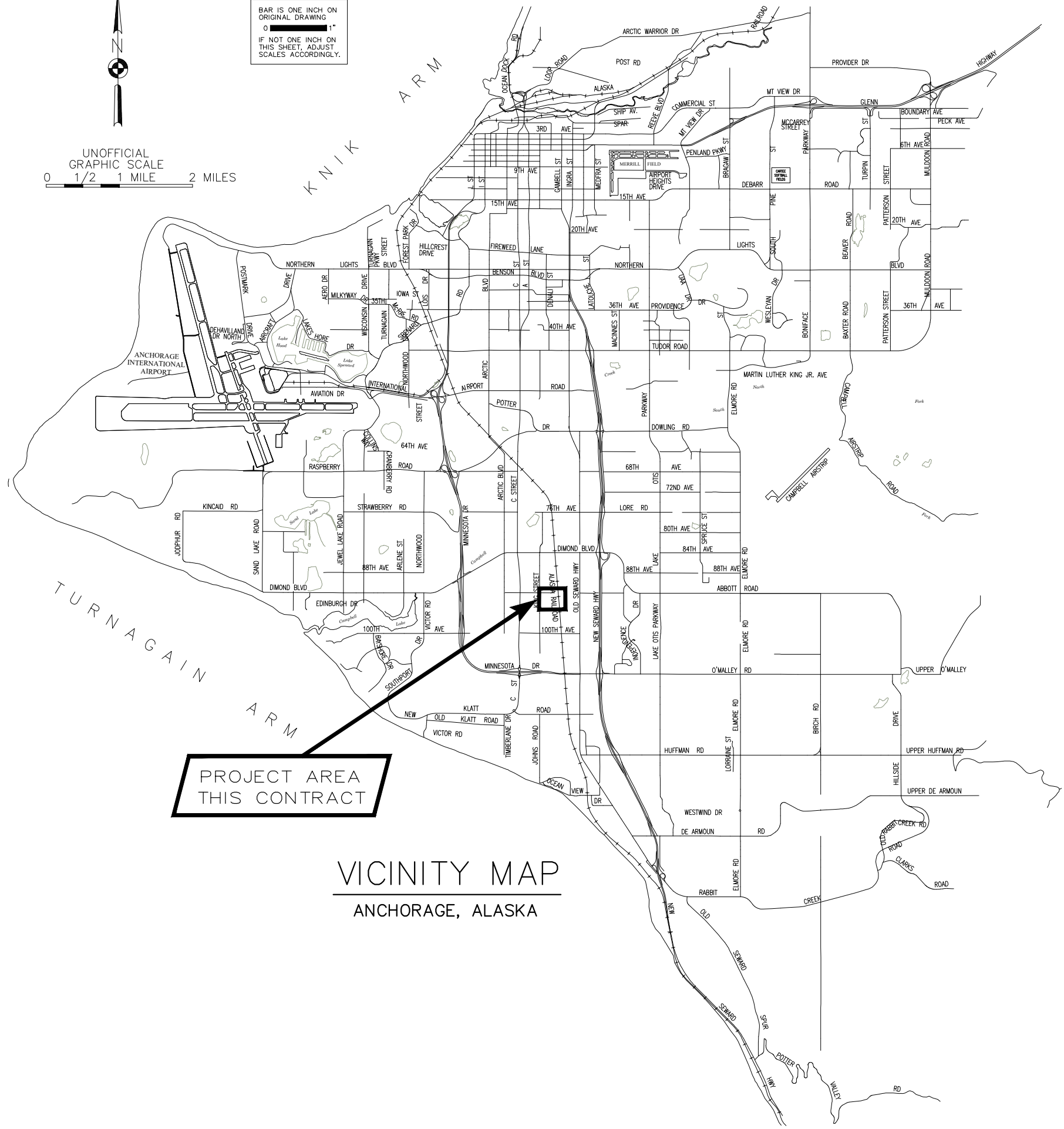




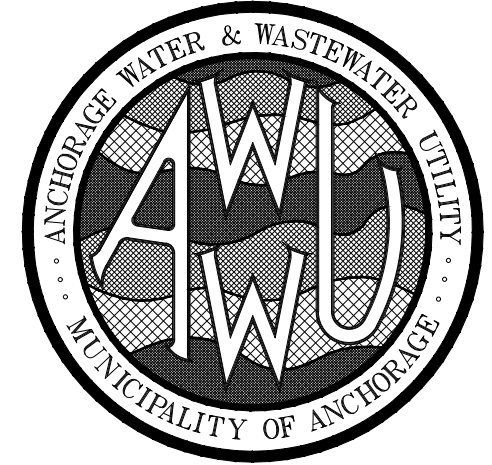
VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1/2 1 MILE 2 MILES
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

UNOFFICIAL GRAPHIC SCALE
 0 1/2 1 MILE 2 MILES



**PROJECT AREA
THIS CONTRACT**

VICINITY MAP
 ANCHORAGE, ALASKA



AWWU PLAN SET
 NO. XXXX

**MUNICIPALITY OF ANCHORAGE
 WATER & WASTEWATER UTILITY**

**KING STREET
 FUELING FACILITY IMPROVEMENTS**

AWWU PROJECT ID. NO. WW.H7960

08/17/2020

65% SUBMITTAL

Plot Date: Aug 17, 2020 - 2:59pm Drawing File: P:\projects\9559\Gen\General\00_1 COVER SHEET.dwg User: dillus modified by: dillus

KING STREET
 FUELING FACILITY IMPROVEMENTS
 INVITATION TO BID No. XX-XXXX
 AWWU PROJECT ID. NO. WW.H7960

ABBREVIATIONS

AC = ASPHALT CONCRETE
 ADEC = ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
 ANSI = AMERICAN NATIONAL STANDARDS INSTITUTE
 AST = ABOVE GROUND STORAGE TANK
 ATG = AUTOMATIC TANK GAUGING SYSTEM
 AWWU = ANCHORAGE WATER & WASTEWATER UTILITY
 CL = CENTERLINE
 COM = COMMUNICATION
 CONT = CONTINUOUS
 CONC = CONCRETE
 D = DEPTH
 DEG. = DEGREE
 DESC = DESCRIPTION
 DEF = DIESEL EXHAUST FLUID
 DIA. = DIAMETER
 DIP = DUCTILE IRON PIPE
 DN = NOMINAL DIAMETER
 E = EAST, EASTING
 EA = EACH
 EL, ELEV = ELEVATION
 ESMT = EASMENT
 EXIST = EXISTING
 EW = EACH WAY
 F = FAHRENHEIT, FUEL
 FF = FINISHED FLOOR
 FG = FINISHED GRADE
 FL = FLOWLINE
 FT = FEET
 GA = GAUGE
 GAL = GALLON
 GALV = GALVANIZED
 GB = GRADE BREAK
 H = HEIGHT
 INV = INVERT
 LBS = POUNDS
 LF = LINEAR FEET
 MASS = MUNICIPALITY OF ANCHORAGE STANDARD SPECIFICATIONS
 MAX = MAXIMUM
 ME = MATCH EXISTING
 MH = MANHOLE
 MIN = MINIMUM
 MISC = MISCELLANEOUS
 N = NORTH, NORTHING
 NO, # = NUMBER
 NTS = NOT TO SCALE
 OC = ON CENTER
 OD = OUTSIDE DIAMETER
 OHE = OVERHEAD ELECTRIC
 O&M = OPERATIONS AND MAINTENANCE
 OSHA = OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
 PCC = PORTLAND CEMENT CONCRETE
 PCS = PETROLEUM CONTAMINATED SOIL
 PSI = POUNDS PER SQUARE INCH
 R = RADIUS
 RD = ROAD
 ROW = RIGHT-OF-WAY
 RR = RAILROAD
 S = SEWER, SOUTH
 SCH = SCHEDULE
 SD = STORM DRAIN
 SDCB = STORM DRAIN CATCH BASIN
 SF = SQUARE FEET
 SQ = SQUARE
 SS = STAINLESS STEEL
 SSCO = SANITARY SEWER CLEANOUT
 T = TELEPHONE
 T&B = TOP AND BOTTOM
 TBC = TOP BACK OF CURB
 TC = TOP OF CURB
 T/ = TOP OF
 TYP = TYPICAL
 UC = UNDERGROUND
 VL = VEHICLE IDENTIFICATION LINK
 W = WEST, WIDTH
 W/ = WITH
 WWF = WELDED WIRE FABRIC
 & = AND
 @ = AT
 # = NUMBER
 ± = PLUS OR MINUS

LEGEND

SYMBOL		PLAN LEGEND
EXISTING (E)	PROPOSED (P)	
---	---	PROPERTY LINE
---	---	EASEMENT
---	---	GRADE BREAK
---	---	CENTERLINE
---	---	DRAINAGE SWALE
---	---	FENCE
---	---	FUEL LINE
---	---	OVERHEAD ELECTRIC
---	---	UNDERGROUND ELECTRIC
---	---	SANITARY SEWER LINE
---	---	STORMDRAIN LINE
---	---	WATER LINE
---	---	CONTOUR LINE
---	---	CONCRETE
---	---	EDGE OF GRAVEL
---	---	EDGE OF PAVEMENT
---	---	EDGE OF TREES
---	---	STRUCTURE
---	---	SPOT ELEVATION
---	---	WATER VALVE/KEY BOX
---	---	SANITARY SEWER MANHOLE
---	---	STORM DRAIN MANHOLE
---	---	CATCH BASIN MANHOLE
---	---	DRY WELL
---	---	LUMINAIRE
---	---	ELECTRIC OUTLET
---	---	BOLLARD
---	---	FIRE HYDRANT
---	---	SANITARY SEWER CLEANOUT
---	---	TEST BORING
---	---	CULVERT

GENERAL NOTES

- ALL CONSTRUCTION MUST BE INSTALLED AS SPECIFIED IN THE MOST CURRENT EDITION OF THE MUNICIPALITY OF ANCHORAGE STANDARD SPECIFICATIONS FOR STREETS-DRAINAGE-UTILITIES-PARKS (MASS), THE AWWU DESIGN AND CONSTRUCTION PRACTICES MANUAL, AND THE SPECIAL PROVISIONS.
- VERIFY AND RECORD THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES ENCOUNTERED IN THE FIELD AND RECORD ANY CHANGES ON THE CONTRACTOR RECORD DRAWINGS.
- RESTORE ALL DISTURBED PROPERTY, INCLUDING DRAINAGE SWALES, DISTURBED BY CONTRACT ACTIVITIES TO PRECONSTRUCTION CONDITION.
- RECORD SURVEY NOTES FOR SUBMITTAL WITH RECORD DRAWING PLANS PRIOR TO CONTRACT FINAL PAYMENT.
- PROVIDE EROSION AND SEDIMENT CONTROLS AS NECESSARY TO COMPLY WITH FEDERAL, STATE, AND MUNICIPAL LAWS THAT PROHIBIT UNPERMITTED DISCHARGE OF POLLUTANTS, INCLUDING SEDIMENTS, THAT ARE A RESULT OF EROSION AND OTHER CONSTRUCTION ACTIVITIES. CONDUCT ALL WORK SO SEDIMENT IS NOT TRANSPORTED ONTO THE ROADWAY OR ADJACENT PROPERTY. AT A MINIMUM, SWEEP UP ANY SEDIMENT TRACKED ONTO PAVED SURFACES IN PUBLIC RIGHT-OF-WAY WITHIN 24 HOURS OF THE TRACKING TO MINIMIZE THE WASH-OFF OF SEDIMENT INTO THE STORM DRAINS OR WATERWAYS.
- LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE ONLY. VERIFY LOCATIONS BY OBTAINING UTILITY LOCATES PRIOR TO BEGINNING CONSTRUCTION.
- DIMENSIONS AND RADII SHOWN ARE TO EDGE OF ASPHALT OR CONCRETE, CENTER OF BOLLARD, OR EDGE OF FUEL TANK UNLESS INDICATED OTHERWISE.
- ELEVATIONS ARE TO TOP OF ASPHALT, CONCRETE, OR EARTHWORK FINISH GRADE UNLESS INDICATED OTHERWISE.
- EXISTING GROUND CONTOURS ARE BASED ON SURVEY BY R&M CONSULTANTS INC.
- SOILS INFORMATION IS DERIVED FROM SOILS INVESTIGATION PERFORMED BY SHANNON & WILSON INC. SEE GEOTECHNICAL REPORT DATED JULY 2020 AND TITLED: PRELIMINARY RECOMMENDATIONS, KING STREET CAMPUS-WIDE IMPROVEMENTS, ANCHORAGE, AK.
- FOLLOW ALL MOA REGULATIONS FOR NOISE, HOURS OF OPERATION, AND DUST CONTROL.

SHEET INDEX

NO.	SHEET	SUBJECT
GENERAL		
1	GO.1	COVER SHEET
2	GO.2	ABBREVIATIONS, LEGEND, GENERAL NOTES, AND SHEET INDEX
3	GO.3	SURVEY CONTROL
CIVIL		
4	C1.0	EXISTING CONDITIONS AND DEMOLITION PLAN
5	C1.1	SITE PLAN
6	C1.2	GRADING AND DRAINAGE PLAN
7	C1.3	CONCRETE JOINTING PLAN
8	C2.0	SITE SECTIONS
9	C2.1	SITE SECTIONS
10	C3.0	CIVIL DETAILS
ARCHITECTURAL		
11	A0.1	ARCHITECTURAL NOTES, SYMBOLS, AND ABBREVIATIONS
12	A1.0	FUEL SHACK PLANS
13	A1.1	FUEL CANOPY ROOF PLAN
14	A2.0	FUEL CANOPY ELEVATIONS
15	A2.1	FUEL SHACK ELEVATIONS
STRUCTURAL		
16	S0.1	NOTES AND ABBREVIATIONS
17	S1.0	CANOPY FOUNDATION AND ROOF PLANS
18	S1.1	TANK AND PLATFORM FOUNDATION PLAN
19	S2.0	ELEVATIONS
20	S3.0	FOUNDATION DETAILS
21	S3.1	STAIR AND PLATFORM DETAILS
MECHANICAL		
22	M0.1	MECHANICAL NOTES, SYMBOLS, AND ABBREVIATIONS
23	M0.2	MECHANICAL SPECIFICATIONS
24	M0.8	PIPING & INSTRUMENTATION DIAGRAM
25	M0.9	GENERATOR PIPING & INSTRUMENTATION DIAGRAM
26	M1.0	MECHANICAL SITE PLAN
27	M2.1	FUEL ISLAND ELEVATION
28	M3.0	TYPICAL 12,000 GALLON TANK DETAILS
29	M3.1	MECHANICAL DETAILS
30	M3.2	MECHANICAL DETAILS
PLUMBING		
31	P0.1	PLUMBING LEGEND AND FIXTURE SCHEDULES
32	P1.1	ROOF PLUMBING PLAN
ELECTRICAL		
33	E0.1	ELECTRICAL LEGEND AND FIXTURE SCHEDULES
34	E1.0	ELECTRICAL DEMOLITION PLANS
35	E1.1	ELECTRICAL SITE PLAN - REMODEL
36	E1.2	LIGHTING PLANS
37	E1.3	POWER PLANS
38	E1.4	SIGNAL PLANS
39	E2.0	HAZARDOUS BOUNDARY PLAN
40	E3.0	ELECTRICAL DETAILS
41	E3.1	ELECTRICAL DETAILS
42	E3.2	ELECTRICAL DETAILS

Plot Date: Aug 17, 2020 - 2:59pm Drawing File: P:\Projects\9559\Cost\General\00_2_ABBREVIATIONS, LEGEND, GENERAL NOTES, AND SHEET INDEX.dwg Last modified by: alius

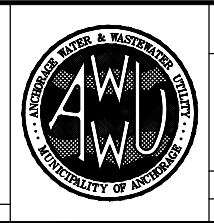
65% SUBMITTAL - NOT FOR CONSTRUCTION

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.
 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: _____

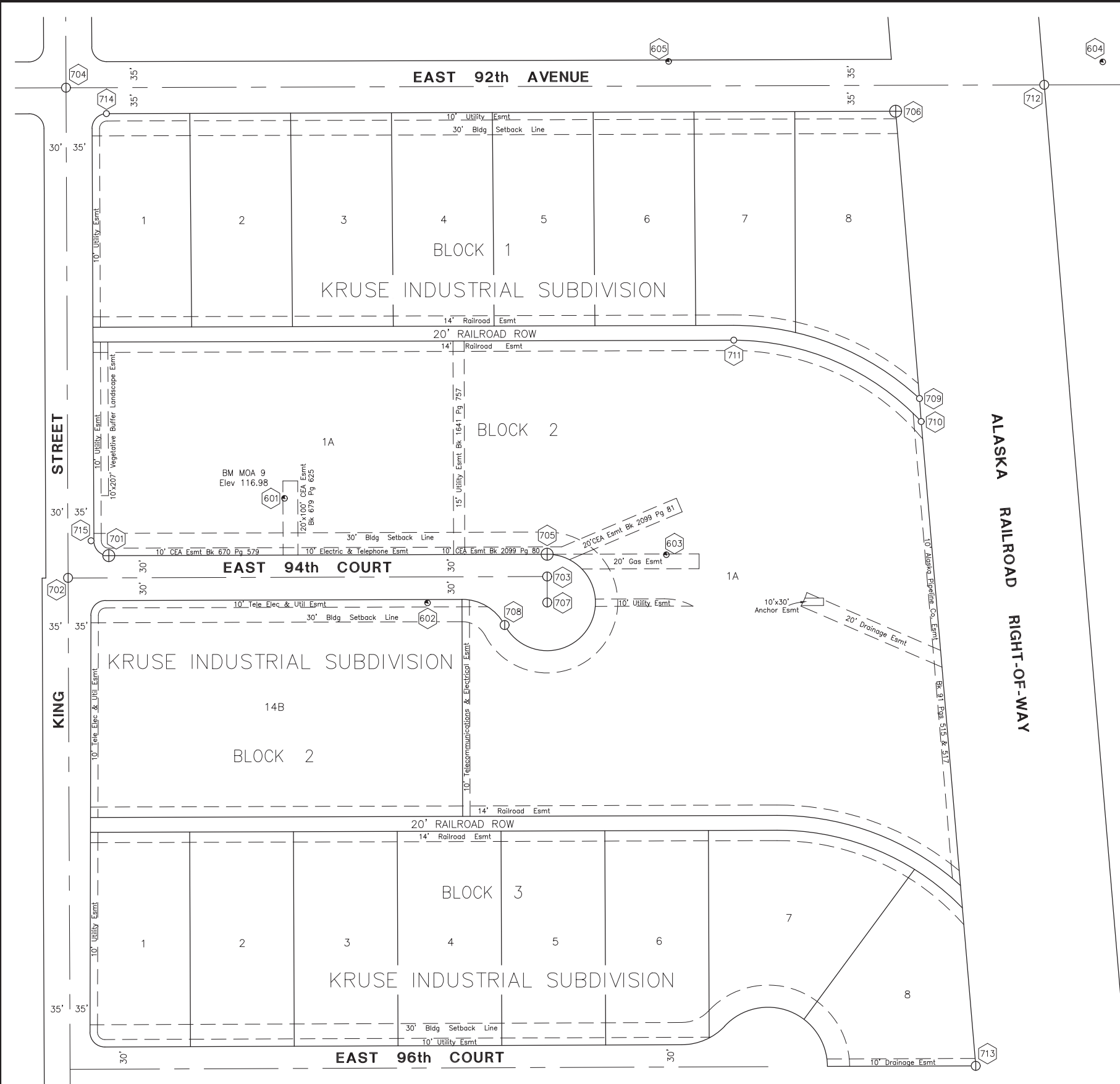
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 2525 GAMBELL STREET SUITE 200 ANCHORAGE, AK 99503
 400 US ROUTE 1 NORTH SUITE 6 FAIRBANKS, AK 99701
 TEL (907) 563-3835 TEL (207) 869-8006
 FAX (907) 563-3817 FAX (207) 869-8015

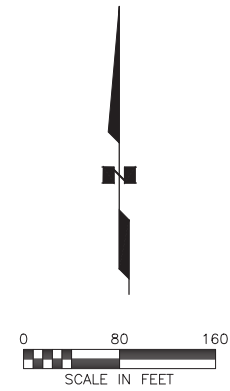


MUNICIPALITY OF ANCHORAGE
 WATER & WASTEWATER UTILITY
 KING STREET
 FUELING FACILITY IMPROVEMENTS
ABBREVIATIONS, LEGEND, GENERAL NOTES, AND SHEET INDEX G0.2
 HORZ SCALE: N/A DATE: 08/17/2020 GRID: SW2431
 VERT SCALE: N/A PROJ. ID: WW.H7960
 SHEET 2 of 42

CONSULTANT SEAL



COORDINATE SCHEDULE				
Point	Northing	Easting	Elevation	Description
601	2607139	1662116	116.98	Found 2 1/2" Brass Cap - Bench Mark MOA 9
602	2606998	1662309	121.03	Scribed "X" in NW'ly base bolt of a Metal Light Pole
603	2607063	1662631	122.70	Scribed "X" in NE flange bolt of hydrant
604	2607727	1663220	117.57	Scribed "X" in N'ly flange bolt of hydrant
605	2607728	1662634	116.38	Scribed "X" in N'ly flange bolt of hydrant
701	2607061.8324	1661879.0049		Found 2 1/2" Aluminum Cap Monument
702	2607031.7903	1661824.0005		Found 2" ALCAP in a Monument Case
703	2607033.6042	1662470.2828		Found 2" ALCAP in a Monument Case
704	2607692.6787	1661821.2344		Found 2" ALCAP in a Monument Case
705	2607063.6241	1662470.2094		Found 2 1/2" Aluminum Cap Monument
706	2607660.9371	1662940.3321		Found 3 1/4" Brass Cap Monument
707	2606998.5944	1662470.4115	119.35	Found 2" ALCAP on 5/8" Rebar in a Monument Case
708	2606968.1970	1662412.9940		Found 2" ALCAP on 5/8" Rebar
709	2607273.6317	1662972.4178		Found 5/8" Rebar
710	2607242.5403	1662974.8096		Found 5/8" Rebar
711	2607352.3349	1662721.9700		Found 5/8" Rebar
712	2607696.5588	1663140.7321		Found 2" ALCAP
713	2606373.8639	1663048.2852		Found Yellow Plastic Cap
714	2607657.8038	1661875.7839		Found 5/8" Rebar
715	2607081.8518	1661855.1637		Found 5/8" Rebar



SURVEY NOTES

- The field survey was performed by R&M Consultants, Inc. between February 8 and March 9, 2016. Field survey information for this project is located in R&M Field Book No. 2305.04.
- A title search was not performed, easements of record other than those shown on the recorded plats are not shown hereon.
- All disturbed property corners shall be replaced by the contractor in accordance with the M.O.A. Standard Specifications, Section 65.02 Construction Surveying, Article 2.1 Project Control.
- The Basis of Bearings is NAD83(2011) (EPOCH 2010.0000) Alaska State Plane Zone 4 grid from GPS observations.
- Coordinates are NAD83(2011) (EPOCH 2010.0000) Alaska State Plane Zone 4, expressed in U.S. Survey Feet. The Basis of Coordinates is Point No. 701. The coordinates of Point No. 701 were established as the average position obtained by sending two 6 hour static GPS observations to the NGS OPUS utility for processing.
- To convert from NAD83(2011) (EPOCH 2010.0000) Alaska State Plane Zone 4 coordinates to Anchorage Bowl 2000 coordinates: Scale using 1.0001089927 and then Translate using -2,296,869.1713 N, -1,312,516.9847 E.
- Elevations are based on the M.O.A. Vertical Datum 1972 N.G.S. Adjustment. The Basis of Elevations is Bench Mark "MOA 9", a 2 1/2" Brass Cap set flush with concrete, located 4.8' east of the SW corner of the AWWU Maintenance and Operations Building, Elev.=116.98'. See M.O.A. Benchmark Book, Description Page D-59.

LEGEND

- ⊕ Found Primary Monument
- ⓪ Found Rebar With Aluminum or Plastic Cap
- Found 5/8" or 1/2" Rebar
- Project Bench Mark or TBM
- ⑦ Survey Control Point Number
See Coordinate Schedule

65% SUBMITTAL - NOT FOR CONSTRUCTION

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" = 80' VERT SCALE: N/A	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	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. 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: _____
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www.rmconsult.com

MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

KING STREET
FUELING FACILITY IMPROVEMENTS

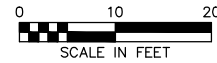
SURVEY CONTROL **G0.3**

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VERT SCALE: N/A
DATE: 08/17/2020
GRID: SW2431
PROJ. ID.: WW:H7960

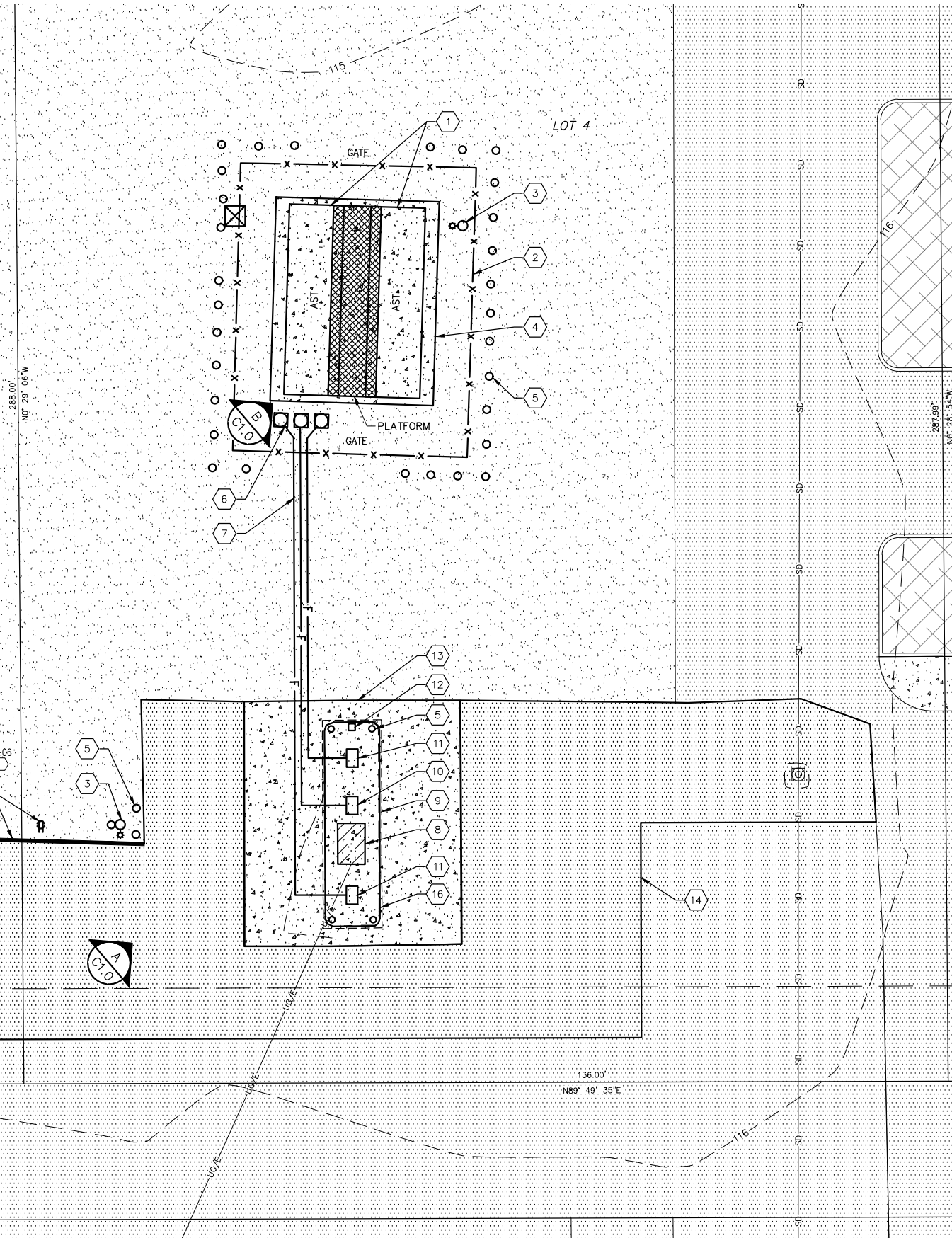
SHEET 3 of XX

DEMOLITION NOTES

1. PROVIDE A DETAILED DEMOLITION PLAN THAT IS COORDINATED WITH THE NEW WORK PLAN. THE DEMOLITION PLAN MUST INCLUDE THE NUMBER OF DEMOLITION EVENTS AND ESTIMATED TIME REQUIRED FOR EACH EVENT. REFER TO NEW WORK PLAN SEQUENCING NOTES ON C1.1 FOR PHASED CONSTRUCTION REQUIREMENTS.
2. COORDINATE ACCESS AND ALLOWABLE TIME DURATION FOR EACH DEMOLITION EVENT WITH THE OWNER AND OTHER AWWU KING STREET CAMPUS PROJECTS.
3. COORDINATE WITH THE OWNER TO DETERMINE WHICH DEMOLITION ITEMS THE OWNER WILL RETAIN. ITEMS TO BE RETAINED BY THE OWNER MUST NOT BE DAMAGED DURING DEMOLITION. ITEMS TO BE RETAINED MUST BE DISPOSED OF AT A LOCATION DESIGNATED BY THE OWNER.
4. REFER TO MECHANICAL AND ELECTRICAL FOR ADDITIONAL DEMOLITION REQUIREMENTS.
5. DEMOLITION WORK MUST NOT BEGIN UNTIL:
 - A. RELATED SUBMITTALS FOR NEW WORK HAVE BEEN RECEIVED AND APPROVED
 - B. NEW WORK PLAN HAS BEEN RECEIVED AND APPROVED
 - C. DEMOLITION PLAN HAS BEEN RECEIVED AND APPROVED
 - D. OWNER REQUIREMENTS FOR SHUTDOWN HAVE BEEN COORDINATED AND MET



LOT 3
 KRUSE INDUSTRIAL SUBDIVISION
 BLOCK 1



DEMOLITION ITEMS

- 1 REMOVE AND DISPOSE OF (2) 10,000 GAL ABOVE GROUND STORAGE TANKS AND ASSOCIATED PLATFORM.
- 2 REMOVE AND DISPOSE OF CHAIN LINK FENCE AND SWING GATES (APPROXIMATELY 155 LF).
- 3 REMOVE AND DISPOSE OF LIGHT POLES AND BASES (TYP OF 2).
- 4 REMOVE AND DISPOSE OF ASSUMED 10" THICK CONCRETE TANK PAD (APPROXIMATELY 720 SF).
- 5 REMOVE AND DISPOSE OF BOLLARDS (TYP OF 36).
- 6 REMOVE AND DISPOSE OF CONTAINMENT SUMPS (TYP OF 3).
- 7 REMOVE AND DISPOSE OF UNDERGROUND FUEL LINES.
- 8 REMOVE AND DISPOSE OF FUEL SHACK.
- 9 REMOVE AND DISPOSE OF CANOPY.
- 10 REMOVE AND RELOCATE DIESEL DISPENSER. SEE M1.0.
- 11 REMOVE AND RELOCATE UNLEADED DISPENSER (TYP OF 2). SEE M1.0.
- 12 REMOVE AND RELOCATE FUELMASTER VIL. SEE M1.0.
- 13 REMOVE AND DISPOSE OF 6" THICK CONCRETE DRIVE SLAB (APPROXIMATELY 910 SF).
- 14 SAWCUT AND REMOVE 2" THICK ASPHALT PAVEMENT (APPROXIMATELY 4,980 SF).
- 15 REMOVE AND DISPOSE OF METAL BULL RAIL, POSTS, AND ASSOCIATED ELECTRICAL OUTLETS AND CONDUIT (APPROXIMATELY 100 LF).
- 16 REMOVE AND DISPOSE OF 30" THICK CONCRETE ISLAND (APPROXIMATELY 240 SF).

AWWU PLAN SET
NO. XXXX



A
 C1.0 FUELING FACILITY
 SCALE: NTS



B
 C1.0 AST AND PAD
 SCALE: NTS

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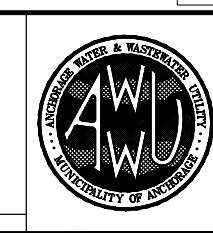
Plot Date: Aug 17, 2020 - 2:39pm Drawing File: P:\Projects\9559\Coal\Current\Civil\C1.0 EXISTING CONDITIONS AND DEMOLITION PLAN.dwg Last modified by: alius

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"=10' VERT SCALE: N/A	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	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. 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.	
2. DATA TRANSFERRED BY:			

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 (907) 563-3835 FAX (907) 563-3817
 400 US ROUTE 1 NORTH SUITE 6 PALMVIEW, WAKE 94105
 (907) 869-8006 FAX (907) 869-8015



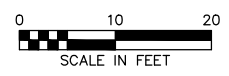
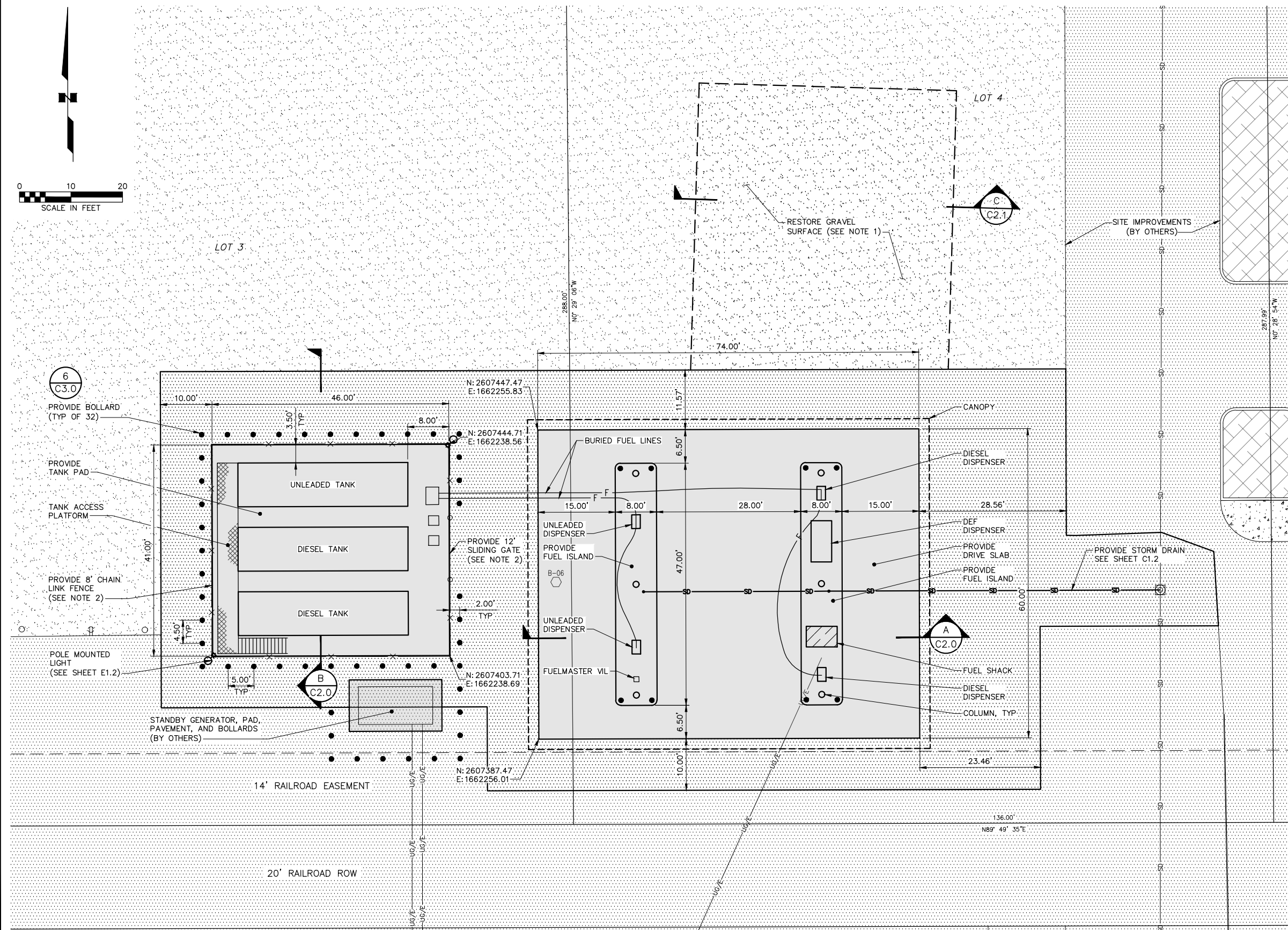
MUNICIPALITY OF ANCHORAGE
 WATER & WASTEWATER UTILITY
 KING STREET
 FUELING FACILITY IMPROVEMENTS
EXISTING CONDITIONS AND DEMOLITION PLAN C1.0
 HORZ SCALE: 1"=10' DATE: 08/17/2020 GRID: SW2431
 VERT SCALE: N/A PROJ. ID.: WW:H7960
 SHEET 4 of 42

SITE NOTES

1. EXTENT OF GRAVEL SURFACE RESTORATION SHOWN IS BASED ON DEMOLITION WORK. PCS MAY BE ENCOUNTERED DURING DEMOLITION WORK. NOTIFY THE OWNER IF PCS IS ENCOUNTERED.
2. CONSTRUCT CHAIN LINK FENCE AND SLIDE GATE PER MASS STANDARD DETAILS #70-41 AND 70-42. PROVIDE 9 GA FABRIC, BARBED WIRE, AND ALUMINUM SLATS FOR FENCE AND GATE.

SEQUENCING NOTES

1. PROVIDE A DETAILED WORK PLAN THAT IS COORDINATED AND PHASED WITH THE DEMOLITION PLAN. THE WORK PLAN MUST MEET OWNER SCHEDULE REQUIREMENTS FOR SHUTDOWN AND MINIMIZE DOWNTIME OF THE FUELING FACILITY.
2. COORDINATE TIMING OF THE FUELING FACILITY SHUTDOWN WITH THE OWNER. THE OWNER MUST BE GIVEN A MINIMUM OF 30 DAYS NOTICE PRIOR TO SHUTDOWN TO ALLOW ENOUGH TIME FOR THE OWNER TO ESTABLISH TEMPORARY OFFSITE FUELING SERVICES.
3. MAXIMUM ALLOWABLE OUTAGE TIME FOR THE FUELING FACILITY IS 30 DAYS.
4. THE FOLLOWING OTHER PROJECTS LOCATED ON THE AWWU KING STREET O&M CAMPUS MUST BE CONSIDERED IN THE PLANNING OF THIS WORK:
 - KING STREET WARM VEHICLE STORAGE BUILDING PROJECT
 - KING STREET EMERGENCY BACKUP GENERATOR PROJECT



6
C3.0

PROVIDE BOLLARD (TYP OF 32)

PROVIDE TANK PAD

TANK ACCESS PLATFORM

PROVIDE 8' CHAIN LINK FENCE (SEE NOTE 2)

POLE MOUNTED LIGHT (SEE SHEET E1.2)

STANDBY GENERATOR, PAD, PAVEMENT, AND BOLLARDS (BY OTHERS)

14' RAILROAD EASEMENT

20' RAILROAD ROW

RESTORE GRAVEL SURFACE (SEE NOTE 1)

SITE IMPROVEMENTS (BY OTHERS)

PROVIDE STORM DRAIN (SEE SHEET C1.2)

65% SUBMITTAL - NOT FOR CONSTRUCTION

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"=10' VERT SCALE: N/A	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE
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.

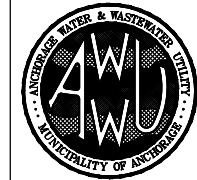
1. DATA PROVIDED BY: _____
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 CONTRACTOR: _____
 BY: _____ TITLE: _____
 DATE: _____

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MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

KING STREET
FUELING FACILITY IMPROVEMENTS

SITE PLAN

HORZ SCALE: 1"=10'
VERT SCALE: N/A

DATE: 08/17/2020

GRID: SW2431

PROJ. ID.: WW:H7960

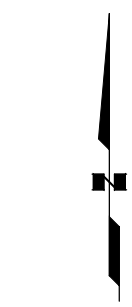
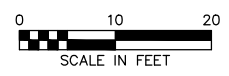
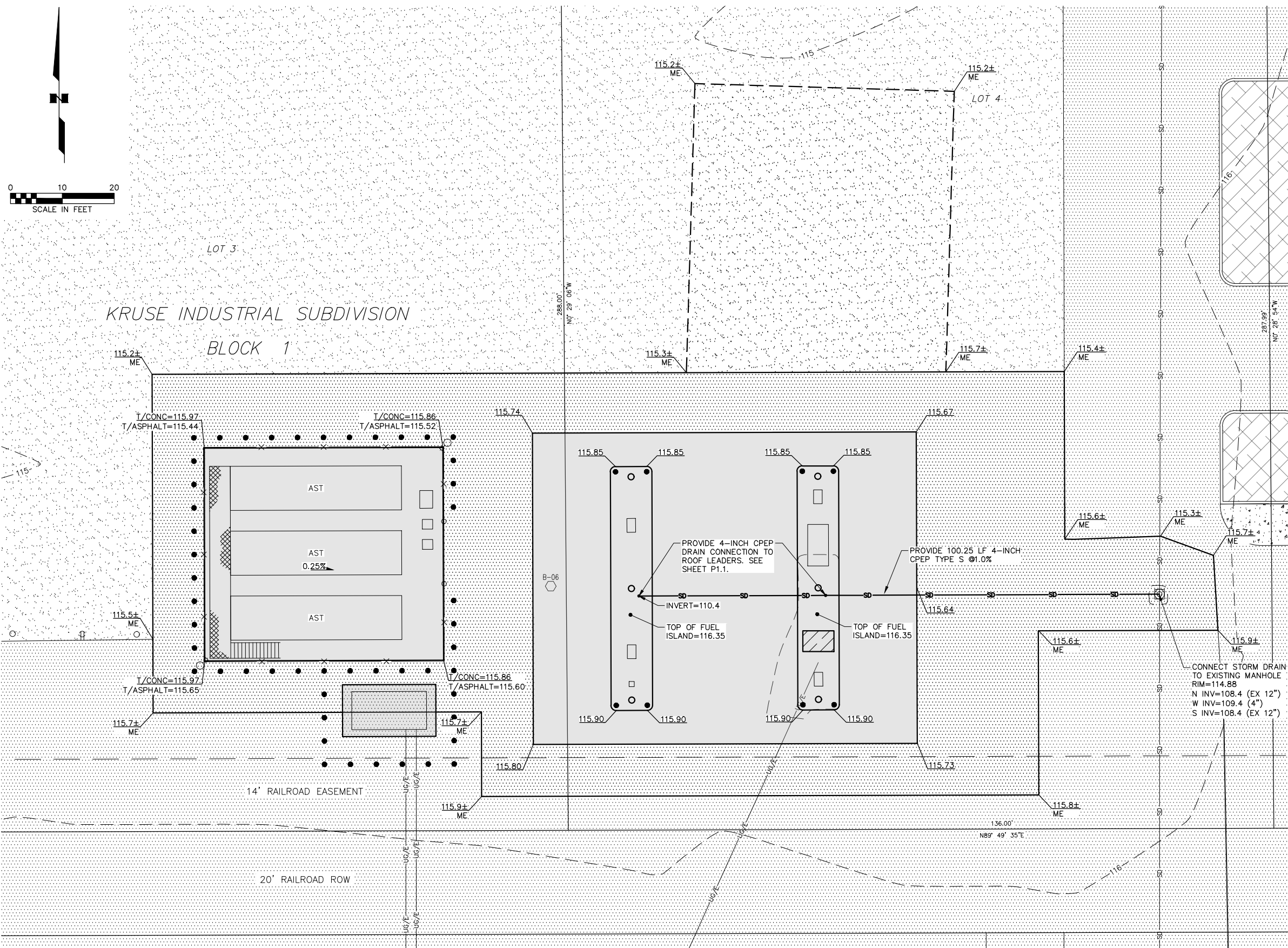
C1.1

SHEET 5 of 42

Plot Date: Aug 17, 2020 - 3:00pm Drawing File: P:\Projects\9559\Cost\Current\Civil\C1_1 SITE PLAN.dwg Last modified by: alius

SHEET NOTES
 1. GRADING PLAN IS INCOMPLETE PENDING ELEVATION/DRAINAGE COORDINATION WITH UMI/AQ. GRADING PLAN WILL BE COMPLETED FOR THE 95% SUBMITTAL.

AWWU PLAN SET
 NO. XXXX



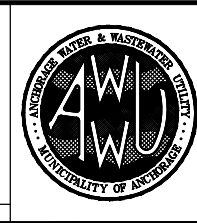
65% SUBMITTAL - NOT FOR CONSTRUCTION

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PROFILE			CABLE TV				
SANITARY SEWER			TRAFFIC SIGNAL				
STORM SEWER			DESIGN				
WATER			QUANTITIES				
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PLAN CHECK				REVISIONS			

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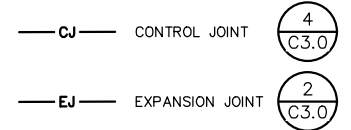
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 2525 GAMBELL STREET SUITE 200 ANCHORAGE, AK 99503
 (907) 563-3835
 400 US ROUTE 1 NORTH SUITE 6 FAIRBANKS, ALASKA 99705
 (907) 563-3835
 (907) 563-3817



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GRADING AND DRAINAGE PLAN
 C1.2
 HORZ SCALE: 1"=10' DATE: 08/17/2020 GRID: SW2431 SHEET 6 of 42
 VERT SCALE: N/A
 PROJ. ID.: WW:H7960

Plot Date: Aug 17, 2020 - 3:00pm Drawing File: P:\Projects\9559\Coat\Current\Civil\C1.2 GRADING AND DRAINAGE PLAN.dwg Last modified by: alius

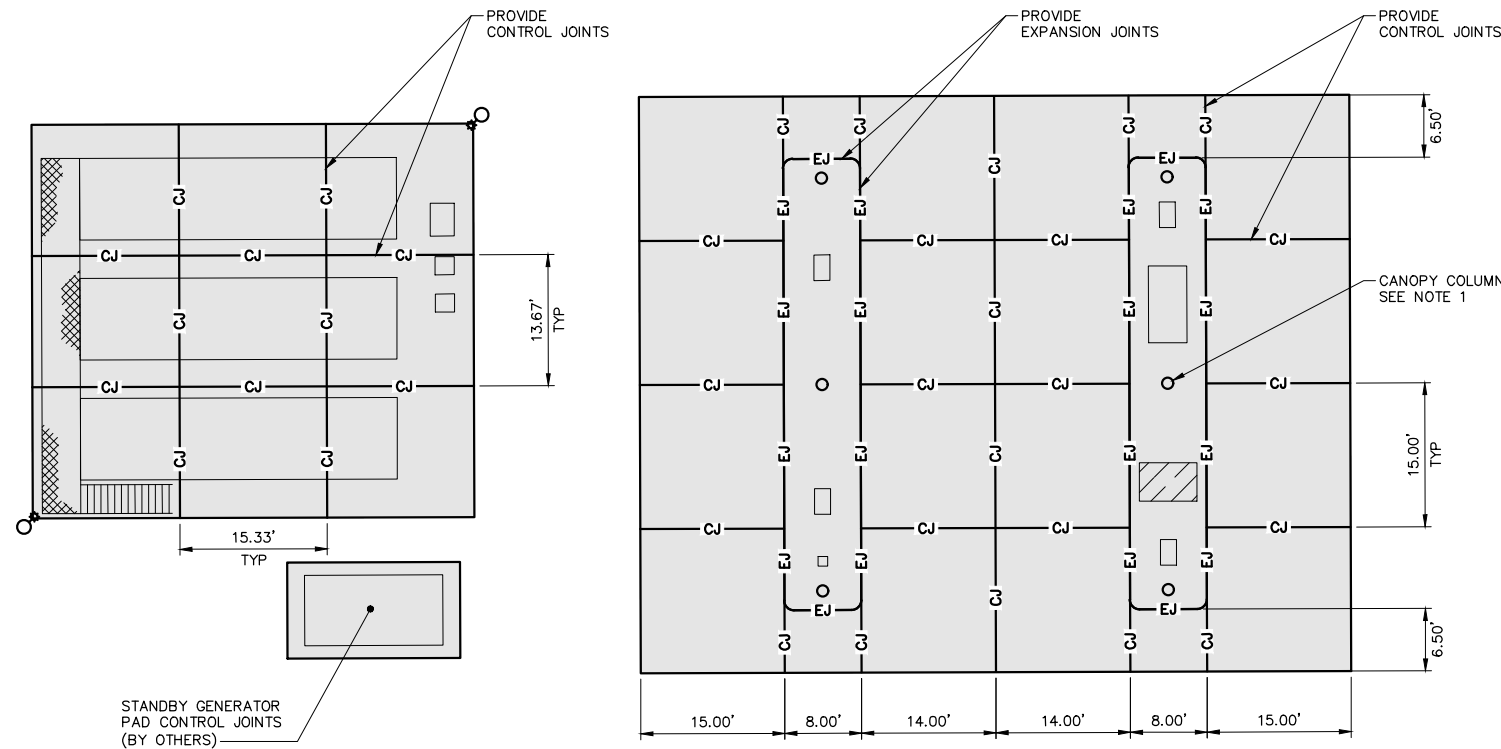
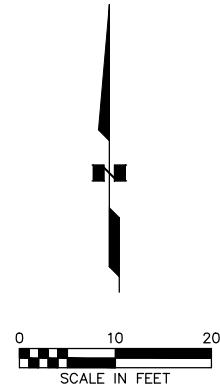
JOINT LEGEND



SHEET NOTES

1. PROVIDE EXPANSION JOINT AT EACH COLUMN BASE. SEE DETAIL 2/C3.0 FOR EXPANSION JOINT.

AWWU PLAN SET
NO. XXXX



Plot Date: Aug 17, 2020 - 3:00pm Drawing File: P:\projects\9559\Cost\Current\Civil\C1_3 CONCRETE JOINTING PLAN.dwg Last modified by: alius

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DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE
BASE			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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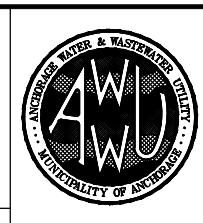
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 (207) 869-8006 TEL (207) 869-8015 FAX

CONSULTANT SEAL



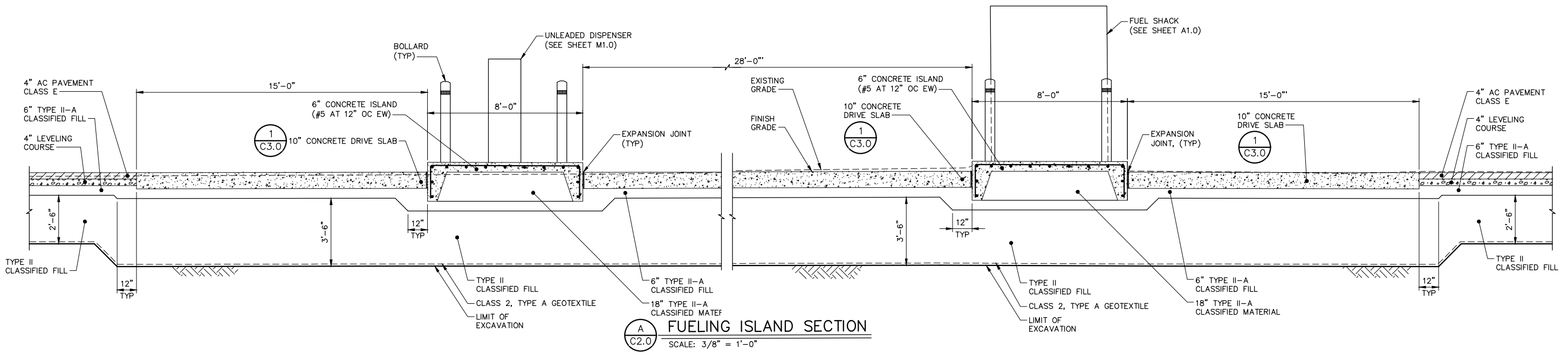
MUNICIPALITY OF ANCHORAGE
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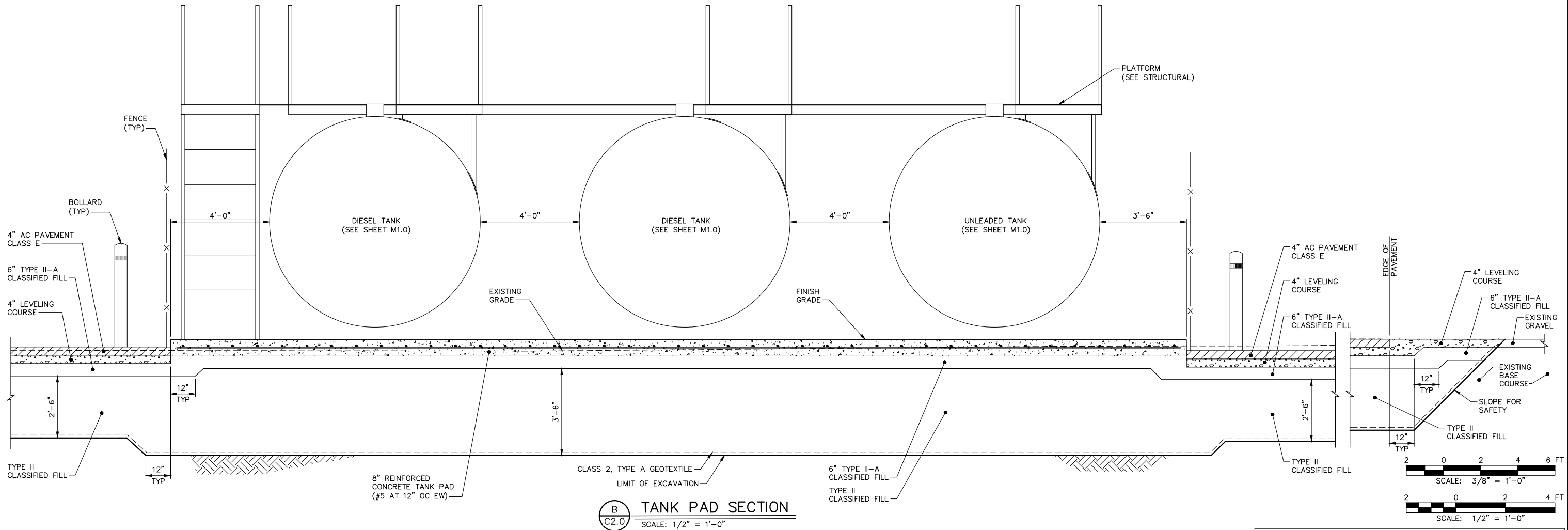
CONCRETE JOINTING PLAN

HORZ SCALE: 1"=10'
 VERT SCALE: N/A
 DATE: 08/17/2020
 GRID: SW2431
 PROJ. ID.: WW:H7960

C1.3
 SHEET 7 of 42



A FUELING ISLAND SECTION
SCALE: 3/8" = 1'-0"



B TANK PAD SECTION
SCALE: 1/2" = 1'-0"

65% SUBMITTAL - NOT FOR CONSTRUCTION

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DATA	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	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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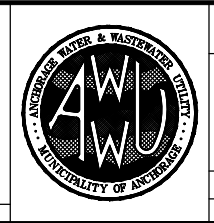
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WATER & WASTEWATER UTILITY

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SITE SECTIONS

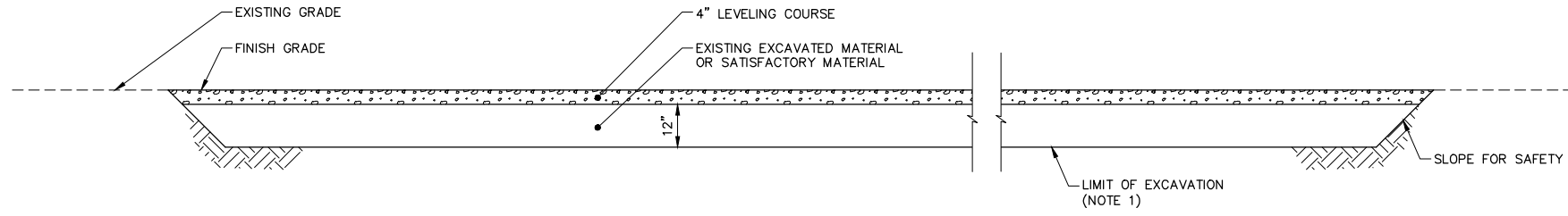
AWWU

DATE: 08/17/2020
GRID: SW2431
PROJ. ID.: WW:H7960

SCALE: AS NOTED
VERT SCALE: N/A

SHEET 8 of 42

Plot Date: Aug 17, 2020 - 3:00pm Drawing File: P:\Projects\9559\Cad\Civil\C2.0 SITE SECTIONS.dwg Last modified by: alus



NOTE
1. EXCAVATE TO HORIZONTAL EXTENT AND DEPTH REQUIRED TO COMPLETE DEMOLITION WORK. NOTIFY THE OWNER IF PCS IS ENCOUNTERED IN THE EXCAVATION.

C
C2.1 **GRAVEL PAD SECTION**
SCALE: 1/2" = 1'-0"

Plot Date: Aug 17, 2020 - 3:00pm Drawing File: P:\Projects\9559\Cad\Current\Civil\C2_1 SITE SECTION.dwg Last modified by: alius

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BASE			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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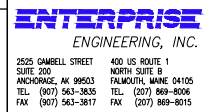
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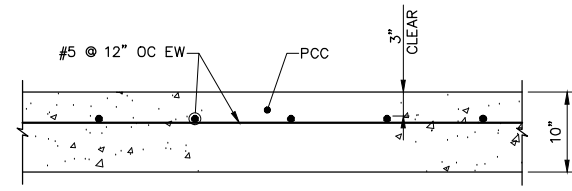
SITE SECTIONS

C2.1

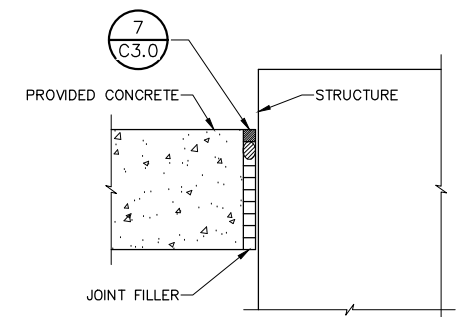
HORZ SCALE: AS NOTED DATE: 08/17/2020 GRID: SW2431
VERT SCALE: N/A
PROJ. ID.: WW:H7960

CONSULTANT SEAL

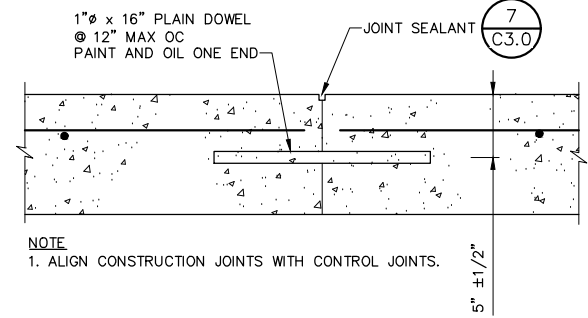
SHEET 9 of 42



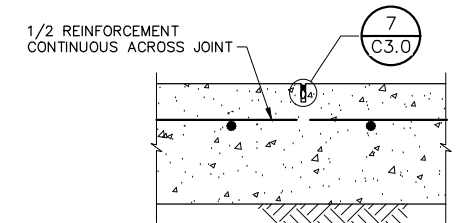
1 CONCRETE PAVEMENT
SCALE: 1" = 1'-0"



2 EXPANSION JOINT
SCALE: 3" = 1'-0"

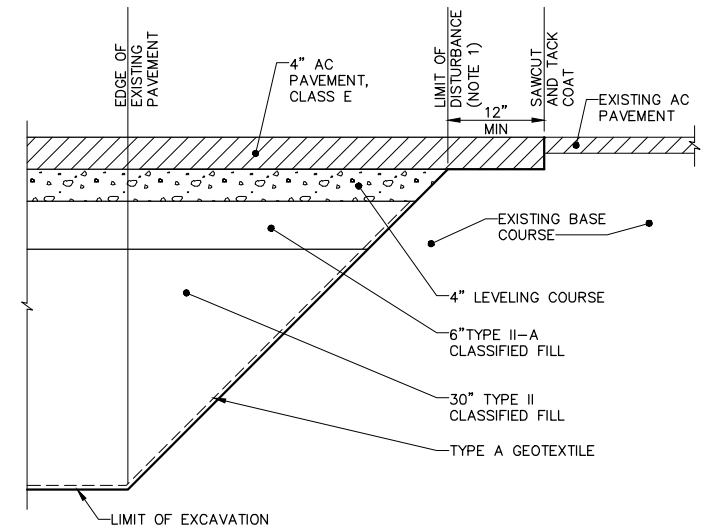


3 CONSTRUCTION JOINT
SCALE: 1 1/2" = 1'-0"



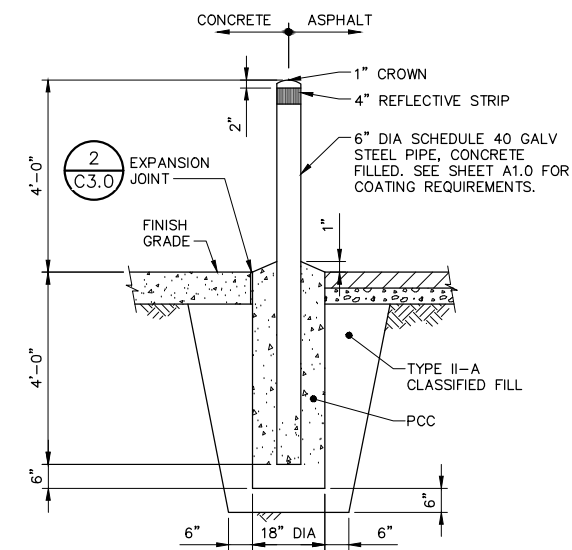
4 CONTROL JOINT
SCALE: 1 1/2" = 1'-0"

NOTE
1. CUT ALTERNATE TOP BARS 1 1/2 INCHES EACH SIDE OF CONTROL JOINT (TOTAL OF 3 INCHES PER CUT BAR REMOVED).

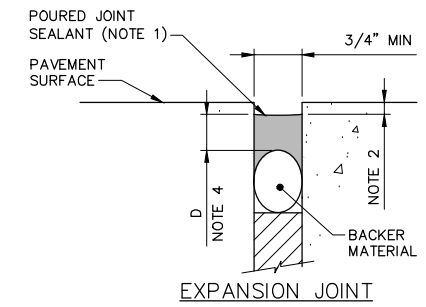
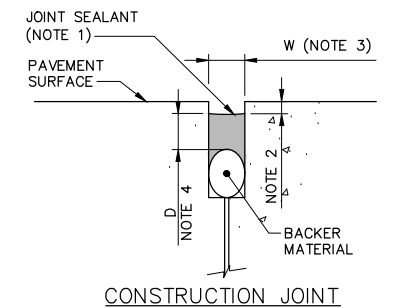
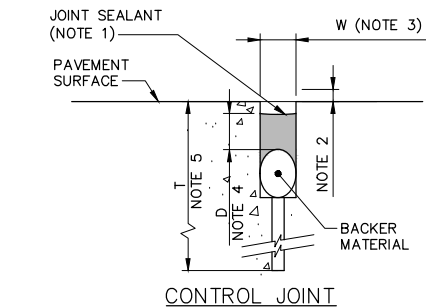


5 AC PAVEMENT TIE-IN
SCALE: 1" = 1'-0"

NOTE
1. SAWCUT A MINIMUM OF 1-FOOT INTO UNDISTURBED ASPHALT.

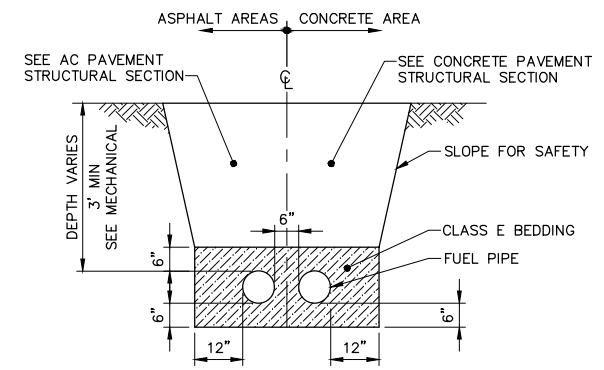


6 BOLLARD
SCALE: 1/2" = 1'-0"



7 JOINT SEALANT
SCALE: NTS

NOTES
1. JOINT SEALANT MUST BE FUEL RESISTANT.
2. TOP OF SEALANT MUST BE 1/8" TO 1/4" BELOW TOP OF PAVEMENT.
3. WIDTH OF SEALANT, W: 1/2" TO 5/8"
4. DEPTH OF SEALANT, D: INSTALL PER MANUFACTURER'S INSTRUCTIONS.
5. DEPTH OF INITIAL SAWCUT, T:
5.1. 1/4 SLAB THICKNESS FOR PAVEMENTS LESS THAN 12 INCHES



8 FUEL LINE TRENCH
SCALE: 1/2" = 1'-0"

65% SUBMITTAL - NOT FOR CONSTRUCTION

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PROFILE			CABLE TV				
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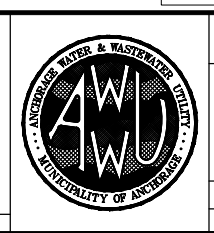
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CIVIL DETAILS

AWWU

DATE: 08/17/2020
GRID: SW2431
PROJ. ID.: WW:H7960

SCALE: AS NOTED
VERT SCALE: N/A

SHEET 10 of 42

Plot Date: Aug 17, 2020 - 3:01pm Drawing File: P:\Projects\9559\Cost\Current\Civil\C3_0\Civil Details.dwg Last modified by: dillus

ABBREVIATIONS											
&	AND	CONT	CONTINUOUS	F.O.B.	FACE OF BLOCK	JAN	JANITOR	PARA	PARALLEL	STL	STEEL
Z	ANGLE	COOR	COORDINATE	F.O.F.	FACE OF FINISH	JT	JOINT	PART	PARTITION	STR	STORAGE
@	AT	CORR	CORRIDOR	F.O.S.	FACE OF STUD			PEMB	PRE-ENGINEERED METAL BUILDING	STRUC	STRUCTURAL
⊖	CENTERLINE	C.R.	COLD ROLLED	F.O.	FACE OF (Conc. etc.)	LAB	LABORATORY	PERF	PERFORATED	ST.S	STORM SEWER
∅	DIAMETER	C.R.C.	COLD ROLLED CHANNEL	F.R.P.	FIBER REINFORCED PANEL	LAM	LAMINATE OR LAMINATED	PERM	PERMANENT	SUSP	SUSPENDED
#	NUMBER	C.T.	CERAMIC TILE	FRT	FIRE-RETARDANT TREATED	LAV	LAVATORY	PERP	PERPENDICULAR	SV	SHEET VINYL
		CTR	CENTER	FT	FOOT OR FEET	LB	POUND	PL	PLATE	SYM	SYMMETRICAL
ABV	ABOVE			FTG	FOOTING	LH	LEFT HAND	PLY	PLYWOOD	TB	TACKBOARD
ACT	ACOUSTICAL CEILING TILE	DBL	DOUBLE	FURR	FURRING	LL	LIVE LOAD	P.LAM	PLASTIC LAMINATE	TBHM	THERMALLY- BROKEN HOLLOW METAL
ACOUS	ACOUSTICAL	DEPT	DEPARTMENT	FUT	FUTURE	L.O.W.	LIMITS OF WORK	PR	PAIR	TEL	TELEPHONE
ADD	ADDITION	DET	DETAIL			L.P.	LOW POINT	PREFAB	PREFABRICATED	TEMP	TEMPORARY
AFF	ABOVE FINISH FLOOR	DEMO	DEMOLITION	GA	GAUGE			PT	PRESSURE TREATED	T&G	TONGUE AND GROOVE
AHU	AIR HANDLING UNIT	DIA	DIAMETER	GAL	GALLON	MAT'L	MATERIAL	PT	PAINT	T.O.	TOP OF (eg CONCRETE)
ALT	ALTERNATE	DIAG	DIAGONAL	GALV	GALVANIZED	MAX	MAXIMUM	PTD	PAPER TOWEL DISPENSER	T.O.S.	TOP OF STEEL
ALUM	ALUMINUM	DIM.	DIMENSION	G.B.	GRAB BAR	MECH	MECHANICAL	R	RISER	TV	TELEVISION
APPROX	APPROXIMATE	DISP	DISPENSER	GL	GLASS	MTL	METAL	R	RADIUS	TYP	TYPICAL
ARCH	ARCHITECTURAL	DN.	DOWN	GWB	GYPSON WALL BOARD	MFR	MANUFACTURER	R.D.	ROOF DRAIN	UL	UNDERWRITERS LABORATORY
ASPH	ASPHALT	DS	DOWNSPOUT			MIN	MINIMUM OR MINUTE	REF	REFERENCE	UNFIN	UNFINISHED
AVG	AVERAGE	DWG	DRAWINGS	H.B.	HOSE BIB	MIR	MIRROR	REFR	REFRIGERATOR	UNO	UNLESS NOTED OTHERWISE
				HDWD	HARDWOOD	MISC	MISCELLANEOUS	REINF	REINFORCING		
BD	BOARD	E	EAST	HDWR	HARDWARE			REQ	REQUIRE(D)	VCT	VINYL COMPOSITION TILE
BLDG	BUILDING	(E)	EXISTING	H.M.	HOLLOW METAL	N	NORTH	RH	RIGHT HAND	VERT	VERTICAL
BLKG	BLOCKING	EA	EACH	HORIZ	HORIZONTAL	NIC	NOT IN CONTRACT	R.L.	RAIN LEADER	VEST	VESTIBULE
BLW	BELOW	ELEV	ELEVATION	H.P.	HIGH POINT	NO	NUMBER	RM	ROOM	VR	VAPOR RETARDER
B.O.	BOTTOM OF	ELEC	ELECTRICAL	HR	HOUR	NOM	NOMINAL	R.O.	ROUGH OPENING	VTR	VENT THROUGH ROOF
B.S.	BOTH SIDES	EQ	EQUAL	HT	HEIGHT	NTS	NOT TO SCALE	R.O.W.	RIGHT OF WAY	W	WEST
B/T	BETWEEN	EQUIP	EQUIPMENT	HW	HOT WATER	O	OVER	S	SOUTH	W/	WITH
BTU	BRITISH THERMAL UNIT	E.S.	EACH SIDE	HW	HARDWARE	O.C.	ON CENTER	S.C.	SOLID CORE	WC	WATER CLOSET
		EXIST	EXISTING	HWY	HIGHWAY	O.D.	OUTSIDE DIAMETER	SCHED	SCHEDULE	WD	WOOD
CAB	CABINET	EXP	EXPOSED			OPNG	OPENING	SECT	SECTION	W/O	WITHOUT
C.F.C.I.	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	EXP.JT.	EXPANSION JOINT	I.D.	INSIDE DIAMETER	OPP	OPPOSITE	SHEATH	SHEATHING	WP	WATERPROOF
		EXT	EXTERIOR	" OR IN	INCHES			SHT	SHEET	WT	WEIGHT
CIRC	CIRCULAR			IHM	INSULATED HOLLOW METAL			SIM	SIMILAR		
CLG	CEILING	F.D.	FLOOR DRAIN	INSUL	INSULATION			S.O.W.	SCOPE OF WORK		
CLR.	CLEAR	FDN	FOUNDATION	INT	INTERIOR			SPEC(S)	SPECIFICATION(S)		
CMU	CONCRETE MASONRY UNIT	F.E.	FIRE EXTINGUISHER					SQ	SQUARE		
COL	COLUMN	F.E.C.	FIRE EXTINGUISHER CABINET					S.S.	STAINLESS STEEL		
COMP	COMPOSITION	FIN	FINISH					STD	STANDARD		
CONC	CONCRETE	FF	FACTORY FINISH(ED)								
CONSTR	CONSTRUCTION	FF	FINISH FLOOR								
		FLUOR	FLUORESCENT								

- | GENERAL PROJECT NOTES | |
|-----------------------|--|
| 1. | ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THE 2018 INTERNATIONAL BUILDING CODE, APPLICABLE UNIFIED FACILITIES CRITERIA (UFCs) AND ALL OTHER STATE AND LOCAL CODES, INCLUDING ALL AMENDMENTS. |
| 2. | ALL WORK SHALL CONFORM TO THE AMERICAN DISABILITIES ACT (A.D.A.) ACCESSIBILITY GUIDELINES FOR BUILDING AND FACILITIES (A.D.A.G.) AND ICC/ANSI 117.1 UNLESS NOTED OTHERWISE. |
| 3. | ALL WALL AND CEILING FINISHES SHALL MEET THE REQUIREMENTS OF CHAPTER 8 I.B.C. TABLE 803.5 2009 EDITION. |
| 4. | ALL MATERIALS CALLED OUT ARE NEW UNLESS SPECIFICALLY NOTED AS EXISTING. |
| 5. | ALL DIMENSIONS ARE TO FACE OF STUD, FACE OF CONCRETE, FACE OF C.M.U., TO CENTERLINE OF STRUCTURAL COLUMN, OR TO STRUCTURAL GRID-LINE UNLESS NOTED OTHERWISE. |
| 6. | DIMENSIONS NOTED AS 'CLEAR' (OR CLR.) SHALL BE TO FINISHED FACE AND TAKE PRECEDENCE OVER OTHER DIMENSIONS. |
| 7. | DO NOT SCALE THE DRAWINGS TO OBTAIN CONSTRUCTION DIMENSIONS. DRAWINGS ARE INTENDED TO PROVIDE INFORMATION FOR CONTRACTORS DETERMINATION OF SCOPE OF WORK. |
| 8. | FIELD VERIFY DIMENSIONS AND LOCATIONS OF EXISTING CONSTRUCTION PRIOR TO COMMENCEMENT OF THE WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS ARE INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED. THE EXISTING CONDITIONS SHOWN ON THE DRAWINGS ARE BASED ON EITHER SITE OBSERVATION, ORIGINAL DRAWINGS OR WERE ASSUMED BASED ON EXPECTED CONDITIONS. IF THE EXISTING CONDITIONS DO NOT CLOSELY MATCH THE CONDITIONS SHOWN ON THE DRAWINGS, OR IF THE EXISTING MATERIALS ARE OF QUESTIONABLE OR SUBSTANDARD QUALITY, NOTIFY THE GOVERNMENT PRIOR TO COMMENCING ANY WORK. |
| 9. | VERTICAL ELEVATION DATUMS ARE TO FIRST FLOOR FF UNLESS NOTED OTHERWISE. REFER TO CIVIL DRAWINGS FOR ACTUAL ELEVATIONS |

ARCHITECTURAL DRAWING CONVENTIONS						
NORTH ARROW	GRID LINES	SHEET NOTE TAG	BLDG./WALL SECTION	DETAIL	EXTERIOR ELEVATION	PARTITION TYPE
INTERIOR ELEVATION	DOOR NUMBER		VERT. CONTROL POINT	ROOM IDENTIFICATION	REVISIONS	MATCHLINE

Plot Date: Aug 17, 2020 - 11:29am Drawing File: W:\2020\2000B.01 EEI AWWU King Street Fuel Storage\DWG\A0.1.dwg Last modified by: aschell

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VERIFY SCALE		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY
BASE			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: _____ 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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ANCHORAGE WATER & WASTEWATER UTILITY
MUNICIPALITY OF ANCHORAGE

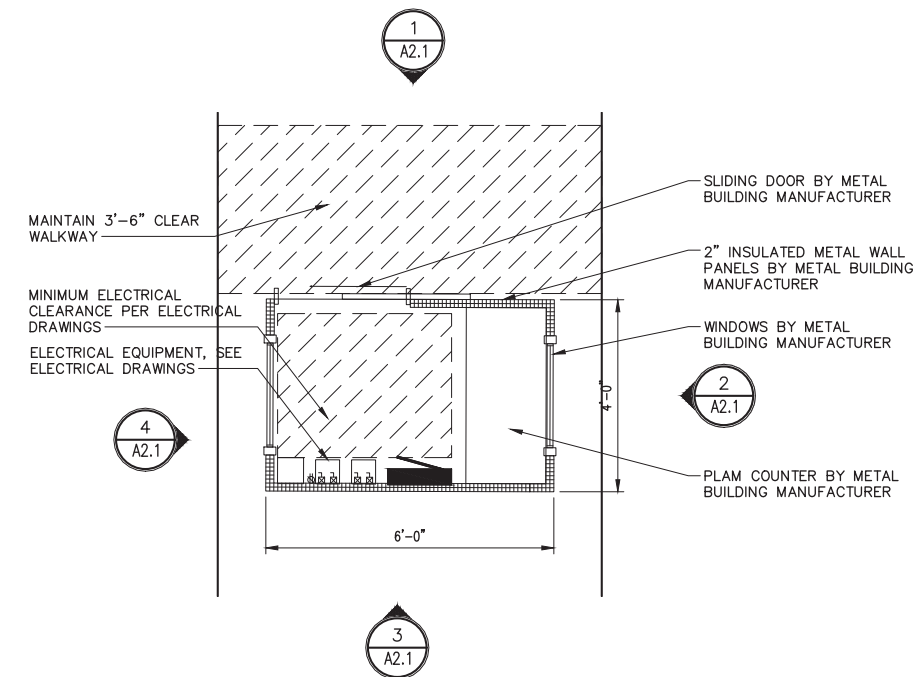
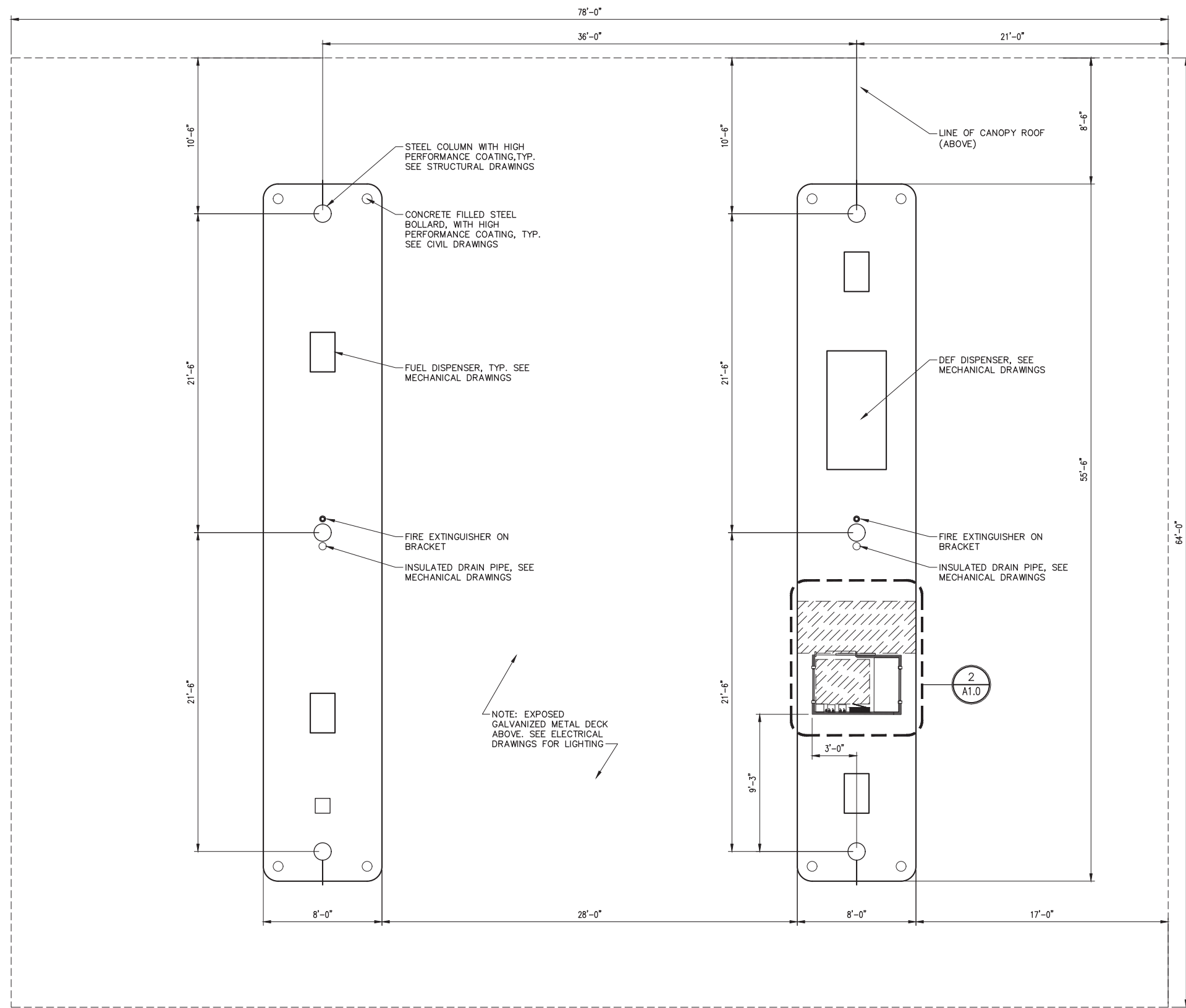
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KING STREET
FUELING FACILITY IMPROVEMENTS

ARCHITECTURAL NOTES, SYMBOLS, AND ABBREVIATIONS A0.1

HORIZ SCALE: N/A	DATE: 08/17/2020	GRID: SW2431	SHEET 11 of 42
VERT SCALE: N/A		PROJ. ID.: WW:H7960	

Plot Date: Aug 17, 2020 - 11:29am Drawing File: W:\2020\2000B.01 EEI AWU\ King Street Fuel Storage\DWG\A1.0 FUEL SHACK.dwg Last modified by: aschell



2 FUEL SHACK PLAN
SCALE: 1/4" = 1'-0"

1 FUEL ISLAND PLAN
SCALE: 1/4" = 1'-0"

AWU PLAN SET
NO. XXXX

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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	DATA	DRAWN BY	CHECKED BY	REV	DATE
BASE			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: _____
COMPANY: _____
DATE: _____

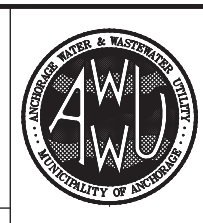
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DATA TRANSFER CHECKED BY: _____
COMPANY: _____
BY: _____ TITLE: _____
DATE: _____

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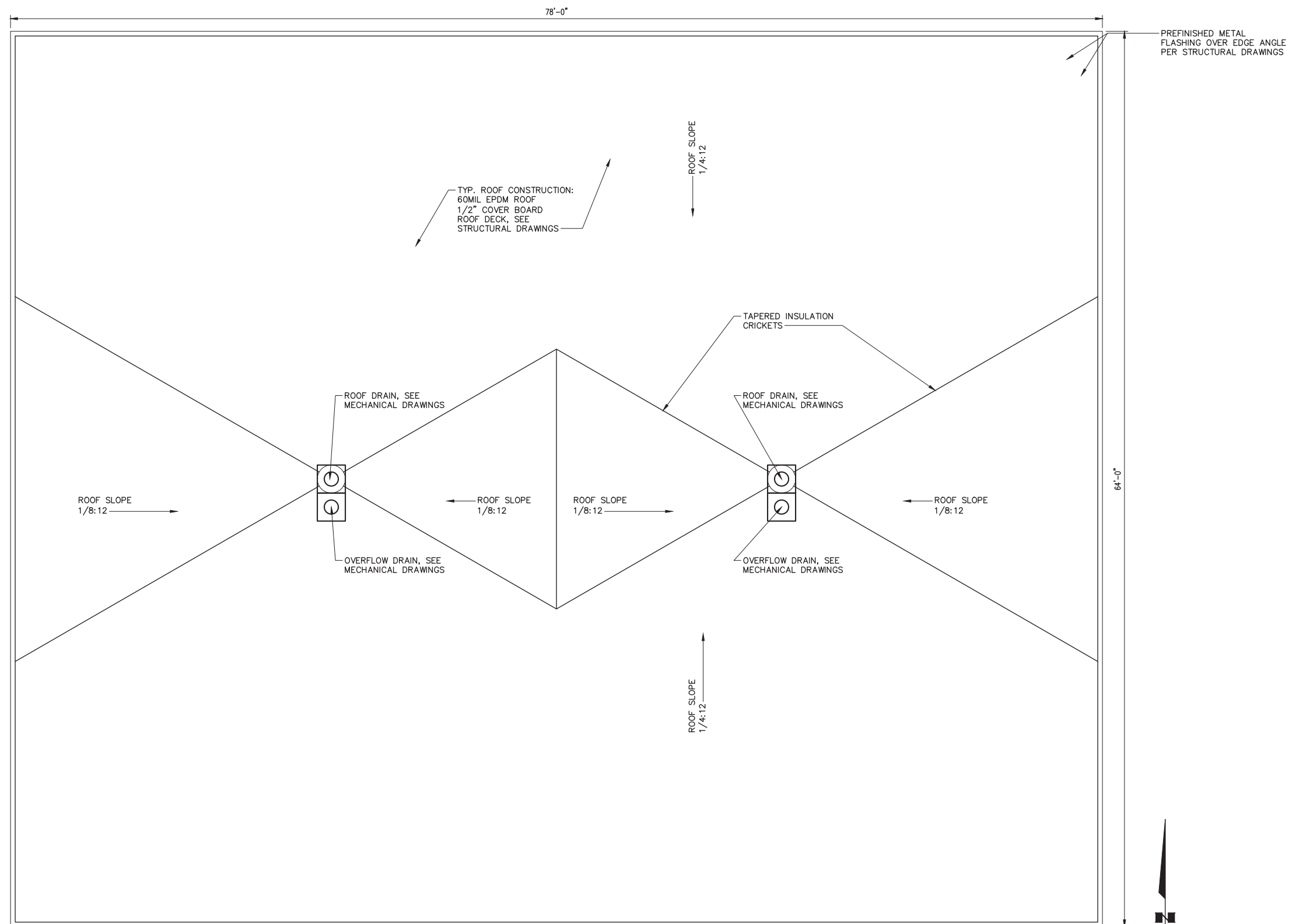
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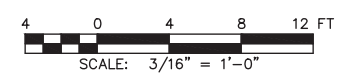
FUEL SHACK PLANS

A1.0

HORZ SCALE: 1/2" = 1'-0" DATE: 08/10/2020 GRID: SW2431 SHEET 12 of 42
VERT SCALE: 1/2" = 1'-0"
PROJ. ID.: WW:H7960



1 ROOF PLAN
A1.1 SCALE: 1/4" = 1'-0"



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DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE
BASE			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: _____
 COMPANY: _____
 DATE: _____

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 BY: _____ TITLE: _____
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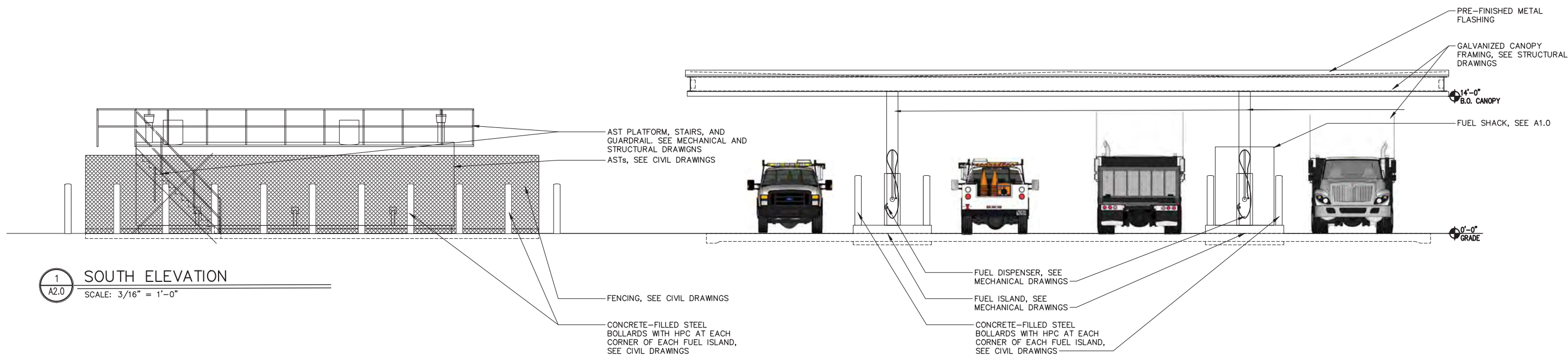
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**FUEL CANOPY
 ROOF PLAN**

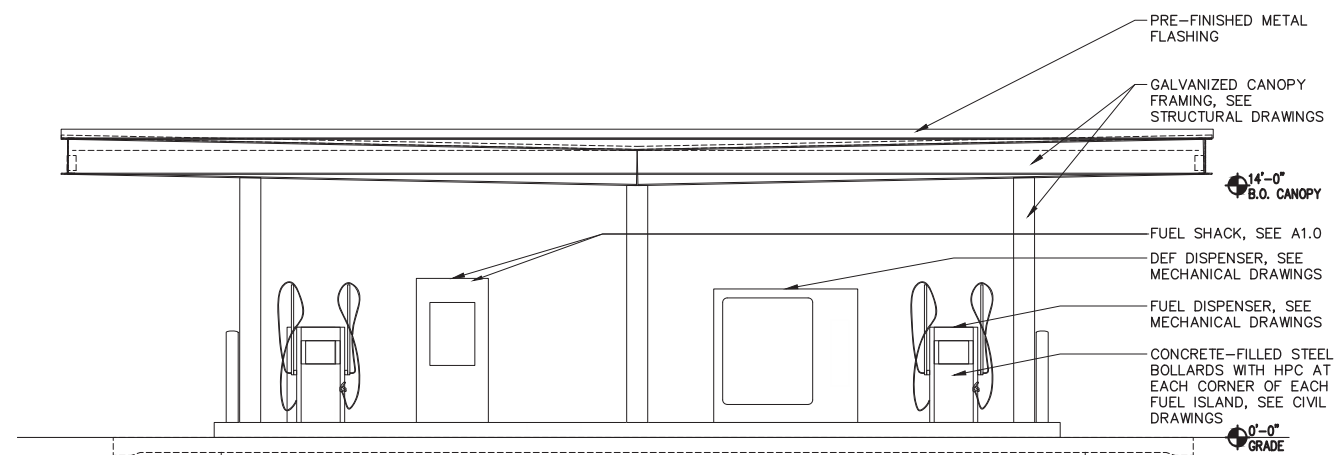
A1.1

HORZ SCALE: 1/2" = 1'-0" DATE: 08/17/2020 GRID: SW2431 SHEET 13 of 42
 VERT SCALE: 1/2" = 1'-0"
 PROJ. ID.: WW:H7960

Plot Date: Aug 17, 2020 - 11:29am Drawing File: W:\2020\2000B.01 EEI AWWU King Street Fuel Storage\DWG\A1.1 ROOF PLAN.dwg Last modified by: sachell



1 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



2 EAST ELEVATION
SCALE: 3/16" = 1'-0"

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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	DATA	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			

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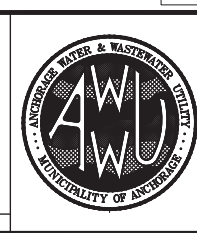
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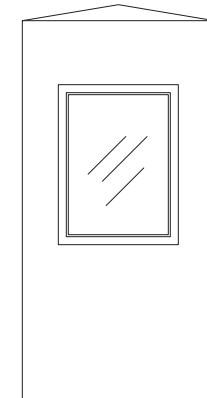
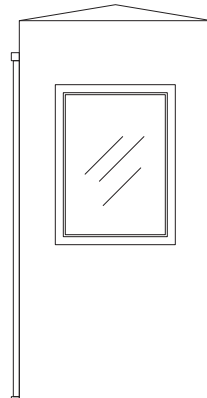
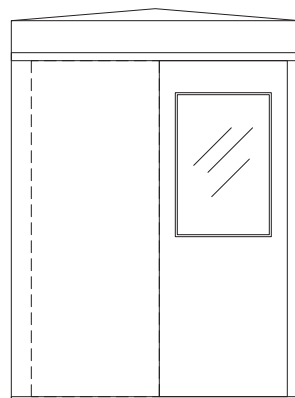
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KING STREET
 FUELING FACILITY IMPROVEMENTS

FUEL CANOPY ELEVATIONS

AWWU

HORIZ SCALE: 1/2" = 1'-0" DATE: 08/17/2020 GRID: SW2431 SHEET 14 of 42
 VERT SCALE: 1/2" = 1'-0"
 PROJ. ID.: WW:H7960

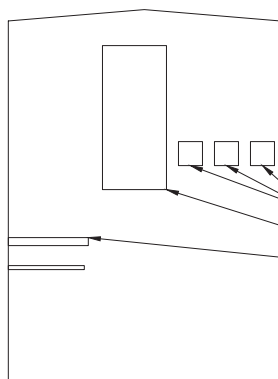


1 FUEL SHACK NORTH ELEVATION
A2.1 SCALE: 1/2" = 1'-0"

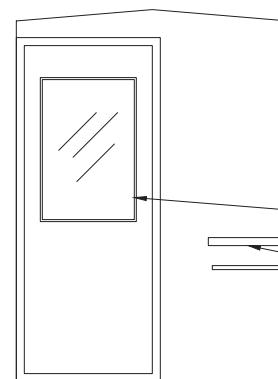
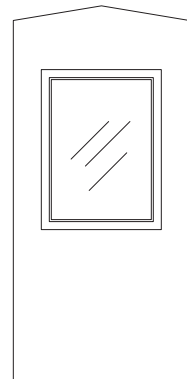
2 FUEL SHACK EAST ELEVATION
A2.1 SCALE: 1/2" = 1'-0"

3 FUEL SHACK SOUTH ELEVATION
A2.1 SCALE: 1/2" = 1'-0"

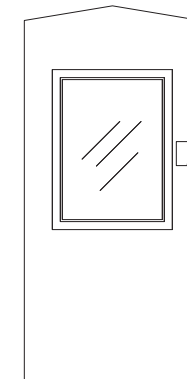
4 FUEL SHACK WEST ELEVATION
A2.1 SCALE: 1/2" = 1'-0"



MOTOR STARTERS, SEE ELECTRICAL DRAWINGS
ELECTRICAL PANEL, SEE ELECTRICAL DRAWINGS
PLAM DESK BY METAL BUILDING MANUFACTURER



SLIDING DOOR BY METAL BUILDING MANUFACTURER
PLAM DESK BY METAL BUILDING MANUFACTURER



MOTOR STARTERS, SEE ELECTRICAL DRAWINGS

5 FUEL SHACK NORTH INTERIOR ELEVATION
A2.1 SCALE: 1/2" = 1'-0"

6 FUEL SHACK EAST INTERIOR ELEVATION
A2.1 SCALE: 1/2" = 1'-0"

7 FUEL SHACK SOUTH INTERIOR ELEVATION
A2.1 SCALE: 1/2" = 1'-0"

8 FUEL SHACK WEST INTERIOR ELEVATION
A2.1 SCALE: 1/2" = 1'-0"

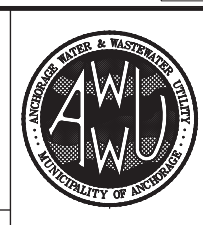
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DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE
BASE			TELEPHONE				
TOPOGRAPHY			ELECTRIC				
PROFILE			CABLE TV				
SANITARY SEWER			TRAFFIC SIGNAL				
STORM SEWER			DESIGN				
WATER			QUANTITIES				
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PLAN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

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FUEL SHACK ELEVATIONS
 A2.1
 HORZ SCALE: 1/2"=1'-0" DATE: 08/10/2020 GRID: SW2431 SHEET 15 of 42
 VERT SCALE: 1/2"=1'-0" PROJ. ID.: WW:H7960

ABBREVIATIONS

ACI	AMERICAN CONCRETE INSTITUTE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AST	ABOVEGROUND STORAGE TANK
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BOT	BOTTOM
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
DEG	DEGREES
DIA	DIAMETER
DO	DITTO
EW	EACH WAY
E/W	EAST/WEST DIRECTION
EQ	EQUAL
FDN	FOUNDATION
FT	FOOT/FEET
FTG	FOOTING
GAL	GALLON
IBC	INTERNATIONAL BUILDING CODE
ICC	INTERNATIONAL CODE COUNCIL
INT	INTERMEDIATE
LG	LONG
MFR	MANUFACTURER
MPH	MILES PER HOUR
NO	NUMBER
N/A	NOT APPLICABLE
N/S	NORTH/SOUTH DIRECTION
OC	ON CENTER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PEMB	PRE-ENGINEERED METAL BUILDING
PL	PLATE
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
SOG	SLAB ON GRADE
SQ	SQUARE
STD	STANDARD
T/	TOP OF
THK	THICK
TOS	TOP OF STEEL
TYP	TYPICAL
U/S	UNDERSIDE
UON	UNLESS OTHERWISE NOTED
UST	UNDERGROUND STORAGE TANK
VERT	VERTICAL
W/	WITH
WD	WIDE

GENERAL STRUCTURAL NOTES

THE FOLLOWING NOTES APPLY UNLESS OTHERWISE INDICATED.

CODE

INTERNATIONAL BUILDING CODE (IBC) 2012, ASCE 7-10 WHERE REFERENCED BY THE IBC, AS AMENDED BY THE MUNICIPALITY OF ANCHORAGE (MOA).

DESIGN LOADS

SNOW	P _g =50.0 PSF, P _f =40.0 PSF I=1.0, C _e =0.9, C _t =1.2
WIND	132 MPH 3-SECOND GUST, EXPOSURE C RISK CATEGORY II, I=1.0
SEISMIC	I=1.0, RISK CATEGORY II S _w =1.50, S _g =0.679 SITE CLASS D S _{ps} =1.00, S _{ps} =0.679 SEISMIC DESIGN CATEGORY D EQUIVALENT LATERAL FORCE PROCEDURE STEEL ORDINARY CANTILEVER COLUMN SYSTEM V=0.80xW C _s =0.8, R=1.25, OMEGA=1.25, C _p =1.25

FUEL ISLAND CANOPY

TOTAL UNFACTORED REACTIONS			
COLUMN	VERTICAL GRAVITY (LBS)	VERTICAL UPLIFT (LBS)	HORIZONTAL (LBS)
ALL	44,000	12,000	11,000

NOTE

THE ABOVE NOTED COLUMN REACTIONS WERE DEVELOPED BASED ON LOCAL SITE CONDITIONS TO DESIGN THE FOUNDATIONS. ACTUAL REACTIONS MAY VARY FROM ONE MANUFACTURER TO NEXT. REACTIONS FROM SELECTED BUILDING MANUFACTURER MUST BE CHECKED AGAINST THOSE USED TO DESIGN THE FOUNDATION.

FOUNDATIONS

ALLOWABLE SOIL BEARING PRESSURE= 5,000 PSF
CONSULT SUBSURFACE INVESTIGATION REPORT BY SHANNON & WILSON DATED JULY 17, 2020 FOR FOUNDATION AND EXCAVATION INFORMATION.

ALLOWABLE PILE DESIGN LOADS:
24" Ø PILE WITH 40"-0" EMBEDMENT - 45 KIPS.

REINFORCED CONCRETE

REFER TO CIVIL FOR DRIVE SLAB INFORMATION.

MIX DESIGN:

SUBMIT MIX DESIGN:

ALL CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS	f' _c	=	4500 PSI
CEMENT		=	TYPE I/II, TYPE III NOT PERMITTED IN SOG
MAXIMUM WATER CEMENT RATIO	(W/C)	=	0.45
MAXIMUM AGGREGATE SIZE		=	3/4 INCH
SLUMP		=	4" MAX TYP, 9" MAX IF PLASTICIZER ADDED
AIR CONTENT		=	5% ± 1.5%
SUPER PLASTICIZER			NOT PERMITTED IN SLAB ON GRADE.

REINFORCING:

SUBMIT REINFORCING STEEL SHOP DRAWINGS WITH DETAILS PER ACI 315 MANUAL OF STANDARD PRACTICE. LAP BARS WITH A CLASS B SPLICE.
REINFORCING STEEL BARS:
ASTM A615, GRADE 60 - TYPICAL
ASTM A615, GRADE 60 - TIES

CONCRETE COVER:

GRADE BEAMS 3", EXCEPT 2" WHERE EXPOSED TO WEATHER, 3" AGAINST EARTH, COLUMNS 1 1/2" TO STIRRUPS OR TIES, SLAB ON GRADE 1 1/2", UON.

ALL EXPOSED CONCRETE EDGES TO RECEIVE A 3/4" CHAMFER OR RADIUS, UON.

ANCHOR RODS:

ANCHOR RODS: ASTM F1554, GRADE 36, HEX HEADED. SET ALL ANCHOR RODS BY TEMPLATE.

FINISH:

PROVIDE A BROOM FINISH TO ALL SLABS.

STRUCTURAL STEEL

SUBMIT SHOP DRAWINGS WITH LAYOUT, MARK NUMBERS AND AWS SYMBOLS. FABRICATION AND ERECTION PER AISC SPECIFICATIONS. VERIFY MATERIALS, WELDING PROCEDURES AND WELDER'S QUALIFICATIONS PRIOR TO START OF WORK.

STRUCTURAL STEEL SHAPES ASTM A992, GRADE 50, F_y = 50 KSI, EXCEPT HOLLOW STRUCTURAL SECTIONS (HSS) TO BE ASTM A500, GRADE B, F_y = 46 KSI. STEEL PIPE SHALL BE ASTM A53/A53M, TYPE E OR S, GRADE B. ALL OTHER PLATES AND SHAPES ASTM A36, F_y = 36 KSI.

WELDING:

WELDING PER AWS D1.1, MINIMUM SIZE WELDS 3/16" CONTINUOUS FILLET PERFORMED BY WELDERS CERTIFIED PER AWS FOR ROD AND POSITION. ELECTRODES SHALL BE E70XX MINIMUM WITH A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LBS AT MINUS 20 DEG. F.

PROTECTIVE COATING:

REFER TO PROJECT SPECIFICATIONS.

DRILL-IN ANCHORS

DRILL-IN EXPANSION ANCHORS:

"KWIK BOLTS" BY HILTI FASTENING SYSTEMS, "RED HEAD WEDGE ANCHOR" BY ITT PHILIPS OR APPROVED EQUAL. ICC-ES CERTIFICATION REQUIRED.

DRILL-IN ADHESIVE ANCHOR SYSTEMS:

HIT-HY200 + HIT-Z-R ADHESIVE ANCHOR SYSTEM FOR REINFORCED CONCRETE, BY HILTI FASTENINGS SYSTEMS, OR APPROVED EQUAL. ICC-ES CERTIFICATION REQUIRED.

STEEL PIPE PILES

STEEL PIPE PILES SHALL HAVE A MINIMUM YIELD STRENGTH OF 35 KSI AND BE IN ACCORDANCE WITH IBC 1810.3.2.3. PIPE PILES SHALL CONFORM TO ASTM A252. FULLY WELDED STEEL PILES SHALL BE FABRICATED FROM PLATES THAT CONFORM TO ASTM A36, ASTM A283, ASTM A572, ASTM A588 OR ASTM A690.

CANOPY PILES - MINIMUM DIMENSIONS ARE 2'-0" DIAMETER WITH 3/8" WALL THICKNESS.

DRIVEN PILE ALLOWABLE LOAD UTILIZED FOR DESIGN.

MINIMUM EMBEDMENT SHALL BE 40'-0" BELOW EXISTING GRADE SURFACE.

ALLOWABLE LOADS MAY BE INCREASED BY 1/3 FOR SHORT-TERM LOADING.

METAL FABRICATIONS - WALKWAYS, PLATFORMS AND STAIRS

1. HANDRAILS SHALL BE 2 RAIL, 1-1/2 INCH DIAMETER SCH 40 PIPE. POSTS SHALL BE 1-1/2 INCH DIAMETER SCH 80 PIPE. POST SPACING SHALL BE A MAXIMUM OF 4 FEET. PIPE SHALL CONFORM TO ASTM A 53 GRADE B, F_y = 35 KSI SEAMLESS PIPE.

2. BOLTS, NUTS, AND WASHERS FOR HANDRAILS SHALL BE STAINLESS STEEL.

BOLTS	ASTM A 193, CLASS 2, GRADE B8
NUTS	ASTM A 194, GRADE 8, HEAVY HEX
WASHERS	ASTM F 436

STEEL GRATING

SUBMIT SHOP DRAWINGS. COMPLY WITH PROVISIONS AND REQUIREMENTS IN ACCORDANCE WITH ANSI/NAAMM MGB 531 METAL BAR GRATING MANUAL, ASTM A1011 AND ASTM A510.

1. PLATFORM STEEL GRATING SHALL BE GALVANIZED SERRATED STEEL BAR GRATING WITH BEARING BARS 1 1/4 INCH X 3/16 INCH AT 1 3/16 INCH CENTER TO CENTER AND CROSS BARS AT 4 INCHES CENTER TO CENTER. BAND EDGES OF GRATING AND EDGES OF OPENING WITH BARS OF THE SAME OR GREATER THICKNESS THAN THE METAL USED FOR GRATING. FASTEN GRATING WITH SADDLE CLIPS OR WELD LUGS.

2. STAIR TREADS SHALL BE GALVANIZED SERRATED STEEL BAR GRATING WITH BEARING BARS 1 1/4 INCH X 3/16 INCH AT 1 3/16 INCH CENTER TO CENTER AND CROSS BARS AT 4 INCHES CENTER TO CENTER WITH SLIP-RESISTANT ABRASIVE NOSING. CONNECT TO STRINGERS BY MINIMUM 3/16" FILLET WELDS OR 5/8"Ø GALVANIZED BOLTS.

PRE-ENGINEERED METAL BUILDINGS (PEMB)

CONTRACTOR SHALL SUBMIT DESIGN DRAWINGS AND ENGINEERING CALCULATIONS TO THE MUNICIPALITY OF ANCHORAGE FOR STRUCTURAL REVIEW AS A DEFERRED SUBMITTAL. DRAWINGS AND CALCULATIONS SHALL BE STAMPED BY AN ENGINEER REGISTERED IN ALASKA. DESIGN DRAWINGS CANNOT BE ERECTION OR SHOP DRAWINGS PER MOA REQUIREMENTS. DRAWINGS AND DETAILS MUST COMPLY WITH PROVISIONS AND REQUIREMENTS IN ACCORDANCE WITH AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, AISC 303-10, SECTION 3.

MISCELLANEOUS

THE MOST STRINGENT DESIGN REQUIREMENT SHALL GOVERN WHERE DRAWINGS AND SPECIFICATIONS DIFFER.

REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF PIPING, CONDUIT, ETC., NOT SHOWN.

REFER TO CIVIL DRAWINGS FOR FINISH GRADE ELEVATIONS.

VERIFY ALL DIMENSIONS AND CONDITIONS AT THE PROJECT SITE PRIOR TO STARTING WORK AND NOTIFY AWWU IMMEDIATELY OF ANY DISCREPANCIES.

SUBMIT ALL REQUIRED SHOP DRAWINGS AND RECEIVE APPROVAL FROM AWWU PRIOR TO FABRICATION.

PROVIDE TEMPORARY ERECTION BRACING AND SHORING AS REQUIRED FOR STABILITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.

REFER TO SPECIFICATIONS FOR INFORMATION NOT CONTAINED IN GENERAL NOTES.

SPECIAL INSPECTIONS

SPECIAL INSPECTIONS SHALL BE PERFORMED BY QUALIFIED PERSONNEL EMPLOYED BY THE OWNER. THE OWNER SHALL SUBMIT INSPECTORS RESUMES TO THE BUILDING DEPARTMENT FOR APPROVAL. THE CONTRACTOR SHALL COORDINATE WORK WITH THE SPECIAL INSPECTORS.

SPECIAL INSPECTORS SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH APPROVED DESIGN DRAWINGS. INSPECTION REPORTS SHALL BE FURNISHED TO THE BUILDING DEPARTMENT, OWNER AND ENGINEER OF RECORD. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER AND CONTRACTOR FOR CORRECTION.

THE SPECIAL INSPECTOR 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 THE WORKMANSHIP PROVISIONS OF THE APPLICABLE CODES.

PROVIDE THE FOLLOWING SPECIAL INSPECTIONS PER SECTION 1704 & 1705 OF THE IBC:

PILE FOUNDATIONS:

SPECIAL INSPECTOR SHALL BE PRESENT CONTINUOUSLY WHEN FOUNDATIONS ARE BEING INSTALLED. RECORDS SHALL INCLUDE THE FOLLOWING:

- 1) VERIFY ELEMENT MATERIALS, SIZE AND LENGTHS COMPLY WITH THE REQUIREMENTS.
- 2) DETERMINE CAPACITIES OF TEST ELEMENTS AND CONDUCT ADDITIONAL LOAD TESTS, AS REQUIRED.
- 3) OBSERVE DRIVING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.
- 4) VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM TYPE AND SIZE OF HAMMER, RECORD NUMBER OF BLOWS PER FOOT OF PENETRATION, DETERMINE REQUIRED PENETRATIONS TO ACHIEVE DESIGN CAPACITY, RECORD TIP AND BUTT ELEVATIONS AND DOCUMENT ANY DAMAGE TO FOUNDATION ELEMENT.

REINFORCED CONCRETE:

DURING THE TAKING OF TEST SPECIMENS FOR SLUMP, AIR ENTRAINMENT, AND COMPRESSIVE STRENGTH CYLINDERS AND PLACING OF CONCRETE FOR A MINIMUM OF ONE HOUR AT THE BEGINNING OF EACH POUR.

REINFORCING STEEL:

PRIOR TO CLOSING THE FORMS AND DELIVERY OF CONCRETE TO THE SITE.

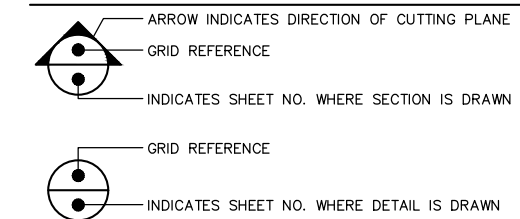
BOLTS INSTALLED IN CONCRETE:

PRIOR TO AND DURING THE PLACEMENT OF CONCRETE AROUND BOLTS.

WELDING:

PROVIDE PERIODIC VISUAL EXAMINATION OF WELDS PER THE REQUIREMENTS OF AWS D1.1.

LEGEND



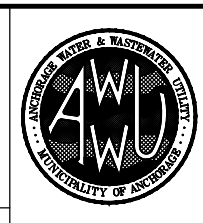
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VERIFY SCALE	THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.			IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.	FULL SIZE SCALE HORZ SCALE: VERT SCALE:				
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BASE			TELEPHONE						
TOPOGRAPHY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

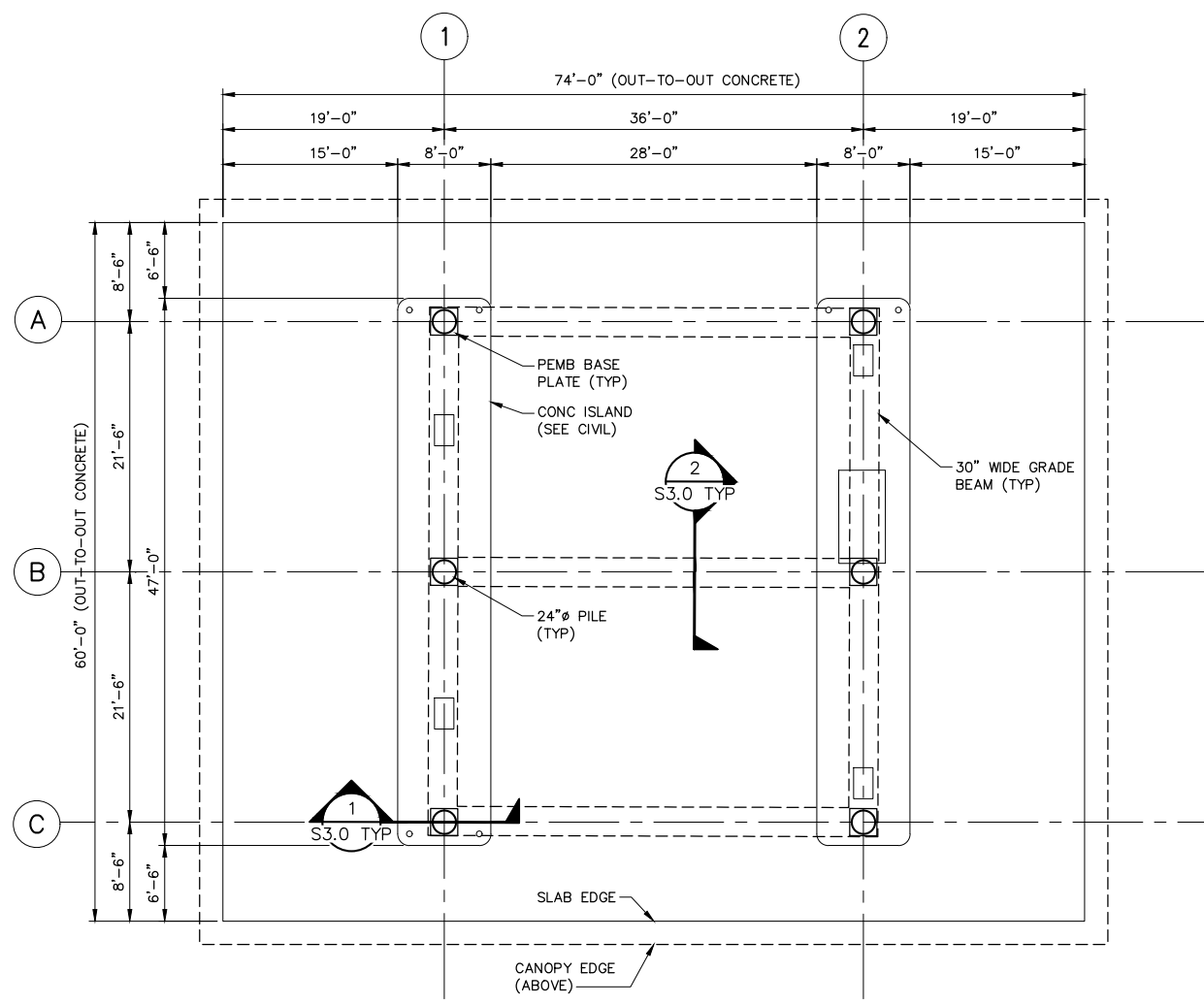
RECORD DRAWING	Note: To be filled out on original drawings upon project completion.
1. DATA PROVIDED BY:	This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.
CONTRACTOR:	
BY:	TITLE:
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DATA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

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CONSULTANT

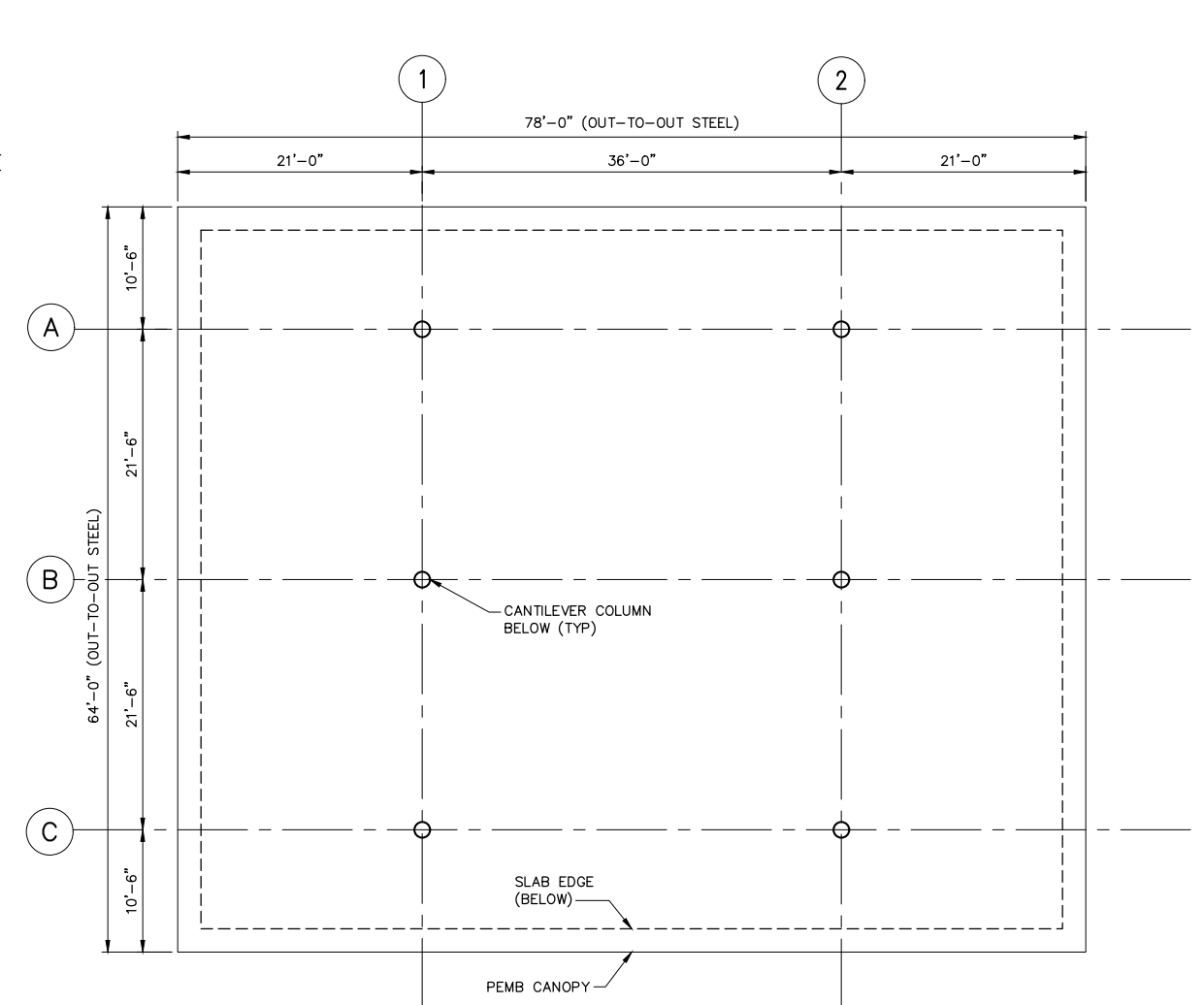
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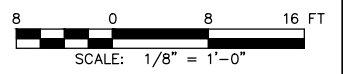
MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY			
KING STREET FUELING FACILITY IMPROVEMENTS			
STRUCTURAL NOTES AND ABBREVIATIONS			
S0.1			
HORZ SCALE: NTS	DATE: 08/17/2020	GRID: SW2431	SHEET 16 of 42
VERT SCALE: N/A	PROJ. ID.: WW:H7960		



CANOPY FOUNDATION PLAN
SCALE: 1/8" = 1'-0"



CANOPY ROOF PLAN
SCALE: 1/8" = 1'-0"



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Plot Date: Aug 17, 2020 - 2:12pm Drawing File: P:\Projects\9659\Cad\Current\Structural\S1_C_EE.dwg Last modified by: whm

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BASE			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: _____
 DATE: _____

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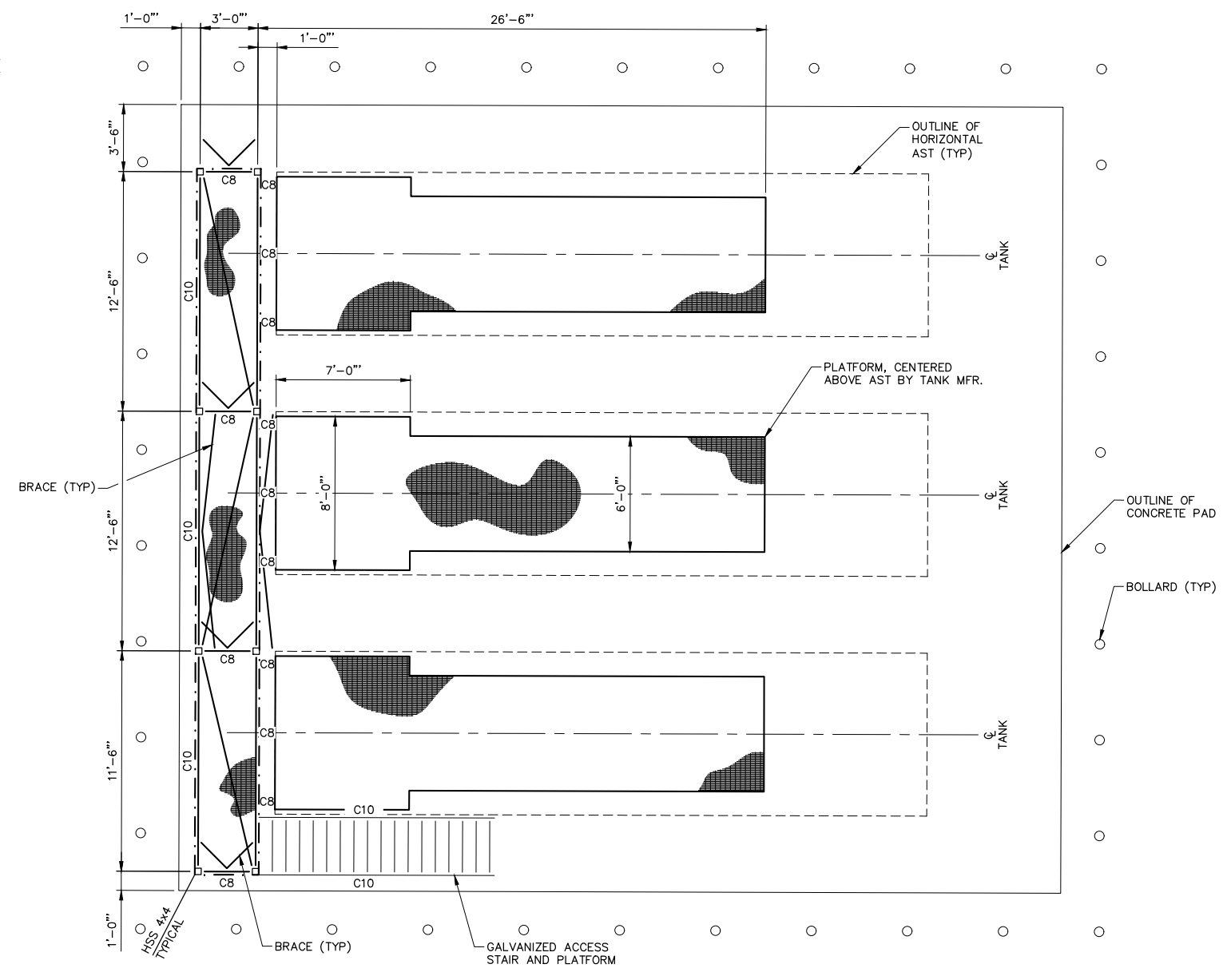
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KING STREET
 FUELING FACILITY IMPROVEMENTS

CANOPY FOUNDATION AND ROOF PLANS
S1.0

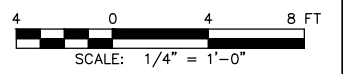
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 VERT SCALE: N/A
 PROJ. ID: WW:H7960

SHEET 17 of 42



TANK PLATFORM FRAMING PLAN

SCALE: 1/4" = 1'-0"



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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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 BY: _____ TITLE: _____
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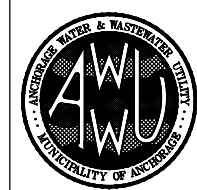
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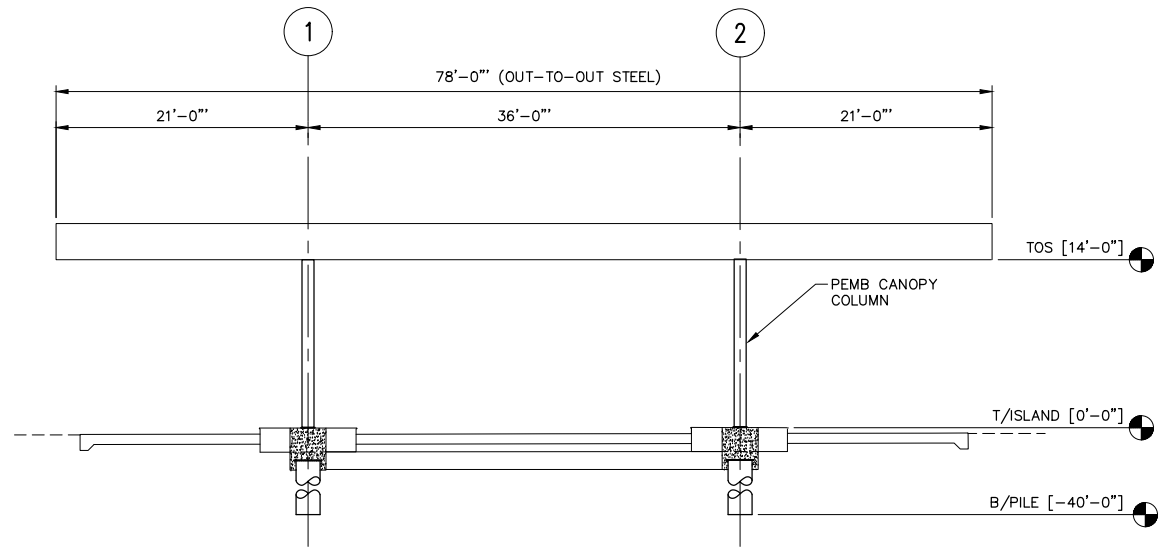
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TANK AND PLATFORM FOUNDATION PLAN

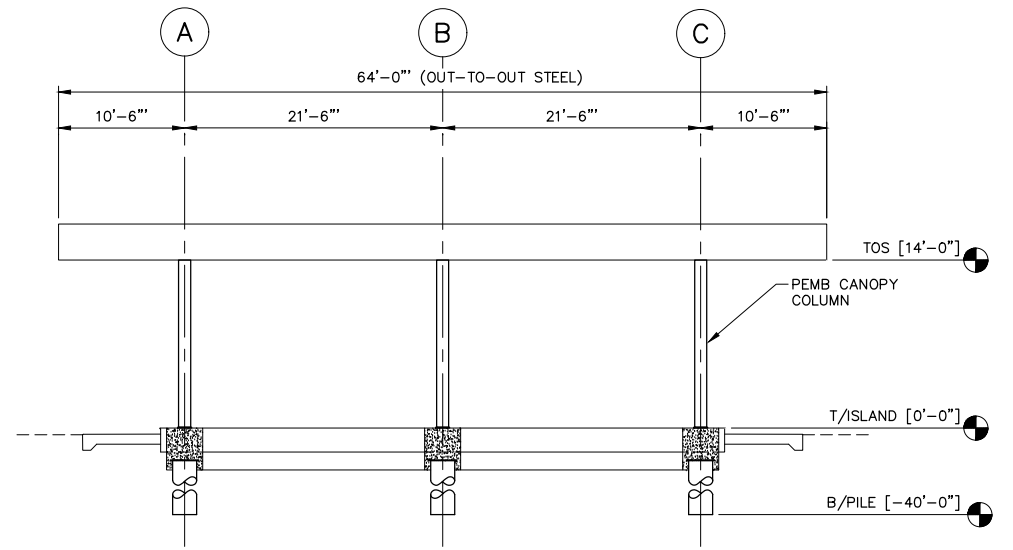
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 VERT SCALE: N/A
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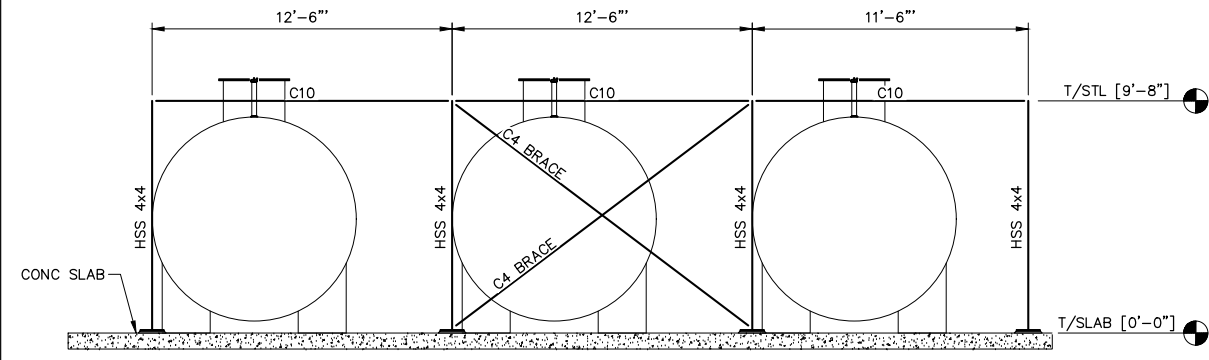
SHEET 18 of 42



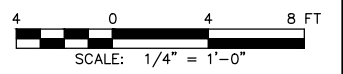
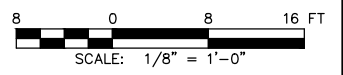
A CANOPY ALONG GRIDS A, B, AND C
S2.0 SCALE: 1/8" = 1'-0"



B CANOPY ALONG GRID 1 (GRID 2 SIM.)
S2.0 SCALE: 1/8" = 1'-0"



C TANK PLATFORM FRAMING (LOOKING EAST)
S2.0 SCALE: 1/4" = 1'-0"



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DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE
BASE			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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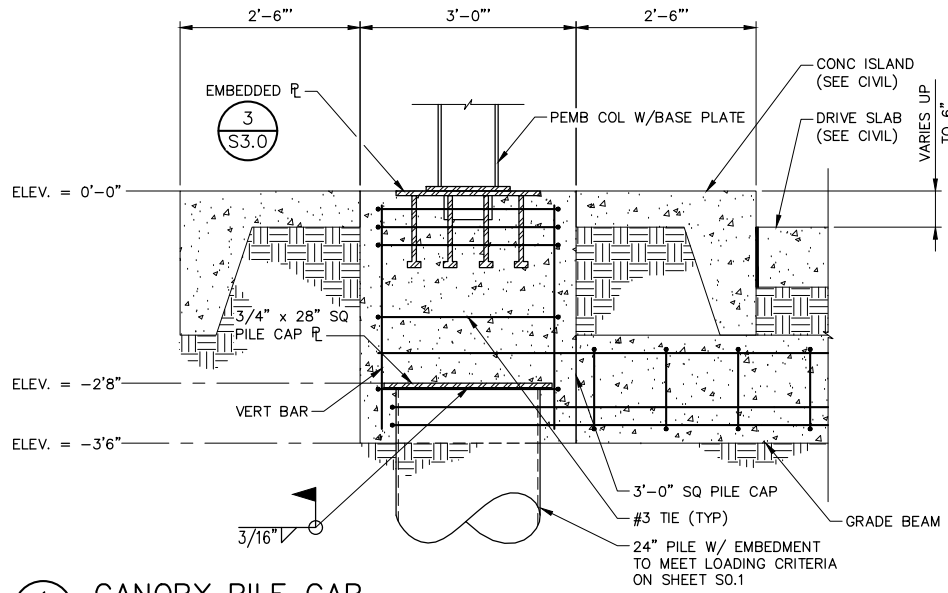
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KING STREET
FUELING FACILITY IMPROVEMENTS

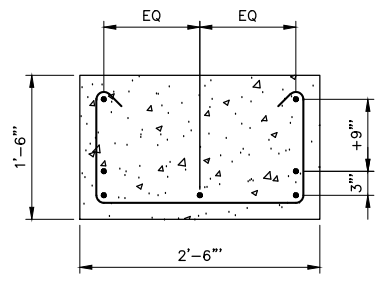
SECTIONS AND ELEVATIONS

S2.0

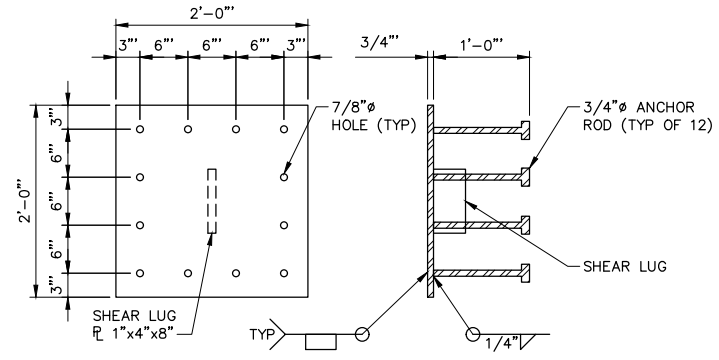
HORIZ SCALE: NTS DATE: 08/17/2020 GRID: SW2431 SHEET 19 of 42
VERT SCALE: N/A
PROJ. ID.: WW:H7960



1 CANOPY PILE CAP
S1.0 SCALE: 3/4" = 1'-0"

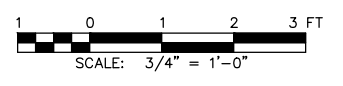


2 GRADE BEAM
S1.0 SCALE: 1" = 1'-0"



NOTE:
1. ORIENT SHEAR LUG PERPENDICULAR TO LONG DIRECTION.

3 EMBEDDED P
S3.0 SCALE: 1" = 1'-0"



Plot Date: Aug 17, 2020 - 2:12pm Drawing File: P:\Projects\9659\Cad\Current\Structural\S3_0_EE.dwg Last modified by: whm

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DATA	BY	DATE	BY	DATE	DESCRIPTION	HORZ SCALE:	VERT SCALE:
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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2. DATA TRANSFERRED BY: _____
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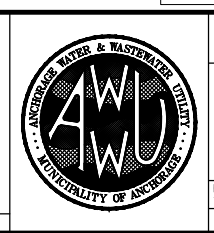
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FOUNDATION DETAILS

S3.0

HORZ SCALE: NTS DATE: 08/17/2020 GRID: SW2431 SHEET 20 of 42
 VERT SCALE: N/A PROJ. ID.: WW:H7960

STAIR AND PLATFORM DETAILS WILL BE COMPLETED FOR THE 95% SUBMITTAL

65% SUBMITTAL - NOT FOR CONSTRUCTION

Plot Date: Aug 17, 2020 - 3:26pm Drawing File: P:\Projects\9559\Cad\Current\Structural\SS_1_LEE.dwg Last modified by: alius

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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			

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

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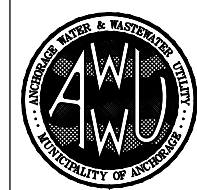
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CONSULTANT



MUNICIPALITY OF ANCHORAGE
 WATER & WASTEWATER UTILITY

KING STREET
 FUELING FACILITY IMPROVEMENTS

STAIR AND PLATFORM DETAILS

S3.1

HORZ SCALE: NTS DATE: 08/17/2020 GRID: SW2431 SHEET 21 of 42
 VERT SCALE: N/A
 PROJ. ID.: WW.H7960

SEAL

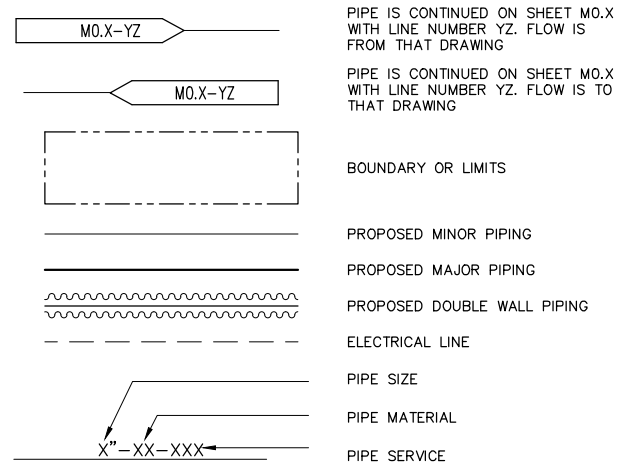
MECHANICAL NOTES

- MECHANICAL PIPING WORK MUST BE DONE ACCORDING TO ASME B31.3, PEI RP100, AND PEI RP200 UNLESS OTHERWISE NOTED.
- COORDINATE WORK WITH FACILITY. WORK MUST NOT INTERFERE WITH ONGOING OPERATIONS AT THE FACILITY.
- COORDINATE DEFUELING OF EXISTING PIPING (AS REQUIRED TO PERFORM THE WORK UNDER THIS PROJECT) WITH FACILITY PERSONNEL. DEFUEL DISPENSER SUPPLY PIPING PRIOR TO COMMENCING WORK WITH THE DISPENSER SUMPS.
- RETURN ANY CLEAN FUEL REMOVED FROM THE EXISTING PIPING TO THE FACILITY.
- DEFINITIONS
 - PURGING: THE COMPLETE REMOVAL OF FUEL FROM PIPING BY USING SUCTION EQUIPMENT TO REMOVE FUEL AT LOW POINTS, AND/OR COLD CUTTING PIPING AT LOW POINTS TO DRAIN FUEL.
 - INERTING: THE REMOVAL OR NEUTRALIZATION OF EXPLOSIVE VAPORS IN PIPE OR PORTIONS OF PIPE WHICH PREVIOUSLY CONTAINED FUEL AS REQUIRED TO PERFORM HOT WORK.
 - DEMOLISH: REMOVE AND DISPOSE OFF-SITE.
- AFTER DEFUELING, THE PIPING MUST BE PURGED AND INERTED AS REQUIRED TO PERFORM ANY REQUIRED HOT WORK SAFELY.
- HOT-WORK, PIPE END PREPARATION AND WELDING (IF REQUIRED) MUST BE ACCOMPLISHED BY:
 - COMPLETE PIPE DEFUELING AND INERTING BETWEEN SUMPS, OR
 - USING GAS BARRIER PLUGS AND INERTING IN ACCORDANCE WITH API BULLETIN 2209.
- COLD CUTTING OF EXISTING PIPE IS REQUIRED AFTER DEFUELING.
- CONTRACTOR MUST NOT DAMAGE EXISTING DISPENSERS AND MUST REPAIR ANY DAMAGE AT NO ADDITIONAL EXPENSE TO THE OWNER.
- DIMENSIONS AND PIPING LAYOUT SHOWN ARE APPROXIMATE. CONTRACTOR MUST VERIFY DIMENSIONS AND LAYOUT IN FIELD PRIOR TO FABRICATION.
- PRIOR TO ASSEMBLING SECONDARY CONTAINMENT JOINTS, PNEUMATICALLY TEST THE PRODUCT PIPING AS INDICATED.
- UPON SUCCESSFUL PNEUMATIC TEST OF THE PRODUCT PIPING, HYDROSTATICALLY TEST THE PRODUCT PIPING WITH FUEL AS INDICATED.
- PRIOR TO BACKFILLING, PNEUMATICALLY TEST THE SECONDARY CONTAINMENT PIPING AS INDICATED.
- HYDROSTATICALLY TEST DISPENSER SUMPS PRIOR TO BACKFILLING AS INDICATED.
- HYDROSTATICALLY TEST TANK SUMPS AS INDICATED.
- PROVIDE COPIES OF ALL PNEUMATIC AND HYDROSTATIC TEST RESULTS TO AWWU FOR RECORD KEEPING.

INSTRUMENT IDENTIFICATION LEGEND

- LOCAL, FIELD MOUNTED INSTRUMENT
- MAIN, CENTRAL PANEL MOUNTED INSTRUMENT
- LOCAL, FIELD MOUNTED DISPLAY
- MAIN, CENTRAL PANEL MOUNTED DISPLAY
- CONTROL / INTERLOCK SCHEME
- AUTOMATIC TANK GAUGE
- EMERGENCY FUEL SHUT-OFF

P&ID LINE DESIGNATION (FLOW DIAGRAMS)



ABBREVIATIONS

AG	ABOVE GRADE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
API	AMERICAN PETROLEUM INSTITUTE
AST	ABOVEGROUND STORAGE TANK
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ATG	AUTOMATIC TANK GAUGE
AWS	AMERICAN WELDING SOCIETY
BE	BEVELED END
CL	CENTERLINE
CLASS	CLASS
CS	CARBON STEEL
DEF	DIESEL EXHAUST FLUID
DEMO	DEMOLISH
DIA	DIAMETER
DW	DOUBLE WALLED
EFSO	EMERGENCY FUEL SHUT-OFF
ELEC	ELECTRICAL
ELEV	ELEVATION
FNPT	FEMALE NATIONAL PIPE THREAD
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FEET
GAL	GALLON
GPM	GALLONS PER MINUTE
HPV	HIGH POINT VENT
HP	HORSE POWER
IN	INCH
LAH	LEVEL ALARM HIGH
LAHH	LEVEL ALARM HIGH-HIGH
LAL	LEVEL ALARM LOW
LALL	LEVEL ALARM LOW-LOW
LI	LEVEL INDICATOR
LO	LOCK OPEN
LPD	LOW POINT DRAIN
LS	LEVEL SENSOR
LSH	LEVEL SWITCH HIGH
LSHH	LEVEL SWITCH HIGH-HIGH
LSL	LEVEL SWITCH LOW
M	MOTOR
MAOP	MAXIMUM ALLOWABLE OPERATING PRESSURE
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
MNPT	MALE NATIONAL PIPE THREAD
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
PEI	PETROLEUM EQUIPMENT INSTITUTE
PI	PRESSURE INDICATOR
POL	PETROLEUM OIL LUBRICANTS
PS	PIPE SUPPORT
PSI	POUNDS PER SQUARE INCH
RED	REDUCER OR RED (COLOR)
REF	REFERENCE
RFSO	RAISED FACE SLIP ON
RP	RECOMMENDED PRACTICE
SCH	SCHEDULE
S/N	SERIAL NUMBER
SQ	SQUARE
SS	STAINLESS STEEL
STP	SUBMERSIBLE TURBINE PUMP
SW	SOCKET WELD
T	TANK
THD	THREADED
TYP	TYPICAL
THK	THICK
UL	UNDERWRITERS LABORATORY
UG	UNDERGROUND
VIL	VEHICLE IDENTIFICATION LINK
W/	WITH
WCB	WROUGHT CARBON- GRADE B
WN	WELD NECK

P&ID (FLOW DIAGRAM) SYMBOLS

- ARROW FLOW DIRECTION
- ATMOSPHERIC VENT
- BREAKAWAY
- CAM AND GROOVE TYPE COUPLING
- BALL VALVE
- CHECK VALVE - SWING TYPE
- CHECK VALVE - WAFER TYPE
- EMERGENCY SHEAR SHUT OFF VALVE W/ FUSIBLE LINK
- FLANGE
- FLEXIBLE HOSE
- HORN
- LIGHT (ON CENTRAL CONTROL PANEL)
- NOZZLE W/ SWIVEL
- PRESSURE INDICATOR
- OVERFILL PREVENTION VALVE
- SOLENOID VALVE
- SUBMERSIBLE TURBINE PUMP
- UNION
- WYE STRAINER
- CONNECT TO EXISTING
- LIMITS OF REMOVAL (REMOVE ON SHADED SIDE)

EXISTING EQUIPMENT INFORMATION

- UNLEADED DISPENSERS
 - MAKE: DRESSER WAYNE - SELECT SERIES
 - MODEL: 3/G7242D/29GHJ/JKL
 - S/N: 39645D A18
- DIESEL DISPENSER
 - MAKE: DRESSER WAYNE - SELECT SERIES
 - MODEL: 3/G7242D/29GHJ/JKL
 - S/N: 39649D A18

SEQUENCE OF OPERATIONS

- ### DISPENSER
- A CARD IS SWIPED THROUGH THE VEHICLE IDENTIFICATION LINK (VIL).
 - THE VIL ENERGIZES THE REQUESTED DISPENSER NOZZLE.
 - THE DISPENSER NOZZLE, WHEN REMOVED FROM THE DISPENSER, SHALL OPEN THE DISPENSER VALVE, OPEN THE ANTI-SIPHON SOLENOID VALVE, AND ENERGIZE THE ASSOCIATED PUMP.
 - FUEL IS RECEIVED BY SQUEEZING THE NOZZLE. FUEL IS STOPPED BY RELEASING THE NOZZLE OR BY AUTOMATIC SENSING OF THE FUEL TANK BEING FULL.
 - PLACING THE NOZZLE BACK INTO THE DISPENSER SHALL CLOSE THE DISPENSER VALVE, CLOSE THE ANTI-SIPHON VALVE, AND DE-ENERGIZE THE ASSOCIATED PUMP.
 - REMOVING THE NOZZLE FROM THE DISPENSER WILL DO NOTHING UNTIL STEP 1 IS REPEATED.
- ### TRUCK OFFLOAD
- FUEL RECEIPT INTO ANY TANK IS A MANUAL OPERATION THAT WILL UTILIZE THE OFFLOAD PUMPS LOCATED ON THE OFFLOAD TRUCK.
- ENSURE ADEQUATE ULLAGE EXISTS IN RECEIPT TANK BY READING ATG LEVEL AND/OR LOCAL TANK GAUGE.
 - POSITION TRUCK, CHOCK WHEELS, AND CONNECT THE GROUNDING CLAMP TO TRUCK.
 - CONNECT THE OFFLOAD HOSE TO THE CAM-LOCK ADAPTER IN THE SPILL CONTAINER.
 - OPEN MANUAL BALL VALVE NEAR THE SPILL CONTAINER AND VERIFY FUEL RECEIPT PATH ON TANK RECEIPT PIPING.
 - UTILIZING THE PUMP ONBOARD THE OFFLOAD TRUCK, OFFLOAD FUEL INTO TANK.
 - UPON COMPLETION OF FUEL TRANSFER, TURN OFF TRUCK PUMP.
 - IF FUEL LEVEL IN TANK REACHES HIGH LEVEL ELEVATION, HIGH LEVEL ALARM (LAH) WILL ILLUMINATE A VISIBLE LIGHT AND SOUND AN AUDIBLE ALARM.
 - IF FUEL LEVEL IN TANK REACHES HIGH-HIGH LEVEL ELEVATION, HIGH-HIGH LEVEL ALARM (LAHH) WILL ILLUMINATE A VISIBLE LIGHT AND SOUND AN AUDIBLE ALARM. AT HIGH-HIGH LEVEL, THE TANK OVERFILL PREVENTION VALVE WILL CLOSE.
 - ONCE AN ALARM HAS BEEN ACTIVATED, THE ACKNOWLEDGE BUTTON WILL SILENCE THE AUDIBLE ALARM BUT THE VISIBLE LIGHT WILL ILLUMINATE UNTIL THE SYSTEM HAS BEEN CLEARED AND THE RESET BUTTON PRESSED.
 - CLOSE MANUAL BALL VALVE ON TANK RECEIPT PIPING.
 - DISCONNECT OFFLOAD HOSE, GROUNDING CLAMP, AND UNCHOCK TRUCK WHEELS.
- ### EMERGENCY STOP AND RESET
- DEPRESSION OF ANY EMERGENCY STOP PUSHBUTTON AT THE DISPENSING STATION OR ELECTRICAL PANEL SHALL STOP ALL FUELING PUMPS LOCATED IN THE TANKS. THIS ACTION IS EXECUTED WITHOUT REGARD TO PRODUCT BEING DISPENSED.
 - NOTE: DEPRESSION OF AN EMERGENCY STOP PUSHBUTTON WILL NOT STOP OFFLOAD FUELING PUMPS, LOCAL TO THE OFFLOAD TRUCKS.
 - IN ORDER TO RESET THE SYSTEM AFTER ALARM, PULL THE ACTIVATED EMERGENCY STOP PUSHBUTTON THAT WAS INITIALLY DEPRESSED.

FILL GENERATOR DAY TANK

REFILLING THE GENERATOR'S DAY-TANK (BELLY-TANK) IS A MANUAL OPERATION. MANUAL MONITORING OF THE DAY-TANK LEVEL IS REQUIRED. WHEN THE DAY-TANK REQUIRES ADDITIONAL FUEL, IT MUST BE MANUALLY TRANSFERRED PER THE FOLLOWING PROCEDURE:

- VERIFY THAT GENERATOR DAY-TANK REQUIRES ADDITIONAL FUEL.
 - VERIFY ISOLATION VALVES BETWEEN BULK DIESEL TANK 3 AND GENERATOR DAY-TANK ARE OPEN.
 - INSERT KEY INTO THE KEYED ON/OFF HAND SWITCH FOR PUMP P-4 (LABELED "GENERATOR FILL").
 - TURN THE KEYED ON/OFF HAND SWITCH FOR PUMP P-4 TO THE "ON" POSITION. PUMP P-4 STARTS AND ASSOCIATED ANTI-SIPHON SOLENOID VALVE OPENS; FUEL BEGINS TO FLOW INTO GENERATOR DAY-TANK.
 - MANUALLY MONITOR THE FUEL LEVEL IN THE GENERATOR DAY-TANK.
 - IF THE FUEL LEVEL IN THE GENERATOR DAY-TANK REACHES THE DAY-TANK'S HIGH-LEVEL SWITCH SET POINT (LSH = 85%), THE DAY-TANK'S HIGH-LEVEL ALARM WILL SOUND AND PUMP P-4 WILL SHUT DOWN. PUMP P-4 CANNOT BE RESTARTED UNTIL THE DAY-TANK LSH IS CLEARED.
 - IF THE FUEL LEVEL IN THE GENERATOR DAY-TANK REACHES THE DAY-TANK'S OVERFILL-PREVENTION VALVE'S SET POINT (OFV = 90%), THE DAY-TANK'S OVERFILL PREVENTION VALVE WILL CLOSE PREVENTING FURTHER FILLING.
 - IF THE FUEL LEVEL IN TANK 3 REACHES THE LOW-LEVEL SWITCH SET POINT (LSL), TANK 3'S LOW-LEVEL ALARM WILL SOUND AND PUMP P-4 WILL SHUT DOWN. PUMP P-4 CANNOT BE RESTARTED UNTIL THE TANK 3 LSL IS CLEARED.
 - WHEN FUEL LEVEL IN THE GENERATOR DAY-TANK REACHES DESIRED LEVEL, TURN THE KEYED ON/OFF HAND SWITCH FOR PUMP P-4 TO THE "OFF" POSITION. PUMP P-4 STOPS AND ASSOCIATED ANTI-SIPHON SOLENOID VALVE CLOSSES; FUEL STOPS FLOWING.
 - REMOVE KEY FROM THE KEYED ON/OFF HAND SWITCH FOR PUMP P-4.
- ### TRANSFER ULLSD FROM TANK 3 TO TANK 2
- TO PERIODICALLY TURN OVER FUEL IN TANK 3 (GENERATOR FUEL BULK TANK), THE FUEL MUST BE TRANSFERRED TO TANK 2 TO BE UTILIZED AS MOTOR-VEHICLE FUEL, AND TANK 3 MUST BE REFILLED VIA TRUCK DELIVERY. TRANSFERRING FUEL FROM TANK 3 TO TANK 2 IS A MANUAL OPERATION.
- VERIFY THAT THERE IS ENOUGH ULLAGE IN TANK 2 TO RECEIVE A TRANSFER.
 - VERIFY ISOLATION VALVES BETWEEN TANK 3 AND TANK 2 ARE OPEN.
 - INSERT KEY INTO THE KEYED ON/OFF HAND SWITCH FOR PUMP P-3 (LABELED "TANK TO TANK TRANSFER").
 - TURN THE KEYED ON/OFF HAND SWITCH FOR PUMP P-3 TO THE "ON" POSITION. PUMP P-3 STARTS AND ASSOCIATED ANTI-SIPHON SOLENOID VALVE OPENS; FUEL BEGINS TO FLOW TANK 2.
 - MANUALLY MONITOR THE FUEL LEVEL IN TANK 2 UTILIZING THE CLOCK GAUGE.
 - IF THE FUEL LEVEL IN TANK 2 REACHES THE TANK 2'S HIGH-HIGH-LEVEL ALARM SET POINT (LAHH = 95%), THE TANK 2'S HIGH-HIGH-LEVEL ALARM WILL SOUND AND PUMP P-3 WILL SHUT DOWN. PUMP P-3 CANNOT BE RESTARTED UNTIL THE TANK 2 LSHH IS CLEARED.
 - IF THE FUEL LEVEL IN TANK 2 REACHES THE TANK 2'S OVERFILL-PREVENTION VALVE'S SET POINT (OFV = 95%), THE TANK 2 OVERFILL PREVENTION VALVE WILL CLOSE PREVENTING FURTHER FILLING.
 - IF THE FUEL LEVEL IN TANK 3 REACHES THE LOW-LEVEL SWITCH SET POINT (LSL), TANK 3'S LOW-LEVEL ALARM WILL SOUND AND PUMP P-3 WILL SHUT DOWN. PUMP P-3 CANNOT BE RESTARTED UNTIL THE TANK 3 LSL IS CLEARED.
 - WHEN FUEL LEVEL IN TANK 2 REACHES DESIRED LEVEL, TURN THE KEYED ON/OFF HAND SWITCH FOR PUMP P-3 TO THE "OFF" POSITION. PUMP P-3 STOPS AND ASSOCIATED ANTI-SIPHON SOLENOID VALVE CLOSSES; FUEL STOPS FLOWING.
 - REMOVE KEY FROM THE KEYED ON/OFF HAND SWITCH FOR PUMP P-3.

65% SUBMITTAL - NOT FOR CONSTRUCTION

Plot Date: Aug 17, 2020 - 3:29pm Drawing File: P:\Projects\9559\Cost\Current\Mech\M0_1.dwg Last modified by: alius

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

PLAN CHECK	REVISIONS

VERIFY SCALE	RECORD DRAWING
THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.	THIS SHALL SERVE TO CERTIFY THAT THESE RECORD DRAWINGS ARE A TRUE AND ACCURATE REPRESENTATION OF THE PROJECT AS CONSTRUCTED.
IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.	CONTRACTOR: _____
FULL SIZE SCALE HORZ SCALE: N/A VERT SCALE: N/A	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: _____
	DATE: _____

REUSE OF DOCUMENTS

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.

<p>2525 GAMBELL STREET SUITE 200 ANCHORAGE, AK 99503 (907) 563-3836 (907) 563-3817</p>	<p>400 US ROUTE 1 NORTH SUITE B FAIRBANKS, WY 84105 (207) 869-8006 (207) 869-8015</p>	<p>MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY</p> <p>KING STREET FUELING FACILITY IMPROVEMENTS</p> <p>MECHANICAL NOTES, SYMBOLS, AND ABBREVIATIONS M0.1</p>	
		<p>CONSULTANT</p>	<p>SEAL</p>

AWWU PLAN SET
NO. XXXX

SPECIFICATIONS

EQUIPMENT, PIPING AND ACCESSORIES MUST BE PROVIDED FROM SPECIFIED MANUFACTURERS AS INDICATED. AS NEEDED, EQUIVALENT MANUFACTURERS WILL BE ASSESSED ON A CASE BY CASE BASIS.

PIPE, VALVES, AND ACCESSORIES SPECIFICATIONS

- PIPING SYSTEMS MUST MEET THE MATERIAL, FABRICATION, AND OPERATING REQUIREMENTS OF ASME B31.3, EXCEPT AS MODIFIED HEREIN.
- FLEXIBLE DOUBLE-WALL NON-METALLIC PIPE: PIPING MUST BE OPW FLEXWORKS SUPPLY PIPING OR APPROVED EQUAL. PIPING MUST CONFORM TO UL 971 AND BE COMPATIBLE WITH THE FUEL PRODUCTS TO BE TRANSFERRED. PIPING MUST BE AN INTEGRAL PRIMARY CARRIER AND SECONDARY CONTAINMENT TYPE, INSTALLED IN MANUFACTURERS SUPPLIED CORRUGATED FLEXIBLE ACCESS PIPING. SIZE IS LIMITED TO 3-INCH DIAMETER OR LESS. COUPLINGS AND FLEXIBLE PIPING MUST BE FROM THE SAME MANUFACTURER TO ENSURE COMPATIBILITY AND PROPER PIPE TO COUPLING SEAL. ALL PIPING CONNECTIONS MUST BE CONTAINED WITHIN A CONTAINMENT SUMP OR SECONDARY CONTAINMENT PAD.
- CARBON STEEL PIPE: ASTM A53/ A53M, TYPE E OR S, GRADE B, OR API SPEC 5L, PSL 1, GRADE B. PIPING LARGER THAN 2 INCHES MUST BE SCHEDULE 40. PIPING 2 INCHES AND SMALLER MUST BE SCHEDULE 80.
- CARBON STEEL FITTINGS: END CONNECTIONS FOR PIPE OR FITTINGS 2 INCHES AND SMALLER MUST BE FORGED, SOCKET WELD TYPE CONFORMING TO ASTM A182/ A182M AND ASME B16.11, UNLESS INDICATED OTHERWISE. END CONNECTIONS FOR PIPE OR FITTINGS 2-1/2 INCHES AND LARGER MUST BE BUTT WELDED TYPE CONFORMING TO ASTM A234/ A234M, GRADE WPB AND ASME B16.9 OF THE SAME WALL THICKNESS AS THE ADJOINING PIPE. WHERE THREADED END CONNECTIONS ARE INDICATED, PROVIDE CONNECTIONS THAT CONFORM TO ASME B16.3, CLASS 150, OR ASME B16.11.
- FLANGES:
 - PROVIDE FLANGED END CONNECTIONS ON EQUIPMENT, FITTINGS, PIPING, PIPING COMPONENT, ADAPTERS, COUPLERS, AND VALVES THAT CONFORM TO ASME B16.5, CLASS 150.
 - CARBON STEEL FLANGE MUST CONFORM TO ASTM A105/A105M.
 - PROVIDE FLANGE GASKETS THAT ARE 1/8-INCH THICK AND THAT CONFORM TO ASME B16.21, RAISED-FACE TYPE UNLESS OTHERWISE INDICATED. GASKETS MUST BE CONSTRUCTED FLANGE OF BUNA-N.
- FLANGE BOLTS, NUTS, AND WASHERS: BOLTS AND NUTS FOR PIPE FLANGES, FLANGED FITTINGS, VALVES AND ACCESSORIES MUST CONFORM TO ASME B18.2.1 AND ASME B18.2.2.
 - BOLTS MUST BE REGULAR HEXAGONAL BOLTS CONFORMING TO ASME B18.2.1 WITH MATERIAL CONFORMING TO ASTM A193/ A193M, CLASS 2, GRADE B7 WHEN CARBON STEEL FLANGES ARE INVOLVED. BOLTS MUST BE THREADED IN ACCORDANCE WITH ASME B1.1, CLASS 2A FIT, COARSE THREAD SERIES, FOR SIZES 1-INCH AND SMALLER AND EIGHT-PITCH THREAD SERIES FOR SIZES LARGER THAN 1-INCH. BOLTS MUST BE OF SUFFICIENT LENGTH TO OBTAIN FULL BEARING ON THE NUTS AND SHALL PROJECT NO LESS THAN TWO FULL THREADS BEYOND THE NUTS WITH THE BOLTS TIGHTENED TO THE REQUIRED TORQUE. TIGHTEN BOLTS TO TORQUE AND TIGHTENING PATTERN RECOMMEND BY GASKET MANUFACTURER.
 - NUTS MUST CONFORM TO ASME B18.2.2, HEXAGONAL, HEAVY SERIES WITH MATERIAL CONFORMING TO ASTM A194/ A194M, GRADE 7 FOR CARBON STEEL BOLTS. NUTS SHALL BE THREADED IN ACCORDANCE WITH ASME B1.1, CLASS 2B FIT, COARSE THREAD FOR SIZES 1-INCH AND SMALLER AND EIGHT-PITCH THREAD FOR SIZES LARGER THAN 1-INCH.
 - PROVIDE WASHERS UNDER BOLT HEADS AND NUTS. WASHERS TO BE ASTM F536, FLAT CIRCULAR CARBON STEEL FOR CARBON STEEL BOLTS.
- THREADED UNIONS: UNIONS MUST CONFORM TO ASTM A105/ A105M, ASME B16.39, CLASS 150, AND MSS SP-83
- FLEXIBLE PIPE CONNECTOR: CONNECTOR MUST BE THE FLEXIBLE, CLOSE PITCH, METAL HOSE TYPE THAT IS CONSTRUCTED WITH EXTERIOR ANNULAR CORRUGATIONS AND PROVIDED WITH A SINGLE LAYER OF BRAIDED WIRE SHEATH COVERING. CONNECTORS MUST BE CONSTRUCTED ENTIRELY OF STAINLESS STEEL AND BE RATED FOR THE SYSTEM WORKING PRESSURE AND TEMPERATURE. PROVIDE THREADED END CONNECTIONS FOR CONNECTORS SMALLER THAN 2-1/2 INCHES.
- BALL VALVES (SIZES SMALLER THAN 2-INCHES): VALVE MUST BE OF 3-PIECE CONSTRUCTION WITH ENCLOSED FASTENERS CONFORMING TO MSS SP-110. VALVE MUST HAVE INTERCHANGEABLE END CAPS CONFORMING TO ASME B16.11 (SOCKET WELDED) AND ASME B1.20.1 (NPT); VALVE END CAPS MUST BE REMOVED DURING WELDING TO PREVENT HEAT DAMAGE TO THE SEATS. VALVES INSTALLED IN CARBON STEEL PIPING STEMS MUST HAVE BODIES CONSTRUCTED OF WCB CARBON STEEL. VALVES MUST HAVE STAINLESS STEEL PRESSURE BALANCED SOLID BALL, STAINLESS STEEL ANTI-BLOWOUT ONE PIECE BOTTOM ENTRY STEM, AND STAINLESS STEEL HARDWARE. VALVE MUST BE RATED FOR SERVICE AT 275 PSIG AT TEMPERATURES BETWEEN -20°F AND 100°F. VALVE MUST HAVE A FULL-PORT BALL AND TWO-POSITION LOCKING HANDLE.
- BALL VALVES (2 INCHES AND LARGER): ANSI CLASS 150, NON-LUBRICATED, DOUBLE SEATED, SPLIT-BODY, BALL TYPE THAT CONFORMS TO REQUIREMENTS OF ASME B16.5, ASME B16.10, ASME B16.34, AND API 598. VALVE MUST MEET THE FIRE TEST REQUIREMENTS OF API STD 607. VALVE MUST OPERATE FROM FULLY OPEN TO FULLY CLOSED WITH 90 DEGREE ROTATION OF THE BALL. VALVE MUST BE CAPABLE OF 2-WAY SHUTOFF. VALVES INSTALLED IN CARBON STEEL PIPING SYSTEMS MUST HAVE A BODY CONSTRUCTED OF WCB CARBON STEEL. VALVE BALL MUST BE SOLID, NOT HOLLOW CAVITY, AND SHALL BE CONSTRUCTED OF STAINLESS STEEL. BALL VALVES MUST HAVE VITON OR PTFE SEATS, BODY SEALS AND STEM SEALS. VALVE MUST BE RATED FOR 275 PSIG AT -20°F TO 100°F. EXCEPT AS OTHERWISE SPECIFIED, REDUCED PORT OR FULL PORT VALVES MAY BE PROVIDED AT THE CONTRACTOR'S OPTION. MANUALLY OPERATED VALVES SMALLER THAN 6 INCHES MUST BE LEVER OPERATED OR HANDWHEEL OPERATED.
- WAFER CHECK VALVES: SPRING ASSISTED, WAFER/LUG PATTERN, BUTTERFLY CHECK WITH FKM OR PTFE SEAT RING, DESIGNED TO PREVENT FLOW REVERSAL SLAMMING OF VALVE, DUAL PLATE, AND MUST CONFORM TO ASME B16.34, API STD 594, EXCEPT FACE TO FACE DIMENSIONS MAY DEVIATE FROM STANDARD. VALVES MUST BE SUITABLE FOR INSTALLATION IN ANY ORIENTATION. VALVES SHALL HAVE BODIES CONSTRUCTED OF CARBON STEEL AND HAVE STAINLESS STEEL INTERNAL DISK AND SPRING. VALVES SHALL BE RATED FOR 275 PSIG AT -20°F TO 100°F.
- SWING TYPE CHECK VALVE: SWING CHECK VALVES MUST CONFORM TO API STD 600, REGULAR TYPE, ANSI CLASS 150 WITH FLANGED END CONNECTIONS. DISCS AND SEATING RINGS MUST BE RENEWABLE WITHOUT REMOVING THE VALVES FROM THE LINE. THE DISC MUST BE GUIDED AND CONTROLLED TO CONTACT THE ENTIRE SEATING SURFACE.
- ANTI-SIPHON SOLENOID VALVES: VALVES MUST BE SOLENOID CONTROLLED, SPRING LOADED VALVES. VALVES MUST BE NORMALLY CLOSED GLOBE TYPE AND MUST OPEN UPON THE RECEIPT OF AN ELECTRONIC SIGNAL WHEN THE DISPENSER PUMP IS SWITCHED TO THE "ON" POSITION. VALVES SOLENOID MUST BE 120 VAC, 60 HZ, CONTINUOUS DUTY RATED AND SUITABLE FOR INSTALLATION IN CLASS I, DIVISION I HAZARDOUS AREA

LOCATIONS. THE VALVE MUST NOT REQUIRE A DIFFERENTIAL PRESSURE TO OPEN AND MUST INCLUDE A BUILT-IN EXPANSION RELIEF SET TO RELIEVE AT 5 PSI, MINIMUM. VALVE BODY MUST BE STAINLESS STEEL AND HAVE CLASS 150 CONNECTIONS.

- TANK OVERFILL PREVENTION VALVE: VALVE MUST BE THE TWO-STAGE, FLOAT ACTIVATED, SHUTOFF TYPE THAT IS AN INTEGRAL PART OF THE DROP TUBE USED FOR PRESSURIZED FILL SYSTEMS. THE VALVE MUST COMPLETELY STOP THE FLOW OF FUEL INTO THE TANK, WHEN THE LIQUID LEVEL RISES ABOVE 95 PERCENT OF TANK CAPACITY. VALVE MUST BE CONSTRUCTED OF THE SAME MATERIAL AS THE FILL TUBE. VALVE MUST BE PROVIDED WITH TEST MECHANISM ASSEMBLY TO VERIFY VALVE OPERATION AND TESTING OF THE FLOAT.
- WYE "Y" STRAINER: STRAINER BODY MUST BE CONSTRUCTED OF CARBON STEEL WITH CLASS 150 CONNECTIONS. BASKET MUST BE BOTTOM REMOVABLE WITH 100 MESH SCREEN CONSTRUCTED OF TYPE 304 OR 316 STAINLESS STEEL. STRAINER MUST HAVE A MINIMUM PRESSURE RATING OF 275 PSI AT TEMPERATURES BETWEEN -20°F AND 100°F.
- PIPE SUPPORTS: SUPPORTS MUST BE THE ADJUSTABLE TYPE CONFORMING TO MSS SP-58. COATED SUPPORTS MUST BE COATED WITH FUSION BONDED EPOXY RESIN APPLIED BY THE FLUIDIZED BED METHOD. THICKNESS OF THE COATING MUST BE NOT LESS THAN 10 MILS. SURFACE PREPARATION AND COATING APPLICATION MUST BE IN ACCORDANCE WITH THE EPOXY MANUFACTURE'S INSTRUCTION. THE COATING MUST BE PINHOLE FREE WHEN TESTED WITH A LOW VOLTAGE HOLIDAY DETECTOR SET AT NO MORE THAN 100 TIMES THE MIL THICKNESS OF THE COATING. ALL PINHOLES MUST BE MARKED, REPAIRED AND RETESTED TO ENSURE A PINHOLE FREE FILM. THE COATING MATERIAL MUST BE A 100 PERCENT SOLID, THERMOSETTING, FUSION-BONDED, DRY POWDER EPOXY RESIN. THE MANUFACTURER MUST CERTIFY THAT THE MATERIAL IS SUITABLE FOR FLUIDIZED BED APPLICATION AND THAT IT IS APPROVED BY THE ENVIRONMENTAL PROTECTION AGENCY.
 - ADJUSTABLE PIPE SUPPORTS MUST CONSIST OF A CAST IRON SADDLE AND A THREADED NIPPLE CONNECTED TO A CARBON STEEL PIPE BY MEANS OF A SPECIAL REDUCER CONFORMING TO MSS SP-58. THE SUPPORT MUST BE PROVIDED WITH PTFE INSULATION STRIPS BETWEEN THE U-BOLT AND PIPE.

EQUIPMENT SPECIFICATIONS

- OFFLOAD CONTAINMENT BOX: REMOTE OFFLOAD CONTAINMENT BOX MUST BE OF MINIMUM 15-GALLON CAPACITY AND PROVIDE A SINGLE CONNECTION POINT FOR EACH TYPE OF FUEL, DRAIN PIPING, AND VENTING OF THE BOX. PENETRATIONS IN THE CONTAINMENT BOX SIDES MUST NOT ALLOW LIQUID TO ESCAPE. THE CONTAINMENT IN THE EVENT THAT THE LIQUID LEVEL RISES ABOVE THE PIPE PENETRATION. BOX MUST BE WEATHER RESISTANT, COMPATIBLE WITH THE FUEL TO BE HANDLED, AND BE LOCATED AT A HEIGHT SO THE RECEIPT PIPING WITHIN THE CONTAINMENT BOX IS AT AN ELEVATION EQUAL TO OR BELOW THE TRUCK OFFLOAD CONNECTION POINT. CONTAINMENT BOX MUST BE ANCHORED TO THE CONCRETE TANK PAD.
- GROUNDING REEL: GROUNDING SYSTEM MUST BE EQUIPPED WITH A SELF-WINDING GROUNDING CABLE REEL. THE CABLE MUST BE AT LEAST 50 FEET LONG. EACH OFFLOAD GROUNDING CONNECTION MUST PROVIDE AN ADDITIONAL GROUNDING LUG. THE CABLE REEL, THE GROUNDING CABLE AND THE CONNECTION CLAMP MUST BE IN ACCORDANCE WITH CID A-A-50696.
- QUICK DISCONNECT COUPLER: COUPLER MUST BE THE QUICK DISCONNECT, CAM TYPE THAT CONFORMS TO CID A-A-5936. PROVIDE COUPLER WITH A STAINLESS STEEL DUST PLUG AND A STAINLESS STEEL HANGING EYE FOR TRUCK OFFLOADING SYSTEMS.
- SUBMERSIBLE TURBINE PUMP: PROVIDE RED JACKET SUBMERSIBLE TURBINE PUMP, 3/4 HP MOTOR. SUBMERSIBLE PUMP MUST BE THE MULTI-STAGE, VERTICAL TYPE. PUMP AND MOTOR COMBINATION MUST OPERATE TOTALLY SUBMERGED IN THE PRODUCT OF THE STORAGE TANK. PUMP MUST EXTEND WITHIN 6-INCHES OF THE STORAGE TANK BOTTOM. PUMP FUEL INLETS MUST BE HORIZONTAL. PUMP MOUNTING MUST COMPLETELY SUPPORT BOTH THE WEIGHT AND VIBRATION OF THE PUMP. PUMP MUST INCLUDE A STEEL LIFTING LUG CAPABLE OF SUPPORTING THE WEIGHT OF THE ENTIRE PUMP AND MOTOR ASSEMBLY. PUMP MUST INCLUDE A VERTICAL SOLID SHAFT MOTOR, BASE MOUNTING FLANGE, VERTICAL PUMP DISCHARGE, LOW NET POSITIVE SUCTION HEAD (NPSH) FIRST STAGE IMPELLERS, AND DYNAMIC AND TRUST BALANCING OF IMPELLERS. PUMP MUST BE ACCESSIBLE FOR SERVICING WITHOUT DISTURBING CONNECTING PIPING. PUMP BASEPLATE CASING, AND BEARING HOUSING MUST BE OF CAST IRON CONSTRUCTION. PUMP MUST BE PROVIDED WITH A STAINLESS STEEL ONE PIECE PUMP SHAFT. INTERNAL PUMP COMPONENTS IN DIRECT CONTACT WITH THE FUEL TO BE HANDLED MUST BE OF COMPATIBLE CONSTRUCTION. PUMP BEARINGS MUST BE SELECTED TO GIVE A MINIMUM L-10 RATING LIFE OF 25,000 HOURS IN CONTINUOUS OPERATION. PROVIDE PUMP WITH THREADED END PIPING CONNECTIONS. PUMP SHALL INCLUDE AN INTEGRAL PRESSURE RELIEF VALVE SET AT 40 PSI, VENTURI-TYPE SYPHON PRIMER, CHECK VALVE, AND AIR ELIMINATOR.
- PRODUCT DISPENSING UNIT: PROVIDE A WAYNE FUELING SYSTEM SELECT EC FLEET FUEL DISPENSER TO MATCH EXISTING DISPENSERS, EXISTING MODEL NUMBER 3/G7242D/2GJK. DISPENSER MODEL TO BE VERIFIED IN THE FIELD. UNIT MUST CONFORM TO UL 87, MADE OF STAINLESS STEEL OR ALUMINUM. DISPENSER MUST BE REMOTE, COMPUTER CONTROLLED, LIGHTED, DOUBLE-SIDED ISLAND CONFIGURATION WITH TWO HOSE OUTLETS FOR SINGLE PRODUCT DELIVERY. UNIT MUST BE FOR DIESEL DISPENSING AT A DELIVERY FLOWRATE OF 22 GALLONS PER MINUTE FROM THE NOZZLE. PROVIDE DISPENSER WITH NECESSARY APPURTENANCES FOR OPERATION, INCLUDING A METER, MINIMUM 6-DIGIT TOTALIZER, INTERNAL FILTERS, HOSE MAST, NOZZLE BOOT, LOCKABLE HOUSING, AND GREEN PANELING.
 - HOSE: PROVIDE DISPENSING HOSE CONFORMING TO UL 330, GASOLINE AND OIL RESISTANT, STATICALLY GROUNDED, FLEXIBLE IN SUB-ZERO TEMPERATURES. PROVIDE A MINIMUM OF 12 FEET OF HOSE FOR EACH HOSE OUTLET ON THE DISPENSER.
 - NOZZLES: PROVIDE MANUALLY ACTIVATED, AUTOMATIC SHUTOFF TYPE NOZZLES WITH A LATCH-OPEN DEVICE FUEL NOZZLE. NOZZLES MUST HAVE FULL HAND INSULATOR TO PREVENT SPLASH-BACK.
 - BREAKAWAY DEVICE: PROVIDE EACH PRODUCT HOSE WITH UL LISTED EMERGENCY BREAKAWAY DEVICE DESIGNED TO RETAIN LIQUID ON BOTH SIDES OF BREAKAWAY POINT. BREAKAWAY DEVICE MUST HAVE PRESSURE BALANCING CHAMBER TO OVERRIDE LINE PRESSURE TO PREVENT NUISANCE BREAKS CAUSED BY RESTRICTION IN DELIVERY HOSE DIAMETER.
 - EMERGENCY SHUTOFF VALVE: PROVIDE VALVE THAT CONFORMS TO UL 842. VALVE MUST PROVIDE COMPLETE SHUTOFF FOR A FUEL LINE IN THE EVENT A DISPENSER IS DISLOCATED OR OVERTURNED DUE TO A SUDDEN IMPACT. VALVE MUST INCLUDE A SECONDARY POPPET TO LIMIT SPILLAGE FROM THE DISPENSER AFTER A KNOCKDOWN OR DURING INSTALLATION.
- DISPENSER SUMP: PROVIDE AN OPW ONE-PIECE POLYETHYLENE DISPENSER SUMP, OR APPROVED EQUAL, UNDER EACH DISPENSER UNIT TO PROVIDE CONVENIENT ACCESS TO AND SECONDARY CONTAINMENT OF PIPING COMPONENTS. SUMP MUST BE CONSTRUCTED OF POLYETHYLENE OR FIBERGLASS-REINFORCED PLASTIC (FRP) AND BE CHEMICALLY COMPATIBLE WITH FUEL TO BE HANDLED BY THE DISPENSING UNIT AND ANY CONNECTING PIPING. SUMP MUST MOUNT DIRECTLY TO THE BOTTOM OF THE DISPENSING UNIT WITH A STABILIZER BAR TO ASSURE PROPER SHEARING ACTION FOR THE EMERGENCY SHUTOFF VALVE. RAINFALL DRAINAGE MUST NOT DRAIN INTO THE SUMP. SUMP MUST BE CAPABLE OF WITHSTANDING UNDERGROUND BURIAL LOADS TO BE ENCOUNTERED.

- THE SIDES OF THE DISPENSER SUMP MUST ALLOW THE PENETRATION OF CARRIER PIPES, EXTERIOR CONTAINMENT PIPES, AND CONDUITS. ALL SUMP PENETRATIONS MUST HAVE ENTRY BOOT SEALS TO ENSURE NO WATER INFILTRATION INTO THE SUMP AND THAT LIQUID WILL NOT ESCAPE FROM THE SUMP SHOULD THE LIQUID LEVEL WITHIN THE SUMP RISE ABOVE THE PIPE PENETRATION. PROVIDE BOOT SEALS THAT ARE CHEMICALLY COMPATIBLE WITH THE FUEL TO BE HANDLED AND THAT ARE RESISTANT TO THE INFLUX OF GROUND WATER. BOOT AND SEALS MUST BE DESIGNED AND INSTALLED TO ACCOMMODATE THE ANTICIPATED AMOUNT OF THERMAL EXPANSION AND CONTRACTION IN THE PIPING SYSTEM.
- LEAK DETECTION SYSTEM: PROVIDE SENSORS AND DETECTORS THAT ARE COMPATIBLE WITH THE EXISTING TIS-450 ELECTRONIC MONITORING/ALARM PANEL LEAK DETECTION SYSTEM. PROVIDE SENSORS AND DETECTORS THAT ARE INTRINSICALLY SAFE FOR USE IN A CLASS 1, DIVISION 1, GROUP D ENVIRONMENT AS DEFINED BY NFPA 70. SENSORS MUST BE COMPATIBLE WITH THE FUEL TO BE HANDLED AND MUST DISTINGUISH AND REPORT THE DIFFERENCE BETWEEN HYDROCARBONS AND WATER. SENSORS MUST HAVE A MINIMUM PROBABILITY OF DETECTION OF 95 PERCENT AND A MAXIMUM PROBABILITY OF FALSE ALARM OF 5 PERCENT. SENSORS MUST BE REUSABLE AFTER AN ALARM CONDITION IS SENSED.
 - ABOVEGROUND STORAGE TANK: PROVIDE VEEDER-ROOT NON-DISCRIMINATING INTERSTITIAL SENSOR FOR STEEL TANKS. SYSTEM MUST CONTINUOUSLY AND AUTOMATICALLY MONITOR THE INTERSTITIAL SPACE OF A DOUBLE WALL TANK FOR BREACHES IN THE INTEGRITY OF THE PRIMARY TANK, ALARMING WHEN LIQUID IS DETECTED AT A MINIMUM OF ONE (1) INCH.
 - CONTAINMENT AND DISPENSER SUMPS: PROVIDE VEEDER-ROOT DISCRIMINATING DISPENSER PAN AND CONTAINMENT SUMP SENSORS. SYSTEM MUST CONTINUOUSLY AND AUTOMATICALLY MONITOR EACH CONTAINMENT SUMP AND DISPENSER SUMP WITH AN ELECTRONIC TYPE LIQUID SENSOR. SENSOR MUST DETECT LIQUIDS WITHIN A MINIMUM OF ONE (1) INCH ABOVE THE SUMP'S BOTTOM. THE LEAK DETECTION SYSTEM MUST BE CAPABLE OF TRIGGERING SHUTDOWN OF THE SUBMERSIBLE TURBINE PUMP.
 - UNDERGROUND PIPING: PROVIDE VEEDER-ROOT ELECTRONIC PRESSURIZED LINE LEAK DETECTION SYSTEM TO CONTINUOUSLY AND AUTOMATICALLY MONITOR FOR PIPING LEAKS USING AN AUTOMATIC LINE LEAK DETECTOR. DETECTOR MUST DETECT A MINIMUM LEAK RATE OF 3 GALLONS PER HOUR AT 10 PSIG LINE PRESSURE WITHIN 1 HOUR. DETECTOR MUST DETECT LEAKS AGAINST A MINIMUM OF 6 FEET OF HEAD PRESSURE. DETECTOR SHALL DETECT LEAKS FROM ANY PORTION OF THE UNDERGROUND PRODUCT PIPING.
- DEF DISPENSER: PROVIDE BLUE1 INSULATED TOTE CABINET FOR DIESEL EXHAUST FLUID STORAGE AND DISPENSING. DISPENSER AND STORAGE MUST BE A SINGLE UNIT, CONSTRUCTED OF FIBERGLASS REINFORCED PLASTIC (FRP) AND BE WEATHERPROOF WITH A CABINET HEATER. PROVIDE A PRIMARY STORAGE CONTAINER FOR 330 GALLONS AND SECONDARY CONTAINMENT. UNIT MUST BE ACCESSIBLE FROM EITHER SIDE OF THE FUELING ISLAND AND HAVE LOCKABLE ACCESS PANELS. MATERIALS AND COMPONENTS MUST BE COMPATIBLE WITH DEF. PROVIDE DISPENSER WITH NECESSARY APPURTENANCES FOR OPERATION, INCLUDING A METER, TRANSFER PUMP, MINIMUM 5-DIGIT TOTALIZER, NOZZLE, AND HOSE.

REQUIREMENTS FOR WELDING OF FUELING PIPING

- PIPING SYSTEMS MUST MEET THE MATERIAL, FABRICATION AND OPERATING REQUIREMENTS OF ASME B31.3, EXCEPT AS MODIFIED HEREIN. ALL WELDING OF FUEL PIPING SHALL CONFORM TO ASME B31.3.
- CONTRACTOR MUST BE RESPONSIBLE FOR THE QUALITY OF ALL JOINT PREPARATION, WELDING, AND EXAMINATION. ALL MATERIALS USED IN THE WELDING OPERATIONS MUST BE CLEARLY IDENTIFIED AND RECORDED.
- WELDING PROCEDURES, WELDERS, AND WELDING OPERATORS MUST BE QUALIFIED IN ACCORDANCE WITH ASME B31.3 AND ASME BPVC SECTION IX.
- ALL WPS, PQR, AND WELDER QUALIFICATIONS MUST BE SUBMITTED TO AND APPROVED BY AWWU OR AWWU'S ENGINEER PRIOR TO ANY WELDING OF PROCESS PIPING. CONTRACTOR MUST PROVIDE THE SERVICES OF A COMMERCIALY INDEPENDENT NDE COMPANY TO PERFORM REQUIRED VISUAL EXAMINATION (VT), RADIOGRAPHIC EXAMINATION (RT), LIQUID PENETRANT EXAMINATION (PT) AND/OR MAGNETIC PARTICLE EXAMINATION (MT) AS INDICATED HEREIN. ACCEPTANCE STANDARDS MUST MEET THE REQUIREMENTS OF ASME B31.3.
- PROVIDE 100% VISUAL EXAMINATION OF ALL COMPLETED SOCKET AND BUTT WELDING IN ACCORDANCE WITH ASME B31.3 AND ASME BPVC SECTION V.
- A MINIMUM OF 30% OF ALL BUTT WELDS ON PROCESS PIPING MUST RECEIVE RADIOGRAPHIC EXAMINATION IN ACCORDANCE WITH ASME B31.3 AND ASME BPVC SECTION V. RADIOGRAPHIC EXAMINATION MUST INCLUDE AT LEAST TWO FIELD WELDS OF EACH PIPE SIZE.
- A MINIMUM OF 30% OF ALL SOCKET WELDS ON PROCESS PIPING MUST RECEIVE MAGNETIC PARTICLE EXAMINATION OR LIQUID PENETRANT EXAMINATION IN ACCORDANCE WITH ASME B31.3 AND ASME BPVC SECTION V.
- WELD MAPS MUST BE KEPT CURRENT AT ALL TIMES (AWWU MAY REQUEST TO SEE THEM AT ANY TIME) AND MUST BE SUBMITTED TO AWWU AS PART OF THE PROJECT CLOSEOUT DOCUMENTS.

PIPE AND FIELD-FABRICATED STRUCTURE COATINGS

- ALL PROVIDED ABOVEGROUND PIPE, FLANGES, WELDS, VALVES AND OTHER PIPING COMPONENTS SHALL BE COATED PER THE FOLLOWING REQUIREMENTS.
- WHERE EXPOSED, THE ABOVEGROUND PORTION OF PIPE SUPPORTS AND OTHER PROVIDED STRUCTURAL STEEL SHALL BE COATED PER THE FOLLOWING REQUIREMENTS.
- PROVIDE THE FOLLOWING THREE-COAT COATING SYSTEM. ALL THREE COATS SHALL BE OF THE SAME MANUFACTURER. SURFACE PREP AND APPLICATION SHALL BE PER MANUFACTURER'S RECOMMENDATIONS, TOP COAT COLORS SHALL BE WHITE.
 - EPOXY POLYAMIDE, ZINC-RICH PRIMER COAT (2-4 MILS)
 - EPOXY POLYAMIDE INTERMEDIATE COAT (2-4 MILS)
 - UV-RESISTANT POLYURETHANE TOPCOAT (2.5-4 MILS)
- VALVES AND PIPING COMPONENTS PROVIDED WITH A FACTORY-APPLIED PRIMER SHALL ONLY RECEIVE THE INTERMEDIATE AND TOP COATS.

START-UP AND COMMISSIONING REQUIREMENTS



- PRIOR TO ANY ON-SITE COMMISSIONING ACTIVITIES, THE FOLLOWING SAFETY PROCEDURE MUST BE ACCOMPLISHED IN ALL FUELING AREAS TO BE COMMISSIONED:
 - PLACEMENT OF CONTRACTOR-PROVIDED PORTABLE EYEWASH UNITS
 - VERIFICATION OF PROPER GROUNDING THROUGHOUT SYSTEM
 - COORDINATION WITH AWWU PERSONNEL, ANCHORAGE FIRE DEPARTMENT, AND SAFETY OFFICERS
 - PLACEMENT OF CONTRACTOR-PROVIDED FIRE EXTINGUISHERS CAPABLE OF EXTINGUISHING A FUEL FIRE.
- THE CONTRACTOR MUST SUBMIT A DETAILED WRITTEN PLAN FOR IMPLEMENTATION OF SYSTEM COMMISSIONING. THE PLAN MUST BE SUBMITTED FOR AWWU OR AWWU ENGINEER'S APPROVAL TWENTY (20) CALENDAR DAYS PRIOR TO COMMENCEMENT OF FUEL SYSTEM COMMISSIONING.
- THE CONTRACTOR MUST BE RESPONSIBLE FOR PROPERLY DISPOSING OF ANY SLUDGE, DEBRIS, FILTRATION ELEMENTS, AND WASTE FUEL RESULTING FROM PIPING CLEANING AND FLUSHING ACTIVITIES. COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS FOR HAZARDOUS WASTE DISPOSAL.
- AWWU WILL PROVIDE THE FUEL AND VEHICLES NECESSARY FOR SYSTEM TESTING. THE CONTRACTOR MUST NOTIFY AWWU A MINIMUM OF THIRTY (30) DAYS IN ADVANCED OF THE REQUIREMENTS.
- PNEUMATICALLY AND HYDROSTATICALLY PRESSURE TEST THE ABOVEGROUND CARBON STEEL PIPING. WITH FUEL, HYDROSTATICALLY TEST THE TANK FILL PIPING AT 150 PSIG AND TEST DISPENSER ISSUE PIPING AT 75 PSIG, IN ACCORDANCE WITH ASME B31.3 AND API RP 1110, FOR FOUR (4) HOURS.
- PRESSURE TEST DOUBLE-WALL DISPENSER SUPPLY PIPING AT 75 PSIG IN ACCORDANCE WITH THE PIPE MANUFACTURER'S WRITTEN INSTRUCTION.
- FLUSH EACH DISPENSER WITH APPROXIMATELY 50 GALLONS OF FUEL TO REMOVE SEDIMENT AND VISIBLE PARTICULATE USING THE INTERNAL DISPENSER FILTER(S). FLUSH EACH DISPENSER THROUGH ONE HOSE USING ONE INTERNAL FILTER. ONE DESIGNATED FILTER FOR EACH PRODUCT MAY BE USED TO FLUSH EACH DISPENSER BY TRANSFERRING THE FILTER BETWEEN DISPENSERS. UPON COMPLETION OF FLUSHING, PROVIDE NEW DISPENSER FILTER(S) THAT WAS/WERE USED FOR FLUSHING. ALL FUEL USED FOR FLUSHING MUST BE RETURNED TO AWWU.
- PRIOR TO ENERGIZING THE ELECTRICAL EQUIPMENT, VERIFY THAT SHORT-CIRCUIT LINKS HAVE BEEN REMOVED FROM THE CURRENT TRANSFORMER AND THAT SECONDARY CIRCUITS HAVE BEEN CONNECTED. VERIFY ALL ELECTRICAL EQUIPMENT MEETS CLASS 1 DIVISION 1 REQUIREMENTS. CONDUIT EXPLOSION-PROOF SEAL-OFFS SHALL BE POURED AFTER INITIAL ELECTRICAL CHECKS BUT BEFORE FUEL RECEIPT.
- PRIOR TO INITIAL FUEL DISPENSING, VERIFY THAT EACH EFSO SWITCH WILL TRIP THE CIRCUIT BREAKER IN THE FUEL DISPENSERS.
- PERFORM EQUIPMENT TESTS OF THE TRUCK OFFLOAD AND DISPENSING CAPABILITIES AND ALARM CONDITIONS TO CONFIRM THAT INDIVIDUAL COMPONENTS ARE CORRECTLY INSTALLED AND ARE OPERATIONAL.
- WITH ONE FUELING PUMP/DISPENSER OPERATING, TEST EACH EFSO PUSHBUTTON STATION TO VERIFY THAT PUMP STOPS. REPEAT THIS PROCEDURE FOR EACH FUELING PUMP DISPENSER AND EFSO PUSHBUTTON STATION.
- VERIFY THE SUMP LEAK DETECTION SENSOR ARE FUNCTIONING BY REMOVING AND DIPPING IN SEPARATE BUCKETS WITH FUEL AND WATER. VERIFY THE SENSOR PROVIDES ALARMS IN THE EXISTING ATG PANEL.
- DURING PERFORMANCE TESTING, THE CONTRACTOR MUST DEMONSTRATE THAT ALL PORTIONS OF THE FUEL SYSTEM ARE OPERATING AS DESIGNED AND SPECIFIED. IN THE EVENT THAT A PORTION OF THE SYSTEM OR ANY PIECE OF EQUIPMENT FAILS TO MEET THE TEST, THE CONTRACTOR MUST MAKE THE NECESSARY REPAIRS OR ADJUSTMENT AND REPEAT THE PERFORMANCE TEST UNTIL SATISFACTORY PERFORMANCE IS OBTAINED.

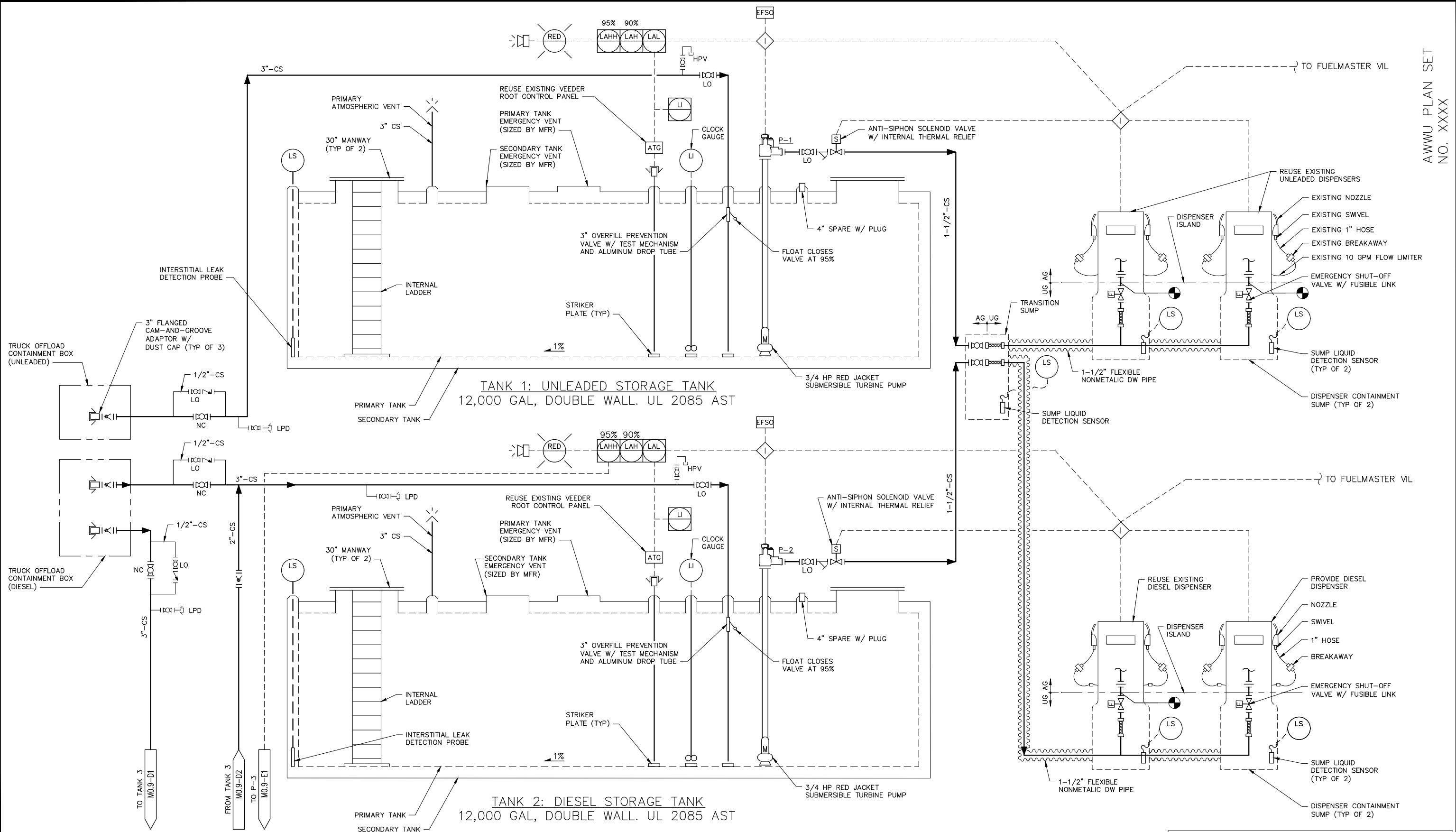
AWWU PLAN SET
NO. XXXX

Plot Date: Aug 17, 2020 - 3:29pm Drawing File: P:\Projects\9559\Coal\Current\Mech\No. 2.dwg Last modified by: aliss

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

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MECHANICAL SPECIFICATIONS	
MO.2	
HORZ SCALE: N/A	DATE: 08/17/2020
VERT SCALE: N/A	GRID: SW2431
PROJ. ID.: WW:H7960	SHEET 23 of 42



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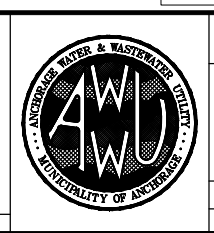
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CONSULTANT SEAL



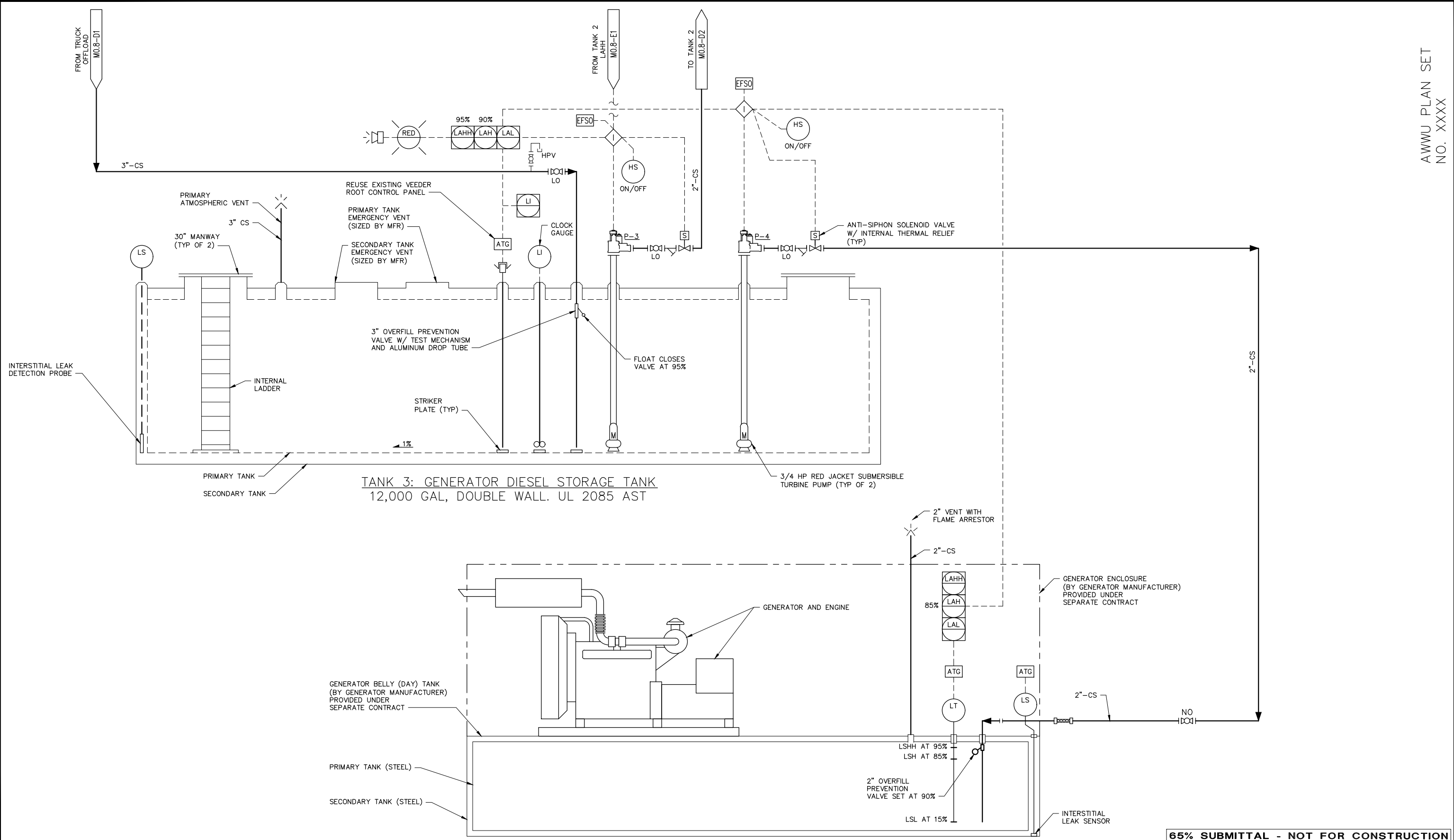
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KING STREET
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PIPING & INSTRUMENTATION DIAGRAM
MO.8

HORZ SCALE: N/A DATE: 08/17/2020 GRID: SW2431 SHEET 24 of 42
 VERT SCALE: N/A
 PROJ. ID.: WW.H7960



TANK 3: GENERATOR DIESEL STORAGE TANK
12,000 GAL, DOUBLE WALL. UL 2085 AST

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

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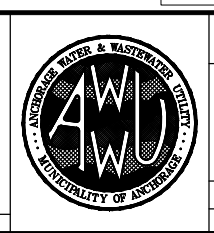
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CONSULTANT



MUNICIPALITY OF ANCHORAGE
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KING STREET
 FUELING FACILITY IMPROVEMENTS

GENERATOR PIPING & INSTRUMENTATION DIAGRAM M0.9

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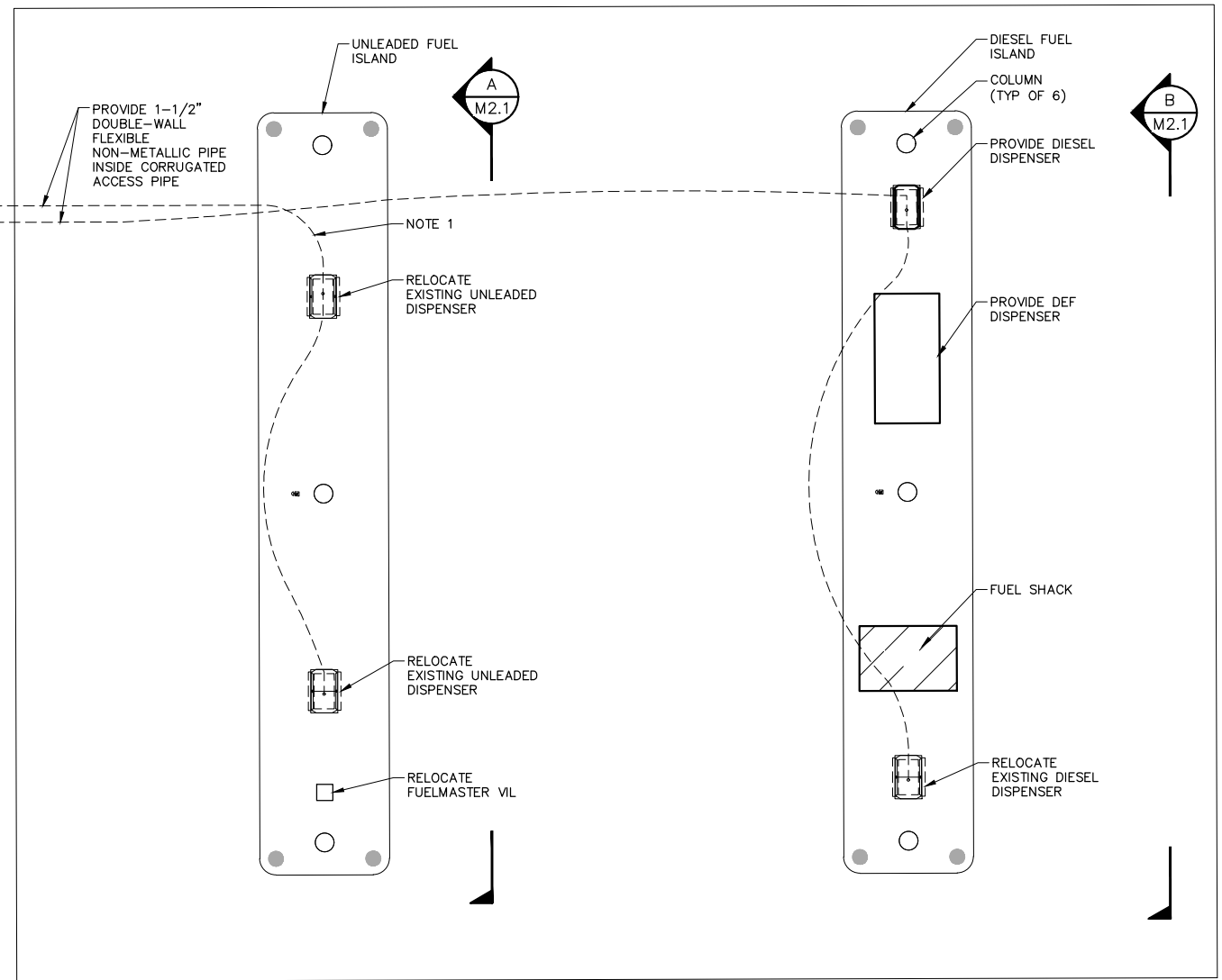
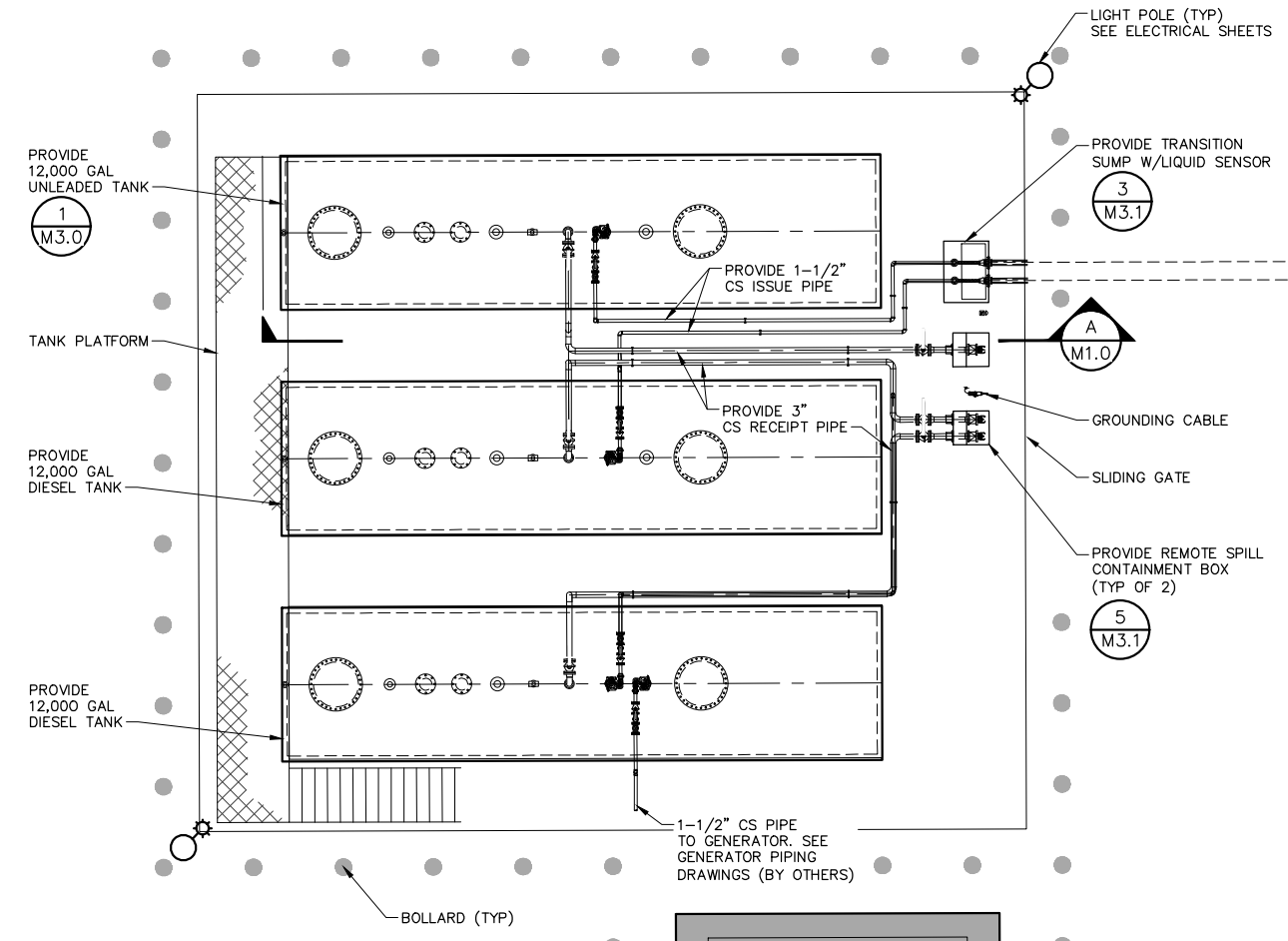
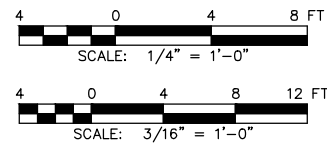
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SHEET NOTE

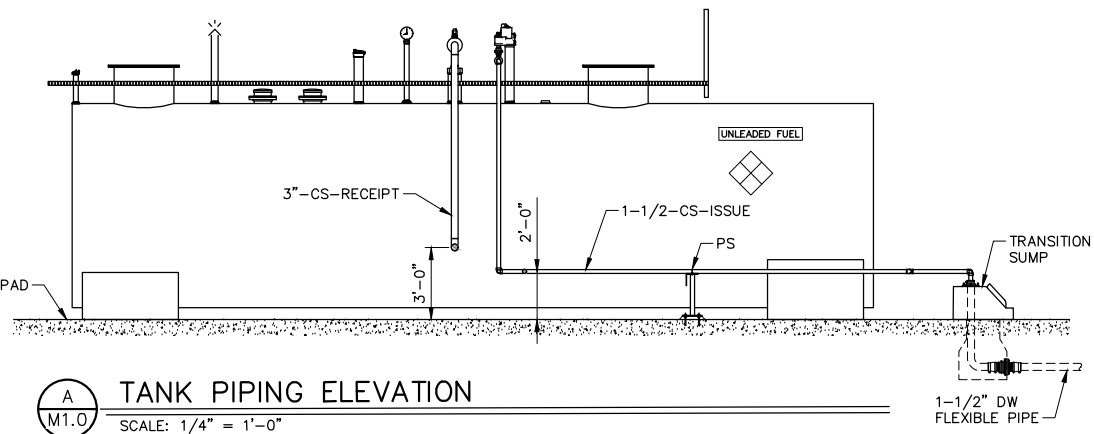
1. FOLLOW MANUFACTURER'S ALLOWANCE FOR BEND RADIUS FOR FLEXIBLE PIPE.

AWWU PLAN SET
NO. XXXX



FUEL STATION SITE PLAN

SCALE: 3/16" = 1'-0"



A TANK PIPING ELEVATION
SCALE: 1/4" = 1'-0"

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

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BY: _____ TITLE: _____
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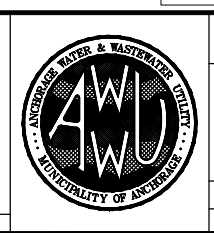
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FUELING FACILITY IMPROVEMENTS

MECHANICAL SITE PLAN

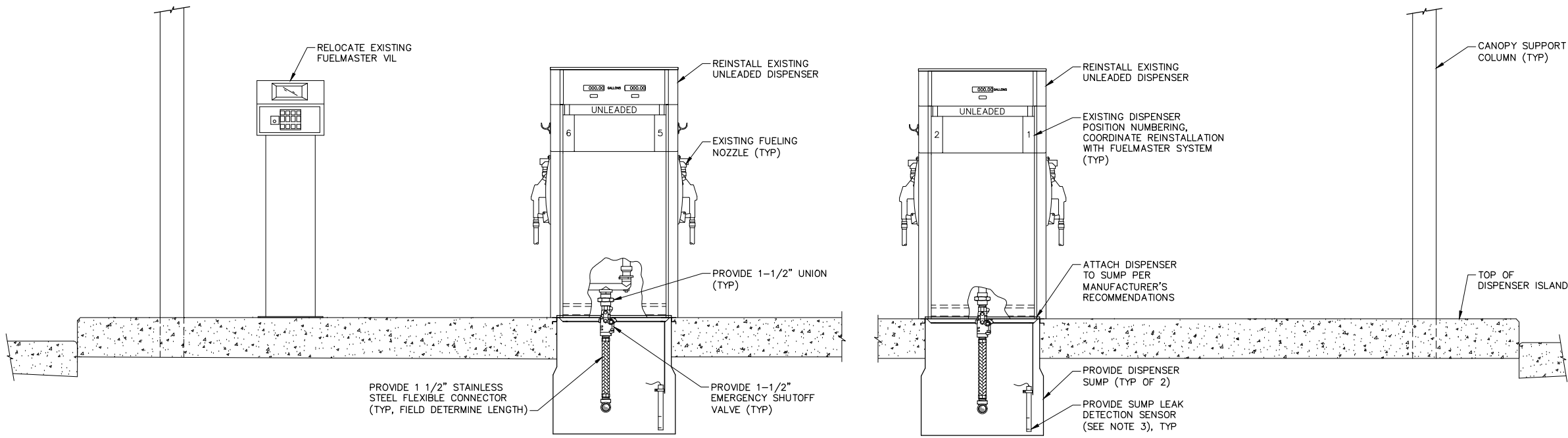
AWWU

DATE: 08/17/2020
GRID: SW2431
SHEET 26 of 42

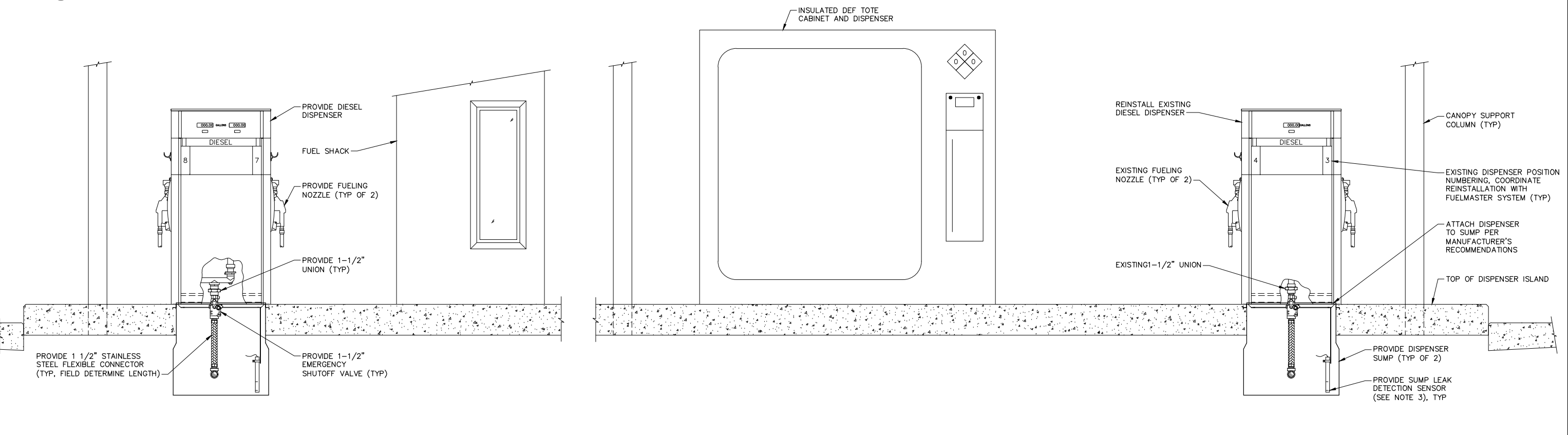
Plot Date: Aug 17, 2020 - 3:30pm Drawing File: P:\Projects\9559\Cost\Current\Mech\M1_0.dwg Last modified by: alius

SHEET NOTES

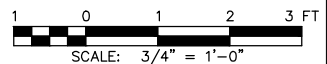
- DIMENSIONS OF DISPENSER SUMPS ARE APPROXIMATE. COORDINATE DISPENSER SUMP SELECTION WITH DISPENSER MODEL. SEE M-001 FOR THE EXISTING GASOLINE AND DIESEL DISPENSER INFORMATION.
- HYDROSTATICALLY TEST THE DISPENSER SUMPS PRIOR TO BACKFILLING TO VERIFY THE SUMP PENETRATIONS ARE LIQUID TIGHT. SEE MO.1 FOR TESTING REQUIREMENTS.
- RE-INSTALL THE TWO EXISTING UNLEADED DISPENSERS AND ONE DIESEL DISPENSER AFTER SUMP INSTALLATION PER THE DISPENSER MANUFACTURER'S INSTRUCTIONS. COORDINATE INSTALLATION AND DISPENSING POSITIONS WITH THE FUELMASTER SYSTEM.
- EXISTING DISPENSER HOSES, HOSE HANGERS, SWIVELS AND BREAKAWAY DEVICES NOT SHOWN FOR CLARITY. REUSE EXISTING DISPENSER HOSES AND EQUIPMENT.
- ELECTRICAL CONDUITS NOT SHOWN FOR CLARITY. SEE ELECTRICAL FOR CONDUIT ROUTING AND CONNECTIONS.
- PROVIDE ONE DISPENSER SUMP LEAK DETECTION SENSOR PER DISPENSER SUMP. SECURE SENSOR TO SUMP PER SENSOR MANUFACTURER'S RECOMMENDATIONS. SEE ELECTRICAL FOR SENSOR CONNECTION TO THE EXISTING VEEDER-ROOT TLS-450 PANEL.



A UNLEADED DISPENSER ISLAND ELEVATION
SCALE: 3/4" = 1'-0"



B DIESEL DISPENSER ISLAND ELEVATION
SCALE: 3/4" = 1'-0"



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

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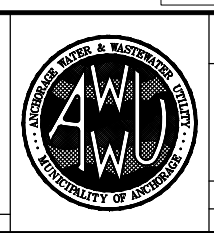
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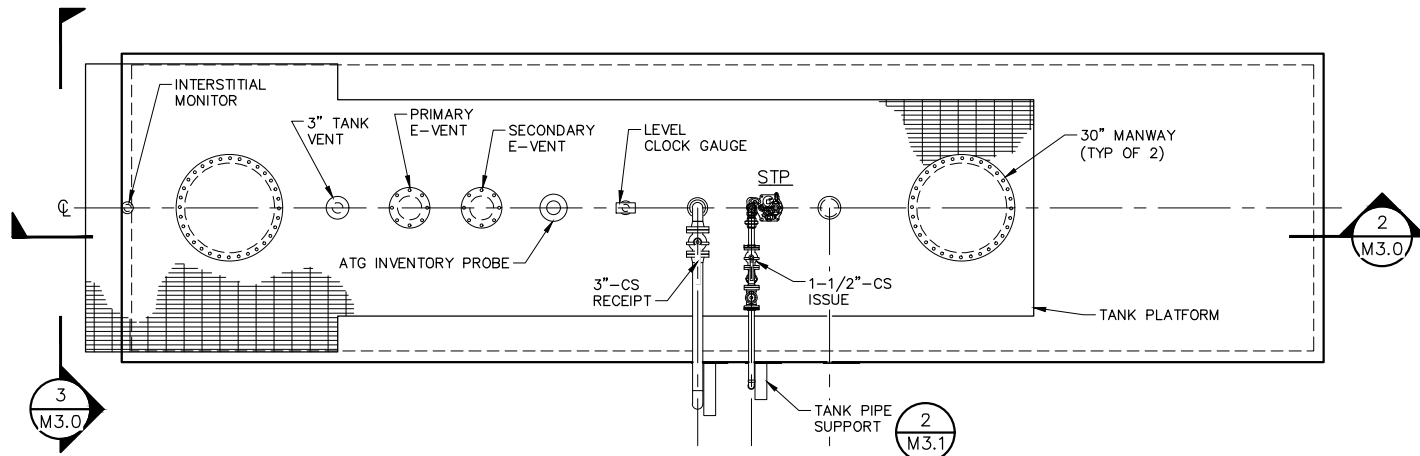
FUEL ISLAND ELEVATION

M2.1

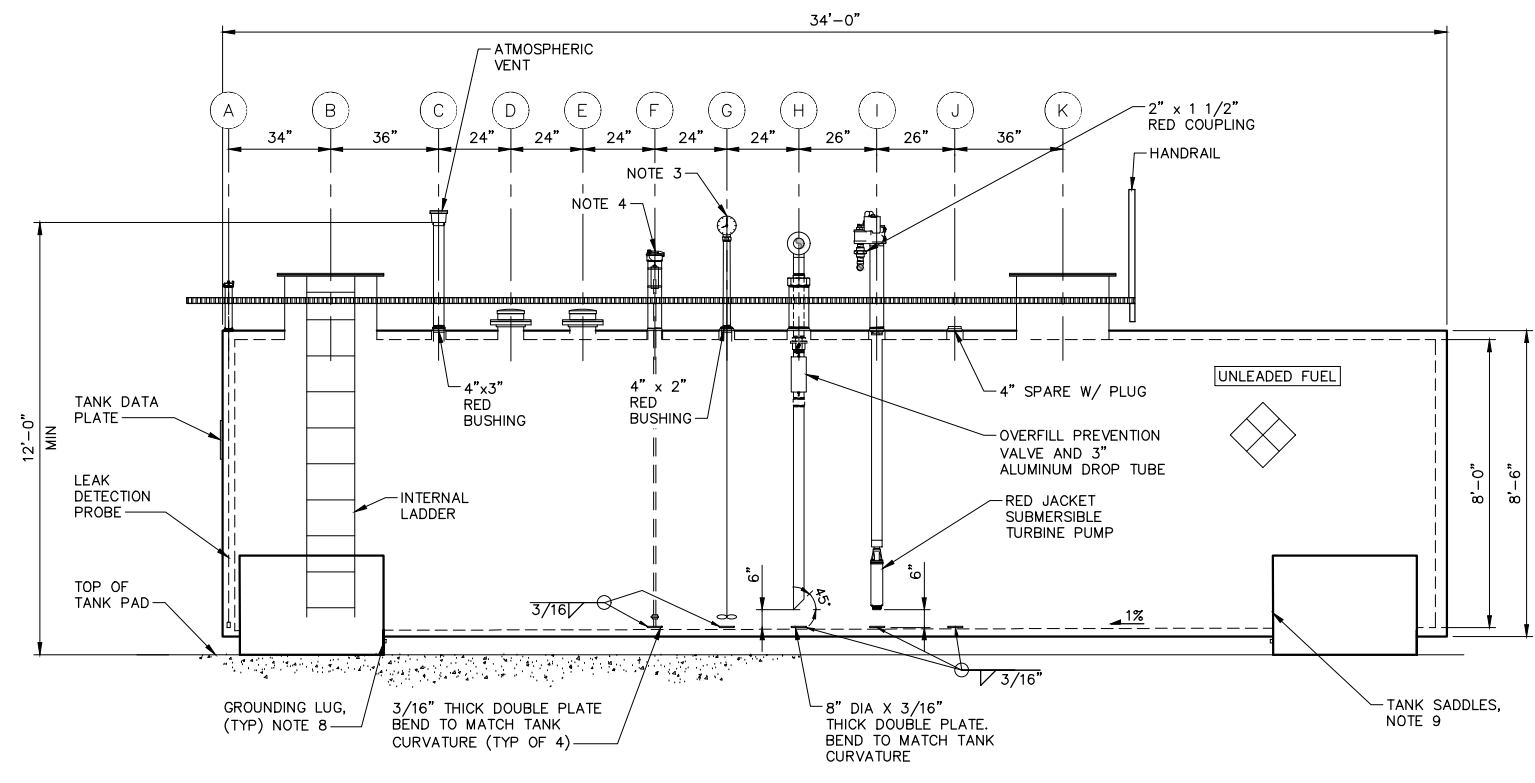
HORZ SCALE: 3/16"=1' DATE: 08/17/2020 GRID: SW2431
VERT SCALE: N/A
PROJ. ID.: WW:H7960

SHEET 27 of 42

Plot Date: Aug 17, 2020 - 3:30pm Drawing File: P:\Projects\9559\Cost\Current\Mech\M2.1.dwg Last modified by: alius



1 TYPICAL 12,000 GALLON TANK PLAN
SCALE: 3/8" = 1'-0"

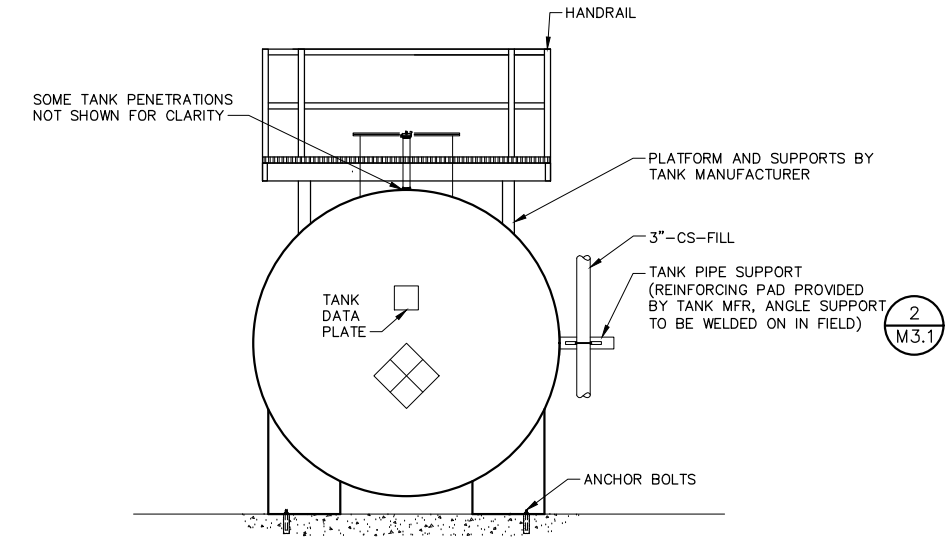


2 TYPICAL 12,000 GALLON TANK SECTION
SCALE: 3/8" = 1'-0"

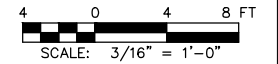
SHEET NOTES

1. DETAILS FOR UNLEADED TANK SHOWN. DIESEL TANKS ARE SIMILAR. SEE TANK NOZZLE SCHEDULE REMARKS FOR NOZZLE J.
2. TANK MUST BE A UL 2085 LISTED TANK.
3. PROVIDE CLOCK GAUGE 2'-0" ABOVE PLATFORM GRATING. CLOCK GAUGE MUST FACE THE OFFLOAD CONNECTION POINT.
4. 4" TIGHT FILL ADAPTER W/ DUST-CAP WITH 4" SCH 40 THD RISER (16" LONG OR LENGTHEN TO SIT ABOVE GRATING).
5. FOR TANK PIPE SUPPORT DETAIL, SEE 2/M3.1
6. FOR OVERFILL PREVENTION VALVE DETAIL, SEE 1/M3.1.
7. FOR TANK LABELING DETAIL, SEE 4/M3.1.
8. CONNECT GROUNDING WITH EXOTHERMIC GROUND TO GROUNDING RING. FOR TANK GROUNDING DETAIL, SEE 4/E3.0.
9. TANK MANUFACTURER TO SLOPE TANK 1% BY THE HEIGHT OF THE SADDLES.

TANK NOZZLE SCHEDULE				
	QTY	SIZE	TYPE	REMARKS
(A)	1	2"	FNPT	INTERSTITIAL MONITOR
(B)	1	30"	-	MANWAY
(C)	1	4"	FNPT	3" TANK VENT
(D)	1	8"	RFSO	PRIMARY E-VENT (SIZED BY TANK MFR)
(E)	1	8"	RFSO	SECONDARY E-VENT (SIZED BY TANK MFR)
(F)	1	4"	FNPT	ATG LEVEL PROBE
(G)	1	4"	FNPT	LEVEL GAUGE (CLOCK)
(H)	1	6"	FNPT	TANK FILL
(I)	1	4"	FNPT	ISSUE/SUBMERSIBLE TURBINE PUMP
(J)	1	4"	FNPT	TANKS 1 & 2: SPARE, TANK 3: SUBMERSIBLE TURBINE PUMP (TRANSFER TO TANK 2)
(K)	1	30"	-	MANWAY



3 TYPICAL 12,000 GALLON TANK END ELEVATION
SCALE: 3/8" = 1'-0"



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

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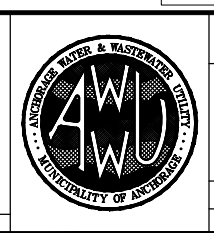
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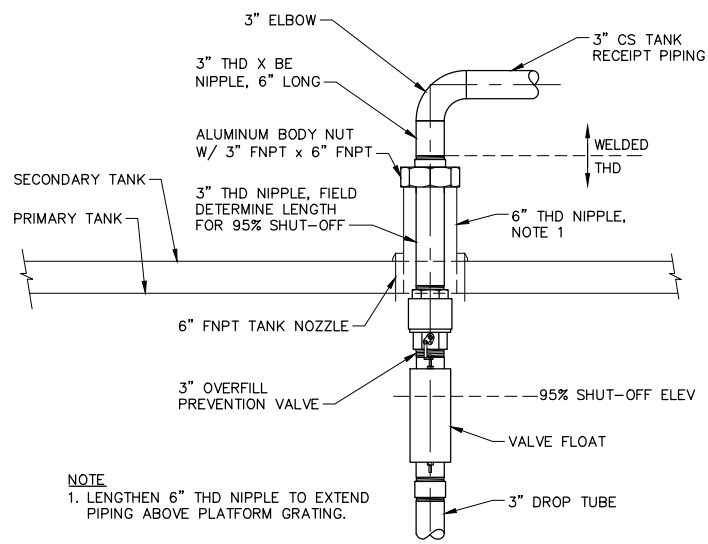


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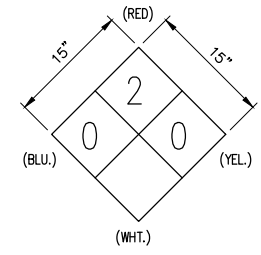
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TYPICAL 12,000 GALLON TANK DETAILS M3.0

HORIZ SCALE: AS NOTED DATE: 08/17/2020 GRID: SW2431 SHEET 28 of 42
 VERT SCALE: N/A PROJ. ID: WW:H7960

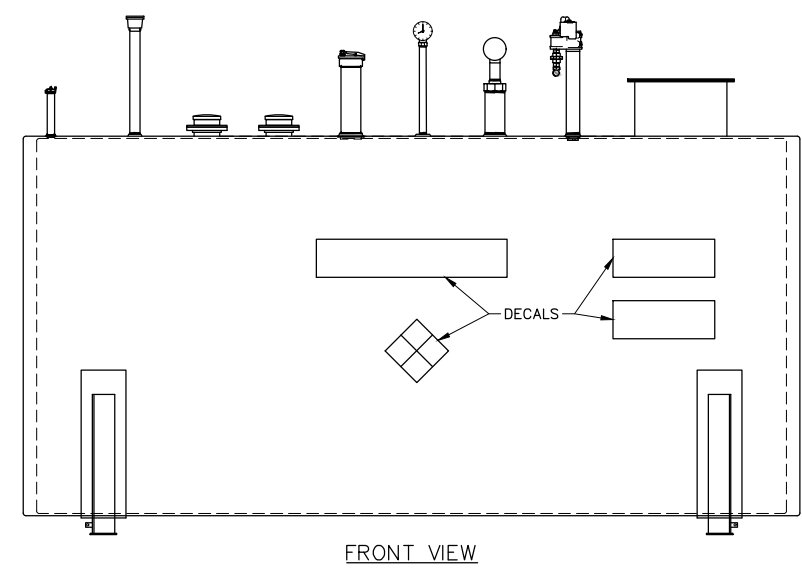


1 OVERFILL PREVENTION VALVE
M3.1 SCALE: 1" = 1'-0"



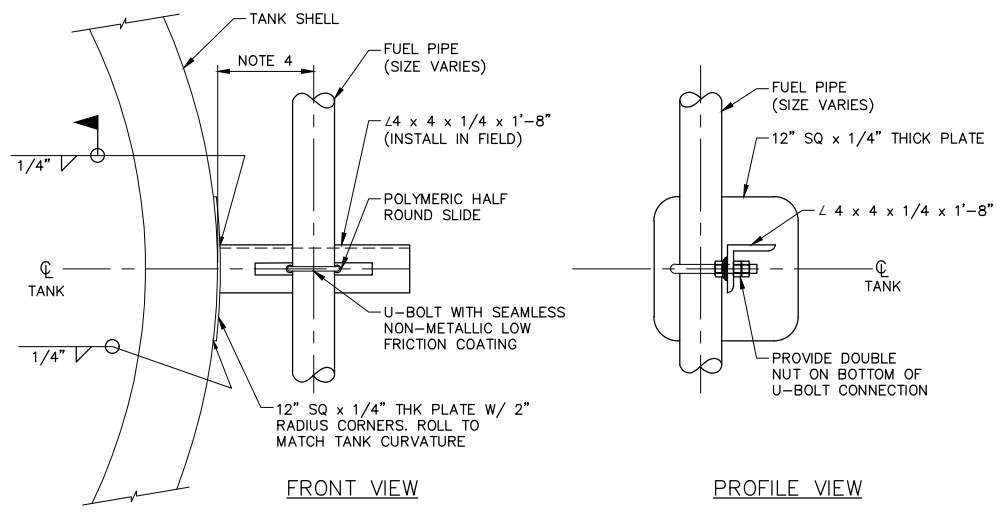
STAMPED ALUMINUM HAZARD SIGNAL SYSTEM PER NFPA 704 CHAPTER 6. (INSTALL ON ALL VISIBLE SIDES)

TANK NOZZLE I.D.'s



FRONT VIEW

4 ABOVEGROUND STORAGE TANK LABELING REQUIREMENTS
M3.1 SCALE: NTS



FRONT VIEW

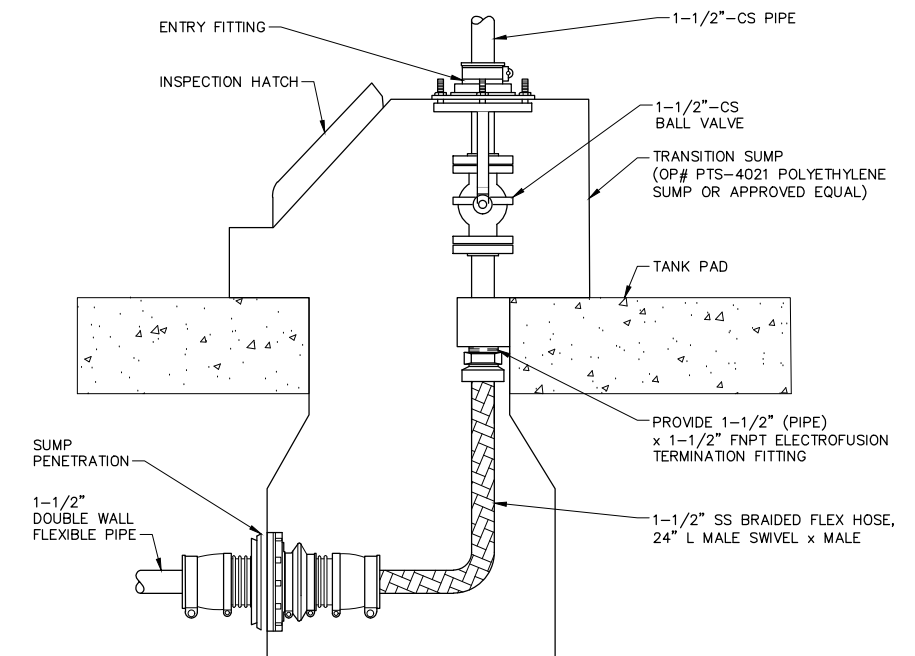
PROFILE VIEW

- NOTES**
1. ALL REINFORCING PLATE WELDS MUST BE COMPLETED BY TANK MFR.
 2. TIGHTEN U-BOLT SO IT IS SNUG AGAINST PIPE. PROVIDE DOUBLE NUT ON UNDERSIDE OF U-BOLT TO PREVENT LOOSENING.
 3. TANK MANUFACTURER TO WELD AND COAT REINFORCING PLATE IN THE SHOP AND PROVIDE ANGLE SUPPORT FOR INSTALLATION IN THE FIELD. CONTRACTOR TO WELD ANGLE TO REINFORCING PLATE FOR FUEL PIPE ALIGNMENT AND TO REPAIR ANY DAMAGED COATINGS ON PLATE IN THE FIELD.
 4. FOR DISTANCE FROM TANK SEE PLAN VIEW M1.0.

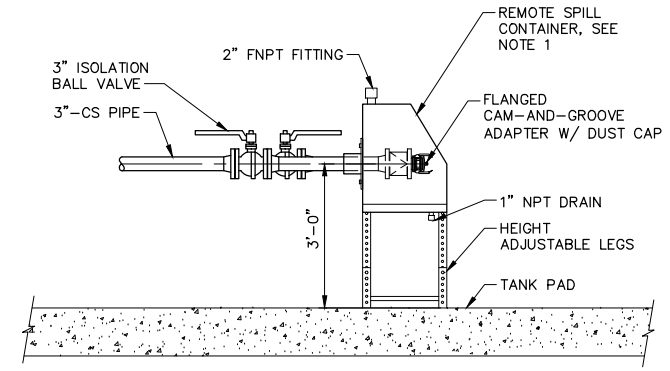
2 TANK PIPE SUPPORT
M3.1 SCALE: 1 1/2" = 1'-0"

- | | |
|--|--|
| XX,XXX # | 1 1/2" BLACK LETTERS ON WHITE BACKGROUND (INSTALL ON ONE VISIBLE SIDE) |
| WEIGHT (empty) | 1" BLACK LETTERS ON WHITE BACKGROUND |
| MAIN TANK VENT | 1" BLACK LETTERS ON WHITE BACKGROUND |
| MAIN TANK EMERGENCY VENT VENTING CAPACITY XXX,XXX CFH MIN | 1" BLACK LETTERS ON WHITE BACKGROUND |
| INTERSTITIAL EMERGENCY VENT VENTING CAPACITY XXX,XXX CFH MIN | 1" BLACK LETTERS ON WHITE BACKGROUND |
| LEAK DETECTION TUBE | 1" BLACK LETTERS ON WHITE BACKGROUND |
| INTERSTITIAL SENSOR | 1" BLACK LETTERS ON WHITE BACKGROUND |
| X,XXX GALLON CAPACITY | 1 1/2" BLACK LETTERS ON WHITE BACKGROUND (INSTALL ON ONE VISIBLE SIDE) |
| CAUTION: THIS TANK TO CONTAIN PETROLEUM PRODUCTS ONLY | 1" & 3/4" BLACK LETTERS ON WHITE BACKGROUND (ONE ON EACH VISIBLE SIDE) |
| NO SMOKING | 3" RED LETTERS ON WHITE BACKGROUND (ONE ON EACH VISIBLE SIDE) |
| COMBUSTIBLE | 3" RED LETTERS ON WHITE BACKGROUND (ONE ON EACH VISIBLE SIDE) |
| DIESEL FUEL | 3" RED LETTERS ON WHITE BACKGROUND (ONE ON EACH VISIBLE SIDE) |
- INSTALL NEXT TO CORRESPONDING TANK OPENING

REQUIRED TANK DECALS

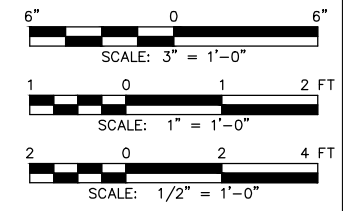


3 TRANSITION SUMP DETAIL
M3.1 SCALE: 1 1/2" = 1'-0"



- NOTE**
1. PROVIDE SPILL CONTAINER WITH 1 ENTRY HOLE FOR UNLEADED AND SPILL CONTAINER WITH 2 ENTRY HOLES FOR DIESEL.

5 REMOTE SPILL CONTAINER DETAIL
M3.1 SCALE: 1/2" = 1'-0"



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

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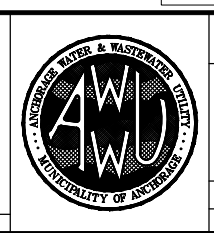
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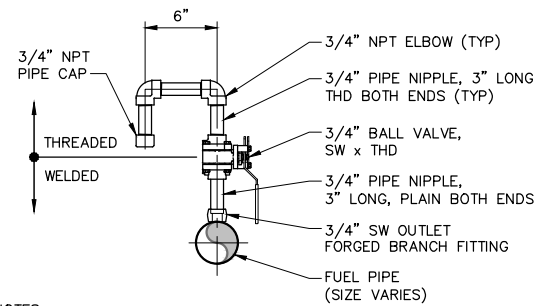
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MECHANICAL DETAILS

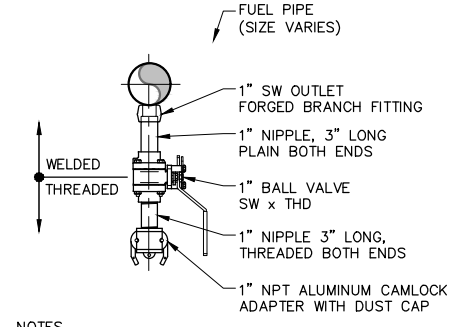
M3.1

HORIZ SCALE: AS NOTED DATE: 08/17/2020 GRID: SW2431 SHEET 29 of 42
VERT SCALE: N/A PROJ. ID.: WW.H7960



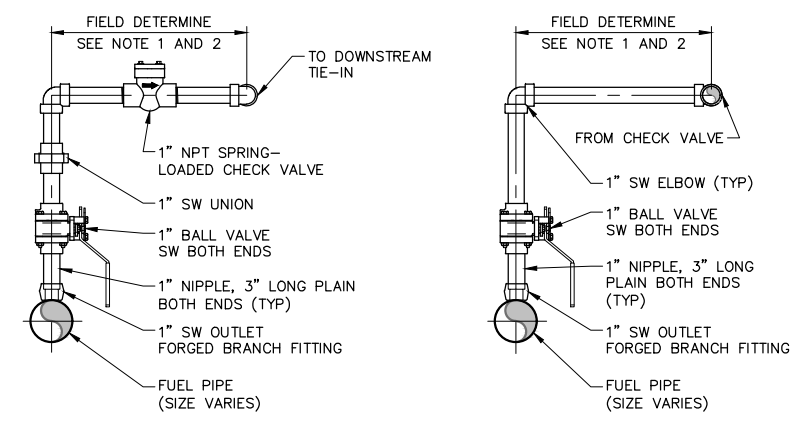
- NOTES**
1. ENSURE VALVE HAS ADEQUATE CLEARANCE TO ALLOW FULL ROTATION OF VALVE HANDLE.
 2. REMOVE VALVE SEATS DURING WELDING.

1 HIGH POINT VENT (HPV)
SCALE: 1 1/2" = 1'-0"



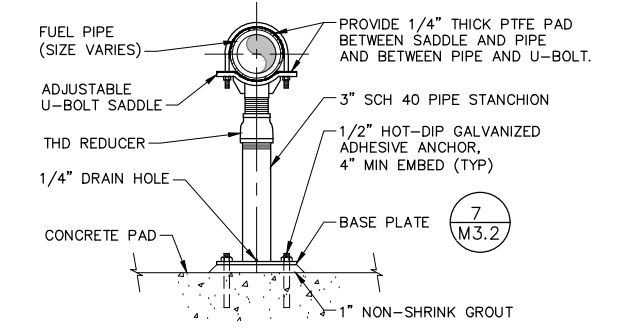
- NOTES**
1. PROVIDE 90 DEGREE ELBOW AND LOCATE DRAIN VALVE HORIZONTALLY WHERE REQUIRED FOR CLEARANCE ABOVE FINISH SURFACE OR ACCESSIBILITY UNDER PIPE RACKS.
 2. REMOVE VALVE SEATS DURING WELDING.

2 LOW POINT DRAIN (LPD)
SCALE: 1 1/2" = 1'-0"



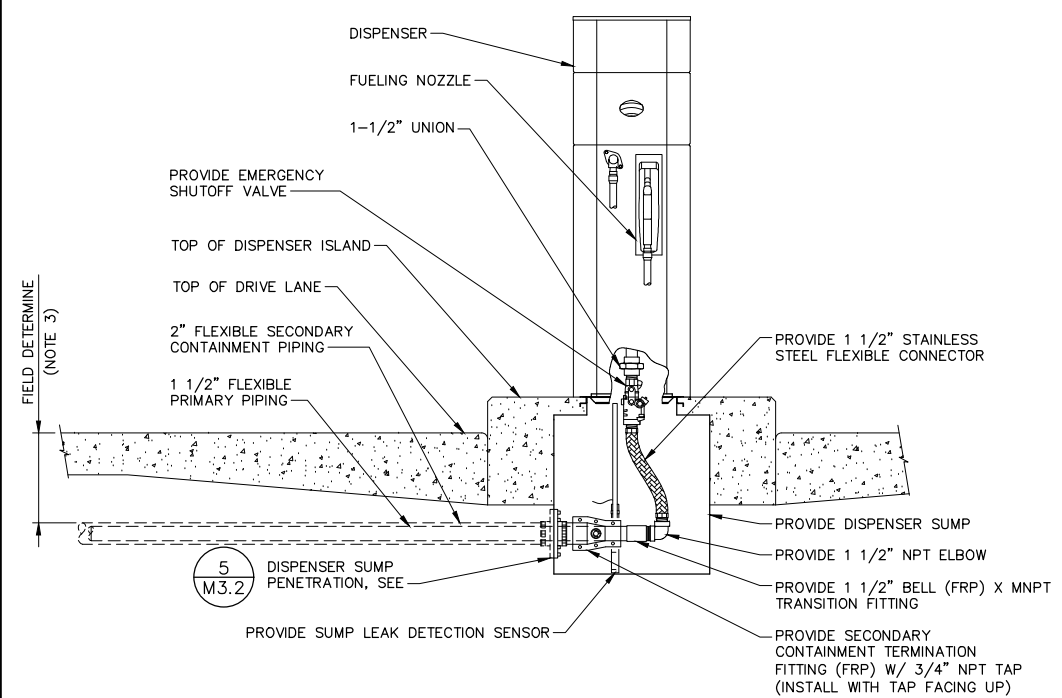
- PROTECTED PIPE**
- NOTES**
1. ADJUST DIMENSION AS REQUIRED TO CLEAR DOWNSTREAM CONFLICTS.
 2. ROUTE CHECK VALVE OUTLET PIPING TO CLEAR VALVE OPERATING MECHANISM, AND TO LOCATIONS AS INDICATED. PROVIDE A MINIMUM OF 6 INCHES CLEARANCE AROUND VALVE OPERATORS.
 3. ALL CONNECTIONS ARE SOCKET WELDED OR THREADED AS INDICATED.
 4. REMOVE BALL VALVE SEATS DURING WELDING.
 5. INSTALL CHECK VALVE IN HORIZONTAL ORIENTATION AS SHOWN.
 6. LOCK BALL VALVES OPEN USING PLASTIC STRAPS (CAR SEALS).

3 CHECK VALVE RELIEF ASSEMBLY
SCALE: 1 1/2" = 1'-0"



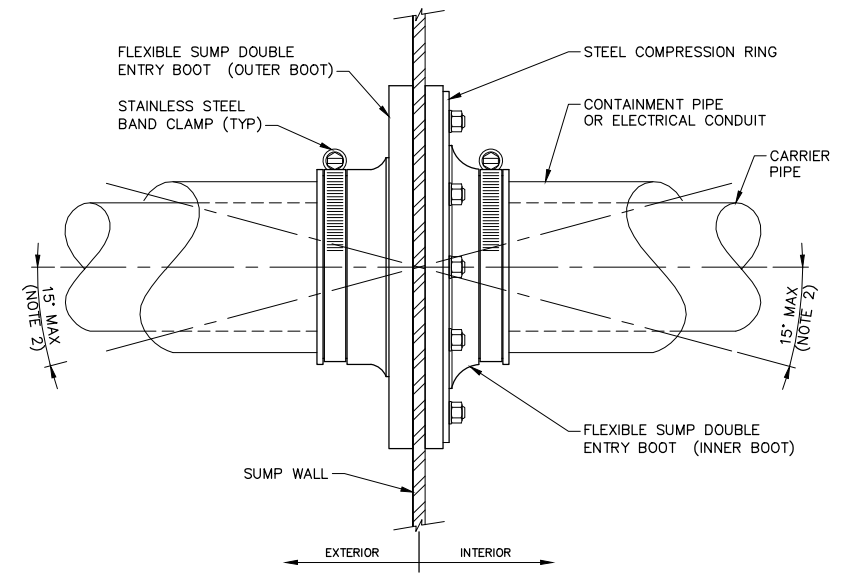
- NOTES**
1. FIELD DETERMINE SUPPORT HEIGHT.
 2. IF U-BOLT IS TEFLON COATED, THEN PTFE NEED ONLY BE PLACED BETWEEN THE PIPE AND SADDLE.
 3. SUPPORT FINISH MUST BE HOT-DIP GALVANIZED.
 4. FOR EACH PIPE SIZE, PROVIDE APPROPRIATE U-BOLT AND SADDLE.

4 ADJUSTABLE PIPE SUPPORT
SCALE: 1" = 1'-0"



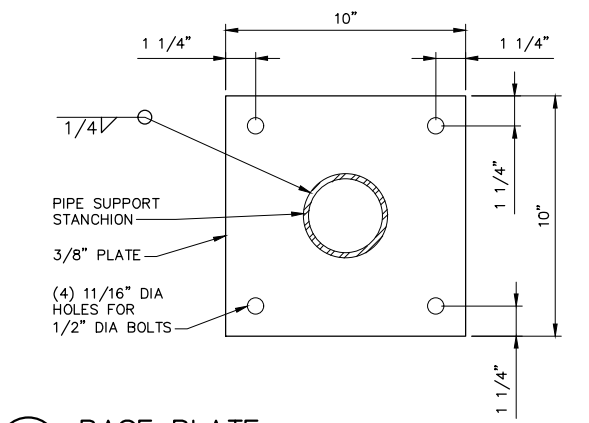
- NOTES**
1. PROVIDE DOUBLE WALL FLEXIBLE NON-METALLIC PIPE FITTINGS AS REQUIRED TO ROUTE PIPING THROUGH THE SUMP WALL.
 2. EXISTING DISPENSER HOSES, HOSE HANGERS, SWIVELS AND BREAKAWAY DEVICES NOT SHOWN FOR CLARITY. REUSE EXISTING DISPENSER HOSES AND EQUIPMENT FOR TWO UNLEADED AND ONE DIESEL DISPENSER. PROVIDE ONE NEW DIESEL DISPENSER WITH EQUIPMENT.
 3. ELECTRICAL CONDUITS NOT SHOWN FOR CLARITY.

5 TYPICAL DISPENSER SIDE ELEVATION
SCALE: 3/4" = 1'-0"

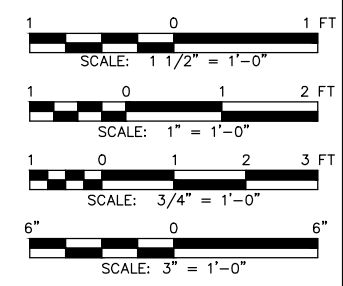


- NOTES**
1. INSTALL ENTRY BOOT PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
 2. PIPING AND CONDUIT PENETRATION INTO THE SUMP SHALL HAVE A MAXIMUM ANGLED ENTRY (MEASURED PERPENDICULAR TO THE SUMP WALL) OF 15 DEGREES OR AS RECOMMENDED BY THE FLEXIBLE ENTRY BOOT MANUFACTURER, WHICHEVER IS LESS.
 3. PROVIDE ENTRY BOOT MANUFACTURER'S RECOMMENDED SEALANT AROUND SEALING FLANGE AND FASTENERS.

6 DISPENSER SUMP PENETRATION DETAIL
SCALE: NTS



7 BASE PLATE
SCALE: 3" = 1'-0"



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

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ENTERPRISE ENGINEERING, INC.
2525 GAMBELL STREET SUITE 200 ANCHORAGE, AK 99503
(907) 563-3835 FAX (907) 563-3817

400 US ROUTE 1 NORTH SUITE 6 FAIRBANKS, WY 84105
(207) 869-8006 FAX (207) 869-8015

CONSULTANT SEAL

MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

KING STREET
FUELING FACILITY IMPROVEMENTS

MECHANICAL DETAILS

M3.2

HORZ SCALE: AS NOTED DATE: 08/17/2020 GRID: SW2431
VERT SCALE: N/A PROJ. ID.: WW:H7960

SHEET 30 of 42

PIPING LEGEND	LOGIC	ABBREVIATIONS
<p>----- COLD WATER</p> <p>----- COLD WATER CIRCULATION</p> <p>---XXX--- SEE ABBREVIATIONS FOR MEDIA</p> <p>○ PIPE UP</p> <p>○ PIPE DOWN</p> <p>○ TEE UP</p> <p>○ TEE DOWN</p> <p>--- --- UNION</p> <p>○ ○ BALL/BUTTERFLY VALVE</p> <p>∇ CHECK VALVE</p> <p>△ RELIEF VALVE</p> <p>○ PUMP</p> <p>∇ ANTI SIPHON VALVE</p>	<p>● POINT OF CONNECTION</p> <p>5 M2 ○ DETAIL NUMBER</p> <p>1 △ SHEET LOCATED ON</p> <p>1 △ SHEET NOTES</p>	<p>ADA AMERICAN W/ DISABILITIES ACT GUIDELINES</p> <p>AFG ABOVE FINISHED GRADE</p> <p>AMPS AMPERES</p> <p>BTUH BRITISH THERMAL UNIT/HOUR</p> <p>CW COLD WATER</p> <p>CWC COLD WATER CIRCULATION</p> <p>DIA DIAMETER</p> <p>DEG DEGREE</p> <p>DN DOWN</p> <p>EAT ENTERING AIR TEMPERATURE</p> <p>FT FEET</p> <p>F FAHRENHEIT</p> <p>FPW FIRE PROTECTION WATER</p> <p>GPH GALLONS PER HOUR</p> <p>GAL GALLONS</p> <p>GPM GALLONS PER MINUTE</p> <p>HD HEAD</p> <p>HW HOT WATER</p> <p>HP HORSEPOWER</p> <p>IN INCHES</p> <p>MAX MAXIMUM</p> <p>MBH THOUSAND BTUH</p> <p>MIN MINIMUM</p> <p>MOD MOTOR OPERATED DAMPER NUMBER</p> <p>NEC NATIONAL ELECTRICAL CODE</p> <p>O/A OUTSIDE AIR</p> <p>PD PRESSURE DROP</p> <p>PH PHASE</p> <p>PSI POUND PER SQUARE INCH</p> <p>R/A RETURN AIR</p> <p>RL RAIN LEADER</p> <p>RD-X ROOF DRAIN DESIGNATOR</p> <p>RPM REVOLUTIONS PER MINUTE</p> <p>OD-X OVERFLOW DRAIN DESIGNATOR</p> <p>S/A SUPPLY AIR</p> <p>TEMP TEMPERATURE</p> <p>TSP TOTAL STATIC PRESSURE</p> <p>T'STAT THERMOSTAT</p> <p>TYP TYPICAL</p> <p>UPC UNIFORM PLUMBING CODE</p> <p>V VENT</p> <p>VTR VENT THRU ROOF</p> <p>WPD WATER PRESSURE DROP</p>

PLUMBING FIXTURE SCHEDULE

SYMBOL	MANUFACTURER	MODEL	DESCRIPTION	MOUNTING	CW	HW	WASTE	VENT	TRAP	COLOR	TRIM/REMARKS
RD-1	ZURN	Z100	ROOF DRAIN	FLOOR	---	---	3	---	---	---	NO HUB CAST IRON BODY WITH CAST IRON STRAINER
OD-1	ZURN	Z100	ROOF DRAIN OVERFLOW	FLOOR	---	---	3	---	---	---	NO HUB CAST IRON BODY WITH CAST IRON STRAINER, 2" WATER DAM

FRONT END ADMINISTRATIVE

THE INFORMATION SHOWN ON THIS DRAWING IS TAKEN FROM A NON-DESTRUCTIVE WALK THROUGH OF THE FACILITY. THE CONTRACTOR SHALL FIELD VERIFY ALL ITEMS SCHEDULED FOR DEMOLITION PRIOR TO START OF WORK.

PLANS - THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM PER THE FOLLOWING PLANS AND SPECIFICATIONS. THE DRAWINGS ARE PARTLY DIAGRAMMATIC, NOT NECESSARILY SHOWING ALL OFFSETS OR EXACT LOCATIONS OF PIPING AND DUCTS, UNLESS SPECIFICALLY DIMENSIONED.

CODE - ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE INTERNATIONAL BUILDING CODE (IBC), INTERNATIONAL MECHANICAL CODE (IMC), UNIFORM PLUMBING CODE (UPC), FACILITIES STANDARDS FOR THE PUBLIC BUILDINGS SERVICE (PBS-P100) AND NATIONAL ELECTRICAL CODE (NEC) AS AMENDED BY THE STATE OF ALASKA.

EQUIPMENT SUBSTITUTIONS - ALL EQUIPMENT LISTED IS REPRESENTATIVE OF THE STANDARD OF QUALITY AND PERFORMANCE REQUIRED. "OR EQUAL" SUBSTITUTIONS WILL BE CONSIDERED IF THE SUBSTITUTE CATALOG CUTS ARE SUBMITTED AND ARE SHOWN TO BE OF EQUAL OR BETTER QUALITY, INCLUDING EFFICIENCY OF PERFORMANCE, SIZE AND WEIGHT.

WARRANTY - ALL WORK PERFORMED UNDER THIS CONTRACT SHALL BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM ACCEPTANCE. ANY FAULTY MATERIALS OR WORKMANSHIP SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER DURING THE GUARANTEE PERIOD.

ELECTRICAL WORK - ALL ELECTRICAL WORK IS TO BE PERFORMED BY A LICENSED ELECTRICIAN, IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, NEC.

MATERIALS - ALL MATERIALS OTHER THAN OWNER SUPPLIED SHALL BE NEW AND UNUSED, INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS AND IN THE BEST PRACTICE OF THE CRAFT. OBTAIN OWNER'S APPROVAL OF ALL PRODUCTS PRIOR TO ORDERING OR INSTALLING ANY PART OF ANY SYSTEM.

SUBMITTALS - PROVIDE SUBMITTALS FOR ROOF DRAINS, RAIN LEADER PIPING, INSULATION,

ACCESS - PROVIDE WORKABLE ACCESS TO ALL SERVICEABLE AND/OR OPERABLE EQUIPMENT.

PIPING


RAIN LEADER:

CAST IRON PIPE: CISPI 301, HUBLESS, SERVICE WEIGHT. FITTINGS: CAST IRON. JOINTS: CISPI 310, NEOPRENE GASKETS AND STAINLESS STEEL CLAMP-AND-SHIELD ASSEMBLIES.

INSULATION

PIPING - GLASS FIBER, RIGID, MOLDED, NON-COMBUSTIBLE INSULATION; ANSI/ASTM C547; 'K' VALUE OF 0.24 AT 75 DEG F, RATED TO 850 DEG F, VAPOR RETARDER JACKET OF KRAFT PAPER BONDED TO ALUMINUM FOIL; JOHNS MANVILLE "MICRO-LOK" OR EQUAL. PVC JACKET, JOHNS MANVILLE ZESTON OR EQUAL.

65% SUBMITTAL - NOT FOR CONSTRUCTION

<p>VERIFY SCALE</p> <p>THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.</p> <p>IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.</p> <p>FULL SIZE SCALE HORZ SCALE: 1"=1" VERT SCALE: N/A</p>	<p>RECORD DRAWING Note: To be filled out on original drawings upon project completion.</p> <p>1. DATA PROVIDED BY: _____</p> <p>This shall serve to certify that these Record Drawings are a true and accurate representation of the project as constructed.</p> <p>CONTRACTOR: _____</p> <p>BY: _____ TITLE: _____</p> <p>DATE: _____</p> <p>2. DATA TRANSFERRED BY: _____</p> <p>COMPANY: _____</p> <p>DATE: _____</p>	<p>REUSE OF DOCUMENTS</p> <p>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.</p>	<p>RSA</p> <p>Mechanical and Electrical Consulting Engineers</p> <p>670 West Fireweed Lane, Suite 200 Anchorage, AK 99503 (907)276-0521 Corporate No.: AECC542</p>		<p>MUNICIPALITY OF ANCHORAGE WATER & WASTEWATER UTILITY</p> <p>KING STREET FUELING FACILITY IMPROVEMENTS</p> <p>SCHEDULE AND SPECIFICATIONS LEGEND, ABBREVIATIONS, P0.1</p>	<p>HORZ SCALE: N/A VERT SCALE: N/A</p> <p>DATE: 08/17/2020 GRID: SW2431</p> <p>PROJ. ID.: WW:H7960</p>	<p>SHEET 31 of 42</p>

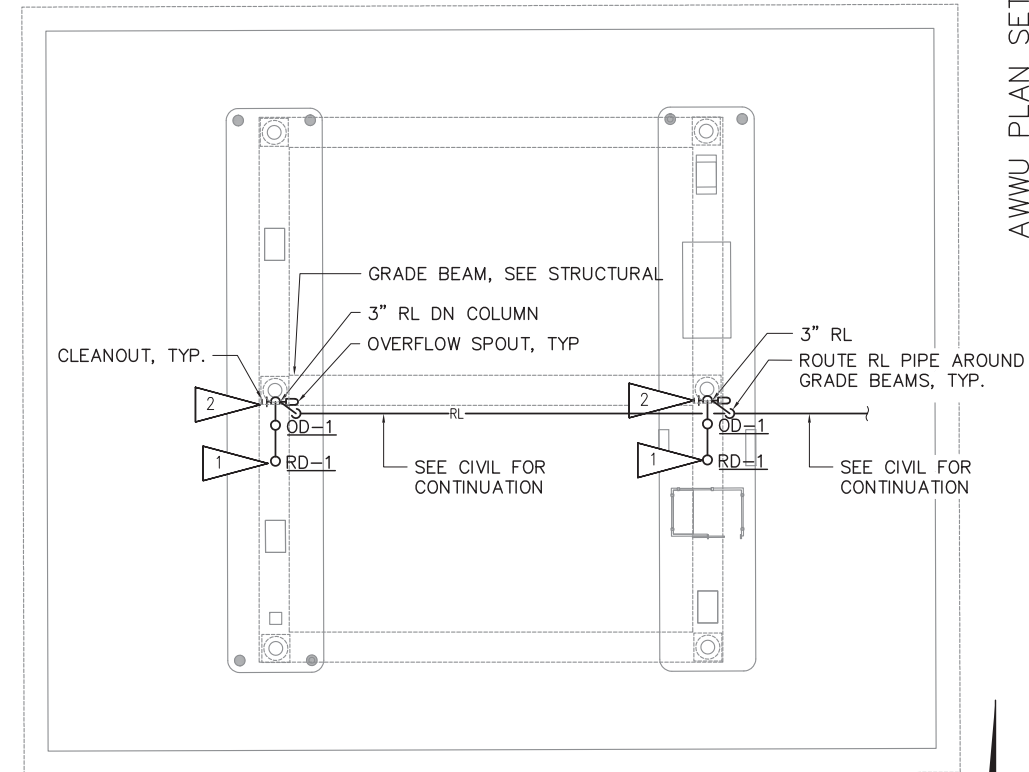
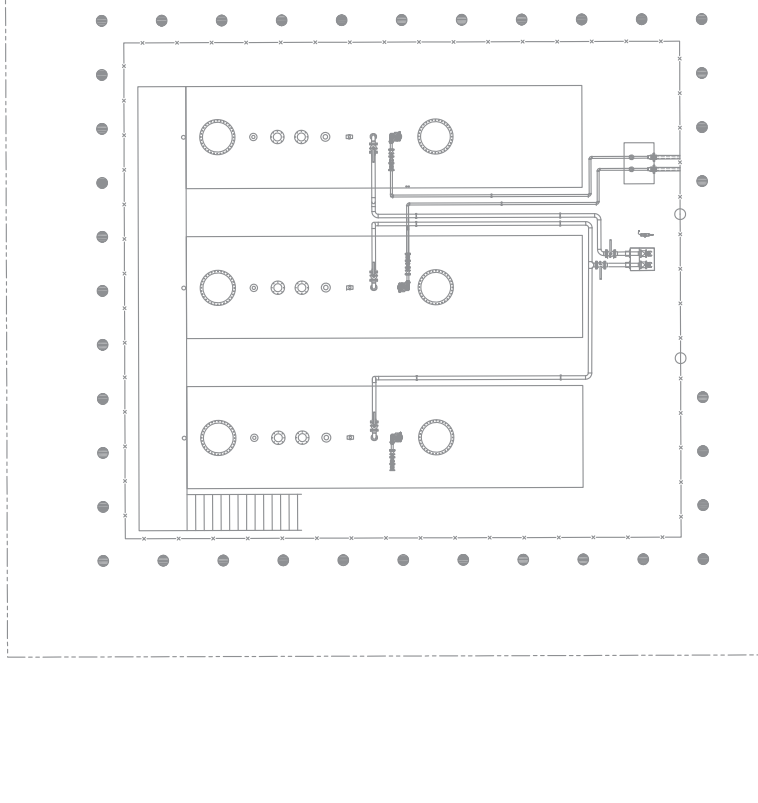
GENERAL NOTES:

A. HEAT TRACE AND INSULATE RAIN LEADER SUMPS AND PIPING

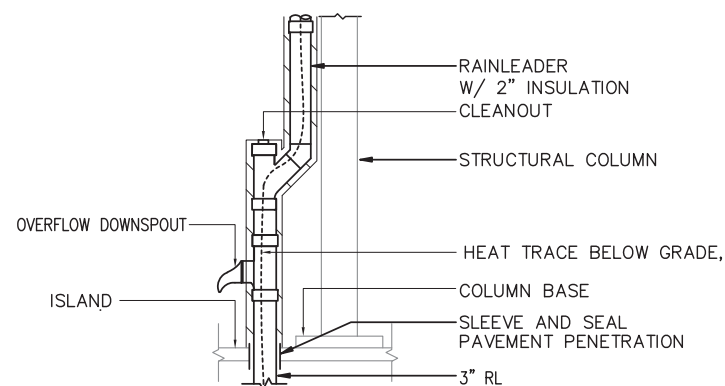
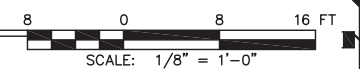
SHEET NOTES:

1 FOR ROOF DRAIN DETAIL SEE - (3) P1.1

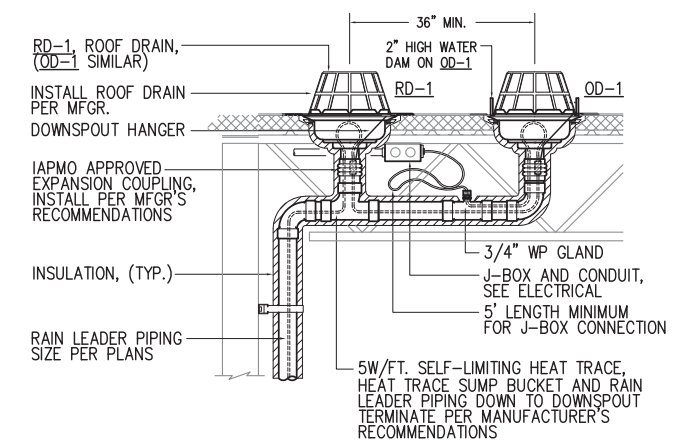
2 CLEAN OUT AND OVERFLOW DOWNSPOUT SHOWN OFFSET FOR CLARITY. FOR DETAIL SEE - (2) P1.1



1 ROOF PLUMBING PLAN
SCALE: 1/8" = 1'-0"



2 OVERFLOW AND CLEANOUT DETAIL
NO SCALE



3 RAIN LEADER DETAIL
NO SCALE

65% SUBMITTAL - NOT FOR CONSTRUCTION

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DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE
BASE			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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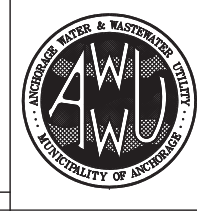
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Corporate No.: AECC542



MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

KING STREET
FUELING FACILITY IMPROVEMENTS

ROOF PLUMBING PLAN

HORZ SCALE: N/A
VERT SCALE: N/A
DATE: 08/17/2020
GRID: SW2431
PROJ. ID.: WWH7960

P1.1
SHEET 32 of 42

AWWU PLAN SET
NO. XXXX

LEGEND

	ROUND LIGHT FIXTURE - PENDANT OR SURFACE MTD CLG		DISCONNECT SWITCH (FUSED)
	LIGHT FIXTURE - SURFACE MTD ON WALL		COMBINATION DISCONNECT/MAGNETIC MOTOR STARTER
	LINEAR LIGHT FIXTURE - SURFACE MTD CLG		VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT
	LINEAR LIGHT FIXTURE - PENDANT MTD		TELECOMMUNICATIONS OUTLET (COMBINATION TELEPHONE & DATA)
	LINEAR LIGHT FIXTURE - WALL MTD		SECURITY CONTROL PANEL
	STRIPLIGHT - PENDANT OR SURFACE MTD CLG		PROXIMITY CARD READER
	STRIPLIGHT - WALL MTD		SECURITY KEYPAD
	FLOODLIGHT - OUTDOORS, WEATHERPROOF		CLOSED CIRCUIT TELEVISION CAMERA (WALL MOUNTED)
	POLE MOUNTED AREA LIGHT - OUTDOORS, WEATHERPROOF		CLOSED CIRCUIT TELEVISION CAMERA (CEILING MOUNTED)
	FIXTURE TAG (LETTER INDICATES TYPE)		DUPLEX RECEPTACLE TO BE REMOVED (DASHED OR DOTTED LINES INDICATE ITEMS TO BE REMOVED TYPICAL)
	SINGLE POLE SWITCH		NOTE TAG (No. INDICATES NOTE)
	SINGLE POLE SWITCH (LOWERCASE LETTER INDICATES SWITCHING)	AFF	ABOVE FINISHED FLOOR
	THREE WAY SWITCH, FOUR WAY SWITCH	AFG	ABOVE FINISHED GRADE
	DIMMER SWITCH	C	CONDUIT
	KEY OPERATED SWITCH	CO	CONDUIT ONLY
	PILOT LIGHT SWITCH	E	DENOTES EXISTING ITEM
	OCCUPANCY SENSOR WALL SWITCH (DUALTECH)	EM	DENOTES EMERGENCY POWER
	OCCUPANCY SENSOR WALL SWITCH DUAL LEVEL (DUALTECH)	GFCI	GROUND FAULT CIRCUIT INTERRUPTER
	OCCUPANCY SENSOR - CEILING MOUNTED (DUALTECH)	GRSC	GALVANIZED RIGID STEEL CONDUIT
	OCCUPANCY SENSOR - WALL MOUNTED (PIR)	K	KELVIN
	PHOTOCELL	LED	LIGHT EMITTING DIODE
	CONDUIT, CONCEALED	LM	LUMENS
	NUMBER AND SIZE OF WIRES (NO MARKS = 3 #12)	MCB	MAIN CIRCUIT BREAKER
	HOMERUN TO PANEL (PANEL AND CIRCUIT No.)	MLO	MAIN LUGS ONLY
	EXISTING, NEW PANEL	NEC	NATIONAL ELECTRICAL CODE
	DUPLEX RECEPTACLE	NL	NIGHTLIGHT
	DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTER	R	DENOTES EXISTING ITEM THAT HAS BEEN RELOCATED
	QUADRAPLEX RECEPTACLE	TTB	TELEPHONE TERMINAL BACKBOARD
	SPECIAL PURPOSE OUTLET	TYP	TYPICAL
	JUNCTION BOX	UON	UNLESS OTHERWISE NOTED
	EMERGENCY PUSHBUTTON SWITCH	WP	WEATHERPROOF
	PUSHBUTTON	XP	EXPLOSION PROOF
	MOTOR (SIZED AS NOTED)		
	FRACTIONAL HORSEPOWER MOTOR STARTER		
	DISCONNECT SWITCH		

LIGHT FIXTURE SCHEDULE

TYPE	LOCATION	MANUFACTURER AND CATALOG NUMBER (OR APPROVED EQUAL)	LUMINAIRE DESCRIPTION	MOUNTING		LAMPS	BALLAST/DRIVER	TOTAL INPUT WATTS
				TYPE	HEIGHT			
A	CANOPY	MCGRAW-EDISON #CNC-E03-LED-E1-SQ-BZ	11"Wx15"Lx4"H CANOPY LIGHT, TYPE V OPTICS, LISTED FOR WET LOCATIONS AND BRONZE FINISH.	SURFACE	CEILING	4,000K 6,131LM	120/277V DRIVER, -40F START	52
B	FUEL STORAGE	MCGRAW-EDISON #GLEON-AF-02-LED-E1-T4FT-BZ	11"Wx15"Lx4"H CANOPY LIGHT, TYPE V OPTICS, LISTED FOR WET LOCATIONS AND BRONZE FINISH.	POLE	+20'-0" AFG	4,000K 8,257LM	120/277V DRIVER, -40F START	66
C	FUEL SHACK	METALUX #4SLSTP5540DD-UNV	4'Lx2.5"Wx2.5H STRIP LIGHT, ROUND WHITE DIFFUSER, AND LISTED FOR DAMP LOCATIONS.	SURFACE	CEILING	4,000K 8,257LM	120/277V DRIVER, -40F START	49

EXISTING LIGHT FIXTURE SCHEDULE

	LUMINAIRE DESCRIPTION	VA
(A)	POLE-MOUNTED LED FLOOD LIGHTS.	300
(B)	HPS WALL PACK.	150
(B1)	CEILING-MOUNTED HPS FIXTURE	150

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DATA	DRAWN BY	CHECKED BY	DATE	REV	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			

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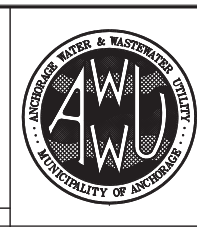
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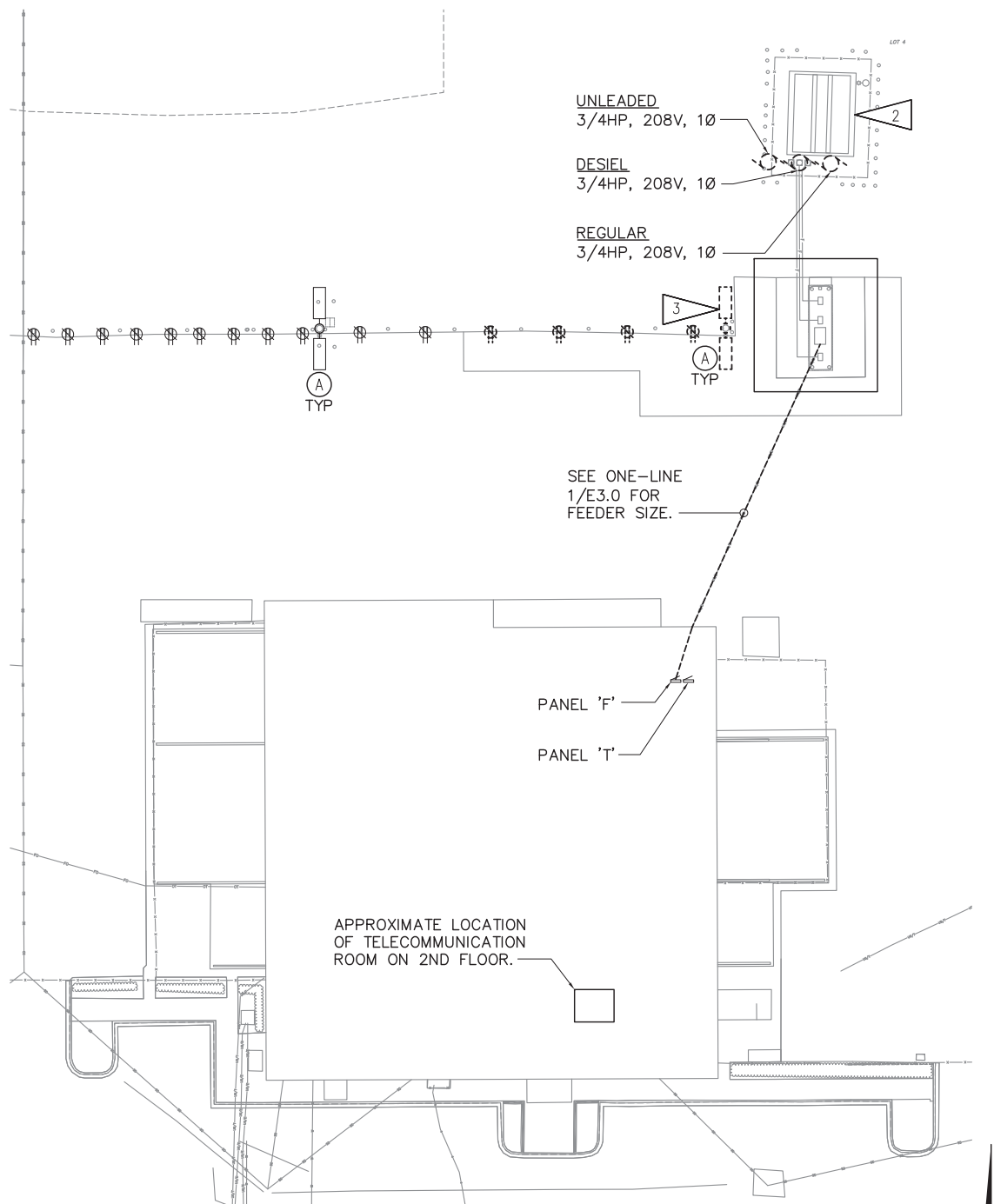
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 FUELING FACILITY IMPROVEMENTS

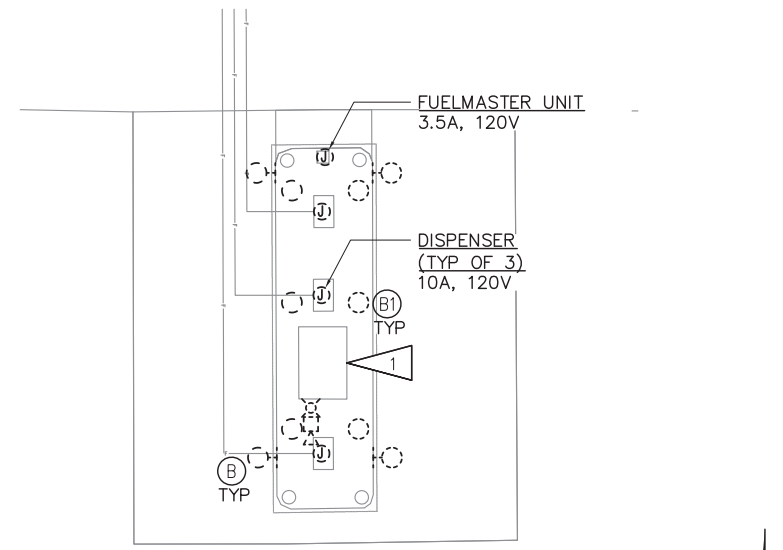
ELECTRICAL LEGEND AND FIXTURE SCHEDULES E0.1

HORZ SCALE: N/A
 VERT SCALE: N/A
 DATE: 08/17/2020
 GRID: SW2431
 PROJ. ID.: WW:H7960

SHEET 33 of 42



1
E1.0 ELECTRICAL SITE PLAN - DEMOLITION
SCALE: 1" = 30'



2
E1.0 ENLARGED ELECTRICAL
FUELING AREA - DEMOLITION
SCALE: 1/8" = 1'-0"

GENERAL NOTES

- A. THE INFORMATION SHOWN ON THIS DRAWING IS TAKEN FROM A NON-DESTRUCTIVE WALK THROUGH OF THE FACILITY. THERE IS NO WARRANTY OR GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HERE-IN. THE CONTRACTOR SHALL FIELD VERIFY ALL ITEMS SCHEDULED FOR DEMOLITION PRIOR TO START OF WORK.
- B. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL SALVAGEABLE MATERIALS. THE CONTRACTOR SHALL DELIVER SALVAGED MATERIALS TO A WAREHOUSE AS DIRECTED BY THE OWNER. THE CONTRACTOR SHALL DISPOSE OF, OFF SITE, ALL UNWANTED MATERIALS.
- C. DASHED OR DOTTED LINES INDICATE ITEMS TO BE REMOVED. SOLID LINES INDICATE EXISTING ITEMS TO REMAIN.

SHEET NOTES

1. DEMOLISH ALL ELECTRICAL EQUIPMENT ASSOCIATED WITH FUELING SHACK UNLESS OTHERWISE NOTED. INCLUDING, BUT NOT LIMITED TO, LIGHTING, POWER, CONTROL EQUIPMENT, LOAD CENTERS ETC. EXISTING ITEMS TO SALVAGE INCLUDE THE VEEDER ROOT CONTROL PANEL.
2. DEMOLISH ALL TANK GAUGING AND SENSORS ASSOCIATED WITH TANKS.
3. SALVAGE LIGHT POLE, FIXTURE AND CIRCUIT FOR RELOCATION. SEE REMODEL PLAN 1/E1.1 FOR NEW LOCATION.

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: N/A VERT SCALE: N/A	
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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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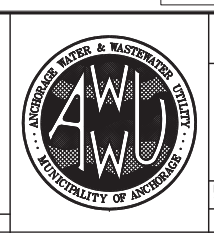
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KING STREET
 FUELING FACILITY IMPROVEMENTS

ELECTRICAL DEMOLITION PLANS

E1.0

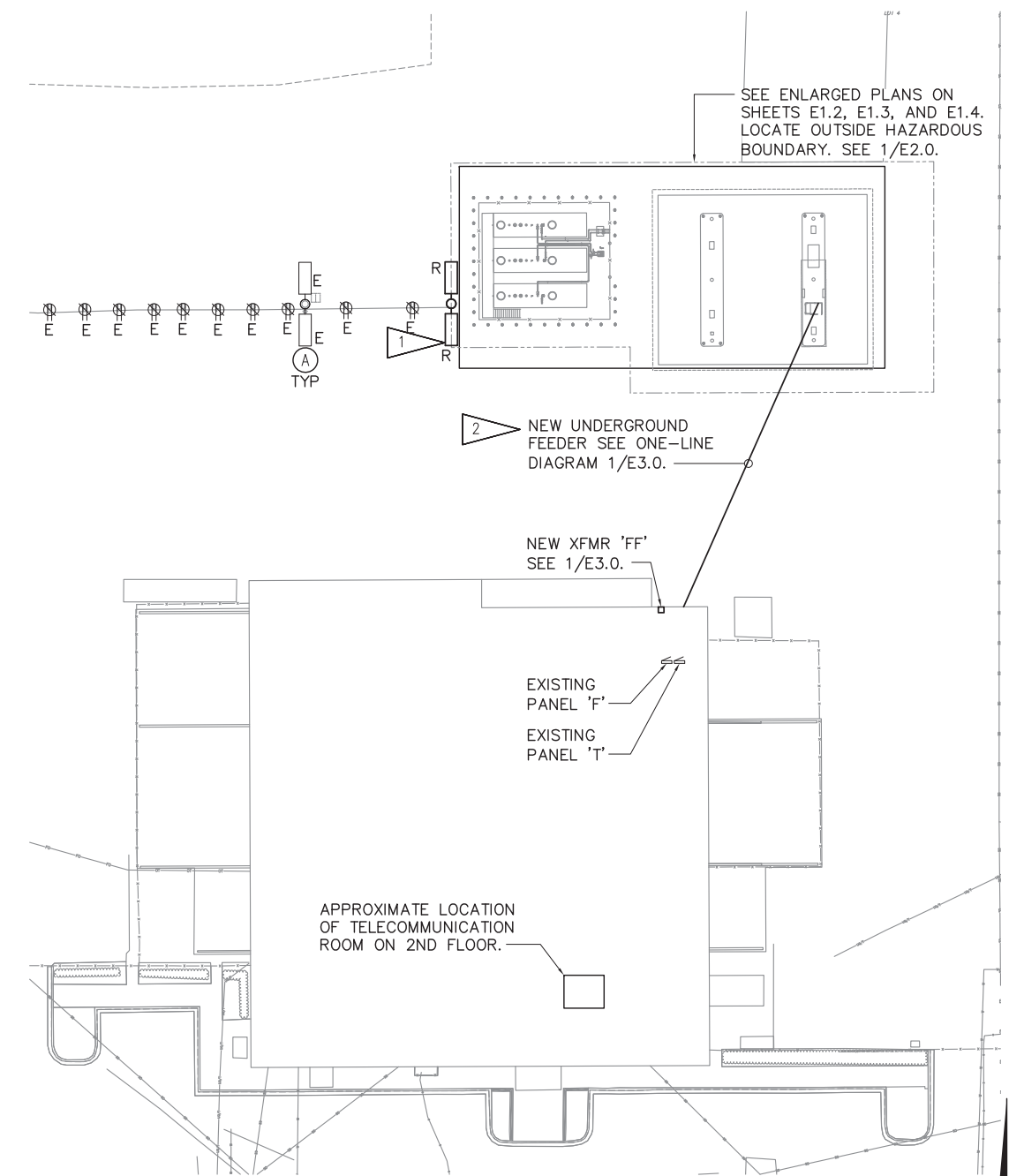
HORZ SCALE: N/A
 VERT SCALE: N/A
 DATE: 08/17/2020
 GRID: SW2431
 PROJ. ID.: WW:H7960

SHEET 35 of 42

SHEET NOTES

1. PROVIDE EXTENSION OF EXISTING CIRCUIT TO RELOCATED FIXTURES AND LIGHT POLE. PROVIDE JUNCTION BOXES, CONDUIT AND WIRE AS REQUIRED.
2. SEE TRENCHING DETAIL 3/E3.0.

NOTE:
SEE SHEET E2.0 FOR HAZARDOUS AREA BOUNDARIES. ALL WORK IN THESE AREAS SHALL BE DONE IN STRICT COMPLIANCE WITH ARTICLES 500, 501, AND 514 OF THE NATIONAL ELECTRICAL CODE. PROVIDE SEAL-OFFS ON ALL CONDUIT PENETRATING CLASSIFIED LOCATIONS AS REQUIRED BY CODE.



1 ELECTRICAL SITE PLAN - REMODEL
E1.1 SCALE: 1" = 30'

30 0 30 60 FT
SCALE: 1" = 30'

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DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE
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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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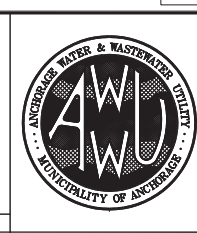
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Corporate No.: AECC542

CONSULTANT



MUNICIPALITY OF ANCHORAGE
WATER & WASTEWATER UTILITY

KING STREET
FUELING FACILITY IMPROVEMENTS

ELECTRICAL SITE PLAN - REMODEL

E1.1

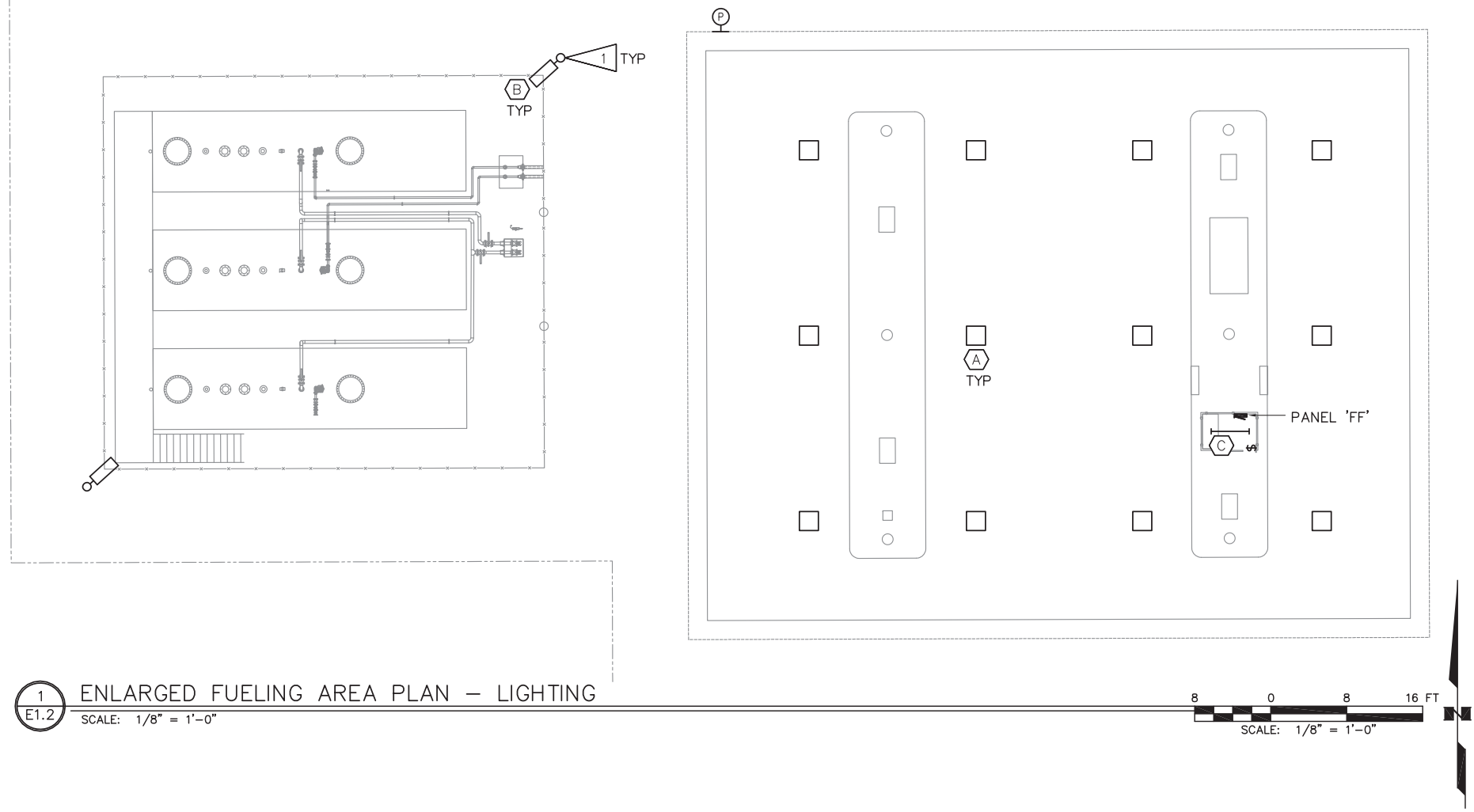
HORZ SCALE: N/A
VERT SCALE: N/A
DATE: 08/17/2020
GRID: SW2431
PROJ. ID.: WW.H7960

SHEET 35 of 42

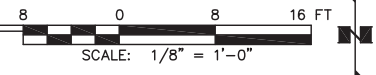
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SHEET NOTES

1. SEE POLE BASE DETAIL 1/E3.2.



1 ENLARGED FUELING AREA PLAN – LIGHTING
E1.2 SCALE: 1/8" = 1'-0"



65% SUBMITTAL - NOT FOR CONSTRUCTION

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: N/A VERT SCALE: N/A	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE
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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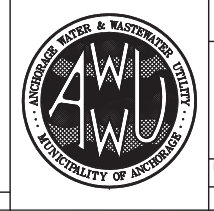
2. DATA TRANSFERRED BY: _____
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LIGHTING PLANS

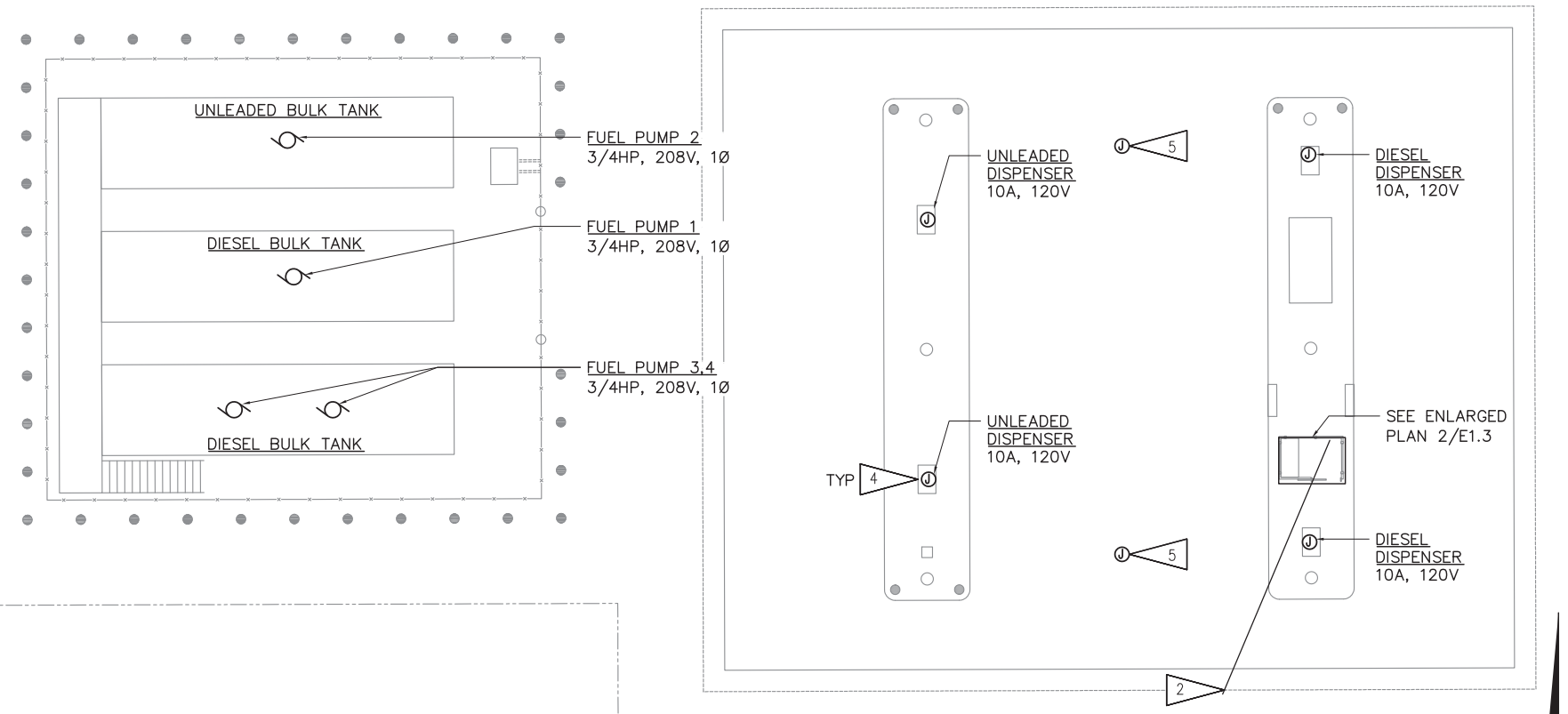
E1.2

HORZ SCALE: N/A	DATE: 08/17/2020	GRID: SW2431	SHEET 36 of 42
VERT SCALE: N/A	PROJ. ID.: WW.H7960		

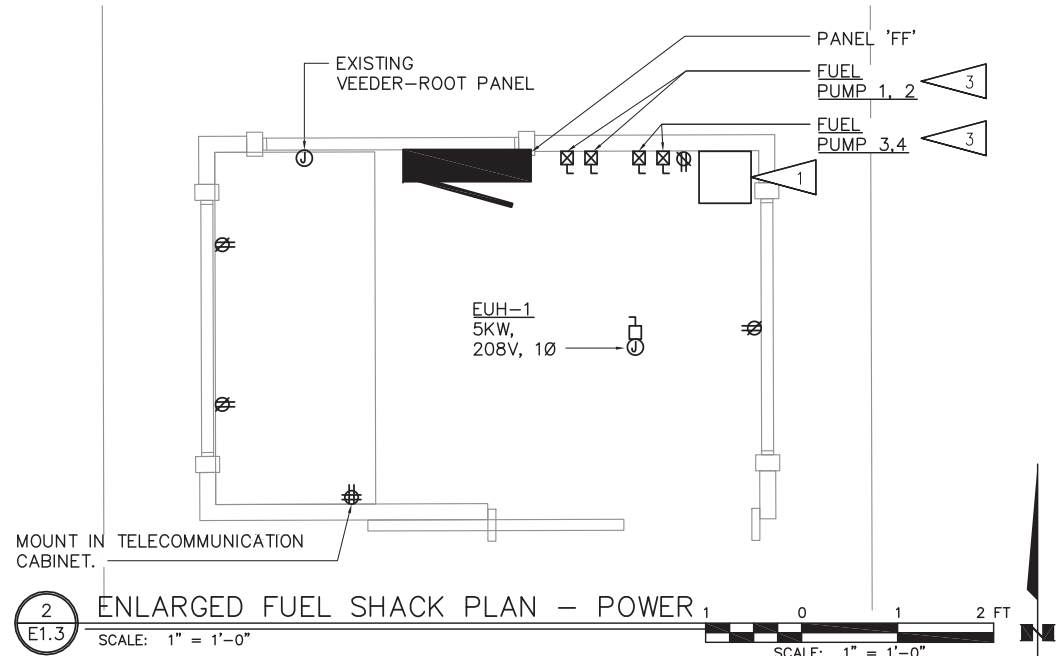
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SHEET NOTES

- HEAT TRACE CONTROLLER WITH INTEGRAL EPD AND THERMOSTATIC CONTROL. INSTALL PROVIDED THERMISTOR OUTSIDE PER MANUFACTURER'S INSTRUCTIONS. RAYCHEM ECW-GF OR APPROVED EQUAL.
- NEW BURIED FEEDER TO EXISTING PANEL 'T' VIA TRANSFORMER 'FF'. SEE 1/E1.1.
- STACK MOTOR STARTERS CONTROLLERS ADJACENT TO PANEL.
- PROVIDE CONNECTION TO DISPENSERS FOR PERMISSIVE OPERATION FROM EXISTING VEEDER-ROOT PANEL. CONNECT PER MANUFACTURER'S INSTRUCTIONS.
- 5W/FT SELF-REGULATING HEAT TRACE ROUTED IN CANOPY ROOF DRAINS AND DOWN SPOUTS. SEE PLUMBING PLANS FOR ROUTING REQUIRED. ROUTE CIRCUIT VIA HEAT TRACE CONTROLLER MOUNTED IN FUEL SHACK, SEE 2/E1.3.



1 ENLARGED FUELING AREA PLAN - POWER
E1.3 SCALE: 1/8" = 1'-0"
8 0 8 16 FT
SCALE: 1/8" = 1'-0"



2 ENLARGED FUEL SHACK PLAN - POWER
E1.3 SCALE: 1" = 1'-0"
0 1 2 FT
SCALE: 1" = 1'-0"

65% SUBMITTAL - NOT FOR CONSTRUCTION

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DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE
BASE			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: _____

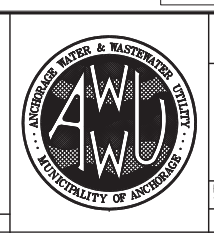
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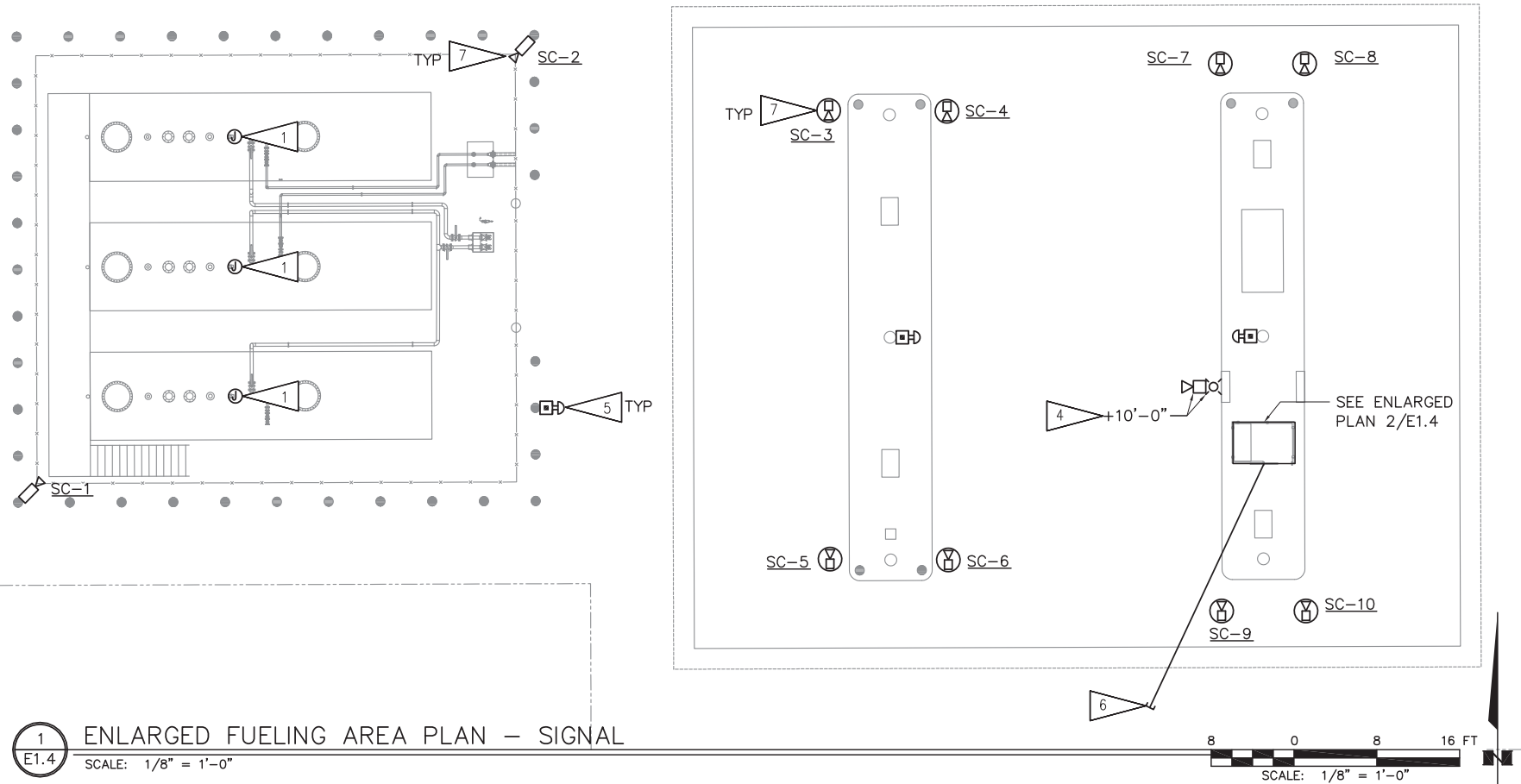
POWER PLANS

E1.3

HORZ SCALE: N/A DATE: 08/17/2020 GRID: SW2431 SHEET 37 of 42
VERT SCALE: N/A
PROJ. ID.: WW:H7960

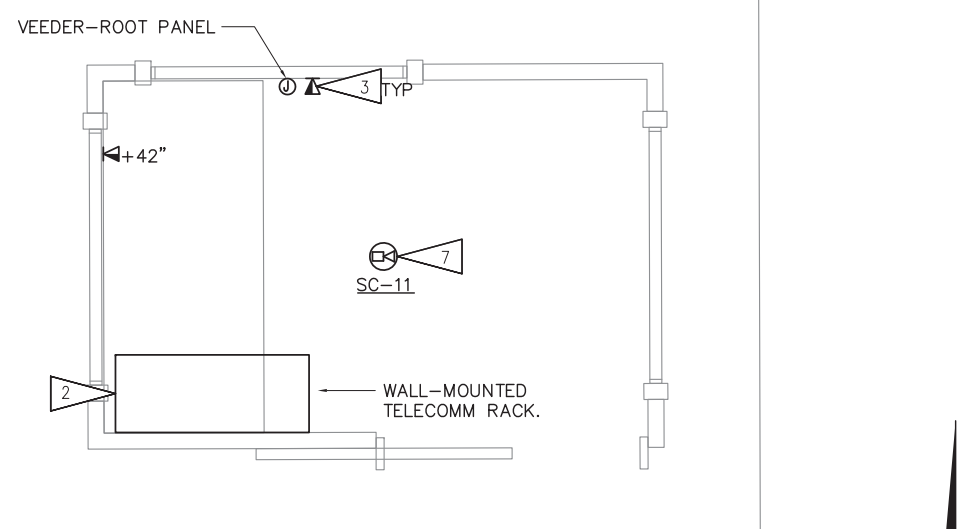
SEAL

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1 ENLARGED FUELING AREA PLAN - SIGNAL
E1.4 SCALE: 1/8" = 1'-0"

- SHEET NOTES**
- TANK GAUGING INSTRUMENTATION AND LEVEL SENSORS. CONNECT TO EXISTING VEEDER-ROOT PANEL IN FUELING SHACK WITH 1" C AND WIRING PER MANUFACTURER'S INSTRUCTIONS. SEE MECHANICAL FOR NUMBER AND LOCATIONS.
 - INSTALL IN RACK 48-PORT PATCH PANEL AND 48-PORT PoE NETWORK SWITCH WITH SPF FIBER CONNECTOR.
 - PROVIDE (1) RJ45 JACK FOR EXISTING VEEDER-ROOT PANEL. PROVIDE (1) CAT 6 BACK TO WALL RACK AND TERMINATE IN PATCH PANEL.
 - PROVIDE HORN/STROBE AND CONNECT TO EXISTING VEEDER-ROOT WITH 3/4" C AND WIRING PER MANUFACTURER'S INSTRUCTIONS.
 - PROVIDE EMERGENCY STOP PUSHBUTTON MOUNTED +44" AFG AND CONNECT TO PANEL-MOUNTED CONTACTOR SUCH THAT POWER IS DISCONNECTED TO ALL REMOTE MOUNTED PUMPS, DISPENSERS AND ALL EQUIPMENT WITHIN THE CLASSIFIED AREAS.
 - INSTALL 2" C WITH 6-STRAND SINGLE-MODE FIBER OPTIC CABLE TO EXISTING TELECOMMUNICATION RACK. TERMINATE AT SPF PORT IN PoE NETWORK SWITCH IN FUEL SHACK AND AT EXISTING FIBER HOUSING AT EXISTING RACK.
 - SEE DETAIL 1/E3.1 FOR CONNECTION TO VSS EQUIPMENT.



2 ENLARGED FUEL SHACK PLAN - SIGNAL
E1.4 SCALE: 1" = 1'-0"

65% SUBMITTAL - NOT FOR CONSTRUCTION

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: N/A VERT SCALE: N/A	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE
BASE			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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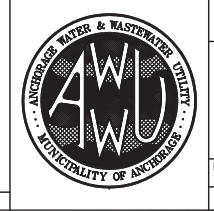
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SIGNAL PLANS

E1.4

HORZ SCALE: N/A DATE: 08/17/2020 GRID: SW2431 SHEET 38 of 42
VERT SCALE: N/A
PROJ. ID.: WW:H7960

CONSULTANT SEAL




GENERAL NOTES

A. IN ACCORDANCE WITH NEC 514.3(A) DIESEL FUEL HAS A FLASHPOINT ABOVE 100°F AND THEREFORE TANKS, AND DISPENSING DEVICES ASSOCIATED WITH THIS FUEL IS CONSIDERED UNCLASSIFIED.

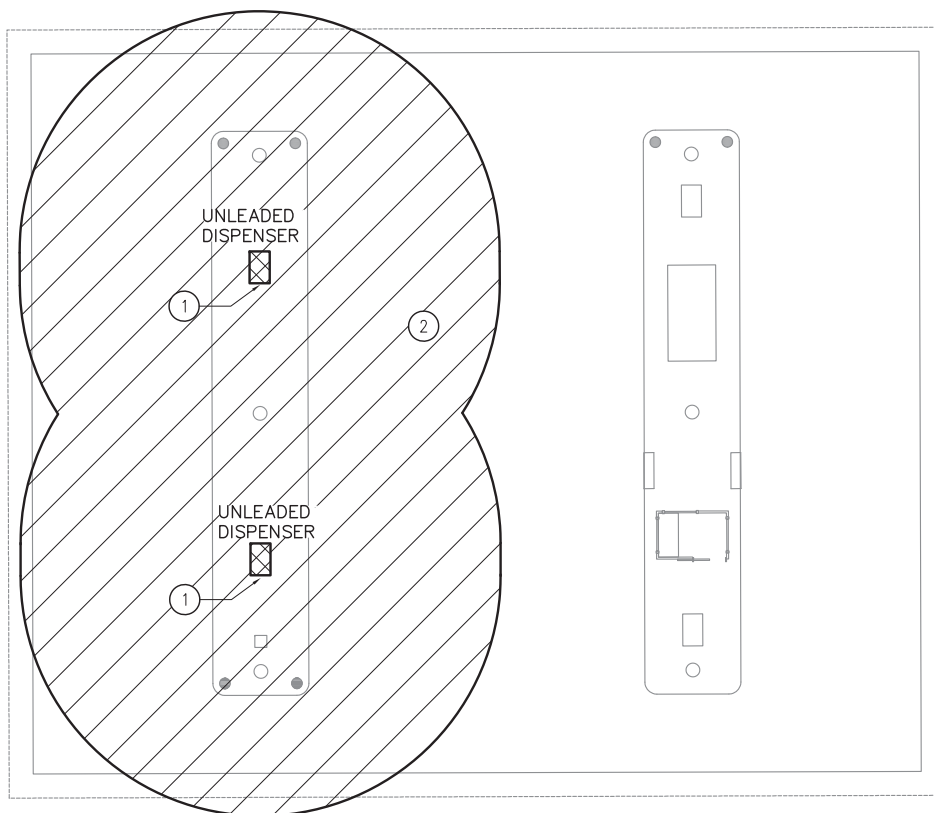
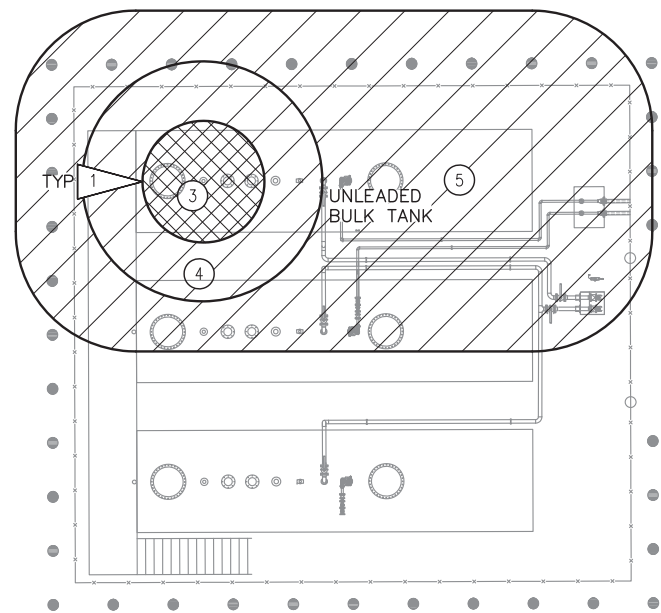
SHEET NOTES

1. COORDINATE NUMBER AND LOCATION OF VENTS WITH TANKS PROVIDED.

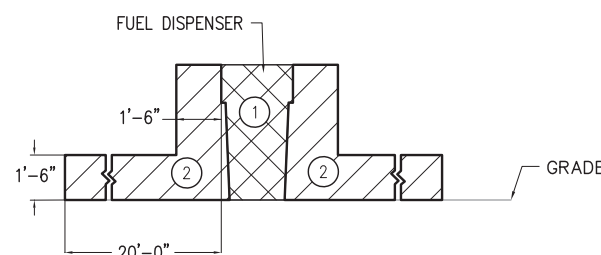
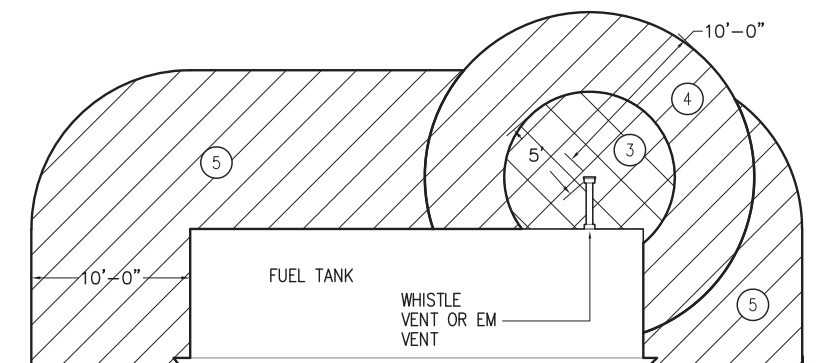
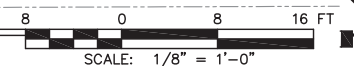
HAZARDOUS LOCATION LEGEND

	CLASS 1, DIVISION 1
	CLASS 1, DIVISION 2
	UNCLASSIFIED

HAZARDOUS LOCATIONS		
NO	CLASSIFICATIONS OF LOCATION	DESCRIPTION OF LOCATIONS
①	CLASS 1, DIVISION 1	AREA WITHIN AND UNDER DISPENSER PIT.
②	CLASS 1, DIVISION 2	WITHIN 18" HORIZONTALLY DOWN TO GRADE OF DISPENSER AND THEN 18" AFG 20' HORIZONTALLY IN ALL DIRECTIONS.
③	CLASS 1, DIVISION 1	WITHIN 5' OF OPEN END OF VENT IN ALL DIRECTIONS.
④	CLASS 1, DIVISION 2	AREA BETWEEN 5' AND 10' OF OPEN END OF VENT IN ALL DIRECTIONS.
⑤	CLASS 1, DIVISION 2	WITHIN 10' OF SHELL, END, OR ROOF OF TANK.



① HAZARDOUS BOUNDARY PLAN
E2.0 SCALE: 1/8" = 1'-0"



② TYPICAL GASOLINE STORAGE TANK HAZARDOUS AREA
E2.0 NO SCALE

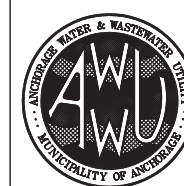
③ GASOLINE FUEL DISPENSER HAZARDOUS AREA
E2.0 NO SCALE

65% SUBMITTAL - NOT FOR CONSTRUCTION

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: N/A 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.	
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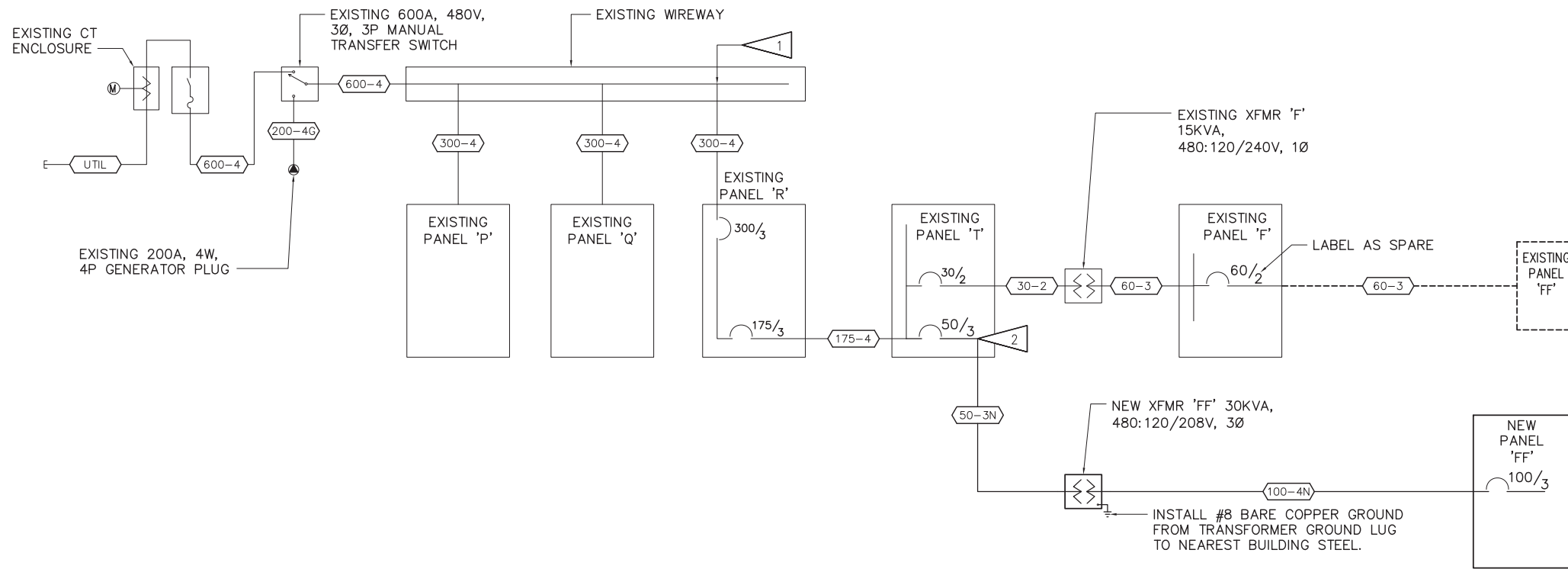
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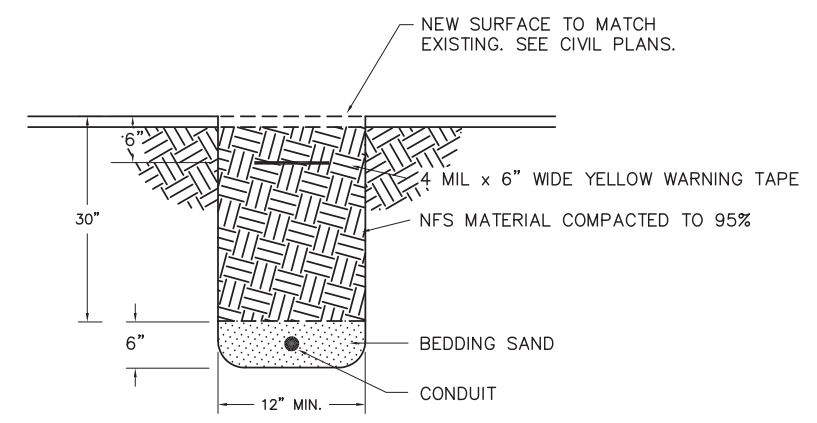
HAZARDOUS BOUNDARY PLAN

HORZ SCALE: N/A DATE: 08/17/2020 GRID: SW2431 SHEET 39 of 42
VERT SCALE: N/A
PROJ. ID.: WW:H7960

E2.0



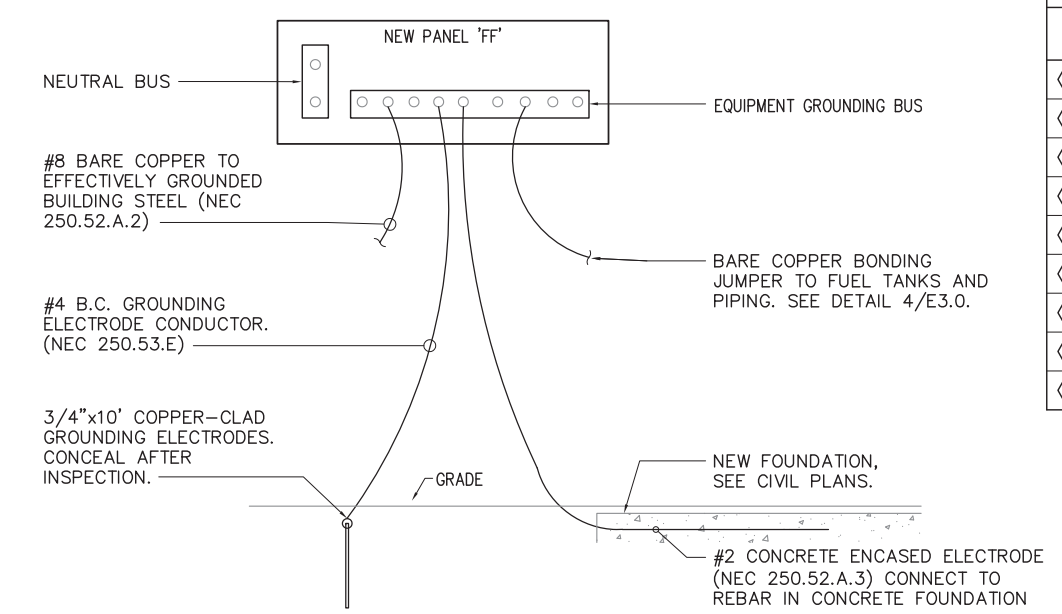
- ### SHEET NOTES
- FEEDER SPLICES MADE ON 600A FEEDER WITHIN WIRE WAY TO FEED DISTRIBUTION PANELS.
 - INSTALL NEW CIRCUIT BREAKER IN SPACE AVAILABLE IN THE EXISTING PANEL. THE EXISTING PANEL IS A SQUARE D I-LINE PANEL 4W, WITH 400A MAIN LUGS. THE NEW CIRCUIT BREAKER SHALL BE COMPATIBLE WITH AND LISTED FOR USE IN THE EXISTING PANEL AND SHALL HAVE A MINIMUM SHORT CIRCUIT AIC RATING TO MATCH THE LOWEST RATED EXISTING DEVICE IN THE PANEL.



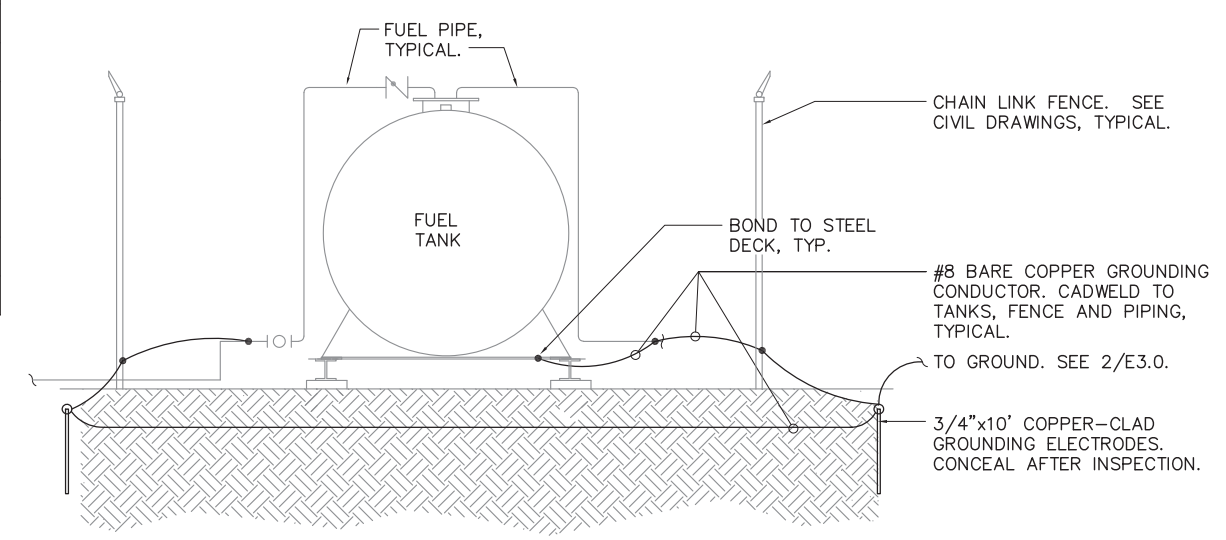
1 PARTIAL ONE-LINE DIAGRAM
E3.0 NO SCALE

3 CONDUIT TRENCHING DETAIL
E3.0 NO SCALE

FEEDER SCHEDULE			
FEEDER TAG	CONDUCTOR AMPS	BRKR SIZE	3 PHASE COPPER CONDUCTORS, NEUTRAL AND GROUND (TAG #100-4, FOR EXAMPLE)
30-2	30A	30A	EXISTING 1/2" C, 2#10
60-3	55A	60A	EXISTING 1" C, 3#6
50-3N	40A	50A	NEW 1" C, 3#8
100-4N	90A	100A	NEW 1.5" C, 4#2 AND 1#8GND
175-4	175A	175A	EXISTING 2" C, 4#2/0
200-4G	200A	-	EXISTING 2" C, 4#3/0
300-4	285A	300A	EXISTING 3" C, 4#300kcmil
600-4	570A	600A	EXISTING 3" C, 4#300kcmil
UTIL			EXISTING SERVICE LATERALS BY CEA



2 GROUNDING DETAIL
E3.0 NO SCALE



4 TYPICAL TANK GROUNDING DETAIL
E3.0 NO SCALE

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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					

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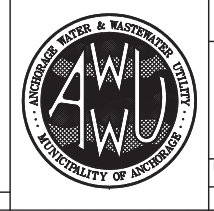
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ELECTRICAL DETAILS

HORZ SCALE: N/A DATE: 08/17/2020 GRID: SW2431 SHEET 40 of 42
 VERT SCALE: N/A
 PROJ. ID.: WW.H7960

VIDEO SURVEILLANCE SYSTEM CAMERA SCHEDULE

SEE RISER DIAGRAM

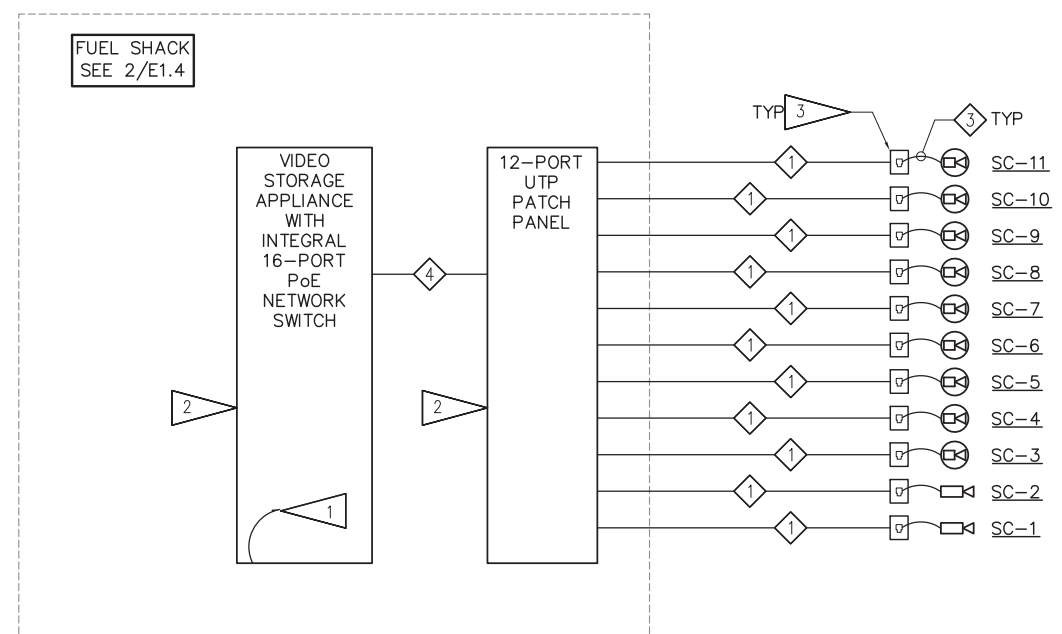
CAMERA DESIGNATION	CAMERA LOCATION (SEE 1 AND 2/E1.4)	INTENDED COVERAGE AREA	CAMERA LENS FOCAL LENGTH	CAMERA TYPE (SEE SPECS)	MOUNTING TYPE
SC-1	SOUTHWEST FUEL STORAGE LIGHT POLE	NORTHEAST AREA OF TANK STORAGE	3.0-9.0 mm VARI-FOCAL	-	POLE MOUNT
SC-2	NORTHEAST FUEL STORAGE LIGHT POLE	SOUTHWEST AREA OF TANK STORAGE	3.0-9.0 mm VARI-FOCAL	-	POLE MOUNT
SC-3	DISPENSING CANOPY	DISPENSER 1 WEST POSITION	3.0-9.0 mm VARI-FOCAL	-	CEILING MOUNT
SC-4	DISPENSING CANOPY	DISPENSER 1 EAST POSITION	3.0-9.0 mm VARI-FOCAL	-	CEILING MOUNT
SC-5	DISPENSING CANOPY	DISPENSER 2 WEST POSITION	3.0-9.0 mm VARI-FOCAL	-	CEILING MOUNT
SC-6	DISPENSING CANOPY	DISPENSER 2 EAST POSITION	3.0-9.0 mm VARI-FOCAL	-	CEILING MOUNT
SC-7	DISPENSING CANOPY	DISPENSER 3 WEST POSITION	3.0-9.0 mm VARI-FOCAL	-	CEILING MOUNT
SC-8	DISPENSING CANOPY	DISPENSER 3 EAST POSITION	3.0-9.0 mm VARI-FOCAL	-	CEILING MOUNT
SC-9	DISPENSING CANOPY	DISPENSER 4 WEST POSITION	3.0-9.0 mm VARI-FOCAL	-	CEILING MOUNT
SC-10	DISPENSING CANOPY	DISPENSER 4 EAST POSITION	3.0-9.0 mm VARI-FOCAL	-	CEILING MOUNT
SC-11	FUEL SHACK	TTLR	360° CAMERA	-	CEILING MOUNT

VIDEO SYSTEM CABLE SCHEDULE

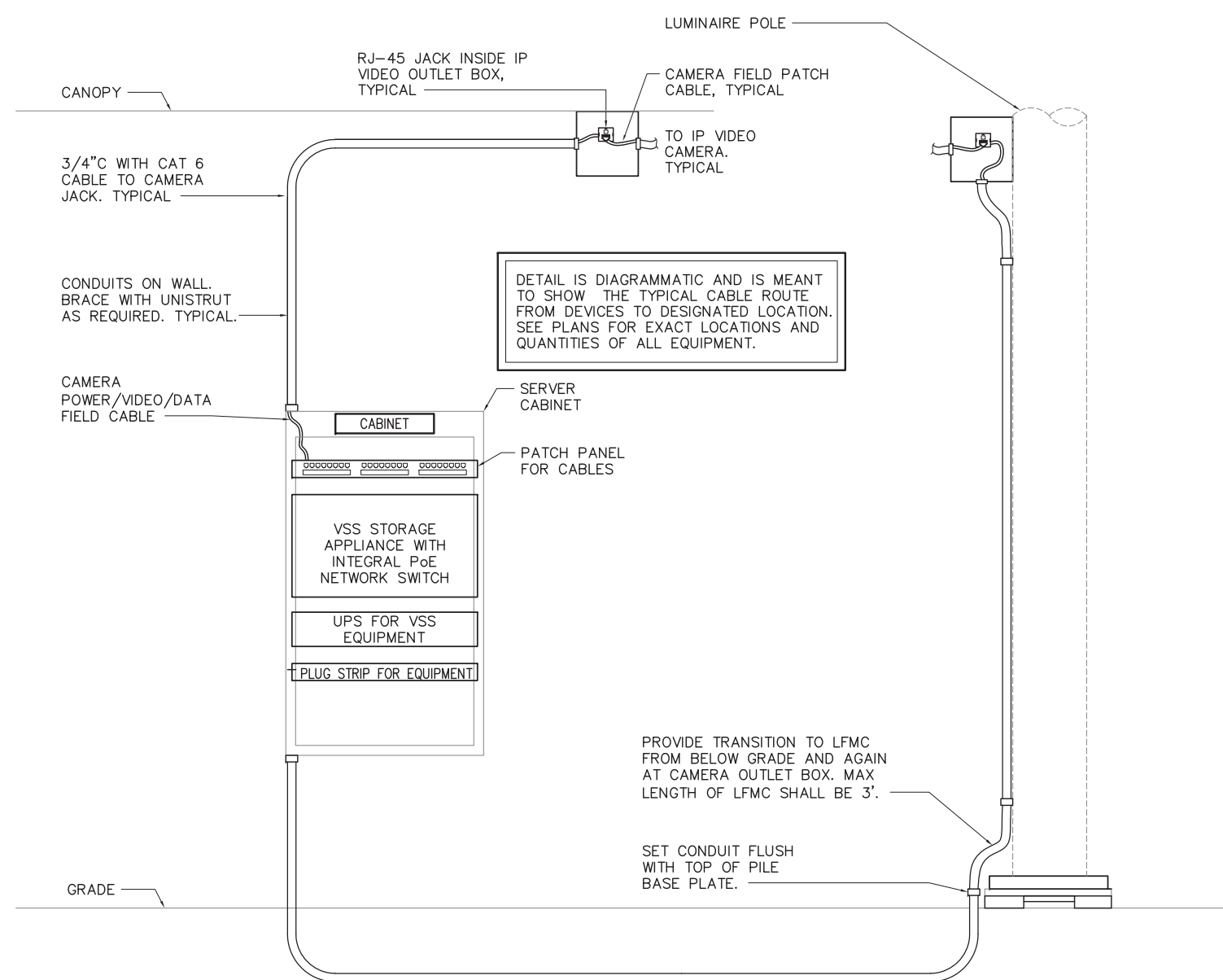
CABLE NUMBER	DESCRIPTION
1	CAMERA PoE CABLE, CAT 6 UTP
2	NETWORK HORIZONTAL CABLE, CAT 6 UTP
3	CAMERA FIELD PATCH CORD, CAT 6 UTP, LENGTH AS REQUIRED.
4	CROSS-CONNECT PATCH CORD, CAT 6 UTP

SHEET NOTES:

- SEE PANEL SCHEDULE FOR CIRCUIT.
- PROVIDE (1) PATCH PANEL AND (1) NETWORK SWITCH IN THE TELECOMMUNICATION CABINET. SEE 2/E1.4 FOR CABINET LOCATION.
- RJ-45 OUTLET IN CAMERA BACKBOX.



1 VIDEO SURVEILLANCE RISER DIAGRAM
NO SCALE



2 HORIZONTAL CABLE ROUTING
NO SCALE

65% SUBMITTAL - NOT FOR CONSTRUCTION

VERIFY SCALE		THIS BAR REPRESENTS ONE INCH ON ORIGINAL DRAWING.		IF BAR IS NOT ONE INCH, ADJUST DRAWING SCALE ACCORDINGLY.		FULL SIZE SCALE	
DATA	DATE	DATA	DATE	DESCRIPTION	BY	DATE	DESCRIPTION
BASE		TELEPHONE					
TOPOGRAPHY		ELECTRIC					
PROFILE		CABLE TV					
SANITARY SEWER		TRAFFIC SIGNAL					
STORM SEWER		DESIGN					
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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: _____

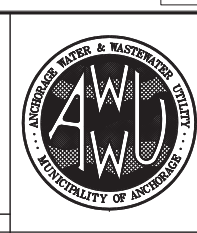
2. DATA TRANSFERRED BY: _____
 COMPANY: _____
 DATE: _____

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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 (907)276-0521
 Corporate No.: AECC542



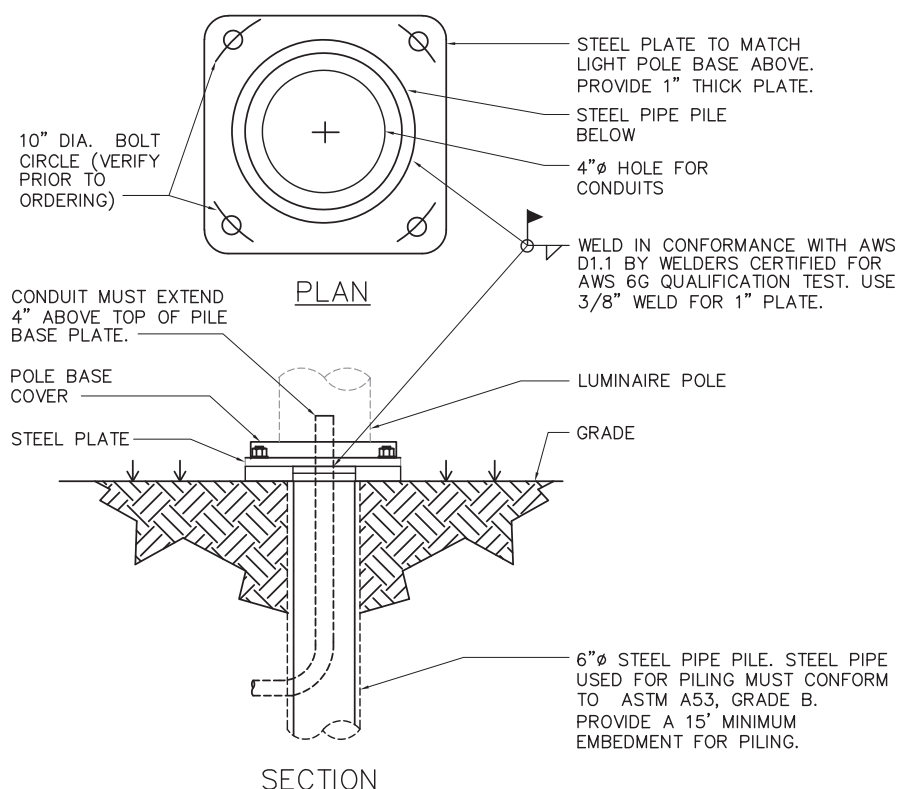
MUNICIPALITY OF ANCHORAGE
 WATER & WASTEWATER UTILITY

KING STREET
 FUELING FACILITY IMPROVEMENTS

ELECTRICAL DETAILS

E3.1

HORIZ SCALE: N/A	DATE: 08/17/2020	GRID: SW2431	SHEET 41 of 42
VERT SCALE: N/A		PROJ. ID.: WW.H7960	



1 POLE BASE DETAIL
E3.2
NO SCALE

65% SUBMITTAL - NOT FOR CONSTRUCTION

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: N/A VERT SCALE: N/A	
DATA	DRAWN BY	CHECKED BY	DATA	DRAWN BY	CHECKED BY	REV	DATE
BASE			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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CONTRACTOR: _____
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DATE: _____

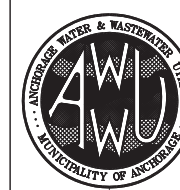
2. DATA TRANSFERRED BY: _____
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ELECTRICAL DETAILS

HORZ SCALE: N/A	DATE: 08/17/2020	GRID: SW2431	SHEET 42 of 42
VERT SCALE: N/A	PROJ. ID.: WW.H7960		

CONSULTANT

SEAL

E3.2