

**SUMMARY OF QUANTITIES**

X071-2A

NUMBER	ITEM	UNIT	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	54
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	142
20200100	EARTH EXCAVATION	CU YD	424
20300100	CHANNEL EXCAVATION	CU YD	760
20700110	POROUS GRANULAR EMBANKMENT	TON	166
* 25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.8
28000250	TEMPORARY EROSION CONTROL SEEDINGS	POUND	130
* 28000300	TEMPORARY DITCH CHECKS	EACH	2
28000400	PERIMETER EROSION BARRIER	FOOT	840
* 28100207	STONE RIPRAP, CLASS A4	TON	477
28200100	FILTER FABRIC FOR USE WITH RIPRAP	SQ YD	378
35101400	AGGREGATE BASE COURSE, TYPE B	TON	520
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	578
* 42001165	BRIDGE APPROACH PAVEMENT	SQ YD	200
* 42001430	BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)	SQ YD	40
48101200	AGGREGATE SHOULDERS, TYPE B	TON	192
* 50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	38.6
50300255	CONCRETE SUPERSTRUCTURE	CU YD	99.8
50300260	BRIDGE DECK GROOVING	SQ YD	314
50300300	PROTECTIVE COAT	SQ YD	336
* 50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
50500505	STUD SHEAR CONNECTORS	EACH	1,830
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	27,470
50901005	STEEL BRIDGE RAIL, TYPE SM	FOOT	203
51201100	FURNISHING METAL PILE SHELLS 14"	FOOT	1,023
51202600	DRIVING AND FILLING SHELLS	FOOT	1,023
51203200	TEST PILE METAL SHELLS	EACH	2
51204315	CONCRETE ENCASEMENT	CU YD	19.0
51500100	NAME PLATES	EACH	1
63000000	STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	125
* 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (TANGENT)	EACH	4
63200310	GUARDRAIL REMOVAL	FOOT	366
* 78201000	TERMINAL MARKER DIRECT APPLIED	EACH	4
* X4066424	BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIXTURE D, N50	TON	89
* X4066614	BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, IL-19.0, N50	TON	267
* X5020501	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 1	EACH	1
* X5020502	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 2	EACH	1
* Z0002600	BAR SPLICERS	EACH	60

\*SEE SPECIAL PROVISIONS

**GENERAL NOTES**

WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

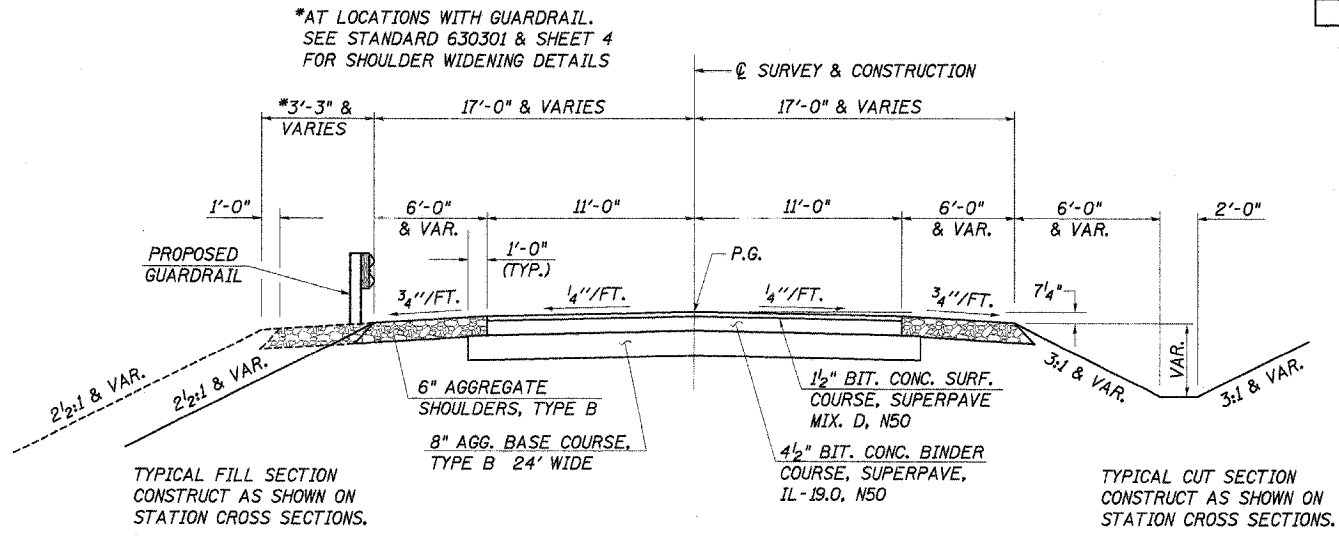
THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY, AS DIRECTED BY THE ENGINEER.

SEEDING, CLASS 2 (SPECIAL) = 0.8 ACRE

TREES THAT INTERFERE WITH CONSTRUCTION WITHIN THE LIMITS OF R.O.W. AND EASMENT LINES SHALL BE REMOVED ONLY AT THE DIRECTION OF THE ENGINEER.

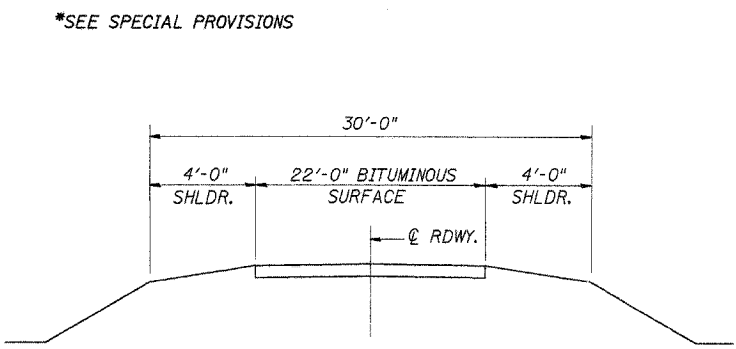
TREE REMOVAL (0 TO 15 UNITS DIAMETER) = 54 UNITS  
 TREE REMOVAL (OVER 15 UNITS DIAMETER) = 142 UNITS

THE EXISTING STEEL BEAMS SHALL BE SALVAGED FOR THE COUNTY. SEE SPECIAL PROVISIONS.



**PROPOSED TYPICAL CROSS SECTION**

STA. 58+00 TO STA. 60+45.58  
 STA. 62+18.42 TO STA. 64+00



**EXISTING TYPICAL CROSS SECTION**

BITUMINOUS MIXTURE REQUIREMENTS		
MIXTURE USE(S)	SURFACE COURSE/ INCIDENTAL BITUMINOUS SURFACING	BINDER COURSE
AC/PG:	64-22	64-22
RAP %: (MAX)	15%	25%
DESIGN AIR VOIDS:	4.2% @ N <sub>des</sub> = 50	4.2% @ N <sub>des</sub> = 50
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL 9.5 OR 12.5	IL 19.0
FRICTION AGGREGATE:	MIXTURE D	N/A

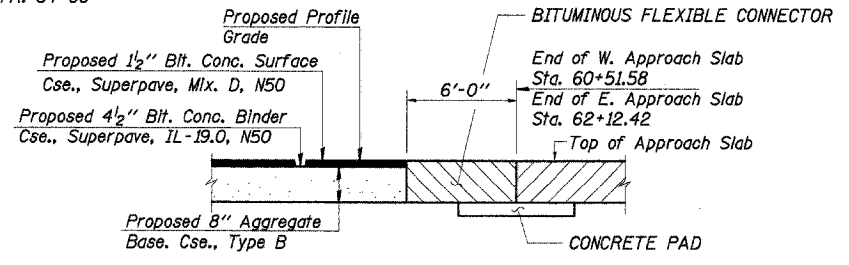
**PAVEMENT DESIGN**

STRUCTURAL DESIGN TRAFFIC (S.D.T.) : YEAR 2014; P.V. = 781, S.U. = 62, M.U. = 44  
 CLASS III ROAD: 73,280 POUND LOAD LIMIT

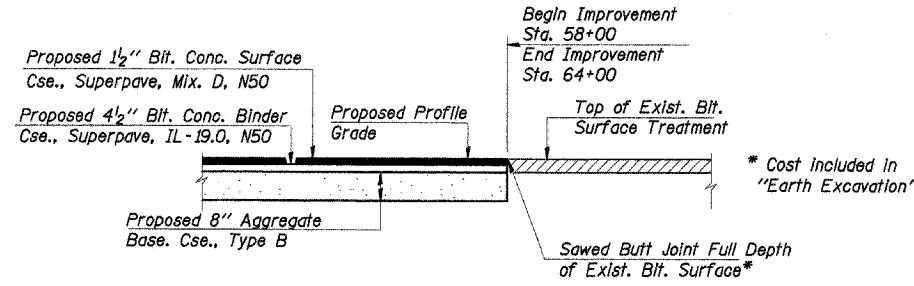
MINIMUM SOIL SUPPORT: E<sub>R1</sub> = 3 k.s.i. (ASSUMED)

PERCENT OF S.D.T. IN DESIGN LANE: P = 50%, S = 50%, M = 50%  
 T.F. = 192; DESIGN MIXTURE TEMP. = 76°  
 E<sub>AC</sub> (AC20) = 650 SAL = 236

PAVEMENT STRUCTURAL MATERIAL:  
 TYPICAL PROPOSED ROADWAY CROSS-SECTION  
 PROPOSED AGGREGATE BASE COURSE 8"  
 PROPOSED BITUMINOUS CONCRETE BINDER AND SURFACE COURSES 6"



**ELEVATION AT APPROACH PAVEMENT**



**ELEVATION AT BEGINNING AND END OF IMPROVEMENT**

**APPLICATION RATES USED IN QUANTITY CALCULATIONS**

STONE RIPRAP, CLASS A4	1.65 TON/CU YD
AGGREGATE BASE	2.05 TON/CU YD
AGGREGATE SURFACE AND AGGREGATE SHOULDERS	1.75 TON/CU YD
BITUMINOUS MATERIALS (PRIME COAT)	0.50 GAL/SQ YD
BITUMINOUS CONCRETE (BINDER & SURFACE COURSE)	112#/SQ YD/IN
POROUS GRANULAR EMBANKMENT	2.05 TON/CU. YD.

**SUMMARY OF QUANTITIES, GENERAL NOTES AND TYPICAL CROSS SECTION**

SECTION 03-00027-11-BR  
 COUNTY HIGHWAY 5  
 TAZEWELL COUNTY  
 STA. 61+32