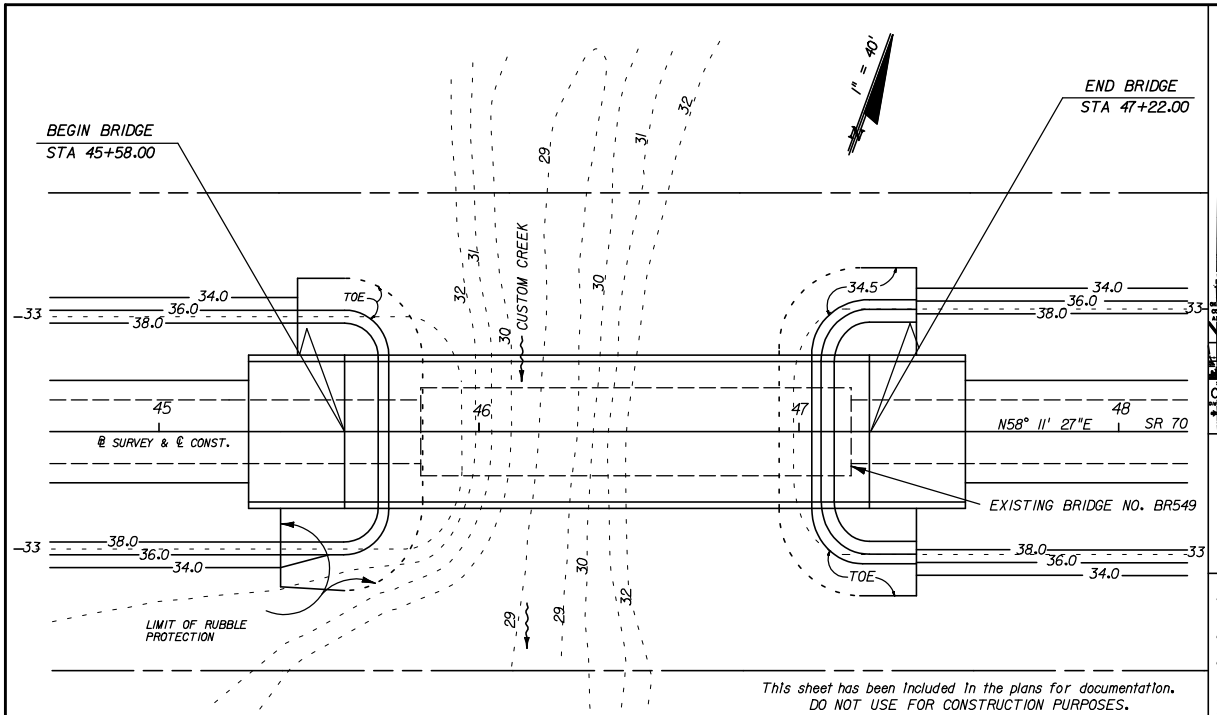
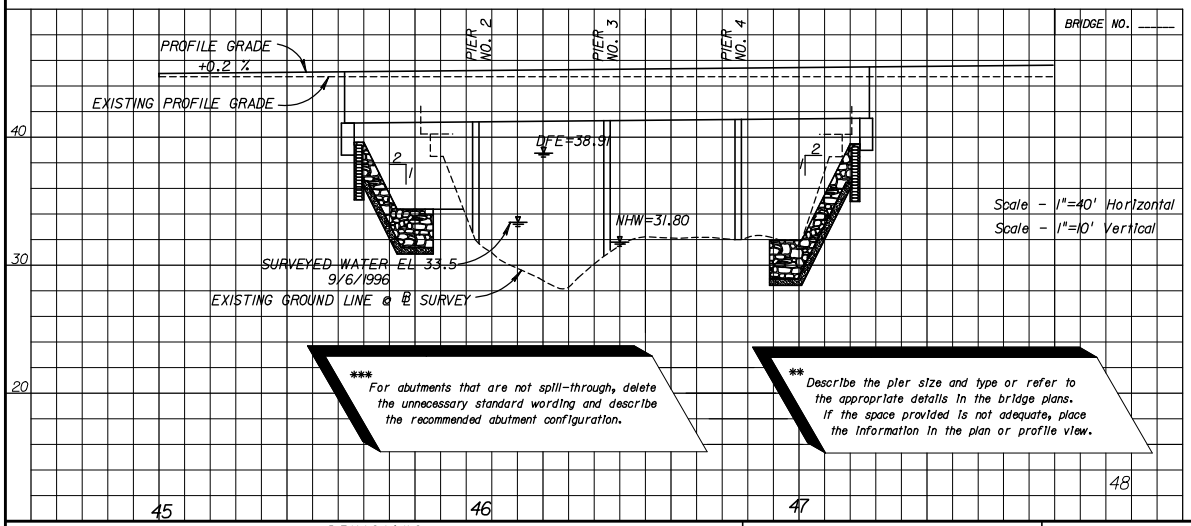
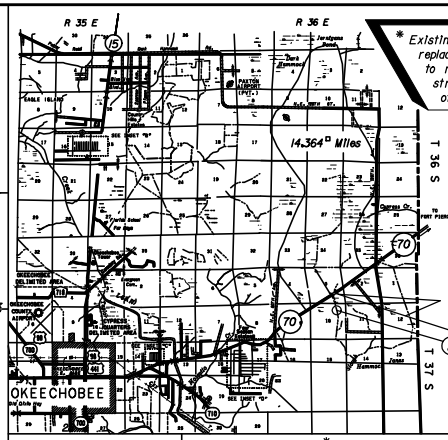


This sheet has been included in the plans for documentation.
DO NOT USE FOR CONSTRUCTION PURPOSES.



*** For abutments that are not spill-through, delete the unnecessary standard wording and describe the recommended abutment configuration.

** Describe the pier size and type or refer to the appropriate details in the bridge plans. If the space provided is not adequate, place the information in the plan or profile view.



* Existing structure 1 refers to the structure being replaced or modified. Structures 2, 3 & 4 refer to relief and immediate upstream and downstream structures and others that affect the hydraulics of the proposed structure.

* EXISTING STRUCTURES					PROPOSED STRUCTURE
(REFERENCE)	(1)	(2)	(3)	(4)	
FOUNDATION	Conc. Piles	Timber			Conc. Piles
OVERALL LENGTH	135	200			164 (rem. #4)
SPAN LENGTH	5 @ 27	20 @ 10			4 @ 41
TYPE CONSTRUCTION	Concrete	Timber			Concrete
AREA OF OPENING @ D.F.	1000	Unknown			1020
BRIDGE WIDTH	28'	Railroad (South)			44'
ELEV. LOW MEMBER	40.35	38.32			41.17

HYDRAULIC DESIGN DATA

NOTE:
The hydraulic data is shown for informational purposes only to indicate the flood discharges and water surface elevations which may be anticipated in any given year. This data was generated using highly variable factors determined by a study of the watershed. Many judgements and assumptions are required to establish these factors. The resultant hydraulic data is sensitive to changes, particularly antecedent conditions, urbanization, channelization and land use. Users of this data are cautioned against the assumption of precision which cannot be obtained.

TERMS:
Design Flood: Utilized to assure a desired level of hydraulic performance.
Base Flood: Has a 1% chance of being exceeded in any given year (100 year frequency)
Overtopping Flood: Causes flow over the highway, over a watershed divide, or thru emergency relief structures.
Greatest Flood: The most severe that can be predicted where overtopping is not practicable.

WATER SURFACE ELEVATIONS: N.H.W. (Non-Tidal) 31.80 M.H.W. (Tidal) _____
CONTROL (Non-Tidal) _____ M.L.W. (Tidal) _____

FLOOD DATA:	MAX. EVENT OF RECORD	DESIGN FLOOD	BASE FLOOD	☐ OVERTOPPING or ☒ GREATEST FLOOD
STAGE ELEV. NGVD (ft)	38.7 (rem. #2)	38.91	39.27	39.57
DISCHARGE (cfs)	unknown	3280	3950	4630
AVERAGE VELOCITY (ft/s)	"	3.22	3.58	4.13
EXCEEDANCE PROB. (%)	"	2	1	0.2
FREQUENCY (yr.)	"	50	100	500

SCOUR PREDICTIONS FOR PROPOSED STRUCTURE DESCRIBED ABOVE:

PIER INFORMATION		TOTAL SCOUR ELEVATION		
NUMBERS	* * SIZE AND TYPE	LONG TERM SCOUR ELEV.	WORST CASE < 100 yr. FREQ. (yr.) 100	WORST CASE < 500 yr. FREQ. (yr.) 500
2 & 3	24" Conc. Piles	N/A	18.4	16.4
4 (rem. #3)	24" Conc. Piles	N/A	27.6	25.6

HYDRAULIC RECOMMENDATIONS

1. BEGIN BRIDGE STATION 45+58.00 END BRIDGE STATION 47+22.00 SKEW ANGLE 0°
2. CLEARANCE PROVIDED: NAV: HORIZ. 39.0 VERT. 8.04 ABOVE EL. 33.14 DRIFT: HORIZ. 39.0 VERT. 2.26 ABOVE EL. 38.91
3. MINIMUM CLEARANCE: NAV: HORIZ. 10.0 VERT. 6.0 ABOVE EL. 33.14 DRIFT: HORIZ. N/A VERT. 2.0 ABOVE EL. 38.91
4. ABUTMENTS:

	BEGIN BRIDGE	END BRIDGE
* * * RUBBLE GRADE:	Bank and Shore	Bank and Shore
SLOPE:	1:2	1:2
BURIED OR NON-BURIED HORIZ. TOE:	Non-Buried	Non-Buried
TOE HORIZ. DISTANCE:	10	10
LIMIT OF PROTECTION:	15' Lt., 20' Rt.	15' Lt. and Rt.

5. DECK DRAINAGE: Spread is contained in shoulder. Runoff captured by inlets at begin bridge.

REMARKS: (1) Bridge lengthened to accomodate predicted channel migration to the west.
(2) Based on mark provided by local resident of 43 years.
(3) Due to predicted channel migration to the west and lack of meander cutoff, Pier No. 4 will not experience main channel scour depths.

EXHIBIT BHD-1
Date: 1/1/06

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
		_ _ _

BRIDGE HYDRAULIC RECOMMENDATIONS

SHEET NO.

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