

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"/SQ.FT. FOR FUTURE WEARING SURFACE.

**DESIGN STRESSES**

**FIELD UNITS**

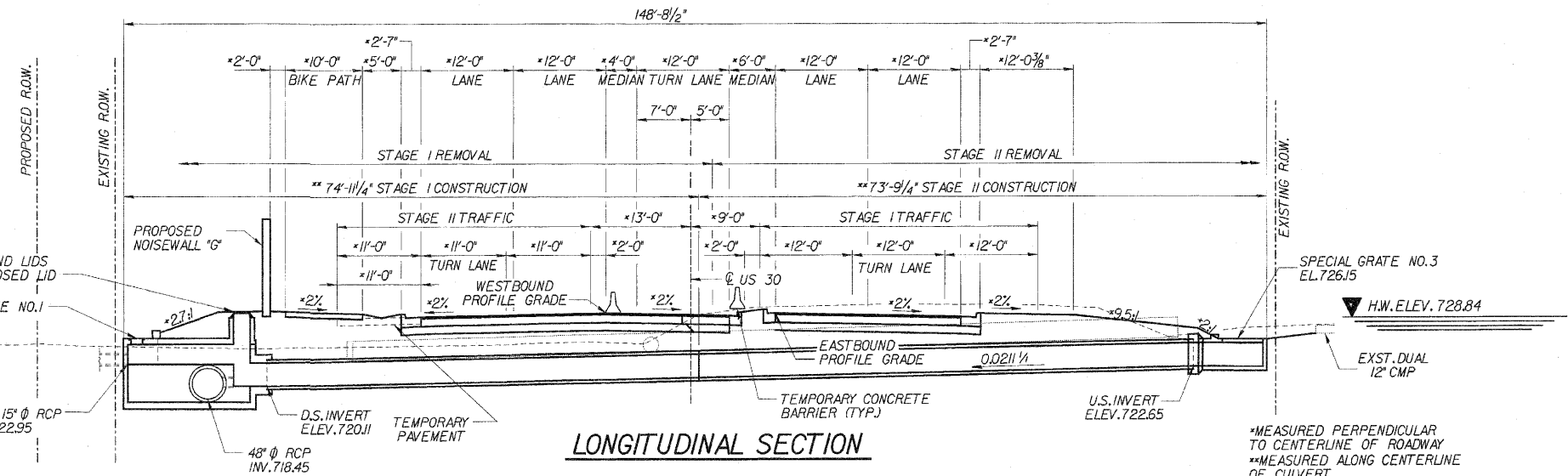
f'c = 3,500 PSI  
 fy = 60,000 PSI (REINFORCEMENT)

**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.

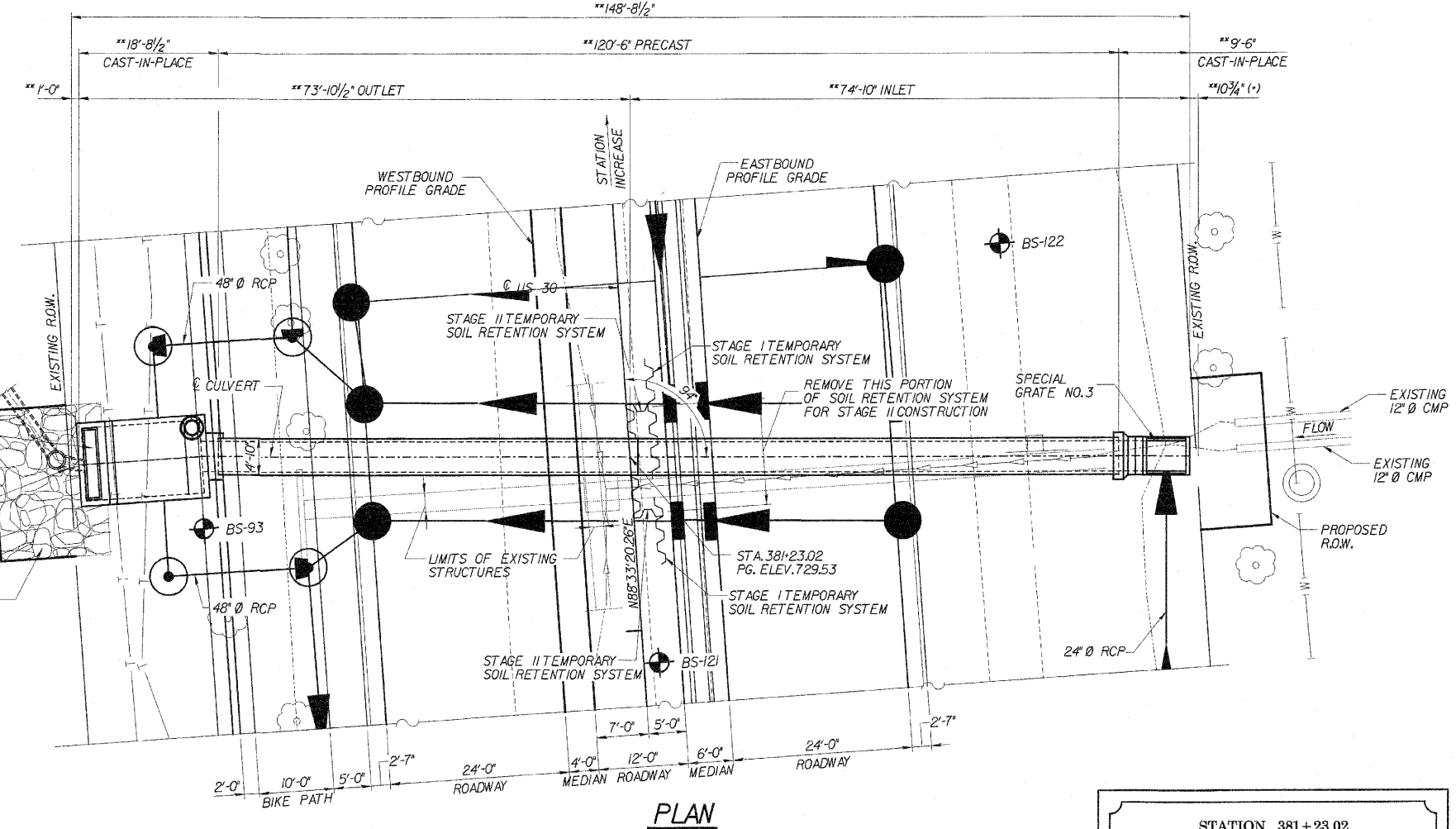


**LONGITUDINAL SECTION**

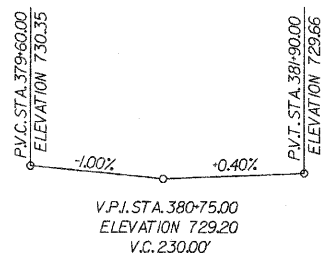
\* MEASURED PERPENDICULAR TO CENTERLINE OF ROADWAY  
 \*\* MEASURED ALONG CENTERLINE OF CULVERT

**TOTAL BILL OF MATERIALS**

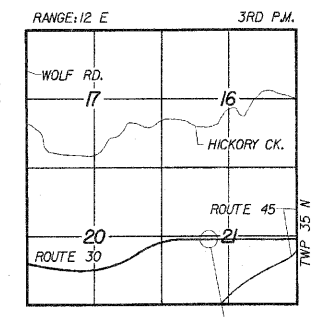
ITEM	UNIT	QUANTITY
STONE RIPRAP, CLASS A6	TON	50
FILTER FABRIC	SQ.YD.	40
REMOVAL OF EXISTING STRUCTURES NO. 8	EACH	1
REINFORCEMENT BARS	POUND	5,240
NAME PLATES	EACH	1
CONCRETE BOX CULVERTS	CU. YD.	25.3
PRECAST CONCRETE BOX CULVERT 4' X 3'	FOOT	120.5
FRAMES AND LIDS, TYPE I, CLOSED LID	EACH	1
TEMPORARY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



**PLAN**



**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 (square feet)		NATURAL H.W.E. (feet)		CREATED HEAD (feet)		HEADWATER ELEVATION (feet)	
			EXISTING	PROPOSED	EXISTING U/S Face	PROPOSED U/S Face	EXISTING	PROPOSED	EXISTING	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	728.42
OVERTOPPING (Pr.)	100	103	4.91	12.00	728.35	728.84	2.74	0.00	731.09	729.49
MAX. CALC.	130	126	4.91	12.00	728.35	728.84	2.96	0.65	731.31	730.03
	500	446	4.91	12.00	728.35	728.84	2.96	1.19	731.31	730.03

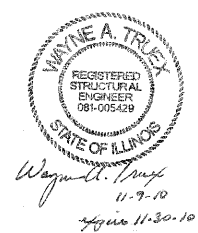
STATION 381+23.02  
 BUILT BY  
 STATE OF ILLINOIS  
 FAP 353 SECT. (12 & 13) WRS-3  
 LOADING HS20  
 STR. NO. 099-C016

**NAME PLATE**

NOTE: SEE STANDARD DRAWING 515001 FOR NAME PLATE DETAILS.

REVISIONS	
NAME	DATE

**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



DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP