Book 2011 Page 3224
Document 2011 3224 Type 06 018 Pages 17
Date 10/07/2011 Time 2:26:38PM
Rec Amt $87.00

DEBORAH L PEYTON, RECORDER/REGISTRAR
DELAWARE COUNTY IOWA

Prepared by/Return to: Nathan P. Kass, TeKippe Engineering, P.C.
1919 – 210th Street, P.O. Box 357, Manchester, Iowa 52057, Ph. (563)927-2060

WETLANDS MITIGATION PLAN
FOR
WEST MARION STREET EXTENSION
MANCHESTER, IOWA
OCTOBER 2011
PROJECT No. 102032.MS

Mayor	-	Milt Kramer
Council	-	Tony Broghammer
	-	Darrell Hanson
	-	Jeff Ogden
	-	Dan Stelken
	-	Ron Struble
City Manager	-	Timothy J. Vick
City Clerk	-	Erin Rempe

Across Lot B and Lot 2
of Karusco South 2nd Subdivision,
Sections 31 & 32 – T89N – R5W, City of
Manchester, Delaware County, Iowa

LICENSED PROFESSIONAL ENGINEER
NATHAN
P. KASS
18659
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Nathan P. Kass 10/6/2011

Nathan P. Kass, P.E. Date
License Number 18659
My license renewal date is December 31, 2011.
Pages covered by this seal: All Sheets

State of Iowa)
ss.
County of Delaware)

NOTARIAL SEAL IOWA
CHRISTINA RICHTER
Commission Number 723809
My Commission Expires
8-5-12

Subscribed and sworn to before me by Nathan P. Kass this 6th day of October, 2011.

Christina Richter

Christina Richter, Notary Public

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I. SITE DESCRIPTION

The site consists of a roadway construction project through existing agricultural row crops in Section 31, Township 89 North, Range 5 West, in the City of Manchester, Delaware County, Iowa. An existing waterway flows through the site. Flow in the channel is seasonal, and fed by both surface runoff and subsurface tiling upstream in the watershed. A wetlands area has been delineated that will be partially affected by construction, and potentially affected by future development. See the Site Map in A.01 of the Appendix.

II. OBJECTIVES

The project will relocate and restore wetlands by reestablishing a channel and typical vegetation at the bottom of the waterway. This vegetation will help the water quality because the channel will be longer and flatter than the previous channel, which will slow the water down allowing sediment to settle out and water to infiltrate into the soils reducing other pollutants to filter out.

III. SITE SELECTION

The site was selected due to the availability of hydric soils on the site, level terrain, and existing location of the water way as it entered the development site. The waterway entered the site near the northwest corner and ran southerly adjacent to the west property line before meandering across the site. The existing wetlands occupied a slough that bisected the property diagonally from northwest to southeast. Extending the channel and replacing the channel bed with hydric soils available on site allowed for establishment of the necessary vegetation. This location allowed for maximum development potential elsewhere on the site. The proposed channel has capacity to carry extreme storm events yet maintain the ecologic and environmental benefit features of wetlands due to its length and gradient. The natural water available from the existing waterway and several field tile outlets will allow for the wetland vegetation to be self-sustaining and defined for preservation of the mitigated site.

IV. SITE PROTECTION INSTRUMENT

The channel itself will be defined as a drainage easement. The easement is to be perpetual with all heirs and assigns so that it is maintained with the property regardless of ownership. This ensures that the channel is not restricted artificially and will be maintained as such. The easement will be recorded at the Delaware County Recorder's Office. The City of Manchester is responsible for maintenance.

V. BASELINE INFORMATION

The existing vegetation found (reed canary grass) along with hydric soils (Clyde-Floyd complex) indicated that wetlands were indeed supported and present. The site was tiled extensively which allows for agricultural tillage and row cropping. See the site map of the delineated wetlands and proposed channel/mitigation location in A.01 of the appendix and the soils map in A.02 of the appendix.

VI. DETERMINATION OF CREDITS

The existing wetlands on the site were delineated and determined to occupy 0.895 acre. The proposed road construction was estimated to disturb 0.255 acre of this. However, future construction may disturb some or all of the remainder. At a ratio of 1.5:1, 1.343 acres is required to mitigate disturbance of all of the established wetlands, but only 0.383 acre to mitigate what is to be disturbed with the project. The proposed channel will support 0.870 acre of wetlands. Since not all of the established wetlands are scheduled to be disturbed at this time, 0.487 acre of additional wetlands will be established in the channel and could be claimed as credits towards the remaining wetlands, leaving only an additional 0.473 acres required to mitigate the entire wetlands area. This additional disturbance is not proposed at this time and is left for the property owner to mitigate at his/her discretion. The current owner has been informed that he is responsible for permitting said mitigation if the remaining wetlands is disturbed.

VII. MITIGATION WORK PLAN

Detailed plans and specifications are included in the construction plans, Iowa SUDAS, and supplemental specifications. The general plan is to seed the area with wetlands species and use rolled erosion control product to protect the seed until established, as well as protect the soils from erosion until the vegetation is established. Additional information includes control of invasive and non-native species by mowing and spraying. Reseeding shall be completed as necessary. Seed mixture for wetlands forbs, grasses, rushes, and sedges is shown in A.03 of the Appendix.

VIII. MAINTENANCE PLAN

The site will be visually inspected approximately every three months during the growing season, or after extreme storm events as appropriate. Mowing and/or spraying requirements will be evaluated and performed as necessary. Excessive siltation will be removed as necessary to allow for healthy growth of desirable vegetation.

IX. PERFORMANCE STANDARDS

Establishment of vegetation will be the main performance criteria. Adequate cover density and growth of the vegetation to prevent erosion and promote the natural filtration of the water is the goal.

X. MONITORING REQUIREMENTS

The density of the desirable vegetation will be monitored not less than annually for a minimum of five years. An annual report will be provided by December of each year to the Rock Island District Office on the standard US Army Corps of Engineers reporting form found in A.04 of the Appendix.

XI. LONG-TERM MANAGEMENT PLAN

The wetlands will continue to be visually monitored to evaluate the need for control of invasive and non-native species. Maintenance of the channel is critical for the performance of upstream storm water management facilities. Thus the City of Manchester inherently is motivated to maintain these facilities and mitigation in peak condition.

XII. ADAPTIVE MANAGEMENT PLAN

The City of Manchester will be responsible for continued monitoring of the site. The City currently utilizes Iowa SUDAS and best management practices that will provide guidance for managing unforeseen issues.

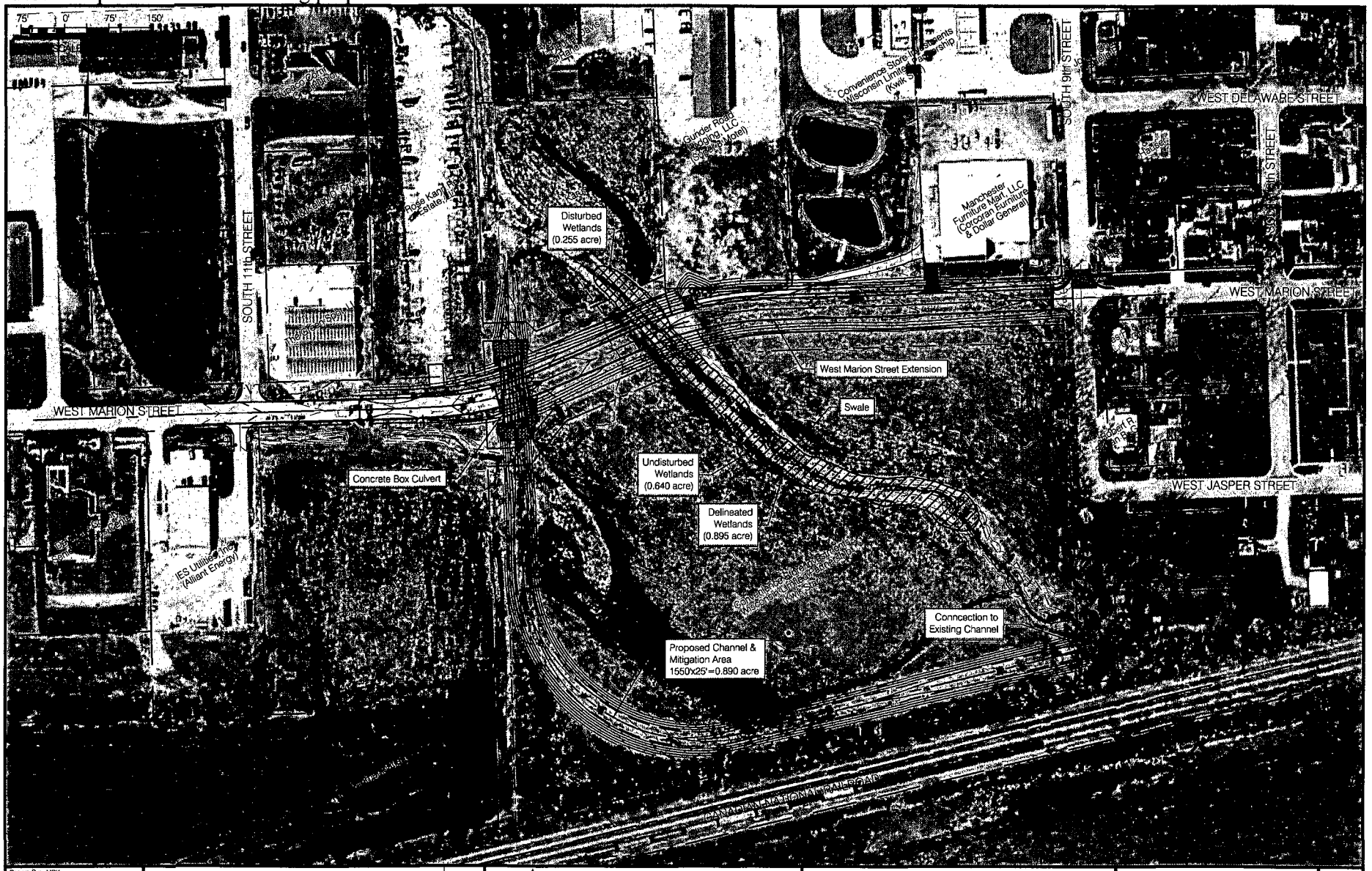
XIII. FINANCIAL ASSURANCES

The City of Manchester has available bonding capacity as required by law that will allow for continued maintenance. The local storm water ordinance also may be a source of funding.

APPENDIX 1

Site Map

Note: map reduced for recording purposes - scale shown not accurate

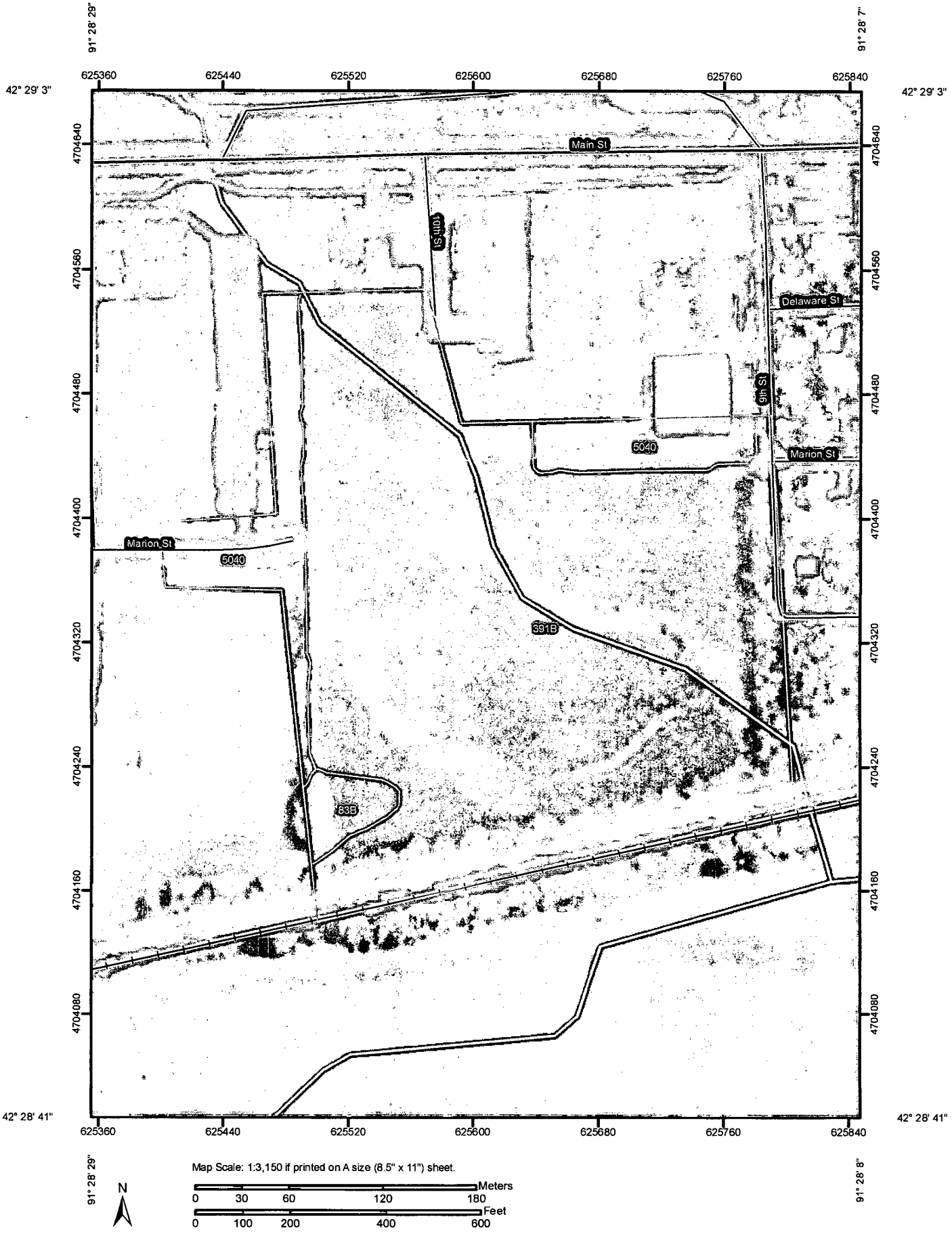


Drawn By: NPK Checked By: — Plot Date: September 29, 2011 Drawing Version: FINAL	File Name: M:\Projects\2010\102032MS\ Dwg 2011\ 102032ms-Plans-1.dwg	CITY OF MANCHESTER TEKIPPE ENGINEERING, P.C. *Serving Eastern Iowa Since 1980* West Union - Manchester - Cedar Rapids	WEST MARION STREET EXTENSION Project No. 102032.MS	SITE MAP	SHEET NO. A.01

APPENDIX 2

Soils Map and Information

Soil Map—Delaware County, Iowa
(102032.MS - W Marion St Extension)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:3,150 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:15,840.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 15N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Delaware County, Iowa
Survey Area Data: Version 16, Apr 15, 2009

Date(s) aerial images were photographed: 7/7/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Delaware County, Iowa (IA055)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
83B	Kenyon loam, 2 to 5 percent slopes	0.6	2.2%
391B	Clyde-Floyd complex, 1 to 4 percent slopes	21.8	85.2%
5040	Orthents, loamy	3.2	12.6%
Totals for Area of Interest		**25.6**	**100.0%**

APPENDIX 3

Wetlands Seed Mixture

11.50 LBS. PLS
14.32 LBS. BULK

THURN SEEDING WETLAND SEEDING (1 ACRE)
BY ION EXCHANGE

7-11-11

COMMON NAME	*SCIENTIFIC NAME*	*LOT #*	*TEST DATE*	*PLS*	*PURITY*	*INERT*	*OTHER*	*WEED*	*NOXIOUS*	*TOTAL GERM OR TZ*	*PLS OZ/LB*	*BULK OZ/LB*
WETLAND FORBS												
WATER PLANTAIN	ALISMA PLANTIAGO-AQUATICA	R-591-A	5/23/11	**92.44**	95.30	0.10	0.00	4.60	1 BARNYARD GRASS	0.97	16.00	17.31
SWAMP MILKWEED	ASCLEPIAS INCARNATA	ASCINC40L77	12/31/11	**77.81**	90.48	9.51	0.00	0.01	NONE	0.86	8.00	10.28
NEW ENGLAND ASTER	ASTER NOVAE-ANGLIAE	ROSASTNOV-P1-Y	2/23/11	**77.06**	81.12	18.87	0.01	0.00	NONE	0.95	8.00	10.38
SHOWY TICK TREFOIL	BIDENS CERNUA	HFBIDCER-N1-YEL	12/17/10	**77.49**	85.15	9.69	5.12	0.04	NONE	0.91	5.00	6.45
BONESET	EUPATORIUM PERFOLIATUM	SLEUPPER-P1	3/2/11	**89.84**	97.65	2.35	0.00	0.00	NONE	0.92	4.00	4.45
SNEEZEWEED	HELENIUM AUTUMNALE	HELAUT30L62	1/10/11	**40.25**	54.39	45.61	0.00	0.00	NONE	0.74	7.00	17.39
ARROWHEAD	SAGITTARIA GRAMINEA	HFSAGLAT-N1	12/1/10	**87.63**	96.30	3.56	0.14	0.00	NONE	0.91	8.00	9.13
BLUE VERVAIN	VERBENA HASTATA	IONVERHAS-P1-Y	3/8/11	**86.91**	98.76	1.23	0.00	0.01	NONE	0.88	5.00	5.75
WETLAND GRASSES, RUSHES & SEDGES												
BIG BLUESTEM	ANDROPOGON GERARDII	ANDGER-ION-P1-Y	5/9/11	**75.50**	77.83	22.17	0.00	0.00	NONE	0.97	32.00	42.39
BARNYARD GRASS	ECHINOCHLOA MURICATA	ECHMUR01-021D	5/11/11	**88.62**	96.33	0.90	2.77	0.00	NONE	0.92	16.00	18.05
BLUE JOINT GRASS	CALAMAGROSTIS CANADENSIS	P.S.150	10/15/10	**70.73**	77.73	22.27	0.00	0.00	NONE	0.91	16.00	22.62
FOX SEDGE	CAREX VULPINOIDEA	CARVUL01-08TL	5/1/11	**72.61**	96.81	3.18	0.01	0.00	NONE	0.75	8.00	11.02
SPIKE RUSH	ELEOCHARIS PALUSTRIS	EP-110	10/15/10	**95.87**	99.86	0.14	0.00	0.00	NONE	0.96	8.00	8.35
RICE CUT GRASS	LEERSIA ORYZOIDES	WILEEORY-N1	4/7/11	**91.12**	95.92	4.08	0.00	0.00	NONE	0.95	16.00	17.56
SWITCHGRASS	PANICUM VIRGATUM	K2000-1	8/1/10	**96.95**	99.95	0.05	0.00	0.00	NONE	0.97	8.00	8.25
DARK GREEN BULRUSH	SCIRPUS ATROVIRENS	SCIATR32K56	2/21/11	**94.31**	99.27	0.73	0.00	0.00	NONE	0.95	8.00	8.48
SOFTSTEM BULRUSH	SCIRPUS VALIDUS	SV-108	10/3/10	**97.89**	99.89	0.01	0.10	0.00	NONE	0.98	16.00	11.24

TOTAL LBS. PLS	11.50
TOTAL LBS. BULK	14.32

APPENDIX 4

US Army Corps of Engineers Report Forms

(standard forms - not included)

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, ROCK ISLAND DISTRICT
PO BOX 2004 CLOCK TOWER BUILDING
ROCK ISLAND, ILLINOIS 61204-2004

REPLY TO
ATTENTION OF

January 28, 2011

Operations Division

SUBJECT: CEMVR-OD-P-2010-1458

Mr. Timothy J. Vick
City Manager
City of Manchester
208 East Main Street
Manchester, Iowa 52057

Dear Mr. Vick:

Thank you for your patience as we completed review of the permit application and plans, submitted by TeKippe Engineering, P.C., for the proposed West Marion Street Extension in Section 31, Township 89 North, Range 5 West, Delaware County, Iowa.

- This project is covered under Nationwide Permit 14, 'Linear Transportation Projects', as described in the enclosed Fact Sheet No. 6(IA), provided you meet the permit conditions for the nationwide permits which are also included in the Fact Sheet. According to the plans, 0.255 acre of wetland will be directly impacted by the project. 0.383 acre of onsite wetland mitigation will be applied as credit for the West Marion Street Extension Project.

The Iowa Department of Natural Resources (IDNR) also issued Section 401 Water Quality Certification for this nationwide permit.

The Corps has also made a determination of no impact on federally threatened and endangered species.

The decision regarding this action is based on information found in the administrative record which documents the District's decision-making process, the basis for the decision, and the final decision.

You are encouraged to conduct your construction activities during a period of low flow. You are required to seed all disturbed areas with native grasses and to implement appropriate measures to insure that sediments are not introduced into waters of the United States during construction of this project.

This verification is valid until the nationwide permits are modified, reissued, or revoked. All of the existing nationwide permits are scheduled to be modified, reissued, or revoked prior to March 18, 2012. It is incumbent upon you to remain informed of changes to the nationwide permits. We will issue a public notice when the nationwide permits are reissued. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant nationwide permit is modified or revoked, you will have twelve (12) months from the date of the modification or revocation of the nationwide permit to complete the activity under the present terms and conditions of this nationwide permit, or until March 18, 2013.

If the activity is not commenced or under contract within this period, or the project specifications have changed, you must immediately notify this office to determine the need for further approval or re-verification.

o A total of 0.895 acre of wetland was delineated on this property. This is a reed canarygrass wetland formed in an agricultural waterway, which was previously a tributary stream. At the downstream (southeast end) of the wetland, the waterway becomes a defined stream channel which flows to the Maquoketa River. There is approximately 350 feet of stream channel from the wetland to the east property line. The stream has an average width of approximately 8 feet measured at Ordinary High Water. The area of stream habitat is 0.064 acre. The 0.895 acre of wetland and the 350 feet of stream channel are determined to be jurisdictional Waters of the United States under Section 404 of the Clean Water Act (33 U.S.C. 1344).

With this letter is an approved jurisdictional determination for your project. If you object to this jurisdictional determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a 'Notification of Administrative Appeal Options and Process' (NAP) Fact Sheet, and 'Request for Appeal' (RFA) form. To request an appeal, submit the completed RFA form to the following address:

James B. Wiseman, Jr.
Administrative Appeals Review Officer
U.S. Army Corps of Engineers
Mississippi Valley Division
ATTN: CEMVD-PD-KM
Post Office Box 80 (1400 Walnut Street)
Vicksburg, Mississippi 39181-0080
Telephone: 601/634-5820
Fax: 601/634-5816

In order for an RFA to be accepted, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by March 28, 2011.

It is not necessary to submit an RFA form to the Division office if you do not object to the jurisdictional determination in this letter.

You should have all required federal, state, and local approvals prior to commencing work.

You are required to complete and return the enclosed "Completed Work Certification" form upon completion of this project, in accordance with General Condition No. 26 of the enclosed Fact Sheet.

o As part of the project, a drainage channel will be constructed along the west and south sides of the property. The drainage channel will be constructed in a manner, with flat slopes, to provide hydrology and will be seeded with a commercial wetland seed mix. The plan is for the drainage channel to establish 0.870 acre of wetland. The mitigation ratio will be 1½ (mitigation) to 1 (impact). Therefore, 0.383 acre of the wetland will be applied as mitigation credit for the West Marion Street Extension Project. Since the wetland impacts, as a result of this project, are under 0.5 acre, the project is able to be authorized under the nationwide permit program.

As stated in the letter with the application, it is anticipated that the property owner south of the proposed West Marion Street will develop the lot resulting in the loss of the remaining 0.64 acre of wetlands. We have agreed to the proposal that the remaining 0.487 acre (0.870 acre – 0.383 acre) of the new wetlands in the proposed drainage channel be applied as mitigation credit for the anticipated development project. The minimum mitigation ratio will be 1½ (mitigation) to 1 (impact). Total mitigation required for the loss of 0.64 acre will be 0.96 acre. An additional 0.497 acre of wetland will be established in the southwest part of the property contiguous with the drainage channel providing 0.984 acre of wetland mitigation for the development project. This additional wetland will be established at the time that the existing wetlands are proposed to be filled. A copy of this authorization letter should be provided to the property owner. They will need to submit a separate permit application for the proposed development project. A copy of this authorization letter should be included with the permit application as evidence of this agreement. The Regulatory Project Manager, reviewing the permit application, will then locate the records in our database.

The 350 feet of stream channel, downstream of the wetland, has not been addressed in the above mitigation plan. Either, this reach of stream must remain undisturbed by the development project, or additional mitigation will need to be provided. The stream channel includes fringe wetland, and the updated US Fish and Wildlife Service National Wetland Inventory classifies this stream channel as Palustrine, Emergent, Wetland. The stream channel has an average width of 8 feet measured at Ordinary High Water. The stream/wetland habitat area is 350' x 8' = 0.064 acre. Using a mitigation ratio of 1½ to 1, an additional 0.096 acre of mitigation wetland will be needed.

Project	**Stream/Wetland Impact**	**Wetland Mitigation**
Street Project-Wetland	0.255 ac	0.383 ac. (current plan)
Development Project-Wetland	0.640 ac	0.487 ac. (current plan)
Development Project – Add. Wetland		0.497 ac. (future plan)
Development Project-Stream	0.064 ac	0.096 ac. (not planned)
TOTAL	0.959 ac.	1.439 ac.

The development project will have stream/wetland impacts over 0.5 acre, which exceeds the nationwide permit program threshold. Therefore, their permit application will be processed for a Department of the Army Individual Permit.

o As a result of implementation of the Mitigation Rule (Compensatory Mitigation For Losses of Aquatic Resources, 33 CFR Par 332) dated April 10, 2008, a final mitigation plan will be required to be submitted to the Corps of Engineers, Rock Island District, to my attention; and to the Iowa Department of Natural Resources, to Ms. Christine Schwake. This plan must address all applicable sections as outlined in the enclosed document, "Stream/Wetland Mitigation Plan Requirements". If possible, this plan should be completed and submitted to this office and the IDNR prior to start of construction. If this is not possible, please submit the plan as soon as possible thereafter. We will review the plan to be sure it meets our requirements. Upon, approval by this office and the IDNR, the mitigation plan, drawings, and this authorization letter, will need to be recorded with the Delaware County Recorder in accordance with Regional Condition 2, stated in Fact Sheet No. 6(IA).

A minimum of 5 years of monitoring of the wetland mitigation area will be required. This shall include the entire 0.870 acre of wetland in the drainage channel. Annual reports are to be submitted to this office and to the IDNR by December 31 of each year. Enclosed is information regarding what is to be included in the annual monitoring reports. A printout of a report template is enclosed. The electronic version of this template can be downloaded from our website: http://www2.mvr.usace.army.mil/Regulatory/

It is not required to use the template. A report in a similar format would be acceptable.

The Rock Island District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete the enclosed postage-paid postcard and mail it to this office, or go to our Customer Service Survey found on our web site at http://per2.nwp.usace.army.mil/survey.html. (Be sure to select "Rock Island District" under the area entitled: Which Corps office did you deal with?)

Should you have any questions, please contact me by letter, telephone 309/794-5377, or email marlyn.w.schafer@usace.army.mil

Sincerely,

Marlyn W. Schafer

Marlyn Schafer
Project Manager
Regulatory Branch

When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

_____ _____

Transferee Date

Enclosures

Copies Furnished (w/enclosures):

Mr. Nathan P. Kass, P.E. & L.S.I.
Project Manager
TeKippe Engineering, P.C.
1919 – 210th Street
Post Office Box 357
Manchester, Iowa 52057