

(P) CULVERTS (X4) & SWALE
PER GRADING PROCEDURE STEP 11
- SEE DETAILS 3 & 4 (SHEET 2)

(P) UPPER AREA ACCESS
ROADS (X2) PER GRADING
PROCEDURE STEPS 3 AND 11
- 24' WIDE CENTERCRESTED
2% TO (P) LINED
V-DITCHES
(SEE DETAIL 2, SHEET 2)

ABBREVIATIONS

APPROX, ~ APPROXIMATELY
BMP BASE MANAGEMENT PRACTICE
CY CUBIC YARDS
EL/ELEV ELEVATION
(E)/(P) EXISTING/PROPOSED
LF LINEAR FEET
MAX/MIN MAXIMUM/MINIMUM
O-CUT/FILL ORGANIC CUT/FILL
S-CUT/FILL STRUCTURAL CUT/FILL
SI SIERRA INSTITUTE
TYP TYPICAL
" / ' INCHES/FEET

CUT/FILL QUANTITY ESTIMATES

ORGANIC CUT/FILL:
TOP OF STOCKPILE O-CUT = 19,500 CY
BORROW AREA O-CUT = 1,000 CY
BORROW AREA REFILL = 8,000 CY
STOCKPILE EXPANSION O-FILL = 12,500 CY

STUCTURAL CUT/FILL:
BORROW AREA S-CUT = 8,000 CY
STOCKPILE CAP S-FILL = 7,000 CY
OTHER CAP S-FILL = 1,000 CY

*ALL ESTIMATES +/- 15%

GRADING PROCEDURE SUMMARY

1. Install temporary erosion control BMPs per Note 13.
2. Improve existing perimeter ditch and berm system - clear sediment and vegetation from perimeter ditch (~1,750 LF), regrade ditch to slope in the counter-clockwise direction as shown, and expand ditch where space availability allows (6' min width around southwest corner); rebuild/build up/reinforce perimeter containment berm where needed - berm top elevation to be approximately 3509' min throughout.
3. Construct temporary access roads (perimeter & stockpile access).
4. Remove organic fill from primary borrow pit area shown (southwest corner) to allow access to clean structural fill below (expected to exist below ~3509' elev) - segregate high grade material (o-fill and s-fill) per field direction.
5. Excavate clean structural fill (below ~3509' elev) from primary borrow area and other borrow areas shown as needed and stockpile where shown. Borrow pits shall not exceed depth to groundwater (~3503' elev, less if evidence of g.w. is observed).
6. Backfill borrow pit(s) using organic fill material with performance compaction per field directions - see Notes 6 & 8.
7. Regrade stockpile to approx 3515' elevation expanding stockpile top surface area approximately as shown using organic fill & regrading fill slopes as needed - see Notes 6 & 8.
8. Cap regraded stockpile with 12" min clean structural fill to 3516' +/- min elevation compacted to 95% relative compaction (see Note 6); slope finish grade radially outward at 1% min.
9. Cover stockpile fill slopes and all other exposed organic fill with clean suitable fill per CBC Appendix J/field direction.
10. Regrade northern portion of project area to create positive drainage northeast-southwest to improved perimeter ditch.
11. Construct permanent access roads, install (P) drainage features, surface access roads w/4-6" depth Caltrans Class 2 aggregate base (450 CY total estimated volume), and install permanent erosion control BMPs (straw wattles, ~3,000 LF total length).

REPAIR BERM WHERE
BREACHED, BUILD UP &
REINFORCE BERM, CLEAN
& REGRADE PERIMETER
DITCH (~1,750 LF) TO
DRAIN TO LDRP PER
GRADING PROCEDURE
STEP 2 -
(P) CONTOURS FOR BERM
& DITCH NOT SHOWN DUE
TO DISCONTINUOUS (E)
GRADE DATA

APPROX PRIMARY BORROW
PIT AREA PER GRADING
PROCEDURES STEPS 4-6
OTHER AREAS SHOWN MAY
BE USED FOR BORROW AS
APPROVED ONSITE

OPEN FIELD/GOLF COURSE

SOUTHERN STOCKPILES GRADING PLAN

NOTES

GENERAL

1. This Grading Plan for the southern stockpiles area of the Sierra Institute Wood Products Campus utilizes existing grade contour data produced by Dan Bastian (PE/PLS) and applies the grading plan description, details, and procedures outlined by Kyle Leach, PG (Project Geologist for the Sierra Streams Institute) to depict proposed changes to grades in the vicinity of the southern stockpiles area, associated drainage provisions (to ensure positive drainage and maintain or increase stormwater conveyance and retention capacity in the area), and construction procedures, with the aim of the work being to cap the previously studied contaminated southern stockpiles with 12" min of clean fill derived from native subsoil in the area while creating as much usable space above the estimated base flood elevation (approximately 3,516 as estimated previously by others) in the area as possible, balancing cut and fill, and providing two points of access to the resulting usable area.
2. Vicinity Map retraced from Plumas County GIS database; property boundaries, easements, and (E) features per survey/site map drawings by Dan Bastian and NST Engineering - see original drawing files/maps for additional information on base map data sources, elevation datums, survey controls, etc.; locations of all (E) and (P) features shown should be considered approximate and field-verified as needed.

CONSTRUCTION

3. It is the owner's/contractor's responsibility to ensure no existing utilities will be impacted by the proposed work. Call 811 - Underground Service Alert, 48 hours min prior to start of construction.
4. It is the owner's/contractor's responsibility to ensure that all required permits are acquired and complied with throughout project construction, including coordination of required inspections; work under this plan is expected to be permitted under an existing grading permit issued by Plumas County; air quality monitoring is expected to be required by EPA necessitating effective dust control by contractor w/temp stoppage of work if visible dust occurs.
5. It is the owner's/contractor's responsibility to verify locations, property boundaries, easement boundaries, etc., onsite as needed to ensure all setbacks and other applicable requirements are met.
6. All project work shall be performed by qualified professionals under the supervision of Geologist or Engineer applying applicable construction BMPs and shall be performed in accordance CBC Appendix J and all other applicable regulations and standards; Plan shown may be adapted in the field as needed subject to required approvals; compaction testing shall be performed per field direction at owner's expense.
7. For all grading areas, the ground surface shall be prepared prior to start of grading by removing vegetation and other unsuitable materials. Removed vegetation shall be removed from the site or processed onsite in accordance with applicable regulations and guidelines.
8. For areas to receive fill, the ground surface shall be prepared to receive fill by scarifying the ground to facilitate bonding with the fill material. For sloped areas to receive fill, the ground surface shall be further prepared by benching in accordance with CBC Sec. J107.3 prior to placing fill. All fill shall be free of deleterious material and rocks exceeding 12" diameter and shall be placed and compacted in lifts of 12" max depth.
9. Finish grades shall transition smoothly to adjacent undisturbed grades in a fashion that does not cause concentration of sheet flow runoff.
10. Cut and fill slopes shall not exceed 2:1 (H:V); 3:1 max is recommended.

DRAINAGE AND EROSION CONTROL

11. Owner/contractor shall employ all basic construction stormwater BMPs, including minimizing area of disturbance, protecting existing vegetation, good housekeeping, dust control, tracking control, etc., as needed.
12. Drainage Design Summary: Unless otherwise approved, site drainage shall be as follows - resulting usable stockpile top surface area shall be crowned with 1% min outward slope to ensure positive drainage/avoid ponding of stormwater in the area; access roads to the resulting usable area shall be center-crested 2% to (P) lined v-ditches; (P) perimeter maintenance access road shall be outsloped 2% to (E) perimeter ditch; (P) v-ditch along inside edge of road shall slope 1% min to (P) culverts connecting to (E) perimeter ditch approximately where shown; (E) perimeter ditch system shall be regraded and expanded as site constraints allow and associated berms shall be built up and/or reinforced as needed to minimize risk of breaching (see section view, Sheet 2). The intent of the drainage design is to prevent concentration of sheet flow runoff and maximize onsite stormwater retention/infiltration so as to minimize offsite runoff and erosion risk.
13. Temporary Erosion Control: sediment control BMPs (temporary wattles, see Detail 1 on Sheet 2) shall be installed in suitable locations surrounding proposed grading areas per field direction prior to the start of construction; contractor shall minimize exposure of disturbed soils to precipitation and stormwater runoff to the maximum extent practicable, shall cover soil stockpiles during significant storm events, & shall deploy additional BMPs as needed to prevent sediment transport offsite and/or into waterways.
14. Permanent Erosion Control: straw wattles shall be installed along the top & toe of stockpile area fill slopes per field direction (~3,000 LF total estimated length); all disturbed areas shall be further stabilized via hydroseed/ hydromulch application coordinated separately by owner at owner's expense. In the event that drainage issues or erosion are observed during construction, it shall be the contractor's responsibility to take corrective action as soon as practicable to minimize impacts and discharge of sediment-laden runoff from the site.
16. Upon project completion, it shall be the owner's responsibility to monitor and maintain all drainage features as needed to ensure continued function.

REVISIONS

DATE	DESCRIPTION
8.8.23	REVS FOR RFP

PROPERTY OWNER:
SIERRA INSTITUTE

APNS 111-050-065 THROUGH 067,
111-103-001, 111-170-019,
111-102-007, & 111-084-004

GRADING PLAN

SOUTHERN STOCKPILES AREA

SI WOOD PRODUCTS CAMPUS

HINDS ENGINEERING

PO BOX 1421
GRACIALE, CA 96103
PH: (530) 401-0000
ENGINEERING LIC: #C88952

DRAWN:GRH

CHECKED:KL

DATE:04.18.23

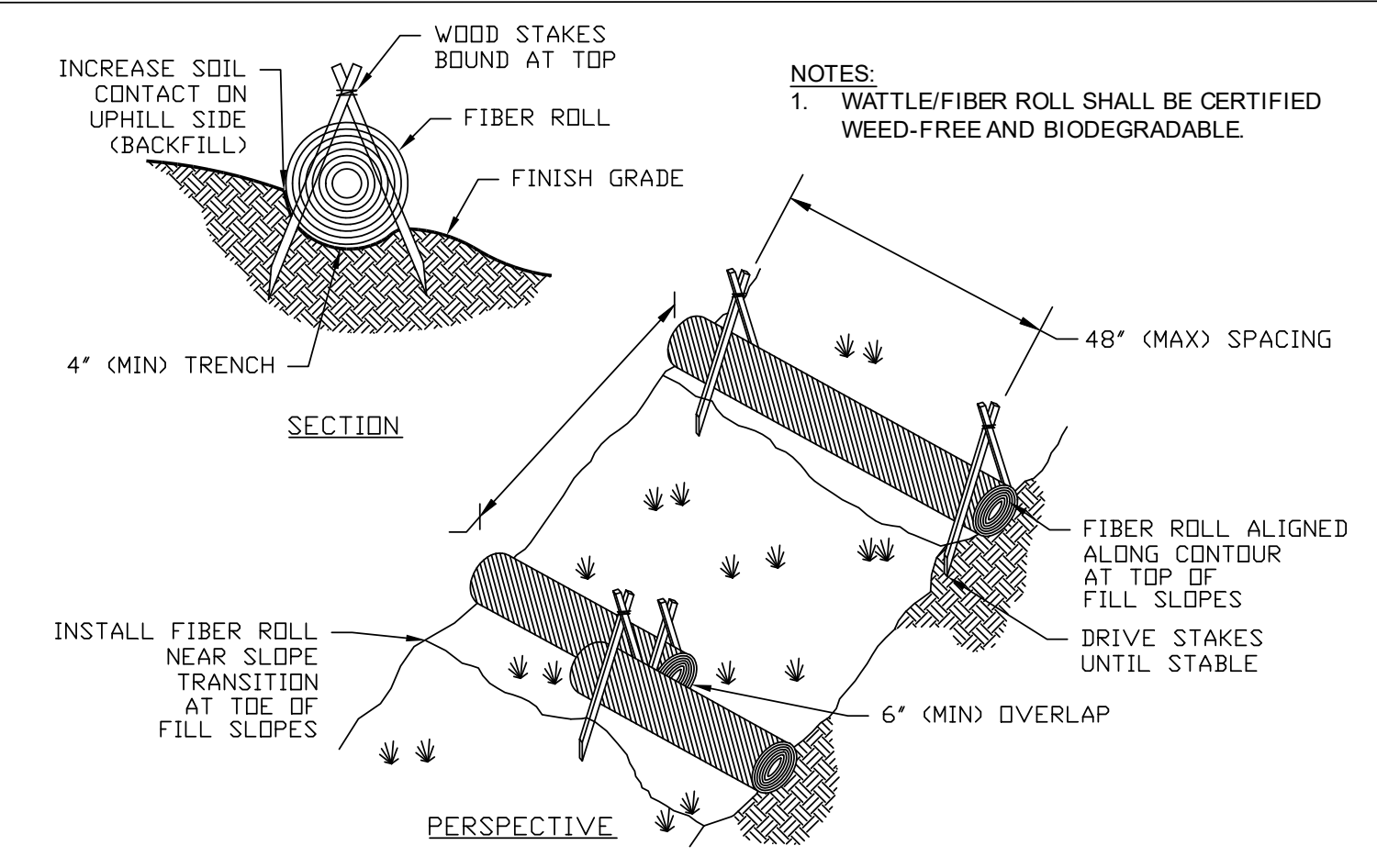
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1

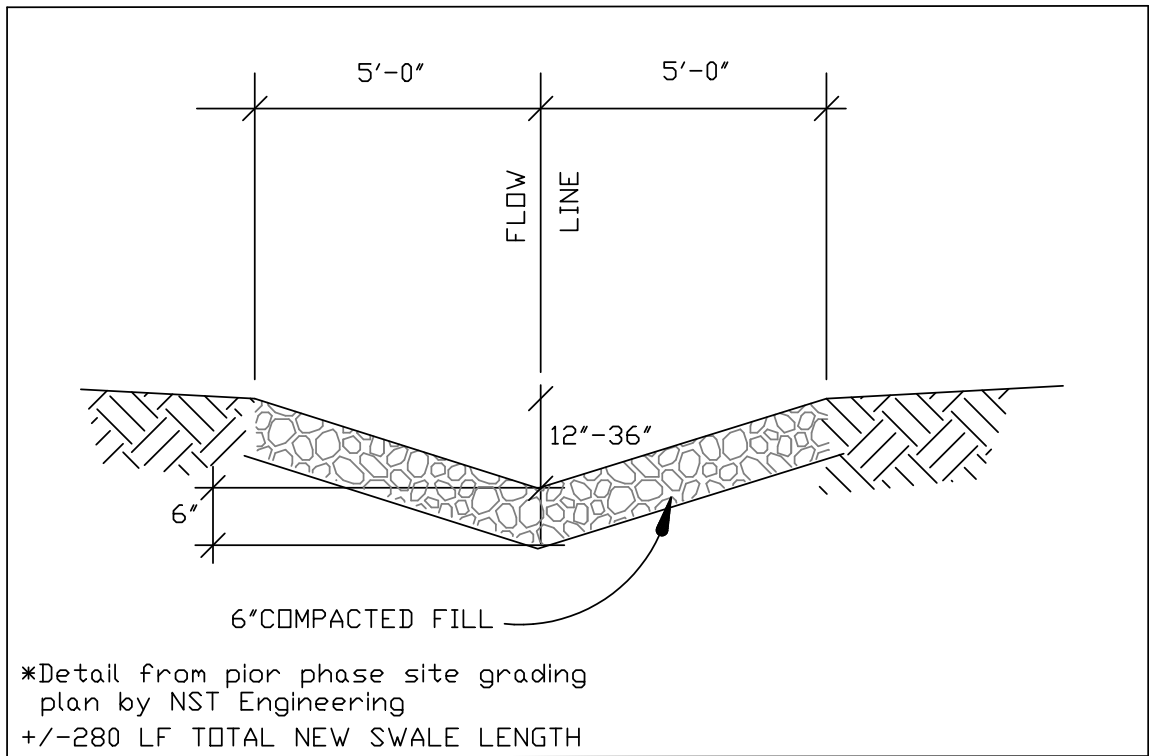
OF 2 SHEETS



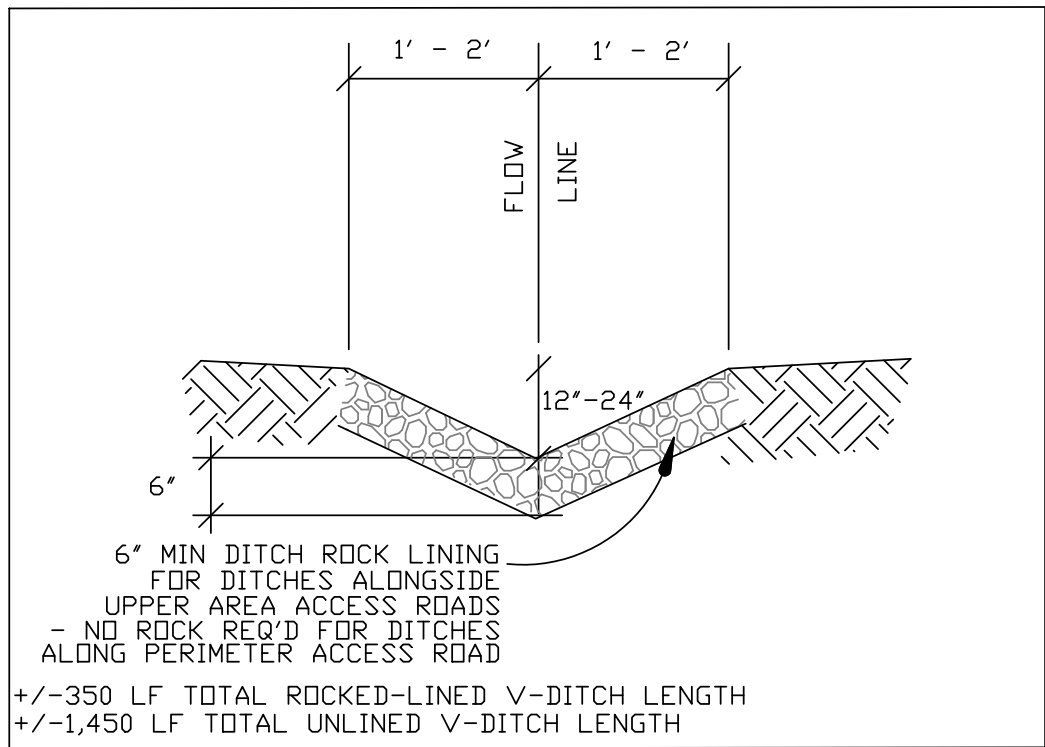
Signature Applied
Electronically on: 8/8/2023



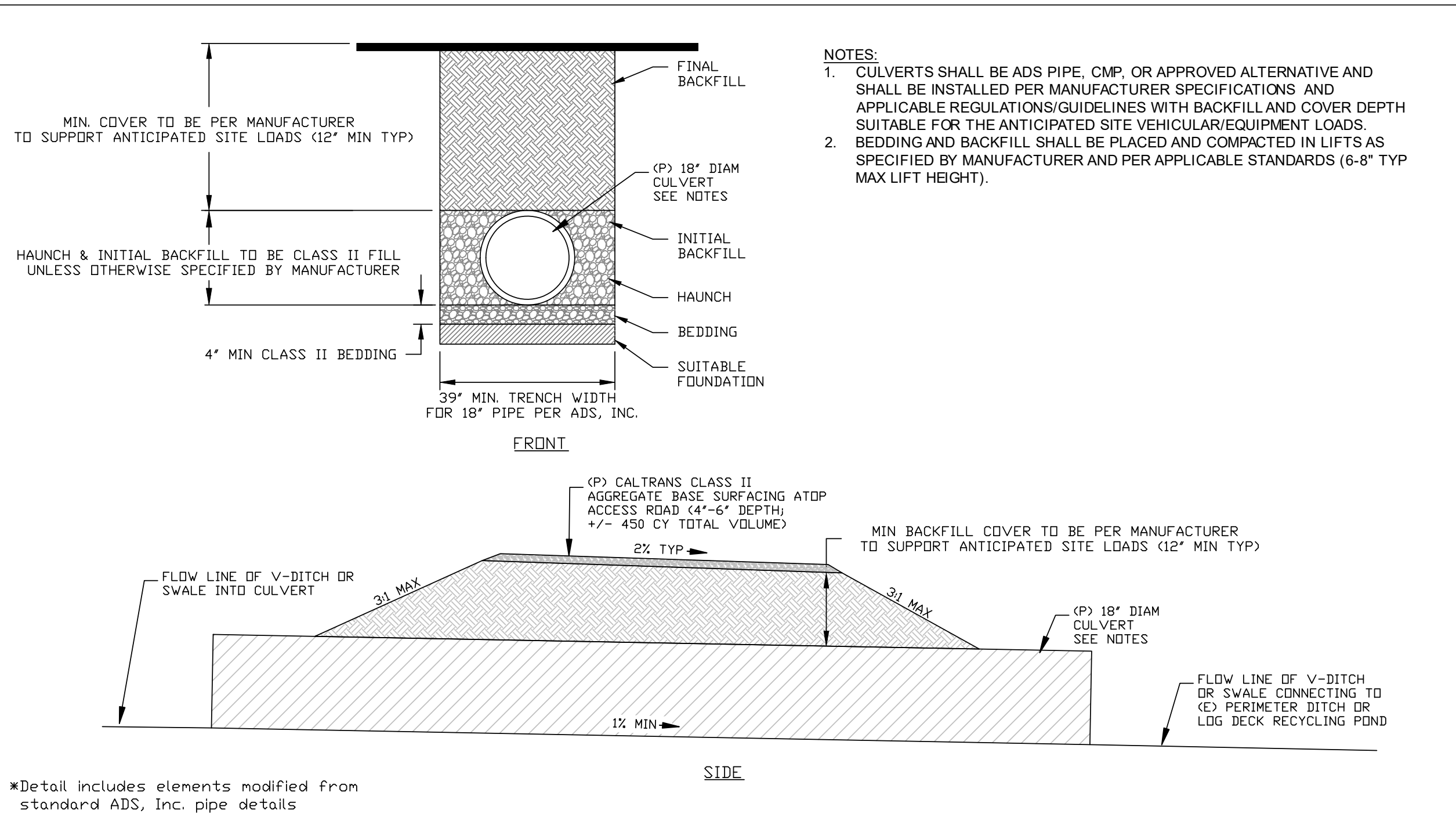
1. Straw Wattle (Fiber Roll)
NTS



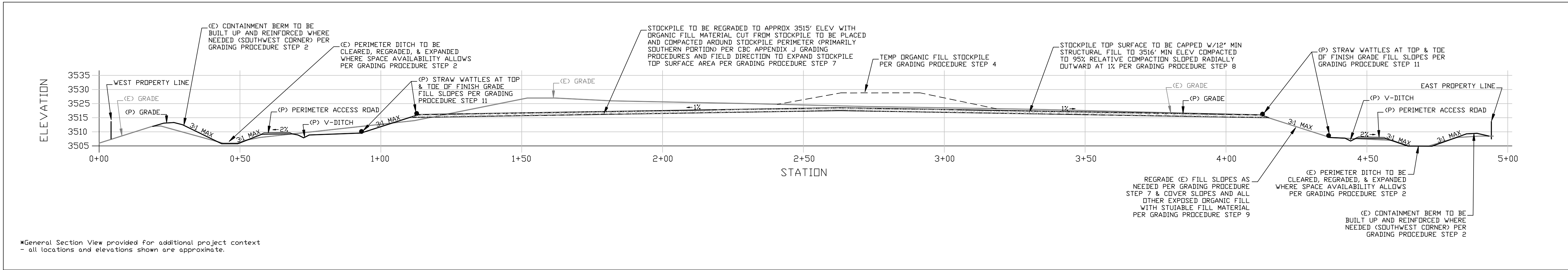
4. Drainage Swale
NTS



5. V-Ditch
NTS



3. Culvert
NTS



General Cross-Section
Scale: 1" = 20'

ADDITIONAL DETAILS AVAILABLE UPON REQUEST

REVISIONS	
DATE	DESCRIPTION

PROPERTY OWNER:
SIERRA INSTITUTE

APNS 111-050-065 THROUGH 067,
111-103-001, 111-170-019,
111-102-007, & 111-084-004

GRADING PLAN DETAILS

SOUTHERN STOCKPILES AREA

SI WOOD PRODUCTS CAMPUS

HINDS ENGINEERING

PO BOX 1421
GRAEAGLE, CA 96103
PH: (530) 401-0000
ENGINEERING LIC: #C88952

DRAWN:GRH

CHECKED:KL

DATE:08.08.23

SCALE: A.S.

2

OF 2 SHEETS

Electronic Copy

Signature Applied
Electronically on: 8/8/2023