AS CONSTRUCTED		
NO REVISIONS ☐	REVISED ☒	VOID ☐

9/19/97
Construction Subaccount: 10486

REVISIONS			

COLORADO
DEPARTMENT OF TRANSPORTATION

COLORADO PROJECT NO. MC C510-005

EISENHOWER-JOHNSON MEMORIAL TUNNEL

INDEX OF PLANS

No Revisions 3 - 6, 8 - 10, 12 - 14

AS CONSTRUCTED

NO REVISIONS ____ REVISED 9/19/97 VOID ____

EISENHOWER-JOHNSON MEMORIAL TUNNEL
CONSTRUCTION SUBACCOUNT NO 10486

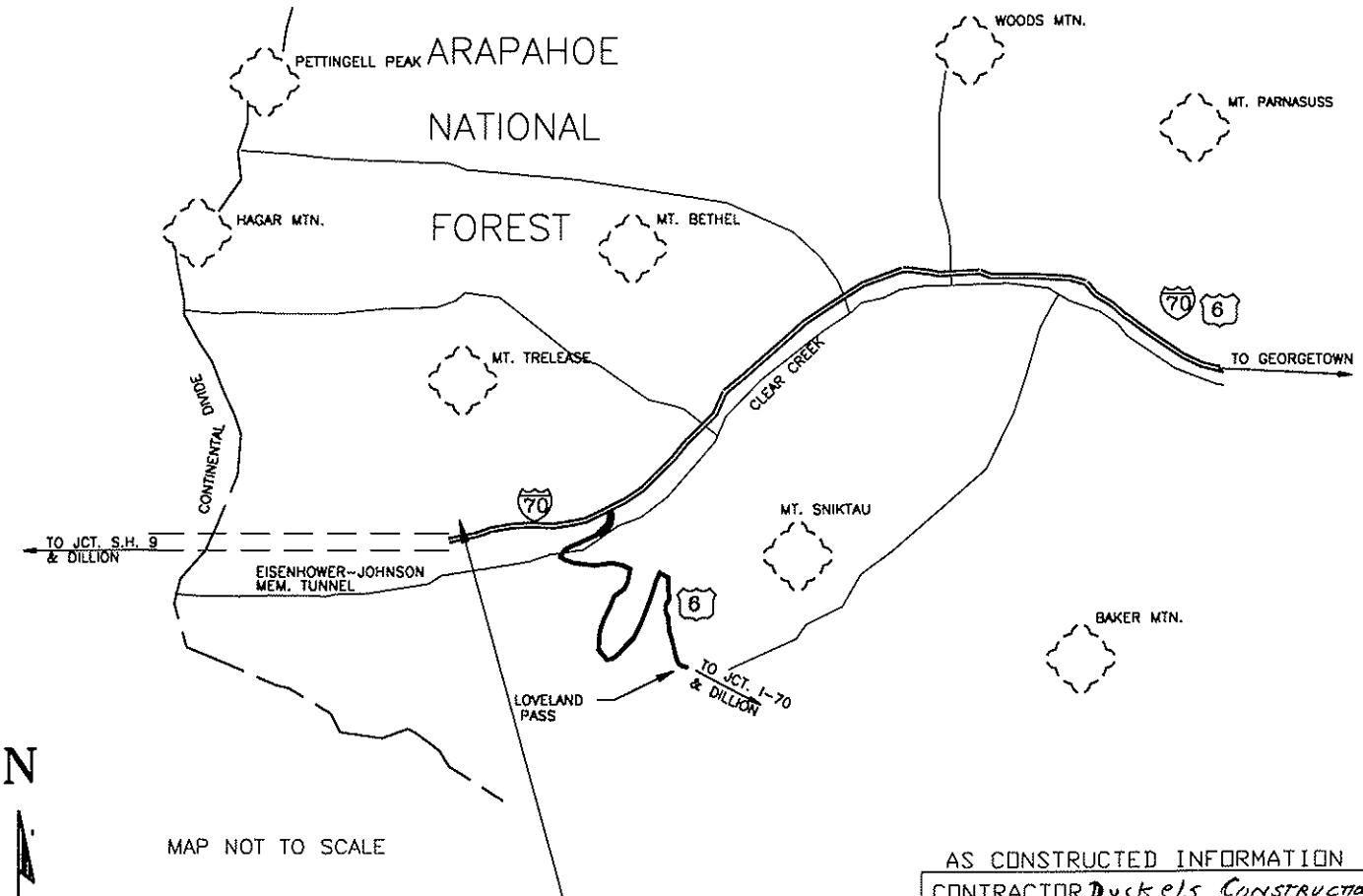
FWHA OVERSIGHT
YES ☐ NO ■

COLORADO
DEPARTMENT OF TRANSPORTATION

COLORADO PROJECT NUMBER MC C510-005

STATE HIGHWAY NO. I-70

CLEAR CREEK COUNTY



LOCATION OF PROJECT
M.P. 216 ON I-70 EAST BOUND

AS CONSTRUCTED INFORMATION

CONTRACTOR Duckels Construction
PROJECT ENGINEER BRIAN GILBERT
(Project or Resident)
PROJECT STARTED 8/01/97
PROJECT COMPLETED 9/19/97
AS CONSTRUCTED PLANS
APPROVED
RE 11/6/98
TITLE DATE

G.L.M./REGION 1

COLORADO PROJECT NO. MC C510-005
CONSTRUCTION SUBACCOUNT No. 10486

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THE STANDARD PLAN SHEETS INDICATED HEREON BY A MARKED BOX ARE TO BE USED TO CONSTRUCT THIS PROJECT.

STANDARD PLANS LIST

M & S STANDARDS NOVEMBER 1992

COLORADO PROJECT NO. MC C510-005
CONSTRUCTION SUBACCOUNT No. 10486

AS CONSTRUCTED			
NO REVISIONS [X]	REVISED [ ]	VOID [ ]	

9/19/97

DESCRIPTION OF PROJECT

This project is located on State Highway I-70 Westbound in Clear Creek County, Colorado. The project site is located at Mile Post 216 outside East Portal of the Eisenhower Tunnel within north-eastern parking lot.

The work shall consist of:

1. Provide and install a new 40,000 gal. emergency spill underground storage system at the specified location.

2. Provide and install a double wall delivery piping system from the existing pipe to the new tank as shown.

3. After the new system is operational, fill and plug the existing 20,000 gal. underground metal storage tank (tank has never been used).

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GENERAL NOTES

It is estimated that one 20,000 gal. underground metal storage tank will be filled and plugged on this project. This work will be paid for as a pay item 202-Plug Storage Tank. Removal of vent and manhole will be incidental to the work and will not be paid for separately. Contractor shall supply method of filling and plugging the tank to the Engineer for approval.

It is estimated that 1000 lineal feet of temporary fence will be required on this project.

It is estimated that 100 lineal feet of silt dike will be required on this project.

All excess excavation on this project shall become the property of the Contractor.

New piping system shall be connected to the existing 6 inch cast iron pipe at the indicated location. Contractor shall submit the detail to the Engineer for approval.

The Contractor is responsible to maintain a continuous traffic flow and an asphalt surface of the approach to the parking lot and the loop road.

Concrete barriers Type 4 (temporary) will be required on this project along both roadways. The length of the barrier along each roadway shall be extended 75 feet beyond each side of the excavated trench. Barriers shall be in accordance with M & S Standards M-606-12 and S-603-2. Barrier reflectors shall be placed at 30 ft intervals and will not be paid for separately. Placement of the barriers shall be approved by the Engineer. Barriers will not be paid for separately but included in the price of the work.

The existing utility lines are as shown on the drawings. Any additional information regarding utility lines at the project site can be obtained by the Contractor from the Eisenhower Tunnel Maintenance Section tel. (303) 623-7705, Rick Steele. All affected utility lines protection will be responsibility of the Contractor and shall not be paid for separately.

All traffic control required will be incidental to the work and will not be paid for separately.

CDOT will provide all required traffic cones and drum channelizing devices .

Contractor is to protect the existing culverts during construction operations.

HBP design shall be submitted to the Engineer for approval.

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NATIVE SEEDING

Soil preparation, fertilizer, seeding and mulching will be required for an estimated 0.3 acres of disturbed area within the right-of-way limits which are not surfaced. The following types and rates shall be used:

COMMON NAME	BOTANICAL NAME	LBS PLS/ACRE
Alpine bluegrass	Poa alpina	2
Canada bluegrass v. Reubens	Poa compressa	1
Sheep fescue v. Durar	Festuca ovina	2.5
Tufted hairgrass	Deschampsia caespitosa	0.5
Sandberg bluegrass	Poa sandbergii	2
Alsike clover	Trifolium hybridum	1
Yarrow	Achillea millefolium	0.1
Rocky Mtn. Penstemon	Penstemon strictus	1
	TOTAL:	10.1

FERTILIZER	LBS/ACRE AVAILABLE
NITROGEN:	80
PHOSPHORUS:	40
POTASSIUM:	75

SEEDING APPLICATION: Hand place and rake to a depth of .25"-.5" into the topsoil.

MULCHING APPLICATION: 1 ½ tons of certified weed free native hay per acre crimped into the topsoil.

SPECIAL REQUIREMENTS: Delete the fertilizer where sites are adjacent to water ways.

Project Totals:

212	Seeding (Native)	0.3 acre
213	Mulching (Weed Free)	0.3 acre
✦212	Fertilizer (Available N)	24.0 lbs
✦212	Fertilizer (Available K)	12.0 lbs
✦212	Fertilizer (Available P)	22.5 lbs
✦212	Soil Preparation	0.3 acre

Note: ✦ For Information Only

COLORADO PROJECT No. MC C510-005
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SUMMARY OF ~~APPROXIMATE~~ FINAL QUANTITIES

CONTRACT ITEM No.	CONTRACT ITEM	UNIT	ROADWAY				ROADWAY	
			PLAN	AS CONST.			PLAN	AS CONST.
202	PLUG STORAGE TANK	EACH	1	1			1	1
206	STRUCTURE BACKFILL (SPECIAL) (FLOW- FILL)	CY	77	72			77	72
208	SILT DIKE	LF	100	100			100	100
212	SEEDING (NATIVE)	AC	0.30	0.30			0.30	0.30
213	MULCHING (WEED FREE)	AC	0.30	0.30			0.30	0.30
603	6" PLASTIC PIPE (SPECIAL)(FRP)	LF	210	222			210	222
607	FENCE (TEMPORARY)	LF	1000	1000			1000	1000
622	STORAGE TANK (40,000 GAL.)	EACH	1	1			1	1
625	CONSTRUCTION SURVEYING	LS	1	1			1	1
626	MOBILIZATION	LS	1	1			1	1
	FORCE ACCOUNT							
700	F/A MINOR CONTRACT REVISIONS	F A	1	0			1	0
700	F/A OJT PILOT	F A	1	0			1	0
700	F/A ESB	F A	1	0			1	0

COLORADO PROJECT MC C510-005
CONSTRUCTION SUBACCOUNT #10486

AS CONSTRUCTED			
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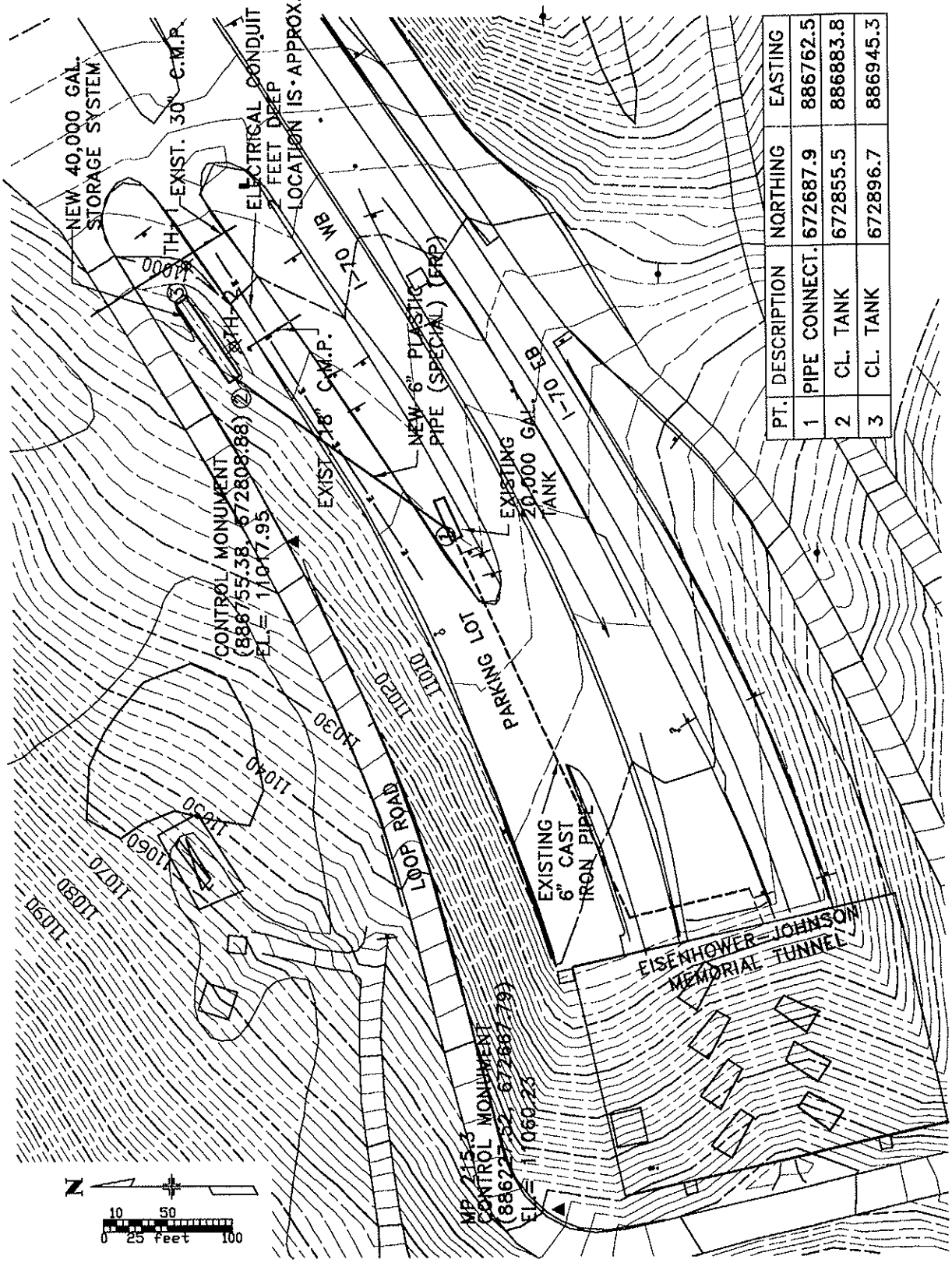
9/19/97

SITE PLAN



PT.	DESCRIPTION	NORTHING	EASTING
1	PIPE CONNECT.	672687.9	886762.5
2	CL. TANK	672855.5	886883.8
3	CL. TANK	672896.7	886945.3

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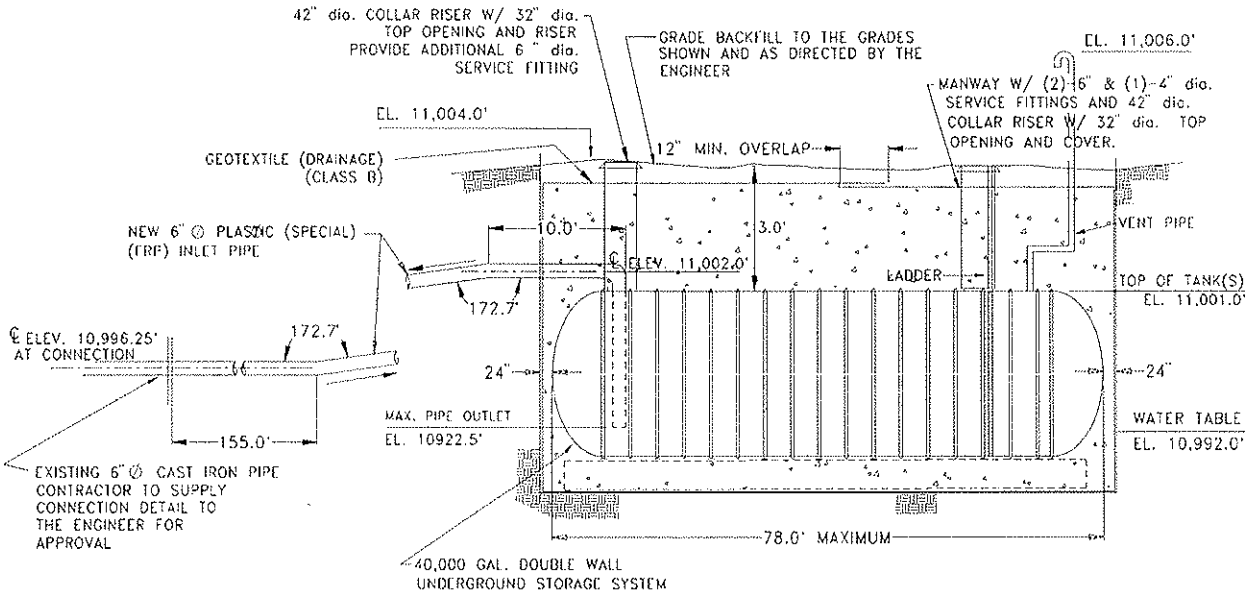
UNDERGROUND STORAGE SYSTEM

ELEVATION



NOTES:

1. Maximum total length of tank(s) configuration shall not exceed 78 feet.

2. Location and type of manway, vent pipe and fittings to be determined by the Manufacturer. If two-tank configuration is chosen, each tank shall be equipped with a manway and a vent pipe as shown.

3. Anchors to be determined by the Contractor in accordance with plans and specifications and approved by the tank manufacturer in writing.

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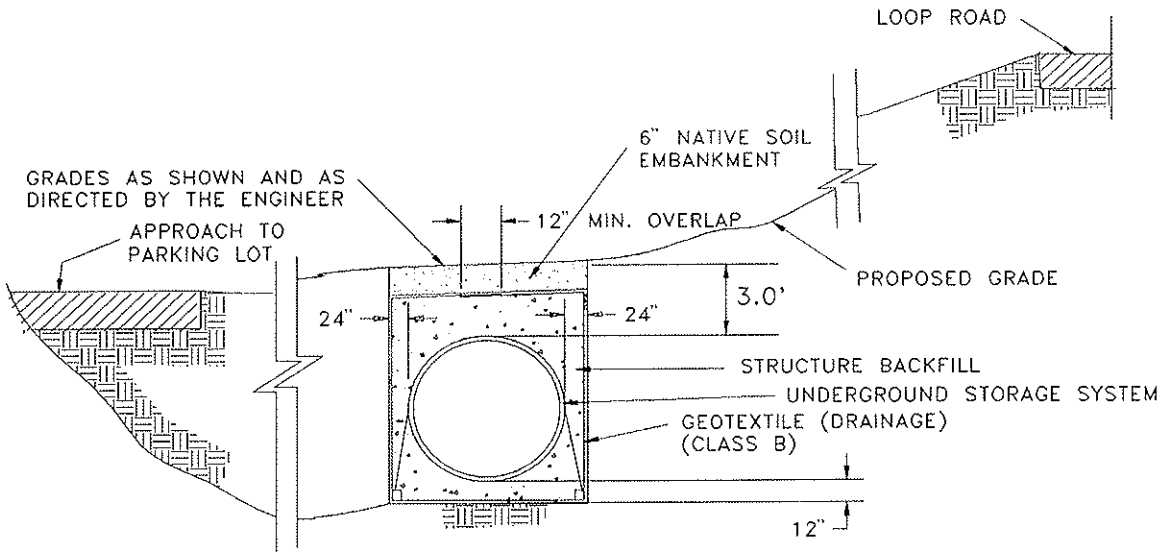
UNDERGROUND STORAGE SYSTEM DETAIL



NOTE:

1. Final grading will be incidental to the tank(s) installation and will not be paid for separately.
2. Underground storage system will be paid for as a pay item 622 Storage Tank (40,000 gal.).

QUANTITIES

ITEM No.	DESCRIPTION	UNIT	QUANTITY
622	STORAGE TANK (40,000 GAL.)	EACH	1

(FOR INFORMATION ONLY)

ITEM No.	DESCRIPTION	UNIT	QUANTITY
203	EMBANKMENT (CIP)	CU. YD.	222.0 ▲
206	STRUCTURE EXCAVATION	CU. YD.	639.0
206	STRUCTURE BACKFILL	CU. YD.	390.0 ✤
420	GEOTEXTILE (DRAINAGE) (CLASS B)	SQ. YD.	21.0

✤ Excludes volume of the tank
▲ Includes 22 cu. yd. of 6" native soil embankment and 200 cu. yd. of final grading.
Note: Quantities are based on dimensions shown and a tank size 10.5' dia. X 74' long.

COLORADO PROJECT MC C510-005
CONSTRUCTION SUBACCOUNT #10486

AS CONSTRUCTED				
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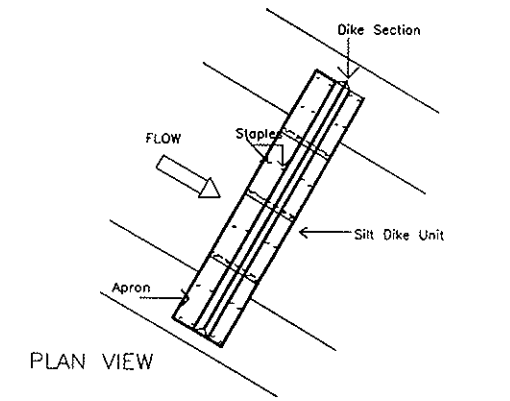
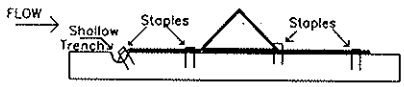
SILT DIKE DETAIL

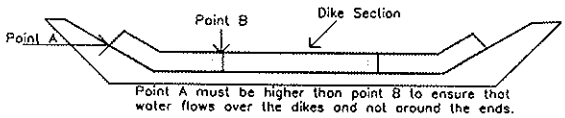
TRIANGULAR SILT DIKE INSTALLATION FOR ROADWAY DITCH OR DRAINAGE DITCH



PLAN VIEW

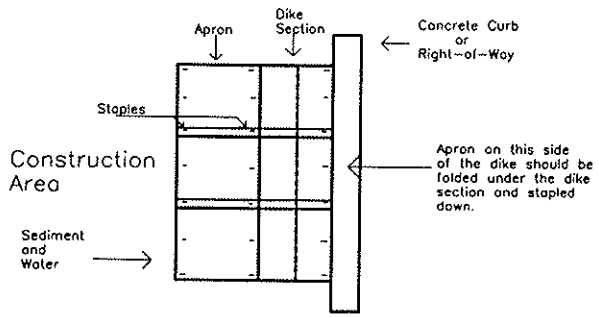


SIDE VIEW

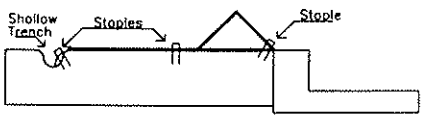


FRONT VIEW

TRIANGULAR SILT DIKE INSTALLATION FOR CONTINUOUS BARRIER



PLAN VIEW



As Constructed
No Revisions: 9/19/97
Revised:
Void:

TO ESTABLISH GEOMETRIC CONTROL FOR THE CONSTRUCTION OF THIS PROJECT, THE DEPARTMENT HAS PROVIDED THE FOLLOWING INFORMATION:

	Format*
■ Horizontal Control	Plans
■ Vertical Control	Plans
☐ Roadway Alignment	
☐ Original Terrain Data	
☐ Other:	

*Specify the information format, ie., plan sheet, computer disk, computer printout, or other.
The information marked is either contained on the plans or is available from the Engineer.

TYPE OF PROJECT
- ☐ Landscaping
- ☐ Signalization
- ☐ Safety Improvement
- ☐ Asphalt Overlay
- ☐ Concrete Overlay
- ☐ Minor Widening
- ☐ Major Reconstruction
- ☐ New Roadway Construction
- ☐ Bridge Replacement
- ☐ Bridge Widening
- ☐ New Bridge
- ■ Other: Storage Tank

SURVEY WORK TO BE PERFORMED BY OTHERS: _____

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER ITEM 625:

- ___ ☐ Establish and Maintain Project Centerline or Engineer Approved Offset Line(s)
- ___ ■ Verification and Maintenance of Horizontal and Vertical Control
- ___ ☐ Verify or Determine existing grades and alignments
- ___ ☐ Verify or Determine existing topography
- ___ ☐ Clearing and Grubbing Limits
- ___ ■ Removal Limits
- ___ ☐ Excavation and Embankment

	SLOPE STAKING	GRID	GRADE STAKES	SPECIAL INTERVAL
___ ☐ Excavation				
___ ☐ Unclassified	–	–	–	–
___ ☐ Stripping	–	–	–	–
___ ☐ Muck	–	–	–	–
___ ☐ Rock	–	–	–	–
___ ☐ Borrow	–	–	–	–
___ ☐ Other: _____	–	–	–	–
___ ☐ Embankment	–	–	–	–
___ ☐ Site Grading	–	–	–	–
___ ☐ Erosion Control (Perm)	–	–	–	–
___ ☐ Other: _____	–	–	–	–

  - ___ ☐ As Staked Earthwork Quantities
- ___ ☐ Landscaping
  - ___ ☐ Top Soil
  - ___ ☐ Seeding
  - ___ ☐ Mulching
  - ___ ☐ Planting
  - ___ ☐ Other: _____
- ___ ☐ Erosion Control
  - ___ ☐ Seeding (Temp)
  - ___ ☐ Silt Fences
  - ___ ☐ Straw Bales
  - ___ ☐ Temporary Berm
  - ___ ☐ Riprap (Temp)
  - ___ ☐ Other (Temp Diversion, Temp Slope Drain, Bush Barrier, Check Dam, Other: _____)

	GRADE STAKES	GRID	SPECIAL INTERVAL	SPECIAL OFFSET
___ ☐ Roadway Bases				
___ ☐ Untreated Subgrade	–	–	–	–
___ ☐ Treated Subgrade	–	–	–	–
___ ☐ Aggregate Base Course	–	–	–	–
___ ☐ Other: _____	–	–	–	–
___ ☐ Pavements				
___ ☐ PMBB – Plant Mix Bituminous Base	–	–	–	–
___ ☐ HBP – Hot Bituminous Pavement	–	–	–	–
___ ☐ Concrete	–	–	–	–
___ ☐ Other: _____	–	–	–	–

- ___ ☐ Roadway Elements
  - ___ ☐ Curb and Gutter
  - ___ ☐ Drop Inlets – alignment and grades
  - ___ ☐ Retaining Walls
  - ___ ☐ Guard Rail
  - ___ ☐ Sidewalk
  - ___ ☐ Other: _____

GENERAL NOTES FOR AND WORK PERFORMED BY THE CONTRACTORS SURVEYOR UNDER ITEM 629 WILL BE FOUND ON SURVEY SUBSET SHEET S2 OF 2.

- ___ ☐ Riprap (Perm)
- ___ ☐ Slope and Ditch Paving
- ___ ■ Minor Structures
  - ___ ■ Structure Excavation limits
  - ___ ☐ Culverts
  - ___ ☐ Culverts w/ Headwalls and Wingwalls
  - ___ ☐ Concrete Box Culverts w/ Headwalls and Wingwalls
  - ___ ■ Pipes
    - ___ ☐ Sanitary Sewer
    - ___ ☐ Storm Sewer
    - ___ ☐ Water
    - ___ ☐ Irrigation
    - ___ ☐ Miscellaneous
  - ___ ☐ Manholes
  - ___ ☐ Inlets
  - ___ ■ Other: Storage Tank
- ___ ☐ Major Structures – Overhead Signs, Concrete Box Culverts, Bridges – and all other structures assigned a structure number
  - ___ ☐ Structure Excavation limits
  - ___ ☐ Concrete Box Culverts w/ Headwalls and Wingwalls
  - ___ ☐ Piling locations and cut off elevations
  - ___ ☐ Caisson locations and elevations
  - ___ ☐ Footing locations, alignment, and elevations
  - ___ ☐ Abutment/Pier locations, alignment, and elevations
  - ___ ☐ Wingwall skew angles/offsets
  - ___ ☐ Structural concrete form locations
  - ___ ☐ Substructure survey (See Revision of Subsection 601.12(m))
  - ___ ☐ Bridge expansion joint(s) alignment and grade (longitudinal and transverse)
  - ___ ☐ Deck grades at Girder 10th or "n" th point locations and elevations
  - ___ ☐ Slope and Ditch Paving
  - ___ ☐ Other: _____
- ___ ☐ Fencing
  - ___ ☐ Temporary
  - ___ ☐ Permanent
  - ___ ☐ Sound Barriers
  - ___ ☐ Other: _____
- ___ ☐ Delineators
  - ___ ☐ Temporary
  - ___ ☐ Permanent
- ___ ☐ Lighting and Traffic Control Devices (Perm)
  - ___ ☐ Signal pole locations and elevations
  - ___ ☐ Light pole locations and elevations
  - ___ ☐ Signs
  - ___ ☐ Field verify sign post locations, elevations, and lengths before fabrication.
  - ___ ☐ Other: _____
- ___ ☐ Pavement Marking
  - ___ ☐ Striping (Temp)
  - ___ ☐ Striping (Perm)
  - ___ ☐ Symbols
  - ___ ☐ Other: _____
- ___ ☐ Temporary Lighting and Construction Traffic Control Devices
  - ___ ☐ Signal pole locations and elevations (Temp)
  - ___ ☐ Light pole locations and elevations (Temp)
  - ___ ☐ Signs (Temp)
  - ___ ☐ Other: _____
- ___ ☐ Easement (Temp)(Staking)

Computer File Information			Survey Tabulation 1 of 2		Project No./Code
Creation Date:	Initials: JPC		Issued By: S.C. & M. Branch Revised 04/15/96		MC C510-005
Last Modification Date:	Initials: JPC				10486
Full Path: C:\Tab\					
Drawing File Name: 10486 tab.dwg					Sheet Number 13
Acad Ver. R12	Scale: 1:2	Units: Feet	Sheet Subset: Survey	Sheet: S1 of 2	

As Constructed
No Revisions: 9/19/97
Revised:
Void:

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER ITEM 629:

___ ☐ Monumentation
- ___ ☐ Control
- ___ ☐ Right of Way (Temp) (Staking)
- ___ ☐ Right of Way
- ___ ☐ Land corners, Aliquot corners
- ___ ☐ Easement (Temp)(Staking)
- ___ ☐ Easement (Perm)
- ___ ☐ Reference the specified existing monuments:_____
- ___ ☐ Relocate the specified existing monuments: _____
- ___ ☐ Locate monuments. It is estimated _____ hours are required.

** A Tabulation of Survey Monuments may be provided on the plans.

GENERAL NOTES:

All work shall be done in accordance with the latest edition of the entire CDOT Survey Manual including all revisions to date:
- Chapter 5 - Construction Surveying, revised 02/07/96.

Adequate information for establishing lines, grades, and locations for all work items have been specified on the plans. Any additional information required to stake the item or element shall be generated by the Contractor's surveyor.

The Contractor's surveyor shall provide an estimate of the man-hours necessary to complete the work items indicated on this sheet. A copy of this sheet, with the estimated man-hours written on the blank line to the left of the specified items, shall be submitted with the Survey Schedule to the Engineer __3__ days prior to the Preconstruction Conference.

The following surveying notebooks are required:
- ☐ Alignment Notebook
- ☐ Benchmark Notebook
- ☐ Control Survey/Monumentation Notebook
- ■ Minor Structure Notebook
- ☐ Major Structure Notebook
- ☐ Slope Staking Notebook
- ☐ Grade Notebook
- ☐ Other Notebook(s):_____

Stakes and Monuments which are damaged or destroyed by the progress of construction shall be replaced by the Contractor at no additional cost to the Department.

The Contractor shall furnish an As Staked earthwork quantity to the Engineer prior to completion of twenty percent (20%) of the planned earthwork in any phase as per the CDOT Survey Manual.
A printed copy of the As Staked earthwork data and a computer disk in the specified format shall be submitted to the Engineer.
The Contractor shall field verify original ground cross sections at maximum 160 m (500 ft) intervals.

Prior to beginning work on any subsequent operation, such as placing base course or paving, the Contractor shall certify in writing to the Engineer that the final grade is within the specified tolerance.

The Contractor shall perform all field surveying and calculations necessary to tie plan grades into field grades.

The Contractor shall coordinate construction staking on the project with any utility work.

The control survey shown on the plans was performed by KLH-TriConsultants.

Computer File Information				Survey Tabulation 2 of 2	Project No./Code
Creation Date:		Initials:	JPC	Issued By: S.C. & M. Branch Revised 04/15/96	MC C510-005
Last Modification Date:		Initials:	JPC		
Full Path:	C:\Tab\				10486
Drawing File Name:	10486 tab.dwg				
Acad Ver. R12	Scale: 1:2	Units:	Feet	Sheet Subset: Survey	Sheet: S2 of 2	Sheet Number 14

COLORADO PROJECT No. MC C510-005
CONSTRUCTION SUBACCOUNT No. 10486

AS CONSTRUCTED				
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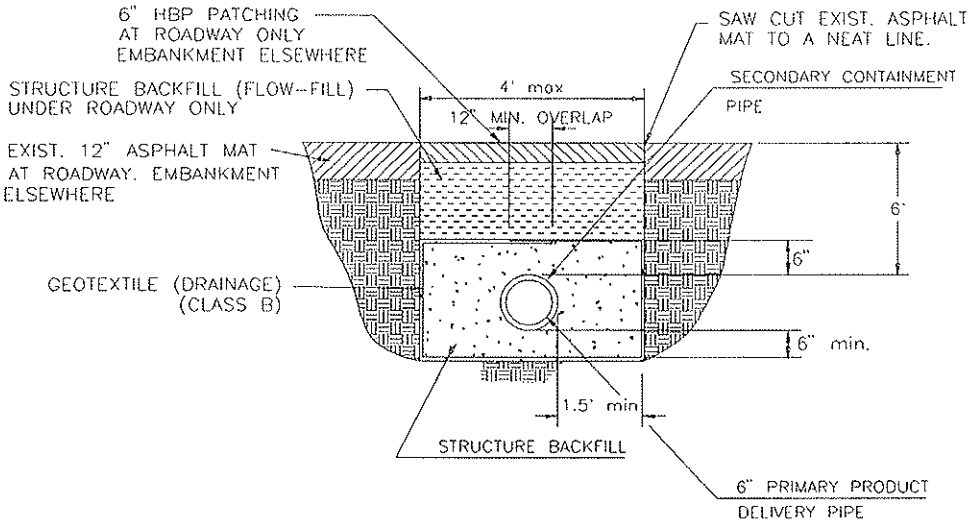
PIPE DETAIL



NOTE: Final grading will be incidental to the pipe installation and will not be paid for separately.

QUANTITIES

ITEM No.	DESCRIPTION	UNIT	QUANTITY
206	STRUCTURE BACKFILL (SPECIAL) (FLOW-FILL)	CU. YD.	~~77.0~~ 72
603	6" PLASTIC PIPE (SPECIAL) (FRP)	LF	~~210.0~~ 222

(FOR INFORMATION ONLY)

ITEM No.	DESCRIPTION	UNIT	QUANTITY
202	REMOVAL OF ASPHALT MAT	SQ. YD.	42.0
203	EMBANKMENT (CIP)	CU. YD.	112.0
206	STRUCTURE EXCAVATION	CU. YD.	252.0
206	STRUCTURE BACKFILL	CU. YD.	56.0 ✤
403	HBP (PATCHING) (ASPHALT)	SQ. YD.	42.0
420	GEOTEXTILE (DRAINAGE) (CLASS B)	SQ. YD.	47.0

✤ Includes volume of the pipe.

Note: Quantities are based on the max./min. dimensions shown.