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	DESIGNED BY:	SCALE:	CHECKED BY:	DWS
DRAWN BY:	TMC	AS NOTED	DATE ISSUED:	2020-06-24
	TMC		200% BASE DWG	

DHM DESIGN  
BTOB MINE RECLAMATION  
MONTROSE COUNTY

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SECTIONS

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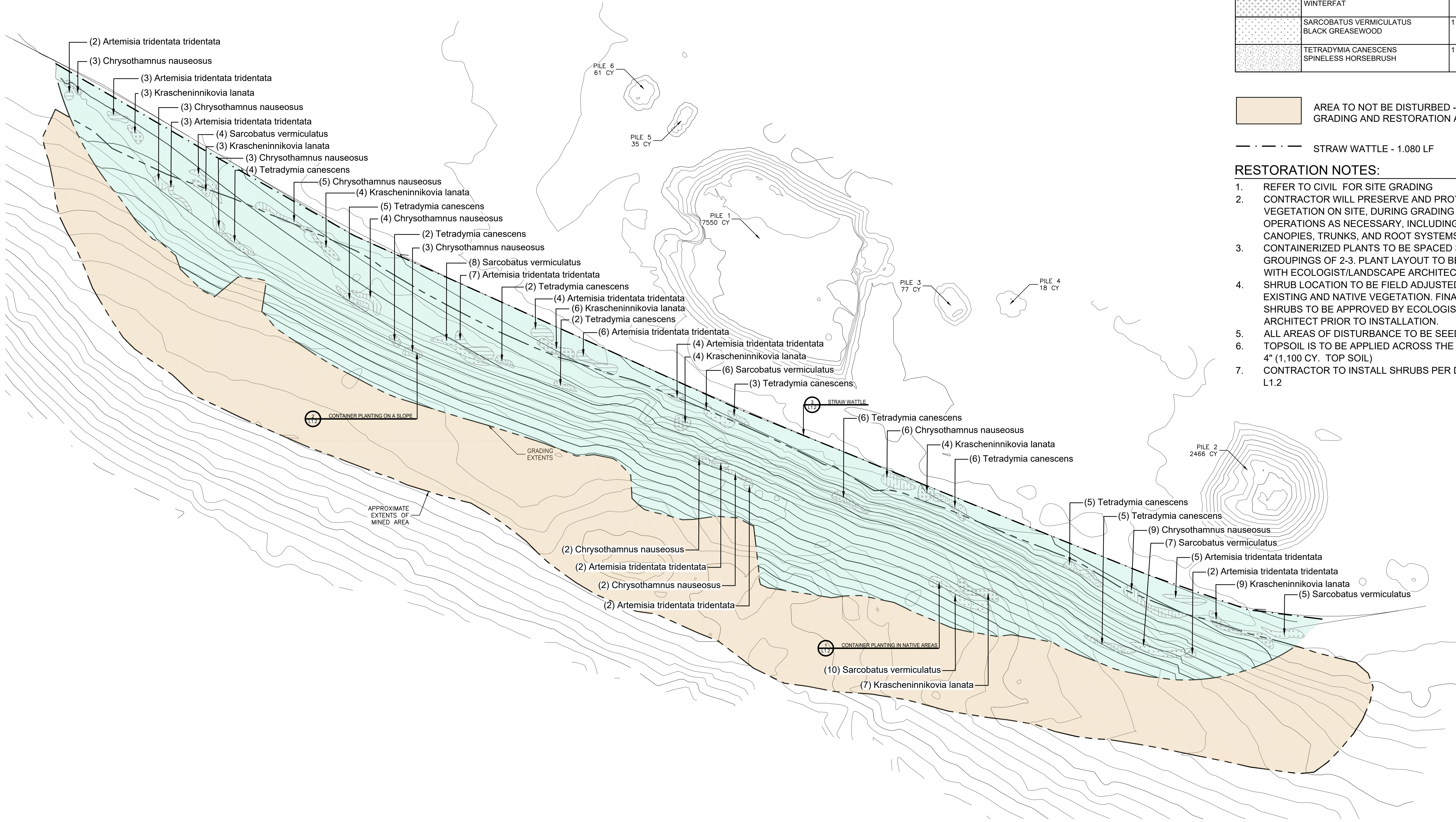
MC JCB NO.: 20087

SHEET NO.: 2



PROJECT: BTOB MINE RECLAMATION - MONTEROSE COUNTY, CO  
DESIGNED: AVN  
DRAWN: AVN  
CHECKED: SE  
DATE: 2020/07/02  
SCALE: 1"=40'-0"

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DRYLAND QUICK ESTABLISHMENT SEED MIX 88,974 SF

Scientific Name	Common Name	Variety	% of Mix	Pounds
Quick Establishment Seed Mix - 2.04 ACRES at 12.75 LBS/ACRE				
Thinopyrum intermedium	Intermediate Wheatgrass		20%	5.1
Elymus trachycaulus	Slender wheatgrass		16%	4.08
Thinopyrum intermedium	Pubescent Wheatgrass		24%	6.12
Psathyrostachys juncea	Rusian wildrye		24%	6.12
Pascoprum smithii	Western wheatgrass		16%	4.08
Sporobolus cryptandrus	Sand dropseed		2%	0.51
Total			100%	26.01

PLANT SCHEDULE				
SHRUB AREAS	BOTANICAL / COMMON NAME	CONT	SPACING	QTY
	ARTEMISIA TRIDENTATA TRIDENTATA BIG BASIN SAGEBRUSH	1 GAL	72" o.c.	40
	CHRYSOETHAMNUS NAUSEOSUS RUBBER RABBITBRUSH	1 GAL	72" o.c.	40
	KRASCHENINNIKOVIA LANATA WINTERFAT	1 GAL	72" o.c.	40
	SARCOBATUS VERMICULATUS BLACK GREASEWOOD	1 GAL	72" o.c.	40
	TETRADYMIA CANESCENS SPINELESS HORSEBRUSH	1 GAL	72" o.c.	40

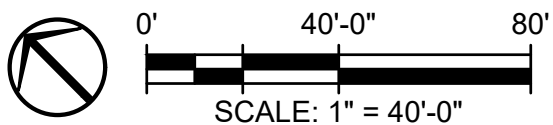
TOTAL: 200

AREA TO NOT BE DISTURBED - PROTECT FROM GRADING AND RESTORATION ACTIVITIES

STRAW WATTLE - 1.080 LF

#### RESTORATION NOTES:

- REFER TO CIVIL FOR SITE GRADING
- CONTRACTOR WILL PRESERVE AND PROTECT EXISTING VEGETATION ON SITE, DURING GRADING AND CONSTRUCTION OPERATIONS AS NECESSARY, INCLUDING ANY TREE CANOPIES, TRUNKS, AND ROOT SYSTEMS.
- CONTAINERIZED PLANTS TO BE SPACED 36" - 60" O.C. IN GROUPINGS OF 2-3. PLANT LAYOUT TO BE COORDINATED WITH ECOLOGIST/LANDSCAPE ARCHITECT.
- SHRUB LOCATION TO BE FIELD ADJUSTED TO ENHANCE EXISTING AND NATIVE VEGETATION. FINAL LAYOUT OF SHRUBS TO BE APPROVED BY ECOLOGIST/LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- ALL AREAS OF DISTURBANCE TO BE SEEDED WITH SEED MIX.
- TOPSOIL IS TO BE APPLIED ACROSS THE SITE AT A DEPTH OF 4" (1,100 CY. TOP SOIL)
- CONTRACTOR TO INSTALL SHRUBS PER DETAILS ON SHEET L1.2



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## BTOB MINE RECLAMATION MONTEROSE COUNTY, CO

PROJECT NUMBER: 19371  
DATE: 2020/07/02  
DESIGNED: JA  
DRAWN: AVN  
CHECKED: SE

REVISIONS:

JOB DESCRIPTION:  
RESTORATION  
PLANTING PLAN

SHEET TITLE:  
RESTORATION  
PLANTING PLAN  
SCHEDULE

SCALE: 1"=40'-0"  
SHEET NUMBER:

L1.0

SHEET 1 OF 3



MATERIALS

SITE PREPARATION

1. SITE SHALL BE FINISHED GRADED, TOPSOIL PLACED/BIOSOL FERTILIZER APPLIED, AND FREE OF DEBRIS AND HEAVY EQUIPMENT IN PLANTING AREAS PRIOR TO THE COMMENCEMENT OF PLANTING OPERATIONS.
2. CONTRACTOR SHALL BECOME FAMILIAR WITH ECOLOGICAL SITE CONDITIONS PRIOR TO BEGINNING SEEDING AND PLANTING WORK.
3. PLANT LOCATIONS WILL BE DETERMINED PRIMARILY BY THE PROJECT DRAWINGS AND NOTES. PRECISE LOCATIONS FOR INDIVIDUAL PLANTS WILL BE DETERMINED BY THE ECOLOGIST BASED ON IN-FIELD MACRO- AND MICRO-SITE AND HYDROLOGIC CONDITIONS AND PLANT ZONATION REQUIREMENTS.
4. PLANTING SITES WILL BE FLAGGED OR SPRAYED WITH GROUND PAINT BY THE ECOLOGIST AS TO PRECISE PLANT LOCATIONS PRIOR TO THE OCCURRENCE OF PLANTING WORK.

EROSION CONTROL AND GRADING

1. REMOVE OR BURY ALL BOULDERS FROM SITE LARGER THAN 1' X 1' IN SIZE, OR SAVE AND STOCKPILE FOR RETAINING BOULDERS IF CALLED FOR. ALL SMALLER ROCK MATERIAL TO BE BACK FILLED IN DISTURBANCE AREAS OR HAULED OFF SITE.
2. CAREFULLY MANEUVER MACHINERY IN ALL AREAS AS NOT TO DISTURB ANY EXISTING VEGETATION (WEST OF GRADING BOUNDARY). EXERCISE CAUTION TO THE GREATEST EXTENT POSSIBLE WHEN MOVING SOIL PILES BACK INTO DISTURBANCE AREA AS TO NOT DAMAGE SURROUNDING VEGETATION .
3. PLACE A 6" STRAW WATTLE ALONG THE ENTIRETY OF THE LOWEST ELEVATION EDGE OF THE EXTENTS OF GRADING RE: DETAILS.

TOPSOIL

1. TOPSOIL SHALL BE OBTAINED FROM PRE-APPROVED ON-SITE COLLECTION AREAS OR PRE-APPROVED IMPORTED MATERIALS FROM OFF SITE.
2. TOPSOIL SHALL CONSIST OF NATURAL, FRIABLE, SANDY LOAM, NATIVE UPLAND TOPSOIL AND SHALL BE SOURCED FROM BEAVER LAKES NURSERY OR AN APPROVED ALTERNATIVE SOURCE.
3. CONTRACTOR TO PROVIDE A TOP SOIL SAMPLE WITH ANALYSIS REPORT RESULTING FROM A CURRENT AGRONOMIC AND FULL TEXTURAL CLASS ANALYSIS OF A TOPSOIL SAMPLE COLLECTED FROM THE ACTUAL SOIL PROPOSED TO BE USED. THE RESULTS OF THE TESTS SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT AND MUST INCLUDE SAMPLE DATE AND REFERENCE THE COLLECTION LOCATION.
4. MATERIAL SHALL BE FREE FROM OBJECTS LARGER THAN 5 INCHES MAXIMUM DIMENSION INCLUDING HARD CLODS OF HEAVY CLAY, SHALE, DECOMPOSED SHALE OR OTHER SUBSOIL, NOXIOUS WEED PARTS (ROOTS, SEEDS, OR SHOOTS), GRASS, REFUSE, STUMPS, ROOTS, BRUSH, OTHER FOREIGN MATTER, HAZARDOUS OR TOXIC SUBSTANCES, AND DELETERIOUS MATERIAL THAT MAY BE HARMFUL TO PLANT GROWTH OR MAY HINDER GRADING, PLANTING, OR MAINTENANCE.
5. TOPSOIL WITHIN THE LIMITS OF CONSTRUCTION SHALL BE SALVAGED PRIOR TO BEGINNING HAULING, EXCAVATING, OR FILL OPERATIONS BY EXCAVATING AND STOCKPILING THE MATERIAL AT DESIGNATED LOCATIONS IN A MANNER THAT WILL FACILITATE MEASUREMENT, MINIMIZE SEDIMENT DAMAGE, AND NOT OBSTRUCT NATURAL DRAINAGE.
6. TOPSOIL SHALL BE PLACED DIRECTLY UPON COMPLETED CUT AND FILL SLOPES WHENEVER CONDITIONS AND THE PROGRESS OF CONSTRUCTION WILL PERMIT.
7. TOPSOIL SHALL BE PLACED AT LOCATIONS AND TO 4" IN DEPTH AND SHALL BE KEYED AND TRACKED TO THE UNDERLYING MATERIAL WITHOUT CREATING A COMPACTED SURFACE BY THE USE OF HARROWS, BULLDOZERS, ROLLERS, OR OTHER EQUIPMENT SUITABLE FOR THE PURPOSE.
8. DO NOT PLACE TOPSOIL WHEN SUBSOIL OR TOPSOIL IS FROZEN, EXCESSIVELY WET, OR OTHERWISE DETRIMENTAL TO THE WORK.
9. WATER SHALL BE APPLIED TO THE TOPSOIL IN A FINE SPRAY BY NOZZLES OR SPRAY BARS SO THE TOPSOIL AREAS WILL NOT BE WASHED OR ERODED.
10. UNIFORMLY DISTRIBUTE TOPSOIL TO WITHIN 1/2 INCH OF FINAL GRADES. FINE GRADE TOPSOIL ELIMINATING ROUGH OR LOW AREAS AND MAINTAINING LEVELS, PROFILES, AND CONTOURS OF SUBGRADE. .
11. PLACED TOPSOIL SHALL BE STABILIZED IMMEDIATELY BY: APPLYING BIOSOL FERTILIZER PER MANUFACTURES RECOMMENDATIONS, PREPARING AND SEEDING WITH THE APPROVED SEED MIXTURE AND MULCH, INSTALLING PERIMETER SILT FENCE AND/OR STRAW WATTLES, PER THE PLANS.

CONSTRUCTION ACCESS

1. REFERENCE CIVIL PLANS FOR APPROXIMATE CONSTRUCTION ACCESS LOCATIONS. ALL CONSTRUCTION ACCESS AREAS WILL NEED TO BE RESTORED AND RE-SEEDED, TYPICAL OF ALL OTHER AREAS BEING RESTORED ON SITE.

VEGETATION

SOURCE MATERIAL

1. CONTAINERIZED PLANTS: CONTAINERIZED PLANT MATERIALS WILL BE GROWN FROM SEED OR CUTTINGS SOURCED WITHIN THE ROCKY MOUNTAIN REGION.

INSTALLATION

1. CONTRACTOR SHALL BE ABLE TO DEMONSTRATE EXTENSIVE EXPERIENCE WITH SIMILAR RESTORATION PROJECTS.
2. ALL CONTAINERIZED PLANTS ARE TO HAVE 50% COMPOST ADDED TO THE BACKFILL OF PLANTING PITS.

DELIVERY / TRANSPORT

1. ALL PLANT MATERIALS ARE TO BE DELIVERED DIRECTLY TO THE PLANTING SITE FROM THE NURSERY FACILITY.
2. PLANT MATERIALS ARE TO BE DELIVERED TO THE PLANTING SITE IN THE SPECIES, SIZE AND QUANTITIES IDENTIFIED BY THIS DOCUMENT. PLANT MATERIALS WILL BE ACCOMPANIED BY A BILL OF LADING STATING SAME.
3. THE SUBCONTRACTOR SHALL COUNT AND CONFIRM THE DELIVERY IS ACCURATE AND INSPECT PLANT MATERIAL TO ENSURE THE PLANT MATERIAL IS IN GOOD CONDITION AND HEALTH.
4. ALL PLANTS WILL BE CHECKED AND APPROVED BY THE DESIGNER OR ECOLOGIST & CONTRACTOR PRIOR TO PLANTING TO ENSURE CONFORMITY OF SPECIES, QUALITY AND QUANTITY. PLANT MATERIAL SHALL:
  - a. BE WELL SHAPED, VIGOROUS AND HEALTHY WITH A WELL BRANCHED ROOT SYSTEM, FREE FORM DISEASE, HARMFUL INSECTS AND INSECT EGGS, SUN-SCALD INJURY, DISFIGUREMENT OR ABRASION;
  - b. BE CHECKED FOR UNAUTHORIZED SUBSTITUTION AND EXHIBIT TYPICAL FORM OF BRANCH TO HEIGHT RATIO;
  - c. MEET THE CONTAINER, CALIPER AND HEIGHT MEASUREMENTS SPECIFIED AND NOT BE CROPPED;
  - d. SHOW NEW FIBROUS ROOTS AND MAINTAIN ITS SHAPE WHEN REMOVED FROM THE CONTAINER AND NOT HAVE BROKEN OR CRACKED ROOTBALLS, OR BROKEN CONTAINERS;
  - e. CONFORM TO THE AMERICAN ASSOCIATION OF NURSERYMEN'S AMERICAN STANDARD FOR NURSERY STOCK.
5. IF WITHIN 24 HOURS OF DELIVERY THE DESIGNER DETERMINES THAT THE PLANT MATERIAL DOES NOT MEET THESE SPECIFICATIONS, THE UNACCEPTABLE MATERIAL SHALL BE REJECTED, REMOVED, AND REPLACED AT NO EXPENSE TO THE CLIENT.
6. IF OVER THE COURSE OF THE PROJECT THE DESIGNER DISCOVERS THE CONTRACTOR HAS FAILED TO PROPERLY STORE, INSTALL & MAINTAIN ANY PREVIOUSLY ACCEPTED PLANT MATERIAL, SAID MATERIAL WILL BE REMOVED AND REPLACED WITH ACCEPTABLE MATERIAL AT THE EXPENSE OF THE SUBCONTRACTOR.
7. DELIVERY IS TO BE MADE USING A VEHICLE WITH AN ENCLOSED, COVERED CARGO AREA TO PREVENT DAMAGE FROM WIND, RAIN, HAIL AND DEBRIS.
8. CONTAINERIZED MATERIALS ARE TO BE SECURED IN A RACK SYSTEM DESIGNED SPECIFICALLY FOR THE TRANSPORTATION OF PLANTS, IN ORDER TO PREVENT DAMAGE CAUSED BY SHIFTING LOADS.
9. PLANT MATERIAL SHALL BE STAGED BY SPECIES IN SEPARATE AND IDENTIFIABLE GROUPS DURING UNLOADING.
10. PLANT MATERIAL SHALL BE IDENTIFIED WITH ATTACHED, DURABLE, WATERPROOF LABELS AND WEATHER RESISTANT INK, STATING THE CORRECT SCIENTIFIC AND COMMON NAME.

STORAGE

1. CONTAINERIZED MATERIALS: PRIOR TO PLANTING, CONTAINERIZED MATERIALS MUST BE STORED IN A LICENSED, QUALIFIED NURSERY (SEE 1.02, B-1). MATERIALS SHALL BE PROPERLY PRUNED IN ACCORDANCE WITH RECOGNIZED STANDARD PRACTICE. ROOT SYSTEMS WILL BE KEPT MOIST AT ALL TIMES.
2. PLANT MATERIAL SHALL BE KEPT SHADED, WATERED AND MAINTAINED IN GOOD HEALTH DURING TRANSPORT AND THEREAFTER UNTIL THE PROJECT IS APPROVED.
3. COMMERCIALY AVAILABLE PLANT MATERIALS NOT INSTALLED WITHIN 5 DAYS OF ARRIVAL AT THE SITE SHALL BE STORED AND PROTECTED IN DESIGNATED TEMPORARY ON-SITE NURSERY AREA. NURSERY GROWN PLANT MATERIAL SHALL NOT BE STORED ON SITE LONGER THAN 15 CALENDAR DAYS. PLANT MATERIAL SHALL BE PROTECTED FROM DIRECT EXPOSURE TO WIND AND SUN, KEPT SHADED AND MOIST BY WATERING, EITHER BY HAND OR A TEMPORARY IRRIGATION SYSTEM UNTIL INSTALLED.

HANDLING

1. CONTAINERIZED MATERIALS: DO NOT INJURE PLANTS BY DROPPING THEM OR HANDLING THEM BY THE TRUNK, STEMS OR FOLIAGE. CONTAINERIZED MATERIALS ARE TO BE HAND-CARRIED BY THE CONTAINER ONLY. THESE MATERIALS SHALL BE KEPT MOIST AT ALL TIMES AND NOT ALLOWED TO DRY OUT.

SEEDING NOTES

SEEDING AREA PREPARATION

1. LIMIT SUBGRADE PREPARATION TO AREAS TO BE PLANTED WITHIN TWO WEEKS OF SUBGRADE PREPARATION. FOLLOWING SUBGRADE PREPARATION, NO VEHICLE TRACKING, EQUIPMENT ACCESS OR MATERIALS STAGING IS TO OCCUR IN PREPARED AREAS, EXCEPT FOR OPERATIONS DIRECTLY RELATED TO SEED INSTALLATION.
2. APPLY BIOSOL OR APPROVED FERTILIZER ALTERNATIVE PER MANUFACTURES RECOMMENDATIONS.
3. MOISTEN PREPARED AREA BEFORE PLANTING IF SOIL IS DRY. WATER THOROUGHLY AND ALLOW SURFACE TO DRY BEFORE PLANTING. DO NOT CREATE MUDDY SOIL.
4. LOOSEN THE SURFACE OF AREAS TO BE SEEDED WITH HAND RAKES BEFORE APPLYING SEED.

BROADCAST SEEDING

1. BROADCAST SEEDING PROTOCOL TO INCLUDE ALL NATIVE REVEGETATION ZONES.
2. DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED IN TRANSIT OR STORAGE. DELIVER SEED TO JOB SITE IN THE ORIGINAL UNOPENED CONTAINERS AND SAVE LABELS.
3. SEED SHALL BE UNIFORMLY SOWN BY BROADCASTING.
4. BROADCAST SEEDING RATES SHALL BE TWICE THE AMOUNT SPECIFIED. BROADCAST SEEDING SHALL BE RAKED INTO THE SOIL TO A DEPTH OF APPROXIMATELY ONE-QUARTER INCH (1/4") TO ONE-HALF INCH (1/2").
5. THE SEEDING SHALL BE DONE IN TWO (2) SEPARATE APPLICATIONS CROSSING THE AREA AT RIGHT ANGLES TO ONE ANOTHER TO GUARANTEE EVEN COVERAGE.
6. DO NOT SEED DURING HIGH WINDS OR WHEN THE GROUND IS FROZEN OR OTHERWISE UNABLE TO BE WORKED.
7. STRAW MULCH SHALL BE STRAW BLOWER BLOWN, CERTIFIED WEED-FREE STRAW. AT LEAST SEVENTY PERCENT (70%) OF THE MULCH BY WEIGHT SHALL BE TEN (10) INCHES OR MORE IN LENGTH. MULCH SHALL NOT CONTAIN ANY NOXIOUS WEED, MUST, MOLD, CAKE, OR DECAY. NO HAY MAY BE USED ON THE PROJECT UNLESS APPROVED IN ADVANCE BY ECOLOGIST OR LANDSCAPE ARCHITECT.
8. PROTECT SEEDED AREAS AGAINST EROSION BY UNIFORMLY SPREADING STRAW MULCH AFTER COMPLETION OF SEEDING OPERATIONS. SPREAD UNIFORMLY AT A MINIMUM RATE OF 2 TONS PER ACRE (45 KG PER 100 SQ. M) TO FORM A CONTINUOUS BLANKET 1-1/2-INCHES (38-MM) LOOSE DEPTH OVER SEEDED AREAS. SPREAD BY HAND, BLOWER, OR OTHER SUITABLE EQUIPMENT.
9. FOLLOW STRAW APPLICATION OF FIBER MATRIX. ATTACH FIBER VIA. HYDRO MULCH AT MANUFACTURER RECOMMENDED RATES. PRODUCT EXAMPLES: Rainier Fiber™ Plus Tackifier
10. PROTECT SEEDED SLOPES EXCEEDING 3:1 AGAINST EROSION WITH EROSION-CONTROL BLANKETS INSTALLED AND STAPLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
11. PROTECTION OF SEEDED AREAS: PROVIDE BARRIERS AS REQUIRED TO PREVENT PEDESTRIAN OR VEHICULAR TRAFFIC OVER NEWLY SEEDED AREAS UNTIL COMPLETION.
12. AT THE END OF ONE GROWING SEASON, ALL SEEDED AREAS SHALL ACHIEVE 85% GERMINATION AND BE FREE OF WEEDS AND OTHER UNDESIRABLE VEGETATION.
13. USE SPECIFIED MATERIALS TO REESTABLISH SEEDING AREA THAT DOES NOT COMPLY WITH REQUIREMENTS AND CONTINUE MAINTENANCE UNTIL ESTABLISHMENT IS SATISFACTORY.

BTOB MINE RECLAMATION  
MONTROSE COUNTY, CO

PROJECT NUMBER: 19371  
DATE: 2020/07/02  
DESIGNED: JA  
DRAWN: AVN  
CHECKED: SE

REVISIONS:

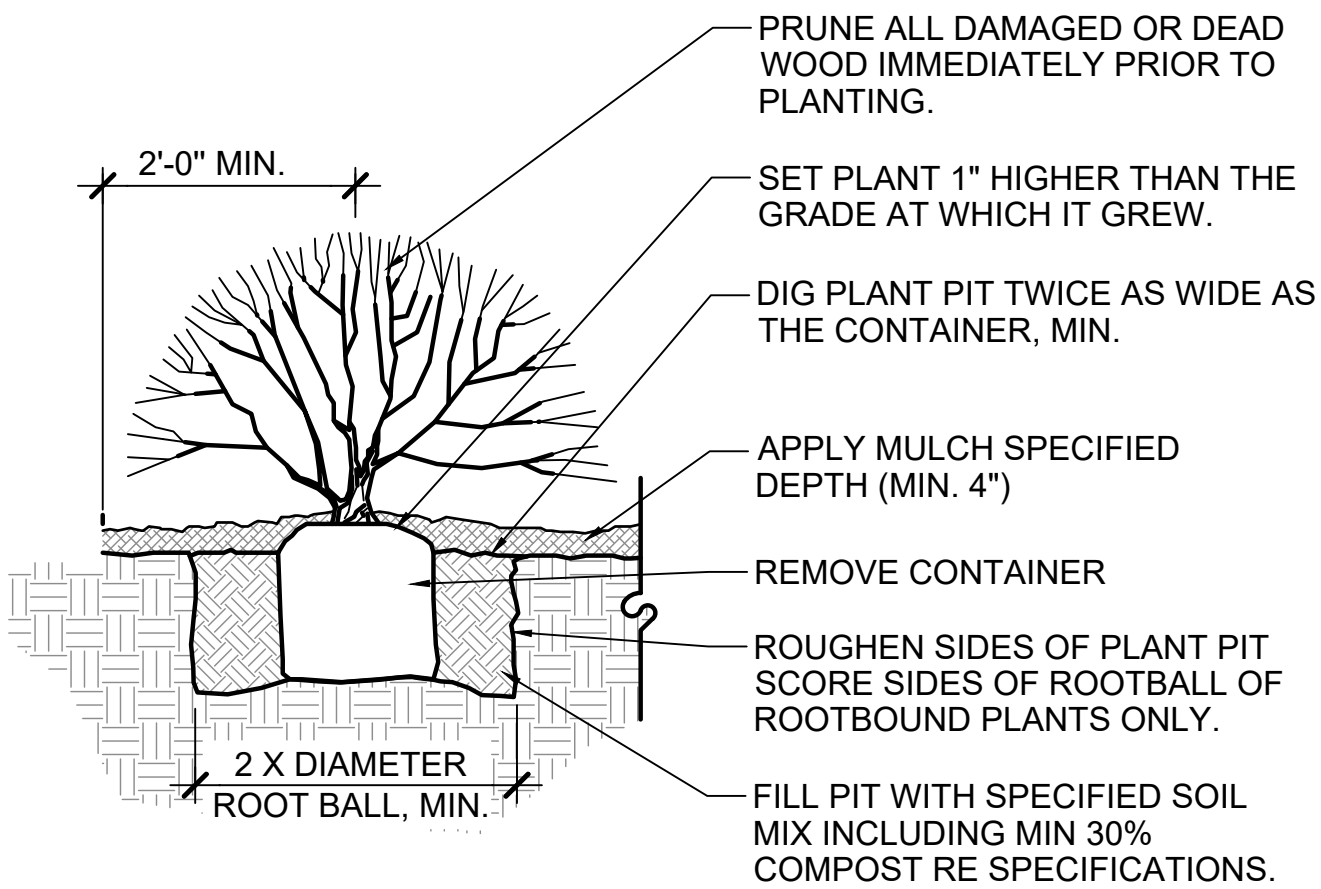
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RESTORATION  
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SHEET TITLE:  
RESTORATION  
DETAILS

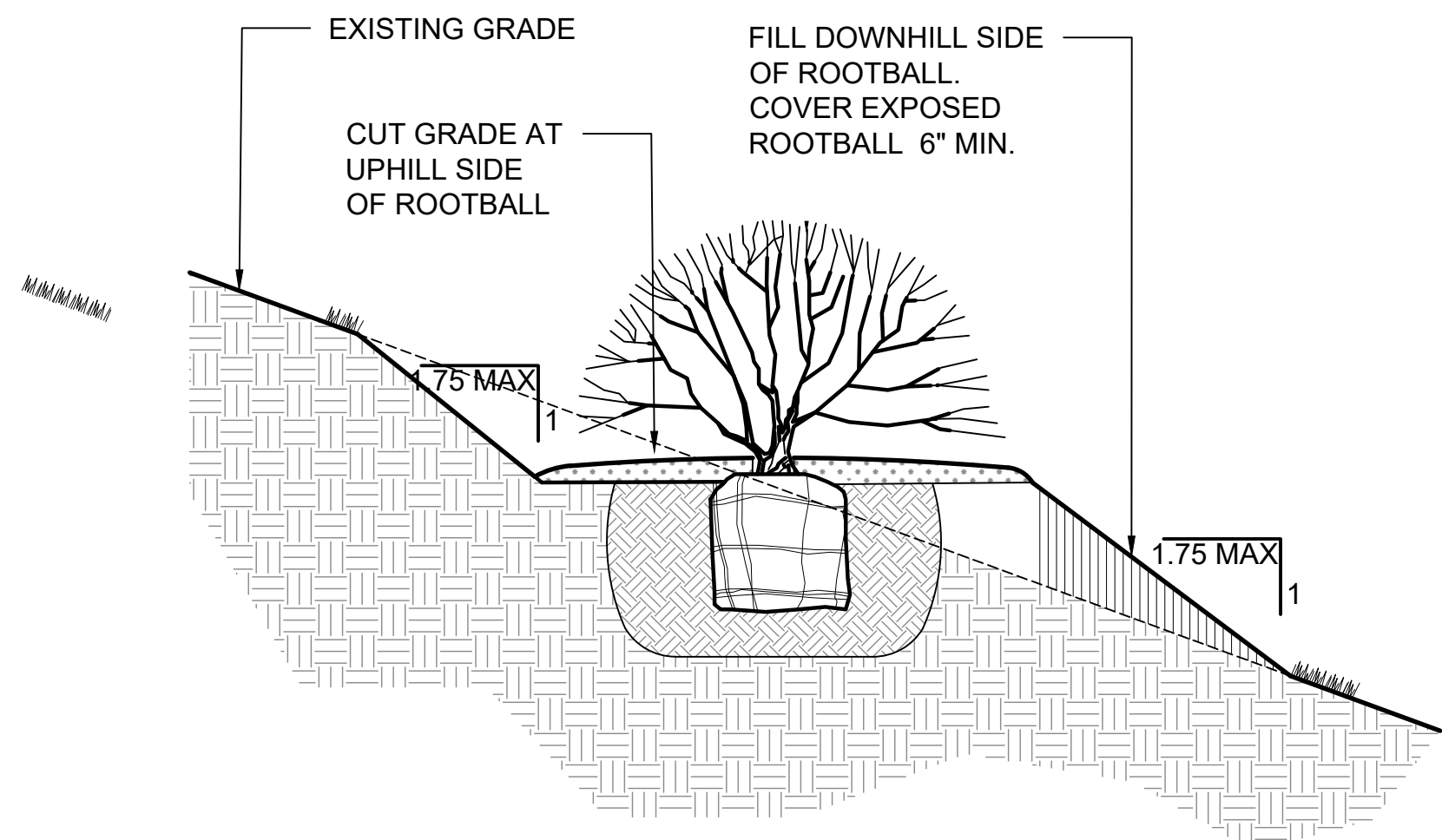
SCALE:  
SHEET NUMBER:

L1.2

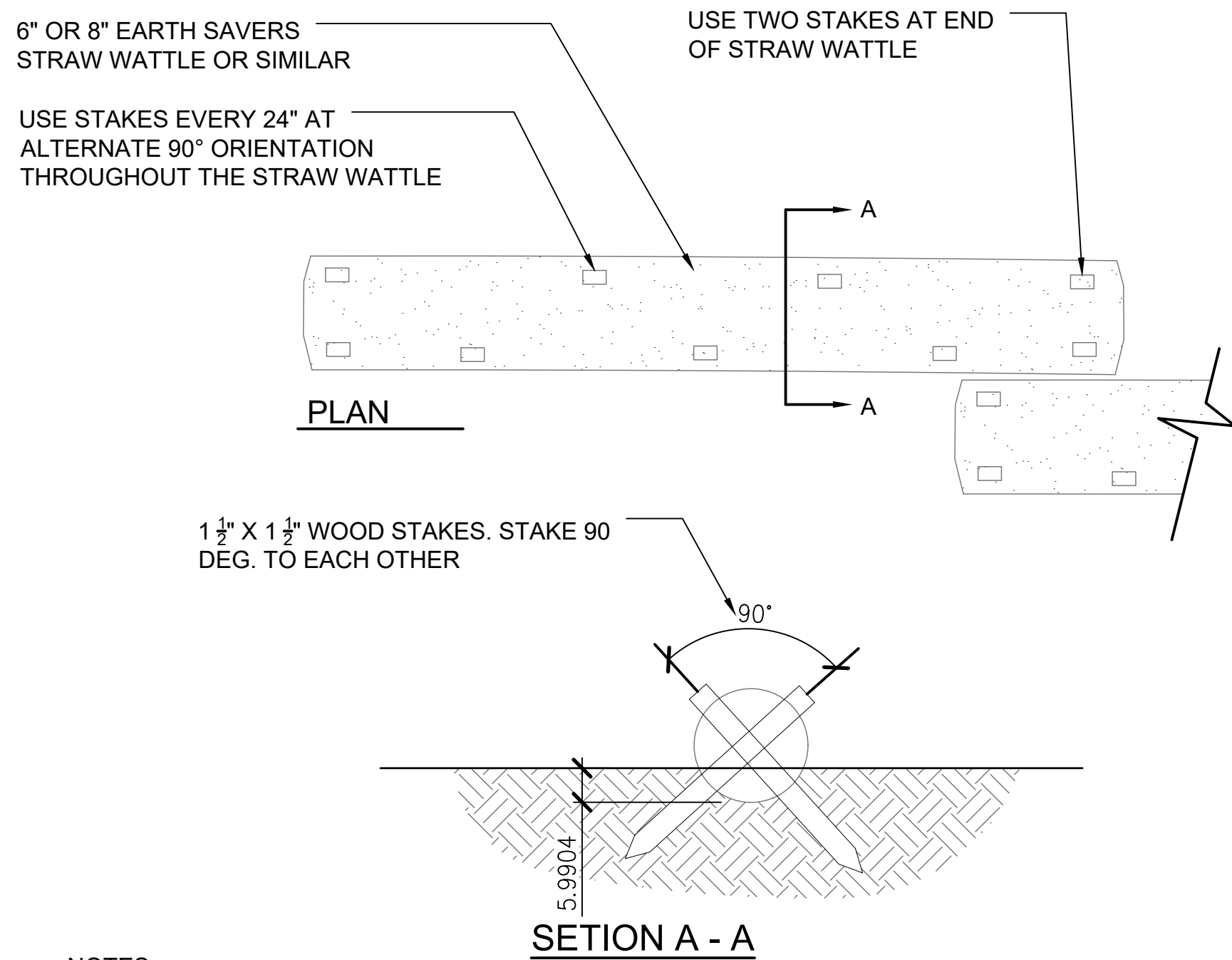
SHEET 3 OF 3



- NOTES:
1. ANY BROKEN OR CRUMBLING ROOTBALLS WILL BE REJECTED.
  2. REMOVING THE CONTAINERS WILL NOT BE AN EXCUSE FOR DAMAGED ROOTBALLS.



- NOTES:
1. REFER TO CONTAINER PLANTING INSTALLATION DETAILS AND TO SPECIFICATIONS FOR MULCHING, BACKFILL, ETC.
  2. THIS INSTALLATION SHALL APPLY (AS NEEDED) TO ALL PLANT TYPES AND SIZES PLANTED ON SLOPES GREATER THAN 8:1.



- NOTES:
1. REFERENCE PLANS FOR APPROXIMATE LOCATIONS AND LENGTHS OF STRAW WATTLES. WHENEVER SLOPES EXCEED 4:1 IN ANY DIRECTION, PLACE STRAW WATTLES AT 10-20' INCREMENTS IN DISTURBED AREAS
  2. TRENCH WATTLE INTO GROUND MIN. 2- 3"
  3. STRAW WATTLE MAY BE 6" OR 8" IN DIA.