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SUBMITTAL TRANSMITTAL

May 27, 2011
WGC Submittal No: 03100-006

PROJECT: **Harold Thompson Regional WRF**
 Birdsell Rd.
 Fountain, CO 80817
 Job No. 2908

ENGINEER: **GMS, Inc.**
 611 No. Weber St., #300
 Colorado Springs, CO 80903
 719-475-2935 Roger Sams

OWNER: **Lower Fountain Metropolitan
 Sewage Disposal District**
 901 S. Santa Fe Ave.
 Fountain, CO 80817
 719-382-5303 James Heckman

CONTRACTOR: **Garney Companies Inc.**
 7911 Shaffer Parkway
 Littleton, CO 80127
 303-791-3600 Dennis Van Auken

SUBJECT: Attached literature for Sure Void Form **Reference Drawing SC-2, SC-9**

SPEC SECTION: 03100

PREVIOUS SUBMISSION DATES: None

DEVIATIONS FROM SPEC: ___ YES X NO

CONTRACTOR'S STAMP: This submittal has been reviewed by Weaver General Construction and approved with respect to the means, methods, techniques, & safety precautions & programs incidental thereto. Weaver General Construction also warrants that this submittal complies with contracted documents and comprises on deviations thereto:

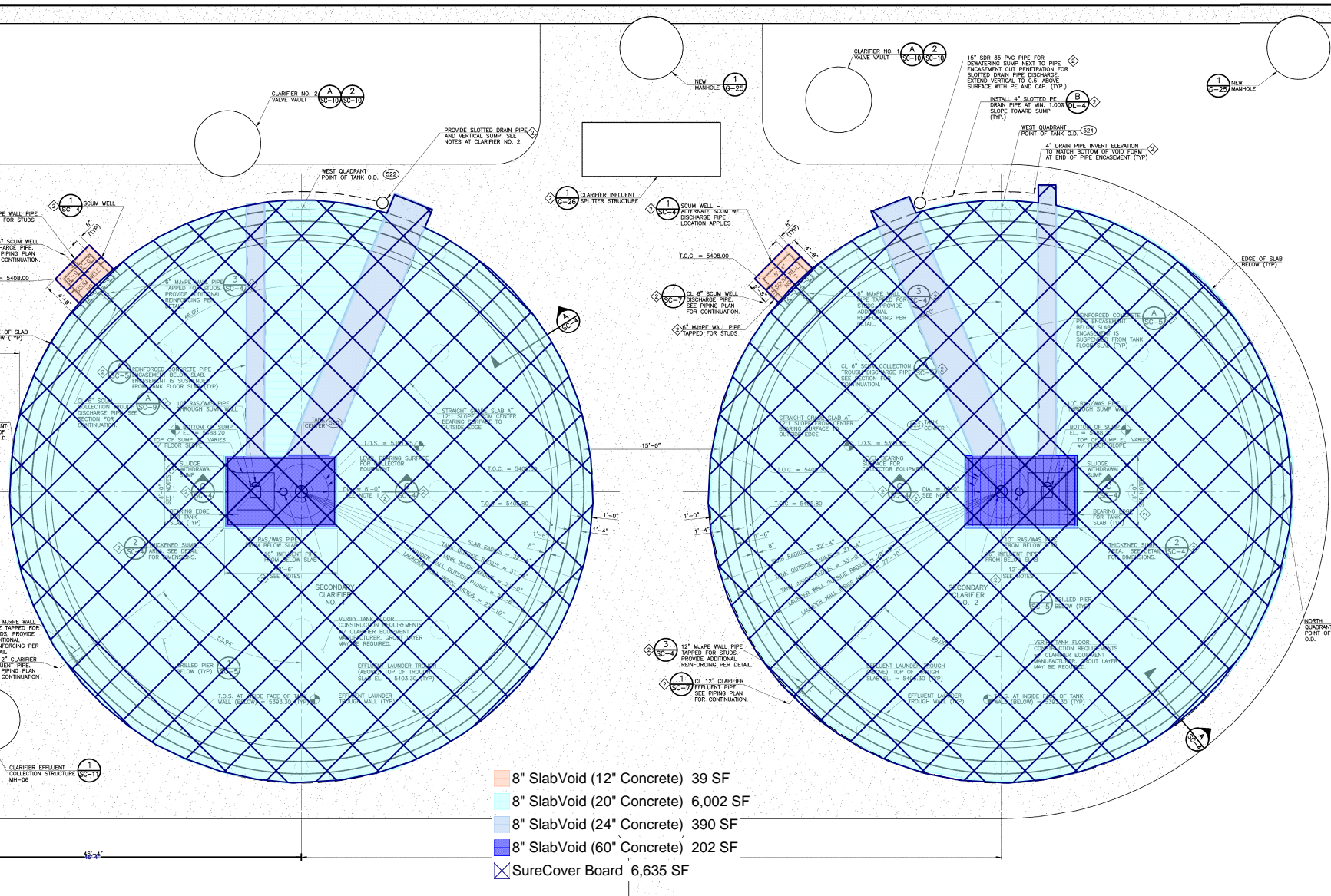
Contractor's Stamp:

Date: 5/27/11
 Reviewed by: H.C. Myers
 (X) Reviewed Without Comments
 () Reviewed With Comments

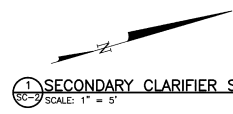
**ENGINEER'S
 COMMENTS:** _____

Engineer's Stamp:

MATCH LINE - SEE PUMPING AND DISINFECTION BUILDING (PD) DRAWINGS



- NOTES:**
1. THE CONTRACTOR SHALL VERIFY ALL SLAB DIMENSIONS AT THE SLUDGE WITHDRAWAL SUMP AND LEVEL BEARING SURFACE AT THE CENTER OF EACH CLARIFIER WITH THE REQUIREMENTS OF THE EQUIPMENT FURNISHED PRIOR TO POURING THE SLABS TO ENSURE CONFORMITY. REFER TO PROCESS PIPING AND EQUIPMENT DRAWINGS.
 2. REFER TO PROCESS PIPING AND EQUIPMENT DRAWINGS AND APPROVED SHOP SUBMITTAL DRAWINGS FOR RELATED REQUIREMENTS OF EQUIPMENT, PIPING AND APPURTENANCES.
 3. T.O.S. = 5399.25 = TOP OF SLAB ELEVATION
 4. T.O.C. = TOP OF CONCRETE ELEVATION
 5. SEE SHEET G-3 FOR COORDINATE INFORMATION.



1 SECONDARY CLARIFIER STRUCTURAL PLAN
SCALE: 1" = 5'

REVISIONS		
NO.	DATE	DESCRIPTION
1	10/29/2010	ISSUED FOR EDUCATION AROUND SECONDARY CLARIFIER TANKS
2	03/20/2011	ISSUED FOR BUILDING PERMIT SUBMITTAL TO MHD (SECONDARY CLARIFIER COMPLETE)

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 PLAN		SC-2	
HAROLD D. THOMPSON REGIONAL WATER RECLAMATION FACILITY LOWER FOUNTAIN METROPOLITAN SEWAGE DISPOSAL DISTRICT			
DRAWN	MAM/SK/C	GMS, INC. CONSULTING ENGINEERS 811 N. WEBER, SUITE 300 COLORADO SPRINGS, COLORADO 80903	
DESIGNED	JIP		
CHECKED	JMG		
DATE	2010		
PROJECT NO.	20166.362	GMS FILE NO.	2599

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SECTION 03100 - CONCRETE FORMWORK (WALLVOID®)

This section includes corrugated paper void form materials to create a temporary support for the placement of structural concrete walls and grade beams spanning between supporting elements where expansive soils or other conditions are present below. WallVoid® creates a void space beneath structural concrete walls and grade beams, allowing expansive soil to swell without damage to the structure.

Information contained herein is intended to be included as a supplement to Section 03100 - Concrete Formwork.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Corrugated paper void form materials to create a temporary support for the placement of structural concrete walls and grade beams over expansive soils.

1.2 SUBMITTALS

- A. Submit product data and manufacturer's installation instructions under provisions of Section 01300 for corrugated paper formwork and accessories.

PART 2 PRODUCTS

Edit the following descriptive specifications to identify project requirements:

WallVoid products can be designed to offer an approximate response to moisture by specifying the interior components' makeup as follows:

1. Extra Fast – Non-wax impregnated, plain kraft paper and a water-soluble adhesive
2. Fast – Non-wax impregnated, plain kraft paper and a moisture-resistant adhesive
3. Moderate – Plain kraft paper with a wax impregnated medium, but non-wax impregnated liners and a moisture-resistant adhesive
4. Slow – Plain kraft paper with wax impregnated medium / liners and a moisture-resistant adhesive
5. Extra Slow – Wet-strength paper with wax impregnated medium / liners and a moisture-resistant adhesive

The standard strengths of WallVoid are designed for any average working load ranging from approx. 800 p.s.f. – 2,000 p.s.f. in increments of about 200 lbs. Custom strengths up to 7,000 p.s.f. are available upon request.

WallVoid is available in ready-to-use, factory-glued assembled form, as well as knockdown (K.D.) form for shipping and storage savings. The standard length of each piece is 60". Pieces are easily crosscut with a handsaw to fit as required. Available void depths range from 1" to 18". Pieces can be stacked in layers to achieve depths greater than 18". Standard widths range from 4" to 36" and can be installed side by side to achieve greater widths.

Types Available:

1. WallVoid® (rectangular with panel flange) – used in between the panels of a wall forming system. The panels are placed on the flange to hold the void piece in place, thereby preventing it from floating up into the wall during concrete placement.
2. FormVoid® (rectangular without flange) – used underneath the panels of a wall forming system. It is designed to carry the load of the formwork as well as the concrete wall or grade beam. It is used primarily in intermittent footing applications.

3. TrenchVoid□ (rectangular without flange) – used in the bottom of a trenched grade beam where the earth is used to form the beam. The width of the void form is the same as the trenched beam.
4. TrapVoid□ (trapezoidal shape with or without flange) – used in either formed walls or trenched grade beam applications where a cast-in-place concrete retainer is required at the base.

Related Products:

1. SlabVoid□ – used to create void space directly under structural concrete slabs.
2. ArcVoid□ – used to properly create void space around the upper portion of drilled piers at the intersection with grade beams.
3. SureTops□ – used to properly form and contain the upper portion of concrete piers.
4. SureRound PierVoid□ – used to properly create void space adjacent to the upper portion of drilled piers at the intersection of the slab, under pier caps, or at a transition in pier diameter.
5. Column Wrap□ – used to surround and isolate telepost columns from the slab.
6. Pipe Guard□ – used to surround and isolate typical diameter pipes that are protruding from the slab.
7. Pipe Wrap□ – used to surround and isolate all sizes of pipes protruding from the slab.
8. Angle Expansion Strip□ – used to reduce damage caused by vertical movement around the slab perimeter adjacent to grade beams.
9. SureRetainer□ by Motzblock□ – used to prevent the migration of backfill material into the voided area, while allowing compaction equipment to operate directly adjacent to wall or grade beam.
10. SureCover Board□ – used to distribute working load, bridge small gaps, and protect void material from puncture and other damage during concrete placement.

Where brackets are indicated [], a choice needs to be made by design engineer. Remove options not needed for a particular project.

2.1 PREFABRICATED VOID FORMS

A. Wall Void Forms:

1. Function: used to create void space directly under walls or grade beams.
2. Composition: corrugated paper material with a moisture resistant exterior, and having an interior fabrication of a uniform, cellular configuration, composed of [Extra Fast] [Fast] [Moderate] [Slow] [Extra Slow] moisture response components.
3. Depth: [(_____) inches deep] [depth as indicated on drawings].
4. Profile: [rectangular] [trapezoidal] shape in cross section.
5. Position: [between form panels] [under form panels] [placed in trench].
6. Strength: capable of sustaining an average working load [of (_____) p.s.f.] [for wall height of (_____) feet based on manufacturer's recommendations].
7. Accessories:
 - a. Drilled Pier Forms – properly form and contain the upper portion of concrete piers.
 - b. Arcuate End Void Form – properly creates void space around the upper portion of drilled piers at the intersection with grade beams.
 - c. Seam Pads – covers void form joints to prevent moisture and concrete from flowing in between and into the wall void interior.
 - d. End Caps – covers exposed ends of void forms to prevent moisture and concrete from flowing into wall void interior.
 - e. Backfill Retainer (impact-resistant, high-density, polyethylene (HDPE) plastic) – allows compaction equipment to operate directly adjacent to wall or grade beam. It is designed to prevent the migration of backfill material into the voided area. Retainer should extend at least 4" above the top of the void form. Sizes available: [14" x 36"] [20" x 48"] [26" x 48"]. Refer to manufacturer's recommendations for installation instructions.
 - f. Protective Cover Board ([275-C fully wax impregnated paper] [1/8" hardboard] [1/4" hardboard] [(_____) inch plywood]) – distributes working load, bridges small gaps, and protects void material from puncture and other damage during concrete placement. Used in wide footings or grade beams where supports for reinforcing steel are placed directly on void forms.

8. Acceptable Products / Manufacturer: WallVoid[®], FormVoid[®], TrenchVoid[®], TrapVoid[®], Column Wrap[®], ArcVoid[®], Seam Pads, End Caps, SureRetainer[®] by Motzblock[®], and SureCover Board[®] as manufactured by SureVoid Products, Inc., Englewood, CO (800) 458-5444 or Fort Worth, TX (888) 803-VOID

PART 3 EXECUTION

3.1 INSTALLATION

- A. Wall Void Forms:
 1. Store void forms and accessories in accordance with manufacturer's recommendations.
 2. Prepare ground surface on an even plane. There should be no capillary break below the void form unless otherwise directed by the designing engineer or architect.
 3. Assemble knockdown (K.D.) products as recommended by manufacturer to develop designed strengths.
 4. Install wall void forms and accessories in accordance with manufacturer's recommendations.
 5. Use end caps to seal exposed ends. Use seam pads to cover joints to prevent concrete intrusion.
 6. Place a layer of protective cover board over void forms as necessary to distribute working load, bridge small gaps, and protect them from puncture and other damage during concrete placement.
 7. Protect void forms from moisture, and replace wet or damaged pieces before placing concrete.
 8. Immediately protect the base of the wall after forms have been stripped with an HDPE retainer. This will keep backfill material from migrating into the voided area. The retainer should be installed per the manufacturer's recommendations.

END OF SECTION

SlabVoid

SlabVoid contains various corrugated papers of different strength and flutes, bonded together with a white, water-based adhesive or held in place with staples. Its structural strength is designed to weaken by the gradual absorption of moisture as the concrete sets. Thus, an adequate void is attained which will allow the ground to heave without causing structural damage to the concrete slab. The SlabVoid interior is composed of a cellular network and is surrounded by a wax-coated cover. Liners can be added to the top and bottom of the cell formation.

ADVANTAGES

1. Lightweight
2. Easy to install
3. Waxed exterior for initial water resistance
4. Optional liners discourage deflection and puncture
5. Can be sent either assembled or knockdown (K.D.)

AVAILABLE DIMENSIONS

HEIGHT - from approximately 2" to 24"

WIDTH - from approximately 4" to 48"

LENGTH – approximately 60"

TECHNICAL DATA

COVER –

- a) 200-275# test, B or C flute corrugated paper
- b) waxed / printed exterior
- c) scored interior

LINER(S) – (optional) top or bottom 150# test, B or C flute corrugated paper

INTERIOR - 200-275# test, B or C or DW corrugated paper

STRENGTH – (_____) p.s.f. working load as recommended for slab thickness (_____) inches

RECOMMENDATIONS

1. Keep SlabVoid dry at all times prior to concrete placement.
2. Prepare grade to an even, smooth surface.
3. Install SureRound PierVoid at piers where required.
4. Install SlabVoid pieces around perimeter of slab area.
5. Cover remaining area by placing pieces end-to-end and side-by-side.
6. Crosscut pieces with handsaw to fit into non-modular areas.
7. Insert End Caps on open pieces that will be exposed to concrete.
8. Place SureCover Board™ over entire surface to bridge small gaps (2" or less) and to protect against puncture from rebar chars, work boots, etc.
9. Install steel and place concrete.