

DLR Group inc.
a Nebraska corporation
6457 Frances Street, Suite 200
Omaha, NE 68106

NEBRASKA DEPARTMENT OF
CORRECTIONAL SERVICES
NEW MULTI-CUSTODY CORRECTIONAL
FACILITY
LINCOLN, NEBRASKA

DLR GROUP PROJECT NO. 10-21108-10

COMBINED CONTRACT
APRIL 4, 2024

NOTICE TO CONTRACTOR: Amend the Project Manuals and Drawings to the above referenced project as follows:

PROJECT MANUAL

ITEM NO. 1. SECTION 003132 – GEOTECHNICAL DATA

- A.** Add Piezometer Memorandum – Attachment No. 2, to Section 003132 “Geotechnical Data” as shown on Attachment No. 1.

ITEM NO. 2. SECTION 312000 – EARTH MOVING

- A.** Delete Section 312000 “Earth Moving” in its entirety and substitute new Section as shown on Attachment No. 2.

1. Subparagraph 2.1.C. 1.; modify the following sentence as follows:

“LA Abrasion, ASTM C131 and ASTM D535 50% maximum loss.”

2. Article 3.4; add Paragraph E as follows:

“E. The base of the cut soil areas outside of the future buildings and future pavements may remain as is without reworking the exposed soils at the surface. These soils will be reworked and recompact as necessary in the next phase of construction.

1. All areas noted for overexcavation in the cut soil areas shall be prepared as noted in the following sections.”

3. Paragraph 3.14.B; delete “monitored” and replace with “surveyed”.

4. Paragraph 3.14.C; delete in its entirety and replace with the following:

“C. Coordinate with the representative from the Geotechnical Testing Agency where to have settlement plates installed onsite. After filling is completed, elevations of each plate shall be surveyed on a weekly basis and provided to the Architect / Engineer and Geotechnical Testing Agency after each survey reading.”

5. Paragraph 3.17.D; delete in its entirety and replace with the following:
 - “D. Spread topsoil to a depth not less than 8 inches (200 mm) and not more than 12 inches (300 mm) over all areas graded under this Contract noted to receive topsoil.”

DRAWINGS

- ITEM NO. 1.** DRAWING C2.0 – OVERALL SITE GRADING AND DRAINAGE PLAN
 - A.** Delete Drawing in its entirety and substitute new Drawing as shown on Attachment No. C2.0.
 1. Modify the locations of Piezometer Borings based on actual installed locations shown.
- ITEM NO. 2.** DRAWING C2.4 – SITE GRADING AND DRAINAGE PLAN – AREA 4
 - A.** Delete Drawing in its entirety and substitute new Drawing as shown on Attachment No. C2.4.
 1. Add the storm sewer schedule notes.
- ITEM NO. 3.** DRAWING C2.5 – OVERALL SITE CUT AND FILL PLAN
 - A.** Delete Drawing in its entirety and substitute new Drawing as shown on Attachment No. C2.5.
 1. Modify the locations of the Piezometer Borings based on actual installed locations shown.
- ITEM NO. 4.** DRAWING C3.0 – OVERALL SITE SWPPP
 - A.** Delete Drawing in its entirety and substitute new Drawing as shown on Attachment No. C3.0.
 1. Add SWPPP Note.
- ITEM NO. 5.** DRAWING C3.2 – SITE SWPPP AREA 2
 - A.** Delete Drawing in its entirety and substitute new Drawing as shown on Attachment No. C3.2.
 1. Revise the size of the outlet protection.
- ITEM NO. 6.** DRAWING C3.3 – SITE SWPPP – AREA 3
 - A.** Delete Drawing in its entirety and substitute new Drawing as shown on Attachment No. C3.3.
 1. Revise the size of the outlet protection.

ITEM NO. 7. DRAWING C3.4 – SITE SWPPP – AREA 4

A. Delete Drawing in its entirety and substitute new Drawing as shown on Attachment No. C3.4.

1. Revise the size of the outlet protection.

ITEM NO. 8. DRAWING C3.5 – SWPPP DETAILS

A. Delete Drawing in its entirety and substitute new Drawing as shown on Attachment No. C3.5.

1. Delete Detail 3D/C3.5 Outlet Protection and replace with new Detail 5A/C3.5 Outlet Protection.

END OF ADDENDUM

Attachment No. 2 to section 003132 Geotechnical Data
Piezometer Memorandum



MEMO

☐ Overnight
☐ Regular Mail
☐ Hand Delivery
☒ Other: Email

To:	Nebraska Department of Correctional Services Attn: Mr. Josh Andrew PO Box 94661 Lincoln, Nebraska 68501
From:	Jordan N. Koskelin, PE – Olsson, Inc. Nicholas A. Menefee, PE – Olsson, Inc.
RE:	Multi-Custody Correctional Facility Piezometer Readings
Date:	March 29, 2024
Project No.:	B21-01132

Five piezometers were installed by an Olsson drilling crew on March 22, 2024, to obtain delayed subsurface water levels prior to the commencement of earthwork operations. Each piezometer was placed in an area of greater excavation as shown below in **Figure 1**.



Figure 1. 2023 Google Earth Aerial Image/Piezometer Location Plan.

Approximately three days after installation, an Olsson geotechnical representative obtained subsurface water levels in each piezometer consecutively the following week. Following the week of daily piezometer readings, subsurface water levels will be obtained once a week until earthwork operations begin in the summer of 2024. The subsurface water levels observed in the piezometers are summarized below in **Table 1**. The last observed subsurface water levels ranged between depths of 19.7 to 32.1 feet below existing grades.

Table 1. Piezometer Water Level Readings.

Piezometer No.	Surface Elevation at Piezometer Location	Piezometer Readings*									
		March 22		March 26		March 27		March 28		March 28	
		Depth (feet)	Elevation	Depth (feet)	Elevation	Depth (feet)	Elevation	Depth (feet)	Elevation	Depth (feet)	Elevation
P-1	1233	55	1178	20	1213	19.5	1213.5	19.8	1213.2	19.7	1213.3
P-2	1213.5	35	1178.5	17.4	1196.1	17.5	1196	17.5	1196	17.5	1196.0
P-3	1234	NE	NA	28	1206	26.6	1207.4	26	1208	25.9	1208.1
P-4	1225	NE	NA	37.6	1187.4	35.7	1189.3	33.9	1191.1	32.1	1192.9
P-5	1224.5	NE	NA	25.6	1198.9	24.8	1199.7	24.3	1200.2	24.1	1200.4

NE—Not Encountered; NA—Not Applicable

*Piezometer water level readings are rounded to the nearest tenth of a foot

We appreciate the opportunity to provide our geotechnical engineering services for this project. If you have any additional questions or need further assistance, please contact us at your convenience.

Respectfully submitted,
Olsson, Inc.



Jordan N. Koskelin, PE
Geotechnical Engineer
531.365.4639
jkoskelin@olsson.com



Nicholas A. Menefee, PE
Geotechnical Engineer
402.458.5963
nmenefee@olsson.com

NEBRASKA DEPARTMENT OF CORRECTIONAL SERVICES
NEW MULTI-CUSTODY CORRECTIONAL FACILITY
LINCOLN, NEBRASKA

10-21108-10
MARCH 19, 2024
SITE PREGRADING – ADD-01

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Excavating and filling for rough grading the Site.
2. Preparing subgrades for slabs-on-grade, pavements, and turf and grasses.
3. Excavating and backfilling for buildings and structures.
4. Excavating and backfilling trenches for utilities and pits for buried utility structures, within and outside building lines.
5. Compaction control, testing, and inspection requirements.
6. Finish grading, including placing and preparing topsoil for turf and grasses.
7. Subgrade stabilization with rock and geogrid

- B. Related Requirements:

1. Section 012200 "Unit Prices" for provisions for unit prices
2. Section 014000 "Quality Requirements" for quality assurance and control requirements, including requirements for Geotechnical Testing Agency.
3. Section 311000 "Site Clearing" for site stripping, grubbing, stripping and stockpiling topsoil, removal of above- and below-grade improvements and utilities, vegetation protection and temporary erosion-and sedimentation-control measures.
4. Section 329200 "Turf and Grasses" for preparing and placing planting soil for turf areas.
5. Section 334600 "Subdrainage" for cut off subdrains in cut soil areas.

1.3 GEOTECHNICAL DATA

- A. Subsurface soil investigations have been made and a complete report is included as an Attachment to Section 003132 "Geotechnical Data." The report is only to inform the contractor of the type and character of materials to be encountered.

1.4 UNIT PRICES

- A. Work of this Section is affected by unit prices for earth moving specified in Section 012200 "Unit Prices."
- B. Geogrid and Rock Subgrade Stabilization:
 - 1. Bids shall be based upon 50,000 (fifty thousand) square yards of Overexcavation subgrade stabilization with geogrid and an 8-inch thick layer of subgrade stabilization rock. Should the actual quantity of geogrid and rock differ from the above quantity, the Contract Sum will be adjusted by Change Order based upon the Unit Price set forth on the Bid Form.
 - 2. The above noted quantity is a total for the Building Overexcavation and the Pavement Overexcavation areas.
 - 3. A registered engineer or surveyor, selected and paid for by the Contractor and approved by the Architect, shall provide the Architect with area and quantity calculations for determining the actual amount of geogrid and rock depth- inch layer of rock installed.
 - 4. Compensation shall be made for variance from the quantity specified in the Unit Price on the Bid Form. The quantity of geogrid and rock stabilization shall be based upon the actual calculated area of geogrid and rock depth- inch layer of rock installed.

1.5 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
 - 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
 - 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.
- C. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- D. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated, and the reuse or disposal of materials removed.
 - 1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions and/or beyond overexcavation limits as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for Changes in the Work.
 - 2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.
- E. Fill: Soil materials used to raise existing grades.

- F. Overexcavation: Additional excavation beyond required subgrade elevations to remove existing fill soils, to remove soft and/or unsatisfactory soils, or to provide a minimum depth of structural fill below slabs and footings. Overexcavation quantities shall be included in the Lump Sum Base Bid as noted within this Section.
- G. Structural Fill: Fill material that supports a structure and/or pavement.
- H. Structures: Buildings, footings, foundations, retaining walls, segmental retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- I. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below granular fill and/or topsoil materials.
- J. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.6 PRE-INSTALLATION MEETINGS

- A. Pre-installation Conference: Conduct pre-excavation conference at Project site.
 - 1. Review methods and procedures related to earthmoving, including, but not limited to, the following:
 - a. Personnel and equipment needed to make progress and avoid delays.
 - b. Coordination of Work with utility locator service.
 - c. Field quality control.
 - d. Set the schedule and agenda for meetings during the duration of grading work.

1.7 ACTION SUBMITTALS

- A. Product Data: For each type of the following manufactured products required:
 - 1. Warning tapes.
- B. Samples for Verification: For the following products, in sizes indicated below:
 - 1. Warning Tape: 12 inches (300 mm) long; of each color.

1.8 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified testing agency.
- B. Material Test Reports: For each on-site soil material proposed for fill and backfill as follows:
 - 1. Classification according to ASTM D 2487.
 - 2. Laboratory compaction curve according to ASTM D 698.

- C. In-Place Material Density and Inspection Reports: Density testing results and inspection reports by the Geotechnical Engineer to the Contractor and duplicate copies to the Architect within ten days of testing or inspection.
- D. Pre-grading and Overexcavation Verification Survey: Submit to the Architect an electronic (ACAD) copy of the pre-graded and overexcavation areas as defined on the Drawings.
 - 1. Submit surveyor's name, address, and license certification for approval to the Architect prior to commencing the work.
 - 2. Submit pre-grading verification survey in an electronic ACAD format to the Architect within 15 days after completion of pre-grading grading operations.
 - 3. Submit overexcavation verification survey in an electronic ACAD format to the Architect within 5 days after completion of overexcavation work.
 - a. The results of the overexcavation survey shall be checked and discussed with the grading contractor in the field immediately following the overexcavation survey work to ensure the proper elevations have been achieved before backfilling the overexcavation.
- E. Submit settlement plate readings to the Architect at 15-day intervals after initial installation.
- F. Seismic survey report from seismic survey agency.
- G. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth-moving operations. Submit before earth moving begins.

1.9 QUALITY ASSURANCE

- A. Surveyor's Qualification: The surveyor used for completing the pre-grading and overexcavation verification survey shall be selected and paid for by the Contractor.
- B. Geotechnical Testing Agency Qualifications: See Section 014000 "Quality Requirements."
- C. Codes and Standards: Perform earth moving operations complying with requirements of authorities having jurisdiction. Acquire permits to haul material over public ways as required by authorities having jurisdiction.

1.10 SCHEDULING

- A. Commencement: Notify the Geotechnical Testing Agency at least seven days in advance of the expected date of commencement of fill placement. Coordinate times of soil testing and inspection to allow for efficient fill placement operations and effective and efficient soil density testing and inspection.
- B. Delays: Notify the Geotechnical Testing Agency of any unexpected delays of fill placement due to inclement weather or equipment breakdown to minimize unnecessary trips to the site

1.11 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
 - 3. Furnish, place, and maintain sufficient flags, flares, barricades, and signage to provide safety to the public.
- B. Improvements on Adjoining Property: Authority for performing earth moving indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.
 - 1. Do not proceed with work on adjoining property until directed by Architect.
- C. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth-moving operations. Arrange with utility companies for disconnection, relocation, or adjustments of utilities that interfere with construction.
 - 1. Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted in writing by the Architect, and then only after acceptable temporary services have been provided.
 - 2. Safeguard utilities indicated to remain in place from damage during site clearing and construction operations. Notify the owning company and the Architect immediately should damage occur to any utility. Damages to utilities known at the start of site clearing or construction operations shall be repaired at the Contractor's expense.
 - 3. Utility locations indicated to remain that are found to conflict with the proposed work shall be brought to the immediate attention of the Architect.
 - 4. Field staking of existing public utility locations shall be by the owning utility company. Notify utility companies to locate the utilities prior to any site clearing or construction operations. Arrange for disconnection, relocation, or adjustments of utilities that interfere with construction.
- D. Private On-Site Utilities: The Contractor shall meet on-site with the Owner's maintenance staff, and shall review any existing drawings that the Owner has available to confirm private utility locations, that were not located by the Utility Locator Service, do not conflict with the proposed work. Notify the Architect immediately if any private utilities are found that will conflict with the proposed work.
- E. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures specified in Section 311000 "Site Clearing" and as shown on the Stormwater Pollution Prevention Plan (included referenced notes and details" are in place.
- F. Do not commence earth moving operations until all existing site utilities scheduled for removal or abandonment have been completed as specified in Section 311000 "Site Clearing."

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. Satisfactory Soils: Properly compacted lean clay soils. Soil Classification Groups CL, CL-ML, ML, SC AND SM according to ASTM D 2487 or a combination of these groups; free of rock or gravel larger than 3 inches (75 mm) in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
1. Satisfactory soil fill material shall be obtained from on-site excavations, or overexcavations, or shall be hauled to the site from an approved borrow area.
 2. Onsite Soils that are expansive are not suitable for direct support of future floor slabs of buildings and future pavements.
- B. Structural Fill Materials:
1. On-site soils meeting the above requirements for Satisfactory Soils are suitable for use as structural fill.
 2. Structural Fill soils placed within 36-inches of the base of future floor slab aggregate base shall have a liquid limit less than 45, a plasticity index less than 25, and not comprise glacial till soils.
 3. Structural Fill soils placed within 24-inches of the base of future pavements shall have a liquid limit less than 50, a plasticity index less than 30, and not comprise glacial till soils.
 4. Glacial Till soils may be used as structural fill at depths greater than 36-inches and 24-inches below floor slab aggregate base and pavements respectively.
- C. Subgrade Stabilization Rock: Crushed recycled concrete or crushed limestone meeting the following gradation requirements:

Sieve Size	Allowable Percent Passing
1-1/2" (37.5 mm)	100
No. 4 (4.75 mm)	20-60
No. 10 (2.0 mm)	0-30
No. 200 (75 µm)	0-5

1. Processed recycled PCC shall be free of soil, vegetation, metal or other deleterious contaminants and meet the following requirements:

Physical Property	Acceptable Range
Sodium Sulfate Soundness, ASTM C88 (5 cycles)*	10% maximum loss
Magnesium Sulfate Soundness, ASTM C88 (5 cycles)*	15% maximum loss
Freeze-Thaw Soundness, AASHTO T 103 (15 cycles)*	15% maximum loss
LA Abrasion, ASTM C131 and ASTM D535	40% 50% maximum loss
Absorption, ASTM C127 and ASTM C128	3.0 maximum

*only one of the three soundness requirements must be met

D. Utility Trench Backfill Material:

1. Bedding material shall be crushed limestone, crushed gravel or sand. Bedding material shall meet the City of Lincoln gradation requirements for bedding material. Bedding material shall also be used as backfill to 12 inches (300 mm) above top of pipe where plastic pipe is used.
2. Backfill material shall be similar to material excavated from the trench. Backfill shall be reasonably free of roots and other organics, trash, frozen material, and stones larger than 6-inches in diameter. Limit stones to 3/4 inches (19 mm) diameter in backfill to 12 inches (300 mm) above the top of pipes larger than 3 inches (75 mm) in diameter. Limit stones to 3/4 inches (19 mm) diameter for backfill to 4 inches (100 mm) above the top of pipes 3 inches (75 mm) or smaller in diameter.

E. Topsoil shall be obtained from stockpiles.

F. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 GEOTEXTILES AND GEOGRIDS

A. Subgrade Stabilization Geogrid: Integrally formed polypropylene biaxial geogrid. Geogrid shall be equal to Tensar BX 1100 manufactured by Tensar Earth Technologies, Inc.

1. Aperture Dimensions: 1-inch (25 mm) x 1.3 –inches (33 mm): ASTM D4759-02.
2. Rib Thickness: 0.03 (0.76 mm) minimum.
3. Tensile Strength (At 2% Strain): 280 lb. ft. (4.1 kN/m) MD, 450 lb. ft. (6.6 kN/m) XMD; ASTM D6637-01.
4. Tensile Strength (At 5% Strain): 580 lb. ft. (8.5 kN/m) MD, 920 lb. ft. (13.4 kN/m) XMD; ASTM D 6637-01.
5. Ultimate Tensile Strength: 850 lb. ft. (12.4 kN/m) MD, 1,300 lb. ft. (19.0 kN/m) XMD; ASTM D 6637-01.
6. Resistance to UV Degradation: 100%; ASTM D 4355-05.

2.3 ACCESSORIES

A. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches (150 mm) wide and 4 mils (0.1 mm) thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches (750 mm) deep; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

- B. Utility Trench Shoring Material: Wood timber or steel sheet piling with cross members and braces to meet local codes or other governmental requirements. Where shoring material must be left in place, use steel sheet piling or pressure creosoted timber sheet piling.
- C. Settlement Plates: Settlement plates shall be supplied and installed by the Contractor.
 - 1. Settlement Plate shall consist of a 24 inch (600 mm) by 24 inch (600 mm) by 3/8 inch (9.5 mm) thick steel plate with a 4 inch (100 mm) diameter Schedule 40 PVC observation riser pipe that extends from plate location to top of finish grade.
 - 2. Provide PVC pipe cap at top of observation riser pipe.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.
 - 1. Remove and replace minor structures including fences, culverts, signs, etc., as required for utility trenching. Reset structures in their original locations.
- B. Stake utility trenches and verify existing utility inverts and locations to assure that utilities can be constructed as engineered. Excavate and expose existing utilities and tunnels along the utility route prior to opening other sections of trench. If conflicts occur between actual conditions and conditions shown on the Drawings, contact the Architect.
- C. Protect and maintain erosion and sedimentation controls during earth-moving operations.
- D. Protect subgrades and foundation soils from freezing temperatures and frost. Provide protective insulating materials as necessary. Remove temporary protection before placing subsequent materials.
- E. Do not commence grading operations when low temperatures prohibit placing fill on non-frozen surfaces. When frost depths are minimal, the frozen surface material may be stripped and stockpiled to allow excavation and placement of non-frozen material. Frozen surface material shall not be used as fill material, but shall be stockpiled until such time as material thaws.
- F. Adjust moisture content of excavated material to within specified tolerances prior to installing fill.

3.2 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
 - 1. Cut off Subdrains shall be used throughout the site for the excavations in the cut areas.

2. See Section 334600 "Subdrainage" for cut off subdrains in cut soil areas. Direct flows to storm sewer or open ditches in a manner that does not disrupt traffic flows or cause damage to adjacent properties.
 3. The Contractor may also install sump pumps and pits as required to remove water if soil conditions permit.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
 2. Install temporary diversion berms and/or ditches to prevent surface runoff from entering utility trenches. Where rain or surface water inadvertently enters the trench, remove water with pumps or other suitable method. Keep utility pipes clean of sediment, debris, and trench water.

3.3 EXPLOSIVES

- A. Explosives: Do not use explosives.

3.4 EXCAVATION, GENERAL

- A. Comply with local codes, ordinances, and requirements of authorities having jurisdiction to maintain stable excavations.
- B. Brace, Shore, or install other means necessary to protect adjacent structures from movement, settlement, or collapse. Damage resulting from movement shall be repaired at the Contractor's expense.
- C. Preparation: Remove vegetation, topsoil, debris, wet and unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placing fills.
- D. Portions of the onsite soils in the deeper cut areas have high moisture contents and generally considered wet soils. The use of heavy earthwork equipment like scrapers will not likely be able to be used in these areas as the soils will degrade under loading from heavy earthwork equipment.
1. Contractors should anticipate the use of backhoes and haul trucks to remove these wet soils from the cut soil areas and dry these soils onsite before placing these soils as fill soils.
 2. Alternatively the wet soils that have been excavated and trucked can be wasted on portions of the site to the south and east of the grading area and dry soil material brought back from this area to be used as fill.
 3. Contractors shall analyze the soil borings for groundwater depths and will be responsible for determining the quantity of cut soils requiring excavating, trucking and drying or replacement of the soils.
 4. Construction operations shall be closely monitored by the representative from the Geotechnical Testing Agency; and restricted if subgrade disturbance becomes apparent.

E. The base of the cut soil areas outside of the future buildings and future pavements may remain as is without reworking the exposed soils at the surface. These soils will be reworked and recompacted as necessary in the next phase of construction.

4.1. All areas noted for overexcavation in the cut soil areas shall be prepared as noted in the following sections.

3.5 ROUGH GRADING SUBGRADE PREPARATION

- A. Prior to placement of fill in areas that is below design grade, proof-roll the resulting subgrade from site clearing operations in the presence of a representative from the Geotechnical Testing Agency.
 - 1. Soft or unsatisfactory soils identified by the representative from the Geotechnical Testing Agency shall be overexcavated to depths and limits as determined by the representative, replaced with satisfactory soils, and compacted to specified densities.
- B. After site clearing and proof-rolling operations and prior to placement of fill in areas that are below design grade, scarify the upper 9 inches (228 mm) of the subgrade, adjust the moisture contents to within limits specified and compact to specified densities.
 - 1. Scarification and re-compaction shall occur in the presence of a representative from the Geotechnical Testing Agency.

3.6 EXCAVATION FOR FUTURE STRUCTURES

- A. Excavate to elevations and dimensions indicated to within a tolerance of plus or minus 1 inch (25 mm). If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
- B. Excavate within building area as required to provide a minimum of 36 inches (900 mm) of structural fill below the bottom of floor slab aggregate base. The floor slab and aggregate base will be 8 inch thickness. The depth to the bottom of overexcavation is 44-inches below the top of floor slab elevation identified on the plans. Survey the base of the overexcavation as specified and backfill the excavated area with structural fill.
- C. The Base of the Building Overexcavation is expected to encounter wet soils. Where identified on the Drawings or determined by the representative from the Geotechnical Testing Agency, provide rock and geogrid stabilization at Building overexcavation subgrades.
 - 1. As directed by the representative from the Geotechnical Testing Agency, unstable soils shall be stabilized by providing geogrid and rock subgrade stabilization.
 - 2. See “Geogrid and Rock Subgrade Stabilization” for Base Bid quantities and Unit Price adjustments.

3.7 EXCAVATION FOR FUTURE WALKS AND PAVEMENTS

- A. Excavate for future walks and pavements to indicated lines and elevations.
- B. Excavate within pavement areas as required to provide a minimum of 24 inches (600 mm) of structural fill below the bottom of pavement. The pavement thickness will vary between 6-inches and 8-inches. The depth to the bottom of overexcavation is 32-inches below the top of pavement elevations identified on the plans. Survey the base of the overexcavation as specified and backfill the excavated area with structural fill.
- C. The Base of the Pavement Overexcavation is expected to encounter wet soils. Where identified on the Drawings or determined by the representative from the Geotechnical Testing Agency, provide rock and geogrid stabilization at Pavement overexcavation subgrades.
 - 1. As directed by the representative from the Geotechnical Testing Agency, unstable soils shall be stabilized by providing geogrid and rock subgrade stabilization.
 - 2. See “Geogrid and Rock Subgrade Stabilization” for Base Bid quantities and Unit Price adjustments.

3.8 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
 - 1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.
- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches (300 mm) higher than top of pipe or conduit unless otherwise indicated.
- C. Excavate and backslope trenches as required to prevent slides or cave-ins. Install shoring, where required, to protect pavements or structures or where the depth of the trench makes backsloping of trench sides impractical. Place material a sufficient distance from the banks of the trench to avoid overloading, slides, or cave-ins.
 - 1. Clearance: 8 inches (200 mm) minimum to 12 inches (300 mm) maximum each side of pipe or conduit.
 - 2. Where indicated widths of utility trenches are exceeded, provide stronger pipe, or special installation procedures, as required by the Geotechnical Engineer.
- D. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of each section of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.
 - 1. For pipes and conduit less than 6 inches (150 mm) in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.

2. For pipes and conduit 6 inches (150 mm) or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
3. Shaping of trench bottoms and backsloping or shoring of trench walls is unnecessary where pipes 4 inches (100 mm) in diameter and smaller can be assembled out of the trench and lowered into the excavation. Widths of trenches need only be wide enough to ensure proper alignment of pipe and installation of pipe to trench bottom without undue forcing.
4. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
5. Where plastic pipe is used, excavate trenches 6 inches (150 mm) deeper than elevation required to allow for bedding course.

3.9 SUBGRADE INSPECTION

- A. Notify representative from the Geotechnical Testing Agency when excavations have reached required subgrade.
- B. If representative from the Geotechnical Testing Agency determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 20 tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
 1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph (5 km/h).
 2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by a representative from the Geotechnical Testing Agency, and replace with compacted backfill or fill as directed.
- D. Authorized additional excavation and replacement material, beyond limits specified, will be paid for according to Contract provisions for Changes in the Work.
- E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by a representative from the Geotechnical Testing Agency, without additional compensation.

3.10 STORAGE OF SOIL MATERIALS

- A. Stockpile borrowed soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.11 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
 - 1. Surveying locations of underground utilities for Record Documents.
 - 2. Testing and inspecting underground utilities.
 - 3. Removing trash and debris.
 - 4. Removing temporary shoring, bracing, and sheeting.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.12 UTILITY TRENCH BACKFILL

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding material in trench bottoms as required by pipe manufacturer. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints.
 - 1. Use a Class B bedding for gravity sewer lines as indicated on the drawings and as recommended by the pipe manufacturer
- C. Backfill under pipe haunches and around bells. Continue backfilling in layers uniformly on each side of pipe to prevent lateral displacement. Compact backfill using hand, pneumatic, or mechanical compacting equipment as required, preventing damage to the pipe. Compact to specified densities.
- D. Backfill voids with satisfactory soil while removing shoring and bracing.
- E. Initial Backfill:
 - 1. Soil Backfill: Place and compact initial backfill of satisfactory soil, free of particles larger than 3/4 inch (19 mm) in any dimension, to a height of 12 inches (300 mm) over the pipe or conduit.
 - a. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
- F. Final Backfill:
 - 1. Soil Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.
- G. Warning Tape: Install warning tape directly above utilities, 12 inches (300 mm) below finished grade, except 6 inches (150 mm) below subgrade under pavements and slabs.

3.13 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers not to exceed 8 inches (200 mm) in loose depth for material to be compacted using heavy equipment and 4 inches (100 mm) in loose depth for material to be compacted by hand-operated equipment. Compact fill and backfill to densities specified and to required elevations as follows:
 - 1. Under grass and planted areas, use satisfactory soil material.
 - 2. Under walks and pavements, use satisfactory soil material, compacted to structural fill densities.
 - 3. Under steps, ramps and walls, use satisfactory soil material compacted to structural fill densities.
 - 4. Under building slabs, footings and foundations, use satisfactory soil material compacted to structural fill densities.
- C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.14 SOIL PRE-LOAD FOR FILL AREAS

- A. Place fill soils where shown on the drawings. The areas identified for Soil Preload will require the soils to be placed and time allowed for consolidation of the underlying soil.
- B. Surcharge is not required for the soil pre-load areas, but settlement plates will need to be installed and ~~monitored~~ surveyed as part of this project.
- C. Coordinate with the representative from the Geotechnical Testing Agency where to have settlement plates installed onsite. After filling is completed, elevations of each plate shall be surveyed on a weekly basis and provided to the Architect / Engineer and Geotechnical Testing Agency after each survey reading.
 - 1. During filling and compaction operations around the plates, use care and protect the plates from damage. Any plates damaged shall be replaced at the Contractor's expense.

3.15 SOIL MOISTURE CONTROL AND COMPACTION

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within specified moisture contents.
 - 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.

2. Remove and replace, or scarify and air dry, satisfactory soil material that exceeds specified optimum moisture contents and is too wet to compact to specified dry unit weight.
- B. Compact and adjust water contents of cohesive fill material to at least the following percentages of maximum dry unit weight and at water contents within the limits specified above or below optimum water content as determined by Test Procedure ASTM D 698-91:

	Percent of Maximum Dry Unit Weight	Percent Above or Below Optimum Water Content
1. Non-supporting Fill:	92 percent	-5 to +5 percent
2. Floor Slab Subgrade -36-in below base of future floor slab/agg base:	98 percent	Optimum to +3 percent
3. Pavement Subgrade -24-in below base of pavements:	98 percent	Optimum to +3 percent
4. Structural fill placed below floor slab Subgrade or pavement subgrades	98 percent	-1 to +3 percent
5. Utility trenches	98 percent	Optimum to + 3 percent

3.16 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
1. Provide a smooth transition between adjacent existing grades and new grades.
 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:
1. Turf or Unpaved Areas: Plus or minus 1 inch (25 mm).
 2. Walks: Plus or minus 1 inch (25 mm).
 3. Pavements: Plus or minus 1/2 inch (13 mm).
- C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch (13 mm) when tested with a 10-foot (3-m) straightedge.
- D. Complete rough grading and verify grade elevations to assure conformance with contours, elevations, and noted pipe invert elevations indicated on the Drawings prior to spreading topsoil.

3.17 FINISH GRADING

- A. Complete pavements, walks, and other improvements, including utilities, prior to finish grading. Where it is necessary for construction and earth moving equipment to pass, delay pavement or walk construction, or build earthen bridges over pavements and walks, to protect them from damage.
- B. Notify the Architect for inspection of berming and special earthwork features. Adjust grades and profiles as directed by the Architect.
- C. Repair settlements and washes. Scarify areas to receive topsoil to a depth of 3 inches (75 mm).
- D. Spread topsoil to a ~~uniform~~ depth not less than ~~4 inches (100 mm)~~ 8 inches (200 mm) and not more than 12 inches (300 mm) over all areas graded under this Contract noted to receive topsoil.
- E. Hold surface of topsoil 1/2 inch (13 mm) below walk and pavement surfaces in the areas to be seeded.
- F. Lightly roll and compact finish surface to minimize wind and water erosion.
- G. Grade areas to uniformly smooth surfaces, free from irregular surface changes, and areas which pocket water.
- H. Grade drainage ditches and swales to drain readily. Use string lines and batter boards or other approved measures to assure proper slopes on swales of two percent or less.
- I. Grade overland sheet drained areas to the following tolerances:
 - 1. For slopes between 1/2 percent and one percent: Tolerance of 1/4 percent slope in 20 feet.
 - 2. For slopes greater than one percent and less than two percent: Tolerance of 1/2 percent slope in 20 feet.
 - 3. For slopes greater than two percent: Tolerance of one percent in 20 feet.

3.18 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.
- B. Inspections: Testing Agency shall perform the following inspections:
 - 1. Inspect and evaluate the subgrade after site clearing operations during proof-rolling operations to determine soft and/or unsatisfactory soils.
 - 2. Determine prior to placement of structural fill that bottom of overexcavations, and excavations within building and pavement areas have been prepared in compliance with requirements.
 - 3. Determine that fill material and maximum lift thicknesses comply with requirements.
 - 4. Determine, at the required frequency, that in-place density of compacted structural fill within building, pavement, and walk areas complies with requirements.

- C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- D. Testing agency will perform moisture and density tests for determining compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2937, and ASTM D 6938, as applicable. The representative from the Geotechnical Testing Agency will determine the locations for testing. Tests will be performed at the following locations and frequencies:
 - 1. Fill, Non-supporting: At each compacted fill and backfill layer, at least one test for every 1000 square yards or less.
 - 2. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. (186 sq. m) or less of paved area or building slab but in no case fewer than three tests.
 - 3. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 200 feet (61 m) or less of trench length but no fewer than two tests.
 - 4. Trench Backfill, Structural: At each compacted initial and final backfill layer, at least one test for every 100 feet (30 m) or less of trench length, but no fewer than two tests.
 - 5. The representative from the Geotechnical Testing Agency shall maintain the right to decrease the number of tests if test results consistently pass required densities.
- E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; re-compact and retest until specified compaction is obtained at the Contractor's expense.

3.19 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Keep trucks and heavy equipment off of the prepared subgrade as much as feasible. Repair and recheck the subgrade profile, tolerances, and density in areas disturbed by construction traffic prior to paving.
- C. Repair and reestablish grades to tolerances specified where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 - 1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and re-compact.
- D. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.20 BALANCING EARTH MOVING QUANTITIES AND DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Adjust grades within the area(s) shown on the Drawings as directed by the Architect in the field to balance the excavation and fill on the site. No additional payment shall be made for balancing cut and fill.
- B. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.
- C. Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Architect.
 - 1. Remove waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

3.21 PRE-GRADING VERIFICATION SURVEY

- A. Survey the entire area graded under this Contract. Include spot elevations on the top and bottom of banks, center of swales, and along the perimeter of future pavements and building. Maximum distance between spot elevations in either direction within survey limits is 50 feet. Indicate the top and bottom of banks and center of swales with the use of a dashed line. Label the line appropriately. Prepare the survey using AutoCad methods superimposed atop the grading plan. An AutoCad Disk of the Site Grading Plan will be made available by the Architect at the request of the Contractor. Allow ten days for preparation of the disk. Use the same bench mark and scale as used on the Grading Plan.
- B. Review the survey to determine which area(s) do not meet plan elevations and grading tolerances. Re-grade these areas and resurvey. Once all areas are corrected, submit the survey to the Architect for record purposes.
 - 1. The following certification statement shall be included on the Verification Survey:
 - a. "I certify that the elevations shown on this survey meet the plan elevations shown on the grading plan within the specified tolerances."
 - b. The survey and statement shall be signed by both the Contractor and the Surveyor.

3.22 OVEREXCAVATION VERIFICATION SURVEY

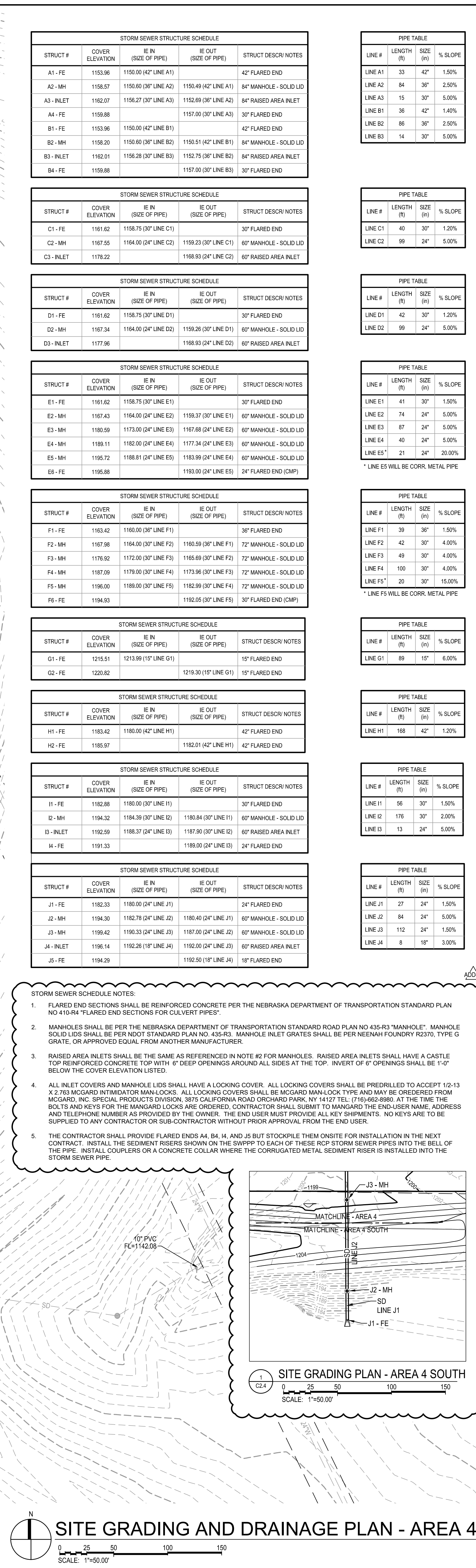
- A. Survey the entire overexcavation area where noted. Include spot elevations along the top and bottom of the perimeter overexcavation. Maximum distance between spot elevations in either direction with the overexcavation area is 50 feet. Prepare the survey using AutoCad Methods superimposed on the grading plan. An AutoCad Disk of the overexcavation will be made available by the Architect at the request of the Contractor. Allow ten (10) days for preparation of the disk.

- B. Review the survey to determine which area(s) do not meet plan elevations and grading tolerances. Re-grade these areas and resurvey. Once all areas are corrected, submit the survey to the Architect for record purposes.
1. The following certification statement shall be included on the Verification Survey:
 - a. "I certify that the elevations shown on this survey meet the plan elevations shown on the grading plan within the specified tolerances."
 - b. The survey and statement shall be signed by both the Contractor and the Surveyor.

END OF SECTION 312000



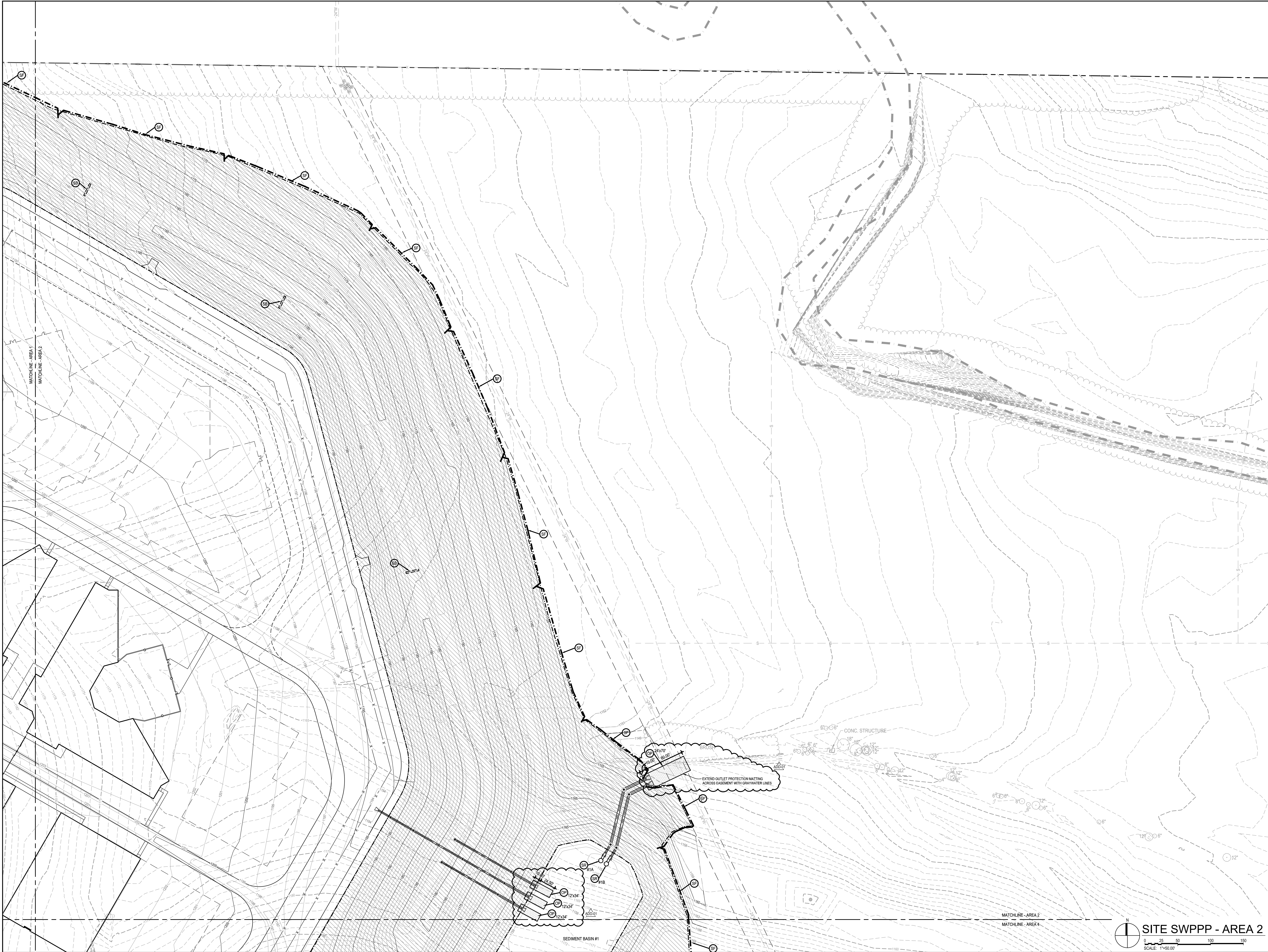
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SITE SWPPP - AREA 2
SCALE: 1"=50.00'



NEBRASKA CERTIFICATE OF AUTHORIZATION #CA-0404

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SUBMITTALS

1. In compliance with the provisions of the Federal Clean Water Pollution Act and the Nebraska Department of Environment and Energy (NDEE), the City LINCOLN, and the **OWNER** has submitted the following:
- A) Notice of Intent (NOI) requesting discharge authorization for stormwater from construction sites under the NPDES Nebraska General Permit No. NER210000-CSW.
- B) Local Grading Permit Application.
2. Under receipt of authorization to discharge to the waters of the state, the terms and conditions of the General Permit will apply to this project. A copy of the General Permit is available on the NDEE's website at dee.ne.gov/Public.nsf/Pages/Water7012.
3. The Storm Water Pollution Prevention Plan (SWPPP) will consist of the following items from the construction documents:
- A) The Site Stormwater Pollution Prevention Plan.
- B) The referenced detail notes and specifications.
- C) SWPPP-Narrative included in the specifications.
4. To complete the Storm Water Pollution Prevention Plan (SWPPP), the **CONTRACTOR** must add the following items:
- A) Locations of job site construction trailers.
- B) Areas for storage of soils and waste (i.e. topsoil stockpiles, storage piles, etc.).
- C) Location of all fueling and chemical storage areas.
- D) Attach a description of measures taken to prevent and/or control fuel and chemical spills.
- E) Attach a schedule for the construction project which identifies the construction phases and the implementation of pollution prevention activities (i.e. installation of erosion control structures and sedimentation basins, initial grading, and temporary seeding).
- F) Copies of the signed certification statements from the **CONTRACTOR** and all **SUB-CONTRACTORS** doing site-related work in the specifications.
- G) Copy of the General Permit.
5. The complete SWPPP shall remain at the job site, easily accessible for on-site inspection, and shall be updated throughout construction should erosion control measures require modifications. The complete SWPPP shall be submitted prior to or concurrently with the submittal of the first "Application for Payment," as specified in Division I Section 01027 "Applications for Payment."

EROSION CONTROL REQUIREMENTS

1. Erosion control measures shown on the Storm Water Pollution Prevention Plan (SWPPP) are the absolute minimum. The **CONTRACTOR** shall install temporary earth dikes, sediment traps or basins, additional situation fencing, and/or disk the soil parallel to the contours as deemed necessary to further control erosion.
2. Soil stabilization of disturbed areas must, at a minimum, be initiated immediately, unless infeasible. Stabilization is required when any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. In arid, semiarid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative stabilization measures must be employed as specified by the permitting authority. In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed.
3. Temporary seeding shall use Certified Seed. Select plants appropriate to the season and site conditions from the table below:

Plants for Temporary Seeding	
Plant Species	Rate Per Acre of Pure Live Seed (lbs per acre)
Alfalfa	40
With One of the Following:	
Spring Oats (Spring)	40
Annual Rye Grass (Summer)	40
Winter Wheat (Fall)	40
Total Lbs. Pure Live Seed Per Acre	80

4. Other seed mixtures as recommended by a qualified agronomist or soil conservationist may be used.
5. All erosion control measures shown shall remain in place throughout the installation of the stabilization measures (i.e. Seeding, Sod, Mulching, Erosion Control Blankets, etc.). Temporary erosion control measures can only be removed after Final Stabilization has been achieved. Final Stabilization is achieved when the following conditions have been met:
- A) All soil-disturbing construction activity has been completed.
- B) A uniform perennial vegetative cover with a minimum density of 70 percent of the native background vegetative cover, has been established on all non-impervious surfaces and areas not covered by permanent structures unless equivalent permanent stabilization (such as riprap, gabions, and geotextiles) measures have been employed;
- 1) 70% establishment is defined as 70% of each square foot of grassed area has been mowed a minimum of two times after reaching a height of 2 (two) inches.
- C) All permanent drainages, constructed to drain water from the site, has been stabilized to prevent erosion;
- D) All temporary erosion protection and sediment control BMPs have been removed without compromising the permanent erosion protection and sediment control BMPs;
- E) All sediment buildup has been removed from conveyances and basins that are to be used as permanent water quality management BMPs. The cleanup of permanent basins used as temporary BMPs during construction shall be sufficient to return the basin to design capacity.
6. Bidders shall include in their bids any necessary grading phasing to allow the erosion control structures to remain in place until the site is stabilized as described above. Once the site is established, all erosion control structures shall be removed, final grades established in the area around the removed erosion control structures, and stabilization completed (i.e. seeding, sod, mulch, etc.). The **CONTRACTOR** shall contact **ARCHITECT / ENGINEER** for approval to remove erosion control structures once the site is established.

ENVIRONMENTAL ISSUES

1. No waste materials, or unused building materials, shall be buried on-site or discharged to the waters of the state.
2. The **CONTRACTOR** is prohibited from discharging the following:
- A) Wastewater from the washout of concrete, unless managed by an appropriate control.
- B) Wastewater from the washout and cleanup of stucco, paint, form releasing oils, curing compounds, and other construction materials.
- C) Fuels, oils, and other pollutants used in vehicle equipment operation and maintenance.
- D) Soaps, solvents, and detergents used in vehicle washing.
3. If vehicle fueling or maintenance occurs on-site, the **CONTRACTOR** shall keep spill kits on-site and stored near chemical storage areas. The **CONTRACTOR** must implement effective means of eliminating the discharge of spilled or leaked chemicals, including fuel, from the area by utilizing the following measures at a minimum:
- A) Ensuring adequate supplies are always available to handle spills, leaks, and disposal of used liquids.
- B) Using drip pans and absorbents under and around leaking vehicles.
- C) Disposing of or recycling oil and oily wastes in accordance with other federal, state, or local requirements.
- D) Cleaning up spills or contaminated surfaces immediately, using dry clean measures where possible, and eliminating the source of the spill to prevent a discharge or furtherance of an ongoing discharge.
- E) Provide containment around fueling and chemical storage areas to ensure that spills do not reach the waters of the state.

DOCUMENTATION, EROSION CONTROL MAINTENANCE, AND INSPECTION

1. Document dates when major grading activities occur and when construction activities temporarily cease. Include dates when stabilization measures are implemented.
2. NPDES inspection of the site will be done by the NPDES Inspecting Agency. Notify the **ARCHITECT / ENGINEER** and the NPDES Inspecting Agency within 24 hours after a storm event of 0.25 inches or more. Notifications shall be received between 8:00 am - 5:00 pm the day of the event or the following day if the storm occurs overnight.
3. Inspections, at a minimum, must be in accordance with one of the two schedules listed below:
- A) At least once every seven (7) calendar days, excluding nonbusiness hours.
- B) Once every 14 calendar days and within 24 hours of the occurrence of a storm event of 0.25 inches or greater, or the occurrence of runoff from snowmelt sufficient to cause a discharge, excluding nonbusiness hours.
4. Inspection frequency may be reduced to at least once every month if:
- A) The entire site is temporarily stabilized;
- B) Runoff is unlikely due to winter conditions (e.g., site is covered with snow, ice, or the ground is frozen);
- C) Reduced inspection frequency does not relieve the permittee of the maintenance responsibilities during interim periods.
5. NPDES inspections will be paid for directly by the **OWNER**.
6. Remove sediment from behind all erosion control structures whenever silt reaches 50% of the capacity of the structure.

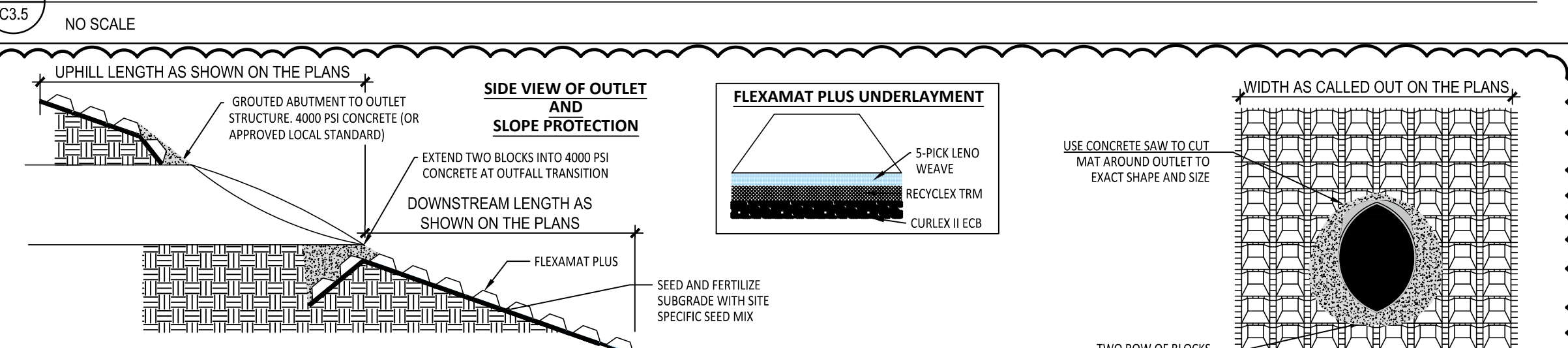
ADDITIONAL EROSION CONTROL MEASURES

1. All project procedures and material shall conform to the following publication and any additions thereto:
- A) Nebraska Construction Storm Water General Permit NPDES Permit No. NER210000.
- B) Local Grading Permit terms, conditions, and requirements.
2. The **CONTRACTOR** must comply with all local noise and dust control ordinances.
3. The **CONTRACTOR** shall notify all utility companies 48 hours before work is started to verify utility locations.
4. The **CONTRACTOR** shall be responsible for complying with all OSHA regulations in the execution of work under this contract.
5. The stabilized construction entrance shall be maintained when needed and as directed by the **OWNER** or **ARCHITECT / ENGINEER**.
6. All erosion control features shall be kept in working order. The **CONTRACTOR** shall repair all damage caused by soil erosion and construction equipment at or before the end of each working day or as directed by the **OWNER** or **ARCHITECT / ENGINEER**.
7. The **CONTRACTOR** shall be responsible for providing containment dikes or other protective measures around all on-site fueling and chemical storage areas.
8. In the event of a release of oil or hazardous substance, the **CONTRACTOR** shall comply with the requirements of the NDEE for notification, containment, investigation, remedial action, and disposal.
9. For dust control the contractor shall use any of the following measures or combination if necessary:
- A) Tank truck or other equipment to spread water on striped areas.
- B) Tank truck or other equipment to spread water on haul roads.
- C) Decrease vehicular speed on haul roads.
- D) As directed by the **OWNER** or **ARCHITECT / ENGINEER**.
10. The **CONTRACTOR** shall keep all streets adjacent to this site clean and free of mud. The street shall be cleaned at the end of each day.

STORMWATER POLLUTION PREVENTION PLAN NOTES

1. Any fines levied to the **OWNER** for non-compliance with the NPDES permit caused by inaction or refusal to comply shall be charged to the **CONTRACTOR**.

SUBMITTALS



FLEXAMAT PLUS - PIPE OUTLET ARMORING

- CONSTRUCTION NOTES:
1. GRADE OUTFALL SO THAT WATER WILL FLOW DOWN CENTER OF THE ARMOR AND BE CONTAINED TO THE ARMORED AREA.
2. ALL SUBGRADE SURFACES PREPARED FOR PLACEMENT OF MATS SHALL BE SMOOTH AND FREE OF ALL ROCKS, STICKS, ROOTS, OTHER PROTRUSIONS, OR DEBRIS OF ANY KIND. THE PREPARED SURFACE SHALL PROVIDE A FIRM UNYIELDING FOUNDATION FOR THE MATS.
3. PRIOR TO FLEXAMAT PLUS INSTALLATION SEED AND FERTILIZER SUBGRADE WITH SITE SPECIFIC SEED MIX IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.
4. INSTALL FLEXAMAT ROLLS. AVAILABLE WIDTHS ARE 4', 5', 8', 10', 12' AND 16' AVAILABLE IN CUSTOM LENGTHS. FOR WIDTHS WIDER THAN 16', INSTALL 15' WIDE MAT WITH 12" GEOTEXTILE EXTENSION AND 6" UNDERLAYMENT EXTENSION.
5. WHERE POSSIBLE AVOID MAT SEAMS IN ARMORED AREA.
6. FOR OUTLET PROTECTION WIDER THAN 16" SEE CHANNEL PARALLEL TO FLOW INSTALLATION DETAIL.
7. INSTALL FLEXAMAT OVER PIPE OUTFALL AND USE CONCRETE SAW TO CUT MAT TO FIT TIGHTLY AROUND OUTFALL PIPE.
8. USE 4000 PSI CONCRETE (OR APPROVED LOCAL STANDARD) TO GROUT AROUND PIPE OUTFALL.
9. AT THE INITIAL LEADING EDGE OF FLEXAMAT EXPOSED TO CONCENTRATED FLOW FROM PIPE OUTFALL, EMBEDDED TWO BLOCKS INTO INTO 4,000 PSI CONCRETE.
10. AT THE END OF THE ARMORED PIPE OUTFALL, EMBED THE MAT 18" IN A TERMINATION TRENCH, FILL AND COMPACT TERMINATION TRENCH WITH A COHESIVE FILL.

PIPE OUTLET PROTECTION

SCALE: 1/2" = 1'-0"

SITE INFORMATION

MAY 1, 2024		TO BE DETERMINED	
Estimated Start Date		NDEE CSW Number	
NDCS NEW MULTI CUSTODY CORR. FACILITY - SITE PREGRADING		TO BE DETERMINED	
Project Name		Project Address	
N/A	N/A	LINCOLN	LANCASER
Subdivision Name	SSID #	City	County
40° 54' 8.08" N	96° 36' 54.17" W	Nebraska	68517
Latitude	Longitude	State	Zip Code
Total Site Area (Acres)	308.68	Estimated Permit Duration (Months)	36
Disturbed Area (Acres)	120	Cut Volume (YD³)	1.4 MIL
Undisturbed Area (Acres)	188	Fill Volume (YD³)	1.4 MIL
Impervious Area Before Construction (%)	1%	Runoff Coefficient Before Construction	0.30
Impervious Area After Construction (%)	1%	Runoff Coefficient After Construction	0.50

Impervious area after construction and runoff coefficient after construction are based on the conclusion of site pregrading

SITE INFORMATION

NO SCALE

The following maintenance schedule has been provided. The **INSPECTOR** must perform the inspections. The **OPERATOR / CONTRACTOR** must perform all needed maintenance. Furthermore, all erosion control features requiring maintenance may not be listed below. The **CONTRACTOR / OPERATOR** and **INSPECTOR** must perform their respective duties on all BMP's that are not listed below as well.

1. **Construction Entrance** - The entrance shall be maintained in a condition which will prevent tracking or flow of sediment onto public rights-of-way. This may require periodic top dressing with additional stone or the reworking of existing stone as conditions demand and repair and/or cleanup of any structures used to trap sediment. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately. The use of water trucks to remove materials dropped, washed, or tracked onto roadways will not be permitted under any circumstances.
2. **Silt Fence** - The maintenance measures are as follows: (2.1) silt fences shall be inspected immediately after each rainfall and at least daily during prolonged rainfall; any required repairs shall be made immediately; (2.2) close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting; (2.3) should the fabric on a silt fence decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly; (2.4) sediment deposits must be removed when the level of deposition reaches approximately one-half the height of the barrier; and (2.5) any sediment deposits remaining in place after the silt fence is no longer required shall be dressed to conform to the existing grade, prepared and seeded.
3. **Storm Drain Inlet Protection** - The maintenance measures are as follows: (3.1) structures shall be inspected after each rain and repairs made as necessary and (3.2) structures shall be removed and the area stabilized when the remaining drainage area has been properly stabilized.
4. **Temporary Diversion Dike** - The measure shall be inspected after every storm and repairs made to the dike, flow channel, outlet or sediment trapping facility, as necessary. Once every two weeks, whether a storm event has occurred or not, the measure shall be inspected and repairs made if needed. Damages caused by construction traffic or other activity must be repaired before the end of each working day.
5. **Temporary Fill Diversion** - Since the practice is temporary and under most situations will be covered the next working day, the maintenance required should be low. If the practice is to remain in use for more than one day, an inspection shall be made at the end of each work day and repairs made to the measure if needed. The **CONTRACTOR / OPERATOR** should avoid the placement of any material over the structure while it is in use. Construction traffic should not be permitted to cross the diversion.
6. **Temporary Sediment Basin** - The basin embankment should be checked regularly to ensure that it is structurally sound and has not been damaged by erosion or construction equipment. The emergency spillway should be checked regularly to ensure that its lining is well established and erosion-resistant. The basin should be checked after each runoff producing rainfall for sediment cleanup and trash removal. When the sediment reaches the cleanup level, it shall be removed and properly disposed of.
7. **Temporary Seeding** - Areas which fail to establish vegetative cover adequate to prevent rill erosion will be re-seeded as soon as such areas are identified. Control weeds by mowing.
8. **Permanent Seeding** - The maintenance measures are as follows: (9.1) in general, a stand of vegetation cannot be determined to be fully established until it has been maintained for one full year after planning; (9.2) new seedlings shall be supplied with adequate moisture, supply water as needed, especially late in the season, in abnormally hot or dry conditions, or on adverse sites, water applications shall be controlled to prevent excess runoff; (9.3) inspect all seeded areas for failures and make necessary repairs, replacements, and reseeding within the planting season, if possible; [9.3.a] if stand is inadequate for erosion control, over seed and fertilize using half of the rates originally specified; [9.3.b] if stand is 60% damaged, re-establish following seeded and seeding recommendations; [9.3.c] if stand has less than 40% cover, re-evaluate choice of plant materials and quantities of soil amendments. To do this, the soil must be tested to determine what factors are responsible and then re-establish the stand following the soil and seeding recommendations.
9. **Mulching** - All mulches and soil coverings should be inspected periodically (particularly after rainstorms) to check for erosion. Where erosion is observed in mulched areas, repair the erosion and additional mulch should be applied. Continue to monitor these areas until which time they become permanently stabilized. Where mulch is used in conjunction with ornamental plantings, inspect periodically throughout the year to determine if mulch is maintaining coverage of the soil surface; repair as needed.
10. **Soil Stabilization Blankets & Matting** - All soil stabilization blankets and matting should be inspected periodically following installation, particularly after rainstorms to check for erosion and undermining. Any dislodgement or failure should be repaired immediately. If washouts or breakage occurs, reinstall the material after repairing damage to the slope or ditch. Continue to monitor these areas until which time they become permanently stabilized; at that time an annual inspection should be adequate.
11. **Street Cleaning / Sweeping** - The maintenance measures are as follows: (12.1) evaluate access points daily for sediment tracking; (12.2) when tracked or spilled sediment is found on paved surfaces, it will be removed daily, during times of heavy track-out, such as during rains, cleaning may be done several times throughout the day; (12.3) unknown spills or objects will not be mixed with the sediment; and (12.4) if sediment is mixed with other pollutants, it will be disposed of properly at an authorized landfill.

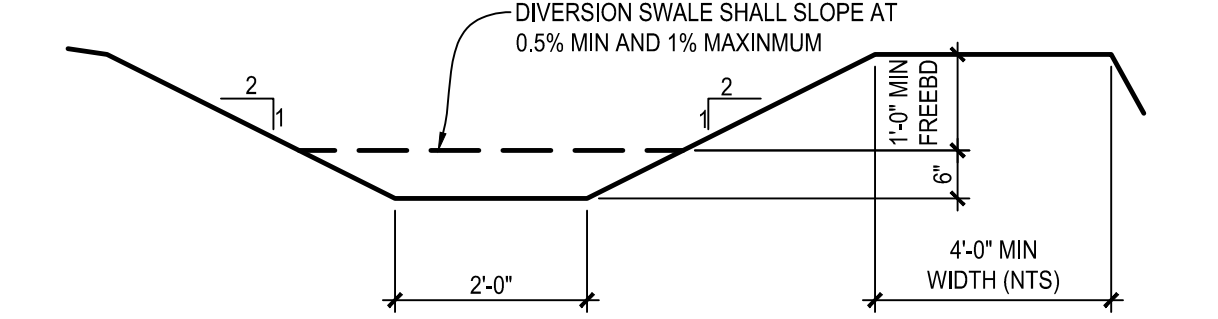
MAINTENANCE SCHEDULE

NO SCALE

1. All **OPERATORS / CONTRACTORS** must confirm with the **APPLICANT** that any and all applicable governmental approvals have been received prior to the start of work.
2. BMP's may not be removed without **INSPECTOR** and applicable governmental approval.
3. The **APPLICANT, INSPECTOR, and CONTRACTOR / OPERATORS** must adhere to all good Housekeeping BMP's as required by the NDES and the local authority having jurisdiction. Good Housekeeping BMP's focus on keeping the work site clean and orderly while handling materials and waste in a manner that eliminates the potential for pollutant runoff. Good Housekeeping BMP's consist of, but are not limited to A) Sanitary Waste Management, B) Solid Waste Management, C) Material Delivery and Storage, D) Street Cleaning / Sweeping, E) Vehicle and equipment fueling, and F) Concrete washout and must be addressed when applicable.
4. The SWPPP documents (e.g., NDES-NPDES, SWPPP-SM, SWPPP-PM, etc.) are essential and a requirement in one part is as binding as though occurring in all. The SWPPP documents are complementary. The documents describe and provide the complete SWPPP. The **APPLICANT, INSPECTOR, and/or CONTRACTORS / OPERATORS** may not take advantage of any apparent SWPPP errors or omissions. The **INSPECTOR** shall notify the **APPLICANT, DESIGNER, and CONTRACTORS / OPERATORS** promptly of any omissions or errors. In the case of a discrepancy between parts of the SWPPP documents, the most stringent requirement shall rule.

GENERAL NOTES

NO SCALE

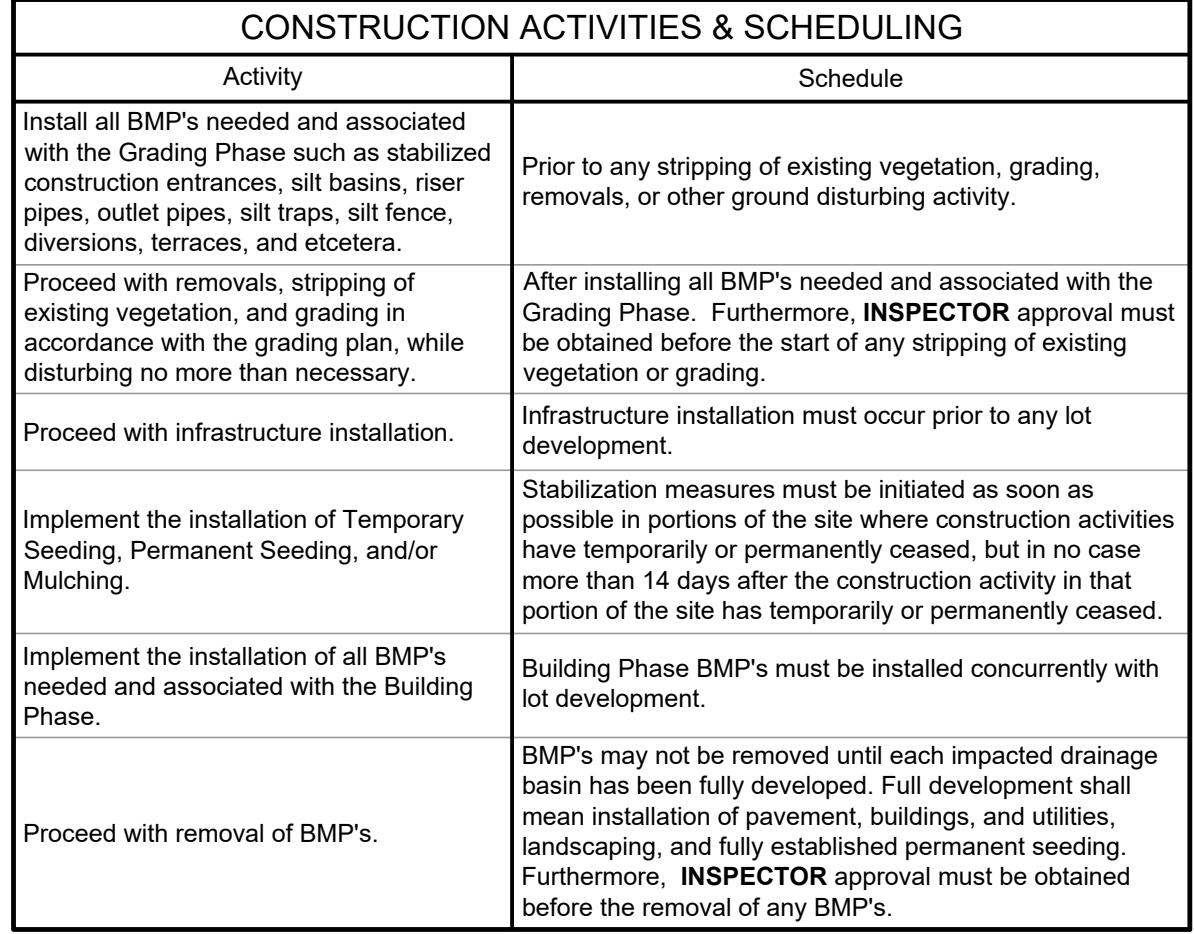


TRAPEZOIDAL CROSS SECTION

- NOTES:
1. THE DIVERSION SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN, AND BE FREE OF IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
2. FILLS SHALL BE COMPACTED AS NEEDED TO PREVENT UNEQUAL SETTLEMENT THAT WOULD CAUSE DAMAGE IN THE CONFINED DIVERSION.
3. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF DIVERSION.
4. STABILIZATION SHALL BE DONE ACCORDING TO THE APPROPRIATE STANDARD AND SPECIFICATIONS FOR VEGETATIVE PRACTICES. SEEDING AND MULCHING MAY BE USED FOR THE ESTABLISHMENT OF THE VEGETATION. IT IS RECOMMENDED THAT, WHEN CONDITIONS PERMIT, TEMPORARY DIVERSIONS OR OTHER MEANS BE USED TO PREVENT WATER FROM ENTERING THE DIVERSION DURING THE ESTABLISHMENT OF THE VEGETATION.

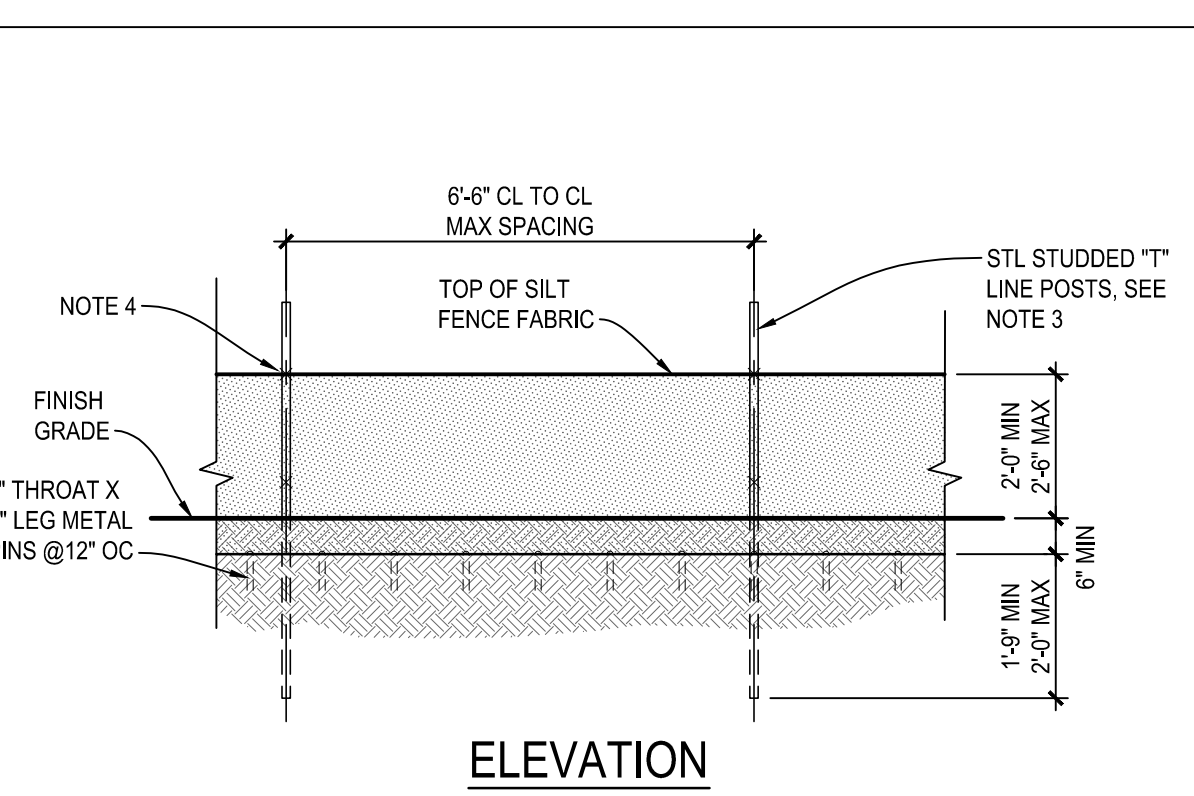
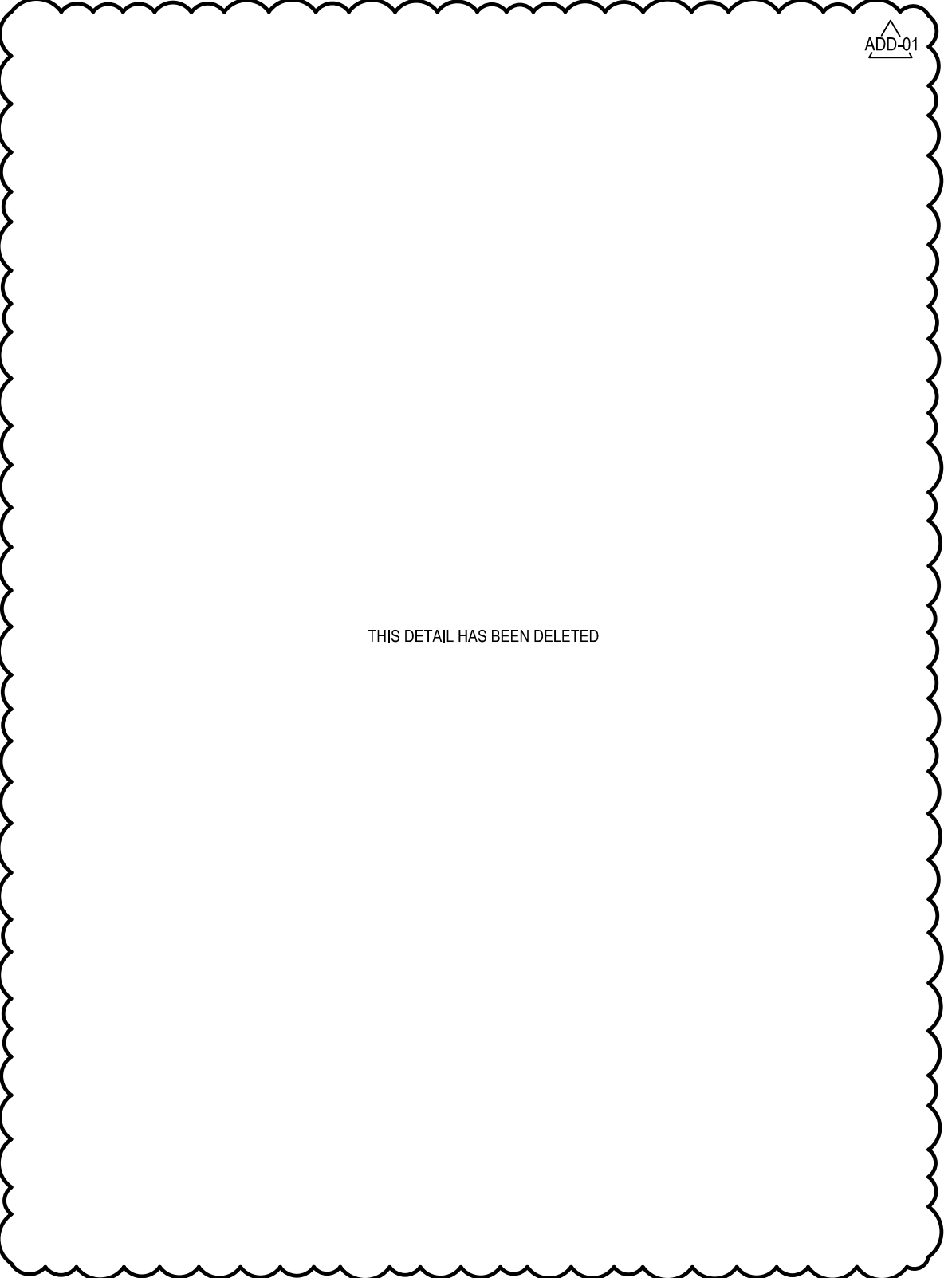
DIVERSION SWALE

SCALE: 1/2" = 1'-0"

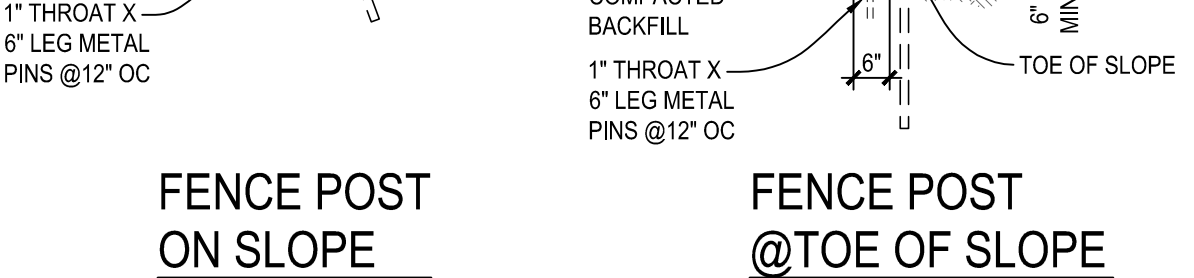
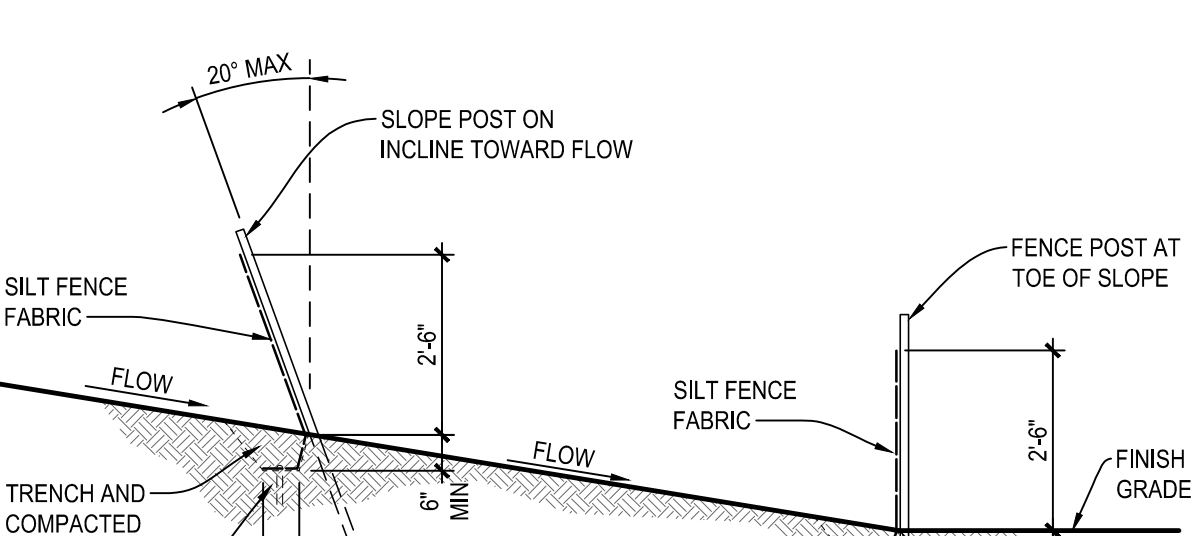


CONSTRUCTION ACTIVITIES & SCHEDULING

NO SCALE



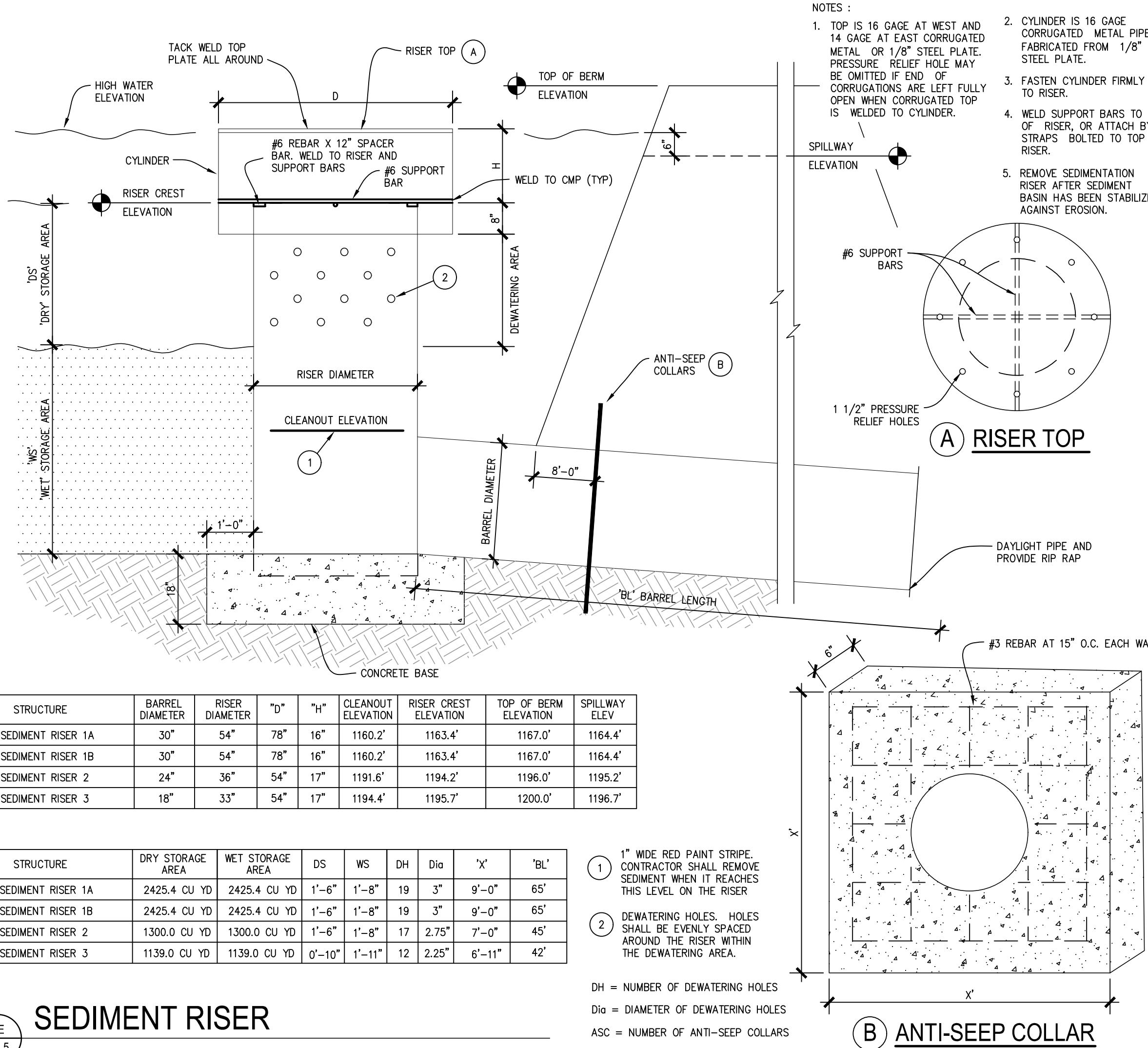
ELEVATION



- NOTES:
1. SILT FENCE FABRIC PROPERTY REQUIREMENTS:
- A. GRADES STRENGTH, BOTH DIRECTIONS, ASTM D4632: 90 LBS MIN
- B. GEOTEXTILE ELONGATION, ASTM D4632: LESS THAN 50% AT FAILURE
- C. PERMITTIVITY, ASTM D4691: 0.05 SEC
- D. APPARENT OPENING SIZE, ASTM D4751: US SIEVE NO. 30 (0.60 MM MAX)
- E. ULTRAVIOLET STABILITY, ASTM D4355: 70% AFTER 500 HOURS OF EXPOSURE
2. WHEN JOINTS IN SILT FENCE ARE UNAVOIDABLE, SILT FENCE FABRIC SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM OVERLAP OF AT LEAST TWO POSTS.
3. STEEL STUDDED "T" POSTS SHALL BE 5'-6" MIN LENGTH AND WEIGH NOT LESS THAN 1.33 POUNDS PER LINEAL FOOT.
4. SILT FENCE FABRIC SHALL BE SECURELY FASTENED TO STEEL STUDDED "T" POSTS WITH TIES AT TOP AND 6 INCHES UP FROM GRADE.
5. MAINTAIN FENCE AS REQUIRED AND REMOVE SILT WHEN BULGES DEVELOP OR WHEN SEDIMENT REACHES HALF THE HEIGHT OF THE SILT FENCE.

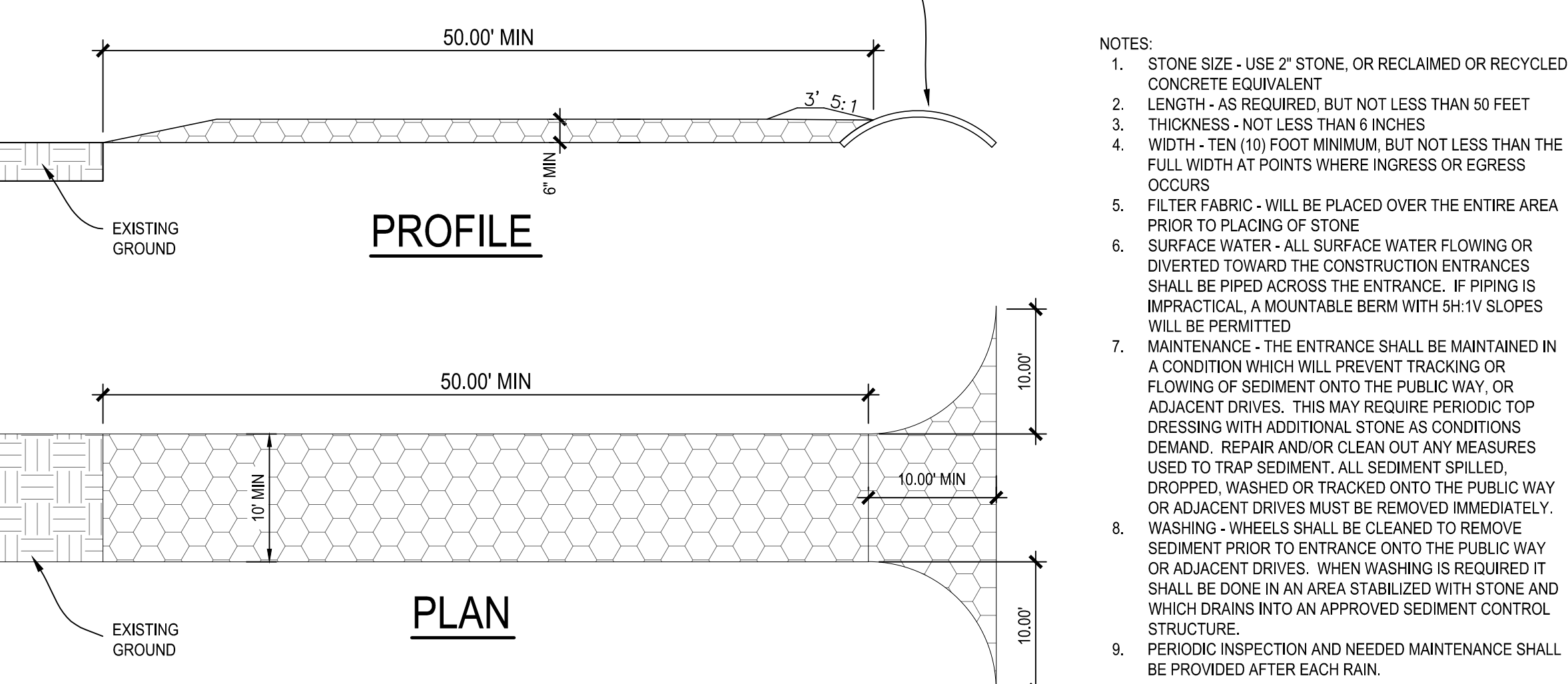
SILT FENCE

SCALE: 1/2" = 1'-0"



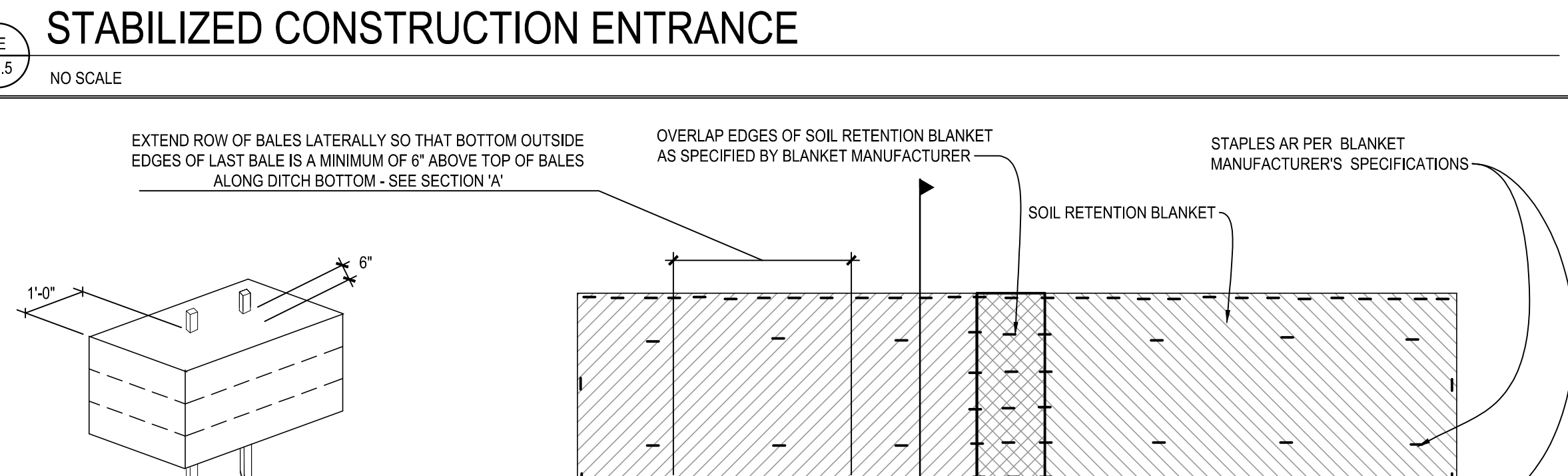
SEDIMENT RISER

NO SCALE



STABILIZED CONSTRUCTION ENTRANCE

NO SCALE



STRAW BALE STAKING DETAIL

- CONSTRUCTION SPECIFICATIONS
1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 8 INCHES AND PLACED SO THE BUNDNESS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR REBARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY Laid BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTIONS SHALL BE FREQUENT AND REPAIRS AND REPLACEMENTS SHALL BE DONE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
6. MAXIMUM DRAINAGE AREA: 5 ACRES.

STRAW BALE SEDIMENT BARRIER

SCALE: 1/4" = 1'-0"