



GUAM WATERWORKS AUTHORITY

Gloria B. Nelson Public Service Building • 688 Route 15, Mangilao, Guam 96913 • Tel. (671) 300-6036

Invitation To Bid: IFB-02-ENG-2019
Upgrade of the Northern District Wastewater Treatment Plant
GWA Project No. S17-003-OEA

Addendum No.: 06

Date: May 8, 2019

All Qualified Bidders:

This addendum is issued to modify the previously issued bid documents and/or given for informational purposes, and is hereby made a part of the bid documents. Failure to acknowledge receipt of this addendum shall be grounds for the bidder's disqualification and rejection of the bidder's proposal.

1. Part A – Specifications

Replace the previously issued specifications listed in Table 1, with the attached specifications labeled Addendum C.

Revisions in Specifications shall carry over to respective alternate bid items whether reflected below or not.

2. Part B – Drawings

Replace the previously issued drawings listed in Table 2, with the attached drawings labeled Addendum C.

Revisions in Drawings shall carry over to respective alternate bid items whether reflected below or not.

3. Part C – GWA Request for Information Response No. 9 to Contractor Inquiries

GWA's response to contractor RFI inquiries No. 9 is attached to this Addendum.

4. Part D – Modifications to Bid Form

Bid Form Section 00410

Replace the previously issued Section 00410, with the attached Section labeled Addendum C.

Note the following:

Two versions of Section 00140 are attached. Only the clean version labeled (Addendum C) with no changes highlighted shall be used for the bid submission requirements.

Bidders are also notified to visit GWA website: www.guamwaterworks.org to ensure that addenda to the bid, answers to questions, and reminders are communicated to all bidders throughout the solicitation process.


 MIGUEL C. BORDALLO, P.E.
General Manager

Attachment(s):

- Revised Specifications – As listed in Table 1
- Revised Drawings – As listed in Table 2
- Revised Bid Form

MCB;gb

Table 1 – Revised Specification (Labeled Addendum C)

NEW	099600	High Performance Coating
NEW	115300	Laboratory Equipment
Revised	444213.13	Sludge Mix System and Appurtenances

Table 2 – Revised Drawings (Labeled Addendum C)

Revised	A0.4	ALL PROCESS BUILDING – WINDOWS SCHEDULE AND SIGNAGE DETAILS
Revised	A0.7	ALL PROCESS BUILDING – RAILING DETAILS
Revised	A1.1.2	SOUTHERNLINK INFLUENT PUMP – FLOOR PLAN – LOWER LEVEL
Revised	A1.-1.1.1	ROUTE 3 INFLUENT PUMP STATION – DEMOLITION PLAN
Revised	A2.1.1	HEADWORKS/RAS WAS FLOOR PLAN LEVEL 1
Revised	A6.1.3	UV DISINFECTION – FLOOR PLAN
Revised	A9.1.1	AERATED SLUDGE STORAGE FACILITY – FLOOR PLAN
Revised	A10.1.1	THICKENING FACILITY – LEVEL 1 FLOOR PLAN
Revised	A11.1.1	ATAD 1-2 & SNDR TANKS W/ ATAD ODOR CONTROL/ELEC. BLDG. AND ATAD CHILLER LEVEL 1 FLOOR PLAN
Revised	A12.1.2	DIGESTER EQUIPMENT BUILDING (ATAD) – LOWER LEVEL & LEVEL 1 FLOOR PLAN
Revised	A14.0.1	DEWATERING FACILITY – CODE ANALYSIS
Revised	A14.1.2	DEWATERING FACILITY LEVEL 2 FLOOR PLAN
Revised	A17.1.1	NEW ADMINISTRATION BUILDING – FLOOR PLAN
Revised	A17.2.1	NEW ADMINISTRATION BUILDING –FURNITURE LAYOUT PLAN
Revised	A18.2.2	RENOVATED/REPURPOSED LABORATORY BUILDING – FURNITURE LAYOUT
Revised	A20.1.1	STANDBY POWER – LEVEL 1
Revised	A20-1.1.1	STANDBY POWER (MAIN ELECTRICAL ROOM) – LEVEL 1 FLOOR PLAN



GUAM WATERWORKS AUTHORITY

Upgrade of the Northern District Wastewater Treatment Plant

GWA Project No. S17-003-OEA

IFB-02-ENG-2019

Response No. 9 to Step 2 Contractor Inquiries

This Addendum and/or Response to Request for Information (RFI) is issued to modify the previously issued bid documents and/or given for informational purposes and to the extent the responses below modify the bid documents, please treat them as an amendment to the Bid. The following responses are in response to RFIs received.

RFI No.	REFERENCE SECTION	QUESTION/INQUIRY AS SUBMITTED	GWA RESPONSE
28a	Section 442223 Centrifuges	Based on Alfa Laval's experience with the described sludge types, the expected polymer dosage would be in the 80-100 active lbs/ton and would need to be verified once the stream is available for testing.	Polymer feed system shall be provided as specified.
28b	Section 442223 Centrifuges	2.7.A.10. – Typically, the bowls are batch tested and not tested for specific projects.	Centrifuges shall be tested as specified.
28c	Section 442223 Centrifuges	2.13.A – Alfa Laval requests to provide VFDs fed by the Main drive VFD DC Link, which provides any back drive motor regeneration to be consumed by the main drive VFD and can be fed by the main drive VFD under power outage.	Recommended approach is acceptable.
28d	Section 442223 Centrifuges	2.13.C – In order to prevent mechanical damages and preserve the safety operation, instead of PID auto-tuning routine we recommend manual PID adjustments due the load high inertia of the bowl/scroll drive system.	Recommended approach is acceptable.
28e	Section 442223 Centrifuges	2.16.-Alfa Laval's standard centrifuge design uses one single cover so guards will not be necessary.	Standard offering is acceptable.
28f	Section 442223 Centrifuges	2.23.B. – Please be advised our standard unit has 2 sensors installed on each centrifuge. One sensor shall be installed on each of the 2 main bearings.	Standard offering of 2 sensors on each unit is acceptable.
28g	Section 442223 Centrifuges	2.25.A.3.a – There are some routines in the program that are blocked due to intellectual property.	Acceptable.

RFI No.	REFERENCE SECTION	QUESTION/INQUIRY AS SUBMITTED	GWA RESPONSE																	
28h	Section 442223 Centrifuges	<p>2.28.B.-Please see below for our standard test duration.</p> <table><tr><th rowspan="2">Design Code</th><th rowspan="2">Bowl diameter [mm]</th><th rowspan="2">Flow rate [m³/hr]</th><th colspan="2">Test time</th></tr><tr><th>Test at maximum speed only</th><th>Test at maximum and operating speed</th></tr><tr><td>NX5541, 5542</td><td>550</td><td>10-15</td><td>120</td><td>60</td></tr><tr><td></td><td></td><td></td><td></td><td>60</td></tr></table>	Design Code	Bowl diameter [mm]	Flow rate [m ³ /hr]	Test time		Test at maximum speed only	Test at maximum and operating speed	NX5541, 5542	550	10-15	120	60					60	Testing shall be as specified.
Design Code	Bowl diameter [mm]	Flow rate [m ³ /hr]				Test time														
			Test at maximum speed only	Test at maximum and operating speed																
NX5541, 5542	550	10-15	120	60																
				60																
28i	Section 442223 Centrifuges	2.28.E. -Alfa Laval shall provide test certificate from tile manufacturer to confirm the tiles have been tested.	Approach is acceptable.																	
28j	Section 444256.13 - PROGRESSIVE CAVITY SLUDGE PUMPS	<p>Centrifuge feed pumps for ATAD stream:</p> <p>Number: 4</p> <p>Type: Progressive cavity</p> <p>Solids concentration of material pumped: 2.88%</p> <p>Flow 69 gpm??</p> <p>Differential head, ft: 59.4</p> <p>Suction diameter: 6 inches</p> <p>Discharge diameter: 6 inches</p> <p>Centrifuge feed pumps for TWAS (Raw) stream:</p> <p>Number: 4</p> <p>Type: Progressive cavity</p> <p>Solids concentration of material pumped: 6.0%</p> <p>Flow: 33 gpm??</p> <p>Differential head, ft: 97.3</p> <p>Suction diameter: 6 inches</p> <p>Discharge diameter: 6 inches</p> <p>Please confirm the flow on these pumps? Are these the feed pump or the discharge pumps? Are two pumps dedicated per sludge type per centrifuge and feeding jointly to meet the specified hydraulic loading? Please confirm.</p>	<p>Pumps are centrifuge feed pumps as specified in the specification. Pumps need to be capable of the flow rates for either type of sludge as stated in the datasheet. Each pump is sized for dedicated feeding to the centrifuge based on solids loadings rates.</p>																	

RFI No.	REFERENCE SECTION	QUESTION/INQUIRY AS SUBMITTED	GWA RESPONSE
28k	Section 444626.02 - Gravity Belt Thickeners:	2.4.G.- Please be advised the capture can be met if the feed solids are minimum 0.75%.	Confirmed solids percentage of 0.75%.
28l	Section 444626.02 - Gravity Belt Thickeners:	2.5 D. The contract drawings show the GBT units mounted on concrete piers. Please strike this sentence	The GBT units shall be skid mounted. Spec refers to the frame that the GBT and appurtenances are mounted and shipped on. This skid will be mounted on the concrete piers showing in the drawings.
28m	Section 444626.02 - Gravity Belt Thickeners:	2.6.B.- Please add "minimum flange thickness shall be 3/8" and minimum web/wall thickness shall be 1/4" .	Flange and web/wall thickness acceptable. No specification change required.
28n	Section 444626.02 - Gravity Belt Thickeners:	Paragraph 2.11.A.- Per our standard specifications the roller shells are constructed of carbon steel. Please change "stainless" to "carbon" .	Rollers shall remain 316 stainless as specified.
28o	Section 444626.02 - Gravity Belt Thickeners:	Paragraph 2.12.C. – Please change "2 cap bolts" to "4 cap bolts" .	Number of cap bolts is acceptable. No specification change required.
28p	Section 44463.01 - POLYMER FEED SYSTEM, LIQUID	<p>Please note the following:</p> <p>The ATAD polymer feed system is not sufficiently sized for this application and the corrected capabilities are listed below:</p> <p>ATAD polymer feed system, corrected capability (1150 lbs/hr)</p> <p>Neat polymer pump capacity: 0-15 gph</p> <p>Polymer type: Emulsion</p> <p>Dilution water flow rate range: 0-4500 gph</p>	Polymer feed systems shall be as specified.
28q	Section 409000 – Instrumentation and Control for Process Systems	Please confirm if Alfa Laval is to provide the "handheld, CRT, or personal computer" in Section 409990-2.5.K.6?	Alfa Laval does not need to provide the "handheld, CRT, or personal computer".
28r	Supplement – Loop Descriptions	3.14.A.1 – Please confirm if diverter gates provided are to be motorized?	Motorized as shown on I14.0.3 and I14.0.4

RFI No.	REFERENCE SECTION	QUESTION/INQUIRY AS SUBMITTED	GWA RESPONSE
29a	C8.1.1.1 and C12.1.2	On Civil Drawings, Sheet C12.1.2 Detail 5 shows a typical section for 2" thk AC Pavement. However on C8.1.1 Road Plans and C12.1.1 Typical Road sections does not show where the 2" thk Pavement. Please provide location where this is used.	For bid contractor shall follow requirement of 3 inch pavement detail on C8 sheets. 2 inch pavement detail may be disregarded for bid.
29b	A1-1.1.1	On Architectural Drawings, Sheet A1-1.1.1 has a Note 8 mentioning "Existing FRP gratings to be removed and replaced with aluminum grating clean & refurbish existing framing system but no Note 8 on plan drawing where this work is. Please provide location	Disregard mentioned in Demolition Legend # 8. See attached A1-1.1.1.1
29c	Cast-In-Place Concrete 033000	On Project Specification for Cast-In-Place Concrete 033000 mentions admixture of Crystalline waterproofing Additive on water holding structure. One of concrete supplier on island is using another product, Penetron, please see attached product data. Please confirm this is acceptable as this has been used previously by the concrete supplier.	Refer to article 11 of instruction to bidders.
29d	Sheet A1-1.5.1	On Sheet A1-1.5.1 Detail 4 Elevation, shows PT3 is on lower level while PT2 is on the wall area. Please confirm the other elevations shows differently.	The PT2 and PT3 are Legends for interior painting finish in room schedule. For Exterior walls refer to paint finish legend with tags 1,2 and 3 mentioned elevation drawings.
29e	Sheet A1-1.1.3	On Sheet A1-1.1.3 On new Aluminum Guardrail Callout at Middle walkway Along Gridline 5-7 and Gridline B-C. Please confirm how many layer and which detail to follow.	Refer to drawings A0.7 Detail 10.
29f	Section 116000	Section 116000- Please specify where to place the amount for Equipments (ATV, Bins and Forklift) on the Bid schedule.	This is incidental work to solids handling and may be placed under process 14, Base bid item 31.
29g	Section 412203.07	Section 412203.07 Davit Cranes, Please provided where to place price on Bid Schedule	Davit cranes shall be accounted for in the bid schedule within the process facility they will be installed (i.e. ATAD, Digester Eq. Bldg., etc.)
29h	Sheet A1-1.1.3	On Sheet A1-1.1.3, Please provide callout for window schedule. Shown on drawings are only door callout schedule.	All louver windows are existing please refer to drawings A0.4.
29i	Sheet MP2.2.6	Headworks Concrete pad detail for Flow Meter MP2.2.6 states see structural, Structural drawings says check MP drawings from GSP and Architectural has the Cradle support dimension but not the concrete pad. Please provide detail (thk, PSI conc, rebar reinforcement and dimension)	Refer to Addendum B sheet S2.2.1 (Typ. Equipment Pad on Grade, see 2/SO.1.1).

RFI No.	REFERENCE SECTION	QUESTION/INQUIRY AS SUBMITTED	GWA RESPONSE
29j		Also provide detail Headworks concrete pad for odor control area. Not provided in Structural, MP and Architectural. Please provide detail (thk, PSI conc, rebar reinforcement and dimension).	Refer to Addendum B sheet S2.2.1 (Typ. Equipment Pad on Grade, see 2/SO.1.1).
29k		Inquiry from Pipe Manufacturer if Coal Tar Epoxy for buried pipe System No. 9, Is it really required. Buried are usually bituminous/asphaltic coating. Please confirm bituminous/asphaltic coating is acceptable.	Coal-tar epoxy is required as specified.
29l	Sheet A0.4	On Addendum Sheet A0.4 shows detail 4 to detail 8, Please provide locations in plan drawings.	Please see revised Signage drawings.
29m	Sheet A1.1.2 and A2.1.1	On Addendum Sheet A1.1.2 and A2.1.1 on Restroom/ Shower Area, There is a P on the wall. Please confirm what is P sign as the signage only has type A, B and C.	Please refer to Specification Section 101400 -Signage Part 2-Products Item 2.2/G- Room Signs indicative the Types are A, P, B and C. See attached drawing A0.4 and Specs Section 101400.
29n		Please provide Window W8 Schedule at Admin Building. Located Near Grid Line E at Grid Line 1.	See revised drawing A0.4-Window Schedule
29o		We would like to request to reduce various notifications such as for inspections and start-up for 1 to 3 days instead of 7 days and a month notification respectively. This will help to carry out works expediently.	Bidder shall plan for the required notification days presented in specifications. Coordination with Owner and RPR may be done to allow for expedition post award.
29p		We would like also to request for RFI Review Time to Three (3) working days and submittal review time to Seven (7) working days (exclude large equipment listed under 013000-1.6.B.)	Bidder shall plan for the required days presented in specifications. Coordination with Owner and RPR may be done allow for expedition post award.
29q		Under Submittal Procedure Paragraph 1.5 Proposed Product List. A. mentions within 15 days after date of Notice to Proceed, to submit list of major products proposed for use with name of manufacturer, trade name and model number of each product. The 15 days is too short to provide products manufacturer data since this confirmation requires contracts to finalize price and conditions to issue Intent to order to manufacturers. We would like to request if it can be provided in about 75 calendar days.	Specification calls for the list to be submitted 21 days after NTP. Required duration will remain. Information such as manufacture, trade name and model numbers should be known by or before 21 days after NTP for major products. See Bid form for major products list.

RFI No.	REFERENCE SECTION	QUESTION/INQUIRY AS SUBMITTED	GWA RESPONSE
29r	Section 013300	In regard to Construction Photographs as per Submittal Procedures 013300, can contractor provide progress photos electronically to Resident Project Representative instead of hard prints of 8" x 10".	Bidder shall plan for the required procedure. Coordination with owner and RPR may be done to accommodate revision to this requirement post award.
29s		Testing and Inspection Services: We would like to request to reduce notification time from 72 hours to 24 hours for field inspection and testing including performance of work requiring special inspection or QA testing on a Saturday, Sunday or legal holidays. And if in case inspection rescheduled due to inclement weather condition, allow contractor to provide inspection request with short notice.	Bidder shall plan for the required notification days presented in specifications. Coordination with Owner and RPR may be done to allow for expedition post award.
29t	Section 014000	On Section 014000 –Owner inspection Part G states Payment for referenced additional services will be charged to contractor by deducting charges from contract SLM/ price on a monthly basis. Can you clarify contract SLM/price or fee to be used on these occasions?	Refer to general conditions 14.03 .
29u	Section 033000 and 016800	The concrete for water holding structures specified in Section 033000 Cast In place concrete I with crystalline concrete waterproof admixture and again stated under Section 016800 part 2.1 the waterproofing material coating such as Xypex required for immersed environment. Please conform the intent is both application necessary.	All new water retaining structures shall follow the requirements of 033000 and have water proofing added to the concrete mix, redundant water proof coating is not required. Testing of all structures listed in Specification 016800 shall be done as specified.
29v	Section 260543	Spec Section 260543-10 Paragraph I. Please clarify bolt together conduit sealing device that can withstand 15psi, are this for all conduit. (a) Please confirm. General practice is that 15psi is for the explosion proof sealing device (EYS). This will stand 15psi and other conduit termination not exposed to change in temperature i.e. ducts from manhole to panels and ducts from panel to panel usually using duct seal. (b). Please also clarify specs " duct sealing compound is not a replacement for manufactured duct sealing services, does this mean we cannot use duct seal and we need to use manufactured bolt on together sealing devices that can withstand 15psi if there is. (c). If so, please specify products and models of the sealing devices since this maybe expensive and the project will require numerous of this.	In reference to spec section 26 05 43.10 paragraph I, delete the entire paragraph and replace it with the following requirement: I. Sealing: provide temporary closure at terminations of duct with pulled cables. Seal spare duct at terminations. Use sealing compound and plugs to withstand at least 15-psig (1.03-MPa) hydrostatic pressure. Provide conduit plug to prevent debris from entering duct.

RFI No.	REFERENCE SECTION	QUESTION/INQUIRY AS SUBMITTED	GWA RESPONSE
29w		Sheet E0.0.15 General Notes mentions Coordinate Telephone service with service provider. Is the application payment by contractor is so please provide cost for uniformity of bid.	Contractor to coordinate with utility service provider for this requirement. Cost for this service will be uniform and will not vary, because the contractors will be using and submitting the same contract documents. EMCE cannot provide the cost at present, because cost might change during final submittal to the utility company.
29x		On Sheet MP1.3.2 drawing, please provide detail to follow for connection to corporation stop and pressure gauge as mentioned to connect to 12"x20" 90 degree reducing bend and 24"x14" eccentric reducer.	A corporation stop may be used as called on plans. Further detail may be provided during construction.
29y		We request to provide pump seal water drawing detail at sludge mixing pump in MP13.2.1, detail provided is detail G at MP0.8.7 at which detail G on that sheet is for buried valve box.	Detail shall be D on MP0.8.7.
29z		On Architectural Drawing on Floor, please provide specification to follow for F1 Clear Concrete Sealer, F2 Epoxy Coating, F3 Heavy Traffic Coating and F4 Ceramic Tile.	Specification to be provided by addendum.
29aa		Questions were provided on Centrifuges similar to RFI 28a to 28r.	Refer to responses to RFI 28a to 28r.
29bb	Sheet MP0.8.7	On Sheet MP0.8.7 for Pump Seal Water Detail B,C & D, mentions copper and stainless steel pipes however as per Specification 221116 (domestic water piping) Paragraph 2.1.A Piping Materials states comply with requirements in "Piping Schedule" which is for NPW and the material as per table schedule is PVC Pipe. Please confirm which to follow.	Detail B/MP0.8.7 is not used and may be disregarded. Detail D/MP0.8.7 shall be implemented as shown where designated on the Drawings. The NPW shown on Pipe Schedule as PVC may be followed for Detail C/MP0.8.7 with union immediately downstream of final VB transitioning to SS tubing. Use SS adapters and bushings as required for connection to PC pumps.
30a	Sheet MP12.2.3 and Sheet I12.0.2	Reference the ATAD Motive Auxiliary Pump and the ATAD Motive Pump 2 on Sheet MP12.2.3 and Sheet I12.0.2: Sheet I12.0.2 shows two 24" dia. plug valves between these pumps. Sheet MP12.2.3 shows one 24" dia. plug valve between these pumps. Which is correct?	MP12.2.3 is correct.


RFI No.	REFERENCE SECTION	QUESTION/INQUIRY AS SUBMITTED	GWA RESPONSE
30b	Sheets MP12.2.3, MP12.3.3, MP12.3.6	Please confirm that the 90-degree elbow at the discharge of ATAD Motive Pump 1 is a 24"x20" reducing elbow (Sheets MP12.2.3, MP12.3.3, MP12.3.6).	Confirmed. 24"x20" Reducing elbow as shown.
30c	ATAD and SNDR Tanks	<p>Please provide construction details for the roof penetrations in the ATAD and SNDR Tanks for the Splash Cone Assemblies.</p> <p>a. Do any of the mechanical details on Sheets MP0.8.1 or MP0.8.2 apply?</p> <p>b. From Specification Section 467324/2.4/B and the MP12 drawings – These roof penetrations are flanged 14" diameter and the piping connection is 6" diameter. Is this a flanged 14"x6" reducer or is this a flanged 6" nozzle on a 14" blind flange?</p> <p>c. What is the material of construction for the roof penetrations (ductile iron, SS316, other)?</p>	<p>a. Penetrations shall be coordinated with the double tee manufacturer.</p> <p>b. Flanged 6" nozzle on a 14" blind flange.</p> <p>c. Materials shall match connecting piping.</p>
30d	Specification Section 442223 Centrifuges	Questions were provided on Centrifuges similar to RFI 28a to 28r.	Refer to responses to RFI 28a to 28r.

RFI No.	REFERENCE SECTION	QUESTION/INQUIRY AS SUBMITTED	GWA RESPONSE
30e	Section 444256.	<p>Specification Section 444256.10 Chopper Pumps</p> <p>a. In reviewing the chopper pump spec 444256.10, 2.15.A. under controls, which Vaughan is not providing, it mentions recirculation actuators – drawings MP4.3.3, MP7.2.1, MP7.3.2, E4.2.4, E7.2.3, I4.0.3 and I.7.02 do not show an actuator.</p> <p>b. 2.15.B.6 actuator running, high motor temperature, seal failure – this sounds like a submersible reference and the drawings do not show these items.</p> <p>c. 2.15.C.3 controls for the mixing valve – again I could not find these items on the drawing, same as 2.15.A.</p> <p>d. Drawing MO0.0.6 states the pump performance of the septage pump as 600 GPM @ 35 ft. TDH. The spec 444256.10, 2.3.A shows 600 GPM @ 34 ft. TDH. Could you have them verify which is correct.</p> <p>e. Drawing EO.0.9 shows the motor of the scum pumps as 20 HP.</p>	<p>a. Recirculation assembly is to be manually actuated. See Section 2.11.A of Specification 444256.10.</p> <p>b. Pump configuration for all chopper pumps is as shown on the Drawings (Vertical Recirculator). Appropriate pilot lights showing fault conditions shall be supplied and reviewed in the Submittal phase.</p> <p>c. Please reference the CONSTRUCTION SET not the PERMIT SET of Specifications. This phrase does not exist in the CONSTRUCTION SET.</p> <p>d. Please reference the CONSTRUCTION SET not the PERMIT SET of Drawings and Specifications. Both Sheet MP0.0.6 and Specification 444256.10 show 600 GPM @ 45' TDH.</p> <p>e. Maximum motor horsepower of the scum pumps is 5 HP. See Sheet MP0.0.6 or Specification 444256.10, 2.3.A.</p>
30f	Sheet S0.0.2	<p>Response to RFI no.5, 11d Structural Drawings. GWA response to refer to Sheet S0.0.2 Subgrade Improvements, for the purpose of estimating which one do we consider;</p> <p>a. 1" thick 1,500psi lean concrete or</p> <p>b. 8" thick base course + vapor barrier sheet?</p>	<p>Items 1 and 2 listed on S0.0.2 Subgrade Improvements shall be considered incidental to foundation preparation work. Item 3 will be considered a different site condition. All enclosed structures will require a vapor barrier sheet.</p>
30g	Sheet S11.2.5	Please provide specification for Pre-engineered Aluminum roof called out in Odor Control /Electrical Building sheet S11.2.5.	Information was provided in Addendum 1 with revised specification.
30h	Sheet A0.7	Please confirm that all new guard railings and handrailing required for all locations to follow the details provided in sheet A0.7 with eight lines of 1-1/2" diameter standard pipe regardless of elevation drawings provided for each process buildings.	Confirmed. All handrails and railings are aluminum. Please see attached drawings A0.7.
30i	Sheet A0.7	Please confirm that all railings and handrailing are to be made of aluminum as per Railing Details on sheet A0.7.	All handrails and railings are aluminum. See attached drawings A0.7.

RFI No.	REFERENCE SECTION	QUESTION/INQUIRY AS SUBMITTED	GWA RESPONSE
30j	Route 3 Influent Pump Station	Please identify which areas needs new railing for Route 3 Influent Pump Station. Some new railings are called out in structural drawings S1-1.1.4 but are not shown in architectural drawings	Refer to Addendum A sheet S1-1.1.4 for additional guard rails not shown on architectural drawings.
30k	Section 055200	Please identify where to apply specification section 055200 Steel Handrails and Guards when stair and handrail details shows aluminum in sheet A0.7.	Refer answered Item 30i
30l	UV Disinfection Building	Please confirm there is no required guard rail for UV disinfection building	None is required. The entire open floor is covered by either FRP channel covers or aluminum grating.
30m	RAS/WAS Building	Please confirm for railing at roof hatch in RAS/WAS is to follow architectural railing with 8-lines of 1-1/2' diameter aluminum pipe as called out in sheet S8.4.3	Delete guard rail around roof hatch at RAS/WAS.
30n	Bid Schedule	GWA had recently issued Addendum No.4 with Specifications and Plan Set Drawings. With all this revisions and updates, may we request five (5) days extension to submit RFI's and four (4) weeks' time extension for bid due date.	There will be no additional extension for RFI's. The bid submission date was extended to May 29, 2019 in Addendum 5.
31a	Article 7- Attachments to this Bid	There are required documents listed under "Article 7-Attachments to this Bid", "Procurement Checklist", and "Appendices" all until Addendum No.4. Please specify other required documents needed to be submitted not listed in the above-mentioned documents	Section 00410 - Bid Form has been revised. Refer to Updated Bid Form in Addendum No. 6
31b	Thickening Facility	2. Architectural drawing for thickening facility does not show the railing requirement for the new pre-engineered metal platform but shown in structural drawing S10.3.1 with 2-lines of railing. Please confirm if the intention is to provide 2 lines of railing and clarify if the material is aluminum or steel.	See response to RFI No. 16F and guardrail shall be per architectural sheet A0.7.
32a	Sheet A0.7 and Section 055823	Details 5, 6, 7, & 9 on A0.7 indicate welded aluminum railings ("all joints to be welded and grind smooth") whereas aluminum railing spec 055823, 2.3, B provides for non-welded rail connections. 3.3, F also indicates "mechanical or adhesive joiner method and fittings." Please clarify that the railings are to be welded connection.	Refer to answered Item 30i.
32b	Aluminum Handrail	Bidder Question 20d on Response 7 indicated the railing finish to be siliconized powder coating. Please confirm if AAMA 2603, 2604, or 2605 criteria. Also, will primer coat be required?	Aluminum Railing is a clear anodized finished.

RFI No.	REFERENCE SECTION	QUESTION/INQUIRY AS SUBMITTED	GWA RESPONSE
33a	Addendum 1 drawing SO.0.2 – Structural General Notes Foundation Probes	Foundation Subgrade Preparation and Foundation Probe Notes items 3, 4 & 5 Question: Please confirm if the above probe hole requirement also applies to deep foundation and rigid slab of Process 3 and 4 Oxidation Ditches and Secondary Clarifiers respectively.	Yes. Refer to Note 5 “One probe hole per each 100 square feet of rigid concrete slab foundations and also rigid concrete mat foundations, to minimum 20 feet below foundation bottom.”
33b	Process 20-1 – Standby Power (Main Electrical Room)	Bid item Please advise which bid item will Process 20-1 will be included	Process 20 has a dedicated bid item for it. Use the dedicated bid item
34	Sheet MP12.3.4	The piping serving ATAD Blower 1 has callouts labeled 6" VDC & 6" VDF. The piping serving the ATAD blowers and SDNR blower on sheets MP12.3.3, MP12.3.4 & MP12.3.6 is all drawn as 8". Please clarify.	Valves and piping shall be 8" as shown on all other sheets and P&IDs.

Bidders are also notified to visit GWA website: www.guamwaterworks.org to ensure that addenda to the bid, answers to questions, and reminders are communicated to all bidders throughout the solicitation process.


MIGUEL C. BORDALLO, P.E.
General Manager

MCB;gb

BID FORM (ADDENDUM C – For Change Delineation Only)

Northern District Wastewater Treatment Plant (NDWWTP) Upgrade to Secondary Treatment

GWA Project No. S17-003-OEA

OEA Grant OCO N676-16-02

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ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

Miguel C. Bordallo, P.E.
General Manager
Guam Waterworks Authority
Gloria B. Nelson Public Service Building
688 Route 15, Mangilao, Guam 96913

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 75 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

- A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

- B. Bidder has conducted a thorough, alert visual examination of the Site, staging and adjacent areas, videos, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent

to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

- E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.
- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s) as delineated per scope item. Prices include all labor, materials, services, and equipment necessary for completion of the Work for a complete and operational wastewater treatment facility at the Northern District WWTP site. All other Work not listed in the following list are considered incidental and are an obligation of the Contractor under the various Bid Items as specified in the Bid at no additional cost to Owner.

- A. Bidders are informed that the bid plans are ordered by Process. Each process presented in the list below consists of but may not be limited to Mechanical, Architectural, Structural, Plumbing, Electrical, and Instrumentation disciplines. Bidders will use this ordering system when developing the Price for the bid items below that call out a specific process.
- B. Owner may elect to provide a portion (approximately 200 tons) of the reinforcing steel for this project at a unit rate per ton, provided to the Contractor as a deductive change order. This unit rate will be based on Contractor’s realized actual unit pricing, delivered to Guam, and supported by receipts. This rebar is currently located at the Baza Gardens WWTP Site approximately 17 miles from the NDWWTP Site. The Contractor will be responsible for transporting this rebar from Baza Gardens WWTP to the NDWWTP. If there is a cost difference between transporting from Baza Gardens WWTP and transporting from the port to the NDWWTP Site, the Contractor will be reasonably compensated at a price agreed to by both parties.
- C. Bidders to include in other Bid item(s) the other costs (if any) associated with accepting such assignment and administering the assigned contract.

5.02 Base Bid:

Base Bid		
Scope Item	Description	Price
1	Mobilization, Not to Exceed 3% of Total Basic Price	\$
2	Insurance and Bonds	\$
3	Project Management, Temporary Facilities and Site Layout	\$
4	Extended Warranty	\$
5	Environmental Protection and Erosion Control Measures	\$

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Bid Form (Addendum C – For Change Delineation Only)

Base Bid		
6	Site Clearing	\$
7	Access Road, Guard Rails and Site Pavement	\$
8	Perimeter Fence Line	\$
9	Project Site Grading and Site Turf	\$
10	Project Site Drainage Improvements	\$
11	Site yard piping demolition works	\$
12	Facility Demolition Works	\$
13	Asbestos and Lead containing Material Handling and Abatement	\$
14	Sludge Removal	\$
15	Process Yard Piping, Including Piping Between Existing and New Site	\$
16	Project off-site Pavement	\$
17	Site Electrical	\$
18	Process 1: Southern Link Pump Station	\$
19	Process 1-1: Route 3 Pump Station	\$
20	Process 2: New Headworks	\$
21	Process 3: Oxidation Ditches	\$
22	Process 4: Secondary Clarifiers and Scum Pumping Station	\$
23	Process 6: UV Disinfection System	\$
24	Process 7: Septage Receiving Station	\$
25	Process 8: RAS/WAS Pump Station	\$
26	Process 9: Aerated Sludge Storage Facility and Pump Station	\$

Base Bid		
27	Process 10: Thickening Facility	\$
28	Process 11: ATAD	\$
29	Process 12: Digester Equipment Building	\$
30	Process 13: Sludge Storage Tanks	\$
31	Process 14: Dewatering Facility	\$
32	Process 15: Side-Stream Pump Station	\$
33	Process 16: Plant Water Systems	\$
34	Process 17: New Administration Building	\$
35	Process 18: Renovated/ Repurpose Lab	\$
36	Process 19: Maintenance Building	\$
37	Process 20: Standby Generator and Building	\$
38	Plant Start-up and Training	\$
39	Project Closeout	\$
	Total Base Price	\$

[Total Price In words]

5.03 The following bid items describe the Deductive Alternate Items, in order of priority, for this Work. Evaluation of Bids and award of Contract will proceed as described in Article 19 of the Instructions to Bidders. In the case that any of the following deductive alternates items are executed to the Contract, the Bidder will complete the following in accordance with the Contract Documents for the following price(s):

A. Alternate Bid A, ATAD and Digester Complex: This deductive alternate item will remove the ATAD treatment process. The solids process system provided in process 9, 10, 11 and 12 will remain and provide for solids stabilization, thickening and dewatering.

i) Alternate Bid A

Alternate Bid A		
Scope Item	Description	Price
1	Mobilization, Not to Exceed 3% of Total Basic Price	\$
2	Insurance and Bonds	\$
3	Project Management, Temporary Facilities and Site Layout	\$
4	Extended Warranty	\$
5	Environmental Protection and Erosion Control Measures	\$
6	Site Clearing	\$
7	Access Road, Guard Rails and Site Pavement	\$
8	Perimeter Fence Line	\$
9	Project Site Grading and Site Turf	\$
10	Project Site Drainage Improvements	\$
11	Site yard piping demolition works	\$
12	Facility Demolition Works	\$
13	Asbestos and Lead containing Material Handling and Abatement	\$
14	Process Yard Piping, Including Piping Between Existing and New Site	\$
15	Project Off-site Pavement	\$

Alternate Bid A		
16	Site Electrical	\$
17	Process 1: Southern Link Pump Station	\$
18	Process 1-1: Route 3 Pump Station	\$
19	Process 2: New Headworks	\$
20	Process 3: Oxidation Ditches	\$
21	Process 4: Secondary Clarifiers and Scum Pumping Station	\$
22	Process 6: UV Disinfection System	\$
23	Process 7: Septage Receiving Station	\$
24	Process 8: RAS/WAS Pump Station	\$
25	Process 9: Aerated Sludge Storage Facility and Pump Station	\$
26	Process 10: Thickening Facility	\$
27	Process 13: Sludge Storage Tanks	\$
28	Process 14: Dewatering Facility	\$
29	Process 15: Side-Stream Pump Station	\$
30	Process 16: Plant Water Systems	\$
31	Process 17: New Administration Building	\$
32	Process 18: Renovated/ Repurpose Lab	\$
33	Process 19: Maintenance Building	\$
34	Process 20: Standby Generator and Building	\$
35	Plant Start-up and Training	\$
36	Project Closeout	\$

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Bid Form (Addendum C – For Change Delineation Only)

Alternate Bid A		
	Total Base Price	\$

[Total Price In words]

- B. Alternate Bid B, New Administration Building: This deductive alternate item will remove the processes noted in Alternate A and the new administration building (Process 17). The renovated and repurposed laboratory (process 18) will serve as the administrative office if this alternate bid item is executed.

i) Alternate Bid B

Alternate Bid B		
Scope Item	Description	Price
1	Mobilization, Not to Exceed 3% of Total Basic Price	\$
2	Insurance and Bonds	\$
3	Project Management, Temporary Facilities and Site Layout	\$
4	Extended Warranty	\$
5	Environmental Protection and Erosion Control Measures	\$
6	Site Clearing	\$
7	Access Road, Guard Rails and Site Pavement	\$
8	Perimeter Fence Line	\$
9	Project Site Grading and Site Turf	\$
10	Project Site Drainage Improvements	\$
11	Site yard piping demolition works	\$
12	Facility Demolition Works	\$
13	Asbestos and Lead containing Material Handling and Abatement	\$
14	Process Yard Piping, Including Piping Between Existing and New Site	\$
15	Project Off-site Pavement	\$
16	Site Electrical	\$
17	Process 1: Southern Link Pump Station	\$
18	Process 1-1: Route 3 Pump Station	\$

Alternate Bid B		
19	Process 2: New Headworks	\$
20	Process 3: Oxidation Ditches	\$
21	Process 4: Secondary Clarifiers and Scum Pumping Station	\$
22	Process 6: UV Disinfection System	\$
23	Process 7: Septage Receiving Station	\$
24	Process 8: RAS/WAS Pump Station	\$
25	Process 9: Aerated Sludge Storage Facility and Pump Station	\$
26	Process 10: Thickening Facility	\$
27	Process 13: Sludge Storage Tanks	\$
28	Process 14: Dewatering Facility	\$
29	Process 15: Side-Stream Pump Station	\$
30	Process 16: Plant Water Systems	\$
31	Process 18: Renovated/ Repurpose Lab	\$
32	Process 19: Maintenance Building	\$
33	Process 20: Standby Generator and Building	\$
34	Plant Start-up and Training	\$
35	Project Closeout	\$
	Total Base Price	\$

[Total Price In words]

- C. Alternate Bid C, New Septage Receiving Station: This deductive alternate item will remove the processes noted in Alternates A and B and the new septage receiving station (Process 7). The existing septage receiving station will remain in operation if this alternate is executed.

i) Alternate Bid C

Alternate Bid C		
Scope Item	Description	Price
1	Mobilization, Not to Exceed 3% of Total Basic Price	\$
2	Insurance and Bonds	\$
3	Project Management, Temporary Facilities and Site Layout	\$
4	Extended Warranty	\$
5	Environmental Protection and Erosion Control Measures	\$
6	Site Clearing	\$
7	Access Road, Guard Rails and Site Pavement	\$
8	Perimeter Fence Line	\$
9	Project Site Grading and Site Turf	\$
10	Project Site Drainage Improvements	\$
11	Site yard piping demolition works	\$
12	Facility Demolition Works	\$
13	Asbestos and Lead containing Material Handling and Abatement	\$
14	Process Yard Piping, Including Piping Between Existing and New Site	\$
15	Project Off-site Pavement	\$
16	Site Electrical	\$
17	Process 1: Southern Link Pump Station	\$

Alternate Bid C		
18	Process 1-1: Route 3 Pump Station	\$
19	Process 2: New Headworks	\$
20	Process 3: Oxidation Ditches	\$
21	Process 4: Secondary Clarifiers and Scum Pumping Station	\$
22	Process 6: UV Disinfection System	\$
23	Process 8: RAS/WAS Pump Station	\$
24	Process 9: Aerated Sludge Storage Facility and Pump Station	\$
25	Process 10: Thickening Facility	\$
26	Process 13: Sludge Storage Tanks	\$
27	Process 14: Dewatering Facility	\$
28	Process 15: Side-Stream Pump Station	\$
29	Process 16: Plant Water Systems	\$
30	Process 18: Renovated/ Repurpose Lab	\$
31	Process 19: Maintenance Building	\$
32	Process 20: Standby Generator and Building	\$
33	Plant Start-up and Training	\$
34	Project Closeout	\$
	Total Base Price	\$

[Total Price In words]

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Bid Form (Addendum C – For Change Delineation Only)

- D. Alternate Bid D, Extended Warranty: This deductive alternate item will remove the processes noted in Alternates A, B, and C and the extended warranties from the equipment listed in specification 017820 – Extended Equipment Warranties. Warranties presented in each individual specification will still be required if this alternate is executed.

i) Alternate Bid DB

Alternate Bid D		
Scope Item	Description	Price
1	Mobilization, Not to Exceed 3% of Total Basic Price	\$
2	Insurance and Bonds	\$
3	Project Management, Temporary Facilities and Site Layout	\$
4	Environmental Protection and Erosion Control Measures	\$
5	Site Clearing	\$
6	Access Road, Guard Rails and Site Pavement	\$
7	Perimeter Fence Line	\$
8	Project Site Grading and Site Turf	\$
9	Project Site Drainage Improvements	\$
10	Site yard piping demolition works	\$
11	Facility Demolition Works	\$
12	Asbestos and Lead containing Material Handling and Abatement	\$
13	Process Yard Piping, Including Piping Between Existing and New Site	\$
14	Project Off-site Pavement	\$
15	Site Electrical	\$
16	Process 1: Southern Link Pump Station	\$
17	Process 1-1: Route 3 Pump Station	\$

Alternate Bid D		
18	Process 2: New Headworks	\$
19	Process 3: Oxidation Ditches	\$
20	Process 4: Secondary Clarifiers and Scum Pumping Station	\$
21	Process 6: UV Disinfection System	\$
22	Process 8: RAS/WAS Pump Station	\$
23	Process 9: Aerated Sludge Storage Facility and Pump Station	\$
24	Process 10: Thickening Facility	\$
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30	Process 19: Maintenance Building	\$
31	Process 20: Standby Generator and Building	\$
32	Plant Start-up and Training	\$
33	Project Closeout	\$
	Total Base Price	\$

[Total Price In words]

Section 00410

Bid Form (Addendum C – For Change Delineation Only)

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following information must be submitted as part of this Bid Form. ~~documents are submitted with and made a condition of this Bid:~~

~~A. Required Bid security;~~

A. List of Proposed Subcontractors whose subcontract amount exceeds \$500,000;

1. _____
2. _____
3. _____
4. _____
5. _____

~~B. List of Proposed Suppliers.~~

~~C.B.~~ List of manufacturers and equipment cost of ~~for~~ the following major equipment:

Specification Number	Equipment	<u>Manufacture Name</u>
442223	Centrifuges	_____
443119	Biotrickling Filter Odor Control System	_____
444213.13	Jet Mix Aeration System and Appurtenances	_____
444256.09	Non-Clog Centrifugal Pumps	_____
444256.13	Progressing Cavity Sludge Pumps	_____
444257.11	Non-Clog Dry-Pit Centrifugal Pumps	_____
444626.02	Gravity Belt Thickener	_____
462133	Rotary Drum Screens	_____
462183	Septage Receiving Equipment	_____
462323	Vortex Grit Removal System	_____
464321	Secondary Clarifier	_____
465361	Oxidation Ditches	_____
466656	Ultraviolet (UV) Disinfection System	_____

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Bid Form (Addendum C – For Change Delineation Only)

467324

Autothermal Thermophilic Aerobic
Digestion System

~~D.—Evidence of authority to do business in the Territory of Guam; or a written covenant to obtain such license within the time for acceptance was required by the Step 1 Bids. If the Contractor submitted a written covenant to obtain the license in the Step 1 Bid, then evidence of Authority to do Business in the Territory of Guam will be required in the Step 2 Bid.~~

~~Guam Contractor's License No.: _____~~

ARTICLE 8 – DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

By:

[Signature] _____

[Printed name] _____

(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:

[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

Section 00410

Bid Form (Addendum C – For Change Delineation Only)

Bidder's License No.:

(where applicable)

BID FORM (ADDENDUM C)

Northern District Wastewater Treatment Plant (NDWWTP) Upgrade to Secondary Treatment

GWA Project No. S17-003-OEA

OEA Grant OCO N676-16-02

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General Manager
Guam Waterworks Authority
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1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

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<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

- B. Bidder has conducted a thorough, alert visual examination of the Site, staging and adjacent areas, videos, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
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3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
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- A. Bidders are informed that the bid plans are ordered by Process. Each process presented in the list below consists of but may not be limited to Mechanical, Architectural, Structural, Plumbing, Electrical, and Instrumentation disciplines. Bidders will use this ordering system when developing the Price for the bid items below that call out a specific process.
- B. Owner may elect to provide a portion (approximately 200 tons) of the reinforcing steel for this project at a unit rate per ton, provided to the Contractor as a deductive change order. This unit rate will be based on Contractor’s realized actual unit pricing, delivered to Guam, and supported by receipts. This rebar is currently located at the Baza Gardens WWTP Site approximately 17 miles from the NDWWTP Site. The Contractor will be responsible for transporting this rebar from Baza Gardens WWTP to the NDWWTP. If there is a cost difference between transporting from Baza Gardens WWTP and transporting from the port to the NDWWTP Site, the Contractor will be reasonably compensated at a price agreed to by both parties.
- C. Bidders to include in other Bid item(s) the other costs (if any) associated with accepting such assignment and administering the assigned contract.

5.02 Base Bid:

Base Bid		
Scope Item	Description	Price
1	Mobilization, Not to Exceed 3% of Total Basic Price	\$
2	Insurance and Bonds	\$
3	Project Management, Temporary Facilities and Site Layout	\$
4	Extended Warranty	\$
5	Environmental Protection and Erosion Control Measures	\$

Base Bid		
6	Site Clearing	\$
7	Access Road, Guard Rails and Site Pavement	\$
8	Perimeter Fence Line	\$
9	Project Site Grading and Site Turf	\$
10	Project Site Drainage Improvements	\$
11	Site yard piping demolition works	\$
12	Facility Demolition Works	\$
13	Asbestos and Lead containing Material Handling and Abatement	\$
14	Sludge Removal	\$
15	Process Yard Piping, Including Piping Between Existing and New Site	\$
16	Project off-site Pavement	\$
17	Site Electrical	\$
18	Process 1: Southern Link Pump Station	\$
19	Process 1-1: Route 3 Pump Station	\$
20	Process 2: New Headworks	\$
21	Process 3: Oxidation Ditches	\$
22	Process 4: Secondary Clarifiers and Scum Pumping Station	\$
23	Process 6: UV Disinfection System	\$
24	Process 7: Septage Receiving Station	\$
25	Process 8: RAS/WAS Pump Station	\$
26	Process 9: Aerated Sludge Storage Facility and Pump Station	\$

Base Bid		
27	Process 10: Thickening Facility	\$
28	Process 11: ATAD	\$
29	Process 12: Digester Equipment Building	\$
30	Process 13: Sludge Storage Tanks	\$
31	Process 14: Dewatering Facility	\$
32	Process 15: Side-Stream Pump Station	\$
33	Process 16: Plant Water Systems	\$
34	Process 17: New Administration Building	\$
35	Process 18: Renovated/ Repurpose Lab	\$
36	Process 19: Maintenance Building	\$
37	Process 20: Standby Generator and Building	\$
38	Plant Start-up and Training	\$
39	Project Closeout	\$
	Total Base Price	\$

[Total Price In words]

5.03 The following bid items describe the Deductive Alternate Items, in order of priority, for this Work. Evaluation of Bids and award of Contract will proceed as described in Article 19 of the Instructions to Bidders. In the case that any of the following deductive alternates items are executed to the Contract, the Bidder will complete the following in accordance with the Contract Documents for the following price(s):

A. Alternate Bid A, ATAD and Digester Complex: This deductive alternate item will remove the ATAD treatment process. The solids process system provided in process 9, 10, 11 and 12 will remain and provide for solids stabilization, thickening and dewatering.

i) Alternate Bid A

Alternate Bid A		
Scope Item	Description	Price
1	Mobilization, Not to Exceed 3% of Total Basic Price	\$
2	Insurance and Bonds	\$
3	Project Management, Temporary Facilities and Site Layout	\$
4	Extended Warranty	\$
5	Environmental Protection and Erosion Control Measures	\$
6	Site Clearing	\$
7	Access Road, Guard Rails and Site Pavement	\$
8	Perimeter Fence Line	\$
9	Project Site Grading and Site Turf	\$
10	Project Site Drainage Improvements	\$
11	Site yard piping demolition works	\$
12	Facility Demolition Works	\$
13	Asbestos and Lead containing Material Handling and Abatement	\$
14	Process Yard Piping, Including Piping Between Existing and New Site	\$

Alternate Bid A		
15	Project Off-site Pavement	\$
16	Site Electrical	\$
17	Process 1: Southern Link Pump Station	\$
18	Process 1-1: Route 3 Pump Station	\$
19	Process 2: New Headworks	\$
20	Process 3: Oxidation Ditches	\$
21	Process 4: Secondary Clarifiers and Scum Pumping Station	\$
22	Process 6: UV Disinfection System	\$
23	Process 7: Septage Receiving Station	\$
24	Process 8: RAS/WAS Pump Station	\$
25	Process 9: Aerated Sludge Storage Facility and Pump Station	\$
26	Process 10: Thickening Facility	\$
27	Process 13: Sludge Storage Tanks	\$
28	Process 14: Dewatering Facility	\$
29	Process 15: Side-Stream Pump Station	\$
30	Process 16: Plant Water Systems	\$
31	Process 17: New Administration Building	\$
32	Process 18: Renovated/ Repurpose Lab	\$
33	Process 19: Maintenance Building	\$
34	Process 20: Standby Generator and Building	\$
35	Plant Start-up and Training	\$
36	Project Closeout	\$

Alternate Bid A		
	Total Price	\$

[Total Price In words]

- B. Alternate Bid B, New Administration Building: This deductive alternate item will remove the processes noted in Alternate A and the new administration building (Process 17). The renovated and repurposed laboratory (process 18) will serve as the administrative office if this alternate bid item is executed.

i) Alternate Bid B

Alternate Bid B		
Scope Item	Description	Price
1	Mobilization, Not to Exceed 3% of Total Basic Price	\$
2	Insurance and Bonds	\$
3	Project Management, Temporary Facilities and Site Layout	\$
4	Extended Warranty	\$
5	Environmental Protection and Erosion Control Measures	\$
6	Site Clearing	\$
7	Access Road, Guard Rails and Site Pavement	\$
8	Perimeter Fence Line	\$
9	Project Site Grading and Site Turf	\$
10	Project Site Drainage Improvements	\$
11	Site yard piping demolition works	\$
12	Facility Demolition Works	\$
13	Asbestos and Lead containing Material Handling and Abatement	\$
14	Process Yard Piping, Including Piping Between Existing and New Site	\$
15	Project Off-site Pavement	\$
16	Site Electrical	\$
17	Process 1: Southern Link Pump Station	\$
18	Process 1-1: Route 3 Pump Station	\$

Alternate Bid B		
19	Process 2: New Headworks	\$
20	Process 3: Oxidation Ditches	\$
21	Process 4: Secondary Clarifiers and Scum Pumping Station	\$
22	Process 6: UV Disinfection System	\$
23	Process 7: Septage Receiving Station	\$
24	Process 8: RAS/WAS Pump Station	\$
25	Process 9: Aerated Sludge Storage Facility and Pump Station	\$
26	Process 10: Thickening Facility	\$
27	Process 13: Sludge Storage Tanks	\$
28	Process 14: Dewatering Facility	\$
29	Process 15: Side-Stream Pump Station	\$
30	Process 16: Plant Water Systems	\$
31	Process 18: Renovated/ Repurpose Lab	\$
32	Process 19: Maintenance Building	\$
33	Process 20: Standby Generator and Building	\$
34	Plant Start-up and Training	\$
35	Project Closeout	\$
	Total Price	\$

[Total Price In words]

- C. Alternate Bid C, New Septage Receiving Station: This deductive alternate item will remove the processes noted in Alternates A and B and the new septage receiving station (Process 7). The existing septage receiving station will remain in operation if this alternate is executed.

i) Alternate Bid C

Alternate Bid C		
Scope Item	Description	Price
1	Mobilization, Not to Exceed 3% of Total Basic Price	\$
2	Insurance and Bonds	\$
3	Project Management, Temporary Facilities and Site Layout	\$
4	Extended Warranty	\$
5	Environmental Protection and Erosion Control Measures	\$
6	Site Clearing	\$
7	Access Road, Guard Rails and Site Pavement	\$
8	Perimeter Fence Line	\$
9	Project Site Grading and Site Turf	\$
10	Project Site Drainage Improvements	\$
11	Site yard piping demolition works	\$
12	Facility Demolition Works	\$
13	Asbestos and Lead containing Material Handling and Abatement	\$
14	Process Yard Piping, Including Piping Between Existing and New Site	\$
15	Project Off-site Pavement	\$
16	Site Electrical	\$
17	Process 1: Southern Link Pump Station	\$
18	Process 1-1: Route 3 Pump Station	\$

Alternate Bid C		
19	Process 2: New Headworks	\$
20	Process 3: Oxidation Ditches	\$
21	Process 4: Secondary Clarifiers and Scum Pumping Station	\$
22	Process 6: UV Disinfection System	\$
23	Process 8: RAS/WAS Pump Station	\$
24	Process 9: Aerated Sludge Storage Facility and Pump Station	\$
25	Process 10: Thickening Facility	\$
26	Process 13: Sludge Storage Tanks	\$
27	Process 14: Dewatering Facility	\$
28	Process 15: Side-Stream Pump Station	\$
29	Process 16: Plant Water Systems	\$
30	Process 18: Renovated/ Repurpose Lab	\$
31	Process 19: Maintenance Building	\$
32	Process 20: Standby Generator and Building	\$
33	Plant Start-up and Training	\$
34	Project Closeout	\$
	Total Price	\$

[Total Price In words]

- D. Alternate Bid D, Extended Warranty: This deductive alternate item will remove the processes noted in Alternates A, B, and C and the extended warranties from the equipment listed in specification 017820 – Extended Equipment Warranties. Warranties presented in each individual specification will still be required if this alternate is executed.

i) Alternate Bid D

Alternate Bid D		
Scope Item	Description	Price
1	Mobilization, Not to Exceed 3% of Total Basic Price	\$
2	Insurance and Bonds	\$
3	Project Management, Temporary Facilities and Site Layout	\$
4	Environmental Protection and Erosion Control Measures	\$
5	Site Clearing	\$
6	Access Road, Guard Rails and Site Pavement	\$
7	Perimeter Fence Line	\$
8	Project Site Grading and Site Turf	\$
9	Project Site Drainage Improvements	\$
10	Site yard piping demolition works	\$
11	Facility Demolition Works	\$
12	Asbestos and Lead containing Material Handling and Abatement	\$
13	Process Yard Piping, Including Piping Between Existing and New Site	\$
14	Project Off-site Pavement	\$
15	Site Electrical	\$
16	Process 1: Southern Link Pump Station	\$
17	Process 1-1: Route 3 Pump Station	\$

Alternate Bid D		
18	Process 2: New Headworks	\$
19	Process 3: Oxidation Ditches	\$
20	Process 4: Secondary Clarifiers and Scum Pumping Station	\$
21	Process 6: UV Disinfection System	\$
22	Process 8: RAS/WAS Pump Station	\$
23	Process 9: Aerated Sludge Storage Facility and Pump Station	\$
24	Process 10: Thickening Facility	\$
25	Process 13: Sludge Storage Tanks	\$
26	Process 14: Dewatering Facility	\$
27	Process 15: Side-Stream Pump Station	\$
28	Process 16: Plant Water Systems	\$
29	Process 18: Renovated/ Repurpose Lab	\$
30	Process 19: Maintenance Building	\$
31	Process 20: Standby Generator and Building	\$
32	Plant Start-up and Training	\$
33	Project Closeout	\$
	Total Price	\$

[Total Price In words]

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following information must be submitted as part of this Bid Form.

- A. List of Proposed Subcontractors whose subcontract amount exceeds \$500,000;

1. _____
2. _____
3. _____
4. _____
5. _____

- B. List of manufacturers for the following major equipment:

Specification Number	Equipment	Manufacture Name
442223	Centrifuges	_____
443119	Biotrickling Filter Odor Control System	_____
444213.13	Jet Mix Aeration System and Appurtenances	_____
444256.09	Non-Clog Centrifugal Pumps	_____
444256.13	Progressing Cavity Sludge Pumps	_____
444257.11	Non-Clog Dry-Pit Centrifugal Pumps	_____
444626.02	Gravity Belt Thickener	_____
462133	Rotary Drum Screens	_____
462183	Septage Receiving Equipment	_____
462323	Vortex Grit Removal System	_____
464321	Secondary Clarifier	_____
465361	Oxidation Ditches	_____
466656	Ultraviolet (UV) Disinfection System	_____
467324	Autothermal Thermophilic Aerobic Digestion System	_____

ARTICLE 8 – DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

By:

[Signature]

[Printed name]

(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:

[Signature]

[Printed name]

Title:

Submittal Date:

Address for giving notices:

Telephone Number:

Fax Number:

Contact Name and e-mail address:

Bidder's License No.:

(where applicable)

SECTION 099600 – HIGH PERFORMANCE COATINGS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Coatings for concrete and masonry including the following:
 - 1. High-performance epoxy coatings for interior concrete flooring.

1.2 RELATED SECTIONS

- A. Section 033000 - Cast-in-Place Concrete.
- B. Section 042000 - Unit Masonry.

1.3 REFERENCES

- A. American Society for Testing Materials (ASTM) - Testing Methods.

1.4 DEFINITIONS

- A. Commercial as used in this Section refers to a product well suited for a commercial application.
- B. VOC as used in this Section refers to Volatile Organic Compounds found in primers, paints, sealers and stains. The level of VOCs appears after each product listed in the Schedule in grams per liter (g/L).

1.5 SUBMITTALS

- A. Product Data: For each paint system indicated, including:
 - 1. Product characteristics.
 - 2. Surface preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Application methods.
 - 5. Cautions for storage, handling and installation.
- B. Selection Samples: Submit a complete set of color chips that represent the full range

of manufacturer's color samples available.

- C. Verification Samples: For each finish product specified, submit samples that represent actual product, color, and sheen.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish surfaces for verification of products, colors and sheens.
 - 2. Finish area designated by Architect.
 - 3. Do not proceed with remaining work until the Architect approves the mock-up.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information:
 - 1. Product name and type (description).
 - 2. Application and use instructions.
 - 3. Surface preparation.
 - 4. VOC content.
 - 5. Environmental issues.
 - 6. Batch date.
 - 7. Color number.
- B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
- C. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.

- D. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 - PRODUCTS

2.1 HIGH-PERFORMANCE EPOXY COATINGS FOR INTERIOR CONCRETE FLOORING

- A. Concrete Flooring Coating System:

- B. Manufacturers:

- Manufacturer A: 8200 System - OverKote - Chemical Resistant Epoxy.

Type: 100 percent solids epoxy floor coatings and toppings for maximum chemical resistance in extreme industrial environments.

- Low odor for use in all regulated areas.
- VOC compliant, safe for people, products and processes.
- USDA acceptable, can be used in USDA facilities based on FSIS Directive 11,000.4 (Rev. 1), November 24, 1995.
- Agriculture Canada (Canadian Food Inspection Agency) compliant.

Topping: 8200 System OverKote HD - Type II - Chemical Resistant Epoxy - Heavy Duty Topping.

Coating: 8200 System OverKote TX - Type I - Chemical Resistant Epoxy - Textured Coating.

Color: Stock colors available. Refer to Finish Schedule.

Or approved equivalent

PART 3 - EXECUTION

3.1 EXAMINATION

- A. The Contractor shall review the product manufacturer's special instructions for surface preparation, application, temperature, re-coat times, and product limitations.
- B. The Contractor shall review product health and safety precautions listed by the manufacturer.
- C. The Contractor shall be responsible for enforcing on site health and safety requirements associated with the Work.
- D. Ensure that surfaces to receive coating are dry immediately prior to application.
- E. Ensure that moisture-retaining substrates to receive coating have moisture content within tolerances allowed by coating manufacturer.
- F. Examine surfaces to receive coatings for surface imperfections and contaminants that could impair performance or appearance of coatings.
- G. Correct conditions that could impair performance or appearance of coatings in accordance with specified surface preparation procedures before proceeding with coating application.

3.2 SURFACE PREPARATION

- A. All cleaning and surface preparations specified herein are minimums.
- B. All surfaces to be coated shall be free of cracks, pits, fins, projections, or other imperfections that would interfere with the formation of a uniform, unbroken coating film.
- C. All oil and grease shall be completely removed with biodegradable degreasers prior to mechanical cleaning begins.
- D. New concrete shall have cured for a minimum 30 days prior to coating application. If a cure and seal agent was added to the concrete or applied after initial cure, the concrete must be abrasive blast cleaned or mechanically abraded to remove the sealer and expose fresh concrete.
- E. Concrete surfaces shall be acid etched, mechanically abraded, or abrasive blast cleaned to remove all laitance to provide a uniform surface profile with a profile depth of 1 1/2 - 3 mils or CSP Level 3.
- F. The coating contractor is to examine the substrate to determine if it is in satisfactory condition to receive the specified floor system. Obtain coating contractor's written report listing conditions detrimental to performance of work in this specification. Do

not proceed with the application of specified floor coating until unsatisfactory conditions have been corrected.

3.3 MIXING AND THINNING

A. Mixing:

1. The base component and activator must be combined with power mixing. Hand mixing is not adequate.
2. Scrape out the container of the activator to transfer as much material as possible.
3. Use a suitable mixing blade which will not entrain air. Mix at 500-750 RPM for 1-3 minutes.
4. Application must begin as soon as the material has been completely mixed.

B. Thinning: Thinning is not required. Do not thin.

3.4 APPLICATION

A. Weather Conditions:

1. Apply when air and surface temperatures are between 60-80 degrees F (15-27 degrees C) and surface temperature is at least 5 degrees F (3 degrees C) above the dew point.
2. The relative humidity should not be greater than 85 percent.

B. Coating Application:

1. Do not attempt to work out of the container. Immediately after mixing material, pour out the activated material in a long thin stripe across the top of the work section of floor. Use only the material that flows naturally out of the container.
2. Do not scrape out the container of activated material. Doing so may result with transfer of un-activated material to the floor which will result with soft spots in the coating.
3. Consult the Rust-Oleum Concrete Protective Systems Product Application Guide for this coating system for complete and detailed application information.

C. Protection of Surfaces:

1. The Coating Contractor shall be responsible for protecting all adjacent surfaces from spills, drips, or any other form of coating damage.
2. The coating contractor and its subcontractors shall be responsible for removing spots or repairing damaged surfaces to the satisfaction of the Architect.

3.5 CLEAN-UP

- A. Clean-up shall be done to remove all spills, drips, overspray, or other unwanted coating from all surfaces not intended to be coated.
- B. All used rags, brushes, roller covers, and other application related materials shall be removed from the work site and disposed in a proper manner and in accordance with local waste regulations.
- C. All equipment, staging, ladders, and other contractor materials brought onto the jobsite by the contractor shall be removed at the conclusion of the job in a timely manner.

3.6 INSTALLATION

- A. Install in accordance with manufacturer's instructions.

3.7 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 115300 – LABORATORY EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Laboratory equipment and supplies.

1.2 COORDINATION

- A. Leave building openings of sufficient size to permit transport of equipment to final position.
- B. Coordinate rough-in frame and anchor placement with other Work.

1.3 ACTION SUBMITTALS

- A. Prepare submittals per requirements of Section 01 3300 – Submittal Procedures.
- B. Product Data: Submit equipment dimensions and construction, equipment capacities, physical dimensions, utility and service requirements and locations.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data:
 - 1. Submit description of equipment operation, adjusting, and required testing.
 - 2. Identify system maintenance requirements, servicing cycles, required lubrication types, and spare-parts sources.

1.5 MANUFACTURER WARRANTIES

- A. Provide five-year manufacturer's warranty for laboratory equipment.

PART 2 - PRODUCTS

2.1 LABORATORY EQUIPMENT AND SUPPLIES

- A. Manufacturers/Supplier: USA BLUEBOOK
 - 1. Aluminum Dishes 70mm, Catalog #34670 (Qty. = 2ea.)
 - 2. Porcelain Funnels 75mm, Catalog #60242 (Qty. = 6ea.)
 - 3. Evaporating Dishes 80mL, Catalog #60198 (Qty. = 10ea.)
 - 4. Vacuum Pump, Catalog #39325 (Qty. = 1ea.)
 - 5. Pump Service Kit, Catalog #39326 (Qty. = 3ea.)
 - 6. Vac. Tubing 3/8 ID x 3/8 OD, Catalog #24769 (Qty. = 2ea.)

7. Filtration Flask 1000 mL, Catalog #31072 (Qty. = 3ea.)
8. Filtration Flask, 2000 mL, Catalog #31073 (Qty. = 2ea.)
9. Rubber Stoppers one-hole, Catalog #33265 (Qty. = 1ea.)
10. Rubber Stoppers two-hole, Catalog #33636 (Qty. = 1ea.)
11. Rubber Stoppers one-hole, Catalog #33607 (Qty. = 1ea.)
12. Rubber Stoppers two-hole, Catalog #33637 (Qty. = 1ea.)
13. Glass Fiber Filters 70 mm, Catalog #39169 (Qty. = 50ea.)
14. Pipet Fillers, Catalog #40665 (Qty. = 4ea.)
15. Filter Forceps, Catalog #31320 (Qty. = 2ea.)
16. Cricible Tongs, Catalog #28980 (Qty. = 2ea.)
17. Wash Bottles 4-pk, Catalog #205014 (Qty. = 2ea.)
18. Graduated Cylinders 100 mL, Catalog #37920 (Qty. = 12ea.)
19. Graduated Cylinders 25 mL, Catalog #37900 (Qty. = 4ea.)
20. Thermometer, Catalog #36968 (Qty. = 1ea.)
21. Muffle Furnace, Catalog #39905 (Qty. = 1ea.)
22. Glass Pipets 10 mL, Catalog #40551 (Qty. = 6ea.)
23. Glass Pipets 20 mL, Catalog #40552 (Qty. = 6ea.)
24. Pyrex Desiccator, Catalog #30336 (Qty. = 1ea.)
25. Desiccant Drierite, Catalog #39134 (Qty. = 2ea.)
26. Microscope, Catalog #33654 (Qty. = 1ea.)
27. Microscope Replacement Bulbs, Catalog #33683 (Qty. = 2ea.)
28. Microscope Replacement Fuses, Catalog #33686 (Qty. = 2ea.)
29. Glass Wipes, Catalog #40708 (Qty. = 1ea.)
30. Microscope Slides, Catalog #33276 (Qty. = 10ea.)
31. Microscope Slide Cover Slips, Catalog #33279 (Qty. = 5ea.)
32. Wastewater Organisms Atlas, Catalog #66950 (Qty. = 1ea.)
33. Microscope Cover, Catalog #33678 (Qty. = 1ea.)
34. Disposable Pipets 3 mL, Catalog #30277 (Qty. = 2ea.)
35. Label Maker, Catalog #44656 (Qty. = 1ea.)
36. Label Tape, Catalog #44659 (Qty. = 2ea.)
37. AA Batteries 8-pk, Catalog #63187 (Qty. = 1ea.)
38. Sharpie Industrial Markers 12-pk, Catalog #44643 (Qty. = 2ea.)
39. Treatment Plant Logs Books, Catalog #43495 (Qty. = 20ea.)
40. Desktop Calculator, Catalog #40721 (Qty. = 4ea.)
41. Gram Strain Kit, Catalog #43916 (Qty. = 1ea.)
42. Portable pH DO Meter, Catalog #33272 (Qty. = 2ea.)
43. DO Electrode & Cable, Catalog #33692 (Qty. = 2ea.)
44. pH Probe, Catalog #33267 (Qty. = 2ea.)
45. DO Electrolyte Solution, Catalog #33695 (Qty. = 2ea.)
46. DO Membrane Caps, Catalog #33696 (Qty. = 4ea.)
47. pH Buffer Solution 4.00, Catalog #40460 (Qty. = 4ea.)
48. pH Buffer Solution 7.00, Catalog #40470 (Qty. = 4ea.)
49. pH Buffer Solution 10.00, Catalog #40480 (Qty. = 4ea.)
50. Magnetic Stirrer, Catalog #36955 (Qty. = 1ea.)

- 51. Magnetic Stirring Bars, Catalog #41006 (Qty. = 4ea.)
- 52. Magnetic Stirring Bars, Catalog #18322 (Qty. = 4ea.)
- 53. Latex Gloves M, Catalog #11987 (Qty. = 15ea.)
- 54. Latex Gloves L, Catalog #119888 (Qty. = 15ea.)
- 55. Latex Gloves XL, Catalog #11989 (Qty. = 10ea.)
- 56. Graduated Beakers 100 mL, Catalog #31103 (Qty. = 8ea.)
- 57. Graduated Beakers 250 mL, Catalog #31105 (Qty. = 8ea.)
- 58. Graduated Beakers 1000 mL, Catalog #31108 (Qty. = 8ea.)
- 59. Wide Mouth Sampling Bottles 250 mL, Catalog #10517 (Qty. = 1ea.)
- 60. Wide Mouth Sampling Bottles 500 mL, Catalog #10518 (Qty. = 1ea.)
- 61. Wide Mouth Sampling Bottles 1000 mL, Catalog #10519 (Qty. = 1ea.)
- 62. Mop Bucket, Catalog #71991 (Qty. = 2ea.)
- 63. Mop Handle, Catalog #74260 (Qty. = 4ea.)
- 64. Mop Head, Catalog #74261 (Qty. = 6ea.)
- 65. Floor Mats 3x5, Catalog #31036 (Qty. = 2ea.)
- 66. Floor Mat 4x6, Catalog #31038 (Qty. = 1ea.)
- 67. 4" Trash Pump, Catalog #72458 (Qty. = 1ea.)
- 68. 2" Suction Hose, Catalog #10834 (Qty. = 1ea.)
- 69. 4" Suction Hose, Catalog #10837 (Qty. = 1ea.)
- 70. 2" Hose Kit, Catalog #52479 (Qty. = 1ea.)
- 71. 4" Hose Kit, Catalog #52481 (Qty. = 1ea.)
- 72. Pressure Washer, Catalog #47407 (Qty. = 1ea.)
- 73. Pressure Washer Hose, Catalog #47419 (Qty. = 1ea.)
- 74. 24" Extension Wand, Catalog #47431 (Qty. = 3ea.)
- 75. Pressure Washer Pump Oil, Catalog #47427 (Qty. = 1ea.)

2.2 ACCESSORIES

- A. Rough-in Equipment: Supply frames, anchors, supports, accessories, and closure trim for scheduled equipment.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that rough-in frames, anchors, and supports are accurately placed.

3.2 INSTALLATION

- A. Set equipment level, plumb, and accurately aligned.
- B. Anchor equipment securely in place.
- C. Sequence installation to accommodate required utility connections.

- D. Touch up surfaces with minor damage caused during installation and replace damaged components.

3.3 ADJUSTING

- A. Adjust operating equipment to most efficient operation.

END OF SECTION 115300

SECTION 444213.13 - SLUDGE MIX SYSTEM AND APPURTENANCES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: This Section specifies the submerged mix system in the Sludge Storage Tank Sludge Storage Tank. The tank mixing system shall uniformly mix digested sludge from the Autothermal Thermophilic Aerobic Digestion (ATAD) treatment process or the undigested treatment process (Raw) and maintain solids in suspension within the Sludge Storage tank at all specified tank operating levels. Complete system information shall be submitted as specified. The system shall consist of ~~horizontal dry pit, non-clog centrifugal chopper pumps (specified under Section 444256.09 - Non-Clog Dry Pit Centrifugal Pumps;~~ Sludge Mixing Pumps, 13-PCL-151, 13-PCL-152, and 13-PCL-153), the tank mixing assembly, and associated header piping supports within the Sludge Storage tank. The pumps shall be provided by the mix system manufacturer. There shall be two tank mixing assembly and associated mix pumps in each of the Sludge Storage tanks (13-TNK-110 and 13-TNK-~~142~~120). The tank mixing manufacturer shall certify that the pumps supplied with this system are compatible with the manufacturer's equipment and the specified range of operating conditions.

1.2 QUALITY ASSURANCE

- A. Unit Responsibility: The manufacture of the mix system is responsible for the selection, purchase, coordination, testing, and training of the entire mix system, including but not limited to pumps, coupling, electric motors, header piping, flush system, and appurtenances.
- B. Factory Tests:
1. Factory test each pump for performance and hydrostatic pressure as specified in the Hydraulic Institute Testing Standards.
- C. Field Test:
1. Hydrotest all piping in accordance with 408001 Process Piping Leakage Testing.
 - ~~0. Inspect and test all manufacturer provided in-tank piping and tank mixing assembly for compliance with fabrication requirements prior to shipment. Satisfactorily test all pumps and motors prior to shipment.~~

~~1.4~~1.3 SUBMITTALS

- A. Provide action and information submittals in accordance with Section 013300 - Submittal Procedures, and as identified herein.
- B. Action:
1. Shop Drawings:
 - a. Manufacturer's catalog data and Shop Drawings of the entire equipment assembly, with complete dimensional data, equipment/component weights, and construction, installation and piping connection details of the tank mixing assemblies, pumps,

flush system, and all associated equipment. This information shall show conformance to the requirements herein and those specified on Drawings.

- b. Design and performance calculations demonstrating compliance with requirements from this Section.
- c. Wiring diagrams for all control and power equipment, both integral and external to the equipment.
- ~~d. —~~ Applicable Pump and Motor Information ~~from Section 444256.11 — Non-Clog Dry-Pit Centrifugal Pumps.~~
- ~~e.d.~~ Complete motor nameplate data, as defined by NEMA, motor manufacturer, and motor modifications, See Section 262000 - Low-Voltage AC Induction Motors, for motor submittal requirements.
- ~~f.e.~~ Dimensions, size, and locations of connections to other work.
- ~~g.f.~~ Details of attachment and support.
- ~~h.g.~~ As applicable, shop painting system, including manufactures descriptive technical catalog literature and specifications.
- ~~i.h.~~ External utility requirements for air, water, power, drain, etc. for each component.
- ~~j.i.~~ Anchorage and bracing data sheets and Drawings as required by Section 018815 - Anchorage and Bracing.

C. Information:

- 1. Operation and maintenance information in accordance with Section 017820 - Operation and Maintenance Data.
- 2. Installation reference list of units installed and operating satisfactorily in municipal wastewater applications for a minimum of 1 year.
- 3. Manufacturer's installation instructions.
- 4. Copies of test logs and performance records during operational tests.
- 5. Copies of the manufacturer's certifications that the equipment has been properly installed, and tested and meets all requirements for satisfactory performance under the conditions specified.
- 6. Certified factory test results.
- 7. List of any special tools required.
- 8. Suggested Spare parts list.
- 9. Warranty: Information specific to this Project.
- 10. Field functional test report.
- 11. Manufacturers Certificate of Proper Installation in accordance with Section 017500 – Start-Up Procedures.
- 12. Special shipping, storage and protection, and handling instructions.

~~1.51.4~~ SHIPPING AND STORAGE

- A. Shipping and storage shall be in accordance with Section 0160100 - Product Requirements.

1.61.5 SERVICE REQUIREMENTS

A. Service Conditions:

Description	
Location	Sludge Storage Tank
Fluid type	Digested Sludge or Raw undigested sludge.
Fluid temperature	40 to 100 degrees F
Sludge Storage tank	Corrosive, environment air at 95 percent relative humidity, and odorous, corrosive gases
Operation	Continuous 24-hour duty
pH	5 to 9

B. Design Requirements for Mix System:

Description	Design Condition
Number Required	2
Tank Diameter, Ft	30.8
Side Water Depth (Min/Max)	4/20
Volume, Gallons	22,000 – 110,000
Tank Type	Bolted Steel, Glass Lined, Flat Bottom, Open Top
Sludge composition, % solids by weight	2.8 to 4
Sludge temperature, degrees F	80 to 100
Electrical Data	460V / 3 PH / 60 HZ

- C. Tank Mixing Assemblies: Floor and pipe mounted nozzle assemblies with two nozzles per tank. Assemblies shall be glass lined cast ductile iron with 1.0-inch nominal wall thickness. Zinc anodes shall be provided for corrosion control. Exterior coatings shall be per Section 099000 - Painting and Coating.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Materials, equipment, and accessories specified in this Section shall be products of:
1. Rotamix.
 2. Or approved equal.

2.2 MATERIALS

A. Tank Mixing Assemblies:

Component	Material
Tank Mixing Assembly	Glass lined cast ductile iron
Nozzles	Glass lined cast ductile iron
Supports	Stainless steel, ASTM A276, Type 316
Anchor bolts and connecting hardware	Stainless steel, ASTM A276, Type 316

2.3 FEATURES

- A. Equipment Configuration: The tank mixing assembly shall consist of and two mixing assemblies with one nozzle and associated piping and supports located within each of the two Sludge Storage Tank, three dry-pit solids handling pumps, and associated piping and appurtenant manufacturer-specific equipment.
- B. Pipe and Valves: All pipe, valves, and pipe supports external to the Sludge Storage tank shall be provided by the Contractor as specified on Drawings and as depicted in process and instrumentation diagrams.
- C. Tank Mixing Assembly:
 1. Two mixing assemblies with one nozzle shall be provided in each of the two Sludge Holding Tanks. as specified on Drawings. Each assembly shall be designed to operate in submerged or partially submerged service conditions inside the tank. The inner surface of the liquid duct shall be smooth and free of protrusions which might collect stringy material.
 2. The liquid nozzles shall be of constantly reducing cross-sectional area in the direction of flow to reduce plugging potential. There shall be no parallel section in the liquid flow path between the liquid duct and the exit orifice of the liquid nozzle.
- D. Supports and Anchor Bolts: All necessary supports for the mixing assemblies within the tanks shall be provided by the system supplier. Pipe supports shall consist of a contoured saddle and a supporting base. The base shall be anchored with anchor bolts and grouted in place, if necessary. The saddle shall be provided with Buna-N rubber pad to avoid abrasion. A contoured clamp with an accompanying Buna-N rubber pad shall hold the piping to the saddle. Anchor bolts of sufficient size and quantity shall be provided for mounting of all manufacturer supplied mixing equipment within the tank.

2.4 MIX PUMPS

- A. The system shall consist of horizontal dry pit, non-clog centrifugal pumps specifically designed to pump waste solids without clogging or plugging. Materials shall be chopped/macerated and conditioned by the pump as an integral part of the pumping action. (specified under Section 444256.09 Non Clog Dry Pit Centrifugal Pumps, Sludge Mixing Pumps, 13-PCL-151, 13-PCL-152, and 13-PCL-153)

- B. The pump casing shall be of volute design, spiraling outward to the Class 125 flanged centerline discharge. Back pull-out design shall incorporate jacking bolts and shall allow removal of pump components without requiring disconnection of casing from inlet or discharge piping. Casing and back-plate shall be ductile cast iron with all liquid passages to be smooth and free from blowholes and imperfections. A pressure tap shall be included on or near the discharge flange. Back-plate shall include a replaceable Rockwell C60 cast alloy steel cutter adjustable for 0.005-0.050" clearance to cut against the rotating impeller pump out vanes.
- C. Impeller shall be semi-open type with pump out vanes to reduce seal area pressure. Chopping of materials shall be accomplished by the action of the cupped and sharpened leading edges of the impeller blades moving across the cutter bar at the intake openings. Impeller shall be cast alloy steel, heat treated to minimum Rockwell C60 and dynamically balanced. The impeller shall be keyed to the shaft and shall have no axial adjustments and no set screws.
- D. Cutter Bar shall be recessed into the pump bowl and shall contain at least 2 shear bars extending diametrically across the intake opening. Individually mounted shear bars shall will not be accepted.
- E. Upper Cutter shall be threaded into the pull-out adapter plate behind the impeller designed to cut against the pump-out vanes and the impeller hub. Shall be cast alloy steel heat treated to a minimum Rockwell C 60. The ratio of the upper cutter cutting diameter to the shaft diameter in the upper cutter area of the pump shall be 3.0 or less.
- F. Pump shall be provided with a mechanical seal with throttle bushing and water fitting for seal flush. The seal shaft sleeve shall be 316 stainless steel. Mechanical seal materials shall be 316 stainless steel with tungsten carbide faces. Seal shall be positively driven by set-screws. Elastomers shall be Buna N and stationary seal member shall be of the cup-mounted type to ensure cushioning of face material from mechanical cock.
- G. Inlet manifold shall be cast ductile iron assembly mounted horizontally with a class 125 inlet flange, 0.5 inch NPT pressure tap, clean-out, drain connection and mounting feet.
- H. Pump and motor coupling shall be T.B. Woods Sureflex elastomeric type.
- ~~A.I.~~ Pump shall be supplied with stainless steel nameplate.
- ~~I.J.~~ Manufacturers:
 - a. Vaughan Co., Inc..
 - b. Or approved equal.

2.5 SPARE PARTS

- A. The Equipment Manufacturer shall provide a list of recommended spare parts, parts numbers, and cost.

2.6 FINISHES

- A. For non-stainless steel and nonaluminum metals, prepare, and prime, and finish coat in accordance with Section 099000 - Painting and Coating.

- B. Stainless steel shall be cleaned and passivated following fabrication in accordance with ASTM A380.

2.7 ACCESSORIES

- A. Equipment Identification Plate: 16-gauge stainless steel with 1/4-inch die-stamped equipment tag number securely mounted in a readily visible location.
- B. Lifting Lugs: Equipment weighting over 100 pounds.
- C. Anchor Bolts: Sized and provided by equipment manufacturer, as specified in Section 055000 - Metals Fabrications.
- D. Anchor Bolt Type: Type 316 stainless steel.

PART 3 - EXECUTION

3.1 GENERAL

- A. Packaged Equipment: When any system is provided as prepackaged equipment, coordination shall include space and structural requirements, clearances, utility connections, signals, outputs, and features required by the manufacturer.

3.2 INSTALLATION

- A. Provide anchor bolt templates.
- B. Contractor will be responsible for field assembly and installation of all equipment, control panels, and cabling provided with the system.
- C. Seismic Anchorage and Bracing: Special inspection in accordance with Section 018815 - Anchorage and Bracing.

3.3 TESTING

- A. Functional Test: Performed in accordance with manufacturer's approved Quality Assurance Inspection Plan.
 - 1. Prior to system startup, inspect components for proper alignment, connection and satisfactory operation.
 - 2. Manufacturer's representative shall inspect installation, make any minor adjustments, provide certification that the system components have been installed correctly and are ready for operation.
- B. Equipment Startup and Commissioning:
 - 1. Refer to Section 017500 - Start-Up Procedures for testing requirements.

- C. In accordance to any testing herein, perform all testing for this product or system consistent with the requirements of Section 017500 - Start-Up Procedures, the applicable codes, and the manufacturer's quality assurance program.

3.4 MANUFACTURER'S SERVICES

- A. In accordance with Section 017500 – Start-Up Procedures.
- B. Manufacturer's Representative: Present at Site, for minimum person-days listed below, travel time excluded. All training shall not commence until an accepted detailed lesson plan for each training activity has been reviewed and approved by the Engineer or Owner.
 - 1. 2 person-days for Functional Testing and Manufacturer Certificate of Proper Installation.
 - 2. 2 person-days for startup and performance testing.
 - 3. 2 person-days for post-startup training of Owner personnel.
- C. Training Sessions: Provide a minimum of 2 hours of classroom training mixing system and appurtenances.

3.5 FIELD FINISHING

- A. Touchup damage areas of painted ferrous metal in accordance with manufacturer's instructions and as specified in Section 099000 - Painting and Coating.

3.6 Supplementals

- A.1. Mixing Pump Datasheet

END OF SECTION 444213.13

CHOPPER PUMP DATA SHEET

Tag Numbers: 13-PCL-151; 13-PCL-152; 13-PCL-153

Pump Name: Sludge Mixing Pump 1, 2 & 3

Manufacturer and Model Number: (1) Vaughn Mixing Chopper Pump HE4T6CS-110

(2)

(3)

SERVICE CONDITIONS

Liquid Pumped (Material and Percent): 3-6%

Pumping Temperature (Fahrenheit): Normal: 75 Max: 80 Min: 68

Specific Gravity at 60 Degrees F: 1

Viscosity Range:

Vapor Pressure at 60 Degrees F: pH:

Abrasive (Y/N) Y caused by

Possible Scale Buildup (Y/N): N caused by

Corrosive caused by

Total Suspended Solids (mg/L)

Min. NPSH Available (Ft. Absolute): 32

Area Classification: Refer to Area Classification Table

Ambient Temperature (F): 85

Location Indoor/Outdoor: Outdoor

Altitude: 300

PERFORMANCE REQUIREMENTS

Capacity (US gpm): Primary: As recommended by Mixing Vendor

Total Dynamic Head (Ft): Primary: As recommended by Mixing Vendor

Max. Pump Speed at Rated Capacity (rpm): 1800

Constant Speed: N – Adjustable

Maximum Head, Rated Impeller (ft):

Maximum Power, Rated Impeller (BHP):

Sphere Size Required (to pass through impeller), Min. (in): 1

PUMP CONSTRUCTION DETAILS

Configuration: Horizontal, Frame Mounted: Y

Vertical, Close-Coupled:

Vertical, Extension Shafting:

Size: _____ Suction (in.): _____ Discharge (in.): _____

Casing: _____ Single Volute: ☒ _____

_____ Tangential Discharge: _____ Centerline Discharge: _____

Impeller: _____ Enclosed: _____ Two Vane: _____ Three Vane: _____

_____ Bladeless: _____ Semi-Open: ☒ _____

Wear Rings: _____ Suction Cover: _____ Impeller: _____

_____ Axial Type: _____ Radial Type: _____ L Type: _____

Bearings L10 Life: 100,000 Hr: _____ 50,000 Hr: _____ 25,000 Hr: _____

Shaft Sleeve: _____ Yes _____ No _____

Pump Base: _____ Manufacturer standard _____

Coupling: _____ Standard Flexible Type: ☒ _____ Spacer Type: _____

_____ Manufacturer: _____ Manufacturers Standard: _____

Seal: _____ Packing: _____

_____ Mechanical Seal: ☒ _____ Single: ☒ _____ Double: _____

_____ Mechanical Seal Manufacturer/Model: _____

_____ Lubrication: _____ Water _____

Materials: _____ Pump Castings (includes casing, suction cover, stuffing box cover,
bearing frame): _____

Impeller: _____ Cast alloy steel heat treated to a minimum of Rockwell hardness C 60.

Pump Shaft: _____ Heat treated alloy steel.

Mechanical Seal: _____ Buna N ☒ _____ Viton _____ EPT _____

_____ Carbon _____ Tungsten Carbide ☒ _____ Silicone Carbide _____

_____ 18-8 Stainless Steel _____ Type 316 Stainless Steel ☒ _____

DRIVE MOTOR (See Section 262000 - Low-Voltage AC Induction Motors)

Horsepower: 15 Voltage: 460 _____ Phase: 3 _____ Hertz: 60 _____

Synchronous Speed (rpm): 1170 _____

Service Factor (at max. ambient temp.): 1.0 _____

Insulation Class: _____ Temperature Rise: _____

Inverter Duty Rated (Y/N): N _____

Motor nameplate horsepower shall not be exceeded at any head-capacity point on pump curve.

Enclosure: DIP _____ EXP _____ ODP _____ TEFC _____ CISD-TEFC _____

_____ TENV _____ WPI _____ WPII _____ SUBM _____

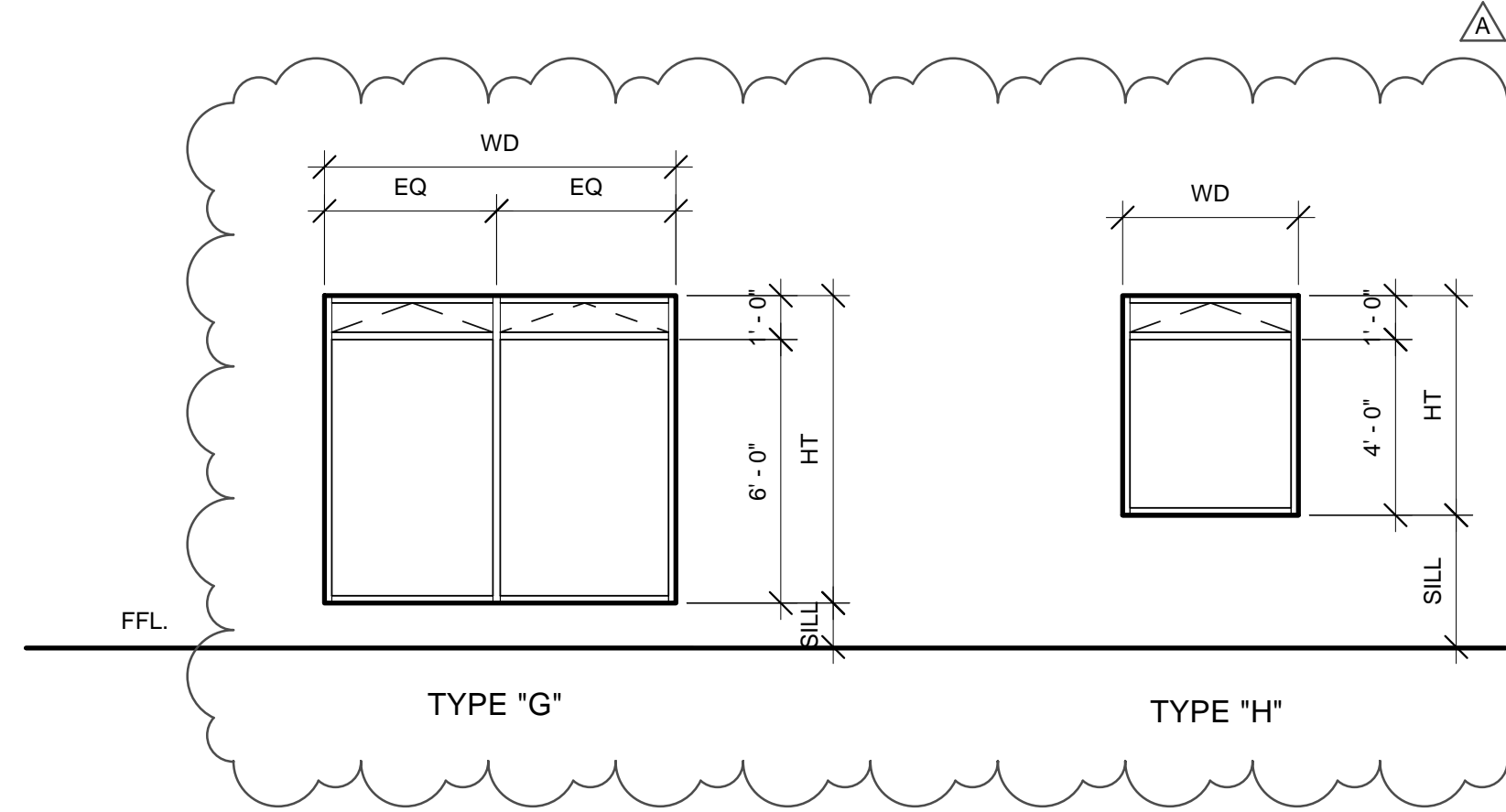
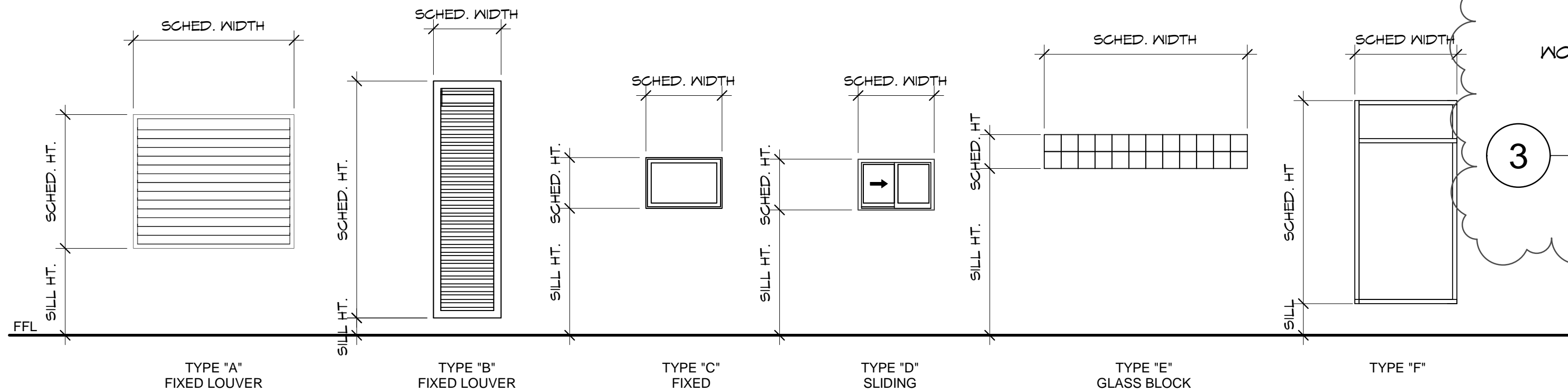
Mounting Type: Horizontal _____ Vertical Solid Shaft: _____

REMARKS

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WINDOW SCHEDULE													
WINDOW NO.	SIZE		TYPE	FRAME		GLASS TYPE	SILL HT.	DETAILS			FIRE RATED	TYPHOON SHUTTER	REMARKS
	W	H		MAT'L	FIN			HEAD	JAMB	SILL			
PROCESS 1-1													
ROUTE 3 INFLUENT PUMP STATION													
L1	2'-8"	1'-2"	B	ALUM	ANOD		6"	1	1	1			
L3	2'-8"	9'-4"	B	ALUM	ANOD		6"	1	1	1			
L4	8'-8"	9'-4"	B	ALUM	ANOD		6"	1	1	1			
L5	2'-8"	8'-0"	A	ALUM	ANOD		2'-0"	1	1	1			
L6	3'-3 1/4"	1'-11 1/4"	B	ALUM	ANOD		2"	1	1	1			
PROCESS 2													
HEADWORKS													
W1	3'-0"	2'-0"	D	ALUM	ANOD	LAM	5'-0"	2	2	3			
PROCESS 10													
THICKENING FACILITY													
L1	8'-0"	10'-0"	B	ALUM	ANOD		6"	1	1	1			
PROCESS 17													
NEW ADMINISTRATION BUILDING													
W1	8'-0"	7'-0"	G	ALUM	ANOD	LAM	12"	3	7	5			
W2	4'-0"	5'-0"	H	ALUM	ANOD	LAM	3'-0"	3	7	5			
W3	8'-0"	5'-0"	G	ALUM	ANOD	LAM	3'-0"	3	7	5			
W4	8'-0"	1'-4"	E	GLASS	CLR	-	6'-8"	6	6	6			
W5	4'-0"	1'-4"	E	GLASS	CLR	-	6'-8"	6	6	6			
W6	5'-0"	7'-0"	F	ALUM	ANOD	LAM	12"	3	7	5			
PROCESS 18													
RENOVATED/REPURPOSED LABORATORY BUILDING													
L1	9'-0"	3'-0"	A	ALUM.	ANOD	-	3'-0"	1	1	1			
L2	2'-0"	2'-0"	A	ALUM.	ANOD	-	6'-6"	1	1	1			
L3	2'-0"	3'-0"	A	ALUM.	ANOD	-	3'-6"	1	1	1			
L4	3'-0"	8'-6"	B	ALUM.	ANOD		0"	1	1	1			
W1	8'-0"	2'-0"	D	ALUM.	ANOD			2	2	3			
W2	4'-0"	3'-0"	D	ALUM.	ANOD	LAM	3'-6"	2	2	3			
PROCESS 20													
STANDBY POWER:													
L1	6'-0"	6'-0"	A	ALUM	ANOD		2'-0"	1	1	1			
L2	3'-0"	7'-0"	B	ALUM	ANOD		6"	1	1	1			

WINDOW AND LOUVER TYPES

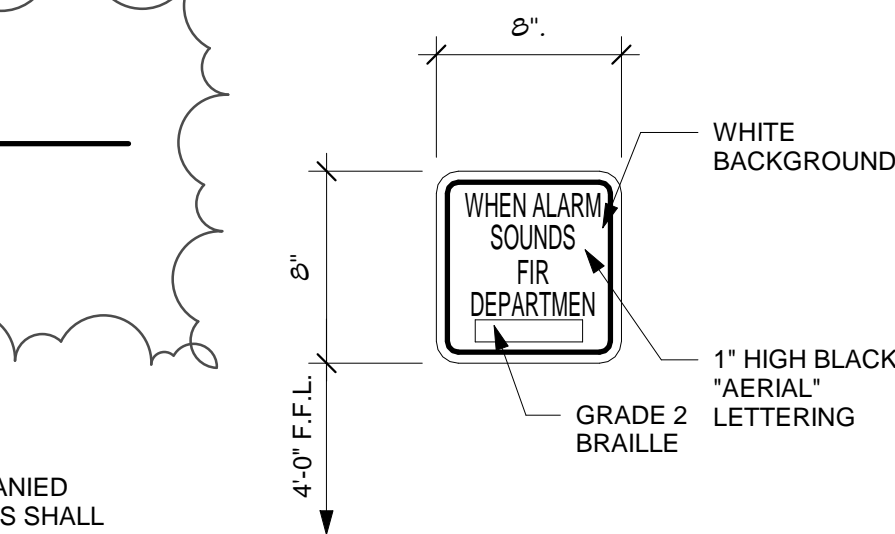


GENERAL NOTES:

- LETTERS AND NUMBERS SHALL BE RAISED * UPPER CASE TEXT AND ACCOMPANIED WITH GRADE 2 BRAILLE STYLE OF TEXT TO BE SELECTED RAISED CHARACTERS SHALL BE AT LEAST 1" HIGH, BUT NO HIGHER THAN 2" PICTOGRAMS SHALL BE 6" MIN IN HEIGHT.
- ROOM SIGNAGE SHALL BE MOUNTED TO THE LATCH SIDE AT 5'-0" ABOVE FINISH FLOOR TO THE CENTERLINE OF ITS EQUIVALENT VERBIAGE/BRAILLE PERMANENT ROOM AND SPACE DESIGNATION. AT DOUBLE DOORS THAT SWING OUT, MOUNT SIGNAGE BEYOND THE SWING OF THE DOOR.
- THE CHARACTERS & BACKGROUND OF SIGNS SHALL BE EGGSHELL, MATTE, OR NON-GLARE FINISH AND SHALL CONTRAST WITH THEIR BACKGROUND AS SELECTED.
- SIGNAGE SHALL BE PROVIDED IN CONFORMANCE TO ROOM NAME INDICATED ON ROOM FINISH SCHEDULE

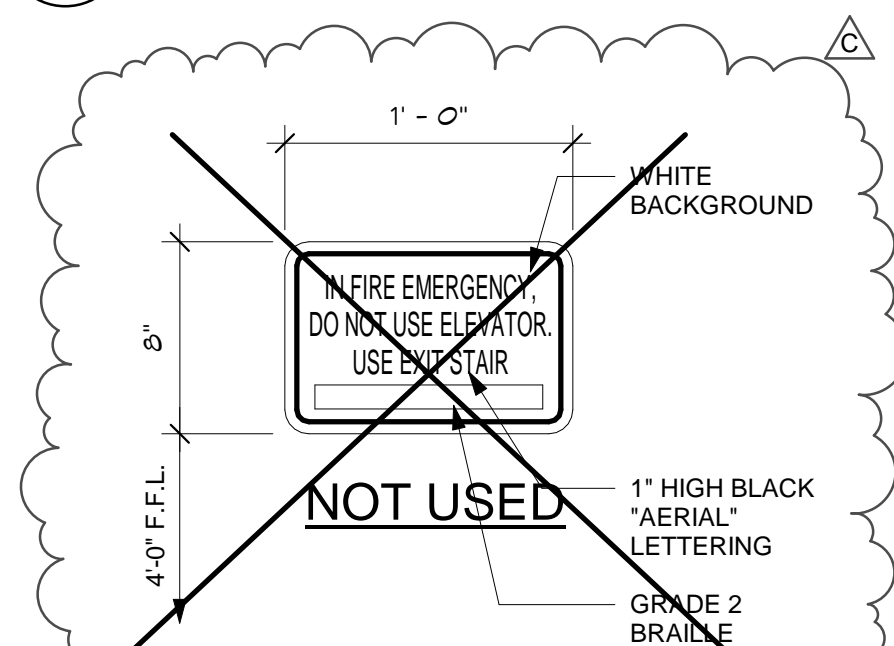
3 RESTROOM SIGNS (TYPE P)

3' = 1'-0"



6 MANUAL FIRE ALARM BOXES

1 1/2" = 1'-0"

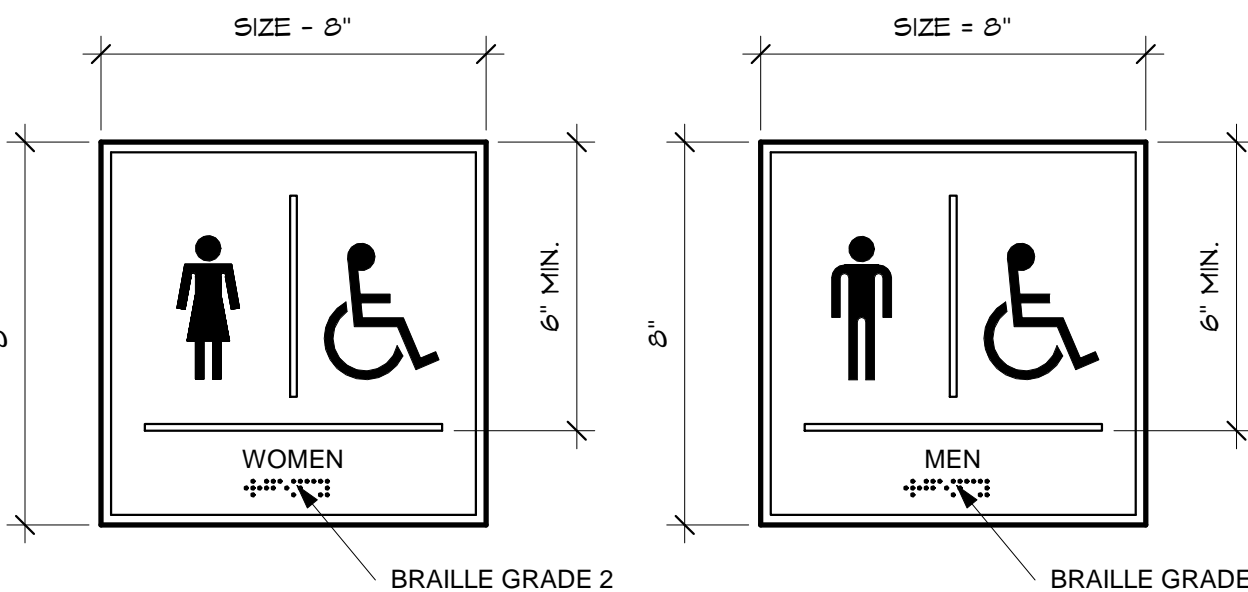


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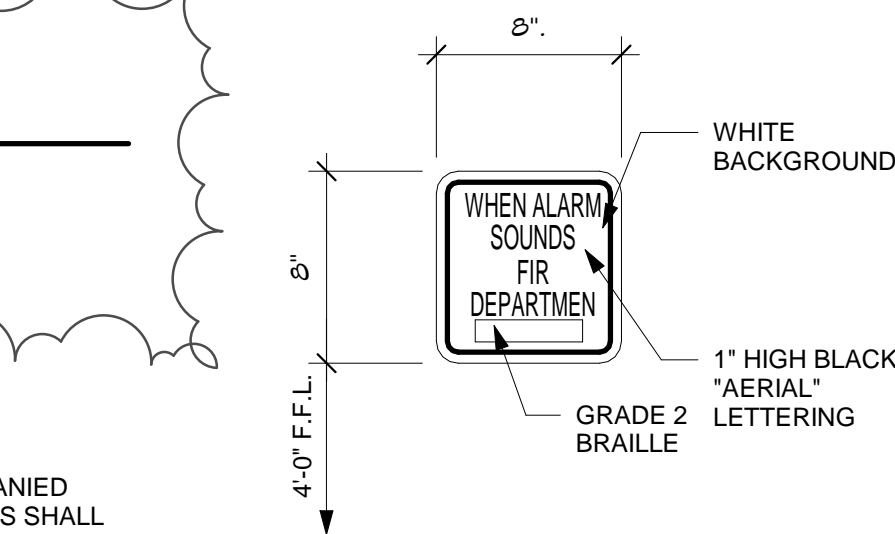


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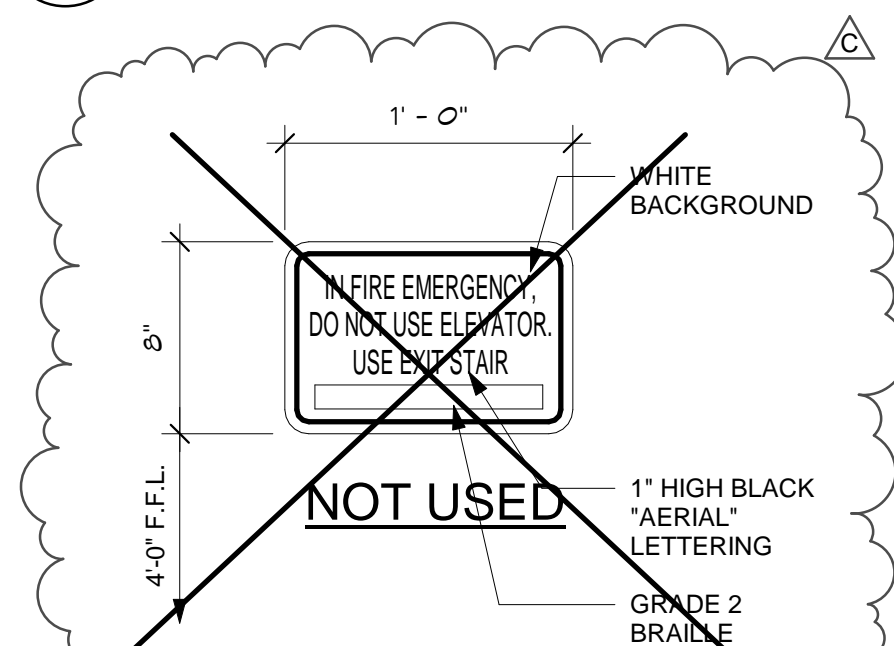
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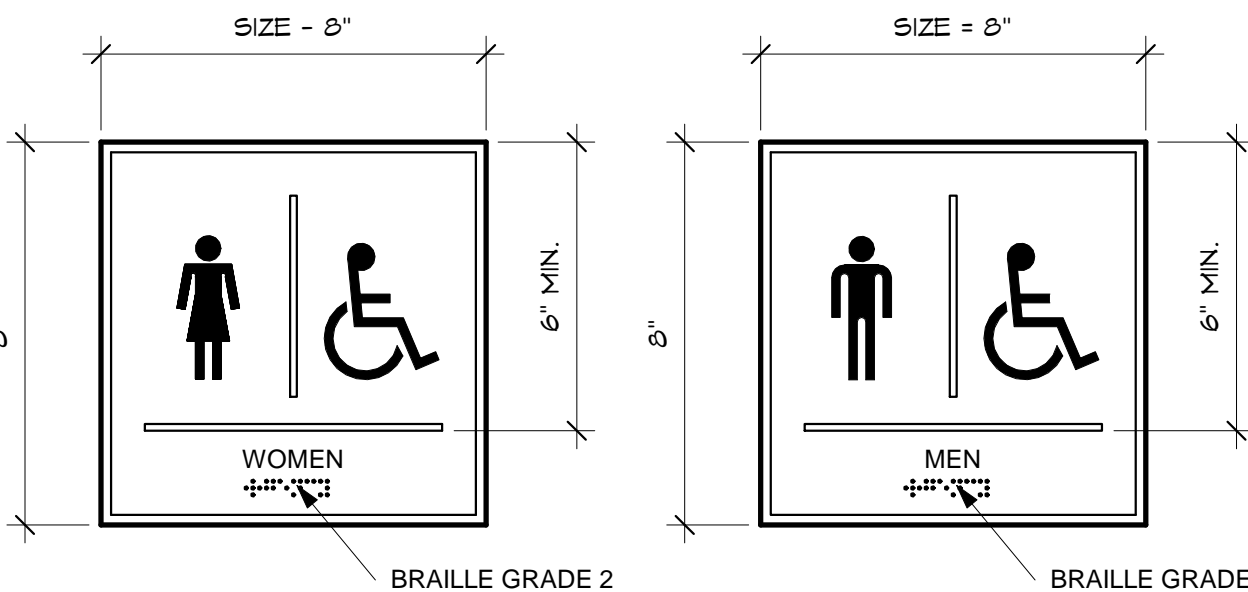


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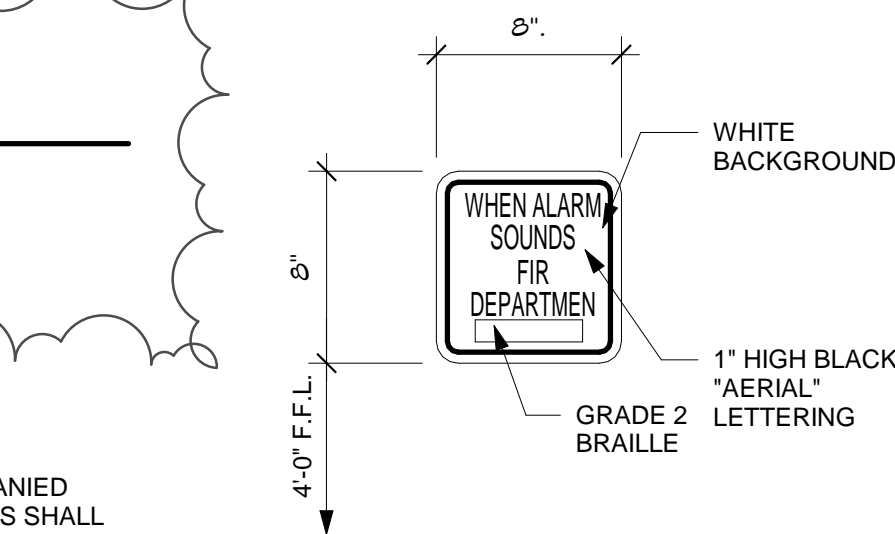


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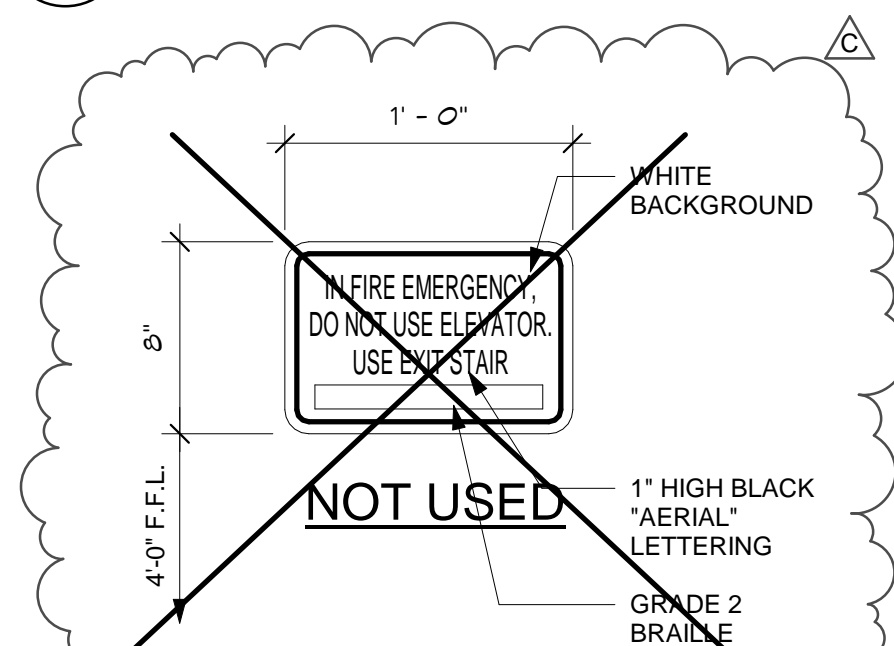
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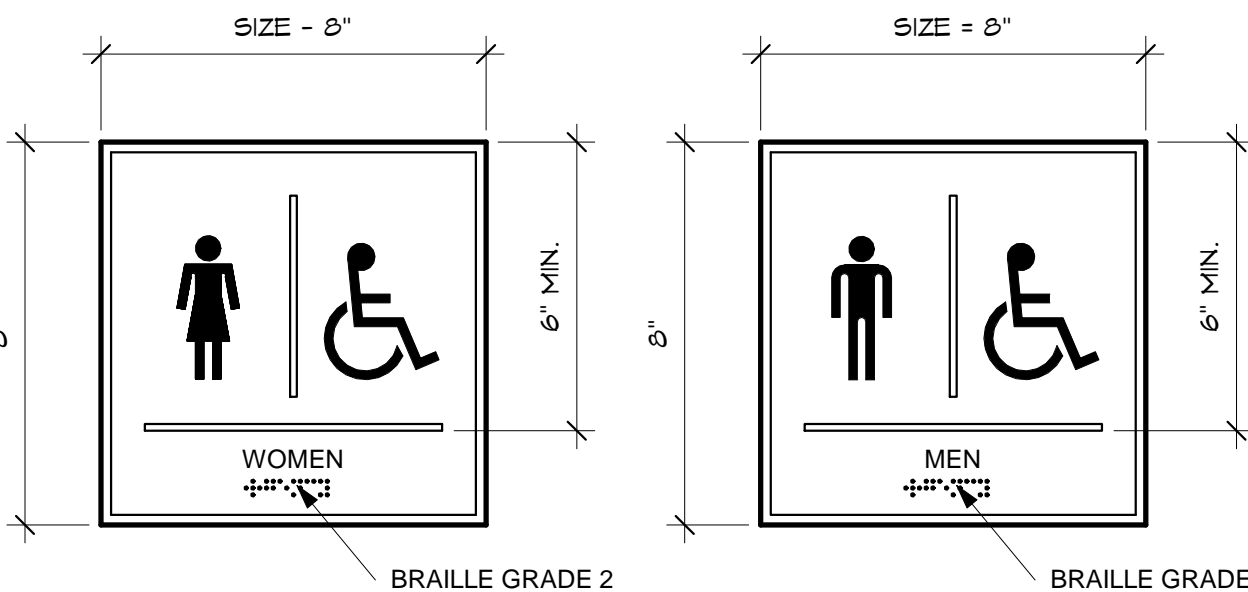


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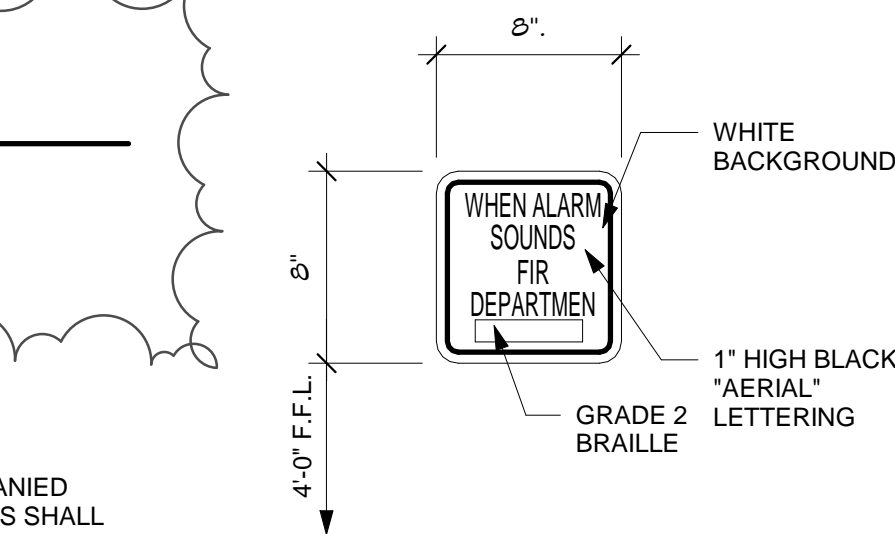


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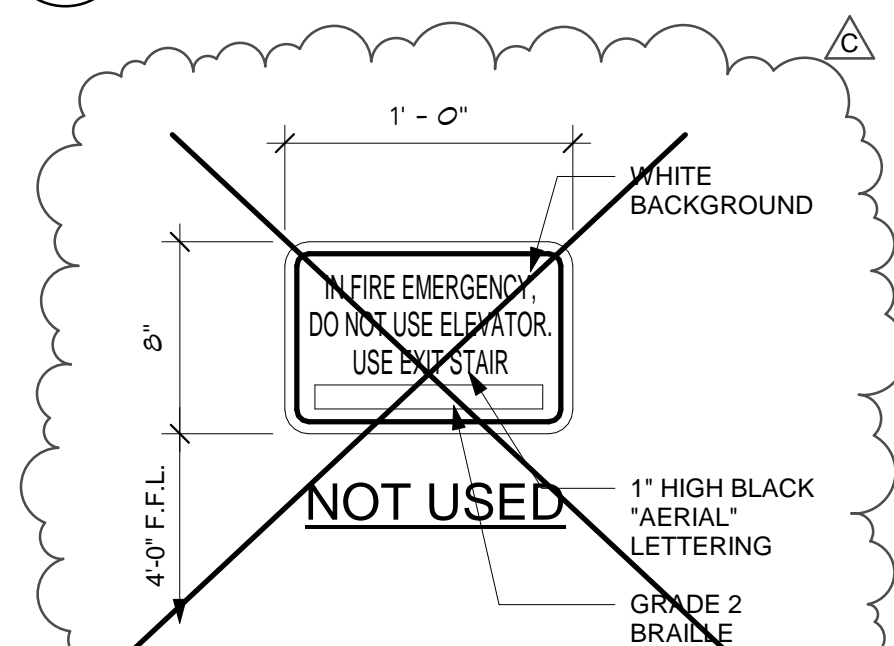
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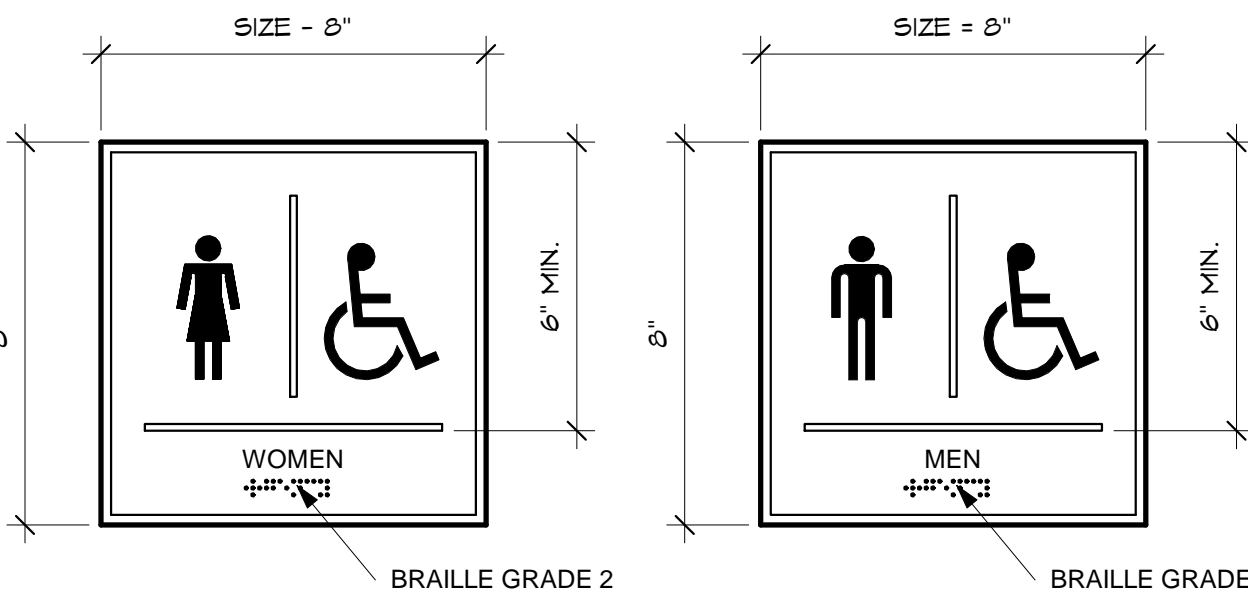


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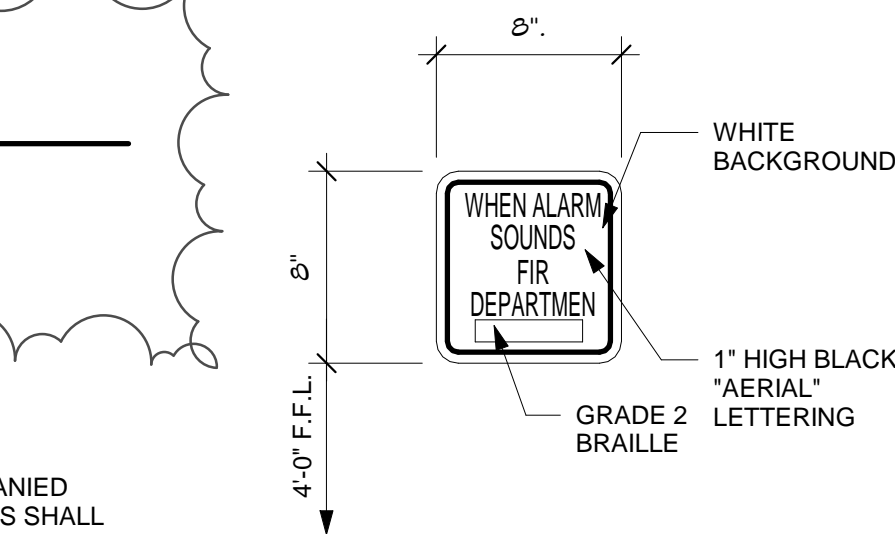


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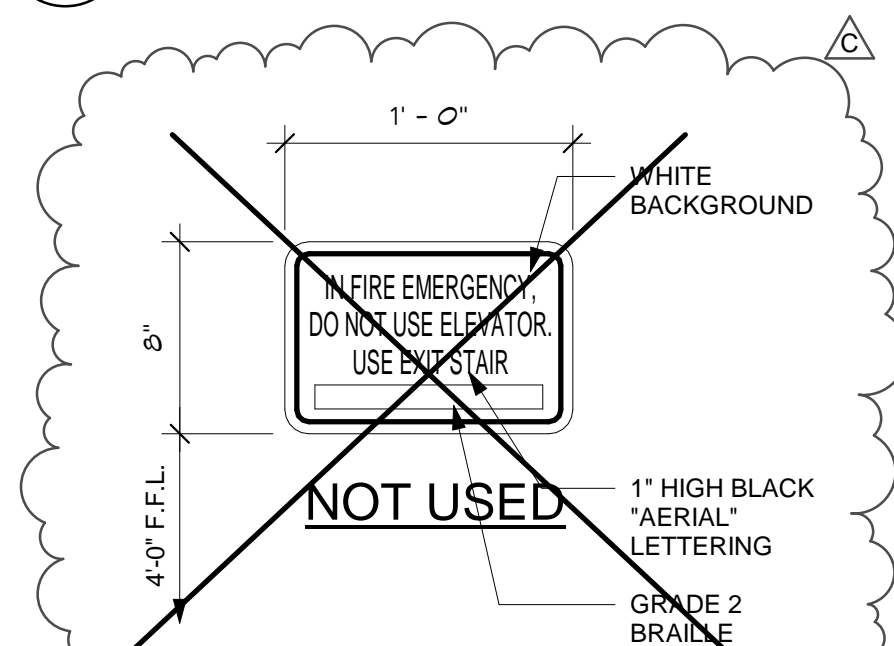
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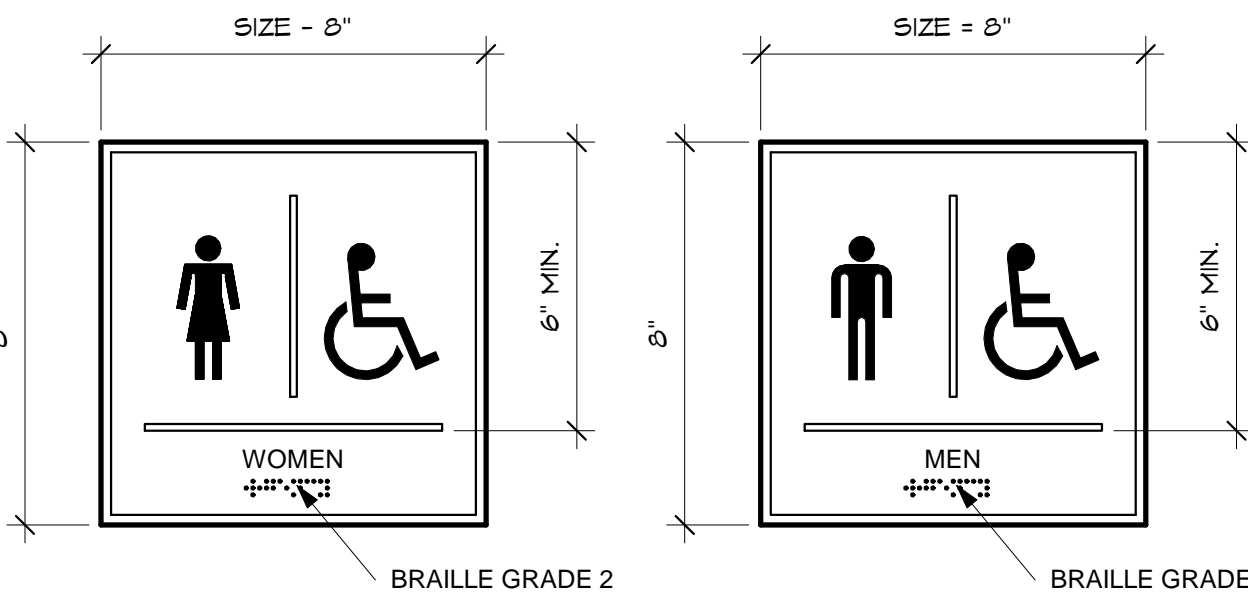


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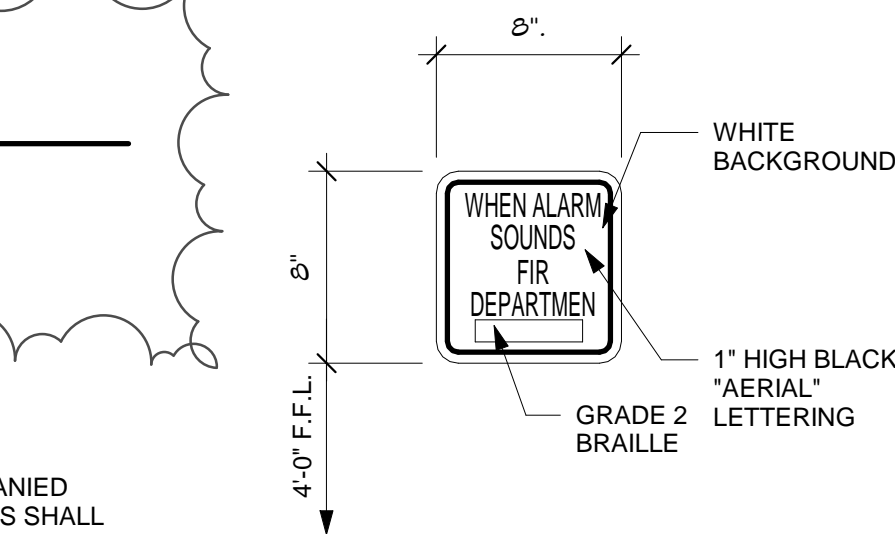


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MENS RESTROOM SIGN

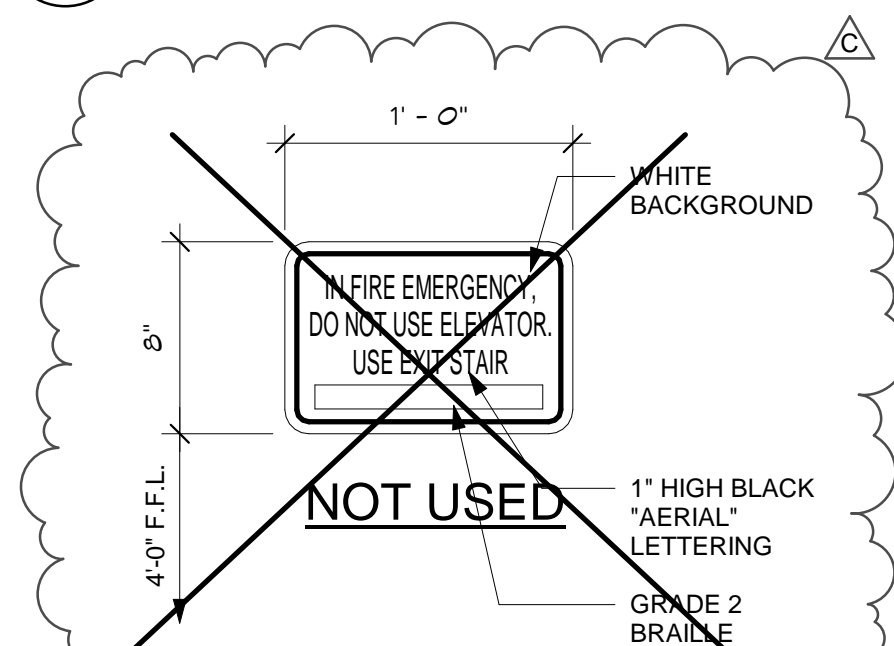
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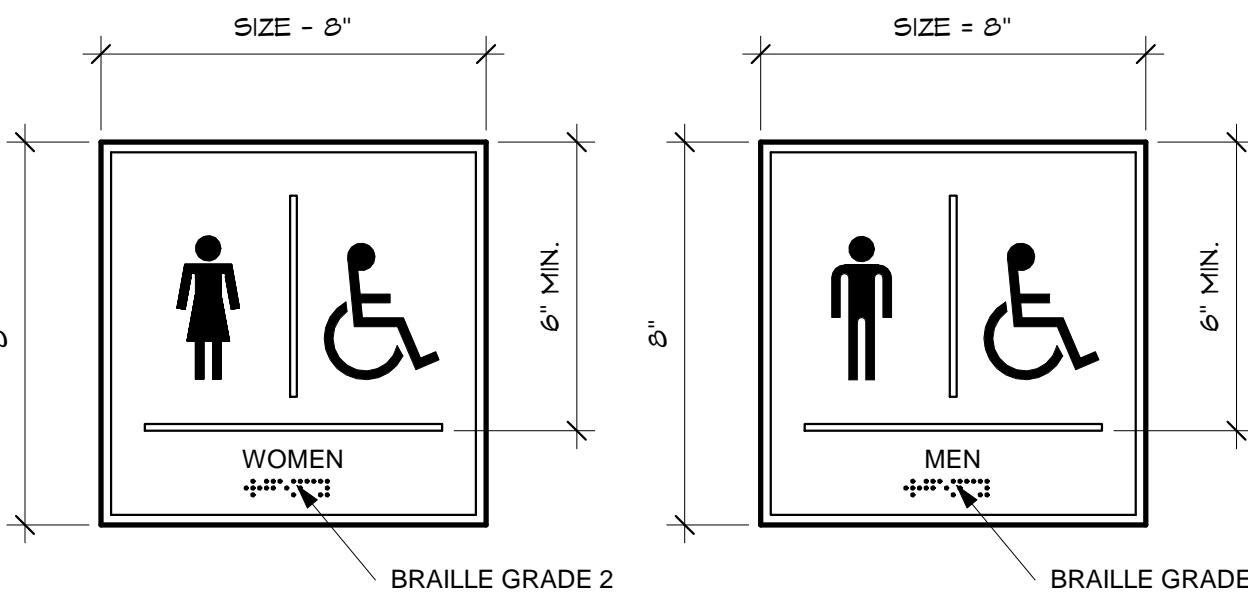


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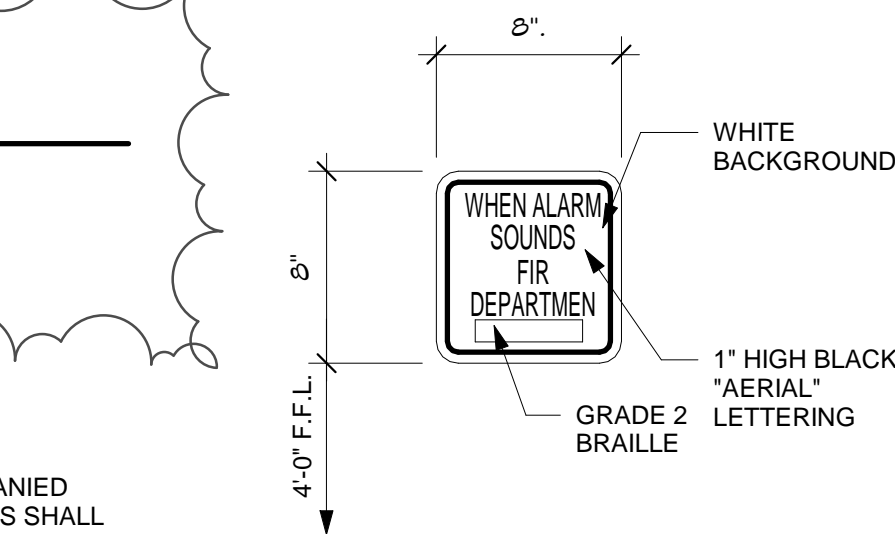


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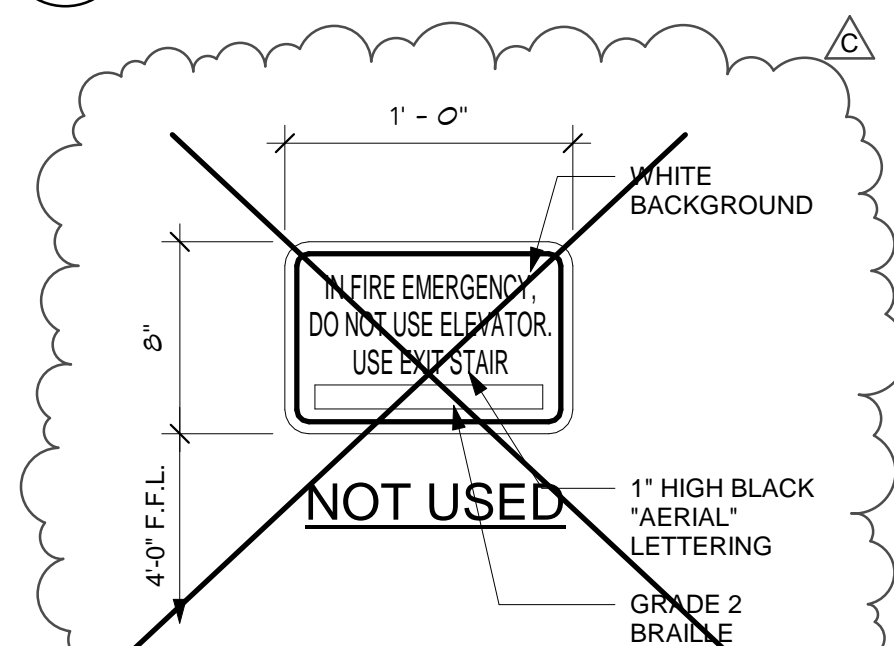
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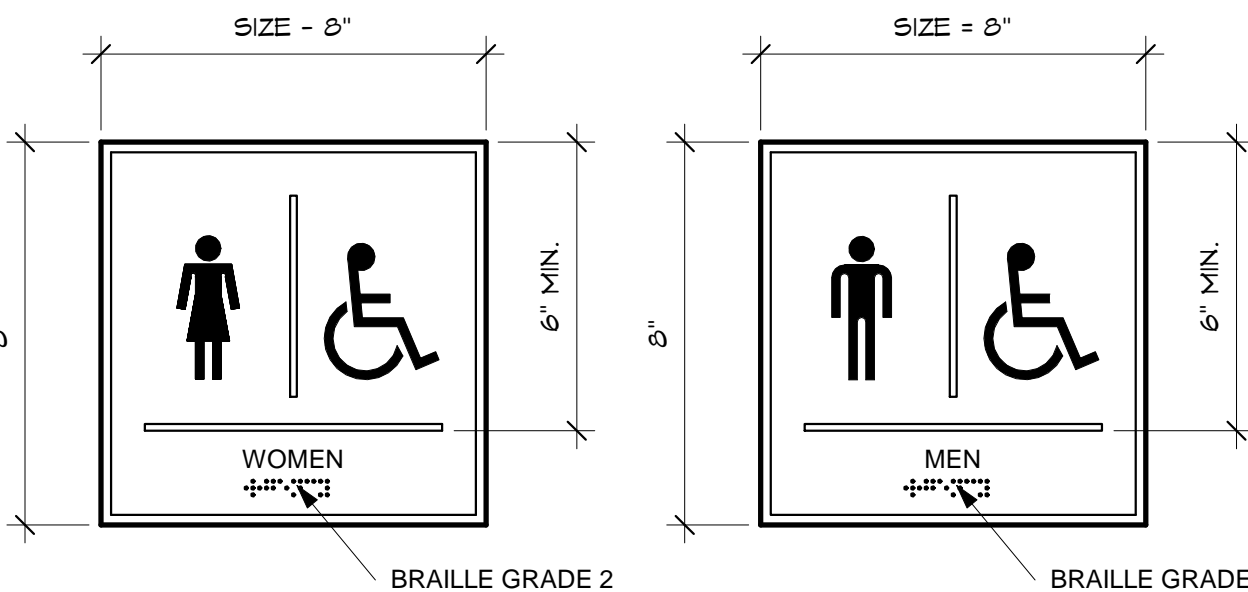


8 EMERGENCY SIGN

1 1/2" = 1'-0"

1 ROOM IDENTIFICATION (TYPE A)

1 1/2" = 1'-0"

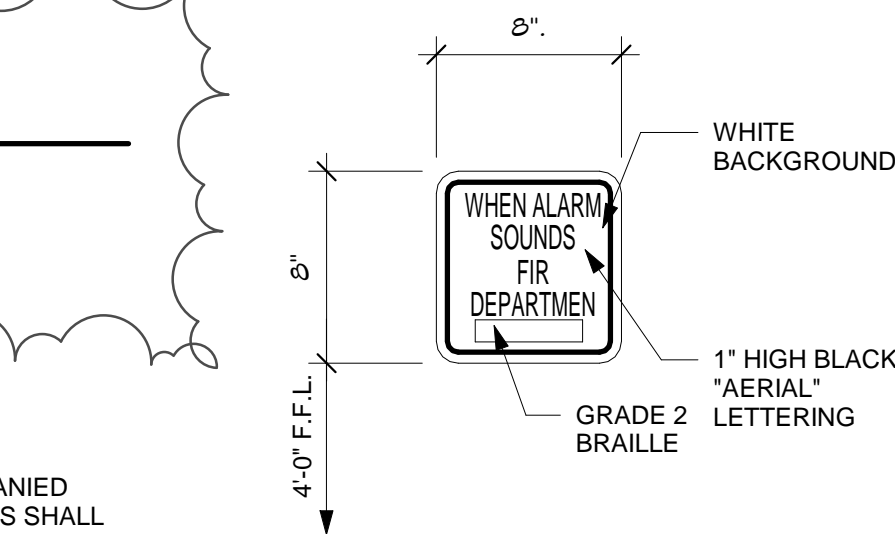


WOMENS RESTROOM SIGN

MENS RESTROOM SIGN

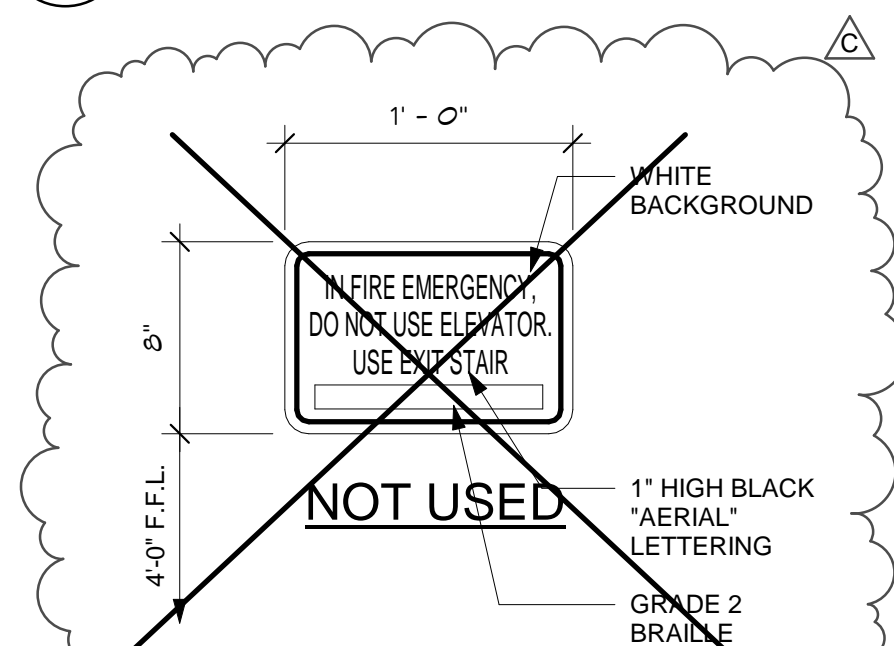
3 RESTROOM SIGNS (TYPE P)

3' = 1'-0"



6 MANUAL FIRE ALARM BOXES

1 1/2" = 1'-0"

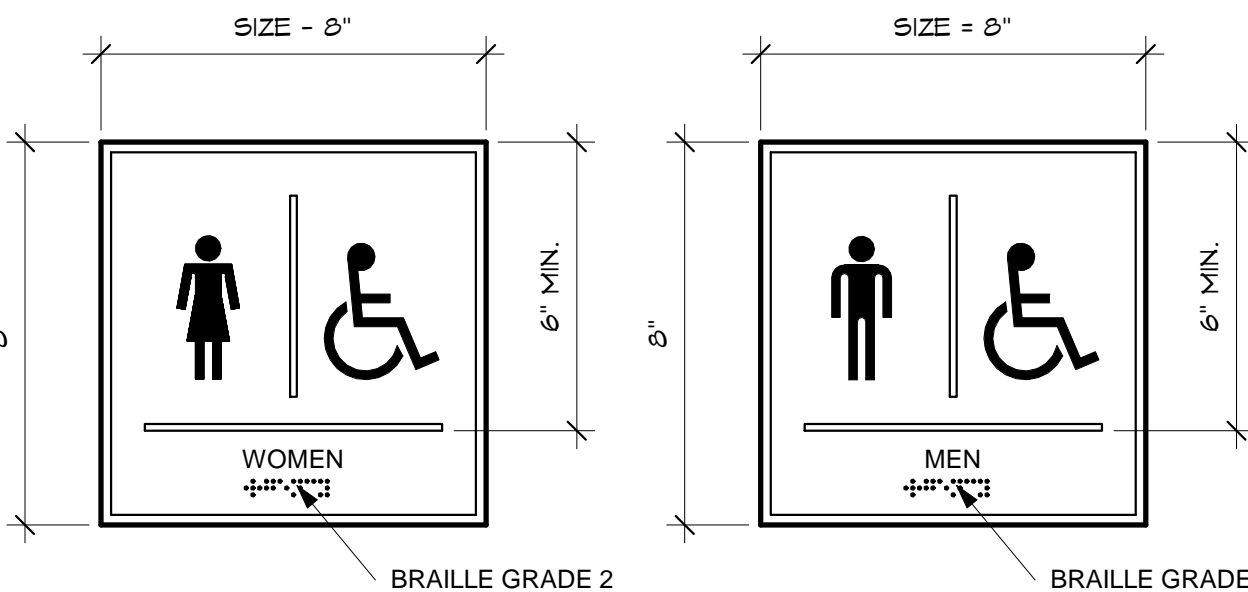


8 EMERGENCY SIGN

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1 1/2" = 1'-0"

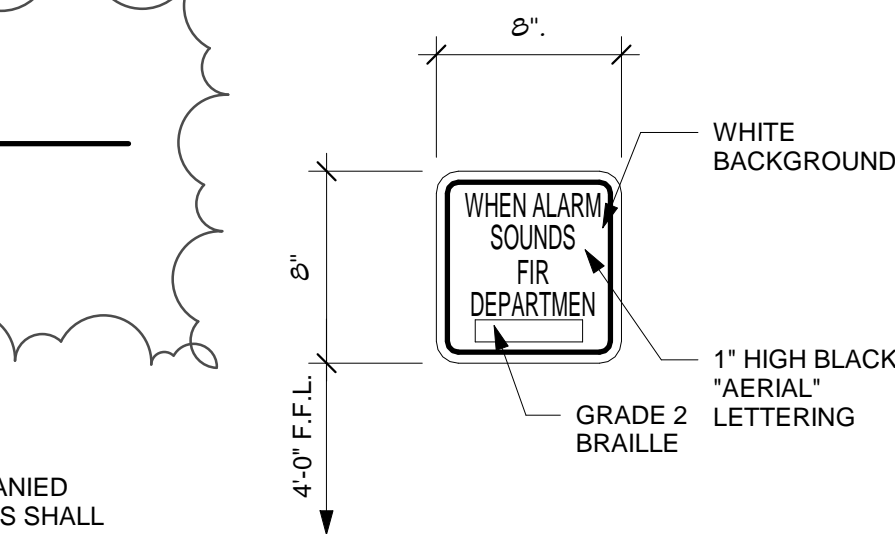


WOMENS RESTROOM SIGN

MENS RESTROOM SIGN

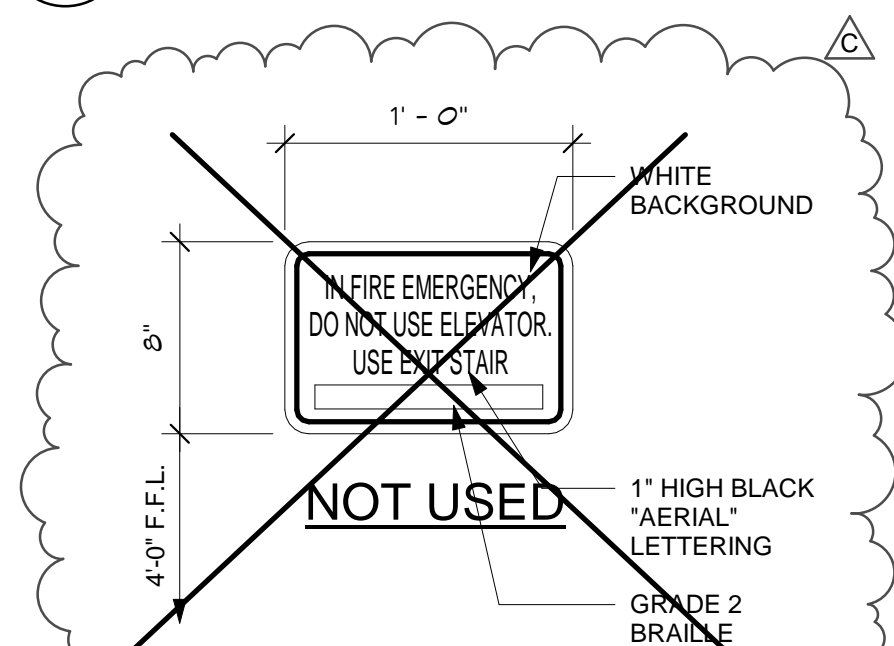
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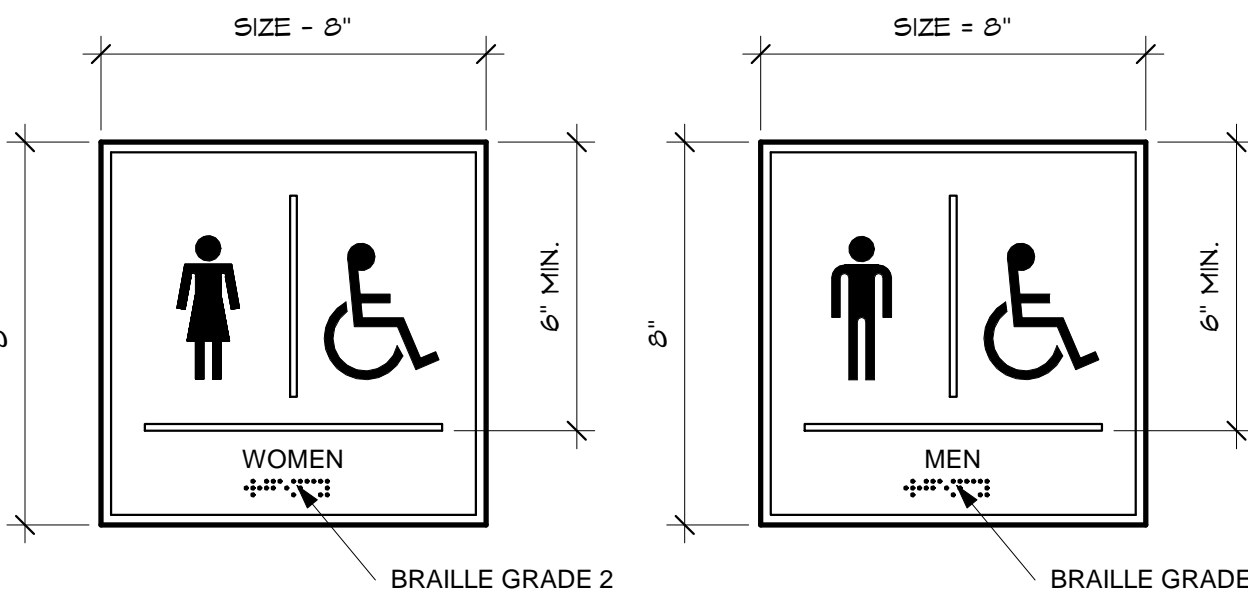


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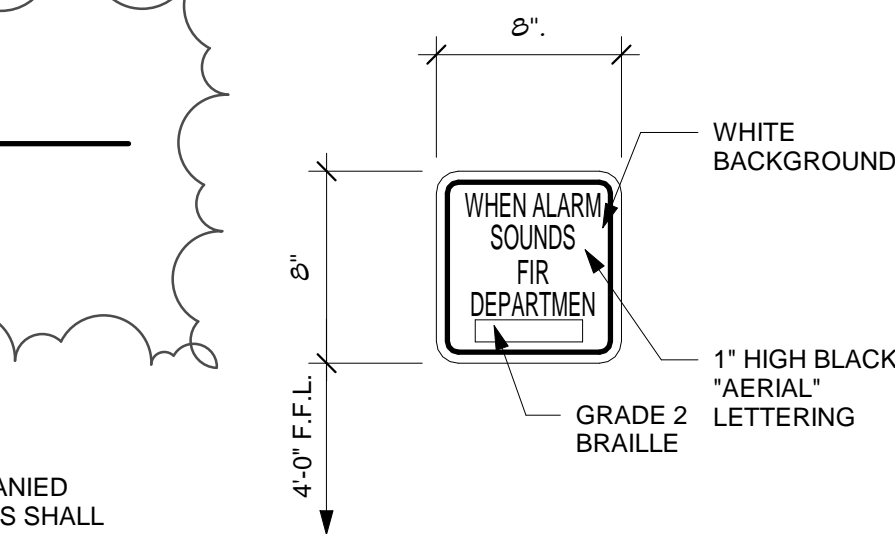


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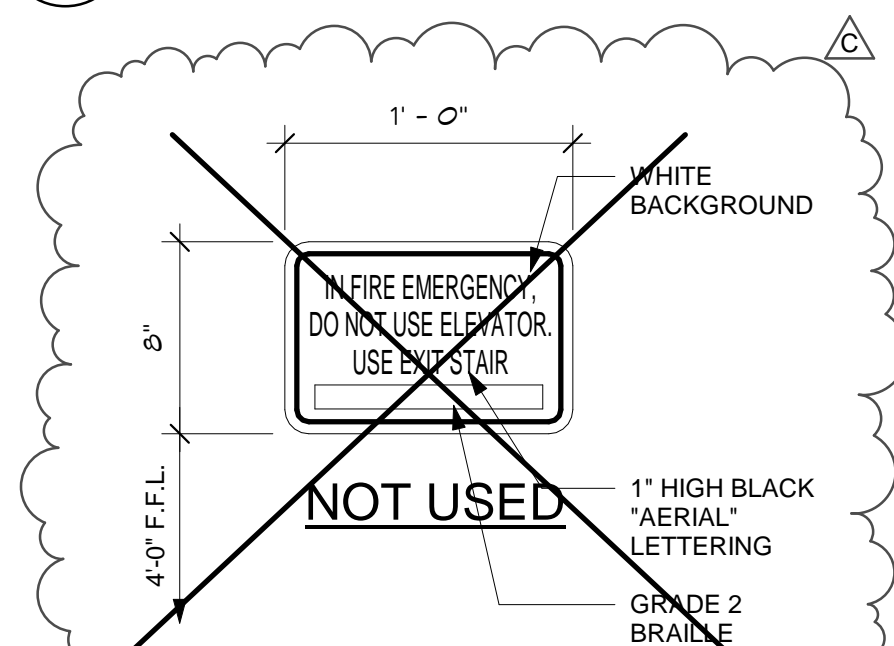
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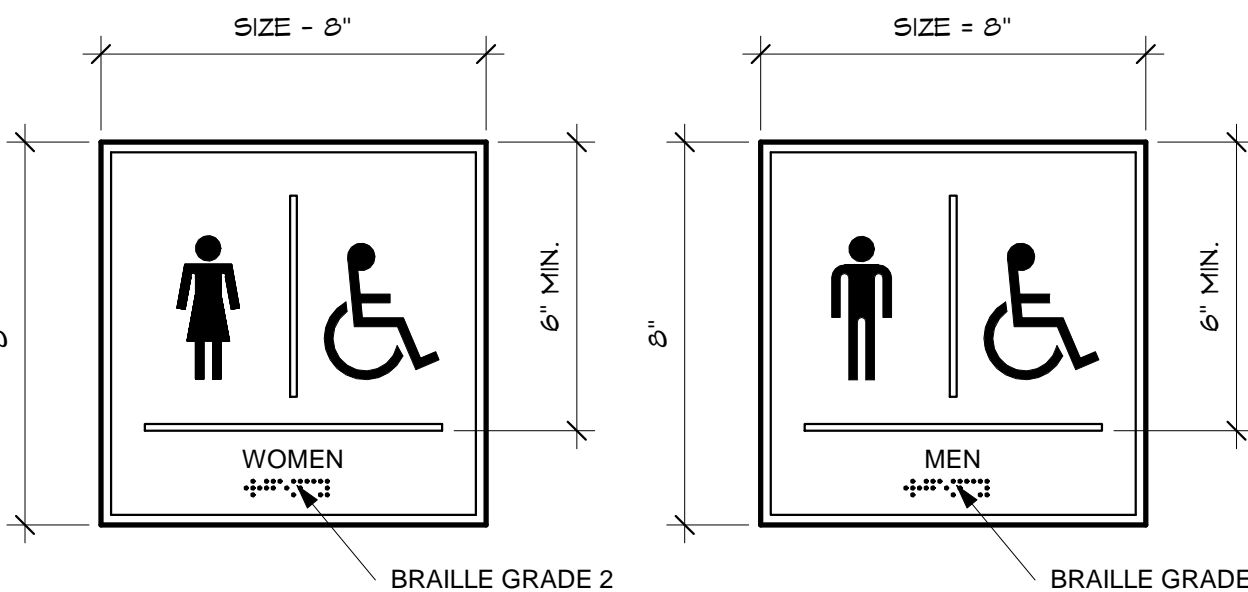


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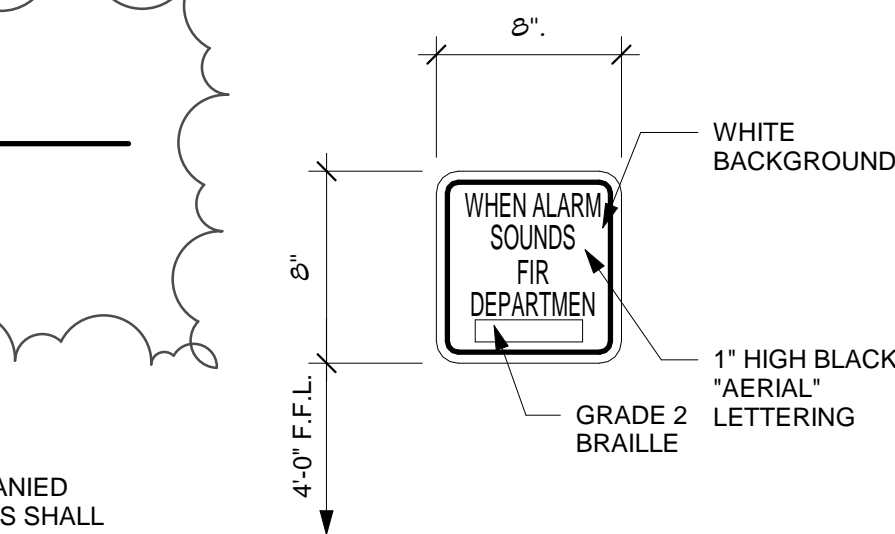


WOMENS RESTROOM SIGN

MENS RESTROOM SIGN

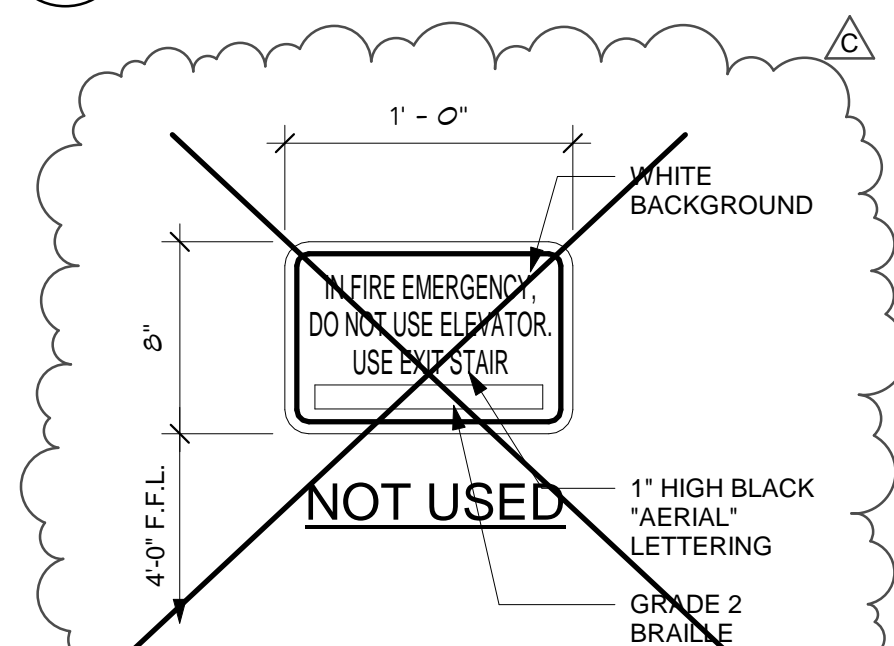
3 RESTROOM SIGNS (TYPE P)

3' = 1'-0"



6 MANUAL FIRE ALARM BOXES

1 1/2" = 1'-0"

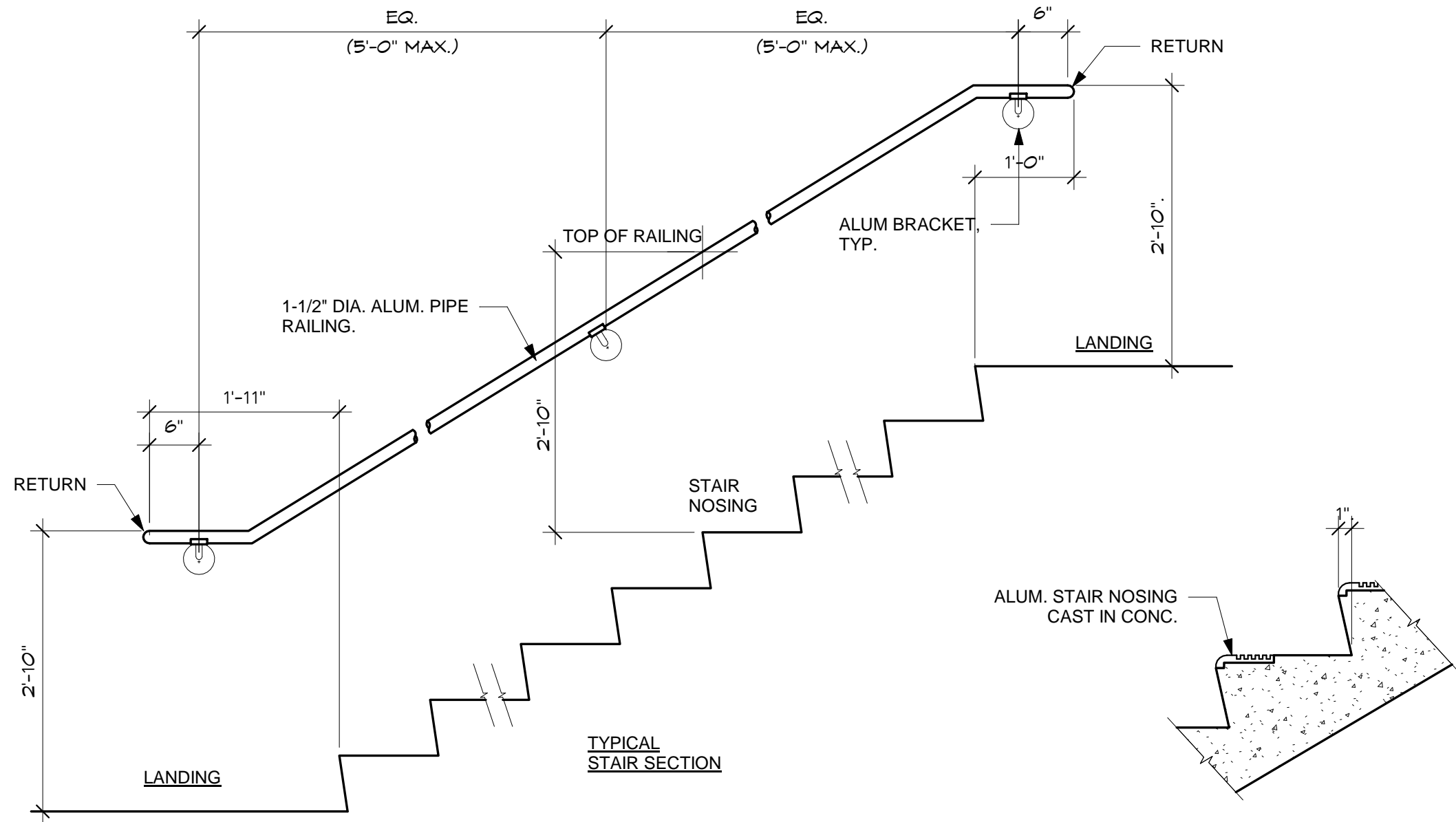


8 EMERGENCY SIGN

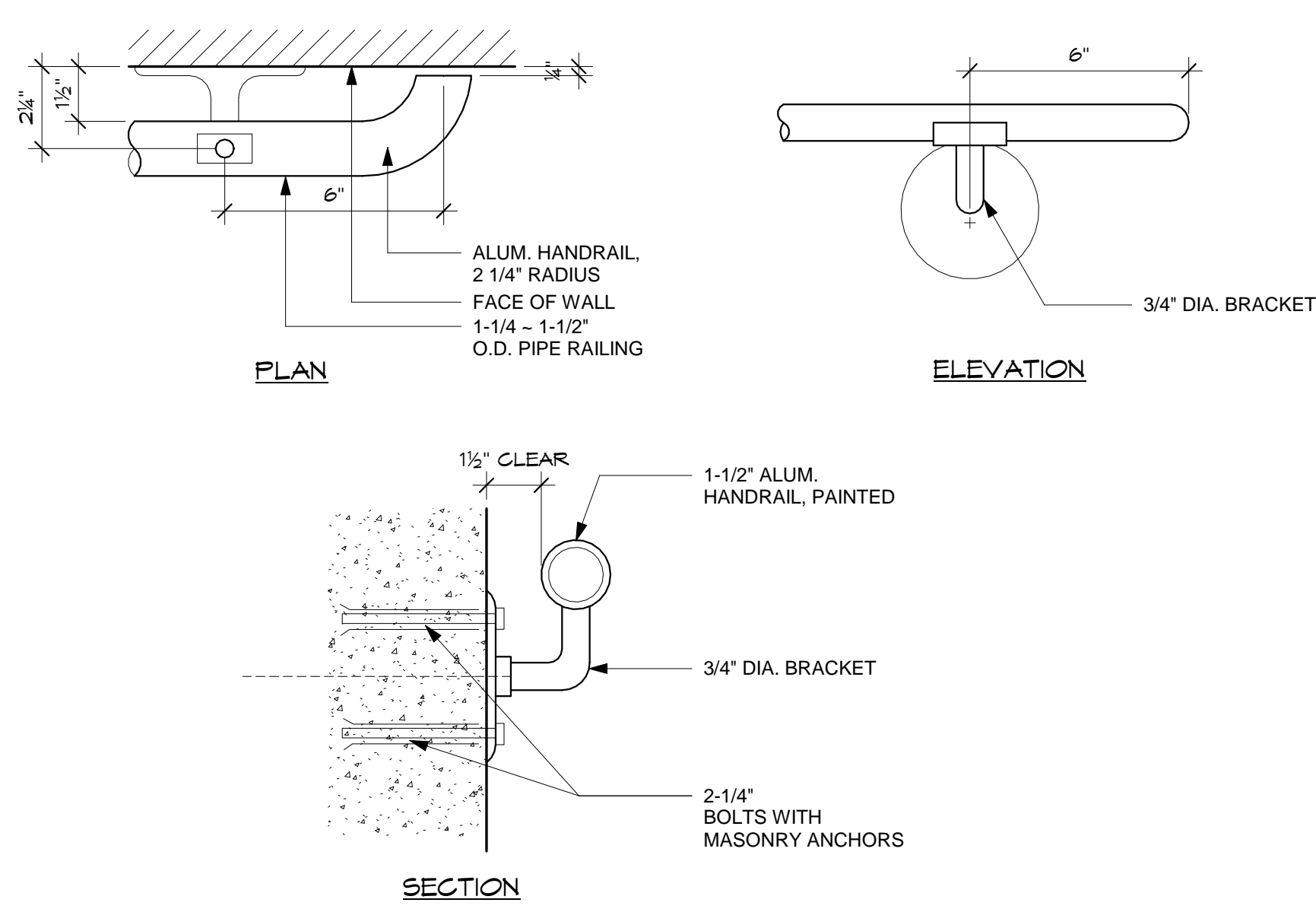
1 1/2" = 1'-0"

1 ROOM IDENTIFICATION (TYPE A)

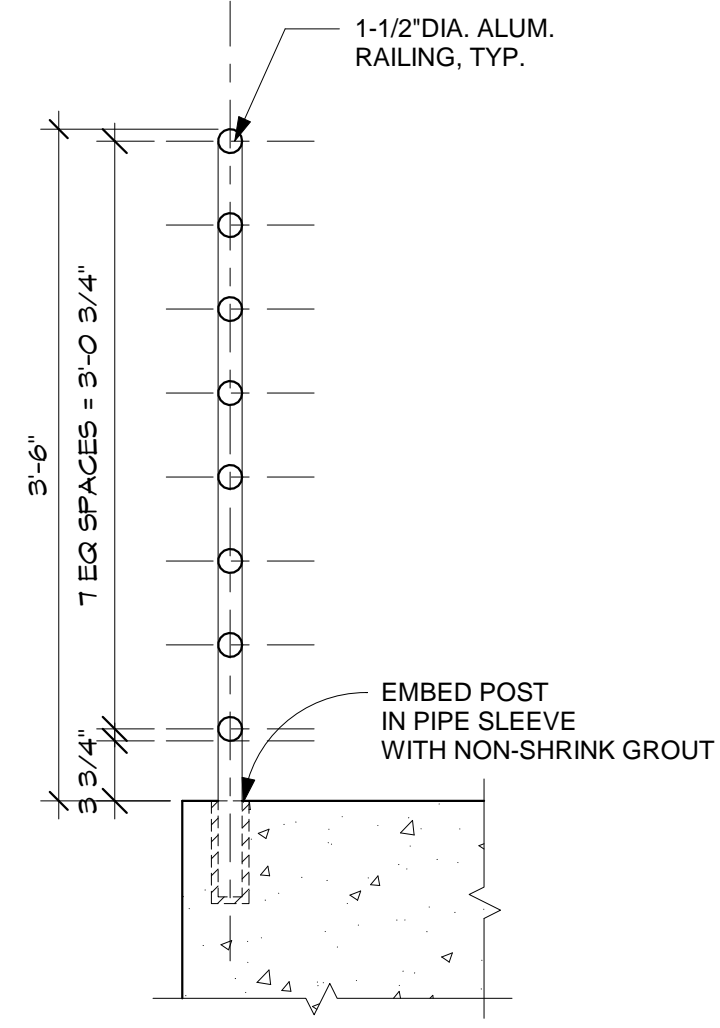
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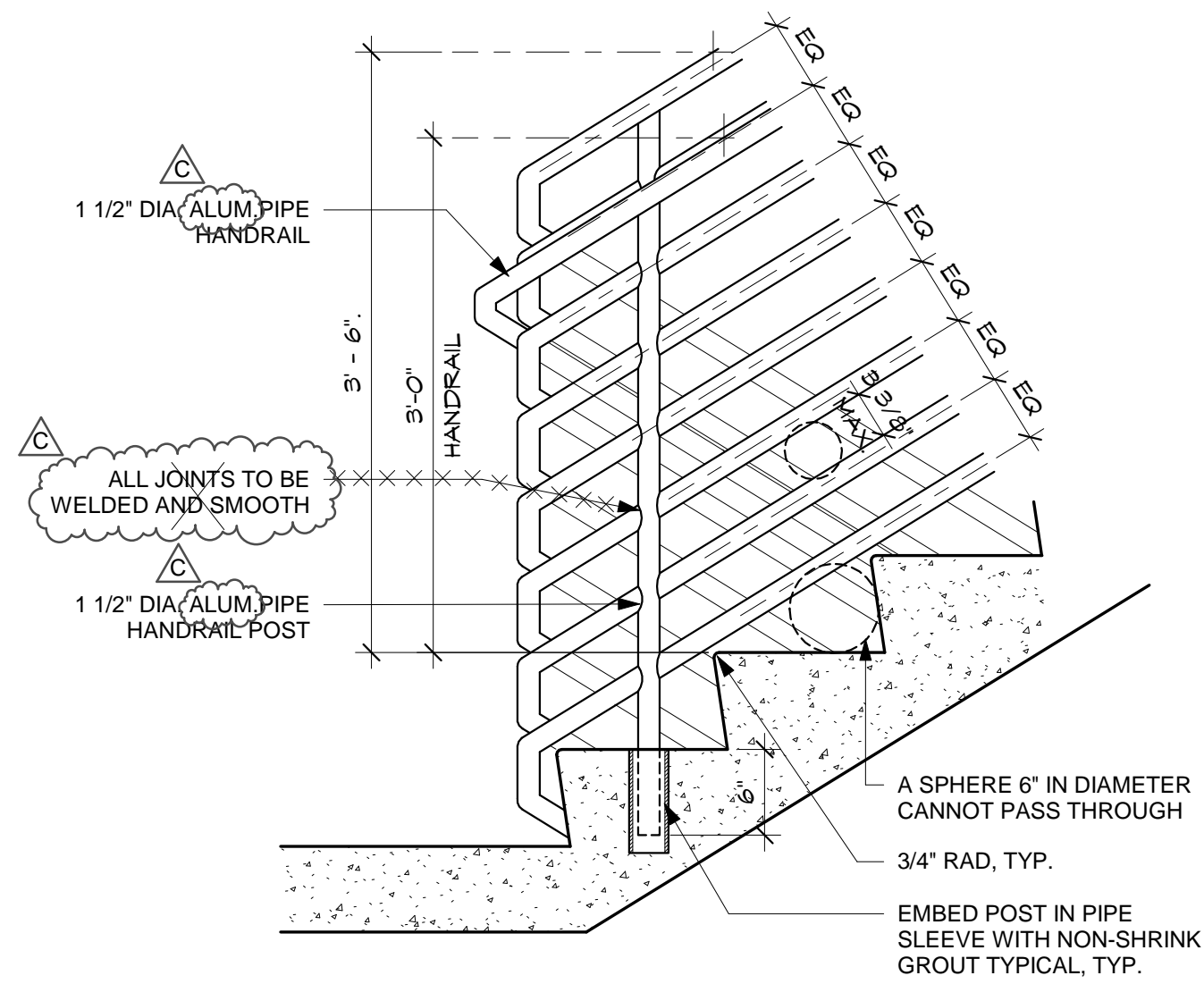
1 WALL MOUNTED HAND RAIL
3/4" = 1'-0"



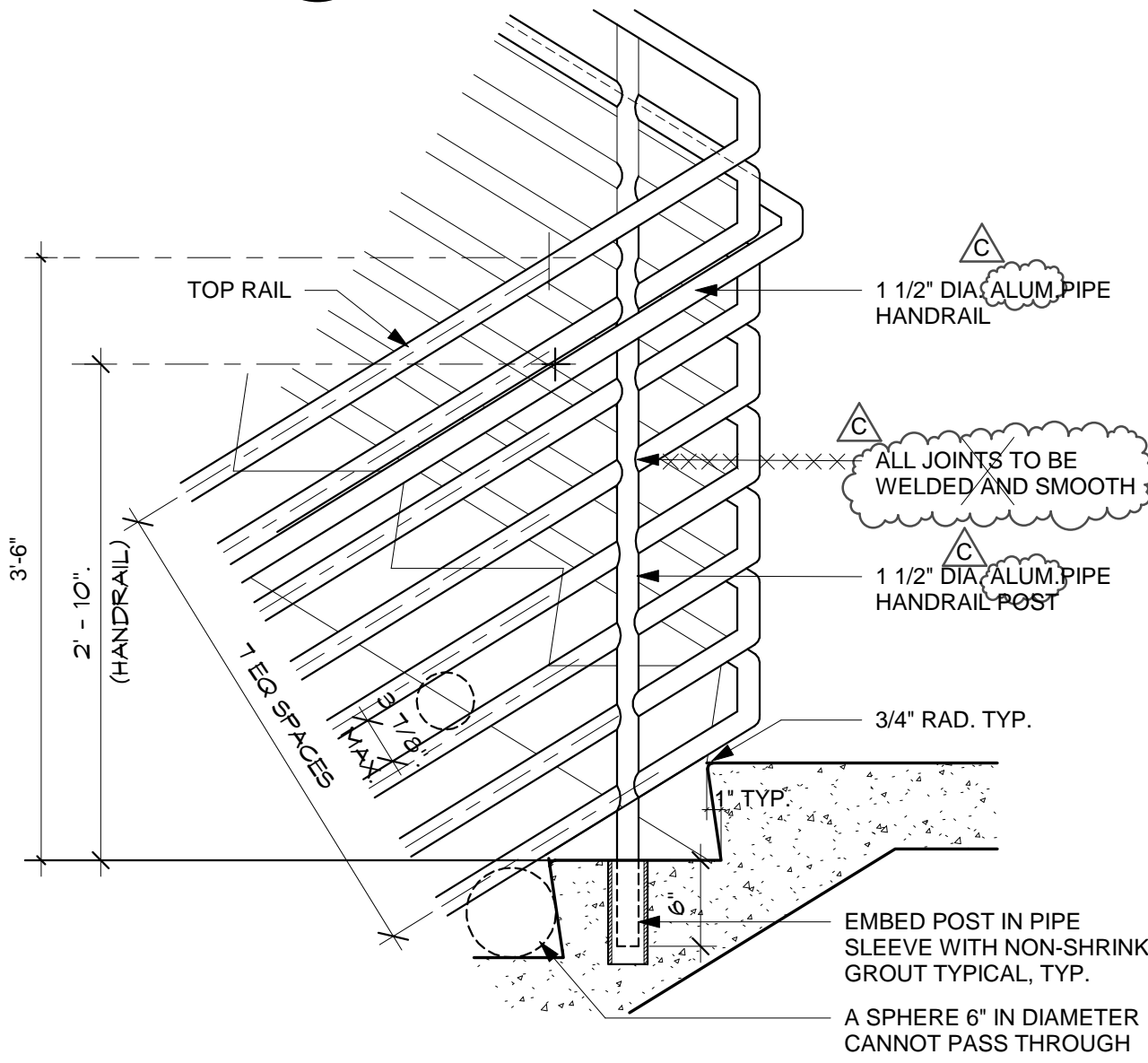
3 HANDRAIL DETAIL
3" = 1'-0"



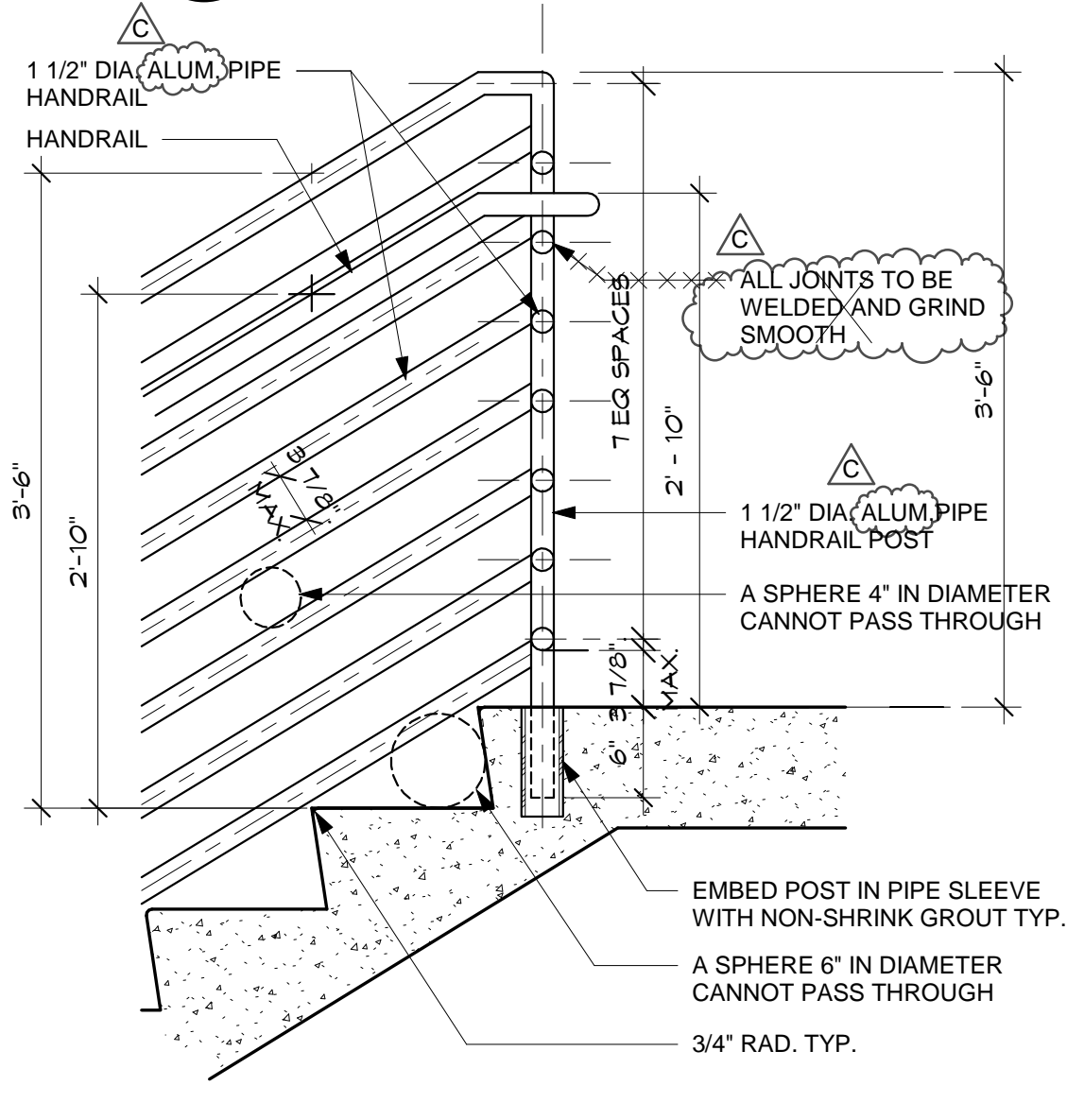
4 GUARDRAIL DETAILS
1" = 1'-0"



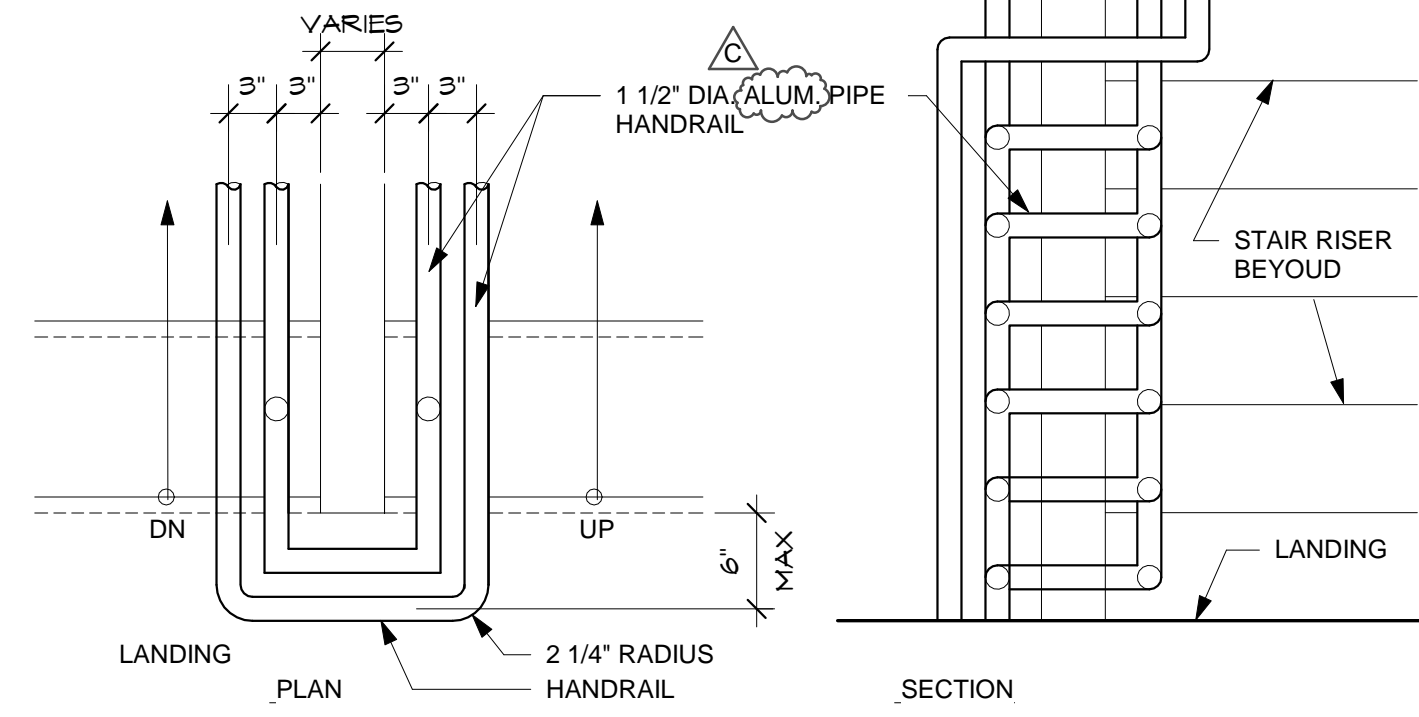
5 GUARDRAIL DET "A"
1" = 1'-0"



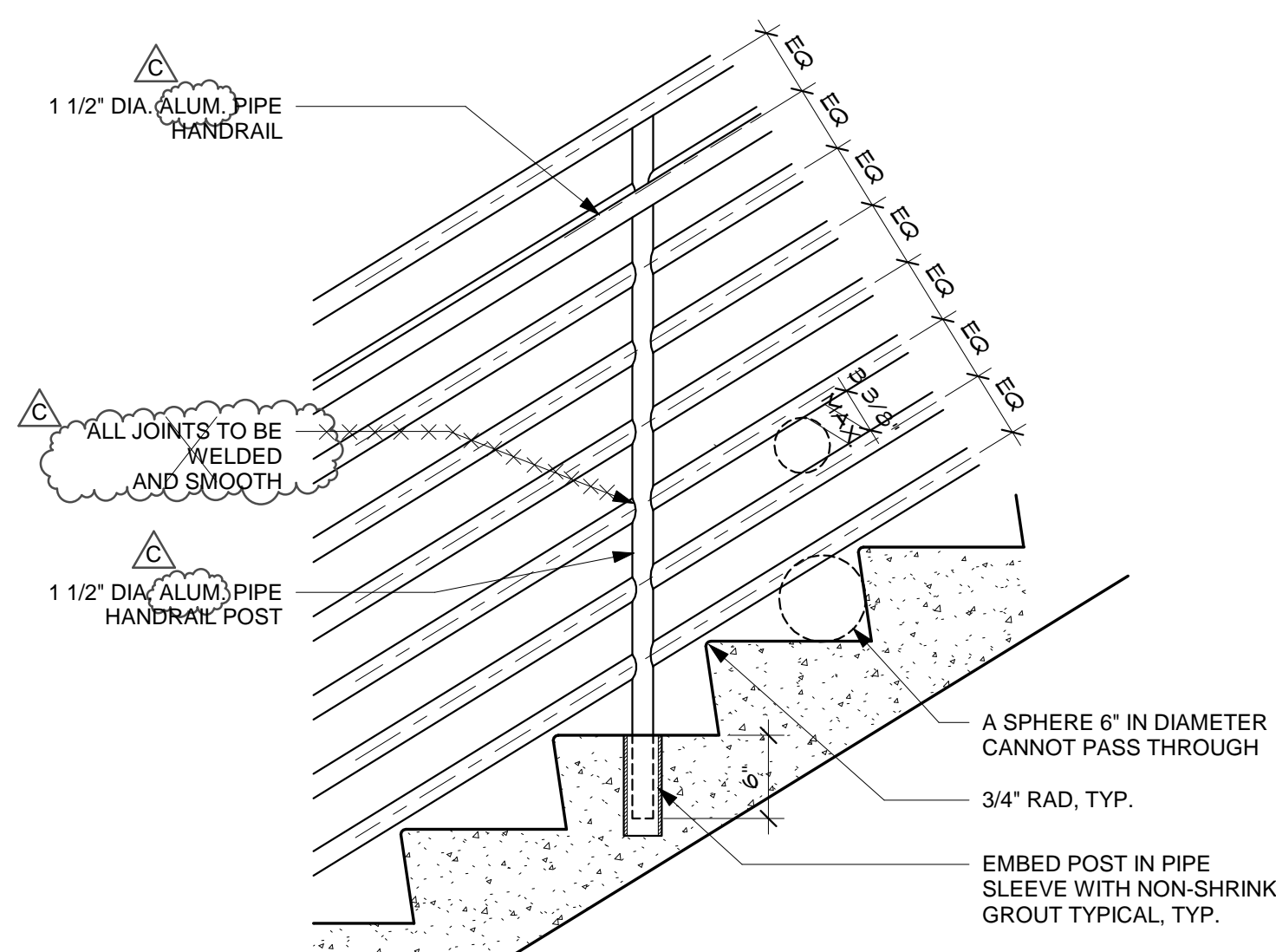
6 GUARDRAIL DET "B"
1" = 1'-0"



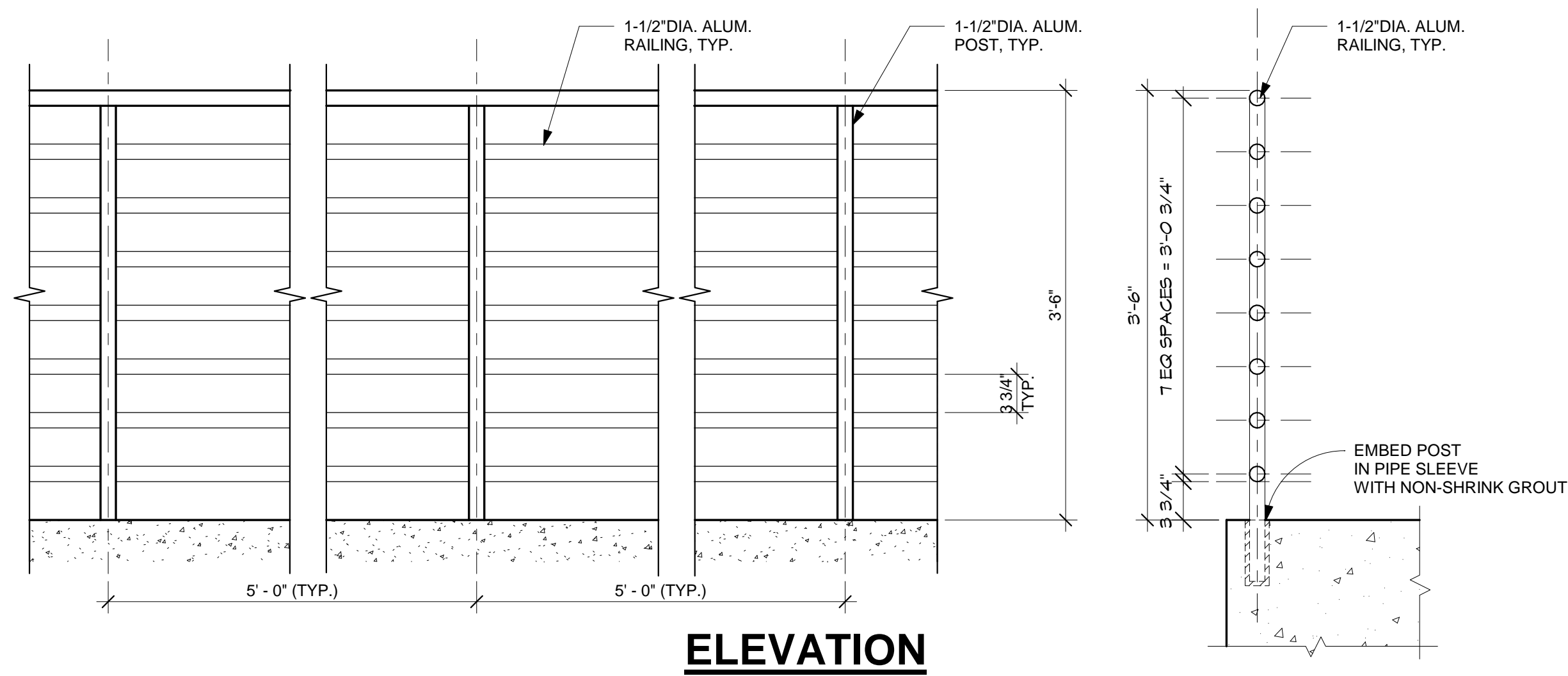
7 GUARDRAIL DET "C"
1" = 1'-0"



8 GUARDRAIL DET "D"
1" = 1'-0"



9 GUARDRAIL DET "E"
1" = 1'-0"



10 GUARDRAIL DETAILS
1" = 1'-0"

CONSULTANTS

TRMA
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100 Cliff Business Center, P.O. Box EA, Agaña, GU 96910
Tel.: (671) 475-8772 • Fax.: (671) 472-3381

Architecture
Planning
Interior Design



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BY ME OR UNDER MY
DIRECT SUPERVISION. DATE: 03-18-2019

PROJECT TITLE

GUAM WATERWORKS AUTHORITY

**NORTHERN DISTRICT
WASTEWATER
TREATMENT PLANT**

SUBMITTAL:

CONSTRUCTION SET

Revision Schedule			
#	Date	Addendum	Description
C	05-06-2019	Addendum C	

Project No.:	S17-003-OEA
Issue Date:	03-18-2019
Drawn By:	TRMA
Checked By:	TRMA
Approved By:	TRMA
Designed By:	TRMA

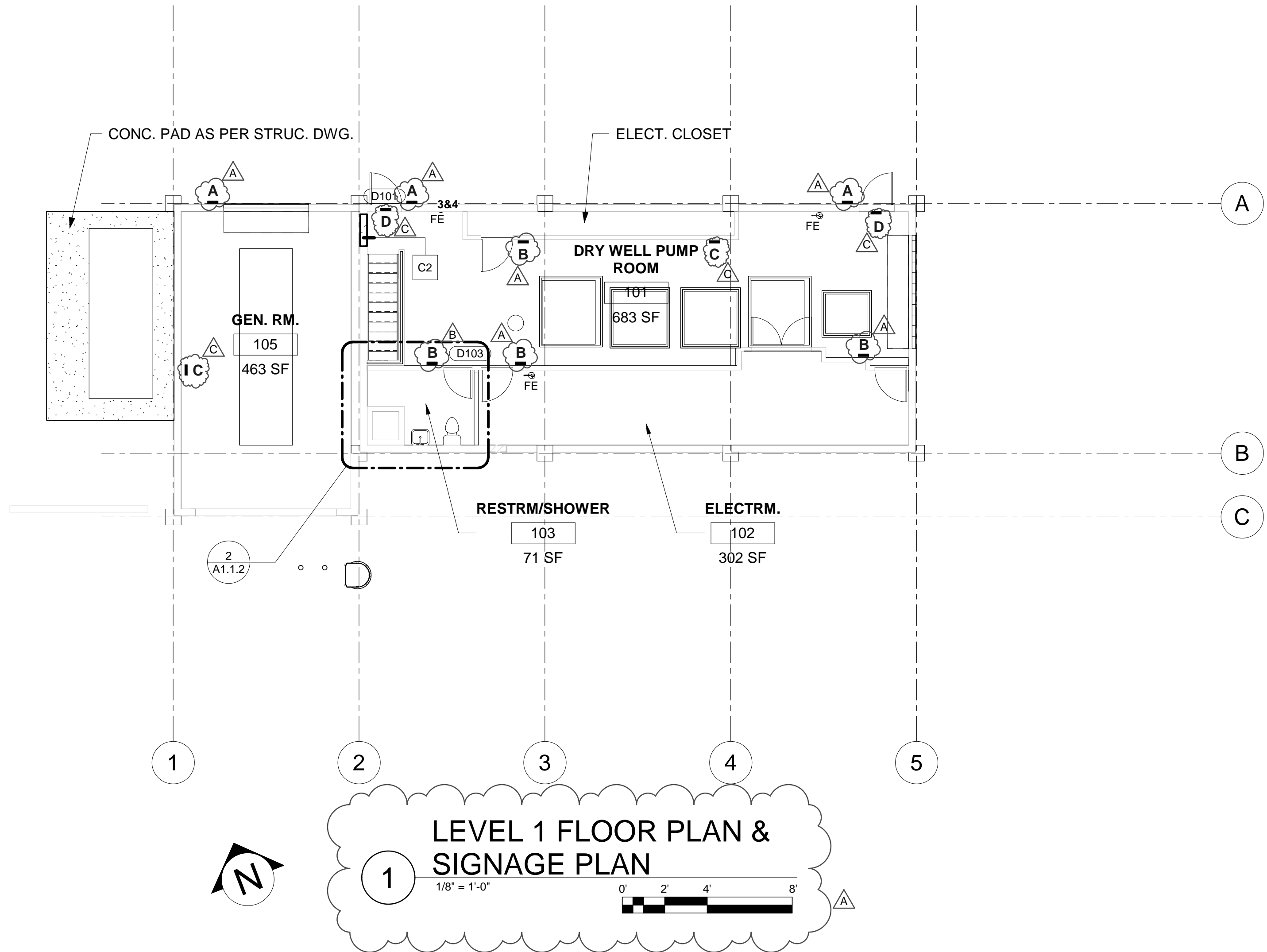
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ALL PROCESS BUILDINGS

RAILING DETAILS

Sheet: **A0.7**
637 OF 1075

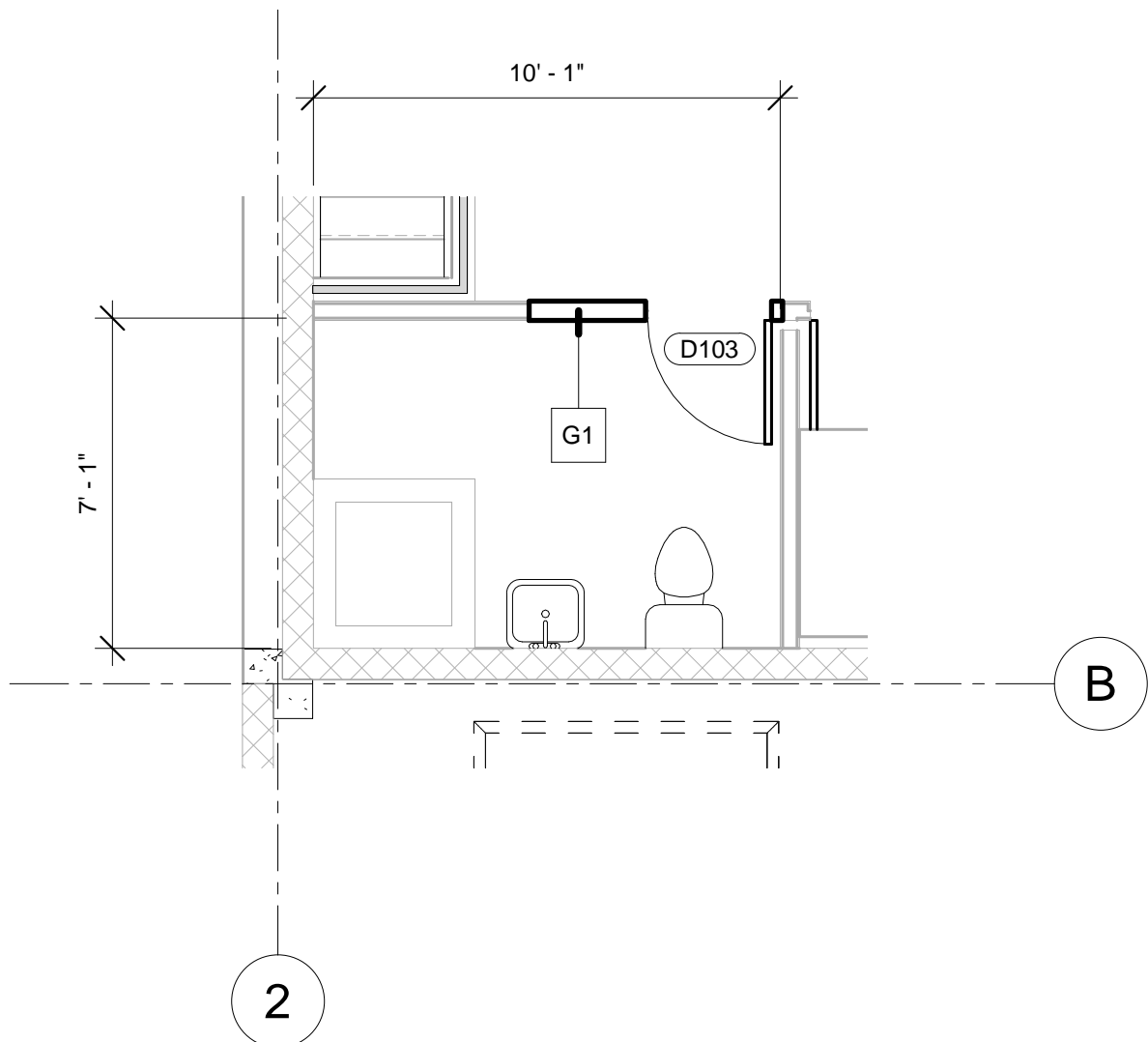
IF SHEET IS LESS THAN 22" X 34"
REDUCED PRINT - USE GRAPHIC SCALES
IF PRINT IS 11" X 17" PRINT IS HALF SCALE

H:\Projects\ND\WWTP\Drawings\100% PERMIT Set\Submittal\P1 SOUTHERN LINK INFLUENT PUMP STATION\P1 INFLUENT PUMP STATION.rvt



GENERAL NOTE

1. REFER TO SHEET A0.1 FOR DOOR SCHEDULE
2. REFER TO SHEET A0.6 FOR ROOM FINISH SCHEDULE
3. REFER TO SHEET A0.9 FOR WALL/PARTITION TYPES
4. REFER TO SHEET A0.4 FOR SIGNAGE DETAIL



RESTROOM DETAIL PLAN

1/4" = 1'-0"



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GUAM WATERWORKS AUTHORITY

NORTHERN DISTRICT
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Revision Schedule		
#	Date	Description
A	04-05-2019	Addendum A
B	04-17-2019	Addendum B
C	05-06-2019	Addendum C

Project No.: S17-003-OEA

Issue Date: 03-18-2019

Drawn By: TRMA

Checked By: TRMA

Approved By: TRMA

Designed By: TRMA

Sheet Title:

SOUTHERN LINK INFLUENT PUMP
STATION

FLOOR PLAN - LOWER
LEVEL

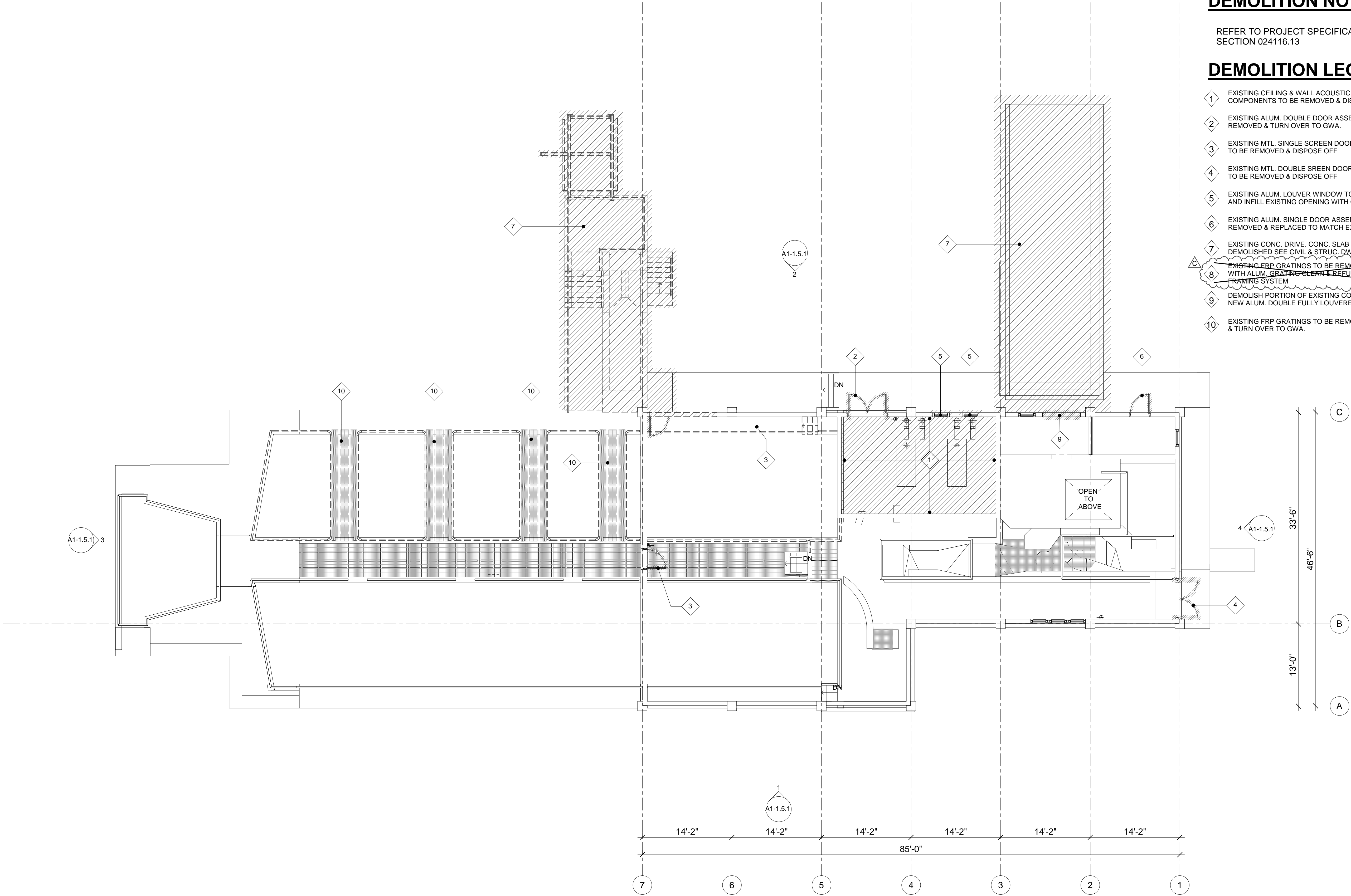
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A1.1.2

Sheet: 643 OF 1075

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DEMOLITION NOTES

REFER TO PROJECT SPECIFICATIONS
SECTION 024116.13

DEMOLITION LEGEND

- 1 EXISTING CEILING & WALL ACOUSTICAL INSULATION COMPONENTS TO BE REMOVED & DISPOSED OFF
- 2 EXISTING ALUM. DOUBLE DOOR ASSEMBLY TO BE REMOVED & TURN OVER TO GWA.
- 3 EXISTING MTL. SINGLE SCREEN DOOR ASSEMBLY TO BE REMOVED & DISPOSE OFF
- 4 EXISTING MTL. DOUBLE SCREEN DOOR ASSEMBLY TO BE REMOVED & DISPOSE OFF
- 5 EXISTING ALUM. LOUVER WINDOW TO BE REMOVED AND INFILL EXISTING OPENING WITH CONCRETE
- 6 EXISTING ALUM. SINGLE DOOR ASSEMBLY TO BE REMOVED & REPLACED TO MATCH EXISTING
- 7 EXISTING CONC. DRIVE, CONC. SLAB & STAIR TO BE DEMOLISHED SEE CIVIL & STRUC. DWGS.
- 8 EXISTING FRP GRATINGS TO BE REMOVED & REPLACED WITH ALUM. GRATING CLEAN & REFURBISH EXISTING FRAMING SYSTEM
- 9 DEMOLISH PORTION OF EXISTING CONC. WALL FOR NEW ALUM. DOUBLE FULLY LOUVERED DOOR
- 10 EXISTING FRP GRATINGS TO BE REMOVED & TURN OVER TO GWA.



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**NORTHERN DISTRICT
WASTEWATER
TREATMENT PLANT**

SUBMITTAL:

CONSTRUCTION SET

Revision Schedule			
#	Date	Addendum	Description
C	05-06-2019	Addendum C	

Project No.:	S17-003-OEA
Issue Date:	03-18-2019
Drawn By:	TRMA
Checked By:	TRMA
Approved By:	TRMA
Designed By:	TRMA

Sheet Title:

**ROUTE 3 INFLUENT PUMP
STATION**

DEMOLITION PLAN

Sheet:

A1-1.1.1

Sheet: 648 OF 1075

IF SHEET IS LESS THAN 22" X 34"
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GENERAL NOTE

1. REFER TO SHEET A0.1 FOR DOOR SCHEDULE
2. REFER TO SHEET A0.6 FOR ROOM FINISH SCHEDULE
3. REFER TO SHEET A0.9 FOR WALL/PARTITION TYPES.
4. REFER TO SHEET A0.4 FOR SIGNAGE DETAIL



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**NORTHERN DISTRICT
WASTEWATER
TREATMENT PLANT**

SUBMITTAL:

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Revision Schedule

#	Date	Addendum	Description
A	04-05-2019	Addendum A	
C	05-06-2019	Addendum C	

Project No.: S17-003-OEA

Issue Date: 03-18-2019

Drawn By: TRMA

Checked By: TRMA

Approved By: TRMA

Designed By: TRMA

Sheet Title:

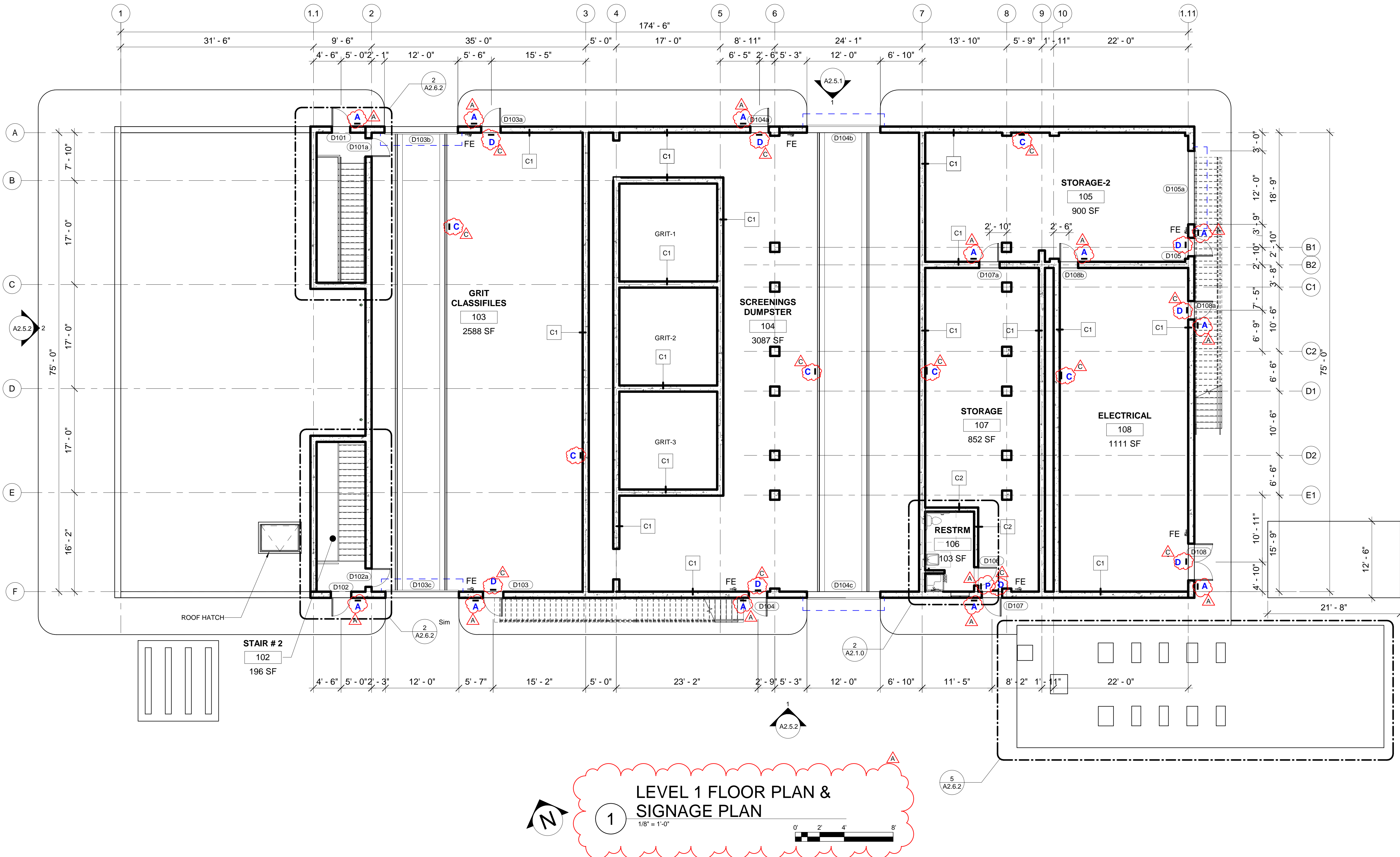
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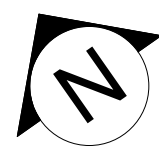
FLOOR PLAN - LEVEL 1

Sheet:

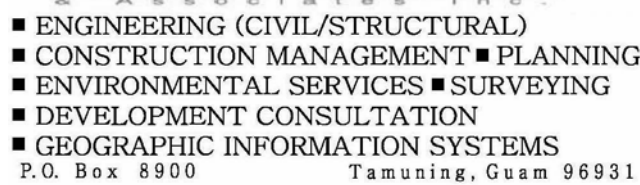
A2.1.1

Sheet: 655 OF 1075




$$1/8'' = 1'-0''$$


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2. REFER TO SHEET A0.6 FOR ROOM FINISH SCHEDULE
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Revision Schedule

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Project No.:	S17-003-OEA
Issue Date:	03-18-2019
Drawn By:	TRMA
Checked By:	TRMA
Approved By:	TRMA
Designed By:	TRMA

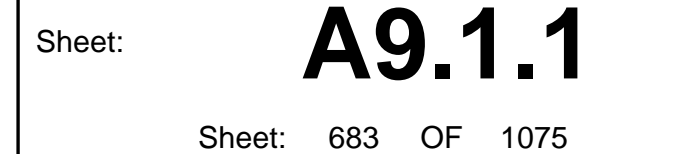
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Sheet: 677 OF 1075

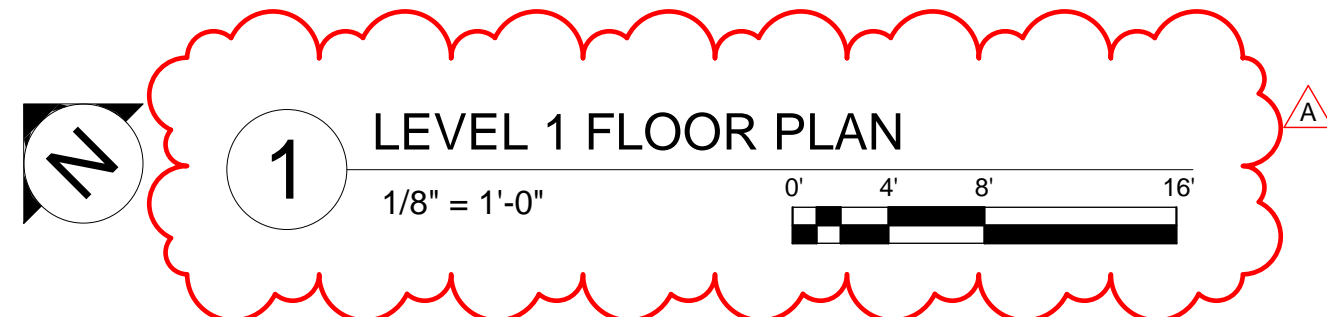
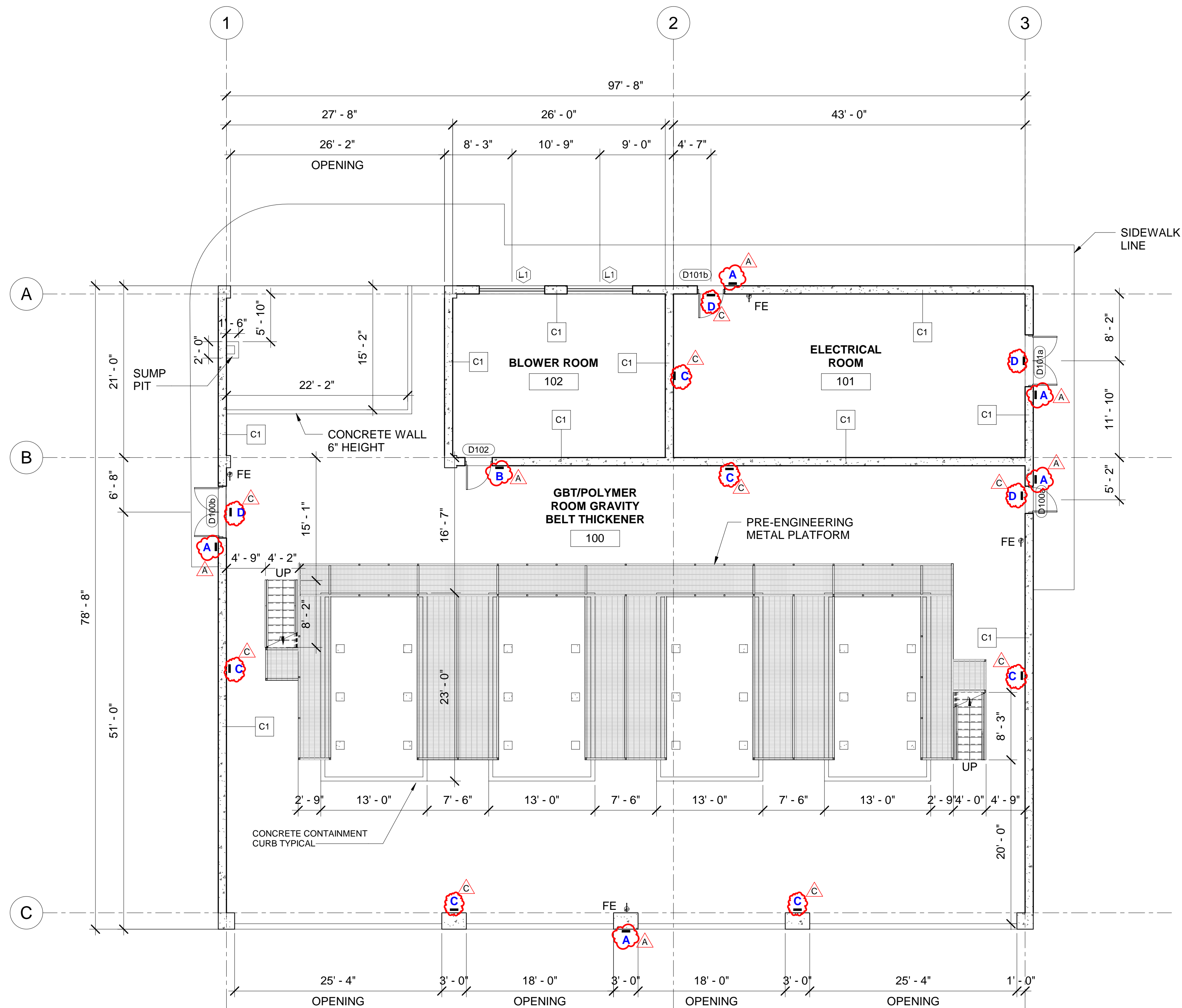
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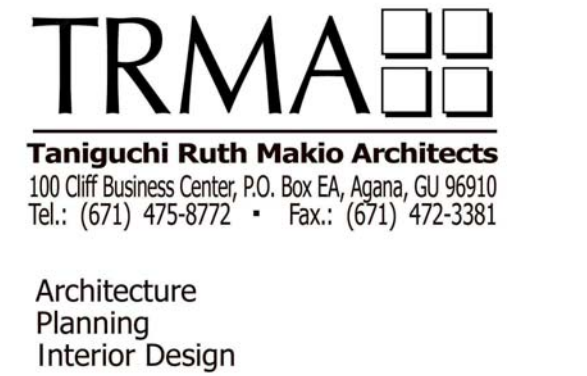
GENERAL NOTES

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3. REFER TO SHEET A0.9 FOR WALL/PARTITION TYPES.
4. REFER TO SHEET A0.4 FOR SIGNAGE DETAIL

A



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PROJECT TITLE



NORTHERN DISTRICT
WASTEWATER
TREATMENT PLANT

SUBMITTAL:

CONSTRUCTION SET

Revision Schedule			
#	Date	Addendum	Description
A	04-06-2019	Addendum A	
C	05-06-2019	Addendum C	

Project No.:	S17-003-OEA
Issue Date:	03-18-2019
Drawn By:	TRMA
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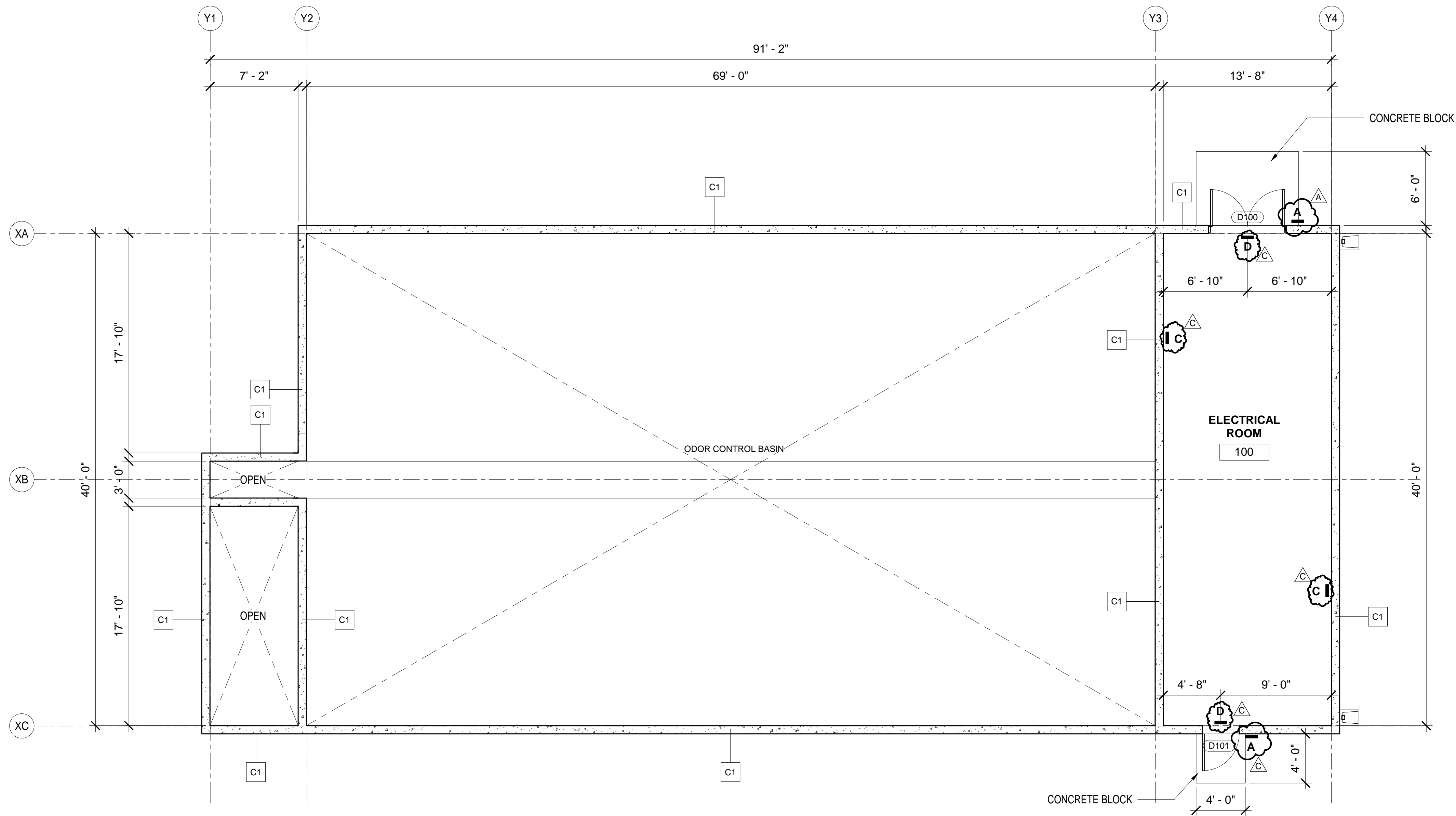
Sheet Title:
THICKENING FACILITY

LEVEL 1 FLOOR PLAN

Sheet: **A10.1.1**
Sheet: 688 OF 1075

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ODOR CONTROL / ELECTRICAL BUILDING

LEVEL 1 FLOOR PLAN & SIGNAGE DETAIL

1

3/16" = 1'-0"

0 2'-8" 5'-4" 10'-8"

A

GENERAL NOTES

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A



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**NORTHERN DISTRICT
WASTEWATER
TREATMENT PLANT**

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Project No.: S17-003-OEA

Issue Date: 03-18-2019

Drawn By: TRMA

Checked By: TRMA

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Sheet Title:

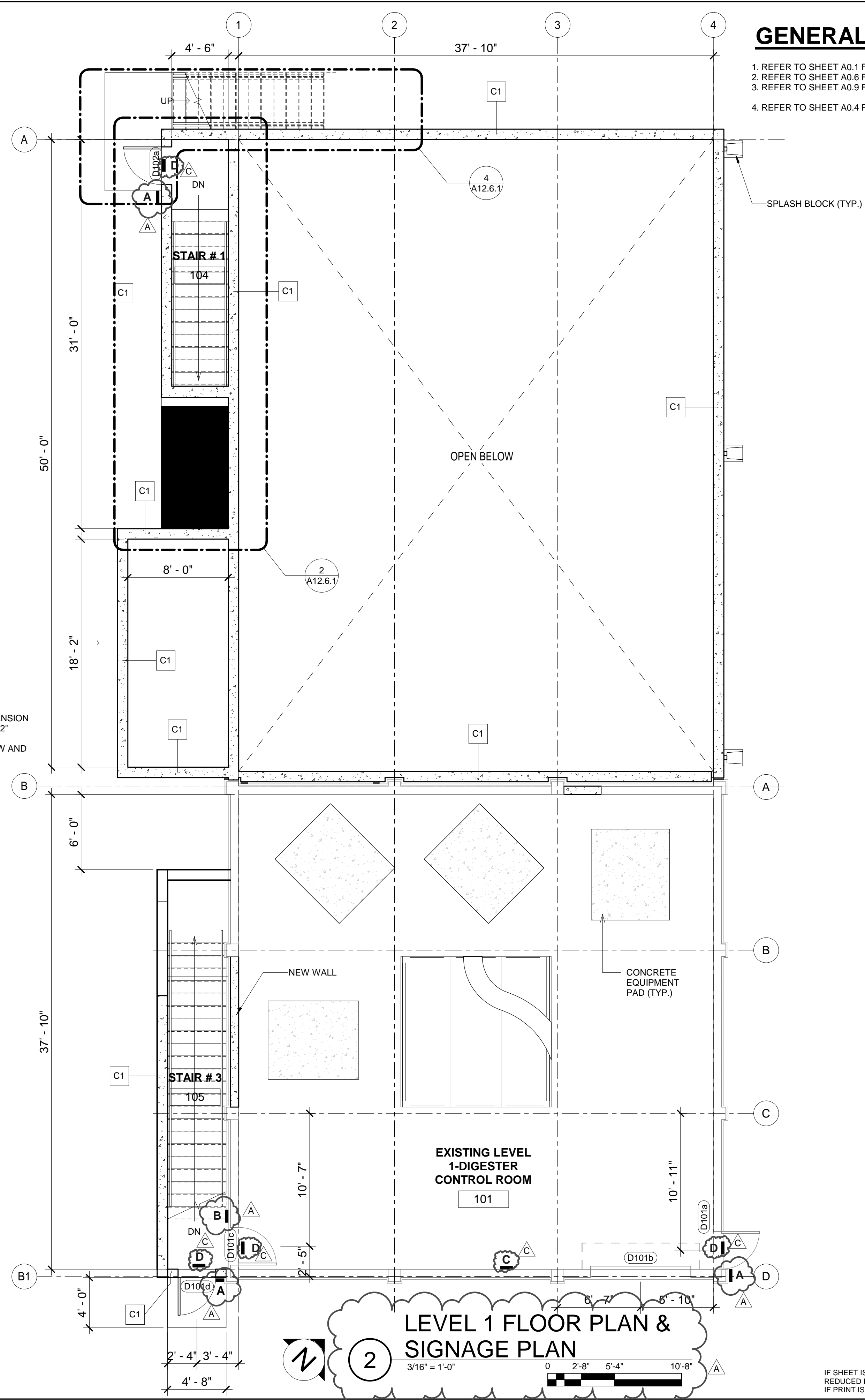
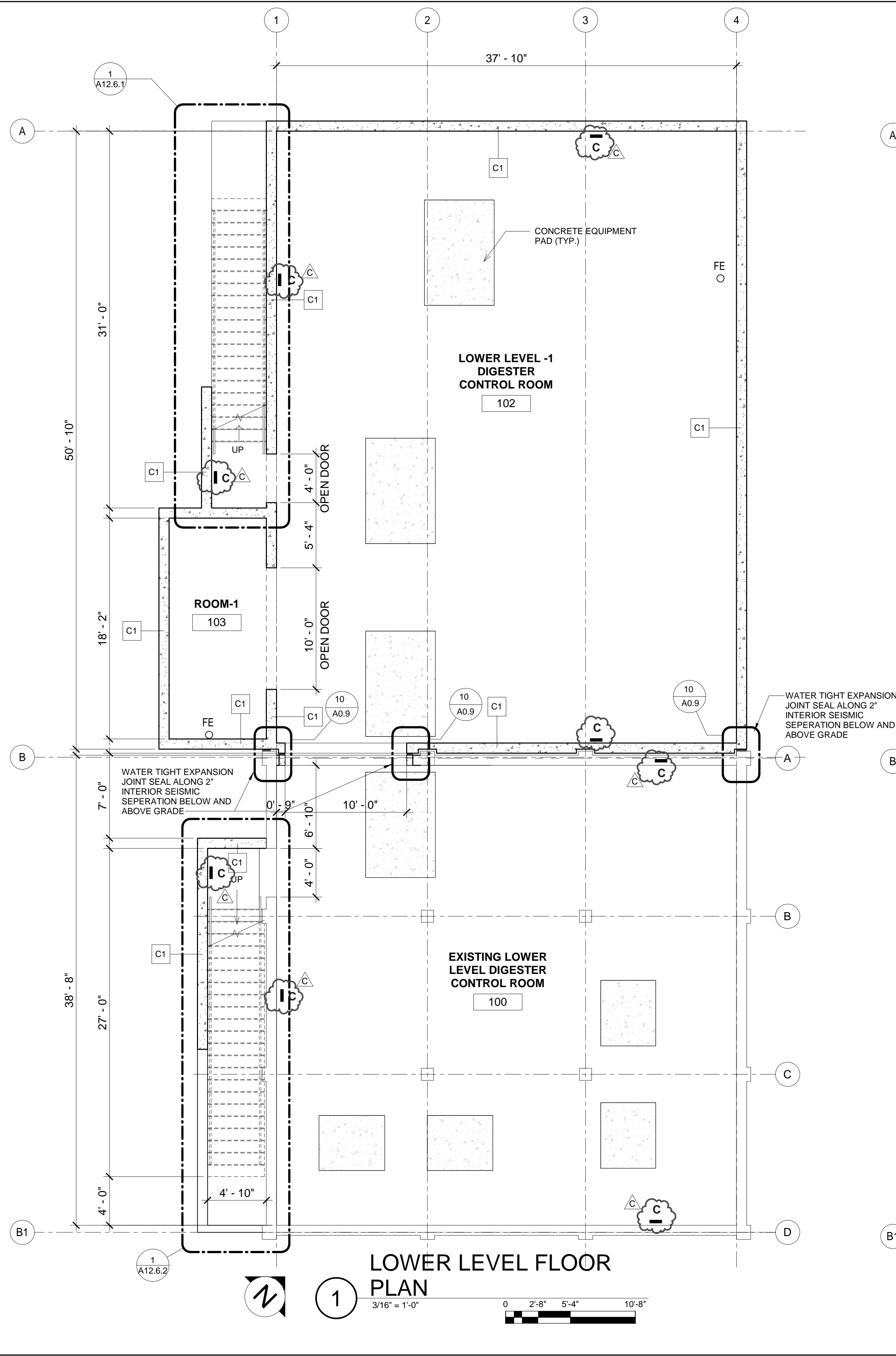
ATAD 1-2&SNDR TANKS,W/ ATAD
ODOR CONTROL/ELEC BLDG AND
ATAD CHILLER
LEVEL 1 FLOOR PLAN

Sheet:

A11.1.1

Sheet: 697 OF 1075

IF SHEET IS LESS THAN 22" X 34"
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- ## GENERAL NOTES

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NORTHERN DISTRICT
WASTEWATER
TREATMENT PLANT

SUBMITTAL:

CONSTRUCTION SET

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Project No.:	S17-003-OEA
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Issue Date:	03-18-2019
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Drawn By:	TRMA
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Checked By:	TRMA
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Approved By:	TRMA
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Designed By:	TRMA
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Sheet Title:

DIGESTER EQUIPMENT BUILDING
(ATAD):

LOWER LEVEL & LEVEL 1
FLOOR PLAN

Sheet: **A12.1.2**

Sheet: 711 OF 1075

IF SHEET IS LESS THAN 22" X 34"
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GOVERNING CODES		
INTERNATIONAL BUILDING CODE (2009) INTERNATIONAL CODE COUNCIL, ACCESSIBLE GUIDELINE, JULY 23, 2004 AND AMENDED AUGUST 5, 2005 INTERNATIONAL FIRE CODE (2009) INTERNATIONAL PLUMBING CODE (2009) INTERNATIONAL MECHANICAL CODE (2009) NFPA 70: NATIONAL ELECTRICAL CODE		
2009 INTERNATIONAL BUILDING CODE ANALYSIS - LIFE SAFETY		
PROEJCT: NORTHERN DISTRICT WASTE WATER TREATMENT FACILITY SUBMITTAL: PERMIT SET SUBMITTAL DATE: MAY 29, 2018 CODE: 2009 INTERNATIONAL BUILDING CODE		
BASIC BUILDING CODE INFORMATION		
SECTION	REQUIREMENT	PROVIDED
\$602	CONSTRUCTION CLASSIFICATION TYPE	TYPE II-B
\$304	OCCUPANCY GROUP	BUSINESS GROUP B
\$304	OCCUPANCY GROUP	FACTORY INDUSTRIAL F-1 MODERATE HAZARD
\$508	INCIDENTAL USE AREA SEPERATION	MIXED USE OCCUPANCY
\$508.2	ACCESSORY OCCUPANCIES	APPLICABLE
\$508.2.2	MIXED USE OCCUPANCY	APPLICABLE
\$508.2.4	NON SEPERATED	NOT APPLICABLE
\$508.2.5	SEPERATED	NOT APPLICABLE
\$508.2.5	OTHER FIRE PROTECTION SYSTEMS, DEVICES	FIRE EXTINGUISHERS - CLASS C
BUILDING AREA		
SECTION	REQUIREMENT	
\$504	AREA LIMIT PER STORY	EXISTING LEVEL 1 - 820SF NEW LEVEL 1- 596SF
\$506	MAX. AREA MODIFICATION PER STORY	NOT APPLICABLE
\$506	MAX. ALLOWED AREA FOR EACH STORY	NOT APPLICABLE
\$506	TOTAL ALLOWED AREA OF BUILDING	EXISTING 1,640SF NEW 1,215SF
\$506	TOTAL DESIGNED AREA OF EACH STORY	EXISTING 1,640SF NEW 1,215SF
\$506	TOTAL DESIGNED AREA OF BUILDING	2,855 SF
BUILDING HEIGHT		
SECTION	REQUIREMENT	PROVIDED
\$503	WITHOUT ANY ALLOWABLE INCREASE	55' - 0", 3 STORIES
\$504.2	ALLOWABLE HEIGHT INCREASE	NOT APPLICABLE, EXCEPTION TYPE II-B
\$504.2	TOTAL HEIGHT INCLUDING ANY ALLOWABLE INCREASE	3 STORIES
GENERAL FIRE PROTECTION REQUIREMENTS		
SEPARATIONS		
SECTION	REQUIREMENT	PROVIDED / ALLOWED
\$717	FIRE BLOCKING REQUIRED	THE BUILDING IS A TYPE IIB NON COMBUSTIBLE, FIRE BLOCKING & DRAFT STOPPING WILL NOT BE USED.
\$717.3	DRAFTSTOPPING REQUIRED	
\$719	SMOKE CONTROL SYSTEM REQUIRED	NOT REQUIRED
\$710	SMOKE BARRIERS REQUIRED	NOT REQUIRED
\$711	SMOKE PARTITION REQUIRED	NOT REQUIRED
\$709	FIRE PARTITION REQUIRED	NOT REQUIRED
\$707	FIRE BARRIER REQUIRED	NOT REQUIRED
ALARM & DETECTIONS		
\$907.2.4	FIRE ALARM SYSTEM REQUIRED	BUILDING DOES NOT EXCEED THE OCCUPANT LOAD REQUIREMENTS OF 907.2.4.2, MANUAL FIRE ALARM SYSTEM IS NOT REQUIRED.
\$908	EMERGENCY ALARM SYSTEM REQUIRED	NOT REQUIRED FOR GROUP F
SUPPRESSION		
\$905.3.5	UNDERGROUND BUILDINGS	NOT APPLICABLE (BUILDING CODE DOES NOT MEET DEFINITION OF UNDERGROUND BUILDING SEE 405.1 DEFINITION).
\$903.2.11.1	STORIES WITHOUT OPENINGS	ALL STORIES AND PLATFORM WITHOUT OPENINGS DO NOT EXCEED 1,500 SF. THEREFORE, SPRINKLER IS NOT REQUIRED. PROVIDED: LEVEL 1 - 504 SF
\$906	PORTABLE FIRE EXTINGUISHERS	WILL BE PROVIDED AS PER IFC SECTIONS 309.4, 1415.1, 2306.1, 3403.2.1, 3606.5.7 PROVIDED: CLASS C FIRE EXTINGUISHERS @ EVERY 75'
\$908 - \$909	OTHER SUPPRESSION SYSTEMS REQUIRED	NOT REQUIRED
\$910	SMOKE AND HEAT VENTS REQUIRED	NOT REQUIRED
AREA OF REFUGE		
EXTERIOR AREA FOR ASSISTED RESCUE		
FIRE-RESISTANCE RATING REQ. FOR BUILDING ELEMENTS - TABLE 601		
PRIMARY STRUCTURAL FRAME	0 HRS.	
BEARING WALLS, EXTERIOR	0 HRS.	
BEARING WALLS, INTERIOR	0 HRS.	
NON BEARING WALLS, EXTERIOR	0 HRS.	
NON BEARING WALLS, INTERIOR	0 HRS.	
FLOOR CONSTRUCTION AND SECONDAY MEMBERS	0 HRS.	
ROOF CONSTRUCTION AND SECONDAY MEMBERS	0 HRS.	

REQUIRED EGRESS WIDTHS	
SECTION	
\$405.1	THE PROVISIONS OF THIS SECTION ONLY APPLY TO BUILDING SPACES THAT HAVE A FLOOR USED FOR HUMAN OCCUPANCY MORE THAN 30' BELOW THE FINISHED FLOOR OF THE LOWEST LEVEL OF EXIT DISCHARGE. EXEMPTION 6: PUMPING STATIONS AND OTHER SIM. MECH. SPACES INTENDED ONLY FOR LIMITED PERIODIC USE BY SERVICE OR MAINTENANCE PERSONNEL. REQUIREMENT: NOT APPLICABLE TO PROJECT
\$1005.1	MINIMUM EGRESS WIDTH ALLOWANCE @ STAIRWAYS: 47 X .3 PER PERSON = 15" PROVIDED: NOT APPLICABLE TO PROJECT MINIMUM EGRESS WIDTH ALLOWANCE @ OTHER: 47 X .2 PER PERSON = 10" PROVIDED: MINIMUM CORRIDOR 2 WIDTH = 60"
\$1018.2	MIN. CORRIDOR WIDTH SHALL BE DETERMINED BY \$1005.1 BUT NOT LESS THAN 44" EXCEPTION 1: 24" FOR ACCESS TO AND UTILIZATION OF ELECT., MECH., AND PLUMB. SYS. PROVIDED: MINIMUM CORRIDOR 2 WIDTH = 60"
\$1014.3	MAX. PATH OF EGRESS TRAVEL FOR GROUP F SHALL NOT EXCEED 75 FEET. PROVIDED: MAX PATH OF EGRESS TRAVEL = 49' - 5"
\$1016.1	MAX. TRAVEL DISTANCE FOR GROUP F SHALL BE 200' PROVIDED: MAX TRAVEL DISTANCE = 122' - 3"
\$1018.4	MAX. DEAD END CORRIDORS FOR GROUP F IS 20' PROVIDED: NO DEAD ENDS OCCUR
\$1015.1	2 EXITS REQUIRED (OCCUPANT LOAD LESS THAN 500) PROVIDED: 3 EXITS PROVIDED
\$1015.2.1	WHERE 2 EXITS ARE REQUIRED, BOTH EXITS SHALL BE PLACED A DISTANCE APART EQUAL TO NOT LESS THAN ONE-HALF OF THE LENGTH OF THE MAX. OVERALL DIAGONAL DIMENSION OF THE BUILDING AREA TO BE SEARVED IN A STRAIGHT LINE. ACTUAL: 115' - 2" * (1/2) = 57' - 7" PROVIDED: MAX DISTANCE FROM D100 TO D101 = 50' - 6"
\$2902.3.2. (EXCEPTION)	THE LOCATION AND MAX TRAVEL DISTANCES TO REQUIRED EMPLOYEE FACILITIES IN FACTORY AND INDUSTRIAL OCCUPANCIES ARE PERFORMED TO EXCEED THAT REQUIRED BY THIS SECTION, PROVIDED THE LOCATION AND TRAVEL DISTANCES ARE APPROVED.

ROOM OCCUPANCY SCHEDULE						
RM. NO.	RM. NAME	AREA	CLASSIFICATION	OCCUPANCY LOAD FACTOR	GROSS/NET	OCC. LOAD
100	STORAGE BIN AREA -2	596 SF	S-1	300 SF	GROSS	2
101	EQUIPMENT AREA	603 SF	S1	300 SF	GROSS	2
201	CENTRIFUGE ROOM-2	619 SF	S-1	300 SF	GROSS	2

EGRESS LEGEND & NOTES

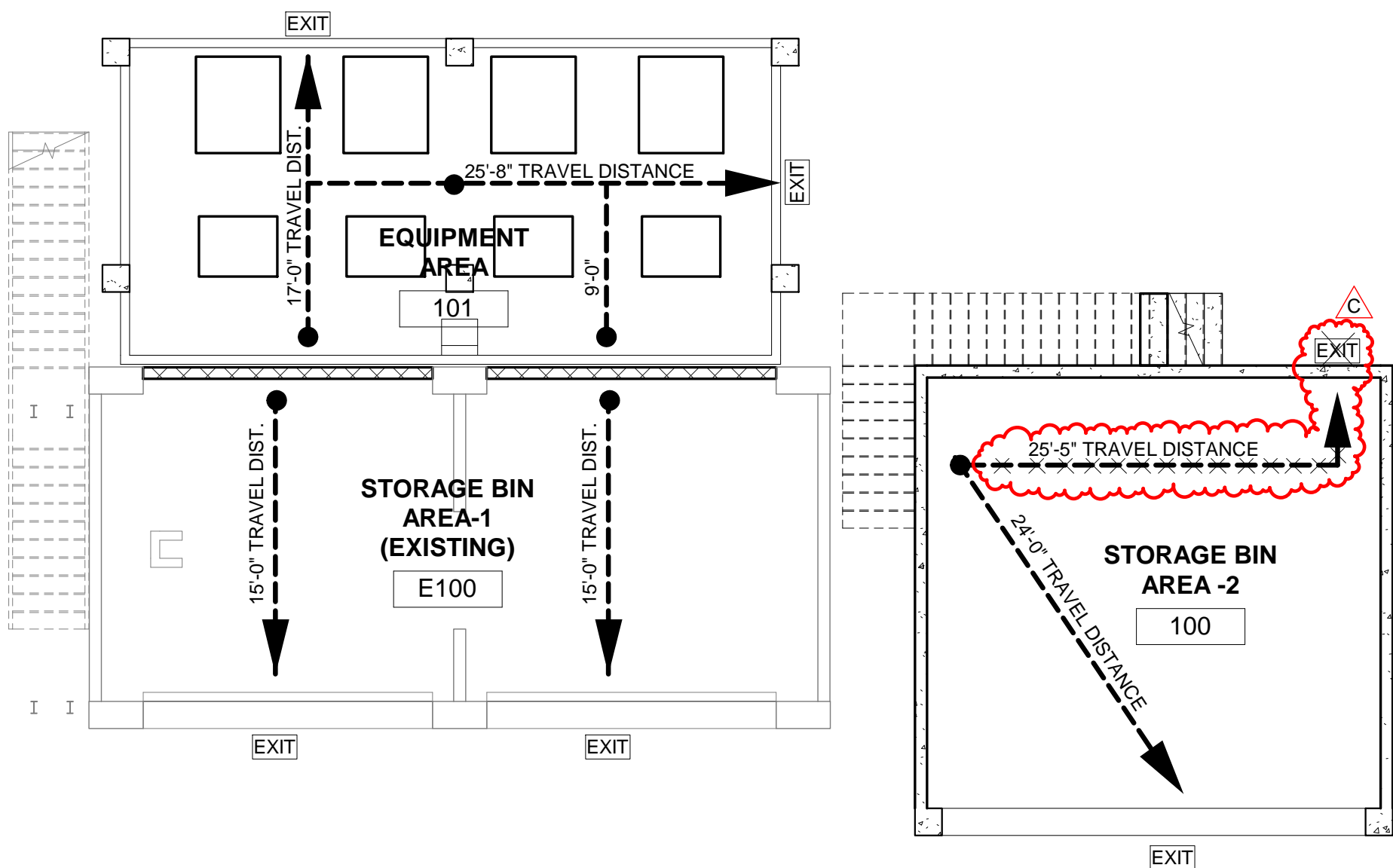
EXTERIOR EXITS

① 3'-0" DOOR (32" CLEAR) @ .2' PER PERSON
= 160 PERSONS

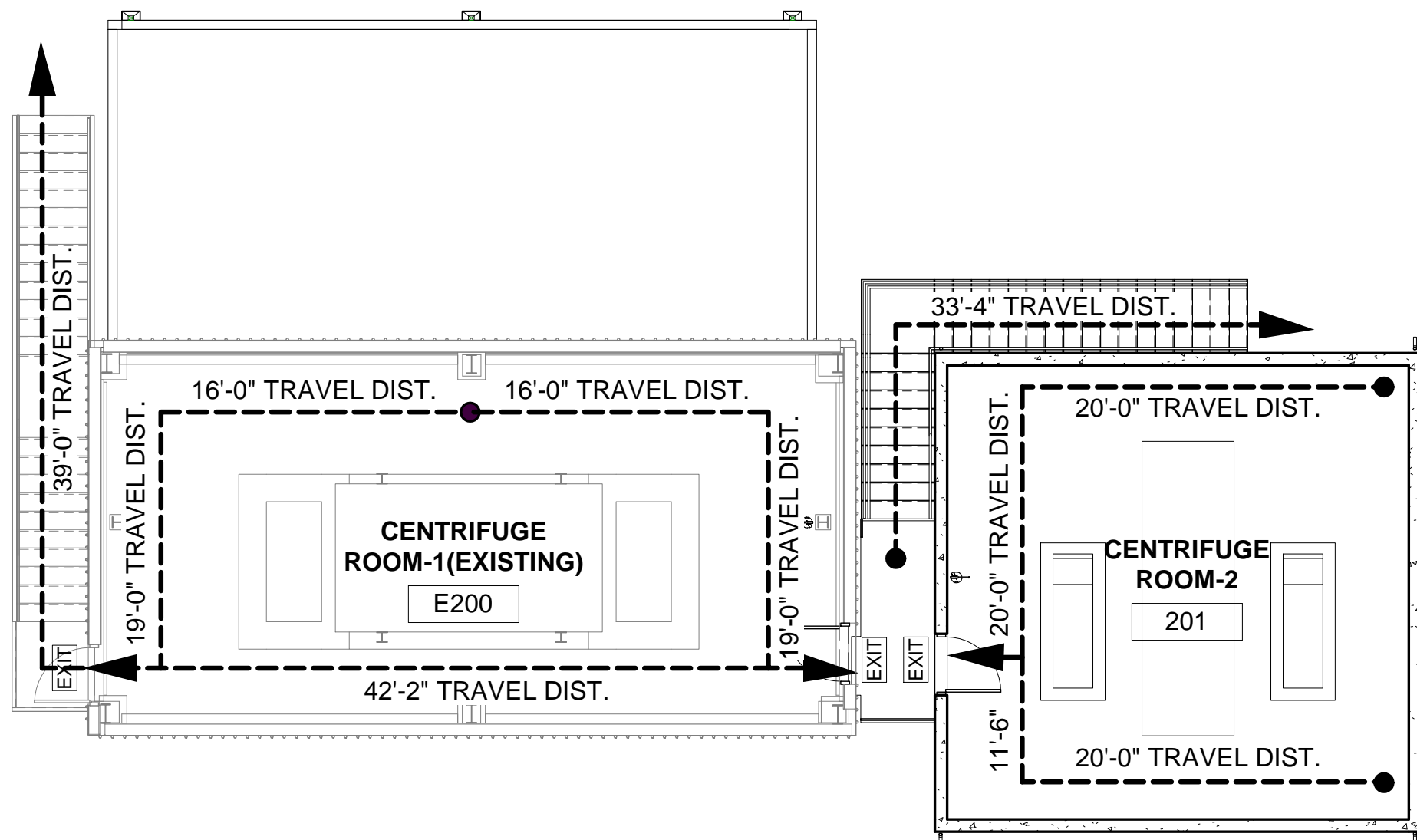
STAIR EGRESS

⑤ 3'-4" STAIRS (3'-0" CLEAR) @ .3 PER PERSON = 120 PERSONS

● ➡ DIRECTION OF TRAVEL



1 EGRESS PLAN LEVEL 1
1/8" = 1'-0"



2 EGRESS PLAN LEVEL 2
1/8" = 1'-0"



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NORTHERN DISTRICT WASTEWATER TREATMENT PLANT

SUBMITTAL:

CONSTRUCTION SET

Revision Schedule			
#	Date	Addendum	Description
C	05-06-2019	Addendum C	

Project No.:	S17-003-OEA
Issue Date:	03-18-2019
Drawn By:	TRMA
Checked By:	TRMA
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Designed By:	TRMA

Sheet Title:
DEWATERING FACILITY

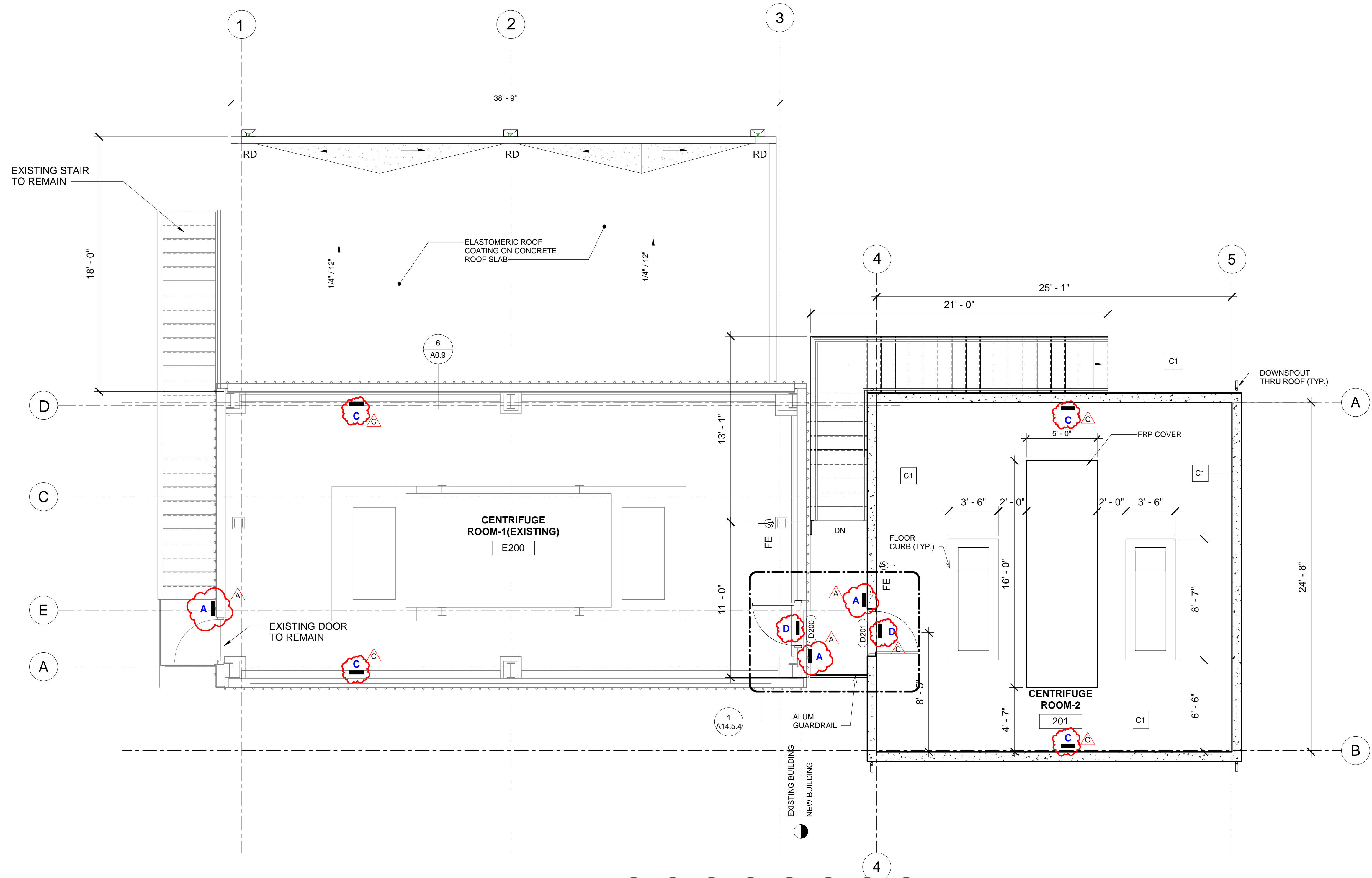
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LEVEL 2 FLOOR PLAN & SIGNAGE PLAN
1
1/4" = 1'-0"
0' 2' 4' 8'

GENERAL NOTES

1. REFER TO SHEET A0.1 FOR DOOR SCHEDULE
2. REFER TO SHEET A0.6 FOR ROOM FINISH SCHEDULE
3. REFER TO SHEET A0.9 FOR WALL/PARTITION TYPES.
4. REFER TO SHEET A0.4 FOR SIGNAGE DETAIL



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**NORTHERN DISTRICT
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SUBMITTAL:

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Revision Schedule

#	Date	Addendum	Description
A	04-05-2019	Addendum A	
C	05-06-2019	Addendum C	

Project No.: S17-003-OEA

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DEWATERING FACILITY

LEVEL 2 FLOOR PLAN

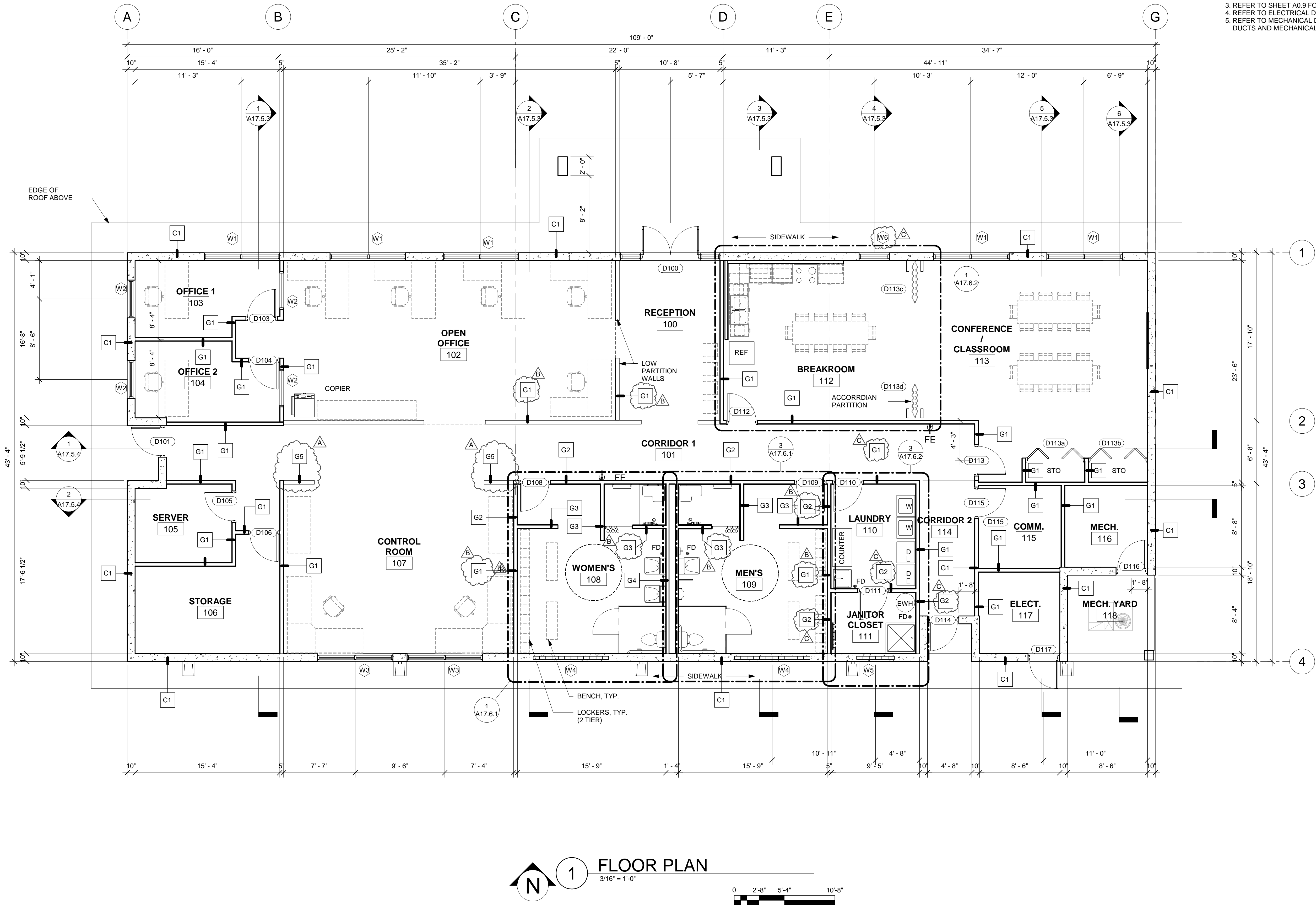
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GENERAL NOTES

1. REFER TO SHEET A0.1 FOR DOOR SCHEDULE
2. REFER TO SHEET A0.6 FOR ROOM FINISH SCHEDULE
3. REFER TO SHEET A0.9 FOR WALL/PARTITION TYPES.
4. REFER TO ELECTRICAL DRAWINGS FOR LIGHTING LAYOUT.
5. REFER TO MECHANICAL DRAWINGS FOR VENTILATION, DUCTS AND MECHANICAL EQUIPMENT.



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Sheet Title:

NEW ADMINISTRATION BUILDING

FLOOR PLAN

Sheet:

A17.1.1

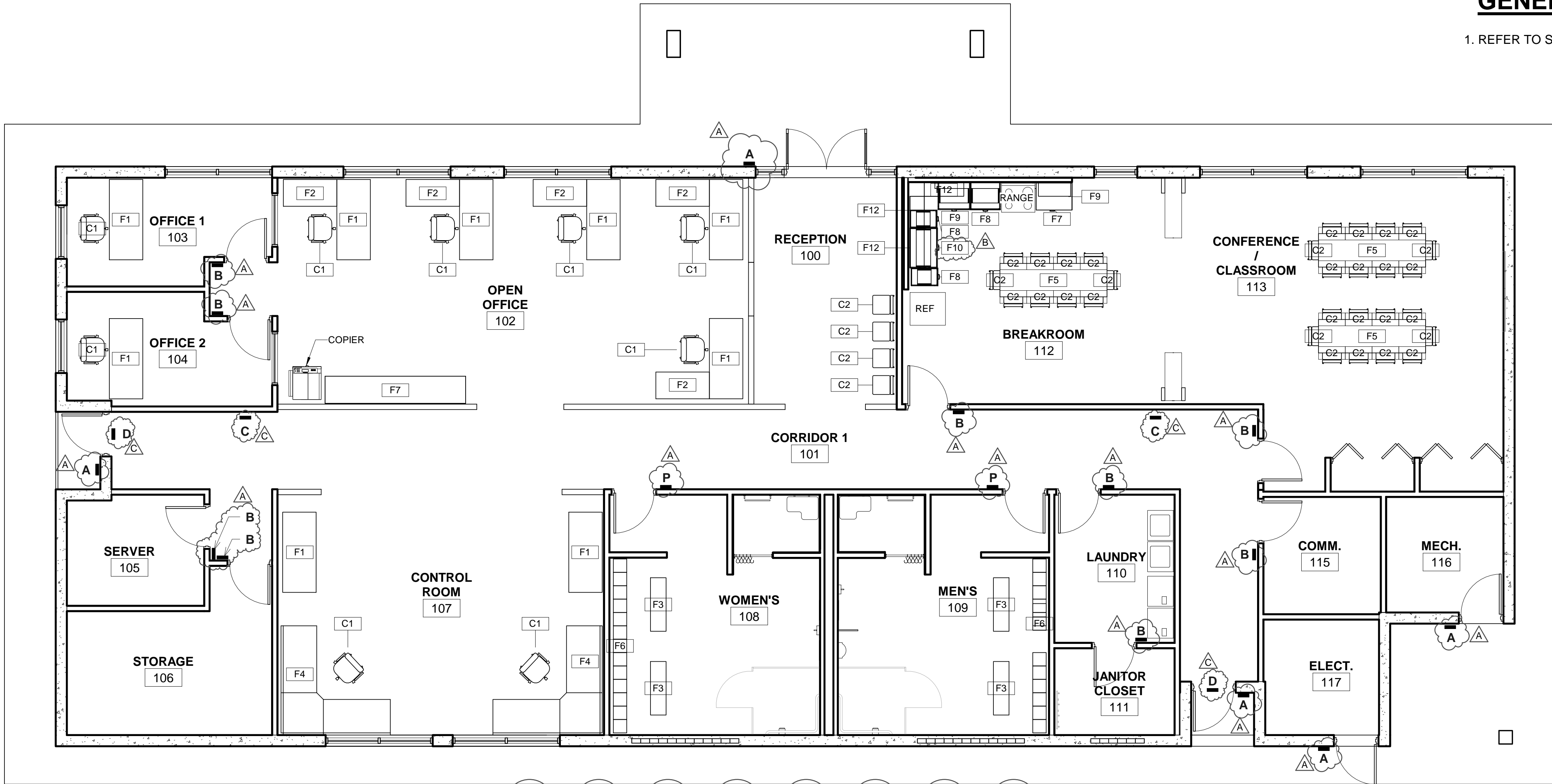
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GENERAL NOTE

1. REFER TO SHEET A0.4 SIGNAGE DETAIL



1

FURNITURE LAYOUT PLAN & SIGNAGE PLAN

3/16" = 1'-0"

0 2'-8" 5'-4" 10'-8"

FURNITURE SCHEDULE				
FURNITURE TYPE	DESCRIPTION	Count	OFOI	OFCl
100 RECEPTION				
C2	CHAIR BREUER	4	•	
102 OPEN OFFICE				
C1	CHAIR EXECUTIVE	5	•	
F1	DESK TABLE 72"X30"	5	•	
F2	DESK TABLE 48"X24"	5	•	
F7	COUNTER TOP 24"DEPTH	1		
103 OFFICE-1				
C1	CHAIR EXECUTIVE	1	•	
F1	DESK TABLE 72"X30"	1	•	
104 OFFICE-2				
C1	CHAIR EXECUTIVE	1	•	
F1	DESK TABLE 72"X30"	1	•	
107 CONTROL ROOM				
C1	CHAIR EXECUTIVE	2	•	
F1	DESK TABLE 72"X30"	2	•	
F4	WORK STATION CUBICLE	2	•	
108 WOMEN'S LOCKER ROOM				
C3	LOCKER BENCH	1		•
F3	LOCKER BENCH	1		•
F6	LOCKER DOUBLE UNIT	13		•

FURNITURE SCHEDULE				
FURNITURE TYPE	DESCRIPTION	Count	OFOI	OFCl
109 MEN'S LOCKER ROOM				
C3	LOCKER BENCH	2		•
F6	LOCKER DOUBLE UNIT	13		•
112 BREAKROOM				
C2	CHAIR BREUER	10	•	
F5	TABLE RECTANGULAR	1	•	
F7	COUNTER TOP 24"DEPTH	1		
F8	BASE CABINET WITH 4-DRAWERS	1		
F9	BASE CABINET WITH DOUBLE DOOR	1		
F10	BASE CABINET WITH DOUBLE DOOR	1		
F11	KITCHEN COUNTER TOP 24"DEPTH	1		
F12	WALL HUNG CABINET DOUBLE DOOR	4		
113 CONFERENCE/CLASSROOM				
C2	CHAIR BREUER	20	•	
F5	TABLE RECTANGULAR	2	•	



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Revision Schedule			
#	Date	Addendum	Description
A	04-05-2019	Addendum A	
B	04-17-2019	Addendum B	
C	05-06-2019	Addendum C	

Project No.:	S17-003-OEA
Issue Date:	03-18-2019
Drawn By:	TRMA
Checked By:	TRMA
Approved By:	TRMA
Designed By:	TRMA

Sheet Title:
NEW ADMINISTRATION BUILDING

FURNITURE LAYOUT PLAN

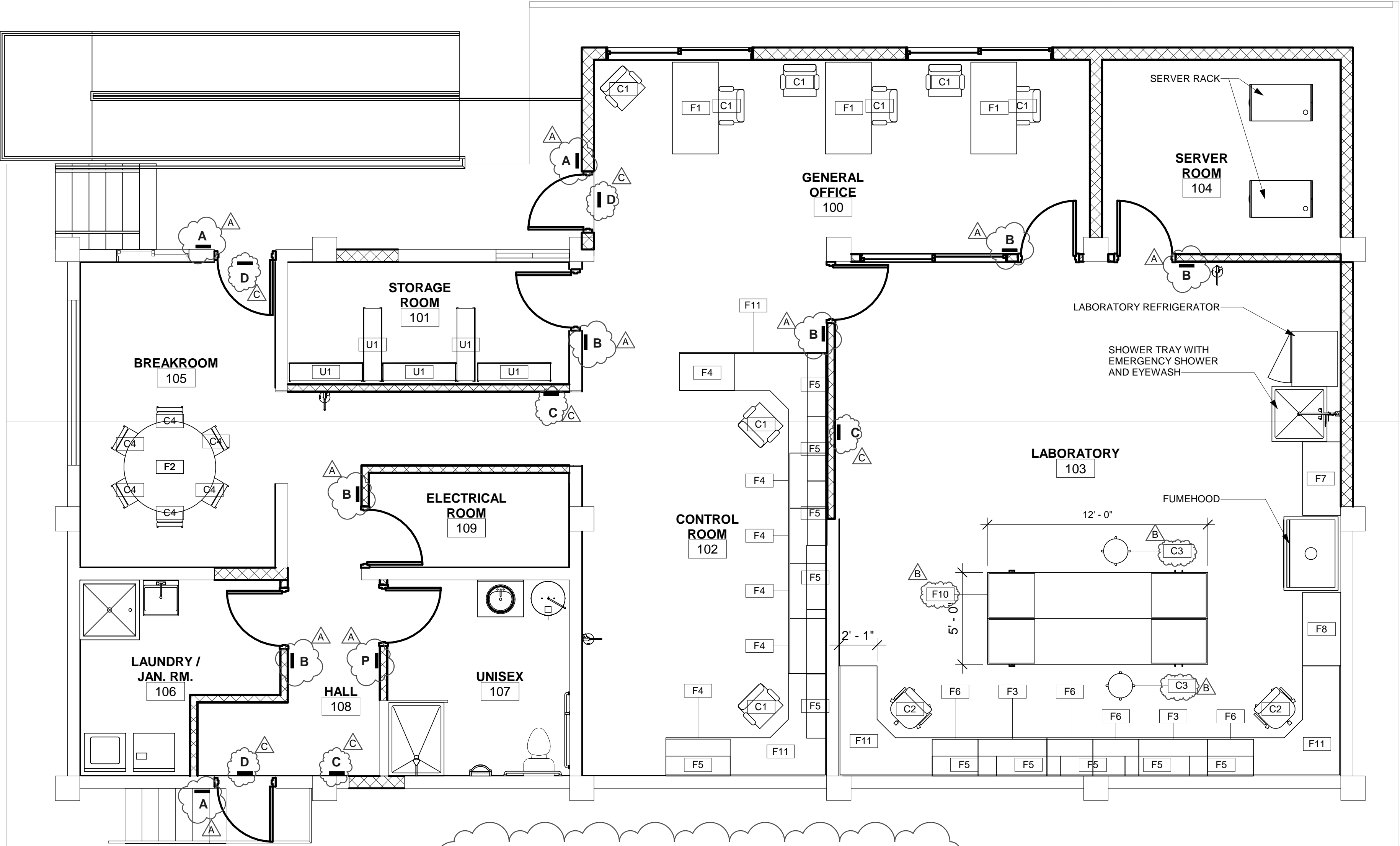
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FURNITURE LAYOUT & SIGNAGE PLAN

1

1/4" = 1'-0"



FURNITURE SCHEDULE

FURNITURE TYPE	DESCRIPTION	Count	OFOI	OFCL
100 GENERAL OFFICE				
C1	CHAIR TASK ARMS	6	•	
F1	DESK 60"X30"	3	•	
101 STORAGE ROOM				
U1	UTILITY SHELVEING 48"X23"DX84"H	5		•
102 CONTROL ROOM				
C1	CHAIR TASK ARMS	2	•	
F4	BASE CABINET DOUBLE DOOR WITH 2-DRAWERS 36"	6		
F5	UPPER CABINET DOUBLE DOOR 42"	7		
F11	COUNTER TOP 24" DEPTH	2		
103 LABORATORY				
C2	CHAIR EXECUTIVE	2	•	
C3	LABORATORY STOOL	2	•	
F3	BASE CABINET DOUBLE DOOR-45"	1		
F5	UPPER CABINET DOUBLE DOOR 42"	5		
F6	BASE CABINET WITH 4-DRAWERS 30"	4		
F7	BASE CABINET DOUBLE DOOR WITH 2-DRAWERS 48"	2		
F8	COUNTER TOP 48" DEPTH	2		
F10	LABORATORY TABLE STATION 60"x144"	1		
F11	COUNTER TOP 24" DEPTH	2		
105 BREAKROOM				
C4	DINING CHAIR BREUR	6	•	
F2	ROUND DINING TABLE 60"DIA WITH 6-CHAIRS	1	•	

GENERAL NOTE

1. REFER TO SHEET A0.4 SIGNAGE DETAIL



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GUAM WATERWORKS AUTHORITY

NORTHERN DISTRICT
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TREATMENT PLANT

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CONSTRUCTION SET

Revision Schedule

#	Date	Description
A	04-05-2019	Addendum A
B	04-17-2019	Addendum B
C	05-06-2019	Addendum C

Project No.: S17-003-OEA

Issue Date: 03-18-2019

Drawn By: TRMA

Checked By: TRMA

Approved By: TRMA

Designed By: TRMA

Sheet Title:

RENOVATED/REPURPOSED
LABORATORY BUILDING

FURNITURE LAYOUT

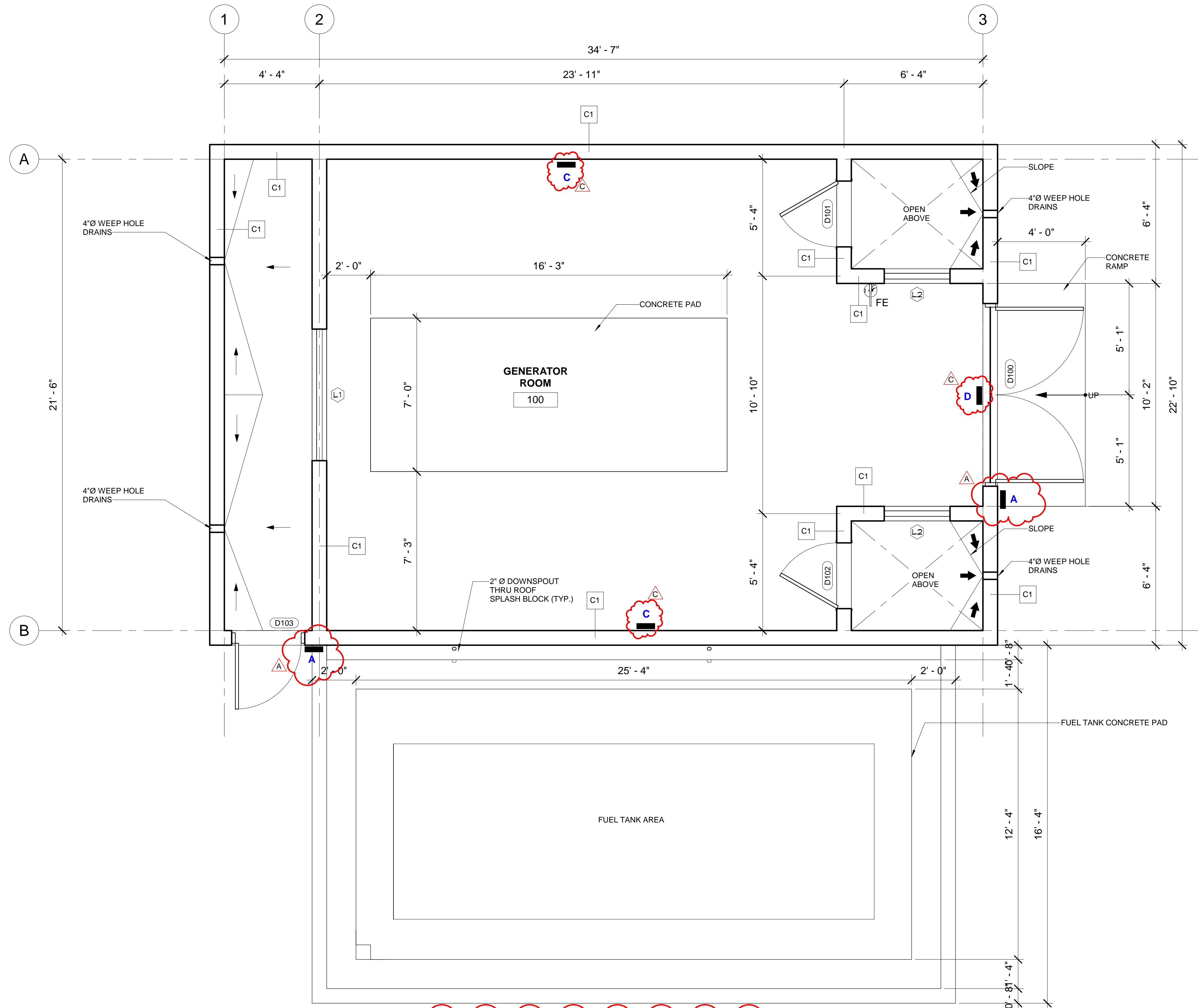
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**LEVEL 1 - FLOOR PLAN
& SIGNAGE PLAN**
3/8" = 1'-0"

GENERAL NOTES

1. REFER TO SHEET A0.1 FOR DOOR SCHEDULE
2. REFER TO SHEET A0.6 FOR ROOM FINISH SCHEDULE
3. REFER TO SHEET A0.3 FOR WALL PARTITION TYPES.
4. REFER TO SHEET A0.4 FOR SIGNAGE DETAIL



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**NORTHERN DISTRICT
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TREATMENT PLANT**

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CONSTRUCTION SET

Revision Schedule			
#	Date	Addendum	Description
A	04-05-2019	Addendum A	
C	05-02-2019	Addendum C	

Project No.:	S17-003-OEA
Issue Date:	03-18-2019
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Sheet Title:

STANDBY POWER

LEVEL 1

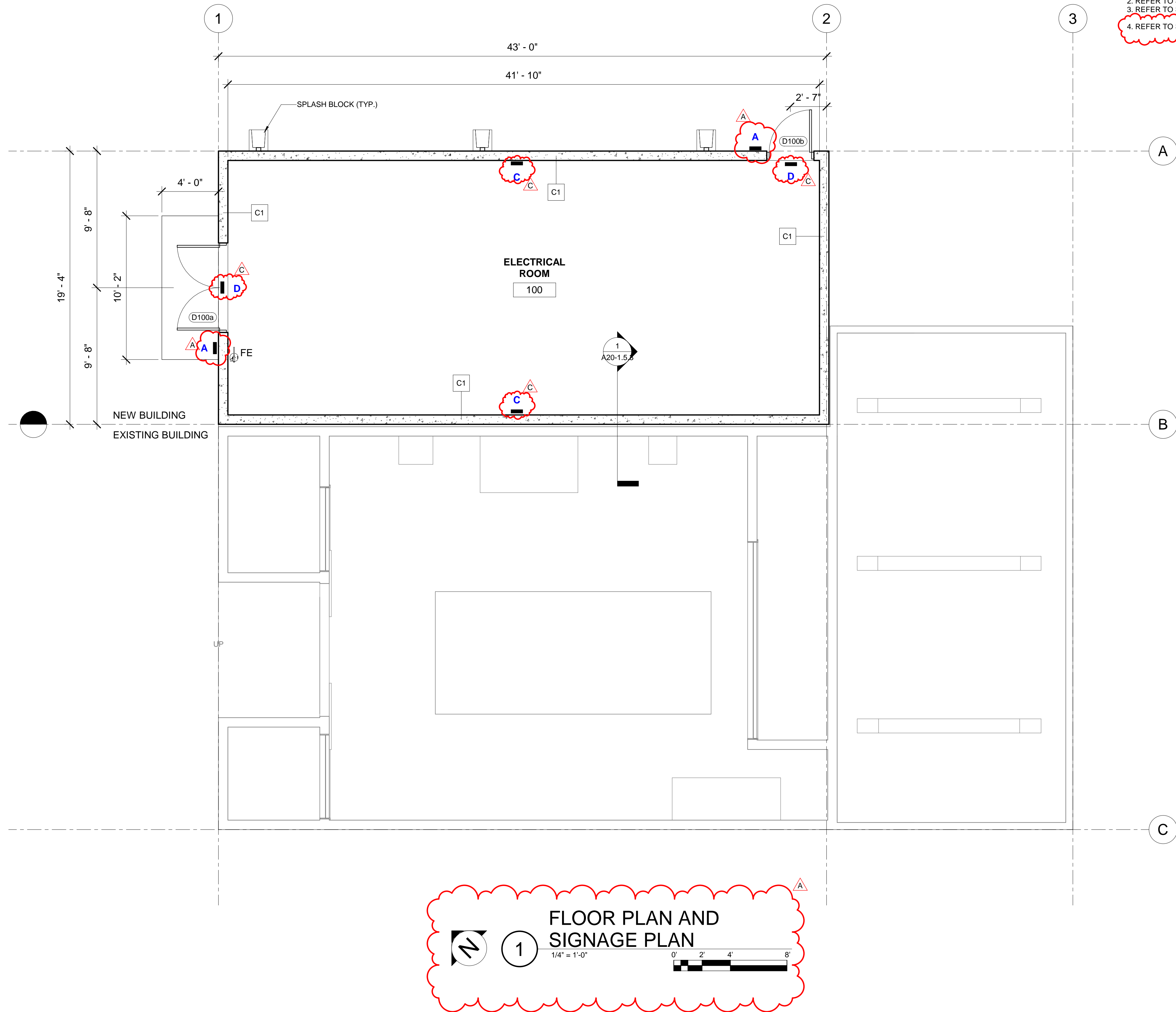
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GENERAL NOTES

1. REFER TO SHEET A0.1 FOR DOOR SCHEDULE
2. REFER TO SHEET A0.6 FOR ROOM FINISH SCHEDULE
3. REFER TO SHEET A0.9 FOR WALL/PARTITION TYPES.
4. REFER TO SHEET A0.4 SIGNAGE DETAIL



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**NORTHERN DISTRICT
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TREATMENT PLANT**

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C	05-02-2019	Addendum C

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Approved By:	MWM
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**STANDBY POWER (MAIN
ELECTRICAL ROOM)**

LEVEL 1 FLOOR PLAN

Sheet:

A20-1.1.1

Sheet: 777 OF 1075

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