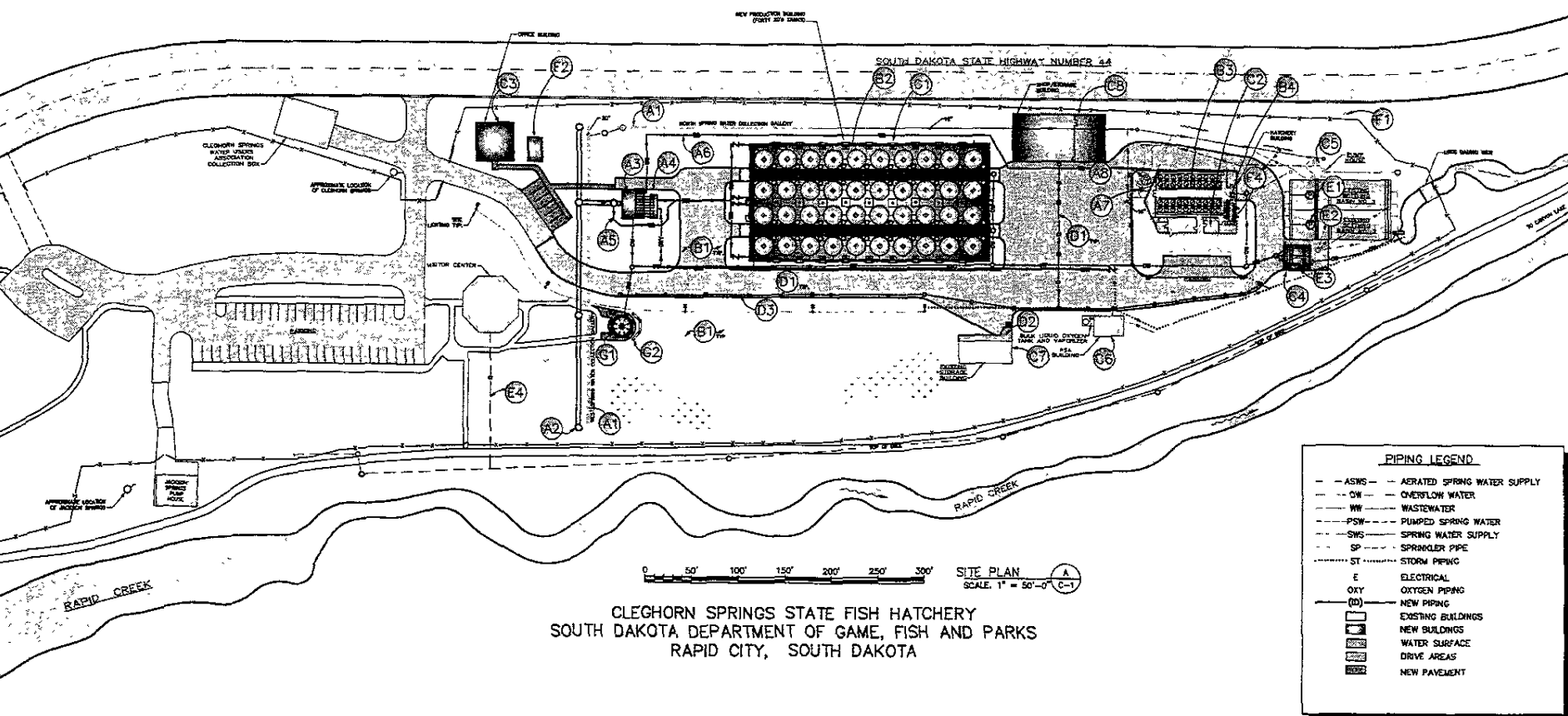


IMPROVEMENTS

- (A) WATER SUPPLY SYSTEM
- (A1) REPLACE EXISTING SPRING WATER COLLECTION GALLERY. REPAIR/REPLACE EXISTING GALLERY TO PROVIDE DEWATERING LOCATION FOR NEW GALLERY CONSTRUCTION.
- (A2) NEW 4.50 GPM SPRING WATER COLLECTION GALLERY SYSTEM. HYDROGEOLOGICAL INVESTIGATION REQUIRED TO ACCESS GALLERY DESIGN RECOMMENDATIONS. DETERMINE FEASIBILITY OF A GROUNDWATER MIGRATION BARriers TO CONTROL GROUNDWATER FLOW.
- (A3) LOW LIFT SPRING WATER PUMPING SYSTEM. 800' (3) 8" DIAMETER PUMPS TO CIRCULAR TANK. BUILDING AERATION/DEGASSING HEADBOX PROPOSED. TWO 2" HD DRYLINE TO GPM PUMPS TO EXISTING AIR HEADBOX PROPOSED OVER PUMP ROOMS (WAS). LIGHTING HOIST WILL BE PROVIDED FOR PUMP AND MOTOR REMOVAL.
- (A4) LOW LIFT HEADBOX WITH OXYGEN-BASED AERATION/DEGASSING COLLING. AERATION/DEGASSING COLLING WILL BE DESIGNED TO PROVIDE NEGATIVE PRESSURE FOR HYDROGEN BUBBLING.
- (A5) SPRING WATER GRAVITY FLOW BYPASS TO CIRCULAR TANK REARING SYSTEM. COMBINATION GRAVITY FLOW AND PUMPED WATER OPERATION WILL BE PROVIDED.
- (A6) PUMPED HATCHERY BUILDING WATER SUPPLY TO RENOVATED HATCHERY BUILDING HEADTANK.
- (A7) EXISTING HATCHERY BUILDING HEADBOX. REPLACE COLLING TO PROVIDE NEGATIVE PRESSURE. SEE HYDROGEOLOGICAL WITH COVERED MANAGEMENT.
- (B) REARING UNITS
- (B1) REMOVE EXISTING PRODUCTION RACK WAYS AND BRIDGE/STOCK RACEWAYS AND ALL RELATED PIPING.
- (B2) TWENTY (20) 12' DIAMETER CIRCULAR REARING TANKS. 40 UNITS PROPOSED PROVIDING 21,440 CUBIC FEET OF REARING VOLUME.
- (B3) RENOVATE HATCHERY BUILDING REARING UNITS. NEW 2" DIAMETER CIRCULAR FIBERGLASS UNITS PROPOSED. 1,531 CUBIC FT. OF REARING VOLUME.
- (B4) RENOVATE BOG INCUBATION AREA. PROVIDE 30 UPWELLING TROUT BOG INCUBATION JARS AND ACCORDIAL BAR SYSTEM WITH 10 JARS. INCUBATION WATER SUPPLY SHALL INCLUDE 1" CIRCULAR WATER AND TWO (2) RECIRCULATING WATER SYSTEMS FOR HATCHERY AND/OR CHILLING AT 20 - 23 GPM EACH 4" DELTA.
- (C) BUILDINGS
- (C1) NEW CIRCULAR TANK READING BUILDING 12'-0" X 12'-0" (3,600 SF). SEE ARCHITECTURE FOR DETAILS.
- (C2) HATCHERY BUILDING RENOVATION. SEE A1 DRAWINGS FOR DETAILS.
- (C3) HATCHERY OFFICE BUILDING REAR DRIVeways.
- (D) INLET MICROSCREEN BUILDING (2' X 50'). SEE ARCHITECTURE FOR DETAILS.
- (D1) RENOVATE EXISTING WATER PUMP STATION.
- (D2) RETAIN EXISTING OXYGEN GENERATION BUILDING FOR STORAGE.
- (D3) MODIFY EXISTING STORAGE BUILDING TO PROVIDE REFRIGERATED FOOD STORAGE AREA WITH UNLOADING DOCK FOR SEMI TRUCK FEED DELIVERY.
- (D4) NEW 100 X 30' SHOP STORAGE BUILDING.
- (D5) SITE.
- (D6) NEW BITUMINOUS ACCESS ROADS. EVALUATE AN UNDERDRAINAGE SYSTEM TO CONTROL SITE GROUNDWATER.
- (D7) ELEVATED LOADING DOCK AND RETAINING WALL FOR FEED DELIVERY SEMI TRUCK USE.
- (D8) NEW STORMWATER DRAINAGE SYSTEM.
- (D9) WASTEWATER.
- (D10) CLARIFIER WALK WALL TO IMPROVE SOLIDS COLLECTION IN EXISTING SOLIDS SETTLING CLARIFIER.
- (D11) CLARIFIER PUMPS FOR SLUDGE REMOVAL. INCLUDE WATER DECENT SYSTEM TO LOWER BASIN WATER FOR SLUDGE REMOVAL.
- (E) DRAIN MICROSCREENS FOR SOLIDS CAPTURE. SCREENS SHALL BE SIZED TO FILTER THE ENTERING FLOW OF THE HATCHERY. SCREEN BACK WASH SOLIDS WILL BE RECOVERED BY CLARIFIERS.
- (E1) DIRECT CONNECT VISITOR CENTER TO CITY SEWER SYSTEM.
- (E2) ELECTRICAL AND HVAC
- (E3) RETAIN EXISTING 3-PHASE ELECTRICAL SERVICE ENTRANCE AT NORTHWEST CORNER OF SITE.
- (E4) NEW ELECTRICAL GENERATOR BUILDING SEE ARCHITECTURE.
- (E5) NEW ELECTRICAL DISTRIBUTION SYSTEM TO BUILDINGS AND ROAD STATION.
- (E6) RENOVATE HVAC SYSTEM TO MEET ILLA REQUIREMENTS.
- (E7) VISITOR INFORMATION AND EDUCATION.
- (E8) NEW COVERED FISH OBSERVATION TANK FOR PUBLIC VIEWING. PROVIDE HANDICAPPED ACCESS TO TANK AND OVERWATER DOCK.
- (E9) NEW COVERED INFORMATION BOOTH WITH HATCHERY PROCESS GRAPHICS AND PICTURES OF FISH REARING OPERATIONS.



CLEGHORN SPRINGS STATE FISH HATCHERY
 SOUTH DAKOTA DEPARTMENT OF GAME, FISH AND PARKS
 RAPID CITY, SOUTH DAKOTA

PIPING LEGEND

---	ASWS	AERATED SPRING WATER SUPPLY
---	OW	OVERFLOW WATER
---	WW	WASTEWATER
---	PSW	PUMPED SPRING WATER
---	SWS	SPRING WATER SUPPLY
---	SP	SPRINKLER PIPE
---	ST	STORM PIPING
E	ELECTRICAL	
OXY	OXYGEN PIPING	
(---)	NEW PIPING	
[]	EXISTING BUILDINGS	
[]	NEW BUILDINGS	
[]	WATER SURFACE	
[]	DRIVE AREAS	
[]	NEW PAVEMENT	

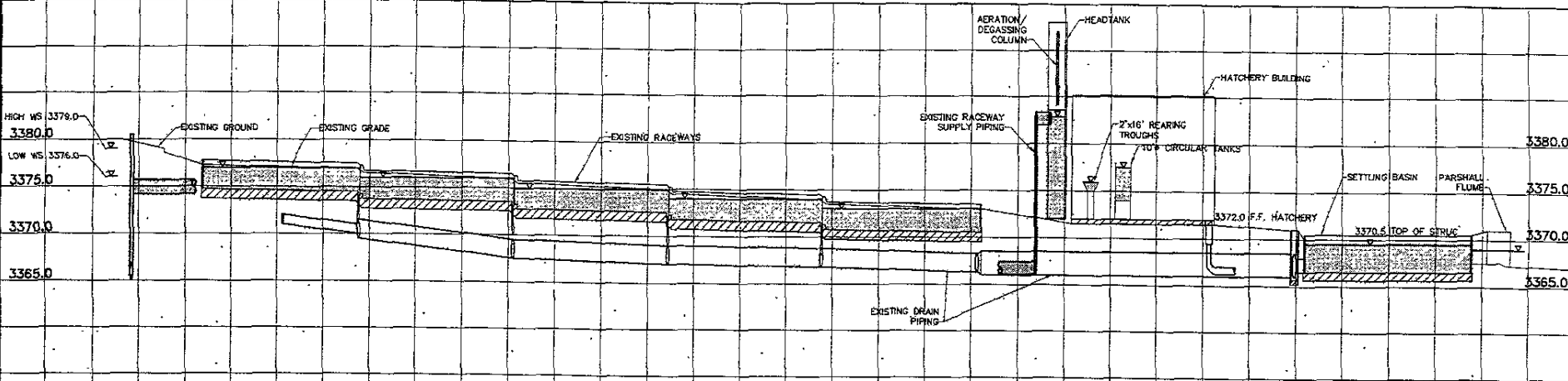
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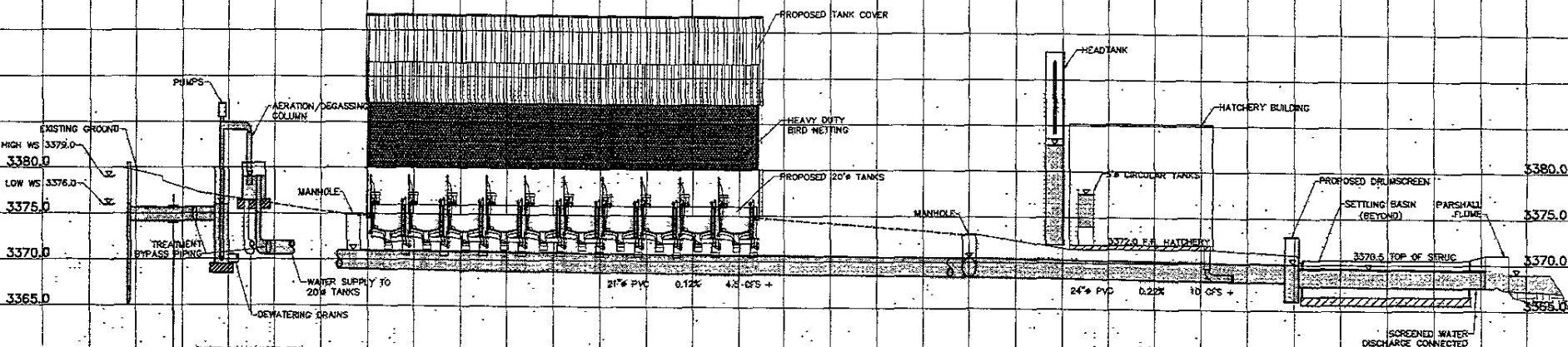


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DRAWING TITLE	IMPROVEMENTS PLAN	FP #	5/17/04
PROJECT	HATCHERY RENOVATION CLEGHORN SPRINGS FISH HATCHERY RAPID CITY, SOUTH DAKOTA	SHEET	C-1
			OF 2 SHEETS



EXISTING HYDRAULIC PROFILE (C-1) (1/81)



PROPOSED HYDRAULIC PROFILE (C-1) (2/81)

SCALE 1" = 30'-0" HORIZ.
1" = 2'-0" VERT.

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DRAWING TITLE: **HYDRAULIC PROFILES**
 PROJECT: **HATCHERY RENOVATION
 CLEGHORN SPRINGS FISH HATCHERY
 RAPID CITY, SOUTH DAKOTA**

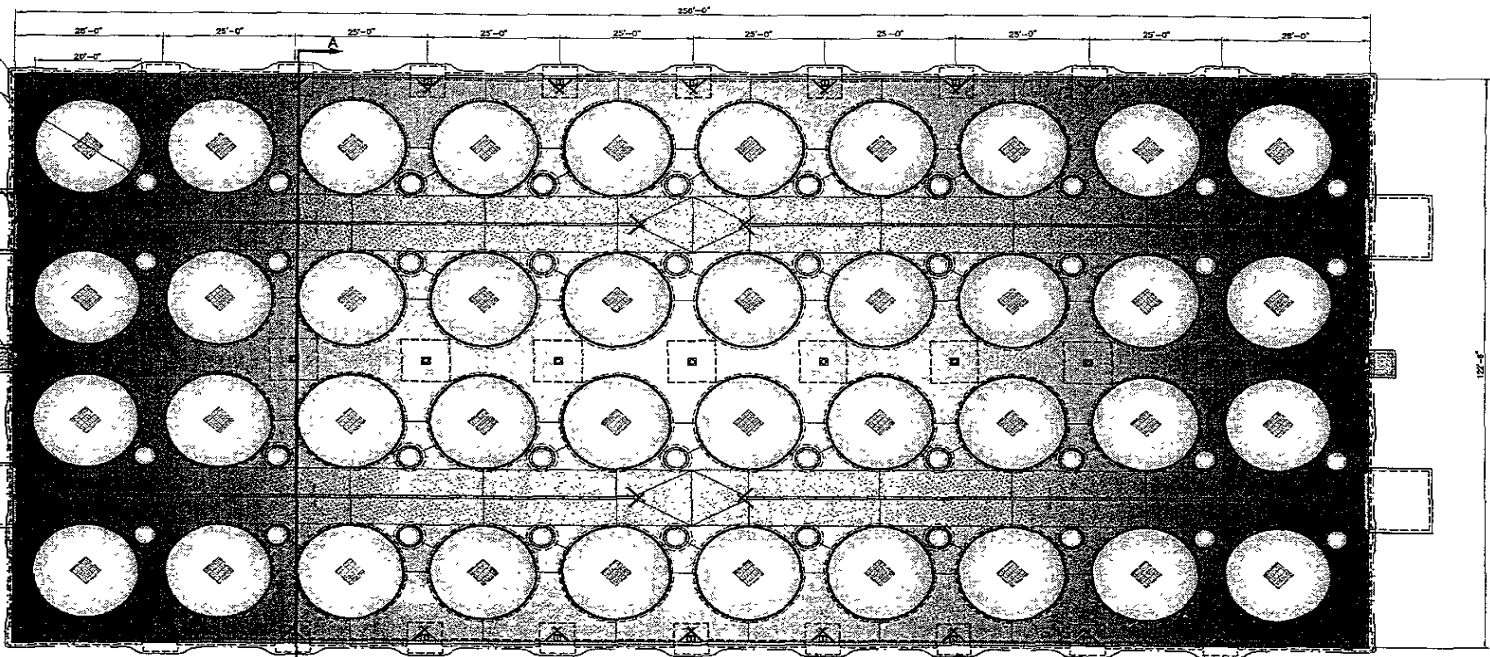
FP # 6/17/04
 SHEET C-2
 OF - SHEETS

PREPARE METAL
FRAME AND ROOF
ON SLAB WITH
HETTING AND
INSULATION OPTION
(SEE SHEETS B-2.1
AND B-2.2
FOR SECTIONS
AND ELEVATIONS)

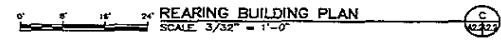
20' REARING TANK
WITH 4" STILLING BASIN TYP.

12' X 12' OVERHEAD DOOR TYP.

36" MANDOOR TYP.




A (SEE SHEETS B-2.2 AND B-2.3 FOR SECTION VIEWS)



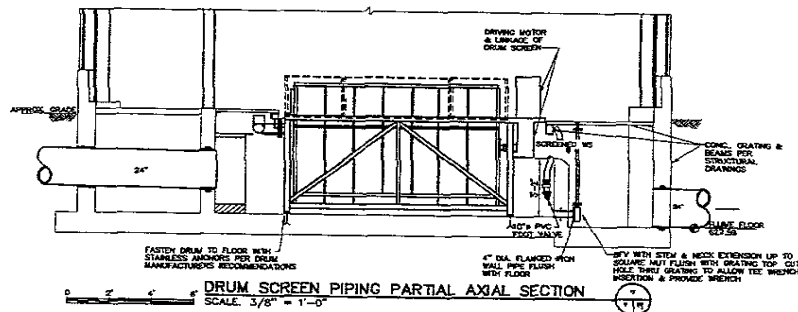
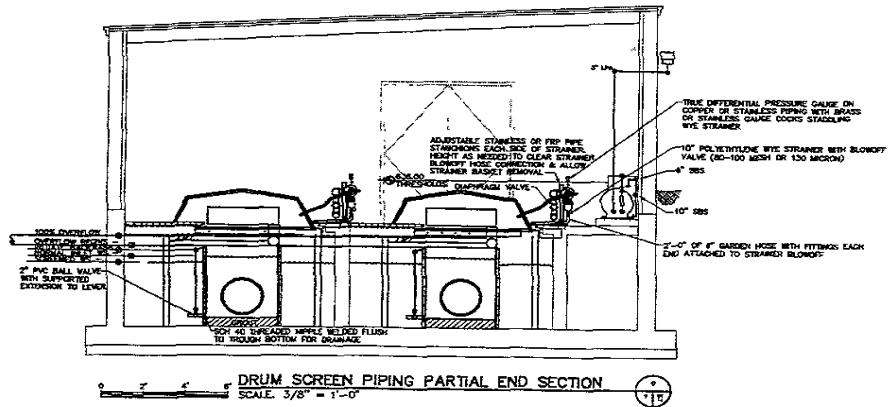
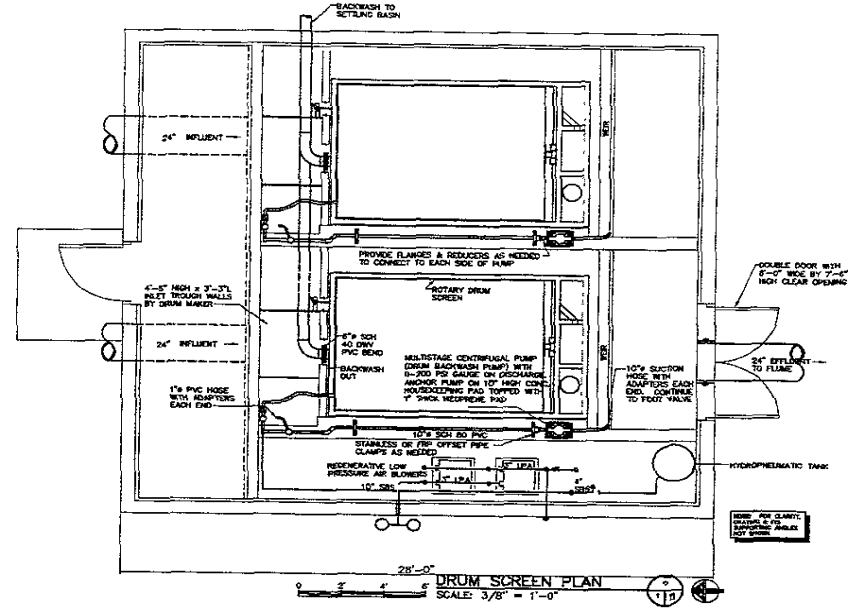
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DRAWING TITLE:	REARING BUILDING PLAN	FP #	5/17/04
PROJECT:	HATCHERY RENOVATION CLEGHORN SPRINGS FISH HATCHERY RAPID CITY, SOUTH DAKOTA	SHEET:	A-21
		OF - SHEETS	



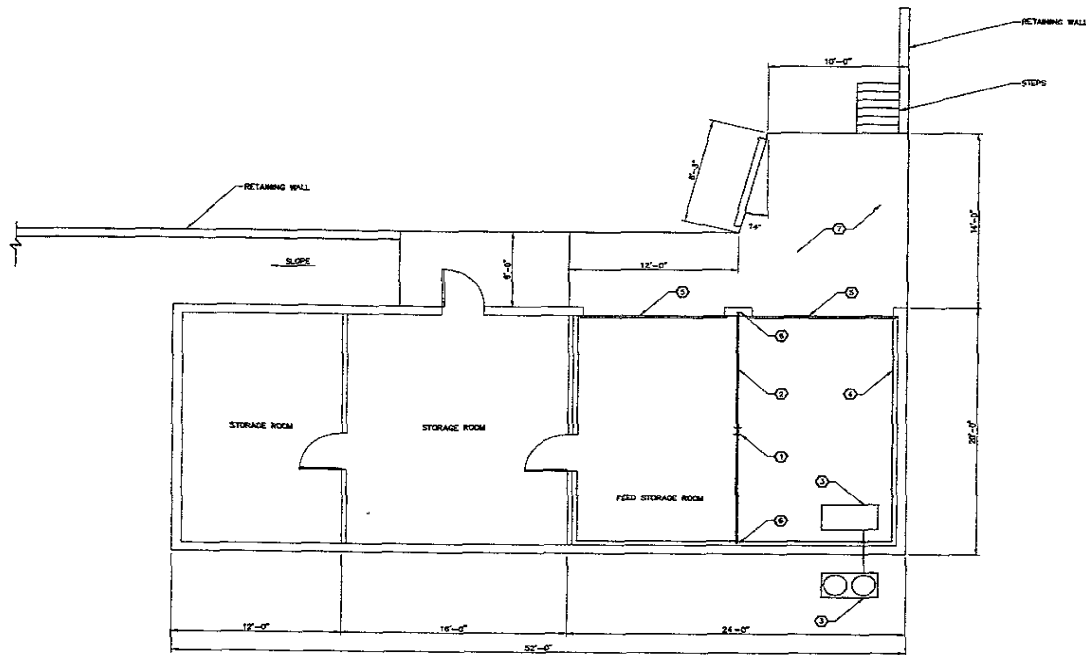
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DRAWING TITLE	DRUMSCREEN BUILDING	SP #	6/17/04
PROJECT	HATCHERY RENOVATION CLEGHORN SPRINGS FISH HATCHERY RAPID CITY, SOUTH DAKOTA	SHEET	A-4.1



KEYED NOTES

- ① REMOVE STEEL COLUMN
- ② MODIFY OR REPLACE EXISTING STEEL BEAM
- ③ PROVIDE SUSPENDED COMMERCIAL HIGH TEMP. REFRIGERATION UNIT (SRT) & CONDENSING UNIT
- ④ PROVIDE INDUSTRIAL GRADE FINISHED WALL & ROOF PANELS WITH RIGID INSULATION
- ⑤ REPLACE OVERHEAD DOORS
- ⑥ MODIFY EXISTING FOUNDATION AND BEAM BEARINGS
- ⑦ CONSTRUCT DOCK FOR FEED PALLET UNLOADING

0' 4' 8' 12' **FEED STORAGE BUILDING PLAN**
SCALE: 1/4" = 1'-0"



NOTE: DRAWINGS WERE GENERATED FOR GRAPHICAL PRESENTATION PURPOSES ONLY. DRAWINGS SHOULD NOT BE USED FOR SCALED ENGINEERING DESIGN.

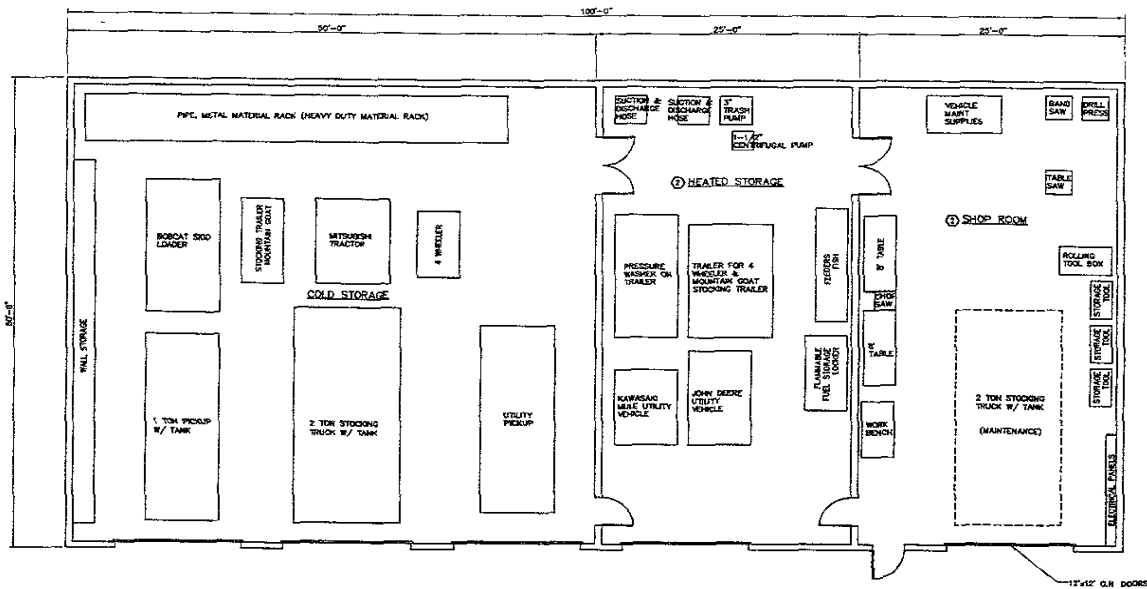
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DRAWING TITLE: **FEED STORAGE BUILDING PLAN**
PROJECT: **HATCHERY RENOVATION
CLEGHORN SPRINGS FISH HATCHERY
RAPID CITY, SOUTH DAKOTA**

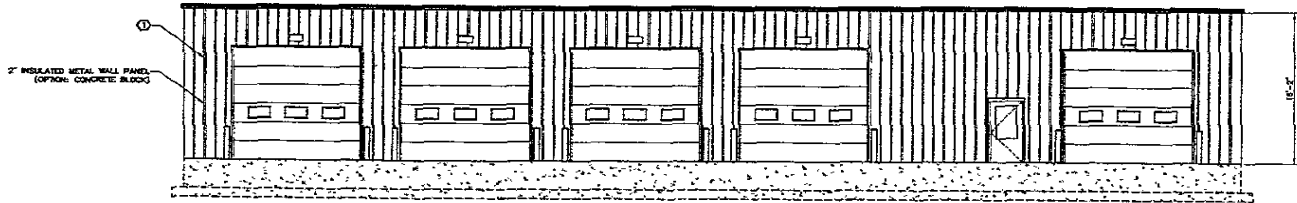
SP # 6/17/04
SHEET A5.1
OF SHEETS



KEYED NOTES

- ① PREHEATED METAL BUILDING
- ② PROVIDE SUSPENDED UNIT GAS HEATERS IN SHOP & HEATED STORAGE.

0' 4' 8' 12' STORAGE/SHOP BUILDING PLAN
SCALE: 3/16" = 1'-0"



0' 4' 8' 12' NORTH ELEVATION
SCALE: 3/16" = 1'-0"



NOTE DRAWINGS WERE GENERATED FOR GRAPHICAL PRESENTATION PURPOSES ONLY. DRAWINGS SHOULD NOT BE USED FOR SCALED ENGINEERING DESIGN.

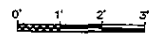
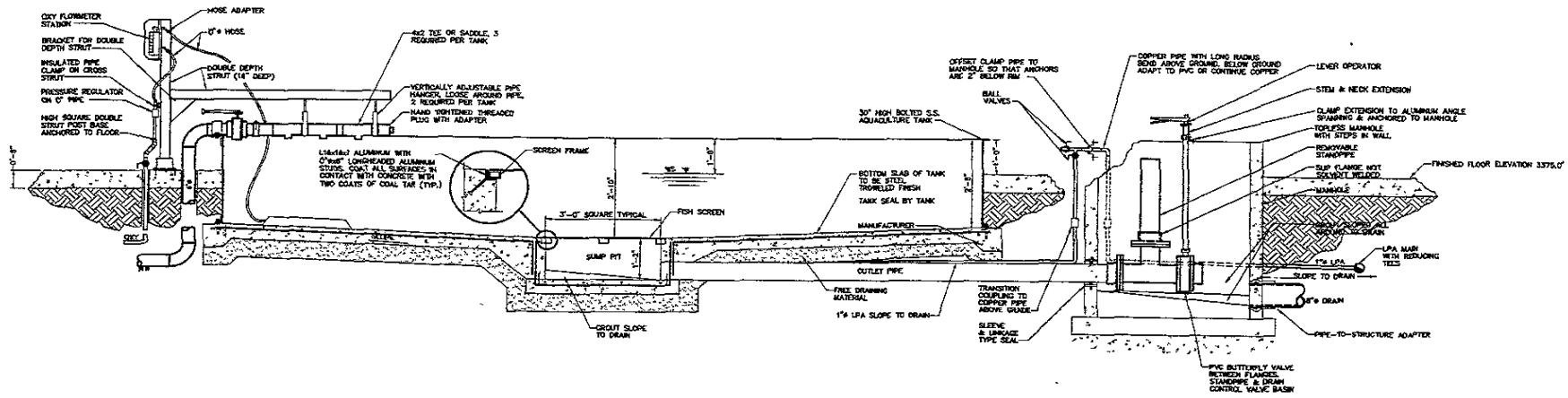
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DRAWING TITLE: SHOP/STORAGE BUILDING PLAN & ELEVATION
 PROJECT: HATCHERY RENOVATION
 CLEGHORN SPRINGS FISH HATCHERY
 RAPID CITY, SOUTH DAKOTA

FP #	6/17/04
SHEET	AS.1
OF - SHEETS	



FEED STORAGE BUILDING PLAN
SCALE: 1/2" = 1'-0"



NOTE: DRAWINGS WERE GENERATED FOR GRAPHICAL PRESENTATION PURPOSES ONLY. DRAWINGS SHOULD NOT BE USED FOR SCALED ENGINEERING DESIGN.

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DRAWING TITLE: 20 - FOOT DIAMETER REARING TANK
 PROJECT: HATCHERY RENOVATION
 CLEGHORN SPRINGS FISH HATCHERY
 RAPID CITY, SOUTH DAKOTA

FP # 6/17/04
 SHEET P2.1