

BASIS OF ESTIMATE

SEEDING - Entire Right-Of-Way Except Roadbed, Sidewalk, and Sodded Areas.

WATER FOR COMPACTION - 10 Gal. Per. C.Y. Of Embankment Quantity.

AGGREGATE SURFACE COURSE CLASS 6 - 1.5 Tons Per C.Y. + 25 % = 29 Ton Per Sta. (2" Depth, 24' Width - Temp. Surf. Prior to Hot Bit. Pvm't.)

4 Ton Per P.D. 22 + 37 Lt. (4" Depth, 12' Width)

6 Ton Per P.D. 25 + 65 Lt. (4" Depth, 12' Width)

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.
8	N. D.	BR-1-80C(15)	3

LIST OF SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS	
NAME	NO.
Hot Bituminous Pavement	SP-109 E
Hot Bituminous Pavement (Temp. Recording)	SS-1
Legal Relations & Responsibility to the Public	SP-123
Measurement and Payment	SP-143
Maintenance & Protection of Traffic	SP-124
Erosion and Water Pollution Control	SP-106 A
Legal Relations & Responsibility to the Public	
Underground Utilities	SP-113
Field Laboratory	SS-3
Metal Pipe	SS-8
Legal Relations & Responsibility to the Public	
Utilities (Century Code)	SP
Control of Materials	SP-125
Bidding Requirements and Conditions	SP-138 A
Measurement and Payment	SS-15
Control of Materials	SS-13
Control of Materials	SS-16
Sodding	SP-122 A
Repair and Restoration of Haul Roads	SP-111 C
Seal Coat	SP-118
Hot Bituminous Pavement	SP-128
Measurement and Payment	SP-133
Measurement and Payment (Bit. Materials)	SP
Bituminous Materials (Acceptance & Sampling)	SP
Bituminous Materials (Viscosity Grades)	SP
Measurement & Payment (Contract Adjustment)	SP
Portland Cement Concrete	SP-126
Measurement & Payment	SP-143
Underground Utilities (Century Code)	SP
PVC Force Sanitary Sewer	SP
Excavation and Embankment (Borrow Area)	SP-105 D
Structural Steel	SP-116 C
Quick Setting Anchor Grout	SP-135
Chemical Admixture for Concrete	SP

STRUCTURAL

SPEC. NO.	208		228	610		612	616		622		624	750	202			
CODE NO.	0100	0110	0100	1112	0134	0138	0115	0362	5722	0020	0440	0460	0125	0100	3000	0105
LOCATION	CLASS 1 EXCAVATION	CLASS 2 EXCAVATION	SELECT BACKFILL	CLASS AE-1 CONCRETE SUB-STRUCTURES	CLASS AAE-3 CONCRETE I-BEAM SUPERSTRUCTURES	CLASS AAE-3 CONCRETE RAILING & POSTS	REINFORCING STEEL GRADE - 60	STRUCTURAL STEEL A 36 WELDED GIRDER	STRUCTURAL STEEL A 572 WELDED GIRDER GRADE -50	STEEL PILING HP 10x42	STEEL TEST PILES HP 10x42 60FT.	STEEL TEST PILES HP 10x42 70FT.	PEDESTRAIN RAILING	LINSEED OIL TREATMENT	BRIDGE BENCH MARKS	REMOVAL OF STRUCTURE
	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	L.B.	L.B.	L.B.	L.F.	EACH	EACH	L.F.	GAL.	SET	LUMP SUM
	170	385	300	260	423	16	124,319	205,300	180,694	2670	2	2	249	23	1	1
GRAND TOTAL	170	385	300	260	423	16	124,319	205,300	180,694	2670	2	2	249	23	1	1

SUMMARY OF QUANTITIES

SPEC. NO.	203	201	216	204		420		401	406		708	712	716	726	728	203	630		302	630	630	630	630	714	714	705	746	756	762						
CODE NO.	0101	0330	0100			0100	0145	0160	0152	0185	0320	0300	0104	0116	0110	0140	0055	0455	0325	5206	5210	5212	5215	0102	0110	0100	0100	0100	3301						
LOCATION	COMMON EXCAVATION TYPE A	CLEARING AND GRUBBING	WATER	AVERAGE HAUL (NOT A PAY ITEM)		RC 250,800 LIQ ASPH. OR CRS-2 EMULS. ASPH. FOR SEAL COAT	COVER COAT	MATERIAL CL. 43	BLOTTER	MATERIAL CL. 44	SS1H OR CSS1H EMULS. ASPHALT FOR TACK COAT	HOT BITUMINOUS PAVEMENT CL. 24	120-150 ASPHALT CEMENT	CURB & GUTTER TYPE I	4" CONCRETE SIDEWALK	6" CONCRETE DRIVEWAY	ADJUST MANHOLE	ADJUST UTILITY APPURTENANCE	SEEDING TYPE B CLASS I OR II	SODDING	BORROW	CORRUGATED STEEL PIPE	CORRUGATED STEEL PIPE	END SECTIONS	AGGREGATE SURFACE COURSE CLASS 6	6" PRESSURE PVC SEWER PIPE	8" PVC SEWER PIPE	10" PVC SEWER PIPE	15" PVC SEWER PIPE	MANHOLES TYPE A	MANHOLE RISER 48"	MOBILIZATION	FLAGGING	FIELD LABORATORY TYPE A	MTC & PROTECTION OF TRAFFIC 2 LANE GRAD. & SURF
	C.Y.	L.SUM	M.GAL.	C.Y.	STA.	GAL.	TON	TON	GAL.	TON	TON	L.F.	S.Y.	S.Y.	EACH	EACH	ACRE	S.Y.	C.Y.	L.F.	EA.									L.SUM	M.HR.	EACH	L.SUM		
	12,122	1	126	14456	3.3	2278	78	19	657	3192	230	1701	679	49	1	1	3	455	12569	26	2			400								1	400	1	1
CITY OF MANDAN FUNDS ONLY																																			
GRAND TOTAL	12,122	1	126	14456	3.3	2278	78	19	657	3192	230	1701	679	49	1	1	3	455	12569	26	2			400	404	76	303	8	2	17		1	400	1	1

1. GENERAL: THE ENGINEER WILL ATTEND TO THE REMOVAL OF EXISTING FENCES TO THE HIGHWAY RIGHT-OF-WAY LINE AND TO THE RELOCATION OR ADJUSTMENT OF UTILITY FACILITIES AS SHOWN ON THE PLANS. ALL PRIVATELY OWNED LIGHT POLES, GUARD POSTS, SIGNS, ETC. WITHIN THE RIGHT-OF-WAY LIMITS SHALL BE REMOVED BY THE OWNER.
2. UTILITIES: SEPARATE PLANS, IF ANY, SHOWING THE UTILITY RELOCATION OR ADJUSTMENT WORK TO BE PERFORMED BY THE UTILITY COMPANIES TO ACCOMMODATE HIGHWAY CONSTRUCTION WILL BE MADE AVAILABLE TO THE CONTRACTOR UPON REQUEST TO THE ENGINEER.
3. SHRINKAGE: 25% ADDITIONAL VOLUME IN YARDAGE COMPUTED BY THE END AREA METHOD IS ALLOWED FOR SHRINKAGE IN EARTH EMBANKMENT.
4. CLASS OF CONCRETE: THE CLASS OF CONCRETE USED IN THE CURB AND GUTTER, SIDEWALKS, AND DRIVEWAYS SHALL BE CLASS A<sub>1</sub>. THE CONTRACTOR SHALL HAVE THE OPTION OF USING AGGREGATE SIZE NO. 1, 3, 4 OR 5 DEFINED IN SECTION 806-2 OF THE STANDARD SPECIFICATIONS.
5. COMPACTION AND DENSITY CONTROLS: THE EMBANKMENT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 203-2.3.2 OF THE STANDARD SPECIFICATIONS.
6. UNDERGROUND CABLES: THE CONTRACTOR SHALL NOTIFY THE ENGINEER SUFFICIENTLY IN ADVANCE OF BEGINNING EXCAVATION IN AREAS OF UNDERGROUND UTILITIES SO THAT ARRANGEMENTS MAY BE MADE TO HAVE THE UTILITY OWNERS DETERMINE LOCATIONS AND DEPTHS.
7. ADJUST MANHOLES: AT THE LOCATION DESIGNATED ON THE PLAN FOR ADJUST MANHOLE, THE CONTRACTOR SHALL FURNISH A NEW MANHOLE CASTING. THE EXISTING CASTING SHALL BE CAREFULLY REMOVED AND DELIVERED TO A SITE DESIGNATED BY THE ENGINEER. COST OF THE NEW CASTING AND REMOVAL AND DELIVERY OF THE EXISTING CASTING SHALL BE INCLUDED IN THE PRICE BID FOR "ADJUST MANHOLES."
8. DRAINAGE: THE CONTRACTOR SHALL PROVIDE SUFFICIENT TEMPORARY DRAINAGE FACILITIES TO KEEP THE ROADWAY AND CONSTRUCTION AREA DRAINED TO THE SATISFACTION OF THE ENGINEER.
9. SIDEWALK: AT LOCATIONS WHERE THE NEW SIDEWALK ABUTTS THE EXISTING SIDEWALK (OR OTHER CONCRETE SURFACING) AND THE GRADES DO NOT MATCH THE CONTRACTOR SHALL REMOVE AND REPLACE AS MUCH OF THE EXISTING SIDEWALK AS DEEMED NECESSARY BY THE ENGINEER TO OBTAIN A REASONABLY SMOOTH PROFILE. REMOVAL OF EXISTING SIDEWALK SHALL NOT BE A SEPARATE PAY ITEM BUT SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS.
10. REMOVAL OF TREES: REMOVAL OF BRUSH AND TREES NECESSARY TO FACILITATE CONSTRUCTION OF THIS PROJECT SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE PRICE BID FOR CLEARING & GRUBBING. NO TREES OUTSIDE THE CONSTRUCTION AREAS SHALL BE DESTROYED WITHOUT APPROVAL OF THE ENGINEER.
11. CONSTRUCTION SEQUENCE: THE CONTRACTOR SHALL FOLLOW THE CONSTRUCTION SEQUENCE LISTED BELOW.
  1. CONSTRUCT THE STRUCTURE AND PLACE THE FILL NECESSARY TO CONSTRUCT THE STRUCTURE. IT IS SUGGESTED THIS FILL MATERIAL BE OBTAINED FROM BORROW AREAS.
  2. COORDINATE THE FIRST STAGE CONSTR. WORK WITH THE COMPLETION OF BRIDGE CONSTR. THEREBY RETAINING THE EXISTING ROW. FOR TRAFFIC FOR THE MAXIMUM LENGTH OF TIME. DURING CONSTRUCTION OF THE FIRST STAGE ONE WAY TRAFFIC MAY BE MAINTAINED ON THE WEST HALF OF THE OLD ROW.
  3. ROUTE TRAFFIC AFTER INSTALLING 2" AGGR. SURF. CRSE. ON THE COMPLETED FIRST STAGE. CONSTRUCT THE REMAINING PORTION OF THE ROADBED WITH A 24' WIDTH OF AGGR. SURF. CRSE.
12. ACCESS POINTS: FINAL DETAILS ON LOCATION OF ACCESS POINTS AND CONSTRUCTION PROCEDURES SHALL BE WORKED OUT WITH THE ENGINEER IN THE FIELD PRIOR TO THE START OF THE PROJECT.
13. DIMENSIONS: DIMENSIONS SHOWN ON THE TYPICAL SECTION FOR SURFACING COURSES ARE APPROXIMATE ONLY. PLAN QUANTITIES WILL BE PLACED UNIFORMLY EXCEPT WHERE OTHERWISE AUTHORIZED BY THE ENGINEER.
14. QUANTITIES: TOTAL QUANTITIES HAVE BEEN ROUNDED OFF TO THE NEAREST WHOLE UNIT FOR BIDDING PURPOSES.
15. BENCHING: THE INSLOPES ON THE RIGHT SIDE OF THE FIRST STAGE EMBANKMENT SHALL BE BENCHED UNLESS OTHERWISE DIRECTED BY THE ENGINEER. BENCHES SHALL BE DEEP ENOUGH TO PROVIDE SUFFICIENT WIDTH TO PERMIT PLACING, SPREADING, AND COMPACTING EQUIPMENT TO OPERATE AND EACH BENCH SHALL BE THOROUGHLY COMPACTED BEFORE ADDITIONAL EMBANKMENT IS PLACED. COST OF BENCHING SHALL BE INCLUDED IN THE PRICE BID FOR COMMON EXCAVATION.
16. TOPSOIL: REMOVAL OF TOPSOIL FROM EXCAVATION AREAS WILL BE PAID FOR AS COMMON EXCAVATION. REMOVAL OF TOPSOIL FROM EMBANKMENT AREAS WILL BE INCLUDED IN THE PRICE BID FOR CLEARING AND GRUBBING. TOPSOIL FROM CLEARING AND GRUBBING AREAS IS APPROXIMATELY 1308 C.Y.
17. HOT BIT. PAVEMENT: THE 6 1/2" HOT BIT. PAVEMENT SHALL BE LAID IN TWO COURSES AS SHOWN ON THE TYPICAL SECTIONS.
18. TACK COAT: WHEN DIRECTED BY THE ENGINEER, THE EMULSIFIED ASPHALT FOR TACK COAT SHALL BE DILUTED WITH WATER PRIOR TO APPLICATION IN A 50:50 RATIO OR OTHER APPROVED PROPORTIONS. COST OF WATER SHALL BE INCLUDED IN THE PRICE BID FOR EMULSIFIED ASPHALT FOR TACK COAT.
19. LOOSE AND EXCESS CHIPS: ALL LOOSE AND EXCESS CHIPS SHALL BE REMOVED FROM THE ROADWAY BY SWEEPING AS SOON AS PRACTICABLE AFTER SEALING AND NO LATER THAN FIVE DAYS AFTER THE SEAL HAS BEEN APPLIED. THE SWEEPING OF LOOSE CHIPS FROM THE SHOULDER ONTO THE NEW SEALED SURFACE WILL NOT BE PERMITTED.
20. CURB & GUTTER: THE 6" LIP CURB AND GUTTER TYPE 1, 10" LIP CURB AND GUTTER TYPE 1, AND THE GUTTER TYPE 1 SHALL ALL BE PAID FOR AS CURB AND GUTTER TYPE 1.  
 6" LIP CURB AND GUTTER EQUALS: 885' (21+ 47.9 TO 26+ 00)  
 10" LIP CURB AND GUTTER EQUALS: 780' (26+ 00 TO 28+ 45 & 30+ 95 TO 32+ 40)  
 GUTTER EQUALS: 36' (AT CONC. DRIVEWAY OPENINGS)
21. CURB & GUTTER AT BRIDGE ENDS: THE REINFORCED CURB & GUTTER AT THE BRIDGE ENDS (SEE SHEET # 7) SHALL NOT BE A SEPARATE PAY ITEM BUT SHALL BE INCLUDED IN THE PRICE BID FOR CURB & GUTTER TYPE 1.
22. REMOVE & RESET GATES: ALL EQUIPMENT & MATERIAL NEEDED TO REMOVE & RESET THE GATES AT 28 + 00 LT. & RT. SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS.
23. TREES: THE TREES REMOVED ON THIS PROJECT SHALL BE CUT IN 10' LENGTHS MAX. OR AS DIRECTED BY THE ENGINEER & STOCKPILED ON THE CITY LANDFILL AREA FOR USE BY THE STATE PARK SERVICE.
24. PRIVATE PROPERTY WITHIN RIGHT OF WAY - ALL PRIVATELY OWNED LIGHT POLES, GUARD POSTS, SIGNS, ETC. WITHIN THE R/W LIMITS SHALL BE REMOVED BY THE OWNER.
25. BORROW: BORROW MAY BE OBTAINED FROM THE CITY LAND FILL AREA. BORROW MAY BE HAULED ACROSS THE EXISTING BRIDGE, BUT LIMITED TO THE LOADING (LIVE & DEAD) OF 22 TONS UNLESS OTHERWISE APPROVED BY THE ENGINEER.