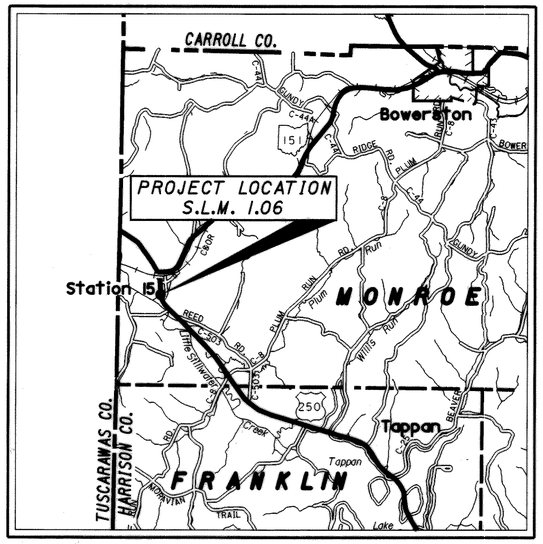



**LOCATION MAP**

LATITUDE: N40°23'10" LONGITUDE: W81°15'40"

SCALE IN MILES
0 1 2 3 4

N

PORTION TO BE IMPROVED
STATE & FEDERAL ROUTES
OTHER ROADS

## DESIGN DESIGNATION

| | |
|---|---|
| CURRENT ADT (2003) | 5500 |
| DESIGN YEAR ADT (2023) | 7500 |
| DESIGN HOURLY VOLUME (2023) | 750 |
| DIRECTIONAL DISTRIBUTION | 55% |
| TRUCKS (24 HOUR B&C) | 28% |
| DESIGN SPEED | 55 MPH |
| LEGAL SPEED | 55 MPH |

DESIGN FUNCTIONAL CLASSIFICATION - RURAL ARTERIAL
NHS PROJECT - YES

## DESIGN EXCEPTION

NONE REQUIRED

**UNDERGROUND UTILITIES**
TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

**PLAN PREPARED BY:**
O.D.O.T.
DISTRICT 11
NEW PHILADELPHIA, OHIO

ENGINEERS SEAL:
STATE OF OHIO JOHN P. BARNHOUSE E-62295 REGISTERED PROFESSIONAL ENGINEER
SIGNED:
DATE: 01-21-03

# STATE OF OHIO
# DEPARTMENT OF TRANSPORTATION

# HAS-250-1.06

## MONROE TOWNSHIP
## HARRISON COUNTY

### INDEX OF SHEETS


| | |
|---|---|
| TITLE SHEET | 1 |
| TYPICAL SECTION | 2 |
| GENERAL NOTES | 3 |
| GENERAL SUMMARY | 4 |
| CALCULATIONS & ESTIMATED QUANTITIES | 5 |
| PLAN & PROFILE | 6 |
| CROSS-SECTIONS | 7-10 |
| CULVERT PLAN & PROFILE | 11 |
| CULVERT DETAILS | 12-18 |
| RIGHT OF WAY | 19-20 |


### PROJECT DESCRIPTION

IMPROVEMENT OF 0.01 MILES OF U.S. 250 IN MONROE TOWNSHIP OF HARRISON COUNTY. THE EXISTING STRUCTURE HAS-250-0106 WILL BE RELINED WITH AN 18' x 10' CONCRETE BOX WITH MINIMAL ROADWAY APPROACH WORK TO INCLUDE GUARDRAIL.

### 2002 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT THE PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

### STANDARD CONSTRUCTION DRAWINGS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| BP-3.1 | 7-28-00 | | | TC-41.20 | 1-19-01 | | |
| | | | | TC-52.10 | 4-20-01 | | |
| | | | | TC-52.20 | 4-20-01 | | |
| | | | | MT-97.10 | 4-19-02 | | |
| DM-1.1 | 7-19-02 | | | MT-105.10 | 10-18-02 | | |
| DM-4.3 | 7-19-02 | | | MT-105.11 | 10-18-02 | | |
| DM-4.4 | 7-19-02 | | | MT-110.10 | 10-18-02 | | |
| GR-1.1M | 10-21-97 | | | | | | |
| GR-1.2M | 1-3-96 | | | | | | |
| GR-2.1M | 4-14-98 | | | | | | |
| GR-2.2M | 10-21-97 | | | | | | |

### SUPPLEMENTAL SPECIFICATIONS

| | |
|---|---|
| 802 | 7-19-02 |
| 864 | 7-11-00 |
| 908 | 4-19-02 |

### SPECIAL PROVISIONS

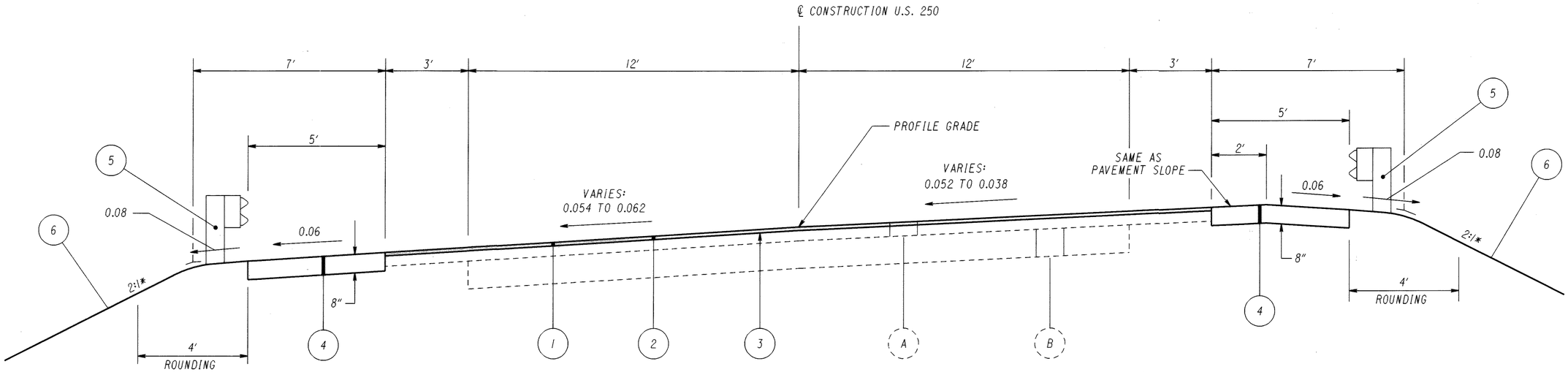
| | | |
|---|---|---|
| NWP #3 | MAINTENANCE | 10-30-02 |

APPROVED
DATE 01-21-03 DISTRICT DEPUTY DIRECTOR

APPROVED
DATE 2-10-03 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. TE21-G020(511)
PID NO. 13043
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
HAS-250-1.06
1/20

HAS - USR 250 - 1.06
030237 PID - 13043
Dist 11 4/23/2003



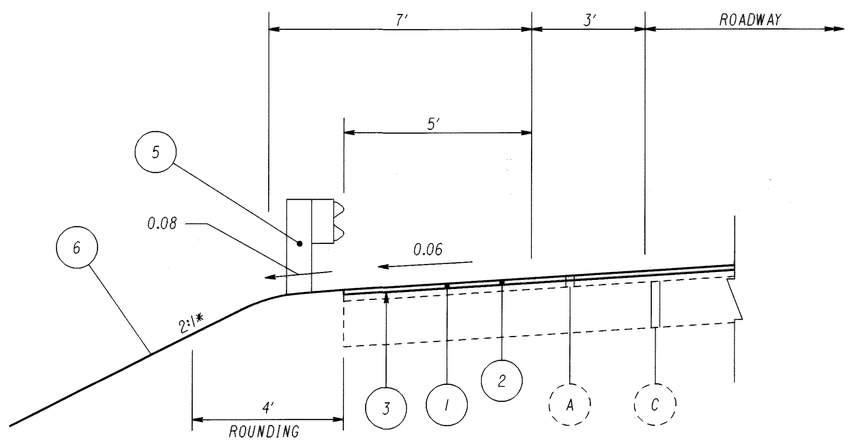

SHOULDER SECTION APPLIES:
STA. 56+00 TO STA. 56+30 LT. & RT. = 30 FT.
STA. 56+60 TO STA. 57+00 LT. & RT. = 40 FT.

## SUPERELEVATED SECTION - U.S. 250

SECTION APPLIES:
STA. 56+00 TO STA. 57+00 = 100 FT.

## LEGEND

- (1) ITEM 448 - 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE I, PG 64-22, AS PER PLAN
- (2) ITEM 254 - 1½" PAVEMENT PLANING, ASPHALT CONCRETE
- (3) ITEM 407 - TACK COAT, APPLIED AT 0.0.75 GAL/S.Y.
- (4) ITEM 304 - AGGREGATE BASE
- (5) ITEM 606 - GUARDRAIL, TYPE 5
- (6) ITEM 659 - SEEDING AND MULCHING
- (A) EXISTING ASPHALT CONCRETE
- (B) EXISTING REINFORCED CONCRETE
- (C) EXISTING BRIDGE DECK




## SHOULDER SECTION ACROSS STRUCTURE

SECTION APPLIES:
STA. 56+30 TO STA. 56+60 LT. & RT. = 30 FT.

* OR AS SHOWN ON CROSS SECTIONS

CALCULATED TKD
CHECKED JPB

# TYPICAL SECTION

HAS-250-1.06

# GENERAL NOTES

CALCULATED TKD | CHECKED JPB

## CLEARING AND GRUBBING

All trees and stumps specifically marked for removal within the construction limits shall be removed under the lump sum bid for Item 201, Clearing and Grubbing. The following is an approximate estimate of the number of trees and stumps to be removed:

| Size | No. of Trees | No. of Stumps | Total |
|---|---|---|---|
| 18" | 3 | 0 | 3 |

## ELEVATION DATUM

All elevations are based on NAVD 1988 datum.

## ROUNDING

The rounding at slope breakpoints shown on the Typical Sections apply to all cross sections even though otherwise shown.

## UTILITIES

Listed below are all utilities located within the project construction limits together with their respective owners:

RESOURCE AMERICA, INC.
515 STILLWATER AVENUE
DENNISON, Ohio 44621
740-922-4698

The location of the underground utilities shown on the plans are as obtained from the owners as required by O.R.C. Section 153.64.

## CONTINGENCY QUANTITIES

The Contractor shall not order materials or perform work for items designated by plan note to be used "as directed by the Engineer" unless authorized by the Engineer. The actual work locations and quantities used for such items shall be incorporated into the final change order governing completion of this project.

## WORK LIMITS

The work limits shown on these plans are for physical construction only. The installation and operation of all temporary traffic control and temporary traffic control devices required by these plans shall be provided by the Contractor whether inside or outside these work limits.

## CONVERSION OF STANDARD CONSTRUCTION DRAWINGS

The metric standard drawings referenced in this plan shall be converted to English units using the SI (Metric) to English conversion factors provided in section 109.02 of the 2002 Construction and Materials Specifications. Conversions shall be appropriately precise and shall reflect standard industry English values where suitable.

## STREAM CHANNEL EXCAVATION

The Contractor shall take all precautions necessary to prevent any incidental discharges associated with the excavation and hauling of material from the stream channel. This pertains to any excavation operations such as foundation pier or abutment excavation, channel cleanout, excavation for rock channel protection, and removal of any temporary fill associated with construction operations.

## DEMOLITION DEBRIS

The Contractor shall take precautions to avoid and/or limit demolition debris from entering the stream. Any material that does fall into the stream shall be removed as soon as possible.

## INSTREAM WORK

Instream work will be limited where practicable and only clean, non-erodible material will be used for fords, cofferdams, or other equipment access pads. This temporary placed material will be removed and the stream bottom restored to near natural conditions when the work is completed.

## CONSTRUCTION NOISE

Activities and land use adjacent to this project may be affected by construction noise. In order to minimize any adverse construction noise impacts, any power-operated construction-type device shall not be operated between the hours of 9 p.m. and 7 a.m. In addition, any such device shall not be operated at any time in such a manner that the noise created substantially exceeds the noise customarily and necessarily attendant to the reasonable and efficient performance of such equipment.

## EROSION CONTROL

Item 601 is provided in the plans for erosion control. Rock of a stable nature shall not be removed in order to place this item. The Engineer shall check and non-perform quantities or adjust locations and quantities of this item where indicated by field conditions during construction.

## SEEDING AND MULCHING

Seeding and mulching shall be applied to all areas of exposed soil between the right-of-way lines, and within the construction limits for areas outside the right-of-way lines covered by work agreement or slope easement. Quantity calculations for seeding and mulching are based on these limits.

## NOTIFICATION OF WORK ZONE LANE RESTRICTIONS

The Contractor shall notify the Engineer at least eighteen (18) days prior to implementing any work zone restrictions that will reduce the width or vertical clearance of any lane on which traffic will be maintained during construction.

The Engineer shall immediately notify the District Roadway Services Manager to advise the Office of Highway Management of the restrictions.

## CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

When it is necessary to splice proposed guardrail to existing guardrail, only the existing guardrail shall be cut, drilled, or punched. The connection shall be made using a "W-Beam Rail Splice" as shown in AASHTO M 180. Payment shall be included in the contract price for the respective guardrail items.

## DRAIN CONNECTORS

All drains, which are encountered during construction, shall be provided with unobstructed outlets. Existing collectors which are located below the roadway ditch elevations, and which cross the roadway, shall be replaced within the construction limits by Item 603 Conduit, Type B, one commercial size larger than the existing conduit.

Existing collectors and isolated farm drains, which are encountered above the elevation of roadway ditches, shall be outletted into the roadway ditch by 603 Type F conduit. The optimum outlet elevation shall be 12" above the flowline elevation of the ditch. Lateral field tiles that cross the roadway shall be intercepted by 603, Type E conduit, and carried in a longitudinal direction to an adequate outlet or roadway crossing.

The location, type, size and grade of replacements shall be determined by the Engineer, and payment shall be made on final measurements.

Erosion control pads and animal guards shall be provided at the outlet end of all farm drains as per Standard Construction Drawing DM-1.1, except when they outlet into a drainage structure. Payment for the erosion control pads, animal guards, and any necessary bends or branches shall be included for payment in the pertinent conduit items.

The following estimated quantities have been included in the general summary for the work noted above:

Item 603, 15" Conduit, Type B - - - - - - - - - - - - - - - 40 Ft.
Item 603, 6" Conduit, Type E - - - - - - - - - - - - - - - 10 Ft.
Item 603, 4" Conduit, Type F - - - - - - - - - - - - - - - 10 Ft.

## ITEM 448 ASPHALT CONCRETE SURFACE COURSE TYPE 1, PG64-22, AS PER PLAN

Material furnished for fine and coarse aggregates used in this item shall exclude all stone and crushed carbonate stone.

## TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

The following estimated quantities are to be placed by the contractor with the Engineer's concurrence for temporary erosion and sediment control measures:

207, Construction Seeding and Mulching 40 Sq. Yd.
207, Perimeter Filter Fabric Fence 480 Ft.
207, Filter Fabric Ditch Check 150 Ft.
659, Repair Seeding and Mulching 100 Sq. Yd.
659, Commercial Fertilizer 0.01 Ton

## ITEM 614 - MAINTAINING TRAFFIC

The Contractor shall maintain 2 lanes of traffic at all times in accordance with the requirements of Item 614. Traffic shall be maintained at all times by use of the existing pavement and existing bridge deck. Exceptions to requiring 2 lanes open are as follows:

1.) The time necessary to off-load box sections from transportaion vehicles. (Setting the box sections to grade shall not interfere with traffic and should be accomplished from a position adjacent to the roadway.)

2.) Pavement planing and resurfacing operations and guardrail replacement.

3.) Pumping grout through the bridge deck.

Traffic shall be maintained for the above exceptions using flaggers and Std. Const. Dwg. MT-97.10.

The Contractor shall maintain permanent "Road Construction Ahead" (OW-128) signs and "End Construction" (OC-8) signs for each direction per Std. Const. Dwg. MT-97.10 throughout the duration of the project.

Length and duration of lane closures and restrictions shall be at the approval of the Engineer. It is the intent to minimize the impact to the traveling public. Lane closures or restrictions over segments of the project in which no work is anticipated within a reasonable time frame, as determined by the Engineer, shall not be permitted. The level of utilization of maintenance of traffic devices shall be commensurate with the work in progress.

Access for local property owners shall be maintained at all times.

All existing lanes shall be open to traffic between November 15 and March 15. November 15 shall be considered to constitute an interim completion date, and liquidated damages shall be assessed according to Section 108.07 for each calendar day that all lanes are not open and available to traffic.

No work shall be performed, and all existing lanes shall be open to traffic, during the following designated holidays or events:

Memorial Day Fourth of July
Labor Day

The period of time that the lanes are to be open depends on the day of the week on which the holiday or event falls. The following schedule shall be used to determine this period:

| Day of the Week: | Time All Lanes Must Be Open to Traffic: |
|---|---|
| Sunday | 12:00 noon Friday through 12:00 noon Monday |
| Monday | 12:00 noon Friday through 12:00 noon Tuesday |
| Tuesday | 12:00 noon Monday through 12:00 noon Wednesday |
| Wednesday | 12:00 noon Tuesday through 12:00 noon Thursday |
| Thursday | 12:00 noon Wednesday through 12:00 noon Monday |
| Friday | 12:00 noon Thursday through 12:00 noon Monday |
| Saturday | 12:00 noon Friday through 12:00 noon Monday |

No extensions of time shall be granted for delays in material deliveries, unless such delays are industry-wide, or for labor strikes, unless such strikes are area-wide.

Should the Contractor fail to meet any of these requirements, the Contractor shall be assessed liquidated damages in accordance with Section 108.07.

All work and traffic control devices shall be in acordance with 614 and other applicable portions of the specifications, as well as the Ohio Manual of Uniform Traffic Control Devices. Payment for all labor, equipment and materials shall be included in the Lump Sum contract price for 614, Maintaining Traffic, unless separately itemized in the plan.

## TEMPORARY ORANGE PLASTIC CONSTRUCTION FENCE

Temporary orange plastic construction fence shall be placed as shown in the plan for the protection of pedestrian traffic. It is the responsibility of the Contractor to insure that the fence is in good condition and properly placed and maintained. The fence shall meet the requirements of Standard Drawing MT-110.10.

The following estimated quantity has been carried to the General Summary:

Item 607 - Fence Misc: Orange Plastic Construction Fence - - - 175 Ft.

HAS-250-1.06

| SHEET NUMBER | ITEM | ITEM EXT. | GRAND TOTAL | UNIT | DESCRIPTION | AS PER PLAN SHEET NO. |
|---|---|---|---|---|---|---|
| | | | | | **ROADWAY** | |
| LUMP | 201 | 11000 | LUMP | | CLEARING AND GRUBBING | |
| 30 | 202 | 35100 | 30 | FT | PIPE REMOVED, 24" AND UNDER | |
| 112.5 | 202 | 38000 | 112.5 | FT | GUARDRAIL REMOVED | |
| 64 | 202 | 38500 | 64 | FT | BRIDGE RAILING REMOVED | |
| 467 | 203 | 10000 | 467 | CU YD | EXCAVATION | |
| 58 | 203 | 20000 | 58 | CU YD | EMBANKMENT | |
| 187.5 | 606 | 13000 | 187.5 | FT | GUARDRAIL, TYPE 5 | |
| 175 | 607 | 98000 | 175 | FT | FENCE, MISC.: ORANGE PLASTIC CONSTRUCTION FENCE | |
| | | | | | **EROSION CONTROL** | |
| 40 | 207 | 10000 | 40 | SQ YD | CONSTRUCTION SEEDING AND MULCHING | |
| 480 | 207 | 30100 | 480 | FT | PERIMETER FILTER FABRIC FENCE | |
| 150 | 207 | 30200 | 150 | FT | FILTER FABRIC DITCH CHECK | |
| 144 | 601 | 32104 | 144 | CU YD | ROCK CHANNEL PROTECTION, TYPE B WITH FABRIC FILTER | |
| 2 | 659 | 00100 | 2 | EACH | SOIL ANALYSIS TEST | |
| 39 | 659 | 00300 | 39 | CU YD | TOPSOIL | |
| 351 | 659 | 10000 | 351 | SQ YD | SEEDING AND MULCHING | |
| 100 | 659 | 14000 | 100 | SQ YD | REPAIR SEEDING AND MULCHING | |
| 0.01 / 0.05 | 659 | 20000 | 0.06 | TON | COMMERCIAL FERTILIZER | |
| 0.15 | 659 | 30000 | 0.15 | TON | AGRICULTURAL LIME | |
| 2 | 659 | 35000 | 2 | M GAL | WATER | |
| | | | | | **DRAINAGE** | |
| 10 | 603 | 00406 | 10 | FT | 4" CONDUIT, TYPE F | |
| 10 | 603 | 01400 | 10 | FT | 6" CONDUIT, TYPE E | |
| 40 | 603 | 05900 | 40 | FT | 15" CONDUIT, TYPE B | |
| | | | | | **PAVEMENT** | |
| 366 | 254 | 01000 | 366 | SQ YD | PAVEMENT PLANING, ASPHALT CONCRETE | |
| 18 | 304 | 20000 | 18 | CU YD | AGGREGATE BASE | |
| 28 | 407 | 10000 | 28 | GALLON | TACK COAT | |
| 16 | 448 | 47021 | 16 | CU YD | ASPHALT CONCRETE SURFACE COURSE, TYPE I, PG64-22, AS PER PLAN | 3 |
| | | | | | **TRAFFIC CONTROL** | |
| 4 | 626 | 00100 | 4 | EACH | BARRIER REFLECTOR, TYPE A | |
| 0.04 | 642 | 00100 | 0.04 | MILE | EDGE LINE, TYPE I | |
| 0.02 | 642 | 00300 | 0.02 | MILE | CENTER LINE, TYPE I | |
| | | | | | **STRUCTURES** | |
| | | | | | FOR BRIDGE NO. HAS-250-0106, SEE SHEET NO. 12 | |
| LUMP | 614 | 11000 | LUMP | | MAINTAINING TRAFFIC | |
| | 619 | 16000 | 4 | MONTH | FIELD OFFICE, TYPE A | |
| | 623 | 10000 | LUMP | | CONSTRUCTION LAYOUT STAKES | |
| | 624 | 10000 | LUMP | | MOBILIZATION | |

CALCULATED TKD
CHECKED JPB

# GENERAL SUMMARY

HAS-250-1.06

**ITEM 448 - ASPHALT CONCRETE SURFACE COURSE TYPE I, PG 64-22, AS PER PLAN**

STA. 56+00 TO STA. 57+00
100' x 30' x 1.5" ÷ 12 ÷ 27 = 13.88 Cu. Yd.
(Use 14 Cu. Yd.)

SHOULDERS

STA. 56+30 TO STA. 56+60 Lt. & Rt.
30' x 5' x 1.5" ÷ 12 ÷ 27 x 2 = 1.39 Cu. Yd.
(Use 2 Cu. Yd.)

Total = 16 Cu. Yd.

**ITEM 254 - 1½" PAVEMENT PLANING, ASPHALT CONCRETE**

STA. 56+00 TO STA. 57+00
100' x 30' ÷ 9 = 333.33 Sq. Yd.
(Use 333 Sq. Yd.)

SHOULDERS

STA. 56+30 TO STA. 56+60 Lt. & Rt.
30' x 5' ÷ 9 x 2 = 33.33 Sq. Yd.
(Use 33 Sq. Yd.)

Total = 366 Sq. Yd.

**ITEM 304 - AGGREGATE BASE**

SHOULDERS

STA. 56+00 TO STA. 56+30 Lt. & Rt.
2 x 30' x 5' x 8" ÷ 12 ÷ 27 = 7.41 Cu. Yd.
(Use 8 Cu. Yd.)

STA. 56+60 TO STA. 57+00 Lt. & Rt.
2 x 40' x 5' x 8" ÷ 12 ÷27 = 9.88 Cu. Yd.
(Use 10 Cu. Yd.)

Total = 18 Cu. Yd.

**ITEM 407 - TACK COAT**

STA. 56+00 TO STA. 57+00
100' x 30' ÷ 9 x 0.075 Gal/Sq. Yd. = 25 Gal.

SHOULDERS

STA. 56+30 TO STA. 56+60 Lt. & Rt.
30' x 5' ÷ 9 x 0.075 Gal/Sq. Yd. x 2 = 2.5 Gal.
(Use 3 Gal.)

Total = 28 Gal.

**ITEM 642 - EDGE LINE, TYPE I (WHITE)**

STA. 56+00 TO STA. 57+00, LT. & RT.
2 x 100' ÷ 5280/mile = 0.04 Miles

Use 0.04 Miles

**ITEM 642 - CENTER LINE, TYPE I (DOUBLE YELLOW)**

STA. 56+00 TO STA. 57+00, ℄
100' ÷ 5280'/mile = 0.02 Miles

Use 0.02 Miles

**ITEM 601 - ROCK CHANNEL PROTECTION, TYPE B WITH FABRIC FILTER**

- 500.37 Sq. Ft. x 2.5 Ft. ÷ 27 = 46.33 Cu. Yd. (Inlet)
- 709.28 Sq. Ft. x 2.5 Ft. ÷ 27 = 65.67 Cu. Yd. (Outlet)
- 72 Sq. Ft. x 3 Ft. Avg. ÷ 27 x 4 = 32 Cu. Yd. (Apron)

TOTAL 144 Cu. Yd.

USE 144 Cu. Yd.

**ITEM 659 - SOIL ANALYSIS TEST** - 2 Each

**ITEM 659 - TOPSOIL**
351 Sq. Yd. x 4" ÷ 36 = 39 Cu. Yd. USE 39 Cu. Yd.

**ITEM 659 - COMMERCIAL FERTILIZER**
351 Sq. Yd. x 9 x 30 lbs/1000 Sq. Ft. x 1/2000 = 0.05 Ton

**ITEM 659 - AGRICULTURAL LIME**
351 Sq. Yd. x 9 x 92 lbs/1000 Sq. Ft. x (1/2000) = 0.15 Ton

**ITEM 659 - WATER**
351 Sq. Yd. x 9 x 300 Gal/1000/1000 x 2 = 1.89 (USE 2 M Gal.)

**SEEDING AND EARTHWORK TABLE**

| SHEET | 659 SEEDING & MULCHING | 203 EXCAVATION | 203 EMBANKMENT |
|---|---|---|---|
| | SQ. YD. | CU. YD. | CU. YD. |
| 7 | 146 | 176 | 25 |
| 8 | 136 | 33 | 33 |
| 9 | 34 | 142 | 0 |
| 10 | 35 | 116 | 0 |
| | | | |
| TOTAL | **351** | **467** | **58** |

| SHEET NO. | REF NO. | STATION TO STATION | SIDE | | 202 GUARDRAIL REMOVED | 202 BRIDGE RAILING REMOVED | 202 PIPE REMOVED 24" & UNDER | 606 GUARDRAIL, TYPE 5 | 626 BARRIER REFLECTOR, TYPE A | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | FT | FT | FT | FT | EACH | | |
| 6 | R-1 | Sta. 55+97 To Sta. 56+91 | Lt. | | 56.25 | 32 | | | | | |
| 6 | R-2 | Sta. 55+97 To Sta. 56+91 | Rt. | | 56.25 | 32 | | | | | |
| 6 | R-3 | | Lt. | | | | 15 | | | | |
| 6 | R-4 | | Lt. | | | | 15 | | | | |
| 6 | GR-1 | Sta. 55+97 To Sta. 56+91 | Lt. | | | | | 93.75 | 2 | | |
| 6 | GR-2 | Sta. 55+97 To Sta. 56+91 | Rt. | | | | | 93.75 | 2 | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| **TOTALS CARRIED TO GENERAL SUMMARY** | | | | | **112.5** | **64** | **30** | **187.5** | **4** | | |

◔ Area Planimetered By Computer
Totals Carried to General Summary

CALCULATED TKD CHECKED JPB

**CALCULATIONS & ESTIMATED QUANTITIES**

**HAS-250-1.06**

P.I. Sta = 61+37.94
△ = 43° 00′ 00″ (LT)
Dc = 4° 00′ 00″
Rc = 1,432.39′
Ts = 765.94′
Lc = 675.00′
Ls = 400′
Es = 112.12′
TS = Sta. 53+72.00
SC = Sta. 57+72.00
CS = Sta. 64+47.00
ST = Sta. 68+47.00

TE21-G020(511)
BEGIN PROJECT
STA. 56+22.72
S.L.M. 1.06

BEGIN WORK
STA. 55+97

END PROJECT
STA. 56+67.02
S.L.M. 1.07

END WORK
STA. 57+00

For Quantities, See Sheet No. 5.
For Culvert Details, See Sheet No. 11-18.

Temporary Orange Construction Fence
Trib. Little Stillwater Creek
Mobile Home
Framed Comm. Building
Temporary Easement
Ex. Channel Easement
Construction Limits
20" Ash
8" Maple
8" Ash
10" Maple
8" Elm
Ex. R/W
Connect to Existing Gaurdrail, Sta. 55+97±
Existing 12" Conduit
90°40′13" From Tan.
90°1′17" From Tan.
Connect to Ex. Guardrail Sta. 56+91±
SC Sta. 57+72.00
Gravel Parking Area
54+00
55+00
56+00
57+00
58+00
59+00
℄ Construction U.S. 250
To Cadiz
R-1
R-2
R-3
R-4
GR-1
GR-2
Connect to Ex. Guardrail Sta. 55+97±
Sta. 56+20.00, U.S. 250 ℄ = Sta. 1+00, ℄ Culvert
S84°35′21.9"W
Connect to Ex. Guardrail Sta. 56+91±
Sta. 56+44.87, ℄ U.S. 250 = Sta. 1+00.15, ℄ of Culvert
℄ of Culvert
Construction Limits
Ex. Channel Easement
Temporary Easement

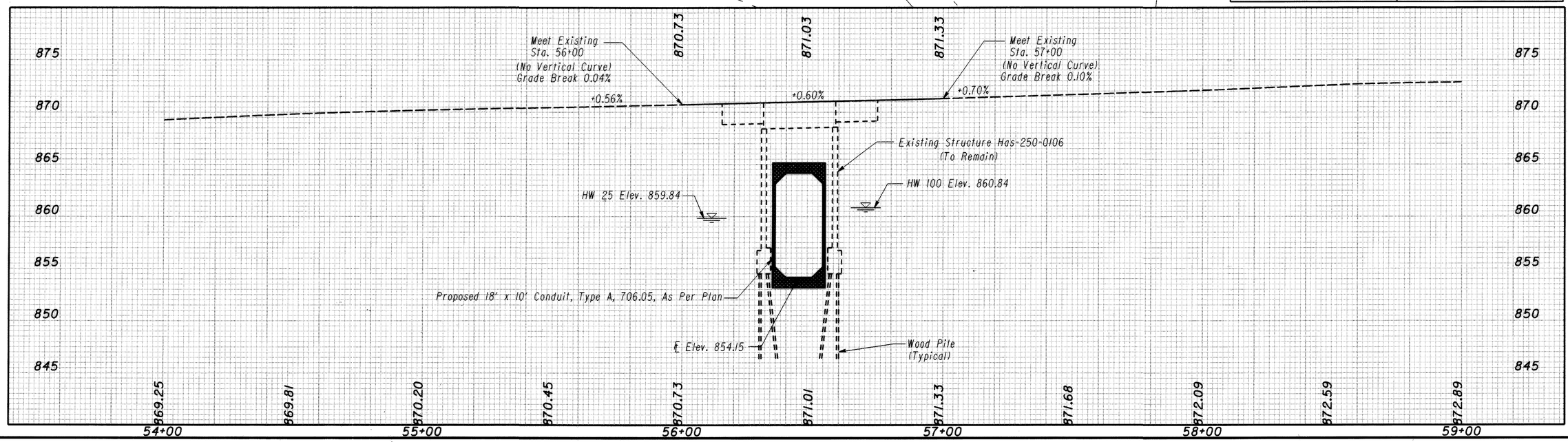
CMON
Minespike
℄ U.S. 250
41.61′
29.69′
25.81′
I.P.
P.O.C. Sta. 59+00.00

24.00′
24.43′
24.62′
P.O.C. Sta. 54+00.00

39.66′
46.76′
25.88′
S.C. Sta. 57+72.00

**BENCHMARK**
STA. 56+69.49, ℄ U.S. 250
22.46′ LEFT
ELEV. 869.74
CONCRETE MONUMENT

**BENCHMARK**
STA. 59+11.48, ℄ U.S. 250
40.04′ LEFT
ELEV. 873.38
CONCRETE MONUMENT




CALCULATED TKD
CHECKED JPB

HORIZONTAL SCALE IN FEET
0 10 20 40

# PLAN AND PROFILE
# STA. 54+00 TO STA. 59+00

HAS-250-1.06

6
20

I:\PROJECTS\13043\dgn\gpl00.dgn 22-JAN-2003 8:37 AM tdowdell

| SEEDING END WIDTH | SEEDING SQ. YDS. |
|---|---|
| 27.2 | |
| | 77.4 |
| 66.5 | |
| | 44.2 |
| 13 | |
| | 24.4 |
| 9 | |
| | 146 |

120 100 80 60 40 20 0 20 40 60 80 100 120

℄ Const. U.S. 250

31' 37'

To Be Removed

2:1 2.3:1

Low Strength Mortar Backfill

0.20%

68' x 18' x 10' Conduit, Type A, 706.05, As Per Plan

Item 601 - 30" of Rock Channel Protection, Type B With Filter Fabric

870.99

56+44.87

871.00

2:1 2:1

Portions of Structure Removed

Item 601 - 30" of Rock Channel Protection, Type B With Filter Fabric

870.90

56+30.00

870.91

870.85

56+20.00

870.85

870.73

56+00.00

870.73

Begin Earthwork and Seeding

℄ Const. U.S. 250

Sheet Totals

Sheet Totals Carried To Sheet No. 5.

| END AREA CUT | END AREA FILL | VOLUME CUT | VOLUME FILL |
|---|---|---|---|
| | | | |
| 0 | 87.5 | | |
| | | 100.6 | 24.1 |
| Ahead 365.4 | 0 | | |
| Back 373.9 | 0 | | |
| | | 70.4 | 0.2 |
| 6.3 | 1 | | |
| | | 4.6 | 0.5 |
| 6.1 | 0.5 | | |
| | | 176 | 25 |

CALCULATED TKD CHECKED JPB

MAINLINE CROSS SECTION SHEET STA. 56+00.00 TO STA. 56+44.87

HAS-250-1.06

7/20

| SEEDING END WIDTH | SEEDING SQ. YDS. |
|---|---|
| 8.9 | |
| | 21.2 |
| 10.2 | |
| | 57.4 |
| 41.5 | |
| | 57.7 |
| | 136 |

Sheet Totals

120 100 80 60 40 20 0 20 40 60 80 100 120

℄ Const. U.S. 250

880 / 870 / 860

871.33
57+00.00
871.33

End Earthwork and Seeding

880 / 870 / 860

871.19
56+80.00
871.21

880 / 870 / 860

Item 601 - 30" of Rock Channel Protection, Type B With Filter Fabric

2:1

2:1

Portions of Structure Removed
871.08
56+60.00
871.09

Item 601 - 30" of Rock Channel Protection, Type B With Filter Fabric

870 / 860 / 850

℄ Const. U.S. 250

120 100 80 60 40 20 0 20 40 60 80 100

| END AREA CUT | END AREA FILL | VOLUME CUT | VOLUME FILL |
|---|---|---|---|
| 5.3 | | | |
| | | 4.3 | 0.4 |
| 6.4 | 1 | | |
| | | 18.5 | 4.6 |
| Ahead 43.6 | 11.4 | | |
| Back 35 | 11.4 | | |
| | | 9.8 | 27.7 |
| Sheet Totals Carried To Sheet No. 5. | | 33 | 33 |

CALCULATED TKD
CHECKED JPB

MAINLINE CROSS SECTION SHEET
STA. 56+60.00 TO STA. 57+00.00

HAS-250-1.06

8
20

| SEEDING END WIDTH | SEEDING SQ. YDS. | END AREA CUT | END AREA FILL | VOLUME CUT | VOLUME FILL |
|---|---|---|---|---|---|
| | | | | | |
| 8.3 | | 167 | 0 | | |
| | 7.6 | | | 61.5 | 0 |
| 10.8 | | 297.9 | 0 | | |
| | 11.5 | | | 62.9 | 0 |
| 9.9 | | 42.4 | 0 | | |
| | 14.8 | | | 17.8 | 0 |
| 7.9 | | 21.6 | 0 | | |
| 34 | Sheet Totals | Sheet Totals Carried To Sheet No. 5. | | 142 | 0 |

120 100 80 60 40 20 ℄ 20 40 60 80 100 120

870 / 860 / 850

For Earthwork, See Mainline Cross Sections

2:1

℄ 854.22

861.4

0+57.15

864.7

Suspend Earthwork and Seeding

1.5:1

Item 601 - 30" of Rock Channel Protection, Type B With Filter Fabric

℄ 854.23

861.0

0+50.00

865.5

1.5:1

Item 601 - 30" of Rock Channel Protection, Type B With Filter Fabric

℄ 854.24

0+40.00

866.4

1.5:1

0+25.00

866.6

Begin Earthwork and Seeding Quantities

CALCULATED TKD

CHECKED JPB

# INLET CHANNEL CROSS SECTION SHEET STA. 0+25.00 TO STA. 0+57.15

HAS-250-1.06

9 / 20

| SEEDING END WIDTH | SEEDING SQ. YDS. | END AREA CUT | END AREA FILL | VOLUME CUT | VOLUME FILL |
|---|---|---|---|---|---|
| 0 | | 0 | 0 | | |
| | 3.1 | | | 9.3 | 0 |
| 8 | | 71.5 | 0 | | |
| | 8.9 | | | 27.5 | 0 |
| 12 | | 113.8 | 0 | | |
| | 22.7 | | | 78.9 | 0 |
| 25.6 | | 278.8 | 0 | | |
| | 35 Sheet Totals | | | 116 | 0 |

120 100 80 60 40 20 ℄ 20 40 60 80 100 120

870 / 860 / 850

1+75.00
862.43

End Earthwork and Seeding

Item 601 - 30" of Rock Channel Protection, Type B With Filter Fabric

2:1 1.5:1

℄ 853.37

1+68.00
860.74

Item 601 - 30" of Rock Channel Protection, Type B With Filter Fabric

2:1 1.5:1

℄ 853.39

1+60.00
862.45

Item 601 - 30" of Rock Channel Protection, Type B With Filter Fabric

2:1 2:1

℄ 854.07

861.30
1+49.15
865.19

Resume Earthwork and Seeding

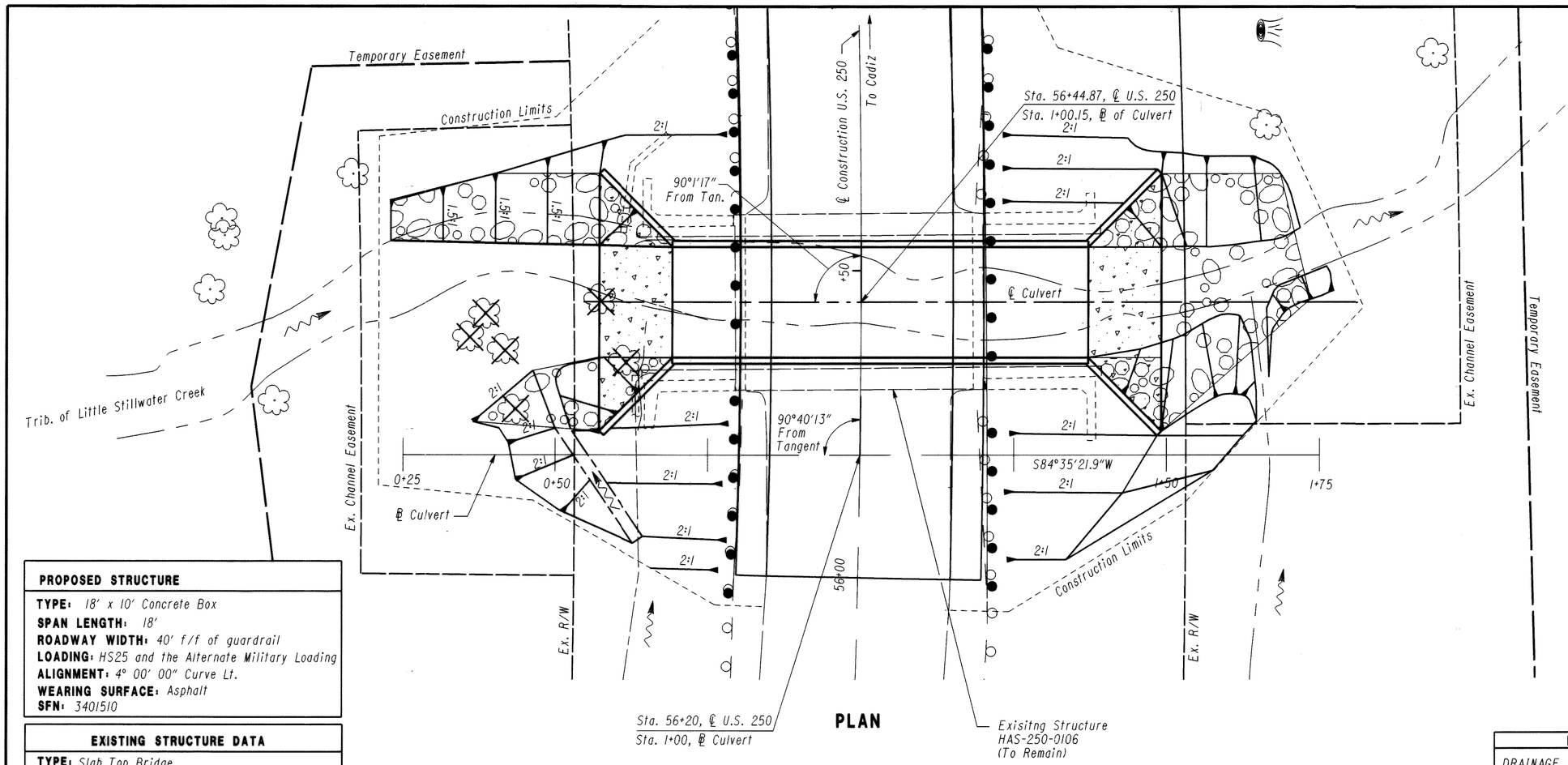
Sheet Totals Carried To Sheet No. 5.

CALCULATED TKD
CHECKED JPB

# OUTLET CHANNEL CROSS SECTION SHEET STA. 1+49.15 TO STA. 1+75.00

HAS-250-1.06

10
20




PLAN

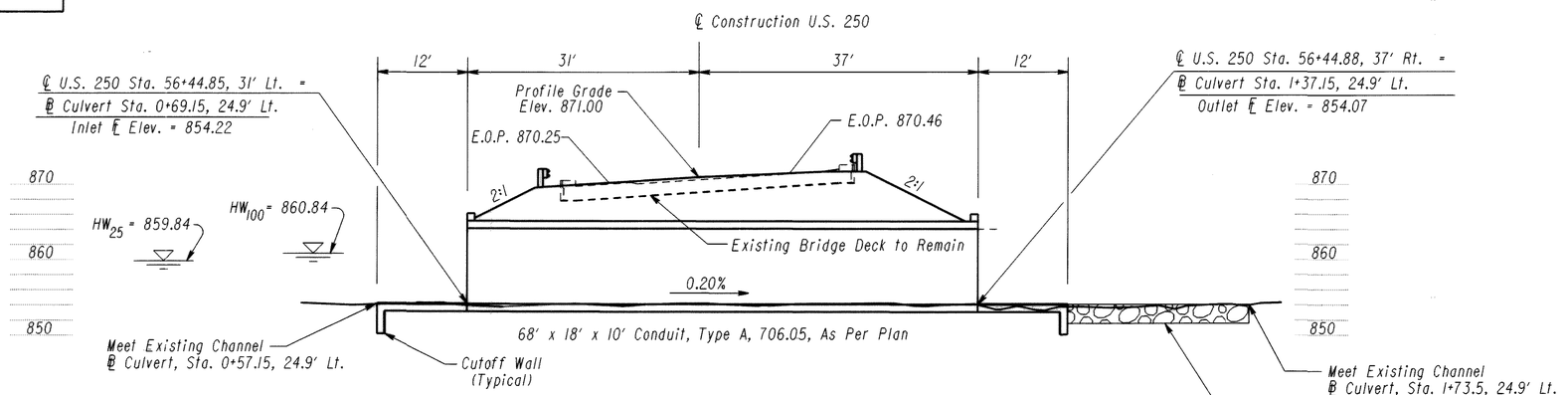
**PROPOSED STRUCTURE**

**TYPE:** 18' x 10' Concrete Box
**SPAN LENGTH:** 18'
**ROADWAY WIDTH:** 40' f/f of guardrail
**LOADING:** HS25 and the Alternate Military Loading
**ALIGNMENT:** 4° 00' 00" Curve Lt.
**WEARING SURFACE:** Asphalt
**SFN:** 3401510

**EXISTING STRUCTURE DATA**

**TYPE:** Slab Top Bridge
**SPAN LENGTH:** 25'
**ROADWAY WIDTH:** 37' f/f of curb
**LOADING:** H-15
**ALIGNMENT:** 4° 00' 00" Curve Lt.
**WEARING SURFACE:** Asphalt
**SFN:** 3401502

| HYDRAULIC DESIGN DATA | |
|---|---|
| DRAINAGE AREA = 3104 ACRES (4.85 SQ. MILES) | |
| $Q_{25}$ = 664 cfs | $Q_{100}$ = 862 cfs |
| $HW_{25}$ = 859.84 | $HW_{100}$ = 860.84 |
| $V_{25}$ = 6.56 fps | $V_{100}$ = 7.19 fps |




PROFILE ALONG CULVERT

For Rock Channel Protection Calculations, See Sheet 5.
For Quantities, See Sheet 12.
For Structure Details, See Sheet No.'s 12-18.

HORIZONTAL SCALE IN FEET
0 5 10 20
CALCULATED TKD
CHECKED JPB

# PLAN AND PROFILE OF CULVERT

HAS-250-1.06

11
20

## GENERAL NOTES

**DESIGN SPECIFICATIONS:**

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, INCLUDING THE INTERIM SPECIFICATIONS THROUGH 2002 AND THE ODOT BRIDGE DESIGN MANUAL.

**DESIGN LOADING:**

HS25 AND THE ALTERNATE MILITARY LOADING.

FWS = 60 psf

**DESIGN STRESSES:**

CAST-IN-PLACE STRUCTURES
CONCRETE CLASS C - f'c = 4,000 psi SUBSTRUCTURE
REINFORCING STEEL - ASTM A615, A616, OR A617
Fy = 60,000 psi.

PRECAST STRUCTURES: FOR BOX AND PIPE CULVERTS SEE CMS SECTION 603.

**COFFERDAMS, CRIBS, AND SHEETING**

TEMPORARY SHORING SHALL BE USED TO ACCOMPLISH THE PROPOSED CONSTRUCTION IN STAGES. THE DESIGN OF THE TEMPORARY SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER, AND CONFORM WITH 501.05.

**ITEM 503 - UNCLASSIFIED EXCAVATION**

EXCAVATION LIMITS FOR THE PROPOSED STRUCTURE SHALL BE AS DEFINED IN 503.11. EXCAVATION OUTSIDE THESE LIMITS NECESSARY TO REMOVE THE EXISTING STRUCTURE SHALL BE INCLUDED IN 202 FOR PAYMENT.

**ITEM 613 - LOW STRENGTH MORTAR BACKFILL, TYPE 2**

LOW STRENGTH MORTAR BACKFILL SHALL BE PLACED AS SHOWN. PAYMENT FOR LOW STRENGTH MORTAR BACKFILL SHALL BE MADE ONLY FOR BACKFILL PLACED TO THE LIMITS SHOWN. THE EXCAVATION REQUIRED FOR THE PLACEMENT OF THE LSM SHALL BE INCLUDED IN ITEM 603 FOR PAYMENT.

**ITEM 518 - POROUS BACKFILL WITH FILTER FABRIC**

1'-6" THICK SHALL BE PLACED BEHIND THE WINGWALLS ONLY AND SHALL EXTEND 12" BELOW THE EMBANKMENT SURFACE TO A DEPTH OF 6" BELOW THE LOWEST WEEPHOLE FLOWLINE ELEVATION. GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" ABOVE THE TOP ELEVATION OF THE WEEPHOLE.

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:**

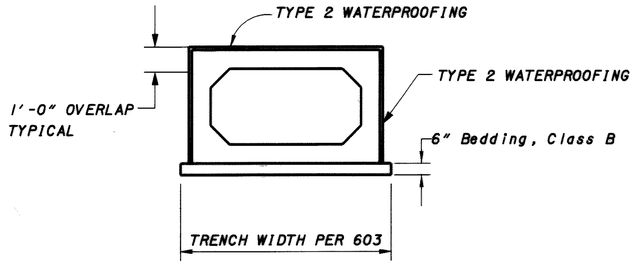
DESCRIPTION:
THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE WINGWALLS AND PORTIONS OF THE ABUTMENT, FOOTING AND CURB. CARE SHALL BE TAKEN DURING REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

**ITEM 603 - 4" CONDUIT, TYPE E, 707.45, AS PER PLAN**

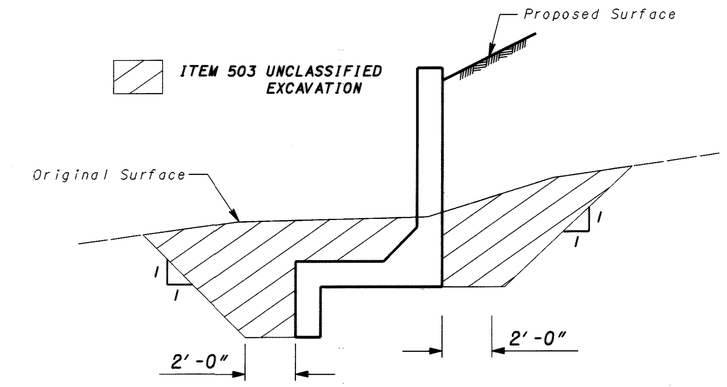
THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ALL OF THE ITEMS (CONNECTORS, TEE FITTINGS, GROUT, ETC.) NEEDED TO PERFORM THE WORK REQUIRED.

## ESTIMATED QUANTITIES

| ITEM | ITEM EXT | TOTAL | UNIT | DESCRIPTION | SEE SHEET NO. |
|---|---|---|---|---|---|
| 202 | 11201 | LUMP | | PORTIONS OF STRUCTURE REMOVED, AS PER PLAN | 12 |
| 503 | 11100 | LUMP | | COFFERDAMS, CRIBS, AND SHEETING | |
| 503 | 21300 | LUMP | | UNCLASSIFIED EXCAVATION | |
| 509 | 10000 | 7686 | POUND | EPOXY COATED REINFORCING STEEL | |
| 510 | 10000 | 54 | EACH | DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT | |
| 511 | 46200 | 63 | CU. YD. | CLASS C CONCRETE | |
| 512 | 33000 | 348 | SQ. YD. | TYPE 2 WATERPROOFING | |
| 518 | 21200 | 15 | CU. YD. | POROUS BACKFILL WITH FILTER FABRIC | |
| 603 | 00401 | 180 | FT. | 4" CONDUIT, TYPE E, 707.45, AS PER PLAN | 14 |
| 603 | 96485 | 68 | FT. | 18' X 10' CONDUIT, TYPE A, 706.05, AS PER PLAN | 16 |
| 613 | 41300 | 296 | CU. YD. | LOW STRENGTH MORTAR BACKFILL (TYPE 2) | |
| 864 | 10100 | 106 | SQ. YD. | SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) | |




**BOX CULVERT FOUNDATION**



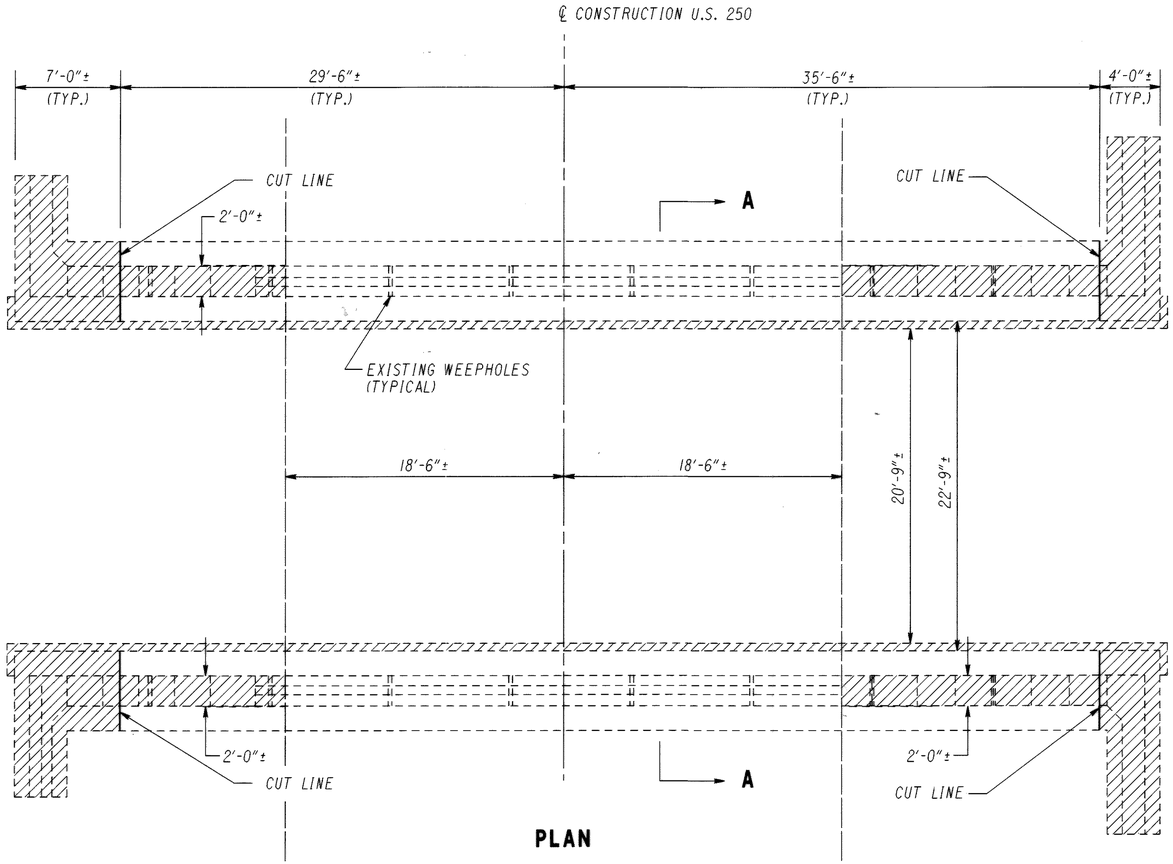

LIMITS OF UNCLASSIFIED EXCAVATION
(APRONWALL)

CALCULATED TKD CHECKED JPB

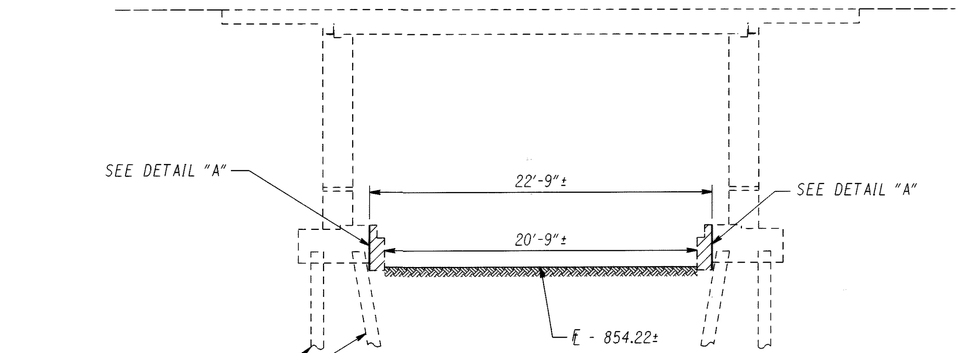
GENERAL NOTES & ESTIMATED QUANTITIES

HAS-250-1.06

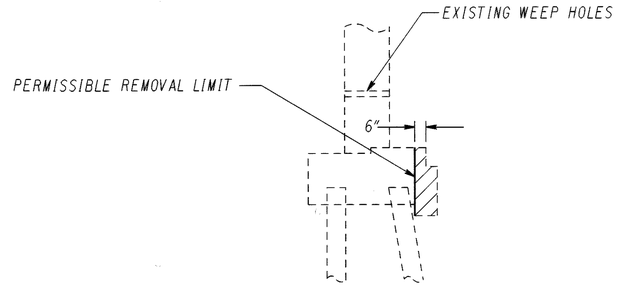
12
20




PLAN

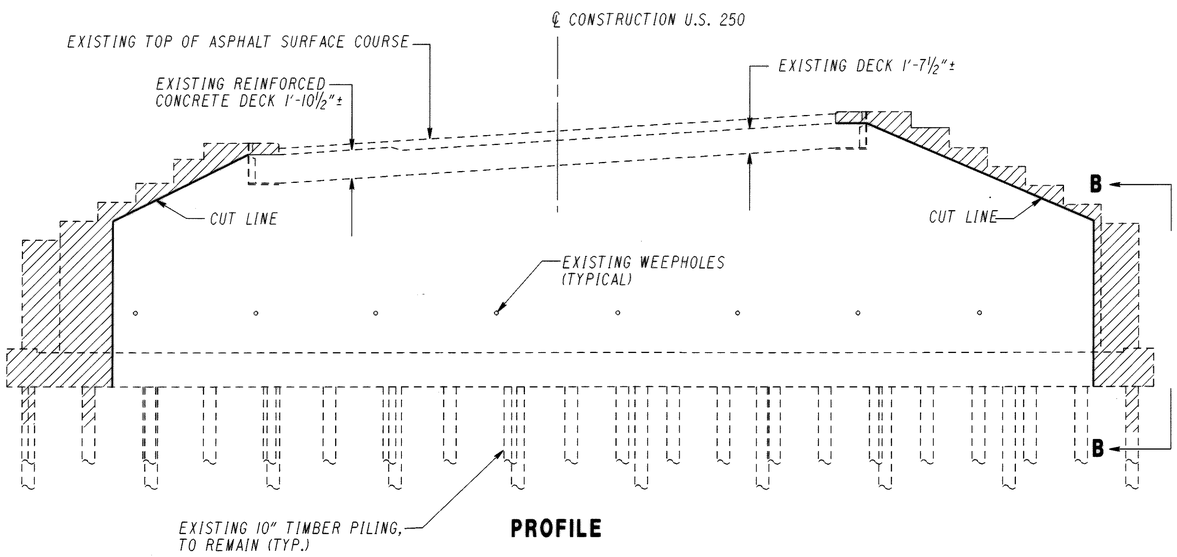



SECTION A-A

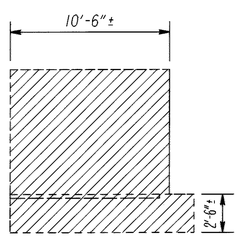



DETAIL "A"

NOTE: CONTRACTOR SHALL NOT REMOVE FOOTING PAST THE PERMISSIBLE LIMIT AND SHALL NOT CUT EXISTING TIMBER PILING.




PROFILE




VIEW B-B

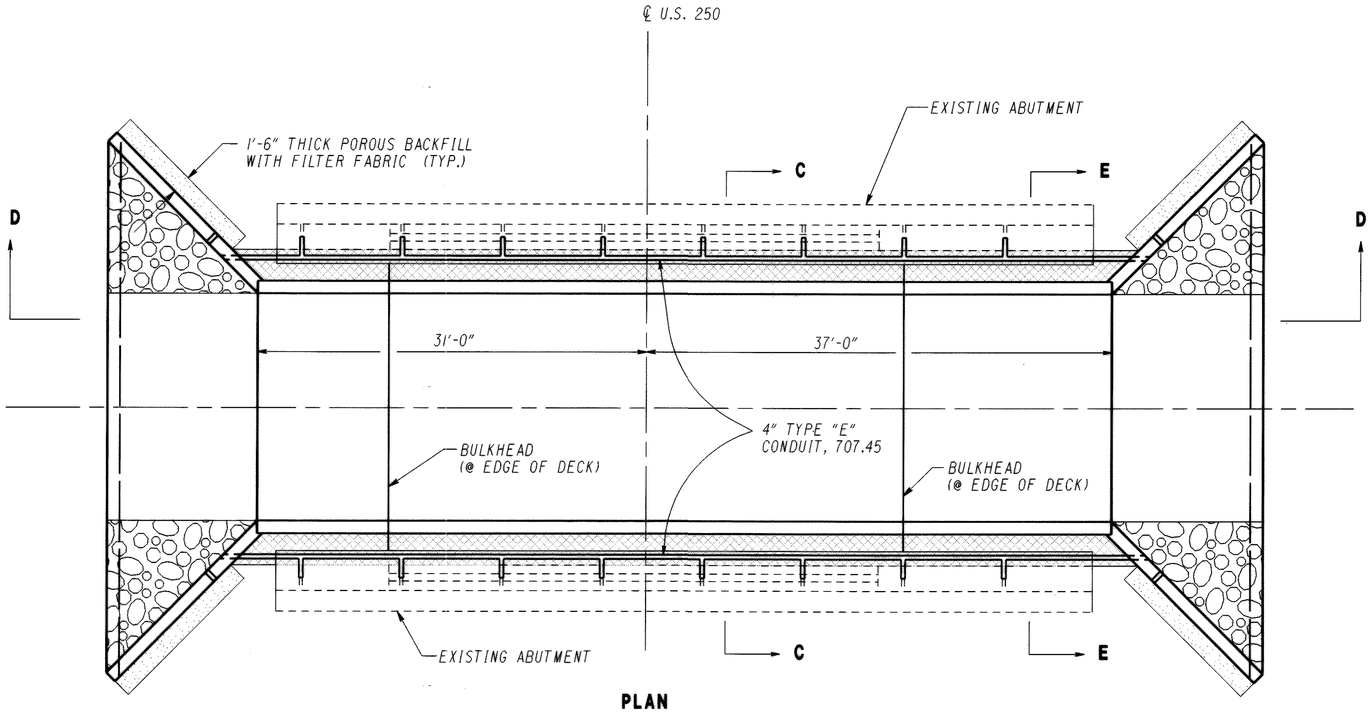
PORTIONS OF STRUCTURE REMOVED

CALCULATED TKD
CHECKED JPB

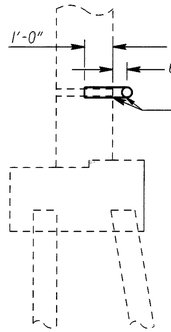
# EXISTING STRUCTURE REMOVAL DETAILS

HAS-250-1.06

13
20



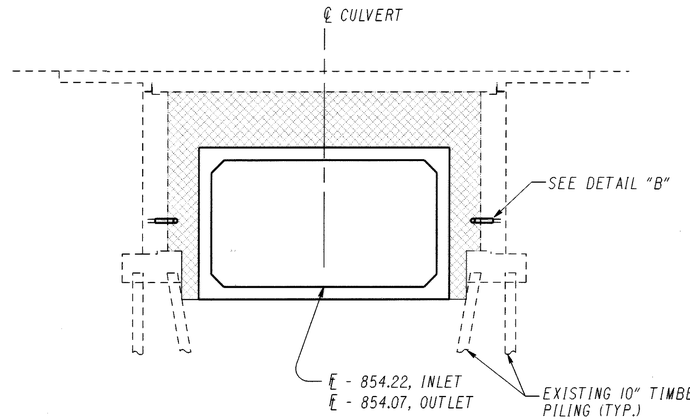

**PLAN**



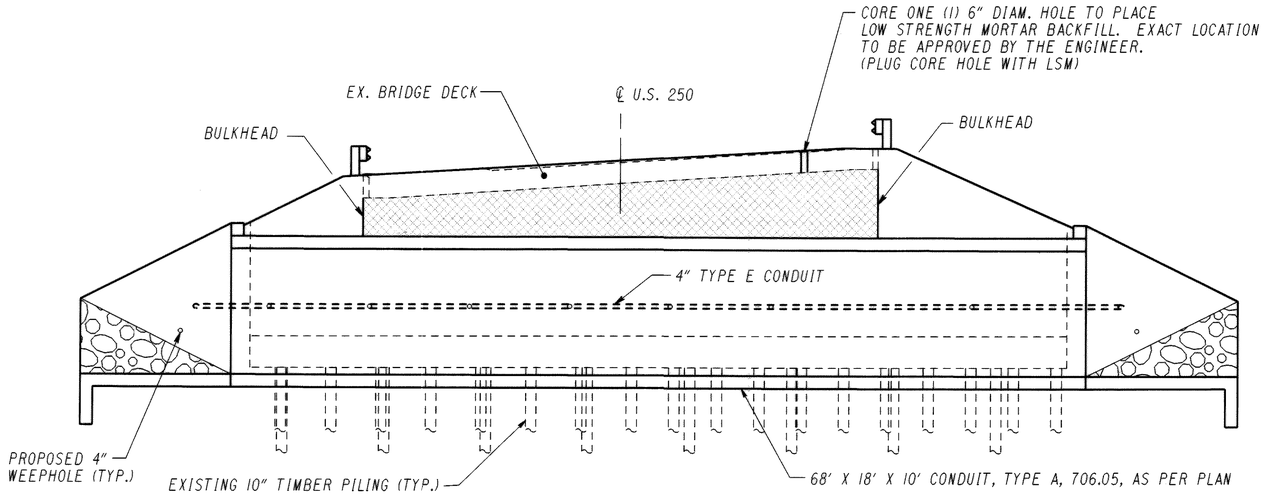

4" TYPE "E" CONDUIT, 707.45, AS PER PLAN

NOTE: THE CONTRACTOR SHALL CONNECT TO EXISTING WEEP HOLES BY USING A 1.5' SECTION OF ITEM 603 - 4" TYPE "E" CONDUIT, 707.45. A 1' SECTION SHALL BE FITTED INSIDE THE ABUTMENT WALL, GROUTED AROUND, LEAVING A 6" SECTION EXTENDED PAST THE FACE OF THE WALL TO CONNECT TO A "T" FITTING.

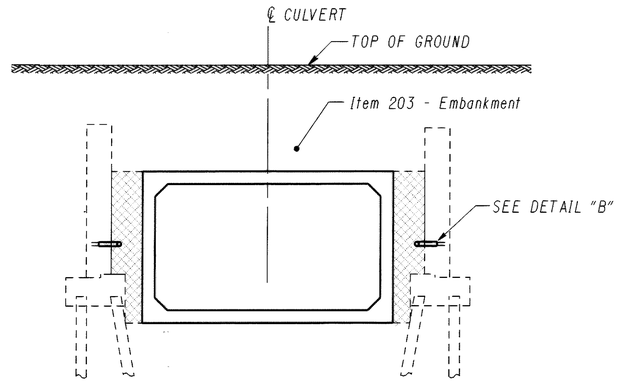
**DETAIL "B"**




**SECTION C-C**




**VIEW D-D**



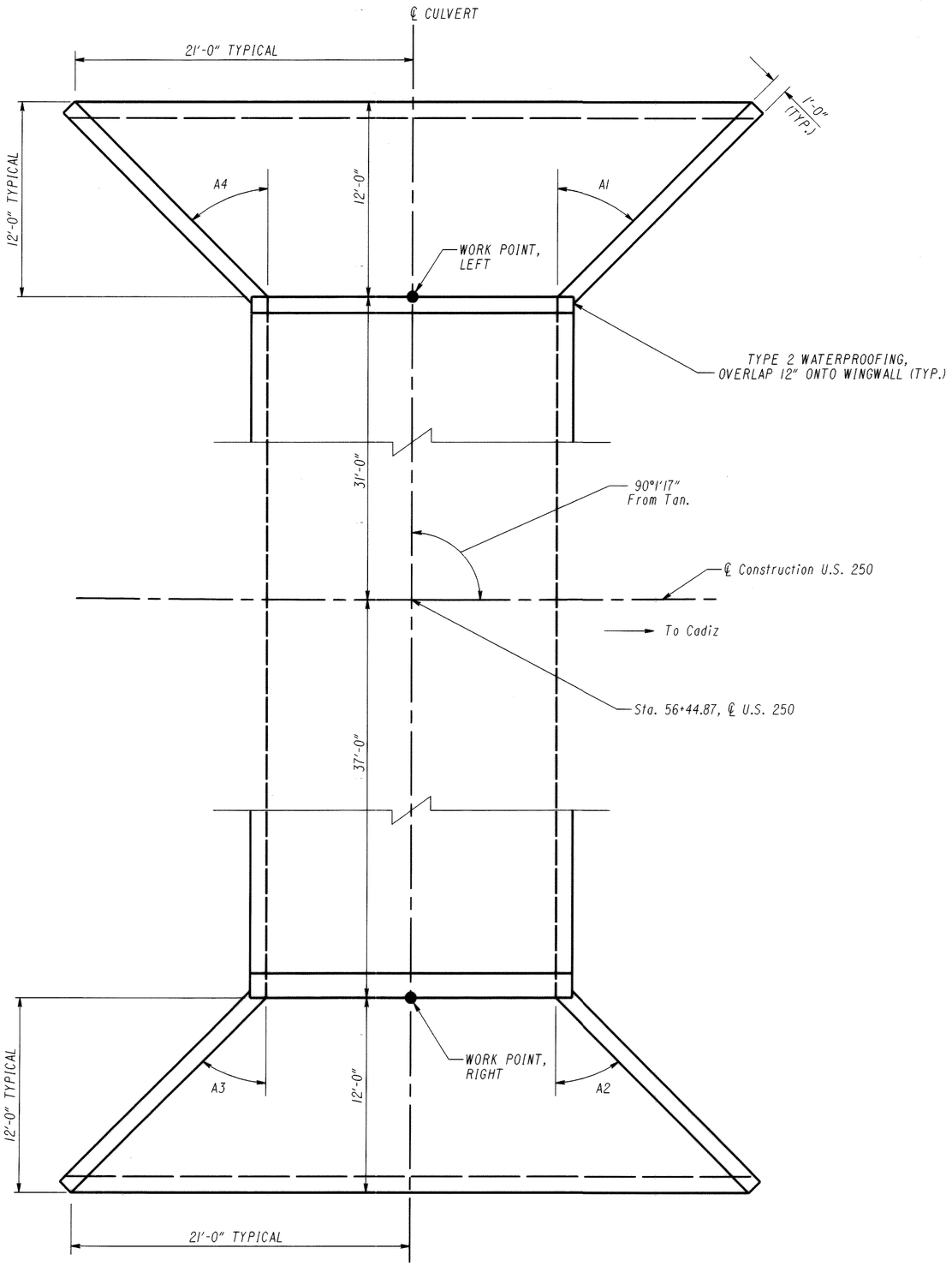

**SECTION E-E**

Limits of Low Strength Mortar Backfill

CALCULATED TKD
CHECKED JPB

# CULVERT DETAILS

HAS-250-1.06




CULVERT AND WINGWALL LAYOUT

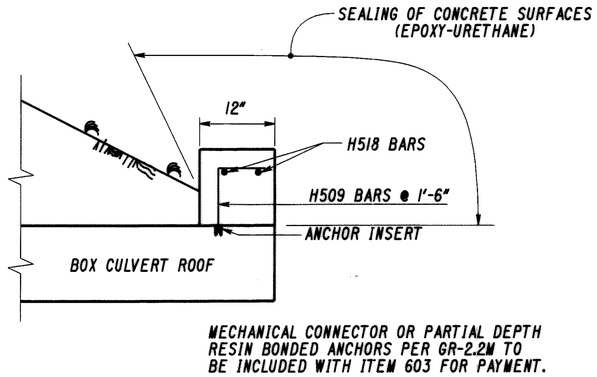
| WINGWALL ANGLES | |
|---|---|
| A1 | 45°0'0" |
| A2 | 45°0'0" |
| A3 | 45°0'0" |
| A4 | 45°0'0" |

| WORK POINTS | | |
|---|---|---|
| LOCATION | STATION | OFFSET |
| LEFT | 56+44.85 | 31'-0" |
| RIGHT | 56+44.88 | 37'-0" |

CALCULATED TKD
CHECKED JPB

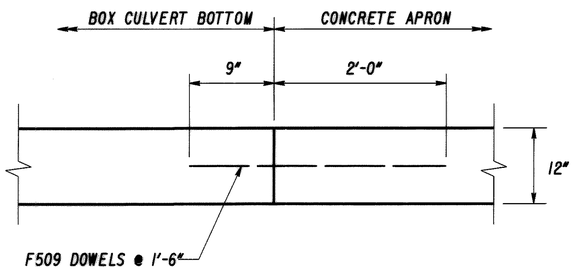
# CULVERT AND WINGWALL LAYOUT

HAS-250-1.06




MECHANICAL CONNECTOR OR PARTIAL DEPTH RESIN BONDED ANCHORS PER GR-2.2M TO BE INCLUDED WITH ITEM 603 FOR PAYMENT.

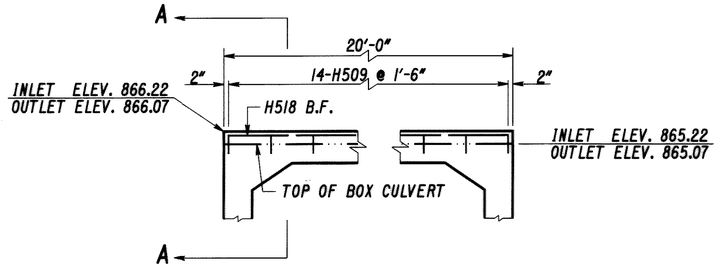
SECTION A-A



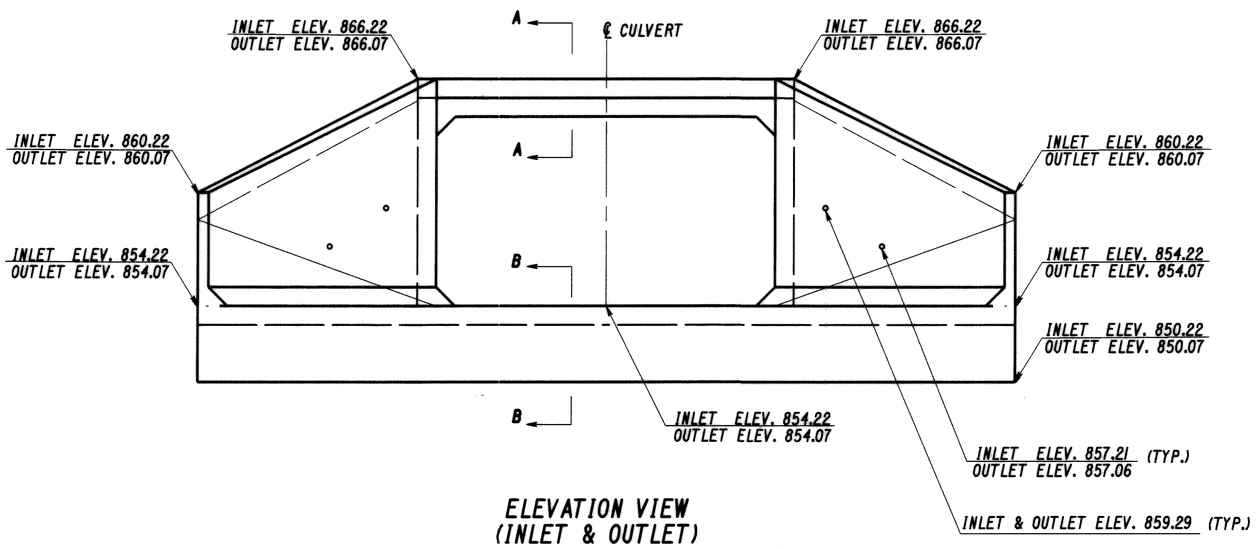

SECTION B-B

**LEGEND**

F.F. - FRONT FACE
R.F. - REAR FACE
B.F. - BOTH FACES



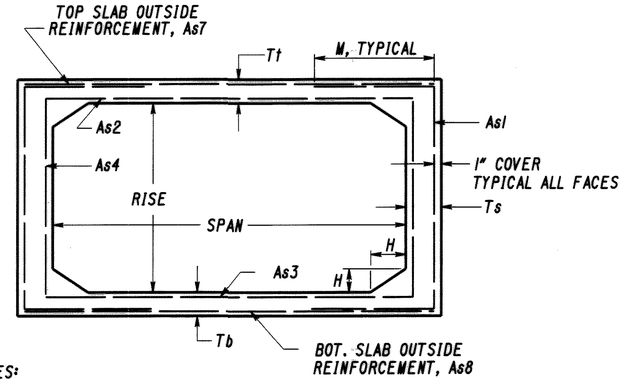

HEADWALL REINFORCING DETAIL




ELEVATION VIEW
(INLET & OUTLET)

**ITEM 603 - 18' x 10' CONDUIT TYPE A, 706.05, AS PER PLAN:**

ALL REQUIREMENTS OF CMS 706.05 AND ASTM C1433 SHALL BE MET EXCEPT AS DETAILED HEREIN:




NOTES:

MINIMUM REINFORCING YIELD STRESS SHALL BE 60,000 PSI.
MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 5,000 PSI.
MAXIMUM REINFORCING SPACING SHALL BE 4.5".
As min. = 0.002 x GROSS SECTION AREA.

LOADING:

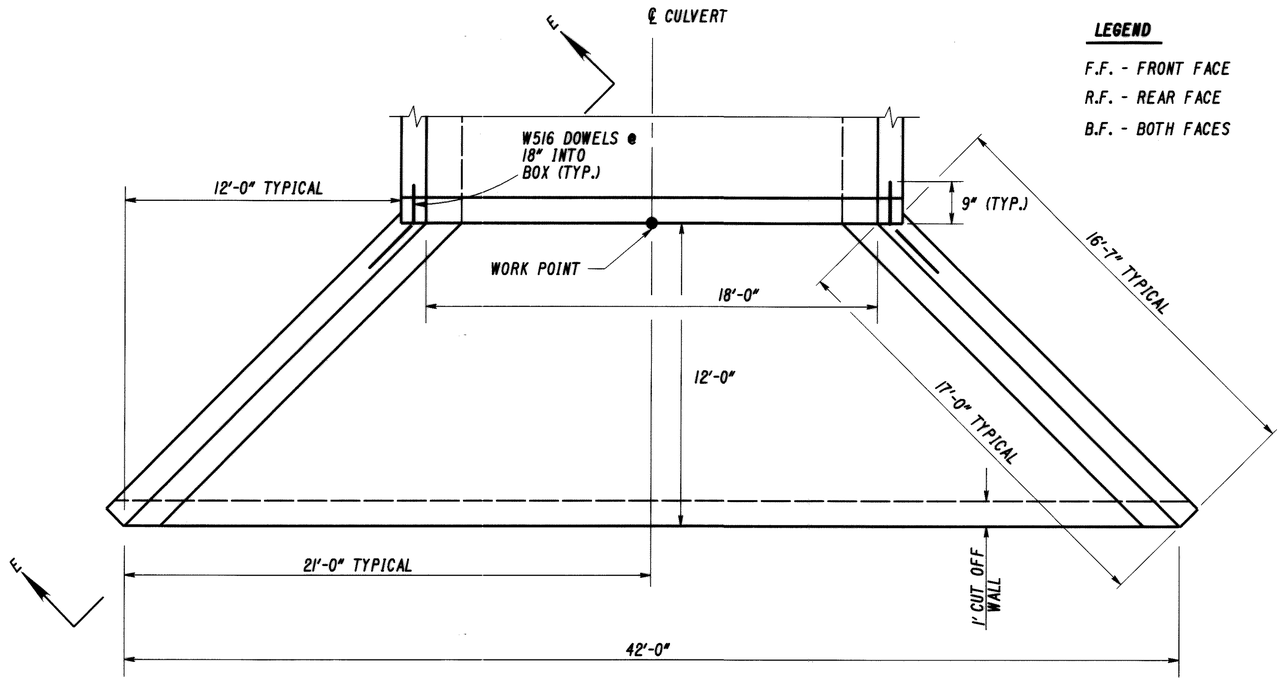
HS-25 AND
ALTERNATE MILITARY
FWS = 60 PSF

| | |
|---|---|
| SPAN | 18' |
| RISE | 10' |
| COVER | 5.4' |
| Tt | 12" |
| Ts | 12" |
| Tb | 12" |
| H | 12" |
| As1 | 1.17 |
| As2 | 1.60 |
| As3 | 1.60 |
| As4 | 0.29 |
| As7 | 0.29 |
| As8 | 0.29 |
| M | 53" |

CALCULATED TKD
CHECKED JPB

CULVERT DETAILS

HAS-250-1.06



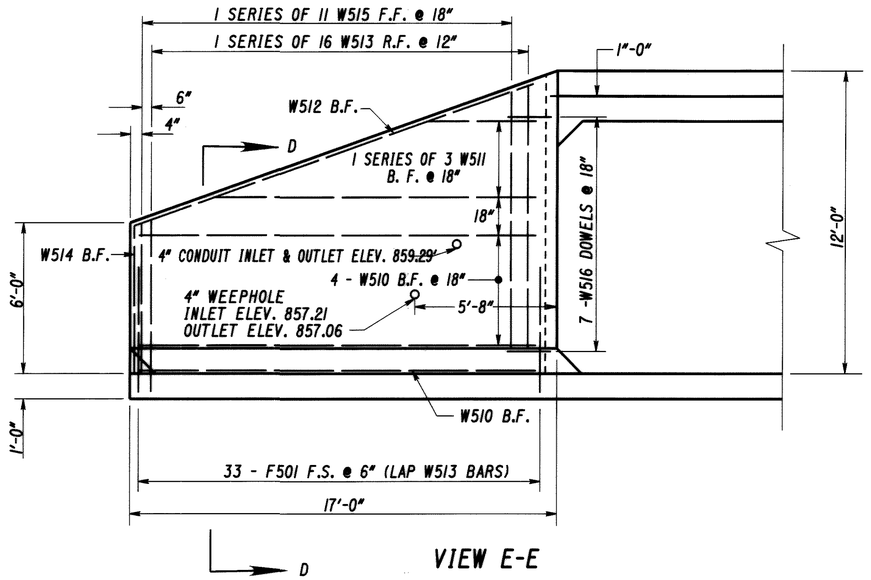

PLAN VIEW

**LEGEND**

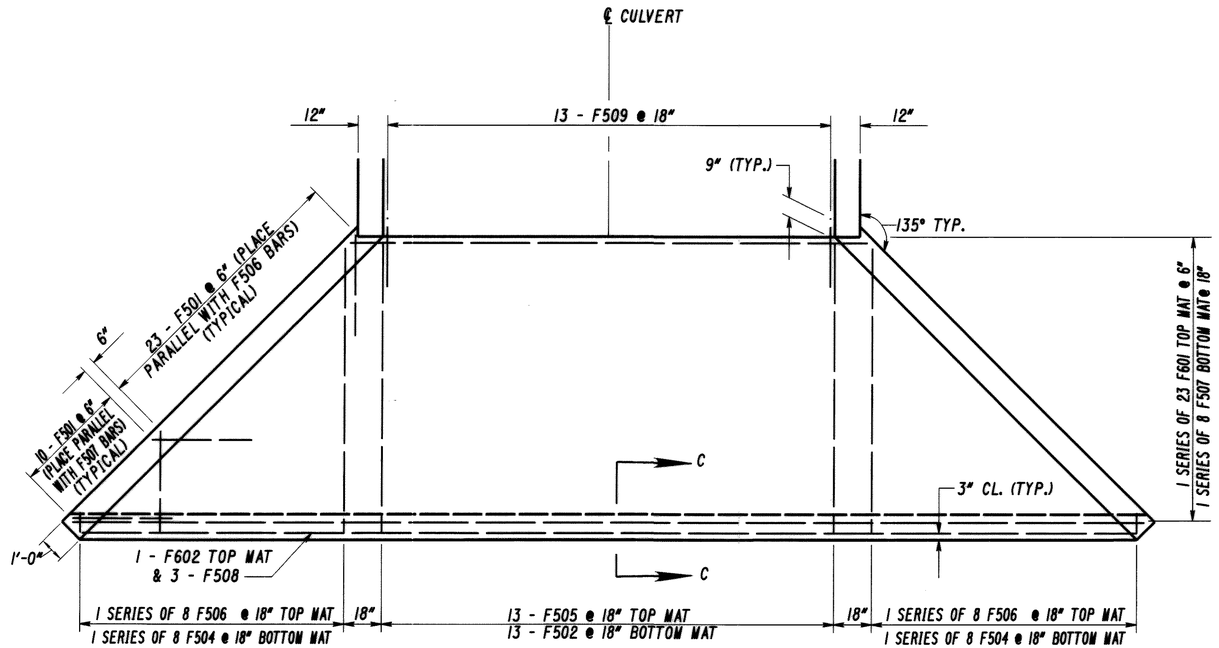
F.F. - FRONT FACE

R.F. - REAR FACE

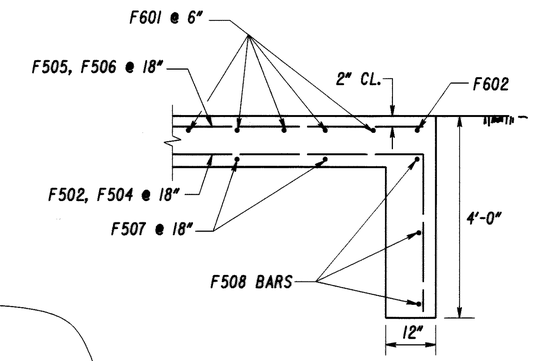
B.F. - BOTH FACES



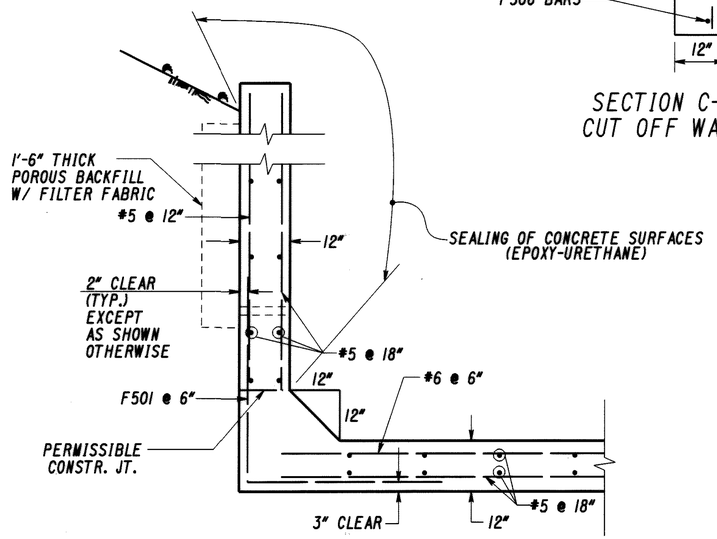

VIEW E-E




APRON REINFORCING




SECTION C-C
CUT OFF WALL




SECTION D-D

CALCULATED TKD
CHECKED JPB

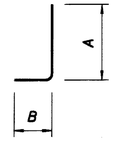
CULVERT DETAILS

HAS-250-1.06

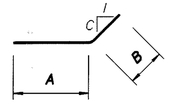
17
20

## CULVERT

| MARK | NUMBER | LENGTH | WEIGHT | TYPE | INLET | OUTLET | DIMENSIONS A | B | C | D | E | R | INC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SLAB - TOP & BOTTOM MAT | | | | | | | | | | | | |
| F501 | 132 | 7'-11" | 1090 | 1 | 66 | 66 | 4'-0" | 4'-0" | | | | | |
| F502 | 26 | 14'-5" | 391 | 1 | 13 | 13 | 11'-6" | 3'-0" | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | 4 | 3'-9" | | | | | 0'-10" | 3'-0" | | | | | |
| F504 | SER | TO | 300 | 1 | 16 | 16 | TO | TO | | | | | 1'-6" |
| | OF 8 | 14'-3" | | | | | 11'-4" | 3'-0" | | | | | |
| | | | | | | | | | | | | | |
| F505 | 26 | 11'-6 " | 312 | ST. | 13 | 13 | | | | | | | |
| | | | | | | | | | | | | | |
| | 4 | 0'-9½" | | | | | | | | | | | |
| F506 | SER | TO | 202 | ST. | 16 | 16 | | | | | | | 1'-6" |
| | OF 8 | 11'-3½" | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | SLAB - BOTTOM MAT | | | | | | | | | | | | |
| | 2 | 20'-6" | | | | | | | | | | | |
| F507 | SER | TO | 517 | ST. | 8 | 8 | | | | | | | 3'-0" |
| | OF 8 | 41'-6" | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| F508 | 6 | 41'-6" | 260 | ST. | 3 | 3 | | | | | | | |
| F509 | 26 | 2'-9" | 75 | ST. | 13 | 13 | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | SLAB - TOP MAT | | | | | | | | | | | | |
| | 2 | 20'-6" | | | | | | | | | | | |
| F601 | SER | TO | 2176 | ST. | 23 | 23 | | | | | | | 1'-0" |
| | OF 23 | 42'-6" | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| F602 | 2 | 41'-6" | 125 | ST. | 1 | 1 | | | | | | | |
| | | | | | | | | | | | | | |
| | HEAD WALL | | | | | | | | | | | | |
| H509 | 28 | 1'-3" | 37 | 1 | 14 | 14 | 0'-10" | 0'-6" | | | | | |
| H518 | 4 | 19'-8" | 82 | ST. | 2 | 2 | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | WING WALLS - FRONT & REAR MAT - HORIZONTAL | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| W510 | 40 | 16'-0" | 668 | ST. | 20 | 20 | | | | | | | |
| | | | | | | | | | | | | | |
| | 8 | 4'-4" | | | | | | | | | | | |
| W511 | SER | TO | 215 | ST. | 12 | 12 | | | | | | | 4'-3" |
| | OF 3 | 12'-10" | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| W512 | 8 | 16'-8" | 139 | ST. | 4 | 4 | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | WING WALLS -REAR MAT - VERTICAL | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | 4 | 6'-1" | | | | | | | | | | | |
| W513 | SER | TO | 589 | ST. | 32 | 32 | | | | | | | 0'-4¼" |
| | OF 16 | 11'-5" | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| W514 | 8 | 5'-11 | 49 | ST. | 4 | 4 | | | | | | | |
| | | | | | | | | | | | | | |
| | WING WALLS -FRONT MAT - VERTICAL | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | 4 | 5'-11" | | | | | | | | | | | |
| W515 | SER | TO | 386 | ST. | 22 | 22 | | | | | | | 0'-6" |
| | OF 11 | 10'-11" | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| W516 | 28 | 2'-6" | 73 | 3 | 14 | 14 | 0'-9" | 1'-9" | 1 | | | | |
| | | | | | | | | | | | | | |
| TOTAL | | | 7686 | | | | | | | | | | |




TYPE- 1




TYPE-3

CALCULATED AS
CHECKED WJK

# REINFORCING STEEL LIST

HAS-250-1.06

# HAS-250-1.06

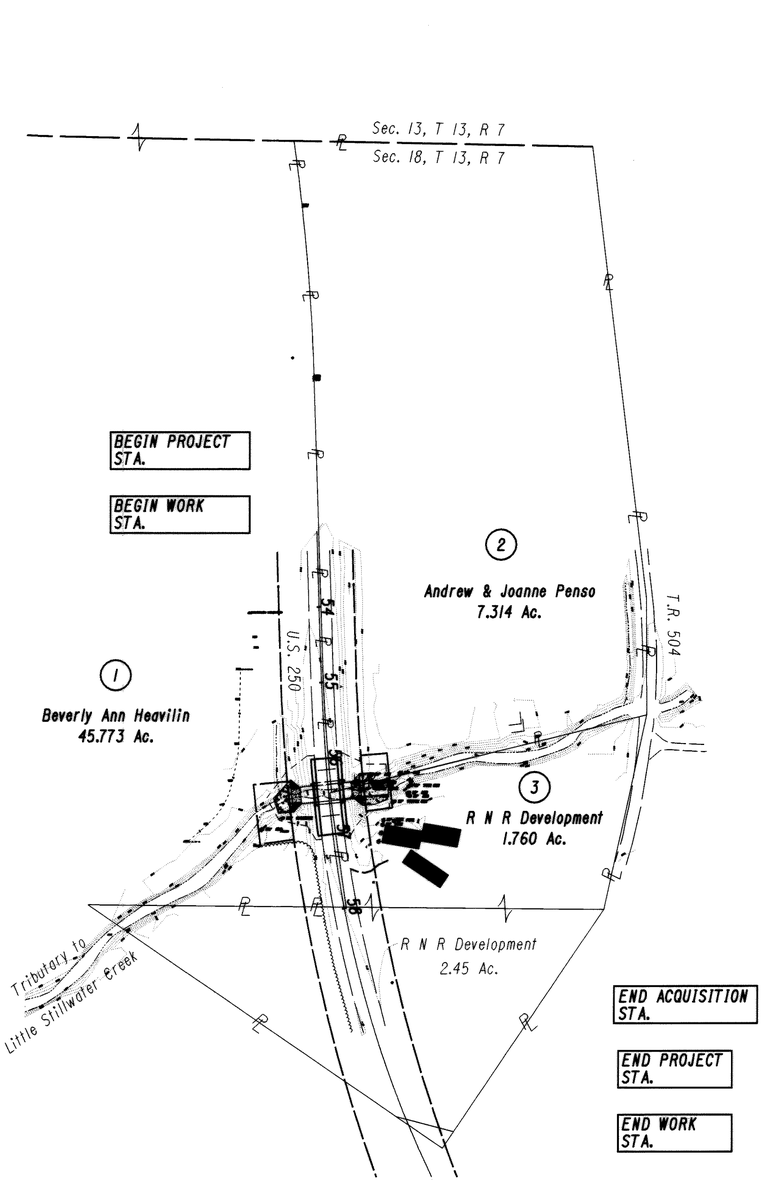
## HARRISON COUNTY, OHIO
## MONROE TOWNSHIP
## SECTION 18, TOWNSHIP 13, RANGE 7

### CONVENTIONAL SIGNS

County Line
Township Line
Section Line
Corporation Line or
Fence Line (existing) x 352 x (proposed) 353
Center Line
Trees, Stumps, (to be removed)
Utility Poles: Telephone, Power, Light
Limited Access (only) LA LA
Right of Way (only) R/W R/W
Limited Access & Right of Way LA & R/W
Existing Right of Way EX. R/W
Property Line (in existing fence)
Railroad or
Guardrail (existing) (proposed)

### STRUCTURE KEY

- RESIDENTIAL BUILDING
- COMMERCIAL BUILDING




(UTILITIES GO HERE)

SCALE IN FEET 0 50 100 200

PID NO. 13043

PROPERTY MAP

HAS-250-1.06

1 / 2

19 / 20

| REV. | DATE | DESCRIPTION |
|---|---|---|
| | | |

DATE COMPLETED

I:\PROJECTS\13043\dgn\rmi00.dgn 22-JAN-2003 8:48 AM tdowdell

# HARRISON COUNTY, OHIO
# MONROE TOWNSHIP
# SECTION 18, TOWNSHIP 13, RANGE 7

**UTILITIES**

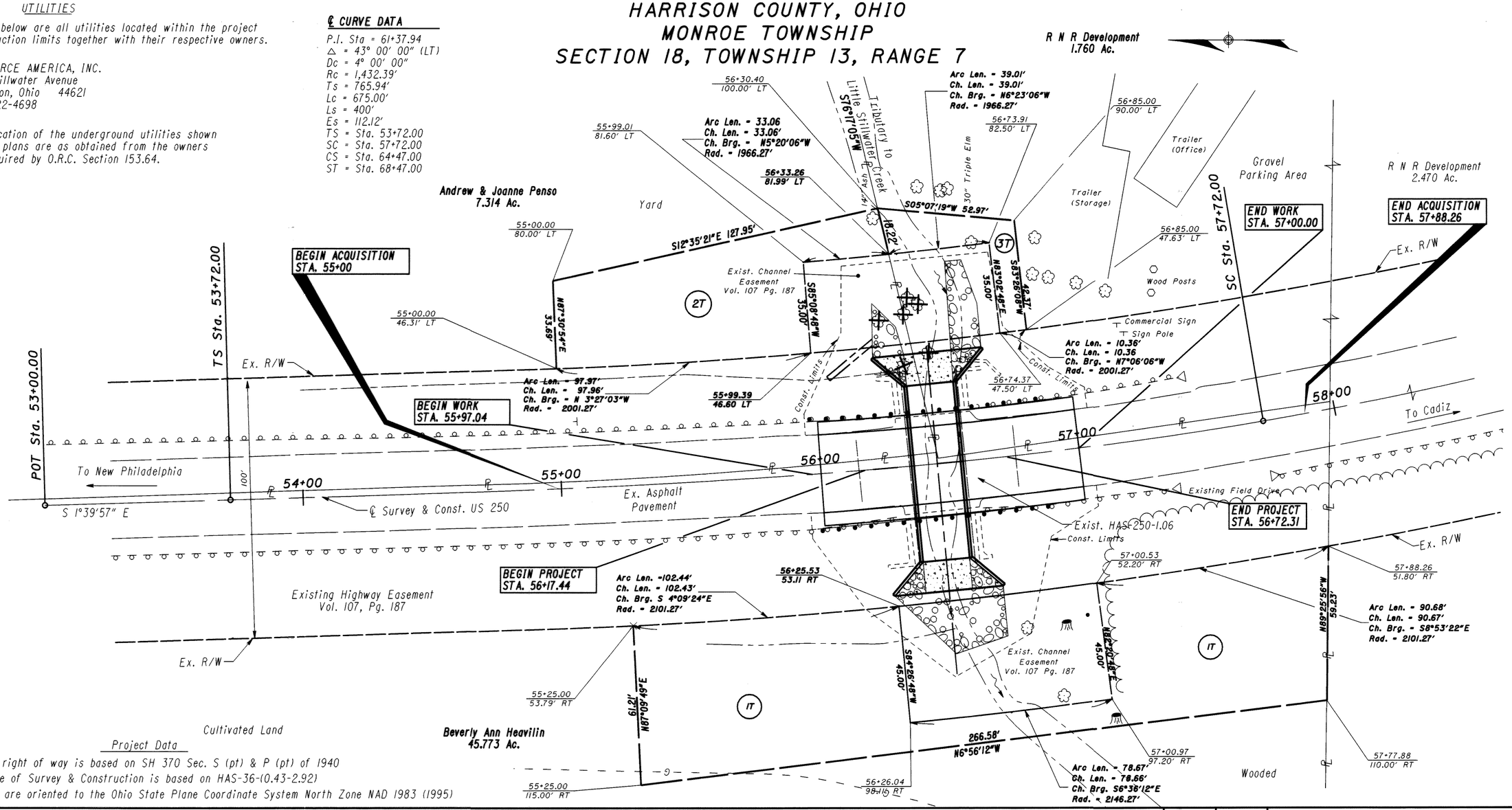
*Listed below are all utilities located within the project construction limits together with their respective owners.*

RESOURCE AMERICA, INC.
515 Stillwater Avenue
Dennison, Ohio 44621
740-922-4698

*The location of the underground utilities shown on the plans are as obtained from the owners as required by O.R.C. Section 153.64.*

**℄ CURVE DATA**

P.I. Sta = 61+37.94
△ = 43° 00′ 00″ (LT)
Dc = 4° 00′ 00″
Rc = 1,432.39′
Ts = 765.94′
Lc = 675.00′
Ls = 400′
Es = 112.12′
TS = Sta. 53+72.00
SC = Sta. 57+72.00
CS = Sta. 64+47.00
ST = Sta. 68+47.00




**Project Data**

*Existing right of way is based on SH 370 Sec. S (pt) & P (pt) of 1940*
*Centerline of Survey & Construction is based on HAS-36-(0.43-2.92)*
*Bearings are oriented to the Ohio State Plane Coordinate System North Zone NAD 1983 (1995)*

TOTAL NUMBER OF :
3 OWNERSHIPS
0 TOTAL TAKES
0 OWNERSHIPS WITH STRUCTURES INVOLVED
0 OWNERSHIPS WITH "P" ITEMS

## SUMMARY OF ADDITIONAL RIGHT OF WAY

NOTES:
ALL AREAS IN ACRES UNLESS OTHERWISE NOTED.
UNDER NO CIRCUMSTANCES ARE TEMPORARY PARCELS TO BE USED FOR STORAGE OF MATERIAL OR EQUIPMENT BY THE CONTRACTOR UNLESS OTHERWISE NOTED
ALL TEMPORARY PARCELS TO BE OF A 12 MONTH DURATION

GRANTEE:
ALL RIGHT OF WAY ACQUIRED IN THE NAME OF STATE OF OHIO UNLESS OTHERWISE SHOWN.

| Rev. | Date | Description |
|---|---|---|
| | | |

Date Completed:

| PARCEL NO. | OWNER | SHEET NO. | OWNERS RECORD BOOK | OWNERS RECORD PAGE | AUDITOR'S PARCEL | RECORD AREA(AC.) | TOTAL P.R.O. | GROSS TAKE | P.R.O. IN TAKE | NET TAKE | STRUCTURE | NET RESIDUE LEFT | NET RESIDUE RIGHT | TYPE FUND | REMARKS AND PERSONALTY | AS ACQUIRED BOOK | AS ACQUIRED PAGE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 T | Beverly Ann Heavilin | | 202 | 308 | 15-00879.000 | 45.773 | 1.314 | 0.271 | 0.000 | 0.271 | --- | | 44.459 | State | To Provide Work Area | | |
| 2 T | Andrew Penso and Joanne Penso | | 193 | 343 | 15-00557.000 | 7.314 | 1.586 | 0.105 | 0.000 | 0.105 | --- | 5.728 | | State | To Provide Work Area | | |
| 3 T | R N R Development | | OR 46 | 318 | 15-00552.000 | 1.760 | 0.288 | 0.023 | 0.000 | 0.023 | --- | 2.443 | 0.756 | State | To Provide Work Area | | |
| | | | | | 15-00553.000 | 2.470 | 0.743 | | | | | | | | Tract Not Involved | | |

SCALE IN FEET 0 10 20 40

PID NO. 13043

RIGHT OF WAY PLAN

HAS-250-1.06

2 / 2

20 / 20

GEOLOGY OF THE SITE

THE CULVERT SITE IS LOCATED IN THE DISSECTED UNGLACIATED PORTION OF THE ALLEGHENY PLATEAU REGION, ON THE FLOODPLAIN OF AND OVER A TRIBUTARY OF LITTLE STILLWATER CREEK, IN AN AREA WHERE EXTREMELY DEEP ALLUVIAL DEPOSITS OVERLIE CLAY-SHALE BEDROCK OF PENNSYLVANIAN AGE.

EXPLORATION

THE EXPLORATION CONSISTED OF TWO DRIVE/PRESS SAMPLE BORINGS MADE BY MEANS OF A MECHANICALLY-POWERED HOLLOW STEM ROTARY AUGER MOUNTED ON A MOBILE PLATFORM, PERFORMED ON FEBRUARY 14-26, 2002.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS

THE TEST BORINGS ENCOUNTERED INTERVALS OF EXTREMELY LOOSE TO EXTREMELY DENSE UNSTRATIFIED BASIC SILT, CLAY AND SAND MODIFIED BY GRAVEL AND VARYING AMOUNTS OF EACH OTHER THAT FLUCTUATE ERRATICALLY IN DENSITY WITH INCREASE IN DEPTH. TEST BORING B-1 PENETRATED TO A DEPTH OF 81.5 FEET, ELEVATION 870.8 FEET AND WAS TERMINATED AT THAT POINT AFTER PENETRATING 11.5 FEET OF MATERIAL REQUIRING 30 OR MORE BLOWS PER FOOT IN THE STANDARD PENETRATION TEST IMMEDIATELY PRIOR TO TERMINATION. TEST BORING B-2 ENCOUNTERED BEDROCK SURFACE AT 78.0 FOOT DEPTH, ELEVATION 793.1 FEET AND PENETRATED AN ADDITIONAL FOOT FOR A TOTAL DEPTH OF 79.0 FEET, ELEVATION 792.1 FEET.

BEDROCK SURFACE WAS NOT ENCOUNTERED IN TEST BORING B-1.

FREE WATER WAS OBSERVED AND MEASURED IN BOTH BORINGS AT 21.0 FOOT DEPTH, ELEVATION 849.8 FEET IN BORING B-1 AND ELEVATION 850.1 FEET IN BORING B-2.

## LEGEND

Roadway or Auger Boring Location - Plan View.

Press and/or Drive Sample and/or Core Boring Location - Plan View.

TR — Top of Rock

W — Indicates Free Water Elevation.

▼ — Indicates Static Water Elevation.

Horizontal Bar on Boring Log in the profile view indicates the Depth the Sample was taken

X/Y/Z — Figures Beside the Boring Log in the Profile view Indicate the Number of Blows for Standard Penetration Test.
X = Number of Blows for First 6 in
Y = Number of Blows for Second 6 in
Z = Number of Blows for Third 6 in

## GENERAL INFORMATION

Drive Sample/Press Sample/Core Borings

Drive sample borings are made by means of a mechanically-powered rotary-type drill rig employing a 2" O.D., 1-3/8" I.D. split spoon sampler, at 2.5 ft and/or 5.0 ft depth intervals, driven by means of a 140 lbs hammer with a free fall of 2.5 ft. The number of blows required to drive the sampler three 0.5 ft increments is considered the standard penetration test.

Drive/press sample borings are made by means of a mechanically-powered rotary-type drill rig, employing a 2 in O.D., 1⅜in I.D. split spoon sampler, and a 3 in O.D. thin wall press sampling tube. The press sampling tube is advanced by continuous uniform pressure, applied by the drill rig.

Core borings are made by means of a mechanically-powered rotary-type drill rig, employing an NW-PAM core barrel with an industrial diamond cutting head.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, type of sample, number of blows for the standard penetration test in three 0.15 m increments, sample description based on laboratory test results utilizing the Casagrande AC classification system, sample number; and gradation, plasticity and moisture content determinations. Results of strength and consolidation testing, if performed on undisturbed samples, will appear graphically on separate enclosures. Rock samples are displayed on the log sheets including depth and elevation of the sample, amount of recovery and a visual classification based on type, color, degree of hardness, grain size, deterioration, bedding, acid reaction and other qualifying factors.

## SYMBOLS OF ROCK TYPES

- Coal
- Fire Clay or Underclay
- Weathered Mudstone
- Mudstone
- Weathered Shale
- Shale
- Weathered Clay-Shale
- Clay-Shale
- Weathered Siltstone
- Siltstone
- Weathered Sandstone
- Sandstone
- Conglomerate
- Weathered Conglomerate
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone
- Flint
- Gypsum
- Boulders or Cobbles

## PARTICLE SIZE DEFINITIONS

| Boulders | Cobbles | Gravel | Coarse Sand | Fine Sand | Silt | Clay |
|---|---|---|---|---|---|---|
| | 12" | 3" | 2.0 mm | 0.42 mm | 0.074 mm | 0.005 mm |
| | | | No. 10 sieve | No. 40 sieve | No. 200 sieve | |

OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING
1600 WEST BROAD ST. COLUMBUS, OH 43223

| REVISED DATE | DATE |
|---|---|
| 7/25/02 | 3/22/02 |
| REVIEWED | |
| M.R.S. | |
| CHECKED | |
| J.B.H. | |

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. HAS - 250 - 01.06
OVER TRIB. OF STILLWATER CREEK

HAS-250-1.06

1 / 4

03/02

P.I. Sta = 61+37.94
△ = 43° 00' 00" (LT)
Dc = 4° 00' 00"
Rc = 1,432.39'
Ts = 765.94'
Lc = 675.00'
Ls = 400'
Es = 112.12'
TS = Sta. 53+72.00
SC = Sta. 57+72.00
CS = Sta. 64+47.00
ST = Sta. 68+47.00

TE21-6020(511)
BEGIN PROJECT
STA. 56+17.44
S.L.M. 1.06

BEGIN WORK
STA. 55+97.04±

Temporary Easement
Ex. Channel Easement
Ex. R/W
Trib. Little Stillwater Creek
Framed Comm. Building
Mobile Home

TE21-6020(511)
END PROJECT
STA. 56+72.31
S.L.M. 1.07

END WORK
STA. 57+00

Connect to Ex. Guardrail
Sta. 56+03.29±
90°40'13" From Tan.
90°1'17" From Tan.
Connect to Ex. Guardrail
Sta. 56+91.84±

54+00
55+00
56+00
57+00
58+00
59+00
℄ Construction U.S. 250
To Cadiz
12'
B-1
B-2
1+25

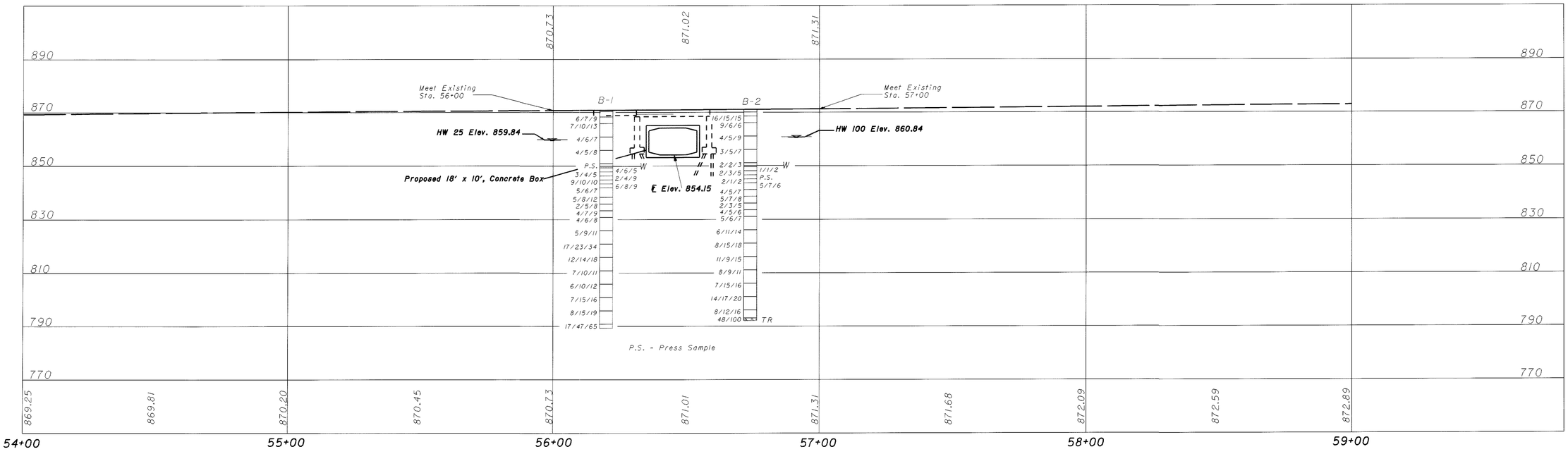
Connect to Ex. Guardrail
Sta. 55+97.04±
Sta. 56+20.00, U.S. 250 ℄ =
Sta. 1+00, ℄ Culvert

Connect to Ex. Guardrail
Sta. 56+85.67±
Sta. 56+44.87, ℄ U.S. 250 =
Sta. 1+00.15, ℄ of Culvert

℄ of Culvert
Ex. R/W

**BENCHMARK**
STA. 56+69.49, ℄ U.S. 250
22.46' LEFT
ELEV. 869.74
CONCRETE MONUMENT

**BENCHMARK**
STA. 59+11.48, ℄ U.S. 250
40.04' LEFT
ELEV. 873.38
CONCRETE MONUMENT




SCALE IN FEET
0 20 40

| REVISED DATE | DATE |
|---|---|
| 7/25/02 | 3/22/02 |

REVIEWED M.R.S.
CHECKED J.B.H.
DRAWN J.B.H.

# STRUCTURE FOUNDATION INVESTIGATION

BRIDGE NO.HAS - 250 - 01.06
OVER TRIB.OF STILLWATER CREEK

# HAS-250-1.06

2 / 4

03/02

State of Ohio
Department of Transportation
Office of Materials Management

LOG OF BORING

Date Started 2/14/02 Sampler: Type SS Dia. 1 3/8" Water Elev. 849.8' Project Identification: HARRISON
Date completed 2/25/02 HAS-250-0106
Boring No. B-1 Station & Offset 56+20, 14' RT. Surface Elev. 870.8' OV. TRIB. OF LITTLE STILLWATER CREEK

| Elev. | Depth | Std. Pen./ R.O.D. | Rec. ft | Loss ft | Description | Sample No. | Physical Characteristics % Agg | % C.S. | % F.S. | % Silt | % Clay | L.L. | P.I. | W.C. | ODOT Class |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 870.8 | 0 | AUGERED | | | ASPHALT | - | - | - | - | - | - | - | - | - | VISUAL |
| 868.3 | 2 | | | | | | | | | | | | | | |
| | 4 | 6/7/9 | | | BROWN GRAVELLY SANDY SILT | 1 | 18 | 8 | 11 | 43 | 20 | NP | NP | 18 | A-4a |
| 865.8 | 6 | 7/10/13 | | | BROWN SANDY CLAY | 2 | 10 | 6 | 12 | 45 | 27 | 32 | 12 | 17 | A-6a |
| | 8 | | | | | | | | | | | | | | |
| 860.8 | 10 | | | | | | | | | | | | | | |
| | 12 | 4/6/7 | | | BROWN SILT AND CLAY | 3 | 5 | 4 | 9 | 46 | 36 | 37 | 15 | 17 | A-6a |
| | 14 | | | | | | | | | | | | | | |
| 855.8 | 16 | 4/5/8 | | | BROWN CLAY | 4 | 0 | 1 | 4 | 32 | 63 | 51 | 22 | 25 | A-7-6 |
| | 18 | | | | | | | | | | | | | | |
| 850.8 | 20 | | | | | | | | | | | | | | |
| 849.3 | 22 | PRESS | | | GRAY AND BROWN SILT | 5-P | 0 | 1 | 5 | 52 | 42 | NP | NP | 24 | A-4b |
| 847.8 | | 4/6/5 | | | GRAY SILTY GRAVELLY SAND | 6 | 21 | 18 | 29 | 19 | 13 | NP | NP | 29 | A-2-4 |
| 846.3 | | 3/4/5 | | | GRAY SILT | 7 | 0 | 0 | 19 | 56 | 25 | NP | NP | 34 | A-4b |
| 844.8 | 26 | 2/4/9 | | | GRAY SILT | 8 | 0 | 0 | 18 | 54 | 28 | NP | NP | 26 | A-4b |
| 843.3 | 28 | 9/10/10 | | | GRAY SILT | 9 | 0 | 0 | 1 | 66 | 33 | NP | NP | 26 | A-4b |
| 841.8 | | 6/8/9 | | | GRAY SILT | 10 | 0 | 0 | 3 | 62 | 35 | NP | NP | 30 | A-4b |
| | 30 | 5/6/7 | | | GRAY SILT | 11 | 0 | 0 | 2 | 64 | 34 | NP | NP | 27 | A-4b |
| 838.3 | 32 | | | | | | | | | | | | | | |
| | 34 | 5/8/12 | | | GRAY SILT | 12 | 0 | 0 | 2 | 68 | 30 | NP | NP | 25 | A-4b |
| 835.8 | 36 | 2/5/8 | | | GRAY SILT | 13 | 0 | 0 | 2 | 57 | 41 | NP | NP | 28 | A-4b |
| 833.3 | 38 | 4/7/9 | | | GRAY SILT | 14 | 0 | 0 | 3 | 56 | 41 | NP | NP | 25 | A-4b |
| 830.8 | 40 | 4/6/8 | | | GRAY SILT | 15 | 0 | 0 | 3 | 55 | 42 | NP | NP | 27 | A-4b |
| | 42 | | | | | | | | | | | | | | |
| 825.8 | 44 | | | | | | | | | | | | | | |
| | 46 | 5/9/11 | | | GRAY SILT | 16 | 0 | 1 | 11 | 49 | 39 | NP | NP | 21 | A-4a |
| | 48 | | | | | | | | | | | | | | |
| 820.8 | 50 | | | | | | | | | | | | | | |
| | 52 | 17/23/34 | | | GRAY SANDY SILT | 17 | 7 | 14 | 38 | 26 | 15 | NP | NP | 17 | A-4a |
| | 54 | | | | | | | | | | | | | | |
| 815.8 | 56 | 12/14/18 | | | GRAY SILT | 18 | 0 | 3 | 16 | 53 | 28 | NP | NP | 21 | A-4b |
| | 58 | | | | | | | | | | | | | | |
| 810.8 | 60 | | | | | | | | | | | | | | |
| | 62 | 7/10/11 | | | GRAY SILT | 19 | 0 | 1 | 8 | 60 | 31 | NP | NP | 23 | A-4b |
| | 64 | | | | | | | | | | | | | | |
| 805.8 | 66 | 6/10/12 | | | GRAY SILT | 20 | 0 | 0 | 5 | 61 | 34 | NP | NP | 26 | A-4b |
| | 68 | | | | | | | | | | | | | | |
| 800.8 | 70 | | | | | | | | | | | | | | |
| | 72 | 7/15/16 | | | GRAY SILT | 21 | 0 | 1 | 6 | 60 | 33 | NP | NP | 22 | A-4b |
| | 74 | | | | | | | | | | | | | | |
| 795.8 | 76 | | | | | | | | | | | | | | |
| | 78 | 8/15/19 | | | GRAY SILT AND CLAY | 22 | 0 | 1 | 17 | 42 | 40 | 35 | 13 | 22 | A-6a |
| 790.8 | 80 | | | | | | | | | | | | | | |
| 789.3 | | 17/47/65 | | | GRAY SILT | 23 | 0 | 1 | 8 | 40 | 51 | NP | NP | 13 | A-4a |

BOTTOM OF BORING

Particle Sizes: Agg= >2.00mm, Coarse Sand= 2.00-0.42mm Fine Sand= 0.42-0.074mm, Silt= 0.074-0.005mm, Clay= <0.005mm

Form TE-151 Revised 9/95

State of Ohio
Department of Transportation
Office of Geotechnical Engineering

UNCONFINED COMPRESSION TEST
(AASHTO T 208)

Project Identification HARRISON
HAS-250-0106
OV. TRIB. OF LITTLE STILLWATER CREEK

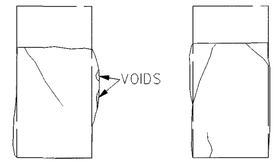
Station & Offset 56+20, 14' RT.
Boring B-1 Depth 21.0'-21.5'
Field No. 5-P Lab No. 01916

Specimen Data

Diameter 2.84" Wet Density N/A
Height 6.05" Dry Density N/A
Visual Description GRAY AND BROWN SILT

Physical Characteristics

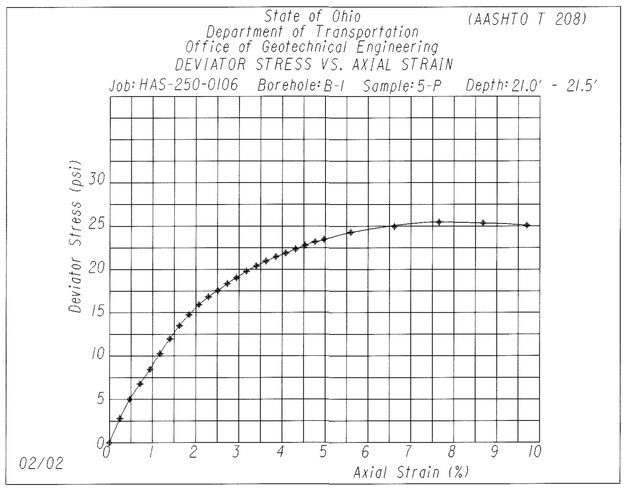
| % Agg. | % C.S. | % F.S. | % Silt. | % Clay. | L.L | P.I. | W.C. |
|---|---|---|---|---|---|---|---|
| 0 | 1 | 5 | 52 | 42 | NP | NP | 24 |




Failure Diagrams

Penetrometer 2.0 TSF
Torvane 0.74 TSF
Remarks: NOTE: TWO VOIDS (1/2" DIAMETER AND 1/8" DEEP) WERE PRESENT ON THE SIDE OF THE SAMPLE PRIOR TO TESTING.
MAX DEVIATOR STRESS = 25.46 PSI AT 7.65 % STRIAN

02/02




OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING
1600 WEST BROAD ST. COLUMBUS, OH 43223

REVISED DATE 7/25/02 | DATE 3/22/02
REVIEWED M.R.S. | CHECKED J.B.H. | TYPED J.B.H.

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. HAS-250-0106
OVER TRIB. OF STILLWATER CREEK

HAS-250-1.06

3/4

03/02

State of Ohio
Department of Transportation
Office of Materials Management

LOG OF BORING

Date Started 2/25/02 Sampler: Type SS Dia. 1⅜" Water Elev. 850.1' Project Identification: HARRISON
Date completed 2/26/02 HAS-250-0106
Boring No. B-2 Station & Offset 56+74, 13' LT. Surface Elev. 871.1' OV. TRIB. OF LITTLE STILLWATER CREEK

| Elev. 871.1 | Depth | Std. Pen./ R.O.D. | Rec. ft | Loss ft | Description | Sample No. | Physical Characteristics % Agg | % C.S. | % F.S. | % Silt | % Clay | L.L. | P.I. | W.C. | ODOT Class |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 870.6 | 0 | AUGERED | | | ASPHALT | - | - | - | - | - | - | - | - | - | VISUAL |
| 870.1 | 2 | AUGERED | | | CONCRETE | - | - | - | - | - | - | - | - | - | VISUAL |
| 868.6 | | | | | | | | | | | | | | | |
| | 4 | 16/15/15 | | | BROWN SILTY GRAVELLY SAND | 24 | 28 | 17 | 17 | 23 | 15 | NP | NP | 9 | A-4a |
| 866.1 | 6 | 9/6/6 | | | BROWN SANDY SILT | 25 | 8 | 11 | 12 | 38 | 31 | NP | NP | 14 | A-4a |
| | 8 | | | | | | | | | | | | | | |
| 861.1 | 10 | | | | | | | | | | | | | | |
| | 12 | 4/5/9 | | | BROWN CLAYEY SILT | 26 | 0 | 6 | 7 | 40 | 47 | 32 | 8 | 26 | A-4a |
| | 14 | | | | | | | | | | | | | | |
| 856.1 | 16 | 3/5/7 | | | BROWN AND GRAY CLAYEY SILT | 27 | 0 | 1 | 2 | 37 | 60 | 37 | 9 | 29 | A-4a |
| | 18 | | | | | | | | | | | | | | |
| 851.1 | 20 | | | | | | | | | | | | | | |
| 849.6 | 22 | 2/2/3 | | | BROWN AND GRAY SANDY SILT | 28 | 0 | 5 | 16 | 40 | 39 | NP | NP | 27 | A-4a |
| 848.1 | 24 | 1/1/2 | | | BROWN SANDY SILT | 29 | 0 | 16 | 27 | 36 | 21 | NP | NP | 22 | A-4a |
| | | 2/3/5 | | | GRAY SILT | 30 | 0 | 0 | 8 | 57 | 35 | NP | NP | 32 | A-4b |
| 845.1 | 26 | PRESS | | | BROWNISH-GRAY CLAYEY SILT | 31-P | 0 | 2 | 4 | 42 | 52 | 33 | 10 | 27 | A-4a |
| 843.6 | 28 | 2/1/2 | | | GRAY SANDY SILT | 32 | 0 | 0 | 21 | 49 | 30 | NP | NP | 41 | A-4a |
| | 30 | 5/7/6 | | | GRAY SILT | 33 | 0 | 0 | 9 | 60 | 31 | NP | NP | 25 | A-4b |
| 841.1 | 32 | 4/5/7 | | | GRAY SILT | 34 | 0 | 0 | 3 | 69 | 28 | NP | NP | 26 | A-4b |
| 838.6 | 34 | 5/7/8 | | | GRAY SILT | 35 | 0 | 0 | 2 | 65 | 33 | NP | NP | 26 | A-4b |
| 836.1 | 36 | 2/3/5 | | | GRAY SILT | 36 | 0 | 0 | 1 | 59 | 40 | NP | NP | 25 | A-4b |
| 833.6 | 38 | 4/5/6 | | | GRAY SILT | 37 | 0 | 0 | 2 | 58 | 40 | NP | NP | 22 | A-4b |
| 831.1 | 40 | 5/6/7 | | | GRAY SILT | 38 | 0 | 0 | 3 | 66 | 31 | NP | NP | 27 | A-4b |
| | 42 | | | | | | | | | | | | | | |
| 826.1 | 44 | | | | | | | | | | | | | | |
| | 46 | 6/11/14 | | | GRAY SANDY SILT | 39 | 0 | 1 | 20 | 56 | 23 | NP | NP | 20 | A-4b |
| 821.1 | 48 | | | | | | | | | | | | | | |
| | 50 | | | | | | | | | | | | | | |
| | 52 | 8/15/18 | | | GRAY SANDY SILT | 40 | 6 | 13 | 15 | 47 | 19 | NP | NP | 16 | A-4a |
| 816.1 | 54 | | | | | | | | | | | | | | |
| | 56 | 11/9/15 | | | BROWN SANDY SILT WITH CLAY | 41 | - | - | - | - | - | - | - | 16 | VISUAL |
| 811.1 | 58 | | | | | | | | | | | | | | |
| | 60 | | | | | | | | | | | | | | |
| | 62 | 8/9/11 | | | GRAY SILT | 42 | 0 | 1 | 5 | 56 | 38 | NP | NP | 21 | A-4b |
| 806.1 | 64 | | | | | | | | | | | | | | |
| | 66 | 7/15/16 | | | GRAY SANDY SILT | 43 | 0 | 5 | 17 | 51 | 27 | NP | NP | 23 | A-4b |
| | 68 | | | | | | | | | | | | | | |
| 801.1 | 70 | | | | | | | | | | | | | | |
| | 72 | 14/17/20 | | | GRAY SANDY CLAY | 44 | 11 | 4 | 15 | 36 | 34 | 35 | 12 | 18 | A-6a |
| | 74 | | | | | | | | | | | | | | |
| 796.1 | 76 | | | | | | | | | | | | | | |
| | | 8/12/16 | | | 78.0 SANDY SILT — TOP OF ROCK | 45 | 0 | 2 | 37 | 35 | 26 | NP | NP | 17 | A-4a |
| 793.1 | 78 | | | | | | | | | | | | | | |
| 792.1 | | 48/100 | | | BLACK, CARBONACEOUS, JOINTED CLAY-SHALE W/SLICKENSIDES — BOTTOM OF BORING | 46 | - | - | - | - | - | - | - | 8 | VISUAL |

Particle Sizes: Agg= >2.00mm, Coarse Sand= 2.00-0.42mm, Fine Sand= 0.42-0.074mm, Silt= 0.074-0.005mm, Clay= <0.005mm

Form TE-15, Revised 9/95

State of Ohio
Department of Transportation
Office of Geotechnical Engineering

UNCONFINED COMPRESSION TEST
(AASHTO T 208)

Project Identification HARRISON
HAS-250-0106
OV. TRIB. OF LITTLE STILLWATER CREEK

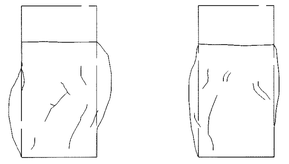
Station & Offset 56+74, 13' LT.
Boring B-2 Depth 25.0' 25.5'
Field No. 31-P Lab No. 01915

Specimen Data

Diameter 2.94" Wet Density N/A
Height 5.91" Dry Density N/A
Visual Description BROWNISH GRAY CLAYEY SILT

Physical Characteristics

| % Agg. | % C.S. | % F.S. | % Silt. | % Clay. | L.L | P.I. | W.C. |
|---|---|---|---|---|---|---|---|
| 0 | 2 | 4 | 42 | 52 | 33 | 10 | 27 |



Failure Diagrams

Penetrometer 0.75 TSF
Torvane 0.36 TSF
Remarks: NOTE: TEST RUN, HOWEVER DATA LOST DUE TO COMPUTER GLITCH.

02/02

OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING
1600 WEST BROAD ST. COLUMBUS, OH 43223

| REVISED DATE | DATE |
|---|---|
| 7/25/02 | 3/22/02 |
| | REVIEWED M.R.S. |
| | CHECKED J.B.H. |
| | TYPED J.B.H. |

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. HAS - 250 - 0106
OVER TRIB. OF STILLWATER CREEK

HAS-250-1.06

4 / 4

03/02