

BENCH MARK: TBM 403  
 STA. 317+30.56, 25.89' LT., EL. 913.497  
 CUT SQUARE ON HEADWALL IN NW  
 QUAD IL 72 & GOLD MINE ROAD, WEST  
 OF CULVERT.

EXISTING STRUCTURE:  
 SINGLE 8'-0" X 5'-0" X 43'-0" CONCRETE BOX CULVERT.

NO SALVAGE.

PROPOSED IMPROVEMENTS:  
 EXISTING STRUCTURE TO BE REMOVED AND REPLACED  
 WITH A 2 CELL - 7'-0" X 4'-0" PRECAST CONCRETE BOX  
 CULVERT WITH CAST-IN-PLACE END SECTIONS.

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

|                       |         |          |                   |           |
|-----------------------|---------|----------|-------------------|-----------|
| ROUTE NO.             | SECTION | COUNTY   | SHEET NO.         | SHEET NO. |
| F.A.P.<br>545         | 114T-1  | CARROLL  | 118               | 38        |
| FED. ROAD DIST. NO. 2 |         | ILLINOIS | FED. AID PROJECT- |           |

Contract # 64C31

DESIGN SPECIFICATIONS

AASHTO 2002 SPECIFICATIONS

LOADING HS20-44

ALLOW 50#/SQ. FT. FOR FUTURE WEARING SURFACE.

DESIGN STRESSES

FIELD UNITS

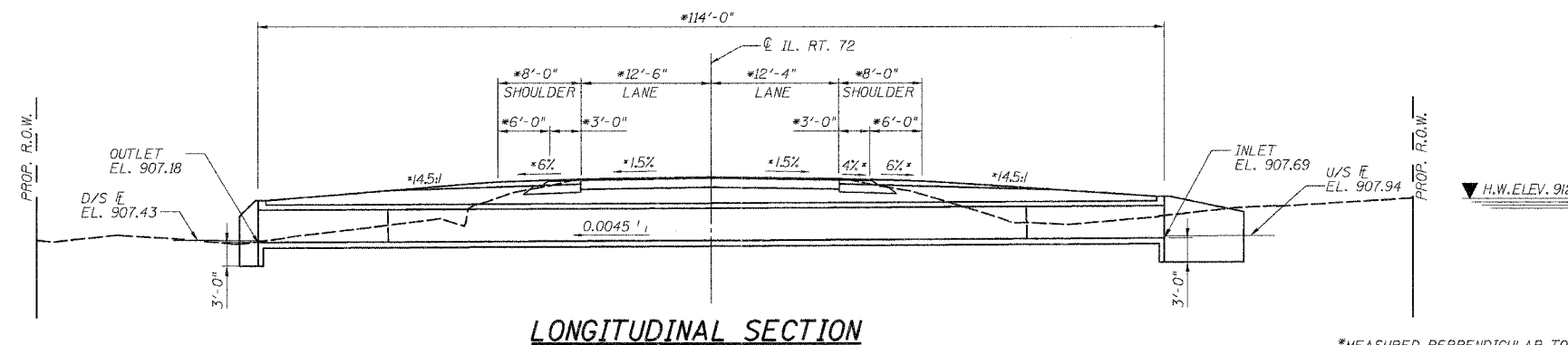
$f'_c = 3,500$  PSI  
 $f_y = 60,000$  PSI (REINFORCEMENT)

PRECAST UNITS

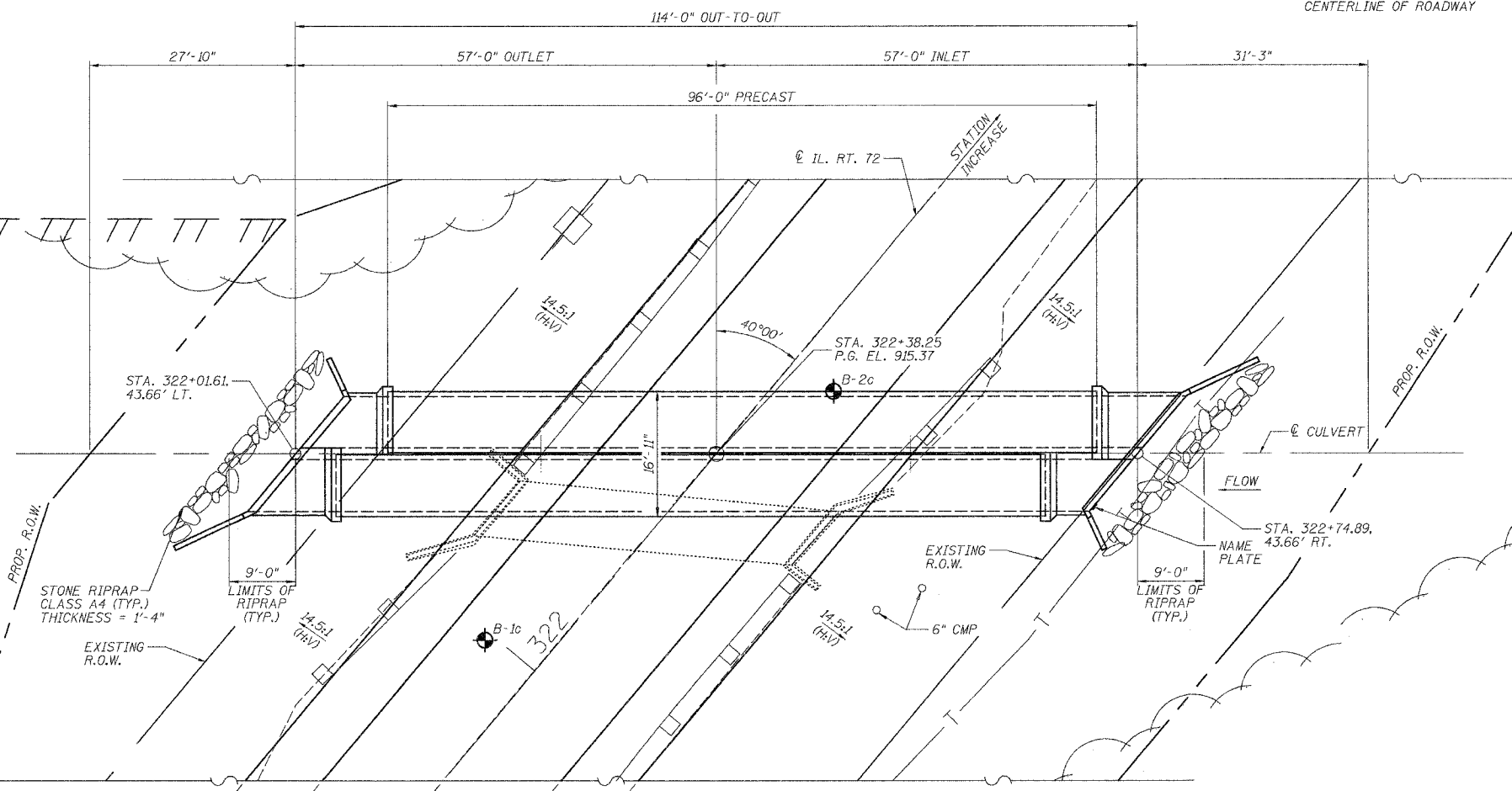
$f'_c = 5,000$  PSI  
 $f_y = 60,000$  PSI (REINFORCEMENT)

GENERAL NOTES

- REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706 GR 60 (IL MODIFIED). SEE SPECIAL PROVISION.
- CAST-IN-PLACE BARREL SHALL BE POURED MONOLITHICALLY WITH WING WALLS.
- EXPOSED EDGES SHALL HAVE A  $\frac{3}{4}$ " CHAMFER.
- CULVERT FLOWS MUST BE MAINTAINED THROUGHOUT THE PROJECT. NORMAL FLOW SHALL BE ALLOWED TO PASS AT THE RATE IT ENTERS THE JOBSITE. HIGH FLOWS SHALL BE ALLOWED PASS TO WITHOUT CAUSING DAMAGE TO UPSTREAM PROPERTIES.
- THE CONTRACTOR SHALL CLEAN OUT CULVERT STREAM FLOW TO THE RIGHT OF WAY LINES. THE COST SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR "PRECAST CONCRETE BOX CULVERT 7'x4'".
- PLACEMENT AND COMPACTION OF THE BACKFILL FOR CULVERT SHALL CONFORM TO SECTION 502.10 OF THE STANDARD SPECIFICATIONS. THE MATERIAL SHALL CONFORM TO SECTION 1004.05 OF THE STANDARD SPECIFICATIONS FOR COARSE AGGREGATE FOR TRENCH BACKFILL, AND SHALL BE COMPACTED TO MINIMUM OF 95% OF THE STANDARD LABORATORY DENSITY. THE ENTIRE EXCAVATION, WITHIN 2 FEET OUTSIDE OF EACH SHOULDER, SHALL BE BACKFILLED WITH TRENCH BACKFILL MATERIAL TO THE BOTTOM OF THE PROPOSED SUBGRADE. THIS TRENCH BACKFILL MATERIAL WILL NOT BE MEASURED FOR PAYMENT, BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE CLASS OF CONCRETE INVOLVED OR OTHER UNIT PRICE ITEM OF THE WORK FOR WHICH IT IS REQUIRED.
- PRECAST CONCRETE BOX CULVERT SLAB & WALL THICKNESS TAKEN FROM AASHTO MATERIAL SPECIFICATIONS. IF FABRICATOR CHOOSES TO ALTER DIMENSIONS, IT MUST BE APPROVED BY THE ENGINEER AND THE CALCULATIONS SHALL BE PREPARED AND SEALED BY AN ILLINOIS LICENSED STRUCTURAL ENGINEER.
- STRUCTURE EXCAVATION AND GRADING AROUND ENDS OF CULVERT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR "PRECAST CONCRETE BOX CULVERT 7'x4'".
- THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M273 (DESIGN FILL HEIGHT = 2'-0").
- THE NEW NUMBER FOR THIS STRUCTURE WILL BE 008-1091.



LONGITUDINAL SECTION



PLAN

STATION 322+38.25  
 BUILT 200. BY  
 STATE OF ILLINOIS  
 IL 72 SECT. 114T-1  
 LOADING HS20  
 STR. NO. 008-1091

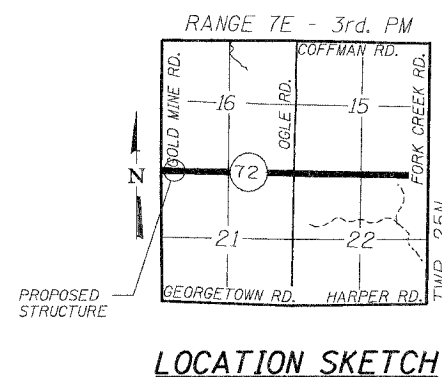
NAME PLATE

NOTE: SEE STANDARD DRAWING 515001  
 FOR NAME PLATE DETAILS.

|          |     |
|----------|-----|
| DESIGNED | ASP |
| CHECKED  | WSP |
| DRAWN    | BEM |
| CHECKED  | ASP |

|          |                                    |
|----------|------------------------------------|
| EXAMINED | 200                                |
| PASSED   | ENGINEER OF BRIDGE DESIGN          |
|          | ENGINEER OF BRIDGES AND STRUCTURES |

| WATERWAY INFORMATION |           |                  |                     |          |
|----------------------|-----------|------------------|---------------------|----------|
| FLOOD                | FREQ. YR. | DISCHARGE C.F.S. | HEADWATER ELEVATION |          |
|                      |           |                  | EXISTING            | PROPOSED |
| TEN-YEAR             | 10        | 150              | 912.26              | 911.64   |
| DESIGN               | 50        | 309              | 914.16              | 912.55   |
| BASE                 | 100       | 410              | 914.30              | 913.29   |
| EX OVT               | 33        | 252              | 913.94              |          |
| PR OVT               | 145       | 475              |                     | 913.94   |



LOCATION SKETCH

TOTAL BILL OF MATERIALS

| ITEM                                 | UNIT    | QUANTITY |
|--------------------------------------|---------|----------|
| CONCRETE BOX CULVERTS                | CU. YD. | 36.0     |
| PRECAST CONCRETE BOX CULVERT 7' x 4' | FOOT    | 192      |
| REINFORCEMENT BARS                   | POUND   | 5,253    |
| REMOVAL OF EXISTING STRUCTURE NO. 3  | EACH    | 1        |
| STONE RIPRAP, CLASS A4               | SQ. YD. | 50       |
| FILTER FABRIC                        | SQ. YD. | 50       |
| NAME PLATES                          | EACH    | 1        |



Wayne A. Treacy  
 11-30-00  
 GENERAL PLAN & ELEVATION  
 F.A.P. 545 (IL. RTE. 72)  
 SECTION 114T-1  
 CARROLL COUNTY  
 STATION 322+38.25  
 STRUCTURE NO. 008-1091