SECTION A — AEROBIC DIGESTER BASIN NO. 1, NO. 2, NO. 3

FINISH GRADE EL. VARIES FROM 5405.39 TO 5404.88
UPPER 2'-0" OF BACKFILL TO BE COMPACTED ON-SITE CLAY MATERIAL, SEE NOTE 2 (TYP)
STRUCTURE BACKFILL TO BE COMPACTED GRANULAR, NON-EXPANSIVE MATERIAL (TYP)
EXISTING GRADE EL. VARIES FROM 5411.00 TO 5410.70

T.O.C. = 5412.81
TOP OF WALL REINF. (1 AB-4)
MAX. OPERATING WATER SURFACE EL. = 5409.81
OUTSIDE WALL REINF. (A AB-4)
AEROBIC DIGESTER BASIN NO. 1
#11 DOWELS @ 9" O.C. EACH FACE
#10's CONT. @ 18" O.C. EACH WAY, TOP AND BOTTOM
MIN. 8" CONT. WATERSTOP CENTERED IN KEYWAY (TYP)
INVERTED KEYWAY (TYP)
T.O.C. = 5397.27
EL. = 5399.31
DRILLED PIER, SEE DRILLED PIER PLAN AND TYPICAL DRILLED PIER DETAIL (TYP)
8" VOID FORM CONT. BETWEEN DRILLED PIERS (TYP)
52'-0"   24'-6"   3'-0"   24'-6"

T.O.C. = 5412.81
TOP OF WALL REINF. (1 AB-4)
MAX. OPERATING WATER SURFACE EL. = 5409.81
#9's CONT. @ 18" O.C. EACH WAY, EACH FACE
#11 DOWELS @ 9" O.C. EACH FACE
AEROBIC DIGESTER BASIN NO. 2
#10 CONT. @ 18" O.C. EACH WAY, TOP AND BOTTOM
MIN. 8" CONT. WATERSTOP CENTERED IN KEYWAY (TYP)
INVERTED KEYWAY (TYP)
T.O.C. = 5397.27
DRILLED PIER, SEE DRILLED PIER PLAN AND TYPICAL DRILLED PIER DETAIL (TYP)
8" VOID FORM CONT. BETWEEN DRILLED PIERS (TYP)

SECTION A (AB-5) SCALE: 1/4" = 1'-0"

T.O.C. = 5412.81
1" CHAMFER ALL AROUND BOTH SIDES OF WALL EXCEPT AT AERATION BASIN STRUTS (TYP ALL WALLS)
TOP OF WALL REINF. (1 AB-4)
MAX. OPERATING WATER SURFACE EL. = 5409.81
#9 CONT. @ 18" O.C. EACH WAY, EACH FACE
#11 DOWELS @ 9" O.C. EACH FACE
AEROBIC DIGESTER BASIN NO. 3
#10 CONT. @ 18" O.C. EACH WAY, TOP AND BOTTOM
MIN. 8" CONT. WATERSTOP CENTERED IN KEYWAY (TYP)
INVERTED KEYWAY (TYP)
EL. = 5399.31
DRILLED PIER, SEE DRILLED PIER PLAN AND TYPICAL DRILLED PIER DETAIL (TYP)
8" VOID FORM CONT. BETWEEN DRILLED PIERS (TYP)

FINISH GRADE EL. VARIES FROM 5410.58 TO 5409.66
UPPER 2'-0" OF BACKFILL TO BE COMPACTED ON-SITE CLAY MATERIAL, SEE NOTE 2 (TYP)
STRUCTURE BACKFILL TO BE COMPACTED GRANULAR, NON-EXPANSIVE MATERIAL (TYP)
EXISTING GRADE EL. VARIES FROM 5404.00 TO 5403.60
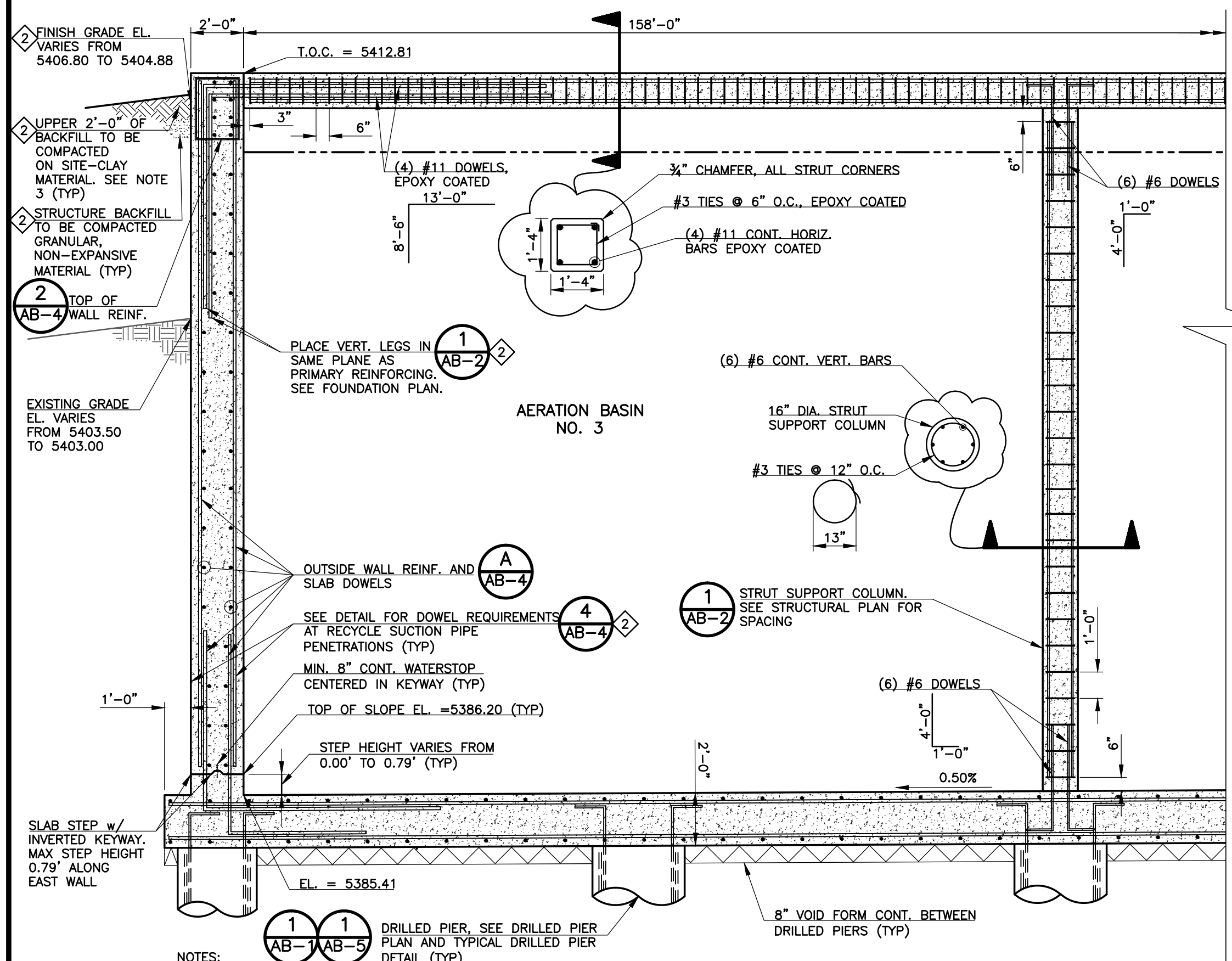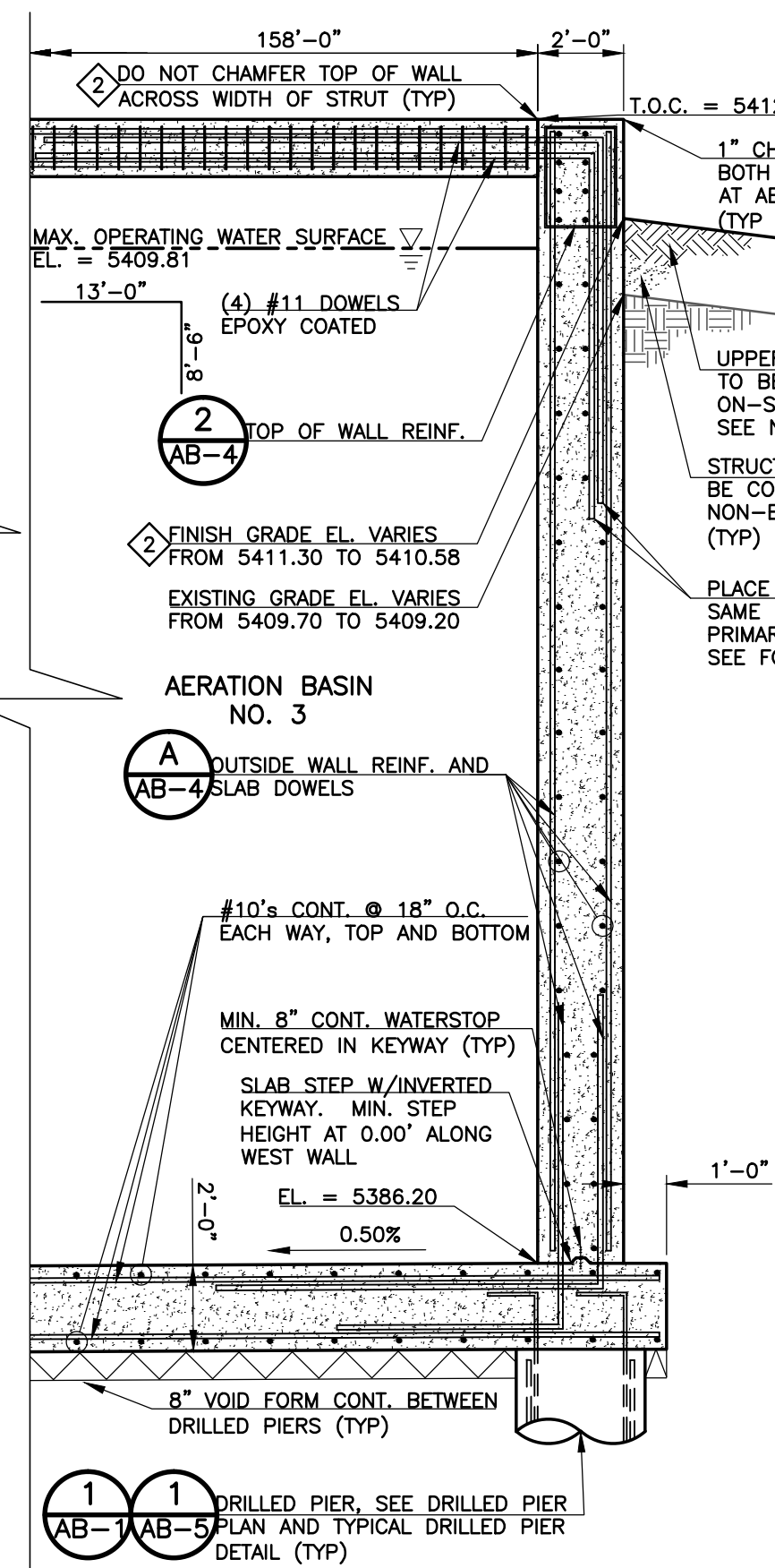#11 DOWELS @ 9" O.C. EACH FACE

NOTES:
1. WALL PENETRATIONS ARE NOT SHOWN FOR CLARITY. REFER TO THE STRUCTURAL PLAN FOR WALL PENETRATION REQUIREMENTS.
2. THE PLACEMENT OF ON-SITE CLAY MATERIAL IN THE UPPER 2'-0" OF BACKFILL IS INTENDED TO ACT AS A RELATIVELY IMPERVIOUS LAYER. DO NOT PLACE CLAY MATERIAL AS UPPER 2'-0" OF BACKFILL UNDER STOOPS OR OTHER CONCRETE SURFACING OR ASPHALT PAVEMENT AS THESE MATERIALS WILL ACT AS THE RELATIVELY IMPERVIOUS LAYER.

SECTION B — AERATION BASIN NO. 3

FINISH GRADE EL. VARIES FROM 5406.80 TO 5404.88
UPPER 2'-0" OF BACKFILL TO BE COMPACTED ON SITE-CLAY MATERIAL, SEE NOTE 3 (TYP)
STRUCTURE BACKFILL TO BE COMPACTED GRANULAR, NON-EXPANSIVE MATERIAL (TYP)
TOP OF WALL REINF. (2 AB-4)
EXISTING GRADE EL. VARIES FROM 5403.50 TO 5403.00

T.O.C. = 5412.81
DO NOT CHAMFER TOP OF WALL ACROSS WIDTH OF STRUT (TYP)
158'-0"
3/4" CHAMFER, ALL STRUT CORNERS
(4) #11 DOWELS, EPOXY COATED
#3 TIES @ 6" O.C., EPOXY COATED
(4) #11 CONT. HORIZ. BARS EPOXY COATED
16" DIA. STRUT SUPPORT COLUMN
#3 TIES @ 12" O.C.
(6) #6 CONT. VERT. BARS
AERATION BASIN NO. 3
PLACE VERT. LEGS IN SAME PLANE AS PRIMARY REINFORCING. SEE FOUNDATION PLAN. (1 AB-2)
OUTSIDE WALL REINF. AND SLAB DOWELS (A AB-4)
STRUT SUPPORT COLUMN, SEE STRUCTURAL PLAN FOR SPACING (2 AB-2)
SEE DETAIL FOR DOWEL REQUIREMENTS AT RECYCLE SUCTION PIPE PENETRATIONS (TYP) (4 AB-4)
MIN. 8" CONT. WATERSTOP CENTERED IN KEYWAY (TYP)
TOP OF SLOPE EL. = 5386.20 (TYP)
(6) #6 DOWELS
SLAB STEP w/ INVERTED KEYWAY. MAX STEP HEIGHT 0.79" ALONG EAST WALL
EL. = 5385.41
0.50%
DRILLED PIER, SEE DRILLED PIER PLAN AND TYPICAL DRILLED PIER DETAIL (TYP) (1 AB-1 / AB-5)
8" VOID FORM CONT. BETWEEN DRILLED PIERS (TYP)

SECTION B (AB-5) SCALE: 1/4" = 1'-0"

NOTES:
1. INFORMATION AND DETAILS SHOWN IN THIS SECTION FOR AERATION BASIN NO. 3 SIMILARLY APPLY TO AERATION BASINS NO. 1 AND 2.
2. WALL PENETRATIONS ARE NOT SHOWN FOR CLARITY. REFER TO THE STRUCTURAL PLAN FOR WALL PENETRATION REQUIREMENTS.
3. THE PLACEMENT OF ON-SITE CLAY MATERIAL IN THE UPPER 2'-0" OF BACKFILL IS INTENDED TO ACT AS A RELATIVELY IMPERVIOUS LAYER. DO NOT PLACE CLAY MATERIAL AS UPPER 2'-0" OF BACKFILL UNDER STOOPS OR OTHER CONCRETE FLATWORK, GRAVEL SURFACING OR ASPHALT PAVEMENT AS THESE MATERIALS WILL ACT AS THE RELATIVELY IMPERVIOUS LAYER.
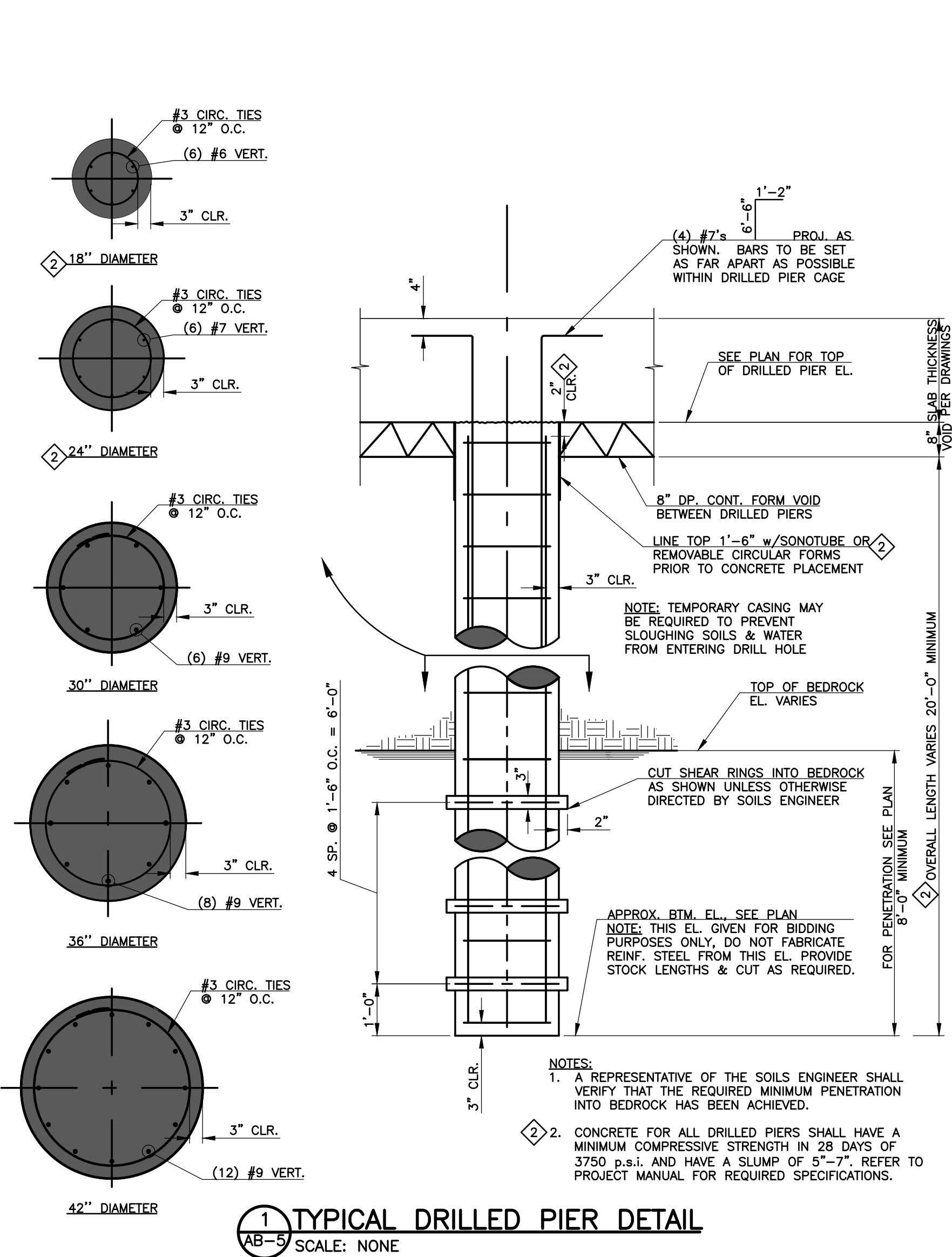
(Second view of AERATION BASIN NO. 3)
T.O.C. = 5412.81
158'-0"
1" CHAMFER ALL AROUND BOTH SIDES OF WALL EXCEPT AT AERATION BASIN STRUTS (TYP ALL WALLS)
MAX. OPERATING WATER SURFACE EL. = 5409.81
(4) #11 DOWELS EPOXY COATED
TOP OF WALL REINF.
UPPER 2'-0" OF BACKFILL TO BE COMPACTED ON-SITE CLAY MATERIAL, SEE NOTE 3 (TYP)
STRUCTURE BACKFILL TO BE COMPACTED GRANULAR, NON-EXPANSIVE MATERIAL (TYP)
FINISH GRADE EL. VARIES FROM 5411.30 TO 5410.58
EXISTING GRADE EL. VARIES FROM 5409.70 TO 5409.20
PLACE VERT. LEGS IN SAME PLANE AS PRIMARY REINFORCING. SEE FOUNDATION PLAN. (1 AB-2)
AERATION BASIN NO. 3
OUTSIDE WALL REINF. AND SLAB DOWELS (A AB-4)
#10's CONT. @ 18" O.C. EACH WAY, EACH FACE
MIN. 8" CONT. WATERSTOP CENTERED IN KEYWAY (TYP)
SLAB STEP w/INVERTED KEYWAY. MIN. STEP HEIGHT AT 0.00" ALONG WEST WALL
EL. = 5386.20
0.50%
8" VOID FORM CONT. BETWEEN DRILLED PIERS (TYP)
DRILLED PIER, SEE DRILLED PIER PLAN AND TYPICAL DRILLED PIER DETAIL (TYP) (1 AB-1 / AB-5)

DETAIL C — AERATION BASIN DRAIN PIPE

SLAB AND WALL REINFORCEMENT (TYP) (B AB-5)
6" MJxMJ WALL PIPE TAPPED FOR STUDS AT EDGE OF SLAB FOR JOINT FLEXIBILITY
SET PLAIN END OF BEND FLUSH w/ TOP OF SLAB
SET BEND w/ MIN 2" CLEAR TO SLAB REINF. ON ALL SIDES OF BEND
6" DRAIN PIPE SEE PIPING PLAN FOR CONTINUATION
6" MJxPE COMPACT 90° BEND (AWWA C153 COMPACT FITTING)
PIPE BEDDING MATERIAL PER SPECIFICATIONS
6" D.I.P.

NOTES:
1. FIELD ADJUST FINAL LOCATION OF PIPING SO IT IS ALL CENTERED BETWEEN THE SLAB DOWELS TO PROVIDE THE MAXIMUM CLEAR SPACE POSSIBLE.

C AERATION BASIN DRAIN PIPE (AB-5) SCALE: 1/2" = 1'-0"

ADDITIONAL REINFORCING FOR WALL PENETRATIONS

(4) ADDITIONAL #5x6'-6" DIAGONAL BARS, EACH FACE
PIPE PENETRATION PER DRAWINGS. POSITION BETWEEN PRIMARY REINFORCING. SEE NOTES BELOW
UNINTERRUPTED #9 OR #10 PRIMARY WALL REINF. @ 18" O.C. EACH FACE

NOTES:
1. FOR HORIZONTAL CONFLICTS BETWEEN UNINTERRUPTED PRIMARY REINFORCING AND PIPE PENETRATIONS, MOVE PIPE PENETRATION TO NEXT GRID SPACING BETWEEN PRIMARY REINFORCING STEEL IN THE CLOSEST DIRECTION.
2. FOR VERTICAL CONFLICTS BETWEEN UNINTERRUPTED PRIMARY REINFORCING AND PIPE PENETRATIONS, MOVE PIPE PENETRATION TO THE NEXT GRID SPACING BETWEEN PRIMARY REINFORCING STEEL BELOW. DO NOT RAISE PIPE PENETRATION.
3. PROVIDE MINIMUM OF 2" CLEAR TO PRIMARY REINFORCING FOR 12" DIAMETER PIPE PENETRATIONS AND SMALLER. PIPE PENETRATIONS LARGER THAN 12" DIAMETER SHALL BE CENTERED WITHIN THE PRIMARY REINFORCING STEEL GRID TO PROVIDE THE MAXIMUM CLEAR SPACE POSSIBLE.
4. FOR AEROBIC DIGESTER BASINS, THE SLAB DOWELS SHALL REMAIN UNINTERRUPTED AS WELL. THEREFORE, PIPE PENETRATIONS SHALL BE PLACED BETWEEN PRIMARY REINFORCING STEEL AND THE SLAB DOWELS, AND CENTERED ON THE SLAB DOWELS TO PROVIDE THE MAXIMUM CLEAR SPACE POSSIBLE.
5. FOR THE AERATION BASIN RECYCLE SUCTION PIPE PENETRATIONS, THESE PENETRATIONS ARE THE ONLY PENETRATIONS LOW ENOUGH TO BE WITHIN THE SLAB DOWELS. TO ENSURE THE SLAB DOWELS ARE UNINTERRUPTED, ADDITIONAL SLAB DOWELS AT CRITICAL PLACEMENTS WILL BE REQUIRED. REFER TO DETAIL 4/AB-4 FOR SLAB DOWEL REQUIREMENTS.
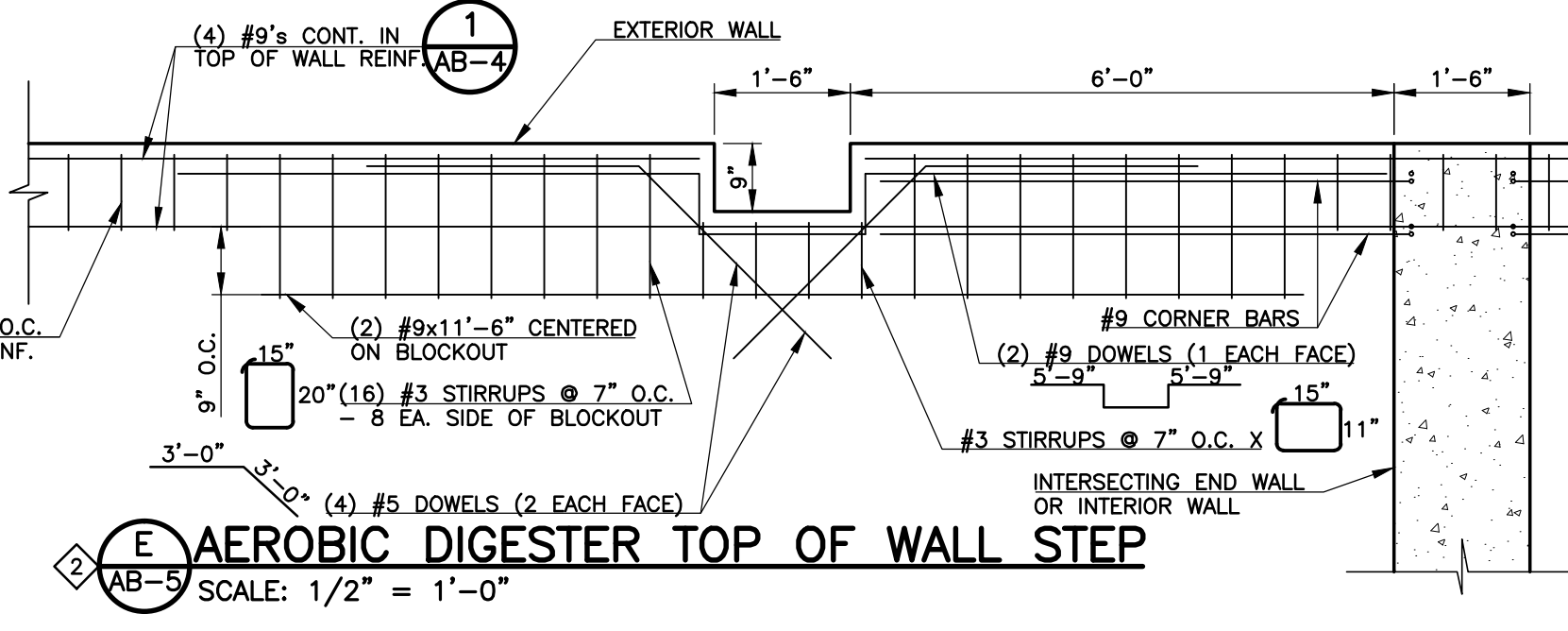
D ADDITIONAL REINFORCING FOR AEROBIC DIGESTER AND AERATION BASIN WALL PENETRATIONS (AB-5) SCALE: NONE

PIER DIAMETER DETAILS

18" DIAMETER — #3 CIRC. TIES @ 12" O.C., (6) #6 VERT., 3" CLR.
24" DIAMETER — #3 CIRC. TIES @ 12" O.C., (6) #7 VERT., 3" CLR.
30" DIAMETER — #3 CIRC. TIES @ 12" O.C., (6) #6 VERT., 3" CLR.
36" DIAMETER — #3 CIRC. TIES @ 12" O.C., (8) #9 VERT., 3" CLR.
42" DIAMETER — #3 CIRC. TIES @ 12" O.C., (12) #9 VERT., 3" CLR.

TYPICAL DRILLED PIER DETAIL

(4) #7's PROJ. AS SHOWN. BARS TO BE SET AS FAR APART AS POSSIBLE WITHIN DRILLED PIER CAGE
SEE PLAN FOR TOP OF DRILLED PIER EL.
SLAB THICKNESS SEE PLAN / VOID PER OTHER DRAWINGS
8" DP. CONT. FORM VOID BETWEEN DRILLED PIERS
LINE TOP 1'-6" w/SONOTUBE OR REMOVABLE CIRCULAR FORMS PRIOR TO CONCRETE PLACEMENT
3" CLR.
NOTE: TEMPORARY CASING MAY BE REQUIRED TO PREVENT SLOUGHING SOILS & WATER FROM ENTERING DRILL HOLE
TOP OF BEDROCK EL. VARIES
CUT SHEAR RINGS INTO BEDROCK AS SHOWN UNLESS OTHERWISE DIRECTED BY SOILS ENGINEER
APPROX. BTM. EL. SEE PLAN
NOTE: THIS EL. GIVEN FOR BIDDING PURPOSES ONLY, DO NOT FABRICATE REINF. STEEL FROM THIS EL. PROVIDE STOCK LENGTHS & CUT AS REQUIRED.
4 SP. @ 1'-6" O.C. = 6'-0"
FOR OVERALL LENGTH VARIES 20'-0" MINIMUM
FOR PENETRATION SEE PLAN
8'-0" MINIMUM

NOTES:
1. A REPRESENTATIVE OF THE SOILS ENGINEER SHALL VERIFY THAT THE REQUIRED MINIMUM PENETRATION INTO BEDROCK HAS BEEN ACHIEVED.
2. CONCRETE FOR ALL DRILLED PIERS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH IN 28 DAYS OF 3750 p.s.i. AND HAVE A SLUMP OF 5"–7". REFER TO PROJECT MANUAL FOR REQUIRED SPECIFICATIONS.

1 TYPICAL DRILLED PIER DETAIL (AB-5) SCALE: NONE

E — AEROBIC DIGESTER TOP OF WALL STEP

(4) #9's CONT. IN TOP OF WALL REINF. (1 AB-4)
EXTERIOR WALL
1'-6"   6'-0"   1'-6"
(2) #9x11'-6" CENTERED ON BLOCKOUT
#9 CORNER BARS
(2) #9 DOWELS (1 EACH FACE)
#3 STIRRUPS @ 7" O.C. IN TOP OF WALL REINF. (1 AB-4)
(16) #3 STIRRUPS @ 7" O.C. — 8 EA. SIDE OF BLOCKOUT
#3 STIRRUPS @ 7" O.C. x
(4) #5 DOWELS (2 EACH FACE)
#3 STIRRUPS @ 7" O.C. (1 AB-4)
INTERSECTING END WALL OR INTERIOR WALL

E AEROBIC DIGESTER TOP OF WALL STEP (AB-5) SCALE: 1/2" = 1'-0"

REVISIONS

NO.	DATE	DESCRIPTION
1	08/24/2010	ISSUED FOR EARTHWORK QUOTE
2	12/21/2010	ISSUED FOR FOUNDATION PERMIT SUBMITTAL TO PPRBD (A-BASINS AND DIGESTER)
3	01/07/2011	ISSUED FOR CONSTRUCTION PER PPRBD PERMIT #58954 (FDN ONLY)

STRUCTURAL SECTIONS AND DETAILS
HAROLD D. THOMPSON REGIONAL WATER RECLAMATION FACILITY
LOWER FOUNTAIN METROPOLITAN SEWAGE DISPOSAL DISTRICT

DRAWN	MAL/MAM
DESIGNED	JP
CHECKED	MG
DATE	2010
PROJECT NO.	20166.362
GMS FILE NO.	2599

GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

SHEET **AB-5**
OF —