

Bench Mark: BM #213 - Set railroad spike in south side of power pole with light at northeast corner of Route 22 and Hampton Road. Station: 100+752.20 10.56m LT. El. 213.760m

Existing Structure: Twin 2.1m x 1.8m concrete box culverts. The Contractor shall remove the existing structure and replace it with a new concrete Single-Barrel Box Culvert.

Salvage: None.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | | |
|-----------------------|---------|--------|------|-------|--------------------|
| FAP | SECTION | COUNTY | DATE | SHEET | SHEET NO. 1 |
| 337 | 20R-5 | LAKE | 562 | 427 | 9 SHEETS |
| FED. ROAD DIST. NO. 7 | | | | | ILLINOIS |
| D-91-552-99 | | | | | Contract No. 60881 |

TOTAL BILL OF MATERIAL

| Item | Unit | TOTAL |
|---|-------|--------|
| Removal of Existing Structures No. 2 | EACH | 1 |
| Reinforcement Bars | KG | 13,960 |
| Temporary Sheet Piling | SQ M | 82 |
| Steel Plate Beam Guard Rail, Attached to Structures | METER | 8.4 |
| Concrete Box Culverts | CU M | 107 |
| Bicycle Railing | METER | 10.80 |
| Bar Splicers | EACH | 55 |

INDEX OF SHEETS

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2. STAGE CONSTRUCTION
3. CULVERT PLAN AND ELEVATION - NORTH
4. CULVERT PLAN AND ELEVATION - SOUTH
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6. BICYCLE RAILING
7. BAR SPLICER (COUPLER) DETAILS
8. BORING LOGS
9. BORING LOGS

GENERAL NOTES:

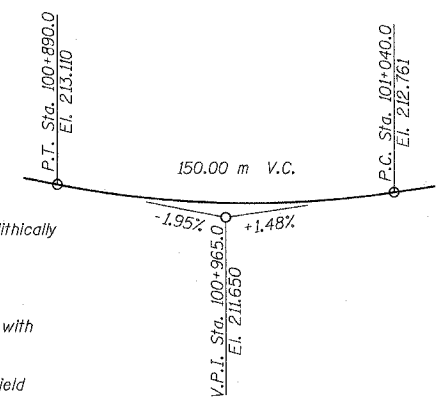
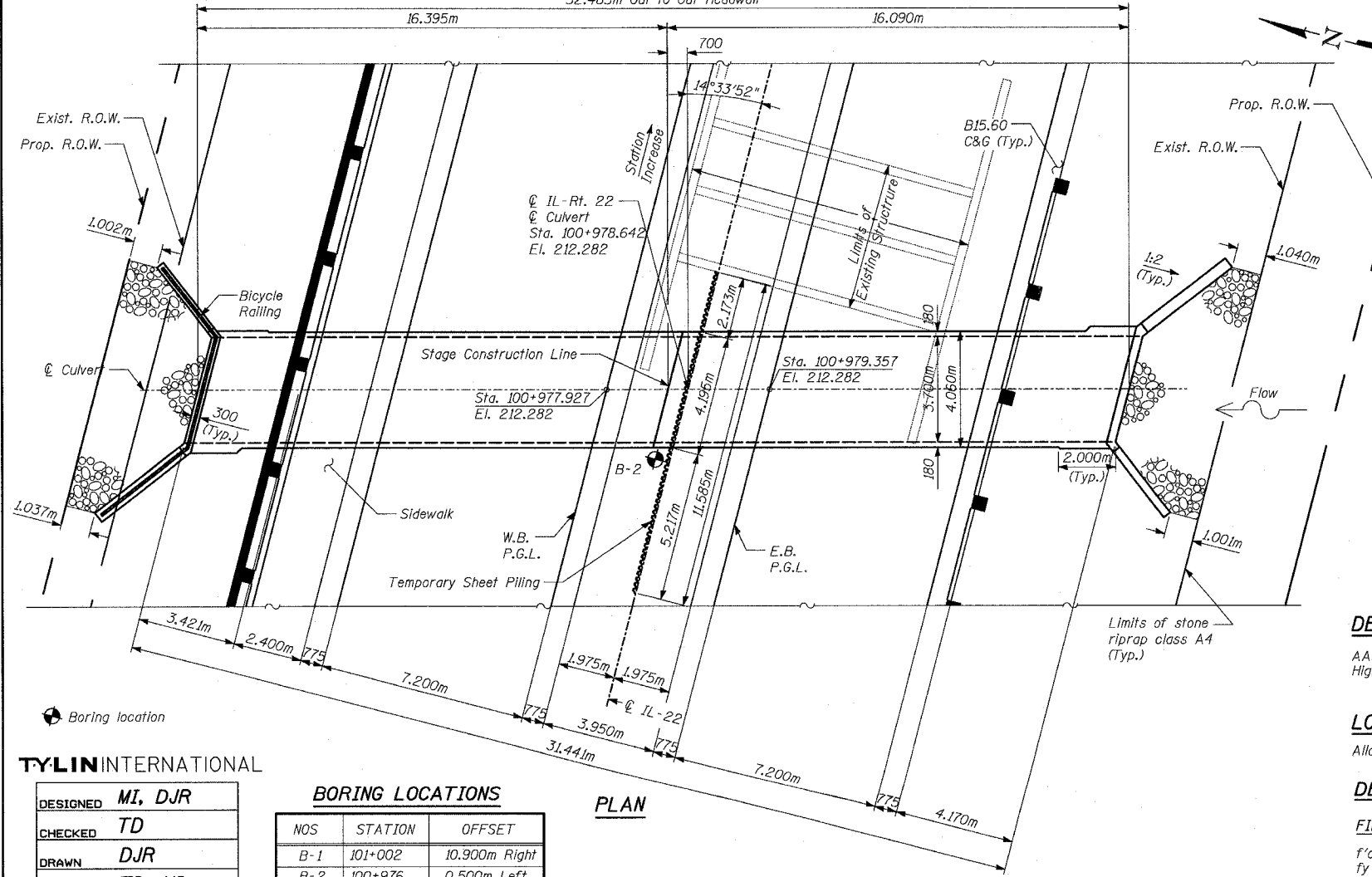
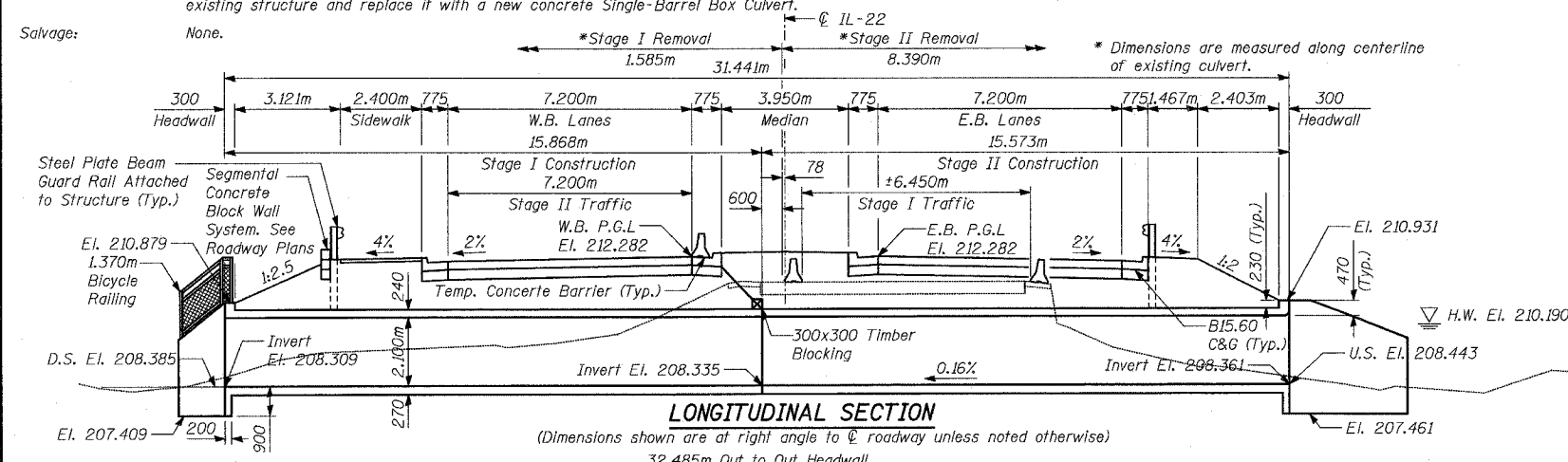
1. Reinforcement bars shall conform to the requirements of AASHTO M31M, or M322M Grade 420.
2. Exposed edges shall be beveled 19mm.
3. All construction joints shall be bonded.
4. A distance of half the length of the wingwall, but not less than two meters of the barrel shall be poured monolithically with the wingwalls.
5. All dimensions are in millimeters (mm) except as noted.
6. For "Stone Riprap, Class A4" and "Filter Fabric for use with Riprap" bill of material, see Roadway plans.
7. Layout of slope protection system may be varied in the field to suit ground conditions as directed by the engineer.
8. Design Fill Height = 1.750m

PROFILE GRADE IL RTE 22

WATERWAY INFORMATION

DRAINAGE AREA = 18.13 SQ.KM AT STATION 100+975 MAX. RECORDED H.W.E. = 210.32m

| Flood | Frequency Yr. | Discharge Cms | Waterway Opening m ² | | Natural H.W.E. m | Created Head m | | Headwater Elevation m | |
|-------------|---------------|---------------|---------------------------------|----------|------------------|----------------|----------|-----------------------|----------|
| | | | Existing | Proposed | | Existing | Proposed | Existing | Proposed |
| Design | 10 | 7.2 | 5.9 | 5.5 | 209.91 | 0.07 | 0.02 | 209.98 | 209.93 |
| Base | 50 | 11.0 | 7.1 | 6.5 | 210.19 | 0.11 | 0.08 | 210.30 | 210.27 |
| Base | 100 | 12.7 | 7.5 | 6.8 | 210.28 | 0.17 | 0.15 | 210.45 | 210.43 |
| Overtopping | | | | | | | | | |
| Max. Calc. | 500 | 16.8 | 7.8 | 7.7 | 210.50 | 0.34 | 0.24 | 210.84 | 210.74 |



TYLIN INTERNATIONAL

| | |
|----------|------------|
| DESIGNED | MI, DJR |
| CHECKED | TD |
| DRAWN | DJR |
| CHECKED | TD, MI |
| DATE | 03-22-2004 |

BORING LOCATIONS

| NOS | STATION | OFFSET |
|-----|---------|---------------|
| B-1 | 101+002 | 10.900m Right |
| B-2 | 100+976 | 0.500m Left |
| B-3 | 100+964 | 14.100m Left |

PLAN

DESIGN SPECIFICATION

AASHTO 2002 Standard Specifications for Highway Bridges.

LOADING MS18

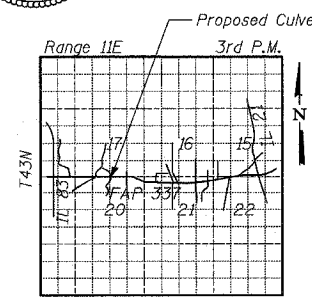
Allow 2.4 KN/m² for future wearing surface.

DESIGN STRESSES

FIELD UNITS
f'_c = 24 MPa
f_y = 420 MPa (Reinforcement)



Signed: Heather J. Gaffney, S.E., IL Lic. No. 081-004961 For drawings 1 thru 9 of 9.
Date: 3/22/04



GENERAL PLAN

IL ROUTE 22 OVER
KILDEER CREEK
FAP 337 SECTION 20R-5
LAKE COUNTY
STA. 100+978.642
S.N. 049-C003