

# NORTHSHORE UTILITY DISTRICT

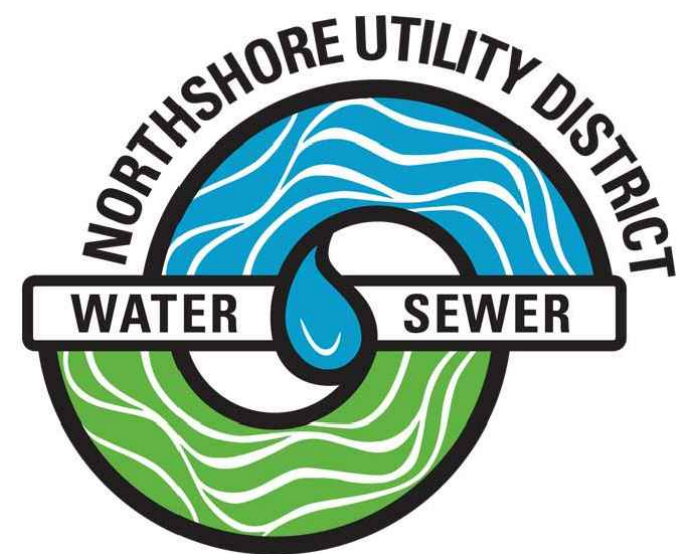
King County, Washington

CONTRACT 2021-02

PRIVATE WATER SERVICE LINE PROJECT #76

JUNE 2021

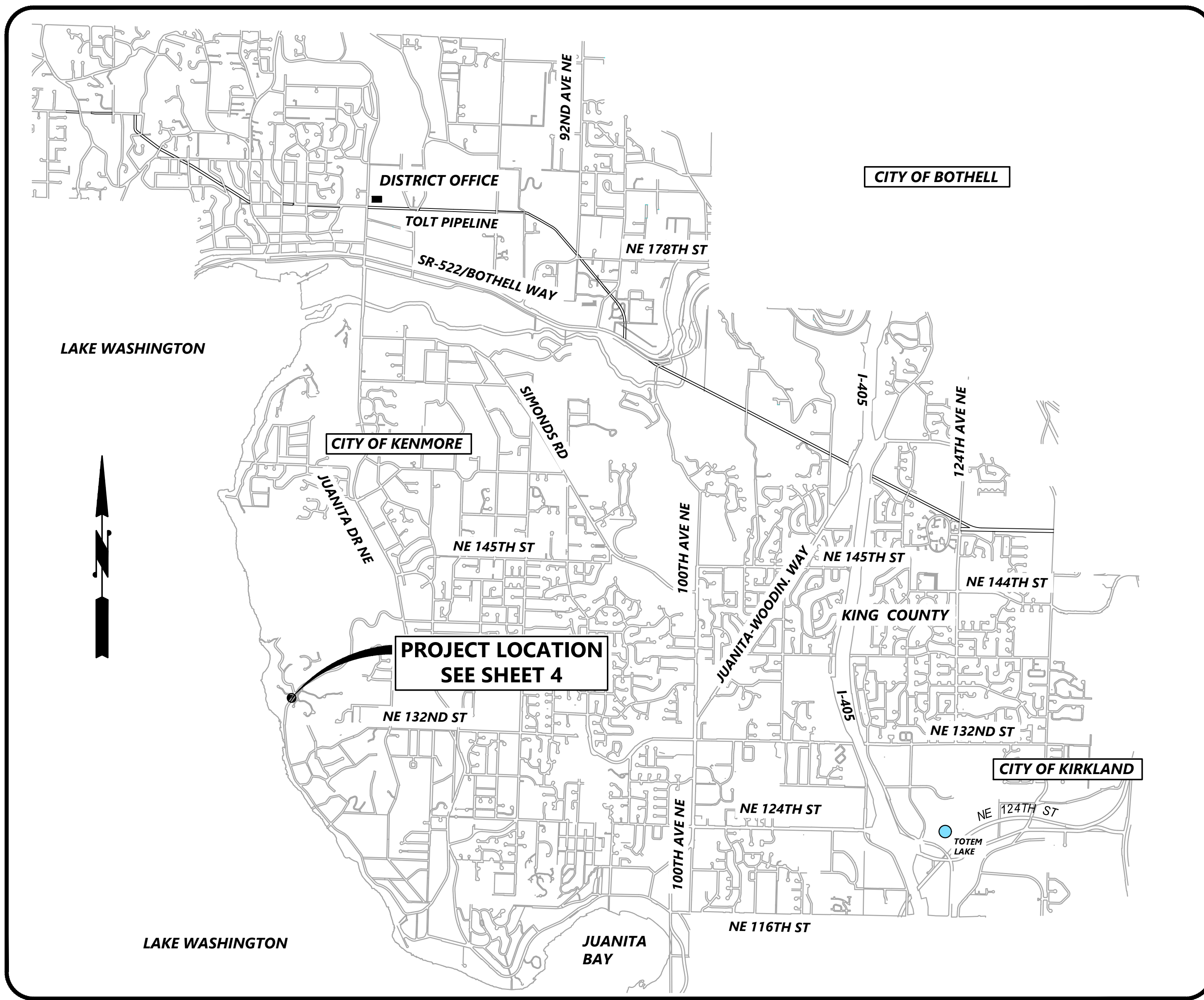
BID SET



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

## SHEET INDEX

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**PROJECT LOCATION  
SEE SHEET 4**

**VICINITY MAP**  
NOT TO SCALE

C1922

SHEET  
1 OF 13

**LEGEND**

EXISTING	PROPOSED	DESCRIPTION
---	---	PROPERTY LINE
---	---	RIGHT OF WAY LINE
---	---	EASEMENT
---	---	DITCH CENTERLINE
---	---	SIDE SLOPE
---	---	WATER LINE
---	---	SANITARY SEWER LINE
---	---	STORM DRAIN LINE
---	---	STORM DRAIN CULVERT
---	---	SWALE OR DITCH
---	---	GAS LINE
---	---	UNDERGROUND POWER LINE
---	---	OVERHEAD POWER LINE
---	---	TELEPHONE LINE
---	---	CABLE LINE
---	---	FIBER OPTIC LINE
---	---	WIRE FENCE
---	---	WOOD FENCE
---	---	CHAIN LINK FENCE
---	---	WATER METER
---	---	FIRE HYDRANT
---	---	WATER VALVE
---	---	WET TAP ASSEMBLY
---	---	BLOW-OFF ASSEMBLY
---	---	THRUST BLOCK
---	---	CLEAN OUT
---	---	SANITARY MANHOLE
---	---	STORM DRAIN MANHOLE
---	---	STORM DRAIN CATCH BASIN
---	---	GAS VALVE
---	---	POWER POLE
---	---	GUY ANCHOR
---	---	LIGHT POLE
---	---	SIGNAL POLE
---	---	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
---	---	ASPHALT CONCRETE PAVEMENT
---	---	GRAVEL
---	---	GRASS
---	---	SAWCUT LINE
---	---	FILTER FABRIC FENCE
---	---	PROTECTIVE TREE FENCING
---	---	PROPERTY ADDRESS

**GENERAL NOTES:**

- ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN THE CURRENT NORTHSORE UTILITY DISTRICT STANDARD SPECIFICATIONS AND STANDARD DETAILS.
- 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.
- A PRE-CONSTRUCTION CONFERENCE WILL BE HELD AT THE DISTRICT OFFICE PRIOR TO START OF CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY NORTHSORE 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.
- THE CONTRACTOR SHALL NOT OPERATE ANY VALVES OR MAKE ANY CONNECTIONS TO THE EXISTING WATER SYSTEM WITHOUT PRIOR APPROVAL FROM THE DISTRICT.

**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 NORTHSORE UTILITY DISTRICT.

**TOPOGRAPHIC MAPPING:**  
THE MAP SHOWN HEREON IS THE RESULT OF A TOPOGRAPHIC SURVEY BY DUANE HARTMAN & ASSOCIATES, INC. (DHA) COMPLETED IN NOVEMBER 2019. 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.

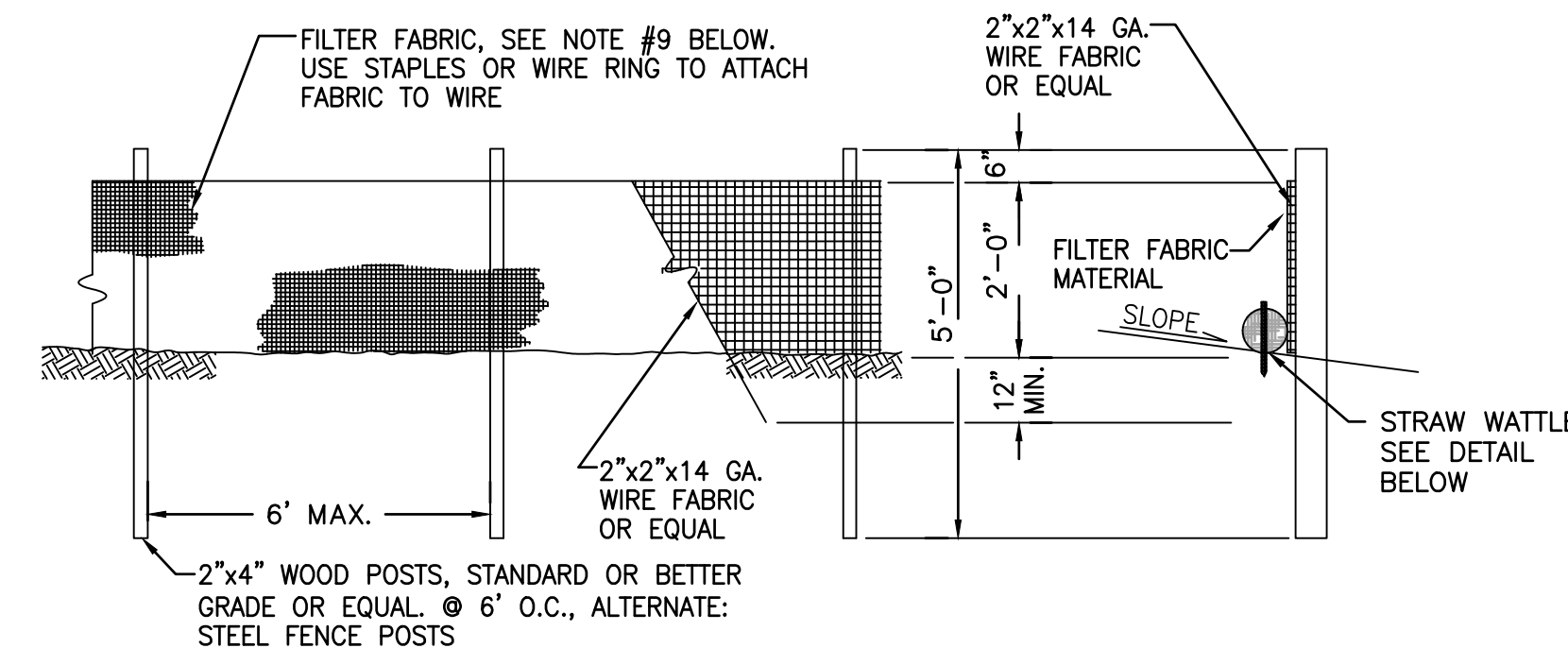
**CONTOUR INTERVAL:** ONE FOOT (1') CONTOURS

**BENCHMARKS:**

POINT TABLE				
POINT #	DESCRIPTION	ELEVATION	NORTHING	EASTING
118	DHA 1653-118	19.9700	266354.2680	1289042.0080
152	DHA 2282-152	31.2400	266357.4920	1289239.9300
119	DHA 119	43.5900	266346.2280	1289316.5760
151	DHA 2282-151	46.0700	266341.0270	1289366.8680
200	DHA 2969-1	51.4800	266364.9220	1289456.1450
201	DHA 2969-2	60.7300	266365.0580	1289585.1810
202	DHA 2693-3	67.9000	266353.4880	1289673.7610
203	DHA 2969-4	81.9200	266296.2090	1289747.2490
204	DHA 2969-5	97.6800	266371.8110	1289843.1210

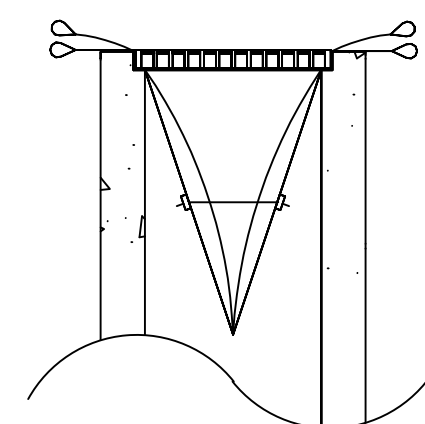
**TEMPORARY EROSION AND SEDIMENTATION CONTROL NOTES**

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

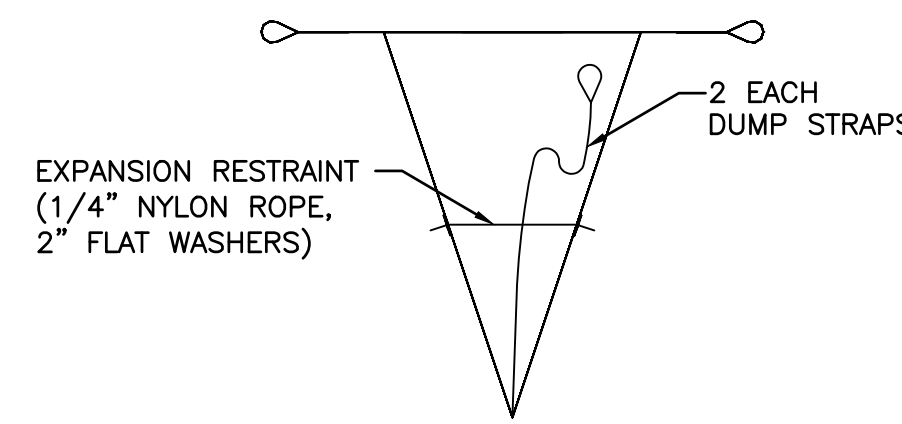


**NOTES**

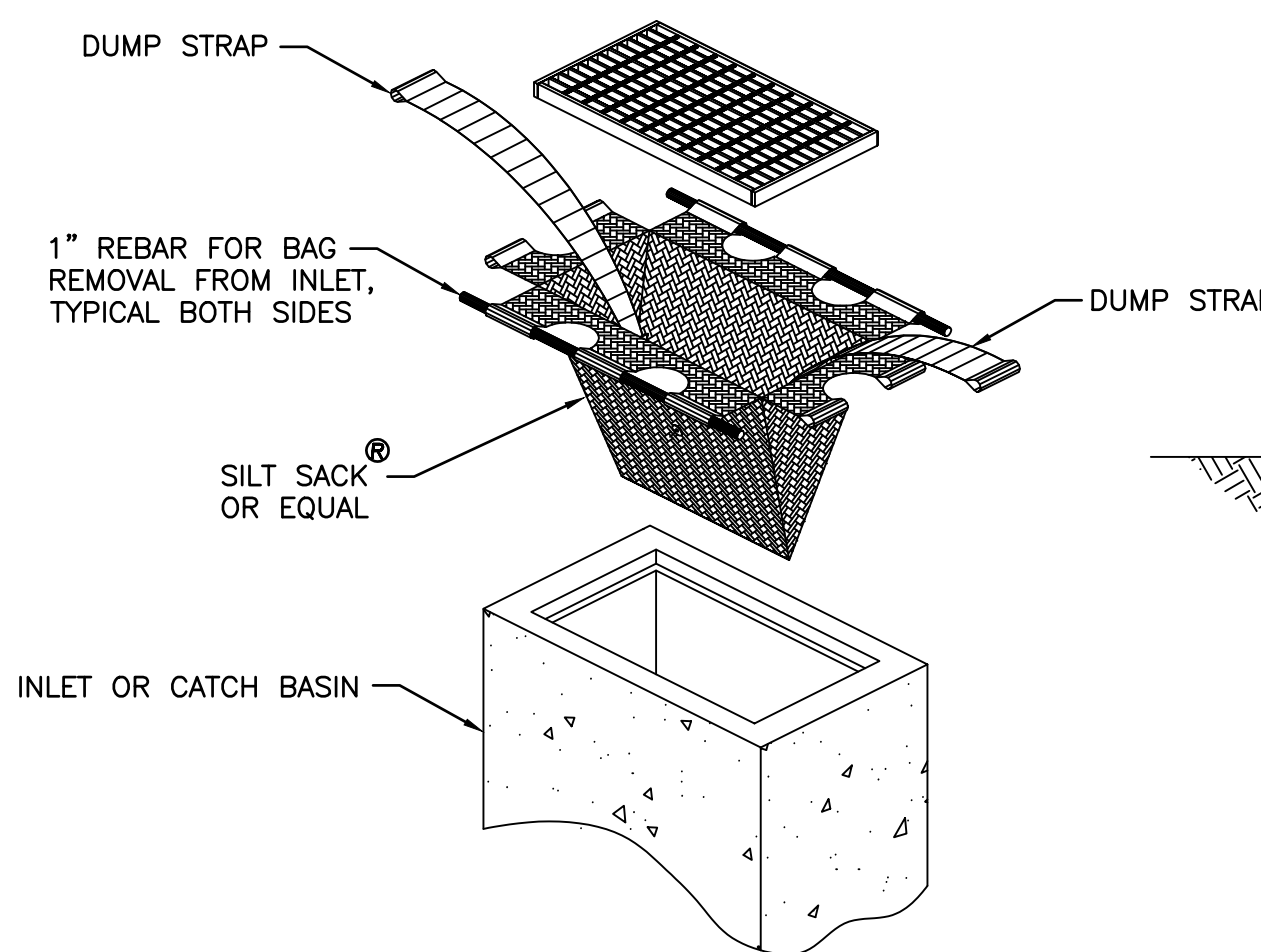
- THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP AND BOTH ENDS SECURELY FASTENED TO THE POST.
- THE FILTER FABRIC 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).
- 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.
- 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.
- 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.
- FABRIC SHALL BE SECURED AT THE BASE BY PEA-ROCK FILLED SANDBAGS OR STRAW WATTLES PLACED END TO END.
- FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
- FILTER FABRIC FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
- FILTER FABRIC SHALL BE PER CURRENT GEOTEXTILE FABRIC STANDARDS FOR SILT FENCE IN THE DEPARTMENT OF ECOLOGY STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON.



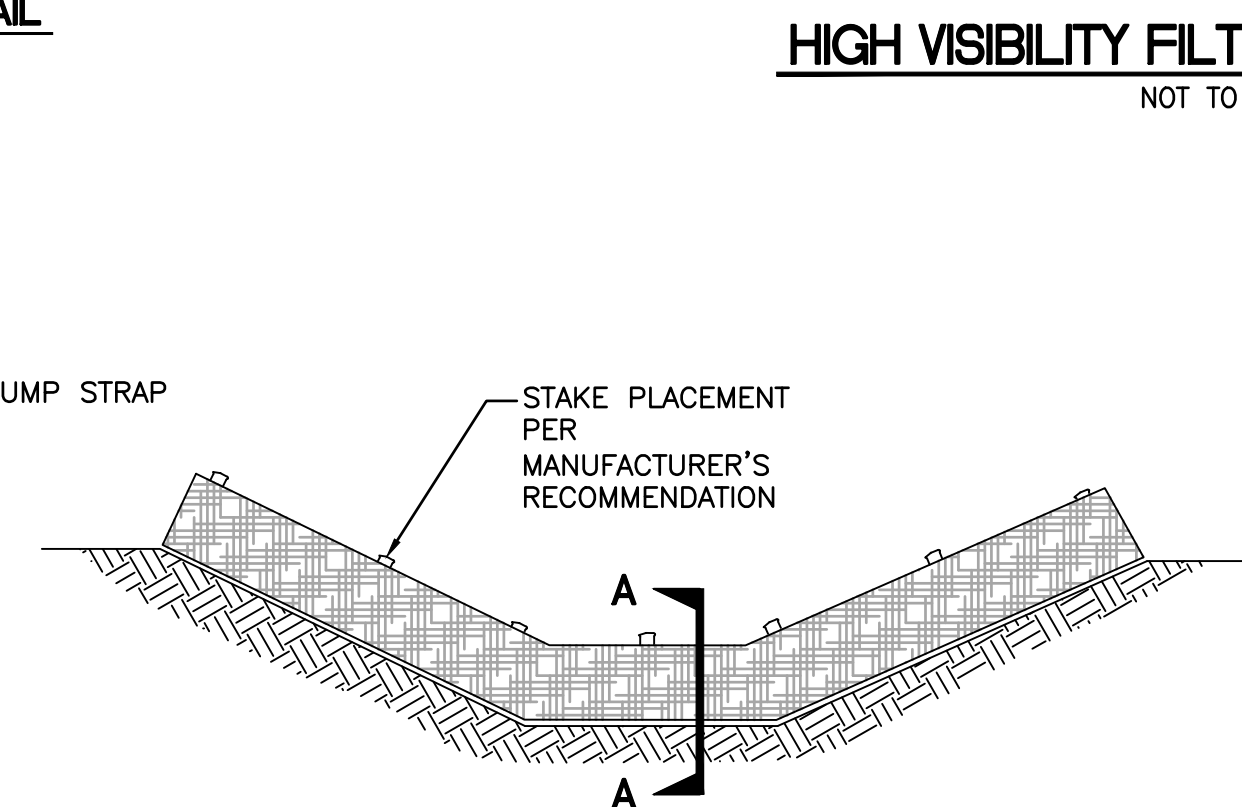
**INSTALLATION DETAIL**



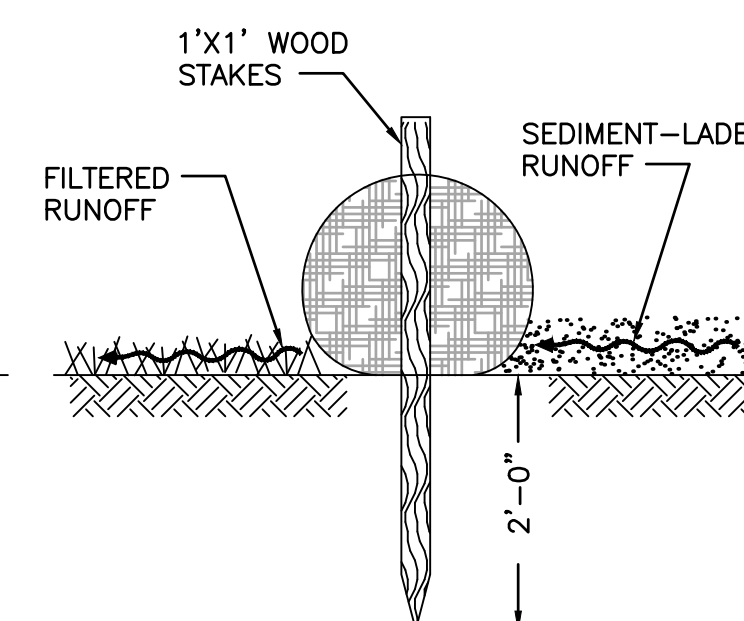
**BAG DETAIL**



**STORM DRAIN INLET PROTECTION**  
NOT TO SCALE



**PLACEMENT OF STRAW WATTLE**



**CROSS SECTION A-A**

**HIGH VISIBILITY FILTER FABRIC FENCE**  
NOT TO SCALE

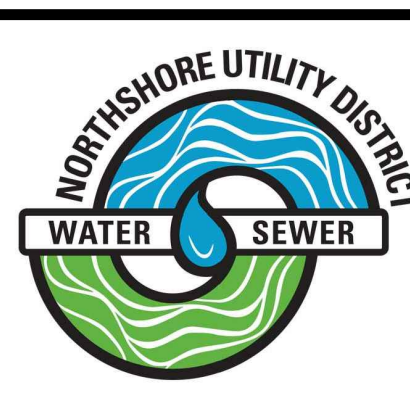
**STRAW WATTLE DAM**  
NOT TO SCALE

NO	BY	APPD	REVISION	DATE
<b>BID SET</b>				

**WARNING**  
IF THIS BAR DOES NOT MEASURE 1\"/>

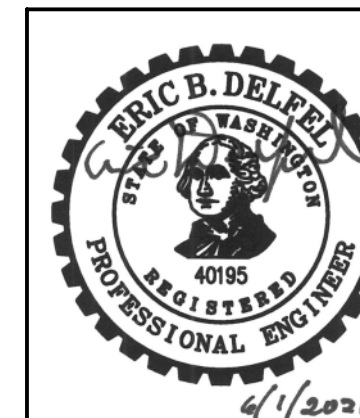


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DRAWN BY	HLT
CHECKED BY	MTM
APPROVAL	EBD
DATE	JUN 2021



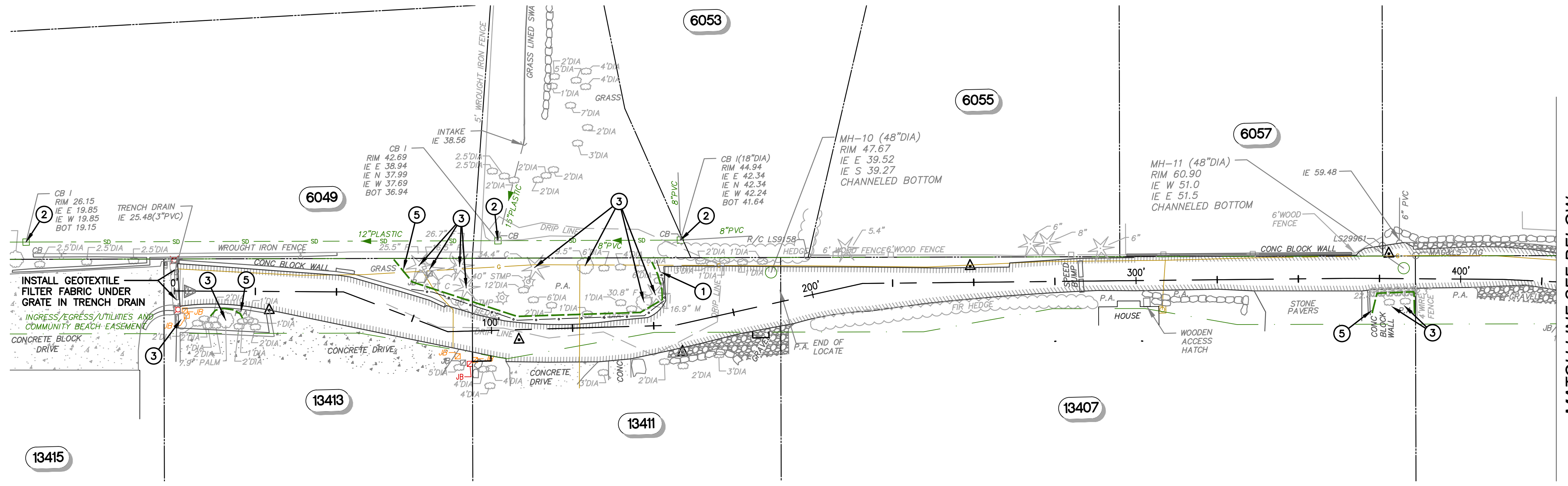
**NORTHSORE UTILITY DISTRICT**  
6830 NE 185th St. P.O. Box 82489  
Kenmore, WA 98028-2684 Kenmore, WA 98028-2684  
Ph: (425) 398-4400 | Fax: (425) 398-4430 | [www.nud.net](http://www.nud.net)

CONTRACT 2021-02  
PRIVATE WATER SERVICE LINE PROJECT #76  
**TESC DETAILS AND NOTES**



BASE MAP H4  
C1922  
**SHEET**  
2 OF 13

SE 1/4, SEC 23, T26N, R4E, WM



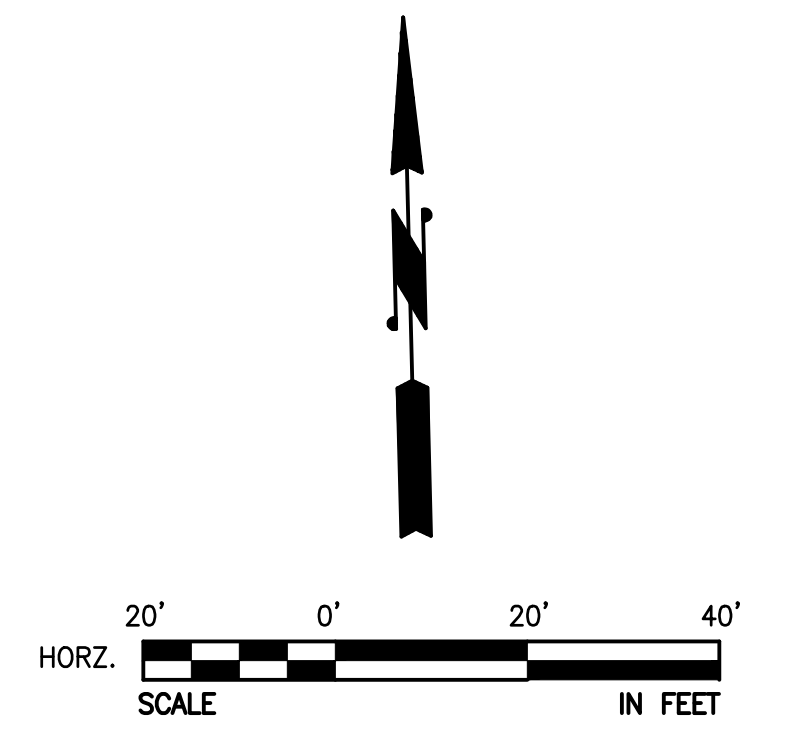
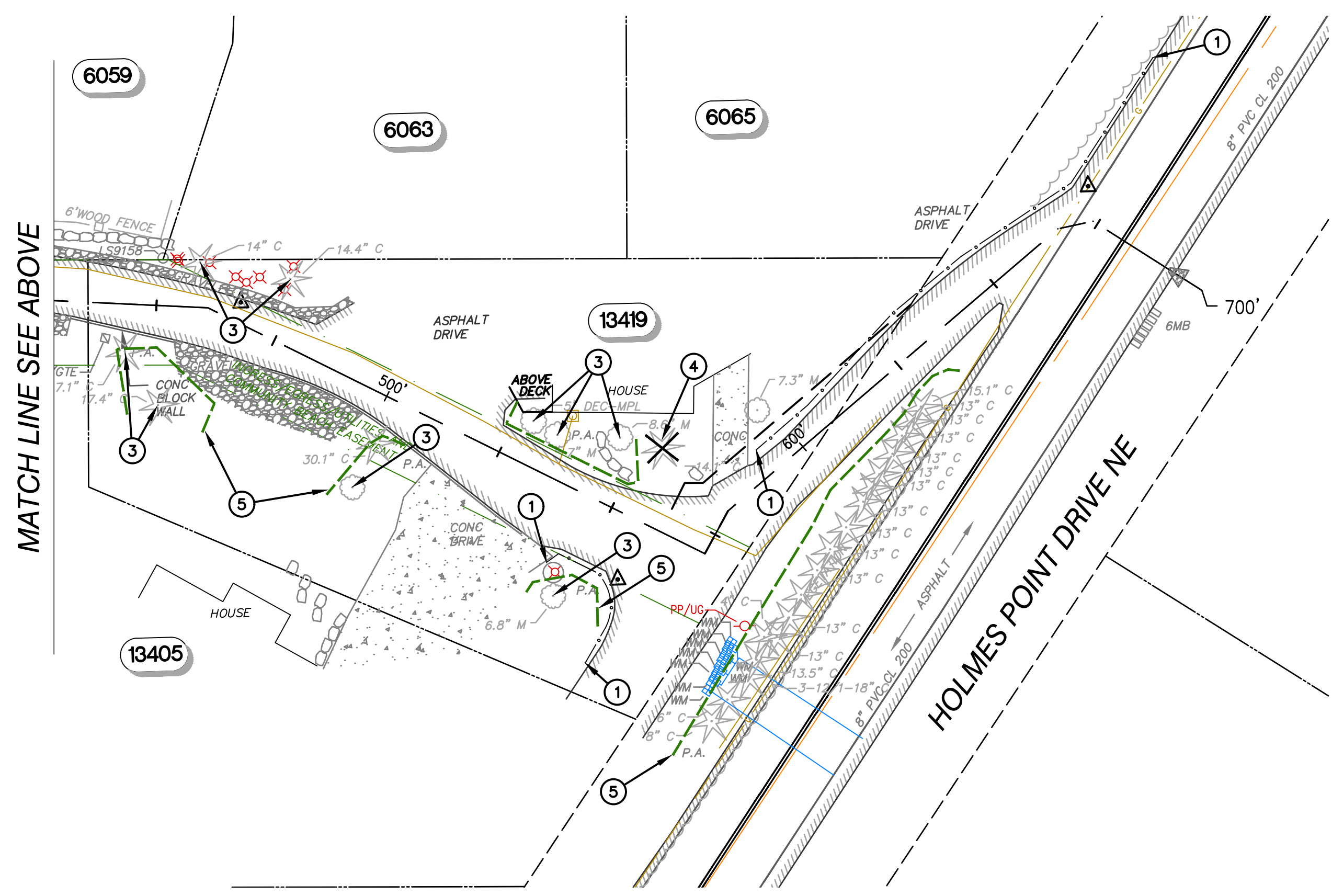
MATCH LINE SEE BELOW

**GENERAL NOTES**

1. INSTALL TESC FACILITIES PER SHEET 2.
2. SEE EROSION CONTROL NOTES SHEET 2.
3. PROTECT ALL TREES AND HEDGES.

**CONSTRUCTION NOTES**

1. INSTALL FILTER FABRIC FENCE PER DETAIL, SHEET 2.
2. INSTALL STORM DRAIN PROTECTION PER DETAIL, SHEET 2.
3. PROTECT EXISTING TREE.
4. REMOVE EXISTING TREE.
5. INSTALL PROTECTIVE TREE FENCING.



NO	BY	APPD	REVISION	DATE
<b>BID SET</b>				

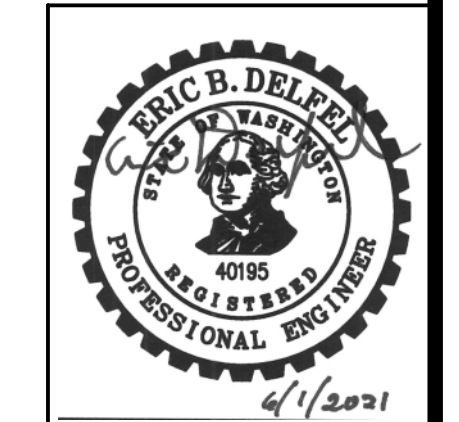
**WARNING**  
  
 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

**Gray & Osborne, Inc.**  
 CONSULTING ENGINEERS

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DRAWN BY	HLT
CHECKED BY	MTM
APPROVAL	EBD
DATE	JUN 2021

**NORTHSHORE UTILITY DISTRICT**  
 6830 NE 185th St.      P.O. Box 82489  
 Kenmore, WA 98028-2684      Kenmore, WA 98028-2684  
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CONTRACT 2021-02  
 PRIVATE WATER SERVICE LINE PROJECT #76  
**TESC AND TREE PROTECTION PLAN**

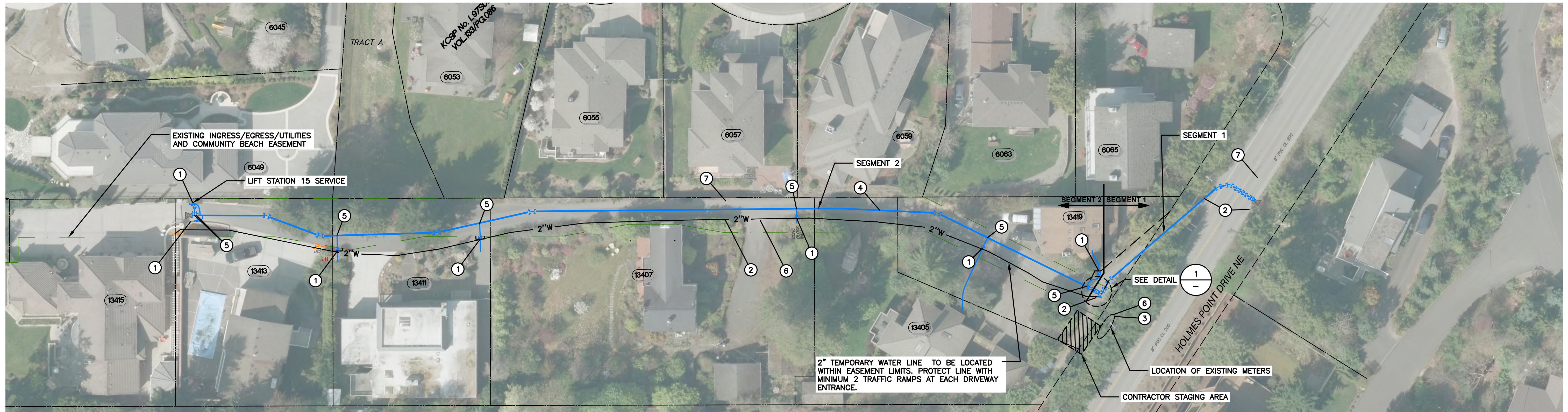


BASE MAP H4
C1922
<b>SHEET</b>
3 OF 13

SE 1/4, SEC 23, T26N, R4E, WM

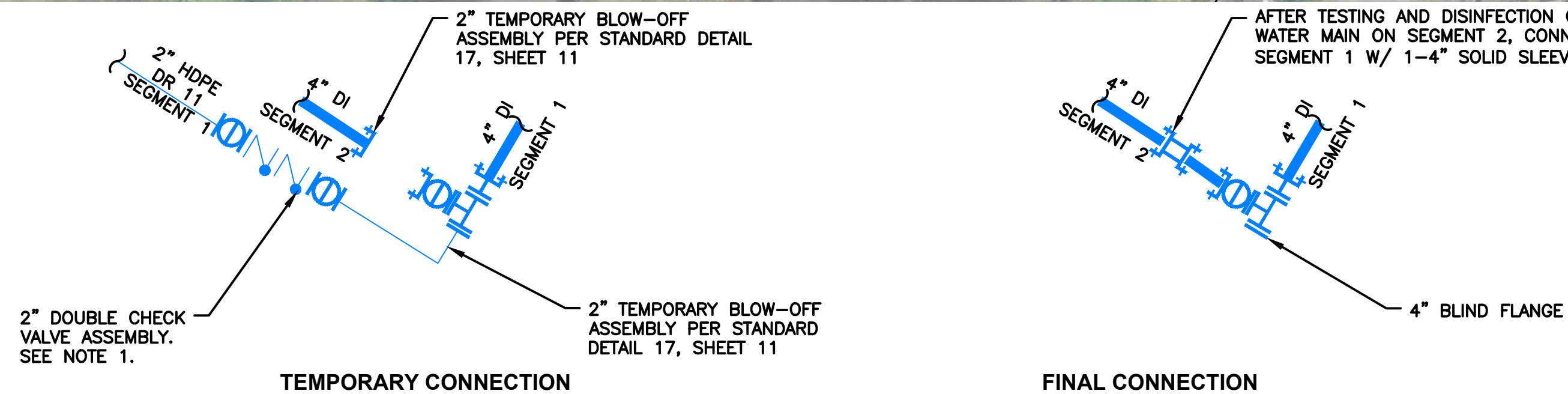
GENERAL NOTES

1. PROPERTIES AT 13415, 13413, 13411, 13407, 13405 AND 13419 HOLMES POINT DRIVE AND THE DISTRICT'S SANITARY SEWER LIFT STATION 15 ARE CONNECTED TO THE DISTRICT'S DISTRIBUTION SYSTEM VIA PRIVATELY OWNED LONG WATER SERVICE LINES INSTALLED IN THE EXISTING INGRESS/EGRESS/UTILITIES AND COMMUNITY BEACH EASEMENT. THE EXISTING WATER METERS ARE LOCATED ON HOLMES POINT DRIVE.
2. INSTALL TESC FACILITIES PRIOR TO CONSTRUCTION. SEE TESC DETAILS AND NOTES SHEET 2.
3. CONTRACTOR TO SUBMIT TEMPORARY SERVICE PLAN FOR DISTRICT REVIEW AND APPROVAL PRIOR TO STARTING WORK.



SUGGESTED CONSTRUCTION SEQUENCE

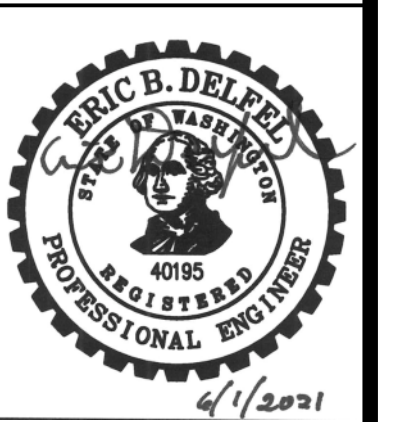
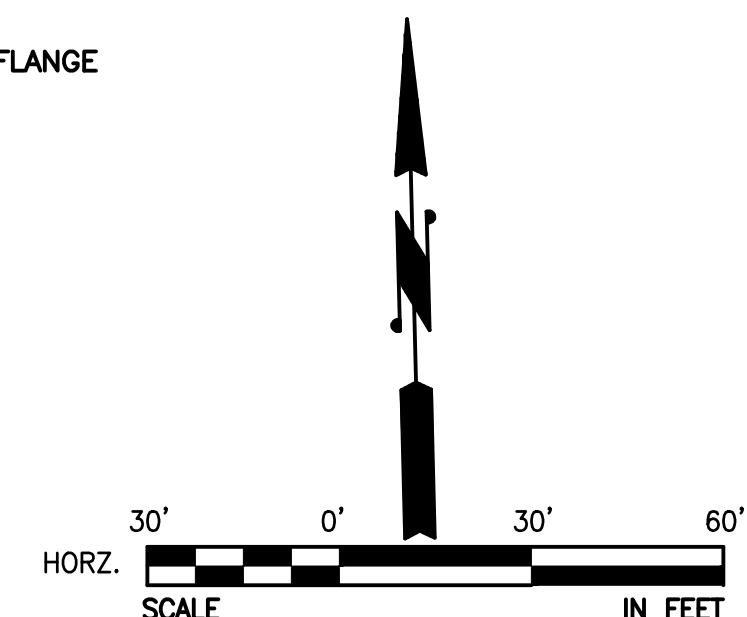
1. CONTRACTOR TO POTHOLE AND LOCATE (7) EXISTING SERVICE LINES AT THE APPROXIMATE LOCATIONS SHOWN ON THE PLANS. ACTUAL LOCATIONS OF THE EXISTING SERVICE LINES MAY VARY FROM WHAT IS SHOWN ON THE PLANS. CONTRACTOR SHALL INSTALL NEW METER BOXES AND SETTERS DIRECTLY ADJACENT TO EXISTING SERVICE LINES AT THE EDGE OF THE EXISTING EASEMENT OR PROPOSED EASEMENT FOR EACH INDIVIDUAL PROPERTY. CONTRACTOR SHALL PROTECT AND MAINTAIN EXISTING WATER SERVICES THROUGHOUT CONSTRUCTION, SEE CONSTRUCTION SEQUENCING NOTE 6.
2. CONTRACTOR SHALL INSTALL SEGMENT 1 OF THE 4-INCH DI WATER MAIN BEGINNING AT THE TRANSITION BETWEEN SEGMENTS 1 AND 2, EAST TO THE CONNECTION POINT WITHIN HOLMES POINT DRIVE NE. ADDITIONALLY, THE CONTRACTOR SHALL INSTALL THE 2-INCH HDPE TEMPORARY WATER SERVICE AND CONNECT TO THE METER BOXES INSTALLED IN CONSTRUCTION SEQUENCING NOTE 1. CONTRACTOR SHALL TEST, DISINFECT, AND MAKE CONNECTION TO THE EXISTING WATER SYSTEM WITHIN HOLMES POINT DRIVE NE AS SHOWN ON SHEET 6.
3. CONTRACTOR SHALL RELOCATE EXISTING METERS ON HOLMES POINT DRIVE TO NEW METER BOXES UNDER THE SUPERVISION OF THE DISTRICT. INSTALL NEW WATER SERVICES FROM THE CUSTOMER SIDE OF THE NEW METER BOXES TO EACH INDIVIDUAL HOME. CAP BOTH ENDS OF EXISTING WATER SERVICE AND ANY OTHER OPEN ENDS OF THE EXISTING SERVICE WHERE IT HAS BEEN CUT OR BROKEN.
4. CONSTRUCT PROPOSED 4-INCH DI WATER MAIN WITHIN SEGMENT 2, AS SHOWN ON THE PLANS. TEST, DISINFECT, AND CONNECT TO NEWLY CONSTRUCTED 4-INCH DI WATER MAIN (SEGMENT 1) AS SHOWN ON THE FINAL CONNECTION DETAIL 1, THIS SHEET.
5. CONSTRUCT PERMANENT SERVICE LINES FROM THE NEWLY CONSTRUCTED 4-INCH DI WATER MAIN TO THE NEW METER BOXES. DISCONNECT TEMPORARY WATER SERVICE AND SWAP OVER TO PERMANENT SERVICE.
6. CONTRACTOR SHALL REMOVE 2-INCH TEMPORARY WATER SERVICE, REMOVE AND WASTEHAUL EXISTING METER BOXES AND SETTERS ON PRIVATE DRIVE, AND ABANDON-IN-PLACE THE EXISTING WATER SERVICE LINES. CONTRACTOR TO LOCATE EXISTING BALL VALVE AND CORP STOP ON 8-INCH MAIN ON HOLMES POINT DRIVE AND CLOSE.
7. CONTRACTOR SHALL COMPLETE SITE RESTORATION AS SHOWN ON SHEET 9.



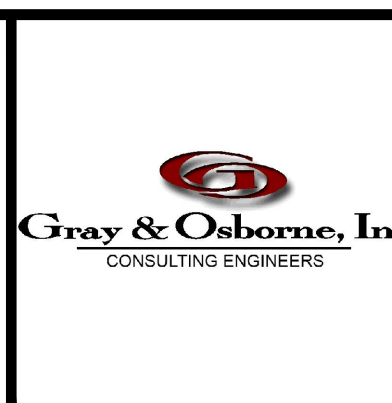
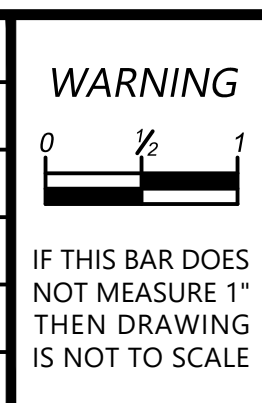
NOTE:

1. DOUBLE CHECK VALVE ASSEMBLY SHALL BE LISTED ON THE MOST CURRENT COPY OF "ACCEPTED CROSS CONNECTION CONTROL" PUBLISHED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA.

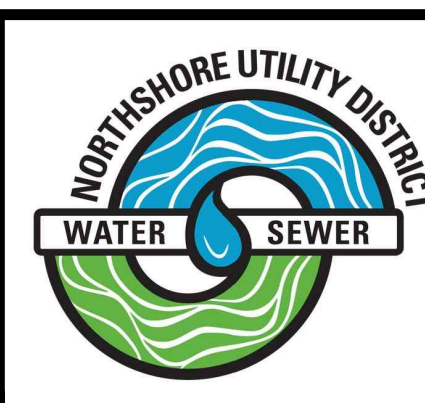
1 CONNECTION DETAILS  
NOT TO SCALE



NO	BY	APPD	REVISION	DATE
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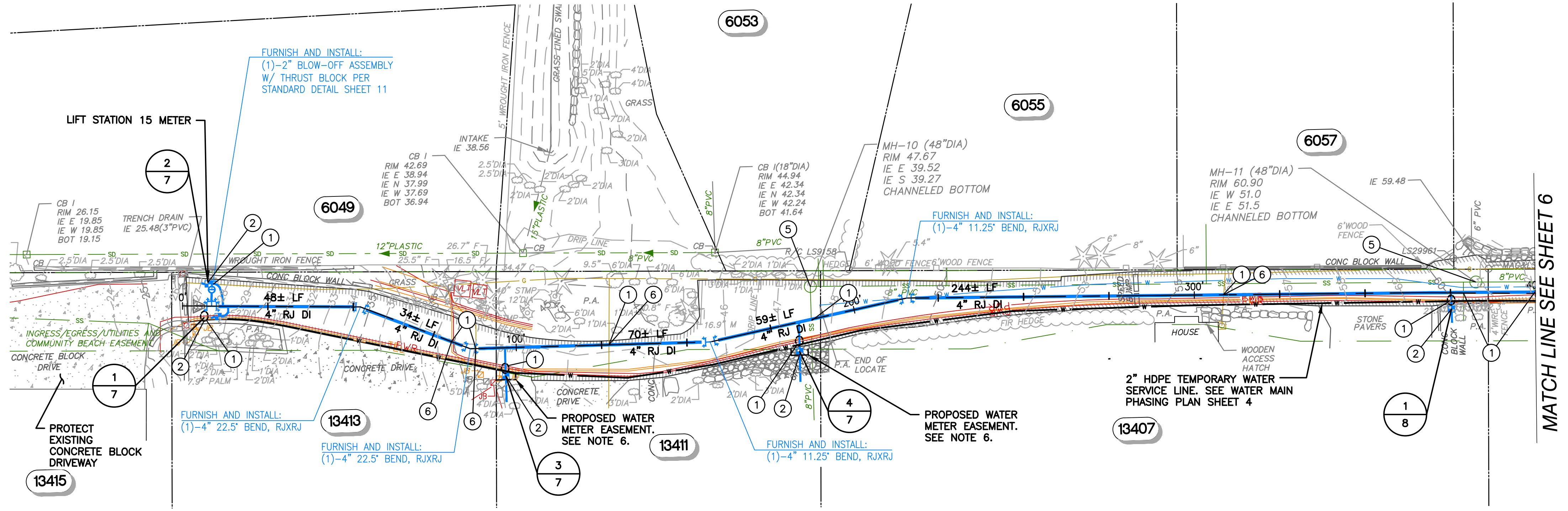


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**WATER MAIN PHASING PLAN**

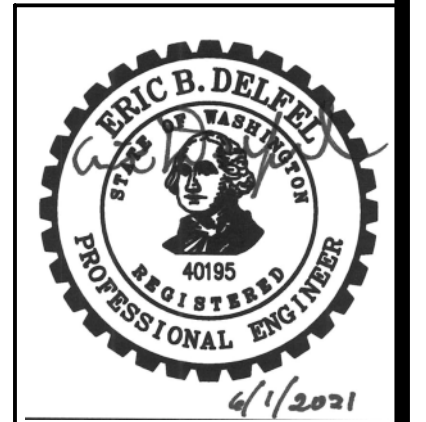
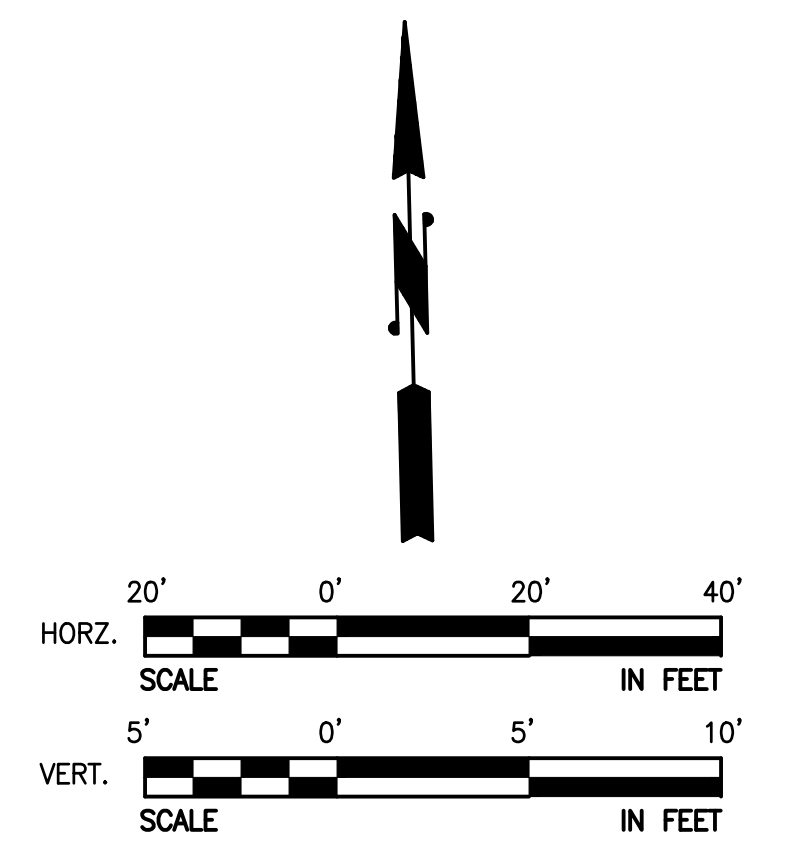
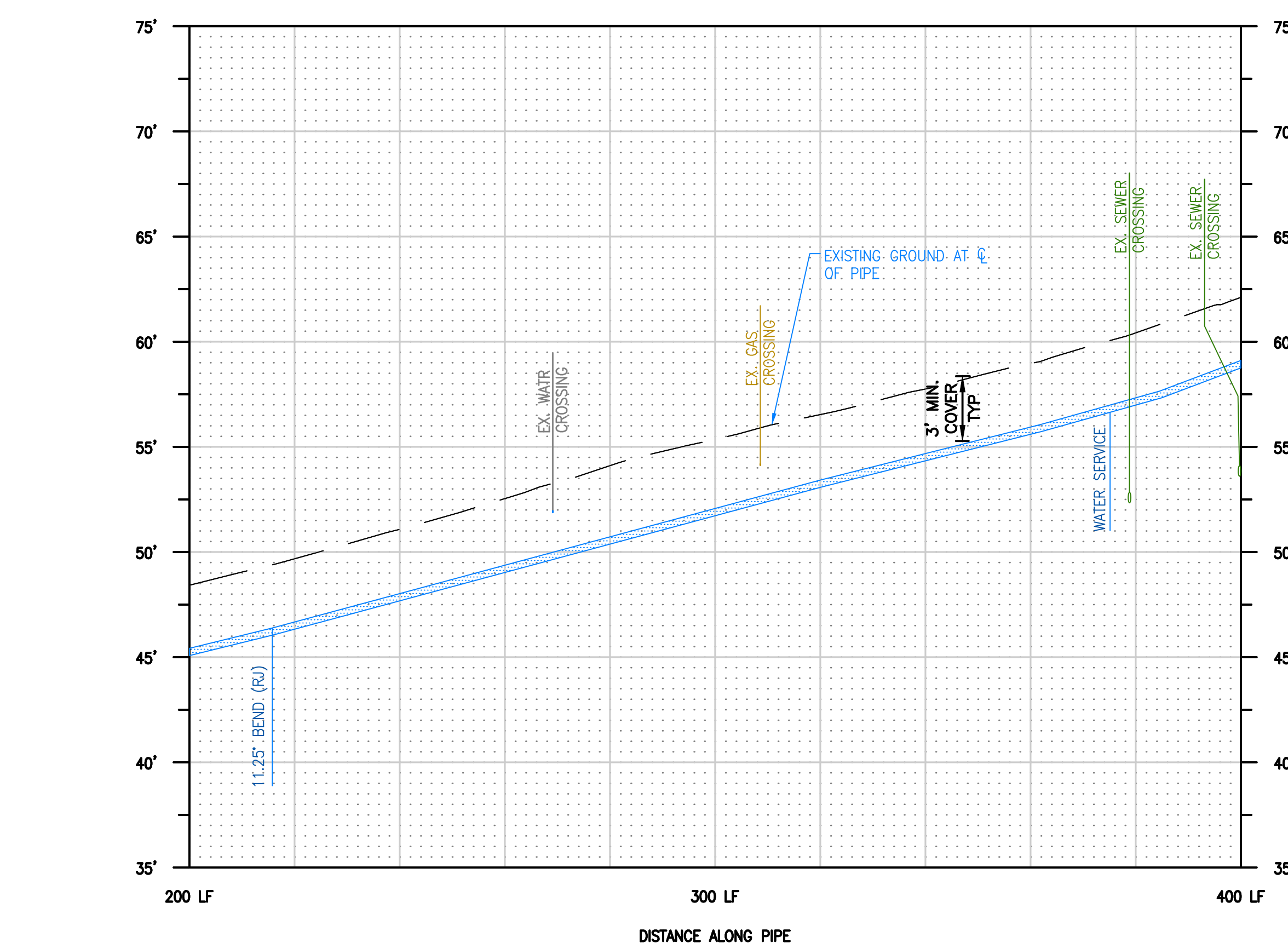
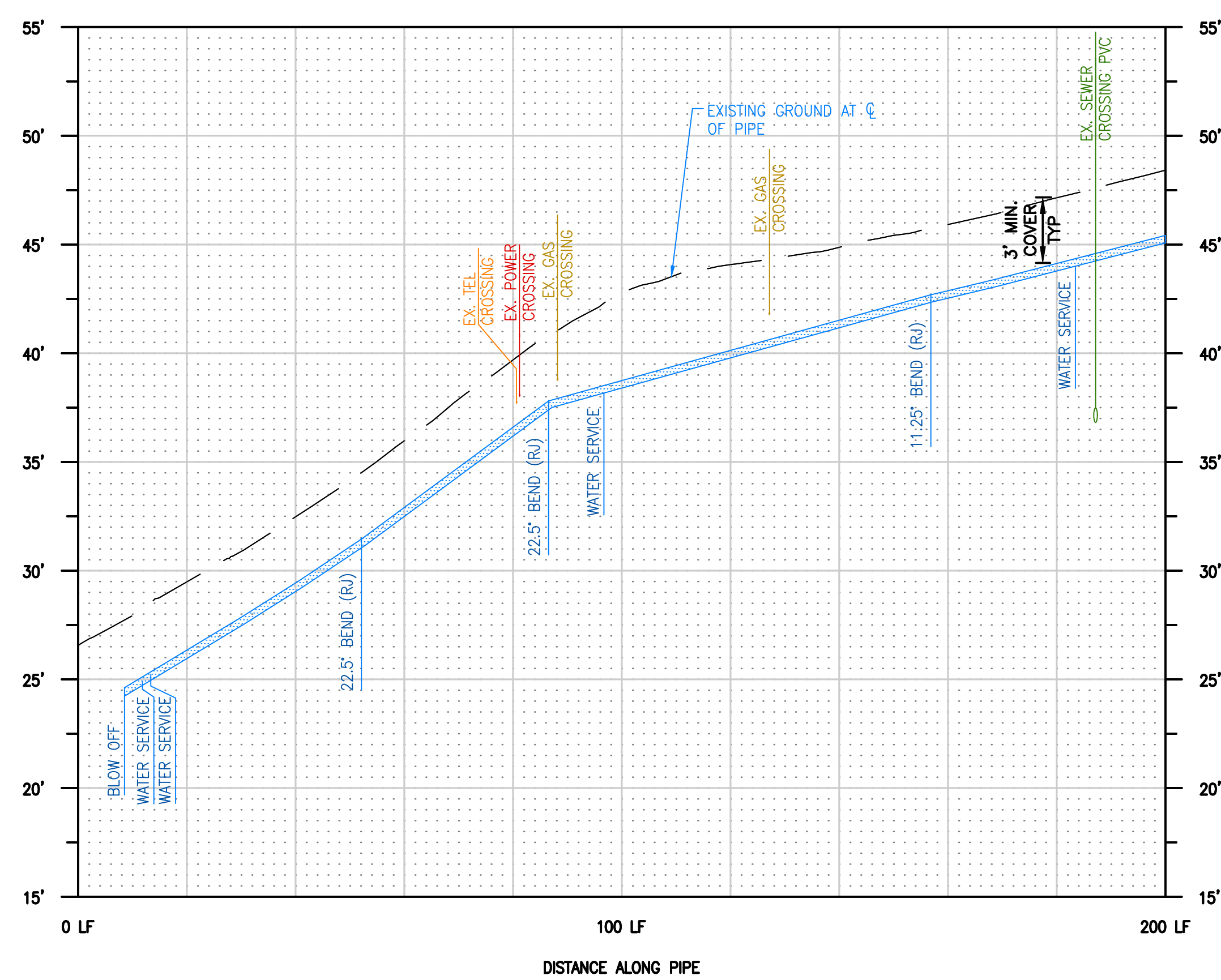
BASE MAP H4
C1922
SHEET
4 OF 13

SE 1/4, SEC 23, T26N, R4E, WM



- GENERAL NOTES**
- SEE SHEET 2 FOR GENERAL NOTES, LEGEND, AND SURVEY CONTROL INFORMATION.
  - PRIOR TO EXCAVATION, INSTALL TESC FACILITIES PER SHEET 2.
  - SEE SHEET 4 FOR WATER MAIN PHASING PLAN AND TEMPORARY WATER SERVICE PLAN.
  - COORDINATE AND CONFIRM FITTING REQUIREMENTS IN THE FIELD WITH THE DISTRICT PRIOR TO CONSTRUCTION.
  - ALL BURIED WATER MAIN SHALL BE RESTRAINED JOINT (R.J.) PIPE WITH FIELD LOK GASKETS (OR APPROVED EQUAL) AND POLYETHYLENE ENCASUREMENT PER NUD STANDARD SPECIFICATIONS.
  - LOCATION OF WATER METERS SHOWN ON PLANS IS APPROXIMATE. FINAL LOCATION OF WATER METERS IS TO BE BASED ON POTHOLED LOCATION OF PRIVATE SERVICE LINE. LOCATE METERS OUTSIDE OF PAVEMENT TO THE EXTENT FEASIBLE. WATER METER EASEMENT TO BE BASED ON AS BUILT SURVEY LOCATION OF METER.

- CONSTRUCTION NOTES**
- CAUTION: POTENTIAL UTILITY CONFLICT. CONTRACTOR SHALL POTHOLE TO DETERMINE EXACT LOCATION AND DEPTH OF THE UTILITY PRIOR TO COMMENCING THE WORK. ANY DISCREPANCIES FOUND IN THE FIELD FROM THOSE SHOWN HERE ON SHALL BE REPORTED TO THE DISTRICT PRIOR TO COMMENCING THE WORK.
  - INSTALL NEW 1" SERVICE PER THE STANDARD WATER DETAILS AND THE TYPICAL WATER SERVICE REPLACEMENT DETAIL SHEET 10. SEE INDIVIDUAL WATER METER DETAIL FOR ADDITIONAL NOTES.
  - REMOVE AND WASTEHAUL EXISTING METER BOX AND SETTER AFTER NEW MAIN IS IN SERVICE. ABANDON EXISTING WATER SERVICE LINE IN-PLACE.
  - DISTRICT TO FURNISH, SUPPLY AND PERFORM WET TAP INSTALLATION ON EXISTING 8-INCH PVC CL 200 MAIN. CONTRACTOR TO PROVIDE ALL OTHER WORK ASSOCIATED WITH WET TAP INCLUDING TRAFFIC CONTROL, EXCAVATION, BACKFILL AND RESTORATION.
  - REPLACE EXISTING MANHOLE FRAME AND COVER PER STANDARD DETAIL 5, SHEET 10.
  - CONSTRUCT NEW WATER MAIN UNDER EXISTING UTILITY.



NO	BY	APPD	REVISION	DATE
<b>BID SET</b>				

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

DESIGNED BY	MTM
DRAWN BY	HLT
CHECKED BY	MTM
APPROVAL	EBD
DATE	JUN 2021

**NORTHSHORE UTILITY DISTRICT**

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

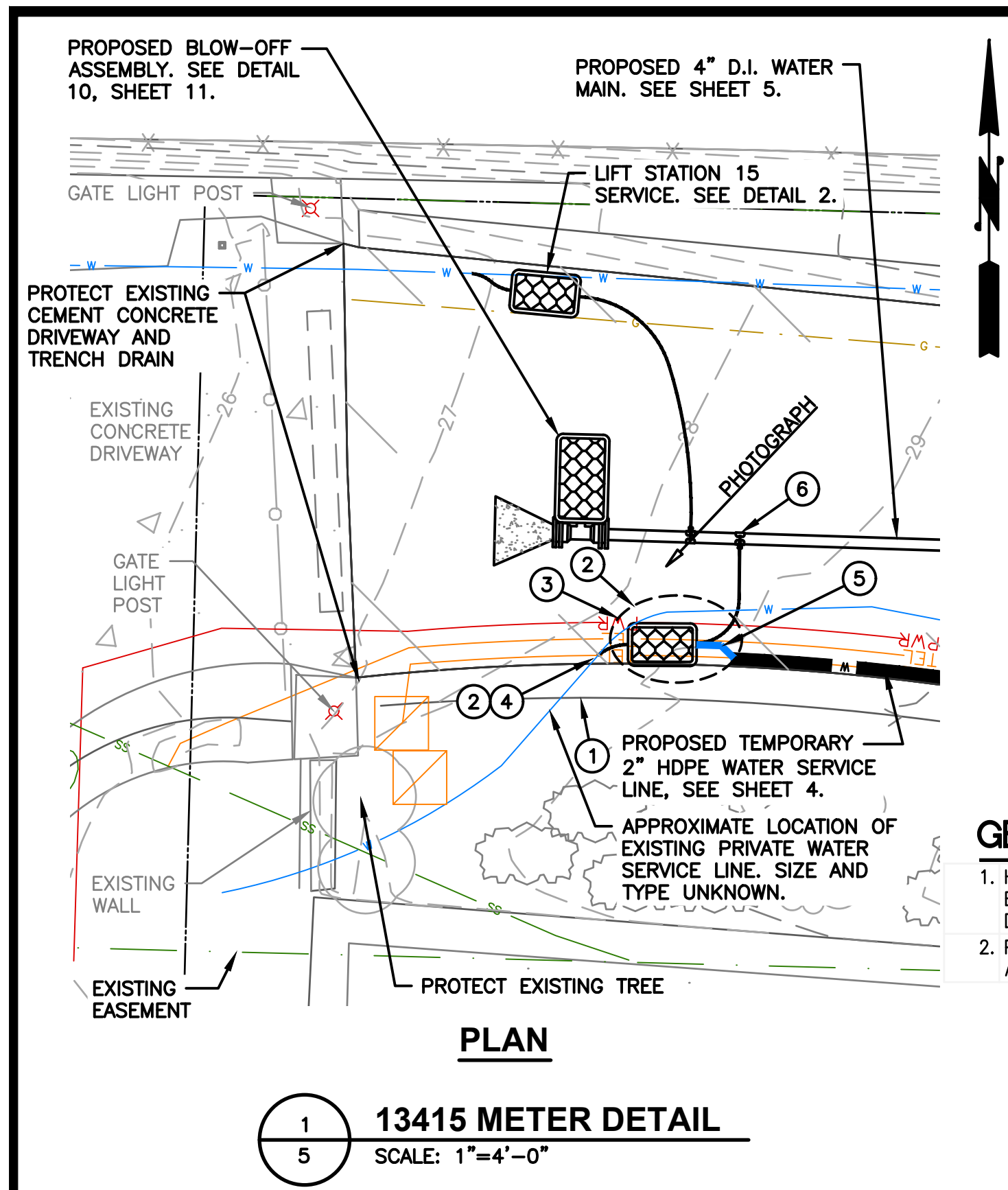
Ph: (425) 398-4400 | Fax: (425) 398-4430 | [www.nud.net](http://www.nud.net)

CONTRACT 2021-02  
 PRIVATE WATER SERVICE LINE PROJECT #76

**PLAN & PROFILE WEST**

BASE MAP H4
C1922
<b>SHEET</b>
5 OF 13





PHOTOGRAPH

**GENERAL NOTES**

- HAND EXCAVATION FOR THE INSTALLATION OF WATER SERVICE PIPING AND METER BOX WILL BE REQUIRED TO AVOID EXCESSIVE DAMAGE TO EXISTING IMPROVEMENTS. COORDINATE WITH THE DISTRICT PRIOR TO COMMENCING CONSTRUCTION TO DETERMINE THE LIMITS OF HAND EXCAVATION.
- PRIOR TO COMMENCING CONSTRUCTION, COORDINATE WITH THE DISTRICT AND PROPERTY OWNERS REGARDING THE REMOVAL AND RESTORATION OF EXISTING LANDSCAPING FEATURES.

**CONSTRUCTION NOTES**

- REMOVE AND RESTORE BLOCK WALL. RESTORE AREA WITH LANDSCAPE BARK AND SHRUBS AS REQUIRED. SEE GENERAL NOTES 1 AND 2.
- POTHOLE TO DETERMINE EXACT LOCATION AND DEPTH OF UTILITIES PRIOR TO COMMENCING WORK. ANY DISCREPANCIES FOUND IN THE FIELD FROM THOSE SHOWN HERE SHALL BE REPORTED TO THE DISTRICT PRIOR TO COMMENCING THE WORK.
- PROPOSED WATER METER LOCATION. SET NEW 1" METER BOX AND SETTER PER DETAIL 4, SHEET 10.
- CONNECT NEW WATER SERVICE TO EXISTING WATER SERVICE PER DETAIL 9, SHEET 10.
- CONNECT METER SETTER TO TEMPORARY WATER MAIN AND THEN SALVAGE EXISTING METER FROM BOX NEAR HOLMES POINT DRIVE AND SET IN NEW METER LOCATION TO PROVIDE TEMPORARY WATER SERVICE DURING WATER MAIN INSTALLATION. CAP BOTH ENDS OF EXISTING WATER SERVICE AND ANY OTHER OPEN ENDS OF THE EXISTING SERVICE WHERE IT HAS BEEN CUT OR BROKEN.
- AFTER THE WATER MAIN INSTALLATION IS COMPLETE, INSTALL WATER SERVICE LINE FROM NEW WATER MAIN TO NEW METER SETTER PER DETAIL 4, SHEET 10.

**SE 1/4, SEC 23, T26N, R4E, WM**



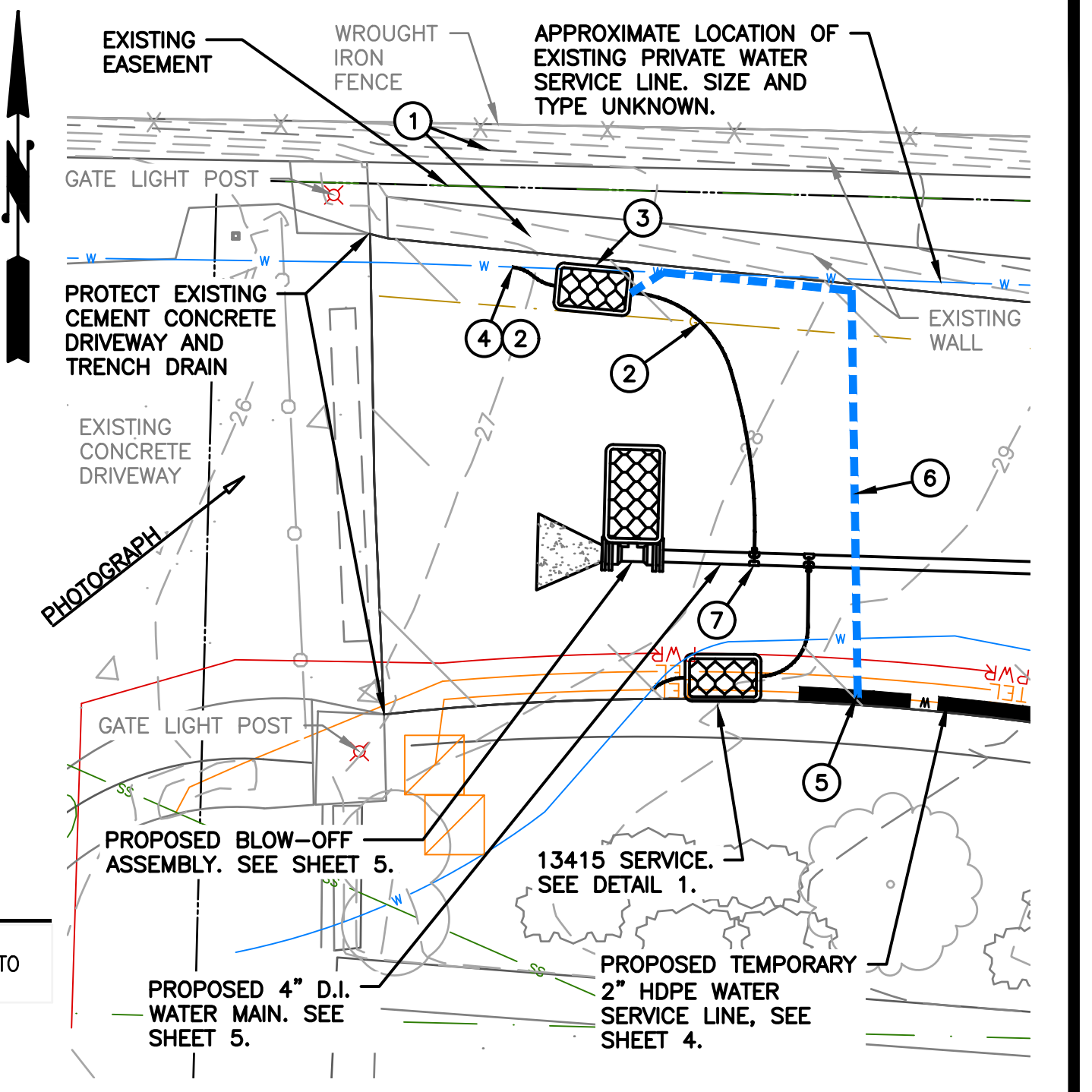
PHOTOGRAPH

**GENERAL NOTES**

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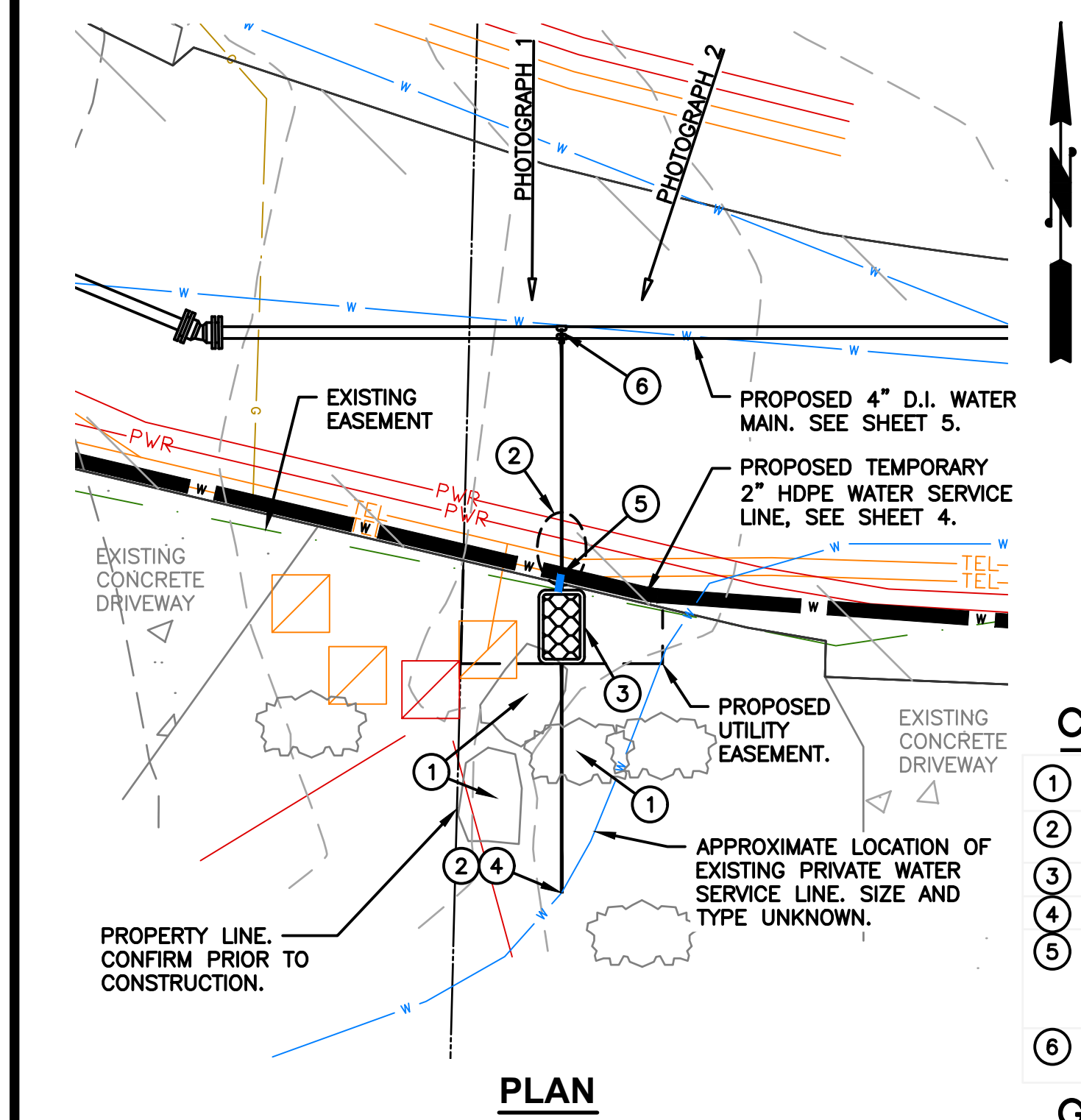
**CONSTRUCTION NOTES**

- PROTECT EXISTING RETAINING WALL.
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PLAN

2 LIFT STATION NO. 15 METER DETAIL  
SCALE: 1"=4'-0"



PHOTOGRAPH 1



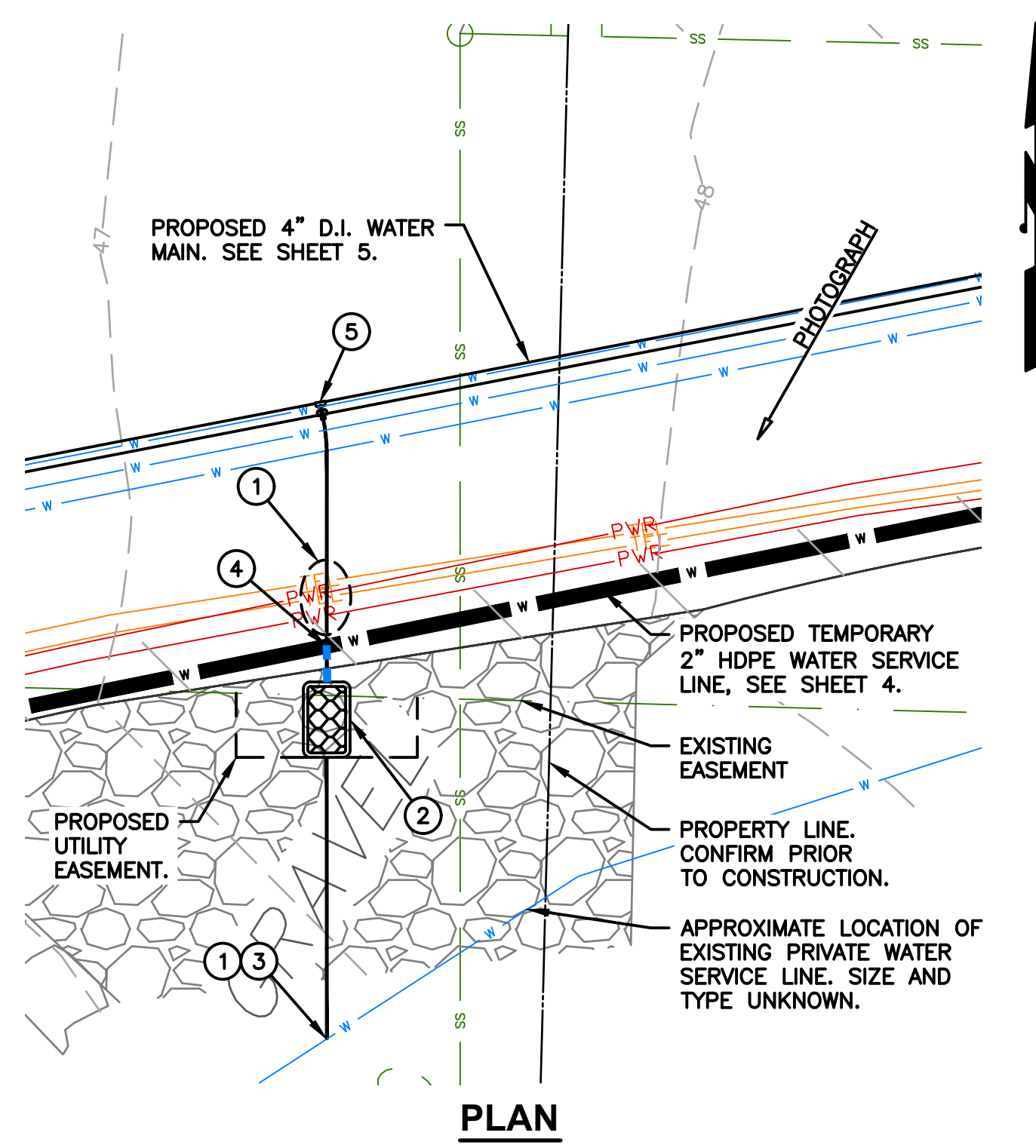
PHOTOGRAPH 2

**CONSTRUCTION NOTES**

- REMOVE AND WASTEHAUL EXISTING DECORATIVE ROCKS AND/OR SHRUBS. RESTORE AREA WITH LANDSCAPE BARK AND SHRUBS AS REQUIRED. SEE GENERAL NOTES 1 AND 2.
- POTHOLE TO DETERMINE EXACT LOCATION AND DEPTH OF UTILITIES PRIOR TO COMMENCING WORK. ANY DISCREPANCIES FOUND IN THE FIELD FROM THOSE SHOWN HERE SHALL BE REPORTED TO THE DISTRICT PRIOR TO COMMENCING THE WORK.
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PLAN



PHOTOGRAPH

**CONSTRUCTION NOTES**

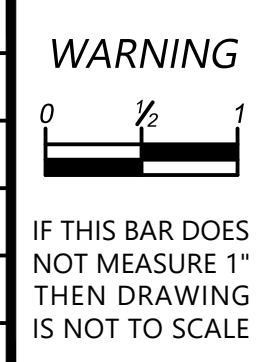
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**GENERAL NOTES**

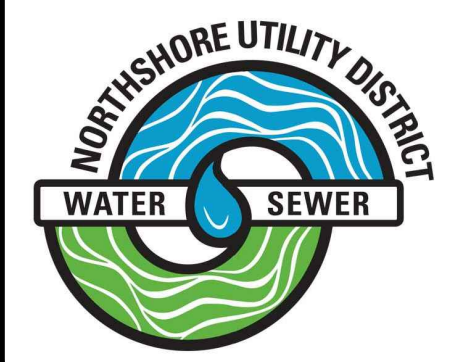
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4 13411 METER DETAIL  
SCALE: 1"=4'-0"

NO	BY	APPD	REVISION	DATE



DESIGNED BY: MTM  
 DRAWN BY: HLT  
 CHECKED BY: MTM  
 APPROVAL: EBD  
 DATE: JUN 2021

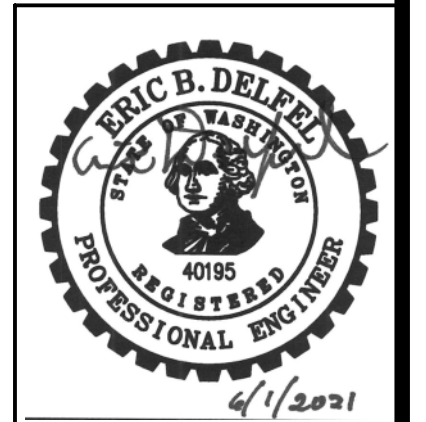


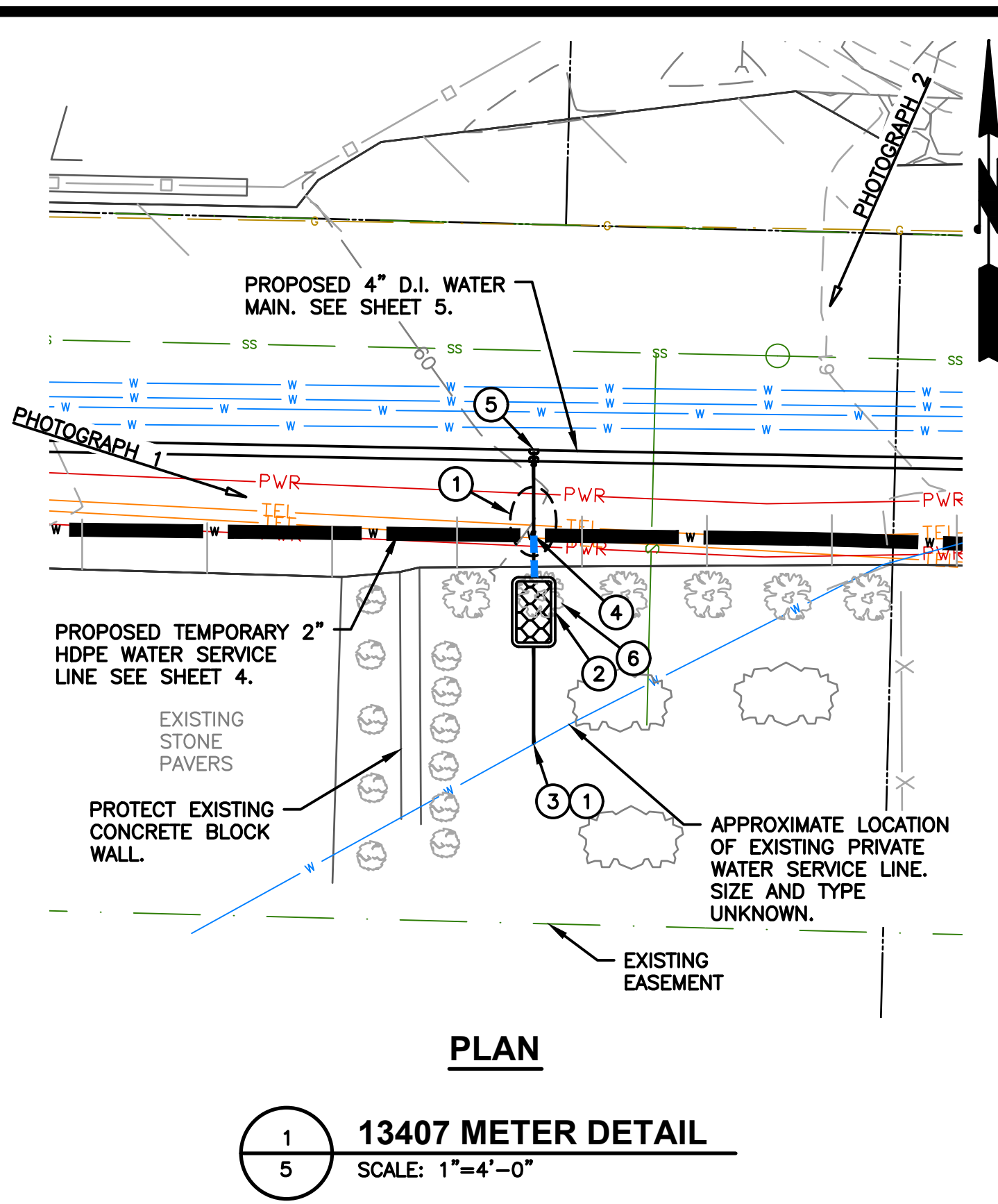
**NORTHSHORE UTILITY DISTRICT**  
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 PRIVATE WATER SERVICE LINE PROJECT #76

**METER DETAILS**

BASE MAP H4  
 C1922  
 SHEET  
 7 OF 13





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  - REMOVE AND WASTEHAUL EXISTING SHRUBS. RESTORE AREA WITH LANDSCAPE BARK AND SHRUBS AS REQUIRED. SEE GENERAL NOTES 1 AND 2.



PHOTOGRAPH 1

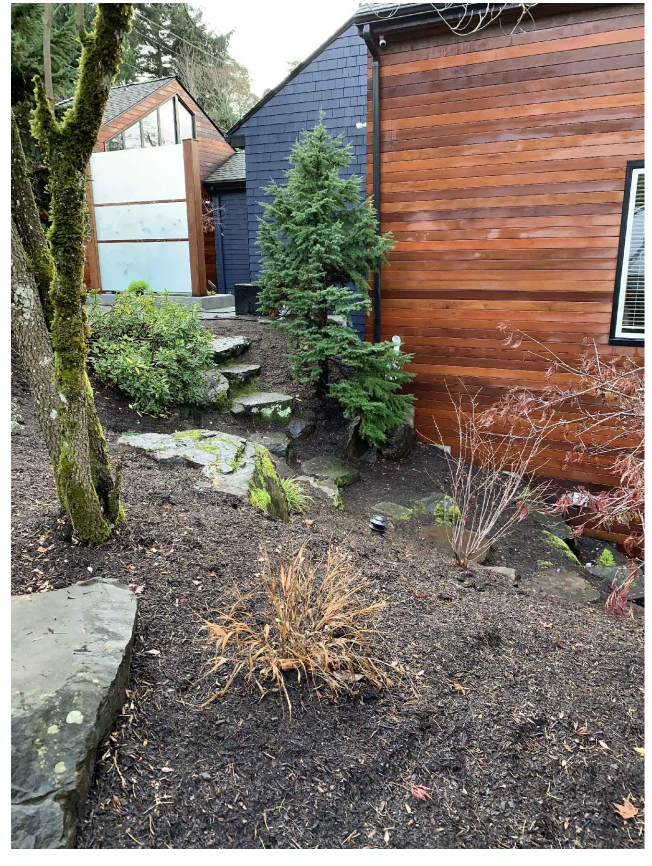


PHOTOGRAPH 2

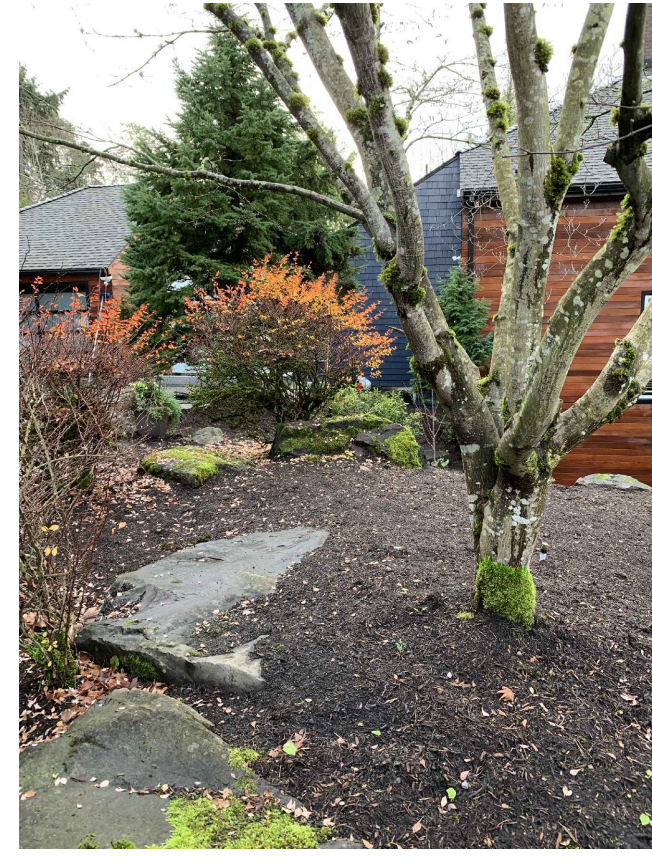
## SE 1/4, SEC 23, T26N, R4E, WM

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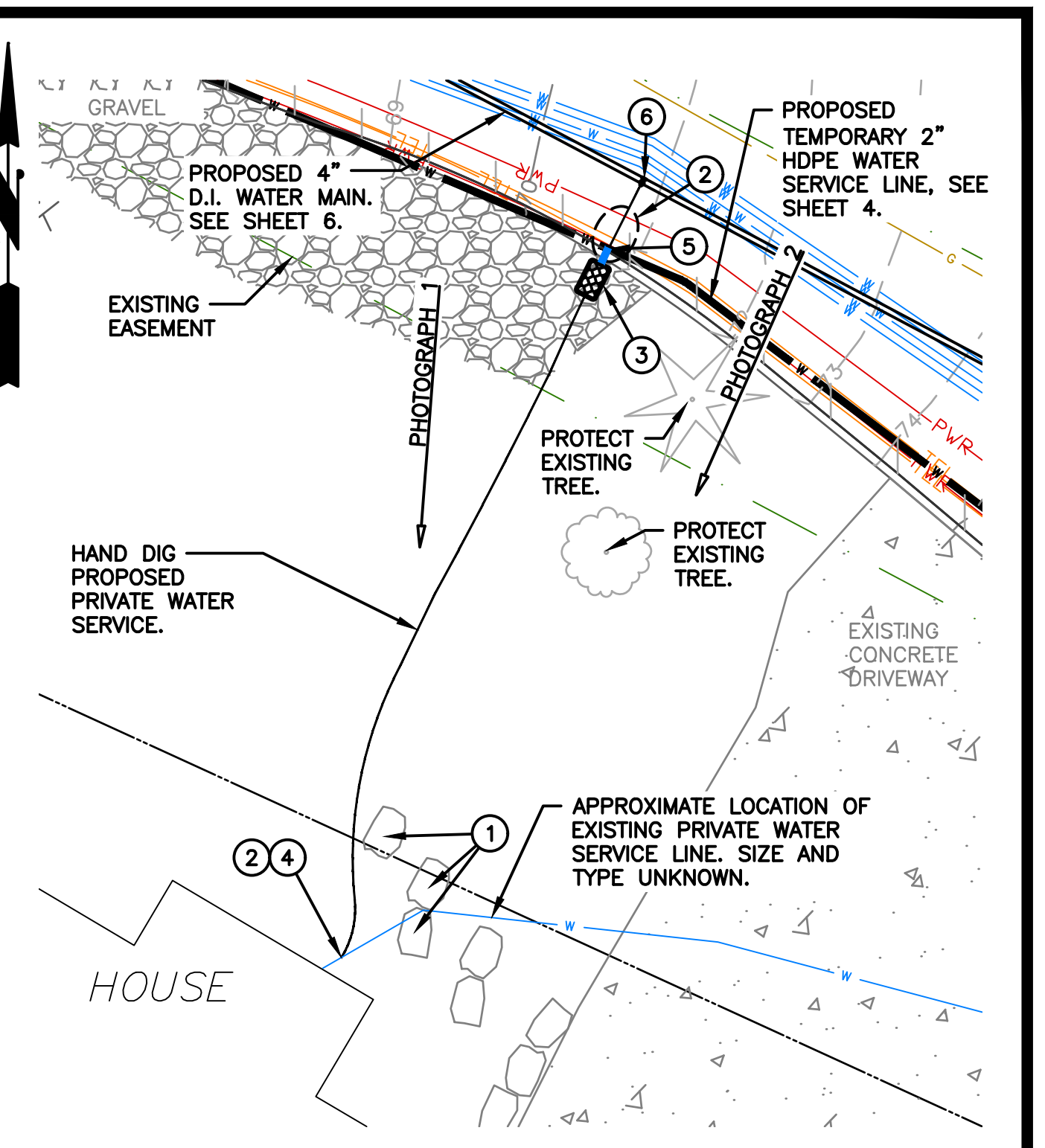


PHOTOGRAPH 1

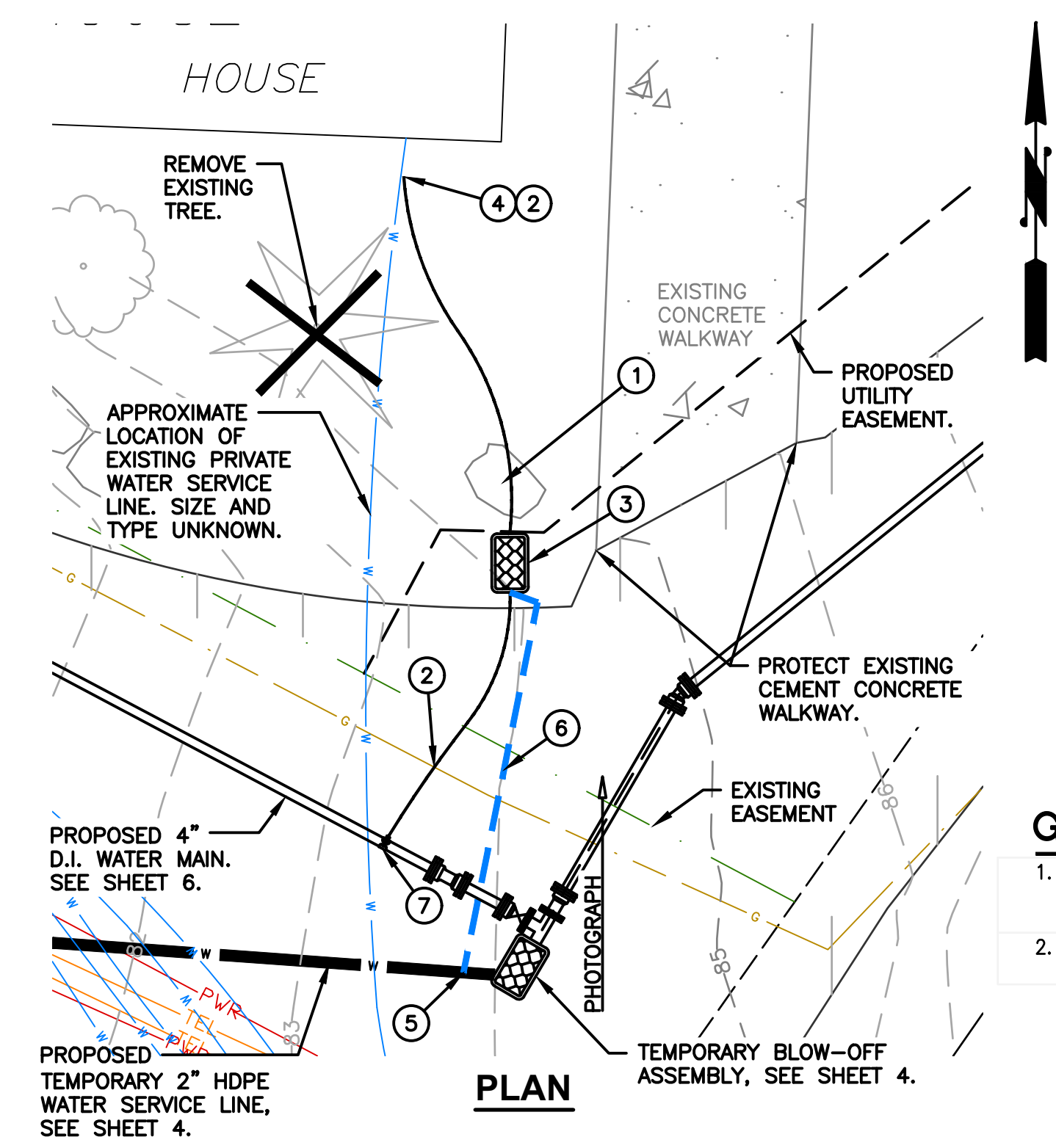


PHOTOGRAPH 2

- ### CONSTRUCTION NOTES
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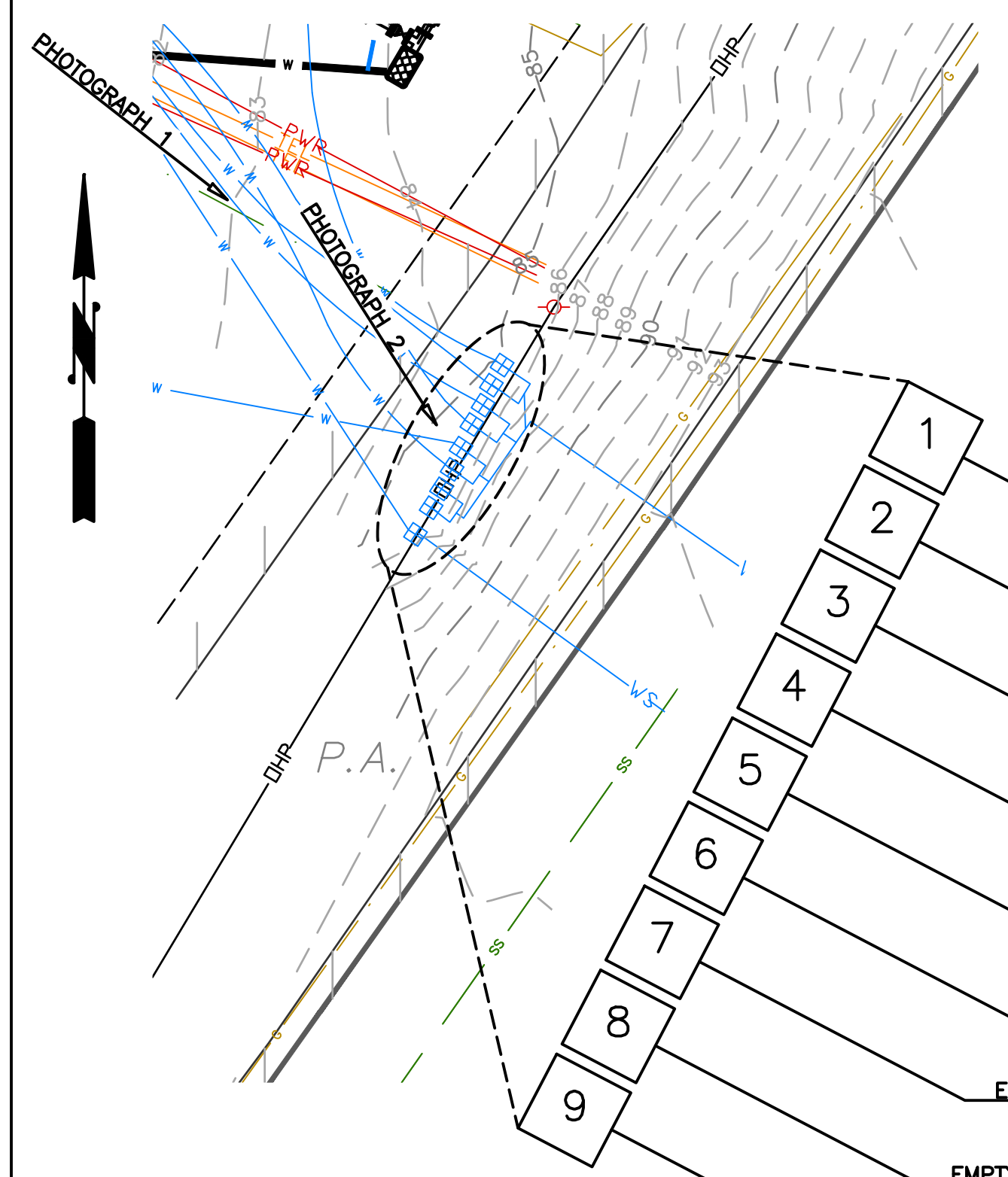
13405 METER DETAIL  
SCALE: 1"=8'-0"



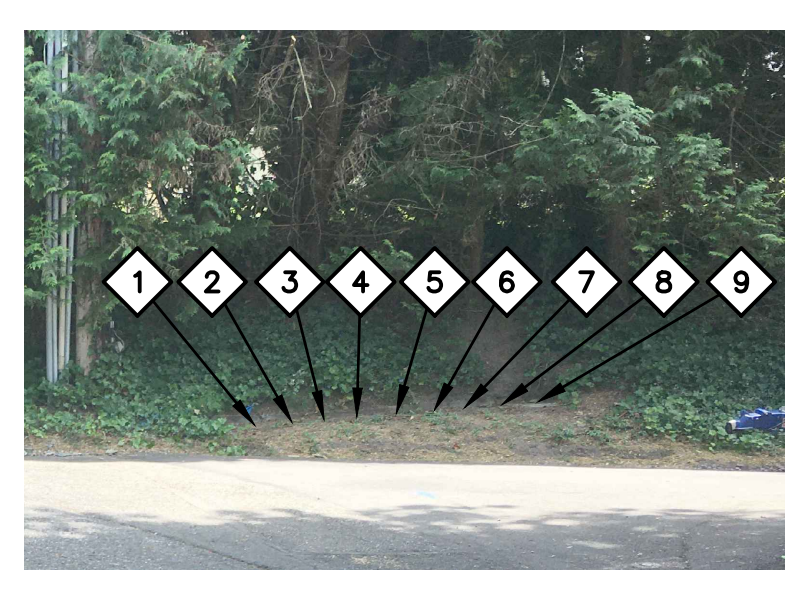
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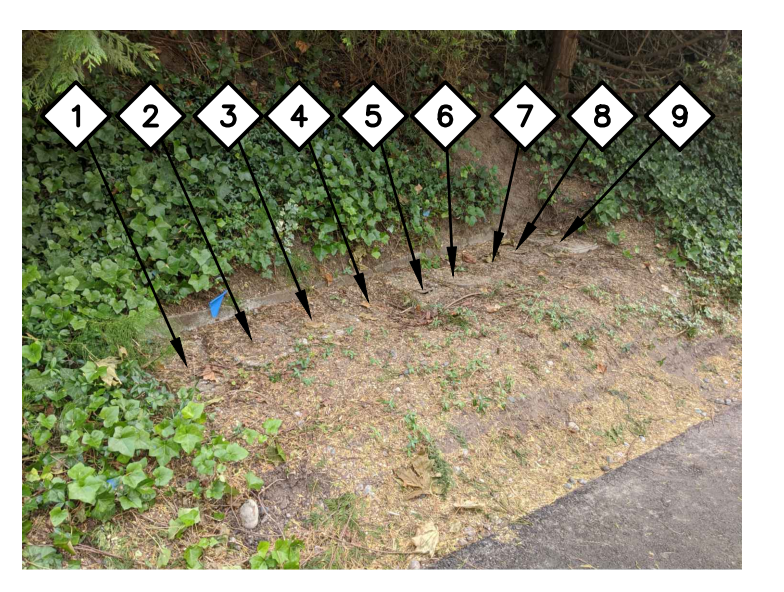
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METER BANK DETAIL  
SCALE: 1"=8'-0"

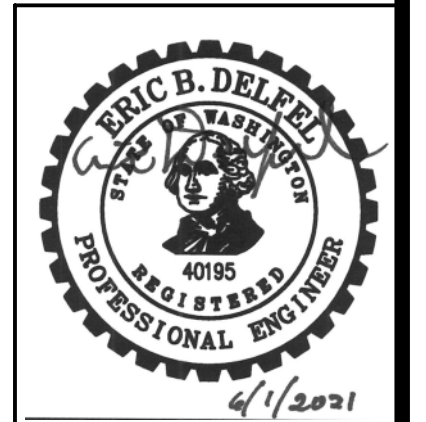


PHOTOGRAPH 1



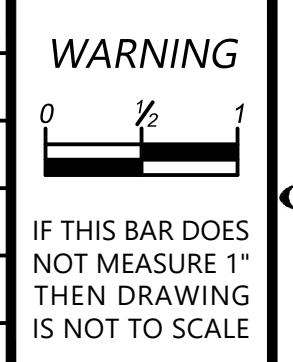
PHOTOGRAPH 2

- ACCOUNT NO. 241653  
OWNER NAME: NUD - LIFT STATION NO. 15
- ACCOUNT NO. 242396  
OWNER NAME: WAKEFIELD - 13413 HOLMES PT. DR. N.E.
- ACCOUNT NO. 243949  
OWNER NAME: KNUDSEN/BANG - 13411 HOLMES PT. DR. N.E.
- ACCOUNT NO. 249938  
OWNER NAME: GILBERT - 13419 HOLMES PT. DR. N.E.
- ACCOUNT NO. 249946  
OWNER NAME: HURTS - 13405 HOLMES PT. DR. N.E.
- ACCOUNT NO. 263464  
OWNER NAME: HERSMAN - 13415 HOLMES PT. DR. N.E.
- EMPTY
- EMPTY
- ACCOUNT NO. 268576  
OWNER NAME: GOODMANSEN - 13407 HOLMES PT. DR. N.E.

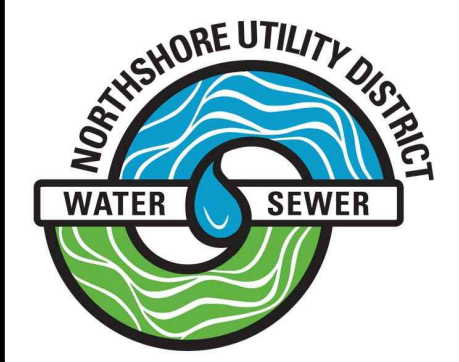


NO	BY	APPD	REVISION	DATE

**BID SET**



DESIGNED BY	MTM
DRAWN BY	HLT
CHECKED BY	MTM
APPROVAL	EBD
DATE	JUN 2021



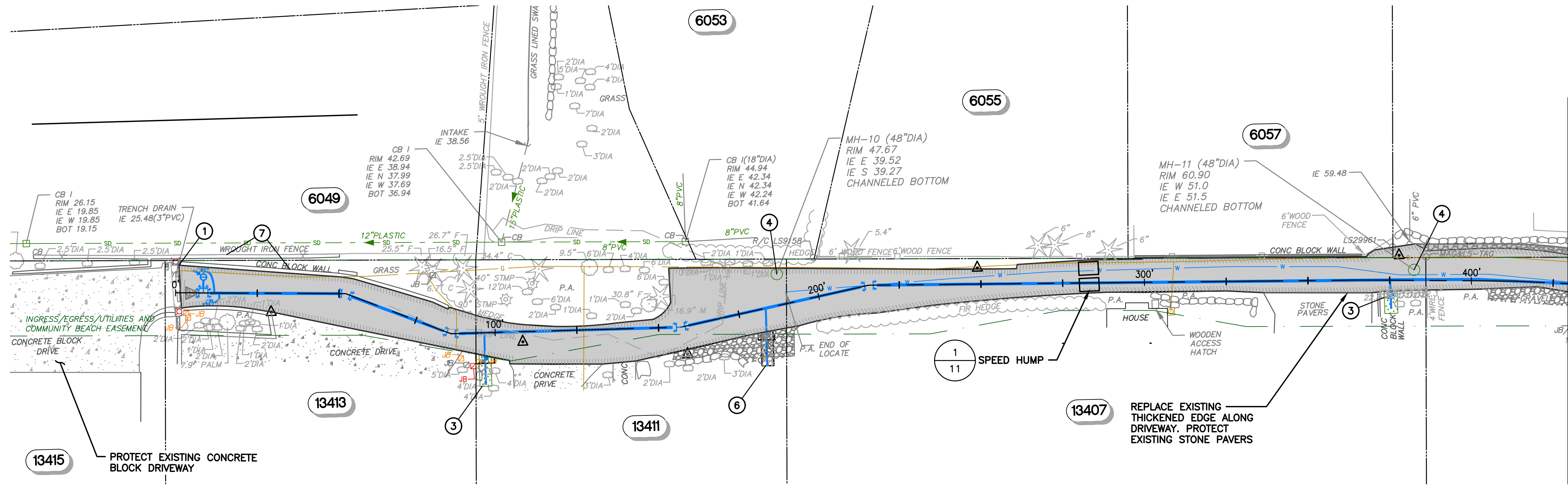
**NORTHSHORE UTILITY DISTRICT**  
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CONTRACT 2021-02  
 PRIVATE WATER SERVICE LINE PROJECT #76  
**METER DETAILS**

BASE MAP H4
C1922
<b>SHEET</b>
8 OF 13



SE 1/4, SEC 23, T26N, R4E, WM

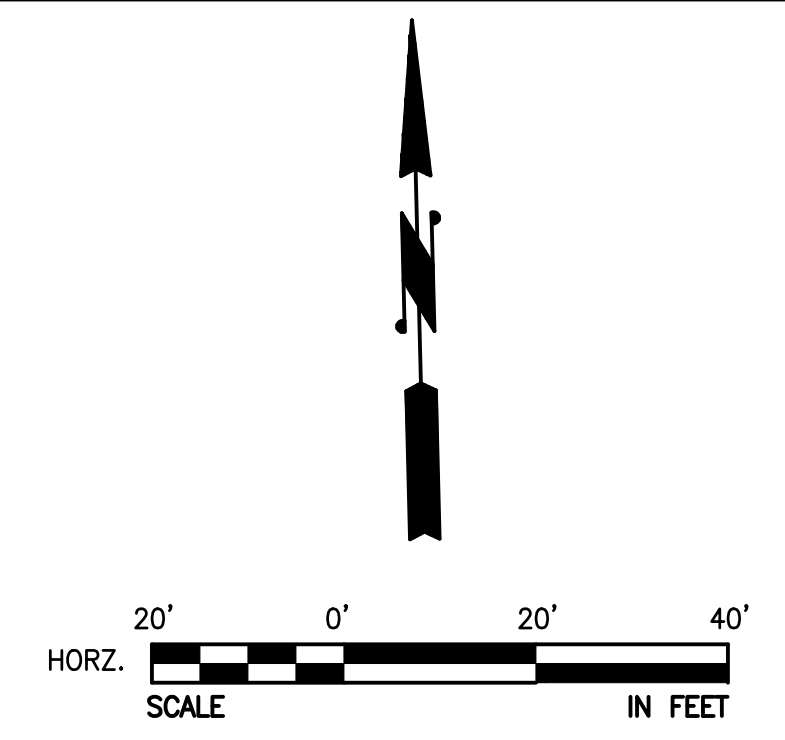
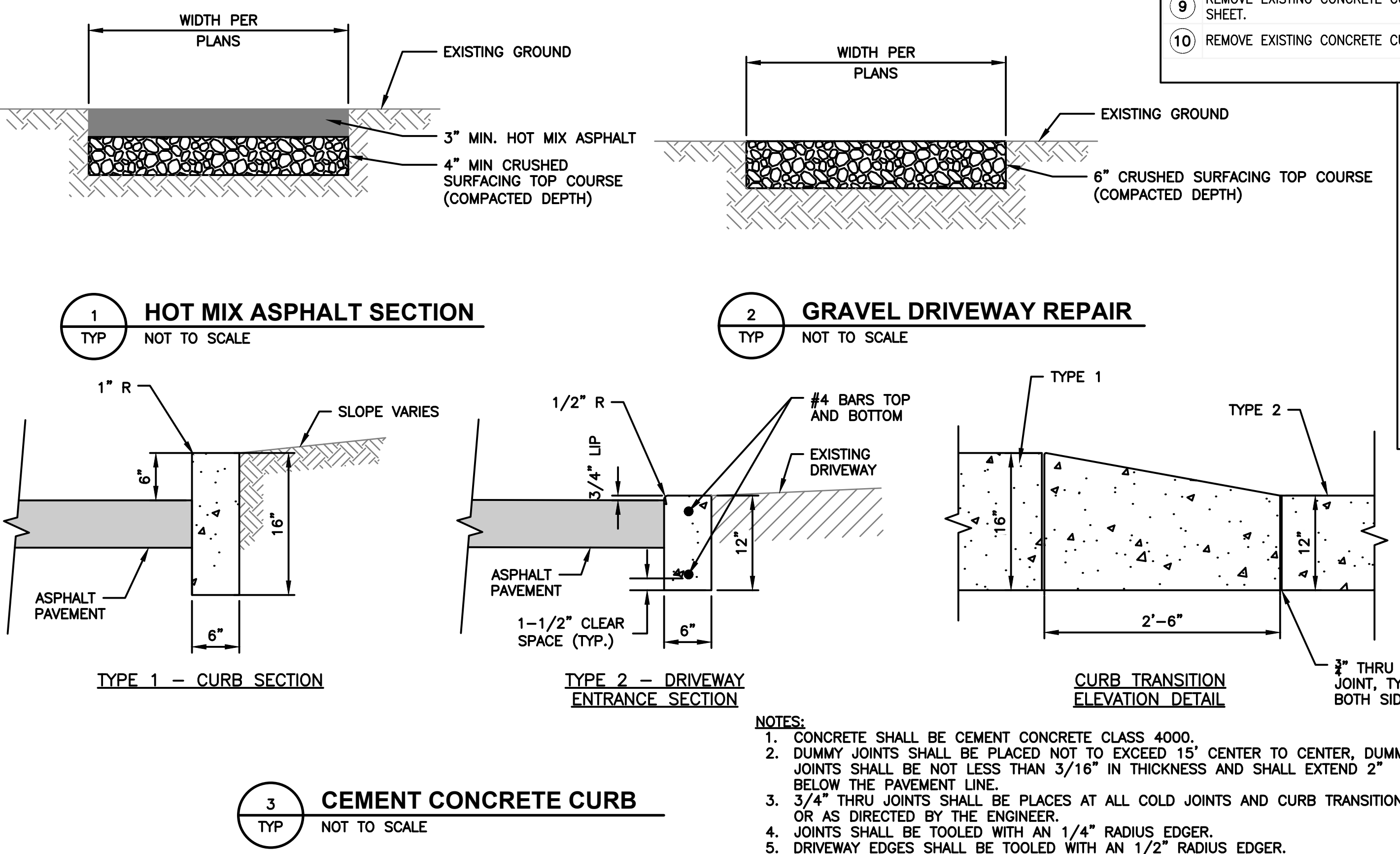
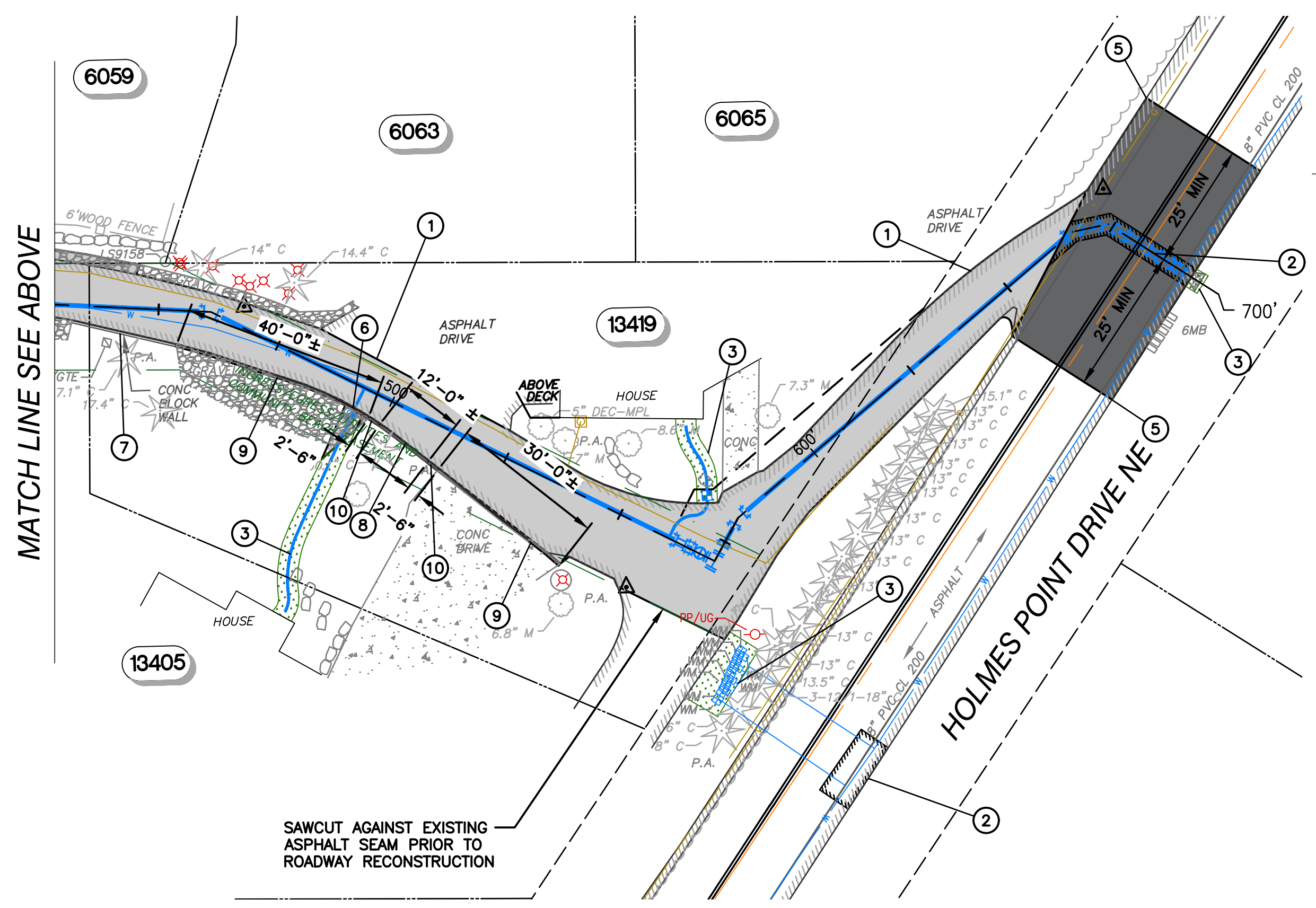


**LEGEND**

- 3-INCH ASPHALT CONCRETE PERMANENT TRENCH PATCH (APPROXIMATE LIMITS) 1
- HMA ROAD RECONSTRUCTION 1
- 2-INCH FULL-WIDTH GRIND AND OVERLAY R.13A 11
- GRAVEL DRIVEWAY REPAIR 2
- LANDSCAPE RESTORATION

- GENERAL NOTES**
- SEE SPECIFICATIONS FOR WORK AND PAYMENT INCLUDED IN GENERAL RESTORATION.
  - GRASS AREAS THAT ARE DAMAGED BY THE CONTRACTOR SHALL BE RESTORED WITH 4" OF TOPSOIL AND SOD PER THE SPECIFICATIONS.
  - RESTORE PAVEMENT MARKINGS TO EXISTING CONDITION.
  - PROTECT/RESTORE ALL LANDSCAPING AND SURFACE FEATURES TO EXISTING CONDITION OR BETTER AS SHOWN ON THE PLANS AND AS SEEN IN APPENDIX A OF THE SPECIFICATIONS.

- RESTORATION NOTES**
- REMOVE AND REPLACE EXISTING ASPHALT PAVEMENT. ROAD RECONSTRUCTION IS TO INCLUDE 4-INCHES OF CSTC AND 3-INCHES OF HOT MIX ASPHALT PER DETAIL 1, THIS SHEET.
  - ASPHALT TRENCH PATCH.
  - RESTORE EXISTING LANDSCAPING, TOPSOIL, AND SOD AS APPLICABLE TO PRE-CONSTRUCTION CONDITIONS, OR BETTER.
  - ADJUST CASTING TO NEW SURFACE GRADE.
  - 2-INCH FULL WIDTH GRIND AND OVERLAY WITH HOT MIX ASPHALT.
  - REPAIR GRAVEL SURFACING TO EXISTING CONDITION.
  - PROTECT EXISTING CONCRETE BLOCK WALL.
  - REMOVE EXISTING CONCRETE CURB. INSTALL CONCRETE CURB, TYPE 1, PER DETAIL 3, THIS SHEET.
  - REMOVE EXISTING CONCRETE CURB. INSTALL CONCRETE CURB, TYPE 2, PER DETAIL 3, THIS SHEET.
  - REMOVE EXISTING CONCRETE CURB. INSTALL TRANSITION CURB PER DETAIL 3, THIS SHEET.



NO	BY	APPD	REVISION	DATE

**BID SET**

**WARNING**

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

**Gray & Osborne, Inc.**  
CONSULTING ENGINEERS

DESIGNED BY: MTM  
DRAWN BY: HLT  
CHECKED BY: MTM  
APPROVAL: EBD  
DATE: JUN 2021

**NORTHSHORE UTILITY DISTRICT**

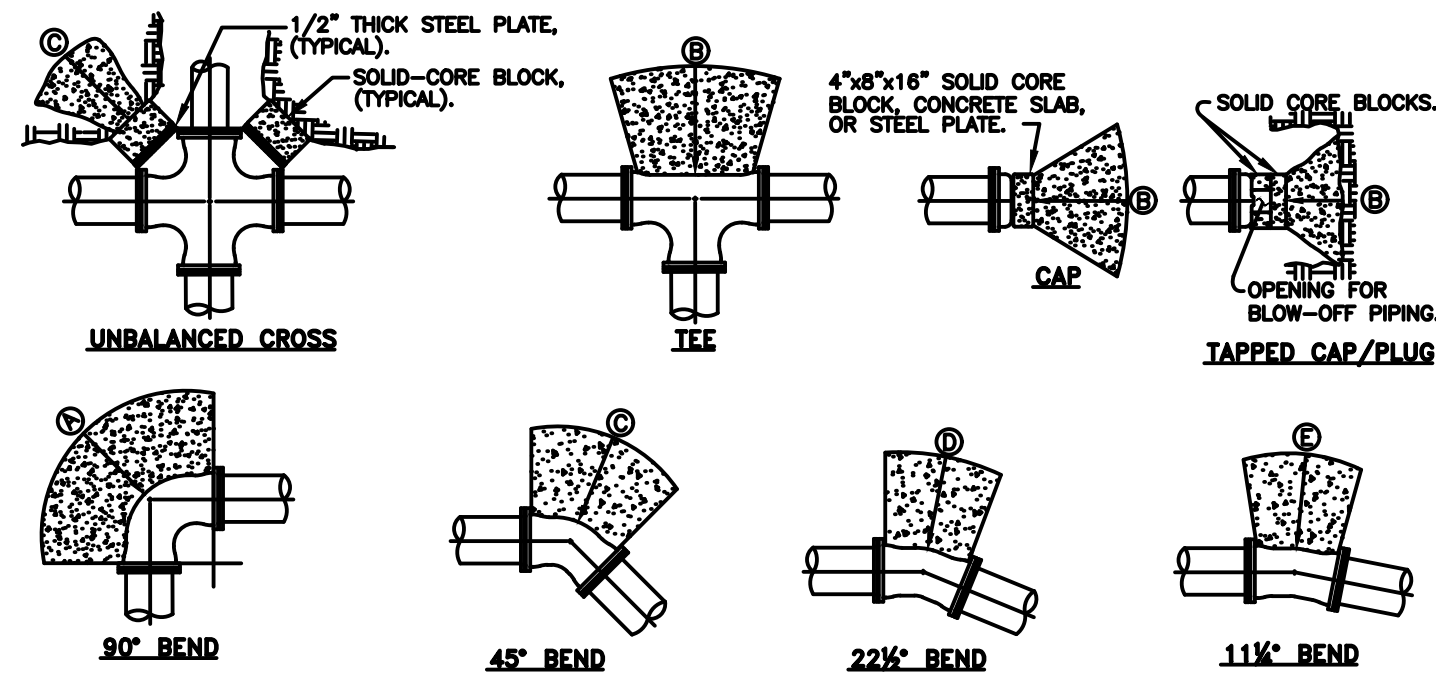
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CONTRACT 2021-02  
PRIVATE WATER SERVICE LINE PROJECT #76

**RESTORATION**

BASE MAP H4  
C1922  
SHEET  
9 OF 13



**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"	28/(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 SEE GENERAL NOTE #7
*MUCK, PEAT, ETC.	
SOFT CLAY	1,000
SAND	2,000
SAND AND GRAVEL	3,000
SAND AND GRAVEL CEMENTED W/CLAY	4,000
HARD SHALE	10,000

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

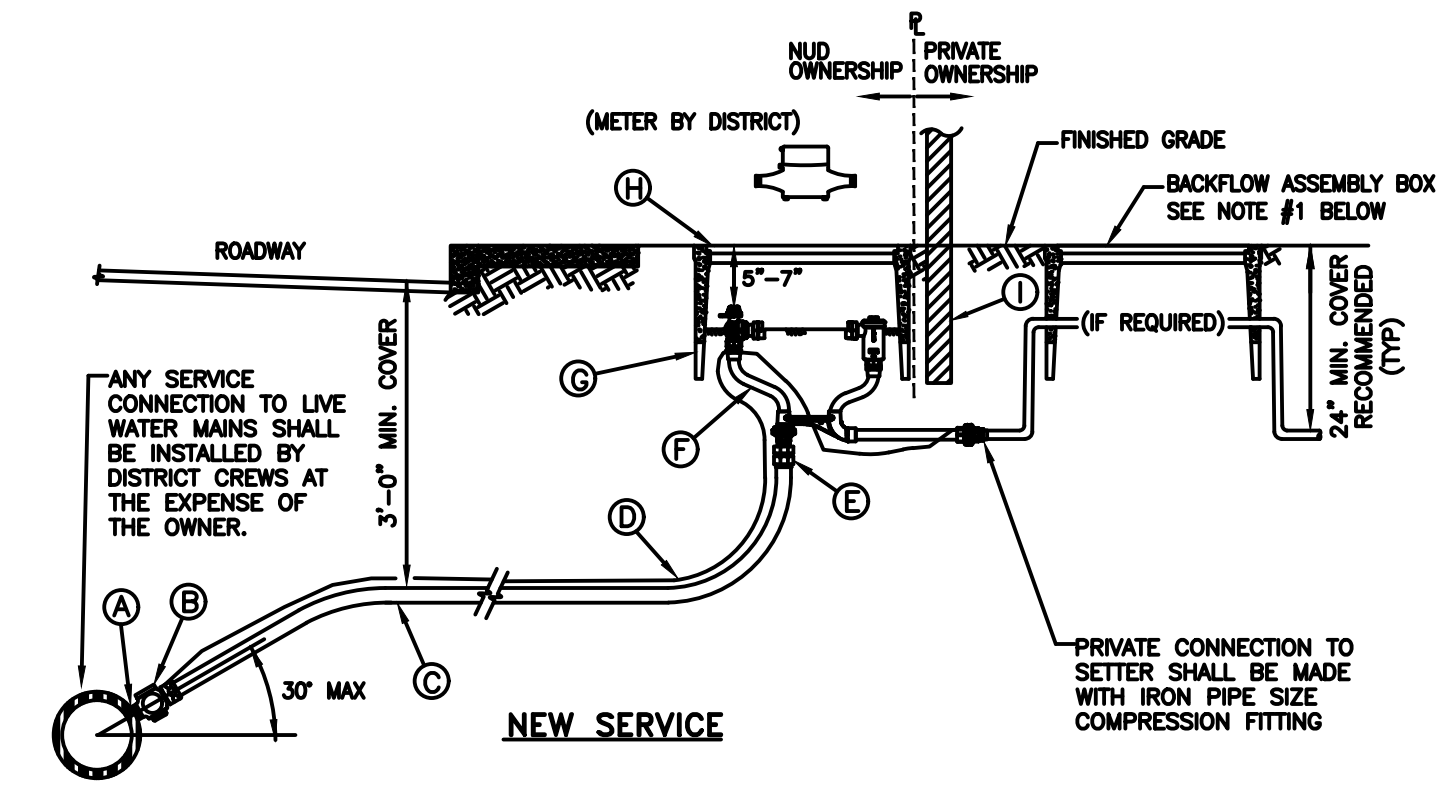
**CONCRETE BLOCKING - HORIZONTAL**

NOT TO SCALE

DETAIL APPROVALS  
EDITOR TDC  
MANAGER DPK

**NORTHSHORE UTILITY DISTRICT**  
2020 STANDARD WATER DETAILS

**1**  
LAST UPDATED FEBRUARY 2018



**MATERIALS LIST**

- (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.
- (B)** 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 FDD202, OR ROMAC 202NS.
- (C)** 1" CORPORATION STOP, CO-PACK JOINT, FORD F1001 OR APPROVED EQUAL, WITH STAINLESS STEEL STIFFENER, FORD INSERT-53-72, A.Y. McDONALD 6136-1", OR MUELLER 505142.
- (D)** 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.
- (E)** 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. INSTALL TRACER WIRE FROM SETTER TO CONNECTION TO THE PRIVATE SERVICE.
- (F)** 1" ADAPTER, MIP-PACK JOINT.
- (G)** 1" METER SETTER WITH DUAL CHECK VALVE: FORD VBHC74-84W-11-44A-FP-NL, A.Y. McDONALD 762-412WDD 44x15, OR MUELLER 390B2588-6A03N
- (H)** METER BOX: ARMORCAST, A6001946PCX12-NUD (NO "MOUSE HOLES") OR DFV, DFV1324CNP4-12-BODY
- (I)** COVER: ARMORCAST, A6001969-H10-NUD OR DFV, DFV1324C-4MT-SMALL-NS-NHK-LID
- (J)** 2"x4"x4", MARKER POST. BURIED AT PROPERTY LINE. PAINTED WHITE WITH "WATER" STENCILED ONTO IT IN BLACK.

- NOTE:**
- 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.
  - ALL PEXa PIPE TO PACK JOINT CONNECTIONS REQUIRE A STIFFENER INSERT.

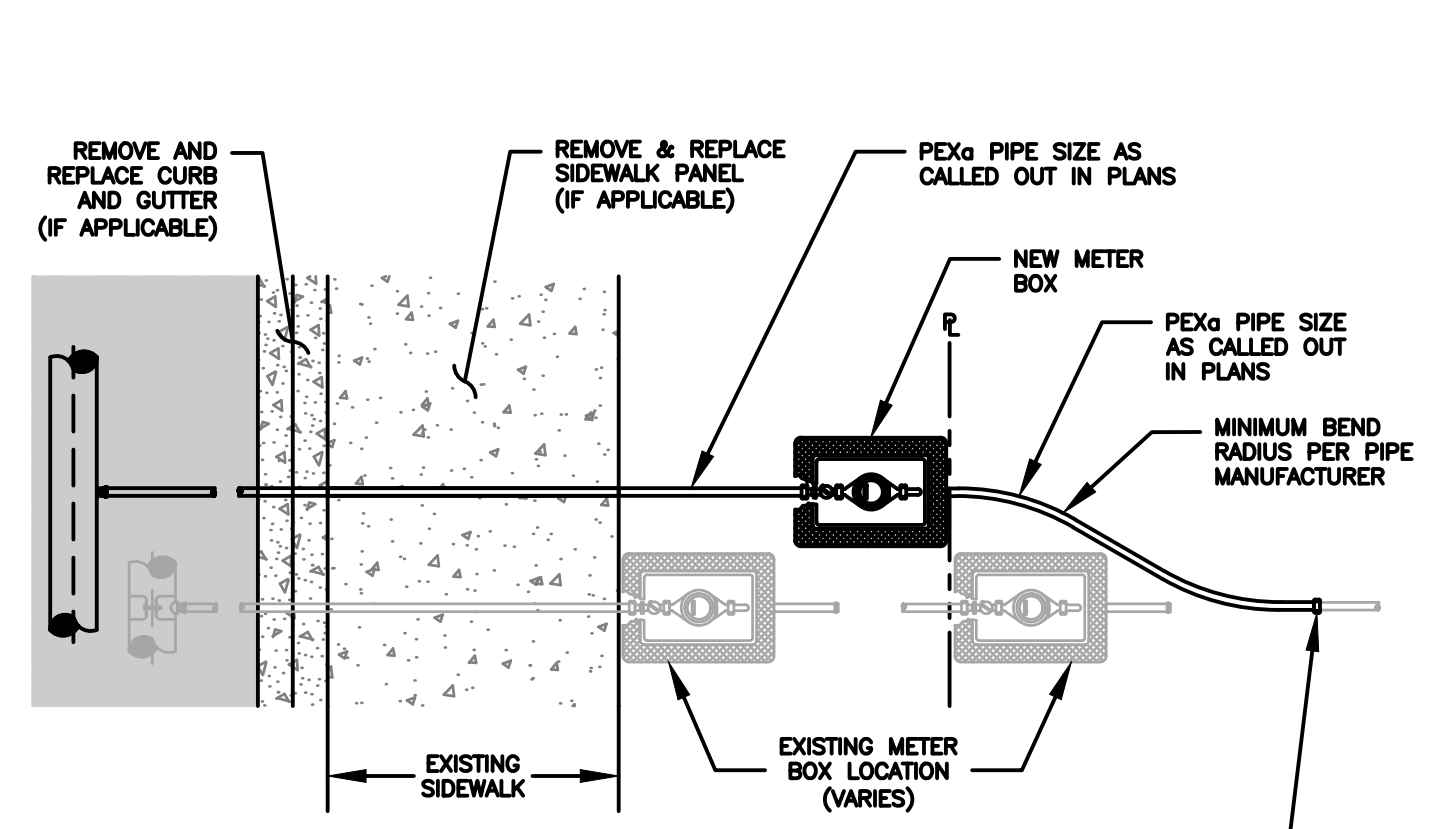
**1" WATER SERVICE**

NOT TO SCALE

DETAIL APPROVALS  
EDITOR TMC  
MANAGER SJD

**NORTHSHORE UTILITY DISTRICT**  
2021 STANDARD WATER DETAILS

**4**  
LAST UPDATED APRIL 2021



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:**
- WATER SERVICE PER NUD STANDARD WATER DETAILS, #4 OR #5.
  - UNLESS SHOWN ON PLANS, RELOCATE NEW METER TO PROPERTY LINE.
  - 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.
  - ALL PIPE FITTINGS SHALL BE BRASS. PRIOR TO MAKING THE CONNECTION, THE CONTRACTOR SHALL POT-HOLE 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.
  - ALL PEXa PIPE TO PACK JOINT CONNECTIONS REQUIRE A STIFFENER INSERT.
  - FLUSH ALL NEW WATER SERVICE PIPING IN THE PRESENCE OF THE DISTRICT.
  - 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.
  - REMOVE AND REPLACE EXISTING METER BOX AND SETTER.
  - RESTORE THE SITE TO A CONDITION EQUAL TO OR BETTER THAN EXISTED PRIOR TO CONSTRUCTION.

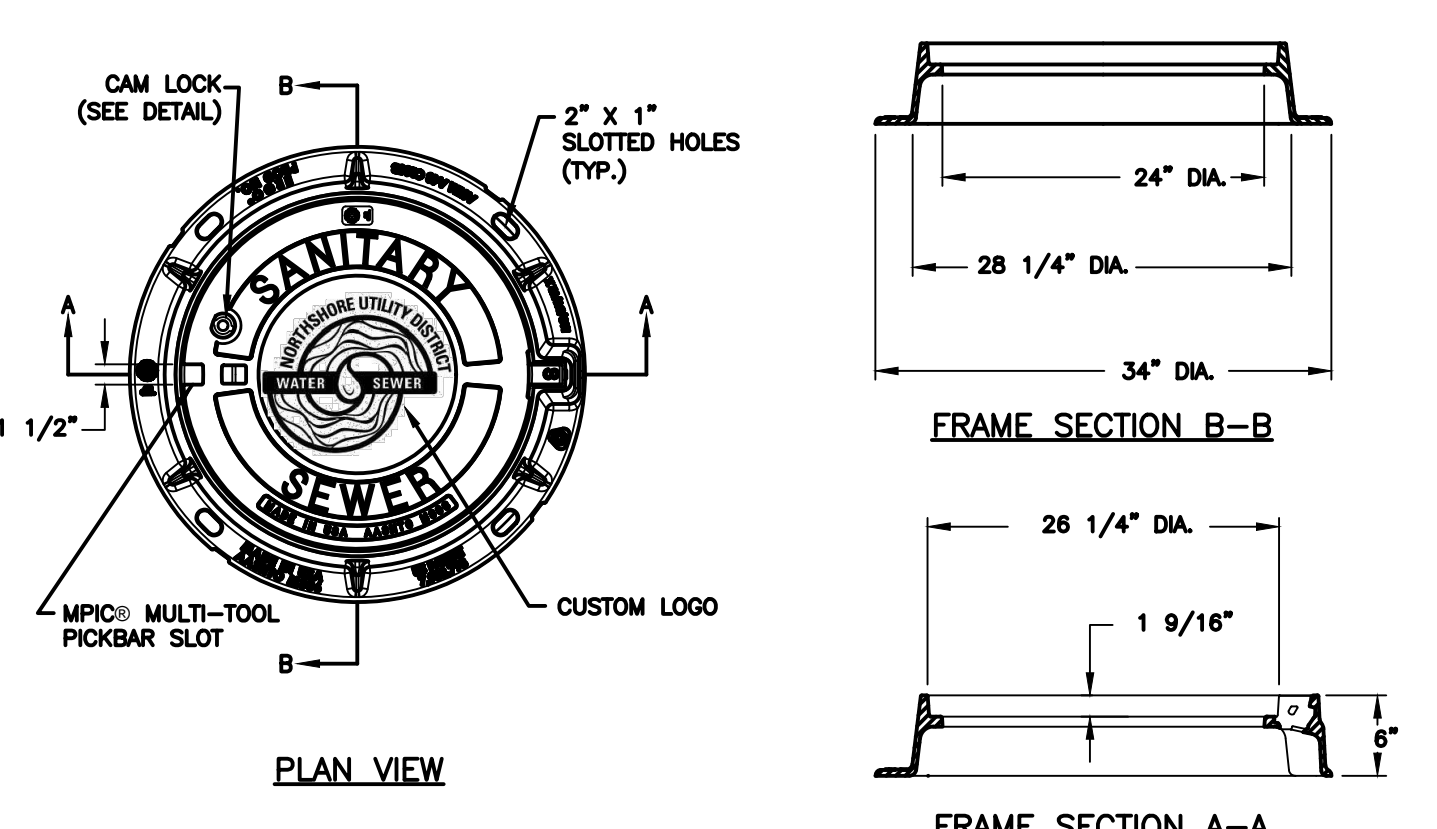
**EXISTING WATER SERVICE RE-CONNECTION**

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DETAIL APPROVALS  
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MANAGER SJD

**NORTHSHORE UTILITY DISTRICT**  
2021 STANDARD WATER DETAILS

**9**  
LAST UPDATED APRIL 2021



- NOTES:**
- MANHOLE FRAME AND COVER SHALL BE EAST JORDAN IRON WORKS ERGO ASSEMBLY, PART NUMBER 001040105L01.
  - FOR PRIVATE MANHOLES, FRAME AND COVER SHALL BE EAST JORDAN IRON WORKS ERGO ASSEMBLY, PART NUMBER 00104043L01. MANHOLE LID TO SAY "SEWER". MANHOLE LID NOT TO INCLUDE NUD LOGO OR NAME.

**MANHOLE LOCKING FRAME AND COVER**

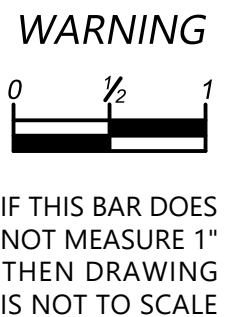
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DETAIL APPROVALS  
EDITOR TMC  
MANAGER SJD

**NORTHSHORE UTILITY DISTRICT**  
2020 STANDARD SEWER DETAILS

**5**  
LAST UPDATED FEBRUARY 2020

NO	BY	APPD	REVISION	DATE

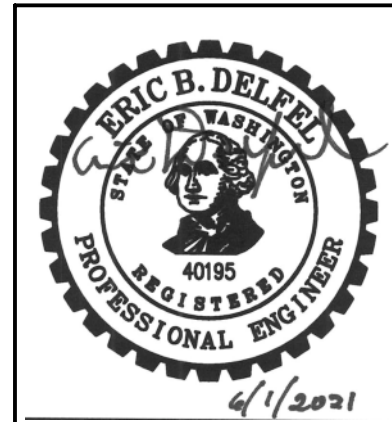


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APPROVAL	EBD
DATE	JUN 2021

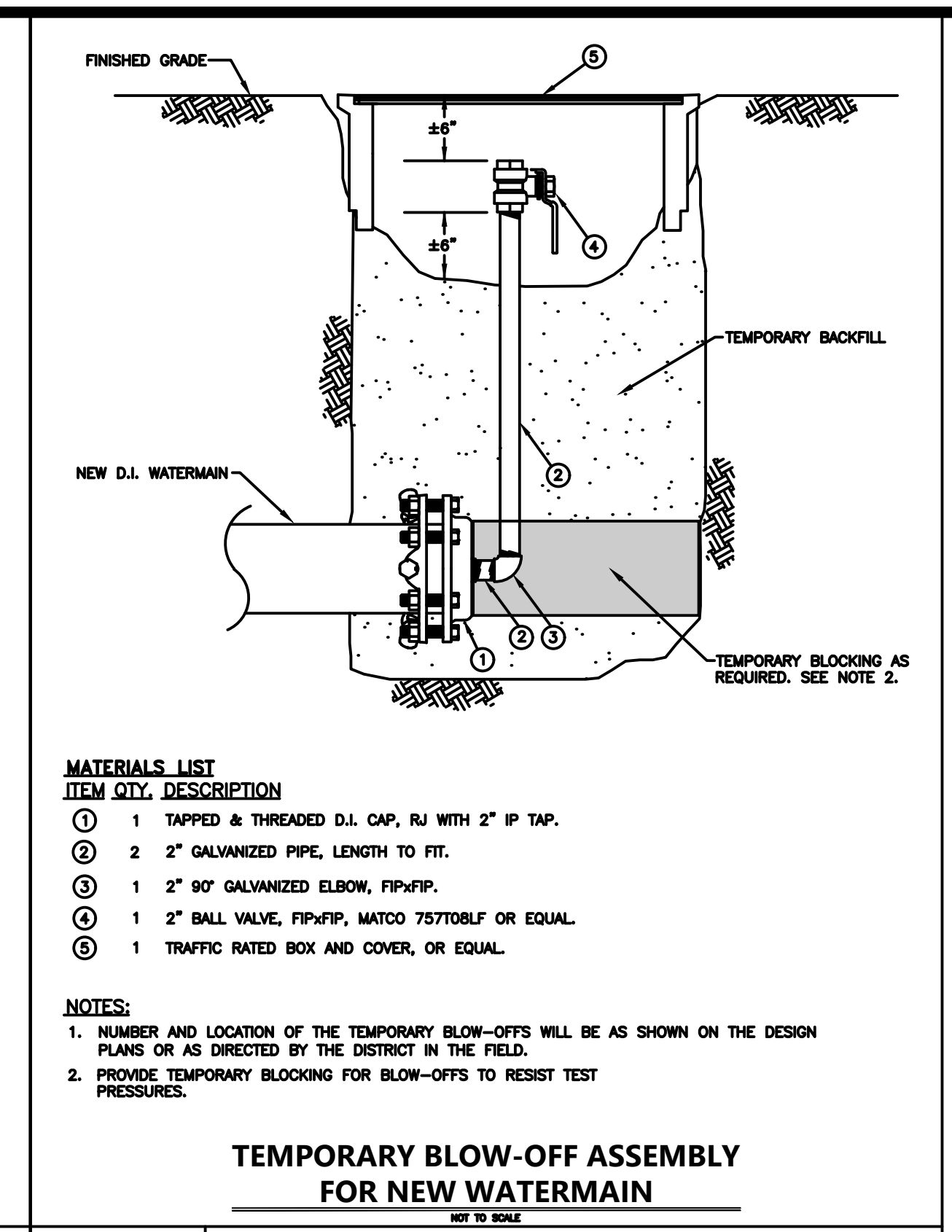
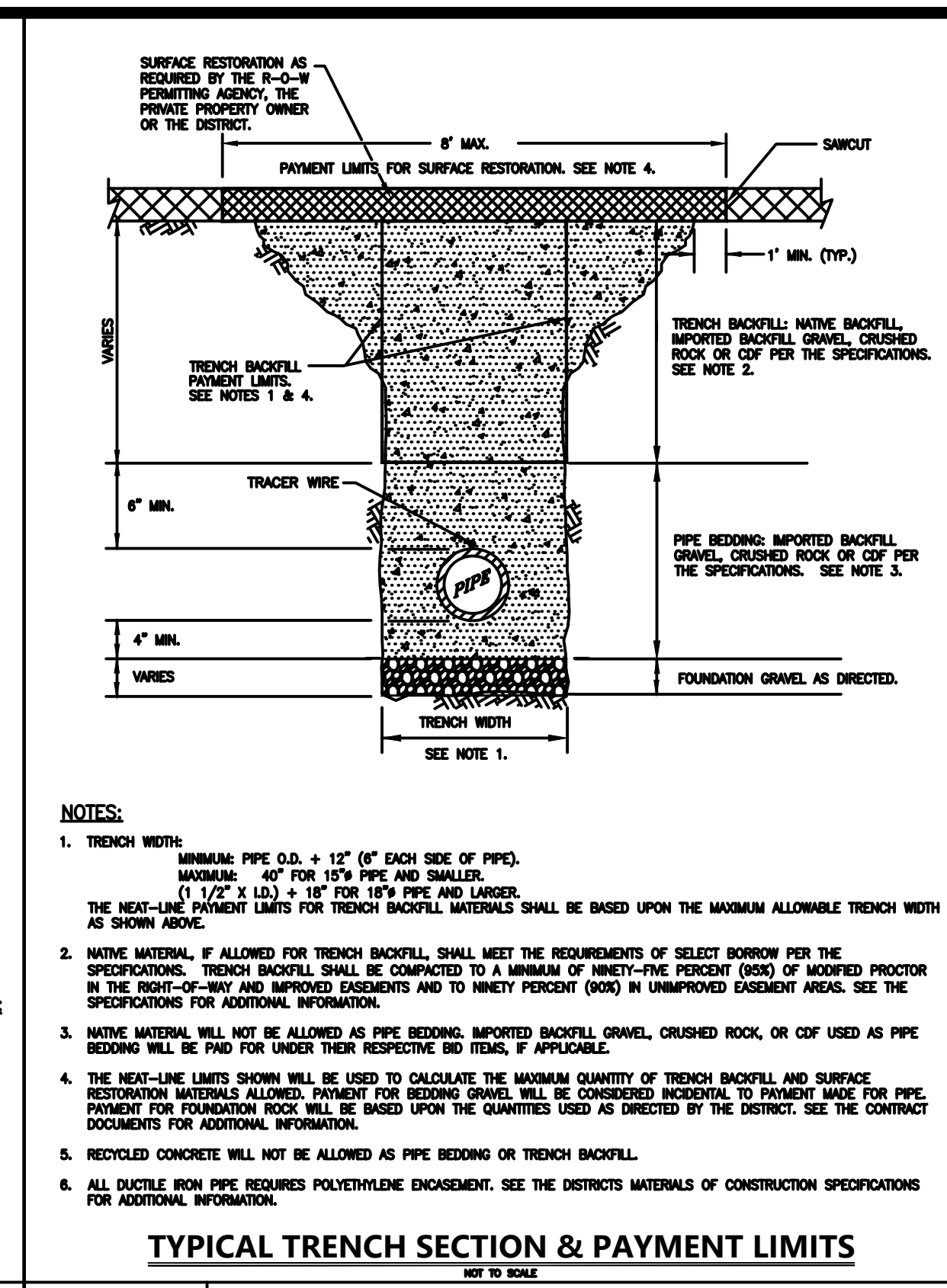
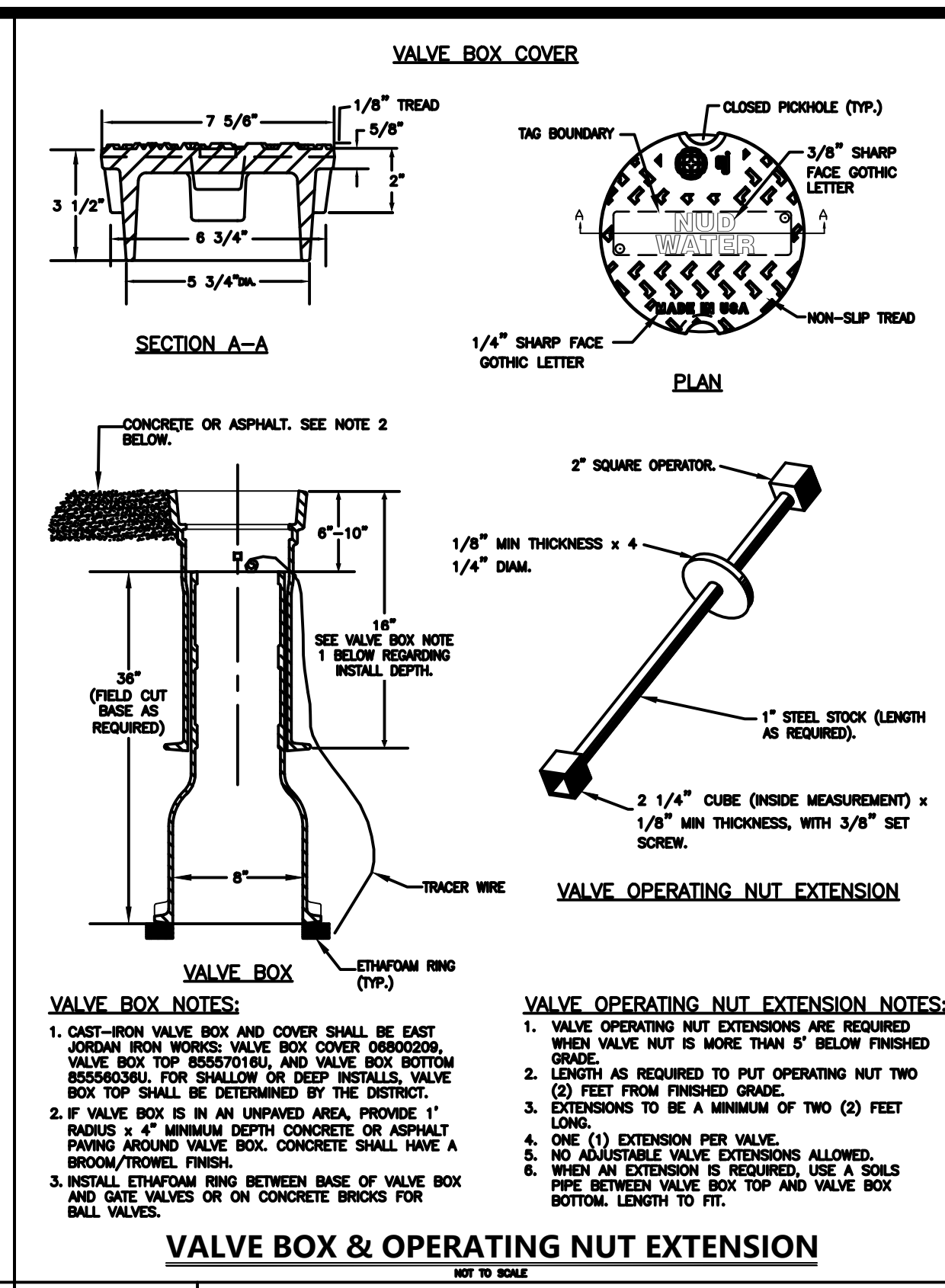
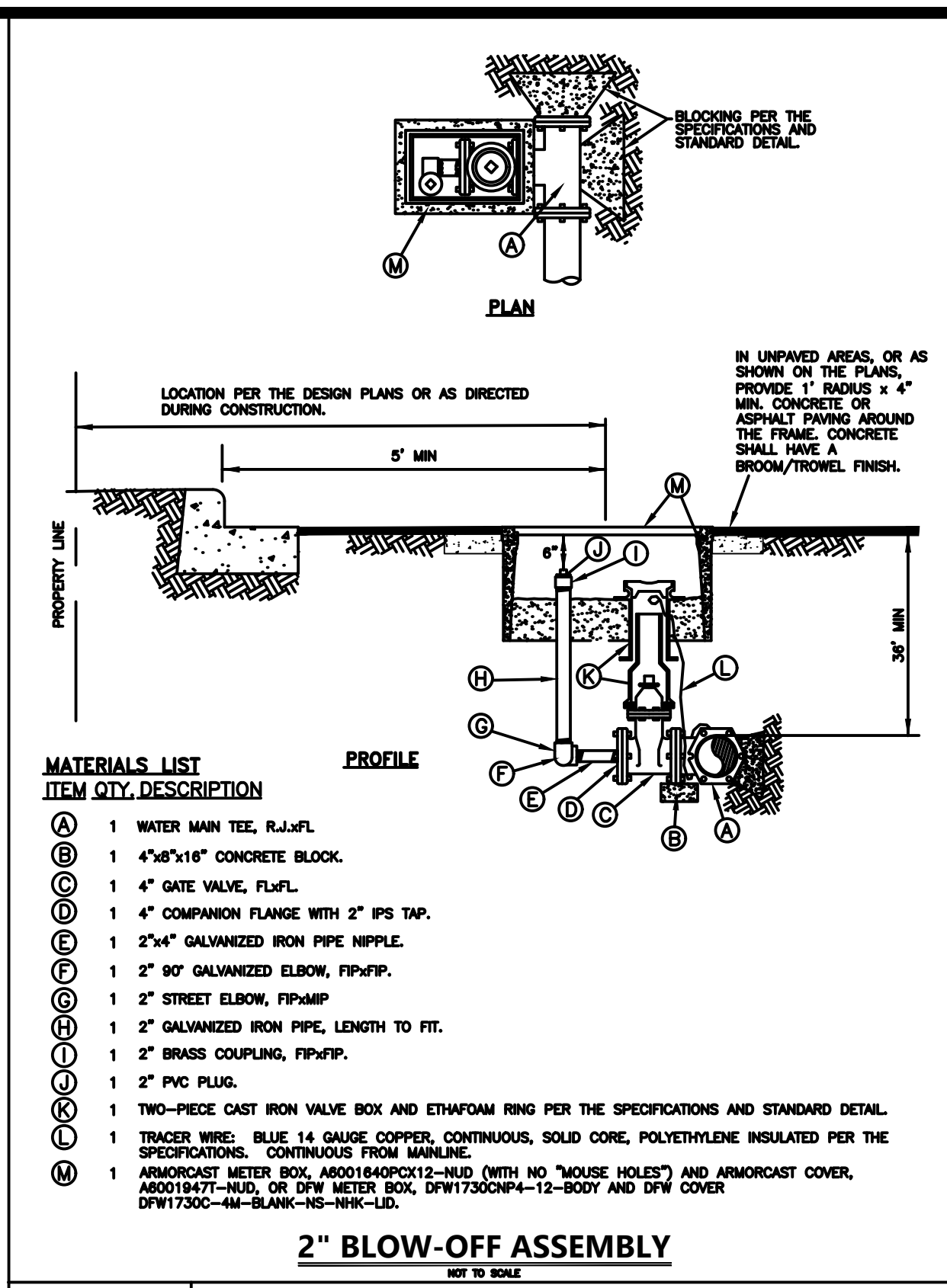


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CONTRACT 2021-02  
PRIVATE WATER SERVICE LINE PROJECT #76  
**STANDARD DETAILS**



BASE MAP H4  
C1922  
SHEET  
10 OF 13

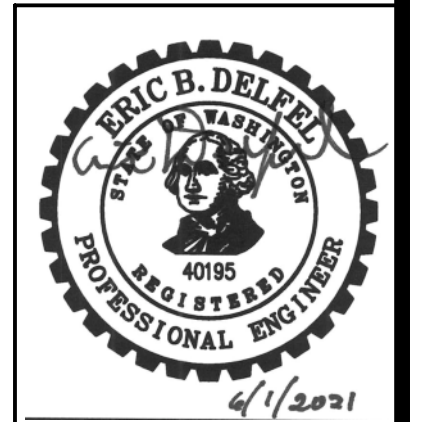
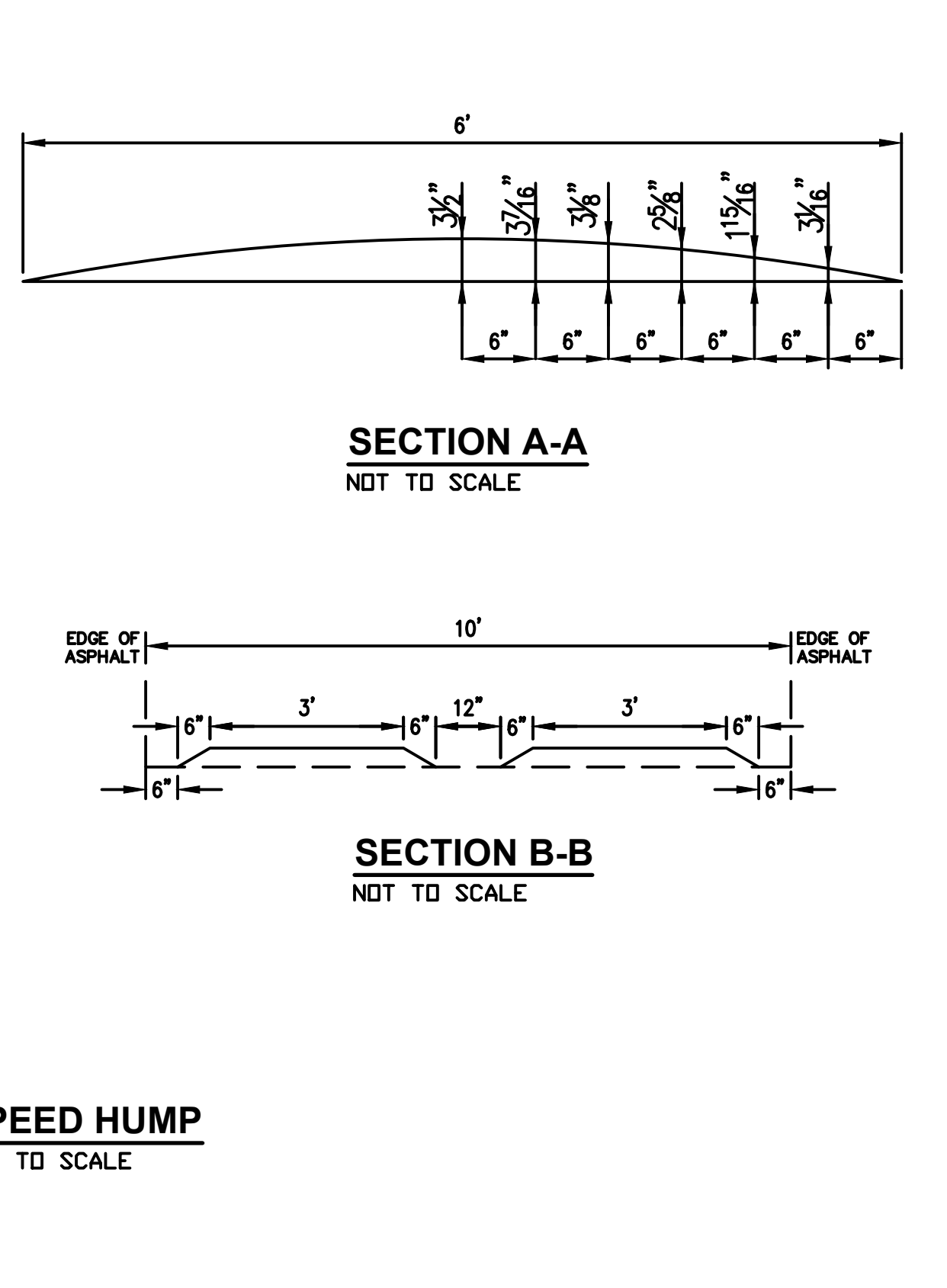
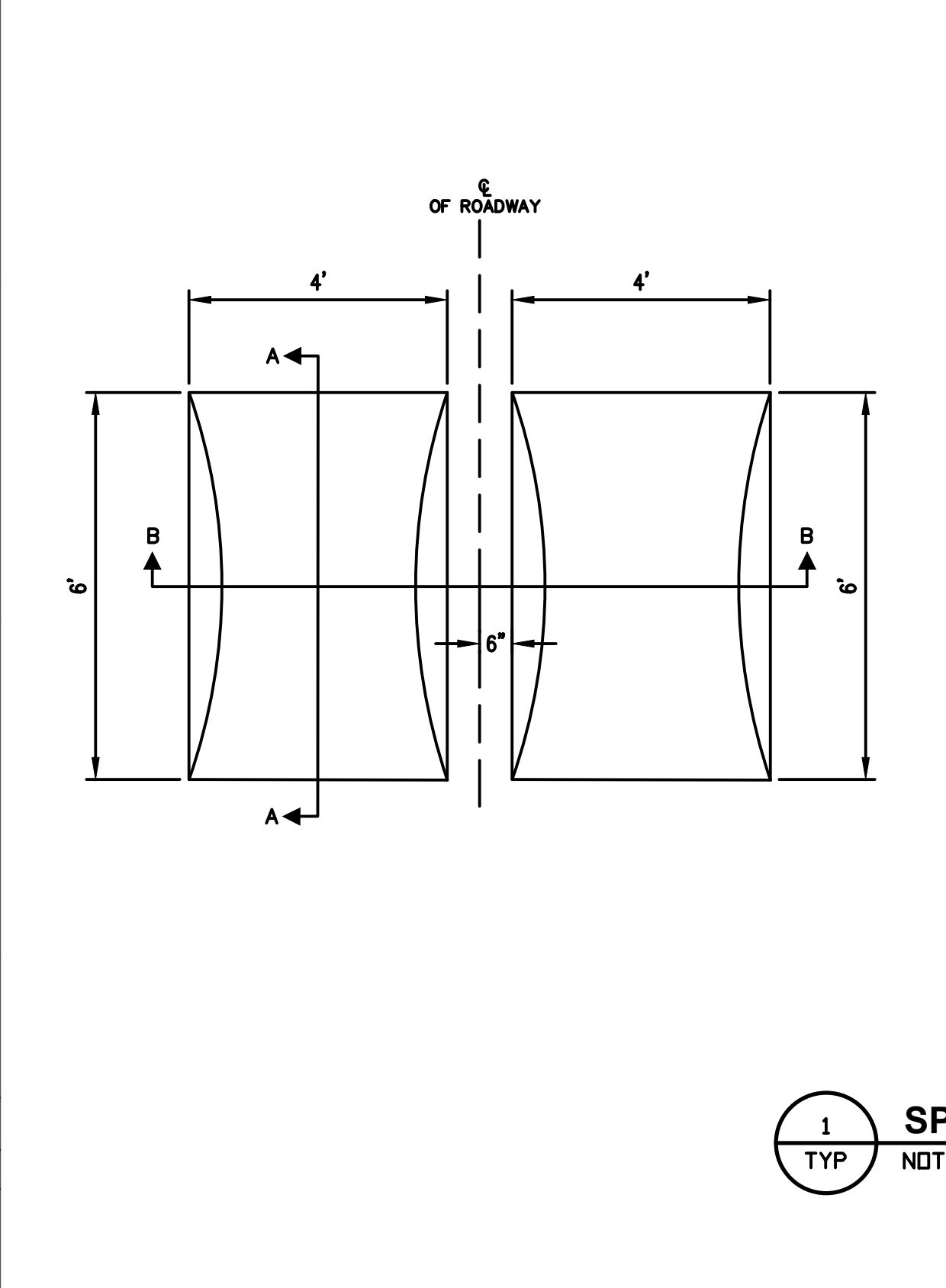
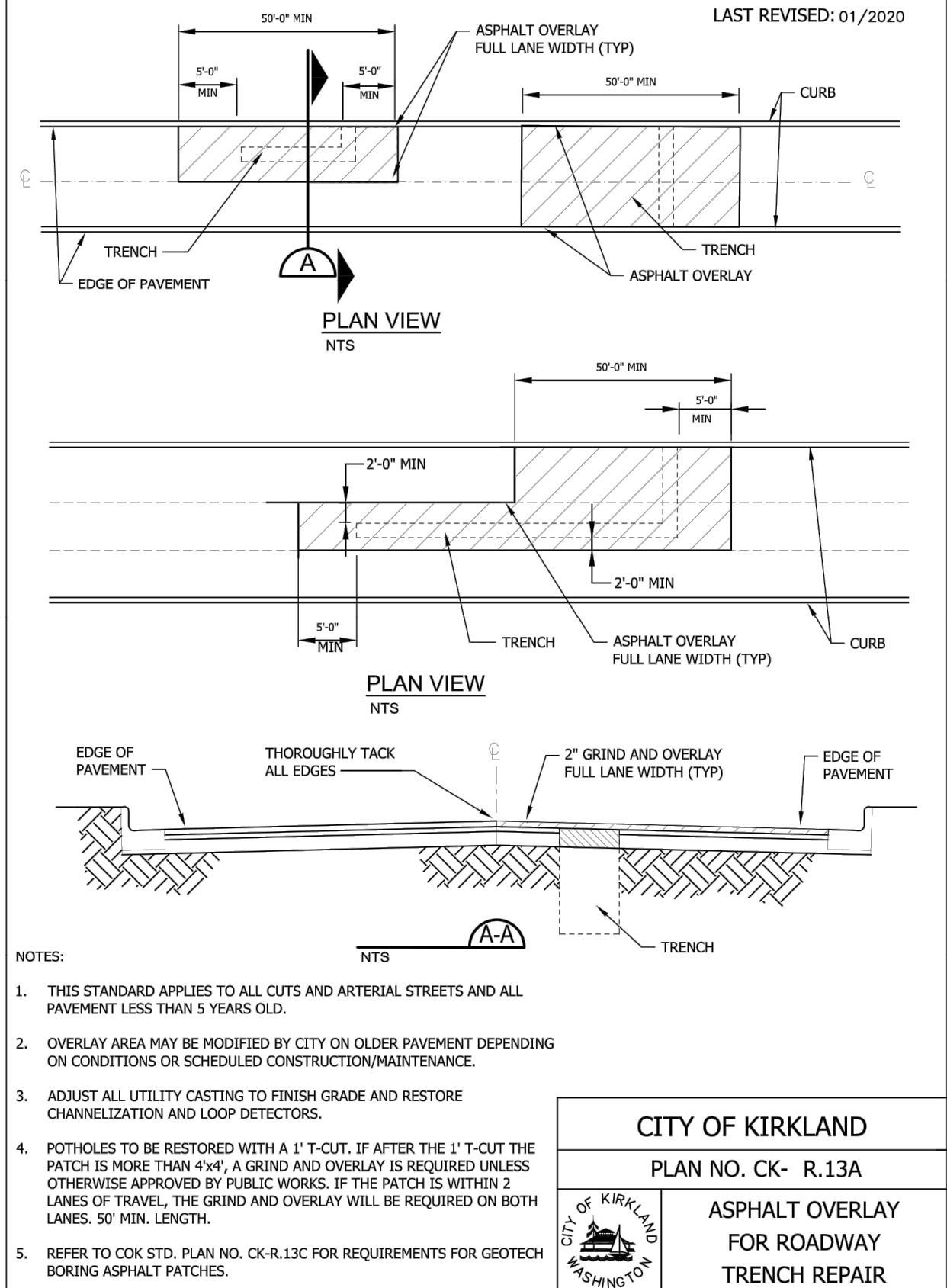


DETAIL APPROVALS: EDITOR T/MC, MANAGER S/D  
**NORTHSHORE UTILITY DISTRICT**  
 2021 STANDARD WATER DETAILS  
 10  
 LAST UPDATED: APRIL 2021

DETAIL APPROVALS: EDITOR T/MC, MANAGER S/D  
**NORTHSHORE UTILITY DISTRICT**  
 2021 STANDARD WATER DETAILS  
 11  
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**NORTHSHORE UTILITY DISTRICT**  
 2021 STANDARD WATER DETAILS  
 12  
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**NORTHSHORE UTILITY DISTRICT**  
 2020 STANDARD WATER DETAILS  
 17  
 LAST UPDATED: FEBRUARY 2020



NO	BY	APPD	REVISION	DATE

**BID SET**

**WARNING**

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

Gray & Osborne, Inc.  
 CONSULTING ENGINEERS

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DRAWN BY	HLT
CHECKED BY	MTM
APPROVAL	EBD
DATE	JUN 2021

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**STANDARD DETAILS**

BASE MAP H4
C1922
SHEET
11 OF 13

SE 1/4, SEC 23, T26N, R4E, WM

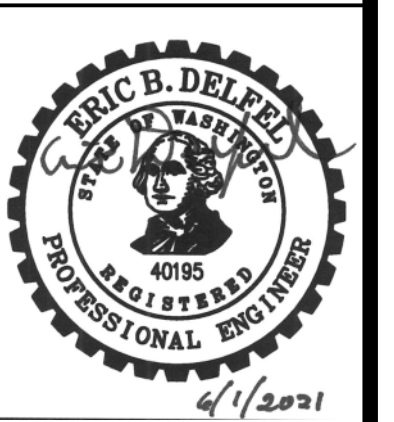
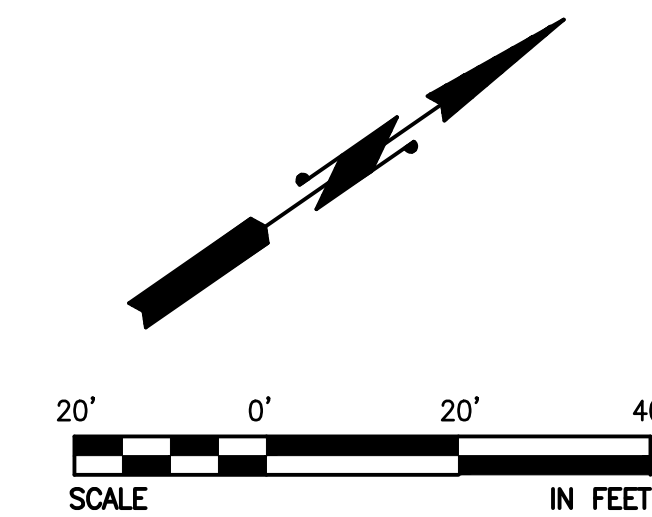


**GENERAL NOTES**

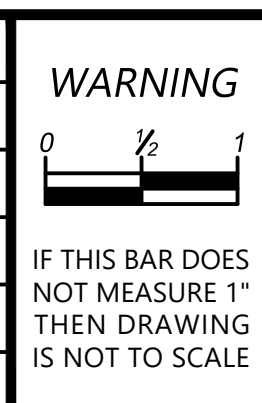
- SIGNS SHALL BE BLACK (NON REFLECTIVE) ON ORANGE (REFLECTIVE) UNLESS NOTED OTHERWISE.
- ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS.
- EXTEND TAPER DEVICES ACROSS SHOULDER.
- MOTORCYCLES USE EXTREME CAUTION SIGNS SHALL BE INSTALLED WHEN THE FOLLOWING ROADWAY CONDITIONS EXIST:
  - GROOVED PAVEMENT
  - ABRUPT LANE EDGE
  - STEEL PLATE
  - LOOSE GRAVEL OR EARTH
- OPEN TRENCHES WITHIN THE TRAVELED SHALL HAVE A STEEL-PLATE COVER PLACED AND ANCHORED OVER THEM. A WEDGE OF SUITABLE ASPHALT MATERIAL SHALL BE PLACED FOR A SMOOTH TRANSITION BETWEEN THE PAVEMENT AND THE STEEL PLATE. WARNING SIGNS SHALL BE USED TO ALERT MOTORISTS OF THE PRESENCE OF STEEL PLATES.
- MAINTAIN ALL PRIVATE ROADWAY AND DRIVEWAY ACCESS AT ALL TIMES.
- SPACING SHOWN IS NOT TO SCALE. FIELD LOCATE TRAFFIC CONTROL DEVICES BASED ON THESE PLANS AND PER THE SPECIFICATIONS.

- CHANNELIZING DEVICE
- TEMPORARY SIGN LOCATION
- FLAGGING STATION
- WORK ZONE

CHANNELIZATION DEVICE SPACING (FEET)		
MPH	TAPER	TANGENT
35/45	10 TO 20	60
25/30	10 TO 20	40



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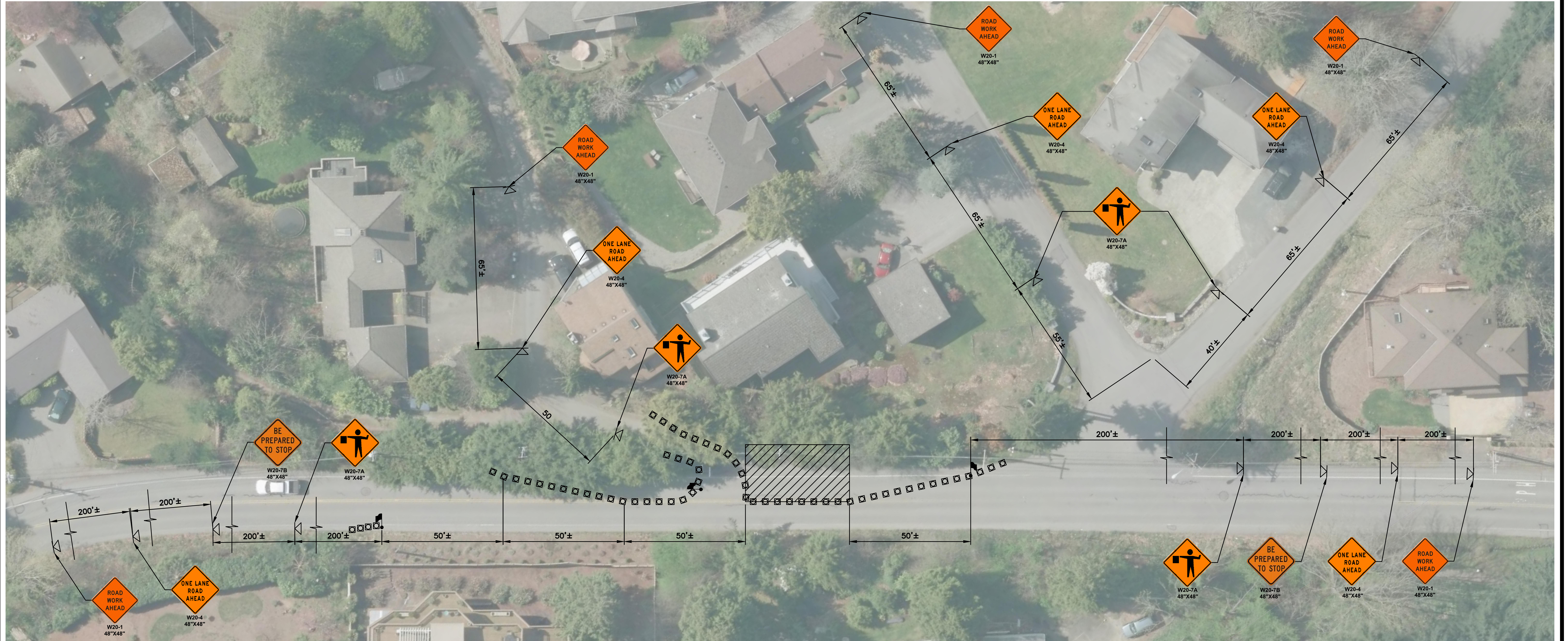
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**TRAFFIC CONTROL PLAN**

BASE MAP H4
C1922
SHEET
12 OF 13

SE 1/4, SEC 23, T26N, R4E, WM

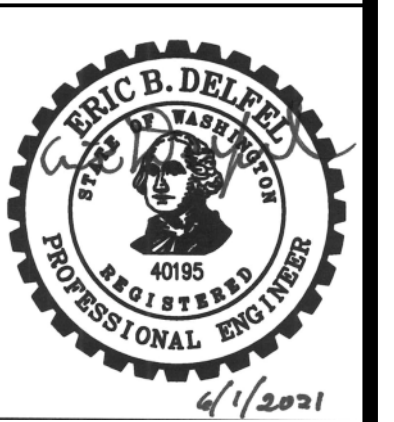
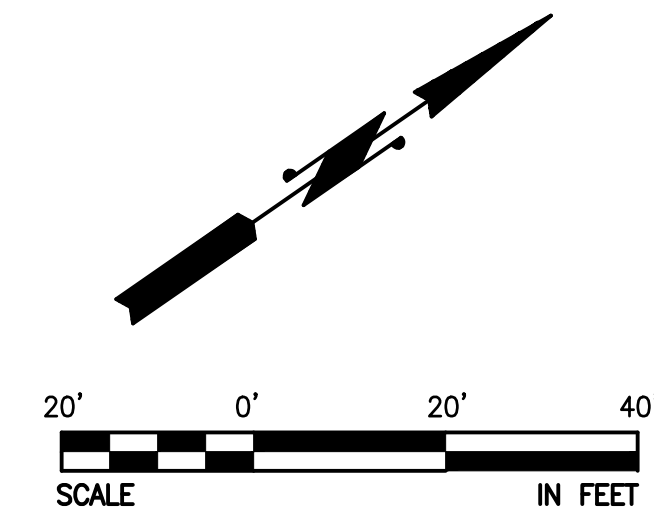


**GENERAL NOTES**

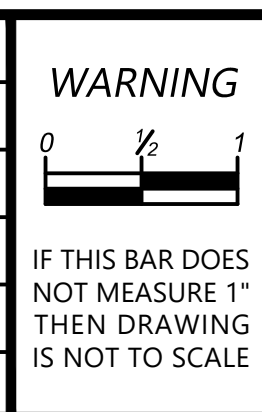
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- MAINTAIN ALL PRIVATE ROADWAY AND DRIVEWAY ACCESS AT ALL TIMES.
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- CHANNELIZING DEVICE
- TEMPORARY SIGN LOCATION
- FLAGGING STATION
- WORK ZONE

CHANNELIZATION DEVICE SPACING (FEET)		
MPH	TAPER	TANGENT
35/45	10 TO 20	60
25/30	10 TO 20	40



NO	BY	APPD	REVISION	DATE
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**TRAFFIC CONTROL PLAN**

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