

GMS, INC.
CONSULTING ENGINEERS
611 NORTH WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903-1074

TELEPHONE (719) 475-2935
TELEFAX (719) 475-2938

EDWARD D. MEYER, P.E.
ROGER J. SAMS, P.E.
GREGORY R. WORDEN, P.E.
THOMAS A. McCLERNAN, P.E.

KEN L. WHITE, P.L.S.
DAVID R. FRISCH, P.L.S.
MARK A. MORTON, P.E.
JASON D. MEYER, P.E.

ENGINEER'S SUPPLEMENTAL INSTRUCTIONS NO. TWELVE (12)
(Via Posting to FTP Site and Electronic Mail)

TO: Wes Weaver
John Jacob
Jeff Burst
Weaver Construction Management, Inc.
Patrick Danenberg
McDade Woodcock, Inc.

DATE: September 23, 2011

FROM: Roger J. Sams, P.E.
Mark Morton, P.E.
GMS, Inc.

RE: Harold D. Thompson Regional Water Reclamation Facility (HDTRWRF)-Phase 1
ENGINEER'S SUPPLEMENTAL INSTRUCTIONS NO. TWELVE (ESI-012)

The ESI-012 addresses modifications to the project drawings relative to the Pumping and Disinfection Building which were issued September 16, 2011 for preparation of the CMO covering the foundation scope of work. The modifications described in this ESI appear on the Pikes Peak Regional Building Department (PPRBD) foundation only permit submittal drawings. Please distribute this ESI to any and all suppliers and subcontractors so the items described herein may be accounted for in the foundation CMO prepared for the Pumping and Disinfection Building. The following is a list of drawing modifications arranged by sheet number.

- Sheet PD-3
 - Deleted the drilled pier near the center of UV Channel No. 2
 - Deleted the drilled pier at the southwest corner of the Drain Wetwell
 - Deleted the drilled pier at the southeast corner of the Wastewater Wetwell
 - Revised the drilled pier at the southwest corner of the Wastewater Wetwell to provide a minimum penetration into bedrock of 13'-0", and an estimated bottom of pier elevation of 5357.00. In addition, two dimensions have been added to specify the placement of this drilled pier.
 - Revised the drilled pier near the center of UV Channel No. 1 to provide a top of pier elevation of 5393.70
 - Revise the drilled pier near the center of the Flume Channel to provide a top of pier elevation of 5393.70
 - Revise four drilled piers along the north wall of the Pump Room, and the two westerly drilled piers under the south wall of the Pump Room to provide a top of pier elevation of 5383.46
 - Added a new note to the drilled pier near the midpoint of the south building wall indicating the approximate location of the ufer grounding electrode, and referencing the electrical drawings for additional information

- Sheet PD-4
 - Revise the following sheet notes as described below
 - Note No. 4: revised to clarify ufer grounding requirements
 - Note No. 7: revised to indicate a Hypochlorite Storage and Feed Room ceiling height of 11'-0"
 - Note No. 13: new note regarding the rigid insulation requirement on the exterior of deep walls
 - Note No. 14: new note regarding the rigid insulation requirement on the interior of perimeter foundation walls
 - Revise Section A to indicate the requirement of a 3/4" chamfer on all four corners of the Channel struts
 - Revise Section B to indicate the requirement of a 3/4" chamfer on all four corners of the Pump Room struts, as well as a stainless steel material for the embedded unistrut
 - Revised the Foundation Plan with regards to the Hypochlorite Storage and Feed Room. The boundary of this room is now shown as 6-inches wide to coincide with the requirement of a 6-inch wide by 8-inch high concrete containment curb. A minimum 6-inch high water stop shall be embedded in the floor slab at the center of the containment curb. An 8-inch floor drain has also been added to this room, the floor drain will be required to have a hinged solid cover plate with a lifting chain and hook that will be secured to the adjacent wall. The elevation of the door opening in the south foundation wall to this room has been raised to an elevation of 5405.28 to provide the necessary containment volume.
 - Revised the location of the trench drain cleanout near the southwest corner of the building to align with the east edge of the trench drain
 - Revised the Wastewater Wetwell top of slab elevation to 5387.00
- Sheet PD-4A
 - Revised the Penetration Plan according to the following descriptions:
 - Placed a 12-inch wall pipe in the wall between the Pump Room and the Drain Wetwell, along with a dimension indication its horizontal position
 - Placed a 6-inch diameter block out in the wall between the Pump Room and the Drain Wetwell, along with a dimension to indicate its horizontal position
 - Added a reference to the new detail, Mud Valve Recess Detail, for the three channel drain pipe penetrations; one in the north end of UV Channel No. 1; one in the north end of UV Channel No. 2; one in the southwest corner of the UV Cleaning Tank
 - Revised details relative to the Hypochlorite Storage and Feed Room as described previously for Sheet PD-4
 - Revised Detail No. 2, Typical Sleeve Detail, to clarify the spacing requirements for sleeve penetrations
 - Provide a new Detail No. 3, Mud Valve Recess Detail, indicating the installation requirements for the slab penetration at each mud valve installation
- Sheet PD-5
 - Revised details relative to the Hypochlorite Storage and Feed Room as previously described for Sheet PD-4, along with dimensions relative to the placement of the containment curb and water stop
 - Revise the trench drain clean out location as previously described for Sheet PD-4
 - Revise the Wastewater Wetwell top of slab elevation to 5387.00
 - Added Note 6 to reference the Jointing Plan for wall and slab joint requirements

- Sheet PD-5A
 - New drawing titled Jointing Plan to indicate the requirements for wall and slab joints of the Pumping and Disinfection Building
- Sheet PD-6
 - Revised Section A to indicate the requirement of an isolation joint at the perimeter of the upper level slab
 - Revised Section A so the top of concrete elevation of the Pump Room slab outside of the trench drain will be 5386.33
 - Added Sheet Note 1 to reference Sheet PD-4 and its Note Nos. 13 and 14 regarding rigid insulation requirements
- Sheet PD-7
 - Revised Section A to indicate the requirement of a tooled joint along the perimeter of the upper level floor slab
 - Revise Section A to illustrate a Channel slab beam near the midpoint of the Flume Channel, along with its associated dimensions, elevations and reinforcing requirements
 - Revise Section B to indicate the requirement of a tooled joint along the perimeter of the upper level floor slab
 - Revise Section C to raise the threshold elevation of the door opening to the Hypochlorite Storage and Feed Room to 5405.28, at that door only
 - Added Sheet Note 1 to reference Sheet PD-4 and its Note Nos. 13 and 14 regarding rigid insulation requirements
- Sheet PD-8
 - Revise Section A according to the following descriptions:
 - Add a note describing the isolation joint requirement at the perimeter of the upper level slab
 - Illustrate the 6-inch diameter block out added for the south Pump Room wall for the sump discharge
 - Illustrate the 12-inch wall pipe added to the south Pump Room wall for the emergency overflow
 - Revise the top of concrete elevation for the Pump Room slab outside of the trench drain to 5386.33
 - Revise the top and bottom elevation of the keyed construction joint with water stop to accommodate the astewater Wetwell slab to the east to 5387.00 and 5386.33, respectively
 - Added a note for the contractor to assure proper support of the wetwell slab and walls during construction to coordinate the elimination of the wetwell drilled piers as described for Sheet PD-3
 - Add a note indicating the requirement for a tooled joint where the wetwell lid interfaces with the south Pump Room wall
 - Revise Section B according to the following descriptions:
 - Add a note indicating the requirement for a tooled joint where the wetwell lid interfaces with the south Pump Room wall
 - Revise the top and bottom of slab elevation for the Wastewater wetwell to 5387.00 and 5386.33, respectively
 - Added a note for the contractor to assure proper support of the wetwell slab and walls during construction to coordinate the elimination of the wetwell drilled piers as described for Sheet PD-3

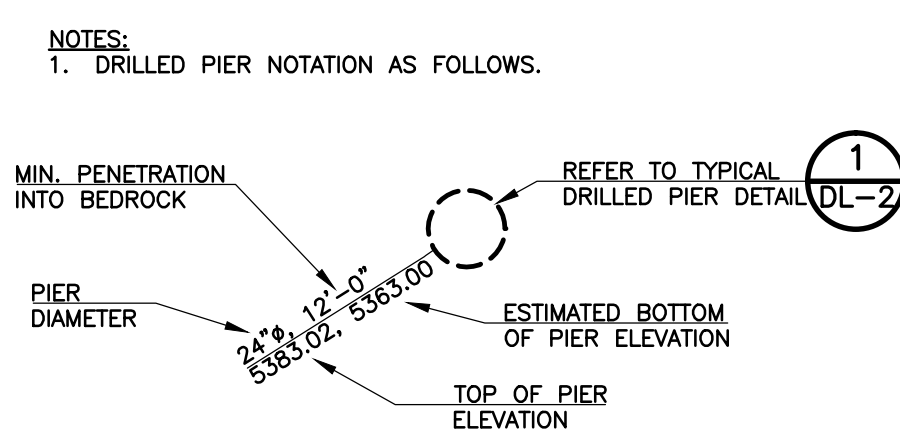
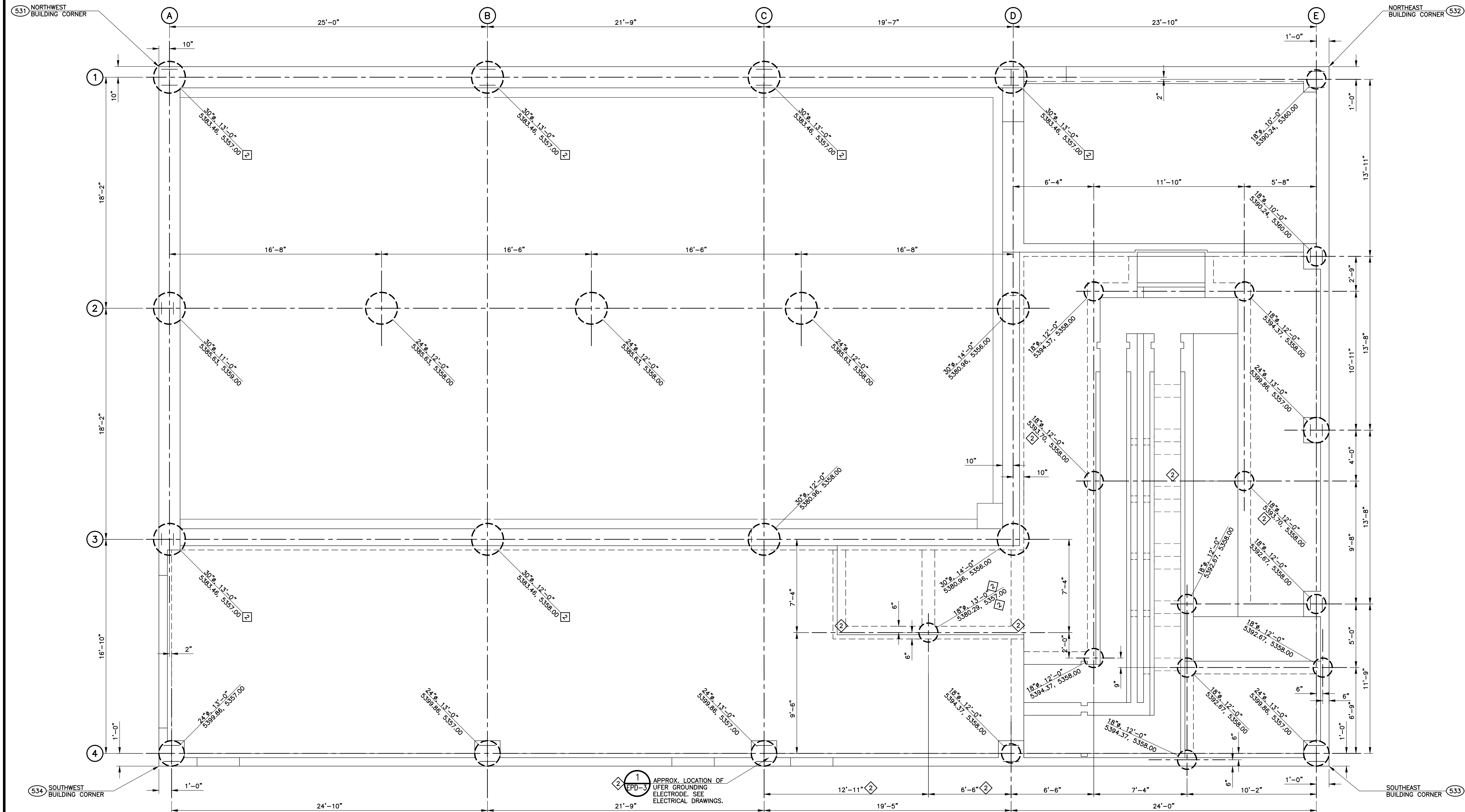
- Sheet PD-17
 - Added references to Detail 3/PD-4A, Mud Valve Recess Detail, for the three channel slab penetrations
 - Added a 6-inch diameter block out in the south Pump Room wall for the sump discharge, along with its associated dimension indicating horizontal position
 - Added a 12-inch wall pipe in the south wall of the Pump Room for emergency overflow, along with its relative dimension indicating horizontal position
 - Added the Hypochlorite Storage and Feed Room floor drain as previously described for Sheet PD-4, along with its associated drain piping and relative dimensions indicating its horizontal position
 - Added Note 4 to describe the detailed requirements for the Hypochlorite Storage and Feed Room floor drain
 - Revised the location of the trench drain clean out to be aligned with the east end of the trench drain
- Sheet EPD-3
 - Revised Keyed Note No. 4 to clarify the ufer grounding requirements
- Sheet EPD-4
 - Added a note referencing the Electrical Grounding Plan to clarify the ufer grounding requirements

Attached as part of this ESI No. Twelve (12) are revised versions of those Drawings listed above which illustrate the described modifications.

Attachments: Sheet PD-3 – Drilled Pier Plan
 Sheet PD-4 – Structural Foundation Plan
 Sheet PD-4A – Penetration Plan
 Sheet PD-5 – Structural Floor Plan
 Sheet PD-5A – Jointing Plan
 Sheet PD-6 – Structural Sections
 Sheet PD-7 - Structural Sections
 Sheet PD-8 - Structural Sections
 Sheet PD-17 – Drain and Vent Plan
 Sheet EPD-3 – Electrical Grounding Plan – Pumping and Disinfection Building
 Sheet EPD-4 - Electrical Foundation Plan – Pumping and Disinfection Building

ec: Lower Fountain Metropolitan Sewage Disposal District
 Fountain Sanitation District
 Colorado Centre Metropolitan District
 Vern Plant, P.E., President, Plant Engineering, Inc.

cc: Jerry Miller, GMS, Inc.
 David R. Frisch, PLS, GMS, Inc.



1 PUMPING AND DISINFECTION BUILDING DRILLED PIER PLAN
PD-3 SCALE: 1" = 4'

REVISIONS		
NO.	DATE	DESCRIPTION
1	09/16/2011	ISSUED FOR CMO PREPARATION (PUMPING AND DISINFECTION BUILDING FOUNDATION)
2	09/22/2011	ISSUED FOR FOUNDATION PERMIT SUBMITTAL TO PPRBD (PUMPING AND DISINFECTION BLDG)

THIS DRAWING IS THE PROPERTY OF GMS, INC., AND IS NOT TO BE RE-PRODUCED, MODIFIED OR USED FOR ANY OTHER PROJECT OR EXTENSION OF THIS PROJECT EXCEPT BY AGREEMENT WITH THIS COMPANY.

© 2010 GMS, INC.

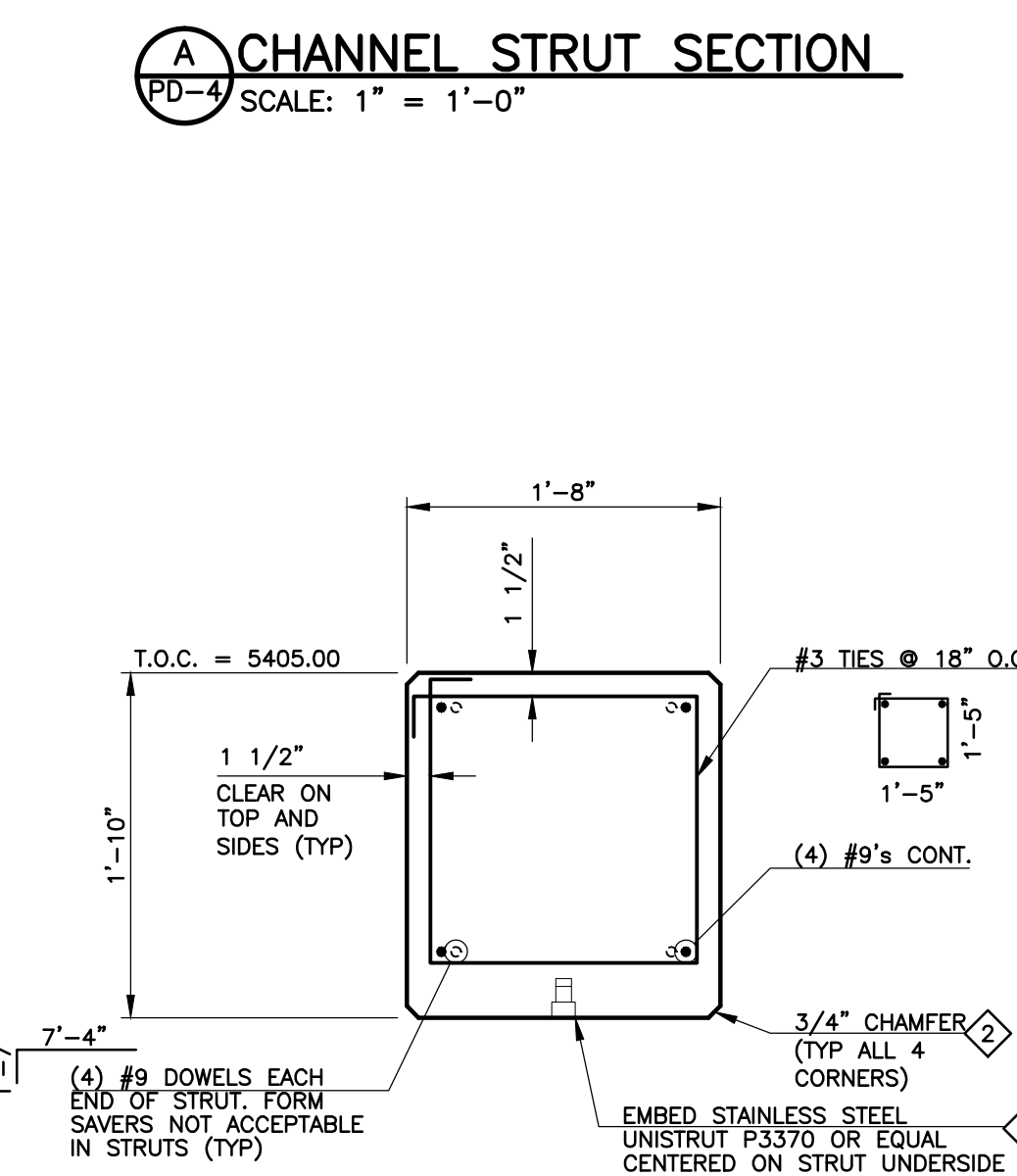
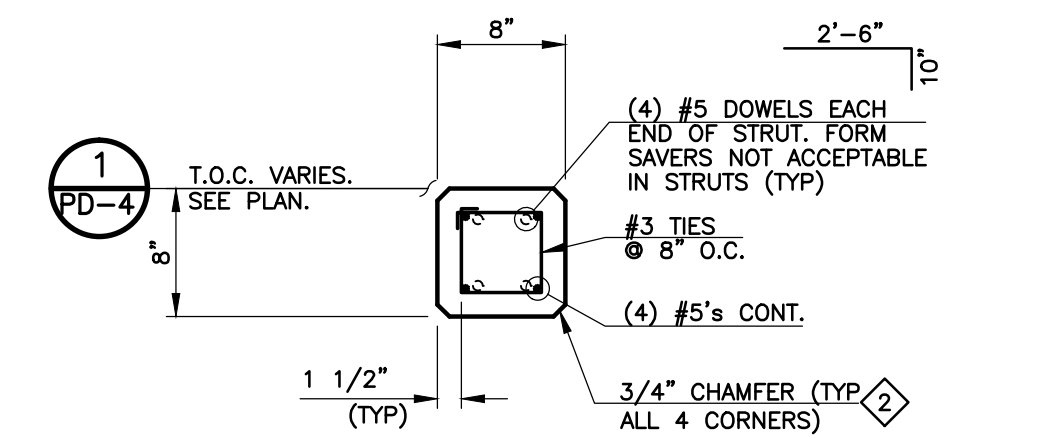
DRILLED PIER PLAN
HAROLD D. THOMPSON REGIONAL WATER RECLAMATION FACILITY
LOWER FOUNTAIN METROPOLITAN SEWAGE DISPOSAL DISTRICT

DRAWN	SKC
DESIGNED	JP/MG
CHECKED	MG
DATE	2011
PROJECT NO.	20166.372
GMS FILE NO.	2599

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

SHEET
PD-3
OF
—

- NOTES:
- FINISH FLOOR ELEVATIONS SHOWN HERE ARE NOMINAL ELEVATIONS. REFER TO THE STRUCTURAL FLOOR PLAN FOR DETAILED ELEVATIONS OF FLOOR DRAINS, DRAIN TRENCHES AND FLOOR SLAB SLOPES.
 - NOTATIONS:
 - T.O.C. = TOP OF CONCRETE ELEVATION FOR CHANNEL STRUT.
 - T.O.W. = TOP OF WALL
 - B.O.W. = BOTTOM OF WALL
 - T.O.C. = TOP OF CONCRETE
 - B.O.S. = BOTTOM OF SLAB
 - WALL STEP NOTATIONS:
 - < INDICATES ELEVATION APPLIES TO LEFT SIDE OF STEP IN PLAN VIEW
 - > INDICATES ELEVATION APPLIES TO RIGHT SIDE OF STEP IN PLAN VIEW
 - POSITION INDICATES THE SIDE THAT THE ELEVATION APPLIES TO THE TOP SIDE OF THE STEP IN PLAN VIEW AND THE BOTTOM ELEVATION APPLIES TO THE BOTTOM SIDE OF THE STEP IN PLAN VIEW.
 - PROVIDE #4 COPPER CONDUCTOR FOR UFER GROUND, ROUTE AND BOND TO REINFORCING STEEL PER CODE. SEE ELECTRICAL DRAWINGS.
 - SEE PIPE PENETRATION PLAN FOR BLOCK-OUTS, WALL PIPES, EMBED REQUIREMENTS, ETC. FOR WALLS AND SLABS.
 - SEE EQUIPMENT AND PIPING DRAWINGS AND DRAIN AND VENT PLAN FOR BELOW SLAB PIPING AND ENCASMENT CONSTRUCTION REQUIREMENTS.
 - HYPOCHLORITE STORAGE AND FEED ROOM IS FRAMED WALLS ON SLAB WITH CEILING AT 11'-0" AFF. TWO - 500 GALLON HYPOCHLORITE STORAGE TANKS, 4'-0" DIA. 6' HIGH REQUIRED UNITS MAX. WEIGHT OF 1200lbs AT EACH TANK. EACH TANK SET ON 6" HIGH CONCRETE HOUSEKEEPING PAD.
 - OPERATING FLOOR ADJACENT TO DISINFECTION AND FLUME CHANNEL TO SLOPE TO OPEN, GRATED CHANNELS PER STRUCTURAL FLOOR PLAN.
 - REFER TO STRUCTURAL FLOOR PLAN FOR SLOPES OF OPERATING FLOOR SURFACES DRAINING TO FLOOR DRAINS.
 - DISINFECTION CHANNELS SHALL HAVE 6-INCH DIAMETER FLOOR DRAIN WITH MUD VALVE.
 - PORTABLE SAMPLER LOCATED ON OPERATING FLOOR ADJACENT TO EXTERIOR WALL AT DOWN STREAM EXTENT OF FLUME CHANNEL.
 - FLOOR MOUNTED ELECTRICAL EQUIPMENT FOR PUMPING AND DISINFECTION SHALL BE PLACED ON 4-INCH HOUSEKEEPING PAD.
 - PROVIDE RIGID INSULATION ON THE EXTERIOR WALLS OF THE PUMP ROOM, NPW ROOM AND CHANNELS. INSULATION SHALL BE INSTALLED ON THE EXTERIOR FACE OF WALL BEGINNING 10 INCHES BELOW GRADE AND EXTENDING TO A MINIMUM OF 30 INCHES BELOW GRADE. RIGID INSULATION SHALL BE A MINIMUM OF 2 INCHES THICK WITH A MINIMUM R-VALUE OF 10.
 - PROVIDE RIGID INSULATION ON ALL PERIMETER FOUNDATION WALLS OF THE UPPER LEVEL. INSULATION SHALL BE INSTALLED ON THE INTERIOR FACE OF WALL BEGINNING AT THE BOTTOM OF SLAB ELEVATION AND EXTENDING TO A MINIMUM OF 24 INCHES BELOW THAT. RIGID INSULATION SHALL BE A MINIMUM OF 2 INCHES THICK WITH A MINIMUM R-VALUE OF 10.



1 PUMPING AND DISINFECTION BUILDING FOUNDATION PLAN
SCALE: 1" = 4'

REVISIONS		
NO.	DATE	DESCRIPTION
1	09/16/2011	ISSUED FOR CMO PREPARATION (PUMPING AND DISINFECTION BUILDING FOUNDATION)
2	09/22/2011	ISSUED FOR FOUNDATION PERMIT SUBMITTAL TO PPRBD (PUMPING AND DISINFECTION BLDG)

THIS DRAWING IS THE PROPERTY OF GMS, INC., AND IS NOT TO BE REPRODUCED, MODIFIED OR USED FOR ANY OTHER PROJECT OR EXTENSION OF THIS PROJECT EXCEPT BY AGREEMENT WITH THIS COMPANY.

7011 GMS, INC.

STRUCTURAL FOUNDATION PLAN

HAROLD D. THOMPSON REGIONAL WATER RECLAMATION FACILITY

LOWER FOUNTAIN METROPOLITAN SEWAGE DISPOSAL DISTRICT

DRAWN: SKC

DESIGNED: MAM

CHECKED: RJS

DATE: 2011

PROJECT NO.: 20166.372

GMS FILE NO.: 2599

GMS, INC.

CONSULTING ENGINEERS

611 N. WEBER, SUITE 300

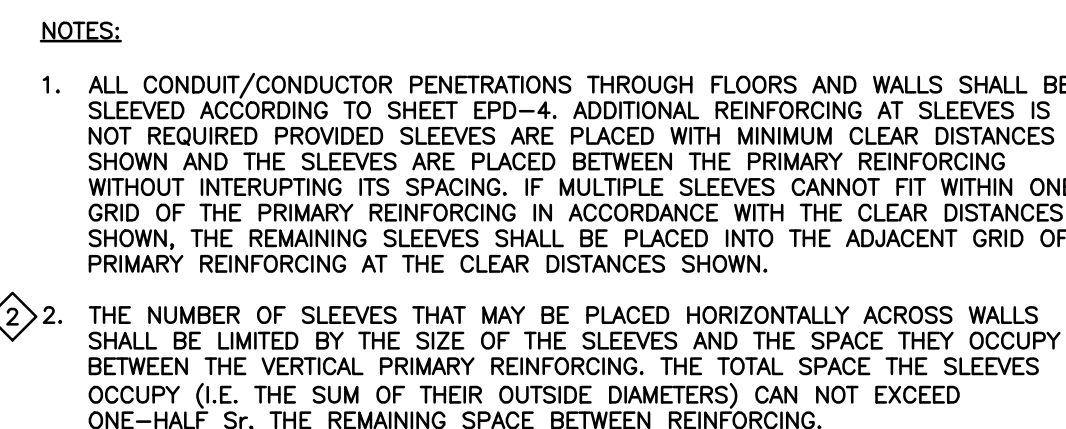
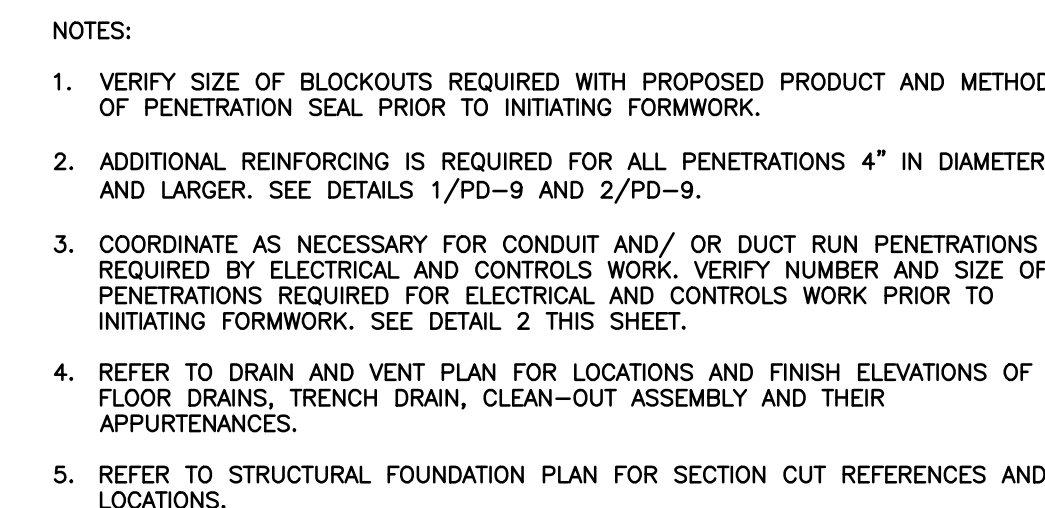
COLORADO SPRINGS, COLORADO 80903

SHEET

PD-4

OF

—



Technical drawing of a manhole assembly. The drawing shows a cross-section of the structure. A mud valve is located at the top, with a circular floor recess for its flange. The channel floor is shown below the mud valve. The wall pipe is shown in the channel floor. The drawing includes the following labels and dimensions:

- MUD VALVE
- 2" (TYP)
- CIRCULAR FLOOR RECESS FOR MUD VALVE FLANGE MAY BE FORMED OR TROWELED/FINISHED AT SLOPE SHOWN. SEE NOTE 1
- CHANNEL FLOOR
- WALL PIPE IN CHANNEL FLOOR PER DRAWINGS
- T.O.C. = 5396.70
- T.O.C. = 5396.60

NOTE:

1. FLOOR RECESS SHALL NOT IMPEDE OR ADVERSELY AFFECT THE INSTALLATION OR SEAL OF THE MUD VALVE FLANGE, OR THE REMOVAL AND REPLACEMENT OF THE MUD VALVE

[illegible]

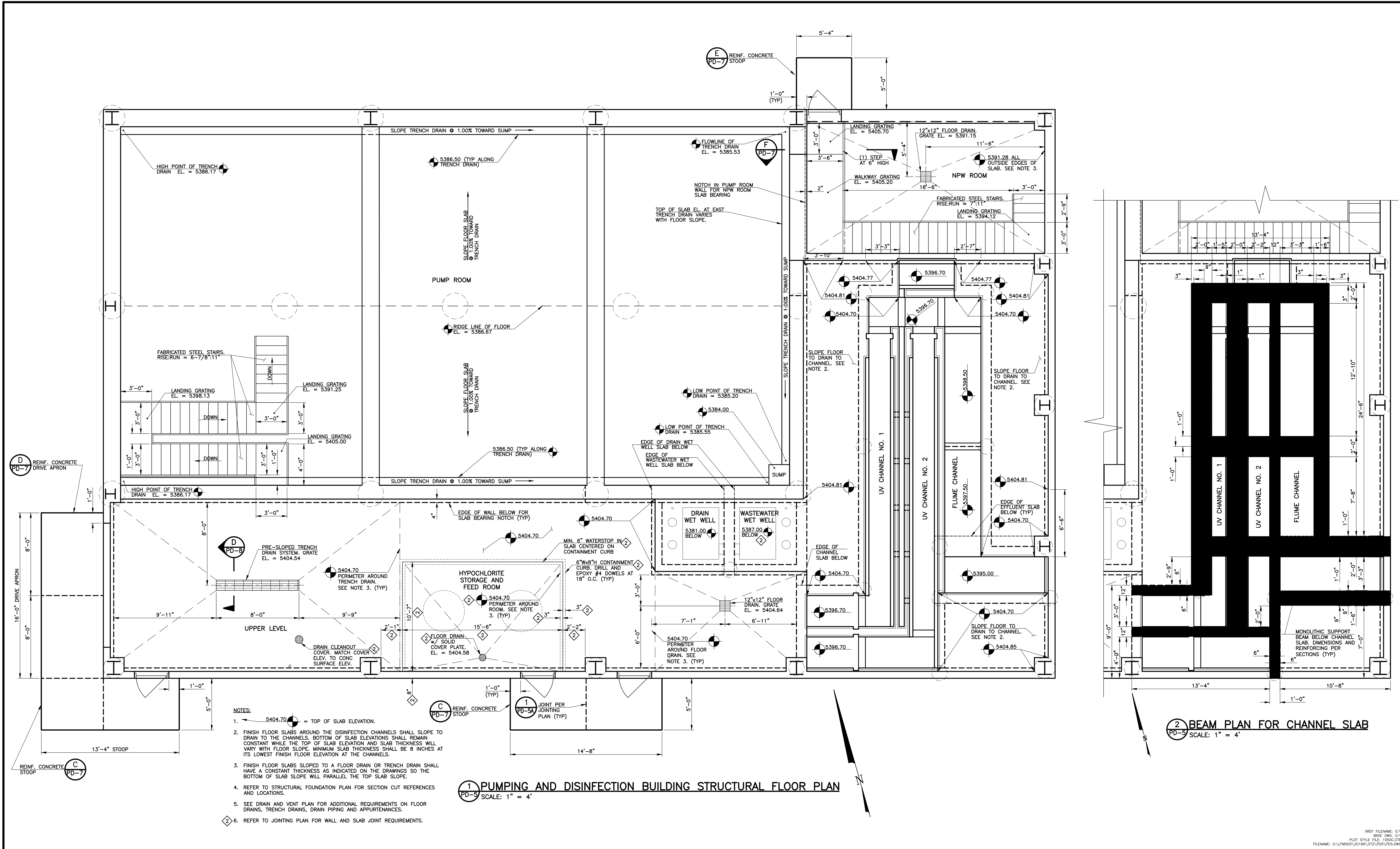
THIS DRAWING IS THE
PROPERTY OF GMS, INC.,
AND IS NOT TO BE RE-
PRODUCED, MODIFIED OR
USED FOR ANY OTHER
PROJECT OR EXTENSION
OF THIS PROJECT EXCEPT
BY AGREEMENT WITH THIS
COMPANY.

PENETRATION PLAN
HAROLD D. THOMPSON REGIONAL WATER RECLAMATION FACILITY
LOWER FOUNTAIN METROPOLITAN SEWAGE DISPOSAL DISTRICT

DRAWN	SKC
DESIGNED	MAM
CHECKED	RJS
DATE	2011
PROJECT NO.	20166.372
GMS FILE NO.	2599

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

SHEET
PD-4A
OF



REVISIONS		
NO.	DATE	DESCRIPTION
1	09/16/2011	ISSUED FOR CMO PREPARATION (PUMPING AND DISINFECTION BUILDING FOUNDATION)
2	09/22/2011	ISSUED FOR FOUNDATION PERMIT SUBMITTAL TO PRBDD (PUMPING AND DISINFECTION BLDG)

THIS DRAWING IS THE PROPERTY OF GMS, INC., AND IS NOT TO BE RE-PRODUCED, MODIFIED OR USED FOR ANY OTHER PROJECT OR EXTENSION OF THIS PROJECT EXCEPT BY AGREEMENT WITH THIS COMPANY.

STRUCTURAL FLOOR PLAN

HAROLD D. THOMPSON REGIONAL WATER RECLAMATION FACILITY
LOWER FOUNTAIN METROPOLITAN SEWAGE DISPOSAL DISTRICT

DRAWN SKC
DESIGNED JP/MG
CHECKED MG
DATE 2011
PROJECT NO. 20166.372
GMS FILE NO. 2599

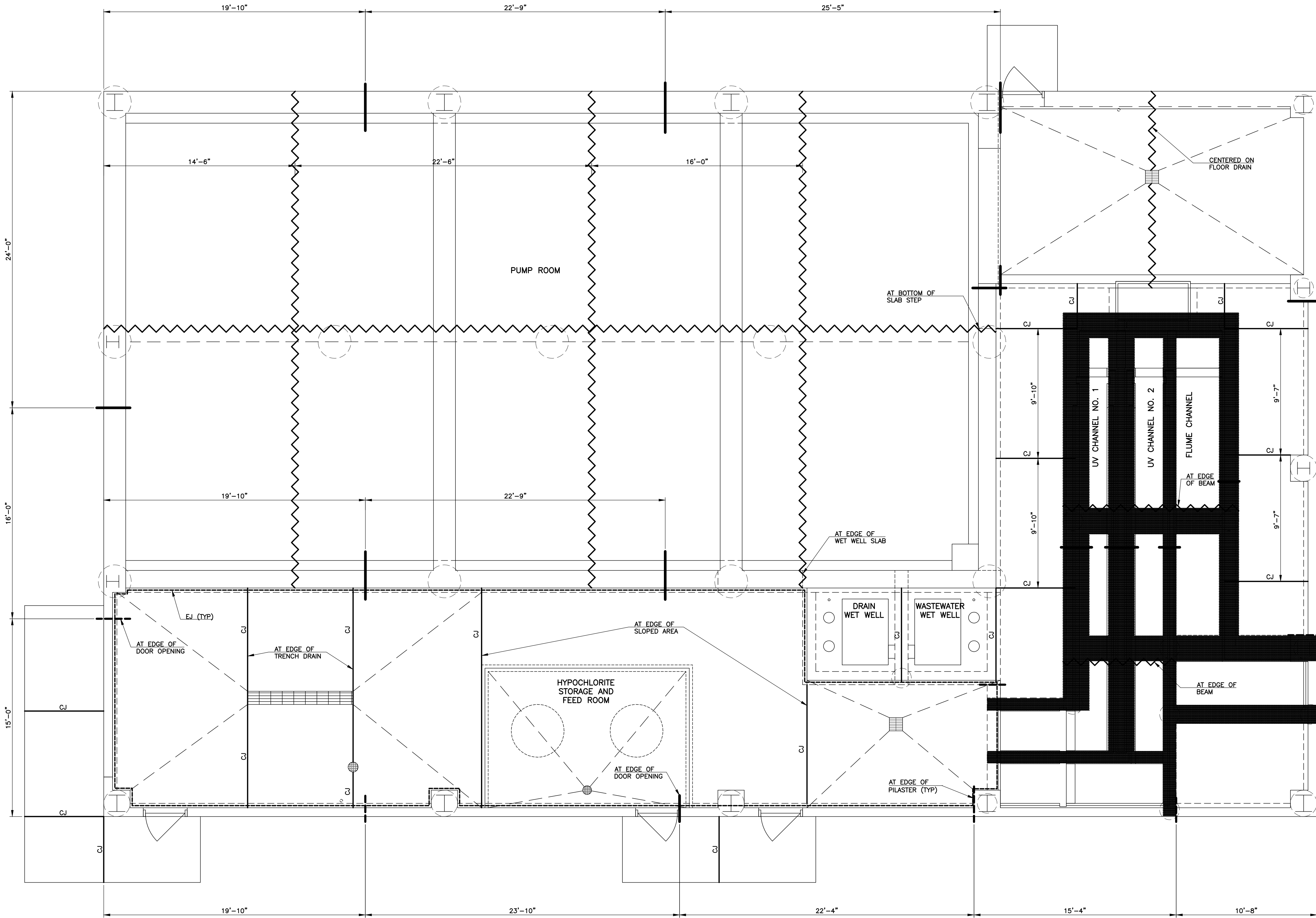
GMS, INC.
CONSULTING ENGINEERS
611 N. WEBER, SUITE 300
COLORADO SPRINGS, COLORADO 80903

SHEET
PD-5
OF
1

XREF FILENAME: G:\PLOT STYLE FILE: 1055C.DWG
FILENAME: G:\PMSDD\20166\372\PD5\PD5.DWG

G:\PMSDD\20166\372\PD5\PD5.DWG 9/22/2011 3:31:07 PM AC DWG TO PDF.pc3 1:1

G:\UNSD\00106072\PD5A\PD5A.dwg, PD5A, 9/22/2011 3:31:13 PM, 42, DWG to PDF, a3, 1:1



1 PUMPING AND DISINFECTION BUILDING JOINTING PLAN
PD-5A SCALE: 1" = 4'

NOTES:

1. = KEYED WALL CONSTRUCTION JOINT WITH MIN. 6" CONTINUOUS WATERSTOP
2. = KEYED WALL CONSTRUCTION JOINT WITHOUT WATERSTOP
3. = KEYED SLAB CONSTRUCTION JOINT WITH MIN. 6" CONTINUOUS WATERSTOP
4. = TOOLED OR SAWCUT SLAB CONTROL JOINT
5. = EXPANSION JOINT, CONCRETE AND REINFORCING TO BE DISCONTINUOUS ACROSS JOINT, SEPARATED BY 1/2" THICK EXPANSION MATERIAL.
6. ALL JOINTS SHALL HAVE SEALANT INSTALLED ON EXPOSED SIDES OF JOINT.
7. ALL KEYED WALL JOINTS SHALL BE CONSTRUCTED ACCORDING TO THE SHEAR KEY DETAIL GIVEN ON SHEET HW-12.
8. ALL WALL JOINTS SHALL BE MINIMUM 2 FEET FROM ANY SLAB JOINT AND MINIMUM 5 FEET FROM ANY DRILLED PIER UNLESS OTHERWISE SHOWN.

REVISIONS		
NO.	DATE	DESCRIPTION
1	09/22/2011	ISSUED FOR FOUNDATION PERMIT SUBMITAL TO PPRED (PUMPING AND DISINFECTION BLDG)

THIS DRAWING IS THE PROPERTY OF GMS, INC., AND IS NOT TO BE RE-PRODUCED, MODIFIED OR USED FOR ANY OTHER PROJECT OR EXTENSION OF THIS PROJECT EXCEPT BY AGREEMENT WITH THIS COMPANY.

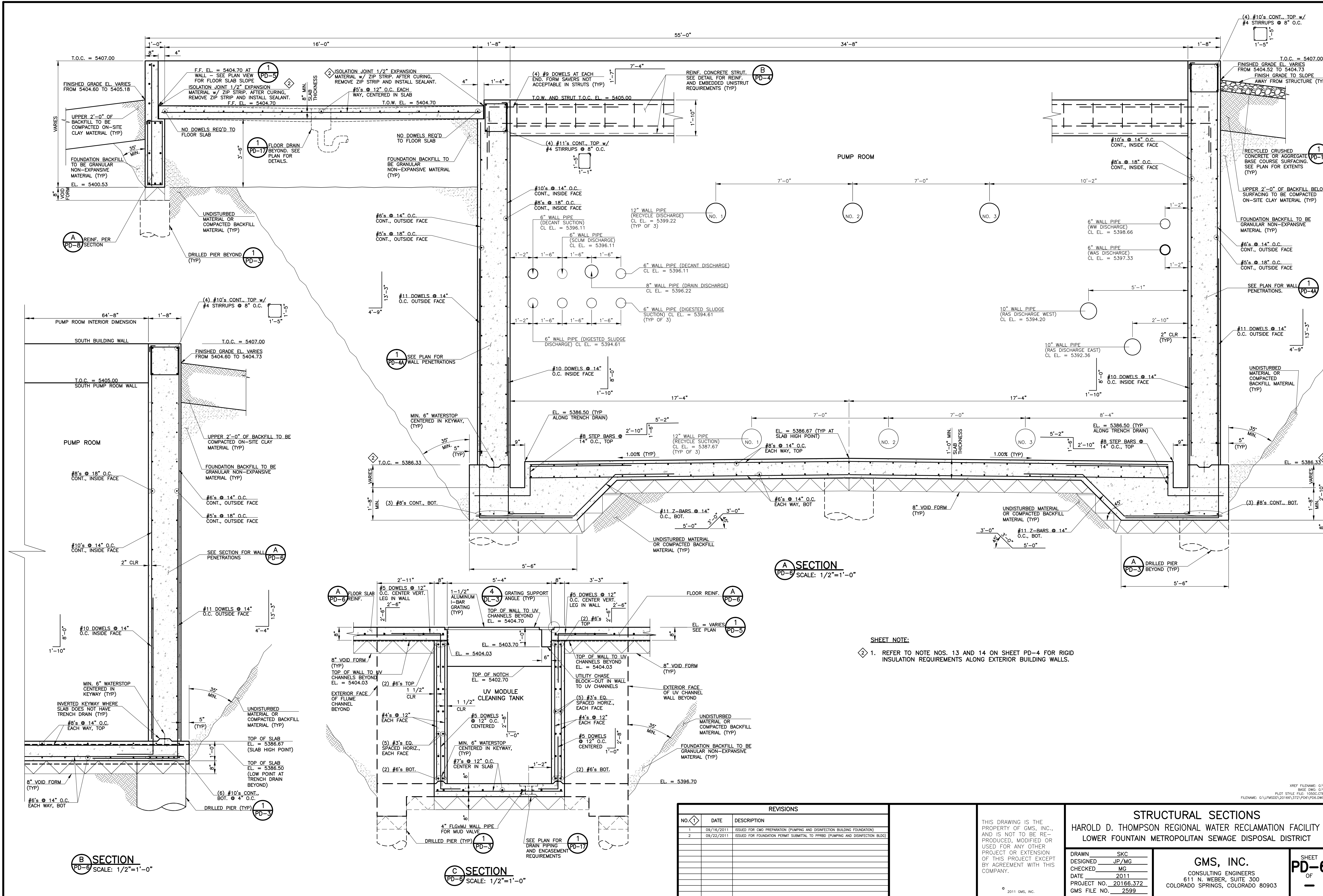
© 2011 GMS, INC.

JOINTING PLAN
HAROLD D. THOMPSON REGIONAL WATER RECLAMATION FACILITY
LOWER FOUNTAIN METROPOLITAN SEWAGE DISPOSAL DISTRICT

DRAWN: SKC/MAM
DESIGNED: MAM/RJS
CHECKED: RJS
DATE: 2011
PROJECT NO.: 20166.372
GMS FILE NO.: 2599

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

SHEET
PD-5A
OF
—



SECTION A
PD-6 SCALE: 1/2"=1'-0"

SECTION B
PD-6 SCALE: 1/2"=1'-0"

SECTION C
PD-6 SCALE: 1/2"=1'-0"

SHEET NOTE:
1. REFER TO NOTE NOS. 13 AND 14 ON SHEET PD-4 FOR RIGID INSULATION REQUIREMENTS ALONG EXTERIOR BUILDING WALLS.

REVISIONS		
NO.	DATE	DESCRIPTION
1	09/16/2011	ISSUED FOR CMO PREPARATION (PUMPING AND DISINFECTION BUILDING FOUNDATION)
2	09/22/2011	ISSUED FOR FOUNDATION PERMIT SUBMITTAL TO PRPD (PUMPING AND DISINFECTION BLDG)

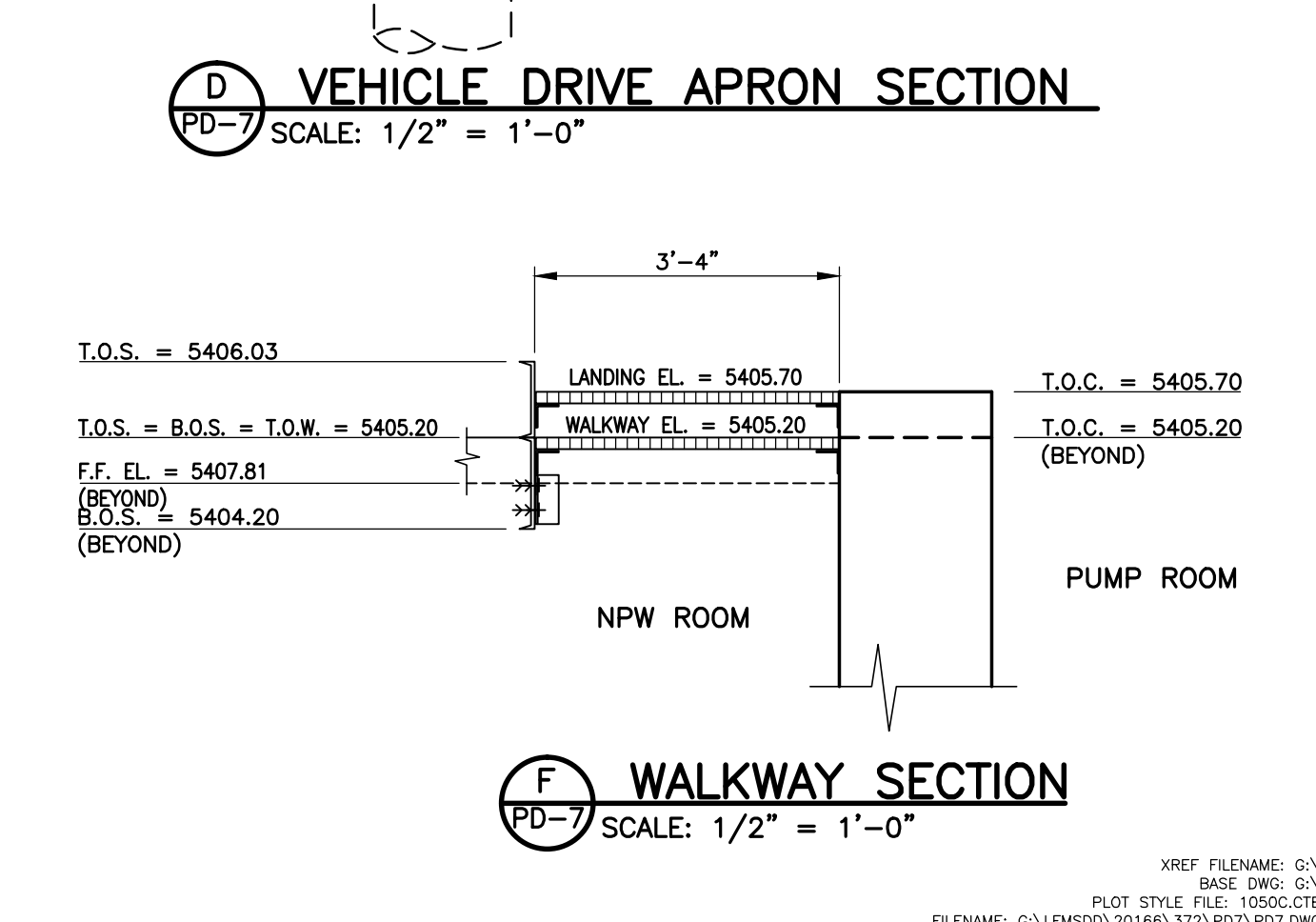
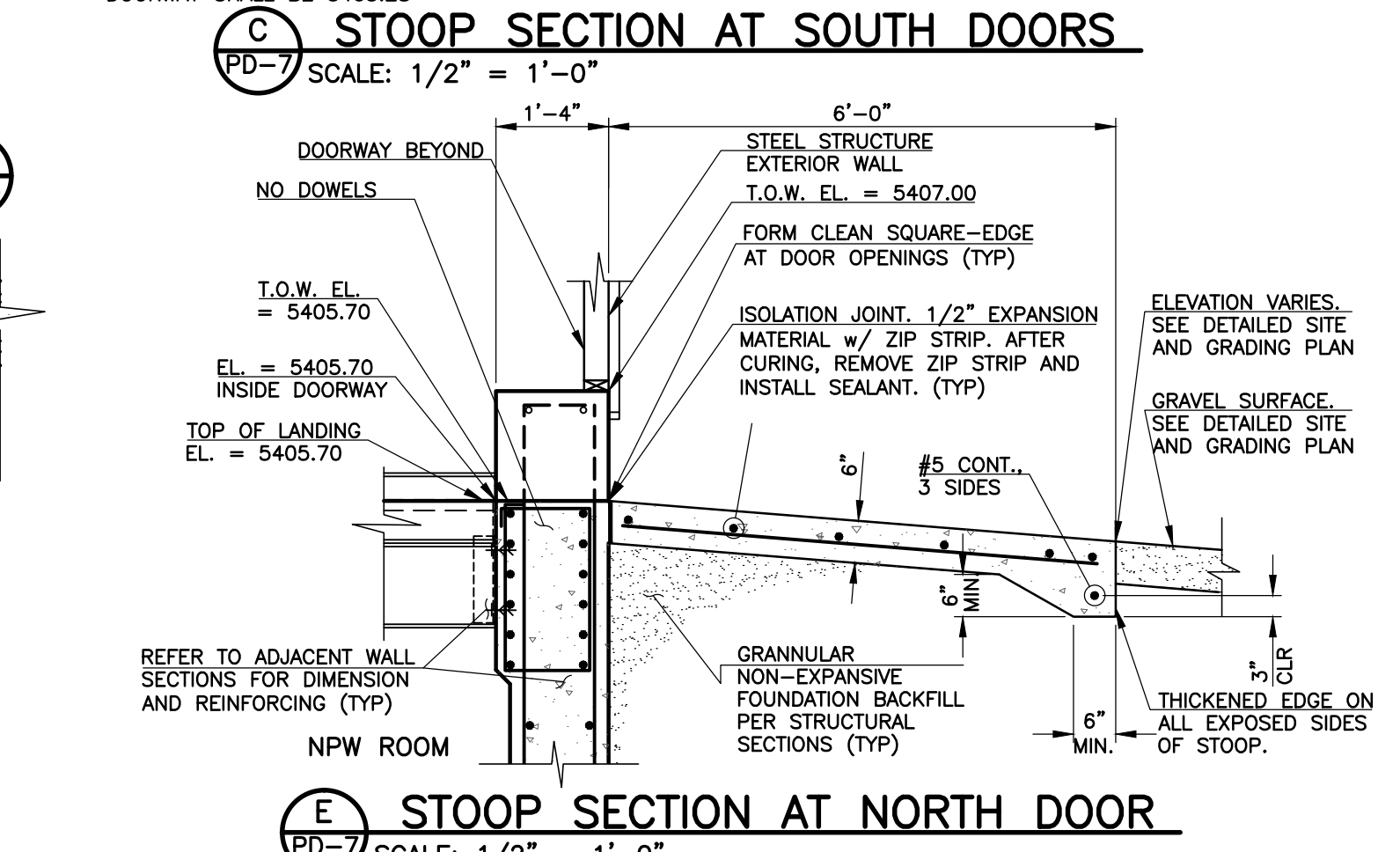
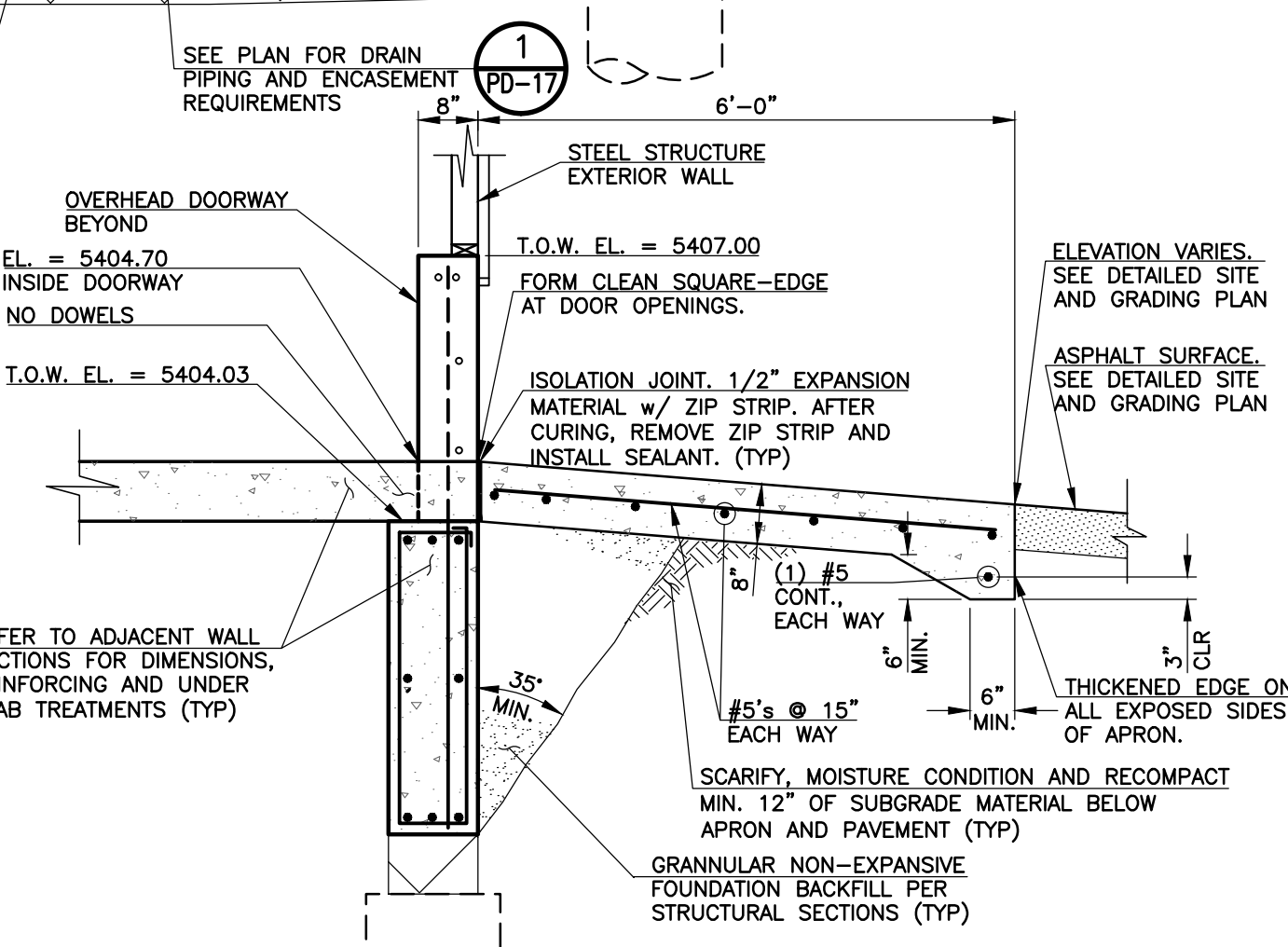
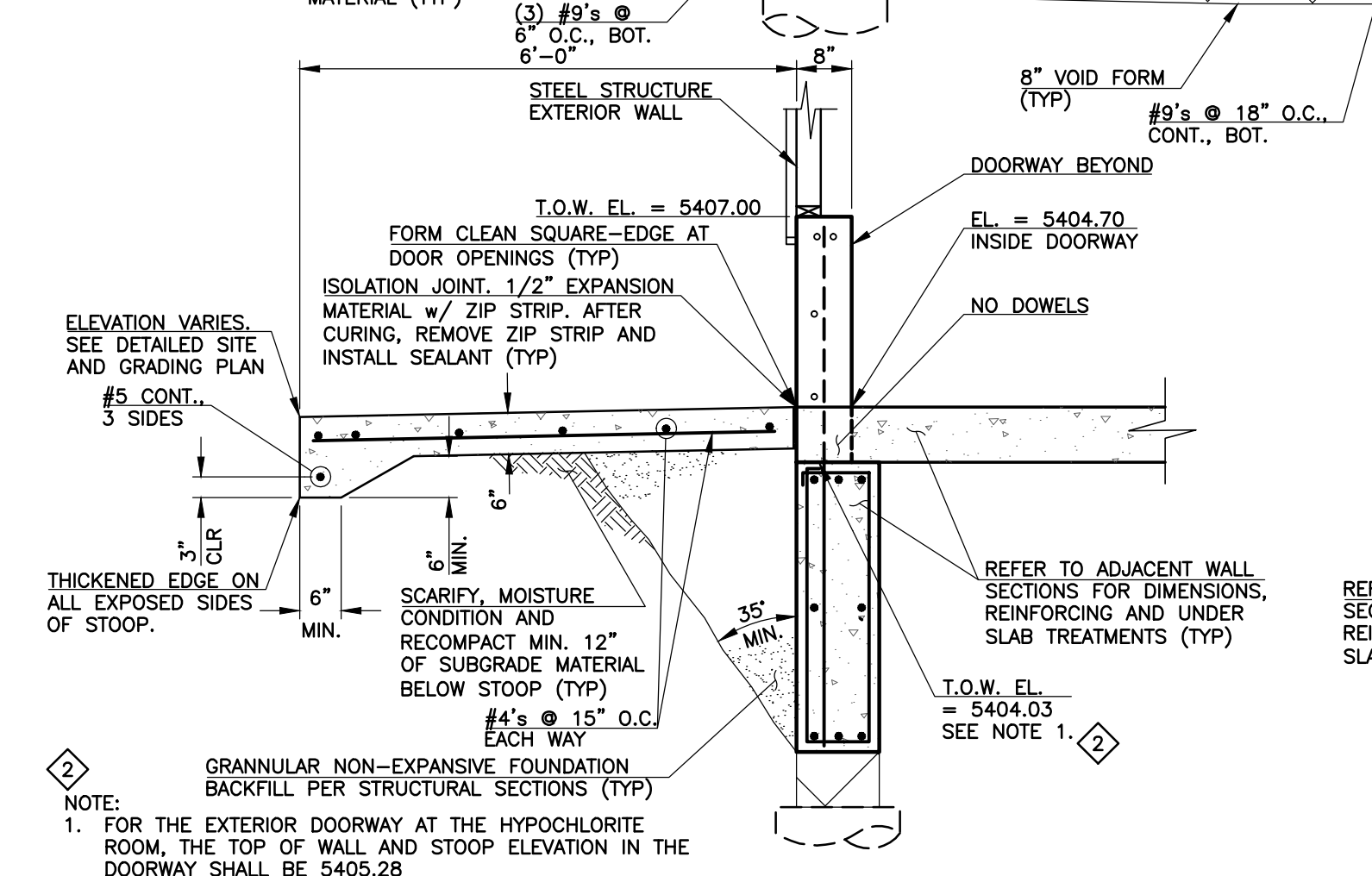
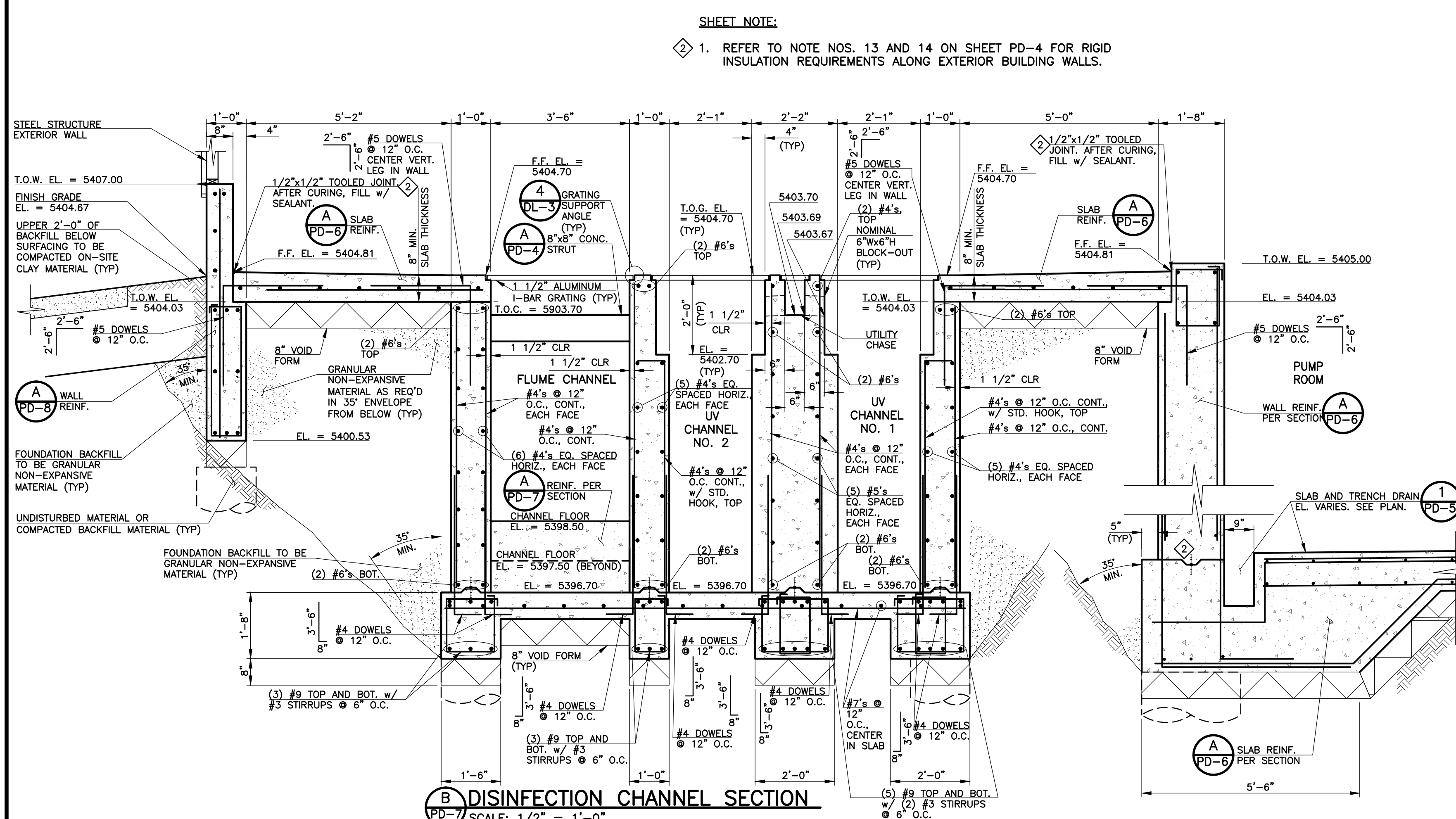
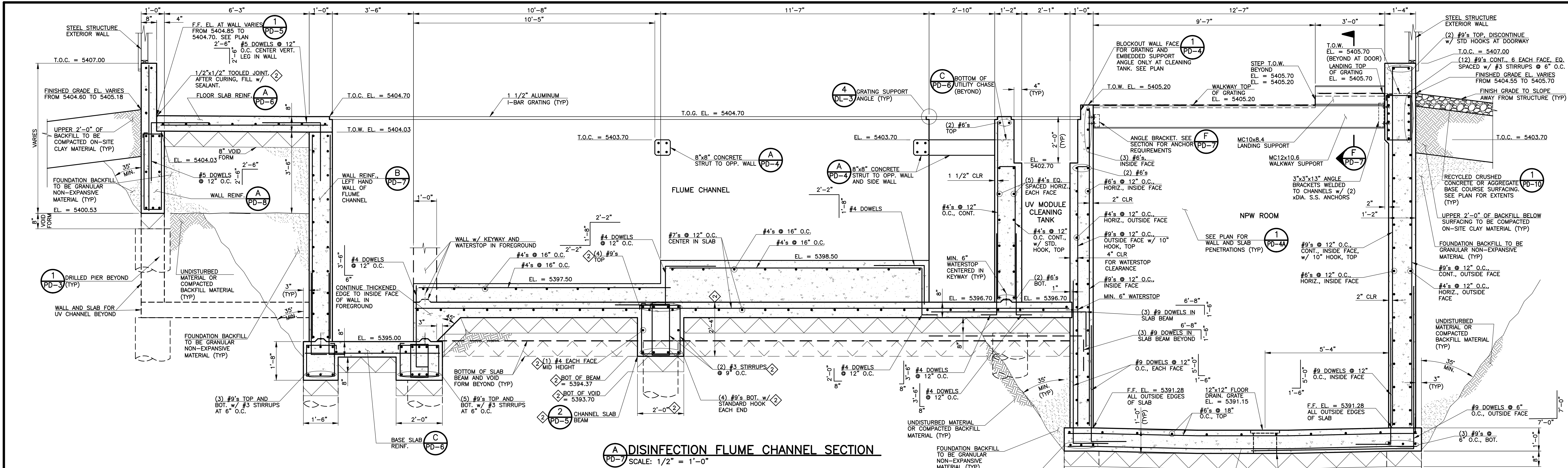
THIS DRAWING IS THE PROPERTY OF GMS, INC., AND IS NOT TO BE REPRODUCED, MODIFIED OR USED FOR ANY OTHER PROJECT OR EXTENSION OF THIS PROJECT EXCEPT BY AGREEMENT WITH THIS COMPANY.

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

DRAWN	SKC
DESIGNED	JP/MG
CHECKED	MG
DATE	2011
PROJECT NO.	20166.372
GMS FILE NO.	2599

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

SHEET PD-6
OF —



REVISIONS		
NO.	DATE	DESCRIPTION
1	09/16/2011	ISSUED FOR CMO PREPARATION (PUMPING AND DISINFECTION BUILDING FOUNDATION)
2	09/22/2011	ISSUED FOR FOUNDATION PERMIT SUBMITTAL TO PPRBD (PUMPING AND DISINFECTION BLDG)

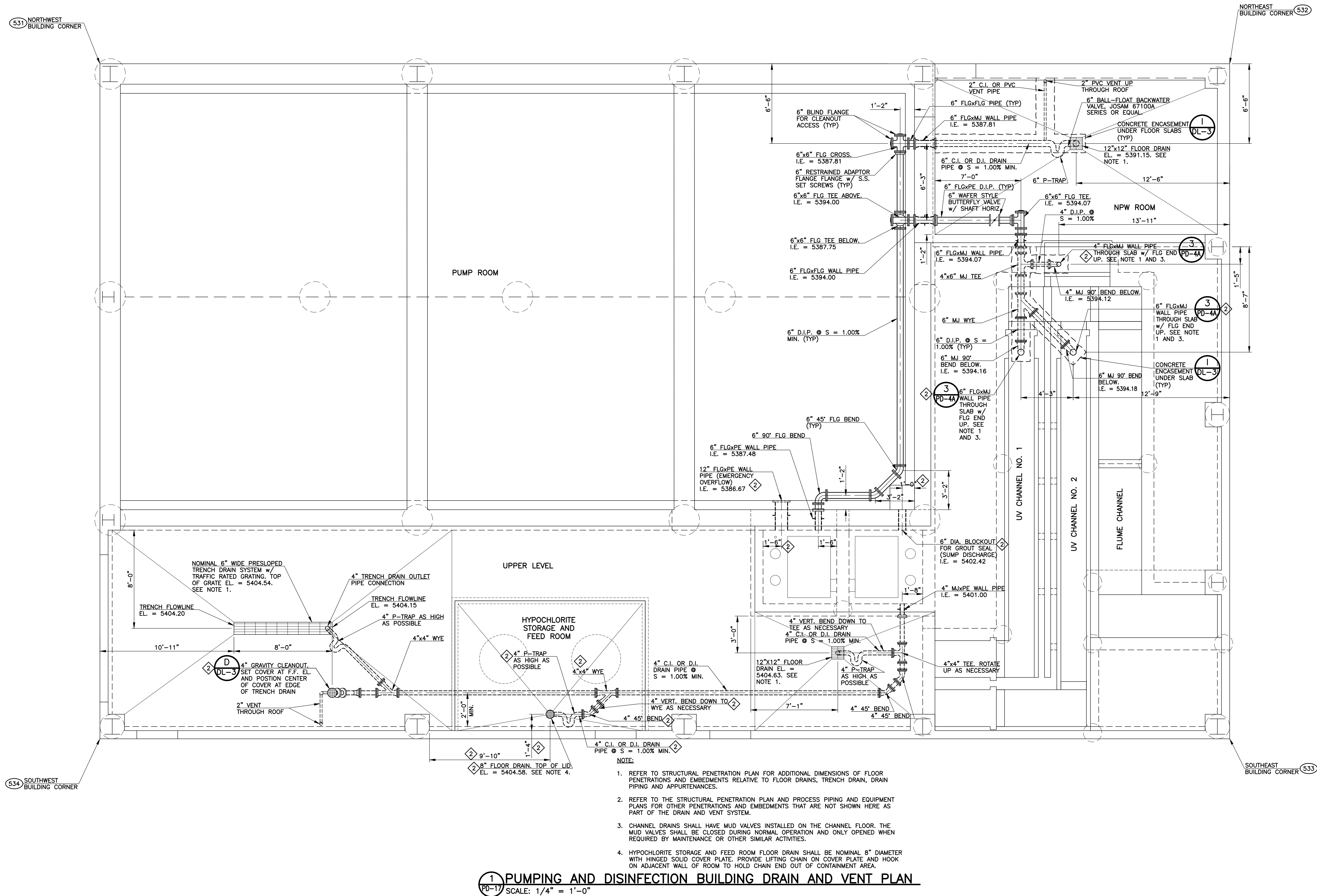
THIS DRAWING IS THE PROPERTY OF GMS, INC., AND IS NOT TO BE REPRODUCED, MODIFIED OR USED FOR ANY OTHER PROJECT OR EXTENSION OF THIS PROJECT EXCEPT BY AGREEMENT WITH THIS COMPANY.

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

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

SHEET
PD-7
 OF
 -

DRAWN: SKC
 DESIGNED: MAM
 CHECKED: RJS
 DATE: 2011
 PROJECT NO.: 20166.372
 GMS FILE NO.: 2599



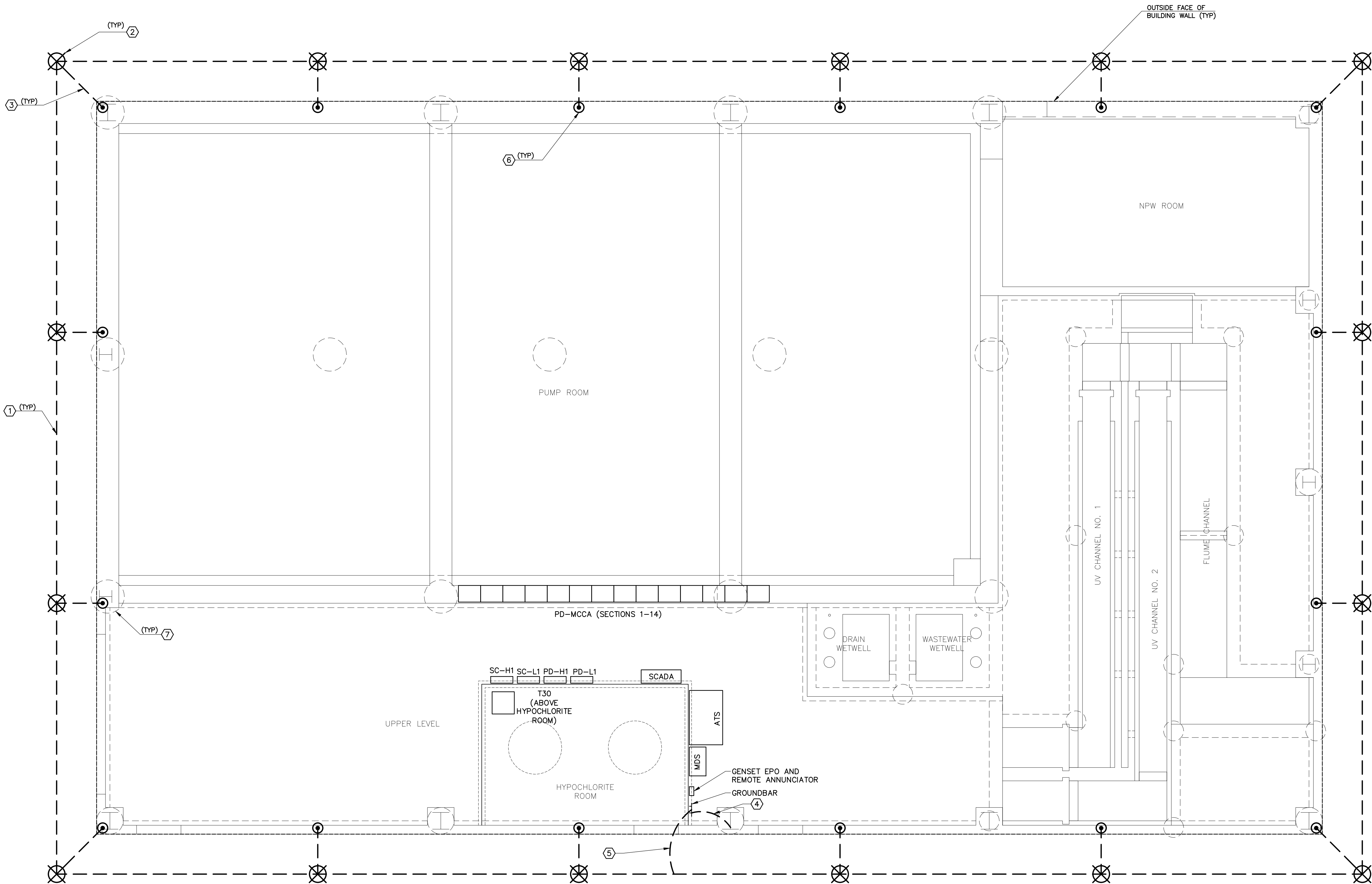
1 PUMPING AND DISINFECTION BUILDING DRAIN AND VENT PLAN
 SCALE: 1/4" = 1'-0"

REVISIONS		
NO.	DATE	DESCRIPTION
1	09/16/2011	ISSUED FOR CMO PREPARATION (PUMPING AND DISINFECTION BUILDING FOUNDATION)
2	09/22/2011	ISSUED FOR FOUNDATION PERMIT SUBMITTAL TO PRPD (PUMPING AND DISINFECTION BLDG)

THIS DRAWING IS THE PROPERTY OF GMS, INC., AND IS NOT TO BE REPRODUCED, MODIFIED OR USED FOR ANY OTHER PROJECT OR EXTENSION OF THIS PROJECT EXCEPT BY AGREEMENT WITH THIS COMPANY.

DRAIN AND VENT PLAN
 HAROLD D. THOMPSON REGIONAL WATER RECLAMATION FACILITY
 LOWER FOUNTAIN METROPOLITAN SEWAGE DISPOSAL DISTRICT

DRAWN: SKC DESIGNED: MAM CHECKED: RJS DATE: 2011 PROJECT NO.: 20166.372 GMS FILE NO.: 2599	GMS, INC. CONSULTING ENGINEERS 611 N. WEBER, SUITE 300 COLORADO SPRINGS, COLORADO 80903	SHEET PD-17 OF —
---	---	----------------------------------



GENERAL NOTES

A. LIGHTNING PROTECTION SYSTEM SHOWN FOR GENERAL INFORMATION ONLY. STRUCTURE TO BE PROVIDED WITH LIGHTNING PROTECTION SYSTEM DESIGNED AND INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 13100. NFPA 780 AND UL STANDARD 96A.

KEYED NOTES

- GROUND RING: COPPER, #4/0 STRANDED. INSTALL AT BOTTOM OF GRADE BEAM FOUNDATION WALLS. AT THE DEEP WALLS OF THE PUMP AND NPW ROOMS, THE GROUND RING SHALL BE INSTALLED AT A MINIMUM DEPTH OF 30 INCHES BELOW FINISHED GROUND SURFACE PER NEC PARAGRAPH 250.53(F). IT IS THE INTENT THAT THE GROUND RING BE PLACED ALL AT ONE TIME DURING BACKFILLING PROCEDURES AND THE INSPECTION OF THE GROUND RING CAN BE ACCOMPLISHED DURING ONE SITE VISIT. THE GROUND RING SHOULD BE PLACED A MINIMUM OF 2 FEET HORIZONTALLY AWAY FROM THE FOUNDATION WALL.
- LOCATIONS FOR 3/4" X 8'-0" GROUND ROD, COPPER OR COPPER CLAD, AT EACH LIGHTNING PROTECTION DOWN CONDUCTOR LOCATION. FINAL DOWN CONDUCTOR LOCATIONS TO BE DETERMINED IN ACCEPTED SHOP SUBMITTAL FOR LIGHTNING PROTECTION SYSTEM.
- LOCATIONS FOR DOWN CONDUCTORS. EXPOSED DOWN CONDUCTORS SHALL HAVE RIGID (GRC OR ACCEPTABLE EQUIVALENT) PROTECTIVE COVERS UP TO 6'-0" ABOVE GRADE WHERE INSTALLED IN CLOSE PROXIMITY TO ROADWAYS.
- LOCATION FOR "UFER" BOND FOR STRUCTURE GROUNDING. RUN INTO DRILLED PIER, TIE TO STEEL REBAR AND PROVIDE MINIMUM 20'-0" LENGTH OF CONDUCTOR WITHIN DRILLED PIER CONCRETE IN ACCORDANCE WITH NEC AND LOCAL CODES. ROUTE STUB UP TO GROUND BAR LOCATED ON THE EAST WALL OF THE HYPOCHLORITE ROOM.
- APPROXIMATE LOCATION FOR BUILDING GROUNDING ELECTRODE CONDUCTOR CONNECTION TO GROUND RING.
- APPROXIMATE LOCATION OF LIGHTNING PROTECTION AIR TERMINALS ON ROOF. FINAL LOCATION TO BE AS SPECIFIED ON THE SHOP DRAWINGS.
- DRILLED PIER PER STRUCTURAL DRAWINGS. SEE SHEET PD-3 FOR EXACT LOCATION.

1 PUMPING AND DISINFECTION BUILDING ELECTRICAL GROUNDING PLAN
EPD-3 SCALE: SCALE: 1/4" = 1'-0"

REVISIONS		
NO.	DATE	DESCRIPTION
1	09/16/2011	ISSUED FOR CMO PREPARATION (PUMPING AND DISINFECTION BUILDING FOUNDATION)
2	09/22/2011	ISSUED FOR FOUNDATION PERMIT SUBMITTAL TO PPRBD (PUMPING AND DISINFECTION BLDG)

THIS DRAWING IS THE PROPERTY OF GMS, INC., AND IS NOT TO BE RE-PRODUCED, MODIFIED OR USED FOR ANY OTHER PROJECT OR EXTENSION OF THIS PROJECT EXCEPT BY AGREEMENT WITH THIS COMPANY.

© 2010 GMS, INC.

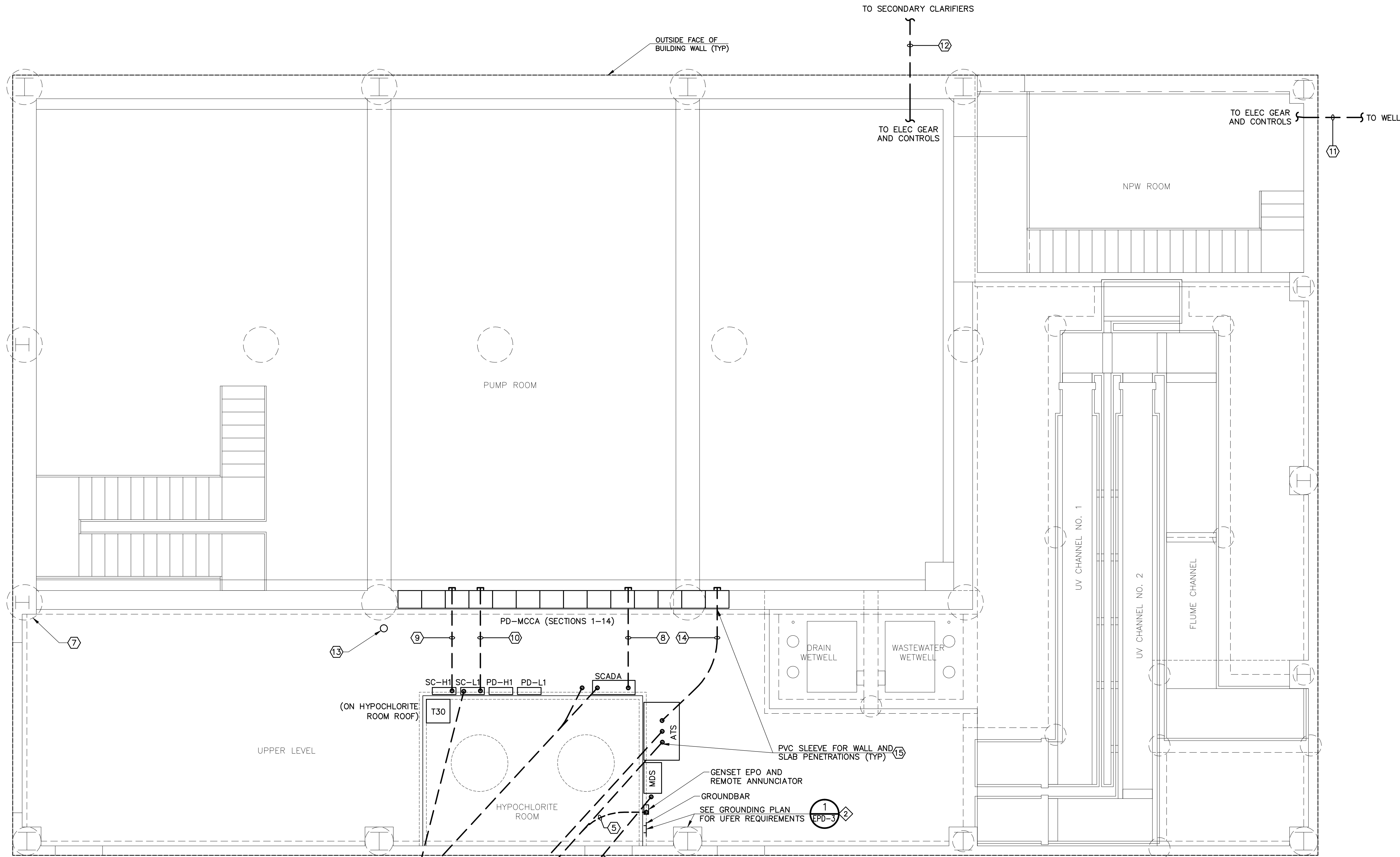
ELECTRICAL GROUNDING PLAN
PUMPING AND DISINFECTION BUILDING
HAROLD D. THOMPSON REGIONAL WATER RECLAMATION FACILITY
LOWER FOUNTAIN METROPOLITAN SEWAGE DISPOSAL DISTRICT

DRAWN: XXX
DESIGNED: XXX
CHECKED: XXX
DATE: 2011
PROJECT NO.: 20166.330
GMS FILE NO.: 2599

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

SHEET
EPD-3
OF
1

XXREF: FILENAME: G:\
BASE: DWG: G:\
PLOT STYLE FILE: 10000.ctb
FILENAME: \\G:\LFMSDD\20166\330\EPD3\EPD3.dwg



GENERAL NOTES

- A. LIGHTNING PROTECTION SYSTEM SHOWN FOR GENERAL INFORMATION ONLY. STRUCTURE TO BE PROVIDED WITH LIGHTNING PROTECTION SYSTEM DESIGNED AND INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 13100. NFPA 780 AND UL STANDARD 96A.
- B. DUE TO PROPOSED HOIST/Crane ARRANGEMENTS FOR BUILDING, THE CEILING AREA MUST BE KEPT CLEAR, AND NO ELECTRICAL EQUIPMENT OR SUPPORTS CAN BE ATTACHED TO THE CEILING.

KEYED NOTES

- ① PUMPING AND DISINFECTION (P&D) BUILDING FEEDER FROM EQUIPMENT AND MAINTENANCE (E&M) BUILDING: (3) 3"C. + (1) SPARE 3"C.
- ② SCADA LOOP FROM E&M BUILDING: (1) 2"C. + (1) SPARE 2"C.
- ③ P&D FEEDER FROM GENSET #2: (2) 3.5"C. + (1) SPARE 3.5"C.
- ④ GENSET #2 CONTROL AND MONITORING: (3) 3/4"C.
- ⑤ GENSET #2 EPO AND REMOTE ANNUNCIATOR: (1) 3/4"C.
- ⑥ GENSET #2 AUXILIARY POWER SUPPLY: (1) 3/4"C.
- ⑦ DRILLED PIER PER STRUCTURAL DRAWINGS. SEE SHEET PD-3 FOR EXACT LOCATION.
- ⑧ SCADA SYSTEM RUNS TO PUMP ROOM (3) 2"C. EXTEND TO PUMP ROOM WALL SURFACE.
- ⑨ 480V CIRCUITS TO PUMP ROOM: (4) 1"C. EXTEND TO PUMP ROOM WALL SURFACE.
- ⑩ 120/208 CIRCUITS TO PUMP ROOM: (4) 1"C. EXTEND TO PUMP ROOM WALL SURFACE.
- ⑪ FEEDER AND CONTROLS TO WELL PUMP: (3) 3/4"C.
- ⑫ FEEDERS AND CONTROLS TO SECONDARY CLARIFIERS: (6) 3/4"C. AND (2) 1.5"C.
- ⑬ PROTECTIVE BOLLARD.
- ⑭ FEEDER FROM ATS TO PD-MCCA: (2) 3.5"C. EXTEND TO PUMP ROOM WALL SURFACE.
- ⑮ ALL WALL AND SLAB PENETRATIONS FOR CONDUIT/CONDUCTOR RUNS SHALL BE SLEEVED ACCORDING TO DETAILS ON THE STRUCTURAL FOUNDATION PLAN AND THE FOLLOWING SCHEDULE:

CONDUIT SIZE (IN.)	SLEEVE SIZE (IN.)
3/4"	2"
1"	2"
1.5"	3"
2"	3"
2.5"	4"
3"	4"
3.5"	6"
4"	6"

1 PUMPING AND DISINFECTION BUILDING ELECTRICAL FOUNDATION PLAN

SCALE: SCALE: 1/4" = 1'-0"

REVISIONS		
NO.	DATE	DESCRIPTION
1	09/16/2011	ISSUED FOR CMO PREPARATION (PUMPING AND DISINFECTION BUILDING FOUNDATION)
2	09/22/2011	ISSUED FOR FOUNDATION PERMIT SUBMITTAL TO PPRBD (PUMPING AND DISINFECTION BLDG)

THIS DRAWING IS THE PROPERTY OF GMS, INC., AND IS NOT TO BE RE-PRODUCED, MODIFIED OR USED FOR ANY OTHER PROJECT OR EXTENSION OF THIS PROJECT EXCEPT BY AGREEMENT WITH THIS COMPANY.

© 2010 GMS, INC.

ELECTRICAL FOUNDATION PLAN PUMPING AND DISINFECTION BUILDING HAROLD D. THOMPSON REGIONAL WATER RECLAMATION FACILITY LOWER FOUNTAIN METROPOLITAN SEWAGE DISPOSAL DISTRICT

DRAWN: XXX
DESIGNED: XXX
CHECKED: XXX
DATE: 2011
PROJECT NO.: 20166.330
GMS FILE NO.: 2599

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

SHEET
EPD-4
OF
—

XREF FILENAME: G:\
BASE DWG: G:\
PLOT STYLE FILE: 10502.ctb
FILENAME: \\G:\FMSDD\20166\330\EPD4\EPD4.dwg