WETLAND MITIGATION REPORT
QUEENS GRANT SUBDIVISION

Town of West Seneca
prepared for
Woodbridge Construction, Inc.

Revised

received 9/19/01

CLIENT:	WOODBRIDGE CONSTRUCTION, INC. 3576 CALIFORNIA ROAD SUITE 101 ORCHARD PARK, NEW YORK 14127
PROJECT NAME:	QUEENS GRANT SUBDIVISION
PROJECT LOCATION:	NORTH STREET AND GRANT BOULEVARD TOWN OF WEST SENECA ERIE COUNTY, NEW YORK
ACTION:	SECTION 404 WETLAND MITIGATION
PREPARED BY:	WILSON ENVIRONMENTAL TECHNOLOGIES, INC. 1331 NORTH FOREST ROAD, SUITE C250 WILLIAMSVILLE, NEW YORK 14221 (716) 688-6900 FAX (716) 688-5884
DATE:	SEPTEMBER 4, 2001
PROJECT NO.:	330.006

INTRODUCTION

Wilson Environmental Technologies, Inc. (WET) has been retained by the Mr. Dennis Boyle, President, Woodbridge Construction, Inc. to design a wetland mitigation plan in conjunction with the U. S. Army Corps of Engineers Section 404 Individual Permit program. The proposed mitigation plan would be compensation for impacts to 1.35± acres of jurisdictional wetlands on the proposed 32.57± acre project site located between North Street and Grant Boulevard, Town of West Seneca, Erie County, New York (Figure 1). The project is referred to as the Queens Grant Subdivision. The proposed plan calls for the construction of a residential, single family home subdivision. The project is being engineered by Schenne & Associates, 967 Luther Road, East Aurora, New York, 14052.

The proposed mitigation plan is to compensate for proposed impacts to 1.35± acres of approximately 2.02± acres of Federal jurisdictional wetland within the proposed Queens Grant project, which is located within the Smoke reek watershed. The proposed impacts would be the result of the construction of the proposed subdivision development. The Queens Grant project has received necessary Town of West Seneca approvals. Construction of the project is scheduled for the Spring of 2001. The proposed mitigation would be constructed concurrently with the subdivision project.

WET is proposing a wetland mitigation project for the Queens Grant site that would involve both the acquisition of a 7.8± acre parcel located contiguous to Buffalo Creek, north of Jackman Lane, west of Briggswood Drive in the Town of Elma, Erie County, New York and the construction of 0.78± of emergent and robust emergent marsh within the Queens Grant subdivision site. The acquisition parcel is located within the floodway of Buffalo Creek. The parcel was examined by WET as part of a pending Section 404 permit action currently under review by the Buffalo District Corps of Engineers as part of the pending application. Through the Public Notice and comment period the USACE and U.S. Fish and Wildlife Service indicated the need for a replacement mitigation component to the mitigation plan. The proposed wetland construction project would provide an expansion of the existing proposed undisturbed wetland through the elimination of a proposed building lot to facilitate the wetland creation plan. WET is proposing to construct a varied habitat wetland mitigation plan on within the existing subdivision, adjacent to the existing undisturbed portion of the wetland on sub-lot number 54.

On May 22, 2000 an on-site meeting was conducted with Mr. Gerald Barry representing the Town of Elma and the USACE with respect to the Elma parcel. At that time it was determined that the subject parcel was suitable as a conservation parcel. The parcel is currently owned by Mr. Donald Lofaso. Mr. Lofaso has agreed to sell the parcel to the Town of Elma as a conservation/green space parcel. The Town of Elma is interested in obtaining this parcel as part of an on-going, Town sponsored ecologically sensitive property acquisition program. WET conducted a habitat review of the Elma parcel on June 23, 2000. That report was submitted as part of the Section 404 application to the USACE on July 7, 2000. The report defines the vegetation communities located on the 7.8 acre site. Briefly, the ecology of the site consists of a mix of mature upland floodplain woodlot and wet shrubland and emergent marsh vegetation communities. Based on the field investigation, WET determined that approximately 2.5± acres of Federally regulated wetland area exists within the site, the majority of the wetland contained within the south east portion of the parcel. The determination was based on the presence of hydric soils, hydrophytic vegetation and abundant wetland hydrology.

The balance of the parcel was determined to consist of upland successional and mature floodplain woodlot vegetation communities. Species commonly found in this vegetation community of this parcel

include shagbark hickory (*Carya ovata*), green ash (*Fraxinus pennsylvanica*), red maple (*Acer rubrum*), black cherry (*Prunus serotina*), and American basswood (*Tilia americana*). Big-tooth aspen (*Populus grandidentata*), eastern cottonwood (*Populus deltoides*) and American elm (Ulmus americana) are also present on the site. Shrubs common within the upland woodlot were arrowwood (*Viburnum dentatum*), tartarian honeysuckle (*Lonicera tatarica*) and nannyberry (*Viburnum lentago*).

The wetland mitigation proposed by WET for the Queens Grant site is the creation of 0.78± acres of robust emergent and emergent marsh habitat consisting of an irregular shaped, sloped excavation contiguous to the existing emergent wetland complex located both east and west of the existing wetland area.

MITIGATION OVERVIEW

617

As wetland **creation**, WET is proposing the creation of varied wetland habitat through the excavation of an upland area adjacent to the existing wetland located at the north end of the site on sub-lot 54. Emergent marsh and robust emergent marsh habitat will be excavated to obtain elevations ranging from 615 feet USGS to 615 feet USGS. surround the inlet swale which will consist of open water habitat. A narrow band of transitional habitat will be created along the east and west margin of the constructed wetland. The elevation from the transitional habitat will be gradually reduced to form seasonally flooded emergent marsh habitat. These habitats will be suitable for mixed wildlife and waterfowl usage. The following table defines the proposed habitat cover types and sizes (Sheet 1, Appendix B):

HABITAT/ ELEVATION RANGE	WATER DEPTH (Max.)	SIZE (Acres)	VEGETATION COVER
Robust Emergent Marsh 615' - 616.0'	1.0 feet	0.55±	Cattail - *Typha latifolia* Water plantain - *Alisma subcordatum* Fox Sedge - *Carex vulpinoidea* Rice cut-grass - *Leersia oryzoides* Sedges - *Carex lurida, C. crinita*, Bulrush, wool grass - *Scirpus atrovirens, S. cyperinus* Sedge - *Carex comosa, C.intumescens* Smart weed - *Polygonum pennsylvanicum* Rice cutgrass - *Leersia oryzoides* Water plantain - *Alisma subcordatum* Bulrush, wool grass - *Scirpus atrovirens*
Emergent Marsh 616.0' - 616.5'	0.5 feet	0.20±	Soft rush - Juncus effusus Fox sedge - *Carex vulpinoidea* Rice cut-grass - *Leersia oryzoides* Sedge - *Carex lurida, C. crinita* Soft rush - *Juncus effusus*
Transitional 616.5' - 617.0'	N/A	0.03±	Meadow fescue (*Festuca pratensis*) Redtop grass (*Agrostis alba)*

WET is proposing the creation of varied wetland habitat through the excavation of an upland area adjacent to the existing wetland located at the north end of the site on sub-lot 54. The excavation is intended to intercept the seasonally high groundwater. Hydrology will be maintained through the compaction of soils to severely limit the rate of permeability of the constructed wetland and through the discharge of storm water flow. The proposed emergent complex will be excavated in an area of Niagara soils. A saturated soil condition is expected to be maintained for a significant portion of the growing season within the upper reaches of the seasonal high water table.

PROPOSED WETLAND COVER TYPE— WET MEADOW-EMERGENT MARSH
SIZE — 1.74± ACRES

HABITAT DESCRIPTION

The exact location is depicted on the enclosed site map (Appendix B, Sheet 2). Currently the area contains a successional old field plant community. This community occurs on sites that have been cleared or otherwise disturbed and this community has at least a 50% cover of shrubs. Shrubs commonly found in this vegetation community of this parcel include graystem and silky dogwood (*Cornus foemina*, FAC; *C. amomum*, FACW), arrowwood (*Viburnum dentatum*, FAC), nannyberry (*Viburnum lentago*, FACW), tartarian honeysuckle (*Lonicera tatarica*, FACU), and hawthorn (*Crataegus spp.*, FACU). The meadow community is mixed throughout the shrubland and includes timothy grass (*Phleum pratense*, FACU), sweet vernal grass (*Anthoxanthum odoratum*, FACU), hairgrass (*Deschampsia flexuosa*, FACU), perennial ryegrass (*Lolium perenne*, FACU) Canada and gray goldenrod (*Solidago canadensis*, FACU; *S. nemoralis*, FACU), common dandelion (*Taraxacum officinale*, FACU), small white aster (*Aster vimineus*, FAC) and white sweetclover (*Melilotus alba*, FACU).

The Niagara series is deep, nearly level somewhat poorly drained soil formed in glacial lake sediments high in clay and silt content. Typically this soil has a perched water table in the upper part of the subsoil from December through May. Permeability is slow to very slow in the subsoil and available water capacity is moderate to high.

OBJECTIVE

An emergent marsh habitat complex will be created by the excavation of soil material to the necessary ground elevation within the creation area. The construction of the replacement habitat will serve to provide nesting, rearing and forage wading birds, dabbling ducks, amphibians and American woodcock, amphibians and reptiles.

PROPOSAL

A shallow water emergent marsh will be constructed in a non wetland area adjacent to the existing wetland area located on sub-lot 54. (Appendix B, Sheet 1). The constructed mitigation plan would incorporate an irregularly shaped boundary/margin sloping gradually to incorporate an emergent marsh. The margins of the boundary and upland tongues would have a shallow grade (1 vertical to 8 horizontal) connecting to the existing wetland. Using shallow excavation, as indicated on the concept plan map, a constructed depression will create a mixed wet meadow and emergent marsh habitat. Areas of slightly higher elevated shrubland habitat will occupy the upland tongues and opposing ends of the mitigation site.

PROPOSED PROTOCOL FOR ESTABLISHMENT OF EMERGENT MARSH COMPLEX

1) Remove all vegetation with a bulldozer or similar equipment from the mitigation creation area as noted on the mitigation plan map.

2) Strip topsoil from the proposed impact wetland and stockpile for re-use as seedbed material within the mitigation area. If soil is found to contain purple loosestrife and common reed grass plant species, clean topsoil will be used in the designated mitigation area. No stockpiling of topsoil or subsoil will occur within the delineated wetland area.

3) Over-excavate to planned elevation and contour as indicated on the plan profile map to be provided and entitled Queens Grant Subdivision Wetlands Mitigation/Creation Plan Sheet 1 of 2. The final shallow water emergent marsh will be a maximum of 12 inches in depth after the re-application 6 - 8 inches of topsoil material and seed with a wetland vegetation seed mixture (see below). Shrub and tree species along the margin of the tongues will be avoided by maintaining a proper construction distance.

4) Maintain slopes of 1:8 (V:H) or flatter within the area of moist-soil wet meadow construction. These areas are to be re-seeded with suitable mixture.

5) After planned elevations have been obtained, re-apply a minimum of 6-8 inches of topsoil over the entire excavated shallow water marsh area for the purpose of holding the seed mixture.

6) Seeding:

A. Prepare seeding area by scarifying soil with a York rake or similar equipment.

B. No fertilizer or lime will be necessary.

C. Seeding should be done before June 15 or after September 15 unless irrigated.

D. Wetland Hummock seed mixture to be applied within the emergent marsh area at a rate of 3.25 lbs/acre:

SPECIES	
Fox sedge	(*Carex vulpinoidea*)
Rice cut-grass	(*Leersia oryzoides*)
Sedge	(*Carex lurida, C. crinita*)
Soft rush	(*Juncus effusus*)
Bulrush, wool grass	(*Scirpus atrovirens S. cyperinus*)
Sedge	(*Carex comosa, C. intumescens*)

E. Robust Emergent Marsh Wetland seed mixture:

SPECIES	SEEDING RATE	APPLICATION AREA
Smartweed (*Polygonum pennsylvanicum*)	15 lbs/acre	All depths at or below anticipated high water level.

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Japanese millet (*Echinochloa crusgalli*)	20-30 lbs/acre	All depths.

F. Non-wetland/Transitional Zone Seeding Mixture:

SPECIES	SEEDING RATE	APPLICATION AREA
Meadow fescue (*Festuca pratensis*)	20 lbs/acre	Upland/marginally wet soils.
Redtop grass (*Agrostis alba*)	3 lbs/acre	"

Purple loosestrife is an exotic, invasive species which can quickly become established in wetland areas. This undesirable species must be removed, either by hand pulling of young plants, by applying a commercial herbicide or through biological control. The broad-leaved herbicide which could be used is Rodeo (active ingredient, glyphosphate 53.5%). This herbicide is approved for use in or near fresh water wetlands. According to the manufacturer, Rodeo is non-volatile, non-toxic to animals, does not bioaccumulate in the food chain, and produces no residual soil activity.

Addition attempts at controlling purple loosestrife is through the use of biological methods. Currently the NYSDEC is experimenting with the use of two species of beetles, *Galerucella calmeriensis* and *G. pusilla*. The beetles are specific to purple loosestrife and were first introduced to North America in 1992. Currently the beetle has been introduced to several locations in the Tonawanda Creek watershed by the NYSDEC. *Galerucella calmeriensis* and *G. pusilla* have very similar life habitats. Adults emerge in the spring from hibernation in leaf litter and feed on the new leaves and shoots of purple loosestrife. The egg laying phase lasts approximately two months in the spring and eggs are laid in clusters of two to ten daily on the plant stem and in the leaf axils. A female can lay 300-400 eggs per year, and the adult lives 8 - 10 weeks. Larvae feed on bud, leaf, and stem tissue. Pupation takes place in the soil or ground cover near the plants. From egg to adult takes about 6 weeks, and there is generally one generation per year.

C. MONITORING SCHEDULE

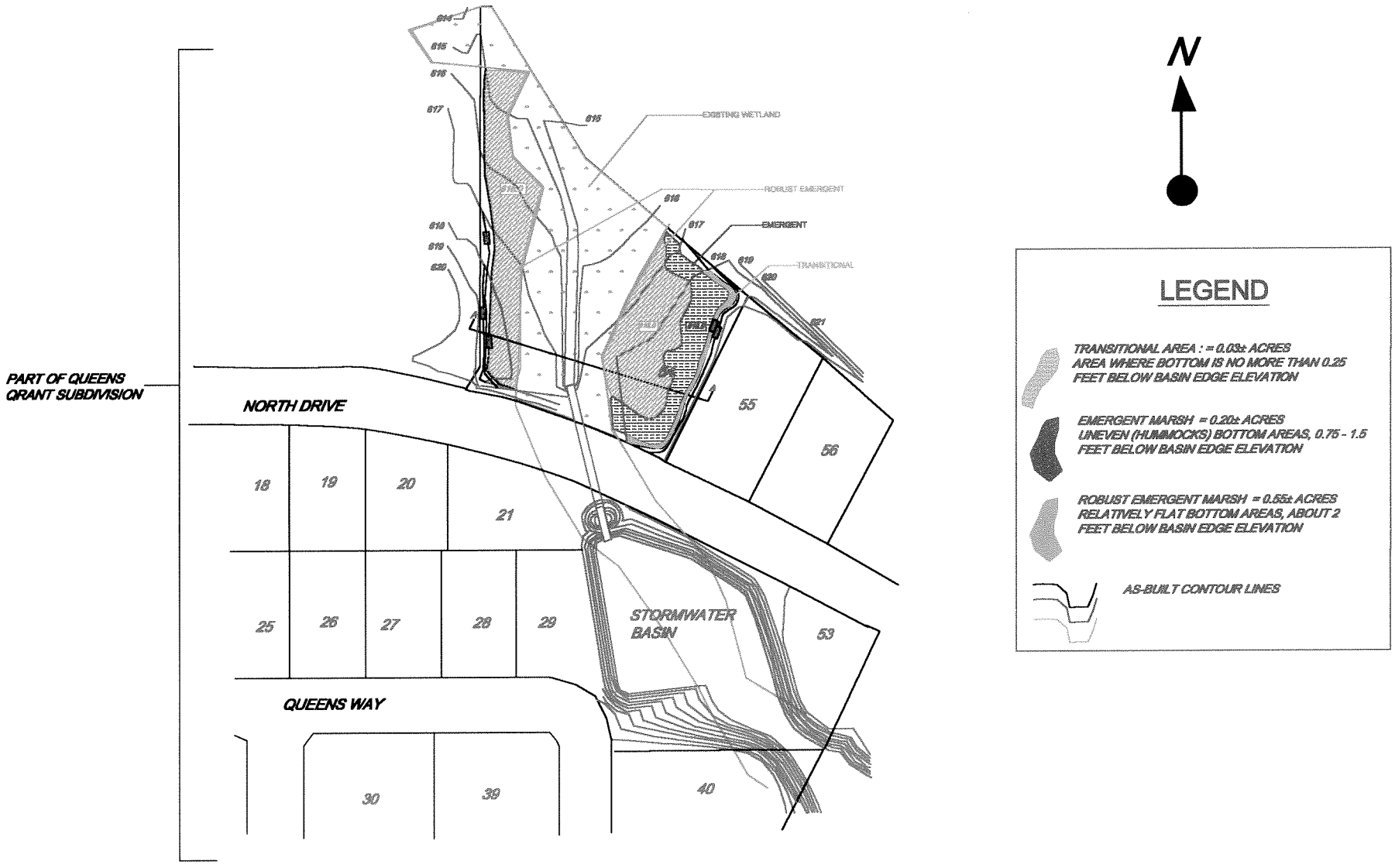
Monitoring of the mitigation areas will be conducted for five years following the first full growth cycle. During the five year period, WET is proposing to assess the success of the mitigation creation during the second and fifth growing seasons in accordance with accepted USACE procedures. The purpose of the monitoring will be to determine if the plant community in the mitigation area has become dominated by FACW and obligate vegetation species. A per cent areal cover estimate of the herbaceous layer will be conducted using a random quadrat test to determine if a dominant FACW - OBL species cover has developed.

Within the mitigation creation area, soil and hydrology will also be monitored to determine if soil saturation/inundation conditions occur for a duration long enough to promote the development of hydric soil characteristics and hydrophytic vegetation. The soils should exhibit a higher degree of saturation within the upper 12 inches of the A-B Horizon. Ponding and saturation to the surface should be evident for a longer duration during the growing season.

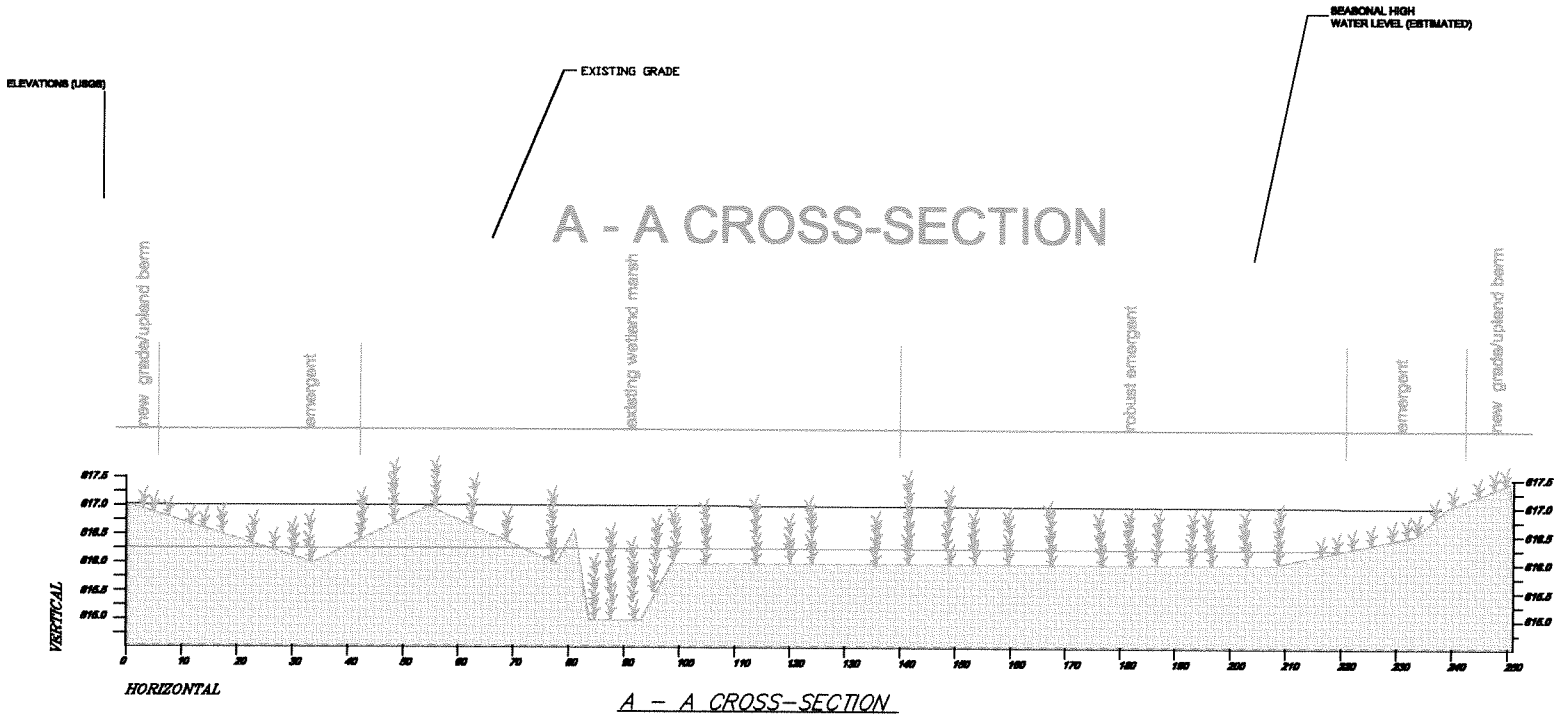
In addition to vegetation and hydrology information, each monitoring report will contain a summary of wildlife activity in or adjacent to the mitigation wetland areas. Fixed station mitigation site photographs will accompany each report. Monitoring will be conducted in mid to late summer of the aforementioned report years.

Measures will be taken by the client to control the spread of purple loosestrife in the mitigation areas. WET will conduct a site visit each spring during the five year monitoring period to identify young plants for elimination. This undesirable species will be removed either by hand pulling of young plants or by applying a commercial herbicide such as Rodeo (active ingredient, glyphosphate 53.5%). This herbicide is approved for use in or near fresh water wetlands.

Addition controls of purple loosestrife will be attempted through the use of biological methods. The NYSDEC will be contacted concerning the possible infestation of the *Galerucella calmeriensis* and *G. pusilla* beetles.



SCALE 1" = 50'	QUEENS GRANT SUBDIVISION WETLAND MITIGATION/CREATION PLAN	TOWN OF WEST SENECA ERIE COUNTY, NEW YORK	Wilson Environmental Technologies, Inc 1331 N. Forest Rd. Suite 250, Williamsville, NY 14221 (716) 688-6900 Fax (716) 688-5884 JOB NO. 330.005.01 AUGUST 2001 SHEET 1 OF 2



A - A CROSS-SECTION

SCALE = AS SHOWN

CONSTRUCTION NOTES:

1. ALL EXCAVATED AREAS TO BE OVEREXCAVATED BY 6" - 8" TO BE REPLACED WITH TOPSOIL.
2. FINAL GRADES SHALL BE IRREGULAR AS DIRECTED BY WETLANDS CONSULTANT.
3. WET MEADOW/EMERGENT MARSH TO BE SEEDED WITH WETLAND HUMMOCK SEED MIXTURE AT A RATE OF 3.25 LBS/AC.
4. ALL APPROPRIATE EROSION CONTROLL METHODS TO BE APPLIED DURING CONSTRUCTION.

LEGEND

ROBUST EMERGENT ELEV. – 615.0' – 616.0'
AREA = 0.55± ACRES

EMERGENT MARSH ELEV. – 616.25' – 616.50'
AREA = 0.20± ACRES

TRANSITIONAL ELEVATION. – 616.50' – 617.0'
AREA = 0.03± ACRES

TOTAL MITIGATION = 0.78± ACRES

CROSS SECTIONS	QUEENS GRANT SUBDIVISION WETLANDS MITIGATION / CREATION PLAN	TOWN OF WEST SENECA ERIE COUNTY, NEW YORK	Wilson Environmental Technologies, Inc. 1331 N. Forest Rd. Suite 250, Williamsville, NY 14221 (716) 688-6900 Fax (716) 688-5884 JOB NO. 330.005.01 | AUGUST, 2001 | SHEET 2 OF 2