

HARTSHORNE PUBLIC WORKS AUTHORITY

WATER DISTRIBUTION IMPROVEMENTS

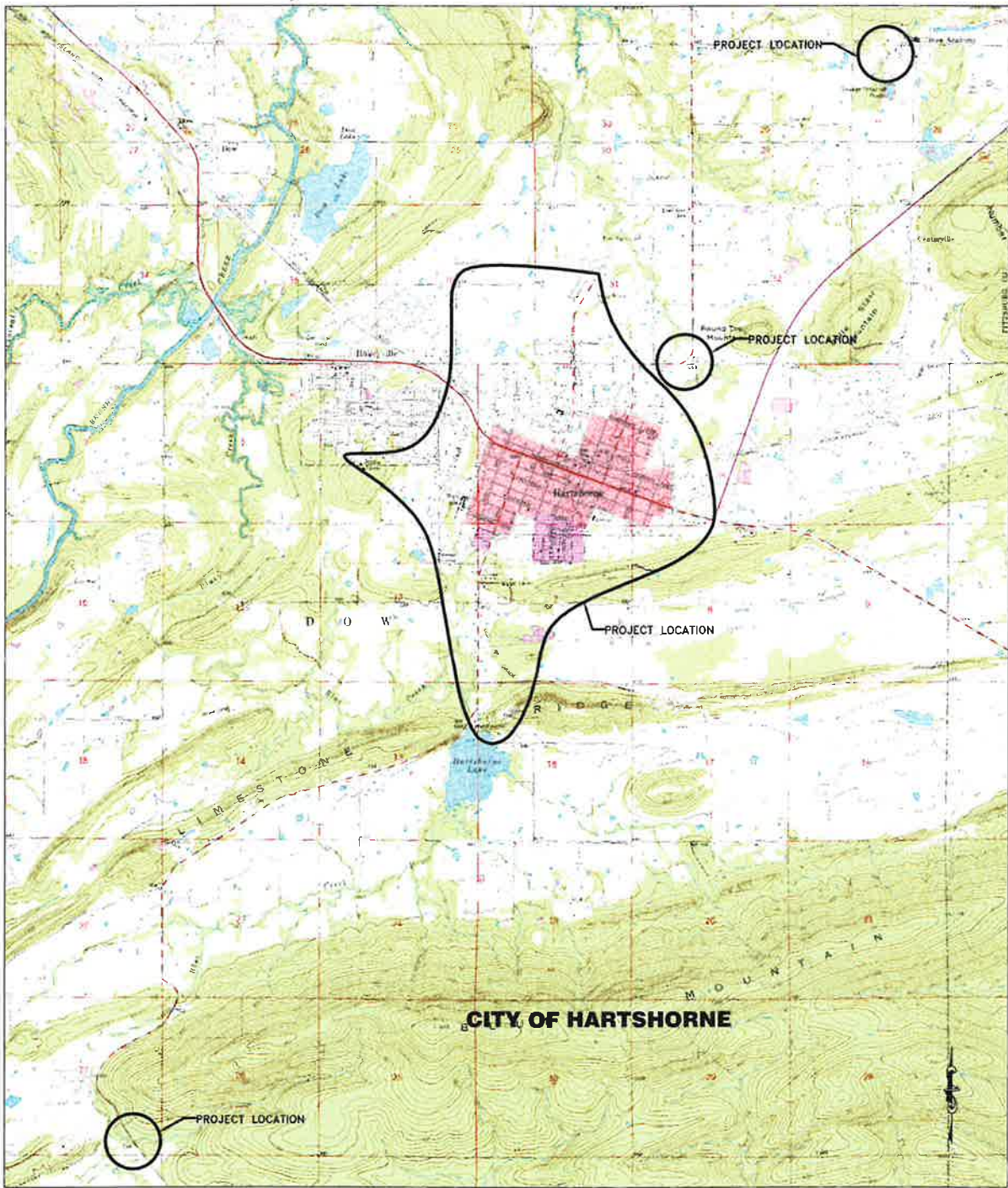
PROJECT NO. HR-21-01

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01/12/2024	INITIAL SIGNED AND SEALED	1-89
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- (1) An effort has been made to locate and show approximate location of underground utility lines. Buried utilities are not necessarily shown. It is the contractors responsibility to locate and preserve all utilities.
- (2) Contractor is responsible for contacting of all utility companies prior to construction.
- (3) 2009 Oklahoma Department of Transportation Commission Specification and Technical Specification Volume II



VICINITY MAP

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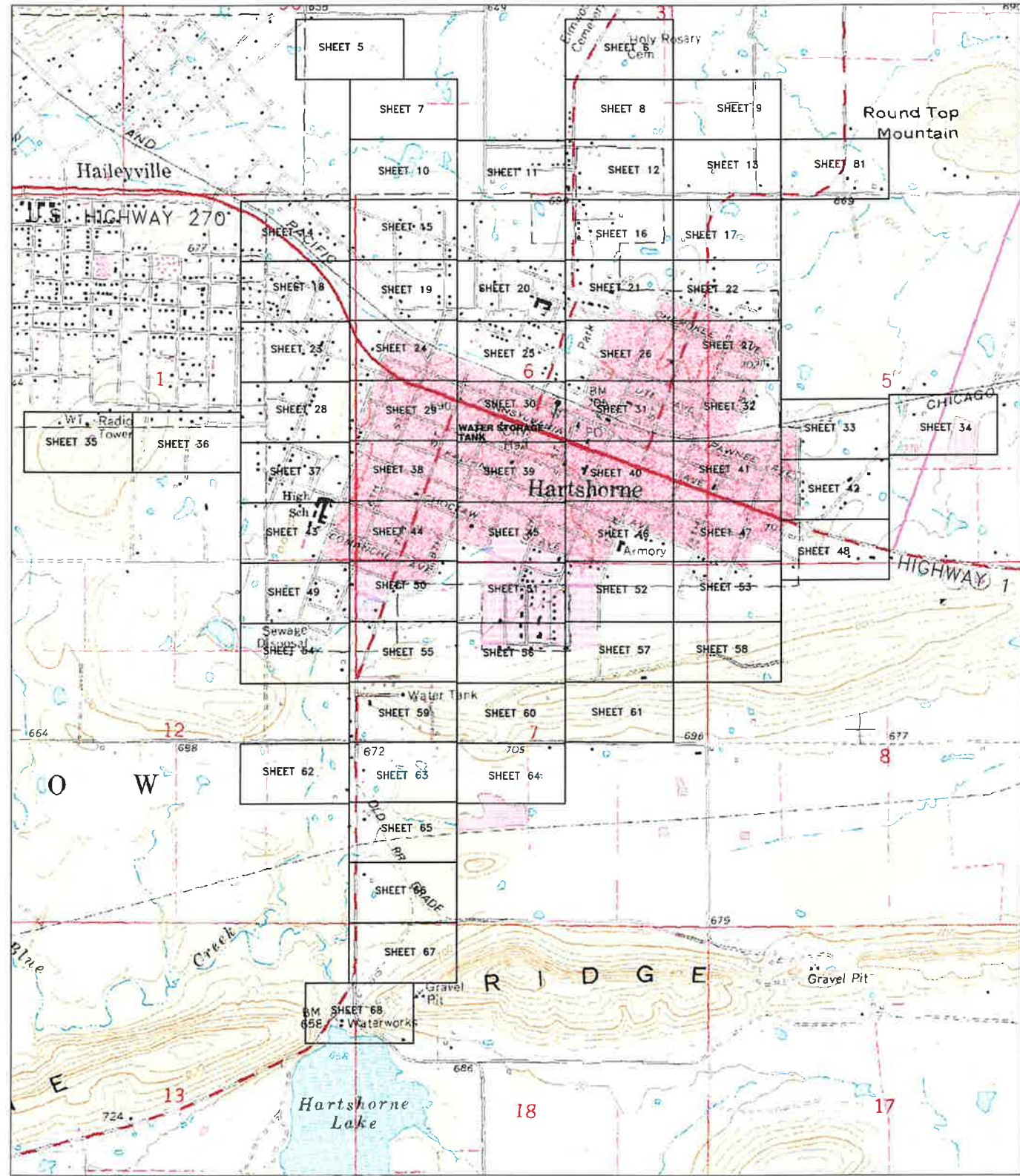
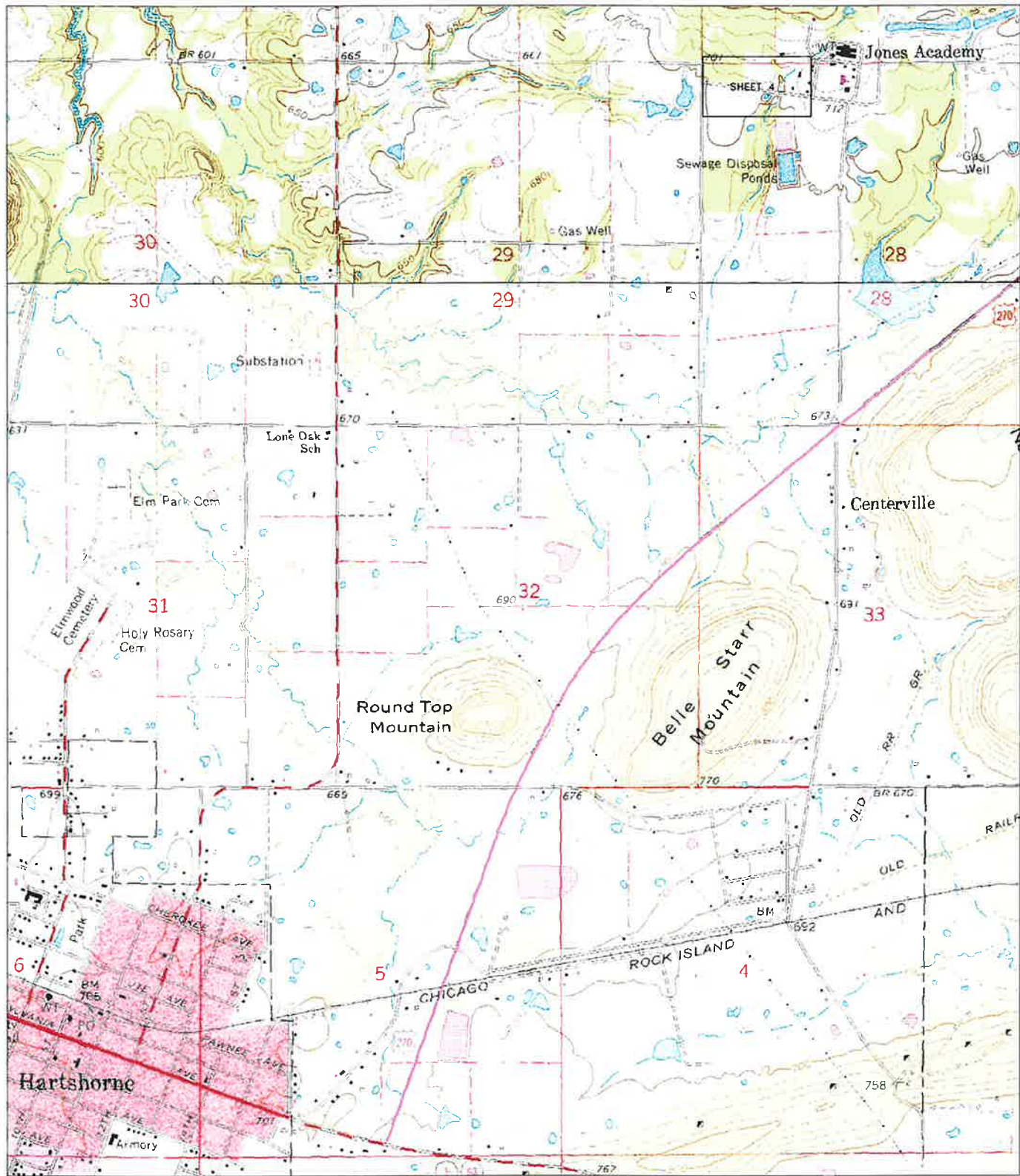
500 VILLAGE BLVD, SUITE A McALESTER, OKLAHOMA 73301 420-5500
OKLAHOMA CERTIFICATION #6685 EXPIRATION 12/31/2027

Crystal Watson
CRYSTA WATSON, P.E.
PROJECT MANAGER



Leon Dale Burke
LEON DALE BURKE, P.E.
PRESIDENT

7/1/25
DATE



01/12/2024	INITIAL SIGNED AND SEALED	CJW
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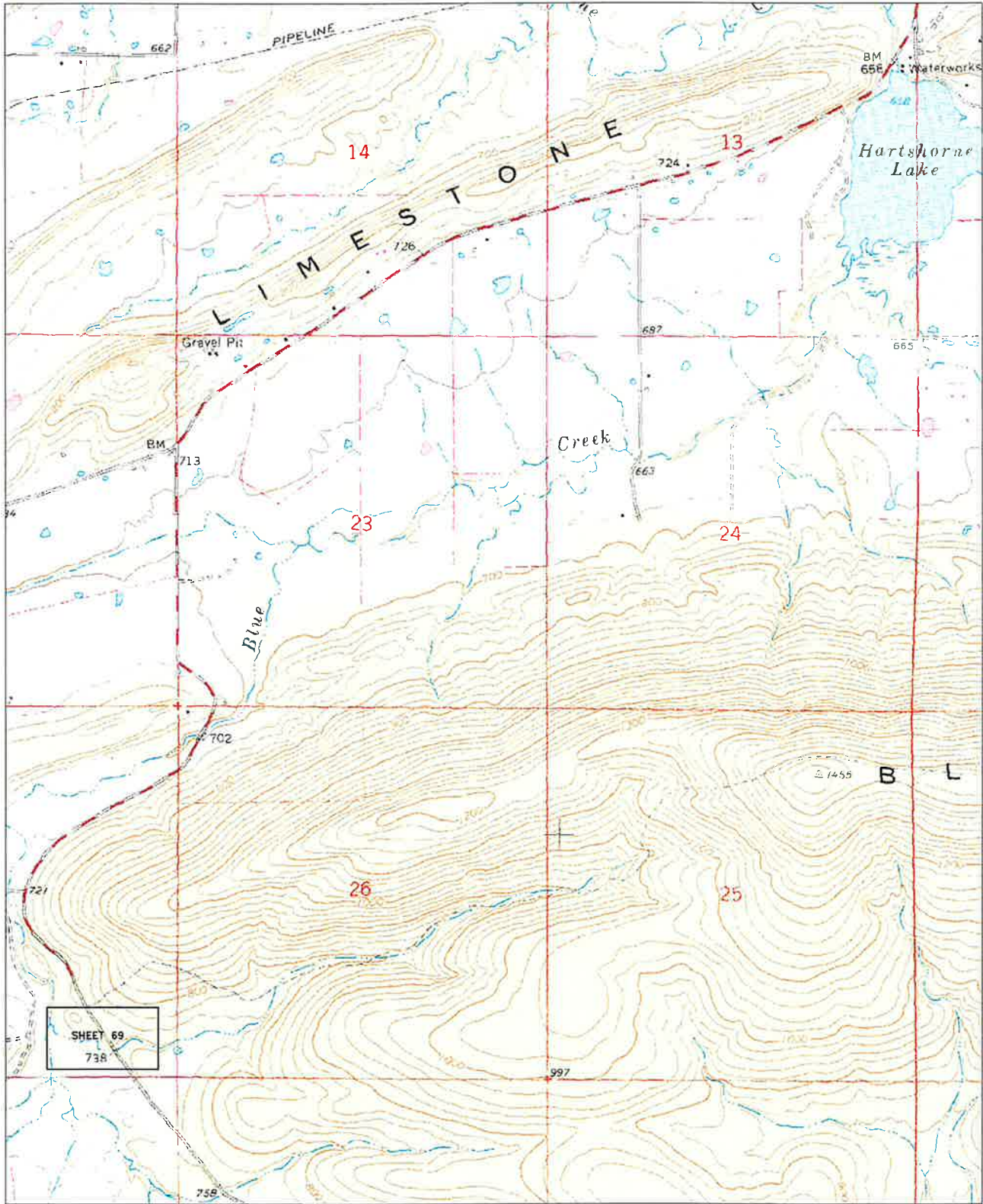
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SITE PLAN

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WATER LINE CONSTRUCTION NOTES:

- (1) CONTRACTOR TO NOTIFY THE OWNER AND ENGINEER 48 HOURS PRIOR TO CONSTRUCTION IN R.O.W. CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION.
- (2) ALL DRIVEWAYS SHALL BE RESTORED TO EXISTING OR BETTER CONDITIONS. THIS WORK WILL NOT BE MEASURED FOR PAYMENT. COST SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK
- (3) CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES AND BE RESPONSIBLE FOR DAMAGE TO UTILITIES ARISING FROM WORK REGARDLESS OF BEING SHOWN OR OMITTED FROM THESE DRAWINGS. CONTRACTOR SHALL NOTIFY OKIE 48 HOURS MIN. PRIOR TO CONSTRUCTION.
- (4) CONTRACTOR SHALL COORDINATE CONSTRUCTION WITH UTILITY COMPANIES AS REQUIRED.
- (5) CONTRACTOR SHALL SUBMIT WORK SCHEDULE TO OWNER PRIOR TO BEGINNING CONSTRUCTION.
- (6) CONTRACTOR RESPONSIBLE FOR CONSTRUCTION STAKING AND LOCATION OF ALL EASEMENTS AND RIGHT OF WAYS.
- (7) ALL PIPING SHALL BE TESTED (PER SPECIFICATIONS) PRIOR TO USE.
- (8) CONTRACTOR SHALL SCHEDULE AND CONDUCT OPERATIONS TO LIMIT AMOUNT OF TRENCH OPENED TO INCLUDE ONLY THAT WHICH MAY BE COVERED IN TWO (2) DAYS TIME. ANY TRENCH LEFT OPEN OVERNIGHT SHALL BE BARRICADED AND PROTECTED AS DETAILED IN O.D.O.T.'S MOST CURRENT EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- (9) ALL PAVEMENT, SIDEWALKS, DRIVES, OR APPROACHES TO BE NEATLY SAWED, REMOVED AND REPLACED IN LIKE OR BETTER CONDITIONS.
- (10) ALL DEBRIS SHALL BE DISPOSED OF AS DIRECTED BY THE OWNER AND IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.
- (11) ROCK EXCAVATION SHALL NOT BE MEASURED FOR PAYMENT AND SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK. BLASTING WILL NOT BE PERMITTED.
- (12) ALL MISCELLANEOUS REMOVAL ITEMS REQUIRED FOR CONSTRUCTION ARE TO BE FIELD LOCATED BY THE CONTRACTOR PRIOR TO BIDDING. THESE ITEMS WILL NOT BE MEASURED FOR PAYMENT AND SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK.
- (13) ANY AND ALL DISTURBED AREAS SHALL BE TOPSOILED, HYDROMULCHED, AND FERTILIZED PER O.D.O.T. SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS. THIS WORK WILL NOT BE MEASURED FOR PAYMENT. COST SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK.
- (14) CONTRACTOR SHALL FIELD VERIFY THE LOCATION, SIZE, TYPE, AND EXTENTS OF ALL STRUCTURES, FENCES, SLABS, AND ANY OTHER ITEMS WITHIN THE CONSTRUCTION AREA PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING FACILITIES OF ANY TYPE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER. CONTRACTOR SHALL COORDINATE RELOCATION OF BUILDINGS/STRUCTURES WITH OWNER AND CITY, RELOCATED BUILDINGS/STRUCTURES SHALL BE RETURNED TO EQUAL OR BETTER THAN ORIGINAL CONDITION.
- (15) CONSTRUCTION AREA SHALL BE SMOOTHLY GRADED AND LEFT FREE OF RUTS, TRACKS, AND DEBRIS UPON FINAL CLEANUP. CONTRACTOR SHALL MAINTAIN A TIDY AND WELL ORGANIZED SITE THROUGHOUT CONSTRUCTION.
- (16) QUALITY CONTROL AND ACCEPTANCE TESTING TO MEET WITH STANDARDS CITED IN THE CONTRACT DOCUMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COST SHALL BE INCLUDED IN ASSOCIATED ITEMS OF WORK.
- (17) ALL VALVE BOX ASSEMBLIES SHALL BE CONSTRUCTED FLUSH WITH FINISHED GRADE.
- (18) CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE REQUIRED 10 FOOT HORIZONTAL AND 2 FOOT VERTICAL SEPARATION BETWEEN SANITARY SEWER AND POTABLE WATER LINES. ALL OTHER PIPING SHALL MAINTAIN A MINIMUM OF 6" SEPARATION.
- (19) WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL OR VERTICAL SEPARATION AS STIPULATED ABOVE, DESIGN AND CONSTRUCT THE SEWER LINE PIPE EQUAL TO PRESSURE WATER LINE PIPE, AND PRESSURE TEST IS REQUIRED TO ASSURE WATER TIGHTNESS OF JOINTS ADJACENT TO THE WATER LINE PRIOR TO BACKFILLING. SEWER LINES SHALL NOT BE LAID IN WATER LINE TRENCHES.
- (20) CONTRACTOR SHALL MAINTAIN 30" OF COVER OVER WATER LINES.
- (21) CONTRACTOR SHALL PROVIDE PRE CONSTRUCTION PHOTOGRAPHS PER SPECIFICATIONS.
- (22) PIPE MATERIAL AND CLASS NOT SPECIFICALLY INDICATED ON THE DRAWINGS SHALL BE INDICATED IN THE SPECIFICATIONS.
- (23) CONTRACTOR SHALL PROTECT EXISTING POWER POLES.
- (24) PROPER TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ALL CONSTRUCTION ZONES.
- (25) ACCESS TO ABUTTED PROPERTY SHALL BE MAINTAINED DURING CONSTRUCTION.
- (26) ALL UNDERGROUND FITTINGS SHALL BE DUCTILE IRON RESTRAINED MECHANICAL JOINTS.
- (27) SERVICE LINE LOCATIONS ARE ESTIMATED AND SHALL BE FIELD LOCATED AT NO ADDITIONAL CHARGE TO THE OWNER.

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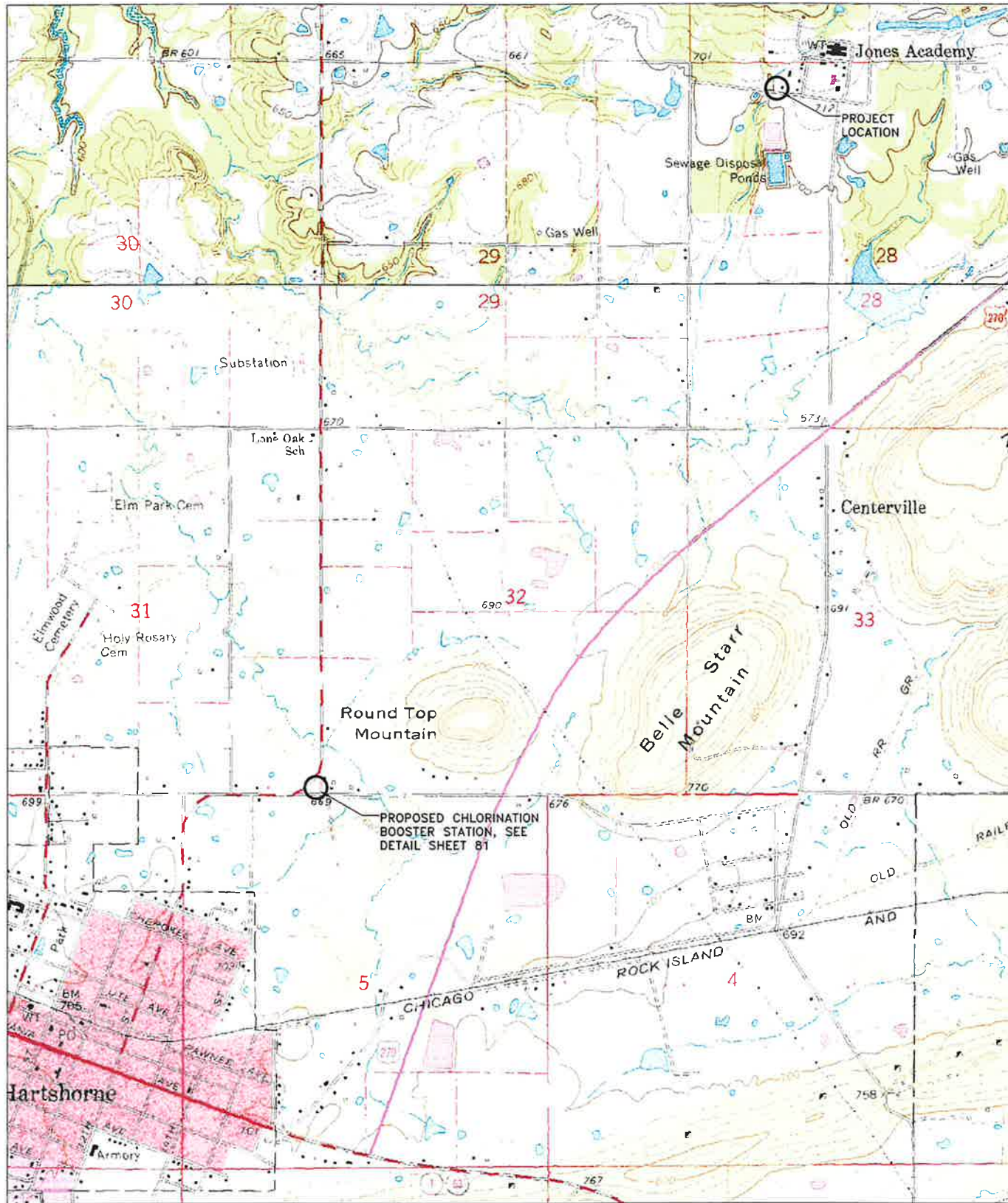
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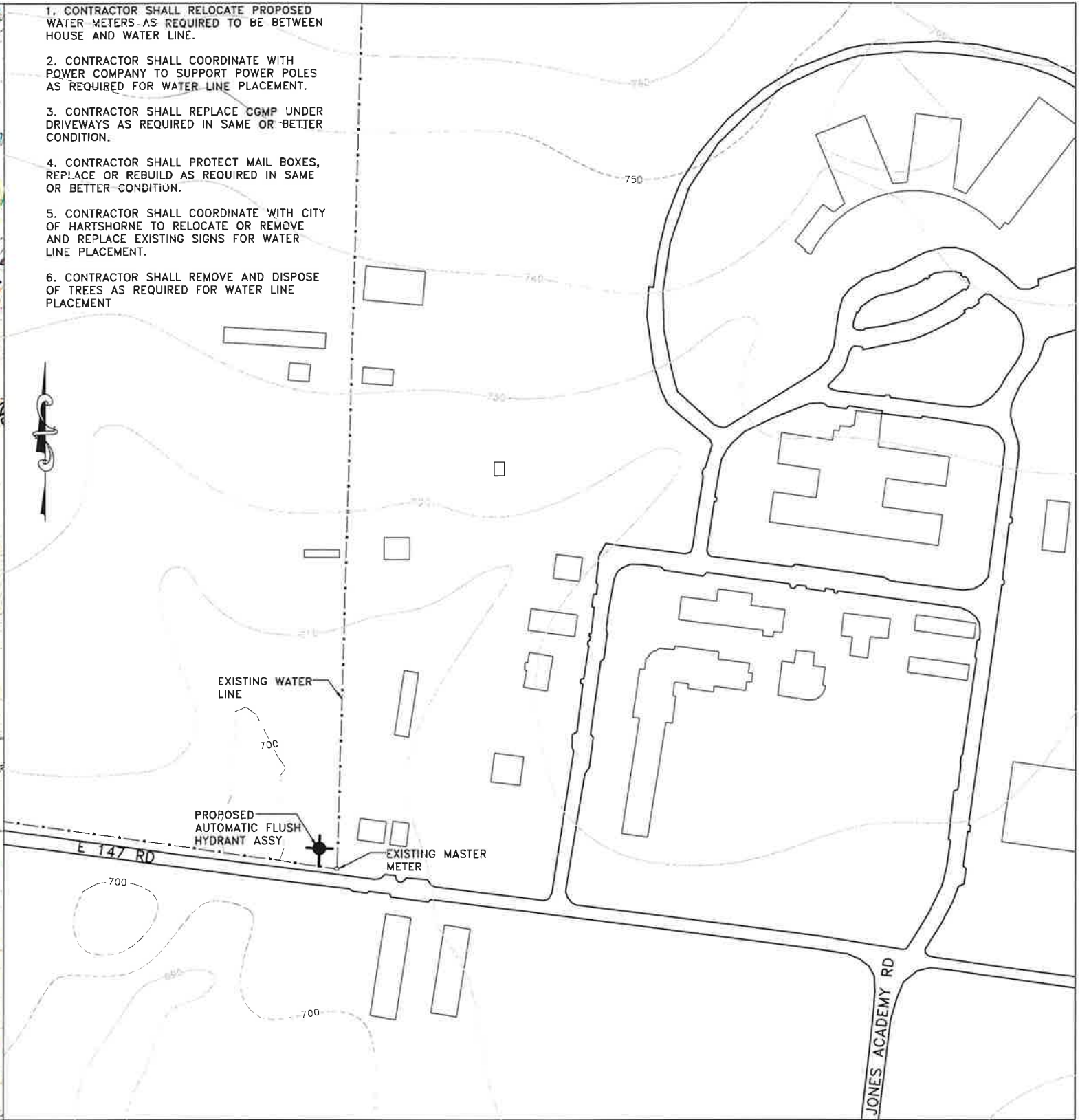
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HARTSHORNE, OKLAHOMA
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SITE PLAN

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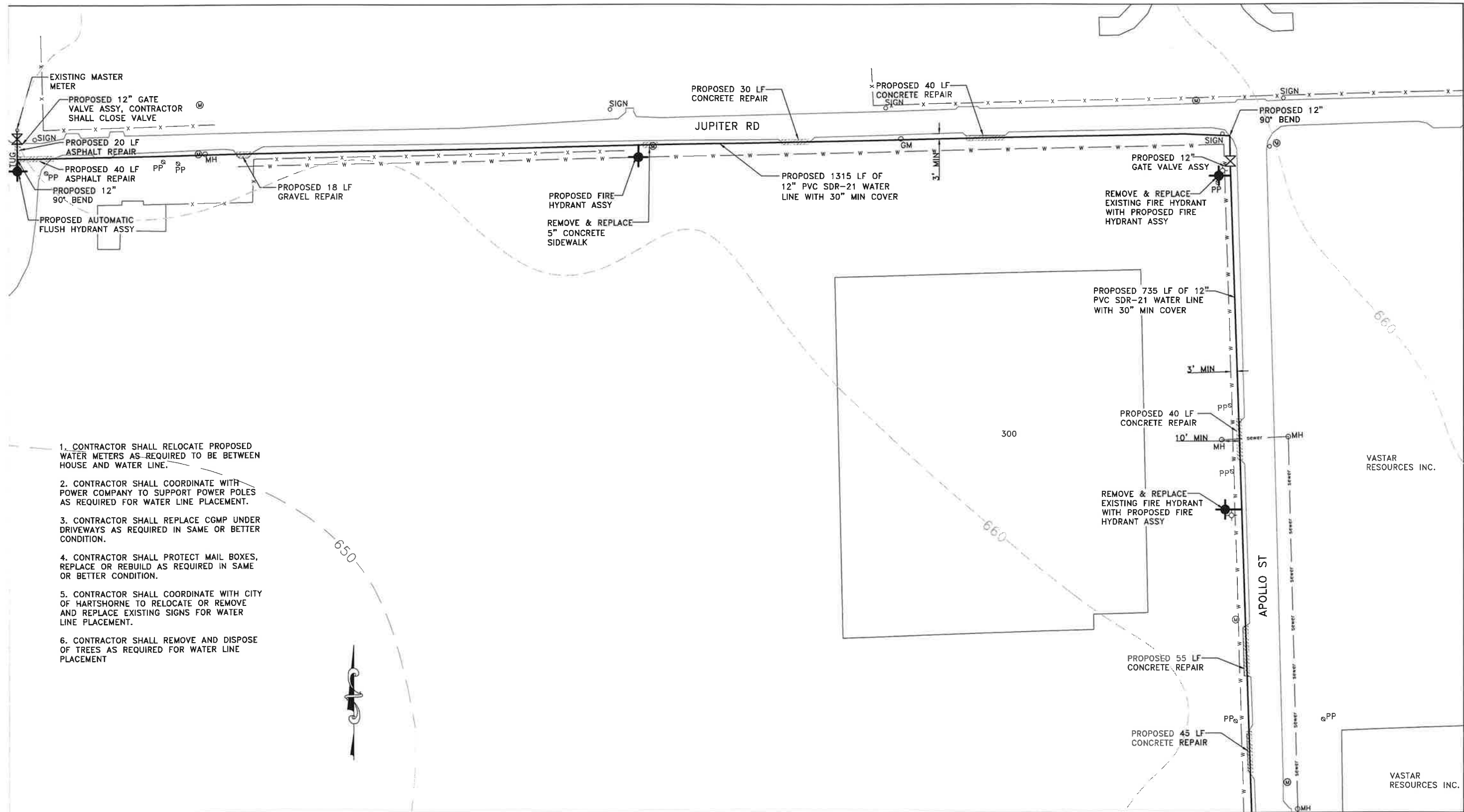
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WATER LINE PLAN

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MATCHLINE SHEET 7

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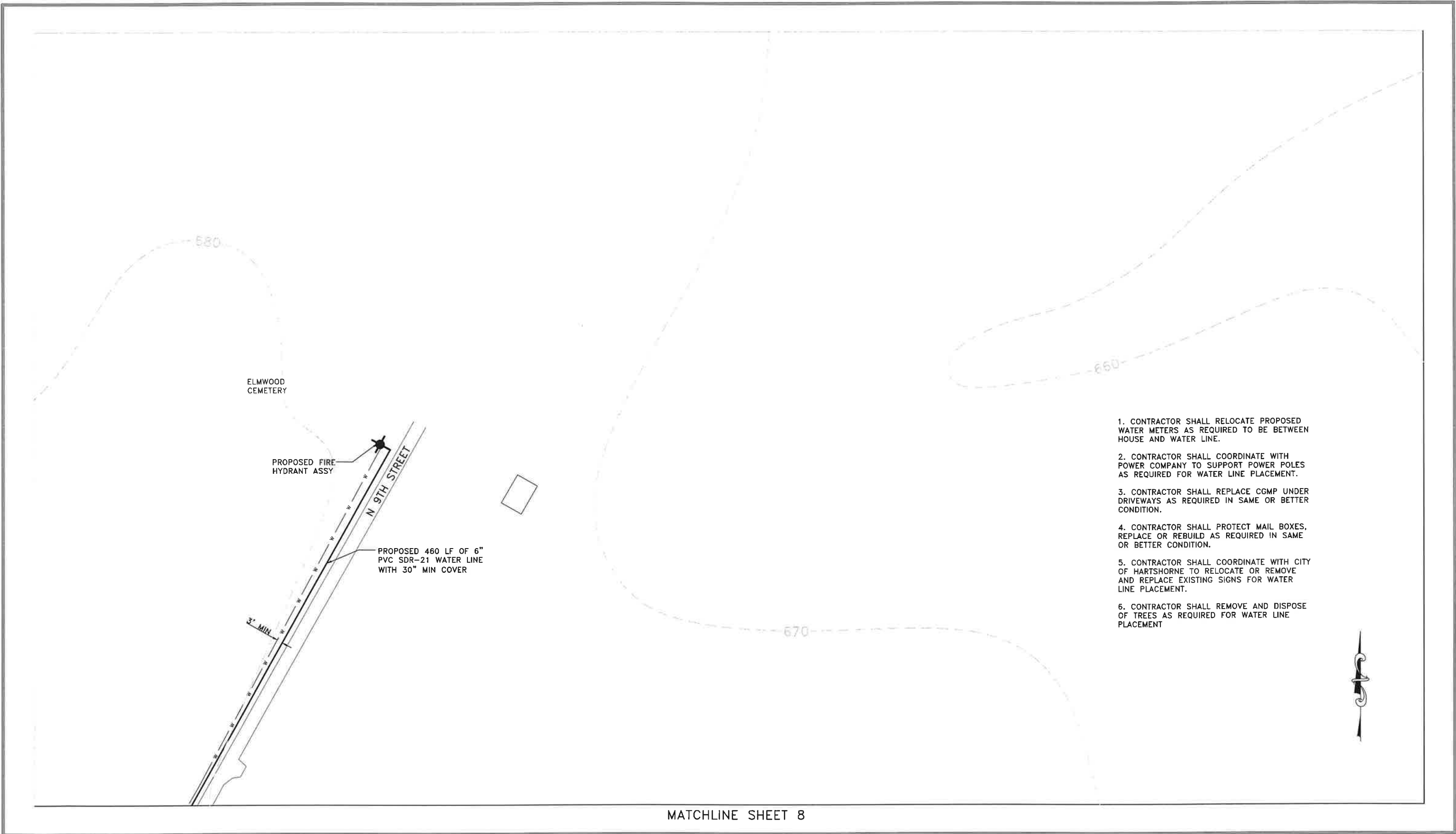
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WATER LINE PLAN

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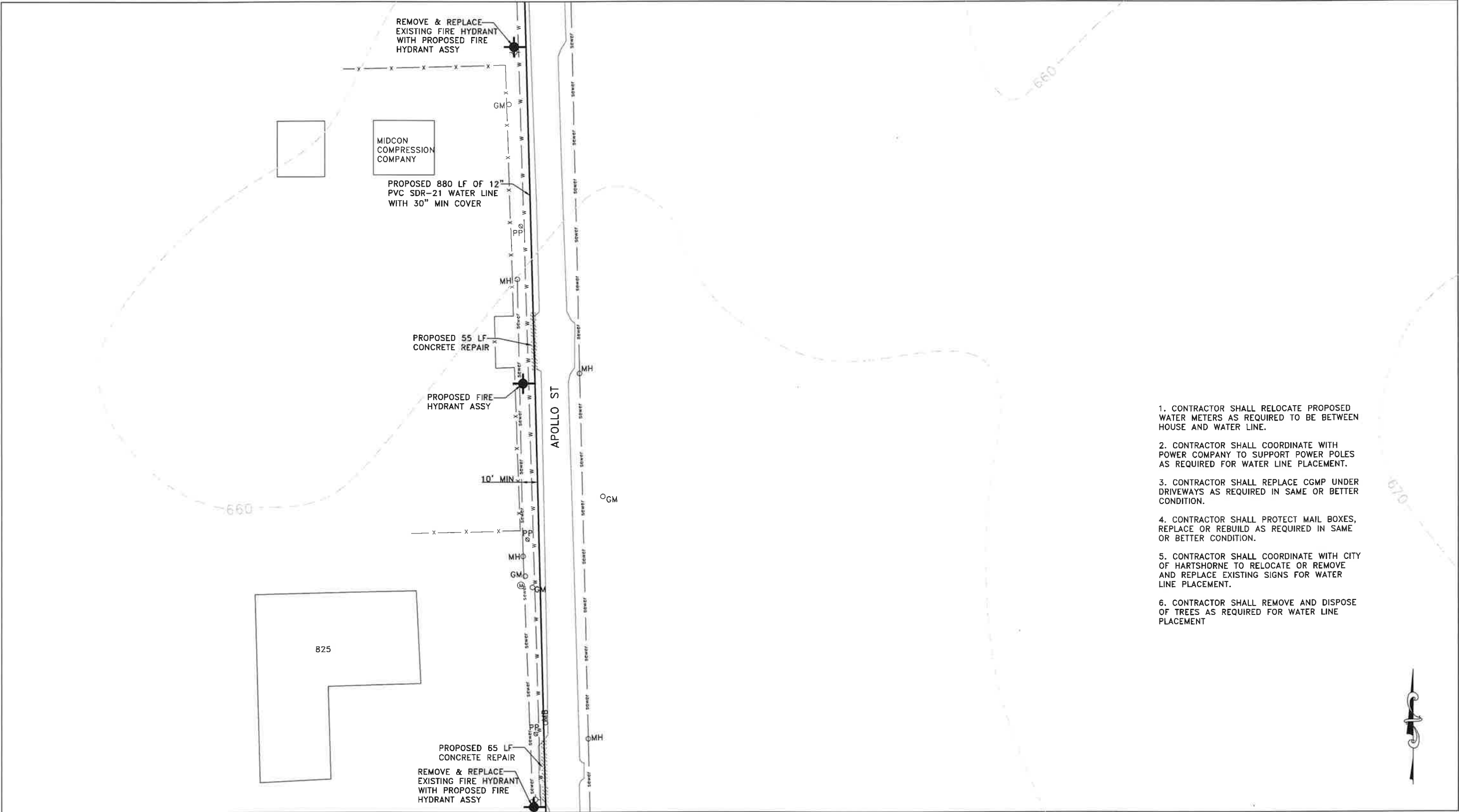
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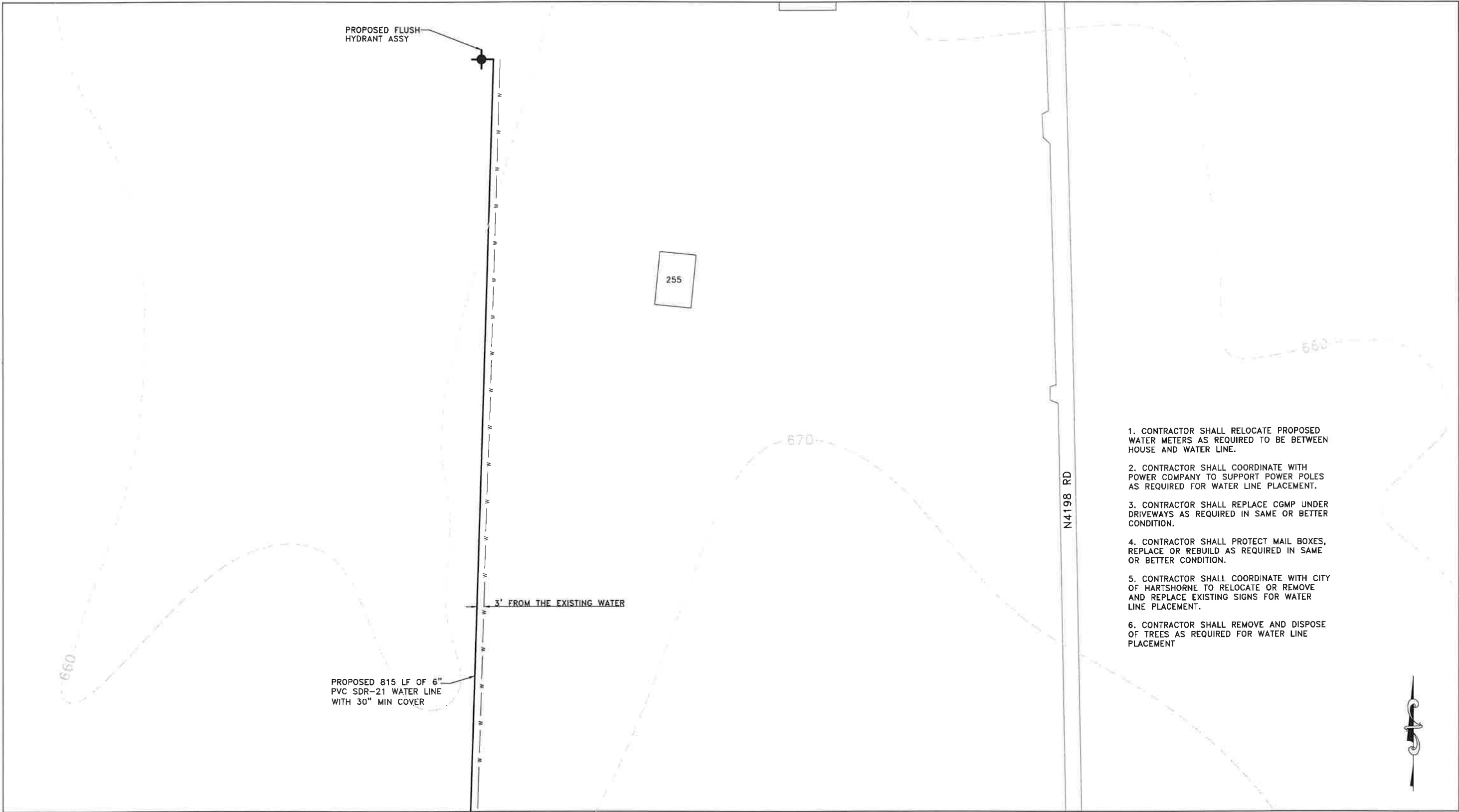
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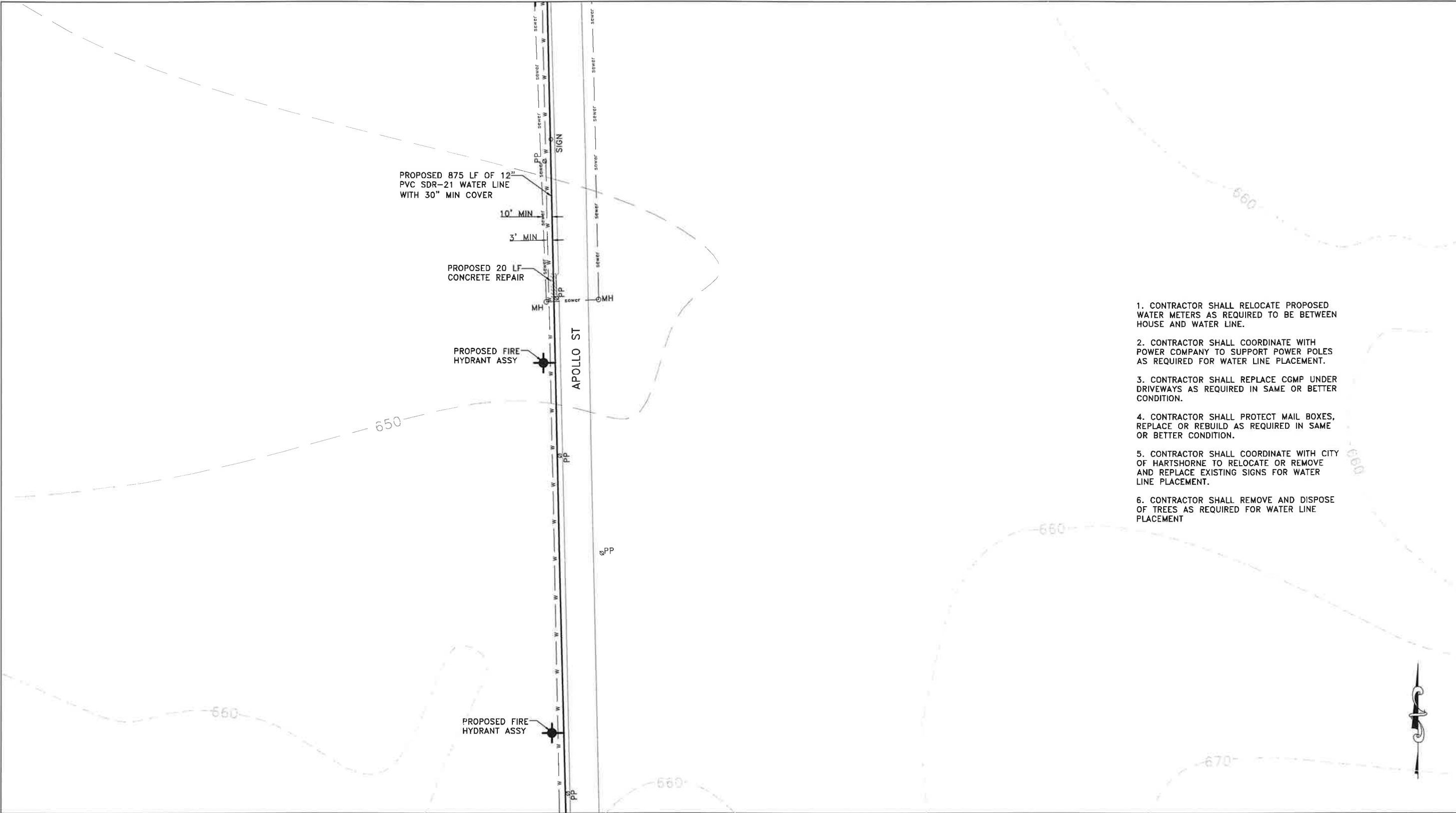
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WATER LINE PLAN

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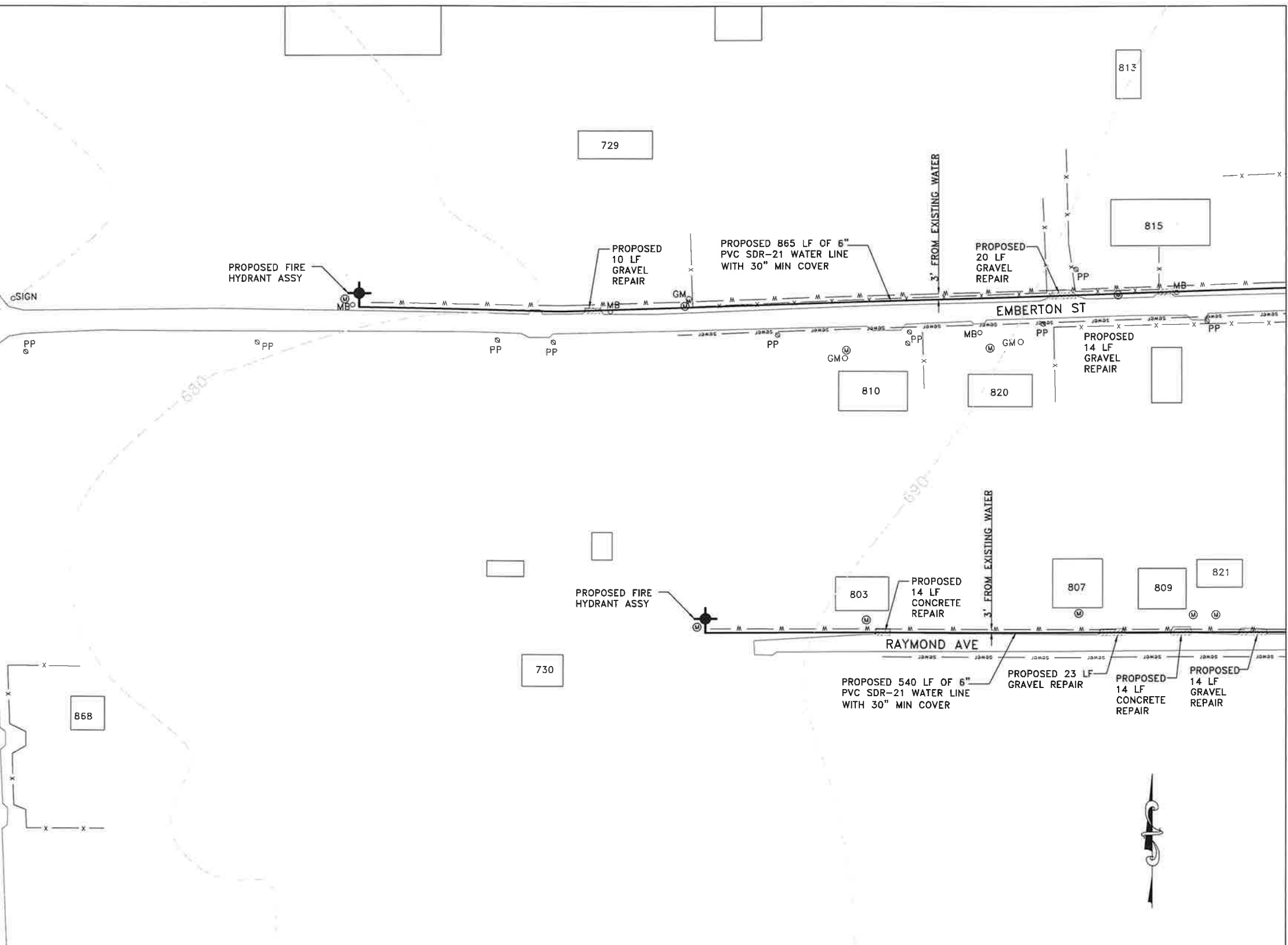
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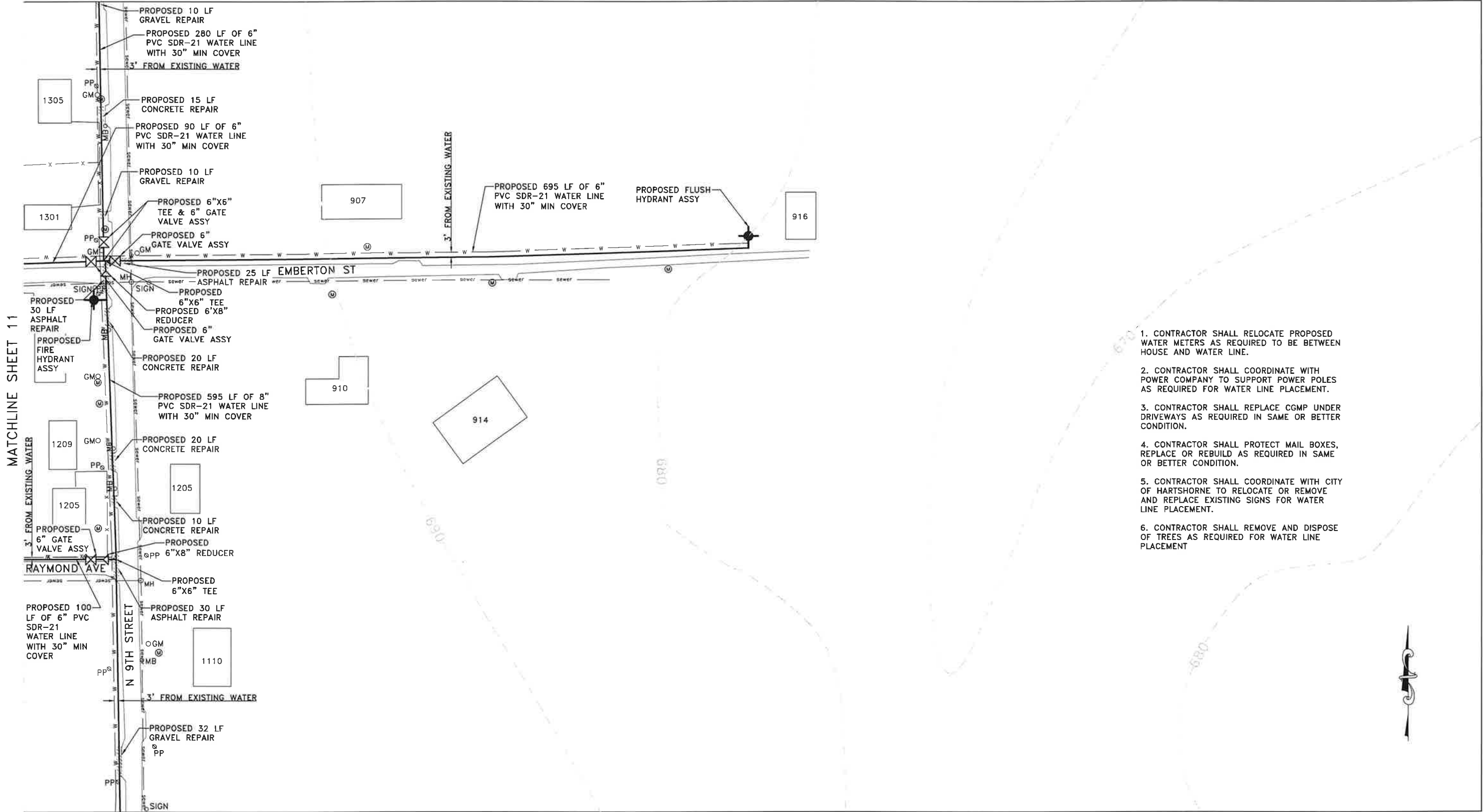
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WATER LINE PLAN

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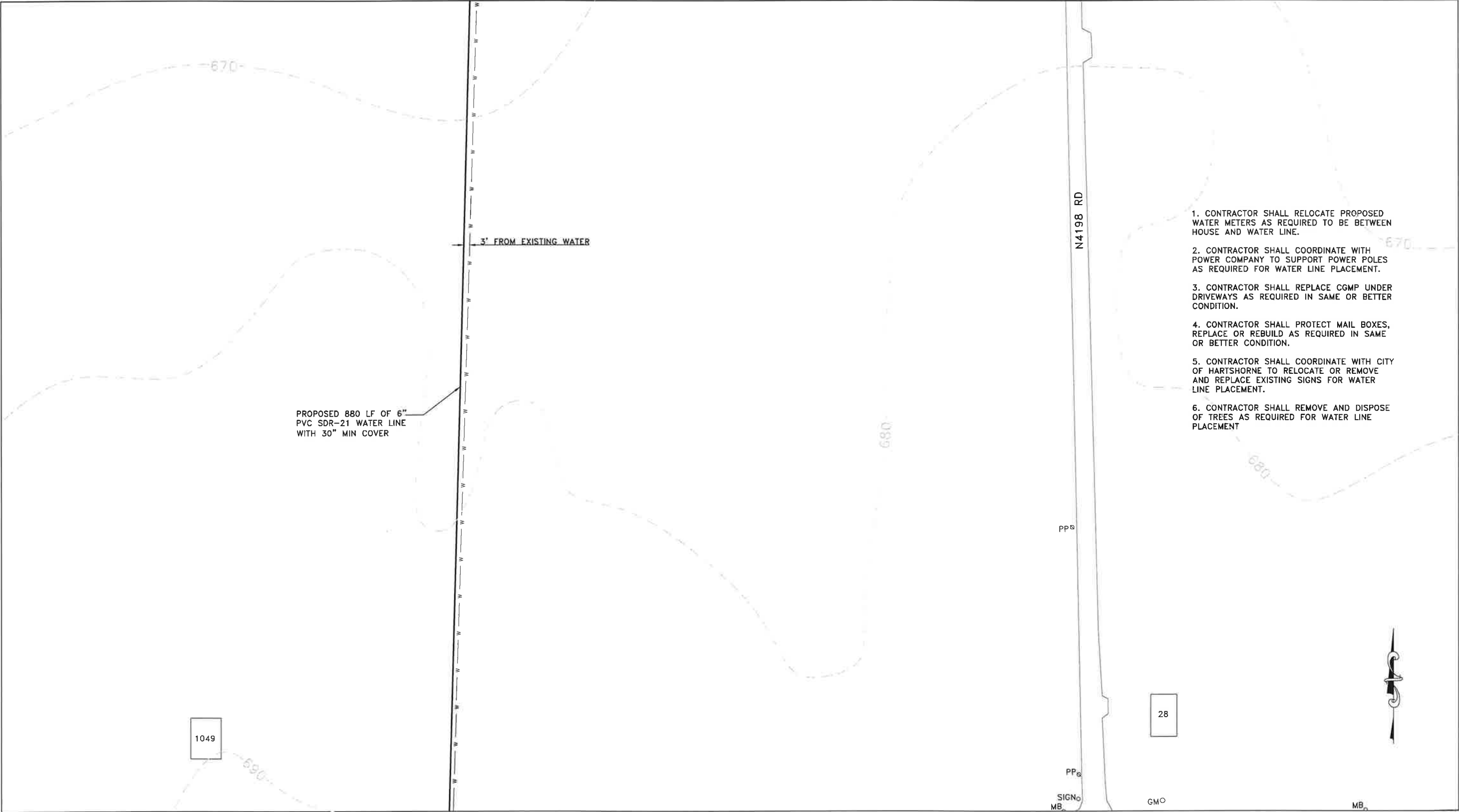
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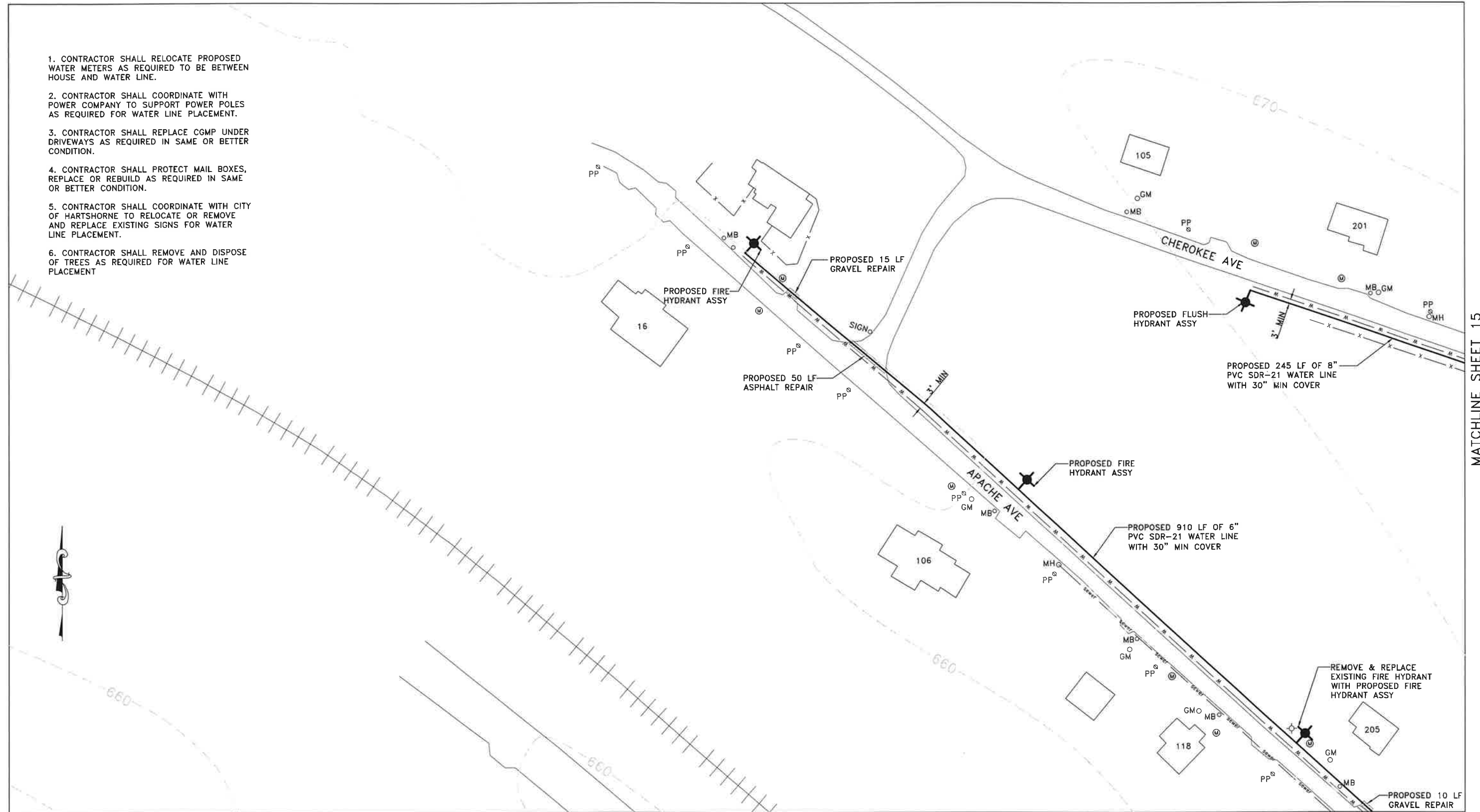


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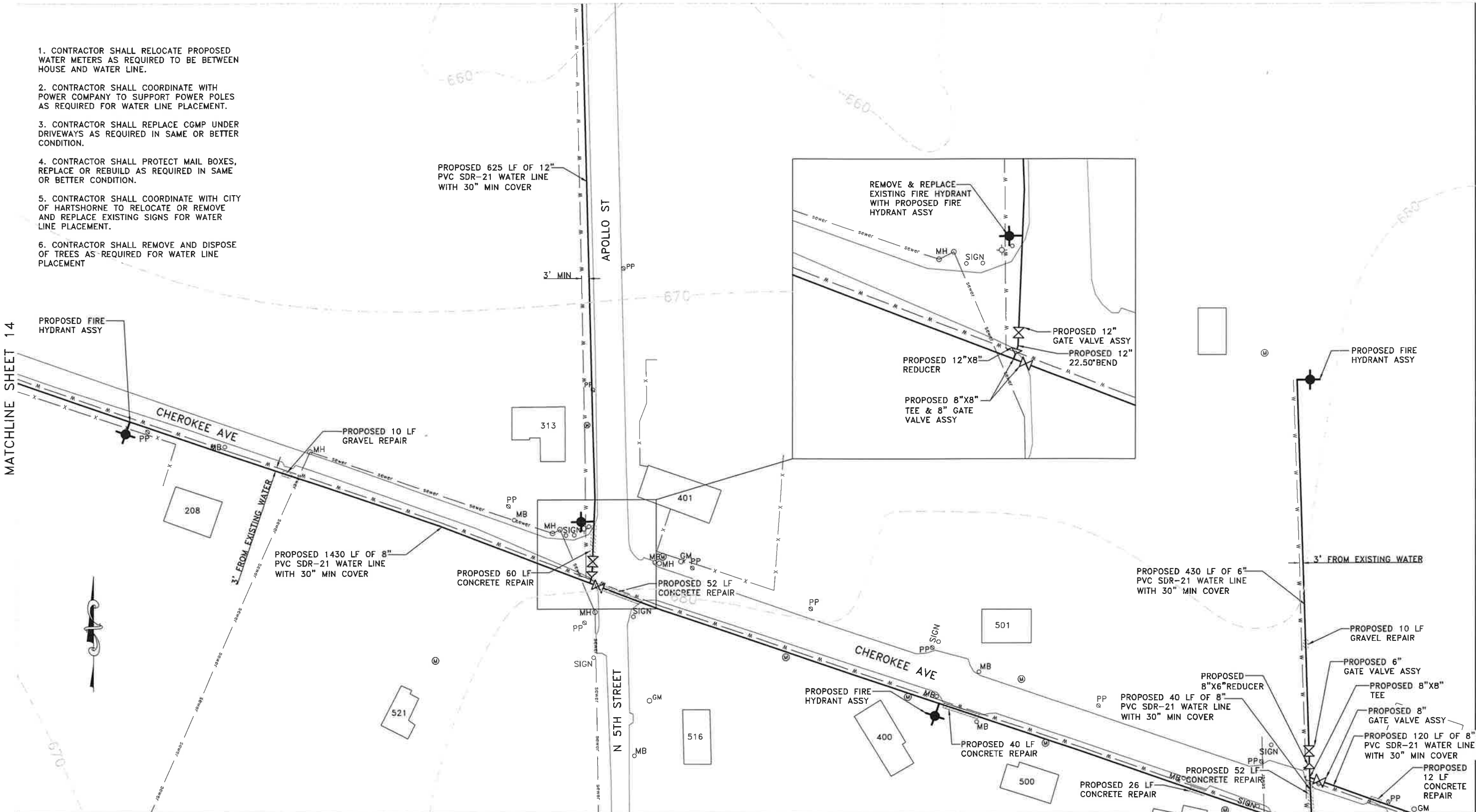
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WATER LINE PLAN

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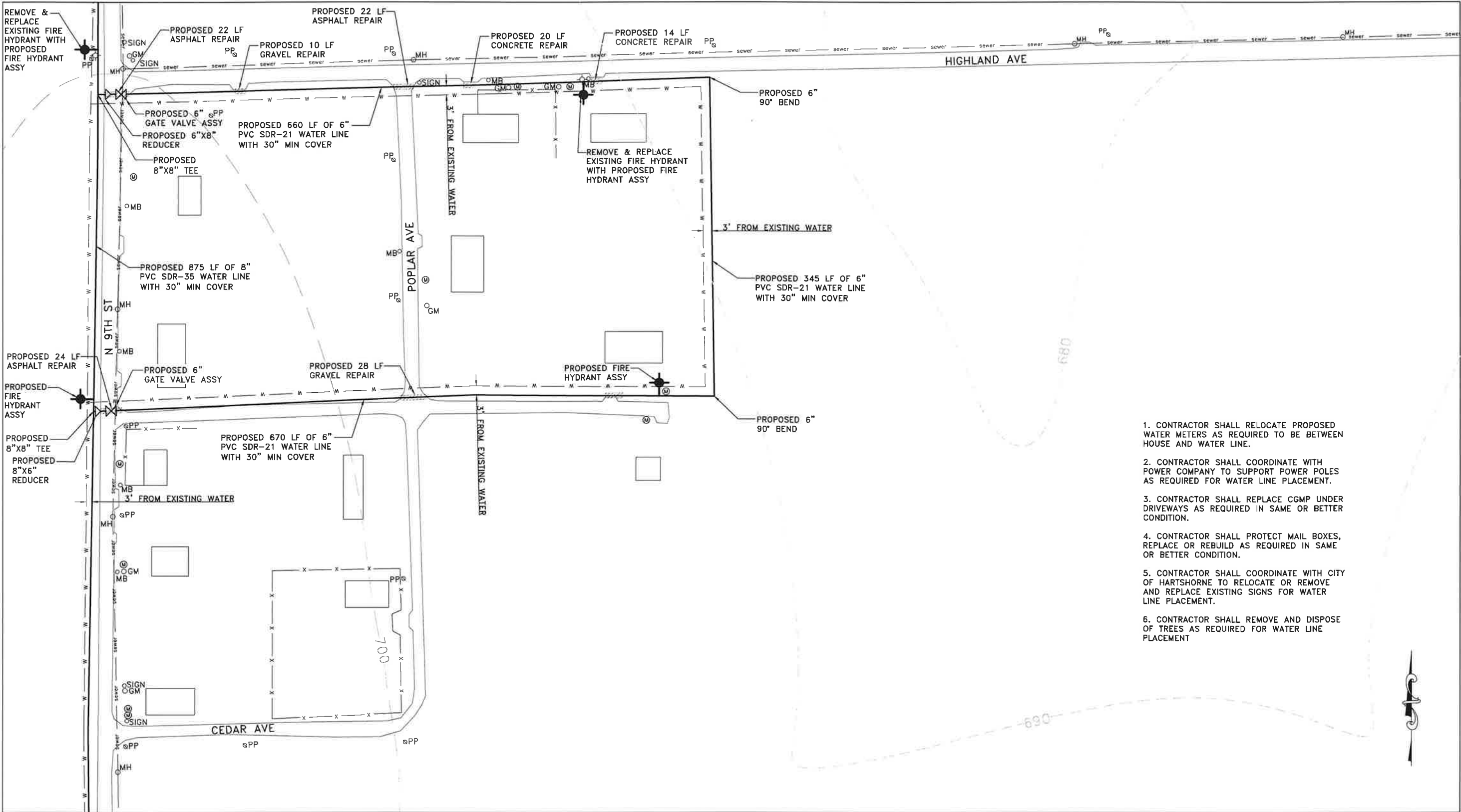
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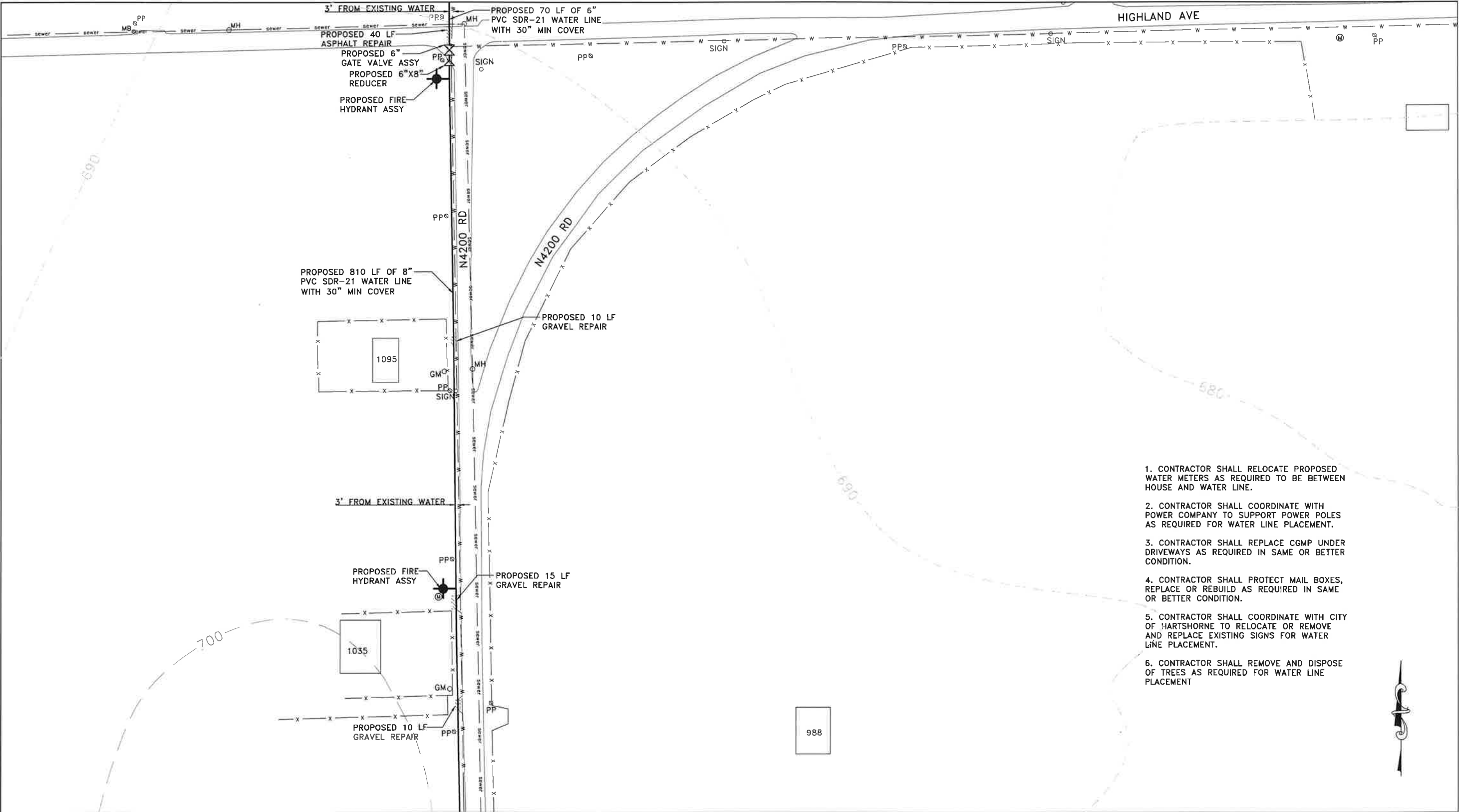
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01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

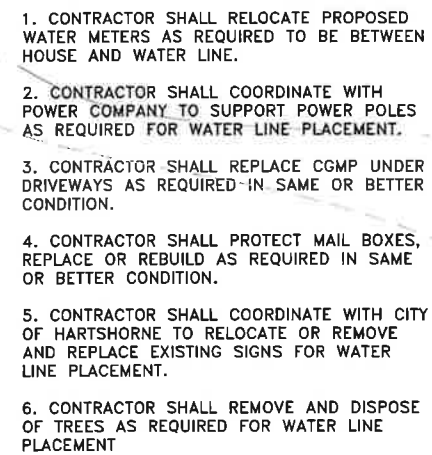
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Approved CJW

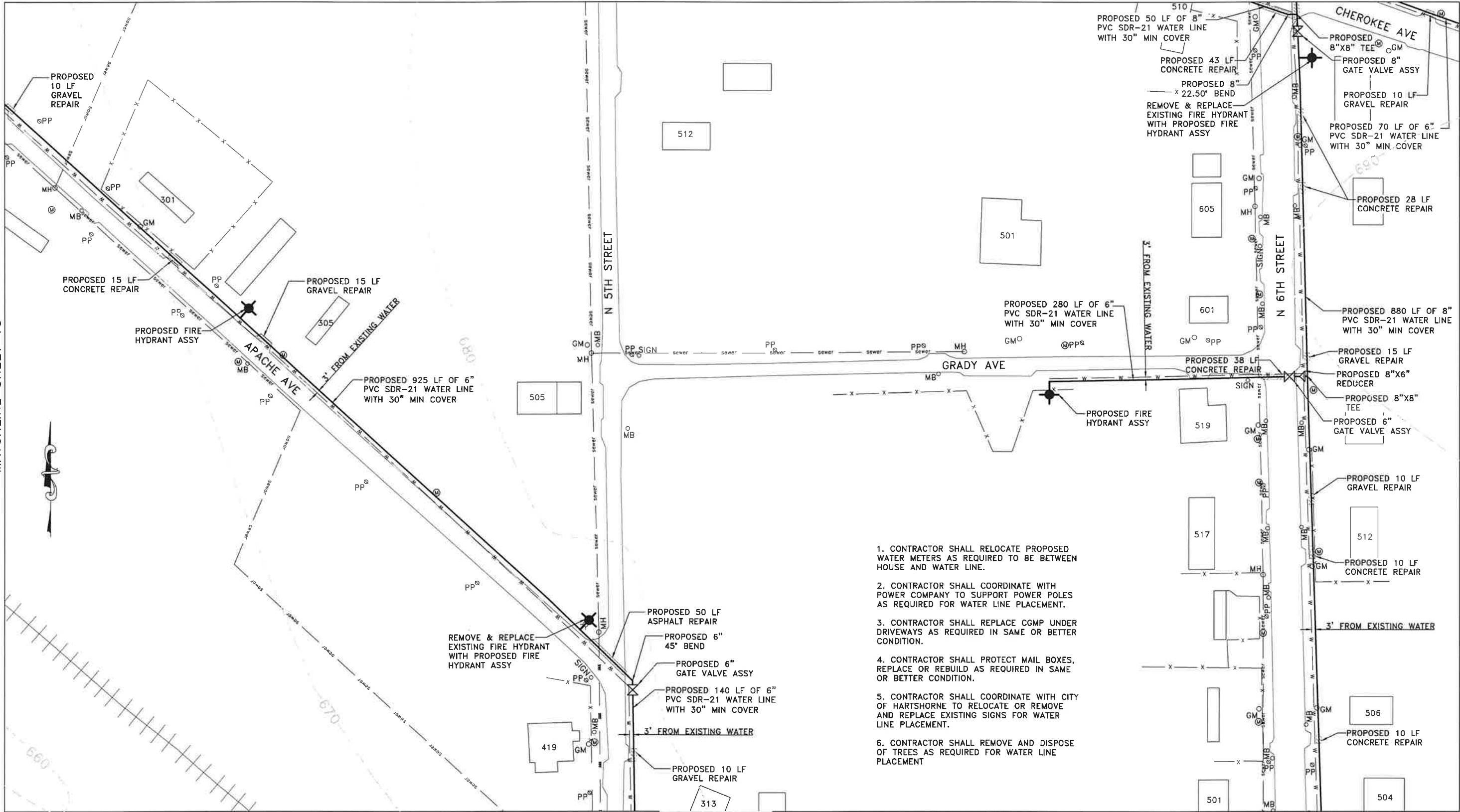


HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

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1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
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Date	Notes	By

Designed **CJW**
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Drawn **ST**
Approved **CJW**

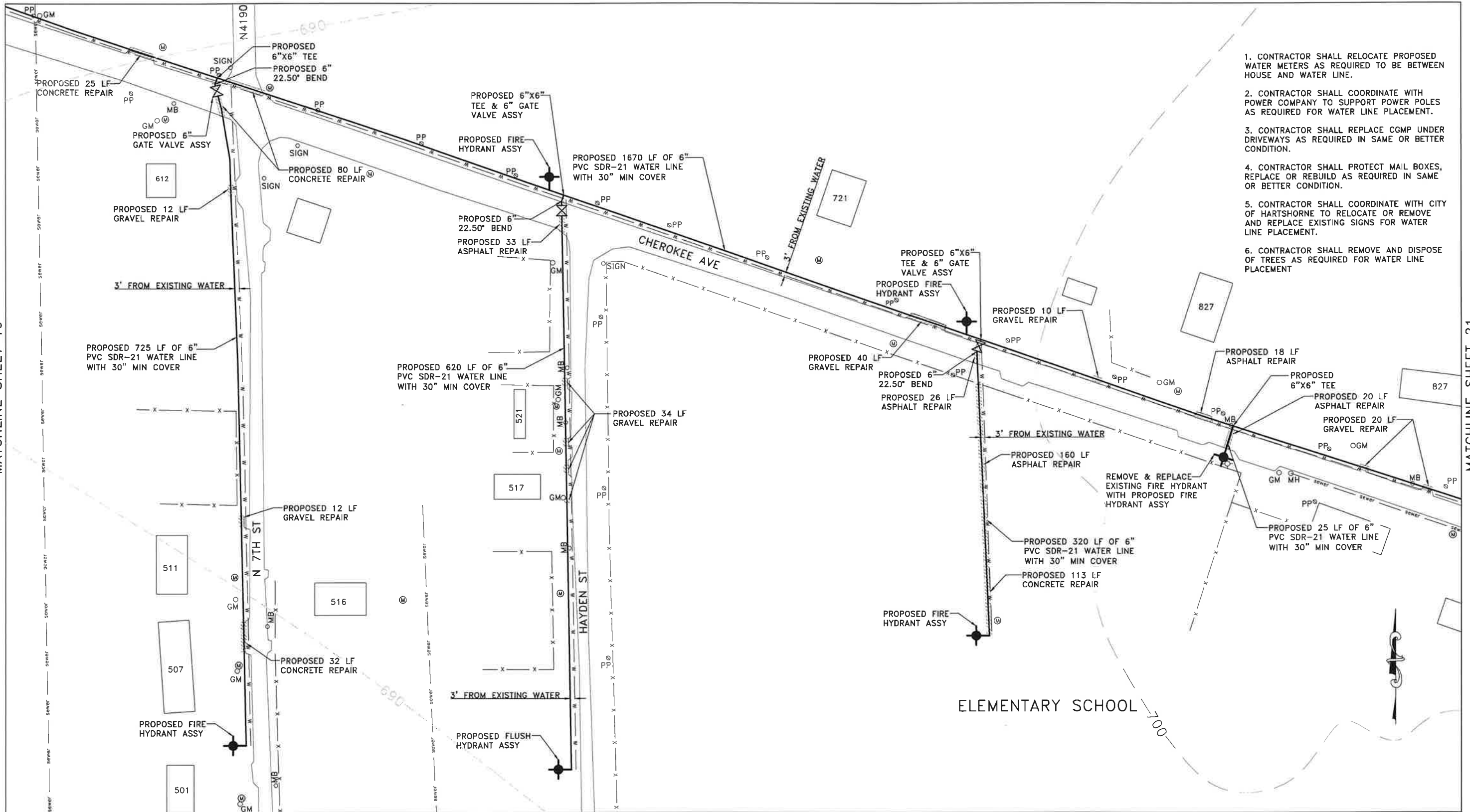


HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

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MATCHLINE SHEET 21

MATCHLINE SHEET 25

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

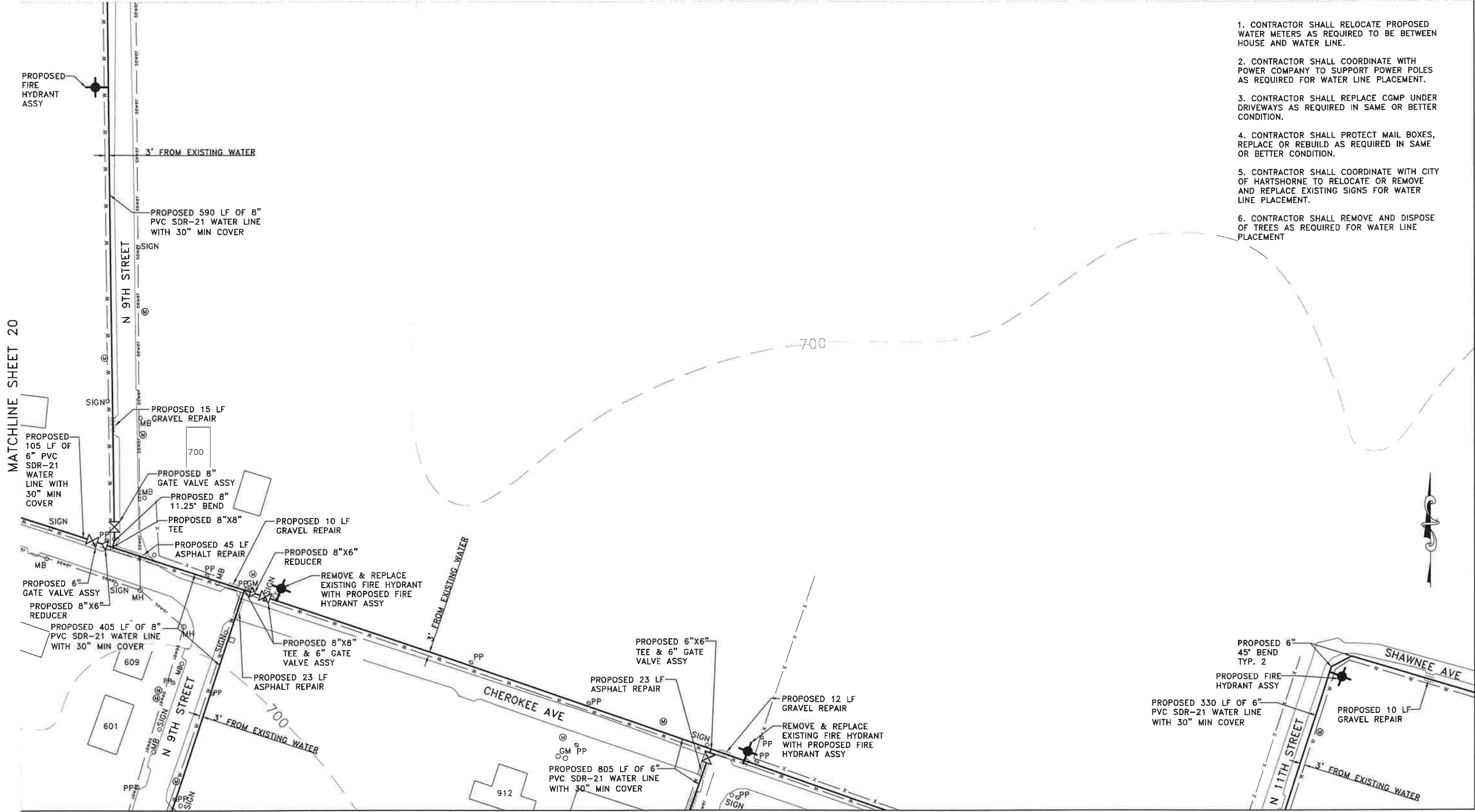
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Drawn **ST**
Approved **CJW**



CITY OF HARTSHORNE
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

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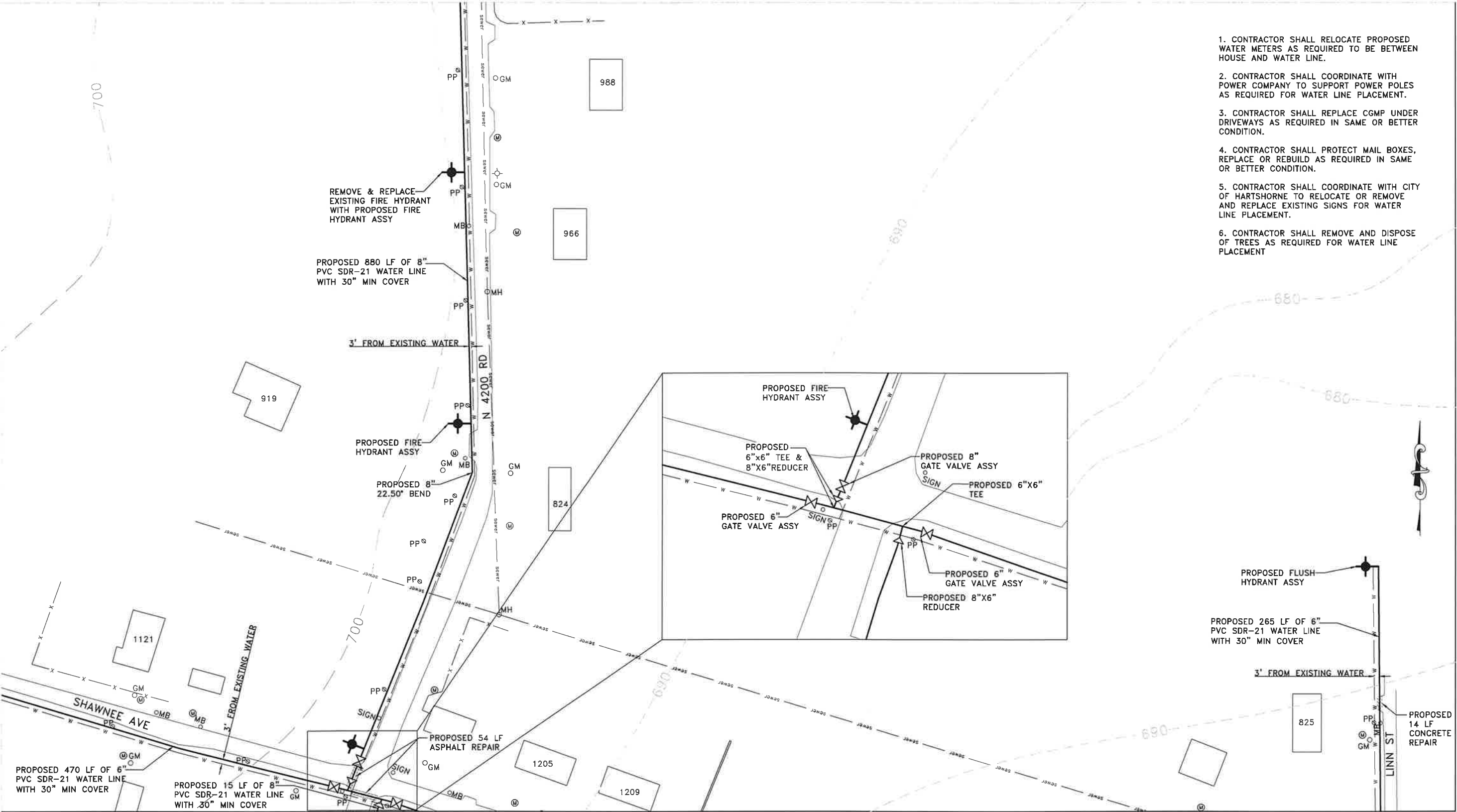
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Drawn **ST**
Approved **CJW**



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

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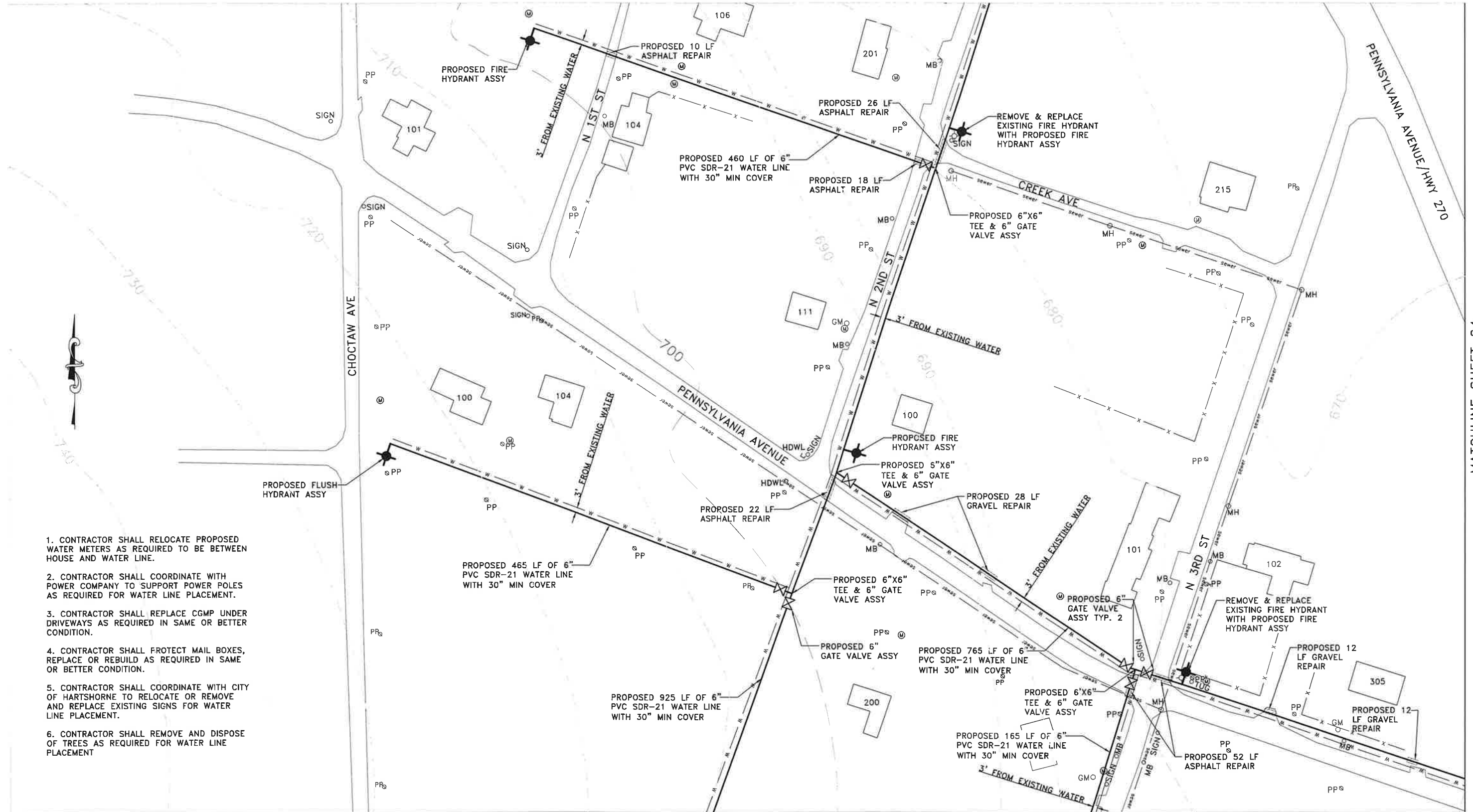
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Drawn **ST**
Approved **CJW**



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

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 HARTSHORNE, OKLAHOMA
 WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

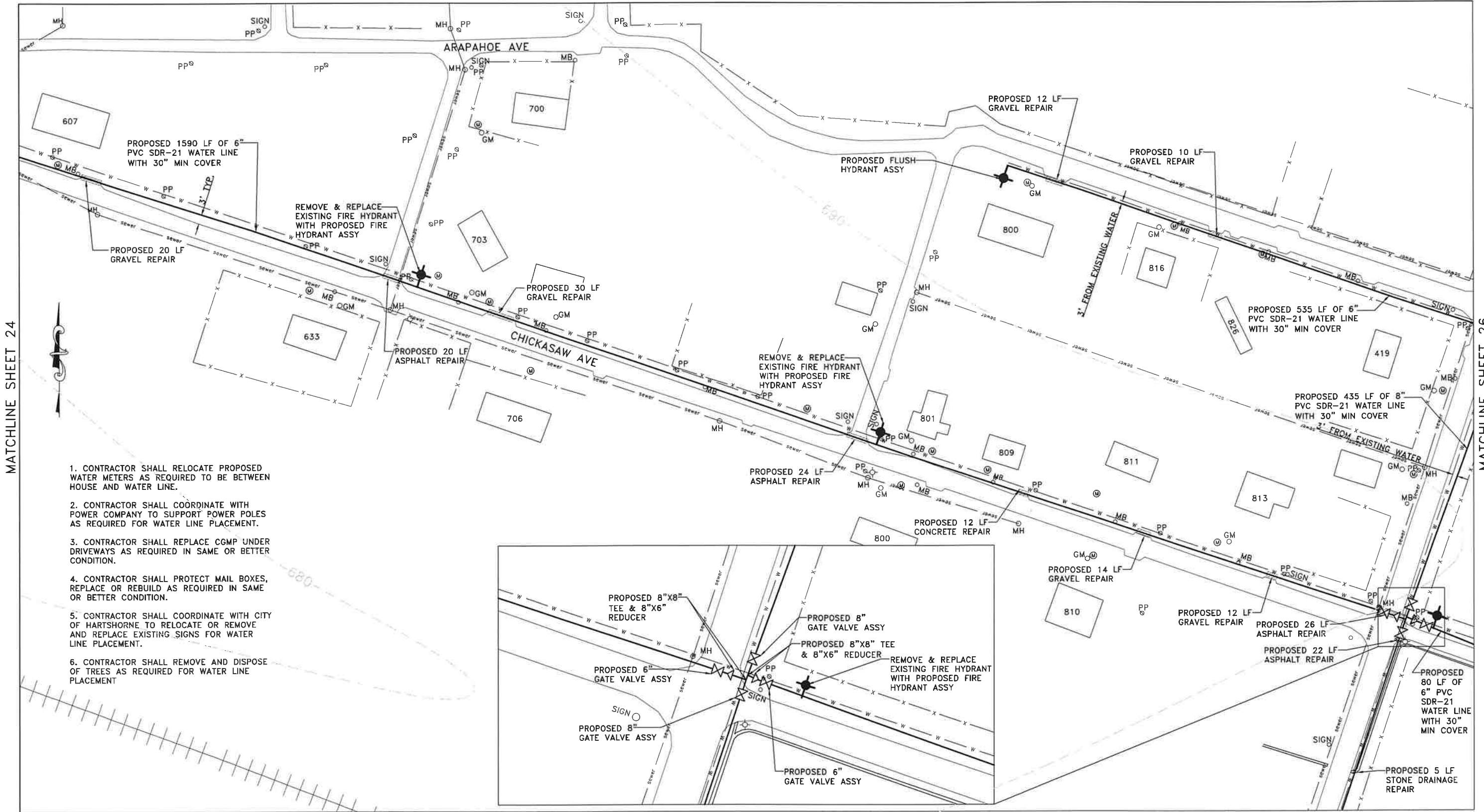
Job: HR-21-01
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- MATCHLINE SHEET 25



Job:	HR-21-01
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HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

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Scale: **1" = 100'**
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MATCHLINE SHEET 25



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07/01/2025	BIDDING & CONSTRUCTION	CJW
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HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

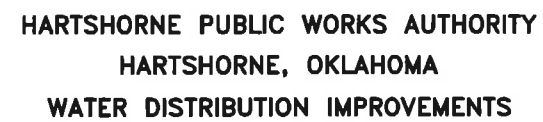
WATER LINE PLAN

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Scale:	1" = 100'
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MATCHLINE SHEET 26



Designed CJW
Checked LDB
Drawn ST
Approved CJW



Job:	HR-21-01
Scale:	1" = 100'
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1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
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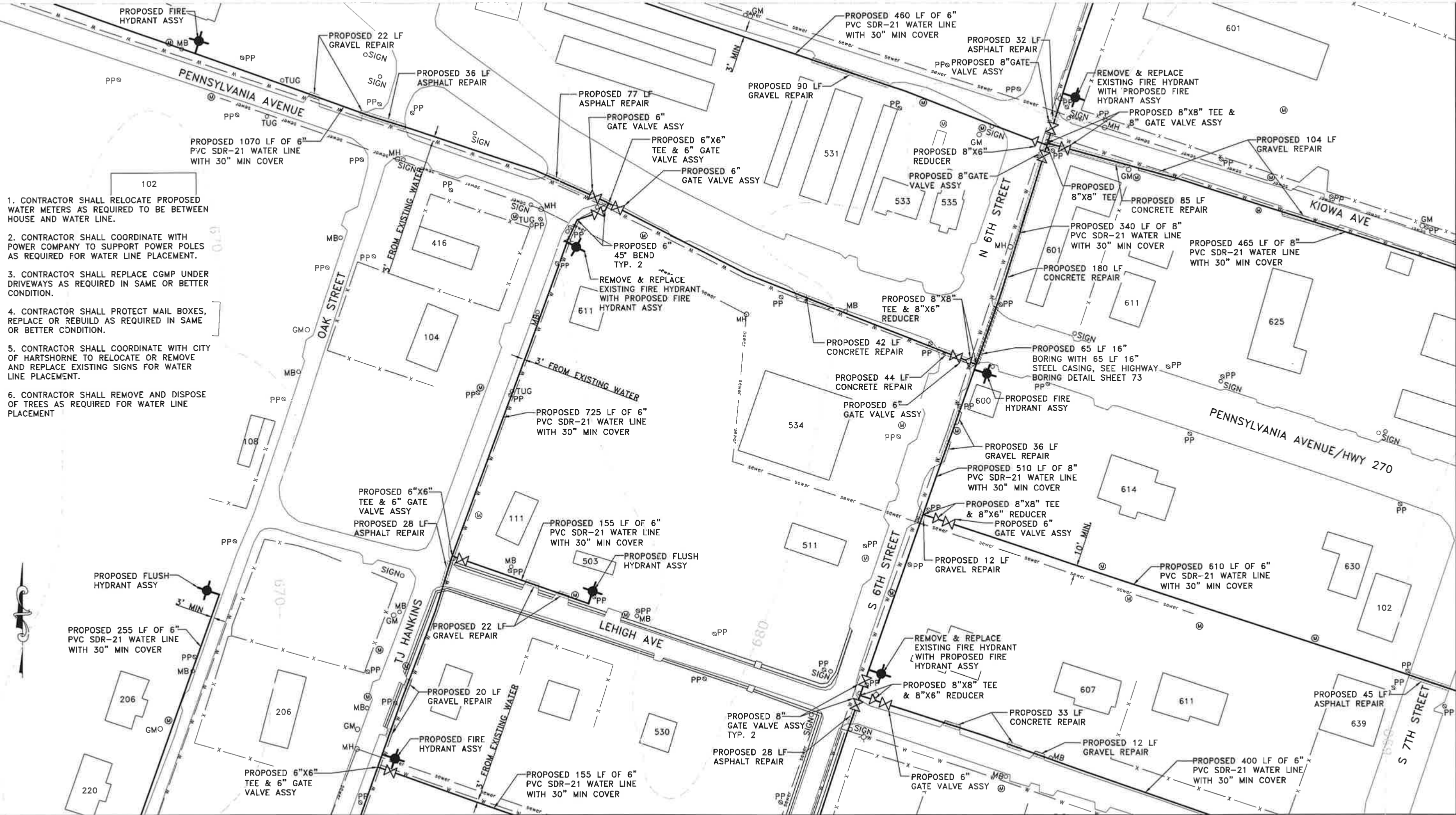


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HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

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Scale:	1" = 100'
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MATCHLINE SHEET 38

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

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HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

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HR-21-01
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1" = 100'
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MATCHLINE SHEET 29



01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By



**INFRASTRUCTURE
SOLUTIONS GROUP, LLC**
Consulting Engineers

WATER LINE PLAN

Job:
HR-21-01

Scale:
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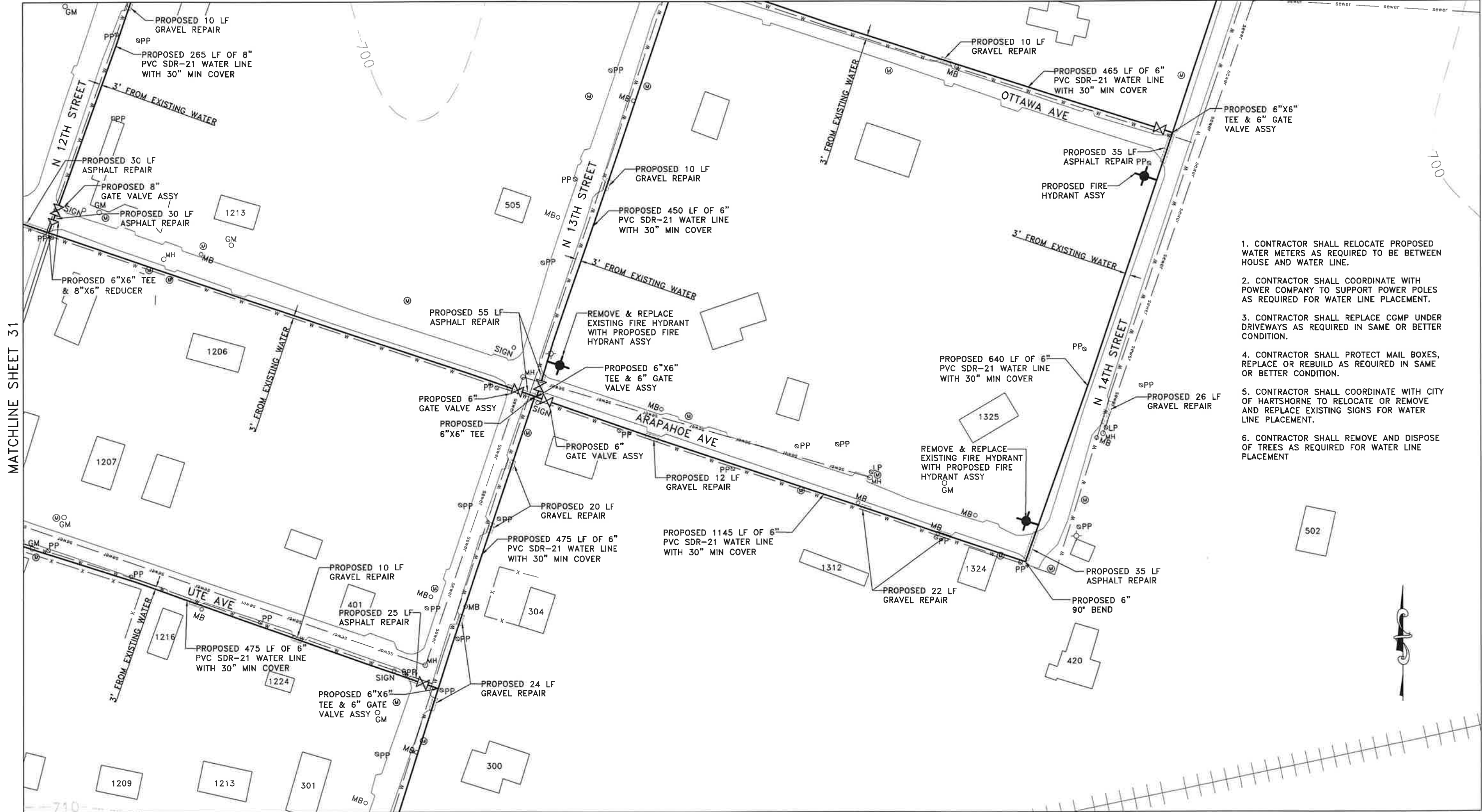
MATCHLINE SHEET 30

6. CONTRACTOR SHALL REMOVE AND DISPOSE OF TREES AS REQUIRED FOR WATER LINE PLACEMENT

-PROPOSED 12 LF
GRAVEL REPAIR

MATCHLINE SHEET 32

Job:	HR-21-01
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1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
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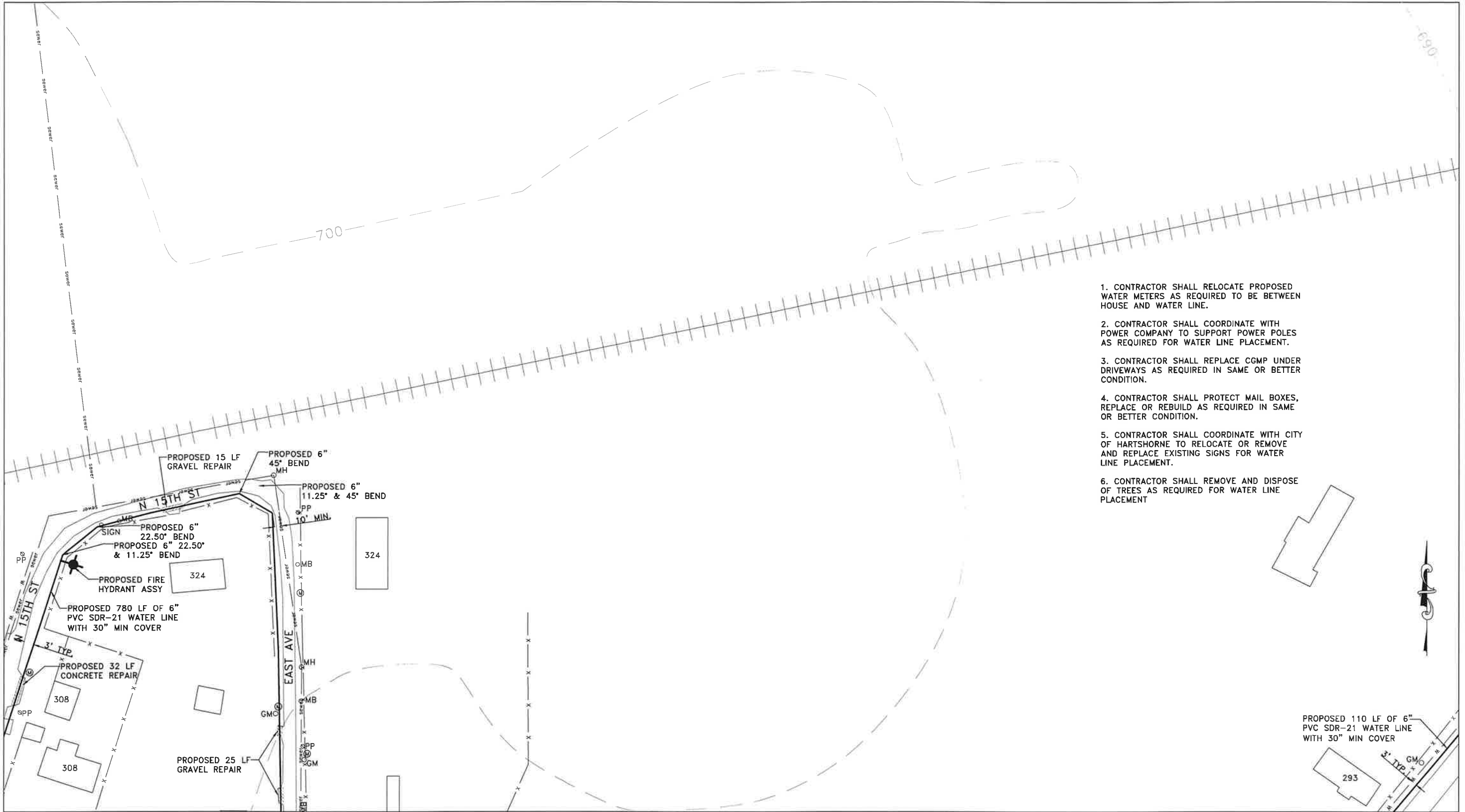


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HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

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MATCHLINE SHEET 34

MATCHLINE SHEET 42

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

Designed **CJW**
Checked **LDB**
Drawn **ST**
Approved **CJW**



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

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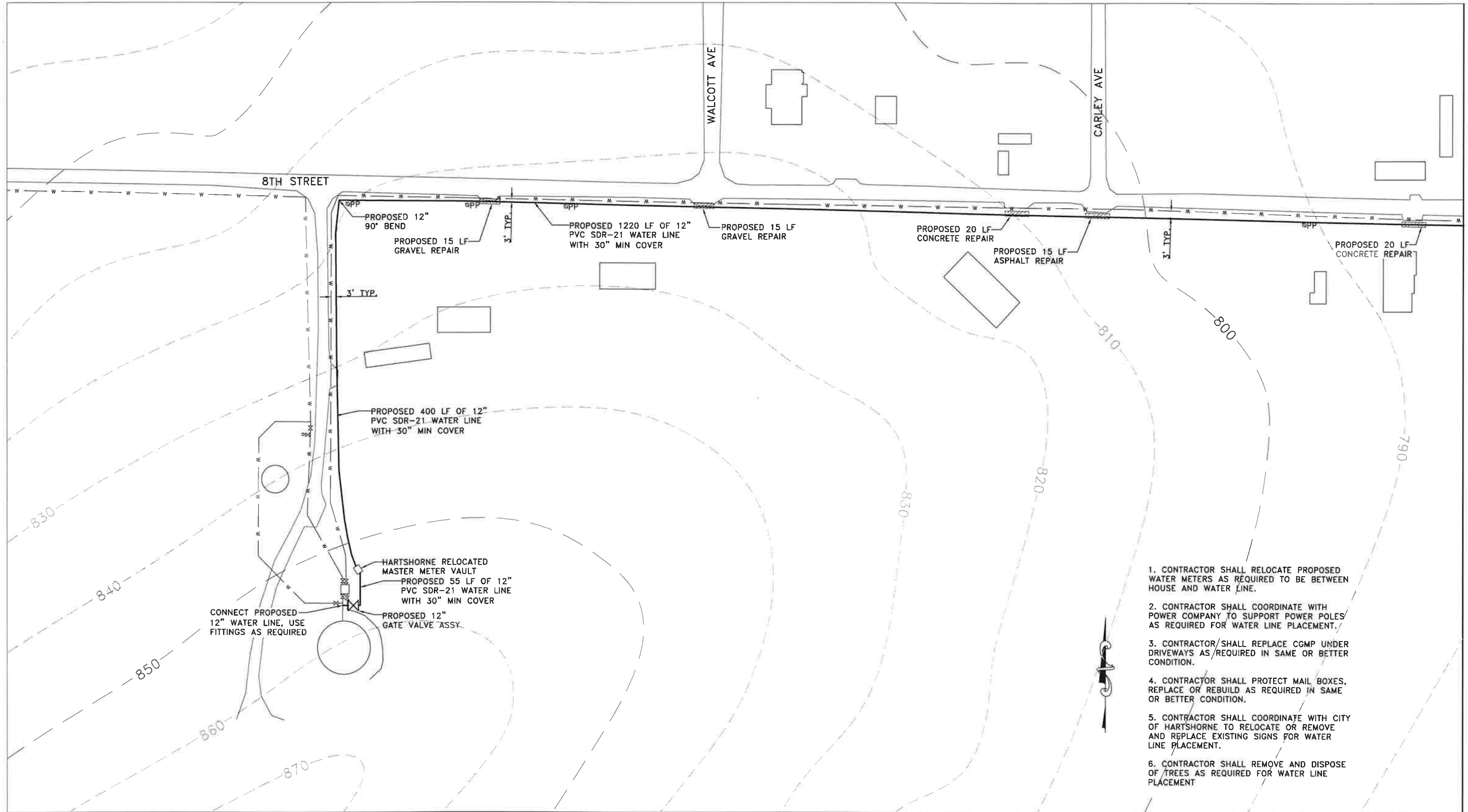
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HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

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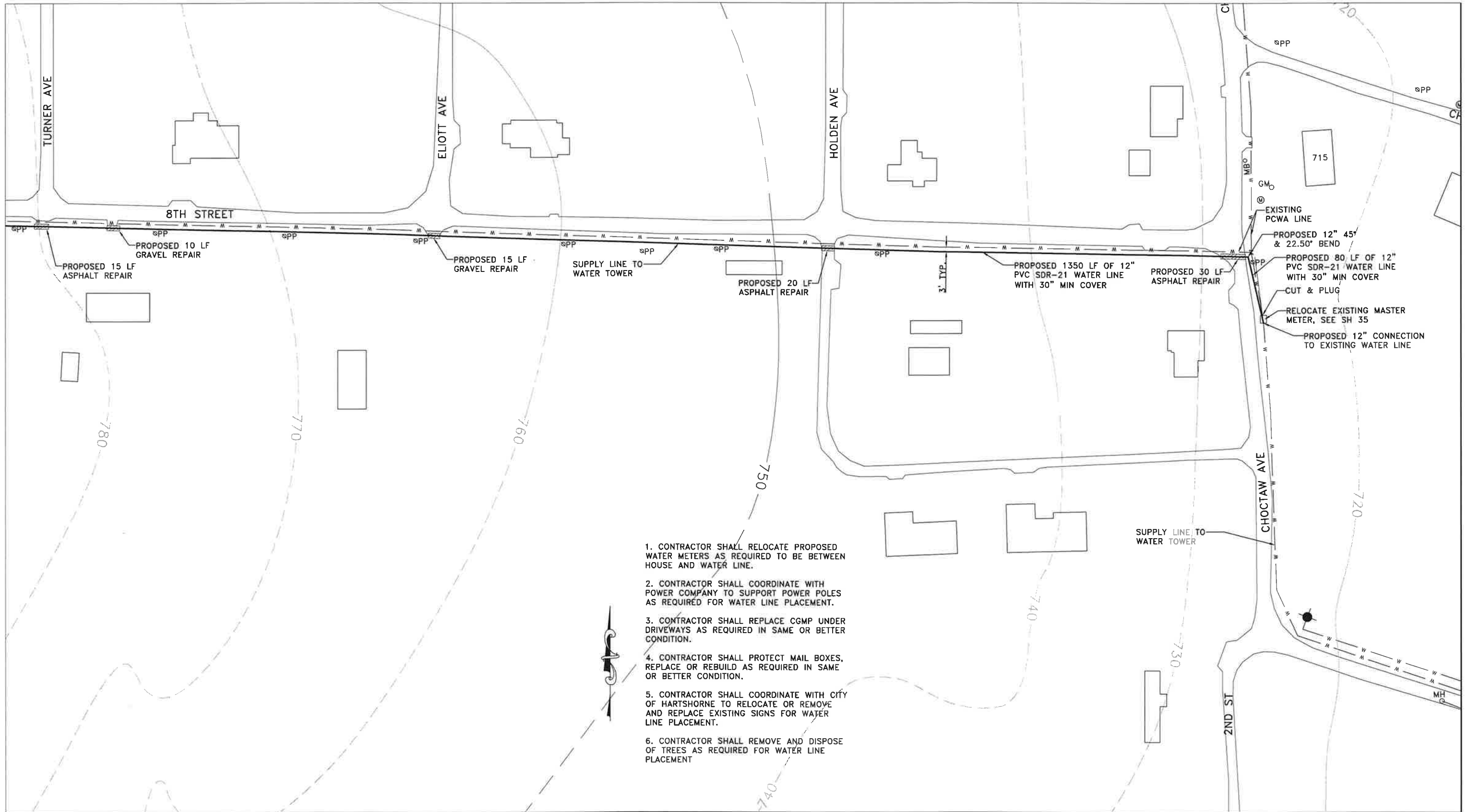


HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
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SECTION A ADDITIVE ALTERNATE

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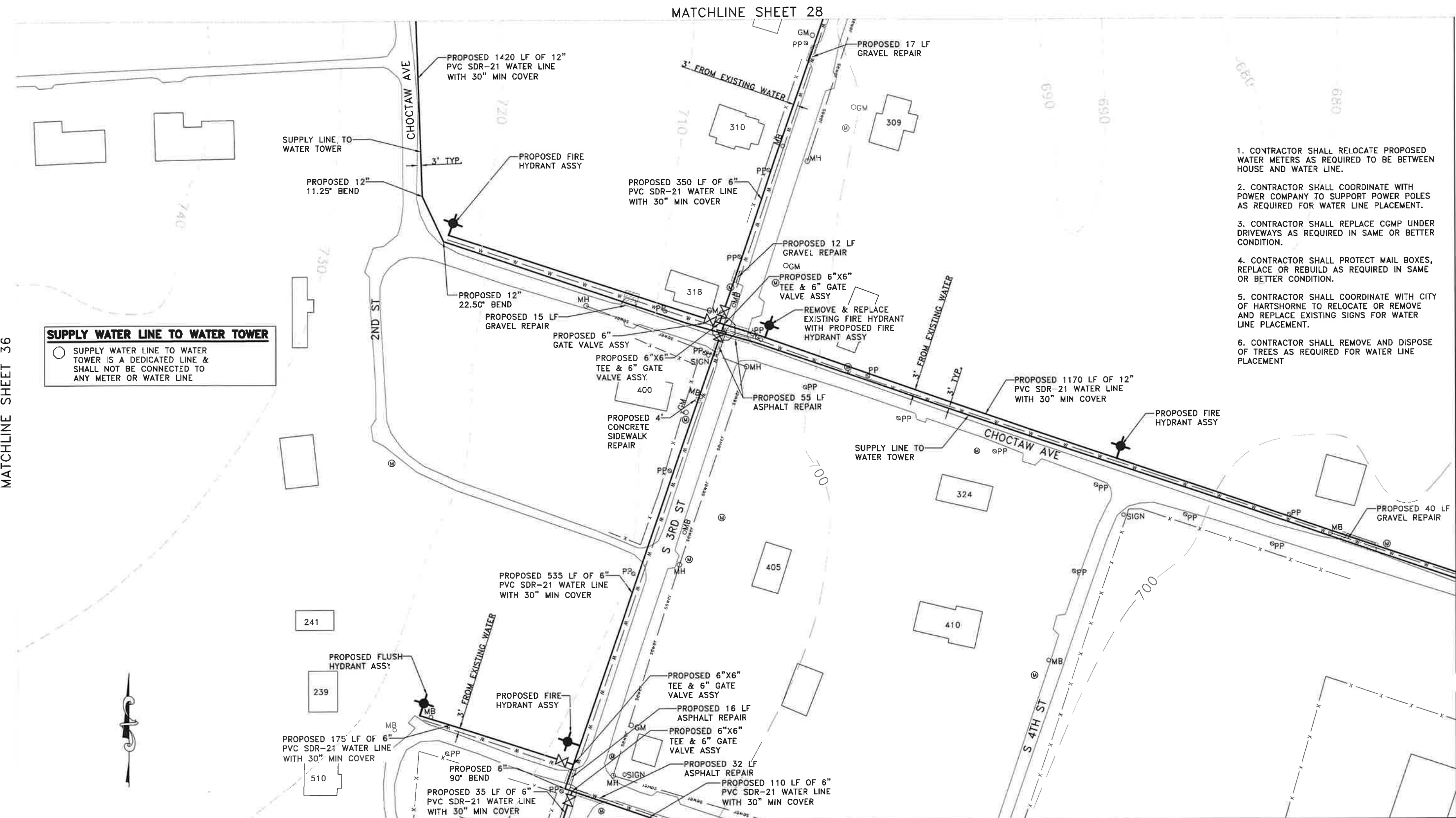


HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

SECTION A ADDITIVE ALTERNATE

Job: HR-21-01
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MATCHLINE SHEET 36



SUPPLY WATER LINE TO WATER TOWER

○ SUPPLY WATER LINE TO WATER TOWER IS A DEDICATED LINE & SHALL NOT BE CONNECTED TO ANY METER OR WATER LINE

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MATCHLINE SHEET 38

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

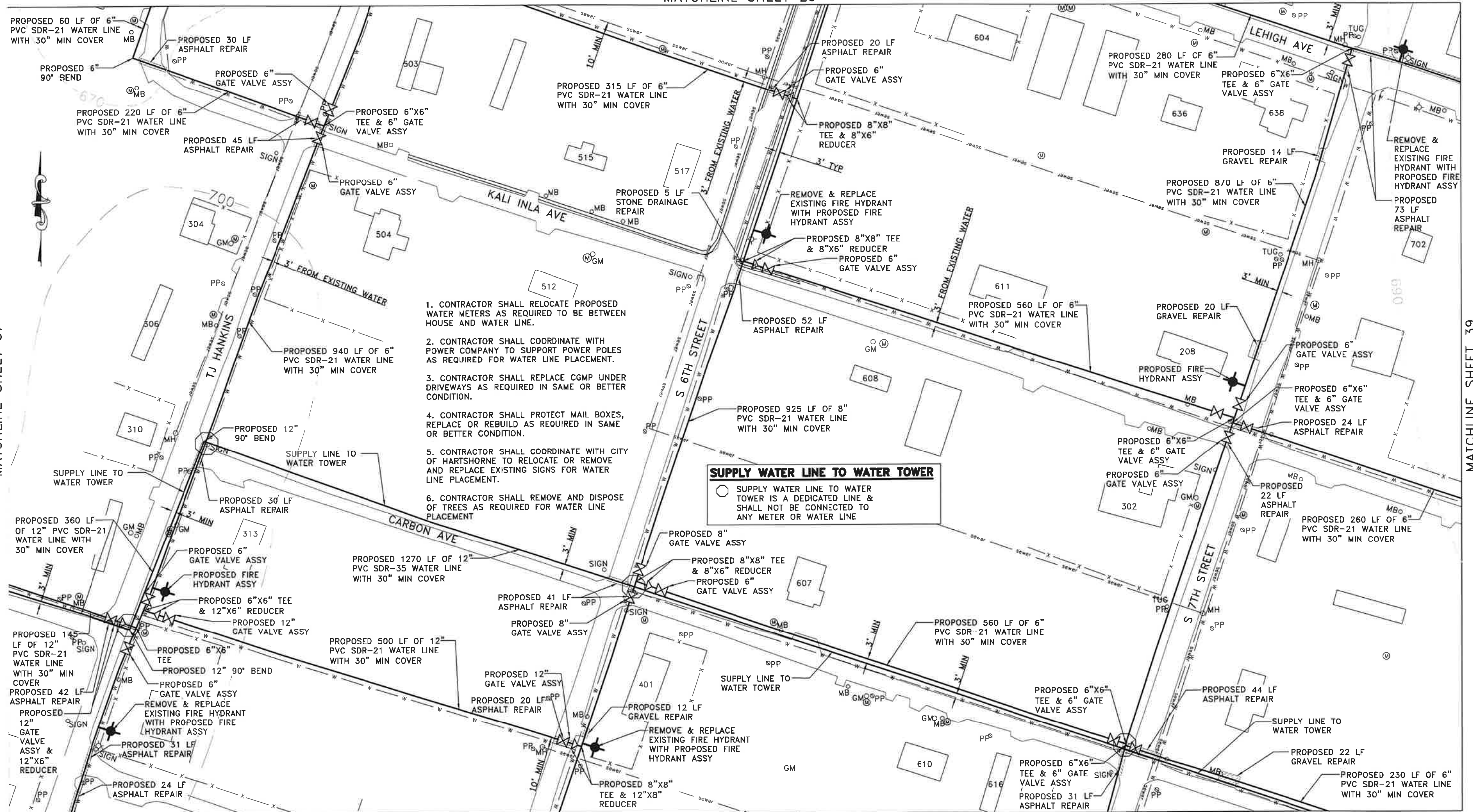
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Approved	CJW



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

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HARTSHORNE, OKLAHOMA
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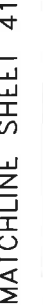


**INFRASTRUCTURE
SOLUTIONS GROUP, LLC**
Consulting Engineers

WATER LINE PLAN

Job:	HR-21-01
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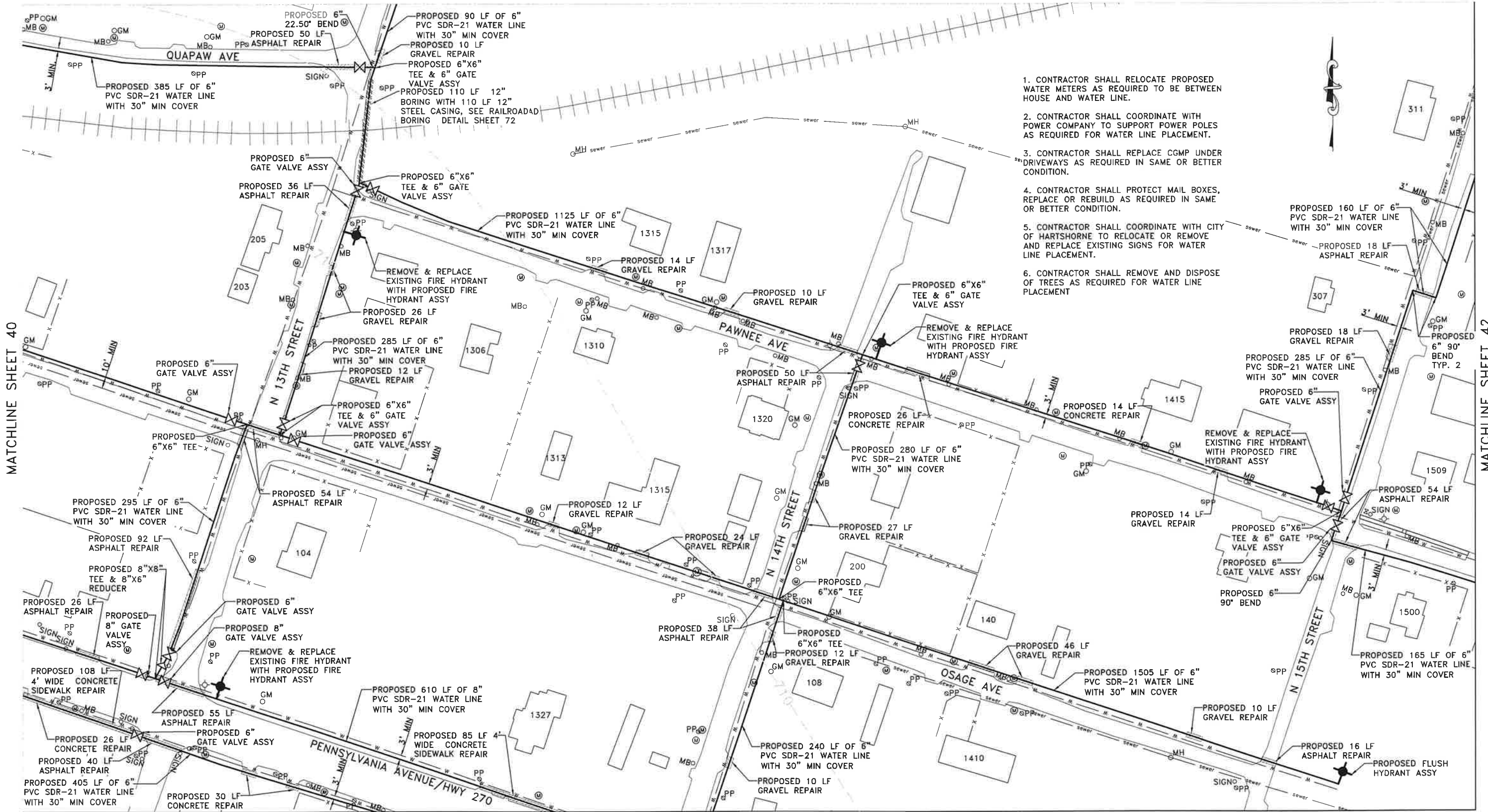
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**INFRASTRUCTURE
SOLUTIONS GROUP, LLC**
Consulting Engineers

WATER LINE PLAN

Job:	HR-21-01
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MATCHLINE SHEET 42

01/12/2024	INITIAL SIGNED AND SEALED	CJW
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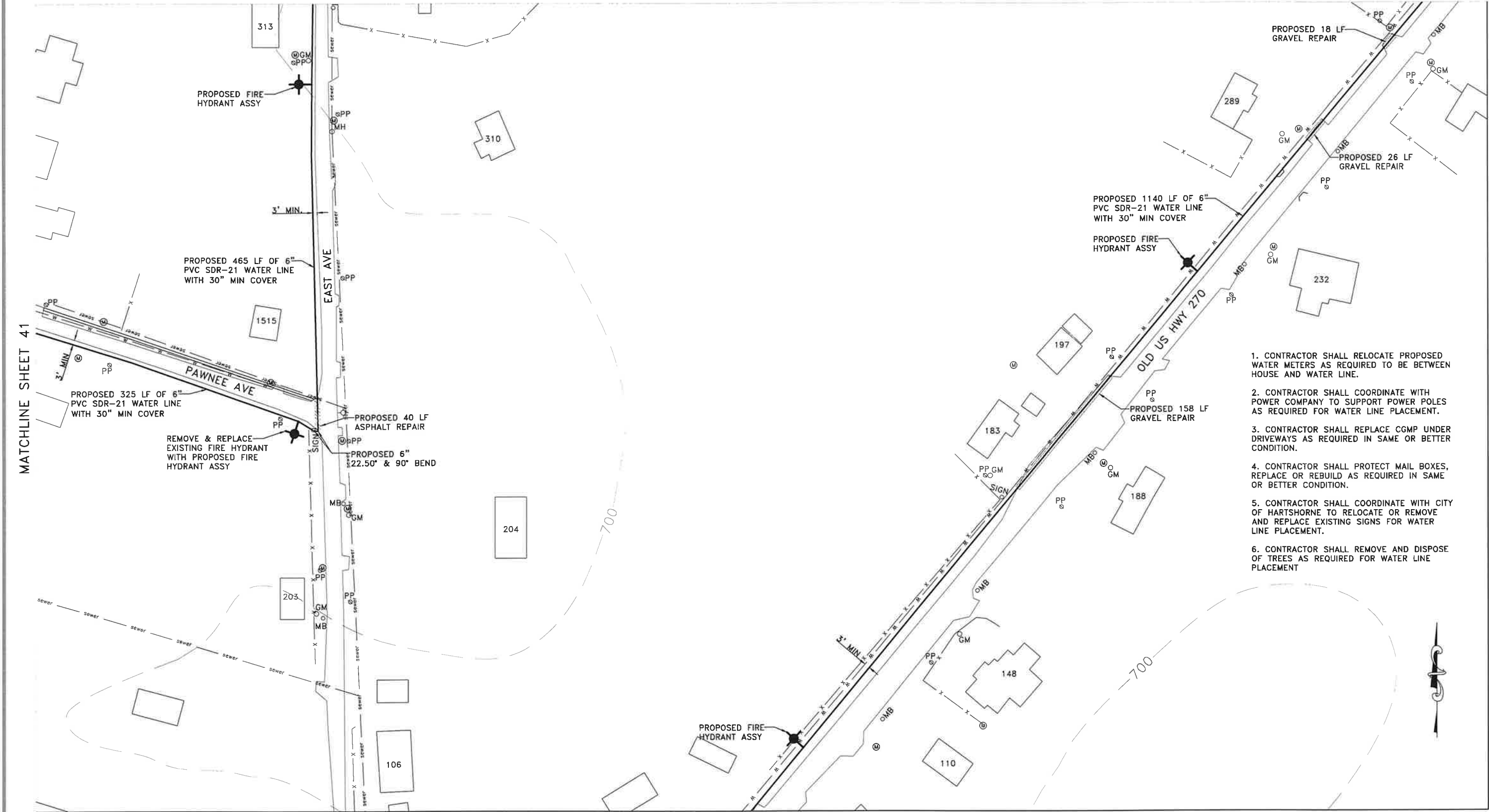
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HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

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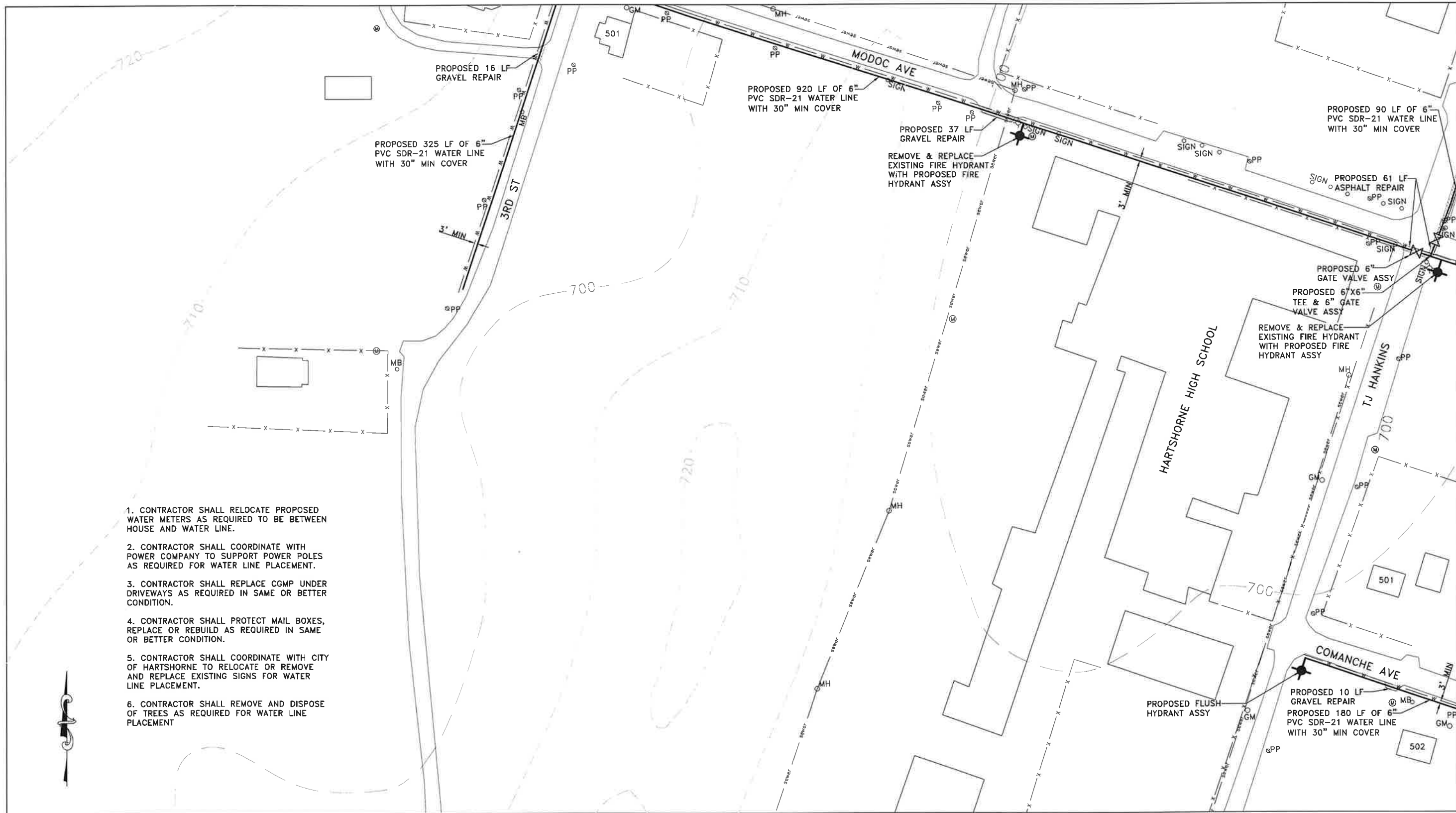


HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

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MATCHLINE SHEET 37



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5. CONTRACTOR SHALL COORDINATE WITH CITY OF HARTSHORNE TO RELOCATE OR REMOVE AND REPLACE EXISTING SIGNS FOR WATER LINE PLACEMENT.
6. CONTRACTOR SHALL REMOVE AND DISPOSE OF TREES AS REQUIRED FOR WATER LINE PLACEMENT

MATCHLINE SHEET 49

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

Designed **CJW**
Checked **LDB**
Drawn **ST**
Approved **CJW**

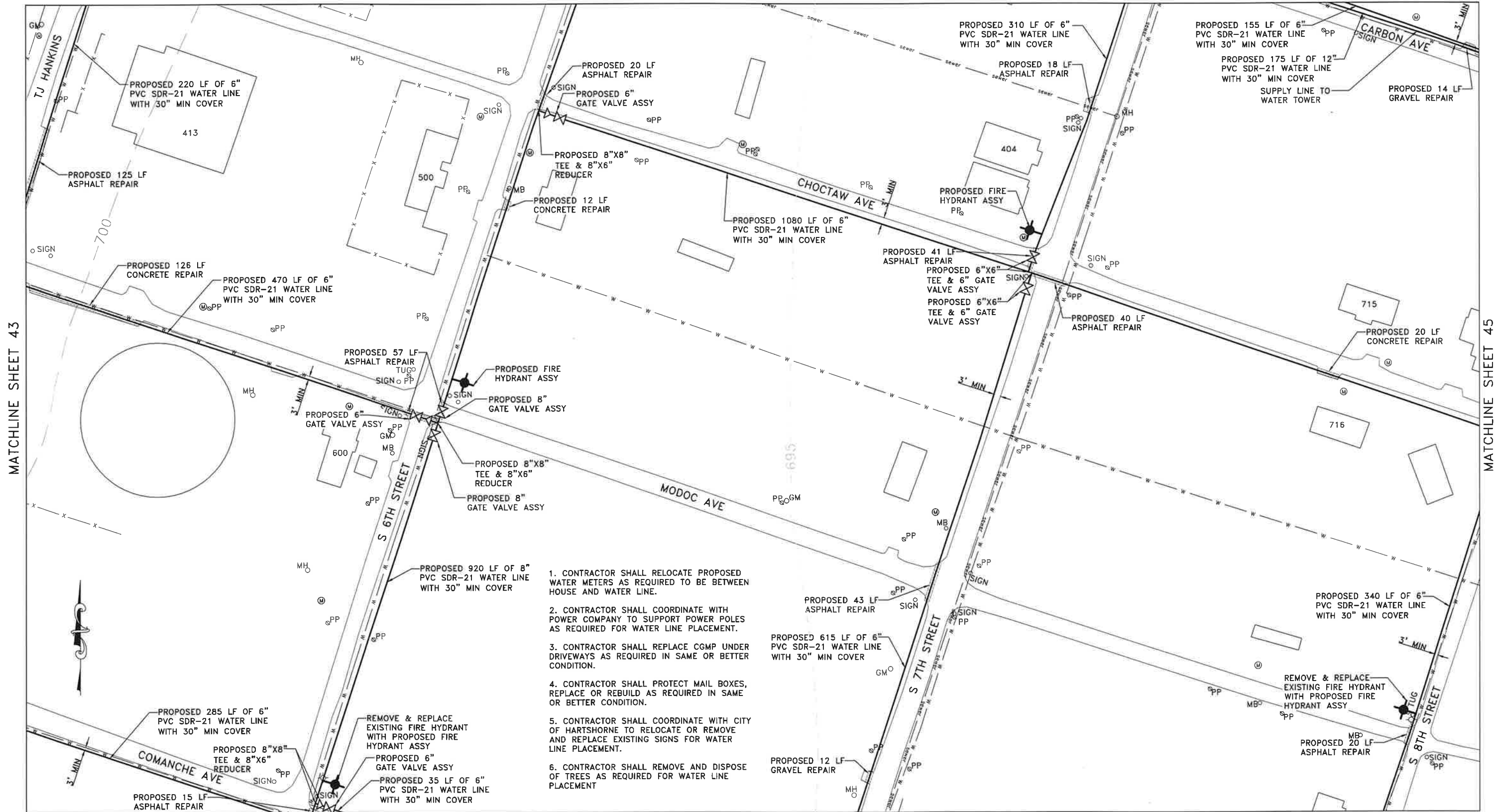


HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

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HR-21-01
Scale:
1" = 100'
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MATCHLINE SHEET 38



MATCHLINE SHEET 50

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

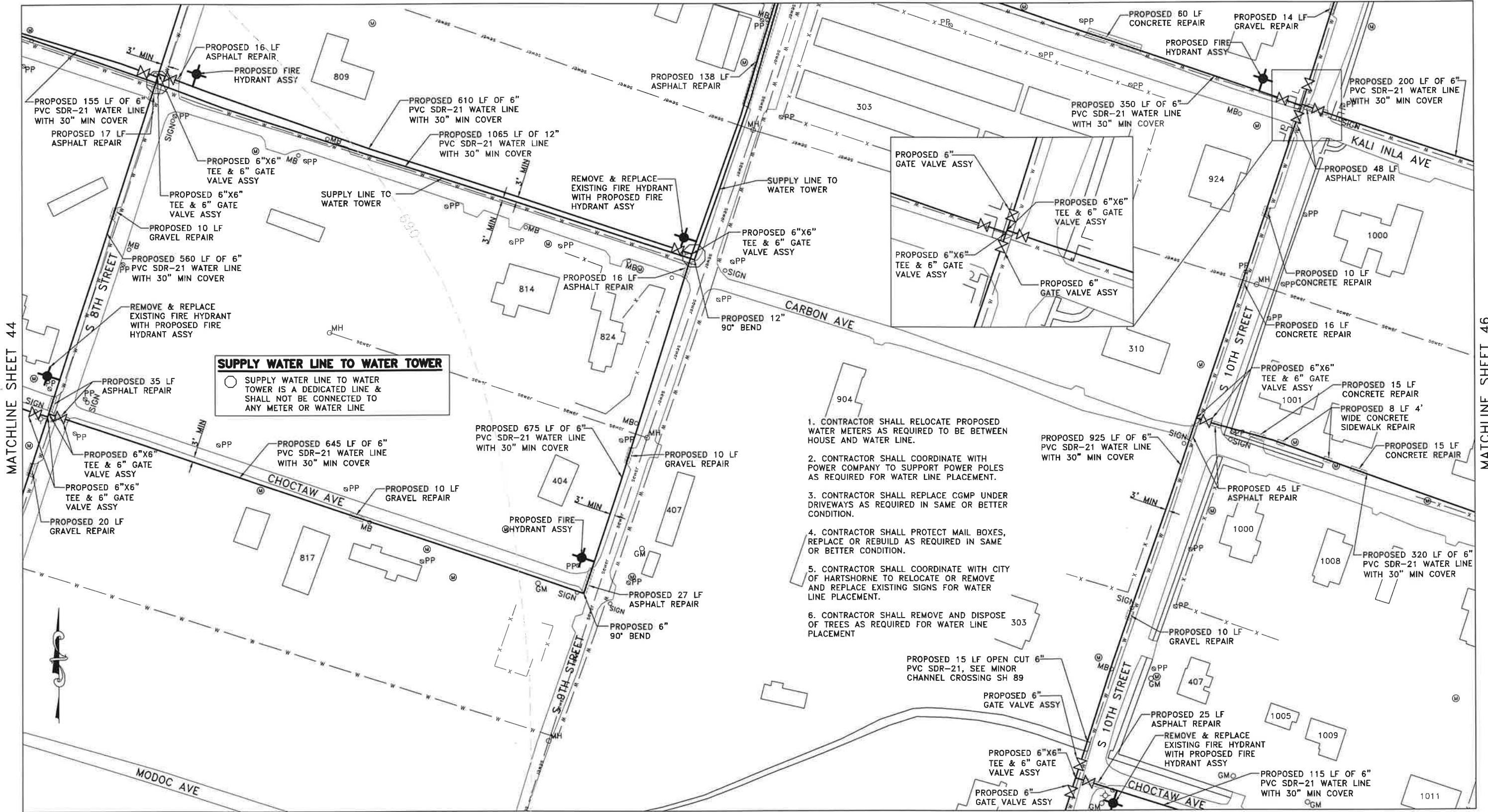
Designed	CJW
Checked	LDB
Drawn	ST
Approved	CJW



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job:	HR-21-01
Scale:	1" = 100'
Sheet:	44 OF 89



01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

Designed

CJW

Checked

LDB

Drawn

ST

Approved

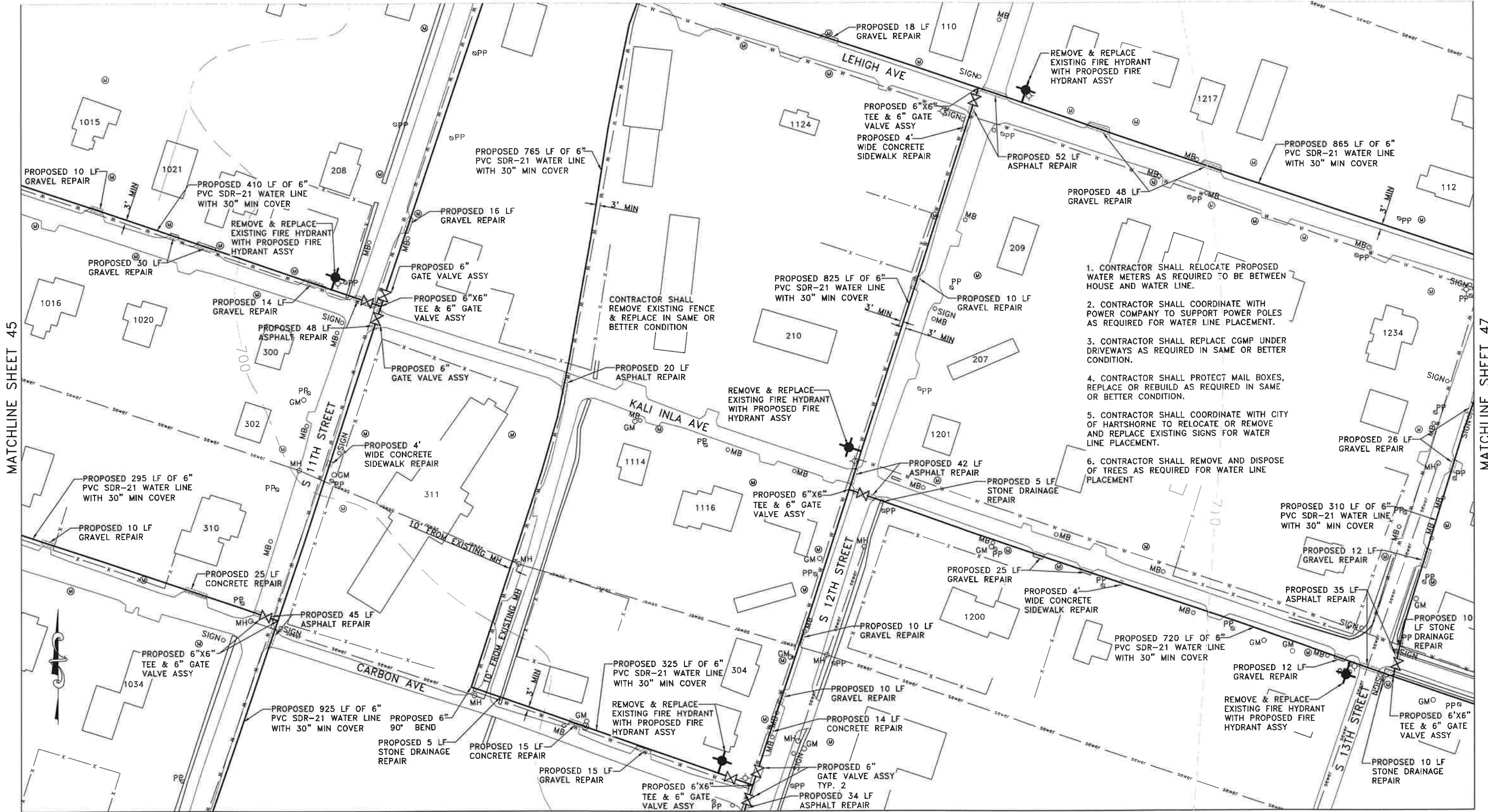
CJW

INFRASTRUCTURE
SOLUTIONS GROUP, LLC
Consulting Engineers

HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job:	HR-21-01
Scale:	1" = 100'
Sheet:	45 OF 89



01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

Designed	CJW
Checked	LDB
Drawn	ST
Approved	CJW

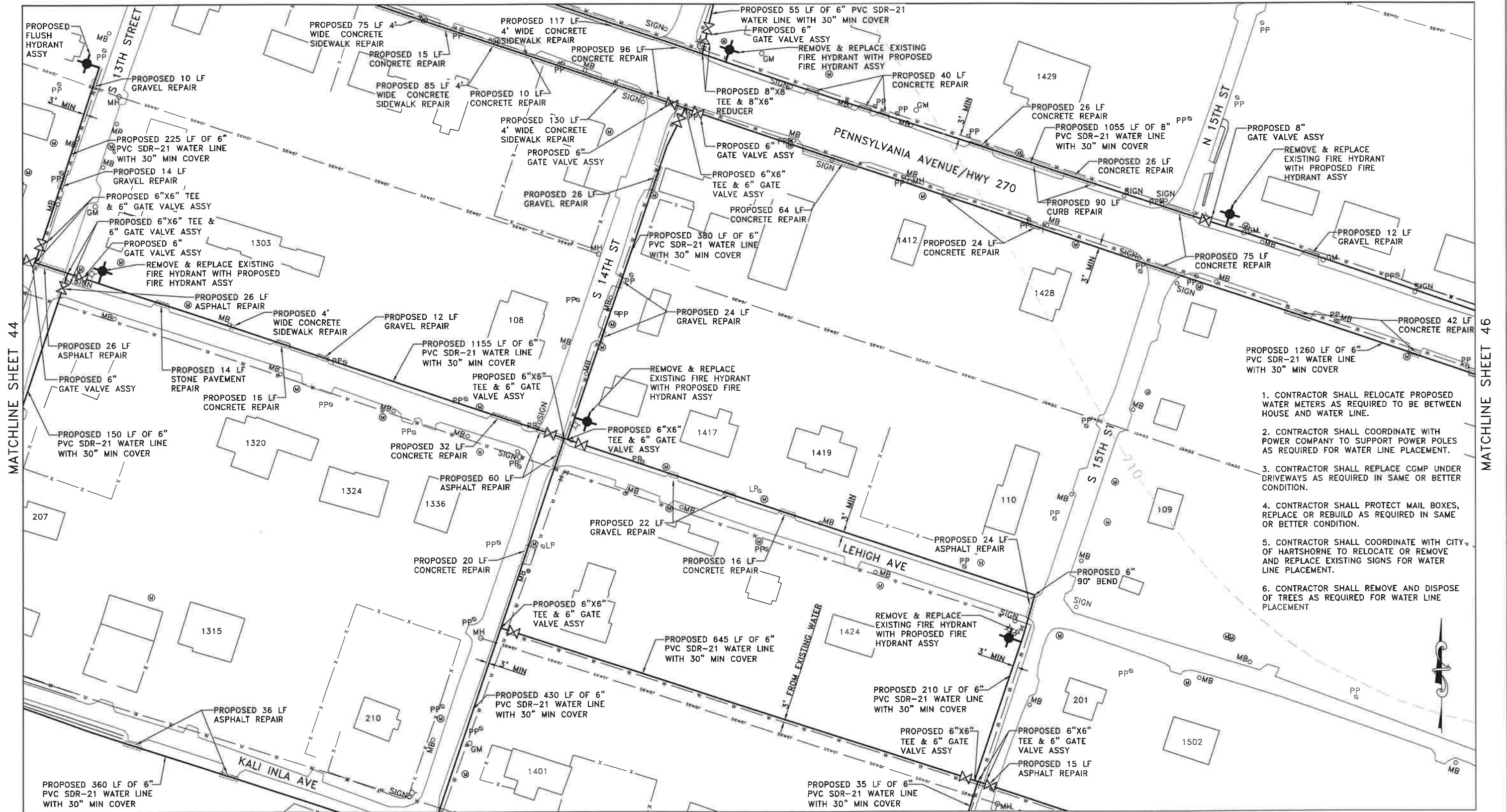


HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

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MATCHLINE SHEET 39



MATCHLINE SHEET 51

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

Designed **CJW**
 Checked **LDB**
 Drawn **ST**
 Approved **CJW**



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job: **HR-21-01**
 Scale: **1" = 100'**
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MATCHLINE SHEET 47



1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
2. CONTRACTOR SHALL COORDINATE WITH POWER COMPANY TO SUPPORT POWER POLES AS REQUIRED FOR WATER LINE PLACEMENT.
3. CONTRACTOR SHALL REPLACE CGMP UNDER DRIVEWAYS AS REQUIRED IN SAME OR BETTER CONDITION.
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6. CONTRACTOR SHALL REMOVE AND DISPOSE OF TREES AS REQUIRED FOR WATER LINE PLACEMENT

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

Designed CJW
Checked LDB
Drawn ST
Approved CJW



**HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS**

WATER LINE PLAN

Job:
HR-21-01

Scale:
1" = 100'

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- 1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
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MATCHLINE SHEET 50

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

Designed **CJW**
Checked **LDB**
Drawn **ST**
Approved **CJW**

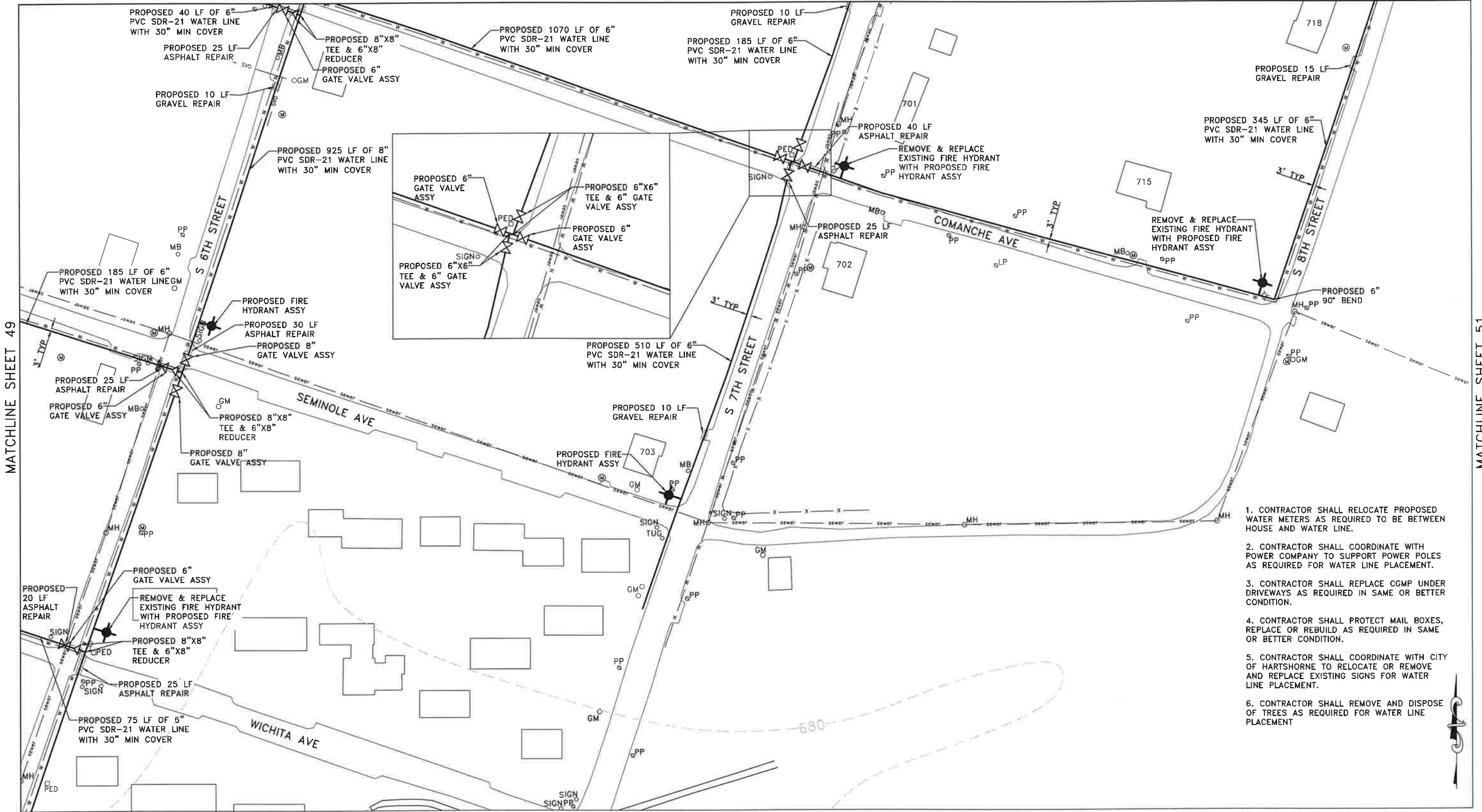


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HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job: HR-21-01
Scale: 1" = 100'
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- 1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
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MATCHLINE SHEET 55

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

Designed **CJW**
Checked **LDB**
Drawn **ST**
Approved **CJW**



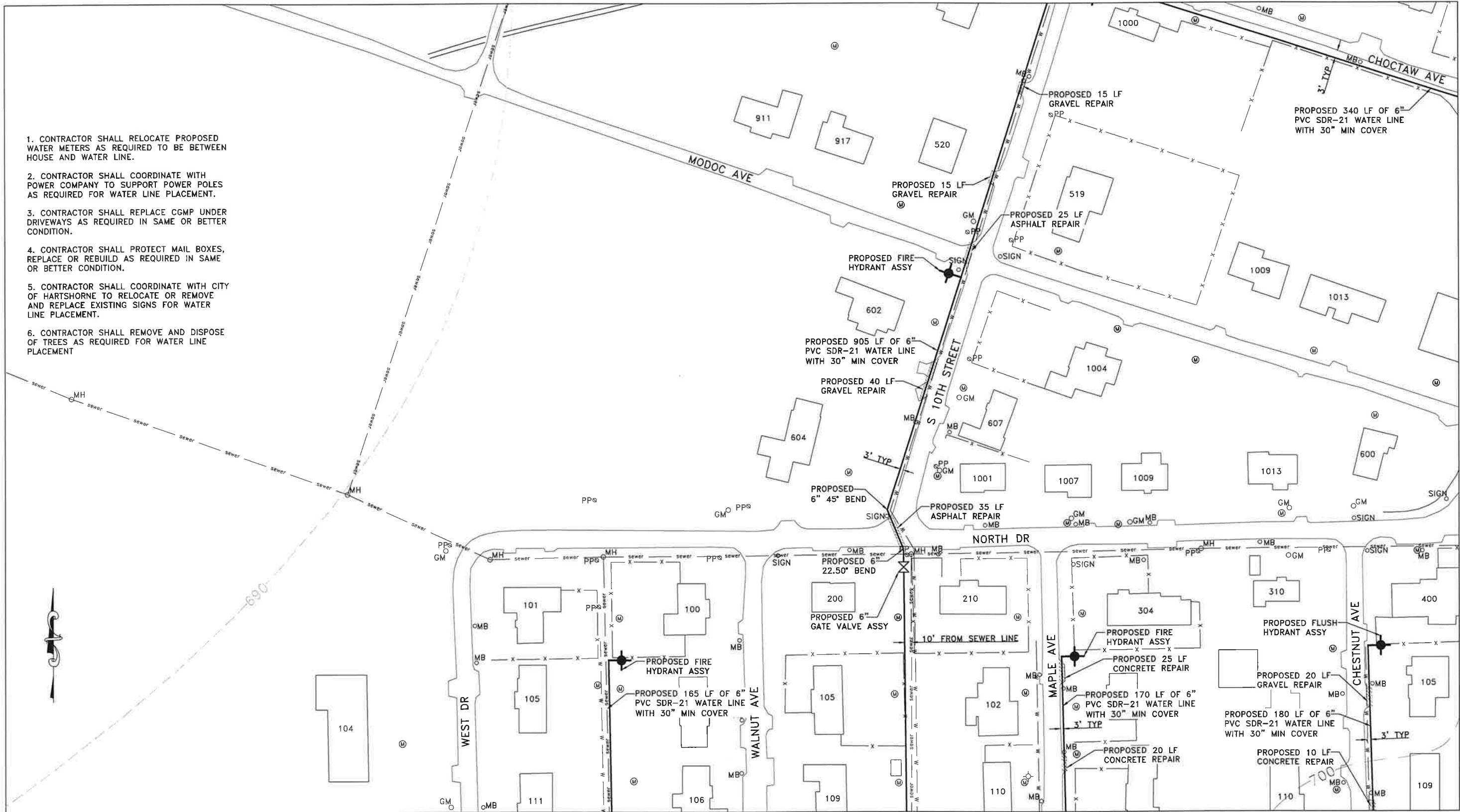
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HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job: **HR-21-01**
Scale: **1" = 100'**
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- 1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
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MATCHLINE SHEET 50



MATCHLINE SHEET 52

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

Designed **CJW**
Checked **LDB**
Drawn **ST**
Approved **CJW**

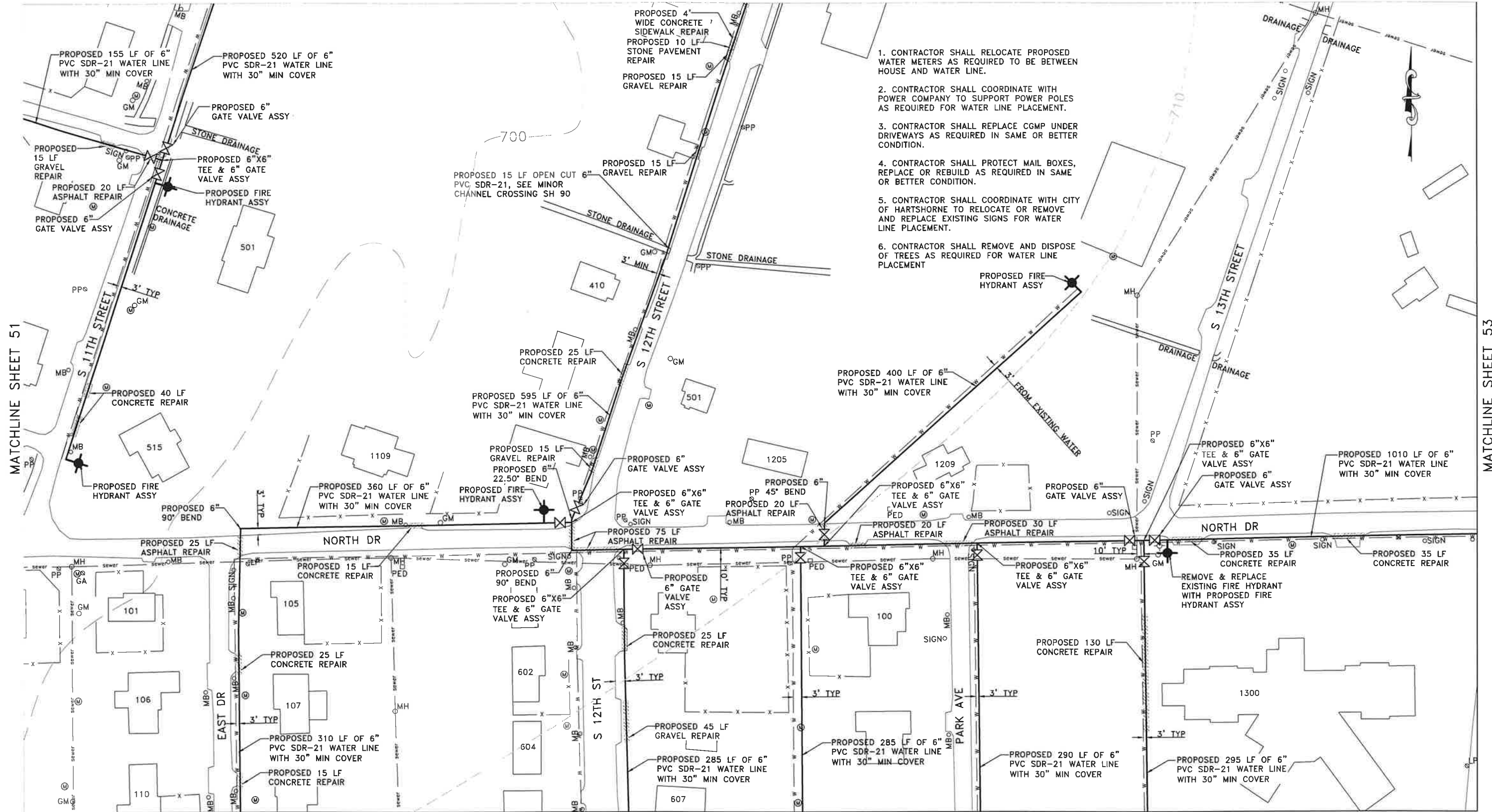


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HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job: HR-21-01
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MATCHLINE SHEET 46



1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
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MATCHLINE SHEET 57

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

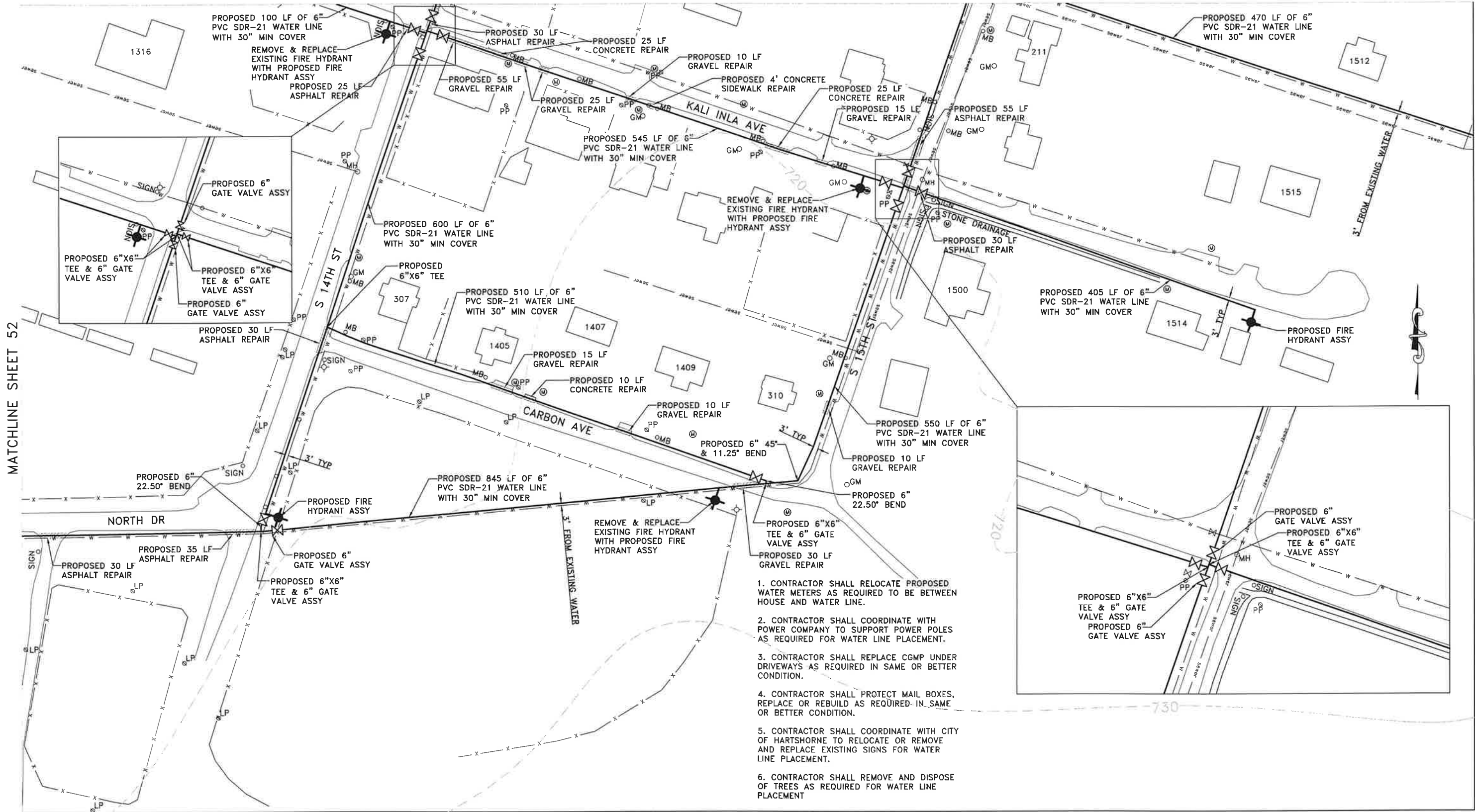
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Checked	LDB
Drawn	ST
Approved	CJW



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job:	HR-21-01
Scale:	1" = 100'
Sheet:	52 OF 89



01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

Designed **CJW**
Checked **LDB**
Drawn **ST**
Approved **CJW**



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job:
HR-21-01
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1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
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01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

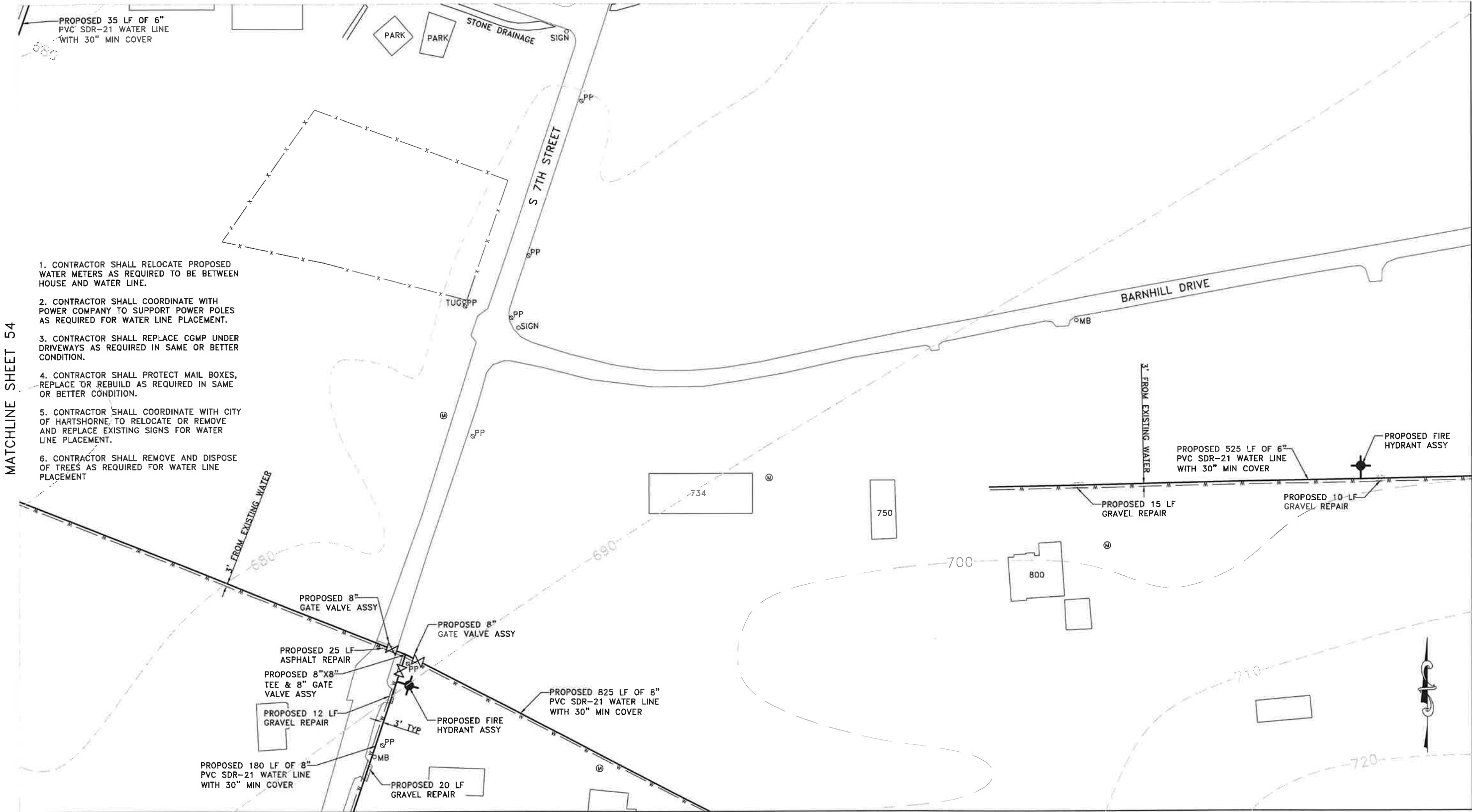
Designed	CJW
Checked	LDB
Drawn	ST
Approved	CJW



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

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Scale:	1" = 100'
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1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
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01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

Designed **CJW**
Checked **LDB**
Drawn **ST**
Approved **CJW**



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job:
HR-21-01
Scale:
1" = 100'
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1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
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MATCHLINE SHEET 55

MATCHLINE SHEET 57

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

Designed **CJW**
 Checked **LDB**
 Drawn **ST**
 Approved **CJW**

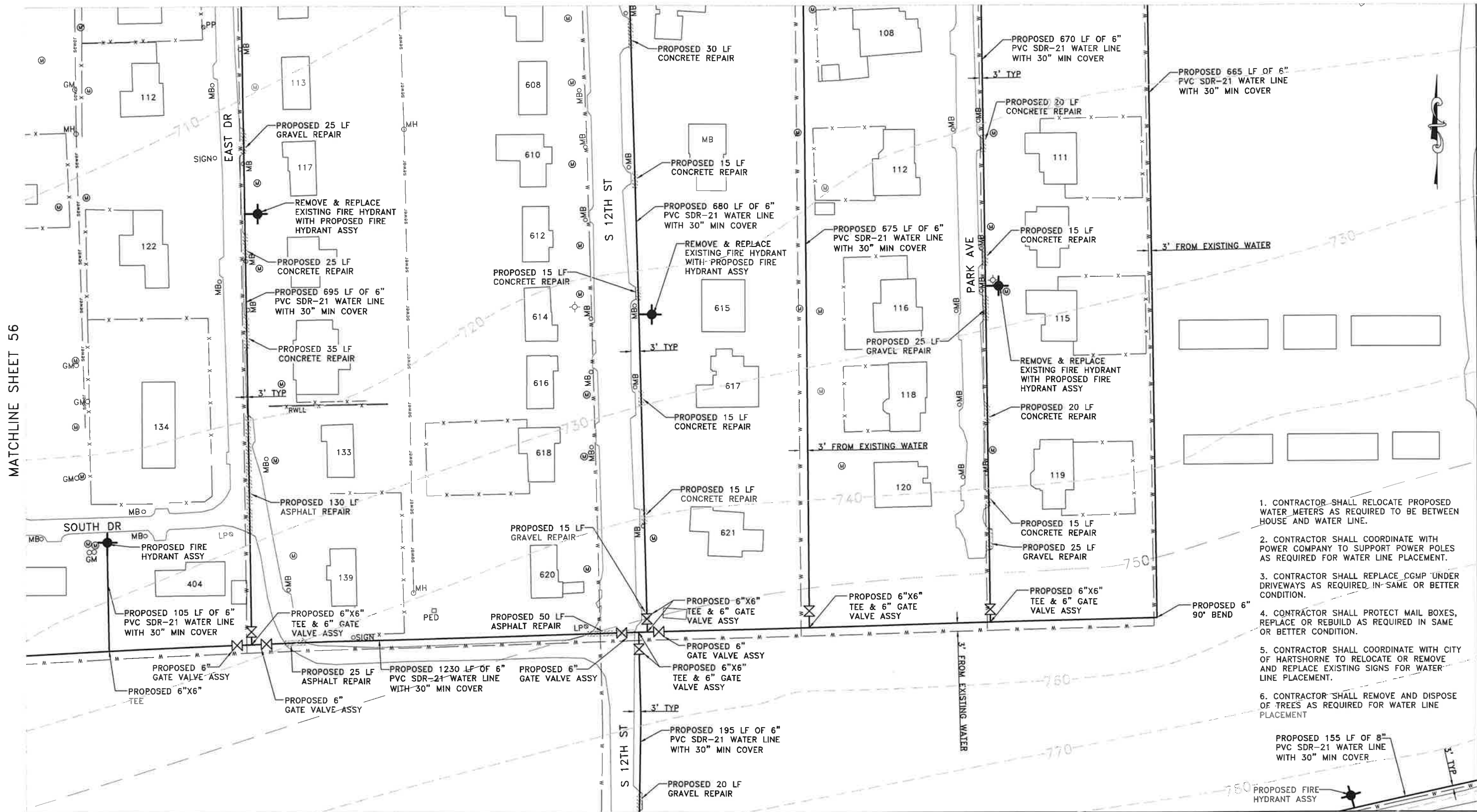


HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job:
 HR-21-01
 Scale:
 1" = 100'
 Sheet:
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MATCHLINE SHEET 52



MATCHLINE SHEET 61

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

Designed	CJW
Checked	LDB
Drawn	ST
Approved	CJW



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

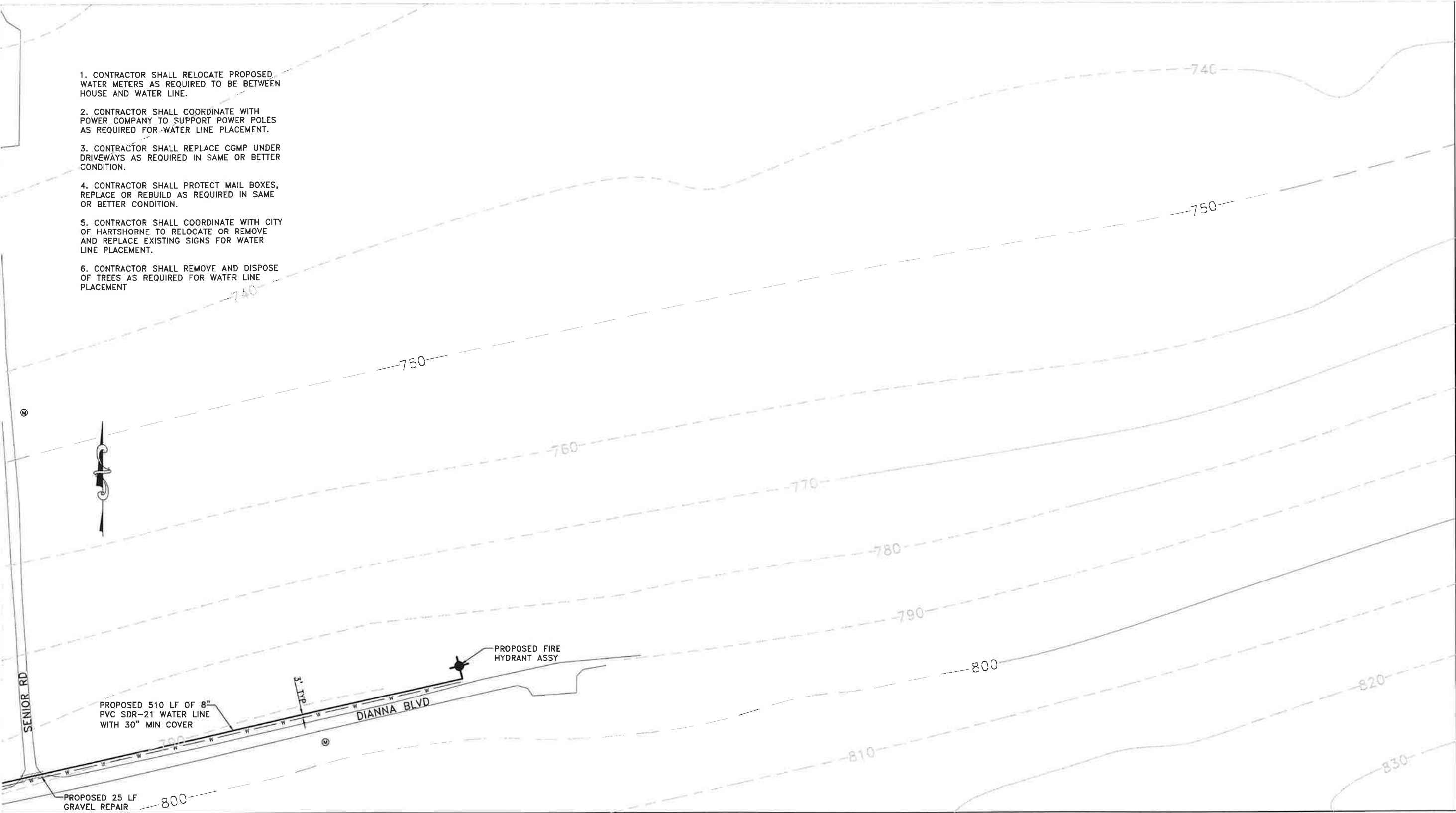
WATER LINE PLAN

Job:
HR-21-01
Scale:
1" = 100'
Sheet:
57 OF 89

1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
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MATCHLINE SHEET 57



01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

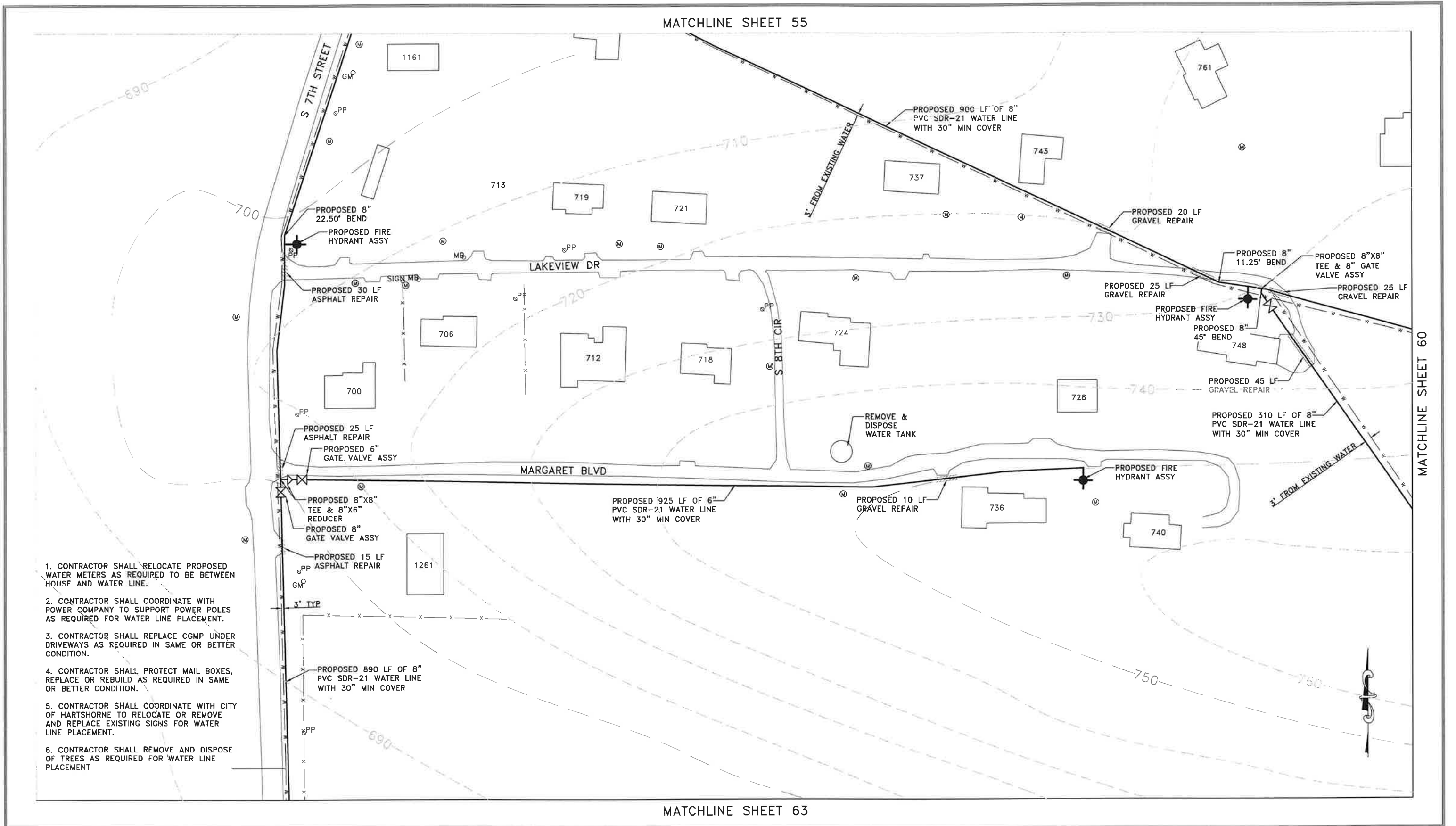
Designed CJW
Checked LDB
Drawn ST
Approved CJW



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job: HR-21-01
Scale: 1" = 100'
Sheet: 58 OF 89



01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2023	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

Designed	CJW
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Drawn	ST
Approved	CJW



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job:	HR-21-01
Scale:	1" = 100'
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PROPOSED 8" 22.50' BEND

PROPOSED FIRE HYDRANT ASSY

PROPOSED 30 LF GRAVEL REPAIR

PROPOSED 8" GATE VALVE ASSY

PROPOSED 6" GATE VALVE ASSY

PROPOSED 8"x8" TEE & 8"x6" REDUCER

PROPOSED 8" GATE VALVE ASSY

PROPOSED 295 LF OF 6" PVC SDR-21 WATER LINE WITH 30" MIN COVER

PROPOSED 1585 LF OF 8" PVC SDR-21 WATER LINE WITH 30" MIN COVER

PROPOSED FIRE HYDRANT ASSY

PROPOSED 8"x8" TEE & 8"x6" REDUCER

PROPOSED 8" GATE VALVE ASSY

PROPOSED 235 LF OF 6" PVC SDR-21 WATER LINE WITH 30" MIN COVER

PROPOSED FIRE HYDRANT ASSY

3' FROM EXISTING WATER

3' FROM EXISTING WATER

3' FROM EXISTING WATER

DIANNA BLVD

55

100

150

730

740

750

760

770

780

790

800

3' FROM EXISTING WATER

PROPOSED 425 LF OF 8" PVC SDR-21 WATER LINE WITH 30" MIN COVER

1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
2. CONTRACTOR SHALL COORDINATE WITH POWER COMPANY TO SUPPORT POWER-POLES AS REQUIRED FOR WATER LINE PLACEMENT.
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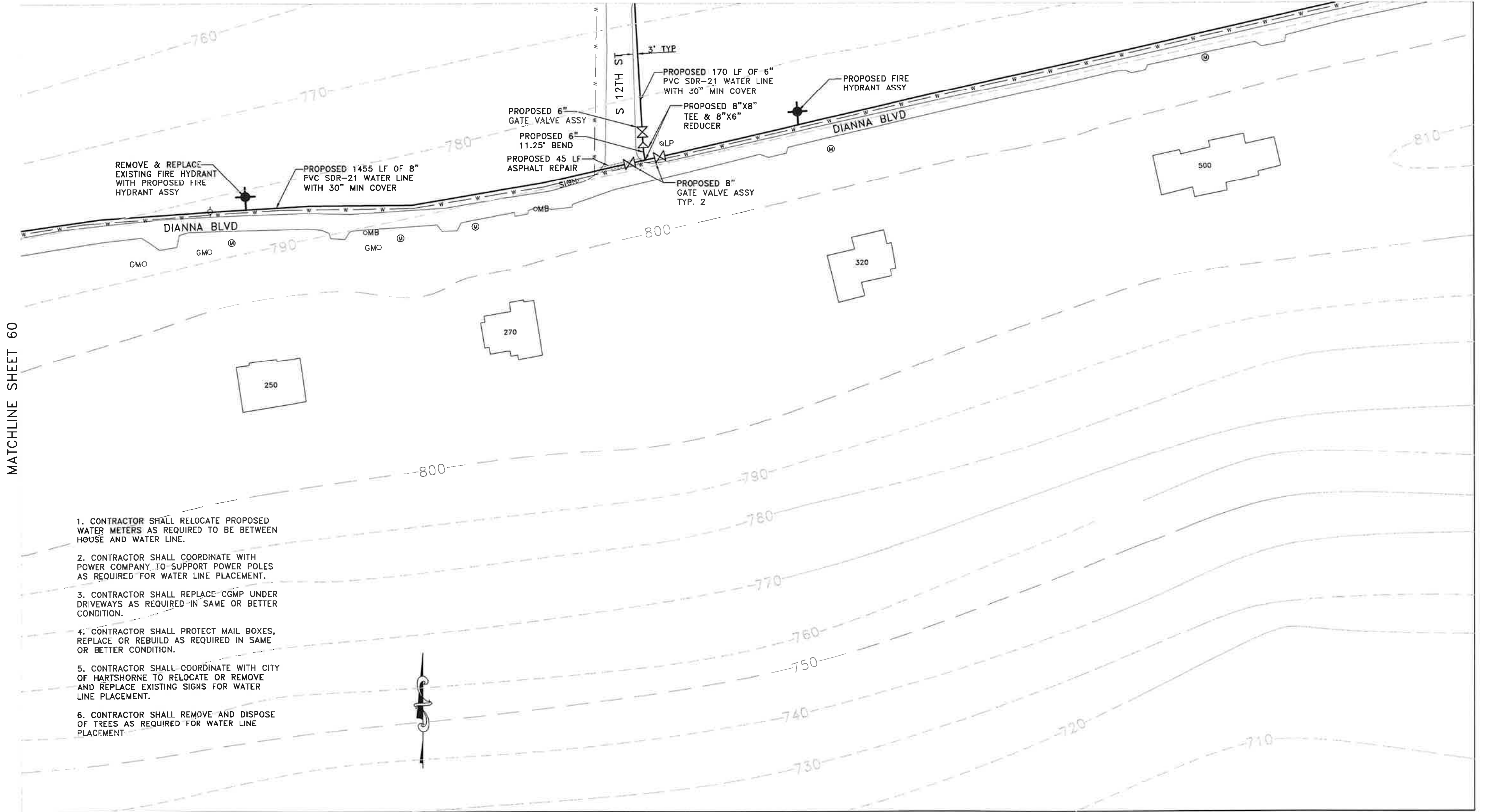
12/2024	INITIAL SIGNED AND SEALED	CJW
01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By



**INFRASTRUCTURE
SOLUTIONS GROUP, LLC**
Consulting Engineers

WATER LINE PLAN

Job:	HR-21-01
Scale:	1" = 100'
Sheet:	60 OF 89



MATCHLINE SHEET 60

1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
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01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

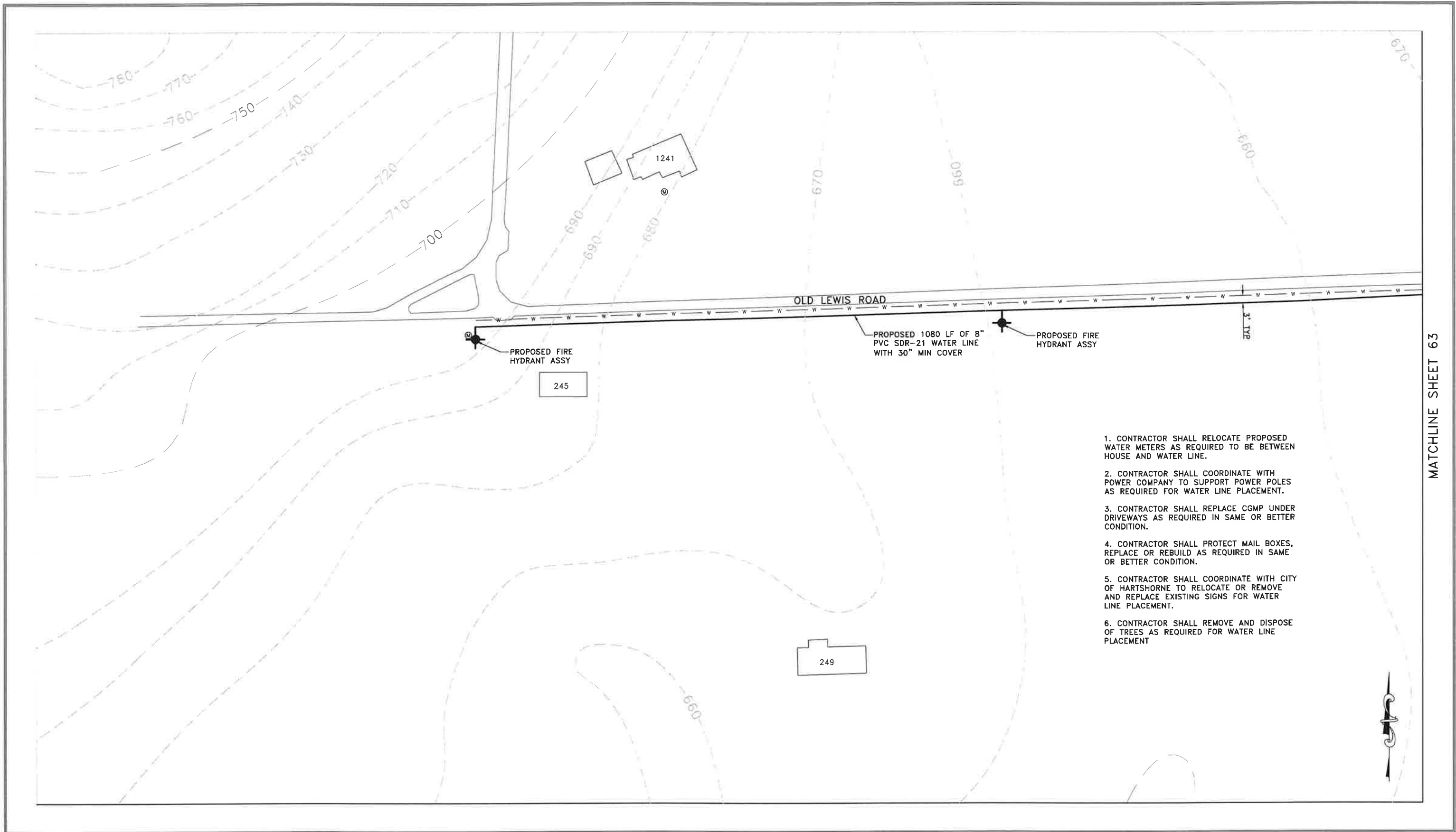
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Checked LDB
Drawn ST
Approved CJW



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job: HR-21-01
Scale: 1" = 100'
Sheet: 61 OF 89



MATCHLINE SHEET 63

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

Designed	CJW
Checked	LDB
Drawn	ST
Approved	CJW

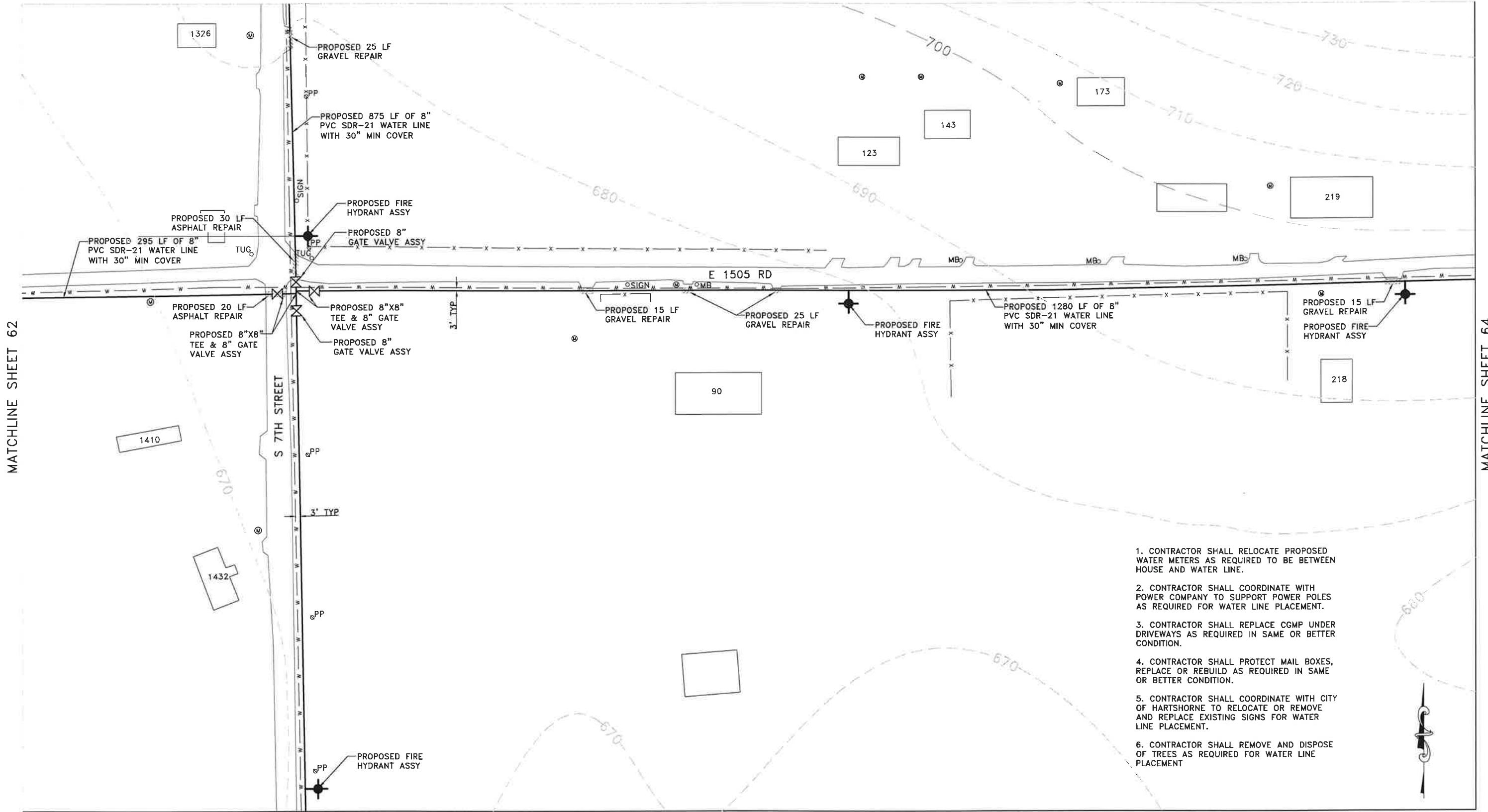


HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job:	HR-21-01
Scale:	1" = 100'
Sheet:	62 OF 89

MATCHLINE SHEET 59



MATCHLINE SHEET 65

1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
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01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

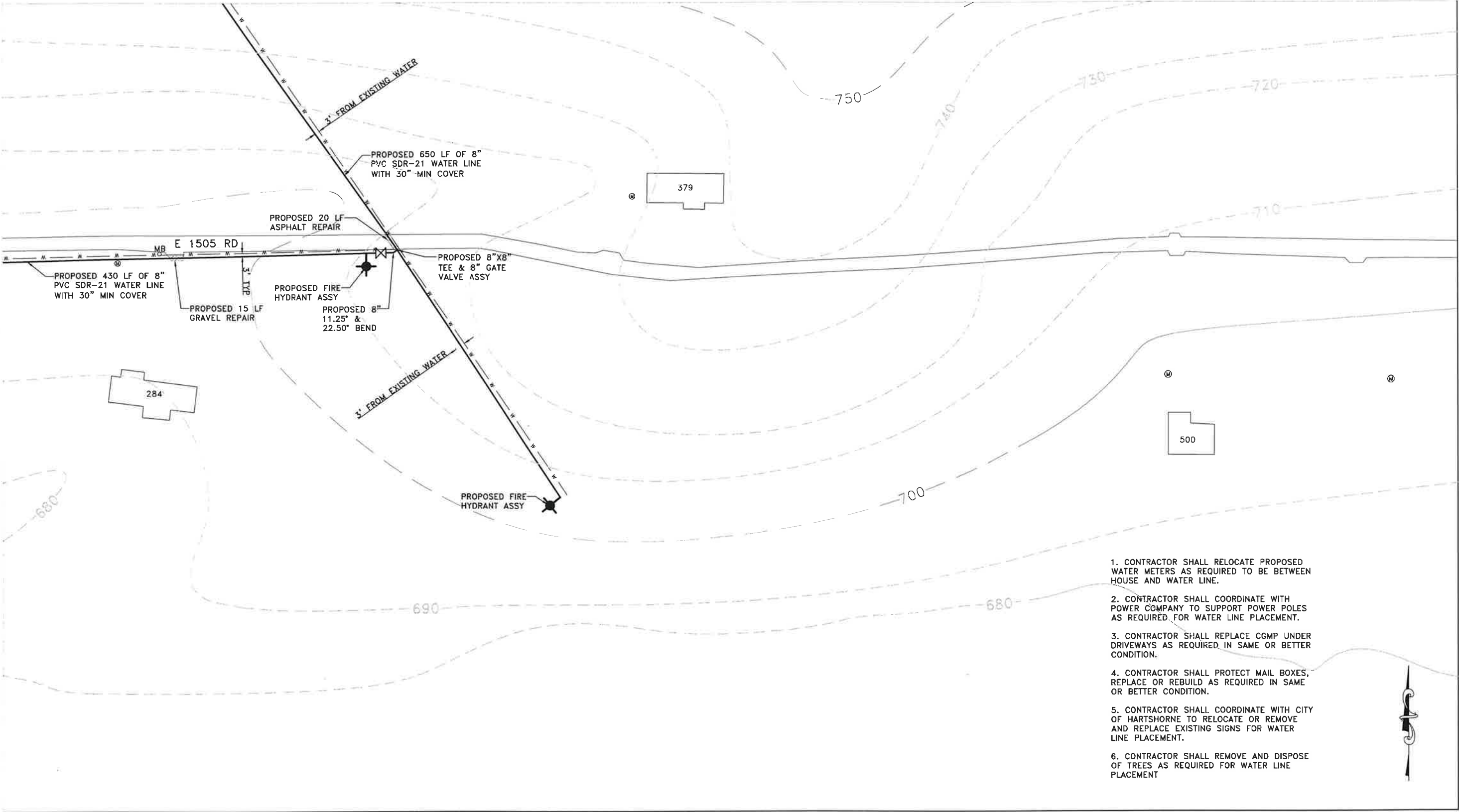
Designed	CJW
Checked	LDB
Drawn	ST
Approved	CJW



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job:	HR-21-01
Scale:	1" = 100'
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- 1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
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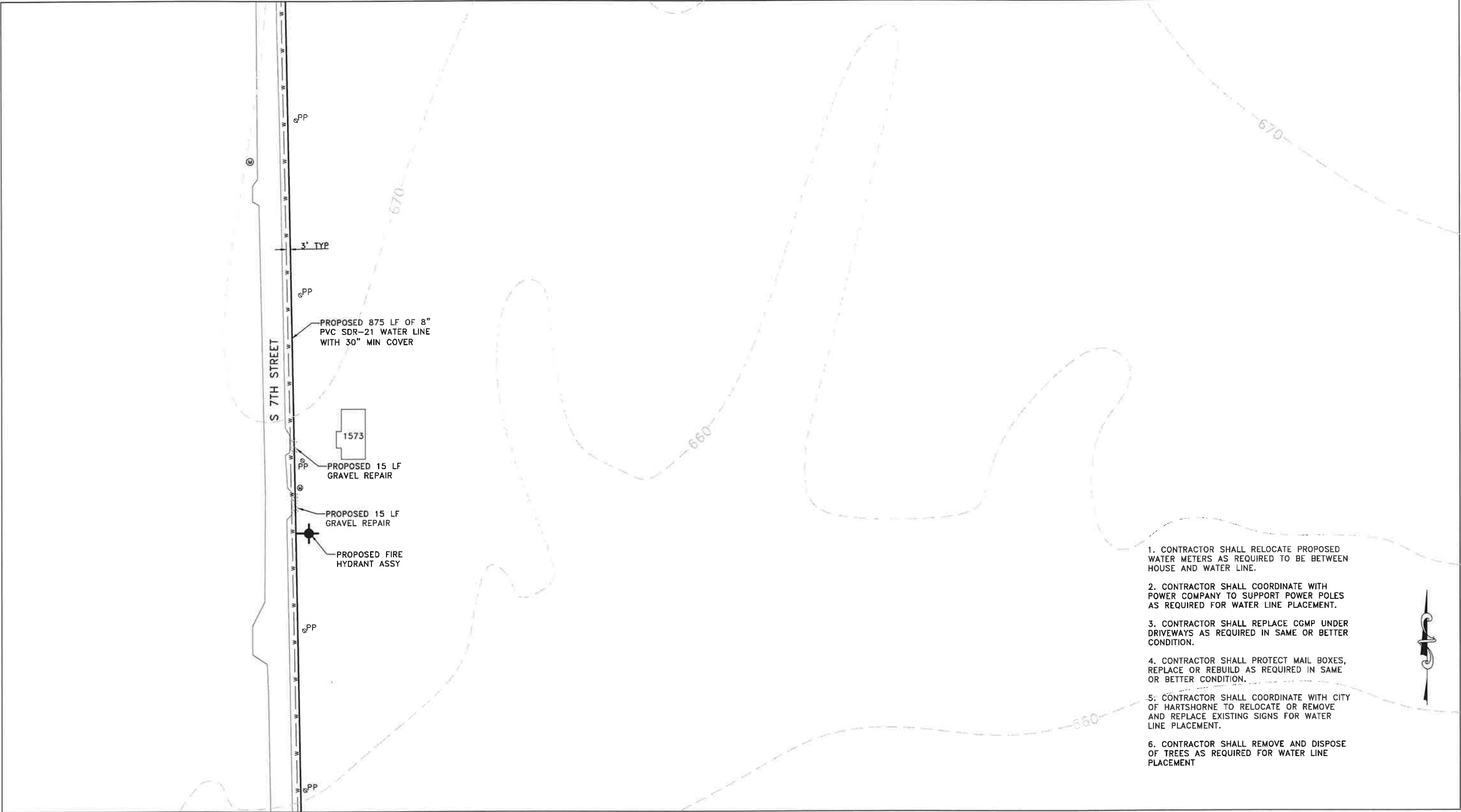
Designed CJW
Checked LDB
Drawn ST
Approved CJW



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job: HR-21-01
Scale: 1" = 100'
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- 1. CONTRACTOR SHALL RELOCATE PROPOSED WATER METERS AS REQUIRED TO BE BETWEEN HOUSE AND WATER LINE.
- 2. CONTRACTOR SHALL COORDINATE WITH POWER COMPANY TO SUPPORT POWER POLES AS REQUIRED FOR WATER LINE PLACEMENT.
- 3. CONTRACTOR SHALL REPLACE CGMP UNDER DRIVEWAYS AS REQUIRED IN SAME OR BETTER CONDITION.
- 4. CONTRACTOR SHALL PROTECT MAIL BOXES, REPLACE OR REBUILD AS REQUIRED IN SAME OR BETTER CONDITION.
- 5. CONTRACTOR SHALL COORDINATE WITH CITY OF HARTSHORNE TO RELOCATE OR REMOVE AND REPLACE EXISTING SIGNS FOR WATER LINE PLACEMENT.
- 6. CONTRACTOR SHALL REMOVE AND DISPOSE OF TREES AS REQUIRED FOR WATER LINE PLACEMENT

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

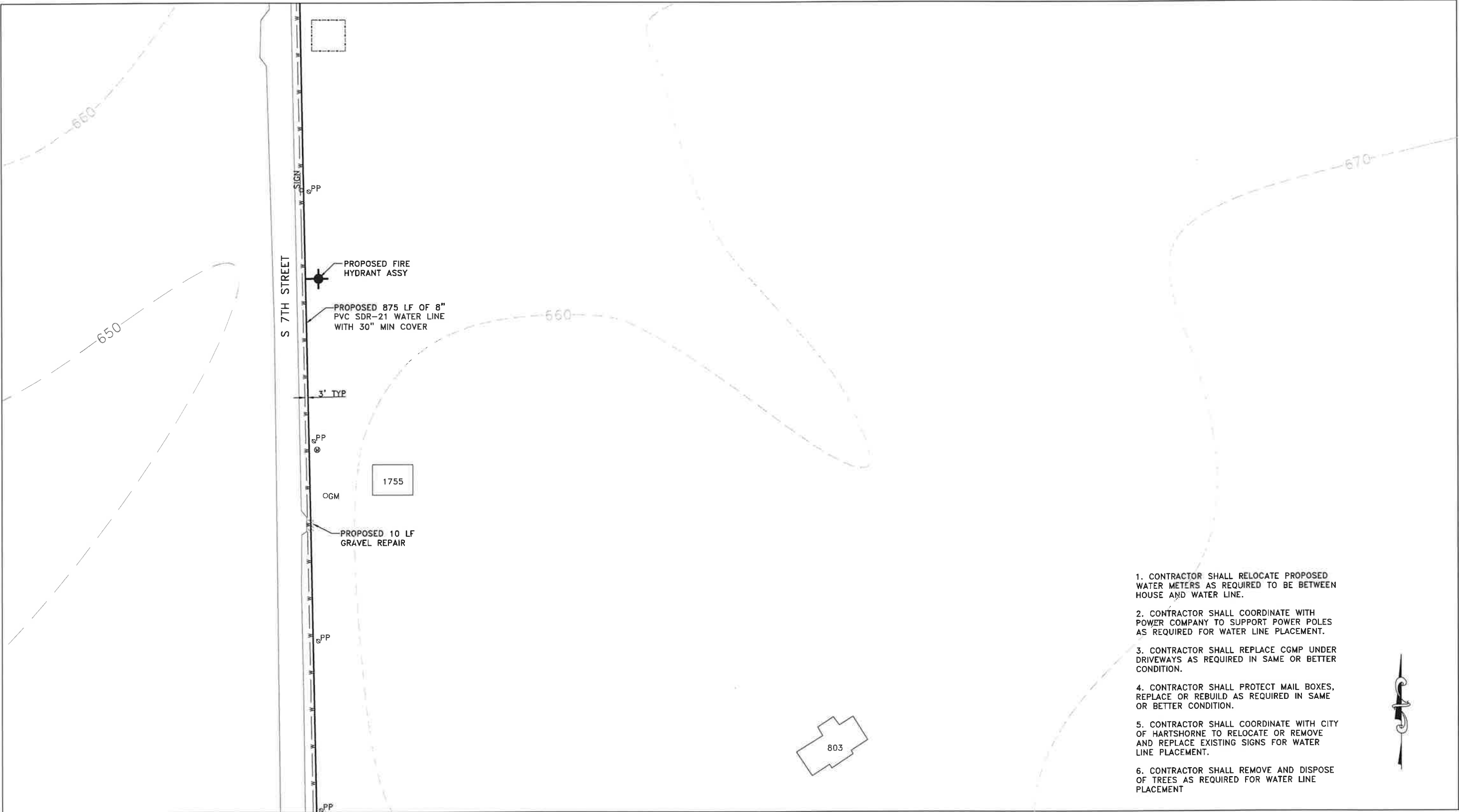
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Checked LDB
Drawn ST
Approved CJW



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job: HR-21-01
Scale: 1" = 100'
Sheet: 65 OF 89



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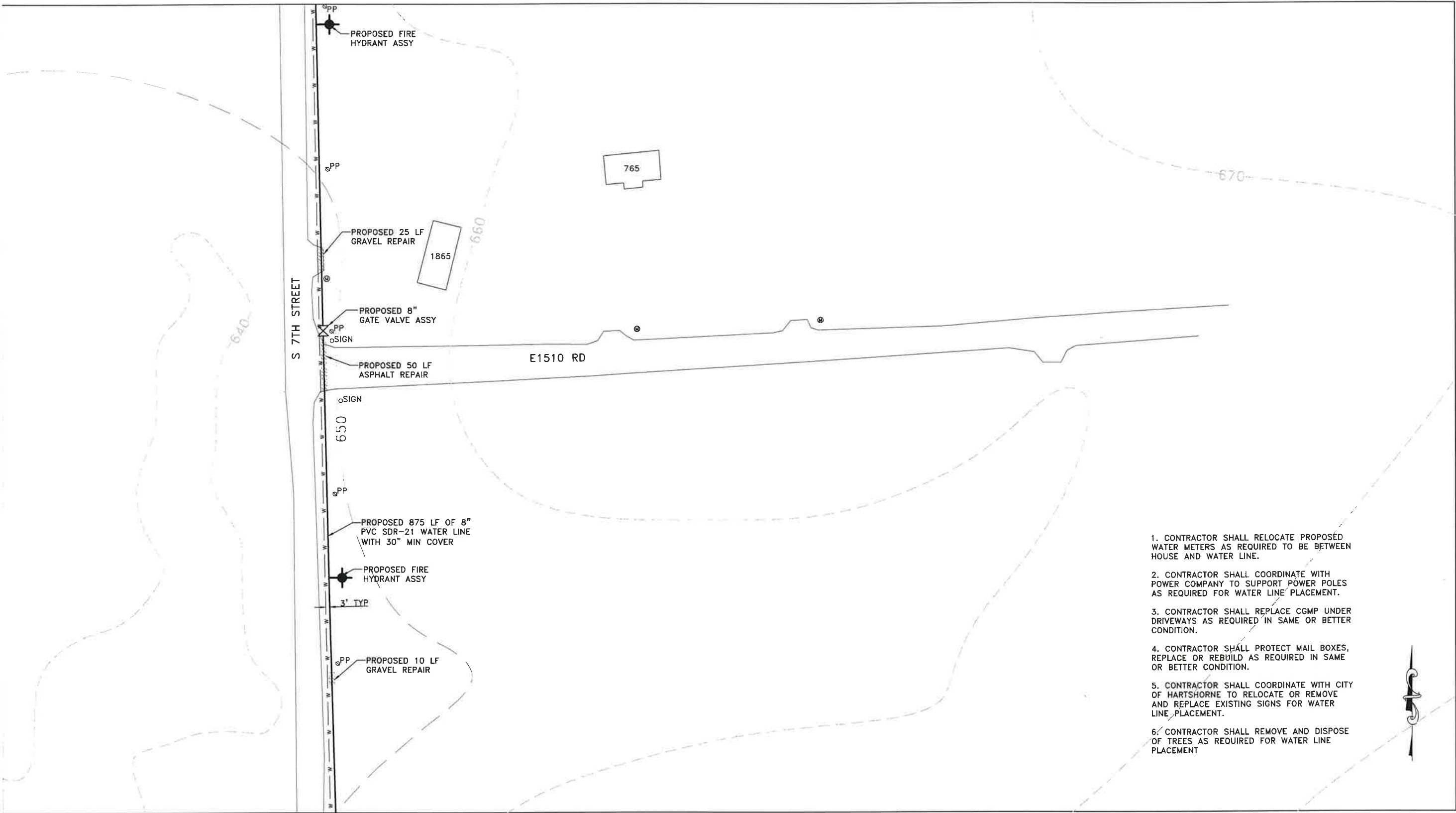
Designed CJW
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Drawn ST
Approved CJW



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job:
HR-21-01
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1" = 100'
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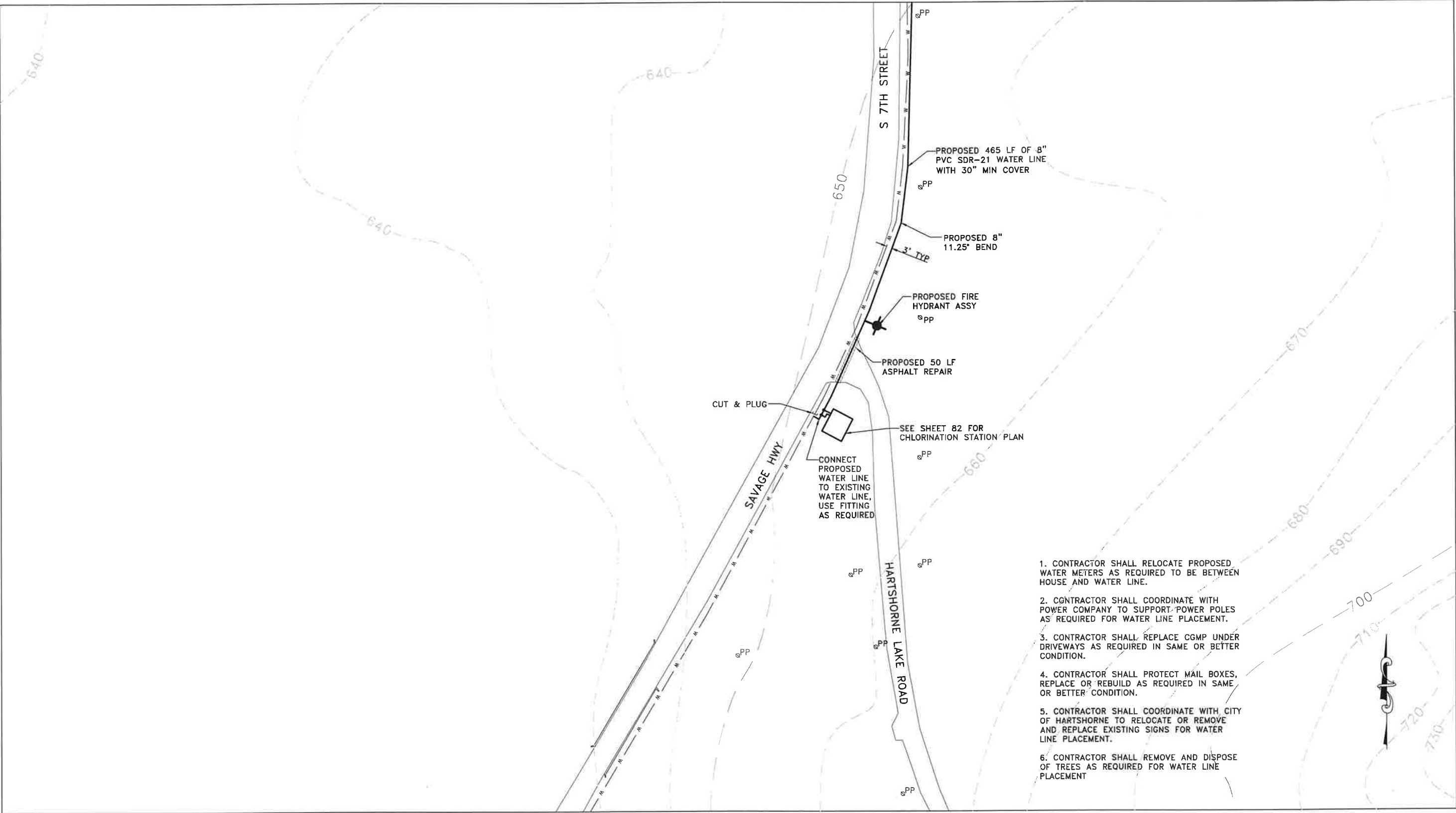
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Approved CJW



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job:
HR-21-01
Scale:
1" = 100'
Sheet:
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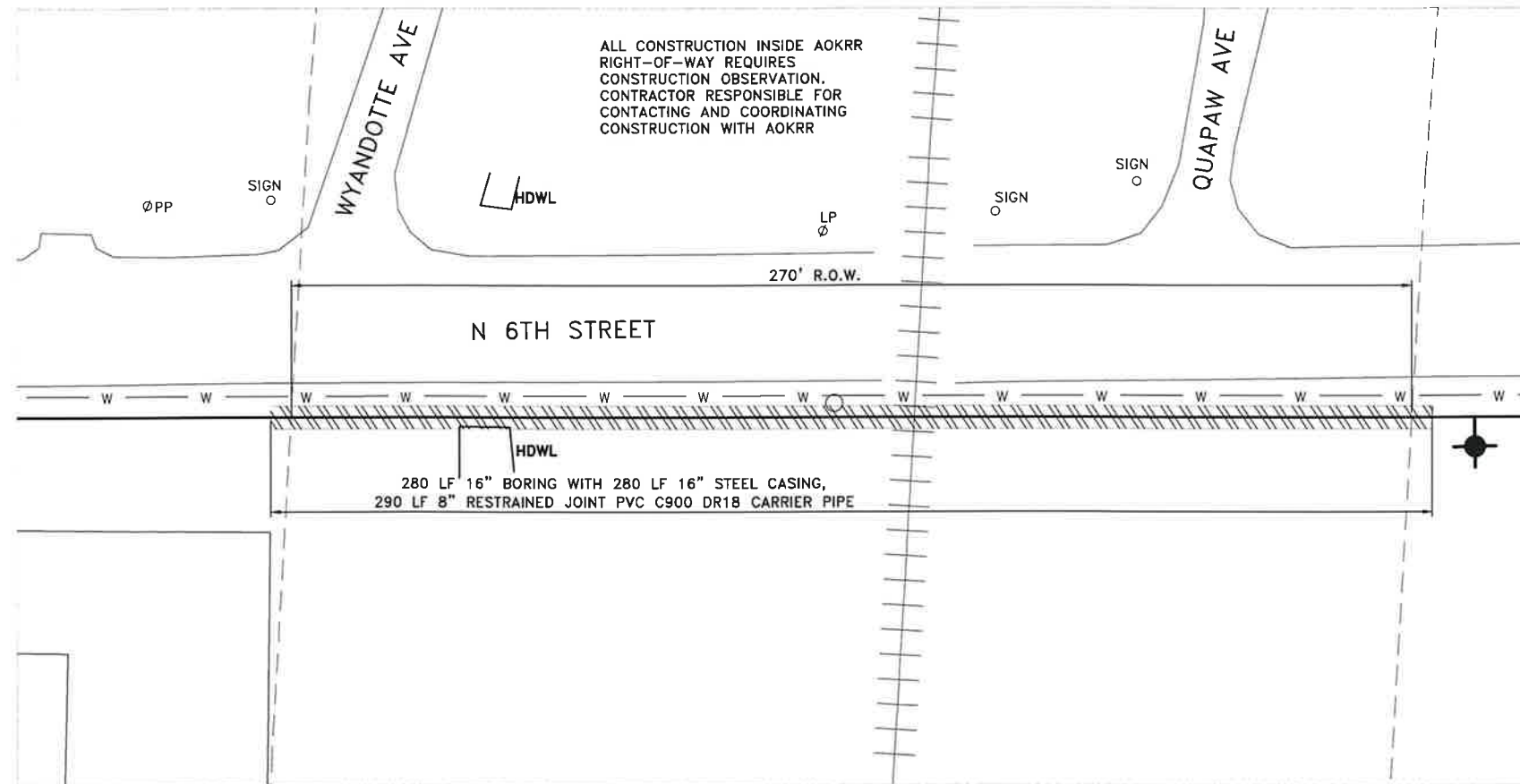
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Approved CJW



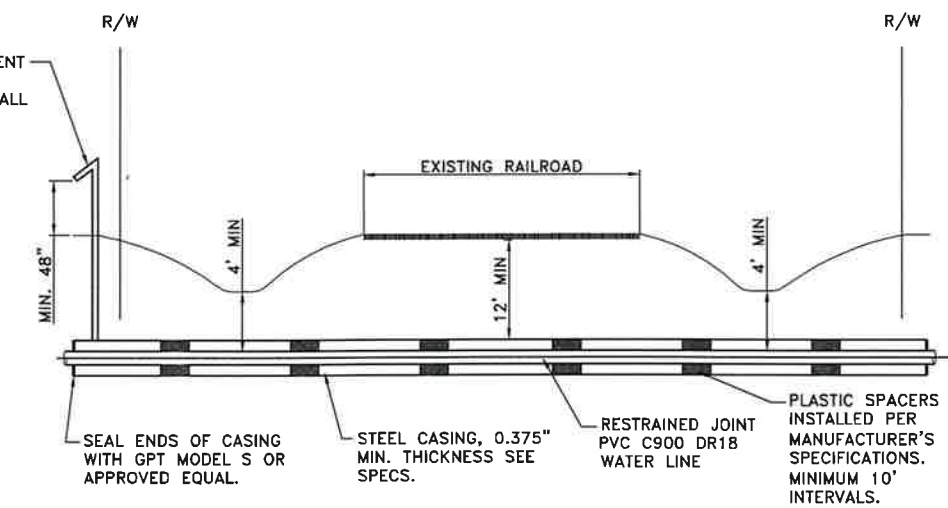
HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

WATER LINE PLAN

Job: HR-21-01
Scale: 1" = 100'
Sheet: 68 OF 89

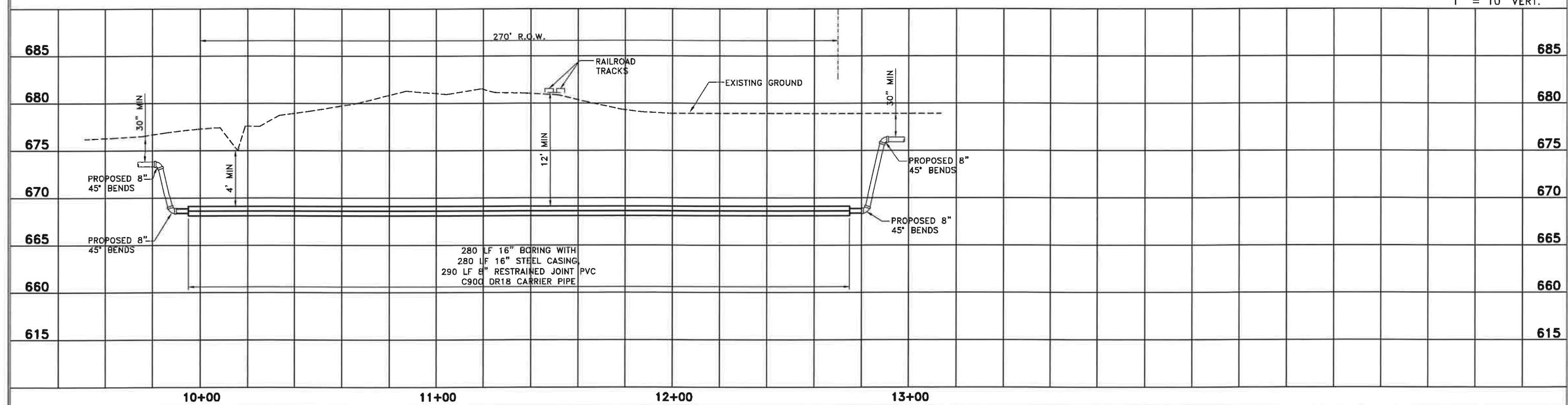


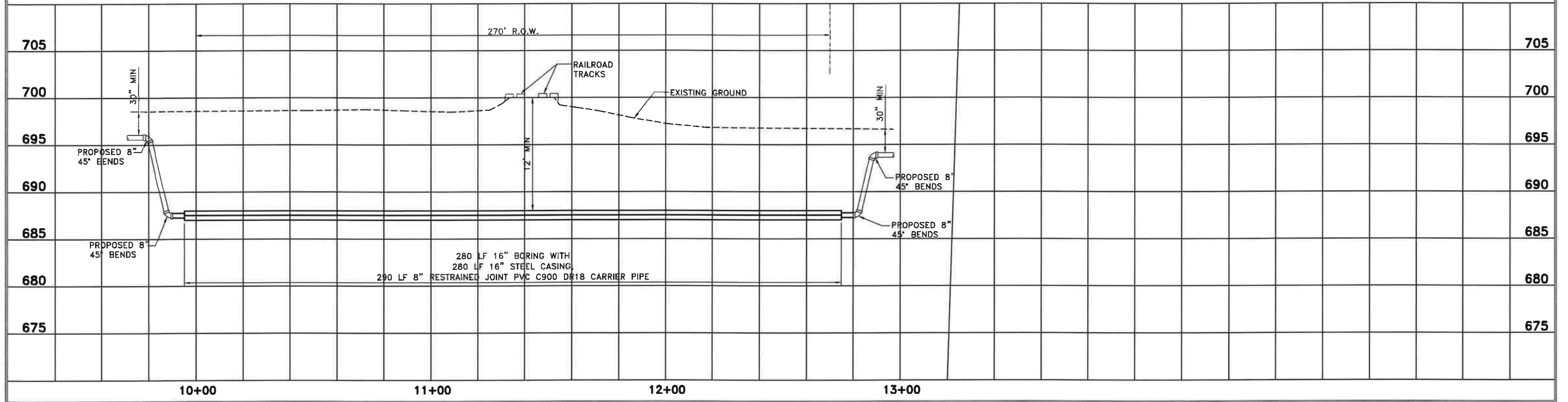
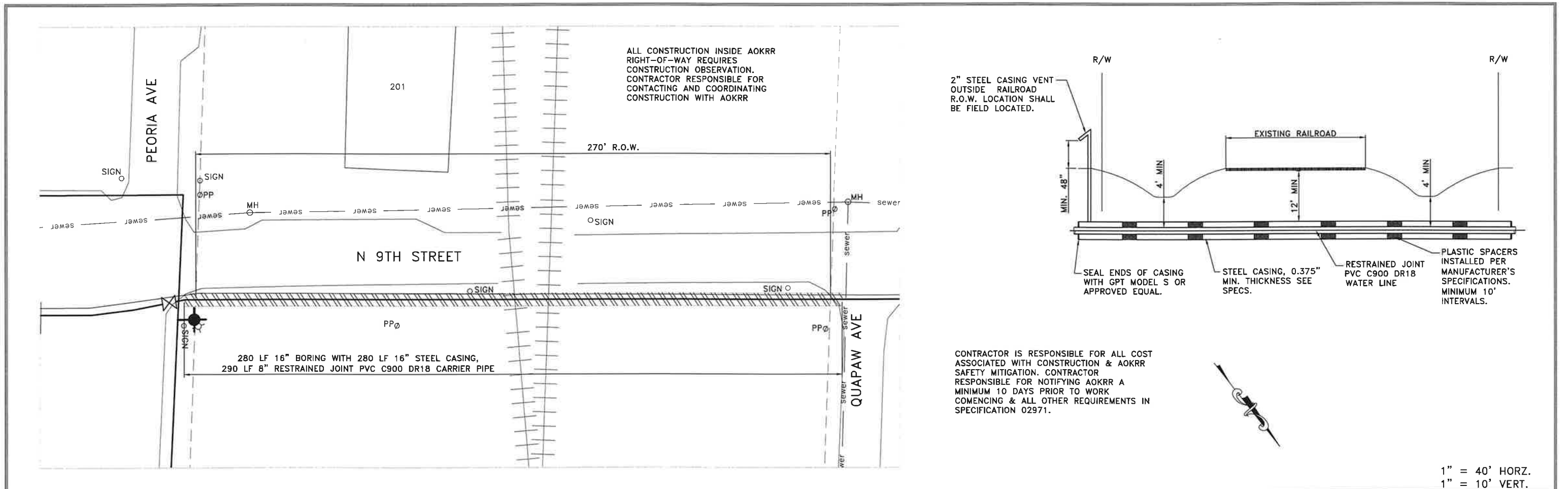
2" STEEL CASING VENT
OUTSIDE RAILROAD
R.O.W. LOCATION SHALL
BE FIELD LOCATED.

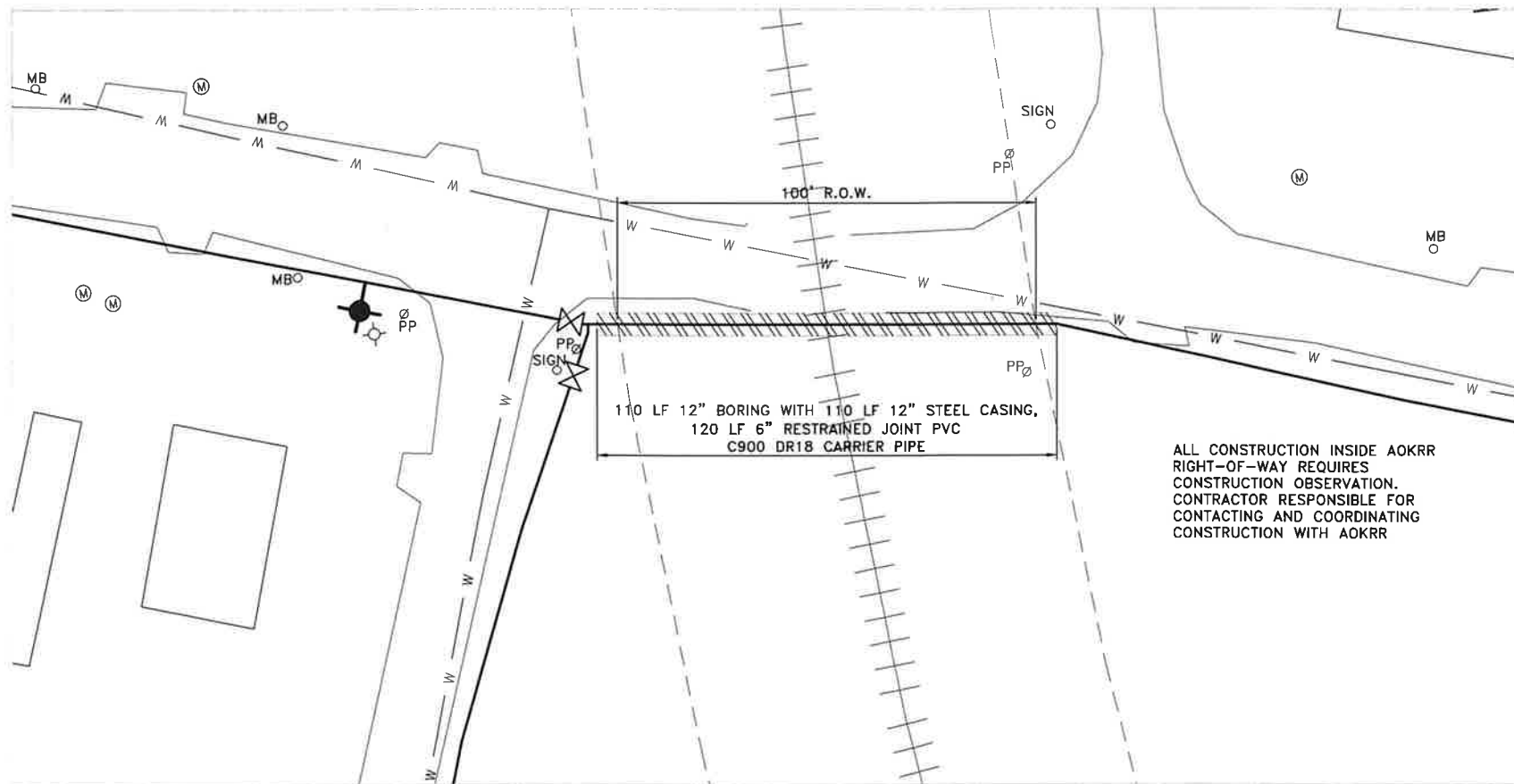


CONTRACTOR IS RESPONSIBLE FOR ALL COST
ASSOCIATED WITH CONSTRUCTION & AOKRR
SAFETY MITIGATION. CONTRACTOR
RESPONSIBLE FOR NOTIFYING AOKRR A
MINIMUM 10 DAYS PRIOR TO WORK
COMENCING & ALL OTHER REQUIREMENTS IN
SPECIFICATION 02971.

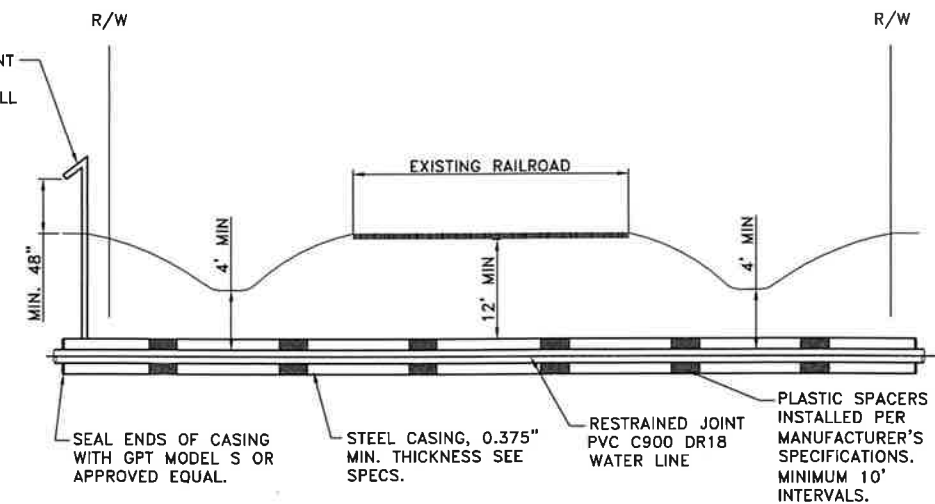
1" = 40' HORZ.
1" = 10' VERT.





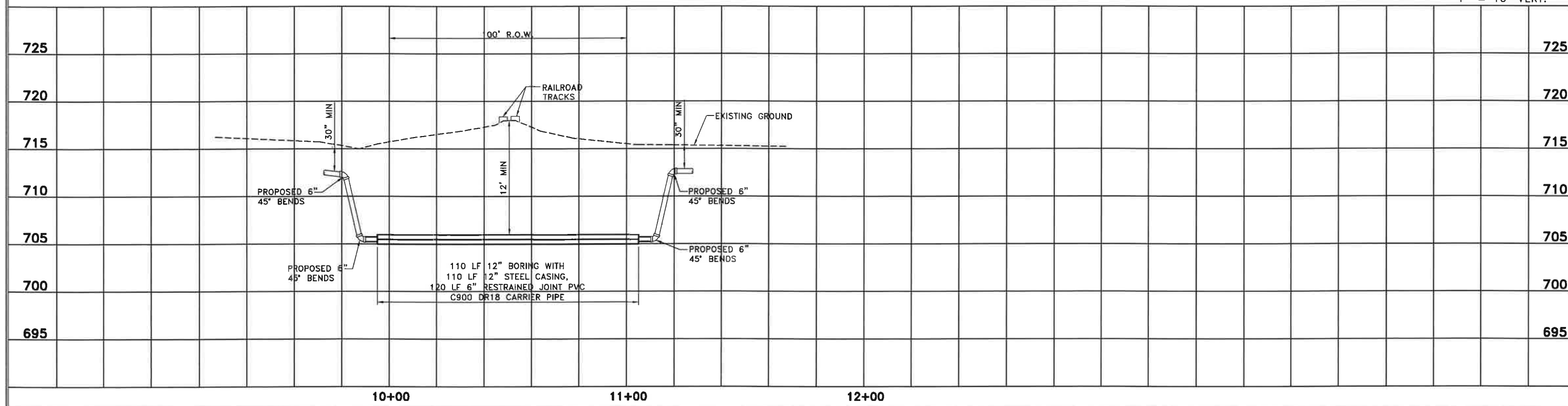


2" STEEL CASING VENT
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Date	Notes	By

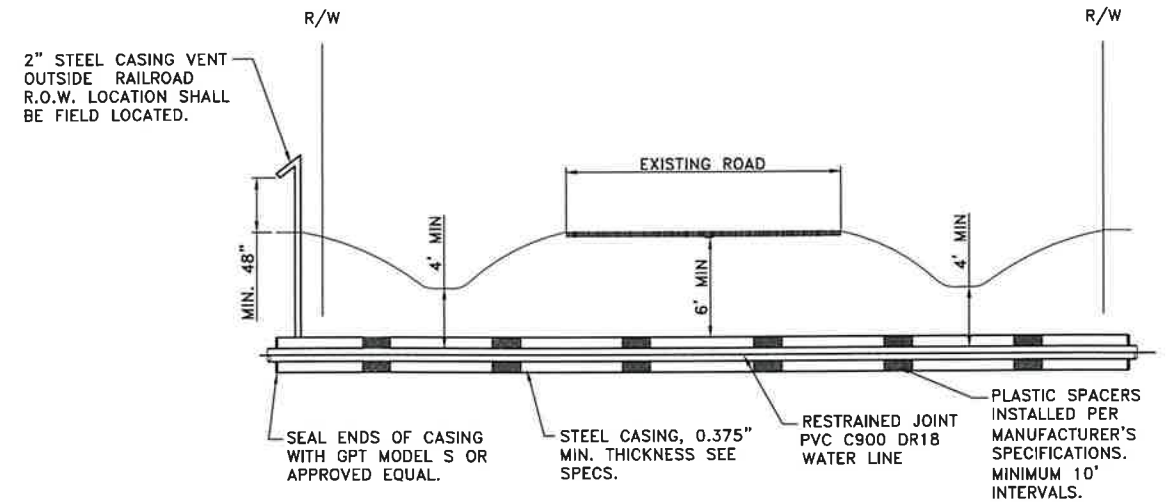
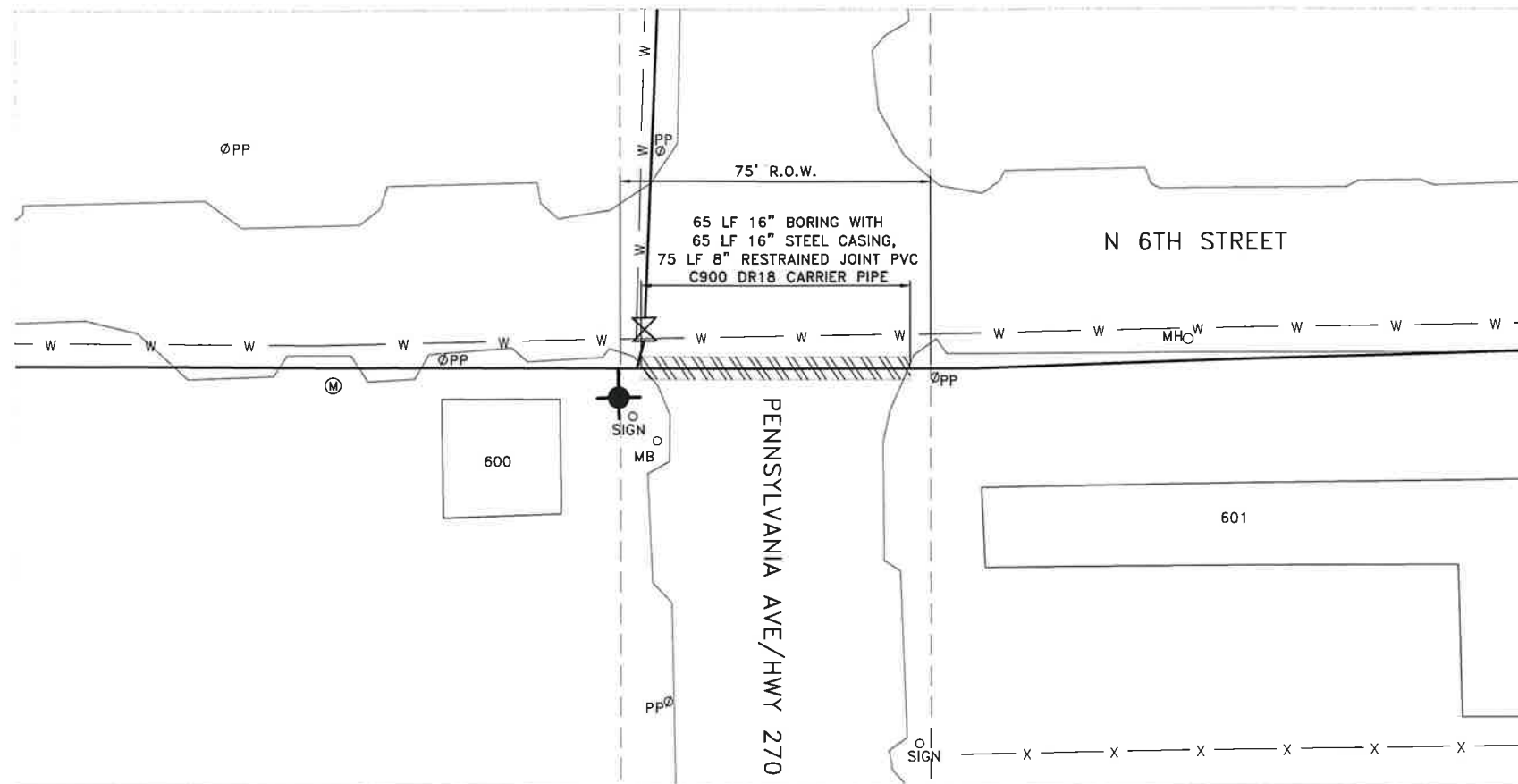
Designed **CJW**
Checked **LDB**
Drawn **ST**
Approved **CJW**



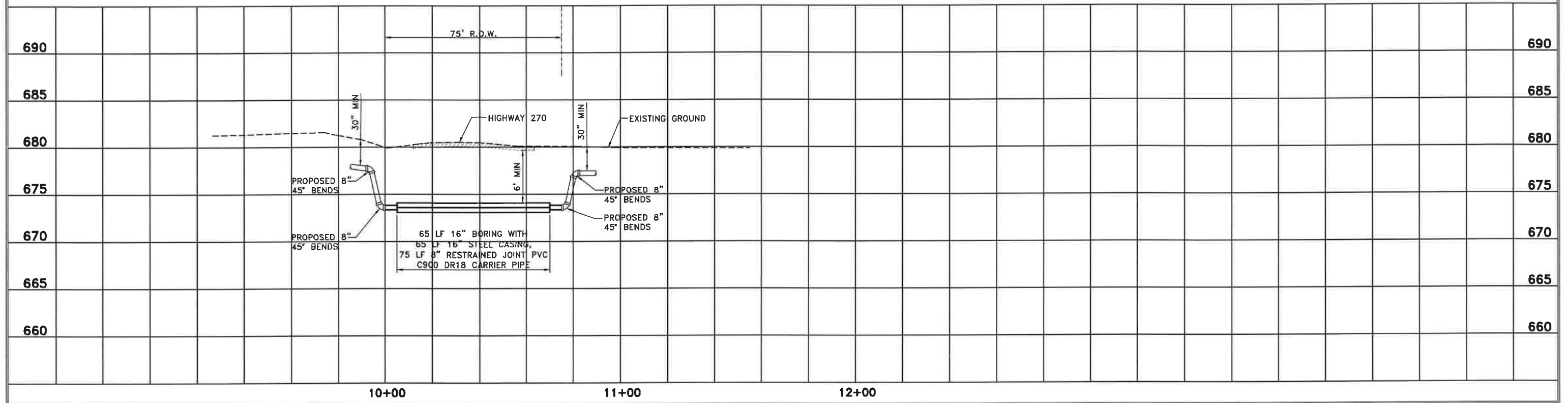
HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS


RAILROAD CROSSING DETAIL

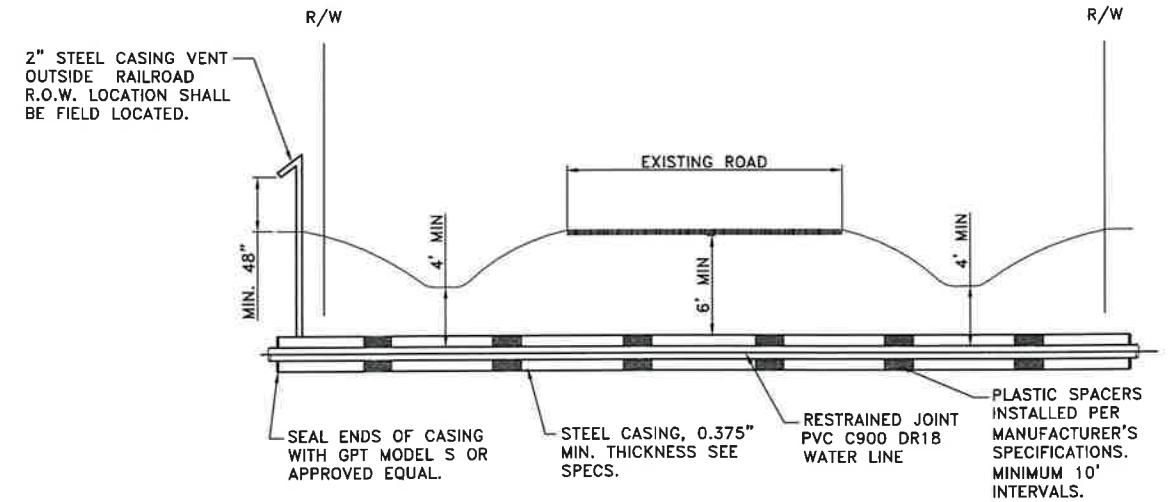
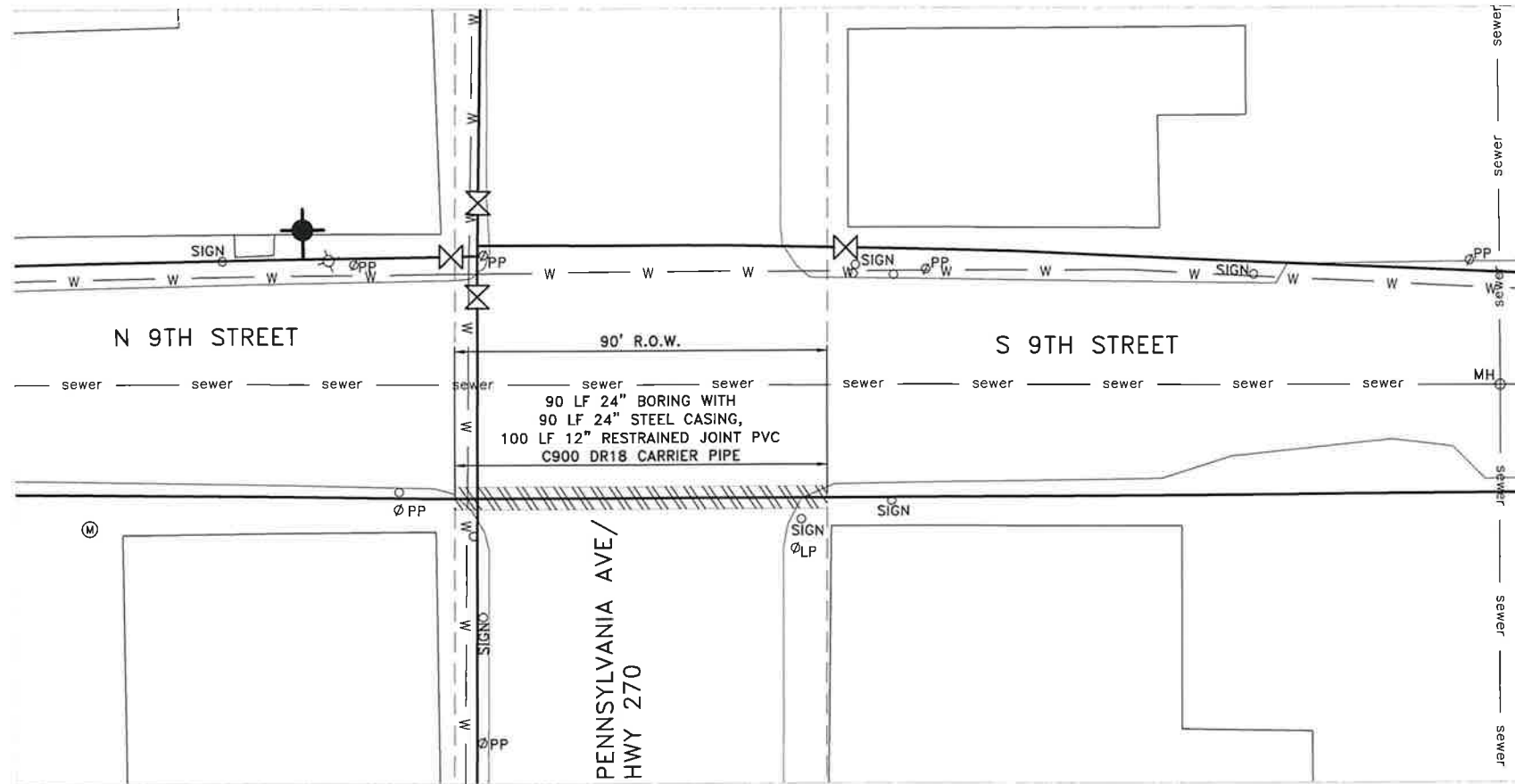
Job:
HR-21-01
Scale:
1" = 40'
Sheet:
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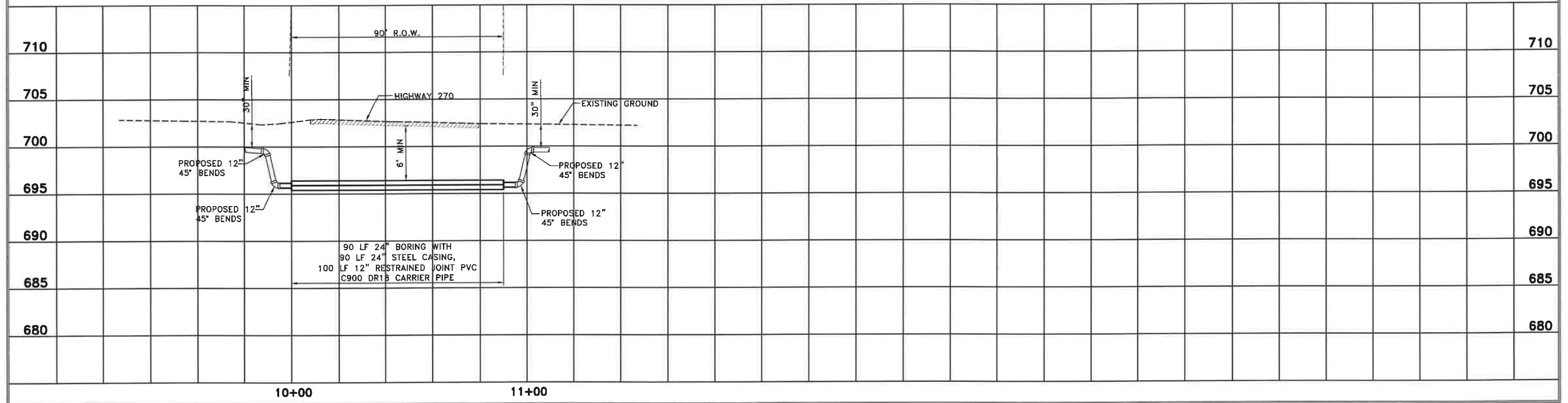
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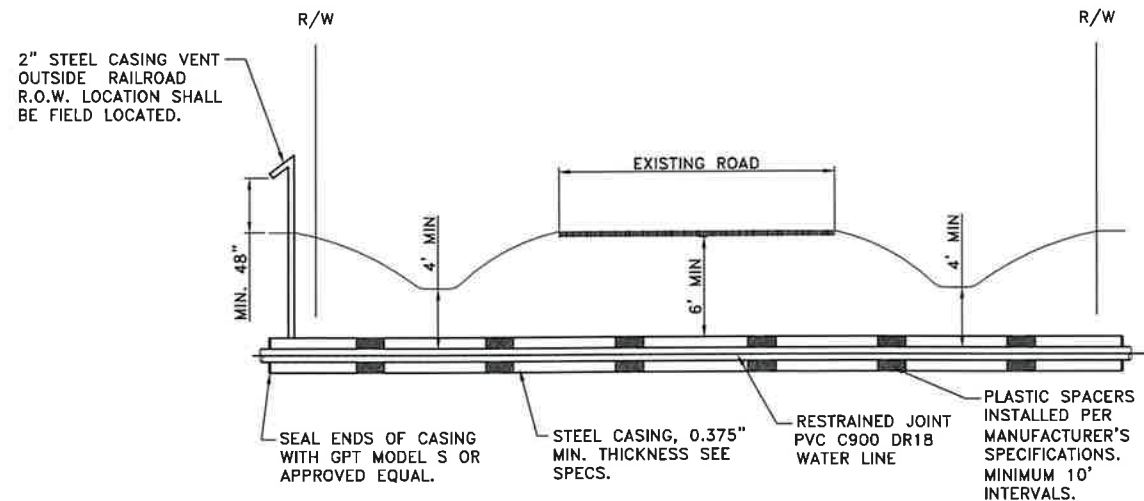
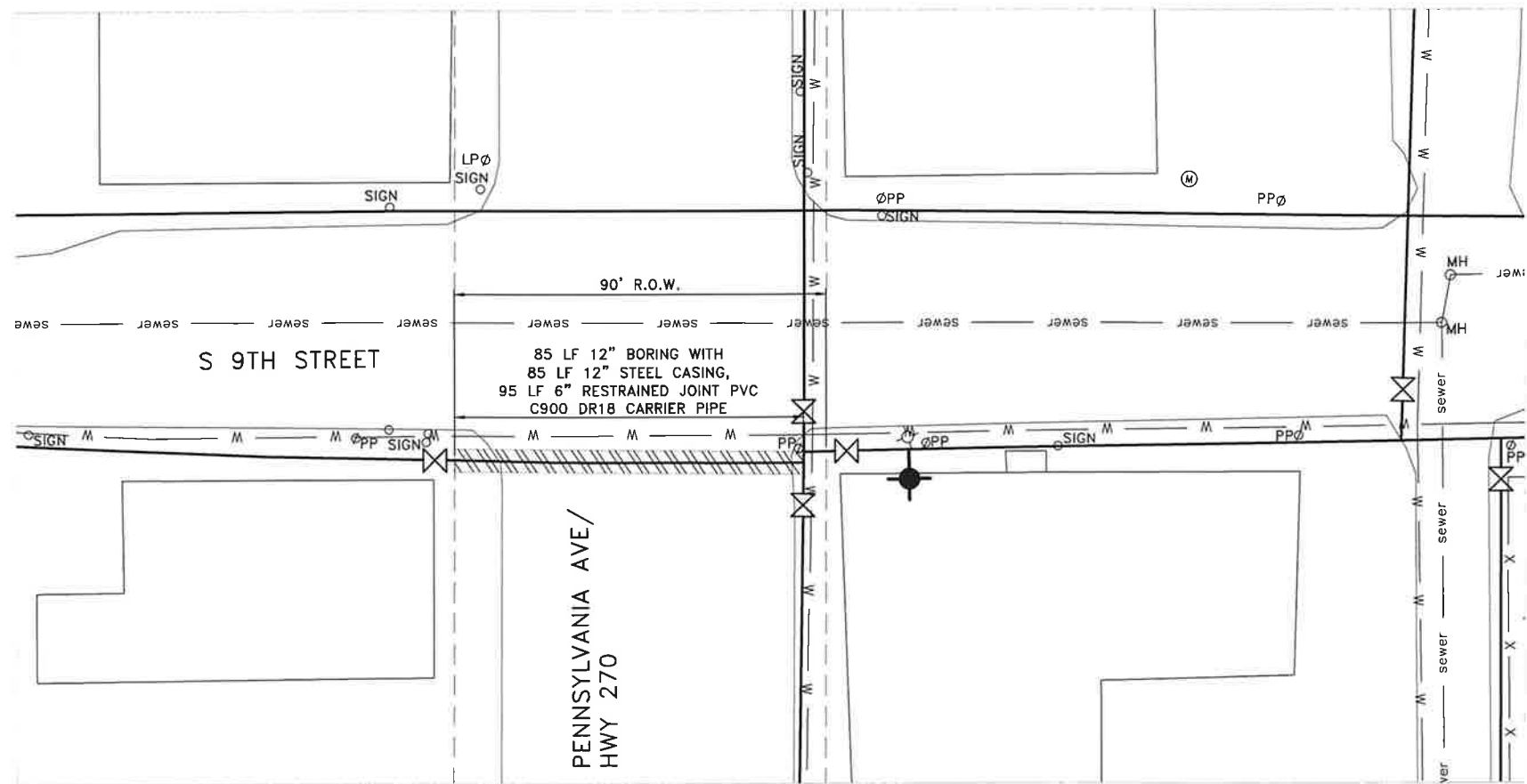
01/12/2024 07/01/2025	INITIAL SIGNED AND SEALED BIDDING & CONSTRUCTION	CJW CJW	Designed <u>CJW</u> Checked <u>LDB</u> Drawn <u>ST</u> Approved <u>CJW</u>	 INFRASTRUCTURE SOLUTIONS GROUP, LLC Consulting Engineers	HARTSHORNE PUBLIC WORKS AUTHORITY HARTSHORNE, OKLAHOMA WATER DISTRIBUTION IMPROVEMENTS	HIGHWAY CROSSING DETAIL	Job: HR-21-01 Scale: 1" = 40' Sheet: 73 OF 89
Date	Notes	By					



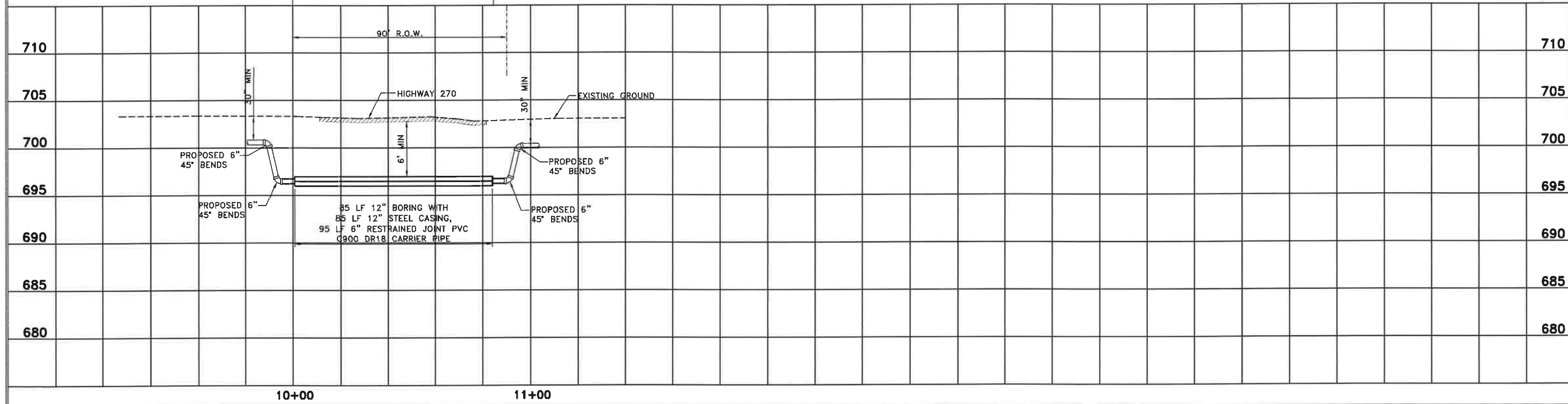
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01/12/2024 07/01/2025 Date	INITIAL SIGNED AND SEALED BIDDING & CONSTRUCTION Notes	C.J.W. C.J.W. By	Designed C.J.W. Checked LDB Drawn ST Approved C.J.W.	 INFRASTRUCTURE SOLUTIONS GROUP, LLC Consulting Engineers	HARTSHORNE PUBLIC WORKS AUTHORITY HARTSHORNE, OKLAHOMA WATER DISTRIBUTION IMPROVEMENTS	HIGHWAY CROSSING DETAIL	Job: HR-21-01 Scale: 1" = 40' Sheet: 74 OF 89
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1" = 40' HORZ.
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01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
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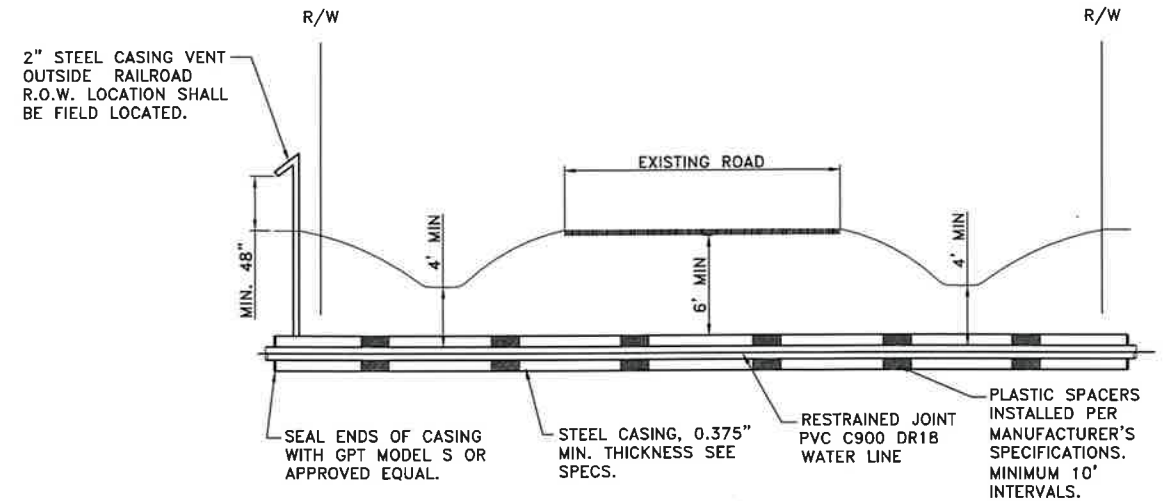
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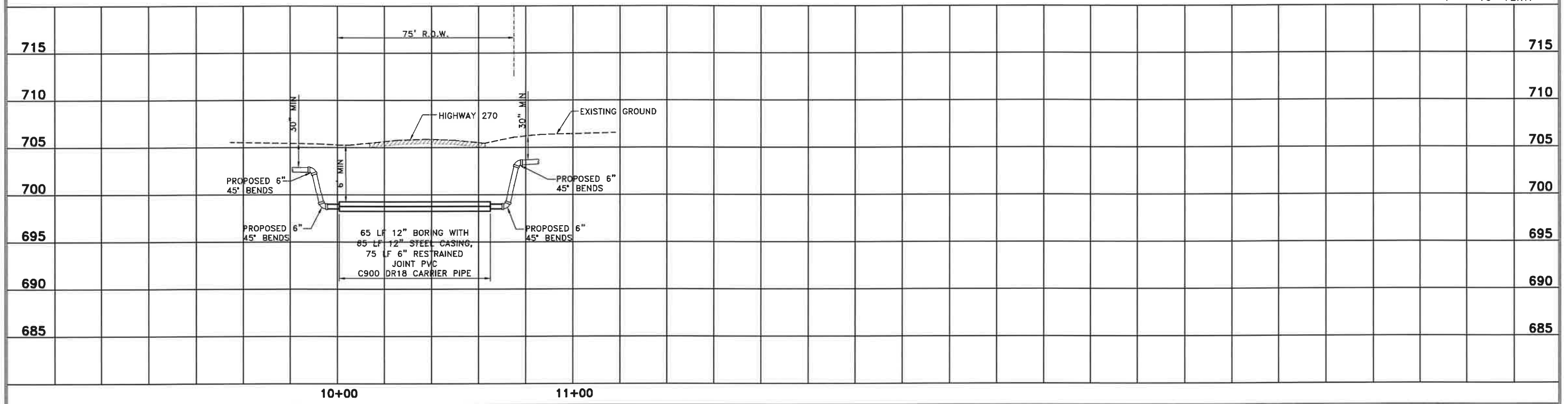
HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

HIGHWAY CROSSING DETAIL

Job:
HR-21-01
Scale:
1" = 40'
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1" = 40' HORZ.
1" = 10' VERT.



01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

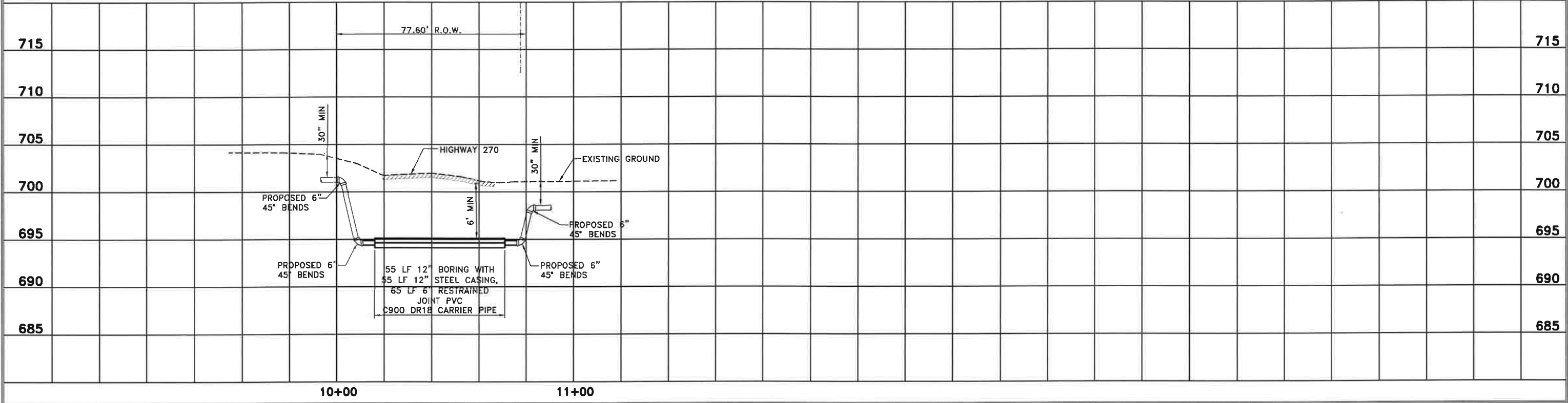
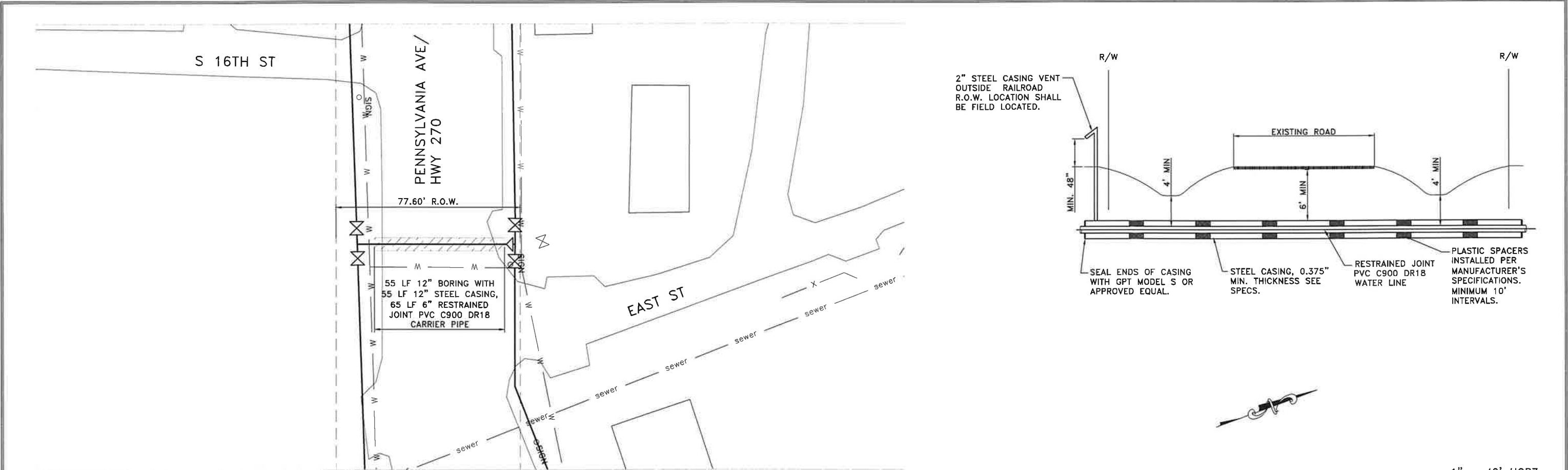
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Approved	CJW



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

HIGHWAY CROSSING DETAIL

Job:
HR-21-01
Scale:
1" = 40'
Sheet:
76 OF 89



01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

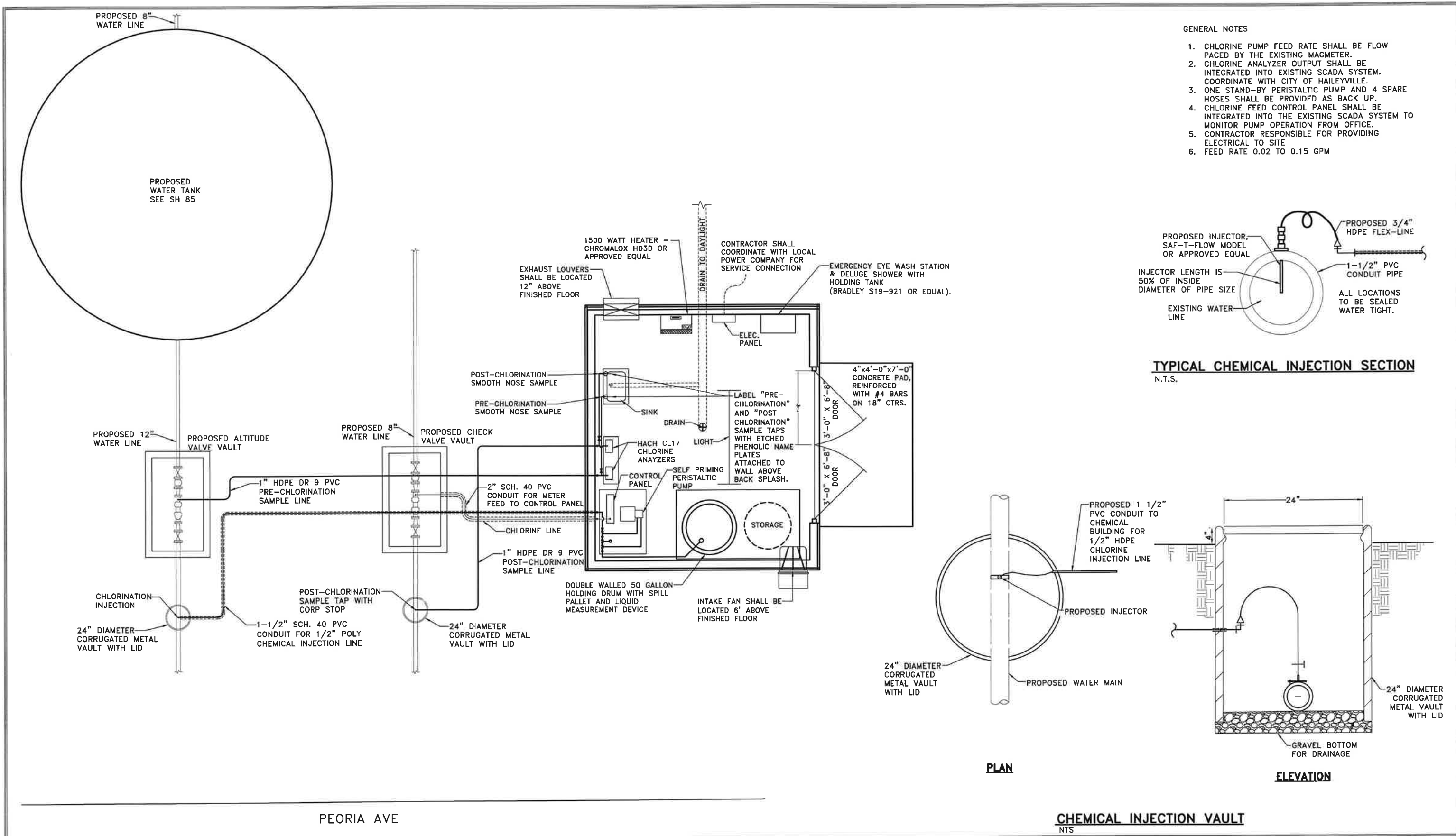
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Approved	CJW



HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

HIGHWAY CROSSING DETAIL

Job:	HR-21-01
Scale:	1" = 40'
Sheet:	77 OF 89



01/12/2024	INITIAL SIGNED AND SEALED	CJW
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Date	Notes	By

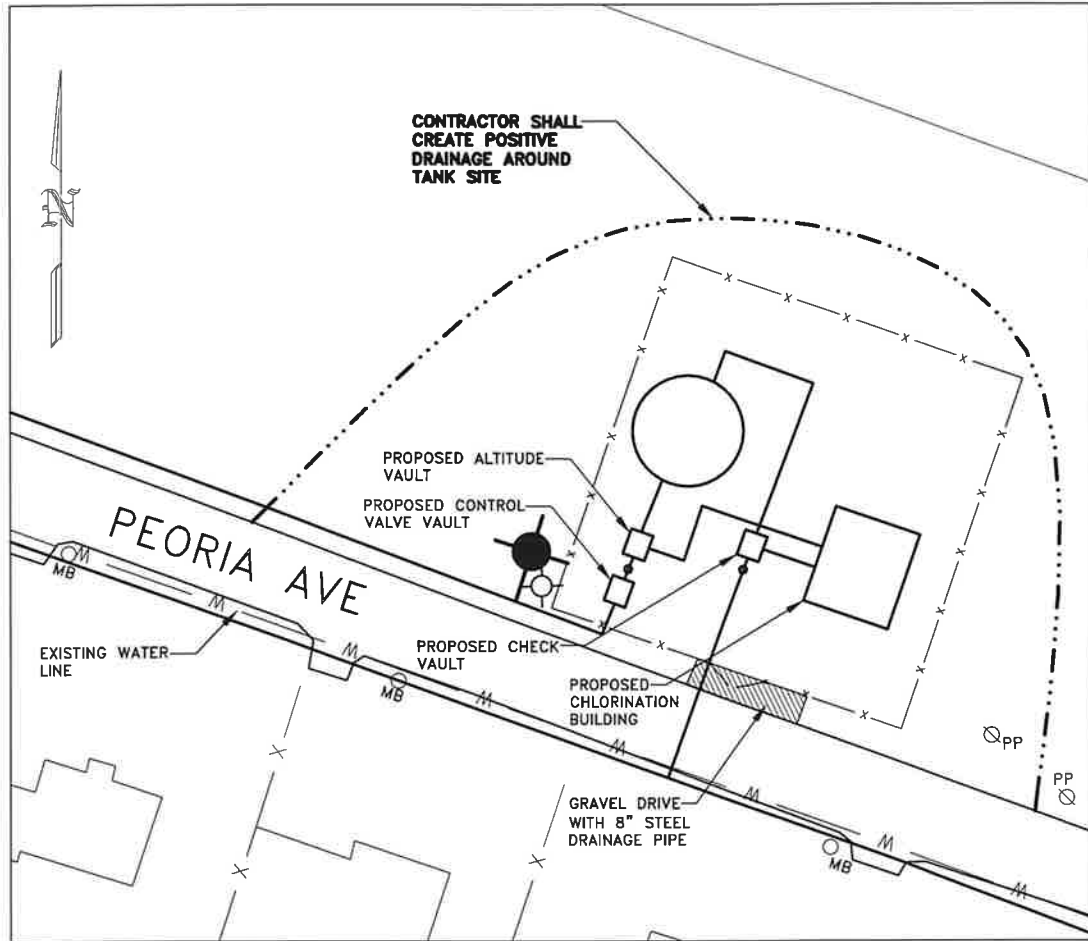
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HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

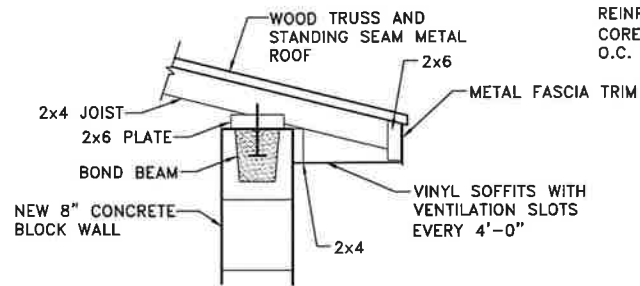
WATER TOWER
CHLORINATION STATION PLAN

Job:	HR-21-01
Scale:	1" = 100'
Sheet:	78 OF 89



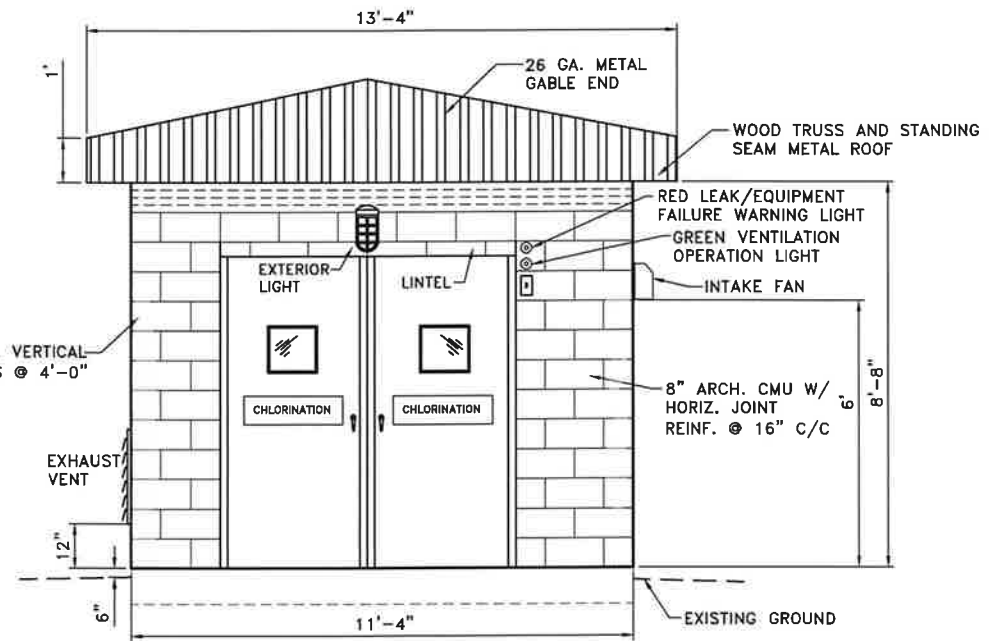
NOTES:

1. 6 TRUSSES REQUIRED, 1 ON EACH END AND AT 24" CENTERED
2. CEILING OF BUILDING SHALL BE 1/2" EXTERIOR GRADE PLYWOOD WITH 2"x1/4" BATTING STRIPS OVER ALL JOINTS. CEILING SHALL BE PAINTED A COLOR OF THE OWNERS CHOOSING.



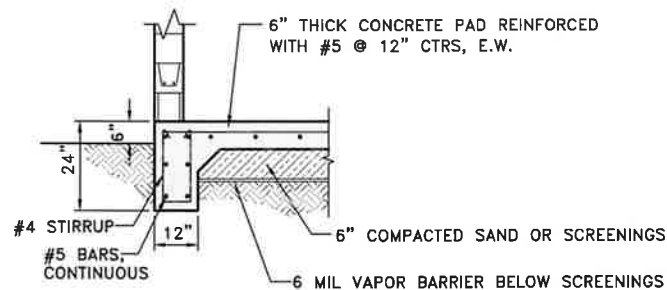
SOFFIT DETAIL

SCALE: NTS



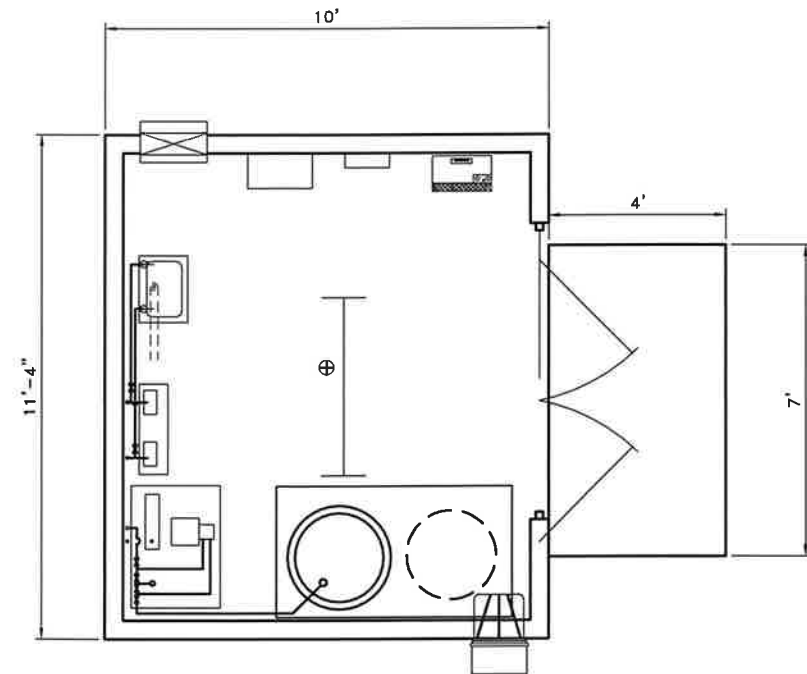
NOTES

1. INTERIOR OF BUILDING SHALL BE SEALED AND PAINTED WHITE.
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3. INTAKE FAN SHALL BE DESIGNED FOR CORROSIVE ENVIRONMENT AND SIZED TO PROVIDE MINIMUM ONE COMPLETE AIR CHANGE PER MINUTE (550 CFM). INTAKE FAN TO BE THERMOSTAT CONTROLLED AND MANUALLY ACTIVATED WITH EXTERNAL LIGHT SWITCH FOR OPERATOR SAFETY.
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5. PROVIDE GRAVITY-FED EMERGENCY EYE WASH STATION (BRADLEY S19-921 OR EQUAL).
6. FLOOR SHALL BE SLOPED @ 2.5% TO FLOOR DRAIN.
7. ALL VENTS SHALL BE ABOVE GRADE.
8. CONTRACTOR SHALL SUPPLY DRUM DOLLY
9. DOORS SHALL BE 3'x7' FRP WITH CORROSION RESISTANT HARDWARE
10. MOUNT EXTERIOR TOGGLE SWITCH FOR MANUAL CONTROL OF LIGHT FIXTURE AND INTAKE FAN INSIDE A PVC FS BOX HAVING A GASKETED, SPRING-LOADED PVC COVER.
11. INTERIOR CEILING SHALL BE 2x4 WOOD FRAME AND 1/2" PLYWOOD WITH 6" BATT INSULATION; PAINTED WHITE.



FOOTING DETAIL

NTS



01/12/2024	INITIAL SIGNED AND SEALED	CJW
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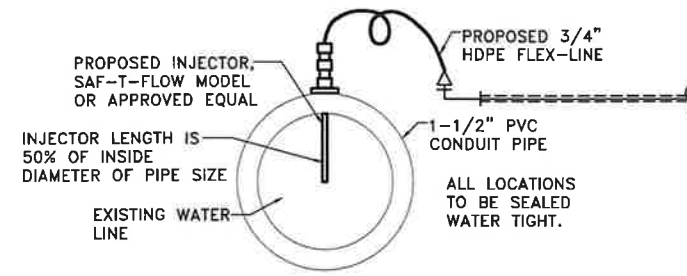
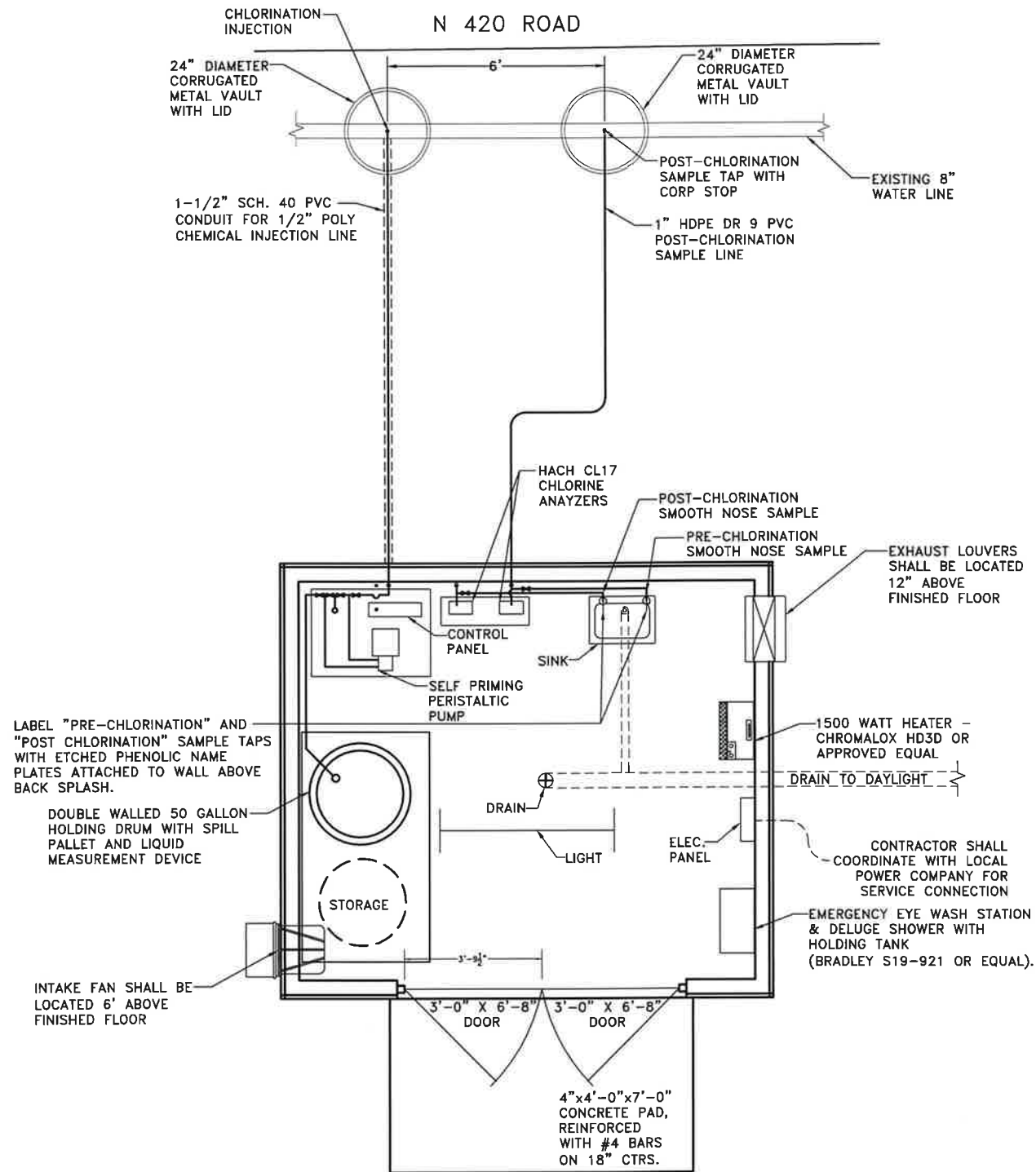
Designed CJW
 Checked LDB
 Drawn ST
 Approved CJW



HARTSHORNE PUBLIC WORKS AUTHORITY
 HARTSHORNE, OKLAHOMA
 WATER DISTRIBUTION IMPROVEMENTS

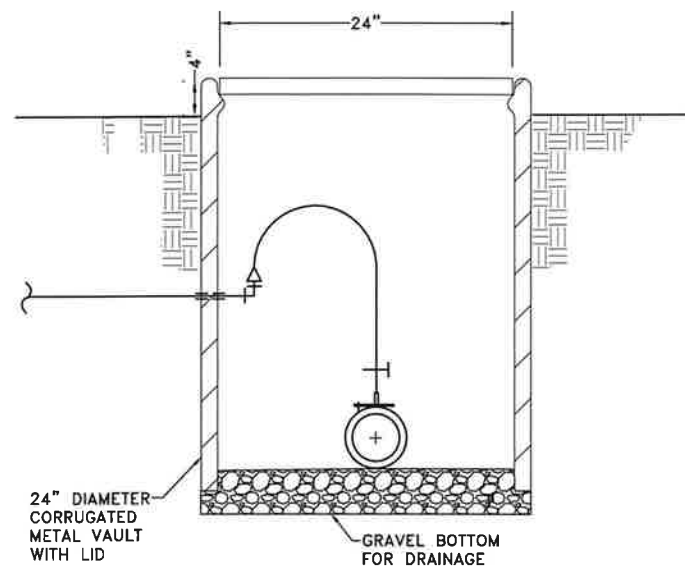
WATER TOWER
 CHLORINATION BUILDING PLAN

Job: HR-21-01
 Scale: 1" = 50'
 Sheet: 79 OF 89

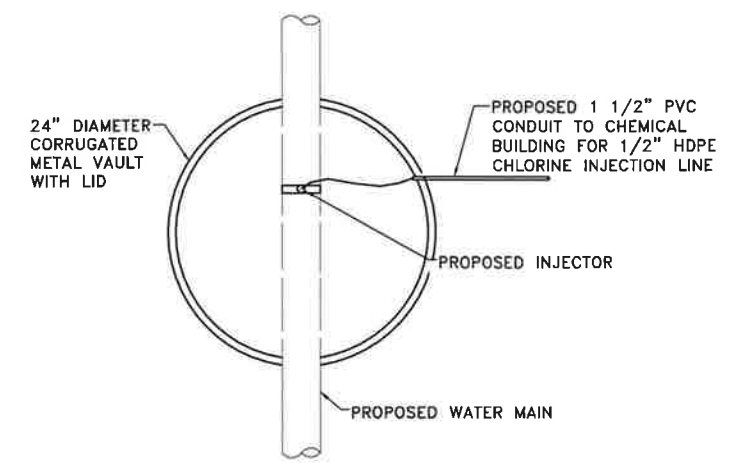


TYPICAL CHEMICAL INJECTION SECTION
N.T.S.

- GENERAL NOTES**
1. CHLORINE PUMP FEED RATE SHALL BE FLOW PAGED BY THE EXISTING MAGMETER.
 2. CHLORINE ANALYZER OUTPUT SHALL BE INTEGRATED INTO EXISTING SCADA SYSTEM. COORDINATE WITH CITY OF HAILEYVILLE.
 3. ONE STAND-BY PERISTALTIC PUMP AND 4 SPARE HOSES SHALL BE PROVIDED AS BACK UP.
 4. CHLORINE FEED CONTROL PANEL SHALL BE INTEGRATED INTO THE EXISTING SCADA SYSTEM TO MONITOR PUMP OPERATION FROM OFFICE.
 5. CONTRACTOR RESPONSIBLE FOR PROVIDING ELECTRICAL TO SITE
 6. FEED RATE 0.02 TO 0.15 GPM



ELEVATION



PLAN

CHEMICAL INJECTION VAULT
NTS



01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

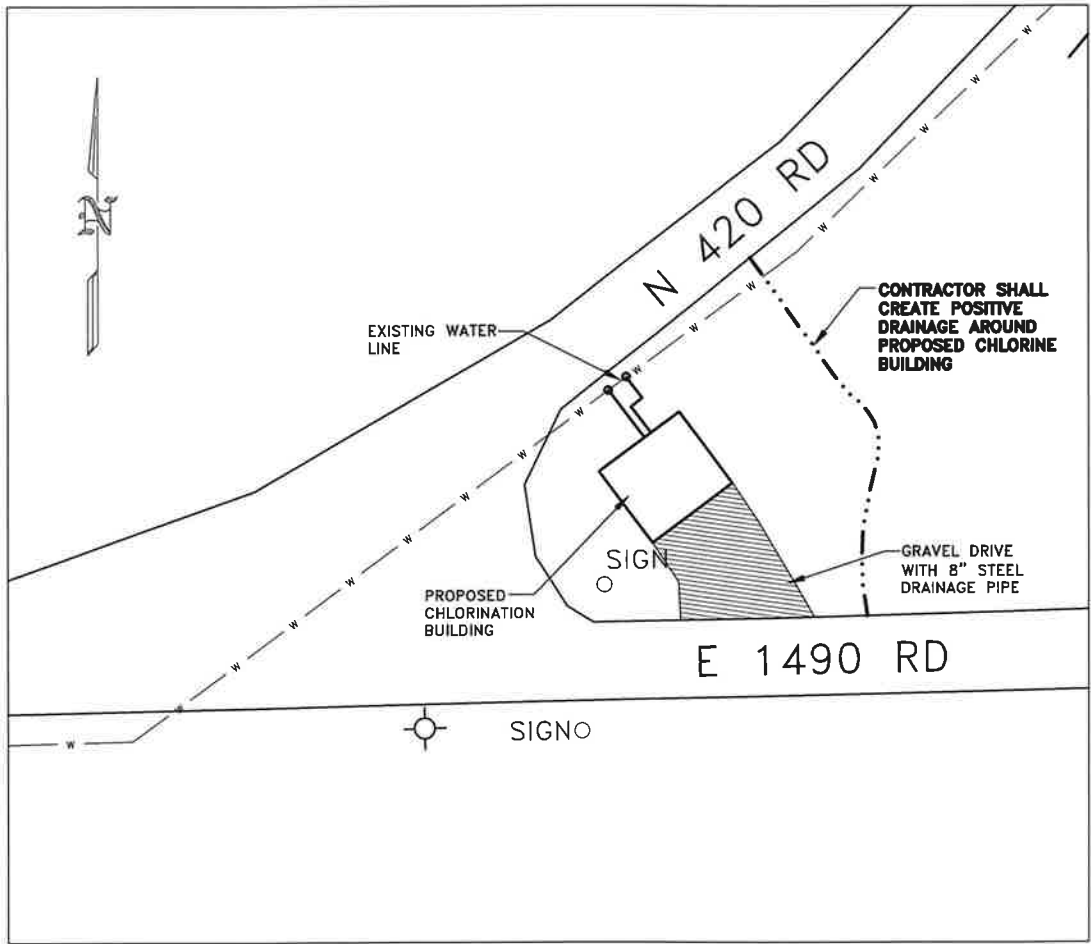
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HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

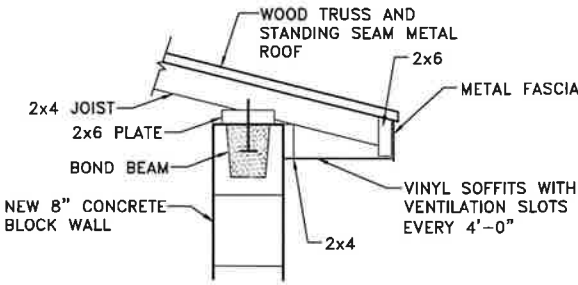
NORTH
CHLORINATION STATION PLAN

Job:	HR-21-01
Scale:	1" = 50'
Sheet:	80 OF 89

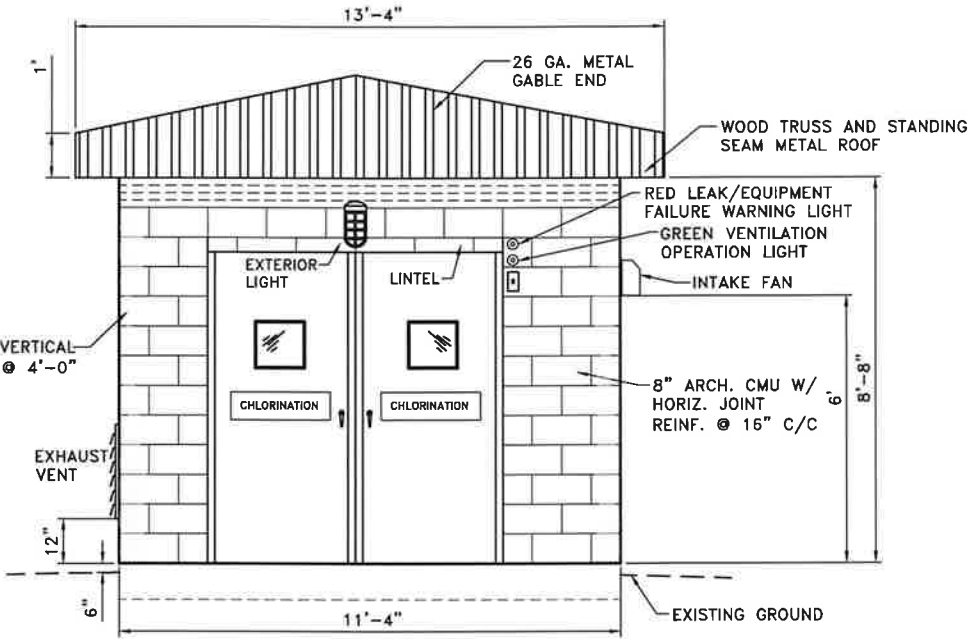


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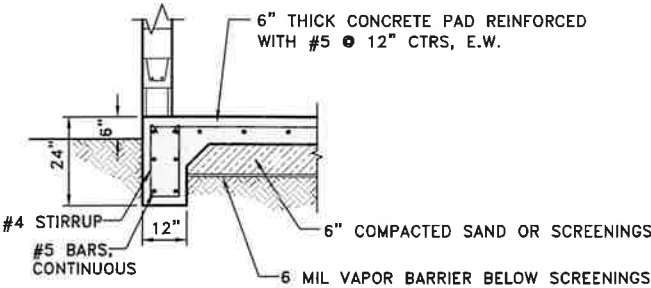


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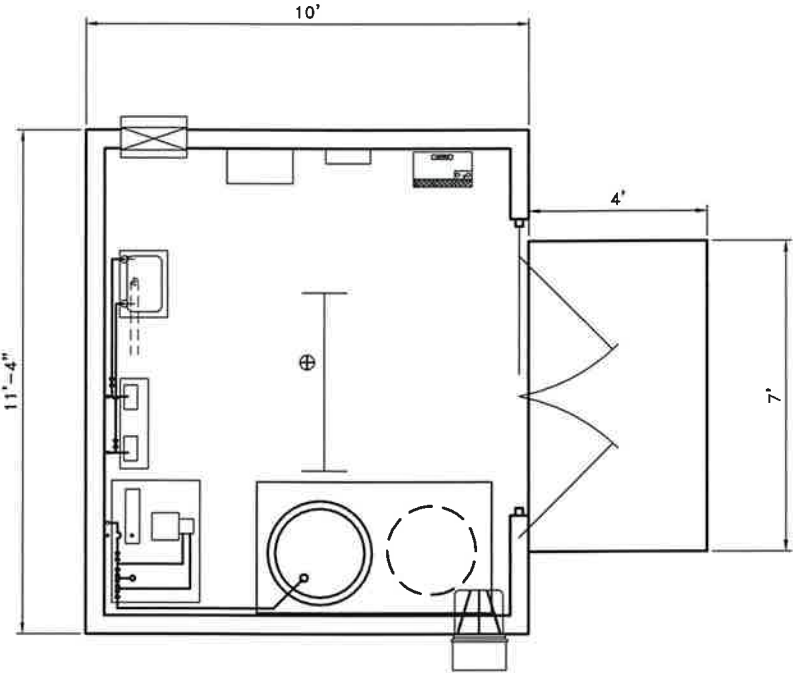


NOTES

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FOOTING DETAIL
NTS



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Drawn ST
Approved CJW

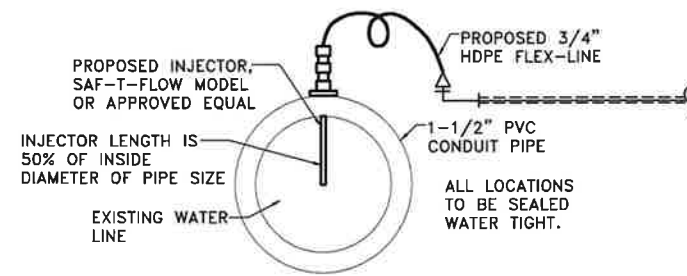
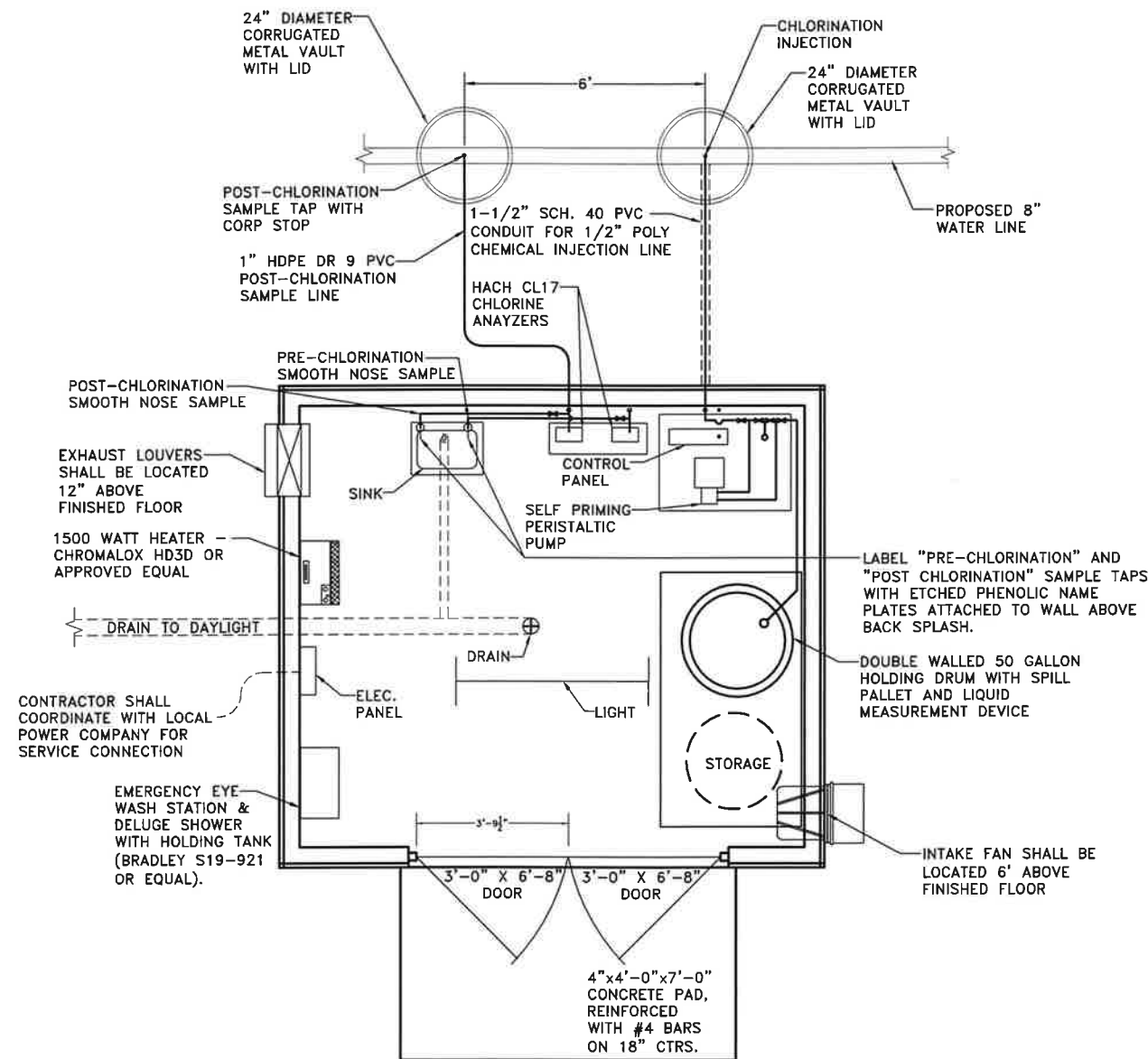


HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

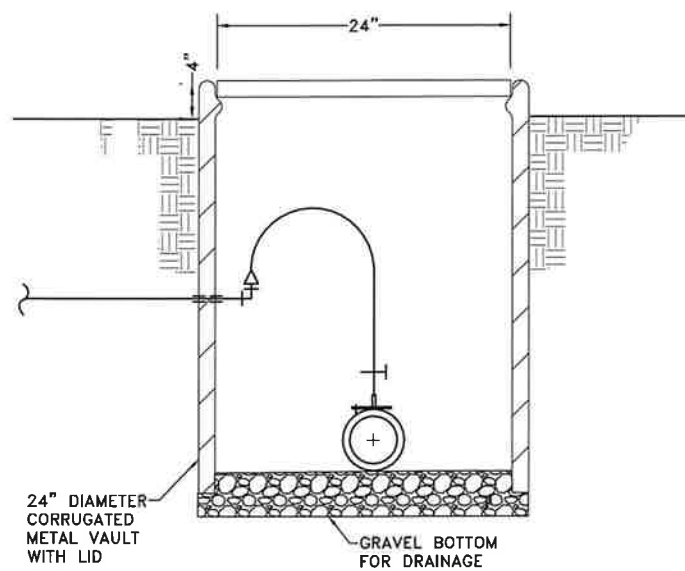
NORTH
CHLORINATION BUILDING PLAN

Job: HR-21-01
Scale: 1" = 50'
Sheet: 81 OF 89

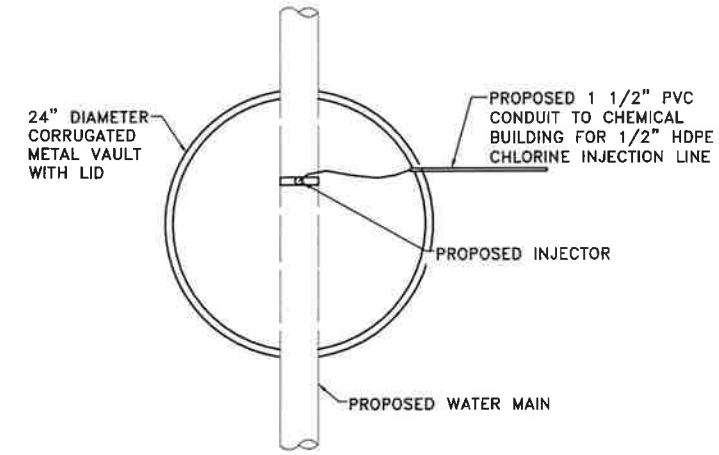
SAVAGE
HIGHWAY



TYPICAL CHEMICAL INJECTION SECTION
N.T.S.



ELEVATION



PLAN

CHEMICAL INJECTION VAULT
NTS

GENERAL NOTES

1. CHLORINE PUMP FEED RATE SHALL BE FLOW PAGED BY THE EXISTING MAGMETER.
2. CHLORINE ANALYZER OUTPUT SHALL BE INTEGRATED INTO EXISTING SCADA SYSTEM. COORDINATE WITH CITY OF HAILEYVILLE.
3. ONE STAND-BY PERISTALTIC PUMP AND 4 SPARE HOSES SHALL BE PROVIDED AS BACK UP.
4. CHLORINE FEED CONTROL PANEL SHALL BE INTEGRATED INTO THE EXISTING SCADA SYSTEM TO MONITOR PUMP OPERATION FROM OFFICE.
5. CONTRACTOR RESPONSIBLE FOR PROVIDING ELECTRICAL TO SITE
6. FEED RATE 0.02 TO 0.15 GPM

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

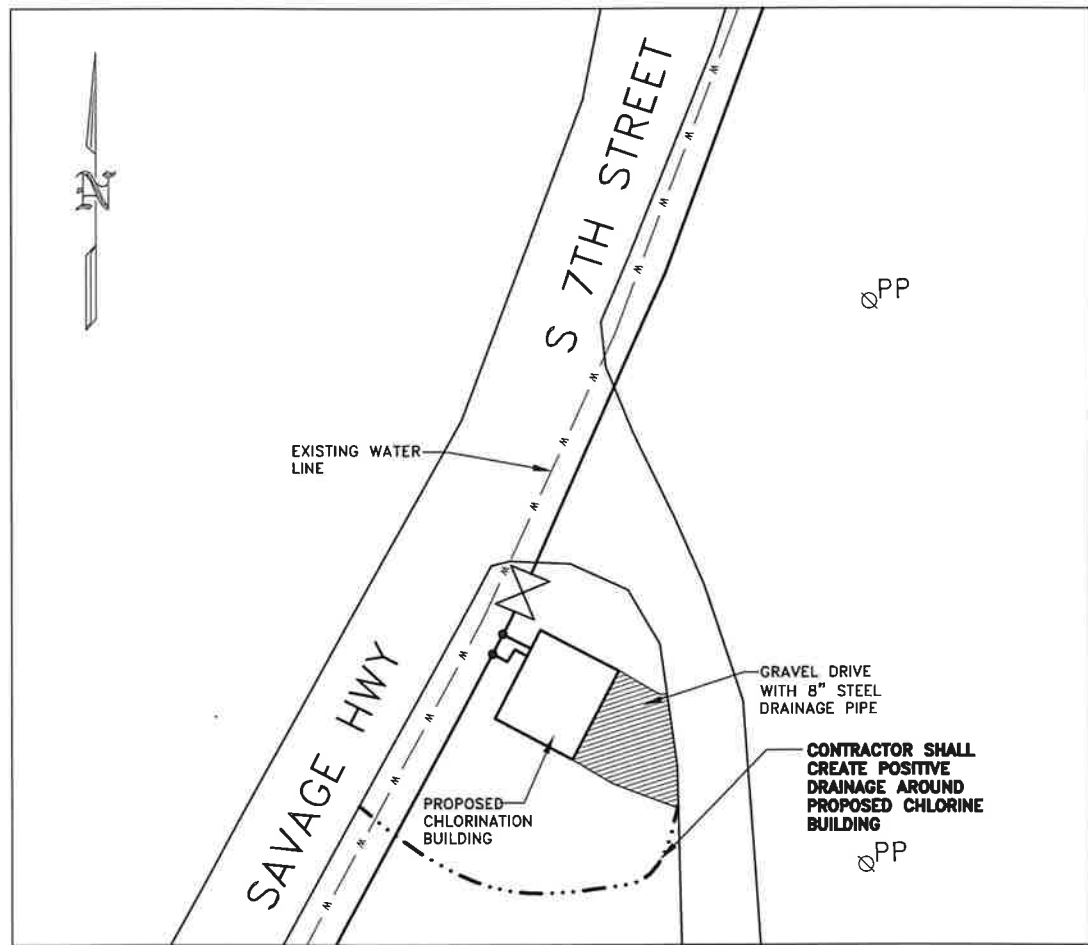
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Drawn	ST
Approved	CJW



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HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

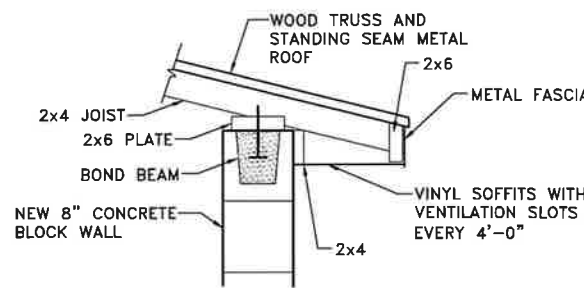
LAKE
CHLORINATION STATION PLAN

Job:	HR-21-01
Scale:	1" = 50'
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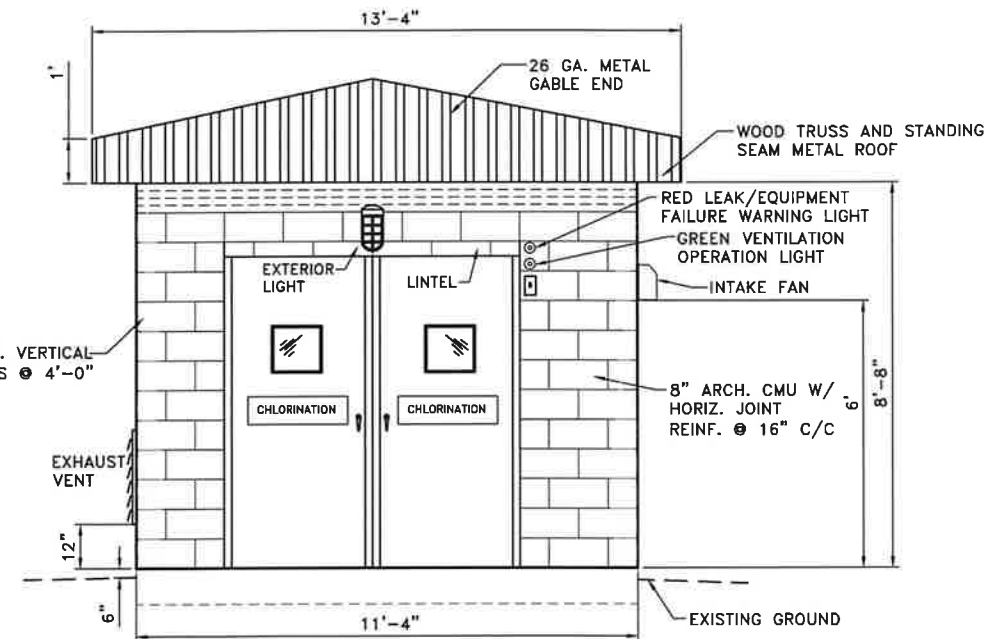


NOTES:

1. 6 TRUSSES REQUIRED, 1 ON EACH END AND AT 24" CENTERED
2. CEILING OF BUILDING SHALL BE 1/2" EXTERIOR GRADE PLYWOOD WITH 2"x1/4" BATTING STRIPS OVER ALL JOINTS. CEILING SHALL BE PAINTED A COLOR OF THE OWNERS CHOOSING.

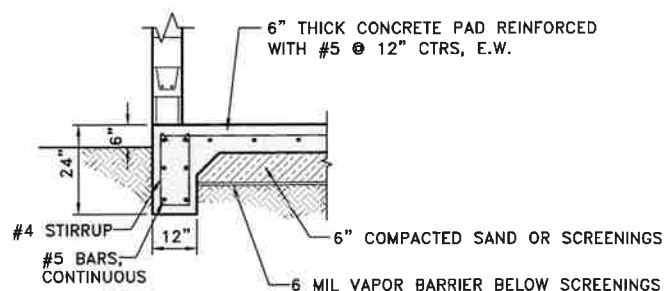


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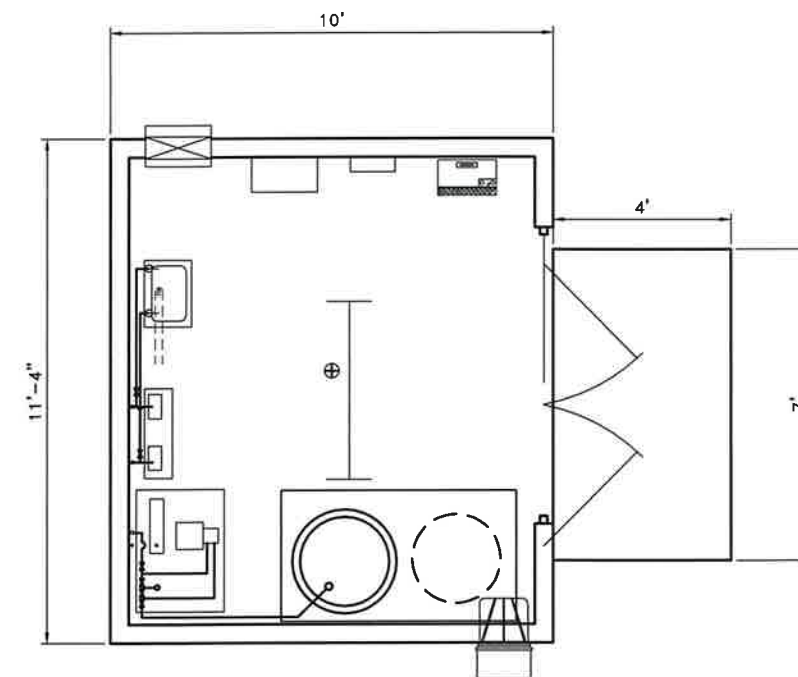


NOTES

1. INTERIOR OF BUILDING SHALL BE SEALED AND PAINTED WHITE.
2. CHEMICAL FEED PUMPS SHALL BE LINKED WITH CONTROL PANEL ALARM SYSTEM TO WARN OPERATORS OF FAILURE.
3. INTAKE FAN SHALL BE DESIGNED FOR CORROSIVE ENVIRONMENT AND SIZED TO PROVIDE MINIMUM ONE COMPLETE AIR CHANGE PER MINUTE (550 CFM). INTAKE FAN TO BE THERMOSTAT CONTROLLED AND MANUALLY ACTIVATED WITH EXTERNAL LIGHT SWITCH FOR OPERATOR SAFETY.
4. PROVIDE CEILING MOUNTED ELECTRIC HEATER SIZED TO KEEP TEMPERATURE AT LEAST 60°F. HEATER SHALL BE CHROMALOX HD3D 500 OR APPROVED EQUAL.
5. PROVIDE GRAVITY-FED EMERGENCY EYE WASH STATION (BRADLEY S19-921 OR EQUAL).
6. FLOOR SHALL BE SLOPED @ 2.5% TO FLOOR DRAIN.
7. ALL VENTS SHALL BE ABOVE GRADE.
8. CONTRACTOR SHALL SUPPLY DRUM DOLLY
9. DOORS SHALL BE 3'x7' FRP WITH CORROSION RESISTANT HARDWARE
10. MOUNT EXTERIOR TOGGLE SWITCH FOR MANUAL CONTROL OF LIGHT FIXTURE AND INTAKE FAN INSIDE A PVC FS BOX HAVING A GASKETED, SPRING-LOADED PVC COVER.
11. INTERIOR CEILING SHALL BE 2x4 WOOD FRAME AND 1/2" PLYWOOD WITH 6" BATT INSULATION; PAINTED WHITE.



FOOTING DETAIL
NTS



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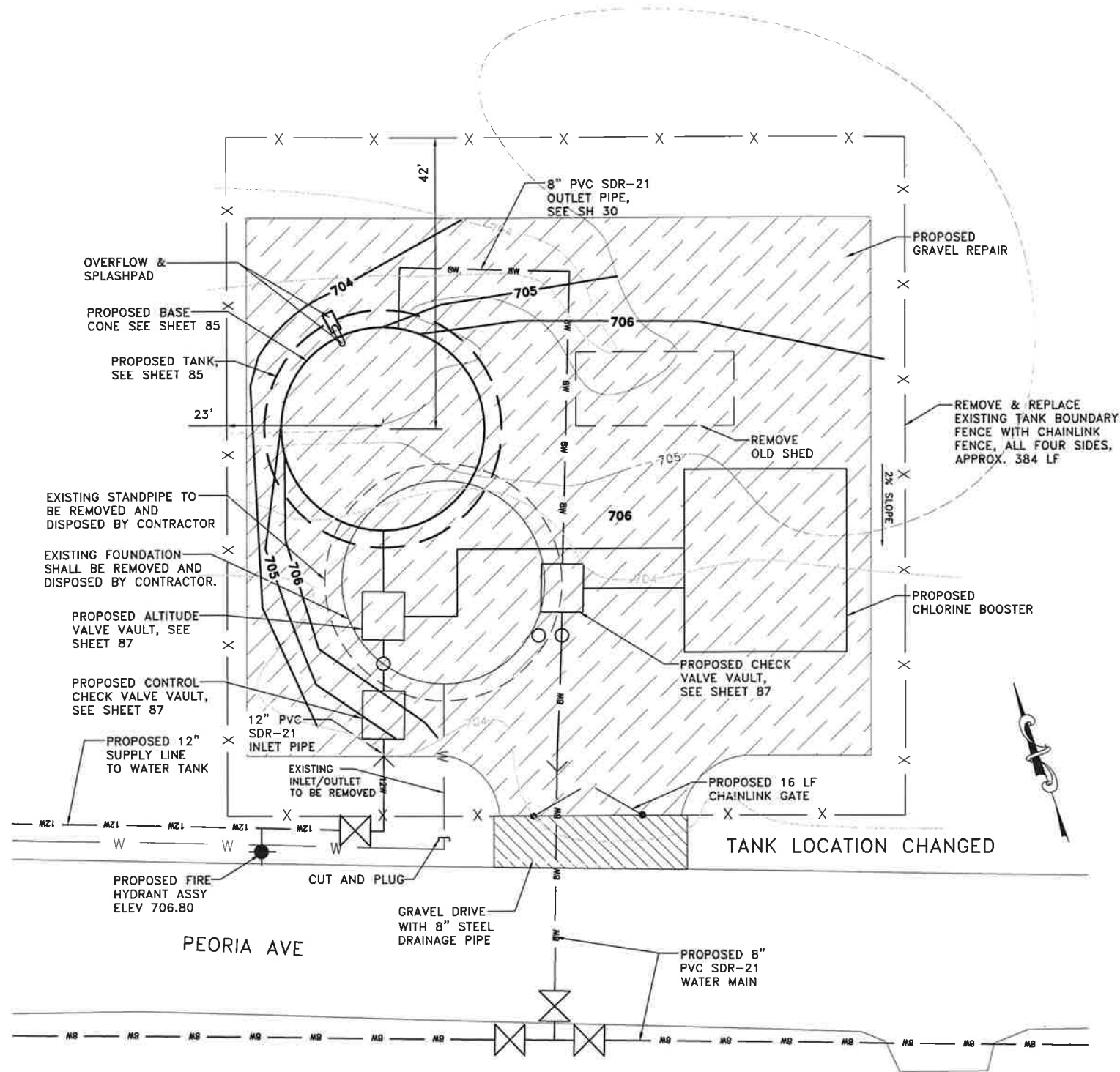
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Drawn ST
Approved CJW



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LAKE
CHLORINATION BUILDING PLAN

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1" = 50'
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PROPOSED ELEVATED TANK SITE AND GRADING PLAN

GENERAL ELEVATED TANK NOTES:

1. ALL AREAS INSIDE PROPOSED ELEVATED TANK PROPERTY SHALL BE CLEARED, GRUBBED AND HYDROMULCHED.
2. SEE CONTRACT SPECIFICATIONS FOR DESIGN CRITERIA AND DETAILS. APPLICABLE ELEVATED TANK SPECIFICATIONS ARE AWWA D100-96 AND ACI 318-95.
3. STEEL TANK FLOOR WITHIN THE PERIMETER OF THE CONCRETE SUPPORT PEDESTAL SHALL BE SUPPORTED BY A STRUCTURAL CONCRETE SLAB.
4. PROVIDE ADEQUATE FREEBOARD TO ENSURE ROOF PROJECTIONS AND PAINTER RAIL REMAIN ABOVE THE HIGH WATER LEVEL.
5. SEE CONTRACT SPECIFICATIONS FOR STEEL TANK COATING REQUIREMENTS.
6. TANK APPURTENANCES ARE ROTATED FOR CLARITY. FINAL LOCATIONS SHALL BE FIELD DETERMINED BY OWNER.
7. MAN DOOR-3' WIDE X 7' HIGH, HOLLOW METAL DOOR WITH 16 GA. 28. FRAME AND HEAVY DUTY CLOSURE.
8. A PRESSURE GAUGE SHALL BE PROVIDED 5 FEET ABOVE THE FOUNDATION ON THE OUTLET PIPE OF THE SELECTED TANK PER SPECIFICATIONS.
9. A 1-INCH OUTLET WITH VALVE SHALL BE PROVIDED 2 FEET ABOVE THE FOUNDATION OF THE ELEVATED TANK FOR TELEMTRY SYSTEM.
10. A 3/4 INCH HOSE BIB SHALL BE PROVIDED 2 FEET ABOVE THE FOUNDATION ON THE OUTLET PIPE.
11. TWO 2-INCH GALVANIZED RIGID STEEL CONDUITS SHALL BE PROVIDED THROUGH TANK FOUNDATION FOR TELEMTRY SYSTEM.

FOUNDATION:

1. REFER TO GEOTECHNICAL REPORT IN SPECIFICATIONS FOR RECOMMENDATIONS REGARDING ALLOWABLE BEARING CAPACITY. FOUNDATION DESIGN SHALL BE SEALED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF OKLAHOMA.
2. DESIGN FOUNDATION SYSTEM PER GEOTECHNICAL REPORT RECOMMENDATIONS AND MAXIMUM APPLICABLE DESIGN LOADS IN ACCORDANCE WITH AWWA D100-96.
3. CONCRETE FOUNDATION DESIGN SHALL BE ACCORDANCE WITH ACI 318-95.
4. FLOOR SLAB-6" THICK 3500 PSI CONCRETE ON COMPACTED GRANULAR REINFORCED WITH #5 REBAR AT 12" E.W.
5. PROVIDE 1/2" ISOLATION JOINT BETWEEN FLOOR AND WALL AND AT PIPES AND SUPPORTS THROUGH FLOOR. CAP WITH SELF LEVELING SEALANT.
6. SAWCUT CONTROL JOINTS 1 1/2" DEEP AT 20 FEET MAXIMUM CENTERS.
7. SLOPE SLAB MINIMUM 0.5% TO VEHICLE DOOR FOR DRAINAGE.

LEGEND:

PROPOSED WATER MAIN
PROPOSED CONTOURS
EXISTING FENCE
PROPOSED FENCE
PROPOSED GRAVEL AREA



SITE PLAN NOTES:

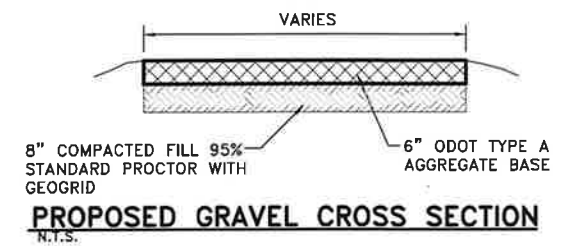
1. EXISTING STANDPIPE TO BE REMOVED AND DISPOSED BY CONTRACTOR
2. CONTRACTOR TO ENSURE 2% SLOPE FROM SOUTH TO NORTH WITHIN THE FENCED AREA AND GRADE TO DRAIN.

MECHANICAL:

1. INLET/OUTLET AND OVERFLOW PIPING WITHIN THE CONCRETE PEDESTAL SHALL BE SCHEDULE 40 GALVANIZED PIPE.
 2. PROVIDE HANGERS, BRACKETS, AND THRUST RESTRAINTS AS REQUIRED.
 3. OVERFLOW SYSTEM SHALL BE DESIGNED TO ACCOMMODATE MAXIMUM FILL RATE.
 4. REMOVABLE SILT STOP SHALL BE MINIMUM 6 INCHES ABOVE TANK FLOOR.
 5. PROVIDE EXPANSION JOINT ON INLET/OUTLET RISER TO ACCOMMODATE MAXIMUM POTENTIAL DIFFERENTIAL MOVEMENT.
 6. PROVIDE THRUST RESTRAINT AND SUPPORT AS REQUIRED.
 7. INSTALL 3 PC. 3/4" TAPPING WITH BRONZE BALL VALVE AND PLUG ON INLET/OUTLET.
- MISCELLANEOUS IRON:
1. ALL LADDERS AND LANDINGS SHALL BE GALVANIZED.
 2. PROVIDE ALUMINUM SAFETY RAILS ON ALL LADDERS.
 3. ROOF ACCESS TUBE AND TANK ACCESS HATCHES SHALL BE 30" SQUARE.
 4. A REMOVABLE ALUMINUM LOUVER SHALL BE INSTALLED AT THE UPPER LANDING FOR ACCESS TO THE EXTERIOR PAINTER RAIL.

ELECTRICAL:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING POWER TO TOWER AND CONTROL VALVE SITE.
2. MOUNT BASE LIGHTS 10 FEET ABOVE SLAB ON GRADE.
3. LADDER LIGHTS SHALL BE AT 25 FEET MAXIMUM SPACING.
4. OBSTRUCTION LIGHT TO BE LOCATED 12 INCHES ABOVE HIGHEST POINT ON TANK.
5. MOUNT EXTERIOR DOOR LIGHTS 10' ABOVE GRADE.
6. SWITCH FOR LIGHTS & RECEPTACLE TO BE MOUNTED INSIDE BY DOOR.
7. ALL CONDUIT TO BE GALVANIZED RIGID STEEL.
8. COORDINATE CONDUIT ROUTING & FIXTURE LOCATIONS/MOUNTING WITH TANK MFG.
9. ALL STAIRWAY LIGHTING SHALL BE SWITCHED & LOCATED AS SHOWN ON PLANS.



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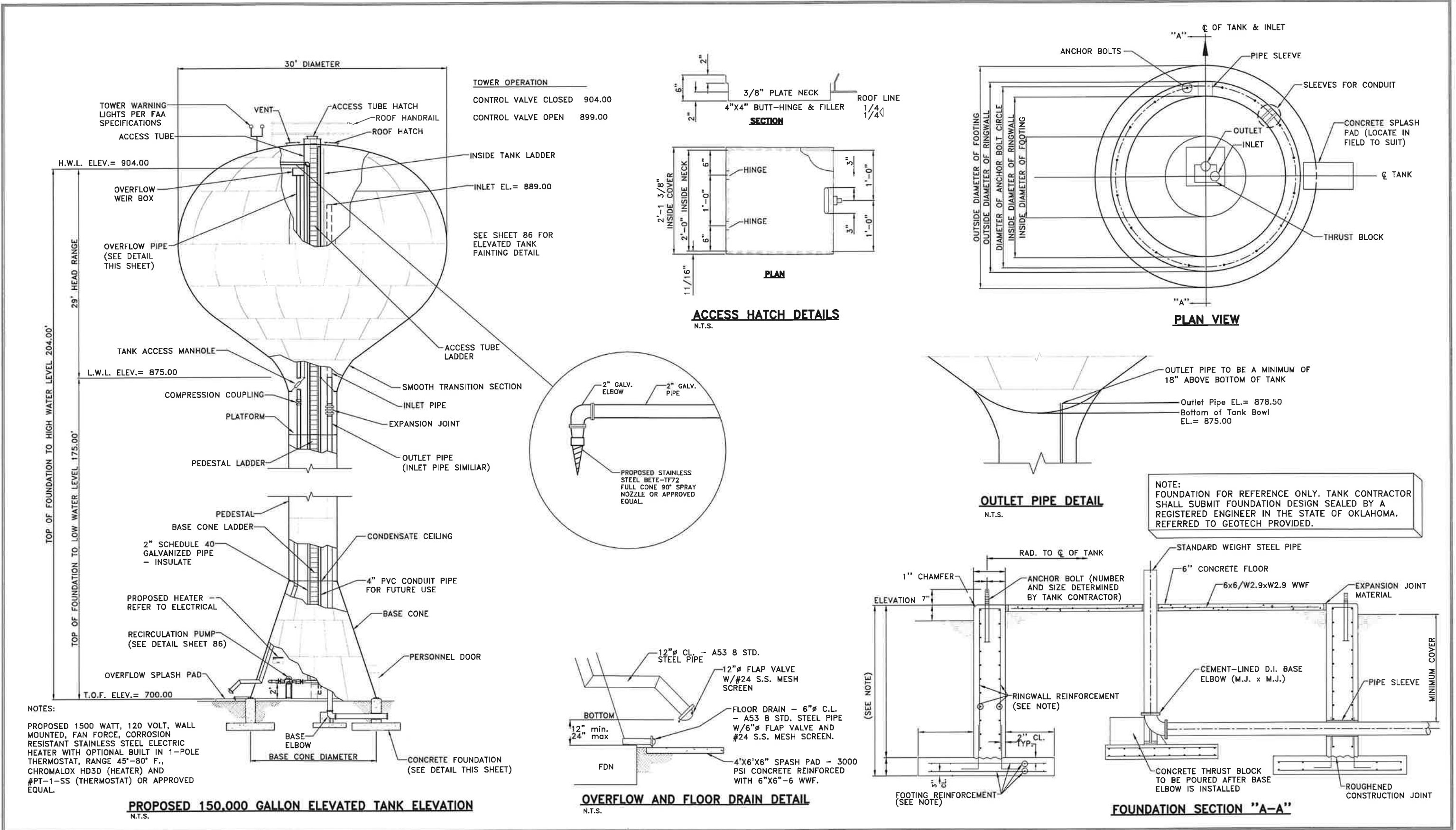
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HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

ELEVATED TANK SITE PLAN

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HARTSHORNE, OKLAHOMA
PROPOSED ELEVATED TANK

ELEVATED TANK DETAILS

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HR-21-01
Scale:
1" = 200'
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VALVE SCHEDULE

VALVE NO.	SIZE	TYPE	COMMENTS
V101-V102	2"	GATE	MANUAL
V103	2"	CHECK VALVE	SWING CHECK

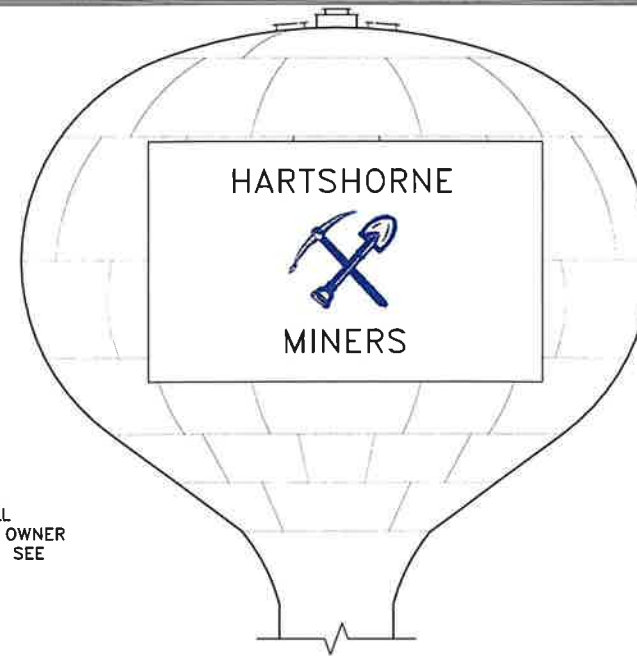
RECIRCULATION PUMP SCHEDULE

PUMP NO.	SIZE	HP	GPM	TDH	POWER REQUIREMENT
P103	2"	2	50	150	460 VOLT, 50 HERTZ, 3 PHASE VFD CONTROLLED

NOTES:

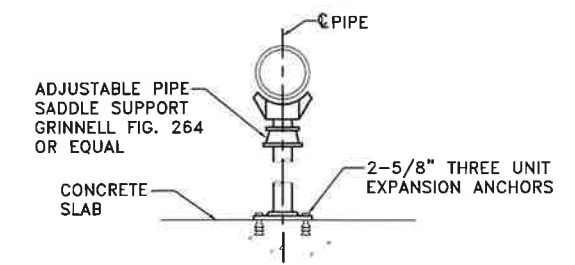
- PUMP SHALL BE GRUNDFOS MOD.# CRE-10-4 OR APP. EQ.
- PUMP MUST BE CAPABLE OF PERFORMING UNDER THE REQUIRED HEAD CONDITIONS.
- PUMP SHALL HAVE AN EFFICIENCY OF 84% AT DESIGN POINT OPERATION.

CONTRACTOR SHALL
COORDINATE WITH OWNER
FOR PAINT COLOR, SEE
SPECIFICATIONS.



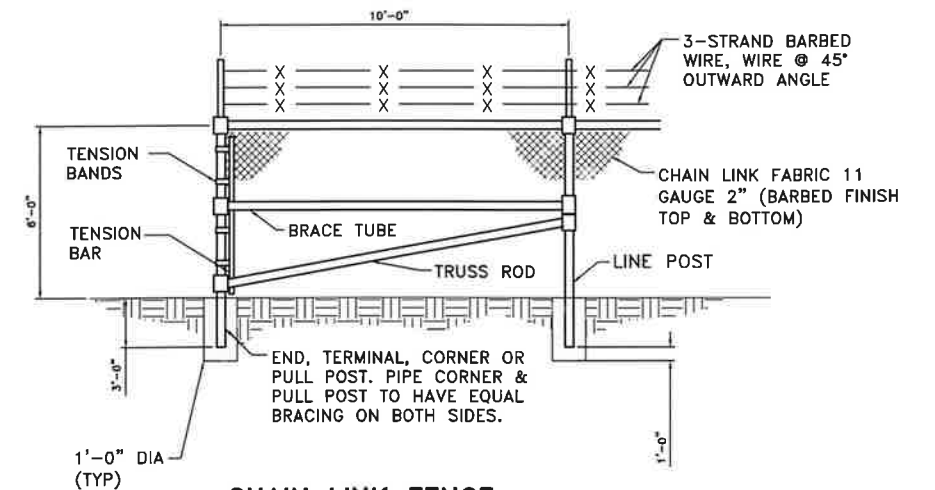
ELEVATED TANK PAINTING DETAIL

1/4" = 1'-0"



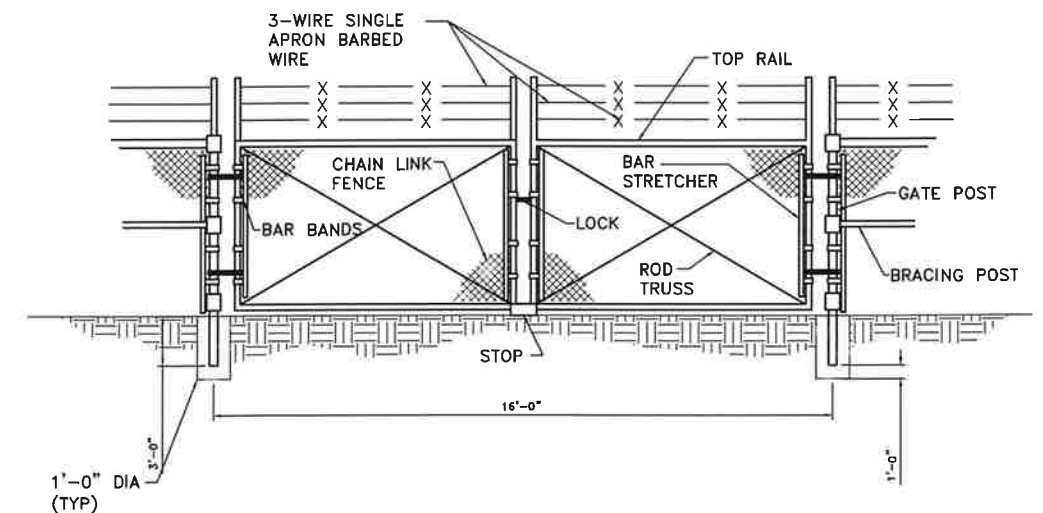
TYPICAL METAL PIPE SUPPORT DETAIL

N.T.S.



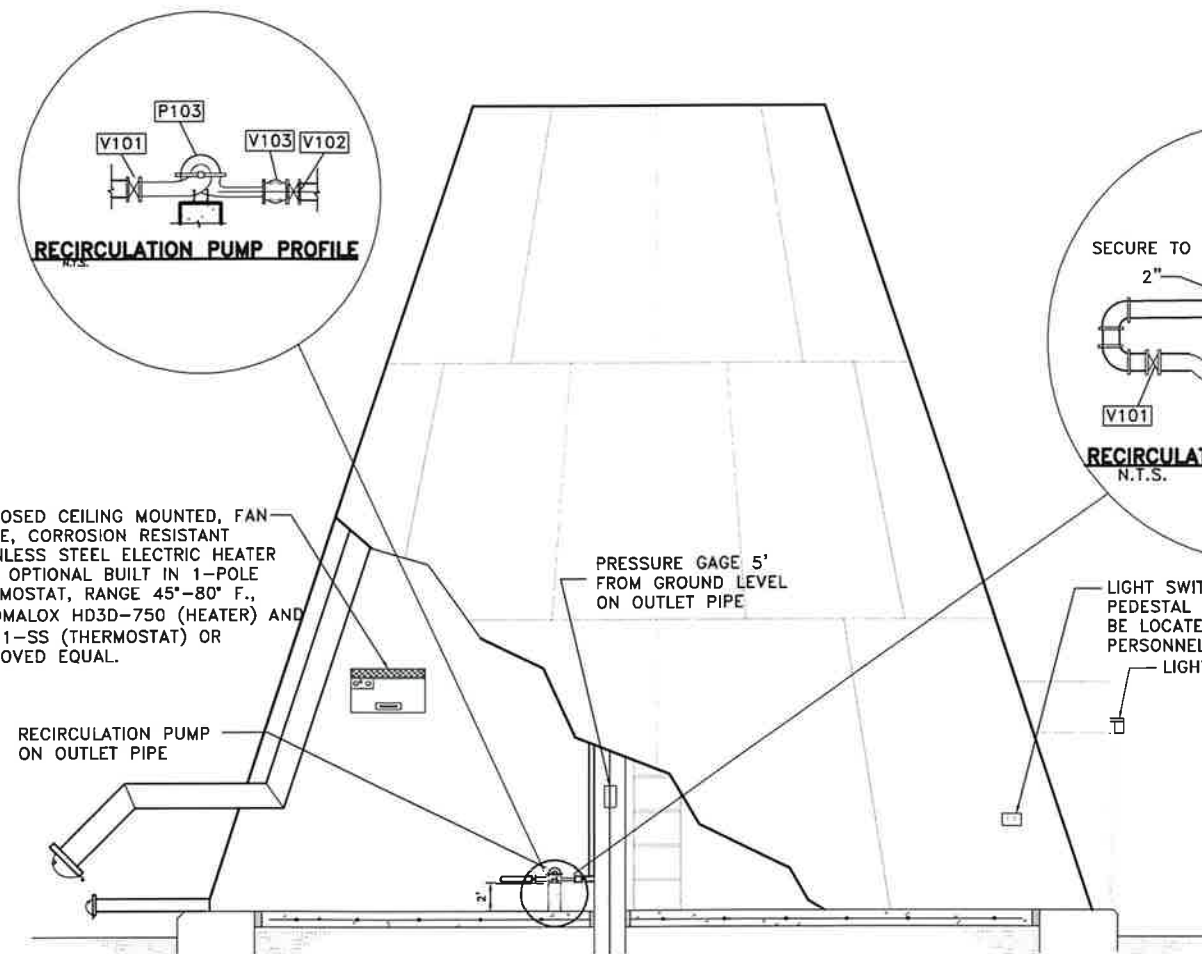
CHAIN LINK FENCE

SCALE: NTS



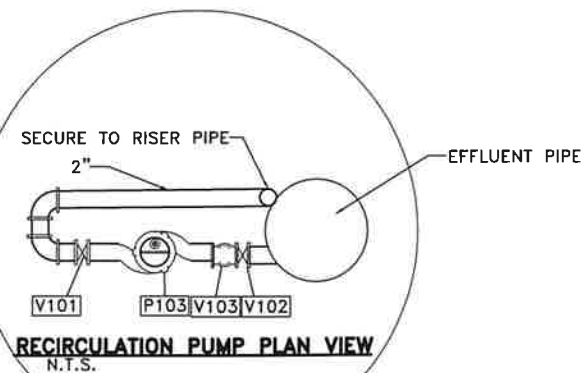
16' DOUBLE GATE

SCALE: NTS



RECIRCULATION PUMP DETAIL

NTS



RECIRCULATION PUMP PLAN VIEW

N.T.S.

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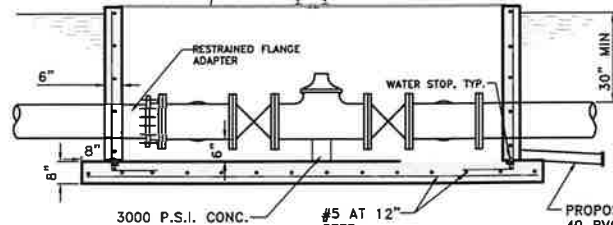
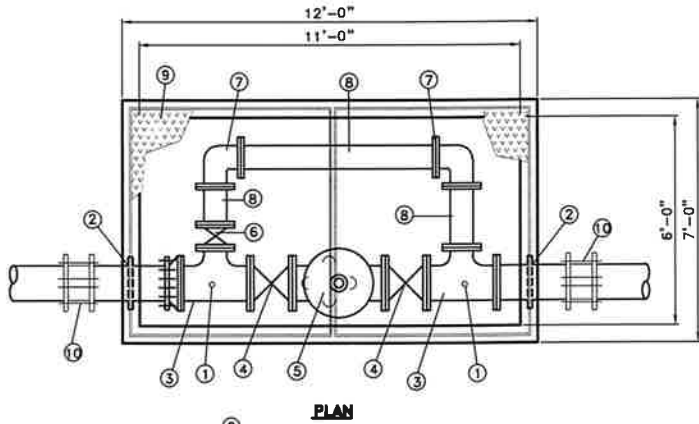
HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
PROPOSED ELEVATED TANK

ELEVATED TANK RECIRCULATION DETAILS

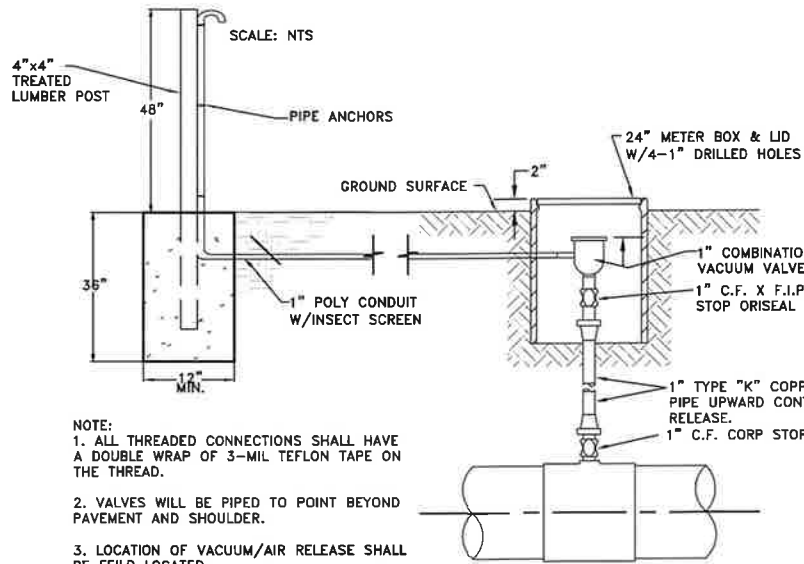
Job:	HR-21-01
Scale:	1" = 40'
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PIPING PLAN

- 1 PRESSURE GAUGE (0-250 PSI)
- 2 12" WALL PIPE
- 3 12"x 12"x 8" TEE
- 4 12" GATE VALVE - MUELLER OR APPROVED EQUAL
- 5 12" ALTITUDE VALVE-CLA-VAL MODEL 610 OR APPROVED EQUAL
- 6 8" GATE VALVE MUELLER OR APPROVED EQUAL
- 7 8" DI 90° BEND
- 8 8" DI SPOOL
- 9 ALUMINUM DOUBLE LEAF HINGED COVER - DALWORTH OR APPROVED EQUAL
- 10 FLEX COUPLING OR MECHANICAL JOINT



CONCRETE ALTITUDE VALVE VAULT

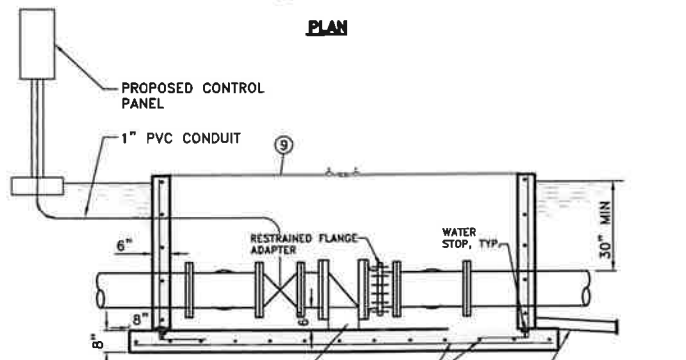
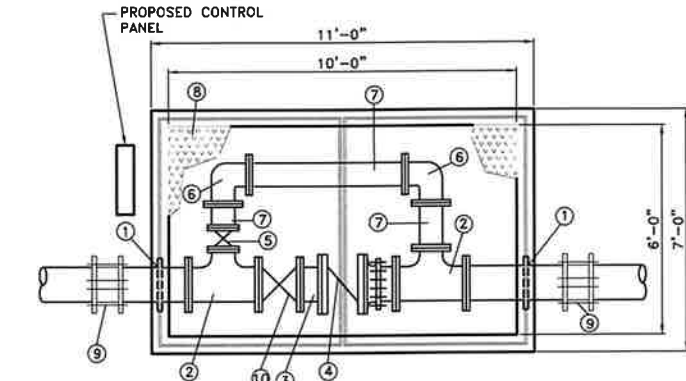


- NOTE:
1. ALL THREADED CONNECTIONS SHALL HAVE A DOUBLE WRAP OF 3-MIL TEFLON TAPE ON THE THREAD.
 2. VALVES WILL BE PIPED TO POINT BEYOND PAVEMENT AND SHOULDER.
 3. LOCATION OF VACUUM/AIR RELEASE SHALL BE FIELD LOCATED.

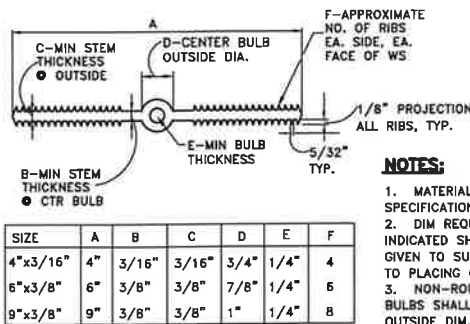
COMBINATION VACUUM/AIR RELEASE ASSY. DETAIL
N.T.S.

PIPING PLAN CONTROL VAULT

- 1 12" WALL PIPE
- 2 12" x 12"x 8" TEE
- 3 12" SPOOL
- 4 12" GLOBE CHECK VALVE VAL-MATIC MODEL 1862 OR APPROVED EQUAL
- 5 8" GATE VALVE MUELLER OR APPROVED EQUAL
- 6 8" DI 90° BEND
- 7 8" DI SPOOL
- 8 ALUMINUM DOUBLE LEAF HINGED COVER - DALWORTH OR APPROVED EQUAL
- 9 FLEX COUPLING OR MECHANICAL JOINT
- 10 BUTTERFLY VALVE WITH ELECTRIC OPERATOR



CONCRETE CONTROL VAULT



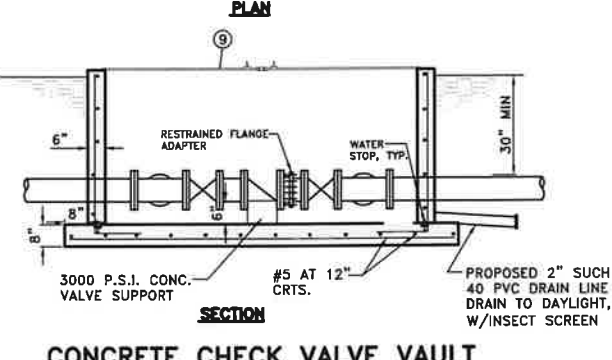
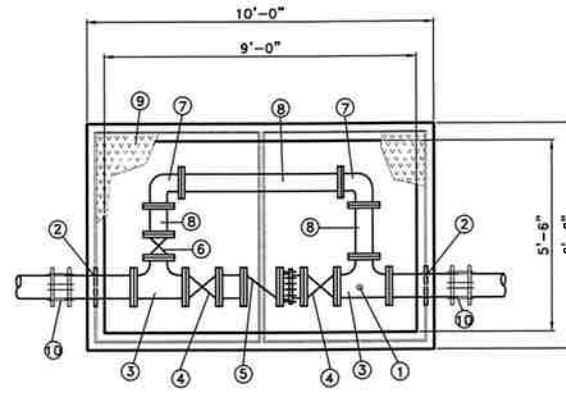
- NOTES:
1. MATERIAL QUALITY PER SPECIFICATIONS.
 2. DIM REQUIREMENTS INDICATED SHOULD BE GIVEN TO SUPPLIERS PRIOR TO PLACING ORDERS.
 3. NON-ROUND CENTER BULBS SHALL HAVE A MIN. OUTSIDE DIM. OF 'D'.

SIZE	A	B	C	D	E	F
4"x3/16"	4"	3/16"	3/16"	3/4"	1/4"	4
6"x3/8"	6"	3/8"	3/8"	7/8"	1/4"	6
9"x3/8"	9"	3/8"	3/8"	1"	1/4"	8

PLASTIC WATER STOP
N.T.S.

PIPING PLAN

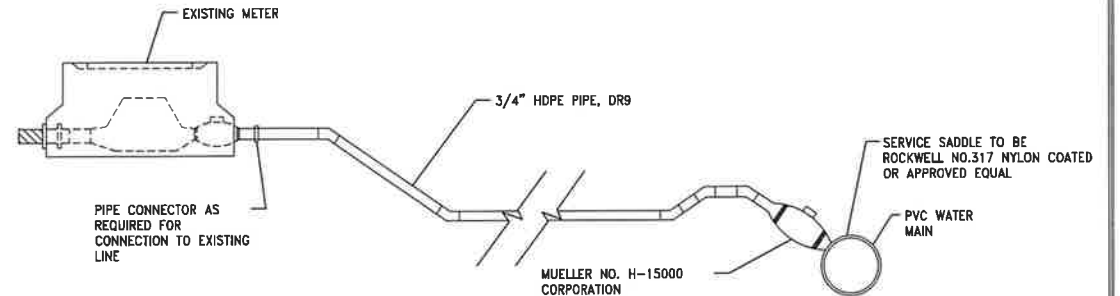
- 1 PRESSURE TRANSDUCER
- 2 8" WALL PIPE
- 3 8" x 8"x 6" TEE
- 4 8" GATE VALVE - MUELLER OR APPROVED EQUAL
- 5 8" GLOBE CHECK VALVE VAL-MATIC MODEL 1858 OR APPROVED EQUAL
- 6 6" GATE VALVE MUELLER OR APPROVED EQUAL
- 7 6" DI 90° BEND
- 8 6" DI SPOOL
- 9 ALUMINUM DOUBLE LEAF HINGED COVER - DALWORTH OR APPROVED EQUAL
- 10 FLEX COUPLING OR MECHANICAL JOINT



CONCRETE CHECK VALVE VAULT

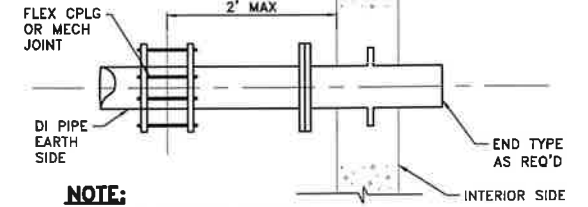
NOTES:

1. ROAD BORES SHALL BE INCLUDED IN THE BID PRICE FOR LONG SERVICES.
2. CONTRACTOR SHALL PROVIDE SERVICES AS DIRECTED PER THE BID PROPOSAL. SERVICES SHALL INCLUDE SERVICE LINE TO EXISTING METER. ALL PLUMBING SHALL BE INSTALLED ACCORDING TO OKLAHOMA PLUMBING CODE. CONTRACTOR SHALL COORDINATE LOCATION OF EXISTING AND NEW SERVICE LINE WITH PROPERTY OWNER.
3. LENGTH OF BORE 3/4" P.E. PIPE VARIES. CONTRACTOR SHALL FIELD VERIFY ALL LENGTHS PRIOR TO BIDDING.
4. SHORT SERVICE IS DEFINED AS METER LOCATED ON THE SAME SIDE OF ROAD AS PROPOSED WATER LINE AND LESS THAN 50'-0".
5. LONG SERVICE DEFINED AS GREATER THAN 50'-0" OR METER LOCATED ON OPPOSITE SIDE OF ROAD FROM PROPOSED WATER LINE AND SHALL INCLUDE SERVICE BORE.



NOTES:

1. ALL PIPING TO BE PRESSURE CLASS 250 DUCTILE IRON PIPE UNLESS OTHERWISE NOTED.
2. ALL BOXES SHALL HAVE 8" ODOT TYPE "A" AGGREGATE BASE OVER 8" COMPACTED FILL 95% STANDARD PROCTOR WITH GEOTEXTILE.
3. TOP OF ALL BOXES SHALL BE 6" ABOVE FINISHED GROUND UNLESS OTHERWISE NOTED.
4. ALL STRAIGHT THRU PIPE IN CONCRETE BOXES SHALL HAVE ONE RESTRAINED FLANGE ADAPTER ON THE INTERIOR OF THE BOX.



NOTE:

- COAT WALL PIPE WITH SPECIFIED PAINT SYSTEM PRIOR TO CONCRETE PLACEMENT.

WALL PIPE
N.T.S.

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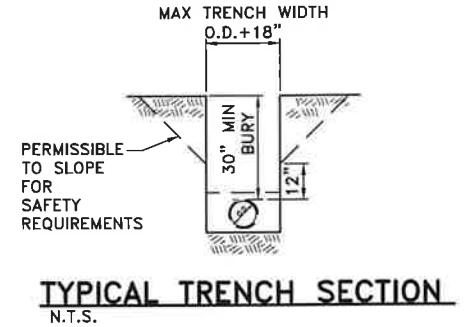
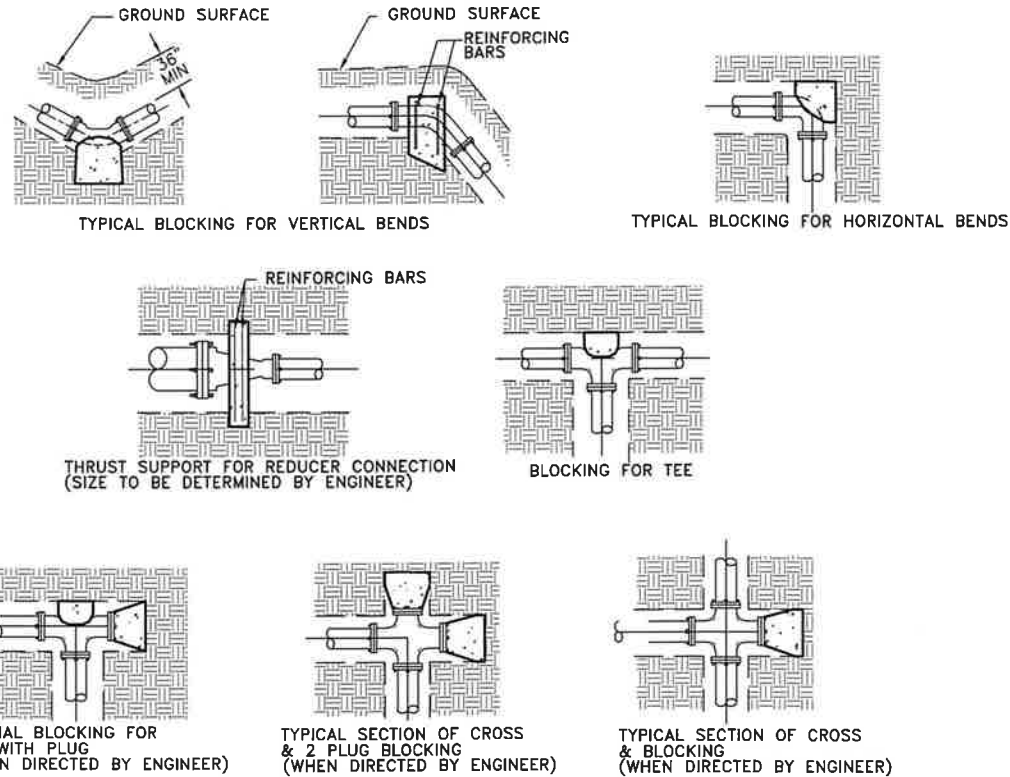
HARTSHORNE PUBLIC WORKS AUTHORITY
HARTSHORNE, OKLAHOMA
WATER DISTRIBUTION IMPROVEMENTS

PROPOSED VAULT DETAILS

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3/16" = 1'
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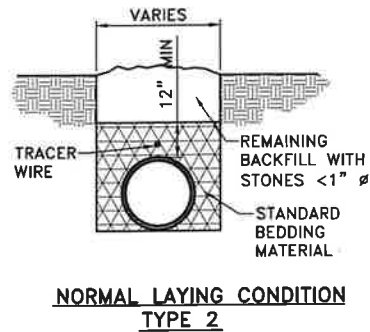
NOTES ON THRUST BLOCKING

- 1.) ALL BLOCKING SHALL BE AGAINST UNDISTURBED HAND DUG SOIL AND SHALL BE CONCRETE HAVING A MINIMUM 28 DAY STRENGTH OF 2000 PER SQUARE INCH.
- 2.) THRUST CALCULATORS TO BE BASED ON THRUST DUE TO WATER PRESSURE AT 100% OF TEST PRESSURE. $THRUST = 2 AP \sin 1/2 \phi$ WHERE A = AREA OF PIPE, P = WATER PRESSURE, ϕ = DEFLECTION ANGLE.
- 3.) VERTICAL UPLIFT BLOCKS SHALL BE DESIGNED ON THE BASIS OF 150 LBS. PER CU. FT. FOR CONCRETE AND SOIL AT 120 LBS. PER CU. FT. OVER THE AREA OF BLOCK.
- 4.) VERTICAL DOWN THRUST BLOCKS SHALL BE DESIGNED ON THE BASIS OF 2000 PER SQ. FT. ALLOWABLE SOIL BEARING PRESSURE. DIMENSIONS MAY BE DECREASED WITH APPROVAL OF THE ENGINEER IF MEASURED SOIL CONDITIONS PERMIT. IN POOR SOIL CONDITIONS, BLOCK DIMENSIONS SHALL BE INCREASED IN PROPORTION TO ALLOWABLE BEARING VALUE.
- 5.) THRUST BLOCKS ON HORIZONTAL BENDS, TEES, CROSSES, AND REDUCERS SHALL BE SIZED BASED ON 24000 LBS. PER SQ. FT. OF BLOCKING SURFACE AREA IN CONTACT WITH UNDISTURBED SOIL. BLOCK DIMENSIONS MAY BE DECREASED WITH APPROVAL OF THE ENGINEER IF MEASURED SOIL CONDITIONS PERMIT. IN POOR SOIL CONDITIONS, BLOCK DIMENSIONS SHALL BE INCREASED IN PROPORTION TO THE ALLOWABLE BEARING VALUE.
- 6.) ALL BLOCKING SHALL HAVE A MINIMUM SOIL COVER OF 1 FT.
- 7.) ADDITIONAL REINFORCING MAY BE REQUIRED FOR HORIZONTAL BLOCKING TO HANDLE UNUSUAL SHEAR LOADING CONDITIONS.
- 8.) ANCHOR COLLARS SHALL BE REINFORCED IN ACCORDANCE WITH REINFORCING BAR SCHEDULE FOR REDUCED BLOCKS SHOWN ABOVE. STEEL ANCHOR RING IN ACCORDANCE WITH DIMENSIONS OF ANCHOR COLLAR.

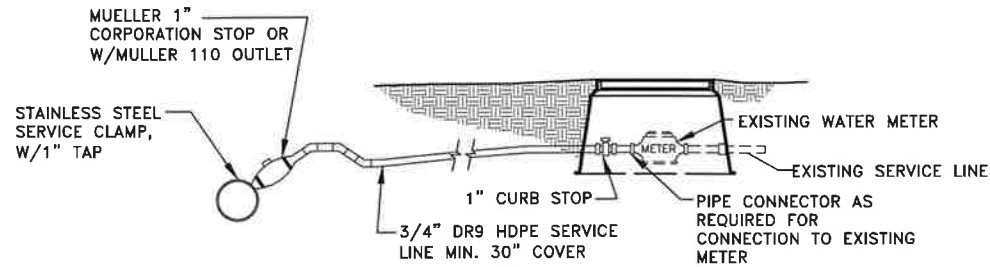


NOTES:

- 1.) STANDARD BEDDING MATERIAL SHALL CONFORM TO TRENCH EXCAVATION, BACKFILL AND COMPACTING SPECIFICATION.
- 2.) ALL BEDDING MATERIAL SHALL BE COMPACTED TO THE SPECIFIED DENSITY IN 6" LAYERS
- 3.) ALL TRENCHING OPERATIONS SHALL CONFORM TO THE MOST CURRENT EDITION OF O.S.H.A. REGULATIONS
- 4.) BELL HOLES SHALL BE CUT AT EACH JOINT TO MAINTAIN PROPER SUPPORT OF PIPE
- 5.) TRENCH BOTTOM SHALL BE SMOOTH AND FREE FROM ANY STONES OR CLODS
- 6.) THE TOP 6" OF TYPE 4 LAYING CONDITIONS SHALL BE COMPACTED TO 95 DENSITY, AASHTO T-99



THRUST BLOCKING DETAILS
N.T.S.



NOTES:

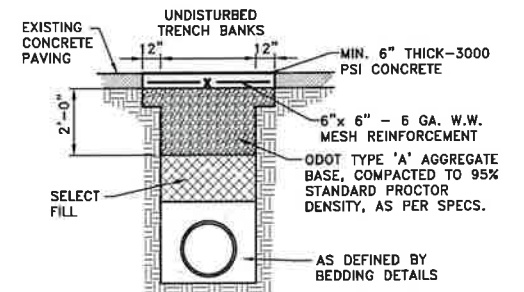
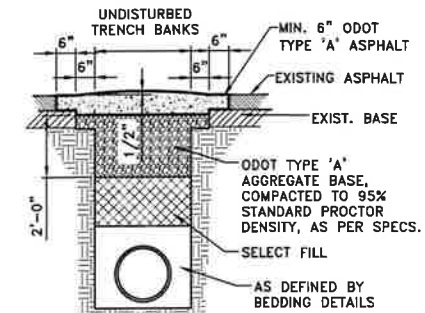
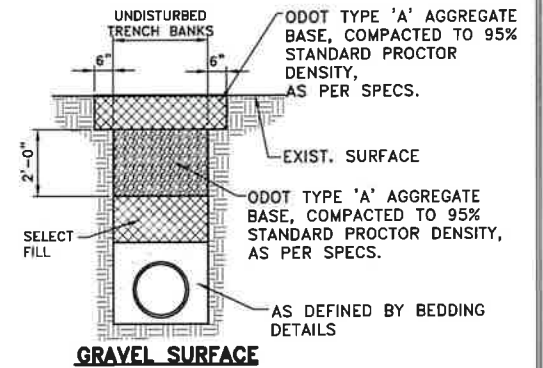
1. ROAD BORES SHALL BE INCLUDED IN THE BID PRICE FOR LONG SERVICES.
2. CONTRACTOR SHALL PROVIDE SERVICES AS DIRECTED PER THE BID PROPOSAL. SERVICES SHALL INCLUDE SERVICE LINE TO EXISTING METER. ALL PLUMBING SHALL BE INSTALLED ACCORDING TO OKLAHOMA PLUMBING CODE. CONTRACTOR SHALL COORDINATE LOCATION OF EXISTING AND NEW SERVICE LINE WITH PROPERTY OWNER.
3. LENGTH OF BORE 1" P.E. PIPE VARIES. CONTRACTOR SHALL FIELD VERIFY ALL LENGTHS PRIOR TO BIDDING.
4. SHORT SERVICE IS DEFINED AS METER LOCATED ON THE SAME SIDE OF ROAD AS PROPOSED WATER LINE.
5. LONG SERVICE DEFINED AS METER LOCATED ON OPPOSITE SIDE OF ROAD FROM PROPOSED WATER LINE AND SHALL INCLUDE SERVICE BORE.

TYPICAL NEW SERVICE CONNECTION
N.T.S.

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NOTE:

- 1.) AGGREGATE BASE SHALL CONFORM TO ODOT 1999 STANDARDS FOR HIGHWAY CONSTRUCTION SECTION 703.01
- 2.) ALL AGGREGATE BASE MATERIAL SHALL BE COMPACTED TO THE SPECIFIED DENSITY IN 6" LAYERS
- 3.) CONTRACTOR SHALL SAW CUT ALL ASPHALT AND CONCRETE TO PROVIDE A SMOOTH JOINT



OPEN CUT SURFACE REPAIR DETAILS
N.T.S.

WATER/PRESSURE LINE BEDDING DETAILS
N.T.S.

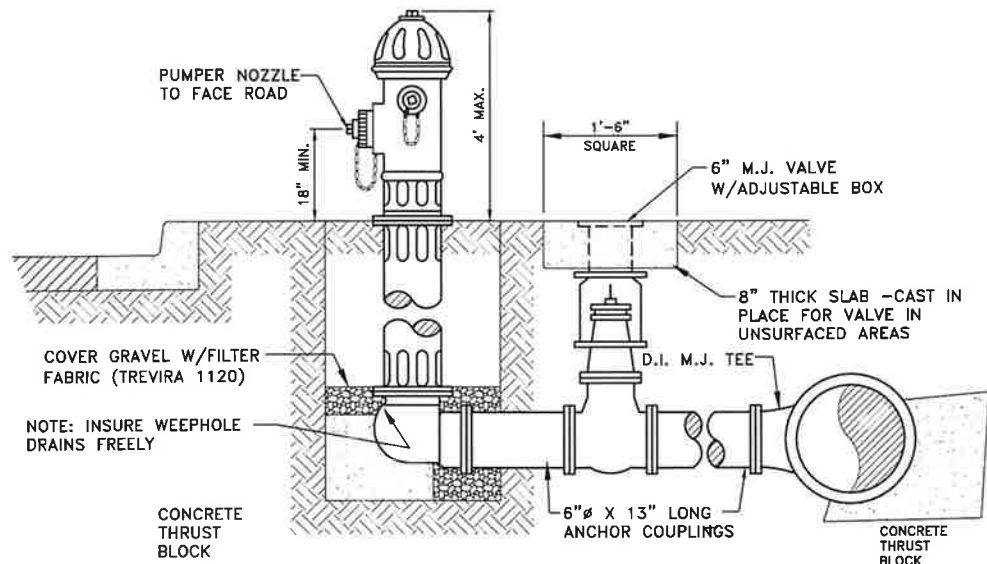
01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
Date	Notes	By

Designed CJW
Checked LDB
Drawn ST
Approved CJW



WATER DETAILS

Job:
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Scale:
1" = 20'
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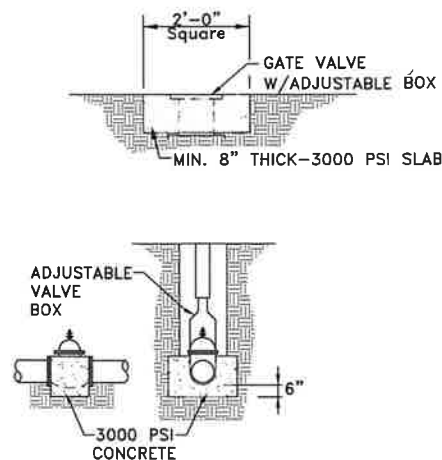


TYPICAL FIRE HYDRANT ASSEMBLY INSTALLATION
N.T.S.

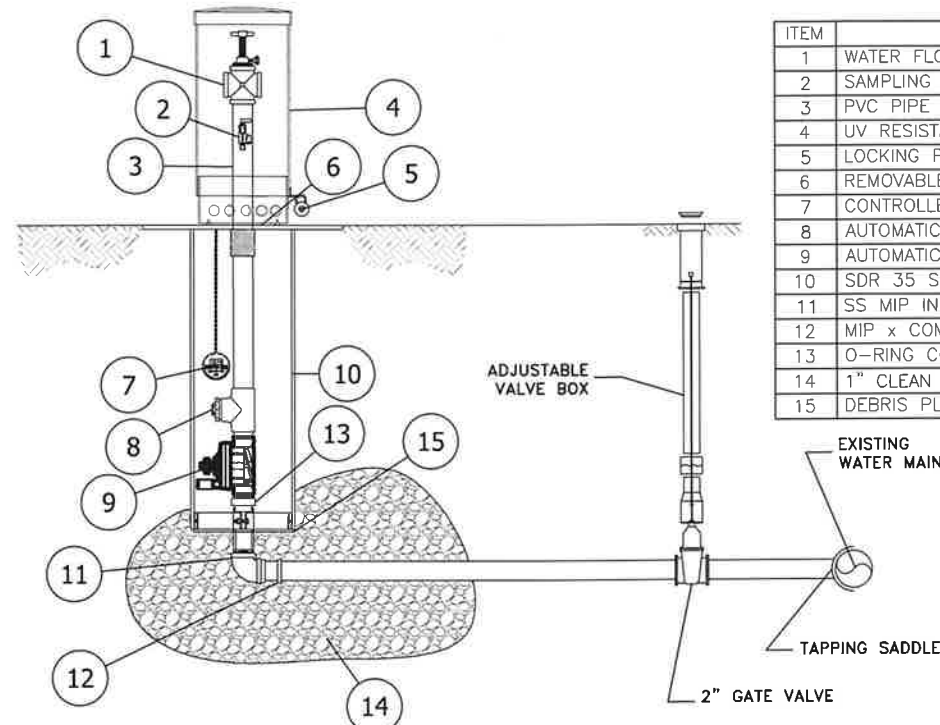
GENERAL NOTES CONCERNING FIRE HYDRANTS :

- 1.) DRAINAGE BED SHALL CONSIST OF CRUSHED STONE OR COARSE GRAVEL W/COARSE SAND, MIN. VOLUME 7 CU. FT., DRAIN BED SHALL EXTEND A MIN. OF 6" ABOVE DRAIN OUTLET.
- 2.) USE 6" C.I. NIPPLE W/M.J. RETAINER GLANDS IF DISTANCE BETWEEN VALVE AND FIRE HYDRANT MUST BE GREATER THAN 17".
- 3.) FIRE HYDRANT SHALL BE BLOCKED AGAINST UNDISTURBED SOIL AS SHOWN.
- 4.) ALL HYDRANTS SHALL BE INSTALLED PLUMB.

- 5.) LARGE NOZZLE FACES ROAD, UNLESS OTHERWISE NOTED. ROTATE BARREL AS REQUIRED.
- 6.) HYDRANT SHOULD NOT BE SET CLOSER THAN 4' TO OBSTRUCTIONS THAT ARE IN LINE WITH NOZZLE.
- 7.) M.J. ANCHOR TEE FOR 16" AND SMALLER. WHEN USING REGULAR M.J. TEE USE 13" ADAPTER NIPPLE BETWEEN TEE AND VALVE.
- 8.) TAPPING SADDLE MAY BE USED ON DUCTILE IRON MAINS LARGER THAN 16" DIAMETER.
- 9.) USE MUELLER HYDRANT, OR APPROVED EQUAL.



VALVE BLOCKING DETAIL
N.T.S.

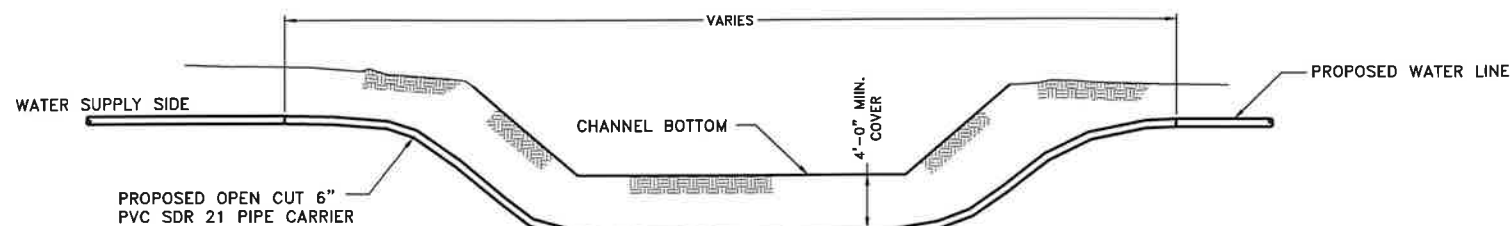


ITEM	ITEM / DESCRIPTION
1	WATER FLOW RESTRICTOR
2	SAMPLING POINT
3	PVC PIPE
4	UV RESISTANT LOCKABLE DOME ENCLOSURE
5	LOCKING POINT
6	REMOVABLE ACCESS PLATE
7	CONTROLLER
8	AUTOMATIC DRAIN
9	AUTOMATIC VALVE
10	SDR 35 SEWER PIPE
11	SS MIP INLET
12	MIP x COMPRESSION ADAPTER
13	O-RING CONNECTOR
14	1" CLEAN ROCK
15	DEBRIS PLATE

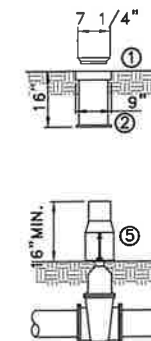
AUTOMATIC FLUSH HYDRANT ASSEMBLY INSTALLATION DETAIL
N.T.S.

NOTES:

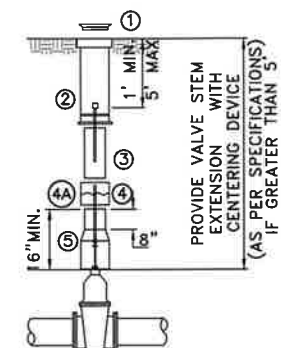
1. FLUSHING HYDRANT SHALL BE KUPFERLE MODEL 9400 ECLIPSE OR APPROVED EQUAL
2. EACH UNIT SHALL BE FURNISHED WITH STAND-ALONE VALVE CONTROLLER.
3. VALVE CONTROLLER SHALL NOT REQUIRE SECOND HAND-HELD DEVICE FOR PROGRAMMING.
4. VALVING AND PIPING SHALL HAVE A 200 PSI RATING.
5. SHALL BE SUBMERSIBLE TO 12 FEET, OPERATE WITH A 9-VOLT BATTERY AND HAVE RESIN-SEATED ELECTRICAL COMPONENTS.
6. SOLENOID SHALL HAVE NO LOOSE PARTS WHEN REMOVED FROM VALVE.
7. FLUSH WATER LINES FREE OF DEBRIS PRIOR TO INSTALLATION.



MINOR CHANNEL CROSSING
SCALE: NTS



- LIST OF MATERIALS**
1. CAST IRON COVER
 2. CAST IRON TOP SECTION
 3. PLASTIC EXTENSION PIECE
 4. PLASTIC EXTENSION COUPLING
 - 4A. 6" PRESSURE PIPE
 5. CAST IRON BOTTOM SECTION



NOTES:

1. IF PLASTIC EXTENSION PIECE(3) AND COUPLING(4) ARE NOT USED, PRESSURE PIPE(4A) AND ANOTHER VALVE BOX(5) MAY BE USED INSTEAD.
2. EXTENSION PIECE CAN BE CUT TO LENGTH REQUIRED.
3. PROVIDE 1'-6" X 1'-6" X 8" THICK CONCRETE AROUND TOP OF VALVE BOX.

VALVE BOX INSTALLATION
N.T.S.

01/12/2024	INITIAL SIGNED AND SEALED	CJW
07/01/2025	BIDDING & CONSTRUCTION	CJW
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