Administration Building
West Hearing Room
5334 S. Prince St.
Littleton, CO 80120
303-795-4630
303-738-7915 TTY

Nancy A. Doty, Chair, District 1
Nancy Sharpe, District 2
Rod Bockenfeld, District 3
Nancy Jackson, Chair Pro-Tem, District 4
Bill Holen, District 5

Study Session

February 29, 2016

The Arapahoe County Board of County Commissioners typically holds weekly Study Sessions on Monday and Tuesday. Study Sessions (except for Executive Sessions) are open to the public and items for discussion are included on this agenda. Agendas (except for Executive Sessions agendas) are available through the Commissioners' Office or through the County's web site at www.arapahoegov.com. Please note that the Board may discuss any topic relevant to County business, whether or not the topic has been specifically noticed on this agenda. In particular, the Board typically schedules time each Monday under "Committee Updates" to discuss a wide range of topics. In addition, the Board may alter the times of the meetings throughout the day, or cancel or reschedule noticed meetings. Questions about this agenda? Contact the Commissioners' Office at 303-795-4630 or by e-mail at commissioners@arapahoegov.com

Study Session Topics

9:00 A.M. Calendar Updates (WHR)
Diana Maes
BoCC Administration Manager

9:30 A.M. E-Team Update (WHR)
David Bessen,
Chair, E-Team
Director, Information Technologies

10:00 A.M. BOCC Updates (WHR)
Board of County Commissioners

Break

11:30 A.M. * Lobbyist Lunch (WHR)

BoCC
Ron Carl, County Attorney
Greg Romberg, Lobbyist

1:00 P.M. Interview For A Vacant Position On The Arapahoe County Water And Wastewater Authority (BoCC Conference Room)
BoCC

2:00 P.M. *Drop In (WHR)
Board of County Commissioners

1. Renewal Of Community Service IGA With The City Of Littleton
Discuss renewal of an Intergovernmental Agreement (IGA) with the City of Littleton to contract for Judicial Services to provide case management for people convicted in Littleton Municipal Court who are ordered to perform community service work

Brad Kamby, Judicial Services Division Manager, Community Resources
Don Klemme, Director, Community Resources
Tiffanie Bleau, Senior Assistant County Attorney
Todd Weaver, Budget Manager, Finance

Documents: BSR DROP-IN COMMUINTY SERVICE IGA RENEWAL 2016.PDF

2. ZTU-2016-00002 Temporary Use Permit
Discuss a request for a Temporary Use Permit, ZTU-2016-00002, for San Miguel Valley Corporation at 171/181 Inverness Drive West, Englewood, Colorado 80112, for Temporary Parking and a Construction Staging Yard

Request: Information/Direction

Tammy King, Zoning Administrator, Public Works and Development
Bryan Weimer, Transportation Division Manager, Public Works and Development
Keith Ashby, Purchasing Manager, Finance
Robert Hill, Senior Assistant County Attorney

Documents: BOARD OF COUNTY COMMISSIONER REFERRAL ZTU-2016-00002.PDF

3:30 P.M. * Executive Session (WHR)
Executive Study Session and County Attorney Administrative Meeting [Section 24-6-402 (4)(b)C.R.S.](As required by law, specific agenda topics will be announced in open meeting prior to the commencement of the closed and confidential portion of this session) (WHR)

Ron Carl, County Attorney

*** To Be Recorded As Required By Law**
WHR - West Hearing Room

Arapahoe County is committed to making its public meetings accessible to persons with disabilities. Assisted listening devices are available. Ask any staff member and we will provide one for you. If you need special accommodations, contact the Commissioners' Office at 303-795-4630 or 303-738-7915 TTY.
Please contact our office at least 3 days in advance to make arrangements.

Board Summary Report

Date: February 4, 2016

To: Board of County Commissioners

Through: Don Klemme, Community Resources Department Director

From: Brad Kamby, Judicial Services Division Manager

Subject: Renewal of Intergovernmental Agreement (IGA) with the City of Littleton to contract for Judicial Services to provide case management for people convicted in Littleton Municipal Court who are ordered to perform community service work.

Request and Recommendation
Judicial Services recommends that the Board or County Commissioners approve a resolution authorizing the renewal of the IGA between the County and the City of Littleton, allowing Judicial Services to continue to provide case management for people convicted in the Littleton Municipal Court and who are ordered to perform community service, provided they pay the scheduled fee. Because this relationship is with another governmental entity, an IGA is necessary. The IGA requires signature by the Chair of the Arapahoe County Board of County Commissioners.

Background
Judicial Services has been providing case management for persons who are ordered by the Littleton Municipal Court to perform community service since 2010. The current IGA was approved by the BoCC on March 3, 2015, for a period of one year; Resolution Number 150206.

Links to Align Arapahoe
Judicial Services' partnership with the Littleton Municipal Court enhances the quality of life in Arapahoe County by providing restorative justice opportunities to individuals convicted of misdemeanor and traffic offenses. In 2015, community services workers referred by Littleton completed 2,086 hours of useful public service.

Discussion
The partnership with the City of Littleton continues to be successful. Judicial Services has been able to accept referrals from Littleton without adding any additional staff. In 2015, Judicial Services completed 89 community service intakes referred by the City of Littleton and collected $6,400 in fees that have been deposited in the County's General Fund.

Alternatives
If the renewal of the IGA is not authorized, the City of Littleton will need to seek other options in order to include community service as a sentencing option for its Municipal Court.

Fiscal Impact

Judicial Services has been able to provide services to the City of Littleton working within its existing budget. In 2015, Judicial Services staff spent approximately 125 hours working on City of Littleton cases at a cost of approximately $3,085. Judicial Services collected $6,400 in supervision fees from clients referred by Littleton. Accepting community service workers from Littleton provides an additional revenue source for Arapahoe County. If the IGA is renewed, it is estimated that in 2016, between $6,500 and $9,000 in supervision fees will be collected and deposited in the General Fund.

Concurrence

The City of Littleton would like to renew the IGA.

Attorney Comments

Reviewed By:

Brad Kamby, Judicial Services Division Manager
Don Klemme, Community Resources Department Director
Janet Kennedy, Finance Director
Tiffanie Bleau, Assistant County Attorney

BOARD OF COUNTY COMMISSIONER REFERRAL

Temporary Use Case Number: ZTU-2016-00002

Address: 171/181 Inverness Drive West

Case Manager: Tammy King

_____
_____
_____

_____
Commissioner Nancy Jackson

_____
_____
_____

_____
Commissioner Nancy Doty

_____
_____
_____

_____
Commissioner Nancy N. Sharpe

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Commissioner Bill L. Holen

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_____
_____

_____
Commissioner Rod Bockenfeld

Arapahoe County
Colorado's First

Public Works and Development/Zoning Division
6924 S. Lima Street
Centennial, Colorado 80112
Phone: 720-874-6650 FAX 720-874-6611
www.arapahoegov.com

TEMPORARY USE PERMIT

ZTU-2016-00002

APPLICANT/REPRESENTATIVE: San Miguel Valley Corp. Bart Brundage	ADDRESS: 7800 East Dorado Pl., Ste. 250 Englewood CO 80111 PHONE: 303-779-8811 FAX: 303-779-8644 EMAIL: bart.brundage@cordilleracorp.com	SIGNATURE: NAME: Barton Brundage TITLE: Vice President
OWNER(S) OF RECORD: San Miguel Valley Corp.	ADDRESS: 7800 East Dorado Pl., Ste. 250 Englewood CO 80111 PHONE: 303-779-8811 FAX: 303-779-8644 EMAIL: nicolechampine@cordilleracorp.com	SIGNATURE: NAME: Nicole Champine TITLE: President

Parcel ID Number:	2075-34-4-21-002 and 2075-34-4-21-003
Address or Intersection:	171 or 181 Inverness Drive West, Englewood CO 80112
Brief Legal Description:	Lot 1 and Lot 2 of Replat of Tract A and Tract B, 171 Inverness Drive West at Inverness Business Park, Filing No. 2, County of Arapahoe, State of Colorado
Subdivision Name & Filing No.:	Inverness Business Park Filing No. 2

	EXISTING	PROPOSED TEMPORARY USE
Zoning:	I-1 PUD	I-1 PUD
Land Use:		
Total Acres:		
Related Cases:		

CASE TYPE

X	Attorney	X	Engineering	X	Sheriff
X	Building	X	Fire District	X	Tri-County Health
	Board of County Commissioners		Oil & Gas Specialist		Other:
	CDOT	X	Planning		Other:
	East End Advisory				

THIS SECTION FOR OFFICE USE ONLY

Case No:	ZTU-2016-00002	Zoning Case Manager:	Tammy KING
Fees paid:	Y (circled) N	Dates to be returned:	4 March 2016
Dates to be referred out:	18 February 2016	Approval signature:	

This development application shall be accompanied with the applicable fee and shall not be considered valid until the total application fee is received. Submittal of this application does not mean you will receive automatic approval, nor does it establish a vested property right in accordance with C.R.S. 24-68-105(1). Further processing and review of this application may require additional information, and/or meetings, as outlined in the Arapahoe County Development Code.

Submit via Email

SAN MIGUEL VALLEY CORPORATION

7800 E. Dorado Place
Suite 250
Englewood, Colorado 80111
(303) 220-8330
Fax: (303) 779-8644

January 29, 2016

Sarah L. White
Arapahoe County Public Works and Development
Engineering Services Division
6924 South Lima Street
Centennial, CO 80112

RE: 171 and 181 Inverness Drive West (D15-00064)
Construction Property Access for Lot 1 Parking Expansion

Dear Ms. White,

This letter is in reference to the property at 171 Inverness Drive West, Englewood CO 80112. The title holder for this property is San Miguel Valley Corporation. The physical location for this property has a purported address of 181 Inverness Drive West, Englewood CO 80112 at the Inverness Business Park. This property is subdivided into Tract A and Tract B and has recently undergone a replat into Lot 1 and Lot 2 as depicted on the Final Development Plan, as certified on September 2, 2015. San Miguel Valley Corporation is the sole title holder for both Lot 1 and Lot 2.

Lot 1 asphalt parking expansion is anticipated for construction in the spring/summer of 2016. San Miguel Valley Corporation states that for the purpose of construction on Lot 1, access and temporary parking on Lot 2 is granted. Access to Lot 2 will be through a temporary driveway off of Inverness Drive West, at the designated Property Access Point as indicated on the Final Development Plan.

Any concerns or questions Arapahoe County has please contact me at 303-779-8811 Ext. 315.

Sincerely,

Barton S. Brundage
Vice President
San Miguel Valley Corporation

GRADING, EROSION & SEDIMENT CONTROL (GESC) PLAN

LOT 1 AND LOT 2
171 INVERNESS DRIVE WEST AT INVERNESS BUSINESS PARK SUBDIVISION

A PORTION OF THE SOUTHEAST 1/4 OF SECTION 34, TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH P.M. CITY OF ENGLEWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

LEGAL DESCRIPTION

LOT 1 AND LOT 2, 171 INVERNESS DRIVE WEST AT INVERNESS BUSINESS PARK SUBDIVISION FILING NO. 2.

BENCHMARK AND DATUM

ELEVATIONS SHOWN HEREON ARE BASED ON ARAPAHOE COUNTY URBAN AREA VERTICAL CONTROL NETWORK, PHASE 2, POINT ID 1222. SAID CONTROL POINT BEING STAMPED "UAP222", LOCATED IN THE SOUTHEAST QUADRANT OF SOUTH YOSEMITE STREET AND EAST PANORAMA DRIVE IN THE NORTH END OF BERM, 77 FEET SOUTH OF THE CENTERLINE OF EAST PANORAMA DRIVE 26 FEET EAST OF THE FLOWLINE OF SOUTH YOSEMITE STREET.

ELEVATION = 5756.73 AS PUBLISHED BY ARAPAHOE COUNTY

DESIGN TEAM CONTACTS

CIVIL ENGINEER

KIMLEY-HORN AND ASSOCIATES, INC.
4582 S. ULSTER STREET – SUITE 1500
DENVER, CO 80237
PHONE: 303.228.2305
CONTACT: MIKE SASARAK, PE

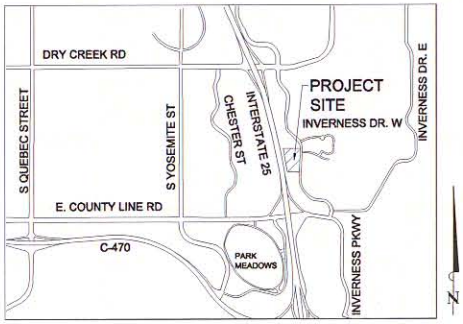
SURVEYOR

CALVADA SURVEYING INC.
6551 SOUTH REVERE PARKWAY
SUITE 165, CENTENNIAL, CO 80111
PHONE: 720.488.1303
CONTACT: JESUS A. LUGO, PLS

LANDSCAPE ARCHITECT

KIMLEY-HORN AND ASSOCIATES, INC.
4582 S. ULSTER STREET – SUITE 1500
DENVER, CO 80237PHONE:
303.228.2300
CONTACT: CHRIS HICE, PLA

OWNER/DEVELOPER
SAN MIGUEL VALLEY CORPORATION
7800 E. DORADO PLACE, SUITE 250
GREENWOOD VILLAGE, CO 80111



VICINITY MAP
SCALE: 1"=2000'

THIS GRADING, EROSION AND SEDIMENT CONTROL (GESC) DOCUMENT HAS BEEN PLACED IN THE ARAPAHOE COUNTY FILE FOR THIS PROJECT AND APPEARS TO FULFILL THE LATEST VERSION OF THE ARAPAHOE COUNTY GRADING, EROSION AND SEDIMENT CONTROL MANUAL. ADDITIONAL GRADING, EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED OF THE OWNER OR HIS/HER AGENTS, DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT FUNCTION AS INTENDED. THE REQUIREMENTS OF THIS GESC DOCUMENT SHALL RUN WITH THE LAND AND BE THE OBLIGATION OF THE LAND OWNER, OR HIS/HER DESIGNATED REPRESENTATIVE(S) UNTIL SUCH TIME AS THE PLAN IS PROPERLY COMPLETED, MODIFIED OR VOIDED.

I HEREBY ATTEST THAT THIS GRADING, EROSION, AND SEDIMENT CONTROL (GESC) DOCUMENT FOR LOT 1 AND LOT 2 171 INVERNESS DRIVE WEST AT INVERNESS BUSINESS PARK SUBDIVISION HAS BEEN PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND TO THE BEST OF MY KNOWLEDGE AND ABILITY HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST VERSION OF THE ARAPAHOE COUNTY GESC MANUAL. THE SIGNATURE AND STAMP AFFIXED HEREON CERTIFIES THAT THIS GESC DOCUMENT WAS PREPARED IN ACCORDANCE WITH THE REQUIRED REGULATIONS AND CRITERIA; HOWEVER, THE STAMP AND SIGNATURE DOES NOT CERTIFY OR GUARANTEE FUTURE PERFORMANCE OF THE EXECUTION OF THE PLAN BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR EXECUTING THE CONSTRUCTION WORK ACCORDING TO THE INFORMATION SET FORTH IN THE PLAN AND IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS.

REGISTERED PROFESSIONAL ENGINEER Michael C. Sasarak
MICHAEL C. SASARAK, P.E.

STATE OF COLORADO NO. 44697
AFFIX SEAL W/DATE

COLORADO REGISTERED PROFESSIONAL ENGINEER 44697 2/1/16

I HEREBY CERTIFY THAT THE GRADING, EROSION, AND SEDIMENT CONTROL MEASURES FOR LOT 1 AND LOT 2 171 INVERNESS DRIVE WEST AT INVERNESS BUSINESS PARK SUBDIVISION SHALL BE CONSTRUCTED ACCORDING TO THE DESIGN PRESENTED IN THIS DOCUMENT. I UNDERSTAND THAT ADDITIONAL EROSION CONTROL, SEDIMENT CONTROL AND WATER QUALITY ENHANCING MEASURES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN POLLUTANT DISCHARGES OR IF THE SUBMITTED PLAN DOES NOT FUNCTION AS INTENDED. THE REQUIREMENTS OF THE PLAN SHALL BE THE OBLIGATION OF THE LAND OWNER AND/OR HIS SUCCESSORS OR HEIRS; UNTIL SUCH TIME AS THE PLAN IS PROPERLY COMPLETED, MODIFIED OR VOIDED.

OWNER OR AUTHORIZED AGENT_____

AUTHORIZED SIGNATURE_____ DATE_____

THESE GESC PLANS HAVE BEEN REVIEWED BY ARAPAHOE COUNTY FOR GRADING, EROSION, AND SEDIMENT CONTROL IMPROVEMENTS ONLY.

FOR AND ON BEHALF OF THE
ARAPAHOE COUNTY
DEPARTMENT OF PUBLIC
WORKS AND DEVELOPMENT

811 Know what's below. Call before you dig.

LEGEND

- PROPERTY LINE
- EXISTING LOT LINE/RIGHT-OF-WAY
- EASEMENT LINE/SIGHT TRIANGLE
- CURB AND GUTTER
- AR — ACCESSIBLE ROUTE
- (6220) — EXISTING CONTOURS
- 6220 — PROPOSED CONTOURS
- XS — SLOPE
- W — EXISTING WATER LINE
- W — PROPOSED WATER LINE
- PROPOSED WATER METER
- S — EXISTING SANITARY SEWER WITH MANHOLE
- SS — PROPOSED SANITARY SEWER WITH CLEANOUT
- E — EXISTING ELECTRICAL LINE
- OH — EXISTING OVERHEAD ELECTRICAL LINE
- E — PROPOSED ELECTRICAL LINE
- PROPOSED ELECTRICAL TRANSFORMER AND PAD
- EXISTING/PROPOSED SIGN
- EXISTING/PROPOSED LIGHT POLE

BMP LEGEND

- CD — CHECK DAM
- CWA — CONCRETE WASHOUT AREA
- CF — CONSTRUCTION FENCE
- CS — CURB SOCKS
- DD — DIVERSION DITCH
- ECB — EROSION CONTROL BLANKET
- IP — INLET PROTECTION
- RRB — REINFORCED ROCK BERM
- RRC — RRB FOR CULVERT PROTECTION
- SCL — SEDIMENT CONTROL LOG
- ST — SEDIMENT TRAP
- SM — SEEDING AND MULCHING
- SF — SILT FENCE
- SSA — STABILIZED STAGING AREA
- SR — SURFACE ROUGHENING
- VTC — VEHICLE TRACKING CONTROL
- LOC — LIMITS OF CONSTRUCTION (2.92 AC)

SHEET INDEX

NO.	SHEET TITLE
1	COVER SHEET
2	INITIAL PLAN PROJECT AREA
3	INITIAL PLAN ACCESS AND STAGING AREA
4	INTERIM AND FINAL PLAN PROJECT AREA
5	INTERIM AND FINAL PLAN ACC STAGING
6	GESC PLAN STANDARD NOTES AND DETAILS
7	GESC PLAN STANDARD NOTES AND DETAILS
8	GESC PLAN STANDARD NOTES AND DETAILS
9	GESC PLAN STANDARD NOTES AND DETAILS

ABBREVIATIONS

APPROX	APPROXIMATE
COM	COMMUNICATIONS
E	EAST OR ELECTRIC
EA	EACH
ELEV	ELECTRIC OR ELEVATION
EX/EXIST	EXISTING
FG	FINISHED GRADE
FL	FLOW LINE
LF	LINEAR FEET
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
N	NORTH
NE	NORTHEAST
NO	NUMBER
NW	NORTHWEST
PROP	PROPOSED
R	RADIUS
RD	ROAD
REV	REVISION
RT	RIGHT
R/W	RIGHT-OF-WAY
S	SOUTH
SD	STORM DRAIN
SE	SOUTHEAST
SF	SQUARE FEET
SS	SANITARY SEWER
ST	STREET
STA	STATION
SW	SIDEWALK OR SOUTHWEST
SY	SQUARE YARDS
TYP	TYPICAL
WA	WATER
WE	WEST

SEMSWA CASE NO. D15-00064 & DPR15-00095
ARAPAHOE COUNTY CASE NO. E15-015

NO.	REVISION	BY	DATE	APPR
1	TEMPORARY ACCESS	WBH	2/16	MCS

Kimley»Horn
© 2015 KIMLEY-HORN AND ASSOCIATES, INC.
4582 S. Ulster Street, Suite 1500
Denver, Colorado 80237 (303) 228-2300

DESIGNED BY: MCS
DRAWN BY: WBH
CHECKED BY: JMH
DATE: 02/01/16

LOT 1 AND LOT 2 171 INVERNESS DRIVE WEST AT INVERNESS PARK SUBDIVISION
GRADING, EROSION & SEDIMENT CONTROL (GESC) PLAN
COUNTY OF ARAPAHOE, STATE OF COLORADO
COVER SHEET

COLORADO REGISTERED PROFESSIONAL ENGINEER 44697 2/1/16

PROJECT NO. 096406000
SHEET 1

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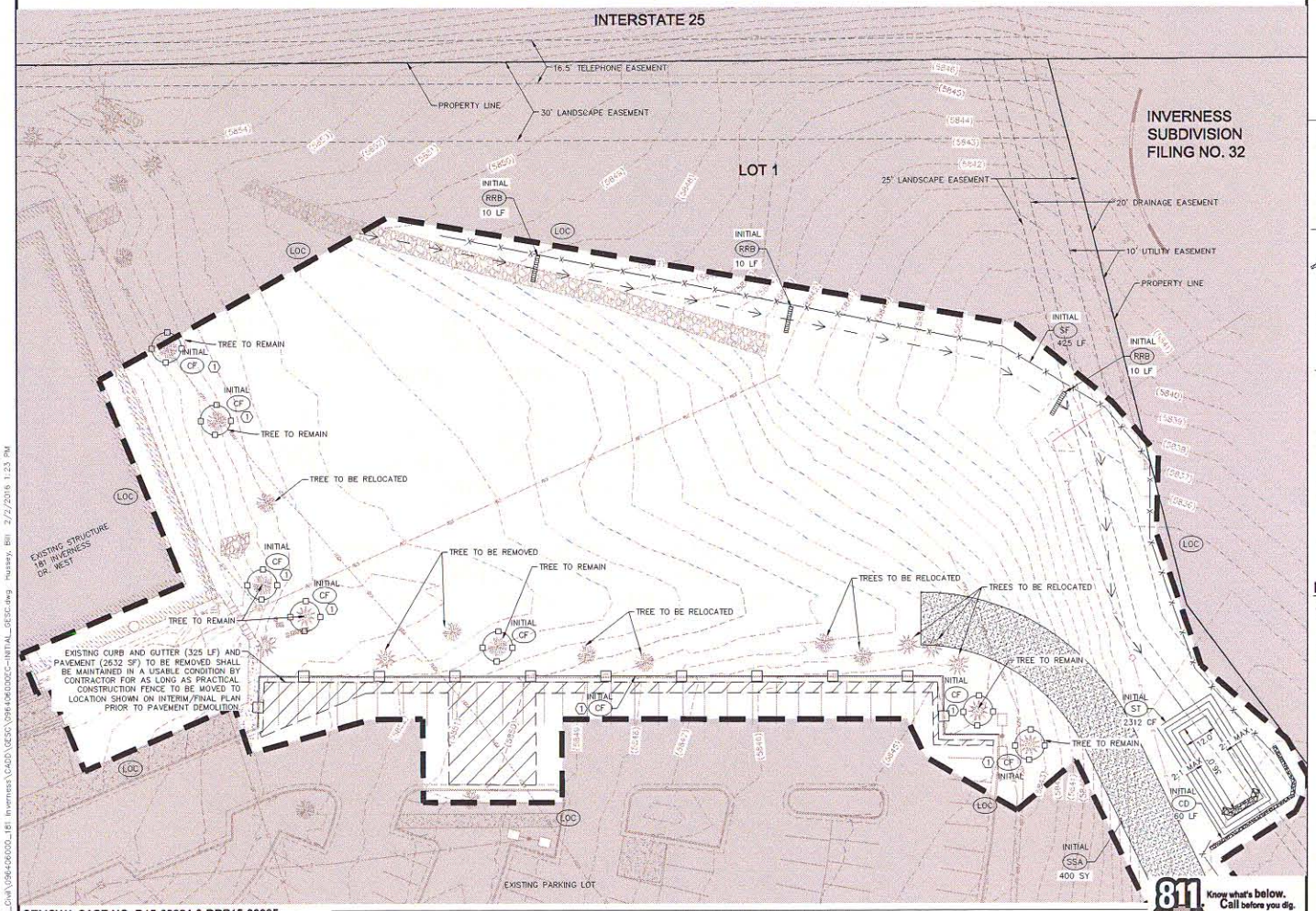
GRADING, EROSION & SEDIMENT CONTROL (GESC) PLAN

LOT 1 AND LOT 2
171 INVERNESS DRIVE WEST AT INVERNESS BUSINESS PARK SUBDIVISION

A PORTION OF THE SOUTHEAST 1/4 OF SECTION 34, TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH P.M. CITY OF ENGLEWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO



SEMSWA CASE NO. D15-00064 & DPR15-00095
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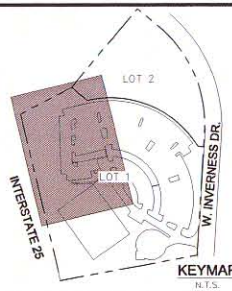
811 Know what's below. Call before you dig.



KEYMAP
N.T.S.

BMP LEGEND

	CD	CHECK DAM
	CWA	CONCRETE WASHOUT AREA
	CF	CONSTRUCTION FENCE
	CS	CURB SOCKS
	DD	DIVERSION DITCH
	ECB	EROSION CONTROL BLANKET
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	RRB	REINFORCED ROCK BERM
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	SCL	SEDIMENT CONTROL LOG
	ST	SEDIMENT TRAP
	SM	SEEDING AND MULCHING
	SF	SILT FENCE
	SSA	STABILIZED STAGING AREA
	SR	SURFACE ROUGHENING
	VTC	VEHICLE TRACKING CONTROL
	LOC	LIMITS OF CONSTRUCTION (2.8 AC)

LEGEND

- PROPERTY LINE
- EXISTING EASEMENT
- (5832) EXISTING CONTOURS
- 5838 PROPOSED CONTOURS
- EXISTING PAVEMENT TO BE REMOVED

KEYNOTES

1. CONSTRUCTION FENCE TO BE INSTALLED WHERE SHOWN AND AROUND EXISTING TREES TO REMAIN. 485 LF

NOTES

1. SEE COVER SHEET OF ARAPAHOE COUNTY STANDARD NOTES AND DETAILS (SHEET 1 OF 3) FOR LEGEND OF BMP NAMES AND SYMBOLS.
2. ANY BMPS SHOWN THAT REQUIRE GRADING, E.G. SEDIMENT BASINS, SEDIMENT TRAPS, CONCRETE WASH OUT AREAS, ETC..., SHALL NOT BE PLACED UNTIL AFTER THE PRE-CONSTRUCTION MEETING. IN ADDITION, THE SEDIMENT BASIN (OR OTHER BMP) SHALL NOT BE INSTALLED UNTIL AFTER THE GESC PRE-CONSTRUCTION MEETING AND ISSUANCE OF THE GESC PERMIT BUT MUST BE FULLY FUNCTIONAL PRIOR TO ANY LARGE SCALE GRADING. THE INITIAL PLAN ILLUSTRATES EXISTING CONDITIONS. NO PROPOSED INFRASTRUCTURE IS SHOWN.
3. CONTRACTOR TO REMOVE EXISTING CURB AND PAVEMENT PRIOR TO INSTALLATION OF THE VEHICLE TRACKING CONTROL (VTC) PAD. VTC TO CONNECT TO NEW EDGE OF PAVEMENT.

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

NO.	REVISION	BY	DATE	APPR
1	TEMPORARY ACCESS	WBH	2/18	MCS

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4582 S. Ulster Street, Suite 1500
Denver, Colorado 80237 (303) 228-2300

DESIGNED BY: MCS
DRAWN BY: WBH
CHECKED BY: JMH
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LOT 1 AND LOT 2 171 INVERNESS DRIVE WEST AT INVERNESS PARK SUBDIVISION
GRADING, EROSION & SEDIMENT CONTROL (GESC) PLAN
COUNTY OF ARAPAHOE, STATE OF COLORADO
INITIAL PLAN PROJECT AREA

COLORADO REGISTERED PROFESSIONAL ENGINEER 44697 2/1/16

PROJECT NO. 096406000

SHEET 2

K:\DEN_Civil\096406000_181 Inverness\CADD\GESC\096406000EC-INITIAL_GESC.dwg Hussey, Bill 2/2/2016 1:23 PM

GRADING, EROSION & SEDIMENT CONTROL (GESC) PLAN

LOT 1 AND LOT 2
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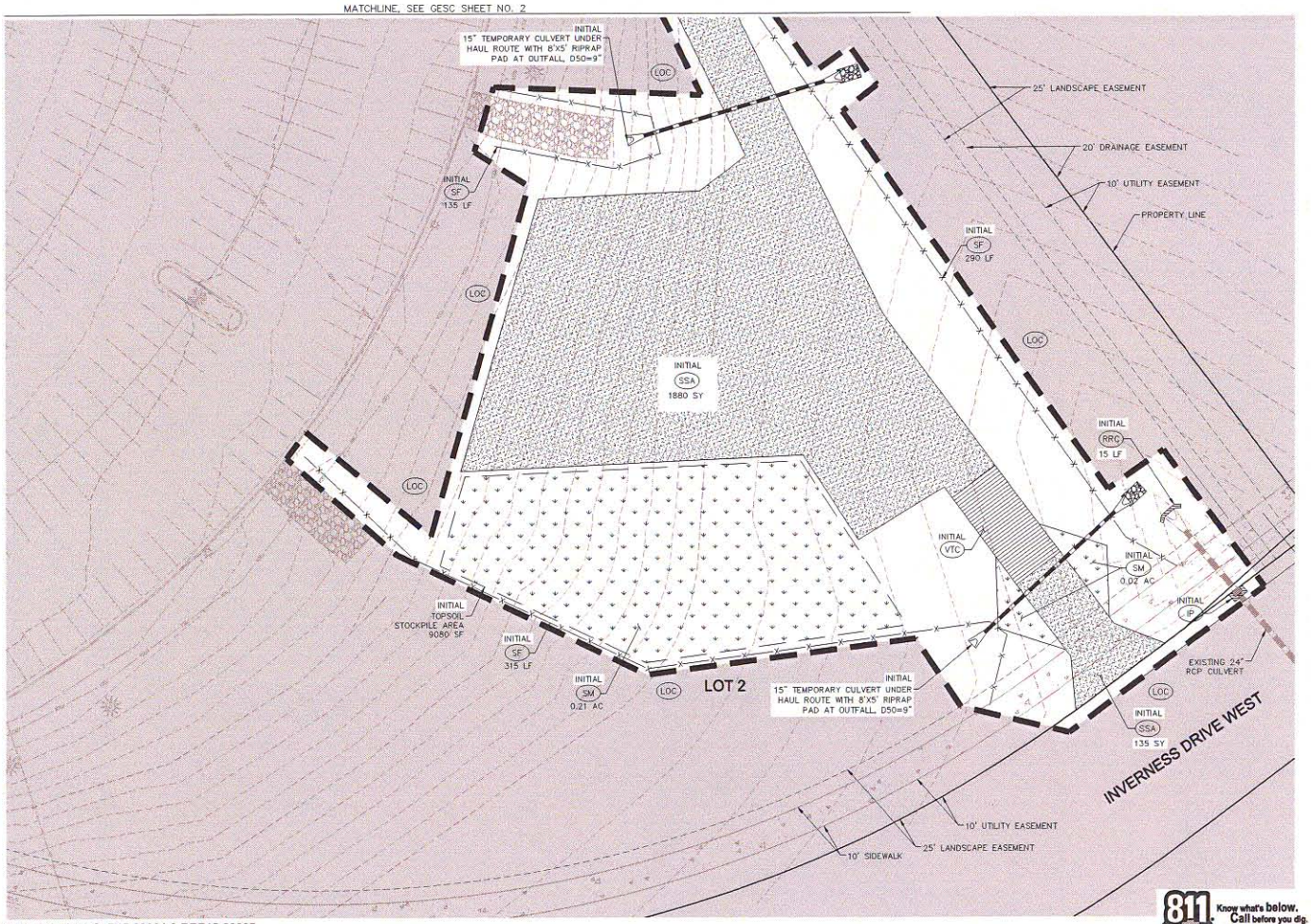

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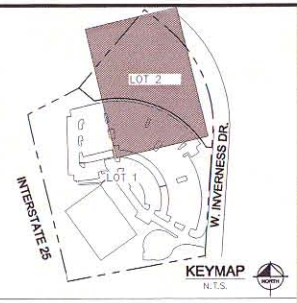
SEMSWA CASE NO. D15-00064 & DPR15-00095
ARAPAHOE COUNTY CASE NO. E15-015



BMP LEGEND

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NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

NO.	REVISION	BY	DATE	APPR.
1	TEMPORARY ACCESS	WBH	2/16	MCS

Kimley»Horn
2015 KIMLEY-HORN AND ASSOCIATES, INC.
4582 S. Ulster Street, Suite 1500
Denver, Colorado 80237 (303) 228-2300

DESIGNED BY: MCS
DRAWN BY: WBH
CHECKED BY: JMH
DATE: 02/01/16

LOT 1 AND LOT 2 171 INVERNESS DRIVE WEST AT INVERNESS PARK SUBDIVISION
GRADING, EROSION & SEDIMENT CONTROL (GESC) PLAN
COUNTY OF ARAPAHOE, STATE OF COLORADO
INITIAL PLAN ACCESS AND STAGING AREA

COLORADO REGISTERED PROFESSIONAL ENGINEER 44697 2/1/16

PROJECT NO. 096406000

SHEET 3

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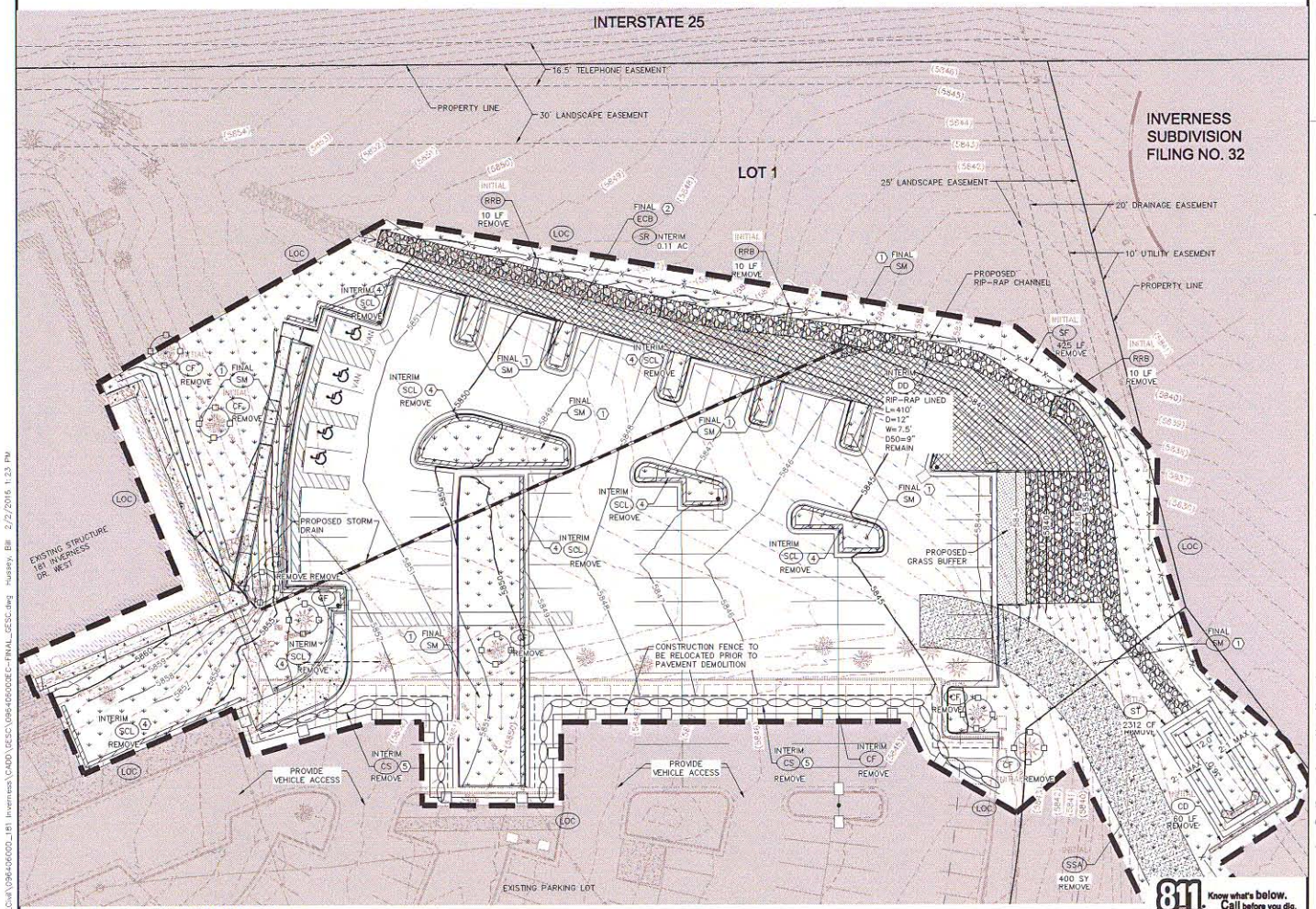
EARTHWORK SUMMARY	
EXCAVATION/CUT	1,100 CY
FILL	1,100 CY
IMPORT/EXPORT	0 CY

GRADING, EROSION & SEDIMENT CONTROL (GESC) PLAN

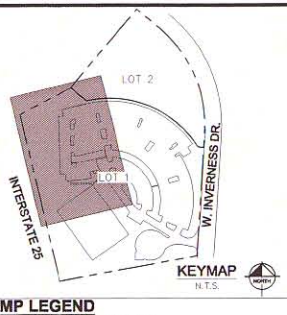
LOT 1 AND LOT 2
171 INVERNESS DRIVE WEST AT INVERNESS BUSINESS PARK SUBDIVISION

A PORTION OF THE SOUTHEAST 1/4 OF SECTION 34, TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH P.M. CITY OF ENGLEWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO



SEMSWA CASE NO. D15-00064 & DPR15-00095
ARAPAHOE COUNTY CASE NO. E15-015

811 Know what's below. Call before you dig.



BMP LEGEND

	CD	CHECK DAM
	CWA	CONCRETE WASHOUT AREA
	CF	CONSTRUCTION FENCE
	CS	CURB SOCKS
	DD	DIVERSION DITCH
	ECB	EROSION CONTROL BLANKET
	RRB	REINFORCED ROCK BERM
	RRC	RRB FOR INLET PROTECTION
	SCL	SEDIMENT CONTROL LOG
	ST	SEDIMENT TRAP
	SM	SEEDING AND MULCHING
	SF	SILT FENCE
	SSA	STABILIZED STAGING AREA
	SR	SURFACE ROUGHENING
	VTC	VEHICLE TRACKING CONTROL
	LOC	LIMITS OF CONSTRUCTION (2.8 AC)

LEGEND

- PROPERTY LINE
- EXISTING EASEMENT
- (5838) EXISTING CONTOURS
- 5838 PROPOSED CONTOURS

KEYNOTES

1. AREA TO BE SEEDED AND MULCHED. TOTAL AREA: 1.73 AC
2. STRAW EROSION CONTROL BLANKET TO BE APPLIED AT GRADED SLOPE 3:1. TOTAL AREA: 510 SY
3. PORTABLE UNIT CONCRETE WASHOUT AREA
4. SEDIMENT CONTROL LOGS SHALL BE INSTALLED IMMEDIATELY FOLLOWING PLACEMENT OF THE CURB AND/OR SIDEWALK AND SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL THE FINAL VEGETATION IS ESTABLISHED. TOTAL LENGTH: 945 LF
5. CURB SOCKS TO BE INSTALLED AROUND PERIMETER OF SITE WHERE PAVEMENT EXISTS. 345 LF

NOTES

1. SEE COVER SHEET OF ARAPAHOE COUNTY STANDARD NOTES AND DETAILS (SHEET 1 OF 14) FOR LEGEND OF BMP NAMES AND SYMBOLS.
2. SHADED BMPS INSTALLED IN INITIAL OR INTERIM STAGE SHALL BE LEFT IN PLACE UNTIL REVEGETATION ESTABLISHMENT IS APPROVED BY THE COUNTY, UNLESS OTHERWISE NOTED.
3. SEE CONSTRUCTION PLANS FOR DETAILS OF PERMANENT DRAINAGE FACILITIES SUCH AS DETENTION FACILITIES, WATER QUALITY FACILITIES, CULVERTS, STORM DRAINS, AND OUTLET PROTECTION.
4. SAW-CUT SLURRY AND CUTTINGS SHALL BE VACUUMED DURING CUTTING AND SURFACING OPERATIONS. SLURRY AND CUTTINGS SHALL NOT DRAIN TO ANY NATURAL OR CONSTRUCTED DRAINAGE CONVEYANCE.
5. SLOPES TO BE LEFT IN A SURFACED ROUGHENED (SR) PRIOR TO FINAL STABILIZATION.
6. PRIOR TO PLACEMENT OF FINAL RIP RAP INTO THE DRAINAGE SWALE, THE ADJACENT SLOPE SHALL BE SEEDED AND EROSION CONTROL BLANKETS (ECB) INSTALLED.
7. UPON COMPLETION OF GRADE FOR THE DRAINAGE SWALE, REINFORCED ROCK BERMS (RRB) SHALL BE INSTALLED AND MAINTAINED UNTIL THE PLACEMENT OF FINAL RIP RAP.

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

NO.	REVISION	BY	DATE	APPR.
1	TEMPORARY ACCESS	WBH	2/16	MCS

Kimley»Horn
2015 KIMLEY-HORN AND ASSOCIATES, INC.
4582 S. ULSTER STREET, SUITE 1500
Denver, Colorado 80237 (303) 228-2300

DESIGNED BY: MCS
DRAWN BY: WBH
CHECKED BY: JMH
DATE: 02/01/16

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GRADING, EROSION & SEDIMENT CONTROL (GESC) PLAN
COUNTY OF ARAPAHOE, STATE OF COLORADO
INTERIM AND FINAL PLAN PROJECT AREA

COLORADO REGISTERED PROFESSIONAL ENGINEER 44697 2/1/16

PROJECT NO. 096406000

SHEET 4

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GRADING, EROSION & SEDIMENT CONTROL (GESC) PLAN

LOT 1 AND LOT 2
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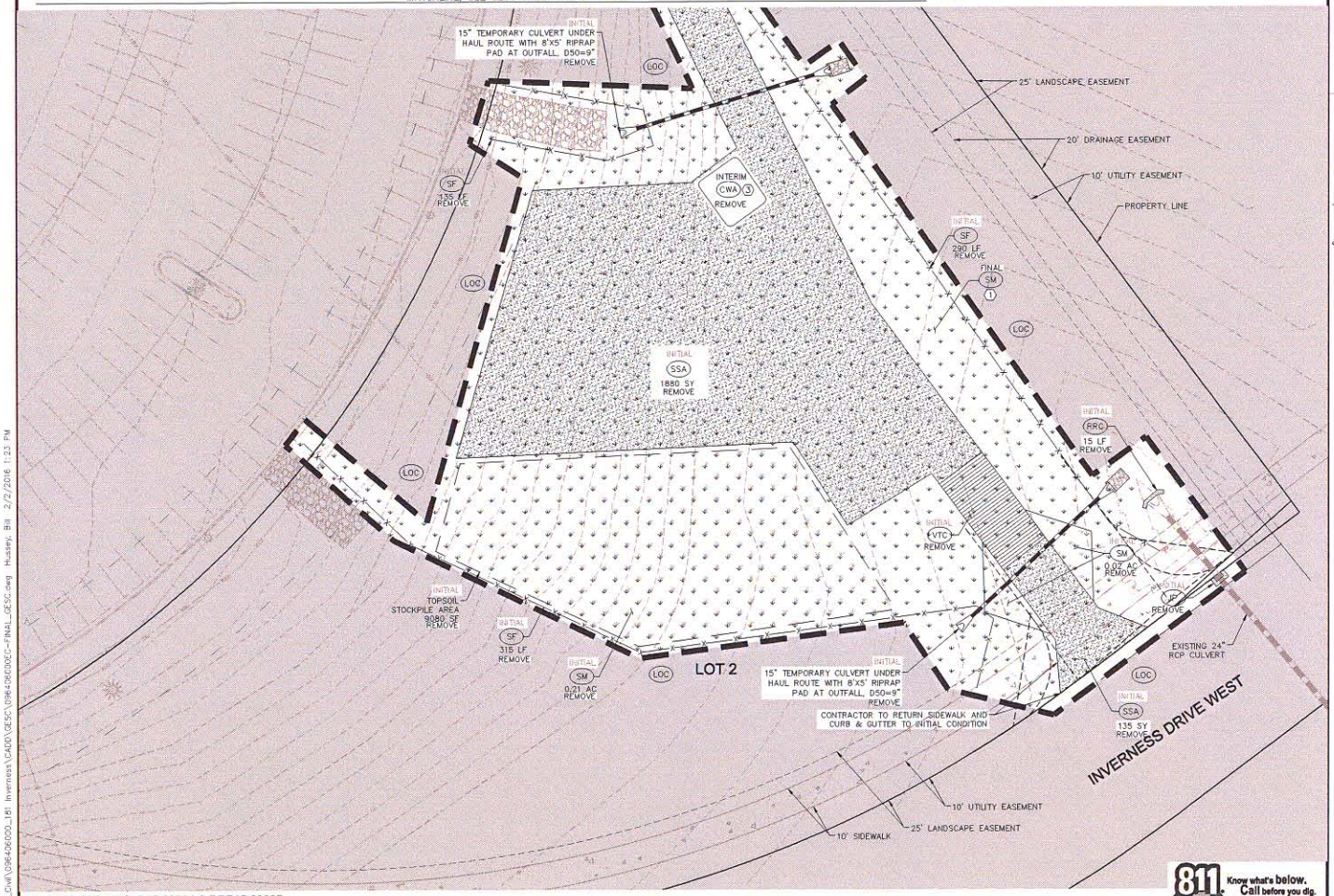
A PORTION OF THE SOUTHEAST 1/4 OF SECTION 34, TOWNSHIP 5 SOUTH, RANGE 67 WEST OF THE 6TH P.M. CITY OF ENGLEWOOD, COUNTY OF ARAPAHOE, STATE OF COLORADO

MATCHLINE, SEE GESC SHEET NO. 4



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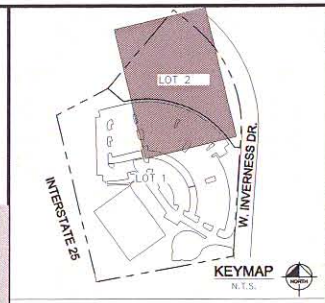

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LOC	LIMITS OF CONSTRUCTION (2.8 AC)

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(5836)	EXISTING CONTOURS
5838	PROPOSED CONTOURS

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HUSON

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Kimley»Horn
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SHEET 5

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GRADING, EROSION, AND SEDIMENT CONTROL (GESC) GENERAL NOTES

1. THE SOUTHEAST METRO STORMWATER AUTHORITY (SEMSWA) DIRECTOR'S SIGNATURE AFFIXED TO THIS DOCUMENT INDICATES SEMSWA HAS REVIEWED THE DOCUMENT AND FOUND IT IN GENERAL COMPLIANCE WITH CENTENNIAL'S LAND DEVELOPMENT CODE AND/OR THE GRADING, EROSION AND SEDIMENT CONTROL (GESC) CRITERIA MANUAL. THE DIRECTOR THROUGH ACCEPTANCE OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY (OTHER THAN AS STATED ABOVE) FOR THE COMPLETENESS AND/OR ACCURACY OF THESE DOCUMENTS.
2. THE ADEQUACY OF THIS GESC PLAN LIES WITH THE ORIGINAL DESIGN ENGINEER.
3. THE GESC PLAN SHALL BE CONSIDERED VALID FOR TWO (2) YEARS FROM THE DATE OF ACCEPTANCE BY SEMSWA. AFTER WHICH TIME THE PLAN SHALL BE VOID AND WILL BE SUBJECT TO RE-REVIEW AND RE-ACCEPTANCE BY SEMSWA. PLANS MUST CONFORM TO CURRENT REQUIREMENTS.
4. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY SEMSWA'S INSPECTION DIVISION. SEMSWA RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THE GESC MANUAL, GESC PLAN OR GESC PERMIT.
5. THE PLACEMENT OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs) SHALL BE IN ACCORDANCE WITH THE ACCEPTED GESC PLAN AND THE SEMSWA GESC MANUAL.
6. ANY VARIATION IN MATERIAL, TYPE, OR LOCATION OF EROSION AND SEDIMENT CONTROL BMPs FROM THE SEMSWA – ACCEPTED GESC PLAN WILL REQUIRE APPROVAL FROM AN ACCOUNTABLE REPRESENTATIVE OF SEMSWA.
7. UPON RECEIVING THE APPROVED, SIGNED AND STAMPED GESC PLANS AND REPORT, THE CONTRACTOR MAY INSTALL THE NON-EARTH DISTURBING INITIAL-STAGE EROSION AND SEDIMENT CONTROL BMPS INDICATED ON THE ACCEPTED GESC PLAN.
8. AFTER INSTALLATION OF THE INITIAL-STAGE EROSION AND SEDIMENT CONTROL BMPs, THE PERMITTEE SHALL CALL THE INSPECTION DIVISION TO SCHEDULE A PRECONSTRUCTION MEETING AT THE PROJECT SITE. THE REQUEST SHALL BE MADE NO LESS THAN 24 HOURS PRIOR TO THE REQUESTED MEETING TIME. NO CONSTRUCTION ACTIVITIES SHALL BE PLANNED WITHIN 24 HOURS AFTER THE PRECONSTRUCTION MEETING.
9. THE OWNER OR OWNER'S REPRESENTATIVE, THE GESC MANAGER, THE GENERAL CONTRACTOR, AND THE GRADING SUBCONTRACTOR, IF DIFFERENT FROM THE GENERAL CONTRACTOR, MUST ATTEND THE PRECONSTRUCTION MEETING. IF ANY OF THE REQUIRED PARTICIPANTS FAIL TO ATTEND THE PRECONSTRUCTION MEETING, OR IF THE INSTALLATION OF THE INITIAL BMPs ARE NOT APPROVED BY THE SEMSWA INSPECTOR, THE APPLICANT WILL HAVE TO PAY A REINSPECTION FEE, ADDRESS ANY PROBLEMS WITH BMP INSTALLATION, AND CALL TO RESCHEDULE THE MEETING, WITH A CORRESPONDING DELAY IN THE START OF CONSTRUCTION.
10. CONSTRUCTION SHALL NOT BEGIN UNTIL THE SEMSWA INSPECTOR APPROVES THE INSTALLATION OF THE INITIAL BMPs, AND THE APPROVED GESC PERMIT HAS BEEN ISSUED BY SEMSWA AND IS IN-HAND ON THE SITE. THE COMPLETED PERMIT WILL GENERALLY BE FIELD ISSUED OR ISSUED VIA EMAIL WITHIN 24-HOURS AFTER THE INSTALLATION OF THE INITIAL BMPs ARE APPROVED.
11. THE GESC MANAGER SHALL STRICTLY ADHERE TO THE SEMSWA APPROVED LIMITS OF CONSTRUCTION AT ALL TIMES. THE SEMSWA INSPECTION DIVISION MUST APPROVE ANY CHANGES TO THE LIMITS OF CONSTRUCTION AND, AT THE DISCRETION OF THE INSPECTION DIVISION, ADDITIONAL EROSION/SEDIMENT CONTROLS MAY BE REQUIRED IN ANY ADDITIONAL AREAS OF CONSTRUCTION/ DISTURBANCE ARE NEEDED.
12. THE MAXIMUM AREA OF CONSTRUCTION SHALL BE LIMITED TO 40 ACRES (70 ACRES IF APPROVED FOR SOIL MITIGATION OPERATIONS) TO REDUCE THE AMOUNT OF LAND DISTURBED AT ANY ONE TIME. LARGER SITES SHALL BE DIVIDED INTO PHASES THAT ARE EACH 40 (OR 70) ACRES OR LESS IN SIZE. THESE PROJECTS SHALL CONDUCT GRADING ACTIVITIES IN ACCORDANCE WITH THE ACCEPTED GESC PLAN. BMP INSTALLATION AND APPROVAL BY SEMSWA AT THE START AND COMPLETION OF EACH PHASE SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN THE GESC MANUAL.
13. NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED WHEREVER POSSIBLE. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATIONS.
14. THE GESC PERMIT SHALL BE VALID FOR A PERIOD OF TWO (2) YEARS.
15. A COPY OF THE GESC PERMIT AND APPROVED GESC PLANS SHALL BE ON SITE OR MADE AVAILABLE UPON REQUEST.
16. THE GESC MANAGER SHALL BE RESPONSIBLE PARTY FOR ENSURING THAT THE SITE REMAINS IN COMPLIANCE WITH THE GESC PERMIT AND SHALL BE THE PERMITTEE'S CONTACT PERSON WITH SEMSWA FOR ALL MATTERS PERTAINING TO THE GESC PERMIT. THE GESC MANAGER SHALL BE ON THE SITE AS NECESSARY TO ENSURE THE GESC REQUIREMENTS ARE BEING IMPLEMENTED, AND (ALONG WITH THE ALTERNATE GESC MANAGER) SHALL PROVIDE SEMSWA WITH A 24-HOUR EMERGENCY CONTACT NUMBER. IN THE EVENT THAT THE CONTRACTOR'S GESC MANAGER IS NOT ON SITE AND CANNOT BE REACHED DURING A VIOLATION, THE ALTERNATE GESC MANAGER SHALL BE CONTACTED. IF NEITHER THE GESC MANAGER NOR ALTERNATE GESC MANAGE CAN BE CONTACTED DURING ANY VIOLATION, WITHIN 24 HOURS, VIOLATION MAY BE ISSUED TO THE PERMITTEE(S).
17. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE THROUGH THE SEMSWA-APPROVED ACCESS POINT. A VEHICLE TRACKING CONTROL PAD IS REQUIRED AT ALL ACCESS POINTS ON THE SITE. ADDITIONAL STABILIZED CONSTRUCTION ENTRANCES MAY BE ADDED WITH AUTHORIZATION FROM THE SEMSWA INSPECTION DIVISION.
18. THE GESC MANAGER IS RESPONSIBLE FOR CLEANUP OF SEDIMENT OR CONSTRUCTION DEBRIS TRACKED ONTO ADJACENT PAVED AREAS. PAVED AREAS INCLUDING STREETS ARE TO BE KEPT CLEAN THROUGHOUT BUILD-OUT AND SHALL BE CLEANED, WITH A STREET SWEEPER OR SIMILAR DEVICE, AT FIRST NOTICE OF ACCIDENTAL TRACKING OR AT THE DISCRETION OF THE SEMSWA GESC INSPECTOR. STREET WASHING IS NOT ALLOWED. SEMSWA RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURES TO ENSURE AREA STREETS ARE KEPT FREE OF SEDIMENT AND/OR CONSTRUCTION DEBRIS.
19. APPROVED EROSION AND SEDIMENT CONTROL BMPs SHALL BE MAINTAINED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THIS PROJECT. AT A MINIMUM, THE GESC MANAGER SHALL INSPECT ALL BMPs IN ACCORDANCE WITH THE ACCEPTED GESC PLAN AND GESC MANUAL. ALL NECESSARY MAINTENANCE AND REPAIR ACTIVITIES SHALL BE COMPLETED WITHIN 48 HOURS. ACCUMULATED SEDIMENT AND CONSTRUCTION DEBRIS SHALL BE REMOVED AND PROPERLY DISPOSED.
20. STRAW BALES ARE NOT A SEMSWA GESC-ACCEPTED SEDIMENT CONTROL BMP.
21. TOPSOIL SHALL BE STRIPPED AND STOCKPILED IN THE LOCATION SHOWN ON THE ACCEPTED GESC PLAN. THE TOPSOIL STOCKPILE(S) SHALL FOLLOW ALL STOCKPILING CRITERIA DESCRIBED IN THE GESC MANUAL. TOPSOIL SHALL BE REPLACED AT A MINIMUM DEPTH OF 6 INCHES. IF A MINIMUM DEPTH OF 6 INCHES CAN NOT BE OBTAINED, ADDITIONAL TOPSOIL AND/ OR APPROVED SOIL AMENDMENTS WILL BE REQUIRED TO BE PLACED PRIOR TO SEEDING AND MULCHING.
22. THE ACCEPTED GESC PLAN MAY REQUIRE CHANGES OR ALTERATIONS AFTER APPROVAL TO MEET CHANGING SITE OR PROJECT CONDITIONS OR TO ADDRESS INEFFICIENCIES IN DESIGN OR INSTALLATION. THE GESC MANAGER SHALL OBTAIN PRIOR APPROVAL FROM THE DESIGN ENGINEER AND SEMSWA FOR ANY PROPOSED CHANGES.
23. LINING OF TEMPORARY SWALES AND DITCHES SHALL BE IN ACCORDANCE WITH THE GESC CRITERIA MANUAL.
24. ANY SETTLEMENT OR SOIL ACCUMULATIONS BEYOND THE LIMITS OF CONSTRUCTION DUE TO GRADING OR EROSION SHALL BE REPAIRED IMMEDIATELY BY THE GESC MANAGER. THE GESC MANAGER SHALL BE HELD RESPONSIBLE FOR OBTAINING ACCESS RIGHTS TO ADJACENT PROPERTY, IF NEEDED, AND REMEDIATING ANY ADVERSE IMPACTS TO ADJACENT WATERWAYS, WETLANDS, PROPERTIES, ETC. RESULTING FROM WORK DONE AS PART OF THIS PROJECT.
25. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
26. SOILS THAT WILL BE STOCKPILED FOR MORE THAN THIRTY (30) DAYS SHALL BE SEEDED AND MULCHED WITHIN FOURTEEN (14) DAYS OF STOCKPILE CONSTRUCTION. NO STOCKPILES SHALL BE PLACED WITHIN ONE HUNDRED (100) FEET OF A DRAINAGE WAY UNLESS APPROVED BY SEMSWA.
27. ALL CHEMICAL OR HAZARDOUS MATERIAL SPILLS WHICH MAY ENTER WATERS OF THE STATE OF COLORADO, WHICH INCLUDE BUT ARE NOT LIMITED TO: SURFACE WATER, GROUND WATER AND DRY GULLIES OR STORM SEWER LEADING TO SURFACE WATER, SHALL BE IMMEDIATELY REPORTED TO THE CDPHE PER CRS 25-8-601, AND SEMSWA. RELEASES OF PETROLEUM PRODUCTS AND CERTAIN HAZARDOUS SUBSTANCES LISTED UNDER THE FEDERAL CLEAN WATER ACT (40 CFR PART 116) MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER AS WELL AS THE CDPHE. CONTACT INFORMATION FOR CDPHE, SEMSWA AND THE NATIONAL RESPONSE CENTER CAN BE FOUND IN APPENDIX A. SPILLS THAT POSE AN IMMEDIATE RISK TO HUMAN LIFE SHALL BE REPORTED TO 911. FAILURE TO REPORT AND CLEAN UP ANY SPILL SHALL RESULT IN ISSUANCE OF A STOP WORK ORDER. TO REPORT SPILLS TO SEMSWA CALL 303-858-8844.
28. ALL WORK ON SITE SHALL STAY A MINIMUM OF ONE HUNDRED (100) FEET AWAY FROM ANY DRAINAGE WAY, WETLAND, ETC. UNLESS OTHERWISE NOTED ON AN ACCEPTED SEMSWA GESC PLAN.
29. THE USE OF REBAR, STEEL STAKES OR STEEL FENCE POSTS FOR STAKING OR SUPPORT OF ANY EROSION OR SEDIMENT CONTROL BMP IS PROHIBITED (EXCEPT STEEL TEE-POSTS FOR USE IN SUPPORTING CONSTRUCTION FENCE).
30. THE CLEANING OF CONCRETE DELIVERY TRUCK CHUTES IS RESTRICTED TO APPROVED CONCRETE WASH OUT LOCATIONS ON THE JOB SITE. THE DISCHARGE OF WATER CONTAINING WASTE CONCRETE TO THE STORM SEWER SYSTEM IS PROHIBITED. ALL CONCRETE WASTE SHALL BE PROPERLY CLEANED UP AND DISPOSED AT AN APPROPRIATE LOCATION.
31. ALL DEWATERING ON SITE SHALL BE COORDINATED WITH A SEMSWA GESC INSPECTOR AND BE FREE OF SEDIMENT IN ACCORDANCE WITH THE GESC CRITERIA MANUAL, AND STATE OF COLORADO DEWATERING PERMIT.
32. ALL PERMANENT INSTALLATIONS OF PIPES FOR STORM SEWERS, SLOPE DRAINS, AND CULVERTS, TOGETHER WITH RIPRAP APRONS OR OTHER INLET AND OUTLET PROTECTION, REQUIRE INSPECTION BY SEMSWA ENGINEERING (SEPARATE FROM GESC INSPECTIONS).
33. ALL DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH THE GESC CRITERIA MANUAL WITHIN 14 DAYS OF SUBSTANTIAL COMPLETION OF GRADING, INCLUDING AREAS TO REMAIN DORMANT FOR LONGER THAN 30 DAYS. WHENEVER IS LESS. THIS MAY REQUIRE MULTIPLE MOBILIZATIONS FOR SEEDING AND MULCHING.
34. HYDRAULIC SEEDING IS NOT AN ACCEPTABLE METHOD OF SEEDING WITHIN THE SEMSWA SERVICE AREA.
35. HYDRO-MULCH MAY BE USED FOR LIMITED APPLICATIONS AS APPROVED BY SEMSWA.
36. UTILITY LINE INSTALLATION SHALL COMPLY WITH THE FOLLOWING CRITERIA:
   - ALL UTILITY WORK WITHIN A CITY OF CENTENNIAL RIGHT-OF-WAY SHALL BE REQUIRED TO OBTAIN A CITY OF CENTENNIAL RIGHT-OF-WAY USE AND CONSTRUCTION PERMIT IN ACCORDANCE WITH THE APPROPRIATE STANDARDS.
   - PROVIDE ADEQUATE EROSION AND SEDIMENT CONTROLS.
   - AT THE END OF A WORK DAY, NO TRENCH SHALL BE LEFT OPEN AND BACKFILL MUST BE COMPLETED TO GRADE.
   - WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES.
   - AT NO TIME SHALL EXCAVATED MATERIAL BE PLACED ON THE STREET.
   - TRENCH DEWATERING DEVICES MUST DISCHARGE IN A MANNER THAT WILL NOT EFFECT STREAMS, WETLANDS, DRAINAGE SYSTEMS, OR OFF-SITE PROPERTY. DISCHARGE FROM TRENCH SHALL BE FREE OF ANY SEDIMENT. A RIPRAP PAD SHALL BE PLACED AT THE DISCHARGE END OF THE HOSE TO PREVENT ANY ADDITIONAL EROSION.
   - STORM SEWER INLET PROTECTION SHALL BE PROVIDED WHENEVER SOIL EROSION FROM THE EXCAVATED AREA HAS POTENTIAL OF ENTERING THE STORM DRAINAGE SYSTEM.
   - ALL DISTURBED AREAS SHALL BE DRILL SEEDED AND CRIMP MULCHED WITHIN FIVE DAYS AFTER UTILITY INSTALLATION IS COMPLETED.
   - ALL OTHER APPLICABLE CRITERIA AS OUTLINED IN THE GESC MANUAL.
37. ALL SINGLE-FAMILY RESIDENTIAL DEVELOPMENT PROJECTS SHALL COMPLY WITH THE GESC CRITERIA AS PRESENTED IN THE GESC MANUAL THROUGHOUT THE BUILDING PERMIT PROCESS.
38. NO RECYCLED ASPHALT OR CONCRETE SHALL BE USED AS A BMP.

DETAIL NO.	SHEET NO.		BMP LEGEND	
1	1		CD	CHECK DAM
2	1		CWA	CONCRETE WASHOUT AREA
3	1		CF	CONSTRUCTION FENCE
4	1		CM	CONSTRUCTION MARKERS
5	1		CS	CURB SOCK
6	1		DW	DEWATERING
7	1		DD	DIVERSION DITCH
8	2		ECB	EROSION CONTROL BLANKET
9	2		GMS	GROUT MIXING STATION
10	2		IP	INLET PROTECTION
11	2		RCD	REINFORCED CHECK DAM
12	2		RRB	REINFORCED ROCK BERM
13	2		RRC	RRB FOR CULVERT PROTECTION
14	2		SB	SEDIMENT BASIN
15	3		SCL	SEDIMENT CONTROL LOG
16	3		ST	SEDIMENT TRAP
17	3		SM	SEEDING AND MULCHING
18	3		SF	SILT FENCE
19	3		SID	SLOPE INTERCEPT DITCH
20	3		SSA	STABILIZED STAGING AREA
21	3		SR	SURFACE ROUGHENING
22	4		TSD	TEMPORARY SLOPE DRAIN
23	4		TSC	TEMPORARY STREAM CROSSING
24	4		VTC	VEHICLE TRACKING CONTROL
25	4		WW	VTC WITH WHEEL WASH
	1			ROCK AND RIPRAP GRADATIONS
			LOC	LIMITS OF CONSTRUCTION

ROCK AND RIPRAP GRADATIONS

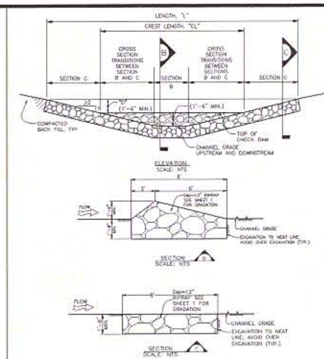
TABLE 1. RIPRAP GRADATIONS

D50 MEDIAN STONE SIZE (INCHES)	% OF MATERIAL SMALLER THAN TYPICAL STONE	TYPICAL STONE EQUIVALENT DIAMETER (INCHES)	TYPICAL STONE WEIGHT (POUNDS)
6	70 – 100 50 – 70 35 – 50 2 – 10	12 9 6 2	85 35 10 0.4
9	70 – 100 50 – 70 35 – 50 2 – 10	15 12 9 3	160 85 35 1.3
12	70 – 100 50 – 70 35 – 50 2 – 10	21 18 12 4	440 275 85 3
18	100 50 – 70 35 – 50 2 – 10	30 24 18 6	1280 650 275 10
24	100 50 – 70 35 – 50 2 – 10	42 33 24 9	3500 1700 650 35

TABLE 2. RIPRAP BEDDING

SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES
	CLASS A
3"	100
1 1/2"	20 – 90
NO. 4	0 – 20
NO. 200	0 – 3

MATCHES SPECIFICATIONS FOR CDOT CLASS A FILTER MATERIAL AND UDFCD TYPE 1 BEDDING. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.



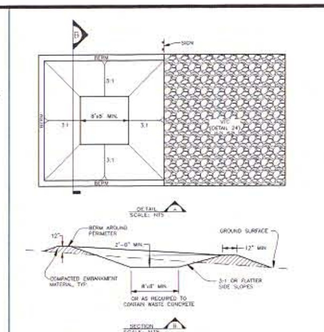
CHECK DAM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   1.1. LOCATIONS OF CHECK DAMS.
   1.2. CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
   1.3. LENGTH, "L", CREST LENGTH, "CL", AND DEPTH, "D".
2. CHECK DAMS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND-DISTURBING ACTIVITIES.
3. RIPRAP UTILIZED FOR CHECK DAMS SHALL HAVE A D50 MEDIAN STONE SIZE OF 12".
4. RIPRAP PAD SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1'-6".
5. THE ENDS OF THE CHECK DAM SHALL BE A MINIMUM OF 1'-6" HIGHER THAN THE CENTER OF THE CHECK DAM.

CHECK DAM MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. SEDIMENT ACCUMULATED UPSTREAM OF CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF CHECK DAM IS WITHIN ½ OF THE HEIGHT OF THE CREST.
3. CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY SEMSWA.
4. WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACK FILL. ANY DISTURBED AREA SHALL BE SEEDED AND MULCHED AND COVERED WITH EROSION CONTROL BLANKET OR OTHERWISE STABILIZED IN A MANNER APPROVED BY SEMSWA.

CD CHECK DAM (1)



CONCRETE WASHOUT AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA.
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL (VTC) (DETAIL 24) IS REQUIRED AT THE ACCESS POINT. THE VTC CAN BE REMOVED AT THE DISCRETION OF THE SEMSWA INSPECTOR.
4. SIGNS MAY BE PLACED AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.
6. CONCRETE WASHOUT MUST BE LINED IN AREAS WITH HIGH GROUNDWATER. LINERS MUST BE 30 MIL OR GREATER.

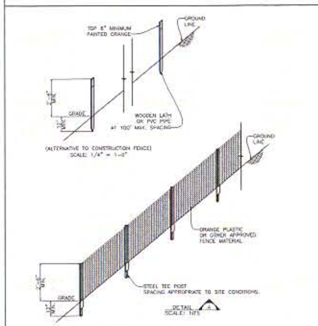
CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY SEMSWA.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.

GENERAL NOTE:

USE OF PROPRIETARY CONCRETE WASHOUT SYSTEM MAY BE CONSIDERED IF APPROVED BY SEMSWA INSPECTOR PRIOR TO USE.

CWA CONCRETE WASHOUT AREA (2)



CONSTRUCTION FENCE INSTALLATION NOTES

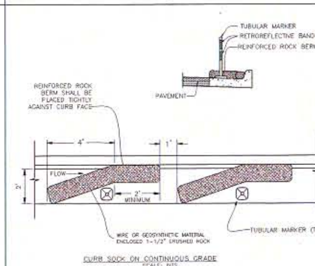
1. SEE PLAN VIEW FOR:
   - TYPE OF CONSTRUCTION LIMIT INDICATOR (FENCE OR MARKERS).
   - LOCATION AND LENGTH OF FENCE OR LINE OF MARKERS.
2. CONSTRUCTION FENCE OR MARKERS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO OTHER BMPS AND ANY LAND-DISTURBING ACTIVITIES.
3. STEEL TEE POSTS SHALL BE UTILIZED FOR SUPPORT OF CONSTRUCTION FENCE. SPACING OF TEE POSTS SHALL BE APPROPRIATE TO SITE CONDITIONS.

CONSTRUCTION FENCE MAINTENANCE NOTES

1. ANY DAMAGED FENCE OR MARKERS SHALL BE REPAIRED ON A DAILY BASIS.
2. FENCE OR MARKERS SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF ANY DISTURBED AREA EXISTS AFTER FENCE REMOVAL, IT SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY SEMSWA.

CF CONSTRUCTION FENCE (3)

CM CONSTRUCTION MARKERS (4)



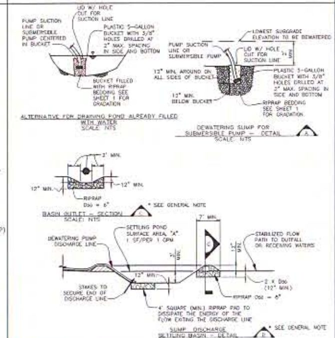
CURB SOCK INSTALLATION NOTES

1. ADDITIONAL CURB SOCKS MAY BE REQUIRED AS DIRECTED BY SEMSWA.
2. CURB SOCKS IN STREETS SHALL BE INSTALLED WITHIN 48-HOURS OF POURING CURBS. CURB SOCKS (AFTER PAVEMENT) SHALL BE INSTALLED WITHIN 48 HOURS AFTER PAVING IS PLACED.
3. CRUSHED ROCK SHALL BE FRACTURED FACE ON ALL SIDES.
4. WIRE MESH SHALL BE FABRICATED OF WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1.0 INCH (COMMONLY TERMED "CHICKEN WIRE"). ROLL WIDTH SHALL BE 48-INCHES.
5. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT APPROXIMATELY 6-INCH CENTERS ALONG ALL JOINTS AND AT APPROXIMATELY 2-INCH CENTERS ON ENDS OF BERM.
6. REINFORCED ROCK BERM SHALL BE CONSTRUCTED IN ONE PIECE OR SHALL BE CONSTRUCTED USING JOINT DETAIL.
7. EXAMPLES OF ACCEPTABLE GEOSYNTHETIC MATERIAL: TENCATE MIRAFI "MIRAGRID 2XT", STRATA GLOBAL SOLUTIONS "STRATAGRID SG 150", SOLID FABRIC OPTIONAL.
8. THE TOP OF REINFORCED ROCK BERM SHALL BE 1/2"-1" BELOW TOP OF CURB.

CURB SOCK MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. SEDIMENT ACCUMULATED UPSTREAM OF CURB SOCK SHALL BE REMOVED WHEN THERE IS EVIDENCE OF SIGNIFICANT SEDIMENT BUILDUP.
3. CURB PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED, UNLESS SEMSWA APPROVES EARLIER REMOVAL OF CURB PROTECTION IN STREETS.

CS CURB SOCKS (5)



DEWATERING INSTALLATION NOTES

1. A CONSTRUCTION DISCHARGE (DEWATERING) PERMIT, IF REQUIRED, SHALL BE OBTAINED FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT PRIOR TO ANY DEWATERING OPERATIONS. ALL DEWATERING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE DISCHARGE PERMIT AND SHALL BE COORDINATED WITH THE SEMSWA GESC INSPECTOR.
2. THE GESC MANAGER SHALL PROVIDE, OPERATE, AND MAINTAIN DEWATERING SYSTEMS OF SUFFICIENT SIZE AND CAPACITY TO PERMIT EXCAVATION AND SUBSEQUENT CONSTRUCTION IN DRY CONDITIONS AND TO LOWER AND MAINTAIN THE GROUNDWATER LEVEL A MINIMUM OF 2-FEET BELOW THE LOWEST POINT OF EXCAVATION AND CONTINUOUSLY MAINTAIN EXCAVATIONS FREE OF WATER UNTIL BACKFILLED TO FINAL GRADE.
3. DEWATERING OPERATIONS SHALL USE ONE OR MORE OF THE DEWATERING SUMPS SHOWN ABOVE OR OTHER MEANS APPROVED BY SEMSWA TO REDUCE THE PUMPING OF SEDIMENT, AND SHALL PROVIDE A TEMPORARY BASIN FOR SETTLING PUMPED DISCHARGES PRIOR TO RELEASE OFF SITE OR TO A RECEIVING WATER. SEDIMENT BASIN PER DETAIL 14 MAY BE USED IN LIEU OF SUMP DISCHARGE SETTLING BASIN SHOWN ABOVE.
4. A 4' SQUARE RIPRAP PAD SHALL BE PLACED AT DISCHARGE POINT.
5. THE DISCHARGE END OF THE LINE SHALL BE STAKED IN PLACES TO PREVENT MOVEMENT OF RIPRAP PAD.

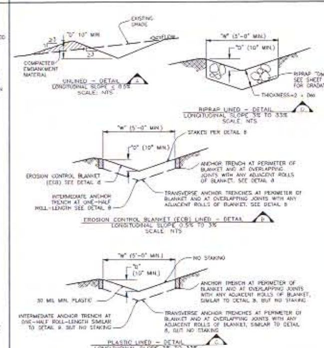
DEWATERING MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. TEMPORARY SETTLING BASINS SHALL BE REMOVED WHEN NO LONGER NEEDED FOR DEWATERING OPERATIONS. ANY DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY SEMSWA.

GENERAL NOTE:

USE OF A SEDIMENT FILTER BAG MAY BE SUBSTITUTED FOR USE OF THE RIPRAP PAD AND SUMP DISCHARGE SETTLING BASIN. FILTER BAG TO SET ON RELATIVELY FLAT STABLE GROUND.

DW DEWATERING (6)



DIVERSION DITCH INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF DIVERSION DITCH.
   - TYPE OF DITCH (UNLINED, ECB LINED, PLASTIC LINED OR RIPRAP LINED).
   - LENGTH OF EACH TYPE OF DITCH.
   - DEPTH, "D", AND WIDTH, "W" DIMENSIONS.
   - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE DETAIL 8).
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, "D50".
2. SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACILITIES OR DIVERSION DITCHES EXCEEDING A 2-YEAR FLOW RATE OF 10 CFS.
3. DIVERSION DITCHES INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.
4. FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF DETAIL 9.
5. IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT.

DIVERSION DITCH MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR, IF APPROVED BY SEMSWA, LEFT IN PLACE.
3. IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY SEMSWA.

DD DIVERSION DITCH (7)

UTILITY NOTIFICATION CENTER OF COLORADO
CALL BEFORE YOU DIG
811
Call 2 days prior to any digging, grading or excavating for the marking of underground member utilities

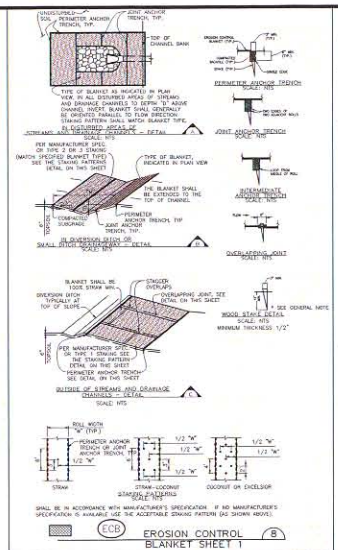
SOUTHEAST METRO STORMWATER AUTHORITY
76 INVERNESS DRIVE EAST
CENTENNIAL COLORADO
80112-5106
(303) 858-8844 - INSPECTION DIVISION
(303) 267-9552

Southeast Metro Stormwater Authority

GRADING EROSION AND SEDIMENT CONTROL STANDARD NOTES AND DETAILS

REVISED APRIL, 2015

GESC SHEET 1 OF 4



ECB EROSION CONTROL BLANKET SHEET 1 8

EROSION CONTROL BLANKET INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF PERIMETER OF EROSION CONTROL BLANKET.
   - TYPE OF BLANKET (STRAW, STRAW–COCONUT, COCONUT, OR EXCELSIOR).
   - AREA "A" IN SQUARE YARDS OF EACH TYPE OF BLANKET.
2. ALL EROSION CONTROL BLANKETS AND NETTING SHALL BE MADE OF 100% NATURAL AND BIODEGRADABLE MATERIAL. NO PLASTIC OR OTHER SYNTHETIC MATERIAL, EVEN IF PHOTO DEGRADABLE, SHALL BE ALLOWED.
3. IN AREAS WHERE EROSION CONTROL BLANKET IS SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING BELOW THE BLANKET IN ACCORDANCE WITH THE REQUIREMENTS OF DETAIL 17. SEEDING AND MULCHING SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO BLANKET INSTALLATION AND THE BLANKET SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
4. PERIMETER ANCHOR TRENCH SHALL BE USED AT OUTSIDE PERIMETER OF ALL BLANKET AREAS.
5. JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF BLANKETS TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL BLANKETS EXCEPT STRAW, WHICH MAY USE AN OVERLAPPING JOINT.
6. INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE–HALF THE ROLL LENGTH FOR COCONUT AND EXCELSIOR BLANKETS.
7. THE OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF BLANKETS TOGETHER FOR BLANKETS ON SLOPES.
8. MATERIAL SPECIFICATIONS OF EROSION CONTROL BLANKET SHALL CONFORM TO TABLE 7.1.
9. ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING EROSION CONTROL BLANKET SHALL BE RESEEDED AND MULCHED IN ACCORDANCE WITH DETAIL 17.
10. SEE DRAINAGE DESIGN PLANS FOR MAJOR DRAINAGEWAY STABILIZATION MEASURES THAT MAY EXCEED THE DESIGN CONDITIONS ASSOCIATED WITH THE DETAILS ABOVE.

TABLE 7.1 – EROSION CONTROL BLANKET TYPE

TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	NETTING MIN.
STRAW	–	100%	–	DOUBLE/NATURAL
STRAW–COCONUT	70% MIN.	30% MAX.	–	DOUBLE/NATURAL
COCONUT	100%	–	–	DOUBLE/NATURAL
EXCELSIOR	–	–	100%	DOUBLE/NATURAL

* FOR OUTSIDE OF STREAMS AND DRAINAGE CHANNELS

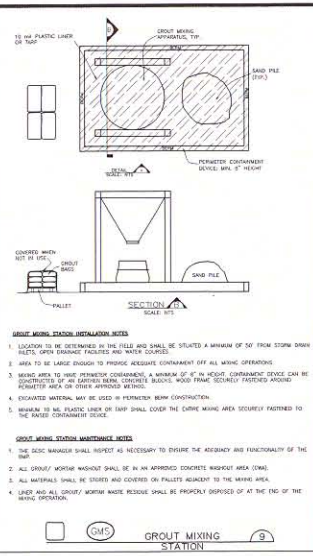
EROSION CONTROL BLANKET MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. EROSION CONTROL BLANKET IS TO BE LEFT IN PLACE UNLESS REQUESTED TO BE REMOVED BY SEWSHA.
3. ANY EROSION CONTROL BLANKET PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE RE–INSTALLED. ANY SUBGRADE AREAS BELOW THE BLANKET THAT HAVE ERODED TO CREATE A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEEDED AND MULCHED AND THE EROSION CONTROL BLANKET REINSTALLED.

GENERAL NOTE

ECO–STAKES MAY BE USED IN AREAS ABOVE ORDINARY HIGH WATER MARK.

ECB EROSION CONTROL BLANKET SHEET 2 8



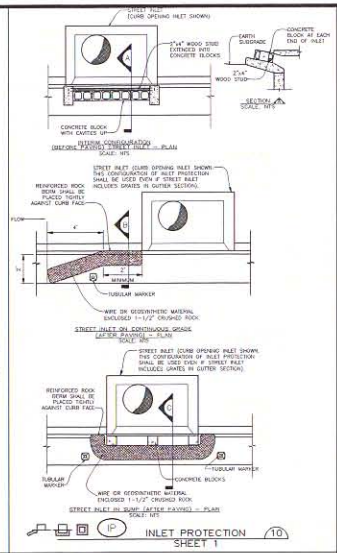
GROUT MIXING STATION INSTALLATION NOTES

1. LOCATION TO BE DETERMINED IN THE FIELD AND SHALL BE SITUATED A MINIMUM OF 50' FROM STORM DRAIN INLETS, OPEN DRAINAGE FACILITIES AND WATER COURSES.
2. AREA TO BE LARGE ENOUGH TO PROVIDE ADEQUATE CONTAINMENT OFF ALL MIXING OPERATIONS.
3. MIXING AREA TO HAVE PERIMETER CONTAINMENT, A MINIMUM OF 6" IN HEIGHT. CONTAINMENT DEVICE CAN BE CONSTRUCTED OF AN EARTHEN BERM, CONCRETE BLOCKS, WOOD FRAME SECURELY FASTENED AROUND PERIMETER AREA OR OTHER APPROVED METHOD.
4. EXCAVATED MATERIAL MAY BE USED IN PERIMETER BERM CONSTRUCTION.
5. MINIMUM 10 MIL PLASTIC LINER OR TARP SHALL COVER THE ENTIRE MIXING AREA SECURELY FASTENED TO THE PARTIAL CONTAINMENT DEVICE.

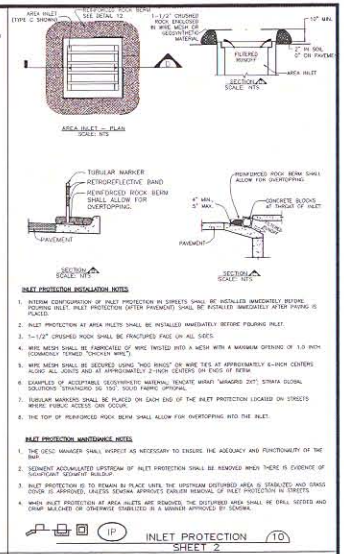
GROUT MIXING STATION MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. ALL GROUT/ MORTAR WASHOUT SHALL BE IN AN APPROVED CONCRETE WASHOUT AREA (TBM).
3. ALL MATERIALS SHALL BE STORED AND COVERED ON PALLETS ADJACENT TO THE MIXING AREA.
4. LINER AND ALL GROUT/ MORTAR WASTE RESIDUE SHALL BE PROPERLY DISPOSED OF AT THE END OF THE MIXING OPERATION.

GMS GROUT MIXING STATION 9



IP INLET PROTECTION SHEET 1 10



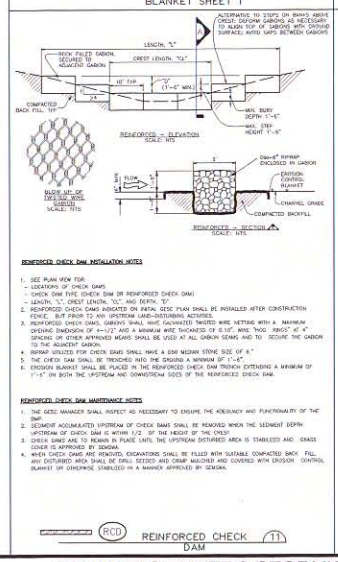
INLET PROTECTION INSTALLATION NOTES

1. INTERIM CONFIGURATION OF INLET PROTECTION IN STREETS SHALL BE INSTALLED IMMEDIATELY BEFORE POURING INLET. INLET PROTECTION (AFTER PAVEMENT) SHALL BE INSTALLED IMMEDIATELY AFTER PAVING IS PLACED.
2. INLET PROTECTION AT AREA INLETS SHALL BE INSTALLED IMMEDIATELY BEFORE POURING INLET.
3. 1-1/2" CRUSHED ROCK SHALL BE FRACTURED FACE ON ALL SIDES.
4. WIRE MESH SHALL BE FABRICATED OF WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1.0 INCH (COMMONLY TERMED "CHICKEN WIRE").
5. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT APPROXIMATELY 6-INCH CENTERS ALONG ALL JOINTS AND AT APPROXIMATELY 2-INCH CENTERS ON ENDS OF BERM.
6. EXAMPLES OF ACCEPTABLE GEOSYNTHETIC MATERIAL TENCATE MIRAFI "MIRAGRID 2XT", STRATA GLOBAL SOLUTIONS "STRATAGRID 150 / 150", SOLID FABRIC OPTIONAL.
7. TUBULAR MARKERS SHALL BE PLACED ON EACH END OF THE INLET PROTECTION LOCATED ON STREETS WHERE PUBLIC ACCESS CAN OCCUR.
8. THE TOP OF REINFORCED ROCK BERM SHALL ALLOW FOR OVERTOPPING INTO THE INLET.

INLET PROTECTION MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED WHEN THERE IS EVIDENCE OF SIGNIFICANT SEDIMENT BUILDUP.
3. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED, UNLESS SEWSHA APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.
4. WHEN INLET PROTECTION AT AREA INLETS ARE REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY SEWSHA.

IP INLET PROTECTION SHEET 2 10



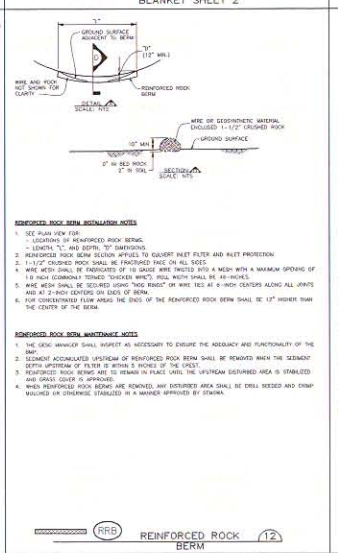
RCD REINFORCED CHECK DAM 11

REINFORCED CHECK DAM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATIONS OF CHECK DAMS.
   - CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
   - LENGTH, "L", CREST LENGTH, "CL", AND DEPTH, "D".
2. REINFORCED CHECK DAMS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND–DISTURBING ACTIVITIES.
3. REINFORCED CHECK DAMS, GABIONS SHALL HAVE GALVANIZED TWISTED WIRE NETTING WITH A MAXIMUM OPENING DIMENSION OF 4–1/2" AND A MINIMUM WIRE THICKNESS OF 0.10". WIRE "HOG RINGS" AT 4" SPACING OR OTHER APPROVED MEANS SHALL BE USED AT ALL GABION SEAMS AND TO SECURE THE GABION TO THE ADJACENT GABION.
4. RIPRAP UTILIZED FOR CHECK DAMS SHALL HAVE A D50 MEDIAN STONE SIZE OF 6."
5. THE CHECK DAM SHALL BE TRENCHED INTO THE ORIGINAL A MINIMUM OF 1'-6".
6. EROSION BLANKET SHALL BE PLACED IN THE REINFORCED CHECK DAM TRENCH EXTENDING A MINIMUM OF 1'-6" ON BOTH THE UPSTREAM AND DOWNSTREAM SIDES OF THE REINFORCED CHECK DAM.

REINFORCED CHECK DAM MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. SEDIMENT ACCUMULATED UPSTREAM OF CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF CHECK DAM IS WITHIN 1/2 OF THE HEIGHT OF THE CREST.
3. CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY SEWSHA.
4. WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACK FILL. ANY DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED AND COVERED WITH EROSION CONTROL BLANKET OR OTHERWISE STABILIZED IN A MANNER APPROVED BY SEWSHA.



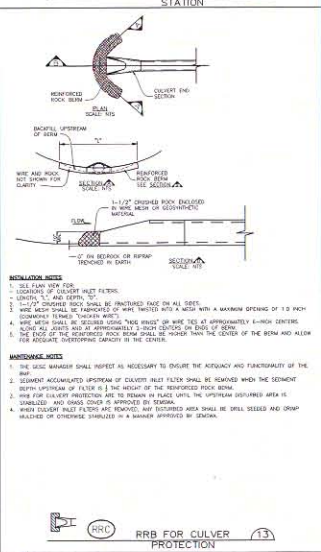
REINFORCED ROCK BERM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATIONS OF REINFORCED ROCK BERMS.
   - LENGTH, "L", AND DEPTH, "D" DIMENSIONS.
2. REINFORCED ROCK BERM DESIGN APPLIES TO CULVERT INLET FILTER AND INLET PROTECTION.
3. 1-1/2" CRUSHED ROCK SHALL BE FRACTURED FACE ON ALL SIDES.
4. WIRE MESH SHALL BE FABRICATED OF 16 GAUGE WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1.0 INCH (COMMONLY TERMED "CHICKEN WIRE"). ROLL WIDTH SHALL BE 48–INCHES.
5. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6–INCH CENTERS ALONG ALL JOINTS AND AT 2–INCH CENTERS ON ENDS OF BERM.
6. FOR CONCENTRATED FLOW AREAS THE ENDS OF THE REINFORCED ROCK BERM SHALL BE 12" HIGHER THAN THE CENTER OF THE BERM.

REINFORCED ROCK BERM MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. SEDIMENT ACCUMULATED UPSTREAM OF REINFORCED ROCK BERM SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF FILTER IS WITHIN 6 INCHES OF THE CREST.
3. REINFORCED ROCK BERMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED.
4. WHEN REINFORCED ROCK BERMS ARE REMOVED, ANY DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY SEWSHA.

RRB REINFORCED ROCK BERM 12



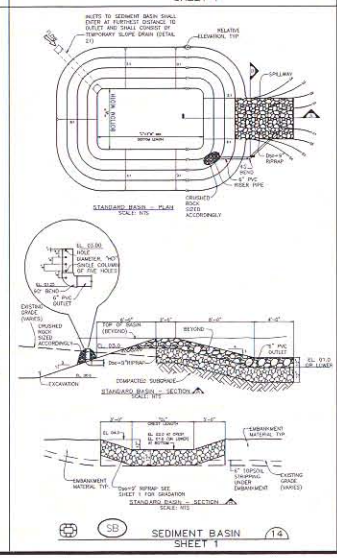
INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATIONS OF CULVERT INLET FILTERS.
   - LENGTH, "L", AND DEPTH, "D".
2. 1-1/2" CRUSHED ROCK SHALL BE FRACTURED FACE ON ALL SIDES.
3. WIRE MESH SHALL BE FABRICATED OF WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1.0 INCH (COMMONLY TERMED "CHICKEN WIRE").
4. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT APPROXIMATELY 6–INCH CENTERS ALONG ALL JOINTS AND AT APPROXIMATELY 2–INCH CENTERS ON ENDS OF BERM.
5. THE ENDS OF THE REINFORCED ROCK BERM SHALL BE HIGHER THAN THE CENTER OF THE BERM AND ALLOW FOR ADEQUATE OVERTOPPING CAPACITY IN THE CENTER.

MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. SEDIMENT ACCUMULATED UPSTREAM OF CULVERT INLET FILTER SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF FILTER IS 1/2 THE HEIGHT OF THE REINFORCED ROCK BERM.
3. RRB FOR CULVERT PROTECTION ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY SEWSHA.
4. WHEN CULVERT INLET FILTERS ARE REMOVED, ANY DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY SEWSHA.

RRC RRB FOR CULVER PROTECTION 13



SB SEDIMENT BASIN SHEET 1 14

SEDIMENT BASIN INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF SEDIMENT BASIN.
   - TYPE OF BASIN (STANDARD BASIN OR NON–STANDARD BASIN).
   - FOR STANDARD BASINS: CREST LENGTH, "CL", BOTTOM WIDTH, "W", AND HOLE DIAMETER, "HO".
   - FOR NON–STANDARD BASINS: SEE CONSTRUCTION DRAWINGS FOR DESIGN OF BASIN INCLUDING RISER HEIGHT, "H", NUMBER OF COLUMNS, "N", HOLE DIAMETER, "HO", AND PIPE DIAMETER, "D".
2. FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.
3. SEDIMENT BASINS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY OTHER LAND–DISTURBING ACTIVITY.
4. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS GREATER THAN 3 INCHES AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT PASSING THE NO. 200 SIEVE.
5. EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY WITHIN 3 PERCENTAGE POINTS OF OPTIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
6. PIPE SCH 40 OR GREATER SHALL BE USED.
7. THE DETAILS SHOWN ON THIS SHEET PERTAIN TO STANDARD SEDIMENT BASIN(S) IDENTIFIED ON THE GESC PLAN VIEW DRAWINGS USED FOR DRAINAGE AREAS LESS THAN 10 ACRES. SEE CONSTRUCTION DRAWINGS FOR DAMAGEMENT, DRAINAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES.

SEDIMENT BASIN MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. SEDIMENT SHALL BE REMOVED FROM THE POND ONCE IT REACHES 6" BELOW THE LOWEST ORIFICE HOLE.
3. SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY SEWSHA.
4. IF SEDIMENT BASINS ARE REMOVED, THE DISTURBED AREA SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY SEWSHA.

SB SEDIMENT BASIN SHEET 2 14

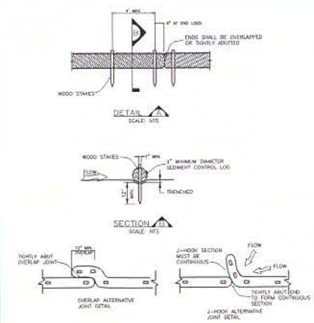
UTILITY NOTIFICATION CENTER OF COLORADO
CALL BEFORE YOU DIG
811
Call 2 days prior to any digging, grading or excavating for the marking of underground member utilities

SOUTHEAST METRO STORMWATER AUTHORITY
76 INVERNESS DRIVE EAST
CENTENNIAL COLORADO
80112-5106
(303) 858-8844 - INSPECTION DIVISION
(303) 267-9552

Southeast Metro Stormwater Authority

GRADING EROSION AND SEDIMENT CONTROL
STANDARD NOTES AND DETAILS
REVISED APRIL, 2015

SEDIMENT CONTROL LOG (SCL) – DETAIL 15



SEDIMENT CONTROL LOG INSTALLATION NOTES

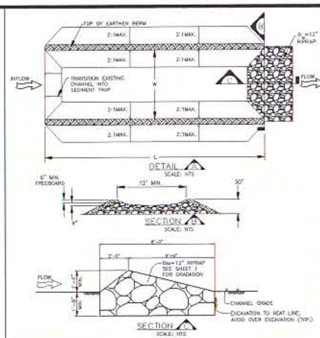
1. SEE PLAN VIEW FOR:
   - LOCATION AND LENGTH OF SEDIMENT CONTROL LOG.
2. SEDIMENT CONTROL LOGS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.
3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR, OR COCONUT FIBER.
4. NOT FOR USE IN CONCENTRATED FLOW AREAS.
5. THE SEDIMENT CONTROL LOG SHALL BE TRENCHED IN APPROPRIATELY.
6. 9" DIAMETER SEDIMENT CONTROL LOGS ARE THE MINIMUM BUT A LARGER DIAMETER MAY BE REQUIRED BY THE SEMSWA INSPECTOR.

SEDIMENT CONTROL LOG MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOGS SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN ½ THE HEIGHT OF THE CREST OF LOG.
3. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF ANY DISTURBED AREA EXISTS AFTER REMOVAL, IT SHALL BE STABILIZED IN A MANNER APPROVED BY THE SEMSWA INSPECTOR.

(SCL) SEDIMENT CONTROL LOG (15)

SEDIMENT TRAP (ST) – DETAIL 16



SEDIMENT TRAP INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION, LENGTH AND WIDTH OF SEDIMENT TRAP.
2. SEDIMENT TRAPS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.
3. SEDIMENT TRAP BERM SHALL BE CONSTRUCTED FROM MATERIAL FROM EXCAVATION. THE BERM SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
4. RIPRAP OUTLET SHALL BE CONSTRUCTED WITH D_{50} =12" RIPRAP WITH A MINIMUM OVERFLOW OF 6".
5. THE TOP OF THE EARTHEN BERM SHALL ALLOW FOR OVERTOPPING.
6. THE ENDS OF THE RIPRAP OUTLET STRUCTURE SHALL ALLOW FOR OVERTOPPING.
7. OVERTOPPING MUST OCCUR ON A STABILIZED SURFACE TO INCLUDE WELL VEGETATED AREAS, RIP RAP, OR PAVEMENT.
8. SEDIMENT TRAP SIZED TO PROVIDE STORAGE VOLUME EQUAL TO 1800 CUBIC FEET PER UPSTREAM ACRE.

SEDIMENT TRAP MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. SEDIMENT ACCUMULATED UPSTREAM OF RIPRAP SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN ½ THE HEIGHT OF THE RIPRAP OUTLET STRUCTURE.
3. SEDIMENT TRAPS SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVERAGE IS APPROVED BY SEMSWA.
4. WHEN SEDIMENT TRAPS ARE REMOVED THE DISTURBED AREA SHALL BE DRILLED SEEDED AND CRIMP MULCHED OR STABILIZED IN A MANNER APPROVED BY SEMSWA.

(ST) SEDIMENT TRAP (16)

SEEDING AND MULCHING (SM) – DETAIL 17

SEEDING AND MULCHING INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - AREA OF SEEDING AND MULCHING.
   - TYPE OF SEED MIX (PERMANENT, TEMPORARY, OR LOW-GROWTH).
2. ALL BRANDS FURNISHED SHALL BE FREE FROM SUCH NOXIOUS SEEDS AS RUSSIAN OR CANADIAN THISTLE, COARSE FESCUE, EUROPEAN BINDWEED, JOHNSON GRASS, KNAP WEED AND LEAFY SPURGE.
3. THE SEEDER SHALL FURNISH TO THE CONTRACTOR A SIGNED STATEMENT CERTIFYING THAT THE SEED FURNISHED IS FROM A LOT THAT HAS BEEN TESTED BY A RECOGNIZED LABORATORY. SEED WHICH HAS BECOME WET, MOLDY, OR OTHERWISE DAMAGED IN TRANSIT OR IN STORAGE WILL NOT BE ACCEPTABLE. SEED TICKETS SHALL BE PROVIDED TO SEMSWA UPON REQUEST.
4. DRILL SEEDING MIX SHALL CONFORM TO THE TABLE ON THE RIGHT; UNLESS OTHERWISE APPROVED BY SEMSWA.
5. IF THE SEED AVAILABLE ON THE MARKET DOES NOT MEET THE MINIMUM PURITY AND GERMINATION PERCENTAGES SPECIFIED, THE CONTRACTOR MUST COMPENSATE FOR A LESSER PERCENTAGE OF PURITY OR GERMINATION BY FURNISHING SUFFICIENT ADDITIONAL SEED TO EQUAL THE SPECIFIED PRODUCT. THE TAGS FROM THE SEED MIXES MUST BE SUPPLIED TO CONTRACTOR AND FORWARDED TO THE SEMSWA GESC INSPECTOR.
6. THE FORMULA USED FOR DETERMINING THE QUANTITY OF PURE LIVE SEED (PLS) SHALL BE (POUNDS OF SEED) X (PURITY) X (GERMINATION) = POUNDS OF PURE LIVE SEED (PLS).
7. PERMANENT SEED MIX SHALL BE USED UNLESS OTHERWISE APPROVED BY SEMSWA.
8. ALL AREAS TO BE SEEDED AND MULCHED SHALL HAVE NATIVE TOPSOIL OR APPROVED SOIL AMENDMENTS SPREAD TO A DEPTH OF AT LEAST 6 INCHES (LOOSE DEPTH). HAUL ROADS AND OTHER COMPACTED AREAS SHALL BE LOOSENED TO A DEPTH OF 6 INCHES PRIOR TO SPREADING TOPSOIL.
9. SOIL IS TO BE THOROUGHLY LOOSENED (TILLED) TO A DEPTH OF AT LEAST 6 INCHES PRIOR TO SEEDING. THE TOP 6 INCHES OF THE SEED BED SHALL BE GENERALLY FREE OF ROCKS GREATER THAN 4 INCHES AND SOIL CLODS GREATER THAN 2 INCHES. SEEDING OVER ANY COMPACTED AREAS THAT HAVEN'T BEEN THOROUGHLY LOOSENED SHALL BE REJECTED.
10. SEED IS TO BE APPLIED USING A MECHANICAL DRILL TO A DEPTH OF 3/4 INCH, ROW SPACING SHALL BE NO MORE THAN 6 INCHES. MATERIAL USED FOR MULCH SHALL CONSIST OF LONG-STEMMED STRAW. AT LEAST 50 PERCENT OF THE MULCH, BY WEIGHT, SHALL BE 10 INCHES OR MORE IN LENGTH. MULCH SHALL BE APPLIED AND MECHANICALLY ANCHORED TO A DEPTH OF AT LEAST 2 INCHES. MULCH SHALL BE APPLIED AT A RATE OF 4000 LB. OF STRAW PER ACRE.
11. IF THE PERMITTEE DEMONSTRATES TO SEMSWA THAT IT IS NOT POSSIBLE TO DRILL SEED, SEED IS TO BE UNIFORMLY BROADCAST AT TWO TIMES THE DRILLED RATE, THEN LIGHTLY HARROWED TO PROVIDE A SEED DEPTH OF APPROXIMATELY 1/4 INCH, THEN ROLLED TO COMPACT, THEN MULCHED AS SPECIFIED ABOVE.
12. WHEN SEEDING AND MULCHING IS USED TO STABILIZED DISTURBED AREAS, ALL DISTURBED AREAS WHICH ARE EITHER FINAL GRADED, OR WILL REMAIN INACTIVE FOR A PERIOD OF MORE THAN 30 DAYS SHALL BE REQUIRED TO BE STABILIZED WITHIN 14 DAYS OF THE COMPLETION OF THE GRADING ACTIVITIES. THIS MAY REQUIRED MULTIPLE MOBILIZATIONS FOR SEEDING AND MULCHING.
13. MULCH SHALL BE APPLIED WITHIN 24-HOURS OF SEEDING.
14. TACKIFIER SHALL BE UTILIZED TO HELP WITH STRAW DISPLACEMENT.

SEEDING AND MULCHING MAINTENANCE NOTES

1. SEEDED AND MULCHED AREAS SHALL BE INSPECTED FOR REQUIRED COVERAGE MONTHLY UNTIL FINAL ACCEPTANCE IS ISSUED. REPAIRS AND RE-SEEDING AND MULCHING SHALL BE UNDERTAKEN AFTER THE FIRST GROWING SEASON FOR ANY AREAS FAILING TO MEET THE REQUIRED COVERAGE.
2. REQUIRED COVERAGE FOR STANDARD, OPEN SPACE AND LOW GROWTH SEED MIXES SHALL BE DEFINED AS FOLLOWS:
   2.1. 70% OF THE EXISTING/ PRE-CONSTRUCTION CONDITION.
   2.2. FREE OF ERODED AREAS.
   2.3. FREE FROM INFESTATION OF NOXIOUS WEEDS IN ACCORDANCE WITH THE GESC CRITERIA MANUAL.
3. RILL AND GULLY EROSION SHALL BE FILLED WITH TOPSOIL PRIOR TO RESEEDING. THE RESEEDING METHOD SHALL BE APPROVED BY SEMSWA.

(SM) SEEDING AND MULCHING (17)

WETLAND SEED MIX [1]

SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB	LBS PLS[2]/AC
SLOUGH GRASS	BECKMANNIA SYZIGACHNE	COOL	20	1,150,000	0.5
CANADIAN REED GRASS	CALAMAGROSTIS CANADENSIS	COOL	20	2,270,000	0.2
TUFTED HAIR GRASS	DESCHAMPSIA CESPITOSA	COOL	10	2,500,000	0.1
COMMON SPIKE RUSH	ELEOCHARIS PALUSTRIS	COOL	15	620,000	0.8
BALTIC RUSH	JUNCUS BALTICUS	COOL	15	10,930,000	0.4
KNOTTED RUSH	JUNCUS NODOSUS	COOL	10	12,300,000	0.1
TORREY'S RUSH	JUNCUS TORREYI	COOL	10	12,300,000	0.1
TOTAL			100	2 LBS PLS[2]/AC	

[1] TO BE INSTALLED AT APPROXIMATELY 0" TO 6" ABOVE WATER LINE.
[2] PLS = PURE LIVE SEED PER POUND BASED 60 SEEDS PER SQUARE FOOT. IF BROADCAST SEEDING, DOUBLE THE RATE APPLIED.

TRANSITION SEED MIX[1,3] – WITHOUT FORBS

SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB	LBS PLS[2]/AC
CANADA WILDRYE	ELYMUS CANADENSIS	COOL	15	115,000	3.4
STREAMBANK WHEATGRASS	ELYMUS LANCEOLATUS SPP. PSAMMOPHILUS	COOL	15	156,000	2.5
SLENDER WHEAT GRASS	ELYMUS TRACHYCAULUS	WARM	10	159,000	1.6
BALTIC RUSH	JUNCUS BALTICUS	COOL	15	10,900,000	0.1
SWITCHGRASS	PANICUM VIRGATUM	WARM	15	389,000	1.0
WESTERN WHEATGRASS	PASCOPYRUM SMITHII	COOL	15	110,000	3.8
SAND DROPSEED	SPOROBOLUS AIROIDES	WARM	15	1,758,000	0.2
TOTAL			100	12.4 LBS PLS[2]/AC	

[1] TO BE INSTALLED AT APPROXIMATELY 6" TO 24" ABOVE WATER LINE.
[2] PLS = PURE LIVE SEED PER POUND BASED 60 SEEDS PER SQUARE FOOT. IF BROADCAST SEEDING, DOUBLE THE RATE APPLIED.
[3] IF DESIRED, SHRUBS FROM THE WILLOW SHRUBLAND PLANT COMPOSITION SCHEDULE CAN BE INSTALLED IN THIS ZONE.

TRANSITION SEED MIX[1,3] – WITH FORBS

SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB	LBS PLS[2]/AC
NATIVE GRASSES					
CANADA WILDRYE	ELYMUS CANADENSIS	COOL	15	115,000	3.4
STREAMBANK WHEATGRASS	ELYMUS LANCEOLATUS SPP. PSAMMOPHILUS	COOL	15	156,000	2.5
SLENDER WHEAT GRASS	ELYMUS TRACHYCAULUS	WARM	10	159,000	1.6
BALTIC RUSH	JUNCUS BALTICUS	COOL	15	10,900,000	0.1
SWITCHGRASS	PANICUM VIRGATUM	WARM	15	389,000	1.0
WESTERN WHEATGRASS	PASCOPYRUM SMITHII	COOL	15	110,000	3.8
SAND DROPSEED	SPOROBOLUS AIROIDES	WARM	15	1,758,000	0.2
NATIVE WILDFLOWERS					
INDIAN BLANKET FLOWER	GAILLARDIA ARISTATA	SUMMER-FALL	1	132,000	0.2
ROCKY MOUNTAIN IRIS	IRIS MISSOURIENSIS	SPRING-SUMMER	2	368,000	0.1
EVENING PRIMROSE	OENOTHERA ELATA	SUMMER	2	1,300,000	0.1
GOLDEN BANNER	THERMOPSIS MONTANA	SPRING	2	15,000	2.5
MEXICAN HAT	RATIBIDA COLUMNIFERA	SUMMER-FALL	1	1,230,000	0.1
SAND DROPSEED	SPOROBOLUS AIROIDES	WARM	15	1,758,000	0.2
TOTAL			100	14.4 LBS PLS[2]/AC	

[1] TO BE INSTALLED AT APPROXIMATELY 6" TO 24" ABOVE WATER LINE.
[2] PLS = PURE LIVE SEED PER POUND BASED 60 SEEDS PER SQUARE FOOT. IF BROADCAST SEEDING, DOUBLE THE RATE APPLIED.
[3] IF DESIRED, SHRUBS FROM THE WILLOW SHRUBLAND PLANT COMPOSITION SCHEDULE CAN BE INSTALLED IN THIS ZONE.

UPLAND SEED MIX – WITHOUT FORBS[1,3]

SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB	LBS PLS[2]/AC
BIG BLUESTEM	ANDROPOGON GERARDII	WARM	10	130,000	2.0
SIDEOATS GRAMA	BOUTELOUA CURTIPENDULA	WARM	10	191,000	1.4
BLUE GRAMA	BOUTELOUA GRACILIS	WARM	10	825,000	0.3
CANADA WILDRYE	ELYMUS CANADENSIS	COOL	12	115,000	2.3
THICKSPIKE WHEATGRASS	ELYMUS LANCEOLATUS SPP. LANCEOLATUS	COOL	5	154,000	0.8
STREAMBANK WHEATGRASS	ELYMUS LANCEOLATUS SPP. PSAMMOPHILUS	COOL	5	156,000	0.8
SLENDER WHEAT GRASS	ELYMUS TRACHYCAULUS	WARM	10	159,000	1.6
NEEDLE AND THREAD	HESPEROSTIPA COMATA	COOL	10	115,000	2.3
WESTERN WHEATGRASS	PASCOPYRUM SMITHII	COOL	10	110,000	2.4
INDIAN GRASS	SORGHASTRUM NUTANS	WARM	10	170,000	1.9
SAND DROPSEED	SPOROBOLUS CRYPTANDRUS	WARM	10	5,298,000	0.1
TOTAL			100	15.5 LBS PLS[2]/AC	

[1] TO BE INSTALLED AT APPROXIMATELY 24" ABOVE WATER LINE.
[2] PLS = PURE LIVE SEED PER POUND BASED 60 SEEDS PER SQUARE FOOT. IF BROADCAST SEEDING, DOUBLE THE RATE APPLIED.
[3] IF DESIRED, TREES AND SHRUBS FROM THE COTTONWOOD SHRUB WOODLAND COMPOSITION SCHEDULE CAN BE INSTALLED IN THIS ZONE.

UPLAND SEED MIX – WITH FORBS[1,3]

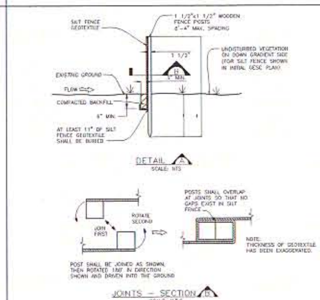
SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB	LBS PLS[2]/AC
NATIVE GRASSES					
BIG BLUESTEM	ANDROPOGON GERARDII	WARM	8	130,000	1.6
SIDEOATS GRAMA	BOUTELOUA CURTIPENDULA	WARM	6	191,000	1.1
BLUE GRAMA	BOUTELOUA GRACILIS	WARM	8	825,000	0.3
CANADA WILDRYE	ELYMUS CANADENSIS	COOL	8	115,000	1.8
THICKSPIKE WHEATGRASS	ELYMUS LANCEOLATUS SPP. LANCEOLATUS	COOL	5	154,000	0.8
STREAMBANK WHEATGRASS	ELYMUS LANCEOLATUS SPP. PSAMMOPHILUS	COOL	5	156,000	0.8
SLENDER WHEAT GRASS	ELYMUS TRACHYCAULUS	WARM	10	159,000	1.6
NEEDLE AND THREAD	HESPEROSTIPA COMATA	COOL	8	115,000	1.8
WESTERN WHEATGRASS	PASCOPYRUM SMITHII	COOL	10	110,000	2.4
INDIAN GRASS	SORGHASTRUM NUTANS	WARM	10	170,000	1.5
SAND DROPSEED	SPOROBOLUS CRYPTANDRUS	WARM	10	5,298,000	0.1
NATIVE WILDFLOWERS					
BLACK-EYED SUSAN	RUDBECKIA HIRTA	SUMMER-FALL	1	1,710,000	0.1
SULFUR FLOWER	ERIOGONUM UMBELLATUM	FALL	2	209,000	0.3
PRAIRIE ASTER	MACHAERANTHERA TANACETIFOLIA	SUMMER	1	408,000	0.1
PURPLE PRAIRIE CLOVER	DALEA PURPUREUM	SUMMER	1	210,000	0.1
WESTERN YARROW	ACHILLEA MILLEFOLIUM VAR. OCCIDENTALIS	SUMMER-FALL	2	2,770,000	0.1
PLAINS COREOPSIS	COREOPSIS TINCTORIA	SUMMER-FALL	1	1,400,000	0.1
INDIAN BLANKET FLOWER	GAILLARDIA ARISTATA	SUMMER-FALL	1	132,000	0.2
PURPLE CONEFLOWER	ECHINACEA PURPUREA	SUMMER	1	117,000	0.2
TOTAL			100	15 LBS PLS[2]/AC	

[1] TO BE INSTALLED AT APPROXIMATELY 24" ABOVE WATER LINE.
[2] PLS = PURE LIVE SEED PER POUND BASED 60 SEEDS PER SQUARE FOOT. IF BROADCAST SEEDING, DOUBLE THE RATE APPLIED.
[3] IF DESIRED, TREES AND SHRUBS FROM THE COTTONWOOD SHRUB WOODLAND COMPOSITION SCHEDULE CAN BE INSTALLED IN THIS ZONE.

COMMON OR TRADE NAME	SCIENTIFIC NAME	LBS PLS/AC
OPTION 1: OATS	AVENA SATIVA	60 TO 30
OPTION 2: QUICKGARD	TRITICUM AESTIVUM X SECALE CEREALE	10 TO 40
OPTION 3: REGREEN	TRITICUM AESTIVUM X ELYTRIGIA ELONGATA	10 TO 40

(SM) SEEDING AND MULCHING (17)

SILT FENCE (SF) – DETAIL 18



SILT FENCE INSTALLATION NOTES

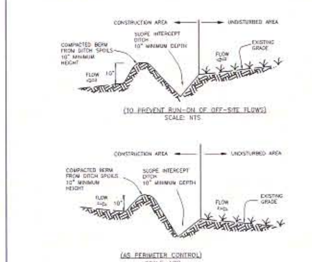
1. SEE PLAN VIEW FOR:
   - LOCATION AND LENGTH OF FENCE.
2. ANCHOR TRENCH SHALL BE EXCAVATED WITH TRENCHER, OR WITH SILT FENCE INSTALLATION MACHINE; NO ROAD GRADERS, BACKHOES, ETC. SHALL BE USED. TRENCH SHALL BE COMPACTED BY HAND, WITH "JUMPING JACK", OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
3. SILT FENCE GEOTEXTILE SHALL MEET THE FOLLOWING REQUIREMENTS:
   - 8-TO 12-GALLONS PER MINUTE PER SQUARE FOOT FLOW CAPACITY.
   - 90 LB. TENSILE STRENGTH PER ASTM D4632.
   - UV DESIGN AT 500 HRS MIN. 70% STRENGTH RETAINED PER ASTM D 4355.
4. SILT FENCE INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. SEDIMENT ACCUMULATED UPSTREAM OF SILT FENCE SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT REACHES A DEPTH OF 6-INCHES.
3. SILT FENCE SHALL BE REMOVED WHEN THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY SEMSWA. IF ANY DISTURBED AREA EXISTS AFTER REMOVAL, IT SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY SEMSWA.

(SF) SILT FENCE (18)

SLOPE INTERCEPT DITCH (SID) – DETAIL 19



SLOPE INTERCEPT DITCH INSTALLATION NOTES

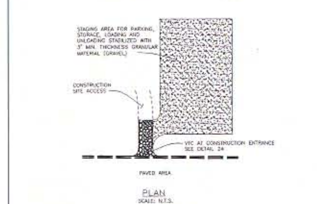
1. MATERIALS CUT OUT OF DITCH TO FORM A COMPACTED BERM ADJACENT TO AND ON THE CONSTRUCTION AREA SIDE OF DITCH.
2. SLOPE INTERCEPT DITCH SHALL HAVE A MINIMUM DEPTH OF 10".
3. COMPACTED BERM SHALL HAVE A MINIMUM HEIGHT OF 10".
4. SLOPE INTERCEPT DITCH SHALL BE CUT IN ON THE CONTOUR.
5. SLOPE INTERCEPT DITCH CAN BE USED IN PLACE OF SILT FENCE (SF) AND SEDIMENT CONTROL LOGS (SCL).
6. SEE PLAN VIEW FOR LOCATION.

SLOPE INTERCEPT DITCH MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. SEDIMENT ACCUMULATED IN DITCH SHALL BE REMOVED WHEN DITCH BECOMES HALF FULL. REMOVED SEDIMENT SHALL BE PLACED ON AND COMPACTED WITH THE ADJACENT BERM.
3. BERM MATERIAL TO FILL DITCH UPON COMPLETION OF CONSTRUCTION. ALL DISTURBED AREAS TO BE SEEDED AND MULCHED PER DETAIL 17.

(SID) SLOPE INTERCEPT DITCH (19)

STABILIZED STAGING AREA (SSA) – DETAIL 20



STABILIZED STAGING AREA INSTALLATION NOTES

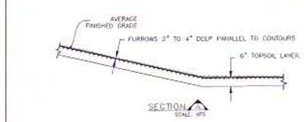
1. SEE PLAN VIEW FOR GENERAL LOCATION OF STAGING AREA. CONTRACTOR MAY MODIFY LOCATION AND SIZE OF STABILIZED STAGING AREA WITH SEMSWA APPROVAL.
2. STABILIZED STAGING AREA SHALL BE LARGE ENOUGH TO FULLY CONTAIN PARKING, STORAGE, AND UNLOADING AND LOADING OPERATIONS.
3. IF REQUIRED BY SEMSWA, SITE ACCESS ROADS SHALL BE STABILIZED IN THE SAME MANNER AS THE STAGING AREA.
4. STAGING AREA SHALL BE STABILIZED PRIOR TO ANY OTHER OPERATIONS ON THE SITE.
5. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM OF 3" OF GRANULAR MATERIAL (GRAVEL).

STABILIZED STAGING AREA MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. GESC MANAGER SHALL PROVIDE ADDITIONAL THICKNESS OF GRANULAR MATERIAL IF ANY RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.
3. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING AND LOADING OPERATIONS.
4. ANY ACCUMULATED DIRT OR MUD SHALL BE REMOVED FROM THE SURFACE OF THE STABILIZED STAGING AREA.
5. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY SEMSWA, USED ON SITE, AND THE AREA TOPSOILED, DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED.

(SSA) STABILIZED STAGING AREA (20)

SURFACE ROUGHING (SR) – DETAIL 21



SURFACE ROUGHENING INSTALLATION NOTES

1. SURFACE ROUGHENING SHALL BE PROVIDED ON ALL FINISHED GRADES (SLOPES AND "FLAT" AREAS) WITHIN 2 DAYS OF COMPLETION OF FINISHED GRADE (FOR AREAS NOT RECEIVING TOPSOIL) OR WITHIN 2 DAYS OF TOPSOIL PLACEMENT.
2. AREAS WHERE BUILDING FOUNDATIONS, PAVEMENT, OR SOD IS TO BE PLACED WITHIN 7-DAYS OF FINISHED GRADING DO NOT NEED TO BE SURFACE ROUGHENED.
3. DISTURBED SURFACES SHALL BE ROUGHENED USING RIPPING OR TILLING EQUIPMENT ON THE CONTOUR OR TRACKING UP AND DOWN A SLOPE USING EQUIPMENT TREADS.

SURFACE ROUGHENING MAINTENANCE NOTES

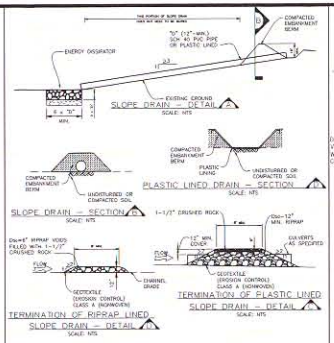
1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. VEHICLES AND EQUIPMENT SHALL GENERALLY BE CONFINED TO ACCESS DRIVES AND SHALL NOT BE DRIVEN OVER AREAS THAT HAVE BEEN SURFACE ROUGHENED.
3. IN NON-TURF GRASS FINISHED AREAS, SEEDING AND MULCHING SHALL TAKE PLACE DIRECTLY OVER SURFACE ROUGHENED AREAS WITHOUT FIRST SMOOTHING OUT THE SURFACE.
4. IN AREAS NOT SEEDED AND MULCHED AFTER SURFACE ROUGHENING, SURFACES SHALL BE RE-ROUGHENED AS NECESSARY TO MAINTAIN GROOVE DEPTH AND SMOOTH OVER ANY RILL EROSION.

(SR) SURFACE ROUGHING (21)

SOUTHEAST METRO STORMWATER AUTHORITY
76 INVERNESS DRIVE EAST
CENTENNIAL COLORADO
80112-5106
(303) 858-8844 - INSPECTION DIVISION
(303) 267-9552

Southeast Metro Stormwater Authority

GRADING EROSION AND SEDIMENT CONTROL
STANDARD NOTES AND DETAILS
REVISED APRIL, 2015



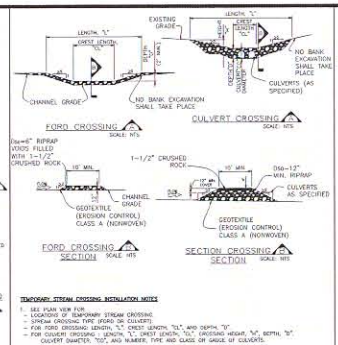
SLOPE DRAIN INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION AND LENGTH OF SLOPE DRAIN.
   - PIPE DIAMETER, "D", AND RIPRAP SIZE, "Dw".
2. SLOPE DRAIN DIMENSIONS SHALL BE CONSIDERED MINIMUM DIMENSIONS; CONTRACTOR MAY ELECT TO INSTALL LARGER FACILITIES. ANY DAMAGE TO SLOPE OR SLOPE DRAIN DURING RUNOFF EVENTS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
3. SLOPE DRAINS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY UPSTREAM LAND-DISTURBING ACTIVITIES.
4. FOR TEMPORARY SLOPE DRAINS, PIPE MAY BE INSTALLED ON TOP OF SLOPE; HOWEVER, 12" MIN. COVER AT TOP OF SLOPE SHALL BE PROVIDED.
5. AN ENERGY DISSIPATOR SHALL BE PLACED AT THE OUTFALL OF THE SLOPE DRAIN.

SLOPE DRAIN MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. TEMPORARY SLOPE DRAINS ARE TO REMAIN IN PLACE UNTIL NO LONGER NEEDED, BUT SHALL BE REMOVED PRIOR TO THE END OF CONSTRUCTION. WHEN SLOPE DRAINS ARE REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY SEMSWA.

TSD TEMPORARY SLOPE DRAIN 22



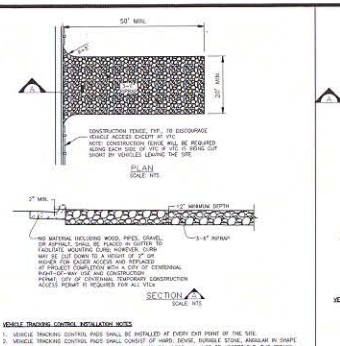
TEMPORARY STREAM CROSSING INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATIONS OF TEMPORARY STREAM CROSSING.
   - STREAM CROSSING TYPE (FORD OR CULVERT).
   - FOR FORD CROSSING: LENGTH, "L", CREST LENGTH, "CL", AND DEPTH, "D".
   - FOR CULVERT CROSSING: LENGTH, "L", CREST LENGTH, "CL", CROSSING HEIGHT, "H", DEPTH, "D", CULVERT DIAMETER, "DSO", AND NUMBER, TYPE AND CLASS OF GAUGE OF CULVERTS.
2. TEMPORARY STREAM CROSSING DIMENSIONS, DSO, AND NUMBER OF CULVERTS INDICATED (FOR CULVERT CROSSING) SHALL BE CONSIDERED MINIMUM DIMENSIONS; ENGINEER MAY ELECT TO INSTALL LARGER FACILITIES. ANY DAMAGE TO STREAM CROSSING OR EXISTING STREAM CHANNEL DURING BASEFLOW OR FLOOD EVENTS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
3. SEE SHEET 1 FOR RIPRAP AND 1-1/2" CRUSHED ROCK GRADATIONS.
4. FOR A TEMPORARY STREAM CROSSING THAT WILL CARRY LOADS, THE TEMPORARY STREAM CROSSING MUST BE DESIGNED BY THE DESIGN ENGINEER.

TEMPORARY STREAM CROSSING MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. SEDIMENT ACCUMULATED UPSTREAM OF STREAM CROSSINGS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF CROSSING IS WITHIN 50% OF THE CREST (FORD CROSSING) OR GREATER THAN AN AVERAGE DEPTH OF 30% (CULVERT CROSSING).
3. STREAM CROSSINGS ARE TO REMAIN IN PLACE UNTIL NO LONGER NEEDED, BUT SHALL BE REMOVED PRIOR TO THE END OF CONSTRUCTION.
4. WHEN STREAM CROSSINGS ARE REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED AND COVERED WITH EROSION CONTROL BLANKET OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE SEMSWA.

TSC TEMPORARY STREAM CROSSING 23



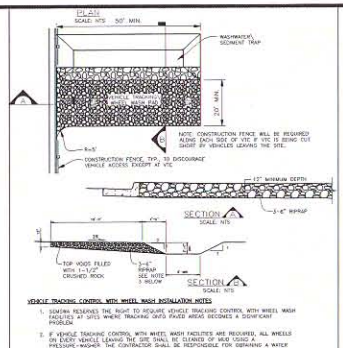
VEHICLE TRACKING CONTROL INSTALLATION NOTES

1. VEHICLE TRACKING CONTROL PADS SHALL BE INSTALLED AT EVERY EXIT POINT OF THE SITE.
2. VEHICLE TRACKING CONTROL PADS SHALL CONSIST OF HARD, DENSE, DURABLE STONE, ANGULAR IN SHAPE AND RESISTANT TO WEATHERING. ROUNDED STONE OR BOULDERS WILL NOT BE ACCEPTABLE. THE STONES SHALL BE 3" WITH A MINIMUM SIZE OF 6". THE STONE SHALL HAVE A SPECIFIC GRAVITY OF AT LEAST 2.6. CONTROL OF VEGETATION WILL BE BY VISUAL INSPECTIONS.
3. ANY CRACKED OR DAMAGED CURB AND GUTTER AND SIDEWALK SHALL BE REPLACED BY PERMITEE.

VEHICLE TRACKING CONTROL MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. VEHICLE TRACKING CONTROL SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE ROCK MATERIAL REMOVED OR, IF APPROVED BY SEMSWA, USED ON SITE, AND THE AREA TOPSOILED, DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED.

VTC VEHICLE TRACKING CONTROL 24



VEHICLE TRACKING CONTROL WITH WHEEL WASH INSTALLATION NOTES

1. SEMSWA RESERVES THE RIGHT TO REQUIRE VEHICLE TRACKING CONTROL WITH WHEEL WASH FACILITIES AT SITES WHERE TRACKING ONTO PAVED AREAS BECOMES A SIGNIFICANT PROBLEM.
2. IF VEHICLE TRACKING CONTROL WITH WHEEL WASH FACILITIES ARE REQUIRED, ALL WHEELS ON EVERY VEHICLE LEAVING THE SITE SHALL BE CLEANED OF MUD USING A PRESSURE-WASHER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A WATER SOURCE.
3. VEHICLE TRACKING CONTROL PADS SHALL CONSIST OF HARD, DENSE, DURABLE STONE, ANGULAR IN SHAPE AND RESISTANT TO WEATHERING. ROUNDED STONE OR BOULDERS WILL NOT BE ACCEPTABLE. THE STONES SHALL BE 3" WITH A MINIMUM SIZE OF 6". THE STONE SHALL HAVE A SPECIFIC GRAVITY OF AT LEAST 2.6. CONTROL OF VEGETATION WILL BE BY VISUAL INSPECTIONS.
4. ANY CRACKED OR DAMAGED CURB AND GUTTER AND SIDEWALK SHALL BE REPLACED BY CONTRACTOR.

VEHICLE TRACKING CONTROL WITH WHEEL WASH MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE BMP.
2. ACCUMULATED SEDIMENT IN THE WASHWATER/SEDIMENT TRAP SHALL BE REMOVED WHEN THE SEDIMENT DEPTH REACHES AN AVERAGE OF 12-INCHES.
3. VEHICLE TRACKING CONTROL WITH WHEEL WASH FACILITY SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE RIPRAP MATERIAL REMOVED OR, IF APPROVED BY THE COUNTY, USED ON SITE, AND THE AREA TOPSOILED, DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED.

WW VTC WITH WHEEL WASH 25

UTILITY NOTIFICATION CENTER OF COLORADO
CALL BEFORE YOU DIG
811
Call 2 days prior to any digging, grading or excavating for the marking of underground member utilities

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GESC
SHEET
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