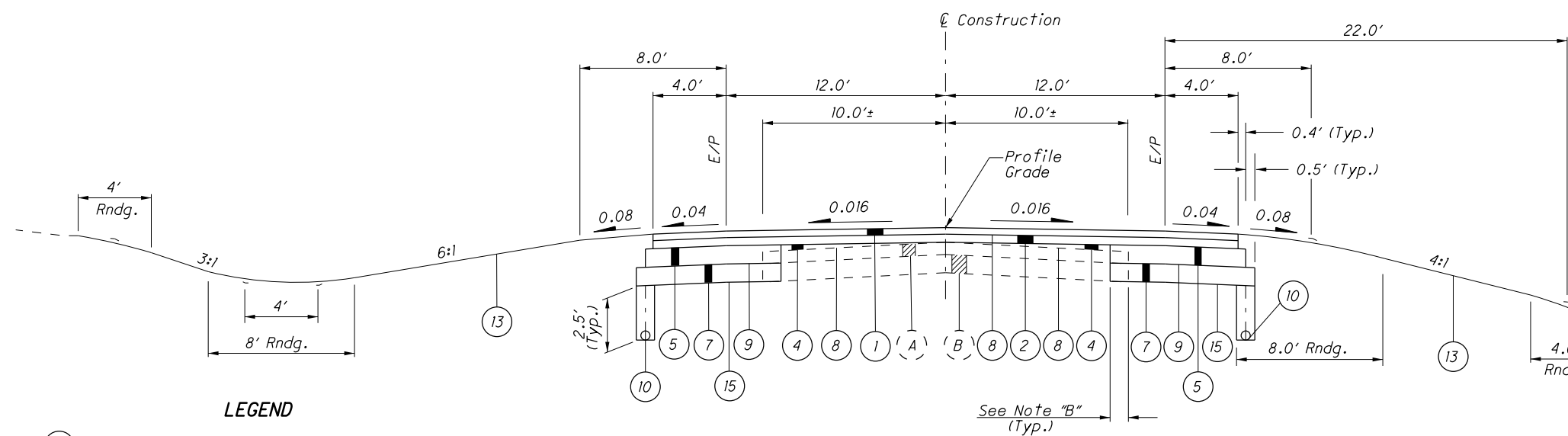
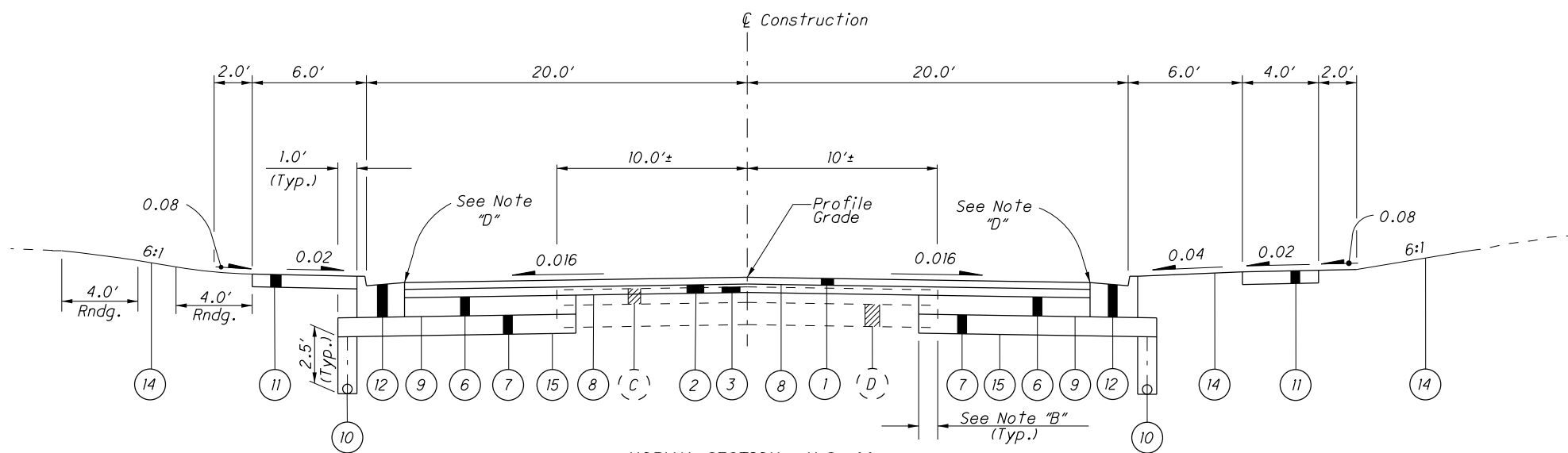


**GUARDRAIL DETAIL - S.R. 106**  
SECTION APPLIES :  
Sta. 635+50 to Sta. 637+75 Rt.  
A Unless otherwise shown on the cross sections



**NORMAL SECTION - S.R. 106**  
Sta. 621+35 to Sta. 640+50



**NORMAL SECTION - U.S. 44**  
Sta. 300+00 to Sta. 318+50

**LEGEND**

- 1 ITEM 441 - 1/4" Asphalt Concrete Surface Course, Type 1, (448) PG64-22
- 2 ITEM 441 - 1 3/4" Asphalt Concrete Intermediate Course, Type 2, (448)
- 3 ITEM 254 - Pavement Planing, Asphalt Concrete (See Note "A")
- 4 ITEM 441 - 0" Min. Asphalt Concrete Intermediate Course, Type 1, (448) (See Note "C")
- 5 ITEM 301 - 5" Asphalt Concrete Base, PG64-22
- 6 ITEM 301 - 6" Asphalt Concrete Base, PG64-22
- 7 ITEM 304 - 6" Aggregate Base
- 8 ITEM 407 - Tack Coat
- 9 ITEM 408 - Prime Coat (Applied at the Rate of 0.4 gal/sq. yd.)
- 10 ITEM 605 - 6" Shallow Pipe Underdrains
- 11 ITEM 608 - 4" Concrete Walk
- 12 ITEM 609 - Combination Curb and Gutter, Type 2
- 13 ITEM 659 - Seeding and Mulching
- 14 ITEM 660 - Sodding Unstaked
- 15 ITEM 204 - Subgrade Compaction
- 16 ITEM 606 - Guardrail, Type 5

- (A) 5± Asphalt Concrete
- (B) 5± Waterbound Macadam
- (C) 4± Asphalt Concrete
- (D) 6± Dense Asphalt Macadam Base

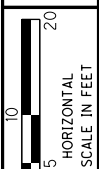
**NOTE "A"**  
Pavement planing shall be a constant depth of 1" at the  $\bar{C}$  of construction with a uniform cross slope of 0.016 established. Maximum depth of planing at the outside edges of existing pavement has been calculated to be 2 1/2".

**NOTE "B"**  
The existing pavement edges shall be saw cut to locate a sound pavement edge per Sec. 203.04(E) of the CMS. For estimating purposes, pavement calculations included in the plan indicate an average width of 1 ft. of existing pavement being replaced.

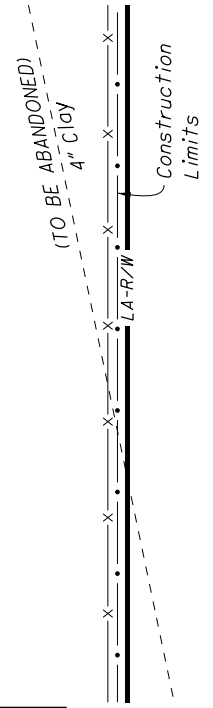
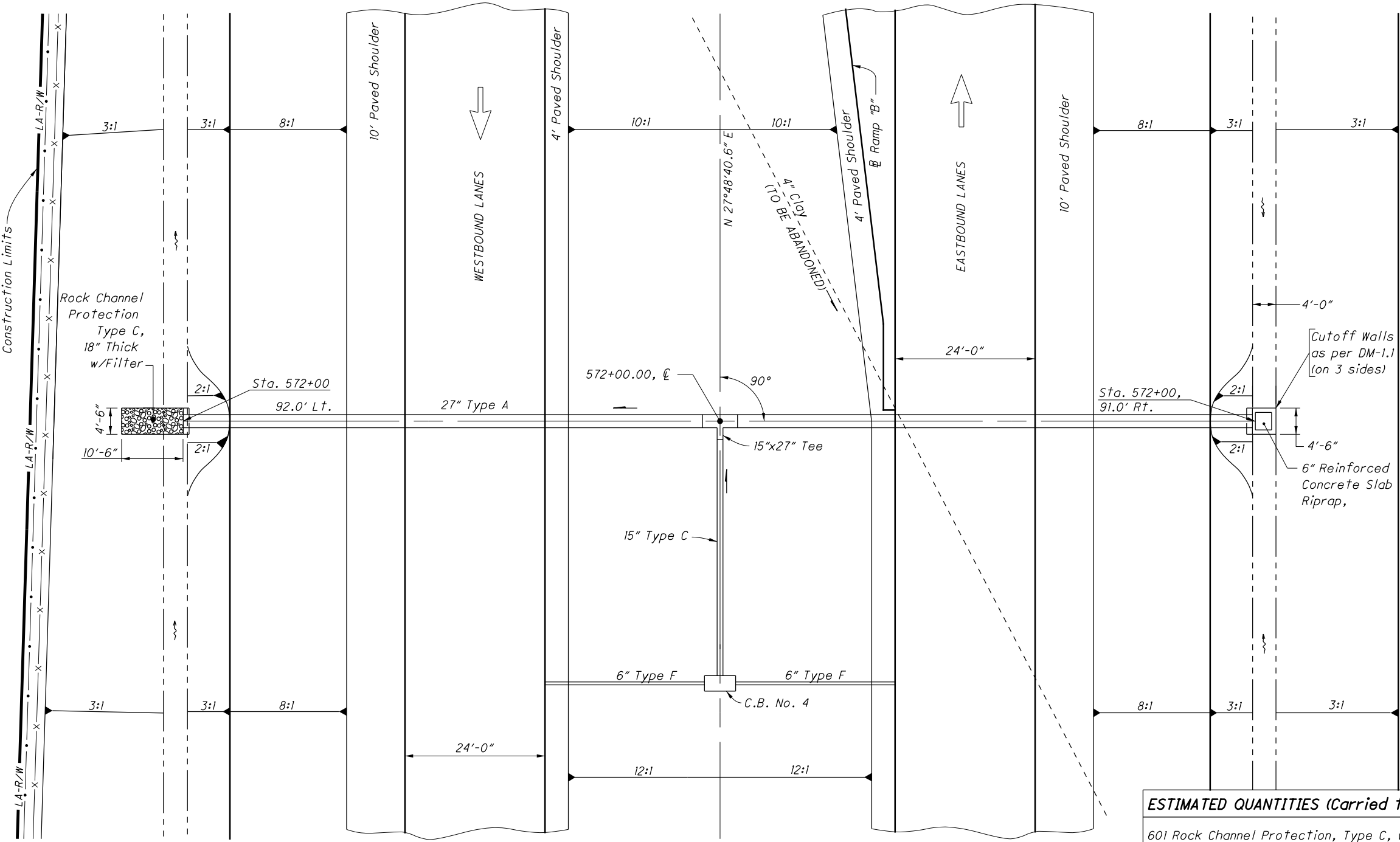
**NOTE "C"**  
Item 441, Asphalt Concrete Intermediate Course, Type 1 (448), is to be used as a leveling course to establish a 0.016 cross slope. Estimated quantities have been calculated based on exaggerated cross-sections shown on sheets 51-58.

**NOTE "D"**  
Item 441, Asphalt Concrete Surface Course, Type 1, (448) PG64-22, is to be 1/4" above gutter plate.

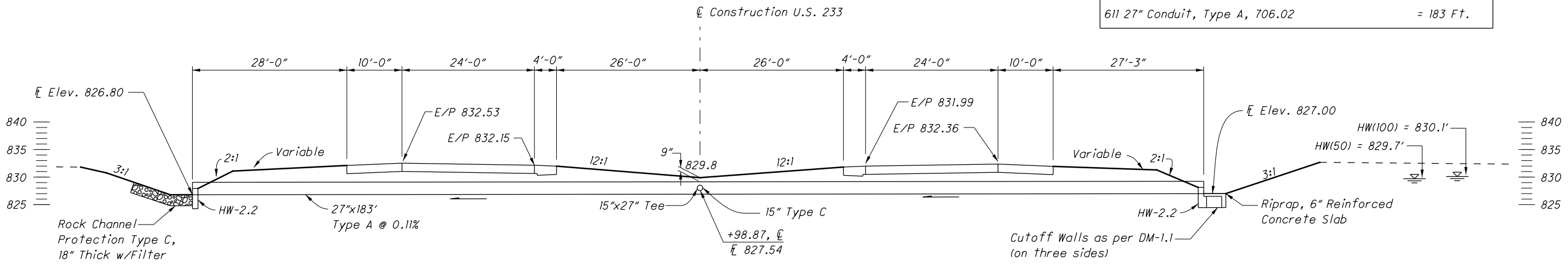
X:\CADD\services\351\stds\SamplePlans\2018\January\1304\_2\_0718.dgn 18-JAN-2018 1:24PM fcheek



HYDRAULIC DESIGN DATA	
Drainage Area	= 28 Ac.
$Q_{50}$	= 22 cfs
$Q_{100}$	= 25 cfs
$HW_{50}$	= 829.7'
$HW_{100}$	= 830.1'
$V_{50}$	= 5.6 fps
$V_{100}$	= 6.1 fps
Ordinary High Water Mark	= 827.3'
Design Service Life	= 75 Yr.
pH	= 7.8
Abrasion Level: 4	
CFN	= 1234567



ESTIMATED QUANTITIES (Carried to General Summary)	
601 Rock Channel Protection, Type C, with Filter	= 2.8 Cu.Yd.
601 Riprap using 6" Reinforced	= 2.0 Sq.Yd.
602 Concrete Masonry	= 1.15 Cu.Yd.
611 27" Conduit, Type A, 706.02	= 183 Ft.



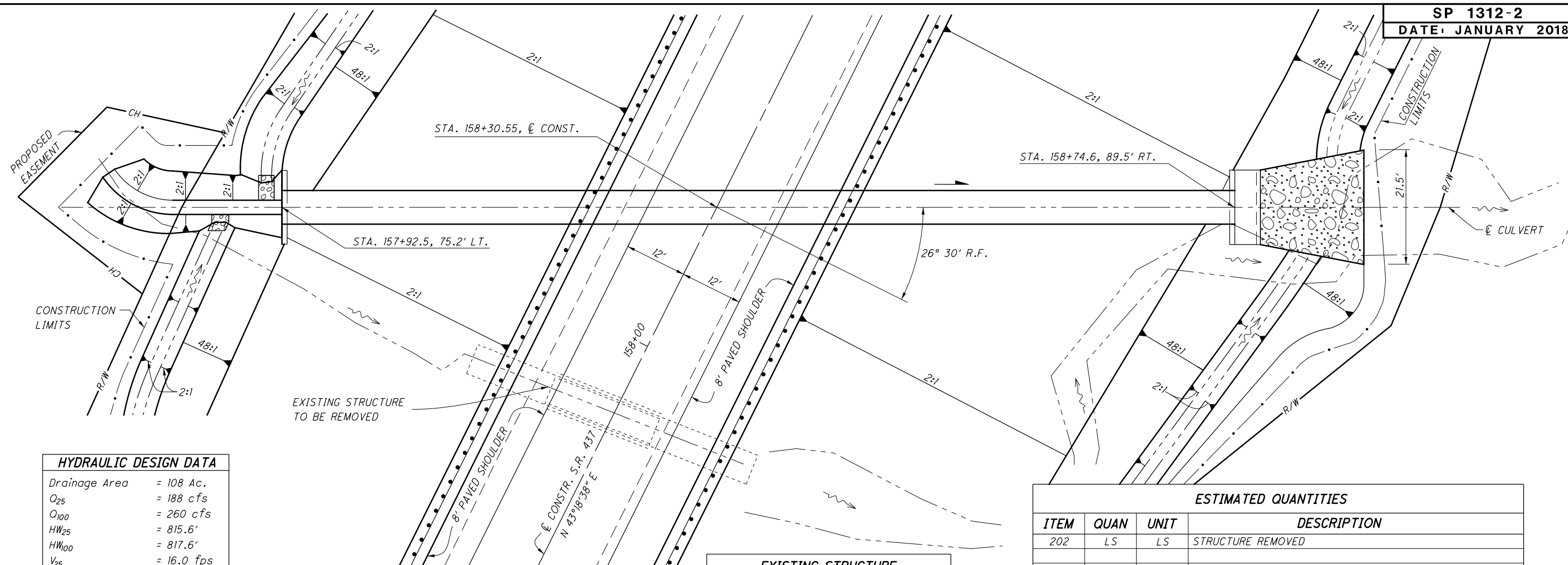
CULVERT DETAILS  
U.S. 233 - STA. 572+00

ALL-233-22.69



0 5 10 20  
HORIZONTAL SCALE IN FEET

CALCULATED JOH  
CHECKED JDH



**HYDRAULIC DESIGN DATA**

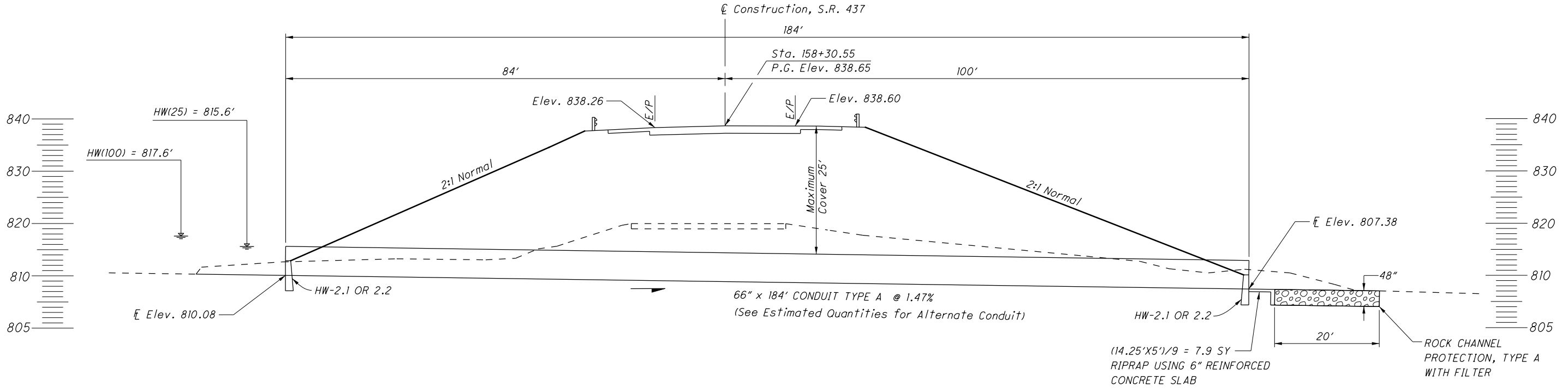
Drainage Area	= 108 Ac.
Q <sub>25</sub>	= 188 cfs
Q <sub>100</sub>	= 260 cfs
HW <sub>25</sub>	= 815.6'
HW <sub>100</sub>	= 817.6'
V <sub>25</sub>	= 16.0 fps
V <sub>100</sub>	= 18.5 fps
ORDINARY HIGH WATER MARK	= 810.3'
DESIGN SERVICE LIFE	= 75 YR
pH	= 7.5
Abrasion Level:	3
CFN	= 1234567

**EXISTING STRUCTURE**  
 TYPE: STONE ARCH W/72" CMP EXTENSIONS  
 SIZE: 6'X5'X58' ARCH  
 SKEW: 26° 30' R.F.  
 ALIGNMENT: TANGENT  
 DATE BUILT: 1908  
 CONDITION: POOR  
 CFN: 7654321

**ESTIMATED QUANTITIES**

ITEM	QUAN	UNIT	DESCRIPTION
202	LS	LS	STRUCTURE REMOVED
601	60	CY	ROCK CHANNEL PROTECTION, TYPE A WITH FILTER
601	8	SY	RIPRAP
602	5.9	CY	CONCRETE MASONRY
611	184	FT	66" CONDUIT, TYPE A, 706.02; OR 78" 707.02 (0.28) GALVANIZED, 707.02 (0.064) ALUMINIZED, 707.03 (0.138) W/CFP, 707.04 (1") (0.064), 707.05 (0.064), 707.07 (0.109)
670	72	SY	DITCH EROSION PROTECTION MAT TYPE C

QUANTITIES CARRIED TO DRAINAGE SUBSUMMARY, SHEET 37



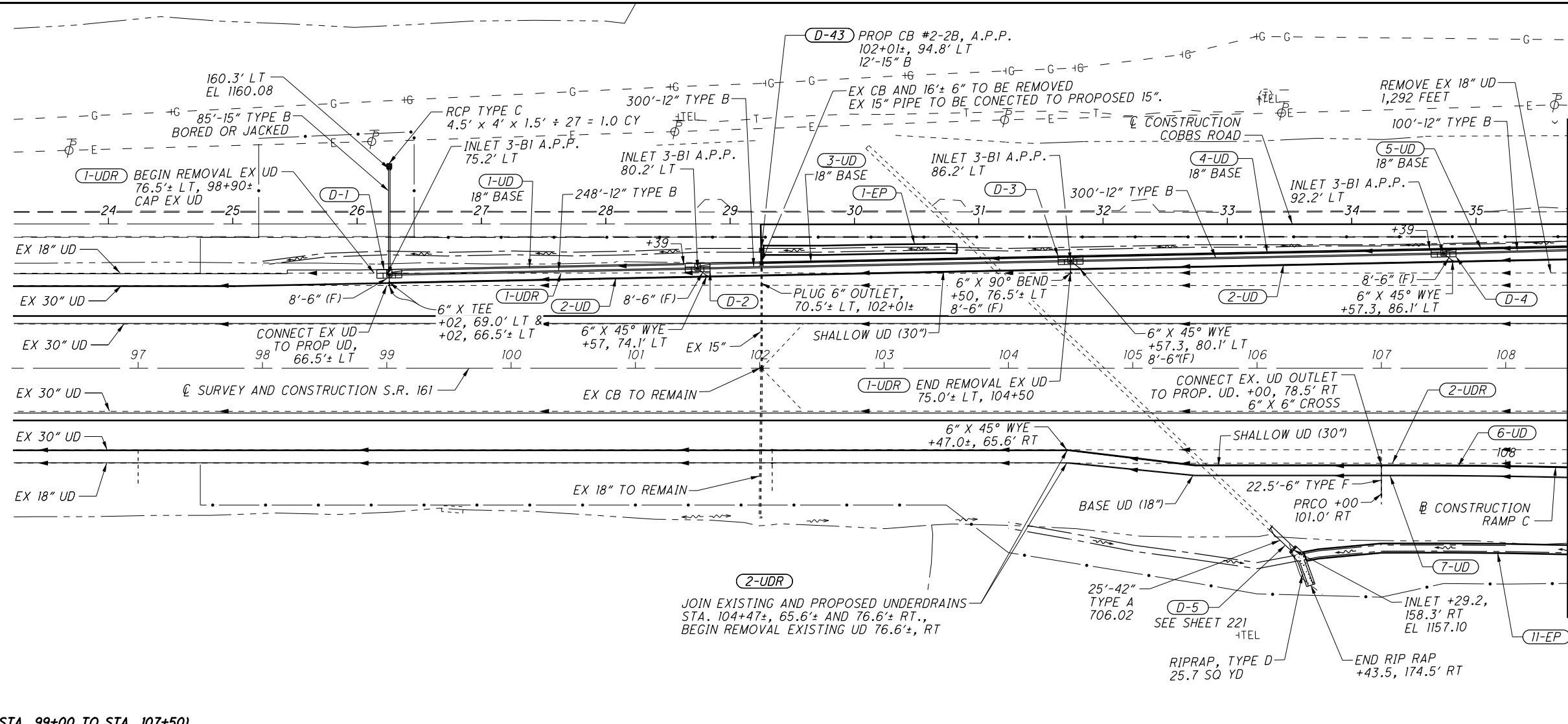
**CULVERT DETAIL**  
**S.R. 437 STA. 158+30**

**PRE-437-2.65**

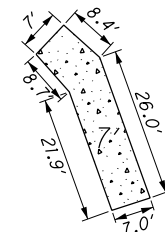


0 25 50 100  
HORIZONTAL SCALE IN FEET

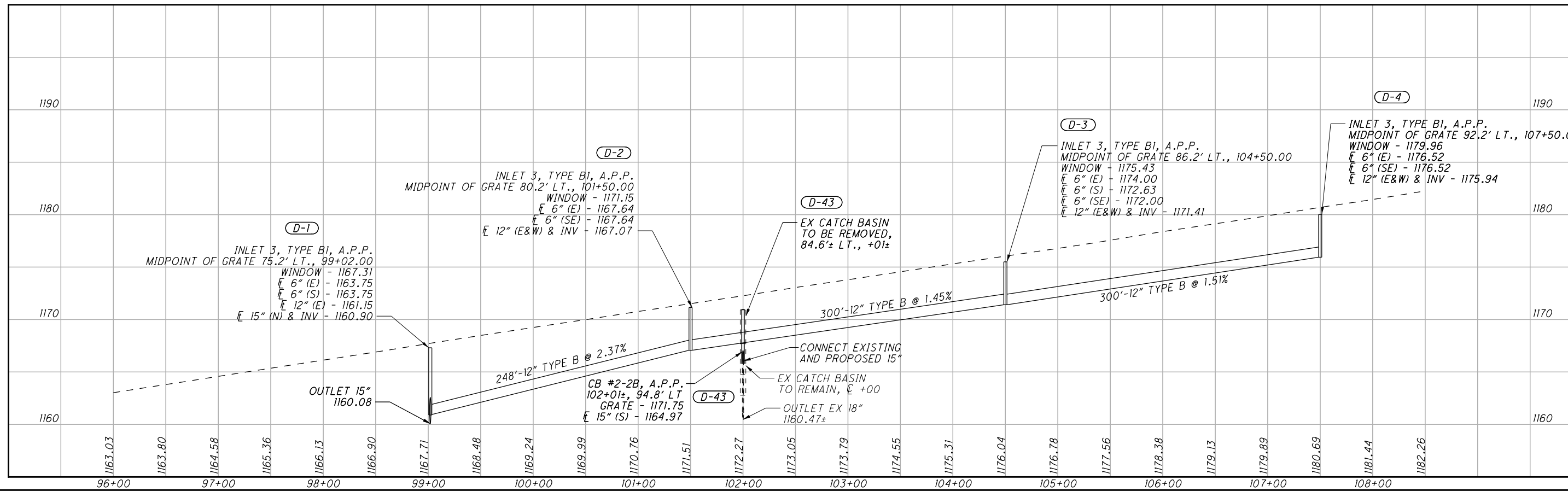
CALCULATED  
R/JG  
CHECKED  
HAG



MATCHLINE STA. 108+50 S.R. 161



CFN = 1234567 (STA. 99+00 TO STA. 107+50)



S.R. 161 DRAINAGE PLAN AND PROFILE  
STA. 96+00 TO STA. 108+50

LIC-161-1.83

206  
336



0 5 10 20  
HORIZONTAL SCALE IN FEET

CALCULATED  
MRV  
CHECKED  
MLC

**EXISTING STRUCTURE**

TYPE: 48" AND 54" CORRUGATED METAL PIPES  
SKEW: 16° L.F.  
ALIGNMENT: TANGENT  
CFN: 7654321

**PROPOSED STRUCTURE**

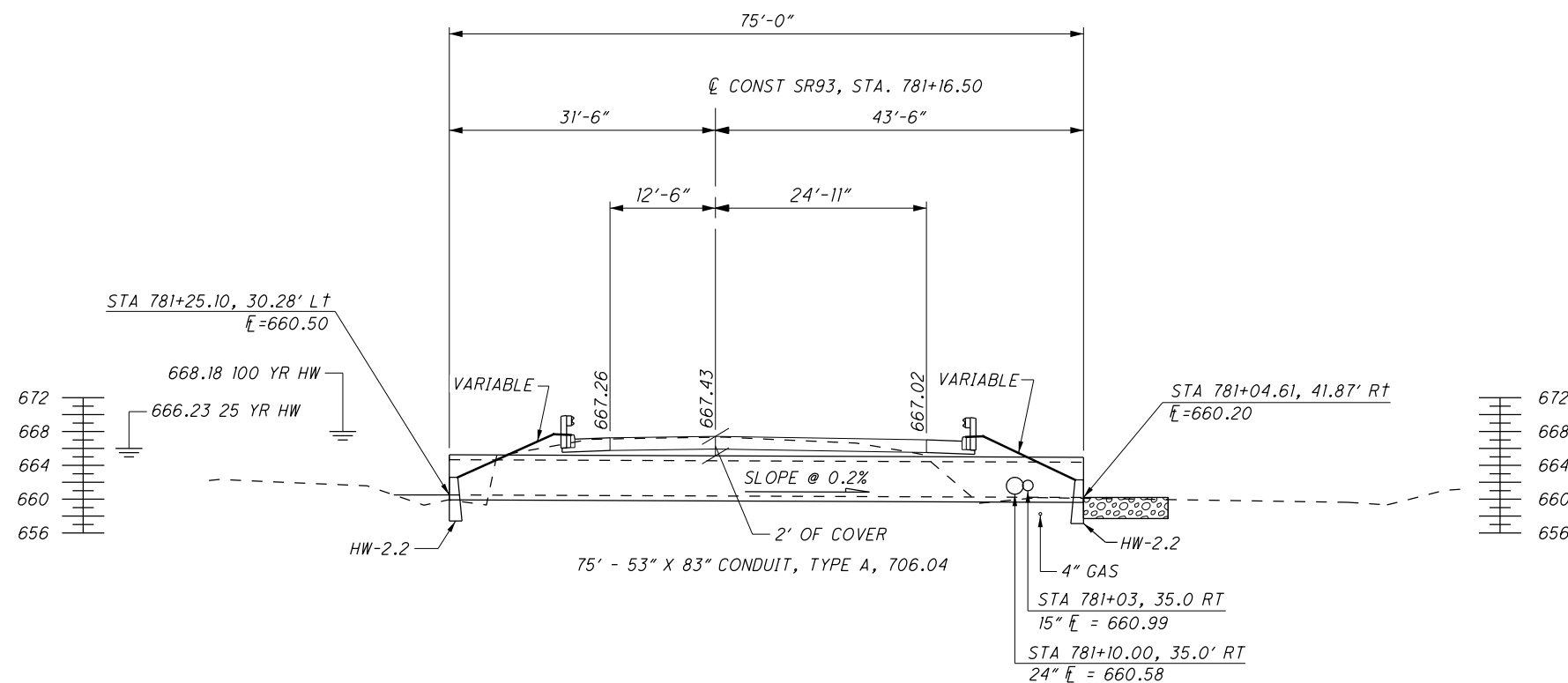
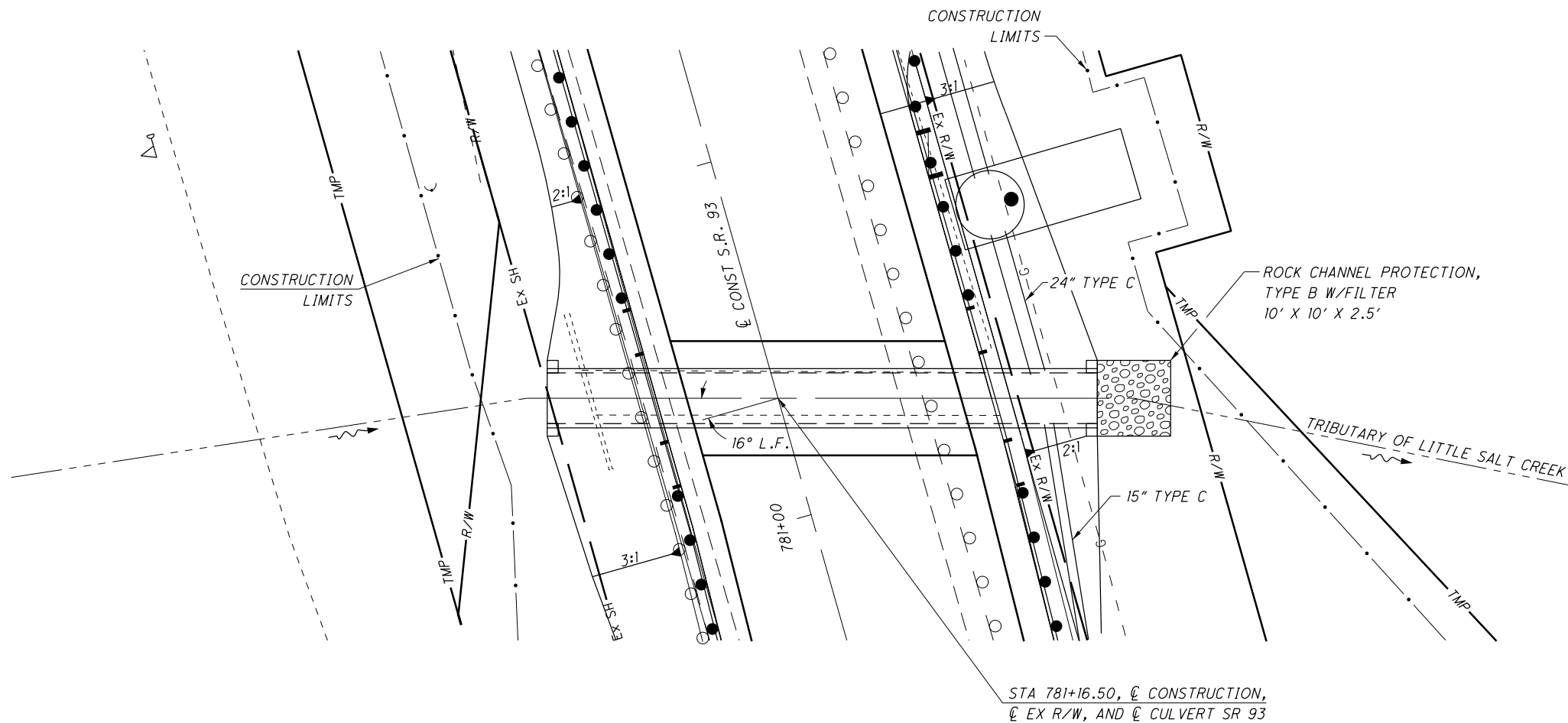
TYPE: 53"X83" ELLIPTICAL CONCRETE PIPE  
SKEW: 16° L.F.  
ALIGNMENT: TANGENT

**HYDRAULIC DESIGN DATA**

DRAINAGE AREA: 344 ACRES  
Q(25): 230 CFS  
HW(25): 666.24 FT  
V(25): 11 FT/S  
Q(100): 325 CFS  
HW(100): 668.81 FT  
V(100): 13 FT/S  
ORDINARY HIGH WATER MARK: 661.0'  
DESIGN SERVICE LIFE: 50 YRS  
pH: 6.8  
Abrasion Level: 4  
CFN: 1234567

**ESTIMATED QUANTITIES CARRIED TO GENERAL SUMMARY**

ITEM	QUANTITY	UNIT	DESCRIPTION
601	9	CY	ROCK CHANNEL PROTECTION, TYPE B, W/FILTER
602	3.3	CY	CONCRETE MASONRY
611	75	FT	53" X 83" CONDUIT, TYPE A, 706.04



CULVERT DETAIL  
STA 781+16.50

JAC-93-14.35

SEEDING  
END SO.  
WIDTH YDS.

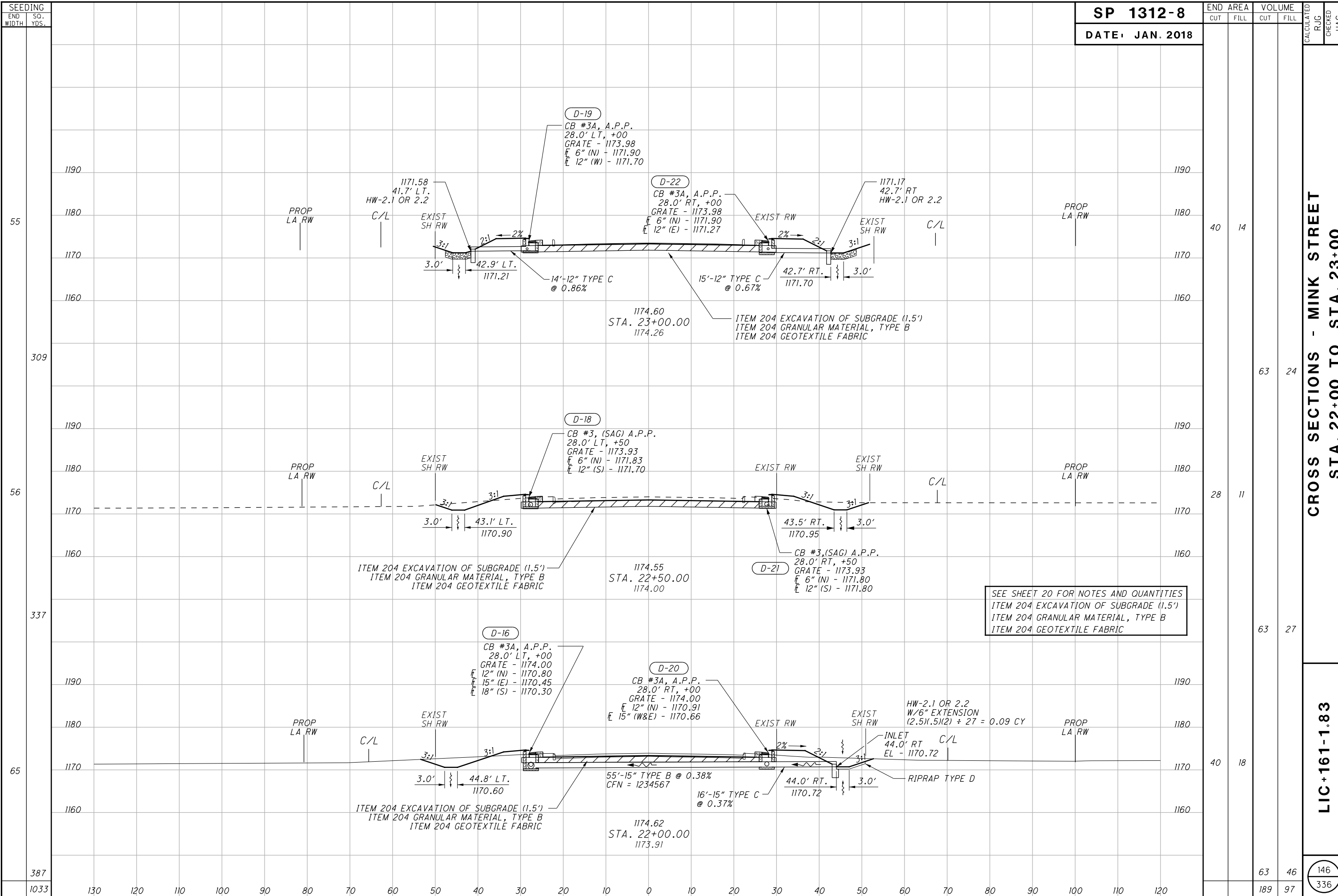
SP 1312-8

END AREA  
CUT FILL

DATE: JAN. 2018

VOLUME  
CUT FILL

CALCULATED  
R/JG  
CHECKED  
HAG



SEE SHEET 20 FOR NOTES AND QUANTITIES  
ITEM 204 EXCAVATION OF SUBGRADE (1.5')  
ITEM 204 GRANULAR MATERIAL, TYPE B  
ITEM 204 GEOTEXTILE FABRIC

CROSS SECTIONS - MINK STREET  
STA. 22+00 TO STA. 23+00

LIC+161-1.83

146  
336