



Report to Planning & Zoning Commission

Clay County, Missouri

General Information

Site Location: 17206 NE 184th Street Holt, MO 64048
Section 03 | Township 53 | Range 31

Site Size: 40± Acres

Existing Landuse & Zoning: Agricultural (AG)

Zoning/Platting History: None

Surrounding Landuse & Zoning:

- North - AG-zoned land, City of Holt (*Approx. 2 miles*)
- East - AG-zoned land, Buckshot Bend (R-5) zoned land
- South - AG-zoned land, Muddy Fork Farms (R-1 & R-1A) zoned land & Aull Acres (R-1) zoned land, City of Kearney (*Approx. 2 miles*)
- West - AG-zoned land, R-1 and R-U zoned subdivisions

Current Conditions:



Courtesy Clay County Assessor GIS/Mapping



Courtesy Microsoft® Bing™



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Assessment

Jewelee Cox, representing Connie Stoffle, is requesting approval of a **Conditional Use Permit (CUP)** for a Recreation + Entertainment Indoor/Outdoor use at 17206 NE 184th Street Holt, MO 64048.

Ms. Cox is pursuing this request in order to convert an old existing tobacco barn on a 40± acre farm into a 3.5 acre space for local events such as weddings, fundraisers, reunions, and other special events.

2008 Comprehensive Plan Considerations

The Comprehensive Plan (“Plan”) indicates that the subject property is located in the **RURAL LOW DENSITY TIER**.

The following tables illustrate two (2) of the most pertinent policies shaped by the Plan. The first (1st) table shows the land use tiers and corresponding guidelines, and the second (2nd) explains the exceptions to the 20-acre minimum lot size policy as directed by the Plan.

Table 4.2 - Land Use Planning Tiers – Presented on the Planning Tier Map

	Natural Resources Tier † (Yellow)	Rural Low-Density Tier † (Green)	Urban Services Tier † (Salmon)
Intent	Support continued agricultural uses in areas beyond near- and long-term urban service extensions.	To accommodate low density rural uses in areas located beyond anticipated city annexation areas.	To promote urban development compatible with the long range growth plans of adjoining cities.
Primary Uses	Agricultural-related uses, natural resources	Agricultural crop lands, livestock grazing, woodlands, grasslands, rural residences	Urban density residential and non-residential
Residential Uses	Rural Density: 1 dwelling unit per 20+ acres.	Rural Density; Rural Residential Density; low-density rural residential development: 1-dwelling unit per 20+ acres, or 1-farmstead dwelling on 5+ acres; Suburban Density: moderate-density development on municipal-level services: up to 4- units per acre.	Suburban Density: moderate-density development on municipal-level services: up to 4- units per acre. Urban Density: development on municipal-level services: greater than 4-units per acre. 20-acre minimum for agricultural and rural residential uses until such time as urban development occurs.
Non-Residential Uses	Farm service related, recreation	Farm service related, recreation	Recreation, limited commercial and industrial consistent with the long range growth plans of adjoining cities.
Minimum Sanitary Sewer Provisions	On-site septic, Community Wastewater Facility if indicated by LESA guidance.	On-site septic, Community Wastewater Facility if indicated by LESA guidance.	Municipal Wastewater Treatment Plant connection for Suburban Density or greater. ⁽³⁾
Zoning Districts	Ag-related zoning districts; Open Space & Parks; non-agricultural zoning if on strict standards (not including Res. Low Density, such as on 3-acre lots).	Ag-related zoning districts; Open Space & Parks; non-agricultural zoning if on strict standards (not including Res. Low Density such as on 3-acre lots).	Open Space & Parks; and residential districts through general industrial (not including Res. Low Density such as on 3-acre lots). AG, Agricultural zoning is appropriate until full range of urban services available.

⁽³⁾ On-site septic allowed for agricultural uses only.

† The **Planning Tier Map** notes a special designation of areas within one mile of each city: “1-Mile Urban Coordination Sub-Tier” where advise-and-consent should be solicited from the designated city. The applicant will be required to submit a letter from the city of jurisdiction concerning the proposal. The Clay County Planning and Zoning Commission may consider the letter as a non binding city recommendation for Clay County to consider in their deliberations.



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Table 4.3 – Option B for Land Use Tier Implementation: Transition Policy Procedures

	Natural Resources Tier* (Yellow)	Rural Low-Density Tier (Green)	Urban Services Tier (Salmon)
Intent	Exceptions from 20-acre minimum lot size in Ag-districts		Phasing in of new regulations
Density Exceptions for Legal Lots of Record as of the date of Revision of the Land Development Code	Subdivision of land to 5+acre lots, provided that 50% of the subdivided parcel is preserved, such as in an agriculture deed restriction.	Or, subdivision of land to 10+acre lots, provided that a "shadow plat" at urban density is approved.	Subdivision of land to 10+acre lots, provided that a "shadow plat" at urban density is approved, and—for plats within one mile of a city—the city's issues have been addressed.
Other Exceptions	Farmstead** dwellings allowed on 5+acre parcels.		City within one mile may review and recommend other exceptions granted in other tiers, provided a "shadow plat" at urban density is approved.

* The Natural Resources Tier includes an "Urban Services Transition Sub-Tier" area along M-92 and C-Highways that extends where urban development is influenced by the urban highway; yet remains within the Natural Resources Tier designation for purposes of enhanced environmental review and scrutiny.
 ** A "Farmstead Dwelling" is the original residence built and initially occupied by a farm family, regardless of whether the current household occupant is associated with farming.

Character of the General Neighborhood

Agricultural (AG) zoned land and the City of Holt (approx. 2 miles) are located to the north. Buckshot Bend (R-5), and Agricultural (AG) zoned land are to the east. Muddy Fork Farms (R-1A & R-1), Aull Acres (R-1), Agricultural (AG) zoned land, and the City of Kearney (approx. 2 miles) are to the south. To the west is Agricultural (AG) zoned land.

Code Considerations

The Conditional Use Permit (CUP) application was properly noticed in the Kearney Courier on August 25, 2016. Adjacent property owners within the statutory law mandated 1,000 foot distance were notified by means of a certified letter mailed on August 25, 2016.

The subject request for a Recreation + Entertainment Indoor/Outdoor Use is handled under multiple sections of the 2011 Clay County Land Development Code (LDC). The use table inside Section 151-6.1 includes a "Recreation + Entertainment Indoor/Outdoor" designation requiring approval of a Conditional Use Permit (CUP) in the Agricultural (AG) and Community Commercial District (C-3) zoning districts. As such, the subject request must meet all of the approval criteria for a CUP in Section 151-3.10 (A) (13) detailed below:

- A) The proposed use complies with the intent of the Comprehensive Plan and general provisions of the Land Development Code, modified for the specific use request.
- B) The proposed use in its proposed location will not have a substantial adverse impact on the public health, safety or general welfare.
- C) The proposed use will not cause substantial injury to the value of other property in the vicinity.
- D) Adequate access routes will be provided and designed to prevent traffic hazards and to minimize traffic congestion in public streets.
- E) Adequate public safety, transportation and utility facilities/services will be available to service the subject property while maintaining adequate levels of service for existing development, and
- F) The proposed use is compatible with adjacent uses in terms of scale, site design, and operating characteristics (i.e., hours of operation, traffic generation, lighting, noise, odor, dust, and other external impacts).



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Outside Agency Review

Missouri Department of Transportation has approved the construction of a commercial approach off 33 Highway. They have noted that “this approval necessitates the removal of the field entrance and all of this would be done through proper permitting with our department.”

The Clay County Public Health Center has noted that a “commercial lagoon is jurisdiction of Missouri Department of Natural Resources.”

Missouri Department of Natural Resources (MDNR) has noted “by using our numbers of a restaurant calculated at 5 gallons per day per guest and you are planning on a max occupancy of 220 persons your calculations look to be correct. This would make you eligible for the permit exemption provided the treatment system is designed accordingly. If you intend to use a holding tank in place of an earthen basin (lagoon), as long as it is surface land applied as mentioned above and in the fact sheet, you will still be under the exemption from permitting. If you intend to take those tanks and then run subsurface irrigation (laterals, drip irrigation, etc) this would result in a subsurface treatment system with flows less than or equal to 3,000 gallons per day which falls under the jurisdictional and permitting authority of the Health Department.”

Public Water Supply District #3 of Clay County currently has a water meter at the subject property and has noted that “water is available at 33 Highway just north of 184th Street upon purchase of a new water meter.”

The Holt Community Fire Protection District serves this property.

Findings

The applicant has submitted a business plan which can be found under Attachment D. Per the business plan, Ms. Cox wishes to convert the approximately 3400 square foot tobacco barn into an event venue that will include dressing rooms, a food prep area, and ADA accessible bathrooms.

Ms. Cox states in the business plan that the capacity of the tobacco barn is 228 people based on the square footage but that she anticipates most events to be around 100 people. She also details in the business plan the number of events and hours of operation. To simplify the anticipated total event numbers from May, 2017 through February, 2019 the approximate number would be 57 events. In addition, Ms. Cox states that a security guard will be required after 8 pm for events with over 100 attendees when alcohol is being served. Events hours for Sunday through Thursday events will be 9:00 am to 10:30 pm, and weekend events, Friday and Saturday are 9:00 a.m. to 11:30 p.m.

Ms. Cox also states in an email dated August 30, 2016 “We intend to utilize a holding tank in place of an earthen basin (lagoon). In accordance with DNR’s Chapter 8 design guidelines, we will land apply the wastewater to the surface through irrigation equipment such as sprinklers or sprayers. The wastewater will be disposed of in a way that it is not being discharged off site (runoff from the land application area, discharging out of the holding structure). The holding tank will be properly maintained and pumped as needed.”

Per correspondence from Missouri Department of Natural Resources, if a holding tank is used and it is surface land applied then Ms. Cox will be exempt from permitting but not exempt from Missouri Department of Natural Resources regulations.



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Chapter 151-10 of the Land Development Code details the required off street parking for a Recreation + Entertainment Indoor/Outdoor use. Using the square footage of the existing barn provided by the applicant in the business plan seventeen (17) parking spaces would be required. In addition, two (2) of the seventeen (17) parking spaces will be required to be accessible and one (1) of those spaces will need to be van accessible. In addition, section 151-10.1 D1 (a) of the 2011 Land Development Code requires that off-street parking areas containing more than five (5) parking spaces shall be screened from view of adjacent street rights-of-way by principle buildings or landscape buffer strips (*See condition #4*).

Ms. Cox plans to construct the driveway with crush-run rock and provide a dust-free parking area. Pasture parking will serve as overflow parking. Ms. Cox is also proposing to incorporate a mesh parking mat such as "GrassProtecta" in combination with asphalt to meet the parking standards of Chapter 151-10 of the 2011 Land Development Code. (*See attachments E, F, & G for more information on this product*).

Section 151-10.1 F (4) states that all off-street parking areas shall be paved and kept in a dust-free condition at all times. Paving shall consist of asphaltic concrete with a minimum thickness of 4 inches, Portland cement concrete with an equivalent thickness, or bricks or paving blocks intended for outdoor use by motor vehicles. Large 2-inch clean rock has also been considered an acceptable application (*See condition #8*).

Recommendations

Staff recommends the request for the **Conditional Use Permit** for a Recreation+Entertainment Indoor/Outdoor Use at 17206 NE 184th Street (40± acres) be **approved** with the following conditions:

Exhibit A

1. The applicant shall comply with all the conditions and requirements of the Land Development Code (LDC) Section 151-3.10, Conditional Use Permits.
2. The CUP shall be based on a time frame of eight (8) years.
3. This CUP may be revoked at any time based on validated public complaints for violations to the LDC substantiated by County staff.
4. Screening must be required to provide for an uninterrupted obstruction of view from 33 Highway and NE 184th Street so as to block the view of the off-street parking areas. Screening must be in the form of buildings or landscape buffer strips and comply with Section 151-10.1 D1(a) of the 2011 Land Development Code.
5. The applicant shall comply with and meet all building codes and regulations adopted by Clay County. A building permit is required to renovate the existing barn and an Occupancy permit must be issued before any events are held.
6. Lighting shall be directed downward and shielded from direct glare on nearby properties and roadways.
7. Wood sign (noted as #7 on the site plan) must comply with Chapter 151-12 of the 2011 Land Development Code and may require a permit.
8. Off-street parking areas and drive aisles shall consist of a minimum of large 2-inch clean rock surfacing. However, if reasonable and prudent nuisance complaints are



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received by County staff for dust generation caused by this approved surfacing, then it must be improved to a paved condition which may only include 4-inch concrete, asphalt, or chip-and-seal of equal thickness.

9. Once approved, this CUP is non-transferable; therefore, if ownership changes a new CUP must be filed with the Clay County Planning and Zoning office.



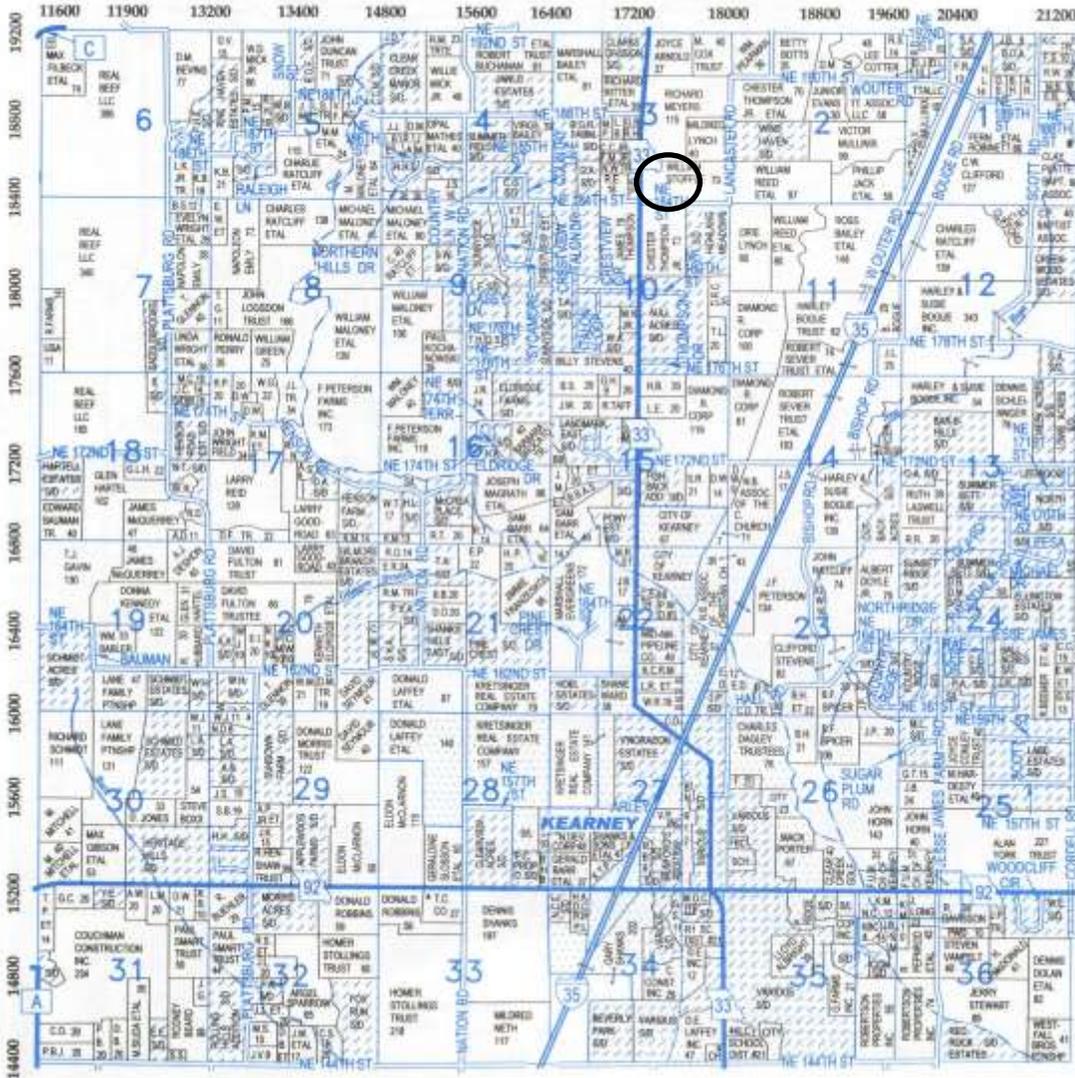
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Attachments

September 16-129CUP – 17206 NE 184th Street Attachment A – Vicinity Map

TOWNSHIP 53N • RANGE 31W

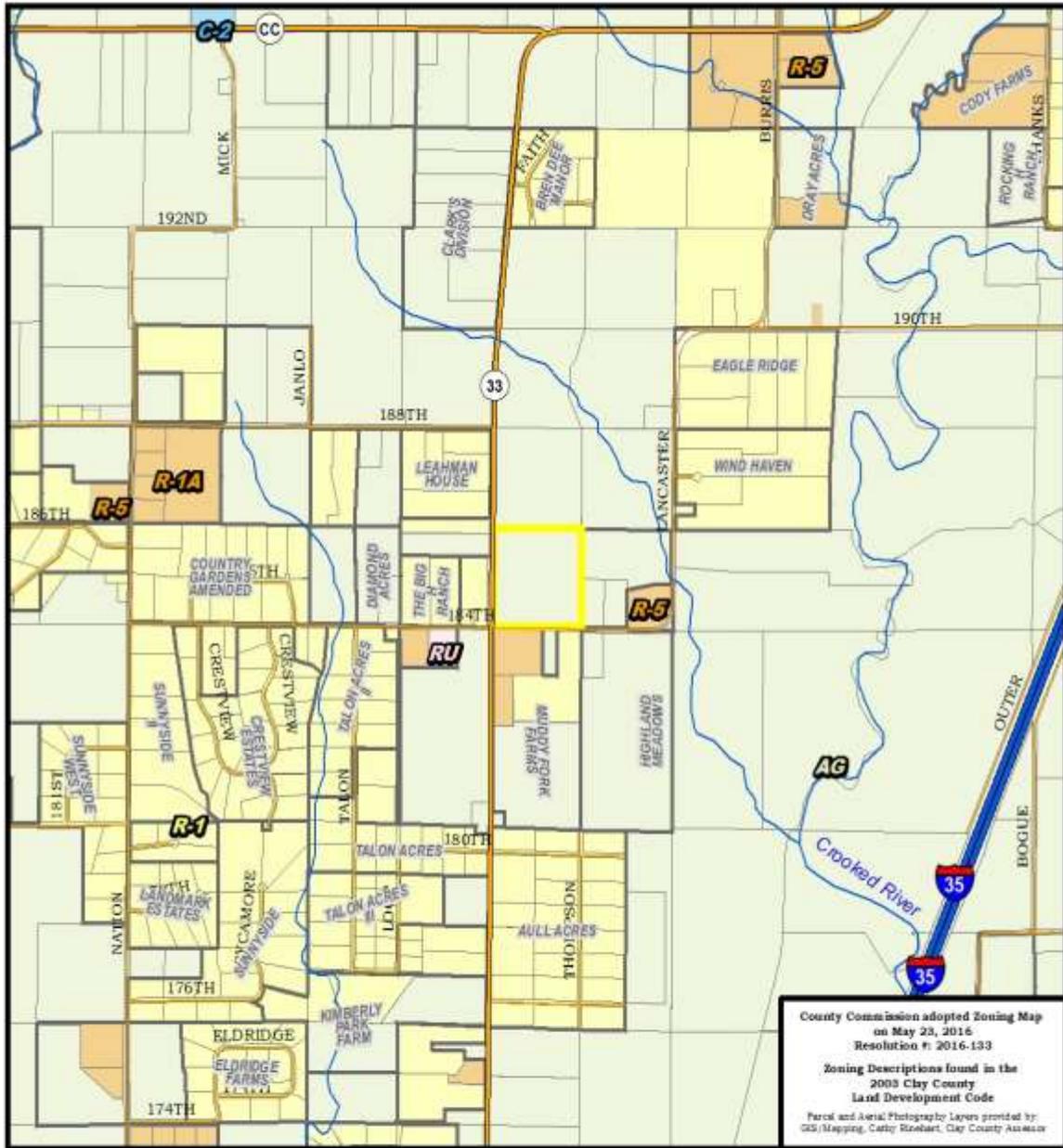




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Sept 16-129CUP – 17206 NE 184th ST Attachment B - Existing Conditions Map



County Commission adopted Zoning Map on May 23, 2016
Resolution #: 2016-133
Zoning Descriptions found in the 2003 Clay County Land Development Code
Parcel and Aerial Photography Layers provided by GIS/Mapping, Cathy Roebart, Clay County Assessor

Map Document: G:\GIS\Project_Files\Armsity Map - 8 x 11 P.mxd
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LEGEND

- Property Line
- Roads
- Streams (EPA)
- Railroads
- Interstate
- State Highways
- Local Roads
- Highway Ramps
- Subdivisions
- 2016 City Limits
- Parks
- County Boundaries

Zoning Districts

- AG
- R-1
- R-1A/R-5
- R-1B/RU
- R-3
- C-1
- C-2
- C-3
- I-1
- I-2
- OP



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Sept 16-129CUP – 17206 NE 184th ST Attachment C - Site Plan Map



County Commission adopted Zoning Map on May 23, 2016
 Resolution #: 2016-133
 Zoning Descriptions found in the 2003 Clay County Land Development Code
 Parcel and Aerial Photography Layers provided by: GIS/Mapping, Emily Baskart, Clay County Assessor

Map Document: G:\GIS\Project_Files\Workcity Map - 8 x 11 P.mxd
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Planning & Zoning Department

1 inch = 75 feet
1 inch = 0.01 miles

LEGEND

Property Line	Streams (EPA)	Interstates	Subdivisions
Railroads	State Highways	Local Roads	2016 City Limits
	Highway Ramps		Parks
			County Boundaries



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September 16-129CUP – 17206 NE 184th Street Attachment D – Business Plan

Dear PNZ Committee & County Commission,

Thank you for reviewing our CUP application for a barn event venue. It is our desire to convert an existing tobacco barn into a peaceful and picturesque space for local events such as weddings, fundraisers, reunions, and other special events.

Few tobacco barns remain in this area, and fortunately this barn has been well-cared for and still stands strong with its characteristic tobacco sticks still in the rafters. In addition to preserving an important piece of local history, the barn venue would bring additional revenue to Clay County and the neighboring communities of Kearney and Holt when event attendees stop for gas, stay overnight in hotels, eat out, etc. We want to be a positive addition to the area and will be very mindful and considerate of our neighbors.

In order to get a positive return on our investment, we are requesting a 10-15 year Conditional Use Permit. Thanks again for your time and consideration.

Sincerely,

Jewelee Cox & Connie Stoffle

BUSINESS PLAN

ADDRESS: 17206 NE 184th St, Holt, MO 64048 (SW1/4 SE1/4 EXC ROW) *Please note: Legal description is for the 40-acre plat, however we plan on using around 3.5 acres.*

PURPOSE: Barn Venue for weddings, fundraisers, reunions, corporate outings and other special events.

STRUCTURE: In order to bring this historic tobacco barn back to life, we have assembled a structural engineering and architecture dream-team, consisting of Michael Skeens, a structural engineer with over 40 years of experience (including barn restoration), and Aimee Gray, owner



of a3g Architects, an established architecture firm in Liberty specializing in rehabbing historical buildings.

The main barn area is 2,832 sq ft with a lean-to area (590 sq ft) where we will add dressing rooms, caterer prep area and bathrooms.

CAPACITY: 228 as calculated based on total square footage, however we anticipate most events to be around 100 occupancy.

OPERATING TIMES: First operating year (2017) we anticipate two

events per month, May through November (approx. 14 events). Second year we anticipate one event per weekend, March through November and one event per month, December through



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February (approx. 43 events). Events will start no earlier than 9am with cutoff times of 10:30pm Sun-Thurs and 11:30pm Fri-Sat.

MUSIC: DJ or live music setup would be in barn, with doors opening up north and east towards empty pasture. Music will be kept at a reasonable volume. Music cutoff time is 10pm Sun-Thurs and 11pm Fri-Sat. The west side of the barn, where the bathrooms will be located, will be insulated to aid in soundproofing. Existing trees surrounding the barn will also act as a natural sound barrier (see Attachment G for surrounding area photos). Additional landscaping will be planted as needed to keep the sound contained.

RESTROOMS/SEPTIC: Facilities will be upgraded to include ADA-compliant restrooms in barn lean-to. Water hookup has been approved by Clay County Water District #3 (see Attachment A). Our soil morphology test results call for a lagoon system or septic tank, which falls under the jurisdiction of the Missouri Department of Natural Resources. Soil engineer Gary Ivy estimates usage at 2200 gallons per day, which would qualify us for the DNR permit exemption of 3000 gallons or less per day (see Attachments B-C). Per the DNR, we will follow the 3000 gallon per day or less no-discharge permit exemption specifications and design guides. We will stay under the one-acre disturbance threshold so will not require a land disturbance permit.

FOOD/KITCHEN: We would not prepare any food on premise. An area would be available for caterer prep space only and would include sink and refrigerator only. We would not sell or serve alcohol. Caterers may serve if they have appropriate liquor license. A security guard will be required after 8:00 pm for events with over 100 attendees when alcohol is being served.

DRIVEWAY: Construction of a new driveway off of 33 Hwy has been approved by MO Highway Department, with removal of existing farm entrance approximately 150 ft away (see Attachment D). Driveway approach will be hard surface with crush-run rock drive.

PARKING: Dust-free parking area will accommodate at minimum 16 parking spaces, as required by the land development code. Pasture parking area is available for overflow. The parking area is on a large flat surface at the crest of a hill. Two ADA parking spaces (one for van access) and a loading zone will be located near the barn entrance. In combination with asphalt parking, we would like to propose a green sustainable parking solution of a mesh parking mat such as GrassProtecta or similar product.

GrassProtecta is a heavy duty, thick, slip-resistant polyethylene mesh, which allows the grass thatch to grow through, creating a strong, discreetly reinforced natural grass surface capable of withstanding vehicle loads, limiting damage and reducing soil compaction. This solution is manufactured to ASTM F 1951-08 standards for ADA Accessibility and has been successfully used for parking areas at event venues and athletic fields.

I have included the GrassProtecta engineering specs, case study and ADA compliance test results (see Attachments E-F). More info is available at <http://www.typargeosynthetics.com/products/ground-reinforcement-mesh/grassprotecta-grass-reinforcement-mesh.html>





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September 16-129CUP – 17206 NE 184th Street Attachment E- Case Study



CASE STUDY

Client: Loyola University
 Location: Baltimore, Maryland
 Product(s): GRASSPROTECTA Standard Mesh
 Application: Stadium Parking (150,000 SF)

ISSUE

With the recent completion of a new sports complex, Loyola University was in need of additional event parking at the soccer and lacrosse stadium. The new facility had already reached its maximum allowable impervious surface area under the current zoning restrictions. In addition, the project was located over a capped landfill site, which posed a number of constraints in regard to topography and soil conditions. Loyola needed a cost-effective approach that would double capacity without increasing impervious cover.

SOLUTION

Based on the intended frequency of use and current site conditions, Loyola University selected GRASSPROTECTA Standard mesh to reinforce the grass area directly adjacent to the main soccer field to create auxiliary parking during games and tournaments. Over 150,000 square feet of GRASSPROTECTA mesh was installed to support vehicle over the existing, newly sown grass area. GRASSPROTECTA mesh was chosen due to its load bearing capacity over the soil profile, which mitigates compaction and protects vegetative growth. The stadium more than doubled capacity of parking without adding additional impervious surface.

BENEFITS

Using GRASSPROTECTA mesh, Loyola University doubled its parking capacity at the new sports complex without adding any additional impervious surface area. The added capacity reduces the amount of rented parking and transportation needed for sporting events, greatly reducing transportation costs and quickly paying for project costs. The new installation creates a multifunctional green space that serves as a recreational space and parking structure without generating additional stormwater or changing the aesthetic view from the sports complex.



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A **fiberweb** BUSINESS



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September 16-129CUP – 17206 NE 184th Street Attachment F- Specifications



SECTION 02795

POROUS PAVEMENT SYSTEM

Display hidden notes to specifier by using "Tools"/"Options"/"View"/"Hidden Text".

GENERAL

1.1 SECTION INCLUDES

- A. Grass reinforcement mesh system.

1.2 RELATED SECTIONS

- A. Section 02300 - Earthwork.
- B. Section 02620 - Subdrainage System.
- C. Section 02700 - Bases, Ballasts, Pavements, and Appurtenances.
- D. Section 02800 - Site Improvements and Amenities.
- E. Section 02810 - Irrigation System.
- F. Section 02900 - Planting.
- G. Section 02920 - Lawns and Grasses.

1.3 REFERENCES

- A. DOT Standards - _____ State Department of Transportation Standard Specifications.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

- A. Sub-base and base design shall conform to the applicable requirements of the DOT Standards for _____ State and the sub-base recommendations of the manufacturer.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.



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- B. Product Data: Manufacturer's data sheets on each product to be used, including:**
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Submit manufacturer's shop drawings including laying pattern and anchoring.**
- D. LEED Submittals: Provide documentation of how the requirements of Credit will be met:**
 - 1. List of proposed materials with recycled content. Indicate post-consumer recycled content and pre-consumer recycled content for each product having recycled content.
 - 2. Product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content.
- E. Samples: Submit manufacturers samples of each product specified.**
- F. Manufacturer's Certificates:**
 - 1. Certify products meet or exceed specified requirements.
 - 2. ISO Certification certifying manufacturers quality management system is currently registered to ISO 9001:2000 quality standards.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer with a minimum for five years documented experience with the products specified and with ISO Certification certifying material compliance for GRASSPROTECTA.**
- B. Installer Qualifications: Installer experienced in performing work of this section that has specialized in installation of work similar to that required for this project. Installer must also be able to provide skilled workman with satisfactory record of performance on landscaping or paving projects of comparable size and quality.**
- C.**
- D. Preinstallation Meetings:**
 - 1. Convene a preinstallation meeting a minimum of two weeks prior to start of porous paving systems.
 - 2. Verify project requirements, subbase and base conditions, manufacturer's installation instructions and coordination with other related work.
 - 3. Require attendance of parties directly affecting work of this section, including the Contractor, engineer, installer, and manufacturer's representative.
 - 4. Comply with Division 1 requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.**
- B. Protect materials during handling and installation to prevent damage.**

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions recommended by manufacturer for desired results. Do not install products under conditions outside manufacturer's absolute limits.**



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- B. Do not begin installation of porous pavements until all hard surface paving adjacent to porous pavement areas, including concrete walks and asphalt paving, is completed.
- C. In cold weather, do not use frozen materials or materials coated with ice or frost, and do not build on frozen base or wet, saturated or muddy subgrade.
- D. Protect partially completed porous paving against damage from other construction traffic when work is in progress.
- E. Protect turf paving from traffic until grass root system has matured for at least 3 to 4 weeks. Use barricades to only permit accessible by emergency and fire equipment during and after installation.

1.9 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PRODUCTS

1.10 MANUFACTURERS

- A. Acceptable Manufacturer: Polymer Group, Inc.; 70 Old Hickory Blvd, Old Hickory, TN 37138. 1-800-541-5519. Web Site: www.typargeosynthetics.com. E-mail: geosales@fiberweb.com
- B. Substitutions: Not permitted.

1.11 MATERIALS

- A. Grass Reinforcement Mesh: GRASSPROTECTA grass reinforcement mesh.
 1. Materials:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the ones not required. See manufactures recommendations for use of the Heavy GRASSPROTECTA 2kg and the Standard GRASSPROTECTA 1.2kg.**

- 1) Heavy GRASSPROTECTA 2kg
 - (a) Thickness: 0.55inch(14mm)
 - (b) Polyethylene: UV Stabilized 20 percent recycled HDPE.
 - (c) Color: Green.
 - (d) Chemical resistance: Excellent.
 - (e) UV resistance: High.
 - (f) Toxicity: Non Toxic.
 - (g) Tensile strength(MD): 16kN/m
 - (h) Yield point elongation(MD): 35%
 - (i) Residual thickness @ 500 kPa: 60%
 - (j) Slip risk PTV value: >40(low slip)
- 2) Standard GRASSPROTECTA 1.2kg
 - (a) Thickness: 0.45inch(11mm)
 - (b) Polyethylene: UV Stabilized 20 percent recycled HDPE.
 - (c) Color: Green.
 - (d) Chemical resistance: Excellent.
 - (e) UV resistance: High.
 - (f) Toxicity: Non Toxic.
 - (g) Tensile strength(MD): 12kN/m



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- (h) Yield point elongation(MD): 30%
- (i) Residual thickness @ 500 kPa: 45%
- (j) Slip risk PTV value: >40(low slip)
- 2. Dimensions:
 - a. Mesh Rolls:
 - 1) 6.56 foot by 65.6 foot (2 m by 20 m).
 - 2) 3.28 foot by 32.8 foot (1 m by 10 m).
- 3. Accessories:
- 4. U-Pins: U shaped steel, 6.7 inches by 2.75 inches by 0.23 inch diameter.

B. Sub-base reinforcement: geogrid.

EXECUTION

1.12 EXAMINATION

- A. Before beginning installation, verify site conditions are as indicated on the Drawings. Notify the Architect if site conditions are not acceptable. Do not begin preparation or installation until unacceptable conditions have been corrected.

1.13 GRASS REINFORCING MESH INSTALLATION

- A. Install GRASSPROTECTA grass reinforcement mesh in accordance with grass reinforcement mesh system manufacturer's instructions.
- B. Install on newly landscaped areas and existing grassed areas as indicated on the Drawings.
 - 1. Install on existing grassed areas. after cutting the grass short.(Remove)
 - 2. Ensure the surface is relatively flat and well drained. Cut grass short and remove clippings. Fill shallow depressions on the grassed surface with a 70:30 blend of sharp sand and good quality topsoil until level and firm. Seed may be applied now or later to avoid disturbance while laying the mesh.
 - 3. Install geogrid layer to improve ground stability and the durability of the grass surface. Install geogrid directly onto prepared grass surface. Fix as required to ensure the geogrid lies flat using metal U-pins. Overlap adjacent rolls a minimum of 8 inches and continue the laying and fixing process.
 - 4. Unroll the GRASSPROTECTA mesh and leave for a minimum of one hour to help the mesh regain its natural flatness before installing.
 - 5. Lay mesh directly onto the existing grass surface or geogrid layer and fix one edge using metal U-pins or plastic pegs, pulling the mesh taut. For external edges fix every 1 to 2 feet until there are no raised edges. Ensure the mesh lies flat to surface.
 - 6. Along the middle of each roll, fix mesh every 1.5 to 3 feet or as required to ensure the mesh lays flat.
 - 7. Butt adjacent rolls together with no overlapping.
 - 8. Secure the butt joints by using the fixing pins/pegs every 1 to 1.5 feet so each metal U-pin can join both edges. Fix the middle of each new roll every 1.5 to 3 feet as required. Repeat using additional pins/pegs to secure any raised areas or where any bridging or rippling of the rolls is evident.
 - 9. Areas that have been leveled with sandy topsoil can be seeded at this stage.
- C. Do not use seeded areas until the grass has grown through the mesh apertures or a minimum of 4-8 weeks in the growing season. The area can be trafficked immediately, but traffic restriction is required.
 - 1. Once the grass has grown through, initial mowing can be done with blades set blades to cut fairly high so that contact with the mesh is not made. When the grass is established and the plants are entwined with the mesh, the grass can be cut normally.



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2. If any raised areas appear after the initial installation, use additional U-pins / plastic pegs to secure them.
 3. **Install on newly landscaped areas prepared as specified in Section 02920.**
 4. Soil surface should be well consolidated, reasonably level and cleared of debris. Existing depressions should be filled with a mixture of sharp sand and top soil and thoroughly consolidated.
 5. Prepare the surface as a lightly tilled and consolidated seedbed.
 6. Install Optional geogrid layer to improve ground stability and the durability of the grass surface. Install geogrid directly onto prepared grass surface. Fix as required to ensure the geogrid lies flat using metal U-pins. Overlap adjacent rolls a minimum of 8 inches and continue the laying and fixing process.
 7. Unroll the GRASSPROTECTA mesh and leave for a minimum of one hour to help the mesh regain its natural flatness before installing.
 8. Lay mesh directly onto the existing grass surface or geogrid layer and fix one edge using metal U-pins or plastic pegs, pulling the mesh taut. For external edges fix every 1 to 2 feet until there are no raised edges. Ensure the mesh lies flat to surface.
 9. Along the middle of each roll, fix mesh every 1.5 to 3 feet or as required to ensure the mesh lays flat.
 10. Butt adjacent rolls together with no overlapping.
 11. Secure the butt joints by using the fixing pins/pegs every 1 to 1.5 feet so each metal U-pin can join both edges. Fix the middle of each new roll every 1.5 to 3 feet as required. Repeat using additional pins/pegs to secure any raised areas or where any bridging or rippling of the rolls is evident.
 12. Areas that have been leveled with sandy topsoil can be seeded at this stage.
 13. Do not use seeded areas until the grass has grown through the mesh apertures or a minimum of 4-8 weeks in the growing season. The area can be trafficked immediately, but traffic restriction is required.
 14. Once the grass has grown through, initial mowing can be done with blades set blades to cut fairly high so that contact with the mesh is not made. When the grass is established and the plants are entwined with the mesh, the grass can be cut normally.
 15. If any raised areas appear after the initial installation, use additional U-pins / plastic pegs to secure them.
- D. Provide treated wood, concrete, steel or plastic curb edge retention at perimeter and edges of rootzone system as indicated on the Drawings.**
- E. Allow the grass to grow through the plastic mesh apertures, and intertwine with the plastic mesh filaments creating a strong, discreetly reinforced grass surface capable of withstanding vehicle loads, limiting damage and reducing soil compaction.**
- F. Regularly maintain grass as specified until substantial completion.**
- 1.14 SEED AND GRASSING**
- A.** Finish in accordance with manufacturer's instructions.
- B. Seeding:**
1. Follow good seeding, fertilizing, and watering procedures for turf establishment based on regional practices.
 2. Increase watering frequency when free draining base materials are used.
 3. Seeding: As specified in Section 02920 - Lawns and Grasses.
- C. Sodding:**
1. Install young sod free from netting materials.
 2. Press sod into the soil surface using a roller or other suitable equipment and follow normal watering procedures.



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3. Sodding: As specified in Section 02920 - Lawns and Grasses.

1.15 MAINTENANCE

- A. **Maintain grass in accordance with manufacturer's instructions and as specified in Section 02920 - Lawns and Grasses.**

END OF SECTION



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September 16-129CUP – 17206 NE 184th Street Attachment G- ADA Compliance Results

Beneficial Designs Inc.

2240 Meridian Blvd, Suite C
Minden NV 89423
775.783.8822 voice
775.783.8823 fax

ASTM F 1951-08 Surface Testing Report

Standard Specification for Determination of Accessibility of
Surface Systems Under and Around Playground Equipment

SUMMARY OF RESULTS

Beneficial Designs, Inc. received a surfacing sample from Boddingtons Limited classified as surface stabilizer with the brand name GrassProtecta[®] Standard. This sample of GrassProtecta[®] Standard met the maneuverability performance requirements of ASTM F 1951-08.

Report prepared by: *Seanna R. Kringer*
Seanna Kringer, Research Associate

17 December 2010
Date

TEST SPECIMEN

Manufacturer Boddingtons Limited
Name GrassProtecta[®] Standard

Type surface stabilizer
Source Essex, England
Mfr's lot no. N/A
Date of manufacture 04/2010
Thickness 0.5 in.

TEST DATE

7 December 2010

TESTING CONDITIONS

Surface water content N/A
Surface temperature 40 deg F
Atmospheric temperature 40 deg F
Relative humidity 62 %

INSTALLATION, LEVELING & COMPACTION

The GrassProtecta[®] Standard mesh was unrolled and allowed to sit for one hour. A 4 foot by 12 foot level portion of existing lawn that was free from bumps and dips was mowed. GrassProtecta[®] Standard mesh was placed over the installation area. Edges of the mesh were pinned to the lawn using supplied "U" pins every 24 inches.

GrassProtecta[®] Standard was installed on 18 October, 2010. Grass was mowed prior to testing.

TEST WHEELCHAIR & RIDER

Manufacturer Sunrise Medical/Quickie
ID no. none
Model Quickie II
Weight 31.5 lb.

Weight of test wheelchair rider 159 lb.
Front-to-rear weight distribution of wheelchair-rider system 40% - 60%



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WHEELCHAIR WORK MEASUREMENT METHOD RESULTS

Straight Propulsion on GrassProtecta® Standard

	Work per meter (N*m)	Trial Time (sec)
Trial 1	26.5	7.7
Trial 2	31.7	7.8
Trial 3	28.7	7.4
Trial 4	27.7	7.4
Trial 5	31.8	7.7

Average work per meter (n=3) 29.4 N*m

Turning on GrassProtecta® Standard

	Work per meter (N*m)	Trial Time (sec)
Trial 1	49.4	6.6
Trial 2	41.7	7.3
Trial 3	46.3	6.5
Trial 4	47.1	6.5
Trial 5	44.6	7.4

Average work per meter (n=3) 46.0 N*m

Straight Propulsion on 7.1% Ramp*

	Work per meter (N*m)	Trial Time (sec)
Trial 1	73.6	6.7
Trial 2	72.0	7.5
Trial 3	60.3	8.0
Trial 4	73.2	7.3
Trial 5	75.3	7.1

Average work per meter (n=3) 72.9 N*m

Turning on 7.1% Ramp*

	Work per meter (N*m)	Trial Time (sec)
Trial 1	65.2	7.0
Trial 2	61.6	7.6
Trial 3	62.1	7.2
Trial 4	60.4	7.9
Trial 5	60.4	7.8

Average work per meter (n=3) 61.4 N*m

* Hard smooth surface with grade of 7.1+/-0.2% (1:14)

Straight Propulsion Work Ratio 0.403

Turning Work Ratio 0.750

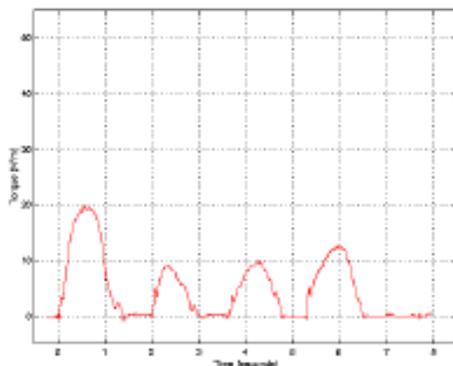
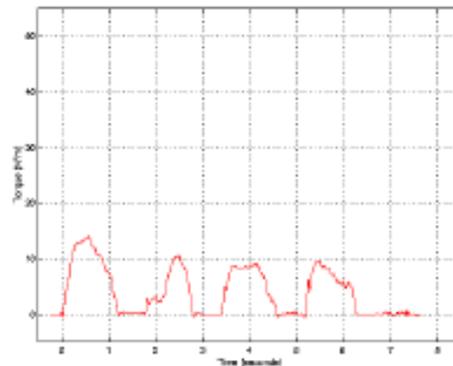
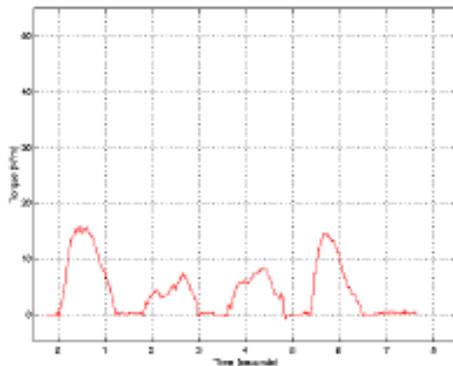
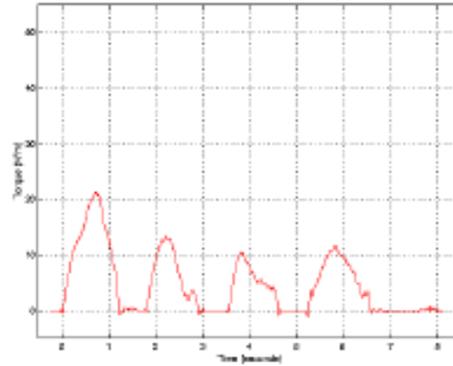
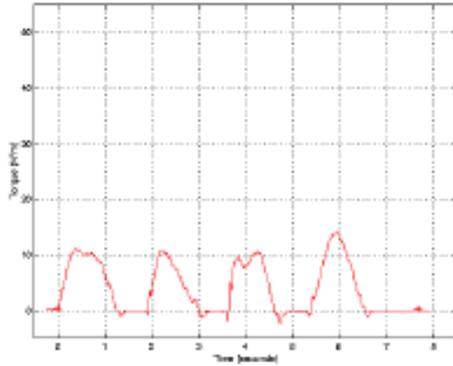
Work ratio = Avg work on surface/Avg work on 7.1% ramp. If both the straight propulsion and turning work ratios are less than 1.00, the surface system meets the performance requirements of F 1951-08.



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ASTM F1951 – 08 Part 6: Wheelchair Work Measurement Method – Straight Propulsion Boddingtons Limited – GrassProtecta® Standard

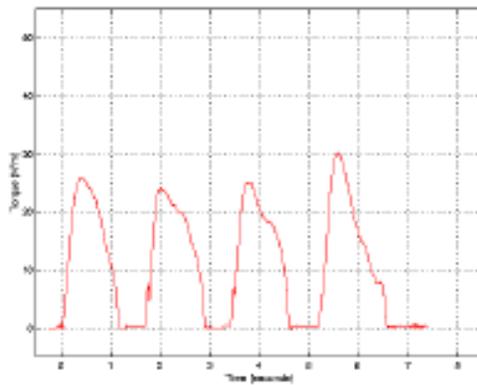
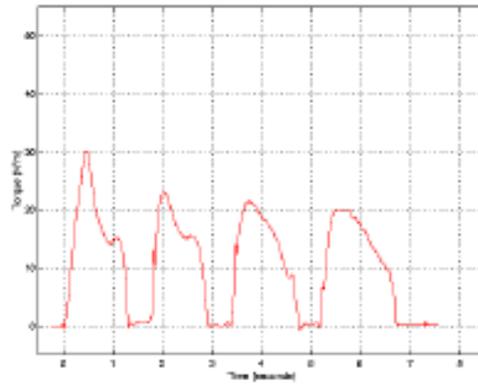
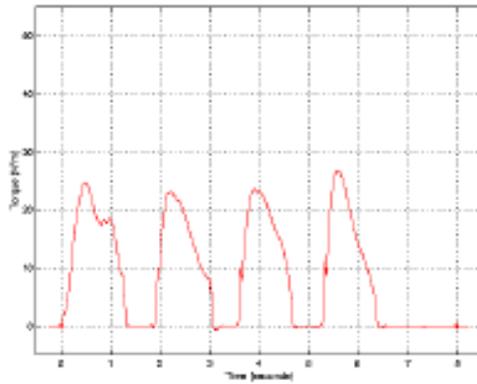
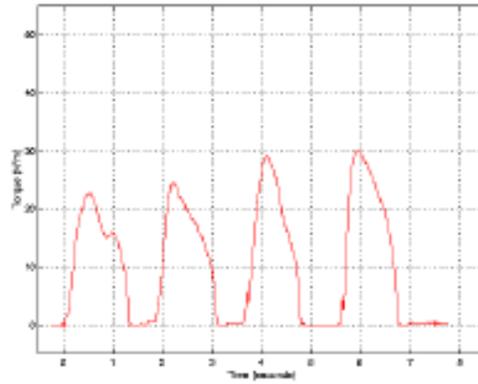
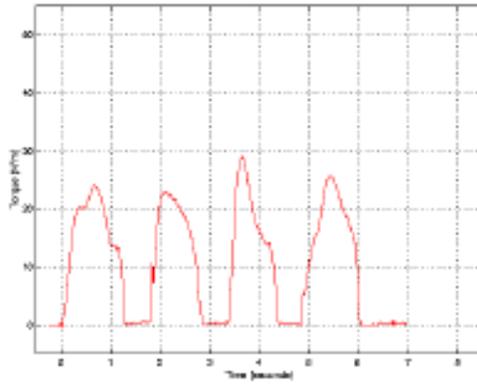




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Clay County, Missouri

ASTM F1951 – 08 Part 6: Wheelchair Work Measurement Method – Straight Propulsion Hard, smooth surface with a grade of $7.1 \pm 0.2\%$ (1:14)

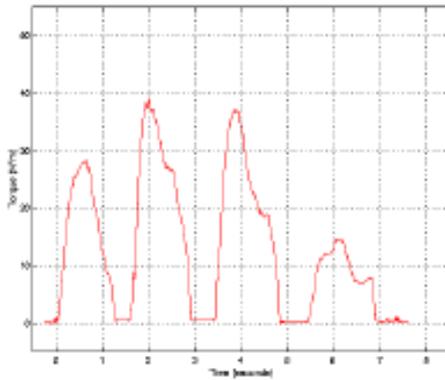
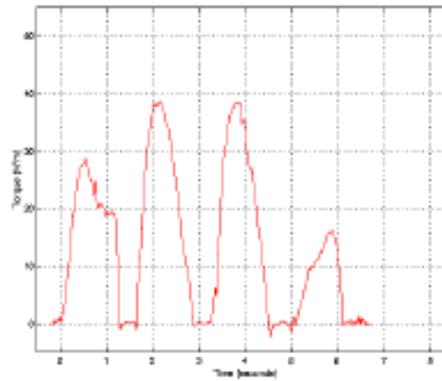
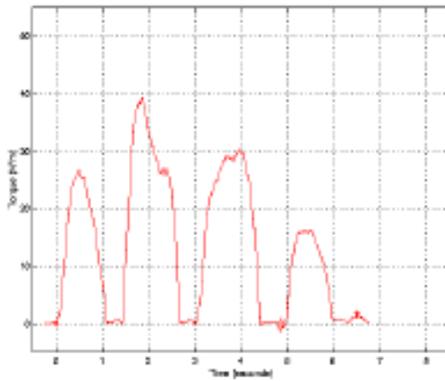
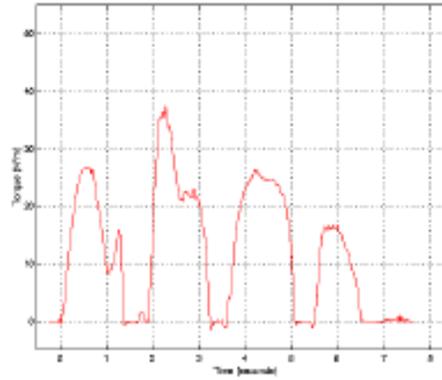
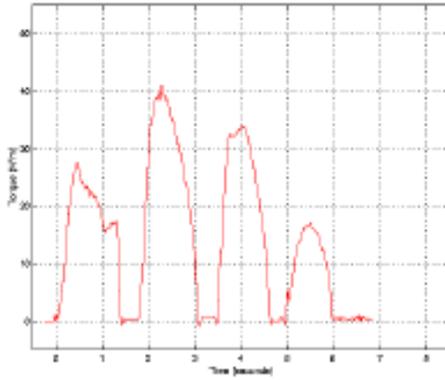




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Clay County, Missouri

ASTM F1951 – 08 Part 7: Wheelchair Work Measurement Method – Turning Boddingtons Limited – GrassProtecta® Standard

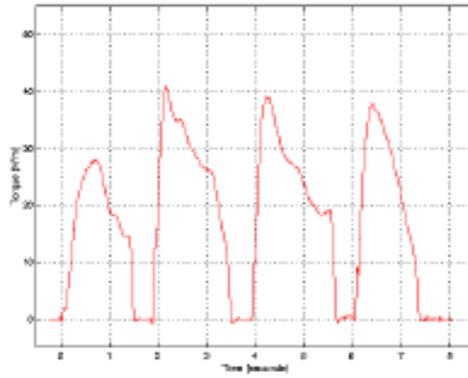
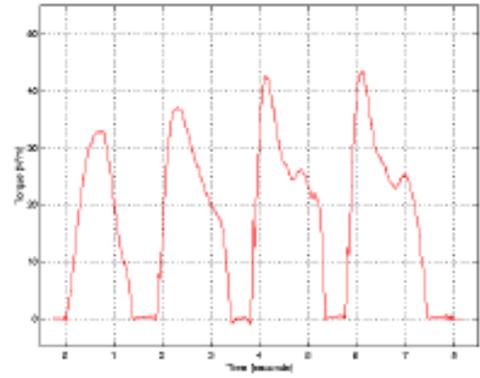
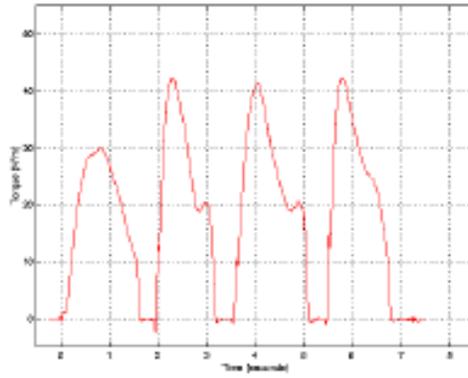
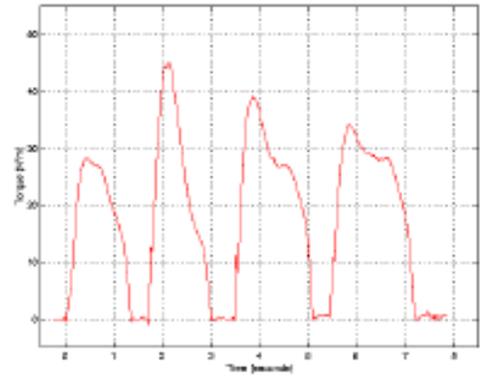
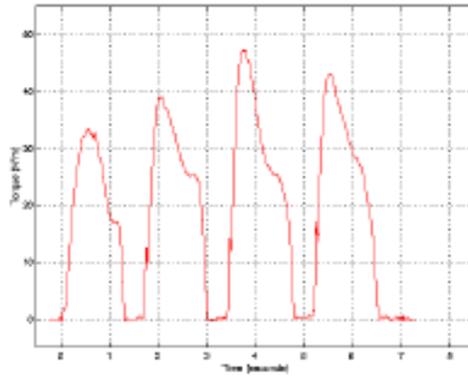




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Clay County, Missouri

ASTM F1951 – 08 Part 7: Wheelchair Work Measurement Method – Turning Hard, smooth surface with a grade of $7.1 \pm 0.2\%$ (1:14)





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September 16-129CUP – 17206 NE 184th Street Attachment H-Surrounding Area Photos





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Looking North from NW corner of barn. All pasture and trees.



Looking East from front of barn. Trees to be trimmed, but will remain.



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Looking NE from East side of barn (other side of trees). All pasture and trees.



Rooftop of Witt residence 1353 ft away.

Lay in-ground home behind trees 1178 ft away.

View from East side of barn looking East.



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September 16-129CUP – 17206 NE 184th Street Attachment I- Concept Pictures

Event Barn Concept Photos



Fresh Air Farm
Platte County, MO





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**Riverwood Winery Tobacco Barn
Rushville, MO**

