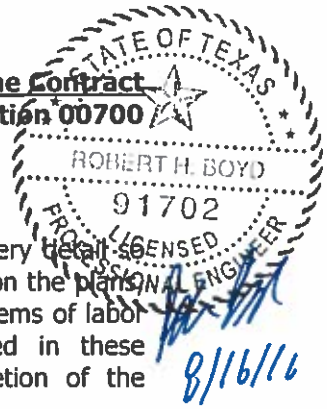


1.0 General Specifications

1.1 These specifications shall cooperate with the accompanying plans in every detail so that any item or any work that may be specified herein and not shown on the plans, or vice-versa, is to be executed the same as if occurring in both. Any items of labor or materials which are not shown on the drawings or mentioned in these specifications but are nevertheless necessary for the proper completion of the construction, are to be provided for by the CONTRACTOR in this bid.

1.2 Should any drawings or figures be omitted on the scale which are necessary for a clear and comprehensive understanding, it will be the duty if the CONTRACTOR to advise the proper parties and in no case proceed with work in uncertainty.

1.3 All labor is to be performed in a skillful, thorough manner.

1.4 All material to be of the dimension and grade as herein specified.

1.5 The CONTRACTOR and all SUBCONTRACTORS shall comply with all federal, state and local laws, codes and ordinances applicable to the work.

1.5.1 The CONTRACTOR has been provided a copy of the Water Pollution Abatement Plan (WPAP) Notice of Approval by the Texas Commission on Environmental Quality.

1.6 The CONTRACTOR shall protect all persons and property throughout the progress until the completion of the work.

1.6.1 Work shall proceed in such a manner as to minimize the spread of dust and flying particles and to provide safe working conditions for all personnel.

1.6.2 Work shall proceed in such a manner as will not interfere with existing surface drainage in the streets and areas adjacent to the project.

1.7 During the course of their work, all craftsmen and tradesmen shall protect all work which precedes theirs from damage and they shall make repairs and/or replacements of any damage caused either directly or indirectly by them.

1.8 CONTRACTOR is responsible for providing all necessary materials, labor and equipment to complete the project. All waste material must be removed from the site at the CONTRACTOR'S sole expense.

1.9 CONTRACTOR shall lay out and correctly establish all lines, levels, grades and positions of all parts of the work, and shall be responsible for their accuracy and proper correlation with existing control lines, monuments and data points. Control lines, monuments and data points shall be carefully preserved by the CONTRACTOR, and if displaced, shall be reset by the CONTRACTOR at the CONTRACTOR'S own expense. All such resetting work shall be subject to the OWNER's approval.

2.0 Waste Material Removal

2.1 All excess stormwater, rock gabions, debris, sand, and underground piping network shall be removed and disposed of by OTHERS.

3.0 New Concrete Wall

3.1 CONTRACTOR shall construct new concrete wall in accordance with the attached structural design plans and tie into existing wall and ramp in accordance with said structural plans.

4.0 Compacted Base Material

4.1 CONTRACTOR shall place material in no more than 6" lifts, compacted to 90% of proctor density.

4.2 Finished grade elevations for compacted base above the existing concrete floor have been provided on attached plans.

5.0 Concrete Floor

5.1 CONTRACTOR shall construct 6" concrete floor with #4 bars at 12" on center (both ways). Concrete grades shall match grades established by compacted base material.

5.2 CONTRACTOR shall tie new concrete floor into walls and ramps according to attached structural plans.

6.0 Computer Controlled Cartridge Filter System

6.1 CONTRACTOR shall install an Aqualogic Standard Filter Basin as shown on the attached plans.

6.2 CONTRACTOR shall install 84 cartridges in accordance with the attached plans.

6.3 CONTRACTOR shall install all necessary components to provide a fully functional Computer Controlled Cartridge Filter System including, but not limited to:

- OSHA compliant access ladders
- Grout fill sloped to drain to filters
- 8" thick rock covering 4" diameter crushed rock covering inlet to the filtration basin
- Neenah R-7512-A C.I. Pipe Screen covering inlet to the filtration basin

GENERAL NOTES:
1.0 GENERAL
1.1 THIS RETAINING WALL DESIGN IS SITE SPECIFIC AND MAY NOT BE USED FOR DIFFERENT SITE LOCATIONS WITHOUT WRITTEN PERMISSION FROM OUTLIER ENGINEERING, INC (OUTLIER)

1.2 DRAWINGS BY DEH STRUCTURAL ENGINEERING, INC PROVIDED BY COMAL COUNTY DATED NOVEMBER, 2003.

1.7 SEE SITE PLAN, ARCHITECTURAL PLAN, OR DESIGNER PLAN FOR ACTUAL TOP-OF-SLAB FINISH FLOOR ELEVATION.

1.8 THE STRUCTURE HAS BEEN DESIGNED TO RESIST DESIGN LOADS ONLY AS A COMPLETED STRUCTURE. APPLICATION OF CONSTRUCTION LOADS TO THE PARTIALLY COMPLETED STRUCTURE SHALL BE CONSIDERED BY THE CONTRACTOR AND SO INCLUDED IN THE DESIGN OF SHORING, BRACING, FORMWORK, AND ANY OTHER SUPPORTING ELEMENTS PROVIDED FOR CONSTRUCTION OF THE STUCTURE. WHEN SPECIFIED IN THE CONTRACT DOCUMENTS, OR REQUIRED BY THE STURCTURAL ENGINEER, CONTRACTOR SHALL PRODUCE CALCULATIONS PREPARED BY A REGISTERED ENGINEER IN THE STATE OF TEXAS, WHICH VERIFY THE MEANS OF STRUCTURALLY MAINTAINING THE INTERGRITY OF THE STRUCTURE DURING CONSTRUCTION.

1.9 DURING ERECTION AND UNTIL ALL PERMANENT CONNECTIONS ARE MADE, THE CONTRACTOR SHALL PROVIDE TEMPOARY BRACING TO BRACE THE STRUCTURE IN ALL DIRECTIONS. (REF. 1.8).

1.10 GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS, GRADE CONDITIONS, (BOTH NEW AND EXISTING). EXISTING STRUCTUAL DETAILS (IF ANY), REPORTING ANY DISCREPANCIES TO THE STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY PHASE OF THE WORK AS THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK FITTING AS INTENDED BY THE CONTRACT DOCUMENTS

2.0 DESIGN DATA AND CRITERIA

2.1 THE FOUNDATION DESIGN UTILIZED GUIDANCE PROVIDED IN THE 2006 IBC AND ACI 301-02.

2.2 STRUCTURAL FOUNDATION DESIGN LOADS:

DEAD LOAD: WEIGHT OF RETAINING WALL COMPONENTS

LIVE LOAD:
RETAINED FLUID 62.4LBS/CF

SEIMIC DESIGN CATEGORY A
SITE CLASS UNKNOWN- NO GEOTECHNICAL INFORMATION PROVIDED
Ss=0.096G
S1=0.031G

4.0 FOUNDATION CONSTRUCTION

4.1 THE EXISTING CONCRETE MUST BE CLEANED WITH A POWER WASHER OR SCRUB BRUSH AND ALL MATERIAL RINSED FROM THE SURFACE.

4.2 USE HAND OPERATED TAMPING EQUIPMENT WITHIN THE HEIGHT OF THE WALL BEHIND THE WALL TO COMPACT FILL.

4.10 FORMWORK SHORING SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE (ACI) ACI 347, "STANDARD FOR DESIGN AND PLACEMENT OF CONCRETE FORMWORK".

4.11 ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH ACI 302.1R.

4.12 PROPER CURING OF ALL CONCRETE SURFACES SHALL BE PROVIDED BY THE BUILDER AND IN ACCORDANCE WITH THE LATEST EDITION OF ACI 308, "THE STANDARD PRACTICE FOR CURING CONCRETE." IF SPRAY-ON CURING COMPOUNDS ARE USED, THEY NEED TO BE COMPATIBLE WITH SUBSEQUENT FINISH

4.13 CONVEY AND PLACE CONCRETE IN SUCH A MANNER THAT THERE WILL BE NO SEPARATION OF INGREDIENTS. MAXIMUM HEIGHT OF CONCRETE FREE FALL IS 5 FEET. REGULATE THE RATE OF PLACEMENT SO CONCRETE REMAINS ELASTIC AND FLOWS INTO POSITION. ALL CONCRETE SHALL BE THOROUGHLY CONSOLIDATED BY SUITABLE MEANS DURING PLACEMENT AND SHALL BE THOROUGHLY WORKED AROUND REINFORECEMENT AND EMBEDDED ITEMS AND INTO CORNERS OF FORMS, ELIMINATING AIR AND ROCK POCKETS THAT MAY CAUSE HONEYCOMBING, PITTING, OR PLANES OF WEAKNESS.

4.14 DO NOT PLACE CONCRETE WHEN TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT UNLESS COLD WEATHER CONCRETE PROCEDURES ARE FOLLOWED. CALCIUM CHLORIDE SHALL NOT BE USED. PROVIDE SPECIAL CARE TO PREVENT HIGH TEMPERATURES DURING HOT WEATHER CONDITIONS IN FRESH CONCRETE. USE WATER REDUCING AND SET RETARDING ADMIXTURES IN SUCH QUANTITIES AS SPECIFICALLY RECOMMENDED BY THE MANUFACTURER TO ENSURE THE CONCRETE REMAINS WORKABLE.

4.15 SCHEDULING OF CONCRETE DELIVERY SHALL BE SUCH TO PREVENT PLACED CONCRETE FROM HARDENING PRIOR TO PLACEMENT OF ADDITIONAL FRESH CONCRETE. NO HORIZONTAL JOINTS WILL BE PREMITTED IN THE CONCRETE EXCEPT AS NOTED. THE BUILDER SHALL CONTACT OUTLIER PRIOR TO PLACING ANY CONCRETE IF CONSTRUCTION JOINTS ARE REQUIRED.

4.16 SLAB SURFACE FINISH SHALL BE TROWELED FINISHES SUITABLE (TRUE AND LEVEL) AND/OR OWNER REQUIREMENTS. SLAB FINISH TOLERANCES SHALL BE TRUE PLANES WITHIN 1/8 INCH IN 10 FEET AS DETERMINED BY A 10 FOOT DIRECTION.

5.0 CONCRETE AND REINFORCING STEEL.

5.1 ALL CONCRETE AND REINFORCING STEEL SHALL MEET LATEST EDITION OF ASTM A615 AND ACI 117 "STANDARD TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS".

5.2 CONCRETE SHALL BE PLACED IN ACCORDANCE WITH LATEST EDITION OF ACI 301 "SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS".

5.3 CONCRETE SHALL BE CLASS C. TXDOT SPECIFICATION 421.

5.4 REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60, TXDOT SPECIFICATION 440.

5.5 UNLESS NOTED, CONCRETE COVER OVER REINFORCING SHALL BE:
-3" WHEN THE CONCRETE IS PLACED DIRECTLY AGAINST THE GROUND.
- 2" FOR BARS LARGER THAN NO. 5, AND
1½" FOR NO. 5 AND SMALLER, IF AFTER REMOVAL OF FORMS THE CONCRETE IS EXPOSED DIRECTLY TO WEATHER OR GROUND.
-1" IN SLABS AND WALLS, AND 1½" FOR BEAMS AND COLUMNS NOT EXPOSED DIRECTLY TO WEATHER OR GROUND.

5.6 WELDED WIRE MESH (WWM) SHALL MEET LATEST EDITION OF ASTM A-185 OR ASTM A-497. USE FLAT SHEETS ONLY. ALL LAPS TO BE 2 FULL SQUARES.

5.7 ALL REINFORCEMENT SHALL BE SECURELY SUPPORTED AT 48" O.C. TO PREVENT VERTICAL AND HORIZONTAL MOVEMENT DURING THE PLACEMENT OF CONCRETE, METAL, PLASTIC, CONCRETE, OR MASONRY CHAIRS MAY BE USED TO SUPPORT REINFORCEMENT.

5.8 ALL REINFORCING HOOKS SHALL BE STANDARD HOOKS AS DEFINED BY ACI, U.N.O

5.9 REINFORCING STEEL LAPS AND SPLICES SHALL BE A MINIMUM OF 30 BAR DIAMETERS, BUT NO LESS THAN 12 INCHES. SPLICES OF THE TOP AND BOTTOM BEAM REINFORCEMENT SHALL BE STAGGERED A MINIMUM OF 5 FEET.

5.10 ALL BEAM SIZES, SLAB THICKNESS, AND REINFORCING SIZES ARE A MINIMUM AND SHALL NOT BE DECREASED WITHOUT PRIOR APPROVAL BY
OUTLIER.

5.11 ALL EXPOSED EDGES OF CONCRETE SHALL HAVE A 1 INCH, 45 DEGREE CHAMFER.

5.12 MAXIMUM AGGREGATE SHALL BE AS FOLLOWS:
WALLS, STRUCTURAL SLABS, BEAMS..3/4"
FOOTING, SLABS ON GRADE ……..…. 1½"

5.13 GRIND ALL CONSTRUCTION JOINTS IN SLAB SO AS TO PRODUCE A SMOOTH AND LEVEL SURFACE.

6.0 SITE OBSERVATION INSPECTIONS BY OUTLIER

6.1 OUTLIER ACCEPTS NO RESPONSIBILITY FOR THE PERFORMANCE OF THIS RETAINING WALL UNLESS SITE OBSERVATIONS ARE PERFORMED BY OUTLIER OR A REPRESENTATIVE OFOUTLIER AND THE CONCRETE IS PLACED WITHIN 48 HOURS AFTER THE OUTLIER SITE OBSERVATION INSPECTION.

6.2 OBSERVATIONS MADE BY OUTLIER ARE TO CHECK FOR GENERAL CONFORMANCE WITH THE OUTLIER PLANS AND SPECIFICATIONS. THE RESPONSIBILITY FOR ENSURING ACCURACY OF THE CONSTRUCTION AND QUALITY CONTROL PROCEDURES REMAIN WITH THE BUILDER.

6.4 THE BUILDER SHALL NOT PLACE ANY CONCRETE UNTIL OUTLIER HAS CONDUCTED THE SITE OBSERVATION AND HAS GIVEN APPROVAL TO PLACE CONCRETE.

6.5 NOTIFY OUTLIER AT LEAST 48 HOURS BEFORE EACH SITE OBSERVATION INSPECTION IS NEEDED.

THE FOLLOWING TxDOT SPECS ARE INCLUDED IN THE NOTES AND SPECIFICATIONS BY THIS REFERENCE.

400 EXCAVATION AND BACKFILL FOR STURCTURES

420 CONCRETE STRUCTURES

421 HYDRAULIC CEMENT CONCRETE

440 REINFORCING STEEL

7.0 PENETRATION DETAIL NOTES –

7.1 CHANNEL WALL PENETRATIONS FOR HOLES 4" OR GREATER, UPTO 1'-6"

7.2. FOR EACH BAR INTERRUPTED BY THE PENETRATION, PLACE EQUIVALENT STEEL, 1/2 TO EACH SIDE OF PENETRATION, FULL HEIGHT / LENGTH

7.3. FOR PENETRATIONS LESS THAN 4", AVOID REINFORCING AND MAINTAIN 2" MIN COVER.

7.4. VERTICAL REINFORCING SHOWN IN PENETRATION DETAIL FOR RETAINING WALL REPLACEMENT ALSO APPLIES TO HORIZONTAL STEEL, EXTEND 2' PAST OPENING.

7.5. FOR PENETRATIONS OUTSIDE THESE PARAMETERS, CONTACT ENGINEER

8.0 DOWELS
8.1 USE HILTI HIT HY 150MAX ADHESIVE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. DRILL AND EPOXY DOWEL INTO EXISTING SLAB. DO NOT CUT EXISTING REBAR DURING INSTALLATION.

STATE OF TEXAS
A. M. STONE
91049
LICENSED
PROFESSIONAL ENGINEER
15 Sept 2014

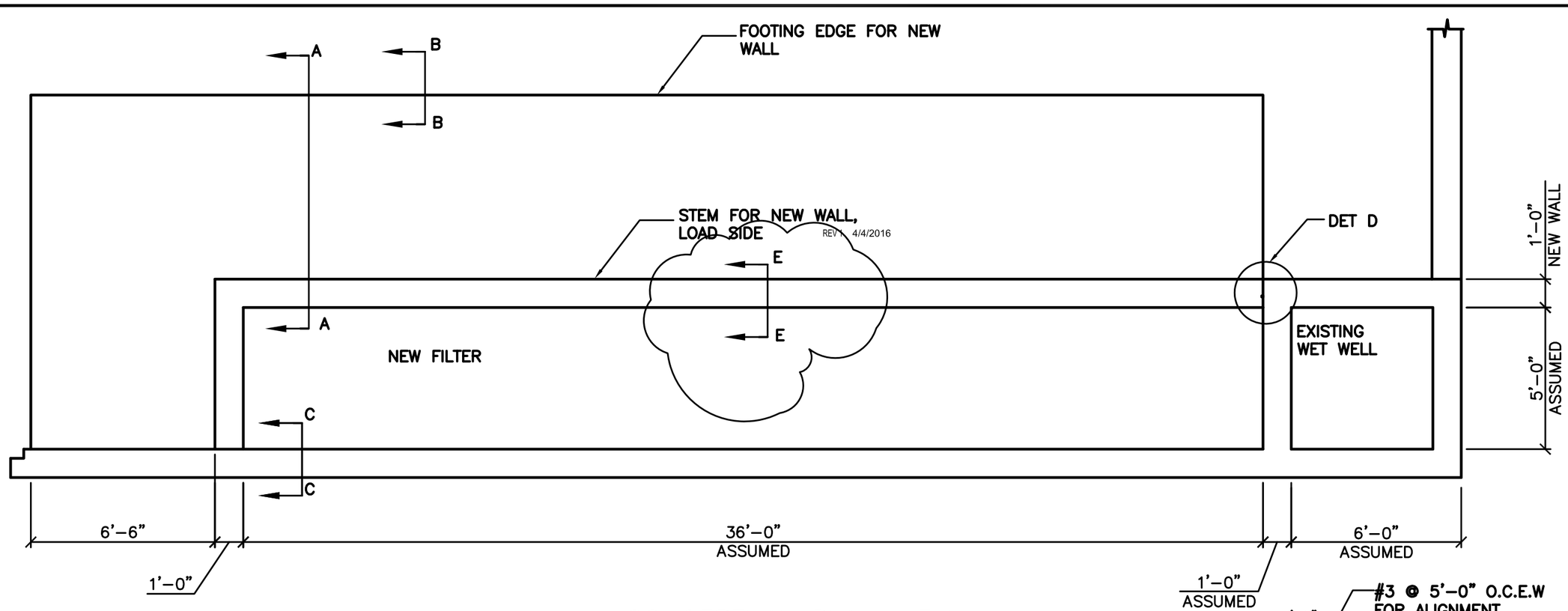
OUTLIER ENGINEERING, INC.
240 Old Court
New Braunfels, TX 78132
Firm Registration # 14384
www.outlierengr.com
Ph:830.837.0242

DETENTION POND
RETAINING WALL MODIFICATIONS

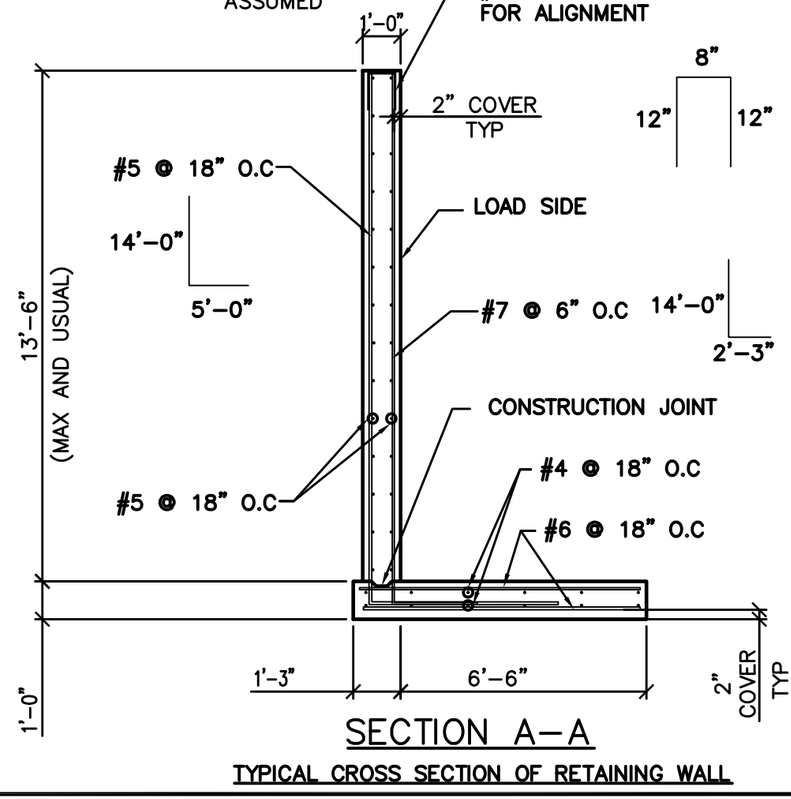
COMAL COUNTY
195 DAVID JONAS DRIVE
NEW BRAUNFELS, TEXAS 78132

REV NO	DATE	BY

JOB NO.: 14-0122
PREPARED BY: SSP
CHECKED BY: -
DATE: 09/12/14
SHEET NO.
S1
OF S3



CONCEPTUAL PLAN VIEW OF NEW WALL



SECTION A–A

TYPICAL CROSS SECTION OF RETAINING WALL

THE SEAL WAS AUTHORIZED BY A.M. STONE, P.E. 91049 ON 04/04/2016. THE ORIGINAL SEALED DRAWING IS ON FILE AT OUTLIER ENGINEERING, INC.

A.M. Stone, PE

STATE OF TEXAS
A.M. STONE
91049
LICENSED
PROFESSIONAL ENGINEER

OUTLIER ENGINEERING INC.
240 Dietz Court
New Braunfels, TX 78132
Firm Registration # 14384
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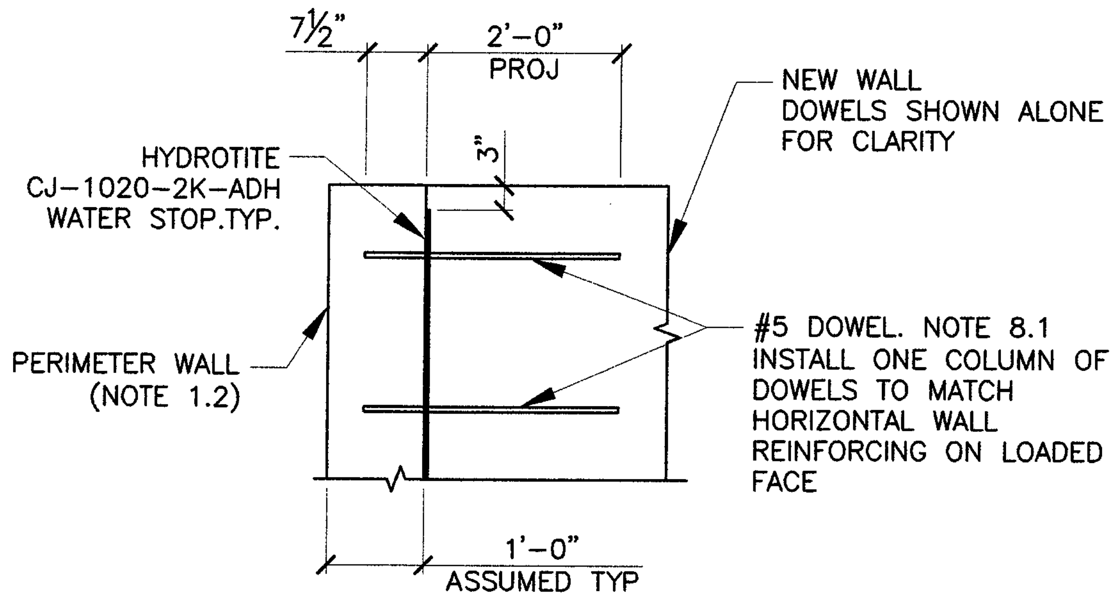
DETENTION POND
RETAINING WALL MODIFICATIONS

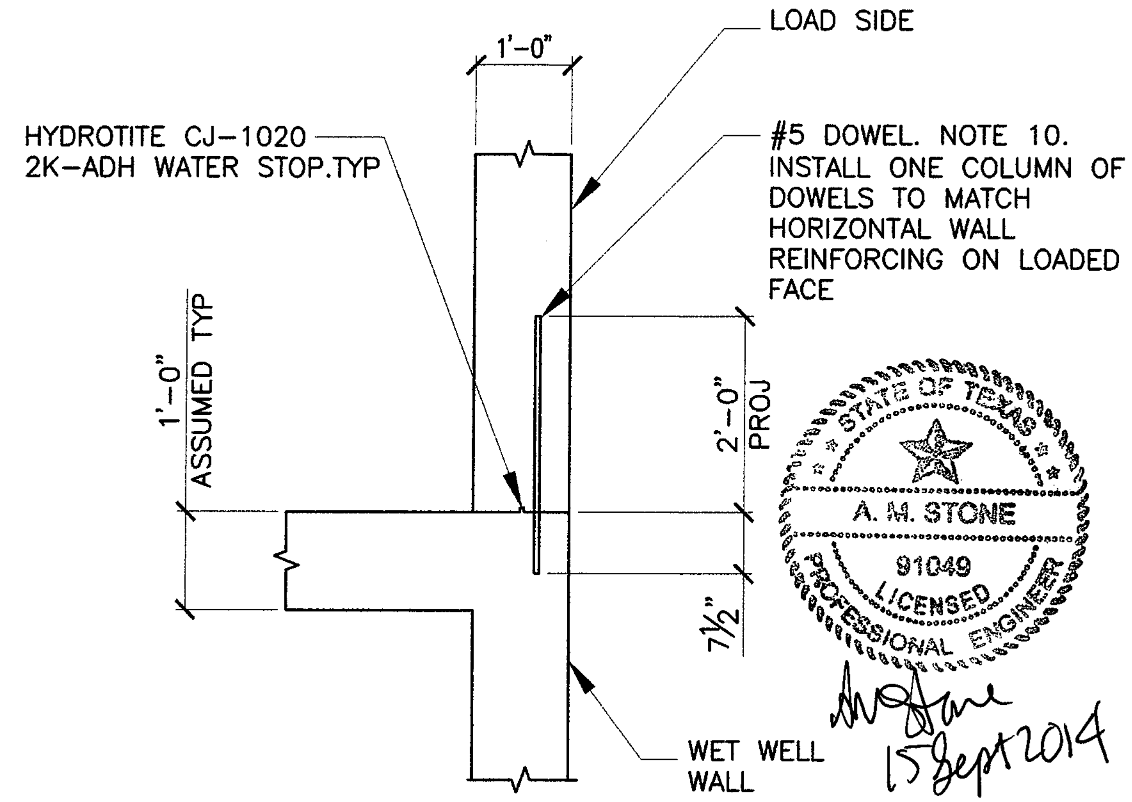
COMAL COUNTY
195 DAVID JONAS DRIVE
NEW BRAUNFELS, TEXAS 78132

REV NO	DATE	BY
1	4/4/2016	AMS

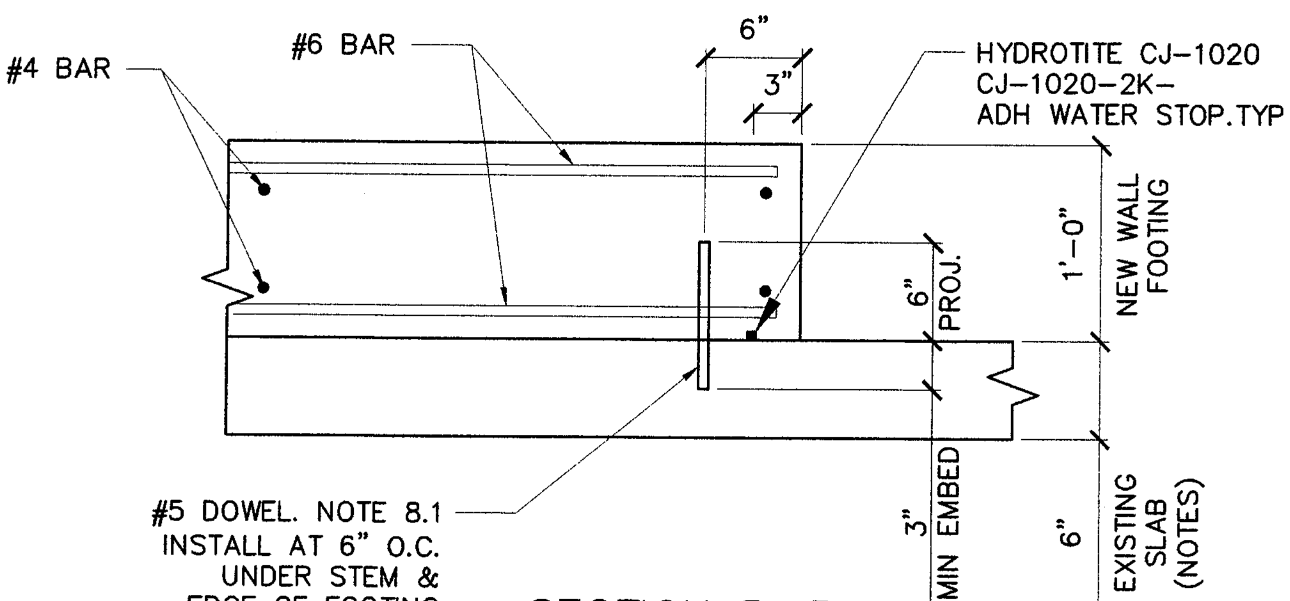
JOB NO.: 14-0122
PREPARED BY: SSP
CHECKED BY: -
DATE: 09/12/14
SHEET NO.
S2
OF S3



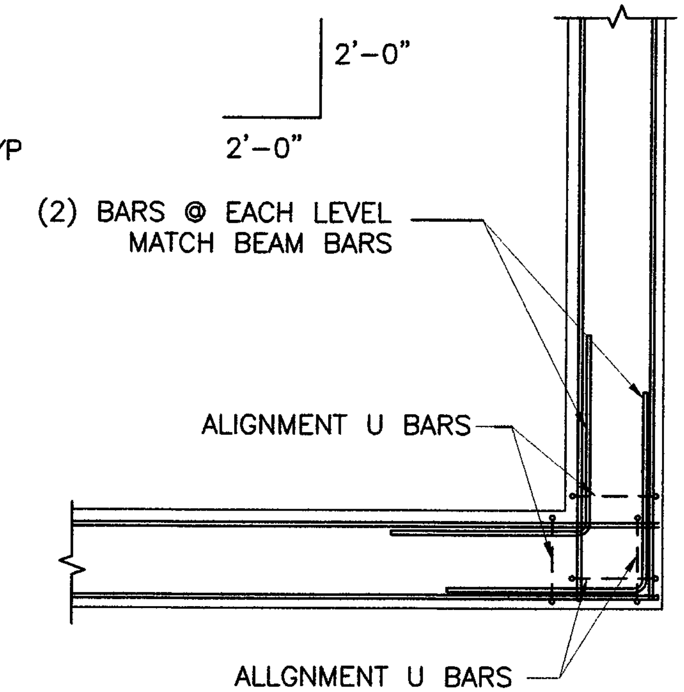
ELEVATION
SECTION C–C
SIMILAR TO WET WALL
CONNECTION BETWEEN
WET WELL AND NEW WALL



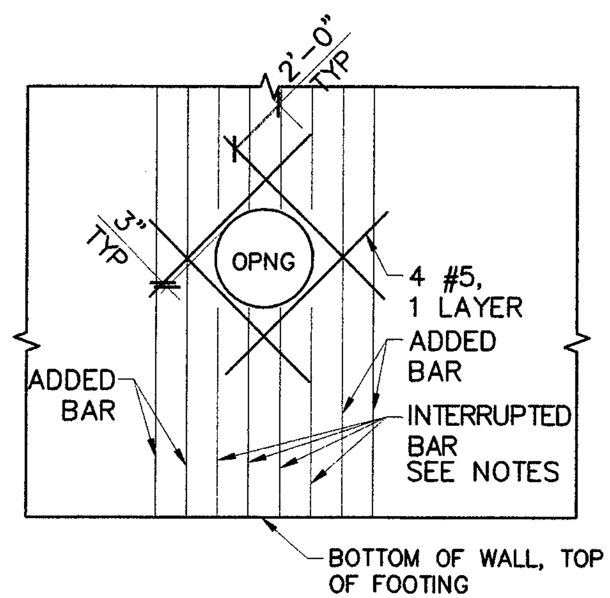
PLAN
DETAIL D
CONNECTION BETWEEN
WET WELL AND NEW WALL
SIMILAR TO PERIMETER WALL



SECTION B–B
CONNECTION BETWEEN
SLAB AND NEW WALL



TYP. CORNER DETAIL



PENETRATION DETAIL
FOR RETAINING WALL

OUTLIER ENGINEERING, INC.
240 Oak Court
New Braunfels, TX 78132
Firm Registration # 14384
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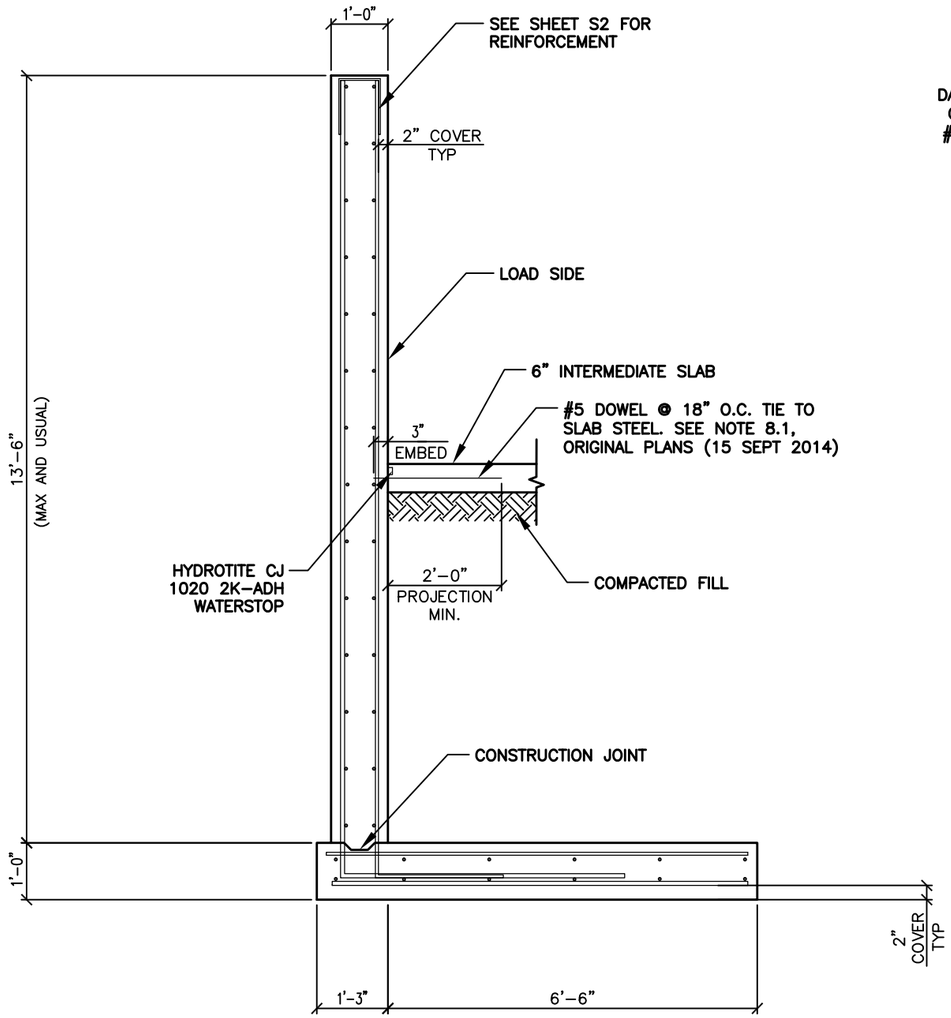
DETENTION POND
RETAINING WALL MODIFICATIONS

COMAL COUNTY
195 DAVID JONAS DRIVE
NEW BRAUNFELS, TEXAS 78132

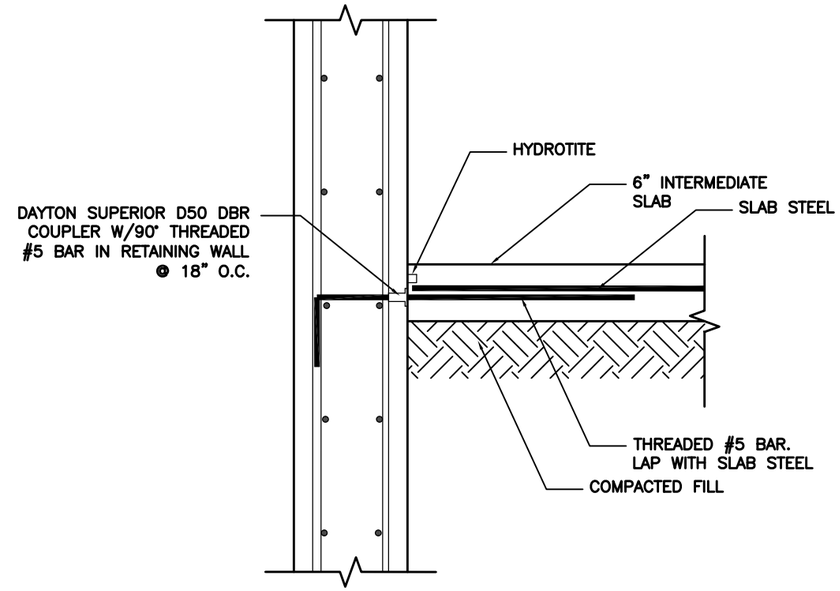
REV NO	DATE	BY

JOB NO.: 14-0122
PREPARED BY: SSP
CHECKED BY: -
DATE: 09/12/14
SHEET NO.
S3
OF S3



SECTION E

INTERMEDIATE SLAB CONNECTION TO WALL



ALTERNATE SECTION E

THE SEAL WAS AUTHORIZED BY A.M. STONE, P.E. 91049 ON 4/4/2016. THE ORIGINAL SEALED DRAWING IS ON FILE AT M&S ENGINEERING, INC.

STATE OF TEXAS
A.M. STONE
91049
LICENSED
PROFESSIONAL ENGINEER
A.M. Stone, PE

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Firm Registration # 14384
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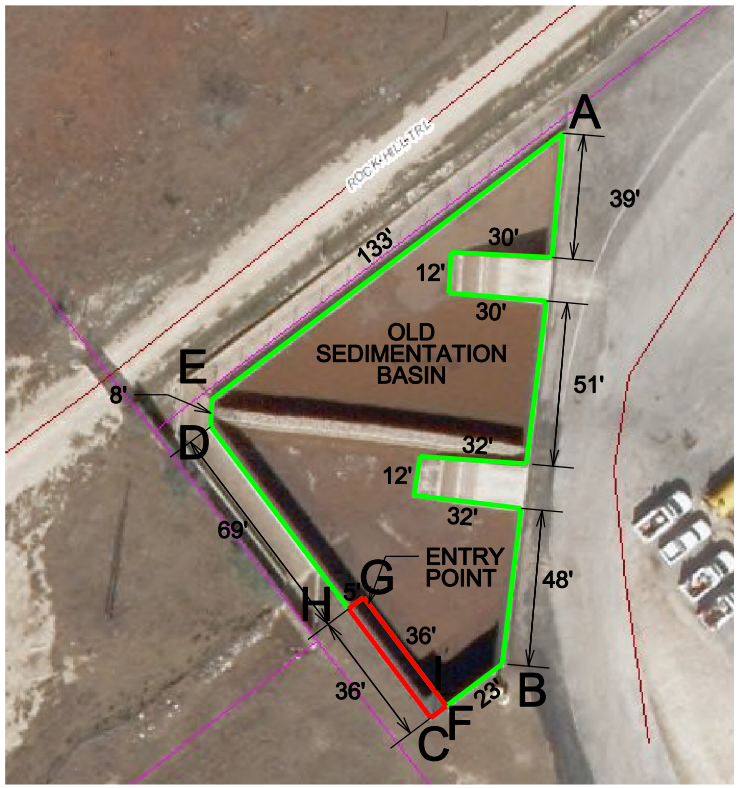
DETENTION POND
RETAINING WALL MODIFICATIONS

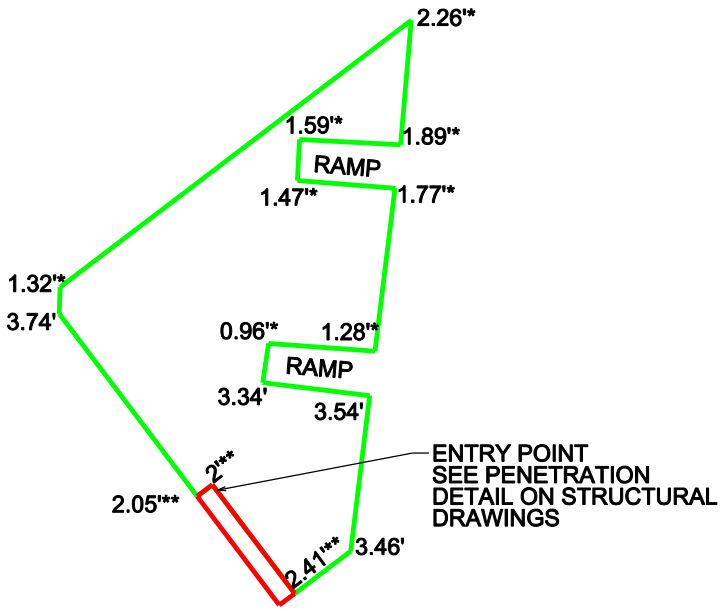
COMAL COUNTY
195 DAVID JONAS DRIVE
NEW BRAUNFELS, TEXAS 78132

REV NO	DATE	BY

JOB NO.: 14-0122
PREPARED BY: SSP
CHECKED BY: -
DATE: 09/12/14

SHEET NO.
S4
OF S4





ELEVATIONS (FT) ABOVE FINISHED
GRADE TO TOP OF COMPACTED BASE
(NTS)
* ELEVATIONS FROM FLOOR ASSUMED TO BE ON TOP OF 2.5' STEP-UP
** ELEVATIONS FROM FLOOR TO BE ON TOP OF FOOTING DETAILED IN STRUCTURAL DRAWINGS

SCOPE:

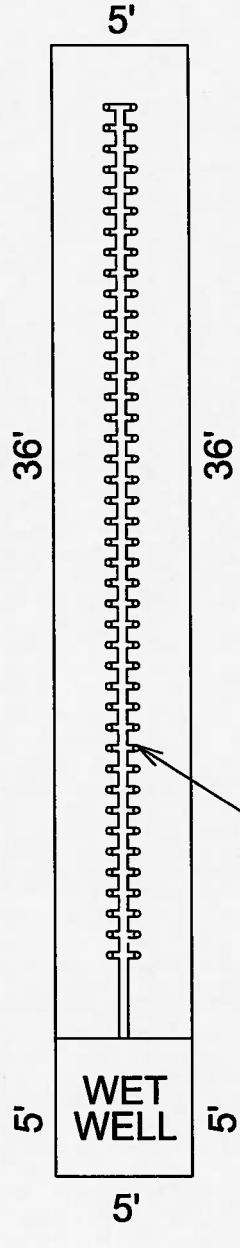
1) EXCESS WATER, ROCK GABIONS, FILTRATION SAND AND GRAVEL AND PIPING NETWORK WILL BE REMOVED AND DISPOSED OF BY OTHERS.

2) BUILD WALL I-G-H (TOP OF WALL WILL MATCH HEIGHT OF EXISTING BASIN) IN ACCORDANCE WITH ATTACHED STRUCTURAL DRAWINGS.

3) PLACE BASE MATERIAL, COMPACTED IN 6" LIFTS IN AREA MARKED A-B-F-G-H-D-E. TOP OF BASE MATERIAL ELEVATIONS PROVIDED BY DRAWING, "ELEVATIONS (FT) ABOVE FINISHED GRADE TO TOP OF COMPACTED BASE." CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS TO DETERMINE VOLUME OF COMPACTED BASE MATERIAL.

4) PLACE 6" CONCRETE SLAB, MATCHING COMPACTED BASE GRADES. CONCRETE SLAB SHALL HAVE #4 REBAR @ 12" O.C. BOTH WAYS. TIE INTO EXISTING WALL/RAMP IN ACCORDANCE WITH ATTACHED STRUCTURAL DRAWINGS.

NTS



84 CARTRIDGES SPACED AT 9"
(AS SHOWN ON STANDARD)

TIED INTO 4" SCH 40 PVC MANIFOLD

STATE OF TEXAS
ROBERT H. BOYD
91702
LICENSED
PROFESSIONAL ENGINEER

7/25/14

AQYALOGIC CARTRIDGE SYSTEM PLANS
NTS

STANDARD INSTALLATION MATRIX

ITEM -- PROVIDED AND INSTALLED BY

SEDIMENTATION BASIN
- ALL CONSTRUCTION -- BY SITE CONTRACTOR

FILTRATION BASIN
- WALLS -- SITE CONTRACTOR
- SUBFLOOR -- SITE CONTRACTOR
- TOP -- SITE CONTRACTOR
- ACCESS LADDER -- SITE CONTRACTOR
- ACCESS DOOR FOR COVERED CHAMBERS -- SITE CONTRACTOR

INFLOW PIPING
- PVC WALL PIPE -- SITE CONTRACTOR
- CONTROL VALVE -- AQUALOGIC ™
- PROTECTIVE GRATE * -- SITE CONTRACTOR
- GRAVEL PACK * -- SITE CONTRACTOR
  - *AT UPSTREAM END OF INFLOW PIPE IN THE SEDIMENTATION CHAMBER

UNDERDRAIN SYSTEM
- PIPE MANIFOLDS -- AQUALOGIC™
- MANIFOLD HEADER -- AQUALOGIC™
- THREADED RECEIVERS -- AQUALOGIC™
- FINISHED FLOOR GROUT -- SITE CONTRACTOR
- DISCHARGE TO OUTFALL -- SITE CONTRACTOR

FILTER CANISTERS
- HOUSING AND CARTRIDGES -- AQUALOGIC™
- GEOTEXTILE WRAP -- AQUALOGIC ™
- FLOATING SEPARATOR RINGS -- AQUALOGIC™

CONTROLS
- RACK OR POLE SUPPORT -- BY AQUALOGIC™
- CONTROL PANEL, WIRING AND ALL CONTROL SYSTEM COMPONENTS -- AQUALOGIC™

NOTE: NON-STANDARD INSTALLATIONS CAN BE ACCOMPLISHED BY SPECIFIC AGREEMENT WITH AQUALOGIC™

AQUALOGIC DESIGN GUIDELINES

1.EACH FILTER CANISTER SHALL BE APPROXIMATELY EQUALLY SPACED WITHIN THE AVAILABLE FILTRATION AREA AND WILL BE CONNECTED TO A 4" SCH 40 PVC MANIFOLD. AQUALOGIC WILL DESIGN AND INSTALL THE FILTER MANIFOLD AND THE MANIFOLD HEADER WHICH WILL UTILIZE STANDARD PVC FITTINGS WITH SOLVENT WELD JOINTS AND WILL COLLECT THE FILTERED EFFLUENT TO A SINGLE DISCHARGE PIPE. THE MANIFOLD WILL INCLUDE A STANDARD FEMALE THREADED ADAPTER AT EACH POINT OF FILTER CANISTER CONNECTION. THE ADAPTER AT EACH POINT OF CONNECTION IS SET SO THAT THE VERTICAL MOUNTED CANISTER WILL BE STRAIGHT AND PLUMB.

2.ALL UNDERDRAIN PIPING SHALL BE EMBEDDED IN A LAYER OF WATERPROOF GROUT WITH A MINIMUM DEPTH OF 12" AT THE FILTER CANISTERS. THE FINISHED SURFACE OF THE GROUT LAYER SHALL BE FLUSH WITH THE BOTTOM OF THE FILTER CANISTERS AND BE SHAPED TO PREVENT PONDING WITH A MINIMUM SLOPE OF ø" PER FOOT. GROUTING SHALL BE INSTALLED BY THE SITE CONTRACTOR AFTER AQUALOGIC INSTALLS THE UNDERDRAIN PIPING.

3.THE AQUALOGIC ™CONTROL PANEL INCLUDING ALL COMPONENTS FOR AUTOMATIC OPERATION SHALL BE MOUNTED ON A SUITABLE RACK OR POLE EMBEDDED IN CONCRETE OR ATTACHED TO AN ACCESSIBLE LOCATION ON THE FILTRATION CHAMBER SIDEWALL.

4.THE MEDIA USED FOR FILTRATION SHOULD HAVE A MEAN FILTRATION RATING (AVERAGE PORE SIZE) OF 10 MICRONS OR AS NEEDED TO ACHIEVE 90 % REMOVAL EFFICIENCY FOR TSS, AS RATED BY THE MEDIA MANUFACTURER. THE MEDIA CARTRIDGES SHALL BE OF THE TYPE DISTRIBUTED BY SWAF, INC. (www.aqualogic-usa.com) OF SAN ANTONIO, TEXAS, OR EQUIVALENT. THE MEDIA SHALL BE PLEATED POLYESTER WRAPPED AROUND A CENTRAL CORE AND HAVE SEMI-FLEXIBLE MOLDED END CAPS CONFIGURED TO MATCH THE CANISTER SEALING RINGS TO RESTRICT BYPASS AROUND THE CARTRIDGE ENDS; AND SHALL BE 2.75 INCH (OUTSIDE DIAMETER) BY 29.25 INCHES IN LENGTH.

CHART "A"

THE AQUALOGIC FILTER CHAMBER MANIFOLD SYSTEM ALLOWS VERSATILITY IN THE DESIGN DIMENSIONS OF THE FILTER CHAMBER. BELOW ARE THE MINIMUM INSIDE DIMENSIONS FOR THE FILTER CHAMBER TO PROPERLY ACCOMMODATE A MANIFOLD OF SELECTED SIZE ACCORDING TO THE NUMBER OF FILTER CANISTERS. SEVERAL SAMPLES ARE INCLUDED

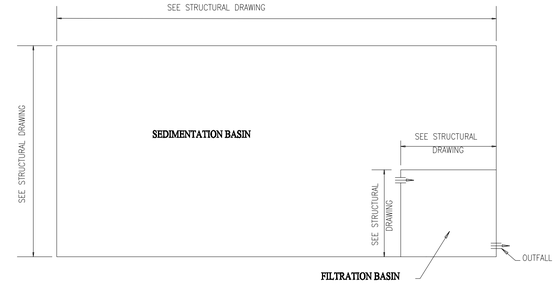
A MANIFOLD IS MADE UP OF SECTIONS CONSISITNG OF 2 FILTER CANISTERS PER SECTION. ADD 9 IN. TO THE LENGTH OF THE FILTER CHAMBER PER EACH ADDITIONAL SECTION OF MANIFOLD.

MANIFOLD ROWS	FILTER CHAMBER WIDTH "A"	"B"	"C"	"D"	"E"	"F"	TOTAL	FILTER CHAMBER LENGTH
1	3.0'	--	--	--	--	1.5'	4.5'	5'+[(NO. SECTIONS -1)*0.75']
2	3.0'	2.0'	--	--	--	3.0'	8.0'	MIN. LENGTH = 6' - 6" (1 MANIFOLD, 3 SECTIONS) (6 FILTERS)
3	3.0'	3.5'	2.0'	--	--	3.0'	11.5'	ADD 9" PER SECTION
4	3.0'	2.0'	3.5'	2.0'	--	3.0'	13.5'	MAX. 25 SECTIONS PER MANIFOLD = 23' - 0"
5	3.0'	3.5'	2.0'	3.5'	2.0'	3.0'	17.0'	

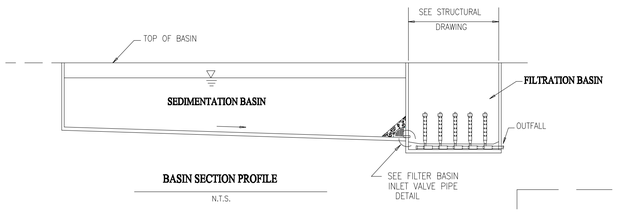
EXAMPLE 1: FILTER CHAMBER FOR 10 CANISTERS (5 SECTIONS)
1 MANIFOLD ROW WITH 5 SECTIONS.
FILTER CHAMBER 4' - 6" WIDE BY 8' - 0" LONG

EXAMPLE 2: FILTER CHAMBER FOR 35 CANISTERS (18 SECTIONS)
1 MANIFOLD ROW WITH 18 SECTIONS.
FILTER CHAMBER 4' - 6" WIDE BY 17' - 9" LONG
OR
2 MANIFOLD ROW WITH 9 SECTIONS EACH.
FILTER CHAMBER 8' - 0" WIDE BY 11' - 0" LONG
OR
3 MANIFOLD ROW WITH 6 SECTIONS EACH.
FILTER CHAMBER 11' - 6" WIDE BY 8' - 9" LONG

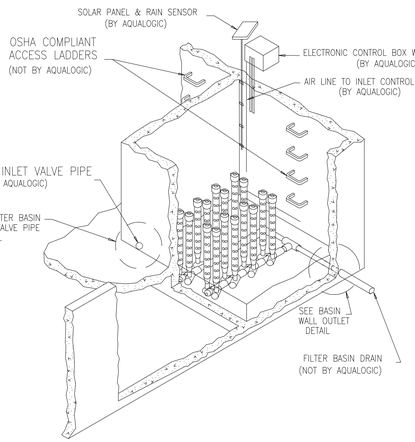
EXAMPLE 3: FILTER CHAMBER FOR 100 CANISTERS (50 SECTIONS)
2 MANIFOLD ROW WITH 25 SECTIONS EACH.
FILTER CHAMBER 8' - 0" WIDE BY 23' - 0" LONG
OR
3 MANIFOLD ROW WITH 17 SECTIONS IN 2 ROWS AND 16 SECTIONS IN 1 ROW.
FILTER CHAMBER 11' - 6" WIDE BY 17' - 0" LONG
OR
4 MANIFOLD ROW WITH 13 SECTIONS IN 3 ROWS AND 11 SECTIONS IN 1 ROW.
FILTER CHAMBER 13' - 6" WIDE BY 14' - 0" LONG



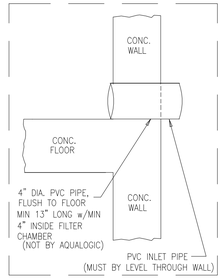
BASIN FLOOR ELEVATION SCHEMATIC
N.T.S.



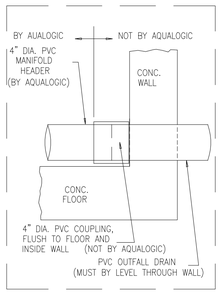
BASIN SECTION PROFILE
N.T.S.



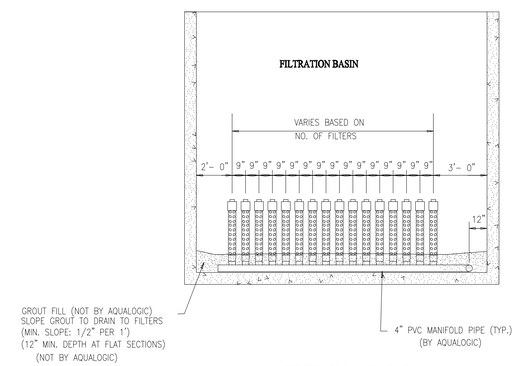
AQUALOGIC SYSTEM (TYPICAL)
N.T.S.



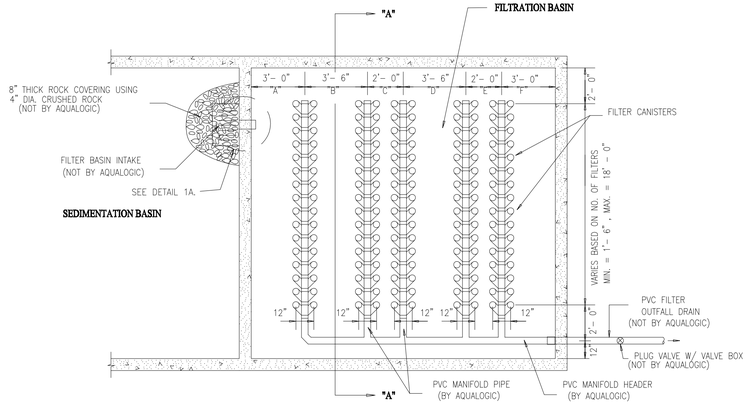
DETAIL 1A.
FILTER BASIN INLET VALVE PIPE



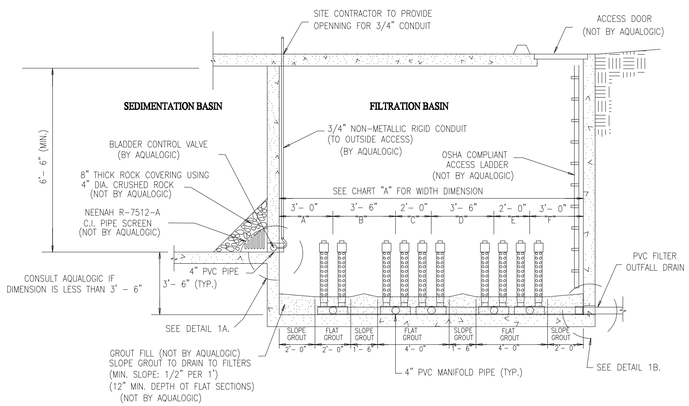
DETAIL 1B.
BASIN WALL OUTLET



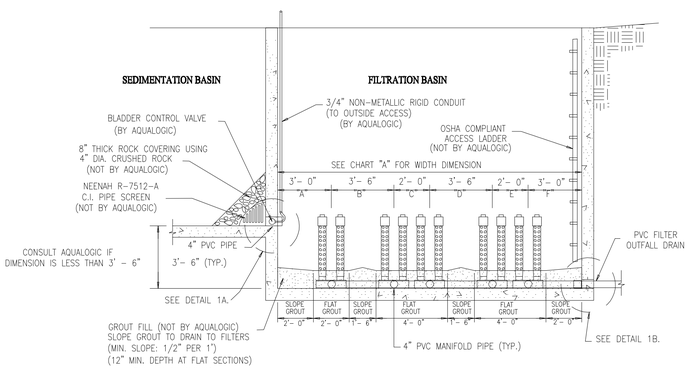
SECTION "A" - "A"
N.T.S.



FILTRATION BASIN PLAN VIEW (TYPICAL)
N.T.S.



COVERED BASIN PROFILE VIEW (TYPICAL)
N.T.S.



OPEN BASIN PROFILE VIEW (TYPICAL)
N.T.S.

No.	Date	REVISIONS
		Appr.
		:22 Mar 2006

AQUALOGIC

STANDARD FILTER BASIN DETAILS

SHEET NO. 1 OF 7