

GENERAL NOTES:

- THESE NOTES ARE GENERAL AND SUPPLEMENTAL TO THE SPECIFICATIONS. THESE NOTES APPLY TO THE ENTIRE PROJECT UNLESS MODIFIED OR NOTED OTHERWISE IN THE CONTRACT DOCUMENTS.
- DESIGN IS IN ACCORDANCE WITH AND CONSTRUCTION SHALL COMPLY WITH THE PROVISIONS OF THE 2017 FLORIDA BUILDING CODE, EXCEPT WHERE OTHER APPLICABLE CODES AND THE CONTRACT DOCUMENTS ARE MORE RESTRICTIVE.
- LIVE LOADS:
 - ROOFS: 20 PSF
 - PROCESS AREAS: 200 PSF
 - STAIRS & PLATFORMS: 100 PSF
 - CANAL SLAB-ON-GRADE: HS20 TRUCK LOADING
- ALL DIMENSIONS INDICATED (*) ARE TO BE VERIFIED EITHER BY FIELD MEASUREMENTS FOR EXISTING STRUCTURES OR BY SHOP DRAWINGS FOR EQUIPMENT FURNISHED. STRUCTURAL DIMENSIONS NOT SHOWN BUT CONTROLLED BY OR RELATED TO EQUIPMENT SHALL BE VERIFIED WITH THE MANUFACTURER PRIOR TO CONSTRUCTION.
- EQUIPMENT ANCHOR BOLT SIZES, TYPES, AND PATTERNS SHALL BE VERIFIED WITH THE MANUFACTURER. ALL BOLT PATTERNS SHALL BE TEMPLATED TO INSURE ACCURACY OF PLACEMENT.
- STRUCTURAL DRAWINGS SHALL BE USED IN COORDINATION WITH DRAWINGS OF ALL OTHER DISCIPLINES AND MANUFACTURER'S SHOP DRAWINGS.
- IF A CONFLICT IS FOUND BETWEEN DIFFERENT PORTIONS OF THE CONTRACT DOCUMENTS, NOTIFY THE OWNER IMMEDIATELY. CONTINUED CONSTRUCTION OF THE AREA IN CONFLICT SHALL BE AT THE CONTRACTOR'S OWN RISK UNTIL THE CONFLICT IS RESOLVED BY THE OWNER.
- STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON THE COMPLETED STRUCTURE. DURING CONSTRUCTION, THE STRUCTURES SHALL BE PROTECTED BY BRACING AND TEMPORARY SUPPORTS WHEREVER EXCESSIVE CONSTRUCTION LOADS MAY OCCUR. OVERSTRESSING OF ANY STRUCTURAL ELEMENT IS PROHIBITED.
- NO BACK FILL SHALL BE PLACED AGAINST ANY WALL UNLESS ALL SUPPORTING ELEMENTS OF THE STRUCTURE HAVE BEEN CONSTRUCTED AND HAVE REACHED THE SPECIFIED MINIMUM CONCRETE STRENGTH.
- DO NOT SCALE THESE DRAWINGS. USE DIMENSIONS.
- CONTRACTOR'S CONSTRUCTION AND/OR ERECTION SEQUENCES SHALL RECOGNIZE AND CONSIDER THE EFFECTS OF THERMAL MOVEMENTS OF STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PERIOD.
- PROVIDE ADDITIONAL REINFORCEMENT AT OPENINGS AND AT WALL INTERSECTIONS AS SHOWN IN STANDARD DETAILS.
- FOR SIZES AND LOCATIONS OF EQUIPMENT SUPPORTS AND PIPE OPENINGS, SEE OTHER DISCIPLINE DRAWINGS. OPENINGS SIZES LESS THAN 12" ARE NOT SHOWN ON STRUCTURAL DRAWINGS. REFERENCE OTHER DISCIPLINE DRAWINGS FOR LOCATIONS.
- FOR NUMBER, TYPE, SIZE, ARRANGEMENT, AND/OR LOCATION OF EQUIPMENT PADS, SEE OTHER DISCIPLINE DRAWINGS. COORDINATE WITH EQUIPMENT SUPPLIER PRIOR TO PLACING SLABS, WALLS, AND FOUNDATIONS. COORDINATE PIPING OPENINGS WITH OTHER DISCIPLINE DRAWINGS.
- STANDARD DETAILS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS OCCURRING THROUGHOUT THE PROJECT, WHETHER OR NOT THEY ARE INDIVIDUALLY CALLED OUT.
- DO NOT CUT OR MODIFY STRUCTURAL MEMBERS FOR PIPES, DUCTS, ETC. UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER.
- VISITS TO THE JOB SITE BY THE ENGINEER TO OBSERVE THE CONSTRUCTION DO NOT IN ANY WAY MEAN THAT ENGINEER IS GUARANTOR OF CONSTRUCTOR'S WORK, NOR RESPONSIBLE FOR THE COMPREHENSIVE OR SPECIAL INSPECTIONS, COORDINATION, SUPERVISION, OR SAFETY AT THE JOB SITE.

FOUNDATION NOTES:

- DESIGN OF FOUNDATION IS BASED ON SUBSURFACE SOIL EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION (PROJECT NO. 18-23-5319) COMPLETED BY ARDAMAN & ASSOCIATES, INC., ON MAY 3, 2019.
- MINIMUM DEPTH FROM ADJACENT FINISHED GRADE TO BOTTOM OF EXTERIOR FOUNDATION 1'-6" UNLESS OTHERWISE NOTED.
- FOUNDATION SLABS AND SLABS-ON-GRADE SHALL BEAR ON COMPACTED SOILS MEETING THE REQUIREMENTS OF THE GEOTECHNICAL REPORT UNLESS OTHERWISE NOTED IN FACILITY NOTES. CONTRACTOR SHALL SUBMIT DENSITY TESTS TO GEOTECHNICAL AND STRUCTURAL ENGINEER OF RECORD FOR 2 FEET OF SUPPORTING SOILS BELOW BOTTOM OF SLABS AND FOUNDATIONS. PLACE 6 MIL VISQUEEN OVER COMPACTED SOILS PRIOR TO PLACING CHAIRS THAT SUPPORT REINFORCING MATS.
- FOUNDATION AND SLAB ON GRADE BEARING SURFACES SHALL BE OBSERVED BY THE GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF FORM WORK OR REINFORCING STEEL. THE OBSERVATION SHALL VERIFY IF THE ACTUAL EXPOSED SUBGRADE IS AS ANTICIPATED BY THE SITE SPECIFIC BORINGS, TEST PITS, TESTING AND DATA REPORTS.

CONCRETE NOTES:

- CONCRETE 28-DAY COMPRESSIVE STRENGTH:
 - CLASS A - 2500 PSI FOR CONCRETE FILL & DUCT ENCASEMENT
 - CLASS B - 3000 PSI FOR SIDEWALKS, CURBS ETC.
 - CLASS C - 5000 PSI ALL FOUNDATIONS AND STRUCTURAL WALLS, SLABS AND BEAMS
 - CLASS D - 5000 PSI PRE-CAST CONCRETE
- REINFORCEMENT: ASTM A615, GRADE 60.
- CONCRETE COVER FOR REINFORCING:
 - A) SURFACES CAST AGAINST SUBGRADE 3"
 - B) TOP SURFACES OF SLABS WHERE PVC WATERSTOP IS REQUIRED IN WALLS 3"
 - C) FORMED SURFACES IN CONTACT WITH WEATHER, SOIL, OR LIQUID 2"
 - D) BOTTOM SURFACES OF SLABS OVER LIQUID 2"
 - E) SURFACES NOT IN CONTACT WITH WEATHER, SOIL, OR LIQUID 1 1/2"
- CONSTRUCTION JOINTS SHALL BE LOCATED AS SHOWN ON THE DRAWINGS. WHERE NOT SHOWN, CONSTRUCTION JOINTS SHALL BE LOCATED AT NO MORE THAN 40' ON CENTER SPACING. SUBMIT PROPOSED CONSTRUCTION JOINT LOCATIONS FOR REVIEW PRIOR TO CONSTRUCTION.
- WHERE HORIZONTAL CONSTRUCTION JOINTS, LOCATED ABOVE THE FOUNDATION SLAB, EXTEND BEYOND WHERE NEEDED, TERMINATE AT A VERTICAL CONSTRUCTION JOINT AS APPROVED BY THE ENGINEER.
- EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS BUT REQUIRED BY OTHER CONTRACT DOCUMENTS, SHALL BE PROVIDED FOR PRIOR TO PLACING CONCRETE.
- AT ALL TYPICAL CURBS, EQUIPMENT PADS, AND PIPE SUPPORT PIERS, REINFORCING DOWELS SHOWN MAY BE REPLACED WITH MATCHING DOWELS SET IN EPOXY IN DRILLED HOLES USING HILTI HIT-RE 500 ADHESIVE SYSTEM OR EQUAL AND 8" MIN. EMBEDMENT. CONTRACTOR TO SUBMIT SIZE, LOCATION AND PROPOSED EMBEDMENTS FOR REVIEW PRIOR TO INSTALLATION OF ANY POST-INSTALLED DOWELS. DOWELS LOCATED CLOSER THAN 3 INCHES FROM ANY EDGE OF CONCRETE SHALL NOT BE REPLACED WITH DRILLED DOWELS.
- WHERE DRILLED EPOXY DOWELS ARE PLACED INTO HARDENED CONCRETE, ADJUST THE DOWEL LOCATIONS AS NEEDED TO AVOID DRILLING THROUGH ANY REINFORCING BARS. IF THE DOWEL LOCATION NEEDS TO BE MODIFIED, CONTACT THE ENGINEER PRIOR TO DRILLING.
- DOWELS, ANCHOR BOLTS, PIPES, AND OTHER EMBEDDED ITEMS SHALL BE HELD SECURELY IN POSITION WHILE CONCRETE IS PLACED.
- CONDUITS AND PIPES EMBEDDED IN OR PENETRATING THROUGH CONCRETE SHALL BE SPACED ON CENTER NOT LESS THAN 3 TIMES THEIR OUTSIDE DIMENSION, BUT NOT LESS THAN 2 1/2 INCHES CLEAR. OUTSIDE DIMENSION OF EMBEDDED ITEMS SHALL NOT EXCEED 1/3 OF THE CONCRETE MEMBER THICKNESS. CLEAR SPACING REQUIREMENTS SHALL APPLY FOR EMBEDDED CONDUITS OR PIPES CROSSING AT AN ANGLE LESS THAN 60 DEGREES.
- THE EFFECTIVE DIMENSION USED TO MEET MEMBER THICKNESS LIMITATIONS SHALL BE THE SUM OF THE OUTER DIMENSIONS OF CROSSING ELEMENTS.
- EMBEDDED CONDUITS AND PIPES SHALL BE LOCATED BETWEEN THE LAYERS OF REINFORCEMENT AND A MINIMUM OF 2 1/2 INCHES CLEAR FROM APPROXIMATELY PARALLEL REINFORCING BARS. REQUIREMENTS FOR EMBEDDED ELEMENTS CROSSING REINFORCING BARS SHALL BE AS REQUIRED FOR CROSSING EMBEDDED ELEMENTS.
- CONDUITS AND PIPES SHALL NOT BE EMBEDDED IN OR PASS THROUGH COLUMNS OR BEAMS UNLESS INDICATED OTHERWISE OR AUTHORIZED BY ENGINEER.
- REINFORCING BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH ANY METAL PIPE, PIPE IN FLANGE, METAL CONDUIT, OR OTHER METAL PARTS EMBEDDED IN CONCRETE. A MINIMUM CLEARANCE OF 2 INCHES SHALL BE PROVIDED.
- PROVIDE 3/4 INCH CHAMFER USING WOOD CHAMFER STRIPS ON ALL EXPOSED CORNERS OF COLUMNS, BEAMS, AND WALLS.
- SIZE AND SPACING OF WALL CORNER AND WALL INTERSECTION REINFORCING SHALL MATCH TYPICAL WALL REINFORCING UNLESS OTHERWISE SHOWN ON PLANS.
- 90 DEGREE BENDS, UNLESS OTHERWISE SHOWN, SHALL BE ACI 350 STANDARD HOOKS.
- WALL CORNERS AND WALL INTERSECTION REINFORCEMENT BARS SHALL BE CONTINUOUS AROUND CORNERS AND THROUGH COLUMNS. REINFORCEMENT SHALL BE EXTENDED INTO CONNECTING WALLS AND LAPPED ON THE OPPOSITE FACE OF THE CONNECTING WALLS, AS INDICATED IN STANDARD DETAILS.
- WALL FOOTING CORNER AND INTERSECTION REINFORCEMENT BARS SHALL BE EXTENDED INTO CONNECTING FOOTINGS AND LAPPED ON THE OPPOSITE FACE OF THE CONNECTING FOOTING. OUTSIDE FACE WALL FOOTING REINFORCEMENT SHALL BE LAPPED WITH CORNER BARS. ALL WALL FOOTING REINFORCEMENT SHALL BE CONTINUOUS THROUGH COLUMN OR PILASTER FOOTINGS.
- REINFORCING STEEL FOR FOOTINGS AND SLABS ON GRADE SHALL BE ADEQUATELY SUPPORTED ON BAR SUPPORTS WITH SPACERS TO KEEP REINFORCING ABOVE THE PREPARED GRADE. LIFTING REINFORCING OFF GRADE DURING CONCRETE PLACEMENT IS NOT PERMITTED.
- PREPARE AND PATCH FORM SNAP-TIE HOLES AND ALTERNATE FORM-THROUGH BOLT HOLE BY DRY-PACKING WITH APPROVED NON-SHRINK GROUT.
- SUBMIT VERTICAL WALL CONSTRUCTION JOINT. LOCATION FOR REVIEW PRIOR TO CONSTRUCTION.

STRUCTURAL STEEL NOTES:

- DETAIL, FABRICATE, AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH AISC STEEL CONSTRUCTION MANUAL AND AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, LATEST EDITION.
- STEEL MATERIAL:
 - 2.1. STRUCTURAL TUBING, ASTM A500, GRADE B OR C
 - 2.2. STRUCTURAL PIPE, ASTM A53, GRADE B
 - 2.3. W SHAPES, ASTM A992
 - 2.4. STRUCTURAL CHANNELS, ASTM A36
 - 2.5. ALL OTHER SHAPES AND PLATES, ASTM A36 UON
- BOLTS SHALL BE HIGH STRENGTH BOLTS CONFORMING TO THE FOLLOWING ASTM SPECIFICATIONS EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE:
 - UNLESS SHOW OTHERWISE A325-N
 - SLIP CONTROL A325-SC
 - ANCHOR BOLTS (AB) F593, AISI TYPE 316, CONDITION CW
 - STAINLESS STEEL STEEL F1554, GR 36
 - GALVANIZED STEEL F1554, GR 36 / A153
 - MACHINE BOLTS (MB) A307
- PROVIDE TYPICAL STEEL BEAM CONNECTIONS FOR A CAPACITY OF NOT LESS THAN THE TOTAL UNIFORM LOAD CAPACITY TABULATED IN THE AISC TABLES FOR ALLOWABLE LOADS OF BEAMS.
- DO NOT PAINT STEEL SURFACES WHICH ARE TO BE WELDED OR ENCASED IN CONCRETE.
- FILLET WELD SIZES SHALL BE THE MINIMUM SIZE REQUIRED BY AISC AND AWS FOR PLATE SIZES TO BE CONNECTED AND SHALL BE APPLIED TO THE ENTIRE JOINT CONTACT LENGTH.
- STAINLESS STEEL SHALL BE TYPE 316L-ASTM A276.
- STAINLESS STEEL TYPE 316L SHALL BE USED IN ALL AREAS TO BE SUBMERGED AND AS SHOWN ON DWGS.
- IF STAINLESS STEEL MEMBERS ARE NOT AVAILABLE, PROVIDE EQUIVALENT STAINLESS STEEL SECTIONS, BUILT UP OUT OF STAINLESS STEEL PLATES.
- ALL BOLTS, ANCHOR BOLTS, AND CONCRETE ANCHORS CONNECTING STAINLESS STEEL SHALL BE TYPE 316 STAINLESS STEEL.
- WHENEVER ONE MEMBER IS FASTENED TO ANOTHER WITH FASTENINGS (BOLTS, WELDS, ETC.) SET AT A UNIFORM SPACING, THERE SHALL BE A MINIMUM OF TWO FASTENINGS PER PIECE CONNECTED AND THE FIRST AND LAST FASTENINGS SHALL BE LOCATED NOT TO EXCEED 1/4 SPACE FROM EACH END.
- ALL GRATING SHALL BE ALUMINUM UNLESS OTHERWISE NOTED.
- ITEMS TO BE EMBEDDED IN CONCRETE SHALL BE CLEAN AND FREE OF OIL, DIRT AND PAINT.
- NO HOLES OTHER THAN THOSE SPECIFICALLY DETAILED SHALL BE ALLOWED THROUGH STRUCTURAL STEEL MEMBERS. NO CUTTING OR BURNING OF STRUCTURAL STEEL IS PERMITTED WITHOUT THE APPROVAL OF THE ENGINEER.

STEEL SHEET PILING NOTES:

- SEE SPECIFICATIONS FOR ALL STEEL SHEET PILING REQUIREMENTS.
- SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A REGISTERED FLORIDA P.E. FOR REVIEW PRIOR TO FABRICATION.

PRECAST CONCRETE NOTES:

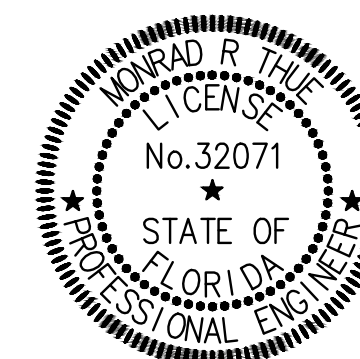
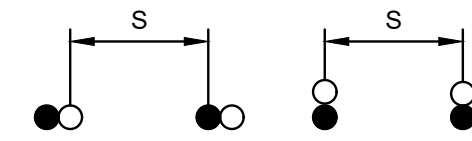
- SEE SPECIFICATIONS FOR ALL PRECAST CONCRETE REQUIREMENTS.
- SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A REGISTERED FLORIDA P.E. FOR REVIEW PRIOR TO FABRICATION.

SLAB/SLAB-ON-GRADE REINFORCEMENT LAP SPLICE LENGTH SCHEDULE (INCHES)				
BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS)		
		f _c = 3 KSI	f _c = 4 KSI	f _c = 5 KSI
#4	2	29	25	23
#5	3	36	31	28
#6	3	43	37	34

RETAINING WALL AND MAT FOUNDATION LAP SPLICE LENGTH SCHEDULE (INCHES)					
BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS)			
		f _c = 4 KSI		f _c = 5 KSI	
		TOP	OTHER	TOP	OTHER
#5	3	40	31	36	28
#6	4	48	37	44	34
#7	4	71	54	63	49
#8	4	81	62	72	56

LAP SPLICE NOTES:

- TABULATED VALUES ARE PER ACI 318-08 REQUIREMENTS FOR NORMALWEIGHT CONCRETE. THE VALUES ON THIS SHEET DO NOT APPLY TO LIGHTWEIGHT CONCRETE.
- MINIMUM BAR SPACING DIAGRAM - "S"
 - FIRST BAR
 - SECOND BAR PLACED OR SPLICE BAR
- TABULATED VALUES ARE FOR NON-EPOXY COATED REINFORCEMENT. FOR EPOXY COATED REINFORCEMENT MULTIPLY VALUES BY 1.3 OR "TOP BARS" AND 1.5 FOR ALL OTHER REINFORCEMENT.
- WHERE BARS OF DIFFERENT SIZES ARE LAP SPICED IN TENSION, THE LAP LENGTH SHALL BE THE TENSION LAP SPLICE LENGTH (LTS) OF THE SMALLER BAR.
- "TOP BARS" ARE DEFINED PER ACI HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE. "OTHER BARS ARE ALL BARS FOR WHICH THIS DOES NOT APPLY."



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CERTIFICATE OF AUTHORIZATION #1841



Engineering & Consulting, Inc.
5590 SW 64th Street, Suite B
Gainesville, Florida 32608
Phone: (352) 377-3233 Fax: (352) 377-0335

DESIGNED	M THUE			
DRAWN	J GALLER			
CHECKED	D CRAPPS			
LTR.	DATE	REVISIONS	BY	APPRD.

JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
8657 BAYPINE ROAD SUITE 300, JACKSONVILLE, FL 32256 / (904) 744-5401

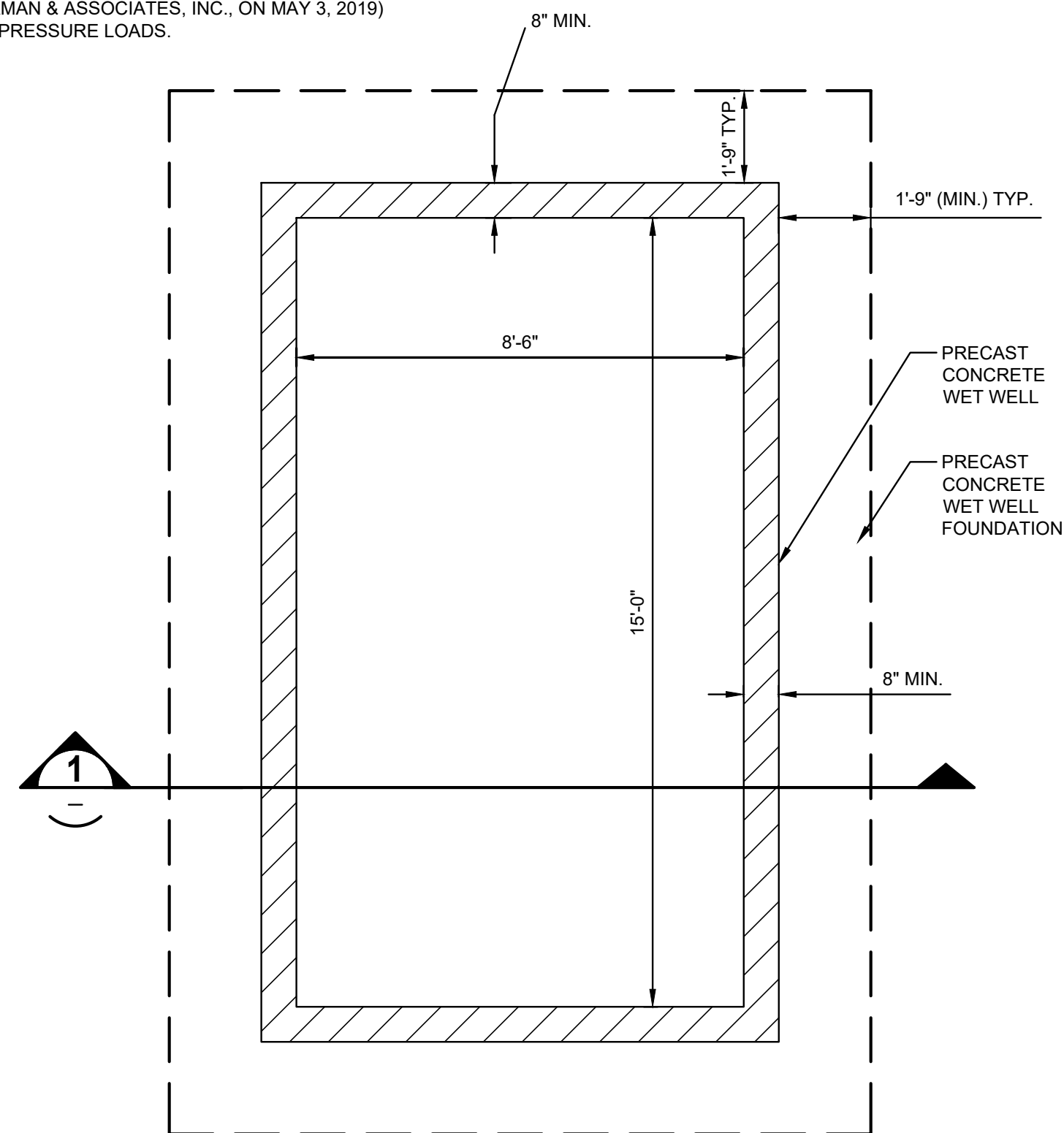
**CRANE CREEK M-1 CANAL FLOW RESTORATION
ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT**

STRUCTURAL GENERAL NOTES

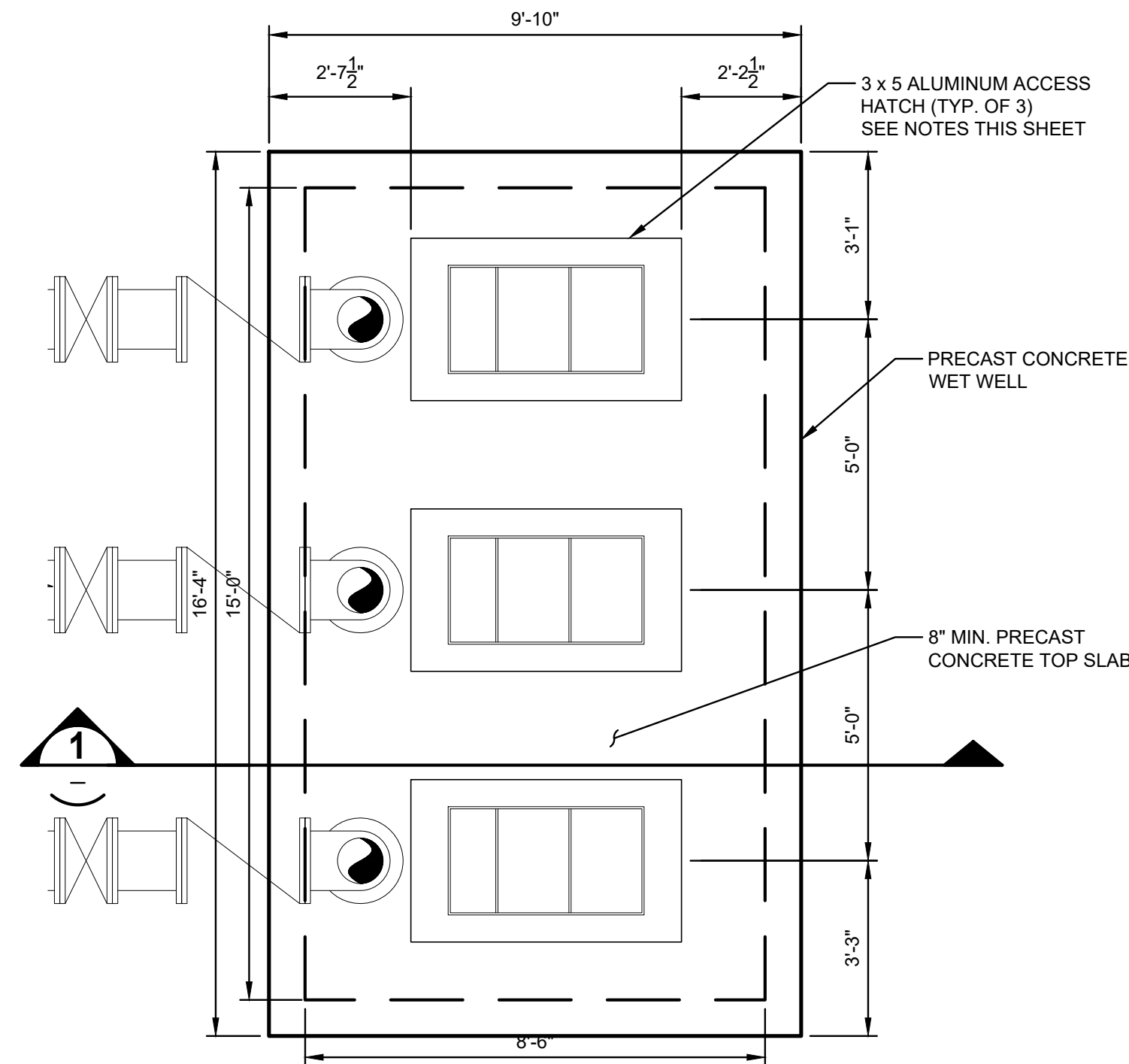
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19750-066-01	OCT 2020
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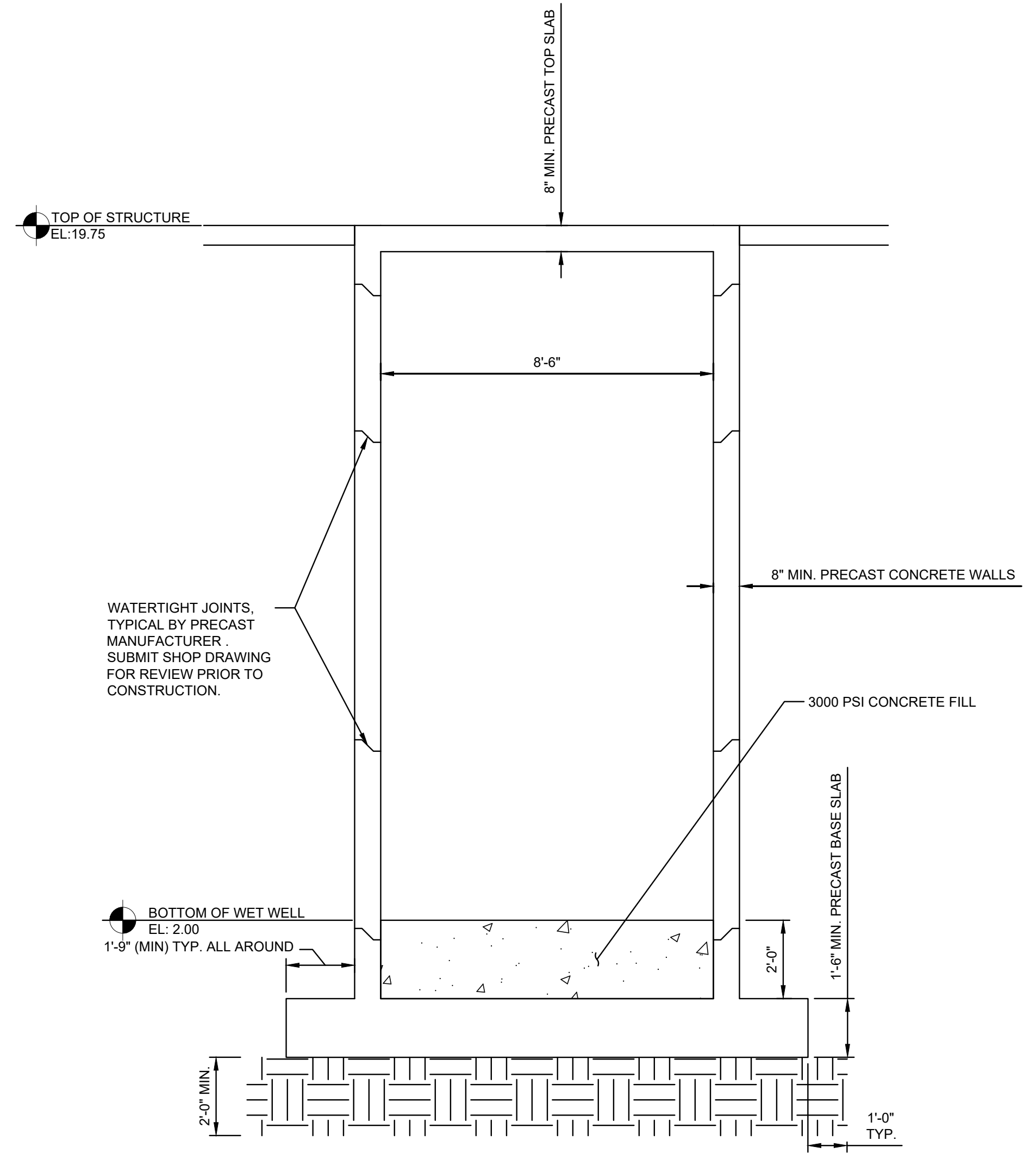
- NOTES:
- SEE SHEET G7 FOR GENERAL NOTES AND OTHER INFORMATION.
 - COORDINATE LOCATION OF ALL MECHANICAL EQUIPMENT AND PIPING WITH MECHANICAL DRAWINGS PRIOR TO CONSTRUCTION.
 - PRECAST STRUCTURE SHALL BE DESIGNED FOR A WATER TABLE AT TOP OF STRUCTURE AND A MINIMUM SAFETY OF FACTOR RESISTING BUOYANCY OF 1.20. INCLUDE BUOYANT WEIGHT OF SOIL OVER TOE IN CALCULATIONS.
 - LIVE LOAD ON TOP SLAB = 200 PSF AND ON HATCHES = 300 PSF. TOP SLAB SHALL HAVE OPENINGS FOR HATCHES COORDINATED PRIOR TO CONSTRUCTION.
 - UNDER THE PRECAST SLAB ON GRADE FOUNDATION, COMPACT SUBGRADE TO A MINIMUM OF 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557) FOR A DEPTH OF 2 FEET. COMPACT MAXIMUM LIFTS OF 1 FOOT.
 - ALUMINUM ACCESS HATCHES SHALL BE DESIGNED FOR 300 PSF LIVE LOAD. CONTRACTOR TO VERIFY SIZE AND LOCATION MEETS REQUIREMENTS OF PUMP INSTALLATION AND MAINTENANCE PRIOR TO PURCHASE AND CONSTRUCTION.
 - REFER TO GEOTECHNICAL REPORT (PROJECT NO. 18-23-5319 COMPLETED BY ARDAMAN & ASSOCIATES, INC. ON MAY 3, 2019) FOR LATERAL EARTH PRESSURE LOADS.



PUMP STATION BASE PLAN (A)
3/8" = 1'-0"
S4-1

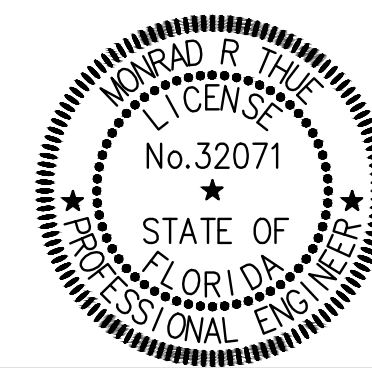


PUMP STATION TOP PLAN (B)
3/8" = 1'-0"
S4-1



SECTION 1
3/8" = 1'-0"
S4-1

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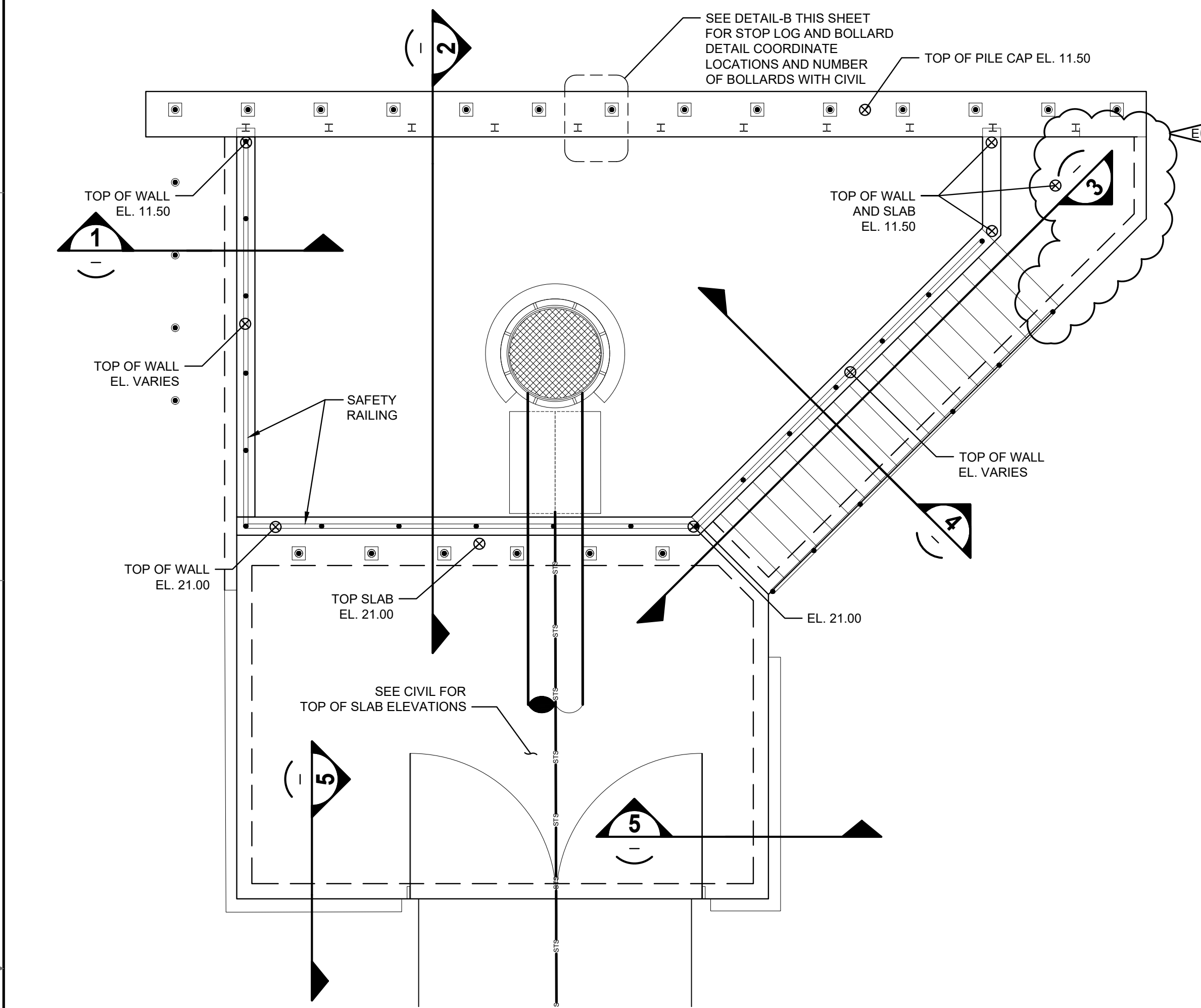
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DRAWN	J GALLER			
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CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
8657 BAYPINE ROAD SUITE 300, JACKSONVILLE, FL 32256 / (904) 744-5401

**CRANE CREEK M-1 CANAL FLOW RESTORATION
ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT**

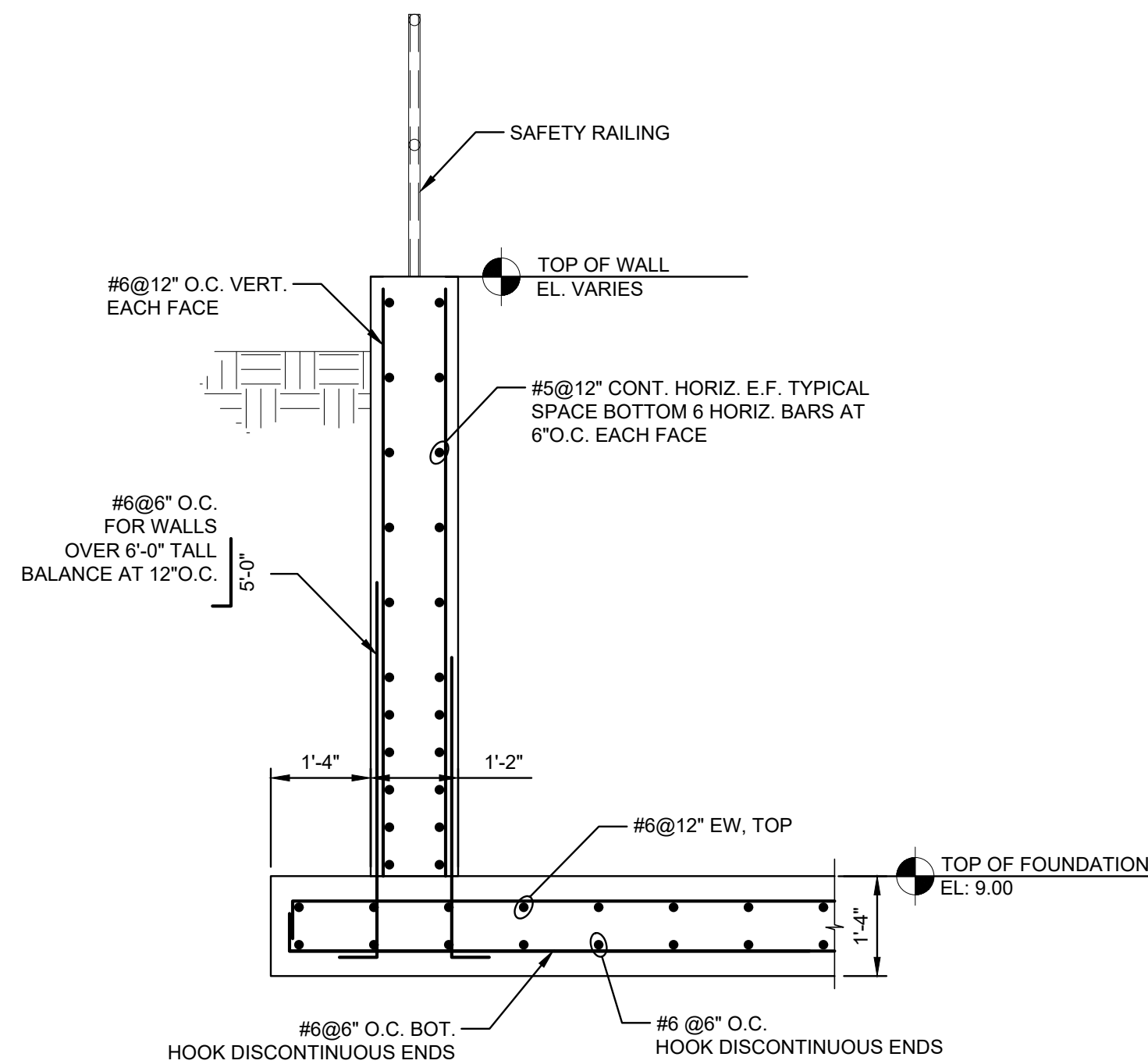
PUMP STATION PLAN

PROJECT NO:	19750-066-01	DATE:	OCT 2020
INDEX NO:		DWG NO:	S4-1



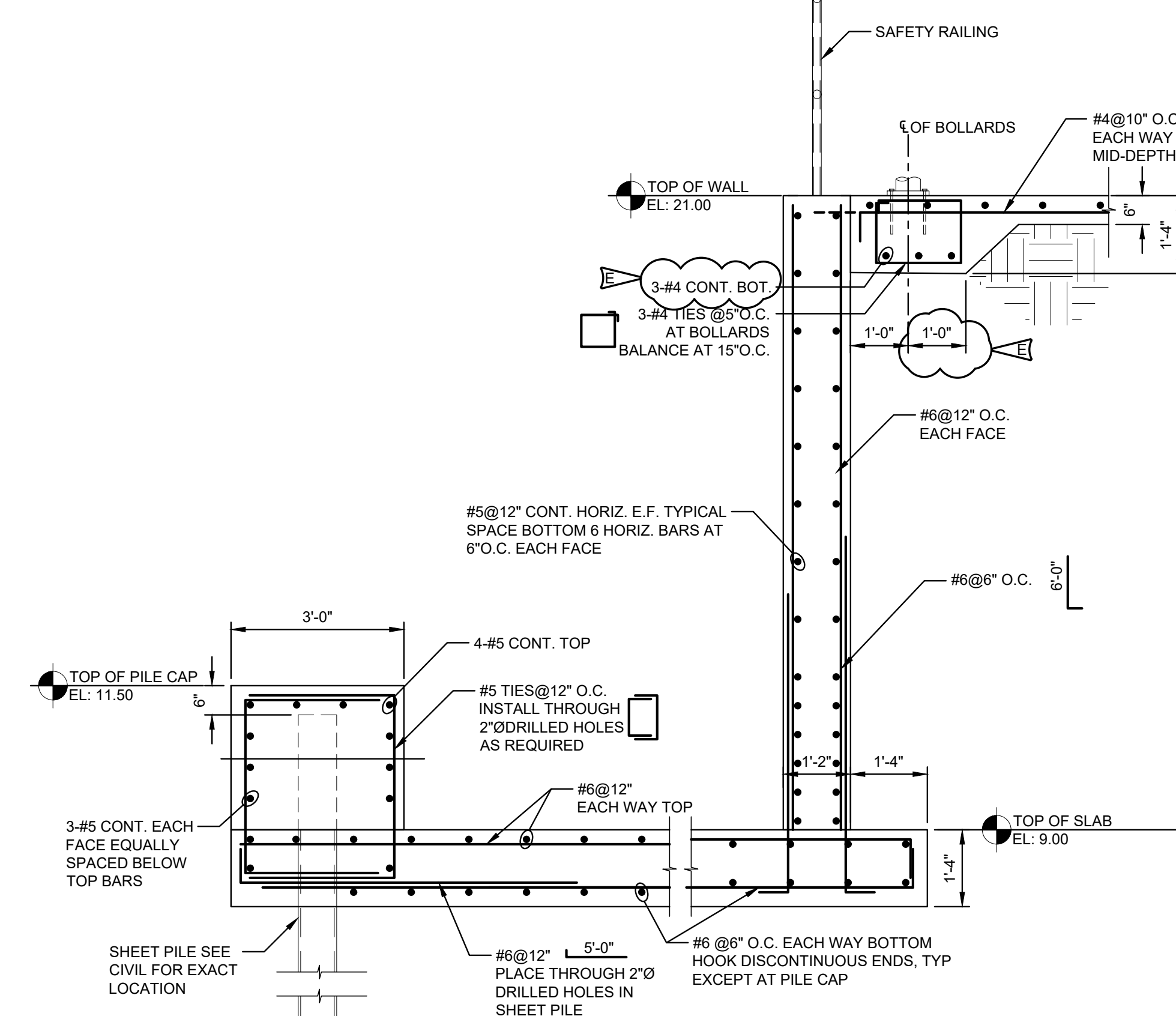
PUMP INTAKE TOP PLAN (A)

1/8" = 1'-0"
S4-2



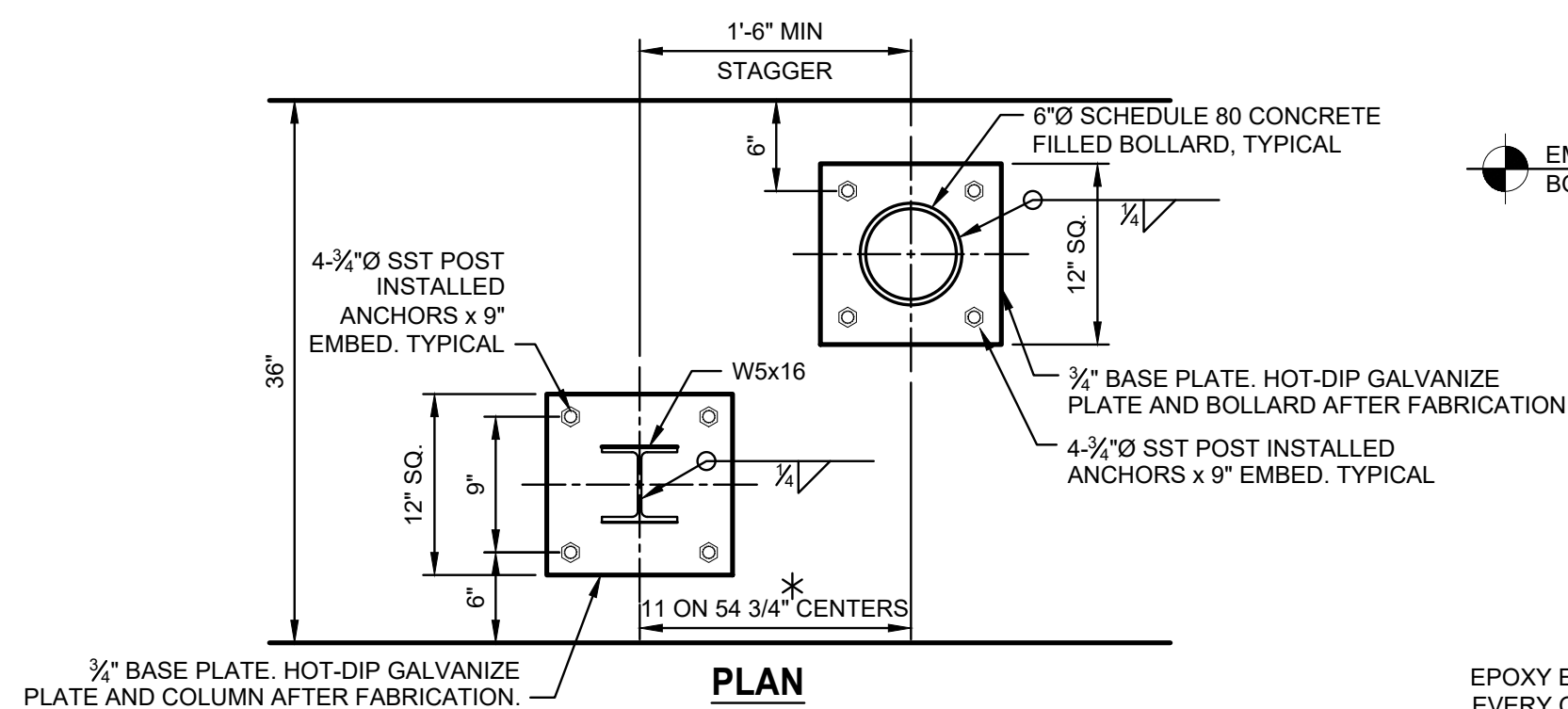
SECTION 1 (S4-2)

1/2" = 1'-0"

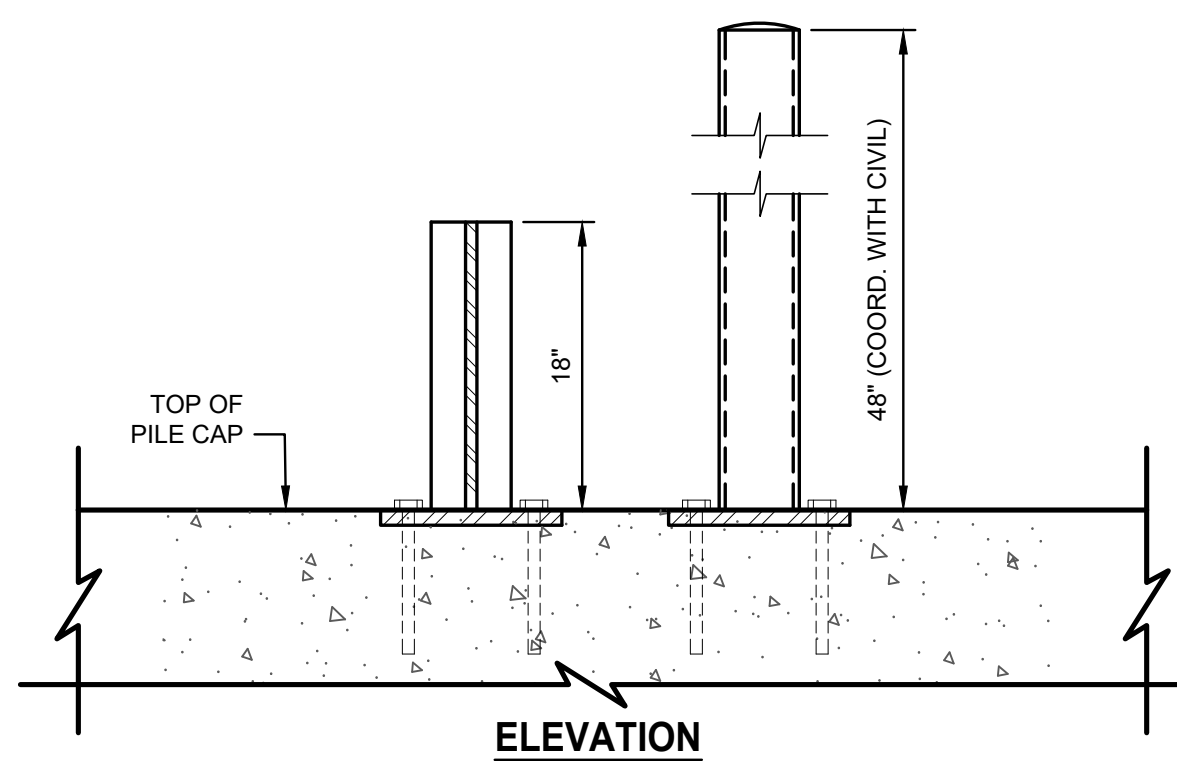


SECTION 2 (S4-2)

1/2" = 1'-0"



PLAN



ELEVATION

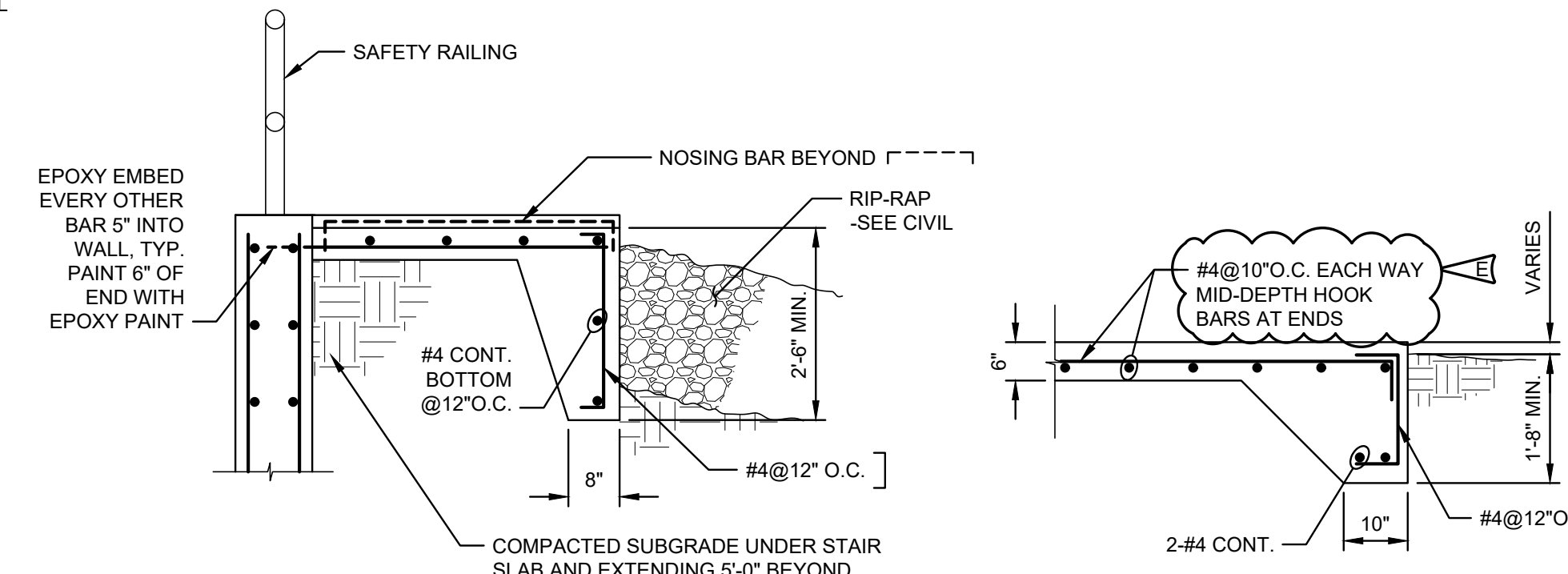
STOP LOG AND BOLLARD SUPPORT DETAIL (B)

1/2" = 1'-0"
S4-2

NOTE:

*DIMENSIONS BASED ON 3 1/2" THICK STOP LOGS BY PLASTI FAB. COORDINATE DIMENSIONS WITH STOP LOG PROVIDER.

SEE CIVIL FOR FURTHER DETAILS.



SECTION 4 (S4-2)

1/2" = 1'-0"

SECTION 5 (S4-2)

1/2" = 1'-0"

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10/30/20	REV E	JMG	MRT	DESIGNED	M THUE
				DRAWN	J GALLER
				CHECKED	D CRAPPS
LTR.	DATE	REVISIONS	BY	APPRD.	

JonesEdmunds
 CERTIFICATE OF AUTHORIZATION #1841
 730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
 8657 BAYPINE ROAD SUITE 300, JACKSONVILLE, FL 32256 / (904) 744-5401

CRANE CREEK M-1 CANAL FLOW RESTORATION
ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT

PUMP STATION
SECTIONS AND DETAILS



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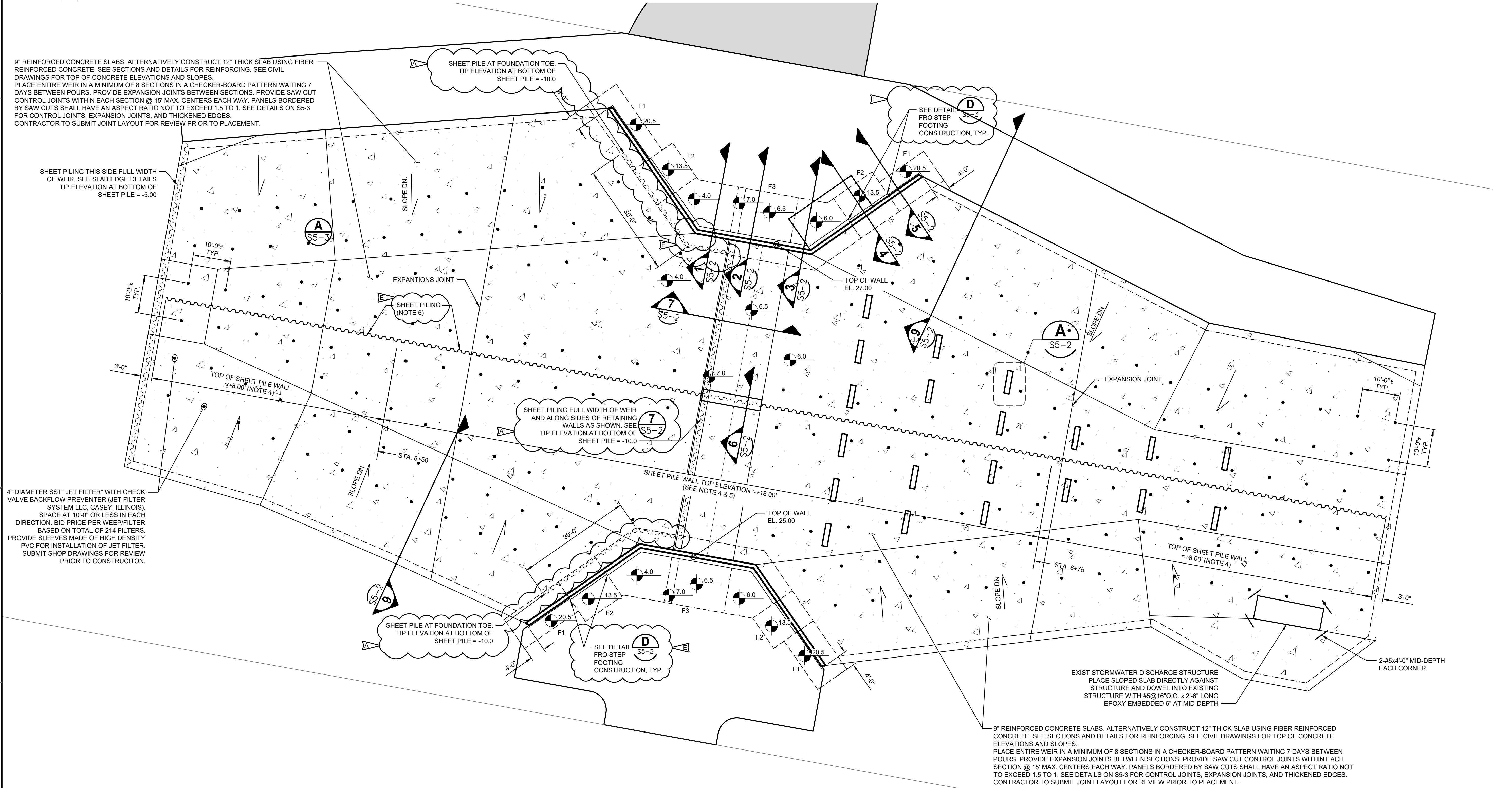
Engineering & Consulting, Inc.
 5590 SW 64th Street, Suite B
 Gainesville, Florida 32608
 Phone: (352) 377-3233 Fax: (352) 377-0335

MONRAD R. THUE, PROFESSIONAL ENGINEER, STATE OF FLORIDA, LICENSE NUMBER 32071

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY MONRAD R. THUE ON THE DATE AT THE RIGHT.

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PROJECT NO:	19750-066-01	DATE:	OCT 2020
INDEX NO:		DWG NO:	S4-2



9" REINFORCED CONCRETE SLABS. ALTERNATIVELY CONSTRUCT 12" THICK SLAB USING FIBER REINFORCED CONCRETE. SEE SECTIONS AND DETAILS FOR REINFORCING. SEE CIVIL DRAWINGS FOR TOP OF CONCRETE ELEVATIONS AND SLOPES. PLACE ENTIRE WEIR IN A MINIMUM OF 8 SECTIONS IN A CHECKER-BOARD PATTERN WAITING 7 DAYS BETWEEN POURS. PROVIDE EXPANSION JOINTS BETWEEN SECTIONS. PROVIDE SAW CUT CONTROL JOINTS WITHIN EACH SECTION @ 15' MAX. CENTERS EACH WAY. PANELS BORDERED BY SAW CUTS SHALL HAVE AN ASPECT RATIO NOT TO EXCEED 1.5 TO 1. SEE DETAILS ON S5-3 FOR CONTROL JOINTS, EXPANSION JOINTS, AND THICKENED EDGES. CONTRACTOR TO SUBMIT JOINT LAYOUT FOR REVIEW PRIOR TO PLACEMENT.

SHEET PILING THIS SIDE FULL WIDTH OF WEIR. SEE SLAB EDGE DETAILS TIP ELEVATION AT BOTTOM OF SHEET PILE = -5.00

4" DIAMETER SST "JET FILTER" WITH CHECK VALVE BACKFLOW PREVENTER (JET FILTER SYSTEM LLC, CASEY, ILLINOIS). SPACE AT 10'-0" OR LESS IN EACH DIRECTION. BID PRICE PER WEIR FILTER BASED ON TOTAL OF 214 FILTERS. PROVIDE SLEEVES MADE OF HIGH DENSITY PVC FOR INSTALLATION OF JET FILTER. SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO CONSTRUCTION.

SHEET PILING FULL WIDTH OF WEIR AND ALONG SIDES OF RETAINING WALLS AS SHOWN. SEE TIP ELEVATION AT BOTTOM OF SHEET PILE = -10.0

EXIST STORMWATER DISCHARGE STRUCTURE PLACE SLOPED SLAB DIRECTLY AGAINST STRUCTURE AND DOWEL INTO EXISTING STRUCTURE WITH #5@16" O.C. x 2'-6" LONG EPOXY EMBEDDED 6" AT MID-DEPTH

9" REINFORCED CONCRETE SLABS. ALTERNATIVELY CONSTRUCT 12" THICK SLAB USING FIBER REINFORCED CONCRETE. SEE SECTIONS AND DETAILS FOR REINFORCING. SEE CIVIL DRAWINGS FOR TOP OF CONCRETE ELEVATIONS AND SLOPES. PLACE ENTIRE WEIR IN A MINIMUM OF 8 SECTIONS IN A CHECKER-BOARD PATTERN WAITING 7 DAYS BETWEEN POURS. PROVIDE EXPANSION JOINTS BETWEEN SECTIONS. PROVIDE SAW CUT CONTROL JOINTS WITHIN EACH SECTION @ 15' MAX. CENTERS EACH WAY. PANELS BORDERED BY SAW CUTS SHALL HAVE AN ASPECT RATIO NOT TO EXCEED 1.5 TO 1. SEE DETAILS ON S5-3 FOR CONTROL JOINTS, EXPANSION JOINTS, AND THICKENED EDGES. CONTRACTOR TO SUBMIT JOINT LAYOUT FOR REVIEW PRIOR TO PLACEMENT.

PLAN
1/4" = 1'-0"

- PLAN NOTES:**
1. SEE CIVIL DRAWINGS FOR ALL PLAN DIMENSIONS, SLOPES, AND TO COORDINATE TOP OF SLAB AND WALL ELEVATIONS.
 2. SEE SECTIONS AND DETAILS FOR FOUNDATION SIZES AND REINFORCING.
 3. SEE FOUNDATION NOTES ON G7 FOR INFORMATION ON FOUNDATION AND SLAB BEARING SURFACES.
 4. SHEET PILE CAN EXTEND TO +18.00' DURING CONSTRUCTION AT CONTRACTOR'S OPTION. FINAL ELEVATION OF +8.00' SHALL BE ACHIEVED BY CUTTING OFF SHEET PILE OR ADDITIONAL DRILLING.
 5. MINIMUM BOTTOM OF SHEET PILE TIP ELEVATION TO BE 25'-0" BELOW BOTTOM OF SLAB.
 6. EXCEPT AT CONCRETE WALL AT WEIR (SECTION 6/S5-2) SHEET PILING SHALL BE CONTINUOUS FROM TOP ELEVATION CALLED OUT DOWN TO TIP ELEVATION OF 25'-0" BELOW BOTTOM OF WEIR SLAB. NO CAP IS REQUIRED



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5590 SW 64th Street, Suite B
Gainesville, Florida 32608
Phone: (352) 377-3233 Fax: (352) 377-0335

8/21/20	REV A	JMG	MRT	DESIGNED	M THUE
10/30/20	REV E	JMG	MRT	DRAWN	J GALLER
				CHECKED	D CRAPPS
LTR.	DATE	REVISIONS	BY	APPRD.	

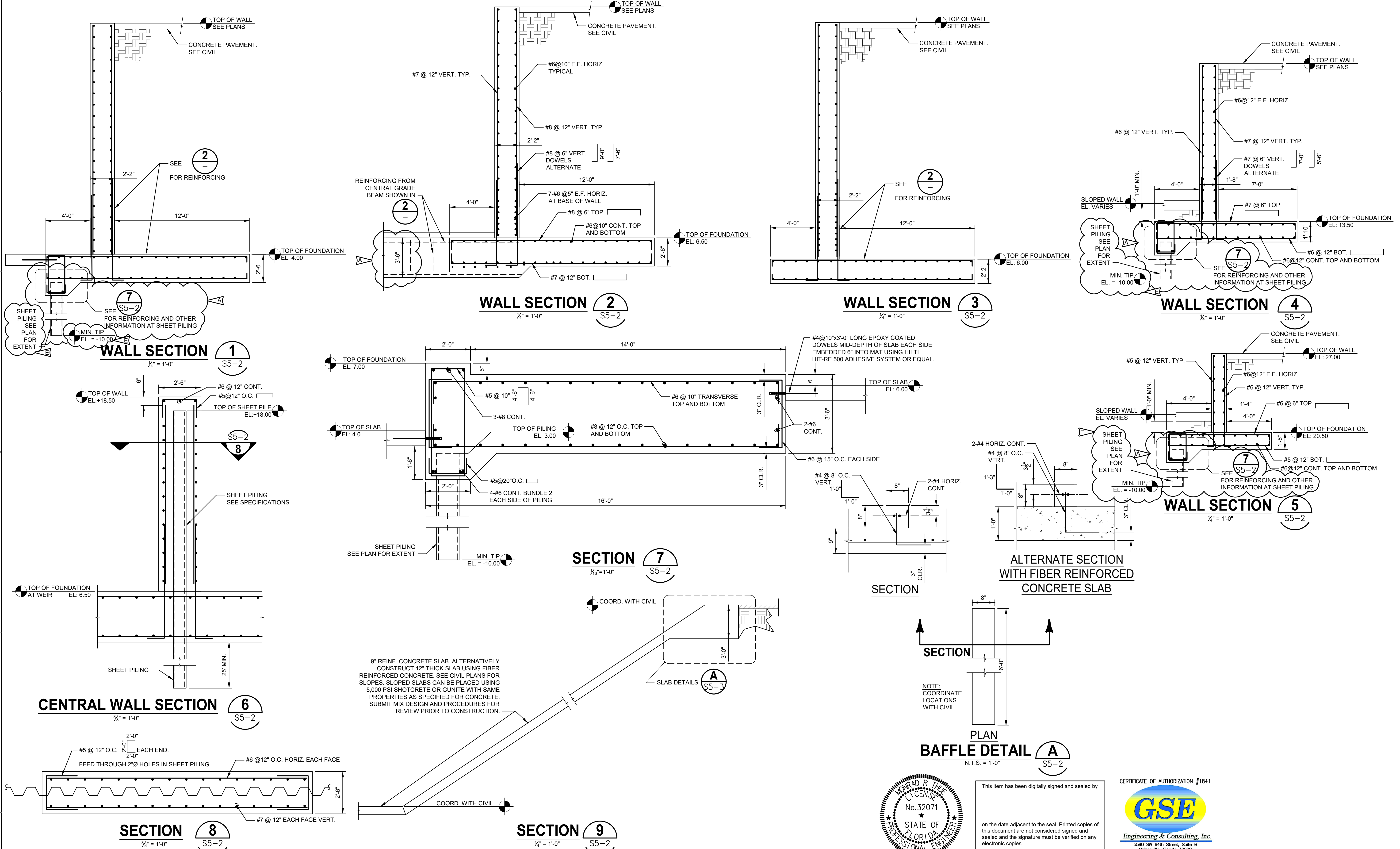
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CRANE CREEK M-1 CANAL FLOW RESTORATION
ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT

WEIR PLAN

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CRANE CREEK M-1 CANAL FLOW RESTORATION
ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT



WEIR SECTIONS AND DETAILS

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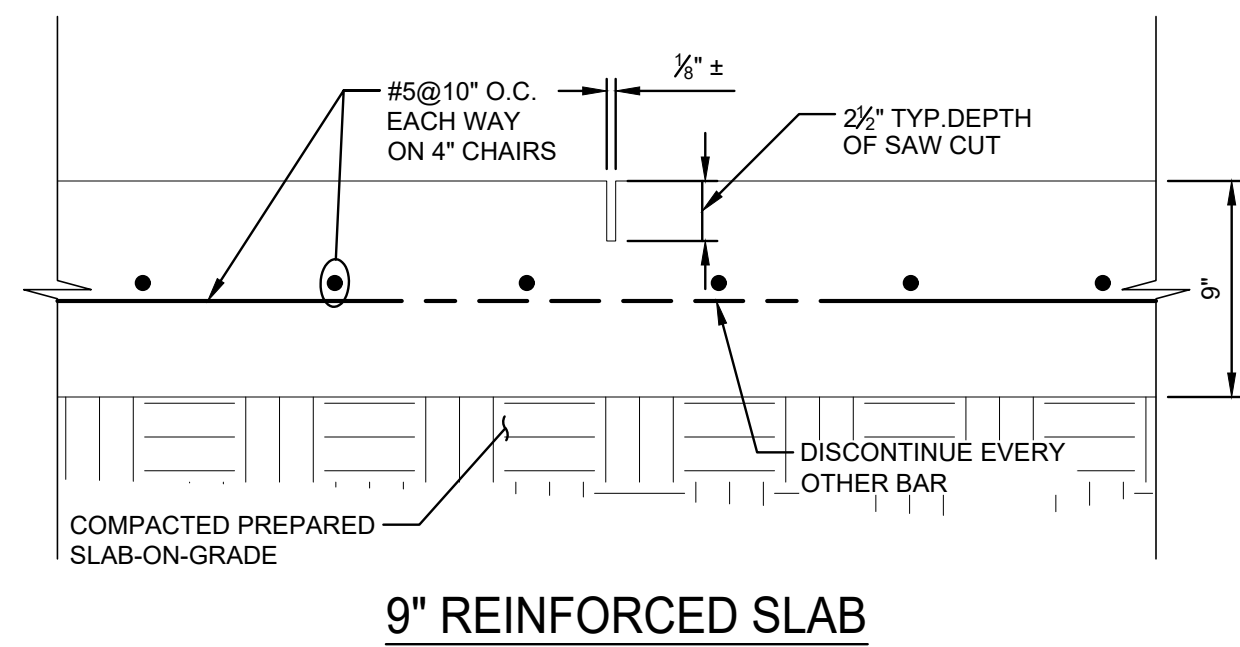
Engineering & Consulting, Inc.
 5590 SW 64th Street, Suite B
 Gainesville, Florida 32608
 Phone: (352) 377-3233 Fax: (352) 377-0335

MONRAD R. THUE, PROFESSIONAL ENGINEER, STATE OF FLORIDA, LICENSE NUMBER 32071

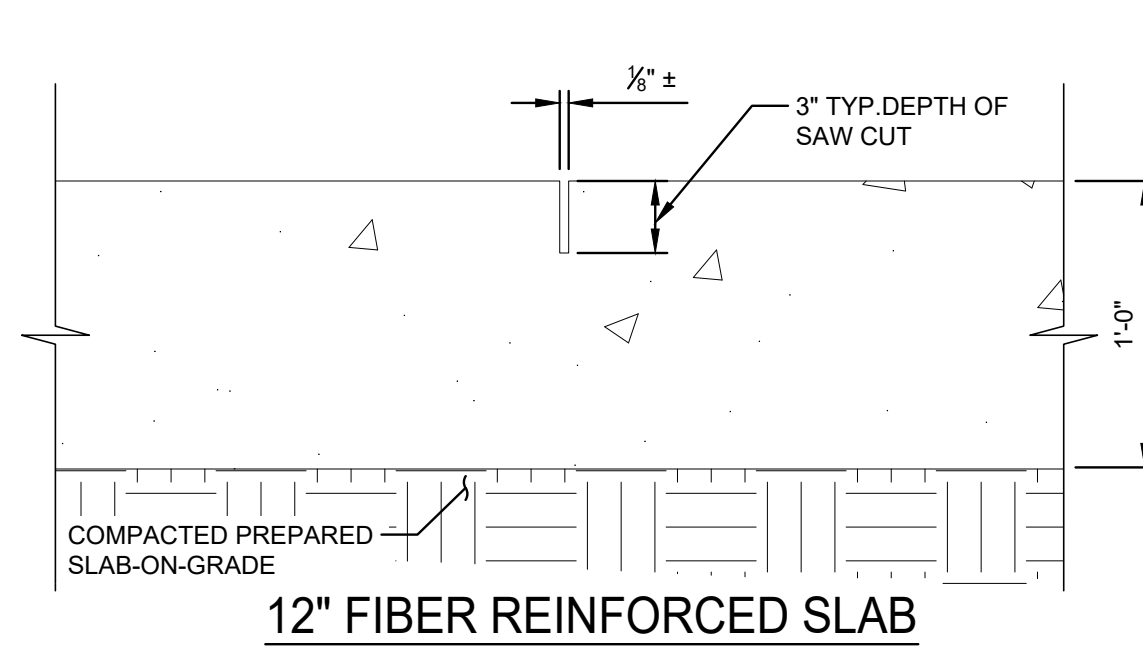
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	S5-2



9" REINFORCED SLAB

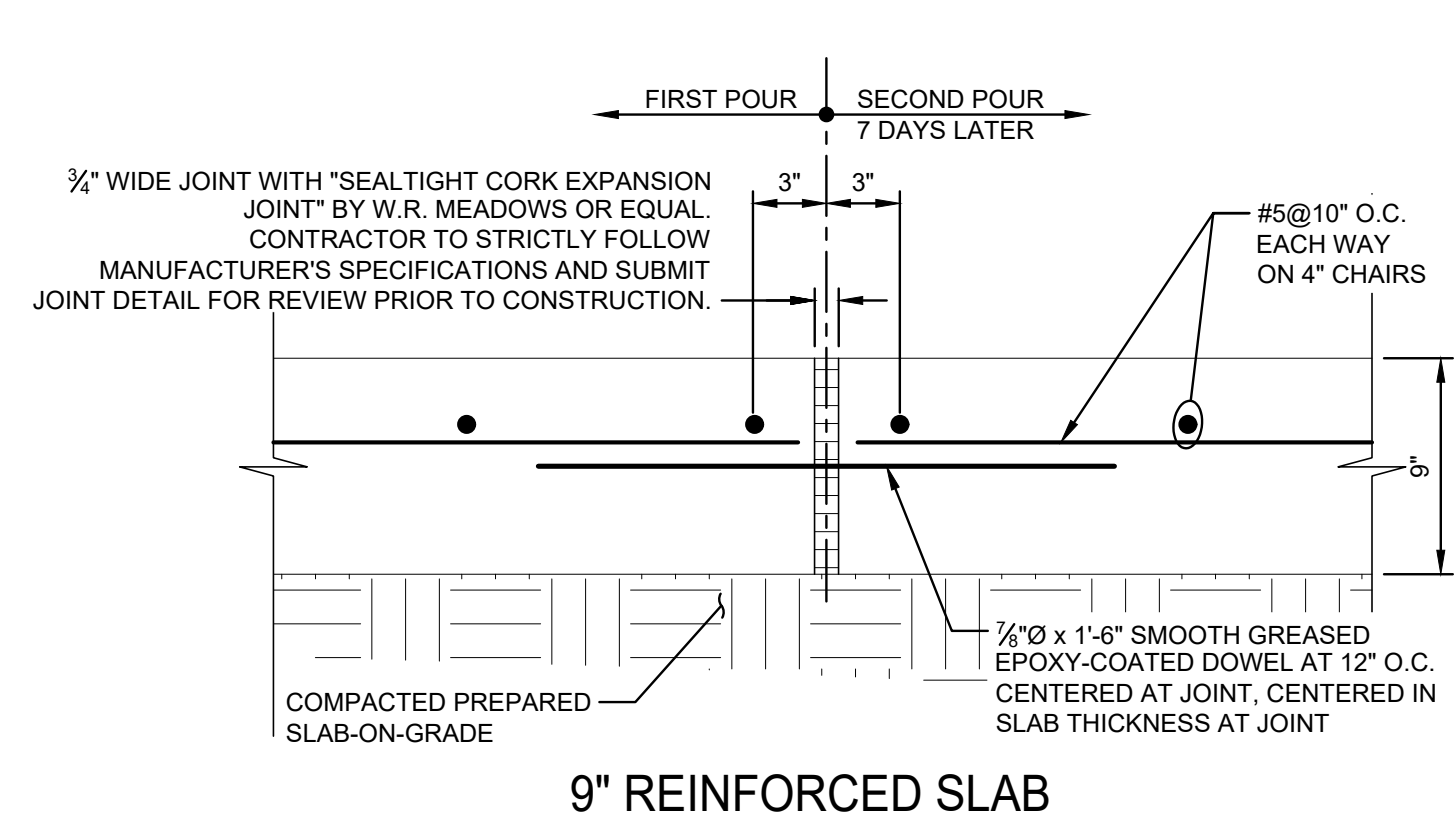


12" FIBER REINFORCED SLAB

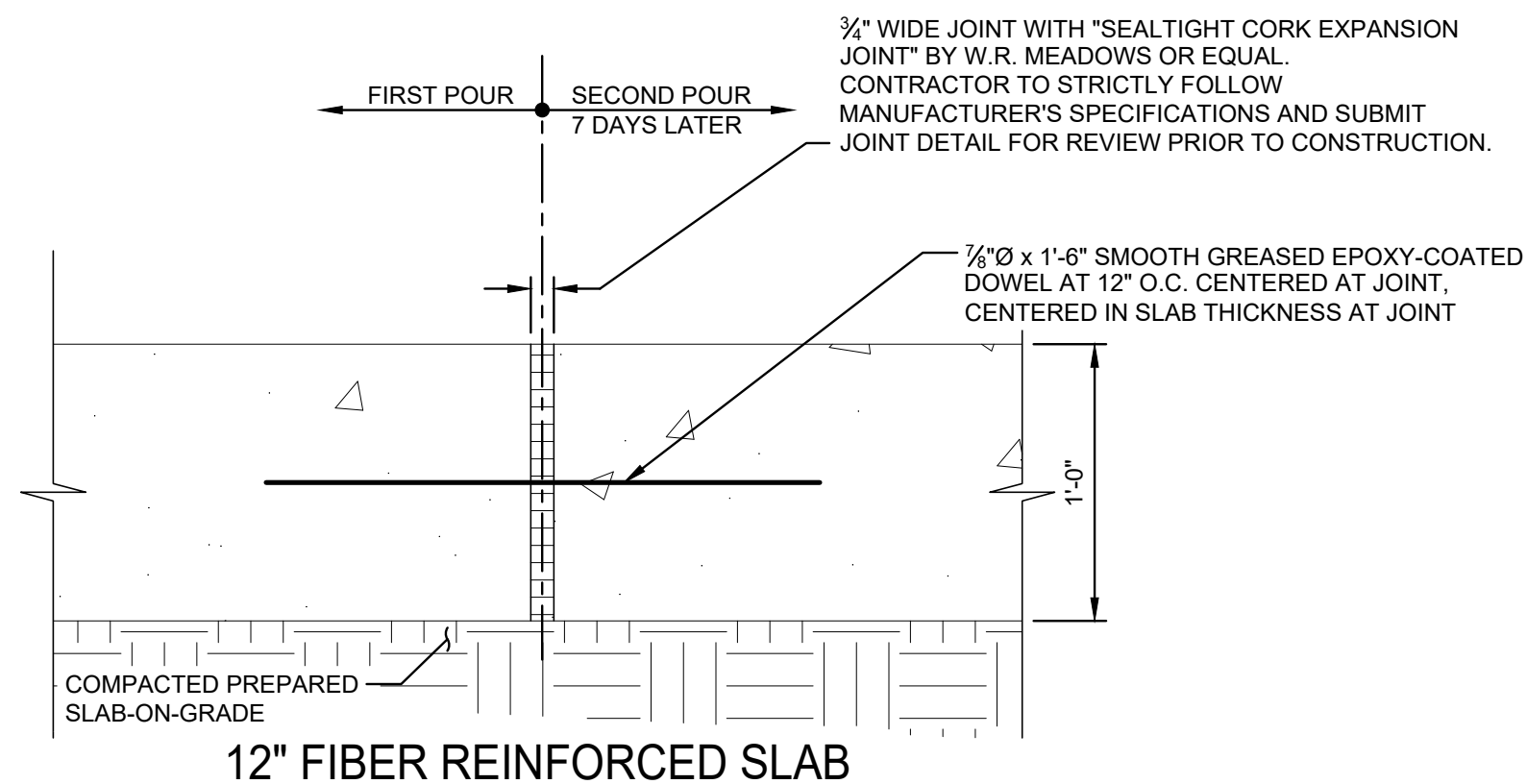
NOTES:

1. SAW CUT AS SOON AS CONCRETE HAS HARDENED SUFFICIENTLY TO PREVENT DISLODGE- MENT OF AGGREGATES. COMPLETE WITHIN 8 HOURS AFTER PLACEMENT.

SAW CUT CONTROL JOINTS @ 15' MAX. CENTERS BETWEEN CONSTRUCTION JOINTS

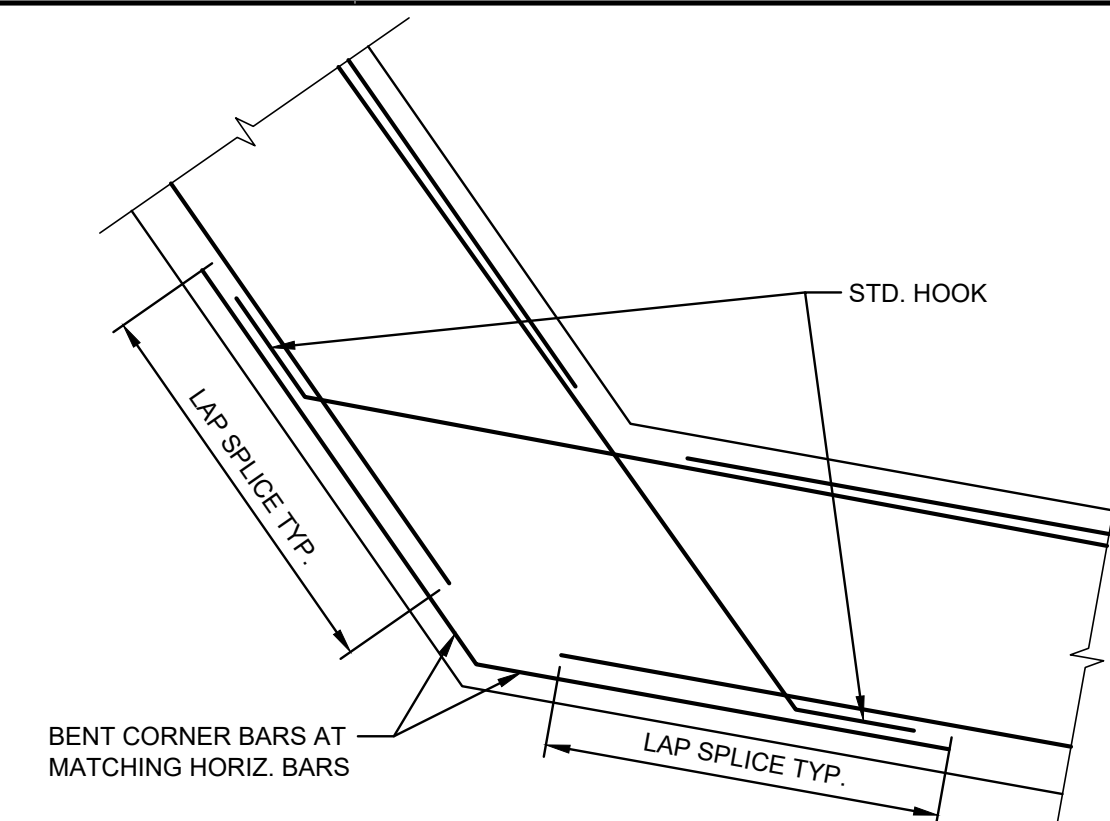


9" REINFORCED SLAB



12" FIBER REINFORCED SLAB

EXPANSION JOINTS

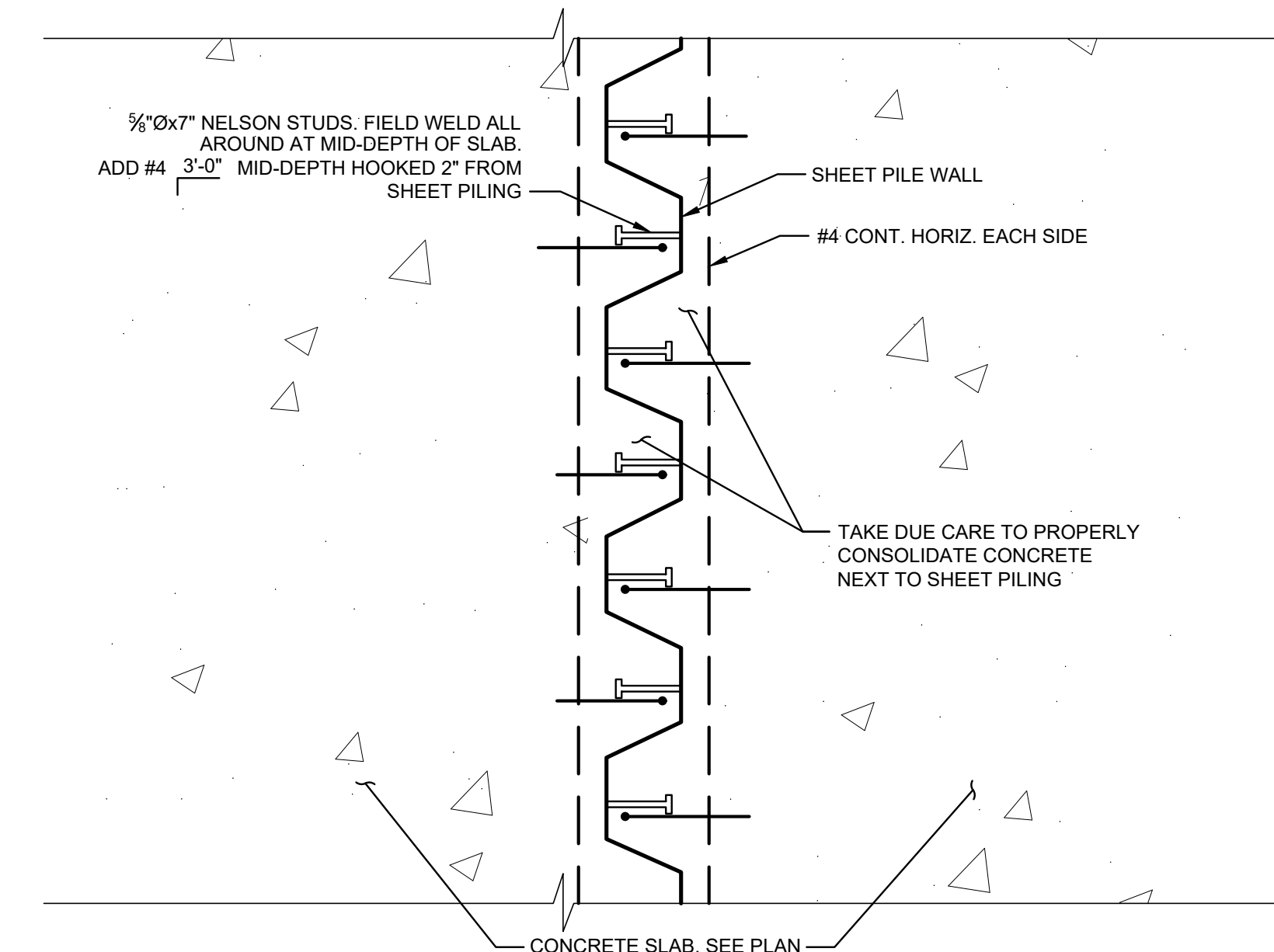


NOTE: VERT. REINF. NOT SHOWN

CONCRETE WALL REINFORCEMENT AT CORNERS

N.T.S.

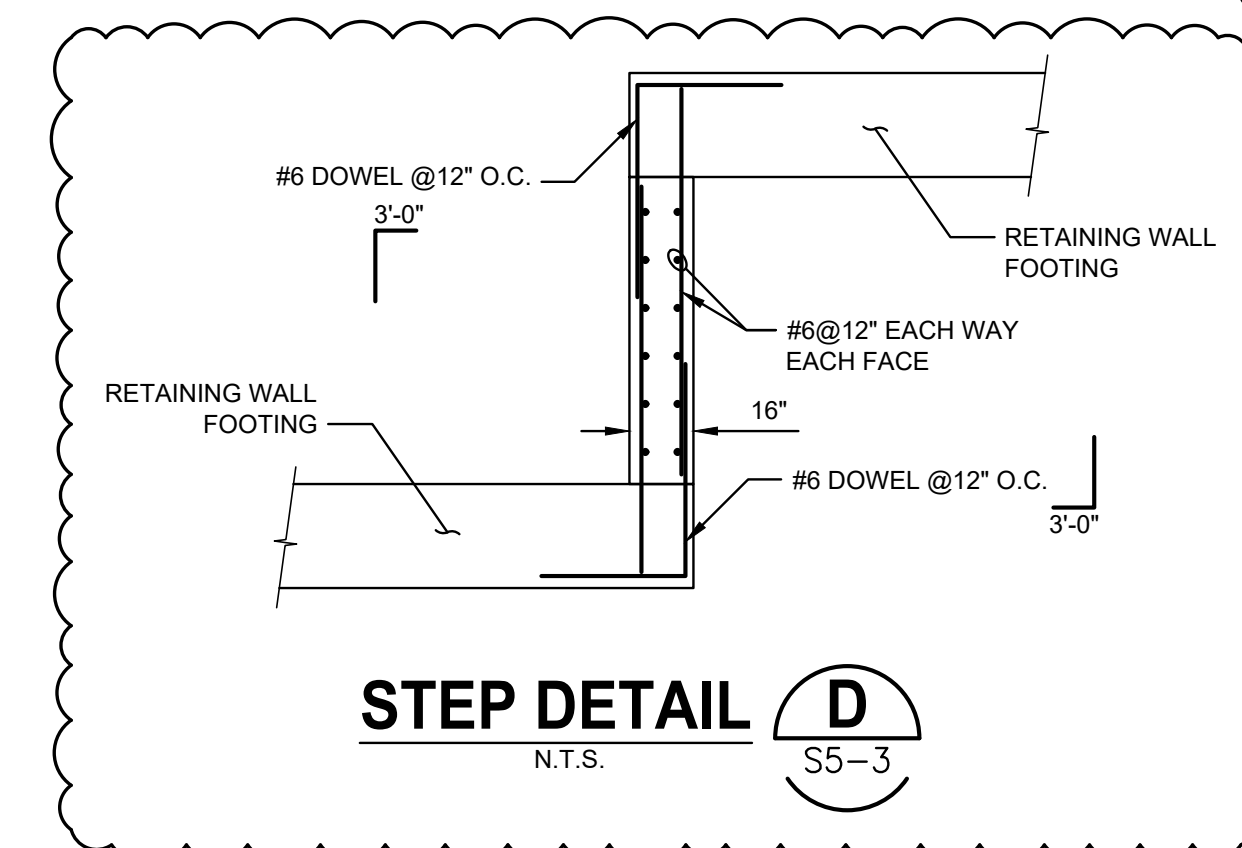
B
S5-3



CONCRETE SLAB AT SHEET PILE WALL

N.T.S.

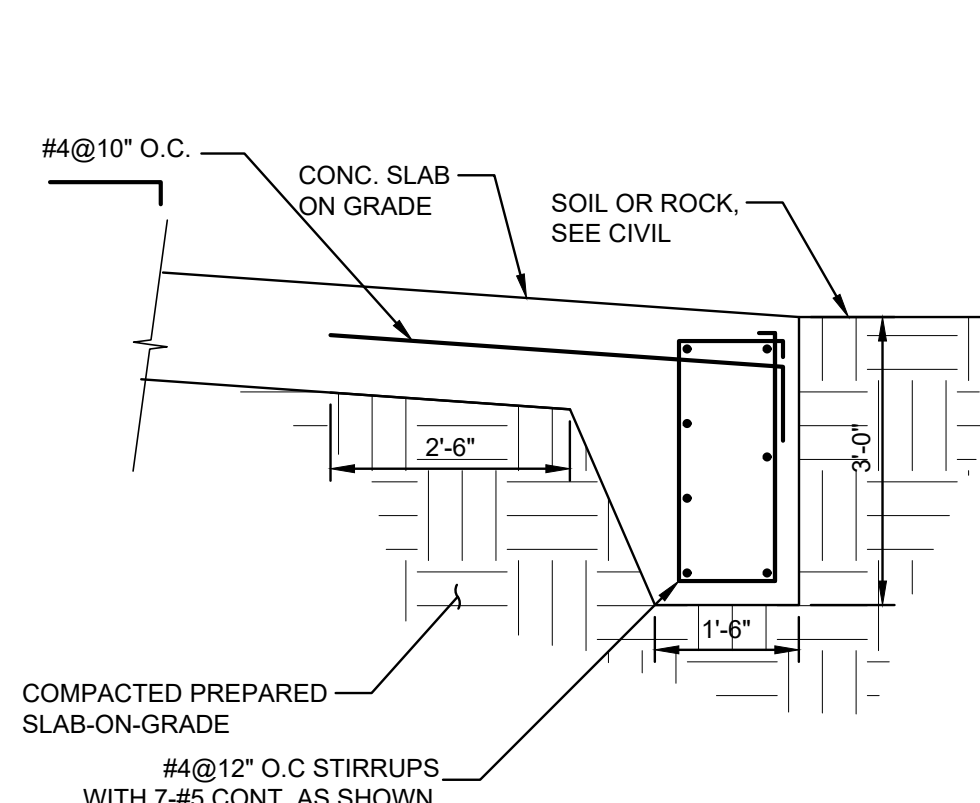
C
S5-3



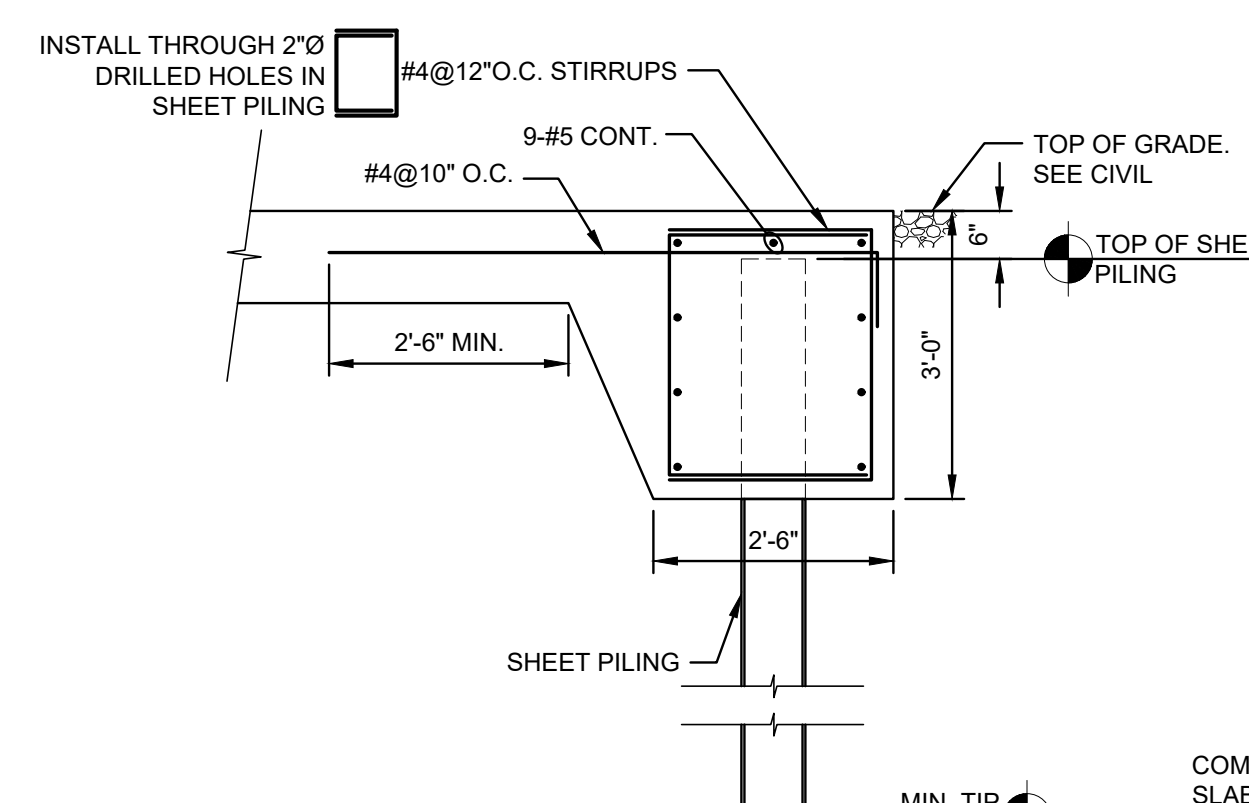
STEP DETAIL

N.T.S.

D
S5-3



EDGE OF SLAB AT BASE

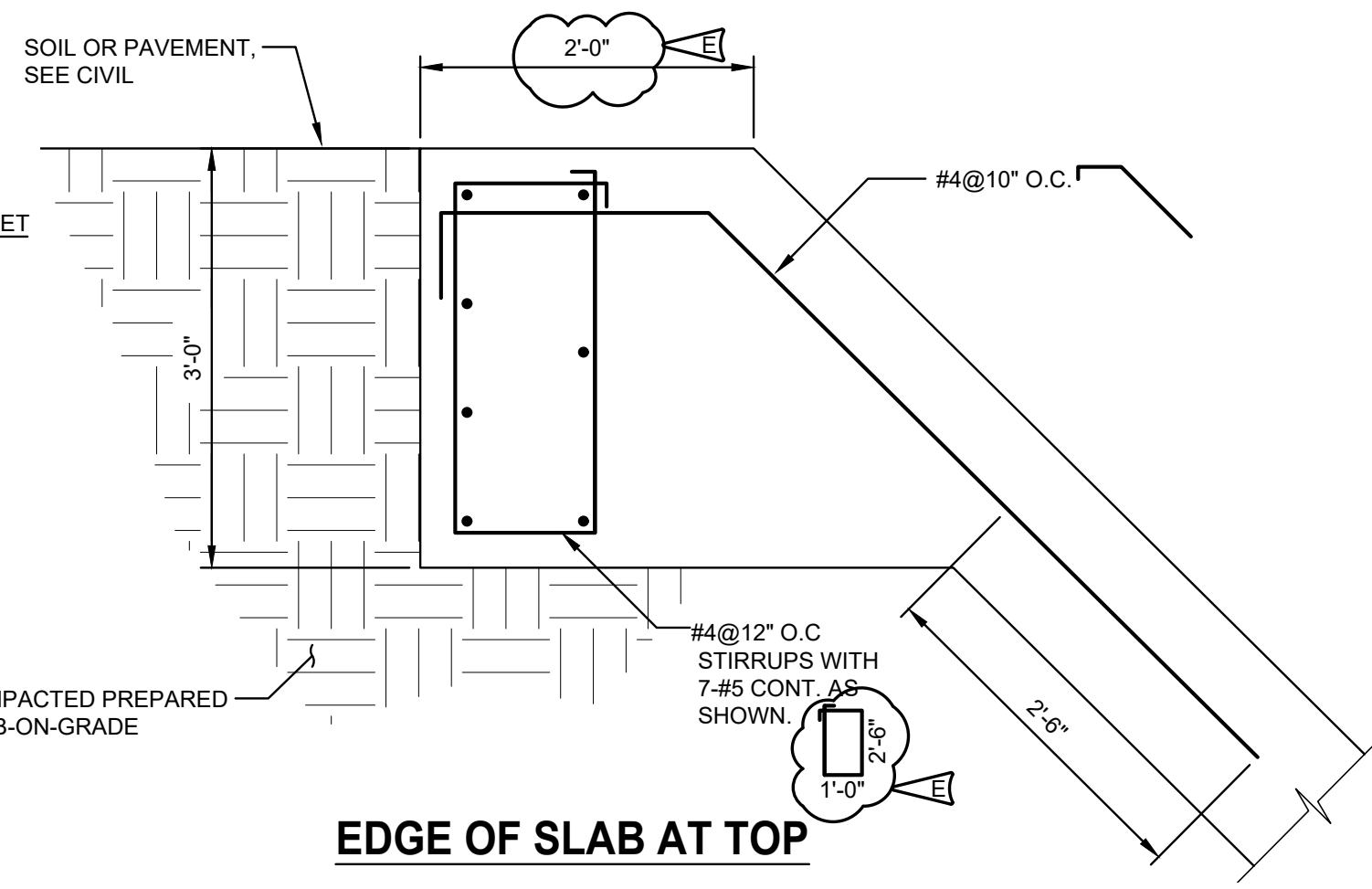


EDGE OF SLAB AT SHEET PILING

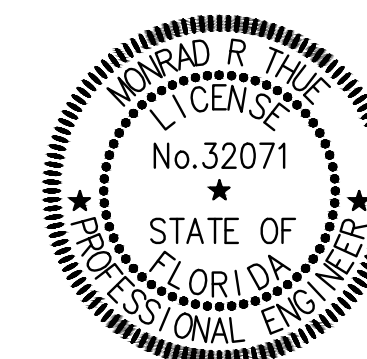
SLAB DETAILS

N.T.S.

A
S5-3



EDGE OF SLAB AT TOP



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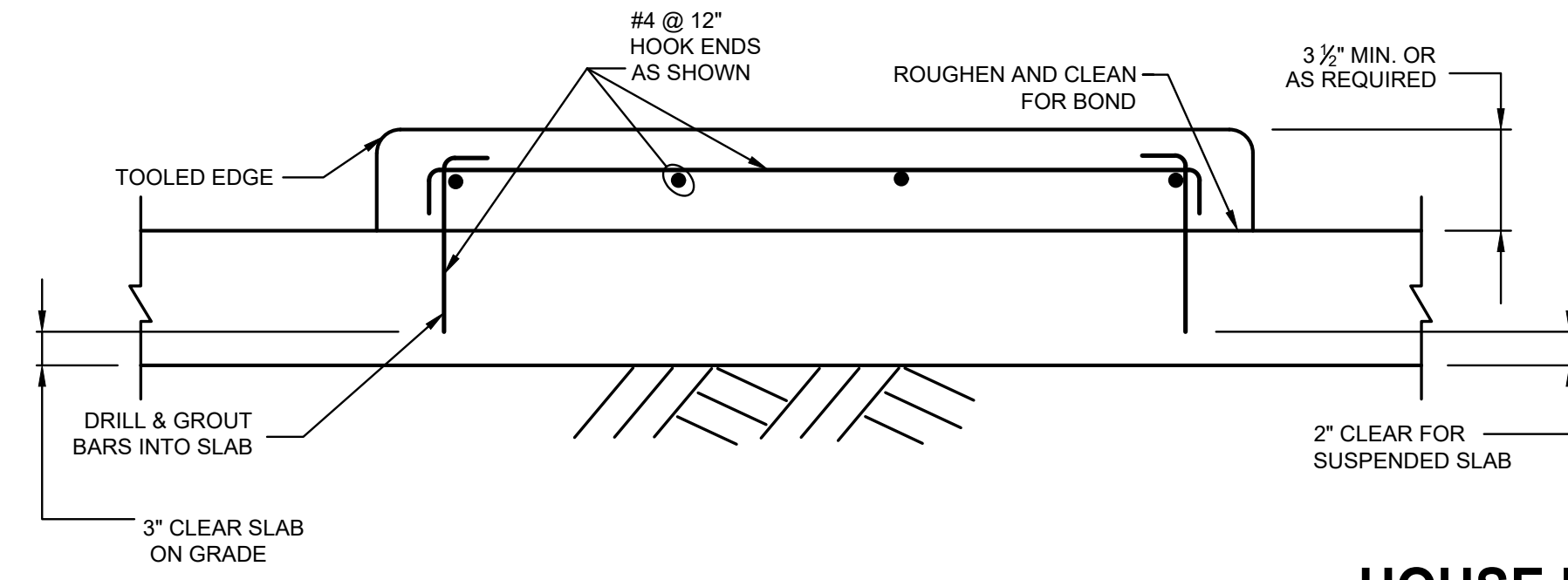
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**CRANE CREEK M-1 CANAL FLOW RESTORATION
ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT**

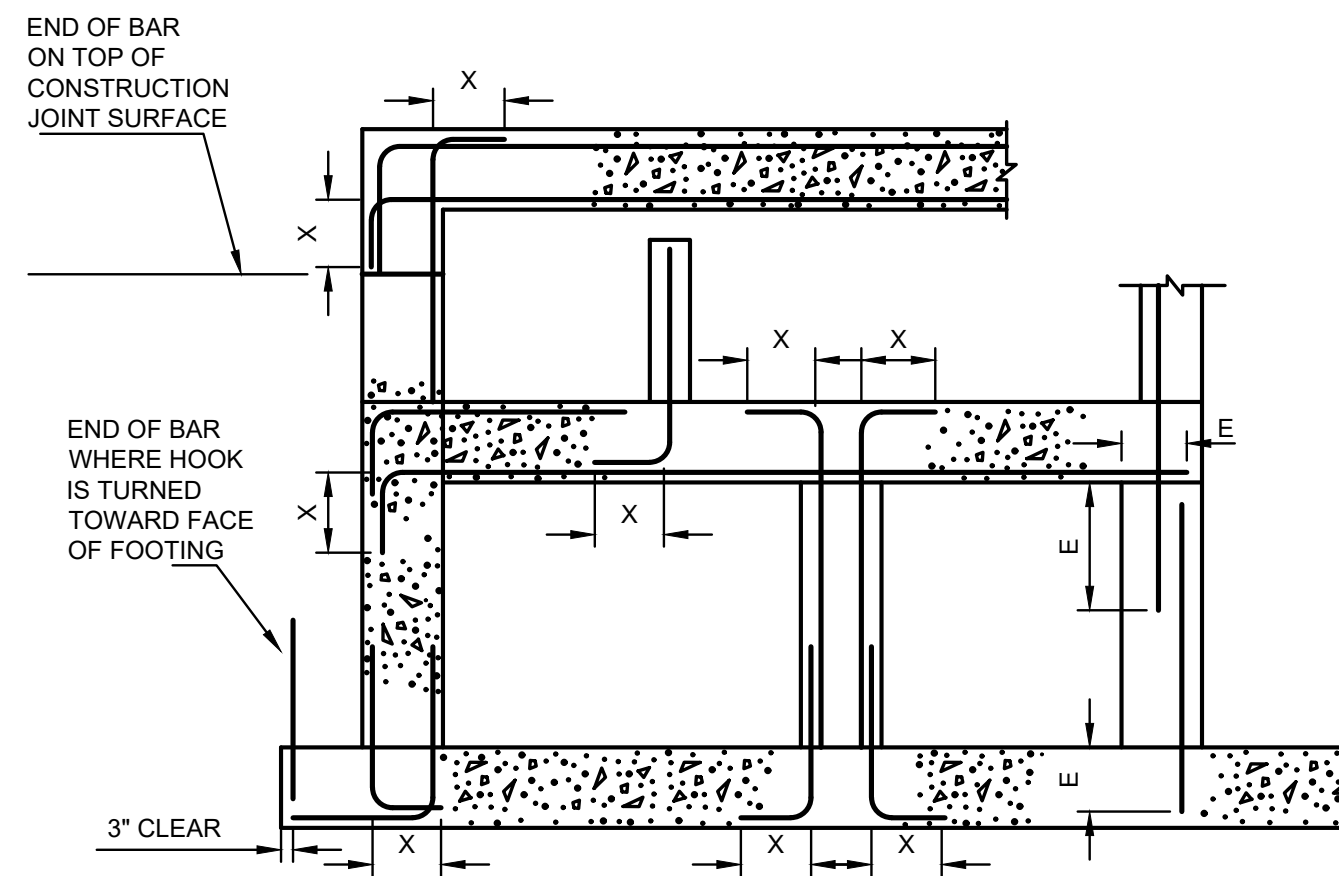
WEIR SECTIONS AND DETAILS

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HOUSE KEEPING PAD A
N.T.S. S5-4



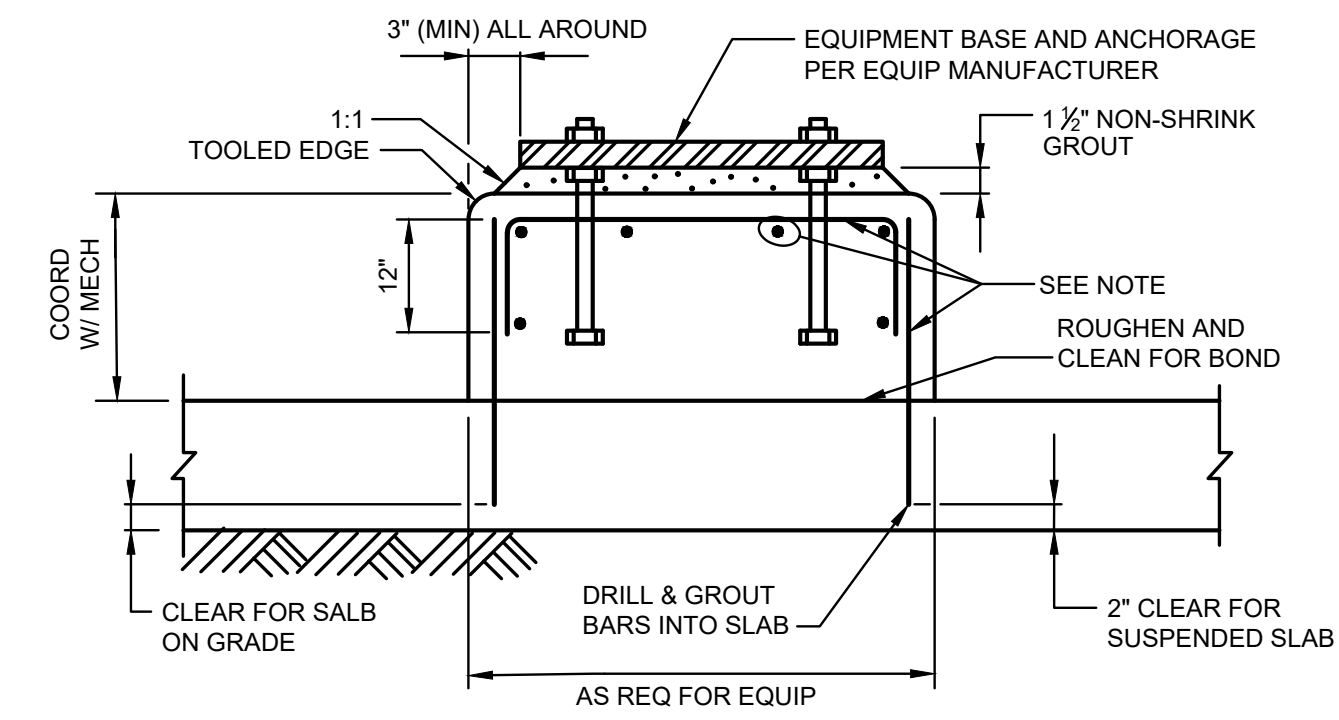
CONCRETE DESIGN STRENGTH = 4,000 PSI
GRADE 60 REINFORCING STEEL

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
LAP SLICE LENGTH								
TOP BAR	2'-0"	3'-5"	4'-1"	5'-10"	7'-4"	7'-10"	8'-8"	10'-5"
OTHER BAR	1'-7"	2'-7"	3'-3"	4'-6"	5'-8"	6'-1"	6'-9"	8'-1"
EMBEDMENT LENGTH								
TOP BAR	1'-7"	2'-7"	3'-2"	4'-6"	5'-2"	5'-10"	6'-7"	7'-3"
OTHER BAR	1'-7"	2'-0"	2'-5"	3'-6"	4'-0"	4'-6"	5'-1"	5'-7"

* TOP BARS SHALL BE DEFINED AS ANY HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR IN ANY SINGLE POUR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.

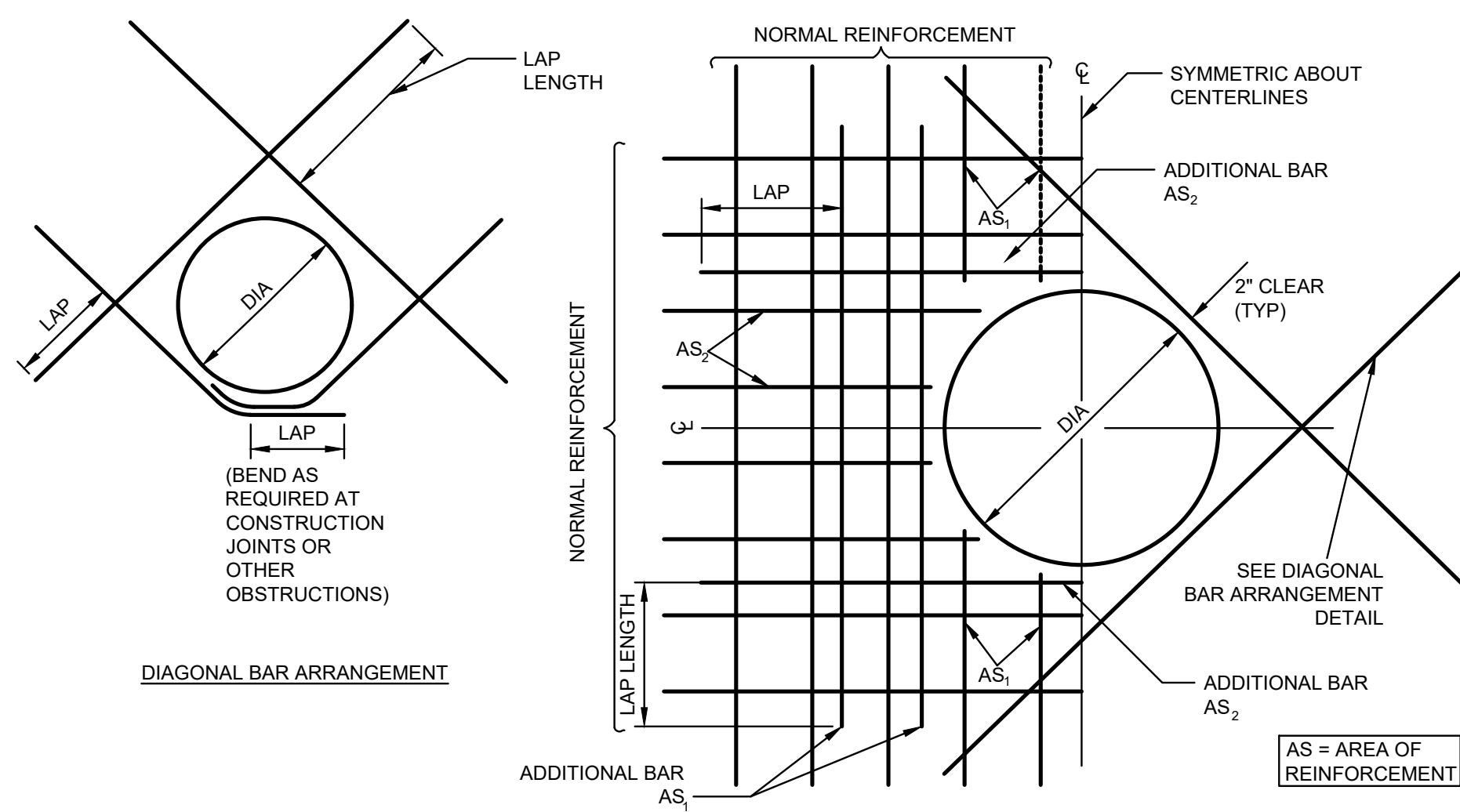
- NOTE:**
- CONTINUOUS WATERSTOP, AS SPECIFIED, SHALL BE INSTALLED IN ALL CONSTRUCTION JOINTS IN WALLS OF WATER HOLDING BASINS AND CHANNELS, EXCEPT WHERE INDICATED OTHERWISE.
 - WHEN BARS OF DIFFERENT SIZES ARE LAP SPICED, LAP LENGTH SHALL BE THE LARGER OF:
EMBEDMENT LENGTH OF LARGER BARS
LAP LENGTH OF SMALLER BAR
 - UNLESS NOTED, BARS SHALL EXTEND AN EMBEDMENT LENGTH "E" INTO ANOTHER MEMBER OR ACROSS A CONSTRUCTION JOINT UNLESS SHOWN TO SPLICE WITH OTHER BARS OR TO EXTEND TO THE FAR FACE OF THE MEMBER AND END WITH A STANDARD HOOK AS DESIGNATED BY "X" N

STANDARD 90 BAR HOOKS, EMBEDMENT LENGTHS, AND LAP LENGTHS F
N.T.S. S5-4



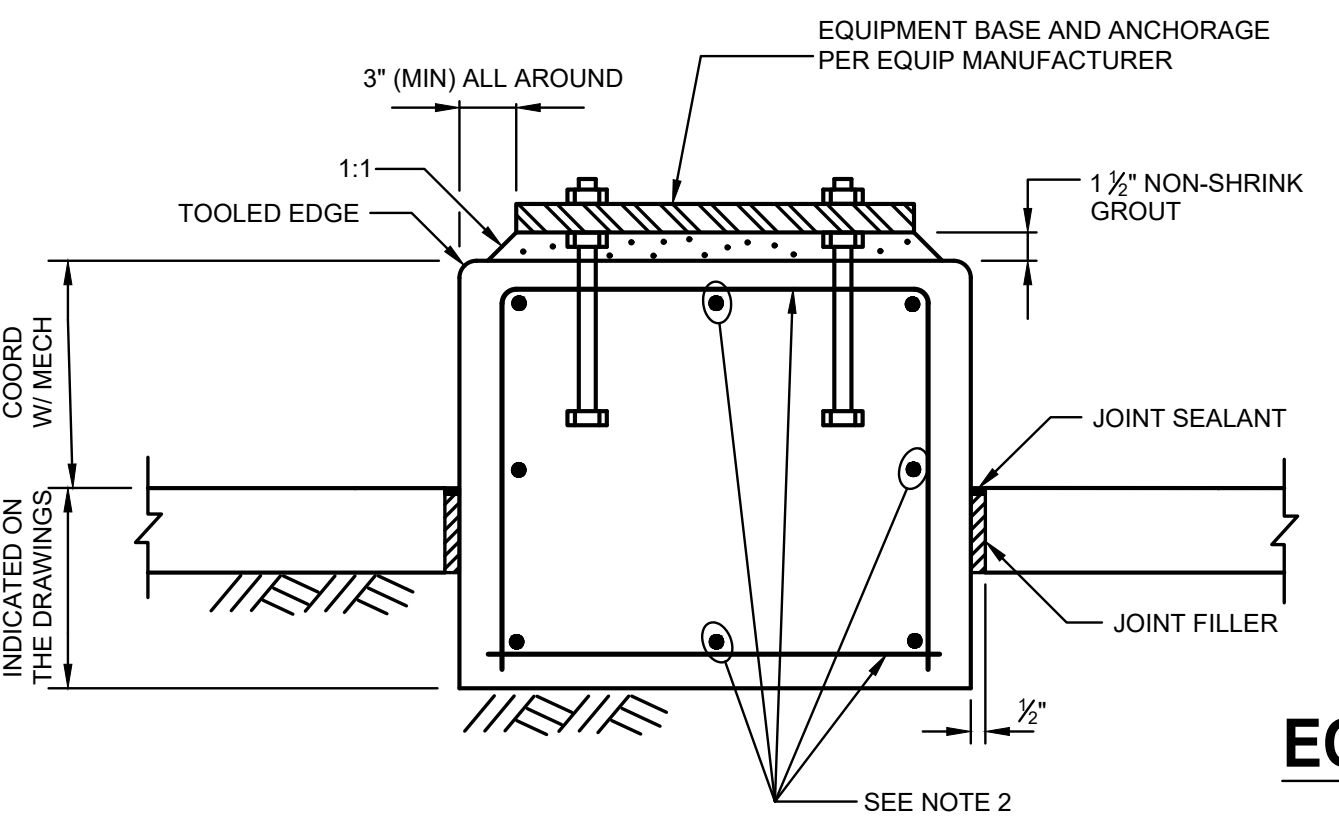
- NOTE:**
- #5@12" UNO PROVIDE CORNER BARS TO ENSURE CONTINUE HORIZONTAL REINFORCEMENT

EQUIPMENT BASE B
N.T.S. S5-4



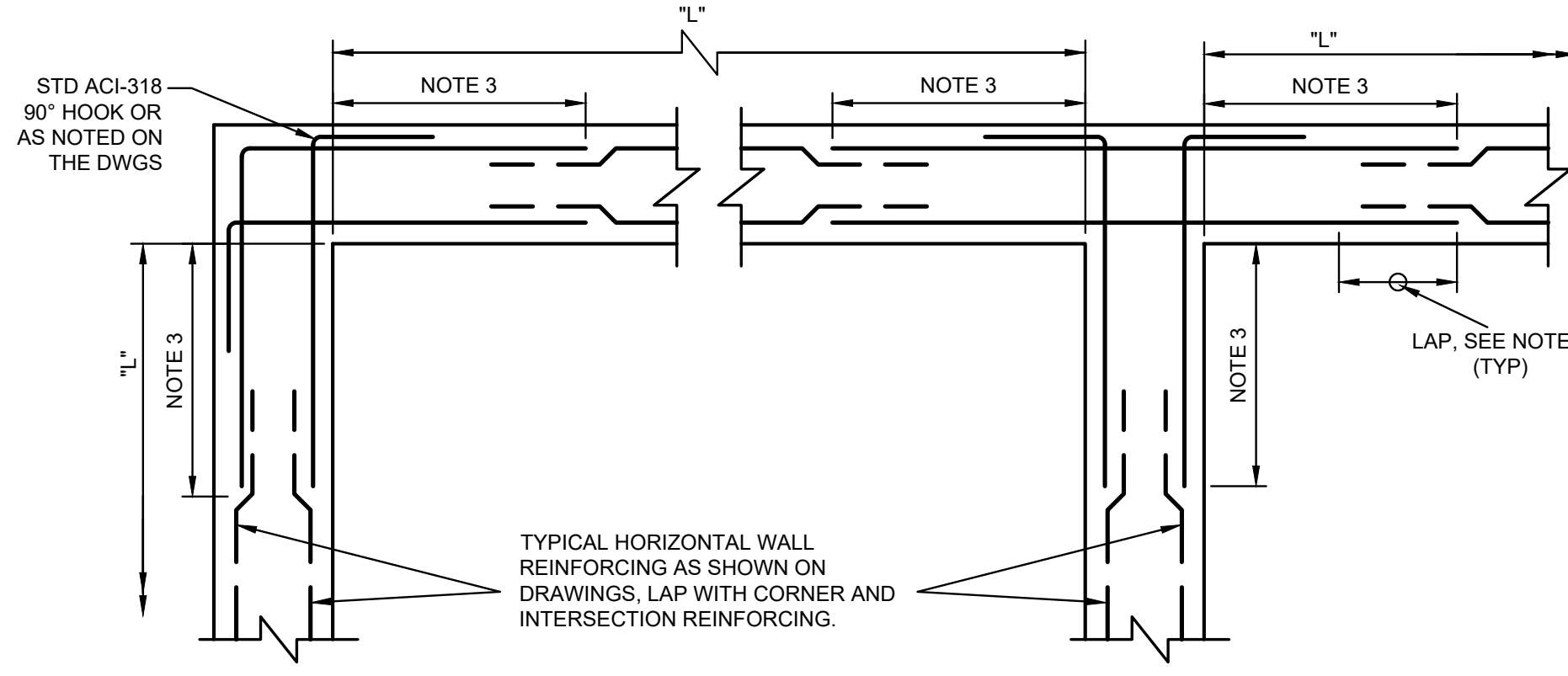
- NOTE:**
- THIS DETAIL TO BE USED AT ALL CIRCULAR OPENINGS EXCEPT WHEN OTHER DETAILING IS INDICATED ON THE DRAWINGS.
 - CUT TYPICAL REINFORCEMENT 2" CLEAR OF OPENING.
 - CUT TYPICAL REINFORCEMENT AT OPENINGS:
A. AS_1 AND $AS_2 = \frac{1}{2}$ AREA OF TOTAL CUT PARS TO BE ADDED ON EACH SIDE OF OPENING.
 - DIAGONAL AND ADDITIONAL BARS AS_1 AND AS_2 TO BE PLACED:
A. AT CENTERLINE OF WALLS OR SLABS WHERE ONE LAYER OF REINFORCEMENT IS PROVIDED.
B. AT EACH FACE OF WALLS OR SLABS WHERE TWO LAYERS REINFORCEMENT ARE PROVIDED.
 - UNLESS OTHERWISE NOTED, SIZE OF DIAGONAL BARS SHALL BE THE SIZE OF THE LARGEST NORMAL REINFORCING BAR CUT.
 - INCREASE SIZE OF ADDITIONAL BARS AS NEEDED TO FIT WITHIN A DISTANCE OF 2X /SLAB THICKNESS FROM OPENING, PROVIDE 2" MIN CLEAR BETWEEN BARS.
 - WHERE A SLAB OR INTERSECTING WALL CONNECTS WITHIN ON WALL THICKNESS OF THE OPENING, ADDITIONAL BARS ON THAT SIDE OF THE OPENING MAY BE OMITTED.
 - WHEN THE LAP LENGTH OF THE ADDITIONAL BARS CANNOT BE ACHIEVED DUE TO AN ADJACENT WALL OR SLAB, ADDITIONAL CORNER BARS OR SLAB DOWELS, RESPECTIVELY, MATCHING THE CUT BARS, ARE TO BE INCLUDED IN THE ADJACENT WALL OR SLAB TO LAP WITH THE ADDITIONAL BARS.

ADDITIONAL REINFORCEMENT AT CIRCULAR OPENINGS G
N.T.S. S5-4



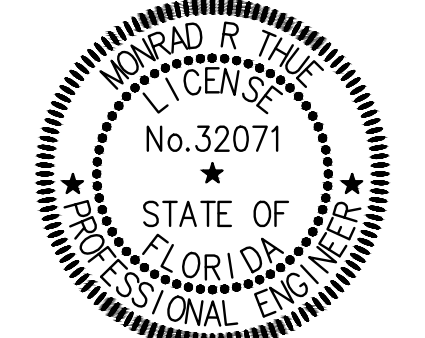
- NOTE:**
- WHERE NO DIMENSION IS INDICATED ON THE DRAWINGS, BASE DEPTH SHALL BE SET SO THAT THE BASE WEIGHS AT LEAST TWICE THE WEIGHT OF THE EQUIPMENT SUPPORTED.
 - #5@12" UNO PROVIDE CORNER BARS TO ENSURE CONTINUE HORIZONTAL REINFORCEMENT.

EQUIPMENT BASE ON GRADE WITH SEPARATING JOINT C
N.T.S. S5-4

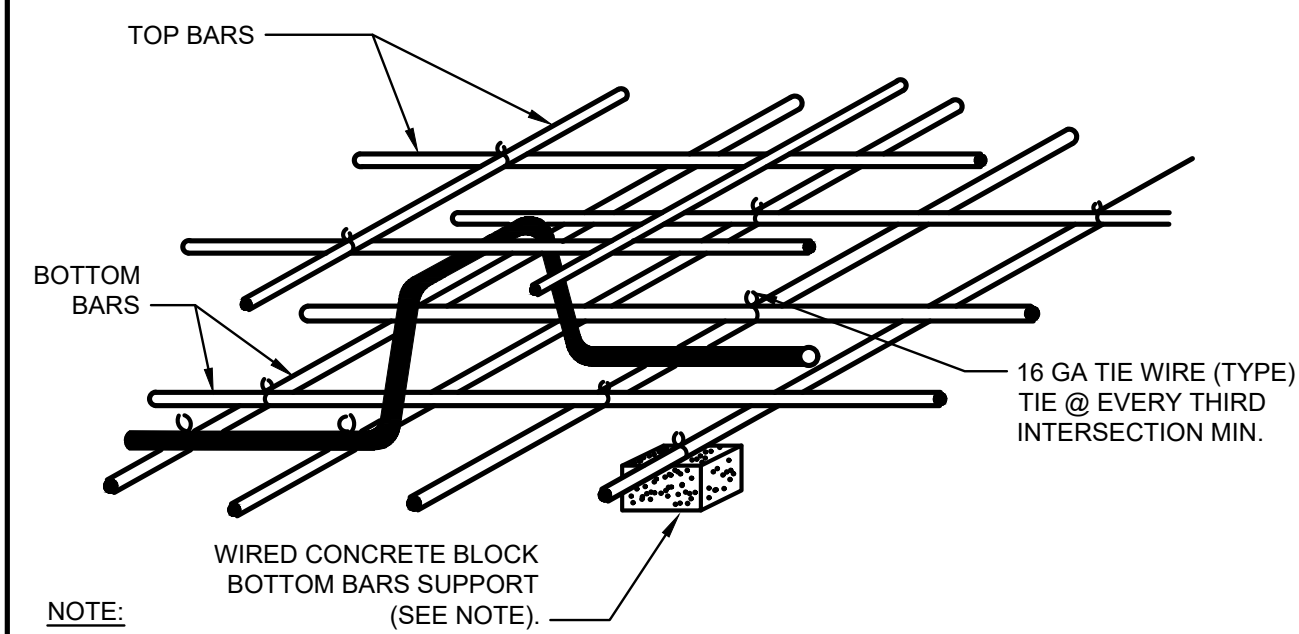


- NOTE:**
- TYPICAL HORIZONTAL WALL CORNER AND INTERSECTION REINFORCING LAYOUT IS SHOWN TO AVOID CONGESTION AND PERMIT PROPER PLACEMENT, FOR SIZE AND SPACING SEE PLAN. ALL HORIZONTAL REINFORCING AT CORNERS AND INTERSECTIONS SHALL BE FABRICATED AND INSTALLED WITH SPLICES LOCATED WHERE SHOWN REGARDLESS OF BAR SIZE AND SPACING.
 - WHERE THE CORNER OR INTERSECTION REINFORCING SIZE AND SPACING IS NOT SHOWN, NOTED OR TABULATED ON THE PLANS, THE SIZE AND SPACING SHALL BE THE SAME AS THE WALL HORIZONTAL REINFORCING SHOWN ON THE WALL SECTIONS OR AS NOTED FOR THE REINFORCING BETWEEN THE CORNERS OR INTERSECTIONS.
 - EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS, THE LENGTH INDICATED AS "NOTE 3" SHALL BE THE LESS OF L/4, 10 FEET, OR 1.0 TIMES THE HEIGHTS OF THE WALL, EXCEPT THAT IN NO CASE SHALL IT BE LESS THAN 2 FEET.
 - L = LENGTH OF WALL PARALLEL TO THE BAR LENGTH IN QUESTION.
 - EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS, THE LENGTH INDICATED AS "NOTE 5" SHALL BE EQUAL TO ONE "LAP LENGTH" AS REQUIRED BY THE GENERAL STRUCTURAL NOTES. USE THE LAP LENGTH AS REQUIRED FOR THE SMALLER OF THE TWO REINFORCING BARS BEING SPLICED.

HORIZONTAL REINFORCEMENT AT WALL INTERSECTIONS H
N.T.S. S5-4

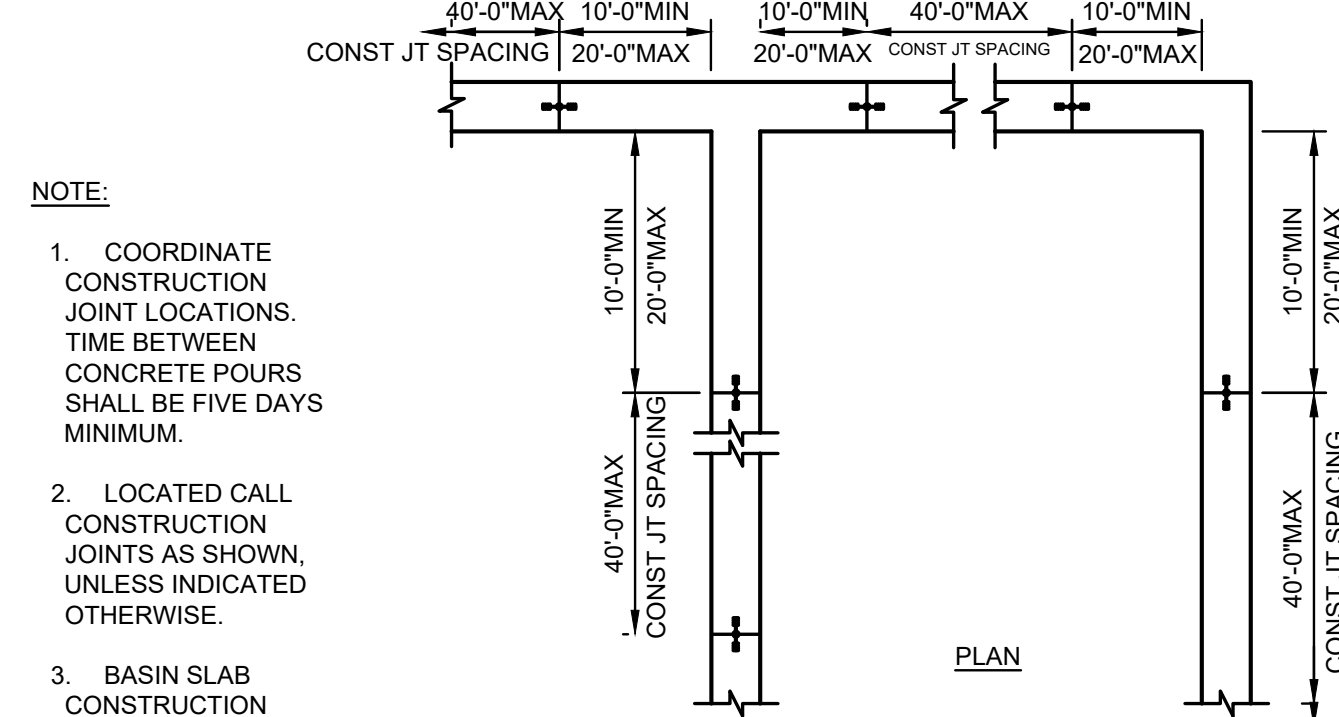


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- NOTE:**
- METAL BAR SUPPORTS, IF USED IN SLABS NOT ON GROUND, SHALL NOT MAKE CONTACT WITH FORMS.

REINFORCING SUPPORT D
N.T.S. S5-4



- NOTE:**
- COORDINATE CONSTRUCTION JOINT LOCATIONS. TIME BETWEEN CONCRETE POURS SHALL BE FIVE DAYS MINIMUM.
 - LOCATED CALL CONSTRUCTION JOINTS AS SHOWN, UNLESS INDICATED OTHERWISE.
 - BASIN SLAB CONSTRUCTION JOINTS SHALL BE SPACED 40'-0" MAX. IN ALL DIRECTIONS.

WALL CONSTRUCTION JOINT SPACING (CONST JT) E
N.T.S. S5-4

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CRANE CREEK M-1 CANAL FLOW RESTORATION
ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT

SECTIONS AND DETAILS

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