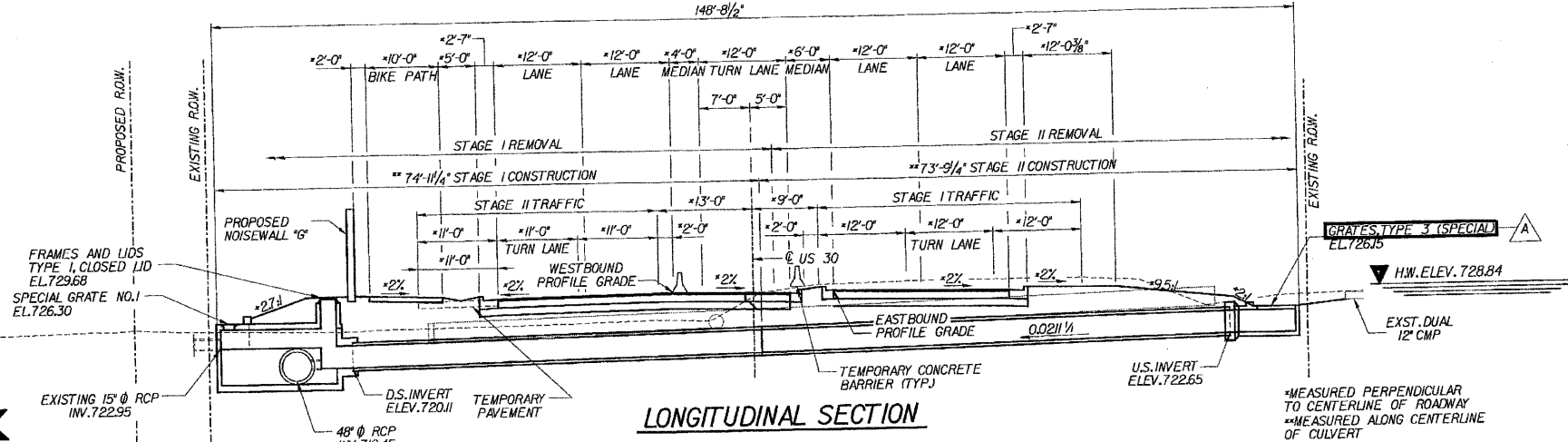


BENCH MARK: BM 241
STA. 382+66.15, 87.43' RT. ELEV. 734.058
MARK ON THE SOUTHERLY FLANGE BOLT OF
SECOND HYDRANT EAST OF WASHINGTON
PARKWAY, SOUTH OF ROUTE 30.

EXISTING STRUCTURE: NO. UNKNOWN
24" Ø X 108' REINFORCED CONCRETE PIPE
NO SALVAGE.

PROPOSED IMPROVEMENTS:
EXISTING STRUCTURE TO BE REMOVED AND
REPLACED WITH A SINGLE 4'-0" X 3'-0" BOX
CULVERT IN STAGES MAINTAINING TWO LANES
OF TRAFFIC.



DESIGN SPECIFICATIONS

AASHTO 2002 SPECIFICATIONS.
LOADING HS20-44
ALLOW 50% SO.FT. FOR FUTURE WEARING SURFACE.

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 PSI
fy = 60,000 PSI (REINFORCEMENT)

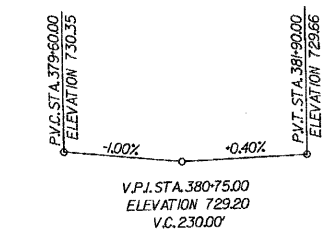
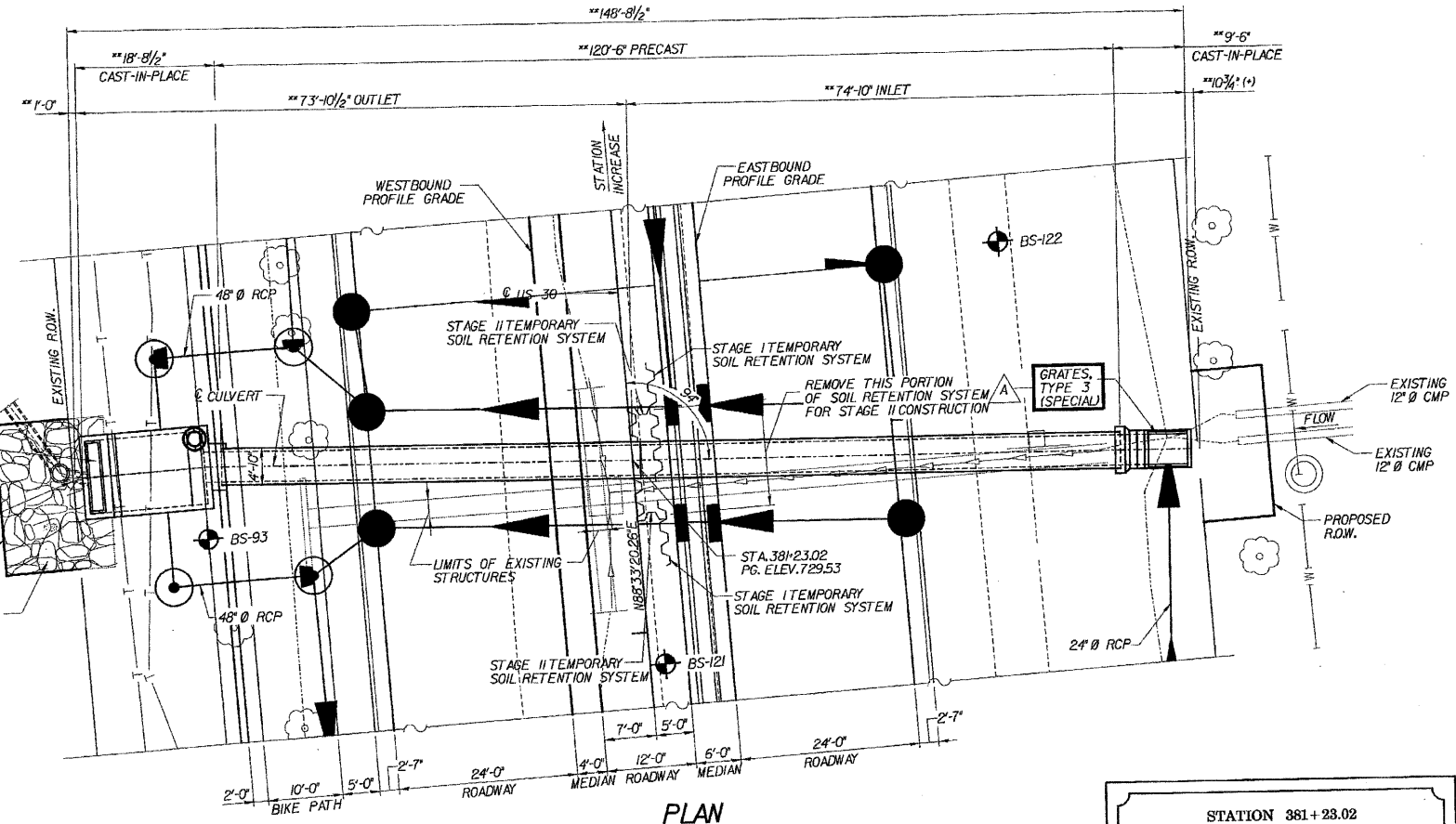
PRECAST UNITS
f'c = 5,000 PSI
fy = 60,000 PSI (REINFORCEMENT)

GENERAL NOTES

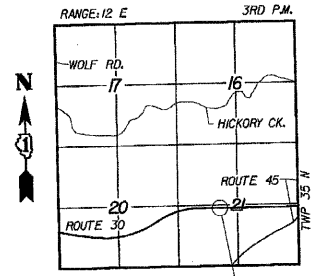
1. REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 706 GR. 60. SEE 'SPECIAL PROVISIONS'.
2. EXPOSED EDGES SHALL HAVE A 3/4" CHAMFER.
3. IN ACCORDANCE WITH ARTICLE 540.04 OF THE STANDARD SPECIFICATIONS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DIVERT STREAM FLOW DURING CONSTRUCTION IN ORDER TO KEEP THE CONSTRUCTION AREAS FREE OF WATER. THE METHOD OF WATER DIVERSION SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER AND THE COST SHALL BE INCLUDED WITH 'REMOVAL OF EXISTING STRUCTURES NO. 8'. CLEAN FILL (GRANULAR) MATERIAL WILL ONLY BE ALLOWED.
4. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M259 (DESIGN FILL HEIGHT - 3'-0").
5. A CANTILEVERED SHEET PILING DESIGN DOES NOT APPEAR FEASIBLE AND ADDITIONAL MEMBERS OR OTHER RETENTION SYSTEMS MAY BE NECESSARY. THE CONTRACTOR SHALL SUBMIT A TEMPORARY SOIL RETENTION SYSTEM DESIGN INCLUDING PLAN DETAILS AND CALCULATIONS FOR REVIEW AND ACCEPTANCE BY THE ENGINEER.

TOTAL BILL OF MATERIALS

| ITEM | UNIT | QUANTITY |
|--------------------------------------|---------|----------|
| STONE RIPRAP, CLASS A6 | TON | 50 |
| FILTER FABRIC | SQ. YD. | 40 |
| REMOVAL OF EXISTING STRUCTURES NO. 8 | EACH | 1 |
| REINFORCEMENT BARS | POUND | 5,240 |
| NAME PLATES | EACH | 1 |
| CONCRETE BOX CULVERTS | CU. YD. | 25.3 |
| PRECAST CONCRETE BOX CULVERT 4' X 3' | FOOT | 120.5 |
| FRAMES AND LIDS, TYPE I, CLOSED LID | EACH | 1 |
| TEMPORARY SOIL RETENTION SYSTEM | SQ. FT. | 295 |
| SPECIAL GRATE NO. 1 | EACH | 1 |
| GRATES, TYPE 3 (SPECIAL) | EACH | 1 |



PROFILE GRADE
© P.G. WBD & EBD.



LOCATION SKETCH

| WATERWAY INFORMATION | | | | | | | | | | |
|---------------------------------|-----------|---|---|---|----------------------------------|----------------------------------|------------------------|-----------------|------------------------------|------------------------------|
| DRAINAGE AREA (SQ. MI.) - 0.061 | | LOW GRADE ELEV. (FEET) EXIST - 731.00 @ STA. 385+74 | | | | | MAX. RECORDED H.W.E. - | | | |
| | | PROPOSED - 729.49 @ STA. 385+75 | | | | | | | | |
| FLOOD | FREQ. YR. | DISCHARGE C.F.S. | WATERWAY OPENING EXISTING (square feet) | WATERWAY OPENING PROPOSED (square feet) | NATURAL H.W.E. EXISTING U/S Face | NATURAL H.W.E. PROPOSED U/S Face | EXISTING (feet) | PROPOSED (feet) | HEADWATER ELEVATION EXISTING | HEADWATER ELEVATION PROPOSED |
| OVERTOPPING (EX.) | 10 | 21 | 4.62 | 12.00 | 728.35 | 728.84 | 0.25 | 0.00 | 728.60 | 726.39 |
| DESIGN | 44 | 48 | 4.91 | 12.00 | 728.35 | 728.84 | 2.65 | 0.00 | 731.00 | 726.86 |
| BASE | 50 | 53 | 4.91 | 12.00 | 728.35 | 728.84 | 2.42 | 0.00 | 730.77 | 726.86 |
| OVERTOPPING (Pr.) | 100 | 103 | 4.91 | 12.00 | 728.35 | 728.84 | 2.74 | 0.00 | 731.09 | 728.42 |
| MAX. CALC. | 130 | 126 | 4.91 | 12.00 | 728.35 | 728.84 | 2.96 | 0.65 | 729.49 | 729.49 |
| | 500 | 446 | 4.91 | 12.00 | 728.35 | 728.84 | 2.96 | 1.19 | 731.31 | 730.03 |

STATION 381+23.02
BUILT BY
STATE OF ILLINOIS
FAP 353 SECT. (12 & 13) WRS-3
LOADING HS20
STR. NO. 099-C016

NAME PLATE

NOTE: SEE STANDARD DRAWING 515001 FOR NAME PLATE DETAILS.

| REVISIONS | |
|------------|----------|
| NAME | DATE |
| ADDENDUM A | 01/05/11 |

DLZ 85 W. Algonquin Rd., Ste. 220
Arlington Heights, IL 60005
DLZ Illinois, Inc.

CULVERT 'K'
GENERAL PLAN
U.S. ROUTE 30 (LINCOLN HIGHWAY)
F.A.P. 353 (U.S. 30)
SECTION (12 & 13) WRS-3
STATION 381+23.02
WILL COUNTY
STRUCTURE NUMBER 099-C016

WAYNE A. TRUAX
REGISTERED STRUCTURAL ENGINEER
081-008429
STATE OF ILLINOIS
1-3-11
April 11-30-12

| | |
|----------|-----|
| DESIGNED | ASP |
| CHECKED | CDS |
| DRAWN | BEM |
| CHECKED | ASP |