



Bridge #05274(Routine, Underwater type 2)
SH 27 SEC.02-11.02 over COLEMAN CREEK
Location: 2.5 MI SW JCT SH 24

Team Lead: John King Inspection Date: August 19, 2020



Latitude:33.91683, Longitude:-93.86454

Route:27 Section:02 Log:11.02

Arnold Road ID:31x27x2xA, Arnold Log mile:11.044

District 03, Howard County

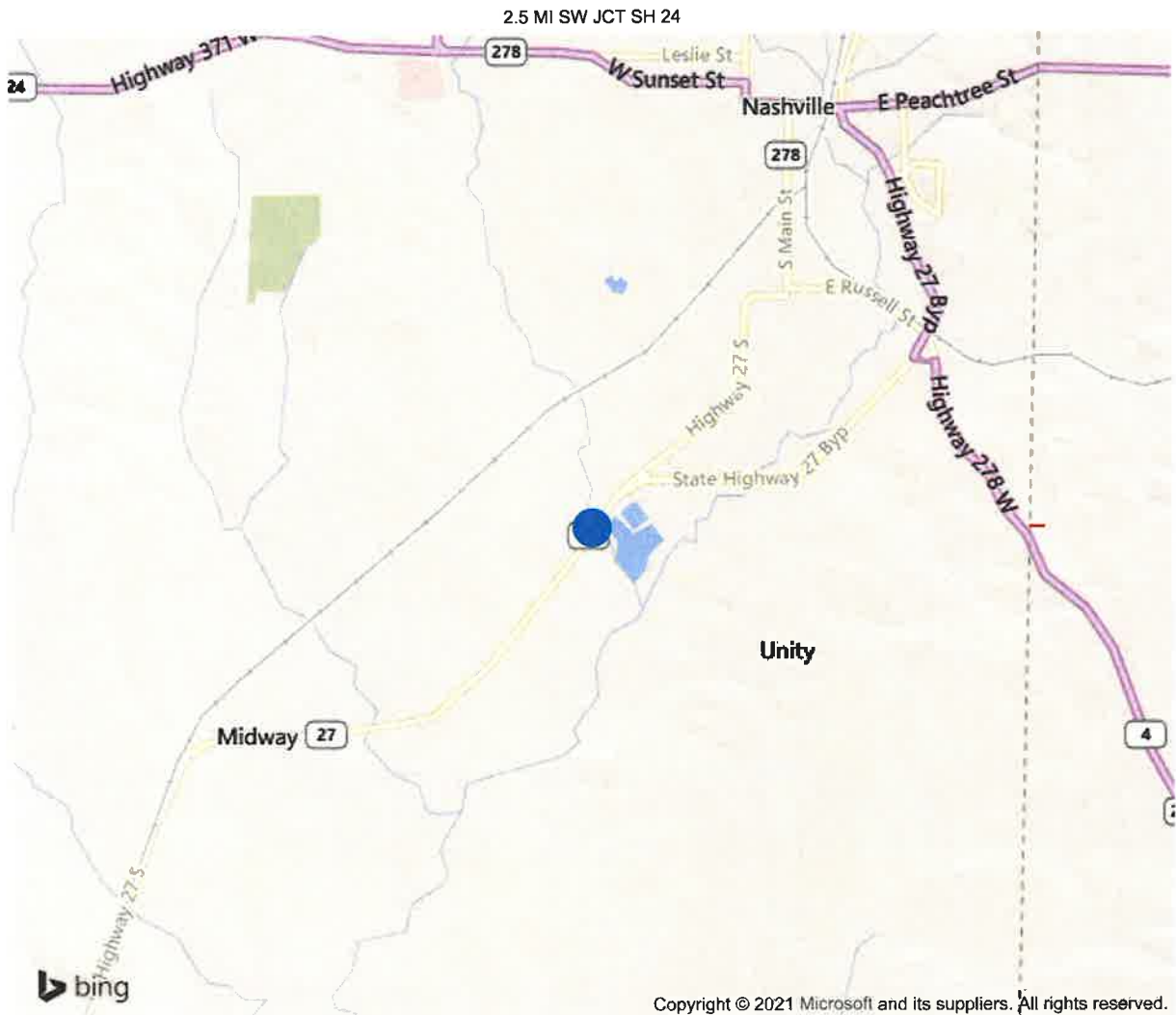
Owner: 1-State Highway Agency



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33.91683, -93.86454



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IDENTIFICATION		
(1) State Names	Arkansas	
(8) Structure Number	05274	
(5) Inventory Route	27	
(2) Highway Agency District	03	
(3) County Code	61-Howard County, Arkansas	
(4) Place Code	0	
(6) Features Intersected	COLEMAN CREEK	
(7) Facility Carried	SH 27 SEC.02-11.02	
(9) Location	2.5 MI SW JCT SH 24	
(11) Mile Point	11.02 mi	
(12) Base Highway Network	No	
(13) LRS Inventory Rte & Subrte	0000000000	
(16) Latitude	33.916832	
(17) Longitude	-93.86454	
(98) Border Bridge State Code		
(99) Border Bridge Structure No.		
STRUCTURE TYPE AND MATERIAL		
(43) Main Structure Type	11	
Material	1-Concrete	
Type	1-Slab	
(44) Approach Structure Type	00	
Material	0-Other	
Type	0-Other	
(45) No. of Spans in Main Unit	5	
(46) No. of Approach Spans	0	
(107) Deck Structure Type	1-Concrete Cast-in-Place	
(108) Wearing Surface/Protective System		
Type of Wearing Surface	1-Monolithic Concrete (concurrently placed	
Type of Membrane	0-None	
Type of Deck Protection	0-None	
AGE AND SERVICE		
(27) Year Built	1970	
(106) Year Reconstructed	0	
(42) Type of Service	15	
On	1-Highway	
Under	5-Waterway	
(28) Lane		
On	2	
Under	0	
(29) Average Daily Traffic	7000	
(30) Year of ADT	2014	
(109) Truck ADT	1 %	
(19) Bypass, Detour Length	14 mi	
GEOMETRIC DATA		
(48) Length of Maximum Span	35 ft	
(49) Structure Length	175 ft	
(50) Curb or Sidewalk Width		
Left	0.5 ft	
Right	0.5 ft	
(51) Bridge Roadway Width Curb to Curb	39 ft	
(52) Deck Width Out to Out	42.3 ft	
(32) Approach Roadway Width (W/Shoulders)	40 ft	
(33) Bridge Median	0-No median	
(34) Skew	0 Deg	
(35) Structure Flared	No flare	
(10) Inventory Route Min Vert Clear	99.99 ft	
(47) Inventory Route Total Horiz Clear	40 ft	
(53) Min Vert Clear Over Bridge Rdwy	99.99 ft	
(54) Min Vert Underclear	0 ft	
Ref:		
(55) Min Lat Underclear RT	99.9 ft	
Ref:		
(56) Min Lat Underclear LT	0 ft	
NAVIGATION DATA		
(38) Navigation Control	0-No navigation control on water	
(111) Pier Protection	1-Navigation protection not requ	
(39) Navigation Vertical Clearance	0 ft	
(116) Vert-Lift Bridge Nav Min Vert Clear	0 ft	
(40) Navigation Horizontal Clearance	0 ft	

CLASSIFICATION		
(112) NBIS Bridge Length		Y
(104) Highway System		0
(26) Functional Class	6-Rural Minor Arterial	
(100) Defense Highway	0-The inventory route is not a S	
(101) Parallel Structure	N-No parallel structure exists.	
(102) Direction of Traffic	2 - way traffic	
(103) Temporary Structure		
(105) Federal Lands Highways	0-N/A	
(110) Designated National Network	1-The inventory route is part of the	
(20) Toll	3-On free road. The structure is toll-	
(21) Maintain	1-State Highway Agency	
(22) Owner	1-State Highway Agency	
(37) Historical Significance	5-Bridge is not eligible for the NRHP	
CONDITION		
(58) Deck		7
(59) Superstructure		7
(60) Substructure		6
(61) Channel & Channel Protection		7
(62) Culverts		N
LOAD RATING AND POSTING		
(31) Design Load	5-MS 18 / HS 20	
(63) Operating Rating Method		1
(64) Operating Rating		
Type	1-Load Factor(LF)	
Rating		60
(65) Inventory Rating Method	1-Load Factor(LF)	
(66) Inventory Rating		
Type		5
Rating		36
(70) Bridge Posting	5-Equal to or above legal loads	
(41) Structure Open/Posted/Closed	A-Open, no restriction	
APPRAISAL		
(67) Structural Evaluation		6
(68) Deck Geometry		5
(69) Clearances, Vertical/Horizontal		N
(71) Waterway Adequacy		6
(72) Approach Roadway Alignment		8
(36A) Bridge Railings	1-Inspected feature meets currently a	
(36B) Transitions	1-Inspected feature meets currently a	
(36C) Approach Guardrail	1-Inspected feature meets currently a	
(36D) Approach Guardrail Ends	1-Inspected feature meets currently a	
(113) Scour Critical Bridges	5-Bridge foundations determined to be	
PROPOSED IMPROVEMENTS		
(75) Type of Work		
(76) Length of Structure Improvement	0 ft	
(94) Bridge Improvement Cost	\$ 0	
(95) Roadway Improvement Cost	\$ 0	
(96) Total Project Cost	\$ 0	
(97) Year of Improvement Cost Estimate	0	
(114) Future ADT	8442	
(115) Year of Future ADT	2028	
INSPECTIONS		
(90) Inspection Date		08/2020
(91) Frequency		24 Months
(92) Critical Feature Inspection	Done	Freq. (Mon) Date
A: Fracture Critical Detail	No	
B: Underwater Inspection	No	
C: Other Special Inspection	No	



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ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
38	RC Slab	SF	7402	7068	309	25	0
1090	Exposed Rebar	SF	1	0	1	0	0
1120	Efflorescence/Rust Staining	SF	25	0	0	25	0
1130	Cracking (RC and Other)	SF	308	0	308	0	0
(38)	cracks were sealed in all spans ,10/19/2016 per Howard 1						
205	Reinforced Concrete Column	EA	12	12	0	0	0
215	Reinforced Concrete Abutment	LF	110	110	0	0	0
234	Reinforced Concrete Pier Cap	LF	109	85	24	0	0
1080	Delamination/Spall/Patched Area	LF	18	0	18	0	0
1090	Exposed Rebar	LF	6	0	6	0	0
(234)	CONCRETE CAPS: BT 2_7' X 2' SPALL RT END NORTH FACE BT 2_2' X 2' SPALL NEER C/L NORTH FACE BT 2_ LG SPALL LT SIDE NORTH FACE BT 3_ 4' X 2' SPALL W/REBAR EXPOSED RT SIDE NORTH FACE BT 4_2' X 2' SPALL W/REBAR EXPOSED N. FACE BT 5_2' X 2' SPALL W/REBAR EXPOSED S. FACE						
301	Pourable Joint Seal	LF	240	0	0	240	0
2310	Leakage	LF	240	0	0	240	0
321	Reinforced Concrete Approach Slab	SF	1728	1728	0	0	0
330	Metal Bridge Railing	LF	350	350	0	0	0

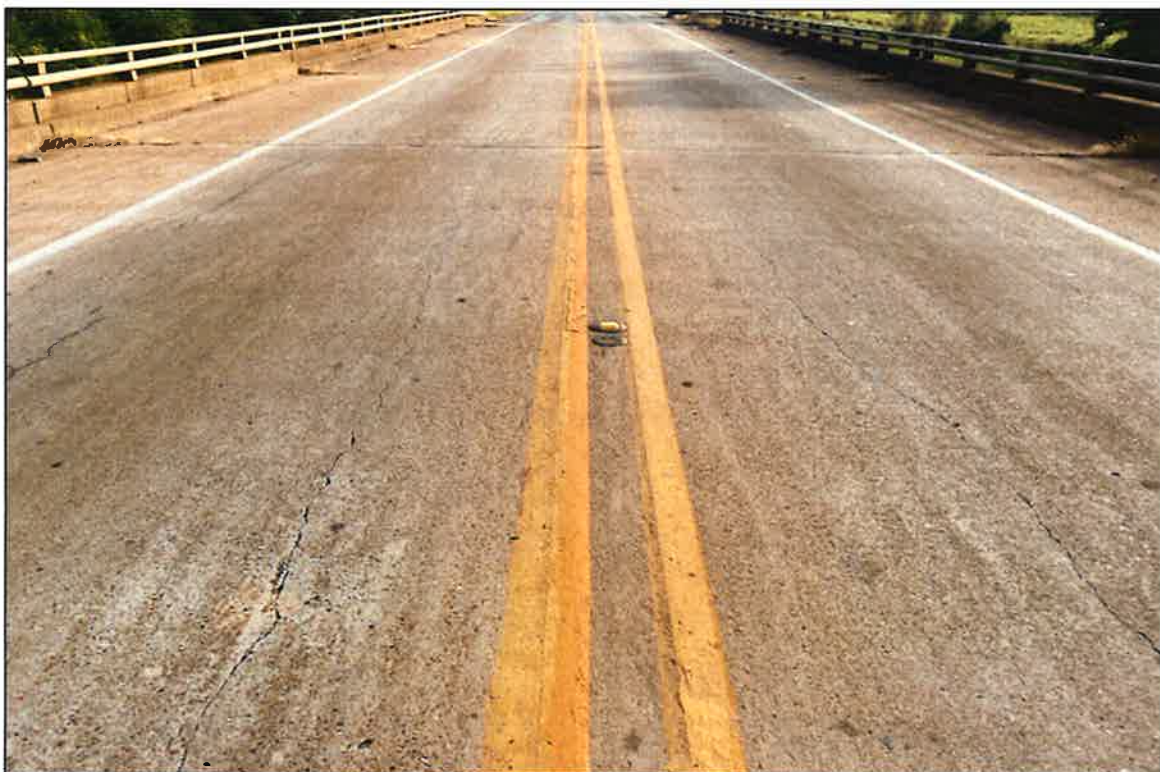


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Alignment



Deck Shot



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Underside of deck typical all spans



Side Shot



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Alignment



Last span.



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Photo span 2.



Last span



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Maintenance Needs

Date Reported: 08/24/2012
Priority: D- Routine
Type of Work: None
Status: Assigned
Component:

Deficiency Description

CONST. JOINTS OVER ALL BENTS NEED CLEANED AND REFILLED

Remarks



Construction joints need cleaned out and reported



Joints.



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Date Reported: 08/24/2012
Priority: D- Routine
Type of Work: None
Status: Assigned
Component:

Deficiency Description

CONCRETE CAPS:

- BT 2_7' X 2' SPALL RT END NORTH FACE
- BT 2_2' X 2' SPALL NEER C/L NORTH FACE
- BT 2_ LG SPALL LT SIDE NORTH FACE
- BT 3_4' X 2' SPALL W/REBAR EXPOSED RT SIDE NORTH FACE
- BT 4_2' X 2' SPALL W/REBAR EXPOSED N. FACE
- BT 5_2' X 2' SPALL W/REBAR EXPOSED S. FACE

Remarks



Spall with rebar exposed at bent 5 left side south face



Spall with rebar exposed BT 2 RT side



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Spalls on BT 2



Spall with rebar exposed right side of bent 3



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Spall with rebar exposed at bent 4 north face



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Date Reported: 08/24/2012
Priority: D- Routine
Type of Work: None
Status: Assigned
Component:

Deficiency Description

DRAIN BOTTOM OF DECK, SPALL AT SONA TUBE AND REBAR EXPOSED, LT SIDE BRIDGE

Remarks



Spalls with rebar exposed at deck drains



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Date Reported: 08/19/2020
Priority: C - Important
Type of Work: Repair
Status: Open
Component: Channel

Deficiency Description

Scour hole at bent 2 left side starting...

Remarks



Scour hole at bent 2 left side starting...



Scour hole at bent 2 left side starting...



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Inspection Comments

JOINTS NEED TO BE CLEANED AND FILLED. DRAIN BOTTOM OF DECK, SPALL AT SONA TUBE AND REBAR EXPOSED, LT SIDE BRIDGE . LARGE CRACKS IN THE DECK ,cracks were sealed in all spans ,10/19/2016 per Howard 18/8/2018...AL, SS, Deck photos taken. Little or no change in condition... 08/19/2020 ALIGNMENT, AND ELEVATION PHOTOS TAKEN. SOUNDINGS TAKEN....

Deck Notes

Substructure Notes

CONCRETE CAPS:

- BT 2_ 7' X 2' SPALL RT END NORTH FACE
- BT 2_ 2' X 2' SPALL NEER C/L NORTH FACE
- BT 2_ LG SPALL LT SIDE NORTH FACE
- BT 3_ 3'X 2' and 2'x1' SPALL W/REBAR EXPOSED RT SIDE NORTH FACE
- BT 4_ 2' X 2' SPALL W/REBAR EXPOSED N. FACE
- BT 5_ 2' X 2' SPALL W/REBAR EXPOSED S. FACE

FED. ROAD DIST. NO.	STATE	FED. AID FUND	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	5-100-1	3586	15	53
JOB NO.	3586	15	53		
50	5174	LAYOUT	2076		

REMOVE EXISTING 100' BRIDGE CONSISTING OF CONCRETE ABUTMENTS AND R.C. DECK GIRDER SPAN. SEE SECTION 1306 OF THE STANDARD SPECIFICATIONS.

CONSTRUCT 100' DETOUR BRIDGE APPROXIMATELY 45' DOWNSTREAM WITH MINIMUM DECK ELEVATION 331.0'. DETOUR BRIDGE TO HAVE 20' ROADWAY AND BE DESIGNED FOR HIS LIVE LOAD. SEE SP 1008-1.

GENERAL NOTES

BENCH MARK - SQUARE INSIDE CURB, 15' RIGHT, STATION 234+80.2, ELEVATION 336.36.

IN ORDER NOT TO DISTURB THE FOUNDING MATERIAL, THE FINAL ONE FOOT OF FOOTING EXCAVATION SHALL BE DONE CAREFULLY BY HAND METHODS TO NEAR LINES OF FOOTINGS. ALL CONCRETE SHALL BE POURED IN THE DRY.

ALL PILING SHALL BE 16" OCTAGONAL PRECAST CONCRETE AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 34 TONS PER PILE, AND TO A MINIMUM PENETRATION OF 20 FEET BELOW THE GROUND LINE. LENGTHS OF PILING SHOWN ARE ASSUMED FOR ESTIMATING QUANTITIES ONLY. ACTUAL LENGTHS TO BE DETERMINED IN THE FIELD. DRIVE ONE 30' TEST PILE IN BENT NO. 1.

FOR DETAILS OF END BENTS SEE DWG. NO. 15073.

FOR DETAILS OF INTERMEDIATE BENTS SEE DWG. NO. 15075.

FOR DETAILS OF 35' R.C. SLAB SPANS SEE DWG. NO. 15074.

FOR DETAILS OF PRECAST CONCRETE PILING SEE DWG. NO. 15072.

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1959, THE 1966 SUPPLEMENTAL SPECIFICATIONS AND APPLICABLE SPECIFICATIONS.

DESIGN SPECIFICATIONS: AASHTO 1966

LIVE LOADING: HS20

UNIT STRESSES: CLASS 5 CONCRETE (f'c) 1,200 PSI

REINFORCING STEEL 20,000 PSI

Foundation Pressure 5-45 cfs

LAYOUT OF BRIDGE OVER COLEMAN CREEK MINERAL SPRINGS-NASHVILLE

HOWARD COUNTY
ROUTE 27 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

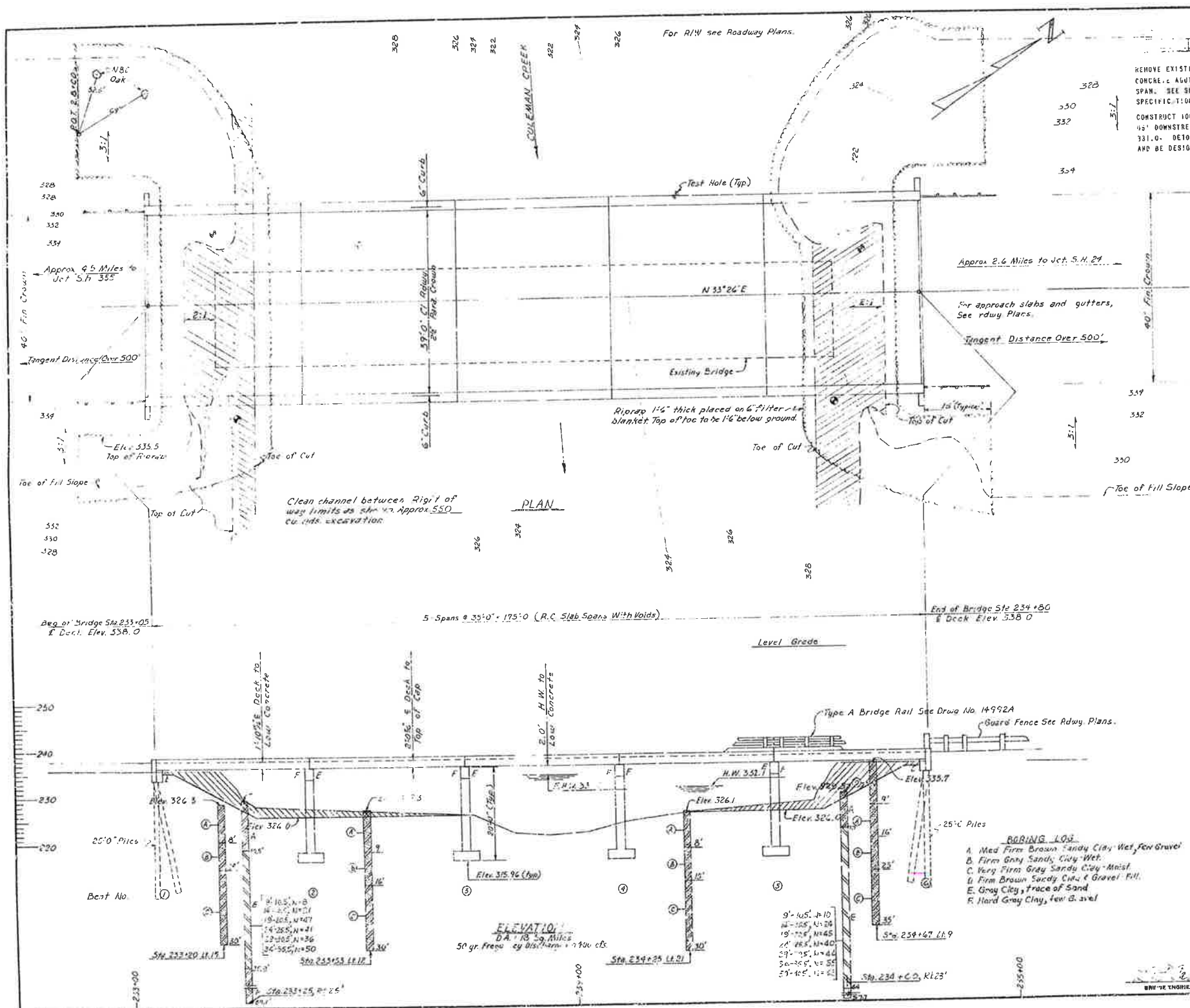
DRAWN BY: W.W.W. DATE: 9-11-68

TRACED BY: DATE: 1-15-68

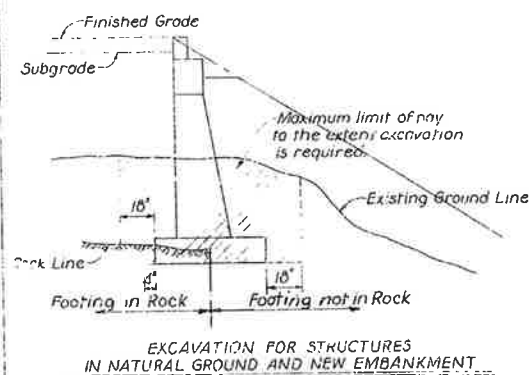
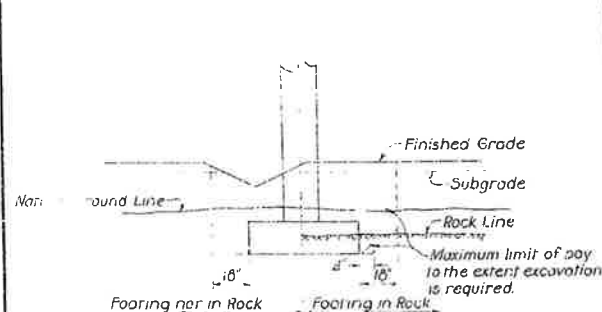
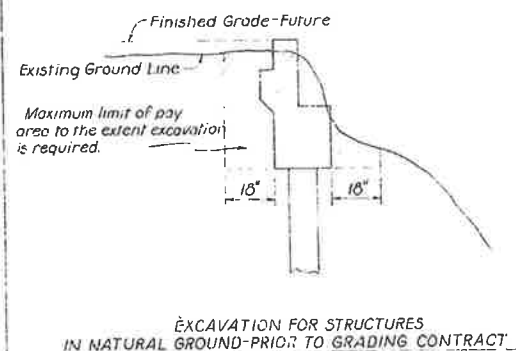
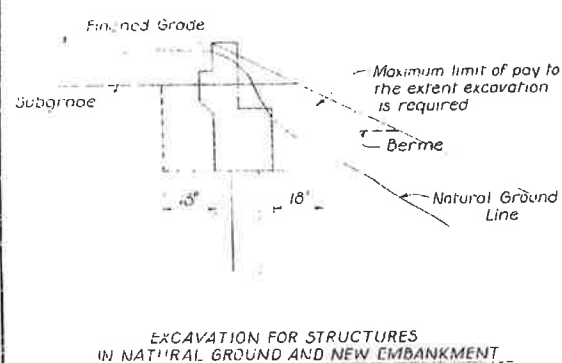
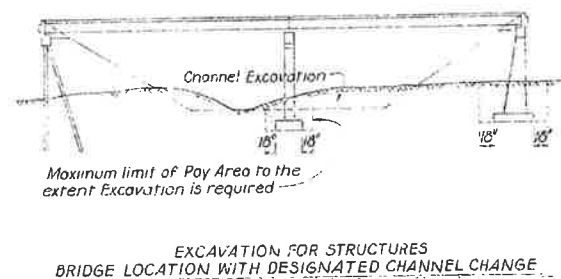
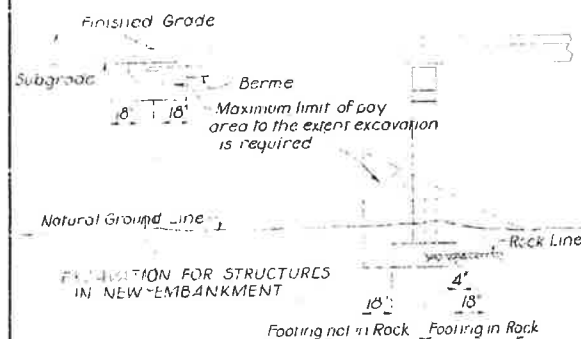
CHECKED BY: E.W.H. DATE: 1-15-68

BRIDGE NO. 5274

DRAWING NO. 16006



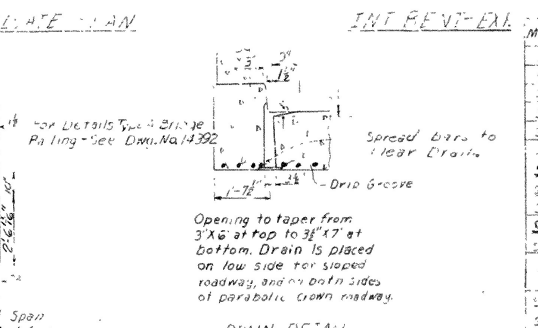
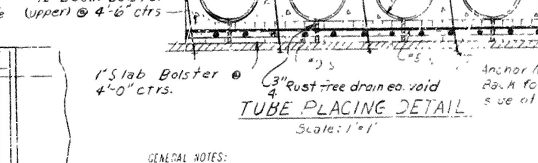
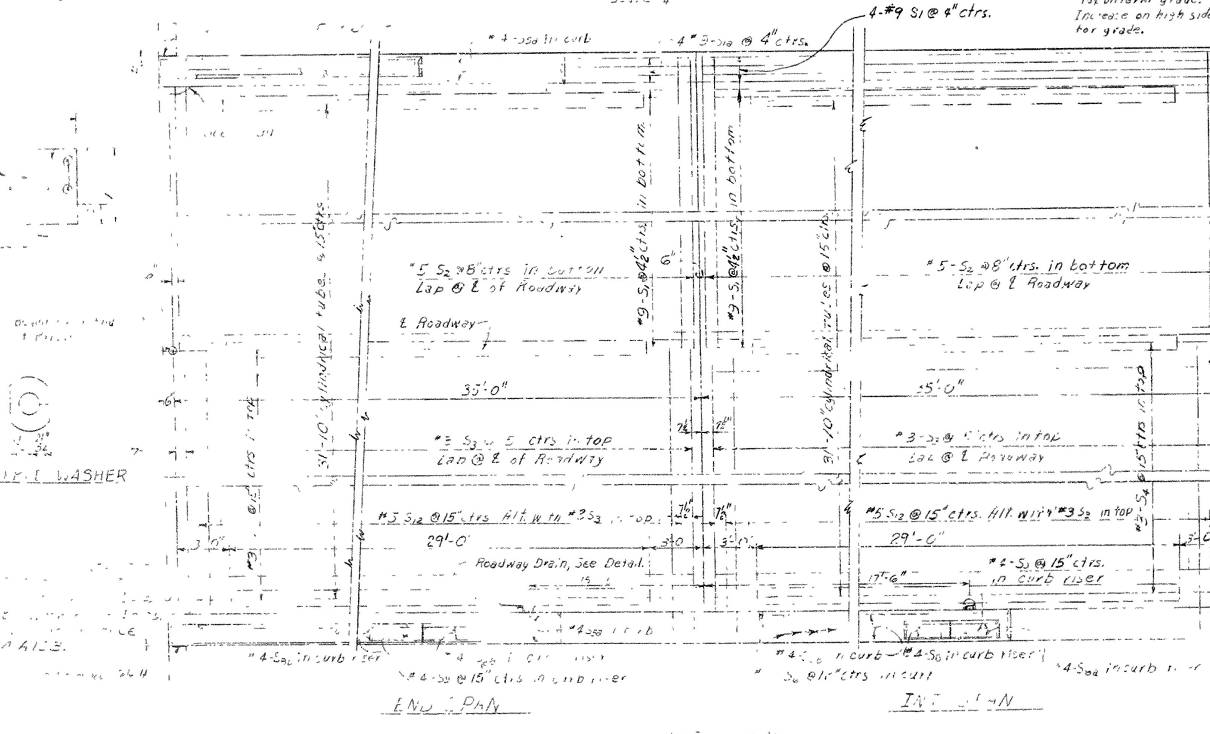
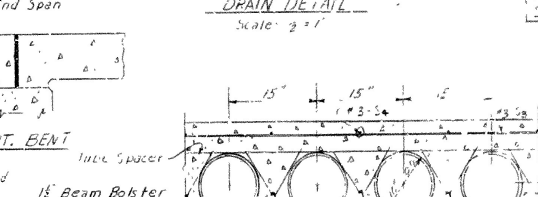
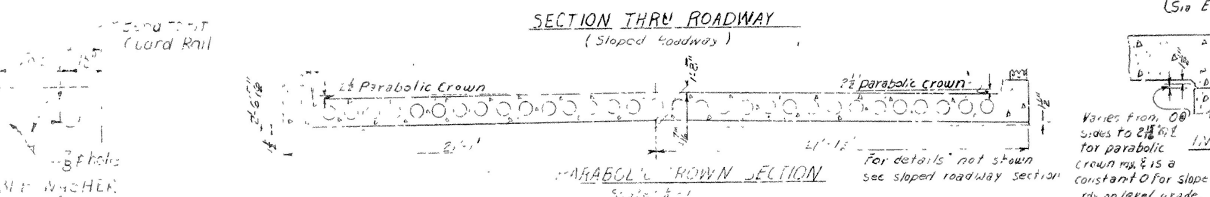
FED. ROAD NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				
JOB NO.					



DETAILS FOR COMPUTING
EXCAVATION FOR STRUCTURES
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RWM DATE: 6-14-68
CHECKED BY: FMH DATE: 5-1-69
BRIDGE NO. DRAWING NO. 1091C

L.P. Carlson
BRIDGE ENGINEER

[illegible]

SFAEFH, SE ZAIL

- GENERAL NOTES:
- All concrete to be Class S. All exposed corners to be chamfered 3/4" unless otherwise noted.
- Reinforcing steel to be deformed bars of intermediate or high grade. Shop lists and bridge diagrams to be submitted and approved before fabrication is begun.
- All cylindrical tubes used to form voids shall be of moisture protected laminated fiber or plastic, minimum thickness 0.25, and shall be furnished complete with end closures.
- All reinforcing steel and fiber tubes shall be accurately located in the forms and firmly held in place by means of steel wire supports or spacers for tubes of a sufficient number and size to prevent displacement during the course of construction, but is to conform to that shown.
- Wire supports for reinforcing bars will not be paid for directly, but will be considered subsidiary to the item "Reinforcing Steel" when forming voids and wire supports and spacers for tubes will not be paid for directly, but will be considered subsidiary to the item "Fiber Tubes in Concrete".
- Shop lists and diagrams of wire supports and spacers for tubes shall be submitted for approval before jobstart on is begun.
- Roofing felt, bituminous felt, and a poured asphalt joints shall be measured and paid for in Class S concrete.
- For details of 1120 Rating see Div. No. 14942 as shown on bridge layout.

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1958, the 1966 Supplementa Specifications, and applicable Special Provisions.

DESIGN SPECIFICATIONS: AASHTO 1985

Design Live Loading: HS20 and Special Interstate Loading of two 24,000 lb axles spaced 4'0" on centers.

Load Distribution to Slab: Dead Load=2/3 psf; Live Load=0.166 wheels/ft of width plus 30% impact.

Unit Stresses: Class 5 Concrete (nat'l) 1,200 psi
Reinforcing Steel 20,000 psi

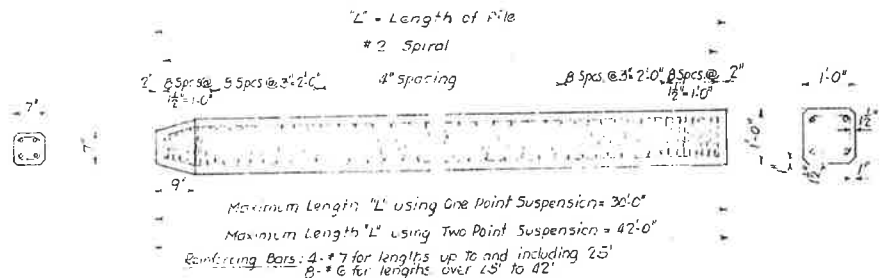
DETAILS OF STANDARD
35'-0" R.C. SLAB SPAN (WITH VOIDS)
39'-0" CLEAR ROADWAY. 2 CURBS at 0'-6"
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

NOTE: This is a Modification
of DWG 15072.

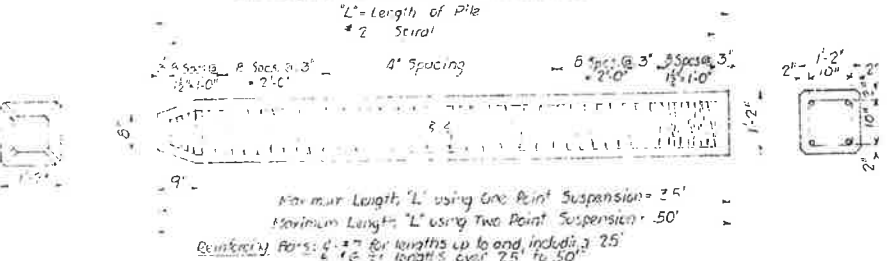
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 TRACED BY _____ DATE _____
 CHECKED BY DFL DATE 10-1-67

SCALE: $1/8" = 1' - 0"$ 3. 15074

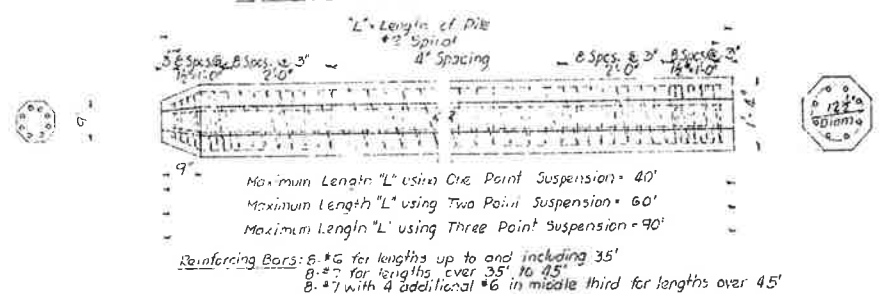
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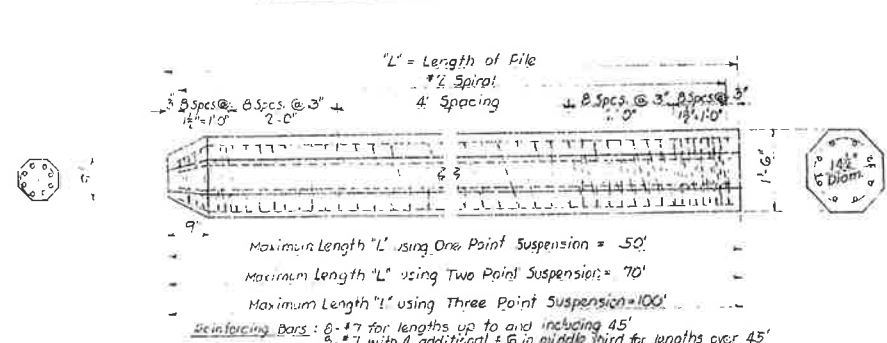
DETAILS OF 12" SQUARE PILE



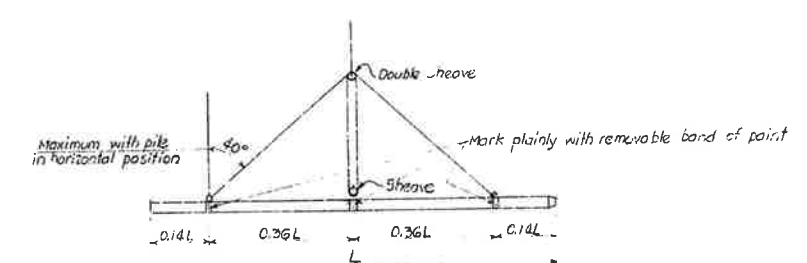
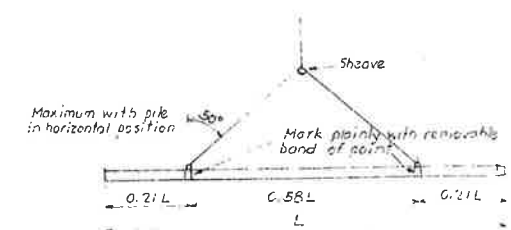
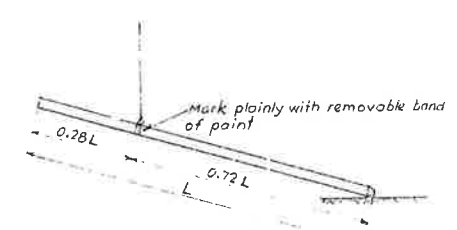
DETAILS OF 14" SQUARE PILE



DETAILS OF 16" OCTAGONAL PILE



DETAILS OF 16" OCTAGONAL PILE



Prestressing Alternate:-

As an alternate to the reinforcement shown, these piles may be prestressed by the use of steel strands of high tensile cold-drawn uncoated stress-relieved wire strands having an ultimate tensile strength of not less than 250,000 p.s.i. and an elongation at rupture of not less than 3% in 10"; number and size of strands and prestressing load to be as follows:-

Pile Size	Wire Strands No. Nominal Dia.	* Prestressing Force Per Strand
12" Square	8 3/16"	10150*
14" Square	12 3/16"	10150*
16" Octagonal	12 3/16"	14000*
18" Octagonal	16 3/16"	14000*

* Prestressing force to be not more than 0.7 of the ultimate value of strand.

To permit splicing for buildup, where necessary, of prestressed piles, reinforcing as shown in details, shall be provided in butt end of pile for a length of 5' and 6' for No. 6 & No. 7 bars respectively.

GENERAL NOTES

All concrete to be Class "B"
Longitudinal reinforcing steel shall be determined bars of intermediate grade, unless otherwise modified by Special Provisions. Spiral shall be formed from plain round billet steel reinforcing bars.
SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1952.

DETAILS OF STANDARD PRECAST CONCRETE PILES

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION

Revisions:-
Provisions for prestressing 1-6-58 H.B.
Prestressing strands, force 4-14-58 H.B.
Number Prestressing strands 14-12-58 H.B.
General Notes 2-25-60 H.B.

DATE 7-26-56
DRAWN BY: [Signature] DATE 7-26-56
CHECKED BY: [Signature] DATE 7-26-56
BRIDGE NO. 2382

See Revised 5-22-61