CITY OF DILLINGHAM, ALASKA
2019 WATER SYSTEM IMPROVEMENTS

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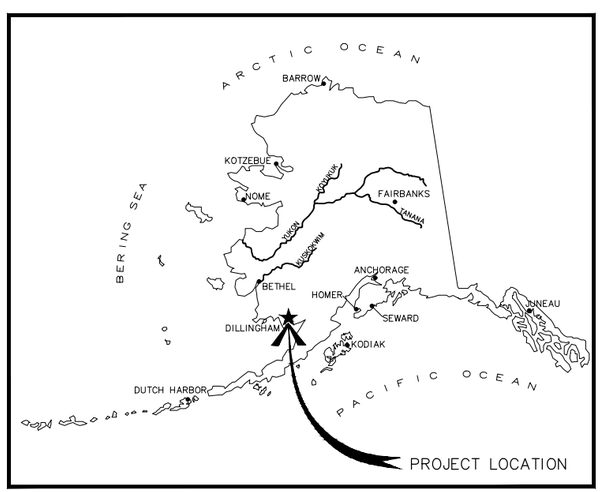
CITY OF DILLINGHAM ALASKA



LOCATION MAP

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CONSULTANT

STATUS:
FINAL DESIGN

DATE:
JULY 2019

PROJECT STATUS

ATTACHMENTS

File: J:\JobsData\21103.01 Dillingham Water System - Task 2\00 CADD\01 Working Set\01 Civil\21103.01 COD Cover.dwg

ABBREVIATIONS

AC = ASBESTOS CONCRETE
ACP = AC PAVEMENT
A.D. = ALGEBRAIC DIFFERENCE
ADOT&PF = ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
APPROX = APPROXIMATE
AWWU = ANCHORAGE WATER & WASTEWATER UTILITY
BM = BENCH MARK
BOP = BOTTOM OF PIPE
BV = BUTTERFLY VALVE
CPEP = CORRUGATED POLYETHYLENE PIPE
CB = CATCH BASIN
CHSCS = CITY OF HOME STANDARD CONSTRUCTION SPECIFICATIONS
CL = CENTERLINE
DIA = DIAMETER
DI = DUCTILE IRON
E = ELECTRICAL, EAST
ELEV. = ELEVATION
E.O.P. = END OF PAVEMENT
E.O.S. = EDGE OF SHOULDER
ESMT = EASEMENT
FH = FIRE HYDRANT
FL = FLANGE
FT = FEET
F&I = FURNISH & INSTALL
GB = GRADE BREAK
GV = GATE VALVE
I.A.W = IN ACCORDANCE WITH
I.D. = INNER DIAMETER
IE = INVERT ELEVATION
INV = INVERT
LF = LINEAR FEET
LT = LEFT
MASS = MUNICIPALITY OF ANCHORAGE STANDARD SPECIFICATIONS
MAX = MAXIMUM
ME = MATCH EXISTING
MFR = MANUFACTURER
MH = MANHOLE
MIN = MINIMUM
MJ = MECHANICAL JOINT
N = NORTH
NO. = NUMBER
N.T.S. = NOT TO SCALE
N/A = NOT APPLICABLE
O.C. = ON CENTER
OG = ORIGINAL GROUND (ELEV.)
OHE = OVERHEAD ELECTRIC
P = PIPE
P.C. = POINT OF CURVATURE
P.I. = POINT OF INTERSECTION
PL = PROPERTY LINE
PP = POWER POLE
P.T. = POINT OF TANGENCY
PVI = POINT OF VERTICAL INTERSECTION
R = RADIUS (LENGTH)
RC = REINFORCED CONCRETE
R.P. = RADIUS POINT
RT = RIGHT
R/W OR ROW = RIGHT-OF-WAY
S = SEWER, SOUTH
SD = STORM DRAIN
SF = SQUARE FEET
S.I. = STREET INTERSECTION
SHLDR = SHOULDER
SS = SANITARY SEWER
S.S. = STAINLESS STEEL
STA = STATION
STD = STANDARD
T = TANGENT (LENGTH)
TBM = TEMPORARY BENCHMARK
TCP = TEMPORARY CONSTRUCTION PERMIT
TWSP = THIN WALL STEEL PIPE
T.O.C. = TOP OF CONCRETE
TYP = TYPICAL
U/G = UNDER GROUND
VB = VALVE BOX
VC = VERTICAL CURVE
VPC = VERTICAL POINT OF CURVATURE
VPI = VERTICAL POINT OF INTERSECTION
VPT = VERTICAL POINT OF TANGENT
W = WATER, WEST

LEGEND

PLAN		
PROPOSED (P)	EXISTING (E)	DESCRIPTION
		RIGHT OF WAY/PROPERTY LINE
		EASEMENT LINE
		EDGE OF PAVEMENT
		EDGE OF GRAVEL
10+00		PROJECT BASELINE STATION
		WATER VALVE
		FIRE HYDRANT
	SD	SANITARY SEWER MANHOLE
		SANITARY SEWER CATCH BASIN
		CULVERT
		ELECTRIC VAULT
		UTILITY TELEPHONE PEDESTAL
		UTILITY POLE
		FENCE
		GUY ANCHOR
		TREE OR BRUSH LINE
	OH&OT	OVERHEAD ELECTRIC & TELEPHONE
	OE	OVERHEAD ELECTRIC LINE
	UE	UNDERGROUND ELECTRIC LINE
	UT	UNDERGROUND TELEPHONE LINE
	F	UNDERGROUND FUEL LINE
	SS	UNDERGROUND SANITARY SEWER LINE
W	W	UNDERGROUND WATER LINE
	SD	UNDERGROUND STORM DRAIN LINE
TW		TEMPORARY WATER
	SS	STORM DRAIN MANHOLE
	TB #	SOIL TEST BORING

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STATE OF ALASKA 49TH
Rebecca L. Campbell
CE-10464
7/1/2019
REGISTERED PROFESSIONAL ENGINEER

PROJECT NO.	CITY GRID	WATER GRID	SEWER GRID
21103.01	–	–	–

CITY OF DILLINGHAM, ALASKA
2019 WATER SYSTEM IMPROVEMENTS

KEY MAP, LEGEND, AND ABBREVIATIONS

DATE: JULY 2019

STATUS: FINAL DESIGN

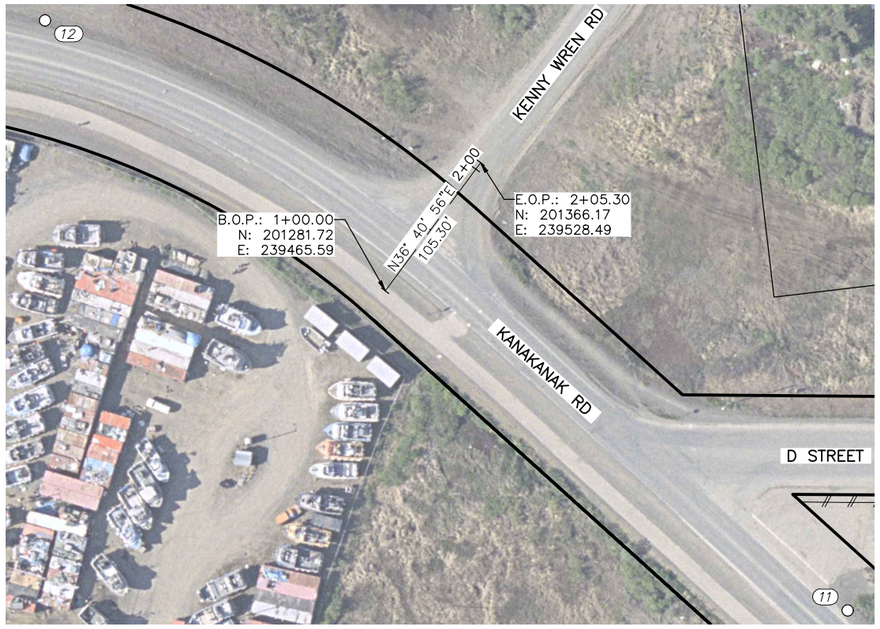
REV	DATE	DESCRIPTION	BY

REVISION

SCALE HOR: 1"=20' VER: 1"=5'
DESIGNED BY AA
DRAWN BY AA
CHECKED BY RLC
APPROVED BY PB

SHEET NO.
C0.2

File: J:\JobsData\21103.01 Dillingham Water System – Task 2\00 CADD\01 Working Set\01 Civil\21103.01 C0D Cover.dwg PLOT DATE: 7/1/2019 4:40 PM



HORIZONTAL CONTROL – KENNY WREN ROAD ALIGNMENT						
POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
12	201460.01	239241.29	35.11	1+08.99	286.39 LT	FOUND 1 1/4" ORANGE PLASTIC CAP ON REBAR 0.5' BELOW GRADE
11	201070.93	239770.57	36.48	1+13.14	370.51 RT	FOUND 1 1/4" ORANGE PLASTIC CAP ON REBAR 0.4' BELOW GRADE

HORIZONTAL CONTROL – BARGE ACCESS ROAD ALIGNMENT						
POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
1773	200360.33	240450.60	38.07	81+33.13	61.48 Lt	FOUND 1/2" REBAR 0.7' BELOW GRADE
1759	200581.06	240503.62	45.43	82+63.47	324.39 Lt	FOUND 5/8" REBAR FLUSH WITH GROUND
1758	200591.96	240532.48	45.89	82+90.83	338.65 Lt	FOUND 5/8" REBAR FLUSH WITH GROUND
1766	200502.91	240323.53	41.23	–	–	FOUND 2" ALUMINUM CAP FLUSH WITH GRADE
1774	200480.16	240319.44	40.33	–	–	FOUND 3 1/2" IRON PIPE WITH NAIL 1' BELOW GRADE

HORIZONTAL CONTROL – 2ND AVENUE ALIGNMENT						
POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
1758	200591.96	240532.48	45.89	86+46.82	272.95 Rt	FOUND 5/8" REBAR FLUSH WITH GROUND
1759	200581.06	240503.62	45.43	86+64.00	298.58 Rt	FOUND 5/8" REBAR FLUSH WITH GROUND
1765	200580.12	240300.65	42.00	87+11.08	496.01 Rt	FOUND REMAINS OF ALUMINUM CAP ON 1/2" REBAR FLUSH WITH CONCRETE SIDEWALK
1764	200506.94	240358.08	41.75	87+69.28	423.44 Rt	FOUND 1 1/2" ALUMINUM CAP FLUSH WITH GRADE
1773	200360.33	240450.60	38.07	87+86.15	322.22 Rt	FOUND 1/2" REBAR 0.7' BELOW GRADE

HORIZONTAL CONTROL STATEMENT

Coordinate System:
This project is located entirely within the Dillingham 1 (DILL–1) adjustment, a U.S. Survey Foot local surface grid coordinate system developed by the Alaska Department of Transportation.

Basis of Coordinates:
The Basis of Coordinates is USC&GS Station DILLINGHAM [1947] (551), a standard USC&GS brass disk on an iron pipe, located three miles from Dillingham along the Wood River Road. Said station has DILL–1 Coordinates of 208,962.8238 N, and 239,478.7397 E.

Basis of Bearings:
The Basis of Bearing is a local plane bearing between USC&GS Station DILLINGHAM [1947] (551), and USC&GS Station DILLINGHAM AZIMUTH MARK No. 1 [1947] (552). DILLINGHAM AZIMUTH MARK No. 1 [1947] (552), a standard USC&GS brass disk on an iron pipe located near the fork in Main Street, bears S 14°13'38" E, a distance of 8,289.40 feet from USC&GS Station DILLINGHAM [1947] (551). DILLINGHAM AZIMUTH MARK No. 1 [1947] has DILL–1 coordinates of 200,927.6709 N and 241,516.0086 E.

Translation Parameters:
To convert the local coordinates to NAD83 (92) State Plane Zone 6 US feet coordinates, translate using +1,640,584.5220 N, +1,312,468.5499, and scale using 0.9999111843.

VERTICAL CONTROL STATEMENT
Vertical Datum is Tidal Mean Lower Low Water (MLLW) published by NOAA, as determined by level loops performed by AKDOT&PF between the following benchmarks:

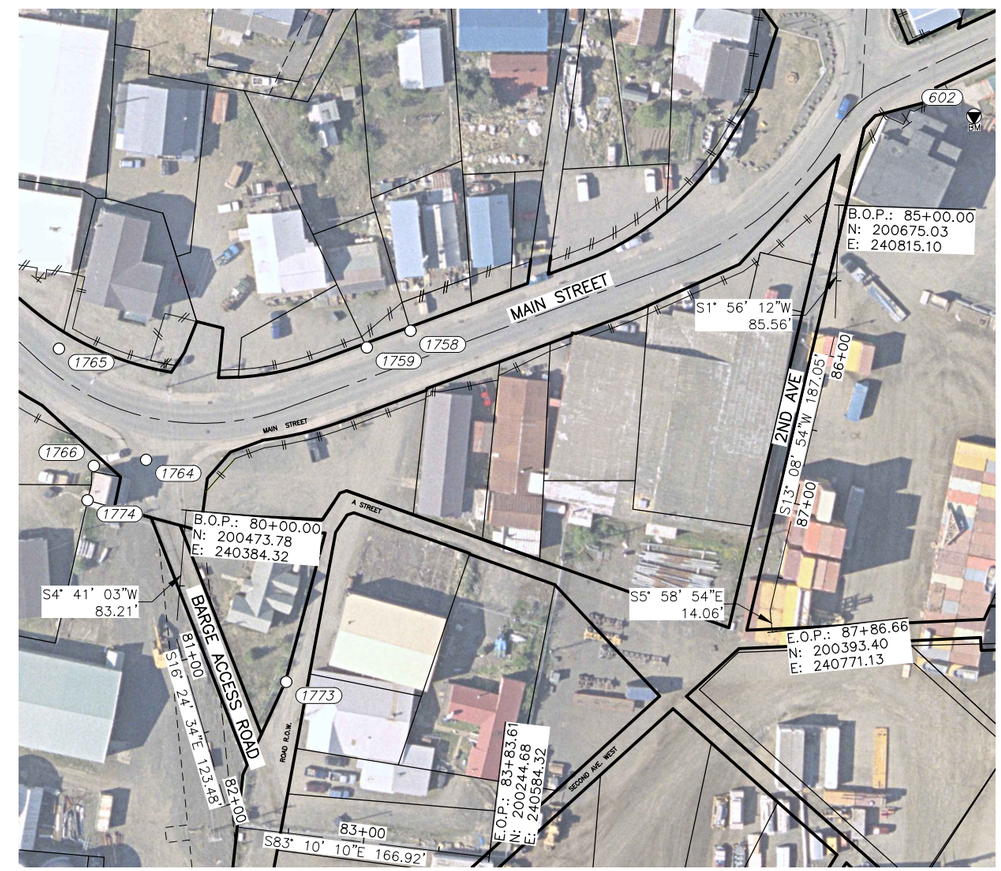
- National Ocean Service (NOS) "BM 5374 B 2007" (601), an encased brass cap on stainless steel rod with datum point affixed, located behind the western end of the seawall south of the Bristol Inn, has a tidal MLLW elevation of 24.68'.
- NOS "BM 5374 D 2007" (602), a brass cap cemented in a concrete patio between a city office building and preschool, has a tidal MLLW elevation of 60.25'.

Elevations on horizontal control points were established by CRW using GPS.

All elevations on control points and benchmarks need to be field verified before they are used.

LEGEND	
(123)	CONTROL POINT #
BM	BENCHMARK
⊕	PRIMARY MONUMENT
○	SECONDARY MONUMENT

VERTICAL CONTROL				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
602	200733.64	240904.24	60.25	FOUND 3 1/2" BRASS CAP MONUMENT FLUSH WITH CONCRETE



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Michael L. Jokela
LS-7839
6/26/2019
REGISTERED PROFESSIONAL LAND SURVEYOR

PROJECT NO. 21103.01
CITY GRID –
WATER GRID –
SEWER GRID –

CITY OF DILLINGHAM, ALASKA
2019 WATER SYSTEM IMPROVEMENTS

SURVEY CONTROL SHEET

DATE: JULY 2019
STATUS: FINAL DESIGN

REV	DATE	DESCRIPTION	BY

REVISION

SCALE HOR. 1"=50' VER. N/A
DESIGNED BY AA
DRAWN BY TDS
CHECKED BY MLJ
APPROVED BY PB

SHEET NO.
CO.3

PLOT DATE: 7/1/2019 4:41 PM
File: J:\JobsData\21103.01 Dillingham Water System – Task 2\00 CADD\01 Working Set\02 Survey\03 Survey Control\21103.01 SCS.dwg

HORIZONTAL CONTROL – MAIN STREET EAST ALIGNMENT

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
552	200927.71	241515.92	94.18	55+02.66	33.43 Rt	FOUND 3 1/2" BRASS CAP MONUMENT 0.3' ABOVE GROUND
807	200815.16	241761.11	94.27	57+48.91	143.61 Rt	FOUND 1 3/4" RED PLASTIC CAP FLUSH WITH SURFACE
817	200973.35	241805.29	86.93	57+91.57	15.00 Lt	FOUND 5/8" REBAR 0.3' BELOW SURFACE
806	200694.45	241828.00	84.08	58+16.96	263.67 Rt	FOUND 1 3/4" RED PLASTIC CAP FLUSH WITH SURFACE
823	200693.92	241888.55	83.70	58+77.52	263.62 Rt	FOUND 1 3/4" RED PLASTIC CAP FLUSH WITH SURFACE
818	200978.01	241975.52	87.90	59+61.75	21.29 Lt	FOUND 5/8" REBAR AT SURFACE, BENT
816	200926.79	242010.57	88.39	59+97.29	29.59 Rt	FOUND 1 3/4" RED PLASTIC CAP 0.1' ABOVE SURFACE
821	200926.37	242099.57	91.26	60+86.29	29.15 Rt	FOUND 5/8" REBAR AT SURFACE, BENT
819	200977.49	242104.82	89.50	60+91.04	22.02 Lt	FOUND 5/8" REBAR AT SURFACE
820	200975.69	242274.52	86.65	62+60.75	21.86 Lt	FOUND 5/8" REBAR 0.3' ABOVE SURFACE
822	200924.21	242317.11	87.11	63+58.61	25.81 Rt	FOUND 5/8" REBAR 0.45' ABOVE SURFACE
813	200691.79	242096.36	81.28	65+92.17	245.35 Rt	FOUND 5/8" REBAR 0.6' BELOW SURFACE

HORIZONTAL CONTROL – D STREET EAST ALIGNMENT

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
809	201280.95	241547.93	85.84	90+16.81	12.45 Rt	FOUND 2" ALUMINUM CAP FLUSH WITH PAVEMENT
817	200973.35	241805.29	86.93	92+74.41	319.84 Rt	FOUND 5/8" REBAR 0.3' BELOW SURFACE

LEGEND	
(123)	CONTROL POINT #
BM	BENCHMARK
⊕	PRIMARY MONUMENT
○	SECONDARY MONUMENT

50' 0 50' 100'

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PROJECT NO.	CITY GRID	WATER GRID	SEWER GRID
21103.01	–	–	–

CITY OF DILLINGHAM, ALASKA
2019 WATER SYSTEM IMPROVEMENTS

SURVEY CONTROL SHEET

STATUS: FINAL DESIGN
DATE: JULY 2019

REV	DATE	DESCRIPTION	BY

REVISION

SCALE HOR: 1"=50' VER: N/A
DESIGNED BY AA
DRAWN BY TDS
CHECKED BY MLJ
APPROVED BY PB

SHEET NO.
C0.4

File: J:\JobsData\21103.01 Dillingham Water System – Task 2\00 CADD\01 Working Set\02 Survey\03 Survey Control\21103.01 SCS.dwg PLOT DATE: 7/1/2019 4:41 PM

SCOPE OF WORK

THE CITY OF DILLINGHAM 2019 WATER SYSTEM IMPROVEMENTS PROJECT WILL CONSTRUCT 105 FEET OF NEW 10-INCH DUCTILE IRON WATER MAINS AND 2103 FEET OF 8-INCH DUCTILE IRON PIPE TO REPLACE EXISTING ASBESTOS PIPE WATER MAINS. THE WATER MAINS WILL BE INSTALLED BY OPEN TRENCH CONSTRUCTION. THE PROJECT WILL INSTALL 20 GATE VALVES, AND 18 WATER SERVICES.

EXISTING WATER SERVICES WERE NOT LOCATED DURING DESIGN. CONTRACTOR SHALL FIELD VERIFY EXISTING SERVICES INCLUDING KEY BOX LOCATIONS PRIOR TO INSTALLATION OF NEW SERVICES. WATER SERVICES SHALL EXTEND TO THE PROPERTY LINE UNLESS A SEPARATE AGREEMENT IS DEVELOPED WITH THE PROPERTY OWNER TO EXTEND SERVICE TO 5' FROM THE PROPERTY STRUCTURE (AT THE HOMEOWNER'S EXPENSE).

THE EXISTING ASBESTOS PIPE WILL BE USED AS A TEMPORARY WATER SYSTEM DURING CONSTRUCTION.

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE INSTALLED AS SPECIFIED IN THE 2015 EDITION OF THE MUNICIPALITY OF ANCHORAGE (MOA) STANDARD SPECIFICATIONS (HEREINAFTER REFERRED TO AS MASS); THE MOST RECENT VERSION OF THE AWWU DESIGN AND CONSTRUCTION PRACTICES MANUAL (DCPM); AND THE SPECIAL PROVISIONS.
2. MAINTAIN A MINIMUM OF TEN (10) FEET HORIZONTAL AND EIGHTEEN (18) INCHES VERTICAL SEPARATION BETWEEN WATER AND SANITARY OR STORM SEWER MAINS AND SERVICES.
3. MAINTAIN A MINIMUM OF 36 INCHES OF VERTICAL SEPARATION BETWEEN ANY STORM SEWER (STORM DRAIN OR FOOTING DRAIN) AND WATERLINE (MAINS OR SERVICES) OR SANITARY SEWER (MAINS OR SERVICES). IF 36 INCHES CANNOT BE MAINTAINED, PROVIDE A MINIMUM R-20 INSULATION. IF EIGHTEEN (18) INCHES CANNOT BE MAINTAINED, RELOCATE WATER MAIN.
4. CONSTRUCT WATER MAIN SO THAT JOINTS ARE EQUIDISTANT FROM EXISTING SANITARY SEWER AND EXISTING STORM SEWER PIPES.
5. HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
6. CONTRACTOR SHALL VERIFY AND RECORD THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES ENCOUNTERED IN THE FIELD AND RECORD ANY CHANGES ON THE CONTRACTOR RECORD DRAWINGS.
7. THE CONTRACTOR SHALL RESTORE ALL DISTURBED PROPERTY, INCLUDING DRAINAGE SWALES, DISTURBED BY CONTRACT ACTIVITIES TO PRECONSTRUCTION CONDITION OR AS SHOWN ON THE PLANS. TOPSOIL & SEED DISTURBED PERVIOUS AREAS.
8. IN CASE OF CONFLICT BETWEEN STATIONING OR DIMENSIONED LOCATION OF PIPE OR FITTINGS, USE DIMENSIONED LOCATIONS RELATIVE TO THE CENTERLINE AND PROPERTY LINE. THE DIMENSIONED LOCATIONS SHALL GOVERN.
9. THE CONTRACTOR SHALL RECORD SURVEY NOTES IN A FORMAT SIMILAR TO THAT SHOWN IN MASS DIVISION 65 FOR SUBMITTAL WITH RECORD DRAWING PLANS PRIOR TO CONTRACT FINAL PAYMENT.
10. ALL WATER PIPE INSULATION SHALL BE RIGID BOARD, HIGH DENSITY EXTRUDED POLYSTYRENE MIN. 60 P.S.I., FOR UNDERGROUND INSTALLATIONS EQUIVALENT TO R-20.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS AS NECESSARY TO COMPLY WITH FEDERAL, STATE, AND MUNICIPAL LAWS THAT PROHIBIT UNPERMITTED DISCHARGE OF POLLUTANTS, INCLUDING SEDIMENTS, THAT ARE A RESULT OF EROSION AND OTHER CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CONDUCT ALL WORK SO SEDIMENT IS NOT TRANSPORTED ONTO THE ROADWAY OR ADJACENT PROPERTY. AT A MINIMUM, THE CONTRACTOR SHALL SWEEP UP ANY SEDIMENT TRACKED ONTO PAVED SURFACES IN PUBLIC RIGHT-OF-WAY WITHIN 24 HOURS OF THE TRACKING TO MINIMIZE THE WASH-OFF OF SEDIMENT INTO THE STORM DRAINS OR WATERWAYS.
12. WATER RESULTING FROM CONTRACTOR'S DEWATERING EFFORT MAY NOT BE PUMPED OR OTHERWISE DIVERTED INTO EXISTING STORM DRAINS UNLESS PERMITS ARE OBTAINED BY THE CONTRACTOR, INCLUDING BUT NOT LIMITED TO, THOSE REQUIRED BY THE ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION. UNDER NO CIRCUMSTANCES WILL THE CONTRACTOR BE ALLOWED TO DIVERT WATER FROM AN EXCAVATION ONTO ROADWAYS. CONTRACTOR SHALL PROVIDE A DISPOSAL SITE FOR EXCESS WATER AND SHALL BE RESPONSIBLE FOR SECURING ALL NECESSARY PERMITS AND APPROVALS. CONTRACTOR SHALL PROVIDE COPIES OF NECESSARY PERMITS AND APPROVALS TO THE CITY OF DILLINGHAM.
13. "BOP" IS DEFINED AS THE OUTSIDE BOTTOM OF PIPE. INVERT "INV" IS DEFINED AS THE INSIDE BOTTOM OF PIPE.
14. DAMAGE TO SEWER SERVICE CONNECTIONS MADE DURING WATERLINE CONSTRUCTION SHALL BE REPAIRED USING APPROVED MATERIALS WITH APPROVED COUPLINGS, AT CONTRACTOR'S EXPENSE.
15. CAUTION!! UNDERGROUND UTILITIES EXIST WITHIN THE PROJECT AREA. CONTRACTOR SHALL CALL FOR UTILITY LOCATES PRIOR TO BEGINNING CONSTRUCTION.
16. ALL WORK SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
17. THE LOCATION OF THE EXISTING FEATURES AND UTILITIES SHOWN IN THESE DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES ENCOUNTERED AND RECORD THEIR LOCATION ON THE CONTRACT RECORD DRAWINGS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER. CONTRACTOR SHALL ADJUST ALIGNMENT OR GRADE OF PROPOSED PIPING AS NECESSARY TO AVOID CONFLICTS WITH EXISTING UTILITIES.
18. ANY EXISTING SURVEY MONUMENTATION DISTURBED BY CONTRACTOR OPERATIONS SHALL BE REPLACED AT CONTRACTOR'S EXPENSE BY SURVEYOR LICENSED TO PRACTICE IN THE STATE OF ALASKA.
19. EXISTING AC PIPE MAY BE ABANDONED IN PLACE WHERE CONSTRUCTION DOESN'T REQUIRE ITS REMOVAL. ABANDON EXISTING WATER WITH A SAND SLURRY I.A.W SPECIFICATIONS.

WATER NOTES

1. CITY OF DILLINGHAM, DILLINGHAM FIRE DEPARTMENT AND EXISTING CUSTOMERS SHALL BE NOTIFIED SEVENTY-TWO (72) HOURS IN ADVANCE OF WATER SERVICE INTERRUPTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY WATER SERVICE TO THE EXISTING CUSTOMERS IF THE OUTAGE EXCEEDS 6-HOURS OR IF DEEMED NECESSARY BY THE ENGINEER.
2. ALL WATER MAINS SHALL BE ZINC COATED DUCTILE IRON CLASS 52 PIPE AS SHOWN IN THE PLANS, CONFORMING TO THE REQUIREMENTS OF MASS SECTION 60.02 FURNISH AND INSTALL PIPE.
3. ALL VALVES, BENDS, TEES, FIRE HYDRANTS AND DEAD-ENDS SHALL BE MECHANICALLY RESTRAINED, EBAA IRON MEGALUG SERIES 1100 OR APPROVED EQUAL UNLESS OTHERWISE NOTED.
4. RESTRAIN ALL PIPING AND APPURTENANCES AS SHOWN ON SHEET C7.0 TO THE RESTRAINT LENGTHS SHOWN.
5. NO PIPE LENGTH LESS THAN EIGHT FEET (8') SHALL BE INCORPORATED IN THE WATER SYSTEM EXCEPT FOR THOSE NECESSARY FOR FIRE HYDRANTS OR VALVE LOCATIONS UNLESS RESTRAINED.
6. THE CONTRACTOR SHALL PROVIDE ALL SETUP AND TEAR DOWN REQUIRED TO OPEN BORE FLUSH NEWLY INSTALLED WATER PIPE. THE CITY WILL PROVIDE FLUSH WATER FROM THEIR DISTRIBUTION SYSTEM. THE CONTRACTOR MUST REQUEST WATER AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO OPEN BORE FLUSHING. OPEN BORE FLUSHING MUST TAKE PLACE PRIOR TO INSTALLATION OF WATER SERVICES.
7. ALL WATER STATIONING IS PIPE STATIONING.
8. ALL WATER MAIN AND SERVICE TRENCH BACKFILL MATERIALS AND BEDDING SHALL BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DENSITY.
9. ALL WATER MAINS AND SERVICES SHALL HAVE A MINIMUM OF 10 FEET OF BURY AT ALL POINTS, UNLESS OTHERWISE NOTED.
10. CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING WATER SERVICES. INFORMATION HAS BEEN COMPILED FROM AS-BUILTS AND MAY VARY.
11. ALL PIPE BEDDING FOR DUCTILE IRON PIPE SHALL BE CLASS 'E' PER THE SPECIFICATIONS.
12. ALL DUCTILE IRON PIPE SHALL BE ENCASED IN 8-MIL V-BIO ENHANCED POLYETHYLENE ENCASEMENT PER MASS SECTION 60.02 FURNISH AND INSTALL PIPE.
13. MAXIMUM DEFLECTION OF PIPE PER JOINT SHALL NOT EXCEED 80% OF THE MANUFACTURERS RECOMMENDED DEFLECTION (4 DEGREES) FOR DIP.
14. ALL WATER SERVICES SHALL BE INSULATED (2' WIDE R-20) OVER THE ENTIRE LENGTH OF THE SERVICE INSTALLED.
15. ALL NUTS, BOLTS AND WASHERS USED TO CONSTRUCT VALVES SHALL BE STAINLESS STEEL (TYPE 316).
16. FURNISH AND INSTALL ANODES ON ALL GATE VALVES, FIRE HYDRANTS, AND WATER SERVICES. ANODES WILL BE PAID PER EACH ANODE INSTALLED I.A.W MASS SECTION 60.06 - FURNISH AND INSTALL GALVANIC ANODES. IF TWO OR MORE GATE VALVES ARE WITHIN 20 FEET OF EACH OTHER. ONLY ONE ANODE IS REQUIRED BUT GATE VALVES MUST BE WIRED TOGETHER WITH #10 AWE HMWPE JUMPER WIRES TO PROVIDE CONTINUITY AND THE ANODE MUST BE ATTACHED TO ONE OF THE VALVES.
17. CONTRACTOR SHALL USE DUCTILE IRON PIPE (DIP) LONG SOLID SLEEVES WITH RESTRAINED JOINTS TO FACILITATE CONNECTING DIP TO DIP OF THE SAME SIZE.
18. WHERE PROPOSED WATER MAIN CROSSES AN EXISTING SEWER MAIN, CONTRACTOR SHALL REPLACE A SEGMENT OF THE EXISTING SEWER MAIN WITH A NEW STICK OF DIP SUCH THAT THE SEWER MAIN JOINTS ARE A MINIMUM OF 9 FEET FROM THE WATER MAIN.
19. WHERE PROPOSED WATER MAIN CROSSES AN EXISTING STORM DRAIN PIPE, CONTRACTOR SHALL REPLACE A SEGMENT OF THE EXISTING STORM DRAIN WITH A NEW STICK OF CPEP SUCH THAT THE STORM DRAIN JOINTS ARE A MINIMUM OF 9 FEET FROM THE WATER MAIN.
20. CONSTRUCT NEW WATER SERVICES PERPENDICULAR TO EXISTING MAIN.
21. LOCATE AND CONNECT TO EXISTING WATER SERVICE PIPING AT PROPERTY OR EASEMENT LINE.
22. INSPECT EXISTING CORPORATION STOP AT MAIN. CONNECT TO CORPORATION STOP IF IT IS IN GOOD CONDITION; INSTALL NEW CORP STOP IF IT IS IN POOR CONDITION.
23. REMOVE AND DISPOSE OF EXISTING SERVICE PIPING WITHIN ROW.
24. REMOVE AND REPLACE EXISTING ASPHALT PAVEMENT (REPLACEMENT OF AC PAVEMENT BY OTHERS) AND CONCRETE CURB AND GUTTER, SEE SPECIAL PROVISIONS.

CRW ENGINEERING GROUP, LLC
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STATE OF ALASKA 49TH
Rebecca L. Campbell
CE-10464
7/1/2019
REGISTERED PROFESSIONAL ENGINEER

PROJECT NO.	CITY GRID	WATER GRID	SEWER GRID
21103.01	–	–	–

CITY OF DILLINGHAM, ALASKA
2019 WATER SYSTEM IMPROVEMENTS

NOTES

DATE: JULY 2019

STATUS: FINAL DESIGN

REV	DATE	DESCRIPTION	BY

REVISION

SCALE
HOR. 1"=20'
VER. 1"=5'

DESIGNED BY AA
DRAWN BY AA
CHECKED BY RLC
APPROVED BY PB

SHEET NO.
C0.5

File: J:\JobsData\21103.01 Dillingham Water System - Task 2\00 CADD\01 Working Set\01 Civil\21103.01 C0D Cover.dwg PLOT DATE: 7/1/2019 4:42 PM

60.02 FURNISH AND INSTALL (10" DI) PIPE

SHEET	START STATION	END STATION	LENGTH (FEET)	COMMENTS
C1.1	1+00.00	2+05.30	105.3	

60.02 FURNISH AND INSTALL (8" DI) PIPE

SHEET	START STATION	END STATION	LENGTH (FEET)	COMMENTS
C4.1	55+00.00	60+00.00	500.0	
C4.2	60+00.00	64+00.00	400.0	
C4.3	64+00.00	66+09.56	207.6	
C6.1	80+00.00	83+83.61	383.6	
C6.2	85+00.00	87+86.66	286.7	
C6.3	90+00.00	93+23.20	323.2	

60.03 FURNISH AND INSTALL (10") GATE VALVE

SHEET	STATION	QUANTITIY	COMMENTS
C1.1	1+00.00	3	

60.03 FURNISH AND INSTALL (8") GATE VALVE

SHEET	STATION	QUANTITY	COMMENTS
C4.1	55+00.00	3	
C4.1	57+38.25	1	
C4.3	66+07.59	3	
C6.1	80+00.00	1	
C6.1	83+83.61	1	
C6.2	85+00.00	1	
C6.2	87+86.66	3	
C6.3	90+00.00	1	
C6.3	93+23.20	1	

60.03 FURNISH AND INSTALL (6") GATE VALVE

SHEET	STATION	QUANTITY	COMMENTS
C4.1	57+38.25	1	

60.05 FURNISH & INSTALL WATER SERVICE LINE

SHEET	STATION	SUBDIVISION	BLOCK	LOT	SIZE (INCH)	COMMENTS
C4.1	56+31.50		16	2	1	WATER SERVICE NOT FOUND
C4.1	58+66.74		12	2	1	WATER SERVICE NOT FOUND
C4.2	60+05.33		15	6	1	WATER SERVICE NOT FOUND
C4.2	60+73.67		12	4	1	WATER SERVICE NOT FOUND
C4.2	61+04.89		12	5	1	WATER SERVICE NOT FOUND
C6.1	80+57.58	USS 2541			2	WATER SERVICE NOT FOUND
C6.1	81+17.87	USS 2541			2	WATER SERVICE NOT FOUND
C6.1	82+61.28	USS 2541			2	SERVICE LOCATE BASED ON ASBUILTS
C6.3	91+08.27		11	1	1	WATER SERVICE NOT FOUND
C6.3	91+99.75		10	2	2	WATER SERVICE NOT FOUND
C6.3	92+08.50		11	6	1	WATER SERVICE NOT FOUND

60.06 FURNISH AND INSTALL ANODE

SHEET	STATION	QUANTITY	COMMENTS
C1.1	1+00.00	1	
C4.1	55+00.00	1	
C4.1	57+38.25	1	
C4.2	63+29.52	1	
C4.3	66+07.59	1	
C6.1	80+00.00	1	
C6.1	83+83.61	1	
C6.2	85+00.00	1	
C6.2	87+86.66	1	
C6.3	90+00.00	1	
C6.3	93+23.20	1	

60.08 DECOMMISSION PIPELINE IN PLACE

SHEET	START STATION	START OFFSET	END STATION	END OFFSET	LENGTH (FEET)	COMMENTS
C4.1	55+01.22	5.4' LT	60+00.00	3.7' LT	498.6	6" AC
C4.2	60+00.00	3.7' LT	60+88.25	3.4' LT	88.1	6" AC
C6.1	80+00.00	0.0'	83+83.61	0.0'	326.7	6" AC
C6.2	85+00.00	0.0'	87+85.40	21.4' RT	290.1	6" AC
C6.3	90+00.00	9.8' LT	93+23.20	0.0'	321.1	6" AC

REPLACE SEWER/STORM DRAIN CROSSING

SHEET	STATION	OFFSET	CROSSING PIPE
C1.1	1+13.01	0.0'	8" DI FORCE MAIN
C4.1	55+02.99	0.0'	18" STORM DRAIN
C6.1	80+43.97	0.0'	8" AC SANITARY SEWER
	80+53.63	0.0'	18" STORM DRAIN
	82+26.55	0.0'	18" STORM DRAIN
	83+43.76	0.0'	8" SANITARY SEWER
C6.3	92+75.38	0.0'	18" STORM DRAIN
	93+12.71	0.0'	8" AC SANITARY SEWER

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PROJECT NO. 21103.01
CITY GRID –
WATER GRID –
SEWER GRID –

CITY OF DILLINGHAM, ALASKA
2019 WATER SYSTEM IMPROVEMENTS

SUMMARY TABLES

DATE: JULY 2019
STATUS: FINAL DESIGN

REV	DATE	DESCRIPTION	BY

REVISION

SCALE
HOR. 1"=20'
VER. 1"=5'
DESIGNED BY AA
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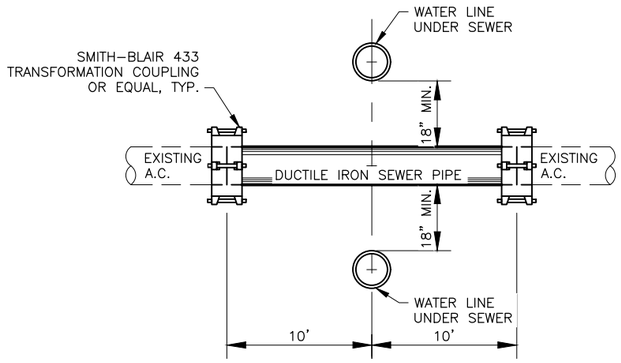
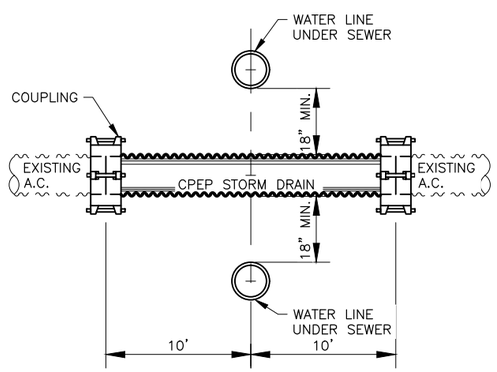
APPROVED BY PB

SHEET NO.
C0.6

File: J:\JobsData\21103.01 Dillingham Water System – Task 2\00 CADD\01 Working Set\01 Civil\21103.01 C0D Cover.dwg PLOT DATE: 7/1/2019 4:42 PM



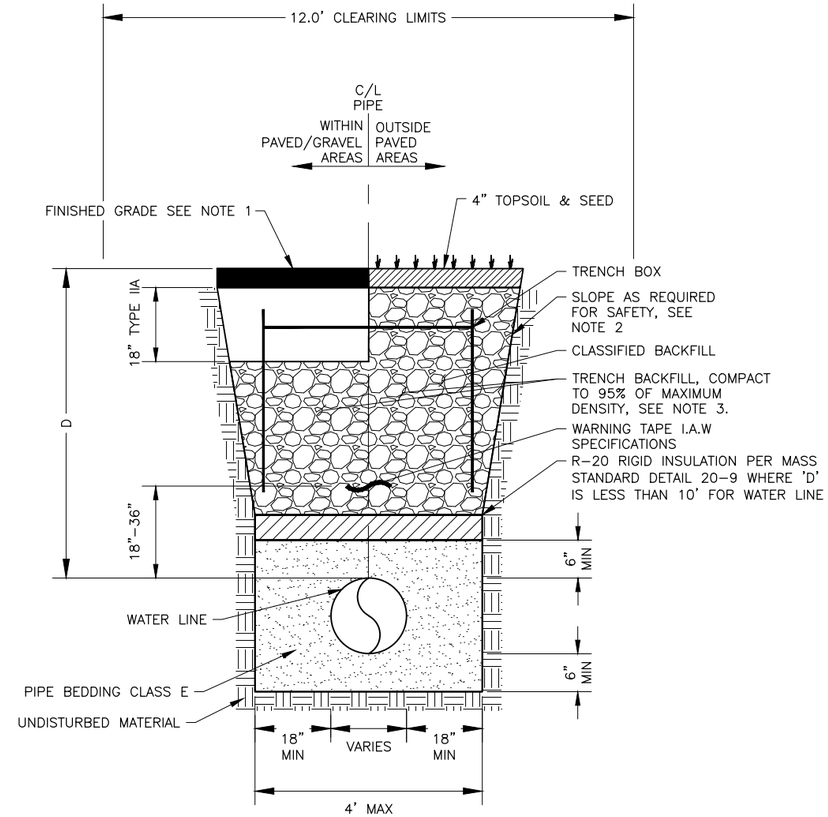
REPLACE SEWER CROSSING



REPLACE STORM CROSSING

REPLACE STORM DRAIN SEWER NOTES:

1. MINIMIZE SEWER/STORM JOINTS WITHIN 10 FEET OF WATERLINE AT CROSSINGS.
2. JOINTS WITHIN 10 FEET OF THE WATERLINE CROSSING SHALL BE WRAPPED IN VISCOTAQ VISCOWRAP SYSTEM PER MASS SECTION 60.02, ARTICLE 2.3, ITEM H.



TYPICAL WATER TRENCH SECTION

WATER TRENCH NOTES:

1. FOR KANAKANAK ROAD, FINISH GRADE SHALL CONSIST OF 3" ASPHALT PAVEMENT CLASS A (TACK COAT ALL EDGES) (BY OTHERS), OVER 3" ATB, OVER 3" LEVELING COURSE. IN OTHER PAVED AREAS, FINISH GRADE SHALL CONSIST OF 4" LEVELING COURSE. IN GRAVEL AREAS, FINISH GRADE SHALL CONSIST OF 4" LEVELING COURSE.
2. TRENCH EXCAVATION AND SHORING SHALL COMPLY WITH ALL LOCAL, STATE, AND OSHA REGULATIONS AND REQUIREMENTS. INDICATED TRENCH WALL SLOPES AND DIMENSIONS ARE FOR PAY QUANTITY DETERMINATIONS ONLY.
3. TRENCH BACKFILL SHALL BE NATIVE TRENCH MATERIAL AS APPROVED BY THE ENGINEER. NATIVE TRENCH MATERIAL NOT APPROVED BY THE ENGINEER SHALL BE REMOVED AND REPLACED WITH TYPE II CLASSIFIED MATERIAL.
4. REMOVE AND DISPOSE OF ALL ORGANIC MATERIALS IN ACCORDANCE WITH MASS SECTION 20.27.
5. FOUNDATION BACKFILL SHALL BE TYPE II IMPORTED FILL, COMPACTED TO 95% PER MASS 20.19.
6. WHERE OTHER UTILITIES ARE ENCOUNTERED, PROVIDE BEDDING MATERIAL AS SHOWN IN THIS DETAIL.

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CITY OF DILLINGHAM, ALASKA
2019 WATER SYSTEM IMPROVEMENTS

DETAILS

DATE: JULY 2019
STATUS: FINAL DESIGN

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SCALE HOR. 1"=20' VER. 1"=5'
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SHEET NO.
C0.7

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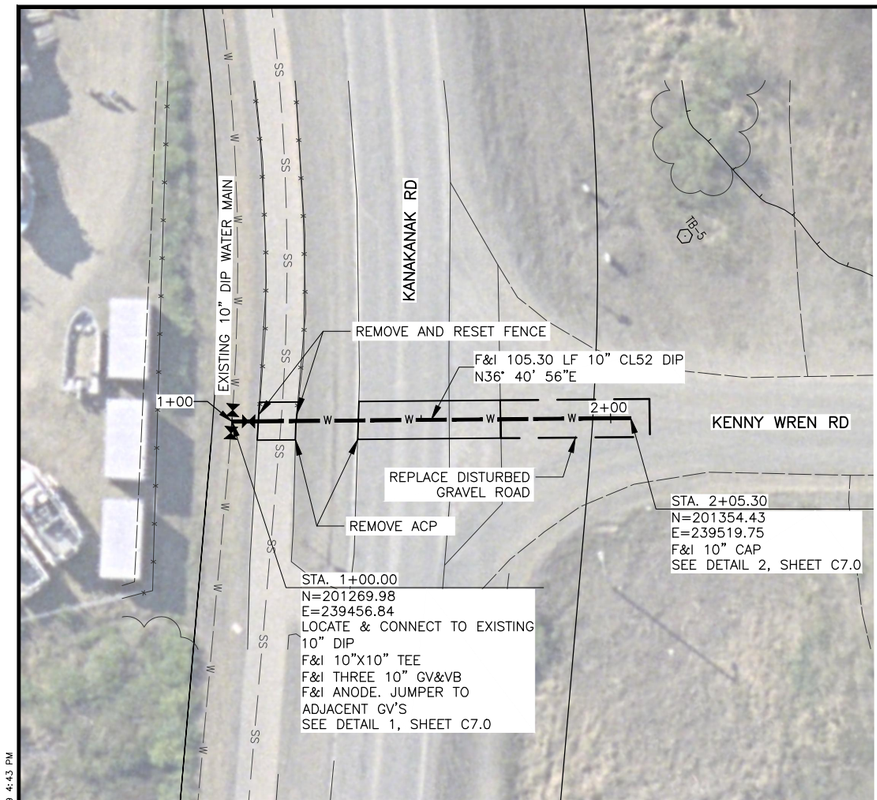

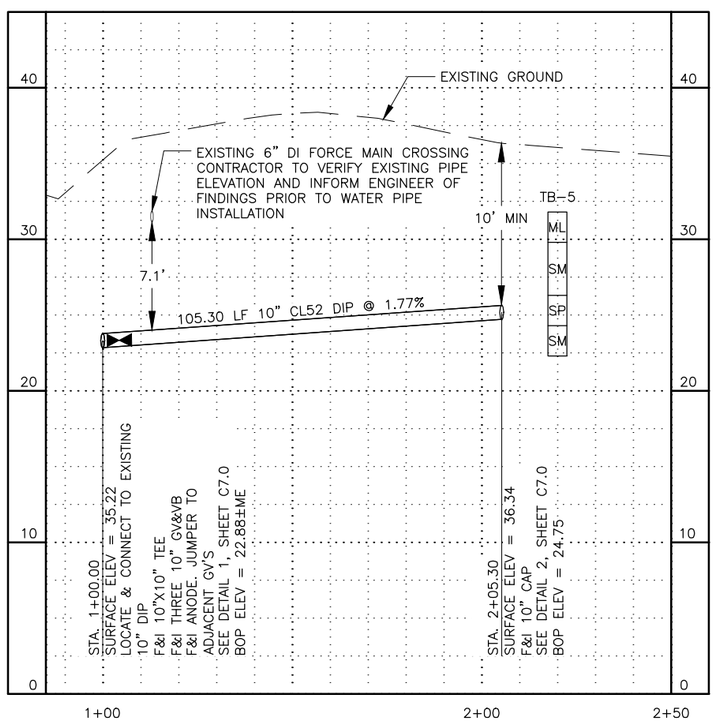

20' 0 20' 40'

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PROJECT NO.	21103.01
CITY GRID	–
WATER GRID	–
SEWER GRID	–

CITY OF DILLINGHAM, ALASKA
2019 WATER SYSTEM IMPROVEMENTS

KENNY WREN ROAD WATER PLAN & PROFILE
STA. 1+00 TO STA. 2+05

DATE: JULY 2019

STATUS: FINAL DESIGN

REV	DATE	DESCRIPTION	BY

REVISION

SCALE HOR.	1"=20'
VER.	1"=5'
DESIGNED BY	AA
DRAWN BY	AA
CHECKED BY	RLC
APPROVED BY	PB

SHEET NO.

C1.1

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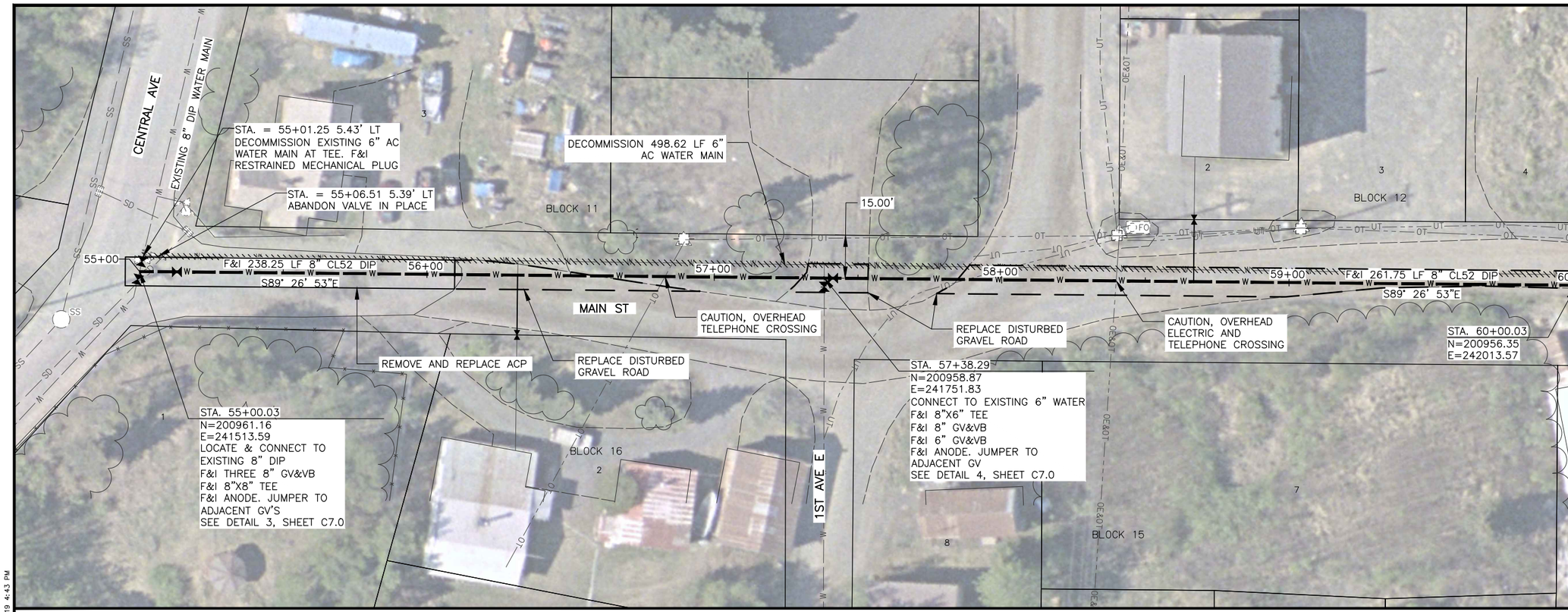

NOTES:

1. CUT EXISTING STORM DRAIN PIPE SO THAT THE JOINT IS 9 FEET FROM THE WATER CROSSING (18 FEET TOTAL). REPLACE EXISTING STORM DRAIN PIPE WITH A NEW STICK OF CPEP SUCH THAT THE STORM DRAIN JOINTS ARE A MINIMUM OF 9 FEET FROM THE WATER MAIN.
2. CUT EXISTING AC SEWER MAIN SO THAT THE JOINT IS 9 FEET FROM THE WATER CROSSINGS (18 FEET). REPLACE EXISTING SEWER MAIN WITH A NEW STICK OF DIP SUCH THAT THE SEWER MAIN JOINTS ARE A MINIMUM OF 9 FEET FROM THE WATER MAIN.

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STATE OF ALASKA
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PROJECT NO. 21103.01
CITY GRID –
WATER GRID –
SEWER GRID –

CITY OF DILLINGHAM, ALASKA
2019 WATER SYSTEM IMPROVEMENTS

MAIN STREET WATER PLAN & PROFILE
STA. 55+00 TO STA. 60+00

STATUS: FINAL DESIGN
DATE: JULY 2019

REVISION

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SCALE HOR. 1"=20' VER. 1"=5'
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SHEET NO.
C4.1

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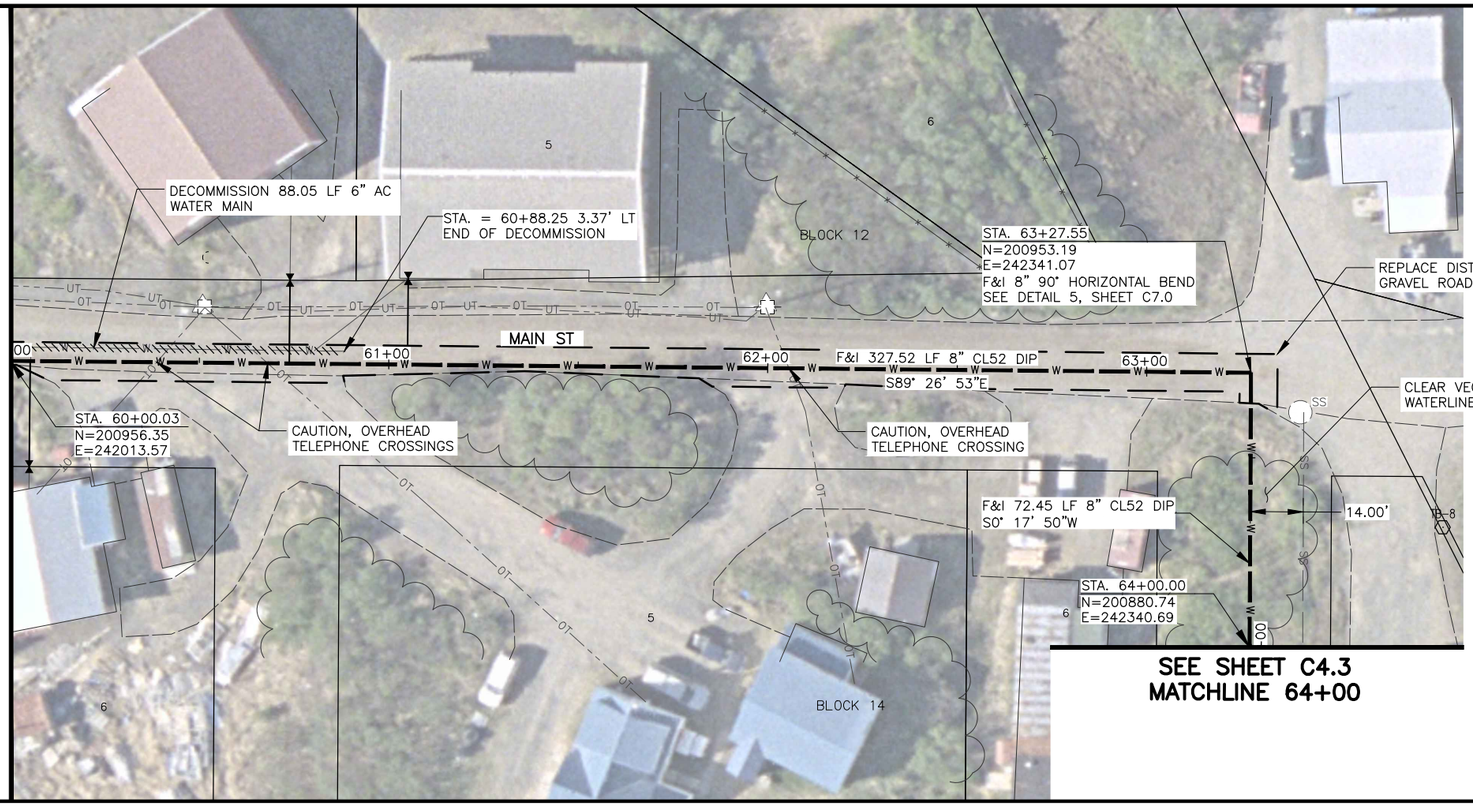

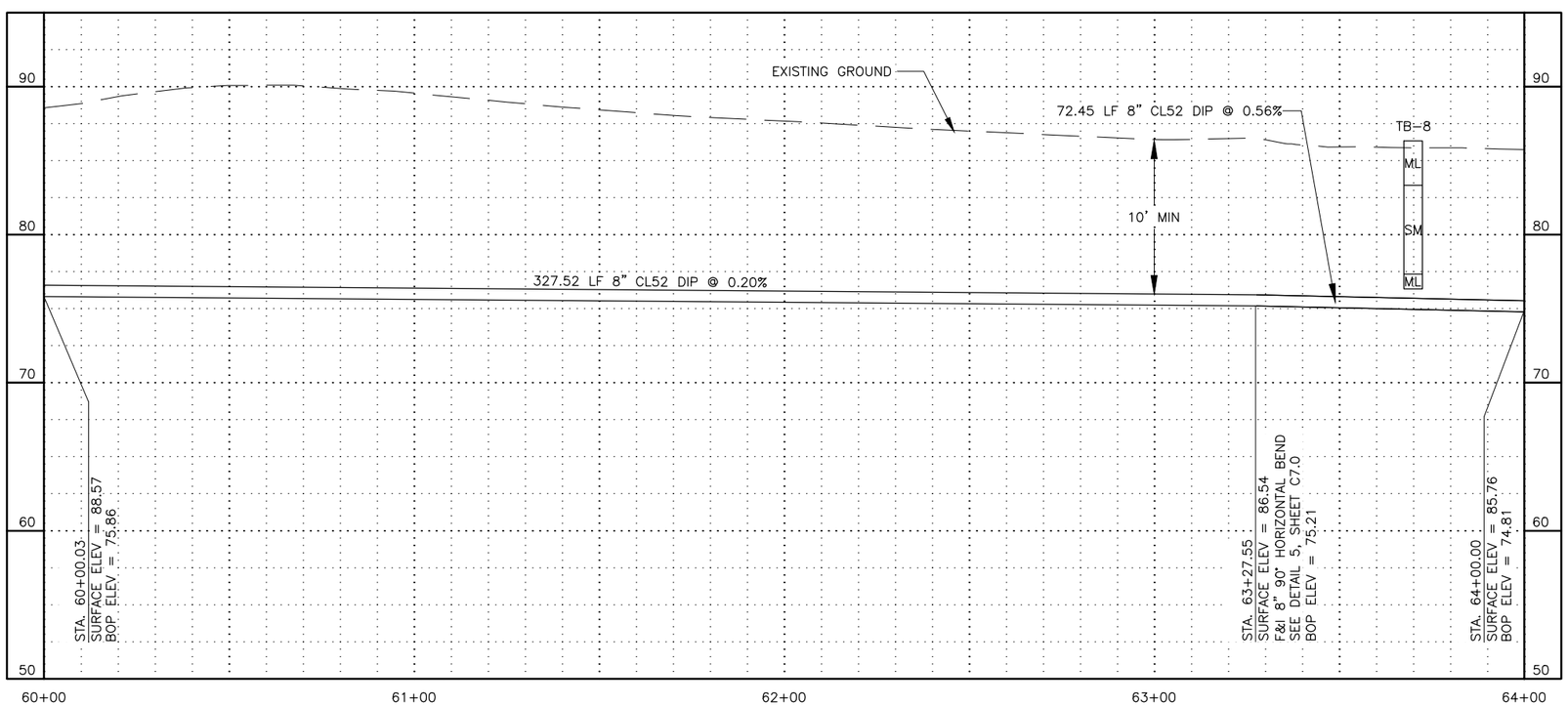

20' 0 20' 40'

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STATE OF ALASKA
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PROJECT NO. 21103.01
CITY GRID –
WATER GRID –
SEWER GRID –

CITY OF DILLINGHAM, ALASKA
2019 WATER SYSTEM IMPROVEMENTS

MAIN STREET WATER PLAN & PROFILE
STA. 60+00 TO STA. 64+00

STATUS: FINAL DESIGN
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REVISION

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SCALE HOR. 1"=20' VER. 1"=5'
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SHEET NO.
C4.2

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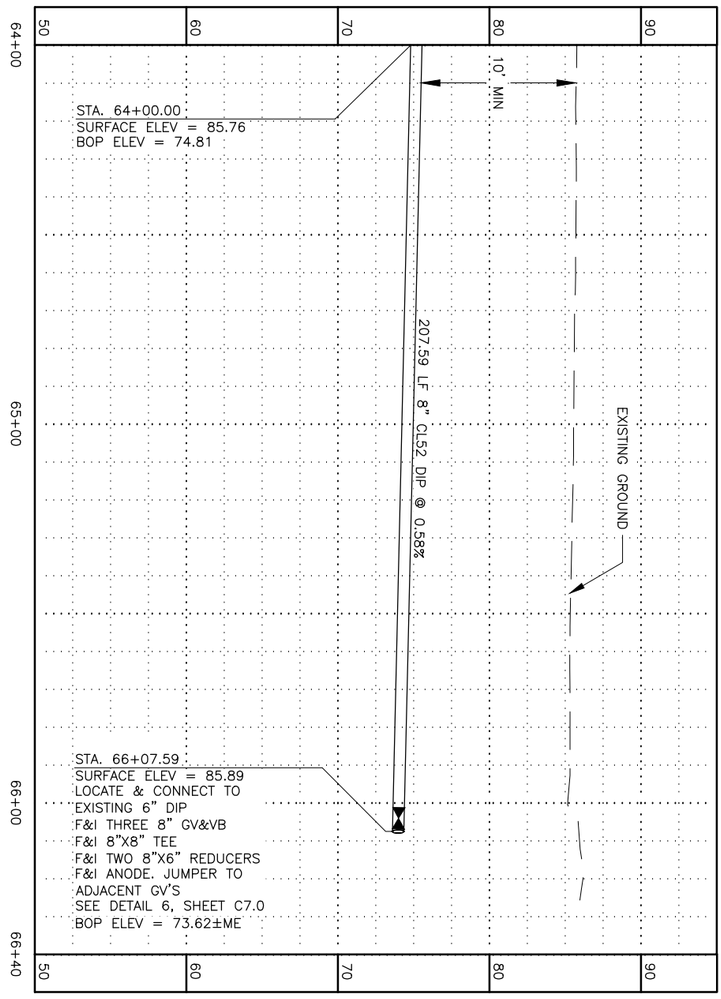
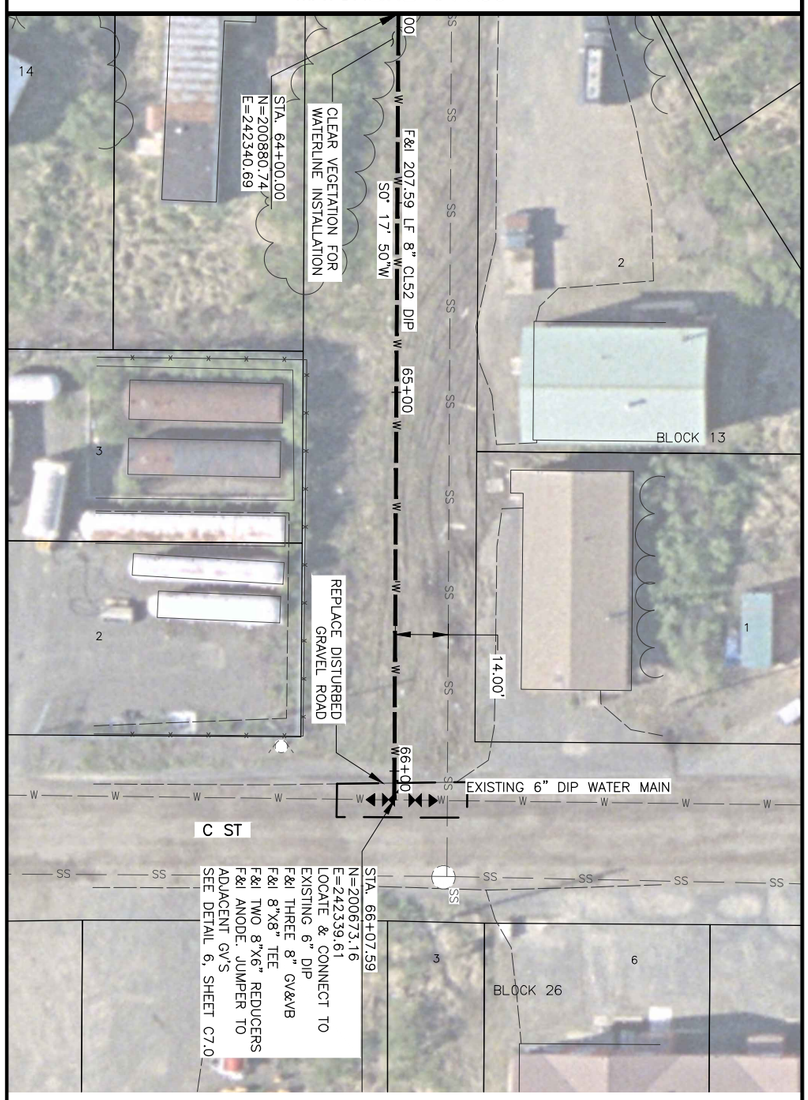


SEE SHEET C4.2
MATCHLINE 64+00



20' 0 20' 40'

SHEET NO.	SCALE	REVISION			
C4.3	HOR. 1"=20' VER. 1"=5'	REV	DATE	DESCRIPTION	BY
	DESIGNED BY AA				
	DRAWN BY AA				
	CHECKED BY RLC				
	APPROVED BY PB				

CITY OF DILLINGHAM, ALASKA
2019 WATER SYSTEM IMPROVEMENTS

MAIN STREET WATER PLAN & PROFILE
STA. 64+00 TO STA. 66+00

STATUS: FINAL DESIGN DATE: JULY 2019

PROJECT NO. 21103.01
CITY GRID –
WATER GRID –
SEWER GRID –

STATE OF ALASKA
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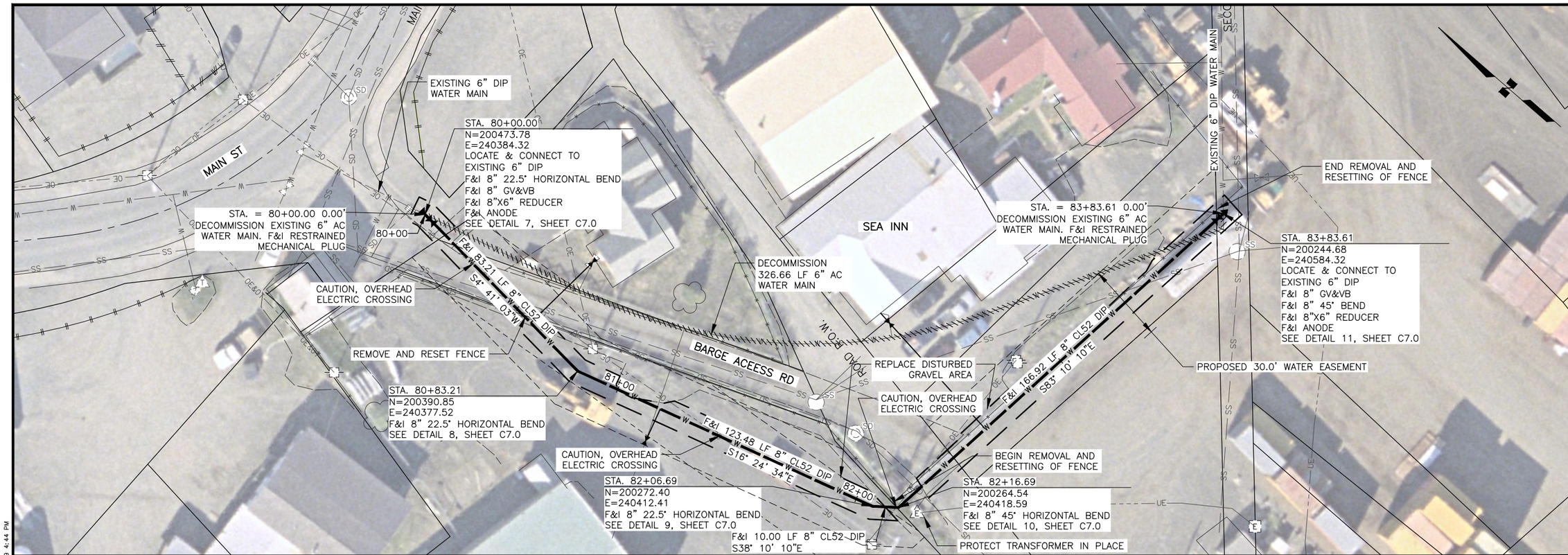

NOTES:

1. CUT EXISTING STORM DRAIN PIPE SO THAT THE JOINT IS 9 FEET FROM THE WATER CROSSING (18 FEET TOTAL). REPLACE EXISTING STORM DRAIN PIPE WITH A NEW STICK OF CPEP SUCH THAT THE STORM DRAIN JOINTS ARE A MINIMUM OF 9 FEET FROM THE WATER MAIN.
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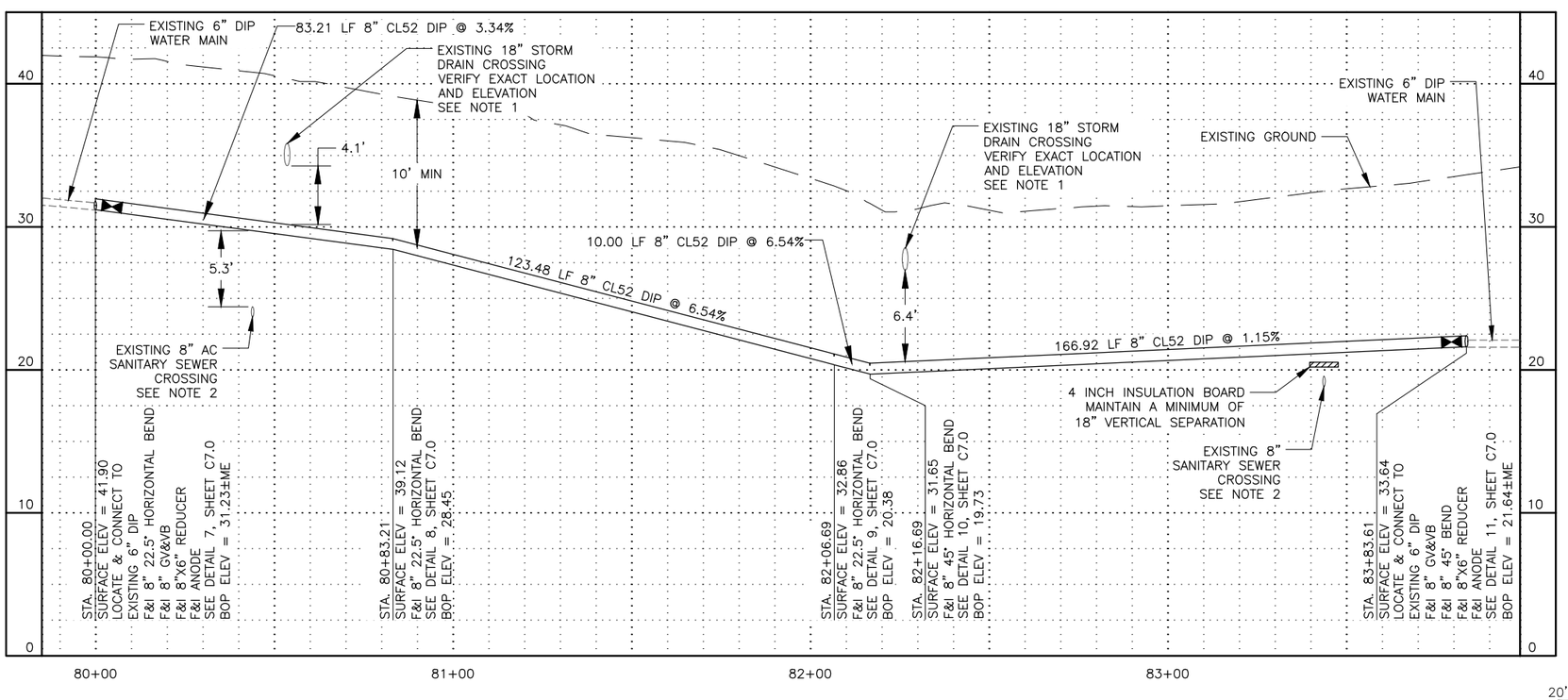

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STATE OF ALASKA 49TH
Rebecca L. Campbell
CE-10464
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PROJECT NO.	CITY GRID	WATER GRID	SEWER GRID
21103.01	–	–	–

CITY OF DILLINGHAM, ALASKA
2019 WATER SYSTEM IMPROVEMENTS

BARGE ACCESS ROAD WATER PLAN & PROFILE
STA. 80+00 TO STA. 83+85

DATE: JULY 2019

STATUS: FINAL DESIGN

REV	DATE	DESCRIPTION	BY

REVISION

SCALE: HOR. 1"=20' VER. 1"=5'
DESIGNED BY AA
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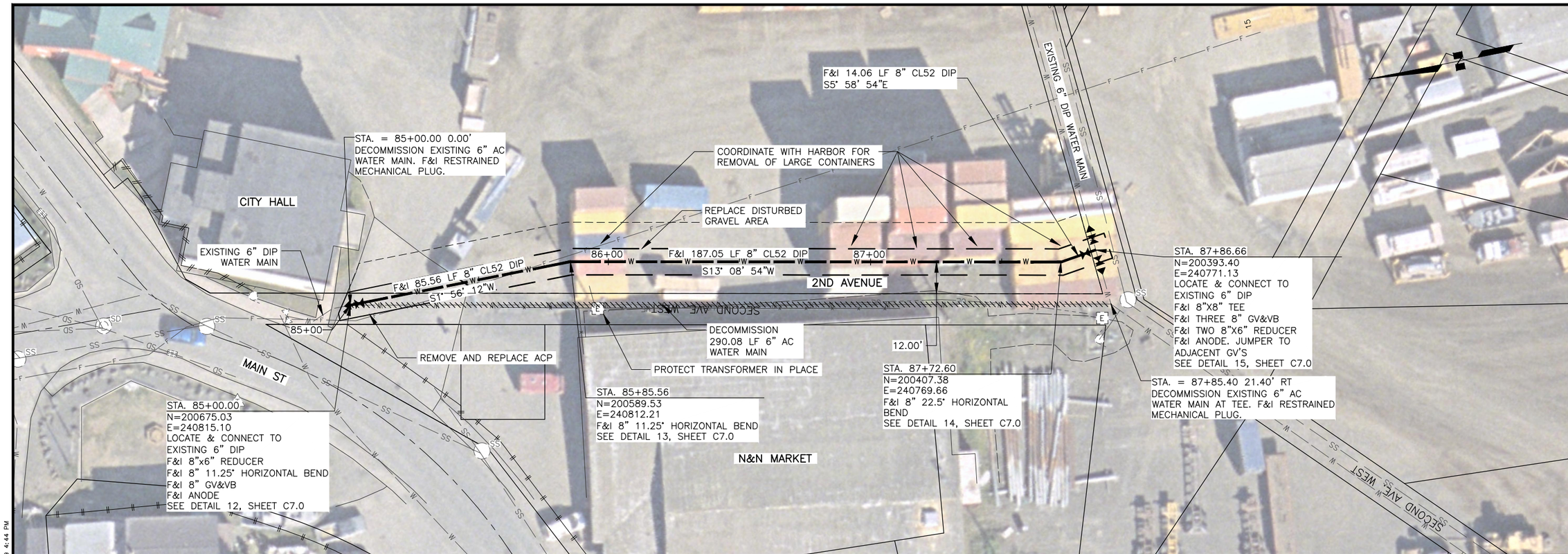
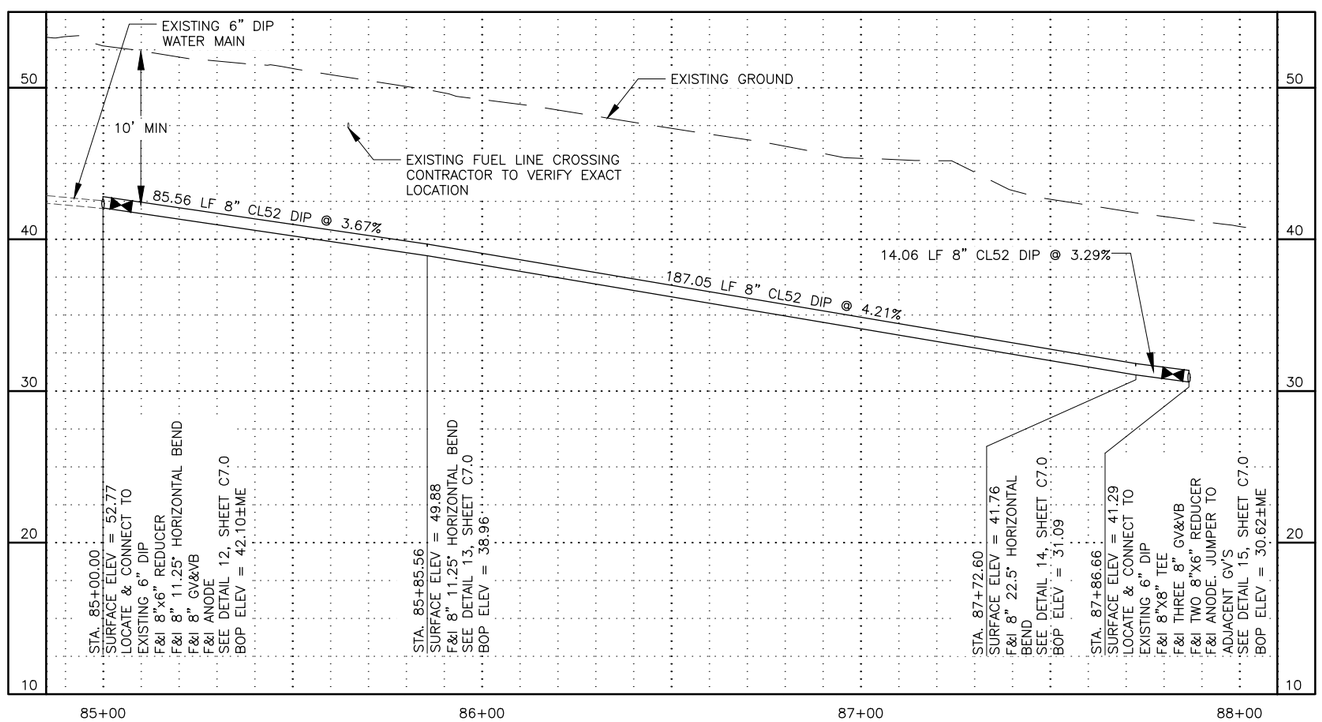
SHEET NO.
C6.1

File: J:\JobsData\21103.01 Dillingham Water System - Task 2\00 CADD\01 Working Set\01 Civil\21103-01 COD Plan & Profile.dwg PLOT DATE: 7/1/2019 4:44 PM





20' 0 20' 40'

CRW ENGINEERING GROUP, LLC
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STATE OF ALASKA 49TH
Rebecca L. Campbell
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PROJECT NO.	CITY GRID	WATER GRID	SEWER GRID
21103.01	–	–	–

CITY OF DILLINGHAM, ALASKA
2019 WATER SYSTEM IMPROVEMENTS

2ND AVENUE WATER PLAN & PROFILE STA. 85+00 TO STA. 87+90

DATE: JULY 2019

STATUS: FINAL DESIGN

REV	DATE	DESCRIPTION	BY

REVISION

SCALE
HOR. 1"=20'
VER. 1"=5'

DESIGNED BY AA
DRAWN BY AA
CHECKED BY RLC
APPROVED BY PB

SHEET NO.
C6.2

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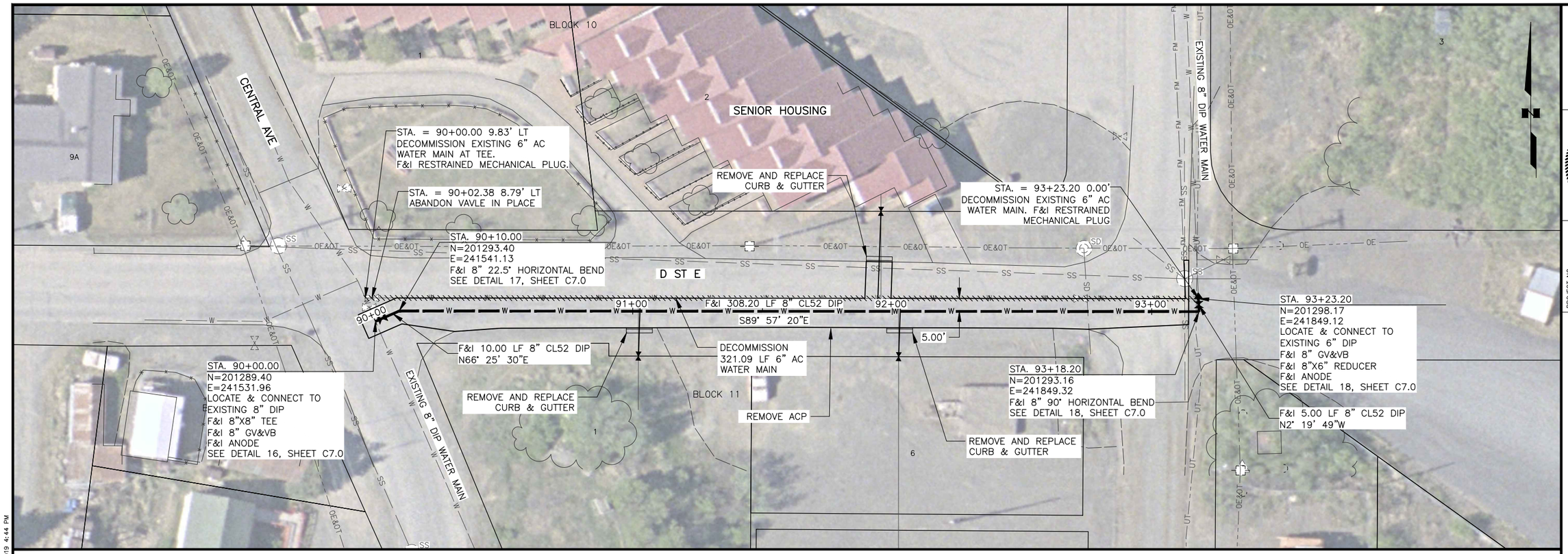

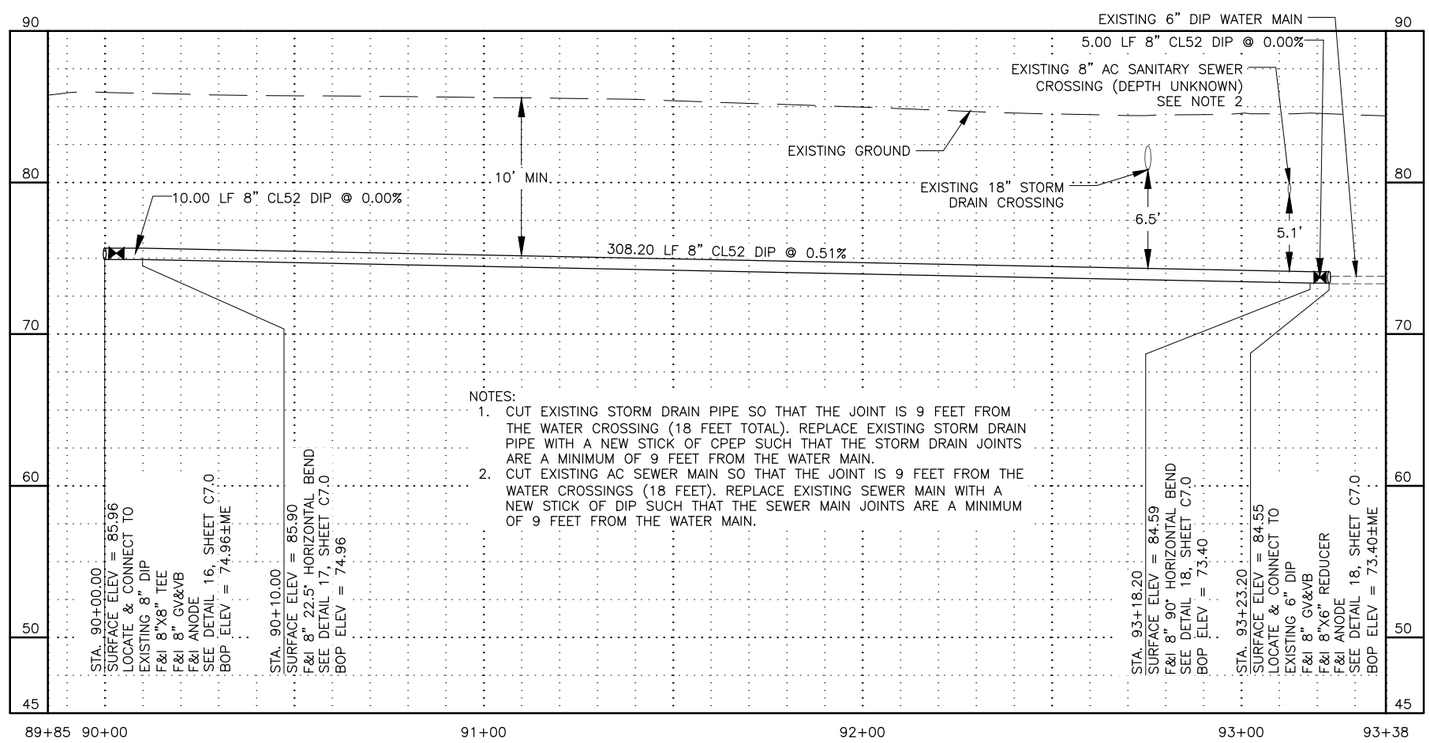

NOTES:

1. CUT EXISTING STORM DRAIN PIPE SO THAT THE JOINT IS 9 FEET FROM THE WATER CROSSING (18 FEET TOTAL). REPLACE EXISTING STORM DRAIN PIPE WITH A NEW STICK OF CPEP SUCH THAT THE STORM DRAIN JOINTS ARE A MINIMUM OF 9 FEET FROM THE WATER MAIN.
2. CUT EXISTING AC SEWER MAIN SO THAT THE JOINT IS 9 FEET FROM THE WATER CROSSINGS (18 FEET). REPLACE EXISTING SEWER MAIN WITH A NEW STICK OF DIP SUCH THAT THE SEWER MAIN JOINTS ARE A MINIMUM OF 9 FEET FROM THE WATER MAIN.

20' 0 20' 40'

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PROJECT NO. 21103.01
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SEWER GRID –

CITY OF DILLINGHAM, ALASKA
2019 WATER SYSTEM IMPROVEMENTS

D STREET WATER PLAN & PROFILE
STA. 90+00 TO STA. 93+30

DATE: JULY 2019

STATUS: FINAL DESIGN

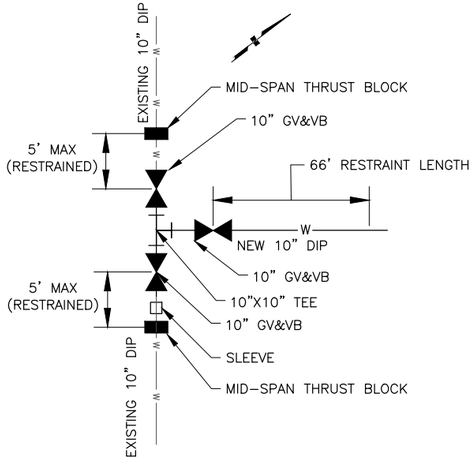
REVISION

REV	DATE	DESCRIPTION	BY

SCALE HOR. 1"=20' VER. 1"=5'
DESIGNED BY AA
DRAWN BY AA
CHECKED BY RLC
APPROVED BY PB

SHEET NO.
C6.3

File: J:\JobsData\21103.01 Dillingham Water System – Task 2\00 CADD\01 Working Set\01 Civil\21103-01 COD Plan & Profile.dwg PLOT DATE: 7/1/2019 4:44 PM



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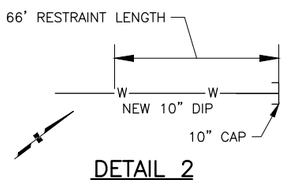

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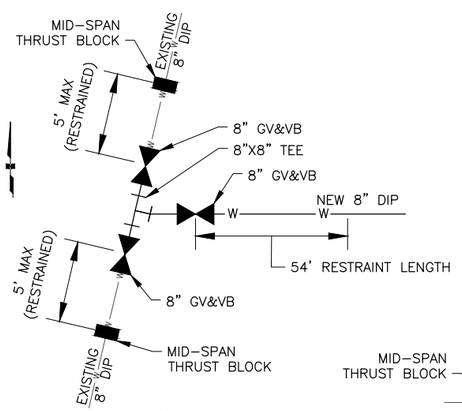

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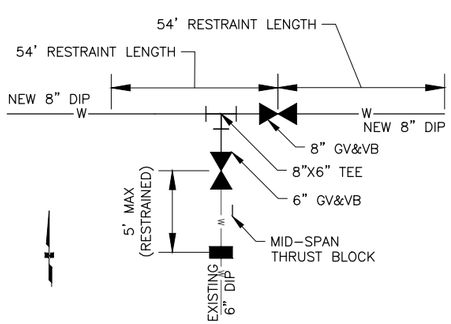

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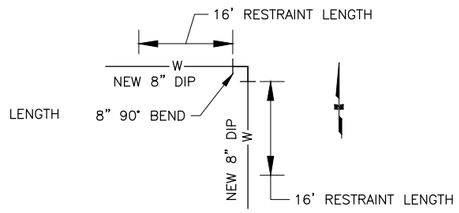

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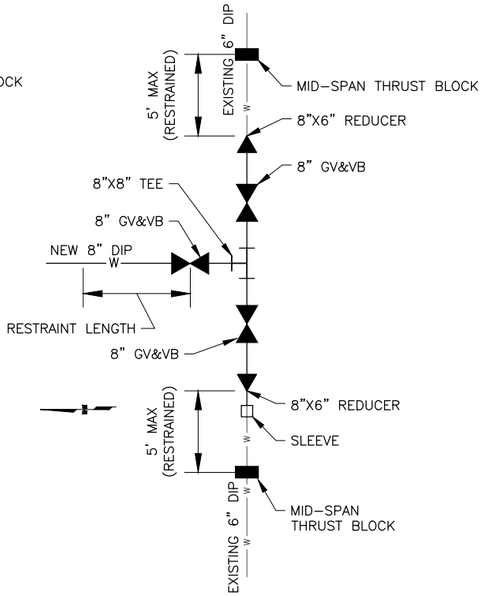

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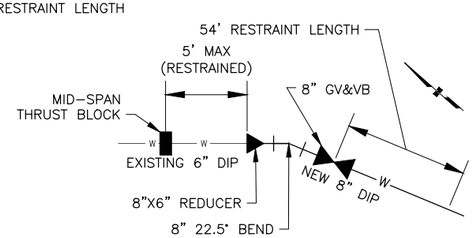

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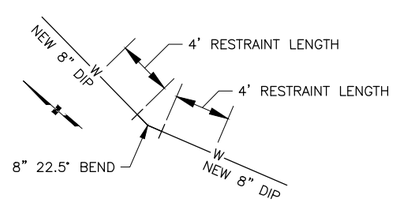

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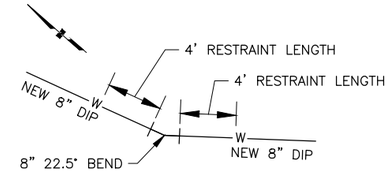

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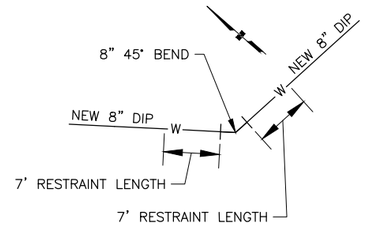

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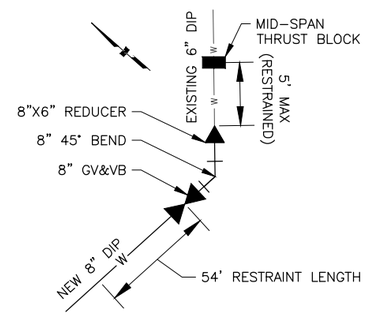

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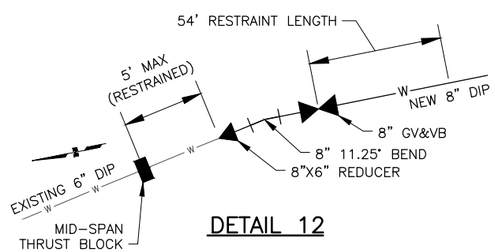

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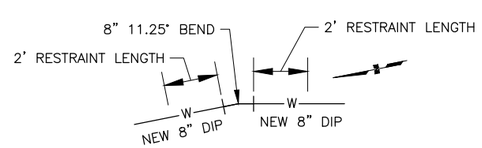

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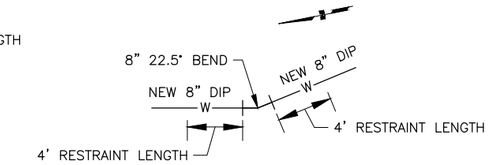

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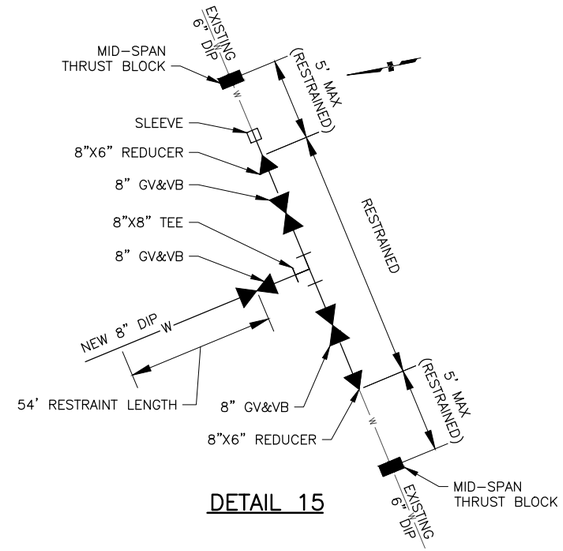

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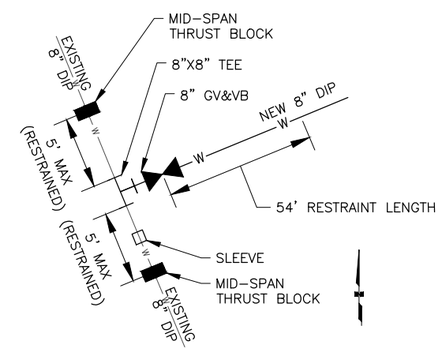

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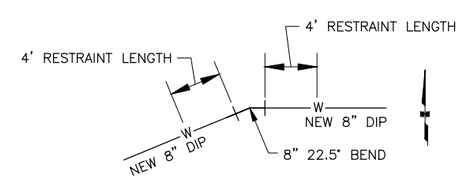

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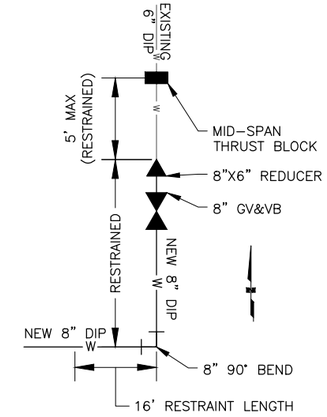

DETAIL 18

CRW ENGINEERING GROUP LLC
3940 ARCTIC BLVD. SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
AECL-882-2-AK

STATE OF ALASKA 49TH
Rebecca L. Campbell
CE-10464
7/1/2019
REGISTERED PROFESSIONAL ENGINEER

PROJECT NO.	CITY GRID	WATER GRID	SEWER GRID
21103.01	–	–	–

CITY OF DILLINGHAM, ALASKA
2019 WATER SYSTEM IMPROVEMENTS

WATER CONNECTION DETAILS

DATE: JULY 2019

STATUS: FINAL DESIGN

REV	DATE	DESCRIPTION	BY

REVISION

SCALE
HOR. 1"=20'
VER. 1"=5'

DESIGNED BY AA
DRAWN BY AA
CHECKED BY RLC
APPROVED BY PB

SHEET NO.
C7.0

File: J:\JobsData\21103.01 Dillingham Water System - Task 2\00 CADD\01 Working Set\01 Civil\21103-01 C00 Details.dwg PLOT DATE: 7/1/2019 4:44 PM