DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

RECEIVED
DEC 30 2014
CITY OF KENT
ENGINEERING DEPT

REPLY TO
ATTENTION OF

Regulatory Branch

DEC 23 2014

Mr. Matt Knox
City of Kent Engineering Department
220 4th Avenue South
Kent, Washington 98032

Reference: NWS-2013-230
Kent Engineering Dept.
(Downey Farmstead)

Dear Mr. Knox:

We have reviewed your application to place fill in 0.015 of an acre of wetlands to install engineered log jams and an eddy feature in the Green River and abutting wetlands at Kent, Washington. The project would also create at least 1,875 linear feet of side channels and at least six acres of floodplain/riparian habitat. Based on the information you provided to us, Nationwide Permit (NWP) 27, *Aquatic Habitat Restoration, Establishment, and Enhancement Activities* (Federal Register February 21, 2012, Vol. 77, No. 34), authorizes your proposal as depicted on the enclosed drawings dated January 9, 2014.

In order for this authorization to be valid, you must ensure that the work is performed in accordance with the enclosed *NWP 27, Terms and Conditions* and the following special conditions:

a. In order to meet the requirements of the Endangered Species Act (ESA) 2008 Fish Passage and Restoration Programmatic Consultation (National Marine Fisheries Reference Number 2008/03598; U.S. Fish and Wildlife Service Reference Number 1341-2008-FWS-#F-0209), you must comply with the conditions included in the *Specific Project Information Form* dated June 10, 2014. If you cannot comply with the terms and conditions of this programmatic consultation, you must, prior to commencing construction, contact the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch for an individual consultation in accordance with the requirements of the ESA and/or the Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996.

b. This U.S. Army Corps of Engineers (Corps) permit does not authorize you to take a threatened or endangered species, in particular Puget Sound Chinook salmon and Puget Sound steelhead trout. In order to legally take a listed species, you must have a separate authorization

under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permits, or ESA Section 7 consultation Biological Opinion (BO) with non-discretionary "incidental take" provisions with which you must comply). The Habitat Restoration Program Limit 8 BO prepared by the National Marine Fisheries Service (NMFS) dated February 28, 2007, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with the specified "incidental take" in the BO (NMFS Reference Number 2006/05601). Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the BO. These terms and conditions are incorporated by reference in this permit. Failure to comply with the commitments made in this document constitutes non-compliance with the ESA and your Corps permit. The NMFS is the appropriate authority to determine compliance with ESA.

c. In order to meet the requirements of the Endangered Species Act, you may conduct the authorized in-water activities during the period from July 1 through August 31 in any year this permit is valid. You shall not conduct any in-water work authorized by this permit during the period from September 1 through June 30 in any year this permit is valid.

d. You shall implement and abide by the "*City of Kent Archeological Monitoring Plan, Downey Farmstead Restoration Project*", dated July 9, 2014. A professional archaeologist shall be on-site to monitor for the presence of archaeological resources during all ground disturbing activities that have the potential to disturb native sediments associated with this project.

e. You shall prepare and submit a summary report of the findings of the archaeological monitoring (positive or negative) to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch within 60 days after monitoring has been completed. The report must prominently display the reference number NWS-2013-230.

f. If human remains, historic resources, or archaeological resources are encountered during construction, all ground disturbing activities shall cease in the immediate area and you shall immediately (within one business day of discovery) notify the U.S. Army Corps of Engineers (Corps), Seattle District, Regulatory Branch. You shall perform any work required by the Corps in accordance with Section 106 of the National Historic Preservation Act and Corps regulations.

g. In order to meet the requirements of Nationwide Permit 27 Regional Condition 1, you shall implement and abide by the monitoring and maintenance plan "*Monitoring, Maintenance, and Adaptive Management Plan, Downey Farmstead Restoration*", dated December 9, 2014. Monitoring shall be performed for Years 1, 2, 3, 5, 7, and 10. Monitoring reports must be submitted to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch by December 31 of each monitoring year. All reports must prominently display the reference number NWS-2013-230.

To satisfy the provisions of the 2008 Fish Passage and Restoration programmatic consultation in accordance with Special Condition "a" above, please be reminded that you must provide the following information upon completion of your project:

1. Project completion date.

2. Sediment monitoring report for projects requiring in-water work, including the extent and duration of downstream turbidity impacts measured every 20 minutes during construction. (For additional details, see question I.R. of the Specific Project Information Form you submitted).

We have reviewed your project pursuant to the requirements of the ESA, the Magnuson-Stevens Fishery Conservation and Management Act, and the National Historic Preservation Act. We have determined that this project complies with the requirements of these laws provided that you comply with all of the permit general and special conditions.

The authorized work complies with the Washington State Department of Ecology's (Ecology) Water Quality Certification and the Coastal Zone Management Act requirements for this NWP. No further coordination with Ecology is required.

We have prepared and enclosed a *Preliminary Jurisdictional Determination* (JD) dated December 17, 2014, which is a written indication that wetlands and waterways within your project area may be waters of the U.S. Such waters will be treated as jurisdictional waters of the U.S. for purposes of computation of impact area and compensatory mitigation requirements associated with your permit application. If you believe the Preliminary JD is inaccurate, you may request an Approved JD, which is an official determination regarding the presence or absence of waters of the United States. If one is requested, please be aware that we may require the submittal of additional information to complete an approved JD and work authorized in this letter may <u>not</u> occur until the approved JD has been finalized.

Our verification of this NWP authorization is valid until March 18, 2017, unless the NWP is modified, reissued, or revoked prior to that date. If the authorized work has not been completed by that date and you have commenced or are under contract to commence this activity before March 18, 2017, you will have until March 18, 2018, to complete the activity under the enclosed terms and conditions of this NWP. Failure to comply with all terms and conditions of this NWP verification invalidates this authorization and could result in a violation of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act. You must also obtain all local, State, and other Federal permits that apply to this project.

Upon completing the authorized work, you must fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit* form. Thank you for your cooperation

during the permitting process. We are interested in your experience with our Regulatory Program and encourage you to complete a customer service survey form. This form and information about our program is available on our website at www.nws.usace.army.mil select "Regulatory Branch, Permit Information" and then "Contact Us." If you have any questions, please contact me at suzanne.l.anderson@usace.army.mil or (206) 764-3708.

Sincerely,

Suzanne Anderson, Project Manager
Regulatory Branch

Enclosures

KENT
WASHINGTON

CITY OF KENT

SUZETTE COOKE - MAYOR

MEMBERS OF CITY COUNCIL

KEN SHARP DENNIS HIGGINS JIM BERRIOS DANA RALPH
DEBORAH RANNIGER BILL BOYCE LES THOMAS

TIM LaPORTE - DIRECTOR OF PUBLIC WORKS
CHAD BIEREN - CITY ENGINEER

RONALD MOORE - CITY CLERK
PAT FITZPATRICK - CITY ATTORNEY

PUBLIC WORKS PROJECT

DOWNEY FARMSTEAD RESTORATION
100% DESIGN

JOB NUMBER 08-3017

Latitude 47.37706; Longitude -122.26136 NWS-2013-230

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C-3	GRADING PNLAN – EAST
C-4	SITE HABITAT IMPROVEMENT PLAN – WEST
C-5	SITE HABITAT PLAN – EAST
C-6	GRADING CONTROL POINT TABLES
C-7	HABITAT STRUCTURE CONTROL POINT TABLES
C-8	SIDE CHANNEL CROSS-SECTIONS AND BANK SLOPE STABILIZATION
C-9	FRAGER ROAD – PLAN AND PROFILE 1
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SHEET INDEX

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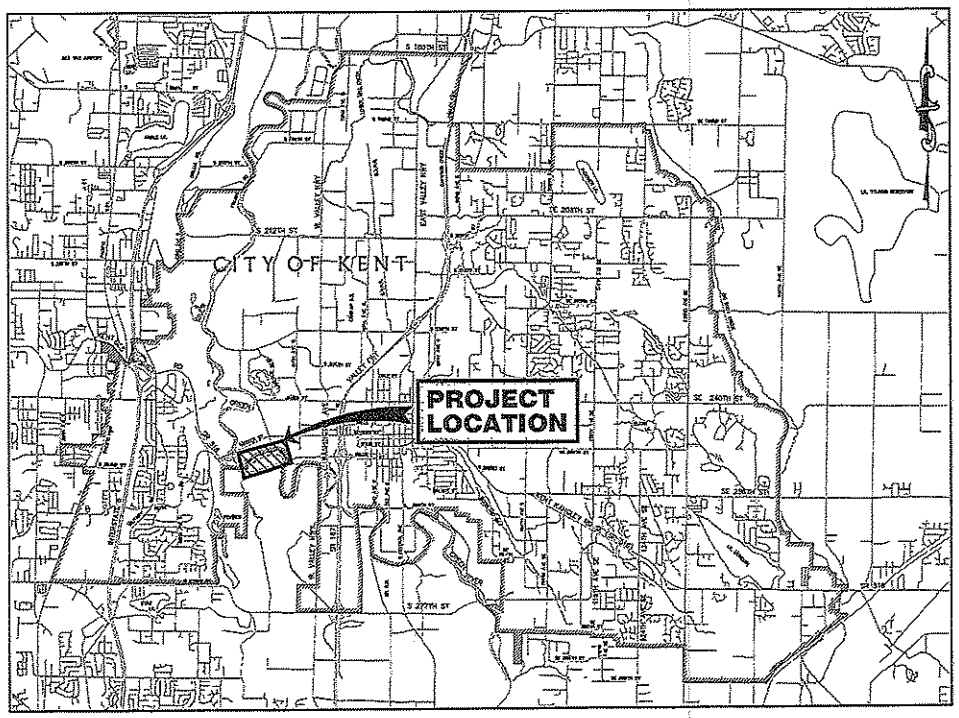
P-1	PLANTING PLAN – WEST
P-2	PLANTING PLAN – EAST
P-3	PLANTING SCHEDULE AND NOTES
P-4	PLANTING DETAILS



VICINITY MAP
NOT TO SCALE

G:\Environmental\08-3017 Downey\dwg\08-3017 G-01 COVER.dwg 1/9/2014 2:49 PM

GENERAL NOTES

1. PRIOR TO ANY CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL ATTEND A SCHEDULED PRE-CONSTRUCTION CONFERENCE WITH THE CITY OF KENT CONSTRUCTION INSPECTION PERSONNEL. PHONE (253) 856-5500 TO SCHEDULE CONFERENCE.
2. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE WSDOT STANDARD SPECIFICATIONS, AND THE KENT SPECIAL PROVISIONS FOR THIS PROJECT.
3. THE CONTRACTOR SHALL COMPLY WITH ALL PUBLIC CONVENIENCE AND SAFETY AS DESCRIBED IN SECTION 1-07.23 TO SECTION 1-07.23(2) OF THE WSDOT STANDARD SPECIFICATIONS FOR STORING OF EQUIPMENT AND MATERIALS DURING NON-WORKING HOURS.
4. THE CONTRACTOR SHALL KEEP STREETS CLEAN AT ALL TIMES BY STREET SWEEPING WHEN NECESSARY, OR WHEN DIRECTED BY THE ENGINEER.
5. ALL ITEMS OF WORK NOT LISTED IN THE BID PROPOSAL WHICH ARE SHOWN ON THE CONTRACT DRAWINGS AND ARE REQUIRED TO COMPLETE THE WORK THAT IS SHOWN SHALL BE CONSIDERED INCIDENTAL TO THE LISTED BID ITEMS.
6. UNLESS OTHERWISE NOTED, THE WORDS "REMOVE, REMOVAL, EXCAVATE AND EXCAVATION" IN THE CONSTRUCTION NOTES, SPECIFICATIONS, AND SHOWN ON THE PLANS MEANS REMOVAL, HAUL AND LEGAL OFF-SITE DISPOSAL BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
7. THE ISSUED-FOR-CONSTRUCTION PLANS, THE APPROVED TRAFFIC CONTROL PLANS, THE APPROVED TEMPORARY EROSION/SEDIMENTATION CONTROL PLANS, THE STANDARD SPECIFICATIONS AND KENT SPECIAL PROVISIONS SHALL BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
8. UNLESS STATED OTHERWISE THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS, METHODS AND SEQUENCE OF CONSTRUCTION AND FOR THE SAFETY OF THE WORKERS.
9. ALL EXISTING UTILITIES SHALL REMAIN IN SERVICE UNLESS OTHERWISE NOTED.
10. IDENTIFICATION, LOCATION, MARKING AND RESPONSIBILITY FOR UNDERGROUND FACILITIES OR UTILITIES IS GOVERNED BY THE PROVISIONS OF CHAPTER 19.122, REVISED CODE OF WASHINGTON.
11. THE CONTRACTOR SHALL CONTACT THE UNDERGROUND UTILITIES LOCATION SERVICE (811) AT LEAST TWO WORKING DAYS PRIOR TO CONSTRUCTION. THE ENGINEER SHALL BE CONTACTED IMMEDIATELY IF A CONFLICT EXISTS.
12. CAUTION – EXTREME HAZARD – OVERHEAD AND UNDERGROUND ELECTRICAL SERVICE LINES ARE GENERALLY NOT SHOWN ON THE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXTENT OF ANY HAZARD CREATED BY OVERHEAD OR UNDERGROUND ELECTRICAL POWER IN ALL AREAS AND SHALL FOLLOW PROCEDURES DURING CONSTRUCTION AS REQUIRED BY LAW AND REGULATION. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL MEET WITH UTILITY OWNERS AND DETERMINE THE EXTENT OF HAZARD AND REMEDIAL MEASURES AND SHALL TAKE WHATEVER PRECAUTIONS THAT MAY BE REQUIRED.
13. ALL LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN ESTABLISHED BY FIELD SURVEY OR OBTAINED FROM THE BEST AVAILABLE RECORDS AND SHOULD THEREFORE BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN AND TO FURTHER DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN HEREON WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN.
14. DURING THE PROCESS OF RELOCATING UTILITIES, THE CONTRACTOR IS RESPONSIBLE FOR ALL SHORING AND BRACING REQUIRED TO PROTECT AND SUPPORT EXISTING UNDERGROUND UTILITIES AND STRUCTURES DURING CONSTRUCTION.
15. ANY OPEN CUTS OF EXISTING PUBLIC ROADWAYS SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND KENT SPECIAL PROVISIONS. ALL CUTS INTO EXISTING ASPHALT SHALL BE ALONG NEAT, CONTINUOUS, SAW CUT LINES. A TEMPORARY COLD MIX PATCH MUST BE PLACED IMMEDIATELY AFTER BACKFILL AND COMPACTION. UNLESS OTHERWISE DIRECTED BY THE ENGINEER THE EXISTING SURFACING MUST BE REPLACED IN KIND (OR 3 INCHES OF COMPACTED HMA PG64-22, CLASS 1/2", ASPHALT CONCRETE, WHICHEVER IS GREATER) WITHIN 30 DAYS OF COLD PATCHING. THE CONTRACTOR SHALL CLOSELY FOLLOW REQUIREMENTS SET FOR WORKING HOURS, DETOUR AND WARNING SIGNS AND NOTIFICATION OF ROAD ALTERATIONS TO THE POLICE AND/OR OTHER EMERGENCY SERVICES.
16. ALL UTILITY LIDS, COVERS, ETC. LOCATED IN THE STREETS AND SIDEWALKS SHALL BE ADJUSTED TO GRADE.
17. IT IS ILLEGAL UNDER WASHINGTON STATE ADMINISTRATIVE CODE 332-120 TO WILLFULLY DESTROY SURVEY MARKERS. STAKES, MARKS, AND OTHER REFERENCE POINTS SET BY CITY FORCES, AND EXISTING CITY, STATE OR FEDERAL MONUMENTATION, SHALL BE CAREFULLY PRESERVED BY THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF IT BECOMES APPARENT THAT A SURVEY MARKER WILL BE DISTURBED DUE TO CONSTRUCTION. THE CONTRACTOR SHALL ALLOW AMPLE TIME FOR CITY SURVEY DEPARTMENT PERSONNEL TO ACQUIRE ADEQUATE INFORMATION SO THAT THE MONUMENT MAY BE REPLACED IN ITS ORIGINAL POSITION AFTER CONSTRUCTION.
18. ALL STORM AND SEWER PIPE PLUGGED DURING CONSTRUCTION SHALL BE DONE WITH SPEED PLUG OR APPROVED EQUAL.
19. THE COSTS FOR GENERAL RESTORATION AND CLEAN UP REQUIRED IN COMPLIANCE WITH THE SPECIFICATIONS FOR THIS PROJECT SHALL BE CONSIDERED INCIDENTAL TO AND INCLUDED IN THE UNIT CONTRACT PRICE OF OTHER BID ITEMS EXCEPT FOR THOSE ITEMS INCLUDED IN THE PROPOSAL.

LEGEND

EXISTING FEATURES APPEAR SCREENED

- KEYED NOTE
- SECTION LETTER OR DETAIL NUMBER
- SHEET NUMBER WHERE SECTION OR DETAIL IS REFERENCED
- FENCE
- GUARD RAIL
- EP — EDGE OF PAVEMENT
- ALIGNMENT/CENTERLINE
- PROPERTY LINE
- 35 — CONTOUR LINE AND LABEL
- OHW — ORDINARY HIGH WATER
- P — POWER LINE
- G — GAS LINE
- W — WATERLINE
- D — STORM DRAIN LINE
- S — SANITARY SEWER LINE
- SIGN
- STREET LIGHT/LUMINAIRE
- DECIDUOUS TREE
- CONIFEROUS TREE
- FIRE HYDRANT
- VALVE
- VAULT
- WATER METER
- STRUCTURE/ROAD REMOVAL

DATUM

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83/91

CITY OF KENT BENCHMARK No. 1047
BENCHMARK ELEVATION: 42.959

BENCHMARK DESCRIPTION: SET 4"x4" CONCRETE MONUMENT WITH BRASS DISK ON E SIDE OF FRAGER RD, ± 0.3 MI. S OF BM 1046, ± 0.3MI. N OF BM 1048. MONUMENT IS 1.7' E OF E FACE OF E GUARDRAIL, ± 91' S OF POWERPOLE 314250/164439, ± 63' N OF POWER POLE 314240/16449. SET REBAR AT N EDGE FOR METAL DETECTOR.

CITY OF KENT BENCHMARK No. 6247
BENCHMARK ELEVATION: 45.456

BENCHMARK DESCRIPTION: SET CITY OF KENT 2" ALUMINUM DISK AT N EDGE OF PLANTER ISLAND IN TOP OF CURB AT INTERSECTION OF S 251st AND 62nd AVE S AT N END OF SIGNATURE POINT APARTMENT COMPLEX.

FRANCHISE UTILITY NOTE

ALL FRANCHISE UTILITY HAND HOLES, JUNCTION BOXES, VAULTS, CABINETS, PEDESTALS, ETC. SHALL BE RELOCATED, REMOVED REPLACED AND/OR ADJUSTED TO GRADE BY THE FRANCHISE UTILITY OWNER OR THEIR REPRESENTATIVE, UNLESS OTHERWISE NOTED ON THESE PLANS. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH THE UTILITY COMPANY. ALL CITY OF KENT OWNED JUNCTION BOXES, VALVE BOXES, METER BOXES, ETC. SHALL BE RELOCATED, REMOVED, REPLACED AND/OR ADJUSTED TO GRADE AS NOTED ON THE PLANS BY THE CONTRACTOR.

FRANCHISE UTILITY CONTACTS

AT&T:	DAN MCGEOUGH	(425) 886-9830
PSE ELECTRIC:	ANITA YUROVCHAK	(253) 476-6304
PSE GAS:	ANITA YUROVCHAK	(253) 476-6304
CENTURYLINK:	DALE HARTMAN WARREN PERKINS	(253) 372-5364 (253) 372-5325
COMCAST CABLE:	JERRY STEELE	(206) 391-1763

ABBREVIATIONS

ACP	ASPHALTIC CONCRETE PAVEMENT	NAVD	NORTH AMERICAN VERTICAL DATUM
AL	ALIGNMENT	NE	NORTHEAST
AVE	AVENUE	NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
BMP	BEST MANAGEMENT PRACTICE	NW	NORTHWEST
BOC	BOTTOM OF CHANNEL	O.C.	ON-CENTER
BP	BEGINNING POINT OF ALIGNMENT	OFF	OFFSET
℄	CENTERLINE	PC	POINT OF CURVE
CB	CATCH BASIN	PCC	POINT OF COMPOUND CURVE
CMP	CORRUGATED METAL PIPE	PI	POINT OF INTERSECTION
CSBC	CRUSHED SURFACING BASE COURSE	PT	POINT OF TANGENCY
CSTC	CRUSHED SURFACING TOP COURSE	R	RADIUS, RANGE, RIGHT
DBH	DIAMETER AT BREAST HEIGHT	R/W	RIGHT OF WAY
DI	DUCTILE IRON	S	SOUTH
DIA	DIAMETER	SD	STORM DRAIN
E	EAST, EASTING	SE	SOUTHEAST
EG	EXISTING GROUND	SEC	SECTION
EL	ELEVATION	SS	SANITARY SEWER
ELJ	ENGINEERED LOG JAM	SSMH	SANITARY SEWER MANHOLE
EP	EDGE OF PAVEMENT, ENDPOINT OF ALIGNMENT	ST	STREET
EXST	EXISTING	STA	STATION
FG	FINISH GRADE	SW	SOUTHWEST
H	HIGH	T	TOWNSHIP
HDPE	HIGH DENSITY POLYETHYLENE	TESC	TEMPORARY EROSION AND SEDIMENT CONTROL
HMA	HOT MIX ASPHALT	TOC	TOP OF CONCRETE
IE	INVERT ELEVATION	TOW	TOP OF WALL
INT	INTERSECTION OF ALIGNMENTS	TYP	TYPICAL
L	LEFT, LENGTH OF ARC	UPRR	UNION PACIFIC RAILROAD
LF	LINEAL FEET	W	WEST, WIDE
MID	MIDPOINT OF CURVE	W.M.	WILLAMETTE MERIDIAN
N	NORTH, NORTHING	WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
NAD	NORTH AMERICAN DATUM	Δ	DELTA

NWS-2013-230

NO.	REVISION	BY	DATE

DESIGNED: CW | CHECKED: | KENT PROJECT NO. 08-3017 | SCALE: HORIZ: VERT:
DRAWN: CW | PROJECT ENGR: | CONST. MGMT. REVIEW
APPROVED: CITY ENGINEER | DATE

BAR IS ONE INCH ON ORIGINAL DRAWING ADJUST SCALES ACCORDINGLY 0" 1"

City of Kent Public Works Department Engineering Division

GENERAL NOTES AND LEGEND

DOWNEY FARMSTEAD RESTORATION

SHEET G-2 OF 29

FILE NO. 08-3017 G-02 GENERAL NOTES AND LEGEND.dwg

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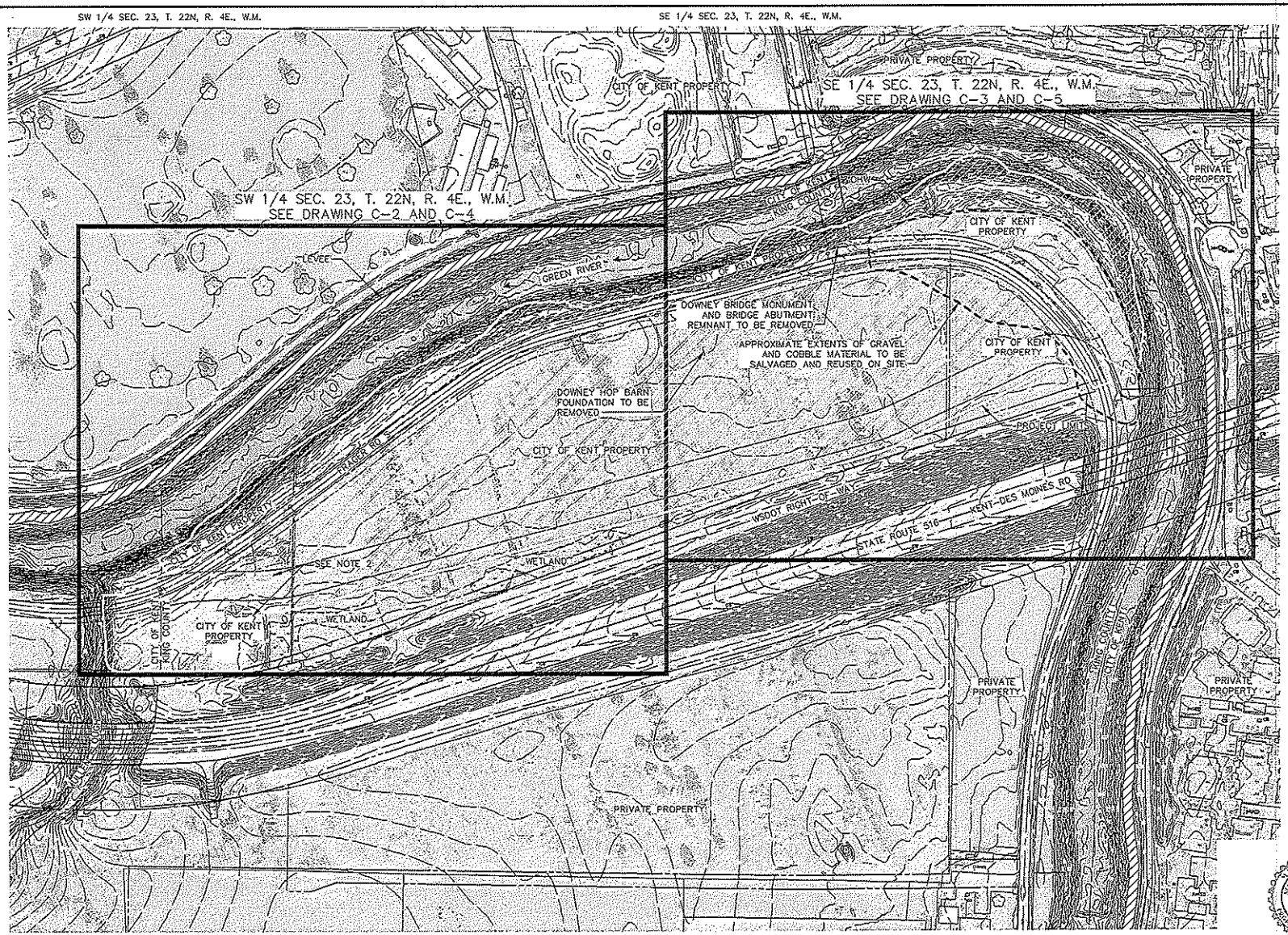

100 0 100 200
1"=100'

NOTES:

1. SITE ELEVATION DATA WAS PROVIDED BY CITY OF KENT, 4/2010. BATHYMETRIC DATA WAS SURVEYED BY PGS 2/2010. AERIAL PHOTO IS FROM 2009 AND PROVIDED BY THE CITY OF KENT.
2. THESE BUILDINGS AND SUBSTRUCTURES HAVE BEEN REMOVED FROM THE PROJECT AREA.

NWS-2013-230

HERRERA
2200 Sixth Avenue
Suite 1100
Seattle, Washington
98121-1820
206-441-9080
206-441-9108 FAX
http://www.herrerainc.com

NO.	REVISION	BY	DATE

DESIGNED: M.B. CHECKED: M.E. KENT PROJECT NO. 08-3017 SCALE: NOTED
DRAWN: R.H. PROJECT ENGR: M.E. CONST. MGMT. REVIEW YEAR:
APPROVED: CITY ENGINEER DATE NOV. 2013
BAR IS ONE INCH ON ORIGINAL DRAWING ADJUST SCALES ACCORDINGLY 0" 1"

City of Kent
Public Works Department
Engineering Division

EXISTING SITE PLAN AND KEY MAP

DOWNEY FARMSTEAD RESTORATION

SHEET C-1 OF 29
FILE NO. 0167C01

Plot Date: 1/9/2014 1:07 PM Cad User: Mackenzie, Chris
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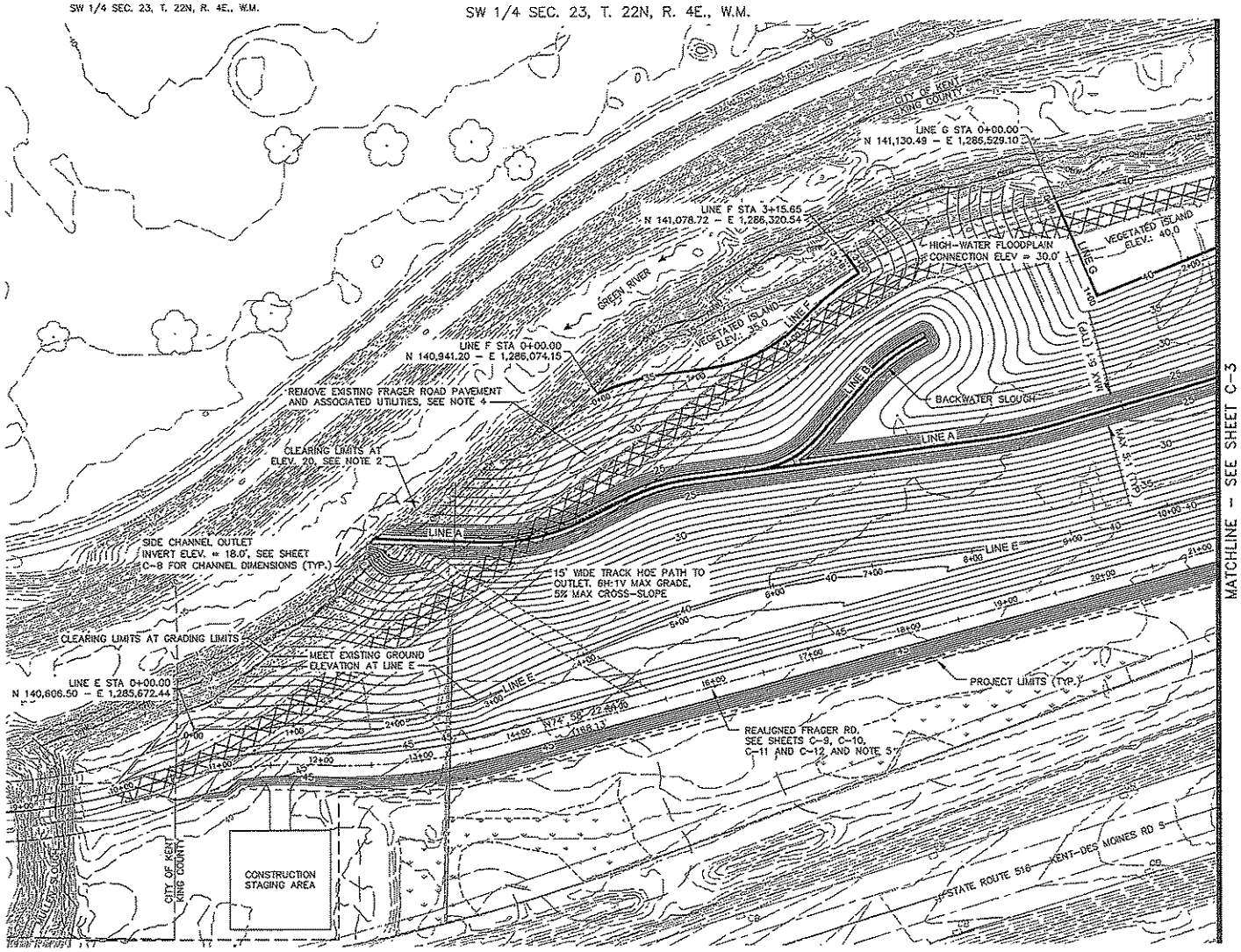

50 0 50 100
1"=50'

GRADING NOTES:

1. SEE SHEET C-6 FOR STATIONING LINE LAYOUT DATA.
2. CONTRACTOR SHALL CLEAR AND GRUB TO CLEARING LIMITS EXCEPT WHERE VEGETATION TO BE PRESERVED HAS BEEN FLAGGED BY THE OWNER.
3. CONTRACTOR SHALL SEPARATE AND STOCKPILE GRAVEL AND COBBLE FROM SUBSURFACE AT EAST END OF SITE (SEE SHEET C-1) FOR USE AS BACKFILL OF SIDE CHANNEL INLET ENGINEERED LOG JAMS, TYPE 3. STOCKPILE LOCATION TO BE APPROVED BY THE ENGINEER.
4. CENTURY LINK AND PUGET SOUND ENERGY SHALL REMOVE AND RELOCATE THEIR RESPECTIVE TELEPHONE AND POWER UTILITIES, TO BE COORDINATED BY THE OWNER.
5. CONTRACTOR SHALL ESTABLISH TEMPORARY DRIVING SURFACE FOR REALIGNED FRAGER ROAD FOR USE BY CONTRACTOR'S VEHICLES AND EQUIPMENT, AND BY THE GENERAL PUBLIC. TEMPORARY ROADWAY SURFACE SHALL BE IN PLACE PRIOR TO REMOVAL OF ANY EXISTING FRAGER ROAD PAVEMENT. THIS TEMPORARY ROADWAY SHALL BE MAINTAINED THROUGHOUT DURATION OF CONSTRUCTION UNTIL PERMANENT FRAGER ROAD SURFACING OCCURS. SEE SHEET C-11 FOR DETAIL OF PERMANENT FRAGER ROAD SURFACING.
6. 100-YEAR FLOOD ELEV. = 43 FT.

NWS-2013-230

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DRAWN: R.H. | PROJECT ENGR: M.E. | CONST. MGMT. REVIEW | VERT:
APPROVED: CITY ENGINEER | DATE: NOV. 2013

BAR IS ONE INCH ON ORIGINAL DRAWING ADJUST SCALES ACCORDINGLY 0" 1"

KENT WASHINGTON
City of Kent
Public Works Department
Engineering Division

GRADING PLAN – WEST

DOWNEY FARMSTEAD RESTORATION

SHEET C-2 OF 29
FILE NO. 0817002

Path: G:\Environmental\08-3017 Downey\dwg\UFS CAD Files\0817C02.dwg
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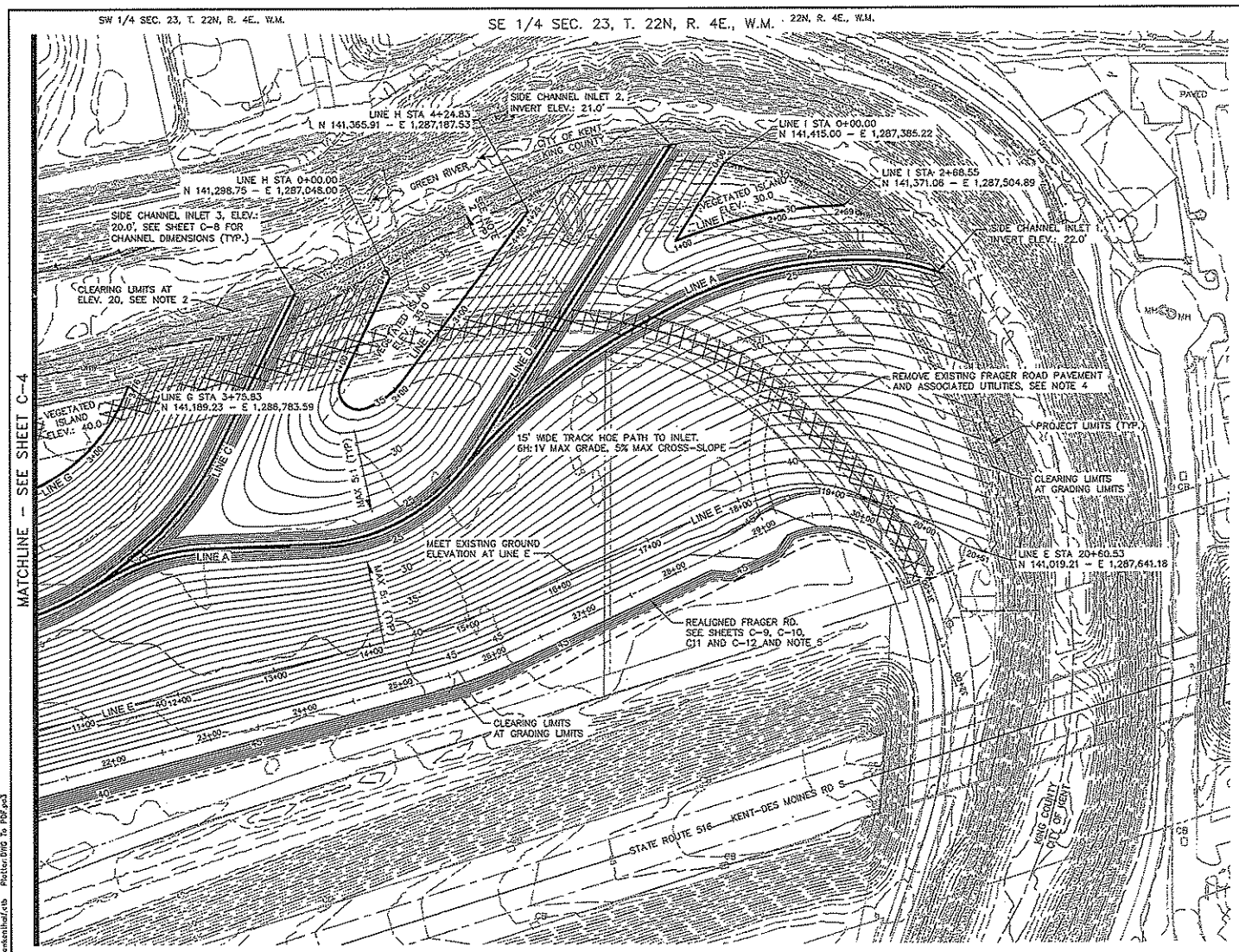
Plot Style Table: Newkenthall.ctb Plotter: DWG To PDF.pc3



50 0 50 100
1"=50'

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DESIGNED: M.D. | CHECKED: M.E. | KENT PROJECT NO. 08-3017 | SCALE: HORIZ. NOTED
DRAWN: R.H. | PROJECT ENGR: M.E. | CONST. MGMT. REVIEW | VERT.
APPROVED: CITY ENGINEER | DATE NOV. 2013 | BAR IS ONE INCH ON ORIGINAL DRAWING ADJUST SCALES ACCORDINGLY 0" 1"

City of Kent
Public Works Department
Engineering Division

GRADING PLAN – EAST

DOWNEY FARMSTEAD RESTORATION

SHEET C-3 OF 29
FILE NO. 0817003

Path: G:\Environmental\08-3017 Downey\dwg\WRS CAD Files\0817003.dwg
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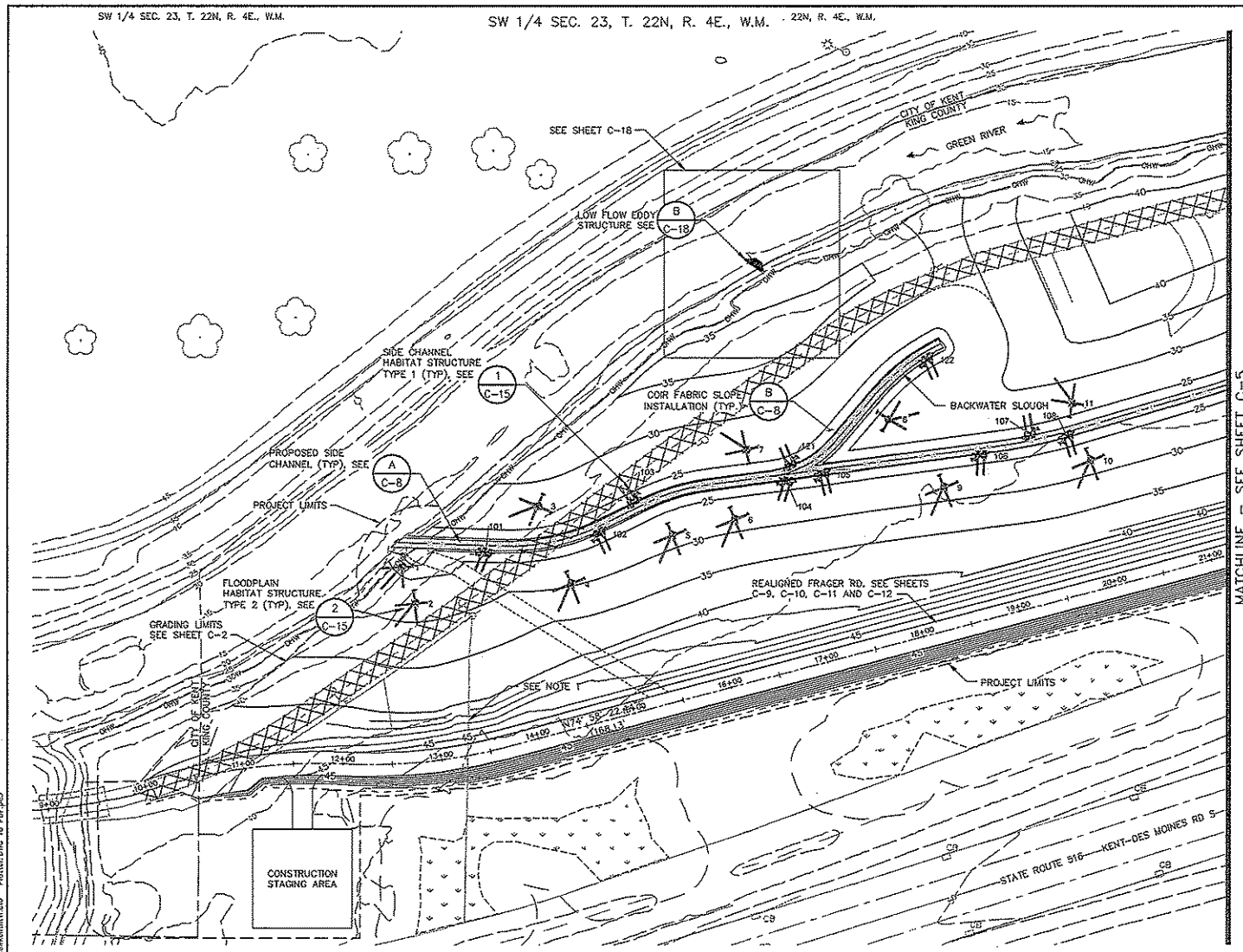
Plot Style Table: Nonkenthal.ctb | Plotter DWG To PDF.pc3



50 0 50 100
1"=50'

SITEWORK PLAN NOTES:

1. CONTRACTOR SHALL REMOVE ALL EXISTING MANMADE FEATURES FROM WITHIN THE PROJECT SITE, SUCH AS, BUT NOT LIMITED TO: FENCES, REMAINING SUBSTRUCTURES, GRAVEL, PAVEMENT, AND WASTE DEBRIS.

LEGEND:

- FLOODPLAIN HABITAT STRUCTURE SEE CONTROL POINTS TABLE ON SHEET C-7
- CHANNEL HABITAT STRUCTURE SEE CONTROL POINTS TABLE ON SHEET C-7
- LOW FLOW EDDY STRUCTURE SEE CONTROL POINTS TABLE ON SHEET C-18

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DESIGNED: M.S. | CHECKED: M.E. | KENT PROJECT NO. 08-3017
DRAWN: R.H. | PROJECT ENGR: M.E. | CONST. MGMT. REVIEW
APPROVED: CITY ENGINEER
SCALE: HORIZ: NOTED VERT:
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SITE HABITAT IMPROVEMENT PLAN - WEST

DOWNEY FARMSTEAD RESTORATION

SHEET C-4 OF 29
FILE NO. 0817C04

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Plot Date: 1/9/2014 3:29 PM Cad User: Bedsworth, Chris
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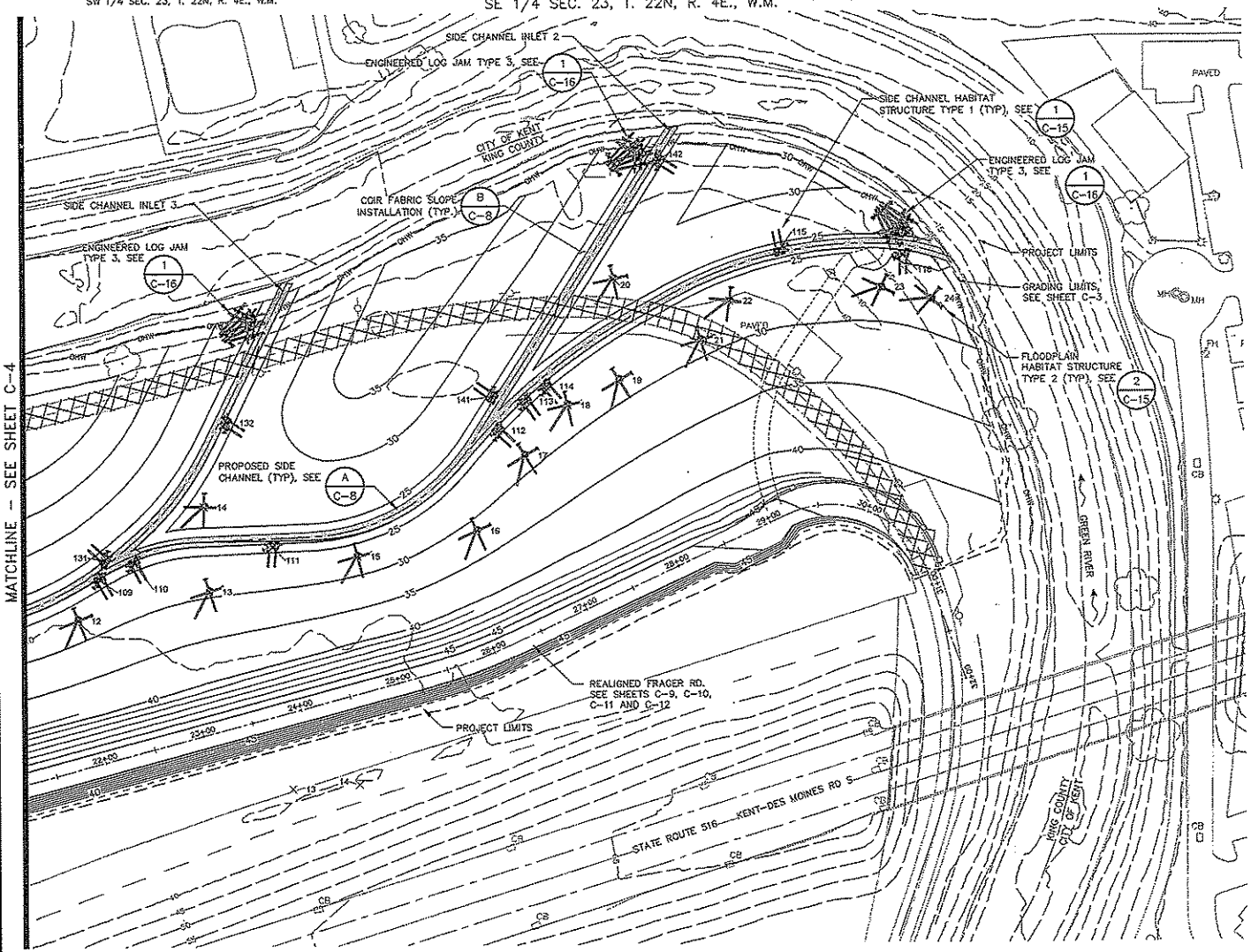

SITEWORK PLAN NOTES:

1. CONTRACTOR SHALL REMOVE ALL EXISTING MANMADE FEATURES FROM WITHIN THE PROJECT SITE, SUCH AS, BUT NOT LIMITED TO: FENCES, REMAINING SUBSTRUCTURES, GRAVEL, PAVEMENT, AND WASTE DEBRIS.

LEGEND:

- 10 FLOODPLAIN HABITAT STRUCTURE SEE CONTROL POINTS TABLE ON SHEET C-7
- 114 CHANNEL HABITAT STRUCTURE SEE CONTROL POINTS TABLE ON SHEET C-7
- SIDE CHANNEL INLET ENGINEERED LOG JAM SEE CONTROL POINTS TABLE ON SHEET C-7

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DRAWN: S.H. | PROJECT ENGR: M.E. | CONST. MGMT. REVIEW
APPROVED: CITY ENGINEER | DATE: NOV. 2013

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City of Kent
Public Works Department
Engineering Division

SITE HABITAT IMPROVEMENT PLAN – EAST

DOWNEY FARMSTEAD RESTORATION

SHEET C-5 OF 29

FILE NO. 0817C05

Path: G:\Environmental\08-3017 Downey\dwg\NRS CAD Files\0817C05.dwg
Plot Date: 11/8/2013 3:29 PM Cad User: Wadsworth, Chris
Plot Style Table: NewKentHalf.ctb Plotter: DWG To PDF.pc3

SW 1/4 SEC. 23, T. 22N, R. 4E., W.M.

SE 1/4 SEC. 23, T. 22N, R. 4E., W.M.

LINE A							
NUMBER	DIRECTION	LENGTH	RADIUS	TANGENT	DELTA	START STATION	END STATION
L1	S87° 59' 36"E	133.73'				-0+25.00	1+08.73
C1		98.90	200.00'	50.48'	28° 19' 59"	1+08.73	2+07.63
L2	N53° 40' 24"E	50.95'				2+07.63	2+58.58
C2		85.16'	200.00'	32.87'	18° 40' 01"	2+58.58	3+23.74
L3	N82° 20' 26"E	294.57'				3+23.74	6+18.30
C3		74.23'	500.00'	37.16'	8° 30' 22"	6+18.30	6+92.53
L4	N73° 50' 03"E	145.87'				6+92.53	8+38.41
C4		73.32'	300.00'	36.84'	14° 00' 13"	8+38.41	9+11.73
L5	N59° 51' 22"E	36.70'				9+11.73	9+48.43
C5		97.74'	200.00'	49.87'	28° 00' 03"	9+48.43	10+46.17
L6	N87° 51' 25"E	109.65'				10+46.17	11+55.82
C6		164.74'	200.00'	87.37'	47° 11' 43"	11+55.82	13+20.56
L7	N40° 39' 41"E	22.38'				13+20.56	13+42.94
C7		211.24'	600.00'	106.72'	20° 10' 18"	13+42.94	15+54.18
L8	N60° 50' 00"E	38.14'				15+54.18	15+92.32
C8		221.22'	400.00'	113.52'	31° 41' 17"	15+92.32	18+13.54
C9		85.46'	200.00'	43.91'	24° 46' 04"	18+13.54	19+00.00

LOCATION: SHEETS C-2 & C-3

LINE B							
NUMBER	DIRECTION	LENGTH	RADIUS	TANGENT	DELTA	START STATION	END STATION
C13		73.28'	100.00'	38.37'	41° 59' 18"	3+88.92	4+62.20
L9	N40° 21' 06"E	64.89'				4+62.20	5+27.09
C14		72.17'	200.00'	36.48'	20° 40' 29"	5+27.09	5+99.26
L10	N61° 01' 37"E	10.74'				5+99.26	6+10.00

LOCATION: SHEET C-2

LINE C							
NUMBER	DIRECTION	LENGTH	RADIUS	TANGENT	DELTA	START STATION	END STATION
C16		53.66'	300.00'	27.01'	10° 17' 24"	9+11.73	9+65.61
L11	N49° 32' 27"E	20.80'				9+65.61	9+86.40
C17		122.70'	300.00'	62.22'	23° 26' 05"	9+86.40	11+09.11
L12	N26° 06' 22"E	190.89'				11+09.11	13+00.00

LOCATION: SHEET C-3

LINE D							
NUMBER	DIRECTION	LENGTH	RADIUS	TANGENT	DELTA	START STATION	END STATION
C18		29.91'	200.00'	14.48'	8° 16' 59"	13+20.56	13+49.47
L13	N82° 22' 43"E	375.53'				13+49.47	17+25.00

LOCATION: SHEET C-3

LINE E							
NUMBER	DIRECTION	LENGTH	RADIUS	TANGENT	DELTA	START STATION	END STATION
L31	S88° 58' 09"E	56.91'				0+00.00	0+56.91
C31		16.74'	100.00'	8.39'	9° 35' 29"	0+56.91	0+73.65
C32		75.82'	650.00'	37.99'	6° 41' 01"	0+73.65	1+49.47
C33		53.60'	500.00'	26.83'	6° 08' 32"	1+49.47	2+03.07
L32	N31° 59' 51"E	18.59'				2+03.07	2+21.66
C34		14.76'	50.00'	7.43'	16° 54' 34"	2+21.66	2+36.41
C35		15.14'	25.00'	7.81'	34° 42' 26"	2+36.41	2+51.56
C36		22.78'	100.00'	11.44'	13° 03' 15"	2+51.56	2+74.34
C37		9.31'	50.00'	4.67'	10° 40' 12"	2+74.34	2+83.65
L33	N66° 34' 03"E	162.05'				2+83.65	4+45.71
C38		122.93'	900.00'	61.56'	7° 49' 35"	4+45.71	5+68.64
C39		144.45'	1100.00'	72.33'	7° 31' 27"	5+68.64	7+13.09
L34	N81° 55' 04"E	121.87'				7+13.09	8+34.97
C40		68.19'	500.00'	34.15'	7° 48' 49"	8+34.97	9+03.15
L35	N74° 06' 16"E	91.51'				9+03.15	9+94.66
C41		29.66'	1000.00'	14.83'	1° 41' 56"	9+94.66	10+24.32
L36	N75° 48' 14"E	443.50'				10+24.32	14+67.81
C42		69.37'	400.00'	34.77'	9° 56' 13"	14+67.81	15+37.19
L37	N65° 52' 01"E	238.96'				15+37.19	17+76.15
C43		47.26'	600.00'	23.64'	4° 30' 45"	17+76.15	18+23.40
C44		42.23'	150.00'	21.25'	16° 07' 48"	18+23.40	18+65.63
C45		56.59'	115.00'	28.88'	28° 11' 37"	18+65.63	19+22.22
C46		12.02'	175.00'	6.01'	3° 55' 12"	19+22.22	19+34.24
L38	S88° 14' 01"E	44.51'				19+34.24	19+78.75
C47		59.50'	200.00'	29.97'	17° 02' 48"	19+78.75	20+38.26
C48		7.94'	25.00'	4.00'	18° 11' 51"	20+38.26	20+46.20
L39	S70° 23' 05"E	14.33'				20+46.20	20+50.53

LOCATION: SHEETS C-2 & C-3

LINE F							
NUMBER	DIRECTION	LENGTH	RADIUS	TANGENT	DELTA	START STATION	END STATION
C19		76.70'	292.87'	38.57'	15° 00' 54"	-0+00.00	0+76.70
L14	N82° 16' 16"E	39.52'				0+76.70	1+16.22
C20		102.81'	150.00'	53.52'	39° 16' 16"	1+16.22	2+19.03
C21		73.89'	287.91'	37.15'	14° 42' 16"	2+19.03	2+92.93
L15	N34° 23' 34"W	22.73'				2+92.93	3+15.65

LOCATION: SHEET C-2

LINE G							
NUMBER	DIRECTION	LENGTH	RADIUS	TANGENT	DELTA	START STATION	END STATION
L16	S23° 18' 46"E	101.99'				0+00.00	1+01.99
L17	N66° 26' 45"E	118.82'				1+01.99	2+20.82
C23		155.02'	178.85'	82.76'	49° 39' 42"	2+20.82	3+75.83

LOCATION: SHEETS C-2 & C-3

LINE H							
NUMBER	DIRECTION	LENGTH	RADIUS	TANGENT	DELTA	START STATION	END STATION
L18	S25° 12' 05"W	116.61'				0+00.00	1+16.61
C24		47.61'	20.00'	50.61'	135° 24' 22"	1+16.61	1+64.23
C25		48.03'	85.00'	24.68'	32° 22' 41"	1+64.23	2+12.26
L19	N56° 25' 02"E	212.56'				2+12.26	4+24.83

LOCATION: SHEETS C-2 & C-3

LINE I							
NUMBER	DIRECTION	LENGTH	RADIUS	TANGENT	DELTA	START STATION	END STATION
L20	S31° 58' 37"W	94.17'				0+00.00	0+94.17
C26		174.38'	455.00'	88.27'	21° 57' 30"	0+94.17	2+68.55

LOCATION: SHEETS C-2 & C-3

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DESIGNED: M.D. CHECKED: M.E. KENT PROJECT NO. 08-3017 SCALE: HORIZ. NOTED
DRAWN: R.H. PROJECT ENGR: M.E. CONST. MGMT. REVIEW VERT.
APPROVED: CITY ENGINEER DATE: NOV. 2013
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City of Kent
Public Works Department
Engineering Division

GRADING CONTROL POINT TABLES

DOWNEY FARMSTEAD RESTORATION

SHEET C-6 OF 29

FILE NO. 0817C06

Path: G:\Environmental\08-3017 Downey\dwg\URS CAD Files\0817C06.dwg
Plot Date: 7/8/2014 3:29 PM
Plot Style Table: Monochrome.ctb
Plotter: DWG To PDF.pc3
CAD User: Woodworth, Chris

SW 1/4 SEC. 23, T. 22N, R. 4E., W.M.

SE 1/4 SEC. 23, T. 22N, R. 4E., W.M.

SIDE CHANNEL ENGINEERED LOG JAM TYPE 3 STRUCTURE CONTROL POINTS TABLE		
STRUCTURE # - CONTROL POINT	NORTHING	EASTING
INLET #1-A	141325.7	1287555.9
INLET #1-B	141347.2	1287537.9
INLET #2-A	141410.0	1287298.8
INLET #2-B	141396.2	1287274.4
INLET #3-A	141243.2	1286915.2
INLET #3-B	141228.5	1286891.4

LOCATION: SHEET C-5
REFERENCED: SHEETS C-16 & C-17

FLOODPLAIN HABITAT STRUCTURE TYPE 2 CONTROL POINTS TABLE		
STRUCTURE #	NORTHING	EASTING
1	140770.1	1285859.7
2	140733.0	1285871.8
3	140831.9	1285995.0
4	140753.1	1286028.7
5	140892.3	1286130.3
6	140818.5	1286192.9
7	140889.4	1286204.0
8	140920.0	1286347.9
9	140851.0	1286403.0
10	140878.1	1286550.4
11	140936.3	1286531.5
12	140945.3	1286742.7
13	140973.4	1286972.1
14	141057.7	1286867.2
15	141007.5	1287018.8
16	141032.4	1287136.7
17	141106.6	1287184.4
18	141158.5	1287226.5
19	141181.3	1287277.5
20	141281.9	1287272.0
21	141220.6	1287357.8
22	141259.5	1287386.0
23	141272.1	1287535.4
24	141260.5	1287584.4

LOCATION: SHEETS C-4 & C-5
REFERENCED: SHEETS C-15

SIDE CHANNEL HABITAT STRUCTURE TYPE 1 CONTROL POINTS TABLE		
STRUCTURE #	STATION, LINE	OFFSET AND SIDE (LOOKING UPSTATION)
101	0+90.0 LINE A	8.1 RT.
102	2+03.9 LINE A	7.4 RT.
103	2+48.5 LINE A	8.3 LT.
104	4+03.6 LINE A	7.9 RT.
105	4+40.5 LINE A	5.4 RT.
106	6+00.0 LINE A	7.6 RT.
107	6+52.2 LINE A	7.2 LT.
108	6+88.2 LINE A	5.1 RT.
109	9+39.5 LINE A	6.6 RT.
110	9+77.9 LINE A	7.6 RT.
111	11+19.3 LINE A	8.2 RT.
112	13+75.5 LINE A	8.6 RT.
113	14+15.6 LINE A	6.9 RT.
114	14+40.9 LINE A	9.0 RT.
115	17+11.0 LINE A	3.0 LT.
116	18+33.7 LINE A	9.6 RT.
121	4+11.2 LINE B	7.9 LT.
122	5+69.3 LINE B	7.8 RT.
131	9+54.0 LINE C	5.1 LT.
132	11+37.5 LINE C	6.6 RT.
141	13+93.2 LINE D	8.3 LT.
142	16+84.5 LINE D	6.3 RT.

LOCATION: SHEETS C-4 & C-5
REFERENCED: SHEETS C-15

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DESIGNED: M.B. CHECKED: M.E. KENT PROJECT NO. 08-3017
DRAWN: R.H. PROJECT ENGR: M.E. CONST. MGMT. REVIEW
APPROVED: CITY ENGINEER
SCALE: HORIZ: NOTED VERT:
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City of Kent
Public Works Department
Engineering Division

HABITAT STRUCTURE CONTROL POINT TABLES

DOWNEY FARMSTEAD RESTORATION

SHEET C-7 OF 29
FILE NO. 0817007

Path: G:\Environmental\08-3017 Downey\dwg\URS CAD Files\0817007.dwg
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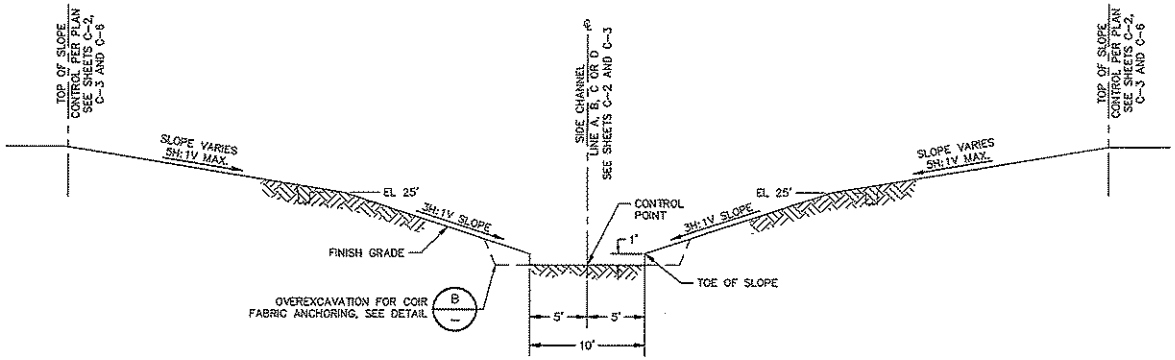
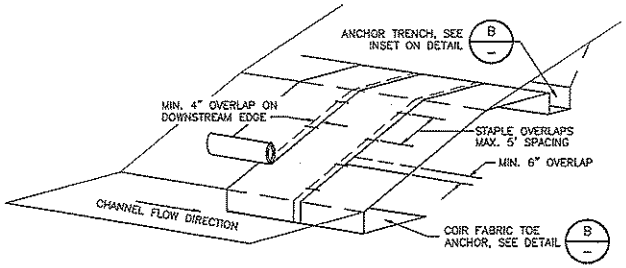


TYPICAL SECTION – SIDE CHANNEL GRADING (A, C-3, C-4)

SCALE: NONE

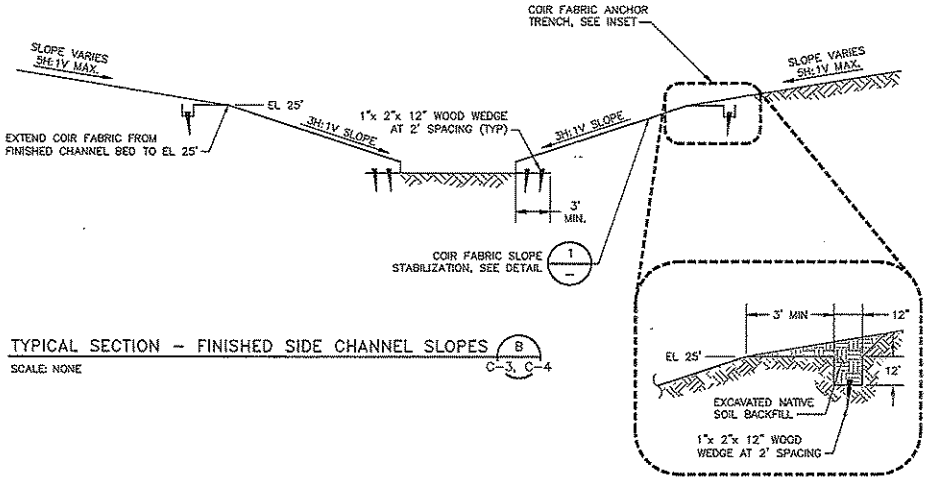


NOTES:

1. SEE SPECIFICATION FOR MATERIAL HANDLING, SLOPE SURFACE PREPARATION AND OTHER DETAILS.
2. COIR FABRIC SHALL BE INSTALLED AND APPROVED BY THE ENGINEER PRIOR TO PLANTING.
3. ALL SEEDING SHALL OCCUR PRIOR TO COIR FABRIC PLACEMENT.

DETAIL – COIR FABRIC SLOPE STABILIZATION INSTALLATION (1)

SCALE: NONE



TYPICAL SECTION – FINISHED SIDE CHANNEL SLOPES (B, C-3, C-4)

SCALE: NONE

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City of Kent Public Works Department Engineering Division

SIDE CHANNEL CROSS-SECTIONS AND BANK SLOPE STABILIZATION

DOWNEY FARMSTEAD RESTORATION

SHEET C-8 OF 29

FILE NO. 0817C08

Path: G:\Environmental\GS-3017 Downey\dwg\WRS CAD Files\0817C08.dwg
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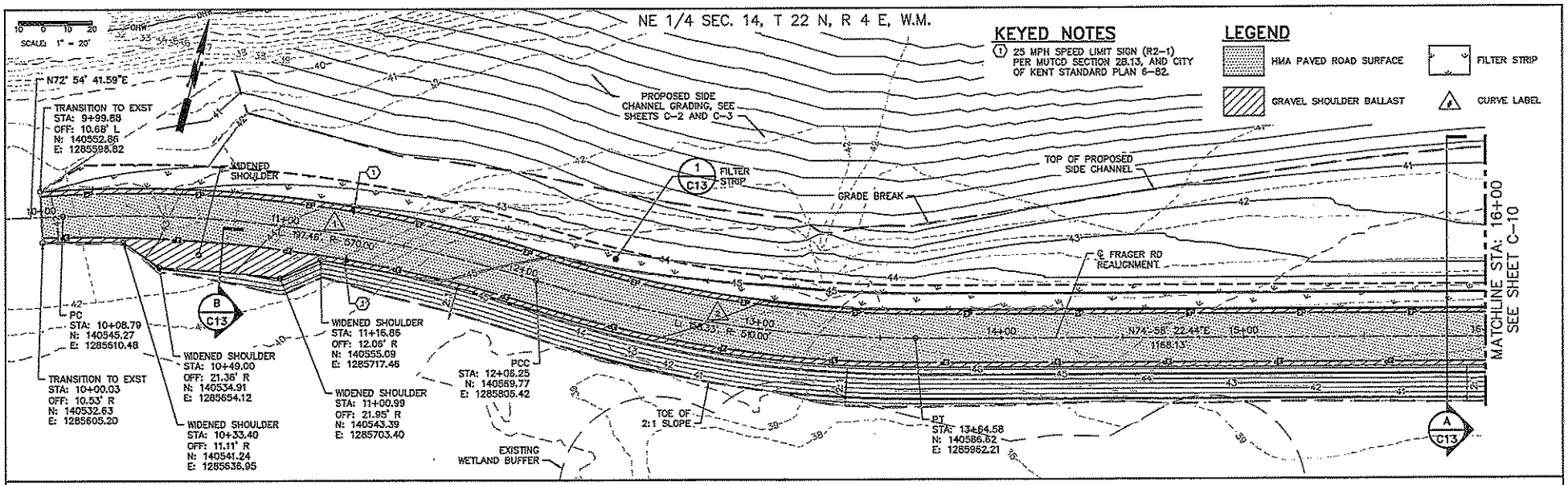

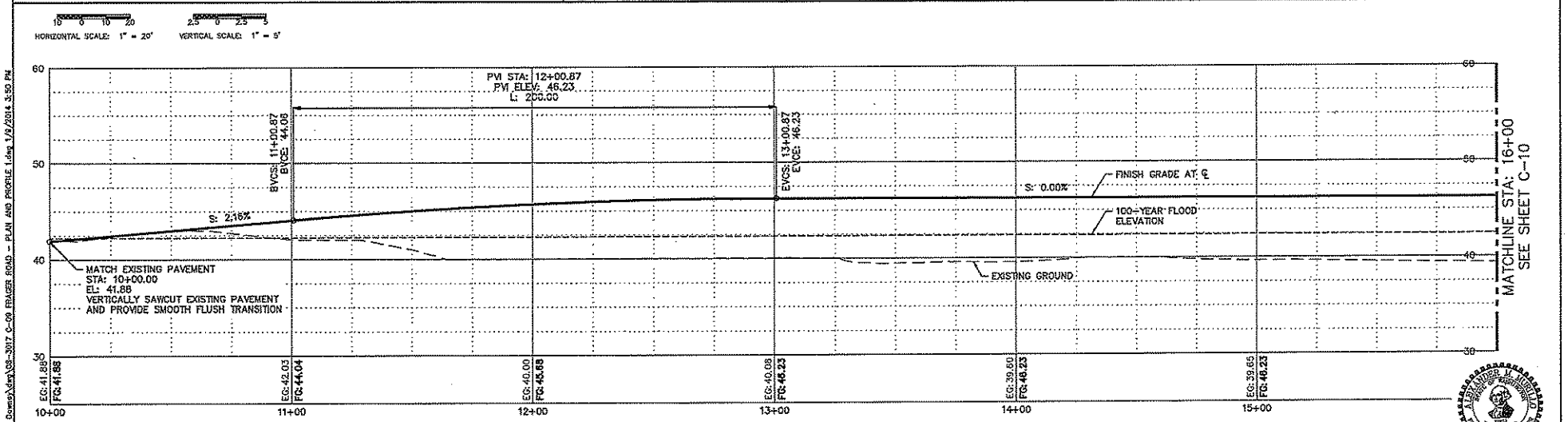

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Public Works Department
Engineering Division

FRAGER ROAD – PLAN AND PROFILE 1

DOWNEY FARMSTEAD RESTORATION

SHEET C-9 OF 29
FILE NO. 08-3017 C-09 FRAGER ROAD - PLAN AND PROFILE 1.dwg

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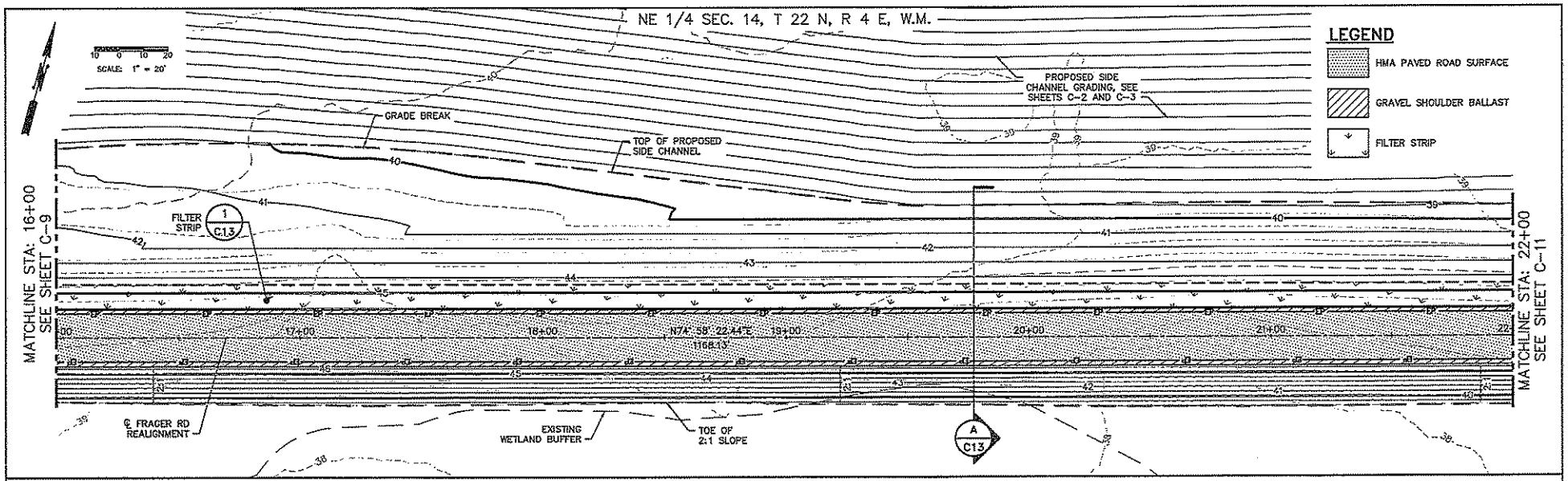

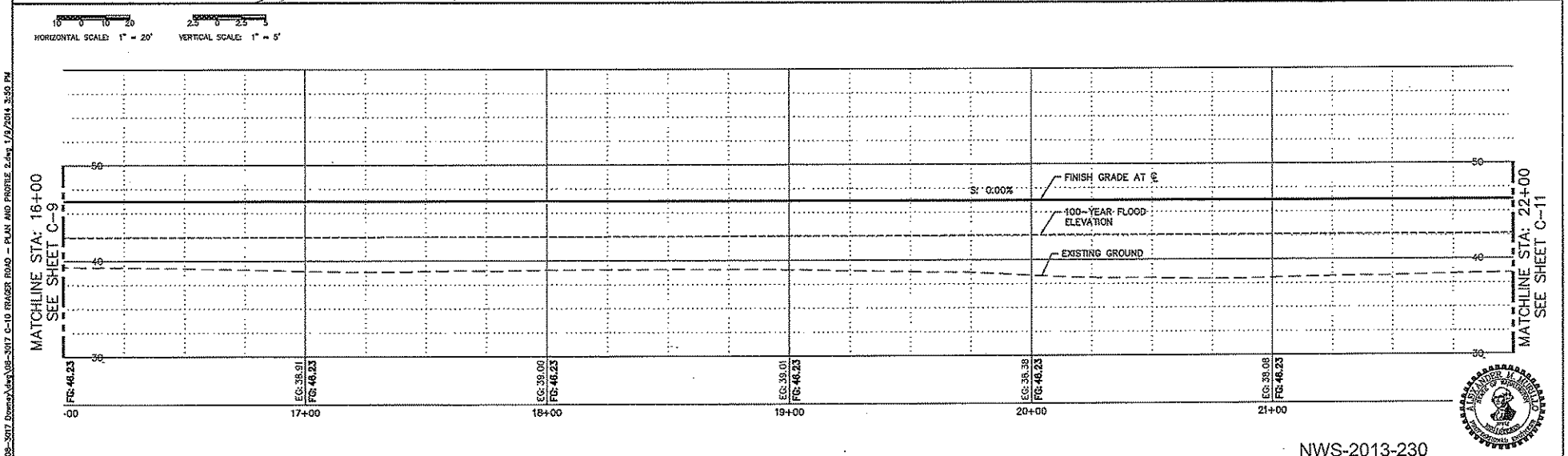

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NO.	REVISION	BY	DATE

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PROJECT ENGR:
APPROVED: CITY ENGINEER
KENT PROJECT NO. 08-3017
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DATE
SCALE: HORIZ. 1"=20' VERT. 1"=5'
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Engineering Division

FRAGER ROAD – PLAN AND PROFILE 2

DOWNEY FARMSTEAD RESTORATION

SHEET C-10 OF 29
FILE NO. 08-3017 C-10 FRAGER ROAD – PLAN AND PROFILE 2.dwg

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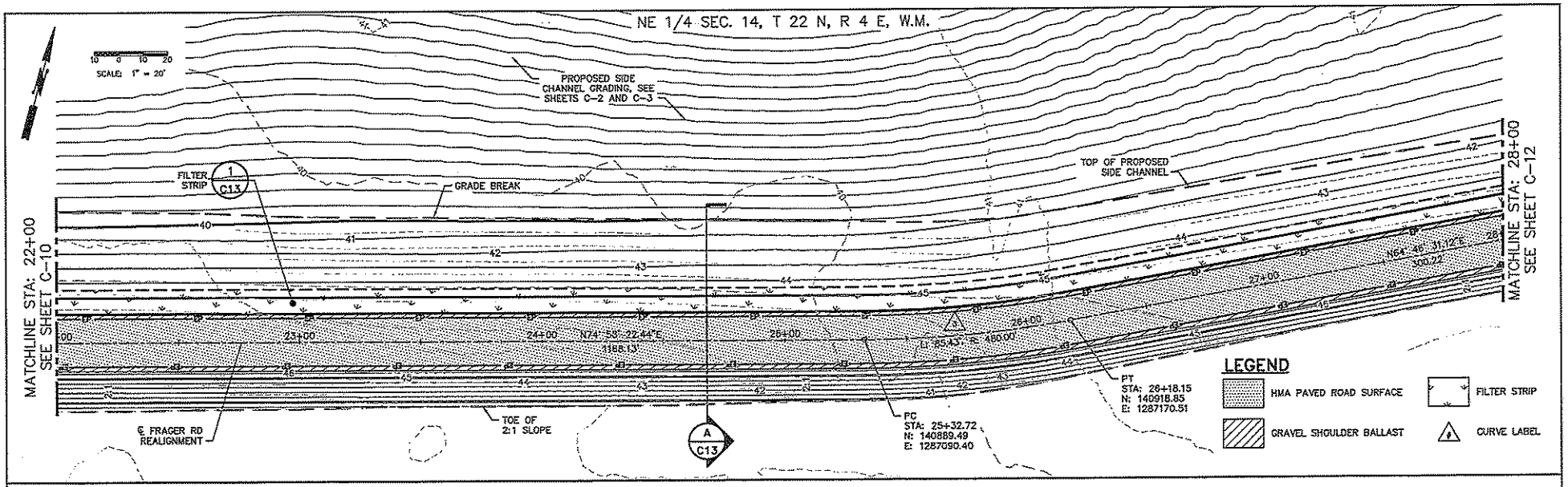

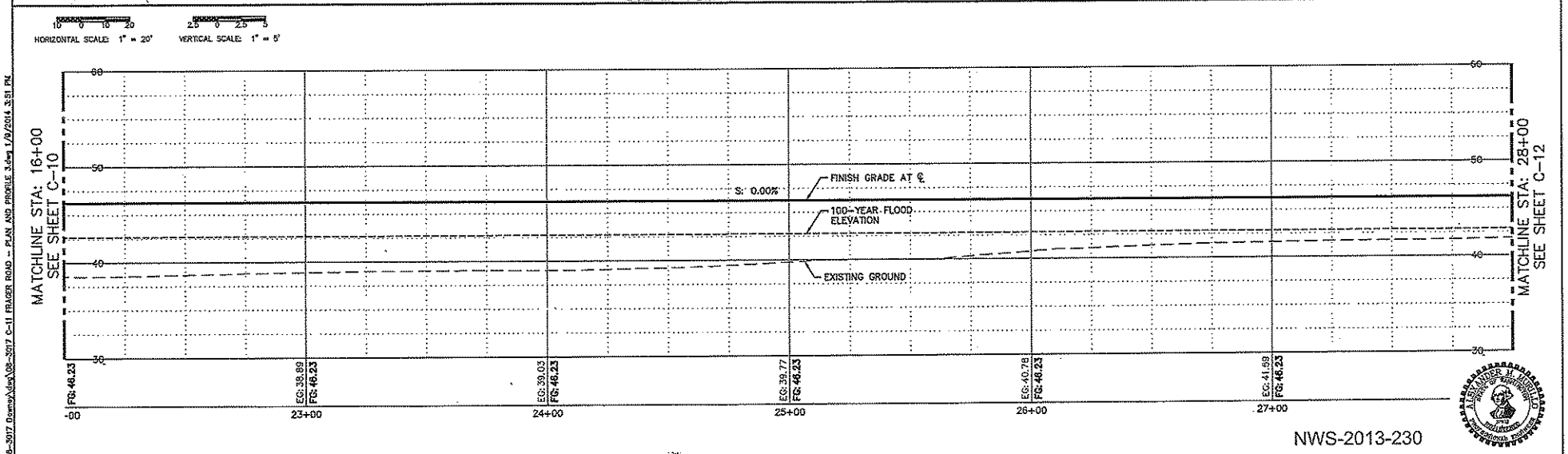

NWS-2013-230

NO.	REVISION	BY	DATE

DESIGNED: CW | CHECKED: | KENT PROJECT NO. 08-3017 | SCALE: HORIZ: 1"=20' VERT: 1"=5'
DRAWN: CW | PROJECT ENGR: | CONST. SERV. REVIEW
APPROVED: _____ CITY ENGINEER | DATE

BAR IS ONE INCH ON ORIGINAL DRAWING ADJUST SCALES ACCORDINGLY
0" 1"

City of Kent
Public Works Department
Engineering Division

FRAGER ROAD – PLAN AND PROFILE 3

DOWNEY FARMSTEAD RESTORATION

SHEET C-11 OF 29
FILE NO. 08-3017 C-11 FRAGER ROAD - PLAN AND PROFILE 3.dwg

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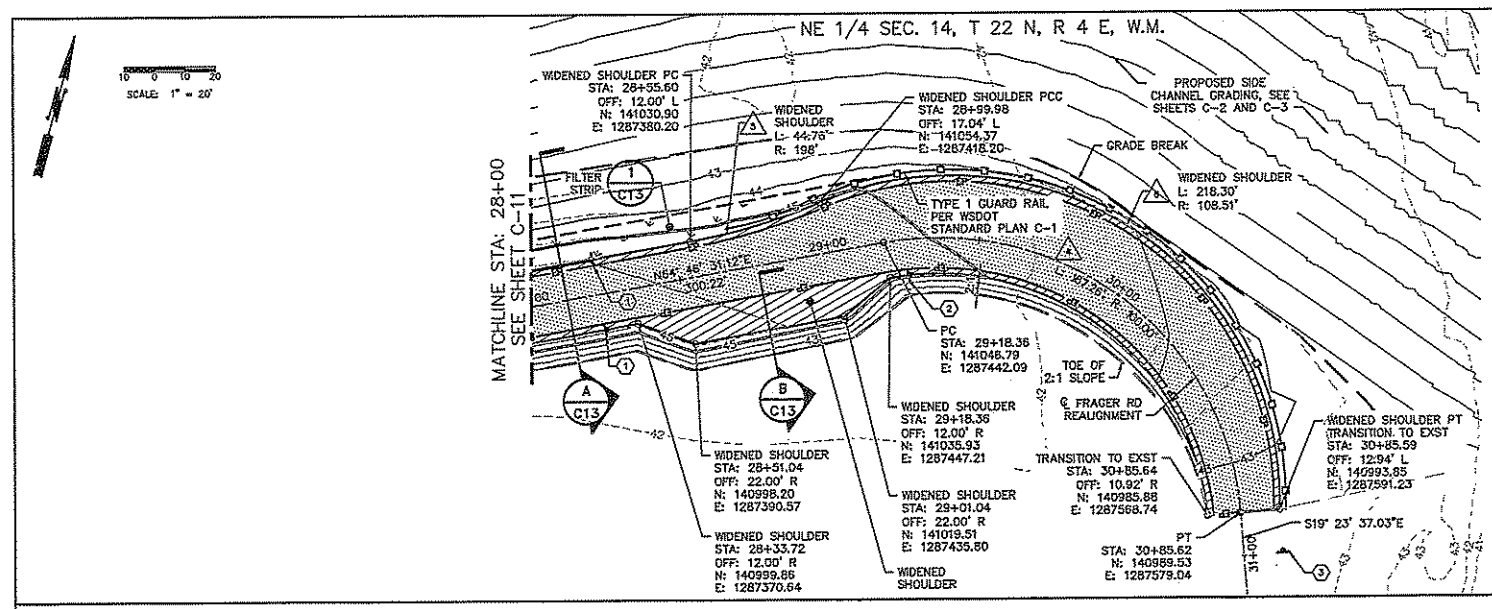
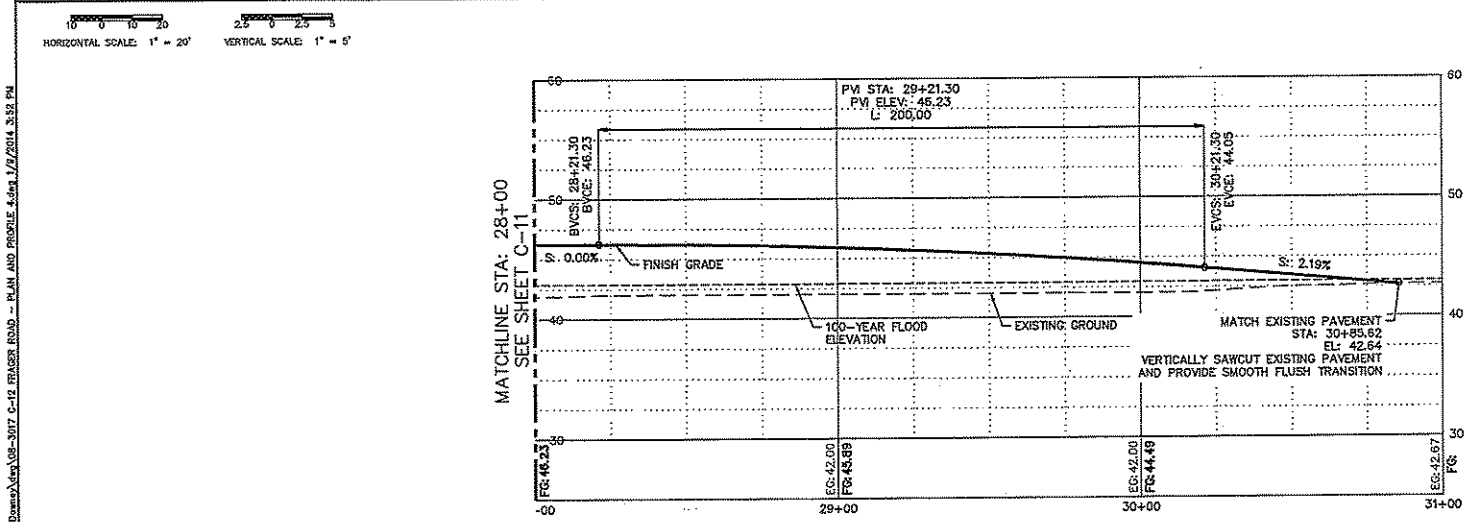


KEYED NOTES

1. 25 MPH SPEED LIMIT SIGN (R2-1) PER MUTCD SECTION 2B.13, AND CITY OF KENT STANDARD PLAN 6-82.
2. 15 MPH SPEED WARNING SIGN (W1-1R AND W13-1P) PER MUTCD SECTION 2C.06 AND CITY OF KENT STANDARD PLAN 6-82.
3. 15 MPH SPEED WARNING SIGN (W1-1L AND W13-1P) PER MUTCD SECTION 2C.06 AND CITY OF KENT STANDARD PLAN 6-82.

HATCH LEGEND

- HMA PAVED ROAD SURFACE
- GRAVEL SHOULDER BALLAST
- FILTER STRIP
- CURVE LABEL



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Public Works Department
Engineering Division

FRAGER ROAD – PLAN AND PROFILE 4

DOWNEY FARMSTEAD RESTORATION

SHEET C-12 OF 29

FILE NO. FRAGER ROAD – PLAN AND PROFILE 4.dwg

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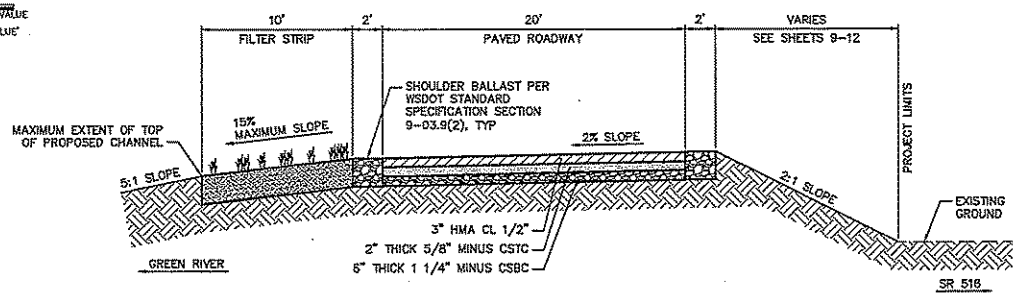
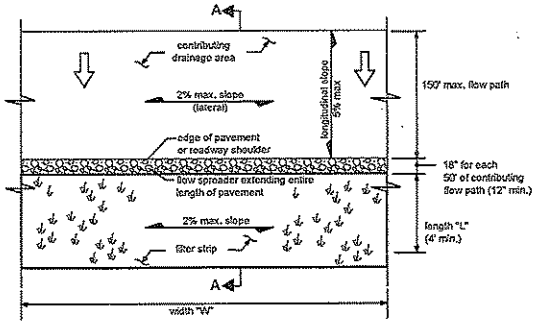
NE 1/4 SEC. 14, T 22 N, R 4 E, W.M.

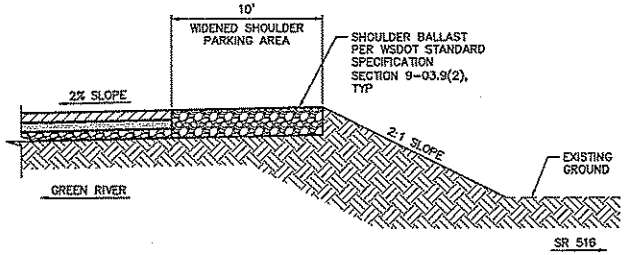
SCALE: 1" = VALUE'



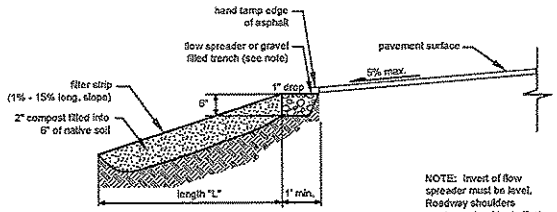
A TYPICAL ROADWAY SECTION
C9-C12 NOT TO SCALE



PLAN VIEW
NTS



B TYPICAL WIDENED SHOULDER SECTION
C9,C12 NOT TO SCALE



NOTE: Invert of flow spreader must be level. Roadway shoulders must use shoulder ballast per WSDOT Standard Specification Section 9-03.9(2).

SECTION A-A

KING COUNTY FILTER STRIP DETAIL
2009 SURFACE WATER DESIGN MANUAL
SECTION 6.3.4
1 C9-C12 NOT TO SCALE

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City of Kent Public Works Department Engineering Division

FRAGER ROAD – TYPICAL ROADWAY SECTIONS AND DETAILS

DOWNEY FARMSTEAD RESTORATION

SHEET C-13 OF 29

FILE NO. ROAD - TYPICAL ROADWAY SECTIONS AND DETAILS.dwg

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NE 1/4 SEC. 14, T 22 N, R 4 E, W.M.

SCALE: 1" = 40'

CITY OF KENT OLD FISHING HOLE PARK

PARKING AREA, SEE ENLARGED PLAN BELOW

EXISTING PARK

EXISTING EDGE OF PAVEMENT

ROW/PROPERTY LINE, TYP

FRAGER RD

EXISTING BRIDGE OVER MULLEN SLOUGH

PARKING AREA
STA: 1+80.17
OFF: 9.45' R
N: 140814.69
E: 1284870.34

EXISTING FENCE TO BE REMOVED

4" WIDE WHITE PAINT MARKING PER MUTCD SECTION 3B.24

4" WIDE WHITE PAINT STRIPING, TYP

MATCH EXISTING GROUND ELEVATION ALONG FRAGER RD

PARKING AREA
STA: 1+80.82
OFF: 51.06' R
N: 140786.28
E: 1284839.90

SLOPE

MATCH EXISTING GROUND ELEVATION ALONG PARK

WHEEL BLOCK, TYP

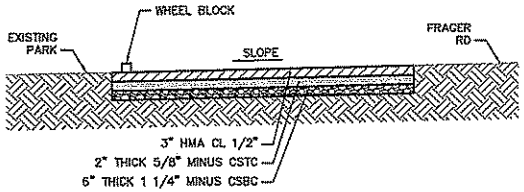
(6) 9' SPACES = 54'

PARKING AREA
STA: 2+51.26
OFF: 9.37' R
N: 140762.29
E: 1284919.73

PARKING AREA
STA: 2+49.48
OFF: 51.35' R
N: 140733.63
E: 1284889.01

ENLARGED PARKING AREA PLAN

SCALE: 1" = 10'



A PARKING AREA SECTION

NOT TO SCALE

NWS-2013-230

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City of Kent
Public Works Department
Engineering Division

PARKING AREA PLAN AND DETAILS

DOWNEY FARMSTEAD RESTORATION

SHEET C-14 OF 29

FILE NO. 08-3017 C-14 PARKING AREA PLAN AND DETAILS.DWG

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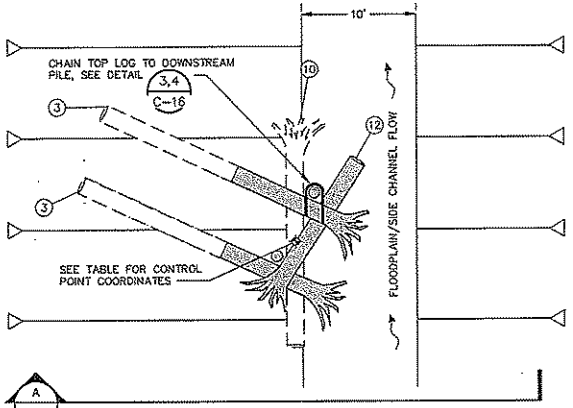
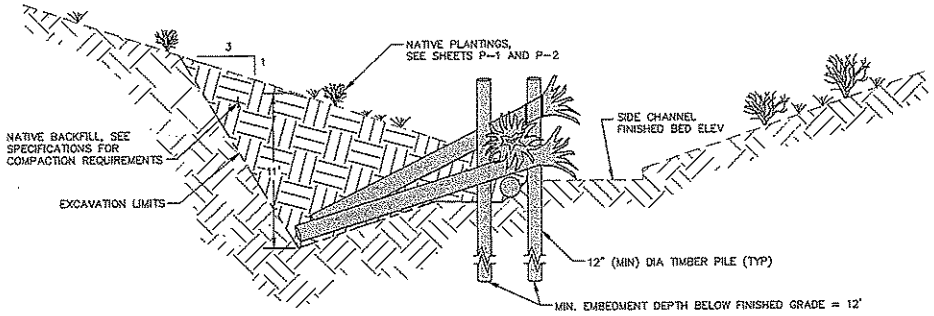


PLAN – SIDE CHANNEL HABITAT STRUCTURE, TYPE 1 (1) C-4, C-5
SCALE: 1"=5'



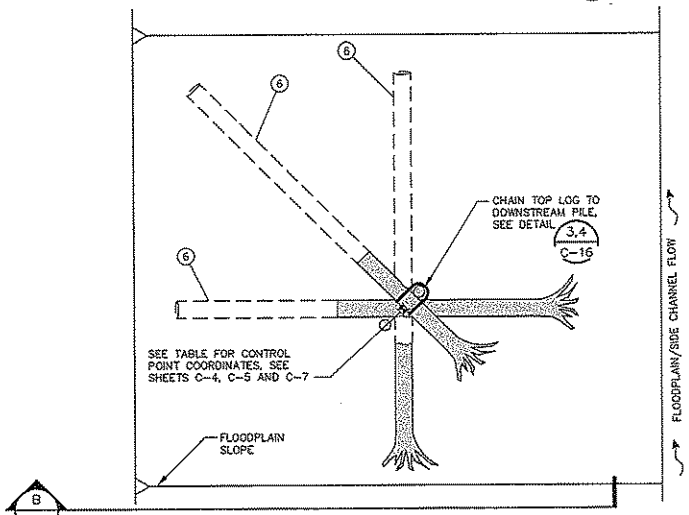
SECTION – SIDE CHANNEL HABITAT STRUCTURE, TYPE 1 (A)
SCALE: 1"=5'

SIDE CHANNEL
HABITAT STRUCTURE TYPE 1 LOG SCHEDULE:

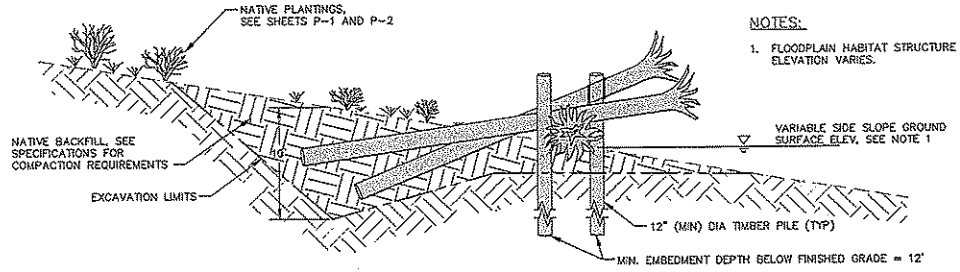
LOG #	DIAMETER (IN)	LENGTH (FT)	ROOTWAD	QUANTITY/STRUCTURE
3	18	25	YES	2
10	18	20	YES	1
12	18	15	YES	1
PILES	12	30	NO	2
			TOTAL:	6 PER STRUCTURE

FLOODPLAIN
HABITAT STRUCTURE TYPE 2 LOG SCHEDULE:

LOG #	DIAMETER (IN)	LENGTH (FT)	ROOTWAD	QUANTITY/STRUCTURE
6	18	35	YES	3
PILES	12	30	NO	2
			TOTAL:	5 PER STRUCTURE



PLAN – FLOODPLAIN HABITAT STRUCTURE, TYPE 2 (2) C-4, C-5
SCALE: 1"=5'



SECTION – FLOODPLAIN HABITAT STRUCTURE, TYPE 2 (B)
SCALE: 1"=5'

NOTES:

1. FLOODPLAIN HABITAT STRUCTURE ELEVATION VARIES.

NWS-2013-230

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DESIGNED: M.B. | CHECKED: M.E. | KENT PROJECT NO. 08-3017 | SCALE: HORIZ: NOTED
DRAWN: R.N. | PROJECT ENGR: M.E. | CONST. MGMT. REVIEW | VERT:
APPROVED: CITY ENGINEER | DATE: NOV. 2013

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City of Kent
Public Works Department
Engineering Division

HABITAT STRUCTURE TYPE 1 AND 2 PLAN AND SECTION

DOWNEY FARMSTEAD RESTORATION

SHEET C-15 OF 29
FILE NO. 0817C15

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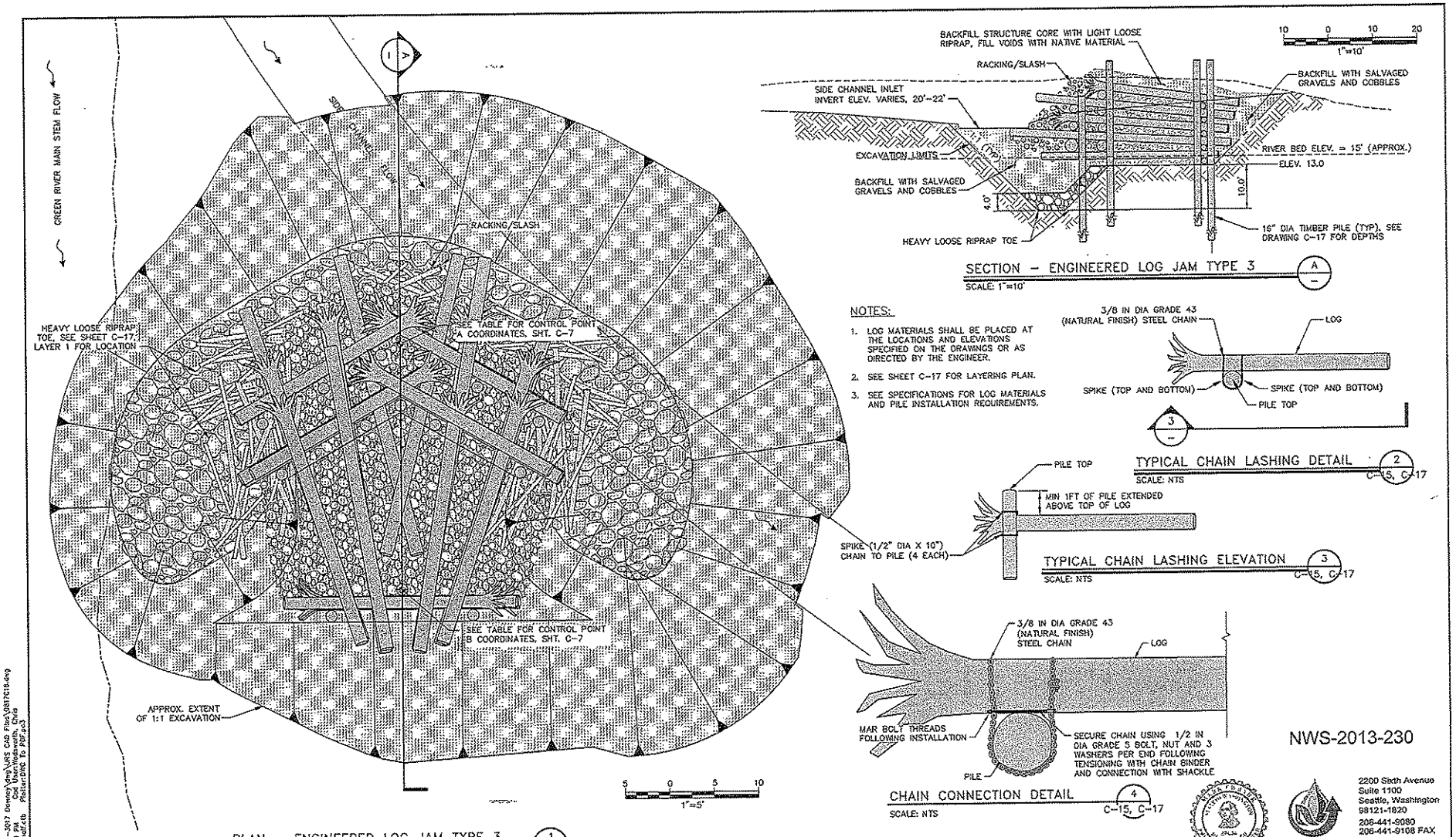

PLAN – ENGINEERED LOG JAM TYPE 3 (1 / C-5)
SCALE: 1"=5'

SECTION – ENGINEERED LOG JAM TYPE 3 (A)
SCALE: 1"=10'

NOTES:

1. LOG MATERIALS SHALL BE PLACED AT THE LOCATIONS AND ELEVATIONS SPECIFIED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
2. SEE SHEET C-17 FOR LAYERING PLAN.
3. SEE SPECIFICATIONS FOR LOG MATERIALS AND PILE INSTALLATION REQUIREMENTS.

TYPICAL CHAIN LASHING DETAIL (2) C-15, C-17
SCALE: NTS

TYPICAL CHAIN LASHING ELEVATION (3) C-15, C-17
SCALE: NTS

CHAIN CONNECTION DETAIL (4) C-15, C-17
SCALE: NTS

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DRAWN: R.H. | PROJECT ENGR: M.E. | CONST. MGMT. REVIEW | VERT:
APPROVED: CITY ENGINEER | DATE: NOV. 2013

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City of Kent
Public Works Department
Engineering Division

ENGINEERED LOG JAMS TYPE 3
PLAN AND SECTION

DOWNEY FARMSTEAD
RESTORATION

SHEET C-16 OF 29
FILE NO. 0817C16

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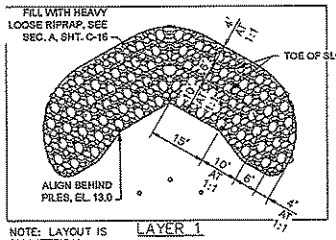
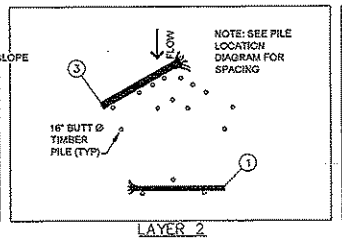


NOTE: LAYOUT IS SYMMETRICAL ABOUT CENTERLINE

LAYER 1



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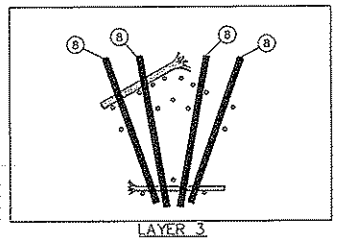
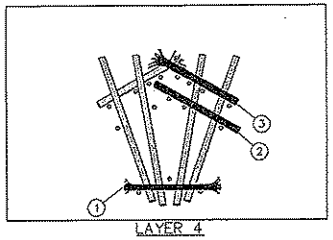


LAYER 3



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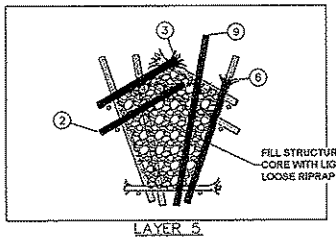

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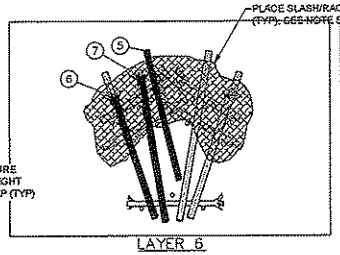

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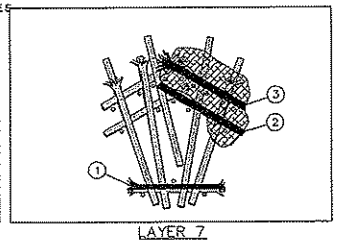
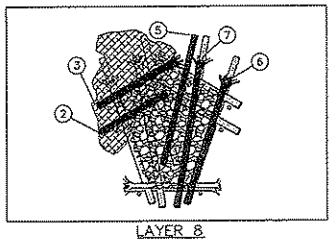
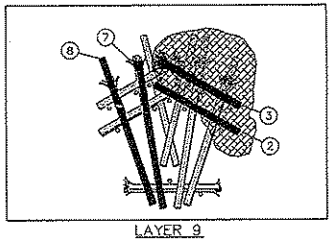


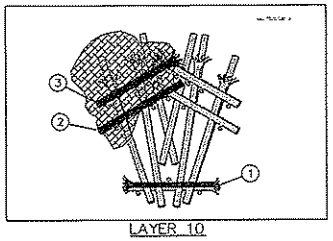
LAYER 7



LAYER 8



LAYER 9



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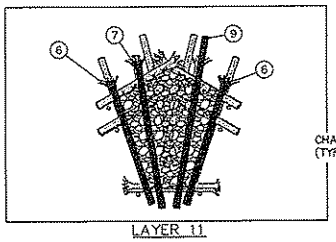
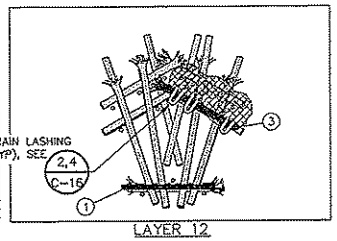
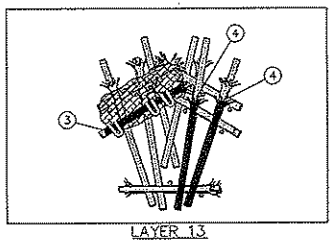


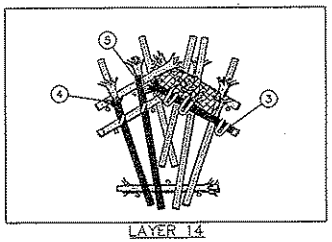
LAYER 11



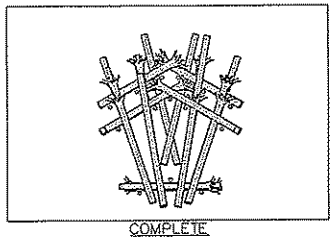
LAYER 12



LAYER 13



LAYER 14

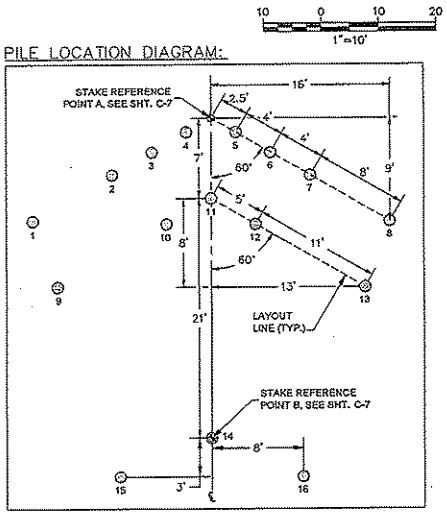


COMPLETE

NOTES:

1. PILE LOCATIONS SHALL BE STAKED BY ENGINEER.
2. LOG MATERIALS SHALL BE PLACED AT THE LOCATIONS AND ELEVATIONS SPECIFIED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
3. TRIM LOGS AS REQUIRED, PER SPECIFICATIONS.
4. LOG ORIENTATION SYMMETRIC ABOUT CENTERLINE.
5. SLASH AND RACKING TO BE PLACED AS FIRST STEP IN LAYER SHOWN.

PILE LOCATION DIAGRAM:



ENGINEERED LOG JAM TYPE 3 PILE SCHEDULE:

PILE #	BUTT DIAMETER (IN)	LENGTH (FT)	MAX. TIP ELEV. (FT)
1-8	16	60	-25
9-13	16	55	-20
14-16	16	45	-10

ENGINEERED LOG JAM TYPE 3 LOG SCHEDULE:

LOG #	DIAMETER (IN)	LENGTH (FT)	ROOTWAD	QUANTITY/STRUCTURE
1	16	25	YES	5
2	18	25	NO	6
3	18	25	YES	10
4	18	30	YES	3
5	18	35	NO	3
6	18	35	YES	5
7	18	40	YES	4
8	18	40	NO	5
9	18	45	NO	2
			TOTAL:	43 PER STRUCTURE

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SCALE: HORIZ: NOTED VERT: DATE: NOV. 2013
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City of Kent
Public Works Department
Engineering Division

ENGINEERED LOG JAM TYPE 3
LAYERING PLAN

DOWNEY FARMSTEAD
RESTORATION

SHEET C-17 OF 29
FILE NO. 0917017

Path: G:\Environmental\09-3017 Downey\dwg\LWS CAD Files\0917017.dwg
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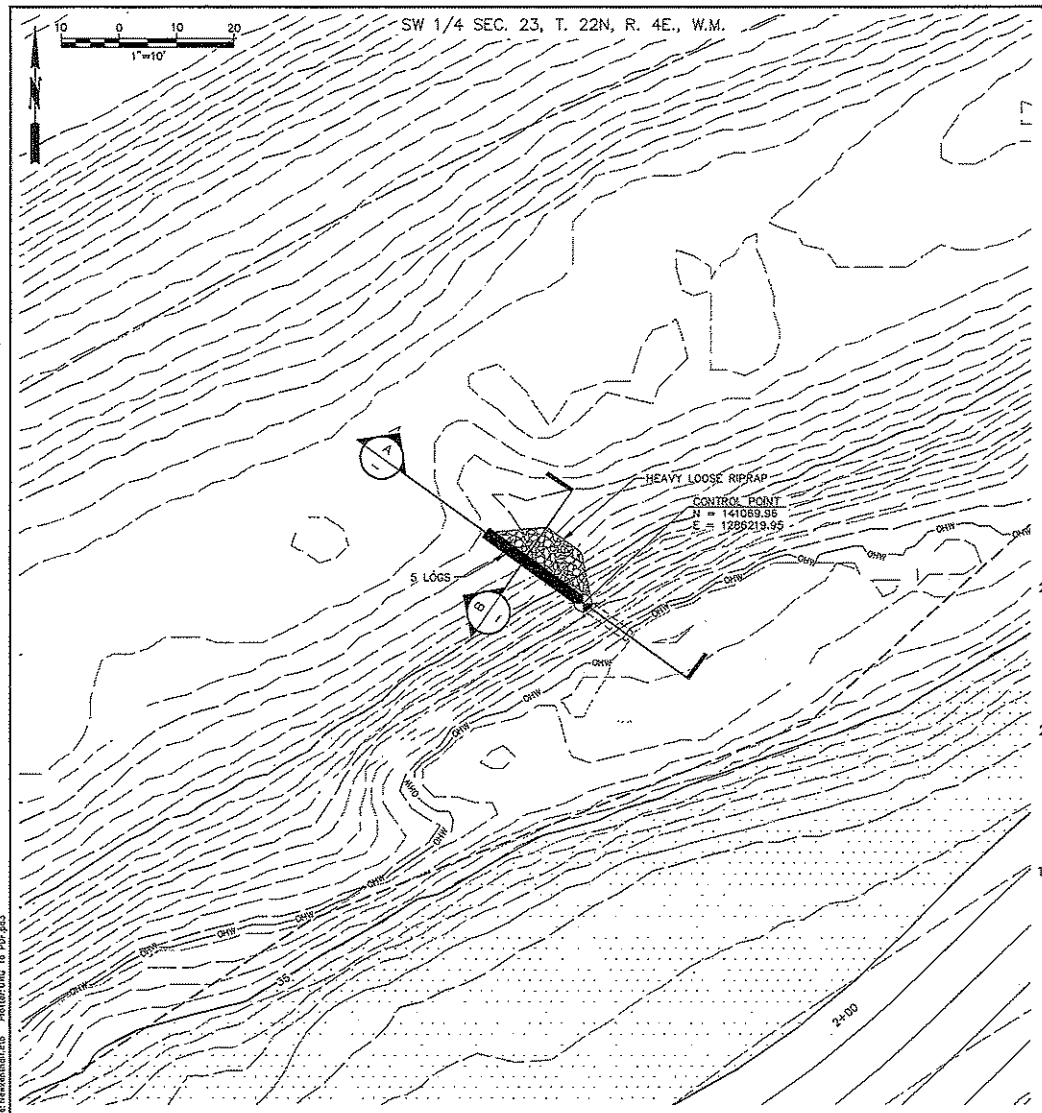
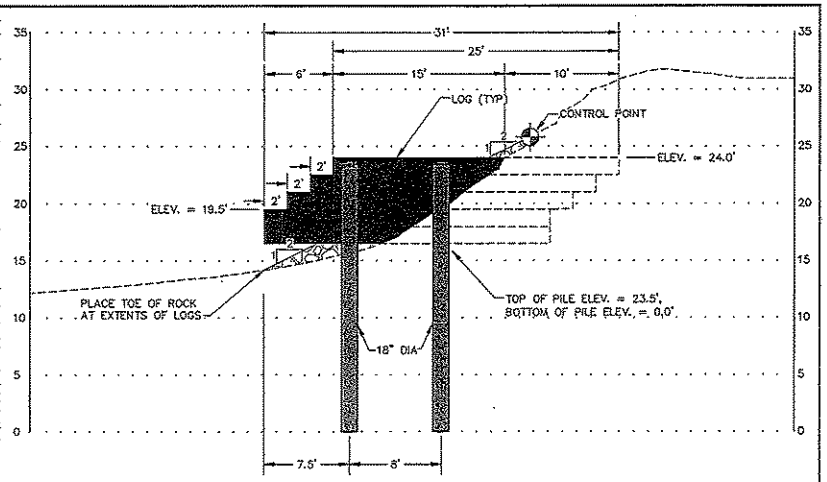
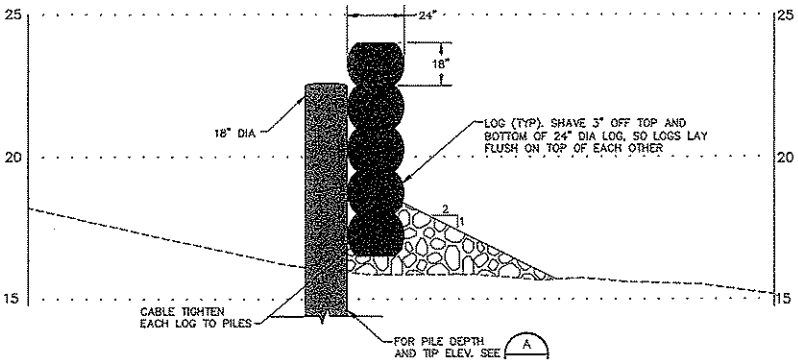




SECTION – LOW FLOW EDDY HABITAT STRUCTURE (A)

SCALE: 1" = 5'



SECTION – LOW FLOW EDDY HABITAT STRUCTURE (B)

SCALE: 1" = 2'

NWS-2013-230

LOW FLOW EDDY HABITAT STRUCTURE CONTROL POINTS TABLE				
LOG #	DIA (IN)	LENGTH (FT)	ROOTWAD	QUANTITY
1	24	25	NO	5
PILES	18	23.5	NO	2

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NO.	REVISION	BY	DATE

DESIGNED: M.B. CHECKED: M.E. KENT PROJECT NO. 08-3017 SCALE: HORIZ: NOTED VERT:
DRAWN: R.H. PROJECT ENGR: M.E. CONST. MGMT. REVIEW
APPROVED: CITY ENGINEER DATE: NOV. 2013
BAR IS ONE INCH ON ORIGINAL DRAWING ADJUST SCALES ACCORDINGLY 0" 1"

City of Kent
Public Works Department
Engineering Division

LOW FLOW EDDY HABITAT STRUCTURE PLAN AND SECTION

DOWNEY FARMSTEAD RESTORATION

SHEET C-18 of 29

FILE NO. 0817C18

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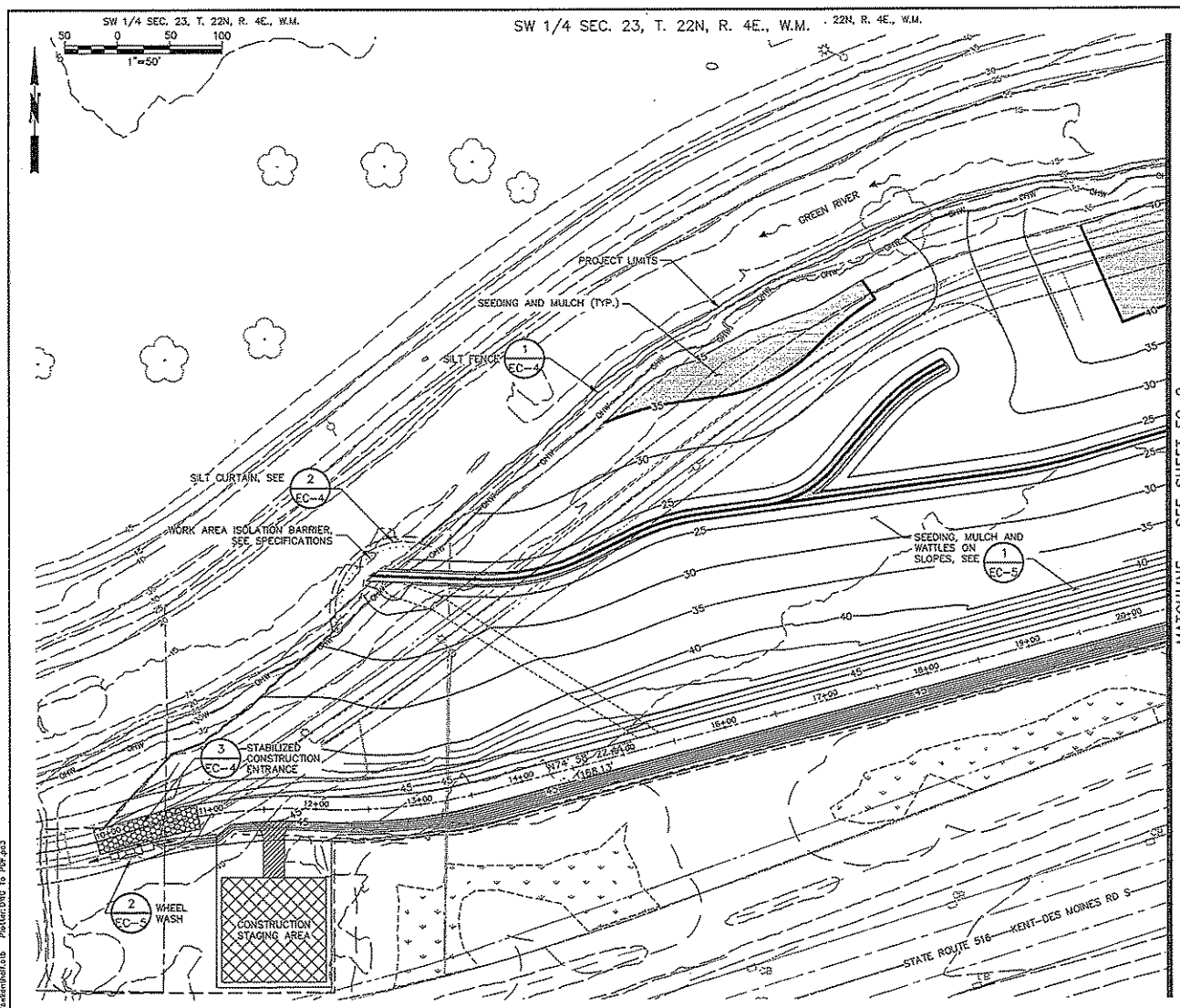

TEMPORARY EROSION AND SEDIMENT CONTROL NOTES:

1. THE IMPLEMENTATION OF THIS TESC PLAN AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT AND UPGRADING OF THESE TESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS APPROVED.
2. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED UNLESS AUTHORIZED BY THE ENGINEER. TEMPORARY FENCING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF THE CONSTRUCTION.
3. THE TESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER TO INSURE THAT SEDIMENT LADEN WATER DOES NOT ENTER THE RIVER OR VIOLATE APPLICABLE WATER STANDARDS.
4. THE TESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR THE ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE TESC FACILITIES SHALL BE UPGRADED (E.G. ADDITIONAL SUMPS, RELOCATIONS OF DITCHES AND SILT FENCES, ETC.) AS NEEDED FOR UNEXPECTED STORM EVENTS OR AS THE ENGINEER DEEMS NECESSARY.
5. THE TESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING AND OPERATION, OR WITHIN 24 HOURS FOLLOWING A STORM EVENT. WHEN TEMPORARY CONTROL MEASURES ARE NO LONGER NEEDED, THE CONTRACTOR SHALL REMOVE THEM AND FINISH RESTORING THE AREAS THEY OCCUPIED AS THE ENGINEER DIRECTS.
6. ANY AREA STRIPPED OF VEGETATION, INCLUDING ROADWAY EMBANKMENTS DURING THE TIME OF MAY 1ST TO SEPTEMBER 30TH, WHERE NO FURTHER WORK IS ANTICIPATED FOR A PERIOD OF SEVEN (7) DAYS, SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED TESC METHODS (E.G. SEEDING, MULCHING, NETTING, EROSION BLANKETS, ETC.). GRASS SEEDING FOR FAST GERMINATING GRASSES ALONE WILL BE ACCEPTABLE ONLY IF LEFT UNDISTURBED FOR MORE THAN A MINIMUM OF SIX (6) WEEKS DURING THE MONTHS OF APRIL THROUGH OCTOBER INCLUSIVE, AS APPROVED BY THE ENGINEER.
7. DURING THE PERIOD OF OCTOBER 1ST THROUGH APRIL 30TH, ALL PROJECT DISTURBED AREAS THAT ARE TO BE LEFT UNWORKED FOR MORE THAN TWO (2) DAYS SHALL BE COVERED BY ONE OF THE FOLLOWING COVER MEASURES: MULCH, SODDING OR PLASTIC COVERING.
8. WHERE SEEDING FOR TEMPORARY EROSION CONTROL IS REQUIRED, FAST GERMINATING GRASSES (E.G. ANNUAL OR PERENNIAL RYE) SHALL BE APPLIED AT AN APPROPRIATE RATE OF APPROXIMATELY 80 POUNDS PER ACRE. SHOULD THE AREA BE DISTURBED DUE TO RAINFALL EVENTS BEFORE SUFFICIENT GRASS GROWTH, OTHER PROTECTIVE MEASURES WILL BE REQUIRED IMMEDIATELY TO PREVENT EROSION WITHIN THAT AREA.
9. WHERE STRAW MULCH FOR TEMPORARY EROSION CONTROL IS REQUIRED, IT SHALL BE APPLIED AT A MINIMUM THICKNESS OF THREE (3) INCHES OR 3,000 LBS PER ACRE.
10. AS CONSTRUCTION PROGRESSES AND UNEXPECTED SEASONAL CONDITIONS DICTATE, AND AS THE ENGINEER REQUIRES, THE CONTRACTOR SHOULD ANTICIPATE THAT MORE TESC MEASURES WILL BE NECESSARY TO PROTECT THE RIVER AND/OR ADJACENT PROPERTIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ADDRESS DEFICIENT TESC CONDITIONS AND PROVIDE ADDITIONAL FACILITIES, OVER AND ABOVE MINIMUM REQUIREMENTS OUTLINED ON THE APPROVED PLANS.
11. SILT FENCE SHALL BE USED WHERE NOTED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
12. THE TESC PLAN DRAWINGS ARE CONCEPTUAL AND THE CONTRACTOR IS REQUIRED TO SUBMIT A DETAILED TESC PLAN IN ACCORDANCE WITH KENT SPECIAL PROVISIONS SECTION 1-08.0.
13. SHOULD THE CONTRACTOR FAIL TO INSTALL THE REQUIRED TESC MEASURES, OR TO PERFORM MAINTENANCE IN A TIMELY MANNER, OR FAILS TO TAKE IMMEDIATE ACTION TO INSTALL ADDITIONAL APPROVED PROTECTIVE MEASURES, ALL FINES, COST OF CLEANUP, COSTS OF DELAYS AND DOWN TIME SHALL BE BORNE BY THE CONTRACTOR.
14. STOCKPILES OF SOILS OR OTHER ERODIBLE MATERIAL MUST BE COVERED DAILY DEPENDING ON THE WEATHER FORECAST, AND AS DIRECTED BY THE CITY. STOCKPILES MUST BE LOCATED AT LEAST 50 FEET FROM STORM DRAIN INLETS, WATERWAYS AND DRAINAGE CHANNELS UNLESS OTHERWISE APPROVED BY THE CITY.

NWS-2013-230

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DESIGNED: M.G. | CHECKED: M.E. | NEXT PROJECT NO. 08-2017 | SCALE: HORIZ. NOTED
DRAWN: R.H. | PROJECT ENGR. M.E. | CONST. MGMT. REVIEW | VERT.
APPROVED: CITY ENGINEER | DATE NOV. 2013
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City of Kent Public Works Department Engineering Division

TESC AND WATER MANAGEMENT PLAN – WEST

DOWNEY FARMSTEAD RESTORATION

SHEET EC-1 OF 29
FILE NO. 0817EC01

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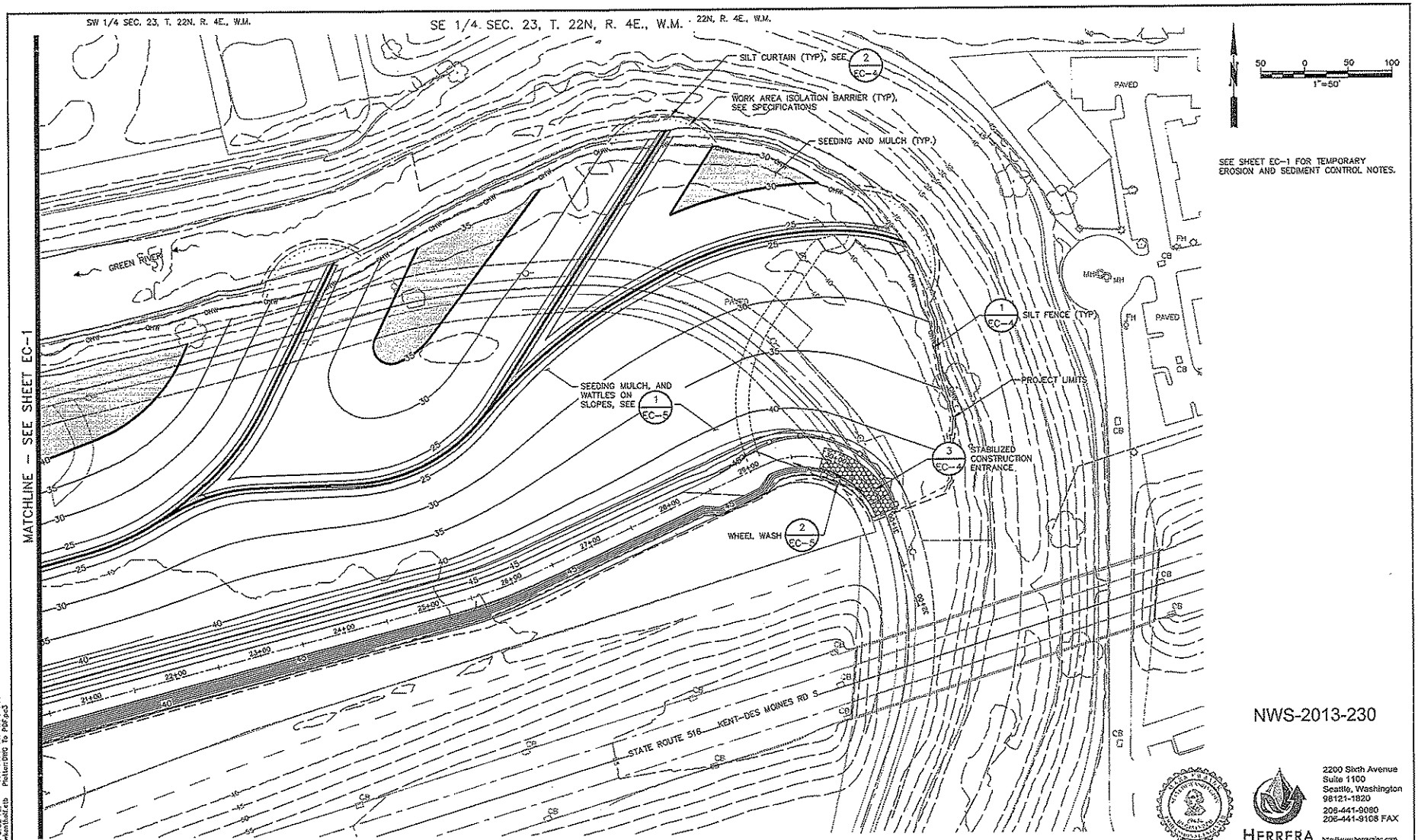

NO.	REVISION	BY	DATE

DESIGNED: M.B. | CHECKED: M.E. | KENT PROJECT NO. 08-3017 | SCALE: HORIZ. NOTED | BAR IS ONE INCH ON ORIGINAL DRAWING ADJUST SCALES ACCORDINGLY
DRAWN: R.H. | PROJECT ENGR: M.E. | CONST. MGMT. REVIEW | VERT.
APPROVED: CITY ENGINEER | DATE: NOV. 2013

City of Kent
Public Works Department
Engineering Division

TESC AND WATER MANAGEMENT PLAN – EAST

DOWNEY FARMSTEAD RESTORATION

SHEET EC-2 OF 29
FILE NO. 0817EC02

Path: G:\Environmental\08-3017 Downey\dwg\URS CAD Files\0817EC02.dwg
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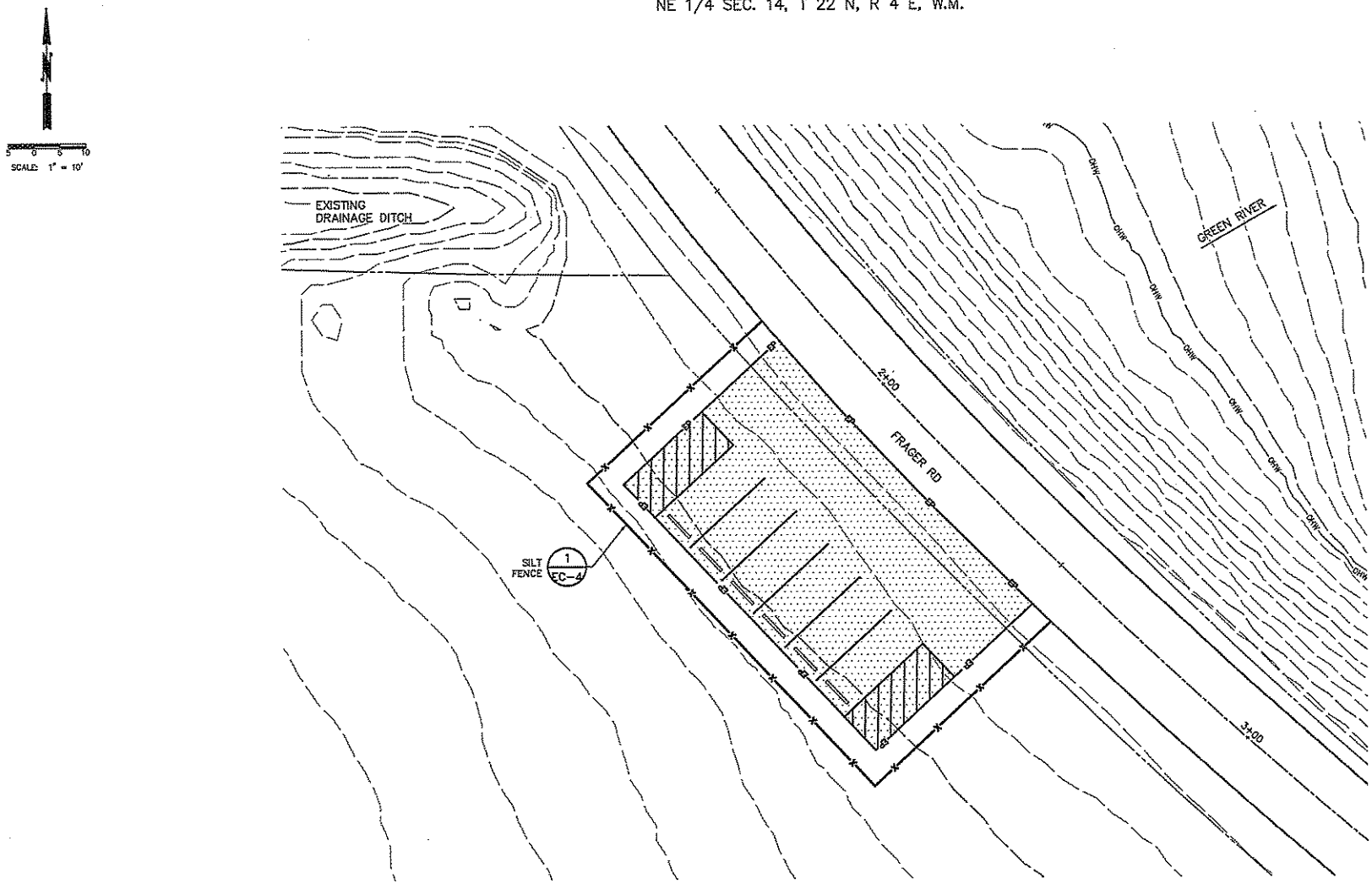
Plot Style Table: NewKentBall.ctb Plotter: DWG To PDF.pc3

NE 1/4 SEC. 14, T 22 N, R 4 E, W.M.



NWS-2013-230

NO.	REVISION	BY	DATE

DESIGNED: CW | CHECKED: | KENT PROJECT NO. 08-3017 | SCALE: HORIZ: 1"=10' VERT:
DRAWN: CW | PROJECT ENGR: | CONST. MGMT. REVIEW
APPROVED: CITY ENGINEER | DATE

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City of Kent
Public Works Department
Engineering Division

TESC AND WATER MANAGEMENT PLAN – PARKING AREA

DOWNEY FARMSTEAD RESTORATION

SHEET EC-3 OF 29

FILE NO. 08-3017 EC-3 TESC AND WATER MANAGEMENT PLAN – PARKING AREA.DWG

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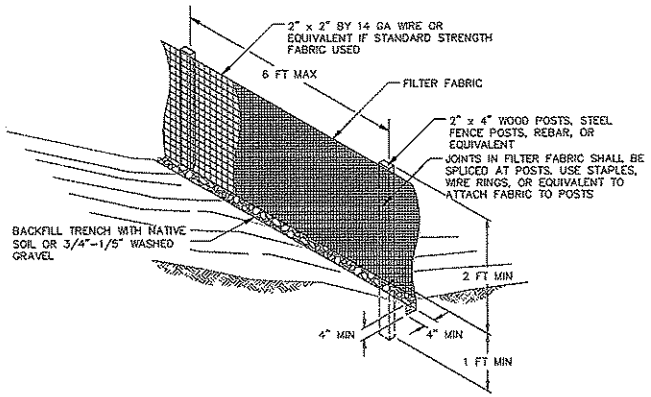
SW 1/4 SEC. 23, T. 22N, R. 4E., W.M.

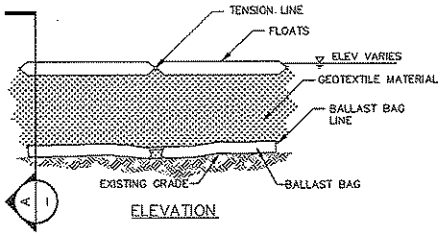
SE 1/4 SEC. 23, T. 22N, R. 4E., W.M.



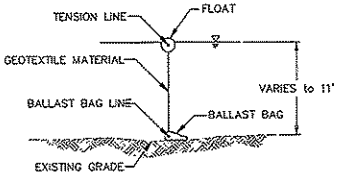
NOTES:

1. THE FILTER FABRIC (CONSTRUCTION GEOTEXTILE FOR TEMPORARY SILT FENCE) SHALL BE PURCHASED IN A CONTINUOUS ROLL, 5FT WIDE, CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, THE FILTER FABRIC SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6 INCH OVERLAP, AND SECURELY FASTENED TO THE POST.
2. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 12 INCHES.
3. A TRENCH SHALL BE EXCAVATED A MINIMUM OF 4 INCHES WIDE BY 4 INCHES DEEP, UPSLOPE AND ADJACENT TO THE POST TO ALLOW THE FILTER FABRIC TO BE BURIED.
4. THE FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE POSTS, AND 12 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 30 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO TREES.
5. THE TRENCH SHALL BE BACKFILLED WITH NATIVE SOIL OR WITH 3/4"-1 1/2" WASHED GRAVEL.
6. SILT FENCES SHALL BE REMOVED AT DIRECTION OF ENGINEER, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
7. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL EVENT AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
8. SILT FENCE PERFORMANCE SHALL BE EVALUATED AND SILT FENCE LOCATIONS SHALL BE EVALUATED AND ADJUSTED AS DIRECTED OR APPROVED BY THE ENGINEER AND THE PERMITTING AUTHORITY.
9. SILT FENCE SHALL BE INSTALLED AS SHOWN ON DRAWINGS.
10. ANY DEVIATION OR CHANGE TO SILT FENCE DETAILS MUST BE APPROVED BY THE OWNERS REPRESENTATIVE.
11. THE CONTRACTOR SHALL MAINTAIN A COPY OF THE MANUFACTURER'S SPECIFICATIONS FOR FILTER FABRIC ON SITE.
12. MAINTENANCE STANDARDS:
    A. ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY.
    B. IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE SILT FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT TRAP OR POND, OR OTHERWISE DIVERTED TO A LOCATION THAT DOES NOT RESULT IN TURBID DISCHARGES TO SURFACE WATERS.
    C. THE UPHILL SIDE OF THE SILT FENCE SHALL BE CHECKED FOR SIGNS OF THE SILT FENCE CLOGGING, ACTING AS A BARRIER TO FLOW, AND CAUSING CHANNELIZATION OF FLOWS PARALLEL TO THE FENCE. IF SUCH CHANNELIZATION OCCURS, THE CONTRACTOR SHALL REPLACE THE FENCE OR REMOVE THE TRAPPED SEDIMENT.
    D. SEDIMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN THE SEDIMENT IS 6 INCHES HIGH.
    E. IF THE FILTER FABRIC HAS DETERIORATED DUE TO ULTRAVIOLET BREAKDOWN, IT SHALL BE REPLACED.

DETAIL – SILT FENCE (1)
SCALE: NONE — EC-1, EC-2, EC-3



ELEVATION

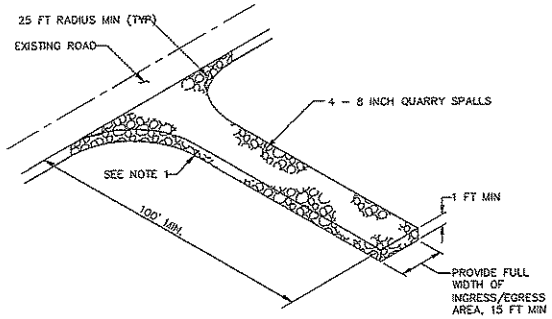


SECTION A

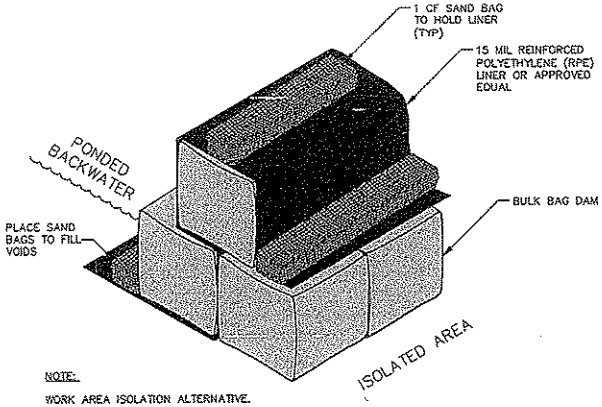
NOTES:

1. PLACE SILT CURTAIN TO PROVIDE MIN. 5' DISTANCE FROM OUTER/RIVERWARD TOE OF BULK BAG DAM.
2. ATTACH ENDS OF SILT CURTAIN TO BANK ON EITHER END, MINIMIZING ANY GAPS WHERE TURBID WATER COULD PASS.

DETAIL – SILT CURTAIN (2)
SCALE: NTS — EC-1, EC-2



DETAIL – STABILIZED CONSTRUCTION ENTRANCE (3)
SCALE: NONE — EC-1, EC-2



NOTE:

WORK AREA ISOLATION ALTERNATIVE.

DETAIL – BULK BAG DAM (OPTIONAL) (–)
SCALE: NTS — EC-1, EC-2

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DRAWN: P.H. | PROJECT ENGR: M.E. | CONST. MGMT. REVIEW | VERT:
APPROVED: CITY ENGINEER | DATE: NOV. 2013
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City of Kent Public Works Department Engineering Division

TESC AND WATER MANAGEMENT DETAILS AND NOTES – 1 OF 2

DOWNEY FARMSTEAD RESTORATION

SHEET EC-4 OF 29
FILE NO. 0817EC04

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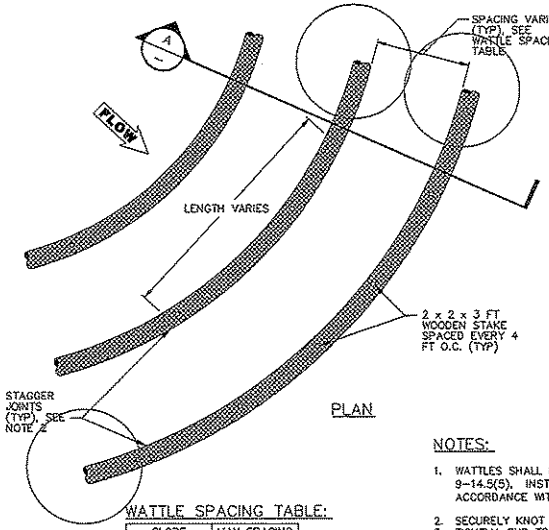
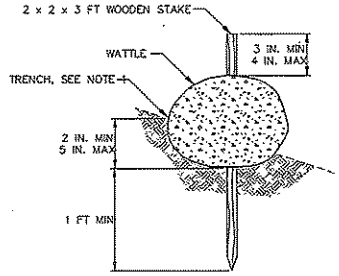
SE 1/4 SEC. 23, T. 22N, R. 4E., W.M.



PLAN



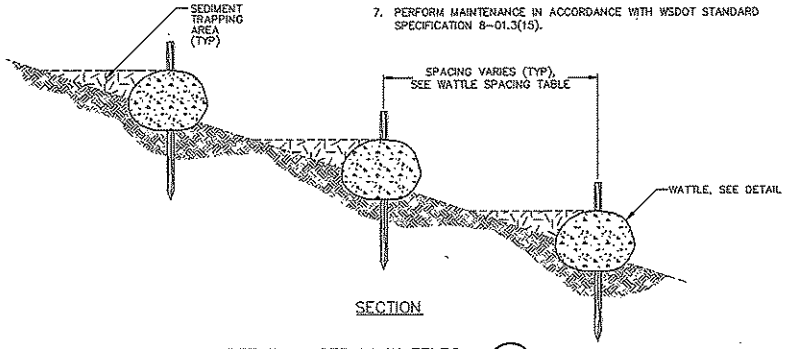
DETAIL

WATTLE SPACING TABLE:

SLOPE	MAX SPACING
1:1	10 FT
2:1	20 FT
3:1	30 FT
4:1	40 FT

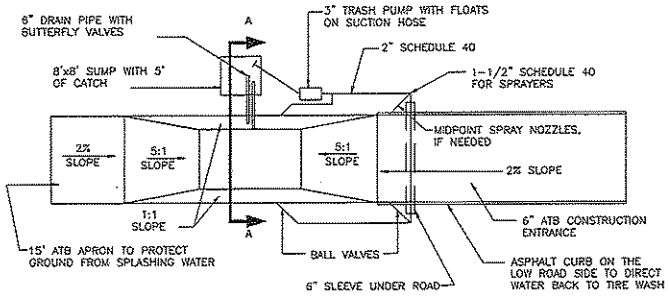
NOTES:

1. WATTLES SHALL BE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION 9-14.5(5). INSTALL WATTLES ALONG CONTOURS. INSTALLATION SHALL BE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION 8-01.3(10).
2. SECURELY KNOT EACH END OF WATTLE. ABUT ADJACENT WATTLES
3. TIGHTLY, END TO END, WITHOUT OVERLAPPING THE ENDS.
4. PILOT HOLES MAY BE DRIVEN THROUGH THE WATTLES AND INTO THE SOIL WHEN SOIL CONDITIONS REQUIRE.
5. LIVE STAKES MAY BE USED FOR PERMANENT INSTALLATION AND SHALL BE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION 9-14.5(6).
6. WATTLES SHALL BE INSPECTED REGULARLY, AND IMMEDIATELY AFTER A RAINFALL PRODUCES RUNOFF, TO ENSURE THEY REMAIN THOROUGHLY ENTRENCHED AND IN CONTACT WITH THE SOIL.
7. PERFORM MAINTENANCE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION 8-01.3(15).

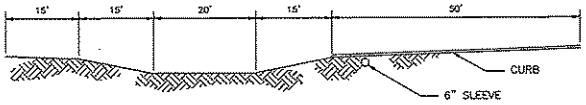


SECTION

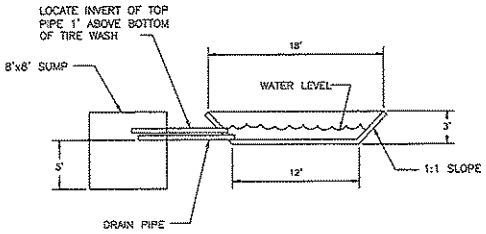
DETAIL – STRAW WATTLES (1)
SCALE: NONE EC-1, EC-2



PLAN VIEW



ELEVATION VIEW



SECTION A-A

NOTES:

1. BUILD 8'x8' SUMP TO ACCOMODATE CLEANING BY TRACKHOE.

DETAIL – TIRE WASH (2)
SCALE: NONE EC-1, EC-2

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DRAWN: R.H. | PROJECT ENGR: M.E. | CONST. MGMT. REVIEW
APPROVED: CITY ENGINEER | DATE: NOV. 2013

City of Kent
Public Works Department
Engineering Division

TESC AND WATER MANAGEMENT DETAILS AND NOTES – 2 OF 2

DOWNEY FARMSTEAD RESTORATION

SHEET EC-5 OF 29
FILE NO. 0817EC05

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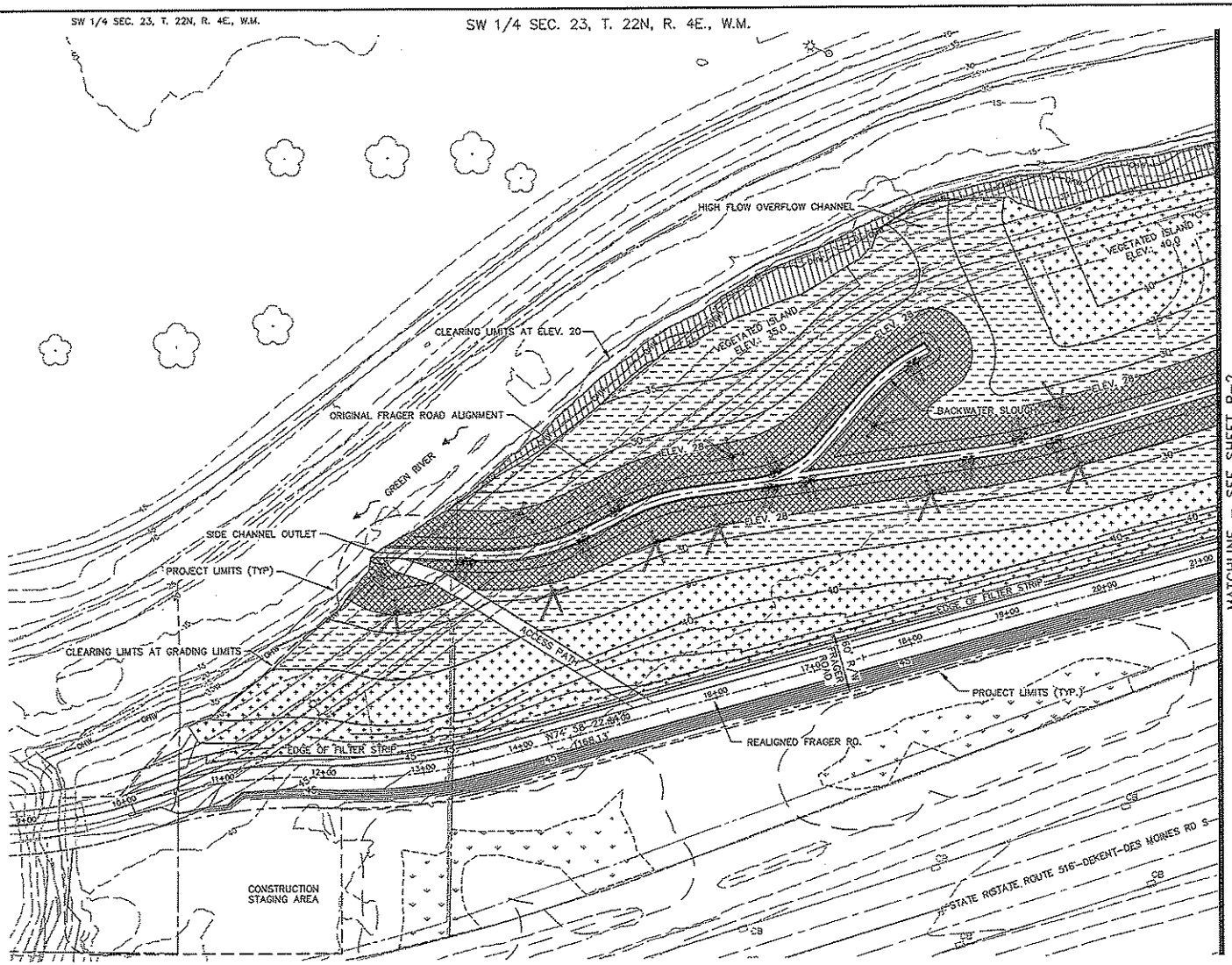

50 0 50 100
1"=50'

LEGEND:

- SCRUB SHRUB (PSS)
- FORESTED WETLAND (PFO)
- FORESTED UPLAND
- STEEP SLOPE

NOTES:

1. SEE PLANTING MATERIAL SCHEDULE ON SHEET P-3 FOR PLANT SPECIES AND QUANTITIES IN EACH PLANTING ZONE.
2. SEE SHEET P-4 FOR PLANTING DETAILS.

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DRAWN: R.H. | PROJECT ENGR: M.E. | CONST. MGMT. REVIEW | VERT:
APPROVED: CITY ENGINEER | DATE: NOV. 2013

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City of Kent
Public Works Department
Engineering Division

PLANTING PLAN – WEST

DOWNEY FARMSTEAD RESTORATION

SHEET P-1 OF 29
FILE NO. 0817P01

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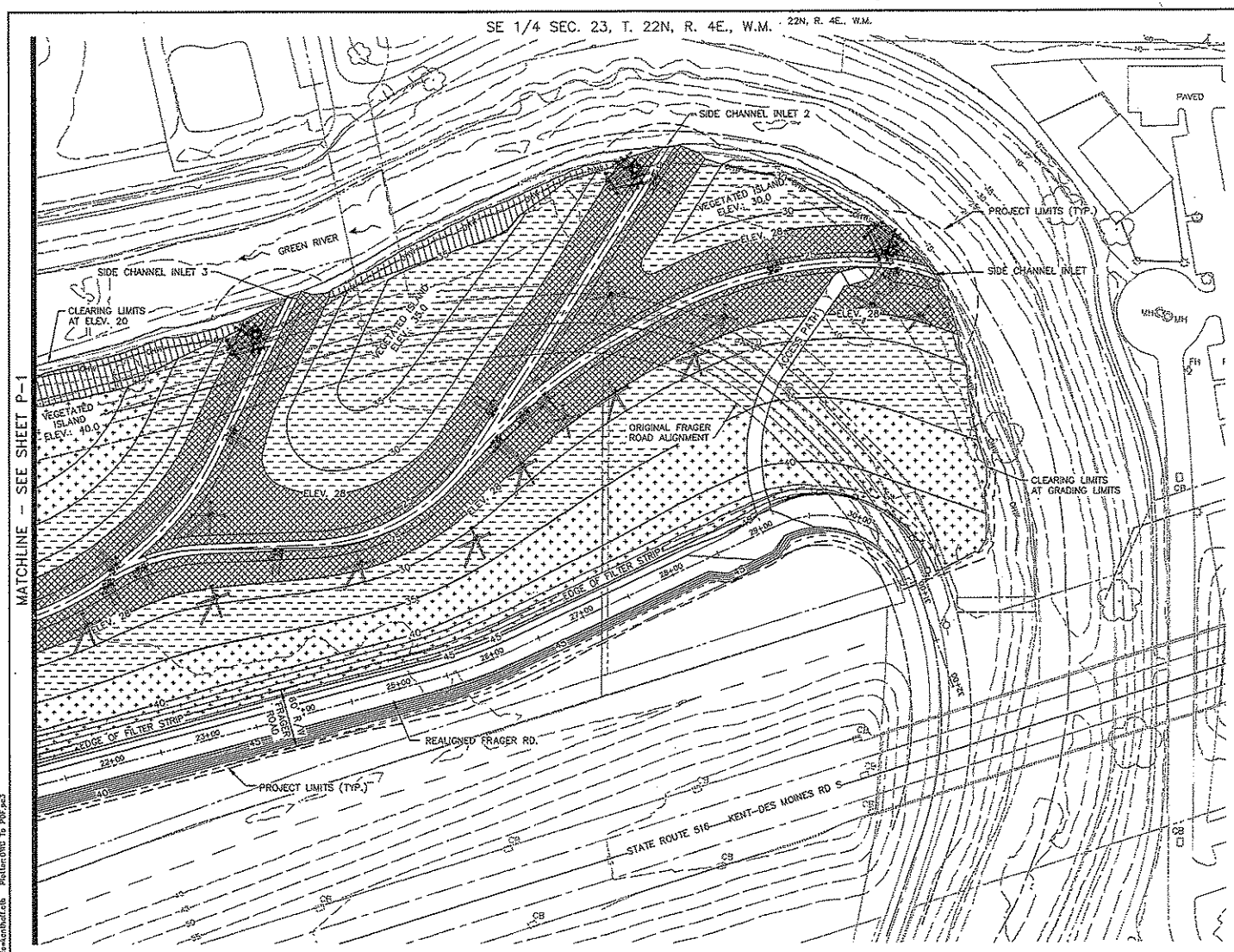

50 0 50 100
1"=50'

LEGEND:

- SCRUB SHRUB (PSS)
- FORESTED WETLAND (PFO)
- FORESTED UPLAND
- STEEP SLOPE

NOTES:

1. SEE PLANTING MATERIAL SCHEDULE ON SHEET P-3 FOR PLANT SPECIES AND QUANTITIES IN EACH PLANTING ZONE.
2. SEE SHEET P-4 FOR PLANTING DETAILS.

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City of Kent
Public Works Department
Engineering Division

PLANTING PLAN - EAST

DOWNEY FARMSTEAD RESTORATION

SHEET P-2 OF 29
FILE NO. 0817P02

Path: G:\Environmental\08-3017 Downey\dwg\URS CAD Files\0817P02.dwg
Plot Date: 1/9/2014 3:35 PM Cad User: Windsworth, Chris
Plot Style Table: NewKentHalf.ctb Plotter: DWG To PDF.pc3

PLANTING NOTES:

1. ENGINEER SHALL APPROVE GRADING PRIOR TO PLANT INSTALLATION.
2. ENGINEER SHALL APPROVE ALL PLANT ZONE BOUNDARIES AND PLANT LAYOUT PRIOR TO PLANTING.
3. PLANTING SHALL OCCUR DURING THE MONTH OF OCTOBER AFTER FINISH GRADE ACCOMPLISHED.
4. EROSION CONTROL SEEDING USING SPECIFIED SEED MIXES SHALL OCCUR AS SOON AS CONSTRUCTION IS COMPLETED IN ORDER TO PROTECT SOILS. FOLLOW UP SEEDING MAY BE NEEDED IN SEPTEMBER TO ASSURE SUCCESSFUL PLANT ESTABLISHMENT. SEE SPECIFICATIONS FOR SEED MIX AND APPLICATION RATE.
5. ALL PLANTS SHALL CONFORM TO THE STANDARDS OF THE CURRENT EDITION OF AMERICAN STANDARD FOR NURSERY STOCK AS APPROVED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI Z60.1–2004).
6. ALL PLANT MATERIALS SHALL HAVE NORMAL, WELL–DEVELOPED BRANCHES AND VIGOROUS ROOT SYSTEMS, AND BE FREE FROM PHYSICAL DEFECTS, PLANT DISEASES, AND INSECT PESTS.
7. PLANT SUBSTITUTIONS ARE SUBJECT TO APPROVAL BY THE ENGINEER.
8. PLANTS SHALL BE TAGGED FOR IDENTIFICATION WHEN DELIVERED.
9. KEEP PLANTS SHADED UNTIL THE ACTUAL TIME OF PLANTING. DO NOT LET THE PLANT MATERIAL SIT IN THE SUN OR DRY OUT BEFORE PLANTING.
10. EMERGENT PLUGS SHALL BE KEPT IN COOL DARK PLACE PRIOR TO PLANTING. EMERGENT PLUGS SHALL BE KEPT MOIST PRIOR TO PLANTING. PLANTING SHALL TAKE PLACE 24 HOURS TO 48 HOURS AFTER DELIVERY, UNLESS STAGING AREA IS CREATED TO KEEP PLANTS MOIST AND PROTECTED. REMOVE DEAD OR WITHERED ROOTS AND STEMS OF PLUGS WITH A SHARP KNIFE PRIOR TO PLANTING. THOROUGHLY WATER ALL PLANTED AREAS IMMEDIATELY AFTER PLANTING.
11. APPLY 3"OF WOOD CHIP OR BARK MULCH AROUND ALL PLANTED STOCK AFTER PLANTING, CAREFUL TO KEEP MULCH AWAY FROM THE STEMS AND BASES OF PLANTS.
12. SCRUB SHRUB (PSS), FORESTED WETLAND (PFO), STEEP SLOPE, AND ADJACENT ACCESS ROAD AREAS WILL BE HYDROSEEDED WITH WETLAND GRASS SEED MIX. FORESTED UPLAND AND ADJACENT ACCESS ROAD AREAS WILL BE HYDROSEEDED WITH UPLAND GRASS SEED MIX. SEE SPECIFICATIONS FOR SEED MIX AND APPLICATION RATE.

Plant Material Schedule

Stratum	Symbol	Scientific Name	Common Name	Container Size	On Center (O.C.) Spacing	Scrub Shrub (PSS)	Forested Wetland (PFO)	Forested Upland	Steep Slope	Total
Tree										
	AR	*Alnus rubra*	Red alder	1 Gallon	15' O.C.		200			200
	FL	*Fraxinus latifolia*	Oregon ash	1 Gallon	15' O.C.		200			200
	PC	*Pinus contorta var. contorta*	Shore pine	1 Gallon	15' O.C.			300		300
	PB	*Populus balsamifera*	Black Cottonwood	1 Gallon	15' O.C.		120	200		320
	PM	*Pseudotsuga menziesii*	Douglas fir	1 Gallon	15' O.C.			200		200
	SL	*Salix lucida ssp. Lasiandra*	Pacific willow	6' Live stake	4' O.C.	3030	2750			5780
Shrub										
		Cornus sericea	Red osier dogwood	1 Gallon	4' O.C.	1212	1828			3040
		Corylus cornuta	Beaked hazelnut	1 Gallon	6' O.C.			315	90	405
		Holodiscus discolor	Ocean spray	1 Gallon	6' O.C.			315		315
		Mahonia aquifolium	Tall Oregon Grape	1 Gallon	4' O.C.			700	400	1100
		Physocarpus capitatus	Pacific ninebark	1 Gallon	4' O.C.		900			900
		Ribes sanguineum	Red flowering current	1 Gallon	4' O.C.			700		700
		Rosa gymnocarpa	Wood rose	1 Gallon	4' O.C.				700	700
		Rosa nutkana	Nootka rose	1 Gallon	4' O.C.		900			900
		Salix hookeriana	Hooker's willow	6' Live stake	4' O.C.	2200	1850			4050
		Salix geyeriana	Geyer willow	6' Live stake	4' O.C.	2200	1850			4050
		Salix sitchensis	Sitka willow	6' Live stake	4' O.C.	2830	1850			4680
		Symphoricarpus albus	Snowberry	1 Gallon	4' O.C.			700	700	1400
Groundcover										
		Carex amplifolia	Bigleaf sedge	Bare root	24" O.C.	468	832			1300
		Carex obnupta	Slough sedge	Bare root	24" O.C.	715	835			1550
		Carex stipata	Sawbeak sedge	Bare root	24" O.C.	700	1250			1950
		Juncus acuminatus	Tapertip rush	Bare root	24" O.C.	935	1665			2600
		Juncus ensifolius	Daggerleaf rush	Bare root	24" O.C.	450	1250			1700
		Juncus tenuis	Slender rush	Bare root	24" O.C.	468	832			1300
		Schoenoplectus/Scirpus acutus	Hardstem bulrush	Bare root	24" O.C.	468	832			1300
		Schoenoplectus/Scirpus microcarpus	Small-fruited bulrush	Bare root	24" O.C.	468	832			1300
Wetland Grass Seed Mix						x	x		x	10.44 ac
Upland Grass Seed Mix								x		4.59 ac

NWS-2013-230

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NO.	REVISION	BY	DATE

DESIGNED: M.G. | CHECKED: M.E. | KENT PROJECT NO. 08-3017 | SCALE: HORIZ: NOTED
DRAWN: R.H. | PROJECT ENGR: M.E. | CONST. MGMT. REVIEW | VERT: ____
APPROVED: ____ CITY ENGINEER | DATE: NOV. 2013

BAR IS ONE INCH ON ORIGINAL DRAWING ADJUST SCALES ACCORDINGLY
0" 1"

City of Kent
Public Works Department
Engineering Division

PLANTING SCHEDULE AND NOTES

DOWNEY FARMSTEAD RESTORATION

FILE NO. 0817P03

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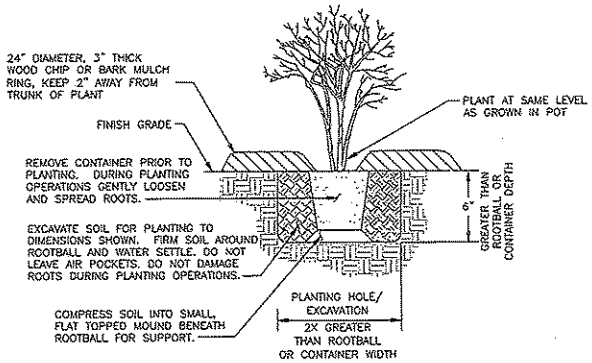
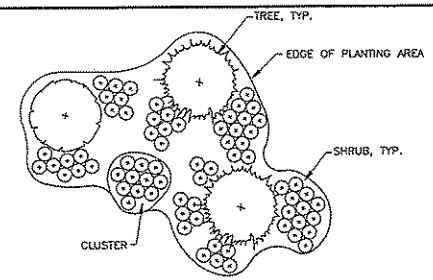


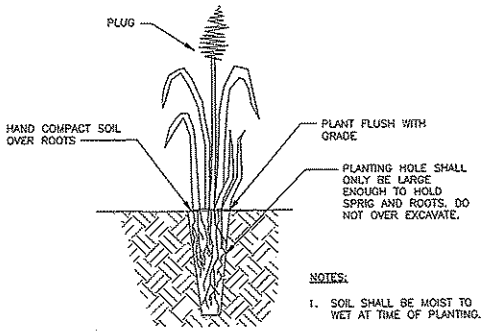
TREE AND SHRUB PLANTING DETAIL (1)
SCALE: NONE



NOTES:

1. PLANT SHRUBS IN CLUSTERS OF UNEVEN NUMBERS (E.G. THREE, FIVE, SEVEN, ETC.)
2. PLANT ONE SPECIES OF SHRUBS IN CLUSTERS OF THREE, FIVE, SEVEN, ETC.
3. EVENLY SPACE CLUSTERS THROUGHOUT PLANTING AREA.
4. INTENT OF SHRUB PLANTING IS TO APPEAR NATURAL AND INFORMAL.

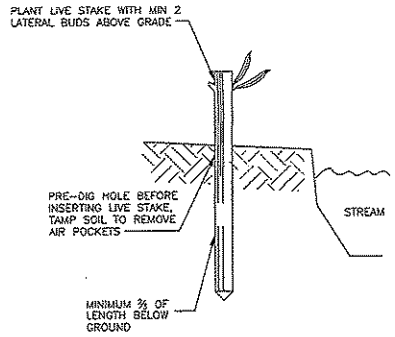
SHRUB SPACING AROUND TREES DETAIL (2)
SCALE: NONE



NOTES:

1. SOIL SHALL BE MOIST TO WET AT TIME OF PLANTING.

PLUG INSTALLATION DETAIL (3)
SCALE: NONE



NOTES:

1. LIVE STAKE MUST COME INTO CONTACT WITH GROUNDWATER.

LIVE STAKE PLANTING DETAIL (4)
SCALE: NONE

NWS-2013-230

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NO.	REVISION	BY	DATE	DESIGNED: M.B.	CHECKED: M.E.	KENT PROJECT NO. CB-3017	SCALE: HORIZ: NOTED	BAR IS ONE INCH ON ORIGINAL DRAWING ADJUST SCALES ACCORDINGLY	City of Kent Public Works Department Engineering Division	PLANTING DETAILS	DOWNEY FARMSTEAD RESTORATION	SHEET P-4 OF 29
				DRAWN: R.H.	PROJECT ENGR: M.E.	CONST. MGMT. REVIEW	VERT:					FILE NO. 0817P04
				APPROVED:		CITY ENGINEER	DATE: NOV. 2013	0" 1"				

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