MAINE DEPARTMENT OF

INLAND FISHERIES AND WILDLIFE

ADDENDUM NO. 1

TO THE SPECIFICATIONS, PROPOSAL, CONTRACT AND BOND

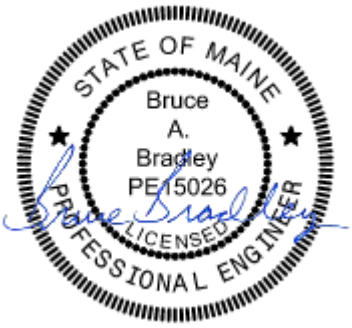
FOR THE CONSTRUCTION OF

IMPROVEMENTS AT GRAND LAKE STREAM STATE FISH HATCHERY
GRAND LAKE STREAM, MAINE

WASHINGTON COUNTY

BGS PROJECT NO.: 3289-14

BID DATE: 24 AUGUST 2023



hdrinc.com 5201 South Sixth Street Road, Springfield, IL 62703-5143
(217) 585-8300

SUBJECT:	**ADDENDUM 1**
PROJECT:	Improvements at Grand Lake Stream State Fish Hatchery
DATE:	Tuesday, August 15, 2023
TO:	Richard Parker - DIFW
FROM:	Andrew Gurski – HDR

This Addendum is issued to known individuals, firms or corporations holding Bidding Documents and Contract Documents for above listed project.

This Addendum is hereby made a portion of Bidding Documents and Contract Documents. Bidders are required to acknowledge receipt of Addendum in appropriate space on Bid Form.

QUESTIONS AND RESPONSES

1. **QUESTION:** Roofing and siding for the metal building is specified in division 7 and 13. Which governs?

   RESPONSE: *For metal buildings, the roofing and siding specified in the Division 13 should govern.*

2. **QUESTION:** Div 13 – Roof panels are listed as VRS II. I am assuming they mean VSR II. However, they note self-drillers as Unacceptable. VRS II roof clips are installed with self-drillers. See the attached PDS and installation planography.

   RESPONSE: *VSR II is correct. Self-drilling screws are acceptable for the VRS II roof clips.*

3. **QUESTION:** Div 13 – 2.6.D.2 – Stainless Steel Tabs – This is applicable to MR24 roofing, not VSR II Roofing.

   RESPONSE: *Correct – The stainless-steel tabs can be omitted from VSR II roofing systems.*

4. **QUESTION:** If buildings are unheated, why are they specing R-19 with thermal blocks for the walls, and thermal bridges for the roof (which are used for R-33.3 roof insulation systems). They also spec'd an option for a banded liner system.

   RESPONSE: *Wall insulation and thermal blocking on walls is not required. Thermal bridges are required for all metal building roofs. Effluent building is insulated and will be heated above freezing.*

5. **QUESTION:** Div 13 – 2.10.H – Snow Retention System – These are not provided nor warranted by the Metal Building System Manufacturer. Butler does not do this. EOR to advise as to where snow stops are to be installed and quantify the number of rows required.

   RESPONSE: *Snow retention systems are not required on the Upper and Lower Pavilions. A snow guard is required on the Filter Building over the mandoor only. Provide a single set of snow retention bars that extends a minimum of 1ft to either side of the mandoor. The basis for the snow retention system is the "AceClamp A2 Bar Snow Guard System", with 3 holes / bars as manufactured by PMC Industries, Inc.*

6. **QUESTION:** Div 13 – Need to confirm what insulation systems are needed for the roof and walls. The specs are confusing, and I cannot determine what they want. Also need to confirm the roof and wall insulation vapor retarder. Again, the specs are not clear.

   RESPONSE: *Roof systems shall have a minimum 3" rigid insulation. A vapor retarder shall be placed below the rigid insulation. Insulation is not required at wall panels. Effluent building is insulated and will be heated above freezing.*

DRAWING UPDATES

7. **SHEET 00G-001: SHEET INDEX**

   UPDATE: *Sheet list was updated to account for updated sheet titles and new sheet.*

8. **SHEET 02A-201: UPPER PAVILION EXTERIOR ELEVATIONS**

   UPDATE: *Sheet was updated to modify the feed storage garage height to 8-ft.*

9. **SHEET 02A-301: UPPER PAVILION WALL SECTIONS & DETAILS**

   UPDATE: *Sheet was updated to modify the callout for the bird netting.*

10. **SHEET 02A-601: UPPER PAVILION DOOR SCHEDULE AND DETAILS**

    UPDATE: *Sheet was updated to modify the door and frame schedule to update the feed storage garage height to 8-ft.*

11. **SHEET 03S-301: LOWER PAVILION SECTIONS**

    UPDATE: *Sheet was added to set.*

12. **SHEET 03S-302: LOWER PAVILION DETAILS**

    UPDATE: *Sheet title was corrected.*

13. **SHEET 03A-201: LOWER PAVILION EXTERIOR ELEVATIONS**

    UPDATE: *Sheet was updated to modify the feed storage garage height to 8-ft.*

14. **SHEET 03A-301: LOWER PAVILION WALL SECTIONS & DETAILS**

    UPDATE: *Sheet was updated to modify the callout for the bird netting.*

15. **SHEET 03A-601: LOWER PAVILION DOOR SCHEDULE AND DETAILS**

    UPDATE: *Sheet was updated to modify the door and frame schedule to update the feed storage garage height to 8-ft.*

16. **SHEET 05S-101: OXYGEN PAD STRUCTURAL PLAN AND SECTION**

    UPDATE: *Sheet was updated to modify detail callouts.*

SPECIFICATION UPDATES

17. **SECTION 13 20 00 – BOLTED STEEL AQUACULTURE TANKS, Part 1.4, A., C.**

RESPONSE: *Delete "1. Tarsco of T.F. Warren Group represented by Salt Creek Technologies Inc., Elmhurst, IL Phone: 630-530-2808."*

18. SECTION 32 31 13 - CHAIN LINK FENCE AND GATES

RESPONSE: *Specification was added. Clarity between difference of fence at oxygen pad and bird netting.*

INDEX OF DRAWINGS

SHEET #	DESCRIPTION
SERIES 00 - GENERAL	
00G-000	COVER SHEET
00G-001	SHEET INDEX
00G-002	ABBREVIATIONS
00G-003	GENERAL LEGEND
00G-004	CIVIL LEGEND
00G-005	MECHANICAL LEGEND
00G-006	ELECTRICAL LEGEND 1
00G-007	ELECTRICAL LEGEND 2
00G-008	INSTRUMENTATION LEGEND
00G-009	LIFE SAFETY
00S-100	GENERAL STRUCTURAL NOTES
00S-101	GENERAL STRUCTURAL DETAILS 1
00S-102	GENERAL STRUCTURAL DETAILS 2
00S-103	GENERAL STRUCTURAL DETAILS 3
00S-601	STRUCTURAL SCHEDULES
00D-501	GENERAL PROCESS DETAILS
00D-502	GENERAL PROCESS DETAILS
00D-601	PROCESS WATER FLOW SCHEMATIC
00D-602	PROCESS SCHEDULES 1
00D-603	PROCESS SCHEDULES 2
00M-601	MECHANICAL SCHEDULES
00E-501	GENERAL ELECTRICAL DETAILS 1
00E-502	GENERAL ELECTRICAL DETAILS 2
00E-503	GENERAL INSTRUMENTATION DETAILS 1
00E-601	DIAGRAMS
00E-651	ELECTRICAL SCHEDULES 1
00E-652	ELECTRICAL SCHEDULES 2
SERIES 01 - SITE	
01V-101	EXISTING TOPOGRAPHIC SURVEY
01C-101	EXISTING SITE DEMOLITION PLAN
01C-102	GRADING AND DRAINAGE PLAN
01C-103	EROSION CONTROL PLAN
01C-111	OVERALL SITE PLAN
01C-201	PLAN AND PROFILE - FWS & WDW
01C-501	EROSION CONTROL DETAILS
01D-101	OVERALL SITE PIPING PLAN
01D-501	STANDARD PIPING DETAILS
01E-101	OVERALL ELECTRICAL SITE PLAN
SERIES 02 - UPPER PAVILION	
02S-101	FOUNDATION PLAN
02S-102	FRAMING PLAN
02S-301	SECTIONS
02S-302	DETAILS
02A-101	UPPER PAVILION PLAN
02A-201	UPPER PAVILION DOOR SCHEDULE & DETAILS
02A-301	UPPER PAVILION WALL SECTIONS & DETAILS
02A-601	UPPER PAVILION DOOR SCHEDULE AND DETAILS
02D-101	ABOVE FLOOR PROCESS PIPING PLAN
02D-102	BELOW FLOOR PROCESS PIPING PLAN
02D-301	TANK SECTIONS
02D-401	ENLARGED PLAN & DETAILS
02E-101	ELECTRICAL PLAN

INDEX OF DRAWINGS

SHEET #	DESCRIPTION
SERIES 03 - LOWER PAVILION	
03S-101	FOUNDATION PLAN
03S-102	FRAMING PLAN
03S-103	20' DIAMETER TANK FOUNDATION
03S-104	20' DIAMETER TANK FOUNDATION DETAILS
03S-301	SECTIONS
03S-302	DETAILS
03A-101	LOWER PAVILION PLAN
03A-201	LOWER PAVILION DOOR SCHEDULE & DETAILS
03A-301	LOWER PAVILION WALL SECTIONS & DETAILS
03A-601	LOWER PAVILION DOOR SCHEDULE AND DETAILS
03D-101	ABOVE FLOOR PROCESS PIPING PLAN
03D-102	BELOW FLOOR PROCESS PIPING PLAN
03D-301	TANK SECTIONS
03D-401	ENLARGED PLAN & DETAILS
03E-101	ELECTRICAL PLAN
SERIES 04 - EFFLUENT TREATMENT BUILDING	
04S-101	FOUNDATION PLAN
04S-102	PLAN AT EL 283.50'
04S-103	PLAN AT 285.50'
04S-104	SECTIONS
04S-105	SECTIONS
04S-106	CLARIFIER PLANS AND SECTION
04S-107	CLARIFIER FOUNDATION PLAN, SECTION AND DETAILS
04S-108	SLUDGE STORAGE TANK PLAN, SECTIONS AND DETAILS
04A-101	EFFLUENT TREATMENT BUILDING PLAN AND ELEVATIONS
04D-101	OVERALL EFFLUENT PROCESS PIPING PLAN
04D-401	DRUMFILTER BUILDING PROCESS PIPING PLAN
04D-402	BACKWASH PUMP STATION PROCESS PIPING PLAN & SECTION
04D-403	CLARIFIER PROCESS PIPING PLAN & SECTION
04D-404	SLUDGE STORAGE PROCESS PIPING PLAN & DETAILS
04D-501	DRUMFILTER BLDG DETAILS
04M-101	MECHANICAL PLAN
04E-101	OVERALL EFFLUENT ELECTRICAL PLAN
04E-401	ELECTRICAL PLANS
SERIES 05 - LOX & RACEWAYS	
05S-101	STRUCTURAL PLAN AND SECTION
05D-101	EXISTING RACEWAYS LHO PIPING PLAN AND SECTIONS
05D-102	EXISTING RACEWAY DETAILS
05D-103	PROCESS PLAN
05E-101	ELECTRICAL PLAN
SERIES 06 - STORAGE BUILDING	
06C-101	STORAGE BUILDING SITE PLAN
06S-001	STORAGE BUILDING GENERAL STRUCTURAL NOTES
06S-101	STORAGE BUILDING FOUNDATION & ROOF FRAMING PLAN
06S-501	STORAGE BUILDING STRUCTURAL DETAILS
06A-101	STORAGE BUILDING FLOOR PLAN
06A-201	STORAGE BUILDING ELEVATION PLAN - OPTION A
06E-101	ELECTRICAL FLOOR PLAN

ISSUE	DATE	DESCRIPTION
A1	08/15/2023	ADDENDUM 1
	07/14/2023	ISSUED FOR BID

PROJECT MANAGER	ANDREW GURSKI
CIVIL	J. GAGNON
STRUCTURAL	B. BRADLEY
ARCHITECTURAL	M. BASKIN
PROCESS	J. CHANDLER
MECHANICAL	J. CHANDLER
ELECTRICAL	A. KANER
PROJECT NUMBER	10357686

STATE OF MAINE
Jeffrey K. Chandler
PE17167
LICENSED
PROFESSIONAL ENGINEER

IMPROVEMENTS AT GRAND LAKE STREAM STATE FISH HATCHERY

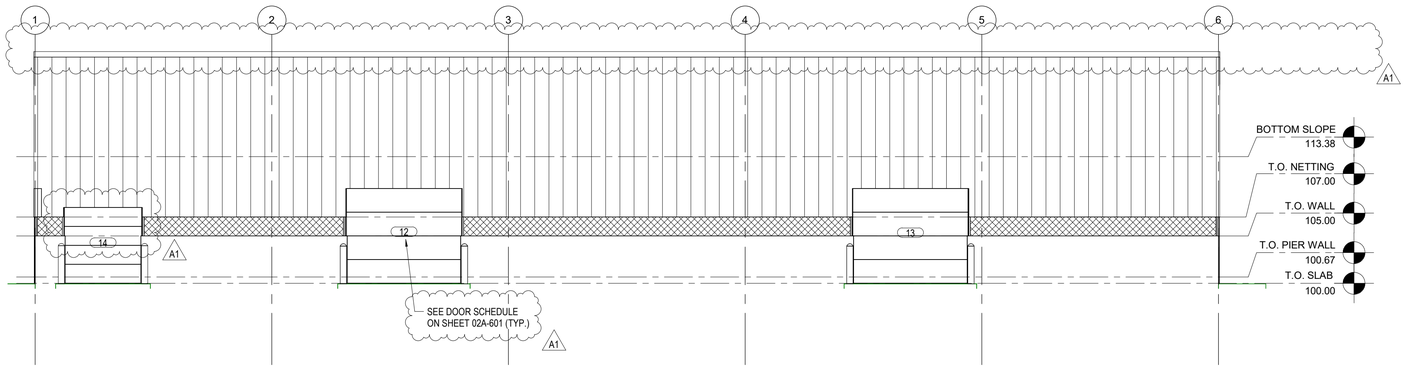
SHEET INDEX

0 1" 2"

FILENAME 103537686-00-G.rvt

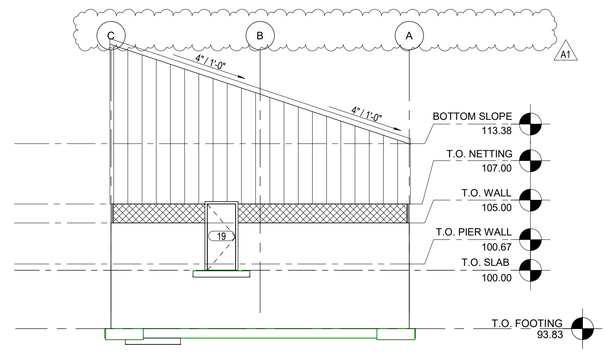
SCALE NONE

SHEET 00G-001



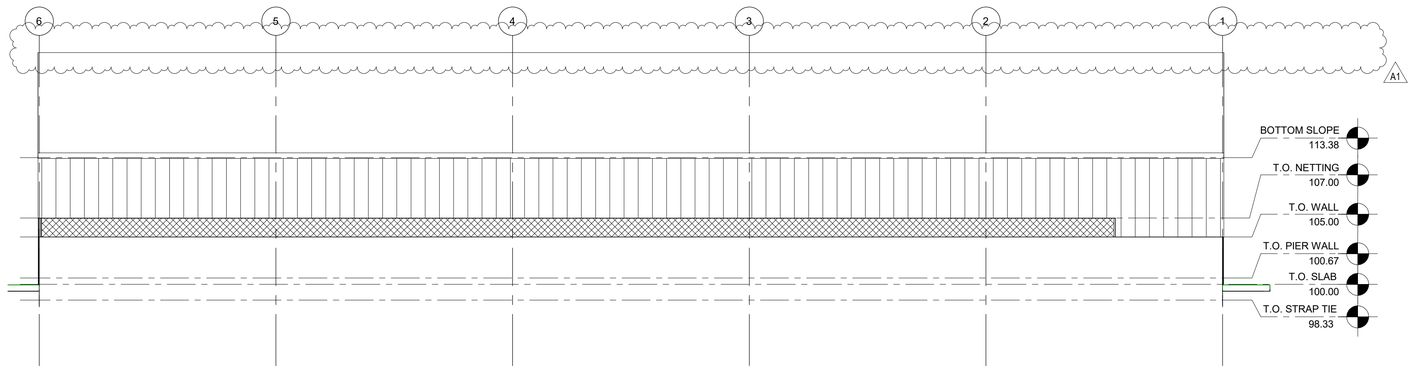
1 UPPER PAVILION SOUTH ELEVATION

1/8" = 1'-0"



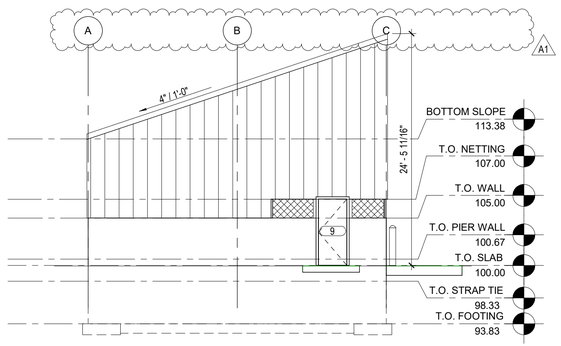
2 UPPER PAVILION EAST ELEVATION

1/8" = 1'-0"



3 UPPER PAVILION NORTH ELEVATION

1/8" = 1'-0"



4 UPPER PAVILION WEST ELEVATION

1/8" = 1'-0"

ISSUE	DATE	DESCRIPTION
A1	08/15/2023	ADDENDUM 1
	07/14/2023	ISSUED FOR BID

PROJECT MANAGER	ANDREW GURSKI
CIVIL	J. GAGNON
STRUCTURAL	B. BRADLEY
ARCHITECTURAL	M. BASKIN
PROCESS	J. CHANDLER
MECHANICAL	J. CHANDLER
ELECTRICAL	A. KANER
PROJECT NUMBER	10357686

LICENSED ARCHITECT
Michael A. Baskin
3595
STATE OF MAINE

IMPROVEMENTS AT GRAND LAKE STREAM STATE FISH HATCHERY

UPPER PAVILION EXTERIOR ELEVATIONS

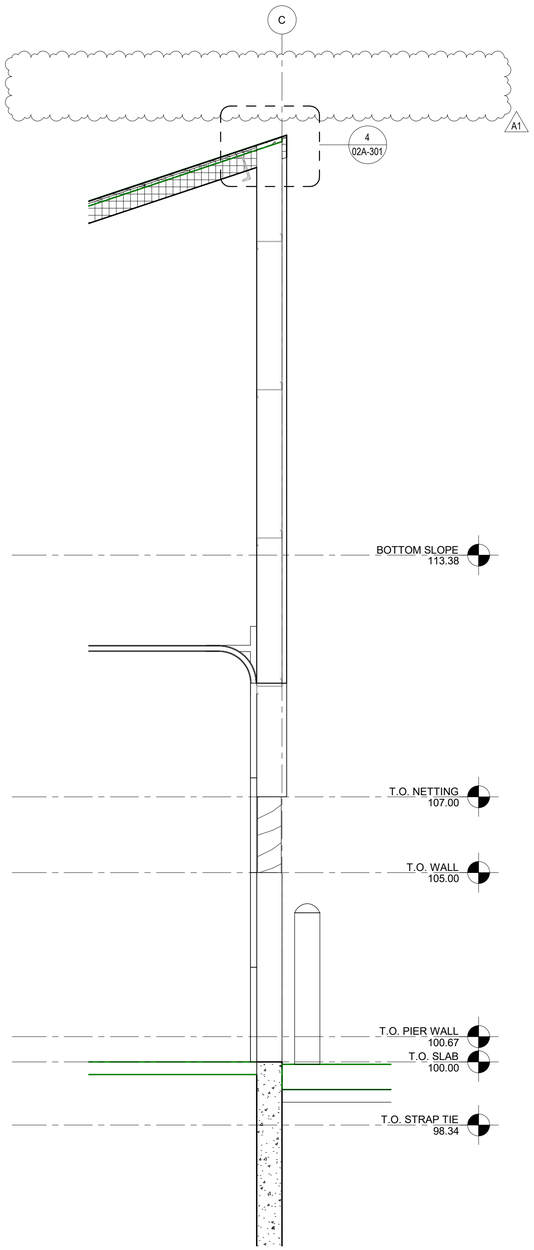
0 1" 2"

FILENAME

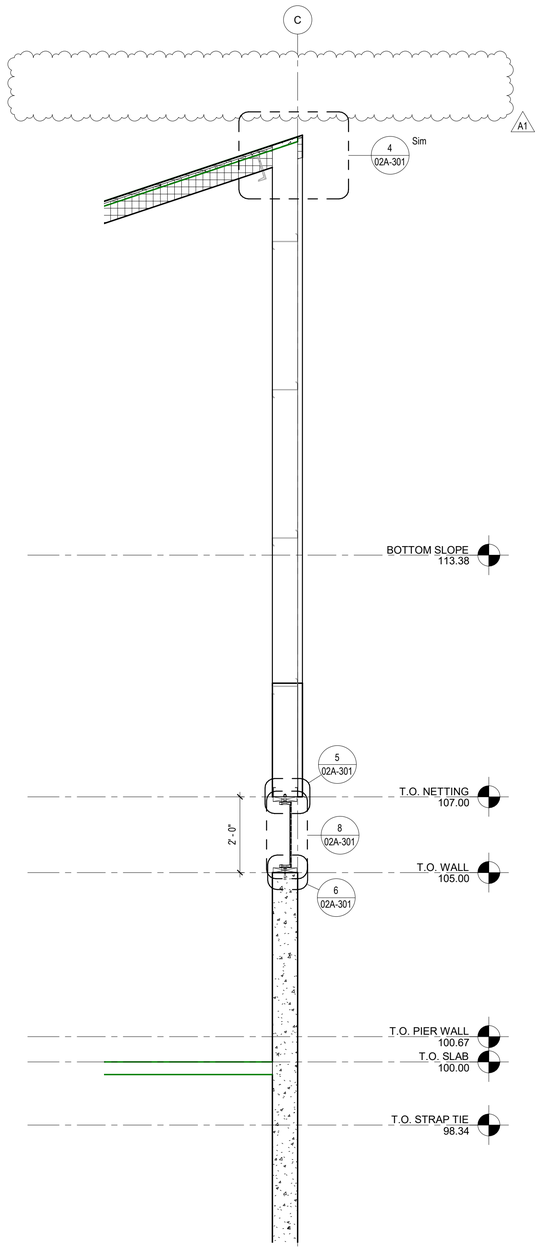
SCALE 1/8" = 1'-0"

SHEET 02A-201

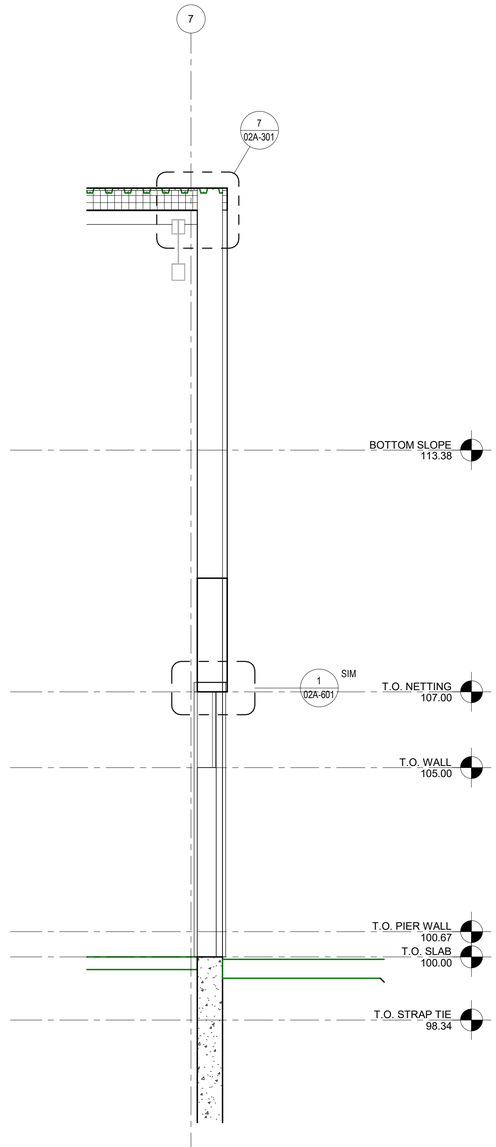
Autodesk Docs://10357686_MaineDIF_GrandLake Stream Exp_2022/v2022_10357686-A-Maine DIF_GrandLake Stream EXP.rvt
8/15/2023 3:56:21 PM



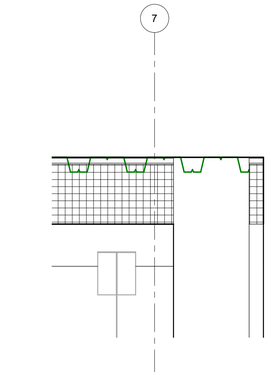
1 Section 1
1/2" = 1'-0"



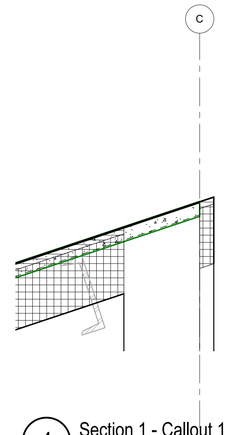
2 Section 2
1/2" = 1'-0"



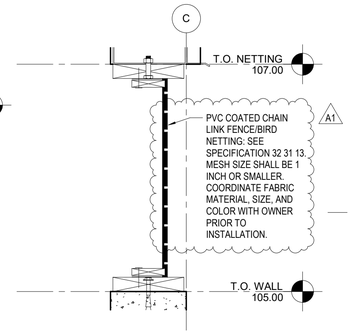
3 Section 3
1/2" = 1'-0"



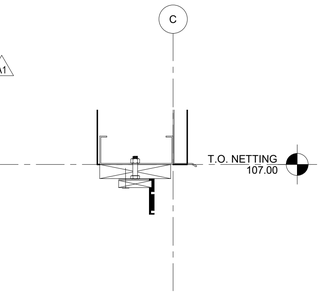
7 Section 3 - Callout 1
1 1/2" = 1'-0"



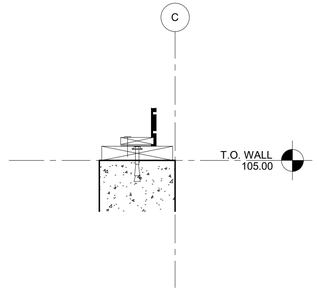
4 Section 1 - Callout 1
1 1/2" = 1'-0"



8 Section 2 - Callout 3
1 1/2" = 1'-0"



5 Section 2 - Callout 1
1 1/2" = 1'-0"



6 Section 2 - Callout 2
1 1/2" = 1'-0"

ISSUE	DATE	DESCRIPTION
A1	08/15/2023	ADDENDUM 1
	07/14/2023	ISSUED FOR BID

PROJECT MANAGER	ANDREW GURSKI
CIVIL	J. GAGNON
STRUCTURAL	B. BRADLEY
ARCHITECTURAL	M. BASKIN
PROCESS	J. CHANDLER
MECHANICAL	J. CHANDLER
ELECTRICAL	A. KANER
PROJECT NUMBER	10357686

LICENSED ARCHITECT
Michael A. Baskin
5595
STATE OF MAINE

IMPROVEMENTS AT GRAND LAKE STREAM STATE FISH HATCHERY

UPPER PAVILLION WALL SECTION & DETAILS

0 1" 2"

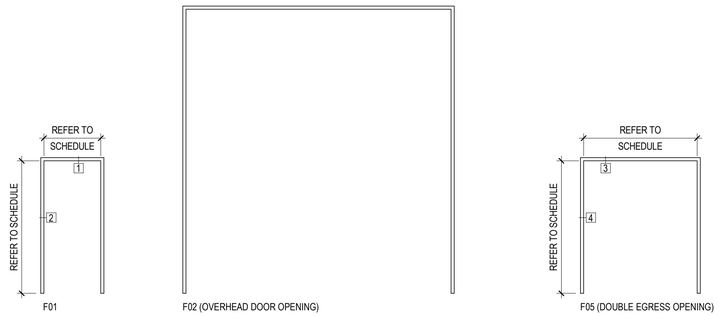
FILENAME

SCALE As indicated

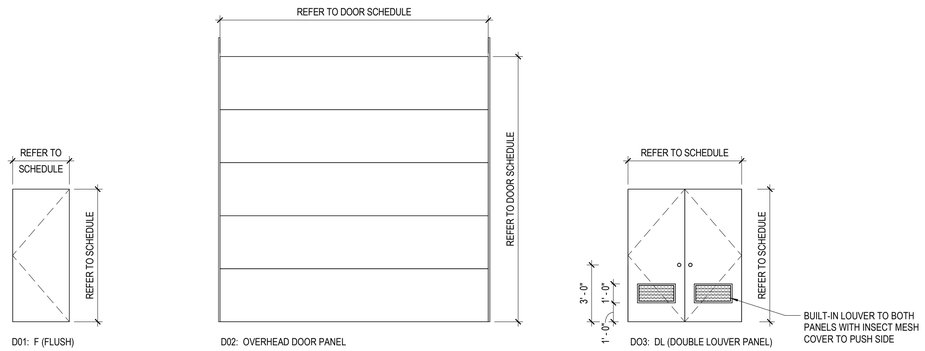
SHEET 02A-301

Autodesk Docs://10357686_MaineDIF_GrandLake Stream Exp_2022/v2022_10357686-A-Maine DIF_GrandLake Stream EXP.rvt
8/15/2023 3:56:23 PM

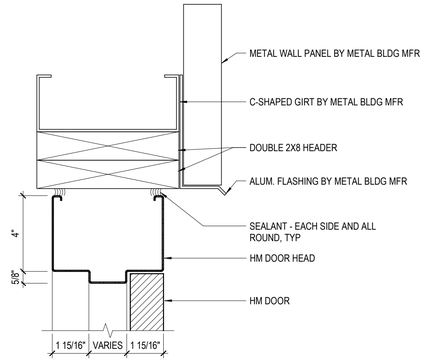
DOOR AND FRAME SCHEDULE																	
IDENTIFICATION				DIMENSIONS					DOOR TYPE	PANEL		FRAME			FIRE RATING	HARDWARE GROUP	NOTES
LEVEL	ROOM NO.	ROOM NAME	DOOR NO.	OPENING WIDTH			H	T		Material	Finish	TYPE	Material	Finish			
				W1	W2	Total Width											
T.O. SLAB	201	FEED STORAGE	15	3'-0"	3'-0"	6' - 0"	7' - 0"	2"	D03	METAL	PAINTED	F05	METAL	PAINTED	N/A	2	
T.O. SLAB	200	TANK ROOM	9	-	-	3' - 0"	7' - 0"	2"	D01	METAL	PAINTED	F01	METAL	PAINTED	N/A	2	
T.O. SLAB	200	TANK ROOM	12	-	-	12' - 0"	12' - 0"	2"	D02	METAL	PAINTED	F02	METAL	PAINTED	N/A	2	
T.O. SLAB	200	TANK ROOM	13	-	-	12' - 0"	12' - 0"	2"	D02	METAL	PAINTED	F02	METAL	PAINTED	N/A	2	
T.O. SLAB	200	TANK ROOM	14	-	-	8' - 0"	8' - 0"	2"	D02	METAL	PAINTED	F02	METAL	PAINTED	N/A	2	
T.O. SLAB	200	TANK ROOM	19	-	-	3' - 0"	7' - 0" A1	2"	D01	METAL	PAINTED	F01	METAL	PAINTED	N/A	2	



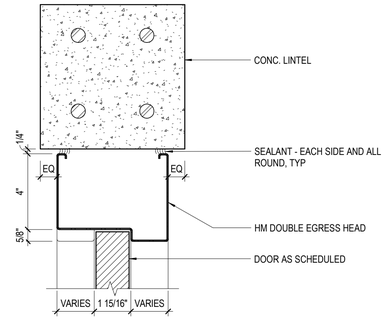
DOOR FRAME TYPES



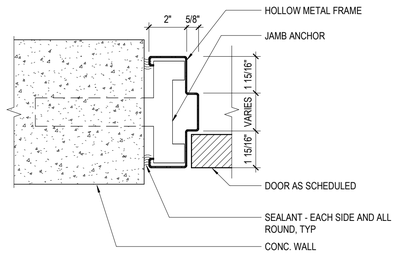
DOOR TYPES



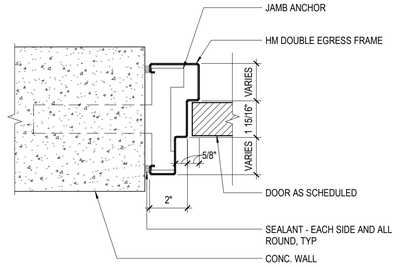
1 HEAD - HM DOOR
3" = 1'-0"



3 HEAD - HM DOUBLE EGRESS DOOR
3" = 1'-0"



2 JAMB - HM DOOR
3" = 1'-0"



4 JAMB - HM DOUBLE EGRESS DOOR
3" = 1'-0"

ISSUE	DATE	DESCRIPTION
A1	08/15/2023	ADDENDUM 1
	07/14/2023	ISSUED FOR BID

PROJECT MANAGER	ANDREW GURSKI
CIVIL	J. GAGNON
STRUCTURAL	B. BRADLEY
ARCHITECTURAL	M. BASKIN
PROCESS	J. CHANDLER
MECHANICAL	J. CHANDLER
ELECTRICAL	A. KANER
PROJECT NUMBER	10357686

LICENSED ARCHITECT Michael A. Baskin 3595 STATE OF MAINE

IMPROVEMENTS AT GRAND LAKE STREAM STATE FISH HATCHERY

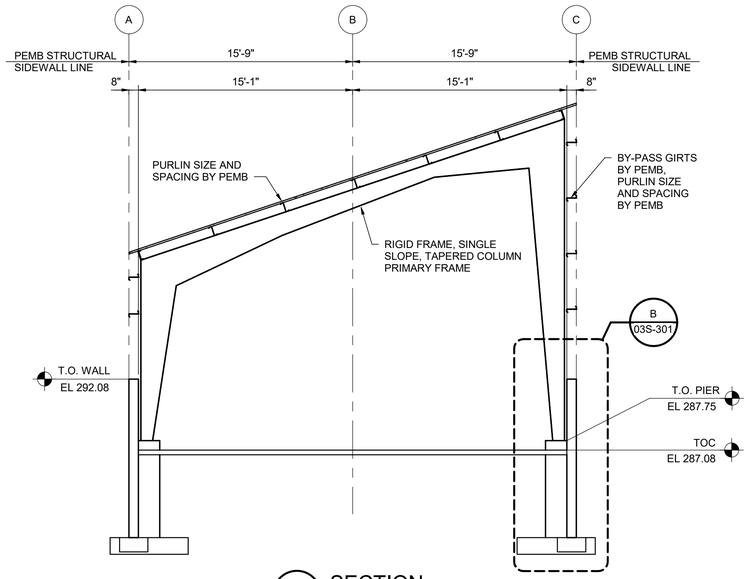
UPPER PAVILION DOOR SCHEDULE AND DETAILS

0 1" 2"

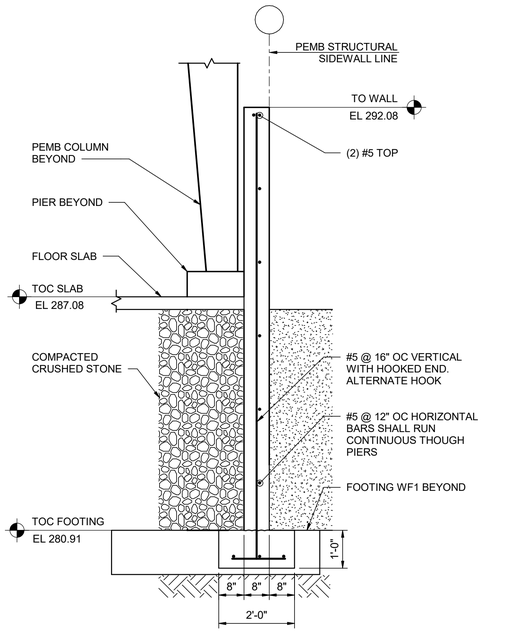
FILENAME

SCALE As indicated

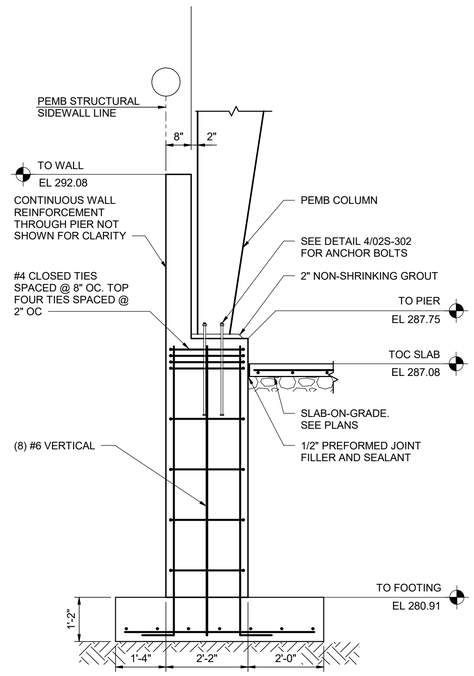
SHEET 02A-601



A 03S-101 **SECTION** 3/16" = 1'-0"

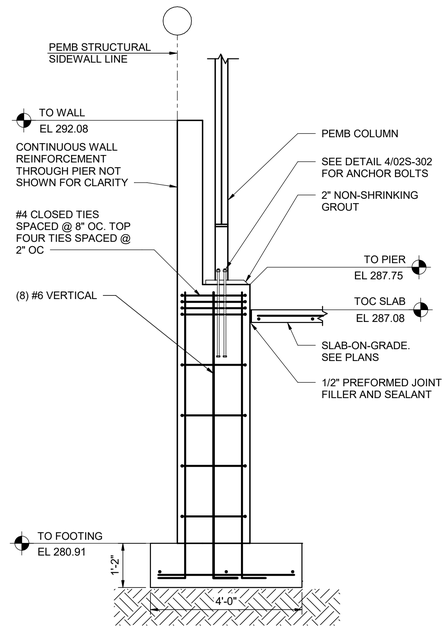


B 03S-301 **SECTION** 1/2" = 1'-0"

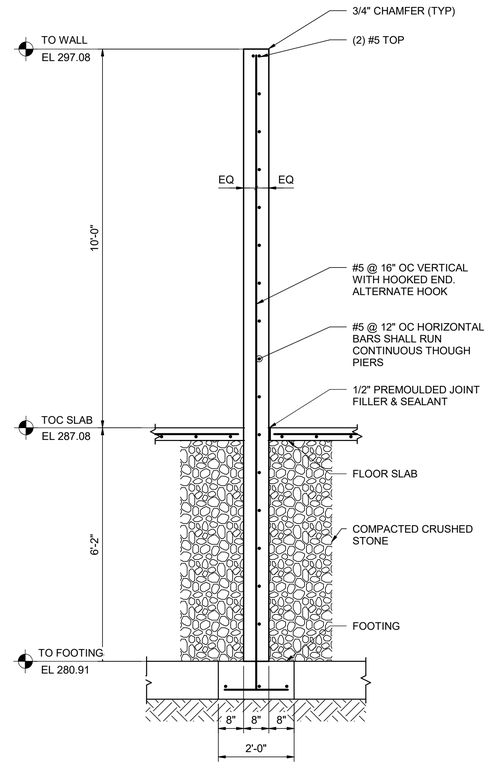


NOTE:
CAST WALL SECTION INTEGRAL WITH PIER. TYPICAL AT ALL PIER LOCATIONS.

C 03S-101 **SECTION** 1/2" = 1'-0"



D 03S-101 **SECTION** 1/2" = 1'-0"



E 03S-101 **SECTION** 1/2" = 1'-0"

ISSUE	DATE	DESCRIPTION
A1	08/15/2023	ADDENDUM 1
	07/14/2023	ISSUED FOR BID

PROJECT MANAGER	ANDREW GURSKI
CIVIL	J. GAGNON
STRUCTURAL	B. BRADLEY
ARCHITECTURAL	M. BASKIN
PROCESS	J. CHANDLER
MECHANICAL	J. CHANDLER
ELECTRICAL	A. KANER
PROJECT NUMBER	10357686

STATE OF MAINE
Bruce A. Bradley
PE 15026
LICENSED
PROFESSIONAL ENGINEER

IMPROVEMENTS AT GRAND LAKE STREAM STATE FISH HATCHERY

LOWER PAVILION SECTIONS

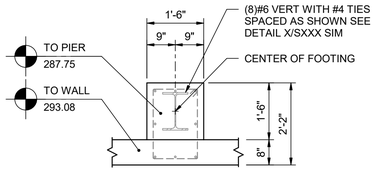
0 1" 2"

FILENAME 10353741-03-S.rvt
SCALE As indicated

SHEET 03S-301

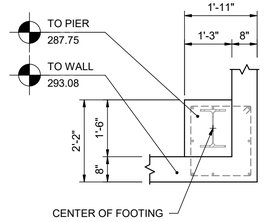
A1

Autodesk Docs://10357686_MaineDIF_GrandLake Stream Exp_2022/10357686-03-S.rvt
8/15/2023 3:55:10 PM

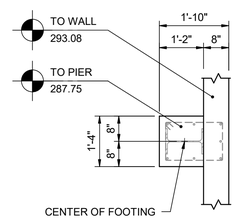


NOTE:
VERIFY PIER SIZE ADEQUACY WITH MBM PRIOR TO FORMING OR CASTING CONCRETE.

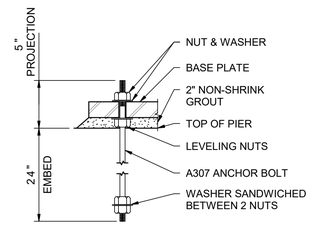
1 PIER TYPE P1
1/2" = 1'-0"



2 PIER TYPE P2
1/2" = 1'-0"

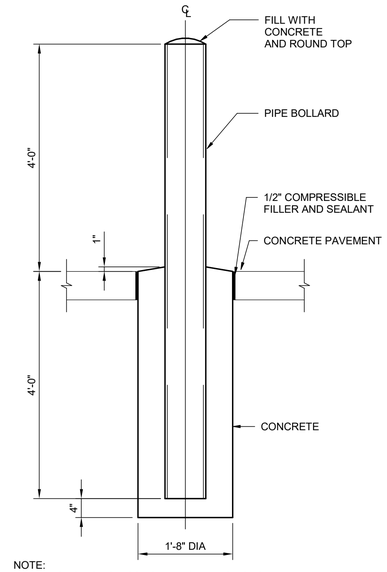


3 PIER TYPE P3
1/2" = 1'-0"



NOTE:
ANCHOR BOLTS PROVIDED AND INSTALLED BY GENERAL CONTRACTOR (GC.) ANCHOR BOLT SIZES SPECIFIED BY PEMB.

4 ANCHOR BOLT DETAIL
NOT TO SCALE



NOTE:
1. REINFORCING FOR CONCRETE SLAB NOT SHOWN.

5 BOLLARD
NOT TO SCALE

ISSUE	DATE	DESCRIPTION
A1	08/15/2023	ADDENDUM 1
	07/14/2023	ISSUED FOR BID

PROJECT MANAGER	ANDREW GURSKI
CIVIL	J. GAGNON
STRUCTURAL	B. BRADLEY
ARCHITECTURAL	M. BASKIN
PROCESS	J. CHANDLER
MECHANICAL	J. CHANDLER
ELECTRICAL	A. KANER
PROJECT NUMBER	10357686

STATE OF MAINE
Bruce A. Bradley
PE 15026
LICENSED
PROFESSIONAL ENGINEER

IMPROVEMENTS AT GRAND LAKE STREAM STATE FISH HATCHERY

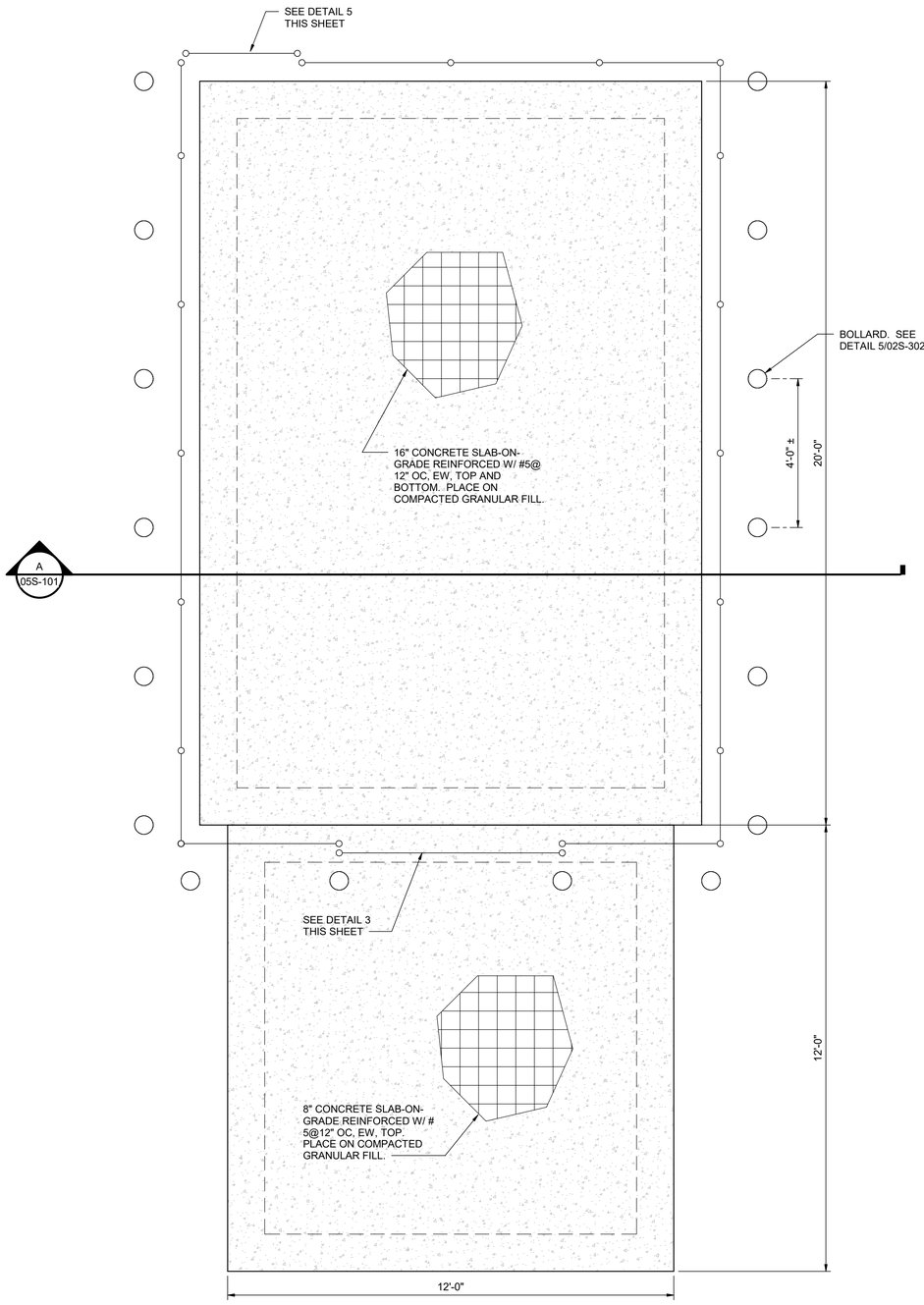
LOWER PAVILION DETAILS
A1

0 1" 2"

FILENAME 10353741-03-S.rvt
SCALE As indicated

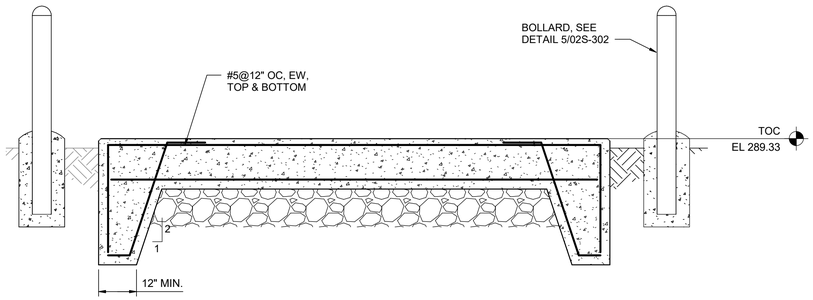
SHEET
03S-302

Autodesk Docs://10357686_MaineDIF_GrandLake Stream Exp_2022/10357686-03-S.rvt
8/15/2023 3:55:10 PM

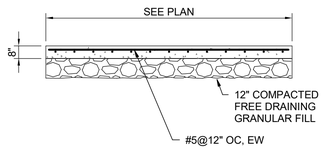


0 1' 2' 4'

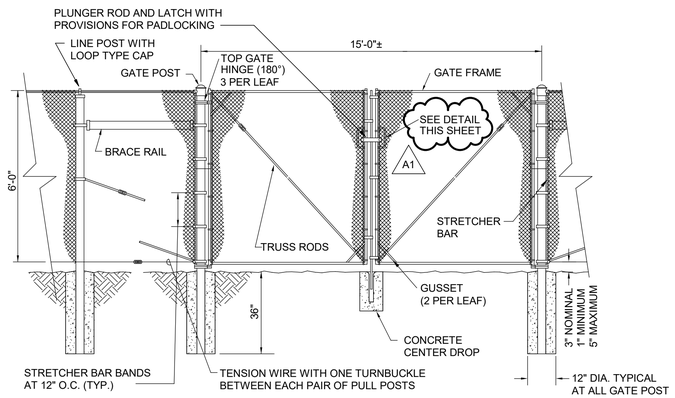
PLAN
1/2" = 1'-0"



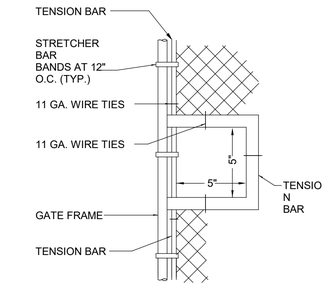
A / -
SECTION
1/2" = 1'-0"



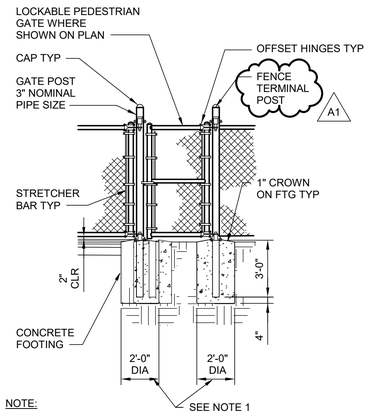
2 / -
DRIP PAD SECTION
1/4" = 1'-0"



3 / -
6' GALVANIZED CHAIN LINK FENCE
NOT TO SCALE



4 / -
CUT OUT DETAIL FOR CHAIN & LOCK
NOT TO SCALE



NOTE:

1. USE 3'-0" DIA CONCRETE FOOTING HOLE FOR POST DIAMETERS GREATER THAN 5" AND USE 4'-0" DIA CONCRETE FOOTING HOLE FOR POST DIAMETERS GREATER THAN 6".

5 / -
CHAIN LINK GATE
NOT TO SCALE

PLAN NORTH TRUE NORTH

GENERAL NOTES:

1. SEE SHEET 00S-001 FOR GENERAL STRUCTURAL NOTES.
2. SEE 00S-500 SERIES SHEETS FOR TYPICAL STRUCTURAL DETAILS.
3. REFER TO ARCHITECTURAL, PROCESS, MECHANICAL, PLUMBING, ELECTRICAL, AND DRAWINGS OF OTHER TRADES FOR LOCATIONS OF OPENINGS, DEPRESSIONS, FLOOR SLOPES AND DRAINS.
4. CONTRACTORS SHALL MARK WHERE THE REBARS ARE LOCATED.
5. SLEEVE ALL PIPE PENETRATIONS THROUGH SLAB WITH PVC PIPE SIZED TO ALLOW PIPE TO FREELY PASS THROUGH SLAB.

ISSUE	DATE	DESCRIPTION
A1	08/15/2023	ADDENDUM 1
	07/14/2023	ISSUED FOR BID

PROJECT MANAGER	ANDREW GURSKI
CIVIL	J. GAGNON
STRUCTURAL	B. BRADLEY
ARCHITECTURAL	M. BASKIN
PROCESS	J. CHANDLER
MECHANICAL	J. CHANDLER
ELECTRICAL	A. KANER
PROJECT NUMBER	10357686

STATE OF MAINE · Bruce A. Bradley · PE 5026 · LICENSED · PROFESSIONAL ENGINEER

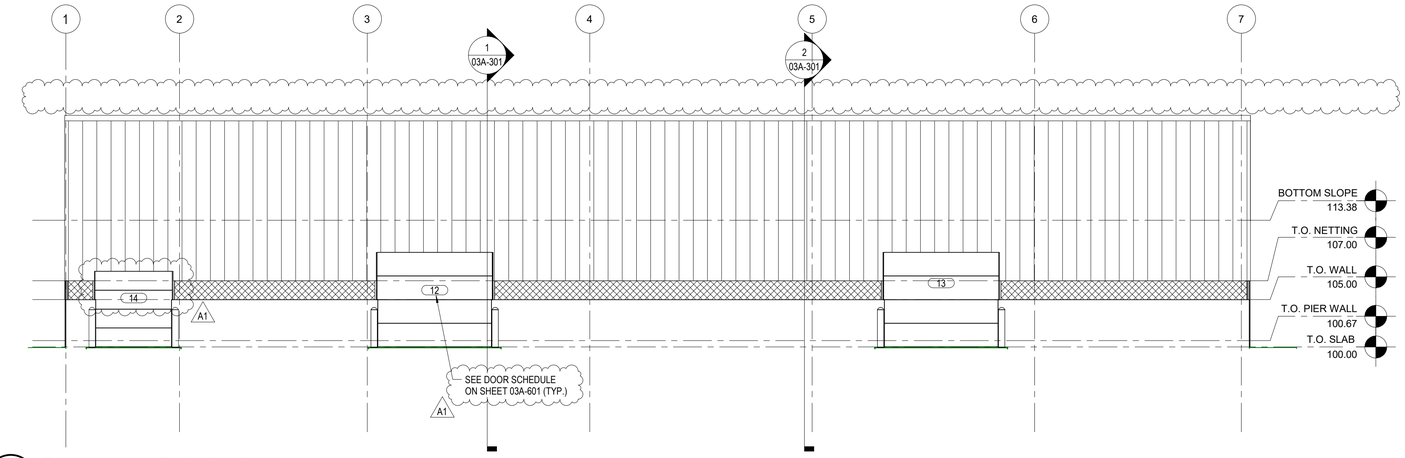
IMPROVEMENTS AT GRAND LAKE STREAM STATE FISH HATCHERY

OXYGEN PAD
STRUCTURAL PLAN AND SECTION

0 1" 2"

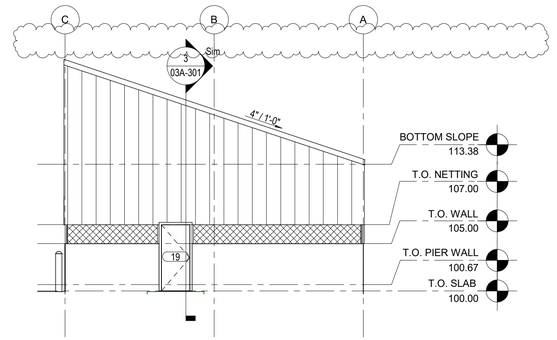
FILENAME 10357686-05-U
SCALE As indicated
SHEET 05S-101

Autodesk Docs://10357686_MaineDIF_GrandLake Stream Exp_2022/10357686-05-U-OXYGEN_PAD.rvt
8/15/2023 3:53:10 PM



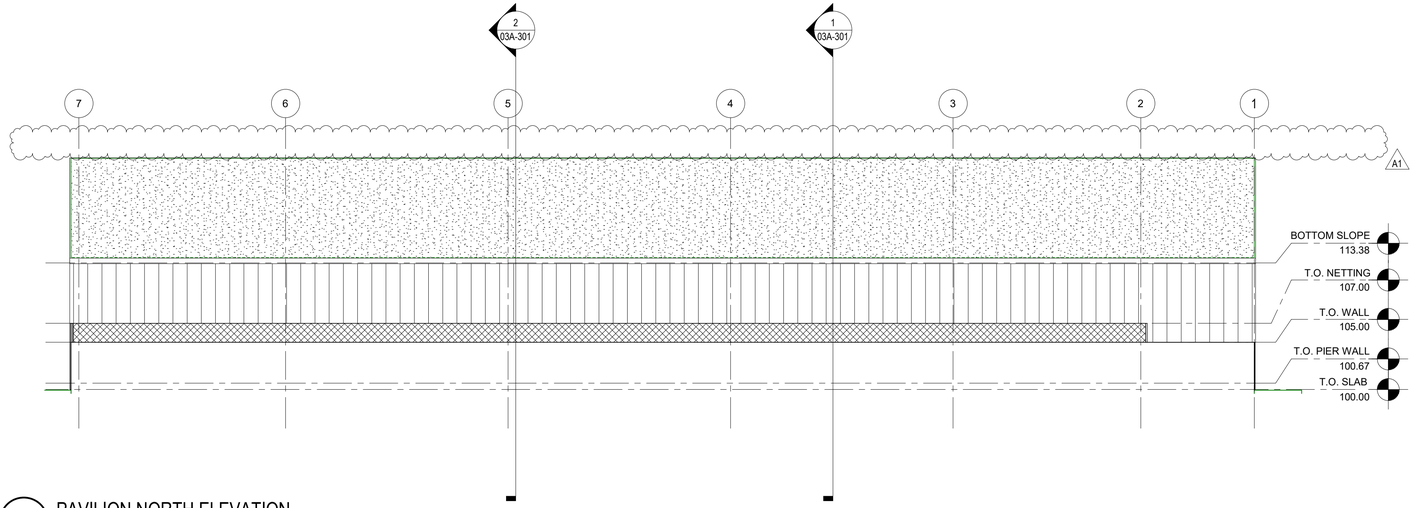
3 PAVILION SOUTH ELEVATION

1/8" = 1'-0"



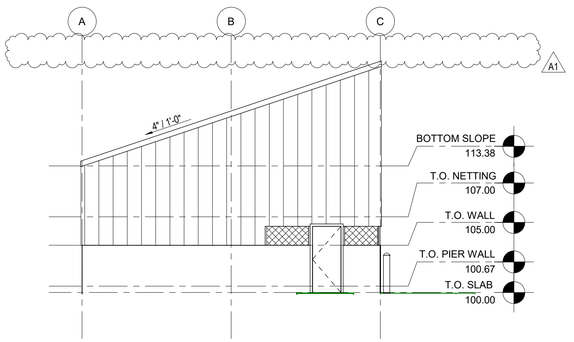
1 PAVILION EAST ELEVATION

1/8" = 1'-0"



2 PAVILION NORTH ELEVATION

1/8" = 1'-0"



4 PAVILION WEST ELEVATION

1/8" = 1'-0"

ISSUE	DATE	DESCRIPTION
A1	08/15/2023	ADDENDUM 1
	07/14/2023	ISSUED FOR BID

PROJECT MANAGER	ANDREW GURSKI
CIVIL	J. GAGNON
STRUCTURAL	B. BRADLEY
ARCHITECTURAL	M. BASKIN
PROCESS	J. CHANDLER
MECHANICAL	J. CHANDLER
ELECTRICAL	A. KANER
PROJECT NUMBER	10357686

LICENSED ARCHITECT
Michael A. Baskin
5595
STATE OF MAINE

IMPROVEMENTS AT GRAND LAKE STREAM STATE FISH HATCHERY

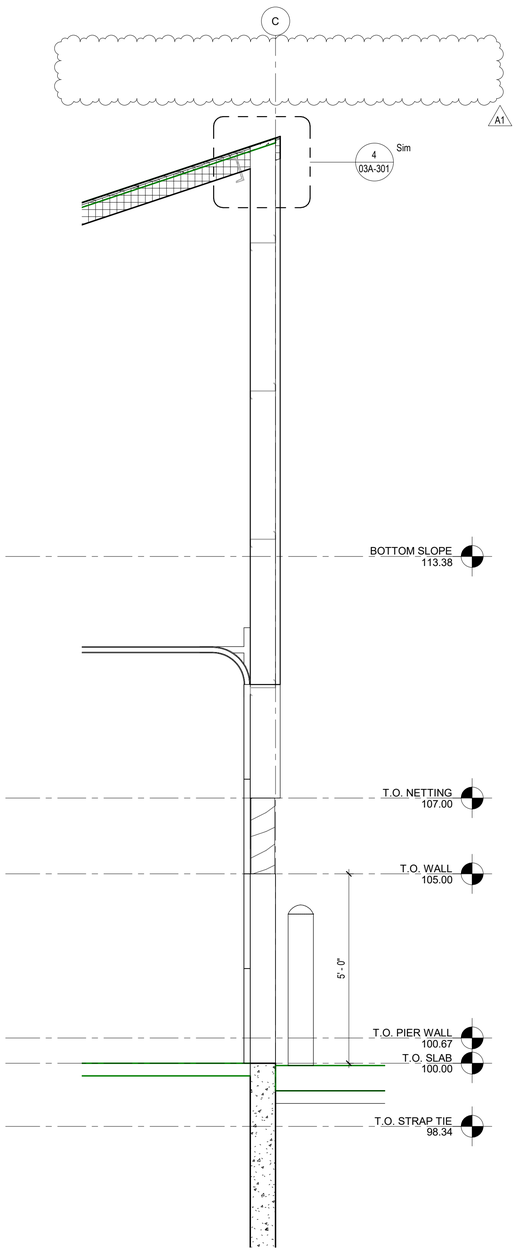
LOWER PAVILION EXTERIOR ELEVATIONS

0 1" 2"

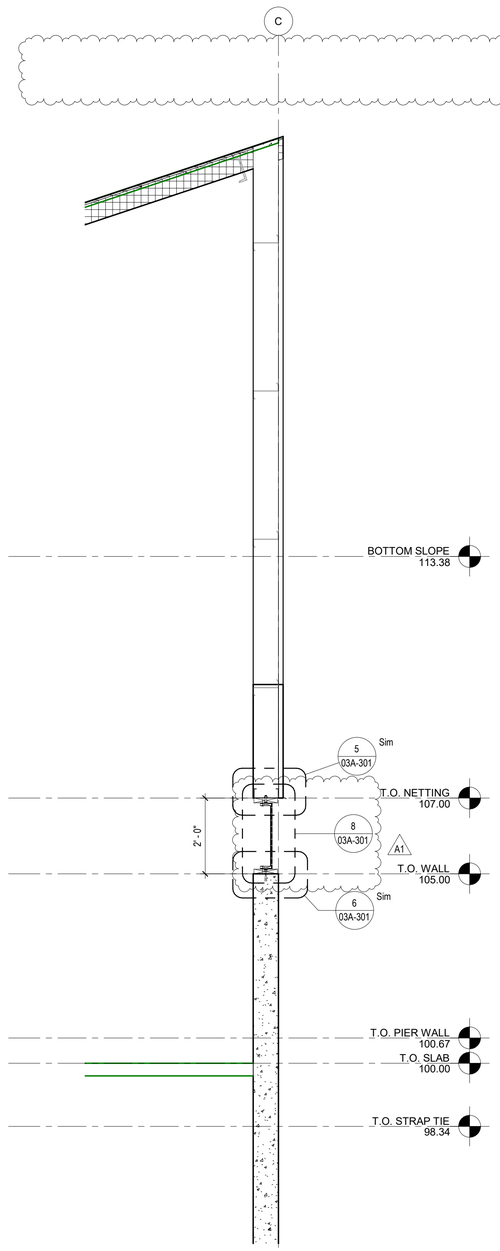
FILENAME

SCALE 1/8" = 1'-0"

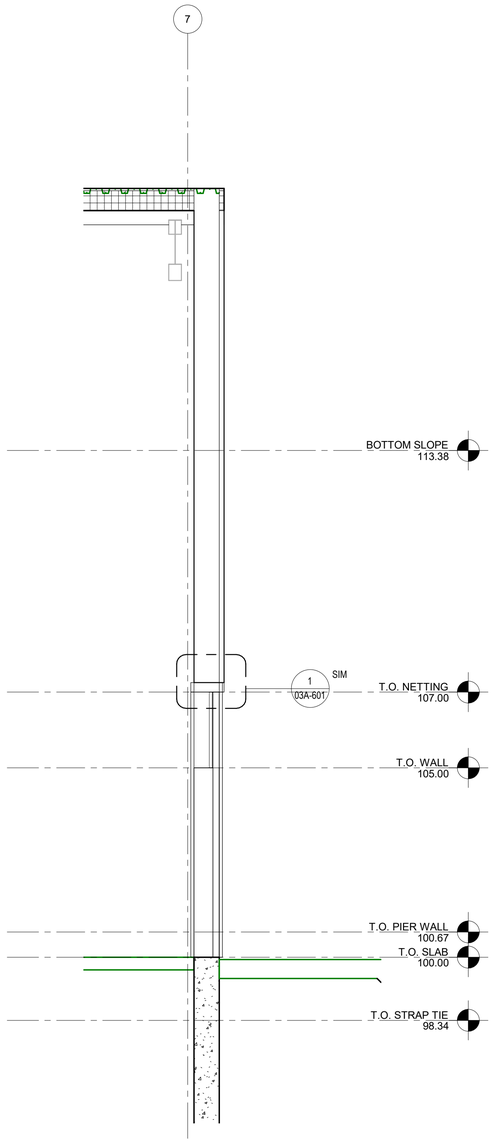
SHEET 03A-201



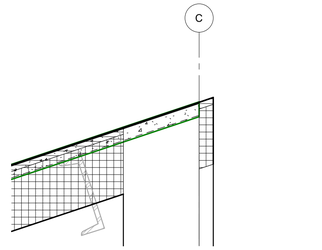
1 Section 1
1/2" = 1'-0"



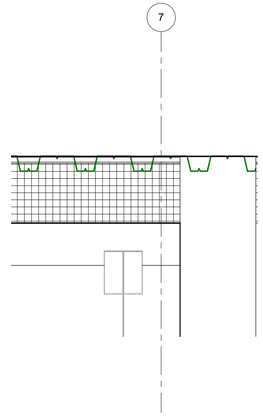
2 Section 2
1/2" = 1'-0"



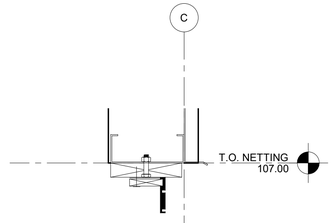
3 Section 3
1/2" = 1'-0"



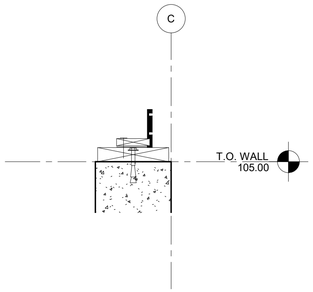
4 Section 1 - Callout 1
1 1/2" = 1'-0"



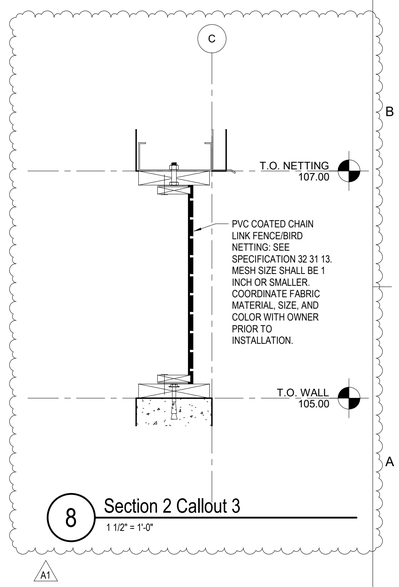
7 Section 3 - Callout 1
1 1/2" = 1'-0"



5 Section 2 - Callout 1
1 1/2" = 1'-0"



6 Section 2 - Callout 2
1 1/2" = 1'-0"



8 Section 2 Callout 3
1 1/2" = 1'-0"

1 2 3 4 5 6 7 8

D C B A

Autodesk Docs://10357686_MaineDIF_GrandLake Stream Exp_2022/v2022_10357686-A-Maine DIF_GrandLake Stream EXP.rvt
8/15/2023 3:56:26 PM

ISSUE	DATE	DESCRIPTION
A1	08/15/2023	ADDENDUM 1
	07/14/2023	ISSUED FOR BID

PROJECT MANAGER	ANDREW GURSKI
CIVIL	J. GAGNON
STRUCTURAL	B. BRADLEY
ARCHITECTURAL	M. BASKIN
PROCESS	J. CHANDLER
MECHANICAL	J. CHANDLER
ELECTRICAL	A. KANER
PROJECT NUMBER	10357686

LICENSED ARCHITECT
Michael A Baskin
5595
STATE OF MAINE

IMPROVEMENTS AT GRAND LAKE STREAM STATE FISH HATCHERY

LOWER PAVILION WALL SECTIONS & DETAILS

0 1" 2"

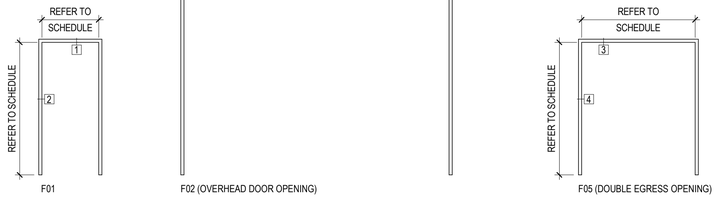
FILENAME

SCALE As indicated

SHEET

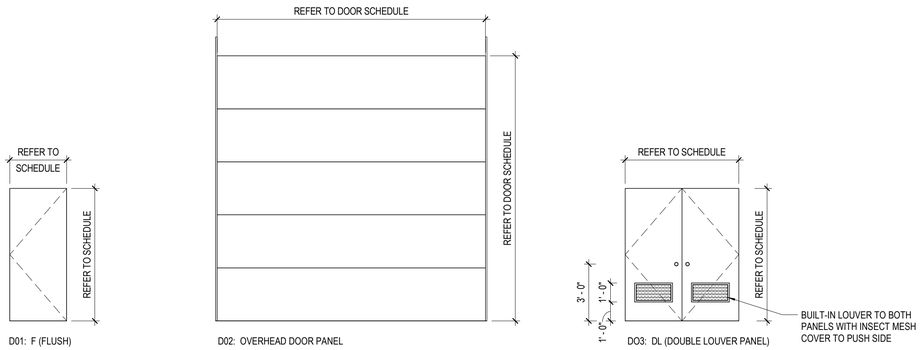
03A-301

DOOR AND FRAME SCHEDULE																	
IDENTIFICATION				DIMENSIONS					DOOR	PANEL		FRAME				HARDWARE	
LEVEL	ROOM NO.	ROOM NAME	DOOR NO.	OPENING WIDTH			H	T	TYPE	Material	Finish	TYPE	Material	Finish	FIRE RATING	GROUP	NOTES
				W1	W2	Total Width											
T.O. SLAB	301	FEED STORAGE	15	3'-0"	3'-0"	6' - 0"	7' - 0"	2"	D03	METAL	PAINTED	F05	METAL	PAINTED	N/A	2	
T.O. SLAB	300	TANK ROOM	9	-	-	3' - 0"	7' - 0"	2"	D01	METAL	PAINTED	F01	METAL	PAINTED	N/A	2	
T.O. SLAB	300	TANK ROOM	12	-	-	12' - 0"	12' - 0"	2"	D02	METAL	PAINTED	F02	METAL	PAINTED	N/A	2	
T.O. SLAB	300	TANK ROOM	13	-	-	12' - 0"	12' - 0"	2"	D02	METAL	PAINTED	F02	METAL	PAINTED	N/A	2	
T.O. SLAB	300	TANK ROOM	14	-	-	8' - 0"	8' - 0"	2"	D02	METAL	PAINTED	F02	METAL	PAINTED	N/A	2	
T.O. SLAB	300	TANK ROOM	19	-	-	3' - 0"	7' - 0" A1	2"	D01	METAL	PAINTED	F01	METAL	PAINTED	N/A	2	



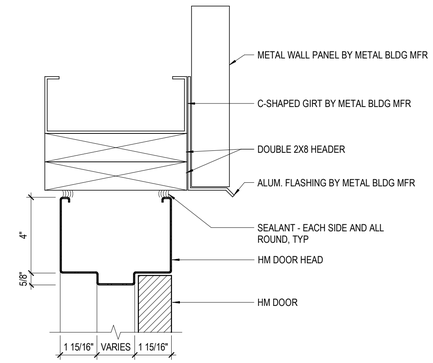
F01 F02 (OVERHEAD DOOR OPENING) F05 (DOUBLE EGRESS OPENING)

DOOR FRAME TYPES

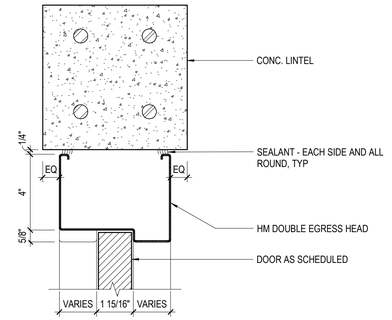


D01: F (FLUSH) D02: OVERHEAD DOOR PANEL DO3: DL (DOUBLE LOUVER PANEL)

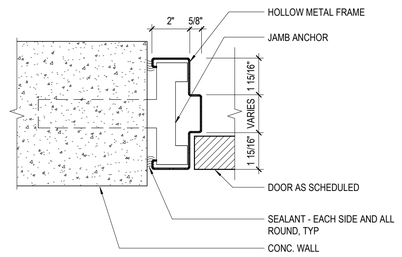
DOOR TYPES



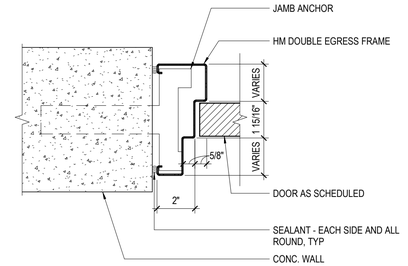
1 HEAD - HM DOOR
3" = 1'-0"



3 HEAD - HM DOUBLE EGRESS DOOR
3" = 1'-0"



2 JAMB - HM DOOR
3" = 1'-0"



4 JAMB - HM DOUBLE EGRESS DOOR
3" = 1'-0"

ISSUE	DATE	DESCRIPTION
A1	08/15/2023	ADDENDUM 1
	07/14/2023	ISSUED FOR BID

PROJECT MANAGER	ANDREW GURSKI
CIVIL	J. GAGNON
STRUCTURAL	B. BRADLEY
ARCHITECTURAL	M. BASKIN
PROCESS	J. CHANDLER
MECHANICAL	J. CHANDLER
ELECTRICAL	A. KANER
PROJECT NUMBER	10357686

LICENSED ARCHITECT Michael A. Baskin 5595 STATE OF MAINE

IMPROVEMENTS AT GRAND LAKE STREAM STATE FISH HATCHERY

LOWER PAVILION DOOR SCHEDULE AND DETAILS

0 1" 2"

FILENAME

SCALE As indicated

SHEET 03A-601

TABLE OF CONTENTS

DIVISION 00 — PROCUREMENT AND CONTRACTING REQUIREMENTS
00 01 07 - SEALS AND SIGNATURES
00 11 13 - NOTICE TO CONTRACTORS FOR EMAIL BID
00 21 13 - INSTRUCTIONS TO BIDDERS
00 22 13 - INSTRUCTIONS TO FILED SUB-BIDDERS
00 41 13 - CONTRACTOR BID FORM
00 43 13 - CONTRACTOR BID BOND SAMPLE 21
00 52 13 - CONTRACT AGREEMENT SAMPLE
00 61 13.13 - CONTRACTOR PERFORMANCE BOND SAMPLE 21
00 61 13.16 - CONTRACTOR PAYMENT BOND SAMPLE 21
00 62 76 - APPLICATION FOR PAYMENT
00 62 76.01 - APPLICATION FOR PAYMENT CONTINUATION SHEET
00 63 46 - CONSTRUCTION CHANGE DIRECTIVE
00 63 63 - CHANGE ORDER
00 71 00 - DEFINITIONS
00 72 13 - GENERAL CONDITIONS
00 72 14 - SUPPLEMENTAL GENERAL CONDITIONS
00 73 46 - WAGE DETERMINATION SCHEDULE

DIVISION 01 — GENERAL REQUIREMENTS
01 11 00 - SUMMARY OF WORK
01 26 13 - REQUESTS FOR INFORMATION (RFI)
01 29 73 - SCHEDULE OF VALUES (LUMP SUM PROJECTS)
01 30 00 - SPECIAL CONDITIONS
01 32 17 - CONSTRUCTION PROGRESS SCHEDULE
01 33 00 - SUBMITTALS
01 33 04 - OPERATION AND MAINTENANCE MANUALS
01 35 73 - DELEGATED DESIGN PROCEDURES
01 42 13 - STANDARD ABBREVIATIONS AND SYMBOLS
01 45 00 - QUALITY ASSURANCE AND CONTROL
01 45 33 - SPECIAL INSPECTIONS AND TESTING PROGRAM
01 61 03 - EQUIPMENT - BASIC REQUIREMENTS
01 65 50 - PRODUCT DELIVERY, STORAGE, AND HANDLING
01 71 14 - MOBILIZATION AND DEMOBILIZATION
01 71 23 - FIELD ENGINEERING
01 73 20 - OPENINGS AND PENETRATIONS IN CONSTRUCTION
01 73 29 - DEMOLITION, CUTTING AND PATCHING
01 74 23 - CLEANING
01 75 00 - FACILITY START-UP
01 77 00 - CONTRACT CLOSEOUT (GC)
01 78 23 - OPERATION AND MAINTENANCE DATA
01 78 36 - WARRANTIES
01 78 39 - PROJECT RECORD DOCUMENTS
01 78 43 - SPARE PARTS, TOOLS AND MAINTENANCE MATERIALS
01 91 03 - COMPONENT AND SYSTEM COMMISSIONING

DIVISION 02 — EXISTING CONDITIONS
02 00 00 - EXISTING CONDITIONS

DIVISION 03 — CONCRETE
03 05 05 - CONCRETE TESTING AND INSPECTION
03 11 13 - FORMWORK
03 15 19 - ANCHORAGE TO CONCRETE
03 21 00 - REINFORCEMENT

03 31 30 - CONCRETE MATERIALS AND PROPORTIONING
03 31 31 - CONCRETE MIXING, PLACING, JOINTING, AND CURING
03 35 00 - CONCRETE FINISHING AND REPAIR OF SURFACE DEFECTS
03 41 33 - PRECAST AND PRESTRESSED CONCRETE

DIVISION 04 — MASONRY
04 01 20 - MASONRY CLEANING
04 05 13 - MASONRY MORTAR AND GROUT
04 05 23 - MASONRY ACCESSORIES
04 05 50 - COLD AND HOT WEATHER MASONRY CONSTRUCTION
04 22 00 - CONCRETE MASONRY

DIVISION 05 — METALS
05 50 00 - METAL FABRICATIONS
05 52 43 - WELDED ALUMINUM RAILINGS

DIVISION 06 — WOOD, PLASTICS, AND COMPOSITES
06 10 00 - ROUGH CARPENTRY
06 17 53 - METAL PLATE CONNECTED WOOD TRUSSES
06 82 00 - MATS & FIBERGLASS REINFORCED PLASTIC FABRICATIONS
06 85 14 - FRP WEIRS AND BAFFLES

DIVISION 07 — THERMAL AND MOISTURE PROTECTION
07 13 26 - SELF-ADHERING SHEET MEMBRANE WATERPROOFING
07 21 00 - BUILDING INSULATION
07 26 00 - UNDER SLAB VAPOR RETARDER
07 27 26 - FLUID APPLIED AIR BARRIER - VAPOR RESISTIVE
07 42 14 - PREFORMED FACTORY-INSULATED METAL WALL PANELS
07 61 13 - METAL ROOFING
07 62 00 - FLASHING AND SHEET METAL
07 92 00 - JOINT SEALANTS

DIVISION 08 — OPENINGS
08 11 00 - HOLLOW METAL DOORS AND FRAMES
08 15 00 - FIBERGLASS REINFORCED PLASTIC (FRP) DOORS AND FRAMES
08 36 13 - OVERHEAD DOOR - SECTIONAL ALUMINUM
08 70 00 - FINISH HARDWARE
08 90 00 - LOUVERS AND VENTS

DIVISION 09 — FINISHES
09 29 00 - GYPSUM BOARD
09 77 61 - FIBERGLASS REINFORCED PLASTIC (FRP) PANELS
09 91 10 - ARCHITECTURAL PAINTING
09 96 00 - HIGH PERFORMANCE INDUSTRIAL COATINGS

DIVISION 10 — SPECIALTIES
10 44 33 - FIRE PROTECTION SPECIALTIES

DIVISION 13 — SPECIAL CONSTRUCTION
13 20 00 - BOLTED STEEL AQUACULTURE TANKS
13 34 00 - POST-FRAME BUILDING SYSTEMS
13 34 19 - METAL BUILDING SYSTEMS

DIVISION 23 — HEATING VENTILATING AND AIR CONDITIONING
23 05 13 - COMMON MOTOR REQUIREMENTS FOR PLUMBING AND HVAC EQUIPMENT
23 30 00 - HVAC AIR DISTRIBUTION

DIVISION 26 — ELECTRICAL
26 05 00 - ELECTRICAL - BASIC REQUIREMENTS
26 05 19 - WIRE AND CABLE - 600 VOLT AND BELOW

26 05 26 - GROUNDING AND BONDING
26 05 33 - RACEWAYS AND BOXES
26 05 43 - ELECTRICAL - EXTERIOR UNDERGROUND
26 08 13 - ACCEPTANCE TESTING
26 09 16 - CONTROL EQUIPMENT ACCESSORIES
26 24 16 - PANELBOARDS
26 24 19 - MOTOR CONTROL EQUIPMENT
26 27 26 - WIRING DEVICES
26 28 00 - OVERCURRENT AND SHORT CIRCUIT PROTECTIVE DEVICES
26 28 16 - SAFETY SWITCHES
26 36 00 - TRANSFER SWITCHES
26 43 13 - LOW VOLTAGE SURGE PROTECTION DEVICES (SPD)
26 50 00 - INTERIOR AND EXTERIOR LIGHTING

DIVISION 31 — EARTHWORK
31 10 00 - SITE CLEARING
31 23 00 - EARTHWORK
31 23 33 - TRENCHING, BACKFILLING, AND COMPACTING FOR UTILITIES
31 25 00 - SOIL EROSION AND SEDIMENT CONTROL
31 32 19 - GEOTEXTILES

DIVISION 32 — EXTERIOR IMPROVEMENTS
32 12 16 - ASPHALTIC CONCRETE VEHICULAR PAVING
32 15 40 - CRUSHED STONE SURFACING
32 31 13 - CHAIN LINK FENCE AND GATES
32 91 13 - TOPSOILING AND FINISHED GRADING
32 92 00 - SEEDING, SODDING AND LANDSCAPING

DIVISION 33 — UTILITIES
33 05 16 - PRECAST CONCRETE MANHOLE STRUCTURES
33 05 23 - PIPELINE UNDERCROSSINGS
33 40 00 - STORM DRAINAGE SYSTEM
33 46 00 - FOUNDATION AND UNDERSLAB DRAINAGE SYSTEM

DIVISION 40 — PROCESS INTERCONNECTIONS
40 05 00 - PIPE AND PIPE FITTINGS - BASIC REQUIREMENTS
40 05 07 - PIPE SUPPORT SYSTEMS
40 05 17 - PIPE - COPPER
40 05 19 - PIPE - DUCTILE
40 05 24 - PIPE - STEEL
40 05 31 - PIPE - PLASTIC
40 05 51 - VALVES - BASIC REQUIREMENTS
40 05 52 - MISCELLANEOUS VALVES
40 05 61 - GATE VALVES
40 05 62 - PLUG VALVES
40 05 63 - BALL VALVES
40 05 64 - BUTTERFLY VALVES
40 05 66 - CHECK VALVES
40 20 50 - O2 STORAGE, DISTRIBUTION AND DISSOLUTION
40 41 13 - HEAT TRACING CABLE
40 42 00 - PIPE, DUCT AND EQUIPMENT INSULATION
40 60 05 - SLUICE & SLIDE GATES AND METAL STOP LOGS
40 60 05 - SLUICE & SLIDE GATES AND METAL STOP LOGS (Copy)
40 71 00 - FLOW INSTRUMENTATION

DIVISION 43 — PROCESS GAS AND LIQUID HANDLING, PURIFICATION AND STORAGE EQUIPMENT
43 21 00 - PUMPING EQUIPMENT - BASIC REQUIREMENTS

43 22 56 - LIQUID PROCESS EQUIPMENT - SLUDGE TANK MIXING
43 22 71 - PROCESS POLY TRENCH DRAINS AND FLOOR SINKS
43 23 13.19 - OVERHUNG HORIZONTAL SELF-PRIMING CENTRIFUGAL PUMPS
43 25 13 - SUBMERSIBLE PUMPS AND DEICERS

DIVISION 46 — WATER AND WASTEWATER EQUIPMENT

46 13 01 - ALUMINUM COVERS - DOME TYPE
46 13 15 - ALUMINUM COVERS - FORMED PANEL TYPE
46 43 22 - CIRCULAR CLARIFIER EQUIPMENT
46 71 33 - ROTARY DRUM FILTER

SECTION 13200

BOLTED STEEL AQUACULTURE TANKS

PART 1 - GENERAL

1.1 WORK INCLUDES

A. Furnish, erect and install bolted stainless steel aquaculture tanks including tank structures and tank appurtenances as shown in the Drawings. Contractor shall provide all labor, materials, equipment, tools, etc. as necessary for the complete and proper construction of the bolted steel aquaculture tanks.

1.2 RELATED REQUIREMENTS

A. Specified Elsewhere:

1. Section 02140: Dewatering.
2. Section 02200: Earthwork
3. Section 02778: Geotextile Fabric.
4. Section 03002: Concrete.
5. Section 15060: Pipe and Pipe Fittings.

1.3 QUALITY ASSURANCE

A. Regulatory Requirements.
   1. Design of tanks shall conform to the International Building Code, 2012 edition.
   2. The contractor shall be fully State of Maine licensed and certified to complete all work required in this specification section and as shown on the drawings.

B. Tank supplier shall offer and supply a new tank structure as supplied form a manufacturer specializing in the design, fabrication and erection of factory fabricated bolted stainless steel tank systems.

1.4 QUALIFICATION OF TANK SUPPLIER

A. The bidder shall offer a new tank structure as supplied from a manufacturer specializing in the design, fabrication and erection of factory fabricated, bolted stainless steel tank systems.

B. Strict adherence to the standards of design, fabrication, erection, product quality and long term (30 year minimum) performance, established in this specification will be required by the Owner and Owner's Representative.

C. Manufacturers:
   1. ~~Tarsco of T.F. Warren Group represented by Salt Creek Technologies Inc.~~
      ~~Elmhurst, IL~~
      ~~Phone: 630-530-2808~~
   2. Tank Connection, Parsons, KS
   3. American Structures, Inc.
      Menomonie, WI
      Phone: 715-235-4225
      www.ameristruc.com

D. The Owner's decision or judgment on any of the experience or qualification matters will be final, conclusive, and binding.

1.5 REFERENCES

A. Standards:

1.	AWWA D103-09 Latest Edition:	Factory Coated Bolted Steel Tanks for Water Storage.
2.	ASTM A36:	Standard Specification for Structural Steel
3.	ASTM A307:	Specification for Carbon Steel Bolts
4.	ASTM A325:	Specification for High Strength Bolts
5.	ASTM A123:	Specification for Zinc Coating.
6.	ASTM A153:	Specification for Hardware Zinc Coating.
7.	ASTM A570:	Specification for Steel Sheets.

1.6 SUBMITTALS: Submit per General Conditions.

A. Product Data: Submit manufacturer's product literature concerning stainless steel tanks coatings, sealants, gaskets, hardware.

B. Shop Drawings: Submit complete shop and installation drawings stamped by the tank manufacturer's registered professional engineer including typical structural, panel and foundation attachment details, coating and material specifications, and complete installation instructions. Include structural design calculations as well as complete specifications for this application.

C. Certifications: The manufacturer must certify by affidavit to the Owner and Contractor, jointly, that the bolted-steel aquaculture tank will meet every aspect of the requirements set forth in this specification.

1.7 DELIVERY, STORAGE AND HANDLING

A. Storage and handling of the materials shall conform to the manufacturer's recommendations and shall be done in such a manner as to prevent damage to any part of the work. Each tank kit will be supplied in wooden crates capable of being stored outdoors at the site and placed on the existing concrete floors for assembly.

B. Tank materials shall not be delivered to the site sooner than four (4) months prior to the approved date for installation.

1.8 WARRANTY

A. Contractor to provide a warranty regarding tank installation for a period of one year from the date of final acceptance.

B. Tank manufacturer to provide a warranty regarding tank structure, material and installation workmanship for a period of one year from the date of final acceptance.

C. Stainless steel tanks shall be warranted against corrosion for a period of 5 years from the date of final acceptance.

D. Sealant manufacturer to provide a warranty for a period of one (1) year from the date of final acceptance.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Provide bolted steel tanks (some with watertight screened side overflow boxes) with the following design requirements:

1. Nominal Diameter: as shown in the Drawings minus as much as 6 inches, plus as much as 0.05 ft..

3. Number of Panels: Not to exceed 20 panels/tank
4. Specific Gravity of Contents: 1.0 (freshwater)
5. Minimum yield strength of stainless steel plate and shapes shall be 31,000 psi.
6. Earthquake Design:
    a. Seismic Design Category B
    b. Seismic Importance Factor 1.0
7. Allowable Soil Bearing Capacity: 3,000 pounds per square foot
8. Foundation: See structural drawing.
9. Performance:
    a. The tank structural design shall perform with the intended 36" inches +/- of compacted rock aggregate and concrete slab as well as the structural design requirements needed to correctly support the tank both empty and full.
11. Tank Wall Sections: Wall sections shall be type 304 or 316 stainless steel. The Owner's Representative will consider other stainless steel alloy types if the Manufacturer can demonstrate a minimum of 10 years of successful application in tank performance.
12. Panel Stiffeners: Panel stiffeners (if required) will be limited to two (2) intermediate stiffeners of bolted steel construction. Coordinate stiffener locations with plumbing and electrical equipment.
13. Structural Shapes:
    a. Top and bottom rolled structural shapes shall be in accordance with AISC Manual of Steel Construction. Material shall be stainless steel meeting structural service requirements only below grade exterior structural shapes may be hot-dipped galvanized steel.
    b. Foundation anchor bolt selection, interval spacing, and installation shall be the responsibility of the tank manufacturer. Stainless steel anchors will be used.
    c. Tanks will be filled with water for testing prior to aggregate backfilling and shall pass leak test per ACI 350.1-10 due to having concrete floors and concrete drain sumps. The bolted steel walls and their connections to the concrete floor shall have zero visible leakage.
    d. Tank structural anchoring and sealing should reflect appropriate manufacturer's installation for slab installation.
14. All tank assembly, bolting, sealing, use of sealant materials and anchoring shall be per Manufacturer's written instruction.

B. Bolt Fasteners

1. ASTM A490, ASTM A307, ASTM A325.
2. All bolts and fasteners shall be stainless steel.
3. Bolt heads shall be encapsulated up to the shank with black, high impact co-polymer.
4. All exterior exposed bolts, nuts or washers shall be covered with black polypropylene caps.
5. Lengths shall be selected to provide a neat and uniform appearance. Excessive threads extending beyond the nut after torquing will not be accepted.
6. Provide a minimum of four (4) splines on the underside of the bolt head at the shank to resist rotation during torquing.
7. Partially fill caps with sealant and manually push over exterior exposed fastener or use other manufacturers approved method for attachment of caps.
8. Threaded ends above grade shall be capped..

D. Sealants

1. All bolted connections shall incorporate air cured flexible sealant in compliance with AWWA D103, Section 2.10.2. Sealants shall have excellent adhesion to the coating, low shrinkage, and minimum 20-year life to exterior exposure. Sealants shall be provided by the tank manufacturer and must be certified for use in immersion service. Sealants shall be applied in a neat workmanship manner and excess material shall be carefully removed.

E. Tank Finish

1. Stainless steel tank walls shall have a 2B matte finish.

F. Geotextile Fabric: (see also Section 02271)

1. The portion of the stainless steel tank that is below grade shall be covered with geotextile fabric prior to placement of backfill. Fabric shall be placed at ground level and extend past the base of the stainless steel tank, protecting the tank surface from the abrasive backfill.

PART 3 - EXECUTION

3.1 TANK ERECTION

A. Tank erection shall be supervised and performed by a factory authorized field representative of the tank manufacturer with an experienced assembly crew.

B. Field erection of bolted steel tank shall be in strict accordance with the procedures outlined in the manufacturer's erection manual.

C. Particular care shall be exercised in handling and bolting of the tank plates and members to avoid abrasion or scratching of the surface.

D. Prior to liquid test, all surface areas shall be inspected by the Owner’s Representative.

E. The Owner’s Representative and Owner shall retain the right to reject panels with excessive damage.

F. All excess sealants and concrete repair compounds shall be fully cleaned and removed from tank interior surfaces.

G. Selection and application of all sealants, gaskets, and/or grouts required to make the tanks function in their intended application as depicted in the project drawings and this specification will be the responsibility of the tank manufacturer and authorized installer.

3.2 TESTING

A. Prior to placement of Geotextile Fabric and Backfill, the tank shall be filled with water to overflow level to check water tightness. All leaks shall be repaired by the Tank Installer and Contractor in accordance with the manufacturer’s recommendations.

B. Coordinate acquisition of test water and disposal of test water with the Hatchery Manager.

C. Placement of Geotextile Fabric and backfill shall occur only after tank installation approval by the Owner’s Representative.

3.3 CLEANING

A. Wash thoroughly using clean water. Do not use chemicals or harsh abrasives.

END OF SECTION

SECTION 32 31 13
CHAIN LINK FENCE AND GATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Chain link fencing and gates.

B. Related Specification Sections include but are not necessarily limited to:
   1. Section 31 23 00 - Earthwork.

1.2 QUALITY ASSURANCE

A. Referenced Standards:
   1. ASTM International (ASTM):
      a. A153/A153M, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
      b. A392, Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric.
      c. A824, Standard Specification for Metallic-Coated Steel Marcelled Tension Wire for Use with Chain-Link Fence.
      d. F552, Standard Terminology Relating to Chain Link Fencing.
      e. F567, Standard Practice for Installation of Chain-Link Fence.
      f. F626, Standard Specification for Fence Fittings.
      g. F900, Standard Specification for Industrial and Commercial Steel Swing Gates.
      h. F1043, Standard Specification for Strength and Protective Coatings on Steel Industrial Fence Framework.
      i. F1083, Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures.
   2. American Welding Society (AWS).
   3. National Fire Protection Association (NFPA):
      a. NFPA 70, National Electrical Code (NEC).
   4. Underwriters Laboratories, Inc. (UL).

B. Qualifications:
   1. Installer bonded and licensed in the Project state.
   2. Installer shall have a minimum two years experience installing similar fencing.
   3. Utilize only AWS certified welders.
   4. Electric gate operators to be UL listed.
   5. Grounding by an electrician licensed in Project state.

1.3 DEFINITIONS

A. See ASTM F552.

B. NPS: Nominal pipe size, in inches.

C. Installer or Applicator:
   1. Installer or applicator is the person actually installing or applying the product in the field at the Project site.
   2. Installer and applicator are synonymous.

1.4 SUBMITTALS

A. Shop Drawings:
   1. Product technical data including:
      a. Acknowledgement that products submitted meet requirements of standards referenced.
      b. Manufacturer's installation instructions.

2. Scaled plan layout showing spacing of components, accessories, fittings, and post anchorage.
3. Mill certificates.
4. Source quality control test results.
5. Automatic gate system:
    a. Electrical circuitry and control wiring.
    b. Intercom system.
    c. Detector loop layout.
    d. Locking plan.
    e. Method of installation of detector loop.
    f. Sealant material for detector loops.

PART 2 - PRODUCTS

2.1 COMPONENTS

A. Chain Link Fabric:
1. Fabric type:
    a. ASTM A392 zinc-coated steel:
        1) Coated before weaving, 2.0 oz/SQFT.
    b. PVC-coated steel:
        1) ASTM F668, Class 2B.
        2) Galvanized core wire, ASTM A641, Class 3.
2. Wire gage:
    a. Oxygen Pad gage: 6.
    b. Bird Netting gage: 9
3. Mesh size:
    a. Oxygen Pad: 2 inches.
    b. Bird Netting: 1 inch.
4. Selvage treatment:
    a. Top: Twisted and barbed.
    b. Bottom: Knuckled.

B. Concrete:
1. ASTM C150 Type I.
2. 1 inches maximum size aggregate (ASTM C33).
3. Clean water.
4. Minimum 28-day compressive strength of 2500 psi.
5. Not less than four sacks of cement per cubic yard.
6. 3 inches minimum slump.
7. 2 to 4% entrained air.

C. Line Post:
1. ASTM F1083 pipe:
    a. Schedule 40, NPS 2.

D. Corner or Terminal Posts:
1. ASTM F1083 pipe:
    a. Schedule 40, NPS 2-1/2.

E. Brace and Rails:
1. ASTM F1083 pipe:
    a. Schedule 40, NPS 1-1/4.

F. Tension Wire:
1. Top and bottom of fabric:
    a. ASTM A824, galvanized steel, Class 3.

G. Fence Fittings (Post and Line Caps, Rail and Brace Ends, Sleeves-Top Rail, Tie Wires and Clips, Tension and Brace Bands, Tension Bars, Truss Rods):
   1. ASTM F626.

H. Swing Gate:
   1. ASTM F900.
   2. Materials as specified for fence framework and fabric.
   3. Hardware:
      a. Galvanized per ASTM A153/A153M.
      b. Hinges to permit 180 degrees inward gate opening.

2.2 SOURCE QUALITY CONTROL

A. Test related fence construction materials to meet the following standards:
   1. Posts and rails: ASTM F1043, Heavy Industrial.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install in accordance with:
   1. Manufacturer's instructions.
   2. Lines and grades shown on Drawings.
   3. ASTM F567.

B. Do not start fence installation before final grading is complete and finish elevations are established.

C. Drill holes in firm, undisturbed or compacted soil.

D. Place fence with bottom edge of fabric at maximum clearance above grade, as shown on Drawings.
   1. Correct minor irregularities in earth to maintain maximum clearance.

E. Space line posts at equal intervals not exceeding 10 feet on-center.

F. Provide post braces for each gate, corner, pull and terminal post and first adjacent line post.

G. Install tension bars full height of fabric.

H. Rails:
   1. Fit rails with expansion couplings of outside sleeve type.
   2. Rails continuous for outside sleeve type for full length of fence.

I. Provide expansion couplings in top rails at not more than 20 feet intervals.

J. Anchor top rails to main posts with appropriate wrought or malleable fittings.

K. Install bracing assemblies at all end and gate posts, as well as side, corner, and pull posts.
   1. Locate compression members at mid-height of fabric.
   2. Extend diagonal tension members from compression members to bases of posts.
   3. Install so that posts are plumb when under correct tension.

L. Pull fabric taut and secure to posts and rails.
   1. Secure so that fabric remains in tension after pulling force is released.
   2. Secure to posts at not over 15 inches on-center, and to rails at not over 24 inches on-center, and to tension wire at not over 24 inches on-center.
   3. Use U-shaped wire conforming to diameter of pipe to which attached, clasping pipe and fabric firmly with ends twisted at least two full turns.
   4. Bend ends of wire to minimize hazards to persons or clothing.

M. Install post top at each post.

N. Gates:
   1. Construct with fittings or by welding.
   2. Provide rigid, weatherproof joints.
   3. Assure right, non-sagging, non-twisting gate.
   4. Coat welds with rust preventive paint, color to match pipe.

O. Install electric gate operator in accordance with NFPA 70.

END OF SECTION