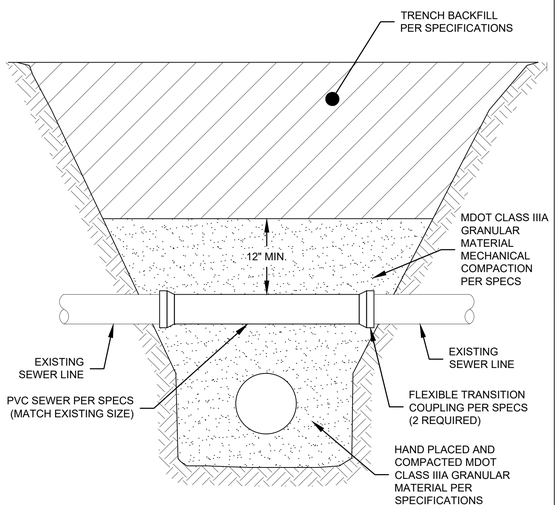
WYE SEWER LATERAL CONNECTION TO PVC SANITARY SEWER MAIN

02-231 SANITARY SEWER LATERAL (PLAN VIEW)

NO SCALE

NOTES:

1. THE BACKFILL MATERIALS AND METHODS SHALL CONFORM TO THE SPECIFICATIONS.

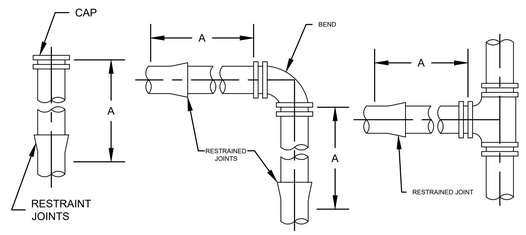


02-235 EXISTING SANITARY SEWER LINE REPAIR

NO SCALE

NOTES:

1. RESTRAINED JOINTS SHALL BE MADE USING MECHANICAL JOINTS WITH RETAINER GLANDS OR LOCKING GASKETS.
2. INCREASE THE ABOVE VALUES BY 25 PERCENT FOR PVC AND HDPE PIPE AND WHEN POLYETHLYENE ENCASEMENT IS UTILIZED.



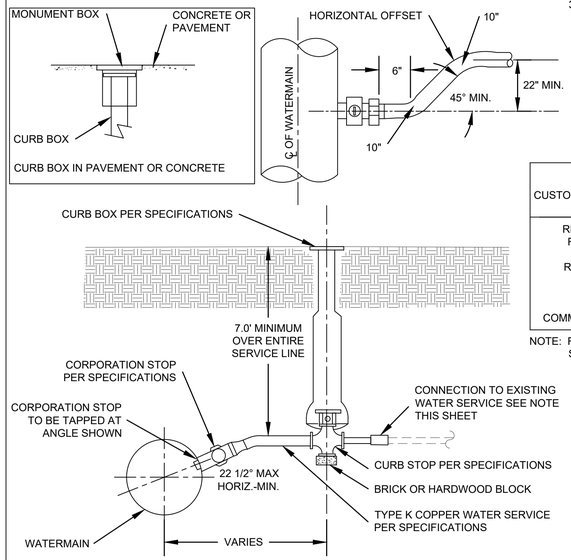
LENGTH OF RESTRAINT REQUIRED, "A" IN FEET				DESIGN STRENGTH OF RESTRAINT REQUIRED (KIPS)	
PIPE SIZE	DEFLECTION ANGLE				
	22-1/2	45	90, TEE, CAP OR VALVE	45	90, TEE, CAP OR VALVE
6"	3	11	37	2.0	5.0
8"	4	15	50	3.0	9.0
10"	5	18	61	5.0	14.0
12"	6	22	73	6.0	20.0
16"	8	28	95	11.0	36.0

02-405 PIPE RESTRAINT DETAIL

NO SCALE

NOTES:

1. SERVICE LINES SHALL BE CONTINUOUS WITHOUT JOINTS FROM THE CORPORATION STOP TO THE CURB STOP UNLESS APPROVED BY THE ENGINEER OR OWNER.
2. BEDDING FOR WATER SERVICE LATERAL PIPE SHALL BE THE SAME AS FOR WATERMAIN PIPING AND IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS.
3. SERVICE LINES INSTALLED BENEATH THE ROADWAY SURFACE SHALL BE INSTALLED INSIDE OWNER SUPPLIED CASING PIPE IN ACCORDANCE WITH THE SPECIFICATIONS.



SERVICE SIZE RECOMMENDATION TABLE

CUSTOMER DESCRIPTION / METER SIZE	APPROXIMATE MAXIMUM DEMAND (GPM)	SUGGESTED MAXIMUM ALLOWABLE SERVICE LENGTHS FOR WATER SERVICE SIZE SHOWN BASED ON METER SIZE SHOWN AND A MAXIMUM PRESSURE DROP OF 8 PSI.			
		1" SERVICE	1 1/4" SERVICE	1 1/2" SERVICE	2" SERVICE
RESIDENTIAL SINGLE FAMILY / 5/8" METER	10 GPM	130 FEET	280 FEET	680 FEET	2700 FEET
RESIDENTIAL HOBBY FARM / 1" METER	15 GPM	70 FEET	200 FEET	500 FEET	2000 FEET
SMALL FARM OR COMMERCIAL / 1" METER	20 GPM	35 FEET	100 FEET	250 FEET	1000 FEET

NOTE: REVIEW METER AND SERVICE LINE SIZE AND LENGTHS FOR OTHER CONDITIONS SUCH AS SPRINKLER REQUIREMENTS AND HIGH USE, CONSTANT PRESSURE CONDITION.

CONNECTION TO EXISTING WATER SERVICE SHALL BE AS FOLLOWS:

1. COPPER TO COPPER SHALL HAVE CONDUCTIVE COMPRESSION COUPLING.
2. COPPER TO STEEL PIPE SHALL HAVE CONDUCTIVE COMPRESSION COUPLING TO THREADED COUPLING.

02-412 TYPICAL WATER SERVICE CONNECTION AND SERVICE SIZE RECOMMENDATIONS

NO SCALE

GEI Consultants
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2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

STANDARD DETAILS

Attention: 0 1"
If this scale bar does not measure 1" then drawing is not original scale.

RELEASE #	DATE
DESCRIPTION	
A	12/16/2022
90 PERCENT DRAFT	
B	02/10/2023
FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
99-D-02

SHEET 29

ARCHIVE #

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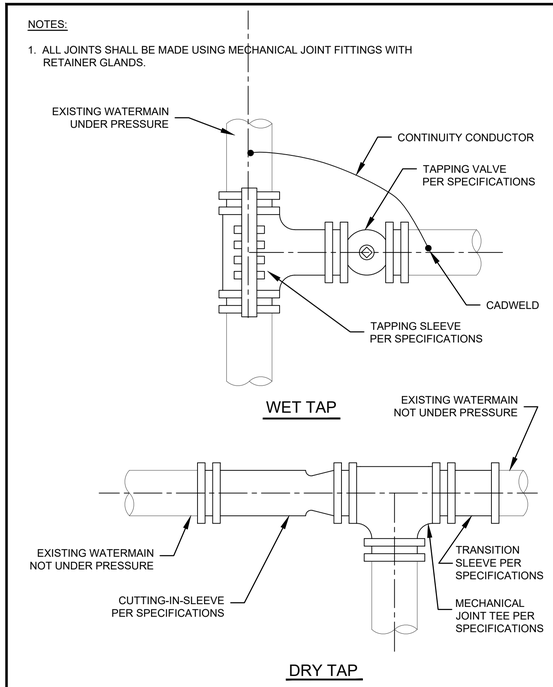
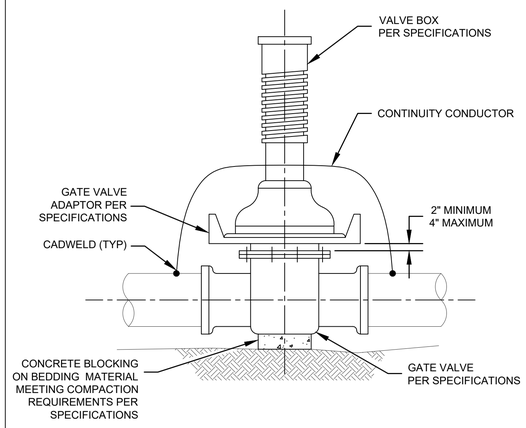
NOTES:

1. ALL JOINTS SHALL BE MADE USING MECHANICAL JOINT FITTINGS WITH RETAINER GLANDS.



02-414 TAPPING EXISTING WATERMAIN

NO SCALE

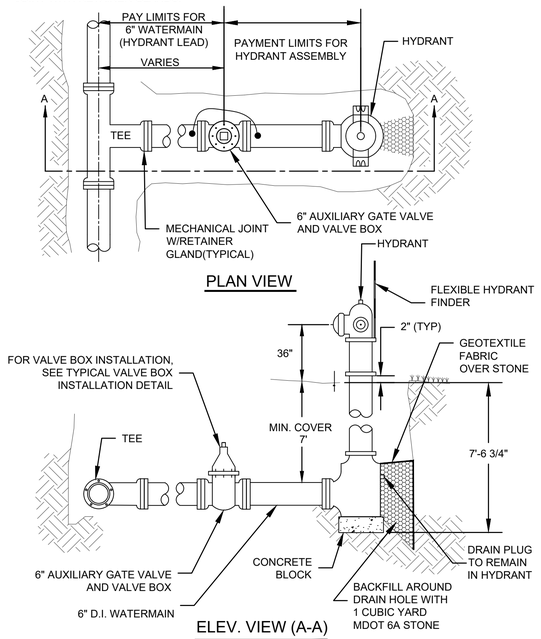


02-420 TYPICAL VALVE BOX INSTALLATION

NO SCALE

NOTES:

1. ALL HYDRANT LEAD FITTINGS, INCLUDING ALL THREE SIDES OF THE TEE, SHALL BE MECHANICAL JOINT WITH RETAINER GLANDS.

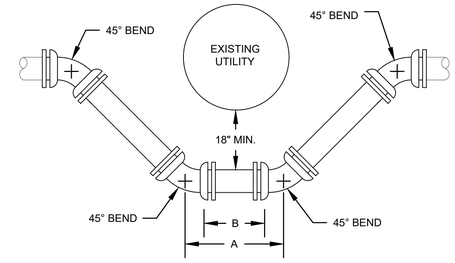


02-430 TYPICAL HYDRANT CONNECTION

NO SCALE

NOTES:

1. WHEN CROSSING UNDER STORM OR SANITARY SEWERS. THE DIMENSION "B" SHALL BE A FULL LENGTH OF PIPE W/JOINTS AT EQUAL DISTANCE FROM THE SEWER.
2. ALL JOINTS SHALL BE MADE USING MECHANICAL JOINT FITTINGS WITH RETAINER GLANDS. THE ENGINEER MAY ALLOW OTHER TYPES OF JOINT RESTRAINTS IF CIRCUMSTANCES WARRANT.



I.D. EXISTING UTILITY

W.M.	MIN. DIMENSION		≥12"	≥24"	≥36"	≥48"
6"		A	23"	28 1/2"	34"	40"
		B	13"	16 1/2"	22"	27 1/2"
8"		A	24"	29 1/2"	35"	40 1/2"
		B	13 1/2"	13 1/2"	19"	24 1/2"
10"		A	25"	30 1/2"	36"	41 1/2"
		B	14"	14"	16"	21 1/2"
12"		A	25"	31 1/2"	37"	42 1/2"
		B	14 1/2"	14 1/2"	14 1/2"	18 1/2"

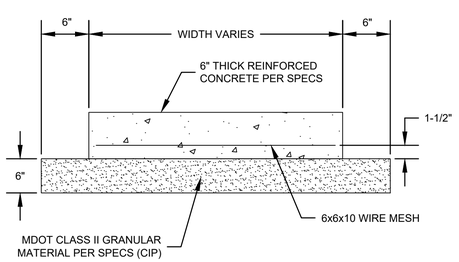
*=LENGTH GOVERNED BY BELL ON FITTINGS

02-440 WATERMAIN CROSSING DETAIL

NO SCALE

NOTES:

1. CONCRETE DRIVEWAYS SHALL BE SAWCUT FULL DEPTH TO A NEAT AND TRIM LINE PRIOR TO REPLACEMENT.
2. CONCRETE DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MDOT STANDARD PLAN R-29-I, OR THE LATEST REVISION THEREOF.
3. ANY EXISTING DRIVEWAY WHICH BECOMES UNDERCUT DURING CONSTRUCTION SHALL BE REMOVED AND REPLACED.
4. PROVIDE CONTROL JOINTS IN ACCORDANCE WITH MDOT STANDARD PLAN R-29-I

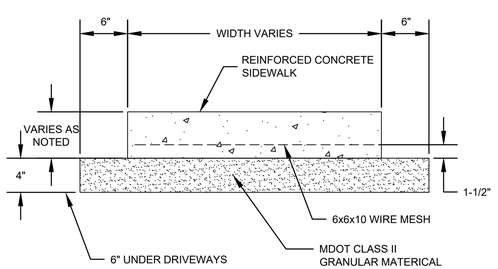


03-010 CONCRETE DRIVEWAY

NO SCALE

NOTES:

1. CONCRETE SIDEWALK SHALL BE SAWCUT FULL DEPTH TO A NEAT AND TRIM LINE PRIOR TO REPLACEMENT.
2. CONCRETE SIDEWALK SHALL BE CONSTRUCTED IN ACCORDANCE WITH MDOT STANDARD PLAN R-29-I, OR THE LATEST REVISION THEREOF.
3. ANY EXISTING SIDEWALK WHICH BECOMES UNDERCUT DURING CONSTRUCTION SHALL BE REMOVED AND REPLACED.
4. CONCRETE SIDEWALK SHALL BE 4" FOR PEDESTRIAN TRAFFIC AND 6" FOR VEHICULAR TRAFFIC. PROVIDE CONTROL JOINTS IN ACCORDANCE WITH MDOT STANDARD PLAN R-29-I.

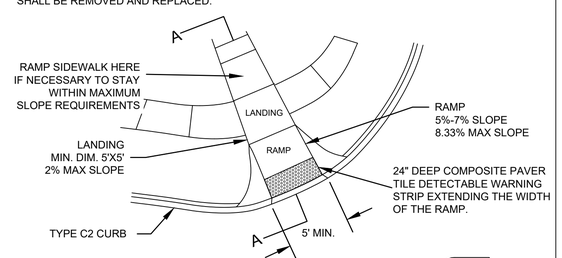


03-020 CONCRETE SIDEWALK

NO SCALE

NOTES:

1. CONCRETE SIDEWALK RAMP SHALL BE SAWCUT TO FULL DEPTH TO A NEAT AND TRIM LINE PRIOR TO REPLACEMENT.
2. CONCRETE SIDEWALK RAMP SHALL BE CONSTRUCTED IN ACCORDANCE WITH MDOT STANDARD PLAN R-29-I, OR THE LATEST REVISION THEREOF AND COMPLY WITH ADA REQUIREMENTS.
3. ANY EXISTING CONCRETE SIDEWALK RAMP WHICH BECOMES UNDERCUT DURING CONSTRUCTION SHALL BE REMOVED AND REPLACED.

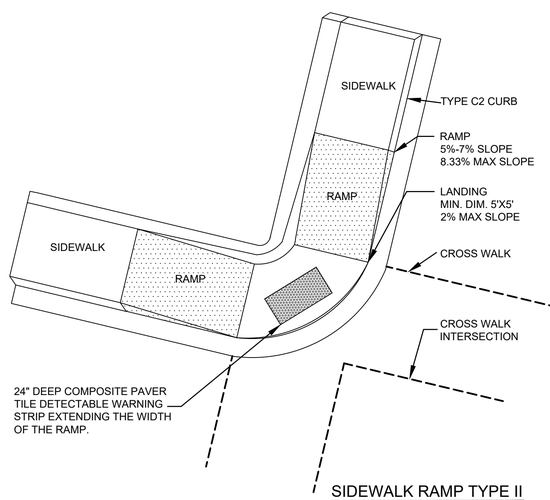


03-021 TYPE I SIDEWALK RAMP DETAILS

NO SCALE

NOTES:

1. CONCRETE SIDEWALK RAMP SHALL BE CONSTRUCTED IN ACCORDANCE WITH MDOT STANDARD PLAN R-29-I, OR THE LATEST REVISION THEREOF AND COMPLY WITH ADA REQUIREMENTS.
2. CONCRETE SIDEWALK RAMP SHALL BE SAW CUT TO FULL DEPTH TO A NEAT AND TRIM LINE PRIOR TO REPLACEMENT.
3. ANY EXISTING CONCRETE SIDEWALK RAMP WHICH BECOMES UNDERCUT DURING CONSTRUCTION SHALL BE REMOVED AND REPLACED.



03-025 TYPE II SIDEWALK RAMP DETAIL

NO SCALE

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2023 Kingsford Heights Watermain Replacement
City of Kingsford
305 S. Carpenter Ave.
Kingsford, MI 49802

STANDARD DETAILS

Attention: 0 1"

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RELEASE #	DATE
DESCRIPTION	
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90 PERCENT DRAFT	
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FOR PERMIT	
C	02/28/2023
FOR PERMIT - REV. 1	
D	03/08/2023
FOR BID	

Designed By: RJM
Checked By: BSF
Drawn By: JRR
Approved By: JRB

GEI PROJECT: 2001888

DWG. NO.
99-D-03

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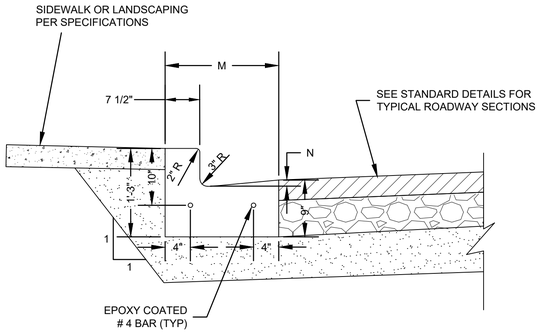
NOTES:

1. CONCRETE CURB AND/OR GUTTER SHALL BE CONSTRUCTED IN ACCORDANCE WITH MDOT STANDARD PLAN R-30-G.

DETAIL	DIMENSION		LANE TIES	CONCRETE CYD / LFT
	M	N		
C2	1' - 6"	7/8"	OMITTED	0.0506



03-041 TYPE C CONCRETE CURB AND GUTTER DETAIL

NO SCALE

GEI Consultants
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906-828-9303

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Kingsford, MI 49802

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FOR PERMIT	
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FOR PERMIT - REV. 1	
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FOR BID	

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Approved By: JRB

GEI PROJECT: 2001888

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99-D-04

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ARCHIVE #

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