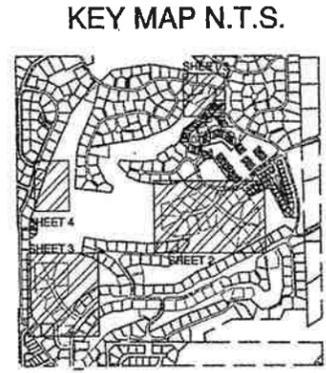


- LEGEND:**
- PROPOSED MAJOR CONTOUR
  - PROPOSED MINOR CONTOUR
  - - - EXISTING MAJOR CONTOUR
  - - - EXISTING MINOR CONTOUR
  - - - PROPOSED SANITARY
  - - - EXISTING SANITARY
  - SF — PROPOSED SILT FENCE
  - LIMITS OF DISTURBANCE
  - CONSTRUCTION SITE BOUNDARIES
  - ⊕ EXISTING WATER VALVES
  - ⊕ EXISTING FIRE HYDRANT
  - ⊕ EXISTING FIRE HYDRANT TO BE REMOVED
  - ⊕ PROPOSED FIRE HYDRANT
  - ⊕ PROPOSED WATER VALVES & REDUCERS
  - ⊕ EXISTING SANITARY MANHOLE
  - ⊕ EXISTING SANITARY MANHOLE TO BE REMOVED
  - ⊕ PROPOSED SANITARY MANHOLE
  - ⊕ CONCRETE WASHOUT
  - ⊕ VEHICLE TRACKING CONTROL
  - ⊕ STRAW BAIL BARRIER
  - ⊕ INLET PROTECTION



- SHEET INDEX**
- 1 - OVER ALL
  - 2 - SPYGLASS HILL & SILVER ROCK PLACE
  - 3 - STONE EAGLE PLACE & LOTS 33 & 34
  - 4 - TRACT 'A'
  - 5 - GRADING & EROSION CONTROL DETAILS
  - 6 - GRADING & EROSION CONTROL DETAILS

**OWNER'S STATEMENT:**  
 THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

*Scott Gratrix* 6-17-17  
 G & S DEVELOPMENT, INC DATE  
 MR. SCOTT GRATRUX  
 303-858-0599

**ENGINEER'S STATEMENT:**  
 These detailed plans were prepared under my direction and supervision. Said plans and specifications have been prepared in accordance with the criteria established by the County for detailed roadway, drainage, grading and erosion control plans and specifications, and said plan and specifications are in conformity with applicable master drainage plans and master transportation plans. Said plans and specifications meet the purposes for which the particular roadway and drainage facilities are designed and are correct to the best of my knowledge and belief. I accept responsibility for any liability caused by any negligent acts, errors or omissions of the contractor in preparing these detailed plans and specifications.

*Michael A. Bartusek*  
 Michael A. Bartusek, P.E. #23329



**DEVELOPER'S STATEMENT:**  
 I, the Developer, have read and will comply with all of the requirements specified on this plan.

By: Scott Gratrix  
 Title: President  
 Address: G & S Development, Inc  
 9800 Pyramid Court, Suite 403  
 Englewood, CO 80112

Filed in accordance with the El Paso County Land Development Code, Drainage Criteria Manual Volumes 1 and 2, and the Engineering Criteria Manual, as amended.

*Scott Gratrix* 6-17-17  
 Scott Gratrix DATE  
**ENGINEER'S STATEMENT:**

THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLAN.

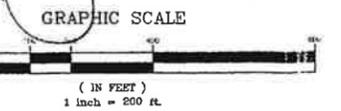
*Michael A. Bartusek*  
 MICHAEL BARTUSEK, COLORADO P.E. #23329  
 ASSOCIATED DESIGN PROFESSIONALS, INC.



**EL PASO COUNTY:**  
 COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

*Jenifer Irvine* 22 AUG 2017  
 JENIFER IRVINE, P.E.  
 COUNTY ENGINEER/ECM ADMINISTRATOR DATE



**NOTE:**  
 IF CONSTRUCTION HAS NOT STARTED WITHIN 2 YEARS OF PLANS BEING SIGNED BY THE EL PASO COUNTY ENGINEER, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL UNDER CURRENT CRITERIA.  
 A MIN OF 18" DRIVEWAY CULVERTS SHALL BE DESIGNED AND PLACED BY THE CONTRACTOR FOR ALL LOTS ADJACENT TO DITCH SECTIONS AT TIME OF DEVELOPMENT

**BENCHMARK:**  
 FBMS MONUMENT 100 IS N.G.S. TRIANGULATION STATION "MONUMENT" - A STANDARD TRIANGULATION STATION DISK. THE MARK IS APPROXIMATELY 0.7 MILES SOUTH ALONG INTERSTATE HIGHWAY 25 FROM THE BAPTIST ROAD OVERPASS. THE MARK IS 75.1 FEET SOUTHWEST OF A FENCE LINE AND 64.5 FEET WEST OF REFERENCE MONUMENT #1.  
 ELEVATION - 6768.46 FEET NGVD '29

THE BASIS OF BEARINGS FOR THIS PROJECT IS THE WEST LINE OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 6, T12S, R66W N00°15'56"W - 1324.20 FEET, THE BEARING IS A GRID BEARING OF THE COLORADO STATE PLANE CENTRAL ZONE NAD 83. THE LINE IS MONUMENTED BY 1934 GLO BRASS CAP ON THE NORTH END AND A 2" DIAMETER ALUMINUM CAP PLS 4642 ON THE SOUTH END.

DESIGNED BY: MAB  
 PROJECT ENGINEER: MAB  
 PROJECT MANAGER: MAB  
 DATE: 07/17/17  
 JOB NO.: 167014  
 CAD FILE NO.: BASE167014  
 SCALE: HORIZ: 1"=200'  
 VERT: 1"=20'  
 DRAWN BY: TPO

**ADPCIVIL**  
 ENGINEERS FOR THE FUTURE  
 3520 Austin Bluffs Parkway  
 Suite 102  
 Colorado Springs, CO 80918  
 (719) 266-0212  
 Fax: (719) 266-0341

**PREPARED BY:**

NO.	DATE	REVISION

**GLENEAGLE GOLF COURSE  
 RESIDENTIAL INFILL DEVELOPMENT  
 EL PASO, COUNTY, COLORADO  
 DRAINAGE, GRADING & EROSION CONTROL PLAN**

**SHEET**  
 1 of 6

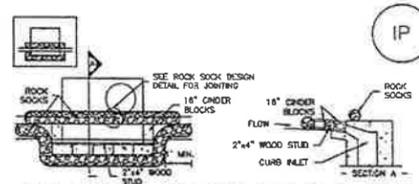
PCD PROJECT NO. SF-16-010





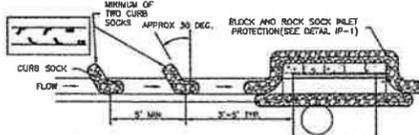






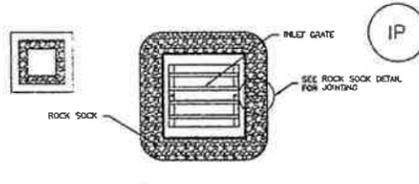
IP-1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

- BLOCK AND ROCK SOCK INLET PROTECTION INSTALLATION NOTES**
- SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
  - CONCRETE "CHERRY" BLOCKS SHALL BE LAID ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB.
  - GRAVEL BARS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.



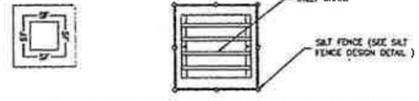
IP-2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

- CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES**
- SEE ROCK SOCK DESIGN DETAIL INSTALLATION REQUIREMENTS.
  - PLACEMENT OF THE SOCK SHALL BE APPROXIMATELY 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.
  - SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 5 FEET APART.
  - AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON-GRADE INLETS.



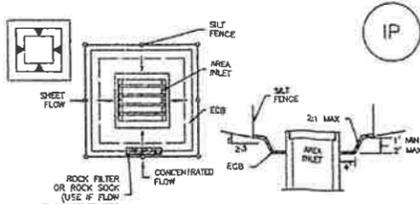
IP-3. ROCK SOCK SUMP/AREA INLET PROTECTION

- ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES**
- SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
  - STRIP MATS/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF ROCK SOCKS FOR INLETS IN PAVEMENT AREAS. INSTALL FOR SEDIMENT CONTROL LOG DETAIL.



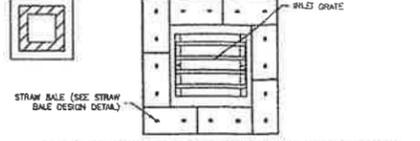
IP-4. SILT FENCE FOR SUMP INLET PROTECTION

- SILT FENCE INLET PROTECTION INSTALLATION NOTES**
- SEE SILT FENCE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
  - POSTS SHALL BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MINIMUM SPACING OF 3 FEET.
  - STRIP MATS/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCE FOR INLETS IN PAVEMENT AREAS. INSTALL FOR SEDIMENT CONTROL LOG DETAIL.



IP-5. OVEREXCAVATION INLET PROTECTION

- OVEREXCAVATION INLET PROTECTION INSTALLATION NOTES**
- THIS FORM OF INLET PROTECTION IS PRIMARILY APPLICABLE FOR SITES THAT HAVE NOT YET REACHED FINAL GRADE AND SHOULD BE USED ONLY FOR INLETS WITH A RELATIVELY SMALL CONTRIBUTING DRAINAGE AREA.
  - WHEN USING FOR CONCENTRATED FLOWS, SHAPE GASH IN 2:1 RATIO WITH LENGTH ORIENTED TOWARDS DIRECTION OF FLOW.
  - SEDIMENT MUST BE PERIODICALLY REMOVED FROM THE OVEREXCAVATED AREA.



IP-6. STRAW BALE FOR SUMP INLET PROTECTION

- STRAW BALE BARRIER INLET PROTECTION INSTALLATION NOTES**
- SEE STRAW BALE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
  - BALES SHALL BE PLACED IN A SINGLE ROW AROUND THE INLET WITH ENDS OF BALES TIGHTLY ABUTTING ONE ANOTHER.



**VEHICLE TRACKING NOTES**

**INSTALLATION REQUIREMENTS**

- ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.
- CONSTRUCTION ENTRANCES ARE TO BE BUILT WITH AN APRON TO ALLOW FOR TURNING TRAFFIC. APRON SHOULD NOT BE BUILT OVER EXISTING PAVED SURFACES EXCEPT FOR A SLIGHT OVERLAP.
- AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING OF GEOTEXTILE AND STONE.
- CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS AND STAGING AREAS ARE TO BE STABILIZED.
- CONSTRUCTION ROADS ARE TO BE BUILT TO CONFORM TO SITE GRADABLE BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.

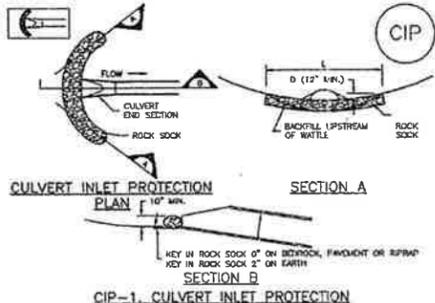
**MAINTENANCE REQUIREMENTS**

- REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.
- STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.
- SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED ONLY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.
- STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.
- OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.

**VEHICLE TRACKING**

City of Colorado Springs: Stormwater Quality

Figure VT-2: Vehicle Tracking Application Examples



CIP-1. CULVERT INLET PROTECTION

- CULVERT INLET PROTECTION INSTALLATION NOTES**
- SEE PLAN VIEW FOR -LOCATION OF CULVERT INLET PROTECTION.
  - SEE ROCK SOCK DESIGN DETAIL FOR ROCK CONNECTION REQUIREMENTS AND JOINTING DETAIL.
- CULVERT INLET PROTECTION MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
  - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
  - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
  - SEDIMENT ACCUMULATED UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS 1/4 THE HEIGHT OF THE ROCK SOCK.
  - CULVERT INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
- (DETAILS ADAPTED FROM ILLINOIS, CALIFORNIA, NOT AVAILABLE IN AUTODO)
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM USFCO STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

- GENERAL INLET PROTECTION INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
    - LOCATION OF INLET PROTECTION
    - TYPE OF INLET PROTECTION (P.1, IP.2, IP.3, IP.4, IP.5, IP.6)
  - INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO SHEET OF EVENT.
  - MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM USFCO STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- INLET PROTECTION MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
  - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
  - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
  - SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS. TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR 1/4 OF THE HEIGHT FOR STRAW BALES.
  - INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.
  - WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDING AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
- (DETAILS ADAPTED FROM ILLINOIS, CALIFORNIA AND CITY OF ALBUQUERQUE, NOT AVAILABLE IN AUTODO)
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM USFCO STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF INLET PROTECTION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY PROPRIETARY INLET PROTECTION METHODS ON THE MARKET. USFCO neither endorses nor discourages use of PROPRIETARY INLET PROTECTION. HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SHOP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.
- NOTE: SOME MUNICIPALITIES DISCOURAGE OR PROHIBIT THE USE OF STRAW BALES FOR INLET PROTECTION. CHECK WITH LOCAL JURISDICTION TO DETERMINE IF STRAW BALE INLET PROTECTION IS ACCEPTABLE.

INLET PROTECTION - NOT TO SCALE

DESIGNED BY: MAB PROJECT ENGINEER  
 DATE: 07/17/17 JOB NO. 16014 PROJECT MANAGER  
 10/14 CAD FILE NO. BASELINA  
 MAB SCALE: 1/8" = 1'-0"  
 DRAWN BY: TPC  
 DATE: 07/17/17

PREPARED BY: **ADPCIVIL** ENGINEERING FOR THE FUTURE

3226 Austin Bluffs Parkway Suite 102  
 Colorado Springs, CO 80918  
 (719) 266-5212  
 Fax: (719) 266-5241

NO.	DATE	REVISION

BY: \_\_\_\_\_

**GLENEAGLE GOLF COURSE  
 RESIDENTIAL INFILL DEVELOPMENT  
 EL PASO COUNTY, COLORADO  
 DRAIN, GRADING AND EROSION CONTROL DETAILS**

**SHEET 6 of 6**

REGISTERED PROFESSIONAL ENGINEER  
 STATE OF COLORADO  
 No. 23329  
 7/24/17

- GENERAL NOTES**
- Do not prepare or see a frozen soils.
  - Do not seed when  $W_i - S_i$  exceeds 5 mph.
  - Perform seeding only after preceding work affecting ground surface is completed.
  - Do not mulch over seeded areas when wind exceeds 15 mph.
  - Seed to be a blend of native prairie grasses.
  - Watering shall be provided in the form of watering trucks and spray bars.
- MULCH MATERIALS**
- HAY OR STRAW MULCH
    - A) Chopped oat, wheat or rye grass hay.
    - B) Free from noxious weed seeds.
    - C) Rotted, brittle or moldy hay is not acceptable.
    - D) 50% by weight greater than 10" inch length.
  - FIBER
    - A) Short wood fiber.
    - B) "Combed", "Silva Fiber" or equivalent.
- BED PREPARATION**
- Prepare to a minimum depth of 4" with disc harrow or chiseling tools.
  - Uproot all competitive vegetation.
  - Work soil uniformly to a smooth surface free of clods, stones over 2" in any dimension or any material which will interfere seeding equipment.
  - Till across slopes.
  - Do not till when soil moisture is unsuitable.
    - A) Soil texture aff: fillage shall be uniform, free of wet compressed or dry clumps.
  - Do not prepare seed bed more than twenty four hours in advance of seeding.
  - Fertilize at a rate of 1/2 (2 lbs. nitrogen per 1,000 sq. ft.)
    - A) Till fertilizer into soil a minimum of two (2) inches.
- |                         |                   |
|-------------------------|-------------------|
| Species                 | lbs./acre drilled |
| Western Wheat Grass     | 3.0               |
| Sideoats Grama          | 2.0               |
| Slender Wheat Grass     | 2.0               |
| Little Bluestem         | 0.5               |
| Switch Grass            | 2.0               |
| Sand Dropped            |                   |
| Paspalum amabilis       | 3.0               |
| Bouteloua curtipendula  | 2.0               |
| Schizachyrium scoparium | 2.0               |
| Bouteloua gracilis      | 0.5               |
| Panicum virgatum        | 2.0               |
| Sporobolus cryptandrus  |                   |
- EROSION CONTROL PLAN NOTES**
- All disturbed areas are to be reseeded.
  - Schedule of Grading - approximate time frame of one month to complete grading and installation of erosion control measures.
  - Temporary Sediment Barriers shall be kept in place and maintained until the vegetation has been reestablished. Removal of sediment is required once it reaches half the height of the sediment control log.