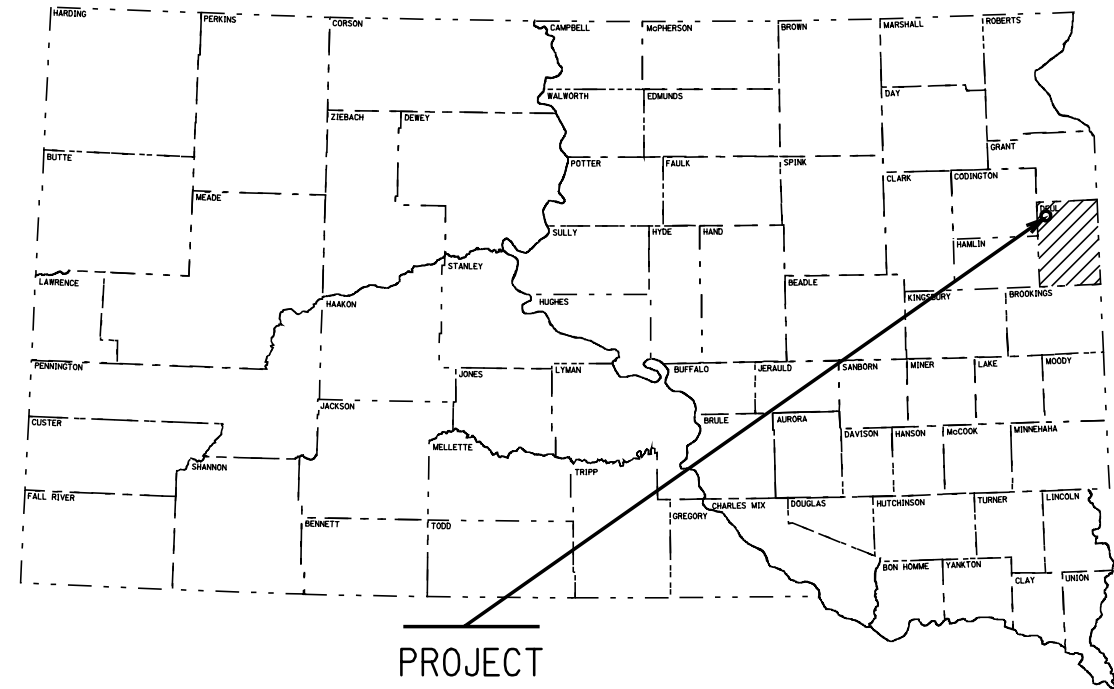


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STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED

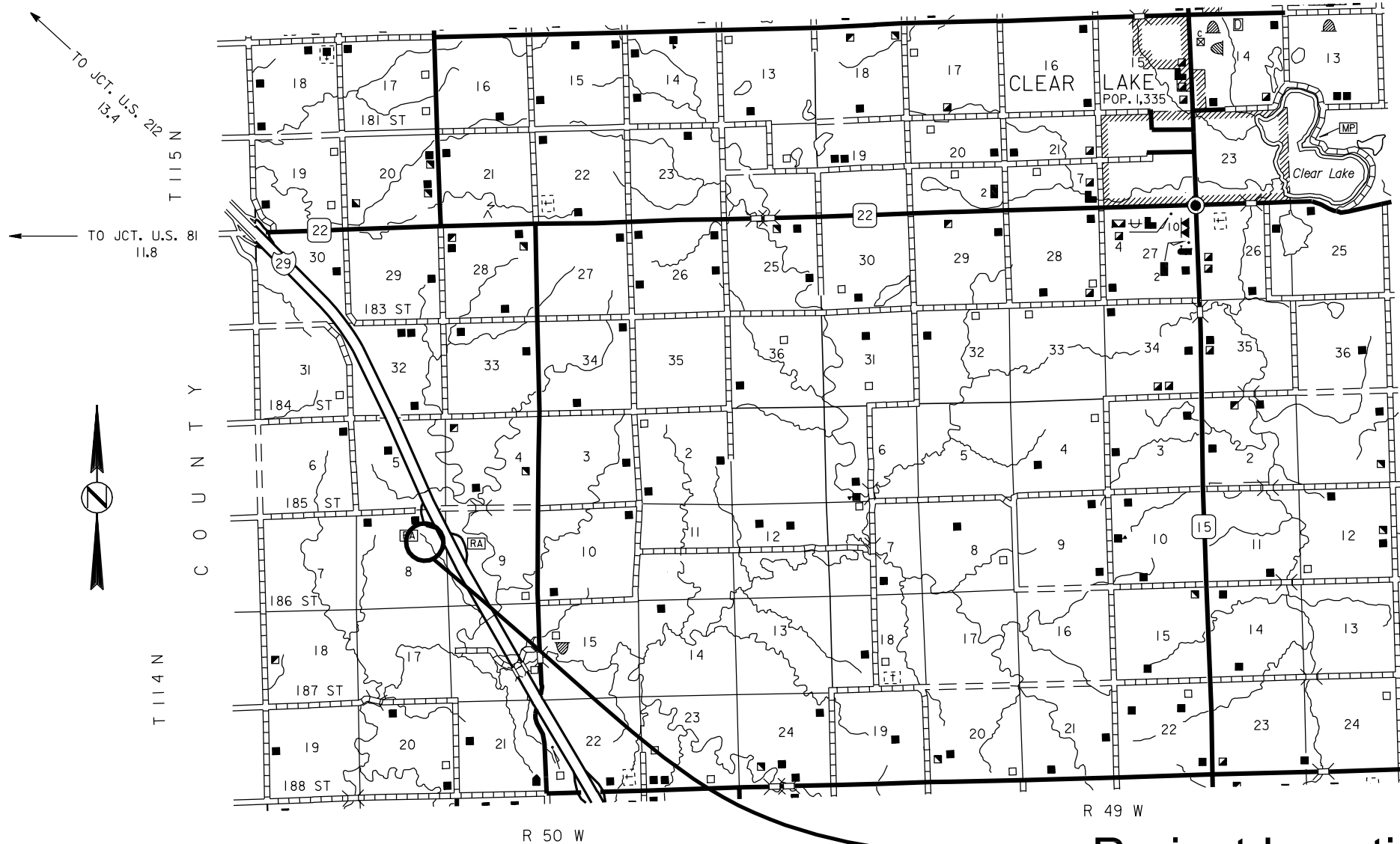
PROJECT 029 S-171  
INTERSTATE HIGHWAY 29  
DEUEL COUNTY

WASTEWATER LAGOON REPAIR  
PCN ilgy

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
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INDEX OF SHEETS

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Sheet No. 2-3	Estimate of Quantities and Plan Notes
Sheet No. 4	Original Construction Plans
Sheet No. 5	Existing Lagoon Detail
Sheet No. 6	Proposed Lagoon Detail
Sheet No. 7	Lagoon Depth Indicator
Sheet No. 8-9	Chain Link Fence Standard Plates



Project Location

I 29 SBL - MRM 161.2

STORM WATER PERMIT  
(None Required)

PLOT NAME - COVER SHEET

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STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
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ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
120E0600	Contractor Furnished Borrow	20	CuYd
230E0020	Placing Contractor Furnished Topsoil	30	CuYd
250E0010	Incidental Work	Lump Sum	LS
700E0110	Class A Riprap	725	Ton
734E0010	Erosion Control	Lump Sum	LS
831E0110	Type B Drainage Fabric	1160	SqYd
900E2030	Miscellaneous Work	1	Site
900e4000	Lagoon Depth Indicator	1	Each

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

SCOPE OF WORK

The location of this project is the South Bound Hidewood Interstate Rest Area located 3 miles Northwest of Exit 157. The Hidewood Interstate Rest Area has a two cell wastewater lagoon system. The larger North cell is the secondary cell and the smaller South cell is the primary cell. The primary cell berms are eroding and will need to be restored with Clay, Drainage Fabric and Riprap.

The system is presently constructed so that raw wastewater may be sent to the primary or secondary cell. During the repair of the primary cell, raw wastewater will be sent to the secondary cell. SDDOT forces will be responsible for changing the raw wastewater point of discharge from the primary to the secondary cell. The Contractor shall notify the Engineer a minimum of 10 calendar days in advance of when he intends to begin work so that SDDOT forces may switch the wastewater discharge location to the secondary cell.

SEQUENCE OF OPERATIONS

The following sequence of operations shall be utilized unless an alternate sequence of operations is submitted to and approved by the Engineer.

1. Remove Chain Link Fence as required
2. Clean out Primary Cell
3. Remove vegetation from repair areas and mow banks
4. Repair banks of berm of the Primary Cell
5. Install Drainage Fabric
6. Install Lagoon Depth Indicator
7. Install Riprap
8. Pre-fill Lagoon
9. Place Topsoil
10. Erosion Control
11. Reset Chain Link Fence

LAGOON FENCING

The Contractor shall visit the site to determine the extent of fence removal required to complete the project.

Chain Link Fence Standard Plates are included in these plans as a guide for reconstruction of the fence upon project completion.

All costs associated with removing the existing fence and resetting the fence to the pre-disturbed location shall be incidental to the contract lump sum price for INCIDENTAL WORK.

CLEAN OUT PRIMARY CELL

The Contractor shall pump any remaining effluent in the existing primary cell into the secondary cell. All costs associated with cleaning out the primary cell shall be incidental to the contract unit price per site for MISCELLANEOUS WORK.

No sludge may be removed from the lagoon site without prior approval from the DENR (South Dakota Department of Environment and Natural Resources).

LAGOON BERM RESTORATION

Erosion of the banks of the berms in the primary/south cell will need to be repaired. The Contractor shall restore the berms of the primary cell with clay fill material back to the original design inslope of 3:1. The Contractor shall supply clay fill material to be used to repair any erosion of the berms before the installation of Drainage Fabric and Riprap. Included in the Estimate of Quantities is 20 cubic yards Contractors Furnished Borrow for the repair of erosion holes in the berms.

All costs to furnish and install the fill material shall be incidental to the contract unit price per cubic yard for CONTRACTOR FURNISHED BORROW.

The clay fill material shall be constructed of relatively impervious and stable material at 0-3% over optimum moisture content. Optimum Moisture will be determined in accordance with SD 104 (AASHTO T99). The compaction and moisture conditions shall be sufficient to limit the seepage through the berm to 1/16 inch per day. Clay shall be placed and compacted in lifts such that the depth of any lift shall not exceed 8 inches.

All vegetation and roots shall be removed from the area upon which the clay fill material is to be placed. The clay fill material must not contain any organic material, debris, frozen material, large clods or stones larger than 6 inches in diameter.

Water required for compaction shall be incidental to the various contract items.

Clay fill material placement of 12” in depth or greater shall be compacted by the Ordinary Compaction Method in accordance with Section 120 of the Standard Specifications. Clay fill material less than 12” in depth shall be compacted to the satisfaction of the Engineer.

CONTRACTOR FURNISHED CLAY AND TOPSOIL

The Contractor shall provide suitable site(s) for Contractor furnished clay and topsoil material. The Contractor is responsible for obtaining all required permits and clearances for the borrow site(s).

The material for the clay fill shall be of the CL class and meet the seepage rate requirements of less than 1/16 inch per day. (CL class as defined by the Unified Soil Classification System ASTM 0-2487.)

Clay fill material quantities are computed using the volume of embankment plus 40% for shrinkage.

Restoration of the Contractor furnished borrow site(s) shall be the responsibility of the Contractor.

Haul of clay and topsoil material on established traveled roadways shall be limited to trucks hauling legal loads and which do not sustain damage to the roadway, parking lots, or other areas of the Hidewood Interstate Rest Area, as approved by the Engineer. Hauling of material in the roadway ditches will not be allowed.

DRAINAGE FABRIC

The Contractor will be responsible to mow the banks of the cells and clear the weed debris from the berms to the satisfaction of the Engineer prior to placement of Drainage Fabric. Drainage Fabric shall be placed 2 feet above the toe to top of the freeboard and anchored by digging a 12 inch deep slot into top of berm. 12 inches of the Drainage Fabric shall be tucked in the slot and tamped shut.

Drainage Fabric shall be Type B. The fabric material shall be resistant to sunlight and organic materials typical of wastewater.

Drainage fabric installation shall be installed such that the in place concrete splash pad (effluent entry point into lagoon) remain unobstructed upon completion of installation.

Payment for furnishing and installing drainage fabric and clearing of all weed debris shall be incidental to the contract unit price per square yard for TYPE B DRAINAGE FABRIC.



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RIPRAP

The riprap shall be provided on the interior slopes to the top of the freeboard. It shall be hard and durable and be stable after placement. Thickness of riprap placement shall be 1.25 feet.

The riprap shall meet the requirements of Section 830 of the Standard Specifications for Class A Riprap, except the minimum size of rock shall be 6 inches.

Riprap installation shall be installed such that the concrete depth gauge and the in place concrete splash pad are not damaged and remain unobstructed upon completion of installation.

WATER SOURCE

The Contractor shall not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the DOT Environmental Office, Nathan Morey at 605-773-5679. This note does not relieve the Contractor of his/her responsibility to obtain the necessary permits from other agencies such as DENR (Department of Environment and Natural Resources) and COE.

PRE-FILLING THE LAGOON

After placement of drainage fabric and riprap is completed, the Contractor shall be required to fill the lagoon to a minimum depth of 3'. This shall be completed before vegetation can begin to grow.

The Contractor shall be responsible for furnishing and transporting the water required to fill the lagoon.

All costs associated with pre-filling the lagoon shall be incidental to the contract unit price per site for MISCELLANEOUS WORK.

PLACING CONTRACTOR FURNISHED TOPSOIL

Upon completion of the erosion repair, installation of drainage fabric and rip rap, topsoil shall be placed above the riprap at the top of the berm. Included in the Estimate of Quantities is 30 Cubic Yards of Placing Contractor Furnished Topsoil to repair the top of the berm.

SOIL STERILIZATION

SDDOT forces will be responsible for soil sterilization of the banks upon completion of the project.

EROSION CONTROL

On completion of construction and placement of topsoil, all disturbed areas above the riprap shall be seeded with Intermediate Wheatgrass (Oahe) at the rate of 1/2 pound Pure Live Seed (PLS) per 1000 square feet and fertilized with a commercial fertilizer having a minimum guaranteed analysis of 18-46-0, 11-52-0, or an approved equal at the rate of 2 pounds per 1000 square feet. Hand seeding and fertilizing devices will be allowed, as approved by the Engineer. All newly seeded and fertilized areas shall be raked to the satisfaction of the Engineer. Seeding and fertilizing will not be measured for payment but shall be incidental to the contract lump sum price for EROSION CONTROL.

WASTE DISPOSAL SITE

The Contractor will be required to furnish a site(s) for the disposal of construction/demolition debris generated by this project.

Construction/demolition debris may not be disposed of within the State ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

1.

Construction/demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction/demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating “No Dumping Allowed”.
2.

Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

HISTORICAL PRESERVATION OFFICE CLEARANCES

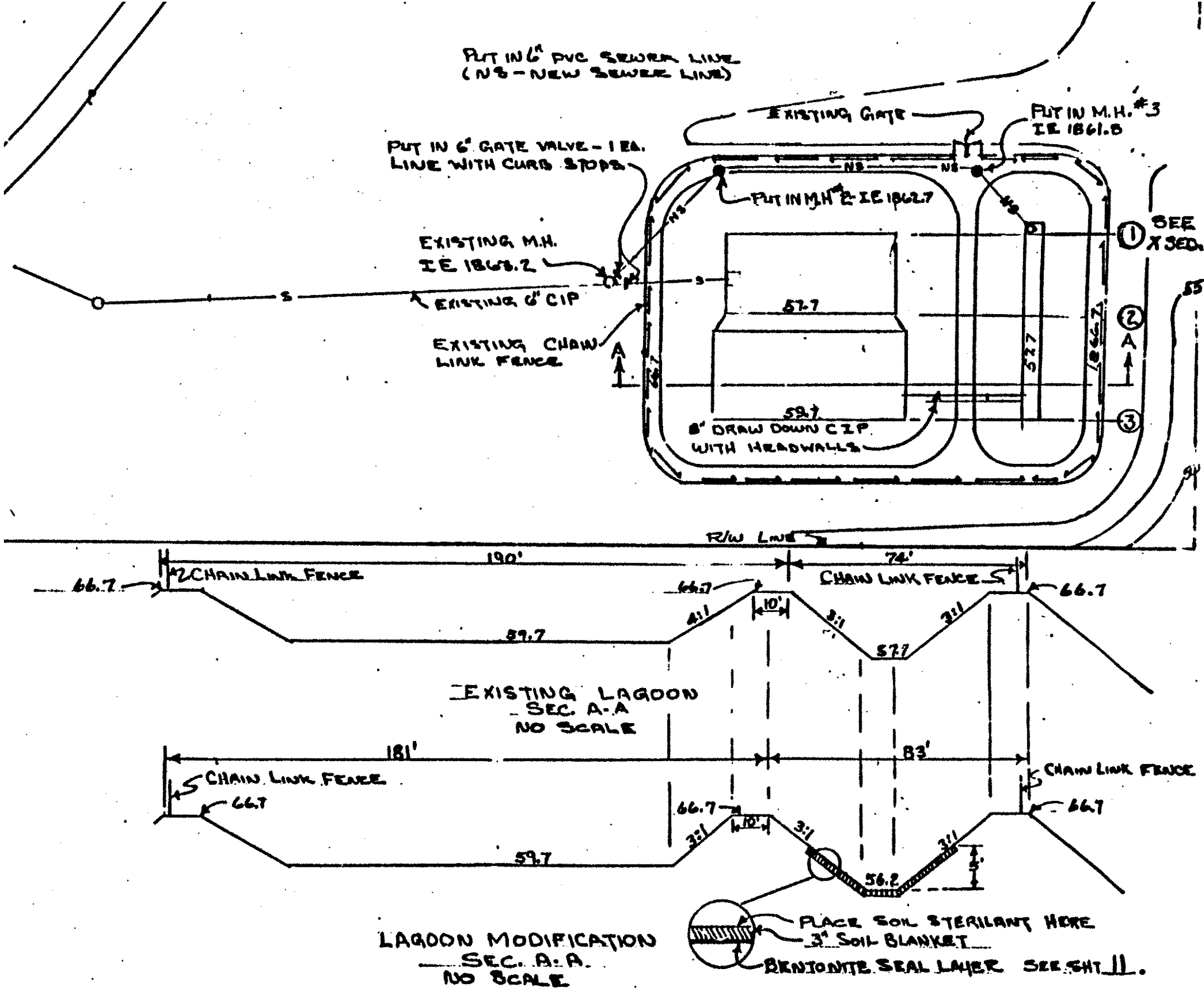
To obtain SHPO clearance, a cultural resources survey may need to be conducted by a qualified archaeologist. The Contractor shall arrange and pay for this survey. In lieu of a cultural resources survey, the Contractor could request a literature search on the site and provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that no artifacts have been found on the site. Jim Donohue, State Archaeological Research Center at 605-394-1937 shall be contacted for a literature search.

If borrow material is furnished from within the current geographical reservation boundaries or historic boundaries of the Lake Traverse, Yankton, or Flandreau-Santee reservations, the Contractor shall obtain THPO (Tribal Historical Preservation Office) clearance from the Tribal Cultural Resources Officer. This requirement is in addition to the SHPO clearance. If no Tribal contact exists, the required SHPO clearance shall suffice, with documentation of Tribal contact efforts provided to SHPO.

To facilitate SHPO and THPO responses, the Contractor should submit a cultural resources survey report or the results of the literature search along with a legal description of the site, a topographical map with the site clearly marked, and evidence of prior site disturbance to Terrence G. Keller, DOT Environmental Supervisor, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3721). Allow 30 days from the date this information is submitted to the Environmental Engineer for SHPO approval. The Contractor is responsible for obtaining all required permits and clearances for the borrow and/or waste disposal site(s) prior to commencing construction activities at the borrow and/or waste disposal site(s). The Contractor shall provide the required permits and clearances to the Engineer at the preconstruction meeting.

ORIGINAL LAGOON CONSTRUCTION DETAILS

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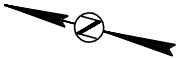
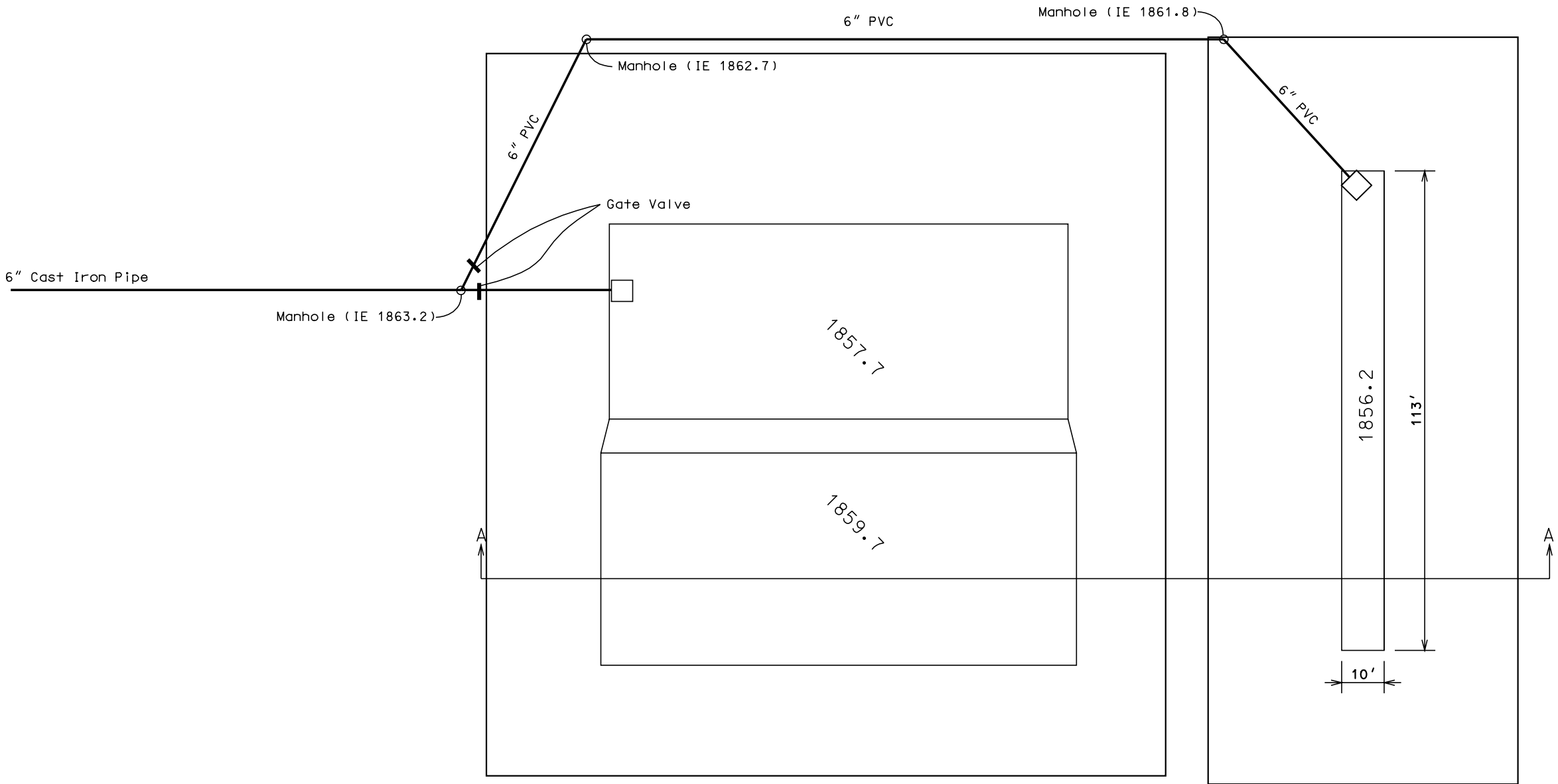
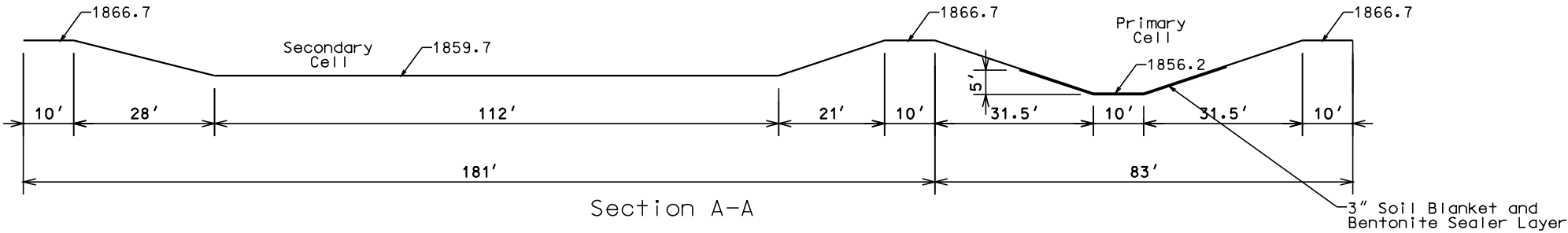


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EXISTING LAGOON SECTION

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PLOT NAME - LAGOON.DETAIL

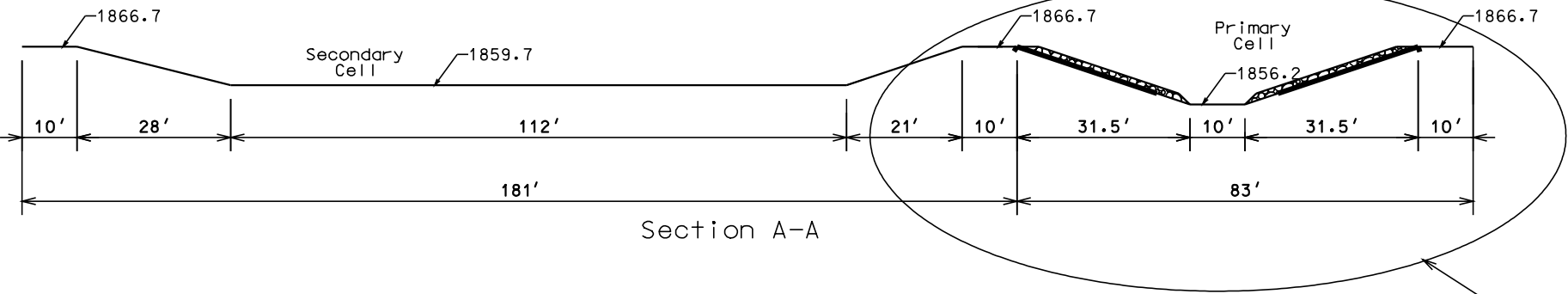
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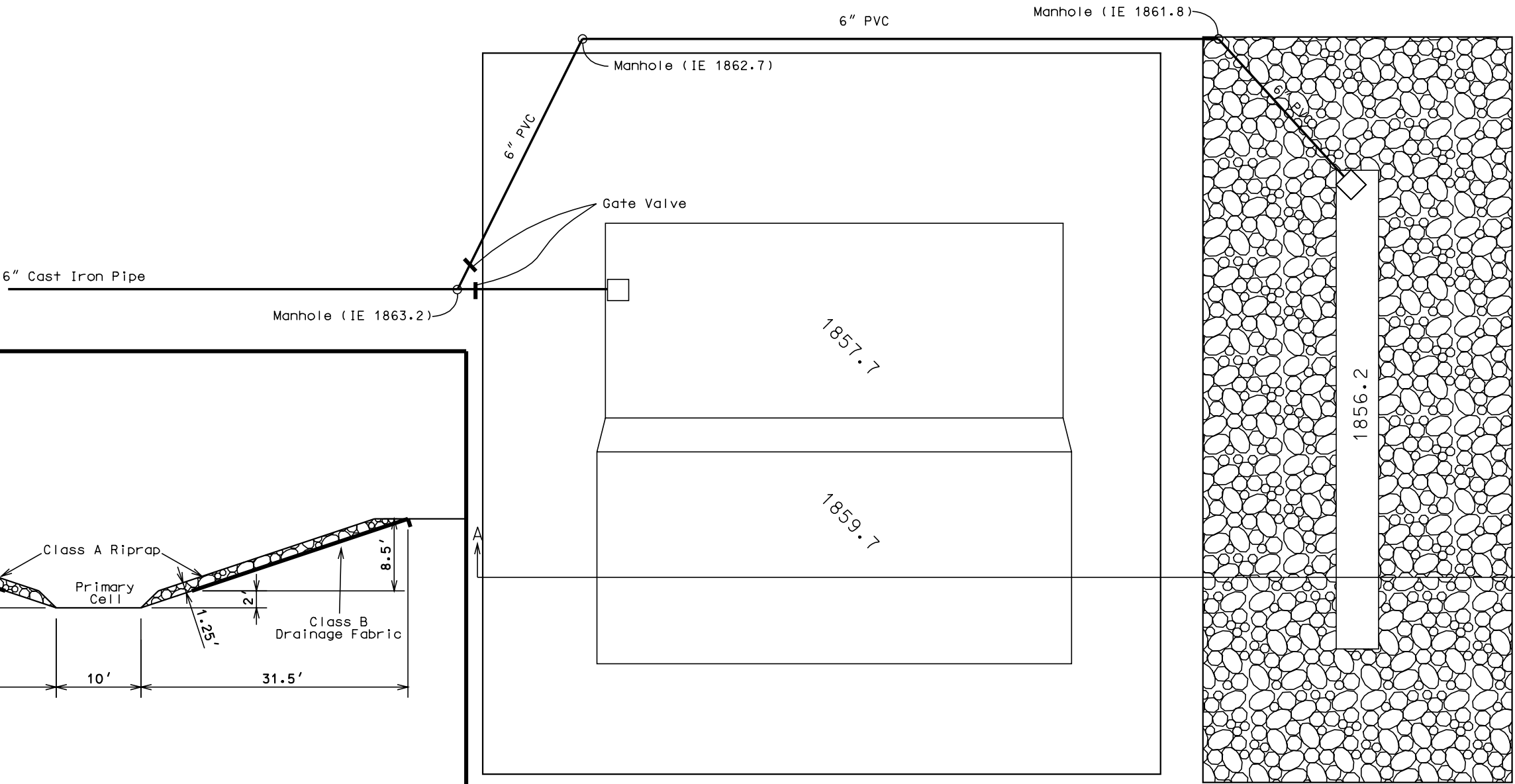
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PROPOSED LAGOON SECTION

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See Detail A



Detail "A"

Note: Chain Link Fence is located on top of berm.



PLOT NAME - LAGOON\_DETAIL1

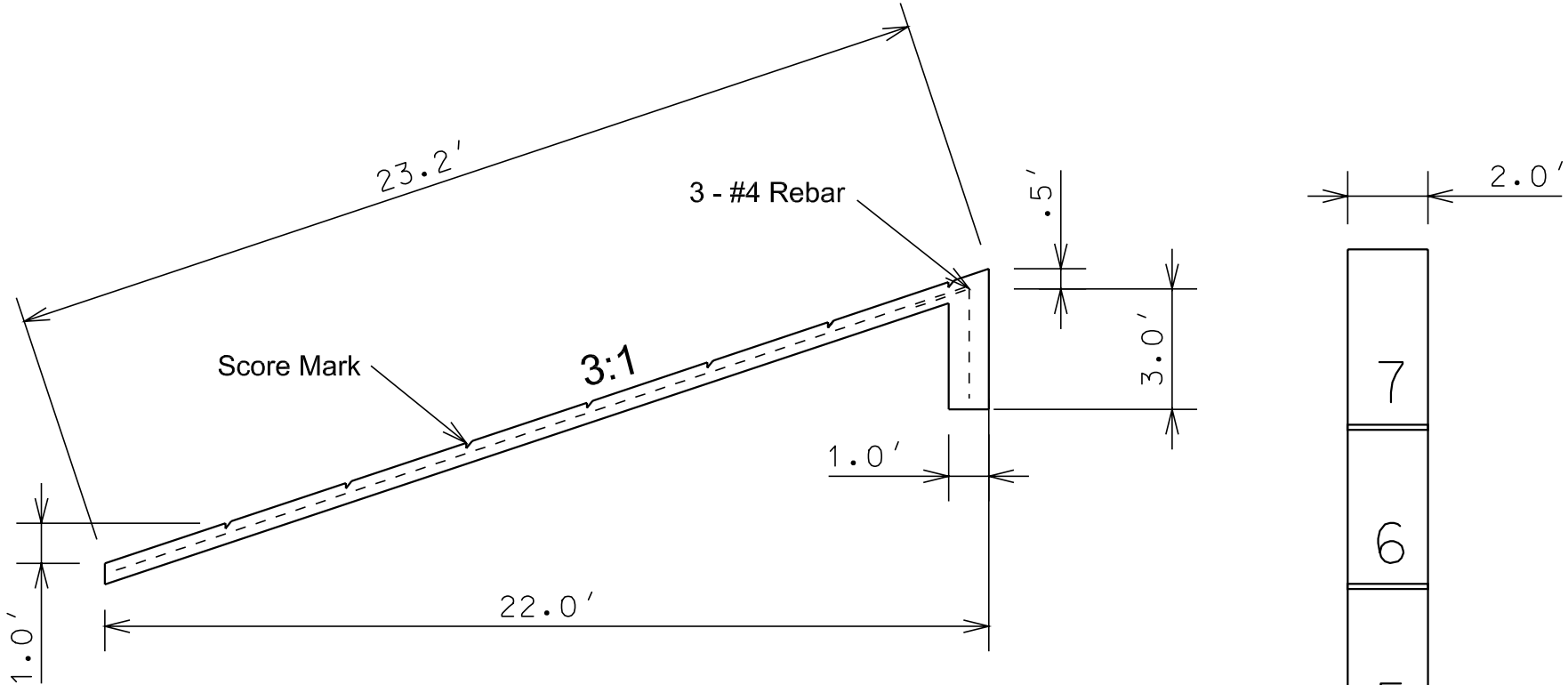
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# DEPTH INDICATOR

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NOTES:

- In place Depth Indicator shall be removed and become the property of the Contractor for his disposal.
- Depth Indicator to be a 24" x 6" concrete slab up the interior slope of the lagoon.
- Drainage Fabric shall be placed under Depth Indicator.
- Place 3 - #4 Rebar in slab. Maintain a minimum cover of 2" on rebar. Rebar to be equally spaced.
- Concrete Shall be Class M-6.
- Make 1" score in concrete for every one foot in vertical height.
- Paint water height numbers at score marks. Numbers shall be 12" high. Paint for numbers shall be a coal tar epoxy paint.
- All costs associated with the Water Depth Indicator, including disposal of in place indicator shall be incidental to the contract unit price per each for LAGOON DEPTH INDICATOR
- Depth Indicator shall be located so as to be easily visible and as directed by the Engineer. Riprap shall be placed around Depth Indicator and shall not obstruct view of Depth Indicator.

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Plotting Date: 29-APR-2009

