# NORTHSHORE UTILITY DISTRICT

ISSUED FOR BIDDING

## King County, Washington

CONTRACT 2021-04

165/81 Water Main Replacement

FALL 2021

NORTHSHORE UTILITY DISTRICT
WATER SEWER

RH2

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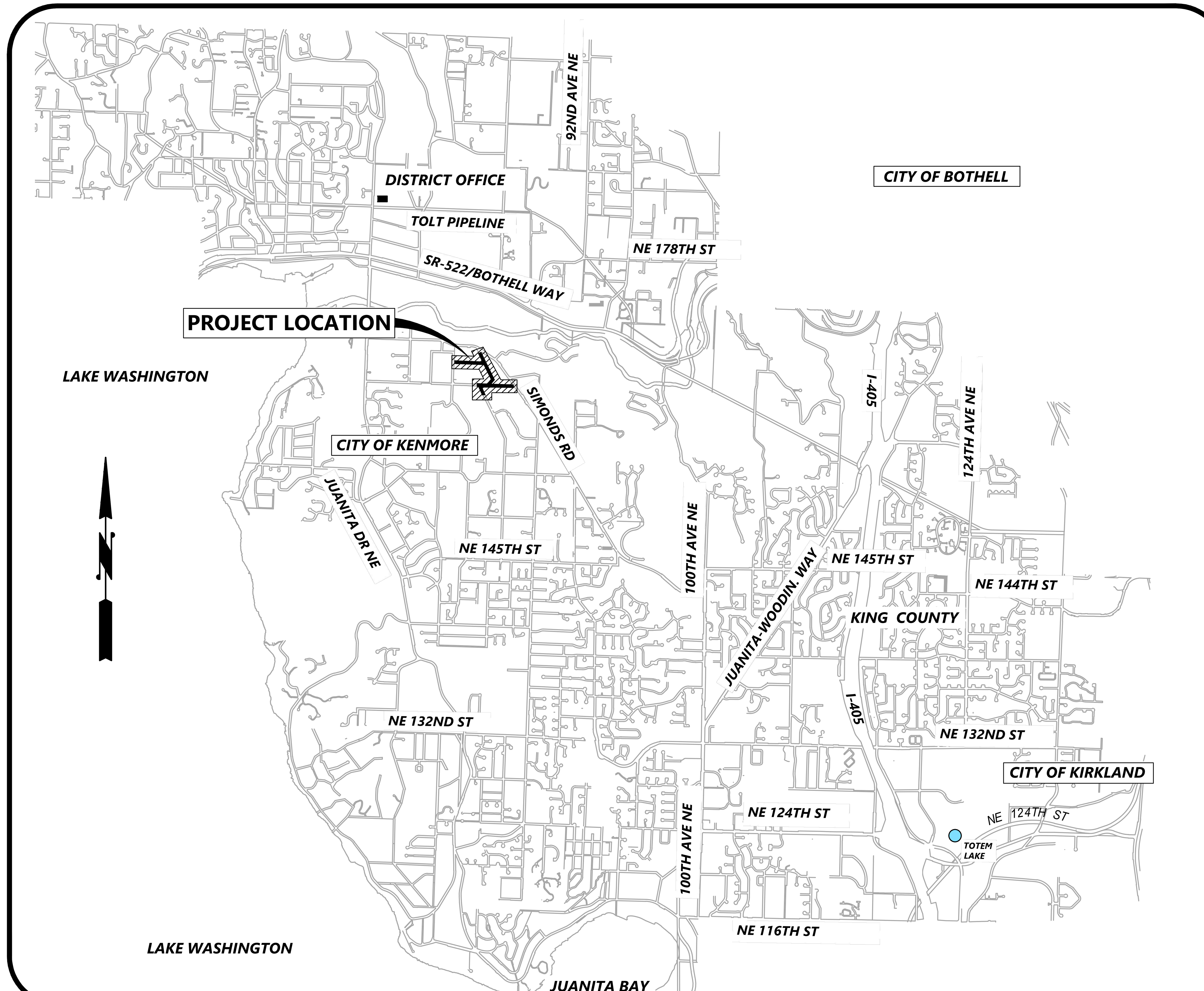
| **MATT BREYSSE** | President of the Board |
| **D. BRUCE GARDINER** | Secretary of the Board |
| **THOMAS D. MORTIMER** | Commissioner |
| **TRUDY C. ROLLA** | Commissioner |
| **SUZANNE GREATHOUSE** | Commissioner |
| **ALAN G. NELSON** | General Manager |

## SHEET INDEX






## VICINITY MAP

NOT TO SCALE

C2021-04

SHEET 1 OF 29

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## LEGEND

| EXISTING | PROPOSED | DESCRIPTION |
|---|---|---|
| | | PROPERTY LINE |
| | | RIGHT OF WAY LINE |
| - - FL - - | | DITCH CENTERLINE |
| | | SIDE SLOPE |
| | | FIRE DEPARTMENT CONNECTION |
| | | DOUBLE CHECK VALVE |
| F F | | FIRE PROTECTION LINE |
| 8" DI W | | WATER LINE |
| 8" PVC SS | | SANITARY SEWER LINE |
| SD SD | | STORM DRAIN LINE |
| 12" CONCRETE SD | | STORM DRAIN CULVERT |
| FL FL | | SWALE OR DITCH |
| G | | GAS LINE |
| UGP | | UNDERGROUND POWER LINE |
| OHP | | OVERHEAD POWER LINE |
| T | | TELEPHONE LINE |
| C | | CABLE LINE |
| FO | | FIBER OPTIC LINE |
| | | WIRE FENCE |
| | | WOOD FENCE |
| | | CHAIN LINK FENCE |
| | | WATER METER |
| | | FIRE HYDRANT |
| | | WATER VALVE |
| | | BLOW OFF ASSEMBLY |
| | | CLEAN OUT |
| | | SANITARY MANHOLE |
| | | STORM DRAIN MANHOLE |
| | | STORM DRAIN CATCH BASIN |
| | | GAS VALVE |
| | | POWER POLE |
| | | GUY ANCHOR |
| | | LIGHT POLE |
| | | SIGNAL POLE |
| P | | ELECTRICAL VAULT |
| | | ELECTRICAL HANDHOLE |
| | | COMMUNICATIONS VAULT |
| | | TELEPHONE HANDHOLE |
| | | SIGN |
| | | MONUMENT |
| | | ROCKERY |
| | | ROCK WALL |
| | | MAIL BOX(ES) |
| | | CONIFER TREE |
| | | DECORATIVE TREE |
| | | DECIDUOUS TREE |
| | | SHRUB |
| | | RETAINING WALL |
| | | CEMENT CONCRETE PAVEMENT |
| | | CEMENT CONCRETE CURB, GUTTER |
| | | ASPHALT CONCRETE PAVEMENT |
| | | GRAVEL |
| | | GRASS |
| | | FILTER FABRIC FENCE |
| | | CATCHBASIN INLET PROTECTION |
| | | PROPERTY ADDRESS |

## GENERAL NOTES:

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN THE CURRENT NORTHSHORE UTILITY DISTRICT STANDARD SPECIFICATIONS AND STANDARD DETAILS.
2. THE APPROXIMATE LOCATIONS OF EXISTING UTILITIES ARE SHOWN ON THE PLANS FOR CONVENIENCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF UTILITY LOCATIONS SHOWN, FOR THE PROTECTION AND REPAIR OF DAMAGED UTILITIES AND FOR THE DISCOVERY OF POSSIBLE ADDITIONAL UTILITIES NOT SHOWN ON THE PLANS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE LOCATED, BY THE APPROPRIATE UTILITY DISTRICTS OR COMPANIES, ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. FOR UTILITY LOCATES IN KING COUNTY, CALL 1–800–424–5555 PRIOR TO DIGGING.
3. A PRE–CONSTRUCTION CONFERENCE WILL BE HELD AT THE DISTRICT OFFICE PRIOR TO START OF CONSTRUCTION.
4. THE CONTRACTOR SHALL NOTIFY NORTHSHORE UTILITY DISTRICT A MINIMUM OF FIVE (5) DAYS IN ADVANCE OF BEGINNING CONSTRUCTION. CONSTRUCTION SHALL NOT BEGIN WITHOUT PRIOR WRITTEN NOTICE TO PROCEED BY THE DISTRICT.
5. THE CONTRACTOR SHALL NOT OPERATE ANY VALVES OR MAKE ANY CONNECTIONS TO THE EXISTING WATER SYSTEM WITHOUT PRIOR APPROVAL FROM THE DISTRICT.
6. CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS TO THE CITY OF KENMORE FOR FINAL RIGHT OF WAY PERMIT APPROVAL.

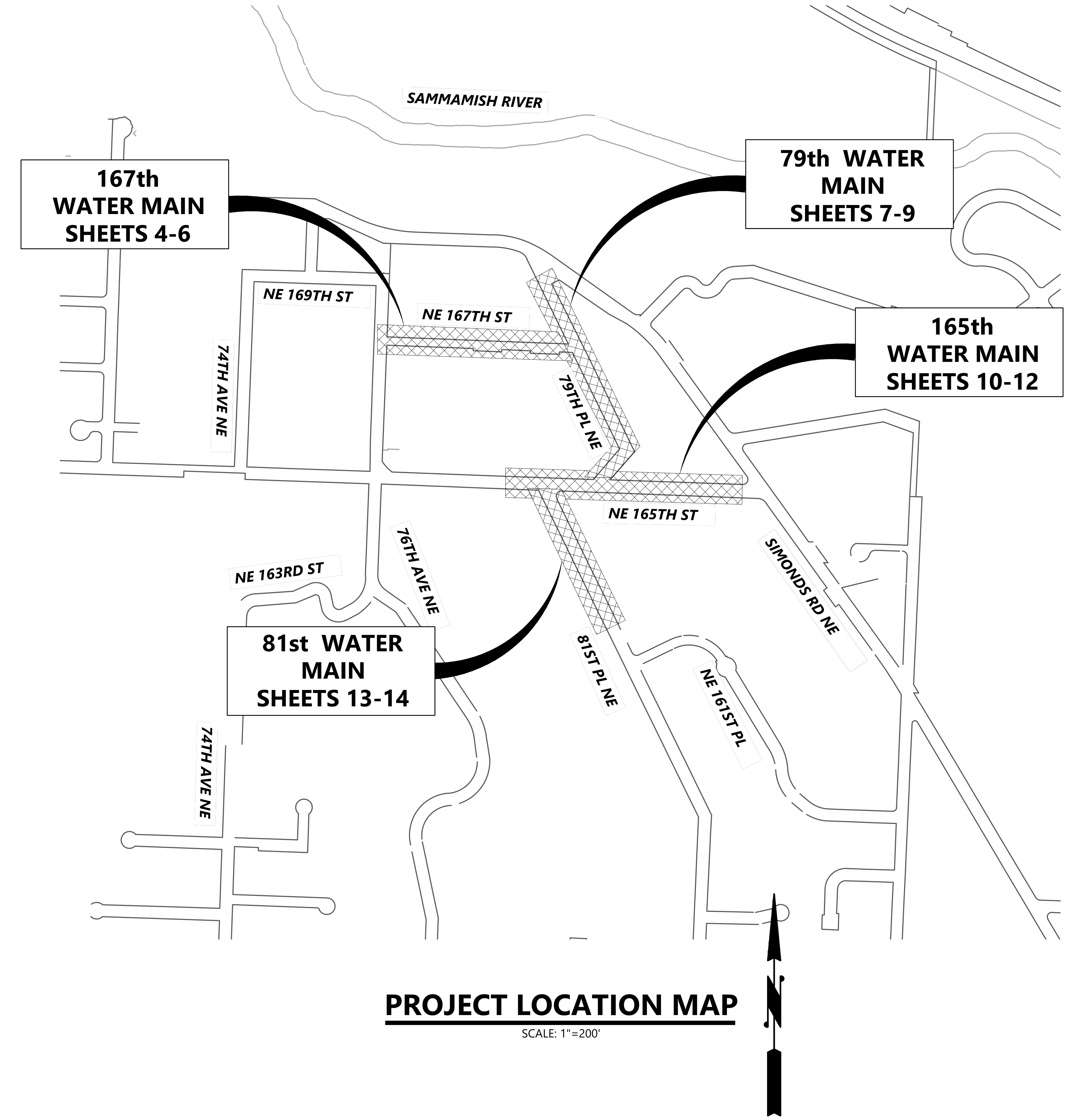
## SURVEY CONTROL DATA

*HORIZONTAL DATUM:*
WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE NAD83(91), US FEET UTILIZING RTK GPS FIELD PROCEDURES

*VERTICAL DATUM:*
NAVD88, US FEET AS PRESCRIBED BY NORTHSHORE UTILITY DISTRICT

*TOPOGRAPHIC MAPPING:*
THE MAP SHOWN HEREON IS THE RESULT OF A TOPOGRAPHIC SURVEY BY DUANE HARTMAN & ASSOCIATES, INC. (DHA) COMPLETED ON JANUARY 2015, IN 2018, AND IN 2021. DHA ASSUMES NO LIABILITY, BEYOND SAID DATE, FOR ANY FUTURE SURFACE FEATURE MODIFICATIONS OR CONSTRUCTION ACTIVITIES THAT MAY OCCUR WITHIN OR ADJOINING THE PERIMETER OF THIS SURVEY. CONTACT DHA (425) 483–5355 FOR SITE UPDATES AND VERIFICATIONS.

*CONTOUR INTERVAL:*
TWO FOOT (2') CONTOURS




**PROJECT LOCATION MAP**
SCALE: 1"=200'

SIGNED: 11/01/2021

| NO | BY | APPD | REVISION | DATE |
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| | | | ISSUED FOR BIDDING - 11/02/2021 | |

WARNING
0 ½ 1
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RH2

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|---|---|
| DESIGNED BY | DMF |
| DRAWN BY | DMF |
| CHECKED BY | AHF |
| APPROVAL | AHF |
| DATE | Nov 1, 2021 |

NORTHSHORE UTILITY DISTRICT
WATER SEWER
6830 NE 185th St.
Kenmore, WA 98028-2684
P.O. Box 82489
Kenmore, WA 98028-2684
**Ph:** (425) 398-4400 | **Fax:** (425) 398-4430 | **www.nud.net**

*CONTRACT 2021-04*
*165/81 WATER MAIN REPLACEMENT*

GENERAL NOTES, LEGEND, SURVEY CONTROL AND PROJECT LOCATION MAP

G01
C2021-04
*SHEET*


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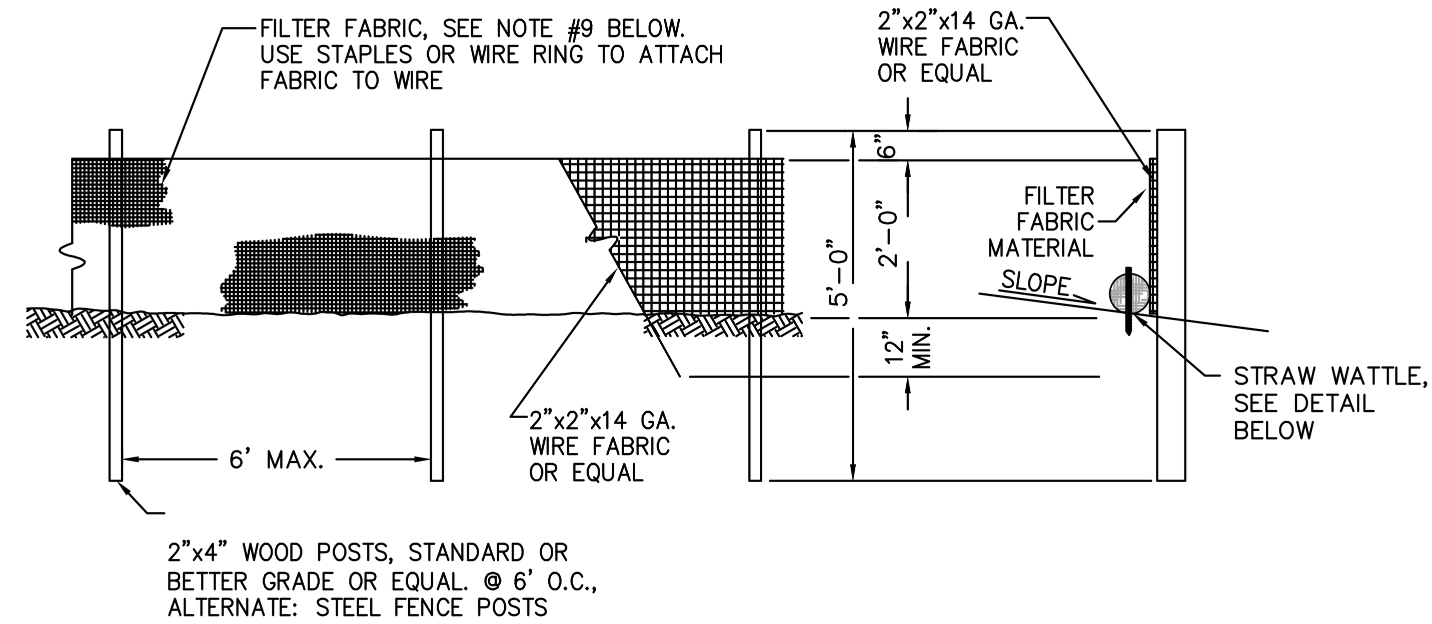
## TEMPORARY EROSION AND SEDIMENTATION CONTROL NOTES

1. THE TEMPORARY EROSION AND SEDIMENTATION CONTROL (TESC) FACILITIES SHALL BE IMPLEMENTED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT WATER DOES NOT ENTER THE DRAINAGE SYSTEM OR VIOLATE APPLICABLE WATER STANDARDS. MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE TESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS APPROVED.
2. THE STORM DRAIN INLET PROTECTION DEVICE SHALL BE SILT SACK OR EQUAL. ALL CATCH BASINS WITHIN THE VICINITY OF THE CONSTRUCTION SHALL HAVE INLET PROTECTION MEASURES.
3. CONTRACTOR SHALL MAINTAIN ALL EXISTING DRAINAGE CHANNELS, CULVERTS, SWALES AND STRUCTURES. WHENEVER EXISTING DRAINAGE FACILITIES ARE DISTURBED, THE CONTRACTOR SHALL PROVIDE SUITABLE MEANS FOR DIVERTING AND MAINTAINING ALL FLOWS DURING CONSTRUCTION IN THAT AREA AT ITS EXPENSE. AFTER CONSTRUCTION HAS BEEN COMPLETED, ALL DRAINAGE CHANNELS, CULVERTS, SWALES AND STRUCTURES DISTURBED SHALL BE RETURNED TO THEIR ORIGINAL CONDITIONS.
4. THE TESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, TESC FACILITIES SHALL BE MAINTAINED AND UPGRADED AS NECESSARY BY THE CONTRACTOR.
5. CONTRACTOR SHALL INSPECT THE TESC FACILITIES AT THE END OF EACH WORKING DAY TO ASSURE ITSELF THAT THEY ARE IN GOOD CONDITIONS. IF TESC FACILITIES REQUIRE REPAIR/MAINTENANCE, IT SHALL BE PERFORMED PRIOR TO THE END OF THE WORKING DAY. ALL DISTURBED AREAS SHALL BE PROMPTLY AND THOROUGHLY STABILIZED AGAINST EROSION DURING PERIODS OF WET WEATHER WHEN WORK IS NOT BEING PERFORMED AT THE SITE.
6. ALL UNSUITABLE OR SURPLUS EXCAVATED OR CLEARED MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN AN APPROVED, LEGAL FILL SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ACCEPTABLE DISPOSAL SITES AND ASSURE THAT ALL SURPLUS MATERIAL IS DISPOSED OF IN SAME.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING ALL APPROPRIATE MEASURES NEEDED (STREET SWEEPERS, WATER TRUCKS, ETC.) TO KEEP STREETS AND ROADS USED AS HAUL ROUTES FOR EXPORT OR IMPORT OF MATERIAL CLEAN AND FREE FROM DEBRIS, MUD, ETC.. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

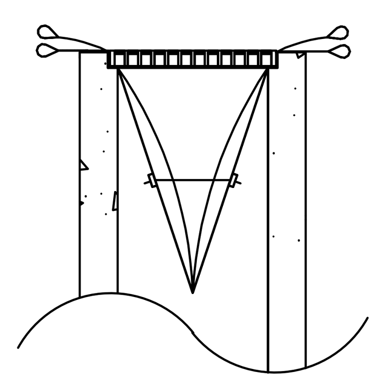



### NOTES

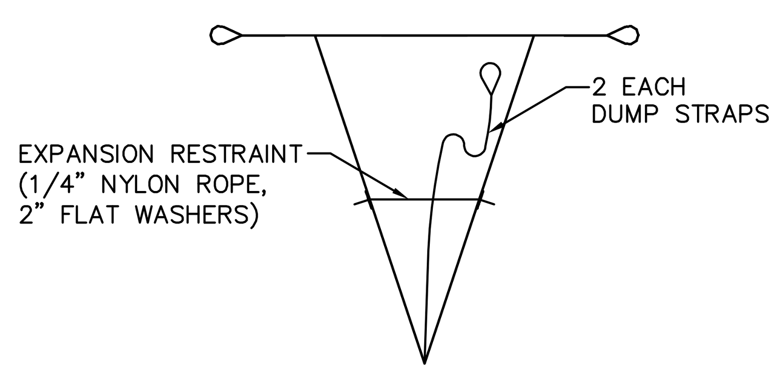
1. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP AND BOTH ENDS SECURELY FASTENED TO THE POST.
2. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS (WHERE FEASIBLE). THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 30 INCHES).
3. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 1 INCH LONG, TIE WIRE OR HOG RINGS.
4. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 20 INCHES OF THE FABRIC SHALL BE EXTENDED ACROSS THE GROUND, UPSLOPE AND ADJACENT TO THE WOOD POST. THE FABRIC SHALL NOT EXTEND MORE THAN 30 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
5. WHEN EXTRA FILTER FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISIONS OF STANDARD NOTE 3 APPLYING.
6. FABRIC SHALL BE SECURED AT THE BASE BY PEA-ROCK FILLED SANDBAGS OR STRAW WATTLES PLACED END TO END.
7. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
8. FILTER FABRIC FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
9. FILTER FABRIC SHALL BE PER CURRENT GEOTEXTILE FABRIC STANDARDS FOR SILT FENCE IN THE DEPARTMENT OF ECOLOGY STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON.

## HIGH VISIBILITY FILTER FABRIC FENCE

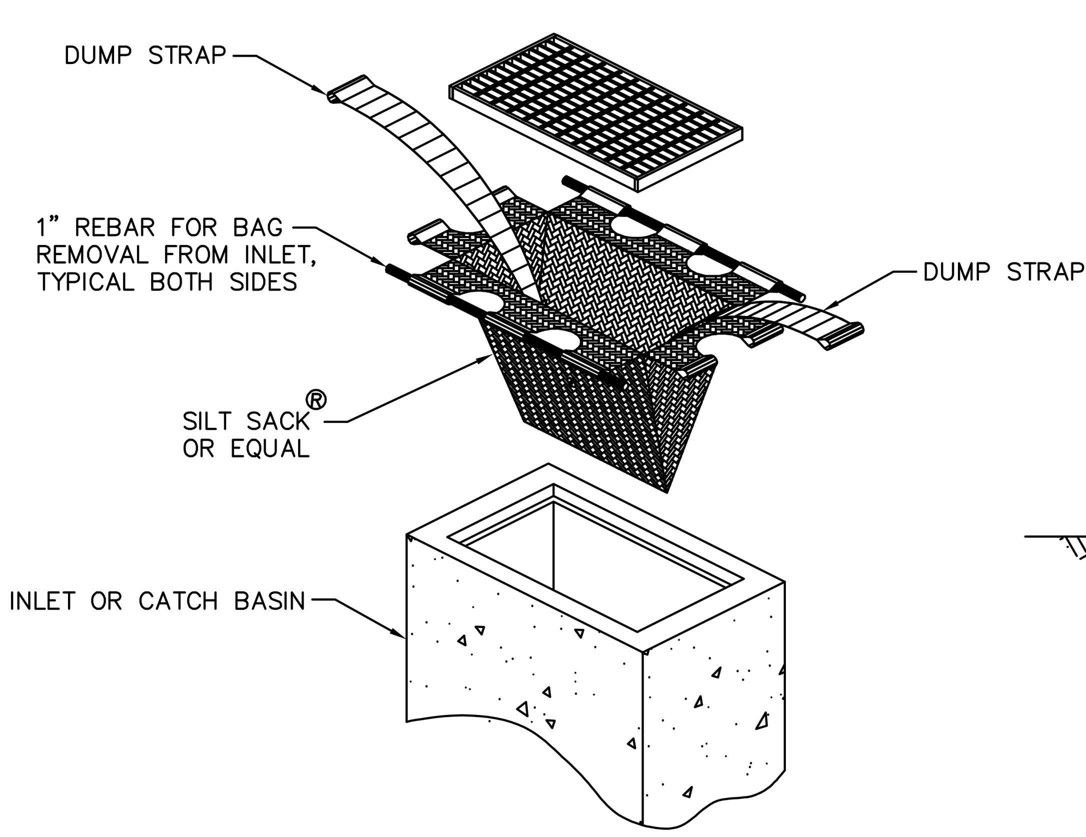
NOT TO SCALE



INSTALLATION DETAIL




BAG DETAIL




## STORM DRAIN INLET PROTECTION

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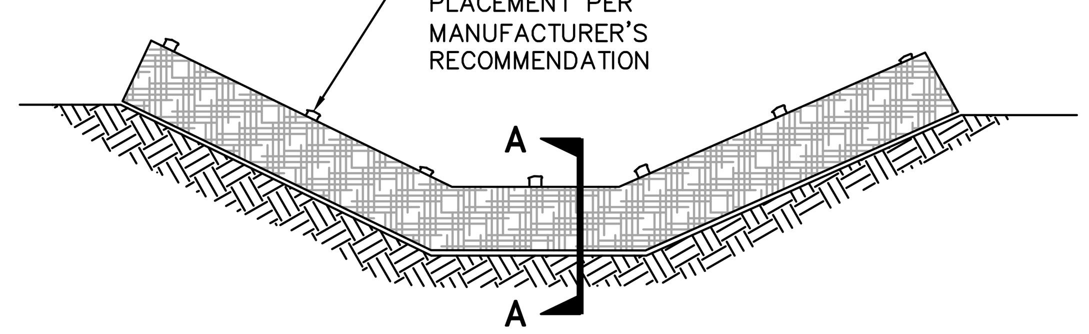
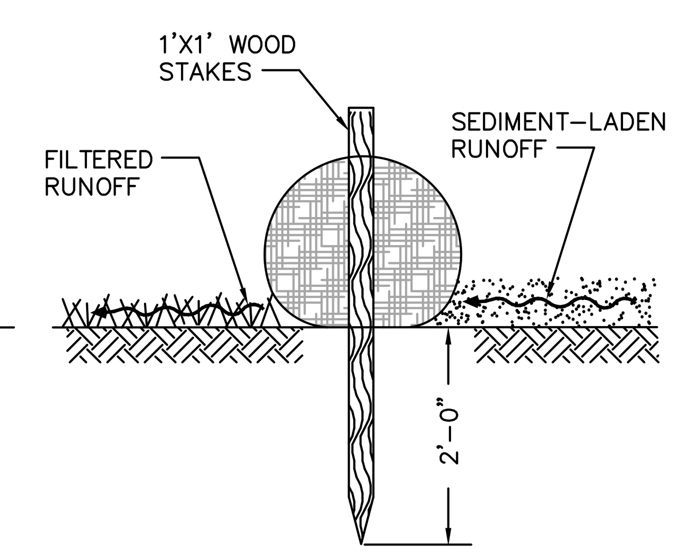



PLACEMENT OF STRAW WATTLE




CROSS SECTION A-A

## STRAW WATTLE DAM

NOT TO SCALE

SIGNED: 11/01/2021

| NO | BY | APPD | REVISION | DATE |
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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

T.E.S.C. DETAILS

G02

C2021-04



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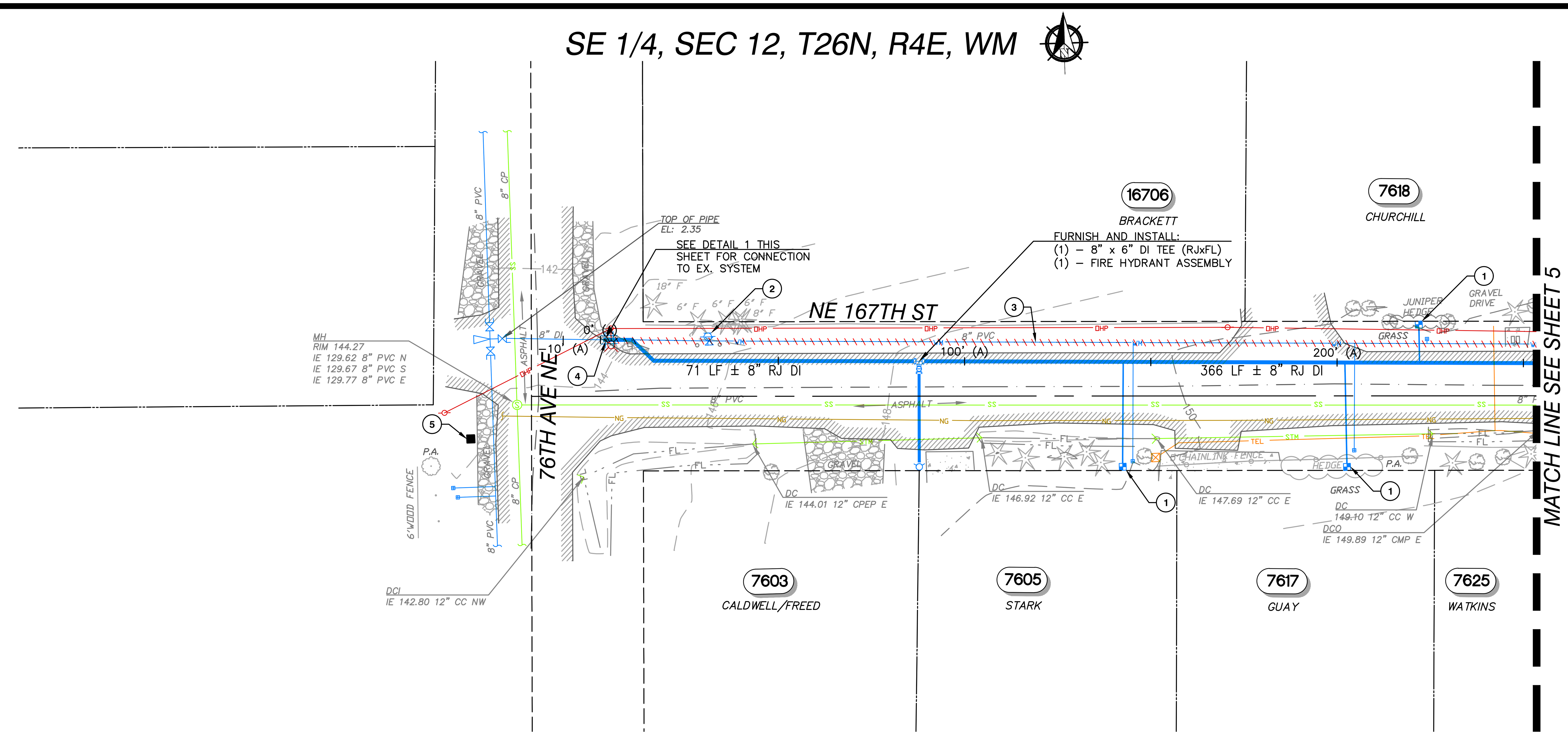
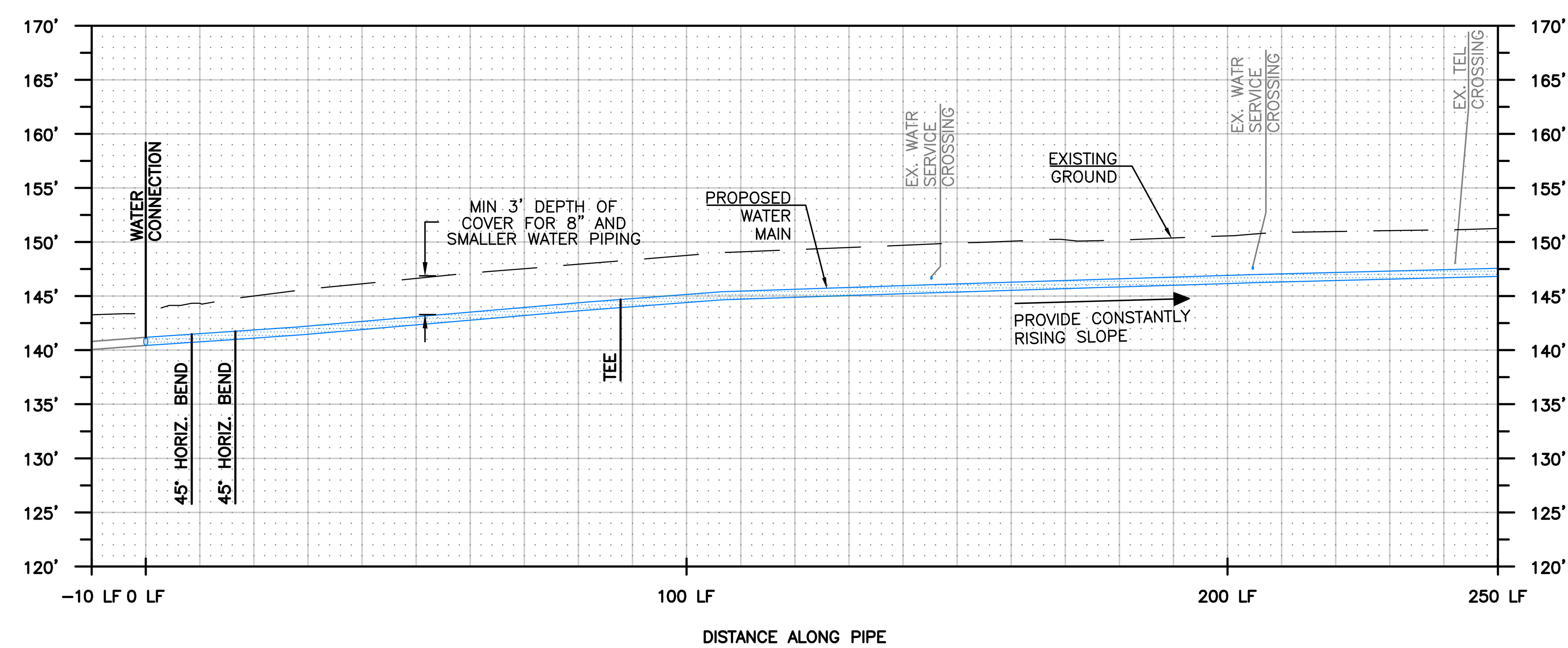


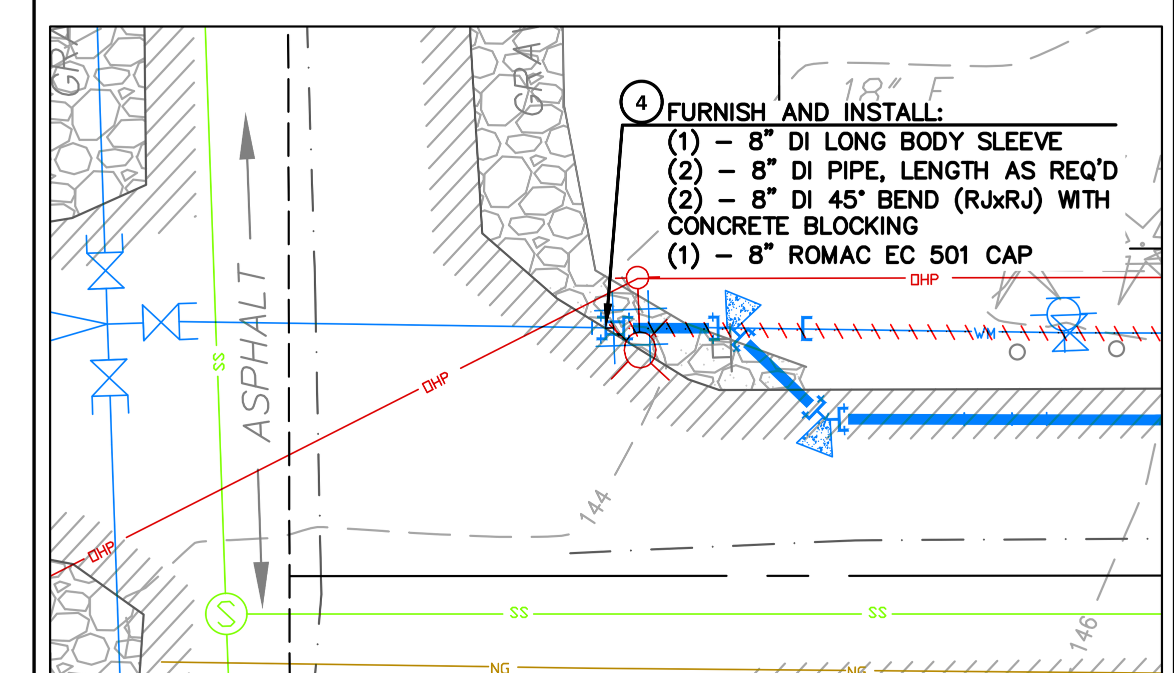




## GENERAL NOTES

1. SEE SHEET 2 FOR GENERAL NOTES, LEGEND, AND SURVEY CONTROL INFORMATION.
2. PRIOR TO EXCAVATION, INSTALL TESC FACILITIES PER SHEET 3.
3. COORDINATE AND CONFIRM FITTING REQUIREMENTS IN THE FIELD WITH NUD PRIOR TO CONSTRUCTION.
4. ALL BURIED WATER MAIN SHALL BE RESTRAINED JOINT (R.J.) PIPE WITH FIELD LOK GASKETS (OR APPROVED EQUAL) AND POLYETHYLENE ENCASEMENT PER NUD STANDARD SPECIFICATIONS. PROVIDE 5' CLEARANCE FROM EXISTING SEWER AND 5' CLEARANCE FROM EXISTING WATER MAIN. WHERE INFEASIBLE AND WITH DISTRICT APPROVAL, MAINTAIN 3' CLEARANCE FROM EXISTING WATER MAIN.
5. LOCATION AND DEPTH OF EXISTING WATER MAINS SHALL BE VERIFIED PRIOR TO CONNECTION.
6. ALL SERVICE CONNECTIONS ARE ASSUMED TO HAVE A PRIVATE PRV DEVICE ON THE BACKSIDE OF THE METER. UNLESS OTHERWISE NOTED, A REPLACEMENT PRV DEVICE SHALL BE INSTALLED AT THE TIME OF RECONNECTION. SEE SPECIFICATIONS FOR PRESSURE TESTING REQUIREMENTS. SEE SHEET 28 FOR STANDARD DETAIL.

## CONSTRUCTION NOTES

1. INSTALL NEW 1" SERVICE PER THE STANDARD WATER DETAILS AND THE TYPICAL WATER SERVICE REPLACEMENT DETAIL SHEETS 28 AND 29.
2. REMOVE AND SALVAGE EXISTING FH AND DELIVER TO THE DISTRICT YARD IN KENMORE IN A CLEAN AND OPERABLE CONDITION. CLOSE EXISTING FH VALVE AND REMOVE VALVE BOX AND PROTECTIVE BOLLARDS WHERE NECESSARY. INSTALL NEW FH ASSEMBLY PER THE STANDARD DETAIL. PROVIDE 6" ROMAC EC 501 CAP.
3. ABANDON IN PLACE THE EXISTING WATERLINE AFTER NEW D.I. WATERLINE CONNECTIONS HAVE BEEN CONSTRUCTED.
4. VERIFY LOCATION AND DEPTH OF EXISTING WATER MAINS PRIOR TO CONNECTION. FINAL CONNECTION SHALL BE MADE TO EXISTING DI PIPE. POTHOLE TO LOCATE EXISTING PVC–TO–DI TRANSITION COUPLING.
5. CATCH BASIN AND INLET SEDIMENTATION PROTECTION REQUIRED, SEE SHEET 3 FOR ADDITIONAL INFORMATION.

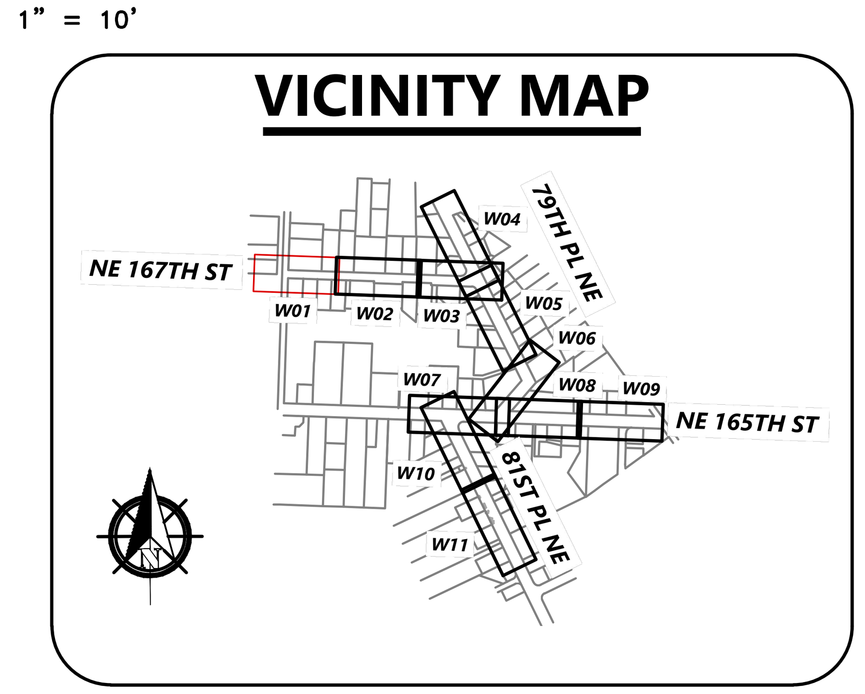



CONNECTION TO EX. SYSTEM – NE 167TH ST

1/4

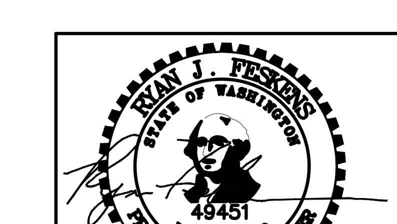
DETAIL
SCALE: 1" = 10'

## VICINITY MAP




HORZ. 20' 0' 20' 40' SCALE IN FEET

VERT. 5' 0' 5' 10' SCALE IN FEET



SIGNED: 11/01/2021

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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

WATER MAIN PLAN AND PROFILE 01

W01
C2021-04
SHEET


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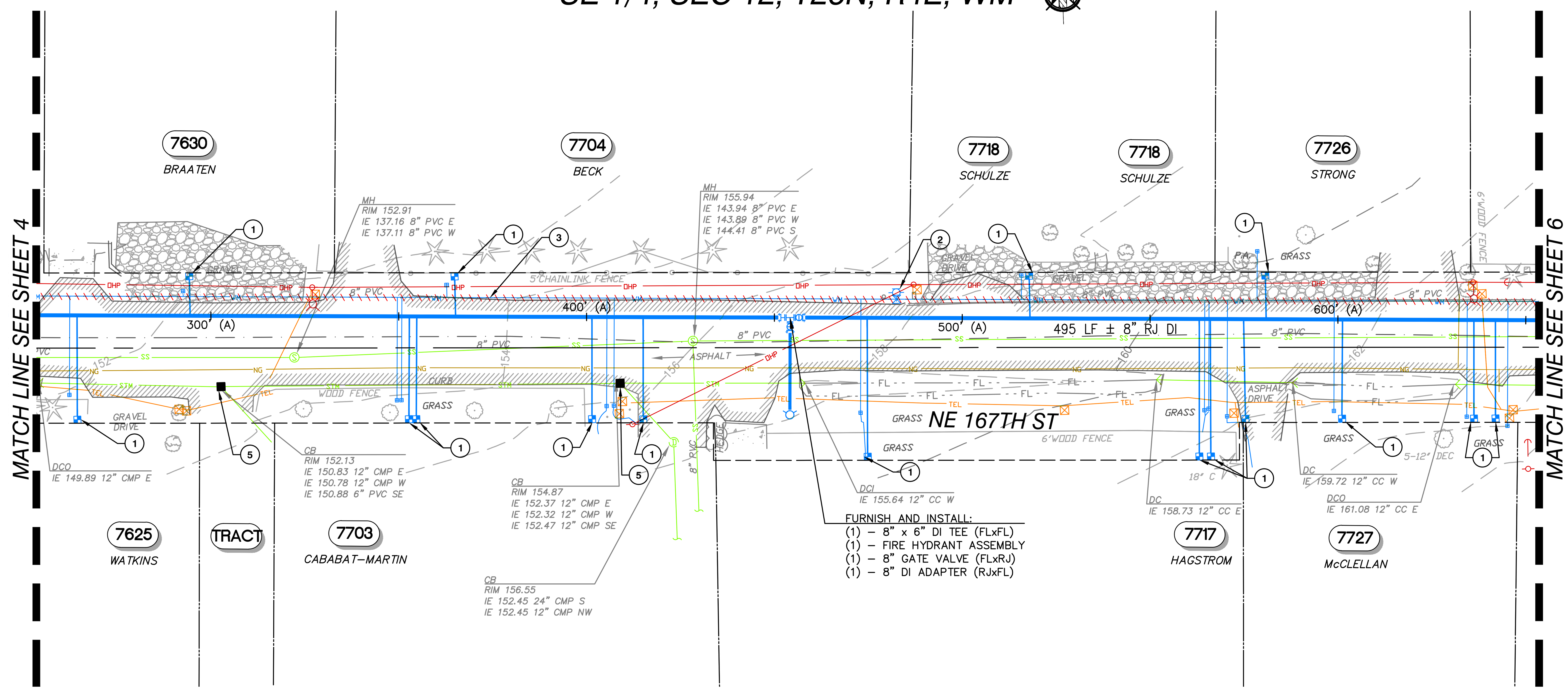
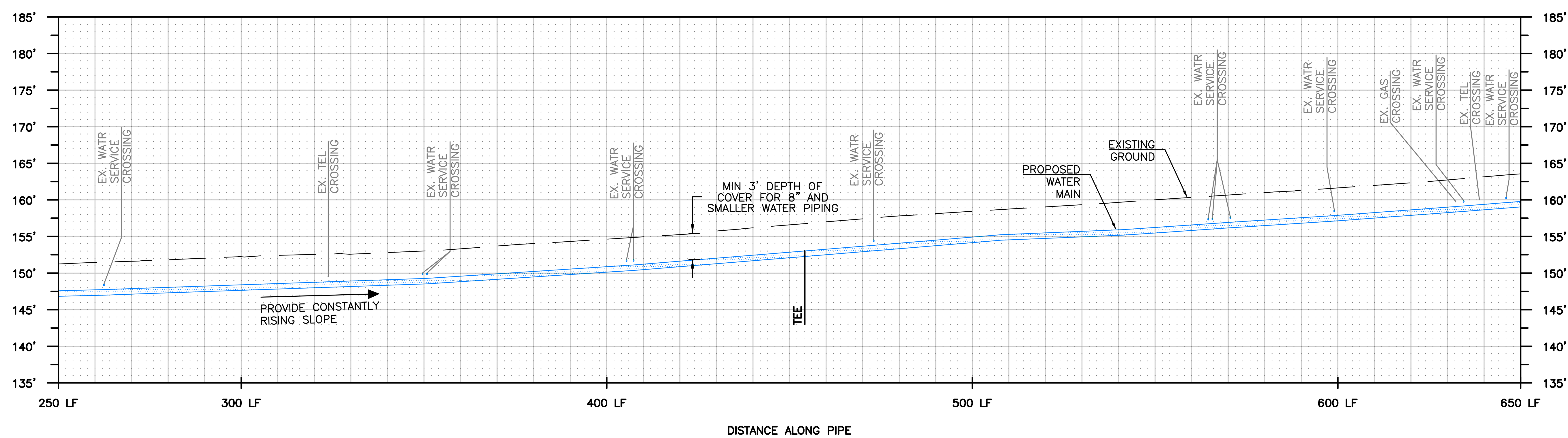
## SE 1/4, SEC 12, T26N, R4E, WM

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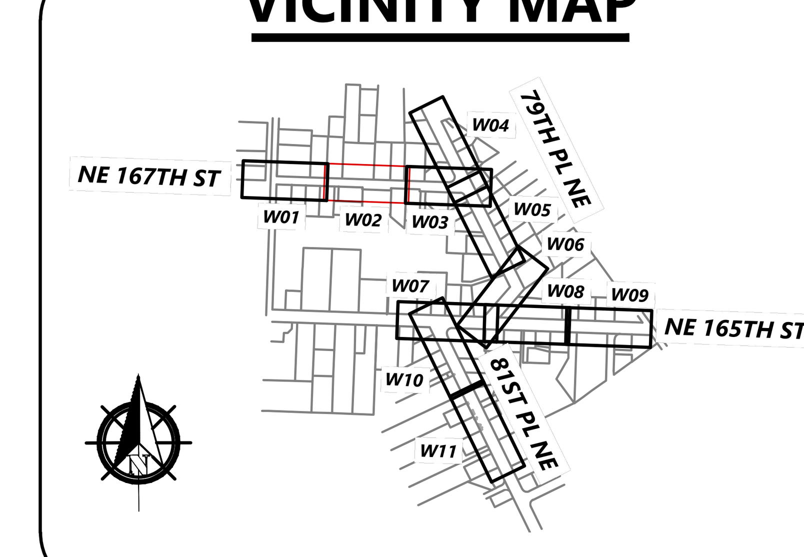


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VERT. 5' 0' 5' 10' SCALE IN FEET

BRIAN J. FESKENS, STATE OF WASHINGTON, 49451, REGISTERED PROFESSIONAL ENGINEER, SIGNED: 11/01/2021

| NO | BY | APPD | REVISION | DATE |
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WATER MAIN PLAN AND PROFILE 02

W02
C2021-04
SHEET 5 OF 29

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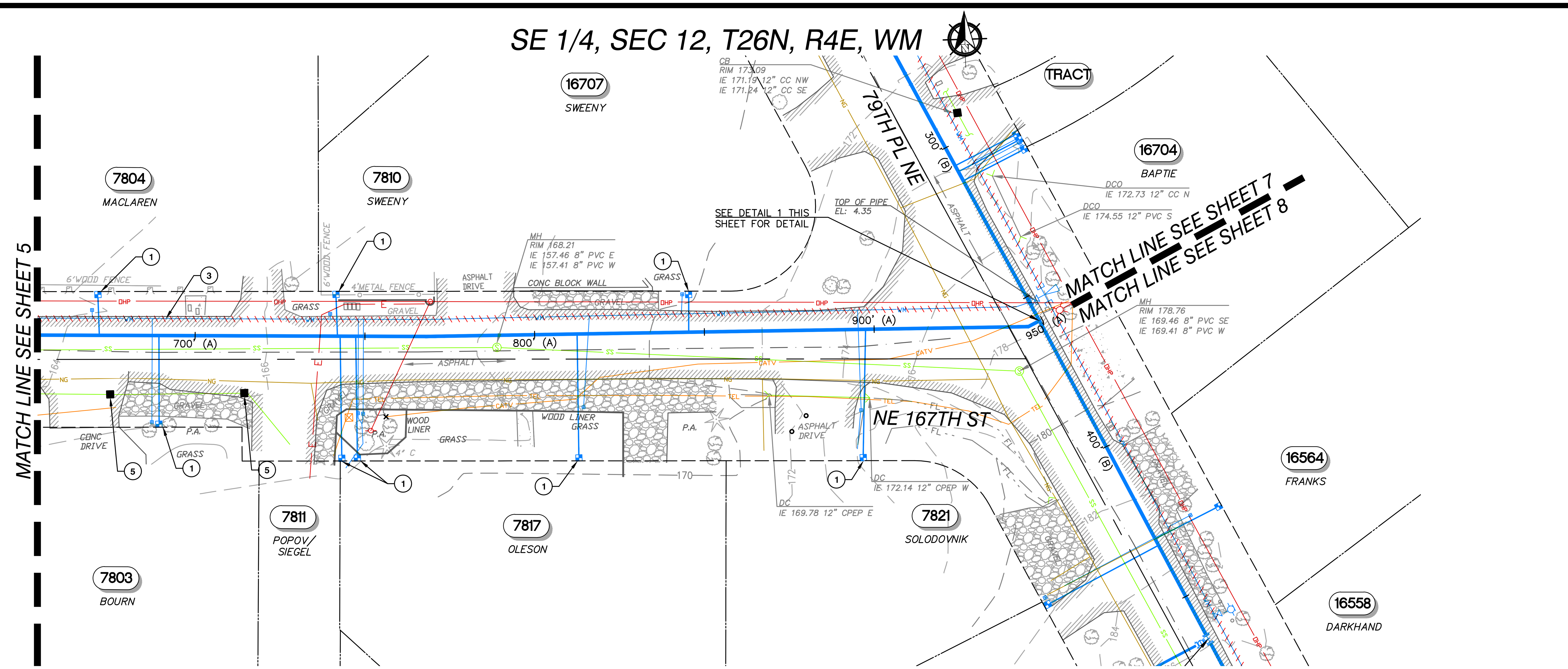


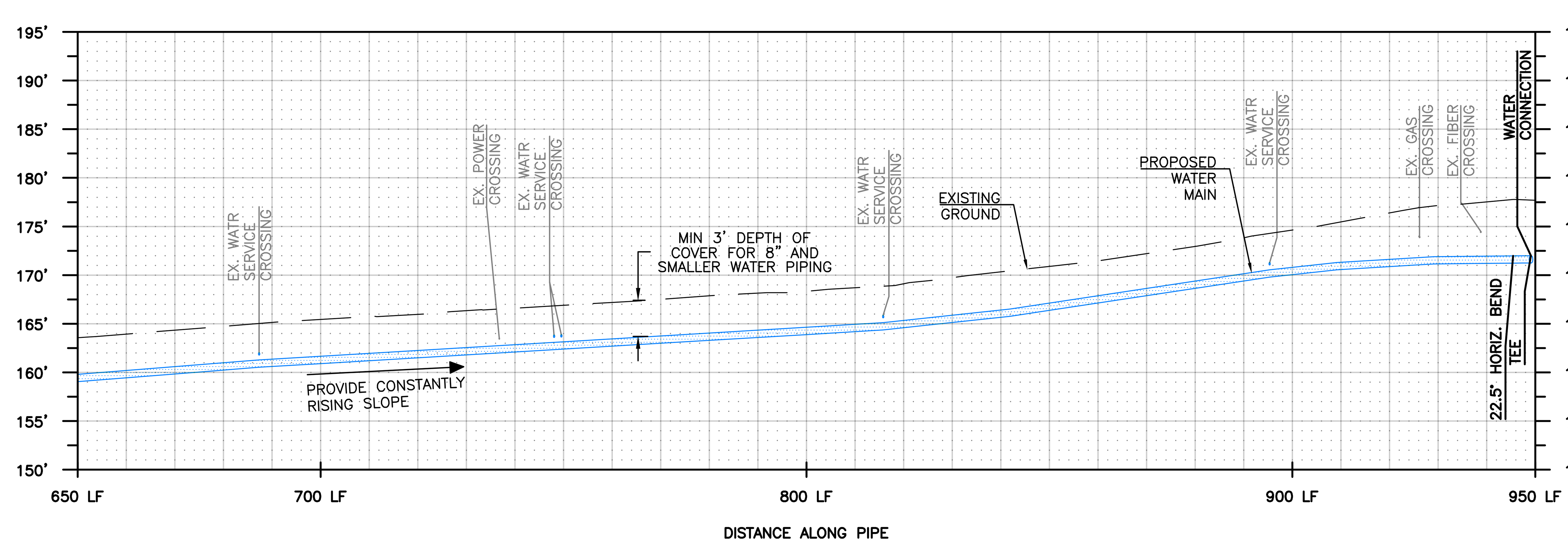


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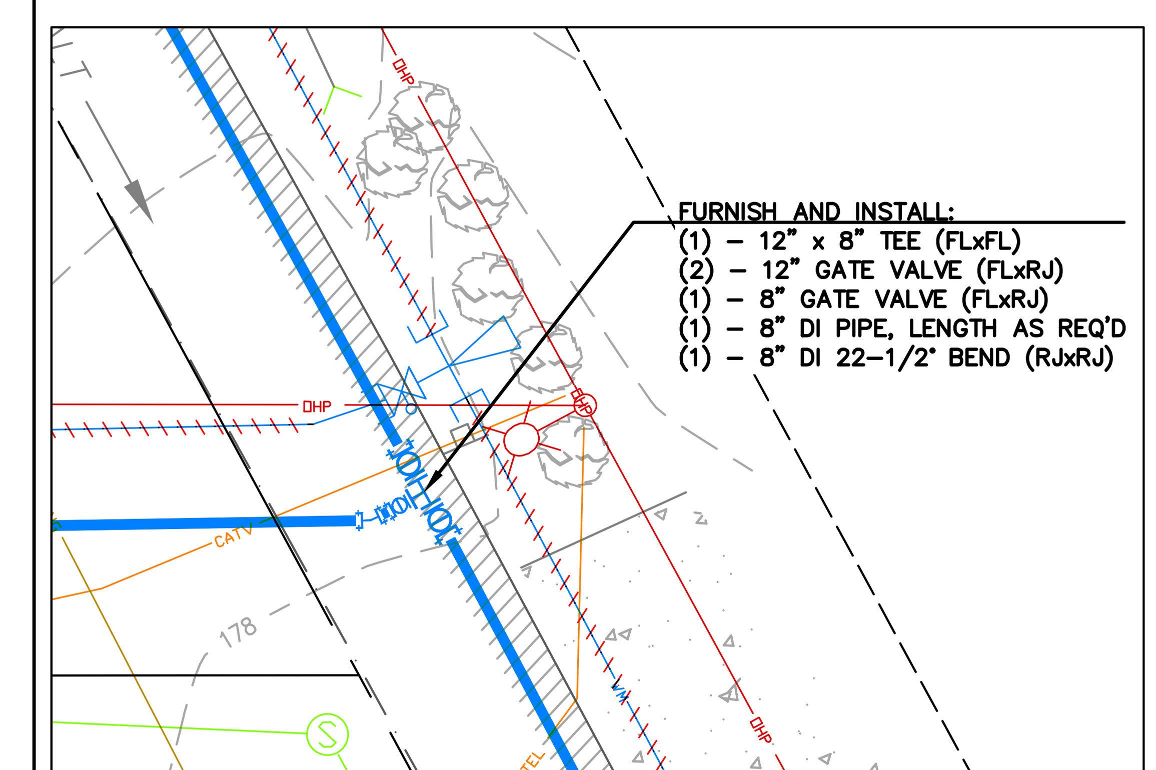
## CONSTRUCTION NOTES

1. INSTALL NEW 1" SERVICE PER THE STANDARD WATER DETAILS AND THE TYPICAL WATER SERVICE REPLACEMENT DETAIL SHEETS 28 AND 29.
3. ABANDON IN PLACE THE EXISTING WATERLINE AFTER NEW D.I. WATERLINE CONNECTIONS HAVE BEEN CONSTRUCTED.
4. VERIFY LOCATION AND DEPTH OF EXISTING WATER MAINS PRIOR TO CROSSING.
5. CATCH BASIN AND INLET SEDIMENTATION PROTECTION REQUIRED, SEE SHEET 3 FOR ADDITIONAL INFORMATION.

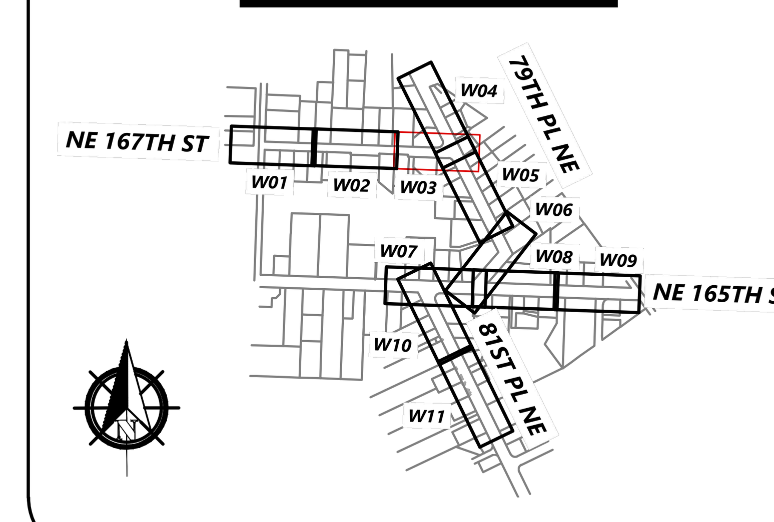



WATER MAIN DETAIL – NE 167TH ST & 79TH PL NE

1 / 6

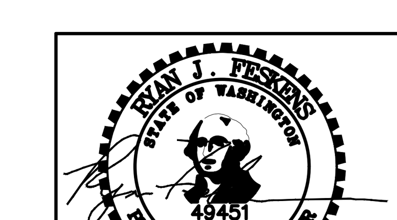
DETAIL
SCALE: 1" = 10'

## VICINITY MAP




HORZ. 20' 0' 20' 40' SCALE IN FEET

VERT. 5' 0' 5' 10' SCALE IN FEET




SIGNED: 11/01/2021

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WARNING

0 ½ 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

RH2

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|---|---|
| DESIGNED BY | DMF |
| DRAWN BY | DMF |
| CHECKED BY | RJF |
| APPROVAL | RJF |
| DATE | Nov 1, 2021 |

NORTHSHORE UTILITY DISTRICT
WATER SEWER
6830 NE 185th St. Kenmore, WA 98028-2684
P.O. Box 82489 Kenmore, WA 98028-2684
Ph: (425) 398-4400 | Fax: (425) 398-4430 | www.nud.net

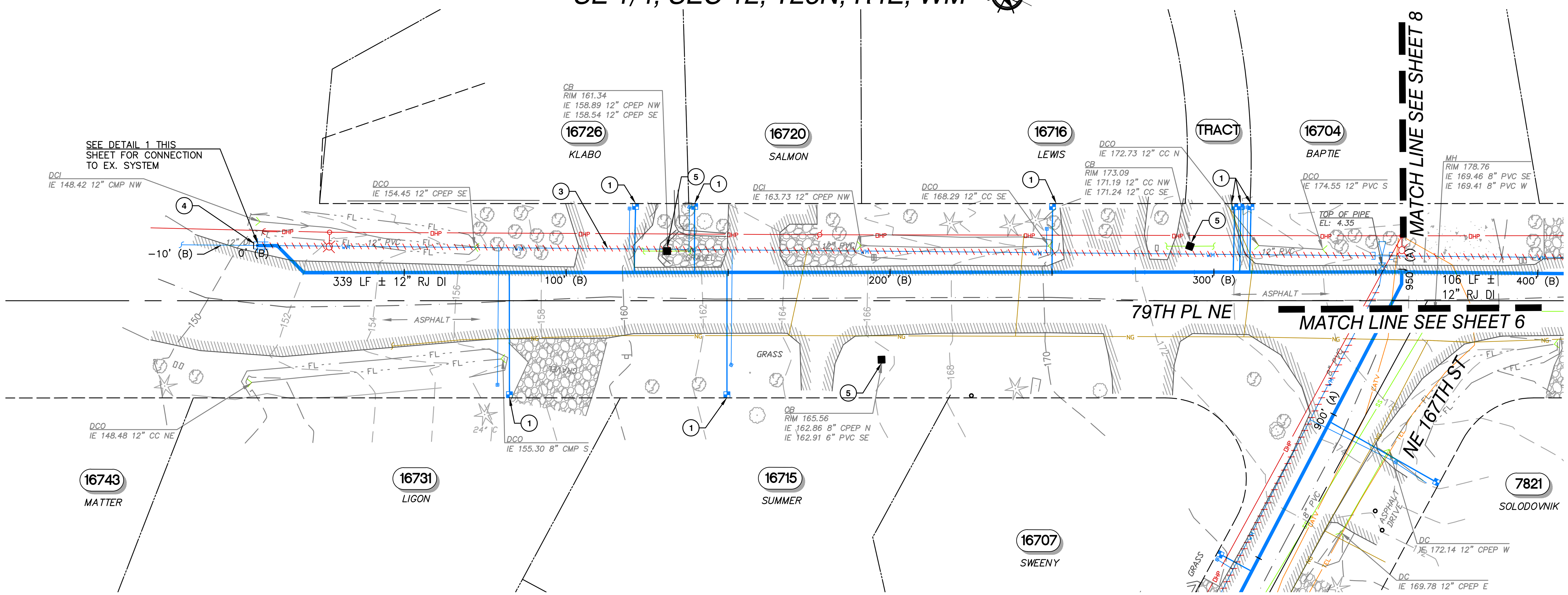
CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

# WATER MAIN PLAN AND PROFILE 03

W03

C2021-04

## SE 1/4, SEC 12, T26N, R4E, WM




### GENERAL NOTES

1. SEE SHEET 2 FOR GENERAL NOTES, LEGEND, AND SURVEY CONTROL INFORMATION.
2. PRIOR TO EXCAVATION, INSTALL TESC FACILITIES PER SHEET 3.
3. COORDINATE AND CONFIRM FITTING REQUIREMENTS IN THE FIELD WITH NUD PRIOR TO CONSTRUCTION.
4. ALL BURIED WATER MAIN SHALL BE RESTRAINED JOINT (R.J.) PIPE WITH FIELD LOK GASKETS (OR APPROVED EQUAL) AND POLYETHYLENE ENCASEMENT PER NUD STANDARD SPECIFICATIONS. PROVIDE 5' CLEARANCE FROM EXISTING SEWER AND 5' CLEARANCE FROM EXISTING WATER MAIN. WHERE INFEASIBLE AND WITH DISTRICT APPROVAL, MAINTAIN 3' CLEARANCE FROM EXISTING WATER MAIN.
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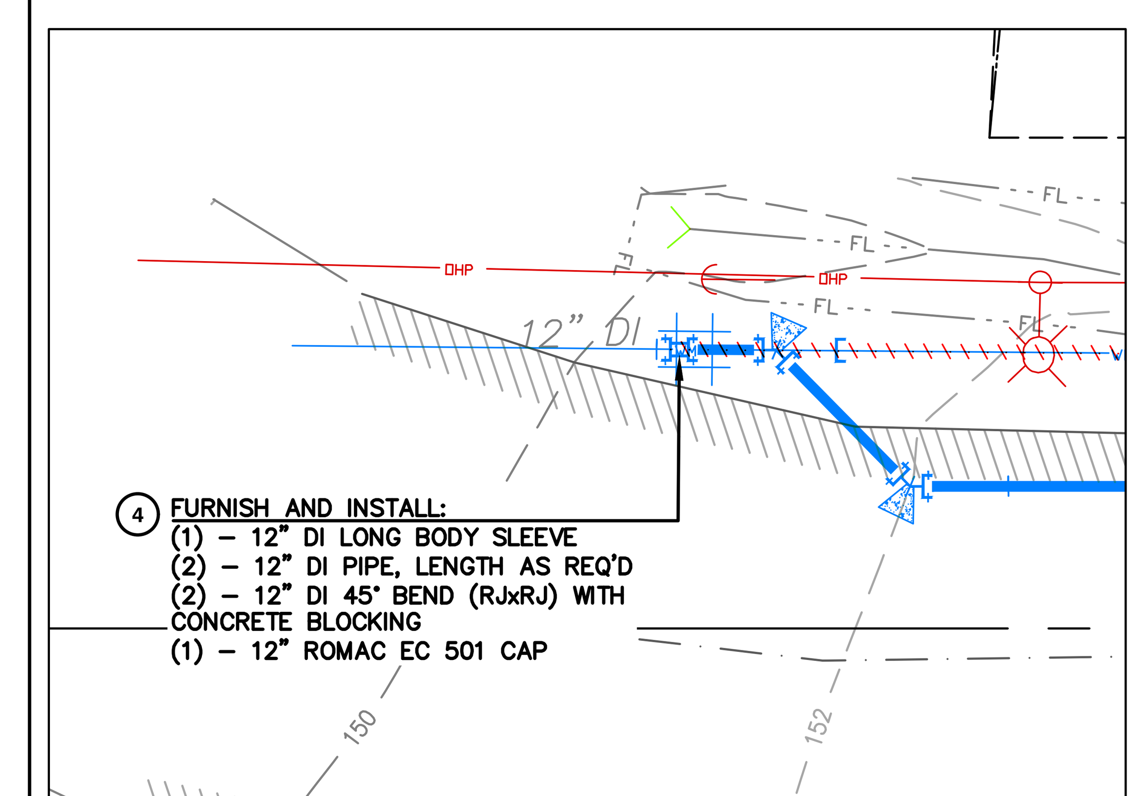
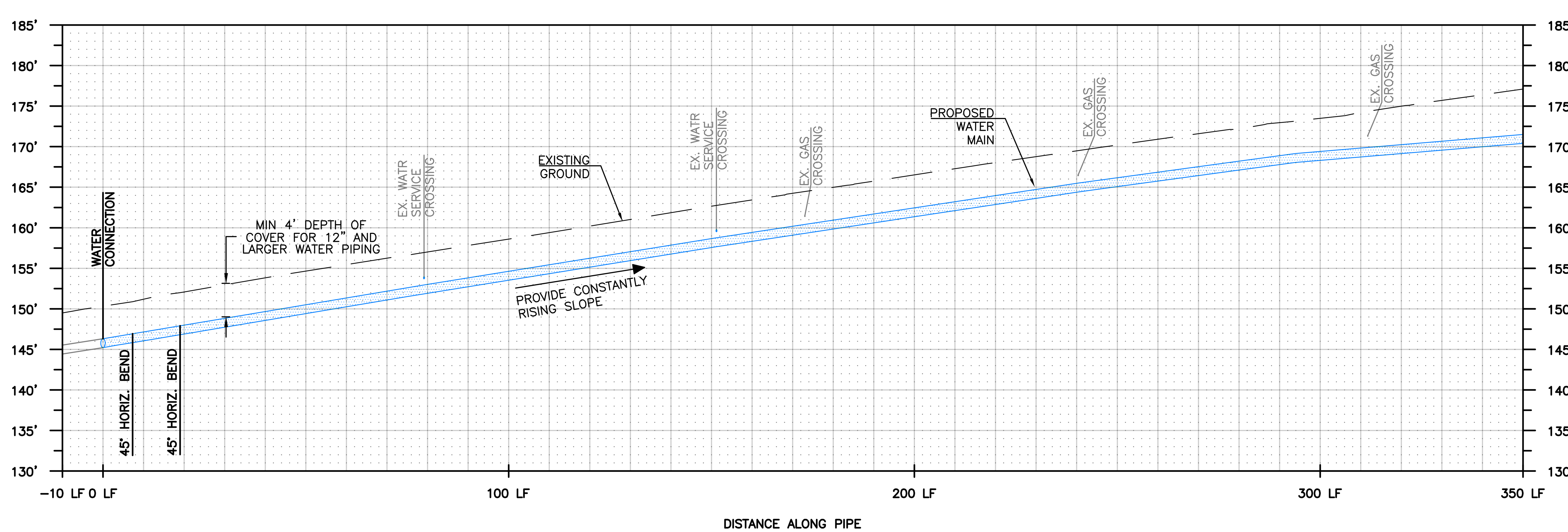
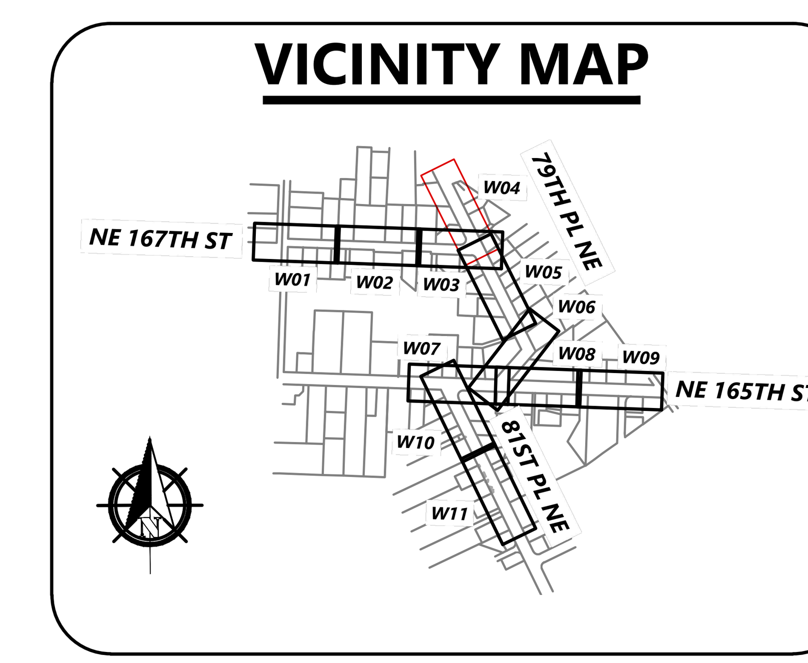



CONNECTION TO EX. SYSTEM – 79TH PL NE (1/7)

DETAIL
SCALE: 1" = 10'

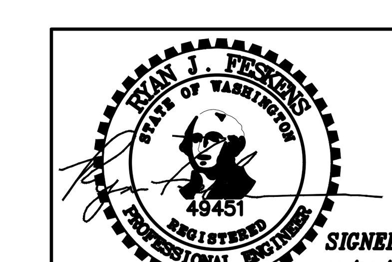



### VICINITY MAP




HORZ. SCALE: 20' 0' 20' 40' IN FEET

VERT. SCALE: 5' 0' 5' 10' IN FEET

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WARNING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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| DESIGNED BY | DMF |
| DRAWN BY | DMF |
| CHECKED BY | RJF |
| APPROVAL | RJF |
| DATE | Nov 1, 2021 |

**NORTHSHORE UTILITY DISTRICT**

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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

WATER MAIN PLAN AND PROFILE 04

W04

C2021-04

SHEET 7 OF 29

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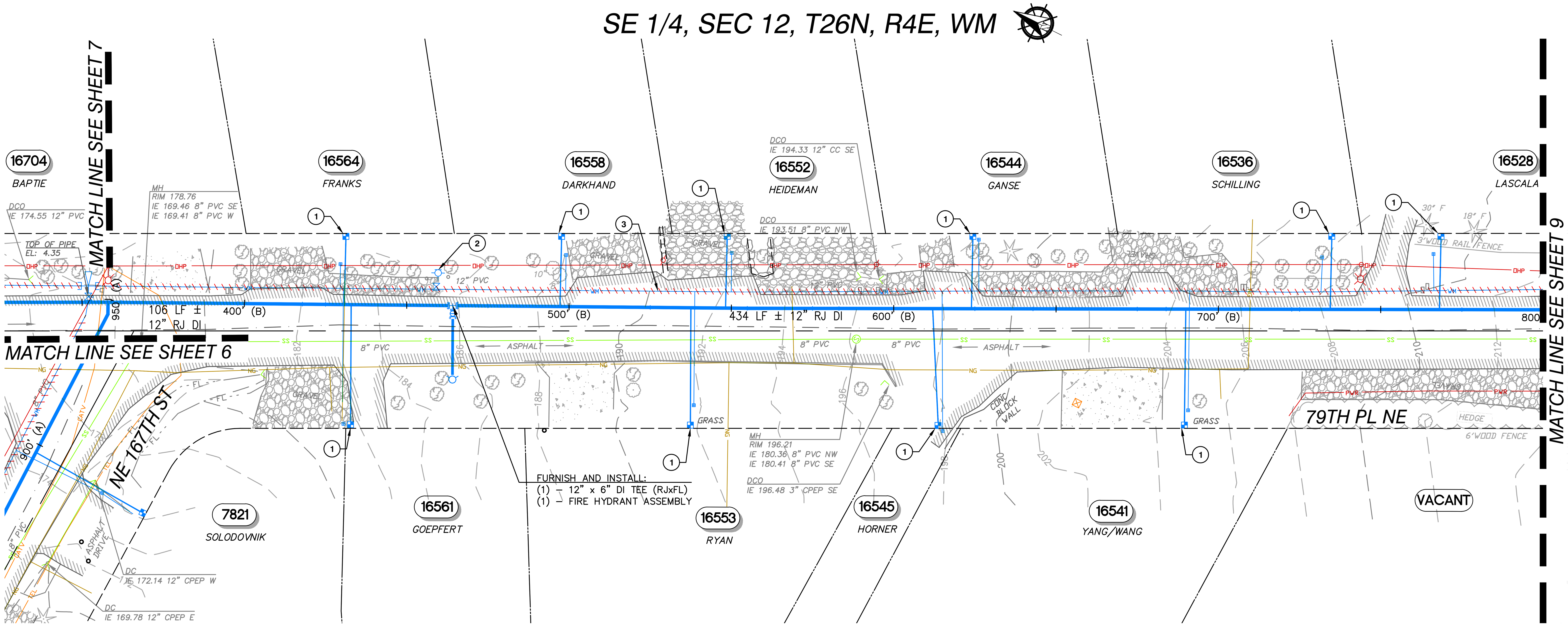


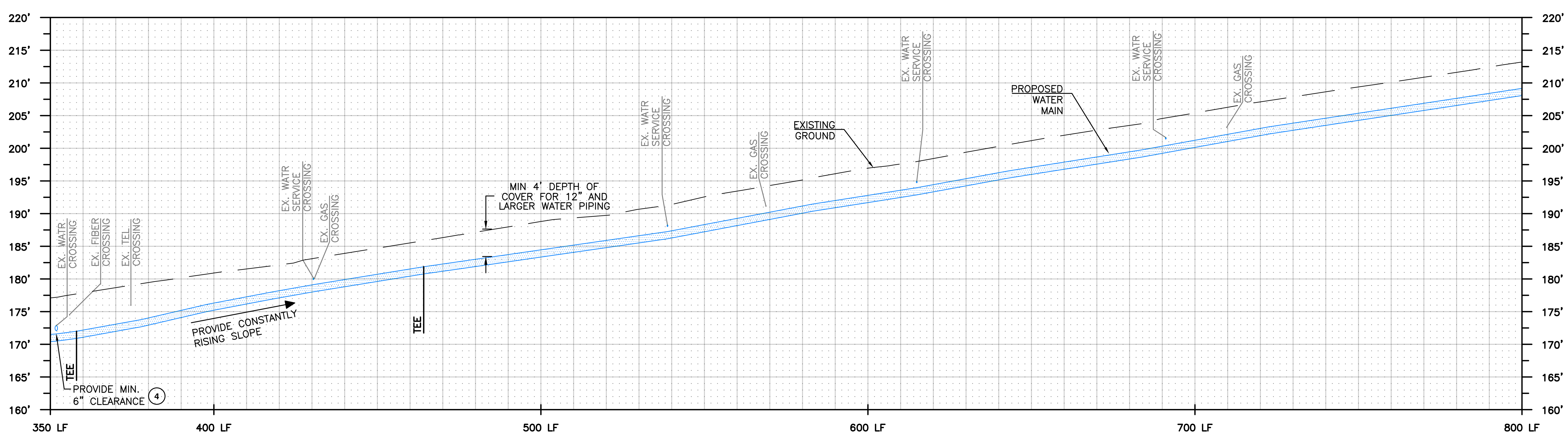


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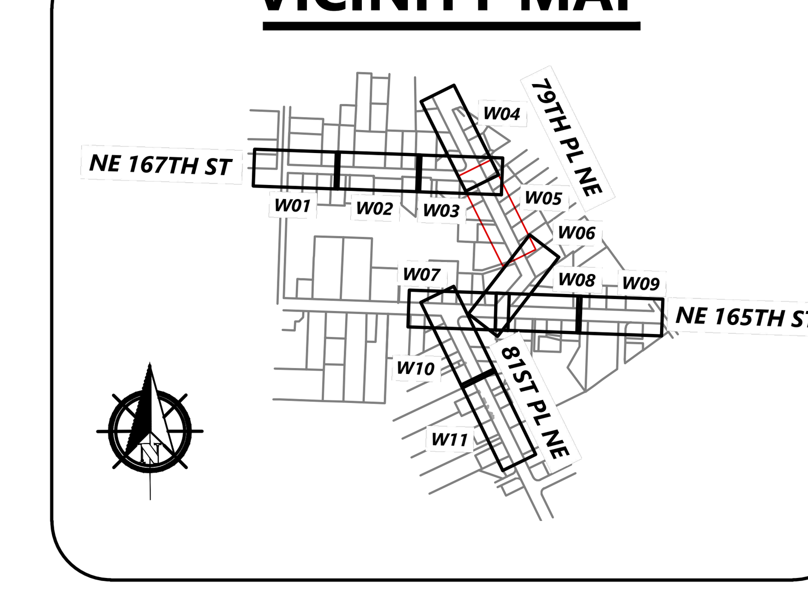
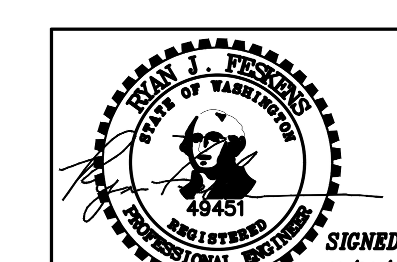
## VICINITY MAP




HORZ. SCALE 20' 0' 20' 40' IN FEET

VERT. SCALE 5' 0' 5' 10' IN FEET

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WARNING
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RH2

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| DESIGNED BY | DMF |
| DRAWN BY | DMF |
| CHECKED BY | RJF |
| APPROVAL | RJF |
| DATE | Nov 1, 2021 |

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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

WATER MAIN PLAN AND PROFILE 05

W05
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SHEET


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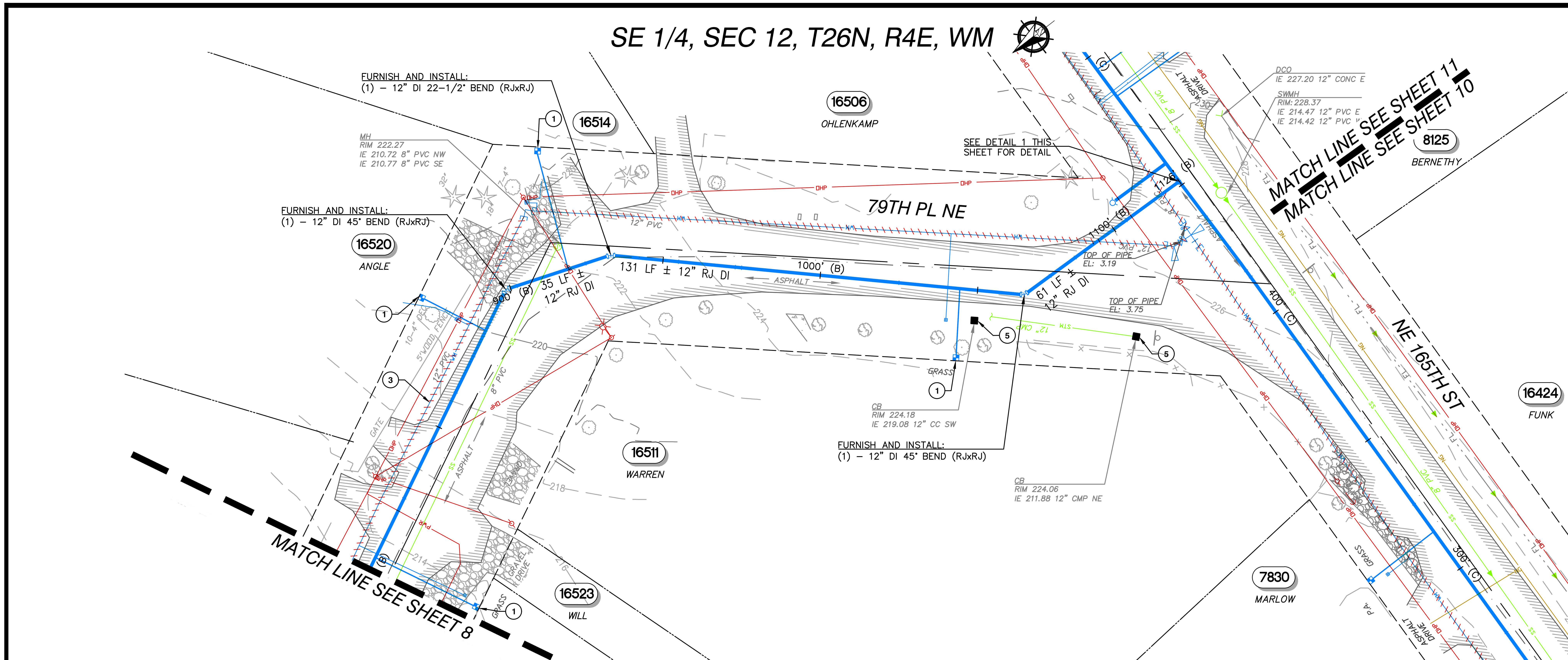
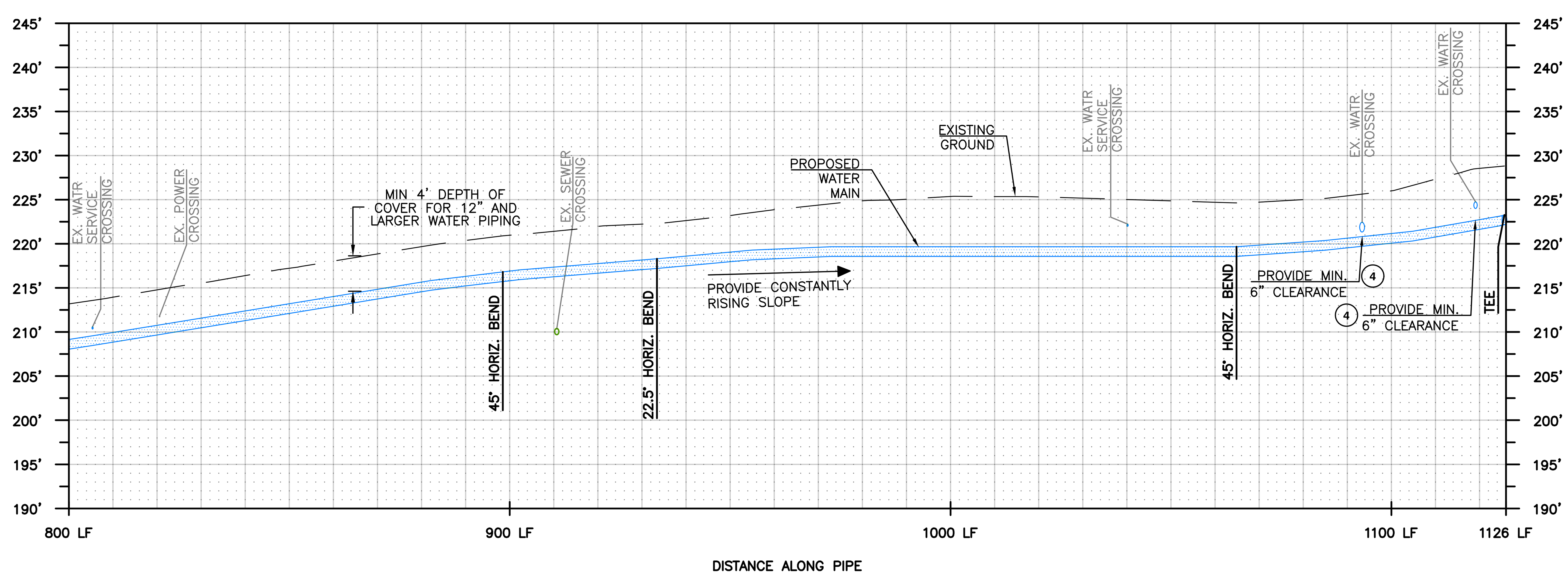
# SE 1/4, SEC 12, T26N, R4E, WM

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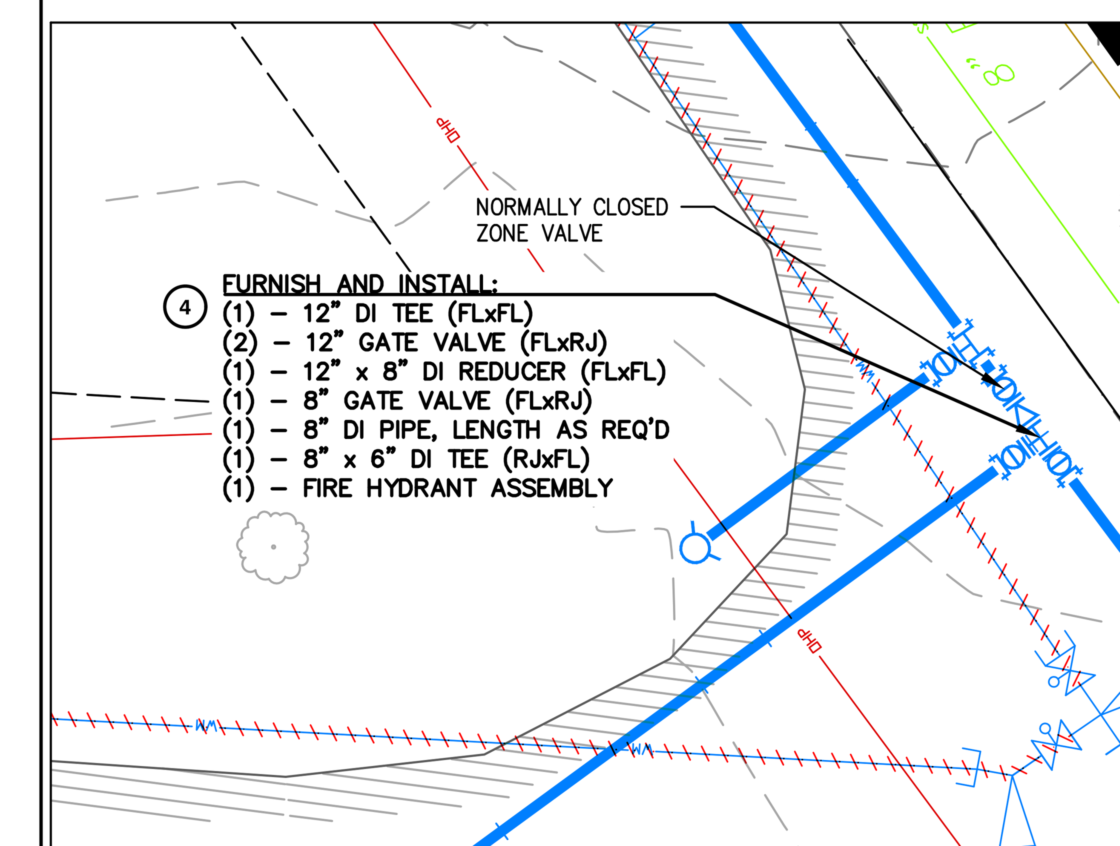
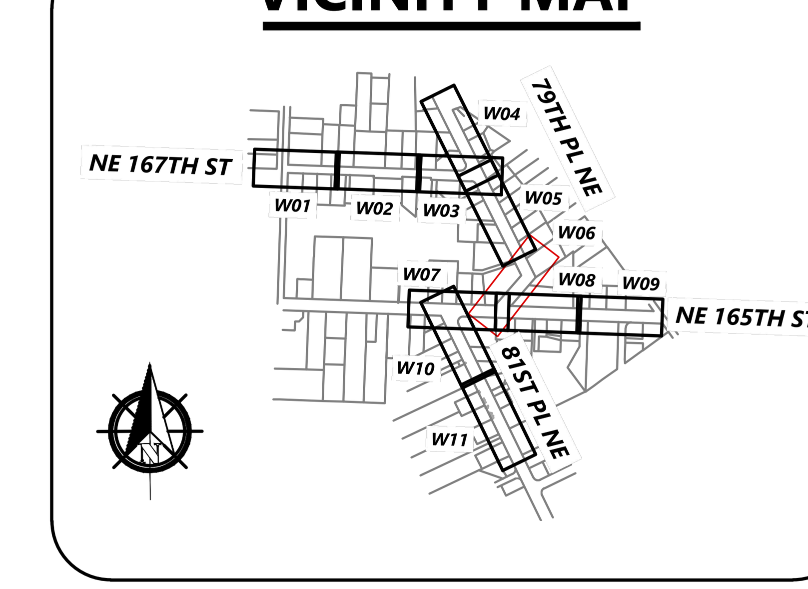



WATER MAIN DETAIL – 79TH PL NE & NE 165TH ST

DETAIL 1/9

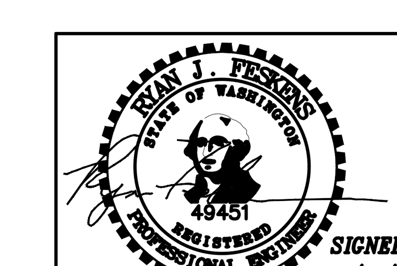
SCALE: 1" = 10'

## VICINITY MAP




HORZ. SCALE 20' 0' 20' 40' IN FEET

VERT. SCALE 5' 0' 5' 10' IN FEET

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WARNING

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RH2

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| DESIGNED BY | DMF |
| DRAWN BY | DMF |
| CHECKED BY | RJF |
| APPROVAL | RJF |
| DATE | Nov 1, 2021 |


NORTHSHORE UTILITY DISTRICT

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CONTRACT 2021-04

165/81 WATER MAIN REPLACEMENT

WATER MAIN PLAN AND PROFILE 06

W06

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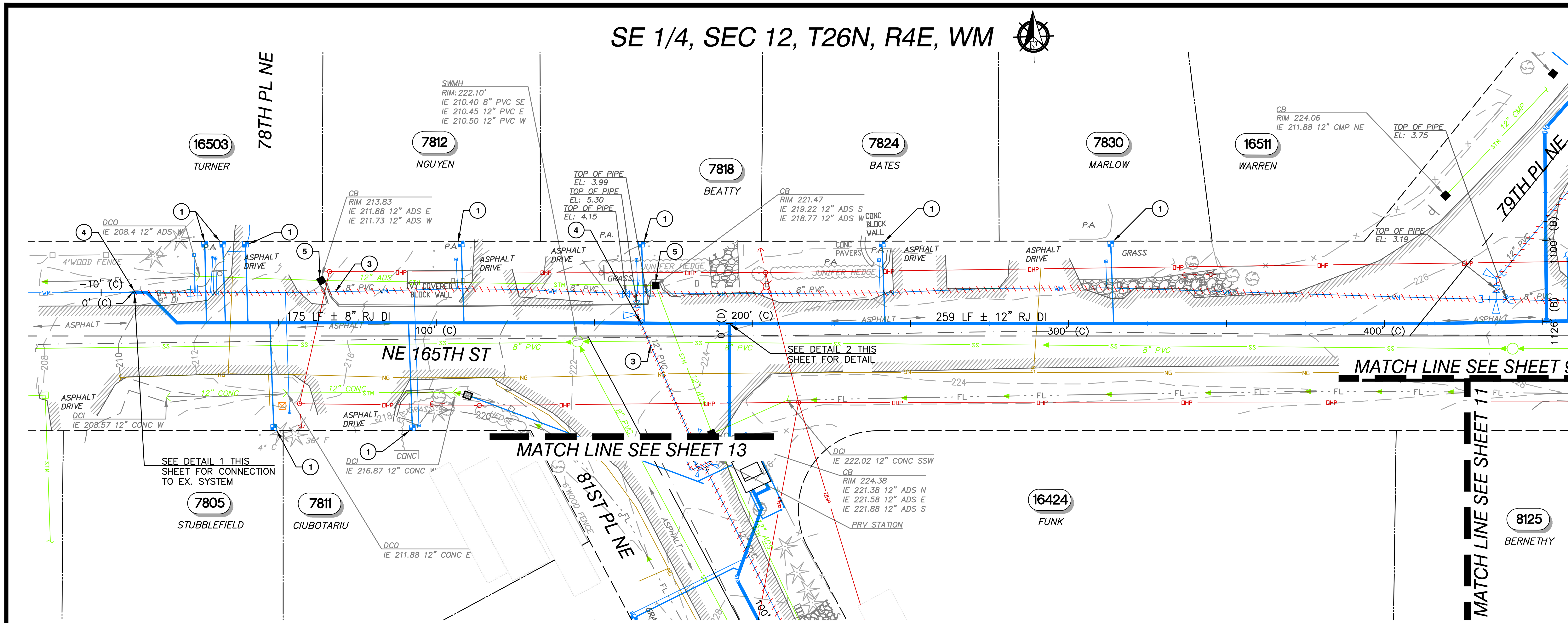
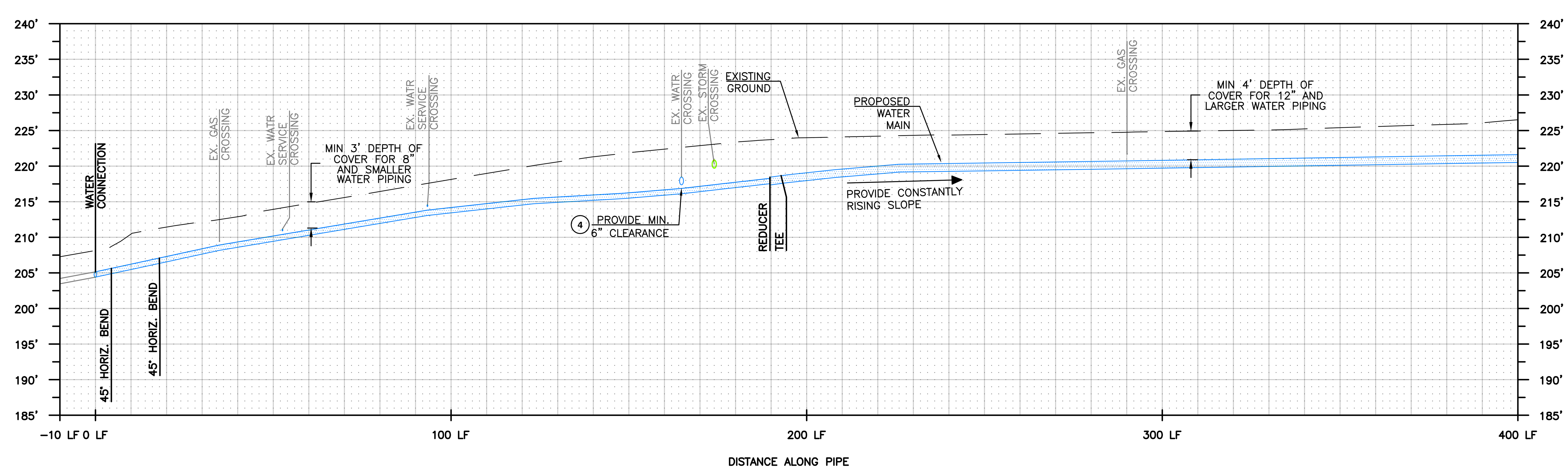
# SE 1/4, SEC 12, T26N, R4E, WM

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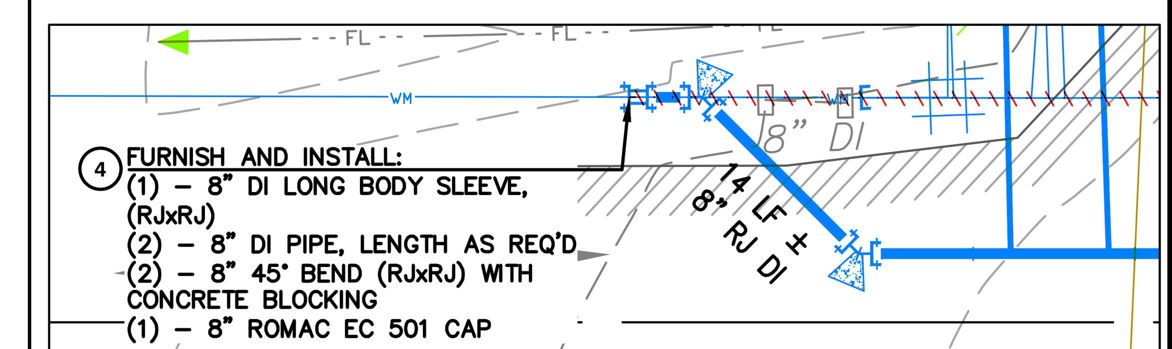
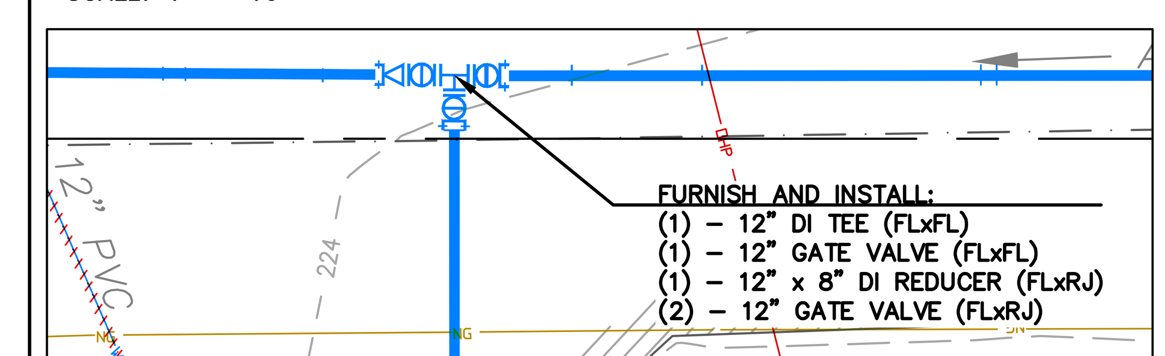



CONNECTION TO EX. SYSTEM – NE 165TH ST (1/10)

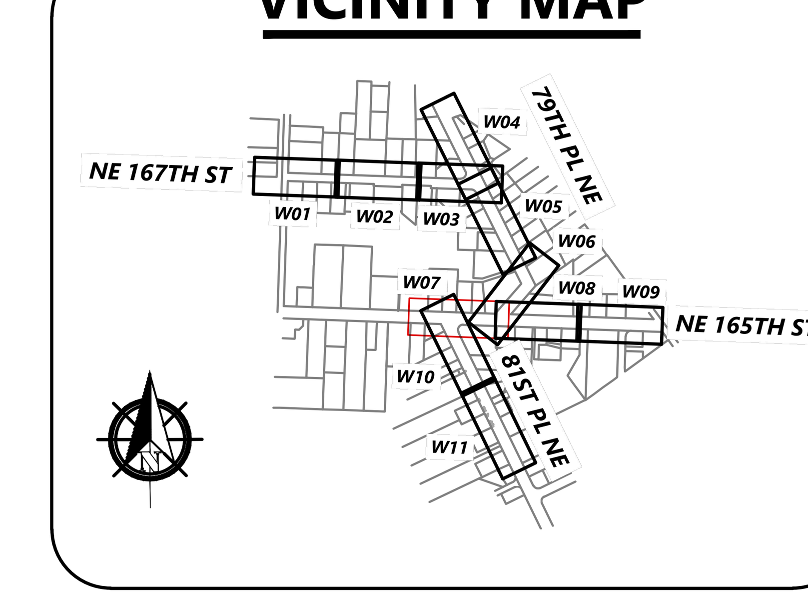
DETAIL
SCALE: 1" = 10'




WATER MAIN DETAIL – NE 165TH ST & 81ST PL NE (2/10)

DETAIL
SCALE: 1" = 10'

## VICINITY MAP




HORZ. SCALE 20' 0' 20' 40' IN FEET

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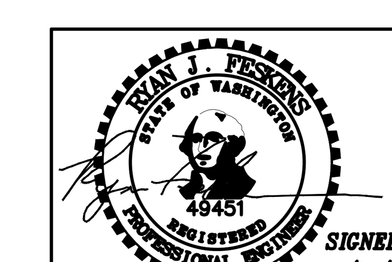


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WARNING
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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

RH2

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| DESIGNED BY | DMF |
| DRAWN BY | DMF |
| CHECKED BY | RJF |
| APPROVAL | RJF |
| DATE | Nov 1, 2021 |


**NORTHSHORE UTILITY DISTRICT**
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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

WATER MAIN PLAN AND PROFILE 07

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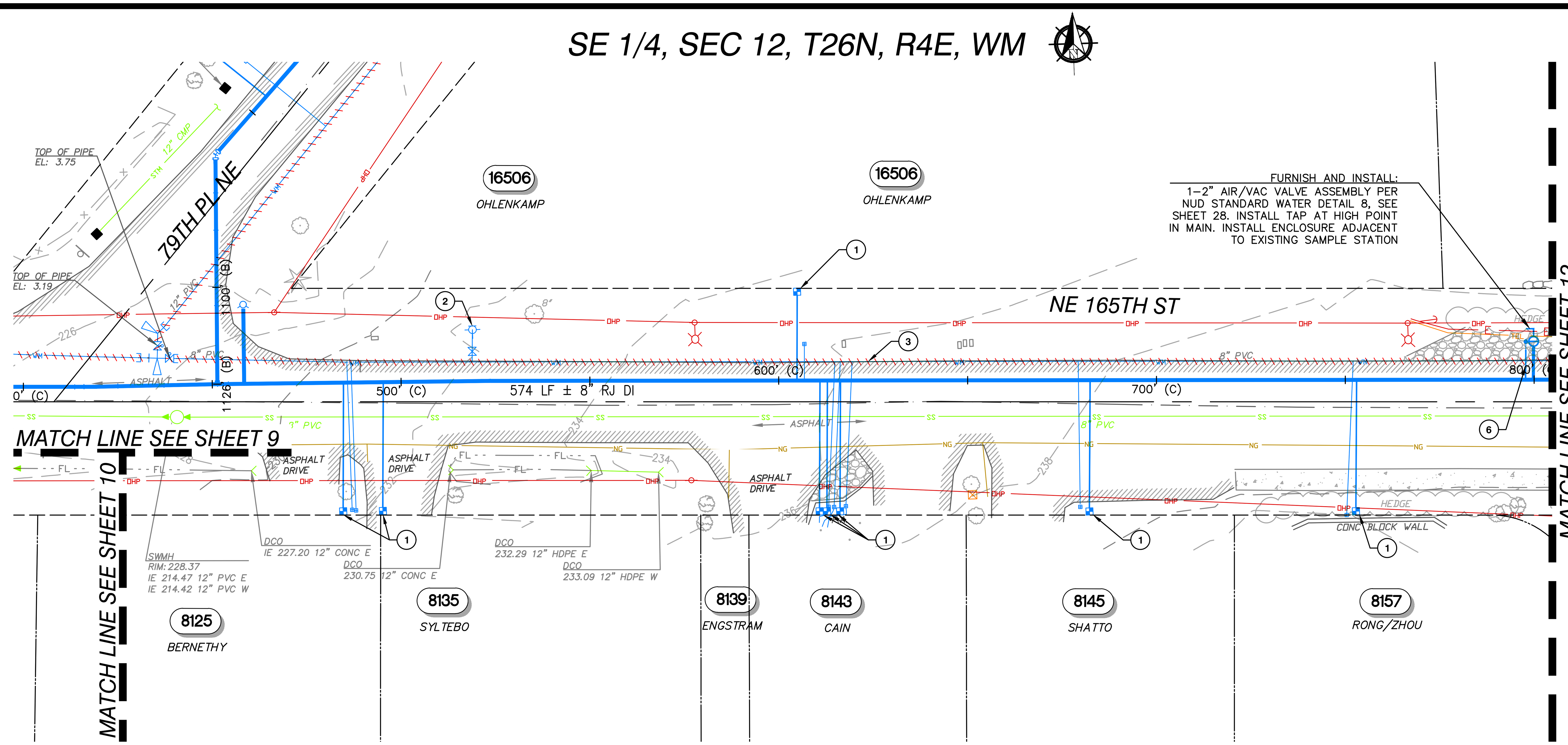
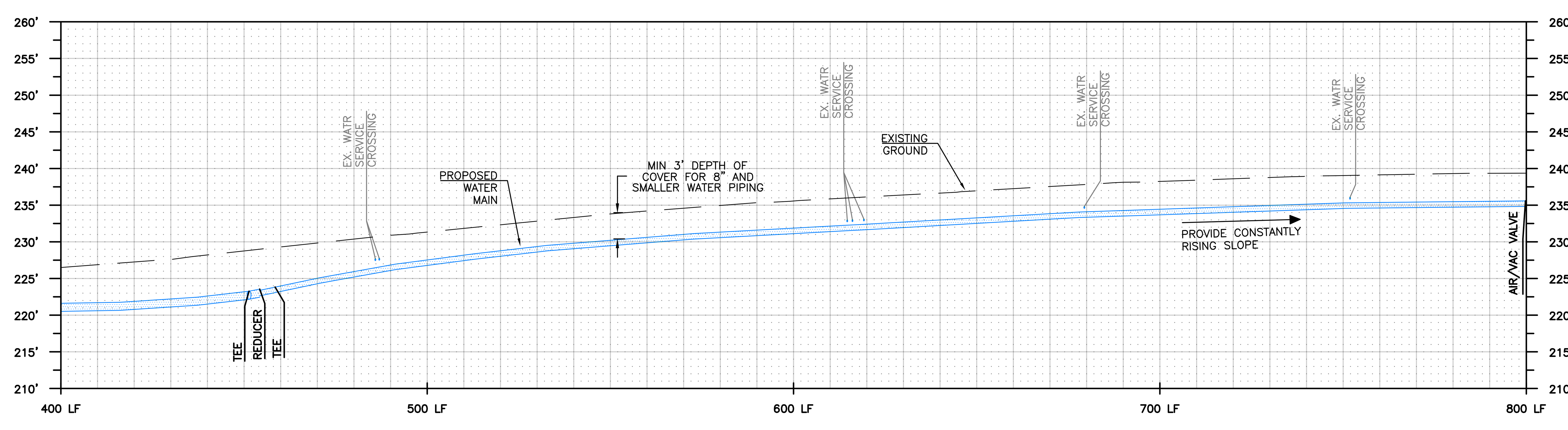
## SE 1/4, SEC 12, T26N, R4E, WM

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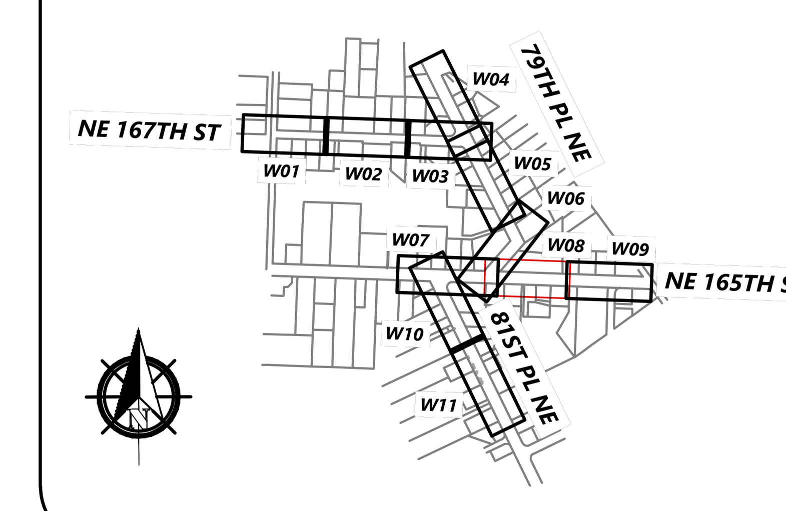
3. ABANDON IN PLACE THE EXISTING WATERLINE AFTER NEW D.I. WATERLINE CONNECTIONS HAVE BEEN CONSTRUCTED.
6. RECONNECT EXISTING WATER SAMPLING STATION (ID: 79-24) TO PROPOSED WATER MAIN, SIMILAR TO 1" WATER SERVICE. REPLACE ENTIRE SERVICE LINE AND TEMPORARILY SUPPORT OR REMOVE SAMPLING STATION AS NECESSARY TO PERFORM WORK. RESTORE CONCRETE PAD TO EXISTING OR BETTER CONDITIONS

### VICINITY MAP




HORZ. SCALE 20' 0' 20' 40' IN FEET

VERT. SCALE 5' 0' 5' 10' IN FEET

RYAN J. FESKENS, STATE OF WASHINGTON, 49451, REGISTERED PROFESSIONAL ENGINEER, SIGNED: 11/01/2021

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| | | | ISSUED FOR BIDDING - 11/02/2021 | |

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RH2

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| DESIGNED BY | DMF |
| DRAWN BY | DMF |
| CHECKED BY | RJF |
| APPROVAL | RJF |
| DATE | Nov 1, 2021 |


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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

WATER MAIN PLAN AND PROFILE 08

W08
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SHEET 11 OF 29

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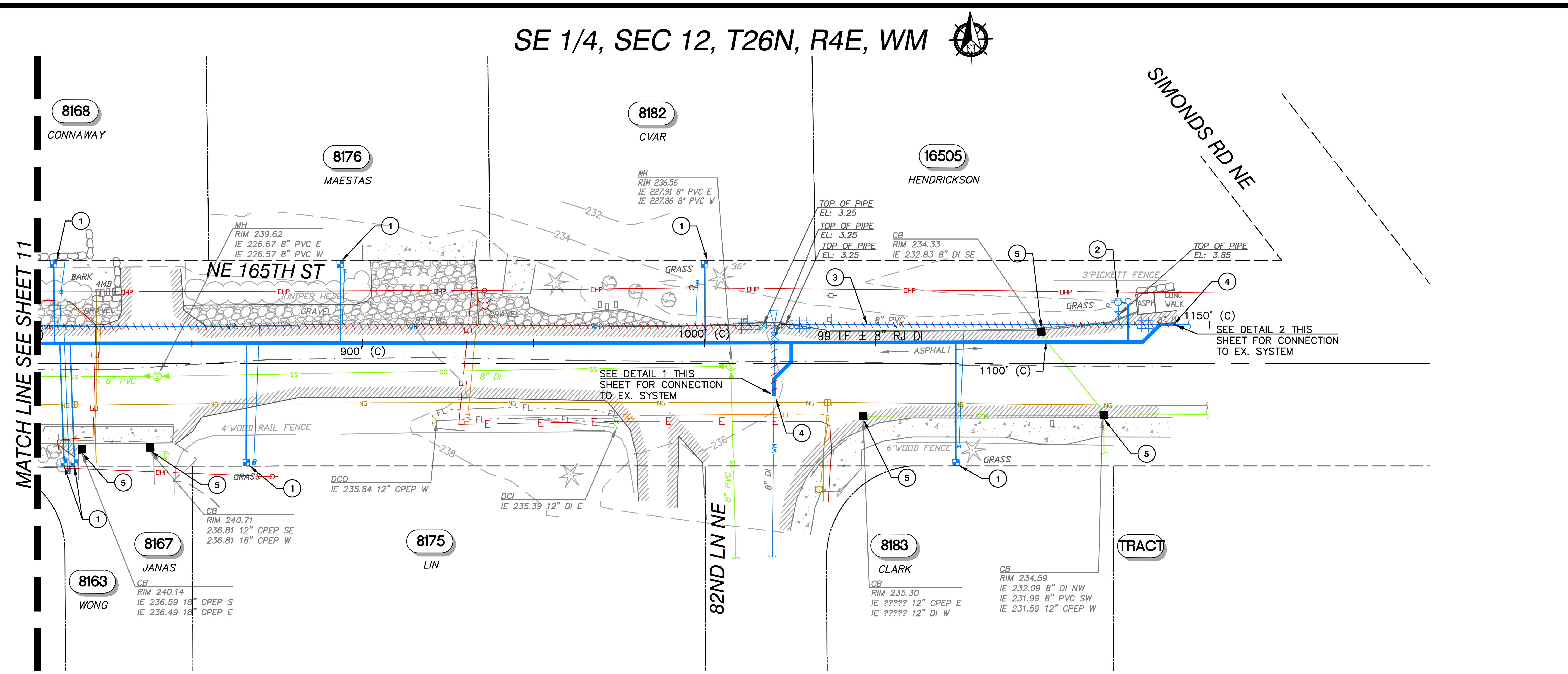
# SE 1/4, SEC 12, T26N, R4E, WM

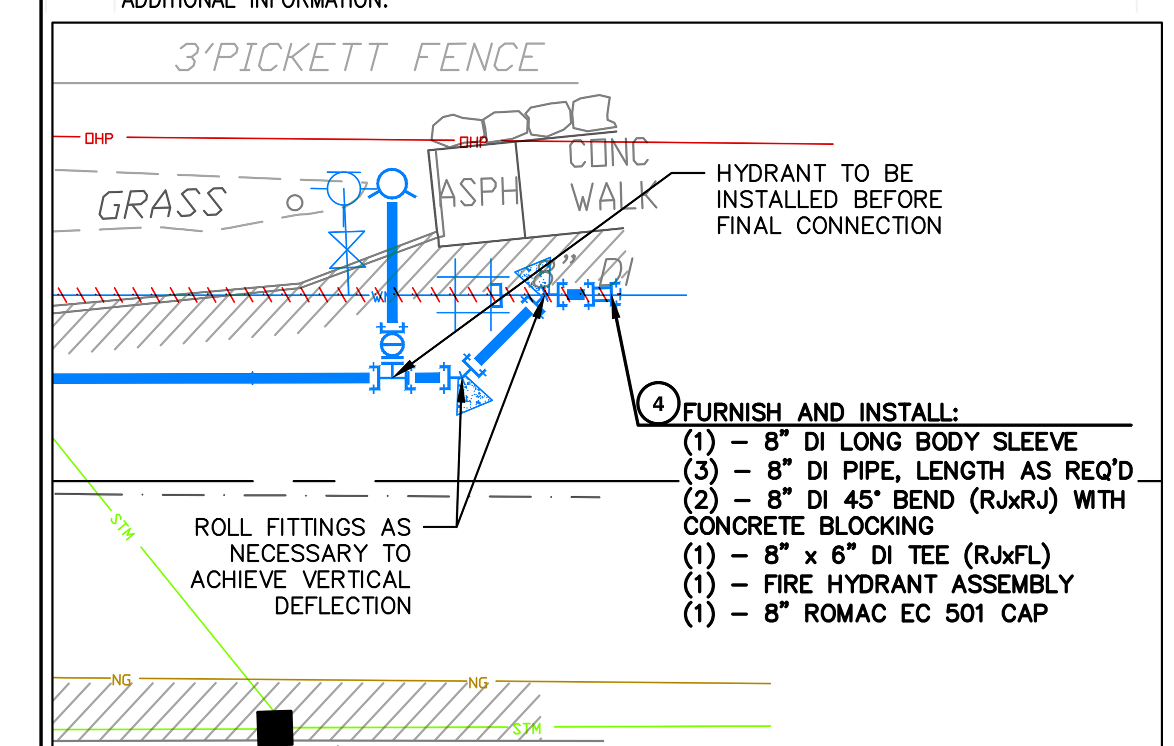



## GENERAL NOTES

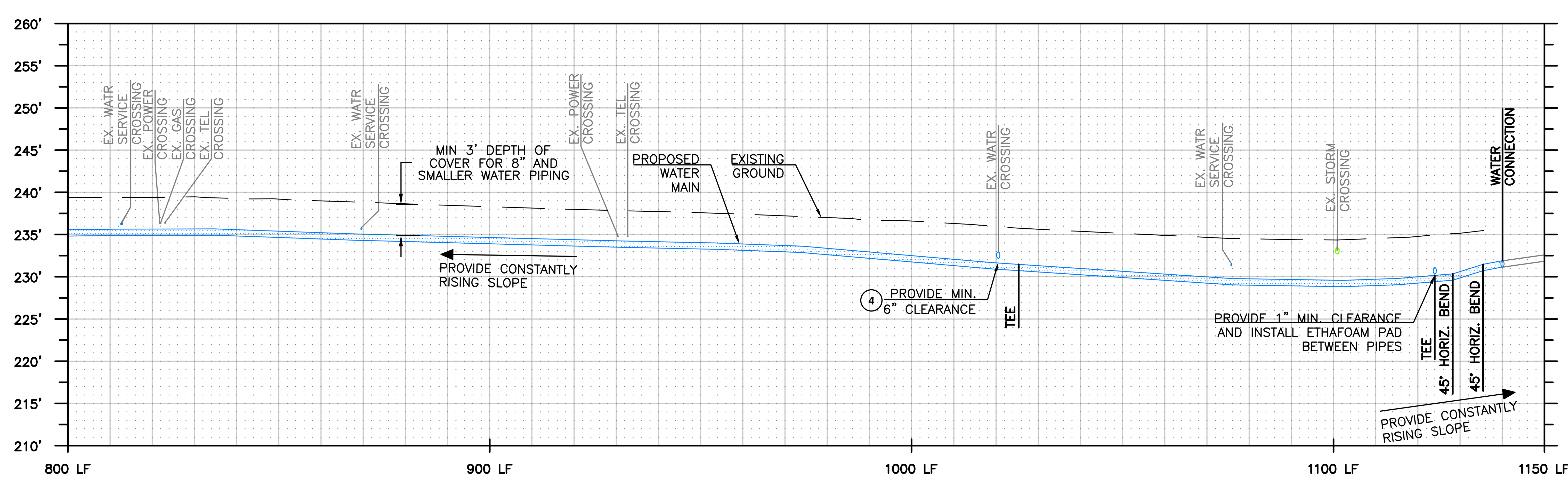
1. SEE SHEET 2 FOR GENERAL NOTES, LEGEND, AND SURVEY CONTROL INFORMATION.
2. PRIOR TO EXCAVATION, INSTALL TESC FACILITIES PER SHEET 3.
3. COORDINATE AND CONFIRM FITTING REQUIREMENTS IN THE FIELD WITH NUD PRIOR TO CONSTRUCTION.
4. ALL BURIED WATER MAIN SHALL BE RESTRAINED JOINT (R.J.) PIPE WITH FIELD LOK GASKETS (OR APPROVED EQUAL) AND POLYETHYLENE ENCASEMENT PER NUD STANDARD SPECIFICATIONS. PROVIDE 5' CLEARANCE FROM EXISTING SEWER AND 5' CLEARANCE FROM EXISTING WATER MAIN. WHERE INFEASIBLE AND WITH DISTRICT APPROVAL, MAINTAIN 3' CLEARANCE FROM EXISTING WATER MAIN.
5. LOCATION AND DEPTH OF EXISTING WATER MAINS SHALL BE VERIFIED PRIOR TO CONNECTION.
6. ALL SERVICE CONNECTIONS ARE ASSUMED TO HAVE A PRIVATE PRV DEVICE ON THE BACKSIDE OF THE METER. UNLESS OTHERWISE NOTED, A REPLACEMENT PRV DEVICE SHALL BE INSTALLED AT THE TIME OF RECONNECTION. SEE SPECIFICATIONS FOR PRESSURE TESTING REQUIREMENTS. SEE SHEET 28 FOR STANDARD DETAIL.

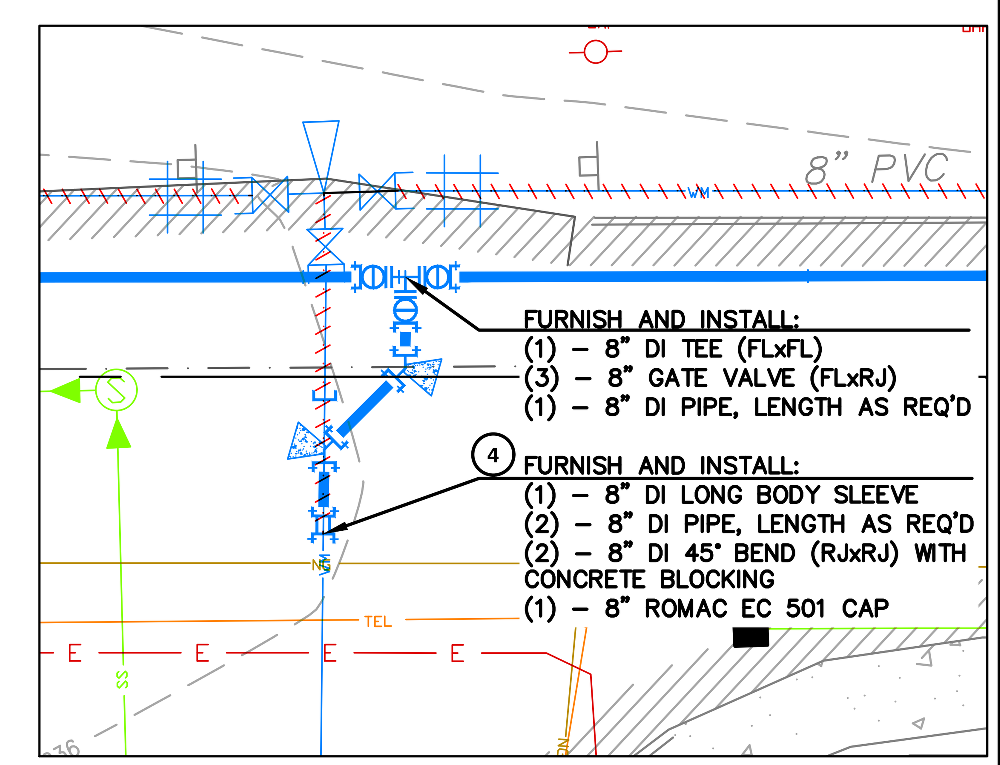
## CONSTRUCTION NOTES

1. INSTALL NEW 1" SERVICE PER THE STANDARD WATER DETAILS AND THE TYPICAL WATER SERVICE REPLACEMENT DETAIL SHEETS 28 AND 29.
2. REMOVE AND SALVAGE EXISTING FH AND DELIVER TO THE DISTRICT YARD IN KENMORE IN A CLEAN AND OPERABLE CONDITION. CLOSE EXISTING FH VALVE AND REMOVE VALVE BOX AND PROTECTIVE BOLLARDS WHERE NECESSARY. INSTALL NEW FH ASSEMBLY PER THE STANDARD DETAIL. PROVIDE 6" ROMAC EC 501 CAP.
3. ABANDON IN PLACE THE EXISTING WATERLINE AFTER NEW D.I. WATERLINE CONNECTIONS HAVE BEEN CONSTRUCTED.
4. VERIFY LOCATION AND DEPTH OF EXISTING WATER MAINS PRIOR TO CONNECTION OR CROSSING. FINAL CONNECTION SHALL BE MADE TO EXISTING DI PIPE. POTHOLE TO LOCATE EXISTING PVC-TO-DI TRANSITION COUPLING.
5. CATCH BASIN AND INLET SEDIMENTATION PROTECTION REQUIRED, SEE SHEET 3 FOR ADDITIONAL INFORMATION.



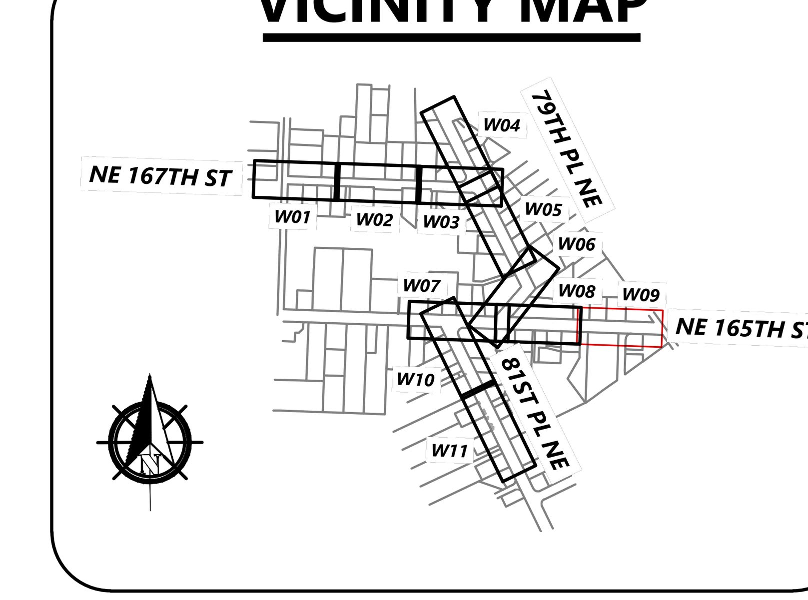

CONNECTION TO EX. SYSTEM – NE 165TH ST (2/12)
DETAIL
SCALE: 1" = 10'




CONNECTION TO EX. SYSTEM – 82ND LN NE (1/12)
DETAIL
SCALE: 1" = 10'

## VICINITY MAP




HORZ. 20' 0' 20' 40' SCALE IN FEET
VERT. 5' 0' 5' 10' SCALE IN FEET

SIGNED: 11/01/2021

| NO | BY | APPD | REVISION | DATE |
|---|---|---|---|---|
| | | | | |
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| | | | | |
| | | | | |

ISSUED FOR BIDDING - 11/02/2021

WARNING
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

RH2

| | |
|---|---|
| DESIGNED BY | DMF |
| DRAWN BY | DMF |
| CHECKED BY | RJF |
| APPROVAL | RJF |
| DATE | Nov 1, 2021 |


NORTHSHORE UTILITY DISTRICT
6830 NE 185th St.
Kenmore, WA 98028-2684
P.O. Box 82489
Kenmore, WA 98028-2684
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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

WATER MAIN PLAN AND PROFILE 09

W09
C2021-04
SHEET


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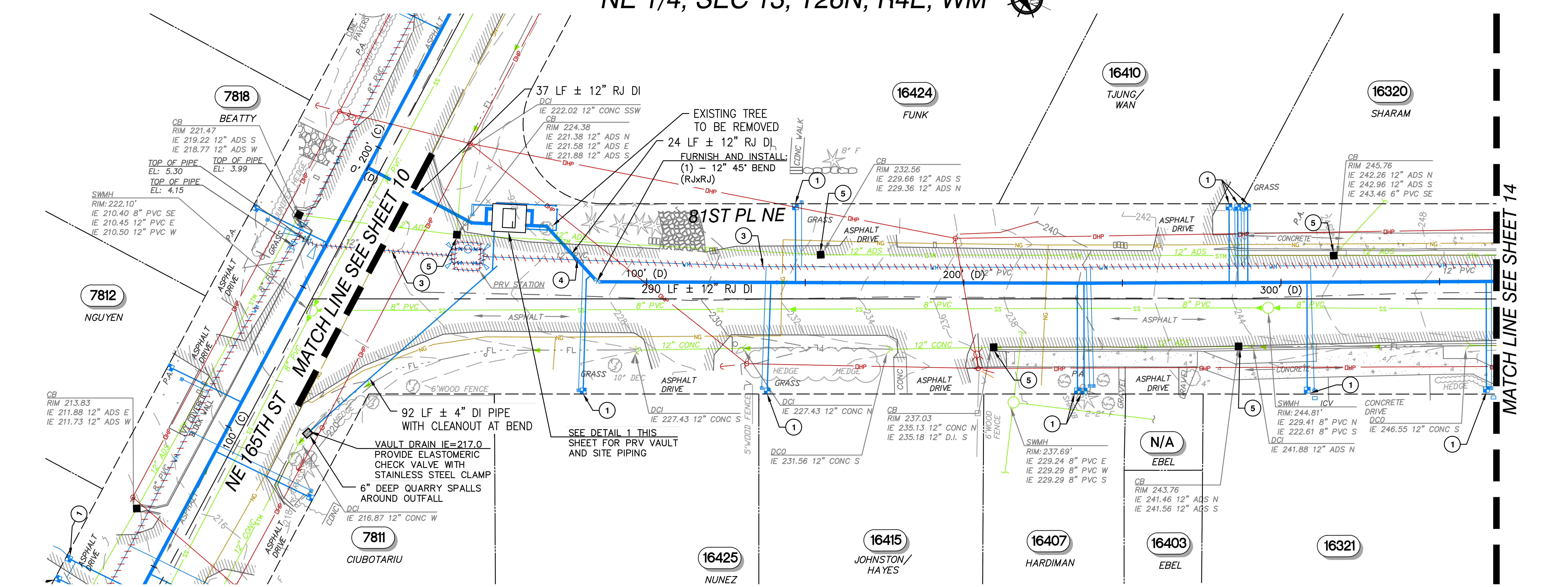
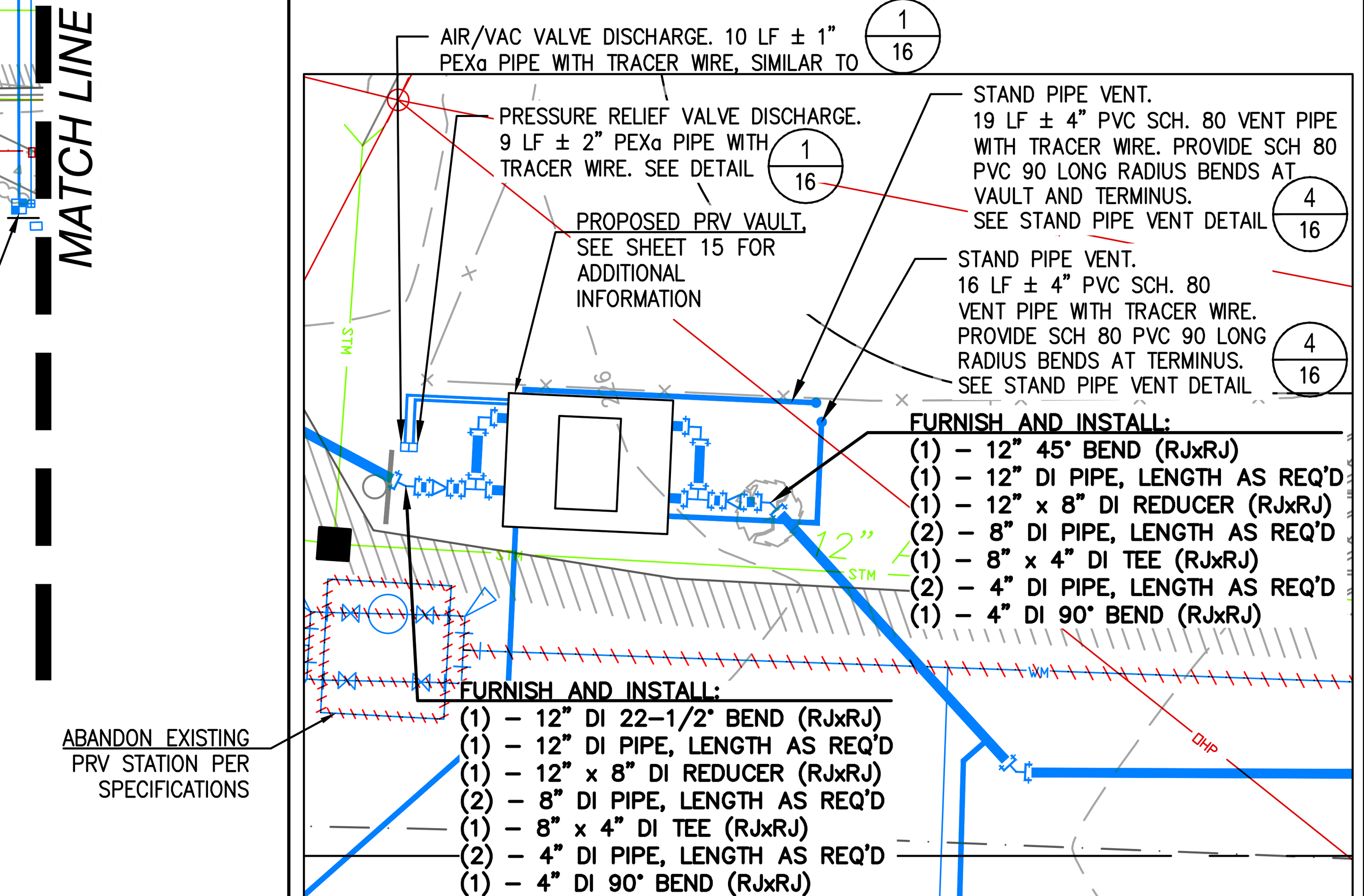
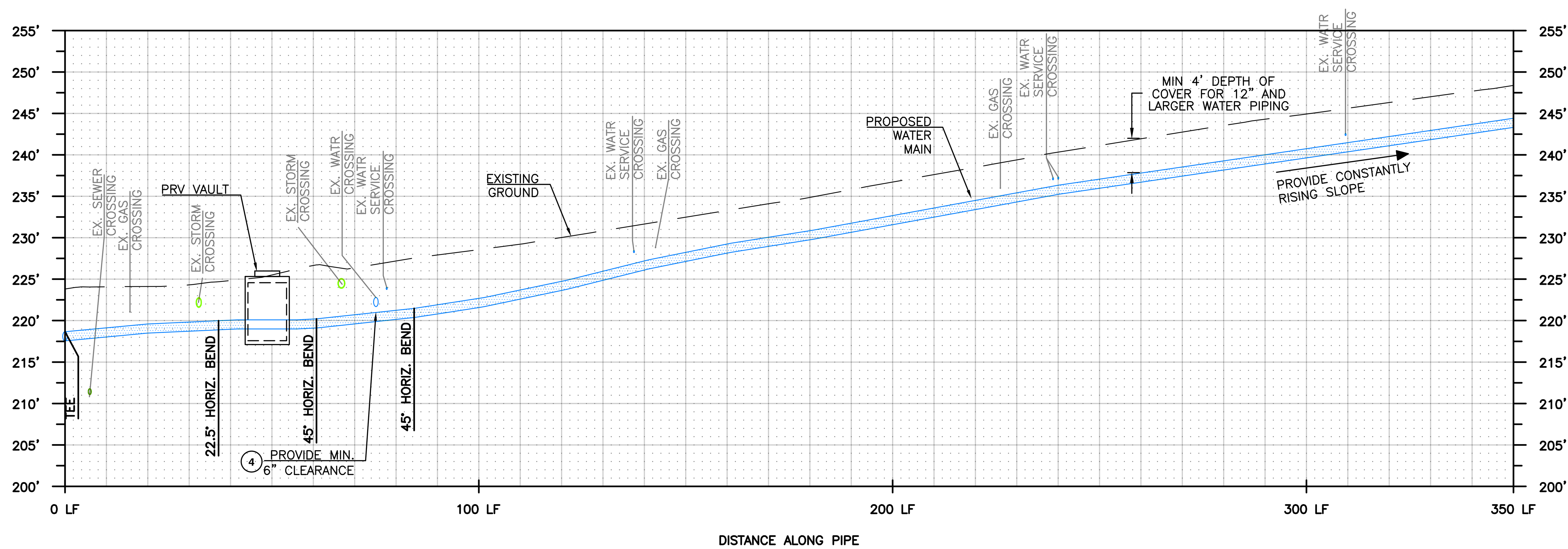
# NE 1/4, SEC 13, T26N, R4E, WM




PRV VAULT AND SITE PIPING
DETAIL
SCALE: 1" = 10'




## GENERAL NOTES

1. SEE SHEET 2 FOR GENERAL NOTES, LEGEND, AND SURVEY CONTROL INFORMATION.
2. PRIOR TO EXCAVATION, INSTALL TESC FACILITIES PER SHEET 3.
3. COORDINATE AND CONFIRM FITTING REQUIREMENTS IN THE FIELD WITH NUD PRIOR TO CONSTRUCTION.
4. ALL BURIED WATER MAIN SHALL BE RESTRAINED JOINT (R.J.) PIPE WITH FIELD LOK GASKETS (OR APPROVED EQUAL) AND POLYETHYLENE ENCASEMENT PER NUD STANDARD SPECIFICATIONS. PROVIDE 5' CLEARANCE FROM EXISTING SEWER AND 5' CLEARANCE FROM EXISTING WATER MAIN. WHERE INFEASIBLE AND WITH DISTRICT APPROVAL, MAINTAIN 3' CLEARANCE FROM EXISTING WATER MAIN.
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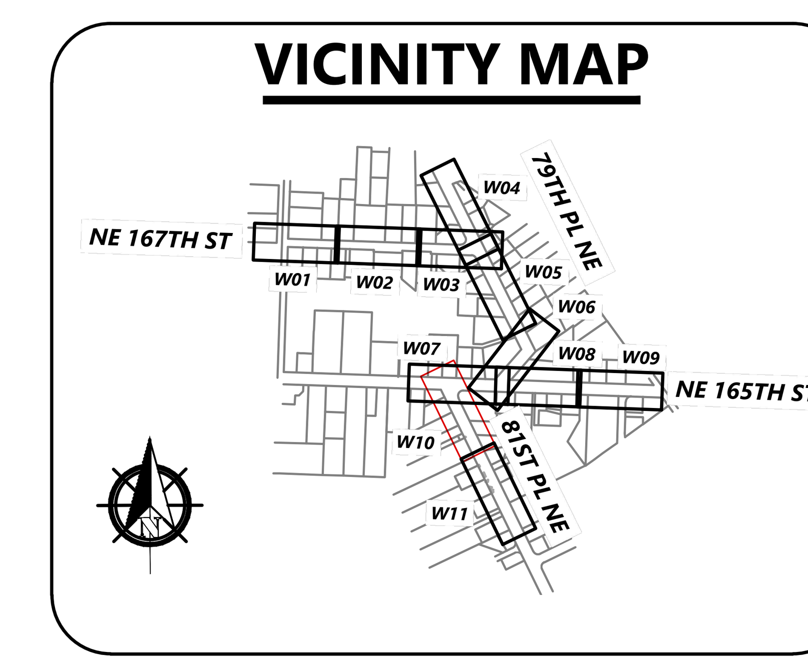
## CONSTRUCTION NOTES

1. INSTALL NEW 1" SERVICE PER THE STANDARD WATER DETAILS AND THE TYPICAL WATER SERVICE REPLACEMENT DETAIL SHEETS 28 AND 29.
3. ABANDON IN PLACE THE EXISTING WATERLINE AFTER NEW D.I. WATERLINE CONNECTIONS HAVE BEEN CONSTRUCTED.
4. VERIFY LOCATION AND DEPTH OF EXISTING WATER MAINS PRIOR TO CROSSING.
5. CATCH BASIN AND INLET SEDIMENTATION PROTECTION REQUIRED, SEE SHEET 3 FOR ADDITIONAL INFORMATION.

## VICINITY MAP




HORZ. SCALE 20' 0' 20' 40' IN FEET
VERT. SCALE 5' 0' 5' 10' IN FEET

SIGNED: 11/01/2021

| NO | BY | APPD | REVISION | DATE |
|---|---|---|---|---|
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ISSUED FOR BIDDING - 11/02/2021

WARNING
0 ½ 1
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RH2

| | |
|---|---|
| DESIGNED BY | DMF |
| DRAWN BY | DMF |
| CHECKED BY | RJF |
| APPROVAL | RJF |
| DATE | Nov 1, 2021 |


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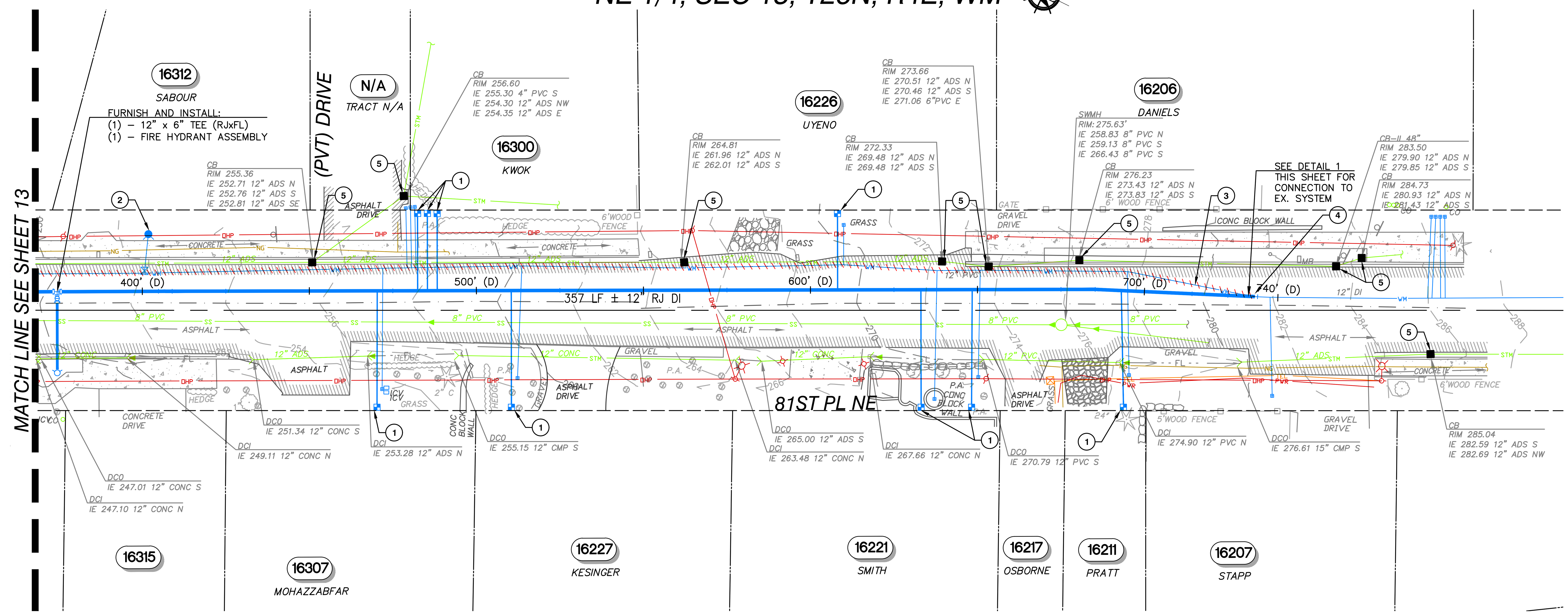
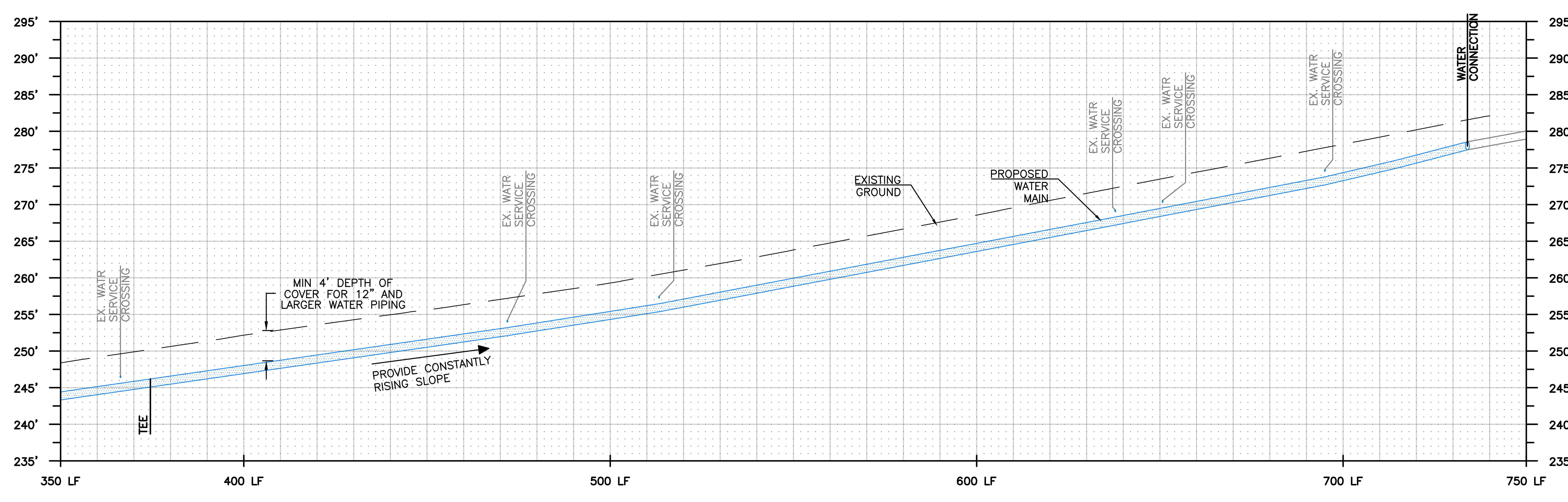
CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

WATER MAIN PLAN AND PROFILE 10

W10
C2021-04
SHEET 13 OF 29

## NE 1/4, SEC 13, T26N, R4E, WM




## GENERAL NOTES

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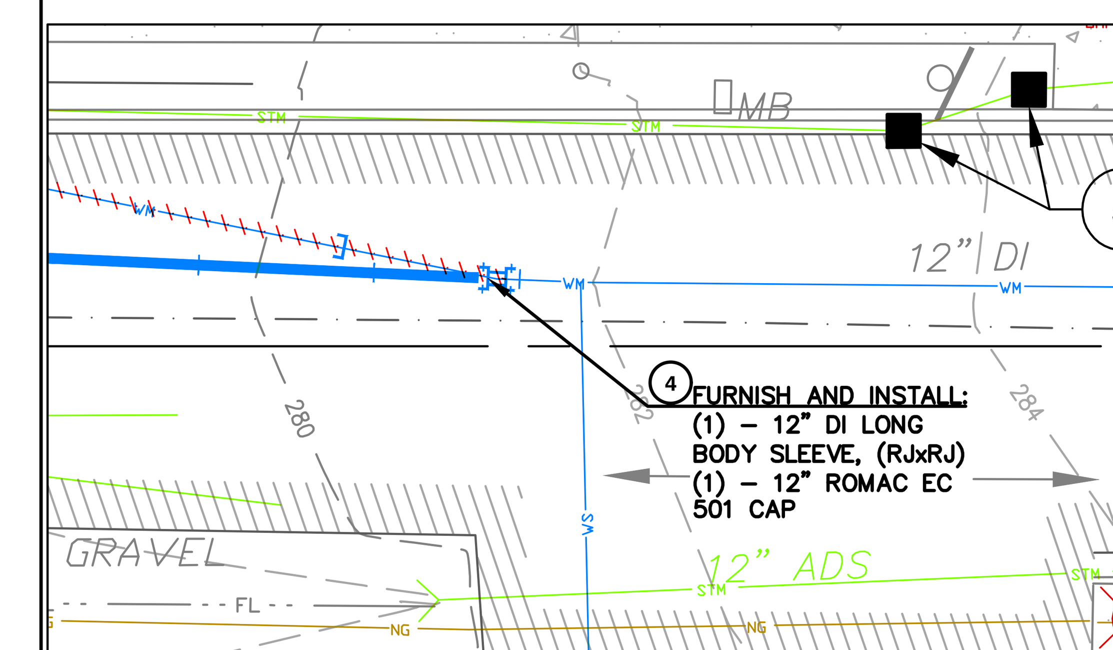
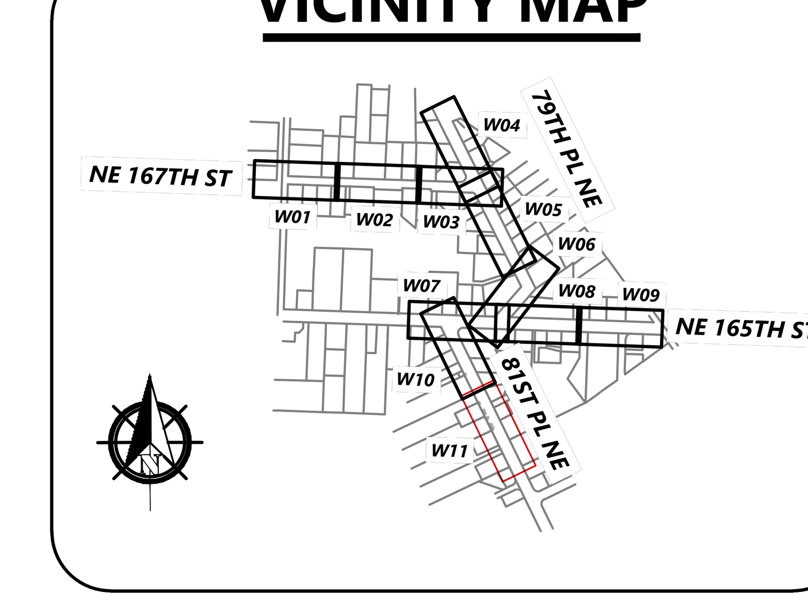



CONNECTION TO EX. SYSTEM – 81ST PL NE

DETAIL 1/14
SCALE: 1" = 10'

### VICINITY MAP




HORZ. SCALE IN FEET: 20' 0' 20' 40'
VERT. SCALE IN FEET: 5' 0' 5' 10'

SIGNED: 11/01/2021

| NO | BY | APPD | REVISION | DATE |
|---|---|---|---|---|
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| | | | ISSUED FOR BIDDING - 11/02/2021 | |

WARNING: 0 ½ 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

RH2

| | |
|---|---|
| DESIGNED BY | DMF |
| DRAWN BY | DMF |
| CHECKED BY | RJF |
| APPROVAL | RJF |
| DATE | Nov 1, 2021 |


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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

WATER MAIN PLAN AND PROFILE 11

W11
C2021-04



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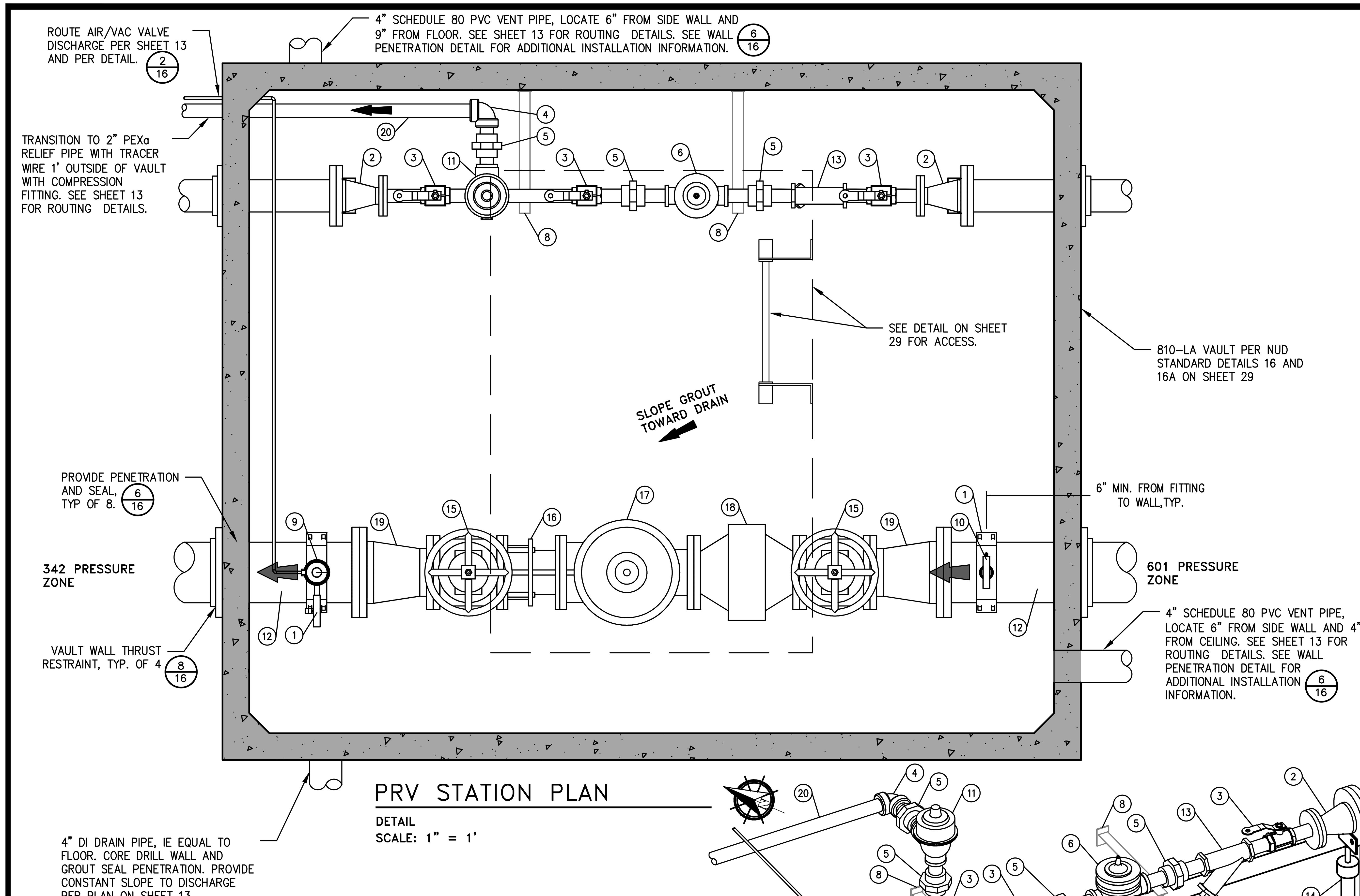


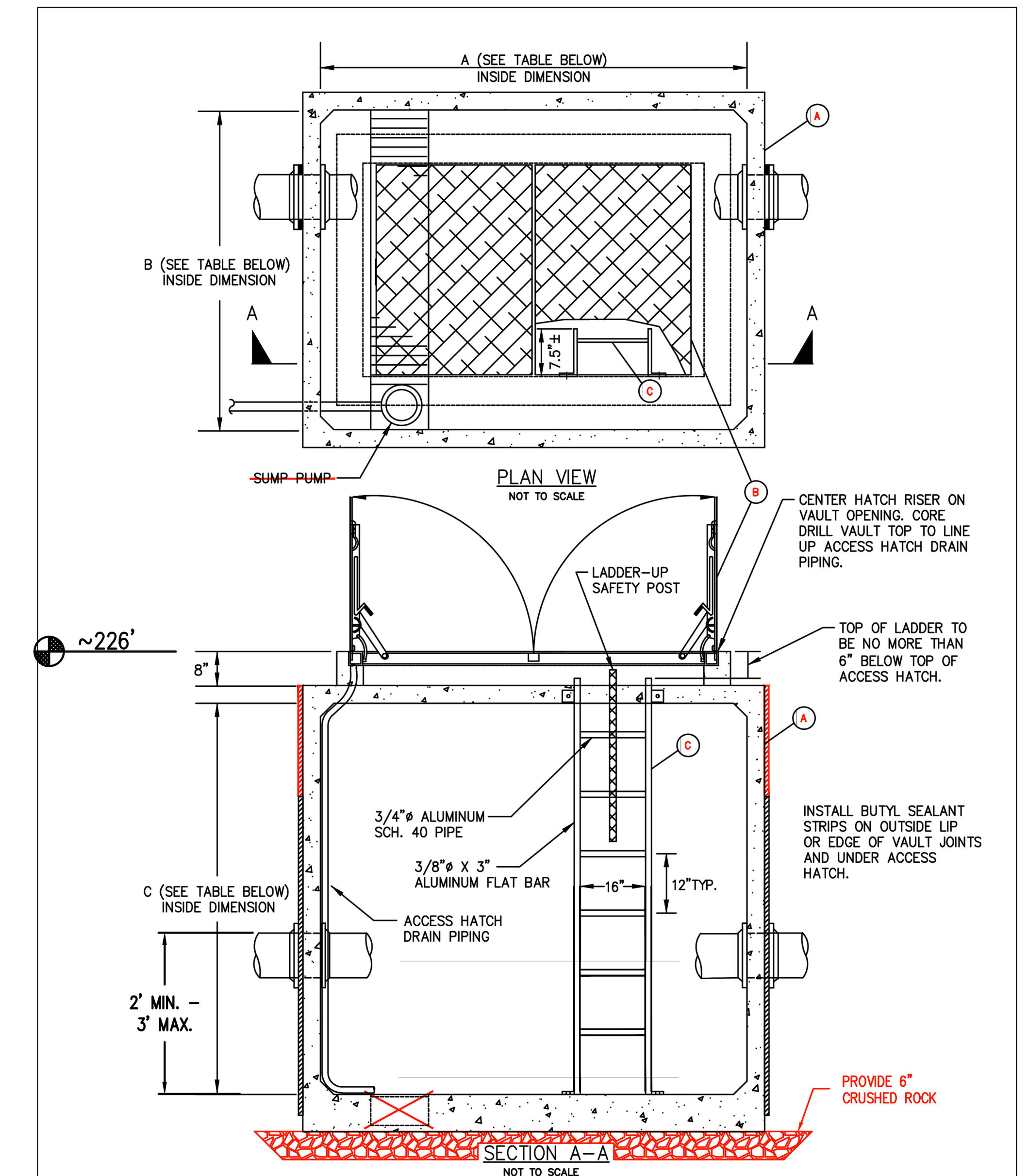

## PRV STATION PLAN

DETAIL
SCALE: 1" = 1'

## MATERIAL LIST:

| ITEM | QUANT. | DESCRIPTION |
|---|---|---|
| 1 | 2 | 8" PIPE SADDLE WITH 1" IP OUTLET |
| 2 | 2 | 4"x2" REDUCER FLxFL |
| 3 | 4 | 2" BRASS BALL VALVE W/ HAND LEVER |
| 4 | 1 | 2" BRASS 90° BEND, FIP. |
| 5 | 4 | 2" BRASS UNION, FIP. |
| 6 | 1 | 2" PRESSURE REDUCING VALVE ASSEMBLY. |
| 7 | 1 | 2" BRASS TEE, FIP. |
| 8 | 2 | PIPE SUPPORT 5/16 |
| 9 | 1 | AIR/VAC VALVE AND PRESSURE GAUGE 2/16 |
| 10 | 1 | HOSE BIBB AND PRESSURE GAUGE 3/16 |
| 11 | 1 | 2" PRESSURE RELIEF VALVE |
| 12 | 2 | 8" DI PIPE, FLxPE 6/16 |
| 13 | 1 | 2" BRASS STRAINER |
| 14 | 5 | ADJUSTABLE PIPING SUPPORT, STANDON #S89 |
| 15 | 2 | 6" DI GATE VALVE, FLxFL |
| 16 | 1 | 6" DISMANTLING JOINT, FLxFL |
| 17 | 1 | 6" PRESSURE REDUCING VALVE, FLxFL |
| 18 | 1 | 6" STRAINER FLxFL |
| 19 | 2 | 8"x6" REDUCER FLxFL |
| 20 | 1 | 2" BRASS NIPPLE INSIDE VAULT, TRANSITION TO 2" POLYETHYLENE PIPE 1' OUTSIDE VAULT WITH FIPxPACK FITTING |

PROVIDE 2" BRASS NIPPLES, MIP, LENGTH TO FIT, AS NECESSARY TO HAVE A COMPLETE AND FUNCTIONAL SYSTEM. INSTALL PIPE AND SUPPORTS AS NECESSARY TO PROVIDE A RIGID, SECURE, NON-SAGGING SYSTEM.




| Vault | Dimension A | Dimension B | Dimension C | Use |
|---|---|---|---|---|
| ~~687-LA~~ | ~~8'~~ | ~~6'~~ | ~~7'~~ | ~~3" & 4" Meters, DCDA's~~ |
| 810-LA | 10' | 8' | 7' | PRV STATION |

NOTES:
1. ~~SEE NUD STANDARD WATER DETAIL #16A FOR SUMP PUMP DETAIL.~~
2. SEE ~~NUD STANDARD WATER DETAIL #16A FOR~~ MATERIALS LIST AND ADDITIONAL NOTES.

## VAULT DETAIL

NOT TO SCALE

DETAIL APPROVALS
EDITOR TMC
MANAGER DPK

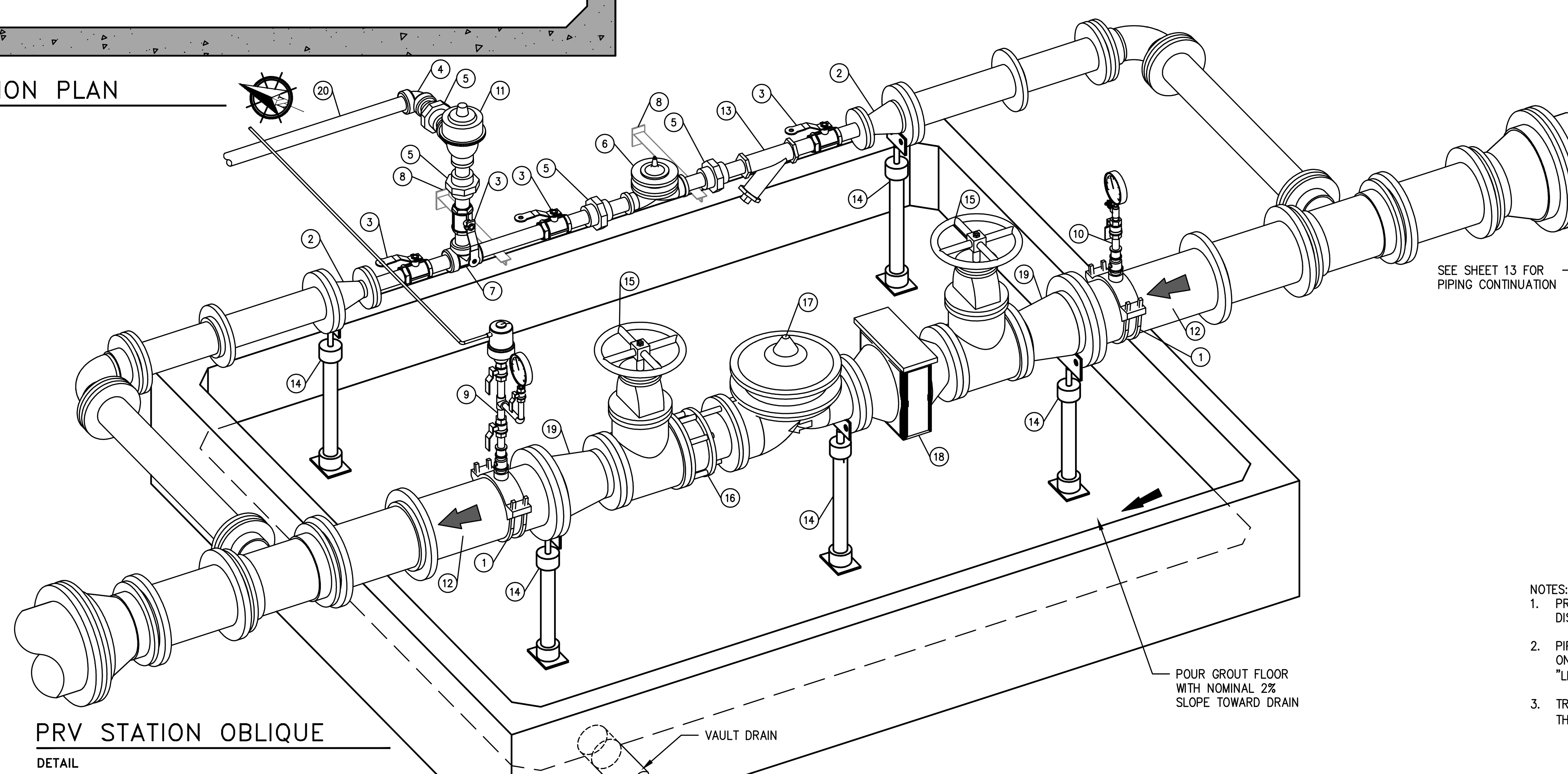
NORTHSHORE UTILITY DISTRICT
2021 STANDARD WATER DETAILS
16
LAST UPDATED FEBRUARY 2019

MATERIALS LIST:

A. PRECAST CONCRETE UNDERGROUND VAULT SHALL BE 810-LA MANUFACTURED BY "UTILITY VAULT COMPANY/ OLDCASTLE PRECAST"
   1. VAULT COMPONENTS:
      a. I. BASE SECTION: 810-SB
      b. CENTER SECTION: 810-ML
      c. TOP SECTION: 810 WITH 48" X 72" HATCH OPENINGS LOCATED AS SHOWN TO ACCOMMODATE THE CONCRETE COVER, NO. 57 CLX 42S, AND THE 48"X72" DOUBLE LEAF HATCH. CORE DRILL CONCRETE TOP SECTION OF VAULT TO ALIGN WITH ACCESS HATCH DRAIN AND INSTALLATION OF 1-1/2" ACCESS HATCH DRAIN PIPING.
   2. ALL VAULT WALLS SHALL BE SOLID FULL WIDTH WITH NO KNOCK-OUTS OR CHANNELS. THE VAULT MANUFACTURER SHALL ENSURE THAT NO VAULT JOINTS ARE LOCATED WITHIN 6" OF THE EDGE OF CORE-DRILLED PENETRATIONS. SEE NOTES BELOW.
   3. INSTALL BUTYL SEALANT STRIPS BETWEEN VAULT SECTIONS AND UNDER ACCESS HATCH PER MANUFACTURER'S RECOMMENDATIONS AND ENSURE THAT SEALANT IS NOT SQUEEZED INTO VAULT.
   4. PAINTING:
      a. CONCRETE TO DRY FOR 28 DAYS PRIOR TO COATING APPLICATION. SURFACE IS TO BE CLEAN, DRY AND FREE OF CONTAMINANTS.
      b. THE INTERIOR OF THE CONCRETE VAULT SHALL BE PAINTED AT THE VAULT MANUFACTURER WITH ONE COAT OF TNEMEC SERIES N69 HI-BUILD EPOXOLINE IL, APPLIED AT 6-8 MILS DFT, COLOR TO BE WHITE.
      c. EXTERIOR BELOW GRADE OF THE CONCRETE VAULT SHALL BE PAINTED WITH ONE COAT TNEMEC SERIES 46H-413 HI-BUILD TNEME-TAR COAL TAR EPOXY, APPLIED AT 16 TO 20 MILS DFT.
      d. TO FIELD REPAIR ANY DAMAGED COATING, CONTRACTOR SHALL LIGHTLY SAND SURFACE WITH 150 GRIT SAND PAPER TO DEGLOSS AREA TO BE RE-COATED. REAPPLY PAINT PER THE DATA SHEET FOR THE SPECIFIED MATERIAL

B. ACCESS HATCH: "UTILITY VAULT" CONCRETE COVER NO. 57 CLX 42S WITH "LW PRODUCTS" 48"X72" DOUBLE LEAF HATCH, H-20. PROVIDE 1-1/2" SCH. 80 CONDUIT FROM HATCH GUTTER TO VAULT DRAIN SECURED TO VAULT WALL WITH APPROVED FASTENERS AT 3' SPACING.

C. ALUMINUM LADDER BOLTED TO VAULT BASE AND HATCH RISER WITH SS HARDWARE. LADDER TO INCLUDE BILCO "LADDER-UP" SAFETY POST.




## PRV STATION OBLIQUE

DETAIL
NOT TO SCALE

NOTES:
1. PROVIDE DRAWINGS AND SUBMITTALS FOR ALL MATERIALS TO THE DISTRICT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
2. PIPE AND CONDUIT PENETRATIONS SHALL BE CORE-DRILLED ON-SITE AND SHALL BE SEALED WATERTIGHT. PROVIDE "LINK-SEAL" FITTINGS AT ALL PENETRATIONS.
3. TRACER WIRE ON MAIN LINE SHALL ENTER THE VAULT THROUGH THE "LINK-SEAL" AND TERMINATE 6" INSIDE VAULT.

RYAN J. FESSING, STATE OF WASHINGTON, 49451, REGISTERED PROFESSIONAL ENGINEER
SIGNED: 11/01/2021

| NO | BY | APPD | REVISION | DATE |
|---|---|---|---|---|
| | | | | |
| | | | ISSUED FOR BIDDING - 11/02/2021 | |

WARNING
0 ½ 1
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RH2

| | |
|---|---|
| DESIGNED BY | DMF |
| DRAWN BY | DMF |
| CHECKED BY | AHF |
| APPROVAL | AHF |
| DATE | Nov 1, 2021 |


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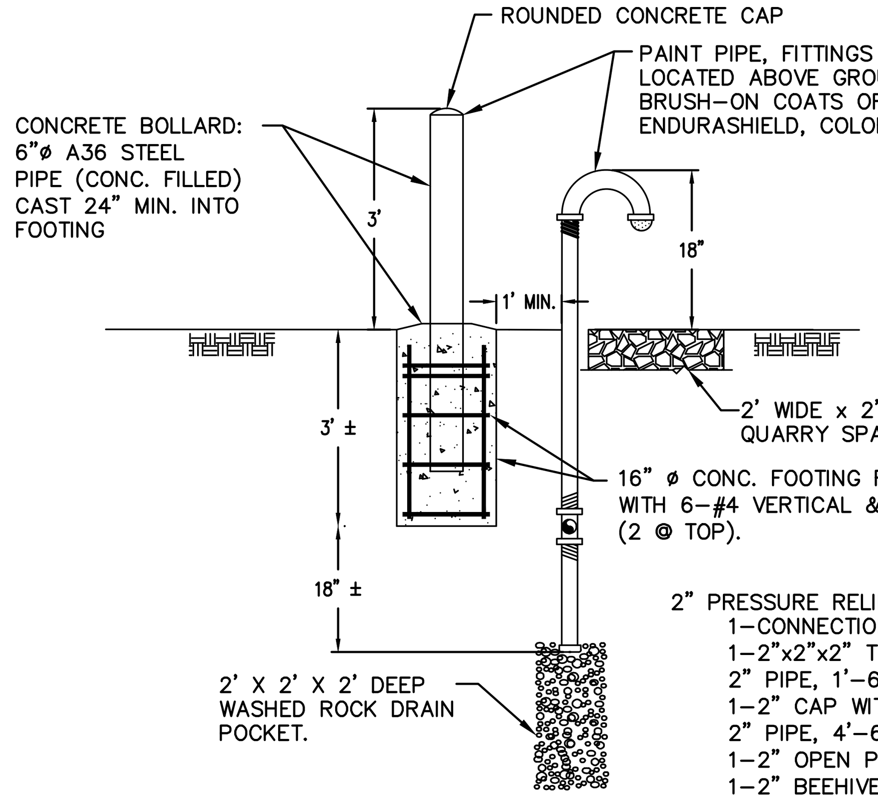
*CONTRACT 2021-04*
*165/81 WATER MAIN REPLACEMENT*

PRV STATION DETAILS

M01
C2021-04
*SHEET*

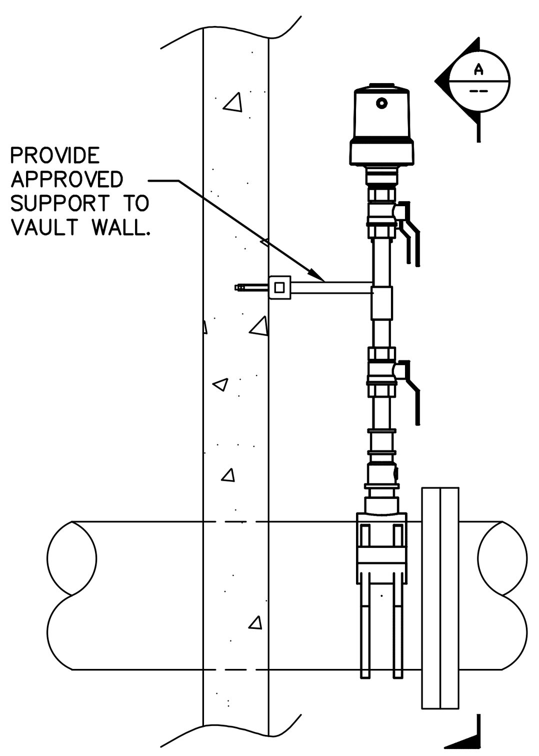

J:\Data\NUD\118-131\CAD\TA 2018-01-A02\165-81-D-MEC01.DWG

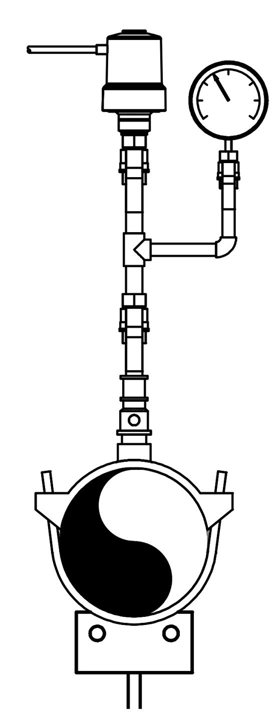



2" PRESSURE RELIEF VALVE BLOW-OFF PIPING:
- 1-CONNECTION TO SITE PIPING
- 1-2"x2"x2" TEE.
- 2" PIPE, 1'-6"± LONG.
- 1-2" CAP WITH 3/8" DRAIN HOLE.
- 2" PIPE, 4'-6"± LONG.
- 1-2" OPEN PATTERN RETURN BEND.
- 1-2" BEEHIVE STRAINER.

NOTE: ALL PIPE AND FITTINGS SHALL BE IPS THREAD AND GALVANIZED IRON.

## PRESSURE RELIEF VALVE DISCHARGE DETAIL 1
NOT TO SCALE



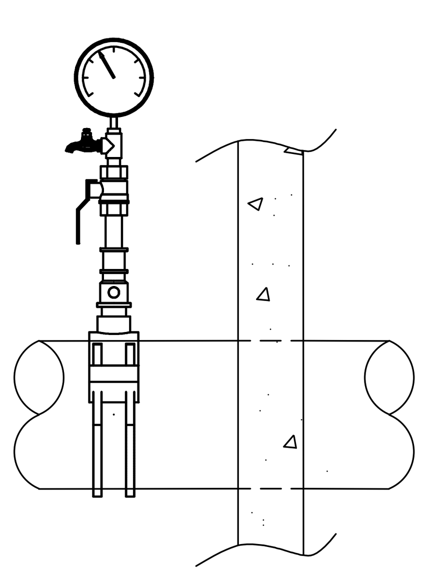
NOTE: ROUTE AIR/VAC VALVE TO VAULT EXTERIOR PER PLAN. PROVIDE 1" COPPER PIPE INSIDE VAULT AND TRANSITION TO 2" PEXa PIPE 1' OUTSIDE VAULT WITH COMPRESSION FITTING. PROVIDE BRASS PIPE AND FITTINGS AS NECESSARY TO HAVE A COMPLETE AND FUNCTIONAL SYSTEM.

AIR/VAC VALVE AND PRESSURE GAUGE ASSEMBLY:
- 1-6" ROMAC SADDLE, 1" OUTLET, PER PLAN.
- 1-1" CORPORATION STOP, CC x MIP.
- 1-1" BRASS COUPLING, FIP.
- 1-1" BRASS NIPPLE, 2" LONG, MIP.
- 1-1" BRASS BALL VALVE WITH HAND LEVER, FIP.
- 1-1" BRASS NIPPLE, CLOSE, MIP.
- 1-1" BRASS TEE, FIP.
- 1-1" BRASS NIPPLE, 3" LONG, MIP.
- 1-1" BRASS BALL VALVE WITH HAND LEVER, FIP.
- 1-1" AIR/VAC VALVE, ARI D-040-C OR APPROVED EQUAL.
- 1-1" X 3/4" BRASS BUSHING, MIP X FIP.
- 1-3/4" BRASS NIPPLE, 4" LONG, MIP.
- 1-3/4" BRASS 90° ELBOW, FIP.
- 1-3/4" BRASS NIPPLE, 3" LONG, MIP.
- 1-3/4" BRASS BALL VALVE WITH HAND LEVER, FIP.
- 1-3/4" X 1/4" BRASS BUSHING, MIP X FIP.
- ASHCROFT GAUGE MODEL #1279 1/4" SS W/ PLUS PERFORMANCE, 0-200 PSI, W/ MAXIMUM POINTER.

## 1" AIR/VAC VALVE & PRESSURE GAUGE: 2
NOT TO SCALE

## SECTION A
NOT TO SCALE

NOTE: VALVES IN VERTICAL ORIENTATION SHALL HAVE HANDLES POINT DOWN, TYP.



HOSE BIBB AND PRESSURE GAUGE ASSEMBLY:
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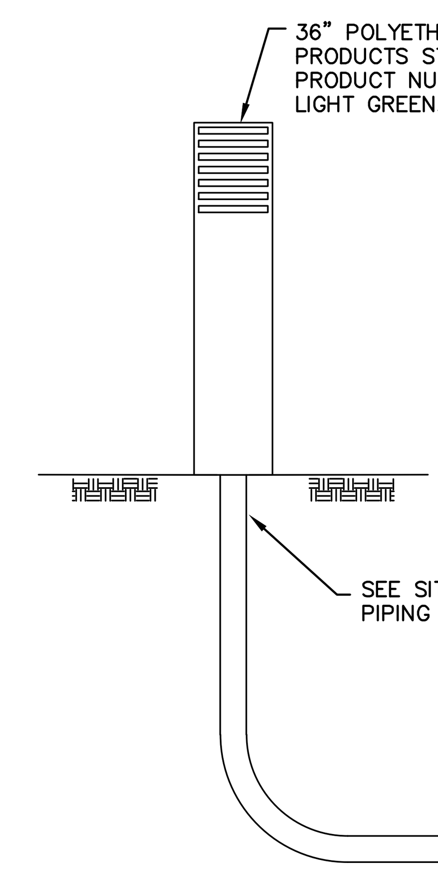
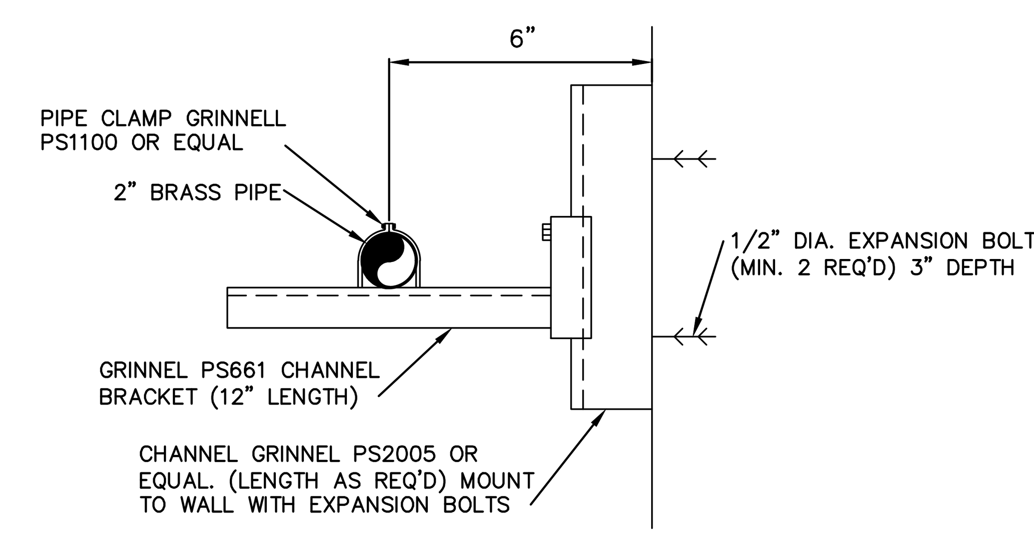
- 1-1" CORPORATION STOP, CC x MIP.
- 1-1" BRASS COUPLING, FIP.
- 1-1" BRASS NIPPLE, 2" LONG, MIP.
- 1-1" BRASS BALL VALVE WITH HAND LEVER, FIP.
- 1-1" X 3/4" BRASS BUSHING, MIP X FIP.
- 1-3/4" BRASS NIPPLE, CLOSE, MIP.
- 1-3/4" BRASS TEE, FIP.
- 1-3/4" BRASS SPIGOT, MIP.
- 1-3/4" X 1/4" BRASS BUSHING, MIP X FIP.
- ASHCROFT GAUGE MODEL #1279 1/4" SS W/ PLUS PERFORMANCE 0-200 PSI.

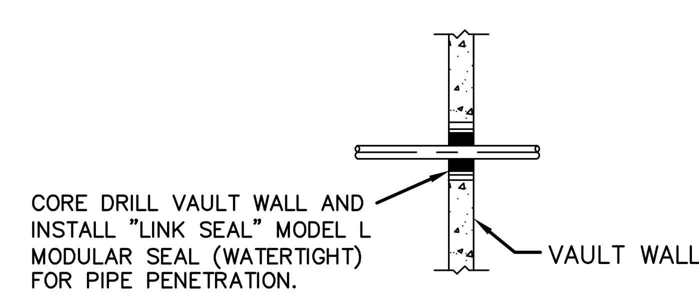
## HOSE BIBB & PRESSURE GAUGE DETAIL 3
NOT TO SCALE



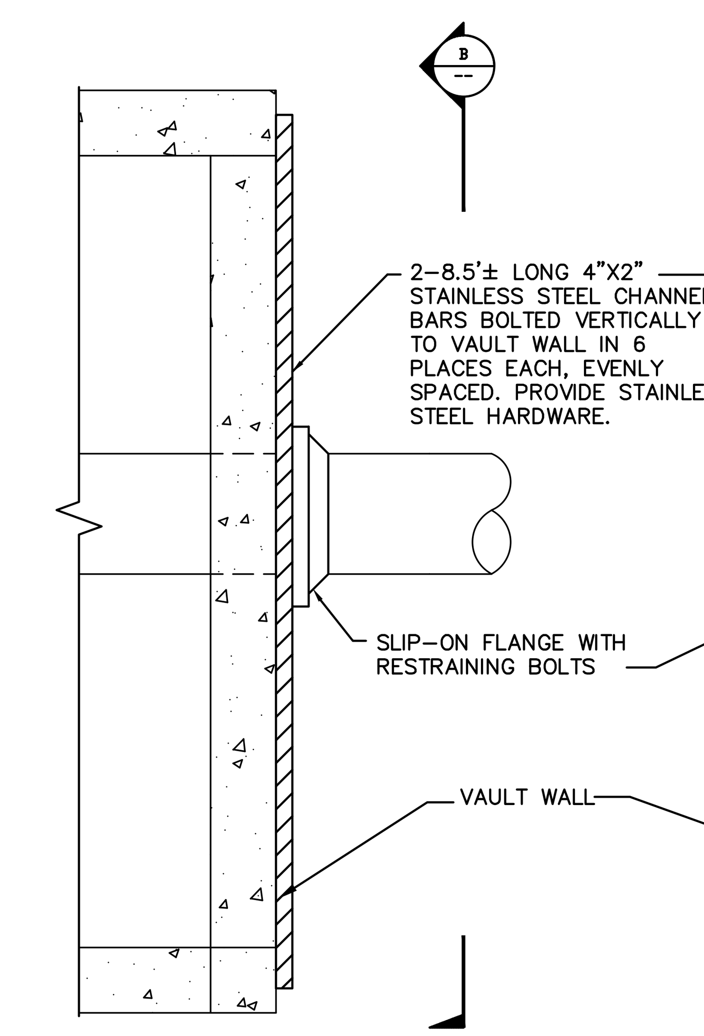

## STAND PIPE VENT 4
NOT TO SCALE

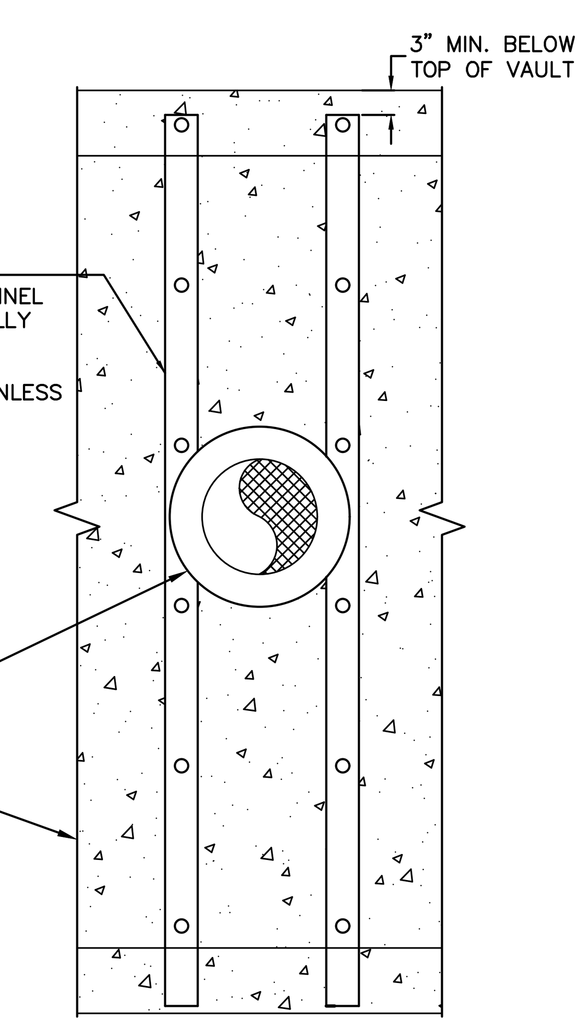



## PIPE SUPPORT 5
NOT TO SCALE



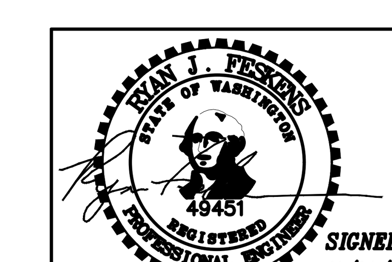

## WALL PENETRATION 6
NOT TO SCALE




## VAULT WALL THRUST RESTRAINT 8
NOT TO SCALE

## SECTION B
NOT TO SCALE

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WARNING
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| DESIGNED BY | DMF |
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| CHECKED BY | AHF |
| APPROVAL | AHF |
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NORTHSHORE UTILITY DISTRICT
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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

MISCELLANEOUS PRV DETAILS

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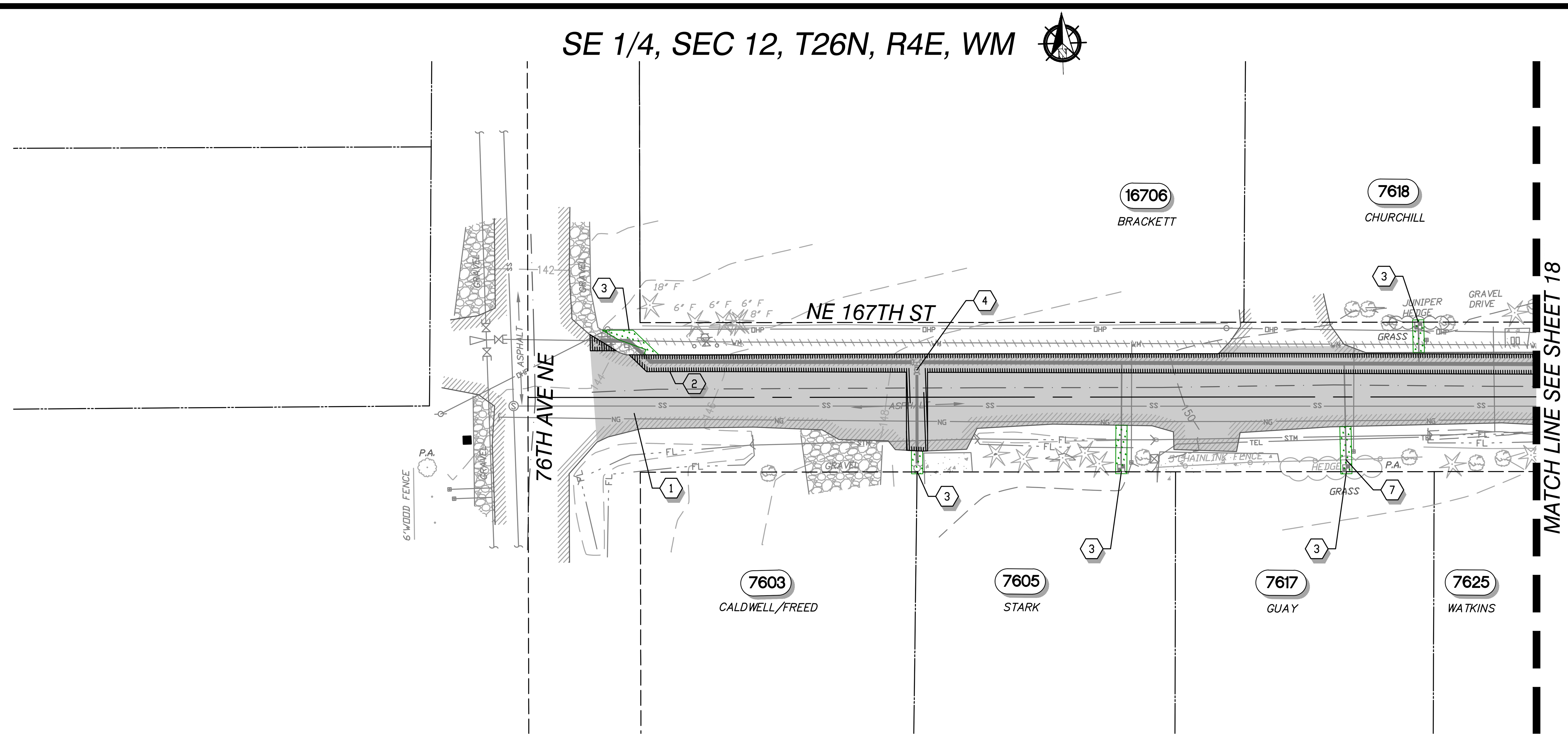


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4. ADJUST VALVE BOX TO GRADE.
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## RESTORATION LEGEND

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- RESTORE GRAVEL
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- CEMENT CONCRETE SIDEWALK AND/OR CURB AND GUTTER REPLACEMENT
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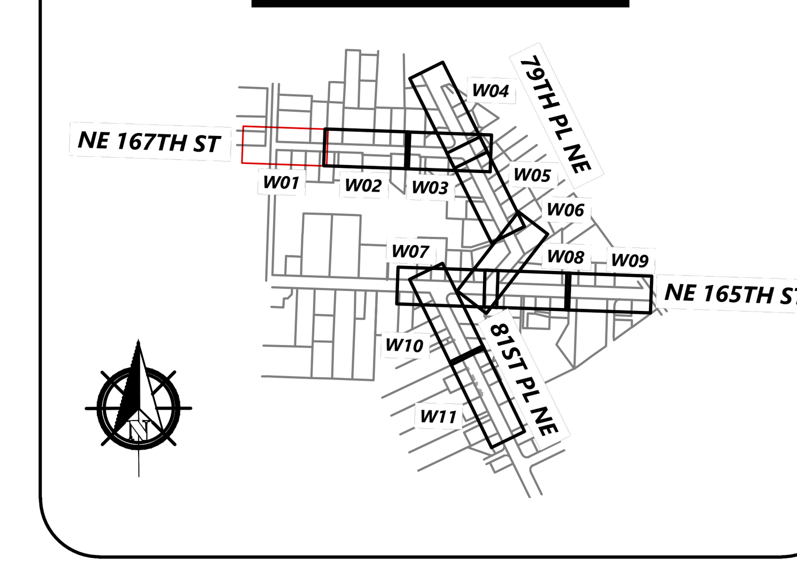
## VICINITY MAP




HORZ. SCALE 20' 0' 20' 40' IN FEET

VERT. SCALE 5' 0' 5' 10' IN FEET

RYAN J. FESSING, STATE OF WASHINGTON, 49451, REGISTERED PROFESSIONAL ENGINEER. SIGNED: 11/01/2021

| NO | BY | APPD | REVISION | DATE |
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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

# WATER MAIN RESTORATION PLAN 01

R01

C2021-04



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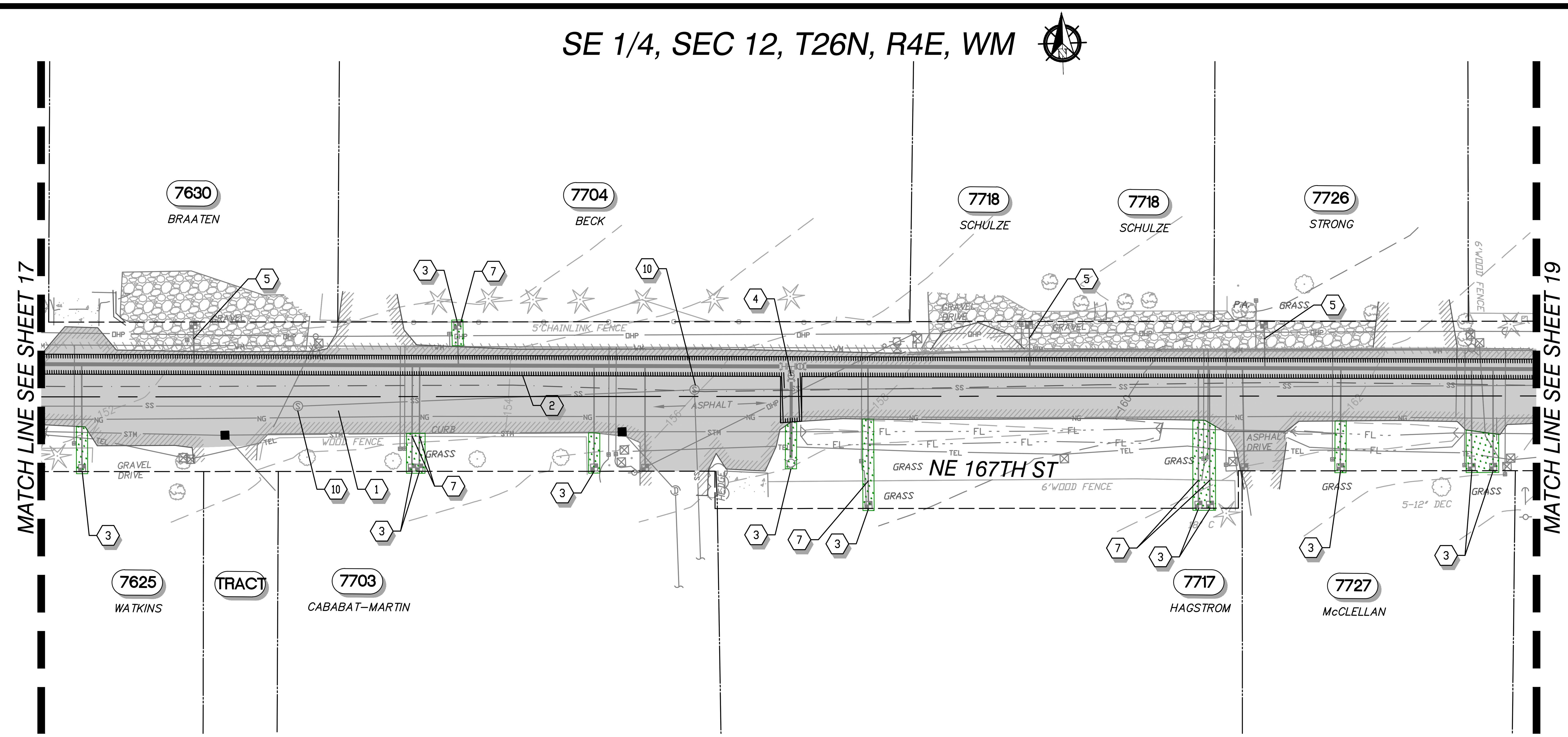


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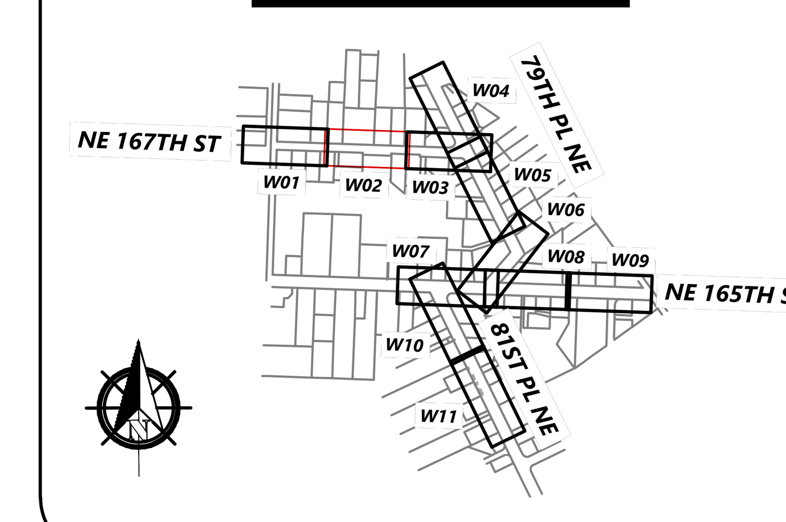


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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

WATER MAIN RESTORATION PLAN 02

R02
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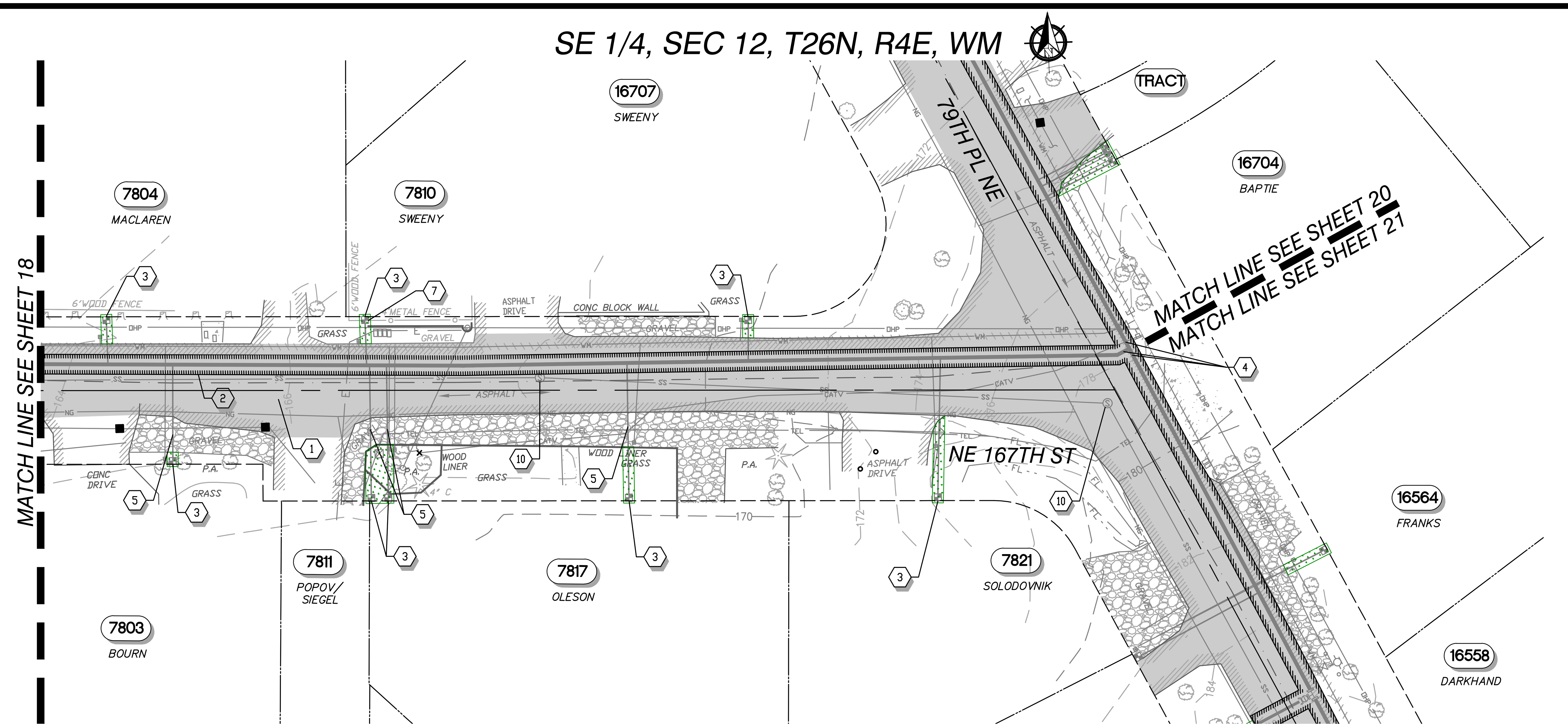


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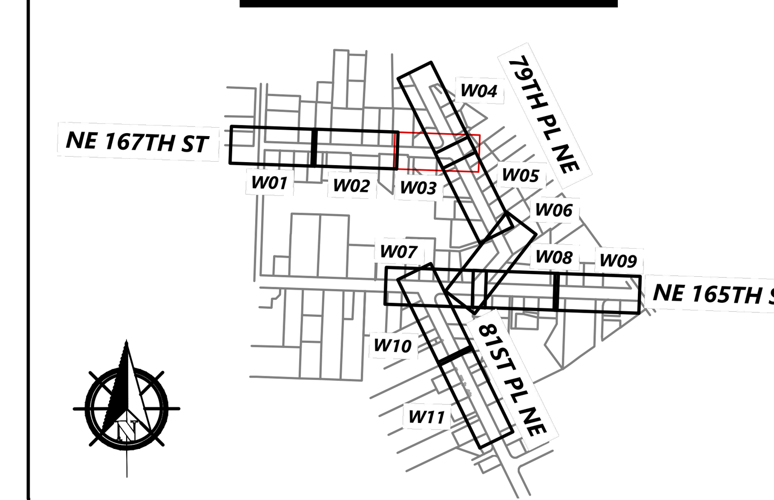


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RYAN J. FESKENS
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49451
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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

WATER MAIN RESTORATION PLAN 03

R03
C2021-04



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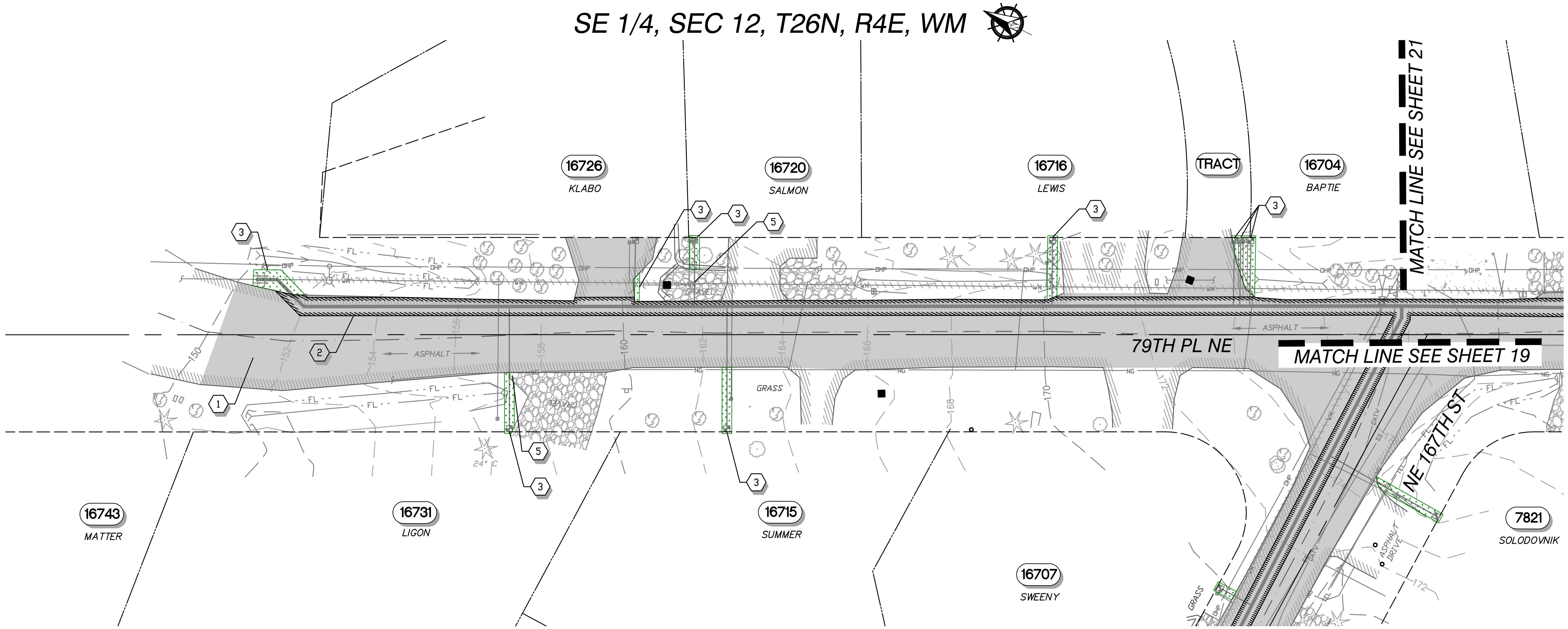


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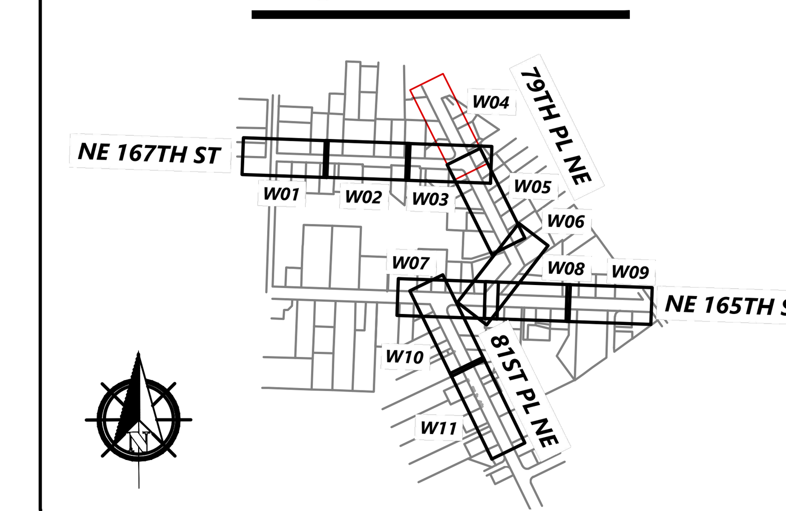


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SIGNED: 11/01/2021

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CONTRACT 2021-04

165/81 WATER MAIN REPLACEMENT

# WATER MAIN RESTORATION PLAN 04

R04

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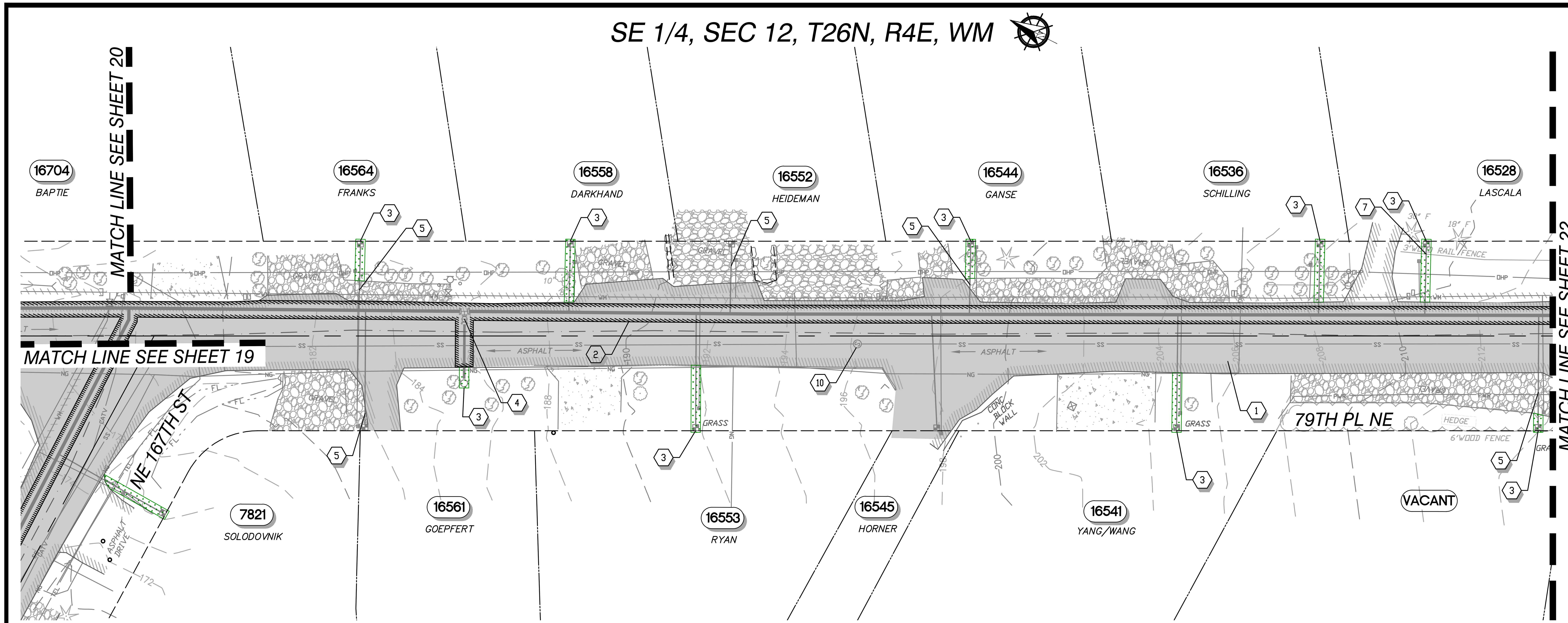


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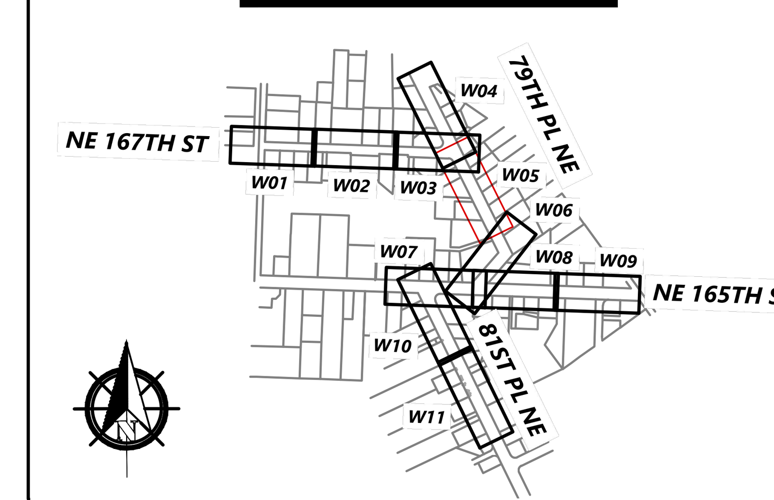


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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

WATER MAIN RESTORATION PLAN 05

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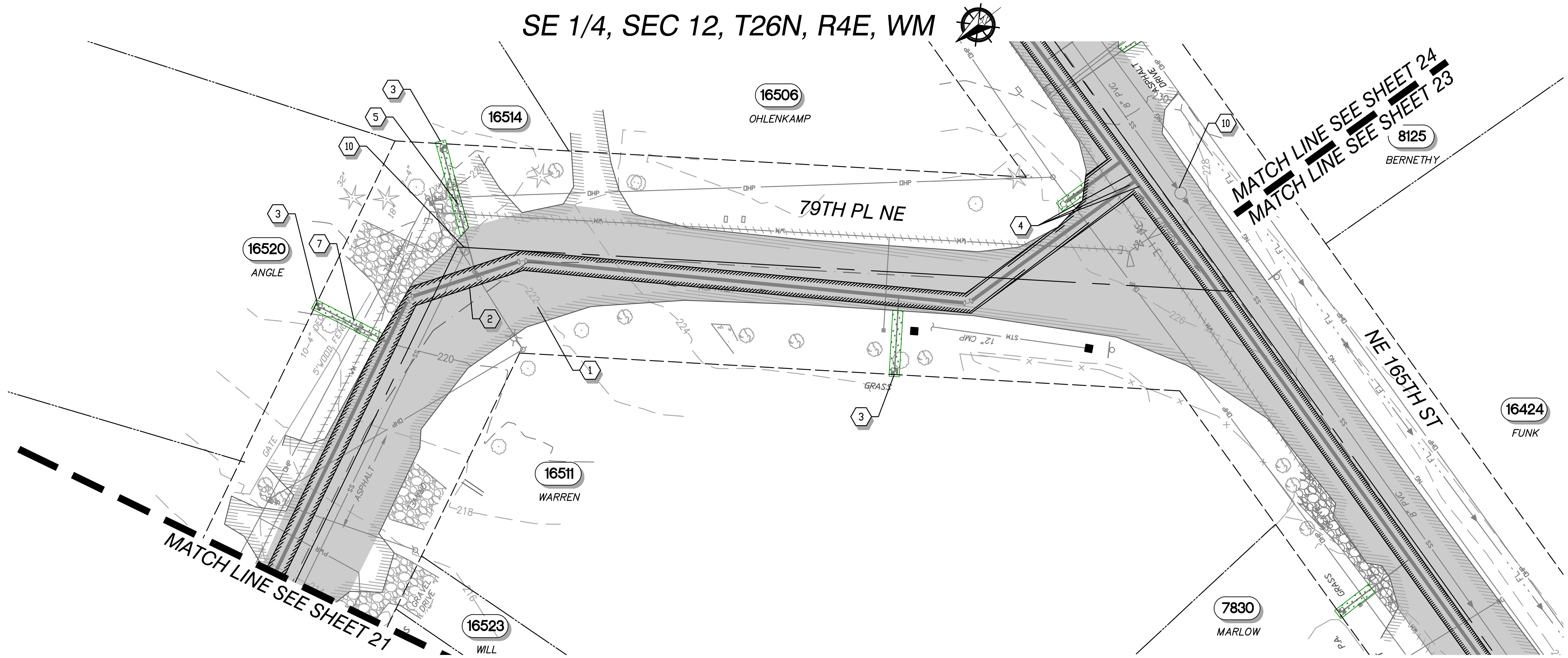


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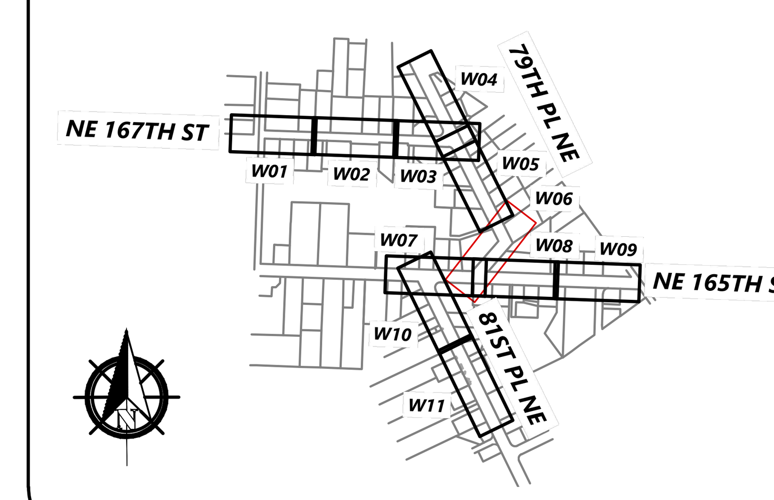


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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

WATER MAIN RESTORATION PLAN 06

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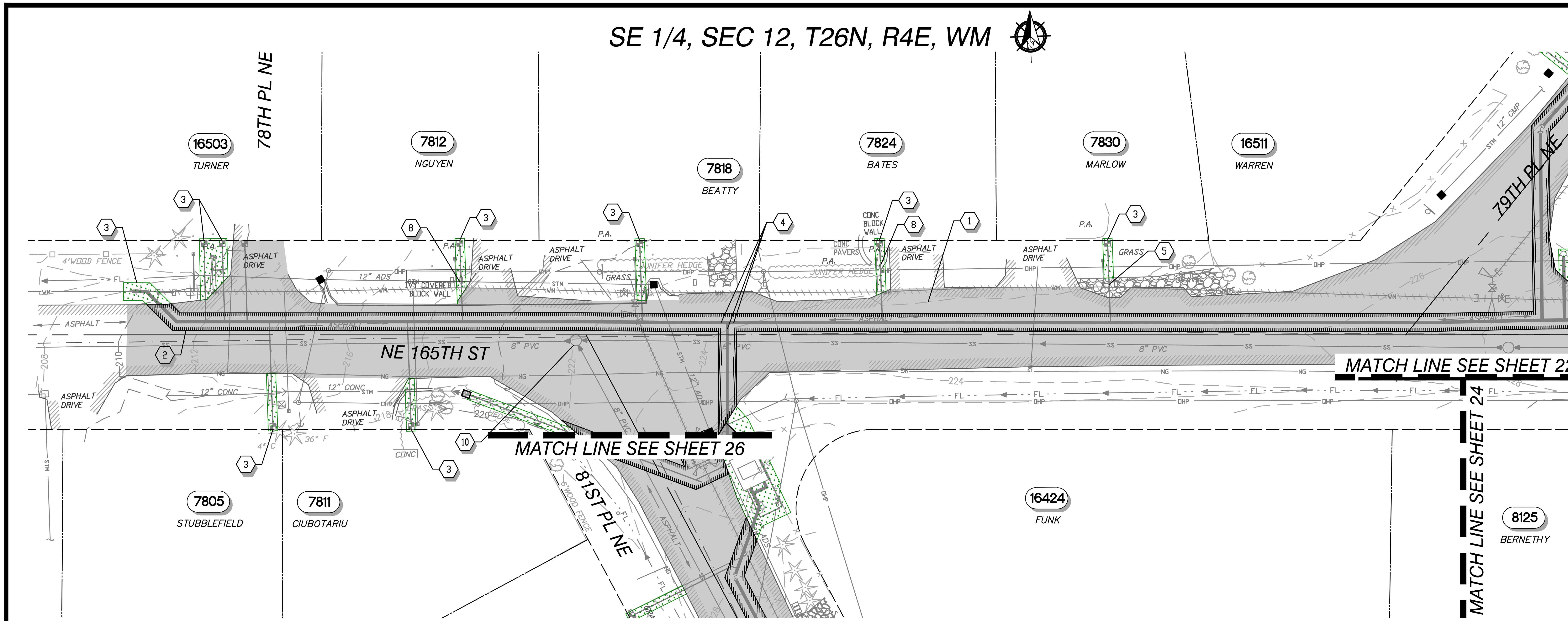


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5. ASPHALT CONCRETE OVERLAY SHALL BE 2" MINIMUM. GRIND EXISTING ASPHALT CONCRETE PAVEMENT PER THE SPECIFICATION IN ORDER TO PROVIDE A SMOOTH OVERLAY TRANSITION. RESTORE STRIPING TO EXISTING CONFIGURATION.

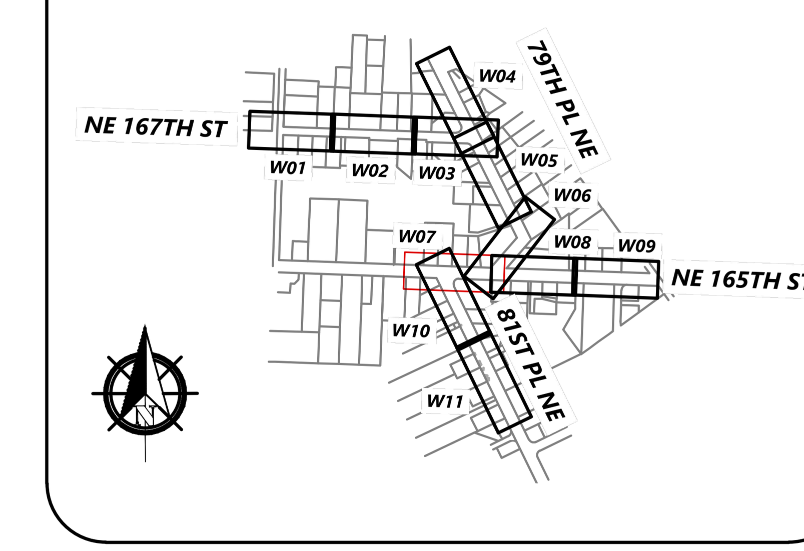
## RESTORATION NOTES

1. GRIND EXISTING ASPHALT PAVEMENT FULL WIDTH OF OVERLAY AREA AND PROVIDE 2" ASPHALT.
2. ASPHALT TRENCH PATCH.
3. RESTORE EXISTING LANDSCAPED AREA TO PRE-CONSTRUCTION CONDITIONS, OR BETTER. WHERE EXISTING LANDSCAPING IS GRASS, PROVIDE TOPSOIL AND SOD.
4. ADJUST VALVE BOX TO GRADE.
5. RESTORE GRAVEL TO PRE-CONSTRUCTION CONDITIONS, OR BETTER.
8. RESTORE WALL TO PRE-CONSTRUCTION CONDITIONS, OR BETTER.
10. REPLACE EXISTING SEWER FRAME AND GRATE WITH NEW PER DISTRICT STANDARDS

## RESTORATION LEGEND

- 2-INCH ASPHALT OVERLAY (APPROXIMATE LIMITS)
- RESTORE LANDSCAPING
- RESTORE GRAVEL
- ASPHALT TRENCH PATCH (APPROXIMATE LIMITS)
- CEMENT CONCRETE SIDEWALK AND/OR CURB AND GUTTER REPLACEMENT
- CEMENT CONCRETE SIDEWALK AND/OR CURB TO BE REMOVED

## VICINITY MAP




HORZ. 20' 0' 20' 40' SCALE IN FEET

VERT. 5' 0' 5' 10' SCALE IN FEET

SIGNED: 11/01/2021

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WARNING 0 ½ 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

RH2

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| DESIGNED BY | DMF |
| DRAWN BY | DMF |
| CHECKED BY | AHF |
| APPROVAL | AHF |
| DATE | Nov 1, 2021 |

NORTHSHORE UTILITY DISTRICT WATER SEWER

**NORTHSHORE UTILITY DISTRICT**

6830 NE 185th St. Kenmore, WA 98028-2684 P.O. Box 82489 Kenmore, WA 98028-2684

Ph: (425) 398-4400 | Fax: (425) 398-4430 | www.nud.net

CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

WATER MAIN RESTORATION PLAN 07

R07

C2021-04

SHEET 23 OF 29

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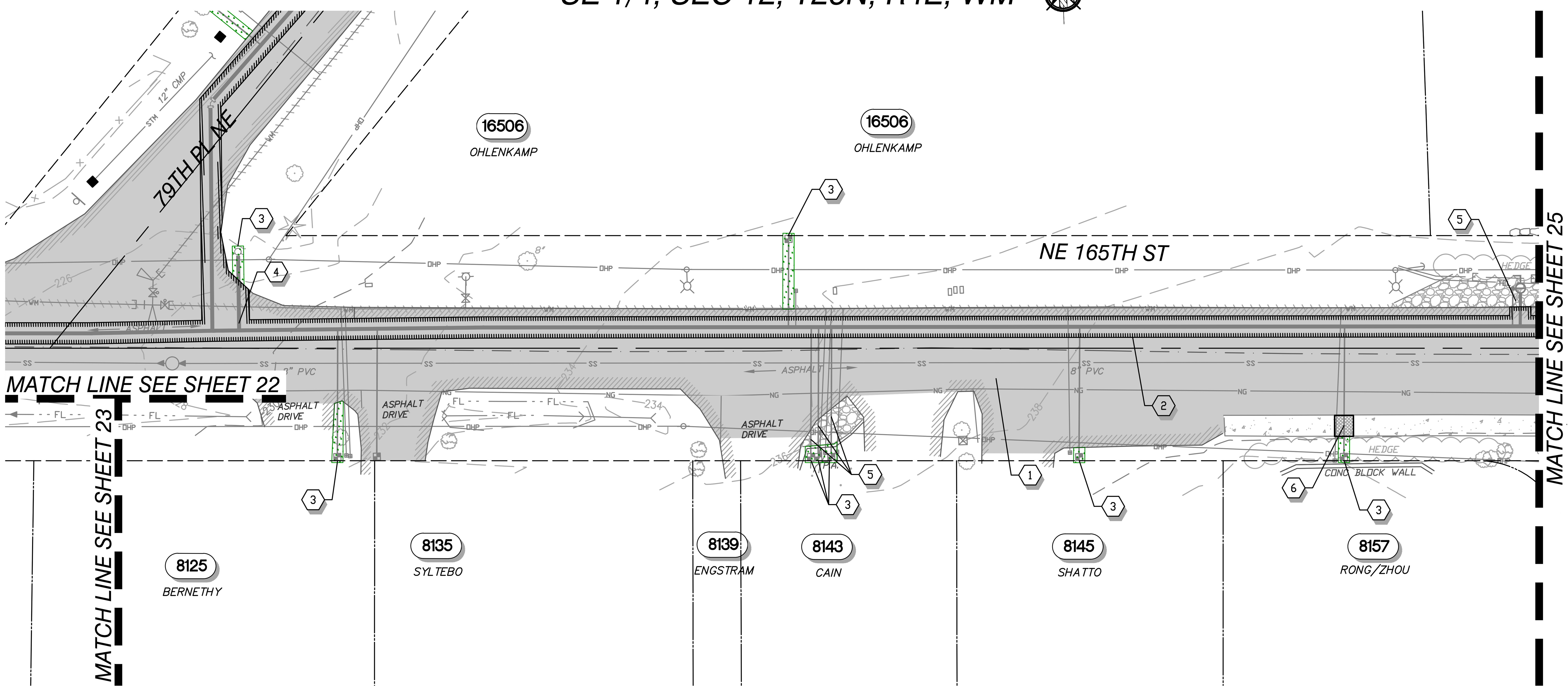
## SE 1/4, SEC 12, T26N, R4E, WM




## NOTES

1. SALVAGED MATERIALS SHALL BE DELIVERED TO THE DISTRICT'S YARD IN KENMORE IN A CLEAN AND OPERABLE CONDITION.
2. NOT ALL RESTORATION REQUIREMENTS MAY BE SHOWN, INCLUDING TRENCH RESTORATION FOR ALL SERVICES. RESTORE ALL DISTURBED AREAS TO EXISTING OR BETTER CONDITIONS.
3. GRASS AREAS THAT ARE DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED WITH 4" OF TOPSOIL AND SOD PER THE SPECIFICATIONS.
4. ADJUST UTILITY CASTINGS OR COVERS TO FINISHED GRADE.
5. ASPHALT CONCRETE OVERLAY SHALL BE 2" MINIMUM. GRIND EXISTING ASPHALT CONCRETE PAVEMENT PER THE SPECIFICATION IN ORDER TO PROVIDE A SMOOTH OVERLAY TRANSITION. RESTORE STRIPING TO EXISTING CONFIGURATION.

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5. RESTORE GRAVEL TO PRE-CONSTRUCTION CONDITIONS, OR BETTER.
6. REPLACE SIDEWALK, CURB AND GUTTER PER CITY OF KENMORE STANDARD DETAILS ON SHEET 29.

## RESTORATION LEGEND

- 2-INCH ASPHALT OVERLAY (APPROXIMATE LIMITS)
- RESTORE LANDSCAPING
- RESTORE GRAVEL
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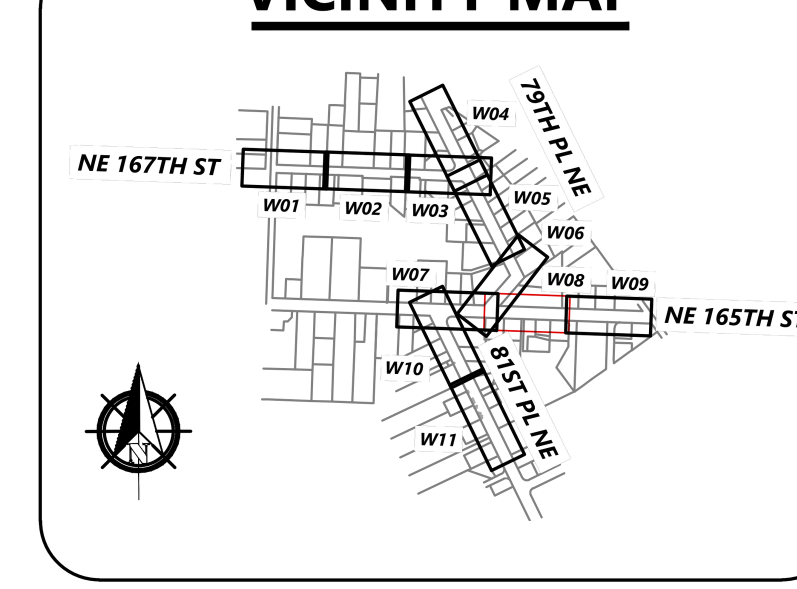
- CEMENT CONCRETE SIDEWALK AND/OR CURB AND GUTTER REPLACEMENT
- CEMENT CONCRETE SIDEWALK AND/OR CURB TO BE REMOVED

## VICINITY MAP




HORZ. 20' 0' 20' 40' SCALE IN FEET

VERT. 5' 0' 5' 10' SCALE IN FEET

RYAN J. FESSING STATE OF WASHINGTON 49451 REGISTERED PROFESSIONAL ENGINEER

SIGNED: 11/01/2021

| NO | BY | APPD | REVISION | DATE |
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NORTHSHORE UTILITY DISTRICT WATER SEWER


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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

WATER MAIN RESTORATION PLAN 08

R08

C2021-04



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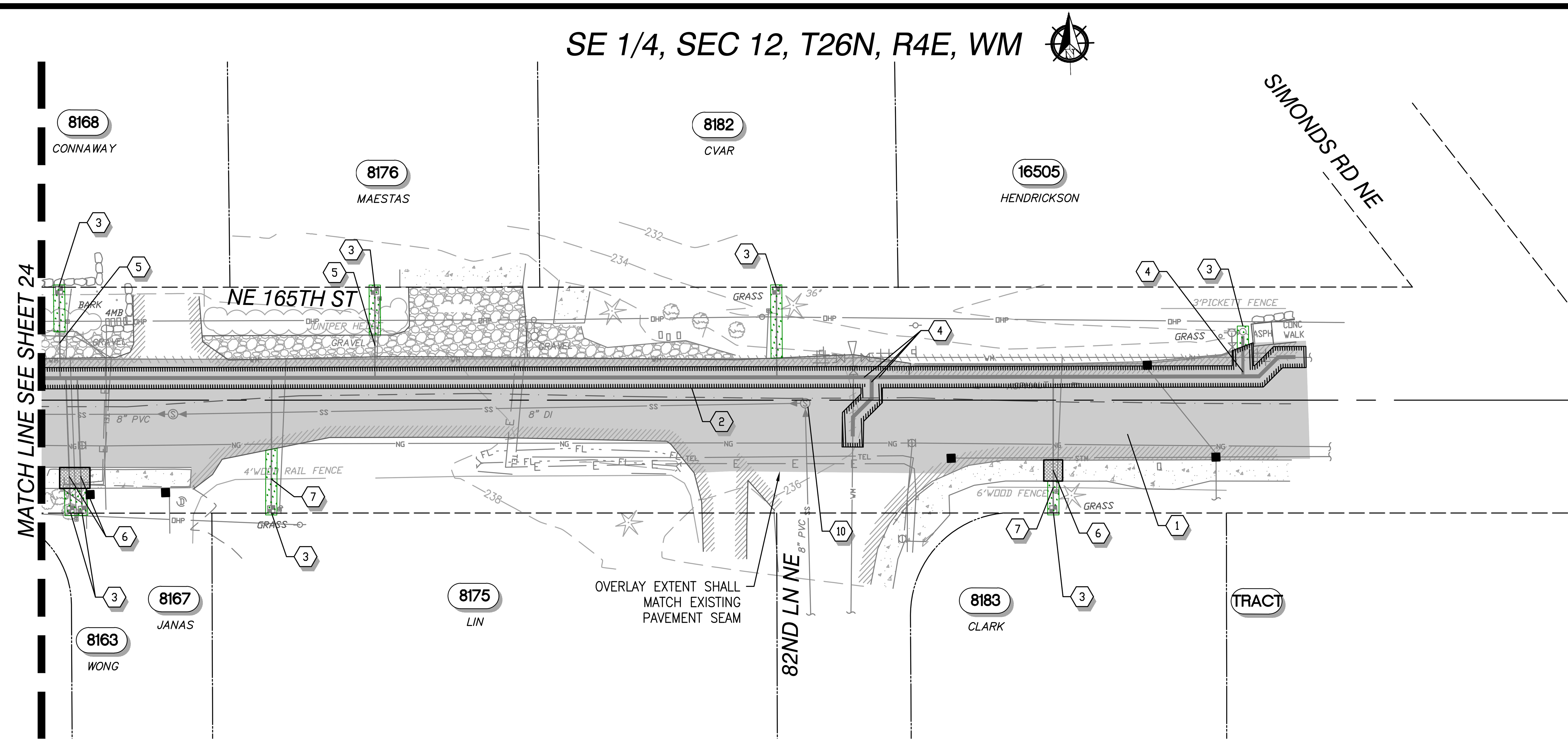


## NOTES

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4. ADJUST VALVE BOX TO GRADE.
5. RESTORE GRAVEL TO PRE-CONSTRUCTION CONDITIONS, OR BETTER.
6. REPLACE SIDEWALK, CURB AND GUTTER PER CITY OF KENMORE STANDARD DETAILS ON SHEET 29.
7. RESTORE FENCE TO PRE-CONSTRUCTION CONDITIONS, OR BETTER
10. REPLACE EXISTING SEWER FRAME AND GRATE WITH NEW PER DISTRICT STANDARDS

## RESTORATION LEGEND

- 2-INCH ASPHALT OVERLAY (APPROXIMATE LIMITS)
- RESTORE LANDSCAPING
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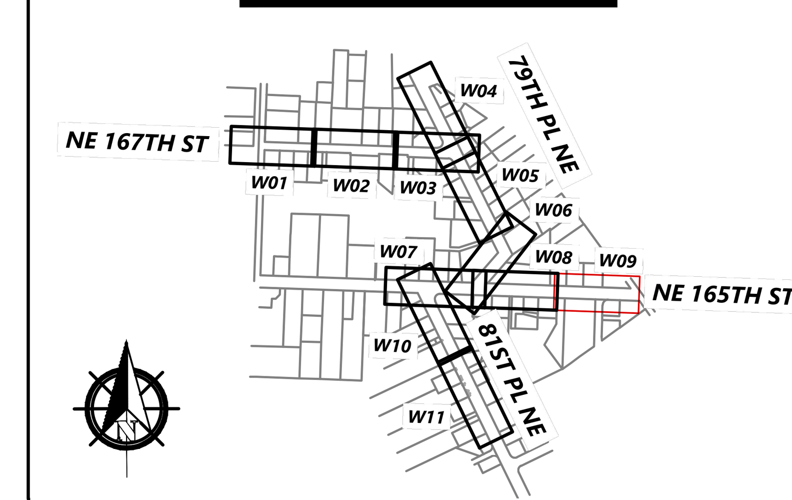
## VICINITY MAP




HORZ. SCALE 20' 0' 20' 40' IN FEET
VERT. SCALE 5' 0' 5' 10' IN FEET

BRIAN J. FESSLER, STATE OF WASHINGTON, 49451, REGISTERED PROFESSIONAL ENGINEER
SIGNED: 11/01/2021

| NO | BY | APPD | REVISION | DATE |
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WATER SEWER

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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

WATER MAIN RESTORATION PLAN 09

R09
C2021-04
SHEET 25 OF 29

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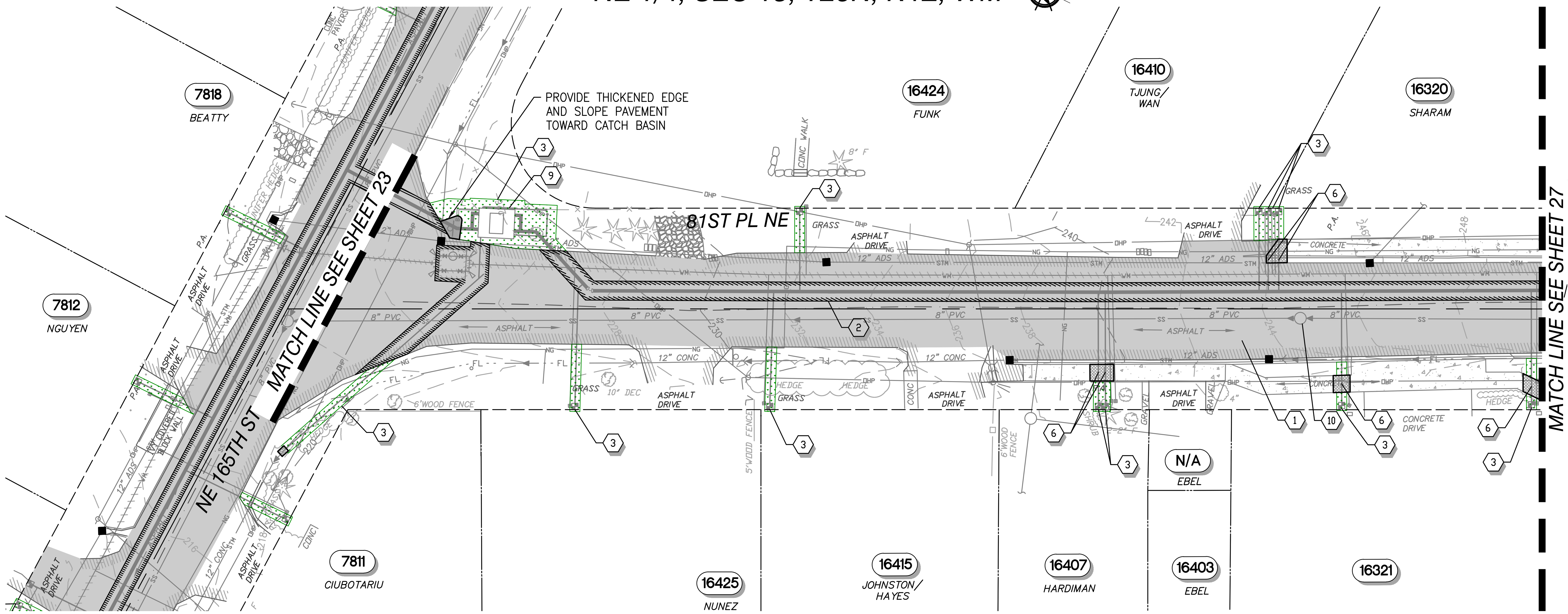
## NE 1/4, SEC 13, T26N, R4E, WM

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6. REPLACE SIDEWALK, CURB AND GUTTER PER CITY OF KENMORE STANDARD DETAILS ON SHEET 29.
9. REMOVE EXISTING FENCE AND POSTS AS NECESSARY TO CONSTRUCT PROPOSED IMPROVEMENTS. PROVIDE AND INSTALL NEW FENCE AND POSTS IF EXISTING MATERIALS ARE DAMAGED DURING REMOVAL OR REINSTALLATION.
10. REPLACE EXISTING SEWER FRAME AND GRATE WITH NEW PER DISTRICT STANDARDS

## RESTORATION LEGEND

- 2-INCH ASPHALT OVERLAY (APPROXIMATE LIMITS)
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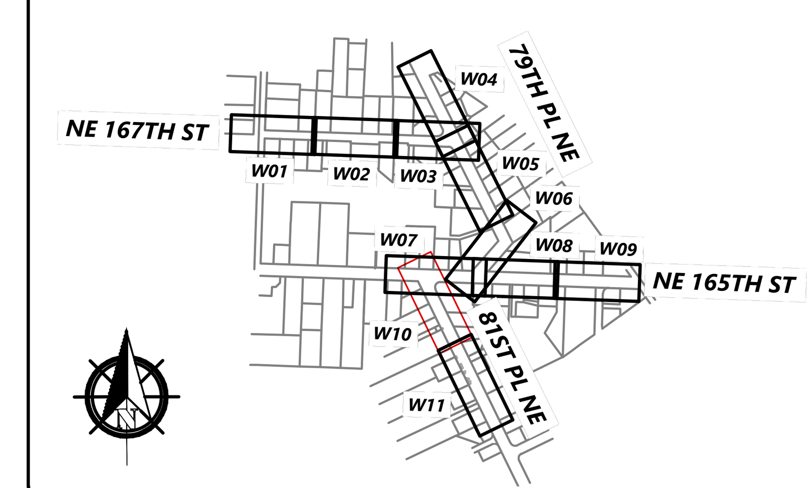


HORZ. SCALE 20' 0' 20' 40' IN FEET

VERT. SCALE 5' 0' 5' 10' IN FEET

RYAN J. FESSING, STATE OF WASHINGTON, 49451, REGISTERED PROFESSIONAL ENGINEER
SIGNED: 11/01/2021

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*CONTRACT 2021-04*
*165/81 WATER MAIN REPLACEMENT*

WATER MAIN RESTORATION PLAN 10

R10
C2021-04
*SHEET* 26 *OF* 29

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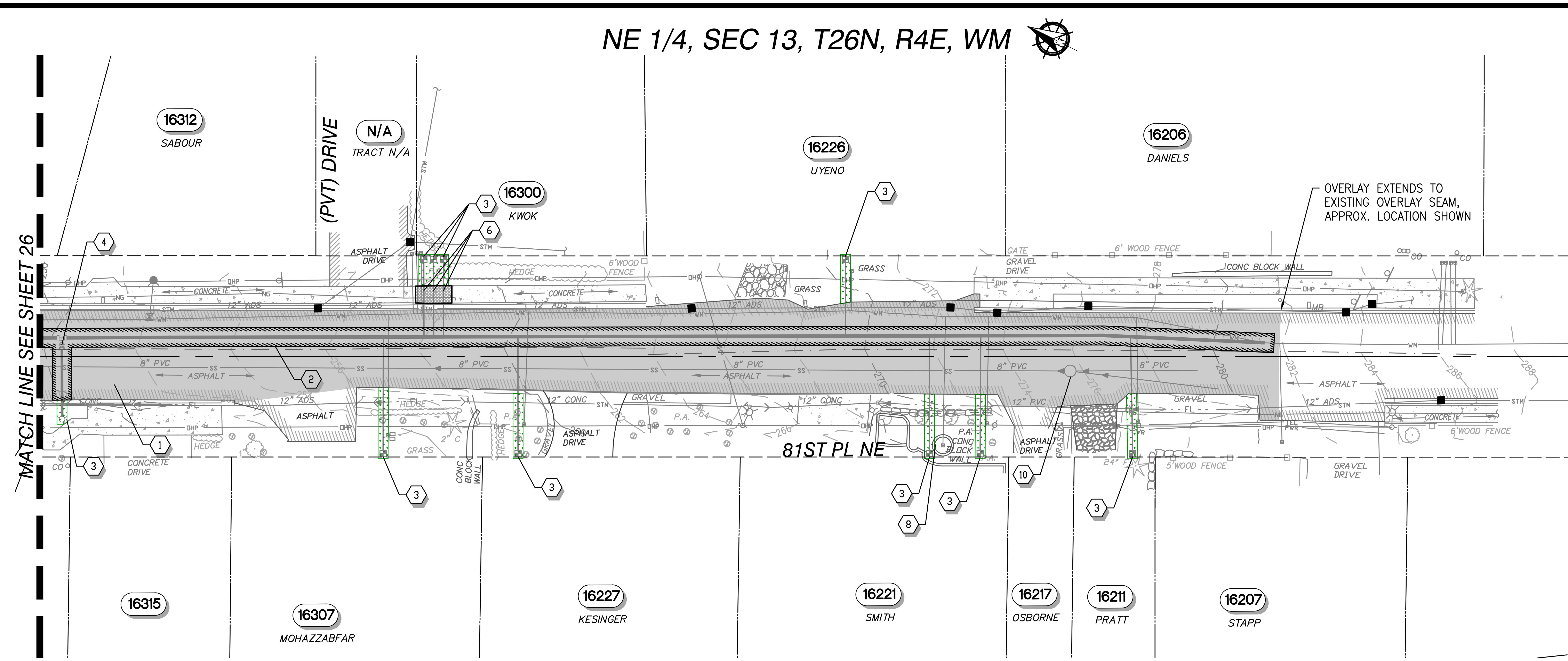
## NE 1/4, SEC 13, T26N, R4E, WM

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(6) REPLACE SIDEWALK, CURB AND GUTTER PER CITY OF KENMORE STANDARD DETAILS ON SHEET 29.

(8) RESTORE WALL TO PRE-CONSTRUCTION CONDITIONS, OR BETTER.

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## RESTORATION LEGEND

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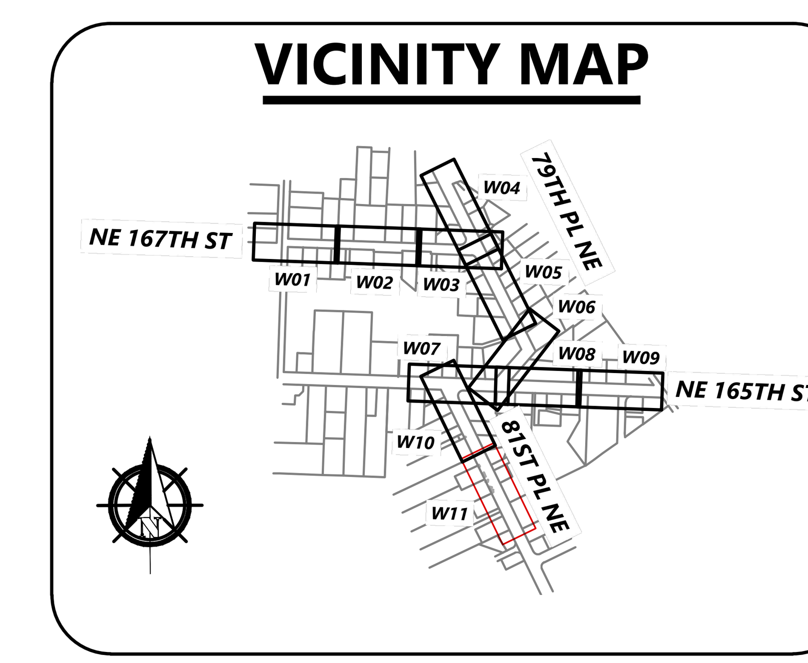


HORZ. 20' 0' 20' 40' SCALE IN FEET

VERT. 5' 0' 5' 10' SCALE IN FEET

RYAN J. FERSONS, STATE OF WASHINGTON, 49451, REGISTERED PROFESSIONAL ENGINEER

SIGNED: 11/01/2021

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NORTHSHORE UTILITY DISTRICT — WATER — SEWER


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CONTRACT 2021-04
165/81 WATER MAIN REPLACEMENT

WATER MAIN RESTORATION PLAN 11

R11

C2021-04



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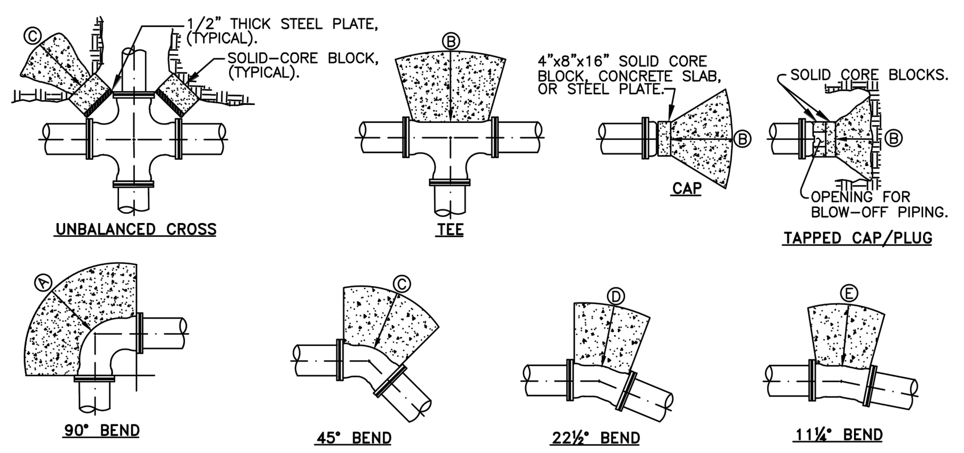



THRUST BLOCK SIZING FOR 250 PSI PRESSURE

MIN. BEARING AREA AGAINST UNDISTURBED SOIL IN SQUARE FEET.

| PIPE SIZE | (A) | (B) | (C) | (D) | (E) |
|---|---|---|---|---|---|
| 4" | 3/(2) | 2/(1) | 2/(1) | 1/(1) | 1/(1) |
| 6" | 6/(4) | 4/(3) | 3/(2) | 2/(1) | 1/(1) |
| 8" | 10/(7) | 7/(5) | 5/(4) | 3/(2) | 2/(1) |
| 10" | 15/(10) | 11/(7) | 8/(5) | 4/(3) | 2/(2) |
| 12" | 22/(14) | 15/(10) | 12/(8) | 6/(4) | 3/(2) |
| 14" | 29/(20) | 21/(14) | 16/(11) | 8/(5) | 4/(3) |
| 16" | 38/(26) | 27/(18) | 21/(14) | 11/(7) | 5/(4) |
| 18" | 48/(32) | 34/(23) | 26/(18) | 13/(9) | 7/(5) |
| 20" | 60/(40) | 42/(28) | 32/(22) | 17/(11) | 8/(6) |
| 24" | 86/(58) | 61/(41) | 47/(31) | 24/(16) | 12/(8) |

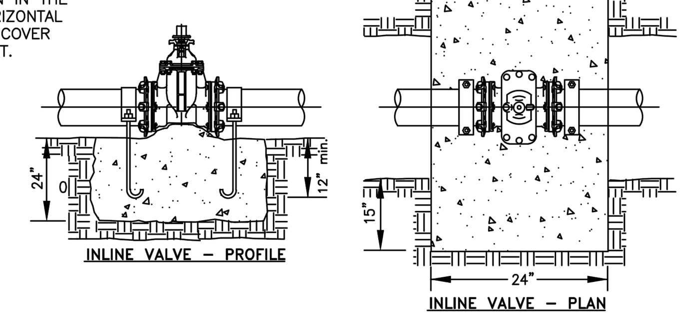
SAFE BEARING LOADS IN LBS./SQ. FT.

THE SAFE BEARING LOADS GIVEN IN THE FOLLOWING TABLE ARE FOR HORIZONTAL THRUSTS WHEN THE DEPTH OF COVER OVER THE PIPE EXCEEDS 2 FEET.

| SOIL | SAFE SOIL BEARING LOAD |
|---|---|
| *MUCK, PEAT, ETC. | SEE GENERAL NOTE #7 |
| SOFT CLAY | 1,000 |
| SAND | 2,000 |
| SAND AND GRAVEL | 3,000 |
| SAND AND GRAVEL CEMENTED W/CLAY | 4,000 |
| HARD SHALE | 10,000 |

GENERAL NOTES:

1. CONCRETE THRUST BLOCK AREA BASED UPON A SAFE SOIL BEARING LOAD OF 2,000/(3,000) LBS. PER SQ. FT (SAND/(SAND GRAVEL)).
2. AREAS MUST BE ADJUSTED FOR OTHER SIZE PIPE, PRESSURES AND SOIL CONDITIONS.
3. CONCRETE BLOCKING SHALL BE CAST-IN-PLACE AND HAVE MINIMUM OF 1/2 SQUARE FOOT CONTACT BEARING AGAINST THE FITTING.
4. BLOCK SHALL BEAR AGAINST FITTINGS ONLY AND SHALL BE CLEAR OF JOINTS TO PERMIT TAKING UP OR DISMANTLING JOINT. INSTALL 8 MIL. PLASTIC SHEETING BETWEEN FITTING AND BLOCK.
5. CONTRACTOR SHALL INSTALL BLOCKING ADEQUATE TO WITHSTAND TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.
6. POLYETHYLENE WRAP NOT SHOWN FOR CLARITY.
7. IN MUCK OR PEAT, PIPE AND FITTING RESTRAINT SHALL BE AS DIRECTED BY THE DISTRICT.




NOTES:

1. CONCRETE BLOCKING AREA IS BASED ON 250 PSI WATER PRESSURE AND 2500 PSI CONCRETE STRENGTH.
2. HARDWARE NOT EMBEDDED IN CONCRETE SHALL BE CLEANED AND COATED WITH COAL TAR EPOXY.
3. IN-LINE VALVE SHALL BE M.J.xM.J. AND BE RESTRAINED WITH MEGA-LUGS, OR EQUAL.
4. RESTRAINING HARDWARE SHALL BE PER NUD STANDARD WATER DETAIL #2 FOR VERTICAL BLOCKING.

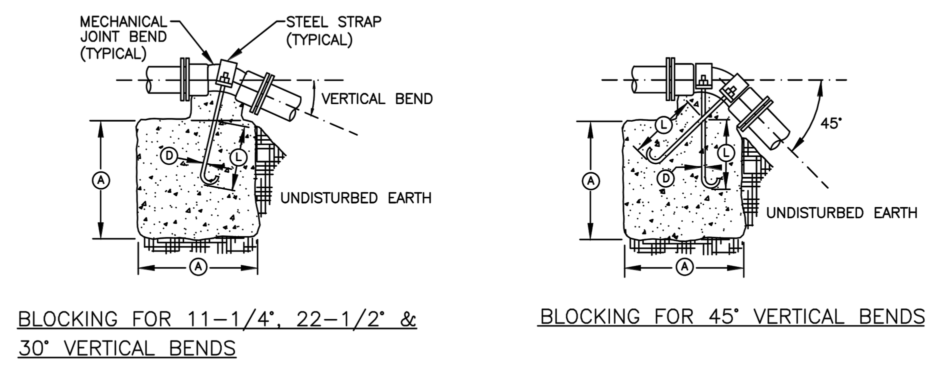
## CONCRETE BLOCKING - HORIZONTAL

NOT TO SCALE

DETAIL APPROVALS | EDITOR TDC | MANAGER DPK

NORTHSHORE UTILITY DISTRICT — 2021 STANDARD WATER DETAILS — 1

LAST UPDATED FEBRUARY 2018

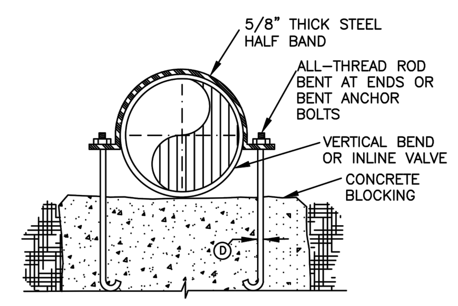



BLOCKING FOR 11-1/4°, 22-1/2° & 30° VERTICAL BENDS

BLOCKING FOR 45° VERTICAL BENDS

VERTICAL BLOCKING

| PIPE SIZE | VERT. BEND | CU.FT. | (A) | (D) | (L) |
|---|---|---|---|---|---|
| 4" | 11-1/4° | 8 | 2.0' | 3/4" | 1.5' |
| | 22-1/2° | 11 | 2.2' | 3/4" | 2.0' |
| | 30° | 17 | 2.6' | 3/4" | 2.0' |
| | 45° | 30 | 3.1' | 3/4" | 2.0' |
| 6" | 11-1/4° | 11 | 2.2' | 3/4" | 2.0' |
| | 22-1/2° | 25 | 2.9' | 3/4" | 2.0' |
| | 30° | 41 | 3.5' | 3/4" | 2.0' |
| | 45° | 68 | 4.1' | 3/4" | 2.0' |
| 8" | 11-1/4° | 16 | 2.5' | 3/4" | 2.0' |
| | 22-1/2° | 47 | 3.6' | 3/4" | 2.5' |
| | 30° | 70 | 4.1' | 3/4" | 2.5' |
| | 45° | 123 | 5.0' | 3/4" | 2.0' |
| 12" | 11-1/4° | 32 | 3.2' | 3/4" | 2.0' |
| | 22-1/2° | 88 | 4.5' | 7/8" | 3.0' |
| | 30° | 132 | 5.1' | 7/8" | 2.5' |
| | 45° | 232 | 6.1' | 3/4" | 2.5' |
| 16" | 11-1/4° | 70 | 4.1' | 7/8" | 3.0' |
| | 22-1/2° | 184 | 5.7' | 1-1/8" | 4.0' |
| | 30° | 275 | 6.5' | 1-1/4" | 4.0' |
| | 45° | 478 | 7.8' | 1-1/8" | 4.0' |
| 20" | 11-1/4° | 91 | 4.5' | 7/8" | 3.0' |
| | 22-1/2° | 225 | 6.1' | 1-1/4" | 4.0' |
| | 30° | 330 | 6.9' | 1-3/8" | 4.5' |
| | 45° | 560 | 8.2' | 1-1/4" | 4.0' |
| 24" | 11-1/4° | 128 | 5.0' | 1" | 3.5' |
| | 22-1/2° | 320 | 6.8' | 1-3/8" | 4.5' |
| | 30° | 480 | 7.9' | 1-5/8" | 5.5' |
| | 45° | 820 | 9.4' | 1-3/8" | 4.5' |




NOTES:

1. CONCRETE BLOCKING AREA IS BASED ON 250 PSI WATER PRESSURE AND 2,500 PSI CONCRETE STRENGTH.
2. BOLTS AND NUTS NOT EMBEDDED IN CONCRETE SHALL BE CLEANED AND COATED WITH COAL TAR EPOXY.
3. POLYETHYLENE WRAP NOT SHOWN FOR CLARITY.
4. HARDWARE SHALL BE TWO CARBON STEEL HALF BANDS (5/8" THICK) EQUAL TO 595 SOCKET CLAMP FROM ANVIL INTERNATIONAL. RODS SHALL BE ALL-THREAD, BENT AT THE ENDS OR BENT ANCHOR BOLTS, WITH 12" MIN. EMBEDMENT FOR INLINE VALVES, OR AS SHOWN ON VERTICAL BLOCKING TABLE.

## CONCRETE BLOCKING - VERTICAL

NOT TO SCALE

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NORTHSHORE UTILITY DISTRICT — 2021 STANDARD WATER DETAILS — 2

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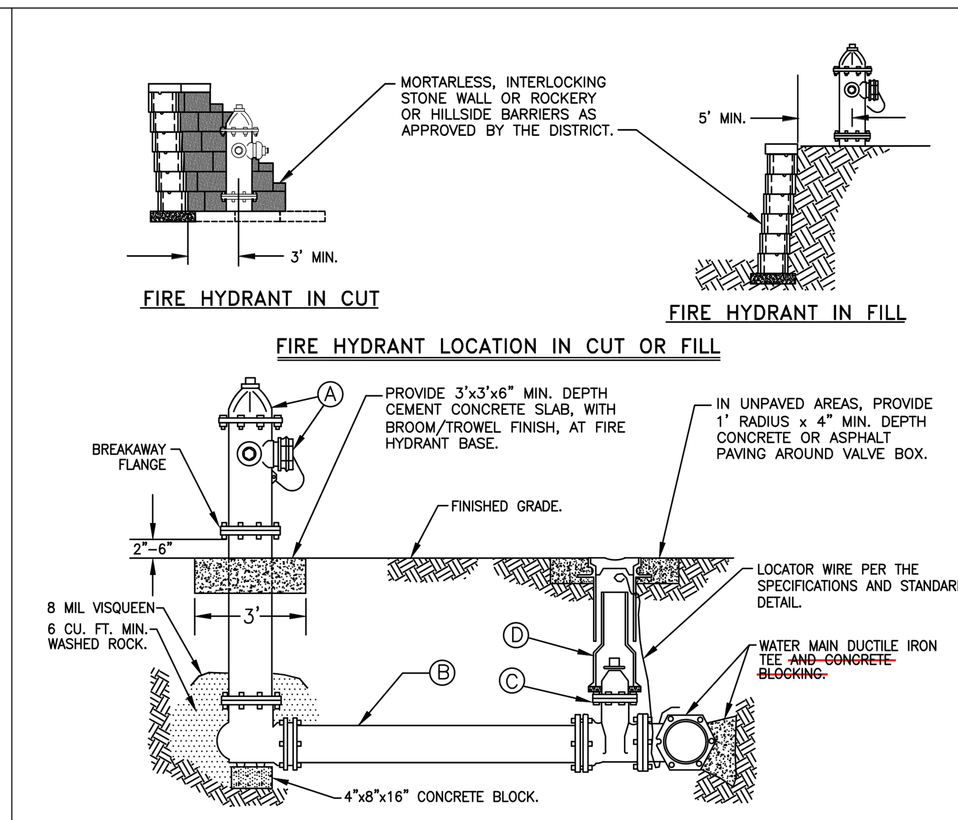


MATERIALS LIST

| ITEM | DESCRIPTION |
|---|---|
| (A) | HYDRANT: SHALL BE MUELLER SUPER CENTURION, AMERICAN DARLING B-62-B, CLOW MEDALLION, M&H 129 OR EAST JORDAN IRON WORKS WATERMASTER 5CD250 IN CONFORMANCE WITH AWWA STANDARD SPECIFICATION C-502. PROVIDE STORZ ADAPTERS (INTEGRAL OR NON-INTEGRAL) AS FOLLOWS: 4" FOR BOTHELL AND NORTHSHORE FIRE DEPARTMENT, AND 5" FOR KIRKLAND. HYDRANT SHALL BE FACTORY PRIME COATED. TOP COAT SHALL BE TWO BRUSH COATS OF SHERWIN WILLIAMS WHITE INDUSTRIAL ENAMEL #B54W101. |
| (B) | 6" CL. 52 D.I. PIPE, 3' MIN. AND 50' MAX. WITH RESTRAINED JOINTS. |
| (C) | 6" R.W. GATE VALVE, F.L.xR.J.: SHALL BE PER THE SPECIFICATIONS. FOR VALVE OPERATING NUT DEPTHS, SEE STANDARD WATER DETAIL #11 |
| (D) | TWO-PIECE VALVE BOX AND ETHAFOAM RING PER THE SPECIFICATIONS AND STANDARD WATER DETAIL #11. |

NOTES:

1. HYDRANT SHALL BE ORIENTED PER FIRE MARSHALL AND HAVE 3' MIN. CLEARANCE AROUND CENTERLINE.
2. BOLLARDS REQUIRED ONLY ON PRIVATE PROPERTY.
3. IF HYDRANT RUN IS LONGER THAN 50', PIPE SIZE WILL BE DETERMINED BY DISTRICT

## FIRE HYDRANT ASSEMBLY

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NORTHSHORE UTILITY DISTRICT — 2021 STANDARD WATER DETAILS — 3

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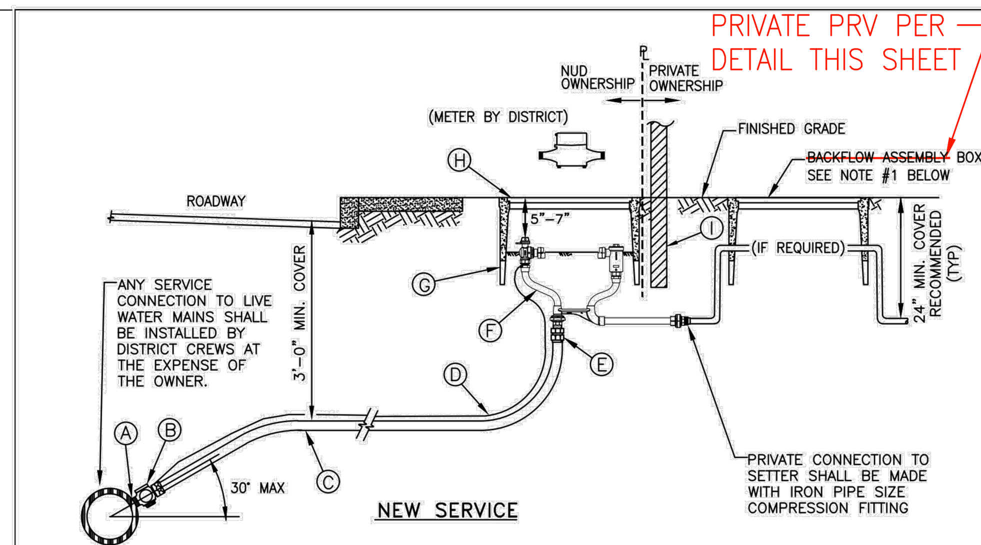


MATERIALS LIST

| ITEM | DESCRIPTION |
|---|---|
| (A) | DIRECT TAP: DIRECT TAP OF DUCTILE IRON OR CAST IRON LARGER THAN 4" DIAMETER IS REQUIRED FOR 1" SERVICES. SADDLES WILL NOT BE ALLOWED ON DUCTILE IRON OR CAST IRON PIPE LARGER THAN 4" DIAMETER.<br>SADDLE: ALL SADDLES SHALL BE DUCTILE IRON CASTING WITH CC THREADS. FOR ALL PIPE MATERIAL OTHER THAN PVC PIPE, SADDLES SHALL BE SINGLE STRAP TYPE EQUAL TO FORD FC101, ROMAC 101NS, MUELLER DR1S, OR DISTRICT APPROVED EQUAL. FOR PVC PIPE, SADDLES SHALL BE DOUBLE STRAP TYPE EQUAL TO MUELLER DR2S, FORD FCD202, OR ROMAC 202NS. |
| (B) | 1" CORPORATION STOP, CCxPACK JOINT, FORD F1001 OR APPROVED EQUAL, WITH STAINLESS STEEL STIFFENER, FORD INSERT-53-72, A.Y. MCDONALD 6136-1", OR MUELLER 505142. |
| (C) | 1 1/4" REHAU MUNICIPEX PEXa 3306, COPPER TUBE SIZE (CTS), SDR 9, AWWA C904, PER THE SPECIFICATIONS. PIPE SHALL BE CONTINUOUS FROM CORPORATION STOP TO METER SETTER. ALL PEXa PIPE INSTALLED BY OPEN-CUT CONSTRUCTION SHALL BE BEDDED IN SAND 4" OVER AND UNDER. NATIVE MATERIAL WILL NOT BE ALLOWED FOR BEDDING. |
| (D) | TRACER WIRE: BLUE 14 GAUGE COPPER, CONTINUOUS, SOLID CORE, POLYETHYLENE INSULATED PER THE SPECIFICATIONS. CONNECTION AT THE METER SETTER SHALL BE MADE WITH AN ALL STAINLESS STEEL HOSE CLAMP. CONNECTION AT THE MAIN LINE WIRE SHALL BE MADE WITH A SPLIT-BOLT CONNECTOR. STRIP COATING PRIOR TO CONNECTION. TRACER WIRE MAY BE REQUIRED FROM SETTER TO HOUSE, CHECK WITH LOCAL JURISDICTION FOR REQUIREMENTS. |
| (E) | 1" ADAPTER, MIPxPACK JOINT. |
| (F) | 1" METER SETTER WITH DUAL CHECK VALVE: FORD VBHC74-84W-11-44A-FP-NL, A.Y. MCDONALD 762-412WDDD 44x15, OR MUELLER 390B2588-6A03N |
| (G) | METER BOX: ARMORCAST, A6001946PCX12-NUD (NO "MOUSE HOLES") OR DFW, DFW1324CNP4-12-BODY<br>IN DRIVEWAY/DRIVING SURFACE: ARMORCAST, A6001946PCX12-NUD OR DFW, DFW1324CNP4-12-BODY |
| (H) | COVER: ARMORCAST, A6001969-H10-NUD OR DFW, DFW1324C-4MT-SMALL-NS-NHK-LID<br>IN DRIVEWAY/DRIVING SURFACE: ARMORCAST, A6001969-H10-NUD OR DFW, DFW1324CNP4-12-4MT SMALL NS HNK-LID |
| (I) | 2"x4"x4', MARKER POST. BURIED AT PROPERTY LINE. PAINTED WHITE WITH "WATER" STENCILED ONTO IT IN BLACK. |

NOTE:

1. IF REQUIRED FOR PREMISE ISOLATION, AN APPROVED BACKFLOW ASSEMBLY SHALL BE INSTALLED IMMEDIATELY BEHIND THE WATER METER PER DISTRICT STANDARD WATER DETAILS #13, #14a, AND #14b .
2. ALL PEXa PIPE TO PACK JOINT CONNECTIONS REQUIRE A STIFFENER INSERT.

## 1" WATER SERVICE

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DETAIL APPROVALS | EDITOR TMC | MANAGER SJD

NORTHSHORE UTILITY DISTRICT — 2021 STANDARD WATER DETAILS — 4

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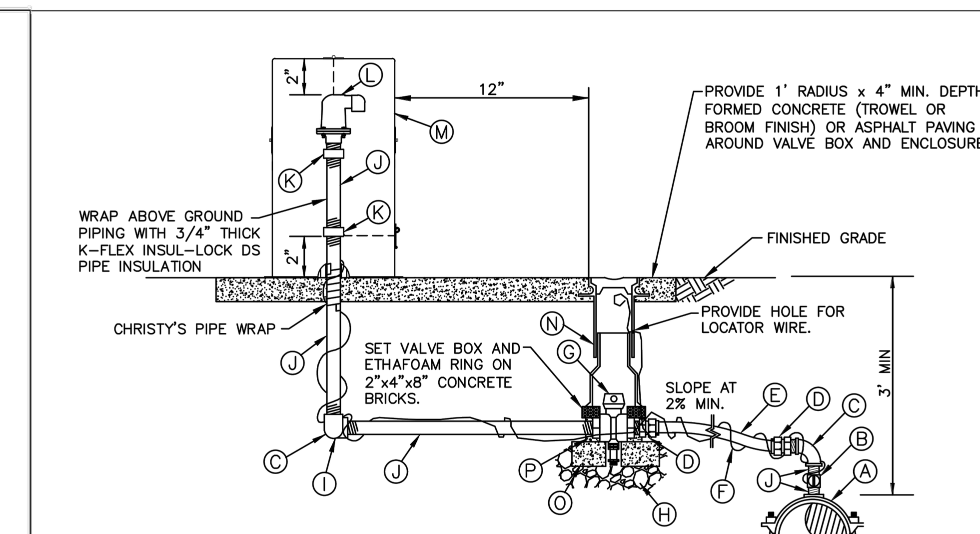


MATERIAL LIST:

| ITEM | QTY. | DESCRIPTION |
|---|---|---|
| (A) | 1 | SADDLE: ALL SADDLES SHALL BE DUCTILE IRON CASTING WITH IP THREADS. FOR ALL PIPE MATERIAL OTHER THAN PVC PIPE, SADDLES SHALL BE SINGLE STRAP TYPE EQUAL TO FORD FC101, ROMAC 101NS, MUELLER DR1S, OR DISTRICT APPROVED EQUAL. FOR PVC PIPE, SADDLES SHALL BE DOUBLE STRAP TYPE EQUAL TO MUELLER DR2S, FORD FCD202, OR ROMAC 202NS. |
| (B) | 1 | 2" BALL VALVE FIPxFIP, FORD #B11-777-NL OR EQUAL. |
| (C) | 2 | 2" 90° BRASS ELBOW, FIPxFIP. |
| (D) | 2 | 2" ADAPTER, MIPxPACK JOINT, FORD #C84-77-NL WITH STIFFENER, FORD INSERT-55, A.Y. MCDONALD 4130-763, OR MUELLER 528707. |
| (E) | 1 | 2" REHAU MUNICIPEX PEXa 3306, COPPER TUBE SIZE (CTS), SDR 9, AWWA C904, PER THE SPECIFICATIONS, LENGTH TO FIT. ALL PEXa PIPE INSTALLED BY OPEN-CUT CONSTRUCTION SHALL BE BEDDED IN SAND, 4" OVER AND UNDER. IF THE DISTANCE BETWEEN BALL VALVES IS LESS THAN 5', A BRASS NIPPLE, LENGTH TO FIT, WITH BRASS FITTINGS, AS REQUIRED, WILL BE ALLOWED. |
| (F) | 1 | TRACER WIRE PER THE SPECIFICATIONS. BLUE 14 GAUGE POLYETHYLENE INSULATED COPPER. CONTINUOUS FROM MAINLINE. |
| (G) | 1 | 2" BALL VALVE, FIPxFIP, CAMBRIDGE BRASS #203NL-F7F7W WITH 2" OPERATING NUT, FORD #QT-67. FOR VALVE OPERATING NUT DEPTHS, SEE STANDARD WATER DETAIL #11. |
| (H) | | WASHED GRAVEL, PASSING 1 1/2" AND RETAINED ON 1/4" MESH. |
| (I) | 1 | STREET ELBOW, FIPxMIP. |
| (J) | 5 | 2" BRASS NIPPLE, LENGTH TO FIT. |
| (K) | 1 | 2" BRASS COUPLING, FIPxFIP. |
| (L) | 1 | AIR/VACUUM RELIEF VALVE, A.R.I. #D-040-C-2". |
| (M) | 1 | INSULATED FIBERGLASS ENCLOSURE. HUBBELL POWER SYSTEMS HOT BOX® VENT GUARD #AVG1824 GREEN. |
| (N) | 1 | TWO-PIECE, CAST IRON VALVE BOX AND ETHAFOAM RING PER THE SPECIFICATIONS AND STANDARD WATER DETAIL #11. |
| (O) | 2 | 4"x8"x16" CONCRETE BLOCK. |
| (P) | 2 | 2"x4"x8" CONCRETE BRICK, ONE ON EITHER SIDE OF THE BALL VALVE TO SUPPORT ETHAFOAM RING. |

NOTES:

1. THE LOCATION OF THE ASSEMBLY AS SHOWN ON THE PLANS IS APPROXIMATE ONLY. THE FINAL LOCATION SHALL BE AT THE LOCAL HIGH POINT OF THE WATER MAIN AS DIRECTED BY THE DISTRICT IN THE FIELD DURING CONSTRUCTION.
2. 2" BALL VALVE SHALL BE INSTALLED PER THE DIRECTIONAL ARROW STAMPED ON VALVE BODY. THE DRAIN PORT IS TO DISCHARGE INTO THE WASHED ROCK.
3. ALL PEXa PIPE TO PACK JOINT CONNECTIONS REQUIRE A PIPE STIFFENER.

## 2" AIR & VACUUM RELIEF VALVE ASSEMBLY

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NORTHSHORE UTILITY DISTRICT — 2021 STANDARD WATER DETAILS — 8

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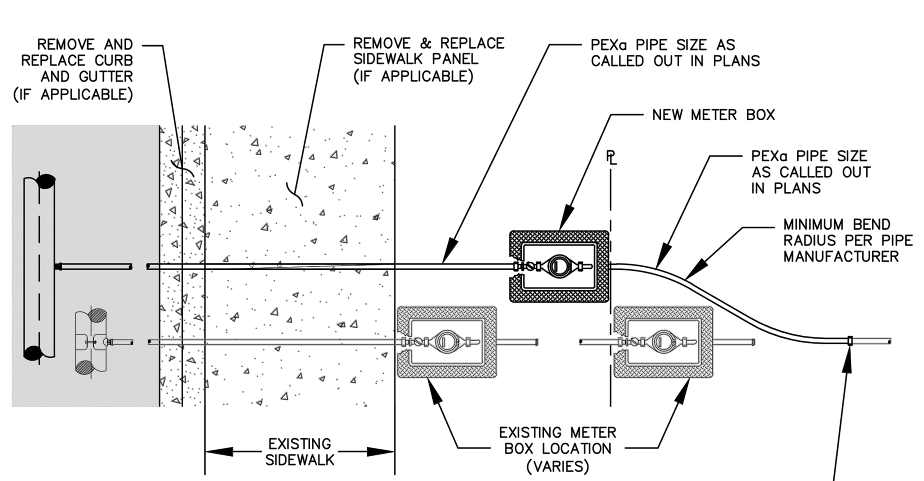


LOCATE AND CONNECT TO EXISTING WATER SERVICE LINE. PROVIDE ALL BRASS INSTA-TITE OR COMPRESSION PACK JOINT STYLE FITTINGS. CONFIRM FITTINGS REQUIRED PRIOR TO DISRUPTING EXISTING WATER SERVICE AND COMMENCING RECONNECTION CONSTRUCTION. SEE NOTE 4.

NOTES:

1. WATER SERVICE PER NUD STANDARD WATER DETAILS, #4 OR #5.
2. UNLESS SHOWN ON PLANS, RELOCATE NEW METER TO PROPERTY LINE.
3. MEASURE AND RECORD EXISTING WATER PRESSURE AT BUILDING PRIOR TO RECONNECTION AND AFTER REESTABLISHMENT OF SERVICE. IF PRESSURE READINGS DIFFER BY MORE THAN 5 PSI, THE CONTRACTOR SHALL LOCATE AND CORRECT THE ISSUE AT THE PRIVATE PRV. IF A PRIVATE PRV IS REMOVED DURING NEW SERVICE INSTALLATION, ADD A NEW PRV DIRECTLY BEHIND METER BOX.
4. ALL PIPE FITTINGS SHALL BE BRASS. PRIOR TO MAKING THE CONNECTION, THE CONTRACTOR SHALL POTHOLE THE EXISTING SERVICE LINE TO DETERMINE THE LOCATION, SIZE, AND TYPE OF EXISTING PIPE AND TO CONFIRM THE PIPE AND FITTINGS REQUIRED TO MAKE THE CONNECTION. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED PIPE AND FITTINGS ON-SITE PRIOR TO DISRUPTING WATER SERVICE AND COMMENCING CONSTRUCTION. NO EXISTING WATER SERVICE SHALL BE DISRUPTED FOR MORE THAN TWO HOURS IN ONE DAY.
5. ALL PEXa PIPE TO PACK JOINT CONNECTIONS REQUIRE A STIFFENER INSERT.
6. FLUSH ALL NEW WATER SERVICE PIPING IN THE PRESENCE OF THE DISTRICT.
7. COORDINATE WITH THE DISTRICT TO SALVAGE THE EXISTING METER AND FOR INSTALLATION OF THE METER INTO THE NEW SERVICE SETTER. LOCATE AND RECONNECT THE EXISTING SERVICE LINE ON THE BACK OF THE METER. ALL PIGTAIL AND PRIVATE WATER SERVICE CONNECTIONS SHALL BE TESTED AT LINE PRESSURE AND SHALL BE VISUALLY INSPECTED BY THE DISTRICT.
8. REMOVE AND REPLACE EXISTING METER BOX AND SETTER.
9. RESTORE THE SITE TO A CONDITION EQUAL TO OR BETTER THAN EXISTED PRIOR TO CONSTRUCTION.

## EXISTING WATER SERVICE RE-CONNECTION

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NORTHSHORE UTILITY DISTRICT — 2021 STANDARD WATER DETAILS — 9

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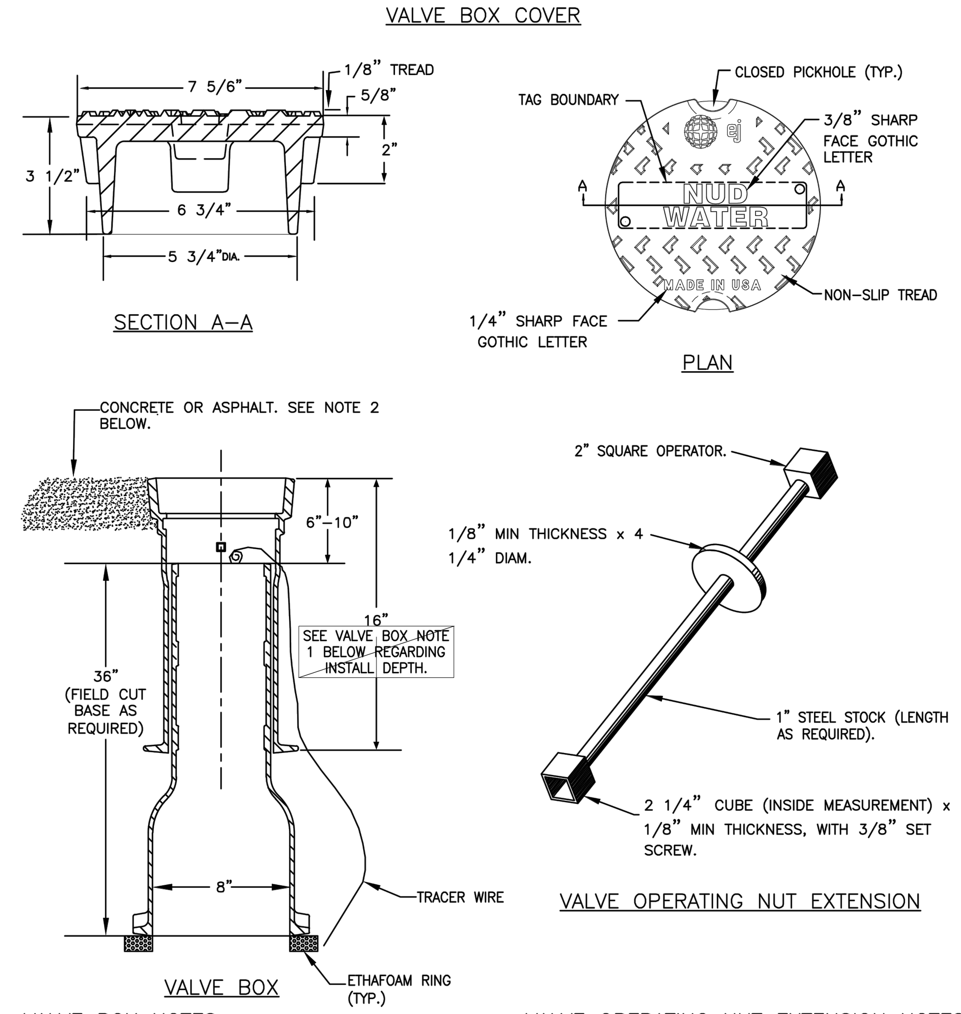


VALVE BOX NOTES:

1. CAST-IRON VALVE BOX AND COVER SHALL BE EAST JORDAN IRON WORKS: VALVE BOX COVER 06800209, VALVE BOX TOP 85557016U, AND VALVE BOX BOTTOM 85556036U. FOR SHALLOW OR DEEP INSTALLS, VALVE BOX TOP SHALL BE DETERMINED BY THE DISTRICT.
2. IF VALVE BOX IS IN AN UNPAVED AREA, PROVIDE 1' RADIUS x 4" MINIMUM DEPTH CONCRETE OR ASPHALT PAVING AROUND VALVE BOX. CONCRETE SHALL HAVE A BROOM/TROWEL FINISH.
3. INSTALL ETHAFOAM RING BETWEEN BASE OF VALVE BOX AND GATE VALVES OR ON CONCRETE BRICKS FOR BALL VALVES.

VALVE OPERATING NUT EXTENSION NOTES:

1. VALVE OPERATING NUT EXTENSIONS ARE REQUIRED WHEN VALVE NUT IS MORE THAN 5' BELOW FINISHED GRADE.
2. LENGTH AS REQUIRED TO PUT OPERATING NUT TWO (2) FEET FROM FINISHED GRADE.
3. EXTENSIONS TO BE A MINIMUM OF TWO (2) FEET LONG.
4. ONE (1) EXTENSION PER VALVE.
5. NO ADJUSTABLE VALVE EXTENSIONS ALLOWED.
6. WHEN AN EXTENSION IS REQUIRED, USE A SOILS PIPE BETWEEN VALVE BOX TOP AND VALVE BOX BOTTOM. LENGTH TO FIT.

## VALVE BOX & OPERATING NUT EXTENSION

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NORTHSHORE UTILITY DISTRICT — 2021 STANDARD WATER DETAILS — 11

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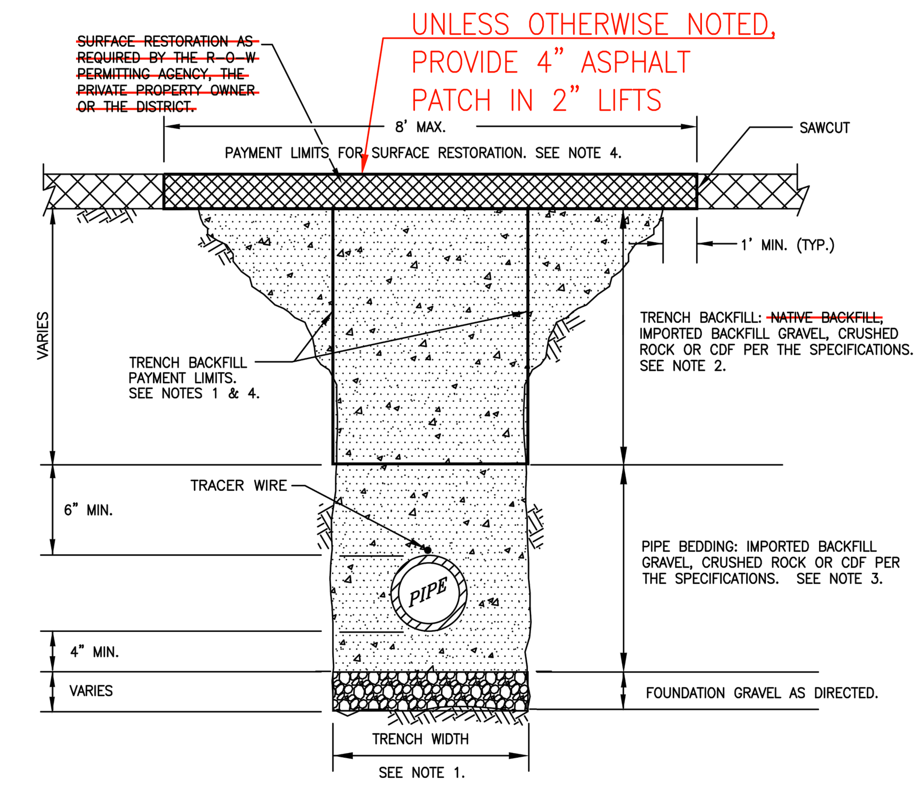


NOTES:

1. TRENCH WIDTH:
   MINIMUM: PIPE O.D. + 12" (6" EACH SIDE OF PIPE).
   MAXIMUM: 40" FOR 15"ø PIPE AND SMALLER.
   (1 1/2" X I.D.) + 18" FOR 18"ø PIPE AND LARGER.
   THE NEAT-LINE PAYMENT LIMITS FOR TRENCH BACKFILL MATERIALS SHALL BE BASED UPON THE MAXIMUM ALLOWABLE TRENCH WIDTH AS SHOWN ABOVE.
2. ~~NATIVE MATERIAL, IF ALLOWED FOR TRENCH BACKFILL, SHALL MEET THE REQUIREMENTS OF SELECT BORROW PER THE SPECIFICATIONS.~~ TRENCH BACKFILL SHALL BE COMPACTED TO A MINIMUM OF NINETY-FIVE PERCENT (95%) OF MODIFIED PROCTOR IN THE RIGHT-OF-WAY AND IMPROVED EASEMENTS AND TO NINETY PERCENT (90%) IN UNIMPROVED EASEMENT AREAS. SEE THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. NATIVE MATERIAL WILL NOT BE ALLOWED AS PIPE BEDDING. IMPORTED BACKFILL GRAVEL, CRUSHED ROCK, OR CDF USED AS PIPE BEDDING WILL BE PAID FOR UNDER THEIR RESPECTIVE BID ITEMS, IF APPLICABLE.
4. THE NEAT-LINE LIMITS SHOWN WILL BE USED TO CALCULATE THE MAXIMUM QUANTITY OF TRENCH BACKFILL AND SURFACE RESTORATION MATERIALS ALLOWED. PAYMENT FOR BEDDING GRAVEL WILL BE CONSIDERED INCIDENTAL TO PAYMENT MADE FOR PIPE. PAYMENT FOR FOUNDATION ROCK WILL BE BASED UPON THE QUANTITIES USED AS DIRECTED BY THE DISTRICT. SEE THE CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.
5. RECYCLED CONCRETE WILL NOT BE ALLOWED AS PIPE BEDDING OR TRENCH BACKFILL.
6. ALL DUCTILE IRON PIPE REQUIRES POLYETHYLENE ENCASEMENT. SEE THE DISTRICTS MATERIALS OF CONSTRUCTION SPECIFICATIONS FOR ADDITIONAL INFORMATION.

## TYPICAL TRENCH SECTION & PAYMENT LIMITS

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NORTHSHORE UTILITY DISTRICT — 2021 STANDARD WATER DETAILS — 12

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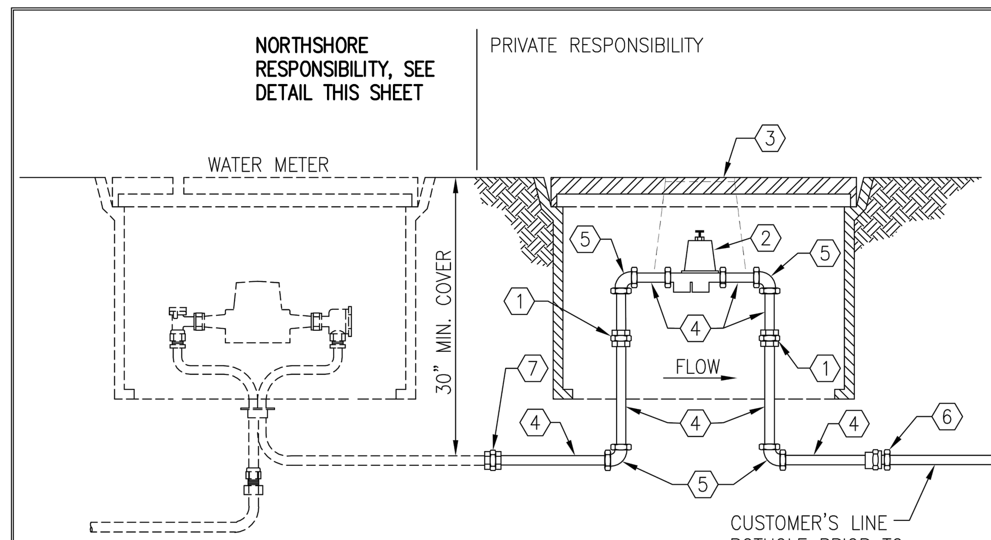


KEYED NOTES FOR PRV

1. 3/4" – 2" BRASS UNION.
2. PRESSURE REDUCING VALVE W/ STRAINER – 3/4" – 2" WITH UNION COUPLING ON THE INLET; EQUAL TO: WATTS #LF25AUB-Z3.
3. LANDSCAPE: MINIMUM 10" ROUND TO ALLOW ACCESS, TRAFFIC AREAS: SAME AS METER BOX
4. 3/4" – 2" BRASS NIPPLE LENGTH AS REQ'D.
5. 3/4" – 2" 90° BEND (FIP) BRASS.
6. CONNECTION TO CUSTOMER'S LINE SHALL BE BRASS AND SIMILAR MATERIAL TO THAT ON CUSTOMER'S SIDE. NO NYLON, PLASTIC, OR GALVANIZED FITTINGS ALLOWED.
7. 3/4" – 2" BRASS DIELECTRIC UNION.
8. CONTRACTOR TO TAKE PRE & POST CONSTRUCTION PRESSURE AT CUSTOMER'S BUILDING AND SET PRESSURE TO PRE CONSTRUCTION LEVEL. CONTRACTOR TO DOCUMENT AND PROVIDE INFORMATION TO THE DISTRICT.

INSTALLATION

THE PRESSURE REDUCING VALVE SHALL BE LOCATED "DOWNSTREAM" OF THE METER. RESPONSIBILITY FOR PROPER INSTALLATION SHALL BE THAT OF THE CONTRACTOR, MAINTENANCE AND OPERATION OF THE VALVE SHALL BE THAT OF THE PROPERTY OWNER.

PRIVATE PRESSURE REDUCING VALVE

RYAN J. FESSENDEN — STATE OF WASHINGTON — 49451 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 11/01/2021

| NO | BY | APPD | REVISION | DATE |
|---|---|---|---|---|
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ISSUED FOR BIDDING - 11/02/2021

WARNING

0 ½ 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

RH2

| | |
|---|---|
| DESIGNED BY | DMF |
| DRAWN BY | DMF |
| CHECKED BY | AHF |
| APPROVAL | AHF |
| DATE | Nov 1, 2021 |


NORTHSHORE UTILITY DISTRICT — WATER SEWER

NORTHSHORE UTILITY DISTRICT

6830 NE 185th St.
Kenmore, WA 98028-2684

P.O. Box 82489
Kenmore, WA 98028-2684

Ph: (425) 398-4400 | Fax: (425) 398-4430 | www.nud.net


*CONTRACT 2021-04*

*165/81 WATER MAIN REPLACEMENT*

GENERAL DETAIL I

D01

C2021-04

*SHEET*

28 *OF* 29

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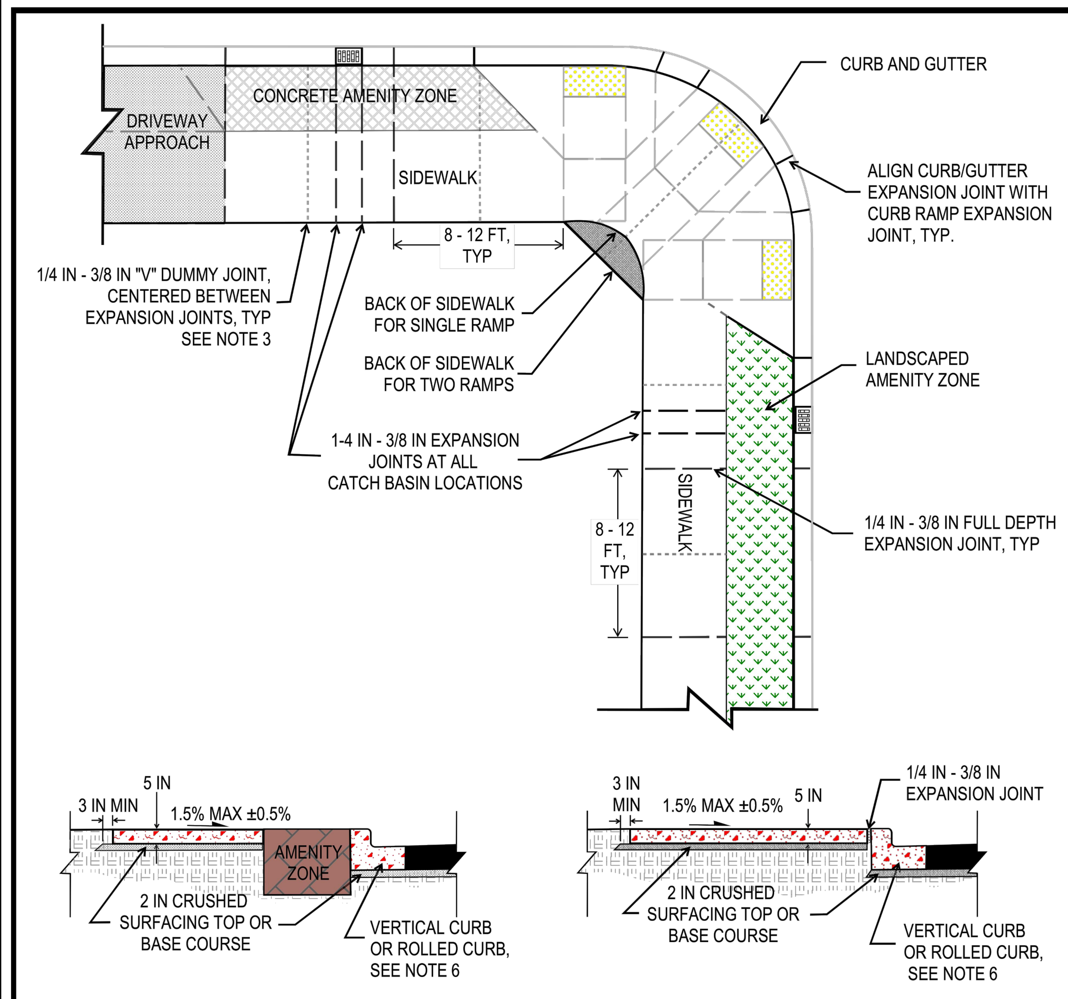
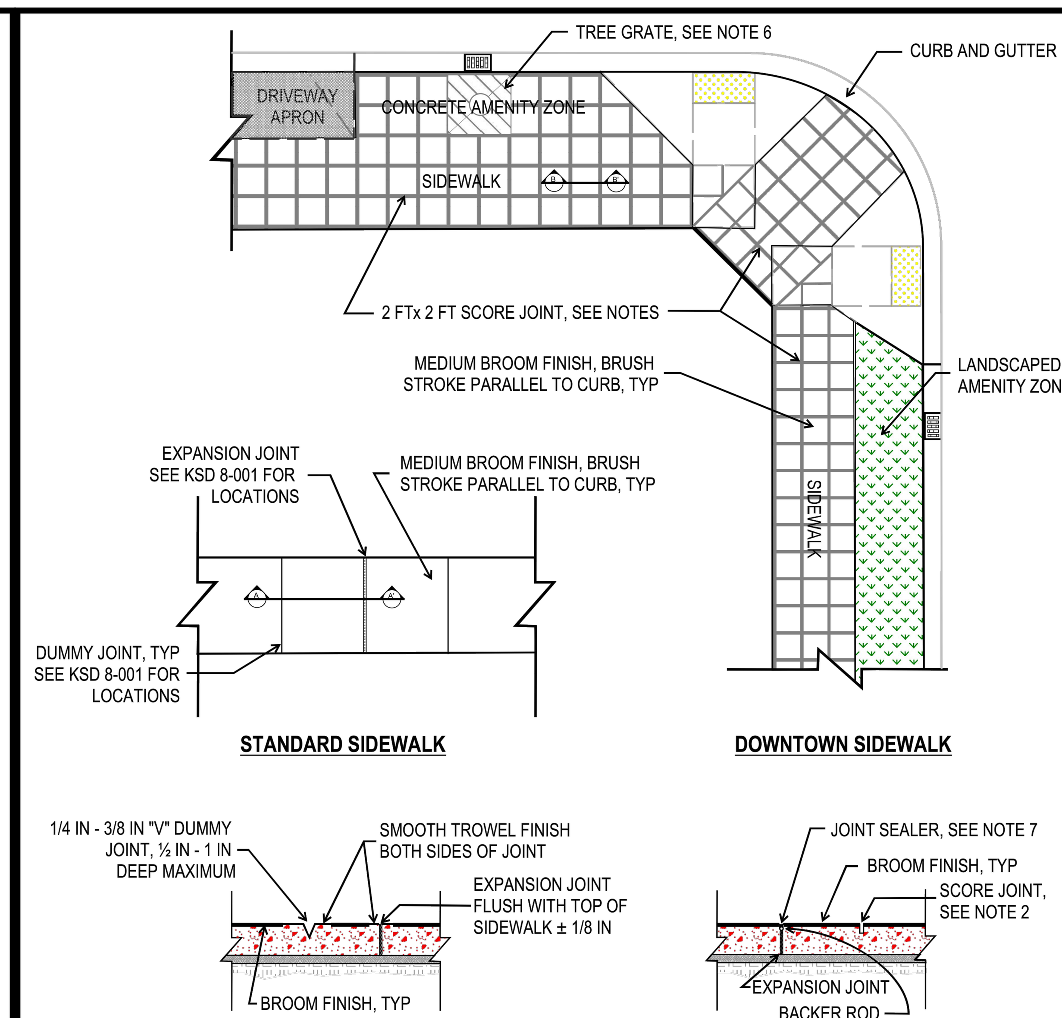



**SIDEWALK, WITH LANDSCAPED AMENITY ZONE**

**SIDEWALK WITH CONCRETE AMENITY ZONE**

NOTES:
1. SPACE DUMMY AND EXPANSION JOINTS AS NOTED, FULL WIDTH OF SIDEWALK.
2. EXPANSION JOINTS SHALL BE EQUALLY SPACED AND FLUSH WITH ADJACENT SIDEWALK PANELS.
3. SEE KSD 8-008 FOR ADDITIONAL CONCRETE PLACEMENT AND FINISHING REQUIREMENTS.
4. EXPANSION JOINTS IN CURB/GUTTER TO ALIGN WITH EXPANSION JOINTS IN SIDEWALK.
5. BACKFILL MATERIAL PER WSDOT STANDARD SPECIFICATION SECTION 9-03.
6. SEE KSD 8-009 FOR CURB REQUIREMENTS.
7. JOINTING AROUND DRIVEWAY APPROACH AND CURB RAMPS FOR REFERENCE ONLY, SEE RESPECTIVE KSD FOR SPECIFIC REQUIREMENTS FOR EACH TYPE.
8. CURB RAMPS SHOWN FOR REFERENCE ONLY. ACTUAL LOCATION, TYPE AND QUANTITY TO BE APPROVED BY THE CITY AND WILL VARY DEPENDING UPON SITE CONDITIONS.
9. 1 FT CLEARANCE BETWEEN RIGHT OF WAY LINE AND BACK OF SIDEWALK.

CITY OF KENMORE — ENGINEERING DEPARTMENT (425) 398-8900 | SIDEWALK | FIGURE 8-001 NOT TO SCALE Date: 02/10/2021

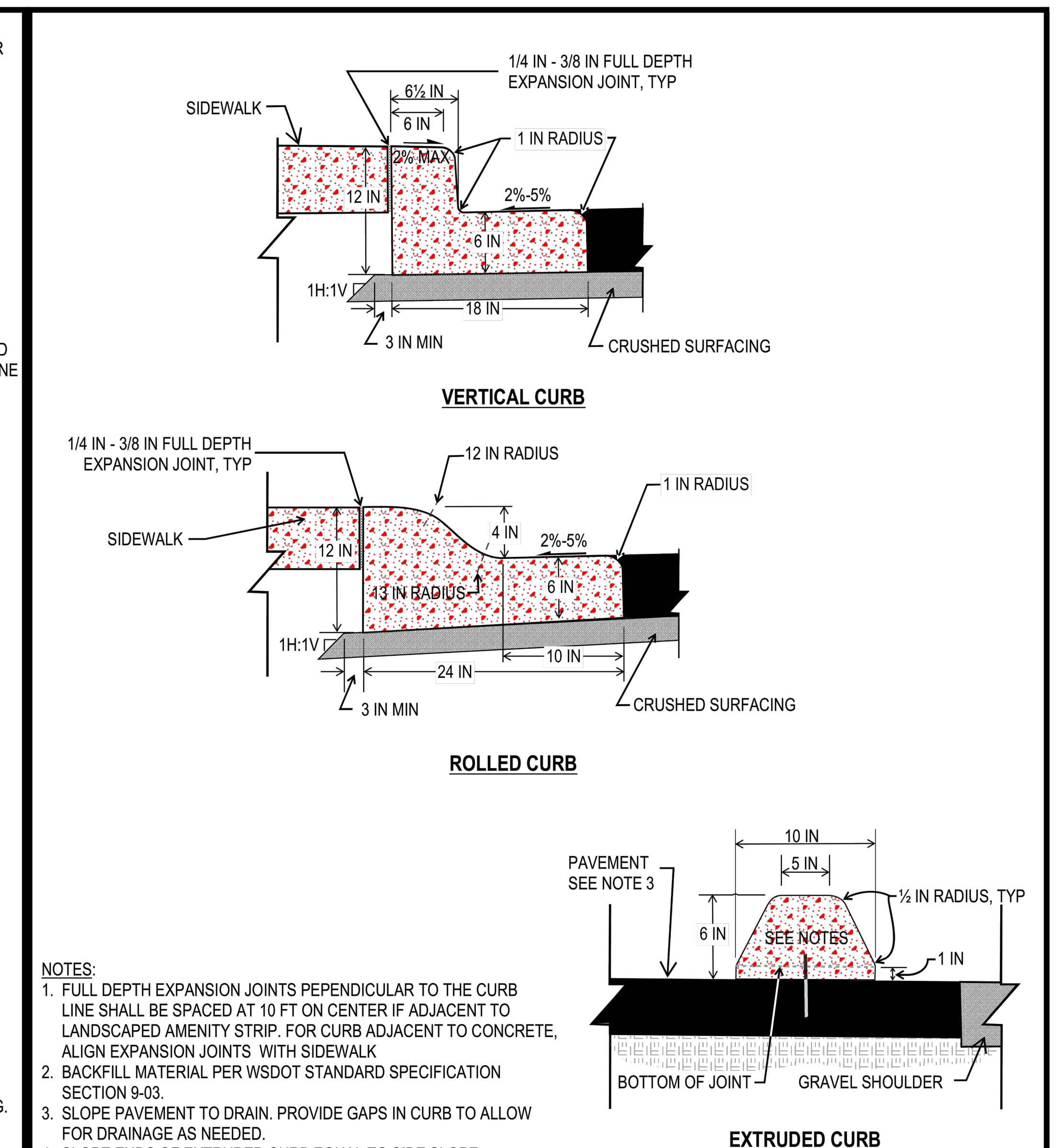



**CROSS SECTION A-A'**

**CROSS SECTION B-B'**

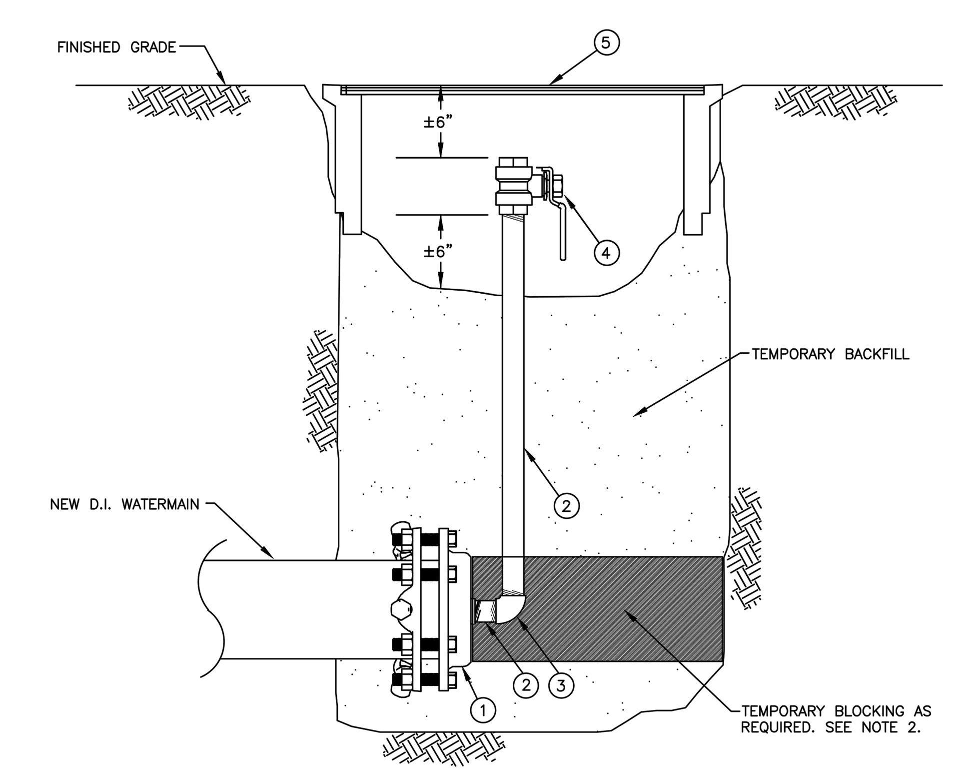
NOTES:
1. SEE ROAD STANDARDS SECTION 2.08 FOR DOWNTOWN SIDEWALK LOCATIONS.
2. SCORE PATTERN SHALL BE SAW CUT AFTER CONCRETE HAS CURED SUFFICIENTLY TO PREVENT CHIPPING, CRACKING, OR OTHER DAMAGE TO THE SIDEWALK. JOINTS SHALL HAVE CLEAN EDGES. INTERSECTION POINTS SHALL BE SQUARE AND ALL EDGES SHALL BE CLEAN. JOINTS SHALL BE 1/4 IN - 3/8 IN WIDE AND BETWEEN 1/4 IN AND 3/8 IN DEEP. SCORE JOINT WIDTH SHALL MATCH EXISTING.
3. SCORE JOINTS SHALL BE PERPENDICULAR/PARALLEL TO CURB LINE.
4. INSTALL 1/4 IN - 3/8 IN FULL DEPTH EXPANSION JOINTS IN LIEU OF SCORE JOINT PER KSD 8.001.
5. ANY REMAINDER WIDTH SHALL BE PLACED AT BACK OF SIDEWALK OR AT DRIVEWAYS, CENTER OF BLOCK, OR AT FURTHEST DISTANCE FROM ANY CURB RAMP. SCORE AREA MAY BE REDUCED AT RADIUS LOCATIONS.
6. ALIGN PLACEMENT OF TREE GRATES WITH SCORE PATTERN WHERE POSSIBLE.
7. TWO COMPONENT POURED RUBBER JOINT SEALER, COLOR TO MATCH SIDEWALK. ½ IN DEEP, RECESS SEALER ¼ IN BELOW FINISHED GRADE OF SIDEWALK.

CITY OF KENMORE — ENGINEERING DEPARTMENT (425) 398-8900 | SIDEWALK FINISH | FIGURE 8-008 NOT TO SCALE Date: 2/26/2021




NOTES:
1. FULL DEPTH EXPANSION JOINTS PEPENDICULAR TO THE CURB LINE SHALL BE SPACED AT 10 FT ON CENTER IF ADJACENT TO LANDSCAPED AMENITY STRIP. FOR CURB ADJACENT TO CONCRETE, ALIGN EXPANSION JOINTS WITH SIDEWALK
2. BACKFILL MATERIAL PER WSDOT STANDARD SPECIFICATION SECTION 9-03.
3. SLOPE PAVEMENT TO DRAIN. PROVIDE GAPS IN CURB TO ALLOW FOR DRAINAGE AS NEEDED.
4. SLOPE ENDS OF EXTRUDED CURB EQUAL TO SIDE SLOPE.
5. PIN EXTRUDED CURB TO PAVEMENT WITH 6 IN LONG #3 REBAR EMBEDDED 4 INCHES IN PAVEMENT. LOCATE PINS 1 FOOT EITHER SIDE OF JOINTS AND AT ENDS.
6. ADD 5 IN DEEP JOINTS EVERY 10 FT OF EXTRUDED CURB.

CITY OF KENMORE — ENGINEERING DEPARTMENT (425) 398-8900 | CURBS | FIGURE 8-009 NOT TO SCALE Date: 02/26/2021




MATERIALS LIST

| ITEM | QTY. | DESCRIPTION |
|---|---|---|
| 1 | 1 | TAPPED & THREADED D.I. CAP, RJ WITH 2" IP TAP. |
| 2 | 2 | 2" GALVANIZED PIPE, LENGTH TO FIT. |
| 3 | 1 | 2" 90° GALVANIZED ELBOW, FIPxFIP. |
| 4 | 1 | 2" BALL VALVE, FIPxFIP, MATCO 757T08LF OR EQUAL. |
| 5 | 1 | TRAFFIC RATED BOX AND COVER, OR EQUAL. |

NOTES:
1. NUMBER AND LOCATION OF THE TEMPORARY BLOW–OFFS WILL BE AS SHOWN ON THE DESIGN PLANS OR AS DIRECTED BY THE DISTRICT IN THE FIELD.
2. PROVIDE TEMPORARY BLOCKING FOR BLOW–OFFS TO RESIST TEST PRESSURES.

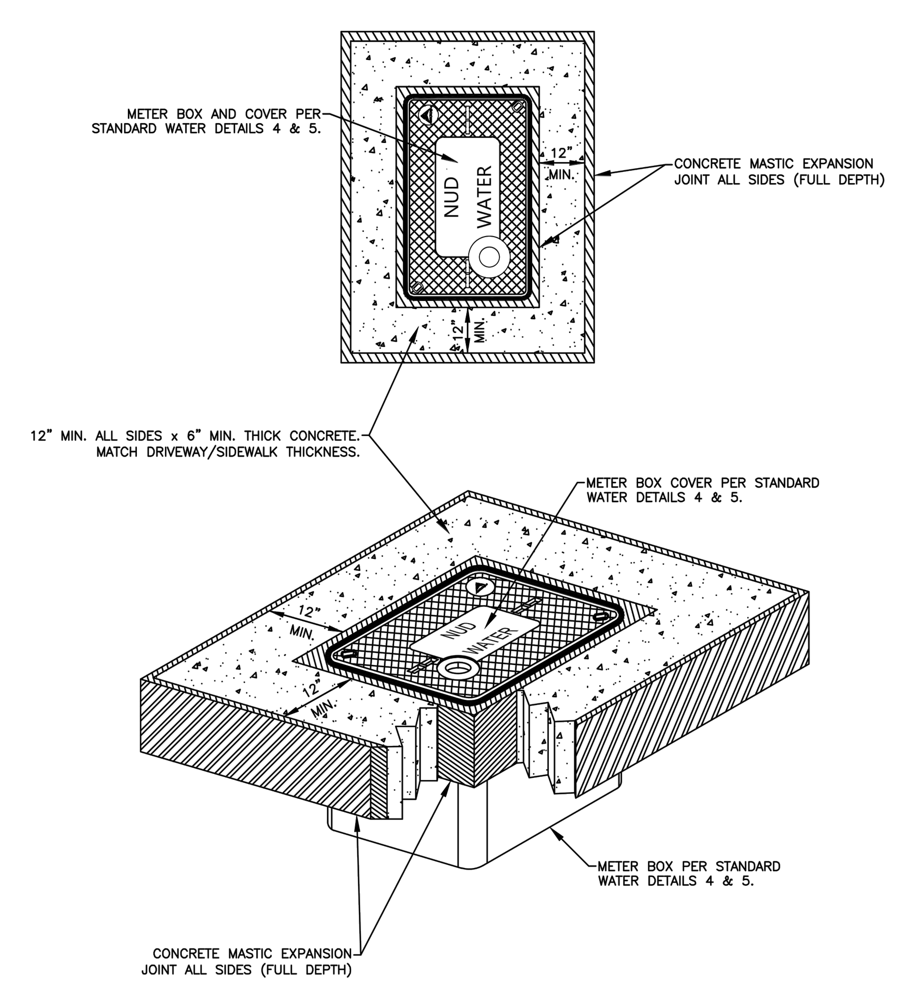
**TEMPORARY BLOW-OFF ASSEMBLY FOR NEW WATERMAIN**

NOT TO SCALE

DETAIL APPROVALS — EDITOR *TMC* — MANAGER *SJD*

**NORTHSHORE UTILITY DISTRICT**
2021 STANDARD WATER DETAILS

17 — LAST UPDATED FEBRUARY 2020




NOTES:
1. METER BOX BLOCK OUT IS ONLY TO BE USED IN CONCRETE DRIVEWAYS OR SIDEWALKS.
2. DISTRICT APPROVAL IS REQUIRED PRIOR TO INSTALLING METER BOX IN DRIVEWAYS.
3. BACKFILL FOR METER BOX BASE IS TO BE COMPACTED 1 1/4" BASE COURSE OR 3/4" TOP COURSE CRUSHED ROCK.
4. CONCRETE FINISH SHALL MATCH ADJACENT CONCRETE DRIVEWAY OR SIDEWALK FINISH.

**METER BOX BLOCK OUT FOR DRIVEWAYS AND SIDEWALKS**

NOT TO SCALE

DETAIL APPROVALS — EDITOR *TMC* — MANAGER *SJD*

**NORTHSHORE UTILITY DISTRICT**
2021 STANDARD WATER DETAILS

18 — LAST UPDATED APRIL 2021

RYAN J. FESSONS — STATE OF WASHINGTON — 49451 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: 11/01/2021

| NO | BY | APPD | REVISION | DATE |
|---|---|---|---|---|
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ISSUED FOR BIDDING - 11/02/2021

*WARNING*
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

| | |
|---|---|
| DESIGNED BY | DMF |
| DRAWN BY | DMF |
| CHECKED BY | AHF |
| APPROVAL | AHF |
| DATE | Nov 1, 2021 |


**NORTHSHORE UTILITY DISTRICT**
6830 NE 185th St. Kenmore, WA 98028-2684
P.O. Box 82489 Kenmore, WA 98028-2684
**Ph:** (425) 398-4400 | **Fax:** (425) 398-4430 | **www.nud.net**


*CONTRACT 2021-04*
*165/81 WATER MAIN REPLACEMENT*

GENERAL DETAIL II

D02
C2021-04

*SHEET*
29 *OF* 29

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