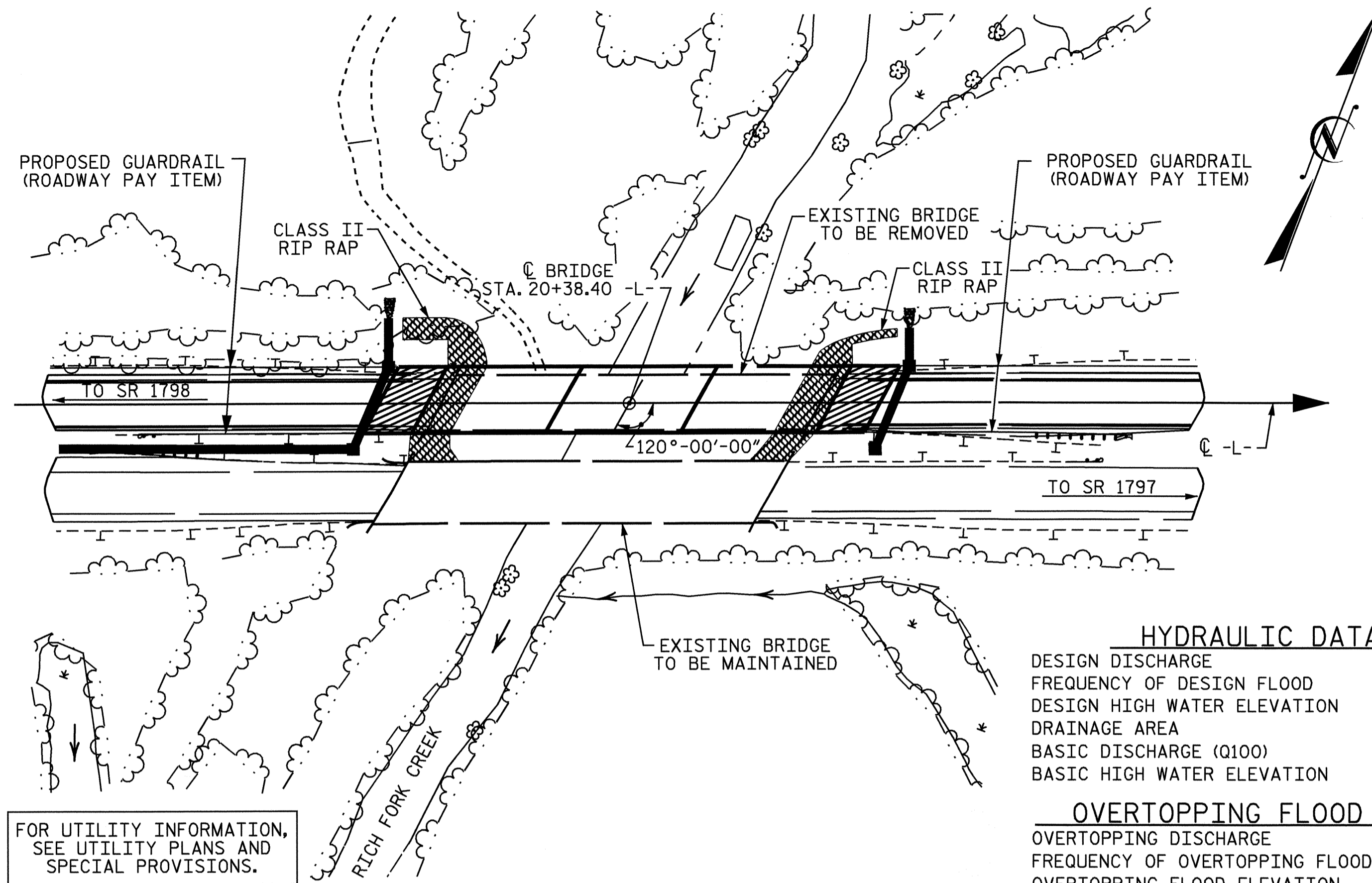


BM 2 R/R SPIKE IN BASE OF 18" OAK -L- STA. 19+56.19 OFF 243.81' LT ELEV = 677.97



HYDRAULIC DATA

DESIGN DISCHARGE	= 7000 cfs
FREQUENCY OF DESIGN FLOOD	= 50 yrs.
DESIGN HIGH WATER ELEVATION	= EL. 663.1
DRAINAGE AREA	= 47.7 sq. mi.
BASIC DISCHARGE (Q100)	= 8400 cfs
BASIC HIGH WATER ELEVATION	= EL. 663.9

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= N/A
FREQUENCY OF OVERTOPPING FLOOD	= 500 yrs. +
OVERTOPPING FLOOD ELEVATION	= EL. 672.3

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = HS 20 OR ALTERNATE LOADING.
 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
 FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.
 THIS BRIDGE HAS BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS.

THE EXISTING STRUCTURE CONSISTING OF 5 SPANS AT 42'-6" WITH A CLEAR ROADWAY WIDTH OF 30 FT. ON REINFORCED CONCRETE DECK GIRDERS ON REINFORCED CONCRETE END BENTS AND BENTS SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

THE SUBSTRUCTURE OF EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC PERFORMANCE CATEGORY A.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH BAR USED THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLES, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", NOVEMBER, 1995.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 30 FT. LEFT AND 25 FT. RIGHT EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE MEASURED AND PAID FOR AS UNCLASSIFIED STRUCTURE EXCAVATION.

NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.

THE CONTRACTOR MAY CHOOSE TO UTILIZE THE STANDARD OVERHANG FALSEWORK BRACING SYSTEM. SEE "STANDARD OVERHANG FALSEWORK" SHEETS.

THE DRILLED PIERS AT BENT NO. 1 AND 2 HAVE BEEN DESIGNED FOR BOTH SKIN FRICTION AND TIP BEARING. THE REQUIRED TIP BEARING CAPACITY IS 30 TONS/FT².

THE REQUIRED TIP BEARING CAPACITY AT BENT NO. 1 AND 2 SHALL BE VERIFIED.

DRILLED PIERS FOR BENT NO. 1 AND 2 HAVE BEEN DESIGNED FOR AN APPLIED LOAD OF 350 TONS EACH AT THE TOP OF THE COLUMN.

PERMANENT STEEL CASING MAY BE REQUIRED FOR DRILLED PIERS AT BENT NO. 1 AND 2. THE CASING SHALL NOT EXTEND BELOW ELEVATION 647.0 WITHOUT THE ENGINEER'S PERMISSION. THE NEED FOR PERMANENT STEEL CASING WILL BE DETERMINED BY THE ENGINEER.

FOR PERMANENT STEEL CASING, SEE SPECIAL PROVISIONS FOR DRILLED PIERS.

DRILLED PIERS AT BENT NO. 1 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 620.5 FT. SATISFY THE REQUIRED TIP BEARING CAPACITY, AND HAVE A MINIMUM PENETRATION OF 4.5 FT. INTO WEATHERED ROCK AS DEFINED BY THE DRILLED PIERS SPECIAL PROVISION.

DRILLED PIER AT BENT NO. 2 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 619.0 (LT) AND 626.5 (RT) AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

THE SCOUR CRITICAL ELEVATION FOR BENT NO. 1 IS ELEVATION 622.0 AND FOR BENT NO. 2 IS ELEVATION 629.0. THE SCOUR CRITICAL ELEVATIONS ARE FOR USE BY MAINTENANCE FORCES TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.

SID INSPECTIONS ARE NOT REQUIRED TO DETERMINE THE BOTTOM CLEANLINESS OF THE DRILLED PIERS AT BENT NO. 1 AND 2.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS AT BENTS NO. 1 AND 2. SEE SPECIAL PROVISION FOR CROSSHOLE SONIC LOGGING.

SPT TESTING IS NOT REQUIRED TO DETERMINE THE TIP BEARING CAPACITY OF THE DRILLED PIERS AT BENT NO. 1 AND 2.

PILES FOR END BENT #2 SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 50 TONS EACH.

STEEL PILE POINTS ARE REQUIRED FOR PILES AT END BENT #2. SEE SPECIAL PROVISIONS FOR STEEL PILE POINTS.

WHEN DRIVING PILES, THE MAXIMUM BLOW COUNT SHALL NOT BE EXCEEDED.

SLURRY CONSTRUCTION IS OPTIONAL FOR THIS PROJECT.

REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.

THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FT. BELOW THE GROUND LINE.

THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE COST OF THE REINFORCED CONCRETE DECK SLAB.

FOR "FABRICATED METAL STAY-IN-PLACE FORMS", SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	4'-0" DIA. DRILLED PIERS IN SOIL	4'-0" DIA. DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 4'-0" DIA. DRILLED PIER	CROSSHOLE SONIC LOGGING	CSL TUBES	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE
	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	CU. YDS.	SQ. FT.	SQ. FT.	CU. YDS.
SUPERSTRUCTURE								8864	7433	
END BENT #1										32.1
BENT #1		64.0	4.5	15.5	1	294.0	410			37.0
BENT #2		54.4	10.0	16.0	1	277.7	255			36.9
END BENT #2										32.1
TOTAL	LUMP SUM	118.4	14.5	31.5	2	571.7	665	8864	7433	138.1

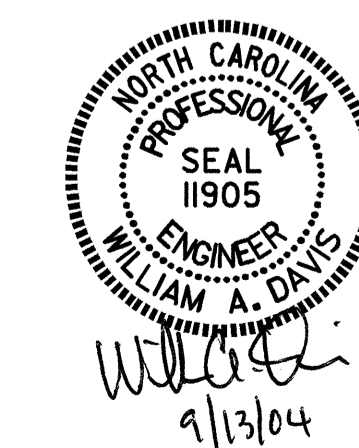
TOTAL BILL OF MATERIAL

	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	54" PRESTRESSED CONCRETE GIRDERS	HP 12 x 53 STEEL PILES	STEEL PILE POINTS	CONCRETE BARRIER RAIL	PLAIN RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS
	LUMP SUM	LBS.	LBS.	NO. LIN. FT.	NO. LIN. FT.	EACH	LIN. FT.	TON	SQ. YD.	LUMP SUM	LUMP SUM
SUPERSTRUCTURE				12 890.00			451.86			LUMP SUM	LUMP SUM
END BENT #1		4903			11 440			320	356		
BENT #1		16527	2142								
BENT #2		17280	2026								
END BENT #2		4903			11 330	11		271	301		
TOTAL	LUMP SUM	43613	4168	12 890.00	22 770	11	451.86	591	657	LUMP SUM	LUMP SUM

DRAWN BY : J. G. KHARVA DATE : 04-21-04
 CHECKED BY : J. D. HAWK DATE : 05-26-04

PROJECT NO. B-4096
DAVIDSON COUNTY
 STATION: 20+38.40 -L-

SHEET 3 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
FOR BRIDGE ON
US 29-70/I-85 BUSINESS
OVER RICH FORK CREEK
BETWEEN SR 1798
AND SR 1797

REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

TOTAL SHEETS: 33