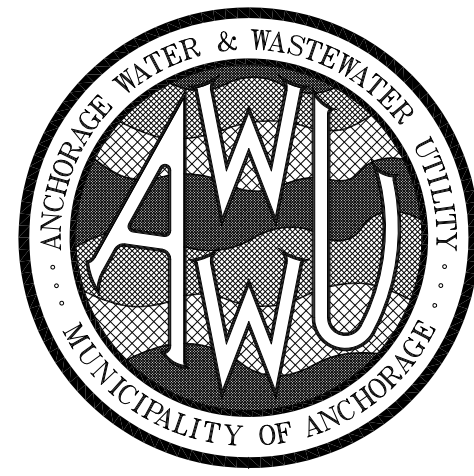
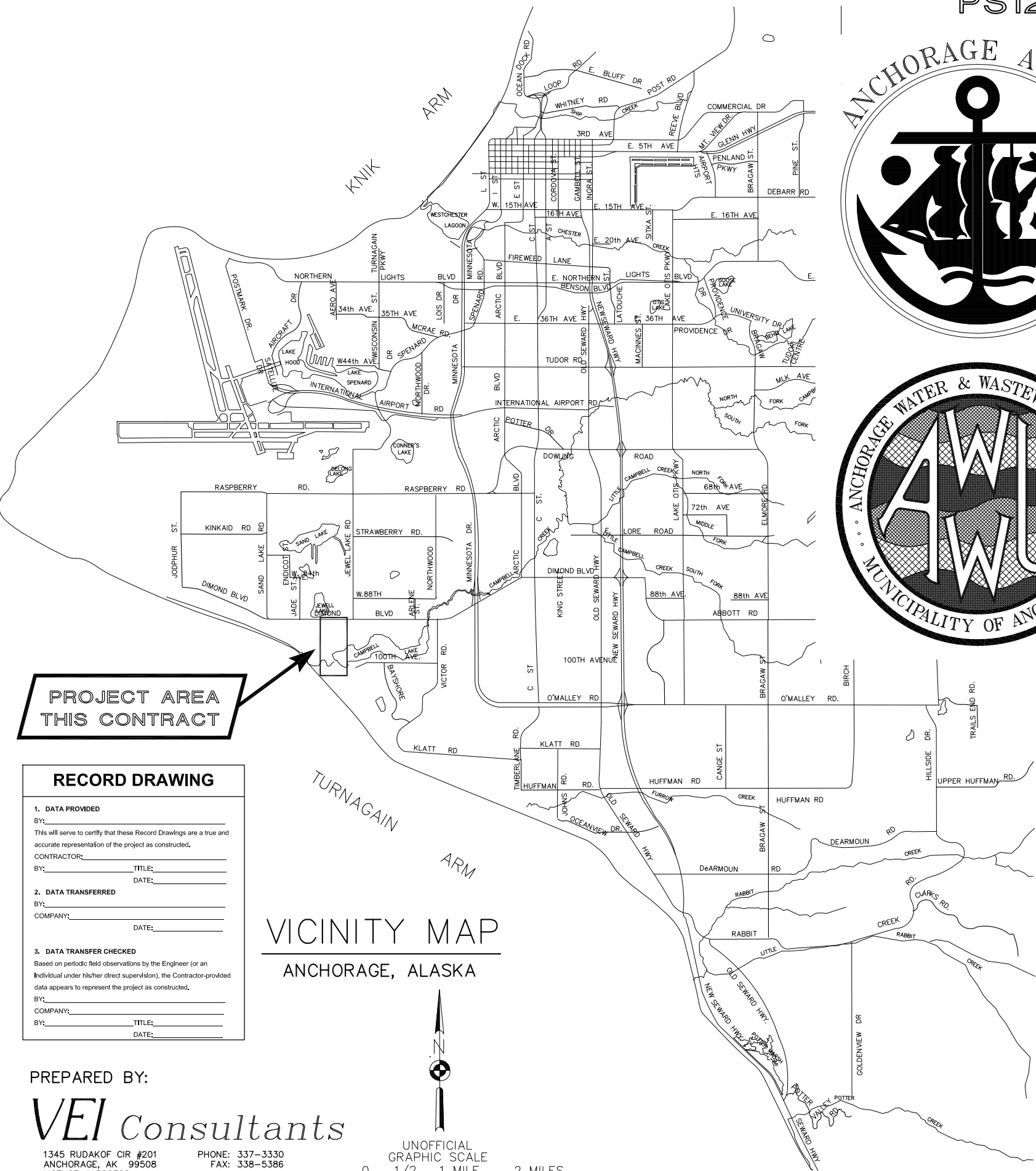


PS12 FORCE MAIN/GRAVITY JUNCTION REHAB
 SCHEDULES A, B, C, AND D
 AWWU PROJECT ID. NO. WW.H7713
 10/29/2021

AWWU PLAN SET
 NO. 10794



SCHEDULE A
 PS12 REHABILITATION

SHEET INDEX		
SHEET No.	INDEX No.	SUBJECT
GENERAL		
1	G1	COVER SHEET
2	G2	NOTES, ABBREVIATIONS & LEGEND
3	G3	KEY MAPS
4	G4	CONSTRUCTION TRAFFIC ROUTES AND SURVEY CONTROL
CIVIL		
5	C1.0	SITE PLAN
6	C2.0	WATER SERVICE
7	C3.0	TURNAGAIN TRUNK ACCESS
8	C4.0	PUMP STATION VEHICLE ACCESS GATES
9	C5.0	PUMP STATION DRIVE GATE DETAIL
PROCESS		
10	P1.0	PUMP STATION P&ID
11	P2.0	PUMP STATION WORK OVERVIEW PLAN VIEW
12	P3.0	PUMP STATION WORK OVERVIEW SECTION VIEW
13	P4.0	CONTROL LEVEL PLAN VIEW
14	P5.0	MOTOR ROOM PLAN VIEW
15	P6.0	MOTOR ROOM SECTION VIEW
16	P7.0	PUMP ROOM DEMOLITION PLAN VIEW
17	P8.0	PUMP ROOM DEMOLITION SECTION VIEW
18	P9.0	PUMP ROOM PLAN VIEW
19	P10.0	PUMP ROOM PIPING - PUMPS 1 & 4 SECTION VIEW
20	P11.0	PUMP ROOM PIPING - PUMPS 2 & 3 SECTION VIEW
STRUCTURAL		
21	D1.0	EXISTING WALL - DEMO PLAN AND SECTION
22	S1.0	GENERAL NOTES
23	S2.0	BASEMENT PUMP ROOM FLOOR PLAN
24	S3.0	CONTROL ROOM FLOOR PLAN
25	S4.0	CONTROL ROOM - BUILDING SECTION
26	S6.0	WALL SECTIONS
27	S10.0	PUMP SECTION AND DETAILS
28	S10.1	THRUST BLOCK SECTIONS AND DETAILS
29	S11.0	WET WELL SLUICE GATE SECTIONS AND DETAILS
30	S18.0	WET PIT 1 AND 2 PLATFORM FRAMING PLAN
31	S18.1	INFLUENT MANHOLE PLATFORM FRAMING PLAN
32	S18.3	PLATFORM FRAMING - SECTIONS
33	S18.4	GUARDRAIL FRAMING ELEVATIONS AND DETAILS
34	S18.5	PLATFORM FRAMING DETAILS
35	S20.0	PUMP STATION WET WELL LADDER PLAN AND ELEVATIONS
MECHANICAL		
36	M0.1	MECHANICAL SPECIFICATIONS, ABBREVIATIONS, AND SYMBOL LEGEND
37	M0.2	MECHANICAL SCHEDULES
38	M1.0	MECHANICAL DEMOLITION - MOTOR LEVEL
39	M1.1	MECHANICAL DEMOLITION DETAILS
40	M2.0	MECHANICAL PLAN - MOTOR LEVEL
41	M2.1	MECHANICAL PLAN - PUMP LEVEL
42	M3.0	MECHANICAL DETAILS
ELECTRICAL		
43	E0.1	ELECTRICAL LEGEND, ABBREVIATIONS, AND SCHEDULES
44	E1.0	POWER ONE-LINE DIAGRAM - EXISTING AND DEMOLITION
45	E1.1	POWER ONE-LINE DIAGRAM - NEW WORK
46	E1.2	ELECTRICAL SCHEDULES AND DETAILS
47	E2.0	CONTROL BLOCK DIAGRAM - DEMOLITION 1 OF 3
48	E2.1	CONTROL BLOCK DIAGRAM - DEMOLITION 2 OF 3
49	E2.2	CONTROL BLOCK DIAGRAM - DEMOLITION 3 OF 3
50	E2.3	CONTROL BLOCK DIAGRAM - NEW WORK 1 OF 3
51	E2.4	CONTROL BLOCK DIAGRAM - NEW WORK 2 OF 3
52	E2.5	CONTROL BLOCK DIAGRAM - NEW WORK 3 OF 3
53	E3.0	ELECTRICAL SITE PLAN
54	E3.1	ELECTRICAL DEMOLITION PLAN - CONTROL ROOM
55	E3.2	ELECTRICAL DEMOLITION PLANS AND SECTIONS
56	E3.3	ELECTRICAL NEW WORK PLAN - CONTROL ROOM
57	E3.4	ELECTRICAL NEW WORK PLANS AND SECTIONS
58	E4.0	INSTRUMENT CONNECTION SCHEDULE
59	E4.1	INSTRUMENT CONNECTION SCHEDULE
60	E4.2	ELECTRICAL SCHEMATICS
61	E5.0	PLC PANEL LAYOUT AND FUNCTIONAL NARRATIVE
62	E5.1	PLC BLOCK DIAGRAM
63	E5.2	PLC POWER DISTRIBUTION
64	E5.3	PLC POWER DISTRIBUTION
65	E5.4	PLC DISCRETE INPUTS
66	E5.5	PLC DISCRETE INPUTS
67	E5.6	PLC DISCRETE INPUTS
68	E5.7	PLC DISCRETE INPUTS
69	E5.8	PLC DISCRETE OUTPUTS
70	E5.9	PLC ANALOG INPUTS
71	E5.10	PLC ANALOG INPUTS
72	E5.11	PLC ANALOG INPUTS
73	E5.12	PLC ANALOG INPUTS
74	E5.13	PLC RTD INPUTS
LANDSCAPING		
75	L1.0	LANDSCAPE PLAN
76	L2.0	LANDSCAPE DETAILS

PROJECT AREA
 THIS CONTRACT

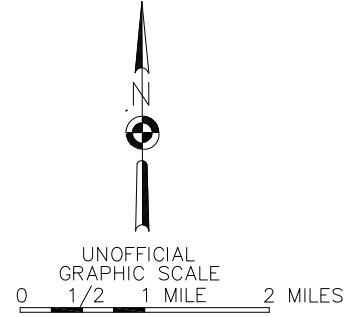
RECORD DRAWING

1. DATA PROVIDED
 BY: _____
 This will serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
 CONTRACTOR: _____
 BY: _____ TITLE: _____
 DATE: _____

2. DATA TRANSFERRED
 BY: _____
 COMPANY: _____
 DATE: _____

3. DATA TRANSFER CHECKED
 Based on periodic field observations by the Engineer (or an Individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
 BY: _____
 COMPANY: _____
 BY: _____ TITLE: _____
 DATE: _____

VICINITY MAP
 ANCHORAGE, ALASKA

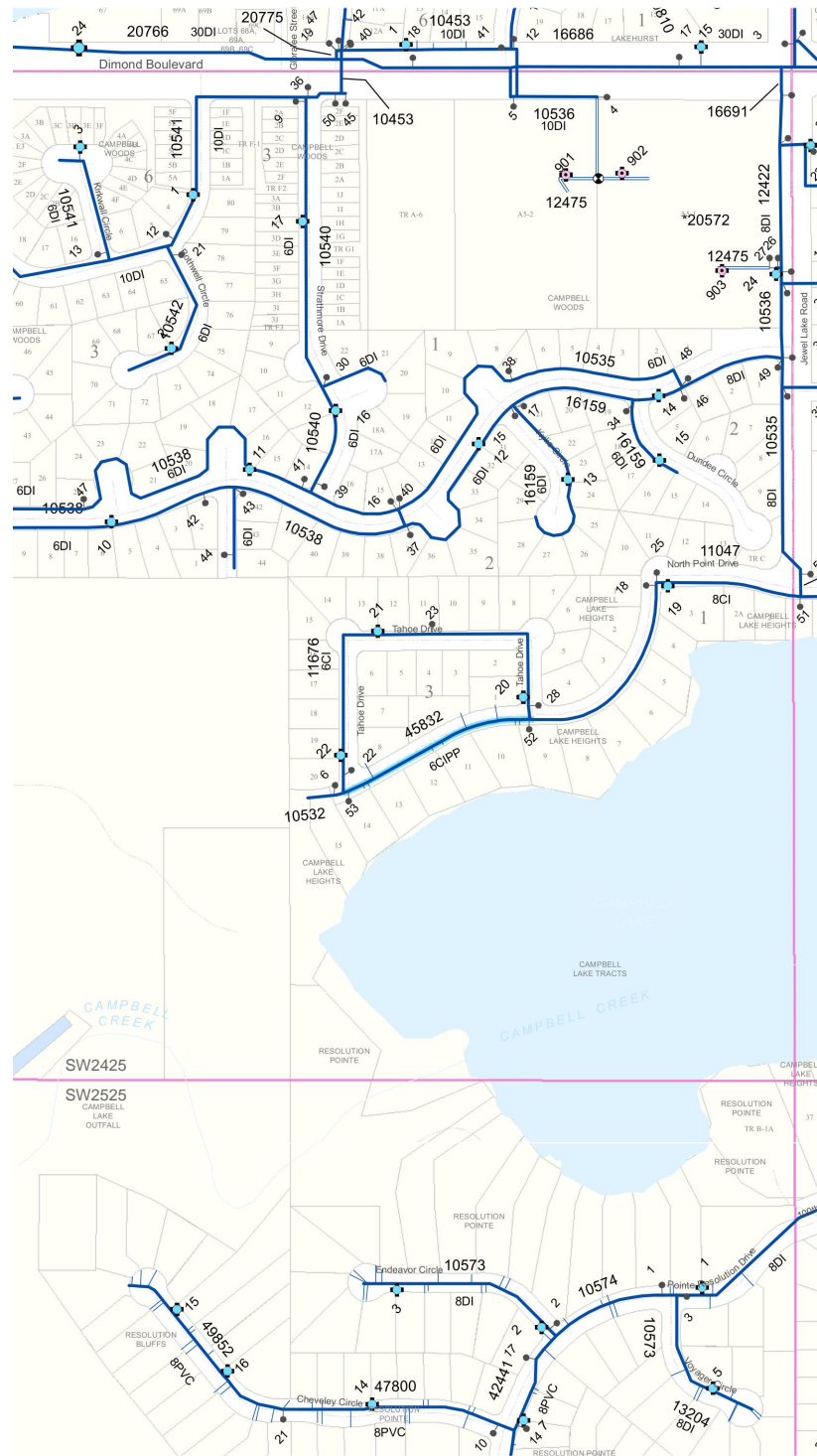


PREPARED BY:
VEI Consultants
 1345 RUDAKOF CIR #201 ANCHORAGE, AK 99508
 PHONE: 337-3330 FAX: 338-5386
 LICENSE #AECC368

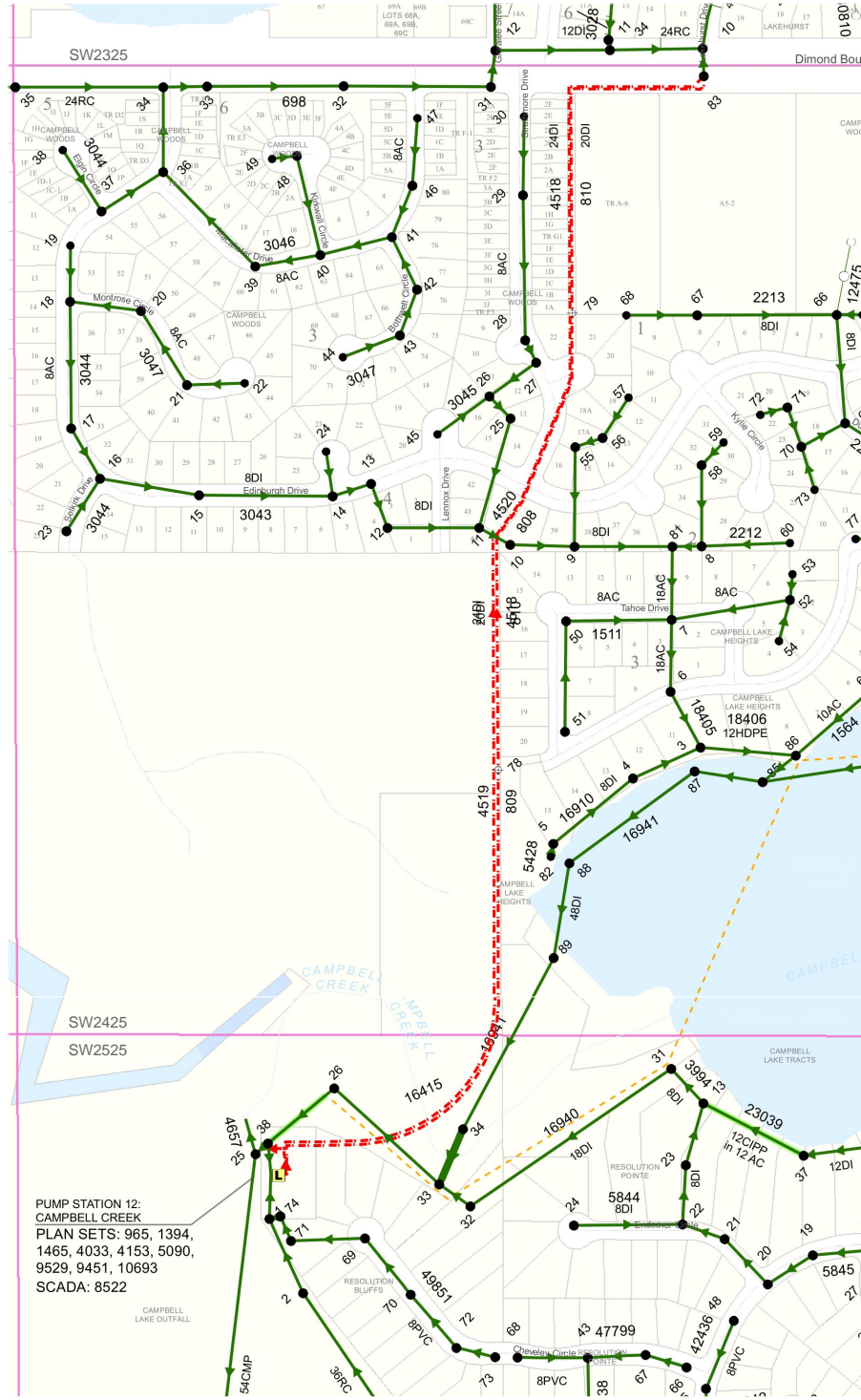
CONTINUED ON SHEET G2

PS12 FORCE MAIN/GRAVITY JUNCTION REHAB
 SCHEDULES A, B, C, AND D

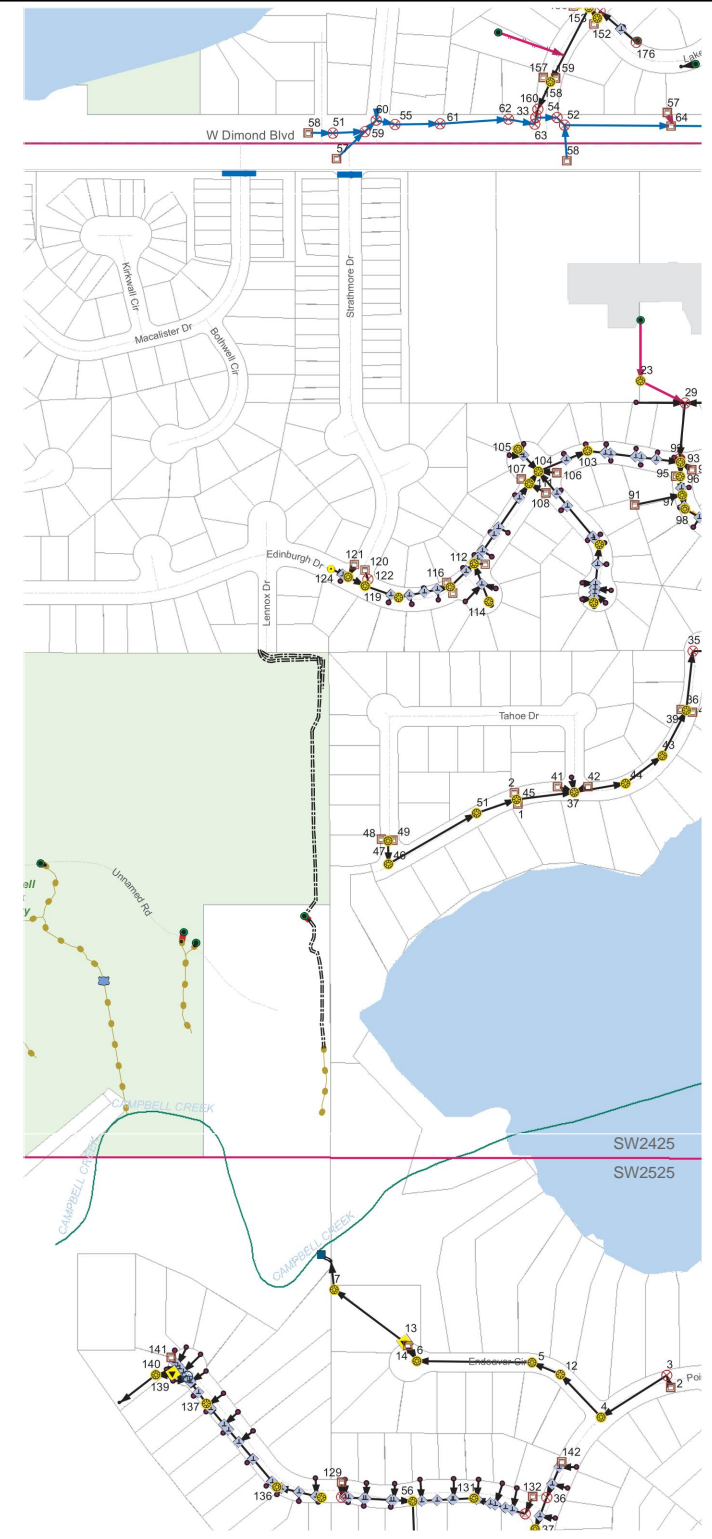
AWWU PROJECT ID. NO. WW.H7713



WATER KEY MAP
N.T.S.



SEWER KEY MAP
N.T.S.



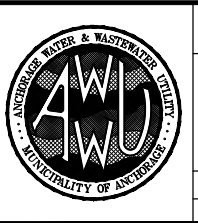
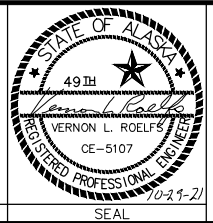
STORM KEY MAP
N.T.S.

PUMP STATION 12:
CAMPBELL CREEK
PLAN SETS: 965, 1394,
1465, 4033, 4153, 5090,
9529, 9451, 10693
SCADA: 8522

CALL BEFORE YOU DIG
The Contractor shall notify all area utility companies prior to commencement of excavation. The following is a partial list:
LOCATE CALL CENTER OF ALASKA 278-3121
(includes ATU, AWWU, CEA, ENG, Butler Aviation/Tesoro, Prime Cable, MLP, Traffic Signals, MOA Storm/Streets)
STATE STORM/STREET LIGHTS 333-2411
MILITARY PETROLEUM LINES

RECORD DRAWING Note: To be filled out on original drawings upon project completion.
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CONTRACTOR: _____
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COMPANY: _____
DATE: _____
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DATA TRANSFER CHECKED BY: _____
COMPANY: _____
BY: _____ TITLE: _____
DATE: _____

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MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB
KEY MAPS
G3
HORZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 3 of 104
VERT SCALE: NA
PROJ. ID.: WW.H7713

SURVEY CONTROL				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	2604847.117	1647272.369	16.30	5/8" REBAR WITH YPC, PROJECT CONTROL POINT
CP2	2605027.185	1647547.104	14.85	5/8" REBAR WITH YPC, PROJECT CONTROL POINT
CP3	2607628.161	1647788.474	90.34	PK NAIL SET IN SIDEWALK, PROJECT CONTROL POINT
CP4	2607612.247	1648068.610	83.98	PK NAIL SET IN SIDEWALK, PROJECT CONTROL POINT
5	2604553	1647227	42.58	2 1/2" BRASS CAP BENCHMARK "CAMPBELL NO. 2"
8	2605272.826	1647609.440	30.47	3/4" ALCAP 0.4' ABOVE GROUND, SW TRACT 1A-1
9	2605681.001	1647607.829	52.42	5/8" REBAR FLUSH, ON WEST BOUNDARY OF TRACT 1A-1
10	2605790.592	1647607.892	54.74	3/4" ALCAP 0.2' ABOVE GROUND, NW TRACT 1A-1
11	2605949.861	1647606.520	56.62	1 1/4" PIPE FLUSH, NW L19
28	2606343.695	1647606.695	63.80	2" BC INSIDE 3" PIPE 0.2' ABOVE GROUND, NE 1/6 S15, NW L15
501	2604769.3157	1647102.1867	19.52	3/4" MON, NE TRACT A
702	2604768.9497	1646976.7093	17.85	3/4" MON, NW TRACT A W.C.
834	2604518.0923	1647101.4553	34.94	3/4" MON, SE TRACT A
931	2604518.6008	1646951.4283	20.49	2" ALCAP, SW TRACT A
1403	2607623.6959	1647848.4018	88.38	PK NAIL SET IN SIDEWALK

~~SCHEDULE B
CAMPBELL CREEK FORCE MAIN UNDERCROSSING~~

SCHEDULE D
FORCE MAIN REHABILITATION
(EXTENDED NORTH TO
DIMOND BLVD)

SCHEDULE C
FORCE MAIN ACCESS DRIVE

SCHEDULE A
PS12 REHABILITATION

PS12 SITE
GATE TO REMAIN
LOCKED DURING
NON-WORK HOURS

0 125 250
SCALE: 1" = 125'

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

1. DATA PROVIDED BY: _____
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CONTRACTOR: _____
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DATE: _____

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BY: _____ TITLE: _____
DATE: _____

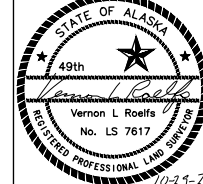
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Consultants

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1345 RUDAKOF CIR #201
ANCHORAGE, AK 99508
LICENSE #AACC368

CONSULTANT



MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

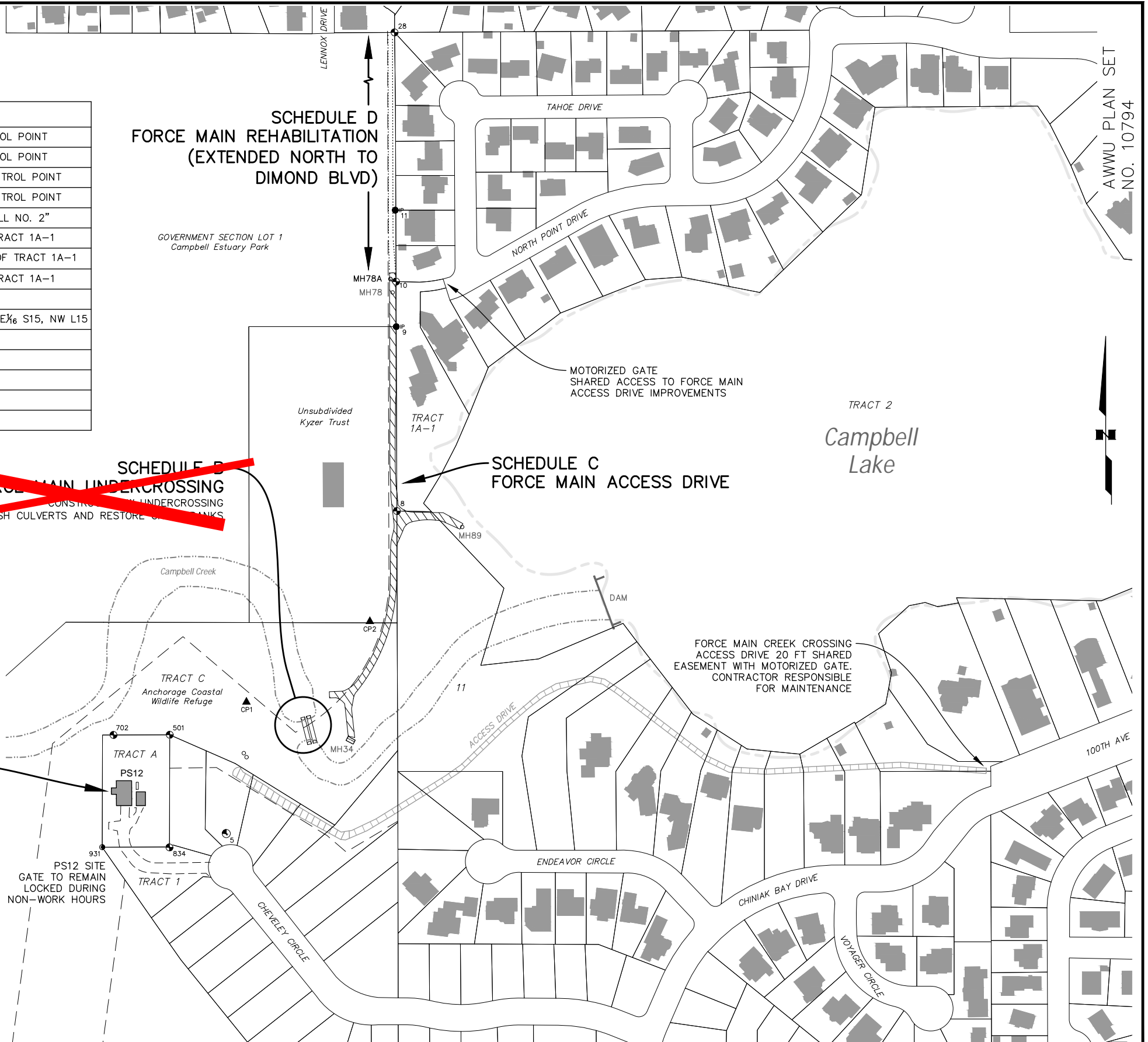
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

**CONSTRUCTION TRAFFIC ROUTES
AND SURVEY CONTROL**

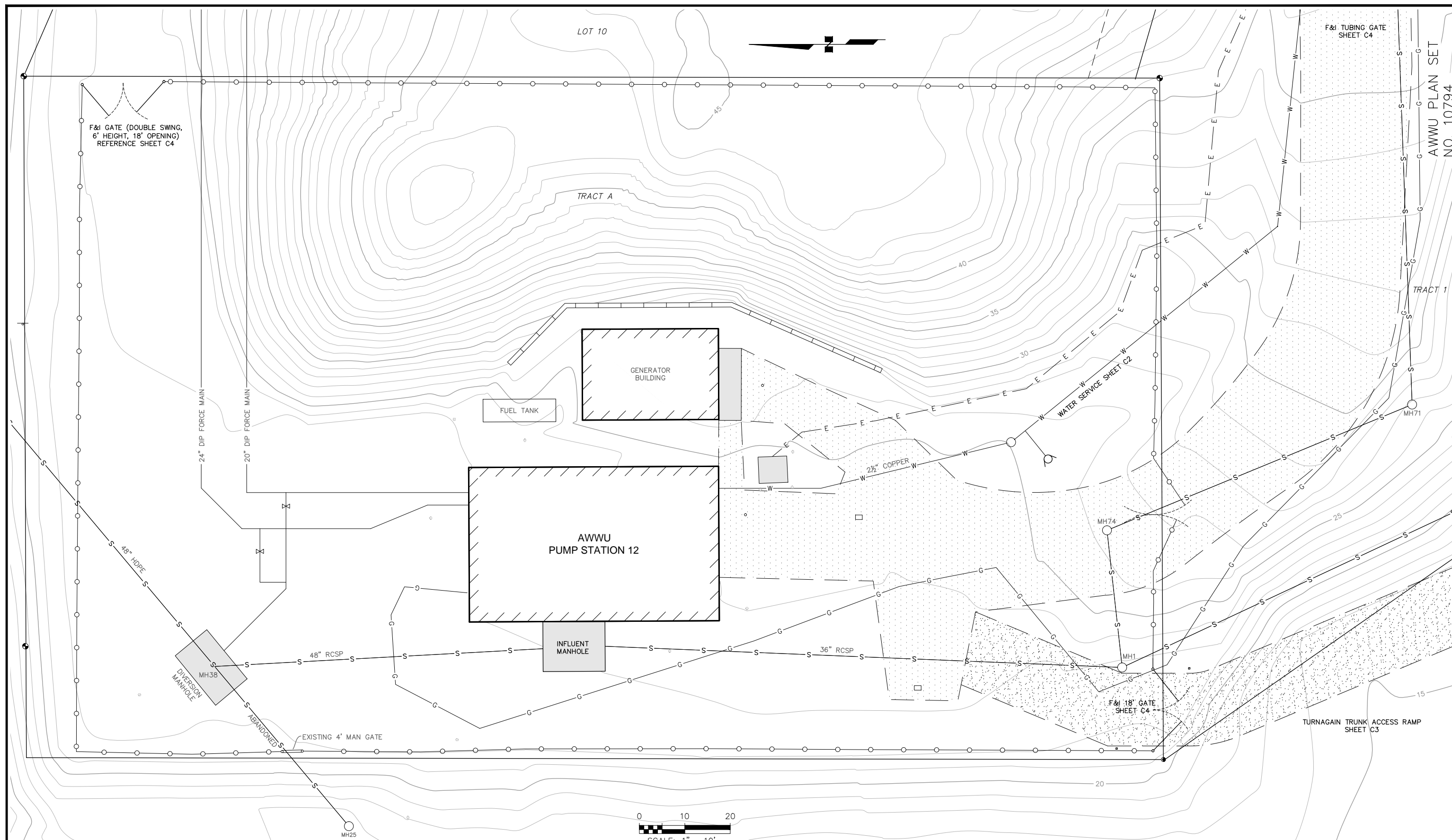
HORIZ SCALE: 1"=125' DATE: 10/29/2021 GRID: SW 2525
VERT SCALE: _____
PROJ. ID.: WW.H7713

G4

SHEET 4 of 104



AWWU PLAN SET
NO. 10794



VERIFY SCALE THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING. 0" = 1" IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY. FULL SIZE SCALE HORZ SCALE: 1"=10' VERT SCALE:

DATA	DRAWN BY	CHECKED BY	DATE	DESCRIPTION	BY
BASE	EVR	VLR			
TOPOGRAPHY					
PROFILE					
SANITARY SEWER					
STORM SEWER					
WATER					
GAS					

PLAN CHECK

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

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 Consultants

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 1345 RUDAKOF CIR #201
 ANCHORAGE, AK 99508
 LICENSE #AECC368

CONSULTANT

STATE OF ALASKA
 49th
 VERNON L. ROELFS
 REGISTERED PROFESSIONAL ENGINEER
 CE-5107
 70-21-21

SEAL

ANCHORAGE WATER & WASTEWATER UTILITY
 AWWU
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MUNICIPALITY OF ANCHORAGE
 WATER & WASTEWATER UTILITY

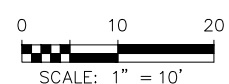
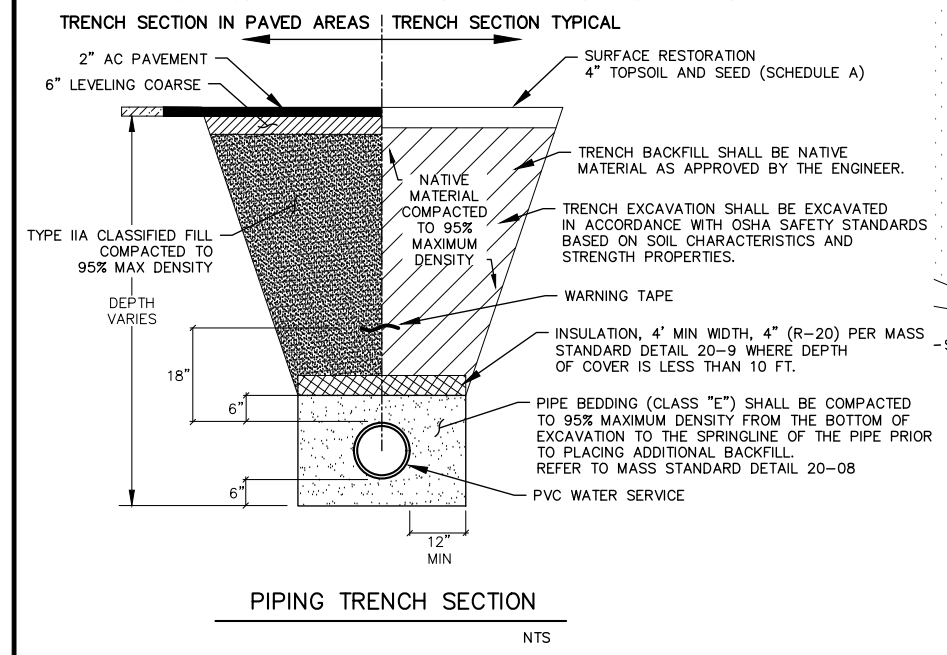
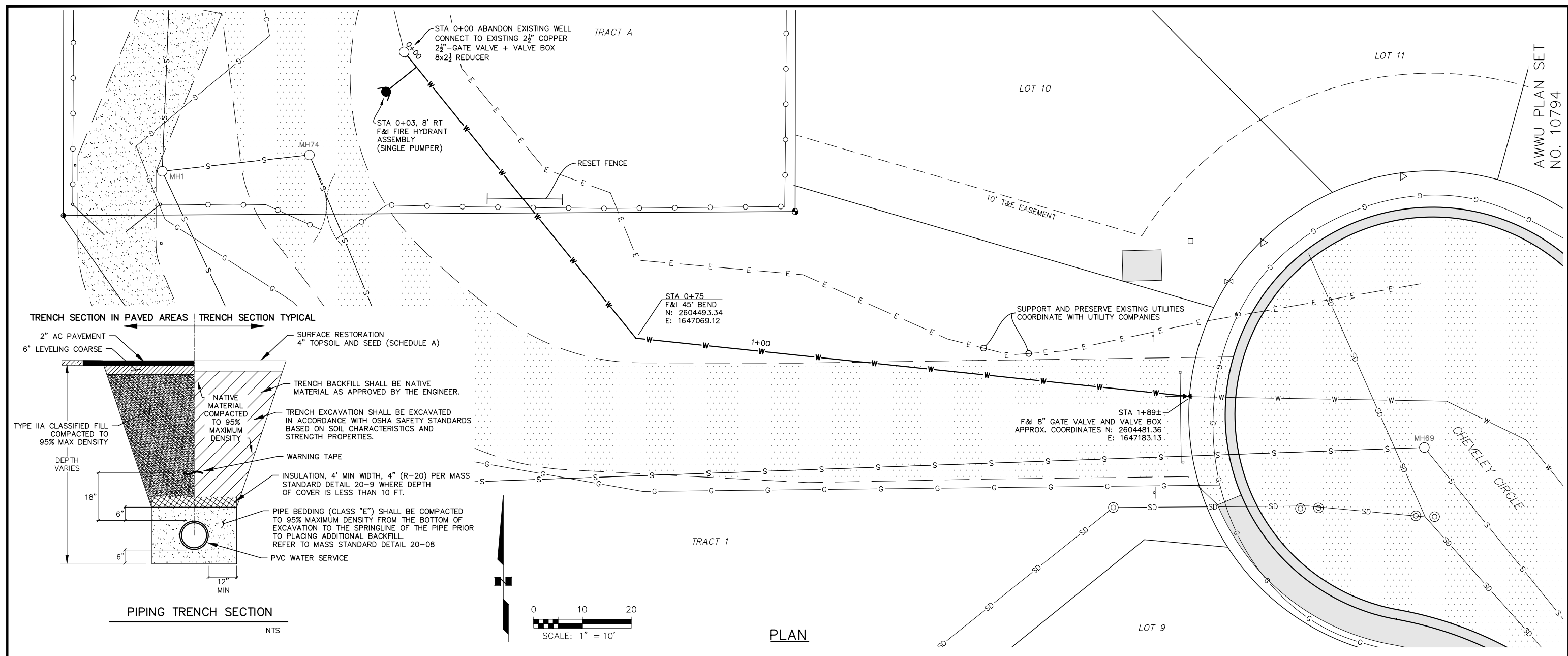
SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

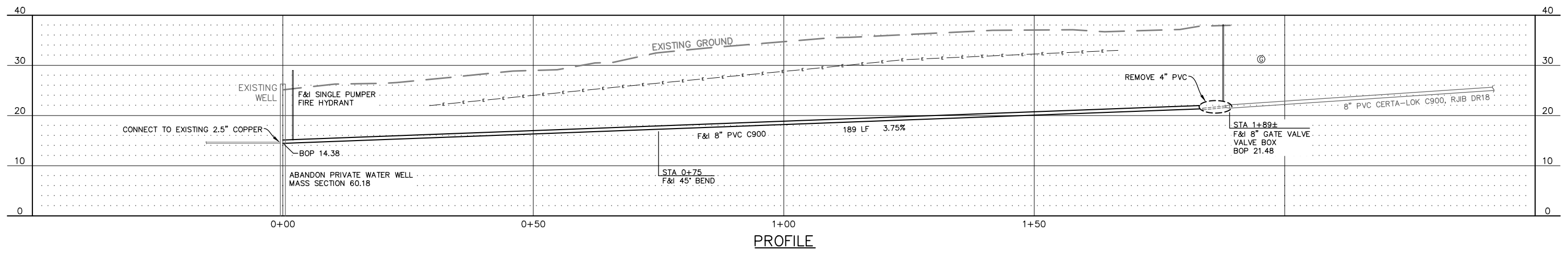
SITE PLAN

C1.0

HORZ SCALE: 1"=10' DATE: 10/29/2021 GRID: SW 2525 SHEET 5 of 104
 VERT SCALE: _____
 PROJ. ID.: WW.H7713



PLAN



PROFILE

VERIFY SCALE THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING. 0" = 1"

DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						

PLAN CHECK

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

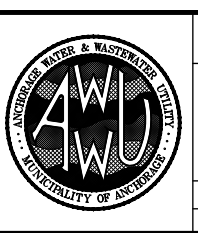
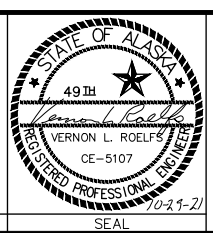
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 BY: _____ TITLE: _____
 DATE: _____

2. DATA TRANSFERRED BY: _____
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 DATE: _____

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 DATA TRANSFER CHECKED BY: _____
 COMPANY: _____
 BY: _____ TITLE: _____
 DATE: _____

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MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE A

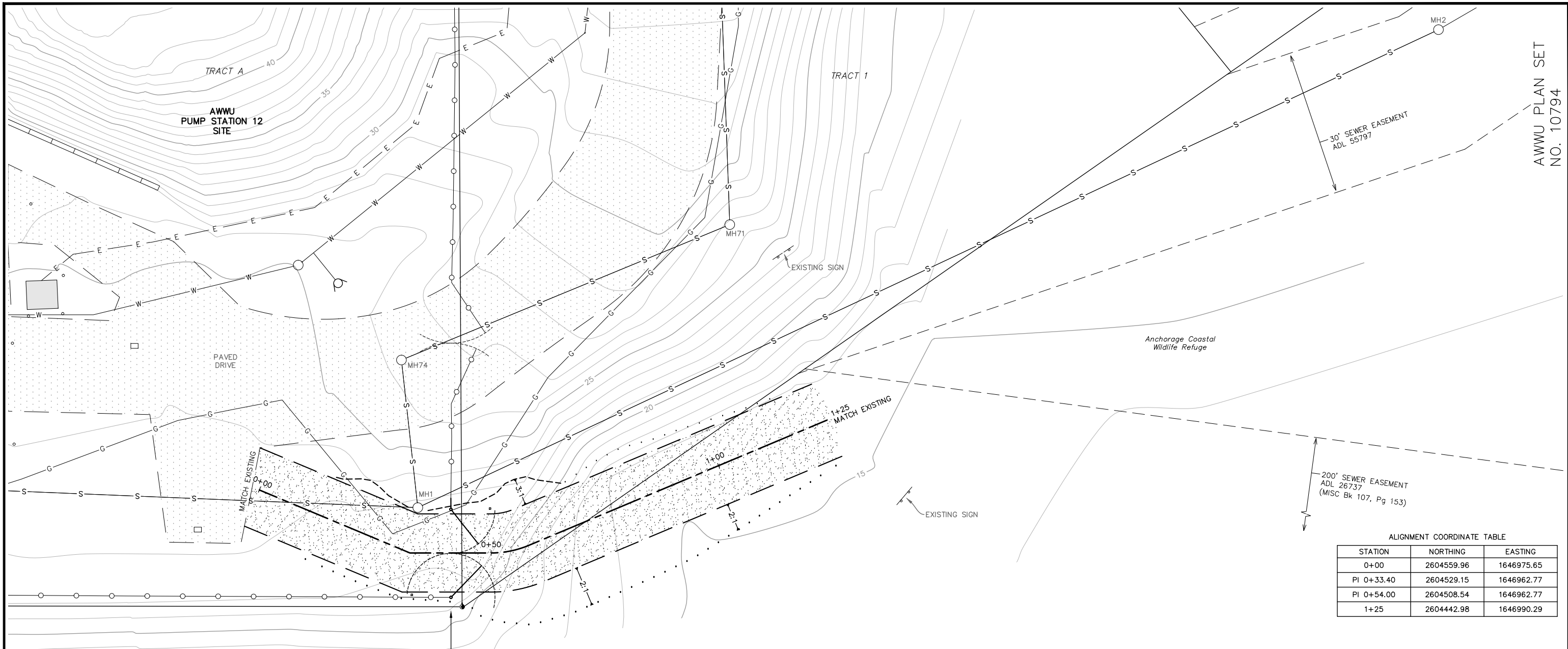
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

WATER SERVICE

C2.0

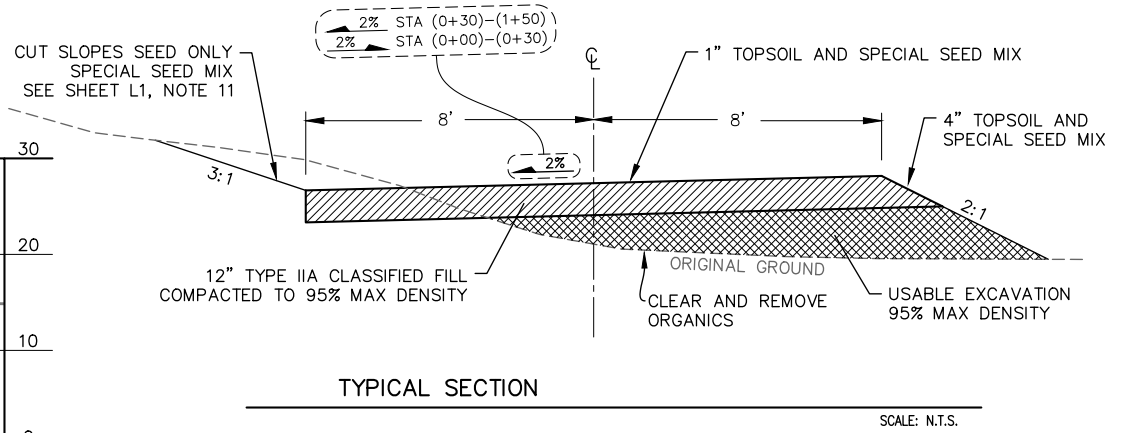
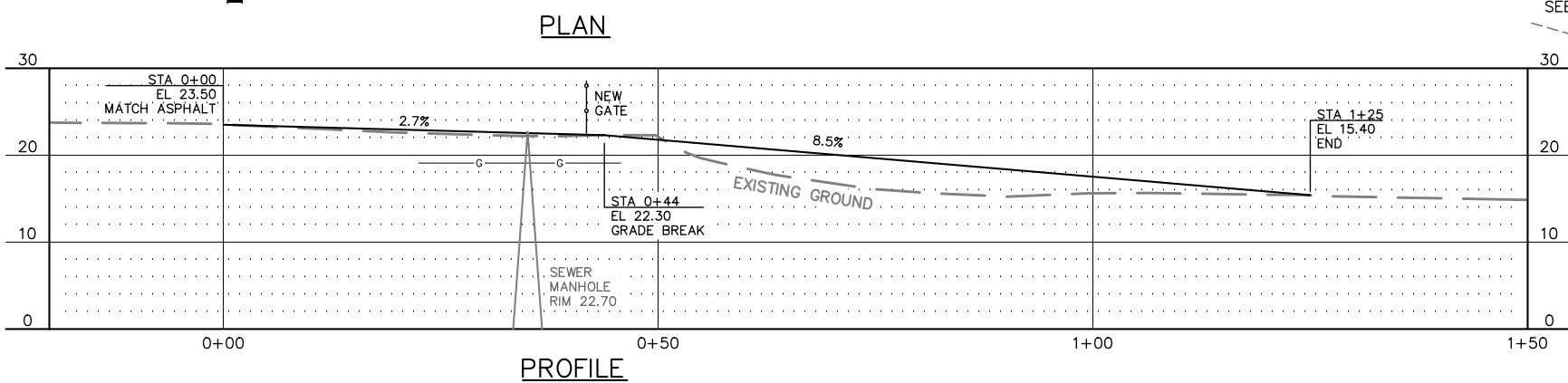
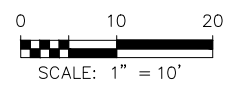
HORIZ SCALE: 1"=10' DATE: 10/29/2021 GRID: SW 2525
 VERT SCALE: 1"=10'
 PROJ. ID.: WW.H7713

SHEET 6 of 104



ALIGNMENT COORDINATE TABLE

STATION	NORTHING	EASTING
0+00	2604559.96	1646975.65
PI 0+33.40	2604529.15	1646962.77
PI 0+54.00	2604508.54	1646962.77
1+25	2604442.98	1646990.29



VERIFY SCALE THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.

0" 1" IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY. FULL SIZE SCALE: 1"=10' (HORIZ SCALE), 1"=10' (VERT SCALE).

DATA	DRAWN BY	CHECKED BY	DATE	DESCRIPTION	BY
BASE	EVR	VLR		TELEPHONE	
TOPOGRAPHY				ELECTRIC	
PROFILE				CABLE TV	
SANITARY SEWER				TRAFFIC SIGNAL	
STORM SEWER				DESIGN	
WATER				QUANTITIES	
GAS				MUN. FINAL CHECK	

PLAN CHECK

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VEI Consultants

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1345 RUDAKOF CIR #201
ANCHORAGE, AK 99508
LICENSE #AECC368

CONSULTANT

STATE OF ALASKA
49th
VERNON L. ROELFS
REGISTERED PROFESSIONAL ENGINEER
CE-5107
70-21-21

SEAL

ANCHORAGE WATER & WASTEWATER UTILITY
AWWU
MUNICIPALITY OF ANCHORAGE

MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

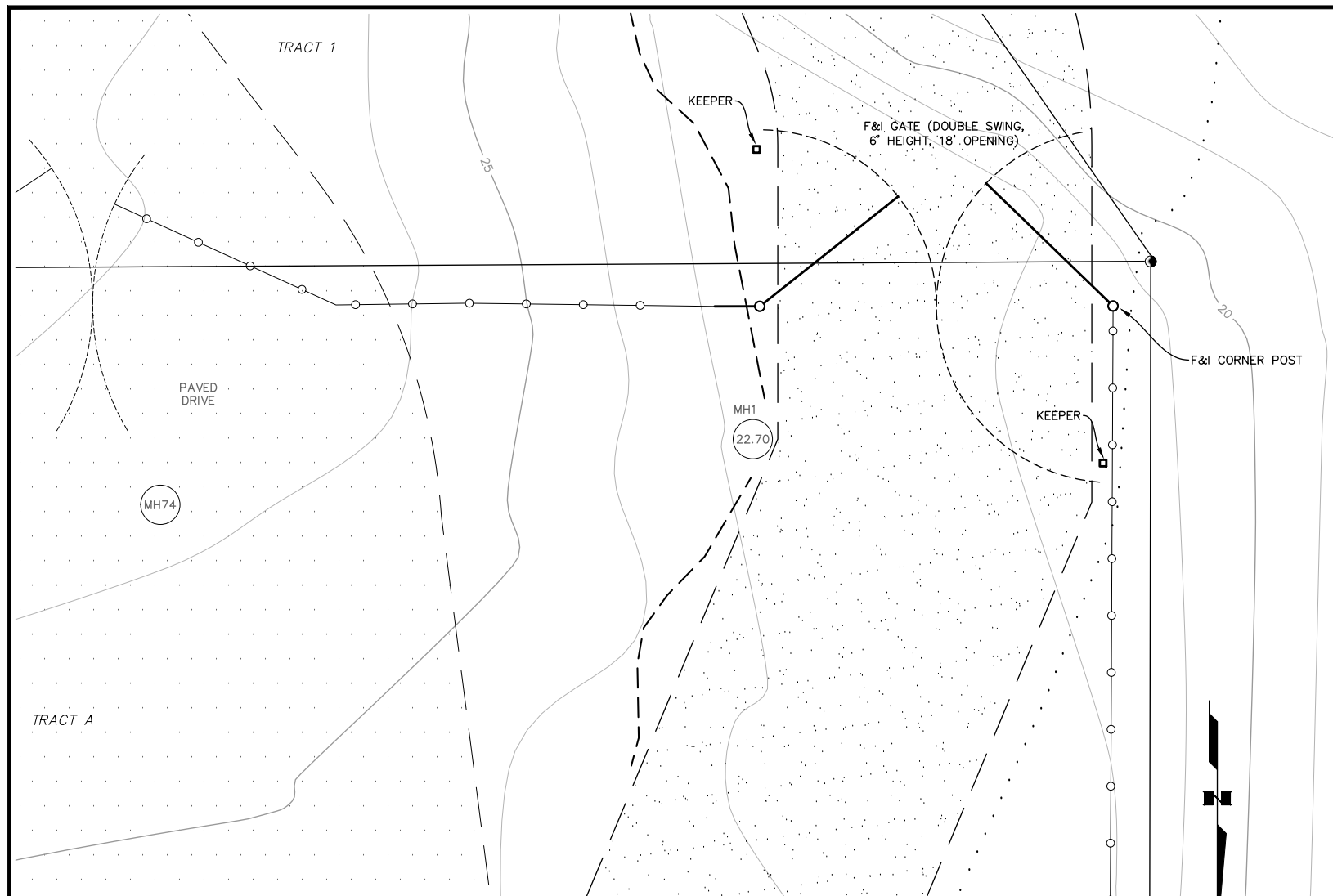
SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

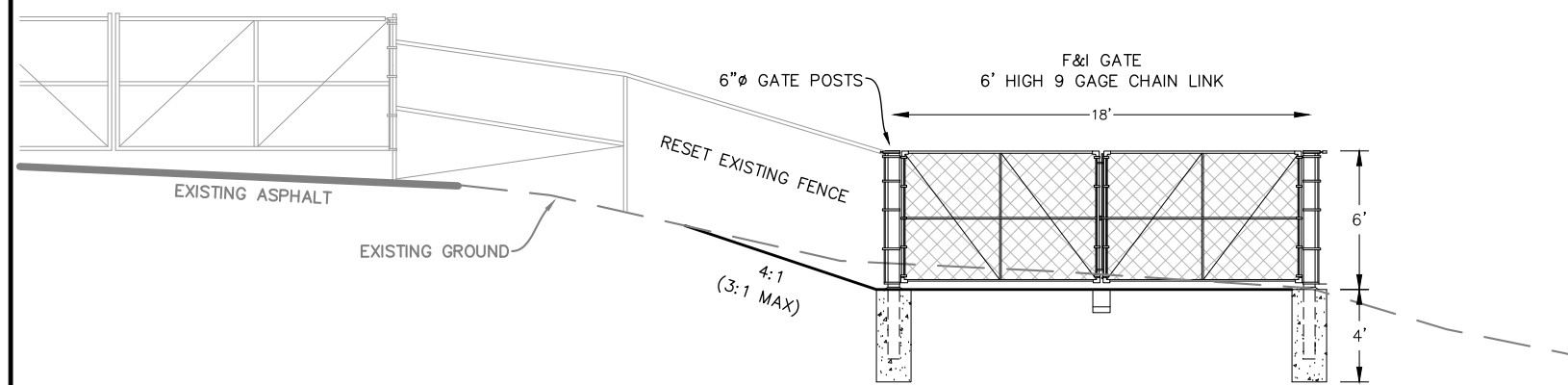
TURNAGAIN TRUNK ACCESS

C3.0

HORIZ SCALE: 1"=10' DATE: 10/29/2021 GRID: SW 2525 SHEET 7 of 104
VERT SCALE: 1"=10'
PROJ. ID.: WW.H7713



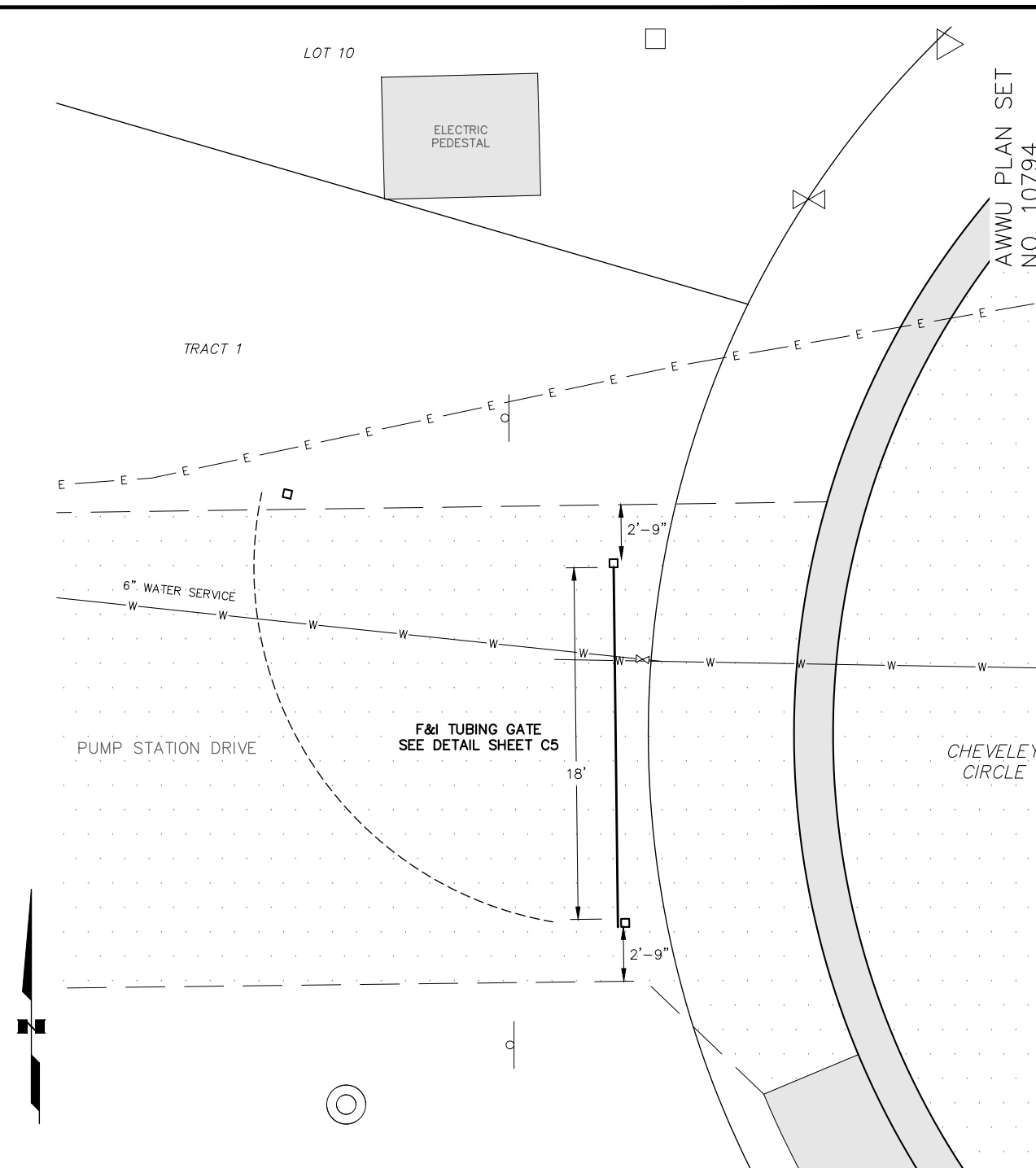
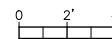
PLAN



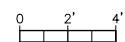
SECTION

TURNAGAIN ACCESS GATE PLAN AND SECTION

REF: MASS 70.18 DETAIL 70-41



PUMP STATION DRIVE GATE PLAN



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

RECORD DRAWING		Note: To be filled out on original drawings upon project completion.	
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CONTRACTOR: ---	BY: ---	TITLE: ---	DATE: ---
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DATE: ---	BY: ---	TITLE: ---	DATE: ---
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	BY: ---	TITLE: ---	DATE: ---

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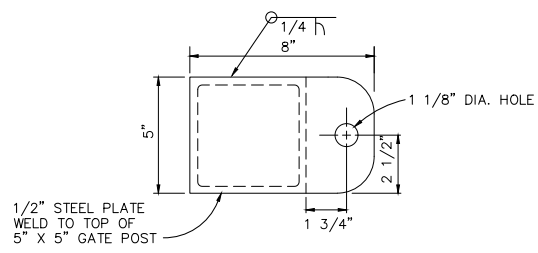
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 Consultants
 PHONE: 337-3330
 1345 RUDAKOF CIR #201
 ANCHORAGE, AK 99508
 LICENSE #AECC368
 CONSULTANT

STATE OF ALASKA
 49th
 VERNON L. ROELFS
 REGISTERED PROFESSIONAL ENGINEER
 CE-5107
 70-21-21
 SEAL

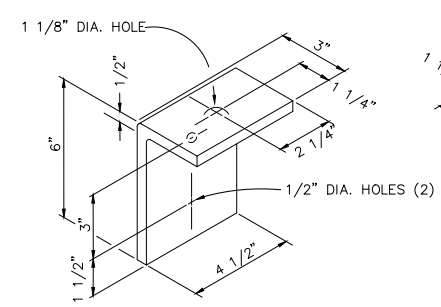
ANCHORAGE WATER & WASTEWATER UTILITY
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MUNICIPALITY OF ANCHORAGE
 WATER & WASTEWATER UTILITY
 SCHEDULE A
 PS12 FORCE MAIN / GRAVITY JUNCTION REHAB
PUMP STATION VEHICLE ACCESS GATES
 C4.0
 HORZ SCALE: DATE: 10/29/2021 GRID: SW 2525 SHEET 8 of 104
 VERT SCALE: PROJ. ID: WW.H7713

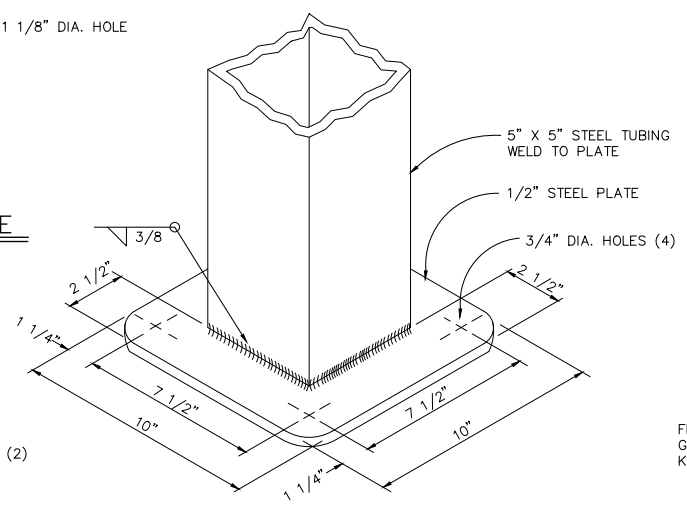
AWWU PLAN SET
 NO. 10794



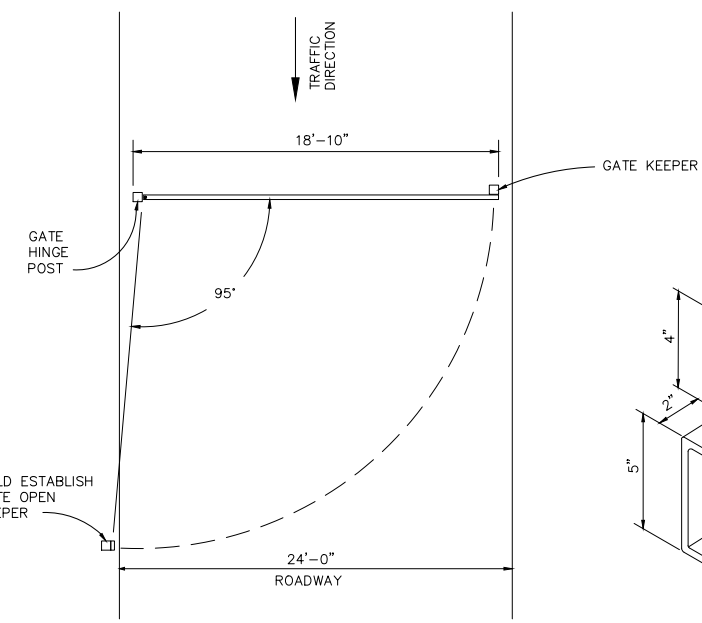
DETAIL A - CAP PLATE
NOT TO SCALE



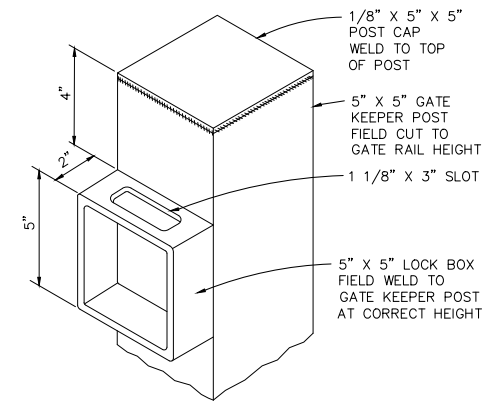
DETAIL B - STEEL ANGLE
NOT TO SCALE



DETAIL C - STEEL PLATES
NOT TO SCALE

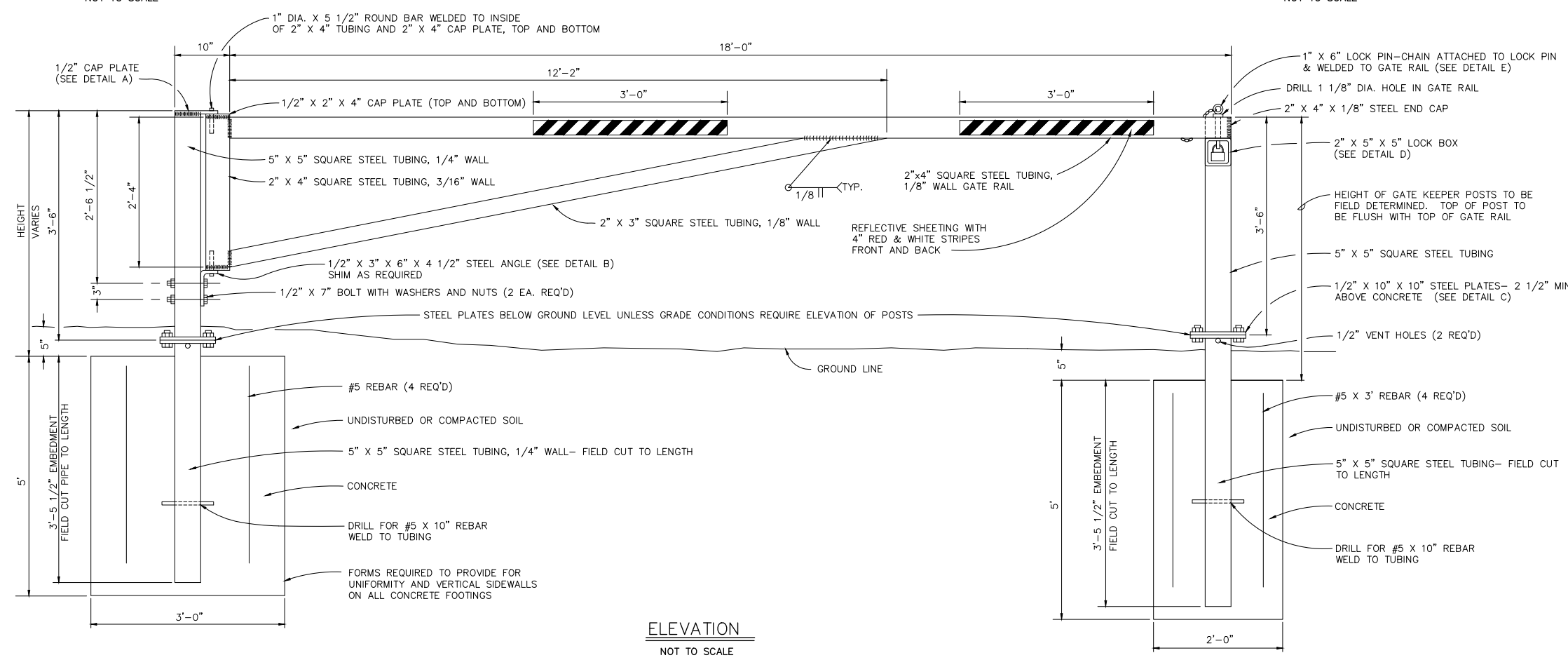


TYPICAL GATE INSTALLATION
NOT TO SCALE

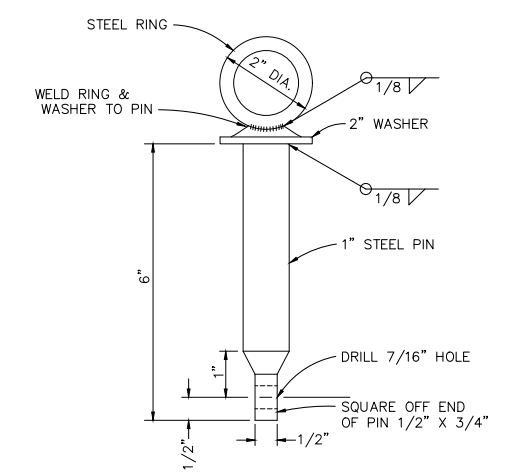


DETAIL D - LOCK BOX
NOT TO SCALE

- GENERAL NOTES**
- SCOUR ALL BOLT THREADS AFTER NUTS ARE TIGHTENED.
 - PRIME WITH RUST INHIBITIVE PRIMER. PAINT WITH HEAVY DUTY ALUMINUM ENAMEL.
 - CONCRETE FOR GATE POSTS TO BE POURED IN HAND DUG OR AUGERED HOLE- FORM REQUIRED FOR UNIFORM & VERTICAL SIDEWALLS.
 - LENGTH OF GATE MAY BE SHORTENED IF ROAD CONDITIONS REQUIRE.
- MATERIAL LIST**
- 3 - 5" X 5" X 3'-5 1/2" SQUARE TUBING- 1/4" WALL THICKNESS (TOP POSTS)
 - 1 - 2" X 4" X 2'-4" SQUARE TUBING- 3/16" WALL THICKNESS (HINGE TUBE)
 - 1 - 2" X 4" X 18" SQUARE TUBING- 1/8" WALL THICKNESS (GATE RAIL)
 - 1 - 2" X 3" X 12'-5" SQUARE TUBING- 1/8" WALL THICKNESS (BRACE)
 - 2 - 5" X 5" X 2" SQUARE TUBING- 1/4" WALL THICKNESS (LOCK BOXES)
 - 6 - 10" X 10" X 1/2" STEEL PLATE
 - 1 - 5" X 8" X 1/2" STEEL PLATE (CAP PLATE)
 - 3 - 2" X 4" X 1/8" STEEL PLATE (END CAPS)
 - 2 - 5" X 5" X 1/8" STEEL PLATE (POST CAPS)
 - 2 - 1" X 5 1/2" ROUND STEEL BARS (HINGE PINS)
 - 1 - 1" X 6" ROUND STEEL BAR (LOCK PIN)
 - 1 - 2" DIA. STEEL RING (LOCK PIN)
 - 2 - 1/2" X 7" STEEL BOLTS WITH WASHERS AND NUTS
 - 12 - 3/4" X 1 3/4" STEEL BOLTS WITH FLAT WASHERS, LOCK WASHERS & NUTS
 - 12 - 3" LENGTHS, #5 REBAR
 - 3 - 10" LENGTHS, #5 REBAR
 - 12 FT. - DAY-NIGHT SAFETY TAPE (3" WIDE)
 - 1 - 2" DIA. WASHER (LOCK PIN)
 - 1 - 1/2" X 3" X 6" X 4 1/2" STEEL ANGLE
 - 3 - 5" X 5" X 6'-6 1/2" SQUARE TUBING- 1/4" WALL THICKNESS (BOTTOM POSTS)



ELEVATION
NOT TO SCALE



DETAIL E - LOCK PIN
NOT TO SCALE

VERIFY SCALE THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.

0" — 1"

IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.

FULL SIZE SCALE
HORZ SCALE:
VERT SCALE:

DATA	DRAWN BY	CHECKED BY	DATE	DESCRIPTION	BY
BASE	EVR	VLR		TELEPHONE	
TOPOGRAPHY				ELECTRIC	
PROFILE				CABLE TV	
SANITARY SEWER				TRAFFIC SIGNAL	
STORM SEWER				DESIGN	
WATER				QUANTITIES	
GAS				MUN. FINAL CHECK	

PLAN CHECK

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

1. DATA PROVIDED BY: _____

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CONTRACTOR: _____

BY: _____ TITLE: _____

DATE: _____

2. DATA TRANSFERRED BY: _____

COMPANY: _____

DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.

DATA TRANSFER CHECKED BY: _____

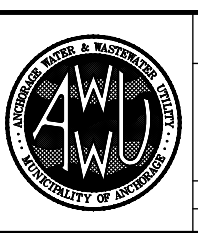
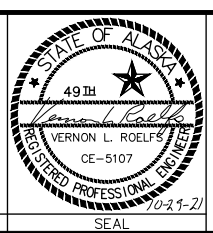
COMPANY: _____

BY: _____ TITLE: _____

DATE: _____

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SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

PUMP STATION DRIVE GATE DETAIL

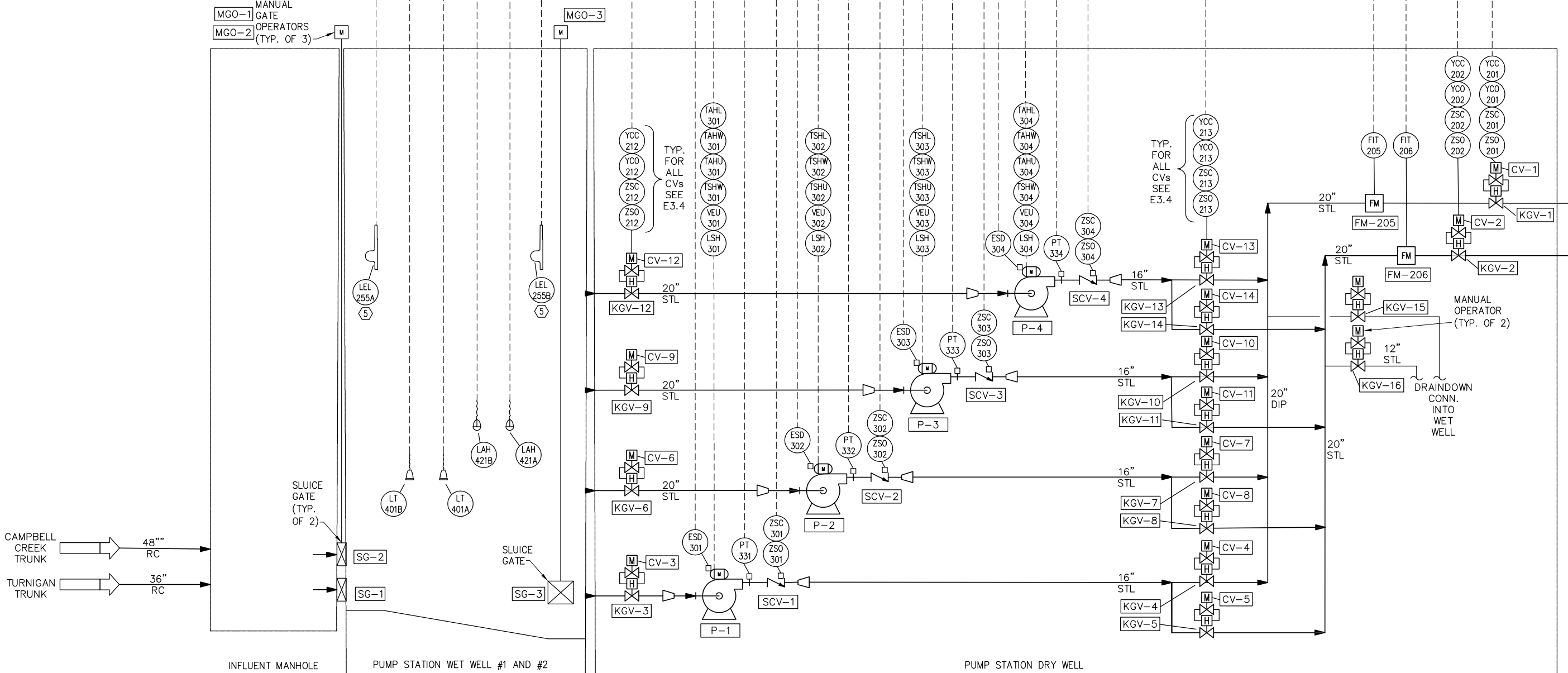
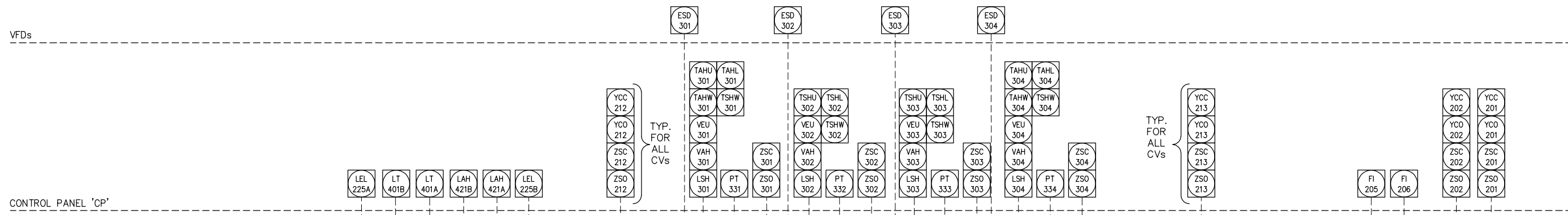
C5.0

HORZ SCALE: _____ DATE: 10/29/2021 GRID: SW 2525

VERT SCALE: _____

PROJ. ID.: WW.H7713

SHEET 9 of 104



FORCE MAIN 'A' TO DIMOND BLVD
FORCE MAIN 'B' TO DIMOND BLVD

- P-1 (NEW) 200HP 5114 GPM LIFT PUMP 460V, 3Ø
- P-2 (EXISTING) 200HP 5114 GPM LIFT PUMP 460V, 3Ø
- P-3 (EXISTING) 200HP 5114 GPM LIFT PUMP 460V, 3Ø
- P-4 (NEW) 200HP 5114 GPM LIFT PUMP 460V, 3Ø

CV-1 THRU 14
SEE SHEETS M0.2
AND M3.0 FOR
DETAILS

FILE: p:\Projects\VEI\pump_station_12\Dwg\Elec\P1.0 PUMP STATION P&ID.dwg DATE: 11/2/2021 11:35 AM

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.		REVISIONS	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DATE	DESCRIPTION	BY	DATE	DESCRIPTION
BASE	---	VLR	---	---	---	---	---	---	---
TOPOGRAPHY	---	---	---	---	---	---	---	---	---
PROFILE	---	---	---	---	---	---	---	---	---
SANITARY SEWER	---	---	---	---	---	---	---	---	---
STORM SEWER	---	---	---	---	---	---	---	---	---
WATER	---	---	---	---	---	---	---	---	---
GAS	---	---	---	---	---	---	---	---	---

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

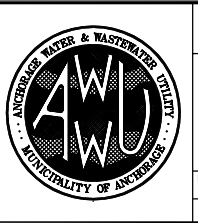
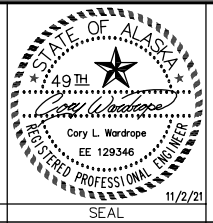
1. DATA PROVIDED BY: _____
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 CONTRACTOR: _____
 BY: _____ TITLE: _____
 DATE: _____

2. DATA TRANSFERRED BY: _____
 COMPANY: _____
 DATE: _____

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 DATA TRANSFER CHECKED BY: _____
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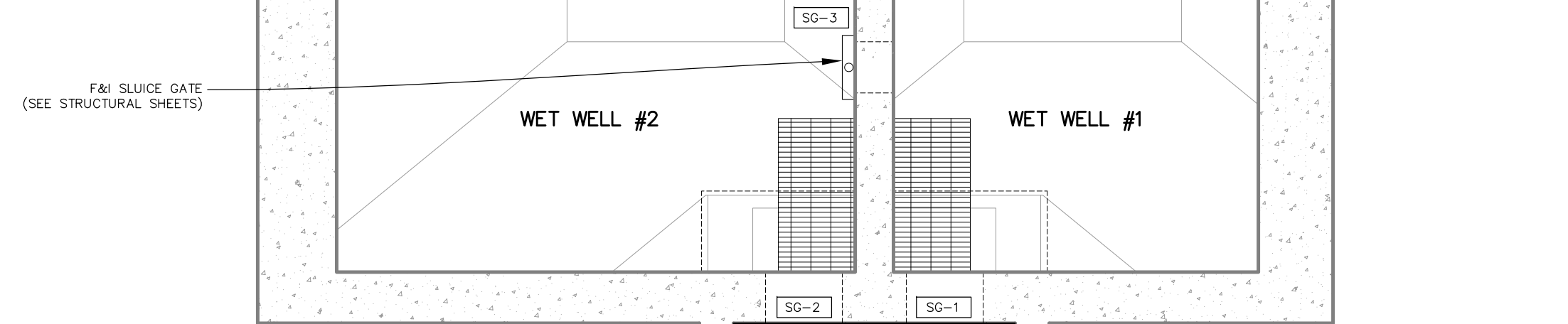
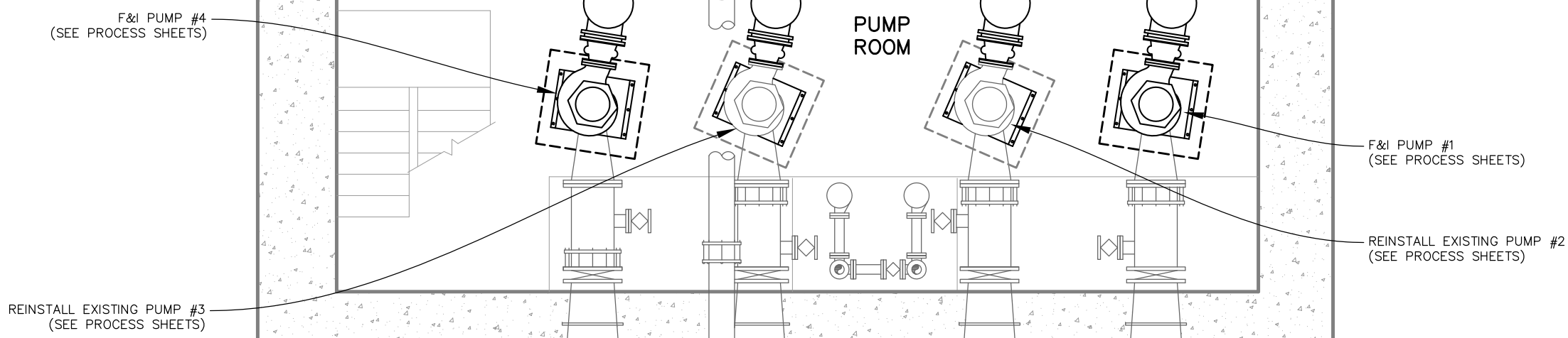
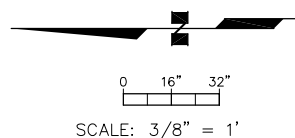
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WATER & WASTEWATER UTILITY

SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB
PUMP STATION P&ID

P1.0

HORIZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 10 of 104
 VERT SCALE: NA
 PROJ. ID.: WW:H7713



SLUICE GATE SCHEDULE

GATE NO.	GATE TYPE	SIZE (IN)	STEM	OPERATING FLOOR ELEV	INVERT ELEV	HEAD, SEATING AND UNSEATING (FT)	OPENING ROTATION	OPERATOR TYPE	COMMENTS
SG-1	NON-SELF CONTAINED, WALL MOUNTED, FLUSH BOTTOM	36 x 36	NON-RISING	25.00	-4.50	29.50	CCW	ELECTRIC, REUSE EXISTING	REPLACE EXISTING
SG-2	NON-SELF CONTAINED, WALL MOUNTED, FLUSH BOTTOM	36 x 36	NON-RISING	25.00	-4.50	29.50	CCW	ELECTRIC, REUSE EXISTING	REPLACE EXISTING
SG-3	NON-SELF CONTAINED, WALL MOUNTED, STANDARD BOTTOM	24 x 24	NON-RISING	25.00	-7.25	32.25	CCW	ELECTRIC, NEW	REPLACE EXISTING

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" — 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

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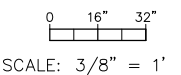
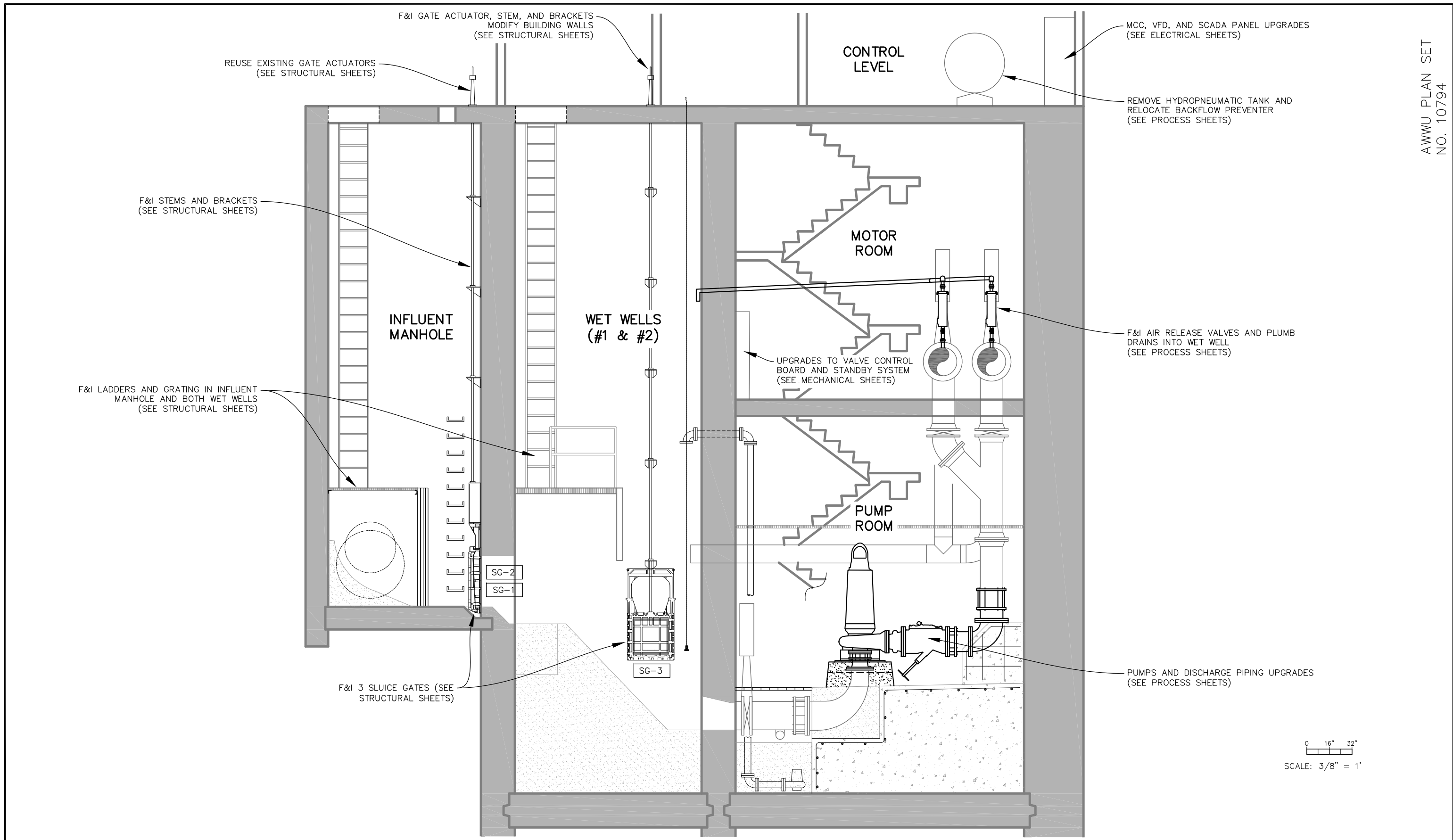
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WATER & WASTEWATER UTILITY

SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

PUMP STATION WORK OVERVIEW
PLAN VIEW P2.0

HORIZ SCALE: DATE: 10/29/2021 GRID: SW 2525 SHEET 11 of 104
VERT SCALE: PROJ. ID.: WW.H7713



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" — 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

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70-21-21

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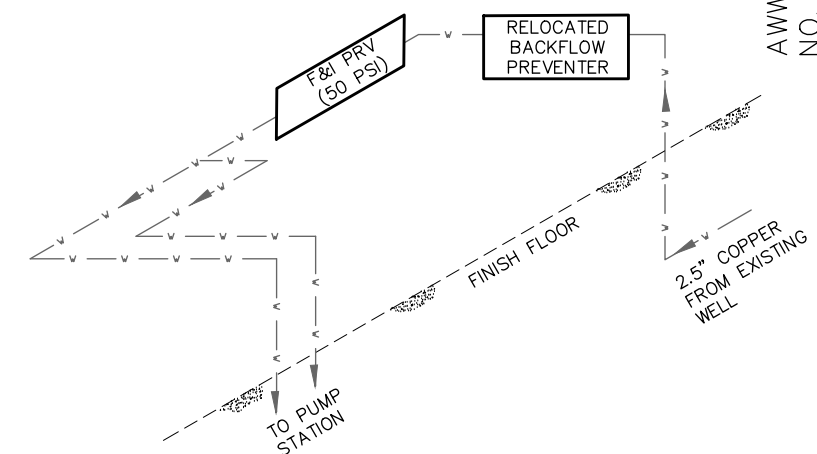
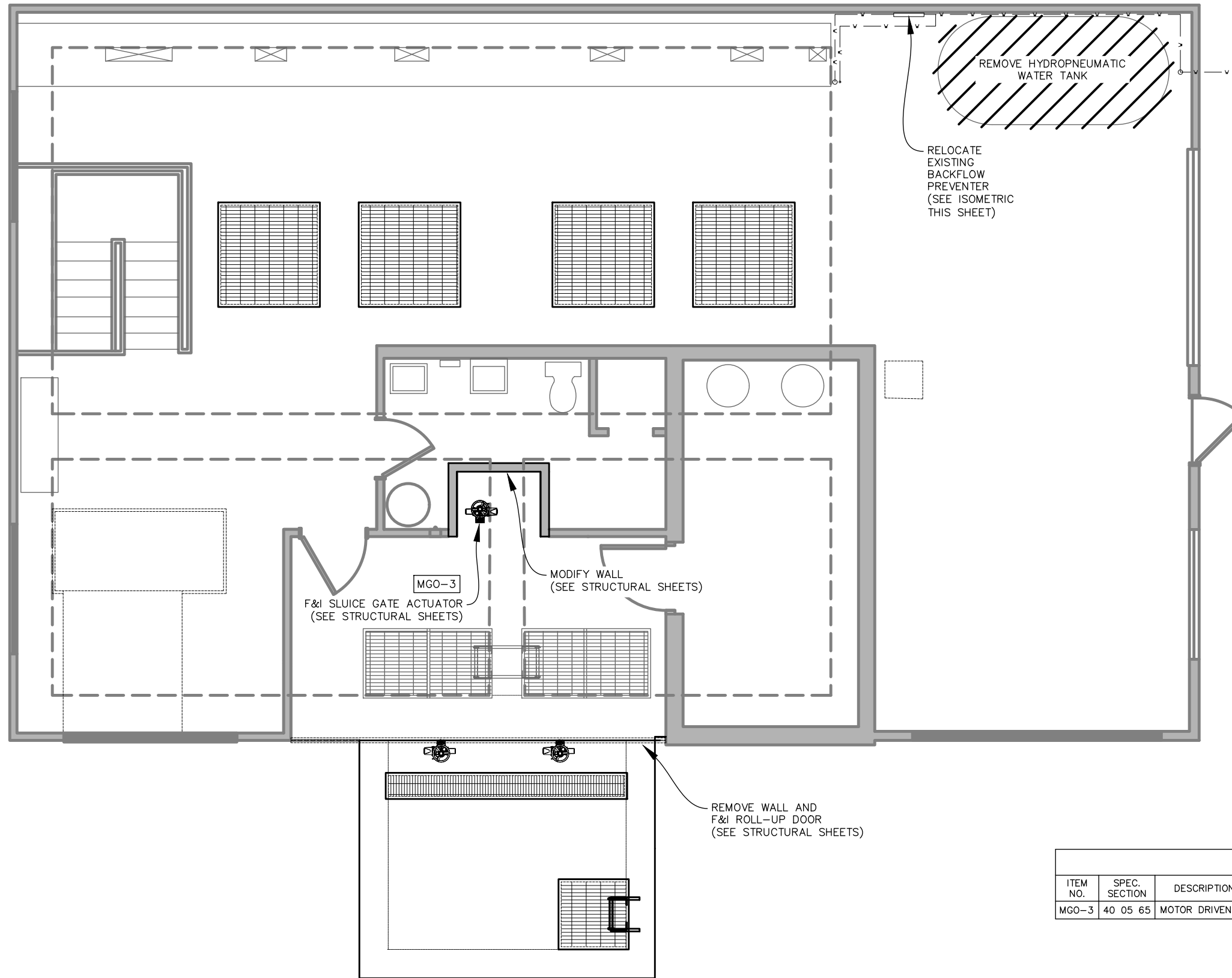
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WATER & WASTEWATER UTILITY

SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

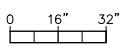
PUMP STATION WORK OVERVIEW
SECTION VIEW P3.0

HORIZ SCALE: DATE: 10/29/2021 GRID: SW 2525 SHEET 12 of 104
 VERT SCALE: PROJ. ID.: WW.H7713



WATER SERVICE - ISOMETRIC
SCALE: NTS

CONTROL LEVEL - PLAN
SCALE: 3/8" = 1'



APPURTENANCES SCHEDULE		
ITEM NO.	SPEC. SECTION	DESCRIPTION
MGO-3	40 05 65	MOTOR DRIVEN SLUICE GATE ACTUATOR WITH LOCAL CONTROLS

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

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 COMPANY: _____
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 DATA TRANSFER CHECKED BY: _____
 COMPANY: _____
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CE-5107
70-21-21

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SCHEDULE A

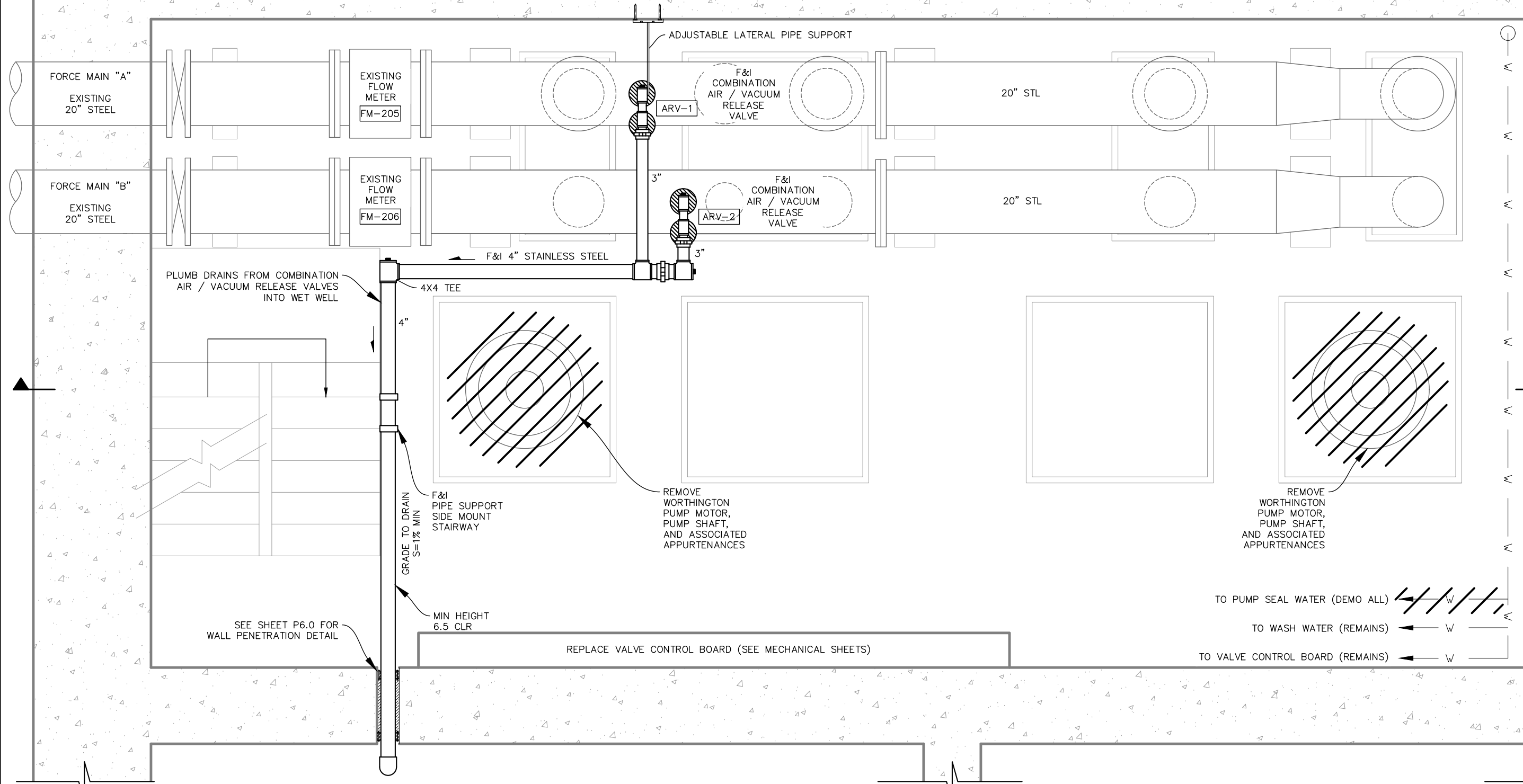
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

**CONTROL LEVEL
PLAN VIEW**

P4.0

HORIZ SCALE: DATE: 10/29/2021 GRID: SW 2525 SHEET 13 of 104
 VERT SCALE: PROJ. ID.: WW.H7713

VALVE SCHEDULE						
VALVE NO.	SPEC. SECTION	TYPE	SIZE	WORKING PRESS. (PSI)	OPERATOR	REMARKS
ARV-1	40 05 53	AIR/VACUUM RELEASE VALVE	3"	175		COMBINATION AIR/VACUUM RELEASE VALVE
ARV-2	40 05 53	AIR/VACUUM RELEASE VALVE	3"	175		COMBINATION AIR/VACUUM RELEASE VALVE



MOTOR ROOM - PLAN
SCALE: 3/4" = 1'

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

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CITY OF ANCHORAGE

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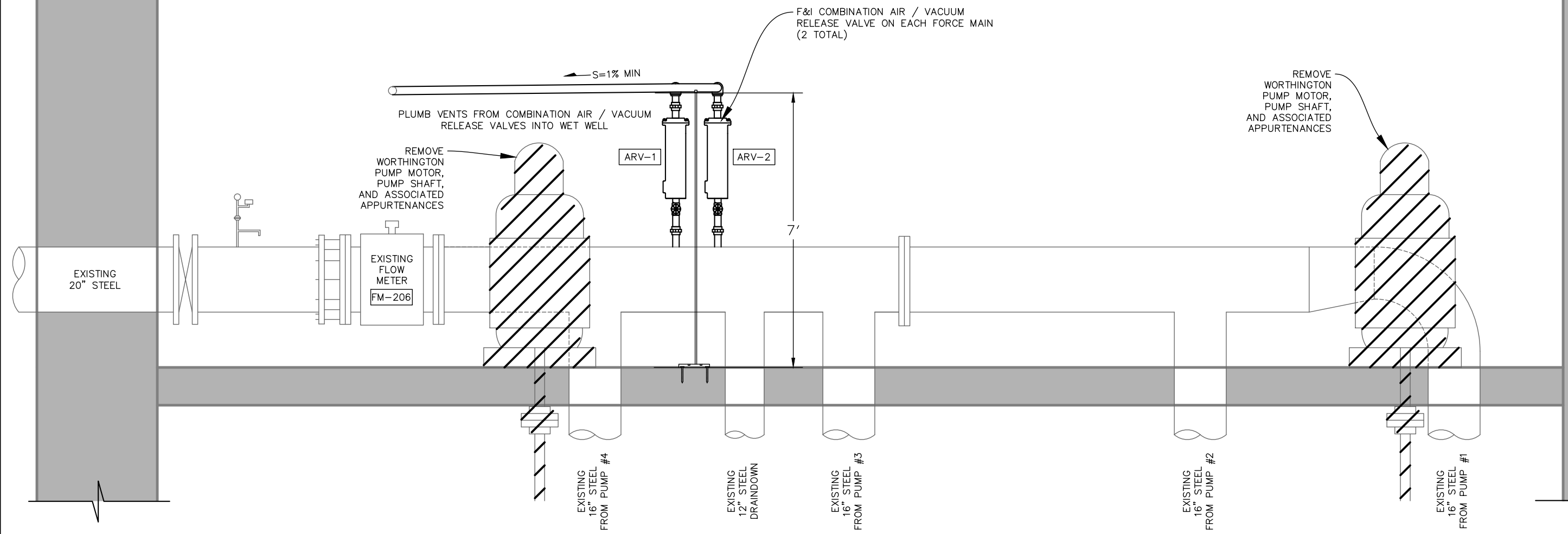
SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

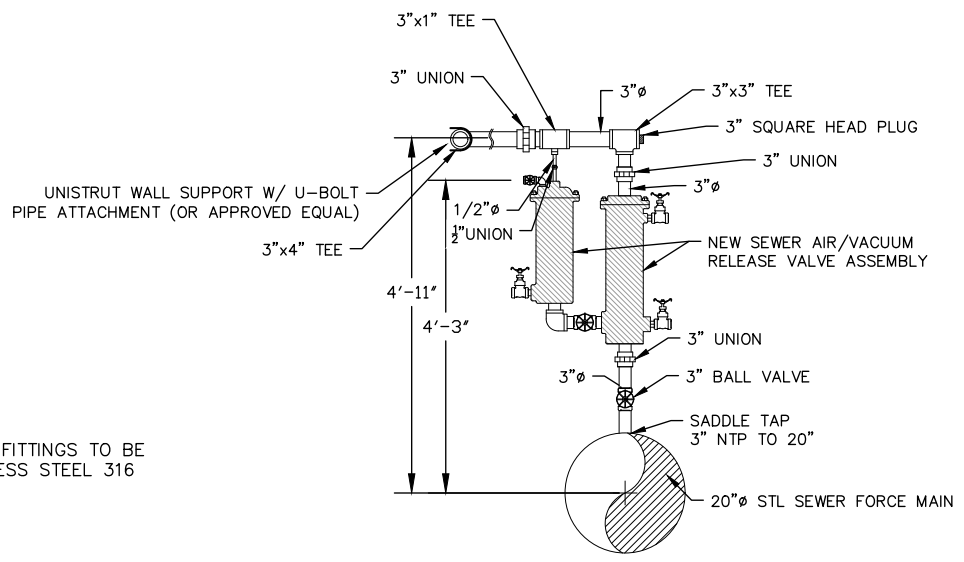
**MOTOR ROOM
PLAN VIEW**

P5.0

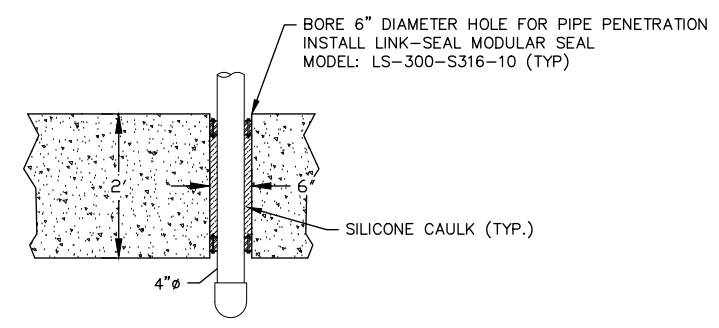
HORIZ SCALE: _____ DATE: 10/29/2021 GRID: SW 2525 SHEET 14 of 104
VERT SCALE: _____
PROJ. ID.: WW.H7713



MOTOR ROOM - SECTION
SCALE: 3/4" = 1'



AIR/VACUUM RELEASE VALVE PIPING
SCALE: 3/4" = 1'



WALL PENETRATION
SCALE: 3/4" = 1'

VERIFY SCALE THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING. 0" = 1" IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY. FULL SIZE SCALE: VERT SCALE: 1" = 1" HORIZ SCALE: 1" = 1"

DATA	DRAWN BY	CHECKED BY	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE		
TOPOGRAPHY			ELECTRIC		
PROFILE			CABLE TV		
SANITARY SEWER			TRAFFIC SIGNAL		
STORM SEWER			DESIGN		
WATER			QUANTITIES		
GAS			MUN. FINAL CHECK		

PLAN CHECK

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

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CONTRACTOR: _____
BY: _____ TITLE: _____
DATE: _____

2. DATA TRANSFERRED BY: _____
COMPANY: _____
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DATE: _____

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VEI Consultants

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LICENSE #AEC368

CONSULTANT

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49th
VERNON L. ROELFS
REGISTERED PROFESSIONAL ENGINEER
CE-5107
70-21-21

SEAL

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AWWU
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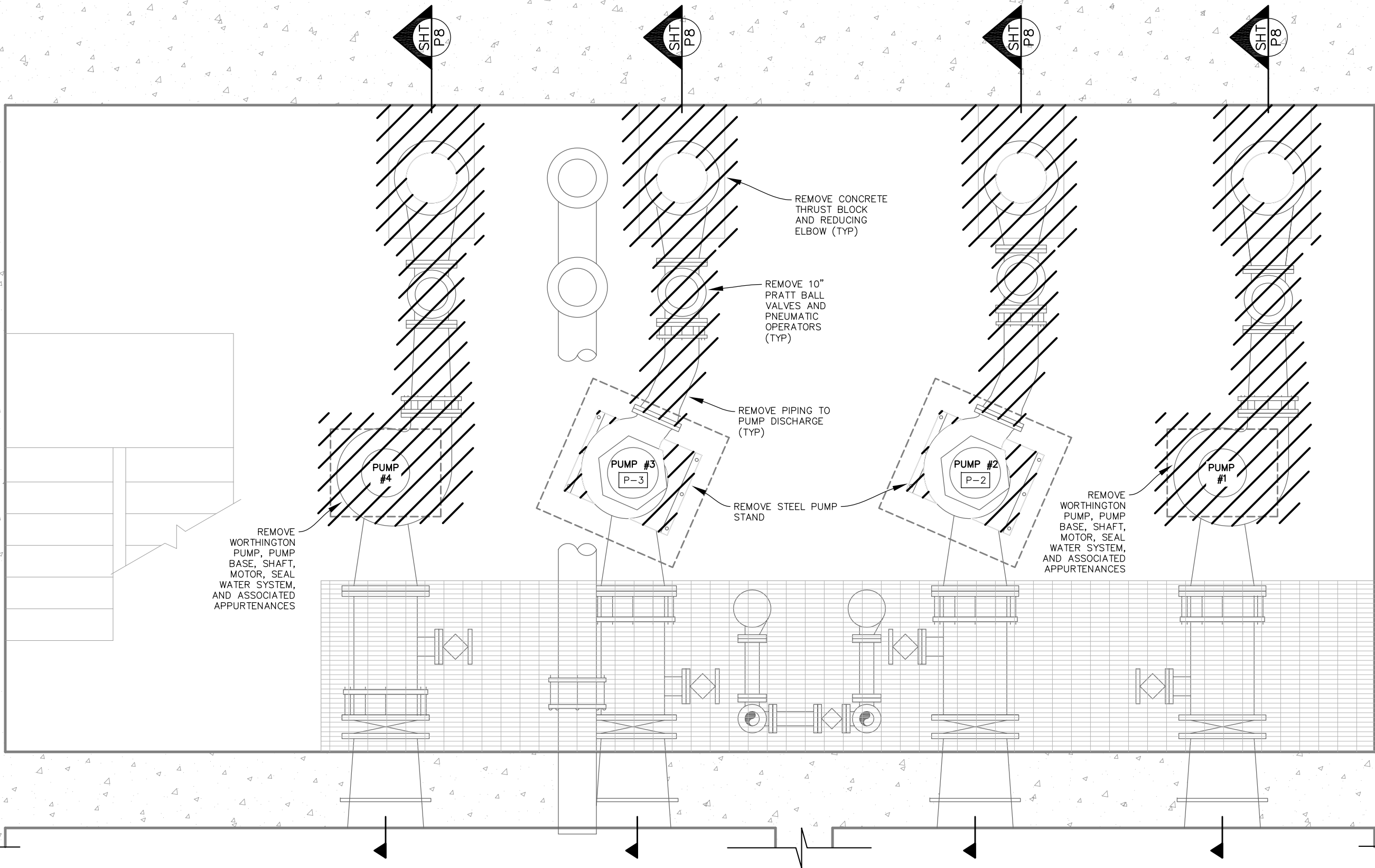
SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

MOTOR ROOM SECTION VIEW

P6.0

HORIZ SCALE: DATE: 10/29/2021 GRID: SW 2525 SHEET 15 of 104
VERT SCALE: PROJ. ID.: WW.H7713



PUMP ROOM DEMOLITION - PLAN
SCALE: 3/4" = 1' 0 8" 16"

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

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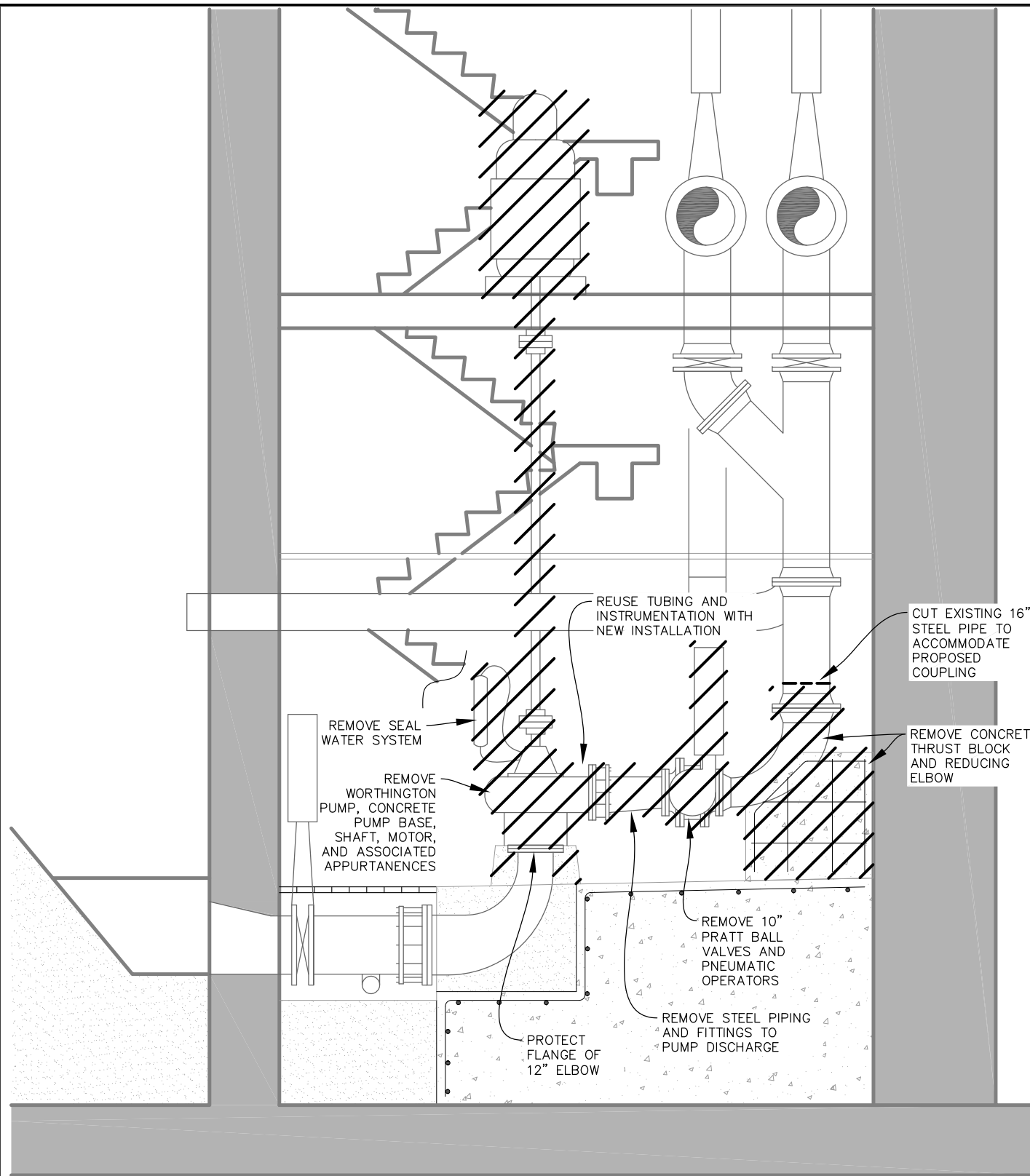
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SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

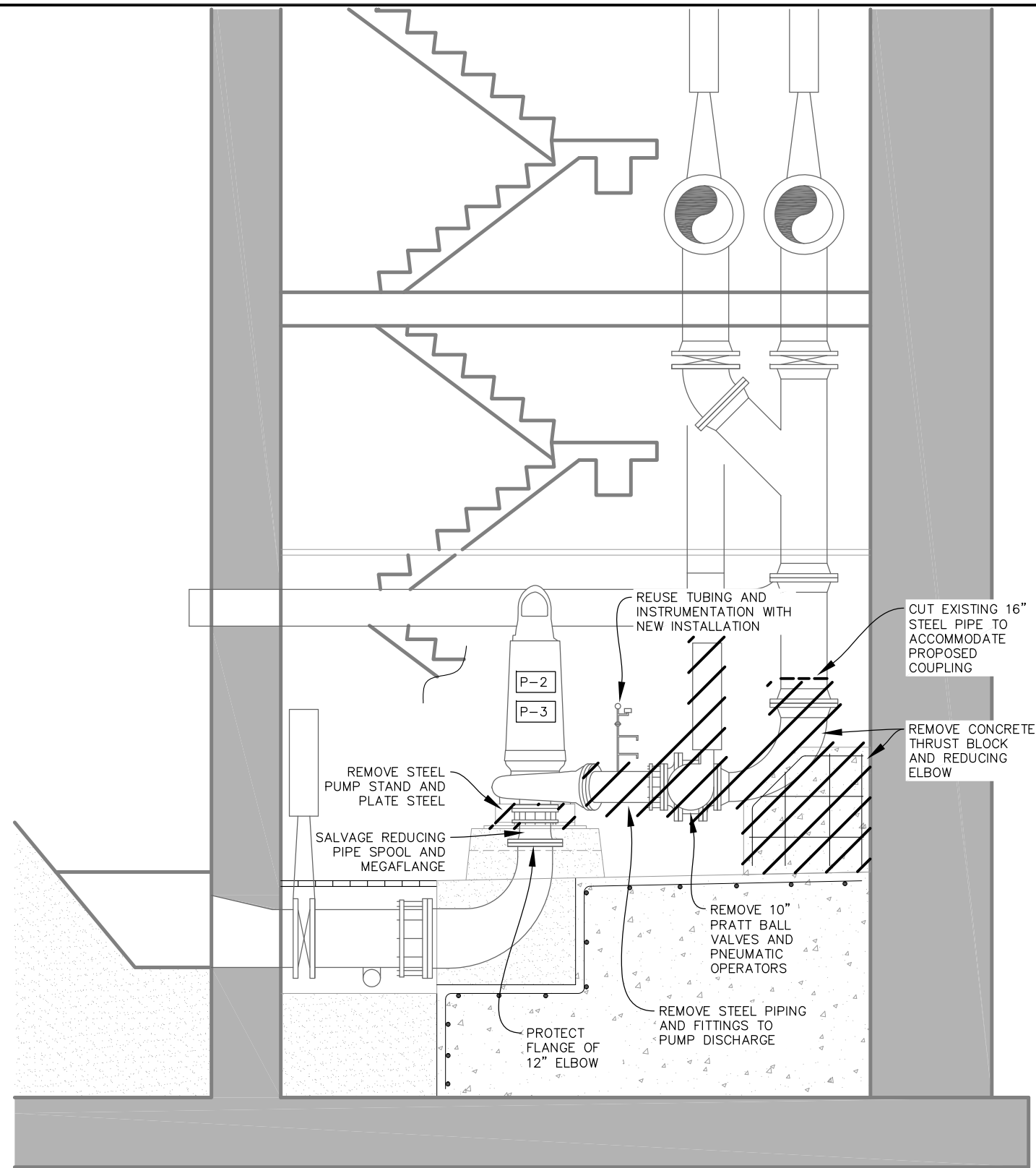
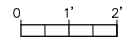
**PUMP ROOM DEMOLITION
PLAN VIEW** P7.0

HORIZ SCALE: _____ DATE: 10/29/2021 GRID: SW 2525 SHEET 16 of 104
VERT SCALE: _____
PROJ. ID.: WW.H7713



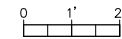
PUMP #1 AND PUMP #4 DEMOLITION - SECTION

SCALE: 1/2" = 1'



PUMP #2 AND PUMP #3 DEMOLITION - SECTION

SCALE: 1/2" = 1'



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" — 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

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SCHEDULE A

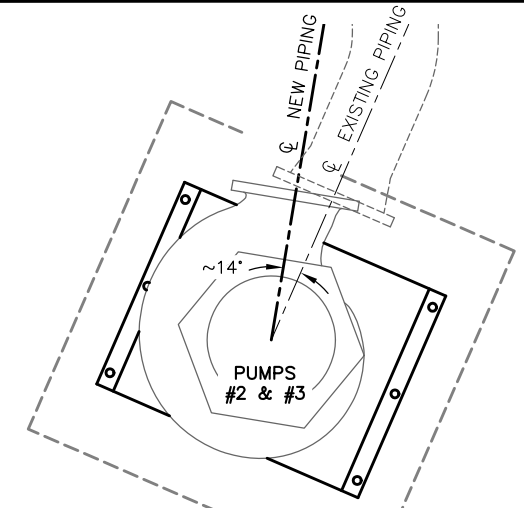
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

PUMP ROOM DEMOLITION
SECTION VIEW

P8.0

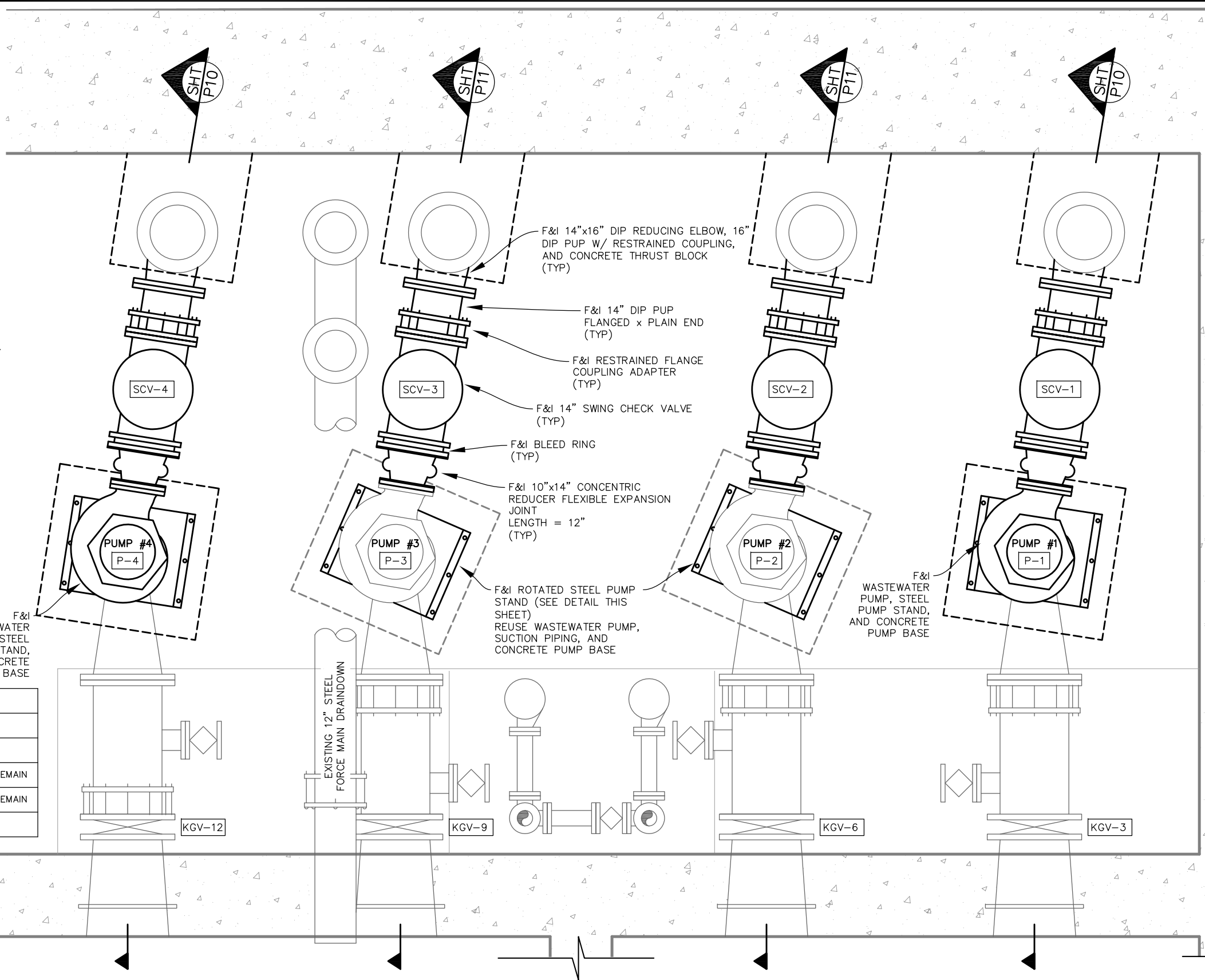
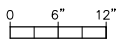
HORIZ SCALE: _____ DATE: 10/29/2021 GRID: SW 2525
 VERT SCALE: _____
 PROJ. ID.: WW.H7713

SHEET 17 of 104



NOTE: PUMP WILL BE ROTATED ON THE NEW STEEL PUMP STAND ~14°. CONTRACTOR SHALL FIELD VERIFY

ROTATED PUMP BASE - PUMPS 2 & 3
SCALE: 1" = 1'



PUMP ROOM - PLAN
SCALE: 3/4" = 1'

PUMP SCHEDULE

PUMP NO.	SPEC. SECTION	TYPE	HP	DESIGN POINT	REMARKS
P-1	43 23 00	SUBMERSIBLE, FOR DRY PIT	200	5100 GPM @ 84 FT	NEW
P-2	43 23 00	ABS XFP 250J-CB2	200	5100 GPM @ 84 FT	EXISTING, TO REMAIN
P-3	43 23 00	ABS XFP 250J-CB2	200	5100 GPM @ 84 FT	EXISTING, TO REMAIN
P-4	43 23 00	SUBMERSIBLE, FOR DRY PIT	200	5100 GPM @ 84 FT	NEW

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATE	DESCRIPTION	REV	DATE	DESCRIPTION	BY	DATE
BASE	---	---	---	---	---	---	---	---	---
TOPOGRAPHY	---	---	---	---	---	---	---	---	---
PROFILE	---	---	---	---	---	---	---	---	---
SANITARY SEWER	---	---	---	---	---	---	---	---	---
STORM SEWER	---	---	---	---	---	---	---	---	---
WATER	---	---	---	---	---	---	---	---	---
GAS	---	---	---	---	---	---	---	---	---
PLAN CHECK					REVISIONS				

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CE-5107
70-21-21

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WATER & WASTEWATER UTILITY

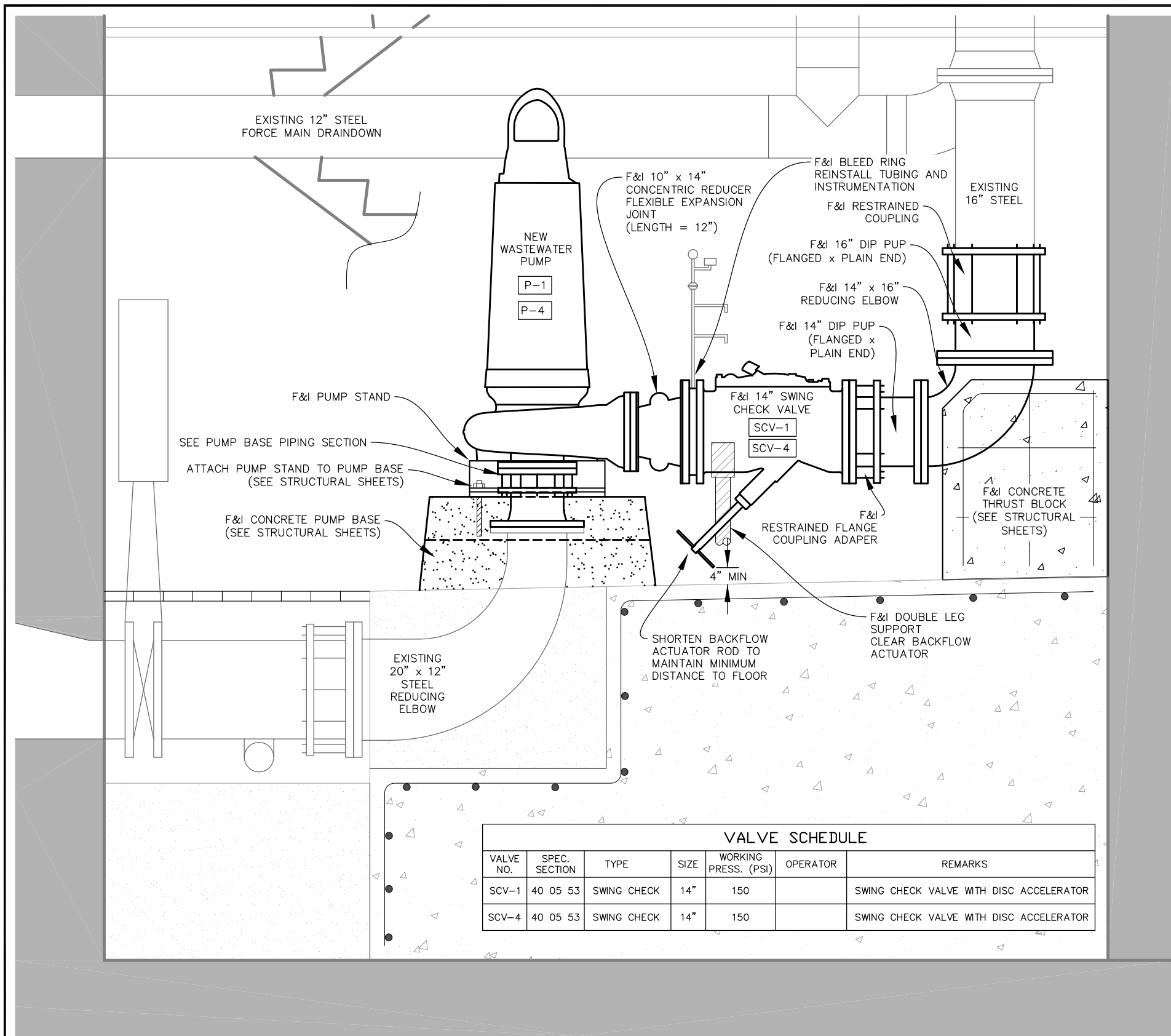
SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

**PUMP ROOM
PLAN VIEW**

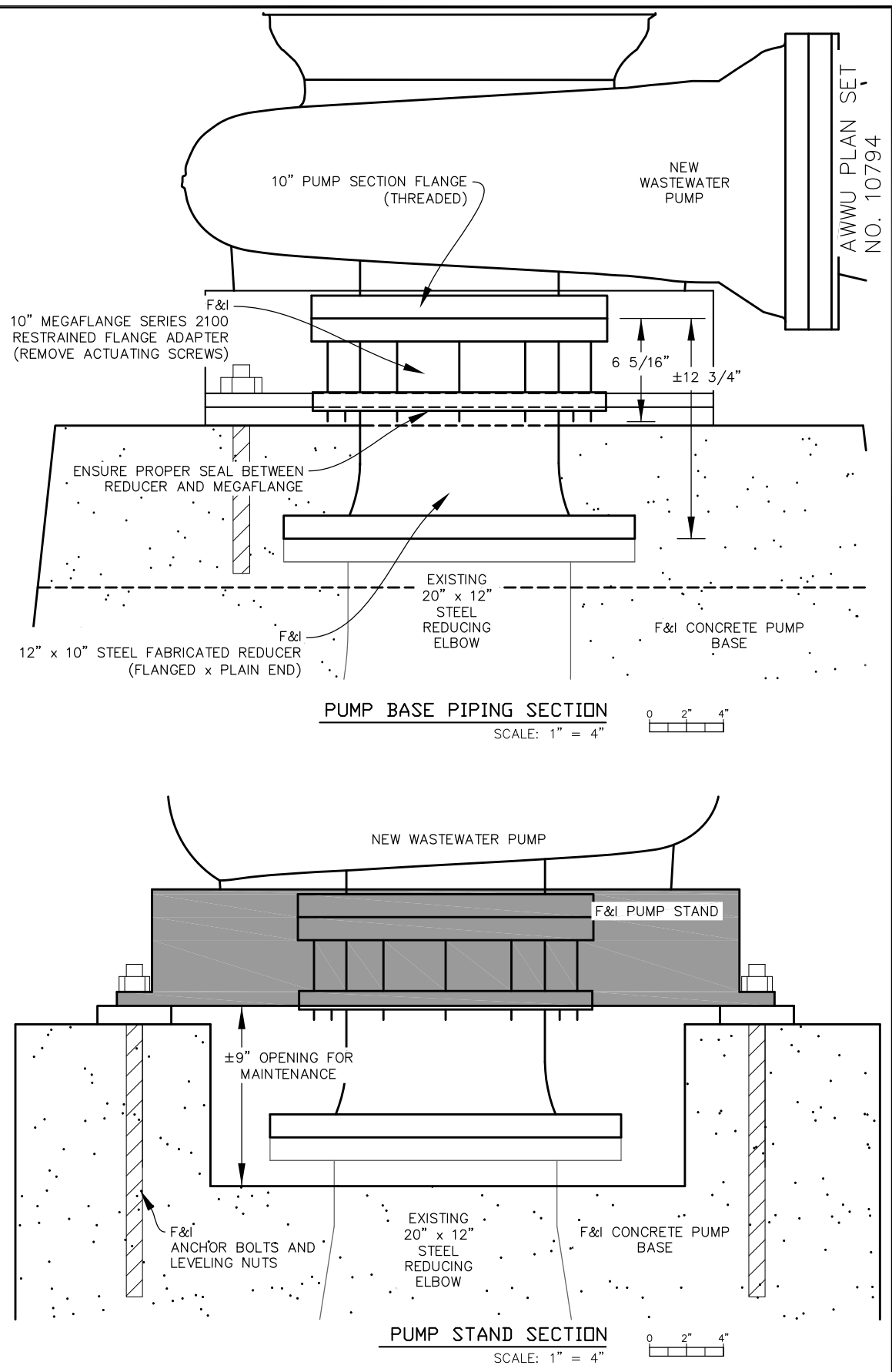
P9.0

HORIZ SCALE: _____ DATE: 10/29/2021 GRID: SW 2525 SHEET 18 of 104
 VERT SCALE: _____ PROJ. ID.: WW.H7713



PUMP #1 AND PUMP #4 SECTION
SCALE: 1" = 1'-0"

VALVE SCHEDULE						
VALVE NO.	SPEC. SECTION	TYPE	SIZE	WORKING PRESS. (PSI)	OPERATOR	REMARKS
SCV-1	40 05 53	SWING CHECK	14"	150		SWING CHECK VALVE WITH DISC ACCELERATOR
SCV-4	40 05 53	SWING CHECK	14"	150		SWING CHECK VALVE WITH DISC ACCELERATOR



PUMP BASE PIPING SECTION
SCALE: 1" = 4"

PUMP STAND SECTION
SCALE: 1" = 4"

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" — 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK					REVISIONS				

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BY: — TITLE: —
DATE: —

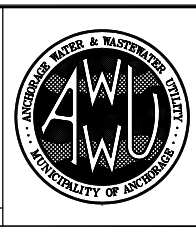
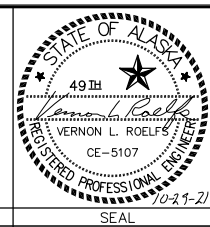
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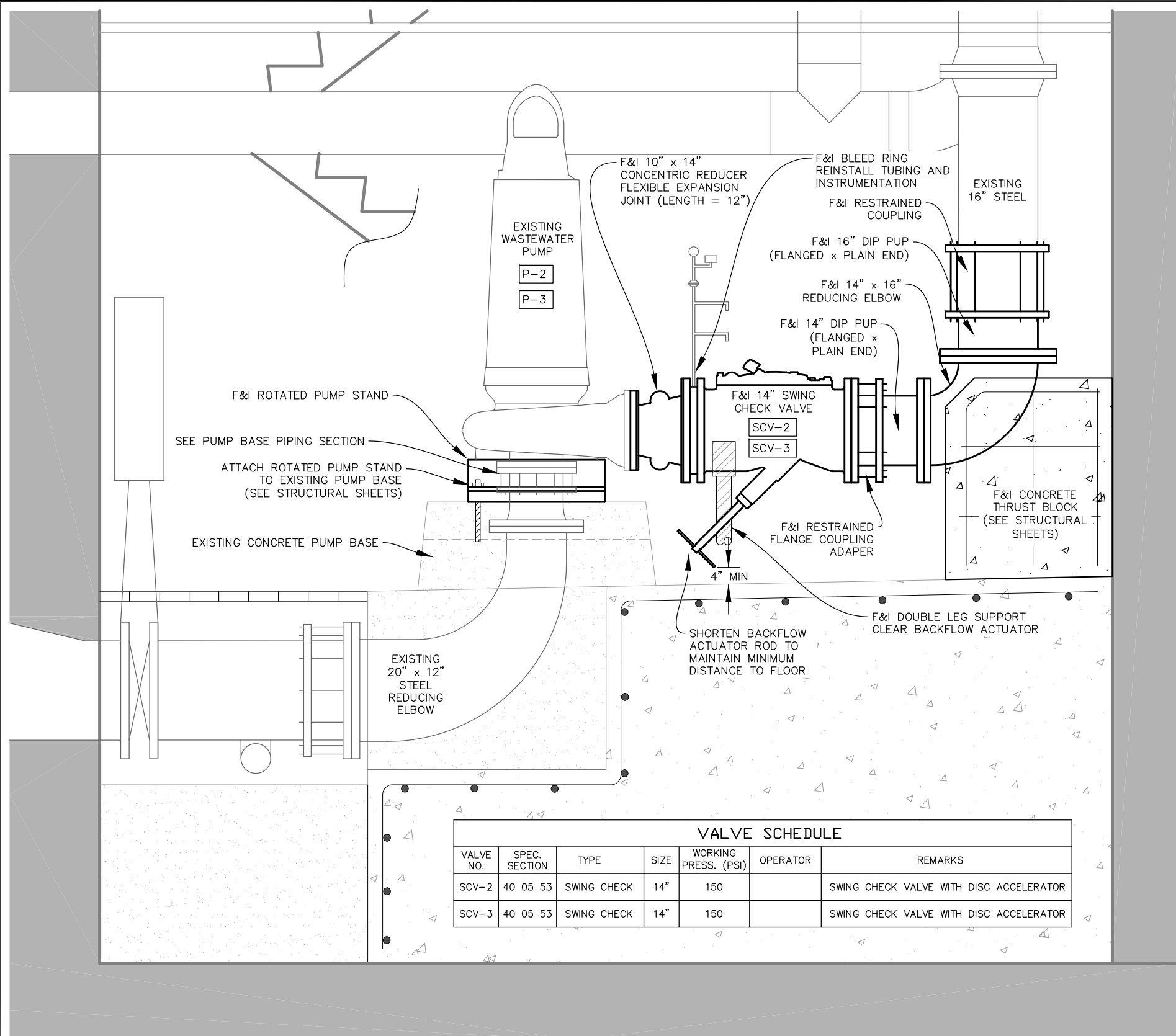
SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

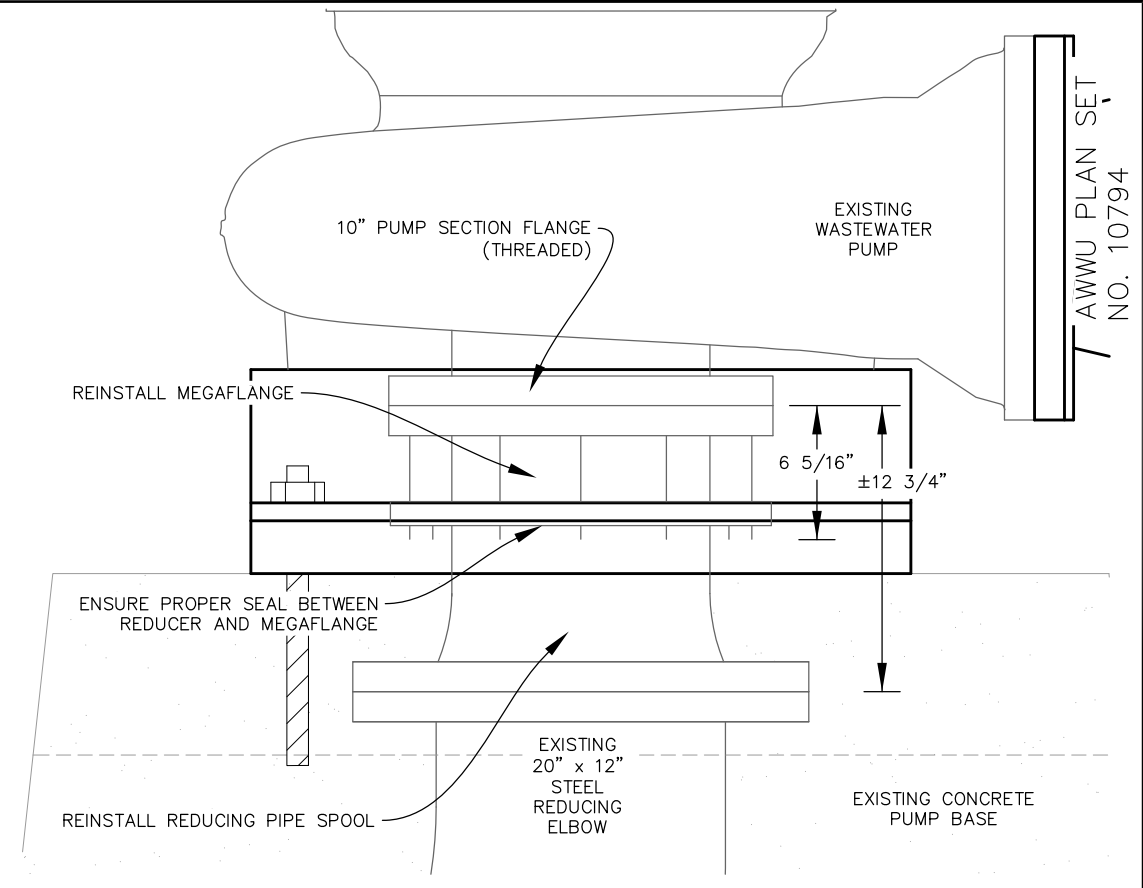
PUMP ROOM PIPING - PUMPS 1 & 4

SECTION VIEW P10.0

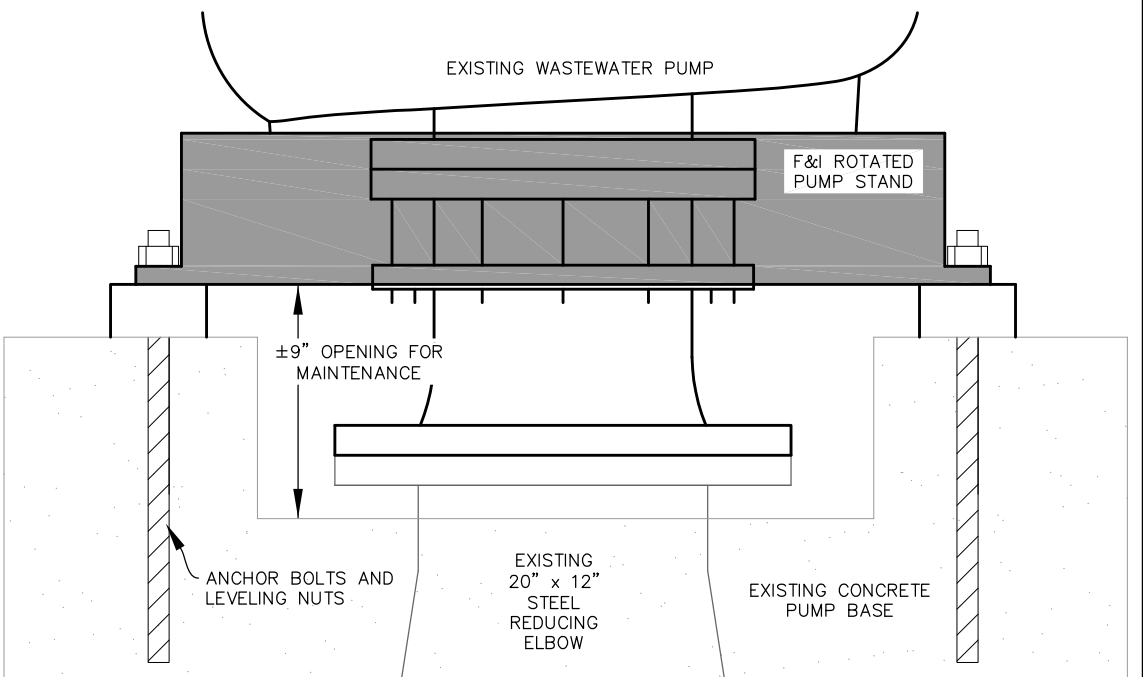
HORIZ SCALE: DATE: 10/29/2021 GRID: SW 2525 SHEET 19 of 104
VERT SCALE: PROJ. ID: WW.H7713



PUMP #2 AND PUMP #3 SECTION
SCALE: 1" = 1'-0"



PUMP BASE PIPING SECTION
SCALE: 1" = 4"



PUMP STAND SECTION
SCALE: 1" = 4"

VALVE SCHEDULE

VALVE NO.	SPEC. SECTION	TYPE	SIZE	WORKING PRESS. (PSI)	OPERATOR	REMARKS
SCV-2	40 05 53	SWING CHECK	14"	150		SWING CHECK VALVE WITH DISC ACCELERATOR
SCV-3	40 05 53	SWING CHECK	14"	150		SWING CHECK VALVE WITH DISC ACCELERATOR

VERIFY SCALE
THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.

DATA	DRAWN BY	CHECKED BY	DATE	DESCRIPTION	BY
BASE	EVR	VLR		TELEPHONE	
TOPOGRAPHY				ELECTRIC	
PROFILE				CABLE TV	
SANITARY SEWER				TRAFFIC SIGNAL	
STORM SEWER				DESIGN	
WATER				QUANTITIES	
GAS				MUN. FINAL CHECK	

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

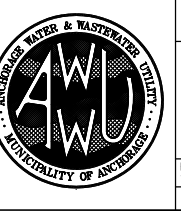
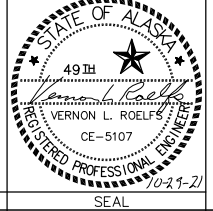
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 BY: _____ TITLE: _____
 DATE: _____

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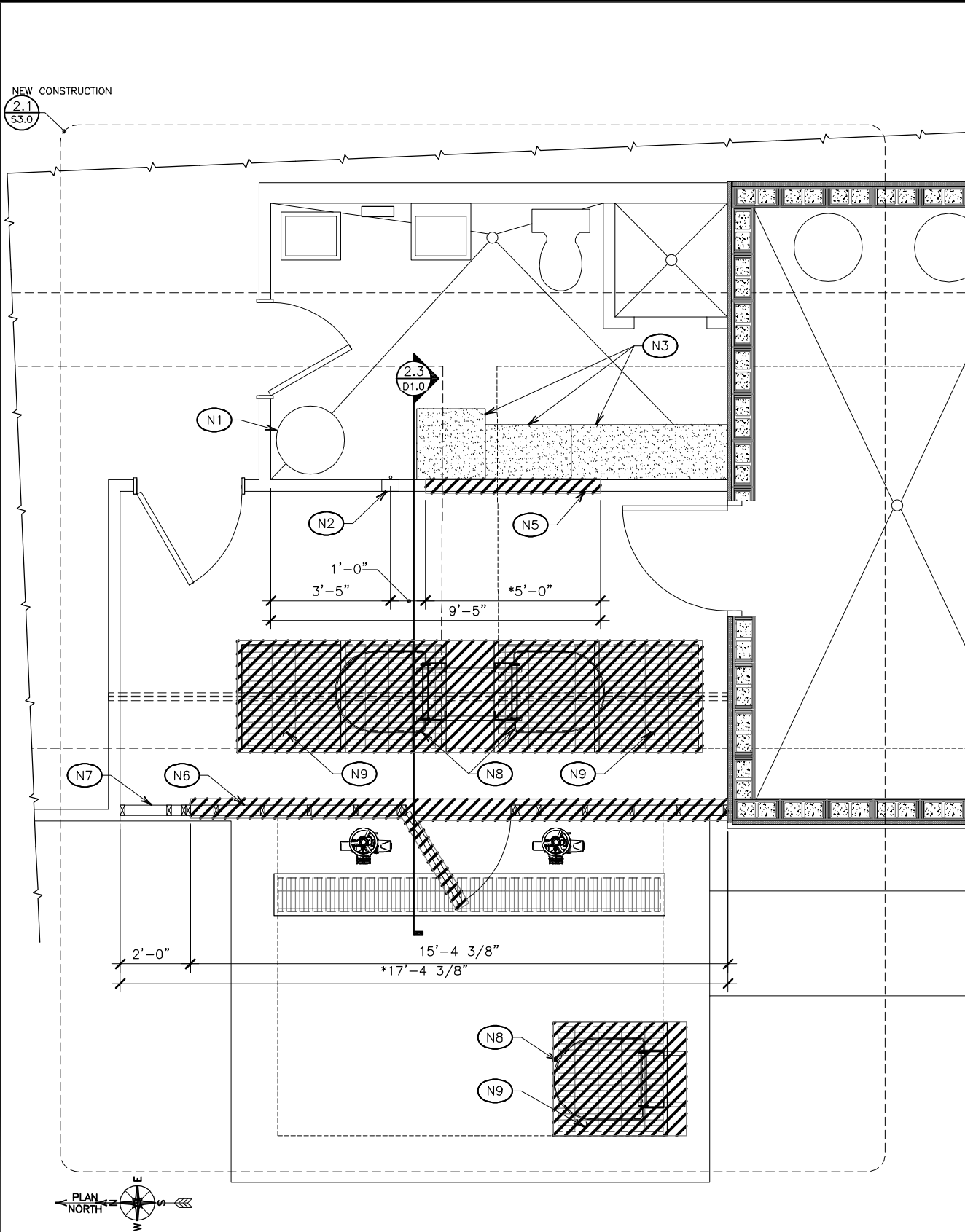
SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

PUMP ROOM PIPING - PUMPS 2 & 3

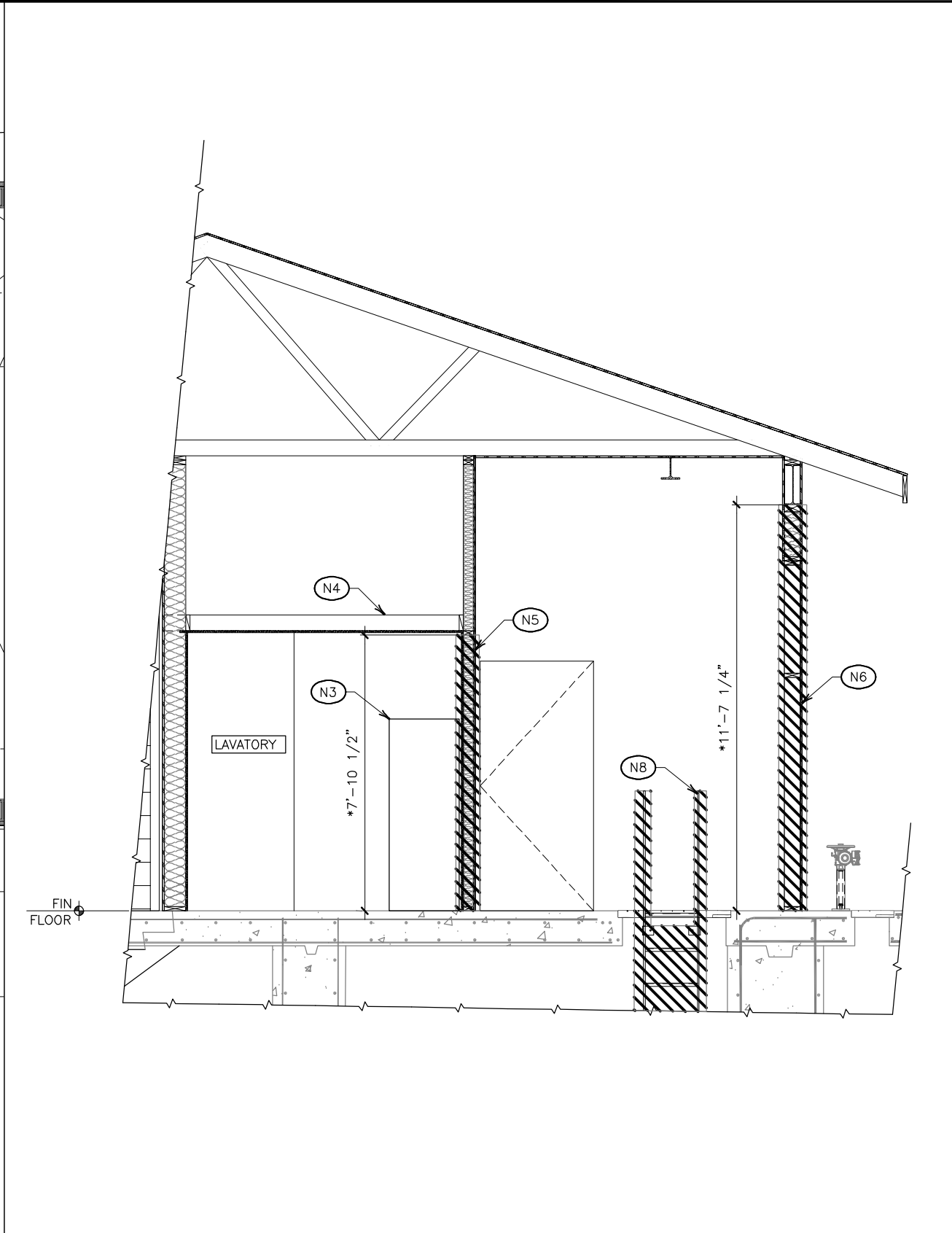
SECTION VIEW P11.0

HORIZ SCALE: DATE: 10/29/2021 GRID: SW 2525 SHEET 20 of 104
 VERT SCALE: PROJ. ID: WW.H7713



2.1 CONTROL ROOM - FLOOR PLAN DEMO
 V-CTRL-RM-PLN-DEMO
 S(24) G(A) P(H) D(EEIS)

VERIFY SCALE		RECORD DRAWING	
DATA	BY	DESCRIPTION	BY
BASE	---	TELEPHONE	---
TOPOGRAPHY	---	ELECTRIC	---
PROFILE	---	CABLE TV	---
SANITARY SEWER	---	TRAFFIC SIGNAL	---
STORM SEWER	---	DESIGN	---
WATER	---	QUANTITIES	---
GAS	---	MUN. FINAL CHECK	---



2.3 CONTROL ROOM BUILDING WALL DEMO
 V-CTRL-RM-WALL-DEMO
 S(24) G(A) P(H) D(EEIS)

RECORD DRAWING		REUSE OF DOCUMENTS	
DATA	BY	DESCRIPTION	BY
BASE	---	TELEPHONE	---
TOPOGRAPHY	---	ELECTRIC	---
PROFILE	---	CABLE TV	---
SANITARY SEWER	---	TRAFFIC SIGNAL	---
STORM SEWER	---	DESIGN	---
WATER	---	QUANTITIES	---
GAS	---	MUN. FINAL CHECK	---

- NOTES (FOR THIS SHEET)**
- (N1) EXISTING WATER HEATER TO REMAIN.
 - (N2) EXISTING HOSE BIB TO BE MOVED AND RE-PIPED.
 - (N3) EXISTING LOCKERS TO BE MOVED. COORDINATE WITH OWNER FOR NEW LOCATION.
 - (N4) EXISTING CEILING JOIST TO REMAIN. SUPPORT AS REQUIRED PRIOR TO DEMOLISHING EXISTING WALL.
 - (N5) EXISTING WALL TO BE DEMOLISHED.
 - (N6) EXISTING INFILL WALL AND DOOR TO BE DEMOLISHED TO BOTTOM OF EXISTING W14 BEAM.
 - (N7) EXISTING WALL SECTION TO REMAIN - PROVIDE DOUBLE 2X STUD AT OPENING EDGE
 - (N8) DEMOLISH EXISTING LADDERS AND REPLACE
 - (N9) DEMOLISH EXISTING BAR GRATING AND REPLACE

- LEGEND:**
- * ALL DEMOLITION DIMENSIONS SHOWN SHALL BE FIELD VERIFIED
 - INDICATES EXISTING TO BE DEMOLISHED

AWWU PLAN SET
NO. 10794

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 Richard C. Bulton
 SE-13628
 REGISTERED PROFESSIONAL ENGINEER
 SEAL

MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY
 SCHEDULE A
 PS 12 UPGRADE FORCE MAIN / GRAVITY JUNCTION REHAB
EXISTING WALL - DEMO PLAN AND SECTION
 D1.0
 HORZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 21 of 104
 VERT SCALE: NA PROJ. ID.: WW.H7713

GENERAL NOTES:

Design Criteria (2018 Edition of the IBC as Amended by the Municipality of Anchorage, Alaska)

Table with 3 columns: Building Category / Seismic Use Group, Site Class (assumed), and values for Ss, Si, Exposure, Ground Snow Load, Service Maintenance Platform LL, and Service Maintenance Platform Point LL.

Stainless Structural Steel

All structural stainless steel construction shall conform to the AISC 360-10. Structural steel shall conform to the following material specifications:

Structural stainless steel, angles, and miscellaneous shapes shall conform to ASTM A564/A564M (ASTM, 2010b) (Type S31600), Fy=30,000 psi. Plates shall be ASTM A480/A480M. Stainless steel bolts ASTM F593 (ASTM, 2008a, Group 2), and nuts (ASTM, 2009c) to have washers.

Table with 2 columns: W Sections and A316/316L. Rows include Rectangular HSS, Round HSS, Channels, Angles, Plate, and Misc., Pipe, and Bolts.

Concrete

See Municipality of Anchorage Specifications (MASS) Section 30.01 Portland Cement Concrete for additional info. Concrete construction shall be inspected by Qualified Personnel. Concrete for foundation components shall obtain a 28 day strength of f'c =5,000 psi and the mix shall contain not less than 6 sacks of cement per cubic yard of concrete. Concrete Class AA-3.

All concrete exposure shall contain 5.5% ± 1.5% air entrainment. Admixtures may be added with approval by engineer.

Adhesive

Secure threaded rod or reinforcing bar to masonry or concrete with Hilti HIT-RE 500 V3 Adhesive. Install rod or reinforcing in predrilled hole with adhesive per manufacturer's instructions and per ICC Evaluation Report ESR-2322 or approved equal.

Reinforcing Steel

Reinforcing steel shall conform to ASTM A-615, (AASHTO M-31) Grade 60, Fy = 60,000 psi. Lap all continuous bars 40 diameters, minimum. Provide corner bars at all footing intersections to match normal horizontal reinforcement. Lap corner bars 40 diameters. Concrete protection (cover) for reinforcing steel shall be as follows:

- 3" Footings and other unformed surfaces
2" Formed surfaces in direct contact with earth
1-1/2" Beams, columns, and surfaces exposed to weather
3/4" Slabs, interior face

Welding

All stainless steel welding shall be in accordance with current edition of AISC and AWS D1.6/D1.6M Standards and shall be performed by an AWS certified welder. All full penetration butt welds shall be inspected with Ultrasonic Testing by a Testing Agency approved by contracting agency and building official. All welds shall be 3/16" fillet unless noted otherwise. All bevel welds shall be 1/16" less than the thickness of the material to be welded unless noted otherwise. Seal weld all metal/metal contacts in addition to weld symbols shown on the plan.

DRY PACK GROUT

Euclid Chemical "Dry Pack Grout" non-shrink grout or similar grout meeting ASTM C1107 formulated to reach 6000 psi strength in 7 days and suitable to be placed at damp, cohesive consistency. Pre-heat base materials to 40°F before installing. Maintain 40°F minimum temperature for one week after placing. Mix grout to a stiff consistency that can be molded with the hands but does not slump. Compact the mortar into the gap by tamping with blunt tools and confining the free sides of the gap. Finish exposed surfaces to a smooth plane.

Fiberglass Grating

Fiberglass grating shall be GatorGrate VFR Vinyl Ester Series, molded fiberglass grating reinforced as manufactured and distributed by AMICO-"SeaSafe", Inc., 209 Glaser Drive. Lafayette, Louisiana 70508. 800-326-8842, www.seasafe.com, or approved equal.

WOOD FRAMING, NAILING, AND CONNECTIONS

Framing lumber shall be graded and marked in accordance with WHPA or WCLIB Standard Grading and Dressing Rules for West Coast Lumber, Latest Edition. Furnish to the following standards:

- Joists HF#2
Beams and Stringers HF#2
Posts and Timbers HF#2
Studs and Misc Framing HF#2
Plates, First Story DF#2
Plates, Upper Stories HF#2

Table with 2 columns: Minimum nailing requirements: (Unless Noted Otherwise) and values for Ceiling joist or rafters to side of studs 8" or less, for each additional 4" of depth of joist, Ceiling joist or rafters at all bearings - toenail each side, Studs to bearing - toenail each side, Blocking between joists, rafters or rafters to joists - toenail each end, To joist/rafter bearings - toenail each side, Double top plates - lower plate to top of stud, Upper plate to lower plate - staggered, Multiple joists/Multiple studs - staggered, and for widths of more than 4".

All wood framing details not shown otherwise shall be constructed to the minimum standards of the IBC. Nailing not shown shall be per Table 2304.9.1 of the IBC. All nails shall be common wire nails. Whenever possible, nails driven perpendicular to the grain shall be used, instead of toenails. There shall be a minimum of two nails at all wood contacts and joists using 8d (8d = 0.131" x 2.5") nails for 1" thick material, 16d (16d = 0.162" x 3.5") nails for 2" thick material, and 40d (40d = 0.225" x 5") nails for 3" thick material. At continuous contacts, provide nails at 12" o.c. with nail sizes as called for above. All nails in pressure treated materials shall be stainless steel. At multiple joist bearings provide multiple studs for bearing and carry to foundation wall.

Provide washers under all bolt heads with wood contact.

All nonbearing walls 2x4. Provide continuous solid blocking at mid-heights of all stud-bearing walls over 8'-0" in height. Individual members of built-up posts shall be glued and attached with 16d (16d = 0.162" x 3.5") spikes at 12" o.c. staggered minimum. In a 3-member built-up member nail each member to the adjacent member with 16d (16d = 0.162" x 3.5") at 12" o.c.

All wood stud walls shall have lower wood plate attached to wood framing below, with 16d (16d = 0.162" x 3.5") nails at 16" o.c. staggered unless shown otherwise. Install solid blocking under all posts between joists. In stud walls or pony walls, install additional studs and blocking under concentrated loads to carry load to foundation.

Walls resting on concrete shall be attached to the foundation. All wood left in permanent contact with concrete shall be pressure preservative treated.

Notations on drawings relating to framing clips, joist hangers, and other connecting devices refer to catalog numbers of Strong-Tie connectors manufactured by the Simpson Company, San Leandro, CA. Where the catalog shows different fastening schedules for a certain connector, the highest number of fasteners shall be used unless otherwise noted. Equivalent devices by other manufacturers may be substituted provided they have ICC approval for equal load capacities approved by the Engineer.

Maximum moisture contact during construction shall be 19%. Control moisture to avoid problems with differential shrinkage perpendicular to the wood grain.

Drawings indicate general and typical details of construction. Where conditions are not specifically indicated but are of similar character to details shown, similar details of construction shall be used, subject to review and approval of the Engineer. If any errors or omissions appear in the drawings, specifications, or other documents, the contractor shall notify the Owner or Engineer in writing of such omission or error before proceeding with the work or accept full responsibility for costs to rectify the error.

Special Inspection

Special inspections shall be performed by qualified personnel.

Special inspectors shall observe the work assigned for conformance with approved design drawings and specifications. Inspection reports shall be furnished to the Anchorage Building Department, Owner and the Engineer of Record. All discrepancies shall be brought to the immediate attention of the Contractor for correction, and to the attention of the Engineer of Record.

The special inspectors shall submit a final signed report stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans and specifications and the applicable workmanship provisions of the applicable codes.

Provide the following special inspections per Chapter 17 of the International Building Code (IBC).

Table with 3 columns: Item, Description, and Frequency. Rows include Reinforcing Steel, Concrete Formwork, Concrete, Steel Framing, Welding, High Strength Bolting, All-Thread Rods, and Reinforcing Steel.

HIDDEN CONDITIONS

It shall be the builder's responsibility to adjust the design as necessary to accommodate actual field conditions. The engineer of record did not do any destructive or invasive investigation of the existing structure. When the builder cuts into the existing structure, he may have to make certain judgments about how to modify the design to fit the existing conditions.

CONTRACTOR'S MEANS AND METHODS

The structural construction documents represent the finished structure. While the drawings may point out some temporary bracing requirements, they do not indicate all bracing required, and they do not indicate the sequence of construction. The Contractor shall be responsible for and provide all measures necessary to protect the structure during construction. Such measures shall include but not be limited to bracing and shoring for loads due to construction equipment. The Contractor shall be responsible for the design and implementation of all scaffolding, bracing, and shoring. The structural engineer shall not be responsible for the contractor's means, methods, techniques, procedures, and sequences of construction. The structural engineer's observation visits will not include inspection of these items.

GENERAL

These plans do not purport to show every aspect of the work required for completion. It shall be the builders' responsibility to:

- Verify dimensions and field conditions prior to fabrication of structural framing.
Notify the engineer of discrepancies and obtain approval for proposed field changes prior to construction or modification.
Contact Utilities for field locates. Buried or covered utilities may exist which are not shown on the plans.
Dispose of soil waste and demolished materials.
Remove snow during construction.
Obtain building permits.
Notify the local building official at construction stages requiring inspection.
Perform all construction with materials, methods, and workmanship accepted as good practice in the construction industry.
Provide adequate shoring, bracing, and formwork as required for the protection of life and property during construction.
Follow manufacturers' recommendations.
Control water runoff and drainage.
Make all precaution to insure jobsite safety.

2.1 GENERAL NOTES

S(1) G(A) P(H) D(EEIS)

VERIFY SCALE section with table for DATA, DRAWN BY, CHECKED BY, REV, DATE, and DESCRIPTION. Includes sub-sections for PLAN CHECK and REVISIONS.

RECORD DRAWING section with notes: To be filled out on original drawings upon project completion. Includes fields for DATA PROVIDED BY, CONTRACTOR, DATE, DATA TRANSFERRED BY, and COMPANY.

REUSE OF DOCUMENTS section with text: THIS DOCUMENT AND THE IDEAS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF AWWU AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT WRITTEN AUTHORIZATION OF AWWU.

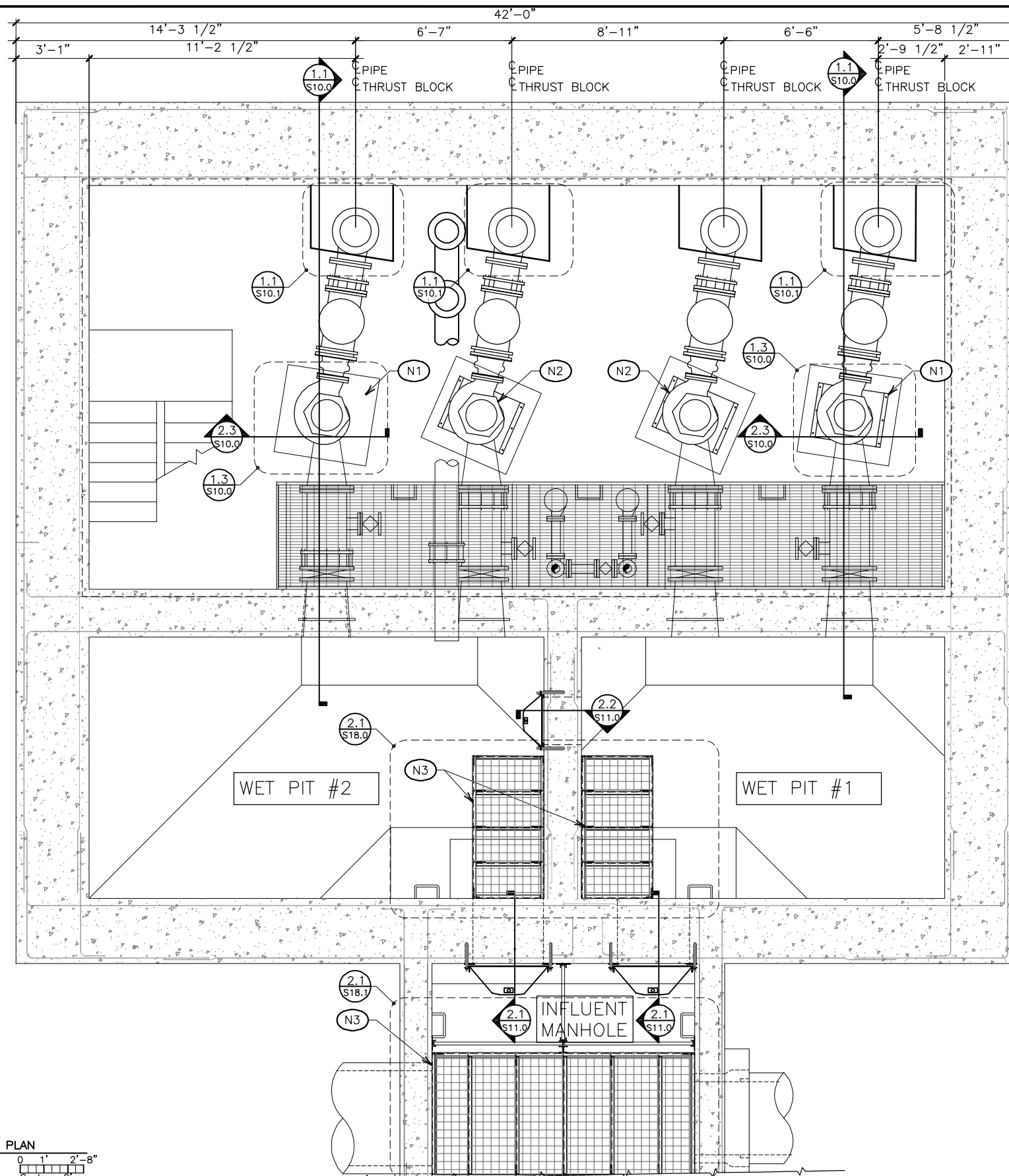
Professional Engineer seals for Richard C. Mutton and AWWU logo for Municipality of Anchorage.

MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY SCHEDULE A. PS 12 UPGRADE FORCE MAIN / GRAVITY JUNCTION REHAB. GENERAL NOTES. SHEET 22 of 104.

AWWU PLAN SET NO. 10794

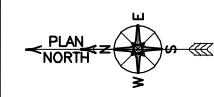
03-28-22 M.O.A. Review



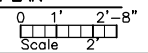


- NOTES (FOR THIS SHEET)
- (N1) NEW PUMP
 - (N2) EXISTING PUMP
 - (N3) EXISTING PLATFORMS TO BE DEMOLISHED AND REPLACED WITH NEW PLATFORM FRAMING

AWWU PLAN SET
NO. 10794



2.1 BASEMENT/PUMP ROOM - ENLARGED FLOOR PLAN
V-PMP-RM-PLN
S(32) G(A) P(H) D(EEIS)



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE HORZ SCALE: 1" = 50' VERT SCALE: N/A	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE			TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

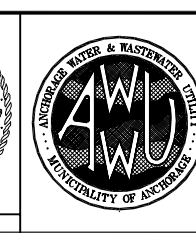
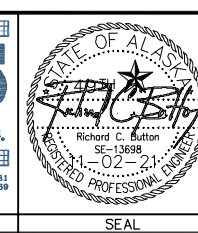
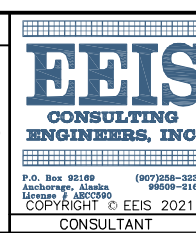
1. DATA PROVIDED BY: _____
This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
CONTRACTOR: _____
BY: _____ TITLE: _____
DATE: _____

2. DATA TRANSFERRED BY: _____
COMPANY: _____
DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
DATA TRANSFER CHECKED BY: _____
COMPANY: _____
BY: _____ TITLE: _____
DATE: _____

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WATER & WASTEWATER UTILITY

SCHEDULE A

PS 12 UPGRADE FORCE MAIN / GRAVITY JUNCTION REHAB

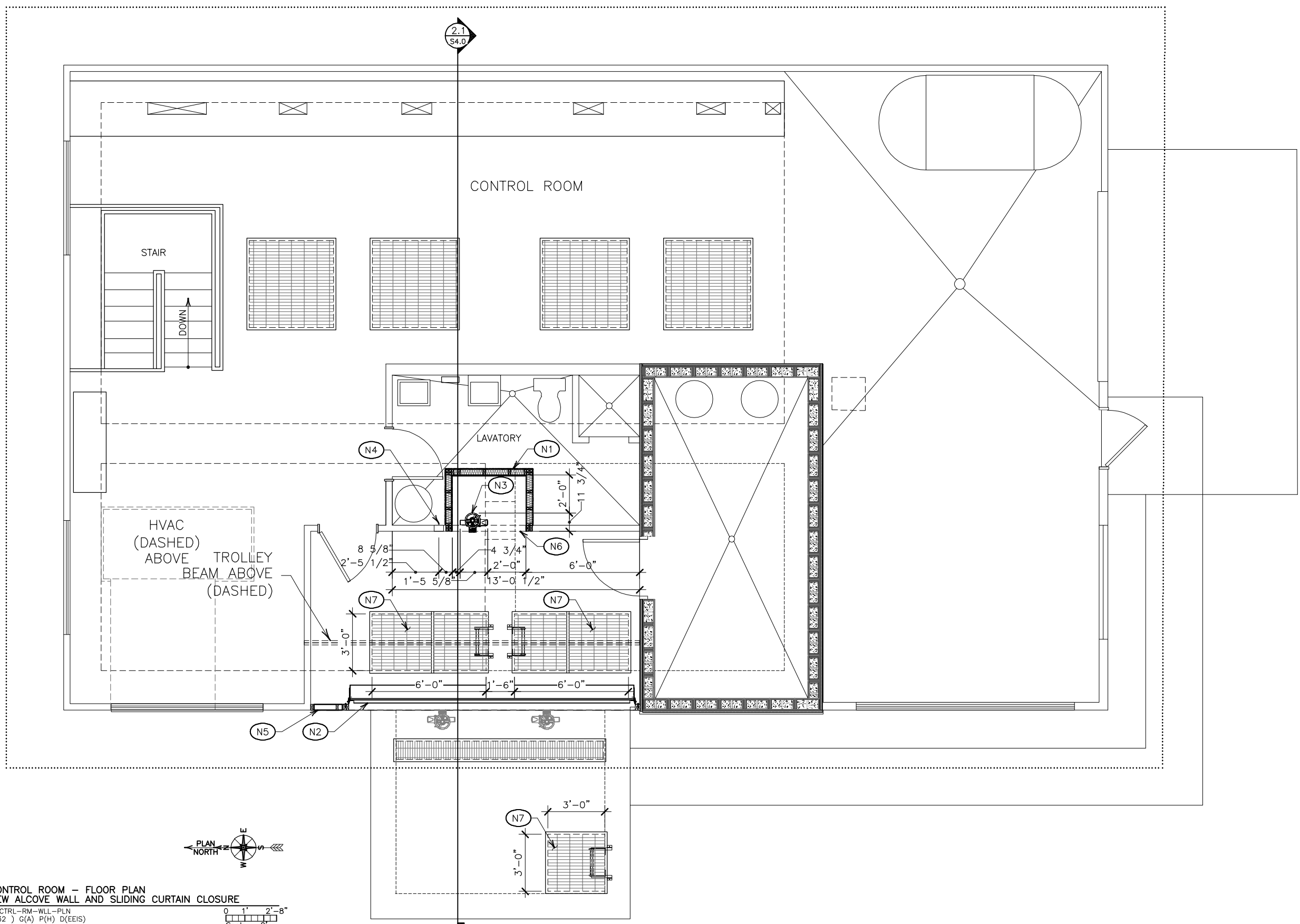
BASEMENT PUMP ROOM FLOOR PLAN

S2.0

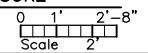
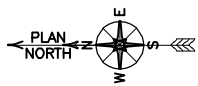
HORZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 23 of 104
VERT SCALE: NA	PROJ. ID.: WW.H7713		

NOTES (FOR THIS SHEET)

- (N1) NEW 2X4 STUD WALL AS SHOWN- ROTOR ACTUATOR ALCOVE WALL TO CONSIST OF:
 - 2X4 STUDS AT 1'-4" O.C.
 - 6 MIL POLY VAPOR RETARDER ON LAVATORY SIDE
 - 5/8" GYPSUM BOARD TAPED, TEXTURED, PRIMED, AND PAINTED WITH (2) COATS OF LATEX ENAMEL TO MATCH EXISTING WALL ON LAVATORY SIDE.
 - 5/8" T1-11 SIDING PRIMED AND PAINTED WITH (2) COATS OF SEMI-GLOSS LATEX ENAMEL (MATCH EXISTING WALL PANEL AND PAINT)
- (N2) NEW ROLL-UP DOOR
- (N3) NEW ACTUATOR
- (N4) NEW LOCATION OF EXISTING HOSE BIB
- (N5) NEW 1'-6" X 2'-0" SCREEN VENT WITH FIXED LOUVER. FIELD COORDINATE LOCATION ON WALL.
- (N6) NEW (2) 2X4 HEADER TO REST ON 2X4 JACK STUD EACH END
- (N7) NEW EXTERIOR AMICO 19W4X 1-1/2" SERRATED GALVANIZED BAR GRATING OR EQUAL. COORDINATE WITH LADDER RISER FOR PENETRATIONS. BAND ALL CUT BARS. FIELD VERIFY DIMENSIONS.



2.1 CONTROL ROOM - FLOOR PLAN
NEW ALCOVE WALL AND SLIDING CURTAIN CLOSURE
V-CTRL-RM-WLL-PLN
S(32) G(A) P(H) D(EEIS)



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE HORZ SCALE: 1" = 50' VERT SCALE: N/A	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DATE	DESCRIPTION	BY
BASE	RCB	TELEPHONE					
TOPOGRAPHY		ELECTRIC					
PROFILE		CABLE TV					
SANITARY SEWER		TRAFFIC SIGNAL					
STORM SEWER		DESIGN					
WATER		QUANTITIES					
GAS		MUN. FINAL CHECK					

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

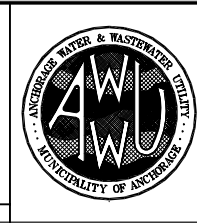
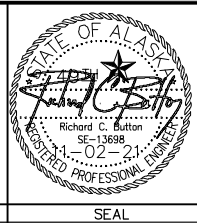
1. DATA PROVIDED BY: _____
This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
CONTRACTOR: _____
BY: _____ TITLE: _____
DATE: _____

2. DATA TRANSFERRED BY: _____
COMPANY: _____
DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
DATA TRANSFER CHECKED BY: _____
COMPANY: _____
BY: _____ TITLE: _____
DATE: _____

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MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE A

PS 12 UPGRADE FORCE MAIN / GRAVITY JUNCTION REHAB

CONTROL ROOM FLOOR PLAN

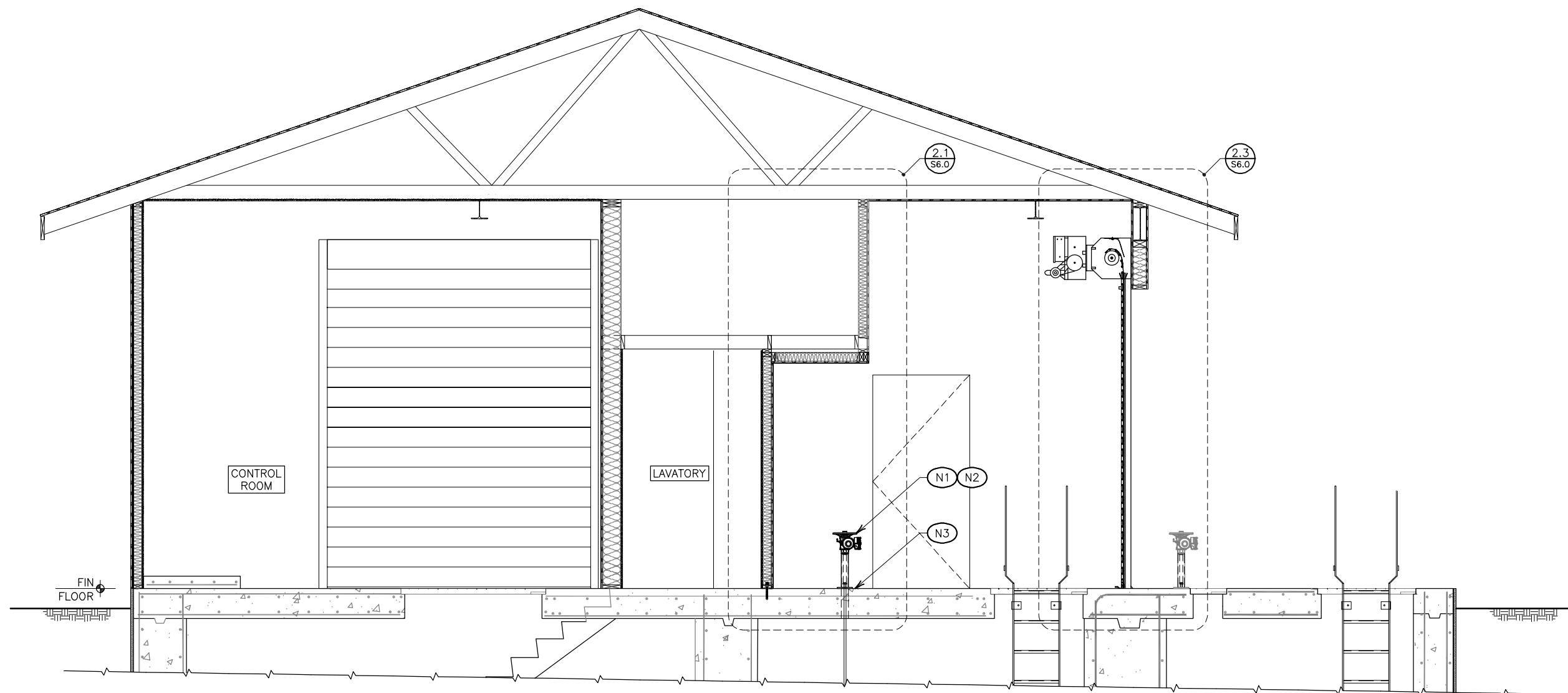
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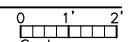
NOTES (FOR THIS SHEET)

- (N1) CONTRACTOR NOTES
 - PRIOR TO CORE DRILLING OF ACTUATOR SHAFT HOLE
 - FIELD X-RAY EXISTING CONCRETE FLOOR AT ACTUATOR TO LOCATE REBARS
 - COORDINATE AND ALIGN ACTUATOR, SHAFT, AND SLUICE GATE FOR HOLE DIA AND LOCATION
 - DO NOT DAMAGE EXISTING CONCRETE FLOOR REINFORCING BARS
- (N2) NEW ACTUATOR
- (N3) EXISTING CONCRETE FLOOR

AWWU PLAN SET
NO. 10794



2.1 CONTROL ROOM BUILDING SECTION - ALCOVE AND CURTAIN WALL
V-CTRL-RM-ELEV
S(24) C(A) P(H) D(EEIS)



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	---	---	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

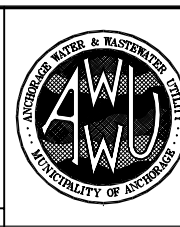
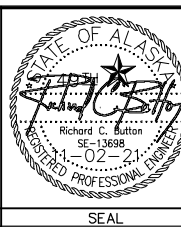
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SCHEDULE A

PS 12 UPGRADE FORCE MAIN / GRAVITY JUNCTION REHAB

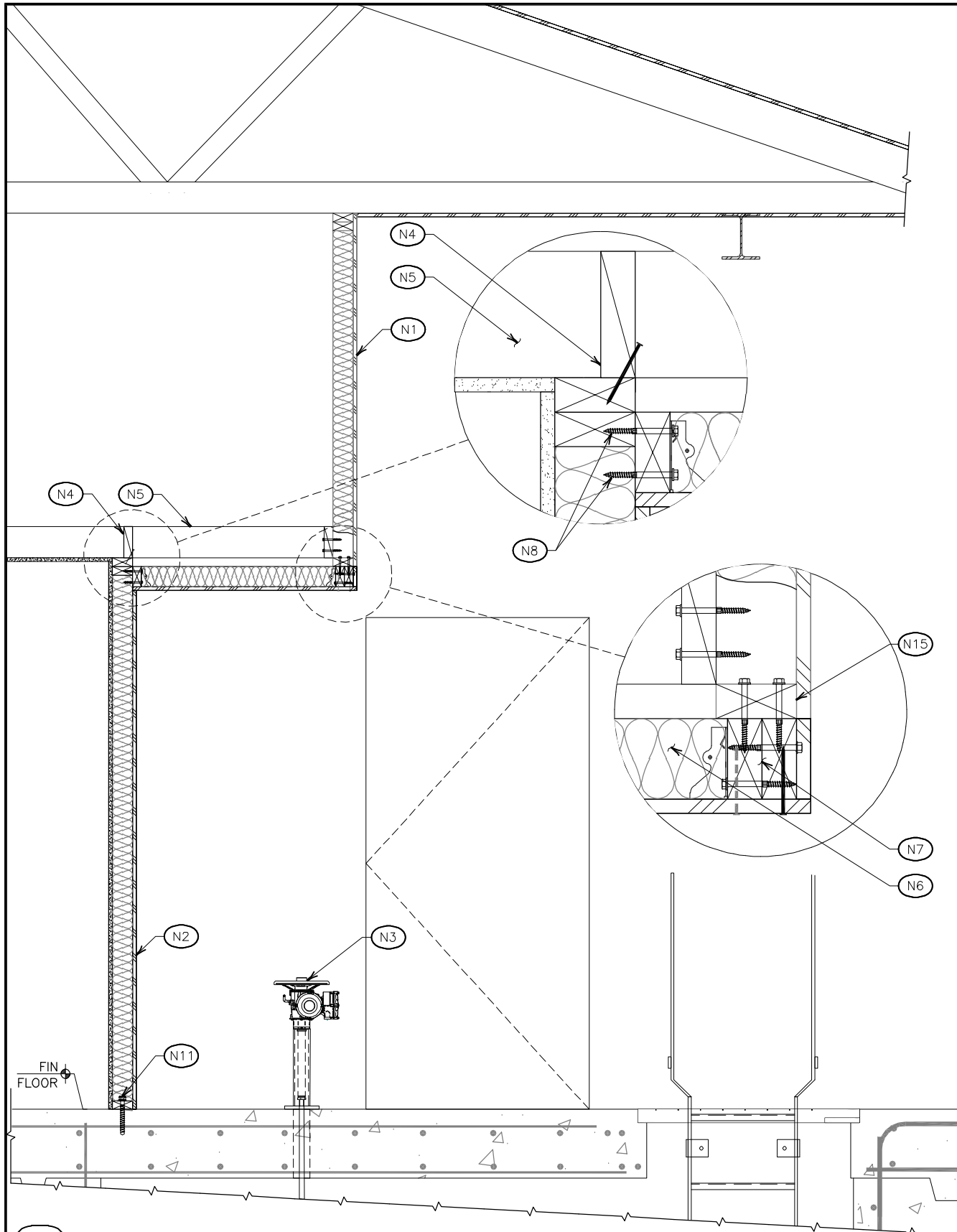
CONTROL ROOM - BUILDING SECTION

S4.0

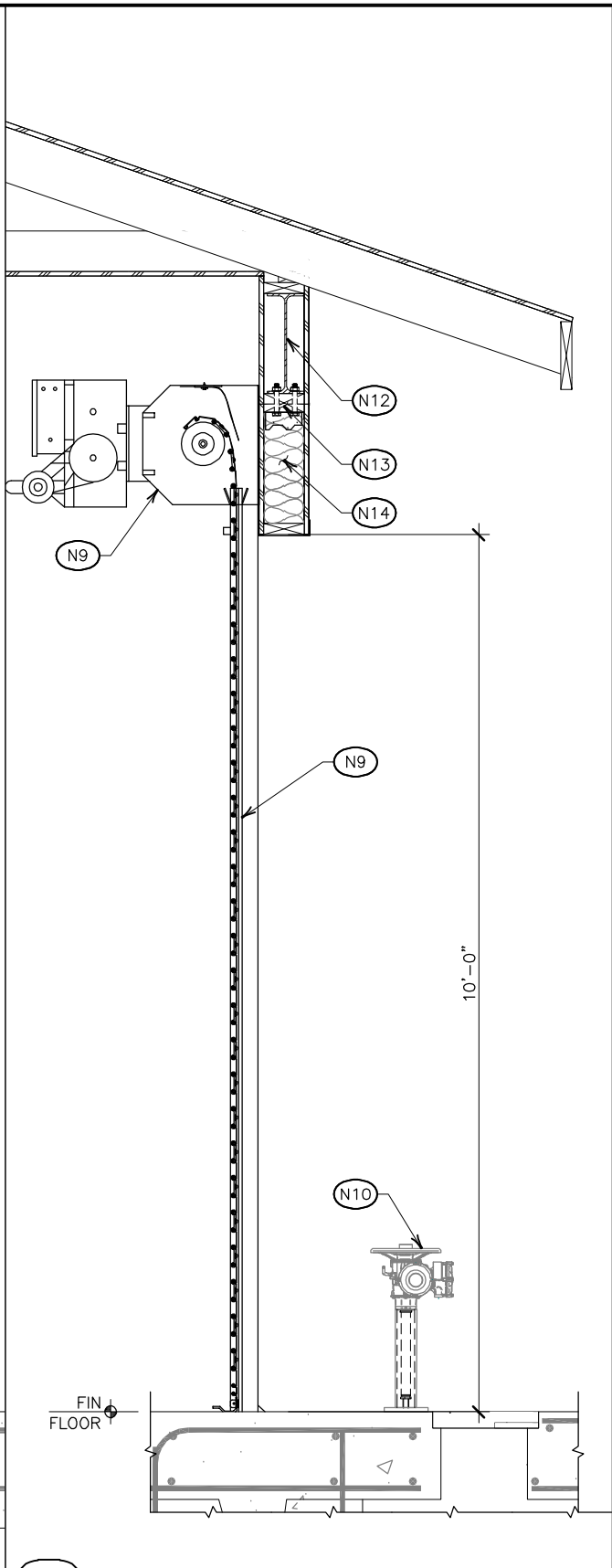
HORIZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 25 of 104
VERT SCALE: NA	PROJ. ID.: WW.H7713		

NOTES (FOR THIS SHEET)

- (N1) EXISTING WALL - CUT OPENING AS SHOWN ON PLANS AND SECTIONS
- (N2) NEW ACTUATOR ALCOVE WALL
- (N3) NEW ACTUATOR
- (N4) 2X BLOCKING BETWEEN EXISTING CEILING JOIST ABOVE NEW WALL.
- (N5) EXISTING CEILING JOIST
- (N6) 2X4 ALCOVE CEILING JOIST AT 2'-0" O.C. WITH SIMPSON U24 HANGER EACH END.
- (N7) (2) 2X4 HEADER. GLUE AND FASTEN WITH SIMPSON SDS25300 SCREWS AT 1'-4" O.C. STAGGERED.
- (N8) 2X4 LEDGER WITH (2) SIMPSON SDS25300 SCREWS AT EACH STUD AND TOP OF PLATE.
- (N9) ROLL UP DOOR: MODEL 620 WITH EXPLOSION PROOF MOTOR MODEL RHX: PIONEER DOORS, INC. CONTACT: RON VANCE PHONE: (907) 344-2212
- (N10) EXISTING ACTUATOR
- (N11) SIMPSON 5/8" DIA X 5" TITEN HD STAINLESS STEEL SCREW ANCHOR AT 2'-8" O.C.
- (N12) EXISTING W14X22 ROOF BEAM
- (N13) 3X6 PLATE - FIELD DRILL EXISTING W14 BOTTOM FLANGE WITH (2) ROWS 5/8" DIA BOLT AT 2'-0" O.C.
- (N14) NEW 2X6 STUD WALL WITH STUDS AT 1'-0" O.C. WITH R-21 FIBERGLASS BATT INSULATION AND 6 MIL POLY VAPOR RETARDER ON INSIDE FACE. INTERIOR AND EXTERIOR SIDING TO MATCH BUILDING. OFF-SET STUDS TO MISS BOLT HEADS. FASTEN STUD TO 3X PLATE WITH SIMPSON L50. FIELD COORDINATE/PROVIDE BLOCKING TO SUPPORT ROLL-UP DOOR ATTACHMENTS
- (N15) CUT EXISTING WALL FLUSH AS SHOWN IN SECTION. INSTALL CONTINUOUS 2X4 PLATE ACROSS BOTTOM OF WALL. TIE NEW HEADER TO WALL WITH (2) ROWS OF SIMPSON SDS25300 AT 1'-4" O.C.



2.1 NEW WALL AT ACTUATOR ALCOVE
V-ALCOVE-WLL-SECT
S(12) G(A) P(H) D(E)IS
Scale: 0" 6" 12"



2.3 NEW FOLDING WALL SECTION
V-EXTWALL-SECT
S(12) G(A) P(H) D(E)IS
Scale: 0" 6" 12"

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" 1" IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE HORZ SCALE: AS SHOWN VERT SCALE: N/A	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DESCRIPTION	BY	DATE
BASE		TELEPHONE					
TOPOGRAPHY		ELECTRIC					
PROFILE		CABLE TV					
SANITARY SEWER		TRAFFIC SIGNAL					
STORM SEWER		DESIGN					
WATER		QUANTITIES					
GAS		MUN. FINAL CHECK					

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

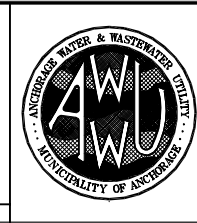
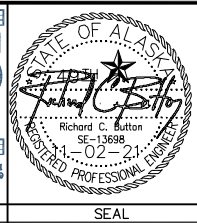
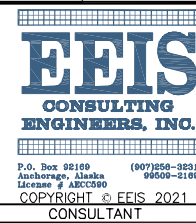
1. This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
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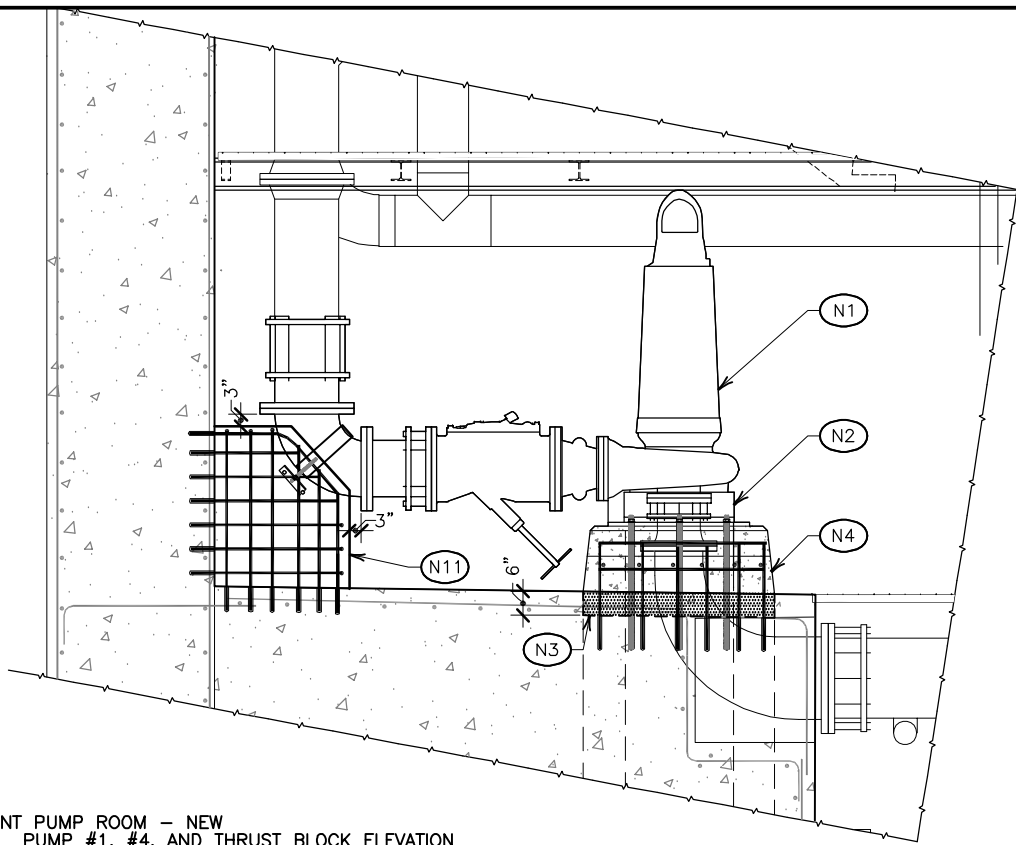


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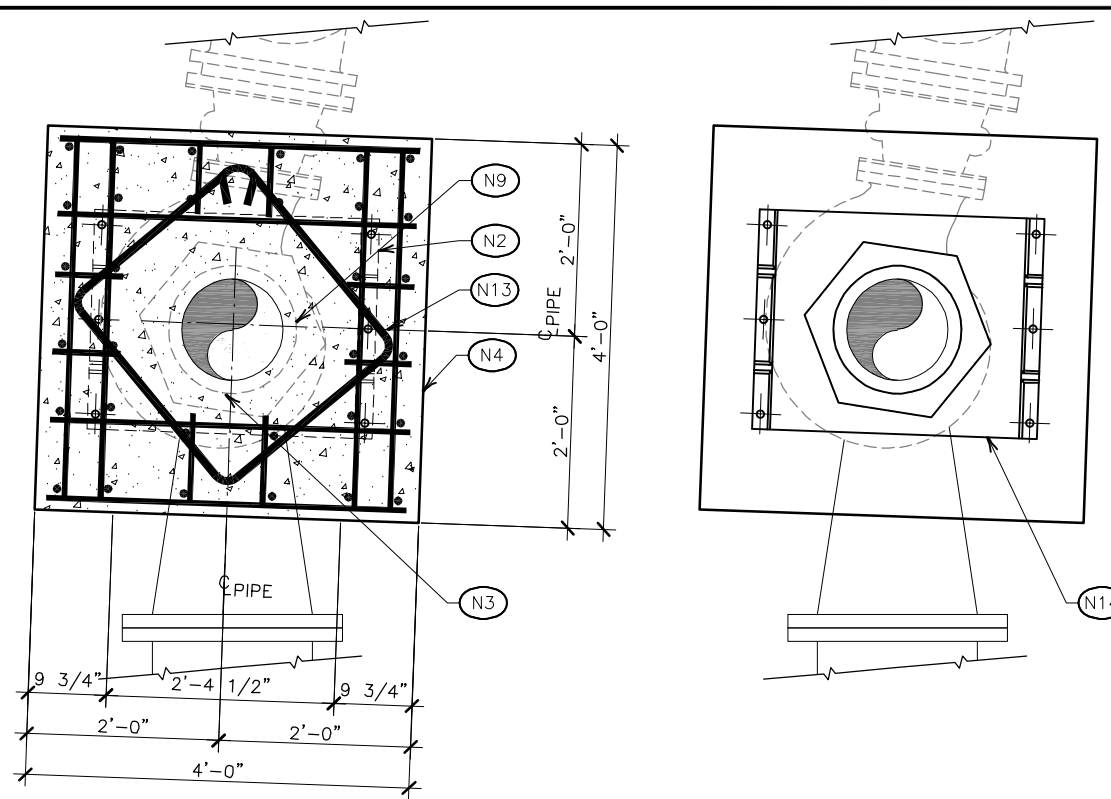
SCHEDULE A
PS 12 UPGRADE FORCE MAIN / GRAVITY JUNCTION REHAB
WALL SECTIONS

S6.0

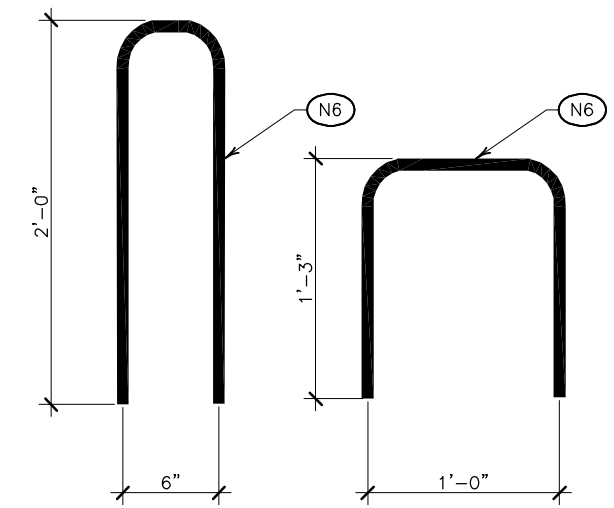
HORZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 26 of 104
VERT SCALE: NA PROJ. ID: WW.H7713



1.1 BASEMENT PUMP ROOM - NEW
TYPICAL PUMP #1, #4, AND THRUST BLOCK ELEVATION
V-TYP-PMP
S(24) G(A) P(H) D(EEIS)
Scale 0 1' 2'



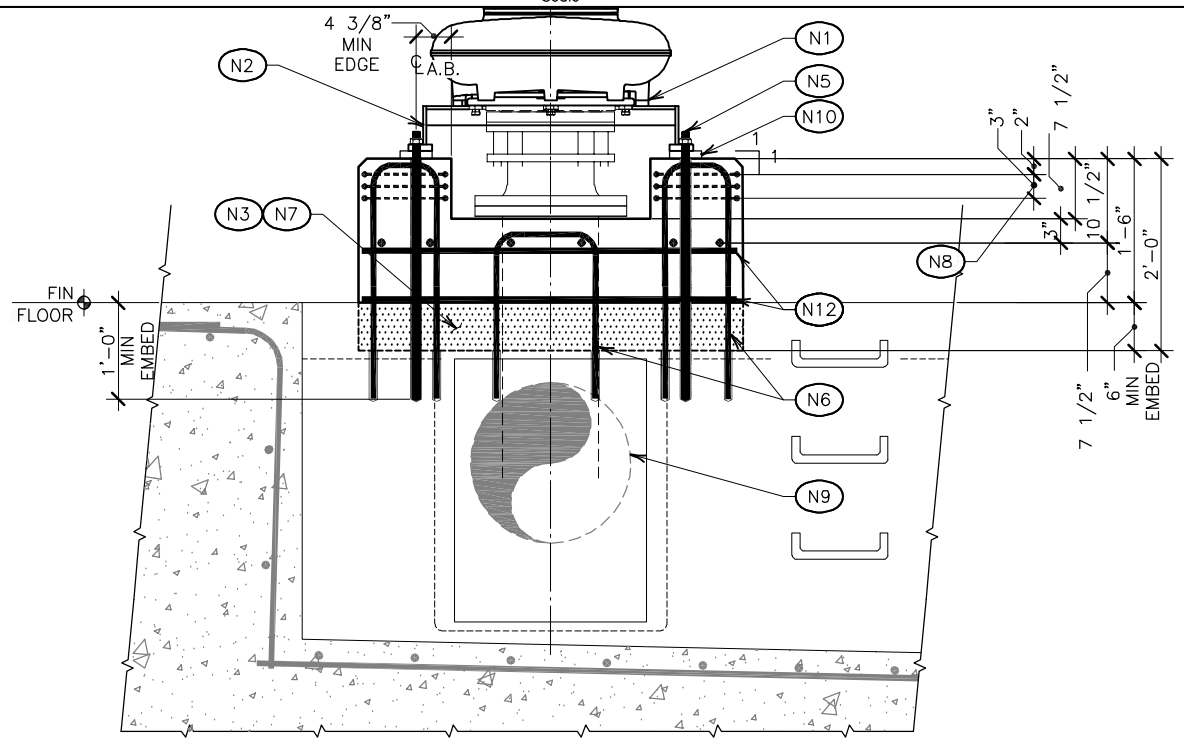
1.3 BASEMENT PUMP ROOM - NEW
PUMP #1 AND #4 CONCRETE PAD PLAN
V-TYP-PMP1-4_PLN
S(12) G(A) P(H) D(EEIS)
Scale 0 6" 12"



2.1A (24) BARS PER CONCRETE BASE
S() G(A) P(H) D(EEIS)
2.1B (8) BARS PER CONCRETE BASE
S() G(A) P(H) D(EEIS)

2.1 TYPICAL PUMP CONCRETE BASE REBAR DETAILS
V-TYP-PMPCONC-BARS
S(6) G(A) P(H) D(EEIS)
Scale 0 3" 6"

NOTE: CONTRACTOR TO CONFIRM DIMENSIONS SHOWN FOR REINFORCING ARE CORRECT, AND WILL ALLOW PUMPS AND PIPING TO BE INSTALLED AS SHOWN ON PLANS AND SECTIONS



2.3 BASEMENT PUMP ROOM - NEW
PUMP #1 AND #4 CONCRETE BASE TRANSVERSE SECTION
V-TYP-PMP1-4_SECT
S(12) G(A) P(H) D(EEIS)
Scale 0 6" 12"

- NOTES (FOR THIS SHEET)
- (N1) NEW PUMP #1 AND #4 (PLAN DASHED FOR CLARITY)
 - (N2) NEW PUMP ANCHORING BASE PL
 - (N3) DEMOLISH EXISTING CONCRETE PUMP BASE TO 6" BELOW FINISH FLOOR. LEAVE EXISTING VERTICAL REBAR IN PLACE AND RE-USE.
 - (N4) NEW PUMP CONCRETE BASE FOR NEW PUMPS - COORDINATE LOCATION WITH PIPING. BEVEL EXTERIOR CORNER EDGES.
 - (N5) (6) 7/8" DIA ALL-THREAD ROD ANCHOR BOLT. ASTM F593 CW1, SS316 WITH ADHESIVE.
 - (N6) #4 BENT VERTICAL BARS - SECURE WITH ADHESIVE IN DRILLED HOLE INTO EXISTING CONCRETE. BARS EQUALLY SPACED
 - (N7) REMOVE 6" OF EXISTING CONCRETE UNDER NEW PUMP CONCRETE BASE
 - (N8) (3) #3 TIE BARS AT 1 1/2" O.C.
 - (N9) EXISTING PIPING - BELOW EXISTING SLAB
 - (N10) LEVELING PL 1" X 4" X 2'-6" MATCH HOLE SIZE AND LOCATION OF PUMP BASE PLATE
 - (N11) CONCRETE THRUST BLOCK
 - (N12) (6) #5 REINFORCING BARS E.W. COORDINATE LOCATIONS AROUND PIPING AND PUMP ANCHOR BOLTS
 - (N13) #5 HOOP BAR
 - (N14) NEW PUMP BASE PLATE

AWWU PLAN SET NO. 10794

File Name: F:\ACAD\2020\220009_VEL-AWU-PS12_STRUC_MODS\Sheets\S10.0_PUMP_SECTION_AND_DETAILS.dwg
Page: 1 of 1
Page Setup: EES_ps-17X11_PDF - L1Scale: 1 - DimScale: 1 - VisRetain: 0

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	BY	DATE	DESCRIPTION	BY	DATE	DESCRIPTION	BY
BASE	AZ	RCB	TELEPHONE				
TOPOGRAPHY			ELECTRIC				
PROFILE			CABLE TV				
SANITARY SEWER			TRAFFIC SIGNAL				
STORM SEWER			DESIGN				
WATER			QUANTITIES				
GAS			MUN. FINAL CHECK				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

1. DATA PROVIDED BY: NAME
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CONTRACTOR: CONTRACTOR
BY: TITLE: TITLE
DATE: DATE

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COMPANY: TEXT
DATE: NUMBER

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
DATA TRANSFER CHECKED BY: TEXT
COMPANY: TEXT
BY: TITLE: TEXT
DATE: NUMBER

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EES CONSULTING ENGINEERS, INC.

Richard C. Bullton
REGISTERED PROFESSIONAL ENGINEER
1-02-21

STATE OF ALASKA
Richard C. Bullton
REGISTERED PROFESSIONAL ENGINEER
1-02-21

AWWU
ANCHORAGE WATER & WASTEWATER UTILITY
MUNICIPALITY OF ANCHORAGE

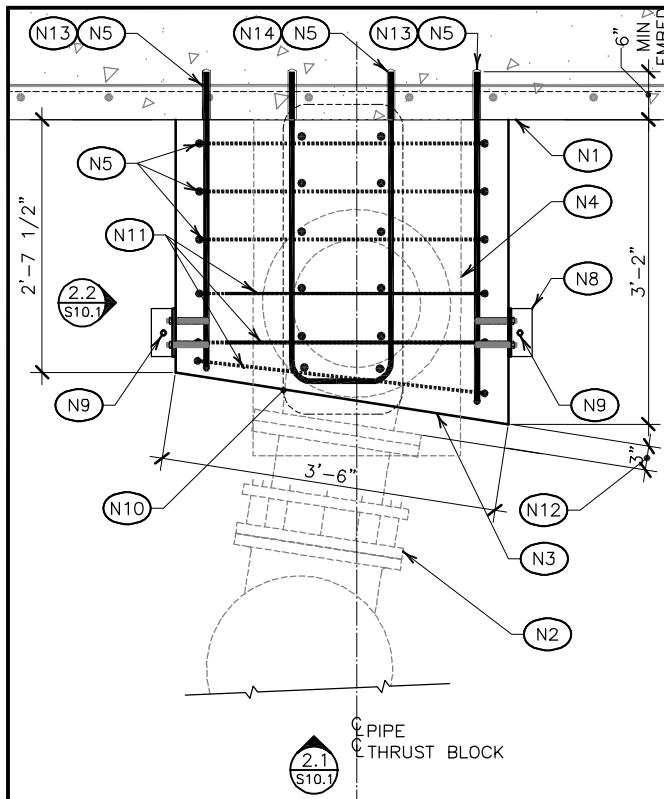
MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE A

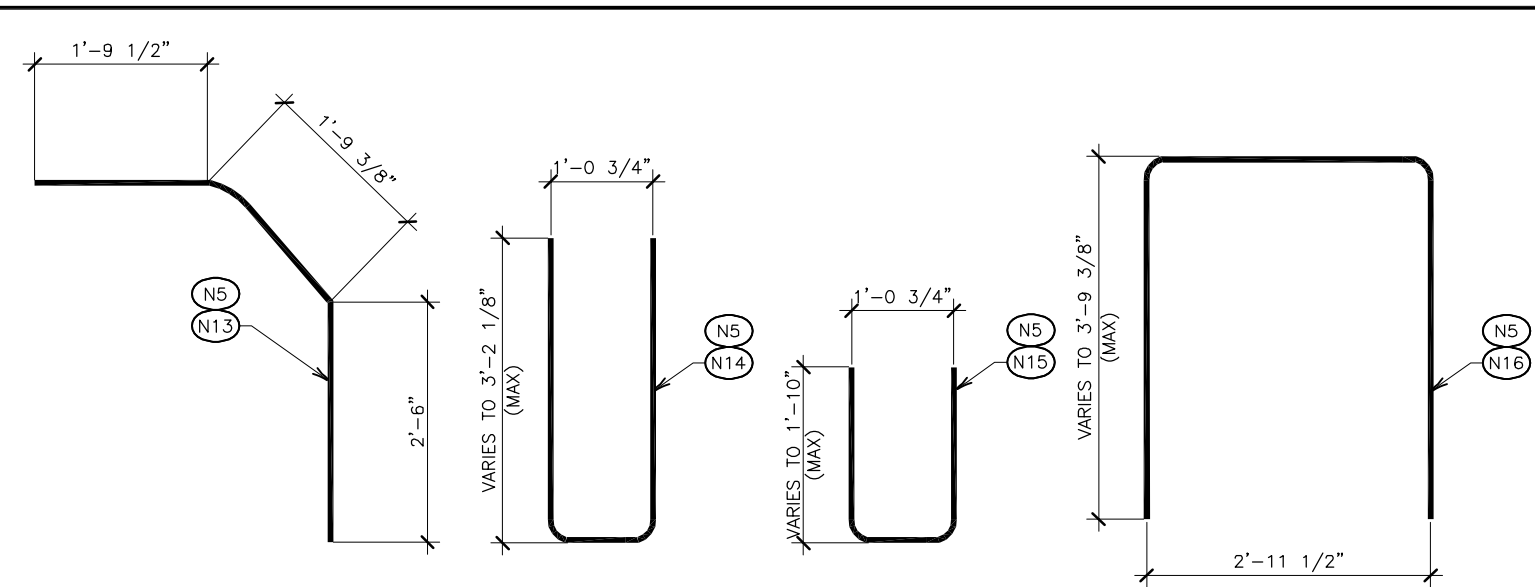
PS 12 UPGRADE FORCE MAIN / GRAVITY JUNCTION REHAB
PUMP SECTION AND DETAILS

S10.0

HORIZ SCALE: NA
VERT SCALE: NA
DATE: 10/29/2021
GRID: SW 2525
SHEET 27 of 104
PROJ. ID.: WW.H7713



1.1 THRUST BLOCK REINFORCING PLAN
 V-TBLOCK-PLN
 S(12) G(A) P(H) D(EEIS)
 Scale 0 6" 12"



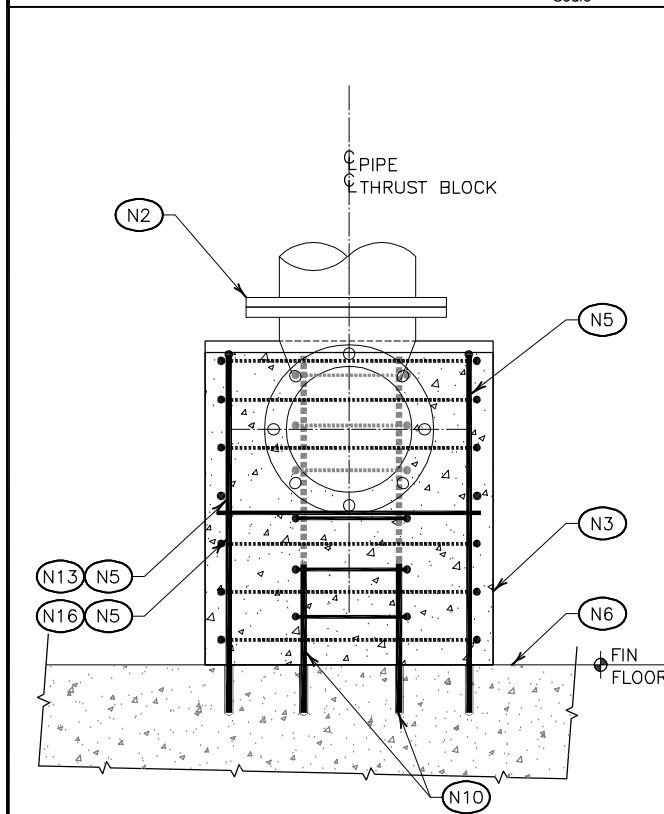
1.2A (2) BARS PER CONCRETE THRUST BLOCK
 S() G(A) P(H) D(EEIS)

1.2B (3) BARS PER CONCRETE BASE
 S() G(A) P(H) D(EEIS)

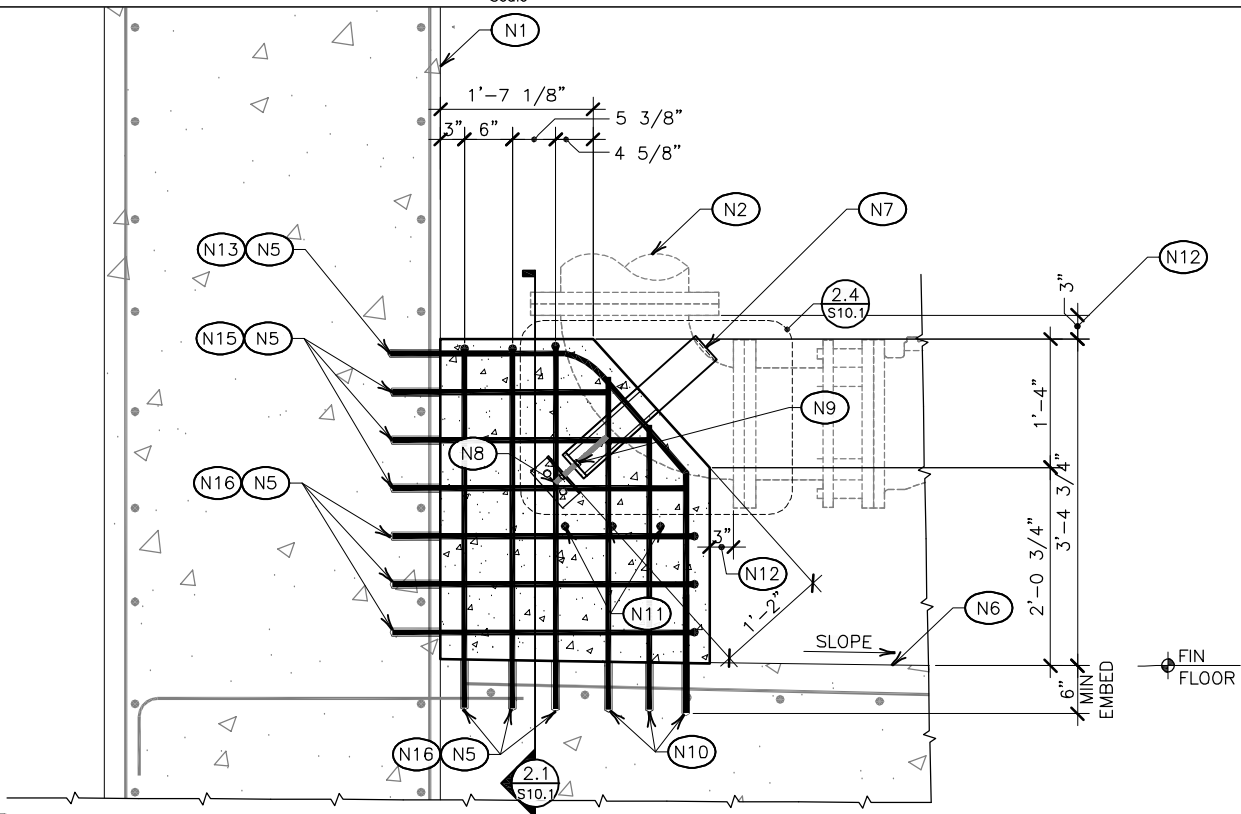
1.2C (3) BARS PER CONCRETE BASE
 S() G(A) P(H) D(EEIS)

1.2D (3) BARS PER CONCRETE BASE
 S() G(A) P(H) D(EEIS)

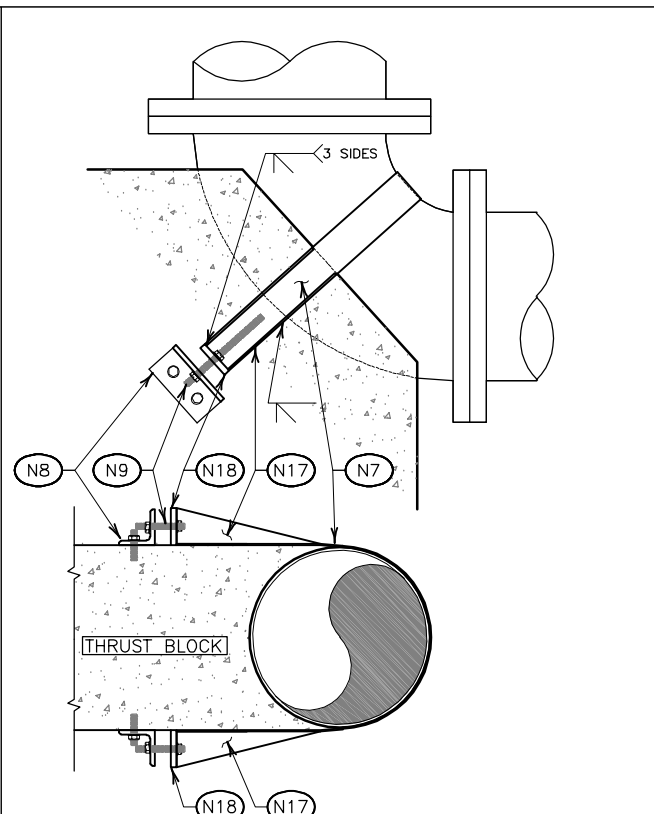
NOTE: CONTRACTOR TO CONFIRM DIMENSIONS SHOWN FOR REINFORCING ARE CORRECT, AND WILL ALLOW PUMPS AND PIPING TO BE INSTALLED AS SHOWN ON PLANS AND SECTIONS



2.1 THRUST BLOCK TRANSVERSE REINFORCING ELEVATION
 V-TBLOCK-TRANSV-ELEV
 S(12) G(A) P(H) D(EEIS)
 Scale 0 6" 12"



2.2 THRUST BLOCK LONGITUDINAL REINFORCING ELEVATION
 V-TBLOCK-LONG-ELEV
 S(12) G(A) P(H) D(EEIS)
 Scale 0 6" 12"



2.4 PIPE STRAP DETAIL
 V-TBLOCK-LONG-ELEV
 S(8) G(A) P(H) D(EEIS)
 Scale 0 4" 8"

- NOTES (FOR THIS SHEET)**
- (N1) EXISTING CONCRETE WALL
 - (N2) PIPING
 - (N3) CONCRETE THRUST BLOCK - POUR CONCRETE AROUND PIPING AFTER PIPE IS ALIGNED
 - (N4) DEMOLISH EXISTING THRUST BLOCK ALONG WITH REINFORCING BARS.
 - (N5) BENT OR STRAIGHT BARS. SECURE BARS IN PREDRILLED HOLES IN EXISTING CONCRETE WALL AND FLOOR WITH ADHESIVE. COORDINATE LOCATIONS WITH EXISTING BARS IN WALL AND FLOOR. FIELD VERIFY DIMENSIONS PRIOR TO FABRICATION OF BARS.
 - (N6) EXISTING CONCRETE FLOOR
 - (N7) SS PIPE STRAP PL 3/16X4 - FIELD INSTALL TO THRUST BLOCK AND COORDINATE LOCATION WITH PIPE ELBOW
 - (N8) L3X3X3/8X6 LONG SS WITH (2) HOLES FOR 3/4" DIA. THREADED RODS - MIN 4" EMBEDMENT. INSTALL IN PREDRILLED HOLE, SECURE WITH HILTI ADHESIVE.
 - (N9) 3/4" DIA. SS THREADED ROD - STRAP PL ADJUSTABLE END
 - (N10) #4 VERTICAL STRAIGHT BARS - LENGTH VARIES. FIELD CUT INTERIOR BARS AS REQUIRED TO MISS BELOW PIPE ELBOW.
 - (N11) (3) #4 STRAIGHT HORIZONTAL BARS AT EDGE FACE OF THRUST BLOCK
 - (N12) PROVIDE MIN CLEARANCE BETWEEN FLANGE AND FACE OF THRUST BLOCK TO ALLOW REMOVAL AND ACCESSING OF BOLT AND NUT REMOVAL
 - (N13) #4 EDGE BENT BAR
 - (N14) #4 BENT U-BAR AT 6" O.C. MAX
 - (N15) #4 BENT U-BAR AT 6" O.C. MAX
 - (N16) #4 BENT U-BAR AT 6" O.C. MAX
 - (N17) STIFFENER PL 3/16"
 - (N18) SS BEARING PL 1/2X4X3 WITH HOLE FOR 3/4" DIA. THREADED ROB

AWWU PLAN SET NO. 10794

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	BY	CHECKED BY	DATE	REV	DATE	DESCRIPTION	BY	DATE	DESCRIPTION
BASE	---	TELEPHONE	---	---	---				
TOPOGRAPHY	---	ELECTRIC	---	---	---				
PROFILE	---	CABLE TV	---	---	---				
SANITARY SEWER	---	TRAFFIC SIGNAL	---	---	---				
STORM SEWER	---	DESIGN	---	---	---				
WATER	---	QUANTITIES	---	---	---				
GAS	---	MUN. FINAL CHECK	---	---	---				
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

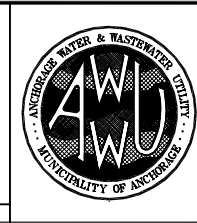
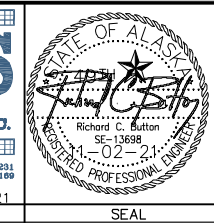
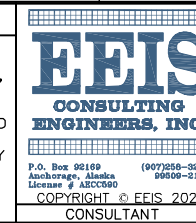
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 BY: _____ TITLE: ---
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2. DATA TRANSFERRED BY: ---
 COMPANY: ---
 DATE: ---

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 COMPANY: ---
 BY: _____ TITLE: ---
 DATE: ---

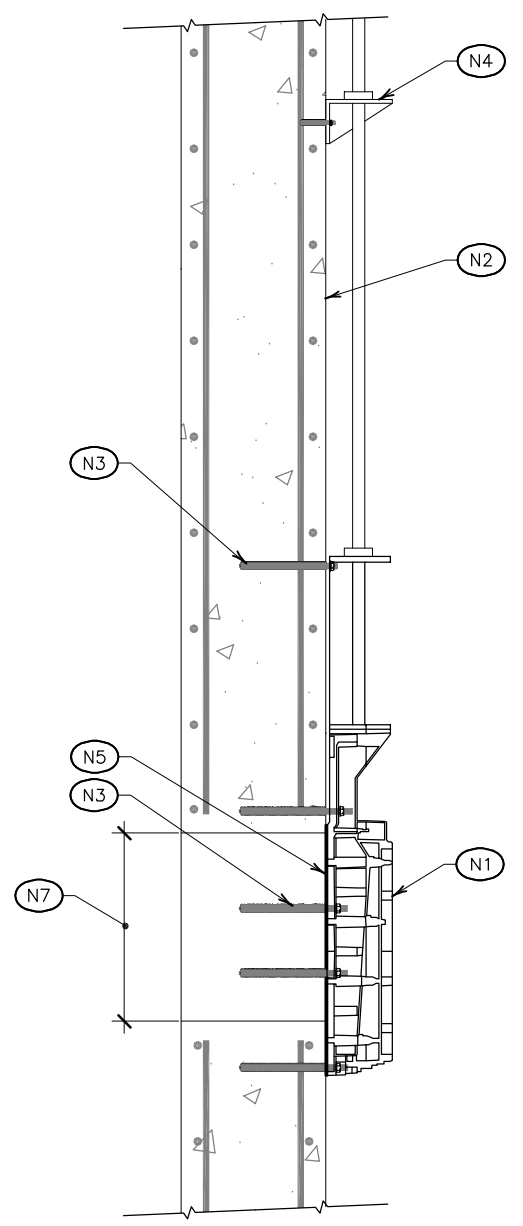
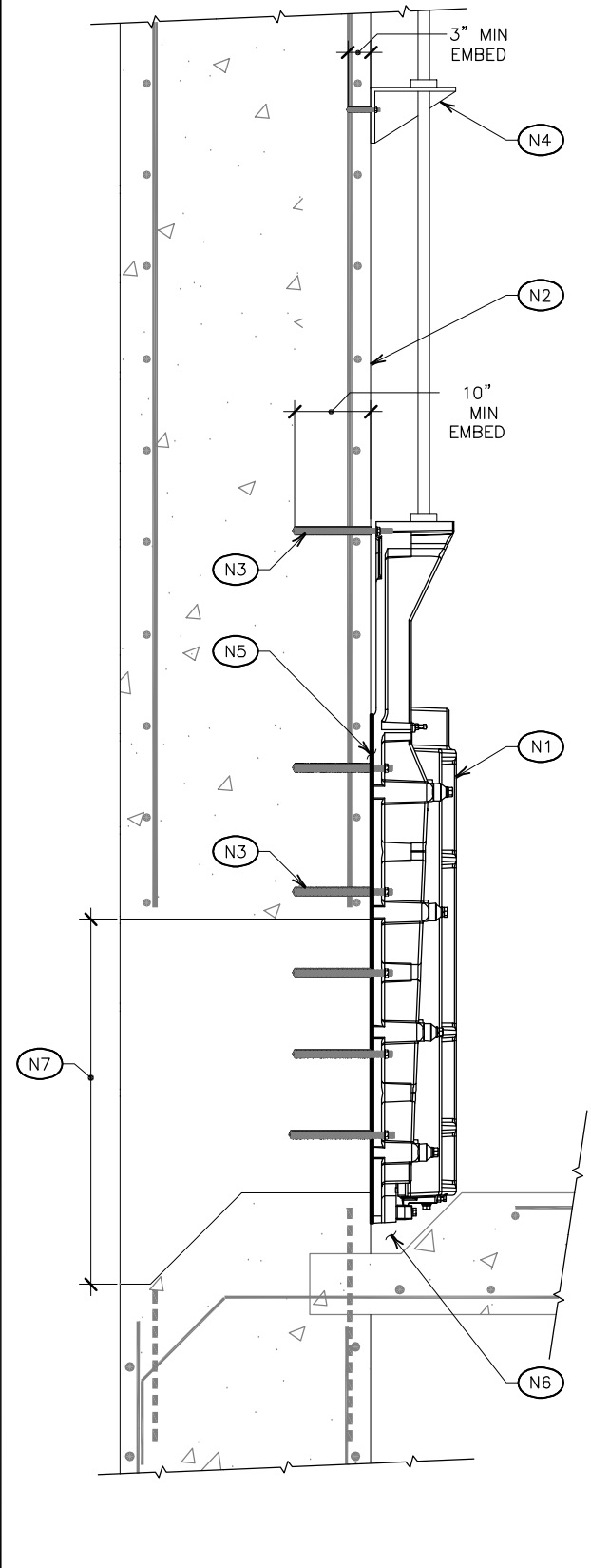
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NOTES (FOR THIS SHEET)

- (N1) NEW SLUICE GATE TO REPLACE DEMOLISHED EXISTING
- (N2) EXISTING WET WELL CONCRETE WALL. AT EXISTING SLUICE GATE CUT AND GRIND EXISTING ANCHOR BOLT FLUSH WITH CONCRETE WALL
- (N3) 3/4" DIA ALL-THREAD STAINLESS STEEL (SS) ROD ASTM F593/F594 TYPE 316 CW. INSTALL IN PREDRILLED HOLE TO CONCRETE WITH HILTI HIT-RE 500 V3 ADHESIVE PER MANUFACTURER'S INSTRUCTIONS.
- (N4) ACTUATOR/SLUICE GATE GUIDE BRACKET. SECURE TO EXISTING WALL WITH (2) 3/8" DIA. THREADED RODS IN PREDRILLED HOLES WITH ADHESIVE
- (N5) 5/16" THICK HARD RUBBER GASKET, MIN. 80 DUROMETER, SHORE D - SET IN SEALANT
- (N6) EXISTING CONCRETE TROUGH
- (N7) OPENING IN EXISTING WALL



2.1 NEW 3'X3' SLUICE GATE - ANCHORING SECTION
V-3X3-SLUICE_GATE
S(12) G(A) P(H) D(EEIS)
Scale: 0 6" 12"

2.2 NEW 2'X2' SLUICE GATE - ANCHORING SECTION
V-2X2-SLUICE_GATE
S(12) G(A) P(H) D(EEIS)
Scale: 0 6" 12"

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE			TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

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CONTRACTOR: _____
BY: _____ TITLE: _____
DATE: _____

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COMPANY: _____
DATE: _____

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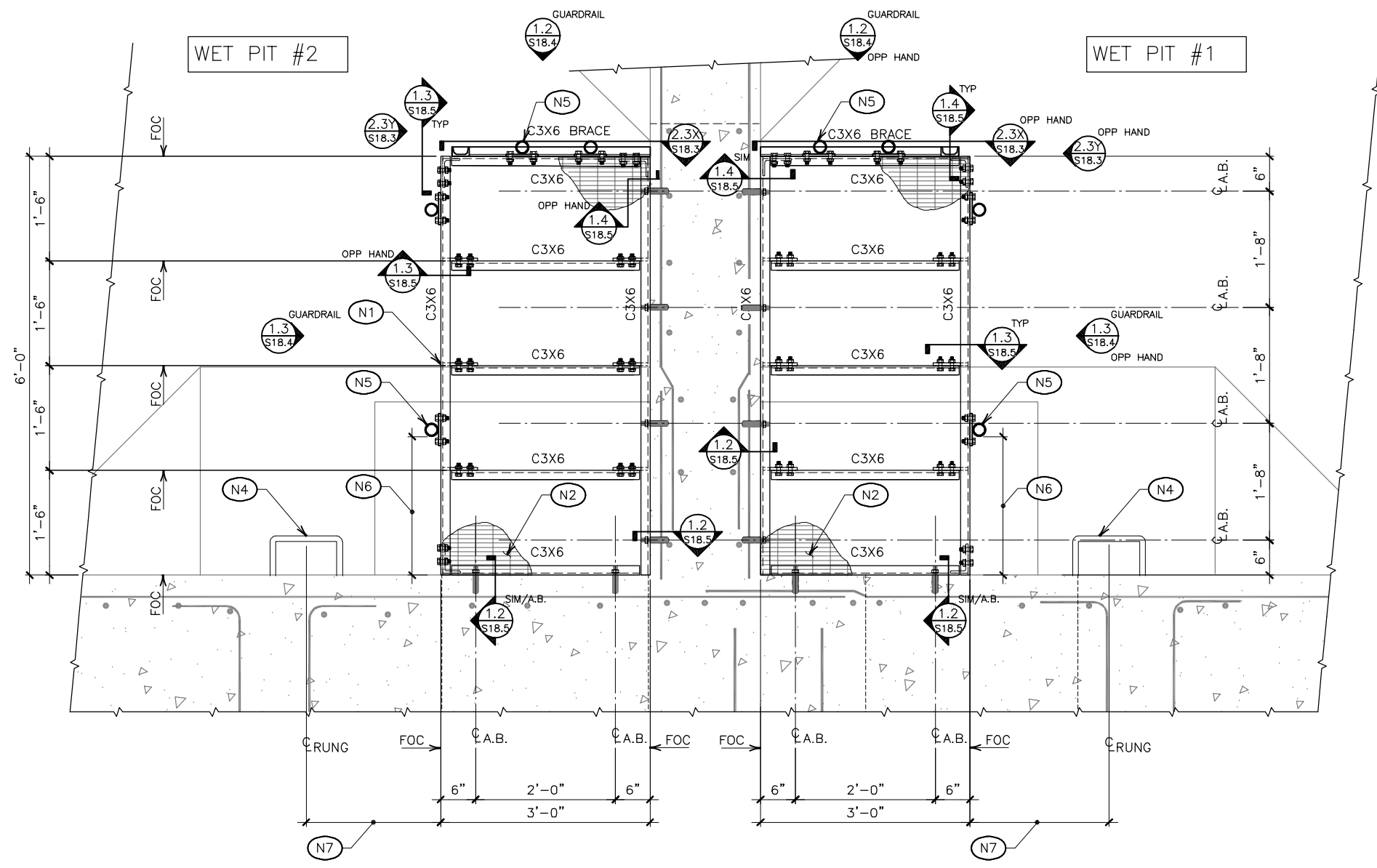
MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE A

PS 12 UPGRADE FORCE MAIN / GRAVITY JUNCTION REHAB
WET WELL SLUICE GATE SECTIONS AND DETAILS S11.0

HORIZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 29 of 104
VERT SCALE: NA PROJ. ID.: WW.H7713

- NOTES (FOR THIS SHEET)**
- (N1) ALL PLATFORM FRAMING SHALL BE STAINLESS STEEL
 - (N2) GATORGRATE GG-1515 FIBERGLASS GRATING
 - (N3) FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF PLATFORM FRAMING MEMBERS. ADJUST AS REQUIRED.
 - (N4) REMOVE/DEMO EXISTING RUNG. CUT BAR FLUSH WITH CONCRETE. REPLACE RUNGS IN ACCORDANCE WITH MASS SPEC SECTION 50.03 AND STANDARD DETAIL 50-06.
 - (N5) GUARDRAIL POST
 - (N6) GUARDRAIL OPENING THIS END
 - (N7) 1'-3" TO 1'-8" STEP OVER TO RUNG



2.1 WET PIT - NEW PLATFORM FRAMING PLAN
S18.0 WET PIT 1 AND 2 PLATFORM FRAMING PLAN
S(12) G(A) P(H) D(E)IS

VERIFY SCALE		RECORD DRAWING	
DATA	BY	DATE	DESCRIPTION
BASE	---	---	---
TOPOGRAPHY	---	---	---
PROFILE	---	---	---
SANITARY SEWER	---	---	---
STORM SEWER	---	---	---
WATER	---	---	---
GAS	---	---	---

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

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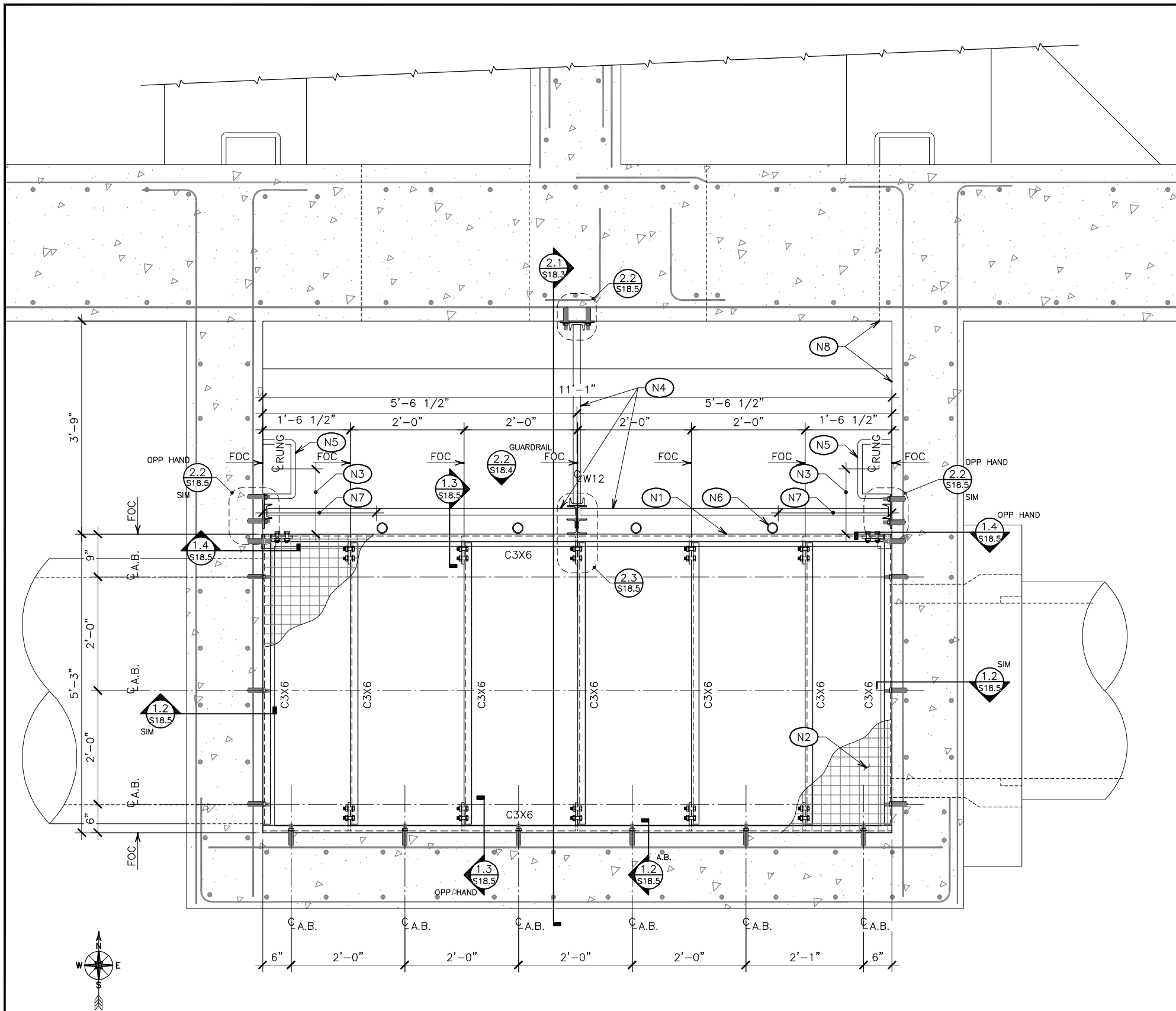
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 Richard C. Bulton
 SE-13628
 1-02-21
 REGISTERED PROFESSIONAL ENGINEER
 SEAL

ANCHORAGE WATER & WASTEWATER UTILITY
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 MUNICIPALITY OF ANCHORAGE

MUNICIPALITY OF ANCHORAGE
 WATER & WASTEWATER UTILITY
 SCHEDULE A
 PS 12 UPGRADE FORCE MAIN / GRAVITY JUNCTION REHAB
WET PIT 1 AND 2 PLATFORM FRAMING PLAN
 S18.0

HORIZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 30 of 104
 VERT SCALE: NA PROJ. ID.: WW.H7713



NOTE: CONTRACTOR TO VERIFY ALL DIMENSIONS WITH EXISTING BEFORE ORDERING MATERIALS FOR PLATFORM OR DIVIDERS.

- NOTES (FOR THIS SHEET)**
- (N1) ALL PLATFORM FRAMING SHALL BE STAINLESS STEEL
 - (N2) GATORGRATE GG-1515 FIBERGLASS GRATING WITH SS CLIPS TO STRUCTURE
 - (N3) 1'-3" TO 1'-8" STEP OVER TO RUNG
 - (N4) PRESSURE TREATED DIVIDER PLANKS
 - (N5) REMOVE/DEMO EXISTING RUNG. CUT BAR FLUSH WITH CONCRETE. REPLACE RUNGS IN ACCORDANCE WITH MASS SPEC SECTION 50.03 AND STANDARD DETAIL 50-06.
 - (N6) GUARDRAIL POST
 - (N7) GUARDRAIL OPENING THIS END
 - (N8) EXISTING CONCRETE WALL

AWWU PLAN SET
NO. 10794

2.1 INFLUENT MANHOLE - PLATFORM FRAMING PLAN
S18.1 INFLUENT MANHOLE PLATFORM FRAMING PLAN
S(12) G(A) P(H) D(E)E(S)

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE HORZ SCALE: AS SHOWN VERT SCALE: N/A	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE			TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

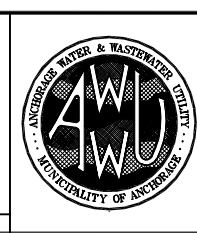
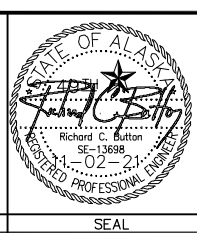
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DATE: _____

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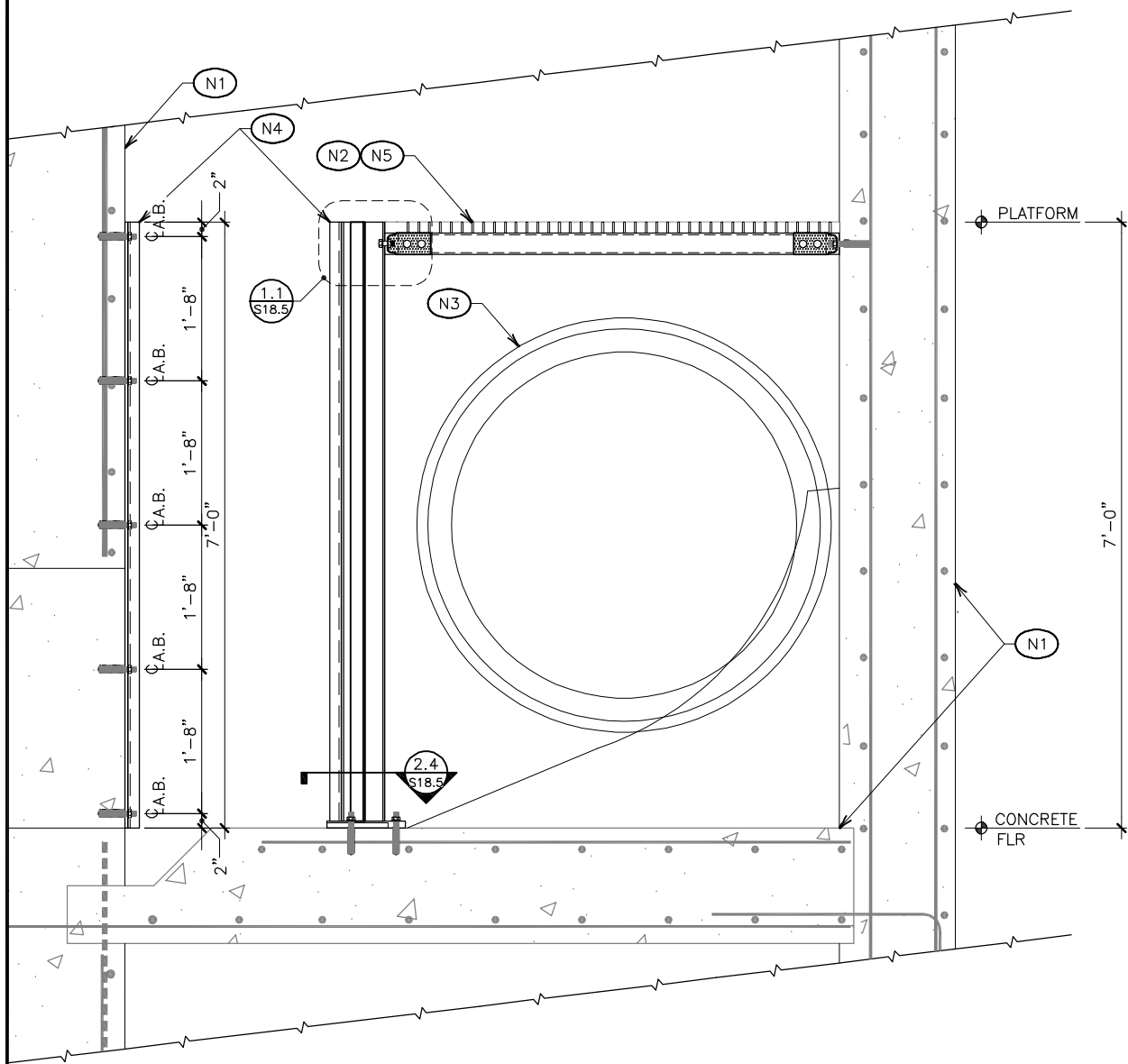
SCHEDULE A

PS 12 UPGRADE FORCE MAIN / GRAVITY JUNCTION REHAB

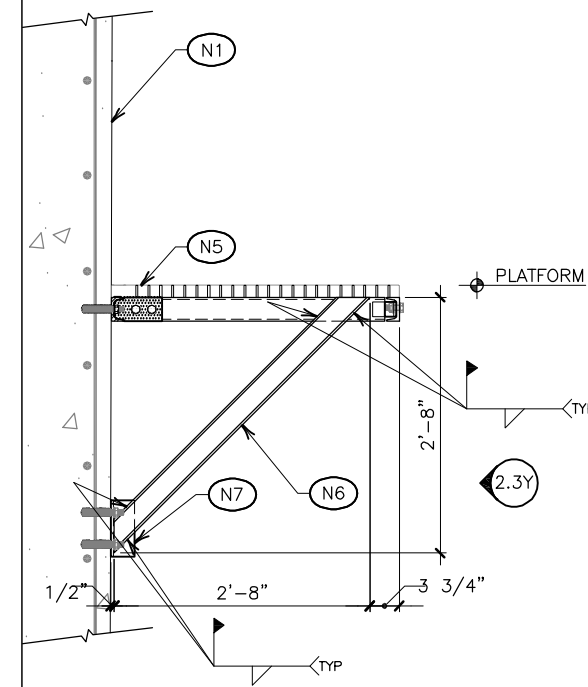
INFLUENT MANHOLE PLATFORM FRAMING PLAN S18.1

HORZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 31 of 104
VERT SCALE: NA PROJ. ID.: WW.H7713

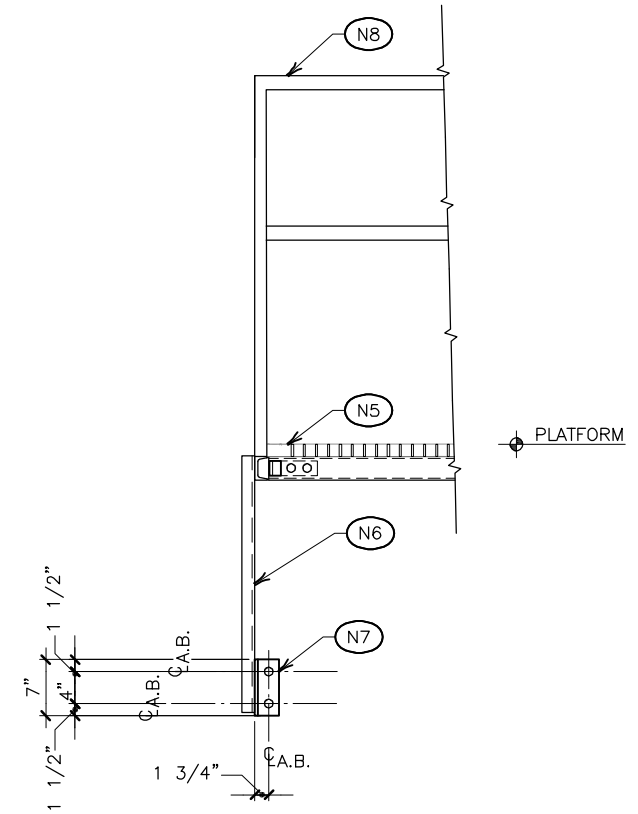
- NOTES (FOR THIS SHEET)**
- (N1) EXISTING CONCRETE WALL OR FLOOR
 - (N2) INFLUENT MANHOLE PLATFORM
 - (N3) EXISTING INFLUENT PIPE
 - (N4) SS RETAINER CHANNEL
 - (N5) GRATING
 - (N6) C3 DIAGONAL BRACE SS
 - (N7) L3X3X1/4 SS. SECURE TO WALL WITH (2) 5/8" DIA. SS ANCHOR RODS WITH ADHESIVE IN PREDRILLED HOLES
 - (N8) PIPE 1 1/4" DIA SCHD 40 SS GUARDRAIL



2.1 PLATFORM FRAMING SECTION AT INFLUENT MANHOLE
C-W6-SECT
S(12) G(A) P(H) D(EEIS)
Scale: 0" 6" 12"



2.3X WET PIT PLATFORM BRACE SIDE ELEVATION
S() G(A) P(H) D(EEIS)
Scale: 0" 6" 12"



2.3Y WET PIT PLATFORM BRACE FRONT ELEVATION
S() G(A) P(H) D(EEIS)
Scale: 0" 6" 12"

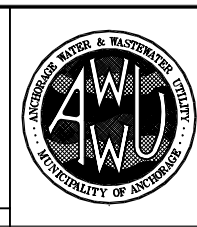
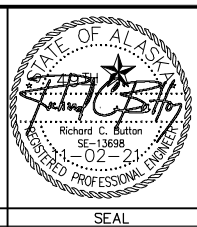
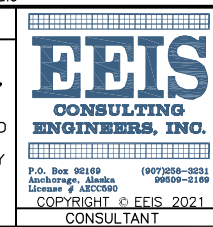
2.3 WET PIT PLATFORM DIAGONAL BRACE ELEVATION
PLFRM-TRNSV-SECT-PIT-2
S(12) G(A) P(H) D(EEIS)
Scale: 0" 6" 12"

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATE	DESCRIPTION	BY	DATE	DESCRIPTION
BASE	---	---	---	TELEPHONE	---	---	---
TOPOGRAPHY	---	---	---	ELECTRIC	---	---	---
PROFILE	---	---	---	CABLE TV	---	---	---
SANITARY SEWER	---	---	---	TRAFFIC SIGNAL	---	---	---
STORM SEWER	---	---	---	DESIGN	---	---	---
WATER	---	---	---	QUANTITIES	---	---	---
GAS	---	---	---	MUN. FINAL CHECK	---	---	---

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COMPANY: _____	COMPANY: _____	DATE: _____	

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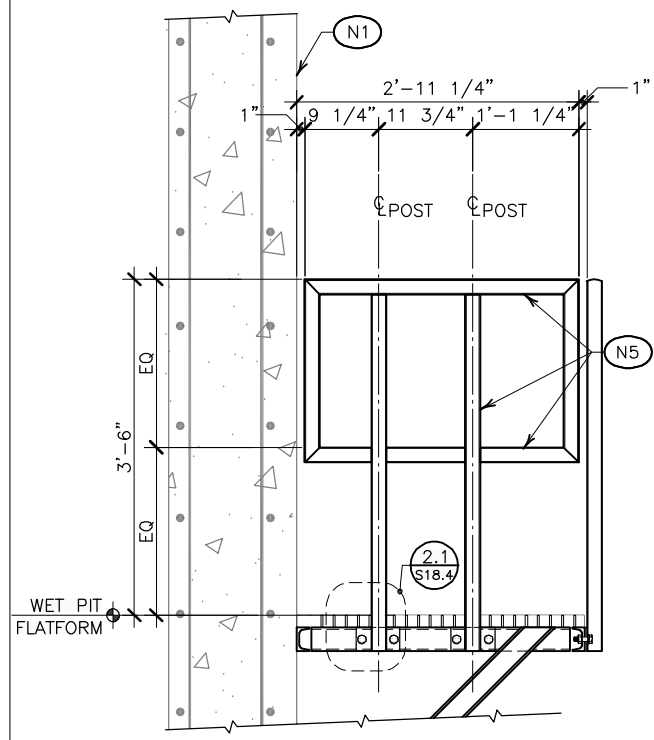
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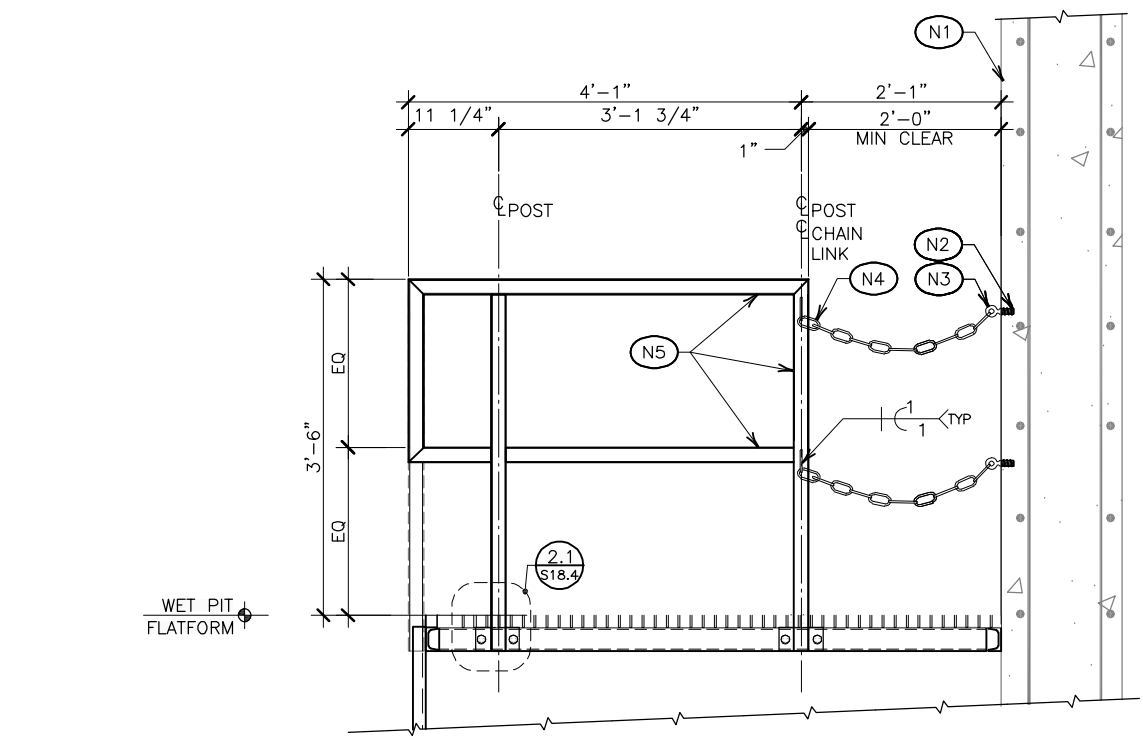
MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY			
SCHEDULE A			
PS 12 UPGRADE FORCE MAIN / GRAVITY JUNCTION REHAB			
PLATFORM FRAMING - SECTIONS			
S18.3			
HORIZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 32 of 104
VERT SCALE: NA	PROJ. ID.: WW.H7713		

NOTES (FOR THIS SHEET)

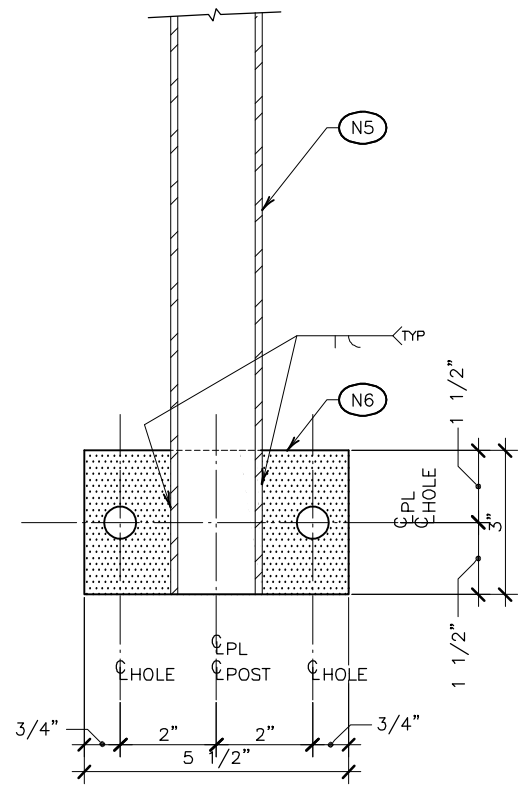
- (N1) EXISTING CONCRETE WALL
- (N2) DEWALT 3/8" STAINLESS STEEL (SS) DROP-IN ANCHOR CATEGORY NO. 6226 OR EQUAL
- (N3) SS SHOULDER EYE BOLT
- (N4) SS SAFETY CHAIN 1/4" DIA WITH SS 5/16" DIA SCREW-LOCKING CARABINERS AT END CONNECTION TO CHAIN PLATE
- (N5) POSTS AND RAILS: PIPE 1 1/4" DIA SS (TYP) ALL JOINTS ON RAILING TO BE FILLET WELDED 90° CONTACTS, BEVEL WELDED FACE TO FACE. ALL WELDS TO BE GROUND SMOOTH AND FINISHED. RAILS ARE TO BE FREE OF SHARP CORNERS AND BURRS
- (N6) SS SUPPORT PL 1/4" WITH HOLES FOR (2) 5/8" DIA BOLTS
- (N7) WELD LINK OF CHAIN TO POST



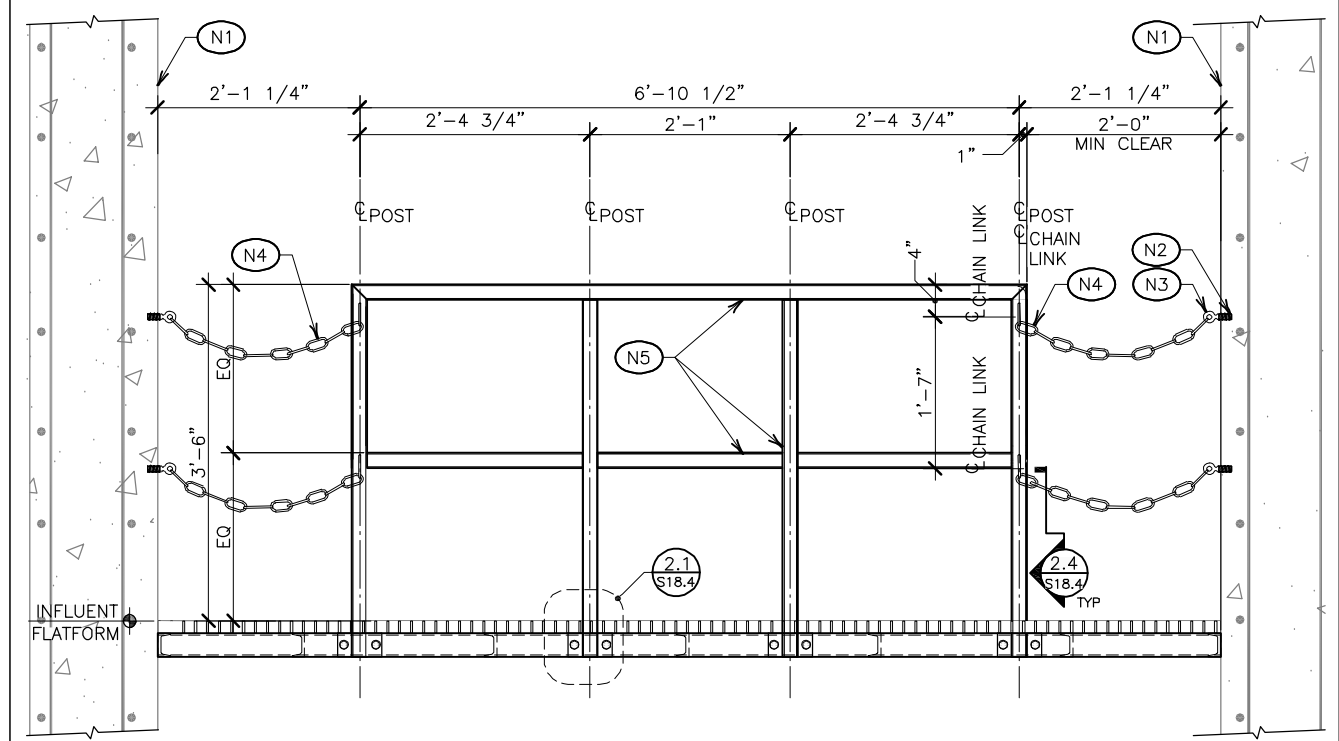
1.2 WET PIT GUARDRAIL - TRANSVERSE ELEVATION
V-GDRL-ELEV-PIT1-2-TRNSV
S(12) G(A) P(H) D(E)IS
Scale: 0 6" 12"



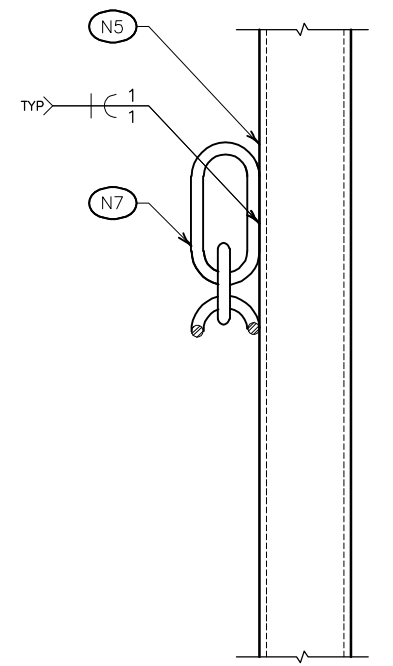
1.3 WET PIT GUARDRAIL - LONGITUDINAL ELEVATION
V-GDRL-ELEV-PIT1-2-LONG
S(12) G(A) P(H) D(E)IS
Scale: 0 6" 12"



2.1 GUARDRAIL BASE SUPPORT PL DETAIL
S(2) G(A) P(H) D(E)IS
Scale: 0 1" 2"



2.2 INFLUENT MANHOLE GUARDRAIL ELEVATION
V-GDRL-ELEV-INFLNT_MANHOLE
S(12) G(A) P(H) D(E)IS
Scale: 0 6" 12"



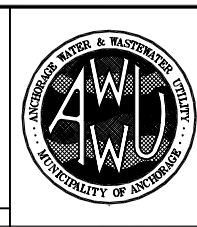
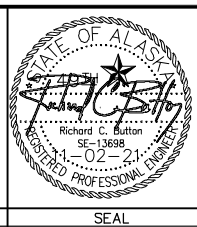
2.4 CHAIN LINK CONNECTION TO GUARDRAIL POST
V-CHAINPLATE
S(2) G(A) P(H) D(E)IS
Scale: 0 1" 2"

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" 1" 2"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DATE	DESCRIPTION	BY	DATE	DESCRIPTION
BASE	---	---	---	---	---	TELEPHONE	---	---	---
TOPOGRAPHY	---	---	---	---	---	ELECTRIC	---	---	---
PROFILE	---	---	---	---	---	CABLE TV	---	---	---
SANITARY SEWER	---	---	---	---	---	TRAFFIC SIGNAL	---	---	---
STORM SEWER	---	---	---	---	---	DESIGN	---	---	---
WATER	---	---	---	---	---	QUANTITIES	---	---	---
GAS	---	---	---	---	---	MUN. FINAL CHECK	---	---	---

RECORD DRAWING		Note: To be filled out on original drawings upon project completion.	
1. DATA PROVIDED BY: ---		This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.	
BY: _____ TITLE: ---		CONTRACTOR: ---	
DATE: ---		DATA TRANSFER CHECKED BY: ---	
2. DATA TRANSFERRED BY: ---		COMPANY: _____ TITLE: ---	
DATE: ---		DATE: ---	

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MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE A

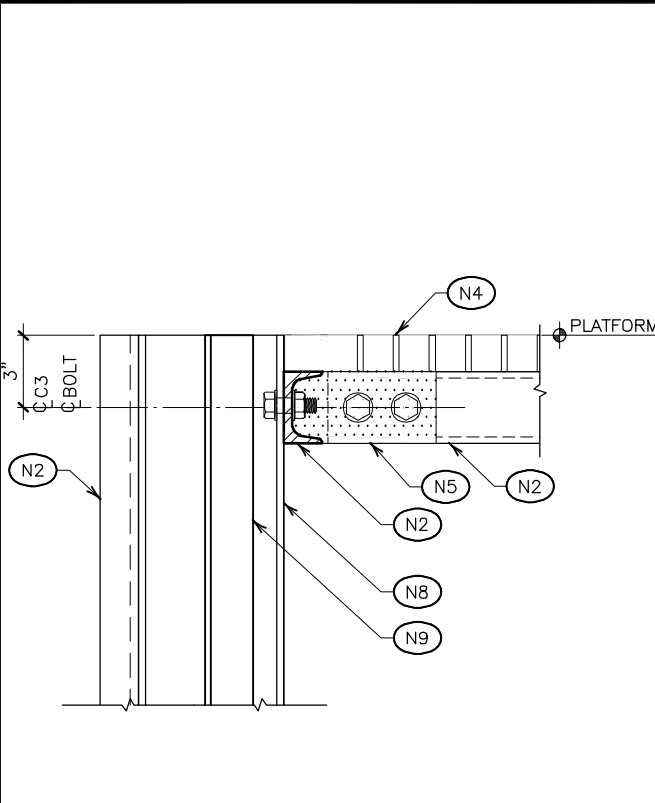
PS 12 UPGRADE FORCE MAIN / GRAVITY JUNCTION REHAB

GUARDRAIL FRAMING ELEVATIONS AND DETAILS

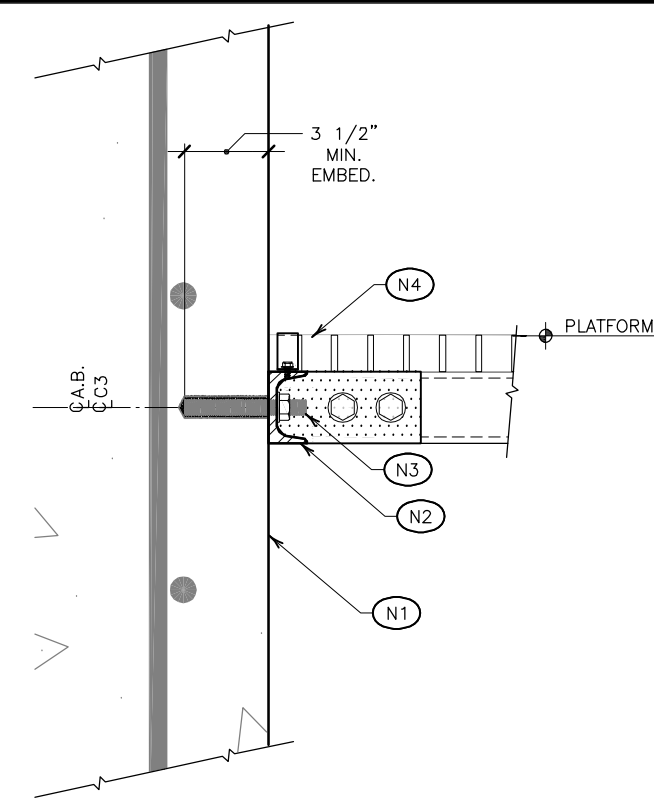
S18.4

HORIZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 33 of 104

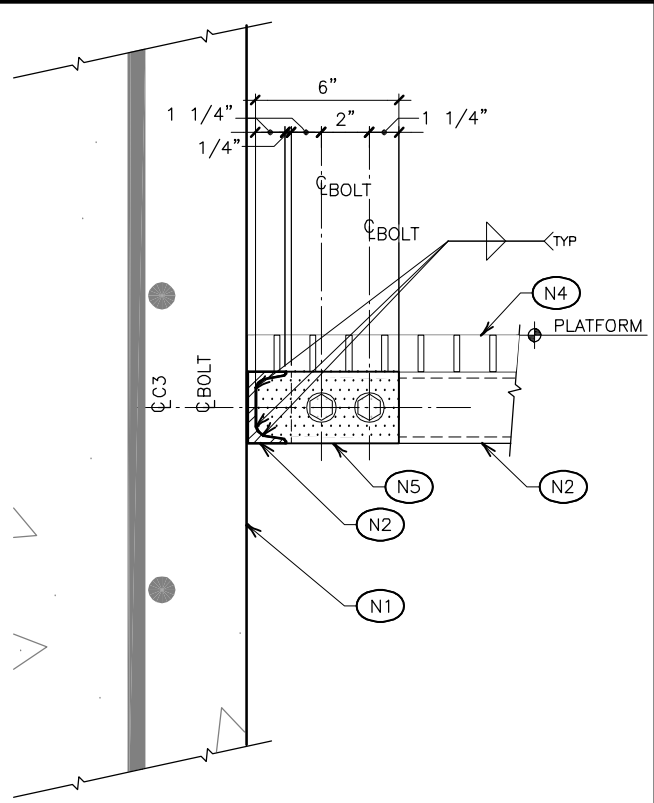
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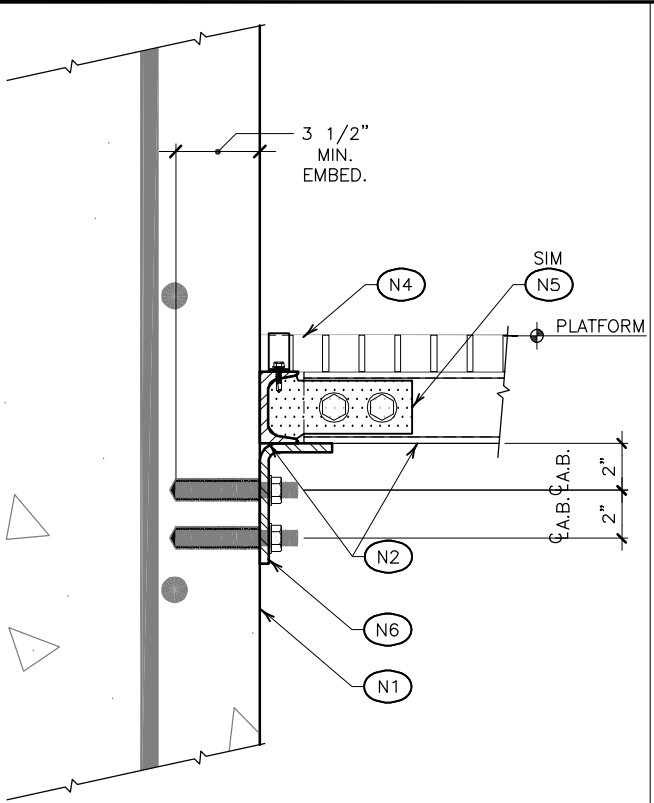
1.1 PLATFORM FRAMING SECTION AT INFLUENT MANHOLE
C-W6-SECT
S(4) G(A) P(H) D(EEIS)
Scale: 0 2" 4"



1.2 TYPICAL PLATFORM/C ANCHORING CONNECTION TO EXISTING CONCRETE WALL
C-LEDGER
S(4) G(A) P(H) D(EEIS)
Scale: 0 2" 4"

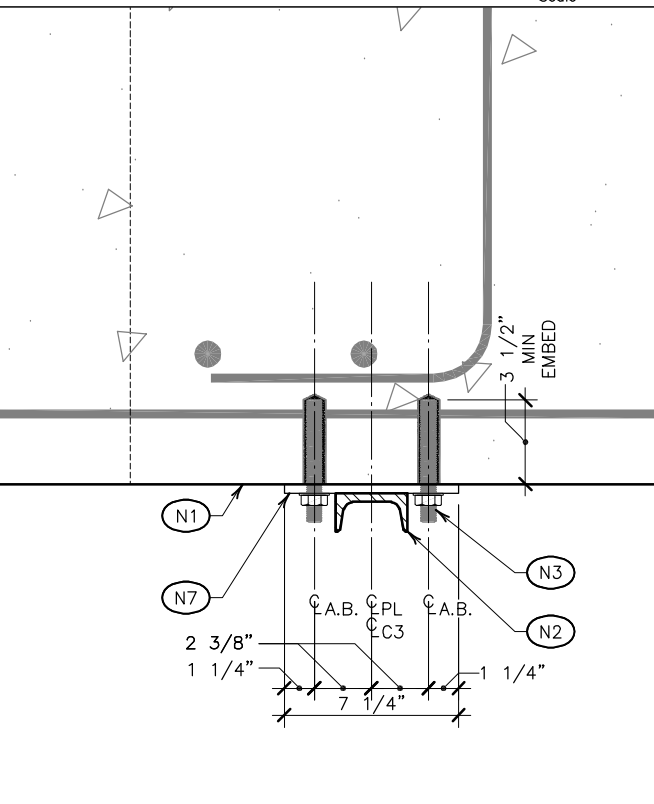


1.3 TYPICAL PLATFORM/C FRAMING CONNECTION DETAIL
C-LEDGER-C-BM
S(4) G(A) P(H) D(EEIS)
Scale: 0 2" 4"

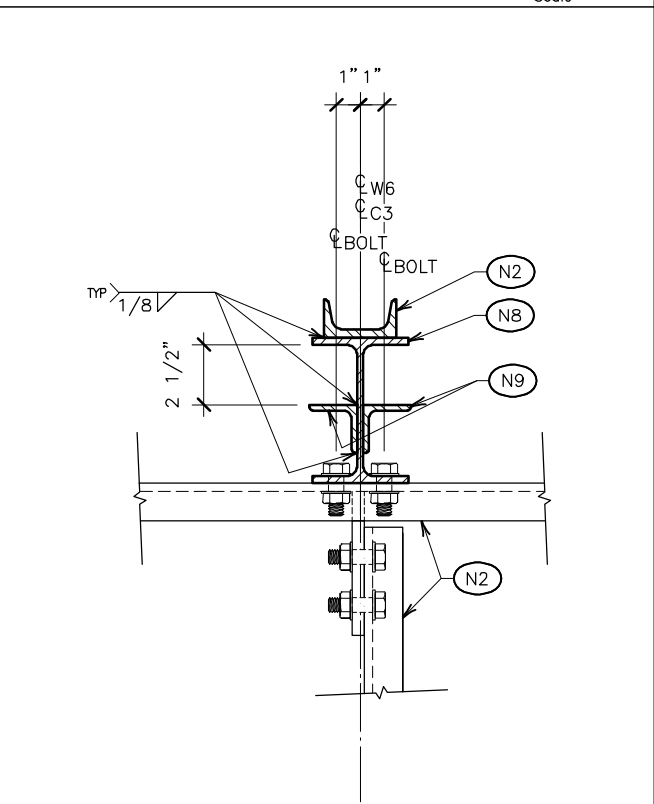


1.4 TYPICAL PLATFORM AT LEDGER OUTSIDE CORNERS
C-LEDGER
S(4) G(A) P(H) D(EEIS)
Scale: 0 2" 4"

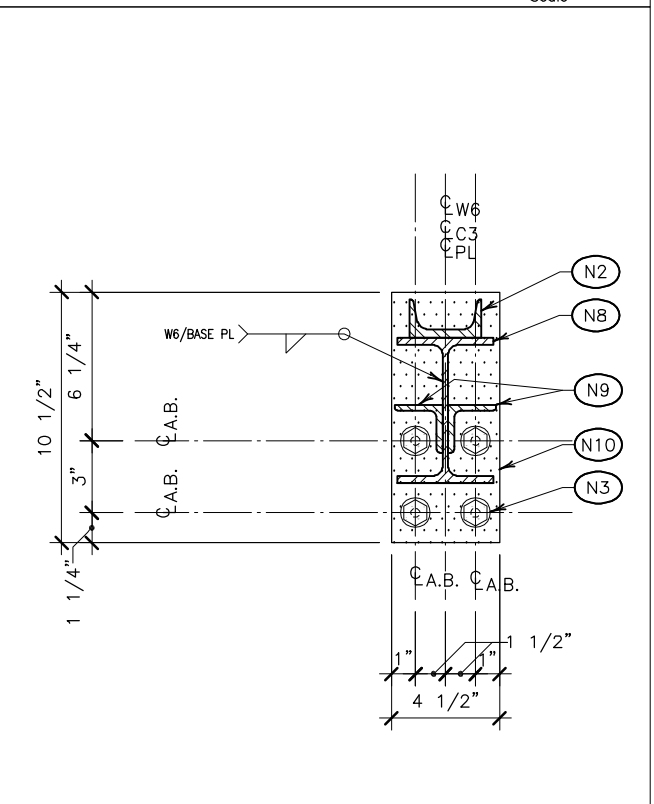
- NOTES (FOR THIS SHEET)**
- (N1) EXISTING CONCRETE WALL
 - (N2) STAINLESS STEEL (SS) PLATFORM OR RETAINER CHANNEL
 - (N3) 5/8" DIA. TREADED ROD SS INSTALLED TO CONCRETE WITH ADHESIVE
 - (N4) GRATING - PROVIDE MANUFACTURER'S SS CLIPS TO STRUCTURE
 - (N5) CONNECTION PL 3/8"x3" SS WITH HOLES FOR (2) 5/8" DIA. BOLTS SS. AT SIM CUT PL WIDTH TO FIT INSIDE OF CHANNEL.
 - (N6) BENT SS LEDGER PL 3/8" X 5" X 3" X 3" LONG SS WITH (2) 5/8" DIA. HOLES
 - (N7) BACKER PL 3/8" SS WITH HOLES FOR 5/8" DIA. ANCHOR BOLTS
 - (N8) W6X12 SS - WITH (2) 5/8" DIA. HOLES
 - (N9) L2X2X1/4" SS PLANK RETAINER ANGLE
 - (N10) BASE PL 1/2" SS WITH (4) HOLES FOR 5/8" DIA. BOLTS



2.2 INFLUENT MANHOLE - PLANK RETAINER/C TO EXISTING CONCRETE WALL FRAMING PLAN
S18.5 PLATFORM FRAMING DETAILS
S(4) G(A) P(H) D(EEIS)
Scale: 0 2" 4"



2.3 PLANK RETAINER SUPPORT - FRAMING PLAN
PLNK-RTNR-W6-PLN
S(4) G(A) P(H) D(EEIS)
Scale: 0 2" 4"



2.4 PLANK RETAINER BASE PL - FRAMING PLAN
PLNK-RTNR-W6-BASE-PLN
S(4) G(A) P(H) D(EEIS)
Scale: 0 2" 4"

VERIFY SCALE THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING. 0" 1" IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY. FULL SIZE SCALE HORZ SCALE: AS SHOWN VERT SCALE: N/A

DATA	DRAWN BY	CHECKED BY	DATE	DESCRIPTION	BY
BASE	---	---	---	TELEPHONE	---
TOPOGRAPHY	---	---	---	ELECTRIC	---
PROFILE	---	---	---	CABLE TV	---
SANITARY SEWER	---	---	---	TRAFFIC SIGNAL	---
STORM SEWER	---	---	---	DESIGN	---
WATER	---	---	---	QUANTITIES	---
GAS	---	---	---	MUN. FINAL CHECK	---

PLAN CHECK

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

1. DATA PROVIDED BY: _____
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CONTRACTOR: _____
BY: _____ TITLE: _____
DATE: _____

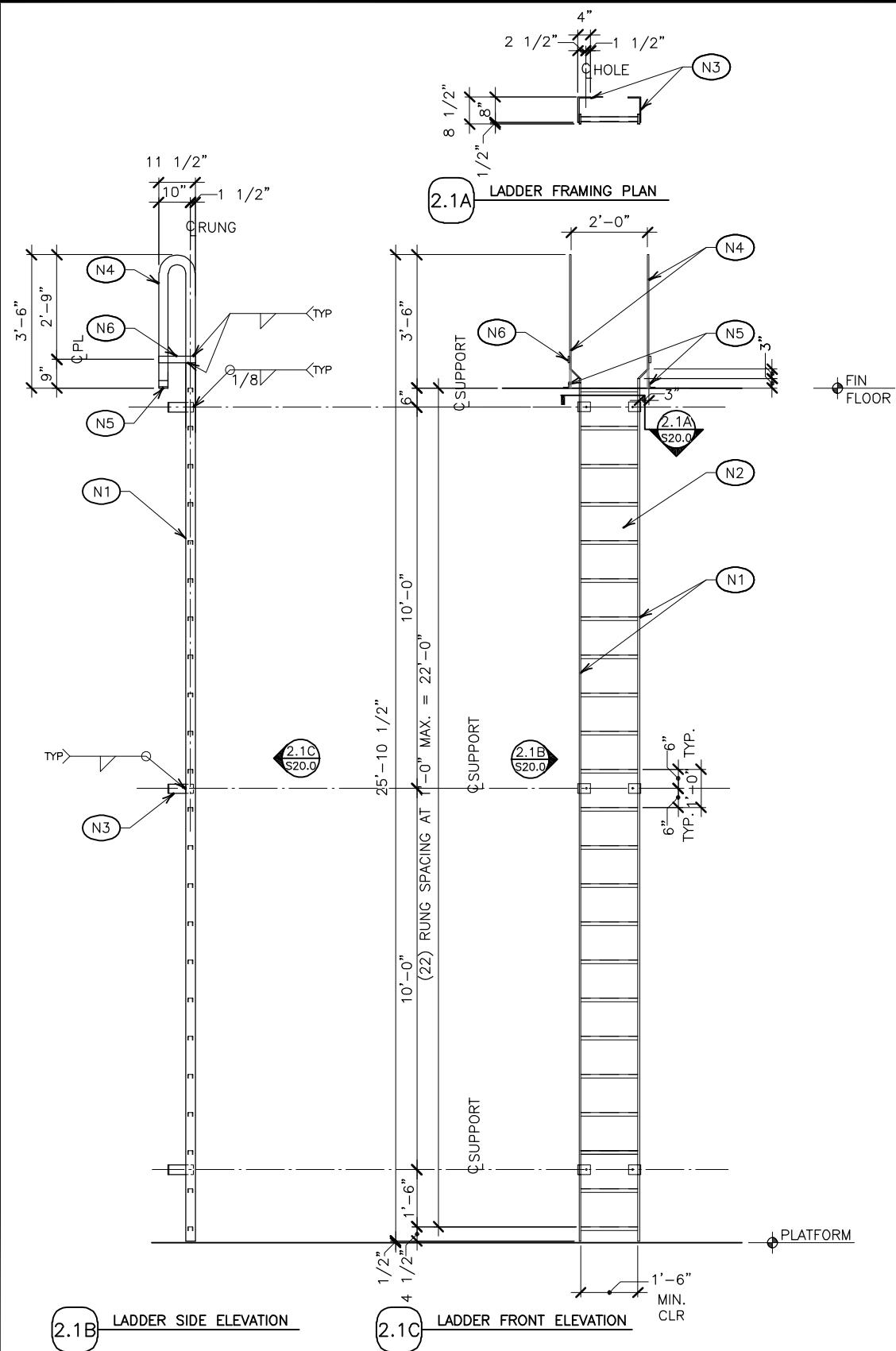
2. DATA TRANSFERRED BY: _____
COMPANY: _____
DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
DATA TRANSFER CHECKED BY: _____
COMPANY: _____
BY: _____ TITLE: _____
DATE: _____

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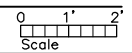


NOTE: CONTRACTOR TO VERIFY ALL DIMENSIONS WITH EXISTING BEFORE ORDERING MATERIALS FOR LADDERS.

- NOTES (FOR THIS SHEET)**
- (N1) LADDER SIDE RAIL PL 1/2"x3" STAINLESS STEEL (SS)
 - (N2) 1 5/8" WIDE AMICO-ISG SAFETY-TREAD LADDER RUNG TYPE 316L, 14 GA. SS
 - (N3) SUPPORT PL 3/8" X 3" SS WITH HOLES FOR 5/8" DIA SS ANCHOR BOLT. DIMENSIONS SHOWN ON PLAN ARE APPROXIMATE. COORDINATE LENGTH FOR CONNECTION TO EXISTING PIT CONCRETE WALL
 - (N4) EXTEND RAIL ABOVE FINISH FLOOR AS SHOWN
 - (N5) WELD L2X2X1/4X 3" LONG SS TO SIDE RAIL EXTENSION - PROVIDE HOLE FOR 1/2" DIA. ANCHOR ROD IN HORIZONTAL LEG AND ANCHOR TO EXISTING CONCRETE FLOOR WITH 1/2" DIA SS ROD WITH ADHESIVE PREDRILLED HOLE. 2" MIN EMBED.
 - (N6) LATERAL SUPPORT PL1/4"x2" SS

2.1 LDDR-ELEV
S(24) G(A) P(H) D(EEIS)

2.1A LADDER FRAMING PLAN AND ELEVATIONS



VERIFY SCALE		RECORD DRAWING	
DATA	DESCRIPTION	DATE	BY
BASE	TELEPHONE		
TOPOGRAPHY	ELECTRIC		
PROFILE	CABLE TV		
SANITARY SEWER	TRAFFIC SIGNAL		
STORM SEWER	DESIGN		
WATER	QUANTITIES		
GAS	MUN. FINAL CHECK		

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

1. This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.

CONTRACTOR: _____

BY: _____ TITLE: _____

DATE: _____

2. DATA TRANSFERRED BY: _____

COMPANY: _____

DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.

DATA TRANSFER CHECKED BY: _____

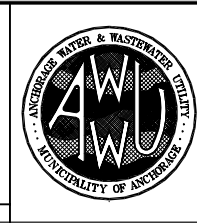
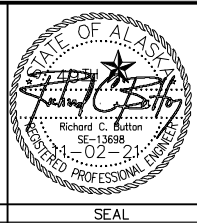
COMPANY: _____

BY: _____ TITLE: _____

DATE: _____

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MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE A

PS 12 UPGRADE FORCE MAIN / GRAVITY JUNCTION REHAB
**PUMP STATION WET WELL LADDER
PLAN AND ELEVATIONS** S20.0

HORIZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 35 of 104
VERT SCALE: NA PROJ. ID.: WW.H7713

FILE: P:\Projects\VEI\Pump Station 12\Drawings\Mech\MO.1 MECHANICAL SPECIFICATIONS, ABBREVIATIONS, AND SYMBOL LEGEND.dwg DATE: 10/28/2021 2:36 PM

SPECIFICATIONS

SCOPE OF WORK:

Furnish and install all material and equipment as required for complete fabrication and installation of the mechanical systems as indicated on the drawings and in the specifications to provide a fully-functioning installation. Refer to the Drawings and Specifications of all disciplines for additional requirements affecting this work.

The basic scope of work includes the replacement of 4-way actuating valves controlling station knife gates and associated piping, installation of a standby pressure pump system and water storage tank. This work includes any required additional piping, tubing, fittings, appurtenances, controls, electrical equipment and wiring.

GENERAL REQUIREMENTS FOR THE WORK:

STANDARDS, CODES AND REGULATIONS: Work shall comply with the latest adopted edition of Alaska Department of Environmental Conservation (ADEC) regulations, International Mechanical Code (IMC), Uniform Plumbing Code (UPC), International Building Code (IBC), National Electrical Code (NEC), and International Fire Code (IFC) including all state and local amendments to these codes.

REFERENCE SYMBOLS: The Mechanical "LEGEND" on the drawings is a standardized version, and all symbols shown may not be used. Use the "LEGEND" as a reference for the symbols used on the drawings.

DRAWINGS: The drawings are diagrammatic, not necessarily showing all offsets or exact locations of fixtures, equipment, etc., unless specifically dimensioned. Review the drawings and specifications for equipment furnished by other crafts but installed in accordance with this section. Bring questionable or obscure items, apparent conflicts between plans, specifications, governing codes and/or utilities regulations to the attention of the Owner. Codes, ordinances, regulations, manufacturer's instructions or standards take precedence when they are more stringent or conflict with the drawings and specifications.

DRAWING NOTATIONS: Heavy lines indicate demolition or new piping and equipment as noted. Heavy dashed lines indicate piping and equipment not directly visible in that view. Lighter lines indicate either existing piping, equipment, and construction or new piping, equipment, and construction by other trades.

RECORD DRAWINGS: Mark up a clean set of drawings as the work progresses to show the dimensioned location and routing of all mechanical work. Show complete routing and sizing of any significant revisions to the systems shown.

APPROVED-EQUAL EQUIPMENT: Equipment shown or specified on the drawings was used as the basis-of-design. Different makes, models and manufacturers may be provided when the substitute is of substantially the same function, quality, reliability, etc. and has been submitted and approved by the owner as an equivalent product.

MECHANICAL EQUIPMENT SUBMITTALS: Provide material and equipment submittals containing a complete listing of material and equipment shown on the drawings. Include catalog numbers, performance data, technical details, wiring diagrams, and rough-in dimensions for all material and equipment. Index and clearly identify all material and equipment by item, name or designation used on the drawings.

Submittal review is for general design and arrangement only and does not relieve the Contractor from any requirements of the Contract Documents. The submittals are not checked for quantity, dimension, or for proper operation. Where allowed, substitutions will be reviewed using the criteria / manufacturers data of the specified component.

PIPING:

WATER PIPING (Hydraulic Valve Control): Contractor may select one piping system for installation throughout the building:
 CPVC: Schedule 80 plastic piping with solvent-welded fittings. For connection with valves and other components use male

pipe thread adapters. Female threaded plastic fittings are prohibited.
 PEX-a: 1/2-inch ID, SDR-9 B137.5 reinforced poly-tubing. Fittings shall be brass with crimp sleeves or as recommended by the pipe manufacturer. Use tubing with blue markings for knife gate OPEN lines and red for knife gate CLOSE lines.
 PPR: Polypropylene/fiberglass composite with fusion fittings. Aquatherm Green Pipe or equal. Use brass adapters for threaded connections.

WATER PIPING (Other):
 Copper: Type-L copper with sweat fittings. Make joints with lead-free flux and solder.

EQUIPMENT:

IDENTIFICATION: Provide engraved three-layer laminated plastic nameplates with black letters on a white background to identify all mechanical equipment assigned a tag as scheduled on the drawings. Letter heights shall be 3/8-inch high. Secure nameplates to equipment fronts using screws or rivets and adhesive backing. Adhesive alone is prohibited.

PUMPS: Provide line size strainers upstream, provide pressure gages upstream and downstream, provide unions on each side of all pumps.

INSTALLATION:

WORKMANSHIP: Installation of all work shall be made so that its several component parts shall function as a workable system complete with all accessories necessary for its operation. All material and equipment shall be installed in accordance with the manufacturer's recommendations, instructions and/or installation drawings and in accordance with NECA standards. Materials and equipment shall be new and shall conform to applicable industry standards and Underwriters Laboratories (UL) standards.

EQUIPMENT MOUNTING AND BRACING: Provide all bracing as required to securely mount pumps, fixtures, devices, and fittings. Unless otherwise noted use galvanized hardware and galvanized formed steel components such as Unistrut or equal. When bolting to structure, verify that the original structural and performance (i.e. water tight) characteristics are maintained. Contractor shall employ a Registered Professional Engineer in the State of Alaska to perform seismic bracing design in accordance with the IBC.

EQUIPMENT CONNECTIONS: Provide piping and structural connections to mechanical equipment as shown and as required. Provide wiring to equipment requiring electrical power in accordance with the Electrical drawings, specifications, and the NEC. Equipment shall include but is not limited to motors, pumps, dispensing equipment, etc.

TRAINING AND QUALIFICATION: Contractor shall provide proof of successful completion of manufacturer-approved training for installation methods and operation of PP-R fusing equipment within 1-year of start of the piping work. A field supervisor who completed training shall be on site during all PP-R pipe installation work.

PLASTIC PIPE FUSING: Install fittings and joints using socket-fusion, electrofusion, or butt-fusion as applicable for the fitting or joint type. All fusion-weld joints shall be made in accordance with the pipe and fitting manufacturer's specifications and product standards. Fusion-weld tooling, welding machines, and electrofusion devices shall be as specified by the pipe and fittings manufacturer. Prior to joining, the pipe and fittings shall be prepared in accordance with ASTM F 2389 and the manufacturer's specifications. Joint preparation, setting and alignment, fusion process, cooling times and working pressure shall be in accordance with the pipe and fitting manufacturer's specifications.

WARRANTY: Polypropylene pipe shall be installed per the Manufacturer's requirements such that Manufacturer shall warrant pipe and fittings for 10 years to be free of defects in materials or manufacturing. Warranty shall cover labor and material costs of

repairing and/or replacing defective materials and repairing any incidental damage caused by failure of the piping system due to defects in materials or manufacturing. Warranty shall be in effect upon submission by the contractor to the manufacturer of valid pressure/leak test documentation indicating that the system was tested and passed the manufacturer's pressure/leak test.

WALL/FLOOR PIPE AND DUCT PENETRATION SEALING: Wall/floor penetration seals shall be used to continuously fill the annular space between pipe and wall/floor. Wall/floor penetration seals, once expanded, shall provide a seal between the pipe and wall/floor opening. The wall/floor opening size and/or type shall be selected according to recommendations found in seal penetration manufacturer's representative catalog. The wall/floor opening refers to a steel or plastic sleeve, core-drilled hole or cast-formed hole.

PIPE ROUTING AND SUPPORT: Route pipes square and perpendicular to building structures. Support piping as required by code with hangers or supports. Provide supports within 12" of elbows. Install piping to maintain headroom and clearance to equipment for maintenance access.

PIPE APPURTENANCES: Provide automatic air vents with ball shutoff valves at all piping high points and provide ball drain valves with hose-thread fittings and a brass-cap on a chain at all low points.

PRESSURE TESTING: While still accessible all piping shall be pressure/leak tested to the manufacturer's standards. Tests shall be carried out using water, compressed air or a mixture of the two. The test pressure shall be as indicated in the pressure leak testing procedures required by the manufacturer. Any leaks detected shall be repaired at the contractor's expense by removing the leaking part and replacing with new parts welded per the pipe manufacturer's guidelines.

PIPE CLEANING AND FLUSHING: Perform service in accordance with ANSI/AWWA C653. Flush all piping systems prior to pressure testing. Fill with cleaning solution recommended by pipe manufacturer and follow written instructions for cleaner. Flush after cleaning. Make necessary arrangements for cleaner disposal.

ABBREVIATIONS

- AAV AUTOMATIC AIR VENT
- ADJ ADJUSTABLE
- ANSI AMERICAN NATIONAL STANDARDS INSTITUTE
- ASME AMERICAN SOCIETY FOR MECHANICAL ENGINEERS
- CPVC CHLORINATED POLYVINYL CHLORIDE
- DEMO DEMOLISH
- DIA DIAMETER
- FNPT FEMALE NATIONAL PIPE THREAD
- FT FEET
- FT HD FEET HEAD
- GAL GALLON
- GALV GALVANIZED
- GPM GALLONS PER MINUTE
- HP HORSEPOWER
- HR HOUR
- ID INSIDE DIAMETER
- IN INCH(ES)
- IPS IRON PIPE SIZE
- LB POUND
- mA MILLI-AMPERES
- MECH MECHANICAL
- mg MILLIGRAMS
- MIN MINIMUM
- MNPT MALE NATIONAL PIPE THREAD
- N.C. NORMALLY CLOSED
- N.O. NORMALLY OPEN
- NPT NATIONAL PIPE THREAD
- NTS NOT TO SCALE
- PH PHASE
- PRESS PRESSURE
- PRV PRESSURE REDUCING VALVE
- PSI POUNDS PER SQUARE INCH
- PVC POLYVINYL CHLORIDE
- QTY QUANTITY
- RPM REVOLUTIONS PER MINUTE
- SCH SCHEDULE
- SS STAINLESS STEEL
- TYP TYPICAL
- VAC VOLTS - ALTERNATING CURRENT
- VDC VOLTS - DIRECT CURRENT
- VFD VARIABLE FREQUENCY DRIVE
- W WIDE / WIDTH

SYMBOL LEGEND

- PIPE TEE DOWN
- PIPE RISER
- PIPE DROP
- GATE VALVE OR GENERIC SCHEMATIC VALVE
- BALL VALVE
- CHECK VALVE
- BALANCING VALVE
- UNION
- REDUCER
- 3-WAY CONTROL VALVE
- SOLENOID VALVE
- STRAINER
- PRESSURE GAUGE
- FLEXIBLE CONNECTOR
- AIR RELEASE VALVE
- PRESSURE RELIEF VALVE
- MOTOR OPERATOR
- POINT OF CONNECTION TO EXISTING

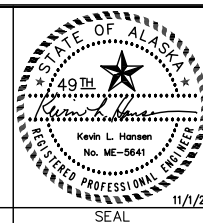
AWWU PLAN SET NO. 10794

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE HORZ SCALE: 1"=20' VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE		VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK					REVISIONS				

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BY: _____ TITLE: _____		DATE: _____	
2. DATA TRANSFERRED BY: _____		DATA TRANSFER CHECKED BY: _____	
COMPANY: _____		BY: _____ TITLE: _____	
DATE: _____		DATE: _____	

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MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY		
SCHEDULE A		
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB		
MECHANICAL SPECIFICATIONS, ABBREVIATIONS, AND SYMBOL LEGEND		MO.1
HORZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525
VERT SCALE: NA	PROJ. ID.: WW:H7713	SHEET 36 of 104

FILE: P:\Projects\VEI\Pump Station 12\Drawings\Mechanical_Schedules.dwg DATE: 10/28/2021 2:37 PM

CONTROL VALVES

TAG	LOCATION	SERVICE	POSITION	OPERATION	SIZE (IN)	MAKE & MODEL
CV-1	MOTOR LEVEL	FORCE MAIN "A" KNIFE GATE - KGV-1	4-WAY	MOTORIZED 2 POSITION	1/2	BRAY MPT230 STAINLESS STEEL 4-WAY LL PORT, NPT ENDS, 150 PSI RATING, W/BRAY SERIES 70 24VDC ELECTRIC OPERATOR W/MANUAL OVERRIDE
CV-2	MOTOR LEVEL	FORCE MAIN "B" KNIFE GATE - KGV-2	4-WAY	MOTORIZED 2 POSITION	1/2	BRAY MPT230 STAINLESS STEEL 4-WAY LL PORT, NPT ENDS, 150 PSI RATING, W/BRAY SERIES 70 24VDC ELECTRIC OPERATOR W/MANUAL OVERRIDE
CV-3	MOTOR LEVEL	PUMP 1 INLET KNIFE GATE - KGV-3	4-WAY	MOTORIZED 2 POSITION	1/2	BRAY MPT230 STAINLESS STEEL 4-WAY LL PORT, NPT ENDS, 150 PSI RATING, W/BRAY SERIES 70 24VDC ELECTRIC OPERATOR W/MANUAL OVERRIDE
CV-4	MOTOR LEVEL	PUMP 1 DISCHARGE "A" KNIFE GATE - KGV-4	4-WAY	MOTORIZED 2 POSITION	1/2	BRAY MPT230 STAINLESS STEEL 4-WAY LL PORT, NPT ENDS, 150 PSI RATING, W/BRAY SERIES 70 24VDC ELECTRIC OPERATOR W/MANUAL OVERRIDE
CV-5	MOTOR LEVEL	PUMP 1 DISCHARGE "B" KNIFE GATE - KGV-5	4-WAY	MOTORIZED 2 POSITION	1/2	BRAY MPT230 STAINLESS STEEL 4-WAY LL PORT, NPT ENDS, 150 PSI RATING, W/BRAY SERIES 70 24VDC ELECTRIC OPERATOR W/MANUAL OVERRIDE
CV-6	MOTOR LEVEL	PUMP 2 INLET KNIFE GATE - KGV-6	4-WAY	MOTORIZED 2 POSITION	1/2	BRAY MPT230 STAINLESS STEEL 4-WAY LL PORT, NPT ENDS, 150 PSI RATING, W/BRAY SERIES 70 24VDC ELECTRIC OPERATOR W/MANUAL OVERRIDE
CV-7	MOTOR LEVEL	PUMP 2 DISCHARGE "A" KNIFE GATE - KGV-7	4-WAY	MOTORIZED 2 POSITION	1/2	BRAY MPT230 STAINLESS STEEL 4-WAY LL PORT, NPT ENDS, 150 PSI RATING, W/BRAY SERIES 70 24VDC ELECTRIC OPERATOR W/MANUAL OVERRIDE
CV-8	MOTOR LEVEL	PUMP 2 DISCHARGE "B" KNIFE GATE - KGV-8	4-WAY	MOTORIZED 2 POSITION	1/2	BRAY MPT230 STAINLESS STEEL 4-WAY LL PORT, NPT ENDS, 150 PSI RATING, W/BRAY SERIES 70 24VDC ELECTRIC OPERATOR W/MANUAL OVERRIDE
CV-9	MOTOR LEVEL	PUMP 3 INLET KNIFE GATE - KGV-9	4-WAY	MOTORIZED 2 POSITION	1/2	BRAY MPT230 STAINLESS STEEL 4-WAY LL PORT, NPT ENDS, 150 PSI RATING, W/BRAY SERIES 70 24VDC ELECTRIC OPERATOR W/MANUAL OVERRIDE
CV-10	MOTOR LEVEL	PUMP 3 DISCHARGE "A" KNIFE GATE - KGV-10	4-WAY	MOTORIZED 2 POSITION	1/2	BRAY MPT230 STAINLESS STEEL 4-WAY LL PORT, NPT ENDS, 150 PSI RATING, W/BRAY SERIES 70 24VDC ELECTRIC OPERATOR W/MANUAL OVERRIDE
CV-11	MOTOR LEVEL	PUMP 3 DISCHARGE "B" KNIFE GATE - KGV-11	4-WAY	MOTORIZED 2 POSITION	1/2	BRAY MPT230 STAINLESS STEEL 4-WAY LL PORT, NPT ENDS, 150 PSI RATING, W/BRAY SERIES 70 24VDC ELECTRIC OPERATOR W/MANUAL OVERRIDE
CV-12	MOTOR LEVEL	PUMP 4 INLET KNIFE GATE - KGV-12	4-WAY	MOTORIZED 2 POSITION	1/2	BRAY MPT230 STAINLESS STEEL 4-WAY LL PORT, NPT ENDS, 150 PSI RATING, W/BRAY SERIES 70 24VDC ELECTRIC OPERATOR W/MANUAL OVERRIDE
CV-13	MOTOR LEVEL	PUMP 4 DISCHARGE "A" KNIFE GATE - KGV-13	4-WAY	MOTORIZED 2 POSITION	1/2	BRAY MPT230 STAINLESS STEEL 4-WAY LL PORT, NPT ENDS, 150 PSI RATING, W/BRAY SERIES 70 24VDC ELECTRIC OPERATOR W/MANUAL OVERRIDE
CV-14	MOTOR LEVEL	PUMP 4 DISCHARGE "B" KNIFE GATE - KGV-14	4-WAY	MOTORIZED 2 POSITION	1/2	BRAY MPT230 STAINLESS STEEL 4-WAY LL PORT, NPT ENDS, 150 PSI RATING, W/BRAY SERIES 70 24VDC ELECTRIC OPERATOR W/MANUAL OVERRIDE
CV-15	MOTOR LEVEL	FORCE MAIN "A" DRAIN KNIFE GATE - KGV-15	4-WAY	MANUAL 2-POSITION	1/2	BRAY MPT230 STAINLESS STEEL 4-WAY LL PORT, NPT ENDS, 150 PSI RATING, W/LEVER OPERATOR
CV-16	MOTOR LEVEL	FORCE MAIN "B" DRAIN KNIFE GATE - KGV-16	4-WAY	MANUAL 2-POSITION	1/2	BRAY MPT230 STAINLESS STEEL 4-WAY LL PORT, NPT ENDS, 150 PSI RATING, W/LEVER OPERATOR
SV-1	MOTOR LEVEL	DRAIN TO WET WELL	2-WAY	NORMAL OPEN	3/4	ASCO 8210G035AC220/50D, 220V COIL, BRASS BODY
SV-2	MOTOR LEVEL	DRAIN TO TANK	2-WAY	NORMAL CLOSED	3/4	ASCO 8210G095AC220/50D, 220V COIL, BRASS BODY


PUMPS

TAG	LOCATION	SERVICE	FLUID	BODY & IMPELLER	FLOW (GPM)	HEAD (PSI)	SPEED (RPM)	MOTOR POWER	VOLTAGE & PHASE (VAC/PH)	MAKE & MODEL	NOTES
PP-1	MOTOR LEVEL	STANDBY CONTROL PRESSURE	WATER	STAINLESS STEEL	20	60	ADJ	1.5 HP	200-240/1	GRUNDFOS CMBE 3-62 I-U-C-E-D-E	4-STAGE CENTRIFUGAL, 1" NPT PORTS, WITH BUILT-IN VFD AND PRESSURE CONTROL AND EXPANSION TANK

WATER STORAGE TANKS

TAG	LOCATION	SERVICE	TYPE	CAPACITY (GAL)	DIMENSIONS	CONNECTIONS (IN)			MAKE & MODEL	NOTES
						OUTLET	INLET	VENT		
WST-1	MOTOR LEVEL	STANDBY WATER STORAGE	VERTICAL, POLYETHYLENE	20	16" DIA X 28" H	3/4"	3/4"	1"	ACE ROTOMOLD #9513-A-VT0020-16	LOW OUTLET, TOP INLET & VENT, 3 YR WARRANTY.

VERIFY SCALE

THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING. 0"  1" IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY. FULL SIZE SCALE: 1"=20' HORIZ SCALE: 1"=20' VERT SCALE: 1"=4'

DATA	DRAWN BY	CHECKED BY	DATE	DESCRIPTION	BY
BASE	VLR	TELEPHONE	----		
TOPOGRAPHY	----	ELECTRIC	----		
PROFILE	----	CABLE TV	----		
SANITARY SEWER	----	TRAFFIC SIGNAL	----		
STORM SEWER	----	DESIGN	----		
WATER	----	QUANTITIES	----		
GAS	----	MUN. FINAL CHECK	----		

PLAN CHECK

RECORD DRAWING

Note: To be filled out on original drawings upon project completion.

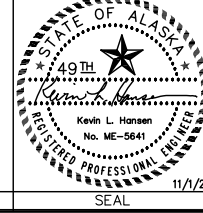
1. DATA PROVIDED BY: _____
 This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
 CONTRACTOR: _____
 BY: _____ TITLE: _____
 DATE: _____

2. DATA TRANSFERRED BY: _____
 COMPANY: _____
 DATE: _____

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 DATA TRANSFER CHECKED BY: _____
 COMPANY: _____
 BY: _____ TITLE: _____
 DATE: _____

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SCHEDULE A
 PS12 FORCE MAIN / GRAVITY JUNCTION REHAB
MECHANICAL SCHEDULES
M0.2

HORIZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525
 VERT SCALE: NA
 PROJ. ID.: WW:H7713

SHEET 37 of 104

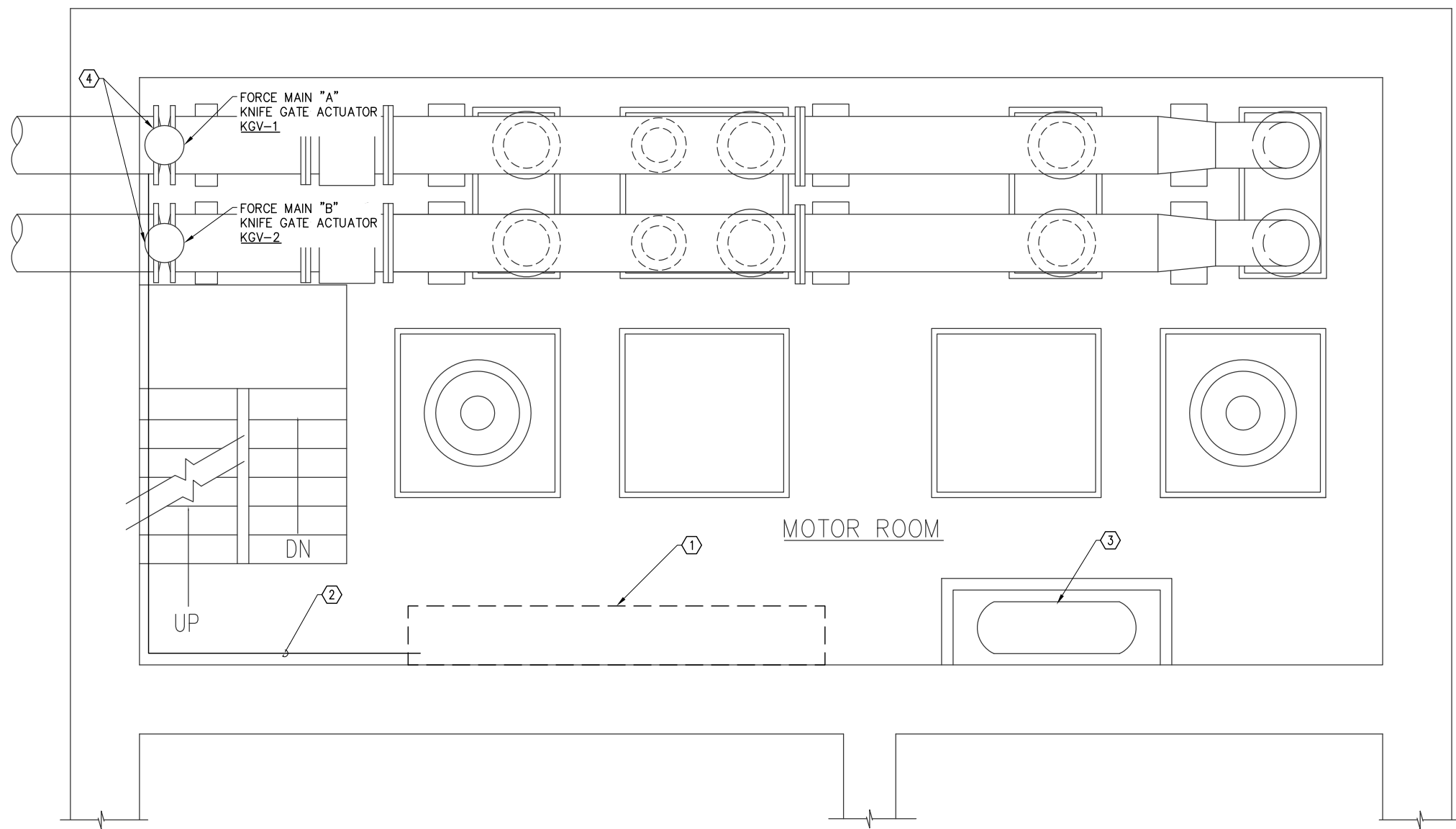
AWWU PLAN SET NO. 10794

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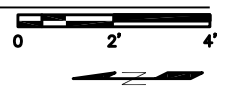
AWWU PLAN SET
NO. 10794

SHEET NOTES

- ① DEMOLISH EXISTING HYDRAULIC CONTROL VALVES AND ASSOCIATED PIPING.
- ② DEMOLISH EXISTING 1/2" COPPER PIPING TO FORCE MAIN KNIFE GATE ACTUATORS (4 PIPES). KNIFE GATE ACTUATORS TO REMAIN
- ③ EXISTING AIR COMPRESSOR TO REMAIN
- ④ KNIFE GATE VALVES AND ACTUATORS TO REMAIN. SEE PROCESS DRAWINGS FOR PROCESS PIPING. PROCESS PIPING LAYOUT SHOWN HERE IS SCHEMATIC ONLY.



1 MECHANICAL DEMOLITION - MOTOR LEVEL
M1.0 SCALE: 1/2" = 1'-0"



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE HORZ SCALE: 1"=20' VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE		VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

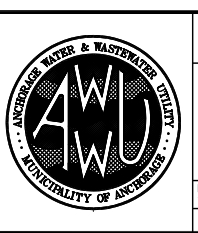
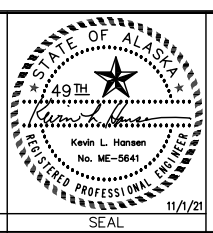
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SCHEDULE A

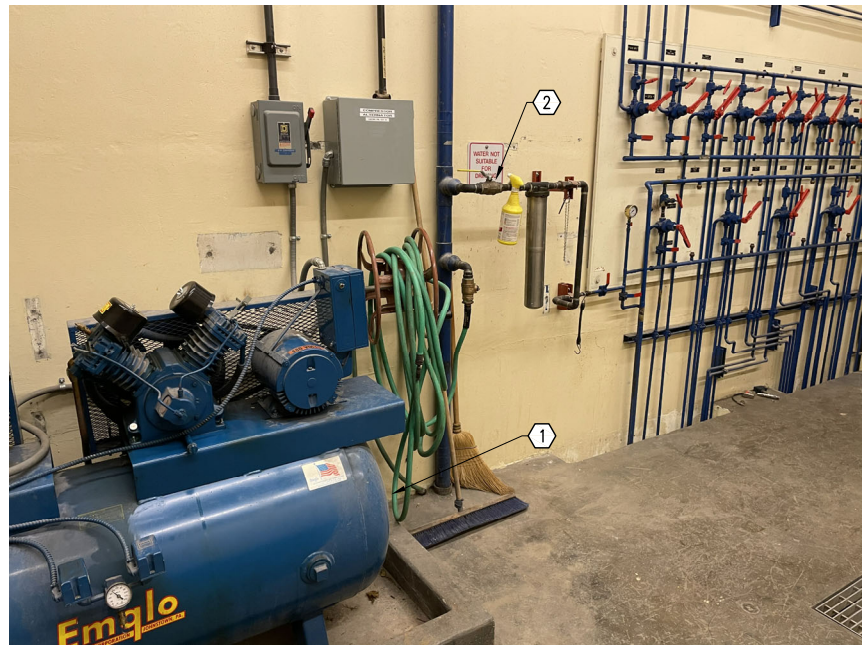
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

MECHANICAL DEMOLITION - MOTOR LEVEL

M1.0

HORZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 38 of 104
VERT SCALE: NA		PROJ. ID.: WW:H7713	

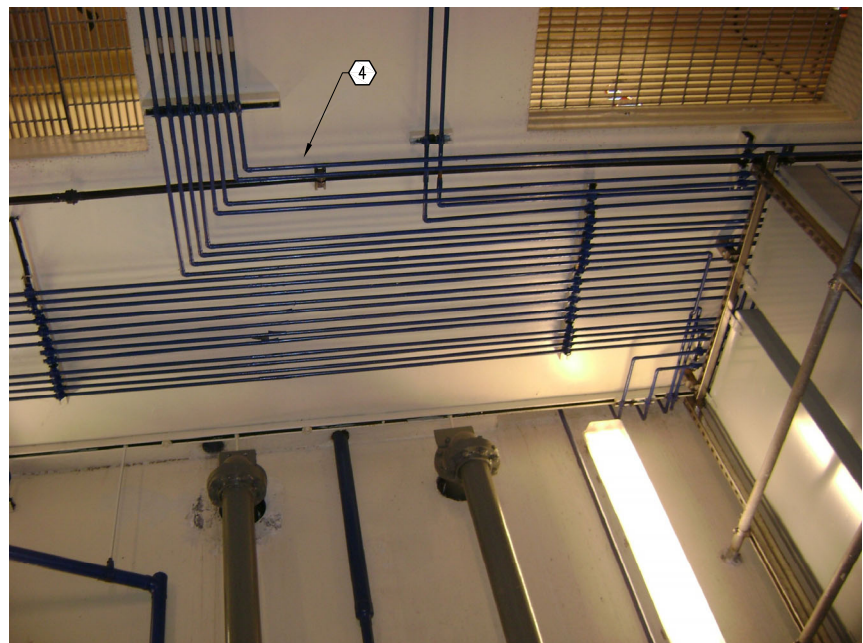
FILE: P:\Projects\VEI\Pump Station 12\Dwg\Mech\DEMOLITION DETAILS.dwg DATE: 10/28/2021 2:37 PM



A AIR COMPRESSOR AND VALVE CONTROL PIPING
M1.1 SCALE: NTS



B VALVE CONTROL PIPING
M1.1 SCALE: NTS



C VALVE CONTROL PIPING AT PUMP ROOM CEILING
M1.1 SCALE: NTS

SHEET NOTES

- ① AIR COMPRESSOR AND ASSOCIATED PIPING AND COMPONENTS TO REMAIN.
- ② PIPING TO THE RIGHT OF THIS POINT TO BE REMOVED/RECONFIGURED. SEE DETAIL 1/M3.0
- ③ ALL VALVE CONTROL PIPING SHOWN ON THIS PHOTO TO BE REMOVED AND REPLACED.
- ④ ALL VALVE CONTROL PIPING SHOWN ON THIS PHOTO TO BE REMOVED AND REPLACED. ROUTING OF NEW PIPING SIMILAR TO EXISTING.

AWWU PLAN SET
NO. 10794

VERIFY SCALE

THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.



IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY. FULL SIZE SCALE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=4'

DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	---	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

RECORD DRAWING

Note: To be filled out on original drawings upon project completion.

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BY: _____ TITLE: _____
DATE: _____

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COMPANY: _____
DATE: _____

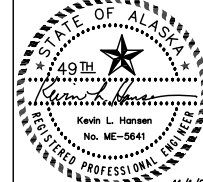
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ANCHORAGE, AK 99503
(907) 276-7933
LICENSE NO. AECC705



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SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

MECHANICAL DEMOLITION DETAILS

M1.1

HORZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525
VERT SCALE: NA
PROJ. ID.: WW:H7713

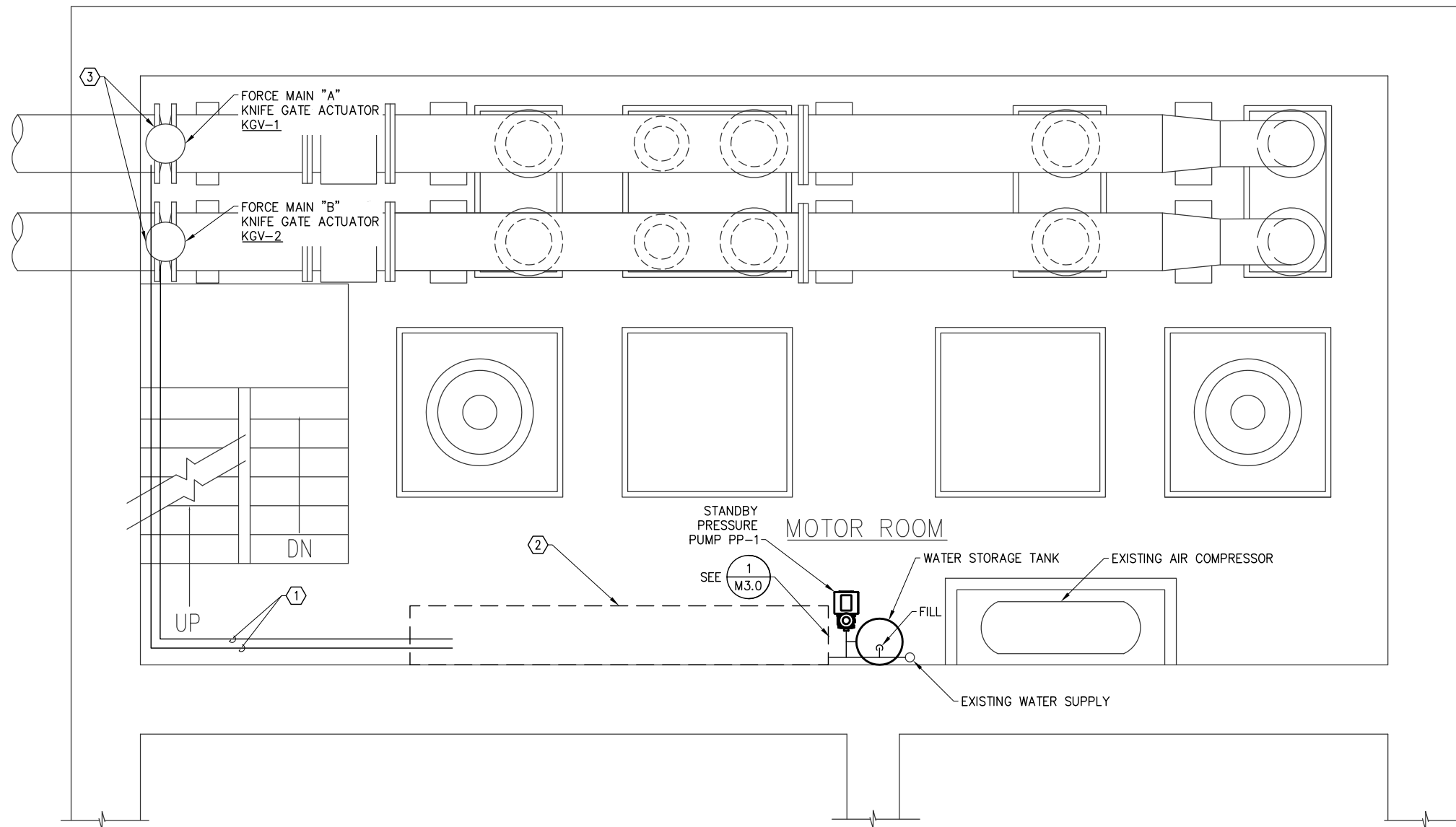
SHEET 39 of 104

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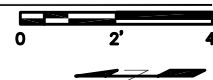
AWWU PLAN SET
NO. 10794

SHEET NOTES

- ① 1/2 INCH "OPEN" AND "CLOSE" PIPING FROM CONTROL STATION TO KNIFE GATE ACTUATORS. FIELD ROUTE SIMILAR TO EXISTING. EACH LINE REPRESENTS TWO PIPES.
- ② CONTROL VALVE LOCATION. REPIPE SIMILAR TO EXISTING INSTALLATION. SEE PHOTO B/M1.1. COORDINATE WITH ELECTRICAL, SEE DETAIL 1/E3.4.
- ③ KNIFE GATE VALVES AND ACTUATORS TO REMAIN. SEE PROCESS DRAWINGS FOR PROCESS PIPING. PROCESS PIPING LAYOUT SHOWN HERE IS SCHEMATIC ONLY.



1 MECHANICAL PLAN - MOTOR LEVEL
SCALE: 1/2" = 1'-0"



VERIFY SCALE

THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.



IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.
HORIZ SCALE: 1"=20'
VERT SCALE: 1"=4'

DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE		VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK					REVISIONS				

RECORD DRAWING

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COMPANY: _____
DATE: _____

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ANCHORAGE, AK 99503
(907) 276-7933
LICENSE NO. AECC705
CONSULTANT

STATE OF ALASKA
49th Anniversary
Kevin L. Hansen
No. ME-5641
REGISTERED PROFESSIONAL ENGINEER
11/1/21
SEAL

ANCHORAGE WATER & WASTEWATER UTILITY
AWWU
MUNICIPALITY OF ANCHORAGE

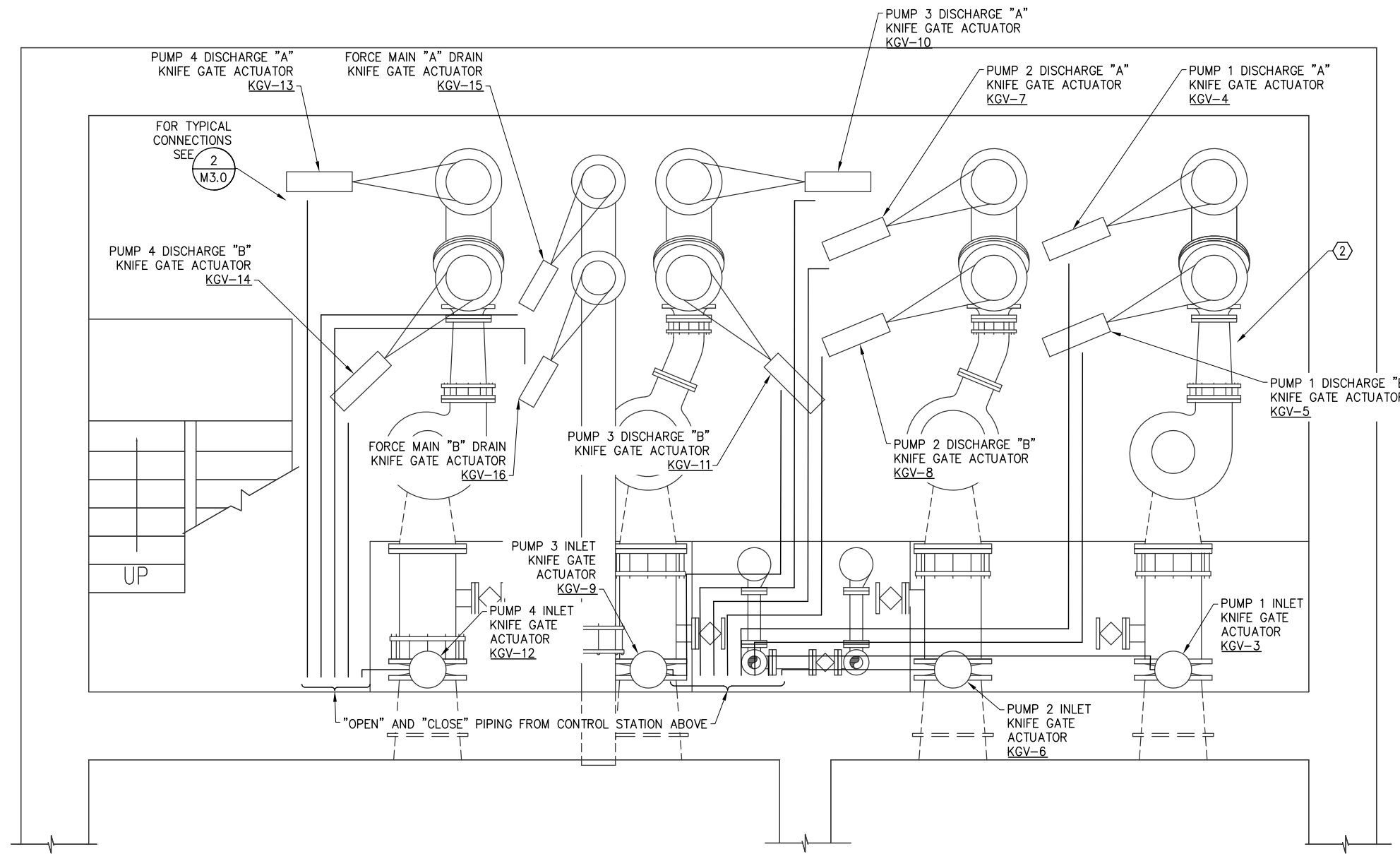
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WATER & WASTEWATER UTILITY
SCHEDULE A
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB
MECHANICAL PLAN - MOTOR LEVEL
M2.0
HORIZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 40 of 104
VERT SCALE: NA
PROJ. ID.: WW:H7713

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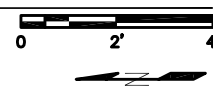
AWWU PLAN SET
NO. 10794

SHEET NOTES

- ① FIELD ROUTE PIPING FROM CONTROL STATION TO KNIFE GATE ACTUATORS. EACH LINE REPRESENTS TWO PIPES, ONE FOR OPEN AND ONE FOR CLOSE.
- ② KNIFE GATE VALVES AND ACTUATORS TO REMAIN. SEE PROCESS DRAWINGS FOR PROCESS PIPING. PUMP AND PROCESS PIPING LAYOUT SHOWN HERE IS SCHEMATIC ONLY.



1 MECHANICAL PLAN - PUMP LEVEL
M2.1 SCALE: 1/2" = 1'-0"



VERIFY SCALE

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VERT SCALE: 1"=4'

DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE		VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK									
REVISIONS									

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DATE: _____

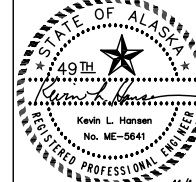
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MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE A

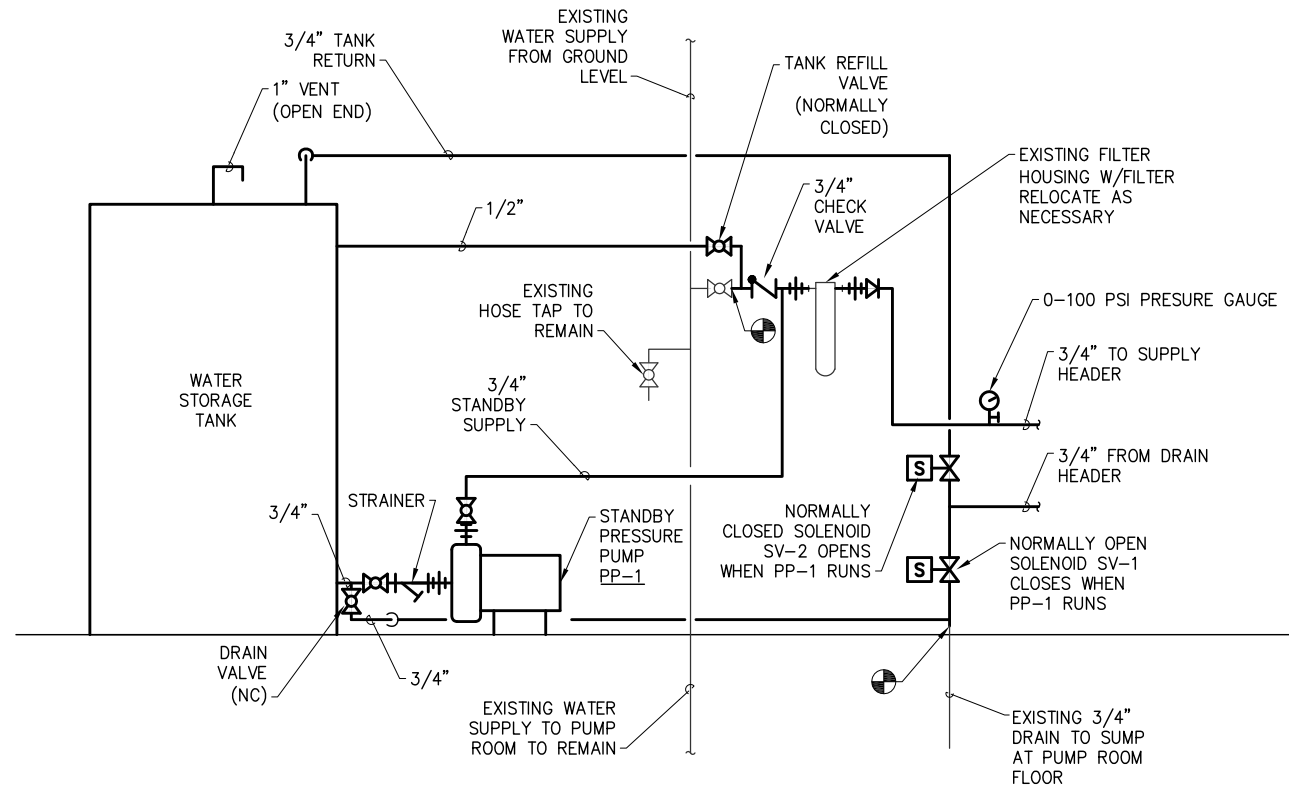
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

MECHANICAL PLAN - PUMP LEVEL

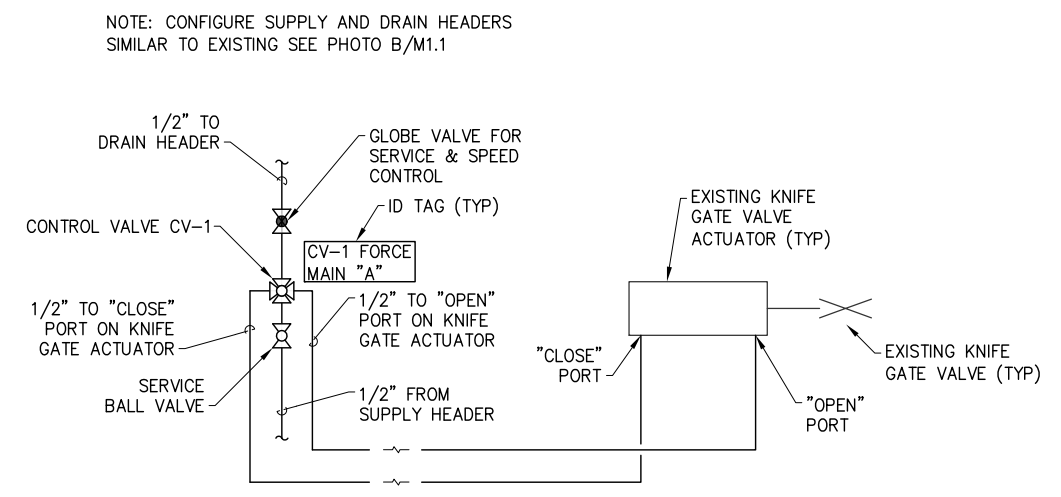
M2.1

HORZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525
VERT SCALE: NA
PROJ. ID.: WW:H7713

SHEET 41 of 104



1 STANDBY BOOSTER PUMP PIPING DETAIL
M3.0 SCALE: NTS



2 TYPICAL CONTROL VALVE PIPING DETAIL
M3.0 SCALE: NTS

FILE: P:\Projects\VEI\Pump Station 12\Dwg\Mech\M3.0 MECHANICAL DETAILS.dwg DATE: 10/28/2021 2:37 PM

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" — 1"		IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.		HORZ SCALE: 1"=20' VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE		VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

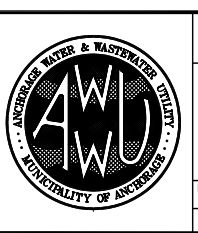
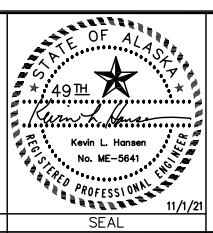
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DATE: _____

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MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

MECHANICAL DETAILS

M3.0

HORZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525
VERT SCALE: NA	PROJ. ID.: WW:H7713	SHEET 42 of 104

FILE: p:\Projects\VEI\pump_station_12\Dwg\Elec\E01 ELECTRICAL LEGEND, ABBREVIATIONS, AND SCHEDULES.dwg DATE: 11/2/2021 11:02 AM

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
—	EXPOSED CONDUIT
----	UNDERGROUND CONDUIT
⌀	3/4" X 10' COPPER CLAD STEEL GROUND ROD
→	CONDUIT RUN - CHANGE IN ELEVATION
⤵	LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT
↪	HOME RUN
Ⓜ	KILOWATT-HOUR METER
Ⓜ	PANELBOARD
Ⓜ	CONTROL PANEL OR CONTROLLER
VFD	VARIABLE FREQUENCY DRIVE
Ⓜ	MOLDED CASE CIRCUIT BREAKER, X = AMPERE RATING, Y = NO. OF POLES
Ⓜ	MOTOR, 3-PHASE
Ⓜ	MOTOR, SINGLE PHASE
Ⓜ	DISCONNECT - NON-FUSED
Ⓜ	20A, 120V, DUPLEX GFI RECEPTACLE, NEMA 5-20R
Ⓜ	20A, 120V, DUPLEX RECEPTACLE, NEMA 5-20R
\$	20A, 120V, SINGLE POLE SWITCH
\$T	MOTOR STARTER, MANUAL
Ⓜ	THERMOSTAT
Ⓜ	JUNCTION BOX OR FITTING
Ⓜ	MOTORIZED VALVE OPERATOR
Ⓜ	MOTORIZED DAMPER
Ⓜ	LEVEL FLOAT SWITCH
Ⓜ	LEVEL TRANSDUCER
OTHER SYMBOLS ARE AS DEFINED BY NOTE.	

CIRCUIT LEGEND

A-1,α GROUP OR EQUIPMENT IDENTIFICATION.
 "A" DENOTES PANEL NAME
 "1" DENOTES CIRCUIT NUMBER
 "α" DENOTES SWITCH LEG AS INDICATED.

\$3,α SWITCH IDENTIFICATION.
 "3" DENOTES SWITCH CONFIGURATION
 "α" DENOTES SWITCH LEG AS INDICATED.

ABBREVIATIONS

A	AMPERE, ANALOG SIGNAL
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AHF	ACTIVE HARMONIC FILTER
AI	ANALOG INPUT
AO	ANALOG OUTPUT
BCU	BARE COPPER
C	CONDUIT
CT	CURRENT TRANSFORMER
CU	COPPER
CV	CONTROL VALVE
D	DIGITAL SIGNAL
DEG	DEGREES
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
E	EMERGENCY
FLA	FULL LOAD AMPERES
FLC	FULL LOAD CURRENT
G	GROUND CONDUCTOR
GES	GROUNDING ELECTRODE SYSTEM
GFI	GROUND FAULT INTERRUPTING
GRC	GALVANIZED RIGID (STEEL) CONDUIT
HP	HORSEPOWER
ICS	INSTRUMENTATION AND CONTROL SYSTEMS
KVA	KILO-VOLT-AMPERES
LSIG	LONG TIME, SHORT TIME, INSTANTANEOUS, GROUND FAULT
LTF	LIQUID TIGHT FLEXIBLE CONDUIT (METALLIC)
MASS	MUNICIPALITY OF ANCHORAGE STANDARD SPECIFICATIONS
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MLO	MAIN LUG ONLY
MOV	MOTOR OPERATED VALVE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN, NUMBER
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PM	POWER MONITOR
POE	POWER OVER ETHERNET
PR	PAIR
RTD	RESISTIVE TEMPERATURE DEVICE
RVSS	REDUCED VOLTAGE SOFT START
SCP	SCADA CONTROL PANEL
SIG	SIGNAL
SS	STAINLESS STEEL
SV	SOLENOID VALVE
TJB	TERMINAL JUNCTION BOX
TWSH	TWISTED WIRE SHIELDED
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLTAGE MONITOR
W	WATTS
WP	WEATHERPROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF (HAZARDOUS AREA)

GENERAL NOTES

- ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE, LOCAL CODES AND AWWU'S REQUIREMENTS GOVERNING THE PROJECT. ALL WORK SHALL BE PERFORMED UNDER THE SUPERVISION OF A CERTIFIED JOURNEYMAN ELECTRICIAN.
- ALL ELECTRICAL EQUIPMENT SHALL INCLUDE THE SEAL OF A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) FOR THE PURPOSE FOR WHICH IT IS INSTALLED.
- DIMENSIONS OF EQUIPMENT ARE APPROXIMATE. INSTALLATION SHALL BE VERIFIED BASED ON FIELD MEASUREMENTS AND ACTUAL MANUFACTURER'S DATA AND SHOP DRAWINGS.
- ALL SITE WORK AND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS. VERIFY ALL INSTALLATIONS PRIOR TO COMMENCEMENT OF WORK. COORDINATE ALL WORK WITH UTILITIES AS REQUIRED.
- ALL SINGLE PHASE BRANCH CIRCUITS SHALL BE 3/4"C, 3#12, AND ALL THREE PHASE BRANCH CIRCUITS SHALL BE 3/4"C, 4#12, UNLESS OTHERWISE NOTED. ALL CIRCUITS SHALL HAVE A WIRE TYPE EQUIPMENT GROUND CONDUCTOR.
- PROVIDE SEISMIC DESIGN AND SUPPORT PER IBC REQUIREMENTS.
- WHERE EXISTING UNDERGROUND UTILITIES ARE SHOWN ON THE PLANS, MULTIPLE PARALLEL LINES MAY BE ENCOUNTERED IN THE SAME TRENCH OR GENERAL AREA. SINGLE LINES WERE SHOWN FOR CLARITY.
- CALL 811 - CALL BEFORE YOU DIG. ALL UTILITIES MAY NOT BE SHOWN IN THE PLANS. THE CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES WITHIN THE WORK AREA PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY UTILITY CONFLICTS BETWEEN PROPOSED STRUCTURES AND UTILITIES. ADJUSTMENTS OF STRUCTURES MAY BE NECESSARY TO AVOID UTILITY CONFLICTS. ADJUSTMENTS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION. HAND DIG WITHIN 36" OF ALL UTILITIES NOT SCHEDULED FOR DEMOLITION.
- COORDINATE WITH AWWU ICS DEPARTMENT IN DISCONNECTION OF EQUIPMENT. DO NOT DISCONNECT EQUIPMENT UNTIL NOTIFICATION TO AWWU ICS HAS BEEN MADE AND APPROVED.
- COORDINATE AND PROVIDE EQUIPMENT WITH THE AMP INTERRUPTING CAPACITY (AIC) FOR THE AVAILABLE FAULT CURRENT AT THE POINT OF THE SYSTEM WHERE INSTALLED. PROVIDE ARC-HAZARD WARNING LABELS ON ALL SWITCHBOARDS, PANELBOARDS, MCC'S AND SIMILAR EQUIPMENT PER NEC ARTICLE 110.16 AND NFPA 70E.

INSTRUMENT IDENTIFIER	
XX = FUNCTION / YY = LOOP	
BELL	ANNUNCIATOR BELL
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
EACA	CONTROL POWER FAILURE
ECA	EMERGENCY POWER AVAILABLE/UPS FAULT
EDCA	BATTERY CHARGER ALARM
EDCC	BATTERY SYSTEM TEST
EDCT	DC SYSTEM VOLTAGE
ESD	EMERGENCY SHUTDOWN
FI	FLOW INDICATOR
FIT	FLOW INDICATING TRANSMITTER
FS	FLOW SWITCH
FT	FLOW TRANSMITTER
FY	FLOW TOTALIZATION
HOA	HAND-OFF-AUTO
HS	HAND SWITCH
LAH	HIGH LEVEL ALARM
LEL	LOWER EXPLOSIVE LIMIT
LS	LEVEL SWITCH
LSH	LEVEL SWITCH HIGH
LSHH	LEVEL SWITCH HIGH-HIGH
LSL	LEVEL SWITCH LOW
LSLL	LEVEL SWITCH LOW-LOW
NCA	NORMAL POWER AVAILABLE
PCV	MOTORIZED PILOT CONTROL VALVE
PI	PRESSURE INDICATION
PIT	PRESSURE INDICATING TRANSMITTER
PT	PRESSURE TRANSMITTER
RL	RUN LIGHT
SC	SPEED CONTROL

INSTRUMENT IDENTIFIER	
XX = FUNCTION / YY = LOOP	
SD	SMOKE DETECTOR
SI	SPEED INDICATION
TAHL	TEMPERATURE ALARM HIGH, LOWER BEARING
TAHW	TEMPERATURE ALARM HIGH, MOTOR WINDING
TAHU	TEMPERATURE ALARM HIGH, LOWER BEARING
TE	TEMPERATURE ELEMENT
TSHL	TEMPERATURE SWITCH HIGH, LOWER BEARING
TSHU	TEMPERATURE SWITCH HIGH, UPPER BEARING
TSHW	TEMPERATURE SWITCH HIGH, MOTOR WINDING
TT	TEMPERATURE TRANSMITTER
VEA	VIBRATION ELEMENT INTERMEDIATE BEARING
VEL	VIBRATION ELEMENT LOWER
VEU	VIBRATION ELEMENT UPPER
VEPL	VIBRATION ELEMENT PUMP LOWER
VEPU	VIBRATION ELEMENT PUMP UPPER
YA	FAULT INDICATION
YAL	PILOT LAMP
YC	RUN REQUEST
YCC	VALVE CLOSE REQUEST
YCO	VALVE OPEN REQUEST
YL	RUN STATUS
YS	HOA SWITCH POSITION
ZC	VALVE POSITION CONTROL
ZS	INTRUSION/POSITION SWITCH
ZSC	VALVE FULLY CLOSED
ZSE	TRANSFER SWITCH EMERGENCY POSITION
ZSHB	GENERATOR AUTO STATUS
ZSM	VALVE OFF SEAT
ZSN	TRANSFER SWITCH NORMAL POSITION
ZSO	VALVE FULLY OPEN
ZT	POSITION TRANSMITTER

INSTRUMENTATION LEGEND

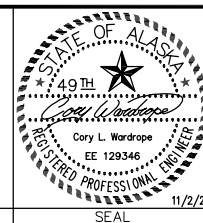
Ⓜ	FIELD MOUNTED INSTRUMENT XX = FUNCTION; YY = TAG NO.
Ⓜ	MCC MOUNTED INSTRUMENT XX = FUNCTION; YY = TAG NO.
Ⓜ	PANEL MOUNTED INSTRUMENT XX = FUNCTION; YY = TAG NO.
Ⓜ	PLC MOUNTED INSTRUMENT XX = FUNCTION; YY = TAG NO.
Ⓜ	PLC FUNCTION XX = FUNCTION; YY = TAG NO.
Ⓜ	PLC CONTROL PANEL XX = CONTROL PANEL NAME/TAG

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" — 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE HORZ SCALE: 1"=20' VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE		VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK					REVISIONS				

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2. DATA TRANSFERRED BY: —	3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.		
COMPANY: —	DATA TRANSFER CHECKED BY: —	COMPANY: —	DATE: —
DATE: —	BY: —	TITLE: —	DATE: —

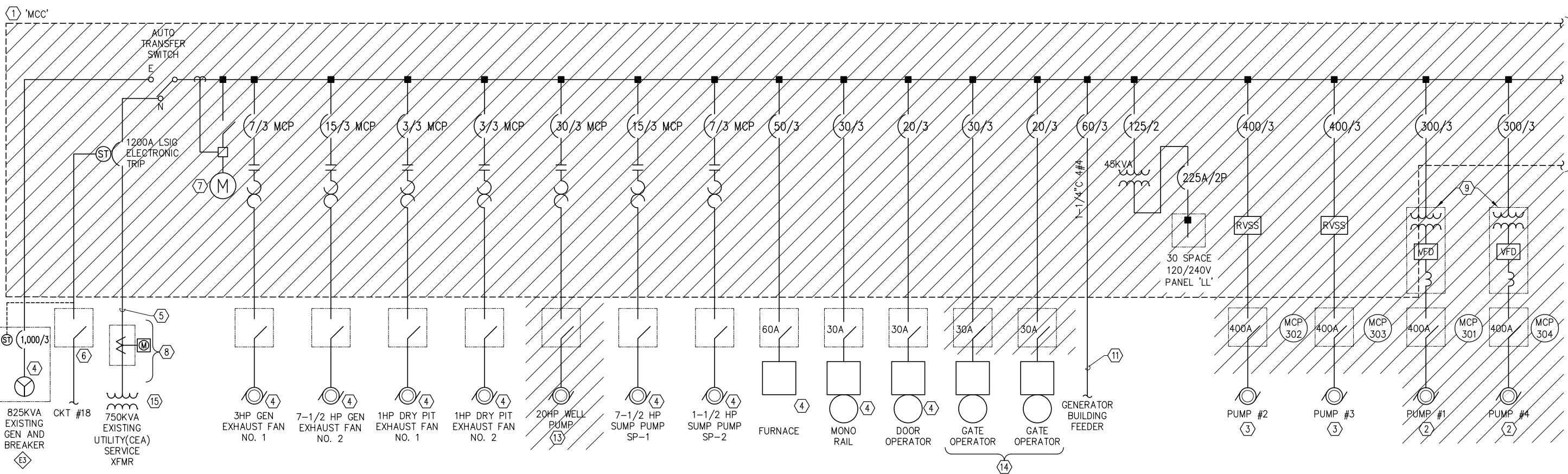
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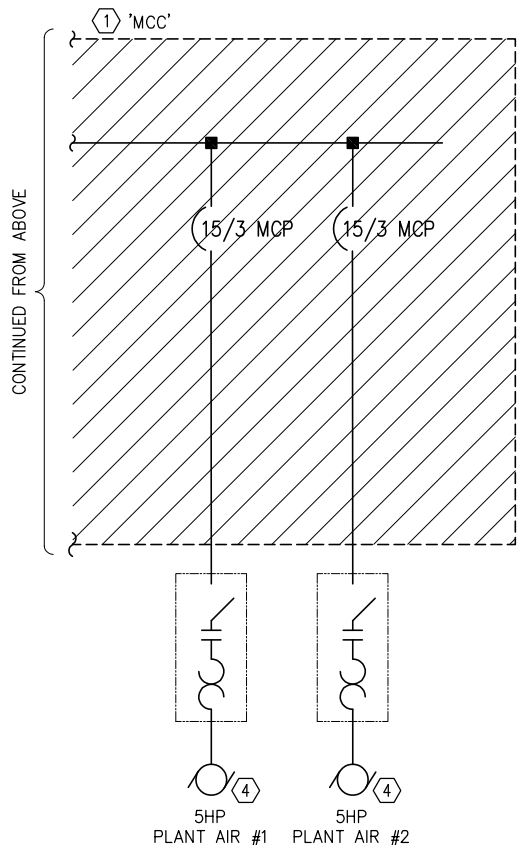


MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY			
SCHEDULE A			
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB			
ELECTRICAL LEGEND, ABBREVIATIONS, AND SCHEDULES			
E0.1			
HORZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 43 of 104
VERT SCALE: NA	PROJ. ID.: WW:H7713		

AWWU PLAN SET NO. 10794



CONTINUED BELOW
AWWU PLAN SET
NO. 10794



1 MCC PHOTO
E1.0 SCALE: NTS



2 SCADA PANELS AND VFDs PHOTO
E1.0 SCALE: NTS

GENERAL SHEET NOTES

1. ALL EQUIPMENT SHOWN IS EXISTING; INFORMATION HAS BEEN EXTRACTED FROM AS-BUILT DRAWINGS. CONTRACTOR SHALL FIELD VERIFY EXISTING INSTALLATION AND IMMEDIATELY NOTIFY THE ENGINEER OF DISCREPANCY.

SHEET NOTES

- ① EXISTING MOTOR CONTROL CENTER (MCC), AUTOMATIC TRANSFER SWITCH, AND MAIN CIRCUIT BREAKER TO BE DEMOLISHED.
- ② DEMOLISH PUMPS #1 AND #4, ASSOCIATED CONDUIT, CONDUCTORS AND DISCONNECTS.
- ③ PUMPS #2 AND #3; REMOVE CONDUCTORS FOR MCC REPLACEMENT. DEMOLISH DISCONNECT SWITCHES.
- ④ EXISTING EQUIPMENT TO REMAIN. DEMOLISH CONDUCTORS FROM EQUIPMENT BACK TO MCC CIRCUIT BREAKER.
- ⑤ DEMOLISH SERVICE ENTRANCE CONDUCTORS.
- ⑥ EXISTING SHUNT-TRIP DISCONNECT SWITCH TO REMAIN; DISCONNECT ACTIVATES MAIN AND STANDBY CIRCUIT BREAKERS. DISCONNECT EQUIPMENT FOR MCC REPLACEMENT.
- ⑦ SALVAGE POWER MONITOR AND TURN OVER TO AWWU PROJECT ENGINEER.
- ⑧ CT CABINET / METER BASE EQUIPMENT TO REMAIN FOR RE-USE WITH NEW SERVICE INSTALLATION. SEE SHEET E3.0 FOR DETAILS.
- ⑨ DEMOLISH PUMP #1 AND PUMP #4 VFD EQUIPMENT.
- ⑩ DEMOLISH PRIMARY AND SECONDARY SCADA PANELS.
- ⑪ DEMOLISH GENERATOR BUILDING FEEDER FOR MCC REPLACEMENT.
- ⑫ DEMOLISH PUMP PROTECTION RELAY PANEL AND ALL ASSOCIATED CONDUIT AND CONDUCTORS.
- ⑬ DEMOLISH WELL PUMP, ASSOCIATED CONDUIT, CONDUCTORS, AND EQUIPMENT. SEE SHEET E3.0 FOR EQUIPMENT LOCATION.
- ⑭ EXISTING GATE OPERATORS TO REMAIN. REPLACE CIRCUITS UNDER NEW WORK. SEE SHEET E3.0 AND E3.1 FOR EQUIPMENT LOCATIONS.
- ⑮ COORDINATE ALL UTILITY SERVICE DEMOLITION WITH CEA.

VERIFY SCALE		0" = 1"		FULL SIZE SCALE	
DATA	CHECKED BY	DATA	CHECKED BY	REV	DATE
BASE	VLR	TELEPHONE			
TOPOGRAPHY		ELECTRIC			
PROFILE		CABLE TV			
SANITARY SEWER		TRAFFIC SIGNAL			
STORM SEWER		DESIGN			
WATER		QUANTITIES			
GAS		MUN. FINAL CHECK			
PLAN CHECK			REVISIONS		

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DATE: ---	DATA TRANSFER CHECKED BY: ---		
	COMPANY: ---		
	DATE: ---		

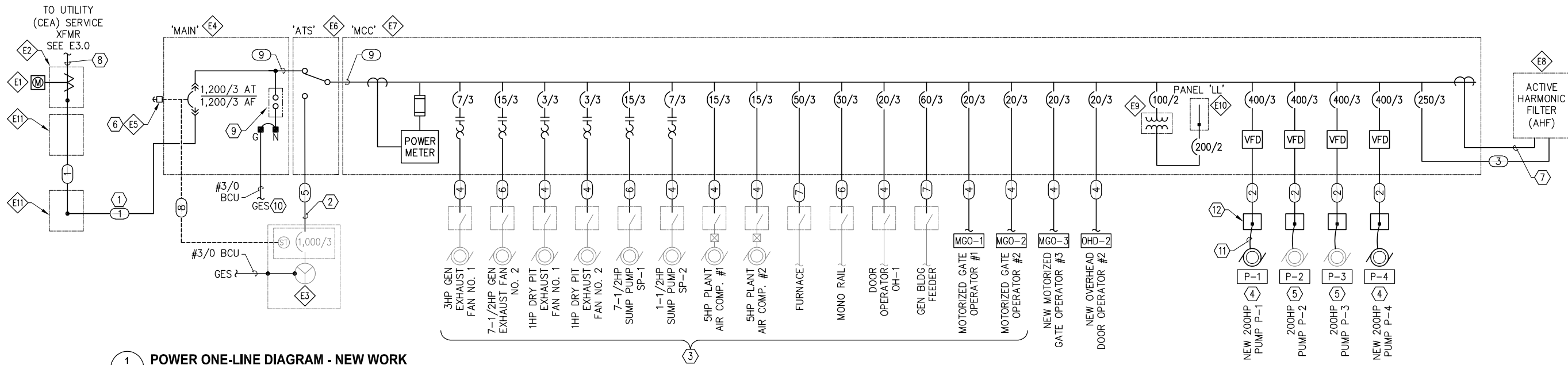
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213 W. FIREWEED LANE
ANCHORAGE, AK 98503
(907) 276-7933
LICENSE NO. AECC705
CONSULTANT

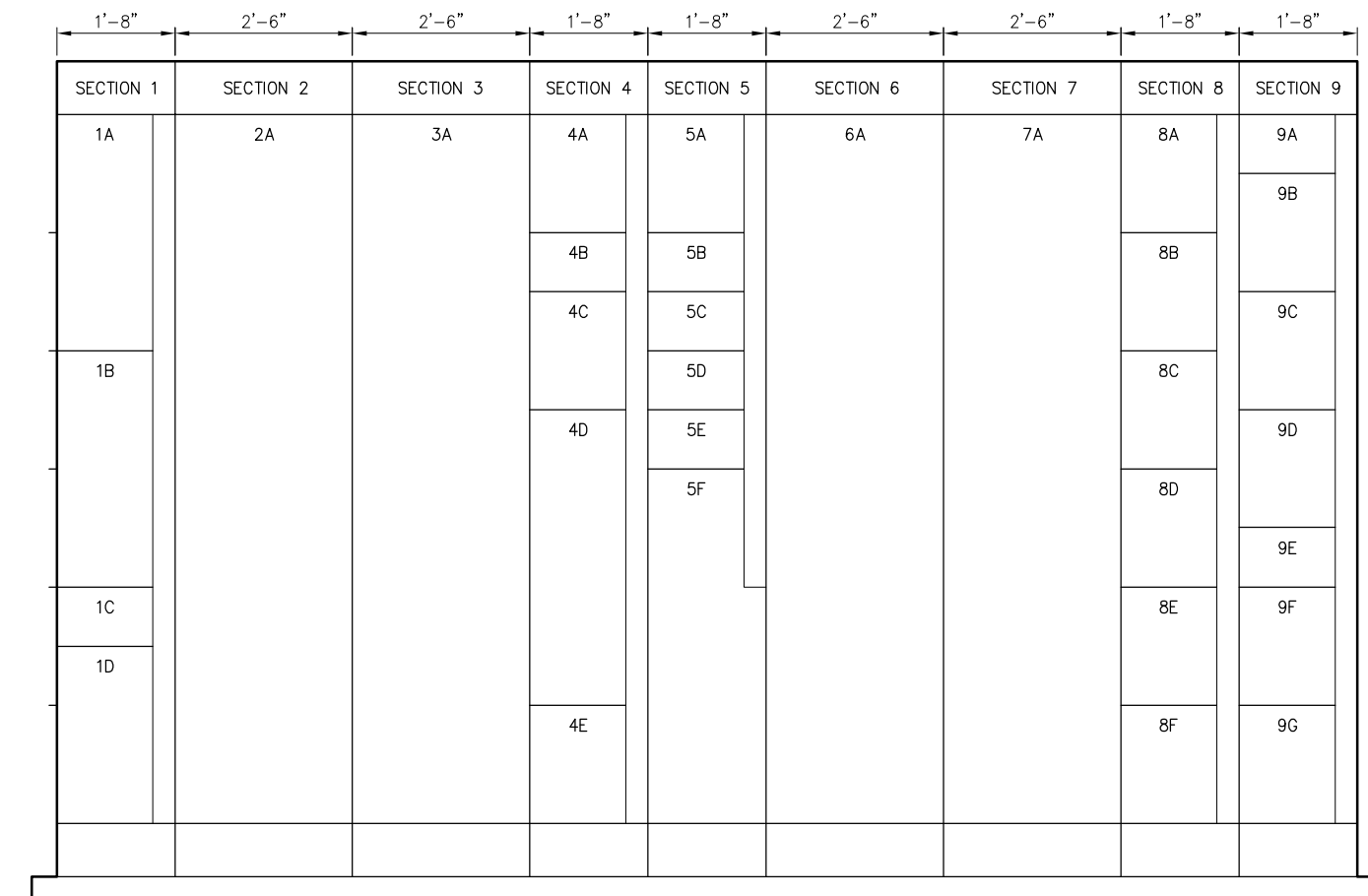
STATE OF ALASKA
49th
Cory L. Wardrop
EE 129346
REGISTERED PROFESSIONAL ENGINEER
11/2/21
SEAL

ANCHORAGE WATER & WASTEWATER UTILITY
MUNICIPALITY OF ANCHORAGE

MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY
SCHEDULE A
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB
POWER ONE-LINE DIAGRAM - EXISTING AND DEMOLITION
E1.0
HORZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525
VERT SCALE: NA
PROJ. ID.: WW:H7713
SHEET 44 of 104



1 POWER ONE-LINE DIAGRAM - NEW WORK
E1.1 SCALE: NTS



'MCC' ELEVATION
SCALE: N/A

SPACE	DESCRIPTION
1A	MAIN LUGS
1B	POWER MONITOR
1C	SPACE
1D	ACTIVE HARMONIC FILTER FEEDER
2A	PUMP 4 VFD
3A	PUMP 3 VFD
4A	ETHERNET SWITCH
4B	GENERATOR BUILDING FEEDER
4C	5HP PLANT AIR COMP. NO. 1
4D	225A, 240/120V PANEL 'LL'
4E	SPACE
5A	OVERHEAD DOOR OPERATOR. OH-2.
5B	MOTORIZED GATE OPERATOR MGO-1
5C	MOTORIZED GATE OPERATOR MGO-2
5D	MORORIZED GATE OPERATOR MGO-3
5E	MONORAIL
5F	37.5kVA TRANSFORMER, 480:240/120
6A	PUMP 2 VFD
7A	PUMP 1 VFD
8A	ETHERNET SWITCH
8B	1-1/2HP SUMP PUMP
8C	3HP GEN EXHAUST FAN NO. 1
8D	5HP PLANT AIR COMP. NO. 2
8E	7-1/2HP SUMP PUMP
8F	7-1/2HP GEN EXHAUST FAN NO. 2
9A	SPACE
9B	OVERHEAD DOOR OPERATOR. OH-1.
9C	SPACE
9D	SPACE
9E	FURNACE FEEDER
9F	1HP DRY PIT EXHAUST FAN NO. 1
9G	1HP DRY PIT EXHAUST FAN NO. 2

CIRCUIT SCHEDULE	
TAG	DESCRIPTION
①	4 EACH: 3-1/2" C, 4#350 (3H,N), 1#3/0 (G)
②	3" C, 3#350 (3H), 1#2 (G)
③	2-1/2" C, 3#250 (3H), 1#4 (G)
④	3/4" C, 3#12 (3H), 1#12 (G)
⑤	3 EACH: 3-1/2" C, 3#400 (3H), 1#2/0 (G)
⑥	1" C, 3#10 (3H), 1#10 (G)
⑦	1-1/4" C, 3#6 (3H), 1#10 (G)
⑧	3/4" C, 3#12 (H,N,G)
⑨	4 EACH: 3-1/2" C, 3#350 (3H), 1#3/0 (G)

ELECTRICAL EQUIPMENT SCHEDULE	
ITEM NO.	DESCRIPTION
E1	EXISTING METER BASE.
E2	EXISTING CT CABINET.
E3	EXISTING STANDBY GENERATOR, 825KVA, 480V, 3Ø.
E4	NEW MAIN CIRCUIT BREAKER (MCB): 1,200A, 480V, 3Ø, ELECTRONIC TRIP WITH ADJUSTABLE LSIG AND ARC-HAZARD REDUCTION MAINTENANCE MODE.
E5	EXISTING 120V SHUNT TRIP DISCONNECT.
E6	NEW AUTOMATIC TRANSFER SWITCH, 'ATS': 1,200A, 480V, 3Ø, 3-WIRE, 65KAIC, NEMA 1, WITH BYPASS ISOLATION.
E7	NEW MOTOR CONTROL CENTER, 'MCC', 1,200A, 480V, 3Ø, 3-WIRE, NEMA 1.
E8	NEW ACTIVE HARMONIC FILTER (AHF), SEE SPECIFICATIONS.
E9	MCC MOUNTED TRANSFORMER: 37.5KVA, 480:240/120V, 1Ø, 3-WIRE.
E10	MCC MOUNTED PANEL 'LL': 200A, 240V, 1Ø, 3-WIRE.
E11	SERVICE ENTRANCE JUNCTION BOX, NEMA 4X SS.

- SHEET NOTES**
- PROVIDE NEW SERVICE ENTRANCE CONDUCTORS. COORDINATE ALL WORK WITH SERVICE UTILITY (CEA) AS REQUIRED. CIRCUIT RATING SHOWN FOR REFERENCE ONLY, TBD BY CEA.
 - RECONNECT STANDBY POWER CIRCUIT TO NEW ATS. PROVIDE NEW CONDUCTORS. EXISTING CONDUITS MAY BE RE-USED.
 - RECONNECT EXISTING EQUIPMENT TO NEW MCC. PROVIDE NEW CONDUCTORS TO EQUIPMENT AS SHOWN.
 - NEW PUMP P-1 AND PUMP P-4.
 - RECONNECT EXISTING PUMP P-2 AND PUMP P-3 TO NEW MCC.
 - RECONNECT SHUNT-TRIP DISCONNECT (CKT LL-18) TO 'MAIN' AND GENSET DISCONNECT CIRCUIT BREAKERS.
 - PROVIDE CONTROL CONDUCTORS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS IN DEDICATED RACEWAY.
 - COORDINATE WITH UTILITY (CEA) FOR INSTALLATION OF NEW SERVICE LATERALS FROM EXISTING UTILITY TRANSFORMER TO NEW SERVICE ENTRANCE LOCATION. SEE SHEETS E3.0 AND E3.3 FOR LOCATIONS.
 - PROVIDE MAIN BUS WITH 100KA/PHASE AC SURGE PROTECTION MOUNTED IN THE MCB CABINET. SEE SPECIFICATIONS FOR DETAILS.
 - PROVIDE GROUNDING ELECTRODE SYSTEM (GES) IN ACCORDANCE WITH NEC 250. SEE DETAIL 1 ON SHEET E1.2.
 - PROVIDE NEW VFD RATED PUMP CABLE (TYP. OF 4). SEE SHEET E3.4 FOR ROUTING AND TERMINATIONS.
 - PROVIDE NEW TERMINAL JUNCTION BOXES (TJB) FOR EACH PUMP (P-1,2,3,4). SEE SHEET E3.4 FOR LOCATION AND DETAILS.
- XX-X SEE SHEET E3.3 FOR EQUIPMENT CONNECTION SCHEDULE.

FILE: p:\Projects\VEI\pump_station_12\Dwg\Elec\E1.1_POWER_ONE_LINE_DIAGRAM - NEW WORK.dwg DATE: 11/2/2021 10:32 AM

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE: 1"=20' HORIZ SCALE: 1"=4' VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	---	VLR	TELEPHONE	---	---	---	---	---	---
TOPOGRAPHY	---	---	ELECTRIC	---	---	---	---	---	---
PROFILE	---	---	CABLE TV	---	---	---	---	---	---
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---	---	---	---	---
STORM SEWER	---	---	DESIGN	---	---	---	---	---	---
WATER	---	---	QUANTITIES	---	---	---	---	---	---
GAS	---	---	MUN. FINAL CHECK	---	---	---	---	---	---
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

1. DATA PROVIDED BY: _____
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CONTRACTOR: _____
BY: _____ TITLE: _____
DATE: _____

2. DATA TRANSFERRED BY: _____
COMPANY: _____
DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
DATA TRANSFER CHECKED BY: _____
COMPANY: _____
BY: _____ TITLE: _____
DATE: _____

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			PS12 FORCE MAIN / GRAVITY JUNCTION REHAB POWER ONE-LINE DIAGRAM - NEW WORK E1.1	
HORIZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 VERT SCALE: NA PROJ. ID.: WW:H7713		SHEET 45 of 104		

SHEET NOTES

- 1 ALL LOADS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED. RECONNECT ALL EXISTING LOADS AS SHOWN.
- 2 NEW LOAD: CONNECT AS SHOWN ON THE PLANS.
- 3 EQUIPMENT AIC RATINGS TO BE ULTIMATELY DETERMINED BY THE PROTECTIVE DEVICE STUDY. SEE SPECIFICATION SECTION 26 05 73.
- E# SEE SHEET E1.1 FOR ELECTRICAL EQUIPMENT SCHEDULE

VOLT: 120/240V
BUS: 225A
MAIN: 200A
LOCATION: MCC

PANEL 'LL' SCHEDULE (E10)

A.I.C. RATING: 65k
ENCLOSURE: NEMA 1
MOUNTING: MCC

CKT	AMP	LOAD DESCRIPTION	KVA	LOAD	A	B	LOAD	KVA	LOAD DESCRIPTION	AMP	CKT
1	20/1	CONTROL ROOM LIGHTS	0.6	L	1.2		L	0.6	CONTROL ROOM LIGHTS	20/1	2
3	20/1	SPARE	0.0	S		0.8	L	0.8	CONTROL ROOM LIGHTS	20/1	4
5	20/1	SCADA CONTROL PANEL 'SCP'	1.0	C	1.8		L	0.8	BATHROOM LIGHTS	20/1	6
7	20/1	SPARE	0.0	S		0.5	L	0.5	WET WELL LIGHTS	20/1	8
9	20/1*	CONTROL ROOM RECEPTACLES	0.7	R	0.7		S	0.0	SPARE	20/1	10
11	20/1*	CONTROL ROOM RECEPTACLES	0.9	R		2.0	C	1.1	HEAT TRACE	20/1	12
13	20/1	DOWNSTAIRS RECEPTACLES	0.4	R	1.6		L	1.2	DOWNSTAIRS LIGHTS	20/1	14
15	20/1	PUMP 2/3 SEAL ALARM PANEL	0.1	C		0.6	C	0.5	COMPRESSOR ALTERNATOR	20/1	16
17	20/1	PUMP 1/4 SEAL ALARM PANEL	0.1	C	1.1		C	1.0	MAIN/GEN SHUNT-TRIP	20/1	18
19	20/1	SPARE	0.0	S		0.0	S	0.0	SPARE	20/1	20
21	20/1	BATHROOM FAN	0.8	M	0.8		S	0.0	SPARE	20/1	22
23	20/1	SPARE	0.0	S		0.0	S	0.0	SPARE	20/1	24
25	20/1	SPARE	0.0	S	0.0		S	0.0	SPARE	20/1	26
27	20/1	SPARE	0.0	S		0.0	S	0.0	SPARE	20/1	28
29	20/1	SPARE	0.0	S	0.0		S	0.0	SPARE	20/1	30
31	30/2	WATER HEATER	2.5	C		3.7	LM	1.2	PRESSURE PUMP PP-1	20/2	32
33	30/2	WATER HEATER	2.5	C		3.7	LM	1.2	PRESSURE PUMP PP-1	20/2	34
35	20/1	SPARE	0.0	S		0.0	S	0.0	SPARE	20/1	36
37		SPACE				0.0			SPACE		38
39		SPACE				0.0			SPACE		40
41		SPACE				0.0			SPACE		42

* INDICTES 5mA GFCI

TOTAL KVA: 18.5
AMPS: 77.1

SUMMARY BY LOAD TYPE	CONNECTED KVA			TOTAL L KVA	NEC%	NEC TOTAL	NOTES:
	PH A	PH B	FEED				
L LIGHTING	3.2	1.3		4.5	1.25	5.6	
R RECEPTACLES	1.1	0.9		2.0	10K+50%	2.0	
M MOTORS	0.8	0.0		0.8	1.00	0.8	
LM LARGEST MOTOR	1.2	1.2		2.4	1.25	3.0	
C CONTINUOUS	4.6	4.2		8.8	1.25	11.0	
N NON-CONTINUOUS	0.0	0.0		0.0	1.00	0.0	
S SPARE	0.0	0.0		0.0	1.00	0.0	
X NON-COINCIDENT	0.0	0.0		0.0	0.00	0.0	
O OTHER	0.0	0.0		0.0	1.00	0.0	
F FEEDER	0.0	0.0		0.0	1.00	0.0	
TOTAL KVA (PHASE)	10.9	7.6		18.5		22.4	
TOTAL AMPERES	90.8	63.3		77.1		93.4	
PHASE BALANCE, AB	A-B	B-A					
PERCENT	59	41					

SERVICE LOAD CALCULATION

(1) EXISTING DEMAND LOAD

EXISTING 12 MONTH PEAK DEMAND LOAD = 337.2 KVA *

NEC FACTOR 25% = 84.3 KVA

SUBTOTAL = 421.5 KVA

(2) DELETED LOADS

ITEM	DESCRIPTION	
1	TWO (2) 150HP PUMPS (PUMP #1, PUMP #4)	= 286.8 KVA
2	ONE (1) 20HP WELL PUMP	= 21.5 KVA
SUBTOTAL		= 308.3 KVA

(3) LOADS NOT ACCOUNTED FOR IN 12-MONTH MAX DEMAND

ITEM	DESCRIPTION	
1	TWO (2) 150HP PUMPS (PUMP #1, PUMP #4)	= 286.8 KVA
SUBTOTAL		= 286.8 KVA

(4) ADDITIONAL DEMAND LOAD

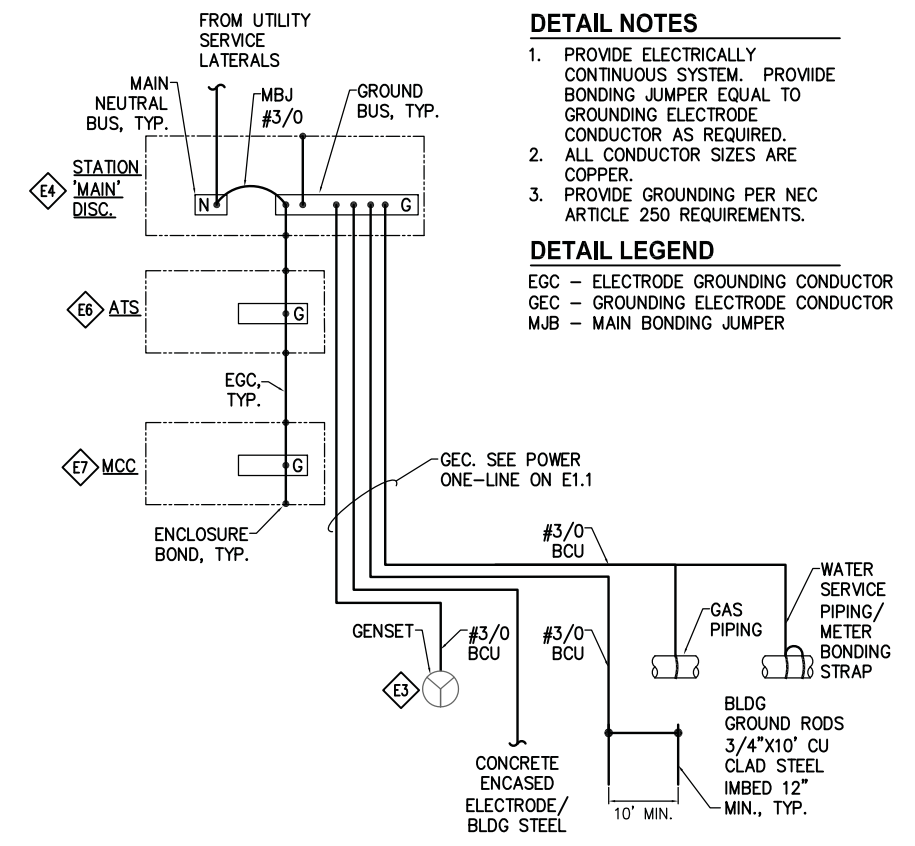
ITEM	DESCRIPTION	
1	TWO (2) NEW 200HP PUMPS (LIFT PUMP P-1, P-4)	= 382.4 KVA
2	ONE (1) NEW 1.5HP STANDBY PRESSURE PUMP (PP-1)	= 2.3 KVA
3	ONE (1) NEW 1.5HP GATE OPERATOR (MGO-1)	= 2.3 KVA
4	ONE (1) NEW ACTIVE HARMONIC FILTER	= 3.3 KVA
5	ONE (1) NEW OVERHEAD DOOR OPERATOR (OHD-1)	= 1.6 KVA
SUBTOTAL		= 391.9 KVA

TOTAL NEW SERVICE DEMAND LOAD

LOAD 1 - LOAD 2 + LOAD 3 + LOAD 4 = 791.9 KVA

952.5 AMPS @480V, 3ø

* RECEIVED FROM CEA



DETAIL NOTES

- 1. PROVIDE ELECTRICALLY CONTINUOUS SYSTEM. PROVIDE BONDING JUMPER EQUAL TO GROUNDING ELECTRODE CONDUCTOR AS REQUIRED.
- 2. ALL CONDUCTOR SIZES ARE COPPER.
- 3. PROVIDE GROUNDING PER NEC ARTICLE 250 REQUIREMENTS.

DETAIL LEGEND

- EGC - ELECTRODE GROUNDING CONDUCTOR
- GEC - GROUNDING ELECTRODE CONDUCTOR
- MJB - MAIN BONDING JUMPER

1 ELECTRICAL GROUNDING SCHEMATIC
E1.2 SCALE: NTS

FILE: P:\Projects\VEI\pump_station_12\Drawings\Elec\E1.2 ELECTRICAL SCHEDULES AND DETAILS.dwg DATE: 5/12/2022 9:57 AM

VERIFY SCALE: THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING. 0" = 1"

IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY. HORIZ SCALE: 1"=20' VERT SCALE: 1"=4'

DATA	DRAWN BY	CHECKED BY	DATE	DESCRIPTION	BY
BASE					
TOPOGRAPHY					
PROFILE					
SANITARY SEWER					
STORM SEWER					
WATER					
GAS					

PLAN CHECK

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

1. DATA PROVIDED BY: _____

This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.

CONTRACTOR: _____

BY: _____ TITLE: _____

DATE: _____

2. DATA TRANSFERRED BY: _____

COMPANY: _____

DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.

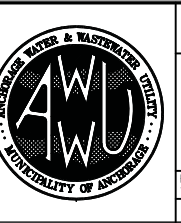
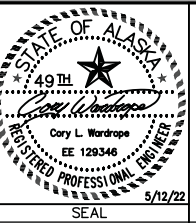
DATA TRANSFER CHECKED BY: _____

BY: _____ TITLE: _____

DATE: _____

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MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE A

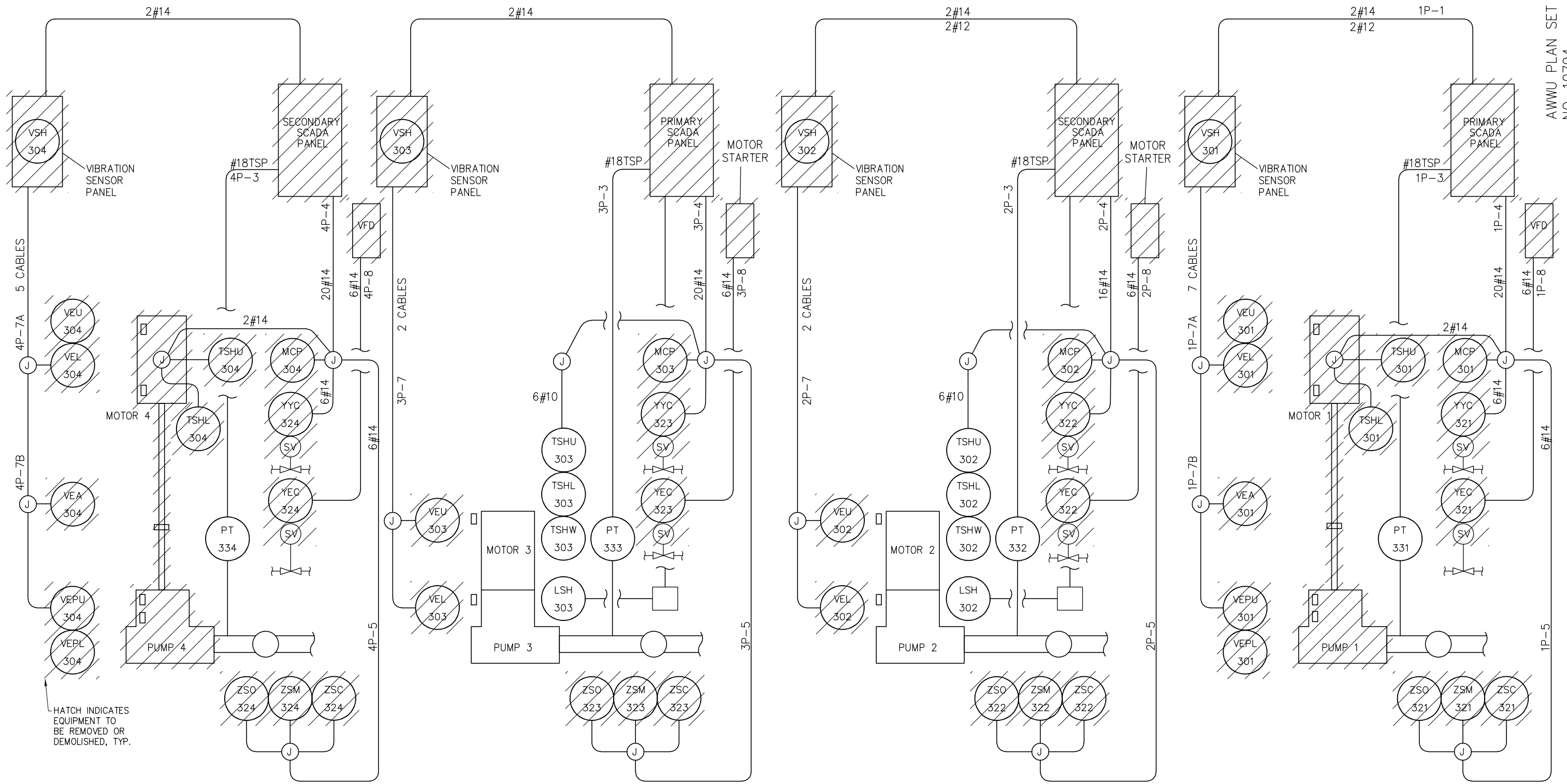
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB
ELECTRICAL SCHEDULES AND DETAILS

E1.2

HORIZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 46 of 104

VERT SCALE: NA PROJ. ID: WW.H7713

FILE: p:\Projects\VEI\pump_station_12\Dwg\Elec\E2.0 CONTROL_BLOCK DIAGRAM - DEMOLITION 1 OF 3.dwg DATE: 10/28/2021 2:33 PM



AWWU PLAN SET
NO. 10794

SHEET NOTES

1. ALL EQUIPMENT SHOWN IS EXISTING; INFORMATION HAS BEEN EXTRACTED FROM AS-BUILT DRAWINGS.
2. ALL EXISTING EQUIPMENT TO REMAIN SHALL HAVE CONDUIT CONNECTIONS AND CONDUCTORS REMOVED FROM SCADA PANELS AND REINSTALLED FOR EQUIPMENT REPLACEMENT.

HATCH INDICATES EQUIPMENT TO BE REMOVED OR DEMOLISHED, TYP.

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" — 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DATE	DESCRIPTION	BY	DATE	REVISIONS
BASE	---	VLR	---	---	---	TELEPHONE	---	---	---
TOPOGRAPHY	---	---	---	---	---	ELECTRIC	---	---	---
PROFILE	---	---	---	---	---	CABLE TV	---	---	---
SANITARY SEWER	---	---	---	---	---	TRAFFIC SIGNAL	---	---	---
STORM SEWER	---	---	---	---	---	DESIGN	---	---	---
WATER	---	---	---	---	---	QUANTITIES	---	---	---
GAS	---	---	---	---	---	MUN. FINAL CHECK	---	---	---

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

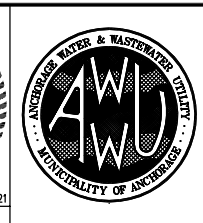
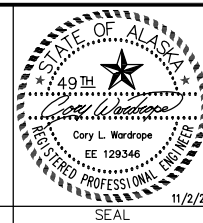
1. DATA PROVIDED BY: _____
 This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
 CONTRACTOR: _____
 BY: _____ TITLE: _____
 DATE: _____

2. DATA TRANSFERRED BY: _____
 COMPANY: _____
 DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
 DATA TRANSFER CHECKED BY: _____
 BY: _____ TITLE: _____
 DATE: _____

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MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE A

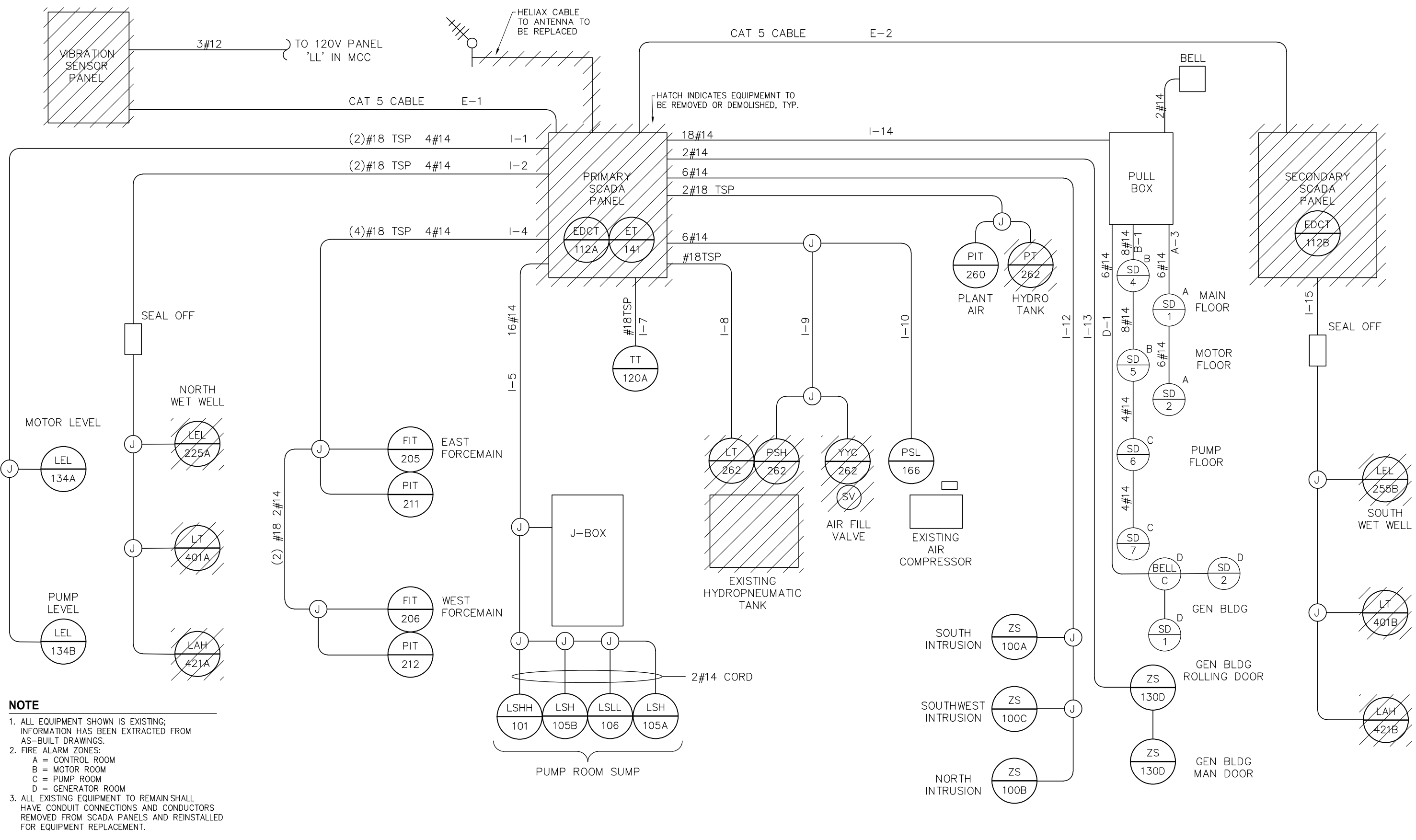
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

CONTROL BLOCK DIAGRAM - DEMOLITION 1 OF 3

E2.0

HORIZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 47 of 104

VERT SCALE: NA PROJ. ID.: WW:H7713



NOTE

1. ALL EQUIPMENT SHOWN IS EXISTING; INFORMATION HAS BEEN EXTRACTED FROM AS-BUILT DRAWINGS.
2. FIRE ALARM ZONES:
A = CONTROL ROOM
B = MOTOR ROOM
C = PUMP ROOM
D = GENERATOR ROOM
3. ALL EXISTING EQUIPMENT TO REMAIN SHALL HAVE CONDUIT CONNECTIONS AND CONDUCTORS REMOVED FROM SCADA PANELS AND REINSTALLED FOR EQUIPMENT REPLACEMENT.

FILE: p:\Projects\VEL\pump_station 12\Dwg\Elec\E2.1 CONTROL BLOCK DIAGRAM - DEMOLITION 2 OF 3.dwg DATE: 11/2/2021 7:46 AM

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.		HORZ SCALE: 1"=20' VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	---	VLR	TELEPHONE	---	---	---	---	---	---
TOPOGRAPHY	---	---	ELECTRIC	---	---	---	---	---	---
PROFILE	---	---	CABLE TV	---	---	---	---	---	---
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---	---	---	---	---
STORM SEWER	---	---	DESIGN	---	---	---	---	---	---
WATER	---	---	QUANTITIES	---	---	---	---	---	---
GAS	---	---	MUN. FINAL CHECK	---	---	---	---	---	---
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

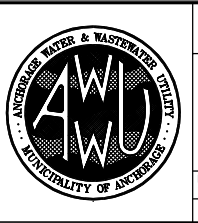
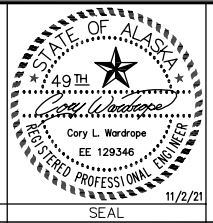
1. DATA PROVIDED BY: _____
This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
CONTRACTOR: _____
BY: _____ TITLE: _____
DATE: _____

2. DATA TRANSFERRED BY: _____
COMPANY: _____
DATE: _____

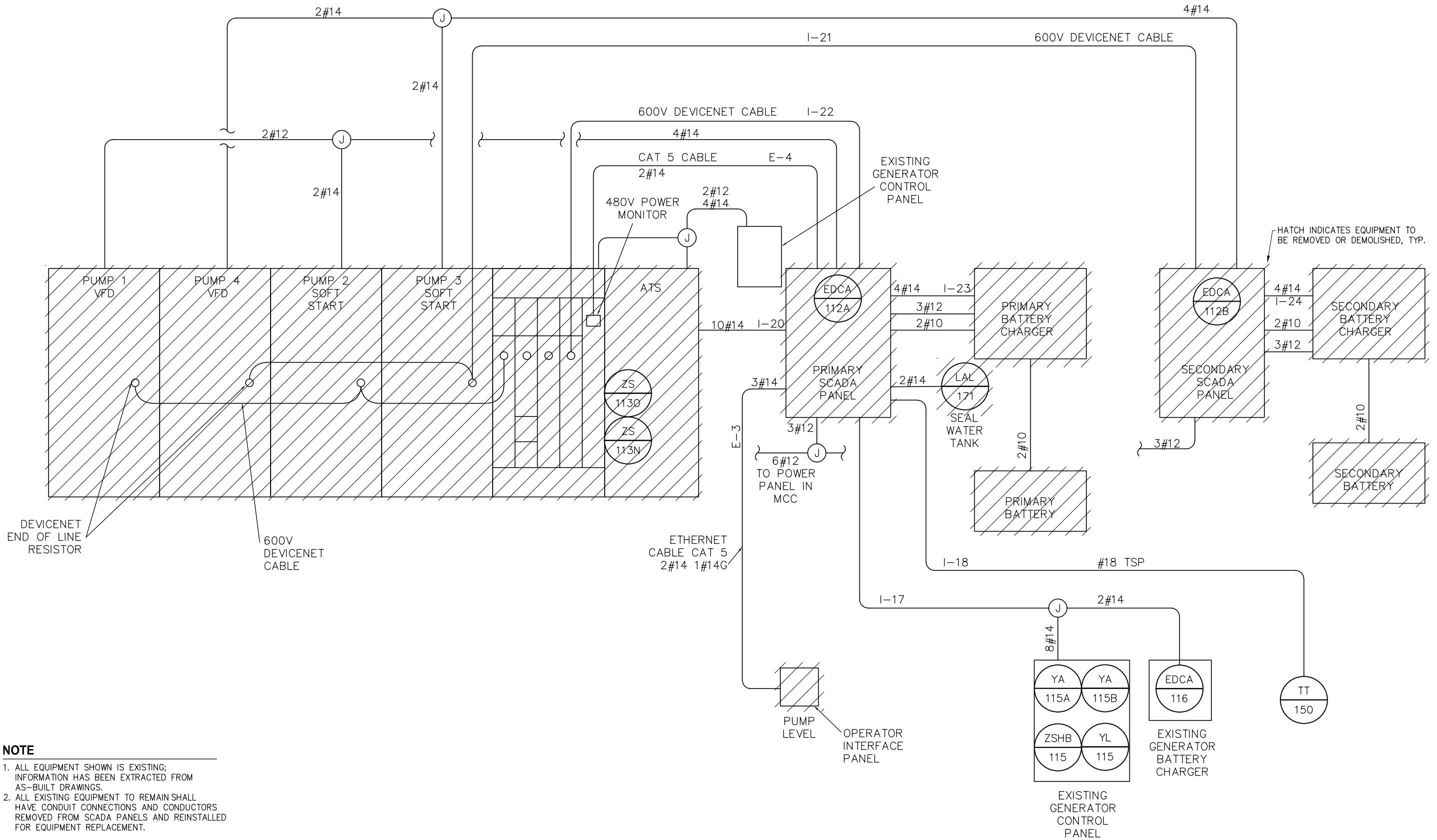
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DATA TRANSFER CHECKED BY: _____
BY: _____ TITLE: _____
DATE: _____

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MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY			
SCHEDULE A			
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB			
CONTROL BLOCK DIAGRAM - DEMOLITION 2 OF 3			
E2.1			
HORZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 48 of 104
PROJ. ID.: WW:H7713			



NOTE

1. ALL EQUIPMENT SHOWN IS EXISTING; INFORMATION HAS BEEN EXTRACTED FROM AS-BUILT DRAWINGS.
2. ALL EXISTING EQUIPMENT TO REMAIN SHALL HAVE CONDUIT CONNECTIONS AND CONDUCTORS REMOVED FROM SCADA PANELS AND REINSTALLED FOR EQUIPMENT REPLACEMENT.

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.		HORZ SCALE: 1"=20' VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE		VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

1. DATA PROVIDED BY: _____

This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.

CONTRACTOR: _____

BY: _____ TITLE: _____

DATE: _____

2. DATA TRANSFERRED BY: _____

COMPANY: _____

DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.

DATA TRANSFER CHECKED BY: _____

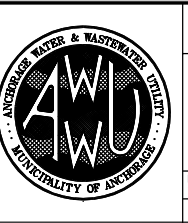
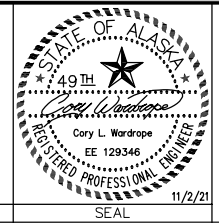
COMPANY: _____

BY: _____ TITLE: _____

DATE: _____

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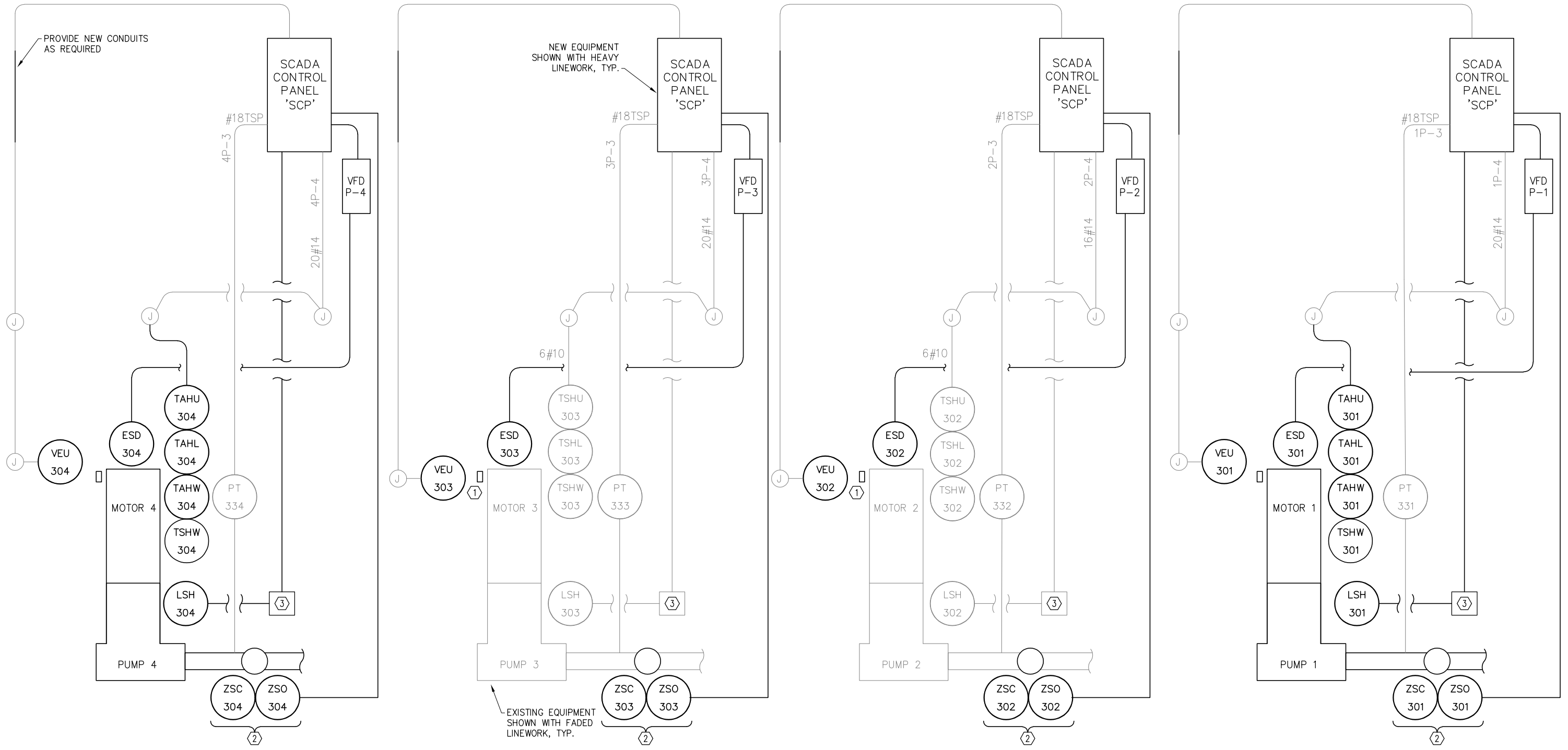


MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY			
SCHEDULE A			
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB			
CONTROL BLOCK DIAGRAM - DEMOLITION 3 OF 3			
E2.2			
HORZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 49 of 104
PROJ. ID.: WW:H7713			

SHEET NOTES

- ① PUMP 2 AND PUMP 3 VIBRATION SENSORS AND ASSOCIATED CABLES TO BE REPLACED WITH NEW.
- ② NEW CHECK VALVE LIMIT SWITCHES.
- ③ SEAL-FAIL CONTROL PANE.
PUMPS #1 AND #4: PROVIDE NEW;
PUMPS #2 AND #3: RECONNECT EXISTING.

XX YY SEE SHEETS E4.0 - E4.1 FOR INSTRUMENT CONNECTION SCHEDULE.



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE HORZ SCALE: 1"=20' VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE		VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.


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 DATA TRANSFER CHECKED BY: _____
 COMPANY: _____
 BY: _____ TITLE: _____
 DATE: _____

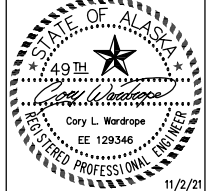
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EDC, INC.
213 W. FIREWEED LANE
ANCHORAGE, AK 98503
(907) 276-7933
LICENSE NO. AECC705

CONSULTANT



11/2/21
SEAL



ANCHORAGE WATER & WASTEWATER UTILITY
MUNICIPALITY OF ANCHORAGE

**MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY**

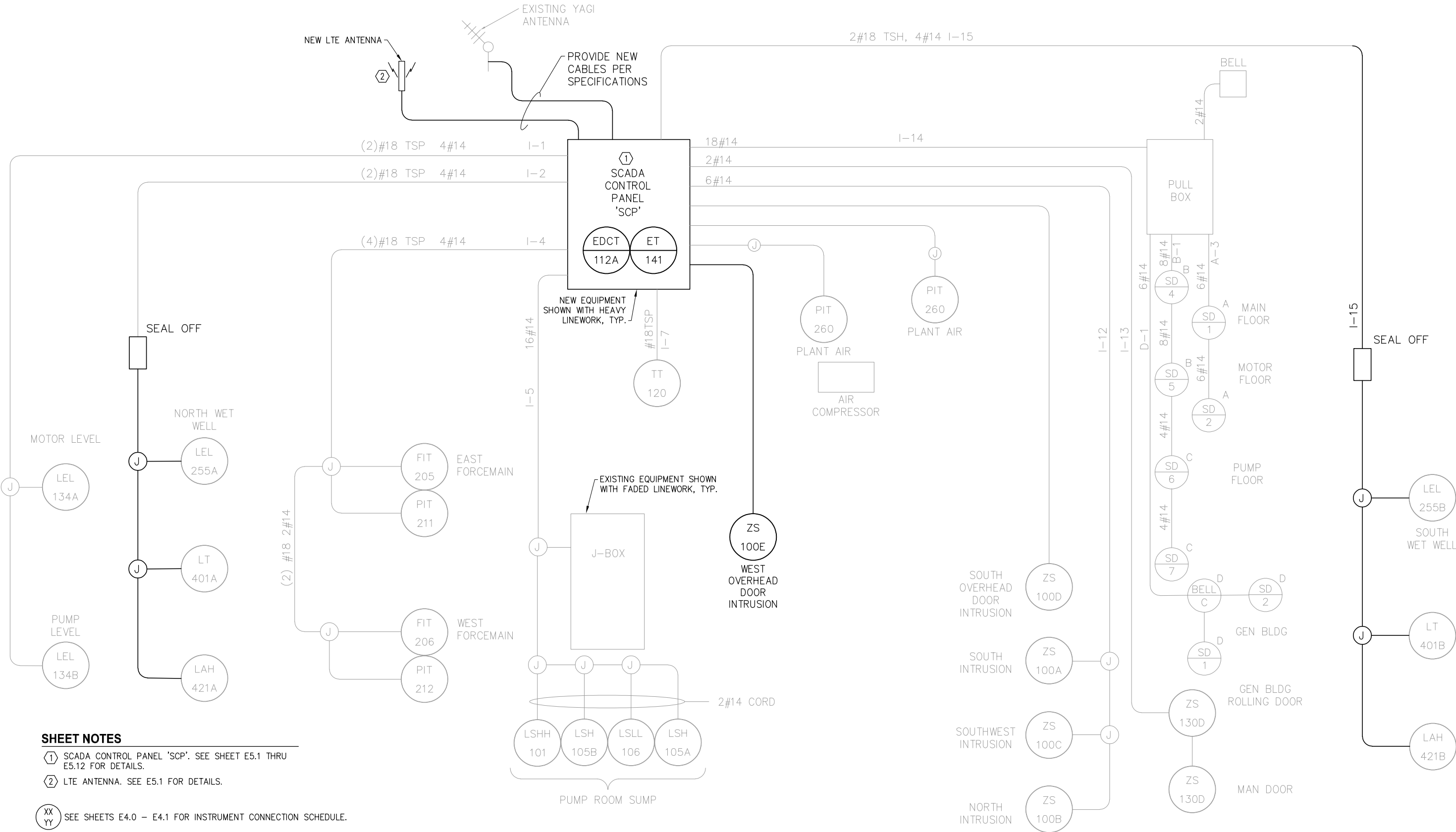
SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB
CONTROL BLOCK DIAGRAM - NEW WORK 1 OF 3
E2.3

HORZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 50 of 104
VERT SCALE: NA		PROJ. ID.: WW:H7713	

FILE: p:\Projects\VEI\pump_station 12\Dwg\Elec\E2.4 CONTROL BLOCK DIAGRAM - NEW WORK 2 OF 3.dwg DATE: 11/1/2021 7:24 PM

AWWU PLAN SET
NO. 10794



SHEET NOTES

① SCADA CONTROL PANEL 'SCP'. SEE SHEET E5.1 THRU E5.12 FOR DETAILS.

② LTE ANTENNA. SEE E5.1 FOR DETAILS.

XX YY SEE SHEETS E4.0 - E4.1 FOR INSTRUMENT CONNECTION SCHEDULE.

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.		HORZ SCALE: 1"=20'		VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY	DATE	DESCRIPTION
BASE		VLR	TELEPHONE								
TOPOGRAPHY			ELECTRIC								
PROFILE			CABLE TV								
SANITARY SEWER			TRAFFIC SIGNAL								
STORM SEWER			DESIGN								
WATER			QUANTITIES								
GAS			MUN. FINAL CHECK								
PLAN CHECK						REVISIONS					

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

1. DATA PROVIDED BY: _____
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 CONTRACTOR: _____
 BY: _____ TITLE: _____
 DATE: _____

2. DATA TRANSFERRED BY: _____
 COMPANY: _____
 DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
 DATA TRANSFER CHECKED BY: _____
 BY: _____ TITLE: _____
 DATE: _____

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EDC, INC.
 213 W. FIREWEED LANE
 ANCHORAGE, AK 99503
 (907) 276-7933
 LICENSE NO. AECC705

STATE OF ALASKA
 49th
 Cory L. Wardrop
 REGISTERED PROFESSIONAL ENGINEER
 EE 129346
 11/2/21

ANCHORAGE WATER & WASTEWATER UTILITY
 AWWU
 MUNICIPALITY OF ANCHORAGE

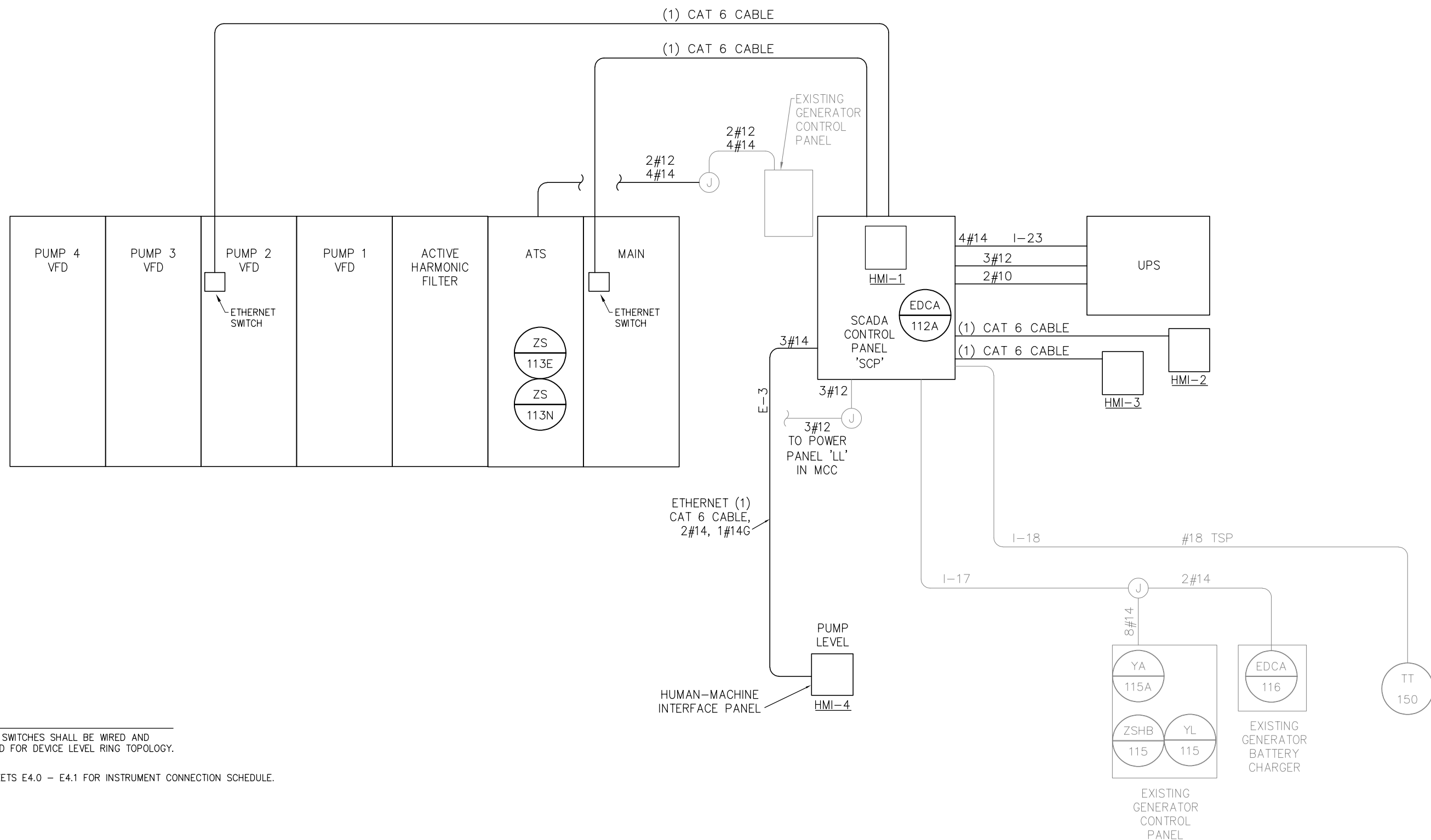
MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

CONTROL BLOCK DIAGRAM - NEW WORK 2 OF 3
 E2.4

HORZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 51 of 104
 VERT SCALE: NA
 PROJ. ID.: WW:H7713



NOTE

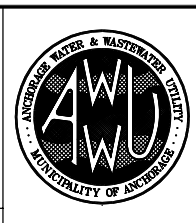
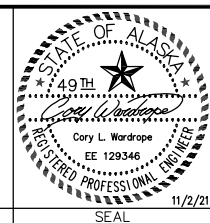
1. ETHERNET SWITCHES SHALL BE WIRED AND CONFIGURED FOR DEVICE LEVEL RING TOPOLOGY.

XX YY SEE SHEETS E4.0 - E4.1 FOR INSTRUMENT CONNECTION SCHEDULE.

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE HORZ SCALE: 1"=20' VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DATE	DESCRIPTION	BY	DATE	REVISIONS
BASE	---	VLR	---	---	---	TELEPHONE	---	---	---
TOPOGRAPHY	---	---	---	---	---	ELECTRIC	---	---	---
PROFILE	---	---	---	---	---	CABLE TV	---	---	---
SANITARY SEWER	---	---	---	---	---	TRAFFIC SIGNAL	---	---	---
STORM SEWER	---	---	---	---	---	DESIGN	---	---	---
WATER	---	---	---	---	---	QUANTITIES	---	---	---
GAS	---	---	---	---	---	MUN. FINAL CHECK	---	---	---

RECORD DRAWING		Note: To be filled out on original drawings upon project completion.	
1. DATA PROVIDED BY: _____	3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.	DATE: _____	DATE: _____
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BY: _____ TITLE: _____	DATA TRANSFER CHECKED BY: _____	DATE: _____	DATE: _____
DATE: _____	COMPANY: _____	DATE: _____	DATE: _____
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COMPANY: _____	DATE: _____	DATE: _____	DATE: _____
DATE: _____	DATE: _____	DATE: _____	DATE: _____

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MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY			
SCHEDULE A			
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB			
CONTROL BLOCK DIAGRAM - NEW WORK 3 OF 3			
E2.5			
HORZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 52 of 104
PROJ. ID.: WW:H7713			

FILE: p:\Projects\VEI\pump_station_12\Dwg\Elec\E3.0 ELECTRICAL SITE PLAN.dwg DATE: 11/2/2021 10:28 AM

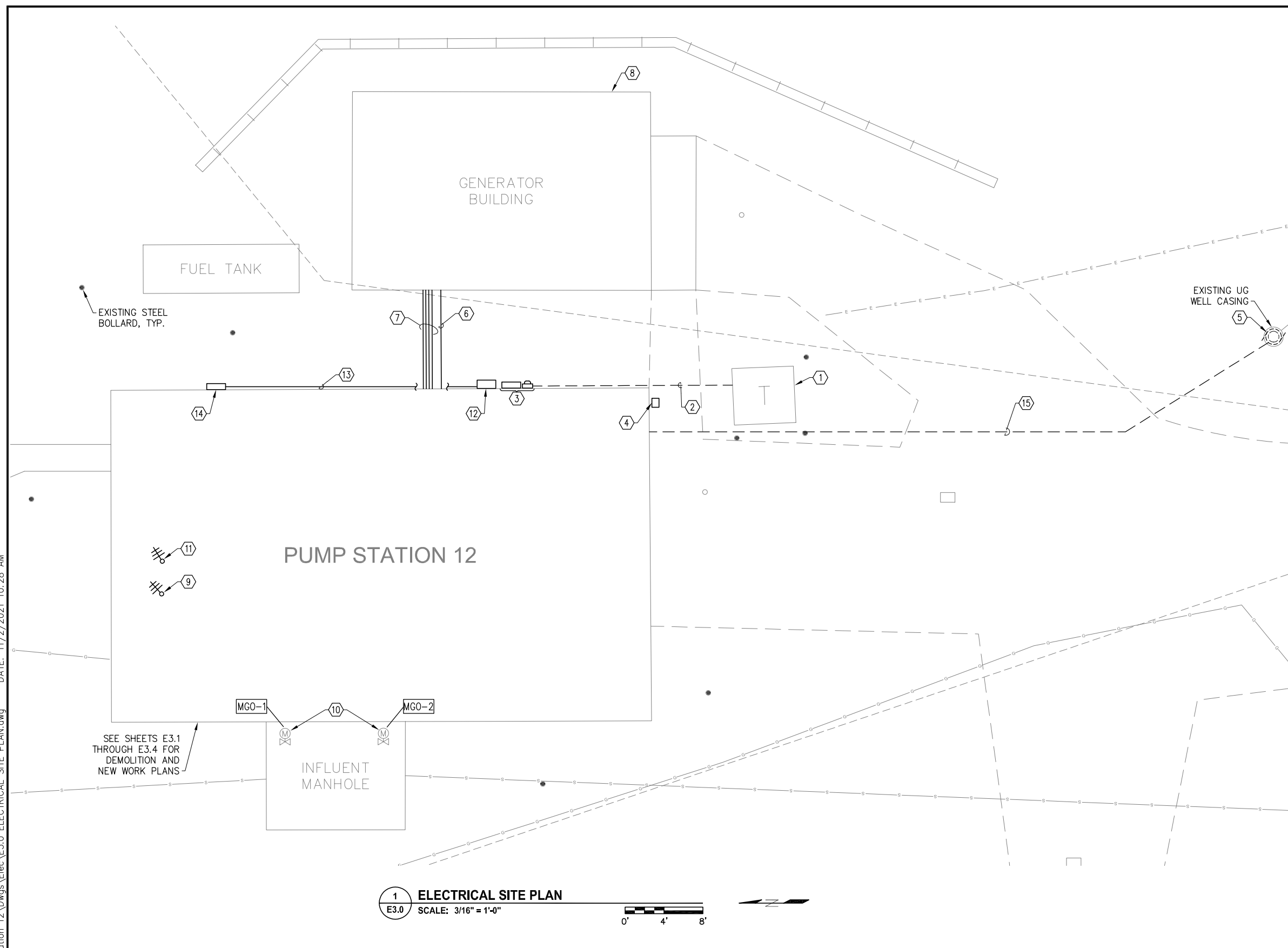
AWWU PLAN SET
NO. 10794

GENERAL SHEET NOTES

1. ELECTRICAL EQUIPMENT SCHEDULED TO REMAIN SHALL BE DISCONNECTED FROM ITS POWER AND/OR COMMUNICATION SOURCE DURING MCC/SCADA EQUIPMENT REPLACEMENT AND RECONNECTED AFTER INSTALLATION OF NEW MCC/SCADA EQUIPMENT.
2. ELECTRICAL EQUIPMENT SCHEDULED FOR DEMOLITION SHALL BE REMOVED ENTIRELY, INCLUDING CONDUITS AND CONDUCTORS; BELOW GRADE EXTERIOR CONDUIT MAY BE ABANDONED IN PLACE.

SHEET NOTES

- 1 EXISTING UTILITY (CEA) TRANSFORMER TO REMAIN.
- 2 EXISTING UTILITY (CEA) SERVICE LATERALS TO REMAIN.
- 3 EXISTING CT CABINET, METER AND EQUIPMENT TO REMAIN.
- 4 EXISTING FACILITY SHUNT-TRIP DISCONNECT TO REMAIN.
- 5 EXISTING WELL PUMP TO BE DEMOLISHED. COORDINATE WORK TO ALLOW KNIFE GATE VALVE (KGV) PRESSURE SYSTEM TO REMAIN IN OPERATION THROUGHOUT CONSTRUCTION. PROVIDE TEMPORARY SERVICE FOR POWERING WELL PUMP AND PRESSURE SYSTEM DURING NEW SERVICE AND SWITCHGEAR CHANGE OVER.
- 6 DEMOLISH STANDBY GENERATOR FEEDER AND REPLACE WITH NEW. SEE SHEET E3.1 AND E3.3 FOR DETAILS.
- 7 DEMOLISH EXISTING GENERATOR BUILDING POWER AND SIGNAL CIRCUITS AND REPLACE WITH NEW. SEE SHEET E3.1 AND E3.3 FOR DETAILS.
- 8 FIELD VERIFY, REMOVE AND REINSTALL EXISTING INTRUSION SWITCH AND HEAT DETECTOR CIRCUITS BETWEEN GENERATOR BUILDING AND SCADA PANEL(S). EXISTING CONDUITS MAY BE REUSED.
- 9 EXISTING ROOF MOUNTED SCADA ANTENNA TO REMAIN. REPLACE EXISTING COAX CABLE TO NEW SCADA CONTROL PANEL 'SCP'. PROVIDE ALL REQUIRED EQUIPMENT FOR A FUNCTIONAL SYSTEM.
- 10 EXISTING MOTORIZED GATE OPERATORS TO REMAIN FOR REUSE. DEMOLISH CONDUCTORS BACK TO MCC AND REPLACE WITH NEW; SEE SHEET E3.3 FOR NEW WORK.
- 11 NEW ROOF MOUNTED CELLULAR LTE ANTENNA. ROUTE CABLING TO NEW SCADA CONTROL PANEL 'SCP'. PROVIDE REQUIRED SUPPORT STRUCTURE ON ROOF. ROUTE CABLE TO AVOID PENETRATING WATERPROOF ROOF MEMBRANE. SEE SHEET E5.1 FOR EQUIPMENT DETAILS. COORDINATE INSTALL WITH OWNER AND ENGINEER.
- 12 NEW NEMA 4X SS JUNCTION BOX. COORDINATE INSTALL WITH SERVING UTILITY (CEA). SET JUNCTION BOX ADJACENT TO EXISTING CT CABINET TO FACILITATE SERVICE LATERAL EXTENSION.
- 13 NEW SERVICE LATERALS EXTENSION; COORDINATE INSTALLATION WITH SERVING UTILITY AND AWWU PROJECT MANAGER FOR SERVICE CHANGEOVER. EXISTING NATURAL GAS AND OTHER BURIED PIPING IN THIS AREA. LOCATE AND WORK AROUND EXISTING PIPING WITH CAUTION. ROUTE SERVICE ENTRANCE CONDUITS ALONG EXTERIOR BUILDING WALL ABOVE GRADE. SECURE CONDUITS WITH CONNECTIONS TO BUILDING STRUCTURAL MEMBERS. SEE POWER ONE-LINE SHEET E1.1.
- 14 NEW SERVICE ENTRANCE JUNCTION BOX, NEMA 4X SS. SIZE JUNCTION BOX TO ACCOMMODATE SERVICE ENTRANCE CONDUCTORS INTO 'MAIN' CIRCUIT BREAKER CABINET. SEE POWER ONE-LINE ON SHEET E1.1 FOR DETAILS.
- 15 DEMOLISH EXISTING WELL PUMP CONDUIT AND CONDUCTORS BACK TO MCC CIRCUIT BREAKER.



1 ELECTRICAL SITE PLAN
SCALE: 3/16" = 1'-0"

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.		HORIZ SCALE: 1"=20'		VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DATE	DESCRIPTION	BY	DATE	REV	DATE	DESCRIPTION
BASE	---	VLR	---	---	---	TELEPHONE	---	---	---	---	---
TOPOGRAPHY	---	---	---	---	---	ELECTRIC	---	---	---	---	---
PROFILE	---	---	---	---	---	CABLE TV	---	---	---	---	---
SANITARY SEWER	---	---	---	---	---	TRAFFIC SIGNAL	---	---	---	---	---
STORM SEWER	---	---	---	---	---	DESIGN	---	---	---	---	---
WATER	---	---	---	---	---	QUANTITIES	---	---	---	---	---
GAS	---	---	---	---	---	MUN. FINAL CHECK	---	---	---	---	---
PLAN CHECK						REVISIONS					

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

1. DATA PROVIDED BY: _____
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CONTRACTOR: _____
BY: _____ TITLE: _____
DATE: _____

2. DATA TRANSFERRED BY: _____
COMPANY: _____
DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
DATA TRANSFER CHECKED BY: _____
COMPANY: _____
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DATE: _____

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ANCHORAGE, AK 98503
(907) 276-7933
LICENSE NO. AECC705

CONSULTANT

STATE OF ALASKA
49th
Cory L. Wardrop
EE 129346
REGISTERED PROFESSIONAL ENGINEER
11/2/21

SEAL

ANCHORAGE WATER & WASTEWATER UTILITY
AWWU
MUNICIPALITY OF ANCHORAGE

MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

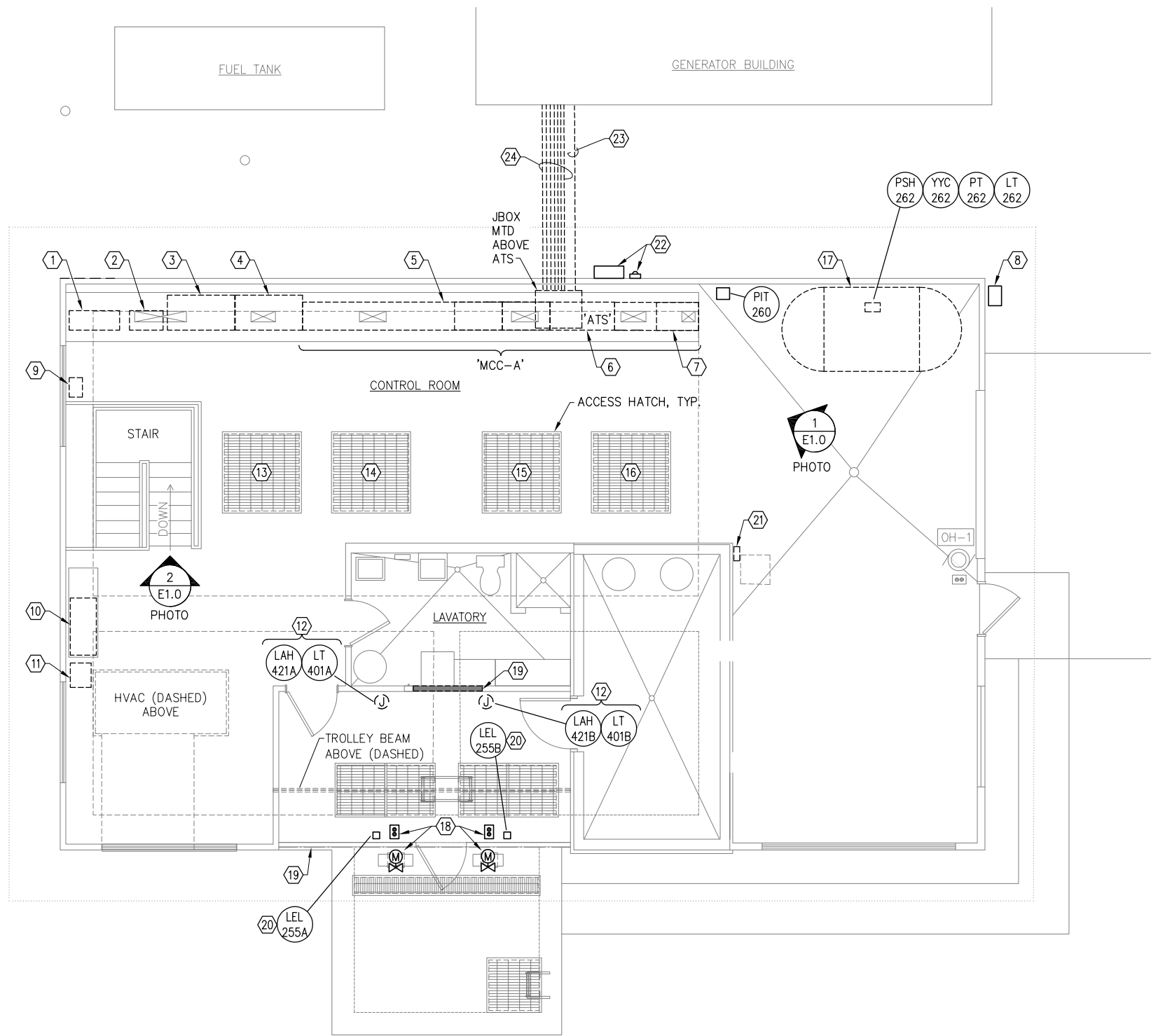
ELECTRICAL SITE PLAN

E3.0

HORIZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 53 of 104
VERT SCALE: NA
PROJ. ID.: WW:H7713

FILE: p:\Projects\VEI\pump_station_12\Dwgs\Elec\E3.1 ELECTRICAL DEMOLITION PLAN - CONTROL ROOM.dwg DATE: 11/1/2021 8:37 PM

AWWU PLAN SET
NO. 10794



GENERAL SHEET NOTES

1. FIELD VERIFY SCADA SYSTEM CONNECTIONS.
2. TEMPORARILY DISCONNECT WIRING BACK TO DEVICES TO REMAIN DURING SCADA PANEL REPLACEMENT.
3. EXISTING CONDUITS AND WIRING MAY BE RE-USED UNLESS OTHERWISE NOTED.
4. EMPTY CONDUITS SHALL BE REMOVED.

SHEET NOTES

- 1 DEMOLISH PRIMARY SCADA PANEL. DISCONNECT ALL FIELD WIRING AND PROTECT FOR RE-CONNECTION AT NEW SCADA PANEL.
- 2 DEMOLISH SECONDARY SCADA PANEL. DISCONNECT ALL FIELD WIRING AND PROTECT FOR RE-CONNECTION AT NEW SCADA PANEL.
- 3 DEMOLISH VFD #1 AND ASSOCIATED EQUIPMENT AND CONDUCTORS.
- 4 DEMOLISH VFD #4 AND ASSOCIATED EQUIPMENT AND CONDUCTORS.
- 5 DEMOLISH MOTOR CONTROL CENTER (MCC). DEMOLISH FEEDER/BRANCH CONDUCTORS TO EQUIPMENT AND REPLACE WITH NEW AS INDICATED ON SHEET E1.1.
- 6 DEMOLISH MCC MOUNTED AUTOMATIC TRANSFER SWITCH (ATS). STANDBY CIRCUITS ENTER ATS OVERHEAD.
- 7 DEMOLISH MCC MOUNTED FACILITY MAIN CIRCUIT BREAKER DISCONNECT.
- 8 SHUNT-TRIP DISCONNECT SWITCH TO REMAIN FOR REUSE.
- 9 PUMPS #1, 2, 3 AND 4 RELAY PROTECTION PANEL TO BE DEMOLISHED.
- 10 VIBRATION MONITORING PANEL TO BE DEMOLISHED. REMOVE ALL WIRING BETWEEN SCADA PANELS AND PUMP SENSORS.
- 11 DEMOLISH PRIMARY AND SECONDARY UNINTERRUPTIBLE POWER SUPPLIES (UPS) AND ASSOCIATED BATTERIES.
- 12 DEMOLISH JUNCTION BOXES SUPPORTING WET WELL INSTRUMENTS INDICATED. INSTRUMENTS TO BE REMOVED AND REINSTALLED. SEE SHEET NOTE #19 BELOW.
- 13 PUMP #4 LOCATED BELOW: DEMOLISH PUMP AND ASSOCIATED CONDUITS AND CONDUCTORS.
- 14 PUMP #3 LOCATED BELOW. REMOVE CONDUITS AND CONDUCTORS FOR MCC REPLACEMENT.
- 15 PUMP #2 LOCATED BELOW. REMOVE CONDUITS AND CONDUCTORS FOR MCC REPLACEMENT.
- 16 PUMP #1 LOCATED BELOW: DEMOLISH PUMP AND ASSOCIATED CONDUITS AND CONDUCTORS.
- 17 HYDROPNEUMATIC TANK TO BE DEMOLISHED. REMOVE ALL ASSOCIATED INSTRUMENTS, CONDUIT AND CONDUCTORS.
- 18 EXISTING MOTORIZED GATE CONTROL STATIONS TO BE DEMOLISHED AND REPLACED. MOTORIZED GATE OPERATORS LOCATED OUTSIDE STATION; SEE SHEET E3.0 AND STRUCTURAL FOR NEW LOCATION.
- 19 EXISTING WALLS TO BE SELECTIVELY DEMOLISHED; SEE STRUCTURAL FOR LIMITS. REMOVE WALL MOUNTED CONDUIT BACK TO NEAREST BOX OR CONDUIT BODY OUTSIDE DEMOLITION LIMITS.
- 20 REMOVE AND REINSTALL EXPLOSIVE GAS MONITORS. REMOVE ALL ASSOCIATED INSTRUMENTS, CONDUIT AND CONDUCTORS.
- 21 HMI PANEL TO BE REPLACED. SEE NEW WORK PLAN ON SHEET E3.3.
- 22 EXISTING UTILITY SERVICE EQUIPMENT TO REMAIN. SEE E3.0 AND E3.3 FOR NEW WORK. COORDINATE ALL WORK WITH SERVING UTILITY (CEA).
- 23 ABOVE GRADE STANDBY GENERATOR FEEDER. DEMOLISH FEEDER CONDUIT/CONDUCTORS FROM ATS TO EXISTING GENERATOR CIRCUIT BREAKER.
- 24 DEMOLISH AND REPLACE ALL EXISTING POWER AND SIGNAL CONDUITS/CONDUCTORS FROM LOADS/CONNECTIONS WITHIN THE GENERATOR BUILDING TO THE NEW SWITCHGEAR AND SCADA CONTROL PANEL 'SCP'.

1 ELECTRICAL DEMOLITION PLAN - CONTROL ROOM
E3.1 SCALE: 1/4" = 1'-0"
0 4' 8'

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE HORZ SCALE: 1"=20' VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DATE	DESCRIPTION	BY	DATE	REVISIONS
BASE	---	VLR	---	---	---	TELEPHONE	---	---	---
TOPOGRAPHY	---	---	---	---	---	ELECTRIC	---	---	---
PROFILE	---	---	---	---	---	CABLE TV	---	---	---
SANITARY SEWER	---	---	---	---	---	TRAFFIC SIGNAL	---	---	---
STORM SEWER	---	---	---	---	---	DESIGN	---	---	---
WATER	---	---	---	---	---	QUANTITIES	---	---	---
GAS	---	---	---	---	---	MUN. FINAL CHECK	---	---	---

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

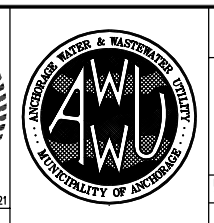
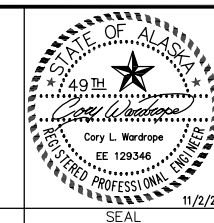
1. DATA PROVIDED BY: _____
 This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
 CONTRACTOR: _____
 BY: _____ TITLE: _____
 DATE: _____

2. DATA TRANSFERRED BY: _____
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3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
 DATA TRANSFER CHECKED BY: _____
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SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

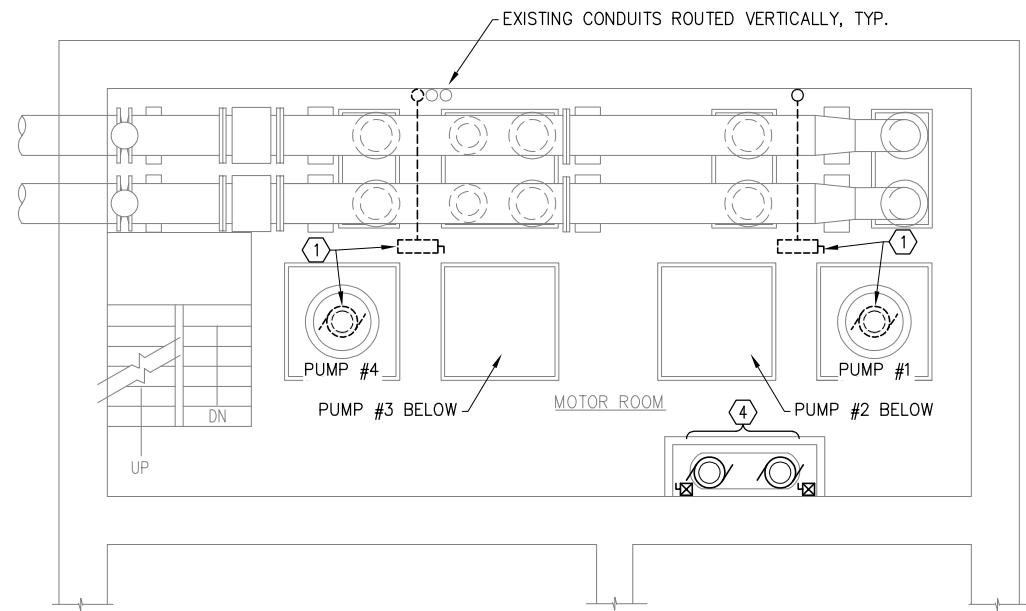
ELECTRICAL DEMOLITION PLAN - CONTROL ROOM

E3.1

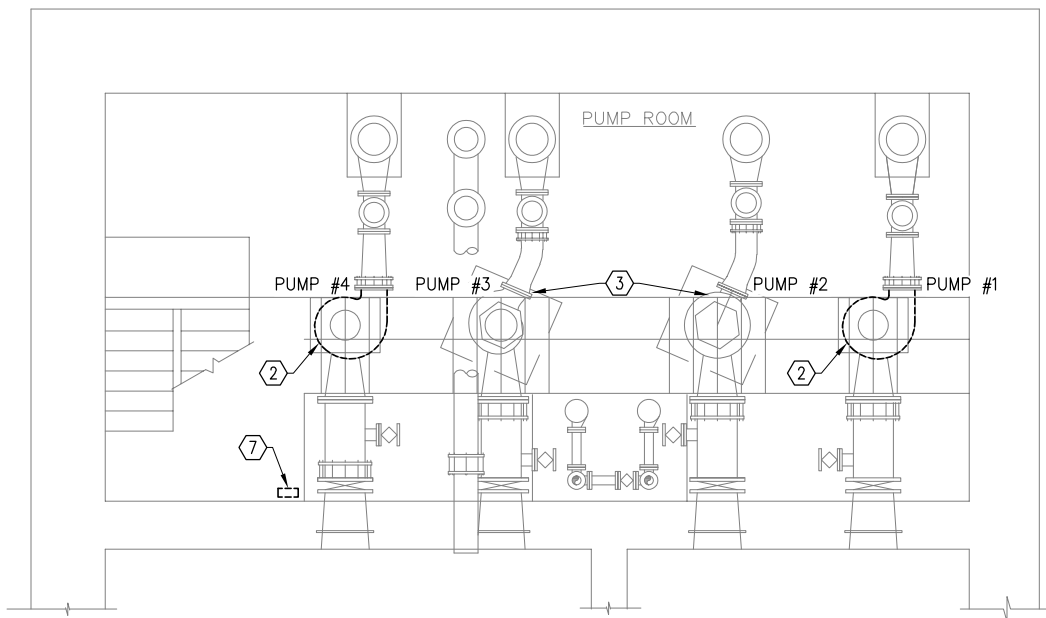
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 VERT SCALE: NA
 PROJ. ID.: WW:H7713

FILE: p:\Projects\VEI\pump_station 12\Dwg\Elec\E3.2 ELECTRICAL DEMOLITION PLANS AND SECTION.dwg DATE: 11/2/2021 9:15 AM

AWWU PLAN SET
NO. 10794



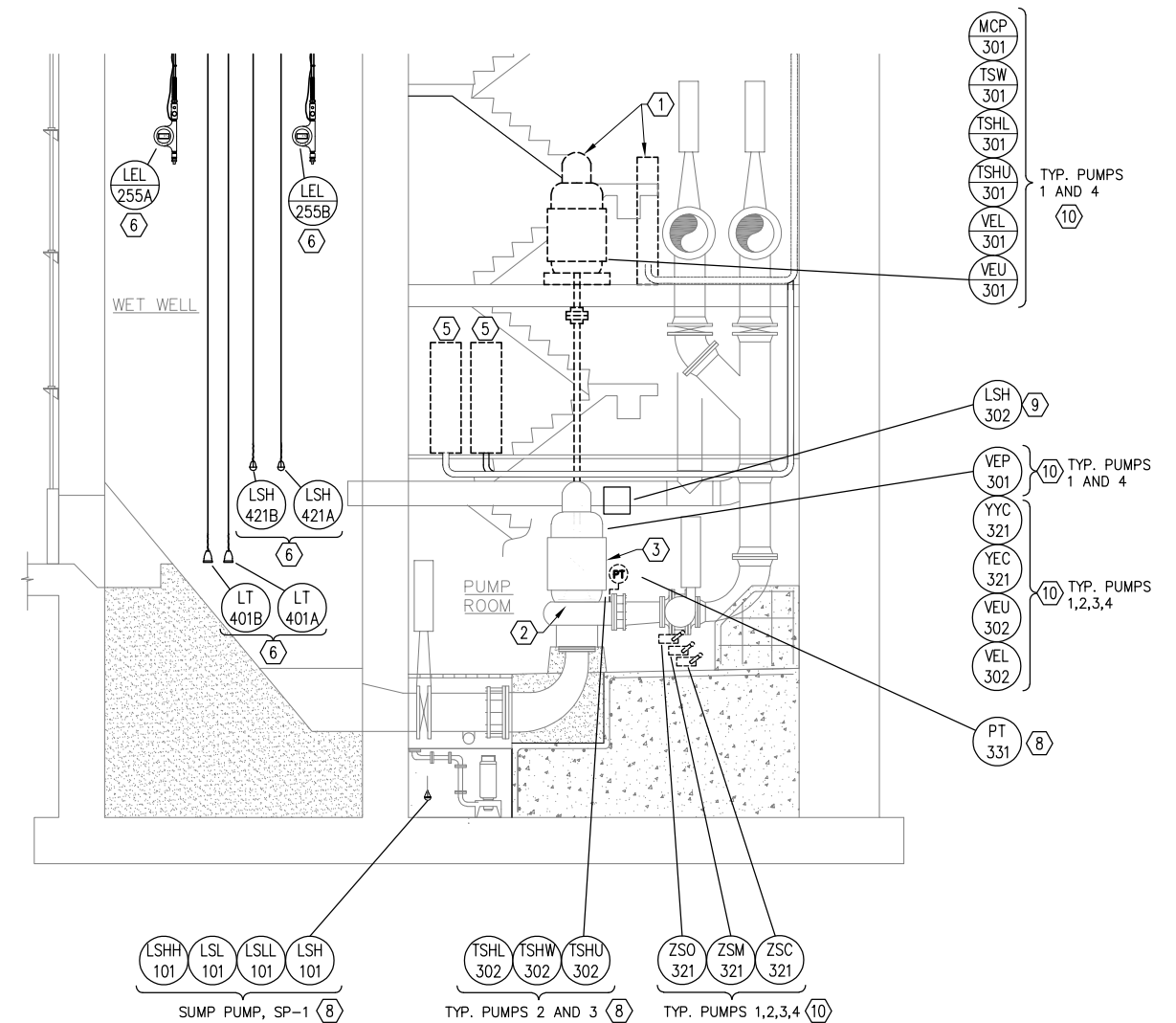
1 ELECTRICAL DEMOLITION PLAN - MOTOR ROOM
E3.2 SCALE: 1/4" = 1'-0"
0 4' 8'



2 ELECTRICAL DEMOLITION PLAN - PUMP ROOM
E3.2 SCALE: 1/4" = 1'-0"
0 4' 8'

SHEET NOTES

- ① PUMPS #1 AND #4: DEMOLISH MOTORS AND ALL ASSOCIATED EQUIPMENT, CONDUITS AND CONDUCTORS.
- ② PUMP BODIES #1 AND #4 TO BE DEMOLISHED.
- ③ PUMPS #2 AND #3 TO REMOVED AND REINSTALLED. REMOVE CONDUITS AND CONDUCTORS FOR MCC REPLACEMENT.
- ④ DUPLEX 'PLANT AIR' AIR COMPRESSOR AND STARTERS TO REMAIN.
- ⑤ PUMPS #2 AND #3 DISCONNECTS TO BE DEMOLISHED.
- ⑥ REMOVE INSTRUMENTS INDICATED. INSTRUMENTS TO BE REINSTALLED AFTER WET WELL WORK IS COMPLETE.
- ⑦ HMI PANEL TO BE REPLACED. SEE NEW WORK PLAN ON SHEET E3.4.
- ⑧ DISCONNECT AND RECONNECT INSTRUMENTS INDICATED.
- ⑨ PUMPS #2 AND #3: SEAL-FAIL CONTROL PANEL AND ASSOCIATED EQUIPMENT TO REMAIN AND BE DISCONNECTED/RE-CONNECTED FOR EQUIPMENT REPLACEMENT.
- ⑩ DEMOLISH INSTRUMENTS INDICATED.



3 ELECTRICAL DEMOLITION - SECTION
E3.2 SCALE: 1/4" = 1'-0"
0 4' 8'

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.		HORIZ SCALE: 1"=20'		VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATE	DESCRIPTION	BY	DATE	DESCRIPTION	BY	DATE	DESCRIPTION	BY
BASE	---	VLR	---	TELEPHONE	---	---	---	---	---	---	---
TOPOGRAPHY	---	---	---	ELECTRIC	---	---	---	---	---	---	---
PROFILE	---	---	---	CABLE TV	---	---	---	---	---	---	---
SANITARY SEWER	---	---	---	TRAFFIC SIGNAL	---	---	---	---	---	---	---
STORM SEWER	---	---	---	DESIGN	---	---	---	---	---	---	---
WATER	---	---	---	QUANTITIES	---	---	---	---	---	---	---
GAS	---	---	---	MUN. FINAL CHECK	---	---	---	---	---	---	---
PLAN CHECK						REVISIONS					

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

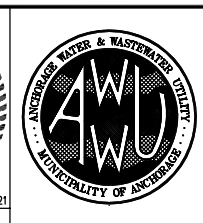
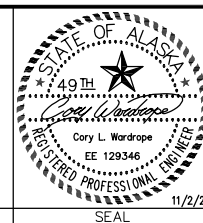
1. DATA PROVIDED BY: _____
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CONTRACTOR: _____
BY: _____ TITLE: _____
DATE: _____

2. DATA TRANSFERRED BY: _____
COMPANY: _____
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WATER & WASTEWATER UTILITY

SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

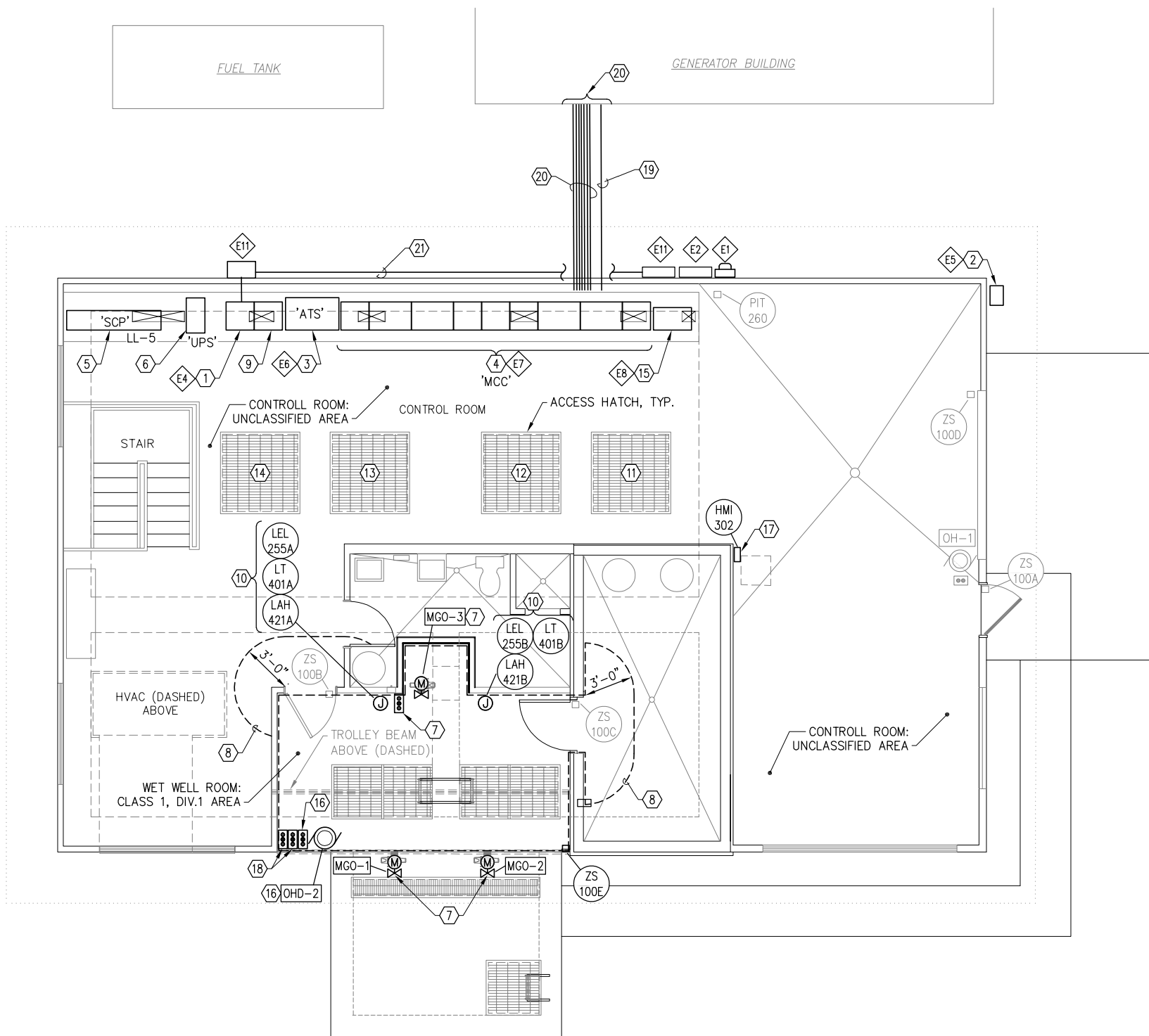
ELECTRICAL DEMOLITION PLANS AND SECTION

E3.2

HORIZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 55 of 104
VERT SCALE: NA	PROJ. ID.: WW:H7713		

FILE: p:\Projects\VE\pump_station_12\Dwg\Elec\E3.3 ELECTRICAL NEW WORK PLAN - CONTROL ROOM.dwg DATE: 11/2/2021 9:19 AM

AWWU PLAN SET NO. 10794



SHEET NOTES

- ① FACILITY MAIN CIRCUIT BREAKER, 'MAIN'. SEE POWER ONE-LINE, ON SHEET E1.1.
- ② EXISTING 120V SHUNT-TRIP DISCONNECT. CONNECT TO 'MAIN' AND GENERATOR MAIN CIRCUIT BREAKER FOR SHUNT-TRIP OPERATION.
- ③ AUTOMATIC TRANSFER SWITCH, 'ATS'. CONNECT TO NORMAL AND STANDBY SOURCES FOR A FUNCTIONAL SYSTEM. SEE POWER ONE-LINE ON SHEET E1.1.
- ④ MOTOR CONTROL CENTER, 'MCC': RECONNECT ALL EXISTING EQUIPMENT TO NEW MCC. SEE POWER ONE-LINE ON SHEET E1.1.
- ⑤ SCADA CONTROL PANEL 'SCP'. RECONNECT ALL EXISTING EQUIPMENT FOR A FUNCTIONAL SYSTEM. SEE SHEETS E5.1 - E5.13.
- ⑥ DC UNINTERRUPTIBLE POWER SUPPLY, 'UPS'. SEE SHEET E5.2 AND SPECIFICATIONS.
- ⑦ CLASS 1, DIV. 1, RATED MOTORIZED GATE OPERATOR. PROVIDE NEW CONTROL STATION FOR MANUAL OPERATION FROM BUILDING INTERIOR.
- ⑧ A CLASS 1, DIV. 2, AREA EXISTS WITHIN 3' OF OPENINGS TO CLASS 1, DIV. 1 AREAS.
- ⑨ EXISTING THRU-SLAB BLOCKOUT/CORED HOLES, TYP; FIELD VERIFY.
- ⑩ REINSTALL INSTRUMENTS TO WET WELL. SEE DETAIL 3, SHEET E3.4.
- ⑪ PUMP P-1 BELOW ACCESS GRATE AT PUMP LEVEL. SEE SHEET E3.4 FOR DETAILS.
- ⑫ PUMP P-2 BELOW ACCESS GRATE AT PUMP LEVEL. SEE SHEET E3.4 FOR DETAILS.
- ⑬ PUMP P-3 BELOW ACCESS GRATE AT PUMP LEVEL. SEE SHEET E3.4 FOR DETAILS.
- ⑭ PUMP P-4 BELOW ACCESS GRATE AT PUMP LEVEL. SEE SHEET E3.4 FOR DETAILS.
- ⑮ ACTIVE HARMONIC FILTER; SEE POWER ONE-LINE, SHEET E1.1, AND SPECIFICATIONS.
- ⑯ CLASS 1, DIV. 1 RATED OVERHEAD DOOR OPERATOR. PROVIDE CONTROL STATION FOR MANUAL OPERATION.
- ⑰ NEW HMI PANEL (HMI-2). SEE SHEET E5.1 AND SPECIFICATIONS FOR DETAILS.
- ⑱ NEW CLASS 1, DIV. 1 RATED GATE OPERATION CONTROL STATIONS. PROVIDE NEW CONTROL CONDUIT AND WIRING FROM STATION TO EXISTING OPERATOR.
- ⑲ PROVIDE NEW GENERATOR FEEDER FROM ATS TO EXISTING GENERATOR MAIN CIRCUIT BREAKER. SEE POWER ONE-LINE ON SHEET E1.1 FOR DETAILS.
- ⑳ PROVIDE NEW CONDUIT/CONDUCTORS TO ALL EXISTING POWER AND SIGNAL CONDUITS/CONDUCTORS FROM LOADS/CONNECTIONS WITHIN THE GENERATOR BUILDING TO THE NEW SWITCHGEAR AND SCADA CONTROL PANEL 'SCP'.
- ㉑ ROUTE SERVICE ENTRANCE CONDUITS ALONG EXTERIOR BUILDING WALL ABOVE GRADE. SECURE CONDUITS WITH CONNECTIONS TO BUILDING STRUCTURAL MEMBERS. SEE POWER ONE-LINE ON SHEET E1.1 FOR CIRCUIT DETAILS.

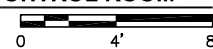
ⓔ# SEE SHEET E1.1 FOR ELECTRICAL EQUIPMENT SCHEDULE.

ⓧⓎ SEE SHEETS E4.0 - E4.1 FOR INSTRUMENT CONNECTION SCHEDULE.

EQUIPMENT CONNECTION SCHEDULE

TAG ID	LOAD					CIRCUIT SIZE	NOTES
	KVA	HP	FLA	V	PH		
MGO-1	-	1/2	1.1	480	3	SEE POWER ONE-LINE SHEET E1.1	
MGO-2	-	1/2	1.1	480	3	SEE POWER ONE-LINE SHEET E1.1	
MGO-3	-	1/2	1.1	480	3	SEE POWER ONE-LINE SHEET E1.1	
P-1	-	200	240	480	3	SEE POWER ONE-LINE SHEET E1.1	
P-2	-	200	240	480	3	SEE POWER ONE-LINE SHEET E1.1	
P-3	-	200	240	480	3	SEE POWER ONE-LINE SHEET E1.1	
P-4	-	200	240	480	3	SEE POWER ONE-LINE SHEET E1.1	
PP-1	-	1-1/2	10	240	1	3/4"C, 2#12 (2H), 1#12 (G)	
OHD-2	-	3/4	-	480	3	SEE POWER ONE-LINE SHEET E1.1	

1 ELECTRICAL NEW WORK PLAN - CONTROL ROOM
E3.3 SCALE: 1/4" = 1'-0"



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.		REVISIONS	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DATE	DESCRIPTION	BY	DATE	
BASE	---	VLR	---	---	---				
TOPOGRAPHY	---	---	---	---	---				
PROFILE	---	---	---	---	---				
SANITARY SEWER	---	---	---	---	---				
STORM SEWER	---	---	---	---	---				
WATER	---	---	---	---	---				
GAS	---	---	---	---	---				
PLAN CHECK									

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

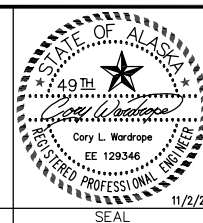
1. DATA PROVIDED BY: _____
 This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
 CONTRACTOR: _____
 BY: _____ TITLE: _____
 DATE: _____

2. DATA TRANSFERRED BY: _____
 COMPANY: _____
 DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
 DATA TRANSFER CHECKED BY: _____
 COMPANY: _____
 BY: _____ TITLE: _____
 DATE: _____

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 WATER & WASTEWATER UTILITY

SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

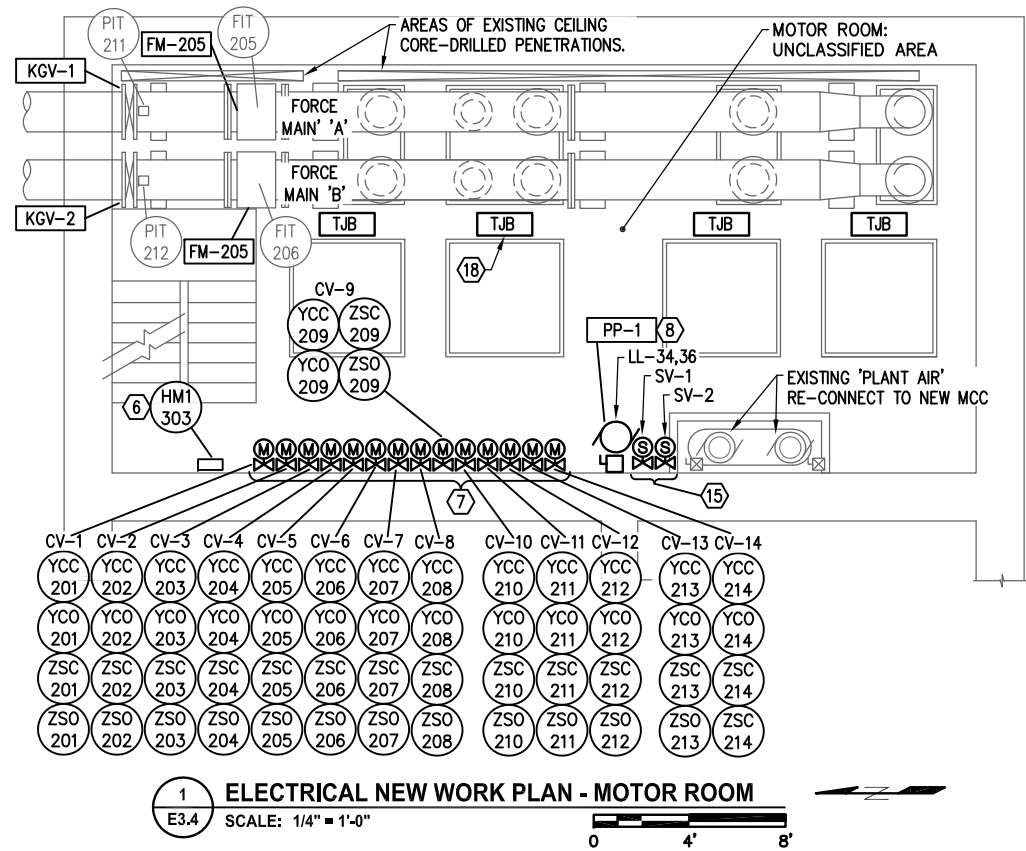
ELECTRICAL NEW WORK PLAN - CONTROL ROOM

E3.3

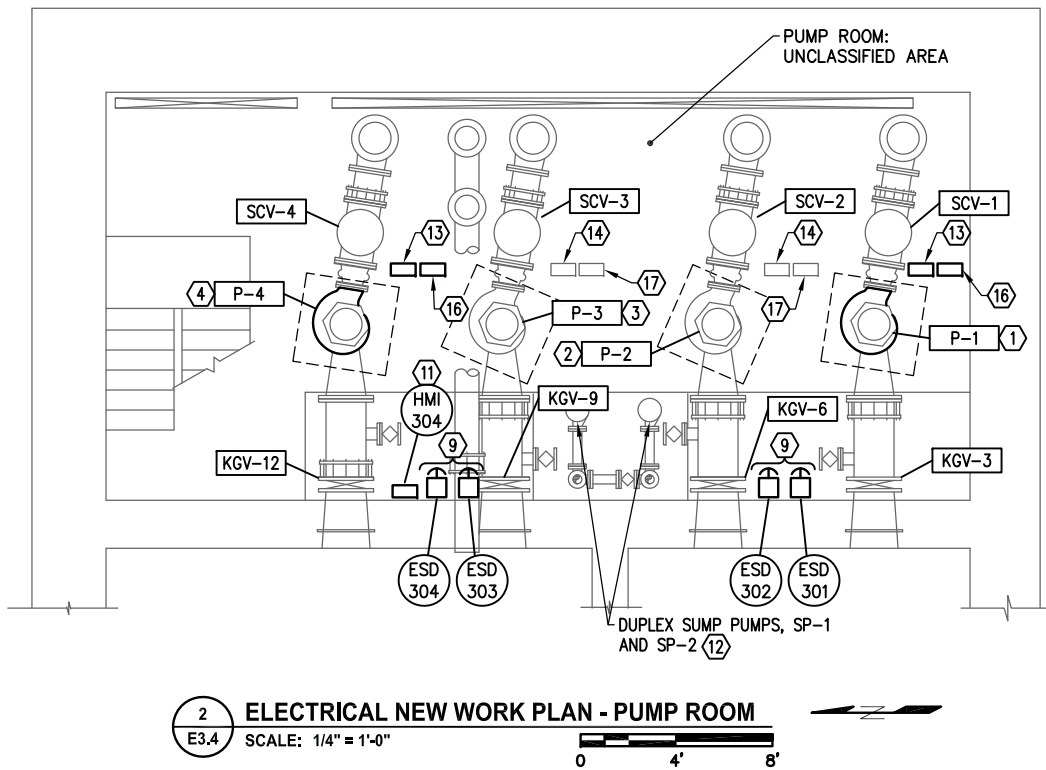
HORIZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 56 of 104
 VERT SCALE: NA
 PROJ. ID: WW:H7713

FILE: p:\Projects\VEI\pump_station_12\Dwg\Elec\E3.4 ELECTRICAL NEW WORK PLANS AND SECTION.dwg DATE: 5/12/2022 9:51 AM

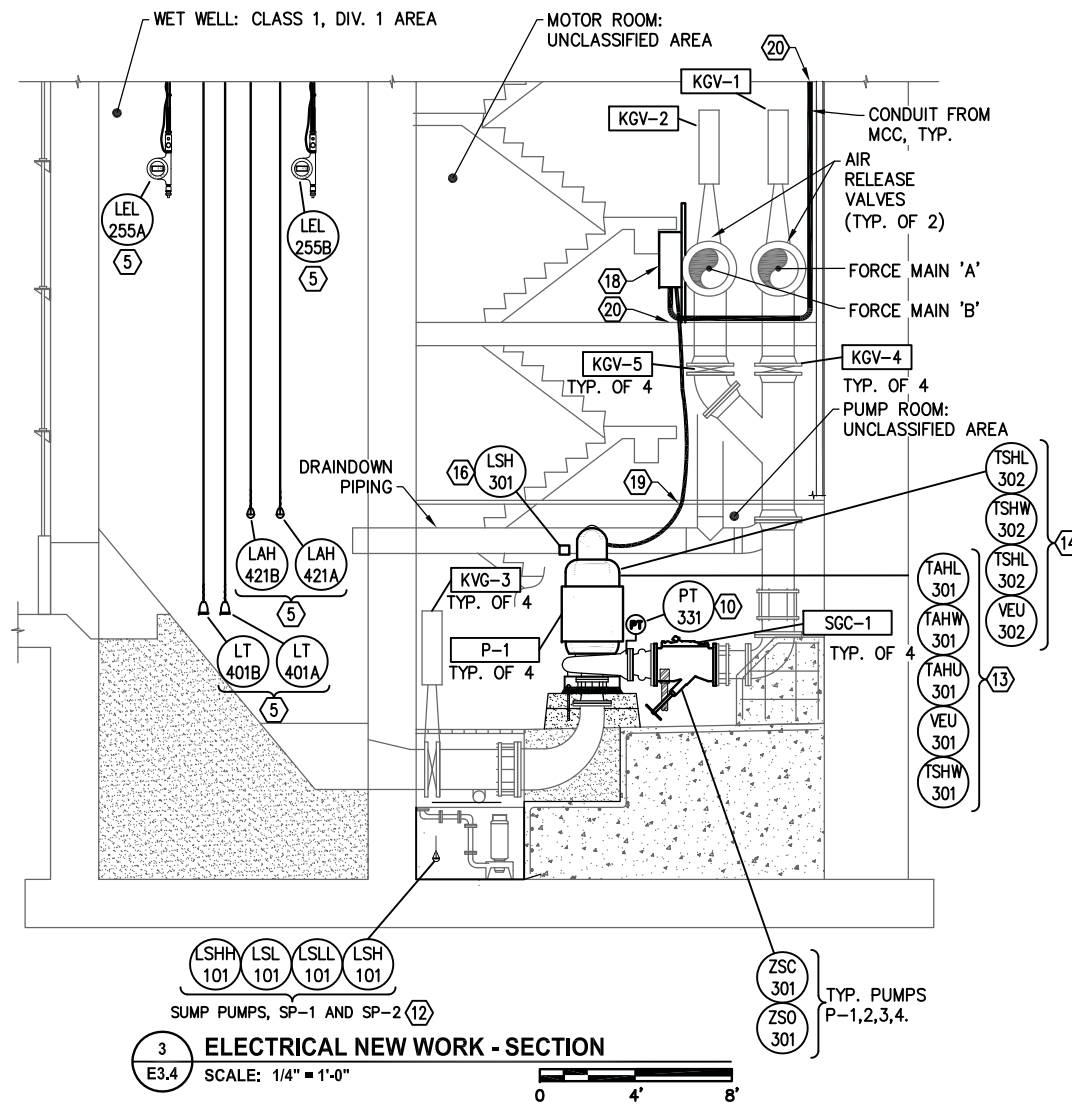
AWWU PLAN SET NO. 10794



1 ELECTRICAL NEW WORK PLAN - MOTOR ROOM
E3.4 SCALE: 1/4" = 1'-0"



2 ELECTRICAL NEW WORK PLAN - PUMP ROOM
E3.4 SCALE: 1/4" = 1'-0"



3 ELECTRICAL NEW WORK - SECTION
E3.4 SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES

1. THIS SHEET DEPICTS NEMA 4X RATED INSTALLATION AREAS UNLESS OTHERWISE NOTED.

SHEET NOTES

- 1 NEW PUMP P-1. SEE EQUIPMENT CONNECTION SCHEDULE ON E3.3.
 - 2 EXISTING PUMP P-2. SEE EQUIPMENT CONNECTION SCHEDULE ON E3.3.
 - 3 EXISTING PUMP P-3. SEE EQUIPMENT CONNECTION SCHEDULE ON E3.3.
 - 4 NEW PUMP P-4. SEE EQUIPMENT CONNECTION SCHEDULE ON E3.3.
 - 5 REINSTALL WET WELL INSTRUMENTS INDICATED.
 - 6 NEW HMI PANEL (HMI-3). SEE SHEET E5.1 AND SPECIFICATIONS FOR DETAILS.
 - 7 NEW MOTORIZED CONTROL VALVES. SEE SHEETS P1.0, E5.6 AND MECHANICAL FOR DETAILS.
 - 8 NEW STANDBY PRESSURE PUMP, PP-1. SEE DETAIL 1/E4.2 AND MECHANICAL.
 - 9 PUMP EMERGENCY SHUTDOWN SWITCH.
 - 10 RECONNECT EXISTING PRESSURE TRANSMITTERS/EQUIPMENT, CONDUIT, CABLING AND UNISTRUT SUPPORT STRUCTURES AS REQUIRED FOR EACH PUMP.
 - 11 NEW HMI PANEL (HMI-4). SEE SHEET E5.1 AND SPECIFICATIONS FOR DETAILS.
 - 12 EXISTING PUMP LEVEL SUMP PUMPS (SP-1 AND SP-2). PROVIDE POWER AND SCADA CONTROL PANEL RECONNECTIONS.
 - 13 PUMPS P-1 AND P-4: PROVIDE NEW NEMA 4X TERMINAL JBOX, TEMPERATURE SENSOR CIRCUITS AND VIBRATION ELEMENT CIRCUITS. ROUTE NEW CIRCUITS BACK TO NEW SCADA CONTROL PANEL 'SCP'.
 - 14 PUMPS P-2 AND P-3: RE-CONNECT EXISTING TEMPERATURE SWITCH CIRCUITS; PROVIDE NEW VIBRATION ELEMENT CIRCUITS. ROUTE ALL CIRCUITS BACK TO NEW SCADA CONTROL PANEL 'SCP'.
 - 15 SOLENOID VALVES SV-1 AND SV-2 CONTROLLED THROUGH PRESSURE PUMP PP-1. SEE SCHEMATIC DETAILS 1/E4.2.
 - 16 NEW SEAL-FAIL RELAY CONTROL PANEL. PUMPS P-1 AND P-4: PROVIDE NEW PANEL, CONDUIT/CABLING, UNISTRUT SUPPORT AND CONNECTIONS.
 - 17 EXISTING SEAL-FAIL RELAY CONTROL PANEL FOR PUMPS P-2 AND P-3: RECONNECT EXISTING.
 - 18 NEW TERMINAL JUNCTION BOX (TJB) FOR MOTOR CABLE CONNECTIONS, NEMA 4X SS. PROVIDE PROPERLY SIZED JBOX, UL LISTED AS TERMINAL BOX, WITH FACTORY INSTALLED, RATED LUGS. MOUNT BOXES ON UNISTRUT SUPPORT STRUCTURE (TYP. OF 4).
 - 19 NEW PUMP MOTOR VFD RATED CABLE (TYP. OF 4). ROUTE CABLE USING UNISTRUT STRUCTURE TO SUPPORT CABLE THROUGHOUT IT'S LENGTH TO THE TERMINAL JUNCTION BOX (TJB). REPLACE EXISTING PUMP (P-2,3) CABLES WITH NEW VFD RATED CABLE OF ADEQUATE LENGTH TO REACH THE TERMINAL JBOX.
 - 20 PROVIDE CORE-DRILL PENETRATIONS OF FLOOR TO ACCOMMODATE CABLE OR CONDUIT ROUTING.
- E# SEE SHEET E1.1 FOR ELECTRICAL EQUIPMENT SCHEDULE.
 XX YY SEE SHEETS E4.0 - E4.1 FOR INSTRUMENT CONNECTION SCHEDULE.
 XX-X SEE SHEETS E3.3 FOR EQUIPMENT SCHEDULE WITH ELECTRICAL CONNECTIONS.

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.		REVISIONS	
DATE	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	---	---	VLR	---	---	---	---	---	---
TOPOGRAPHY	---	---	---	---	---	---	---	---	---
PROFILE	---	---	---	---	---	---	---	---	---
SANITARY SEWER	---	---	---	---	---	---	---	---	---
STORM SEWER	---	---	---	---	---	---	---	---	---
WATER	---	---	---	---	---	---	---	---	---
GAS	---	---	---	---	---	---	---	---	---
PLAN CHECK									

RECORD DRAWING		Note: To be filled out on original drawings upon project completion.	
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COMPANY: ---		DATE: ---	
DATE: ---			

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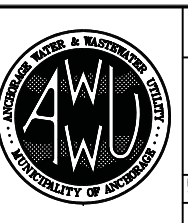
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(907) 276-7933
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CONSULTANT

STATE OF ALASKA
49th
Cary L. Wardrop
EE 129346
REGISTERED PROFESSIONAL ENGINEER
5/12/22

SEAL



MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

ELECTRICAL NEW WORK PLANS AND SECTION

E3.4

HORIZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 57 of 104
VERT SCALE: NA
PROJ. ID.: WW:H7713

INSTRUMENT CONNECTION SCHEDULE					
TAG ID	SIGNAL CIRCUIT SIZE	DESTINATION	POWER CIRCUIT SIZE (IF REQUIRED)	DESTINATION	NOTES
SD-1,SD-2	3/4"C, 2#14 (2SIG), 1#14(G)	SCADA	3/4"C, 2#14 (+24V,-0V), 1#14(G)	SCADA	1
SD-3,SD-4	3/4"C, 2#14 (2SIG), 1#14(G)	SCADA	3/4"C, 2#14 (+24V,-0V), 1#14(G)	SCADA	1
SD-5,SD-6	3/4"C, 2#14 (2SIG), 1#14(G)	SCADA	3/4"C, 2#14 (+24V,-0V), 1#14(G)	SCADA	1
SD-7,SD-8	3/4"C, 2#14 (2SIG), 1#14(G)	SCADA	3/4"C, 2#14 (+24V,-0V), 1#14(G)	SCADA	1
ZS-100A	3/4"C, 2#14 (2SIG), 1#14(G)	SCADA			1
ZS-100B	3/4"C, 2#14 (2SIG), 1#14(G)	SCADA			1
ZS-100C	3/4"C, 2#14 (2SIG), 1#14(G)	SCADA			1
ZS-100D	3/4"C, 2#14 (2SIG), 1#14(G)	SCADA			1
ZS-100E	3/4"C, 2#14 (2SIG), 1#14(G)	SCADA			
LSHH-101	3/4"C, 2#14 (2SIG), 1#14(G)	SCADA			1
LEL-104A	3/4"C, 1PR#18 TWSH	SCADA	3/4"C, 2#14 (+24V,-0V), 1#14(G)	SCADA	1
LEL-104B	3/4"C, 1PR#18 TWSH	SCADA	3/4"C, 2#14 (+24V,-0V), 1#14(G)	SCADA	1
LSH-105A	3/4"C, 2#14 (2SIG), 1#14(G)	SCADA			1
LSH-105B	3/4"C, 2#14 (2SIG), 1#14(G)	SCADA			1
LSSL-106	3/4"C, 2#14 (2SIG), 1#14(G)	SCADA			1
LSH-107A TSH-107A	3/4"C, 4#14 (4SIG), 1#14(G)	SCADA	3/4"C, 2#14 (+24V,-0V), 1#14(G)	SCADA	1,2
LSH-107B TSH-107B	3/4"C, 4#14 (4SIG), 1#14(G)	SCADA	3/4"C, 2#14 (+24V,-0V), 1#14(G)	SCADA	1,2
HS-108A HS-108H	3/4"C, 4#14 (4SIG), 1#14(G)	SCADA			1
ZSE-113 ZSN-113	3/4"C, 4#14 (4SIG), 1#14(G)	SCADA			
YA-115 YL-115 ZSHB-115 EDCA-116	1"C, 8#14 (8SIG), 1#14(G)	SCADA			1
EDCT-116	1PR#18 TWSH	SCADA			
TT-120	3/4"C, 1PR#18 TWSH	SCADA			1
TT-150	3/4"C, 1PR#18 TWSH	SCADA			1
ZS-130C	3/4"C, 2#14 (2SIG), 1#14(G)	SCADA			1
ZS-130D	3/4"C, 2#14 (2SIG), 1#14(G)	SCADA			1
LEL-134A	3/4"C, 1PR#18 TWSH	SCADA	3/4"C, 2#14 (+24V,-0V), 1#14(G)	SCADA	1
LEL-134B	3/4"C, 1PR#18 TWSH	SCADA	3/4"C, 2#14 (+24V,-0V), 1#14(G)	SCADA	1
PSL-166	3/4"C, 2#14 (2SIG), 1#14 (G)	SCADA			

NOTE 1. EXISTING INSTRUMENT(S) TO BE RECONNECTED.
NOTE 2. INSTRUMENT TAG ASSUMED, FIELD VERIFY.

INSTRUMENT CONNECTION SCHEDULE					
TAG ID	SIGNAL CIRCUIT SIZE	DESTINATION	POWER CIRCUIT SIZE (IF REQUIRED)	DESTINATION	NOTES
YCC-201 YCO-201 ZSC-201 ZSO-201	3/4"C, 6#14 (4SIG,2COM), 1#14(G)	SCADA	2#14 (+24V,-0V), 1#14(G)	SCADA	
YCC-202 YCO-202 ZSC-202 ZSO-202	3/4"C, 6#14 (4SIG,2COM), 1#14(G)	SCADA	2#14 (+24V,-0V), 1#14(G)	SCADA	
YCC-203 YCO-203 ZSC-203 ZSO-203	3/4"C, 6#14 (4SIG,2COM), 1#14(G)	SCADA	2#14 (+24V,-0V), 1#14(G)	SCADA	
YCC-204 YCO-204 ZSC-204 ZSO-204	3/4"C, 6#14 (4SIG,2COM), 1#14(G)	SCADA	2#14 (+24V,-0V), 1#14(G)	SCADA	
YCC-205 YCO-205 ZSC-205 ZSO-205	3/4"C, 6#14 (4SIG,2COM), 1#14(G)	SCADA	2#14 (+24V,-0V), 1#14(G)	SCADA	
YCC-206 YCO-206 ZSC-206 ZSO-206	3/4"C, 6#14 (4SIG,2COM), 1#14(G)	SCADA	2#14 (+24V,-0V), 1#14(G)	SCADA	
YCC-207 YCO-207 ZSC-207 ZSO-207	3/4"C, 6#14 (4SIG,2COM), 1#14(G)	SCADA	2#14 (+24V,-0V), 1#14(G)	SCADA	
YCC-208 YCO-208 ZSC-208 ZSO-208	3/4"C, 6#14 (4SIG,2COM), 1#14(G)	SCADA	2#14 (+24V,-0V), 1#14(G)	SCADA	
YCC-209 YCO-209 ZSC-209 ZSO-209	3/4"C, 6#14 (4SIG,2COM), 1#14(G)	SCADA	2#14 (+24V,-0V), 1#14(G)	SCADA	
YCC-210 YCO-210 ZSC-210 ZSO-210	3/4"C, 6#14 (4SIG,2COM), 1#14(G)	SCADA	2#14 (+24V,-0V), 1#14(G)	SCADA	
YCC-211 YCO-211 ZSC-211 ZSO-211	3/4"C, 6#14 (4SIG,2COM), 1#14(G)	SCADA	2#14 (+24V,-0V), 1#14(G)	SCADA	
YCC-212 YCO-212 ZSC-212 ZSO-212	3/4"C, 6#14 (4SIG,2COM), 1#14(G)	SCADA	2#14 (+24V,-0V), 1#14(G)	SCADA	
YCC-213 YCO-213 ZSC-213 ZSO-213	3/4"C, 6#14 (4SIG,2COM), 1#14(G)	SCADA	2#14 (+24V,-0V), 1#14(G)	SCADA	
YCC-214 YCO-214 ZSC-214 ZSO-214	3/4"C, 6#14 (4SIG,2COM), 1#14(G)	SCADA	2#14 (+24V,-0V), 1#14(G)	SCADA	
FIT-205	3/4"C, 1PR#18 TWSH	SCADA	3/4"C, 2#14 (+24V,-0V), 1#14(G)	SCADA	1
FIT-206	3/4"C, 1PR#18 TWSH	SCADA	3/4"C, 2#14 (+24V,-0V), 1#14(G)	SCADA	1
PT-211	3/4"C, 1PR#18 TWSH	SCADA			1
PT-212	3/4"C, 1PR#18 TWSH	SCADA			1
PIT-260	3/4"C, 1PR#18 TWSH	SCADA			1

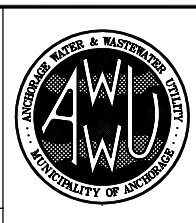
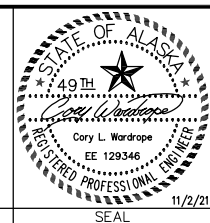
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NOTE 2. INSTRUMENT TAG ASSUMED, FIELD VERIFY.

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE HORZ SCALE: 1"=20' VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	---	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

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MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY			
SCHEDULE A			
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB			
INSTRUMENT CONNECTION SCHEDULE			
E4.0			
HORZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 58 of 104
PROJ. ID.: WW:H7713			

INSTRUMENT CONNECTION SCHEDULE

TAG ID	SIGNAL CIRCUIT SIZE	DESTINATION	POWER CIRCUIT SIZE (IF REQUIRED)	DESTINATION	NOTES
LSH-301	3/4"C, 2#14 (2SIG), 1#14 (G)	SCADA	3/4"C, 3#12 (H, N, G)	PANEL 'LL'	
TAHL-301 TAHU-301 TAHW-301	1-1/4"C, (3) 3C#16 TWSH	SCADA			
TSHW-301	3/4"C, 2#14 (2SIG), 1#14 (G)	SCADA			
VEU-301	3/4"C, 1PR#18 TWSH	SCADA			
ZSC-301 ZSO-301	3/4"C, 3#14 (2SIG,COM), 1#14(G)	SCADA			
LSH-302	3/4"C, 2#14 (2SIG), 1#14 (G)	SCADA	3/4"C, 3#12 (H, N, G)	PANEL 'LL'	1
TSHL-302 TSHU-302 TSHW-302	3/4"C, 6#14 (6SIG), 1#14 (G)	SCADA			1
VEU-302	3/4"C, 1PR#18 TWSH	SCADA			
ZSC-302 ZSO-302	3/4"C, 3#14 (2SIG,COM), 1#14(G)	SCADA			
LSH-303	3/4"C, 2#14 (2SIG), 1#14 (G)	SCADA	3/4"C, 3#12 (H, N, G)	PANEL 'LL'	1
TSHL-303 TSHU-303 TSHW-303	3/4"C, 6#14 (6SIG), 1#14 (G)	SCADA			1
VEU-303	3/4"C, 1PR#18 TWSH	SCADA			
ZSC-303 ZSO-303	3/4"C, 3#14 (2SIG,COM), 1#14(G)	SCADA			
LSH-304	3/4"C, 2#14 (2SIG), 1#14 (G)	SCADA	3/4"C, 3#12 (H, N, G)	PANEL 'LL'	
TAHL-304 TAHU-304 TAHW-304	1-1/4"C, (3) 3C#16 TWSH	SCADA			
TSHW-304	3/4"C, 2#14 (2SIG), 1#14 (G)	SCADA			
VEU-304	3/4"C, 1PR#18 TWSH	SCADA			
ZSC-304 ZSO-304	3/4"C, 3#14 (2SIG,COM), 1#14(G)	SCADA			
PIT-331	3/4"C, 1PR#18 TWSH	SCADA			1
PIT-332	3/4"C, 1PR#18 TWSH	SCADA			1
PIT-333	3/4"C, 1PR#18 TWSH	SCADA			1
PIT-334	3/4"C, 1PR#18 TWSH	SCADA			1
LT-401	3/4"C, 1PR#18 TWSH	SCADA			1
LT-402	3/4"C, 1PR#18 TWSH	SCADA			1

NOTE 1. EXISTING INSTRUMENT(S) TO BE RECONNECTED.
NOTE 2. INSTRUMENT TAG ASSUMED, FIELD VERIFY.

DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	VLR	TELEPHONE							
TOPOGRAPHY		ELECTRIC							
PROFILE		CABLE TV							
SANITARY SEWER		TRAFFIC SIGNAL							
STORM SEWER		DESIGN							
WATER		QUANTITIES							
GAS		MUN. FINAL CHECK							
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

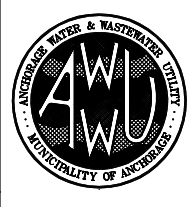
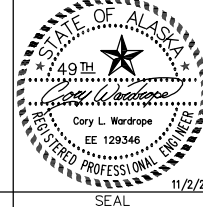
1. DATA PROVIDED BY: _____
This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
CONTRACTOR: _____
BY: _____ TITLE: _____
DATE: _____

2. DATA TRANSFERRED BY: _____
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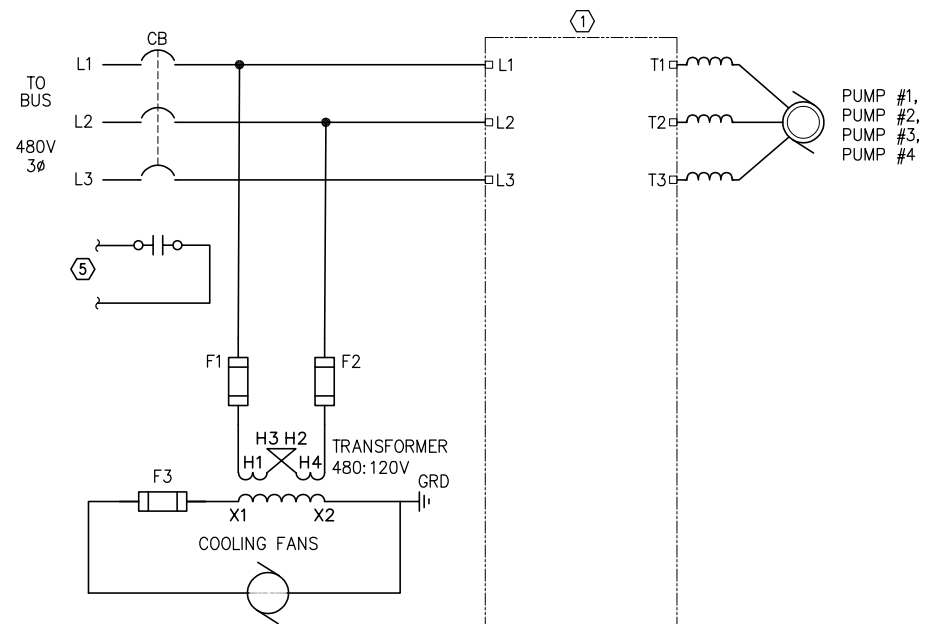
SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

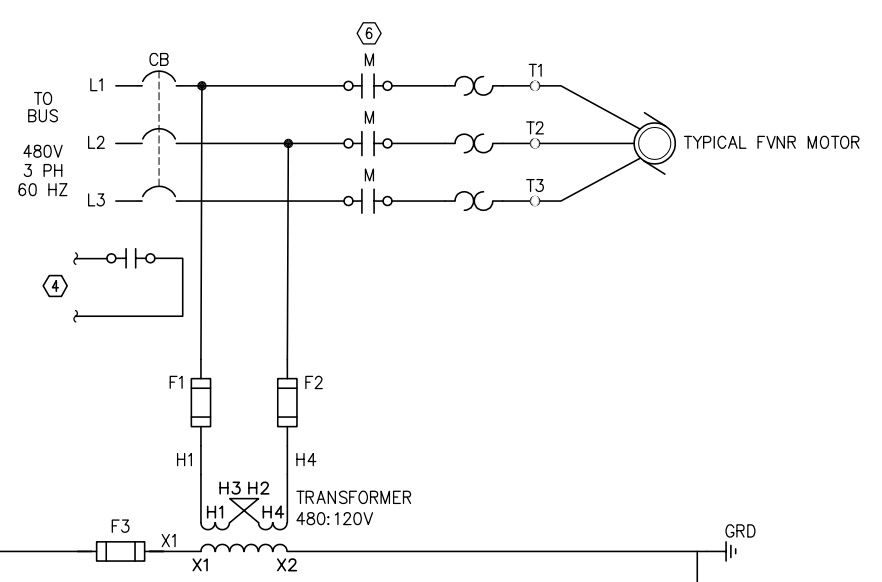
INSTRUMENT CONNECTION SCHEDULE

E4.1

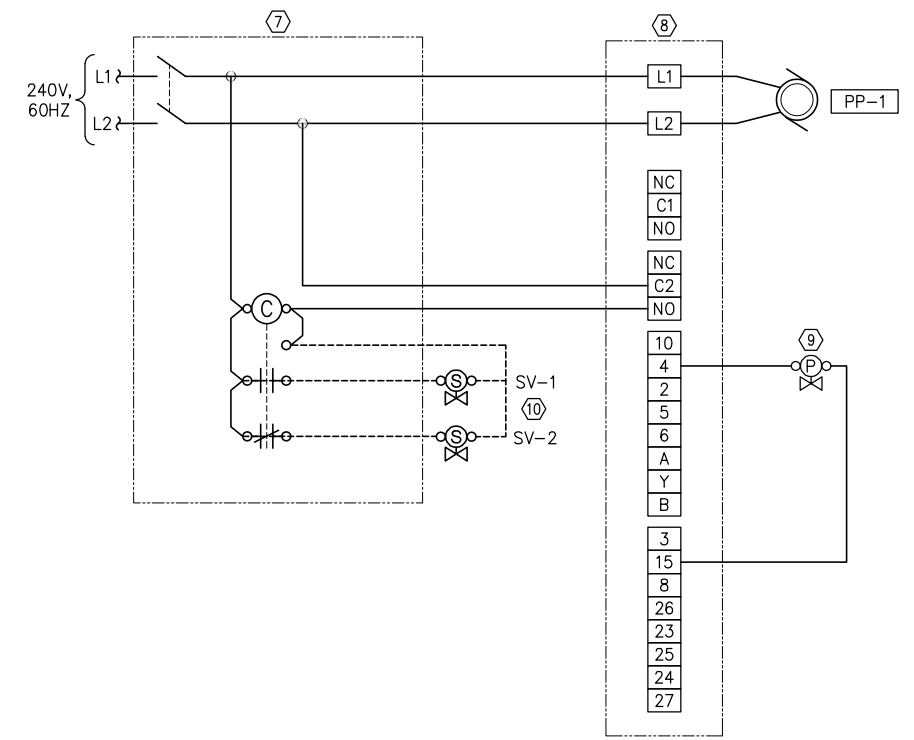
HORIZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 59 of 104
VERT SCALE: NA
PROJ. ID.: WW:H7713



1 TYPICAL VFD ELEMENTARY DIAGRAM
E4.2 SCALE: NTS



2 TYPICAL FULL-VOLTAGE NON-REVERSING MOTOR STARTER ELEMENTARY DIAGRAM
E4.2 SCALE: NTS



3 PRESSURE PUMP PP-1 SCHEMATIC
E4.2 SCALE: NTS

- SHEET NOTES**
- ① VARIABLE FREQUENCY DRIVE.
 - ② ALLEN BRADLEY E300 ELECTRONIC OVERLOAD RELAY WITH ETHERNET COMMUNICATION MODULE.
 - ③ MOTOR WINDING THERMOSTAT(S) WHERE APPLICABLE.
 - ④ CIRCUIT BREAKER TRIP INDICATION TO OL-1.
 - ⑤ CIRCUIT BREAKER TRIP INDICATION TO SCADA.
 - ⑥ ACROSS-THE-LINE MOTOR STARTER.
 - ⑦ 30A, 240V, NEMA 4X CONTACTOR.
 - ⑧ PRESSURE PUMP PP-1 VFD UNIT.
 - ⑨ PRESSURE PUMP PP-1 PRESSURE SENSOR; WIRE PER MANUFACTURER'S INSTRUCTIONS.
 - ⑩ PRESSURE PUMP SYSTEM SOLENOID VALVES; SEE MECHANICAL DETAIL 1 SHEET M3.0.
 - ⑪ LEAKAGE DETECTION PROBES TO PUMP.
 - ⑫ LEAKAGE DETECTION RELAY PER MANUFACTURER. LOCATE RELAY IN NEMA 4X BOX ABOVE PUMP; SEE E3.4 FOR DETAILS.
 - ⑬ LEAKAGE DETECTION OUTPUT TO SCADA; SEE SHEET E5.5 FOR DETAILS.

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.		REVISIONS	
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			QUANTITIES						
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PLAN CHECK									

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213 W. FIREWEED LANE
ANCHORAGE, AK 99503
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CONSULTANT

11/2/21
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WATER & WASTEWATER UTILITY

SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

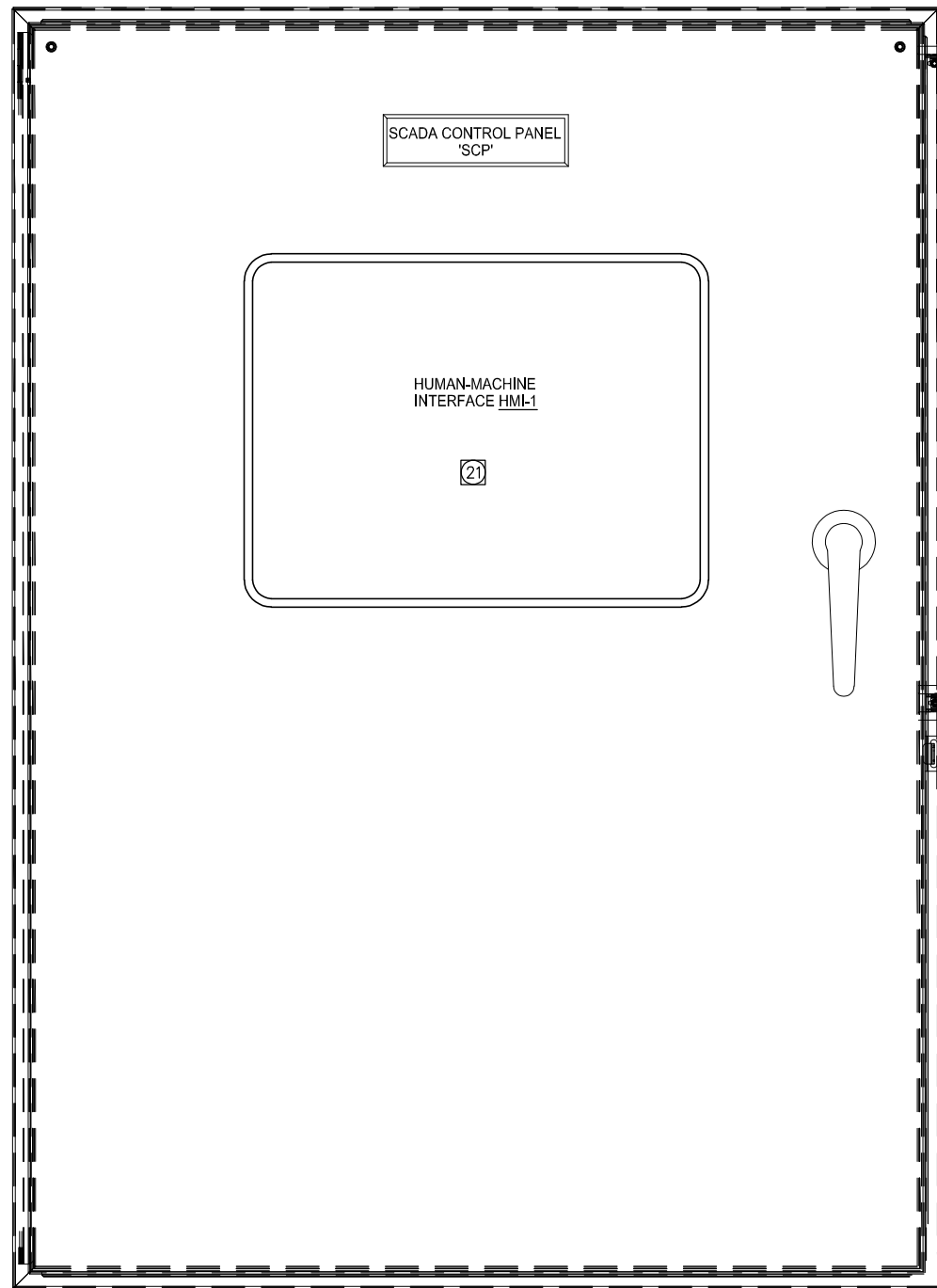
ELECTRICAL SCHEMATICS

E4.2

HORIZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 60 of 104
VERT SCALE: NA	PROJ. ID.: WW:H7713		

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AWWU PLAN SET
NO. 10794



SCADA CONTROL PANEL, 'SCP'
FRONT PANEL VIEW

SEE SHEET E5.1 FOR COMPONENT DESCRIPTION

1 PLC PANEL LAYOUT AND FUNCTIONAL NARRATIVE
E5.0 SCALE: NTS

GENERAL FUNCTIONAL NARRATIVE

THE PUMP STATION 12 SCADA CONTROL PANEL (SCADA, SCP) SHALL CONTROL AND MONITOR THE OPERATION OF THE POWER DISTRIBUTION SYSTEM, PUMPS, EXHAUST FANS, COMPRESSORS, GATES AND VALVES, FACILITY INTRUSION AND FIRE DETECTION, AND VARIOUS PUMP STATION EQUIPMENT.

THE EXISTING STATION PROGRAMMING SHALL BE COPIED TO THE NEW PROCESSORS TO THE GREATEST EXTENT POSSIBLE: THE INTENT IS TO MINIMIZE PROGRAMMING RE-WORK AND FOR THE STATION TO OPERATE AS CURRENTLY PROGRAMMED, EXCEPT AS MODIFIED HEREIN.

PUMP OPERATION:

PUMPS P-1, P-2, P-3, AND P-4 ARE CONTROLLED BY SCADA THROUGH AN ETHERNET/IP INTERFACE IMBEDDED IN EACH PUMP'S RESPECTIVE VARIABLE FREQUENCY DRIVE (VFD). EACH PUMP IS EQUIPPED WITH HAND-OFF-AUTO CONTROLS AT THE VFD ENCLOSURE. EACH PUMP HAS THE FOLLOWING FAILURE/FAULT ALARMS WHICH WILL SHUT DOWN THE PUMP: OVERCURRENT, OVER/UNDER VOLTAGE, PHASE LOSS, SEAL-FAIL, HIGH TEMPERATURE (BEARINGS, WINDINGS); ADDITIONAL PUMPING SYSTEM FAULTS ARE DEFINED BELOW. THE PUMPS WILL BE CONTROLLED AS FOLLOWS:

- 1) IN HAND MODE:
 - A. THE PUMP WILL RUN CONTINUOUSLY (AT THE SPEED MANUALLY ENTERED INTO THE VFD'S KEYPAD) UNLESS A PUMP FAILURE/FAULT ALARM CONDITION OCCURS, IN WHICH CASE THE PUMP WILL SHUT DOWN.
 - B. WHEN THE PUMP IS RUNNING AND MANUALLY SWITCHED TO THE 'OFF' MODE, THE VFD WILL ENTER A PROGRAMMED VFD SHUTDOWN SEQUENCE: THE VFD WILL REDUCE PUMP SPEED FROM THE MANUAL SETPOINT DOWN TO 45 HZ OVER A 30 SECOND PERIOD (OPERATOR ADJUSTABLE 10-60 SECONDS), AND UPON REACHING 45 HZ THE PUMP WILL BE SHUT DOWN.
- 2) IN OFF MODE:
 - A. THE PUMP WILL NOT RUN.
- 3) IN AUTO MODE:
 - A. THE PUMPS WILL START IN A STAGED, LEAD-LAG1-LAG2-LAG3, PUMPING SEQUENCE BASED ON LIQUID LEVEL IN THE WET WELL(S), AS SENSED BY LEVEL TRANSMITTERS LT-401A (NORTH WET WELL) AND LT-401B (SOUTH WET WELL). INITIALLY, P-1 = LEAD; P-3 = LAG1; P-2 = LAG2; P-4 = LAG3.
 - B. AFTER A PUMPING CYCLE THE LEAD PUMP WILL BECOME LAG3, LAG1 BECOMES LEAD, LAG2 BECOMES LAG1, AND LAG3 BECOMES LAG2. PUMP LEAD/LAG SETTINGS SHALL BE OPERATOR ADJUSTABLE THROUGH EACH OF THE HUMAN-MACHINE INTERFACE (HMI) PANELS LOCATED THROUGHOUT THE STATION.
 - C. AS LIQUID LEVEL IN THE WET WELL(S) RISES ABOVE THE 'LEAD PUMP START' SETPOINT, SCADA WILL CALL THE LEAD PUMP TO START BASED ON A PROGRAMMED VFD START SEQUENCE
 1. THE PUMP WILL BE ACCELERATED TO 45 HZ WITHIN TWO (2) SECONDS (OPERATOR ADJUSTABLE 2-10 SECONDS) AND THEN ACCELERATED TO FULL SPEED (60 HZ) OVER A PERIOD OF EIGHT (8) SECONDS (OPERATOR ADJUSTABLE 5-60 SECONDS).
 2. AS LIQUID LEVEL IN THE WET WELL(S) IS PUMPED DOWN AND APPROACHES THE 'LEAD/LAG PUMP STOP' LEVEL SETPOINT, SCADA WILL COMMAND THE RUNNING PUMP(S) TO ENTER A PROGRAMMED VFD SHUTDOWN SEQUENCE: THE VFD WILL REDUCE PUMP SPEED FROM 60 HZ TO 45 HZ OVER A 30 SECOND PERIOD (OPERATOR ADJUSTABLE 10-60 SECONDS), AND UPON REACHING 45 HZ THE PUMP WILL BE SHUT DOWN.
 - D. WHEN THE PUMP IS RUNNING AND THE MODE SWITCH IS ADJUSTED TO THE 'OFF' POSITION, THE VFD WILL ENTER A PROGRAMMED VFD SHUTDOWN SEQUENCE: THE VFD WILL REDUCE PUMP SPEED FROM OPERATING TO 45 HZ OVER A 30 SECOND PERIOD (OPERATOR ADJUSTABLE 10-60 SECONDS), AND UPON REACHING 45 HZ THE PUMP WILL BE SHUT DOWN.
 - E. SHOULD THE LIQUID LEVEL IN THE WET WELL(S) CONTINUE TO RISE ABOVE THE 'LAG1 PUMP START LEVEL' THE ASSOCIATED LAG1 PUMP WILL BE COMMANDED BY SCADA TO START BASED ON A PROGRAMMED VFD START SEQUENCE AS DEFINED ABOVE. AS LIQUID LEVEL IN THE WET WELL(S) CONTINUE TO RISE ABOVE THE 'LAG2 PUMP START' AND 'LAG3 PUMP START' SETPOINTS, SCADA WILL COMMAND THE ASSOCIATED PUMP'S VFD TO START BASED ON A PROGRAMMED VFD START SEQUENCE AS DEFINED ABOVE. AS LIQUID LEVEL IN THE WET WELL(S) IS PUMPED DOWN TO THE 'LEAD/LAG PUMP STOP' SETPOINT, SCADA WILL COMMAND ALL VFD'S TO BEGIN THEIR PROGRAMMED VFD SHUTDOWN SEQUENCE AS DEFINED ABOVE.

KNIFE GATE VALVE OPERATIONS:

- 1) EACH PUMP IS EQUIPPED WITH THREE (3) PUMP ISOLATION KNIFE GATES: ONE (1) AT PUMP SUCTION AND TWO (2) AT PUMP DISCHARGE (ONE FOR EACH FORCEMAIN). THE KNIFE GATES ARE HYDRAULICALLY ACTUATED, AND MAY BE CONTROLLED THROUGH SCADA BY MEANS OF MOTORIZED CONTROL VALVES CV-1 THROUGH CV-12. MOTORIZED CONTROL VALVES CV-1 THROUGH CV-12 SHALL BE PROGRAMMED TO OPERATE IN GROUPS TO ISOLATE INDIVIDUAL PUMPS AND SHALL BE ACCESSIBLE TO STATION OPERATORS THROUGH THE HMI. ADDITIONALLY, EACH PUMP IS EQUIPPED WITH A DISCHARGE CHECK VALVE; THE CHECK VALVE IS A PASSIVE DEVICE BUT WILL SIGNAL OPEN AND CLOSED POSITION TO SCADA VIA ITS EXTERNAL, MECHANICALLY OPERATED POSITION SWITCH. AFTER A PUMP IS STOPPED, REGARDLESS OF PUMPING MODE, SHOULD THE CHECK VALVE NOT FULLY CLOSE, THE FOLLOWING SHALL OCCUR: THE ASSOCIATED PUMP SHALL BE LOCKED-OUT FROM OPERATION AND REMOVED FROM THE LEAD/LAG PUMPING CYCLE; ISOLATION KNIFE GATES SHALL BE ACTUATED TO ISOLATE THE RESPECTIVE PUMP; AN EMERGENCY CALL-OUT SHALL BE INITIATED OFF-SITE THROUGH SCADA.
- 2) EACH 20" FORCEMAIN IS EQUIPPED WITH A KNIFE GATE VALVE LOCATED ON THE MOTOR LEVEL, ONE FOR FORCEMAIN 'A' AND ONE FOR FORCEMAIN 'B'. THE TWO KNIFE GATES ARE HYDRAULICALLY ACTUATED, AND MAY BE CONTROLLED THROUGH SCADA BY MEANS OF MOTORIZED CONTROL VALVES CV-13 AND CV-14. SCADA CONTROL OF CV-13 AND CV-14 SHALL BE MADE ACCESSIBLE TO STATION OPERATORS THROUGH THE HMI, AND SHALL BE MADE REMOTELY ACCESSIBLE TO OFFSITE SCADA MONITORING PERSONNEL. A LOGICAL FUNCTION SHOULD BE PROVIDED THAT WOULD GIVE STATION OPERATORS THE ABILITY TO LOCK-OUT OFFSITE CONTROL.

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TOPOGRAPHY	---	---	ELECTRIC	---	---				
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STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
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PLAN CHECK					REVISIONS				

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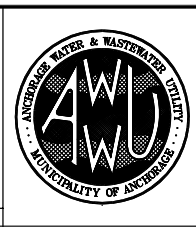
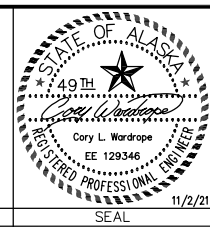
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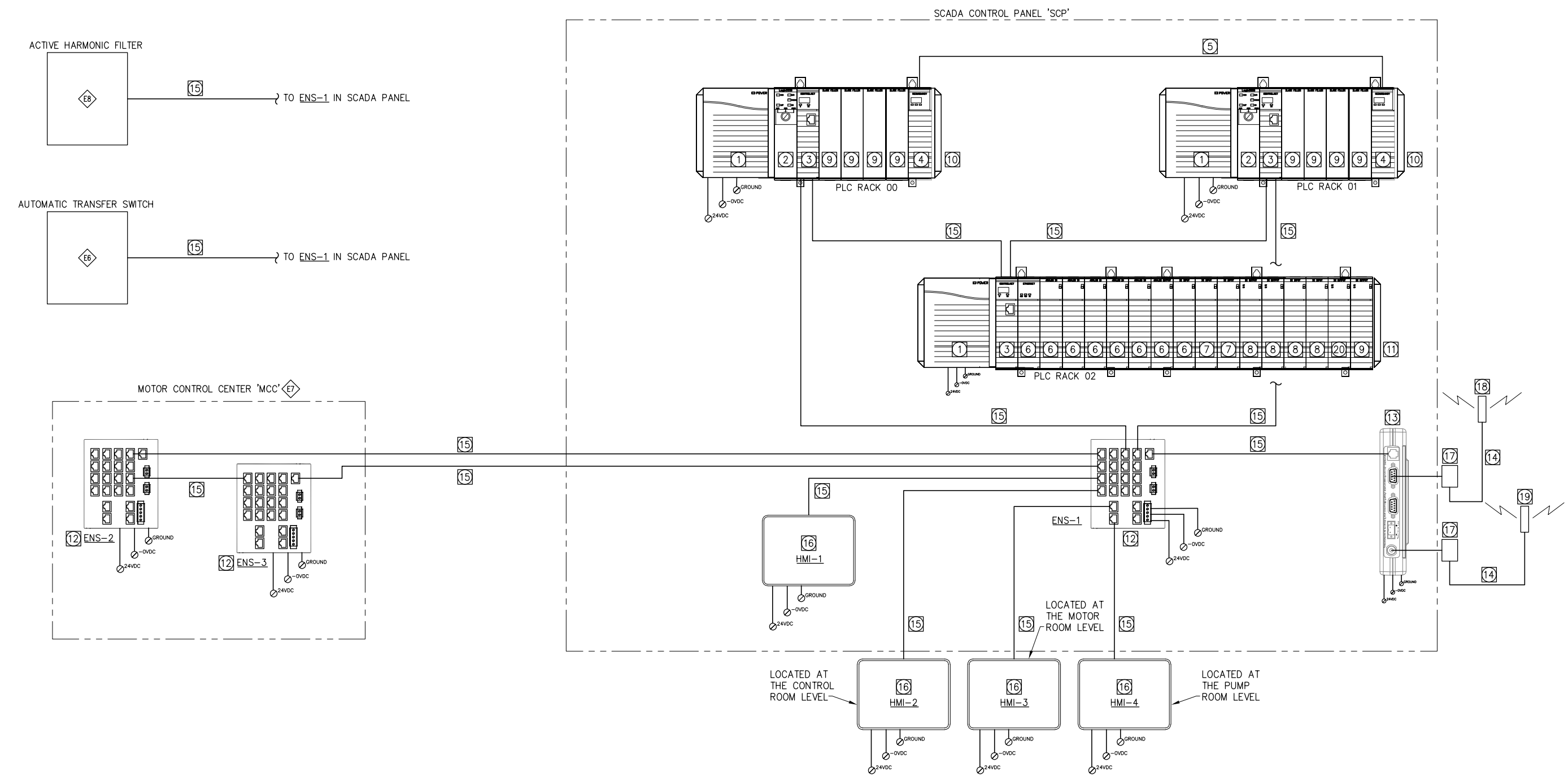
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PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

PLC PANEL LAYOUT AND FUNCTIONAL NARRATIVE
E5.0

HORIZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 61 of 104
PROJ. ID.: WW:H7713			

REF	PART NUMBER	MFG	MODULE USE / TYPE	REF	PART NUMBER	MFG	MODULE USE / TYPE	REF	PART NUMBER	MFG	MODULE USE / TYPE
1	1756-PB75	AB	24VDC POWER SUPPLY	9	1756-N2	AB	BLANK FILLER MODULE	17	DSX	POLYPHASER	BULKHEAD MOUNTED FILTER PROTECTOR
2	1756-L73	AB	CENTRAL PROCESSING UNIT (CPU)	10	1756-A7	AB	7 SLOT CHASSIS MODULE	18	-	-	LTE DIRECTIONAL ANTENNA
3	1756-EN2TR	AB	ETHERNET/IP BRIDGE, COPPER	11	1756-A17	AB	17 SLOT CHASSIS MODULE	19	-	-	YAGI ANTENNA (EXISTING)
4	1756-RM2	AB	REDUNDANCY MODULE	12	1783-BMS20CGP	AB	MANAGED ETHERNET SWITCH W/ DEVICE LEVEL RING	20	1756-IR12	AB	12-POINT RTD MODULE
5	1756-RMC1	AB	REDUNDANCY CABLE, 1M	13	ORBIT MCR	MDS	ORBIT SERIES TRANSCEIVER	21			
6	1756-IB16	AB	16-POINT DISCRETE INPUT MODULE	14	-	-	SEE SPECIFICATIONS	22			
7	1756-OB16E	AB	16-POINT DISCRETE OUTPUT MODULE	15	-	-	CAT6 ETHERNET CABLE, 4PR, RJ45	23			
8	1756-IF16	AB	8-POINT DIFFERENTIAL ANALOG INPUT MODULE	16	2715P-T12WD	AB	PANELVIEW DISPLAY	24			



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TOPOGRAPHY		ELECTRIC							
PROFILE		CABLE TV							
SANITARY SEWER		TRAFFIC SIGNAL							
STORM SEWER		DESIGN							
WATER		QUANTITIES							
GAS		MUN. FINAL CHECK							
PLAN CHECK					REVISIONS				

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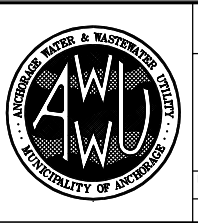
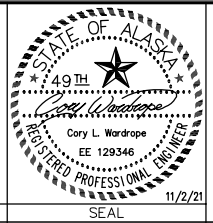
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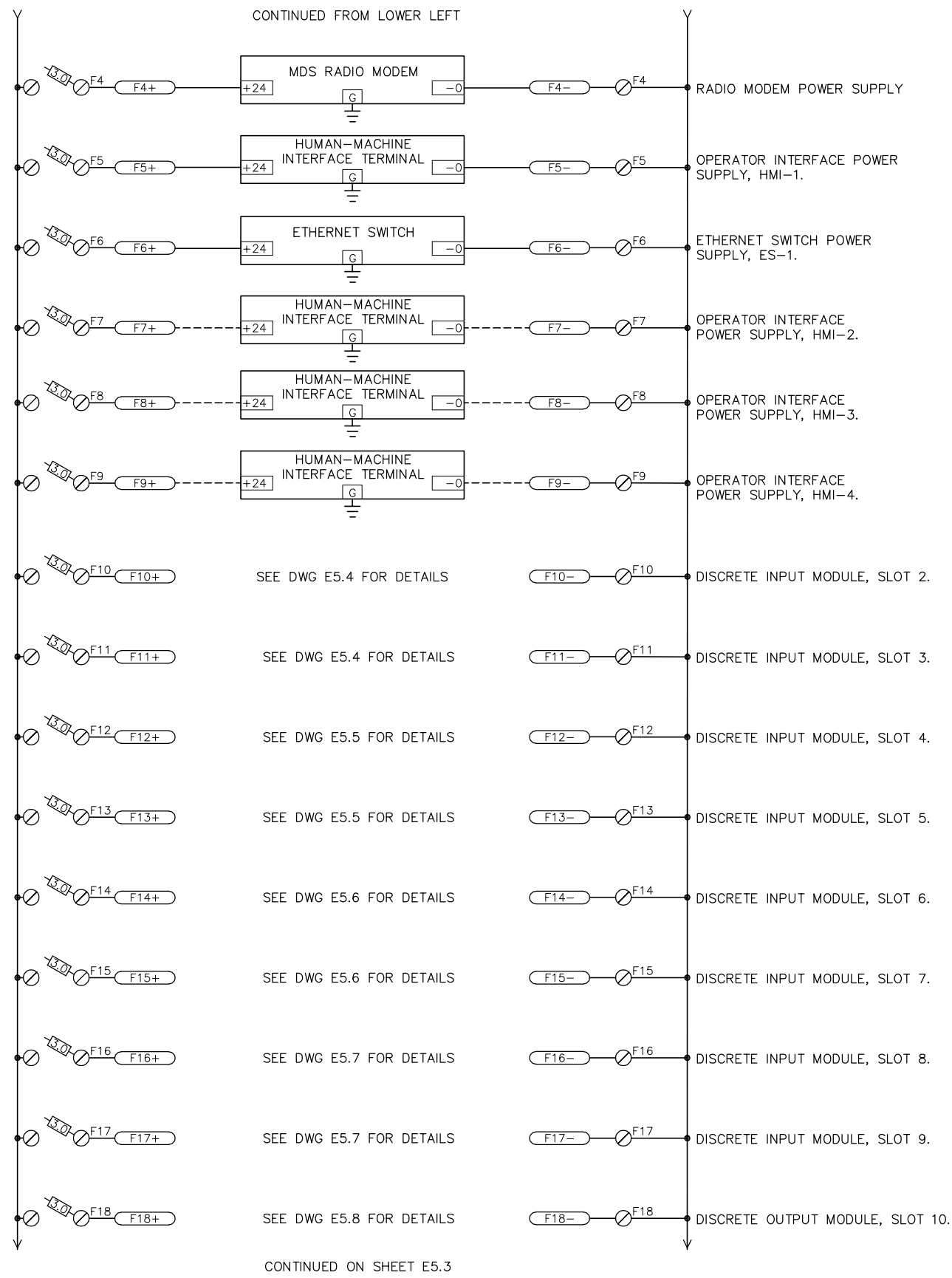
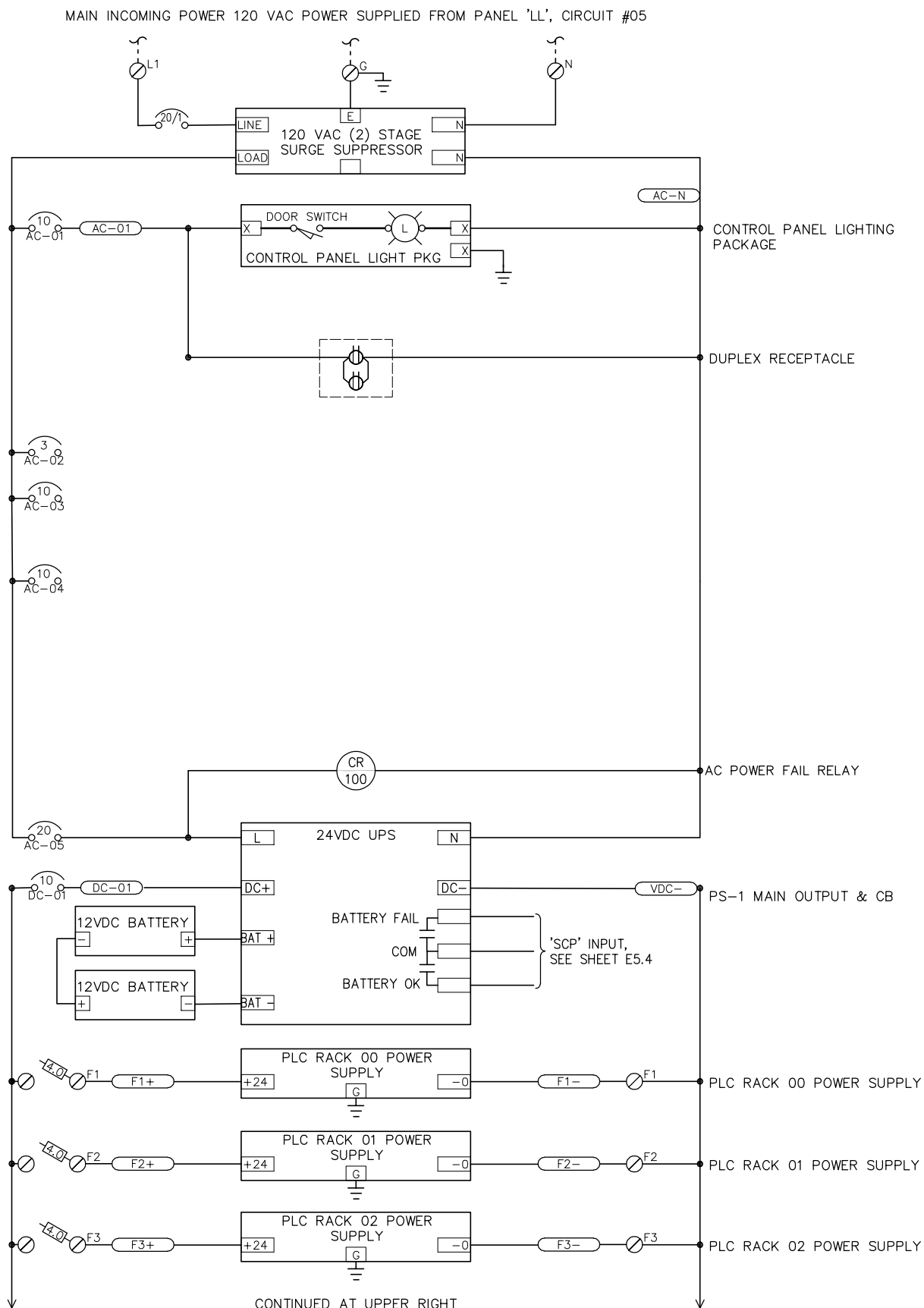
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PS12 FORCE MAIN / GRAVITY JUNCTION REHAB			
PLC BLOCK DIAGRAM			
E5.1			
HORZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 62 of 104
PROJ. ID.: WW:H7713			

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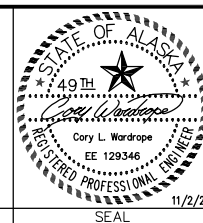
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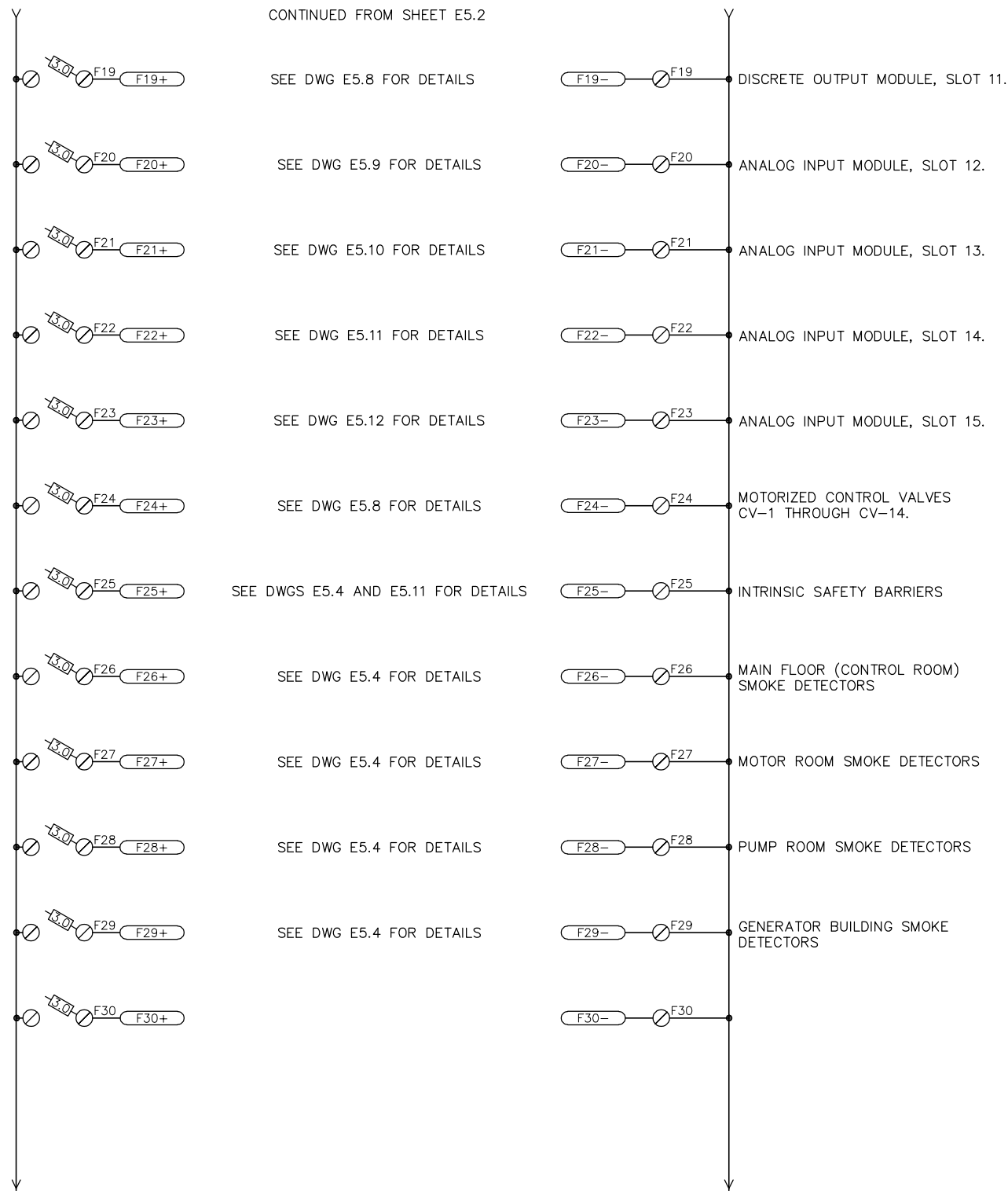
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E5.2			
HORIZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 63 of 104
VERT SCALE: NA	PROJ. ID.: WW.H7713		



CONTINUED FROM SHEET E5.2

SEE DWG E5.8 FOR DETAILS
SEE DWG E5.9 FOR DETAILS
SEE DWG E5.10 FOR DETAILS
SEE DWG E5.11 FOR DETAILS
SEE DWG E5.12 FOR DETAILS
SEE DWG E5.8 FOR DETAILS
SEE DWGS E5.4 AND E5.11 FOR DETAILS
SEE DWG E5.4 FOR DETAILS
SEE DWG E5.4 FOR DETAILS
SEE DWG E5.4 FOR DETAILS
SEE DWG E5.4 FOR DETAILS

DISCRETE OUTPUT MODULE, SLOT 11.
ANALOG INPUT MODULE, SLOT 12.
ANALOG INPUT MODULE, SLOT 13.
ANALOG INPUT MODULE, SLOT 14.
ANALOG INPUT MODULE, SLOT 15.
MOTORIZED CONTROL VALVES
CV-1 THROUGH CV-14.
INTRINSIC SAFETY BARRIERS
MAIN FLOOR (CONTROL ROOM)
SMOKE DETECTORS
MOTOR ROOM SMOKE DETECTORS
PUMP ROOM SMOKE DETECTORS
GENERATOR BUILDING SMOKE
DETECTORS

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TOPOGRAPHY		ELECTRIC							
PROFILE		CABLE TV							
SANITARY SEWER		TRAFFIC SIGNAL							
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GAS		MUN. FINAL CHECK							

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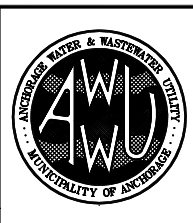
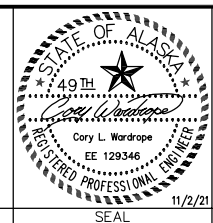
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SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

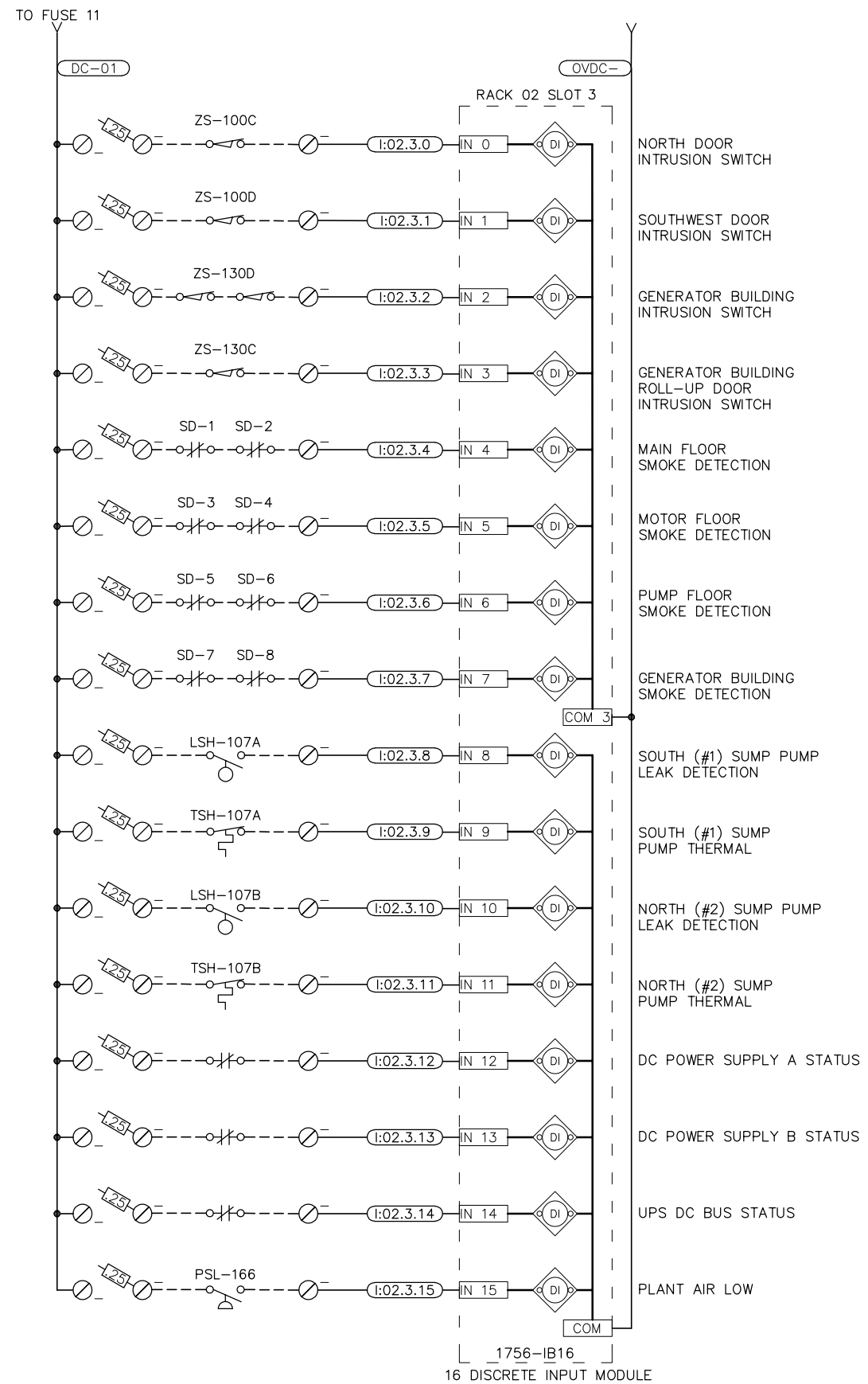
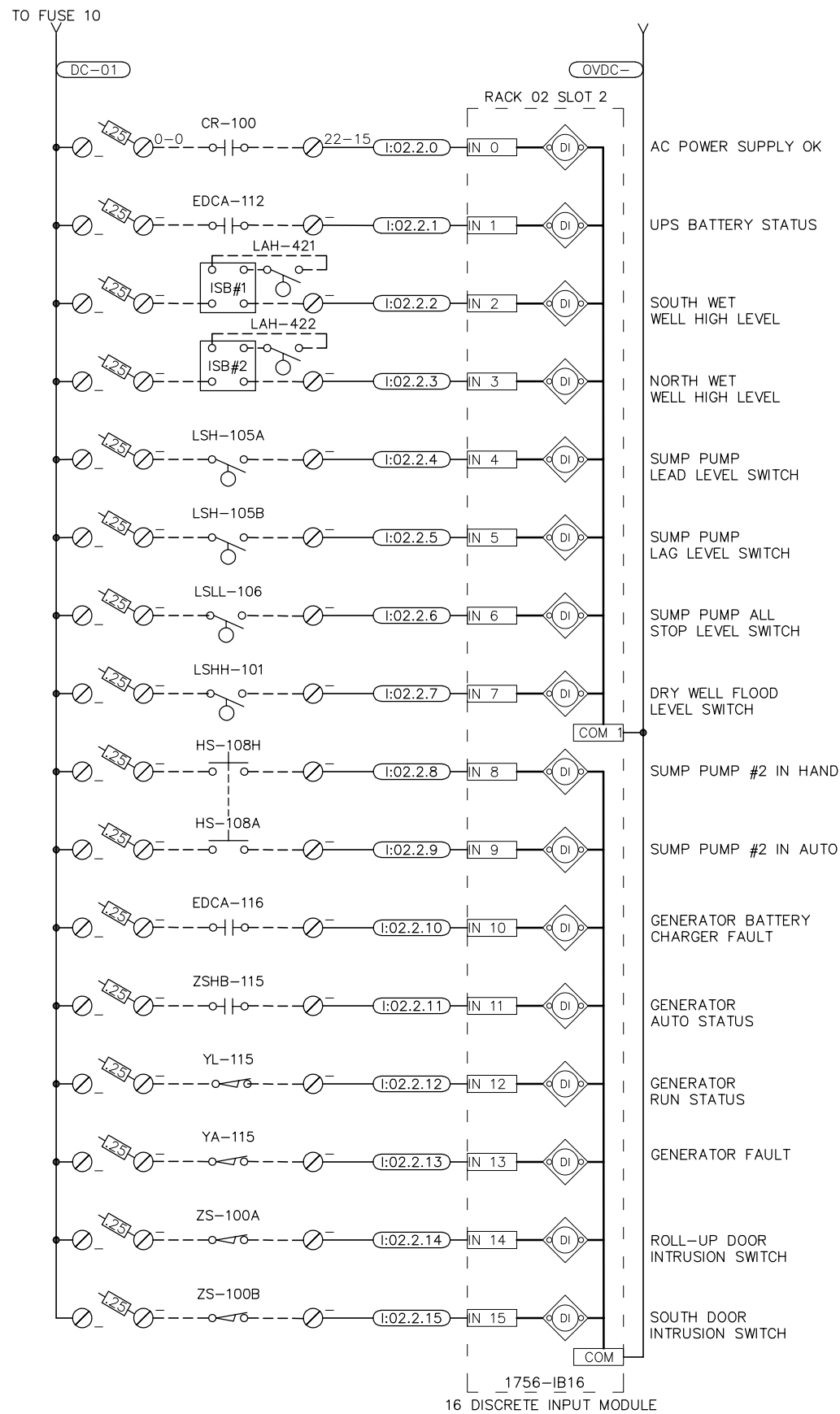
PLC POWER DISTRIBUTION

E5.3

HORIZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 64 of 104
VERT SCALE: NA			
PROJ. ID.: WW:H7713			

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TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK									

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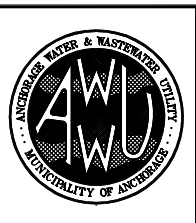
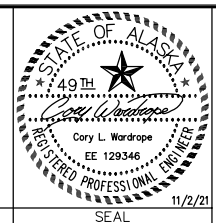
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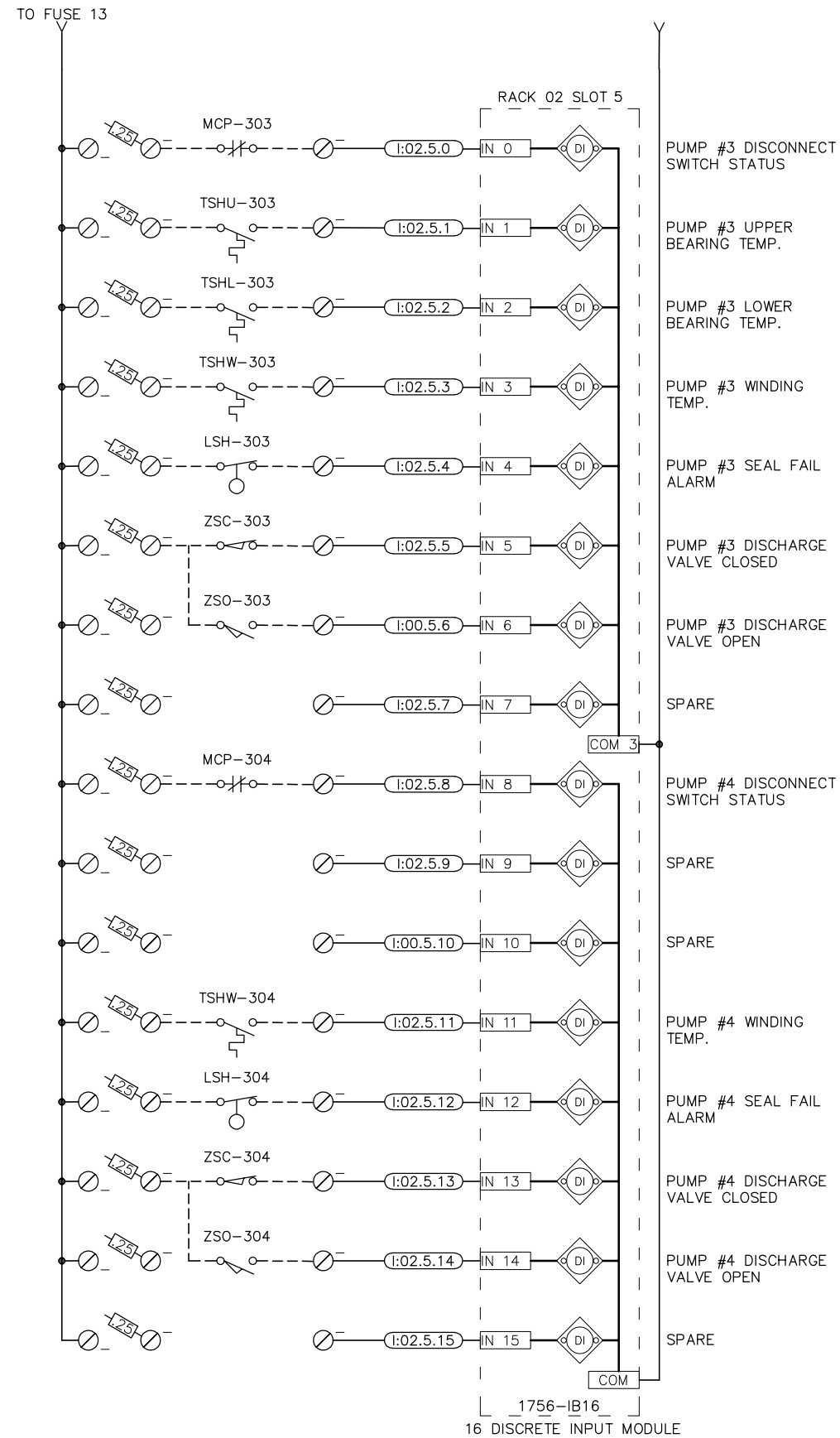
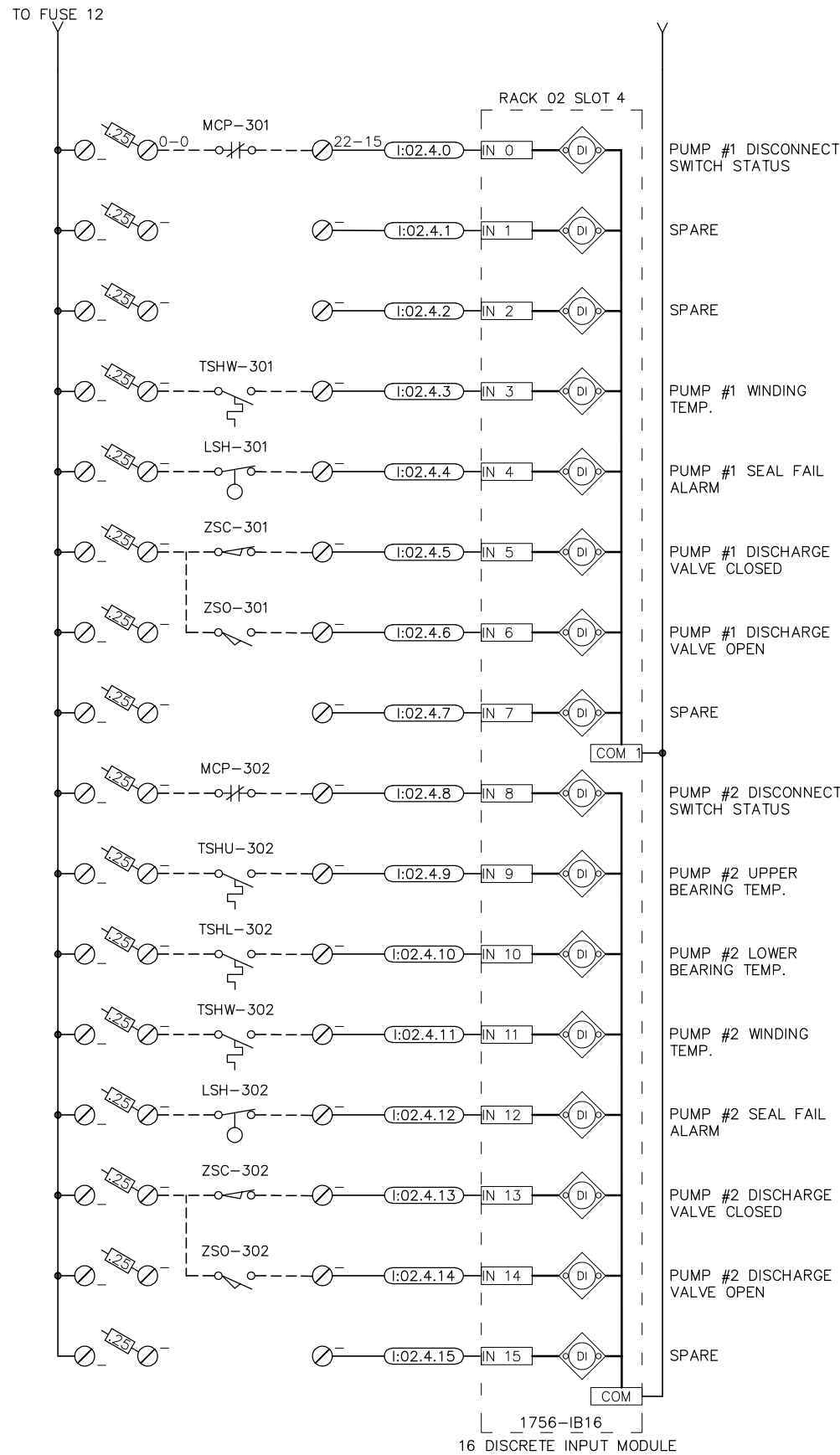
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E5.4			
HORIZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 65 of 104
PROJ. ID.: WW:H7713			

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AWWU PLAN SET
NO. 10794

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.		HORZ SCALE: 1"=20'		VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY	DATE	REVISIONS
BASE		VLR	TELEPHONE								
TOPOGRAPHY			ELECTRIC								
PROFILE			CABLE TV								
SANITARY SEWER			TRAFFIC SIGNAL								
STORM SEWER			DESIGN								
WATER			QUANTITIES								
GAS			MUN. FINAL CHECK								
PLAN CHECK											

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

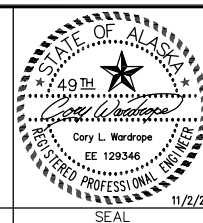
1. DATA PROVIDED BY: _____
 This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
 CONTRACTOR: _____
 BY: _____ TITLE: _____
 DATE: _____

2. DATA TRANSFERRED BY: _____
 COMPANY: _____
 DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
 DATA TRANSFER CHECKED BY: _____
 COMPANY: _____
 BY: _____ TITLE: _____
 DATE: _____

REUSE OF DOCUMENTS

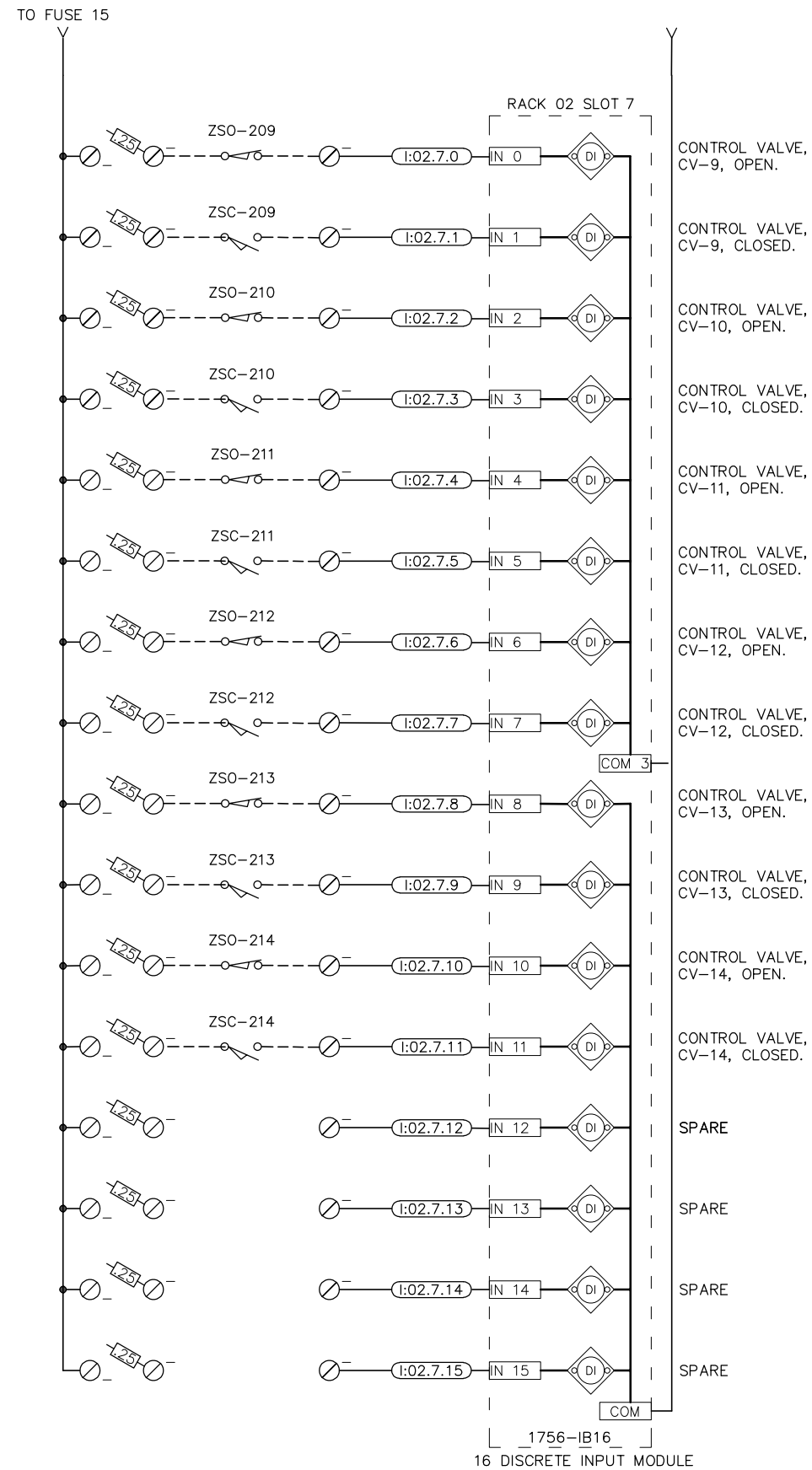
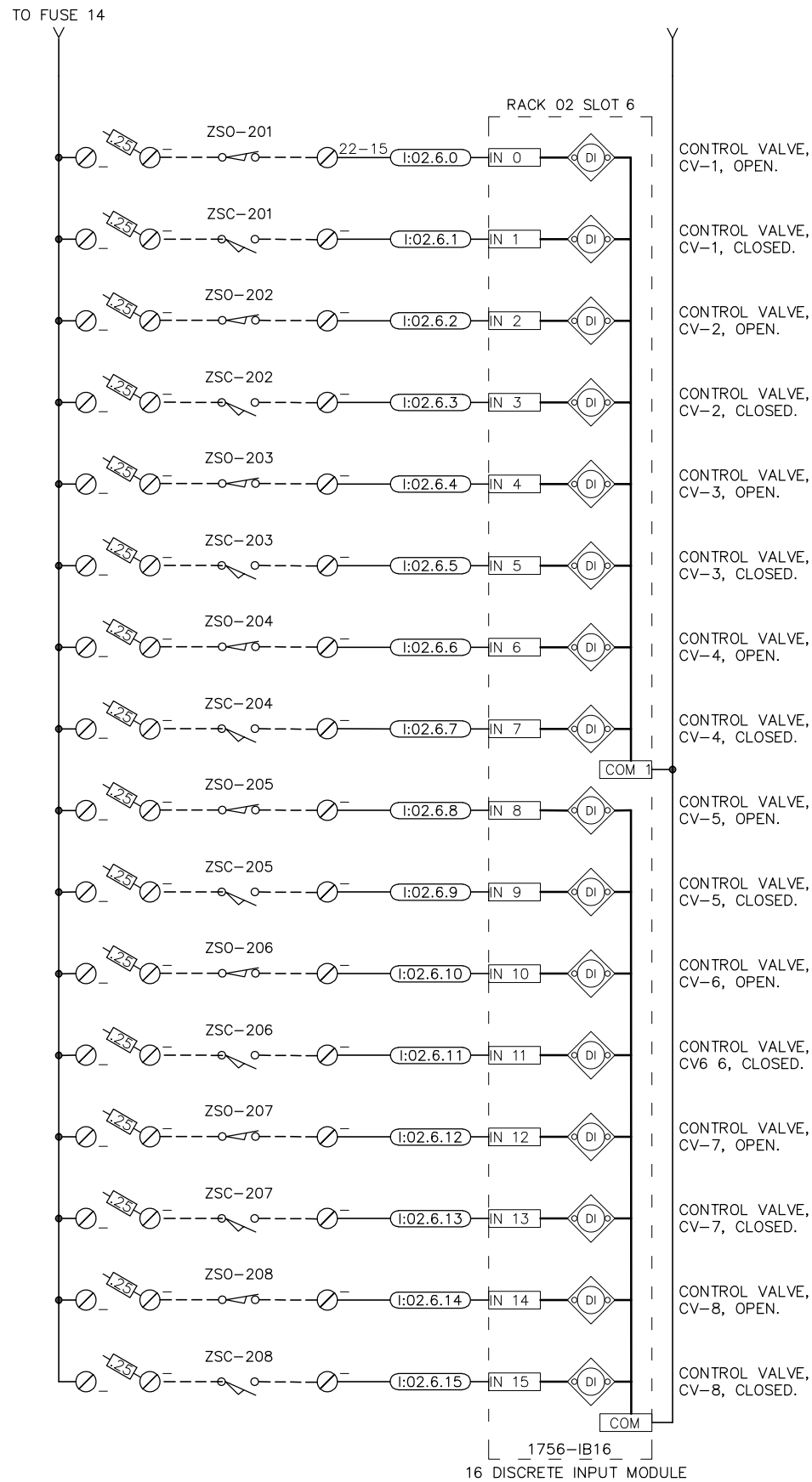
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MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY			
SCHEDULE A			
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB			
PLC DISCRETE INPUTS			
E5.5			
HORZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 66 of 104
PROJ. ID.: WW:H7713			

FILE: p:\Projects\VEI\pump_station_12\Dwgs\Elec\E5.6 PLC DISCRETE INPUTS.dwg DATE: 10/28/2021 2:36 PM

AWWU PLAN SET
NO. 10794



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE: 1"=20' HORIZ SCALE: 1"=4' VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE		VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

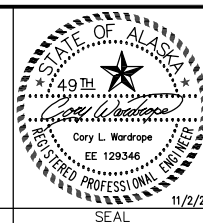
1. DATA PROVIDED BY: _____
 This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
 CONTRACTOR: _____
 BY: _____ TITLE: _____
 DATE: _____

2. DATA TRANSFERRED BY: _____
 COMPANY: _____
 DATE: _____

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 DATA TRANSFER CHECKED BY: _____
 COMPANY: _____
 BY: _____ TITLE: _____
 DATE: _____

REUSE OF DOCUMENTS

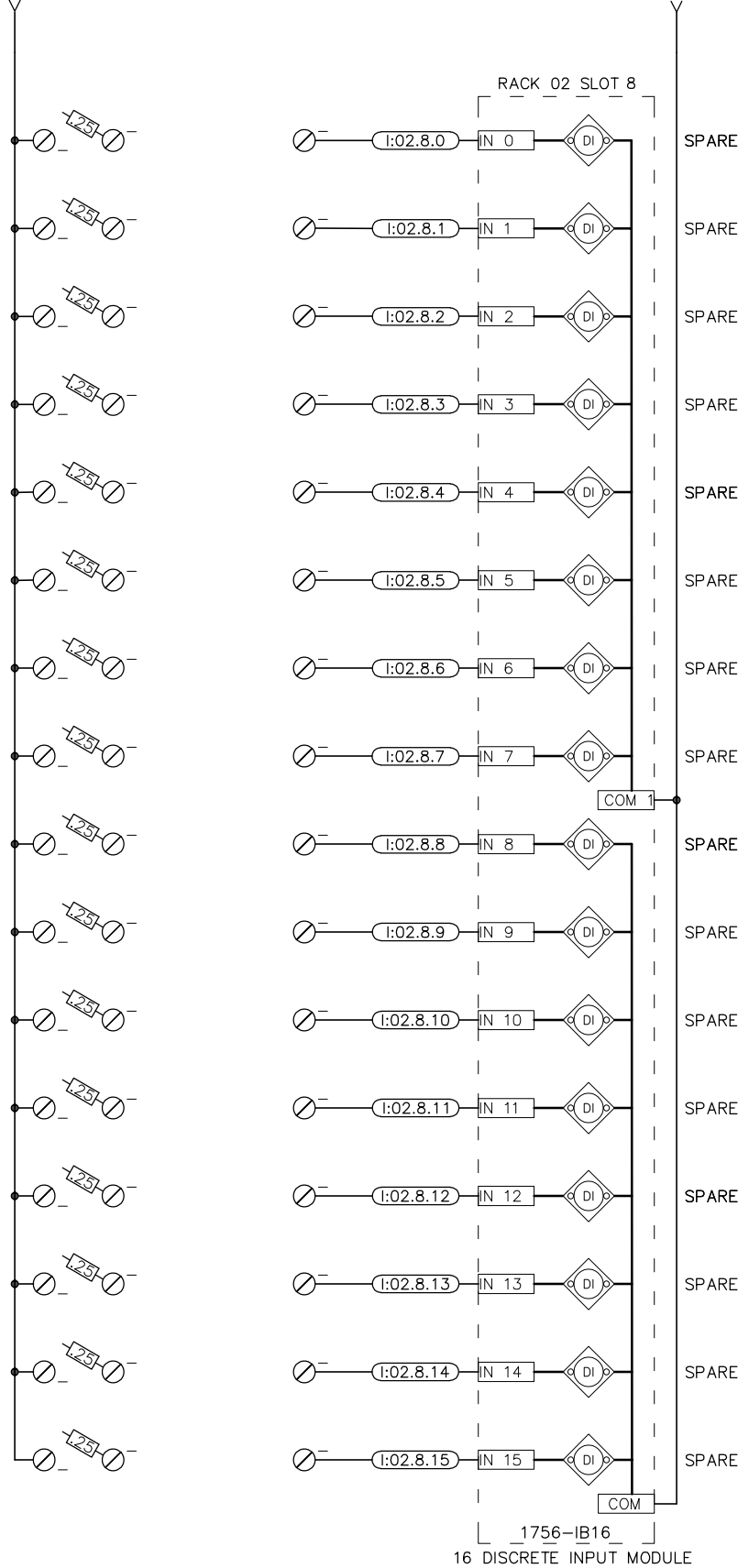
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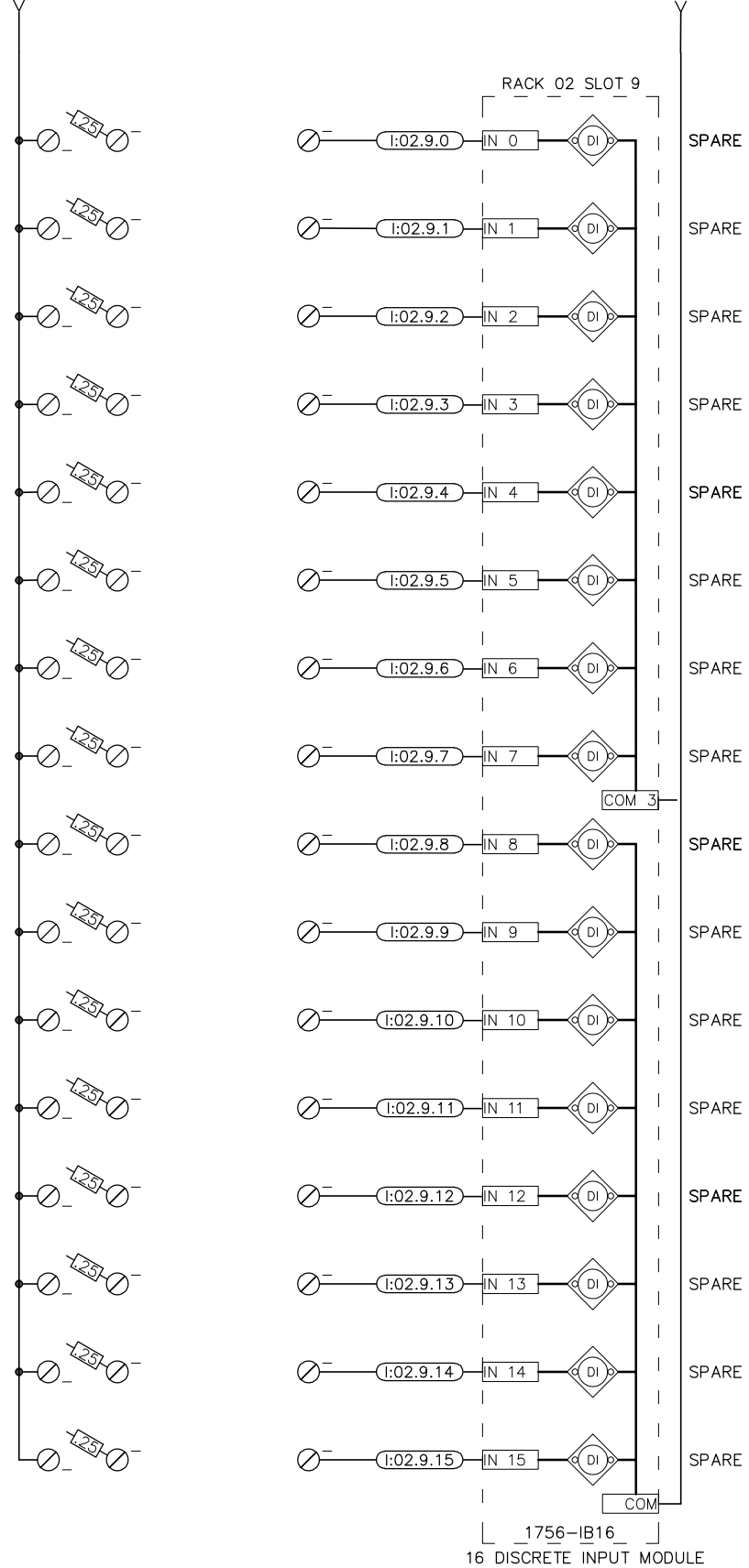
MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY			
SCHEDULE A			
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB			
PLC DISCRETE INPUTS			
E5.6			
HORIZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 67 of 104
PROJ. ID.: WW:H7713			

FILE: p:\Projects\VEI\pump_station_12\Dwg\Elec\E5.7 PLC DISCRETE INPUTS.dwg DATE: 10/28/2021 2:36 PM

TO FUSE 16



TO FUSE 17



AWWU PLAN SET
NO. 10794

VERIFY SCALE

THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.



IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.
 FULL SIZE SCALE
 HORZ SCALE: 1"=20'
 VERT SCALE: 1"=4'

DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE		VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK									REVISIONS

RECORD DRAWING

Note: To be filled out on original drawings upon project completion.

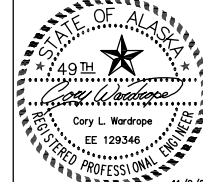
- DATA PROVIDED BY: _____
 This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
 CONTRACTOR: _____
 BY: _____ TITLE: _____
 DATE: _____
- DATA TRANSFERRED BY: _____
 COMPANY: _____
 DATE: _____
- Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
 DATA TRANSFER CHECKED BY: _____
 COMPANY: _____
 BY: _____ TITLE: _____
 DATE: _____

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 LICENSE NO. AECC705



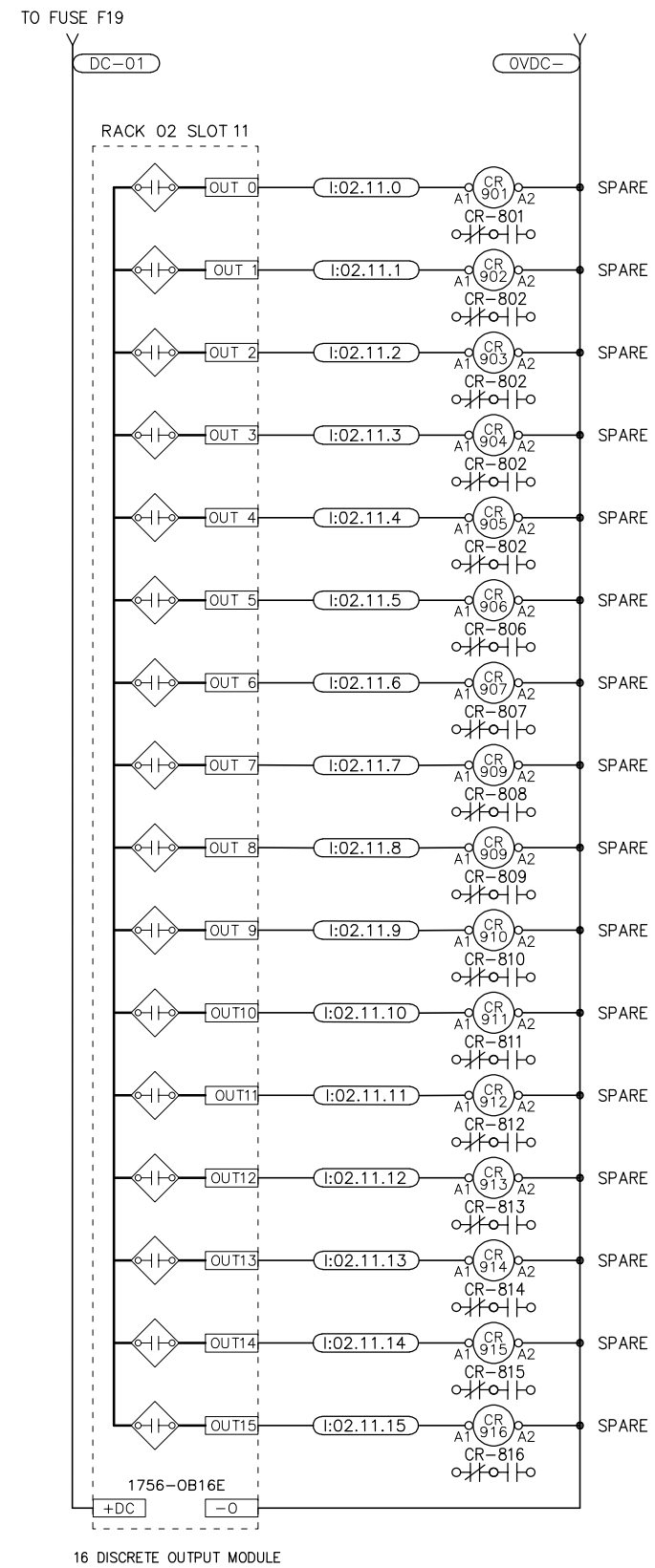
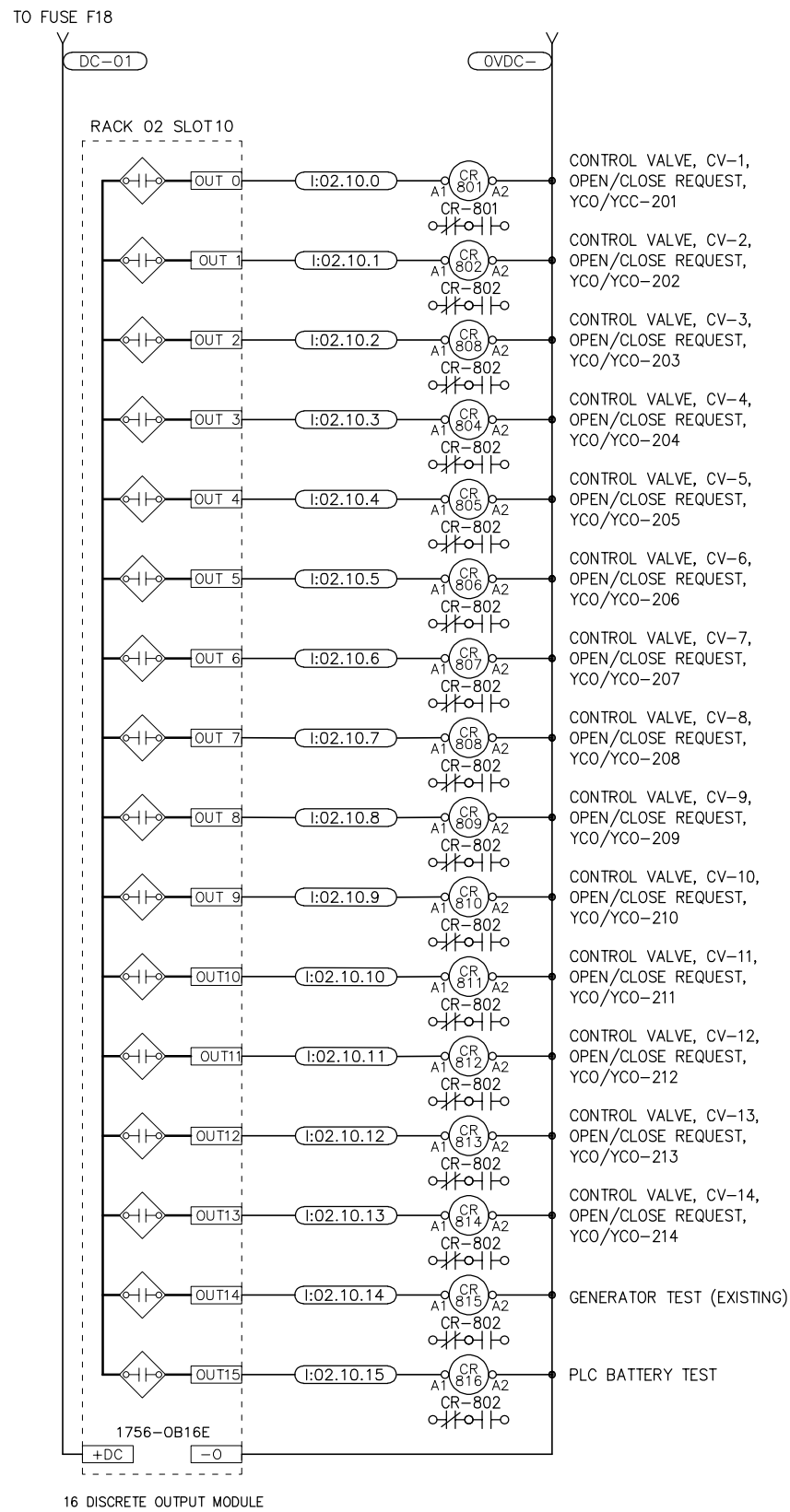
MUNICIPALITY OF ANCHORAGE
 WATER & WASTEWATER UTILITY

SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB
 PLC DISCRETE INPUTS

E5.7

HORZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 68 of 104
VERT SCALE: NA	PROJ. ID.: WW:H7713		



VERIFY SCALE

THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.



IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.

DATA	DRAWN BY	CHECKED BY	DATE	DESCRIPTION	BY
BASE					
TOPOGRAPHY					
PROFILE					
SANITARY SEWER					
STORM SEWER					
WATER					
GAS					
PLAN CHECK					REVISIONS

RECORD DRAWING

Note: To be filled out on original drawings upon project completion.

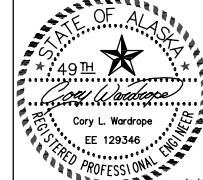
- DATA PROVIDED BY: _____
This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
CONTRACTOR: _____
BY: _____ TITLE: _____
DATE: _____
- DATA TRANSFERRED BY: _____
COMPANY: _____
DATE: _____
- Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
DATA TRANSFER CHECKED BY: _____
COMPANY: _____
BY: _____ TITLE: _____
DATE: _____

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ANCHORAGE, AK 98503
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LICENSE NO. AEC0705



**MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY**

SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

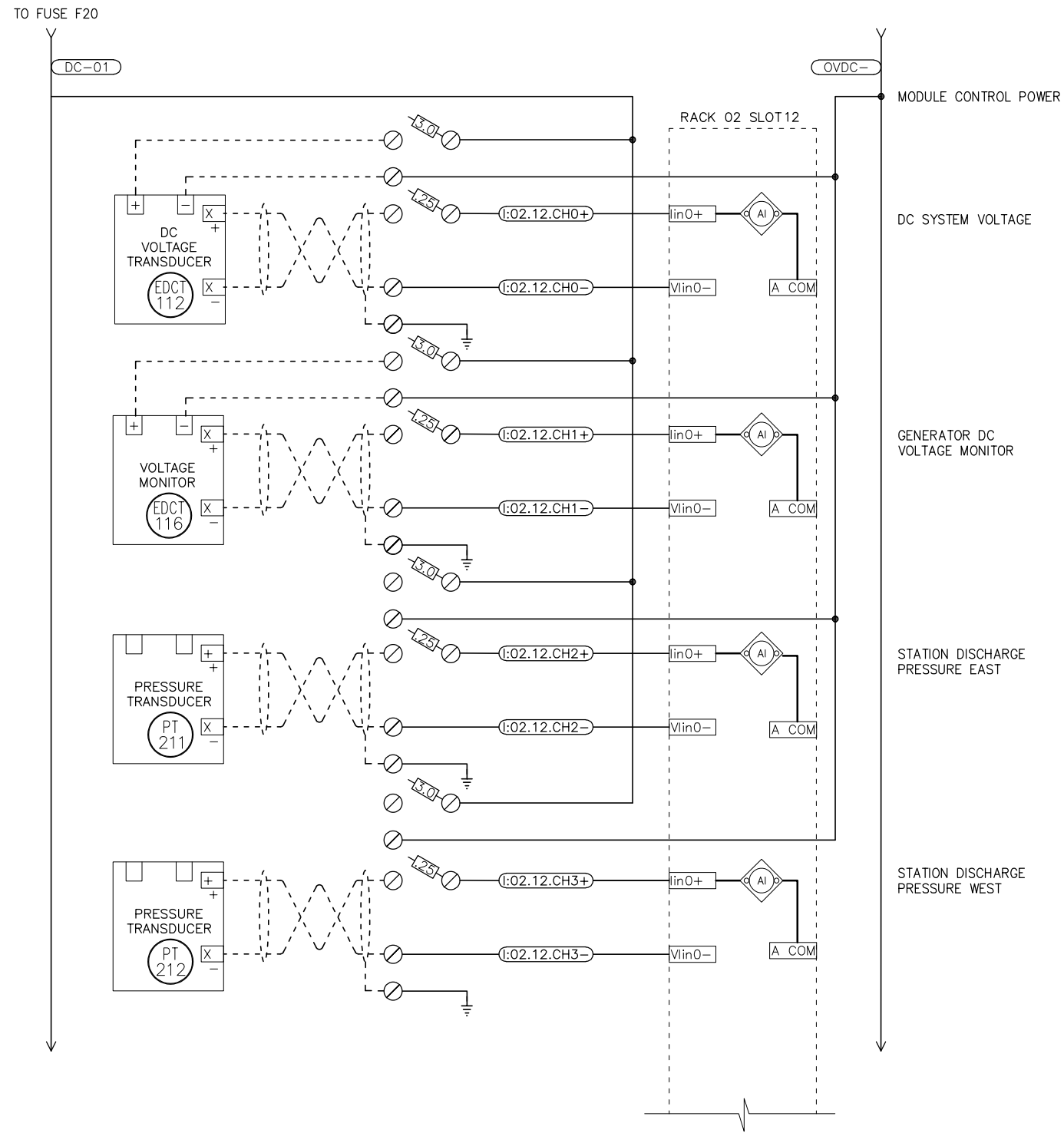
PLC DISCRETE OUTPUTS

E5.8

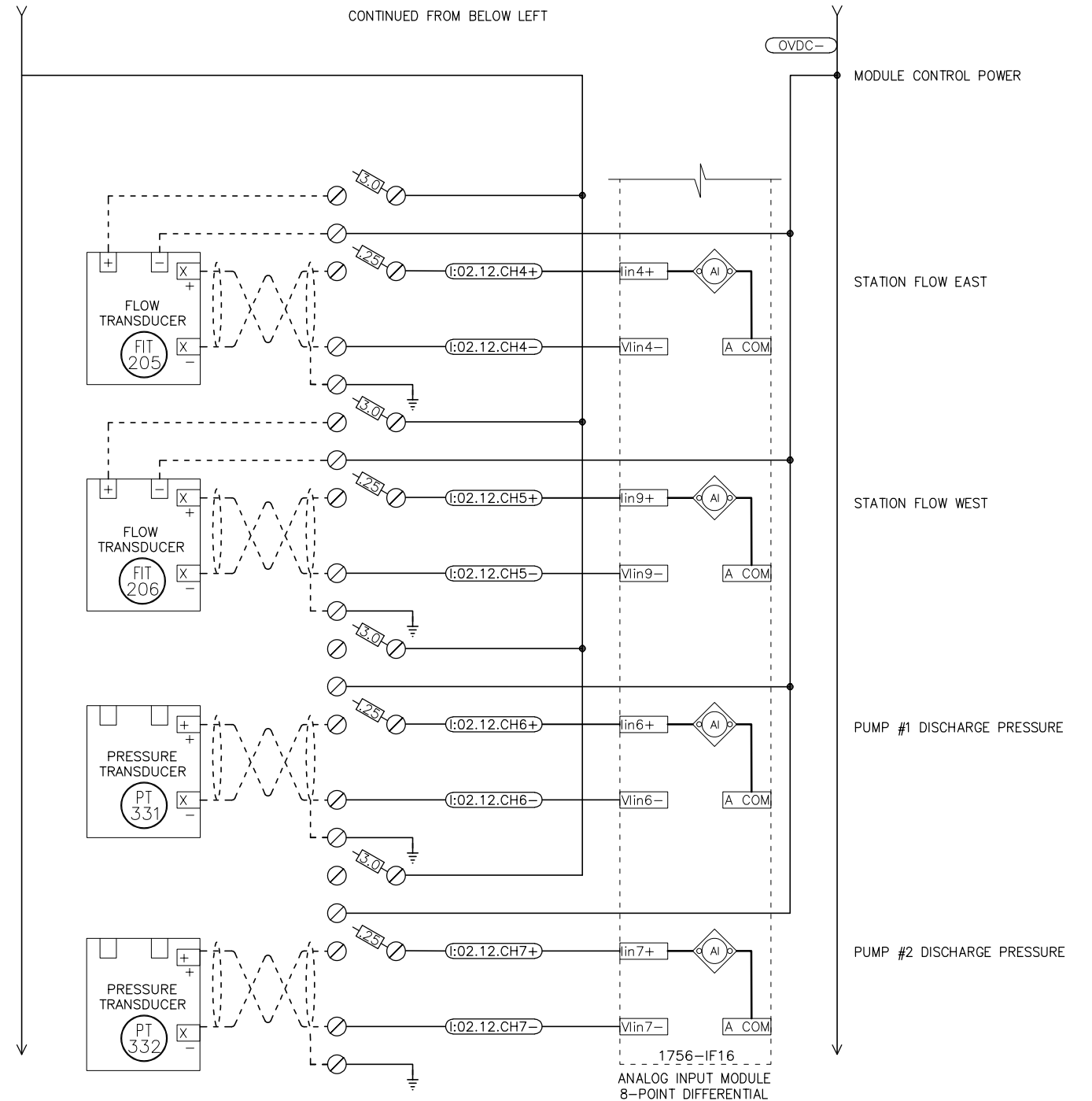
HORIZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 69 of 104
VERT SCALE: NA	PROJ. ID: WW:H7713		

FILE: p:\Projects\VEI\pump_station_12\Dwg\Elec\E5.9 PLC_ANALOG_INPUTS.dwg DATE: 10/28/2021 2:36 PM

AWWU PLAN SET
NO. 10794



CONTINUE ABOVE RIGHT



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" — 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE HORZ SCALE: 1"=20' VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DESCRIPTION	BY	DATE	REV	DESCRIPTION
BASE	---	VLR	---	---	TELEPHONE	---	---	---	---
TOPOGRAPHY	---	---	---	---	ELECTRIC	---	---	---	---
PROFILE	---	---	---	---	CABLE TV	---	---	---	---
SANITARY SEWER	---	---	---	---	TRAFFIC SIGNAL	---	---	---	---
STORM SEWER	---	---	---	---	DESIGN	---	---	---	---
WATER	---	---	---	---	QUANTITIES	---	---	---	---
GAS	---	---	---	---	MUN. FINAL CHECK	---	---	---	---
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

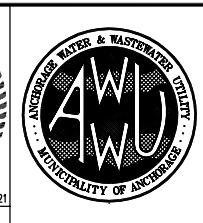
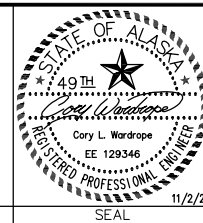
1. DATA PROVIDED BY: _____
 This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
 CONTRACTOR: _____
 BY: _____ TITLE: _____
 DATE: _____

2. DATA TRANSFERRED BY: _____
 COMPANY: _____
 DATE: _____

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 DATA TRANSFER CHECKED BY: _____
 COMPANY: _____
 BY: _____ TITLE: _____
 DATE: _____

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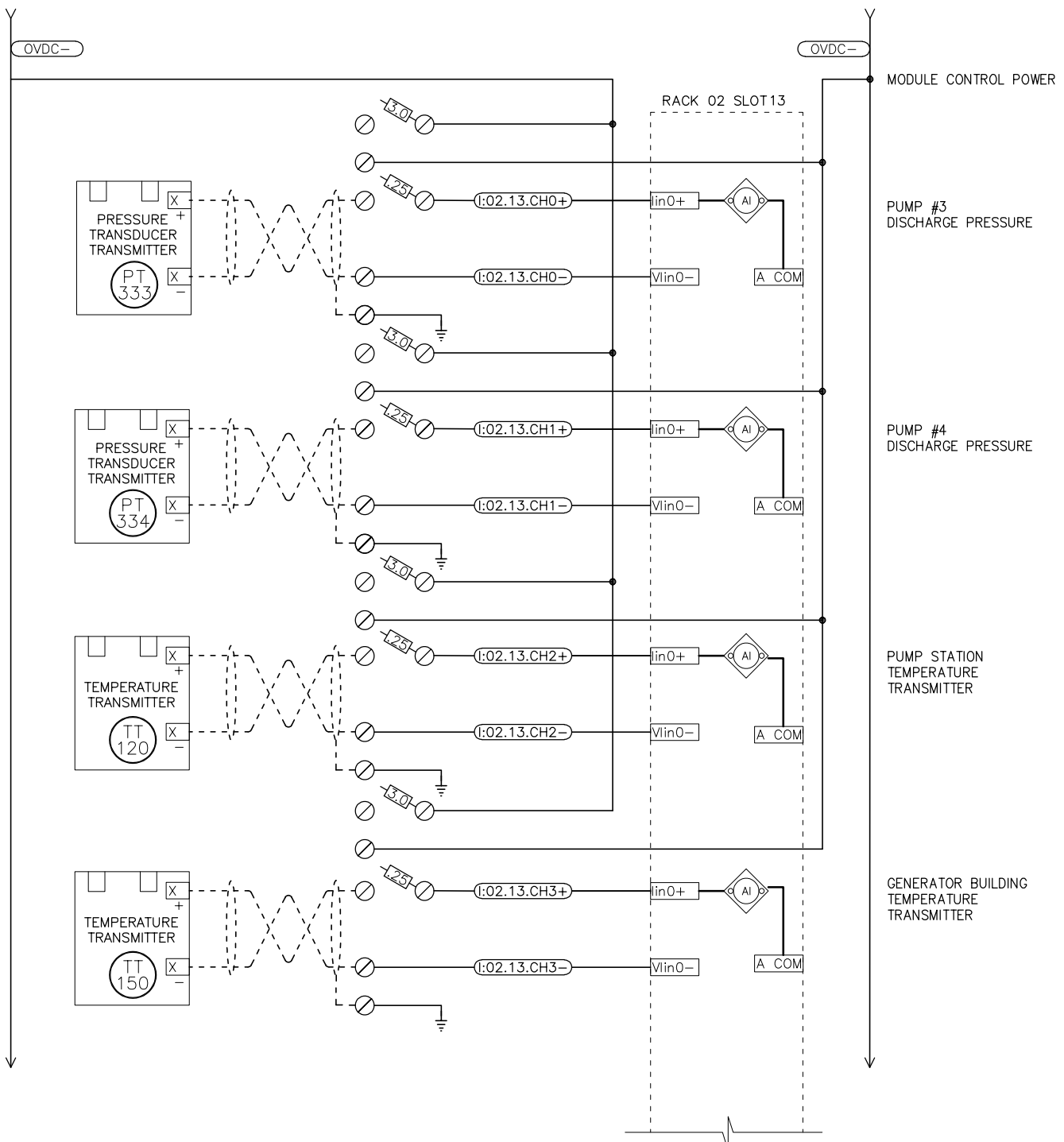


MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY			
SCHEDULE A			
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB			
PLC ANALOG INPUTS			
E5.9			
HORZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 70 of 104
PROJ. ID.: WW:H7713			

FILE: p:\Projects\VEI\pump_station_12\Dwg\Elec\E5.10 PLC ANALOG INPUTS.dwg DATE: 10/28/2021 2:36 PM

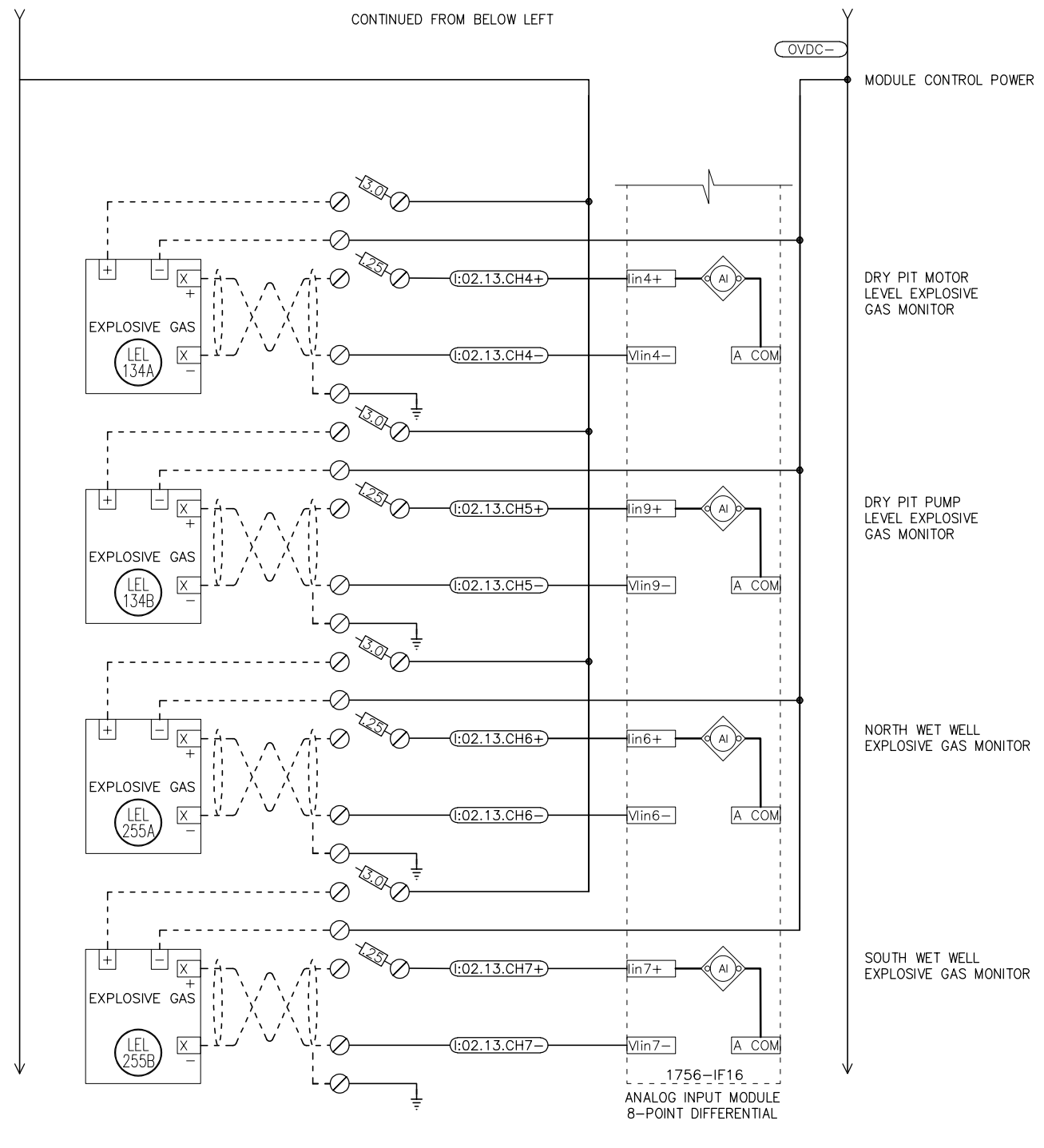
AWWU PLAN SET
NO. 10794

TO FUSE F21



CONTINUE ABOVE RIGHT

CONTINUED FROM BELOW LEFT



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" — 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DATE	DESCRIPTION	BY	DATE	REVISIONS
BASE	---	VLR	---	---	---				
TOPOGRAPHY	---	ELECTRIC	---	---	---				
PROFILE	---	CABLE TV	---	---	---				
SANITARY SEWER	---	TRAFFIC SIGNAL	---	---	---				
STORM SEWER	---	DESIGN	---	---	---				
WATER	---	QUANTITIES	---	---	---				
GAS	---	MUN. FINAL CHECK	---	---	---				
PLAN CHECK									

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

1. DATA PROVIDED BY: _____

This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.

CONTRACTOR: _____

BY: _____ TITLE: _____

DATE: _____

2. DATA TRANSFERRED BY: _____

COMPANY: _____

DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.

DATA TRANSFER CHECKED BY: _____

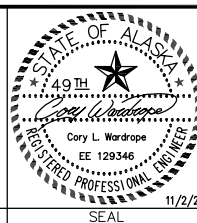
COMPANY: _____

BY: _____ TITLE: _____

DATE: _____

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WATER & WASTEWATER UTILITY

SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

PLC ANALOG INPUTS

E5.10

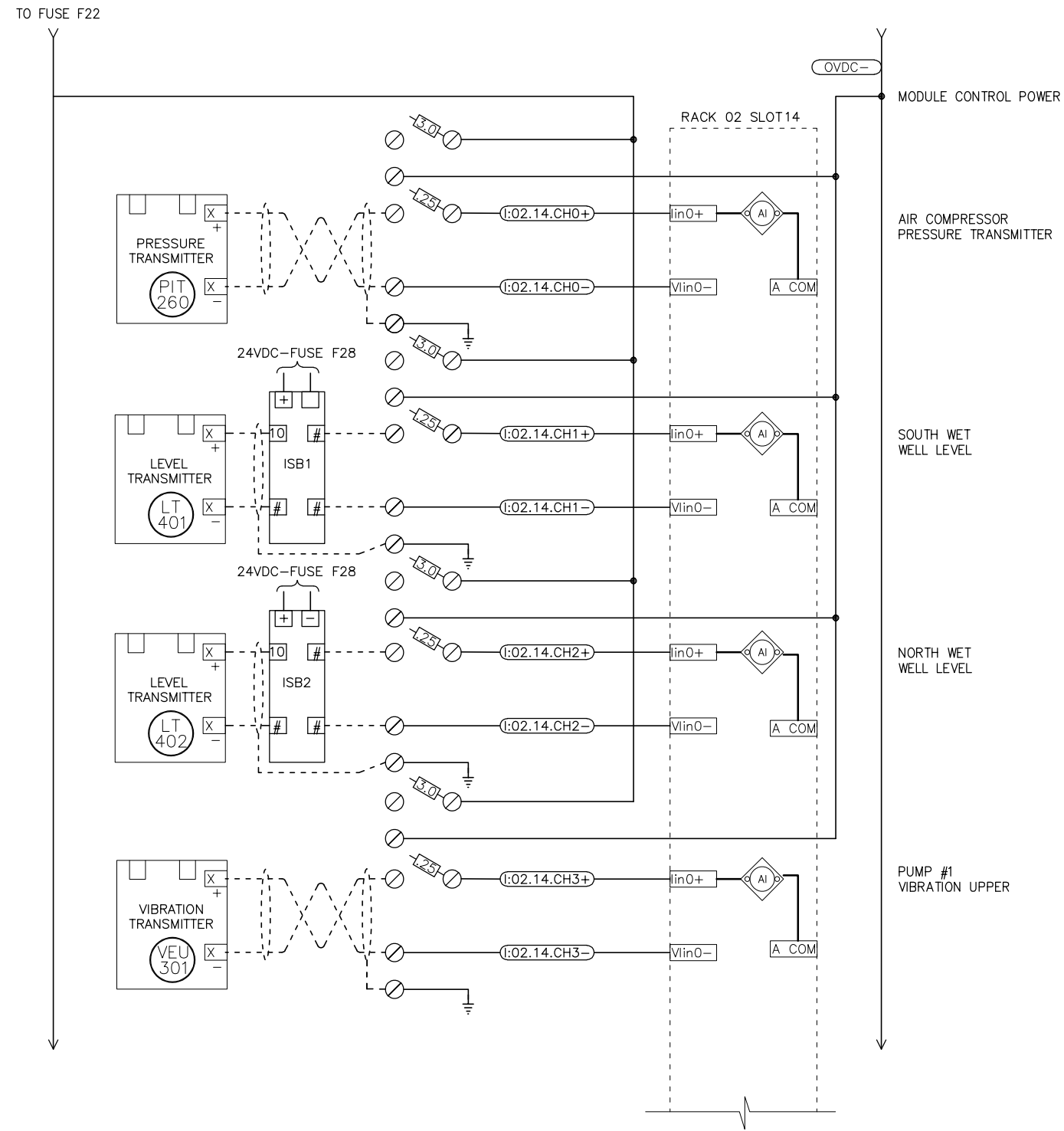
HORIZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 71 of 104

VERT SCALE: NA

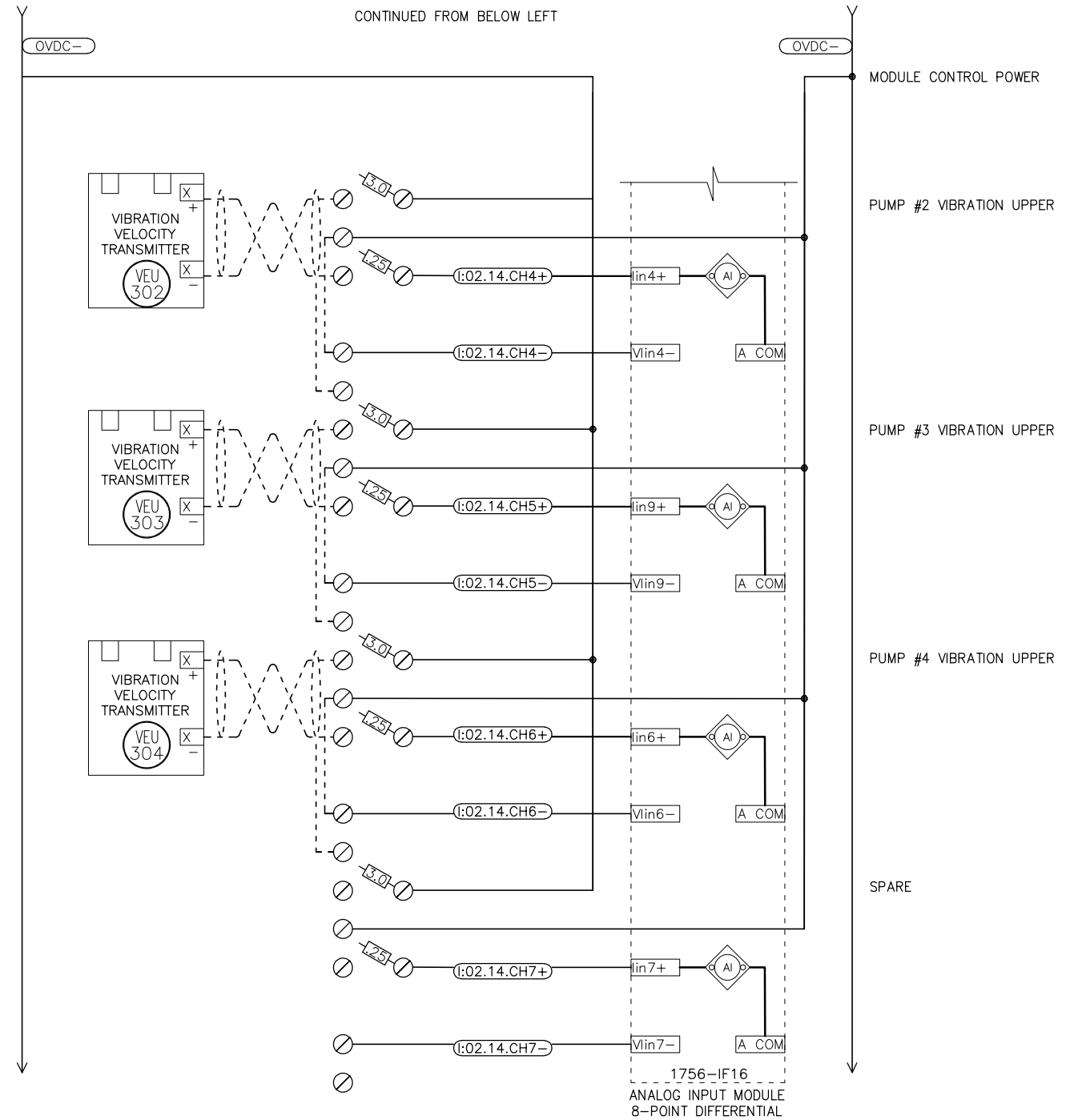
PROJ. ID.: WW:H7713

FILE: p:\Projects\VEI\pump_station_12\Dwgs\Elec\E5.11 PLC ANALOG INPUTS.dwg DATE: 10/28/2021 2:36 PM

AWWU PLAN SET
NO. 10794



CONTINUE ABOVE RIGHT



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DESCRIPTION	BY	DATE	REV	DESCRIPTION
BASE	---	VLR	---	---	---	---	---	---	---
TOPOGRAPHY	---	---	---	---	---	---	---	---	---
PROFILE	---	---	---	---	---	---	---	---	---
SANITARY SEWER	---	---	---	---	---	---	---	---	---
STORM SEWER	---	---	---	---	---	---	---	---	---
WATER	---	---	---	---	---	---	---	---	---
GAS	---	---	---	---	---	---	---	---	---
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

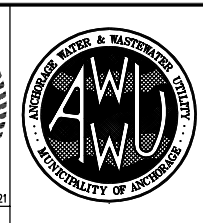
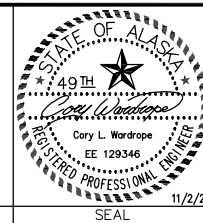
1. DATA PROVIDED BY: _____
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 CONTRACTOR: _____
 BY: _____ TITLE: _____
 DATE: _____

2. DATA TRANSFERRED BY: _____
 COMPANY: _____
 DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
 DATA TRANSFER CHECKED BY: _____
 COMPANY: _____
 BY: _____ TITLE: _____
 DATE: _____

REUSE OF DOCUMENTS

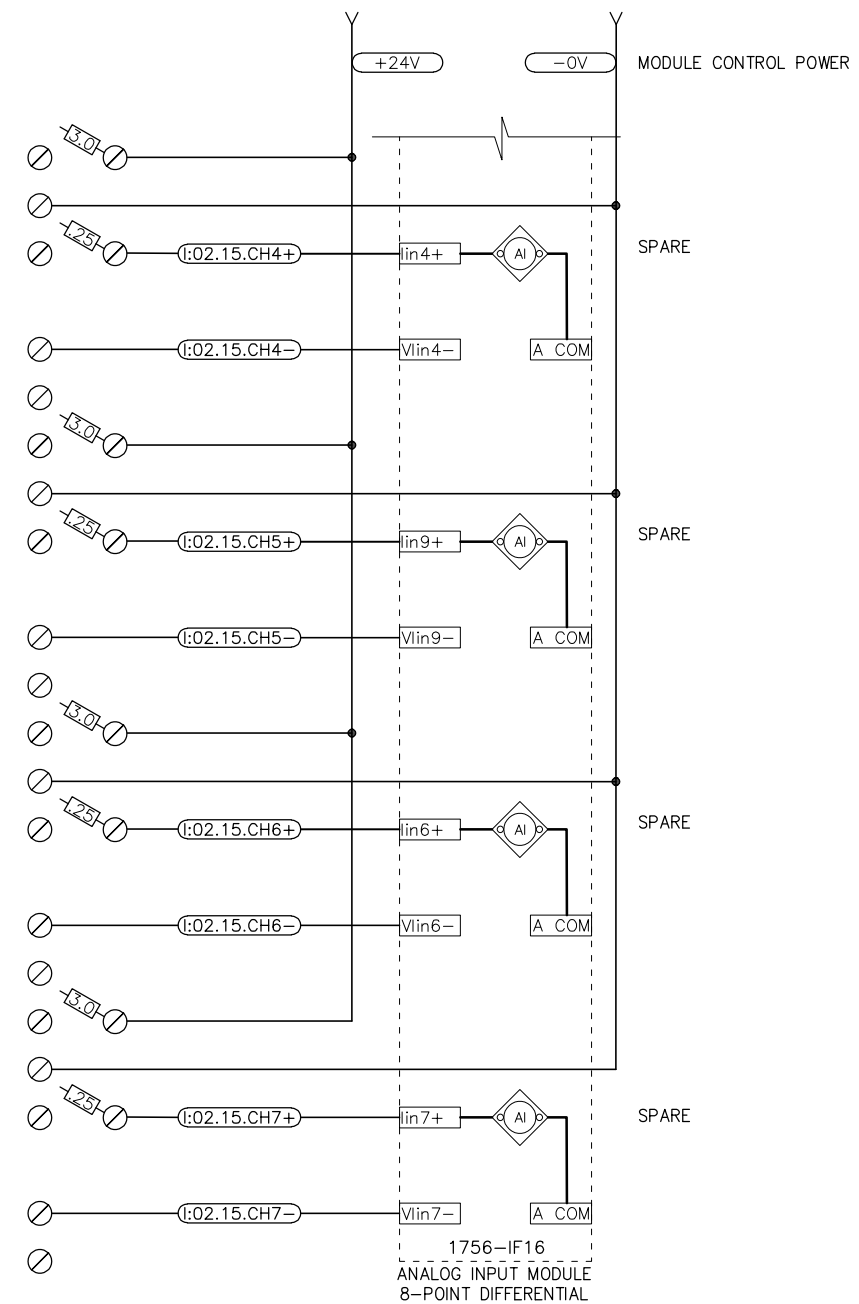
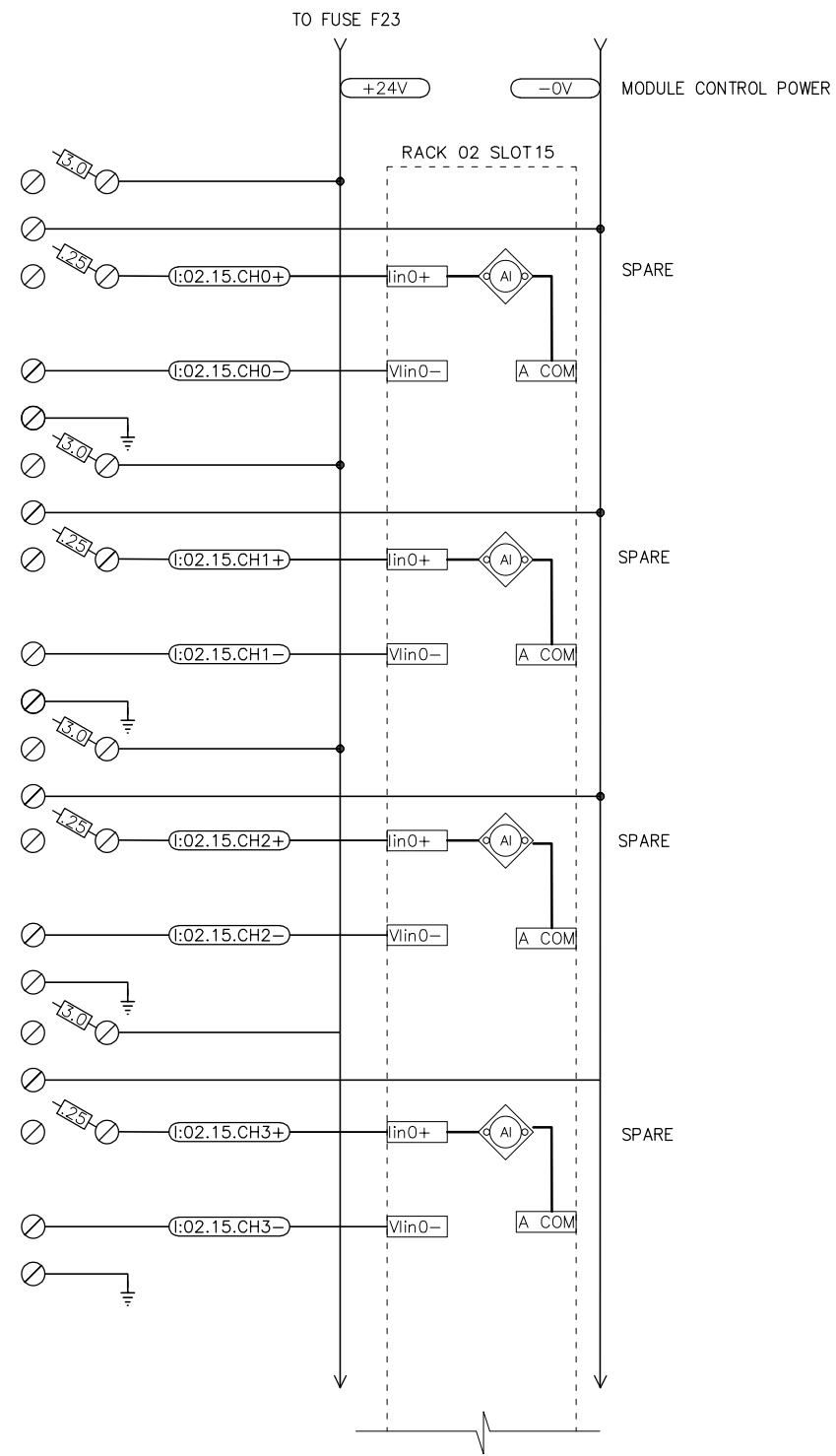
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MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY			
SCHEDULE A			
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB			
PLC ANALOG INPUTS			
E5.11			
HORIZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 72 of 104
PROJ. ID.: WW:H7713			

FILE: p:\Projects\VEI\pump_station_12\Dwgs\Elec\E5.12 PLC ANALOG INPUTS.dwg DATE: 10/28/2021 2:36 PM

AWWU PLAN SET
NO. 10794



VERIFY SCALE

THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.

0" 1"

IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.

DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE		VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK									REVISIONS

RECORD DRAWING

Note: To be filled out on original drawings upon project completion.

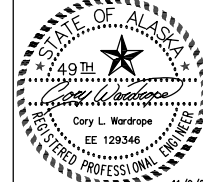
- DATA PROVIDED BY: _____
This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
CONTRACTOR: _____
BY: _____ TITLE: _____
DATE: _____
- DATA TRANSFERRED BY: _____
COMPANY: _____
DATE: _____
- Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
DATA TRANSFER CHECKED BY: _____
COMPANY: _____
BY: _____ TITLE: _____
DATE: _____

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ANCHORAGE, AK 98503
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LICENSE NO. AECC705



**MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY**

SCHEDULE A

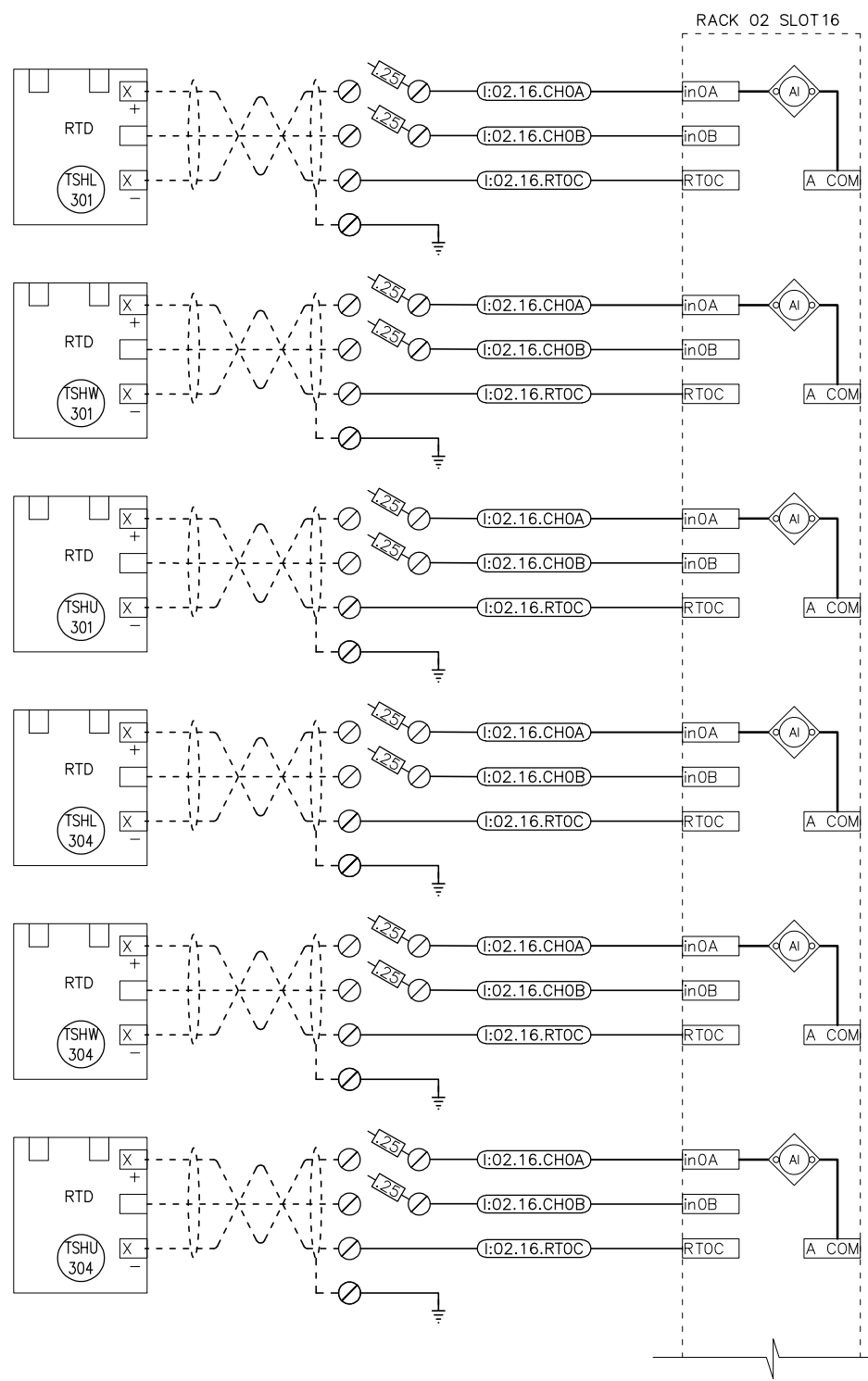
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

PLC ANALOG INPUTS

E5.12

HORIZ SCALE: NA	DATE: 10/29/2021	GRID: SW 2525	SHEET 73 of 104
VERT SCALE: NA	PROJ. ID.: WW:H7713		

FILE: p:\Projects\VEI\pump_station_12\Dwg\Elec\E5.13 PLC RTD INPUTS.dwg DATE: 10/28/2021 2:36 PM



PUMP 1 TEMPERATURE ALARM HIGH,
LOWER BEARING

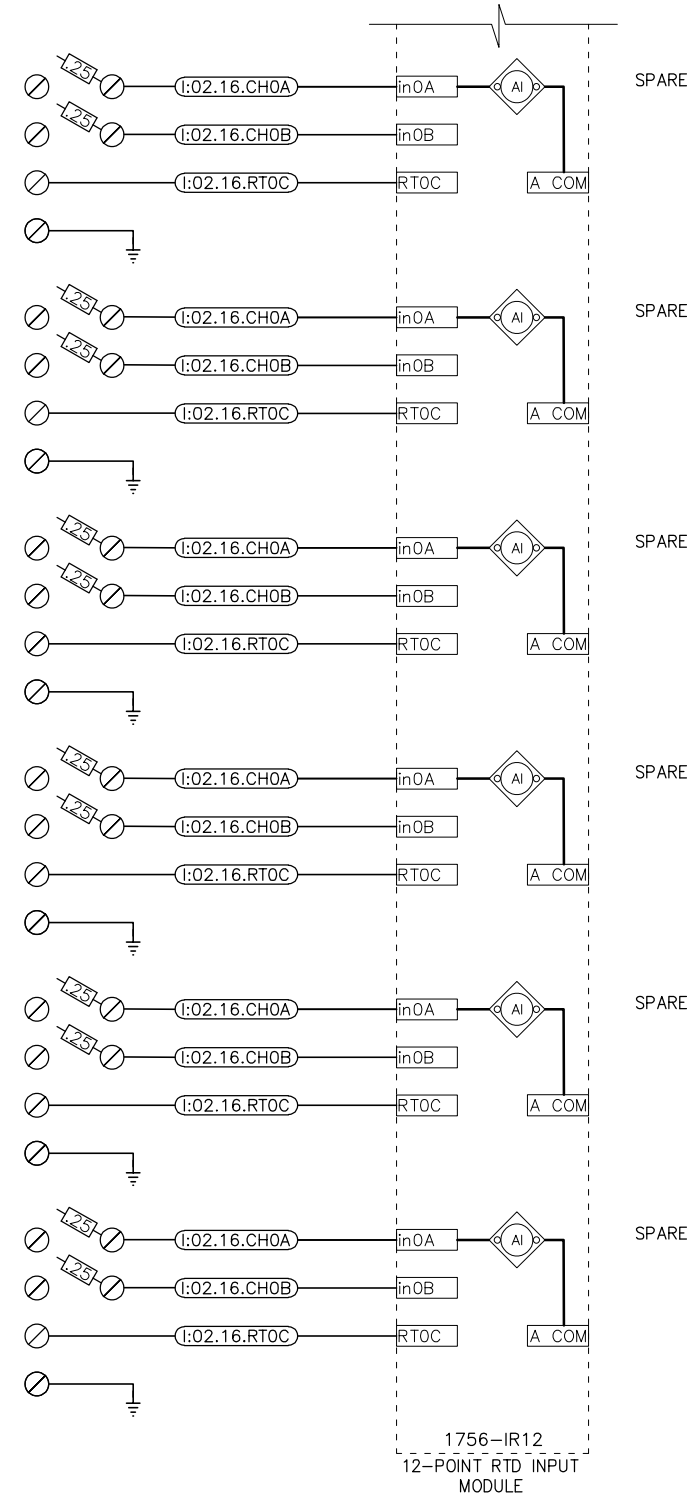
PUMP 1 TEMPERATURE ALARM HIGH,
MOTOR WINDING

PUMP 1 TEMPERATURE ALARM HIGH,
UPPER BEARING

PUMP 4 TEMPERATURE ALARM HIGH,
LOWER BEARING

PUMP 4 TEMPERATURE ALARM HIGH,
MOTOR WINDING

PUMP 4 TEMPERATURE ALARM HIGH,
UPPER BEARING



SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

1756-IR12
12-POINT RTD INPUT
MODULE

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, FULL SIZE SCALE ADJUST DRAWING SCALE ACCORDINGLY.		REVISIONS	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DATE	DESCRIPTION	BY	DATE	DESCRIPTION
BASE	VLR	TELEPHONE							
TOPOGRAPHY		ELECTRIC							
PROFILE		CABLE TV							
SANITARY SEWER		TRAFFIC SIGNAL							
STORM SEWER		DESIGN							
WATER		QUANTITIES							
GAS		MUN. FINAL CHECK							

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

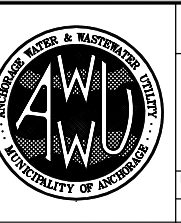
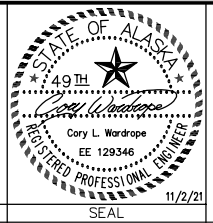
1. DATA PROVIDED BY: _____
This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
CONTRACTOR: _____
BY: _____ TITLE: _____
DATE: _____

2. DATA TRANSFERRED BY: _____
COMPANY: _____
DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
DATA TRANSFER CHECKED BY: _____
COMPANY: _____
BY: _____ TITLE: _____
DATE: _____

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MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

PLC RTD INPUTS

E5.13

HORIZ SCALE: NA DATE: 10/29/2021 GRID: SW 2525 SHEET 74 of 104

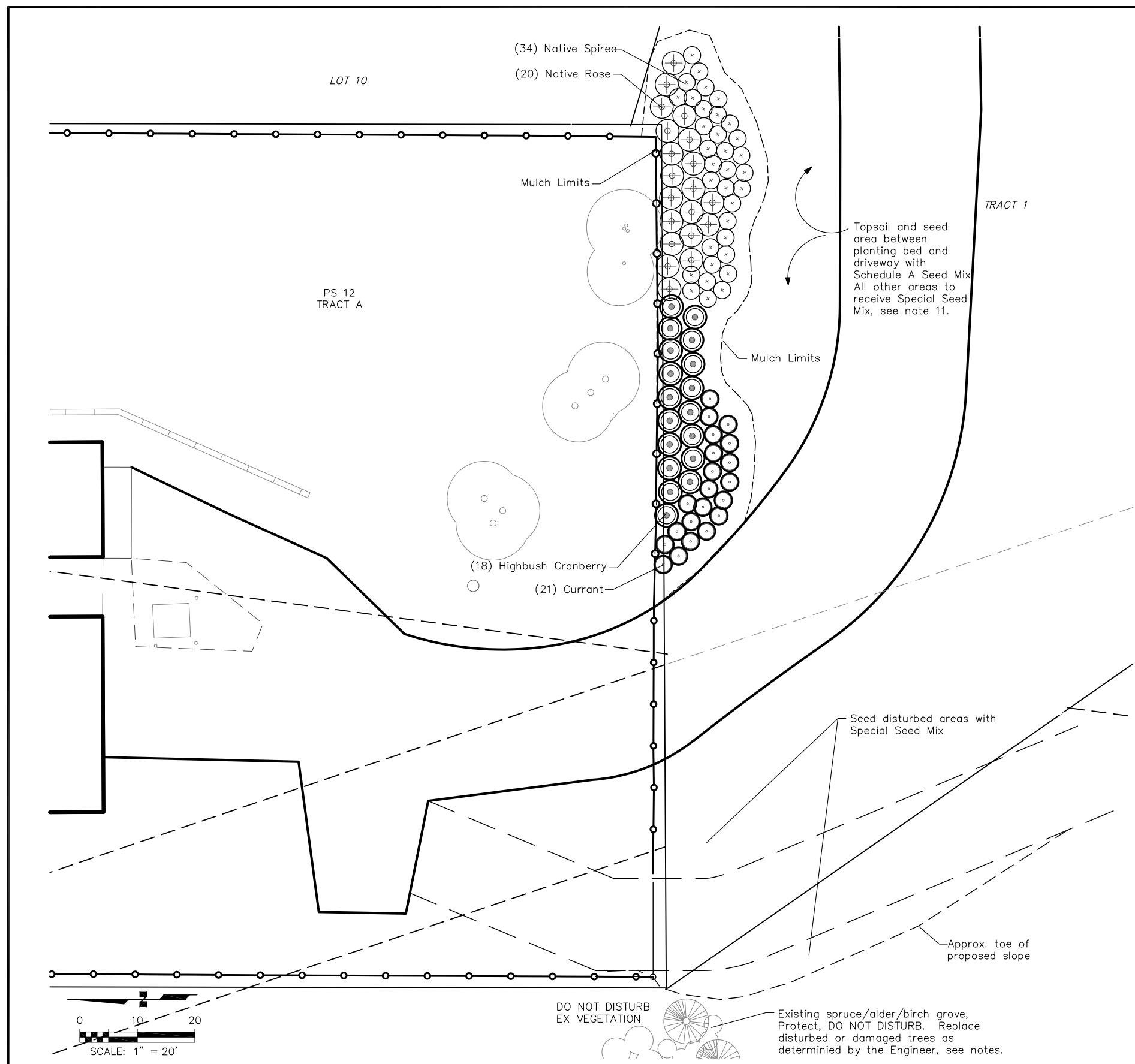
VERT SCALE: NA PROJ. ID.: WW:H7713

Plant Schedule

Common Name	Botanical Name	Quantity	Spacing (min.)	Size	Notes
Shrubs					
Currant	Ribes alpinum	21	3' o.c.	18" tall	Nursery grown
Highbush Cranberry	Viburnum edule	18	4' o.c.	36" tall	Nursery grown
Native Rose	Rosa rugosa	20	4' o.c.	36" tall	Nursery grown
Native Spirea	Spirea beauverdiana	34	3' o.c.	36" tall	Nursery grown

Notes:

- All plants shall meet American Standard for Nursery Stock (ANSI z60.1-2014), AmericanHort. 2130 Stella Court, Columbus OH 43215 www.AmericanHort.org. All plants to be reviewed and accepted by the Engineer/Landscape Architect/Owner prior to planting.
- Locate planting beds using survey stakes or spray paint for approval by the Engineer/Landscape Architect/Owner prior to excavation. Locations may be adjusted as required to avoid utilities, drainage swales or existing vegetation.
- Plants shall be weed free at time of planting.
- Mulch continuously throughout all planting beds with 3" deep shredded bark mulch. See details.
- Completely pre-fill all planting beds with water and allow to drain. Contact Owner if beds do not drain within 3 hours, do not plant in poorly drained soils.
- Topsoil and seed all disturbed areas not used for circulation and maintenance access. DO NOT SEED PLANTING BEDS. Use MASS Schedule A, Lawn Mix with 4" topsoil as shown and MASS Schedule D Seed Mix for all other disturbed areas.
- All lawn seeded areas shall receive 4-inches of topsoil measured after compaction, transition to existing grade.
- All plant species to be hardy and known to thrive in Alaska. Substitutions shall be approved by the Owner in writing.
- Landscape warranty period shall be one year. Replace all dead or dying plants within 7 days of notification.
- Trees that are damaged or disturbed, as determined by the Engineer, shall be replaced as follows:
 15-foot tall and greater spruce – replace each damaged tree with (2) 10' tall nursery grown white spruce
 3/4" and greater caliper birch – replace each damaged plant with (1) 3" caliper birch
 Alder – replace each damaged shrub with (3) 5' tall native willow.
 All replacement plants shall be planted in locations as directed by the Engineer.
- Special Seed Mix – In all disturbed areas except as shown on L-1, use seed mix recommended by the Alaska Plant Materials Center. Request seed mix recommendation 30 days prior to application. Submit approved seed mix to Engineer.



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

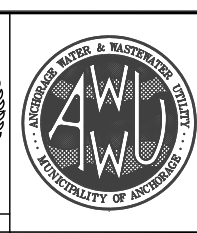
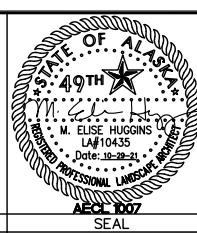
1. DATA PROVIDED BY: _____
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 CONTRACTOR: _____ TITLE: _____
 BY: _____ DATE: _____

2. DATA TRANSFERRED BY: _____
 COMPANY: _____
 DATE: _____

3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.
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SCHEDULE A

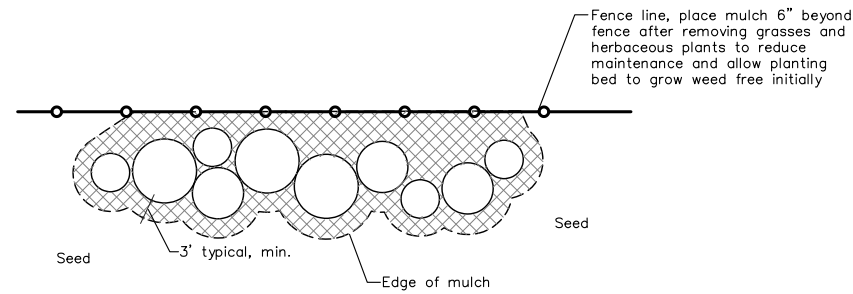
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

LANDSCAPE PLAN

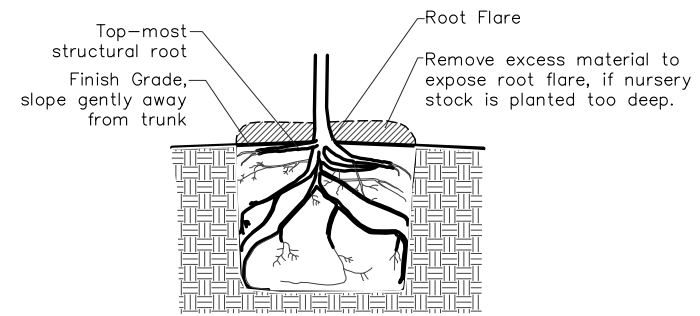
L1

HORIZ SCALE: 1" = 10'
 VERT SCALE: _____
 DATE: 10/29/2021
 GRID: SW 2525
 PROJ. ID.: WW.H7713

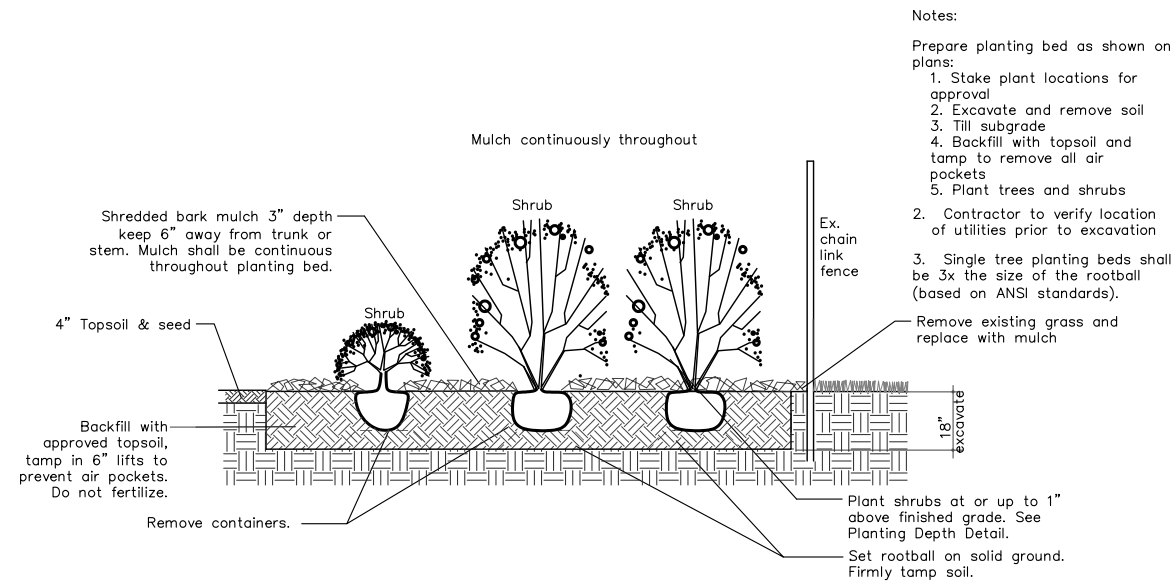
SHEET 75 of 104



1
L2 **Mulch Limits Detail**



2
L2 **Planting Depth Detail**



- Notes:
- Prepare planting bed as shown on plans:
1. Stake plant locations for approval
 2. Excavate and remove soil
 3. Till subgrade
 4. Backfill with topsoil and tamp to remove all air pockets
 5. Plant trees and shrubs
2. Contractor to verify location of utilities prior to excavation
3. Single tree planting beds shall be 3x the size of the rootball (based on ANSI standards).
- Remove existing grass and replace with mulch
- Plant shrubs at or up to 1" above finished grade. See Planting Depth Detail.
- Set rootball on solid ground. Firmly tamp soil.

3
L2 **Planting Bed, Tree & Shrub Planting Detail**

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" — 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

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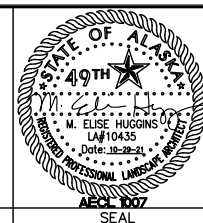
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SCHEDULE A

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

LANDSCAPE DETAILS

L2

HORIZ SCALE: 1" = 10'
VERT SCALE: _____

DATE: 10/29/2021 GRID: SW 2525

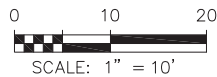
PROJ. ID.: WW.H7713

SHEET 76 of 104

NOTES

REFERENCE SEQUENCE OF CONSTRUCTION FOR ORDER OF DEMOLITION (SP 50.12).

- 2. STOCKPILE (SALVAGED) RIP RAP TO BE USED FOR FORCE MAIN TRENCH ARMORING, FILL SLOPE PROTECTION AND STREAM BANK STABILIZATION.

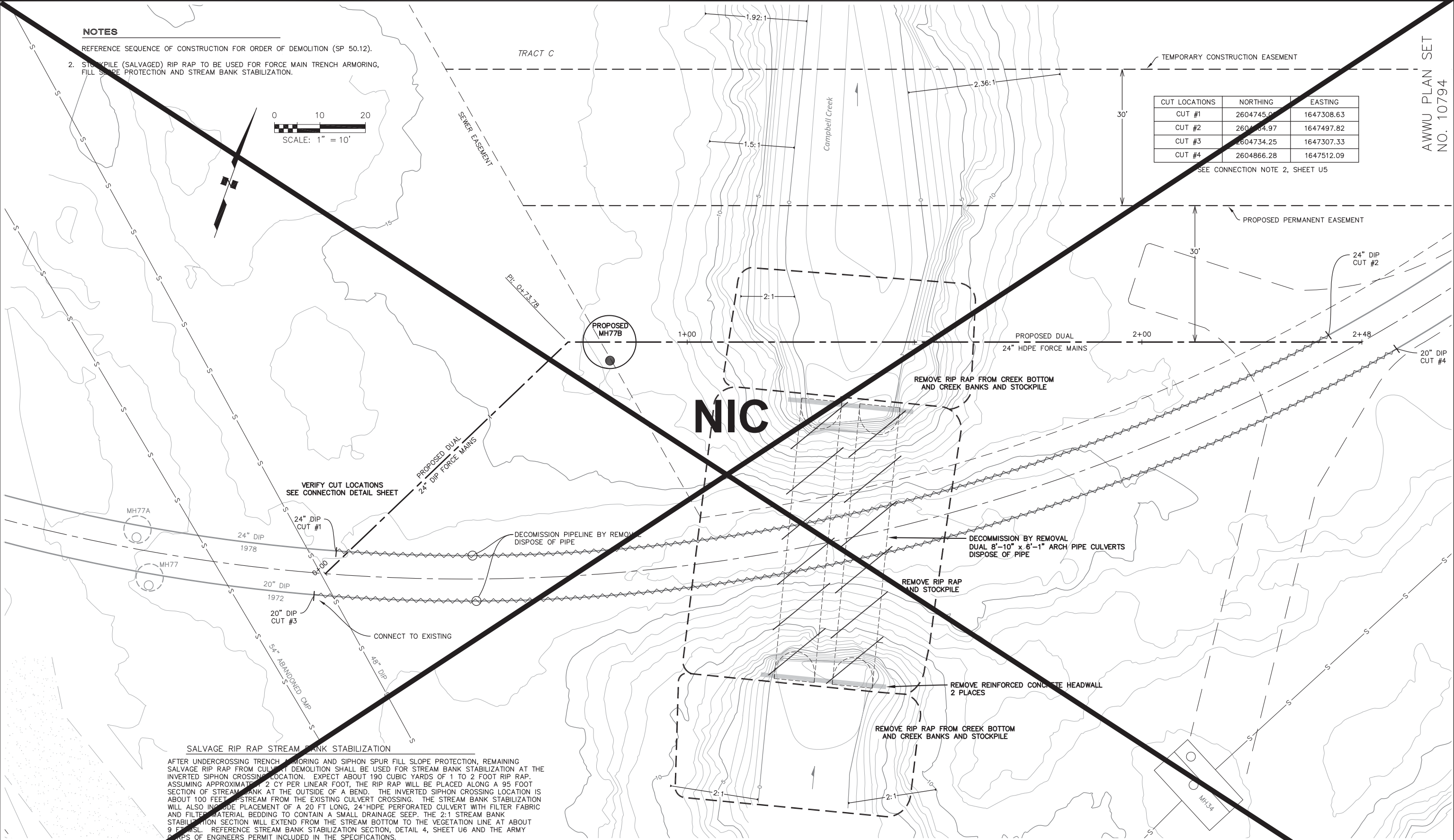


CUT LOCATIONS	NORTHING	EASTING
CUT #1	2604745.00	1647308.63
CUT #2	2604864.97	1647497.82
CUT #3	2604734.25	1647307.33
CUT #4	2604866.28	1647512.09

SEE CONNECTION NOTE 2, SHEET U5

AWWU PLAN SET
NO. 10794

NIC



SALVAGE RIP RAP STREAM BANK STABILIZATION

AFTER UNDERCROSSING TRENCH ARMORING AND SIPHON SPUR FILL SLOPE PROTECTION, REMAINING SALVAGE RIP RAP FROM CULVERT DEMOLITION SHALL BE USED FOR STREAM BANK STABILIZATION AT THE INVERTED SIPHON CROSSING LOCATION. EXPECT ABOUT 190 CUBIC YARDS OF 1 TO 2 FOOT RIP RAP. ASSUMING APPROXIMATELY 2 CY PER LINEAR FOOT, THE RIP RAP WILL BE PLACED ALONG A 95 FOOT SECTION OF STREAM BANK AT THE OUTSIDE OF A BEND. THE INVERTED SIPHON CROSSING LOCATION IS ABOUT 100 FEET UPSTREAM FROM THE EXISTING CULVERT CROSSING. THE STREAM BANK STABILIZATION WILL ALSO INCLUDE PLACEMENT OF A 20 FT LONG, 24" HDPE PERFORATED CULVERT WITH FILTER FABRIC AND FILTER MATERIAL BEDDING TO CONTAIN A SMALL DRAINAGE SEEP. THE 2:1 STREAM BANK STABILIZATION SECTION WILL EXTEND FROM THE STREAM BOTTOM TO THE VEGETATION LINE AT ABOUT 9 FEET MSL. REFERENCE STREAM BANK STABILIZATION SECTION, DETAIL 4, SHEET U6 AND THE ARMY CORPS OF ENGINEERS PERMIT INCLUDED IN THE SPECIFICATIONS.

VERIFY SCALE

THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.



IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.

FULL SIZE SCALE INCH, ADJUST DRAWING HORZ SCALE: 1"=10' VERT SCALE:

DATA	DRAWN BY	CHECKED BY	DATE	REV	DESCRIPTION	BY
BASE	EVR	VLR				
TOPOGRAPHY						
PROFILE						
SANITARY SEWER						
STORM SEWER						
WATER						
GAS						
PLAN CHECK						
REVISIONS						

RECORD DRAWING

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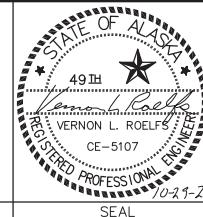
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SCHEDULE B

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

CULVERT DEMOLITION

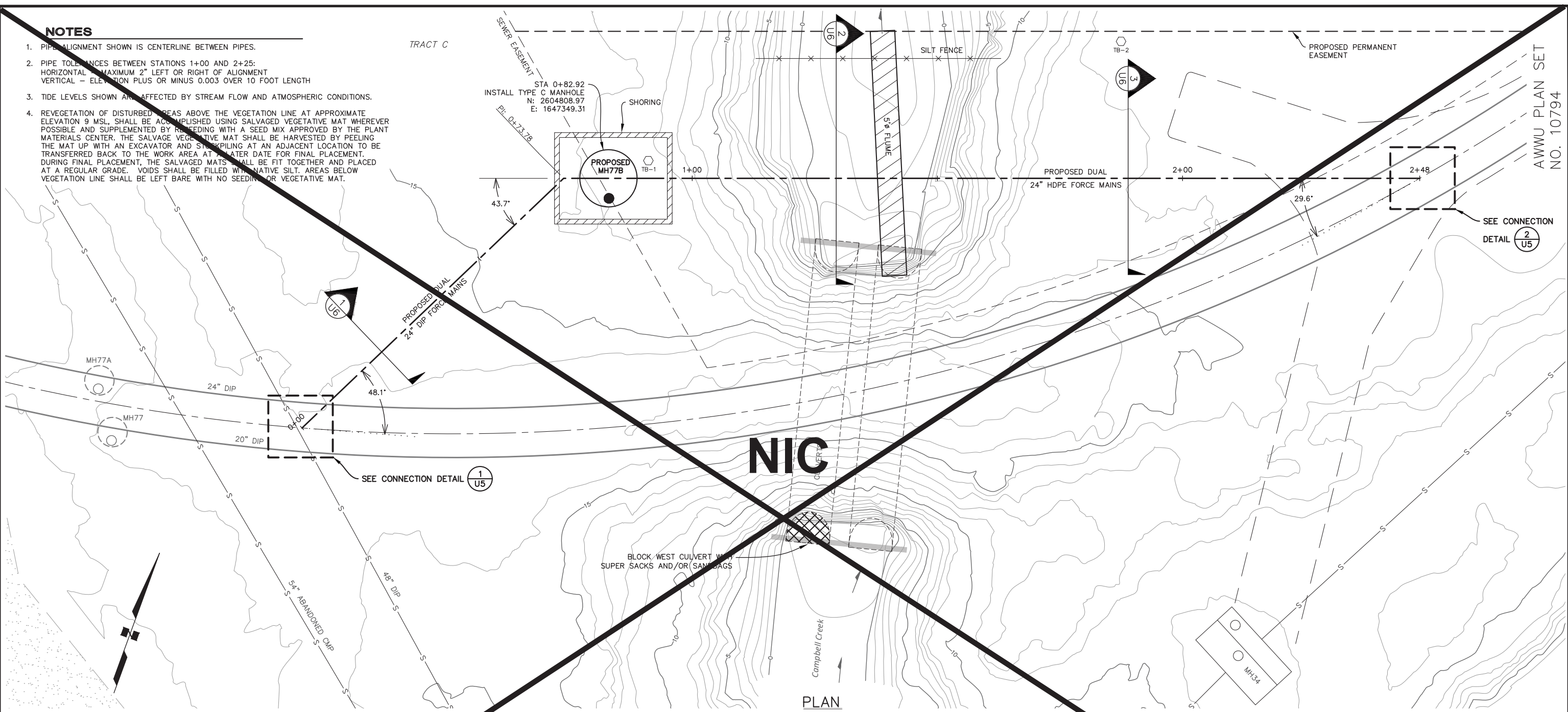
U1

HORZ SCALE: 1"=10'	DATE: 10/29/2021	GRID: SW 2525	SHEET 77 of 104
VERT SCALE:			
PROJ. ID.: WW.H7713			

NOTES

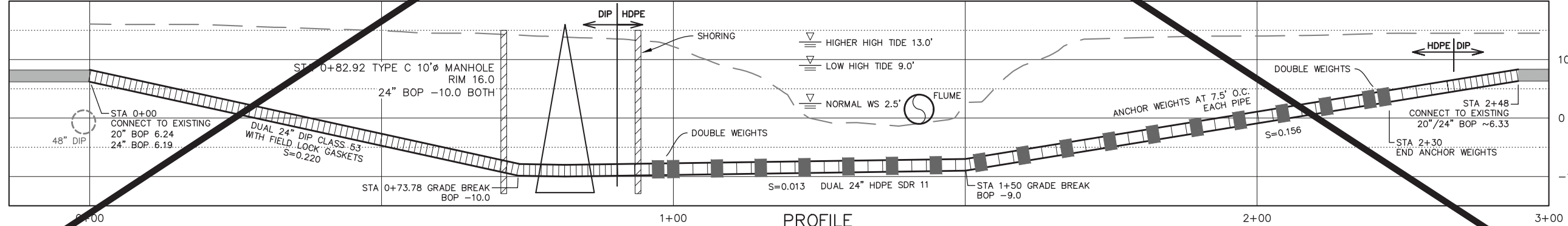
1. PIPE ALIGNMENT SHOWN IS CENTERLINE BETWEEN PIPES.
2. PIPE TOLERANCES BETWEEN STATIONS 1+00 AND 2+25:
HORIZONTAL - MAXIMUM 2" LEFT OR RIGHT OF ALIGNMENT
VERTICAL - ELEVATION PLUS OR MINUS 0.003 OVER 10 FOOT LENGTH
3. TIDE LEVELS SHOWN ARE AFFECTED BY STREAM FLOW AND ATMOSPHERIC CONDITIONS.
4. REVEGETATION OF DISTURBED AREAS ABOVE THE VEGETATION LINE AT APPROXIMATE ELEVATION 9 MSL, SHALL BE ACCOMPLISHED USING SALVAGED VEGETATIVE MAT WHEREVER POSSIBLE AND SUPPLEMENTED BY RESEEDING WITH A SEED MIX APPROVED BY THE PLANT MATERIALS CENTER. THE SALVAGE VEGETATIVE MAT SHALL BE HARVESTED BY PEELING THE MAT UP WITH AN EXCAVATOR AND STOCKPILING AT AN ADJACENT LOCATION TO BE TRANSFERRED BACK TO THE WORK AREA AT A LATER DATE FOR FINAL PLACEMENT. DURING FINAL PLACEMENT, THE SALVAGED MATS SHALL BE FIT TOGETHER AND PLACED AT A REGULAR GRADE. VOIDS SHALL BE FILLED WITH NATIVE SILT. AREAS BELOW VEGETATION LINE SHALL BE LEFT BARE WITH NO SEEDING OR VEGETATIVE MAT.

AWWU PLAN SET
NO. 10794



NIC

PLAN



PROFILE

VERIFY SCALE
THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.

DATA	DRAWN BY	CHECKED BY	DATE	DESCRIPTION	BY
BASE	EVR	VLR			
TOPOGRAPHY					
PROFILE					
SANITARY SEWER					
STORM SEWER					
WATER					
GAS					

PLAN CHECK

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

DATE	DESCRIPTION	BY

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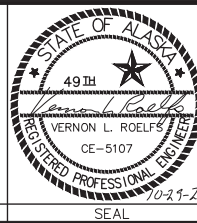
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SCHEDULE B

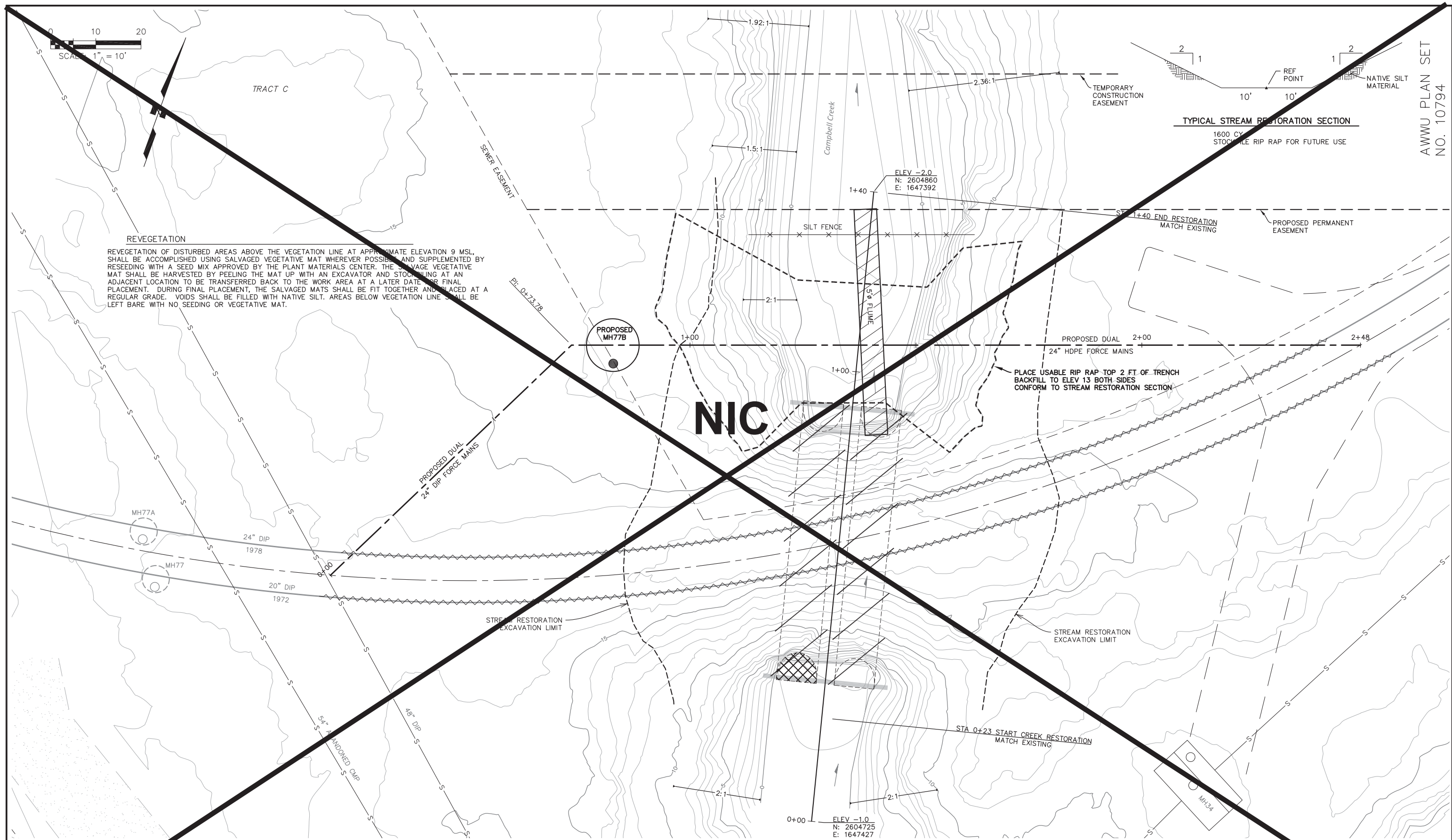
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

**FORCE MAIN UNDERCROSSING
PLAN AND PROFILE**

U2

HORIZ SCALE: 1"=10'
VERT SCALE: 1"=10'
DATE: 10/29/2021
GRID: SW 2525
PROJ. ID.: WW.H7713

SHEET 78 OF 104



REVEGETATION
 REVEGETATION OF DISTURBED AREAS ABOVE THE VEGETATION LINE AT APPROXIMATE ELEVATION 9 MSL, SHALL BE ACCOMPLISHED USING SALVAGED VEGETATIVE MAT WHEREVER POSSIBLE AND SUPPLEMENTED BY RESEEDING WITH A SEED MIX APPROVED BY THE PLANT MATERIALS CENTER. THE SALVAGED VEGETATIVE MAT SHALL BE HARVESTED BY PEELING THE MAT UP WITH AN EXCAVATOR AND STOCKPILING AT AN ADJACENT LOCATION TO BE TRANSFERRED BACK TO THE WORK AREA AT A LATER DATE FOR FINAL PLACEMENT. DURING FINAL PLACEMENT, THE SALVAGED MATS SHALL BE FIT TOGETHER AND PLACED AT A REGULAR GRADE. VOIDS SHALL BE FILLED WITH NATIVE SILT. AREAS BELOW VEGETATION LINE SHALL BE LEFT BARE WITH NO SEEDING OR VEGETATIVE MAT.

NIC

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE 1"=10' VERT SCALE:	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	10/29/2021				
TOPOGRAPHY							
PROFILE							
SANITARY SEWER							
STORM SEWER							
WATER							
GAS							
PLAN CHECK							REVISIONS

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 SCHEDULE B
 PS12 FORCE MAIN / GRAVITY JUNCTION REHAB
STREAM RESTORATION
 U3
 HORZ SCALE: 1"=10' DATE: 10/29/2021 GRID: SW 2525 SHEET 79 of 104
 VERT SCALE: _____
 PROJ. ID.: WW.H7713

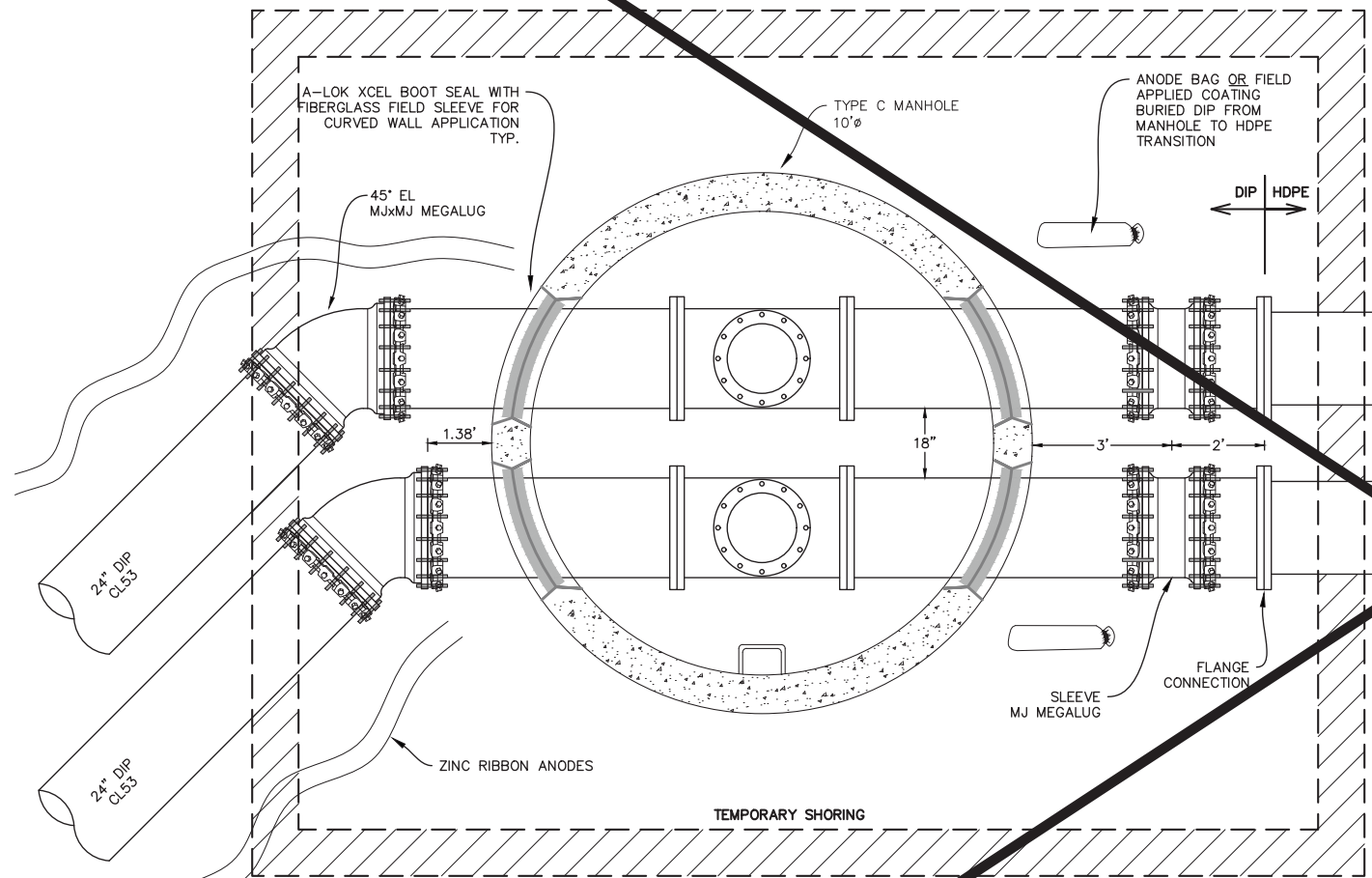
CORROSION CONTROL NOTES

1. ALL DIP SHALL HAVE TIGHTLY BONDED COATINGS. ALL BURIED JOINTS SHALL BE BONDED.
2. ALL FITTINGS SHALL BE EPOXY COATED.
3. WEST OF MANHOLE - TWO ZINC RIBBON ANODES WITH TEST STATIONS SHALL BE INSTALLED ON EITHER SIDE OF THE 20" DIP AND THE 24" DIP (4 RIBBONS TOTAL). TEST STATIONS SHALL BE LOCATED OVER 45° BENDS AT WEST CONNECTION, TO ACT AS ANGLE MANAGERS.
4. EAST OF MANHOLE - ANODE BAGS SERVING ALL NEW DIP PIPING AND FITTINGS WITHIN 20' OR FIELD APPLIED COATING.
5. ALL BOLTS SHALL BE STAINLESS STEEL.
6. SEE SHEET U8 FOR CORROSION CONTROL DETAILS.

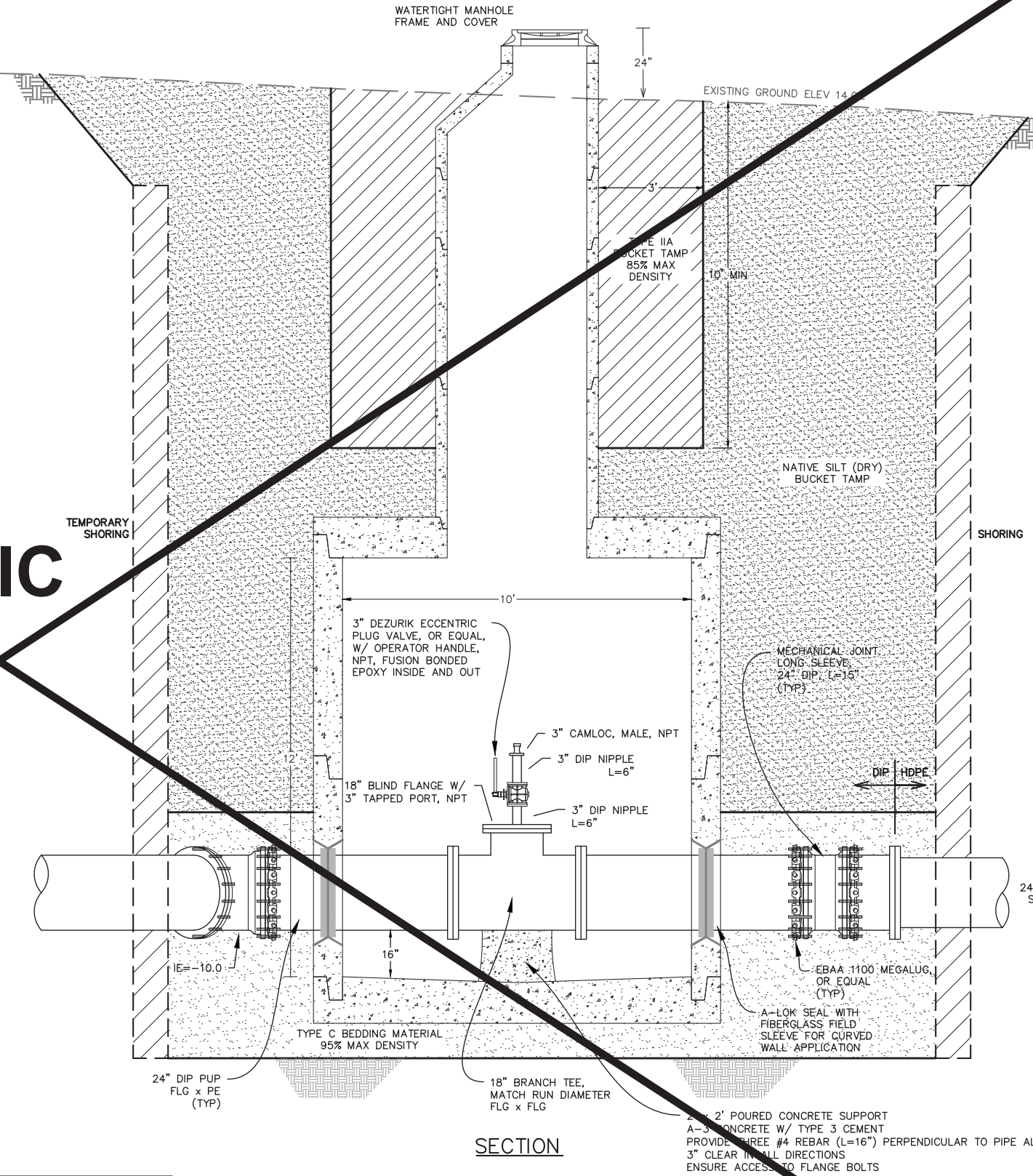
MANHOLE NOTES

1. SANITARY MANHOLE SHALL BE TYPE C WITH ALL ACCESSORIES.
2. USE TYPE III STORM DRAIN MANHOLE STRUCTURE FOR 120" DIAMETER.
3. ALL MANHOLES SHALL HAVE A MINIMUM OF ONE-SIX (6") INCH GRADE RING. MAXIMUM GRADE RING ADJUSTMENT SHALL NOT EXCEED EIGHTEEN (18") INCHES.
4. ALL 24" DIP SHALL BE CLASS 53. ALL 3" DIP SHALL BE CLASS 54.
5. ALL NUTS, BOLTS, AND FASTENERS SHALL BE TYPE 316 STAINLESS STEEL.
6. NATIVE MATERIAL USED FOR TRENCH BACKFILL SHALL CONSIST OF MATERIAL EXCAVATED FROM THE TRENCH, THAT IS COMPACTABLE AND FREE OF ORGANICS AND STONES LARGER THAN THREE INCHES.
7. TEMPORARY SHORING SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. DESIGN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. DESIGN SHALL BE STAMPED BY AN ALASKA PROFESSIONAL ENGINEER.

AWWU PLAN SET
NO. 10794

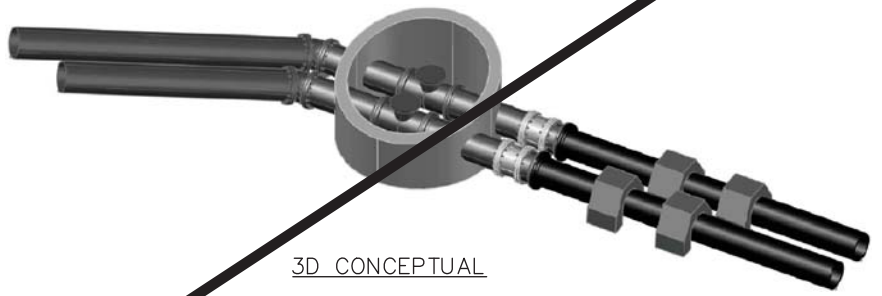


PLAN



SECTION

MANHOLE 77B DETAIL



3D CONCEPTUAL

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TOPOGRAPHY									
PROFILE									
SANITARY SEWER									
STORM SEWER									
WATER									
GAS									

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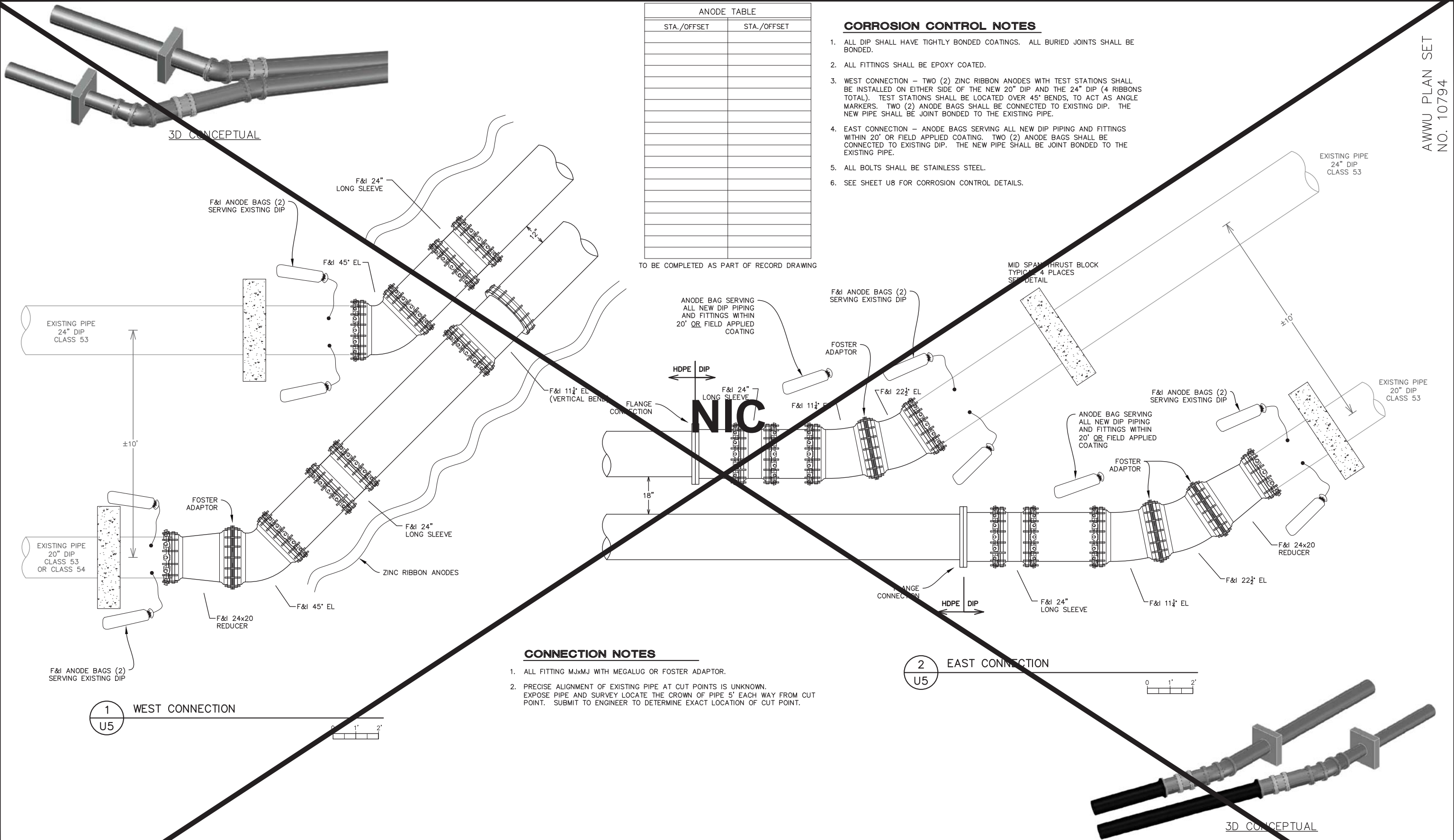
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1345 RUDAKOF CIR #201
ANCHORAGE, AK 99508
LICENSE #AEC368
CONSULTANT

STATE OF ALASKA
49th
Vernon L. Roelfs
REGISTERED PROFESSIONAL ENGINEER
CE-5107
70-21-21
SEAL

ANCHORAGE WATER & WASTEWATER UTILITY
AWWU
MUNICIPALITY OF ANCHORAGE

MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY
SCHEDULE B
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB
MANHOLE
U4
HORIZ SCALE: 1"=2'
VERT SCALE: 1"=2'
DATE: 10/29/2021
GRID: SW 2525
PROJ. ID.: WW.H7713
SHEET 80 of 104



VERIFY SCALE

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0" 1"

IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.

FULL SIZE SCALE: 1"=2'

VERT SCALE: 1"=2'

DATA	DRAWN BY	CHECKED BY	DATE	REV	DESCRIPTION	BY
BASE	EVR	VLR				
TOPOGRAPHY		ELECTRIC				
PROFILE		CABLE TV				
SANITARY SEWER		TRAFFIC SIGNAL				
STORM SEWER		DESIGN				
WATER		QUANTITIES				
GAS		MUN. FINAL CHECK				

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VEI Consultants

49th

VERNON L. ROELFS

REGISTERED PROFESSIONAL ENGINEER

CE-5107

70-21-21

PHONE: 337-3330
1345 RUJAKOF CIR #201
ANCHORAGE, AK 99508
LICENSE #AEC368

CONSULTANT

SEAL

MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY

SCHEDULE B

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

CONNECTION DETAILS

U5

HORIZ SCALE: 1"=2'
VERT SCALE: _____
DATE: 10/29/2021
GRID: SW 2525
PROJ. ID.: WW.H7713

ANODE TABLE

STA./OFFSET	STA./OFFSET

TO BE COMPLETED AS PART OF RECORD DRAWING

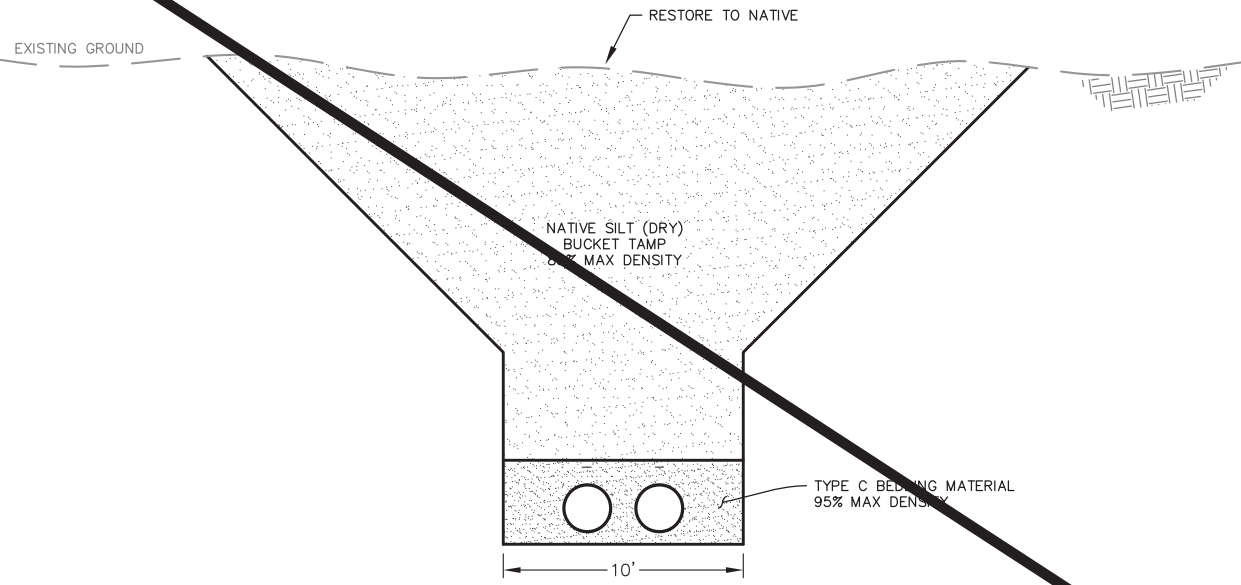
CORROSION CONTROL NOTES

1. ALL DIP SHALL HAVE TIGHTLY BONDED COATINGS. ALL BURIED JOINTS SHALL BE BONDED.
2. ALL FITTINGS SHALL BE EPOXY COATED.
3. WEST CONNECTION - TWO (2) ZINC RIBBON ANODES WITH TEST STATIONS SHALL BE INSTALLED ON EITHER SIDE OF THE NEW 20" DIP AND THE 24" DIP (4 RIBBONS TOTAL). TEST STATIONS SHALL BE LOCATED OVER 45° BENDS, TO ACT AS ANGLE MARKERS. TWO (2) ANODE BAGS SHALL BE CONNECTED TO EXISTING DIP. THE NEW PIPE SHALL BE JOINT BONDED TO THE EXISTING PIPE.
4. EAST CONNECTION - ANODE BAGS SERVING ALL NEW DIP PIPING AND FITTINGS WITHIN 20' OR FIELD APPLIED COATING. TWO (2) ANODE BAGS SHALL BE CONNECTED TO EXISTING DIP. THE NEW PIPE SHALL BE JOINT BONDED TO THE EXISTING PIPE.
5. ALL BOLTS SHALL BE STAINLESS STEEL.
6. SEE SHEET U8 FOR CORROSION CONTROL DETAILS.

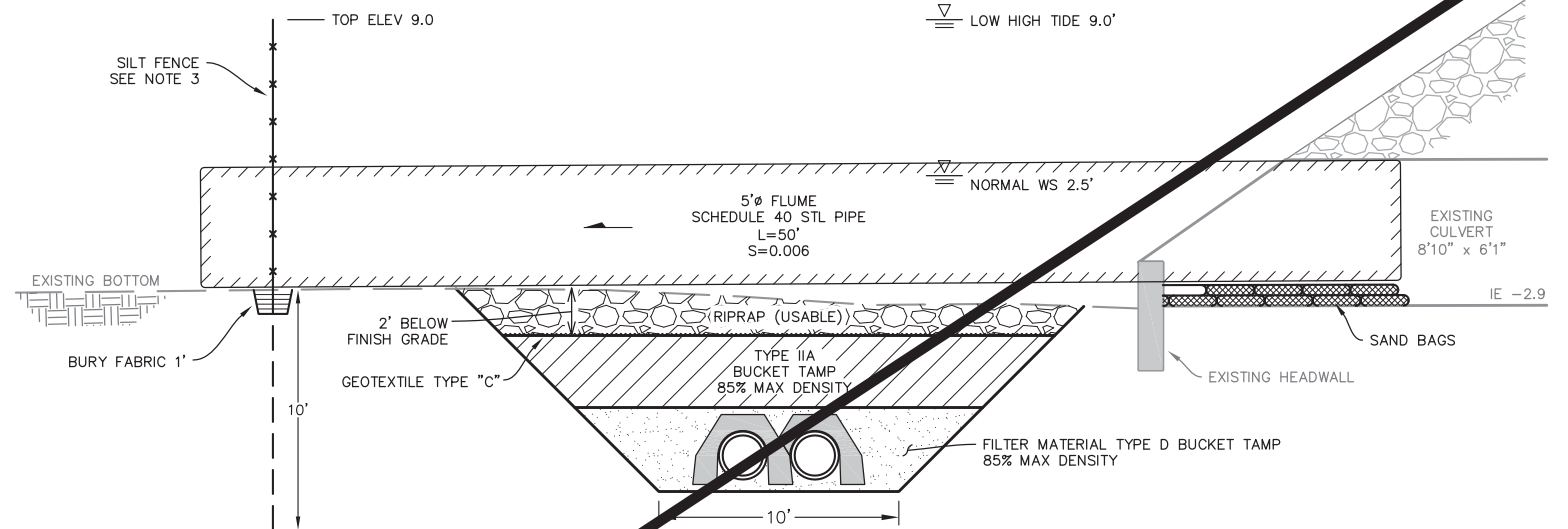
CONNECTION NOTES

1. ALL FITTING MxMJ WITH MEGALUG OR FOSTER ADAPTOR.
2. PRECISE ALIGNMENT OF EXISTING PIPE AT CUT POINTS IS UNKNOWN. EXPOSE PIPE AND SURVEY LOCATE THE CROWN OF PIPE 5' EACH WAY FROM CUT POINT. SUBMIT TO ENGINEER TO DETERMINE EXACT LOCATION OF CUT POINT.

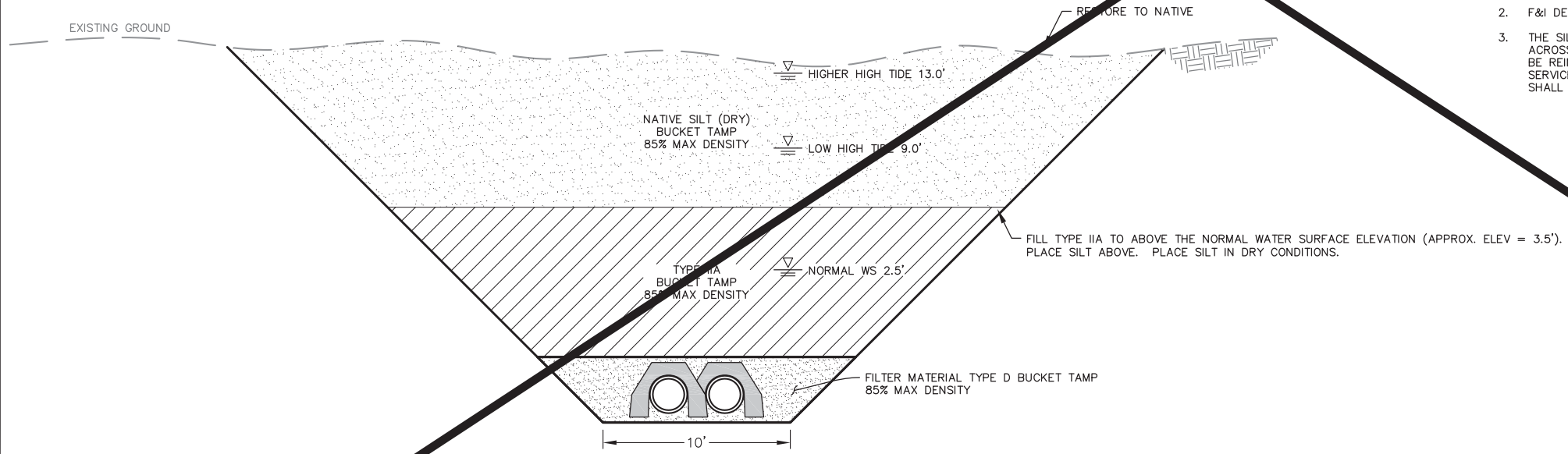
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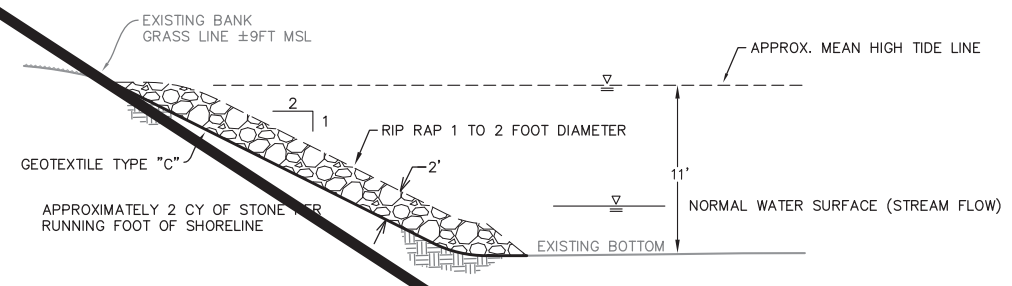
1 TRENCH SECTION STA 0+00 to MH77B
U6



2 FLUME AND IN CHANNEL SECTION STA 0+95 to 1+70
U6



3 TRENCH SECTION STA 1+70 to End
U6



4 STREAM BANK STABILIZATION
U6
SCALE: N.T.S.

NOTES:

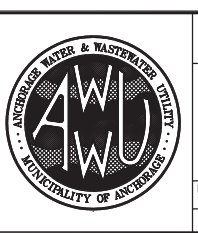
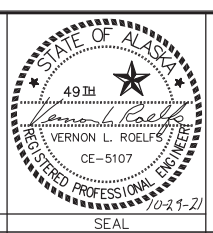
- REVEGETATION OF DISTURBED AREAS ABOVE THE VEGETATION LINE AT APPROXIMATE ELEVATION 9 MSL, SHALL BE ACCOMPLISHED USING SALVAGED VEGETATIVE MAT WHEREVER POSSIBLE AND SUPPLEMENTED BY RESEEDING WITH A SEED MIX APPROVED BY THE PLANT MATERIALS CENTER. THE SALVAGE VEGETATIVE MAT SHALL BE HARVESTED BY PEELING THE MAT UP WITH AN EXCAVATOR AND STOCKPILING AT AN ADJACENT LOCATION TO BE TRANSFERRED BACK TO THE WORK AREA AT A LATER DATE FOR FINAL PLACEMENT. DURING FINAL PLACEMENT, THE SALVAGED MATS SHALL BE FIT TOGETHER AND PLACED AT A REGULAR GRADE. VOIDS SHALL BE FILLED WITH NATIVE SILT. AREAS BELOW VEGETATION LINE SHALL BE LEFT BARE WITH NO SEEDING OR VEGETATIVE MAT.
- F&I DETECTABLE WARNING TAPE ABOVE EACH PIPE.
- THE SILT FENCE SHALL BE IN ACCORDANCE WITH MASS SECTION 70.19. THE FENCE SHALL BE CONSTRUCTED ACROSS THE CREEK AS SHOWN USING DRIVEN 4" STEEL PILES AT 10 FOOT INTERVALS. SILT FENCE FABRIC SHALL BE REINFORCED AS NECESSARY TO MAINTAIN THE INTEGRITY OF THE FENCE. THE 4" STEEL PILES SHALL BE SERVICEABLE SCHEDULE 40 (MIN) STEEL PIPE, DRILLING TUBING OR APPROVED EQUAL. THE PILES AND FENCING SHALL BE THOROUGHLY REMOVED AT THE COMPLETION OF THE UNDERCROSSING WORK.

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE HORZ SCALE: 1"=4' VERT SCALE: 1"=4'	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DESCRIPTION	BY	DATE	REV	DESCRIPTION
BASE	EVR	VLR							
TOPOGRAPHY									
PROFILE									
SANITARY SEWER									
STORM SEWER									
WATER									
GAS									
PLAN CHECK									

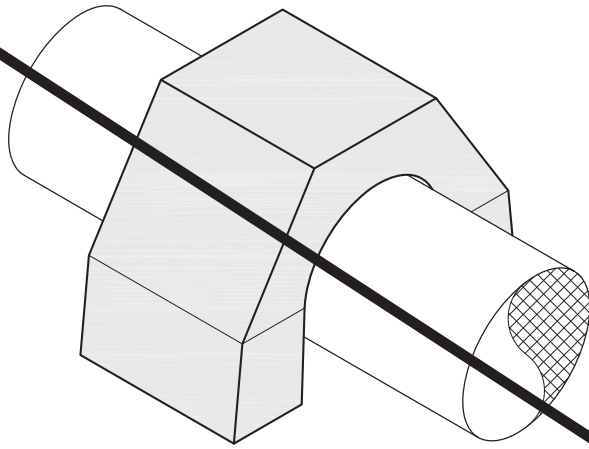
RECORD DRAWING		Note: To be filled out on original drawings upon project completion.	
1. DATA PROVIDED BY: _____	2. DATA TRANSFERRED BY: _____	3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.	REUSE OF DOCUMENTS
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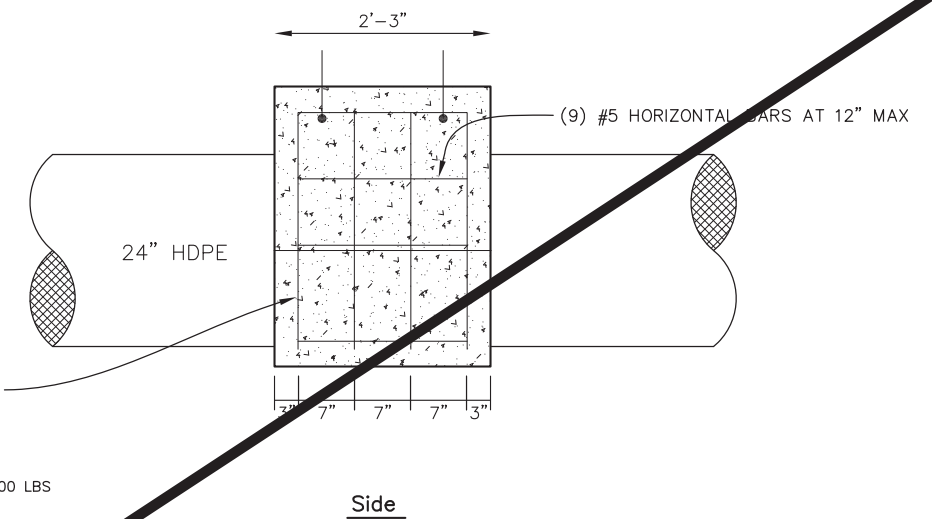
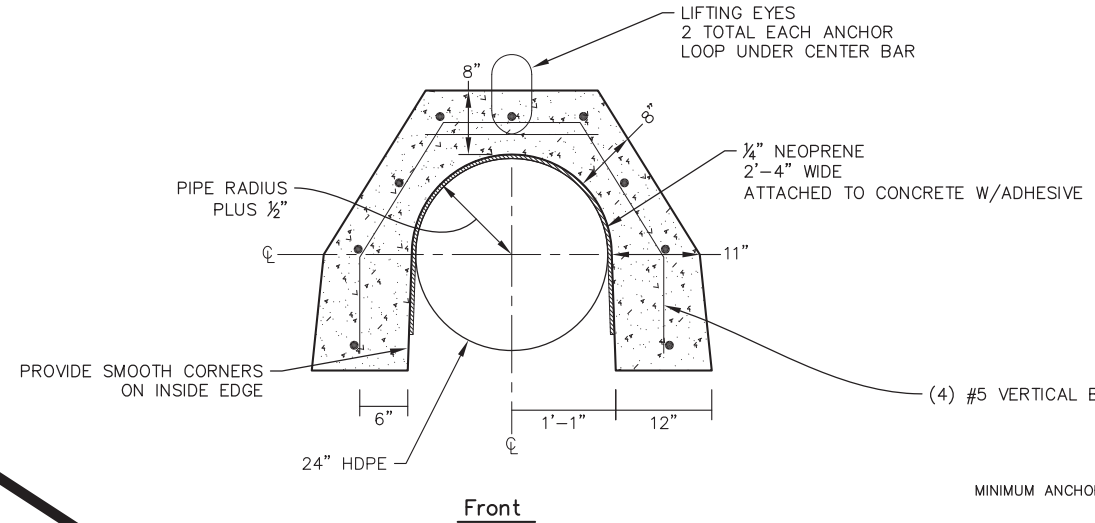
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ANCHORAGE, AK 99508
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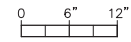
MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY			
SCHEDULE B			
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB			
DETAILS			
U6			
HORZ SCALE: 1"=4'	DATE: 10/29/2021	GRID: SW 2525	SHEET 82 of 144
PROJ. ID.: WW.H7713			



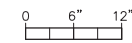
Isometric



CONCRETE ANCHOR WEIGHTS

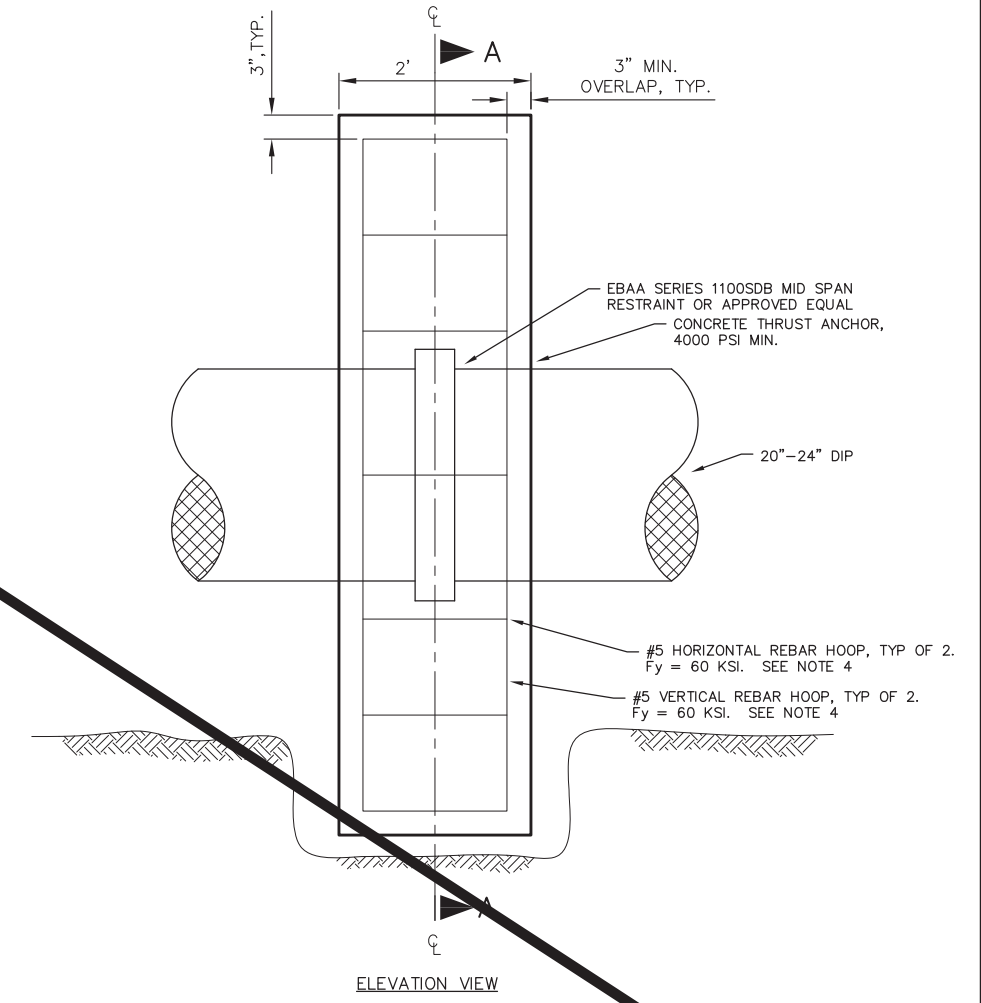
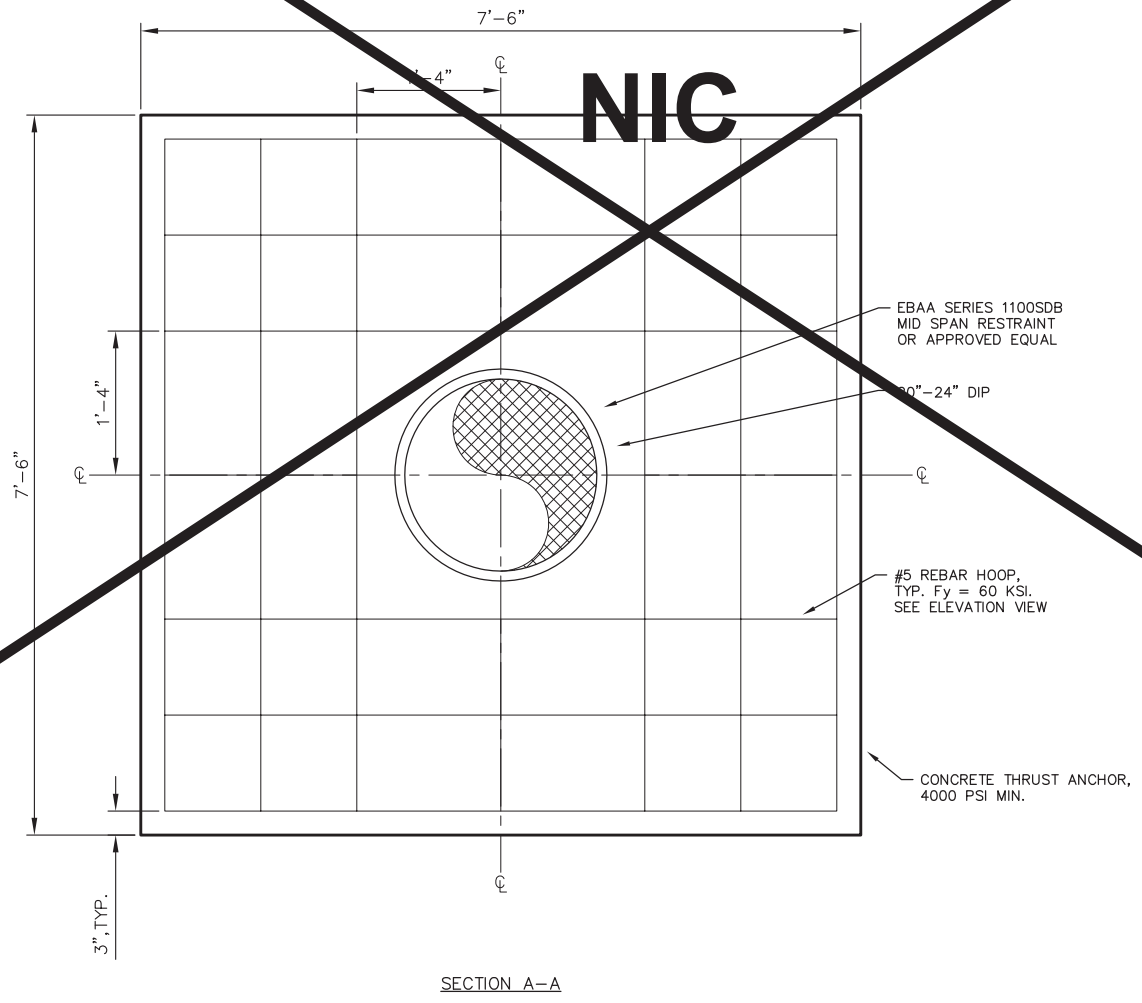


MID SPAN THRUST BLOCK ANCHOR



MID SPAN THRUST ANCHOR NOTES:

1. INSTALL MID SPAN THRUST ANCHOR TO PROVIDE RESTRAINT TO THE END OF EXISTING FORCE MAIN.
2. INSTALL EBAA SERIES 1100SDB MID SPAN RESTRAINT PER MANUFACTURER'S INSTRUCTIONS.
3. BACKFILL AROUND THRUST ANCHOR SHALL BE TYPE II CLASSIFIED FILL COMPACTED TO 95% MAXIMUM DENSITY.
4. PROVIDE FOUR CONTINUOUS #4 REBAR HOOPS IN THRUST ANCHOR. PLACE HOOPS PARALLEL TO HORIZONTAL AND VERTICAL AXIS AROUND MID SPAN RESTRAINT.
5. CONCRETE SHALL REACH 75% MAXIMUM STRENGTH BEFORE PUTTING THRUST BLOCK ANCHOR INTO SERVICE.
6. WHERE NEW DI PIPE IS USED, CONTRACTOR MAY CONSTRUCT THE THRUST BLOCK AND PIPE ASSEMBLY COMPLETE BEFORE INSTALLING INTO THE PIPE SYSTEM.
7. VERIFY THAT THERE ARE NO JOINTS IN THE EXISTING PIPE BETWEEN THE CONCRETE THRUST BLOCK AND THE PROPOSED RESTRAINED FITTINGS.



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DATA	DRAWN BY	CHECKED BY	DATE	REV	DATE	DESCRIPTION	BY	DATE	REVISIONS
BASE	EVR	VLR							
TOPOGRAPHY									
PROFILE									
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STORM SEWER									
WATER									
GAS									

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 COMPANY: _____
 BY: _____ TITLE: _____
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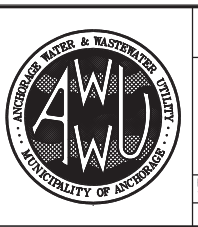
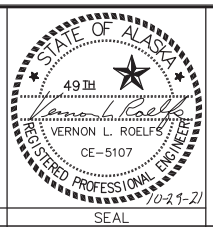
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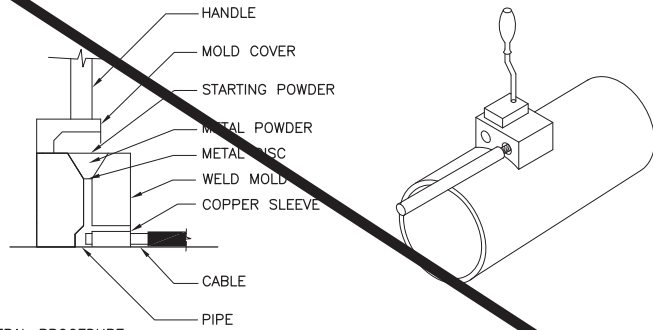
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 ANCHORAGE, AK 99508
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PS12 FORCE MAIN / GRAVITY JUNCTION REHAB			
DETAILS			
U7			
HORIZ SCALE:	DATE: 10/29/2021	GRID: SW 2525	SHEET 83 of 144
VERT SCALE:			
PROJ. ID.: WW.H7713			

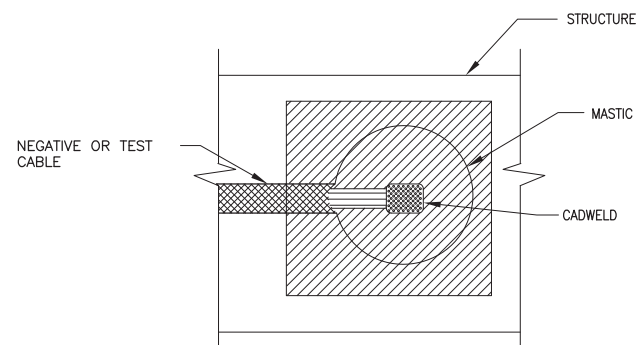
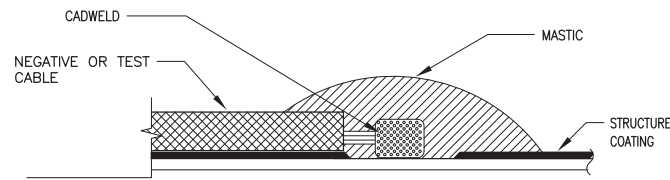


GENERAL PROCEDURE:

1. PROCEDURE IS ONLY TO BE USED AS A GENERAL GUIDE, SEE PROJECT NOTES AND MANUFACTURERS LITERATURE FOR SPECIFIC INSTRUCTIONS.
2. CLEAN & FILE STRUCTURE TO BRIGHT METAL.
3. STRIP INSULATION FROM WIRE SUFFICIENT TO CLEAR WELD MOLD, INSTALL COPPER SLEEVE.
4. HOLD FIRMLY WITH OPENING AWAY FROM OPERATOR, IGNITE POWDER.
5. REMOVE SLAG FROM CONNECTION, TEST WELD WITH SHARP HAMMER BLOW.
6. EXOTHERMIC WELDS MATERIAL SHALL BE CADWELD OR APPROVED EQUAL.
7. COVER ALL EXPOSED METALS AS REQUIRED.

EXOTHERMIC WELD DETAIL

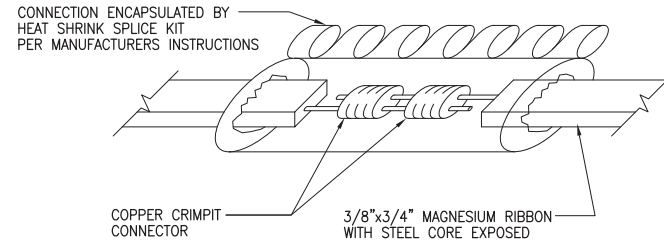
NTS



- NOTES:**
1. USE COAL TAR MASTIC OR APPROVED EQUAL FOR EXOTHERMIC WELD AREA REPAIRS.

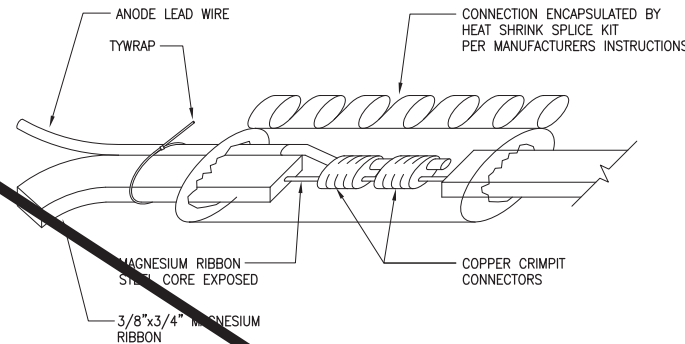
EXOTHERMIC WELD COATING REPAIR DETAIL

NTS



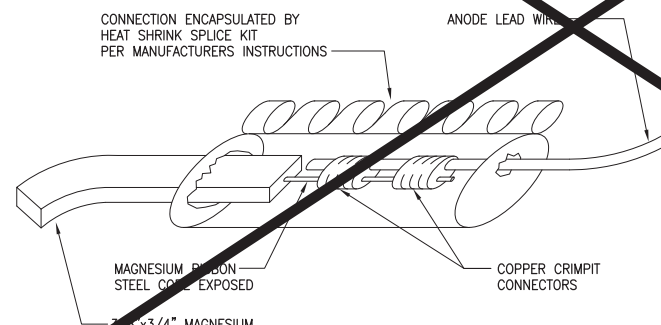
MAGNESIUM RIBBON INLINE SPLICE

NTS



MAGNESIUM RIBBON AND ANODE LEAD WIRE TAP SPLICE

NTS

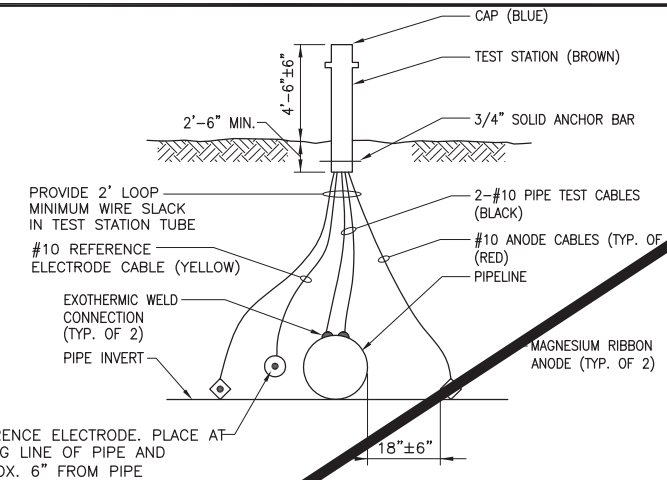


MAGNESIUM RIBBON AND ANODE LEAD WIRE END SPLICE

NTS

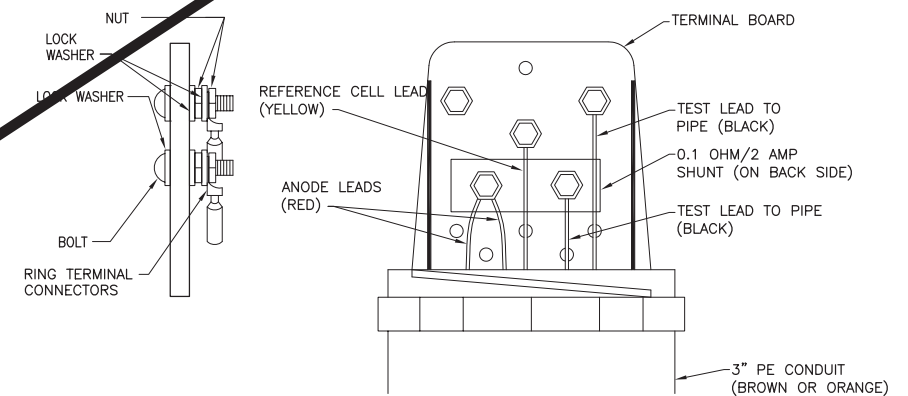
GENERAL NOTES:

1. THE ANODE ENDS SHOULD BE PREPARED FOR SPLICING BY MECHANICAL MEANS ONLY. THE MAGNESIUM COULD IGNITE IF IT IS REMOVED FROM THE IRON CORE WIRE BY MELTING. THE RESULTING FLAME WOULD BE DIFFICULT TO EXTINGUISH.
2. HEAT SHRINK SPLICE ENCAPSULATION KITS SHALL BE RAYCHEM TYPE ASE OR APPROVED EQUAL.



TEST STATION AND MAGNESIUM RIBBON ANODE INSTALLATION

NTS



TEST STATION TERMINAL BOARD

NTS

NOTES:

1. MAGNESIUM RIBBON ANODES SHALL BE 3/8" X 3/4" AND WEIGH AN AVERAGE OF 0.24LBS./FT. ANODES SHALL BE EXTRUDED AND HAVE A 0.135-INCH DIAMETER STEEL CORE. ALL ANODES SHALL BE OF HIGH POTENTIAL MAGNESIUM ALLOY. MAGNESIUM RIBBON SHALL BE INSTALLED ALONG THE ENTIRE LENGTH OF THE PIPELINE. MAGNESIUM ANODES SHALL BE CONNECTED TO AN ANODE LEAD CABLE. THE ANODES SHALL MAKE CONTACT WITH THE STRUCTURE ONLY THROUGH THE TEST STATION. THE CONNECTION BETWEEN THE ANODE LEAD WIRE AND THE MAGNESIUM RIBBON STEEL CORE SHALL BE MADE WITH COPPER CRIMP CONNECTORS. THE SPLICE SHALL BE ENCAPSULATED.
2. UNDERGROUND CABLES UTILIZED FOR THE CATHODIC PROTECTION CIRCUIT SHALL BE NO. 10 AWG, STRANDED COPPER CONDUCTOR WITH HMWPE INSULATION RATED FOR 600 VOLTS AND BELOW GRADE USE. CABLE SPLICES SHALL NOT BE PERMITTED UNLESS OTHERWISE SPECIFIED OR SHOWN. CABLES SHALL BE COLOR-CODED AS SHOWN. COLOR SHALL BE IMPREGNATED IN THE INSULATION MATERIAL.
3. TEST STATIONS SHALL BE TUBE STYLE WITH NINE LEAD TERMINAL BOARD, NICKEL-PLATED BRASS OR STAINLESS STEEL MOUNTING HARDWARE AND COME COMPLETE WITH A 3/4-INCH SOLID ANCHOR BAR. THE TUBE SHALL BE 3-INCH DIAMETER, UV STABILIZED POLYETHYLENE OR POLYCARBONATE, BROWN IN COLOR, WITH A BLUE TEST HEAD AND COMPRESSION FIT BASE. TEST STATION SHALL BE BIG FINK, AS MANUFACTURED BY COTT INDUSTRIES. CABLE TERMINAL CONNECTORS SHALL BE RING CONNECTORS WITH INSULATION GRIP.
4. REFERENCE ELECTRODES SHALL BE CU/CUSO4 TYPE AND SHALL HAVE A MINIMUM DESIGN LIFE OF 20 YEARS. THE LEAD WIRE SHALL BE NO. 10 AWG STRANDED COPPER WITH YELLOW HMWPE INSULATION. REFERENCE ELECTRODES SHALL BE STEALTH REFERENCE ELECTRODES, AS MANUFACTURED BY BORIN MANUFACTURING COMPANY OR GMC STAPERM. THE ELECTRODE SHALL NOT BE HANDLED BY THE LEAD CABLE. PLASTIC OR PAPER BAGS SHALL BE REMOVED FROM THE ELECTRODE BEFORE LOWERING INTO PLACE. SOIL FREE OF ROCKS AND CLOUDS SHALL BE PLACED AROUND THE ELECTRODE. DAMAGE TO THE ELECTRODE OR WIRE INSULATION WILL REQUIRE REPLACEMENT OF THE ENTIRE ASSEMBLY.
5. EXOTHERMIC WELDS SHALL BE PROVIDED FOR CABLE-TO-STRUCTURE CONNECTIONS AND MADE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. EXOTHERMIC WELDS SHALL BE CADWELD, AS MANUFACTURED BY ERICO PRODUCTS, INC. OR APPROVED EQUAL. THE SHAPE AND CHARGE OF THE EXOTHERMIC WELD SHALL BE CHOSEN BY THE CONTRACTOR AND SHALL BE BASED ON THE FOLLOWING PARAMETERS:
 - PIPE MATERIAL
 - PIPE SIZE
 - CABLE SIZE
 - NUMBER OF STRANDS TO BE WELDED
 - ORIENTATION OF WELD (VERTICAL OR HORIZONTAL)
6. MATERIALS USED TO REPAIR AND ENCAPSULATE THE EXOTHERMIC WELD AREA SHALL BE COAL TAR MASTIC OR APPROVED EQUAL.

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" — 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE HORZ SCALE: NA VERT SCALE: NA	
DATA	DRAWN BY	CHECKED BY	DATE	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
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TOPOGRAPHY	---	---	---	---	---	---	---	---	---
PROFILE	---	---	---	---	---	---	---	---	---
SANITARY SEWER	---	---	---	---	---	---	---	---	---
STORM SEWER	---	---	---	---	---	---	---	---	---
WATER	---	---	---	---	---	---	---	---	---
GAS	---	---	---	---	---	---	---	---	---
PLAN CHECK					REVISIONS				

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2. DATA TRANSFERRED BY: ---		DATE: ---	
COMPANY: ---		DATE: ---	
DATE: ---		DATE: ---	

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LICENSE #AEC368

CONSULTANT

STATE OF ALASKA

49th

VERNON L. ROELF

REGISTERED PROFESSIONAL ENGINEER

CE-5107

70-21-21

SEAL

ANCHORAGE WATER & WASTEWATER UTILITY

AWWU

MUNICIPALITY OF ANCHORAGE

MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE B

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

CATHODIC PROTECTION DETAILS

U8

HORZ SCALE: NA
VERT SCALE: NA
DATE: 10/29/2021
GRID: SW 2525
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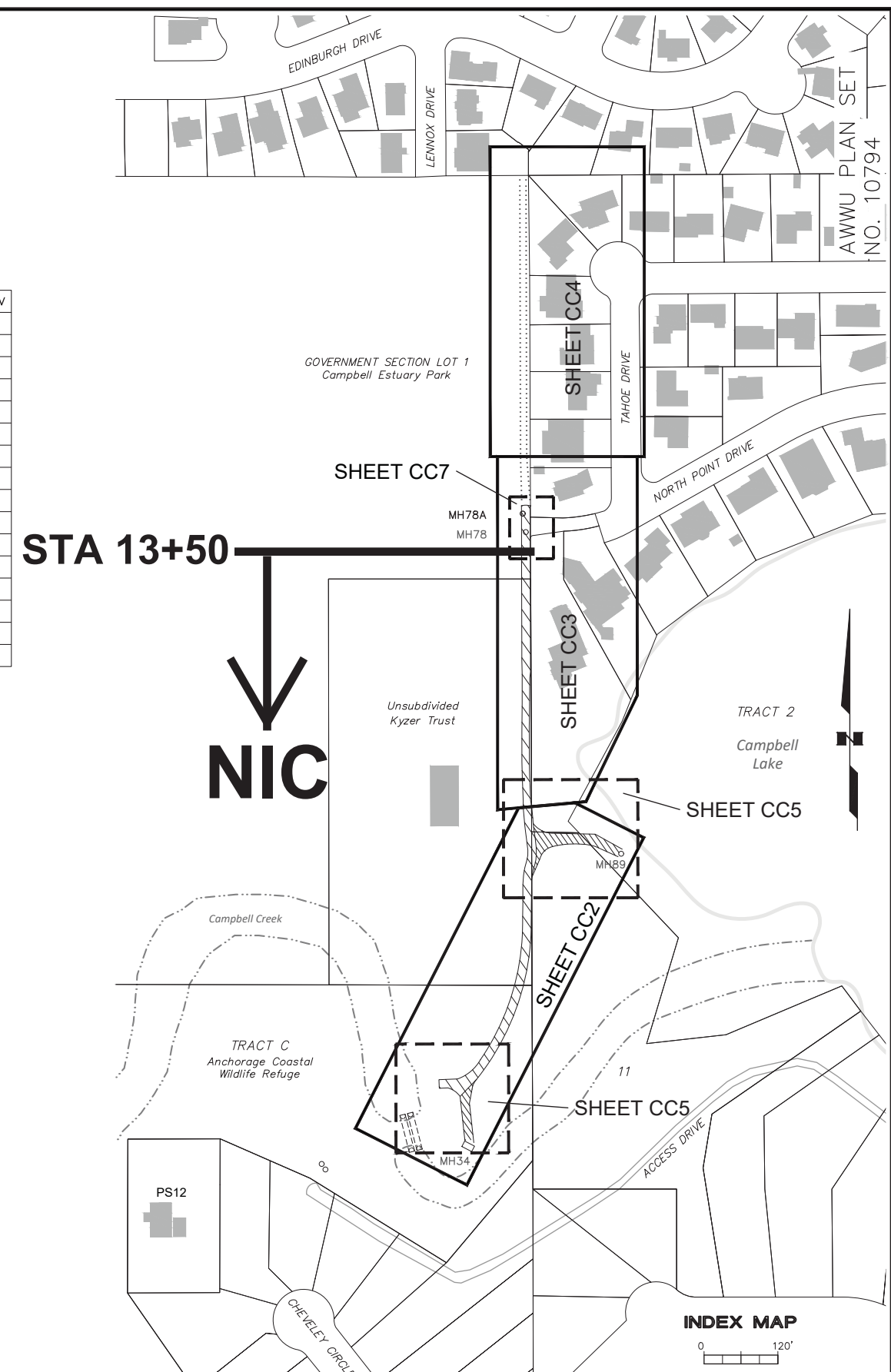
SHEET 84 OF 104

FM DRIVE ALIGNMENT TABLE

POINT	STATION	NORTHING	EASTING	FG ELEV
PC	1+12.73	2604725.24	1647200.84	-
BOP	4+33	2604847.02	1647487.81	14.50
MID	5+84.57	2604973.19	1647570.15	14.50
PT	7+36.14	2605120.90	1647599.83	15.05
PC	8+04.27	2605189.02	1647600.40	19.54
MID	8+18.44	2605203.15	1647601.43	20.94
PT	8+32.62	2605217.03	1647604.27	22.34
PC	8+42.26	2605226.33	1647606.80	23.29
MID	8+52.01	2605235.93	1647608.44	24.25
PT	8+61.77	2605245.67	1647608.18	25.22
PI	9+00	2605283.61	1647603.45	29.00
PI	9+40	2605323.45	1647599.86	33.00
PI	9+90	2605373.41	1647597.88	36.80
PI	10+60	2605443.41	1647597.65	41.00
PI	11+50	2605533.40	1647598.66	46.22
EOP	14+20	2605803.40	1647598.01	55.10

FM DRIVE VERTICAL ALIGNMENT TABLE

PVI STA	FG ELEV
4+33	14.50
7+53	15.73
9+60	35.00
10+60	41.00
11+15	44.70
12+00	48.40
12+80	51.00
13+35	52.40
13+95	54.70
14+20	55.10



VERIFY SCALE THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING. 0" = 1" IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY. FULL SIZE SCALE HORZ SCALE: 1"=120' VERT SCALE:

DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK									REVISIONS

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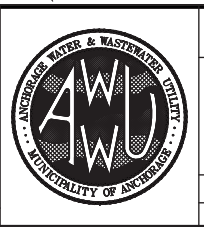
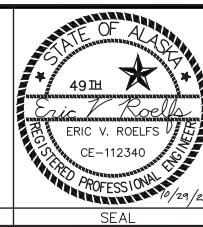
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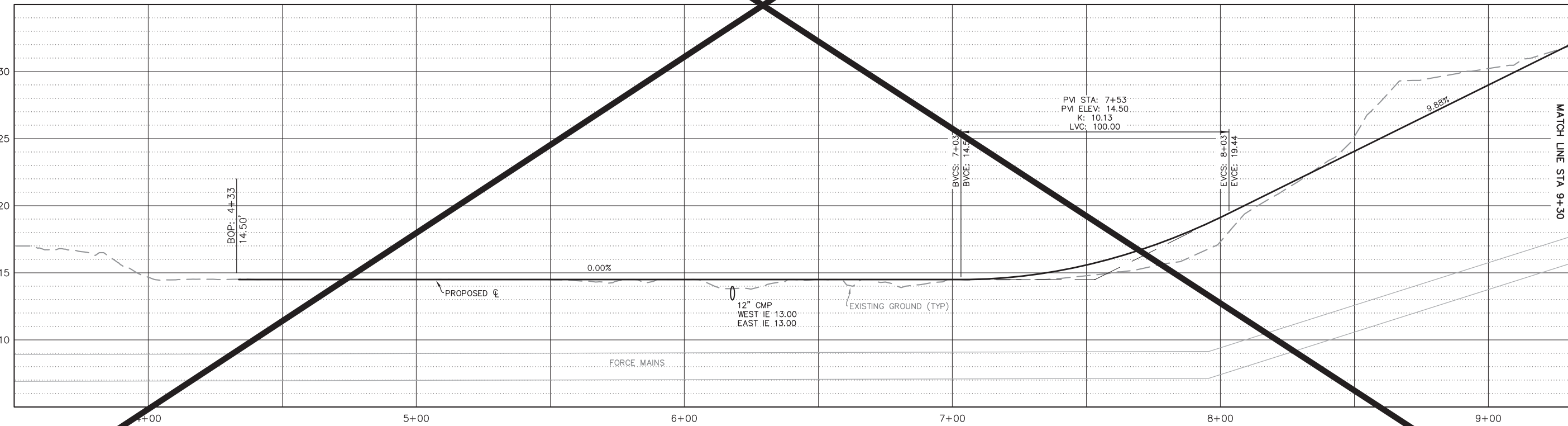
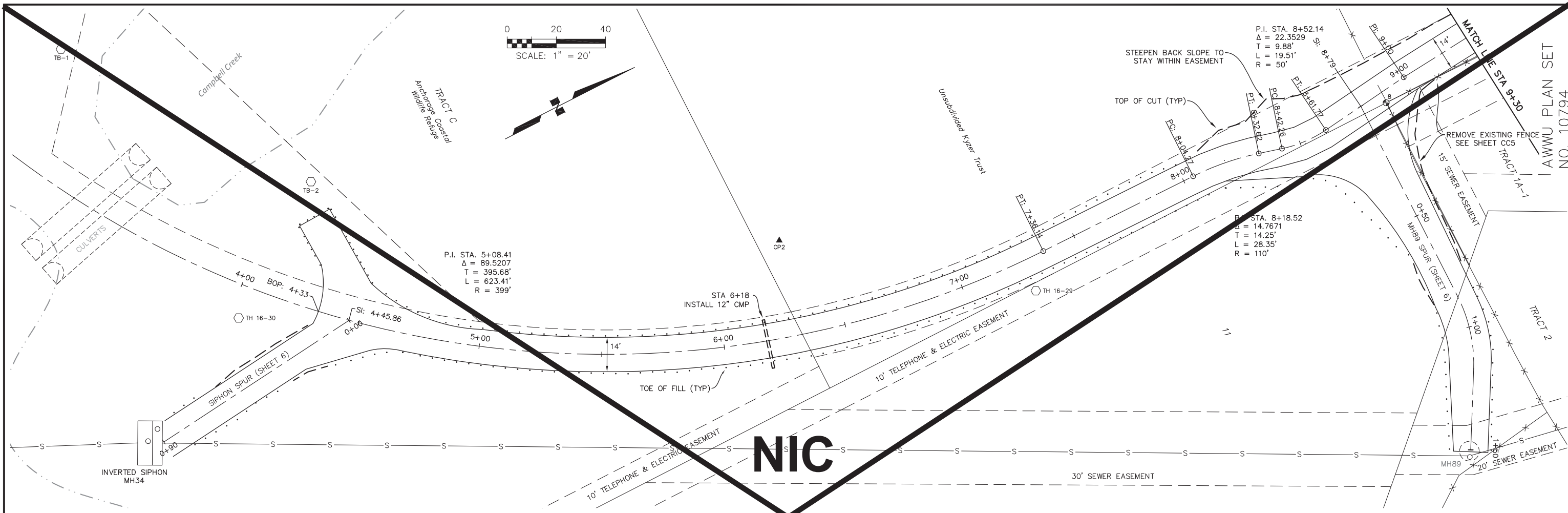
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 PHONE: 337-3330
 1345 RUDAKOF CIR #201
 ANCHORAGE, AK 99508
 LICENSE #AECC368
 CONSULTANT



MUNICIPALITY OF ANCHORAGE
 WATER & WASTEWATER UTILITY
 SCHEDULE C
 PS12 FORCE MAIN / GRAVITY JUNCTION REHAB
FM DRIVE
4+33 TO 9+30 CC1
 HORZ SCALE: 1"=120' DATE: 10/29/2021 GRID: SW 2525
 VERT SCALE: _____
 PROJ. ID.: WW.H7713 SHEET 85 of 104



VERIFY SCALE THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING. 0" = 1" IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY. FULL SIZE SCALE: 1" = 20' (HORZ), 1" = 4' (VERT)

DATA	DRAWN BY	CHECKED BY	DATE	DESCRIPTION	BY
BASE	EVR	VLR		TELEPHONE	
TOPOGRAPHY				ELECTRIC	
PROFILE				CABLE TV	
SANITARY SEWER				TRAFFIC SIGNAL	
STORM SEWER				DESIGN	
WATER				QUANTITIES	
GAS				MUN. FINAL CHECK	

PLAN CHECK

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

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 DATE: _____

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 COMPANY: _____
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 DATE: _____

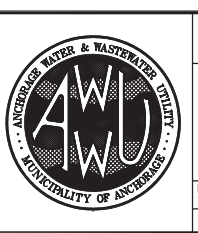
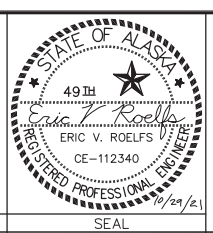
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 WATER & WASTEWATER UTILITY

SCHEDULE C

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

**FM DRIVE
 4+33 TO 9+30** CC2

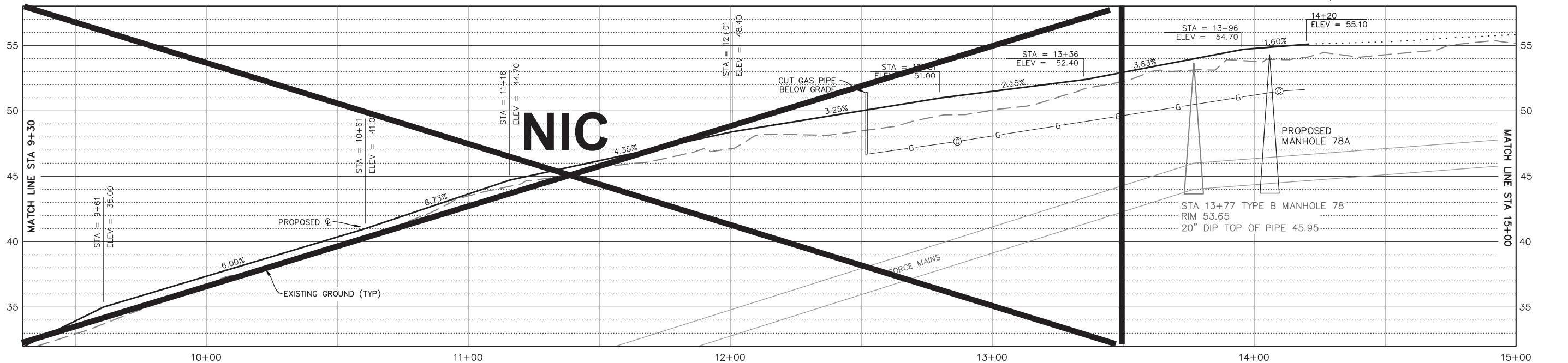
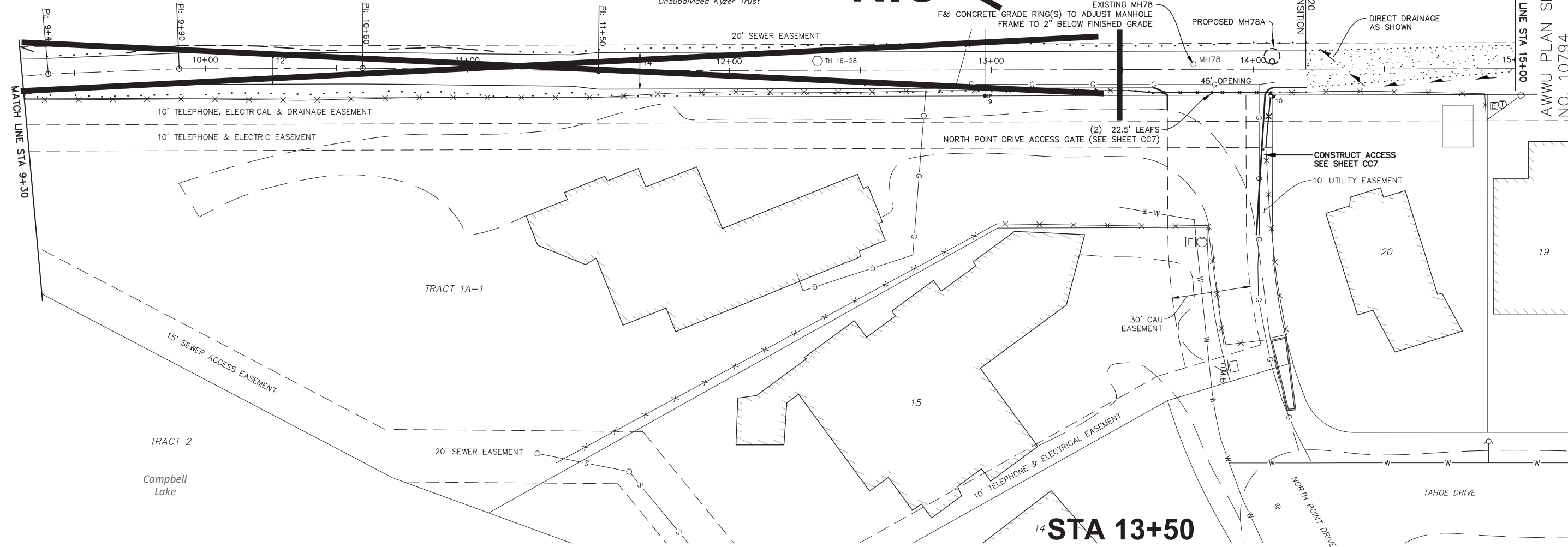
HORZ SCALE: 1" = 20'
 VERT SCALE: 1" = 4'
 DATE: 10/29/2021
 GRID: SW 2525
 PROJ. ID.: WW.H7713

SHEET 86 of 104



NIC ← **STA 13+50**

GOVERNMENT SECTION LOT 1
Campbell Estuary Park



VERIFY SCALE THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING. 0" = 1" IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY. FULL SIZE SCALE: 1" = 20' (HORZ SCALE), 1" = 4' (VERT SCALE)

DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						

PLAN CHECK

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

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 BY: _____ TITLE: _____
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LICENSE #AEC368

CONSULTANT

STATE OF ALASKA
49th
Eric V. Roelfs
REGISTERED PROFESSIONAL ENGINEER
CE-112340
10/29/21

SEAL

ANCHORAGE WATER & WASTEWATER UTILITY
AWWU
MUNICIPALITY OF ANCHORAGE

MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE C

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

FM DRIVE
9+30 TO 15+00 CC3

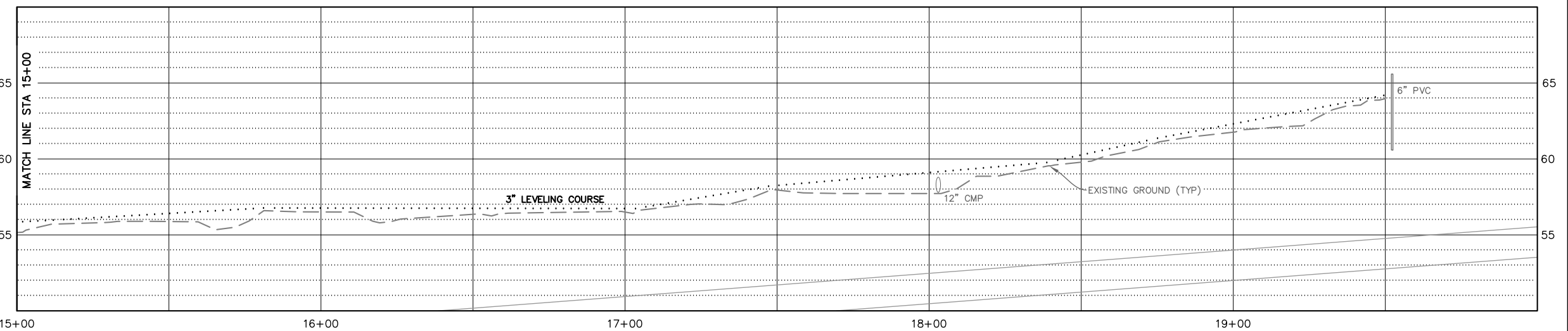
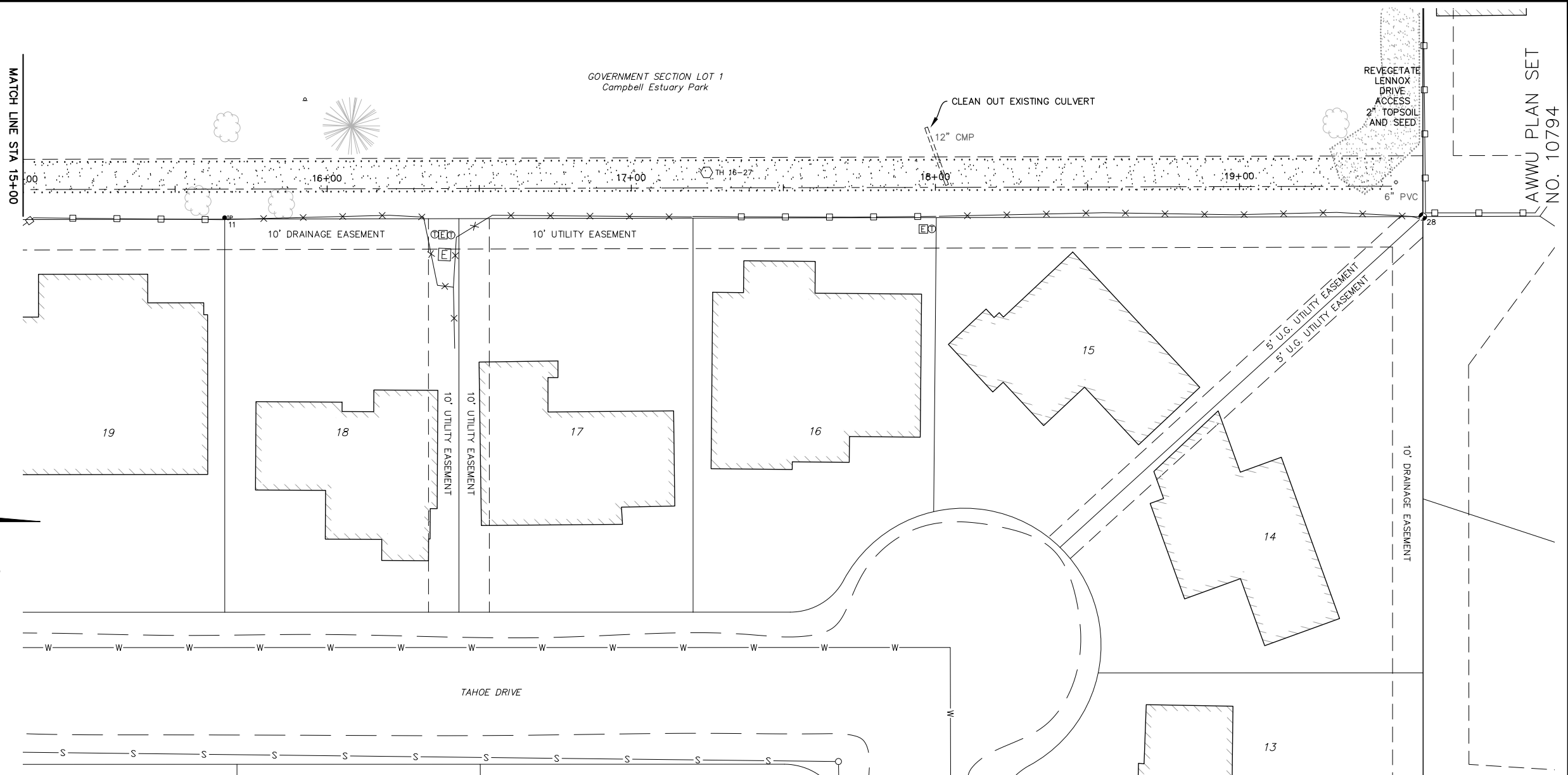
HORZ SCALE: 1" = 20' DATE: 10/29/2021 GRID: SW 2425
 VERT SCALE: 1" = 4' PROJ. ID.: WW.H7713

SHEET 87 of 104

MATCH LINE STA 15+00
AWWU PLAN SET
NO. 10794

NOTES STA 14+20 TO 19+50

1. PLACE 3" OF LEVELING COURSE 10' WIDE
2. FOLLOW EXISTING DRIVE
3. AVOID GOING OUTSIDE SEWER EASEMENT
4. DO NOT BLOCK EXISTING DRAINAGE WAYS
5. LIGHT ROLL COMPACTION
6. OTHER THAN REVEGETATION WORK, NO CONSTRUCTION ACCESS FROM LENNOX DRIVE WILL BE ALLOWED



VERIFY SCALE

THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.

DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						

0" = 1" SCALE BAR

IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.

FULL SIZE SCALE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=4'

RECORD DRAWING

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 CONTRACTOR: _____
 BY: _____ TITLE: _____
 DATE: _____

2. DATA TRANSFERRED BY: _____
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 DATA TRANSFER CHECKED BY: _____
 COMPANY: _____
 BY: _____ TITLE: _____
 DATE: _____

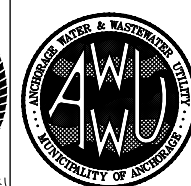
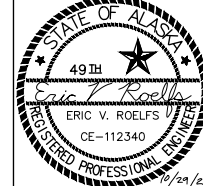
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 LICENSE #AEC368

CONSULTANT



MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY

SCHEDULE C

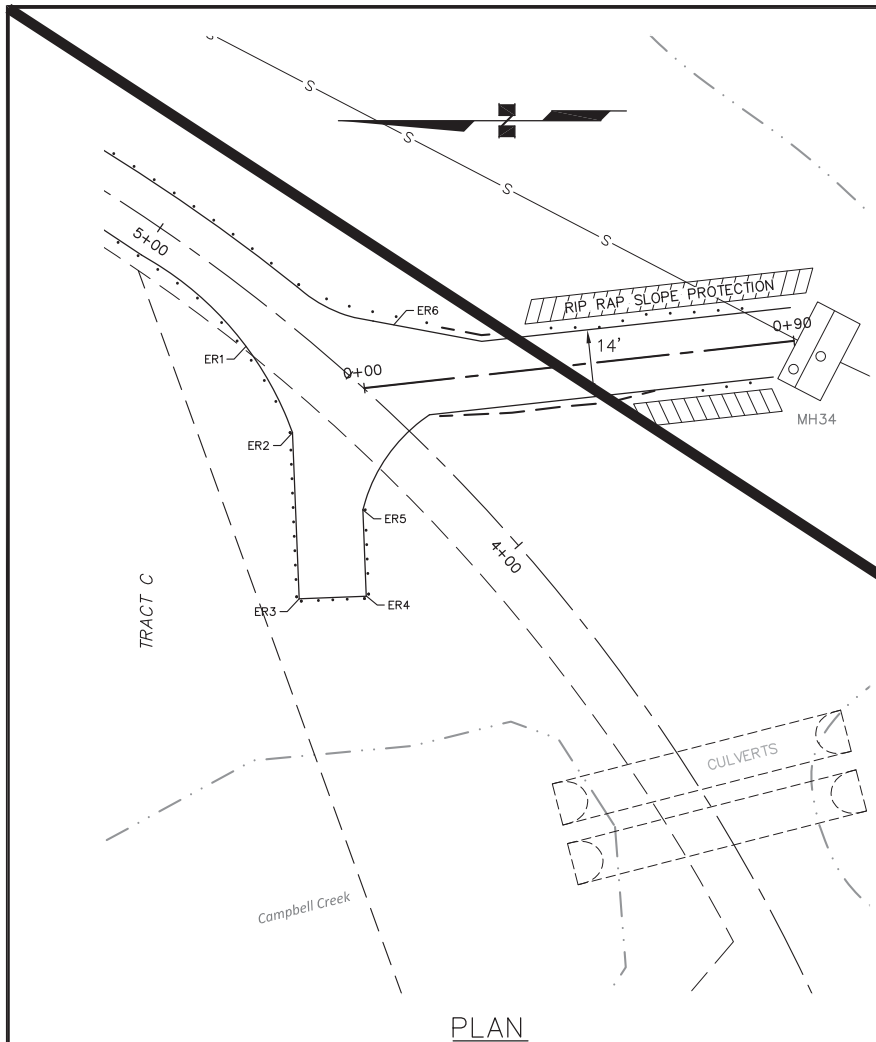
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

FM DRIVE 15+00 TO 19+50

CC4

HORZ SCALE: 1"=20'
 VERT SCALE: 1"=4'
 DATE: 10/29/2021
 GRID: SW 2425
 PROJ. ID.: WW.H7713

SHEET 88 of 104



PLAN

SIPHON SPUR ALIGNMENT TABLE

STATION	NORTHING	EASTING	FG ELEV
SI 0+00	2604856.36	1647496.72	14.50
EOP 0+90	2604766.90	1647506.54	11.50

SIPHON SPUR EDGE OF ROAD TABLE

POINT	NORTHING	EASTING	FG ELEV
ER1	2604881.04	1647505.43	14.30
ER2	2604871.34	1647481.44	14.25
ER3	2604869.96	1647452.82	14.25
ER4	2604855.97	1647453.37	14.25
ER5	2604856.69	1647471.35	14.25
ER6	2604850.25	1647509.86	14.20

MH89 SPUR ALIGNMENT TABLE

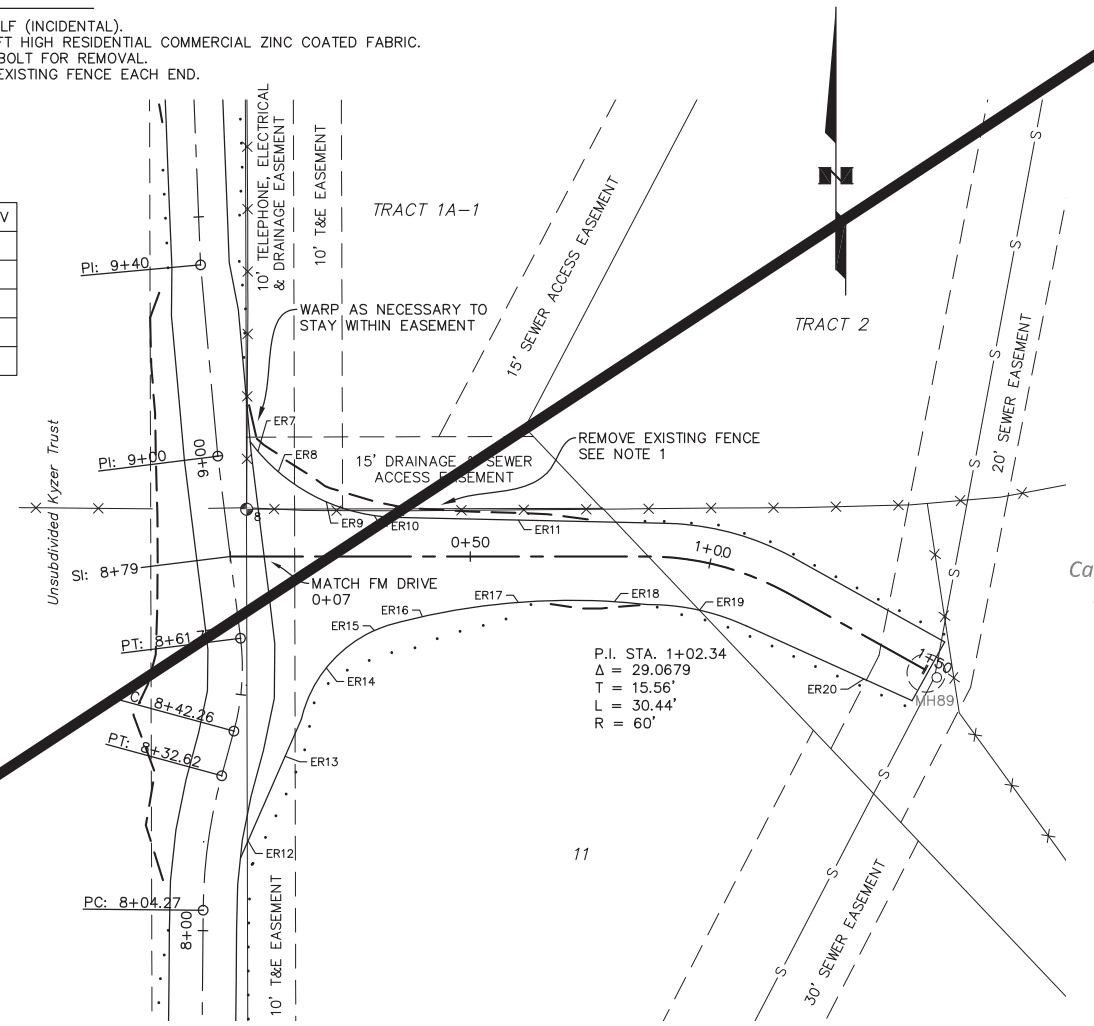
POINT	STATION	NORTHING	EASTING	FG ELEV
SI	0+00	2605262.71	1647606.05	26.92
PC	0+86.78	2605262.71	1647692.84	25.20
MID	1+02.00	2605260.79	1647707.89	25.25
PT	1+17.22	2605255.16	1647721.99	25.17
EOP	1+50	2605239.23	1647750.64	25.00

MH89 SPUR EDGE OF ROAD TABLE

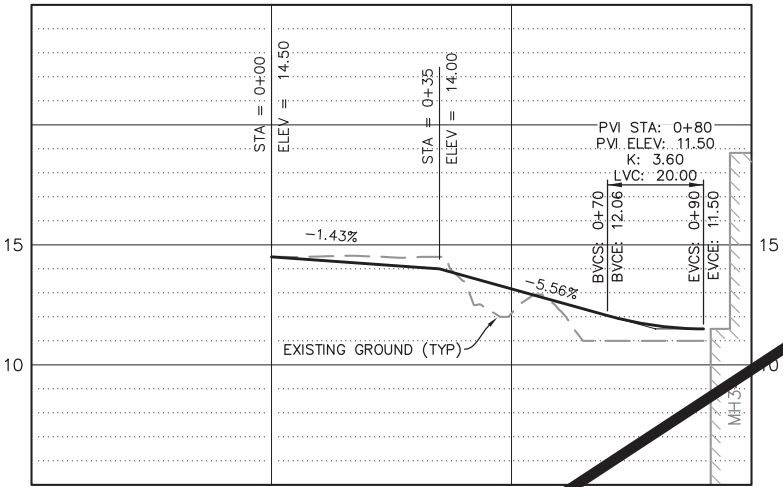
POINT	NORTHING	EASTING	FG ELEV
ER7	2605284.65	1647611.79	28.80
ER8	2605280.36	1647616.05	28.00
ER9	2605274.08	1647626.05	26.40
ER10	2605271.23	1647636.05	25.78
ER11	2605270.28	1647666.05	24.97
ER12	2605203.46	1647609.73	21.02
ER13	2605221.08	1647617.47	22.91
ER14	2605239.52	1647626.05	24.40
ER15	2605247.29	1647636.05	25.30
ER16	2605250.17	1647646.05	24.80
ER17	2605252.71	1647666.05	24.63
ER18	2605253.29	1647686.05	24.92
ER19	2605251.51	1647703.76	25.06
ER20	2605237.21	1647738.05	24.90

NIC

- NOTES**
- REMOVE EXISTING FENCE APPROX 65 LF (INCIDENTAL). REPLACE WITH REMOVABLE FENCE 6 FT HIGH RESIDENTIAL COMMERCIAL ZINC COATED FABRIC. DOUBLE SLEEVE POSTS WITH SINGLE BOLT FOR REMOVAL. MATCH EXISTING FENCE. SPLICE TO EXISTING FENCE EACH END.

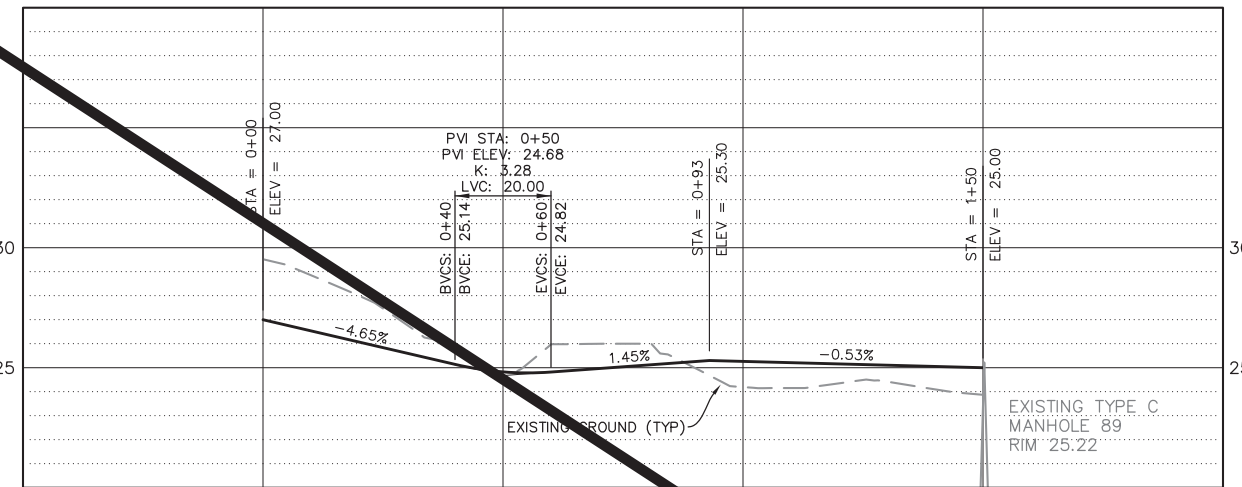


PLAN



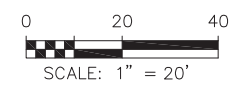
PROFILE

SIPHON SPUR



PROFILE

MH89 SPUR



VERIFY SCALE THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.

DATA	DRAWN BY	CHECKED BY	DATE	DESCRIPTION	BY
BASE	EVR	VLR			
TOPOGRAPHY					
PROFILE					
SANITARY SEWER					
STORM SEWER					
WATER					
GAS					

PLAN CHECK

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 LICENSE #AECC368

CONSULTANT

STATE OF ALASKA
 49th
 ERIC V. ROELFS
 CE-112340
 REGISTERED PROFESSIONAL ENGINEER

10/29/21

SEAL

ANCHORAGE WATER & WASTEWATER UTILITY
 AWWU
 MUNICIPALITY OF ANCHORAGE

MUNICIPALITY OF ANCHORAGE
 WATER & WASTEWATER UTILITY

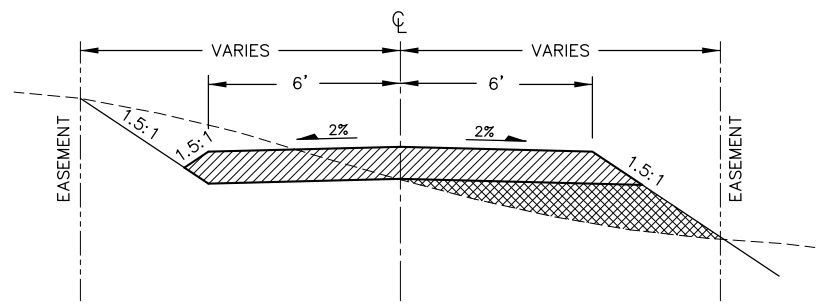
SCHEDULE C

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

SIPHON AND MH89 SPURS

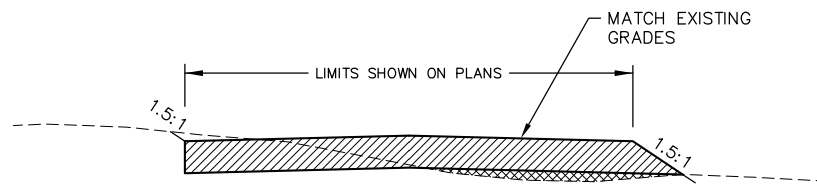
CC5

HORIZ SCALE: 1"=20' DATE: 10/29/2021 GRID: SW 2525
 VERT SCALE: 1"=4' SHEET 89 of 104
 PROJ. ID.: WW.H7713



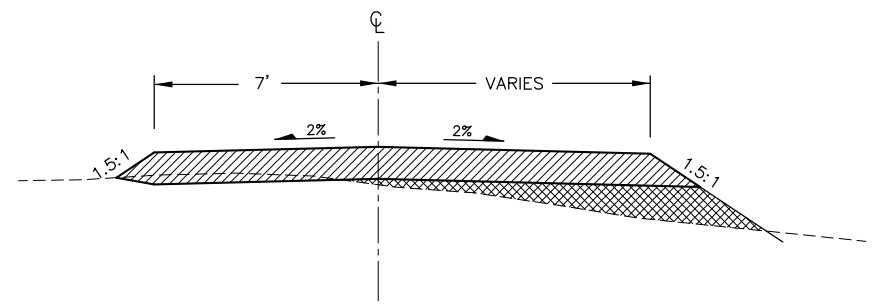
FM DRIVE STA 9+40 TO 11+40

SCALE: N.T.S.



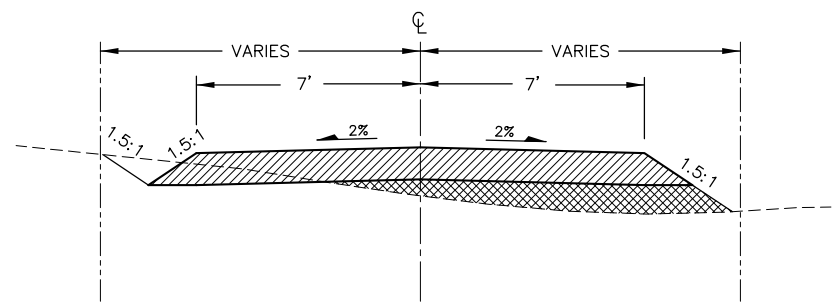
NORTH POINT DRIVE ACCESS

SCALE: N.T.S.



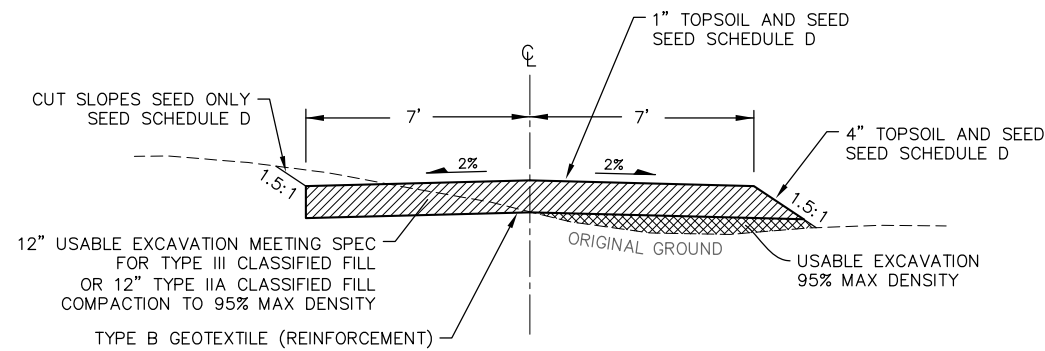
MH89 SPUR STA 0+90 TO 1+50

SCALE: N.T.S.



FM DRIVE STA 8+10 TO 9+30

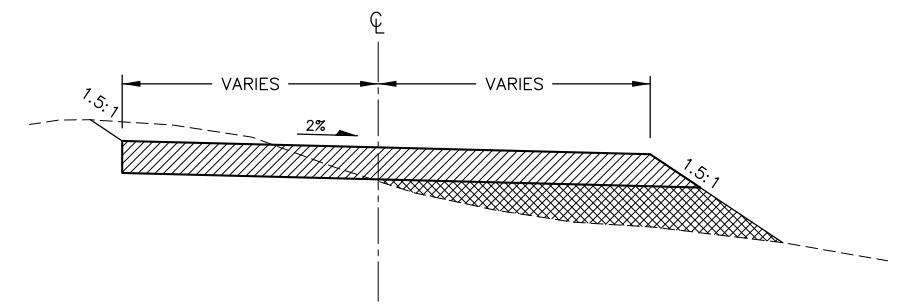
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SIPHON SPUR

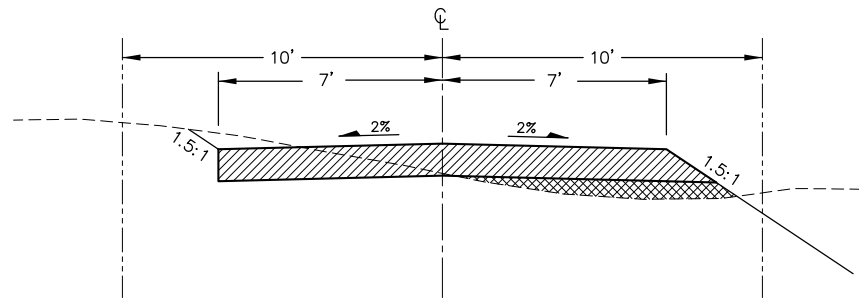
SCALE: N.T.S.

STRUCTURAL SECTION SHOWN IS TYPICAL FOR ALL SECTIONS



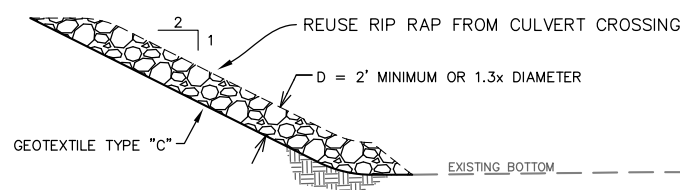
MH89 SPUR STA 0+30 TO 0+90

SCALE: N.T.S.



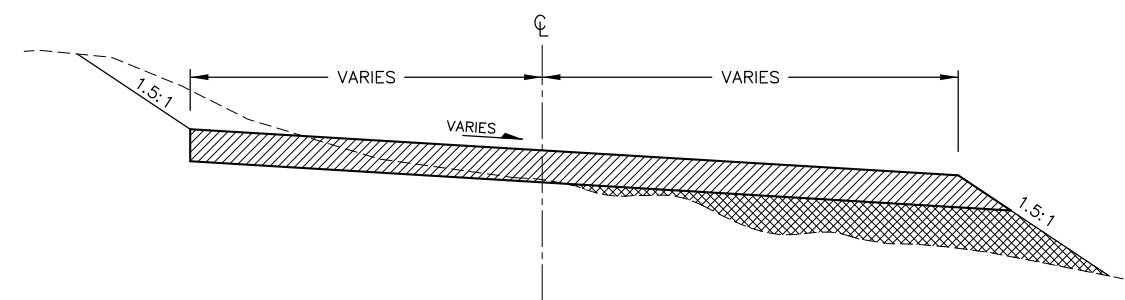
FM DRIVE STA 4+33 TO 8+10 AND 11+40 TO 14+20

SCALE: N.T.S.



RIP RAP PLACEMENT ON FILL SLOPES

SCALE: N.T.S.



MH89 SPUR STA 0+07 TO 0+30

SCALE: N.T.S.

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DATE	DESCRIPTION	BY	DATE	REVISIONS
BASE	EVR	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

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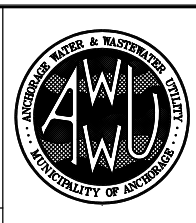
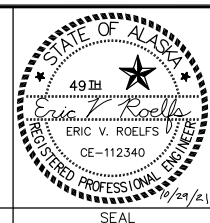
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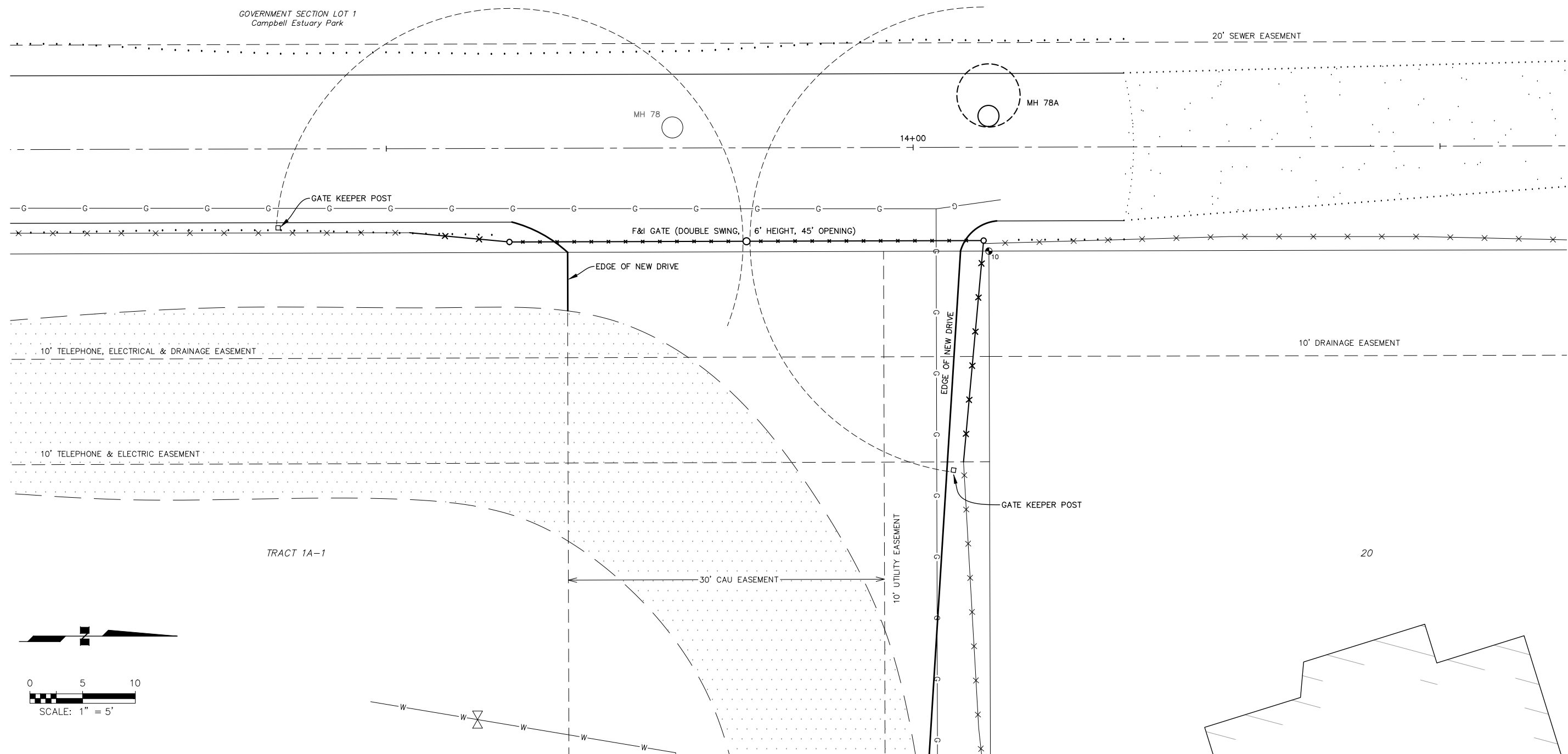
SCHEDULE C

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

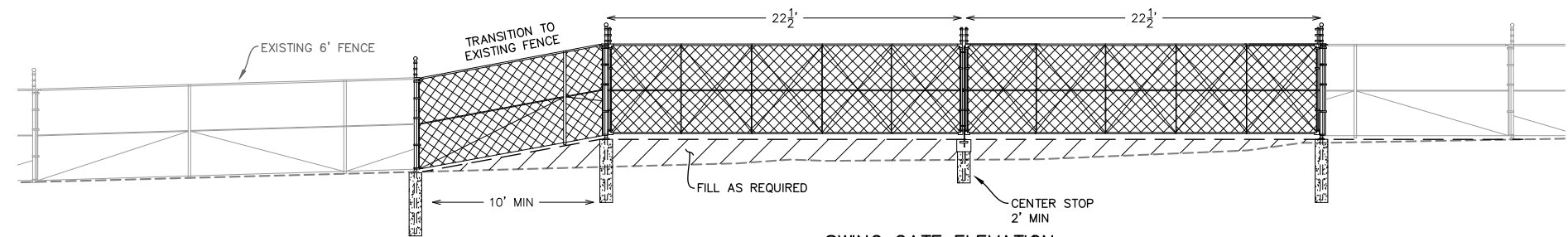
STRUCTURAL SECTIONS

CC6

HORIZ SCALE: _____ DATE: 10/29/2021 GRID: SW 2525 SHEET 90 of 104
 VERT SCALE: _____ PROJ. ID.: WW.H7713



SWING GATE PLAN



SWING GATE ELEVATION

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
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BASE	EVR	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

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10/29/21

SEAL

ANCHORAGE WATER & WASTEWATER UTILITY
AWWU
MUNICIPALITY OF ANCHORAGE

MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE C

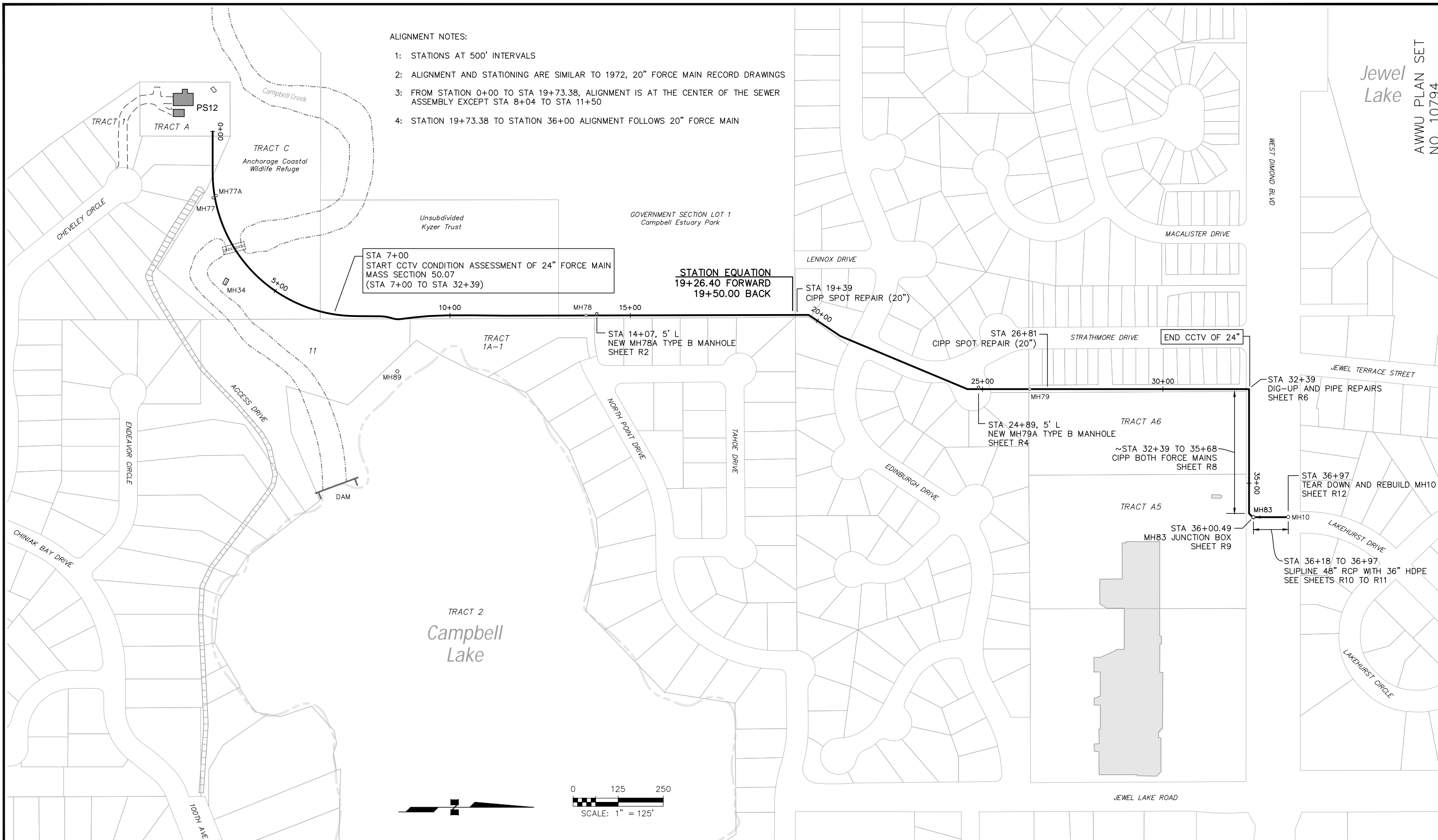
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

NORTH POINT DRIVE ACCESS
GATE PLAN & SECTION CC7

HORIZ SCALE: 1"=5' DATE: 10/29/2021 GRID: SW 2525 SHEET 91 of 104
 VERT SCALE: 1"=5'
 PROJ. ID.: WW.H7713

ALIGNMENT NOTES:

- 1: STATIONS AT 500' INTERVALS
- 2: ALIGNMENT AND STATIONING ARE SIMILAR TO 1972, 20" FORCE MAIN RECORD DRAWINGS
- 3: FROM STATION 0+00 TO STA 19+73.38, ALIGNMENT IS AT THE CENTER OF THE SEWER ASSEMBLY EXCEPT STA 8+04 TO STA 11+50
- 4: STATION 19+73.38 TO STATION 36+00 ALIGNMENT FOLLOWS 20" FORCE MAIN



STA 7+00
START CCTV CONDITION ASSESSMENT OF 24" FORCE MAIN
MASS SECTION 50.07
(STA 7+00 TO STA 32+39)

STATION EQUATION
19+26.40 FORWARD
19+50.00 BACK

STA 14+07, 5' L
NEW MH78A TYPE B MANHOLE
SHEET R2

STA 24+89, 5' L
NEW MH79A TYPE B MANHOLE
SHEET R4

END CCTV OF 24"

STA 32+39
DIG-UP AND PIPE REPAIRS
SHEET R6

STA 36+97
TEAR DOWN AND REBUILD MH10
SHEET R12

STA 36+18 TO 36+97
SLIPLINE 48" RCP WITH 36" HDPE
SEE SHEETS R10 TO R11

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE HORZ SCALE: 1"=125' VERT SCALE:	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	WTK	EVR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

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WATER & WASTEWATER UTILITY

SCHEDULE D

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

FORCE MAIN REHABILITATION

KEY MAP R1

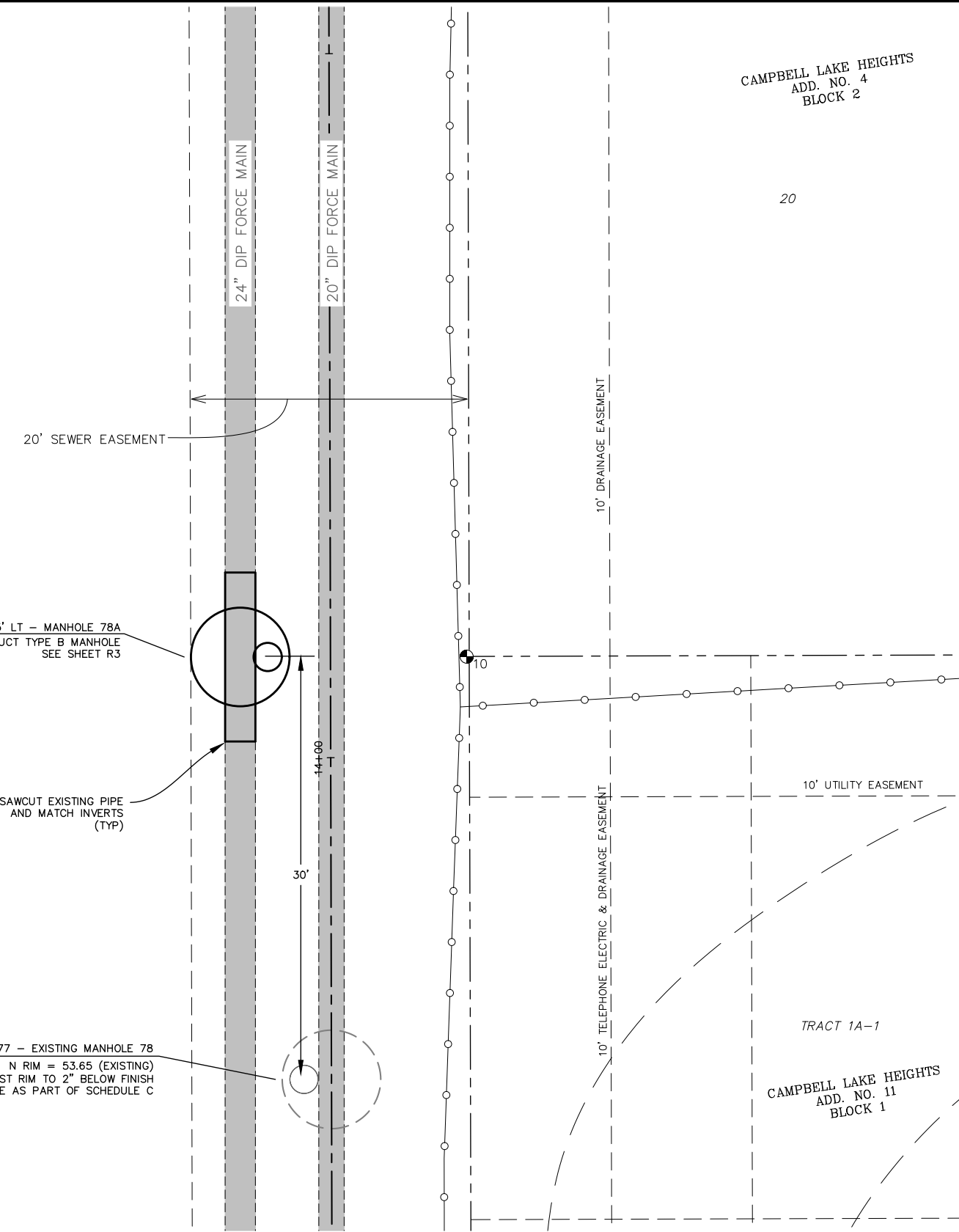
HORZ SCALE: 1"=125' DATE: 10/29/2021 GRID: SW 2425
VERT SCALE: _____
PROJ. ID.: WW.H7713 SHEET 92 of 104

CAMPBELL LAKE HEIGHTS
ADD. NO. 4
BLOCK 2

20



GOVERNMENT SECTION LOT 1
Campbell Estuary Park



STA. 14+07, 5' LT - MANHOLE 78A
CONSTRUCT TYPE B MANHOLE
SEE SHEET R3

SAWCUT EXISTING PIPE
AND MATCH INVERTS
(TYP)

STA. 13+77 - EXISTING MANHOLE 78
N RIM = 53.65 (EXISTING)
ADJUST RIM TO 2" BELOW FINISH
GRADE AS PART OF SCHEDULE C

MANHOLE 78A SITE PLAN

0 5' SCALE: 1" = 5'

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" — 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	STR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

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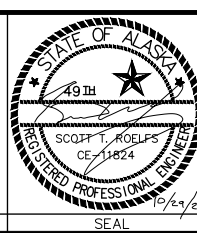
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SCHEDULE D

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

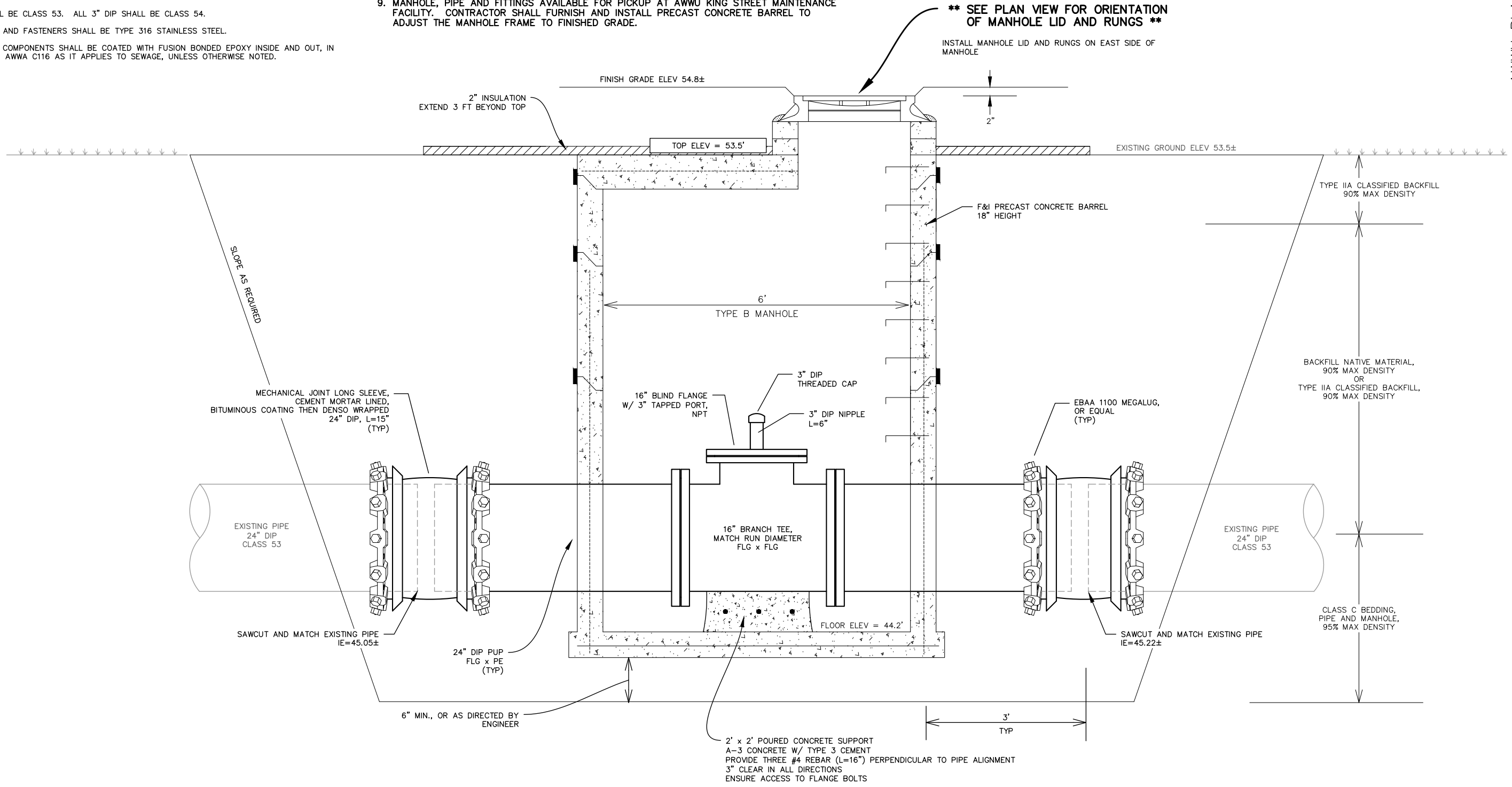
MANHOLE 78A STA 14+07, 5 FT LEFT
SITE PLAN R2

HORIZ SCALE: 1"=5' DATE: 10/29/2021 GRID: SW 2425 SHEET 93 of 104
VERT SCALE: _____
PROJ. ID.: WW.H7713

NOTES

1. ALL MANHOLES SHALL HAVE A MINIMUM OF ONE SIX (6") INCH GRADE RING. MAXIMUM GRADE RING ADJUSTMENT SHALL NOT EXCEED EIGHTEEN (18") INCHES.
2. ALL BEDDING SHALL BE "CLASS C BEDDING".
3. SEWER MAIN, SERVICE TRENCHES AND BEDDING SHALL BE COMPACTED TO A MINIMUM OF 95% MAX. DENSITY.
4. ALL 24" DIP SHALL BE CLASS 53. ALL 3" DIP SHALL BE CLASS 54.
5. ALL NUTS, BOLTS, AND FASTENERS SHALL BE TYPE 316 STAINLESS STEEL.
6. ALL DUCTILE IRON COMPONENTS SHALL BE COATED WITH FUSION BONDED EPOXY INSIDE AND OUT, IN ACCORDANCE WITH AWWA C116 AS IT APPLIES TO SEWAGE, UNLESS OTHERWISE NOTED.
7. ALL PIPE AND FITTINGS OUTSIDE OF MANHOLE, AND EXPOSED THREADS ON 3" DIP, SHALL BE WRAPPED WITH DENSO WRAP SYSTEM, OR EQUAL.
8. NATIVE MATERIAL USED FOR TRENCH BACKFILL SHALL CONSIST OF MATERIAL EXCAVATED FROM THE TRENCH, THAT IS COMPACTABLE AND FREE OF ORGANICS AND STONES LARGER THAN THREE INCHES.
9. MANHOLE, PIPE AND FITTINGS AVAILABLE FOR PICKUP AT AWWU KING STREET MAINTENANCE FACILITY. CONTRACTOR SHALL FURNISH AND INSTALL PRECAST CONCRETE BARREL TO ADJUST THE MANHOLE FRAME TO FINISHED GRADE.

AWWU PLAN SET
NO. 10794



MANHOLE 78A SECTION

SCALE: 1" = 1'-0"

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	STR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK					REVISIONS				

RECORD DRAWING		Note: To be filled out on original drawings upon project completion.	
1. DATA PROVIDED BY: _____		3. Based on periodic field observations by the Engineer (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.	
This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.		CONTRACTOR: _____	
BY: _____ TITLE: _____		DATE: _____	
2. DATA TRANSFERRED BY: _____		DATA TRANSFER CHECKED BY: _____	
COMPANY: _____		BY: _____ TITLE: _____	
DATE: _____		DATE: _____	

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CONSULTANT

STATE OF ALASKA
49th
SCOTT T. ROELFS
CE 19824
REGISTERED PROFESSIONAL ENGINEER
10/29/21

SEAL

ANCHORAGE WATER & WASTEWATER UTILITY
AWWU
UTILITY OF ANCHORAGE

MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

SCHEDULE D

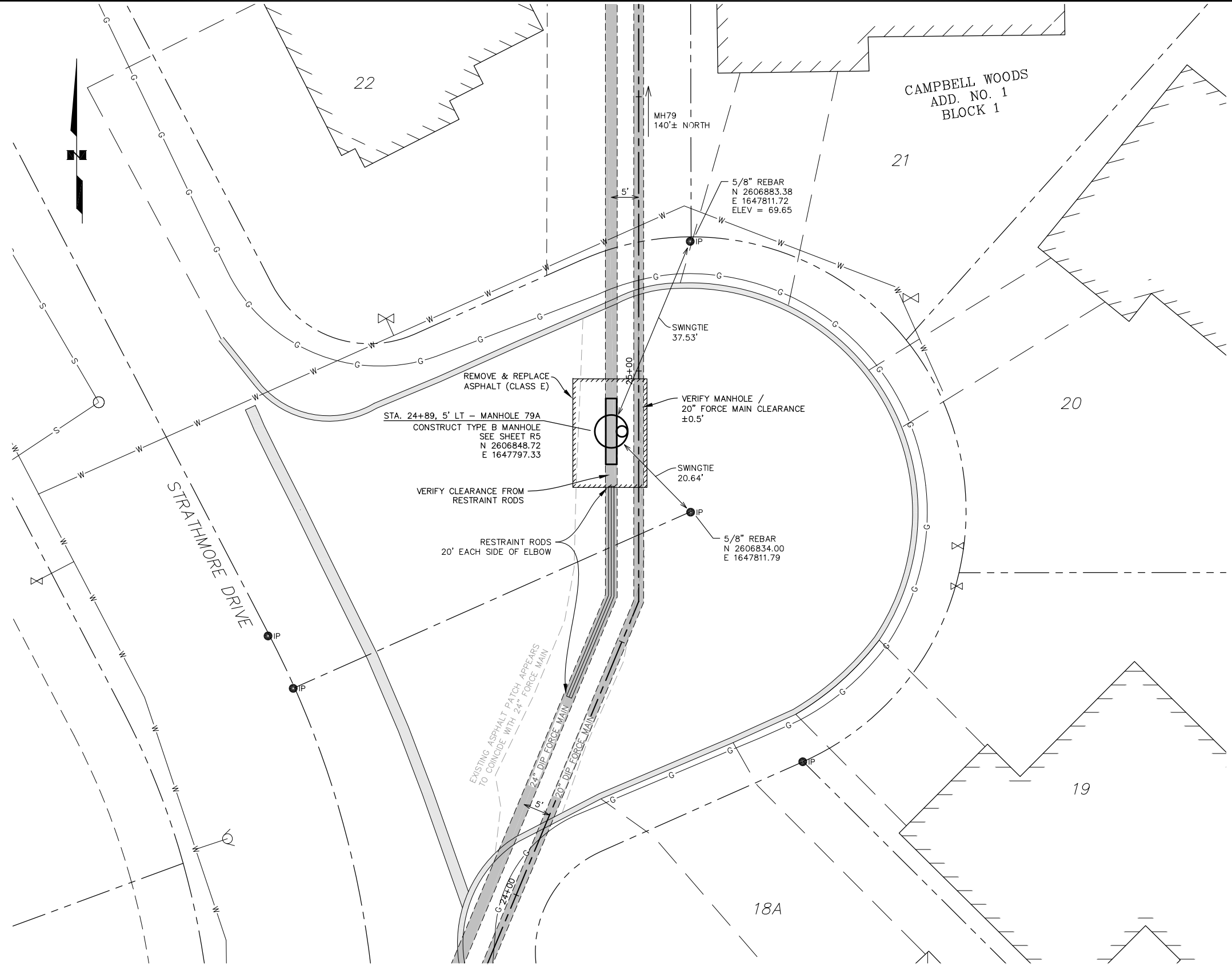
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

MANHOLE 78A STA 14+07, 5 FT LEFT SECTION

R3

HORIZ SCALE: 1"=1'
VERT SCALE: 1"=1'
DATE: 10/29/2021
GRID: SW 2425
PROJ. ID.: WW.H7713

SHEET 94 of 104



SITE PLAN VIEW
0 5' 10' SCALE: 1" = 10'

VERIFY SCALE THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING. 0" = 1" IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY. FULL SIZE SCALE HORZ SCALE: 1"=10' VERT SCALE:

DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	STR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
STORM SEWER			DESIGN						
WATER			QUANTITIES						
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PLAN CHECK					REVISIONS				

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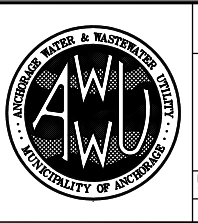
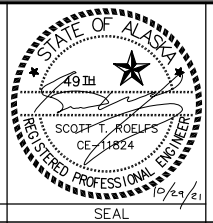
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PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

MANHOLE 79A STA 24+80, 5 FT LEFT

SITE PLAN R4

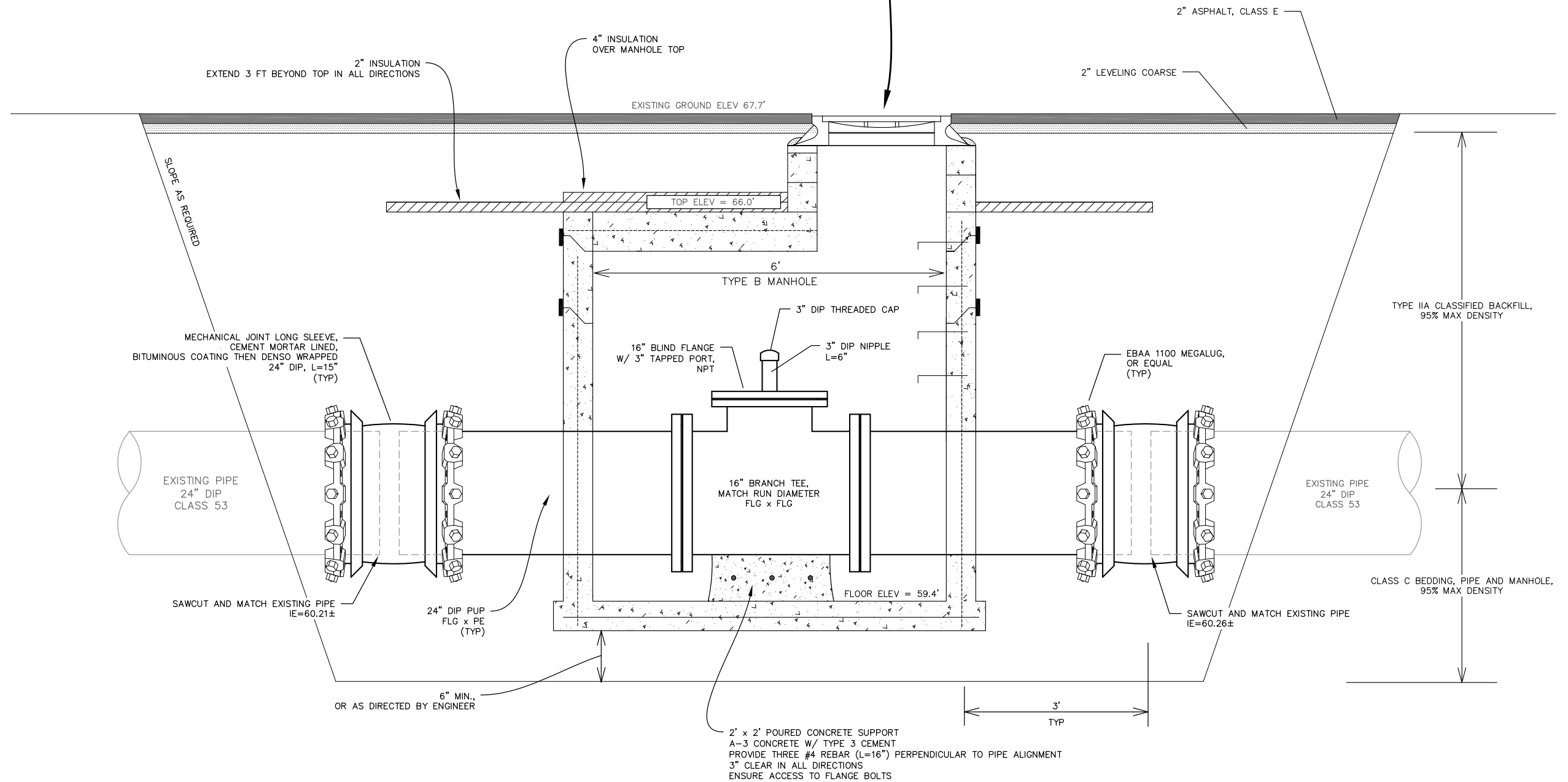
HORZ SCALE: 1"=10' DATE: 10/29/2021 GRID: SW 2425 SHEET 95 of 104
VERT SCALE: _____
PROJ. ID.: WW.H7713

NOTES

- ALL MANHOLES SHALL HAVE A MINIMUM OF ONE SIX (6") INCH GRADE RING. MAXIMUM GRADE RING ADJUSTMENT SHALL NOT EXCEED EIGHTEEN (18") INCHES.
- ALL BEDDING SHALL BE "CLASS C BEDDING".
- SEWER MAIN, SERVICE TRENCHES AND BEDDING SHALL BE COMPACTED TO A MINIMUM OF 95% MAX. DENSITY.
- ALL 24" DIP SHALL BE CLASS 53. ALL 3" DIP SHALL BE CLASS 54.
- ALL NUTS, BOLTS, AND FASTENERS SHALL BE TYPE 316 STAINLESS STEEL.
- ALL DUCTILE IRON COMPONENTS SHALL BE COATED WITH FUSION BONDED EPOXY INSIDE AND OUT, IN ACCORDANCE WITH AWWA C116 AS IT APPLIES TO SEWAGE, UNLESS OTHERWISE NOTED.
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- NATIVE MATERIAL USED FOR TRENCH BACKFILL SHALL CONSIST OF MATERIAL EXCAVATED FROM THE TRENCH, THAT IS COMPACTABLE AND FREE OF ORGANICS AND STONES LARGER THAN THREE INCHES.
- MANHOLE, PIPE AND FITTINGS AVAILABLE FOR PICKUP AT AWWU KING STREET MAINTENANCE FACILITY.**

**** SEE PLAN VIEW FOR ORIENTATION OF MANHOLE LID AND RUNGS ****

INSTALL MANHOLE LID AND RUNGS ON EAST SIDE OF MANHOLE



MANHOLE 79A SECTION VIEW
SCALE: 1" = 1'-0" 0 6 12"

AWWU PLAN SET
NO. 10794

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" — 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE HORZ SCALE: 1"=1' VERT SCALE: 1"=1'	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	STR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

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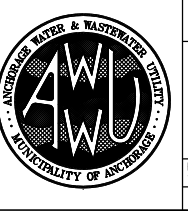
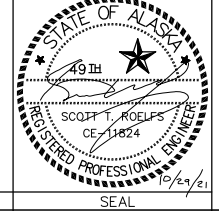
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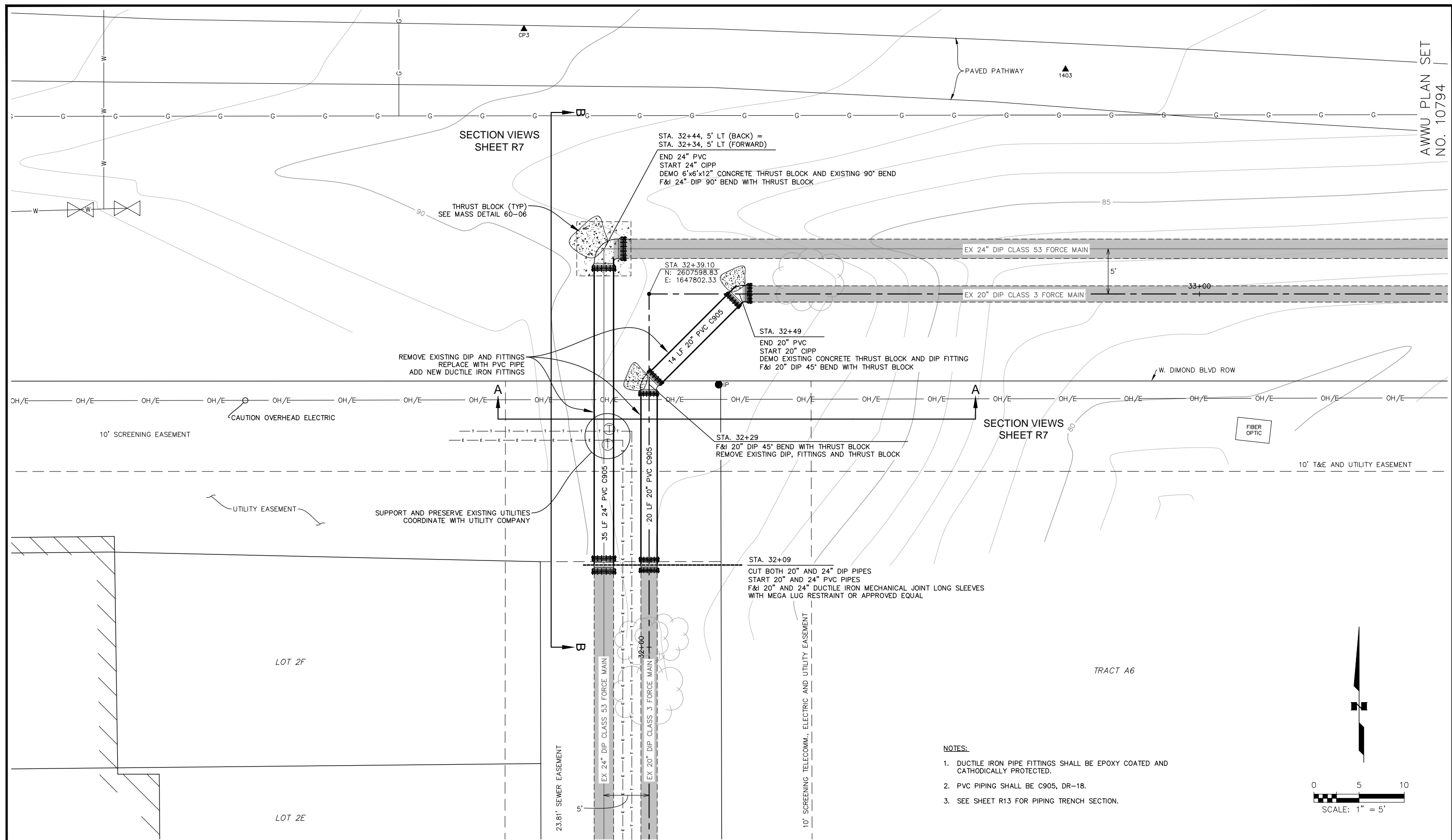
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PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

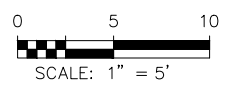
MANHOLE 79A STA 24+80, 5 FT LEFT SECTION

R5

HORZ SCALE: 1"=1' DATE: 10/29/2021 GRID: SW 2425 SHEET 96 of 104
VERT SCALE: 1"=1'
PROJ. ID.: WW.H7713



- NOTES:**
- DUCTILE IRON PIPE FITTINGS SHALL BE EPOXY COATED AND CATHODICALLY PROTECTED.
 - PVC PIPING SHALL BE C905, DR-18.
 - SEE SHEET R13 FOR PIPING TRENCH SECTION.



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DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE						
TOPOGRAPHY			ELECTRIC						
PROFILE			CABLE TV						
SANITARY SEWER			TRAFFIC SIGNAL						
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WATER			QUANTITIES						
GAS			MUN. FINAL CHECK						
PLAN CHECK					REVISIONS				

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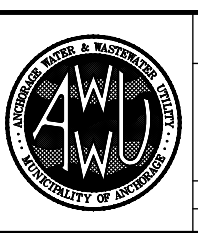
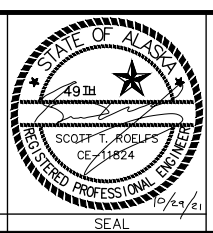
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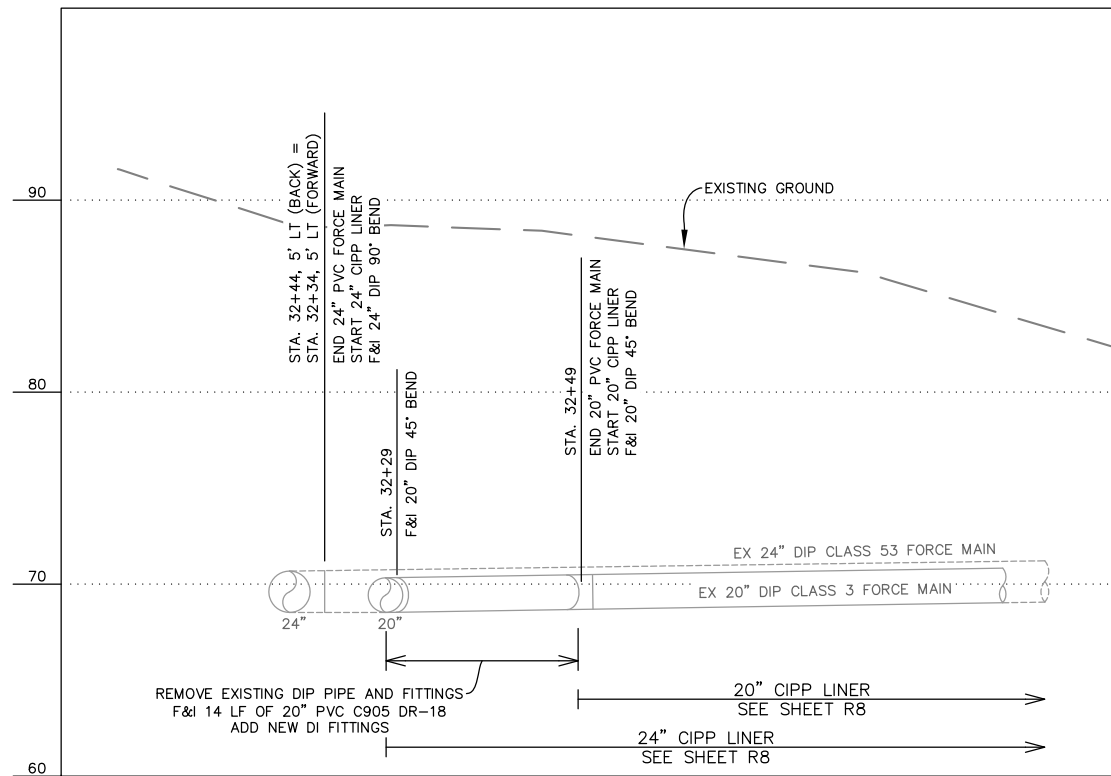
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PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

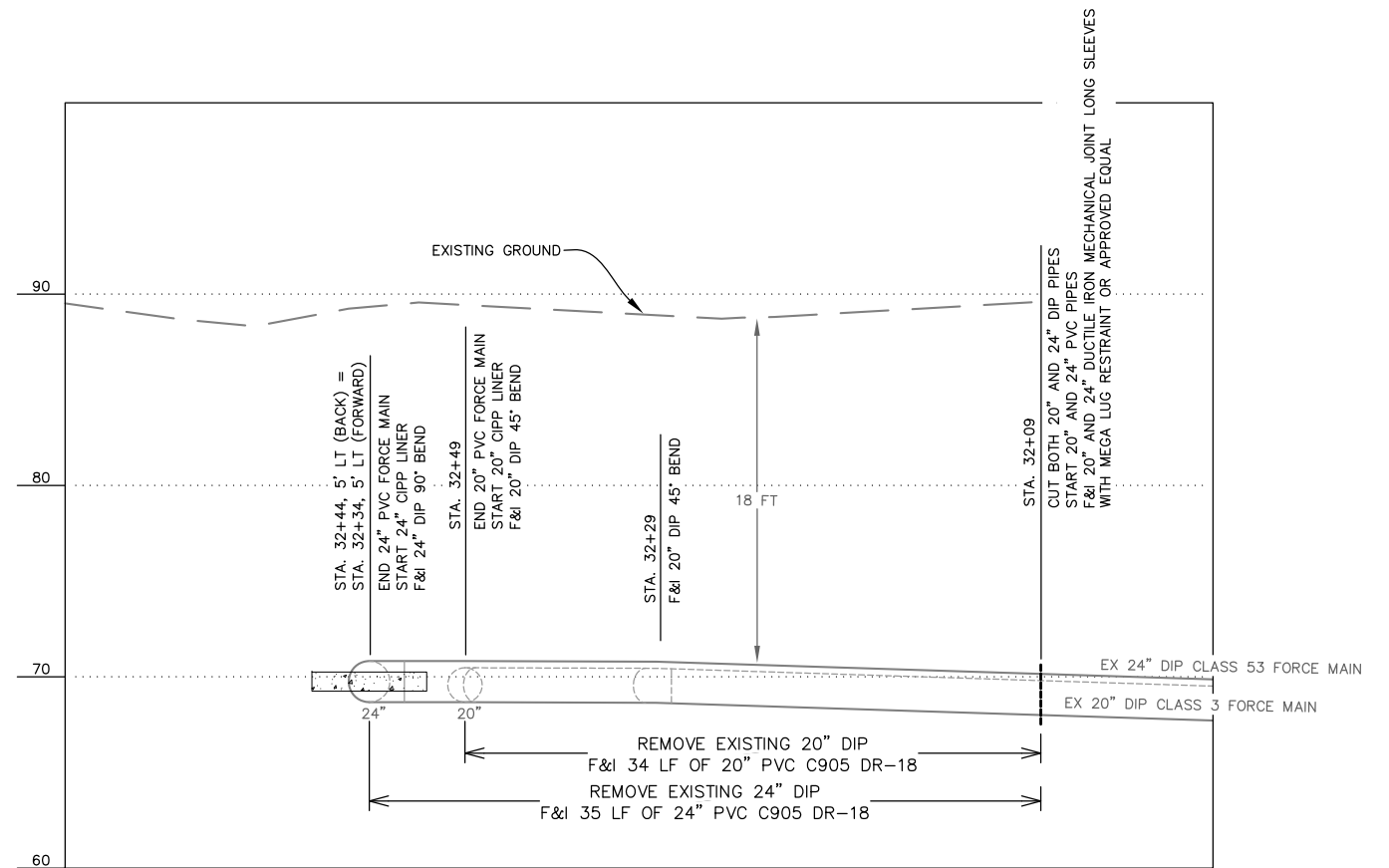
DIG UP REPAIRS STA 32+39

SITE PLAN R6

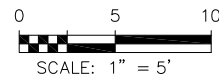
HORZ SCALE: 1"=5'	DATE: 10/29/2021	GRID: SW 2425	SHEET 97 of 104
VERT SCALE:	PROJ. ID.: WW.H7713		



SECTION A-A



SECTION B-B



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" ——— 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

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1. DATA PROVIDED BY: ---	This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.		
CONTRACTOR: ---	ENGINEER (or an individual under his/her direct supervision), the Contractor-provided data appears to represent the project as constructed.		
BY: --- TITLE: ---	DATE: ---		
2. DATA TRANSFERRED BY: ---	DATE: ---		
COMPANY: ---	DATE: ---		
DATE: ---	DATE: ---		

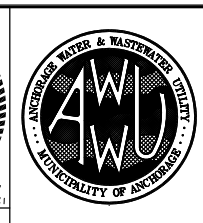
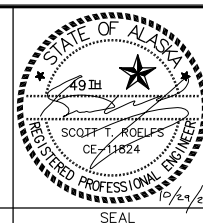
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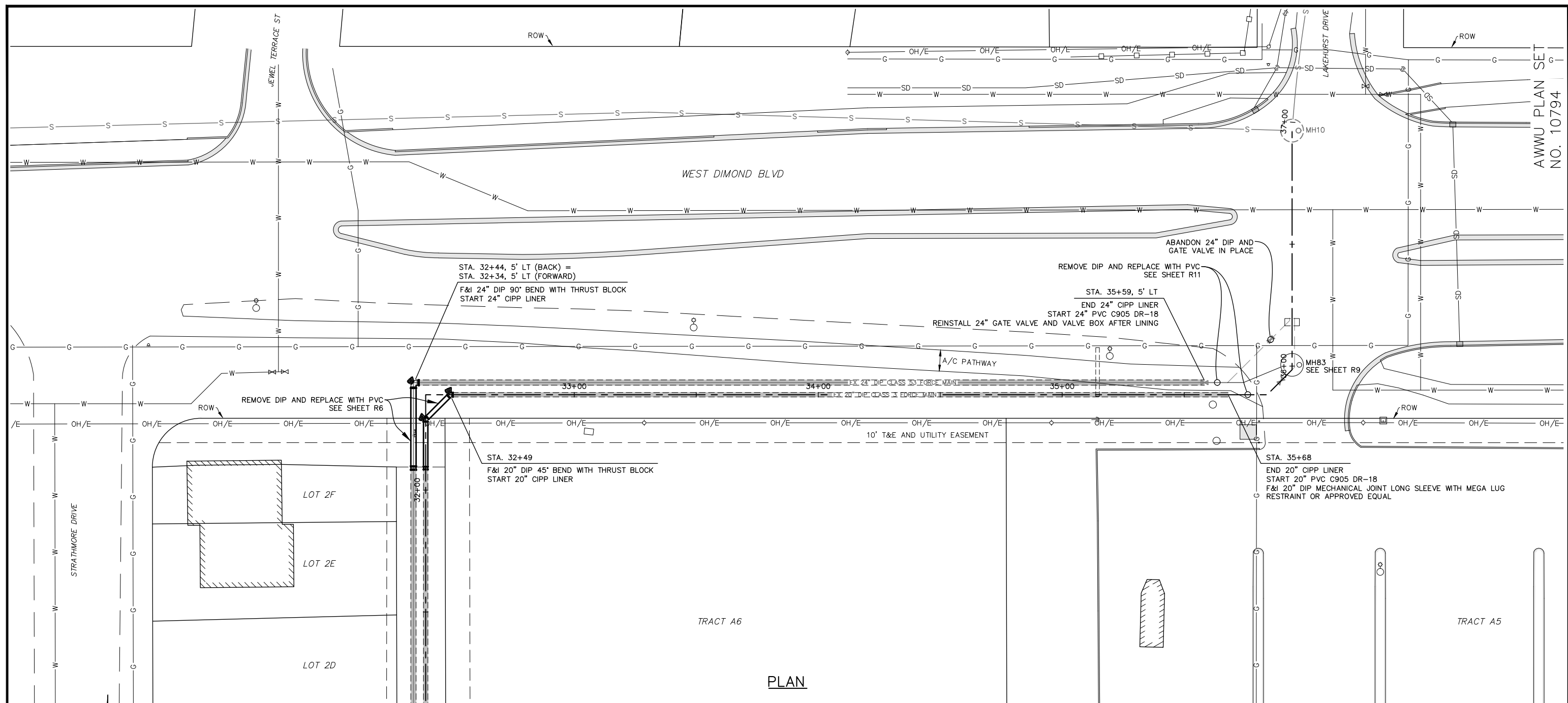
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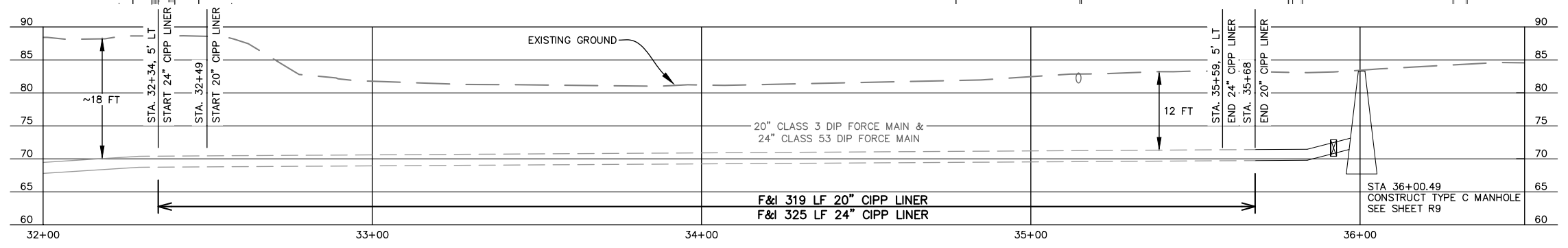
CONSULTANT



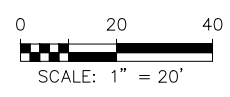
MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY			
SCHEDULE D			
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB			
DIG UP REPAIRS STA 32+39			
SECTION VIEWS			
R7			
HORIZ SCALE: 1"=5'	DATE: 10/29/2021	GRID: SW 2425	SHEET 98 of 104
VERT SCALE: 1"=5'	PROJ. ID.: WW.H7713		



PLAN



PROFILE



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

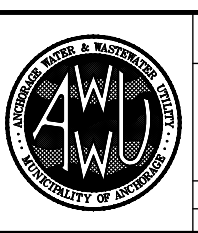
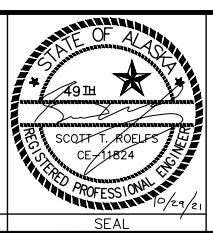
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SCHEDULE D

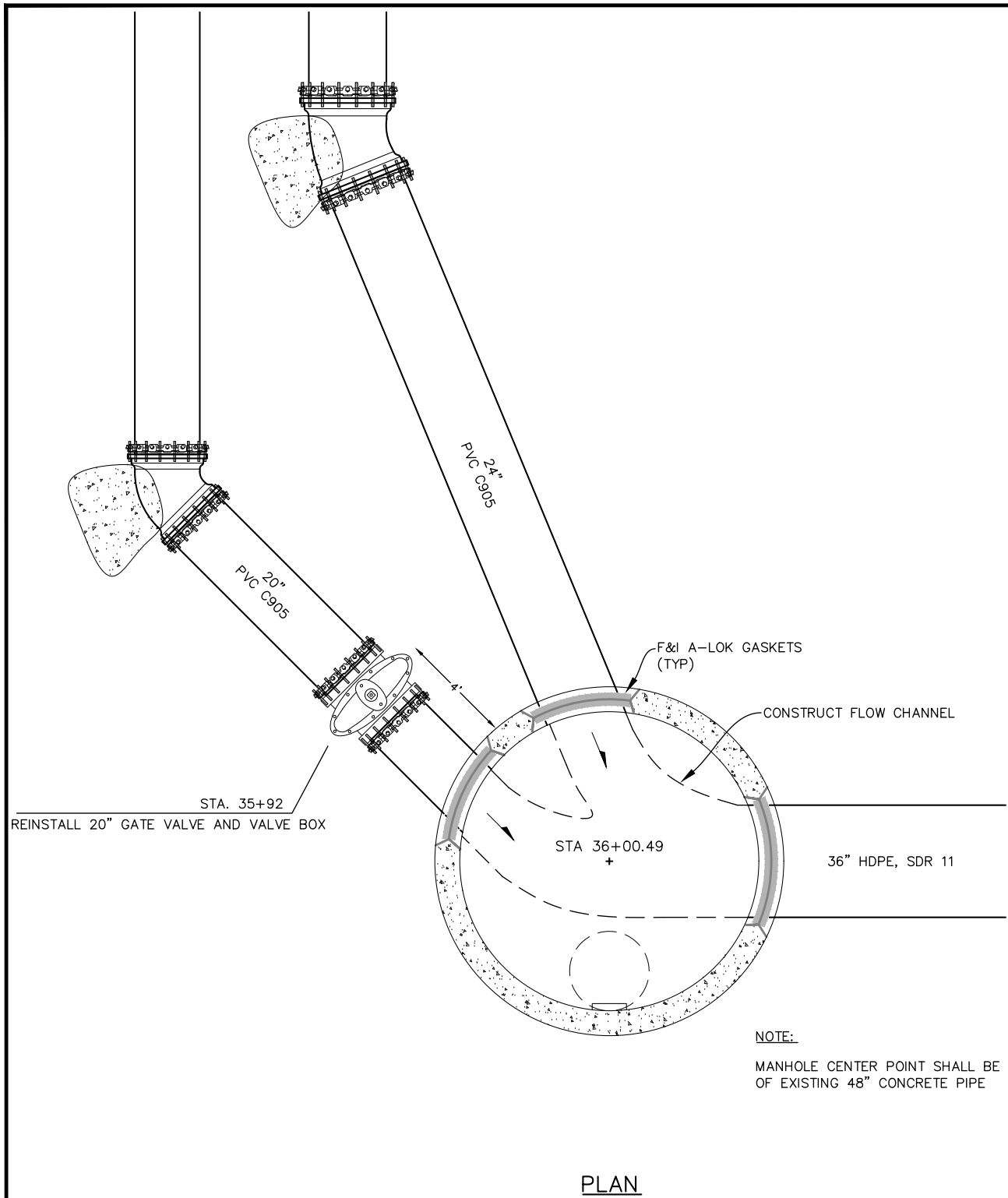
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

CIPP STA 32+34 TO 35+68

PLAN AND PROFILE R8

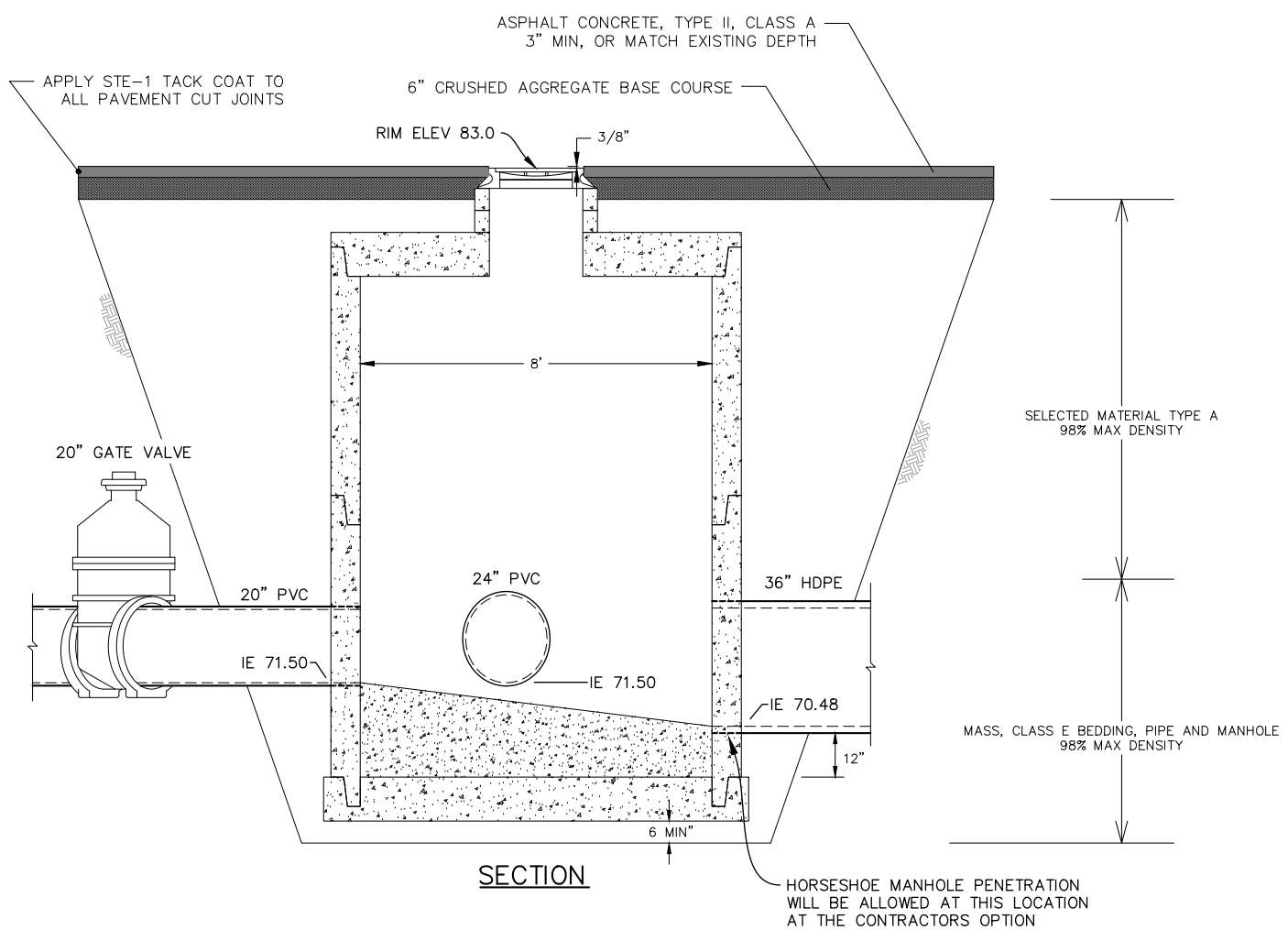
HORIZ SCALE: 1"=20'
VERT SCALE: 1"=10'
DATE: 10/29/2021
GRID: SW 2425
PROJ. ID.: WW.H7713

SHEET 99 of 104



PLAN

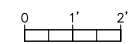
NOTE:
MANHOLE CENTER POINT SHALL BE ON CENTERLINE ALIGNMENT OF EXISTING 48" CONCRETE PIPE



SECTION

HORSESHOE MANHOLE PENETRATION WILL BE ALLOWED AT THIS LOCATION AT THE CONTRACTORS OPTION

NEW TYPE C MANHOLE STA 36+00.49



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" — 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	WTK	EVR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

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 CONTRACTOR: _____
 BY: _____ TITLE: _____
 DATE: _____

2. DATA TRANSFERRED BY: _____
 COMPANY: _____
 DATE: _____

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 DATA TRANSFER CHECKED BY: _____
 COMPANY: _____
 BY: _____ TITLE: _____
 DATE: _____

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SCHEDULE D

PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

MH 83, JUNCTION MANHOLE STA 36+00

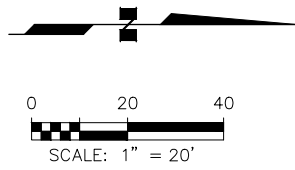
PLAN + SECTION R9

HORIZ SCALE: 1"=2'
VERT SCALE: 1"=2'

DATE: 10/29/2021 GRID: SW 2425

PROJ. ID.: WW.H7713

SHEET 100 of 104

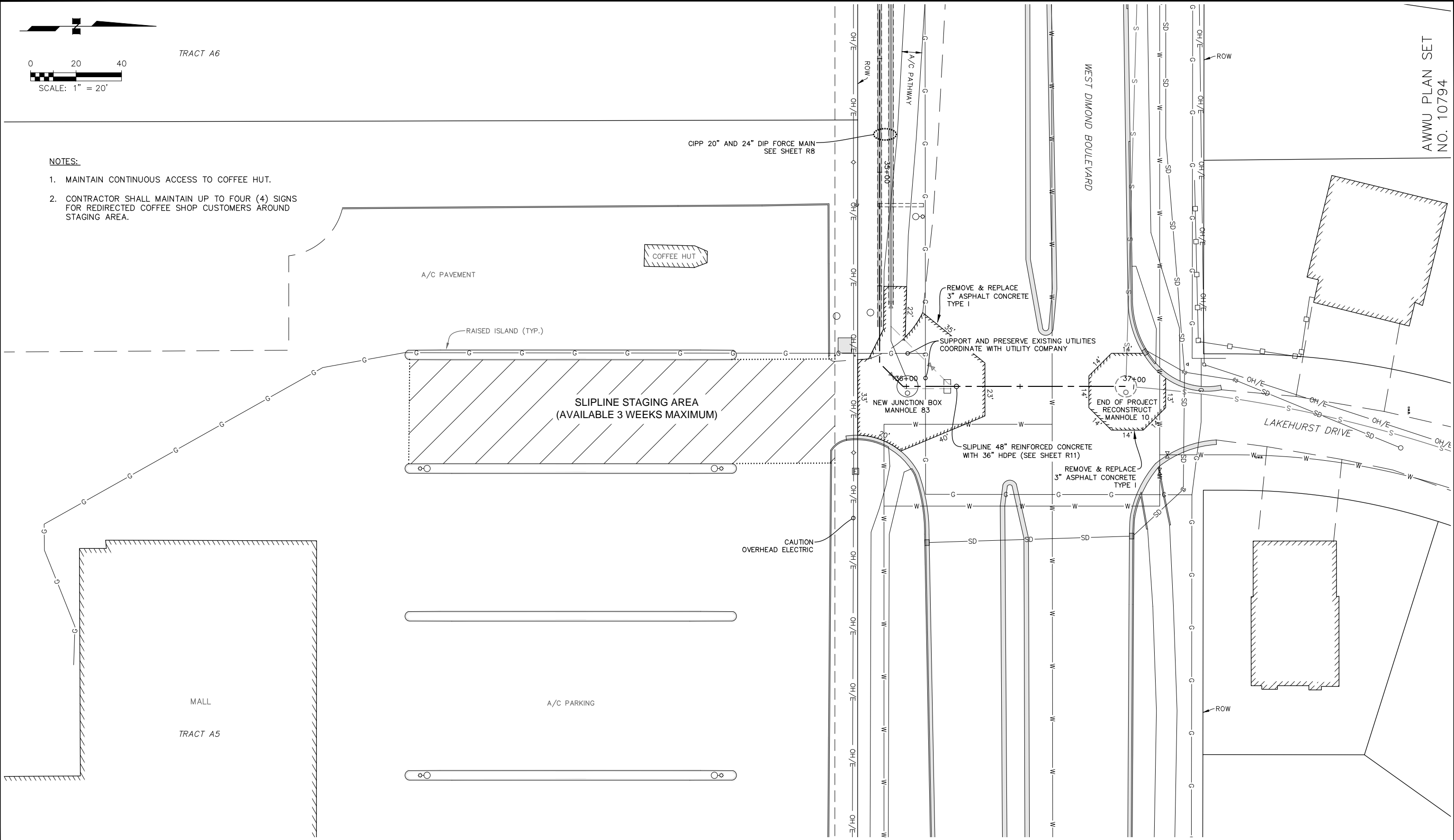


TRACT A6

AWWU PLAN SET
NO. 10794

NOTES:

1. MAINTAIN CONTINUOUS ACCESS TO COFFEE HUT.
2. CONTRACTOR SHALL MAINTAIN UP TO FOUR (4) SIGNS FOR REDIRECTED COFFEE SHOP CUSTOMERS AROUND STAGING AREA.



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" — 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATE	REV	DATE	DESCRIPTION	BY	DATE	REVISIONS
BASE	EVR	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				

RECORD DRAWING Note: To be filled out on original drawings upon project completion.

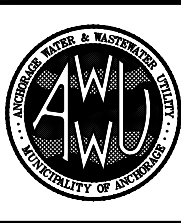
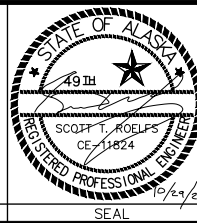
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 BY: _____ TITLE: _____
 DATE: _____

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SCHEDULE D

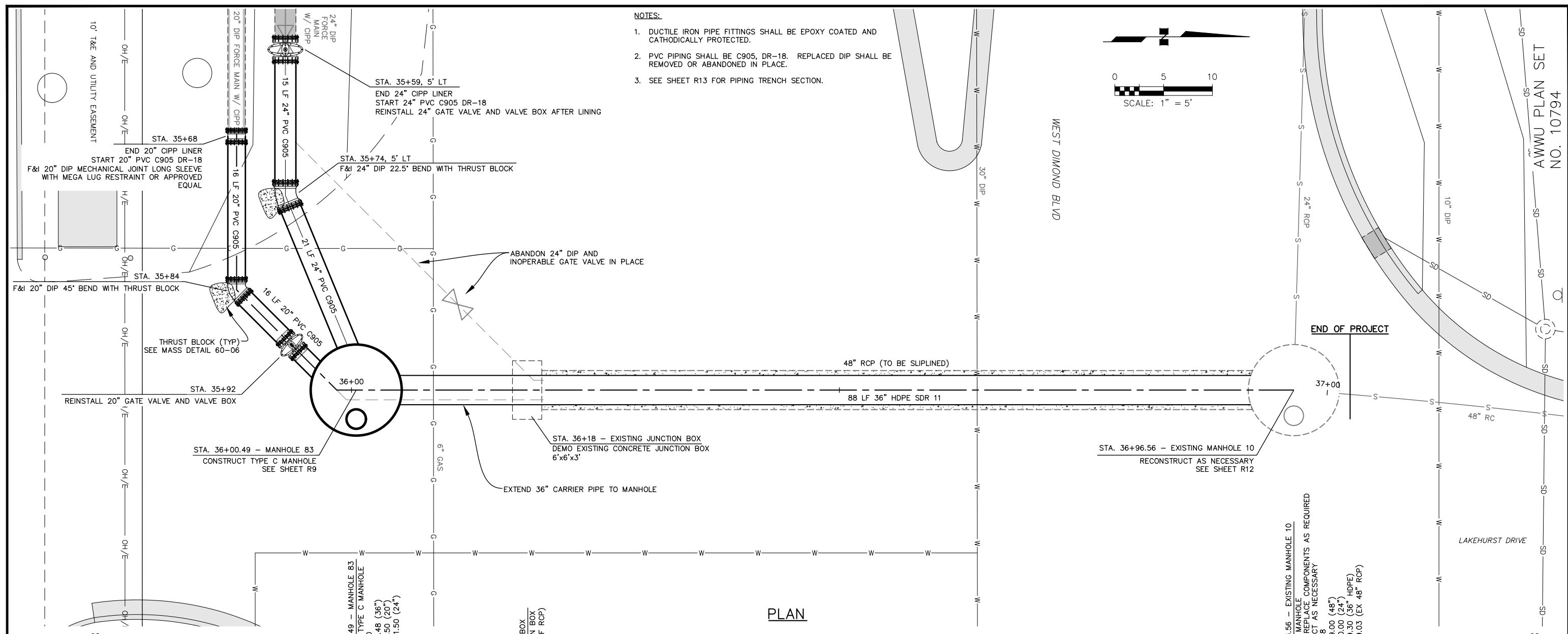
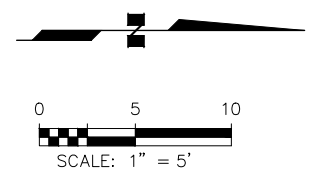
PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

SLIPLINE SITE PLAN

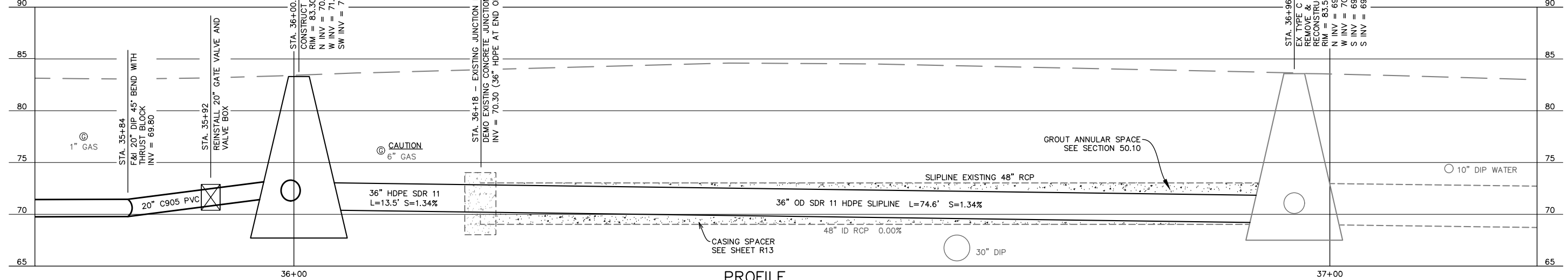
R10

HORIZ SCALE: 1"=20' DATE: 10/29/2021 GRID: SW 2425
 VERT SCALE: _____
 PROJ. ID.: WW.H7713 SHEET 101 of 104

- NOTES:**
- DUCTILE IRON PIPE FITTINGS SHALL BE EPOXY COATED AND CATHODICALLY PROTECTED.
 - PVC PIPING SHALL BE C905, DR-18. REPLACED DIP SHALL BE REMOVED OR ABANDONED IN PLACE.
 - SEE SHEET R13 FOR PIPING TRENCH SECTION.



PLAN



PROFILE

VERIFY SCALE THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING. 0" = 1" IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY. FULL SIZE SCALE HORZ SCALE: 1"=5' VERT SCALE: 1"=5'

DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	EVR	VLR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

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DATE: ---

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COMPANY: ---
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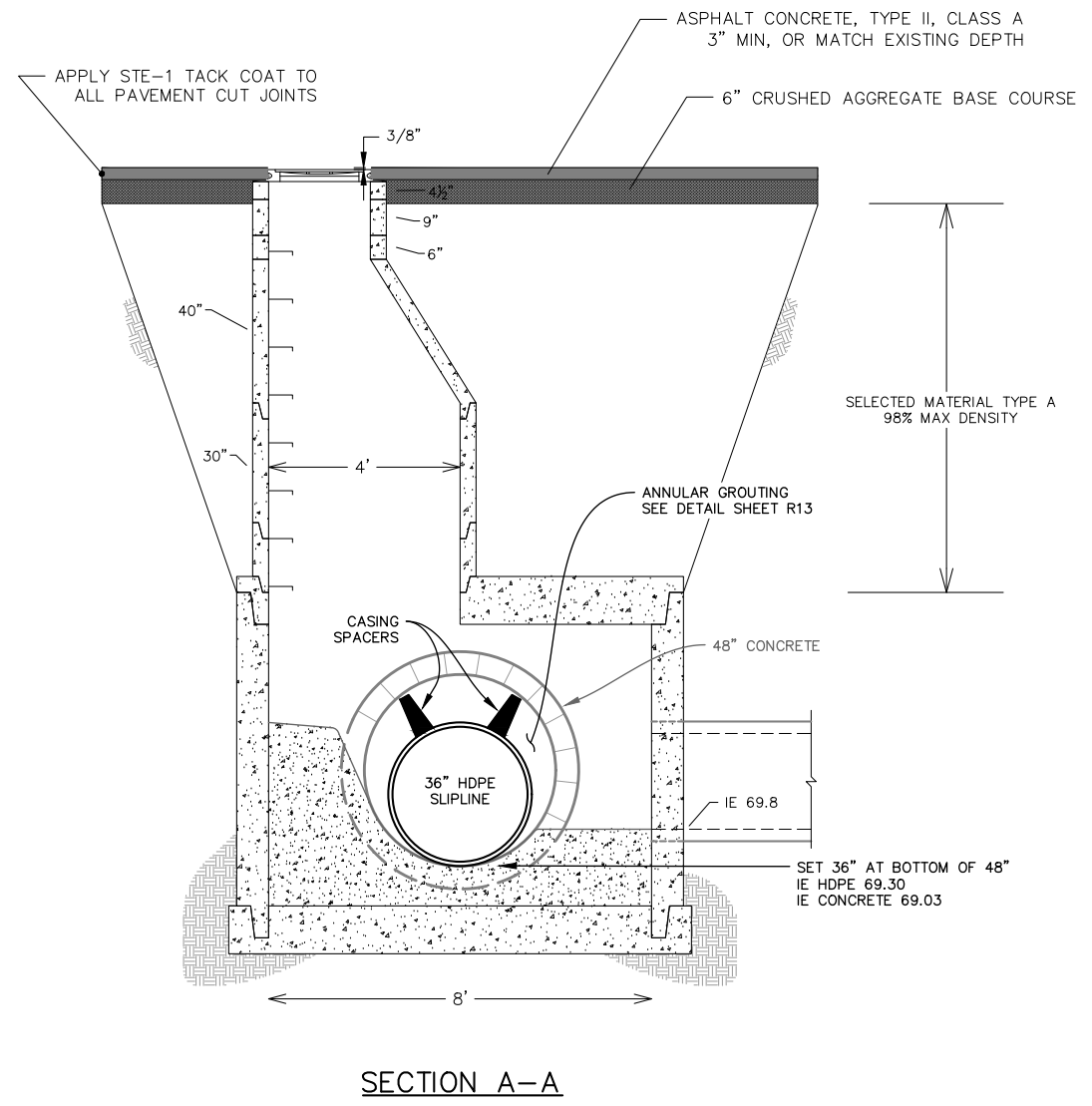
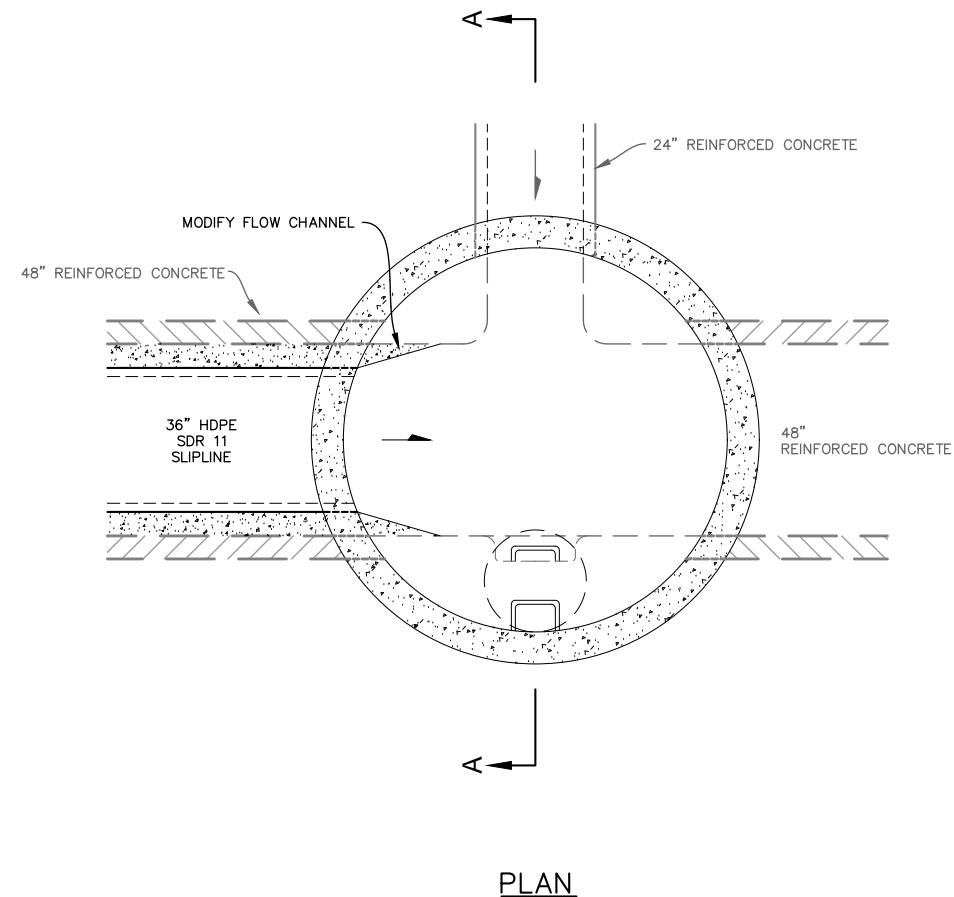
SLIPLINE STA 36+00 TO 36+95

PLAN AND PROFILE R11

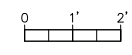
HORZ SCALE: 1"=5' DATE: 10/29/2021 GRID: SW 2425
VERT SCALE: 1"=5'
PROJ. ID: WW.H7713

SHEET 102 of 104

NOTE:
TO FACILITATE SLIPLINING OF THE UPSTREAM 48" R.C.P., THE CONTRACTOR SHALL REMOVE AND REPLACE MANHOLE COMPONENTS INCLUDING THE CONE AND REDUCING SLAB AS NECESSARY TO FACILITATE THE SLIPLINING OPERATION. ALL WORK SHALL BE IN ACCORDANCE WITH MASS SECTION 50.06 EXISTING MANHOLE MODIFICATIONS.



EXISTING MANHOLE #10, STA 36+96.47



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DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE	DESCRIPTION	BY
BASE	WTK	EVR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

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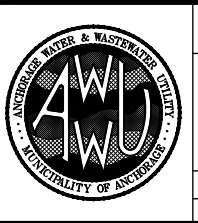
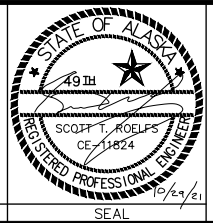
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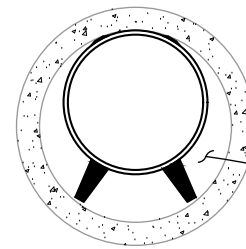
MANHOLE 10 RECONSTRUCTION
STA 36+96.97 PLAN AND SECTION R12

HORIZ SCALE: 1"=2' DATE: 10/29/2021 GRID: SW 2425
VERT SCALE: _____
PROJ. ID: WW.H7713

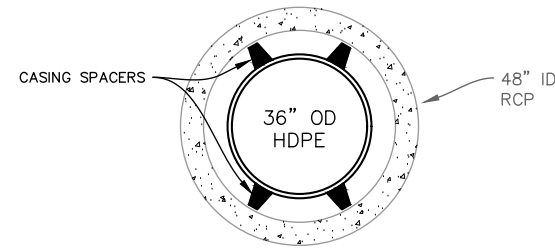
SHEET 103 of 104

NOTES:

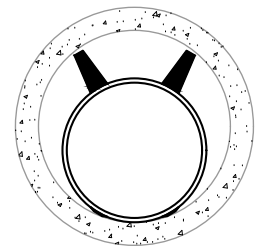
- SUBMIT A PLAN DESCRIBING THE SLIPLINING OPERATION INCLUDING CASING SPACERS AND GROUTING. LIST EQUIPMENT AND MATERIALS, DESCRIBE METHODS, PROPOSED MATERIALS AND SCHEDULES. SHOW THAT THE LINING CAN BE COMPLETED, AND THE TEMPORARY PIPING CAN BE PUT IN PLACE WITHIN THE 8 HOUR PUMP STATION SHUTDOWN ALLOWED. DESCRIBE CONTINGENCY PLANS IN THE EVENT THAT WORK CANNOT BE COMPLETED WITHIN THE 8 HOURS ALLOWED.
- CASING SPACERS SHALL BE PLACED AROUND THE CARRIER PIPE AT 10 FT INTERVALS TO KEEP THE PIPE ALIGNED AND MINIMIZE DEFLECTION BETWEEN SPACERS.
- IT WILL BE IMPORTANT TO ASSURE THAT THE CARRIER PIPE AND SPACERS KEEP THE INTENDED VERTICAL ALIGNMENT AND THE HDPE DOES NOT ROTATE OR TWIST IN THE HOST PIPE DURING SLIPLINING. CLEAR REFERENCE POINTS SHALL BE PROVIDED ON THE INTENDED TOP OF THE CARRIER PIPE AT BOTH ENDS AND AT 10 FOOT INTERVALS ALONG THE LENGTH. THE CONTRACTOR SHALL ALSO PROVIDE A RELIABLE MEANS TO TWIST THE PIPE AT BOTH ENDS IF THE CARRIER PIPE DOES TWIST OR ROTATE DURING THE SLIPLINE PROCESS.
- CARRIER PIPE TOLERANCES:
 - THE DESIGN SLOPE OF THE CARRIER PIPE IS 1.34%. OVER ANY 10 FT SEGMENT, THE SLOPE WILL BE ALLOWED TO VARY, PLUS OR MINUS 0.2% SLOPE.
 - THE CARRIER PIPE CENTERLINE ALIGNMENT WILL BE ALLOWED TO VARY UP TO 2" EITHER SIDE OF HOST PIPE CENTERLINE.



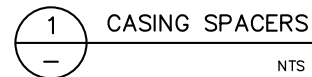
SOUTH END CROSS SECTION



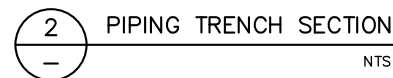
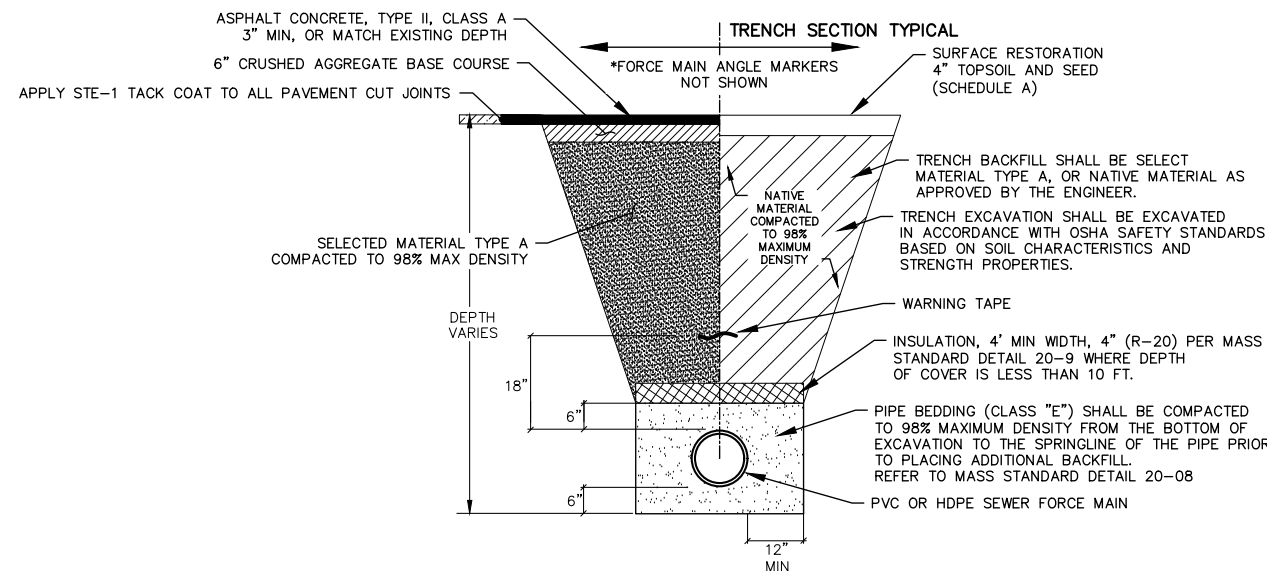
MID CROSS SECTION



NORTH END CROSS SECTION



**TRENCH SECTION IN PAVED AREAS
(DISTURBED ASPHALT REPLACED IN KIND IN DOT ROW)**



VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		0" = 1"		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
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BASE	WTK	EVR	TELEPHONE	---	---				
TOPOGRAPHY	---	---	ELECTRIC	---	---				
PROFILE	---	---	CABLE TV	---	---				
SANITARY SEWER	---	---	TRAFFIC SIGNAL	---	---				
STORM SEWER	---	---	DESIGN	---	---				
WATER	---	---	QUANTITIES	---	---				
GAS	---	---	MUN. FINAL CHECK	---	---				
PLAN CHECK					REVISIONS				

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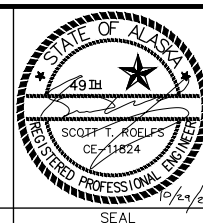
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PS12 FORCE MAIN / GRAVITY JUNCTION REHAB

FORCE MAIN REHABILITATION DETAILS

R13

HORIZ SCALE: _____ DATE: 10/29/2021 GRID: SW 2425 SHEET 104 of 104

VERT SCALE: _____

PROJ. ID.: WW.H7713