TECHNICAL MEMORANDUM

Date:	October 12, 2012	**Project No.:**	1239004.PCD
To:	E. Gayle Macolly	**Company:**	Solutia Inc.
From:	Andrew Fuggle, Tim Richards, Greg Hebeler		
cc:	John Loper, Thomas Loper, Mike Price, Donn Williams	**Email:**	egmaco@solutia.com
RE:	**FORMER MARS HILL CHURCH PARCELS SOIL COVER DESIGN DETAILS**		

1.0 INTRODUCTION

This memorandum provides background information on the existing Interim Measure (IM) soil/geotextile cover system located in the vicinity of the former Mars Hill Church property and provides commentary and figures to guide the construction of supplemental IMs at the former Mars Hill Church property to provide a consistent IM approach for this area moving forward.

2.0 BACKGROUND

As reported by Calhoun County, the former Mars Hill Church property consists of two parcels: PPINs 32210 and 32211, as depicted in the attached Calhoun County aerial photographic map (identified as "48" and "49", respectively) presented as Figure 0. The two parcels are located within the Eastside Properties where IM soil/geotextile covers were previously placed as part of past remedial measures (e.g., the Detention Cap and Cover [DCC] project). During the DCC project, large areas of clean soil covers consisting of a geotextile marker layer and soil fill were constructed. Additionally, a high-density polyethylene (HDPE) geomembrane cover was placed along the alignment of the main north-south drainage way through the Eastside Properties; a portion of which runs along the west side of the former Mars Hill Church area.

As the former Mars Hill Church property owner was in litigation with Solutia Inc. (Solutia) at the time of the DCC project, these parcels were primarily left untreated during the main DCC project work. Subsequent to the DCC project, Solutia directed Allen Hall Excavating in the placement of an approximately ¼ acre soil/geotextile cover IM along the non-asphalted areas south and west of the church over the week of 9 August 1999 as documented in site records provided to Golder by Jerry Hopper via email on 25 June and 02 July 2012. No additional IMs at the church property have since been conducted.

The church structure was recently demolished between August 27th and 30th 2012. Demolition debris was rubbelized and graded within the footprint of the former church structure, as necessary, in preparation for the currently proposed construction of supplemental clean soil covers.

3.0 DELINEATION OF EXISTING IM COVERS

Golder Associates Inc. (Golder), with support from Genesis Project Inc. (Genesis) personnel, conducted an investigation to verify existing IM limits in the vicinity of the former Mars Hill Church parcels (i.e., Study Area – Figure 1). Investigation activities included advancing shallow soil borings using hand augers and observing the soil cuttings and boreholes for evidence of geotextile marker layer to indicate areas with confirmed existing soil covers. Where a soil/geotextile cover was identified, the depth to geotextile (i.e., thickness of soil) ranged from approximately 6 to 30 inches. If remnant geotextile was not identified, it was assumed that a soil cover system does not exist at the location. In a few locations along the western limits of the church parcels, evidence of the HDPE geomembrane was identified in the hand auger borings in line with the limits of liner reported in the DCC project.

Soil boring locations were referenced in the field using handheld Global Positioning System (GPS) equipment and are presented on Figure 1. The interpreted limits of existing IM covers in the vicinity of the former Mars Hill Church are also presented on Figure 1. The full details of efforts to delineate existing IMs across the Eastside Properties during summer 2012 will be provided in a forthcoming memorandum.

4.0 EXISTING AND PROPOSED COVER SYSTEM

Figure 1 indicates the interpreted limits of existing soil/geotextile cover on the Mars Hill Church parcels and surrounding areas (i.e., study area) based on the recent delineation efforts. The existing cover consists of a soil layer nominally 12 inches thick (but which varies generally between six and 30 inches) underlain by a geotextile marker fabric.

The areas without identified existing soil/geotextile cover, as well as the footprint of the former church structure and asphalt paved areas are proposed to be addressed consistent with the surrounding cover systems. The proposed cover consists of a 12 inch minimum thickness clean soil layer underlain by a minimum 4 ounce per square yard (oz/sy) geotextile marker layer.

Figure 2 shows both the existing and proposed limits of soil/geotextile cover. The indicated cover limits are to receive a minimum of 12 inches of clean soil fill, with transition slopes to meet existing ground proposed to extend beyond the proposed limits as necessary.

The area of existing soil/geotextile cover within the study area is interpreted to cover an area of 9,261 square feet. The area of the former church structure and surrounding asphalt pavement (including the truncated end of West 6th street immediately adjacent to the parking area) is approximately 25,539 square feet.

The total area proposed for new soil/geotextile cover placement is 32,292 square feet, or approximately 0.74 acres. The selected contractor will be required to construct new soil/geotextile cover construction using materials and methods in a manner consistent with the following provisions:

- The location of on-property utilities shall be determined (above and below ground), in this case providing verification of proper termination of utility services during church demolition;
- Proposed cover boundaries will be staked in the field by others to guide the work based on the control provided in Figure 2;
- Appropriate erosion and dust control measures and materials will be used to prevent offsite transport of sediment;
- Clean fill, whose upper portion shall be capable of supporting vegetative growth, will be used to cover affected areas; and
- Disturbed areas will be re-seeded and fertilized to establish vegetation consistent with surrounding natural vegetation and in line with Alabama DOT seasonal seeding recommendations.

The limits of proposed covers and the typical cover details are provided on Figure 2. The proposed work consists of the following items:

- Prior to contractor mobilization to the site:
  - Golder will coordinate a surveyor to stake the initial layout of the project with the control points provided in Figure 2.
  - Allen Hall Excavation will be contracted by Solutia to clear all areas of dense vegetation and isolated trees within the limits of proposed new covers.
  - Allen Hall Excavation will also mow/bush hog the area of proposed new covers as low/close as possible, and to apply a Solutia-approved herbicide.
- Contractor to install and maintain erosion control measures as necessary to provide protection for offsite sediment transport and other requirements consistent with the National Pollutant Discharge Elimination System (NPDES).
- Contractor to rubbelize the existing asphalt surface to provide free-draining pathways, spaced at no more than 1 foot apart, to allow water to infiltrate through the cover and rubbelized layer. Contractor to prepare the final surface of the rubbelized layer for placement of the marker fabric. Final surface shall be free of sharp and protruding objects.
- Prepare the surface of proposed cover areas by scarifying and grading to create a smooth surface suitable for geotextile marker layer placement. Minor regrading and removal of materials that will damage the marker geotextile layer may be required in select areas prior to geotextile marker layer placement. The area of the demolished Church building contains bricks and other remnant debris and may require a thin fill layer prior to geotextile placement.
- Place 4 oz/sy (or greater weight) geotextile marker layer continuously over the surface areas to receive new clean fill using 12 inch minimum overlaps at seams. The proposed new covers will be placed on top of existing grades which will result in the new cover areas being elevated above the surrounding ground.
- Place clean soil cover fill (minimum of 12 inches thick), whose upper portion shall be capable of supporting vegetative growth on top of the geotextile marker layer. Proposed cover areas should be graded to provide surface water flow towards the boundaries of the new covers which may require more than 12 inches of fill placement in limited areas.
- Establish vegetation in all disturbed areas, and remove erosion control measures only after vegetation is adequately established.
- Once construction is complete, Golder will direct the contracted surveyor to produce a sealed as-built drawing of the completed work.

Work to be performed by Allen Hall Excavation and Surveyor will be performed under separate contracts from the construction work, and are not to be included in bids for the cover construction work.

Consistent with the ongoing residential removal/backfill activities, it is anticipated that the Eastaboga borrow source can be used to provide clean soil fill and topsoil for the covers described. Coordination of application of proper fertilizer amendment requirements for topsoil materials should be confirmed and coordinated with Solutia's construction manager, Mr. Donn Williams.

5.0 CLOSING

The information presented above includes the findings of the existing covers investigation and proposed construction details for supplemental interim measure covers at the Mars Hill Church parcel(s) located within the Eastside Properties. This memo is intended to be used by Solutia to solicit contractor bids for the proposed construction. Golder has submitted, under separate cover, an independent engineer's cost estimate and cost estimates of other related items for Solutia's use in deciding whether to proceed with the recommended interim measure covers, and for comparison with received contractor bid values.

ATTACHMENTS

Figure 0 – Calhoun County Tax Parcel Map – PPIN(s) 32210 and 32211

Figure 1 – Mars Hill Church Field Verification of Existing Covers

Figure 2 – Mars Hill Church Proposed Construction

FIGURE 0
CALHOUN COUNTY TAX PARCEL MAP (PPINS 32210 AND 32211)

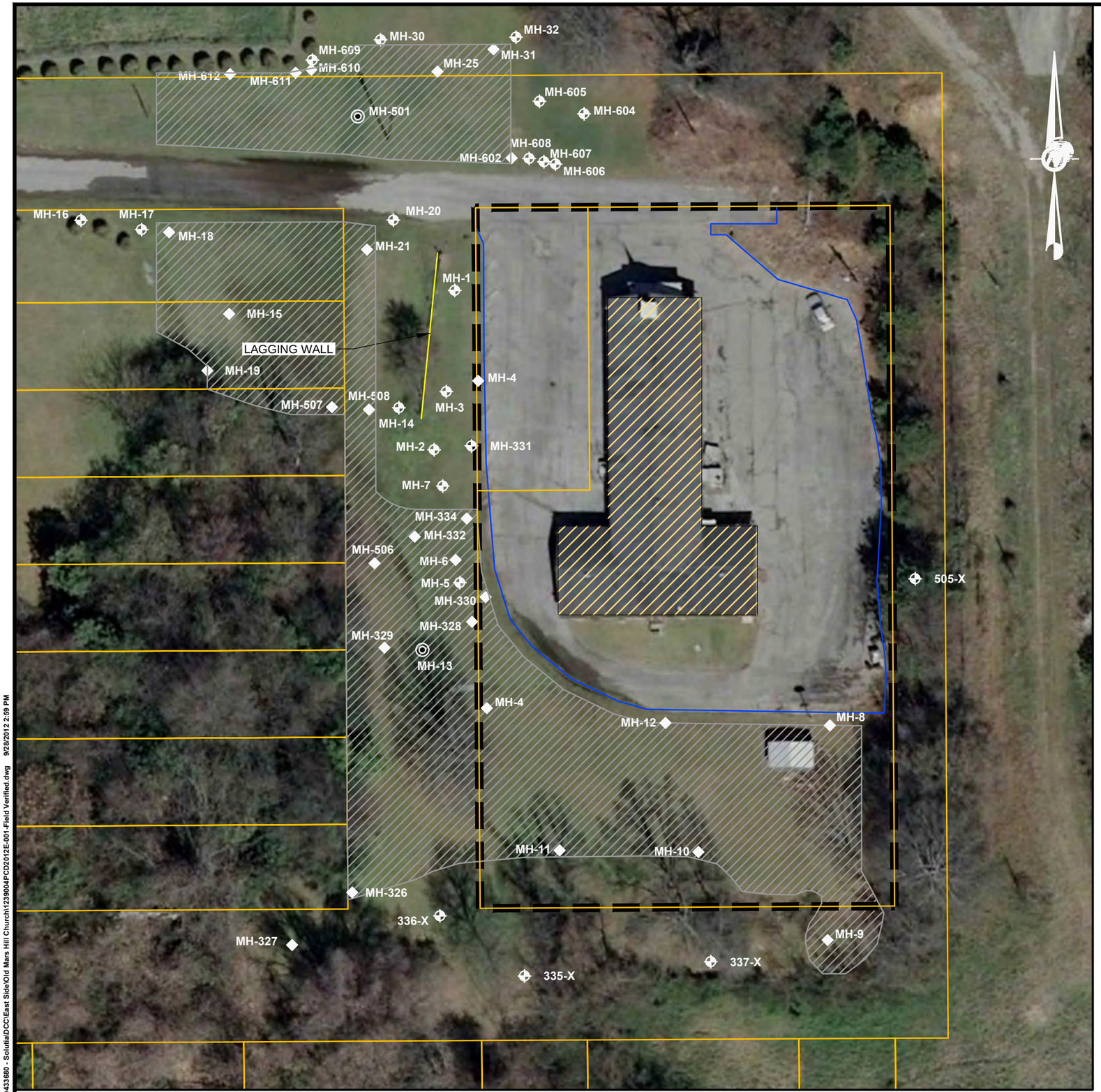
Provided by the Calhoun County
Revenue Commissioner
Mrs. Karen Roper

Maps to be used for Tax Purposes Only -
Not to be used for conveyance
Map Data is in NAD 1983 State Plane
Alabama East Feet

SOLUTIA INC
PPIN: 32210
Parcel Number: 22-01-12-1-002-048.000
Street Address: 0 W 6TH ST ANN AL

Golder Associates	SCALE	Not to Scale	**Former Mars Hill Church - Soil Cover Design**
	DATE	Sept 2011	**Aerial Photographic Map**
	MADE BY	ARF	**Former Mars Hill Church Property**
	CAD	-	
FILE	CHECK	GLH	**Solutia Inc.**
PROJECT No. 1239004PCD REV. 0	REVIEW	GLH	FIGURE **0**

FIGURE 1
FIELD VERIFICATION OF EXISTING COVERS



LEGEND

- STUDY AREA = 41,552 S. F.
- PARCEL BOUNDARY
- LIMITS OF FORMER MARS HILL CHURCH = 5,612 S. F.
- LIMITS OF EXISTING ASPHALT = 19,927 S. F.
- FIELD VERIFIED EXISTING SOIL / GEOTEXTILE COVER: WITHIN STUDY AREA = 9,261 S. F. TOTAL = 27,534 S. F.
- GEOMEMBRANE
- GEOTEXTILE
- NO MARKER ENCOUNTERED

NOTES

1. SOIL / GEOTEXTILE COVER VERIFIED BY HAND AUGERING DURING AUGUST AND SEPTEMBER 2012 TO REFUSAL OR A MAXIMUM DEPTH OF APPROXIMATELY 3'.

2. FORMER MARS HILL CHURCH BUILDING WAS DEMOLISHED IN AUGUST 2012.

REFERENCES

1. AERIAL AND PARCEL BOUNDARIES PROVIDED BY CALHOUN COUNTY. DATE OF AERIAL 2011.

2. GPS LOCATIONS OF HAND AUGER BORINGS PROVIDED BY GENESIS PROJECT INC. VIA EMAIL.

40 0 40
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
1	–	–	–	–		

PROJECT
SOLUTIA

TITLE
MARS HILL CHURCH FIELD VERIFICATION OF EXISTING COVERS

Golder Associates
Atlanta, Georgia

PROJECT No.	1239004PCD		FILE No.	1239004PCD2012E-001-Field Verified	
DESIGN	–	–	SCALE	AS SHOWN	REV. –
CADD	RJC	09/12	1		
CHECK	ARF	09/12			
REVIEW	GLH	09/12			

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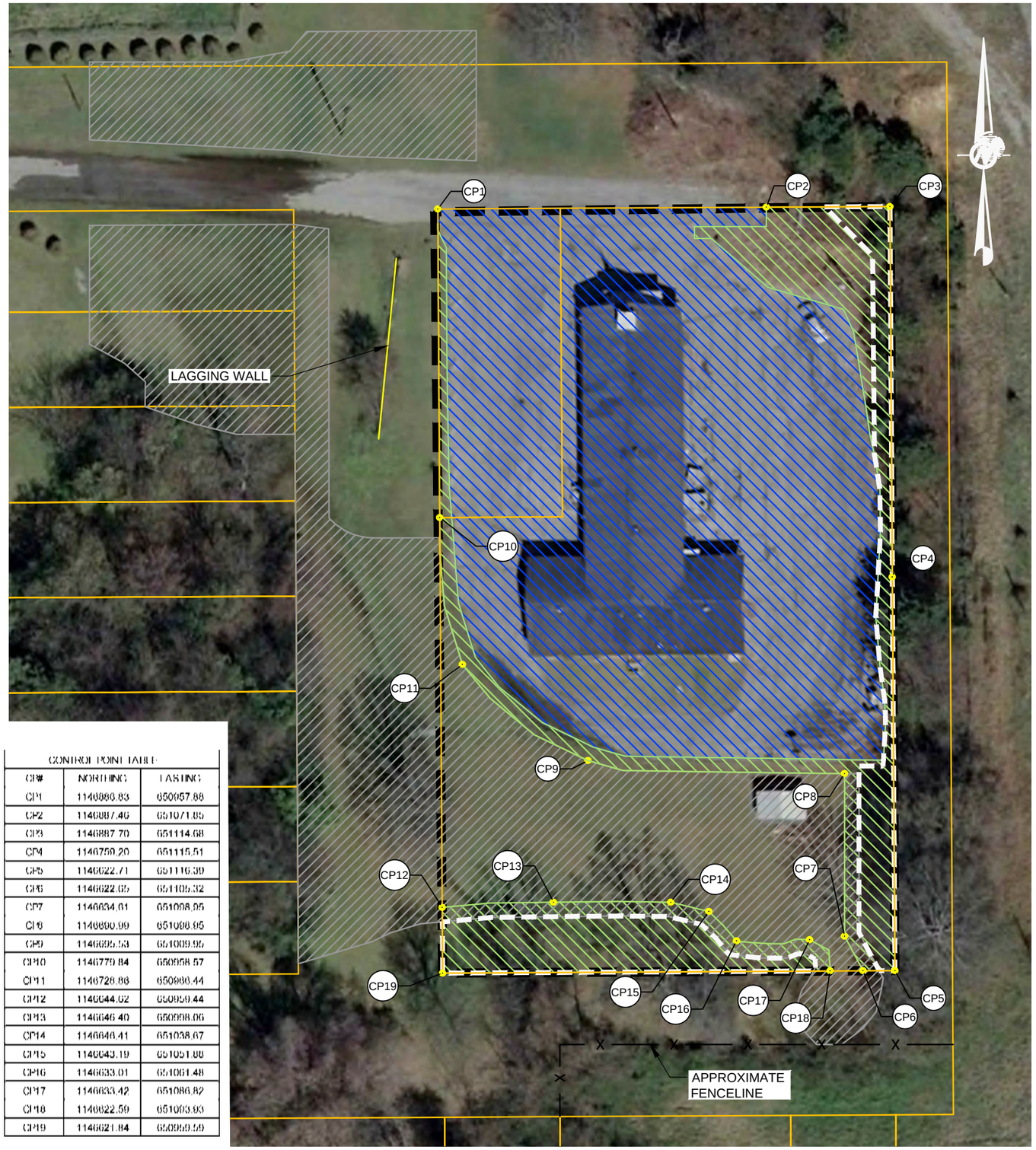
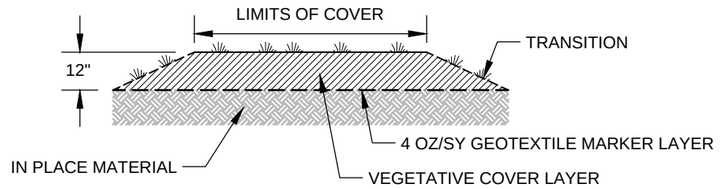
FIGURE 2
PROPOSED CONSTRUCTION

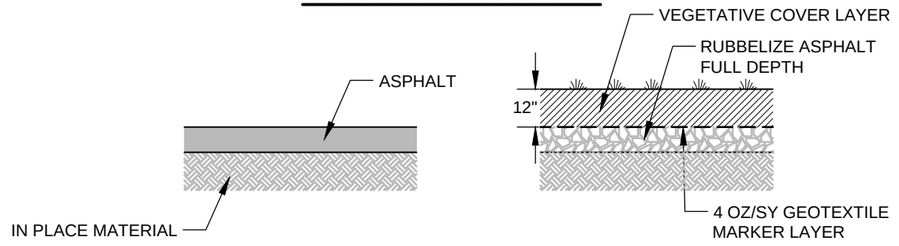


CONTROL POINT TABLE

CP#	NORTHING	EASTING
CP1	1146886.83	650957.88
CP2	1146887.46	651071.85
CP3	1146887.70	651114.68
CP4	1146750.20	651115.51
CP5	1146622.71	651116.39
CP6	1146622.65	651105.32
CP7	1146634.61	651098.95
CP8	1146690.99	651098.95
CP9	1146695.53	651009.96
CP10	1146779.84	650958.57
CP11	1146728.88	650980.44
CP12	1146644.62	650959.44
CP13	1146646.40	650998.06
CP14	1146640.41	651038.67
CP15	1146643.19	651051.88
CP16	1146633.01	651061.48
CP17	1146633.42	651086.82
CP18	1146622.59	651093.93
CP19	1146621.84	650959.59



SOIL COVER DETAIL



EXISTING CONDITIONS

PROPOSED

ASPHALT TREATMENT DETAIL

LEGEND

- STUDY AREA = 41,552 S. F.
- PARCEL BOUNDARY
- ESTIMATED AREAS REQUIRING CLEARING
- PROPOSED SOIL COVER OVER IN-PLACE MATERIAL = 6,753 S. F.
- PROPOSED SOIL COVER OVER RUBBELIZED ASPHALT / DEMOLITION AREA = 25,539 S. F.
- FIELD VERIFIED EXISTING SOIL / GEOTEXTILE COVER: WITHIN STUDY AREA = 9,261 S. F. TOTAL = 27,534 S. F.

NOTES

1. CONTRACTOR TO CONFIRM THAT ALL UTILITIES HAVE BEEN APPROPRIATELY ABANDONED PRIOR TO COMMENCING WORK.

2. AREAS OF DENSE VEGETATION AND ISOLATED TREES WITHIN AREAS OF PROPOSED COVERS ARE TO BE CLEARED BY ALLEN HALL EXCAVATION AHEAD OF COVER PLACEMENT. VEGETATED AREA OF PROPOSED COVERS TO BE MOWED / BUSH HOGGED AS LOW / CLOSE AS POSSIBLE BY ALLEN HALL EXCAVATION.

3. CONTRACTOR TO RUBBELIZE EXISTING ASPHALT WITHIN LIMITS OF PROPOSED COVERS.

4. CONTRACTOR TO PREPARE AREAS OF PROPOSED COVER FOR GEOTEXTILE PLACEMENT BY MINOR GRADING AND REMOVAL OF MATERIALS POTENTIALLY DETRIMENTAL TO THE GEOTEXTILE. THE AREA OF THE DEMOLISHED CHURCH MAY REQUIRE PLACEMENT OF A SOIL LAYER UNDERNEATH THE GEOTEXTILE.

5. CONTRACTOR REQUIRED TO TRANSITION FROM NEW TO EXISTING COVER IN A SMOOTH TRANSITION CONSISTENT WITH EXISTING TOPOGRAPHY.

REFERENCES

1. AERIAL AND PARCEL BOUNDARIES PROVIDED BY CALHOUN COUNTY. DATE OF AERIAL 2011.

40 0 40
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
–	–	–	–	–		

PROJECT

SOLUTIA

TITLE

MARS HILL CHURCH PROPOSED CONSTRUCTION

Golder Associates
Atlanta, Georgia

PROJECT No.	1239004PCD		FILE No.	1239004PCD2012E-002-Proposed Construct	
DESIGN	–	–	SCALE	AS SHOWN	REV. –
CADD	RJC	09/12			
CHECK	ARF	09/12			
REVIEW	GLH	09/12			

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