

**CITY OF WEST DES MOINES
PLAN AND ZONING COMMISSION COMMUNICATION**

Meeting Date: June 19, 2017

Item: Great Western Trail Realignment Site Plan, Southeast corner of Iowa Highway 5 and Veterans Parkway- Site Plan to reroute a bike trail - Knapp Properties –SP-003478-2017

Requested Action: Approval of Site Plan

Case Advisor: J. Bradley Munford 

Applicant's Request: Aimee Staudt with Knapp Properties, is requesting approval of a Site Plan to allow construction of a bike trail and associated site improvements for a portion of The Great Western Trail that is within the Southwest Commerce Park.

History: This area was annexed into the city on June 29, 1998 as a part of the Pine Avenue/Orilla Road Annexation. The City Council consistency zoned the property to Support Commercial in 2006.

City Council Subcommittee: This item was presented at the May 30, 2017 Development and Planning City Council Subcommittee. The Subcommittee was supportive of the request.

Staff Review and Comment: This request was distributed to other City departments and other agencies for their review and comment. There are no outstanding issues. Staff would note the following:

- **Plat of Survey:** This application comes forward in conjunction with a Plat-of-Survey (POS-0034-2017) that will be heard by the City Council on June 26th. The survey will allow Knapp Properties Inc. and Polk County Conservation to exchange ownership of property. This exchange will permit a section on the Great Western Trail to be rerouted so that it will swing north and hug the Highway 5 and Veterans Parkway Right-of-Ways, creating a contiguous parcel for future development.
- **Phased demolition of the existing trail:** As a part of this proposal, approximately 75 feet of the existing trail will be demolished from each end to insure trail users will not stray onto the old trail. The remaining portion of the trail will be demolished with the development of the rest of the Knapp property. Staff is recommending a condition of approval that the applicant shall install and maintain all necessary soil erosion measures.

Comprehensive Plan Consistency: The project has been reviewed for consistency with the Comprehensive Plan. Based upon that review, a finding has been made that the proposed project is consistent with the Comprehensive Plan in that the project is consistent with all of the goals and policies of the Comprehensive Plan and the land use map of the Comprehensive Plan.

Findings: This proposed project was distributed to various city departments for review and comment. Based upon that review, the following findings have been made on the proposed project:

1. The proposed development and use is consistent with the West Des Moines Comprehensive Plan in that the project has been reviewed for consistency with the Comprehensive Plan. Based upon that review, a finding has been made that the proposed project is consistent with the Comprehensive Plan in that the project is consistent with all of the goals and policies of the Comprehensive Plan.
2. The proposed development and use does assure compatibility of property uses within the zone and general area in that this project was reviewed by various City Departments for compliance with the Zoning Ordinance.
3. All applicable standards and conditions have been imposed which protects the public health, safety and welfare in that this project was reviewed by various City Departments and public agencies for compliance with the various state and local regulations. Based upon that review a finding is made that the project has been adequately conditioned to protect the health, welfare and safety of the community.

4. There is adequate on-site and off-site public infrastructure to support the proposed development in that this project was reviewed by various public agencies and City Departments and public utilities to ensure that either the petitioner will construct or the project has been conditioned to construct adequate public infrastructure to serve the development.
5. The proposed development and use has met the requirements contained in the City Code in that this project was reviewed by various City Departments and the project has complied with or has been conditioned to comply with all City Code requirements.
6. The proposed development and use is in keeping with the scale and nature of the surrounding neighborhood in that the proposed project is consistent with the zoning designation and Comprehensive Plan which designates this site as suitable for development such as that proposed by this project.

Staff Recommendation And Conditions Of Approval: Based upon the preceding review and a finding of consistency with the goals and policies of the Comprehensive Plan, staff recommends the Plan and Zoning Commission adopt a resolution recommending the City Council approve the Site Plan to allow the rerouting of a bike trail and associated site improvements within the Southwest Commerce Park, subject to the applicant meeting all City Code requirements and the following:

1. The applicant shall install and maintain all necessary soil erosion measures for any disturbed areas.

Applicant: Knapp Properties
Aimee Staudt
5000 Westown Parkway Suite 400
West Des Moines, Iowa 50266
Aimee.Staudt@Knappproperties.com

Applicant Engineer: Snyder and Associates, Inc.
Richard Voelker
2727 SW Snyder Blvd
Ankeny, Iowa 50023
Rmvoelker@snyder-associates.com

ATTACHMENTS:
Attachment A - Plan and Zoning Commission Resolution
Exhibit A - Conditions of Approval
Attachment B - Location Map
Attachment C - Site Plan

ATTACHMENT A

RESOLUTION NO. -PZC-17-059

A RESOLUTION OF THE PLAN AND ZONING COMMISSION OF THE CITY OF WEST DES MOINES, APPROVING THE GREAT WESTERN TRAIL REALIGNMENT SITE PLAN (SP-003478-2017) FOR THE PURPOSE OF REROUTING A BIKE TRIAL.

WHEREAS, pursuant to the provisions of Title 9, Chapter 1 et seq. of the West Des Moines Municipal Code, the applicant, Knapp Properties has requested approval of a Site Plan for that approximately 15.1 acre site located at the Southeast corner of Iowa Highway 5 and Veterans Parkway to reroute a bike trail;

WHEREAS, studies and investigations were made, and staff reports and recommendations were submitted which is made a part of this record and herein incorporated by reference;

WHEREAS, on June 19, 2017, this Commission held a duly-noticed public meeting to consider the applications for the Site Plan;

NOW, THEREFORE, THE PLAN AND ZONING COMMISSION OF THE CITY OF WEST DES MOINES DOES RESOLVE AS FOLLOWS:

SECTION 1. The findings, for approval, in the staff report or as amended orally at the Plan and Zoning Commission meeting are adopted.

SECTION 2. The Site Plan (SP-003478-2017) permit to allow rerouting of a bike trail located at the Southeast corner of Iowa Highway 5 and Veterans Parkway is hereby approved by the Plan and Zoning Commission, subject to compliance with all the conditions in the staff report including conditions added at the meeting and attached hereto as Exhibit "A". Violation of any such conditions shall be grounds for revocation of the permit, as well as any other remedy which is available to the City.

PASSED AND ADOPTED on June 19, 2017.

Craig Erickson, Chair
Plan and Zoning Commission

ATTEST:

Recording Secretary

I HEREBY CERTIFY that the foregoing resolution was duly adopted by the Plan and Zoning Commission of the City of West Des Moines, Iowa, at a regular meeting held on June 19, 2017, by the following vote:

AYES:
NAYS:
ABSTENTIONS:
ABSENT:

ATTEST:

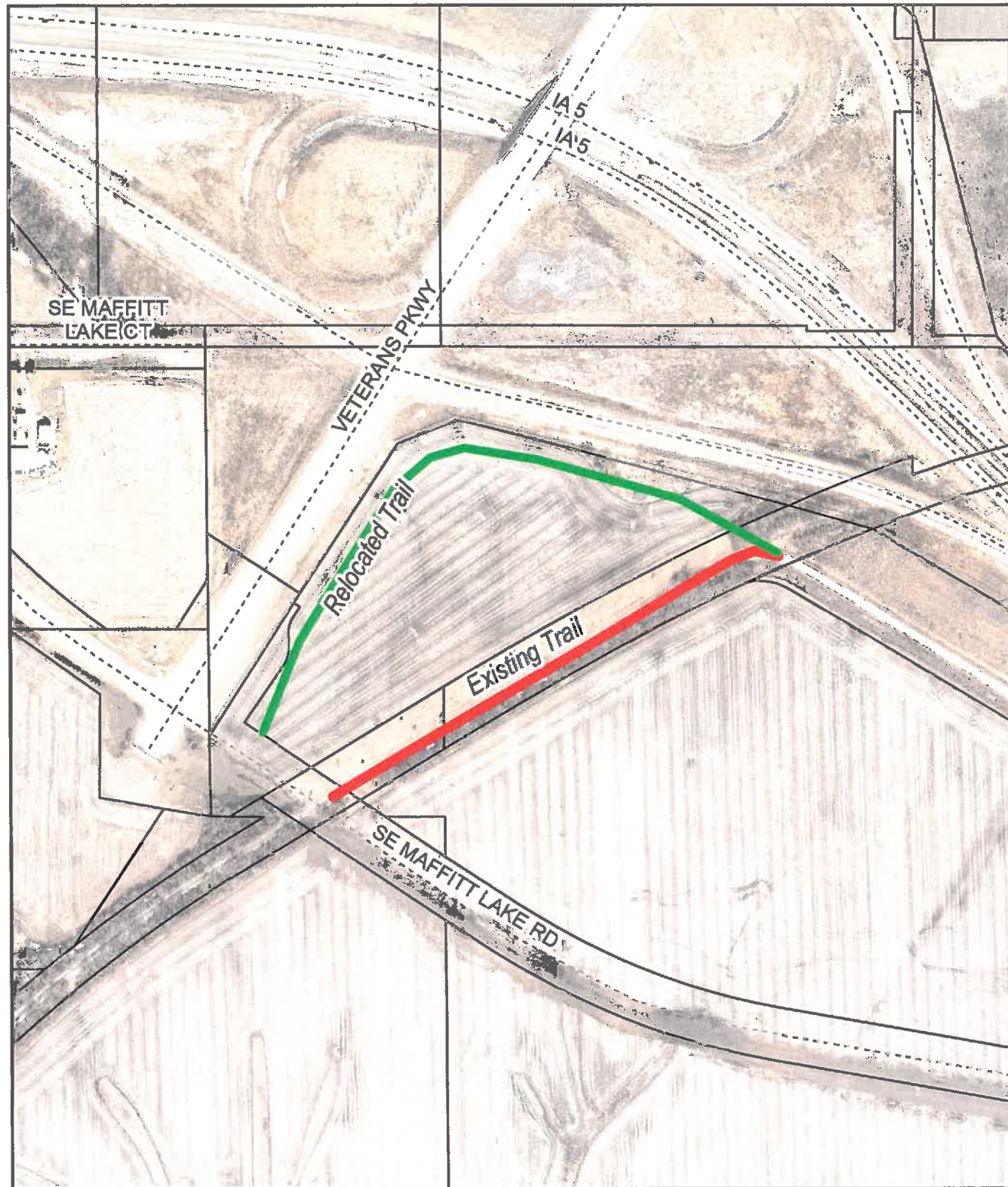
Recording Secretary

EXHIBIT A

**EXHIBIT A
CONDITIONS OF APPROVAL**

1. The applicant shall install and maintain all necessary soil erosion measures for any disturbed areas.

ATTACHMENT B



Great Western Trail Site Plan



CONSTRUCTION PLANS FOR CITY OF WEST DES MOINES POLK COUNTY, IOWA GREAT WESTERN TRAIL REALIGNMENT

Features	Existing	Proposed
Spot Elevation	93.0	93.0
Contour Elevation	93	93
Fence (Barbed, Field, Hog)		
Fence (Chain Link)		
Fence (Wood)		
Fence (Silt)		
Tree Line		
Tree Stump		
Deciduous Tree \ Shrub		
Coniferous Tree \ Shrub		
Communication		
Overhead Communication		
Fiber Optic		
Underground Electric		
Overhead Electric		
Gas Main with Size		
High Pressure Gas Main with Size		
Water Main with Size		
Sanitary Sewer with Size		
Duct Bank		
Test Hole Location for SUE w/D		

(*) Denotes the survey quality service level for utilities

Sanitary Manhole	Existing	Proposed
Storm Sewer with Size		
Storm Manhole		
Single Storm Sewer Intake		
Double Storm Sewer Intake		
Fire Hydrant		
Fire Hydrant on Building		
Water Main Valve		
Water Service Valve		
Well		
Utility Pole		
Guy Anchor		
Utility Pole with Light		
Utility Pole with Transformer		
Street Light		
Yard Light		
Electric Box		
Electric Transformer		
Traffic Sign		
Communication Pedestal		
Communication Manhole		
Communication Handhole		
Fiber Optic Manhole		
Gas Valve		
Gas Manhole		
Gas Appurtenas		
Fence Post or Guard Post		
Underground Storage Tank		
Above Ground Storage Tank		
Sign		
Satellite Dish		
Mailbox		
Soil Boring		

UTILITY QUALITY SERVICE LEVELS

QUALITY LEVELS OF UTILITIES ARE SHOWN IN THE PARENTHESES WITH THE UTILITY TYPE AND WHEN APPLICABLE, SIZE. THE QUALITY LEVELS ARE BASED ON THE CI/ ASCE 38-02 STANDARD.

QUALITY LEVEL (D) INFORMATION IS DERIVED FROM EXISTING UTILITY RECORDS OR ORAL RECOLLECTIONS.

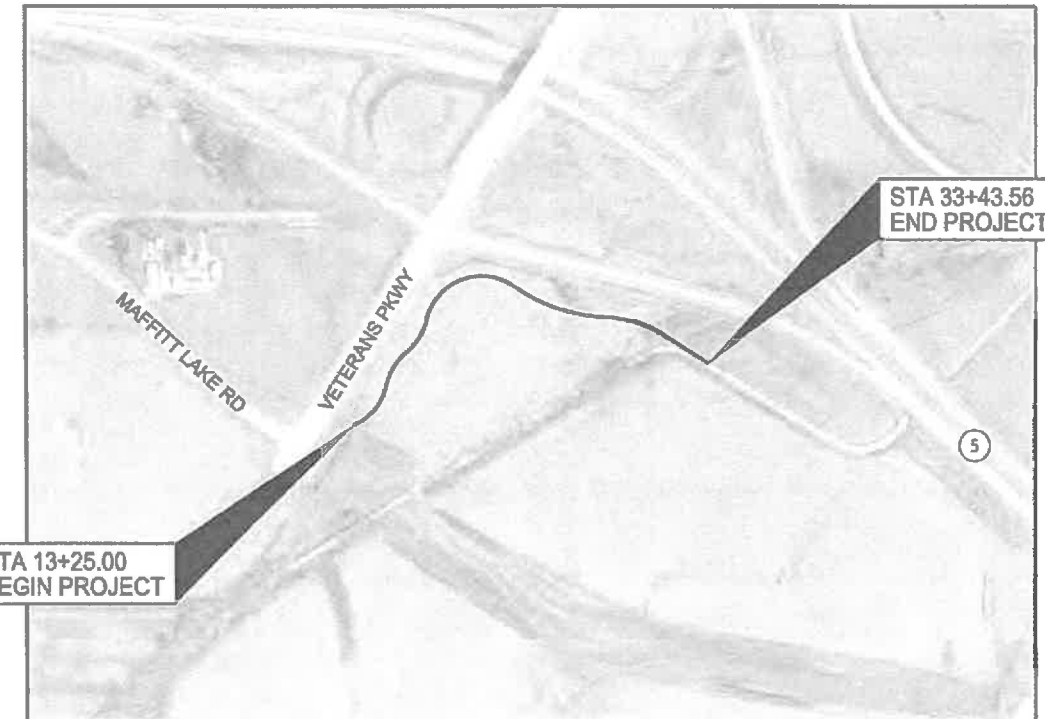
QUALITY LEVEL (C) INFORMATION IS OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION WITH QUALITY D INFORMATION.

QUALITY LEVEL (B) INFORMATION IS OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES.

QUALITY LEVEL (A) IS HORIZONTAL AND VERTICAL POSITION OF UNDERGROUND UTILITIES OBTAINED BY ACTUAL EXPOSURE OR VERIFICATION OF PREVIOUSLY EXPOSED SUBSURFACE UTILITIES, AS WELL AS THE TYPE, SIZE, CONDITION, MATERIAL, AND OTHER CHARACTERISTICS.

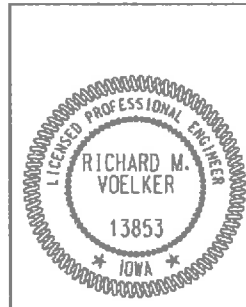
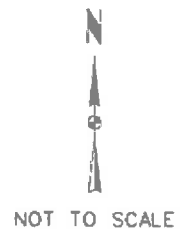
UTILITY WARNING

THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN COMPRISE ALL SUCH ITEMS IN THE AREA EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN ARE IN THE EXACT LOCATION INDICATED EXCEPT WHERE NOTED AS QUALITY LEVEL A.



VICINITY MAP

UTILITY CONTACT INFORMATION			
UTILITY CONTACT FOR MAPPING INFORMATION SHOWN AS RECEIVED FROM THE IOWA ONE CALL DESIGN REQUEST SYSTEM, TICKET NUMBER 551603604.			
MAP RECEIVED AND CLEAR	CENTURYLINK TOM STURMER 720-578-8080 Thomas.sturmer@centurylink.com	NO MAPS RECEIVED	WEST DES MOINES WATER WORKS WILLIAM MABUCE 515-222-3510 william.mabuce@wdmww.com
CLEAR	MIDAMERICAN ELECTRIC CRAG RANFELD 515-252-6632 MECDSDesignLocales@midamerican.com	S-SANITARY SEWER	WEST DES MOINES TRAFFIC RICK KNOWLES 515-222-3480 rick.knowles@wdm.iowa.gov
CLEAR	MIDAMERICAN GAS CRAG RANFELD 515-252-6632 MECDSDesignLocales@midamerican.com	CLEAR	WARREN WATER DISTRICT STAN RIPPERGER 515-208-5352 sripperger@warrenwaterdistrict.com
CLEAR	MICROSOFT DAMIEN BELL 515-710-4342		
NO MAPS RECEIVED	MEDIACOM COMMUNICATIONS CORP PAUL MAY 515-246-2252 pmay@mediacomcc.com		



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.

Richard M. Voelker 5/21/17
Richard M. Voelker, P.E. Date

License Number 13853
My License Renewal Date is December 31, 2018
Pages or sheets covered by this seal:
Sheets 1-6

- INDEX OF SHEETS**
- 1 TITLE SHEET
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 - 4 DETAIL SHEET
 - 5 POLLUTION PREVENTION PLAN
 - 6 POLLUTION PREVENTION PLAN DETAILS
 - 7 OVERALL LANDSCAPE PLAN
 - 8 LANDSCAPING PLAN SHEET
 - 9 TREE PLANTING DETAILS
 - 10 SEEDING SPECIFICATIONS

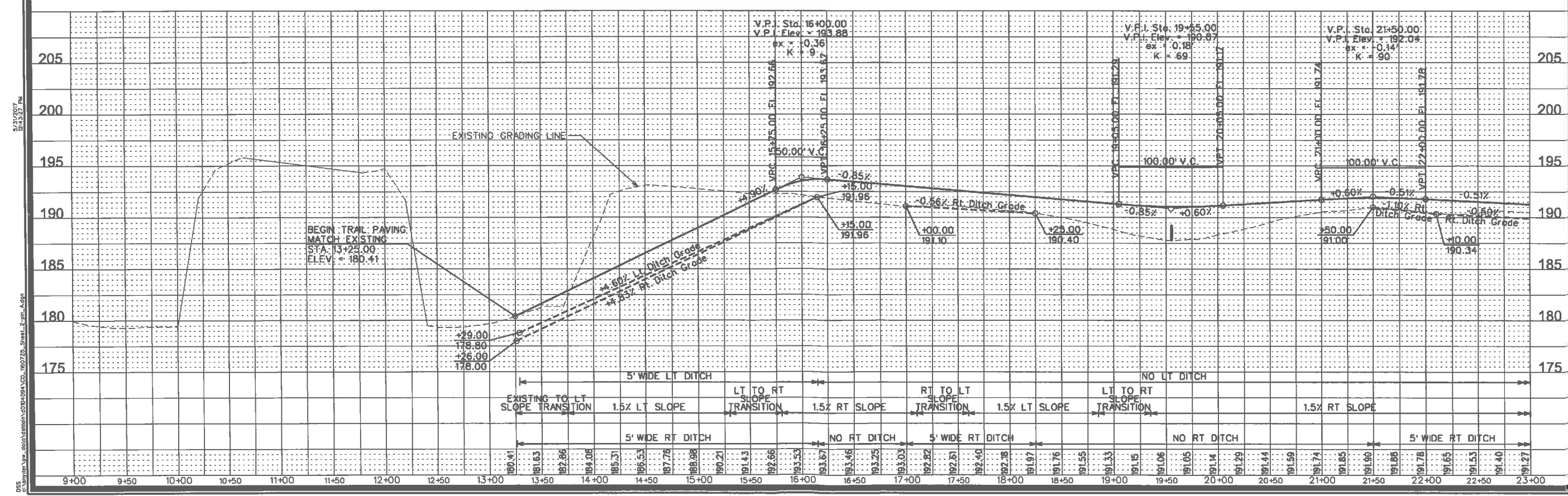
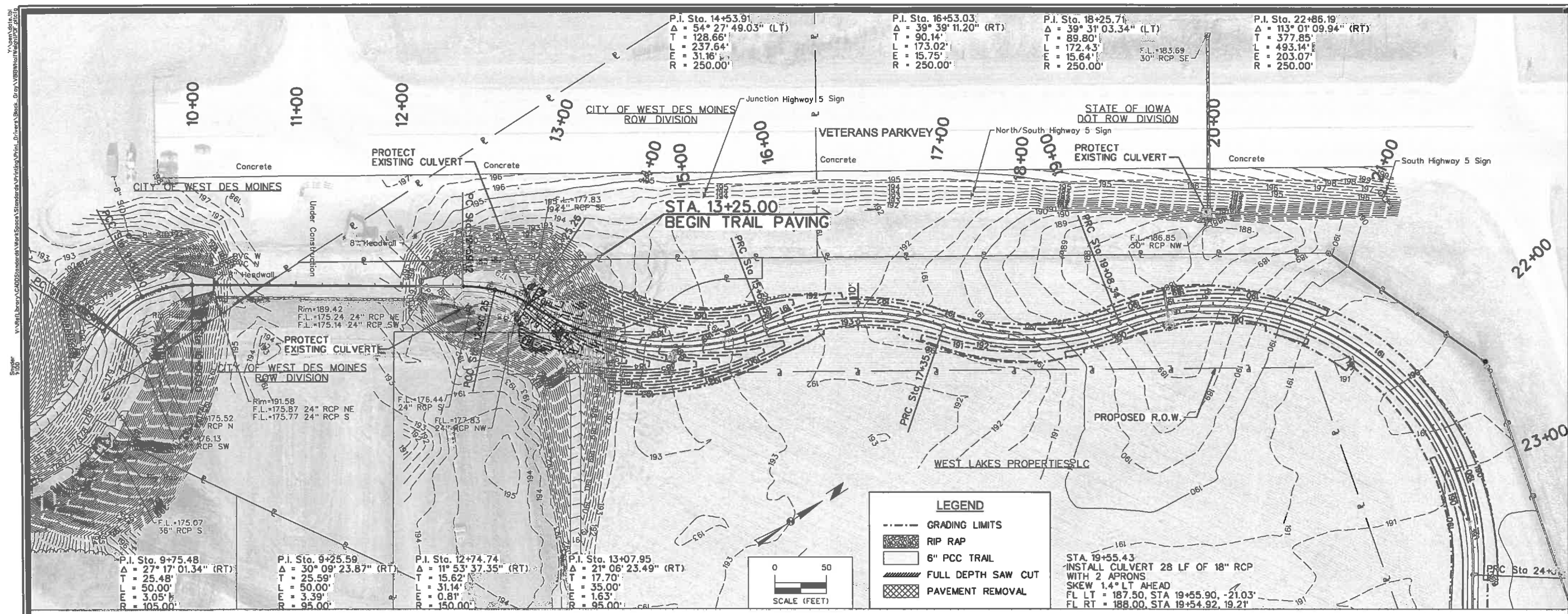
GREAT WESTERN TRAIL REALIGNMENT

TITLE SHEET

WEST DES MOINES, IOWA

SNYDER & ASSOCIATES, INC.

2727 S.W. SNYDER BLVD.
ANKENY, IOWA 50023
515-964-2020 | www.snyder-associates.com



MARK	REVISION	DATE	BY
Engineer: TNJ	Checked By: RMV	Scale: 1"=50'	
Technician: DSS	Date: 08/26/16	Field Bk:	
Project No: 1160725	Sheet	2	

GREAT WESTERN TRAIL REALIGNMENT

PLAN AND PROFILE

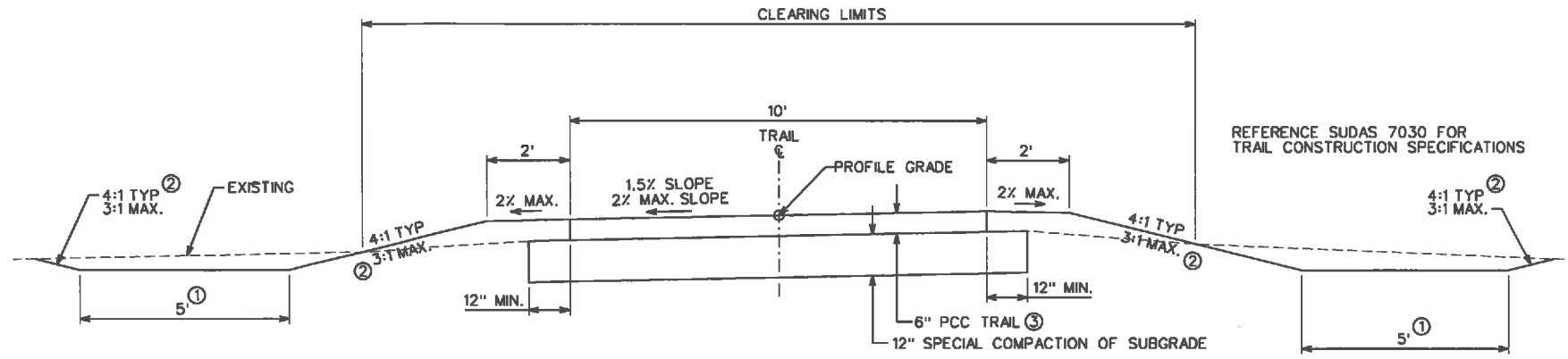
SNYDER & ASSOCIATES, INC.

2727 S.W. SNYDER BLVD.
ANKENY, IOWA 50023
515-964-2020 | www.snyder-associates.com

Project No: 1160725
Sheet 2

GENERAL NOTES:

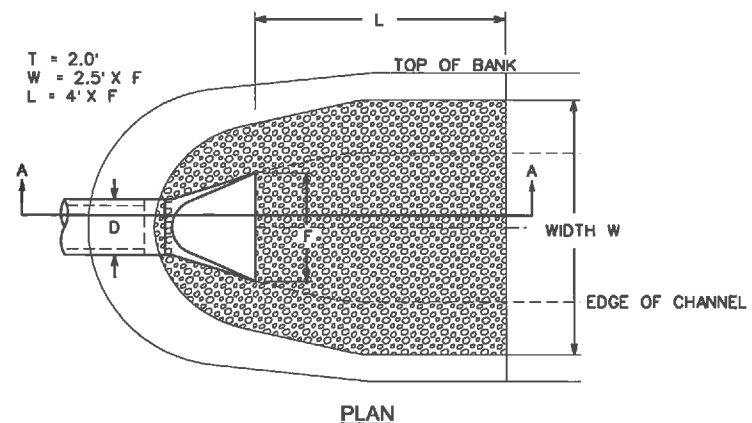
1. NOTIFY THE OWNER AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
2. AVOID DAMAGE TO EXISTING SECTIONS OF TRAIL THAT ARE NOT TO BE REMOVED PER CONTRACT DOCUMENTS. CONTRACTOR SHALL REPLACE EXISTING TRAIL DAMAGED DURING CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO OWNER. SURFACE PROTECTION MEASURES ARE RECOMMENDED.
3. DO NOT RESTRICT PUBLIC ACCESS ON THE ADJACENT TRAIL DURING CONSTRUCTION. KEEP THE EXISTING TRAIL CLEAR OF EQUIPMENT AND MATERIALS AT ALL TIMES. PROVIDE PLANKING OR GRANULAR SURFACING AS NECESSARY TO KEEP TRAIL AND SIDEWALK OPEN (INCIDENTAL). CLEARLY MARK TRAIL CLOSURES AND BARRICADE AS NECESSARY TO PROTECT THE WORK AREA.
4. PROVIDE TEMPORARY SUPPORT FOR EXISTING UTILITY LINES THAT ARE ENCOUNTERED DURING CONSTRUCTION UNTIL BACKFILLING IS COMPLETED.
5. NOTIFY UTILITY COMPANIES PRIOR TO COMMENCING WORK. AVOID DAMAGE TO UTILITIES AND SERVICES DURING CONSTRUCTION. REPAIR ANY DAMAGE CAUSED BY THE CONTRACTOR'S CARELESSNESS AT THE CONTRACTOR'S EXPENSE.
6. DO NOT STORE EQUIPMENT AND/OR MATERIALS ON PAVEMENT OR WITHIN PUBLIC RIGHT OF WAY ON STREETS OPEN TO TRAFFIC. CONTRACTOR SHALL PROVIDE AREAS AS NEEDED FOR STORAGE OF EQUIPMENT AND/OR MATERIALS.
7. ALL FIELD TILES ENCOUNTERED DURING CONSTRUCTION SHALL BE RECONNECTED AND NOTED ACCORDINGLY ON THE AS-BUILT DOCUMENTS.
8. THE CONTRACTOR SHALL PROVIDE WASTE AREAS OR DISPOSAL SITES FOR WASTE MATERIAL REMOVED FROM THE PROJECT WHICH IS NOT DESIRABLE TO BE INCORPORATED INTO THE WORK. NO EXTRA PAYMENTS WILL BE MADE FOR MATERIAL HAULED TO THESE SITES. DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS. DO NOT PLACE WASTE MATERIAL WITHIN THE RIGHT OF WAY. KEEP CONSTRUCTION DEBRIS AND DIRT OFF OF ADJACENT PROPERTIES AND STREETS.
9. PROVIDE EROSION CONTROL MEASURES NECESSARY TO PROTECT AGAINST SILTATION, EROSION AND DUST POLLUTION. COMPLY WITH THE SOIL EROSION CONTROL REQUIREMENTS OF THE IOWA CODE AND ALL LOCAL ORDINANCES AND WITH THE STORM WATER POLLUTION PREVENTION PLAN.
10. DO NOT RESTRICT DRAINAGE CHANNELS AND PROTECT ALL EXISTING DRAINAGE STRUCTURES UNLESS OTHERWISE NOTED. CONTRACTOR IS FULLY LIABLE FOR ALL DAMAGES TO PUBLIC OR PRIVATE PROPERTY CAUSED BY THEIR ACTION OR INACTION IN PROVIDING FOR THE HANDLING OF STORM WATER FLOW DURING CONSTRUCTION.
11. THE CONTRACTOR SHALL NOT DISTURB DESIRABLE GRASS AREAS AND TREES OUTSIDE THE CONSTRUCTION LIMITS.
12. THE TOP SIX INCHES OF ALL DISTURBED AREAS SHALL BE FREE OF ROCK AND DEBRIS AND SHALL BE SUITABLE FOR THE ESTABLISHMENT OF VEGETATION, SUBJECT TO THE APPROVAL OF THE OWNER.
13. AVOID DAMAGE TO PRIVATE PROPERTY DURING CONSTRUCTION. REPAIR ANY DAMAGE CAUSED BY THE CONTRACTOR'S CARELESSNESS AT THE CONTRACTOR'S EXPENSE.
14. CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO OCCUR BETWEEN 7:00 A.M. AND 7:00 P.M. MONDAY THROUGH SATURDAY. NO CONSTRUCTION ACTIVITIES ARE ALLOWED ON SUNDAYS WITHOUT APPROVAL OF THE OWNER.
15. SWPPP PREPARATION AND INSPECTION TO BE PERFORMED BY THE OWNER.
16. ANY WATER USE FROM A WEST DES MOINES WATER WORKS HYDRANT REQUIRES USE OF A WEST DES MOINES WATER WORKS HYDRANT METER. UNMETERED USE IS NOT ALLOWED. METERS CAN BE OBTAINED AT THE WATER PLANT BY CALLING 515-222-3465.



- ① REFER TO SHEETS 1 AND 2 FOR DITCH GRADING.
- ② REFER TO TABLE BELOW FOR FORESLOPE AND BACKSLOPE GRADING.
- ③ TRAIL SHALL BE SLIP-FORMED CLASS C CONCRETE.

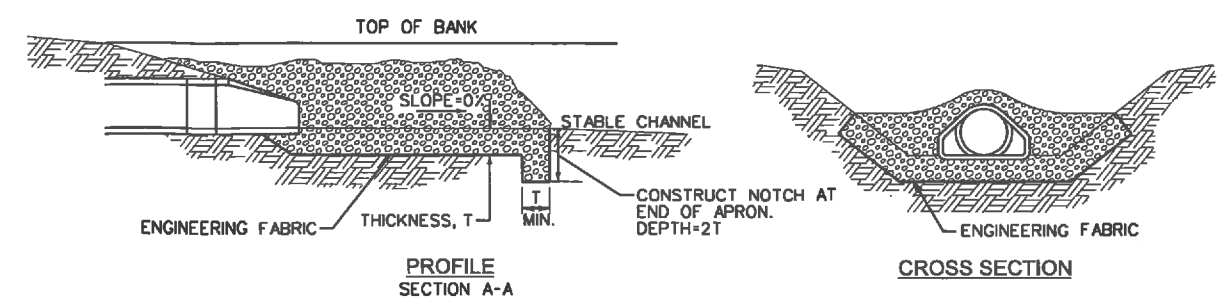
FORESLOPE AND BACKSLOPE GRADING			
DITCH	STATION TO	STATION	SLOPE
RT	13+26.00	15+65.00	3:1
LT	13+29.00	15+65.00	3:1
BOTH	15+65.00	16+15.00	3:1 TO 4:1 TRANSITION
BOTH	16+15.00	33+50.00	4:1

① TYPICAL SECTION FOR 6" PCC TRAIL
NO SCALE



REFERENCE SUDAS 4030 FOR CULVERT INSTALLATIONS. USE 2000D RCP WITH RCP APRONS. NO APRON GUARDS.

REFERENCE SUDAS 9040 FOR RIP RAP INSTALLATION.



② RIP RAP APRON FOR PIPE OUTLET
NO SCALE

REVISION	DATE	BY
Checked By: RMY	Scale: 1"=50'	
Engineer: TNJ	Date: 08/26/16	Field Bk:
Tech: DSS		
Project No: 1160725	Sheet	4

GREAT WESTERN TRAIL REALIGNMENT

MISCELLANEOUS DETAILS AND TYPICAL SECTIONS

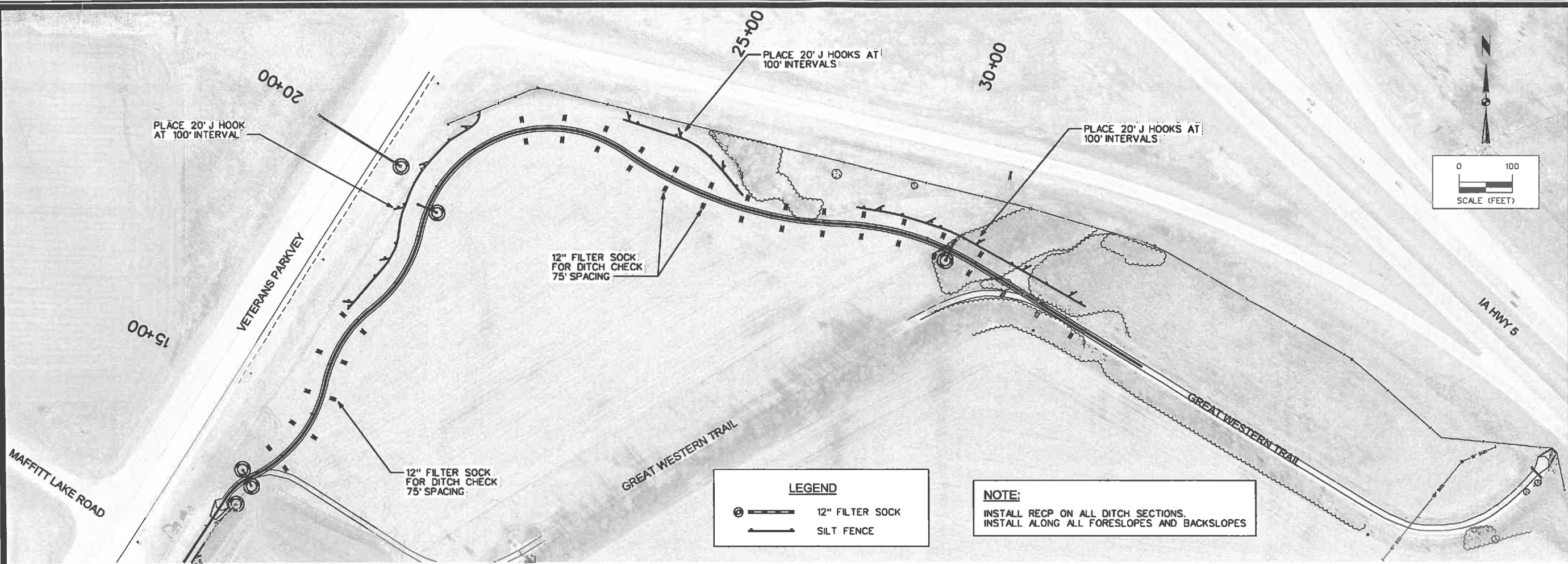
SNYDER & ASSOCIATES, INC.

WEST DES MOINES, IOWA

2727 S.W. SNYDER BLVD.
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515-964-2020 | www.snyder-associates.com

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POLLUTION PREVENTION NOTES

A. POLLUTION PREVENTION AND EROSION PROTECTION

1. **CODE COMPLIANCE:** THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL POTENTIAL POLLUTION AND SOIL EROSION CONTROL REQUIREMENTS OF THE IOWA CODE, THE IOWA DEPARTMENT OF NATURAL RESOURCES (IDNR) NPDES PERMIT, THE U.S. CLEAN WATER ACT AND ANY LOCAL ORDINANCES. THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO PROTECT AGAINST EROSION AND POLLUTION FROM THIS PROJECT SITE AND ALL OFF-SITE BORROW OR DEPOSIT AREAS DURING PERFORMANCE OR AS A RESULT OF PERFORMANCE.
2. **DAMAGE CLAIMS:** THE CONTRACTOR WILL HOLD THE OWNER AND ARCHITECT / ENGINEER HARMLESS FROM ANY AND ALL CLAIMS OF ANY TYPE WHATSOEVER RESULTING FROM DAMAGES TO ADJOINING PUBLIC OR PRIVATE PROPERTY, INCLUDING REASONABLE ATTORNEY FEES INCURRED TO OWNER, FURTHER, IF THE CONTRACTOR FAILS TO TAKE NECESSARY STEPS TO PROMPTLY REMOVE EARTH SEDIMENTATION OR DEBRIS WHICH COMES ONTO ADJOINING PUBLIC OR PRIVATE PROPERTY, THE OWNER MAY, BUT NEED NOT, REMOVE SUCH ITEMS AND DEDUCT THE COST THEREOF FROM AMOUNTS DUE TO THE CONTRACTOR.

B. STORM WATER DISCHARGE PERMIT

1. THIS PROJECT REQUIRES COVERAGE UNDER THE NPDES GENERAL PERMIT NO. 2 FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES FROM THE IDNR, AS REQUIRED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA). THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS ARE RESPONSIBLE FOR COMPLIANCE WITH AND FULFILLMENT OF ALL REQUIREMENTS OF THE NPDES GENERAL PERMIT NO. 2 INCLUDING CREATING OR MAINTAINING THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND POSSIBLY OBTAINING THE GENERAL PERMIT COVERAGE FROM THE IDNR.
2. ALL DOCUMENTS RELATED TO THE STORM WATER DISCHARGE PERMIT, INCLUDING BUT NOT LIMITED TO, THE NOTICE OF INTENT, PROOF OF PUBLICATIONS, DISCHARGE AUTHORIZATION LETTER, CURRENT SWPPP, SITE INSPECTION LOG, AND OTHER ITEMS, SHALL BE KEPT ON SITE AT ALL TIMES AND MUST BE PRESENTED TO ANY JURISDICTIONAL AGENCIES UPON REQUEST. FAILURE TO COMPLY WITH THE NPDES PERMIT REQUIREMENTS IS A VIOLATION OF THE CLEAN WATER ACT AND THE CODE OF IOWA.
3. A "NOTICE OF DISCONTINUATION" MUST BE FILED WITH THE IDNR UPON FINAL STABILIZATION OF THE DISTURBED SITE AND REMOVAL OF ALL TEMPORARY EROSION CONTROL MEASURES. ALL PLANS, INSPECTION REPORTS, AND OTHER DOCUMENTS MUST BE RETAINED FOR A PERIOD OF THREE YEARS AFTER PROJECT COMPLETION. THE CONTRACTOR SHALL RETAIN A RECORD COPY AND PROVIDE THE ORIGINAL DOCUMENTS TO THE OWNER UPON PROJECT ACCEPTANCE AND/OR SUBMITTAL OF THE NOTICE OF DISCONTINUATION.

C. POLLUTION PREVENTION PLAN:

1. THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IS A SEPARATE DOCUMENT IN ADDITION TO THESE PLAN DRAWINGS. THE CONTRACTOR SHOULD REFER TO THE SWPPP FOR ADDITIONAL REQUIREMENTS AND MODIFICATIONS TO THE POLLUTION PREVENTION PLAN MADE DURING CONSTRUCTION.
2. THE SWPPP ILLUSTRATES GENERAL MEASURES AND BEST MANAGEMENT PRACTICES (BMP) FOR COMPLIANCE WITH THE PROJECT'S NPDES PERMIT COVERAGE. ALL BMP'S AND EROSION CONTROL MEASURES REQUIRED AS A RESULT OF CONSTRUCTION ACTIVITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY, NOTE AND IMPLEMENT. ADDITIONAL BMP'S FROM THOSE SHOWN ON THE PLAN MAY BE REQUIRED.
3. THE SWPPP AND SITE MAP SHOULD BE EXPEDITIOUSLY REVISED TO REFLECT CONSTRUCTION PROGRESS AND CHANGES AT THE PROJECT SITE.
4. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS OF THE GENERAL PERMIT AND SWPPP, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING BMP'S UNLESS INFEASIBLE OR NOT APPLICABLE:
 - a. UTILIZE OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SURFACE WHEN DISCHARGING FROM BASINS, PROVIDE AND MAINTAIN NATURAL BUFFERS AROUND SURFACE WATERS, DIRECT STORM WATER TO VEGETATED AREAS TO INCREASE SEDIMENT REMOVAL AND MAXIMIZE STORM WATER INFILTRATION, AND MINIMIZE SOIL COMPACTION.
 - b. INSTALL PERIMETER AND FINAL SEDIMENT CONTROL MEASURES SUCH AS SILT BARRIERS, DITCH CHECKS, DIVERSION BERMS, OR SEDIMENTATION BASINS DOWNSTREAM OF SOIL DISTURBING ACTIVITIES PRIOR TO SITE CLEARING AND GRADING OPERATIONS.
 - c. PRESERVE EXISTING VEGETATION IN AREAS NOT NEEDED FOR CONSTRUCTION AND LIMIT TO A MINIMUM THE TOTAL AREA DISTURBED BY CONSTRUCTION OPERATIONS AT ANY TIME.
 - d. MAINTAIN ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES IN WORKING ORDER, INCLUDING CLEANING, REPAIRING, REPLACEMENT, AND SEDIMENT REMOVAL THROUGHOUT THE PERMIT PERIOD. CLEAN OR REPLACE SILT CONTROL DEVICES WHEN THE MEASURES HAVE LOST 50% OF THEIR ORIGINAL CAPACITY.
 - e. INSPECT THE PROJECT AREA AND CONTROL DEVICES (BY QUALIFIED PERSONNEL ASSIGNED BY THE CONTRACTOR) EVERY SEVEN CALENDAR DAYS. RECORD THE FINDINGS OF THESE INSPECTIONS AND ANY RESULTING ACTIONS IN THE SWPPP WITH A COPY SUBMITTED WEEKLY TO THE OWNER OR ENGINEER DURING CONSTRUCTION. REVISE THE SWPPP AND IMPLEMENT ANY RECOMMENDED MEASURES WITHIN 7 DAYS.

f. PREVENT ACCUMULATION OF EARTH AND DEBRIS FROM CONSTRUCTION ACTIVITIES ON ADJOINING PUBLIC OR PRIVATE PROPERTIES, INCLUDING STREETS, DRIVEWAYS, SIDEWALKS, DRAINAGEWAYS, OR UNDERGROUND SEWERS. REMOVE ANY ACCUMULATION OF EARTH OR DEBRIS IMMEDIATELY AND TAKE REMEDIAL ACTIONS FOR FUTURE PREVENTION.

g. INSTALL NECESSARY CONTROL MEASURES SUCH AS SILT BARRIERS, EROSION CONTROL MATS, MULCH, DITCH CHECKS OR RIPRAP AS SOON AS AREAS REACH THEIR FINAL GRADES AND AS CONSTRUCTION OPERATIONS PROGRESS TO ENSURE CONTINUOUS RUNOFF CONTROL. PROVIDE INLET AND OUTLET CONTROL MEASURES AS SOON AS STORM SEWERS ARE INSTALLED.

h. RESPREAD A MINIMUM OF 4 INCHES OF TOPSOIL (INCLUDING TOPSOIL FOUND IN SOD) ON ALL DISTURBED AREAS, EXCEPT WHERE PAVEMENT, BUILDINGS OR OTHER IMPROVEMENTS ARE LOCATED.

i. STABILIZE UNDEVELOPED, DISTURBED AREAS WITH MULCH, TEMPORARY SEED MIX, PERMANENT SEED MIX OR SOD AS SOON AS PRACTICAL UPON COMPLETION OR DELAY OF GRADING OPERATIONS. INITIATE STABILIZATION MEASURES NO LATER THAN 14 CALENDAR DAYS AFTER CONSTRUCTION ACTIVITY HAS FINISHED OR IS PLANNED TO BE DELAYED MORE THAN 21 CALENDAR DAYS.

j. COORDINATE LOCATIONS OF STAGING AREAS WITH THE OWNER AND RECORD IN THE SWPPP. UNLESS NOTED OTHERWISE, STAGING AREAS SHOULD CONTAIN THE FOLLOWING: JOB TRAILERS, FUELING / VEHICLE MAINTENANCE AREA, TEMPORARY SANITARY FACILITIES, MATERIALS STORAGE, AND CONCRETE WASHOUT FACILITY. CONTROL RUNOFF FROM STAGING AREAS WITH DIVERSION BERMS AND/OR SILT BARRIERS AND DIRECT TO A SEDIMENT BASIN OR OTHER CONTROL DEVICE WHERE POSSIBLE. CONCRETE WASHOUT MUST BE CONTAINED ONSITE.

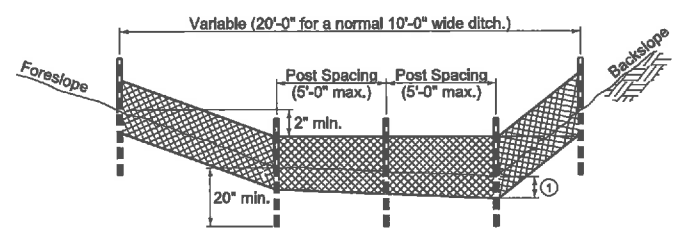
k. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND SITE WASTE PRIOR TO FILING OF THE "NOTICE OF DISCONTINUATION".

MARK	REVISION	DATE	BY
Engineer: TNJ	Checked By: RMY	Scale: 1"= 100'	Fig:
Technician: DSS	Date: 08/26/16	Field Bk:	Sheet 5
Project No: 1160725			

GREAT WESTERN TRAIL REALIGNMENT
POLLUTION PREVENTION PLAN
SNYDER & ASSOCIATES, INC.
 WEST DES MOINES, IOWA
 2727 S.W. SNYDER BLVD.
 ANKENY, IOWA 50023
 515-964-2020 | www.snyder-associates.com

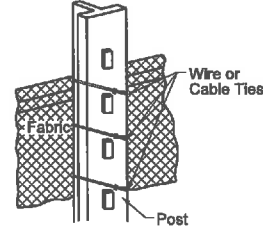
Project No: 1160725
Sheet 5

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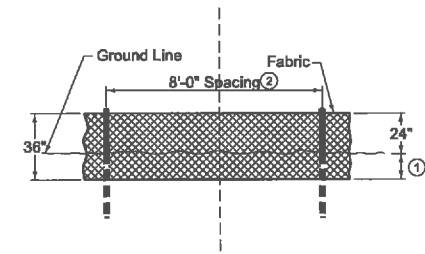


① Insert 12 inches of fabric a minimum of 6 inches deep (fabric may be folded below the ground line).

TYPICAL SILT FENCE DITCH CHECK



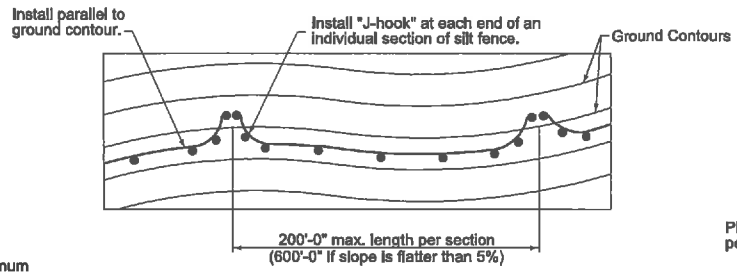
ATTACHMENT TO POST



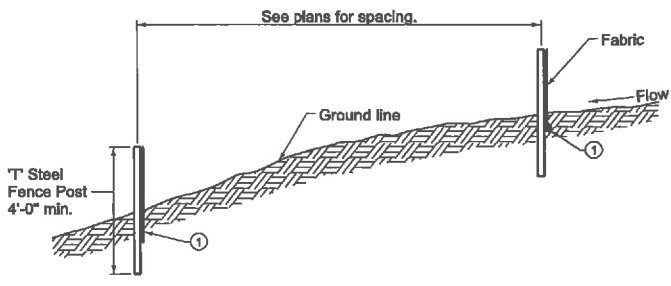
DETAILS OF SILT FENCE ON LONGITUDINAL SLOPES

① Insert 12 inches of fabric a minimum of 6 inches deep (fabric may be folded below the ground line).
 ② Reduce post spacing to 5'-0" at water concentration areas, or as required to adequately support fence.

①
4 NO SCALE



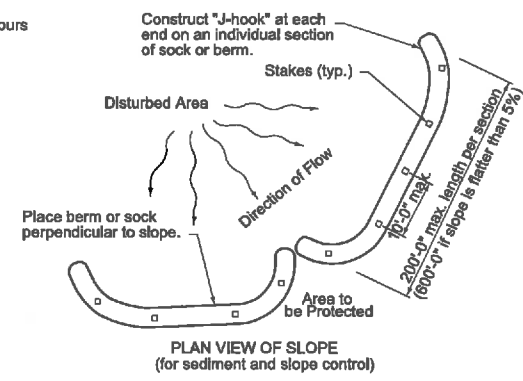
TYPICAL SILT FENCE INSTALLATION ON LONGITUDINAL SLOPES (Plan View)



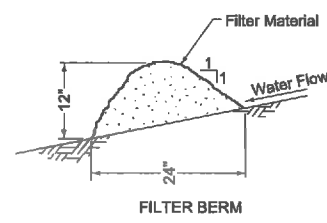
TYPICAL SILT FENCE INSTALLATION ON LONGITUDINAL SLOPES (Profile View)

②
4 NO SCALE

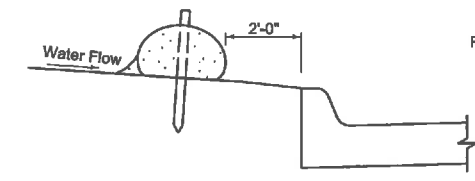
FILTER BERM AND FILTER SOCK



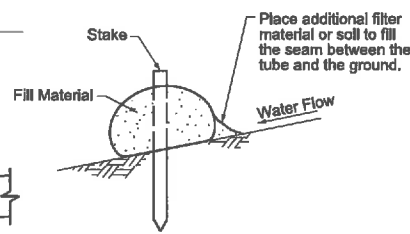
PLAN VIEW OF SLOPE (for sediment and slope control)



FILTER BERM

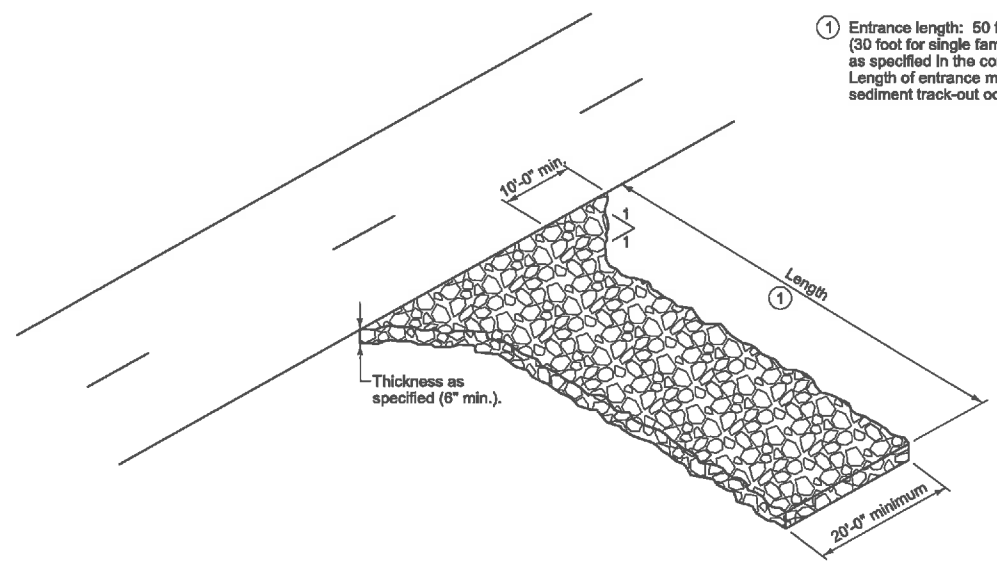


SECTION VIEW AT STREET (for perimeter control along street)



FILTER SOCK

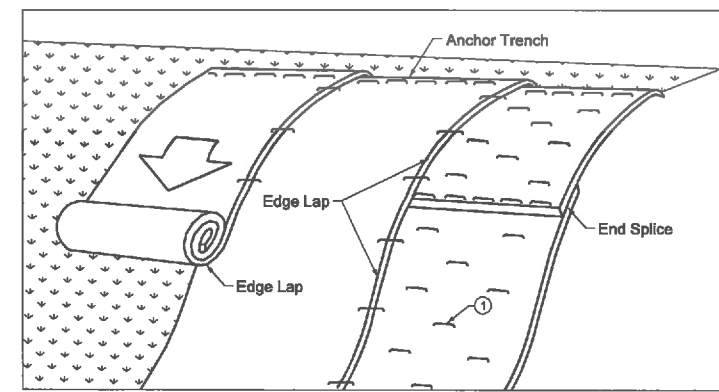
Berm shown is typical for slopes flatter than 3:1. For steeper slopes, increase berm size as directed by the Engineer.
 Place berm in uncompacted windrow perpendicular to the slope at locations specified in the contract documents.
 Filter sock diameter as specified in the contract documents.



① Entrance length: 50 foot minimum (30 foot for single family residential), or as specified in the contract documents. Length of entrance may be increased if sediment track-out occurs.

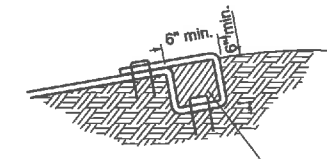
③
4 NO SCALE

STABILIZED CONSTRUCTION ENTRANCE

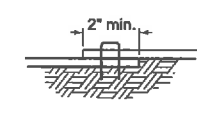


① Secure blanket to ground according to manufacturer's recommended anchoring pattern and minimum shown in Table 1.

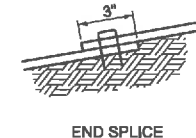
TABLE 1	
Max. slope	Min. anchors
≤ 3:1	1.5/yd ²
2:1	2/yd ²
1:1	2.5/yd ²



ANCHOR TRENCH (12" min. anchor spacing)



EDGE LAP (4'-0" min. anchor spacing)



END SPLICE (18" min. anchor spacing)

④
4 NO SCALE

ROLLED EROSION CONTROL PRODUCT (RECP) INSTALLATION ON SLOPES

MARK	REVISION	DATE	BY
Engineer: TNJ	Checked By: RMV	Scale: 1"= 50'	Field Bk:
Technician: DSS	Date: 08/26/16		
Project No: 1160725	Sheet	6	

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GREAT WESTERN TRAIL REALIGNMENT
POLLUTION PREVENTION PLAN DETAILS
SNYDER & ASSOCIATES, INC.



Project No: 1160725
 Sheet 6

SEEDING CONSTRUCTION NOTES

1. WORK INCLUDES MATERIALS, EQUIPMENT AND LABOR FOR THE PREPARATION OF THE SEEDBED, FURNISHING AND INSTALLING SEED, MAINTENANCE AND WARRANTY FOR COMPLETED SEEDING AREAS, AS SHOWN ON PLANS AND SPECIFIED.
2. SCHEDULING: SEE AT THE EARLIEST POSSIBLE DATE FOLLOWING FINISH GRADE OPERATIONS AND WITHIN SPECIFIED SEEDING DATES. COORDINATE THE SEEDING SCHEDULE WITH ALL OTHER WORK ON THE PROJECT. NOTIFY THE CONTRACTING OFFICER AT LEAST THREE WORKING DAYS PRIOR TO THE START OF SEEDING OPERATIONS. AFTER ALL LAND-DISTURBING ACTIVITIES ARE COMPLETE AND THE SEEDBED PREPARATION HAS BEEN APPROVED BY THE CONTRACTING OFFICER, PERFORM SEED SOWING OPERATIONS.
2. DELIVERY HANDLING AND STORAGE: DELIVER SEED TO SITE IN PRODUCER'S UNOPENED, FULLY LABELED PACKAGES. SEED PACKAGE LABEL SHALL BEAR PRODUCER'S GUARANTEED ANALYSIS FOR PERCENTAGES OF MIXTURE, PURITY, GERMINATION AND WEED SEED CONTENT. DELIVER HYDRAULICALLY APPLIED EROSION CONTROL PRODUCTS IN UV AND WEATHER RESISTANT FACTORY LABELED PACKAGES. STORE AND HANDLE AS SPECIFIED AND RECOMMENDED BY MANUFACTURER. PROTECT ALL PRODUCTS FROM DAMAGE, FROM WEATHER EXCESSIVE TEMPERATURES AND CONSTRUCTION OPERATIONS. STORE PACKAGED MATERIALS OFF GROUND AND PROTECT FROM MOISTURE.
3. SEED MIXTURES: THE CONTRACTOR SHALL FURNISH SEED MIXTURES AS SPECIFIED. PROVIDE FRESH, CLEAN, NEW CROP, CERTIFIED SEED COMPLYING WITH TOLERANCE FOR GERMINATION AND PURITY, AND FREE OF POA ANNUAL BENT GRASS, AND NOXIOUS WEED SEED. THE CONTRACTOR SHALL SUBMIT A SOWING SCHEDULE AND SEED CERTIFICATIONS PRIOR TO PERFORMING ANY SOWING. FURNISH ALL SEEDS FROM AN ESTABLISHED SEED DEALER OR CERTIFIED SEED GROWER. ALL MATERIALS AND SUPPLIERS ARE TO FOLLOW THE AGRICULTURAL MARKETING SERVICE (AMS) FEDERAL SEED ACT, IOWA SEED LAW, AND IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP REGULATIONS, AND BE LABELED ACCORDINGLY. NATIVE GRASSES AND FORBS SHALL BE SOURCE IDENTIFIED AS GO-SEED OF IOWA AND SHALL HAVE A CERTIFIED YELLOW TAG. SEED SOURCES FOR SEED MIXTURE USED ON THIS PROJECT SHALL BE OBTAINED FROM A SITE WITHIN 250 MILES FROM THE PROJECT SITE. ALL SPECIES INCLUDED IN THE SEED MIXTURE SHALL BE APPROVED BY THE CONTRACTING OFFICER PRIOR TO FURNISHING ON-SITE. ENSURE THE SEED PROVIDED MEETS OR EXCEEDS THE MINIMUM REQUIREMENTS OF PURITY AND GERMINATION STATED ON AN ANALYSIS DOCUMENT THAT SPECIFIES QUALITY. APPROVAL OF ALL SEED FOR USE WILL BE BASED ON THE ACCUMULATED TOTAL OF PURE LIVE SEED (PLS). PLS IS OBTAINED BY MULTIPLYING PURITY TIMES GERMINATION. PLS SHALL NOT BE LESS THAN THE ACCUMULATED TOTAL OF THE PLS. IF THE PURITY AND/OR GERMINATION OF NATIVE GRASSES EXCEEDS THE MINIMUM REQUIRED, ADJUST THE APPLICATION RATE BASED ON PLS. IF THE SEED DOES NOT COMPLY WITH THE MINIMUM REQUIREMENTS FOR PURITY AND GERMINATION, AND SUCH SEED CANNOT BE OBTAINED, THE CONTRACTING OFFICER MAY APPROVE USE OF THE SEED ON A BASIS OF PLS OR MAY AUTHORIZE A SUITABLE SUBSTITUTION FOR THE SEED SPECIFIED. ALL SUITABLE SEED SUBSTITUTIONS SHALL BE MADE AT THE TIME OF CONSTRUCTION AND SHALL BE APPROVED BY THE CONTRACTING OFFICER. SEED MIXES ARE SUBJECT TO THE AVAILABILITY OF SEED. ONLY LOCAL ECOTYPES SHALL BE USED FOR THE GREAT WESTERN TRAIL REALIGNMENT SITE. THE SEED SHALL BE MIXED TO THE SPECIFIED PROPORTIONS BY WEIGHT BY METHODS APPROVED BY THE CONTRACTING OFFICER. NATIVE SEED MIX TO BE MIXED ON SITE IN PRESENCE OF THE CONTRACTING OFFICER. PROVIDE THE FOLLOWING SEED MIXES IN LOCATIONS SHOWN ON THE PLANS.

SEED DATES FOR BOTH MIXES: APRIL 1 - JUNE 30TH. SEEDING OUTSIDE THESE DATES SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT AT CONTRACTOR'S RISK.

COOL SEASON PERMANENT GRASS MIX:

COMMON NAME	SCIENTIFIC NAME	PLS PER ACRE
TIMOTHY	PHELUM PRATENSE	4 PLS
RED TOP	AGROSTIS GIGANTEA	4 PLS
ORCHARD GRASS	DACTYLIS GLOMERATA	10 PLS

NATIVE SEED MIXTURE:
PROVIDE NURSE CROP OF COMMON OATS AT 32 LBS PER ACRE FOR SLOPES 3:1 OR GREATER. 16 LBS PER ACRE FOR ALL OTHER SLOPE CONDITIONS.

COMMON NAME	Scientific Name	OZ/AC	SEEDS/SQ FT
Forbs			
Lead Plant	Amorpha canescens	0.5	0.205280073
Butterfly Milkweed	Asclepias tuberosa	3	0.263429752
Azure Aster	Aster azureus	0.5	0.918273646
New England Aster	Aster novae-angiae	0.25	0.384527089
White False Indigo	Baptisia lactea	0.5	0.019513315
Partridge Pea	Chaemecrista fasciculata	16	0.991735537
White Prairie Clover	Dalea candida	3	1.308539945
Purple Prairie Clover	Dalea purpurea	8	3.305785124
Showy Tick Trefoil	Desmodium canadense	2	0.252525253
Pale Purple Coneflower	Echinacea pallida	5	0.60835629
Rattlesnake Master	Eryngium yuccifolium	4	0.688705234
Flowering Spurge	Euphorbia corollata	0.5	0.091827365
Roundheaded Bushclover	Lespedeza capitata	1	0.19513315
Rough Blazing Star	Liatris aspera	3	0.757575758
Prairie Blazing Star	Liatris pycnostachya	1	0.252525253
Foxglove Penstemon	Penstemon digitalis	0.125	0.373048669
Large-flowered Beardtongue	Penstemon grandiflorus	0.25	0.080348944
Wild Rose	Rosa carolina/R. arkansana	1	0.057392103
Blackeyed Susan	Rudbeckia hirta	1	2.112029385
Sweet Coneflower	Rudbeckia subtomentosa	1	0.987144169
Wild Petunia	Ruellia humilis	0.25	0.029843893
Rosinweed	Silphium intergrifolium	1	0.027548209
Compass Plant	Silphium laciniatum	3	0.045454545
Showy Goldenrod	Solidago speciosa	0.25	0.545224977
Prairie Spiderwort	Tradescantia bracteata	1	0.229568411
Ohio Spiderwort	Tradescantia ohioensis	1	0.229568411
Hoary Vervain	Verbena stricta	0.75	0.482093664
Ironweed	Vernonia baldwinii/V. fasciculata	0.5	0.264003673
Golden Alexanders	Zizia aurea	2	0.505050505
Grasses	TOTAL:	61.375	16.21205234
Sideoats grama	Bouteloua curtipendula	32	4.775022957
Canadian wildrye	Elymus canadensis	16	1.836547291
Little Bluestem	Schizachyrium scoparium	58	18.640955
Rough Dropseed	Sporobolus asper	8	5.509641873
TOTAL:		114	30.76216713
GRAND TOTAL:		175.375	46.97421947

4. WARRANTY AND MAINTENANCE PERIOD: THE SEEDING SHALL BE INSTALLED AND MAINTAINED AS SPECIFIED TO GERMINATE AND PROVIDE A UNIFORMLY DENSE STAND OF THE SEED MIX SPECIFIED, FREE OF WEEDS AND UNDESIRABLE SPECIES, DEBRIS, AND FREE OF ERODED AREAS AND BARE SPOTS. RE-RAKE AREAS FAILING TO SHOW A GOOD DENSE STAND WITHIN 60 DAYS FOR COOL SEASON PERMANENT GRASS MIX AND 12-MONTHS FOR NATIVE SEED MIXTURE. RESEED AS ORIGINALLY SPECIFIED. A WARRANTY SHALL BE PROVIDED FOR COMPLETED SEEDING AREAS, STARTING UPON THE DATE OF PROJECT ACCEPTANCE FOR A PERIOD OF 12-MONTHS. THE WARRANTY SHALL GUARANTEE COMPLETED SEEDING AREAS PROVIDING A UNIFORMLY DENSE, LIVE, AND HEALTHY STAND OF SEED MIX SPECIFIED, FREE OF DEBRIS, ERODED AND BARE SPOTS, WEEDS AND UNDESIRABLE SPECIES, DISEASES AND INSECTS. A MINIMUM MAINTENANCE PERIOD OF 12-MONTHS SHALL BE PROVIDED DURING THE WARRANTY PERIOD. ANY DEFECTS IN THE SEEDING AREA AND GRASS STAND SUCH AS WEEDY AREAS, ERODED AREAS AND BARE SPOTS SHALL BE CORRECTED AND RESEEDED AS ORIGINALLY SPECIFIED UNTIL ALL AFFECTED AREAS ARE ACCEPTED BY THE LANDSCAPE ARCHITECT, WITHOUT ADDITIONAL COMPENSATION. REPAIR AND REPLACE TO ORIGINAL CONDITION ALL DAMAGES TO PROPERTY RESULTANT FROM THE SEEDING OPERATION AND ALL DAMAGES AS A RESULTANT FROM THE REMEDYING OF THESE DEFECTS, WITHOUT ADDITIONAL COMPENSATION.
5. WATER: WATER SHALL BE FREE OF ANY SUBSTANCE HARMFUL TO SEED GROWTH. THE CONTRACTOR SHALL PROVIDE WATER, EQUIPMENT, METHODS OF TRANSPORTATION, WATER TANKER, HOSES, SPRINKLERS, AND LABOR NECESSARY FOR THE APPLICATION OF WATER.
6. INOCULANT FOR LEGUMES: AN INOCULANT IS A CULTURE OF BACTERIA SPECIFICALLY FORMULATED FOR LEGUME SEEDS. THE MANUFACTURER'S CONTAINER SHALL INDICATE THE SPECIFIC LEGUME SEED TO BE INOCULATED, RATE OF APPLICATION, AND THE EXPIRATION DATE. ALL INOCULANT SHALL MEET REQUIREMENTS OF THE IOWA SEED LAW. FOLLOW THE SAFETY PRECAUTIONS SPECIFIED ON THE PRODUCT LABEL.
8. STICKING AGENT: A STICKING AGENT SHALL BE A COMMERCIAL MATERIAL RECOMMENDED BY THE MANUFACTURER TO IMPROVE ADHESION OF LEGUME INOCULANT. FOR SMALL QUANTITIES, LESS THAN 50 POUNDS, THE STICKING AGENT NEED NOT BE A COMMERCIAL AGENT, BUT IT MUST BE APPROVED BY THE LANDSCAPE ARCHITECT AND MUST BE APPLIED SEPARATELY PRIOR TO APPLICATION OF INOCULANT. A STICKING AGENT IS NOT REQUIRED IF A LIQUID FORMULATION OF INOCULANTS IS USED.
6. LOCATIONS: ALL AREAS DISTURBED BY CONSTRUCTION. AREAS TO BE DISTURBED SHALL CONFORM TO THE LIMITS STATED OR SHOWN ON THE CONSTRUCTION PLANS AND CONTRACT DOCUMENTS. AREAS DISTURBED OUTSIDE THE CONTRACT LIMITS AND APPROVED FOR SEEDING BY THE LANDSCAPE ARCHITECT SHALL BE SEED BY THE CONTRACTOR AT NO ADDITIONAL COMPENSATION.
7. MULCH:
 - A. ALL AREAS DISTURBED BY CONSTRUCTION WITH SLOPES GREATER THAN 6:1 SHALL USE A HYDRAULICALLY APPLIED EROSION CONTROL PRODUCT. ACCEPTABLE PRODUCTS AND MANUFACTURERS INCLUDE:
 1. FLEXTERRA FGM
Applied at a rate of 4000 lbs per Acre.
Manufactured By: PROFILE Products LLC,
750 Lake Cook Road Suite 440
Buffalo Grove, IL 60089
800-366-1180 (Fax 847-215-0577)
www.profileproducts.com
 2. OR APPROVED EQUAL.
 - B. FOR ALL OTHER SLOPES DRY CEREAL STRAW (OATS, WHEAT, BARLEY OR RYE) OR NATIVE GRASS PRAIRIE HAY MAY BE USED. MULCH MUST BE FREE FROM NOXIOUS WEED, SEED BEARING STALKS, OR ROOTS AND ARE SUBJECT TO INSPECTION AND APPROVAL BY THE CONTRACTING OFFICER. DRY CEREAL STRAW MULCH SHALL BE APPLIED AT A RATE OF 1.5 TONS/ACRE OR NATIVE GRASS PRAIRIE HAY AT 2 TONS/ACRE.
8. TOPSOILING: BRING AREAS TO BE TOPSOILED TO A MINIMUM ELEVATION OF 6" BELOW FINISH GRADE DURING GRADING OPERATIONS. WHEN CONTRACT OPERATIONS HAVE BEEN COMPLETED TO POINT WHERE AREAS WILL NOT BE DISTURBED, CLEAN SUBGRADE FREE OF WASTE MATERIALS, SCARIFY AND PULVERIZE TO A DEPTH OF NOT LESS THAN 3" AND REMOVE SURFACE IRREGULARITIES.
9. SEEDBED PREPARATION: LIMIT PREPARATION OF SEEDBED TO AREAS WHICH WILL BE SEEDING IMMEDIATELY UPON COMPLETION. REMOVE ALL MULCH, WEEDS AND WEED DEBRIS WHERE WEED GROWTH HAS DEVELOPED. IN THE OPINION OF THE CONTRACTING OFFICER, MULCH, WEED GROWTH AND WEED DEBRIS REMOVAL PROCESS SHALL BE APPROVED BY THE CONTRACTING OFFICER AND SHALL BE DONE WITHOUT ADDITIONAL COMPENSATION. USE CRAWLER TYPE OR DUAL-WHEELED TRACTORS FOR SEEDBED PREPARATION. OPERATE EQUIPMENT IN A MANNER TO MINIMIZE DISPLACEMENT OF SOIL AND DISTURBANCE OF THE DESIGN CROSS-SECTION. HARROW RIDGING IN EXCESS OF 4 INCHES DUE TO OPERATION OF TILLAGE EQUIPMENT PRIOR TO ROLLING WITH THE CULTIPACKER. ROLL THE AREA WITH NO LESS THAN ONE PASS OF THE CULTIPACKER PRIOR TO PERMANENT SEEDING. THE CONTRACTOR SHALL SHAPE AND FINE GRADE TO REMOVE WASHES OR GULLIES, WATER POCKETS, AND IRREGULARITIES TO PROVIDE A SMOOTH, FIRM, AND EVEN SURFACE TRUE TO GRADE AND CROSS-SECTION. DISK OR ROTOTILL AND CULTIVATE SEEDBED TO A MINIMUM 4 INCH DEPTH TO A FINE TEXTURE AND WITHOUT SOIL LUMPS. WHERE THE AREA IS INACCESSIBLE TO MACHINERY, IT SHALL BE PREPARED BY HAND TO A MINIMUM DEPTH OF 2 INCHES. SOIL PARTICLES SHALL BE 1/2 INCH OR SMALLER IN THE TOP 1 INCH OF SOIL. COORDINATE PREPARATION OF ALL DITCHES DESIGNATED FOR SPECIAL DITCH CONTROL WITH THE SEEDBED PREPARATION. SEEDBED SHALL BE TILLED PARALLEL TO THE CONTOURS. SMOOTH THE SEEDBED WITH A CULTIVATOR-TYPE TILLAGE TOOL HAVING A RAKE BAR OR A ROCK RAKE. PICK UP AND REMOVE ALL DEBRIS, SUCH AS ROCKS, STONES, CONCRETE LARGER THAN 2 INCHES, OR ROOTS AND OTHER OBJECTIONABLE MATERIAL THAT WILL INTERFERE WITH THE SEEDING OPERATION. A SPRING TOOTH CULTIVATOR MAY BE USED IN LIEU OF A ROCK PICKER. REMOVE THE ROCK BY HAND AFTER EACH USE OF THE CULTIVATOR; REPEAT THE PROCESS UNTIL THE SOIL IS RELATIVELY FREE OF ROCK AS DETERMINED BY THE CONTRACTING OFFICER. RUTS AND WHEEL TRACKS IN THE SEEDBED FROM SEEDBED PREPARATION ARE TO BE REMOVED PRIOR TO SEEDING. SEEDBED PREPARATION TO BE APPROVED BY THE LANDSCAPE ARCHITECT BEFORE THE SEED SOWING OCCURS.

10. SEED PREPARATION: TREAT ALL LEGUME SEED WITH A COMMERCIAL STICKING AGENT TO BE APPLIED PRIOR TO APPLICATION OF INOCULANT, OR AS A MIXTURE WHEN THE STICKING AGENT IS COMPATIBLE WITH OTHER MATERIALS. USE MECHANICAL MIXING EQUIPMENT TO APPLY STICKING AGENT AND INOCULANT ON SEED QUANTITIES OVER 50 POUNDS. DO NOT EXPOSE INOCULATED SEED TO DIRECT SUNLIGHT FOR MORE THAN 30 MINUTES. RE-INOCULATE SEED THAT IS NOT SOWN WITHIN 8 HOURS AFTER INOCULATION PRIOR TO USE. PRE-INOCULATED SEED WITH MANUFACTURER'S RECOMMENDED PROTECTIVE COATING MAY BE USED IN LIEU OF SEED WITH CONTRACTOR-APPLIED INOCULANTS. NATIVE SEED MIXES TO BE MIXED ON SITE IN THE PRESENCE OF THE CONTRACTING OFFICER. TO AID IN PROPER DISTRIBUTION NATIVE SEED MIXES SHALL BE MIXED WITH EQUAL PARTS INERT MATERIAL PRIOR TO SEEDING.

11. SOWING SEED: SOWING SHALL BE DONE BETWEEN SEED DATES SPECIFIED WITH SEED MIX. WITH THE AGREEMENT OF THE LANDSCAPE ARCHITECT AND AT THE FULL RESPONSIBILITY OF THE CONTRACTOR, SEEDING OPERATIONS FOR ALL SEED TYPES MAY BE CONDUCTED OUTSIDE THE SPECIFIED SEEDING DATES. SEEDING OUTSIDE THE SPECIFIED SEED DATES MAY REQUIRE AN INCREASE IN SEED RATES AND AN ALTERNATIVE NURSE CROP. RAKE SURFACE TO PRODUCE FINE SOIL TEXTURE BEFORE SEEDING. CONTRACTOR IS RESPONSIBLE FOR ENSURING PROPER DISTRIBUTION OF SEED. SEED RATE TO BE CAREFULLY CALCULATED BASED EQUIPMENT USED TO SOW SEED AND, IF APPLICABLE, INERT MATERIAL ADDED TO THE MIX IN AREAS ACCESSIBLE TO MACHINERY. SOW SEED WITH A NATIVE GRASS SEED DRILL USING A TWO-PASS METHOD IN OPPOSITE DIRECTIONS. A NO-TILL ATTACHMENT MAY BE ALLOWED IN UNDISTURBED AGRICULTURAL FIELD AREAS IF APPROVED BY CONTRACTING OFFICER. SEED PLANTING DEPTH AS PER SEED SUPPLIER RECOMMENDATION. MAXIMUM PLANTING DEPTH 1/4-INCH. ON AREAS INACCESSIBLE TO FIELD MACHINERY, THE USE OF HAND-OPERATED CYCLONE SEEDERS WILL BE PERMITTED TO BROADCAST SEED, BUT NO OTHER HAND-SEEDING METHODS WILL BE ACCEPTED. THE APPLICATION OF GRASS AND LEGUME SEED WITH HAND SEEDERS ON EARLY SPRING WORK MUST BE PERFORMED AS SEPARATE OPERATIONS. NO MIXING OF THESE TWO TYPES OF SEED WILL BE PERMITTED. ALL OTHER METHODS OF SOWING SEED MUST BE REVIEWED AND APPROVED BY CONTRACTING OFFICER. AFTER BROADCAST SEEDING, SEED SHOULD BE INCORPORATED INTO THE SOIL BY DRAGGING A PIECE OF CHAIN LINK FENCE, USING A DRAG HARROW OR HAND RAKING SEED IN WITH A GARDEN RAKE UNTIL THE SEED DISAPPEARS. ALL SEEDED AREAS SHALL BE PACKED WITH A CULTIPACKER OR LAWN ROLLER WITH NOT LESS THAN ONE COMPLETE PASS.

ALL SEEDED AREAS SHALL BE MULCHED WITHIN 24 HOURS AFTER THE SEED IS SOWN. APPLY MULCH, INCLUDING HYDRAULICALLY APPLIED EROSION CONTROL PRODUCT AND DRY CEREAL MULCH OR NATIVE PRAIRIE HAY MULCH, AFTER APPLICATION OF SEED. UNIFORMLY DISTRIBUTE THE MULCH OVER THE REQUIRED AREAS.

WORK THE DRY CEREAL STRAW OR NATIVE PRAIRIE HAY MULCH INTO THE SOIL WITH A MULCH TUCKER DESIGNED TO ANCHOR THE MULCH INTO THE SOIL BY MEANS OF DULL BLADES OR DISKS. OPERATE EQUIPMENT IN A MANNER TO MINIMIZE DISPLACEMENT OF THE SOIL AND DISTURBANCE OF THE DESIGN CROSS-SECTION.

MIX HYDRAULICALLY APPLIED EROSION CONTROL PRODUCT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION, INSTRUCTIONS AND RECOMMENDATIONS. MIXING OF HYDRAULICALLY APPLIED EROSION CONTROL PRODUCT AND SEED IS NOT ALLOWED. MIX MATERIALS USING POTABLE WATER. FOLLOW MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS FOR CURING TIME.

12. SEEDED AREAS WATERING AND MAINTENANCE: WATER TO BE PROVIDED BY THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR PROVIDING PIPING, LABOR AND EQUIPMENT TO TRANSPORT AND APPLY WATER. DURING THE FIRST WEEK SEEDED AREAS SHALL BE KEPT MOIST AT ALL TIMES. THE AREAS SHALL BE ARTIFICIALLY WATERED A MINIMUM OF ONCE A DAY. EVERY DAY FOR THE FIRST THREE WEEKS AFTER SEEDING IS COMPLETED. THE QUANTITY OF WATER USED SHALL BE ADEQUATE TO KEEP THE SOIL AND MULCH MOIST TO A DEPTH OF 1 INCH AND ENSURE GROWTH OF THE SEED. IF NATURAL RAINFALL IS ADEQUATE TO KEEP THE SOIL AND MULCH MOIST AS STATED ABOVE, ARTIFICIAL WATERING MAY BE DELETED. ANY AREA SEEDING IN THE MONTH OF MAY OR JUNE SHALL BE MAINTAINED FOR AN ADDITIONAL 3 WEEKS. THE SEEDED AREAS SHALL RECEIVE A MINIMUM OF 1 INCH OF WATER EACH WEEK (EITHER NATURAL, ARTIFICIAL, OR COMBINATION) FOR THE FOURTH, FIFTH, AND SIXTH WEEK AFTER SEEDING. PROTECT AND MAINTAIN AREAS DESIGNATED BY WATERING UNTIL COMPLETED PROJECT IS ACCEPTED BY OWNER. WHEN PROJECT IS ACCEPTED BY OWNER, FURNISH COMPLETE WRITTEN INSTRUCTIONS FOR CARE OF SEEDED AREA TO ASSURE PROMOTION OF DEEP ROOT GROWTH, QUALITY, AND WHICH IS REASONABLY FREE OF WEEDS, DISEASE OR OTHER VISIBLE IMPERFECTIONS.

MAINTENANCE BY THE CONTRACTOR SHALL BEGIN IMMEDIATELY FOLLOWING THE INSTALLATION OF SEED AND MULCH AND CONTINUE FOR A 12-MONTH PERIOD FROM PROJECT ACCEPTANCE. MAINTENANCE OF SEEDED AREAS SHALL INCLUDE PROTECTION AGAINST TRAFFIC, REPAIRING OF AREAS DAMAGED, WATERING, ROLLING, AND MOWING. MOW NURSE CROP PRIOR TO DENSE ESTABLISHMENT AND PRIOR TO SEED HEAD PRODUCTION. MOW VEGETATION TO A HEIGHT OF 4 TO 6 INCHES WHENEVER THE VEGETATION GROWS 12 INCHES IN HEIGHT OR PRIOR TO SEED HEAD PRODUCTION ON WEED SPECIES IN FIRST GROWING SEASON, APPROXIMATELY EVERY TWO WEEKS. MOW VEGETATION TO A HEIGHT OF 12 INCHES ONCE A MONTH. IF WEED PRESENCE IS MINIMAL SPOT MOWING, HAND WEEDING OR REDUCED MOWING MAY OCCUR WITH APPROVAL BY OWNER. DO NOT MOW WET SATURATED AREAS IF RUTTING AND SOIL COMPACTION WILL RESULT. IF PERSISTENT PERENNIAL WEEDS AND UNDESIRABLE SPECIES ARE PRESENT A HERBICIDE MAY BE REQUIRED FOR WEED CONTROL. THE SPECIFIC HERBICIDE AND METHOD OF APPLICATION SHALL BE APPROVED BY THE CONTRACTING OFFICER PRIOR TO USING ANY HERBICIDES ON SITE.

13. RE-SEEDING: WHEN ALL WORK RELATED TO SEEDING ON AN AREA HAS BEEN COMPLETED BUT IS WASHED OUT OR DAMAGED PRIOR TO FINAL ACCEPTANCE OF THE SEEDING AREA THE AREA SHALL BE RESEEDED, AND EROSION CONTROL PRODUCT REAPPLIED AT THE CONTRACT UNIT PRICE OR PRICES WHEN SO ORDERED BY THE OWNER. SEEDED AREAS DAMAGED BY RAIN, PRIOR TO FULL APPLICATION AND INSTALLATION OF EROSION CONTROL PRODUCTS, AREA SHALL BE RESEEDED AT A RATE NOT TO EXCEED THE SPECIFIED RATE AND WITHOUT ADDITIONAL COMPENSATION.

14. FINAL ACCEPTANCE: THE AREAS SEEDING SHALL BE GIVEN ACCEPTANCE BASED UPON THE FOLLOWING CRITERIA: ALL REQUIREMENTS FOR THE COMPLETED INSTALLATION AND MINIMUM REQUIRED MAINTENANCE PERIOD HAS BEEN PROVIDED FOR SEEDED AREAS. ACCEPTANCE WILL OCCUR, PROVIDED SEEDED AREAS ARE IN A LIVE, HEALTHY, GROWING, AND WELL-ESTABLISHED CONDITION WITHOUT ERODED AREAS, BARE SPOTS, WEEDS, UNDESIRABLE SPECIES, DISEASE, OR INSECTS. CONTRACTOR SHALL GUARANTEE IN WRITING THAT ALL WORK HAS BEEN COMPLETED AS SPECIFIED AND PROVIDE THE DATE THAT ALL ACTIVITIES WERE COMPLETED. CONTRACTOR SHALL REPLANT AND REDEVELOP ANY BARE SPOTS OR AREA WHICH DOES NOT ATTAIN A FULL STAND DURING FIRST GROWING SEASON. RE-SEEDING OPERATIONS ARE TO BE COMPLETED, AS PER ORIGINAL SPECIFICATIONS. FINAL ACCEPTANCE MAY BE GIVEN BY THE OWNER UPON FULFILLMENT OF ALL ITEMS COMPLETED AS REQUIRED.

DATE	BY
11/20/16	NA
Scale:	Field Bk:
Checked By: RMV	08/26/16
Engineer: TNJ	DSS
Technician:	
Project No:	1160725
Sheet	10

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