

# CITY OF KIRKWOOD

## WEST ESSEX ROAD WATER MAIN REPLACEMENT

### GEYER ROAD TO KIRKWOOD ROAD

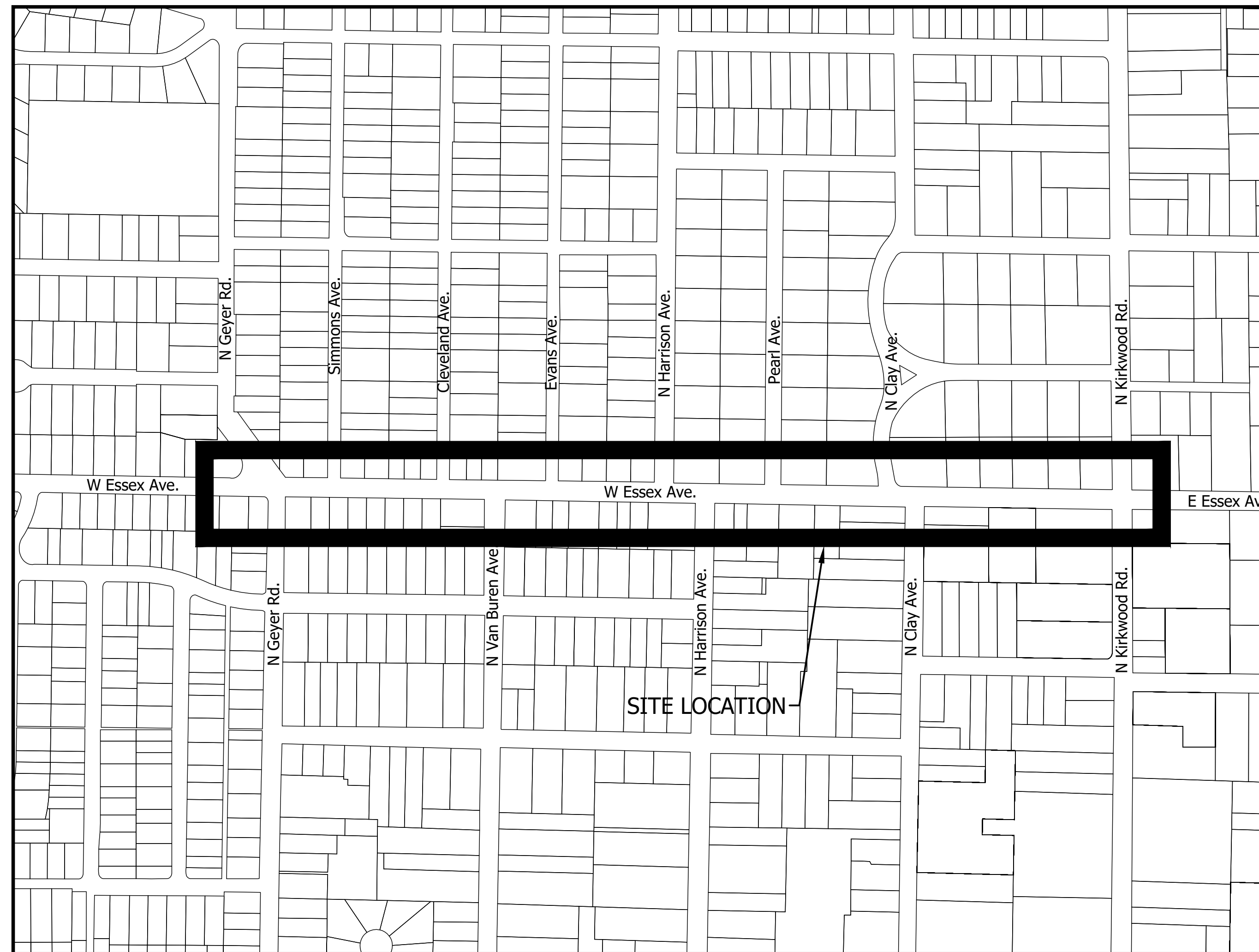
#### PROJECT NO. 521-0135-00W

#### CITY OF KIRKWOOD CONTRACT # 13805

DRAWING INDEX	
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#### SYMBOLS AND LEGEND

	GRATED INLET		TREE STUMP
	CURB/AREA INLET		BENCHMARK
	DOUBLE CURB/AREA INLET		TEST HOLE
	GRATED MANHOLE		BORE HOLE
	STORM SEWER MANHOLE		LANDSCAPED AREA
	SANITARY SEWER MANHOLE		GRAVEL
	TELEPHONE MANHOLE		ASPHALT
	TELEPHONE CABLE PEDESTAL		CONCRETE
	TELEPHONE BOX		BRICK
	WATER METER		STONE PAVERS
	GAS VALVE		BURIED ELECTRIC
	WATER VALVE		OVERHEAD UTILITIES
	FIRE HYDRANT		BURIED GAS
	CLEANOUT		BURIED WATER
	DOWNSPOUT		BURIED TELEPHONE
	SIGN		SANITARY SEWER
	POWER POLE		PROPERTY LINE
	GUY WIRE		LAND HOOK
	LIGHT STANDARD		DEED BOOK
	UTILITY BOX		PLAT BOOK
	TRAFFIC SYMBOL		
	TREE		
	BUSH		



NOT TO SCALE



UTILITY OWNERS		CONTACT PERSON
SPIRE	4118 SHREWSBURY AVE. SHREWSBURY, MO 63119	BRIAN LANGENBACHER (314) 768-7767
AT&T	909 CHESTNUT 9-V-07 ST. LOUIS, MO 63101	JIM LASHLEY (636) 402-7027
AMEREN	12121 DORSETT ROAD, BUILDING W MARYLAND HEIGHTS, MO 63043	BOB SCHINELL (314) 992-8602
MSD	2350 MARKET STREET ST. LOUIS, MO 63103	JOHN ALEXANDER (314) 768-6200
CHARTER COMMUNICATIONS	815 CHARTER COMMONS DRIVE TOWN AND COUNTRY, MO 63017	STEVE GERRIN (636) 387-6641
CITY OF KIRKWOOD - WATER	212 SOUTH TAYLOR AVENUE KIRKWOOD, MO 63112	CLARENCE PATTERSON (314) 822-5810
CITY OF KIRKWOOD - ELECTRIC	139 SOUTH KIRKWOOD ROAD KIRKWOOD, MO 63112	MARK PETTY (314) 822-5843

APPROVED BY:

CITY ENGINEER

DATE

DISCLAIMER  
THE PROFESSIONAL WHOSE SIGNATURE AND PERSONAL SEAL APPEAR HEREON ASSUMES RESPONSIBILITY ONLY FOR WHAT APPEARS ON THIS PAGE, AND DISCLAIMS (PURSUANT TO SECTION 327.411 RSMO) SPECIFICATION, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS NOT SEALED BY THE UNDERSIGNED PROFESSIONAL RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS PAGE REFERS.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THEY SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF THE IMPROVEMENTS.

MISSOURI ONE CALL: 1-800-DIG-RITE (1-800-344-7483)

ENGINEERS AUTHENTICATION

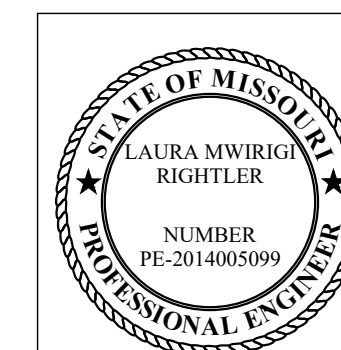
THE RESPONSIBILITY FOR PROFESSIONAL ENGINEERING LIABILITY ON THIS PROJECT IS HEREBY LIMITED TO THIS SET OF PLANS AUTHENTICATED BY THE SEAL, SIGNATURE AND DATE HEREUNDER ATTACHED.

RESPONSIBILITY IS DISCLAIMED FOR ALL OTHER ENGINEERING PLANS INVOLVED IN THIS PROJECT AND SPECIFICALLY EXCLUDES REVISIONS AFTER THIS DATE UNLESS REAUTHENTICATED.

SIGNATURE

DATE

03/25/2022



THESE PLANS PREPARED BY :



CONTACT: LAURA MWIRIG RIGHTLER, P.E.



**SHEET INDEX**

Scale: 1" = 300'

**Erosion Control Notes**

- The Contractor shall assume complete responsibility for controlling all siltation and erosion of the project area. The Contractor shall use whatever means necessary to control erosion and siltation including, but not limited to, staked straw bales and/or siltation fabric fences (possible methods of control are detailed in the plan). Control shall commence with the clearing operations and be maintained throughout the project until acceptance of the work by City of Kirkwood. The Contractor responsibilities include all design and implementation as required to prevent erosion and the depositing of silt. The City of Kirkwood and as required by MoDOT may at their option direct the Permittee in his methods as deemed fit to protect property and improvements. Any depositing of silt or mud on new or existing pavement shall be removed immediately. Any depositing of silts or mud in new or existing storm sewers and/or swales shall be removed after each rain and affected areas cleaned to the satisfaction of the City of Kirkwood and as required by MoDOT.
- Erosion control devices (silt fence, sediment basin, etc.) shall be in accordance with City of Kirkwood erosion and Sediment Control guidelines
- Graded areas shall be restored with sod within 14 days of stopping land disturbance activities. Unless it can be shown to the City Engineer that weather conditions are not favorable, vegetative growth is to be established within 6 weeks of stopping grading work on the project. The vegetative growth established shall be sufficient to prevent erosion and the standard shall be as required by EPA and DNR. (70% coverage per square foot)
- Erosion and sediment control plans should be considered a general guideline. The contractor is responsible to insure that erosion and sediment is not transported offsite. The contractor is responsible for additional erosion and sediment control measures required to accomplish this objective at no additional cost to the owner.

**Geotechnical Notes**

- Refer to project manual for geotechnical analysis by TSI.
- All geotechnical probes were taken within City R/W to a depth of 20 feet.
- All excavations should be constructed in accordance with OSHA regulation. OSHA regulations require that excavations greater than 20 feet in depth be designed by a registered professional engineer. All excavations should be evaluated and classified by a competent person. Based on the conditions encountered in the boring, it appears that overlying soils are predominately medium stiff. The soils would generally conform to OSHA Type B. Excavations extending into Type B soils should be cut on a slope no steeper than 1 vertical (V) on 1 horizontal (H). Flatter slopes may be required. Excavation slopes left exposed should be protected from erosion and saturation by rainfall and runoff.
- In areas where space does not permit the trench walls to be laid back, bracing or shoring possibly with tieback anchors will be required. If easement constraints or adjacent structures preclude the use of tieback anchors, the system may require internal bracing. The use of a portable trench box or shield should not be considered positive bracing or shoring, and should not be employed in areas where soil relaxation from trench box activities could result in unacceptable surface settlement to structures or buried facilities. Bracing of the excavation sides must meet OSHA requirements as a minimum. Positive bracing with prestressed struts should be installed whenever a foundation or structural element is located closer to the trench than a distance equal to twice the trench depth, with the possibility of greater lateral distances in lower strength soils or those influenced by prevailing high groundwater levels at time of excavation. The specifications should incorporate requirements for the contractor to provide pre-and/or post-construction surveys of nearby buildings, roads, utilities, and other third party facilities that have the potential to be impacted. The specifications could also incorporate a requirement for the contractor to monitor the shoring system in selected areas to provide early warning that the system may not be performing as expected where adjacent facilities would be at increased risk.
- All operations should be performed under the supervision of qualified site personnel in accordance with OSHA regulations. Excavation spoils should not be stockpiled near cut slopes. A minimum setback equal to the depth of the excavation should be maintained between the top of the cut slope and the toe of the spoil piles. When a trench box for other temporary shoring is being used, spoil piles must be considered in the design.
- Care should be taken where structure, utilities, or roads are located within a distance less than or equal to twice the depth of excavation. Construction slopes should be closely observed for signs of mass movement: tension cracks near the crest, bulging at the toe, etc. If potential stability problems are observed, the geotechnical engineer should be immediately contacted. The responsibility for excavation safety and stability of temporary construction slopes remains the sole responsibility of the contractor relative to their planned means and methods, construction traffic activity, spoil pile placement, and as designed by a registered professional engineer subcontracted to the contractor as their specialty shoring engineer.

**GENERAL NOTES**

- The Contractor is responsible to call Missouri One Call and The City of Kirkwood for the location of utilities. Contact the City of Kirkwood for the location of City maintained cable for street lights and traffic signals. Call Missouri One Call at 1-800-DIG-RITE (1-800-344-7483) for all other utilities.
- All proposed utilities and/or utility relocations shall be located underground.
- All construction operations and work zone traffic control within the right of way will follow MoDOT or M.U.T.C.D. standards whichever is more stringent.
- Materials such as trees, organic debris, rubble, foundations and other deleterious material that are not to be reused, shall be removed from the site and disposed of in compliance with all applicable laws and regulations. If the material listed previously are reused, a letter from a soil Engineer must clarify amount, location, depth, etc. and must be approved with the construction plans. Landfill tickets for such disposal shall be maintained on file by the developer. Burning on site shall be allowed only by permit from the local fire district. If a burn pit is proposed, the location and mitigation shall be shown on the grading plan and documented by the soils engineer.
- Twenty-four (24) hours prior to starting any of the work covered by the above plans and after approval thereof, the developer shall make arrangements with the Construction Inspection Office to provide for inspection of the work, sufficient in the opinion of the City Engineer, to assure compliance with the plans and specifications as approved.
- The City Engineer or their duly authorized representative shall make all necessary inspections of City infrastructure, escrow items or infrastructure located on the approved plans.
- All utility information on plans is based on information provided by individual utilities, GIS records, or field located by individual utilities. All existing utilities to be field located by the contractor prior to construction. Vertical and horizontal location to be confirmed. Necessary pipe modifications to be made by the contractor at no additional cost to the owner. Individual utility services were not located in all locations.
- Contractor to comply with all permit & statutory requirement, including but not limited to Missouri Department Of Natural Resources (DNR), City Of Kirkwood, & other applicable local, state, & federal agencies.
- Contractor to coordinate and pay any costs for the power utility to hold power poles and/or provide temporary service if required during construction.
- Contractor to coordinate with utility owner to protect, relocate, etc. any existing utilities and services which are impacted by the proposed water mains or excavation. All costs shall be the contractor's responsibility unless indicated otherwise in the plans and specifications.
- Contractor to provide compacted structure backfill around proposed and existing piping at all open-cut utility crossings (Unless concrete cradles specifically indicated in the plans) to adequately support and protect each conduit.
- Traffic control and signage to be utilized in accordance with the manual of uniform traffic control, latest revision. contractor shall adhere to MoDOT and local maintenance of traffic requirements.
- Contractor to protect and repair all damaged field and drainage tile encountered during construction at no additional cost to the owner.
- Contractor to test all new water mains in accordance with Missouri DNR permit requirements, City of Kirkwood requirements, and contract specifications.
- Contractor shall be responsible for preserving existing right-of-way markers, survey monuments, property corners, etc. and contractor shall be responsible for resetting any disturbed markers at no additional cost to the owner.
- The contractor is completely responsible for all cost associated with developing and implementing a dewatering plan. The contractor shall submit the complete and detailed dewatering plan to the engineer and owner for review and approval. The plans shall allow for traffic control and will not allow drive or roadway closure.
- The contractor shall have a copy of the contract documents and required construction permits onsite at all times.
- All concrete and asphalt drives shall be protected during construction. Any damage to existing concrete and asphalt drives that occurs as a result of the construction shall be repaired by contractor at no additional expense to the owner or city.

**Water Notes**

- Fire hydrants shall be a maximum of 600' apart. Local fire district approval is required.
- Coordinate with the City of Kirkwood on the location of taps, service transfers, corp stops, and curb stops.
- All water main must have a minimum of 42" of cover. (City water mains)
- Provide water valves at a minimum of 1,200 foot spacing to isolate the system.
- All water mains shall be class 350 restrained joint DIP, C909 PVC (open trench), C900 Fusible PVC (HDD), or equal with #12 copper locator/tracer wires.
- DISINFECTING: Disinfecting shall be performed in accordance with MoDNR and City of Kirkwood regulations.
- PRESSURE TESTING: Pressure testing shall be performed in accordance with MoDNR and City of Kirkwood regulations.
- BACTERIOLOGICAL TESTING: Bacteriological testing shall be performed in accordance with MoDNR and City of Kirkwood regulations.
- Existing water mains and water services shall be preserved and protected during construction. Existing services shall remain in service until the proposed water main work and testing is complete. Services shall then be transferred to new water main. The existing water main shall be retired as applicable.
- Required fittings and appurtenances may not be shown on the drawings. All water main fittings and appurtenances are to be provided and installed by contractor.
- Final locations of all hydrants and valves shall be approved by the city personnel in the field.
- Valve stem riser shall be required where operation nut exceeds four feet in depth.
- Contractor shall restore and / or replace paving, curbing, sidewalks, gutters, landscaping, fencing, paints, coatings, and other disturbed areas or structures to a condition equal to that before work began and to the satisfaction of the owner. Contractor shall furnish all labor and materials incidental thereto.
- Contractor to remove all valve boxes on mains to be abandoned (hydrant valves included), fill with sandy gravel backfill, and compact to prevent settlement.
- At crossings, the full length of water pipe shall be located so both joints will be as far from the non-potable pipeline as possible but in no case less than 10' or centered on a 20' pipe. In areas where the recommended separations cannot be obtained, the water main shall be Ductile Iron Mechanical Joint Pipe.
- Pipe from main to all Fire Hydrant assemblies shall be Class 350 Restrained Joint DIP.

**Grading Notes**

- When grading operations are complete or suspended for more than 14 days, restored sod must be established at sufficient density to provide erosion control on site. Between permanent sodding, temporary cover shall be provided according to City of Kirkwood standards. All finished grades (areas not to be disturbed by improvements) in excess of 20% slopes (5:1) shall be mulched and tacked at rate of 100 pounds per 1000 square feet when seeded.
- No slopes shall exceed 3 (horizontal): 1 (vertical) unless otherwise approved by the soils report and specifically located on the plans and approved by the City Engineer.
- All trench back fills under paved areas shall be granular back fill, and compacted mechanically. All other trench back fills may be earth material (free of large clods, or stones) and compacted.
- Contractor shall be responsible for final site grading. Excess soil and spoil material shall be disposed of by the contractor off-site, at no additional cost to the owner.
- Contractor to regrade areas as necessary within the construction limits to allow proper drainage to existing and proposed storm sewer structure and drainage outlets.
- Final grades require approval from City of Kirkwood.

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REVISIONS		
DATE	REVISION	BY



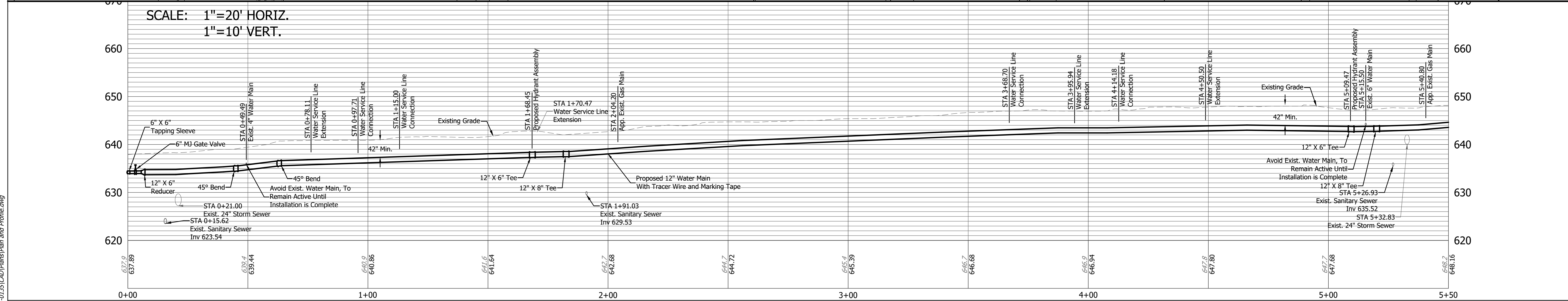
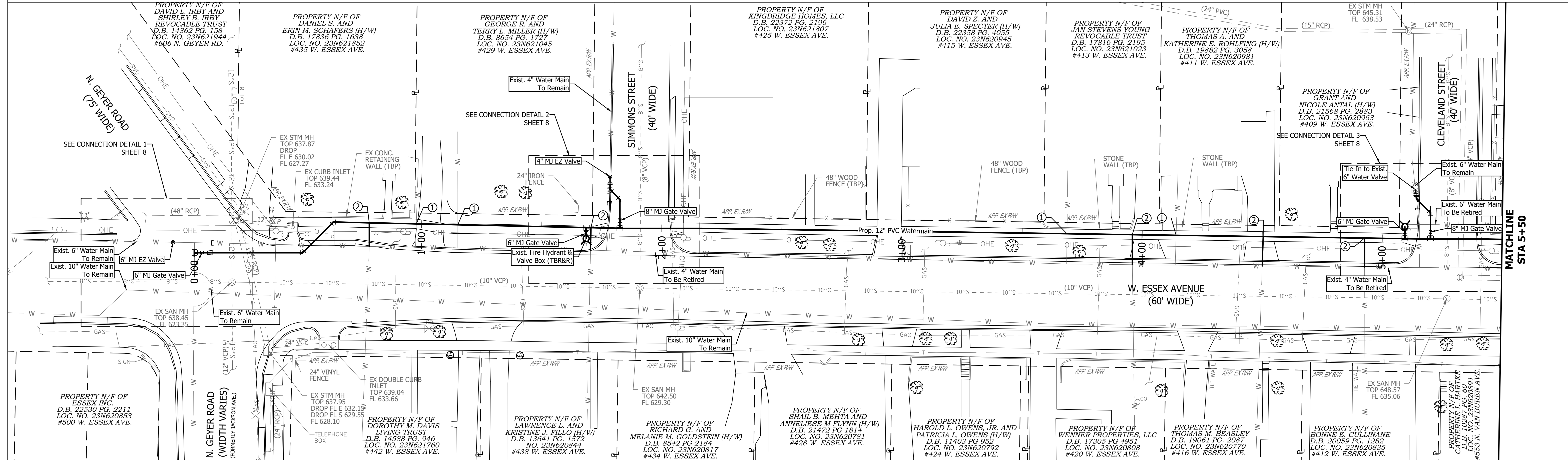
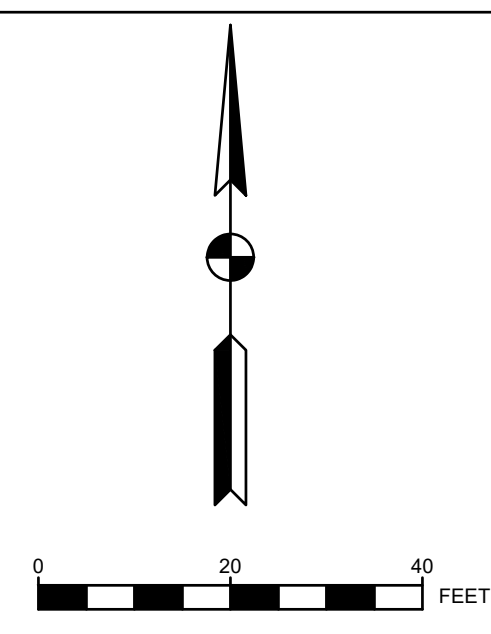
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	Laura Mwirigi Rightler	DATE
DESIGNED: _____	NCL	DRAWN: _____
	NCL	
CHECKED: _____	LMR	CHECKED: _____
	LMR	WEE

CITY OF KIRKWOOD	
WEST ESSEX ROAD WATER MAIN REPLACEMENT	
SHEET INDEX & GENERAL NOTES	

SCALE
AS NOTED
CONSULTANT PROJECT NUMBER
521-0135-00W
SHEETS
2 OF 11

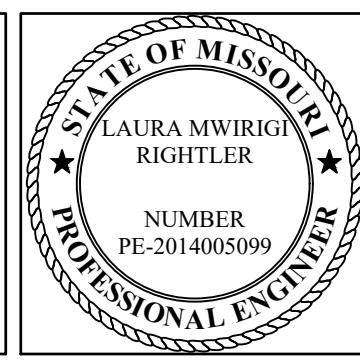
WATER SERVICE TRANSFER TABLE			
ADDRESS	EXISTING SERVICE LINE		RELOCATION REQ'D
	SIZE, INCHES	MATERIAL	
442 W ESSEX AVE	0.75	GALVANIZED	NO
438 W ESSEX AVE	1.25	COPPER	NO
435 W ESSEX AVE	0.625	GALVANIZED	NO
429 W ESSEX AVE	0.625	COPPER	NO
420 W ESSEX AVE	0.625	LEAD	NO
416 W ESSEX AVE	0.625	UNKNOWN	NO
413 W ESSEX AVE	0.625	LEAD	NO
412 W ESSEX AVE	0.75	GALVANIZED	NO
411 W ESSEX AVE	0.75	GALVANIZED	NO

- NOTES:**
- ALL REDUCERS TO BE INSTALLED AFTER TIE-IN ALIGNMENT ACHIEVED.
  - NOT ALL PROPOSED VALVES & FITTINGS ARE SHOWN ON PLAN AND PROFILE SHEETS. SEE CONNECTION DETAILS FOR VALVE & FITTING REQUIREMENTS.
  - A MINIMUM REQUIREMENT OF 2-45° BENDS ON SIDE CONNECTIONS TO ALLOW FOR HORIZONTAL AND VERTICAL ALIGNMENT ADJUSTMENTS.
  - EXISTING WATER MAIN DEPTHS TO BE FIELD VERIFIED PRIOR TO START OF CONSTRUCTION. COORDINATE PROPOSED WATER MAIN DEPTH WITH EXISTING WATER MAINS TO KEEP UTILITY IN SERVICE DURING CONSTRUCTION.
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REVISIONS		
DATE	REVISION	BY
01/09/23	ADDED NOTES 4-7	NCL

- Notes:**
- Connect Exist. Water Service Line To New Water Main. (See Detail Sheet 7)
  - Extend Exist. Water Service Line To New Water Main. (See Detail Sheet 7)



RECOMMENDED FOR APPROVAL  
*Laura Mwirigi Rightler*  
 Laura Mwirigi Rightler  
 DATE: 03/25/2022

DESIGNED: NCL DRAWN: NCL  
 CHECKED: LMR CHECKED: WEE

CITY OF KIRKWOOD  
 WEST ESSEX ROAD WATER MAIN REPLACEMENT

PLAN & PROFILE  
 SHEET 1 OF 5

SCALE  
 1" = 20'

CONSULTANT PROJECT NUMBER  
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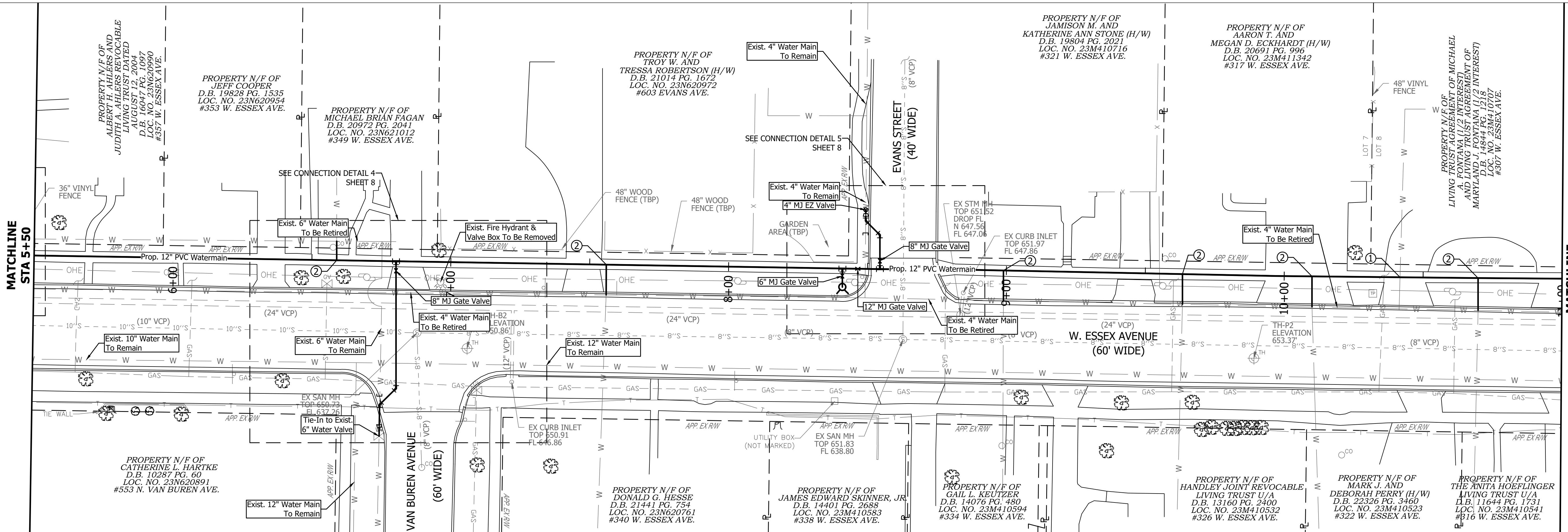
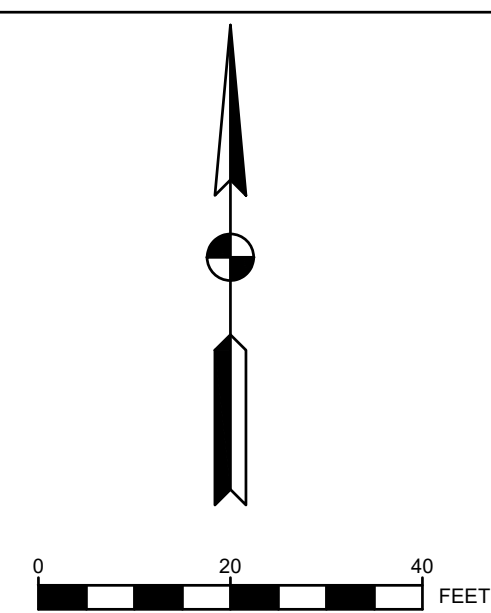
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 3 OF 11

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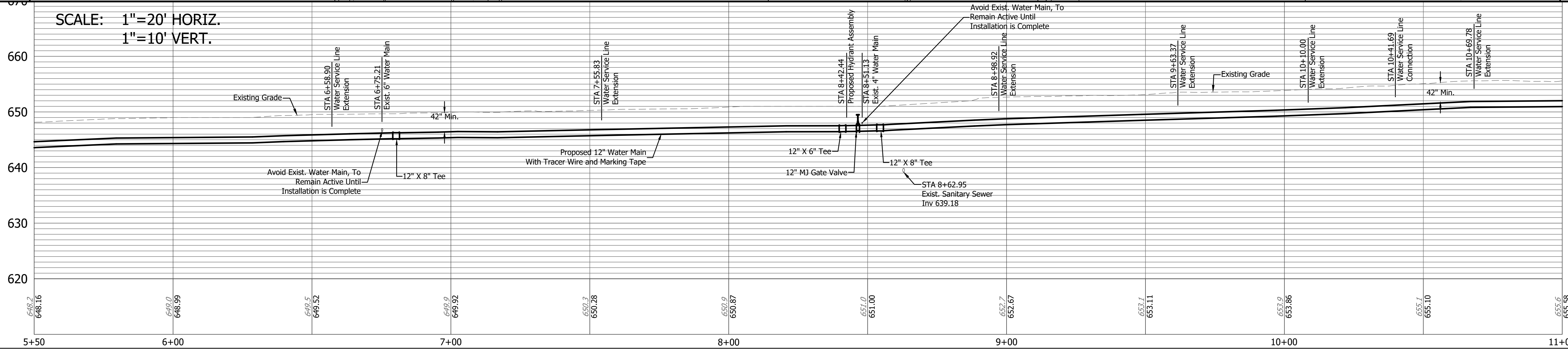
WATER SERVICE TRANSFER TABLE			
ADDRESS	EXISTING SERVICE LINE		RELOCATION REQ'D
	SIZE, INCHES	MATERIAL	CURB STOP
349 W ESSEX AVE	0.625	LEAD	NO
340 W ESSEX AVE	0.625	GALVANIZED	NO
334 W ESSEX AVE	1.00	COPPER	NO
326 W ESSEX AVE	0.75	GALVANIZED	NO
322 W ESSEX AVE	1.00	COPPER	NO
316 W ESSEX AVE	0.625	GALVANIZED	NO
307 W ESSEX AVE	1.00	COPPER	NO

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SCALE: 1"=20' HORIZ.  
1"=10' VERT.



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		WEE

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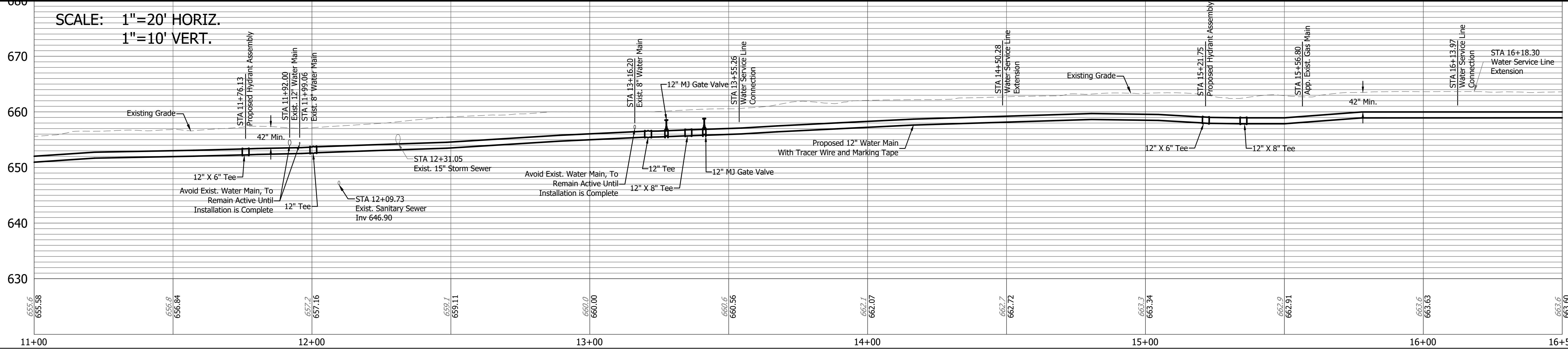
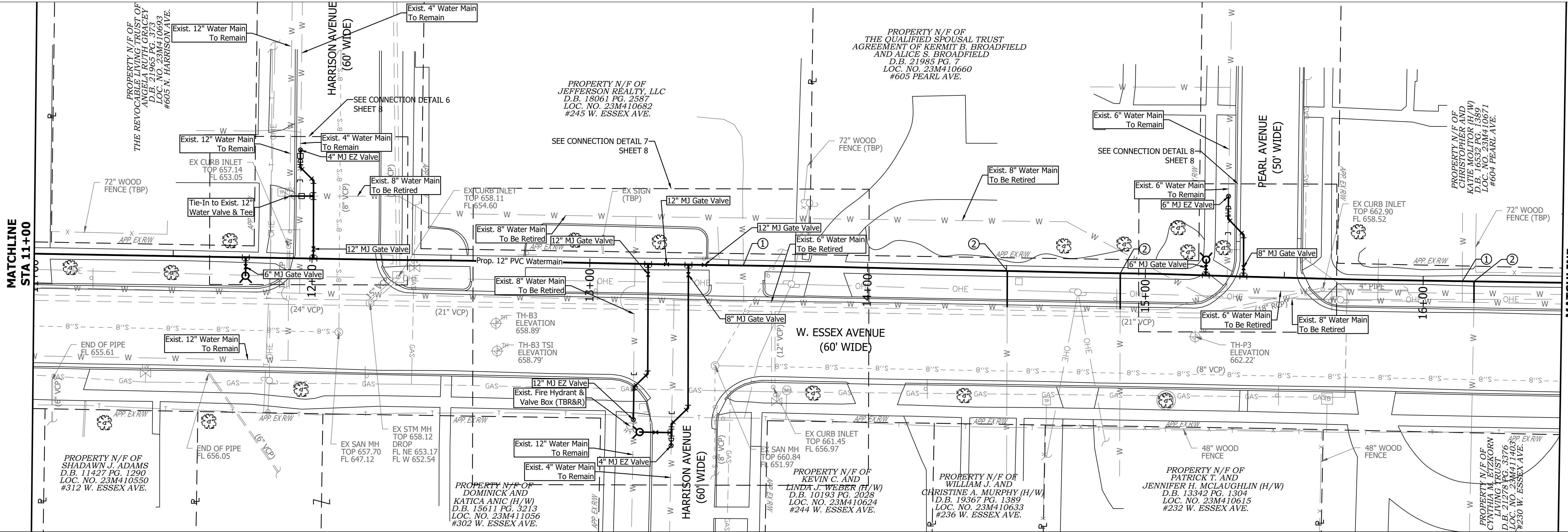
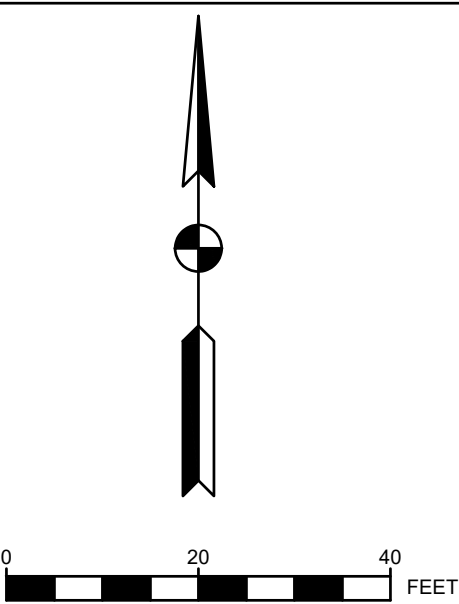
PLAN & PROFILE  
SHEET 2 OF 5

SCALE	1" = 20'
CONSULTANT PROJECT NUMBER	521-0135-00W
SHEET	4 OF 11

WATER SERVICE TRANSFER TABLE			
ADDRESS	EXISTING SERVICE LINE		RELOCATION REQ'D
	SIZE, INCHES	MATERIAL	
245 W ESSEX AVE	0.75	COPPER	NO
236 W ESSEX AVE	1.00	COPPER	NO
232 W ESSEX AVE	0.625	UNKNOWN	NO
230 W ESSEX AVE	1.00	COPPER	NO
604 PEARL AVE	0.625	COPPER	NO

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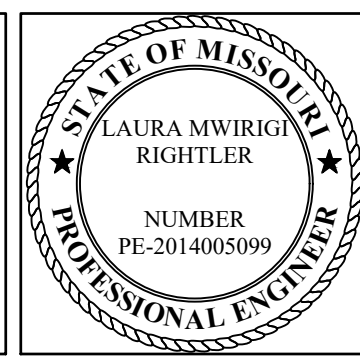


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DESIGNED: NCL	DRAWN: NCL	
CHECKED: LMR	CHECKED: WEE	

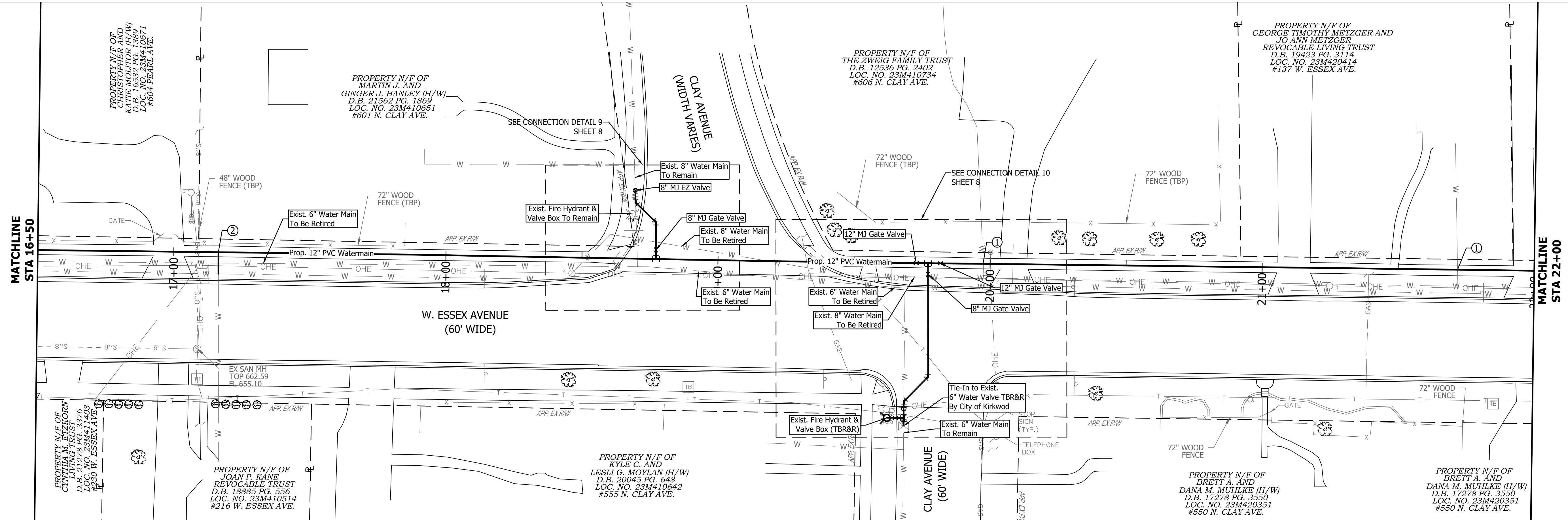
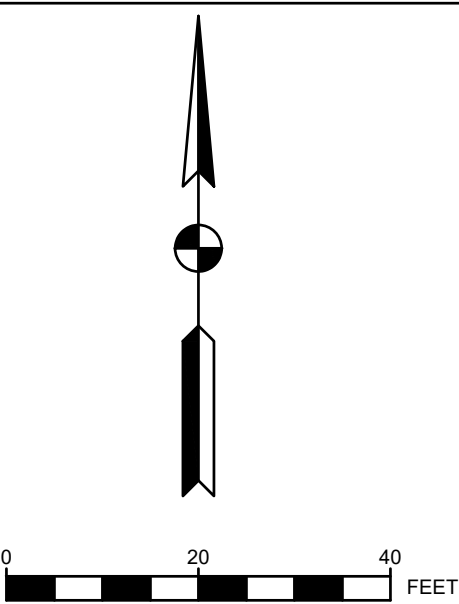
CITY OF KIRKWOOD  
WEST ESSEX ROAD WATER MAIN REPLACEMENT  
  
PLAN & PROFILE  
SHEET 3 OF 5

SCALE	1" = 20'
CONSULTANT PROJECT NUMBER	521-0135-00W
SHEET	5 OF 11

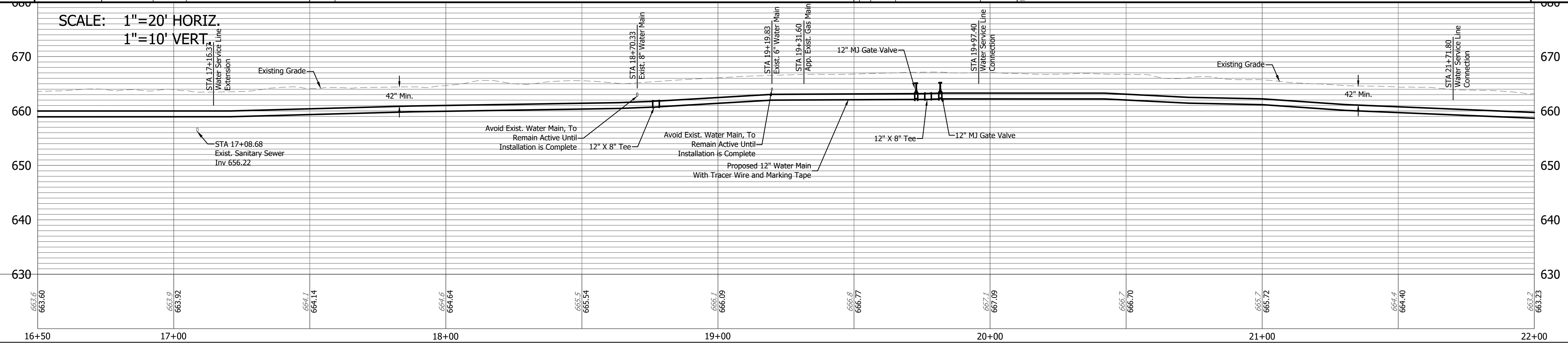
WATER SERVICE TRANSFER TABLE			
ADDRESS	EXISTING SERVICE LINE		RELOCATION REQ'D
	SIZE, INCHES	MATERIAL	
216 W ESSEX AVE	0.625	LEAD	NO
606 CLAY AVE	0.75	COPPER	NO
137 W ESSEX AVE	0.75	COPPER	NO

**NOTES:**

- ALL REDUCERS TO BE INSTALLED AFTER TIE-IN ALIGNMENT ACHIEVED.
- NOT ALL PROPOSED VALVES & FITTINGS ARE SHOWN ON PLAN AND PROFILE SHEETS. SEE CONNECTION DETAILS FOR VALVE & FITTING REQUIREMENTS.
- A MINIMUM REQUIREMENT OF 2-45° BENDS ON SIDE CONNECTIONS TO ALLOW FOR HORIZONTAL AND VERTICAL ALIGNMENT ADJUSTMENTS.
- EXISTING WATER MAIN DEPTHS TO BE FIELD VERIFIED PRIOR TO START OF CONSTRUCTION. COORDINATE PROPOSED WATER MAIN DEPTH WITH EXISTING WATER MAINS TO KEEP UTILITY IN SERVICE DURING CONSTRUCTION.
- EXISTING SANITARY SERVICE CONNECTION DEPTHS TO BE FIELD VERIFIED PRIOR TO THE START OF CONSTRUCTION. COORDINATE PROPOSED WATER MAIN DEPTH WITH EXISTING SANITARY SEWER SERVICES. NO ADDITIONAL PAYMENT WILL BE MADE FOR ADJUSTMENTS TO SERVICE LINES DUE TO SANITARY SEWER INTERFERENCES.
- ALL EXISTING UTILITY LINE DEPTHS TO BE FIELD VERIFIED PRIOR TO START OF CONSTRUCTION. COORDINATE PROPOSED WATER MAIN DEPTH WITH EXISTING SERVICES. NO ADDITIONAL PAYMENT WILL BE MADE FOR ADJUSTMENTS TO SERVICE LINES DUE TO UTILITY LINE INTERFERENCES.
- ALL SIDEWALK REPLACEMENT SHALL BE REPLACED UNDER PERMANENT SIDEWALK RESTORATION. ALL OTHER HARD SURFACE RESTORATION SHALL REMAIN INCLUSIVE TO THE INSTALLATION OF THE WATER MAIN AS STATED UNDER SECTION 00415 C.



SCALE: 1"=20' HORIZ.  
1"=10' VERT.



Date: Jan 12, 2023, 3:24pm User: Momo, Nclshirp  
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REVISIONS		
DATE	REVISION	BY
01/09/23	ADDED NOTES 4-7	NCL

- Notes:
- Connect Exist. Water Service Line To New Water Main. (See Detail Sheet 7)
  - Extend Exist. Water Service Line To New Water Main. (See Detail Sheet 7)



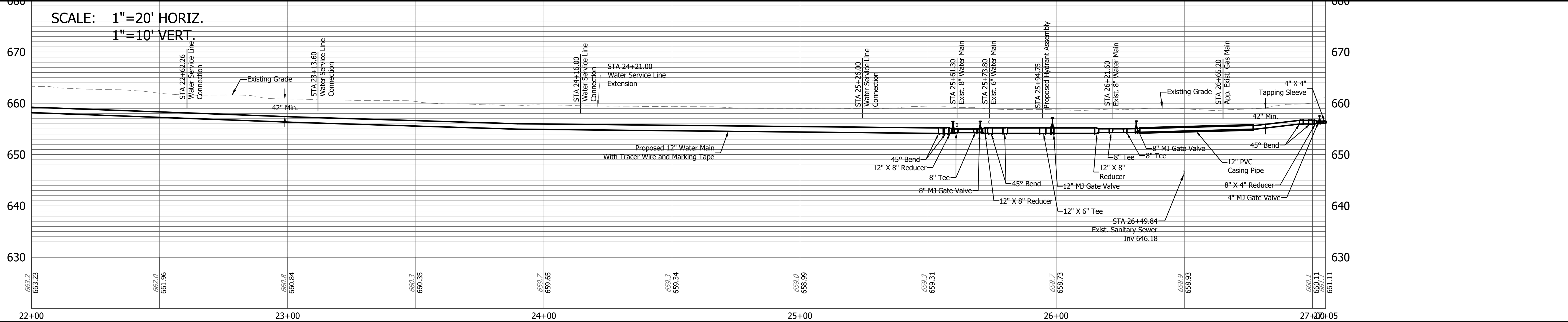
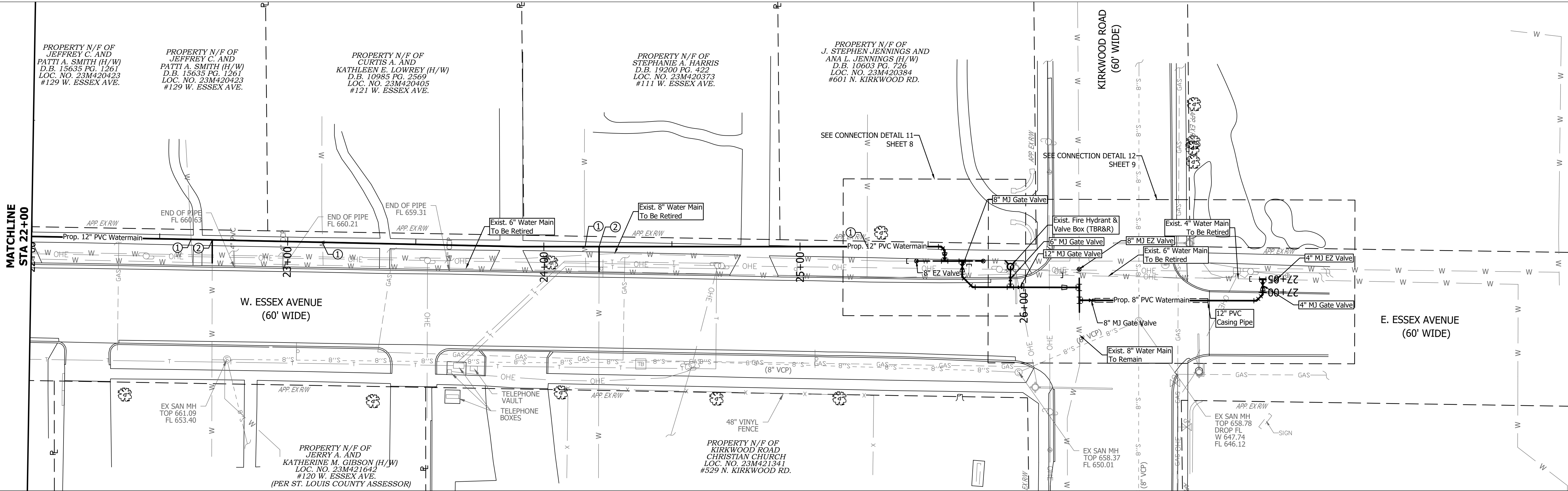
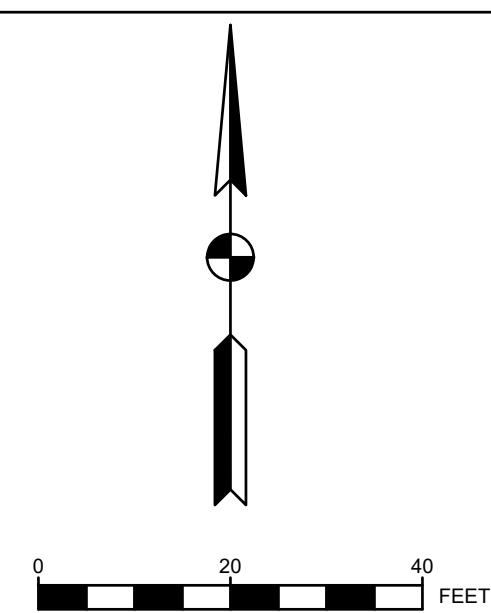
RECOMMENDED FOR APPROVAL	<i>Laura Mwirigi Rightler</i>	03/25/2022
DESIGNED:	NCL	DRAWN:
CHECKED:	LMR	CHECKED:
		WEE

CITY OF KIRKWOOD  
WEST ESSEX ROAD WATER MAIN REPLACEMENT  
  
PLAN & PROFILE  
SHEET 4 OF 5

SCALE	1" = 20'
CONSULTANT PROJECT NUMBER	521-0135-00W
SHEET	6 OF 11

WATER SERVICE TRANSFER TABLE			
ADDRESS	EXISTING SERVICE LINE		RELOCATION REQ'D
	SIZE, INCHES	MATERIAL	CURB STOP
129 W ESSEX AVE	0.75	COPPER	NO
121 W ESSEX AVE	0.75	COPPER	NO
120 W ESSEX AVE	4.0	F.L.	NO
111 W ESSEX AVE	0.75	COPPER	NO
529 N KIRKWOOD RD	1.00	COPPER	NO
601 N KIRKWOOD RD	0.75	COPPER	NO

- NOTES:**
- ALL REDUCERS TO BE INSTALLED AFTER TIE-IN ALIGNMENT ACHIEVED.
  - NOT ALL PROPOSED VALVES & FITTINGS ARE SHOWN ON PLAN AND PROFILE SHEETS. SEE CONNECTION DETAILS FOR VALVE & FITTING REQUIREMENTS.
  - A MINIMUM REQUIREMENT OF 2-45° BENDS ON SIDE CONNECTIONS TO ALLOW FOR HORIZONTAL AND VERTICAL ALIGNMENT ADJUSTMENTS.
  - EXISTING WATER MAIN DEPTHS TO BE FIELD VERIFIED PRIOR TO START OF CONSTRUCTION. COORDINATE PROPOSED WATER MAIN DEPTH WITH EXISTING WATER MAINS TO KEEP UTILITY IN SERVICE DURING CONSTRUCTION.
  - EXISTING SANITARY SERVICE CONNECTION DEPTHS TO BE FIELD VERIFIED PRIOR TO THE START OF CONSTRUCTION. COORDINATE PROPOSED WATER MAIN DEPTH WITH EXISTING SANITARY SEWER SERVICES. NO ADDITIONAL PAYMENT WILL BE MADE FOR ADJUSTMENTS TO SERVICE LINES DUE TO SANITARY SEWER INTERFERENCES.
  - ALL EXISTING UTILITY LINE DEPTHS TO BE FIELD VERIFIED PRIOR TO START OF CONSTRUCTION. COORDINATE PROPOSED WATER MAIN DEPTH WITH EXISTING SERVICES. NO ADDITIONAL PAYMENT WILL BE MADE FOR ADJUSTMENTS TO SERVICE LINES DUE TO UTILITY LINE INTERFERENCES.
  - ALL SIDEWALK REPLACEMENT SHALL BE REPLACED UNDER PERMANENT SIDEWALK RESTORATION. ALL OTHER HARD SURFACE RESTORATION SHALL REMAIN INCLUSIVE TO THE INSTALLATION OF THE WATER MAIN AS STATED UNDER SECTION 00415 C.

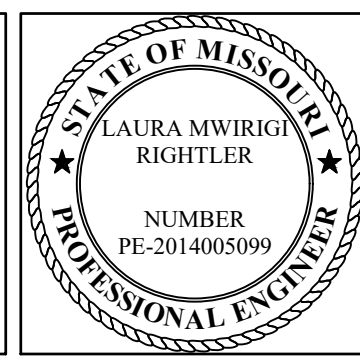


SCALE: 1"=20' HORIZ.  
1"=10' VERT.

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REVISIONS		
DATE	REVISION	BY
01/09/23	ADDED NOTES 4-7	NCL
01/09/23	ADDED SERVICE FOR 120 W ESSEX	NCL

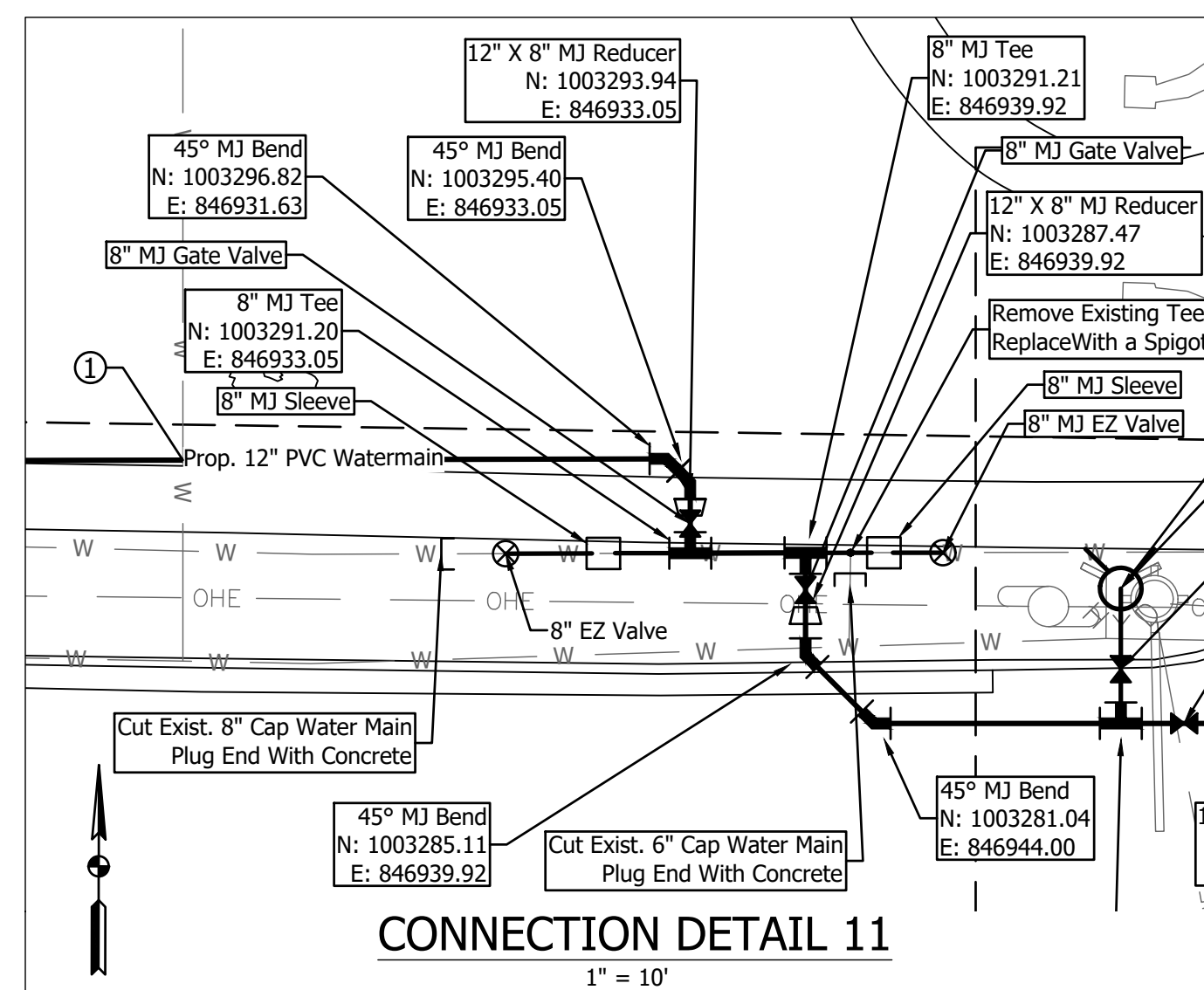
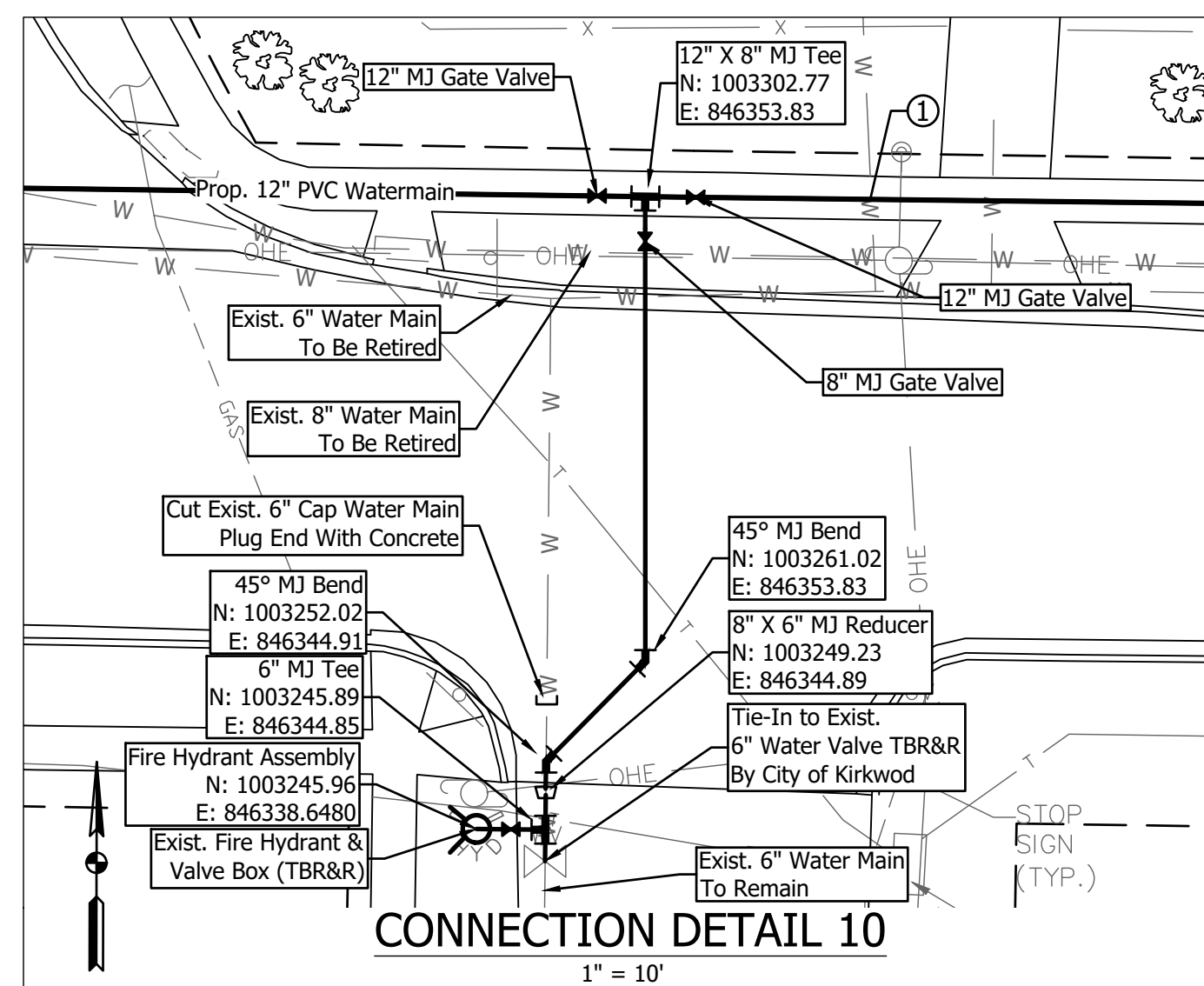
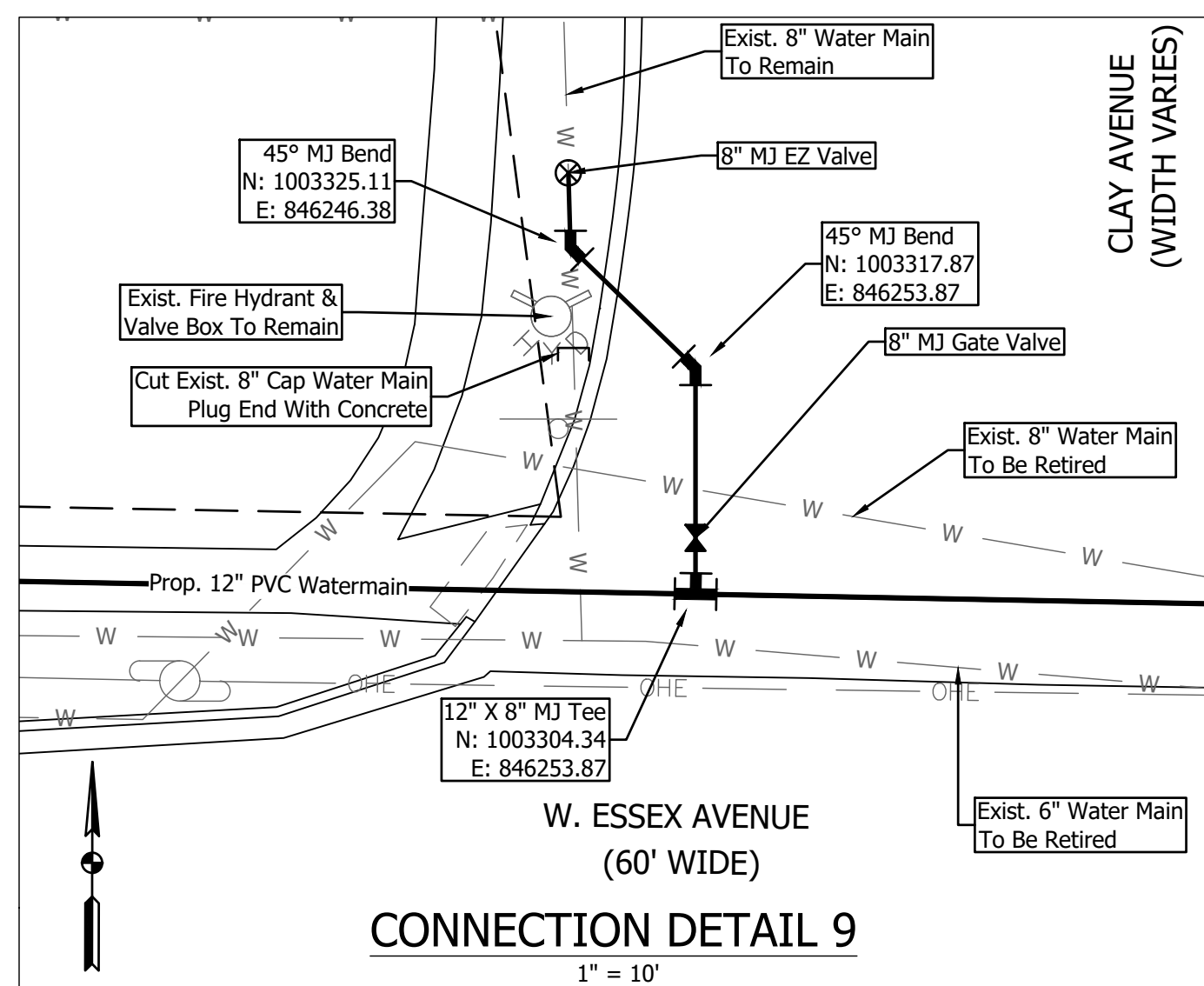
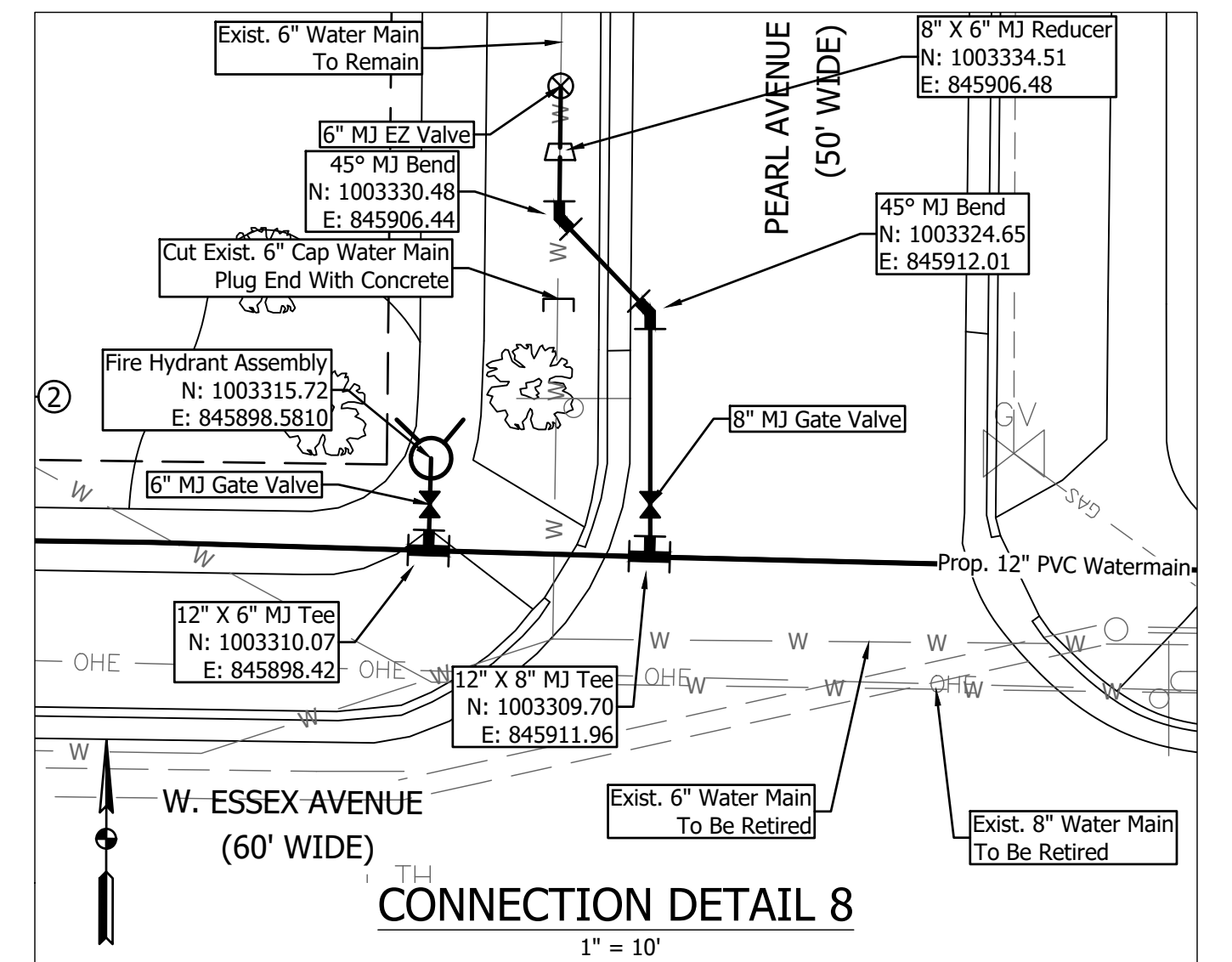
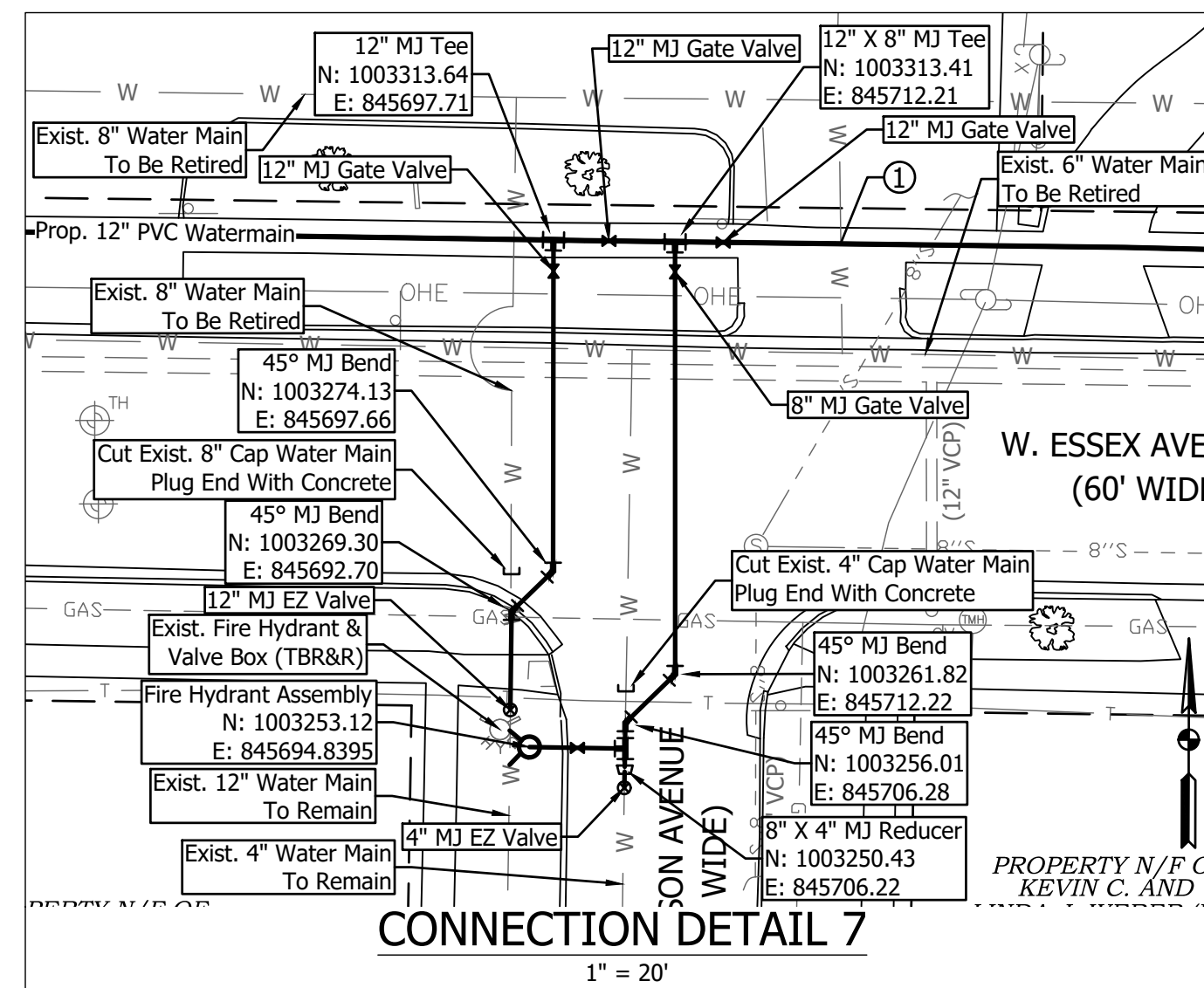
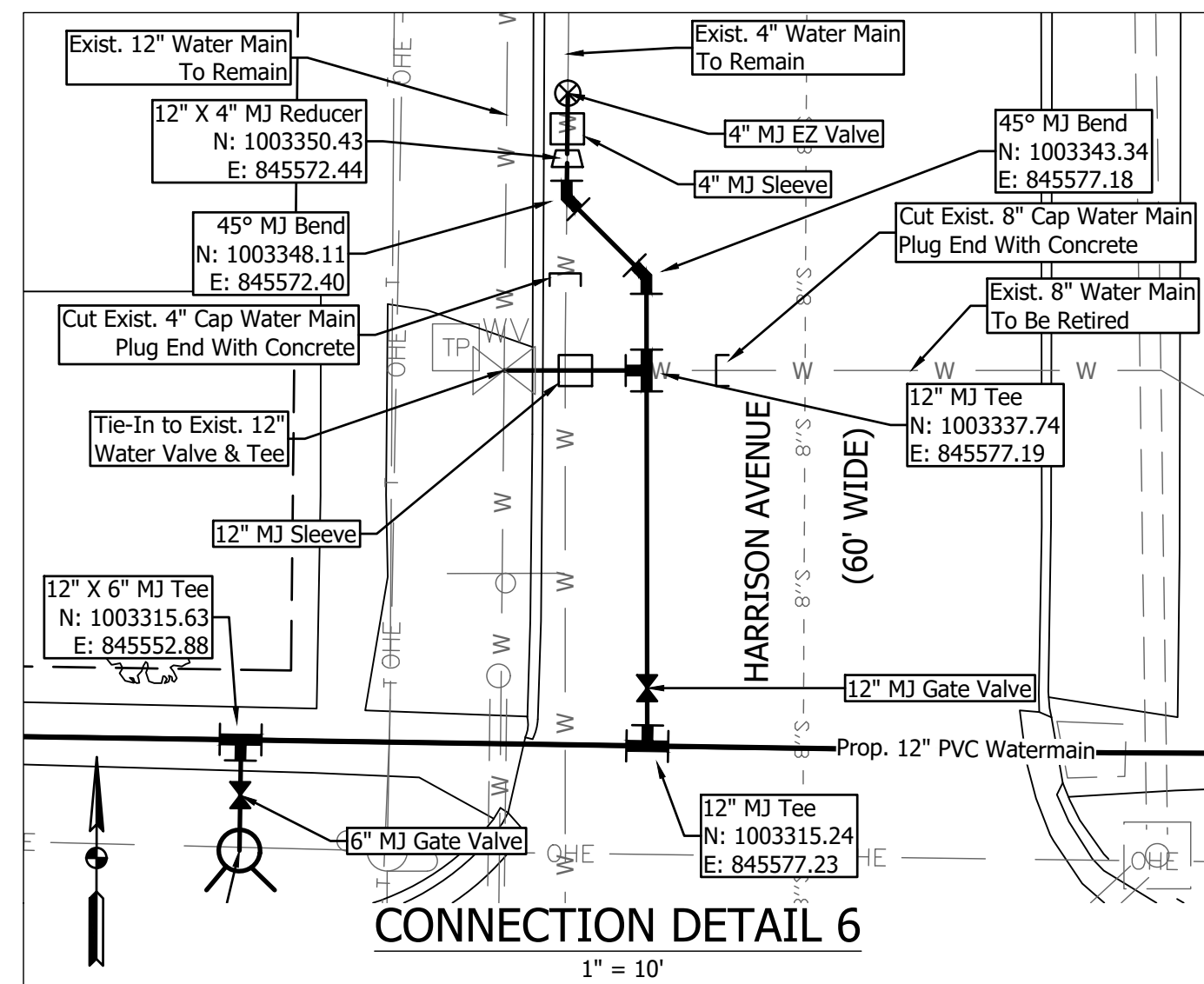
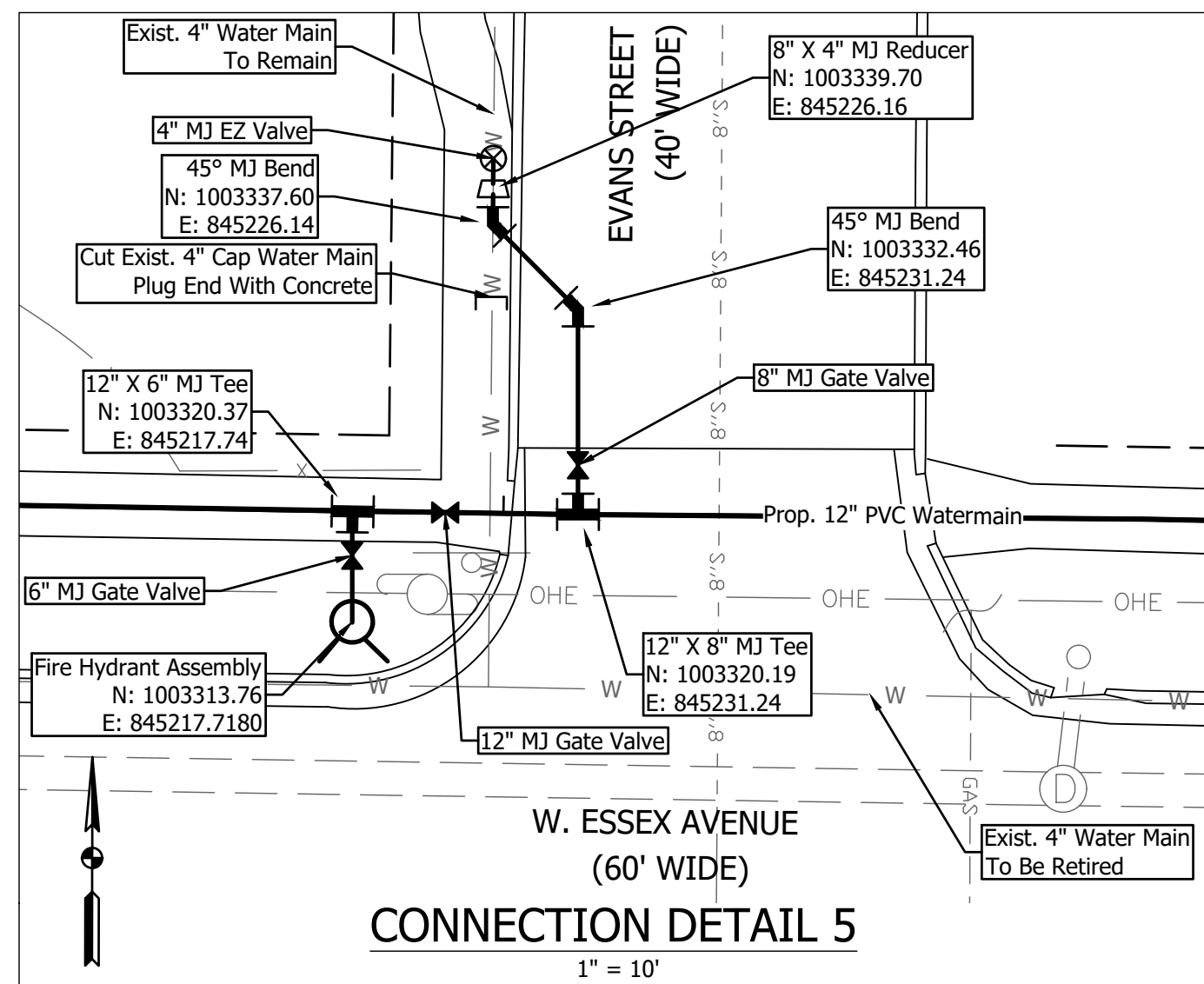
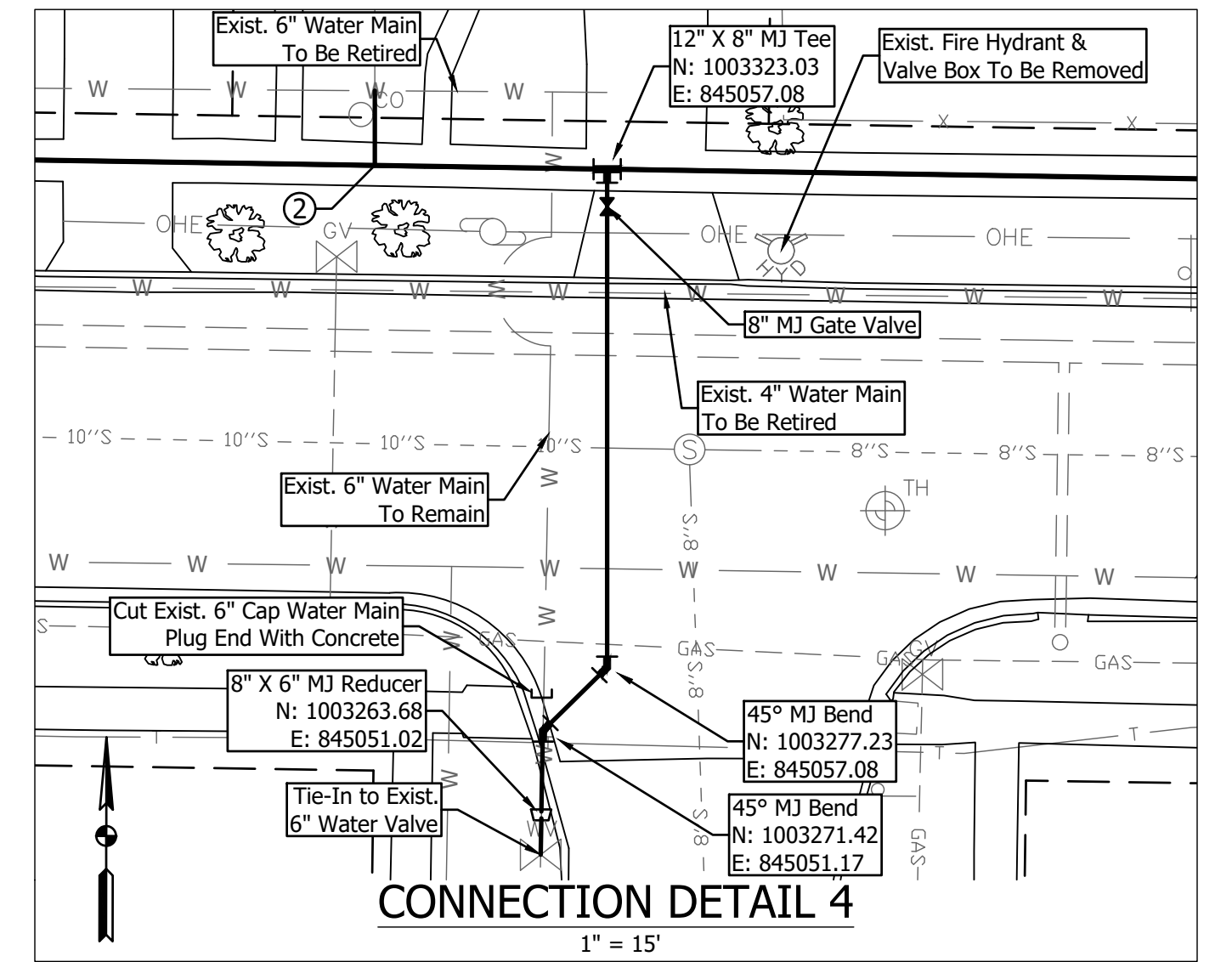
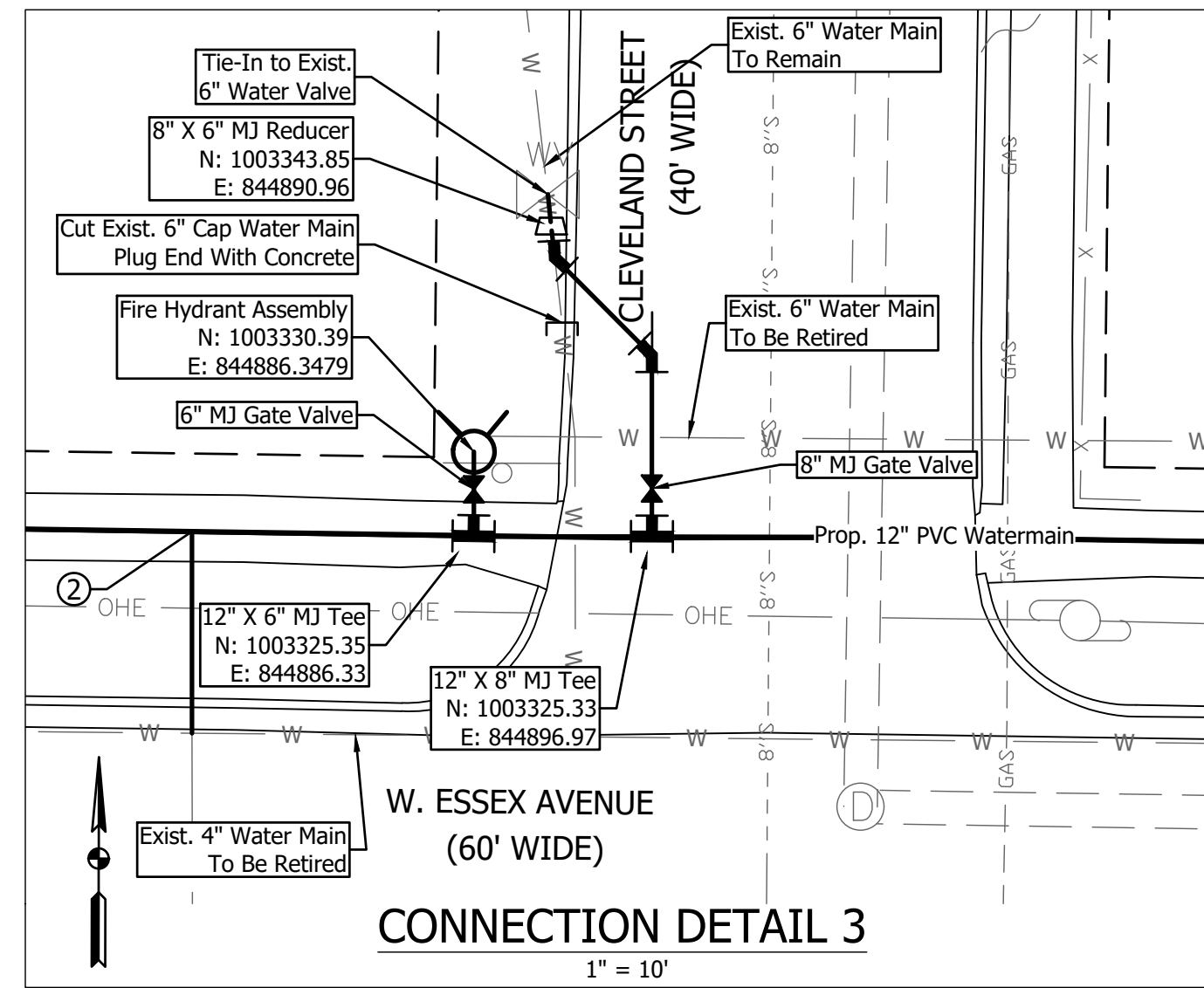
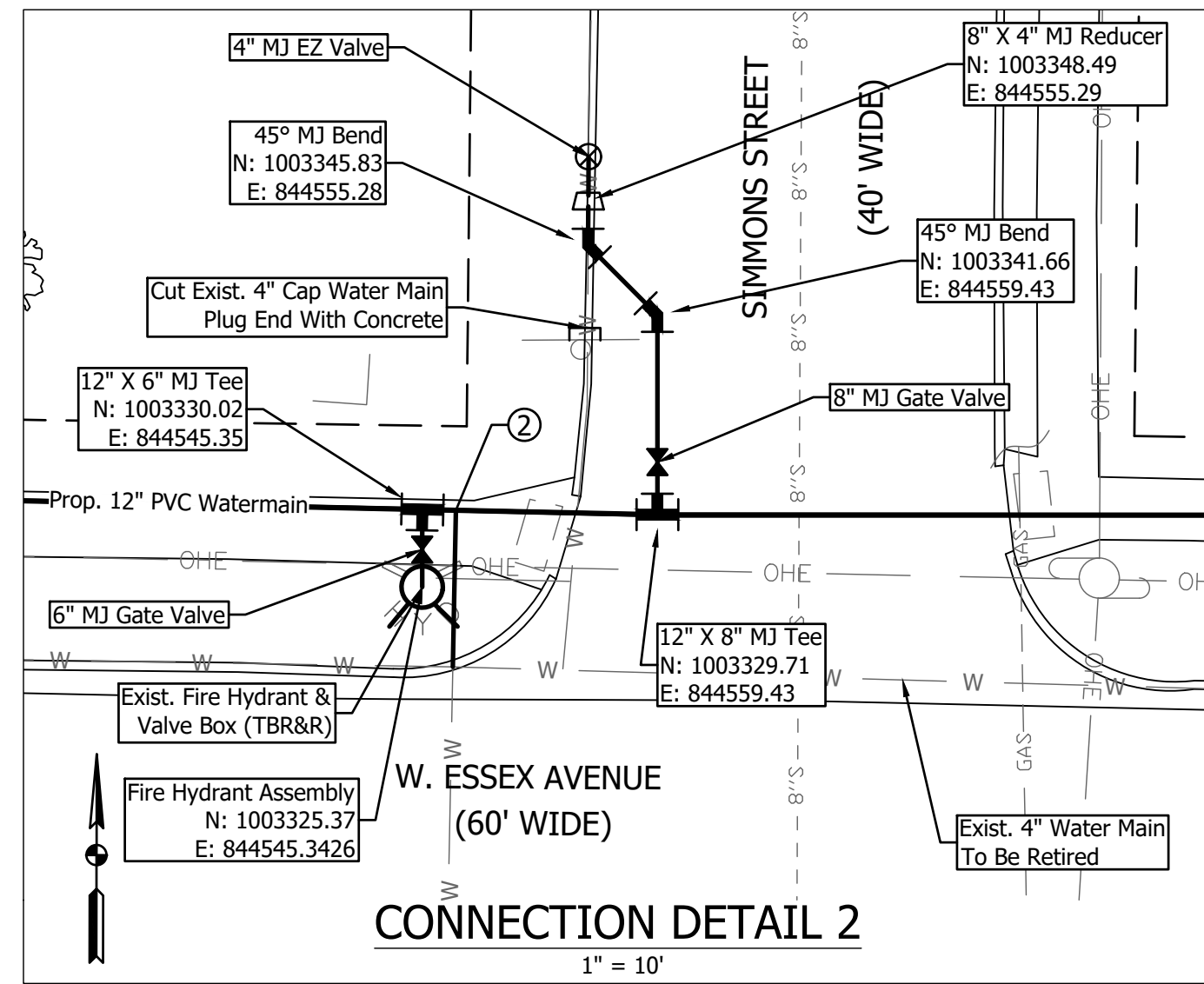
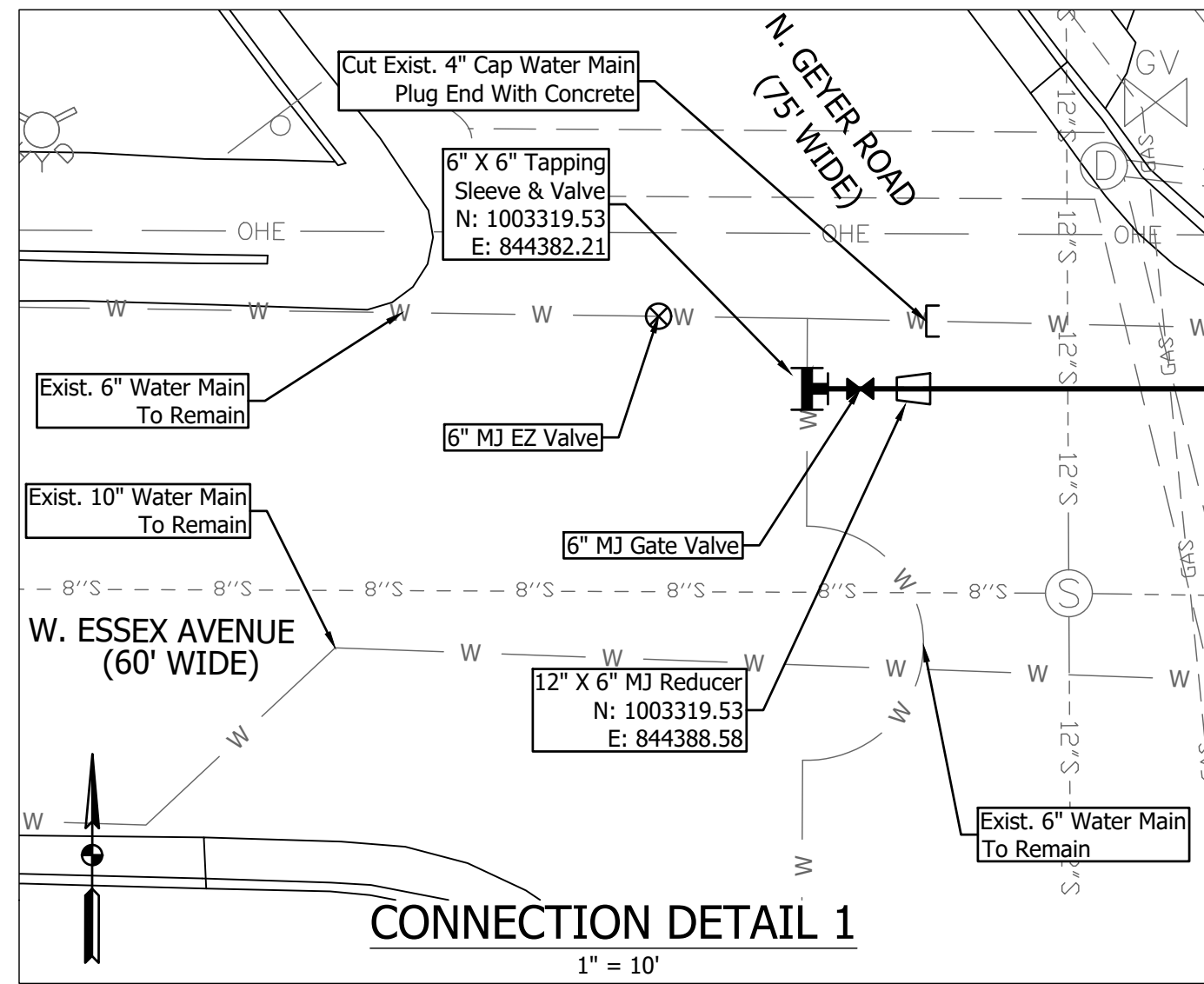
- Notes:**
- Connect Exist. Water Service Line To New Water Main. (See Detail Sheet 7)
  - Extend Exist. Water Service Line To New Water Main. (See Detail Sheet 7)



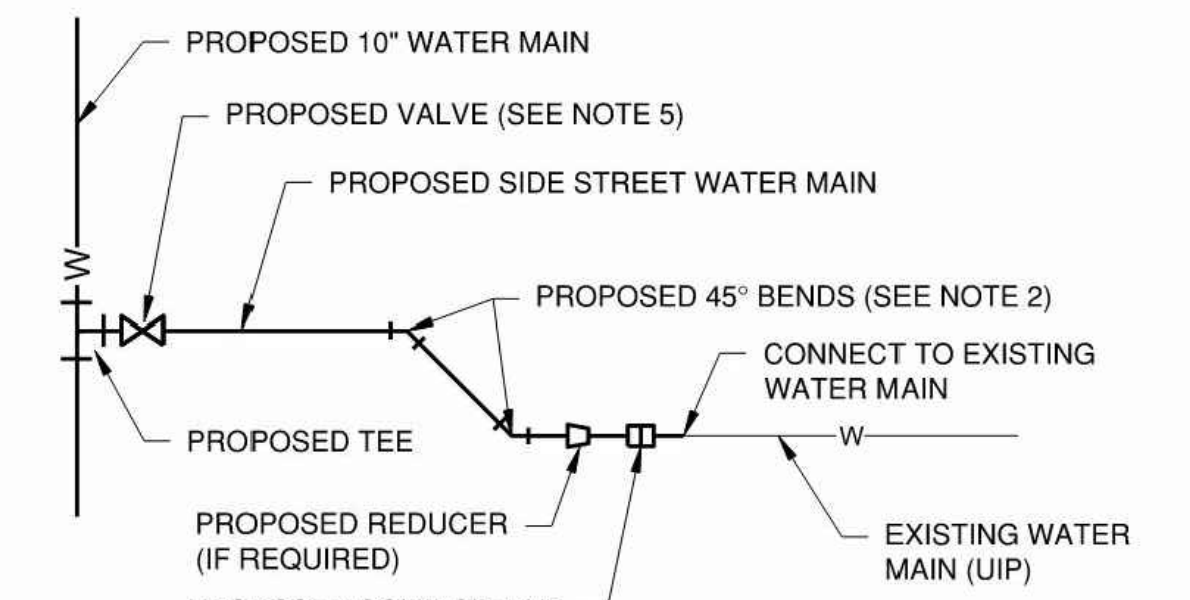
RECOMMENDED FOR APPROVAL: *Laura Mwirigi Rightler* 03/25/2022 DATE  
 DESIGNED: NCL DRAWN: NCL  
 CHECKED: LMR CHECKED: WEE

CITY OF KIRKWOOD  
**WEST ESSEX ROAD WATER MAIN REPLACEMENT**  
 PLAN & PROFILE  
 SHEET 5 OF 5

SCALE: 1" = 20'  
 CONSULTANT PROJECT NUMBER: 521-0135-00W  
 SHEET: 7 OF 11



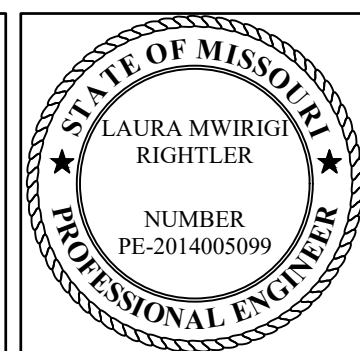
- NOTES:**
1. FITTING, VALVES & LINE SIZES PER SPECIFIC CONNECTION DETAILS
  2. A MINIMUM REQUIREMENT OF 2 - 45° BENDS ON SIDE CONNECTIONS TO ALLOW FOR HORIZONTAL AND VERTICAL ALIGNMENT ADJUSTMENTS.
  3. PROPOSED SIDE STREET WATER MAIN TO BE PVC C909 DR18 WITH TRACER WIRE AND MARKING TAPE.
  4. STATIONING LOCATIONS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO DETERMINE EXACT LOCATION OF TEES & CROSSES BASED ON FIELD CONDITIONS.
  5. WHERE "EZ VALVE" IS SPECIFIED ON THE PLANS (CONNECTION DETAILS 1, 2, 5, 6, 7, 8, 9, 11, 12), VALVE SHALL BE INSTALLED ON EXISTING WATER MAIN AFTER SOLID SLEEVE.



Date: Jan 12, 2023, 3:26pm User: ksmc User: ksmc File: X:\Production\Files\2021\1521-01251\CAD\Plans\Plan and Profile.dwg

REVISIONS		
DATE	REVISION	BY

- Notes:**
1. Connect Exist. Water Service Line To New Water Main. (See Detail Sheet 7)
  2. Extend Exist. Water Service Line To New Water Main. (See Detail Sheet 7)



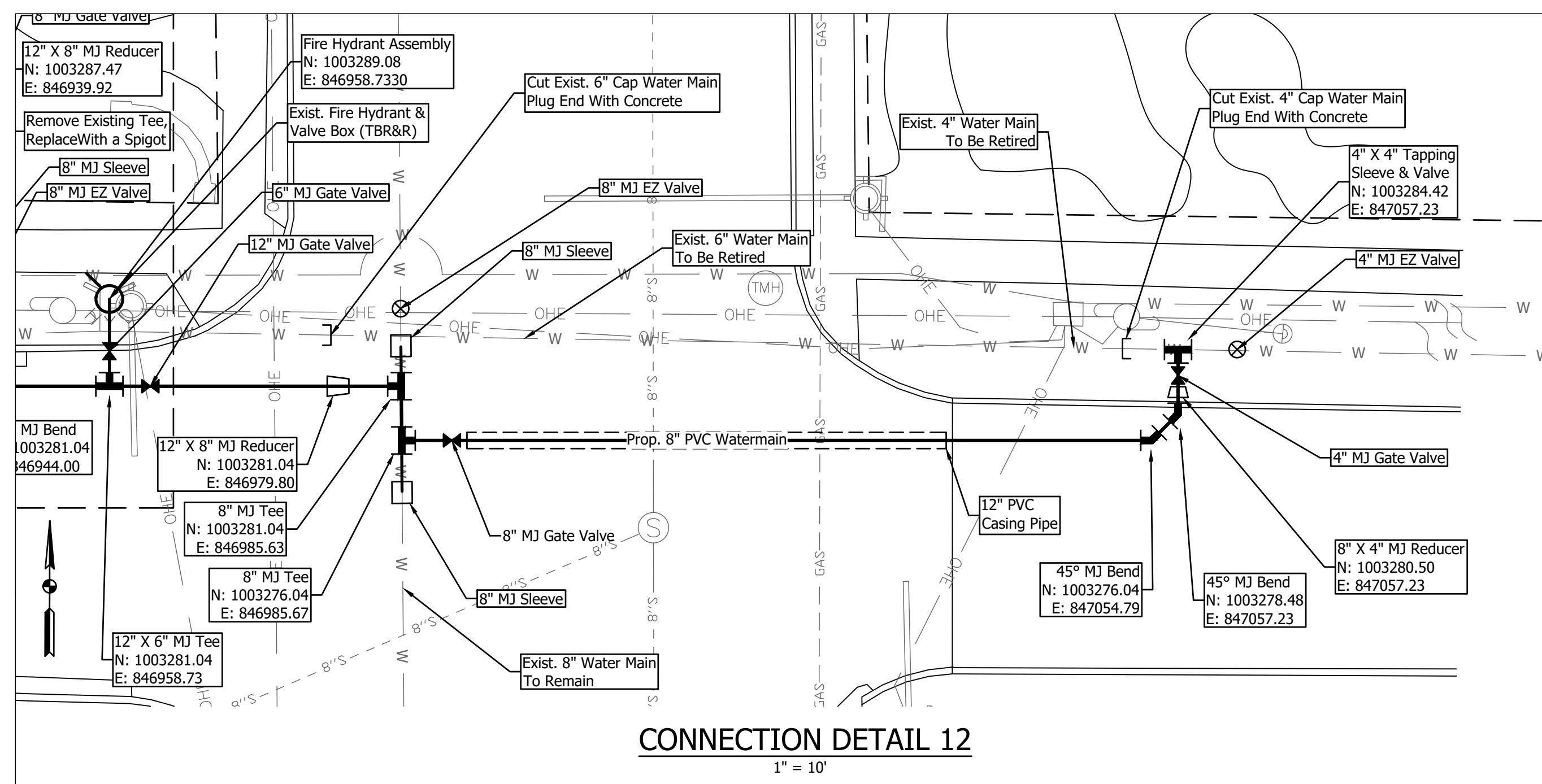
RECOMMENDED FOR APPROVAL	<i>Laura Mwirigi Rightler</i>	03/25/2022
DESIGNED:	NCL	DRAWN:
CHECKED:	LMR	CHECKED:

**CITY OF KIRKWOOD**  
**WEST ESSEX ROAD WATER MAIN REPLACEMENT**

**CONNECTION DETAILS**  
**SHEET 1 OF 2**

SCALE	AS NOTED
CONSULTANT PROJECT NUMBER	521-0135-00W
SHEET	8 OF 11





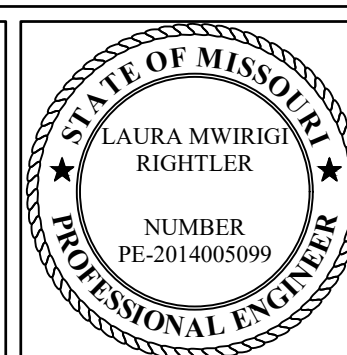
**CONNECTION DETAIL 12**

1" = 10'

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REVISIONS		
DATE	REVISION	BY

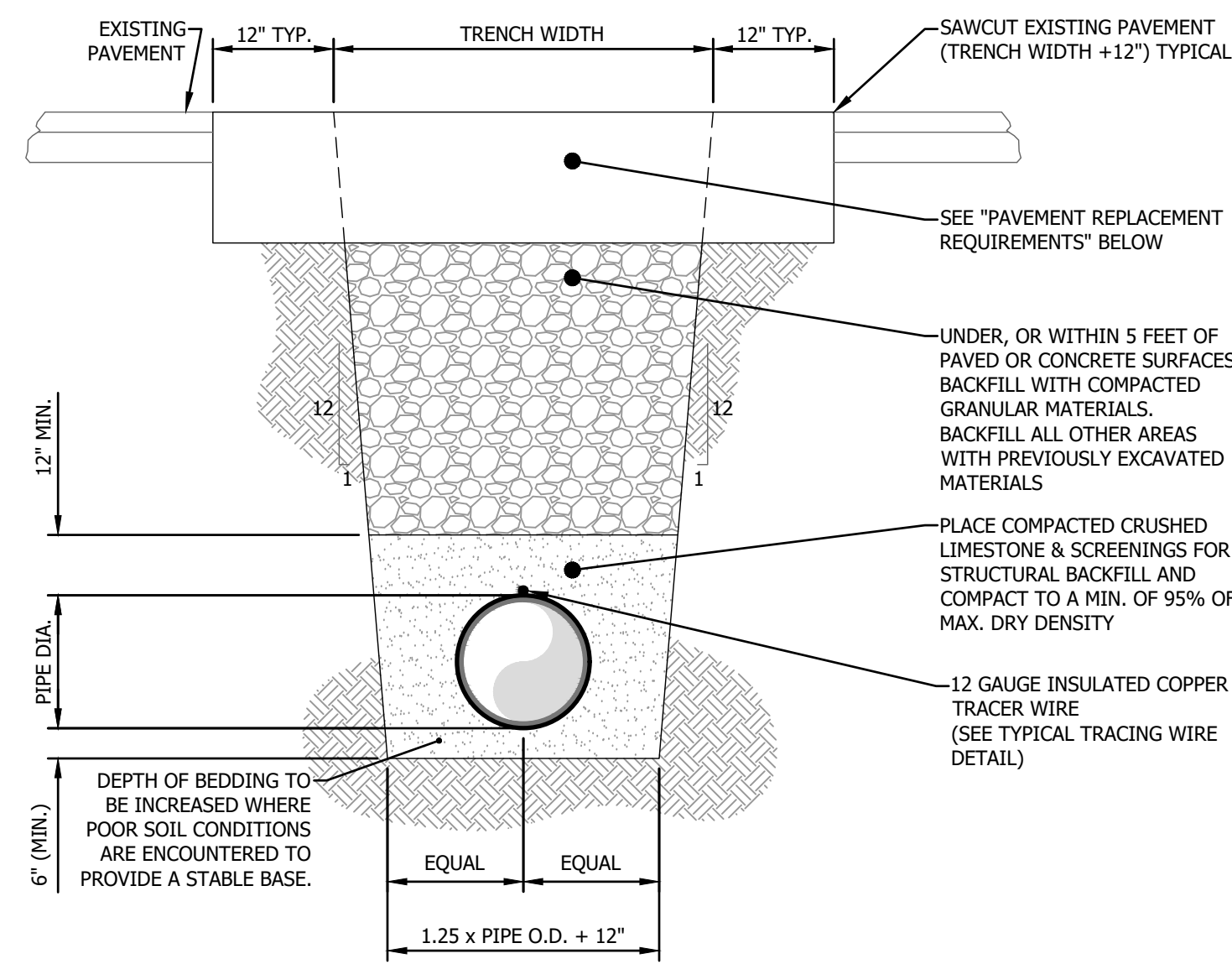
- Notes:
- ① Connect Exist. Water Service Line To New Water Main. (See Detail Sheet 7)
  - ② Extend Exist. Water Service Line To New Water Main. (See Detail Sheet 7)



RECOMMENDED FOR APPROVAL	<i>Laura Mwirigi Rightler</i>	03/25/2022
	Laura Mwirigi Rightler	DATE
DESIGNED: _____	NCL	DRAWN: _____
	NCL	
CHECKED: _____	LMR	CHECKED: _____
	LMR	WEE

<b>CITY OF KIRKWOOD</b> <b>WEST ESSEX ROAD WATER MAIN REPLACEMENT</b>
<b>CONNECTION DETAILS</b> <b>SHEET 2 OF 2</b>

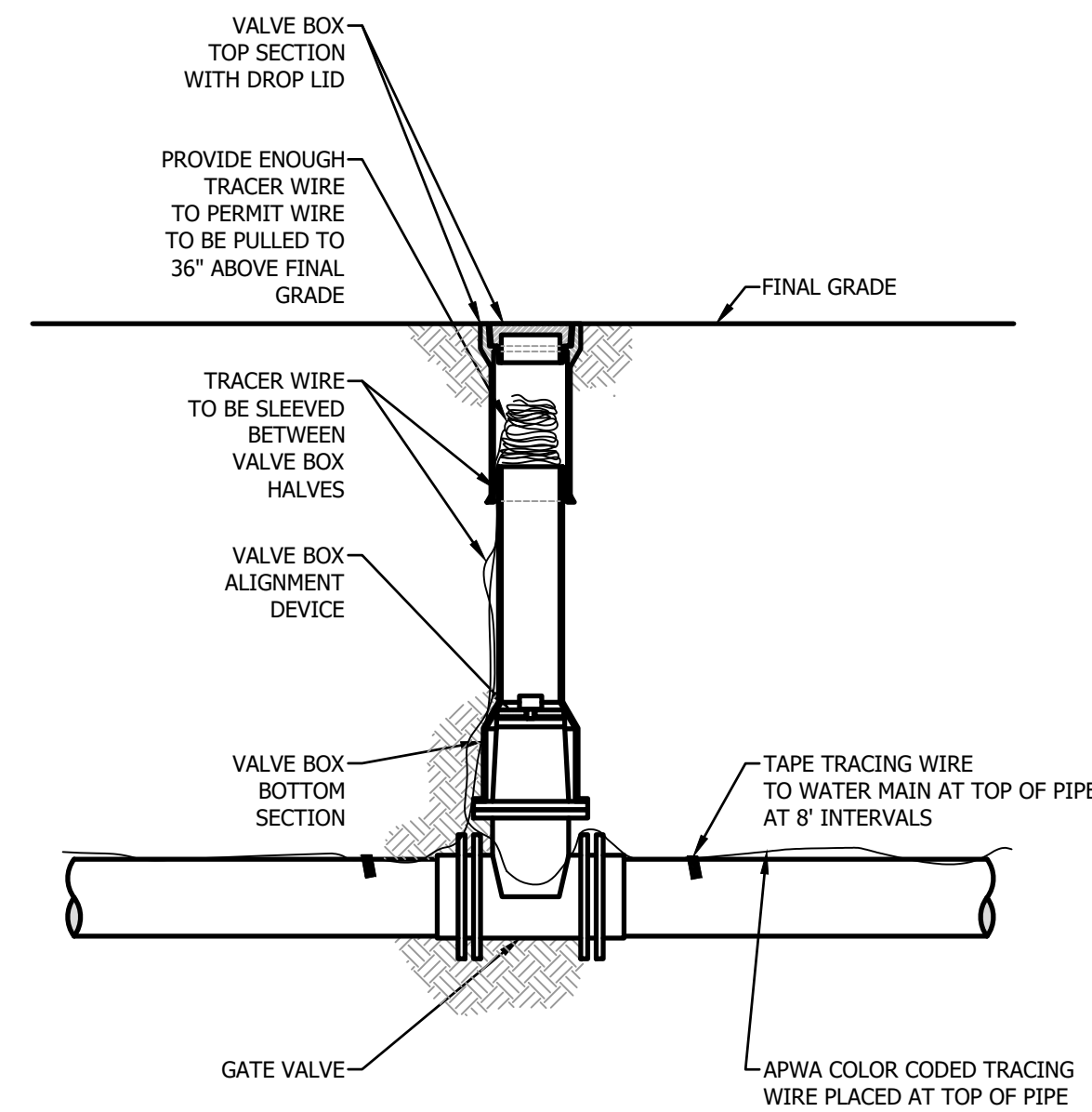
SCALE	AS NOTED
CONSULTANT PROJECT NUMBER	521-0135-00W
SHEET	9 OF 11



PAVEMENT REPLACEMENT REQUIREMENTS	
ASPHALT STREETS (RESIDENTIAL)	660#/SY HMA FOR BASE AND SURFACE
ASPHALT STREETS (COLLECTOR)	980#/SY HMA FOR BASE AND SURFACE
CONCRETE STREETS (RESIDENTIAL)	6" PCCP WITH EXPANSION AND JOINTS TO MATCH EXISTING STREET
CONCRETE STREETS (COLLECTOR)	10" PCCP WITH DOWELS AND EXPANSION AND JOINTS TO MATCH EXISTING STREET
BRICK STREETS	COORDINATE WITH THE ENGINEER FOR SPECIFIC RESTORATION DETAIL

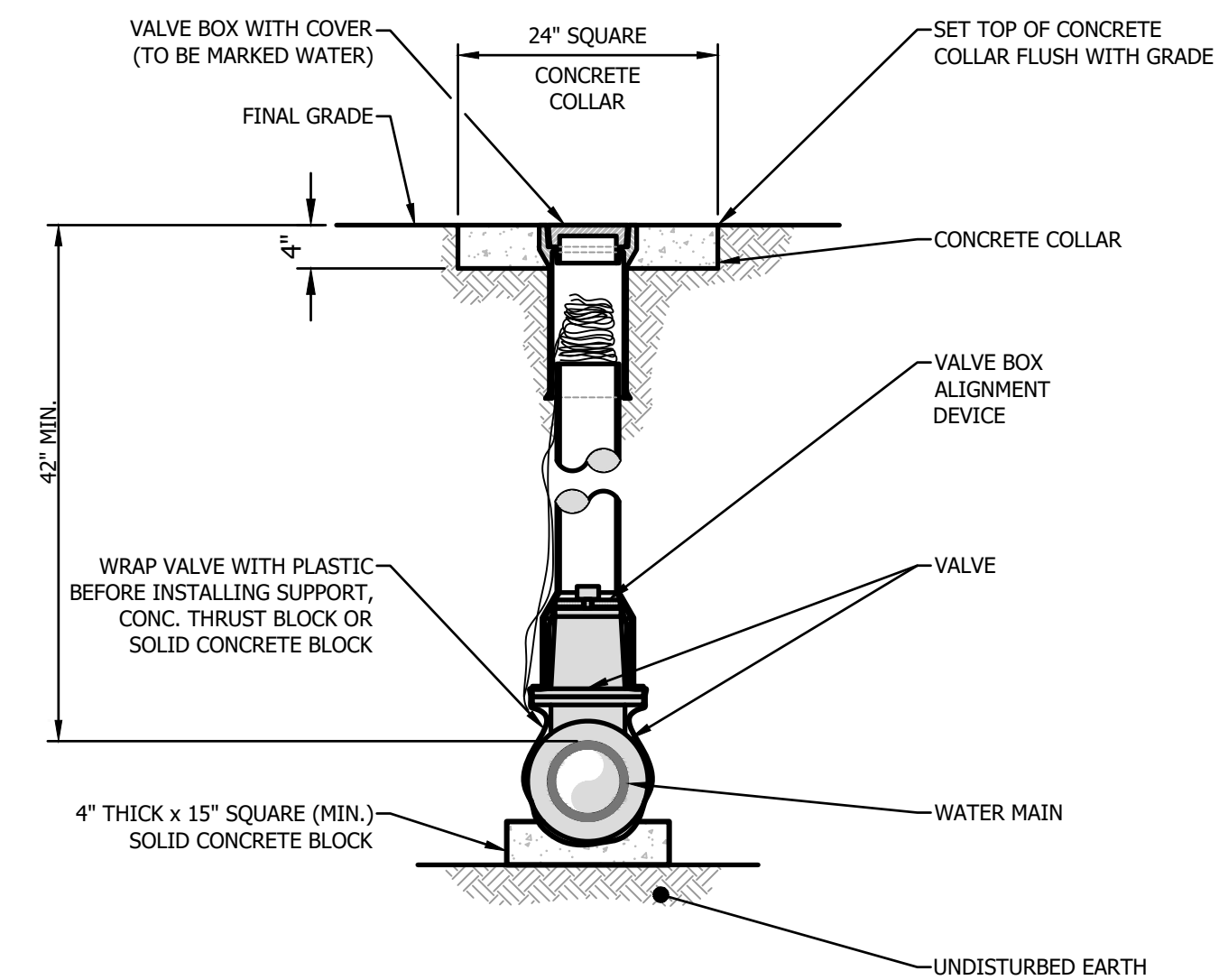
**TYPICAL WATER MAIN TRENCH**

Scale: NTS



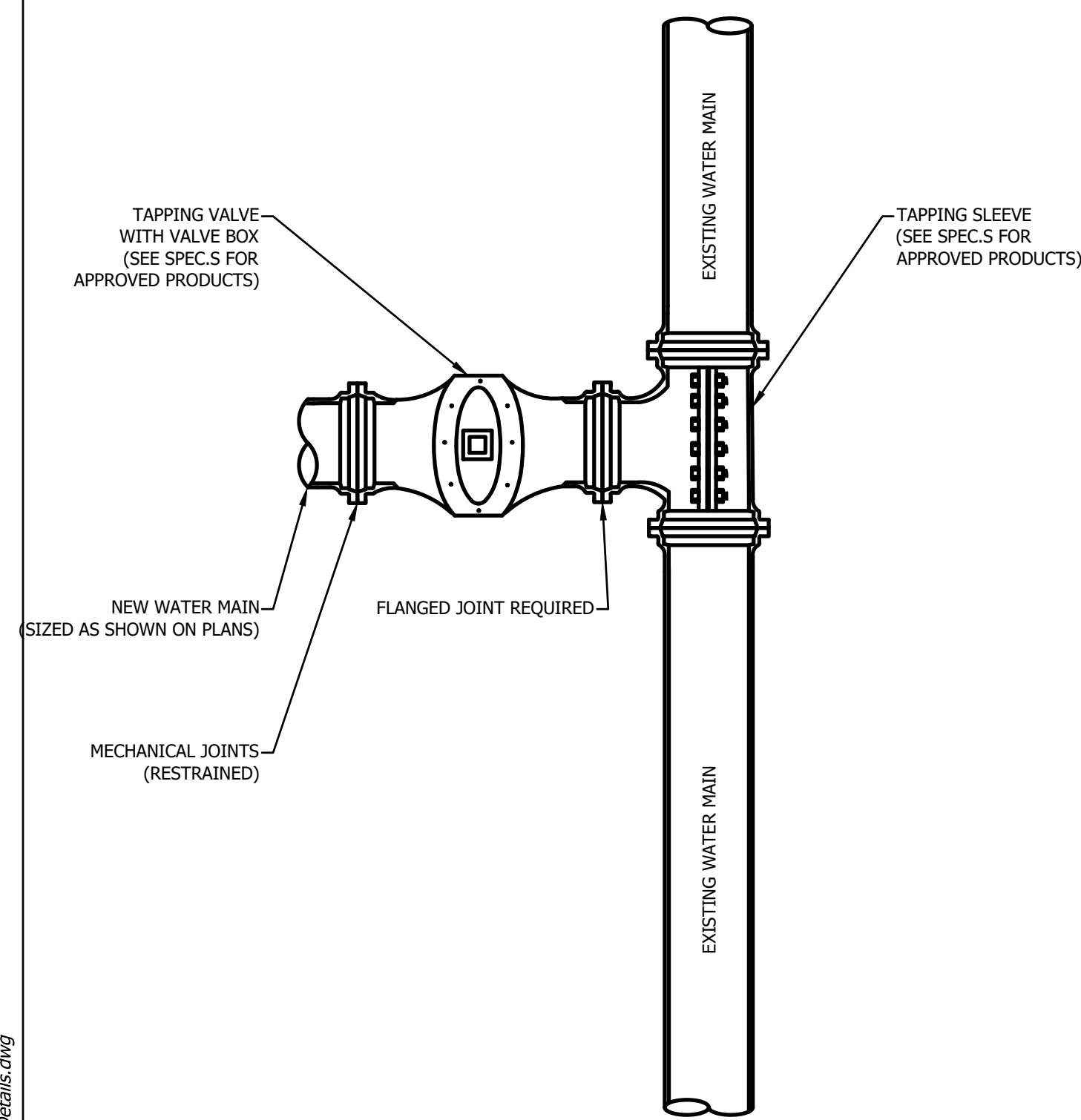
**TRACING WIRE DETAIL**

Scale: NTS



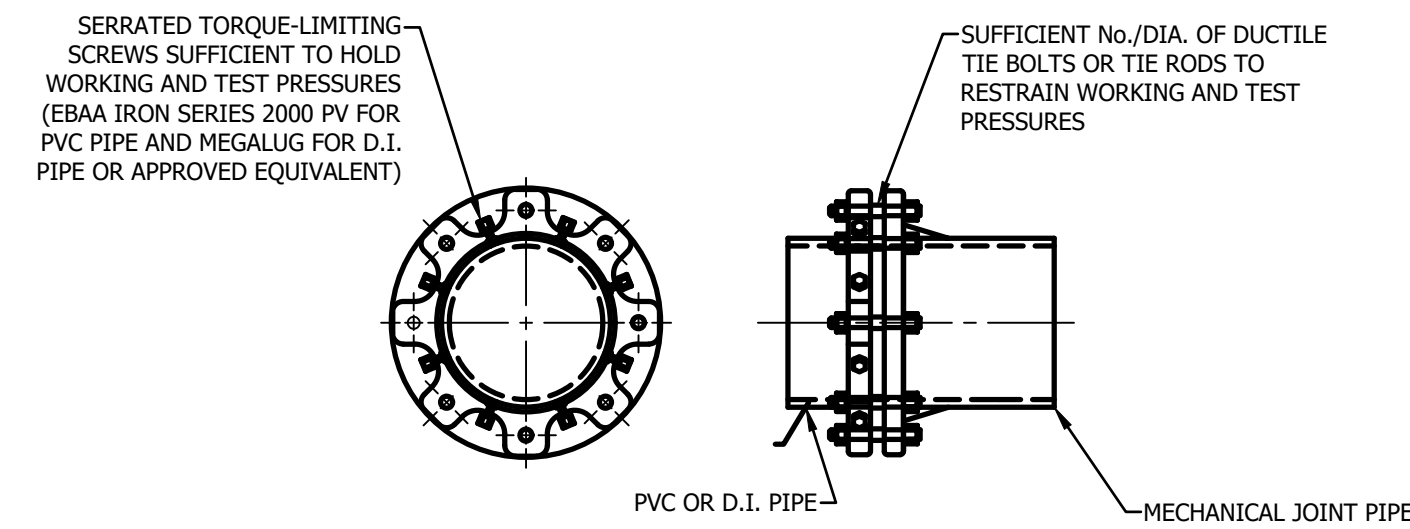
**GATE VALVE INSTALLATION DETAIL**

Scale: NTS

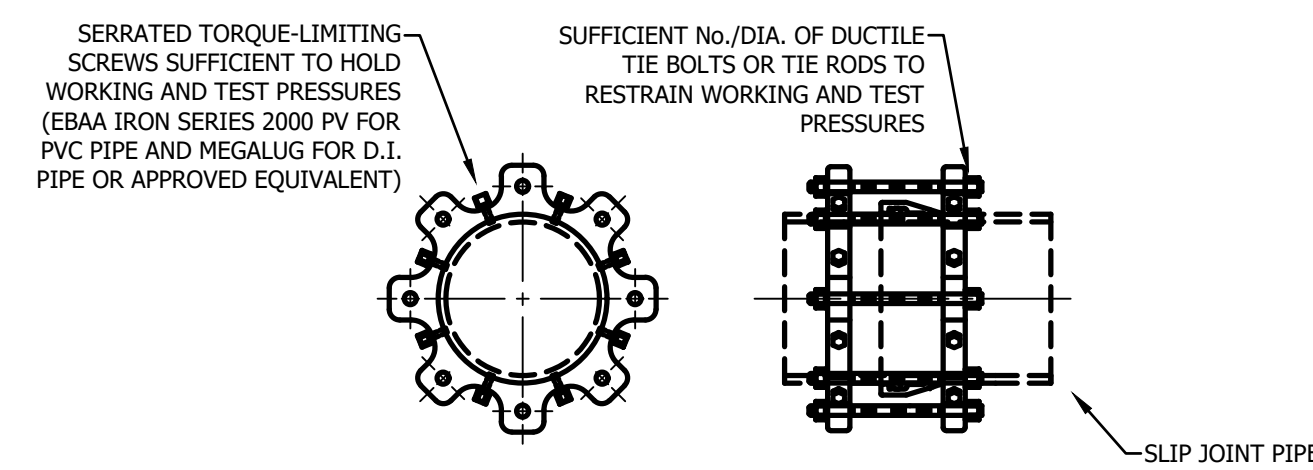


**PRESSURE TAPPING DETAIL**

Scale: NTS



**RESTRAINED JOINTS ON MECHANICAL JOINT PIPE & FITTINGS**



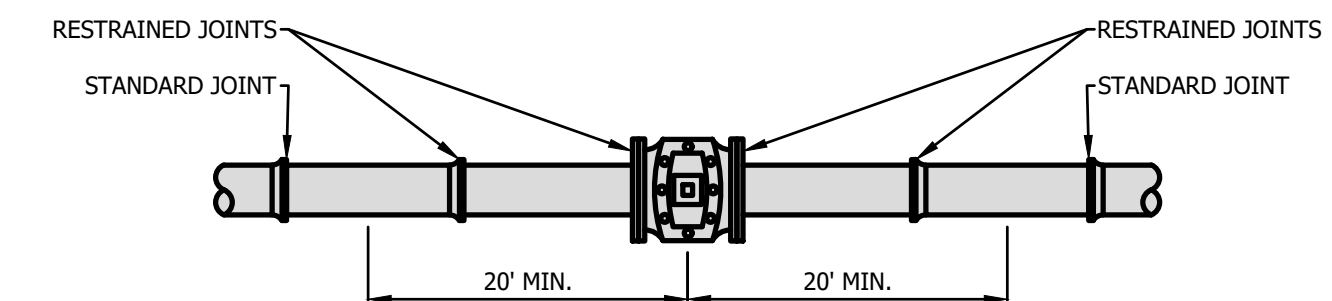
**RESTRAINED JOINTS ON SLIP JOINT PIPE**

(USING GRIPPING TYPE RETAINERS)

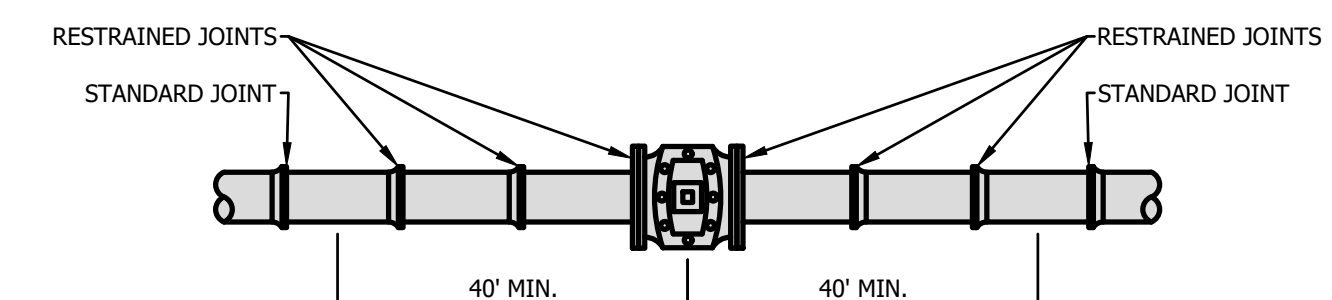
MINIMUM FOOTAGE OF RESTRAINED PIPE FOR VARIOUS DIAMETERS & DEGREES CAST & DUCTILE IRON ELBOWS								
COVER DIA. MAIN	DEGREE OF ELBOW				VERTICAL OFFSET 45°		BRANCH OF TEE	REDUCER
	11 1/4°	22 1/2°	45°	90°	UPPER BEND (3')	LOWER BEND (3')		
	3"	3'	3'	3'	3'	3'		
6"	2'	5'	10'	25'	49'	10'	9'	159'
10"	4'	8'	16'	39'	77'	15'	119'	107'
12"	5'	9'	19'	47'	90'	36'	163'	N/A

**RESTRAINED JOINTS DETAIL**

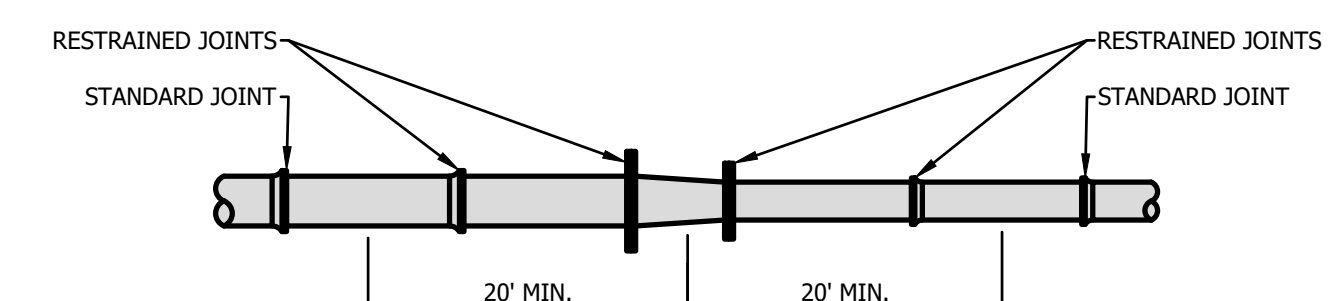
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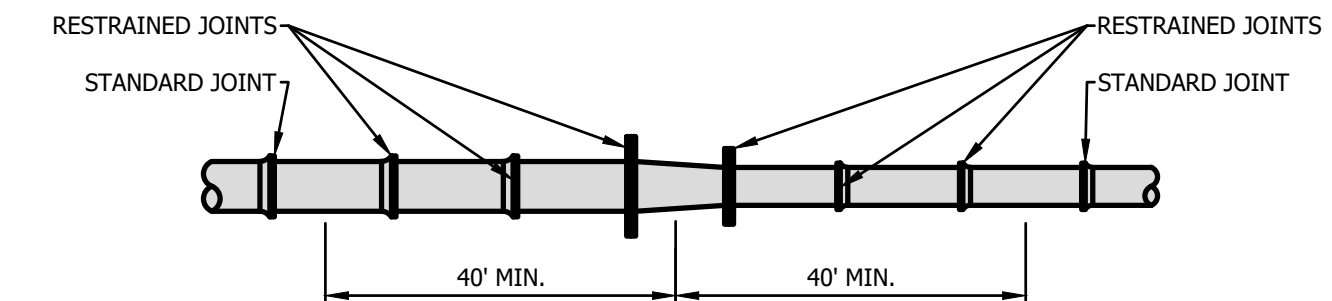
**VALVES (NON-DEAD END) 8" AND SMALLER**



**VALVES (NON-DEAD END) 12" AND LARGER**



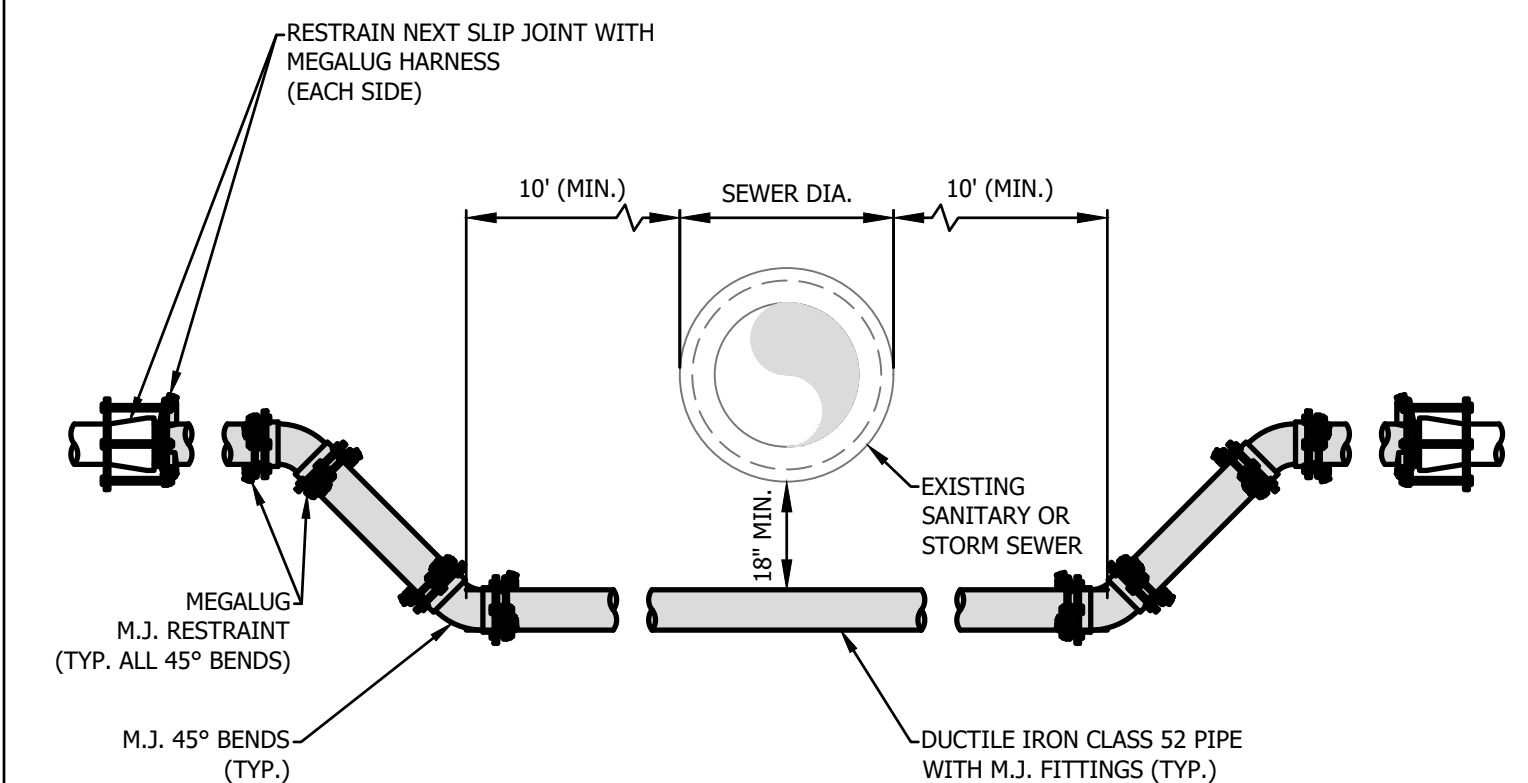
**REDUCERS - LARGER PIPE DIAMETER IS 8" OR SMALLER**



**REDUCERS - LARGER PIPE DIAMETER IS 12" OR LARGER**

**TYPICAL RESTRAINING FOR VALVES & REDUCERS**

Scale: NTS

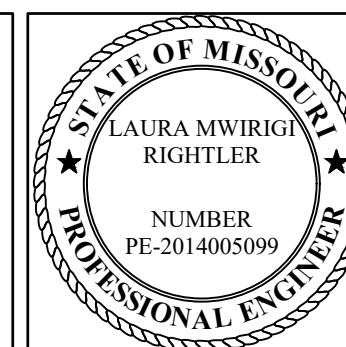


**TYPICAL OFFSET ASSEMBLY**

Scale: NTS

Date: Jan 12, 2023, 3:26pm User: Mjones, Mjeshing Files: X:\Production\Files\2021\1521-0125\CAD\Plans\Details.dwg

REVISIONS		
DATE	REVISION	BY

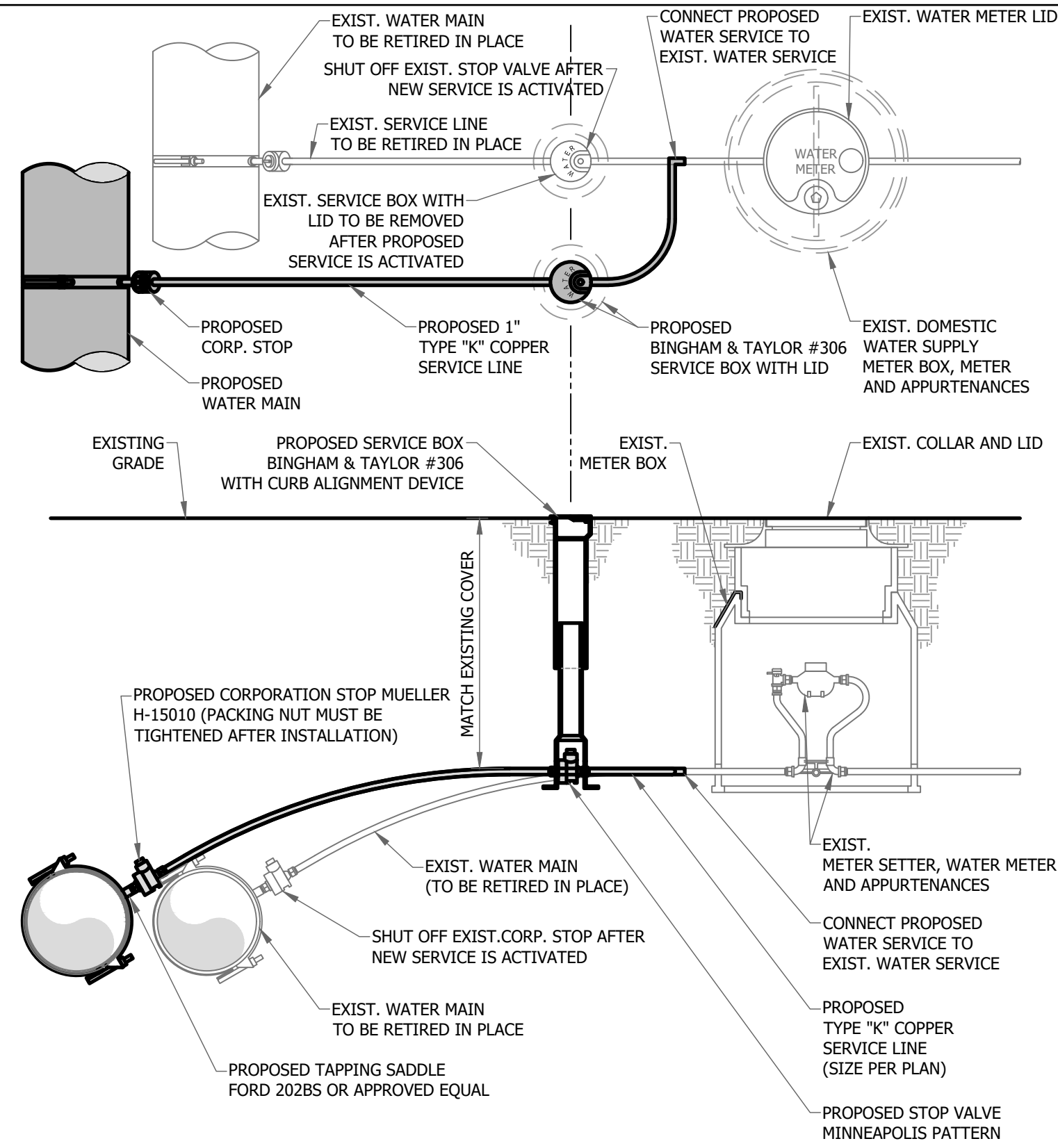


RECOMMENDED FOR APPROVAL	<i>Laura Mwirigi Rightler</i>	03/25/2022
	LAURA MWIRIGI RIGHTLER	DATE
DESIGNED: NCL	DRAWN: NCL	
CHECKED: LMR	CHECKED: WEE	

CITY OF KIRKWOOD  
WEST ESSEX ROAD WATER MAIN REPLACEMENT

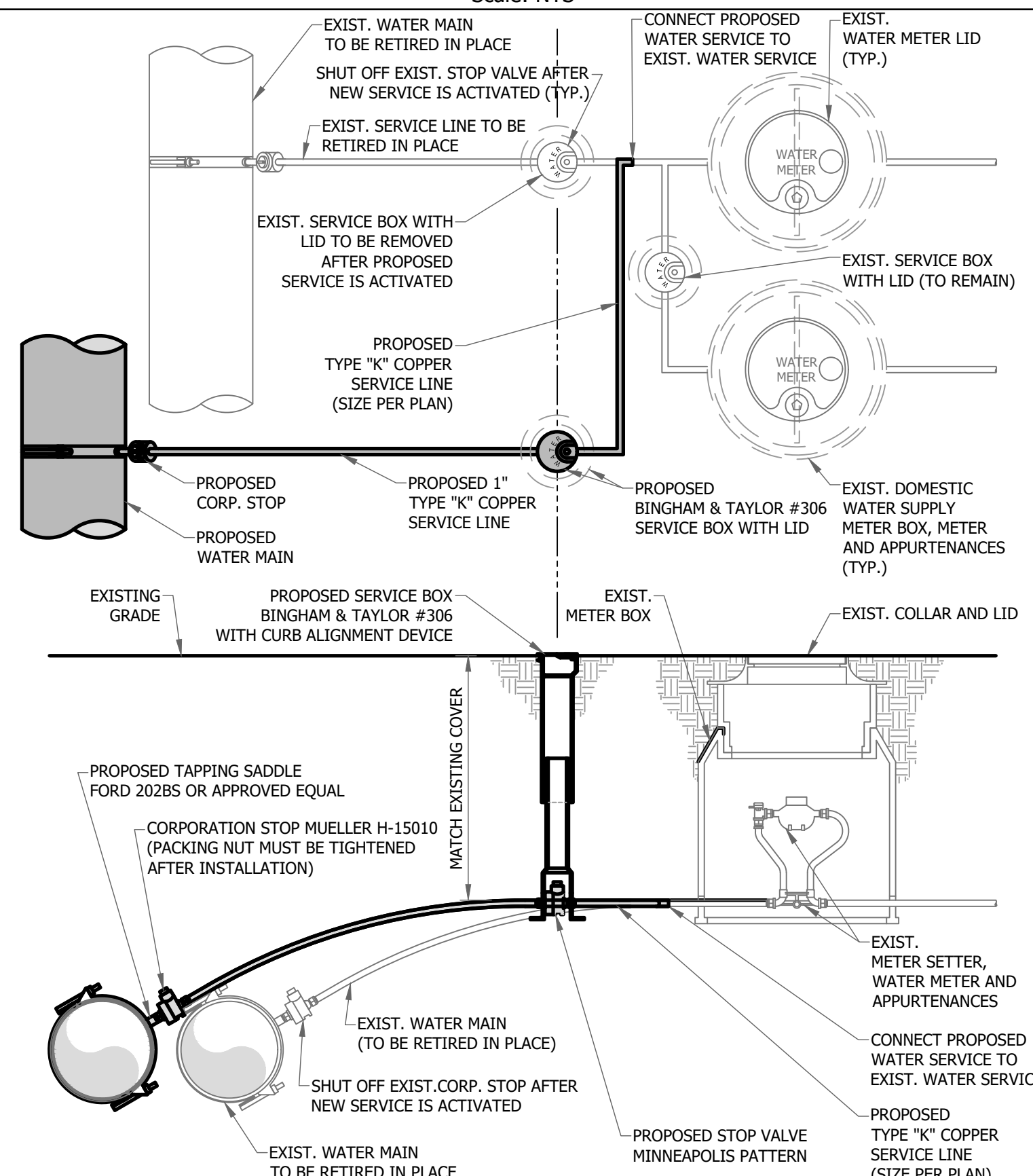
WATER MAIN DETAILS  
SHEET 1 OF 2

SCALE	AS NOTED
CONSULTANT PROJECT NUMBER	521-0135-00W
SHEETS	10 OF 11



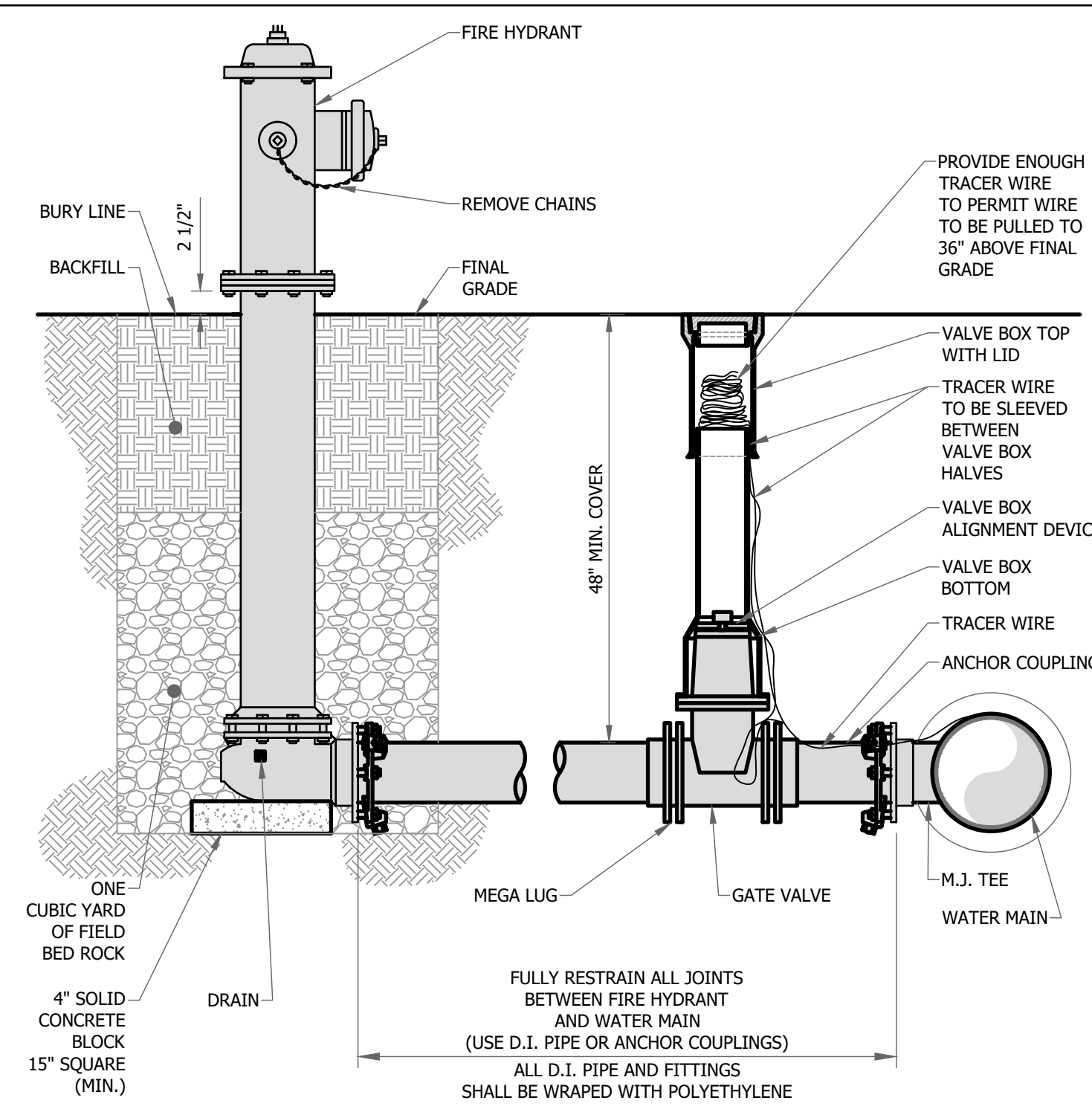
**SINGLE (1" Or 3/4") METER SERVICE CONNECTION**

Scale: NTS



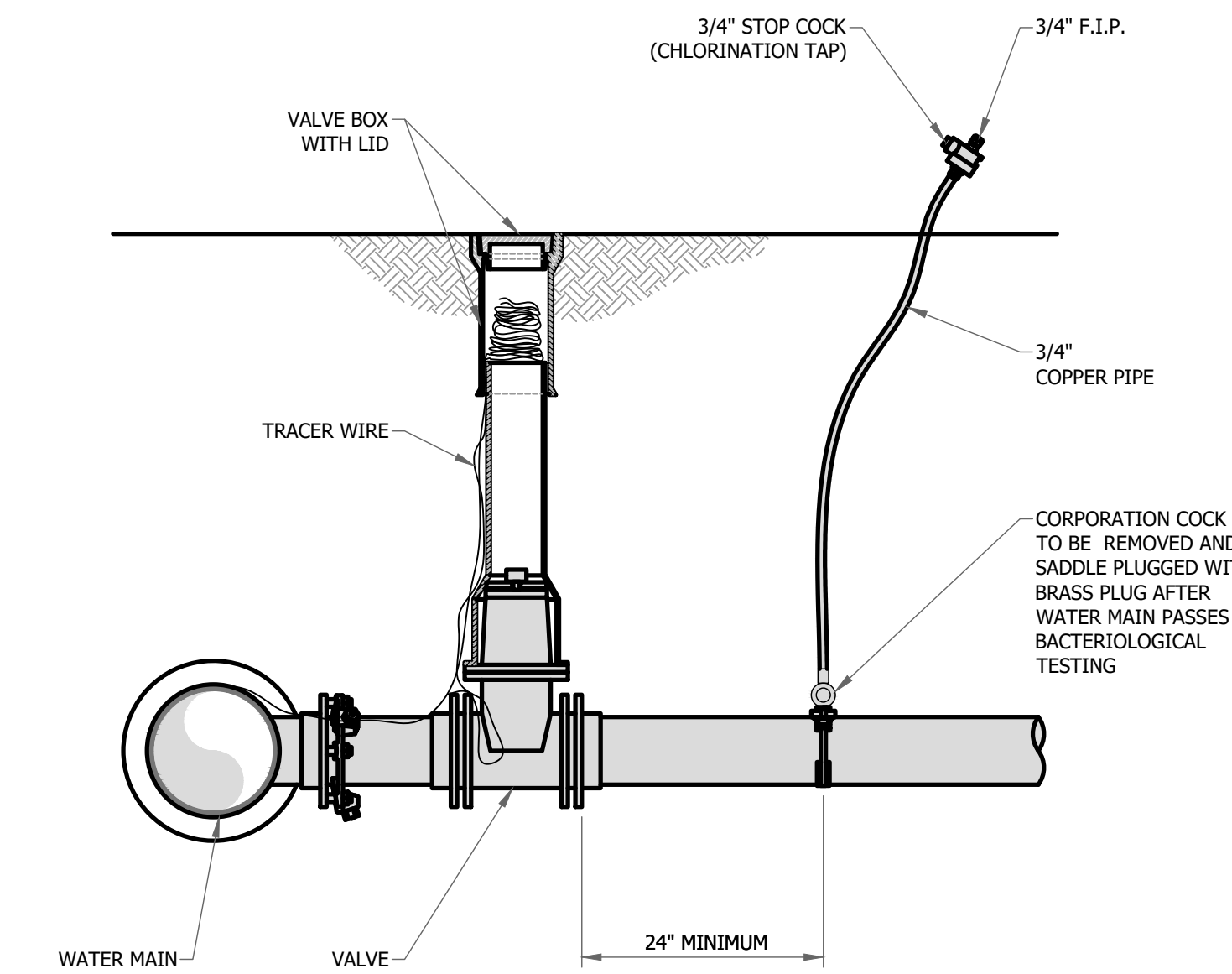
**DUAL (1" Or 3/4") METER SERVICE CONNECTION**

Scale: NTS



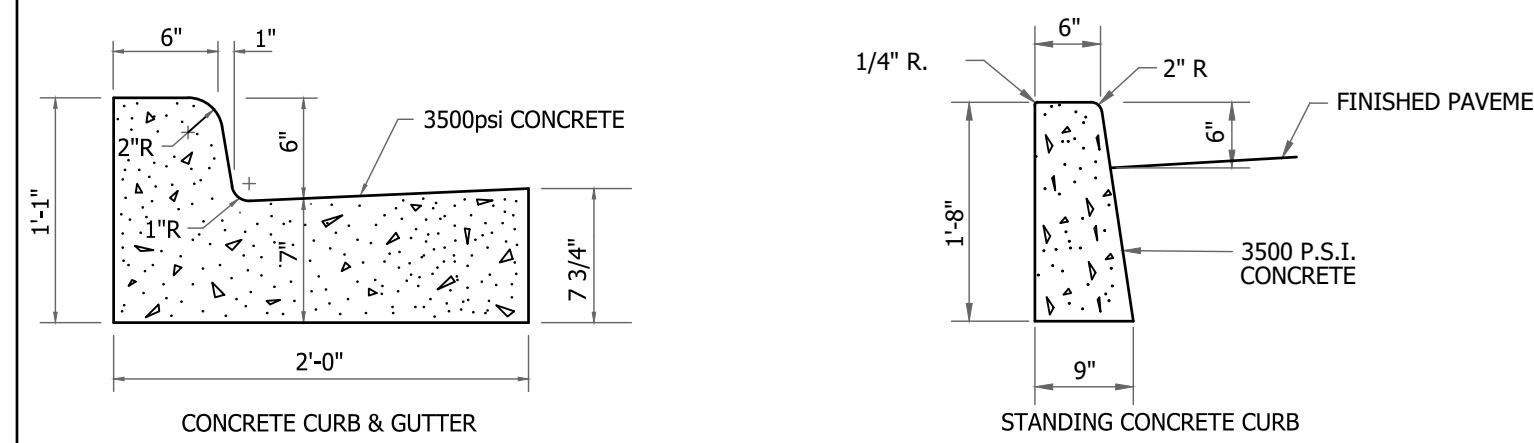
**FIRE HYDRANT ASSEMBLY**

Scale: NTS



**CHLORINATION DISINFECTION TAP**

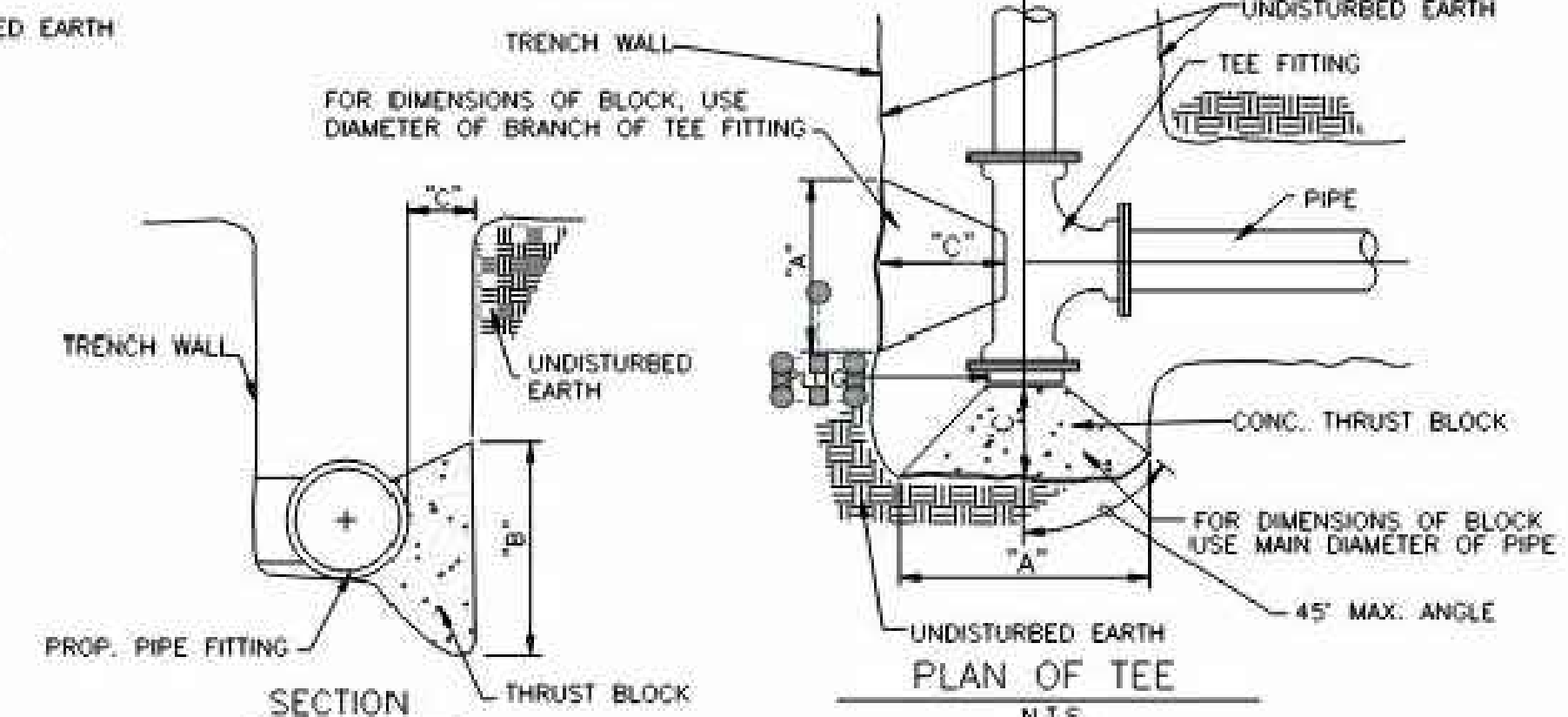
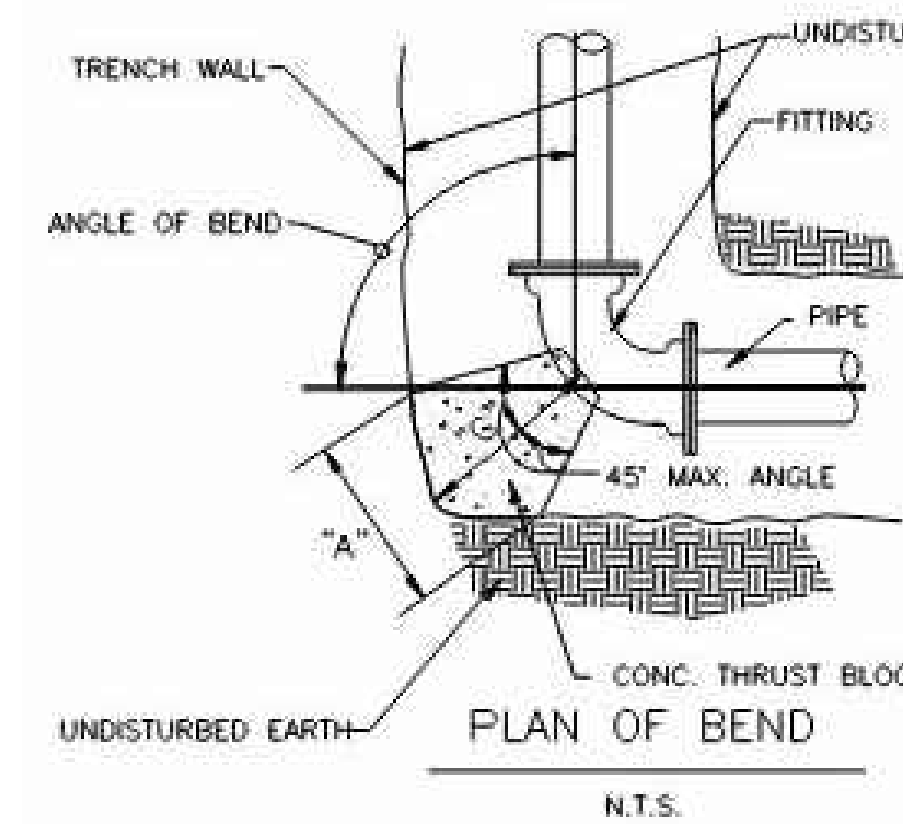
Scale: NTS



- 1/2" PREFORMED EXPANSION JOINT MATERIAL SHALL BE PLACED AT ALL PC AND PT OF CURB RADIUS. MAXIMUM SPACING OF TANGENT SECTIONS SHALL BE 90°.
- PLACE TOOLED CONTRACTION JOINTS AT 10' (MAX.). DEPTH OF THE CONTRACTION SHALL BE 1/3 THE DEPTH OF THE CONCRETE.
- WHERE SIDEWALK AND CURB ARE ADJACENT, SAWED CONTRACTIONS JOINTS SHALL BE PLACED IN THE CURB AT EVERY OTHER SIDEWALK JOINT.
- ALL EXPOSED EDGES SHALL BE ROUNDED WITH A 1/4" RADIUS TOOL.
- SUBGRADE FOR CURB OR CURB & GUTTER SHALL BE A MINIMUM OF 2" THICK OF EITHER "B" BORROW OR NO. 53 CRUSHED STONE AND MECHANICALLY COMPACTED.
- THIS DETAIL IS BASED ON DETAIL D-1 OF THE STANDARD DETAILS FOR THE CITY OF EVANSVILLE, HOWEVER, THE CONTRACTOR SHALL ADJUST THE DIMENSIONS IN THIS DETAIL TO MATCH THE EXISTING CURB.

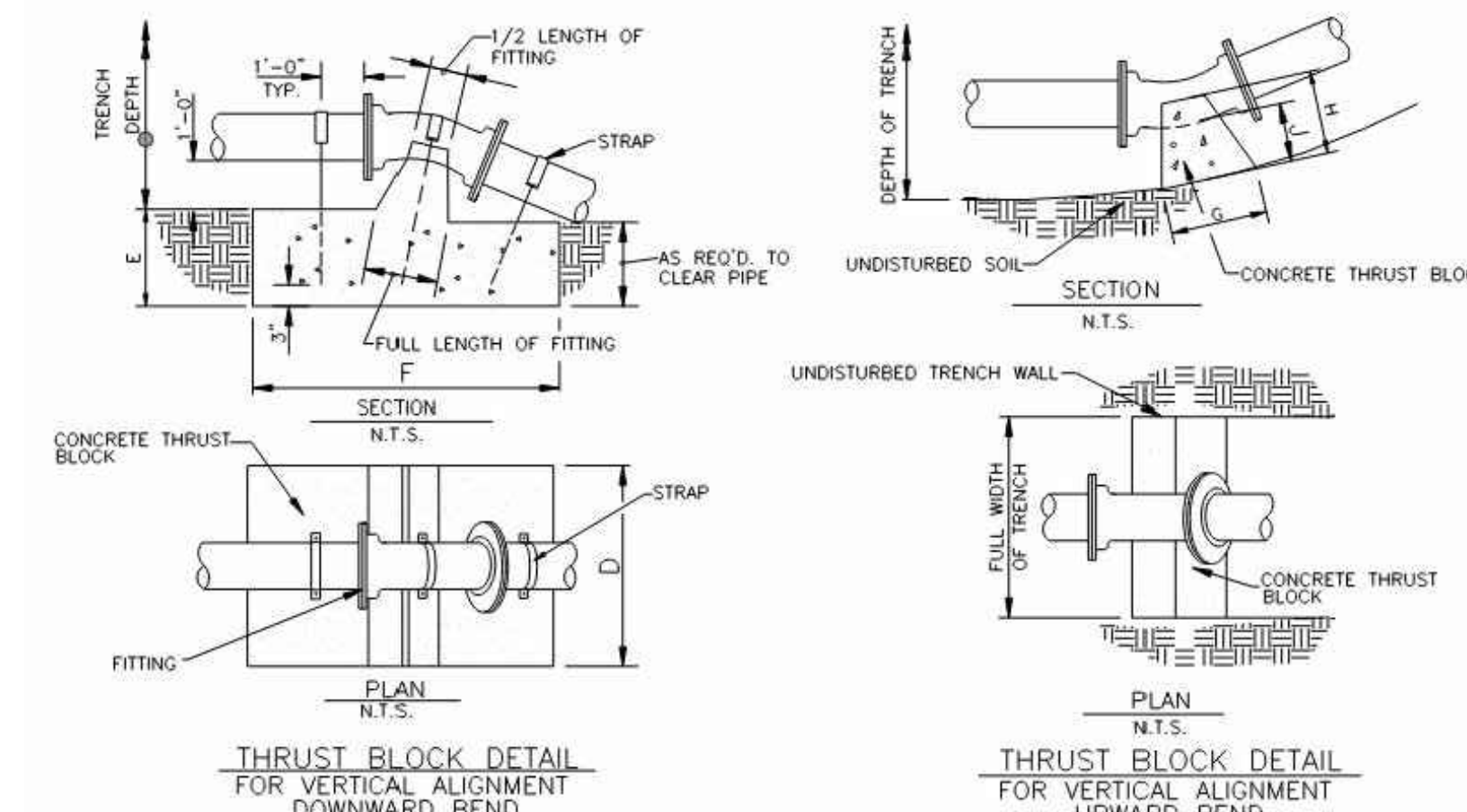
**CURB DETAIL**

Scale: NTS



**HORIZONTAL THRUST BLOCK**

Scale: NTS



**VERTICAL THRUST BLOCK**

Scale: NTS

REVISIONS		
DATE	REVISION	BY

RECOMMENDED FOR APPROVAL	<i>Laura Mwirigi Rightler</i>	03/25/2022
DESIGNED:	NCL	DRAWN: NCL
CHECKED:	LMR	CHECKED: WEE

CITY OF KIRKWOOD  
WEST ESSEX ROAD WATER MAIN REPLACEMENT

WATER MAIN DETAILS  
SHEET 2 OF 2

SCALE	AS NOTED
CONSULTANT PROJECT NUMBER	521-0135-00W
SHEETS	11 OF 11

Date: Jan 12, 2023, 3:26pm User: kpmc\_nlschibing File: X:\Production Files\2021\521-0135\CAD\Plans\Details.dwg