TABLE OF CONTENTS

ENGINEERING JOB CLASS III

LICENSED PROFESSIONAL ENGINEER
JUSTIN D. SPRAGUE
23486
IOWA

To the best of my professional knowledge, judgement and belief, this design, construction drawings, and specifications meet applicable NRCS Standards and Specifications.
TSP-14-9932
ProAg Engineering, LLC

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Date 6.30.23

Justin D. Sprague, P.E.
23486
My license renewal date is December 31, 2023

Pages or sheets covered by this seal:
SHEET 1-9

CLIENT REVIEW (to be signed at Preconstruction Meeting):
I have reviewed and approve the design and construction drawings.

Date

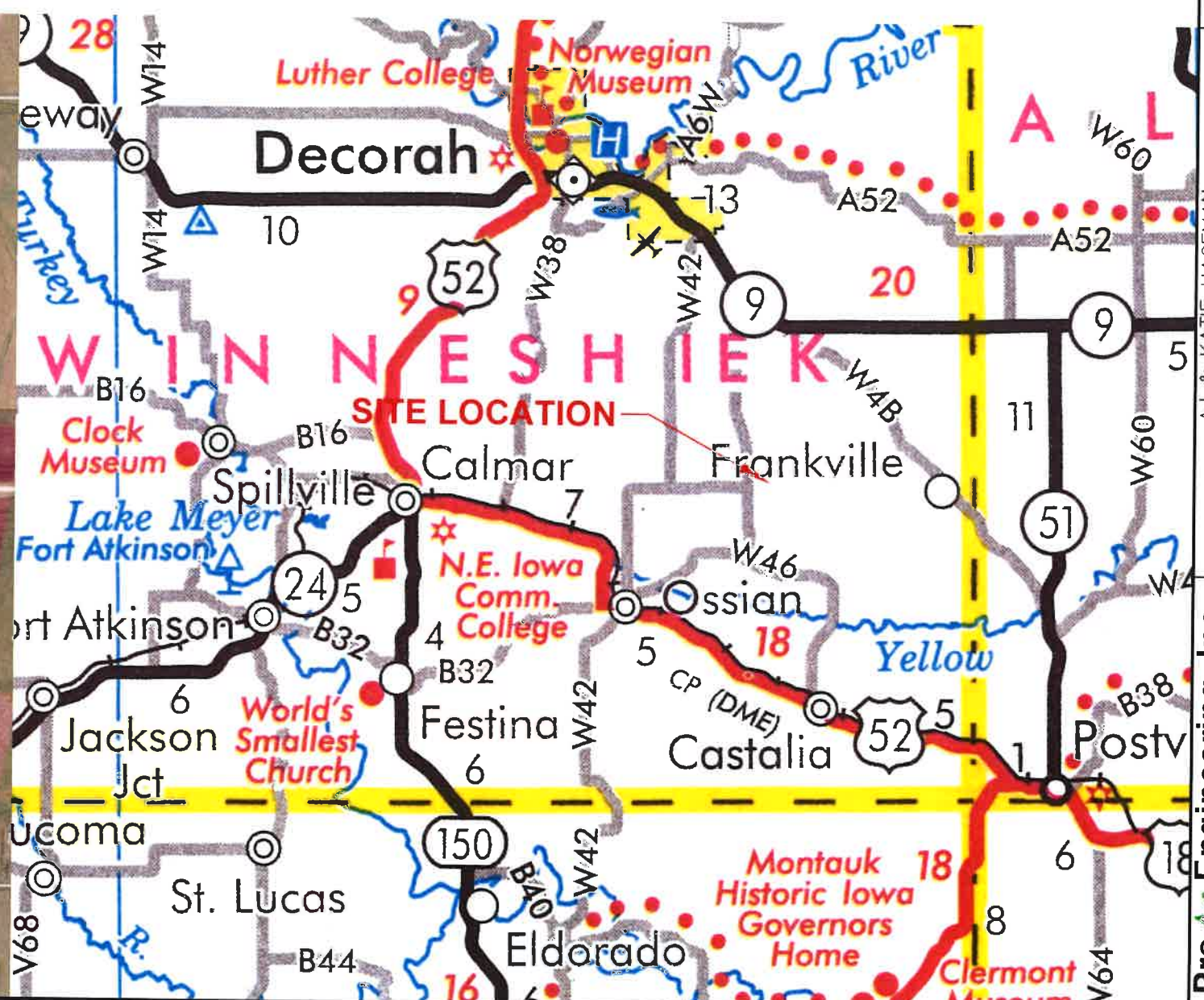
ISSUED FOR BID
NOT FOR CONSTRUCTION

SHEET 1/9

Project No.	22-058
Checked By	JDS
Date 6/15/23	Drawn TMW

AJ & KATIE HAGEMAN
PROPOSED CATTLE CONFINEMENT BARN
SE 1/4, SECTION 29, T-97-N, R-07-W
WINNESHIEK COUNTY, IOWA

ProAg Engineering, Inc.
77402 U.S. Highway 71, P.O. Box 181
Jackson, MN 56143
(507) 849-7200



GRAPHIC SCALE

100 0 50 100

(IN FEET)

1 inch = 100 ft.

MAGNETIC

*****PROPOSED NRCS EQIP QUANTITIES 5/31/23*****

1.) 367 - ROOF & COVERS, ROOF STRUCTURE, >60' = 7,600 SF (76' x 100' ROOF OVER BEDDED PACK AREA)
2.) 313 - WASTE STORAGE FACILITY, BEDDED PACK, CONCRETE = 7,600 SF (76' x 100' BEDDED PACK AREA)
3.) 313 - WASTE STORAGE FACILITY, CONCRETE TANK = 40,320 CF (84' x 40' x 12' PIT VOLUME)
4.) 561 - HEAVY USE AREA PROTECTION, CONCRETE = 3,700 SF (20' x 185' DROVERS ALLEY)
5.) 558 - ROOF RUNOFF STRUCTURE, ROCK TRENCH = 100 LF (ROOF RUNOFF CONTROL)
6.) 606 - SUBSURFACE DRAIN, 6"Ø = 100 LF (ROOF RUNOFF CONTROL)
7.) 620 - UNDERGROUND OUTLET, 6"Ø = 850 LF (ROOF RUNOFF OUTLET)
8.) 606 - SUBSURFACE DRAIN, 4"Ø = 264 LF (PIT PERIMETER TILE)
9.) 620 - UNDERGROUND OUTLET, 4"Ø = 890 LF (PERIMETER TILE OUTLET)
10.) 500 - OBSTRUCTION REMOVAL, CONCRETE SLAB = 10,500 SF (SLAB LOCATED ON PROPOSED BARN SITE)

ELEVATIONS ARE FROM AVAILABLE LIDAR DATA AND ARE BASED ON NAVD88 DATUM. GPS SURVEY SHOTS ON SITE VERIFIED ELEVATIONS. BENCHMARK IS THE TOP OF CAP OF EXISTING WELL, ELEVATION 1265.98

CONTRACTOR IS RESPONSIBLE FOR CALLING IOWA ONE CALL 1-800-292-8989 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.

THIS IS AN NRCS EQIP FUNDED PROJECT. OWNER AND CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO ANY WORK TO ENSURE CONSTRUCTION COMPLAINCE WITH EQIP REQUIREMENTS. FAILURE TO NOTIFY ENGINEER MAY RESULT IN LOSS OF EQIP FUNDS.

****IF ANY CULTURAL RESOURCE OR EVIDENCE THEREOF IS IDENTIFIED ON SITE DURING CONSTRUCTION, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND THE OWNER WILL NOTIFY THE NRCS ARCHEOLOGIST.****

*****ISSUED FOR BID*****
NOT FOR CONSTRUCTION

PROPOSED 900 L.F. 6" Ø OUTLET TILE TO CONNECT TO EXISTING TILE OR DAYLIGHT ABOVE GROUND. LOCATE OUTLET PRIOR TO CONSTRUCTION

PROPOSED 890 L.F. 4" Ø OUTLET TILE TO CONNECT TO EXISTING TILE OR DAYLIGHT ABOVE GROUND. LOCAT OUTLET PRIOR TO CONSTRUCTION

PRECAST CONCRETE BLOCKS TO BE REMOVED BY OWNER

EXISTING MANURE STORAGE AREA TO BE REMOVED BY OWNER

PROPOSED CONFINEMENT BARN (76' x 185') w/ 12' DEEP CONCRETE PIT (84' x 40') BELOW SLATTED BARN FLOOR AND A BEDDED PACK AREA (100' x 76'), BARN FLOOR ELEVATION 1261.0, BOTTOM OF PIT ELEVATION 1249.0

PROPOSED 100 L.F. ROCK TRENCH WITH 6"Ø DRAIN TILE SLOPED @ 1.0% TO WEST. CONNECT TO UNDERGROUND OULET

PROPOSED HIGH POINT 4" Ø PERIMETER DRAIN TILE PLACED AROUND THE PIT FOOTING, SLOPE TILE @ 0.1% TO NE CORNER OF PIT

PROPOSED 20' UNCOVERED REINFORCED CONCRETE ALLEY

EXISTING WATERER

EXISTING POWER POLE

233' TO NEAREST WELL

306' TO ROW

100'

BENCHMARK IS THE TOP OF CAP OF EXISTING WELL, ELEV. 1265.98

2552' TO NEAREST RESIDENCE

1570' TO NEAREST WATER SOURCE

ASSUMED ROW

ASSUMED SOUTH LINE OF SECTION 29, T-97-N, R-07-W WINNESHIEK COUNTY, IOWA

170TH STREET

PROPOSED DIRT QUANTITIES 6/15/23
CUT = 1,111 CUBIC YARDS
FILL = 4,779 CUBIC YARDS
NET = 3,668 CUBIC YARDS
(INCLUDES 35% SHRINK)

1235 1240 1245 1250 1255 1260

SHEET 2/9

Project No.	22-058
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Date	6/15/23
Drawn	TMW

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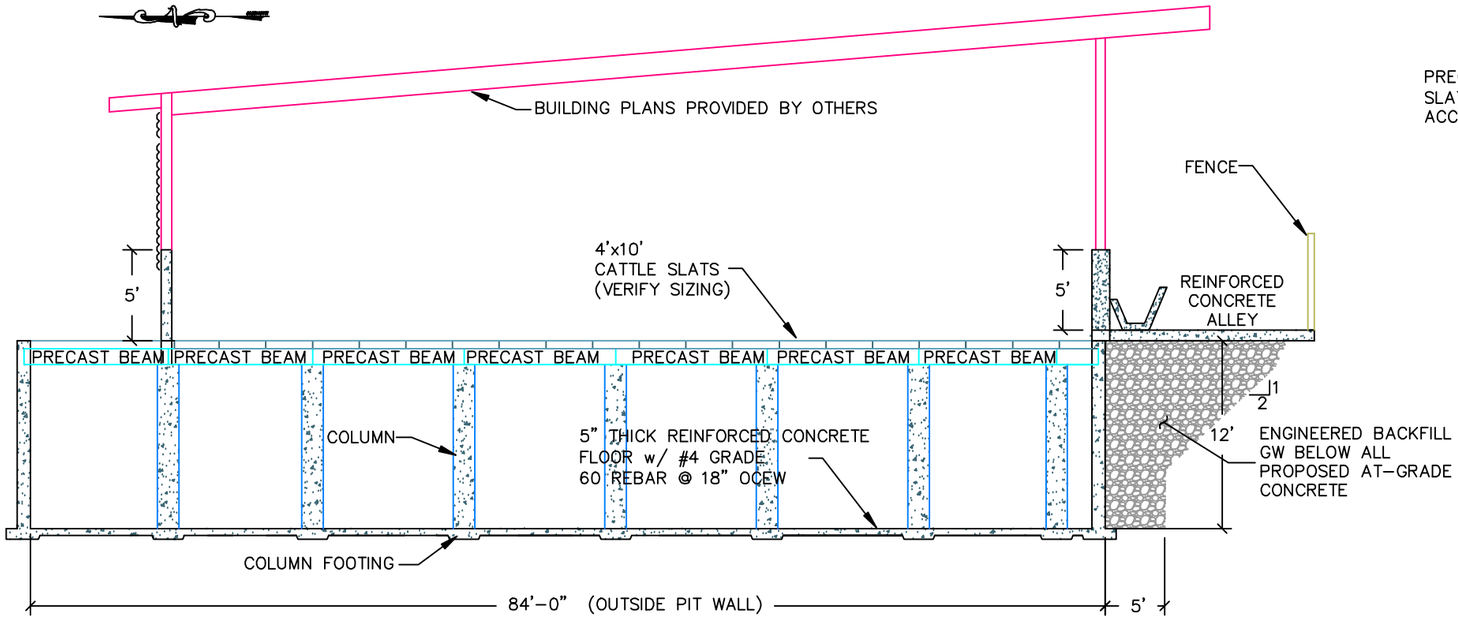
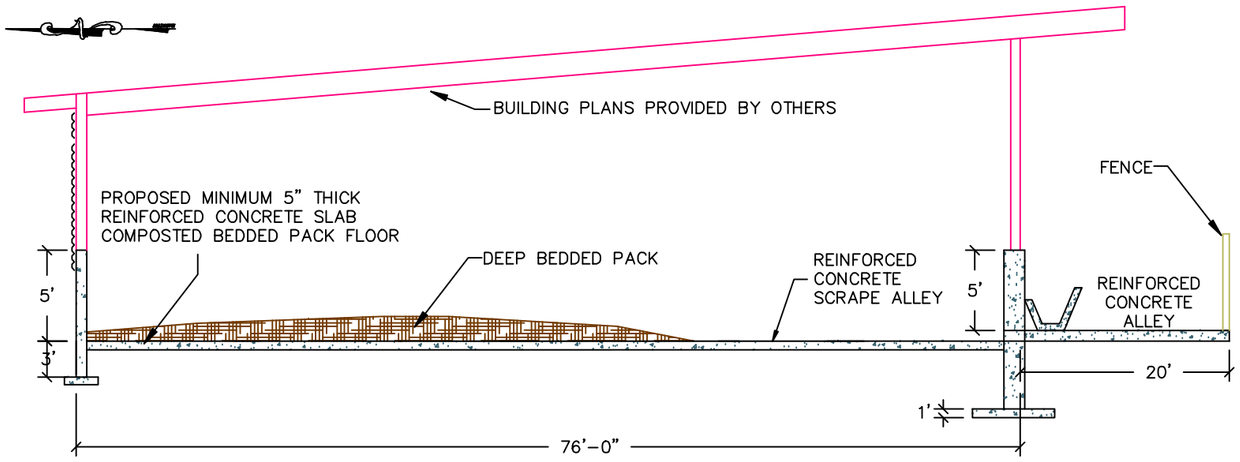
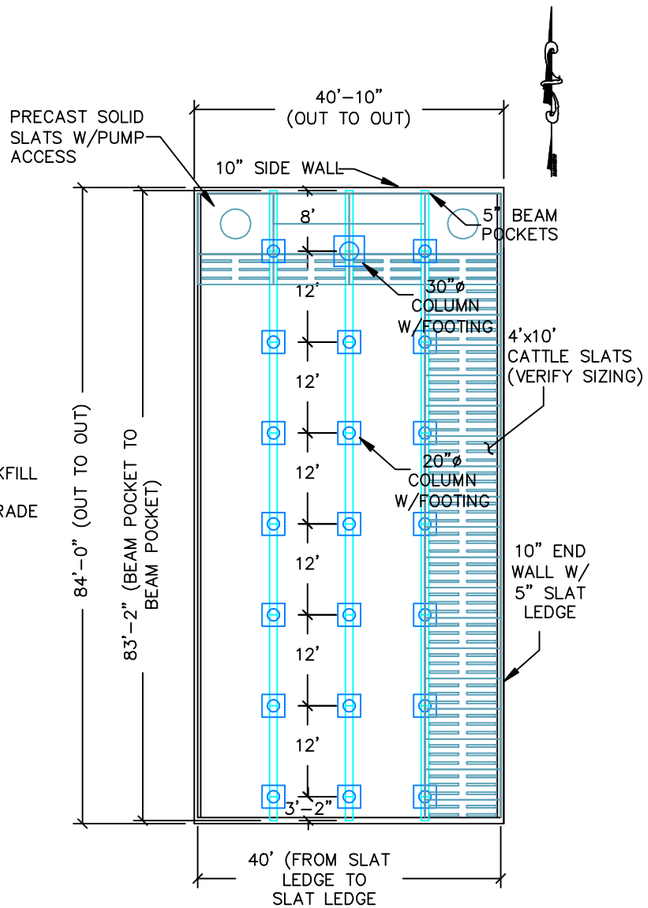


PIT CROSS SECTION (A-A)
(NOT TO SCALE)



BED PACK CROSS SECTION (B-B)
(NOT TO SCALE)



PIT PLAN
(OUTSIDE DIMENSIONS
76'-0"x 40'-10"x 12' PIT)
(NOT TO SCALE)

*****ISSUED FOR BID*****
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SHEET	3/9
Project No.	22-058
Checked By	JDS
Date	6/15/23
Drawn	TJA

AJ & KATIE HAGEMAN
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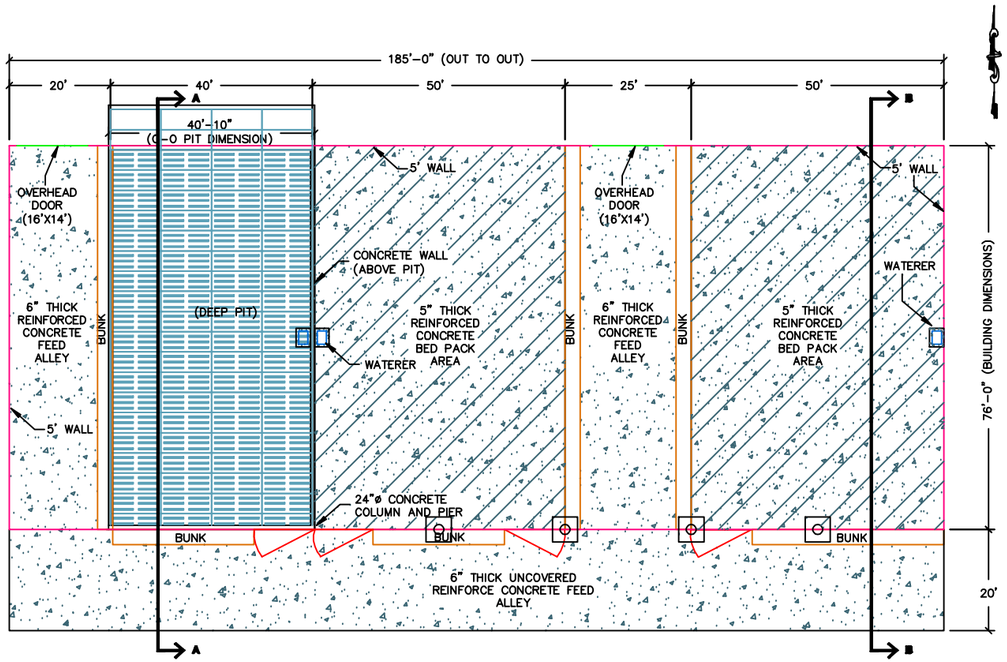
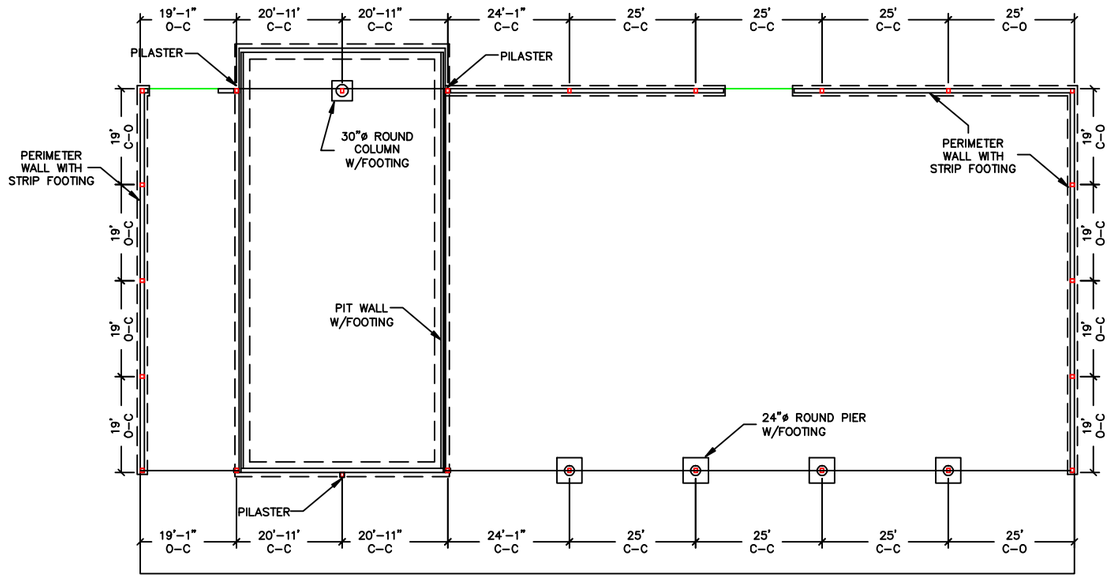


FLOOR PLAN
(OUTSIDE DIMENSIONS 76'-0" x 185'-0")
(NOT TO SCALE)



*****NOTE*****
ANCHOR PLATE LOCATIONS HIGHLIGHTED IN RED
ALL TOP OF WALL ELEVATIONS 105'-0"
CONFIRM ALL ANCHOR LOCATIONS AND BASE PLATE SIZES WITH STRUCTURAL PLANS

ANCHOR PLAN
(NOT TO SCALE)

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Date	6/15/23	Checked By	JDS	Project No.	22-058	SHEET 4/9
Drawn	TMW					

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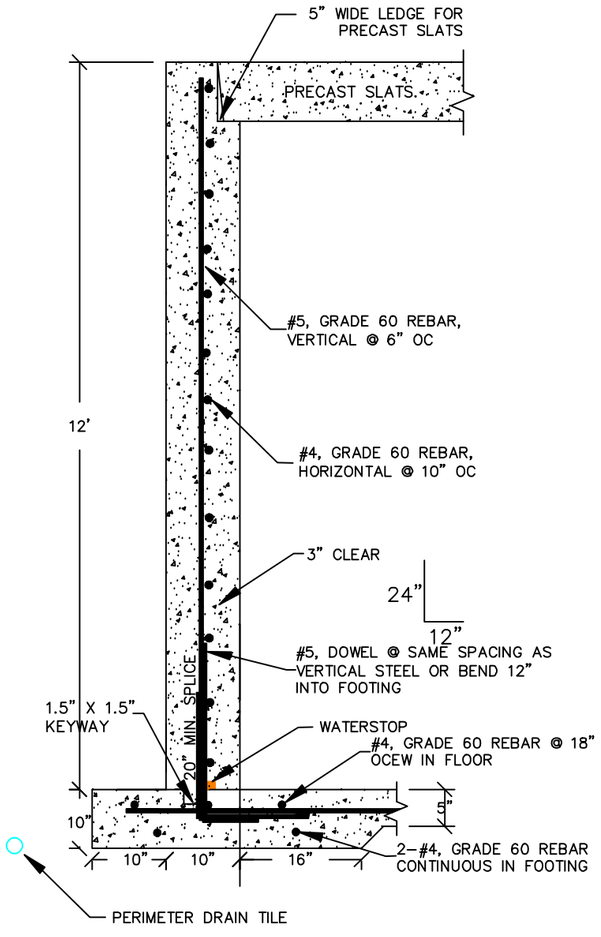
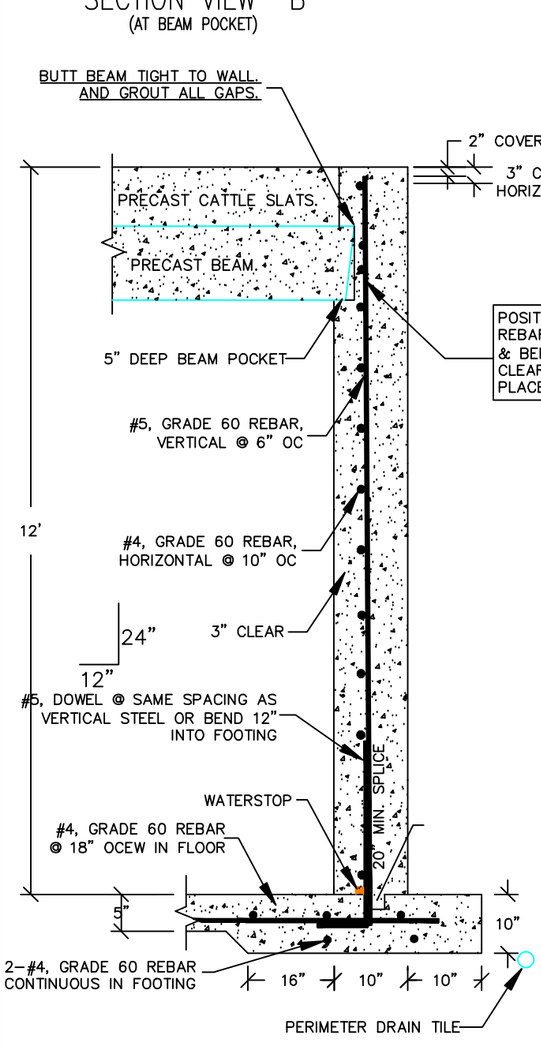
***IMPORTANT NOTE - PRECAST DIMENSIONS CHANGE BETWEEN SUPPLIERS. PRECAST DIMENSIONS MUST BE VERIFIED WITH THE OWNER PRIOR TO CONSTRUCTION.**

SIDE WALL
(NOT TO SCALE)

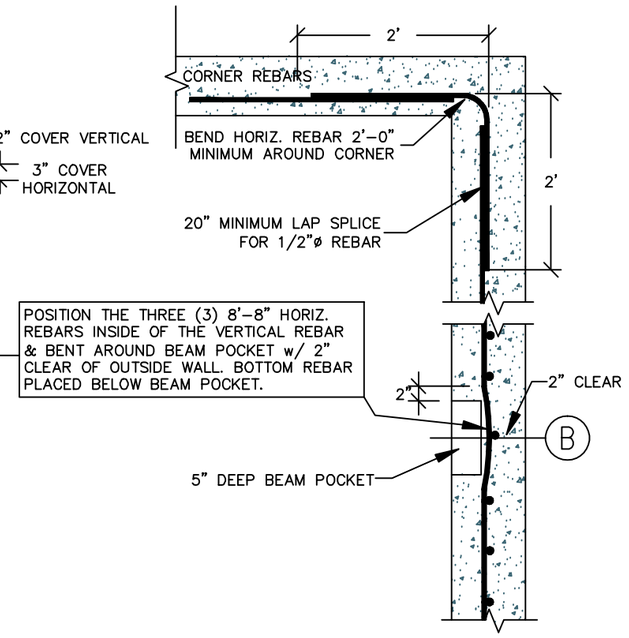


END WALL BRACING & BEAM POCKET
(NOT TO SCALE)

SECTION VIEW B
(AT BEAM POCKET)



TOP VIEW



SLAT LEDGES & STEM WALL CONCRETE NOTES

1.) ANY SLAB ON GRADE WHICH WILL HAVE A VERTICAL WALL ON TOP SHALL HAVE A KEYWAY AND WATERSTOP AT SLAB/WALL INTERFACE.

2.) WATERSTOP TO BE BENTONITE ROLL OR RIBBED PVC @ CONTRACTOR'S OPTION.

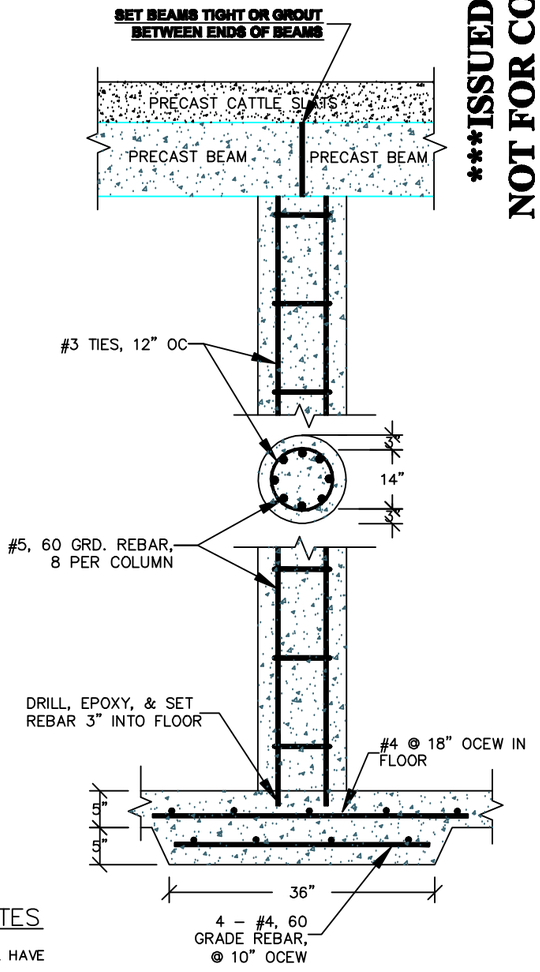
3.) SLAT LEDGES MUST BE 5" WIDE x 6 1/2" HIGH.

4.) 10" OUTSIDE WALLS: THE 5" WIDE x 6 1/2" LEDGE ON INSIDE SIDE OF 10" WALL MUST BE FORMED AND POURED WITH WALL.

DO NOT POUR WALL AND SET SLATS ON TOP. THE 6 1/2" HIGH STEM IS NEEDED FOR SLATS BRACING THE TOP OF WALL

5.) A CONSTRUCTION JOINT IS PERMITTED BETWEEN THE PIT WALL AND STEM WALL, BUT THE CONSTRUCTION JOINT MUST BE EQUAL OR HIGHER THAN THE TOP OF THE PRE-CAST SLATS.

COLUMN DETAIL
(NOT TO SCALE)



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SHEET 5/9	
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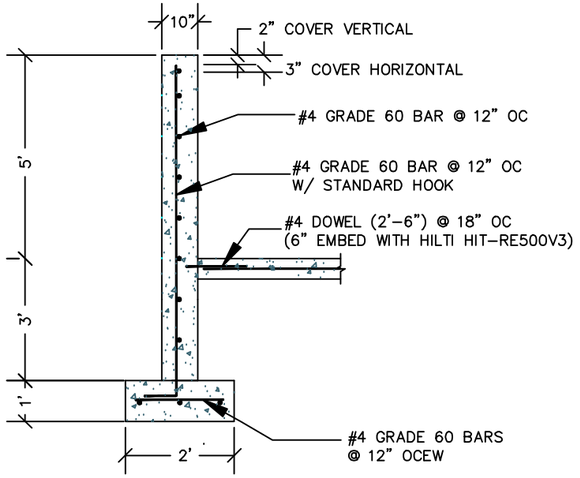
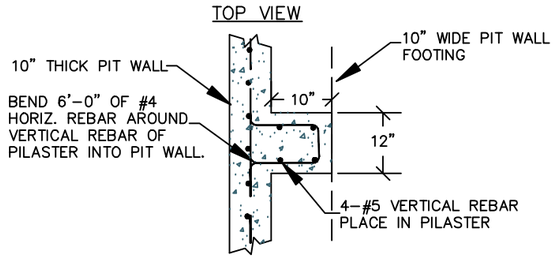
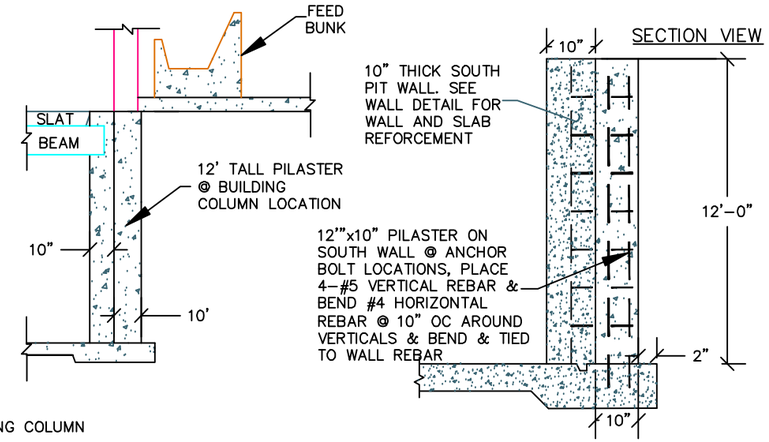


PERIMETER WALL
(NOT TO SCALE)

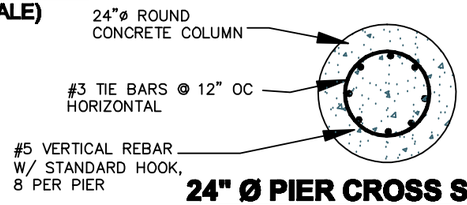
"NOTE"- SEE BUILDING PLANS FOR ANCHOR BOLT PLACEMENT/PILASTER LOCATIONS



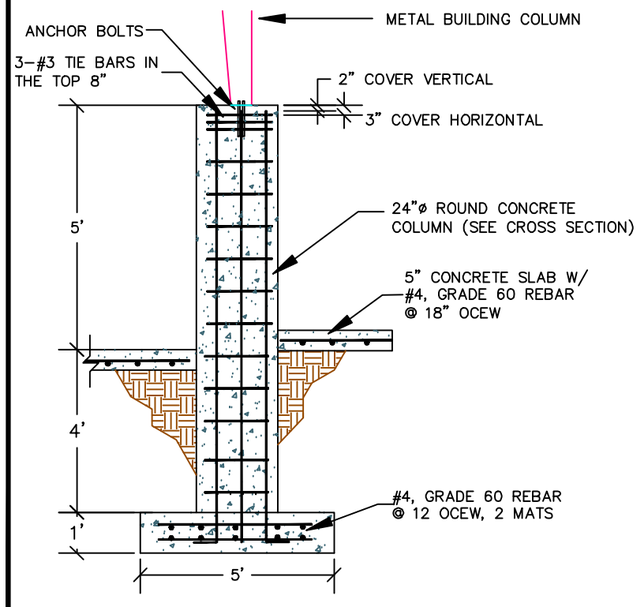
PILASTER DETAIL
(NOT TO SCALE)



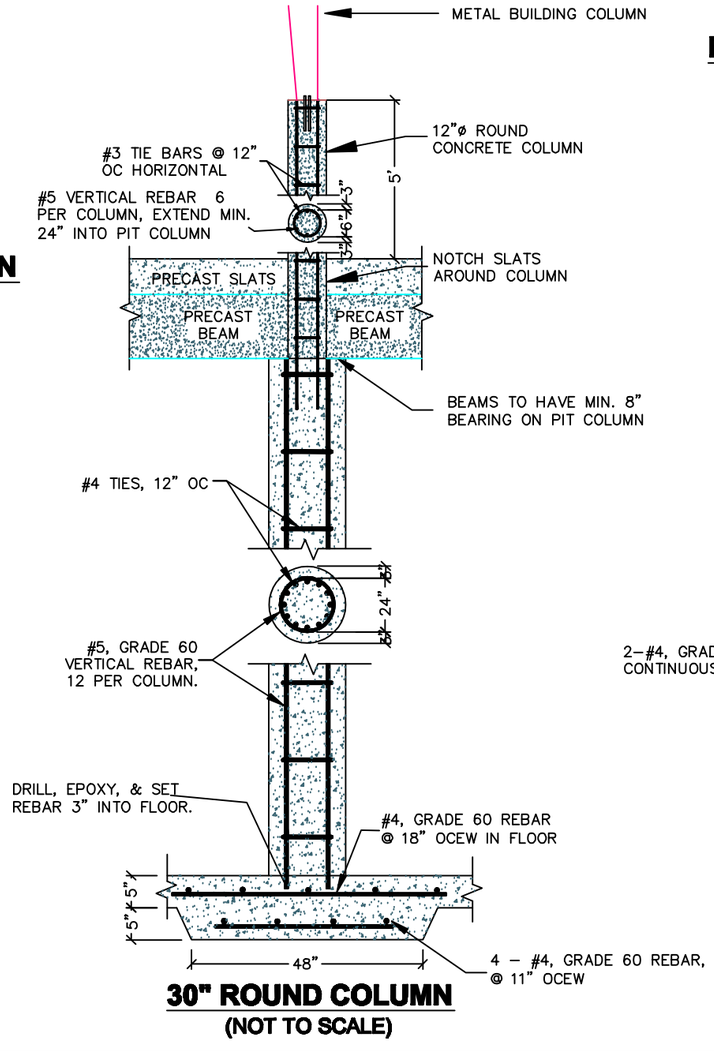
PILASTER & PIER DETAIL
(NOT TO SCALE)



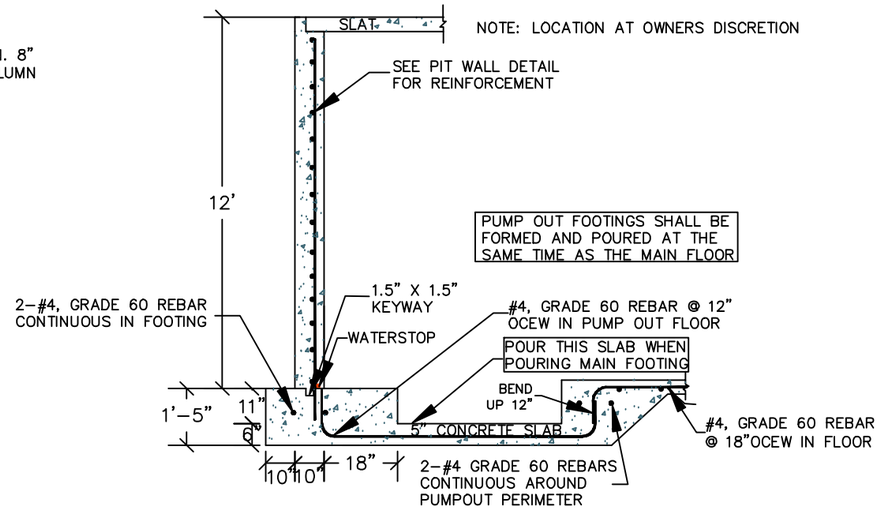
24" Ø PIER CROSS SECTION
(NOT TO SCALE)



PIER CROSS SECTION
(24"Ø COLUMN)
(NOT TO SCALE)



30" ROUND COLUMN
(NOT TO SCALE)



PUMP OUT SECTION
(NOT TO SCALE)

*****ISSUED FOR BID*****
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SHEET	6/9
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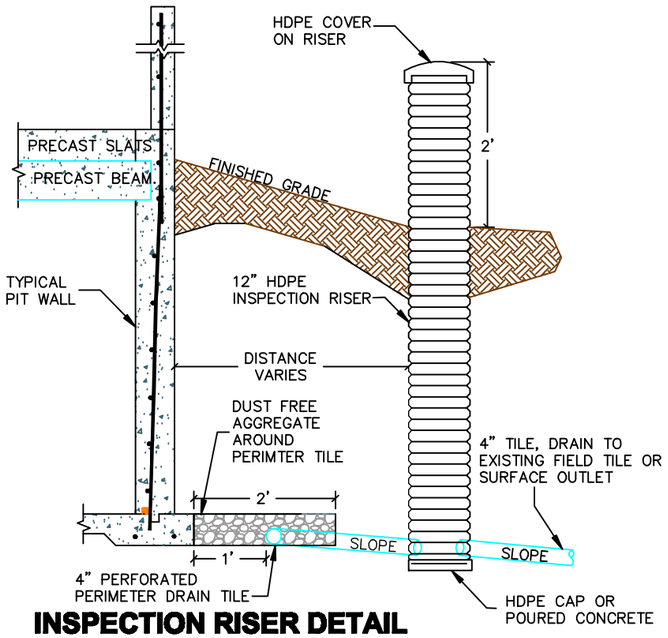
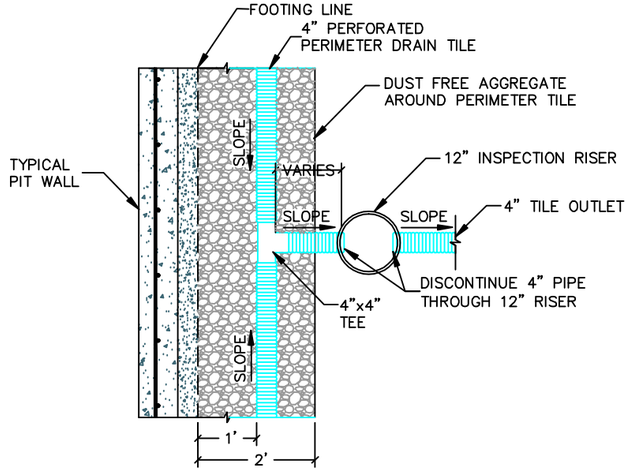
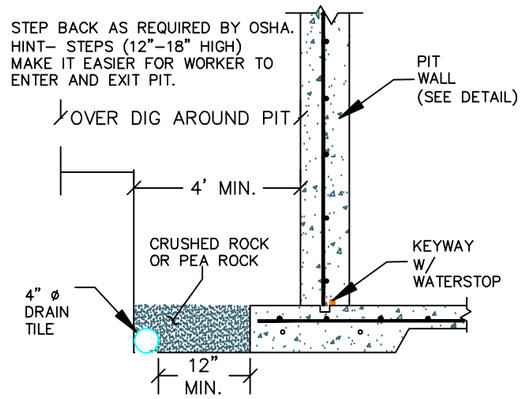


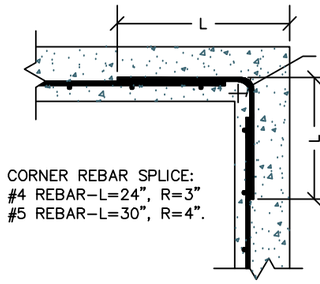
INSPECTION RISER DETAIL
SECTION VIEW
(NOT TO SCALE)



INSPECTION RISER DETAIL
PLAN VIEW
(NOT TO SCALE)

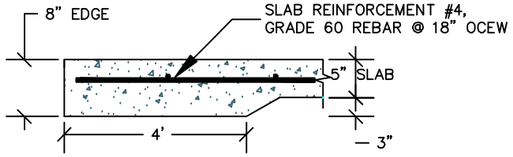


PERIMETER TILE
(NOT TO SCALE)
PERIMETER TILE WITH PEA ROCK COVER INSTALLED BY CONCRETE CONTRACTOR BEFORE POURING FLOOR SLAB.

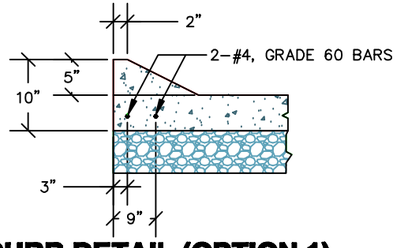


CORNER REBAR
(NOT TO SCALE)

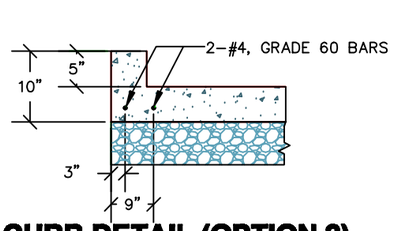
*****ISSUED FOR BID*****
NOT FOR CONSTRUCTION



THICKENED EDGE CONCRETE FLATWORK
(NOT TO SCALE)



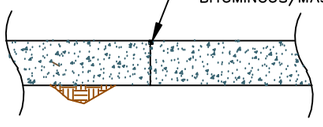
CURB DETAIL (OPTION 1)
(NOT TO SCALE)



CURB DETAIL (OPTION 2)
(NOT TO SCALE)

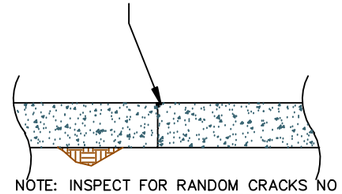
NOTE
IF CURB IS POURED IN A SEPARATE POUR FROM FLATWORK, THEN STUB BARS ARE TO BE PLACED @ 18" OC

CONSTRUCTION JOINTS



CONTRACTION JOINT DETAIL (SLAB)
(NOT TO SCALE)

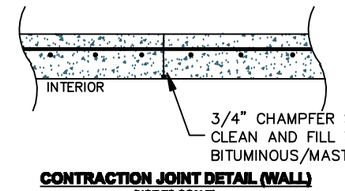
ROUTER OUT CRACK WITH "CRACK CHASER" CONCRETE SAW. BLOW OUT CRACK WITH COMPRESSED AIR. FILL WITH BITUMINOUS SEALANT.



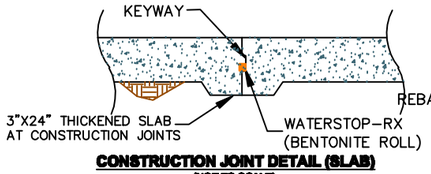
NOTE: INSPECT FOR RANDOM CRACKS NO EARLIER THAN 28 DAYS AFTER FLOOR CONSTRUCTION

RANDOM CRACK REPAIR FOR CONCRETE PIT FLOOR
(NOT TO SCALE)

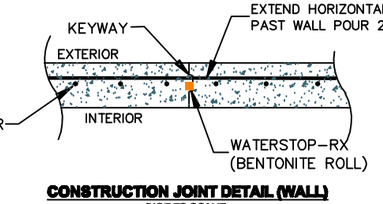
*REINFORCING CONTINUOUS THROUGH ALL JOINTS



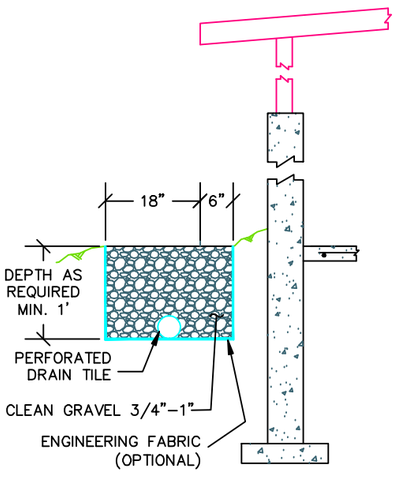
CONTRACTION JOINT DETAIL (WALL)
(NOT TO SCALE)



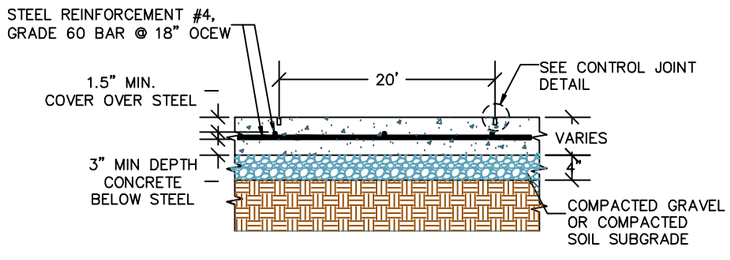
CONSTRUCTION JOINT DETAIL (SLAB)
(NOT TO SCALE)



CONSTRUCTION JOINT DETAIL (WALL)
(NOT TO SCALE)



ROOF RUNOFF COLLECTION TILE
(NOT TO SCALE)



CONCRETE FLATWORK (TYPICAL)
(NOT TO SCALE)

SHEET 7/9	
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CONCRETE & STRUCTURAL NOTES:

A. GENERAL
1.) NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER THESE STRUCTURAL NOTES.
2.) THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS PRIOR TO STARTING WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPENCIES.
3.) IN NO CASE SHALL DIMENSIONS BE SCALED FROM PLANS, SECTIONS, OR DETAILS ON THE STRUCTURAL DRAWINGS.
4.) DESIGN CHANGES MUST BE APPROVED IN WRITING BY BOTH THE OWNER AND ENGINEER BEFORE PROCEEDING WITH THE WORK. SOME DESIGN CHANGES MAY ALSO REQUIRE IDNR, COUNTY AND/OR NRCS APPROVAL.
5.) ANCHOR BOLTS SHALL BE SET AS SPECIFIED BY BUILDING CONTRACTOR.
6.) ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES:
   a. UNIFORM BUILDING CODE (UBC)
   b. IOWA STATE BUILDING CODE
   c. AMERICAN CONCRETE INSTITUTE (ACI)
   d. CONCRETE REINFORCING STEEL INSTITUTE (CRSI) MANUAL OF STANDARD PRACTICE

B. DRAIN TILE
1.) BEFORE ANY PIT CONSTRUCTION, TRENCH AND INSTALL DRAIN AROUND THE PROPOSED PIT, THE DRAIN TILE FLOW LINE MUST BE A MINIMUM OF 12" BELOW THE TOP.
2.) THE DRAIN TILE SHALL BE HEAVY DUTY PERFORATED POLYETHYLENE TUBING 4"ø TILE WITH PEA ROCK COVER OR 4"ø TILE W/ FABRIC SLEEVE AND SAND/GRAVEL COVER.
3.) CONNECT THE DRAIN TILE TO AN EXISTING FARM TILE IF AVAILABLE; DISCHARGE TO SURFACE DRAINAGE; OR DRAIN TO A SUMP AND PUMP TO SURFACE.

C. TEMPORARY BRACING AND BACKFILL
1.) PROVIDE TEMPORARY LATERAL SUPPORT FOR ALL WALLS WHERE GRADE VARIES ON THE TWO SIDES UNTIL THE PERMANENT STRUCTURAL SUPPORT SYSTEM IS IN PLACE.
2.) BACKFILL ONLY AFTER THE FLOOR SLATS OR SOLID FLOOR HAS BEEN INSTALLED.
3.) DO NOT BACKFILL AGAINST WALL UNTIL SLATS ARE INSTALLED AND GROUTED.
4.) CONCRETE IN ALL WALLS SHALL BE ALLOWED TO CURE FOR A MINIMUM OF 7 DAYS BEFORE BACKFILL IS PLACED AGAINST WALLS. EXERCISE CAUTION WHEN BACKFILLING TO BRING UP THE LEVEL UNIFORMLY ON ALL SIDES OF TANKS AND PITS.

D. FOOTINGS, FOUNDATIONS & SUBGRADE
1.) SOIL BEARING DESIGN VALUE;.....3000 PSF ON VIRGIN SOIL OR COMPACTED FILL FOR FOOTINGS.
2.) PROTECT FOUNDATION EXCAVATIONS FROM FROST. DO NOT PLACE CONCRETE ON FROZEN GROUND.
3.) EXISTING DISTURBED SUBGRADE SHALL BE RECOMPACTED TO 95 % OF STANDARD PROCTOR DENSITY.
4.) ALL FILL UNDER FOOTINGS AND SLAB SHALL BE COMPACTED TO A DRY DENSITY OF AT LEAST 95 % OF MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-180.
5.) SAND FILL AS REQUIRED FOR LEVELING SUBGRADES SHALL BE PROVIDED AT ALL SLAB ON GRADE AREAS.

E. REINFORCED CONCRETE
1.) ALL CONCRETE AND REINFORCING WORK SHALL CONFORM TO AMERICAN CONCRETE INSTITUTE'S" STANDARD BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", (ACI 318-05)
2.) CONCRETE WORK SHALL CONFORM TO ALL THE REQUIREMENTS OF ACI 301.
3.) CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF f'C=4000 PSI FLOOR, 4000 PSI WALLS
4.) WATER CEMENT RATIO SHALL BE 0.45 MAXIMUM
5.) CEMENT SHALL CONFORM TO ASTM C150, TYPE 1.
6.) COARSE AGGREGATE SHALL BE 1".
7.) READY-MIX CONCRETE SHALL BE MIXED & DELIVERED IN ACCORDANCE WITH ASTM C94.
8.) SLUMP SHALL BE MAXIMUM OF 5"
9.) AIR CONTENT SHALL BE 5% TO 7%
10.) CONCRETE TO BE CURED WITH SONOBORN CURE AND SEAL OR EQUAL.
11.) ADMIXTURES MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER FOR THE PURPOSE OF INCREASING THE WORKABILITY BUT NOT TO REDUCE THE SPECIFIED MINIMUM CEMENT CONTENT. CALCIUM CHLORIDE SHALL NOT BE USED.
12.) FLOORS SHALL BE 5" THK. WITH #4, GRADE 60 REBAR @ 18" O.C.E.W.
13.) IF CONSTRUCTION JOINTS NECESSARY, COORDINATE LOCATION WITH ENGINEER.
14.) CONSTRUCTION JOINTS ARE NOT PERMITTED IN THE END WALLS OR WITHIN 3 FT. OF A PUMPOUT. THE PUMPOUT FLOOR AND FOOTING MUST BE FORMED AND POURED WITH THE PIT FLOOR. THE PUMPOUT WALLS MUST BE FORMED AND POURED WITH THE PIT WALLS.
15.) REINFORCING STEEL SHALL BE PLACED IN THE CENTER OF CONCRETE PLACEMENT UNLESS NOTED OTHERWISE. STEEL MUST BE SUPPORTED WITH APPROPRIATE CHAIRS OR CONCRETE BLOCKS.

F. STEEL
1.) F'Y = GRADE 60 (60,000 PSI) DEFORMED STEEL.
2.) REINFORCING SHALL BE CONTINUOUS AND LAP A MINIMUM OF 40 BAR DIAMETER UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL BE LAPPED A MINIMUM OF EIGHT INCHES.
3.) MINIMUM BENDING RADIUS SHALL BE 6 BAR DIAMETERS.
4.) MINIMUM BEND AROUND CORNERS FOR #4 BARS – 24", FOR #5 BARS – 30".
5.) ALL CONCRETE IS REINFORCED UNLESS SPECIFICALLY CALLED OUT AS "NOT REINFORCED". REINFORCE ALL CONCRETE NOT OTHERWISE SHOWN WITH THE SAME STEEL AS IN SIMILAR SECTIONS OR AREAS.
6.) THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR FOR REINFORCEMENT UNLESS OTHERWISE NOTED:
   WHERE CAST AGAINST EARTH ..... 3 INCHES
   WALLS AND SLABS (EXPOSED TO EARTH OR WEATHER)..... 2 INCHES
   OTHER..... 2 INCHES

G. TOLERANCES & QUALITY CONTROL
1.) COLUMN FINISH ELEVATIONS SHALL BE + OR – 1/4" FROM DESIGN ELEVATION.
2.) WALL ALIGNMENT (HORIZONTAL) SHALL DEVIATE NO MORE THAN 1/4" IN 10 FT. NO MORE THAN 3/4" OVER THE FULL LENGTH OF WALL.
3.) WALL BEARING LEDGE ELEVATIONS SHALL BE + OR – 1/4"FROM DESIGN ELEVATION IN 10 FT. AND NO MORE THAN 1/2" OVER THE FULL LENGTH OF WALL.
4.) OVERALL FOUNDATION LENGTH & WIDTH DIMENSIONS AND DIAGONAL DIMENSIONS SHOULD BE WITHIN 1/2" OF PLAN DIMENSIONS.
5.) HONEYCOMB AND SHRINKAGE CRACKS WIDER THAN THE THICKNESS OF A PLASTIC CREDIT CARD SHALL BE FILLED WITHIN 48 HOURS WITH CEMENT GROUT SLURRY MOPPED INTO THE CRACKS. DO THE GROUTING OF FLOOR CRACKS BEFORE DIRT AND EQUIPMENT ARE BROUGHT ON THE FLOOR.

H. ELECTRICAL GROUND
1.) INSTALL REINFORCING BARS AS PER ELECTRICAL CODE GROUND AT A MINIMUM LOCATIONS AS PER ELECTRIC CODE NOTIFY THE LOCAL ELECTRICAL INSPECTOR FOR INSPECTION PRIOR TO PLACING CONCRETE.

I. COLD WEATHER CONCRETING
1.) WHEN, FOR MORE THAN 3 CONSECUTIVE DAYS, THE MEAN DAILY TEMPERATURE DROPS BELOW 40° F., THE CONTRACTOR SHALL PLACE AND PROTECT THE CONCRETE IN ACCORDANCE WITH ACI 306.

J. HOT WEATHER CONCRETING
1.) WHEN IT IS LIKELY THAT TEMPERATURE BETWEEN 75° F AND 100°F WILL BE APPROACHED OR EXCEEDED; THAT LOW RELATIVE HUMIDITY IS PRESENT; OR WIND VELOCITY WILL EXCEED 10 MPH, THE CONTRACTOR SHALL PLACE & PROTECT THE CONCRETE IN ACCORDANCE WITH CHAPTERS 4 & 5 OF ACI 305.

K. WATERSTOPS & SEALANTS
1.) WATERSTOP TO BE RIBBED PVC, OR BENTONITE ROLL, AT CONTRACTOR'S OPTION.
2.) 3/8"x3/4" BENTONITE/BUTYL RUBBER EQUAL TO WATERSTOP-RX BY AMERICAN COLLIED COMPANY WATERSTOPS SHALL BE PLACED IN ALL CONSTRUCTION JOINTS ON THE FLOOR AND IN THE WALLS. LOCATION AND NUMBER OF CONSTRUCTION JOINTS ARE TO BE DETERMINED BY THE CONTRACTOR. WATERSTOPS SHALL BE SUITABLE FOR USE WITH MANURE.
3.) MAKE PVC WATERSTOP SPLICES WITH SPLICING IRON.
4.) SEALANT TO BE ELASTOMETRIC POLYURETHANE OR BITUMINOUS ASPHALT BASED.

TABLE OF MATERIALS

SLATTED AREA

ITEM	QUANTITY	UNIT	Notes
12' REINF. CONC. WALL W/ FTG	247	LF	SEE DETAIL
5" REINF. CONCRETE FLOOR	3,294	SF	SEE DETAIL
20" REINF. PIT COLUMN W/ FTG	20	EA	SEE DETAIL
30" REINF. PIT COLUMN W/ FTG	1	EA	SEE DETAIL
5' REINF. CONC. STEM WALL	41	LF	SEE PERIMETER WALL
PRECAST BEAM	249.5	LF	VERIFY PRECAST DIM.
PRECAST SLAT	76	EA	4'x10'
PRECAST PUMPOUT SLAT	2	EA	W/ ACCESS
PRECAST SOLID SLAT	4	EA	4'x10'
PERIMETER TILE	264	LF	4"ø PERFORATED
RUBBER MATS	3,294	SF	OVER CATTLE SLATS
PERIMETER TILE OUTLET	890	LF	4"ø NONPERFORATED
INSPECTION RISER	1	EA	SEE DETAIL
BUNK W/ RAIL	104	LF	PRECAST
WATERER W/ RAIL	1	EA	SEE SPECIAL INSTR.
GATE	1	EA	12'

BEDDED AREA

ITEM	QUANTITY	UNIT	Notes
5" REINF. CONC. FLOOR	7,600	SF	SEE DETAIL
5' PERIMETER WALL W/ FTG	176	LF	SEE DETAIL
5' REINF. CONC. STEM WALL	76	LF	SEE PERIMETER WALL
5' REINF. CONC. COLUMNS W/ FTG	5	EA	SEE DETAIL
BUNK W/ RAIL	140	LF	PRECAST
WATERER W/ RAIL	3	EA	SEE SPECIAL INSTR.
GATE	4	EA	12'

OTHER

ITEM	QUANTITY	UNIT	Notes
6" REINF. CONC. FLOOR	7,120	SF	SEE DETAIL
5' PERIMETER WALL W/ FTG	76	LF	SEE DETAIL
5' REINF. CONC. COLUMNS W/ FTG	2	EA	SEE DETAIL
FENCE	185	LF	OWNER'S DISCRETION
ROCK TRENCH	50	TN	1" CLEAN ROCK
DRAIN TILE	125	LF	6"ø PERFORATED
PERIMETER TILE OUTLET	900	LF	6"ø NONPERFORATED
OVERHEAD DOOR	2	EA	16'x14'
SPLIT CURTAIN	140	LF	
EXCAVATION		CY	
PIT BACKFILL	500	TN	WELL GRADED GRANULAR

NOTE:
CONTRACTOR RESPONSIBLE FOR ALL FINAL QUANTITIES. ESTIMATED MATERIAL QUANTITIES ARE TO BE USED FOR BID PURPOSES ONLY. EXPECT MINOR CHANGES IN FINAL DESIGN.

SPECIAL INSTRUCTIONS:
1. ROOF & STRUCTURAL DESIGN IAW CODE IBC21
2. ROOF PROTECTED WITH DRIPSTOP MOISTURE PROTECTION OR EQUIVALENT
3. WATER IS TO BE RICHIE OMNI 3 18270 OR EQUIVALENT
4. DEMOLITION & SALVAGE IS RESPONSIBILITY OF CONTRACTOR
5. SALVAGE IS PROPERTY OF CONTRACTOR
6. PLUMBING & ELECTRICAL TO BE ROUGHED IN TO LOCATION SHOWN
7. FINAL PLUMBING & ELECTRICAL FIXTURES INSTALL TO BE RESPONSIBILITY OF OWNER

TECHNICAL SPECIFICATIONS:
IA 1 SITE PREPARATION
IA 3 STRUCTURE REMOVAL
IA 5 POLLUTION CONTROL
IA 6 MULCHING & SEEDING
IA 9 SUBSURFACE DRAIN
IA 21 EXCAVATION
IA 23 EARTHFILL
IA 24 DRAINFILL
IA 26 TOPSOILING
IA 31 CONCRETE
IA 620 UNDERGROUND OUTLET

ISSUED FOR BID
NOT FOR CONSTRUCTION

Date	Drawn
6/15/23	TMW

Checked By	Project No.
JDS	22-058

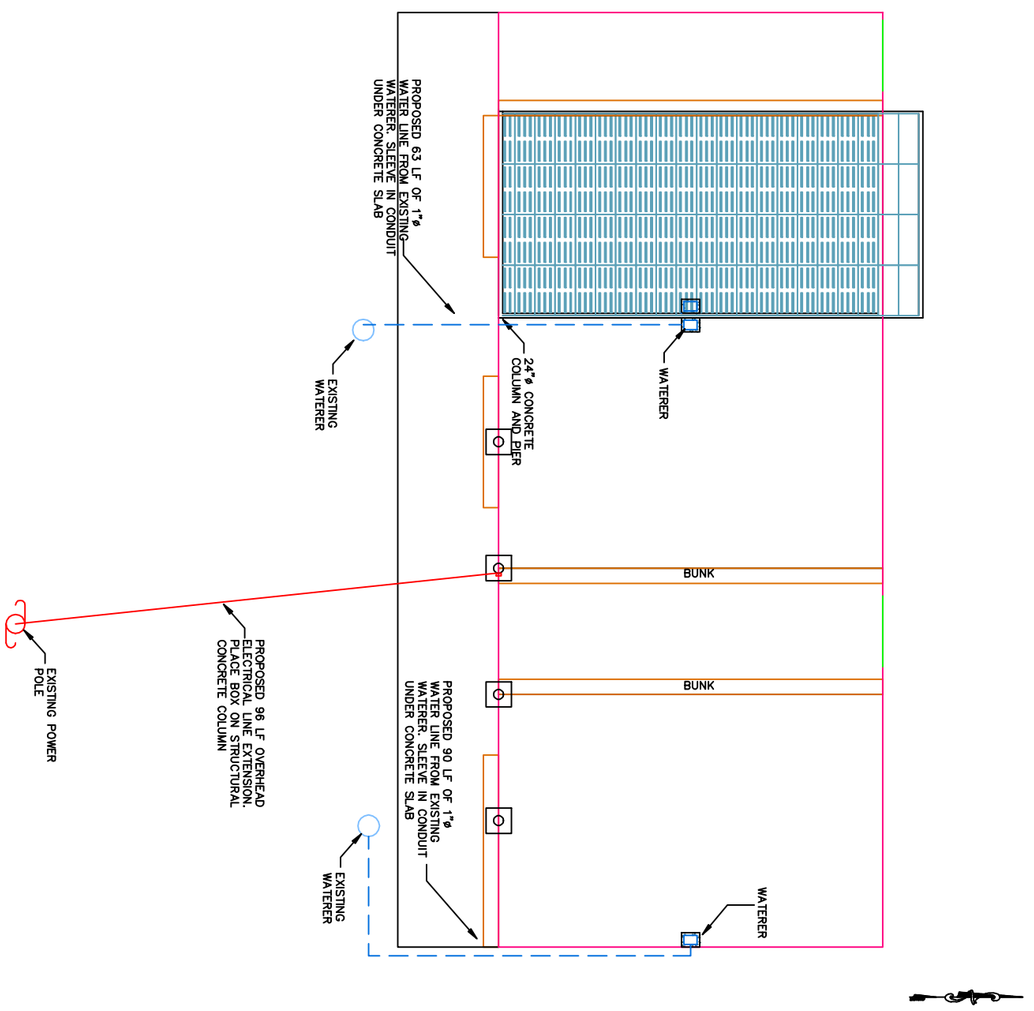
SHEET 8/9

AJ & KATIE HAGEMAN
PROPOSED CATTLE CONFINEMENT BARN
SE 1/4, SECTION 29, T-97-N, R-07-W
WINNESHIEK COUNTY, IOWA

ProAg Engineering, Inc.
77402 U.S. Highway 71, P.O. Box 181
Jackson, MN 56143
(507) 849-7200

PLUMBING & ELECTRICAL LAYOUT

(NOT TO SCALE)



*****ISSUED FOR BID*****
NOT FOR CONSTRUCTION

ProAg Engineering, Inc. 77402 U.S. Highway 71, P.O. Box 181 Jackson, MN 56143 (507) 849-7200	AJ & KATIE HAGEMAN PROPOSED CATTLE CONFINEMENT BARN SE 1/4, SECTION 29, T-97-N, R-07-W WINNESHIEK COUNTY, IOWA	Date 6/15/23	Checked By	Project No.	SHEET 9/9
		Drawn TMW	JDS	22-058	