GOVERNING SPECIFICATIONS & GENERAL NOTES

1. GRANDE INC. DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.

2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.

3. ANY COMPONENT OR APPURtenANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U.S. MAILBOXES WITHIN THE PROJECT LIMTS IN SUCH A MANNER THAT THE PUBIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENTS SHALL BE CONSIDERED INCLUDED IN THIS PRICE-BID FOR THE VARIOUS ITEMS.

5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 157.12 OF THE STANDARD SPECIFICATIONS.

6. ALL TREES THAT DO NOT DIRECTLY INTERFERENCE WITH THE PROPOSED CONSTRUCTION SHALL BE SAVED AS DIRECTED BY THIS ENGINEER. CARE AND PROTECTION SHALL BE GIVEN TO ALL TREES TO ENSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE MARKED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. THE FENCE MAY BE CONSTRUCTED NEARLY OR IN-LINE WITH THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY PENNING SUITABLE TO CONTROL LIVESTOCK.

8. THE GRADING AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLAN IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT. IN NO WAY IS IT INTENDED TO COVER EVERY ITEM OF THE PROJECT. ITEMS NOT DEPICTED IN THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE PROFESSIONAL ENGINEER.

9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE FIRMING 216 - UNCLASSIFIED EROSION.

10. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SURVEYING A 3FT MILE LINE, AFTER GRADING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT TO REMAINING PLACE SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.

GENERAL NOTES
NOTES:

1. REFER TO CROSS SECTIONS FOR IDENTIFICATION OF OUTLINES OF THE項目 ON THE PLAN DURING AND PERIOD PRIOR TO AND DURING PLACEMENT OF PAVEMENT, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) TO BE USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE CONTRACT.

2. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT WORK WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS

3. TRANSITION FROM B TRAVEL LANE TO B TRAVEL LANE

4. CHANGE IN SLOPE = 0.04' /' OR S.E.

5. VAR. COMP'D. DEPTH

6. VAR. SUBGRADE

7. 8'-0" EXIST.

8. 10'-0" EXIST.

9. 11'-6" EXIST.

10. 12'-0"

11. 27'-0" A.C.H.M. SURFACE COURSE (1"

12. 28'-3" A.C.H.M. SURFACE COURSE ("

13. 28'-6" A.C.H.M. BINDER COURSE ("

14. 29'-0" A.C.H.M. BINDER COURSE ("

15. 30'-0"

16. 25'-0" SUBGRADE

17. 533 TOTAL S.F.

18. 400 LBS. PER SQ. YD. & TACK COAT

19. 495 LBS. PER SQ. YD. & TACK COAT

20. 880 LBS. PER SQ. YD. & TACK COAT

21. 220 LBS. PER SQ. YD. & TACK COAT

22. 51'-3" SUBGRADE

23. 29'-0" A.C.H.M. BASE COURSE ("

24. 28'-3" A.C.H.M. SURFACE COURSE ("

25. 28'-6" A.C.H.M. BINDER COURSE ("

26. 220 LBS. PER SQ. YD. & TACK COAT

27. 25'-0" A.C.H.M. SURFACE COURSE ("

28. 26'-0" A.C.H.M. SURFACE COURSE ("

29. 27'-0" A.C.H.M. SURFACE COURSE ("

30. 28'-0" A.C.H.M. SURFACE COURSE ("

31. 29'-0" A.C.H.M. SURFACE COURSE ("

32. 30'-0" A.C.H.M. BINDER COURSE ("

33. 31'-0" A.C.H.M. BINDER COURSE ("

34. 32'-0" A.C.H.M. BINDER COURSE ("

35. 33'-0" A.C.H.M. BINDER COURSE ("
VARIOUS CONTRACT ITEMS.

WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE ESHALT SHALL BE APPROVED BE THE ENGINEER. PAYMENT FOR THIS THING SHALL BE MADE PRIOR TO AND DURING PLACEMENT OF PAVEMENT, THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACEMENT SHALL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGES ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED FROM THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING THE EXISTING PAVEMENT TO BE REMOVED FROM WHAT IS SHOWN ON THE PLANS.

NOTE: The subgrade shall be finished IN CONFORMITY WITH THE LINES, GRADES, AND CROSS SECTIONS SHOWN ON THE PLANS.

LONGITUDINAL JOINTS SHALL BE AT LANE LINES. AFTER ALL OTHER COURSES HAVE BEEN LAID, THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED.

THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN A LAYER THICKNESS WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS.

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE AS SHOWN ON THE PLANS. THE CONTRACTOR WILL CORRECT ANY DEFICIENT WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS.

THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE EXISTING SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NOTES:

AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'.

NOTE: ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE TRANSITION SECTION SHALL BE COMPLETED IN SUCH A WAY THAT THE TOLERANCE FOR THE TRANSITION SECTION IS WITHIN PLUS OR MINUS MINUS .04'.

3:1 SLOPE

6:1 SLOPE

AGGREGATE BASE COURSE (CL. 7)

8'-0" EXIST.

TRAVEL LANE

11'-6" EXIST.

S.E. SLOPE

S.B. STA. 186+49.36 TO STA. 199+00.00

N.B. STA. 192+44.05 TO STA. 208+78.38

TRANSITION:

I-49 (AUXILIARY LANE)

SHOWN IN DIRECTION OF TRAFFIC

SUPERELEVATION SECTION

RAMP 5

I-49, STA. 160+92.06 TO STA. 172+61.44

S.E. SLOPE

S.B. STA. 199+00.00 TO STA. 202+00.00

N.B. STA. 208+78.38 TO STA. 210+62.60

N.B. STA. 153+49.32 TO STA. 164+00.00

TRANSITION:
NOTES:

1. Refer to Cross Sections for Deviation from the Normal Slope. All Intermediate Slopes Shall Be Made Without the Approval of the Engineer.

2. The thickness of aggregate base course shall be determined by the contractor to conform with the plan. The thickness shall be shown on the plan drawings and shall be used as a basis for payment without the approval of the Engineer.

3. All materials placed shall be in accordance with the specifications. Payment will not be made for materials placed in excess of the tolerance permitted.

4. The final 2" of surface course is to be placed after all other courses have been placed. Shoulder sections shall be built true to lines.

5. It is intended that the subgrade shall be finished in conformity with the lane grades and cross sections shown on the plans.

6. The existing asphalt pavement to be removed shall be removed by saving a 2" layer, followed by saving a 1" layer. If the thickness does not remain the pavement will be removed to 12" and the subgrade will be installed. It is required that the subgrade be a minimum of 6" of stable material. Any damage of the asphalt pavement that is to remain will not be repaired by the contractor, and any damage of the subgrade formed shall be removed in place shall be repaired at the contractor's expense.

7. Prior to and during placement of materials, the contractor shall be responsible for the removal of all debris, trash, etc., to be placed in the subgrades shall be considered included in the price so for the various contract items.

SLOPE = 0.04'/' OR S.E. SLOPE

WHICHEVER IS GREATER

SLOPE = 0.02'/'

VAR. SUBGRADE

AGGREGATE BASE COURSE (CL. 7) (VAR. TONS PER STA.) VAR. COMP'D. DEPTH

CONCRETE COMBINATION CURB & GUTTER TYPE A (1'-6")

TRAVEL LANE 24'-0" A.C.H.M. SURFACE COURSE (1"")

FUTRALL DRIVE 12'-0"

SUPERELEVATION SECTION RAMP & RAMP 2

STA. 63+00.64 TO STA. 63+02.32

STA. 63+46.67 TO STA. 63+48.20

SUPERELEVATION SECTION FUTRALL DRIVE

STA. 63+48.20 TO STA. 63+49.20

29'-0" A.C.H.M. SURFACE COURSE (1"")

250 LBS. PER SQ. YD. & TACK COAT

220 LBS. PER SQ. YD. & TACK COAT

FUTRALL DRIVE 12'-0"

SUPERELEVATION SECTION

CURB & GUTTER 3'-0"

30'-0"

TRAVEL LANE 24'-0" A.C.H.M. SURFACE COURSE (1"")

15'-6" A.C.H.M. BINDER COURSE (1"")

16'-0" A.C.H.M. BASE COURSE (1"")

880 LBS. PER SQ. YD. & TACK COAT

495 LBS. PER SQ. YD. & TACK COAT

220 LBS. PER SQ. YD. & TACK COAT

8'-0"

1'-6"

3'-0" GREEN SPACE

CONCRETE COMBINATION CURB & GUTTER TYPE A (1'-6")

TRAIL SECTION FUTRALL DRIVE

STA. 63+49.20 TO STA. 63+50.52

0.02'/'

SIA. 175+63.47 TO STA. 175+66.47

RAMP 2

S.E. SLOPE

3'-0" GREEN SPACE
TANGENT SECTION

TANGENT SECTION

SUPERELEVATION SECTION

SUPERELEVATION SECTION

NOTES:

NOTES:

TYPICAL SECTIONS OF IMPROVEMENT

TYPICAL SECTIONS OF IMPROVEMENT

ARKANSAS

ARKANSAS

REGISTERED PROFESSIONAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER

433-780-5900

433-780-5900
NOTES:

REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL. LEVELS OF CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. ASPHALT FOR LEVELING OPERATING SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING.

THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT ALLOWS THE UNDISTURBED PAVEMENT TO BE SEPARATED BY SAWING THE REMAINING PAVEMENT SHALL BE SEPARATED WITHOUT THE APPROVAL OF THE ENGINEER.

LEVELING OPERATIONS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. WORK SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE AT LANE LINES.

ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER. REFER TO CROSS SECTIONS FOR DEVIATION FROM THE TRANSITION:

TYPICAL SECTIONS OF IMPROVEMENT
TANGENT SECTION - NOTCH & WIDEN

SHILOH DRIVE
STA. 648+00 TO STA. 652+20

TYPICAL SECTIONS OF IMPROVEMENT

- Aggregate Base Course (Class 7)
- Aggregate Base Course (Class 9)
- Aggregate Surface Course (Class 7)
- Aggregate Surface Course (Class 9)
- Aggregate Tack Coat

NOTES:

1. Refer to cross sections for deviation from the normal slopes, no changes shall be made from the planned slopes without the approval of the engineer.
2. Aggregate for leveling or existing pavement shall be placed only if and where approved by the Engineer, therefore, no leveling operations shall be performed before constructing new and existing pavement.
3. The thickness of aggregate base course shall be within plus or minus one inch of the planned slopes. No changes shall be made from the planned slopes without the approval of the engineer.
4. The face of the surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
5. The existing asphalt pavement to be removed from the remaining pavement shall be separated by cutting along a neat line, after cutting, the pavement to be removed shall be carefully picked up in a manner that will not damage the pavement that is to remain in place remaining at the Contractor's expense.
6. The Contractor shall provide pavement, positive drainage at all times, and the Contractor shall be approved by the Engineer.
7. The Contractor shall be considered included in the price bid for the various contract items.
8. Prior to and during placement of pavement, the Contractor shall provide positive drainage at all times. The Contractor shall be approved by the Engineer.
9. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
10. The Contractor will correct any deficient grades, and cross sections shown on the plans.
11. It is intended that the subgrade shall be finished in conformity with the lines, grades, and cross sections shown on the plans.
12. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
13. Longitudinal joints shall be at lane lines.
14. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
15. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
16. The Contractor shall provide pavement, positive drainage at all times, and the Contractor shall be approved by the Engineer.
17. The Contractor will correct any deficient grades, and cross sections shown on the plans.
18. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
19. Longitudinal joints shall be at lane lines.
20. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
21. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
22. Longitudinal joints shall be at lane lines.
23. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
24. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
25. Longitudinal joints shall be at lane lines.
26. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
27. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
28. Longitudinal joints shall be at lane lines.
29. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
30. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
31. Longitudinal joints shall be at lane lines.
32. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
33. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
34. Longitudinal joints shall be at lane lines.
35. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
36. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
37. Longitudinal joints shall be at lane lines.
38. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
39. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
40. Longitudinal joints shall be at lane lines.
41. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
42. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
43. Longitudinal joints shall be at lane lines.
44. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
45. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
46. Longitudinal joints shall be at lane lines.
47. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
48. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
49. Longitudinal joints shall be at lane lines.
50. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
51. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
52. Longitudinal joints shall be at lane lines.
53. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
54. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
55. Longitudinal joints shall be at lane lines.
56. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
57. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
58. Longitudinal joints shall be at lane lines.
59. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
60. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
61. Longitudinal joints shall be at lane lines.
62. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
63. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
64. Longitudinal joints shall be at lane lines.
65. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
66. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
67. Longitudinal joints shall be at lane lines.
68. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
69. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
70. Longitudinal joints shall be at lane lines.
71. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
72. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
73. Longitudinal joints shall be at lane lines.
74. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
75. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
76. Longitudinal joints shall be at lane lines.
77. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
78. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
79. Longitudinal joints shall be at lane lines.
80. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
81. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
82. Longitudinal joints shall be at lane lines.
83. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
84. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
85. Longitudinal joints shall be at lane lines.
86. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
87. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
88. Longitudinal joints shall be at lane lines.
89. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
90. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
91. Longitudinal joints shall be at lane lines.
92. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
93. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
94. Longitudinal joints shall be at lane lines.
95. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
96. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
97. Longitudinal joints shall be at lane lines.
98. The final 2" of surface course is to be placed after all other courses have been laid. Shoulder joints shall be cut at line and grade.
99. Variations in the subgrade that will not damage the pavement shall be made from the planned slopes without the approval of the Engineer.
100. Longitudinal joints shall be at lane lines.
TYPICAL SECTIONS OF IMPROVEMENT

MARVIN AVENUE

- TANGENT SECTION
- SUPERELEVATION SECTION

SHILOH DRIVE

- TANGENT SECTION
- SUPERELEVATION SECTION

NOTES:
- Refer to cross sections for deviations from the normal slopes, no changes shall be made from the normal slopes without the approval of the engineer.
- The thickness of aggregate base course shall be within plus or minus the sum of the plan thickness and the tolerance indicated. Any thickness that does not meet the tolerance indicated shall not be paid for or be used for material priced in excess of the tolerance indicated.
- The final 2" of surface course is to be placed along a neat line. All extra courses may be paid for.
- All concrete joints shall be at lane lines.
- It is intended that the subgrade shall be finished in conformity with the lines, grades, and cross sections shown on the plans.
- The existing asphalt pavement to be removed from the remaining pavement shall be separated by sawing along a neat line. After sawing the pavement to be removed shall be carefully removed in a manner that will not damage the pavement that is to remain. The widening of the existing pavement that is to remain shall be at lane lines. The contractor's expense. Prior to and during placement of pavement, the contractor shall provide proper drainage at the joints and the methods used shall be approved in the field. The method used shall be approved in the field for the various contract items.

- From Shiloh to Shiloh there will be a paving transition from asphalt to asphalt. A transition strip will be placed between the two materials. All special details for paving transition.
EXISTING OUTLET PROTECTORS TO BE RETAINED.
EXISTING LATERAL PIPE UNDERDRAIN TO BE RETAINED AND EXTENDED.

4" PIPE LATERAL

FLEXIBLE PIPE

PLAN VIEW

SIDE VIEW
UNDERDRAIN OUTLET PROTECTORS

SPECIAL DETAILS

FLANGED ENDS. STEEL PIPE TO BE 0.02' /' 3:1
STEEL PIPE TO BE 0.04' /' 6:1

NOTE:
4" PIPE UNDERDRAIN FOR SCHEDULE 40 PIPE.
THE REQUIREMENTS OF ASTM D 1785 PVC PIPE FOR LATERALS SHALL MEET
I-49 EDGE OF LANE (TYPICAL)
GLUED CONNECTION (TYPICAL)
EQUAL WITH 2 CLAMPS CI/PLASTIC COUPLING OR FERNCO 1056-44 4"

4" PIPE LATERAL (NON-PERFORATED)
ELBOW OR EQUAL LONG SWEEP 90° PVC SCHEDULE 40

FREQUENT 250' INTERVALS ON GRADES.

NOTES:
EXISTING 4" PIPE UNDERDRAIN OR LATERAL TO REMAIN IN PLACE THAT IS DAMAGED BY THE
ANY PIPE UNDERDRAIN OR LATERAL TO REMAIN IN PLACE THAT IS DAMAGED BY THE
CONTRACTOR SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S
EXCESS EXPENSE.

Note: Provide outlet shape and slope to flow line in approximate center of screen.

Special Details:

- Underdrains to be retained and extended.
- Existing lateral pipe to be removed.
- Existing outlet protector to be retained.
- Full depth notch.
- Travel lane shoulder.
- Lane edge.
- 4" pipe underdrain.
- 4" pipe lateral.
- Elbow or equal.
- Long sweep 90°.
- PVC Schedule 40.

Specifications:
- Accordion with Section 611 of the Standard Specifications.
- Underdrains. Underdrain outlet protectors will be measured and paid for by the unit.
- Underdrain outlet protectors will be measured and paid for on or as on std. dwg. pu-1.
- Lateral pipes with outlet protectors shall be installed as shown here or as shown on existing pipe.
- Lateral pipes with outlet protectors shall be installed as 4" non-perforated schedule 40 PVC pipe.
- The location of all laterals shall be marked with 4" X 12" permanent pavement markings (type III white) at the outside edge of the shoulder placed transverse to traffic. Payment for this work shall be included in the price bid for the various contract items.
- Existing outlet protectors should be removed and reconstructed. Payment shall be considered included in the price bid for 4" pipe underdrains.

Arkansas - Professional Engineer

No. 13832

7/28/2020

1:55:39 PM

7/29-2020
CONCRETE WALK (TYPE SPECIAL) DETAILS
MAX HEIGHT 3'-0"

Notes:
1. Prefabricated joint aggregates are the type 1 and 2 and 6" poured type 3, 6" to 6" per subsection 501.02(H)(2).
2. Poured joint sealer (type 3, 2"
1. Prefabricated joint filler, poured joint sealer, reinforced steel, and concrete shall be paid for the weep holes, class 3 aggregate, type 2 geotextile fabric, reinforced joint filler, poured joint sealer, reinforced, and concrete shall be included in the unit CIP price per section for concrete walk type special.

CONCRETE WALK (TYPE SPECIAL) DETAILS
MAX HEIGHT 2'-0"

Notes:
1. Prefabricated joint aggregates are the type 1 and 2 and 6" poured type 3, 6" to 6" per subsection 501.02(H)(2).
2. Poured joint sealer (type 3, 2"
1. Prefabricated joint filler, poured joint sealer, reinforced steel, and concrete shall be paid for the weep holes, class 3 aggregate, type 2 geotextile fabric, reinforced joint filler, poured joint sealer, reinforced, and concrete shall be included in the unit CIP price per section for concrete walk type special.
PLAN VIEW
SPECIAL AREA INLET

GENERAL NOTES:
1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INFILLS 4'-0" HIGH AND OVER AS DIRECTED BY THE ENGINEER.
3. ALL HORIZONTAL BARS SHALL BE SPACE 60 AND . . . INCHES APART.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. 4" X 4" COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INFILL AND EXTENSION TO SUPPORT TOP.
6. BASE AND INFILL SHALL BE CAST MONOLITHICALLY.
7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
8. PIPES FOR CURB AND CURB AND GUTTER SHALL BE CAST INTEGRALLY WITH THE GUTTER.
9. PIPE MAYENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
10. APPROPRIATE VARIOUS SECTIONS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER.
11. DURING CONSTRUCTION OF THE ROADWAY THE CONSTRUCTION SHALL MAINTAIN DRAINAGE INTO THE INFILL AND EXTENSION AS APPROVED BY THE ENGINEER.
12. STEPS SHALL BE INSTALLED IN ALL INFILLS 4'-0" HIGH AND OVER AS DIRECTED BY THE ENGINEER.
13. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.

HEAVY DUTY RING & COVER
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF DURABLY ROK AND SHALL COMPLY WITH THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR DURABLY ROK AND CASTINGS AS TO SIZE AND TYPE.
2. HEAVY DUTY RING AND COVER SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
3. HEAVY DUTY RING AND COVER SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.

NOTE: TURNOUTS AND PRIVATE DRIVEWAYS MAY BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

DRAINAGE CHANNEL
*30'-0" FROM STA, M465,00 TO STA, M89,45
COUNTY ROADS & STATE HIGHWAYS
CURB & GUTTER SECTION

SPECIAL DETAILS

DIAMOND THREAD

PLAN VIEW
SPECIAL AREA INLET

SECTION A-A
DETAIL OF DROP INLET

COVER FACE

COVER SECTION

SIDE OPENING DETAIL

DRAINAGE CHANNEL
*30'-0" FROM STA, M465,00 TO STA, M89,45
COUNTY ROADS & STATE HIGHWAYS
CURB & GUTTER SECTION

SPECIAL DETAILS
WIDENING FOR GUARDRAIL

GUARDRAIL TYPE A
(VAR. TONS PER STA.)
(VAR. COMPACTED DEPTH)
BASE COURSE (CLASS 7)
ADDITIONAL AGGREGATE
LBS. PER SQ.YD.
SURFACE COURSE (~") 220
5'-6" ADDITIONAL A.C.H.M.

REQUIREMENTS BEHIND GUARDRAIL.
CROSS SECTIONS FOR SLOPE
NOTE: REFER TO STD. DWG. GR-9A AND EXIST. SHLDR.

PROPOSED OVERLAY
RETAIN AND OVERLAY EXISTING ASPHALT PAVEMENT

SECTION B-B
PLAN VIEW

DETAILS OF RUMBLE STRIPS
CONCRETE MEDIAN BARRIER
SHOULDER

LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER

NOTES:
1. ALIGNMENT OF RUMBLE STRIPS SHALL GENERALLY BE STRAIGHT AND
   VERTICAL. THE GEOMETRY OF THE RUMBLE STRIP ALIGNMENT SHOULD
   BE SUCH THAT THE CENTER OF THE RUMBLE STRIP IS ON THE OUTER
   CURBE OF THE EDGE LINE, EDGE LINE AS WELL AS TO AVOID EXISTING
   LONGITUDINAL JOINTS.
2. THE ~" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE ~" LENGTH.
   SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.
3. RUMBLE STRIPS SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH
   SLABS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.
4. RUMBLE STRIPS SHOULD BE INSTALLED ON THE OUTSIDE EDGE OF THE
   EDGE LINE. (TYPICAL)

DETAILS FOR PAVING TRANSITIONS
" MAX.
2 1"
7"
2ished as well as to avoid existing longitudinal joints.

WIDENING FOR GUARDRAIL

NOTE: REFER TO STANDARD RAIL AND GUARDRAIL REQUIREMENTS HIND EARRAIL.
TO CURB & GUTTER SECTION

TRANSITION FROM OPEN SHOULDER TO CURB & GUTTER SECTION

METHOD OF RAISING GRADE

NOTES:
1. THIS DETAIL IS TO BE USED ONLY IF AND WHERE DIRECTED BY THE ENGINEER.
2. QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WHERE CALCULATED ON THE PLANS AND SPECIFICATIONS. WHERE THE SUBGRADE EXCEEDS THE ASPHALT ROADWAY AND THE PROPOSED SUBGRADE IS ONE FOOT OR LESS.

DETAIL OF SEPARATED TRAIL

DETAIL OF REINFORCING STEEL FOR PAVEMENT (MESH FABRIC TYPE 3)

NOTES:
1. LAY MESH FABRIC TYPE 3 LONGITUDINALLY AND TRANSVERSELY.
2. MESH FABRIC IS NOT REQUIRED WHEN WIDTH OF PORTLAND CEMENT CONCRETE BASE IS LESS THAN 4' X 6'.
3. MESH FABRIC (TYPE 3) WILL NOT BE PAID FOR DIRECTLY, BUT FULL COMPENSATION THEREFOR WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE PER SQ. YD. FOR PORTLAND CEMENT CONCRETE BASE OF 8".
NOTE: ALL RADII DIMENSIONED TO THE EDGE OF PAVEMENT

INTERSECTION AND MEDIAN ISLAND DETAILS

BEGIN BRIDGE
STA. 132+35.02

END BRIDGE
STA. 134+80.34

CONSTRUCTION LIMITS

TYPE C CURB

NOTE: ALL RADII DIMENSIONED TO THE EDGE OF PAVEMENT
NOTE: ALL RADII DIMENSIONED TO THE EDGE OF PAVEMENT

INTERSECTION AND MEDIAN ISLAND DETAILS

LOG MILE 1.30

SPECIAL DETAILS

NOTE: ALL RADII DIMENSIONED TO THE EDGE OF PAVEMENT
NOTES FOR SIDE BARRIER:
1. All exposed edges shall have 1/4" chamfers.
2. Construction joints shall be constructed at 10'-0" maximum spacing in top and sides of barrier and shall be formed in fresh concrete.
3. Construction joints are not permitted at the dowel bar locations.
4. All reinforcing bars shall have 2" minimum covers.
5. Dowel bars will not be required if barrier and base are cast as a complete unit.
6. Sawcuts openings to be constructed adjacent to drop inlets. Dowel bars shall not be placed within 2" of sawcut openings.

CONTRACTION JOINT DETAIL

NOTE FOR MEDIAN BARRIER:
1. All exposed edges shall have 1/4" chamfers.
2. Construction joints shall be constructed at 10'-0" maximum spacing in top and sides of barrier and shall be formed in fresh concrete.
3. Construction joints are not permitted at the dowel bar locations.
4. All reinforcing bars shall have 2" minimum covers.
5. Dowel bars will not be required if barrier and base are cast as a complete unit.
6. Sawcuts openings to be constructed adjacent to drop inlets. Dowel bars shall not be placed within 2" of sawcut openings.

PLANT VIEW
CONCRETE BARRIER WALL (MEDIAN TYPE B) TRANSITION

CONCRETE BARRIER WALL ADJACENT TO ASPHALT PAVEMENT (SIDE TYPE A)

CONCRETE BARRIER WALL (MEDIAN TYPE SP-2)
X = 0'-0" TO 1'-0" MAX
SECTION A-A

CONCRETE BARRIER WALL (MEDIAN TYPE SP-2)
X = 0'-0" TO 1'-0" MAX
FOR BRIDGE
CONTRACTION JOINT DETAIL

NOTES FOR MEDIAN BARRIERS:
1. All exterior edges shall have 3/4" chamfers.
2. Construction joints shall be constructed at 10'-0" maximum spacing in top and sides of median barriers and shall be provided with a 3" minimum lap.
3. Construction joints are not permitted at the dowel bar locations.
4. All reinforcing bars shall have 2" minimum cover.
5. Dowel bars shall not be required if barrier and base are cast as a complete unit.
6. Drainage openings to be constructed adjacent to stop inlets, dowel bars shall not be placed within 6" of drainage openings.

PLAN VIEW

CONCRETE BARRIER WALL (MEDIAN TYPE B AND MEDIAN TYPE C) TRANSITION

CONCRETE BARRIER WALL (MEDIAN TYPE SP-1)

CONCRETE BARRIER WALL (MEDIAN TYPE B) AND (MEDIAN TYPE C) TRANSITION

FOR OVERHEAD SIGN STRUCTURE
JACK AND BORE HEADWALL DETAILS

**SPECIAL DETAILS**

**Job No.:**

**FED. AID Proj. No.:**

**State Sheet No.:**

**Date:**

**Revision Date:**

**FILMED Date:**

**Ark. No.:**

**SHEETS TOTAL:**

**Mill test reports.**

All reinforcing steel shall be Grade 60 (fy = 60,000 psi) with 3/8" min. lap, typ. 1'-5" min. lap, typ. and 5'-6" min. lap, typ. All Concrete shall be Class S with a minimum 28 Day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry, and all exposed corners to be chamfered 1/4" unless otherwise noted.

**NOTES:**

- All reinforcing to be Grade 60 with a minimum 28 Day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry, and all exposed corners to be chamfered 1/4" unless otherwise noted.

- All Concrete shall be Class S with a minimum 28 Day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry, and all exposed corners to be chamfered 1/4" unless otherwise noted.

- Existing Reinforcing Steel to be cleaned and retained at downstream end only.

- Membrane waterproofing - 6" min. to cover Construction Joint on back face of Wings.

- Existing reinforcing Steel to be cleaned and retained at downstream end only.

- Optional Construction Joint.

- Space as Shown, Each Face.

- Top and Bottom of Slab.

- Space as Shown, Cut as Necessary.

- Membrane waterproofing - 6" min. to cover Construction Joint on back face of Wings.

- Existing reinforcing Steel to be cleaned and retained at downstream end only.

- Optional Construction Joint.

**PLAN**

**ELEVATION**

Slab & Toewall Reinforcing Not Shown for Clarity.

**SECTIONS THRU CONSTRUCTION JOINTS**

Scale: " = 1'-0"

**NOTES:**

- **Slab & Toewall Reinforcing Not Shown for Clarity.**
- **Membrane waterproofing - 6" min. to cover Construction Joint on back face of Wings.**
- **Existing reinforcing Steel to be cleaned and retained at downstream end only.**
- **Optional Construction Joint.**
### JACK AND BORE HEADWALL DETAILS

**SPECIAL DETAILS**

**LONG WING ELEVATION**

*Scale: \( \frac{1}{8}" = 1'-0"\)

**SHORT WING ELEVATION**

*Scale: \( \frac{1}{8}" = 1'-0"\)

**SECTION A-A**

*Scale: \( \frac{1}{8}" = 1'-0"\)

*Existing Reinforcing Steel To be Cleaned and Retained at downstream end only.*

**SHORT WING ELEVATION**

*Scale: \( \frac{1}{8}" = 1'-0"\)

**BAR BENDING DIAGRAMS**

*Dimensions are out to out of bars.*

**SCHEDULE OF QUANTITIES**

*Quantities shown are for one end only. Box culvert quantities not included.*

**JACK AND BORE HEADWALL DETAILS**

**SHEET 2 OF 2**
### Inlet Wingwall Table

<table>
<thead>
<tr>
<th>Slab</th>
<th>Length</th>
<th>No. Reqd</th>
<th>Size</th>
<th>Length</th>
<th>No. Reqd</th>
<th>Size</th>
<th>Length</th>
<th>No. Reqd</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Inlet Skewed End Section

#### Details of Reinforcing Steel

#### Mid-Section

### Special Details

- **DATE:** 05/21/2020
- **CHECKED BY:**
- **TABULAR DATA BY:**
- **SPECIAL DETAILS:**

---

For additional information and outlet sections, see Sheet 2 of 2.
**OUTLET WALL TABLE**

<table>
<thead>
<tr>
<th>WALL MATERIAL</th>
<th>WALL HEIGHT</th>
<th>SPACING</th>
<th>WALL THICKNESS</th>
<th>HORIZONTAL DEFLECTION</th>
<th>WALL HEAVE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OUTLET WINGWALL TABLE**

<table>
<thead>
<tr>
<th>WALL MATERIAL</th>
<th>WALL HEIGHT</th>
<th>SPACING</th>
<th>WALL THICKNESS</th>
<th>HORIZONTAL DEFLECTION</th>
<th>WALL HEAVE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OUTLET SLOPE SECTIONS**

<table>
<thead>
<tr>
<th>WALL MATERIAL</th>
<th>WALL HEIGHT</th>
<th>SPACING</th>
<th>WALL THICKNESS</th>
<th>HORIZONTAL DEFLECTION</th>
<th>WALL HEAVE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SPECIAL DETAILS**

*Unless otherwise noted, all dimensions are in inches.*

**OUTLET SKEWED END SECTION**

<table>
<thead>
<tr>
<th>WALL MATERIAL</th>
<th>WALL HEIGHT</th>
<th>SPACING</th>
<th>WALL THICKNESS</th>
<th>HORIZONTAL DEFLECTION</th>
<th>WALL HEAVE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OUTLET SKEWED END SECTION**

<table>
<thead>
<tr>
<th>WALL MATERIAL</th>
<th>WALL HEIGHT</th>
<th>SPACING</th>
<th>WALL THICKNESS</th>
<th>HORIZONTAL DEFLECTION</th>
<th>WALL HEAVE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SPECIAL DETAILS**

*Unless otherwise noted, all dimensions are in inches.*

**SPECIAL DETAILS**

*Unless otherwise noted, all dimensions are in inches.*

**DOUBLE BARREL BOX CULVERT**

**STA. 12+50.00**

The required number of bars and lengths shown are for estimating purposes only. The actual number and length required shall be determined in the field.

Unless otherwise noted, all dimensions are in inches.
This drawing is to be used in conjunction with:
Sheet 1 of 4, "General Notes & Longitudinal Section Length Schedule.
Sheet 2 of 4, "Design Details of R.C. Box Culvert, Sections of Multi-Barrel R.C. Box Culvert",
Sheet 3 of 4, "General Notes & Longitudinal Section Length Schedule.
Sheet 4 of 4, "General Notes & Longitudinal Section Length Schedule.

For additional information and outlet sections, see Sheet 2 of 4.

Note for Top Required for the skewed end section shall be considered subsidiary to the item "Nonexisting Sheet Handout Grade 60."

Double Barred Box Culvert
STA. 169+00

SPECIAL DETAILS
Unless otherwise noted, all dimensions are in inches.

The required number of bars and lengths shown are for estimating purposes only. The actual number and length required shall be determined in the field.

Unlike otherwise noted, all dimensions are in inches.
### Inlet Winwall Table

<table>
<thead>
<tr>
<th>H</th>
<th>B</th>
<th>W</th>
<th>H</th>
<th>B</th>
<th>W</th>
<th>H</th>
<th>B</th>
<th>W</th>
<th>H</th>
<th>B</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
</tr>
<tr>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
</tr>
<tr>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
</tr>
</tbody>
</table>

### Inlet Skewed End Section

<table>
<thead>
<tr>
<th>H</th>
<th>B</th>
<th>W</th>
<th>H</th>
<th>B</th>
<th>W</th>
<th>H</th>
<th>B</th>
<th>W</th>
<th>H</th>
<th>B</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
</tr>
<tr>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
</tr>
<tr>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
</tr>
</tbody>
</table>

### Inlet Slope Sections

<table>
<thead>
<tr>
<th>H</th>
<th>B</th>
<th>W</th>
<th>H</th>
<th>B</th>
<th>W</th>
<th>H</th>
<th>B</th>
<th>W</th>
<th>H</th>
<th>B</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
</tr>
<tr>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
</tr>
<tr>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
<td>29.4</td>
<td>14.7</td>
<td>1</td>
</tr>
</tbody>
</table>

### Mid-Section

**BAR LAP TABLE**

<table>
<thead>
<tr>
<th># of Long</th>
<th>LHS</th>
<th>Section Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4.00</td>
<td>8.00</td>
</tr>
<tr>
<td>2</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>3</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>4</td>
<td>2.00</td>
<td>4.00</td>
</tr>
<tr>
<td>5</td>
<td>2.00</td>
<td>4.00</td>
</tr>
</tbody>
</table>

**PLEASE DRAWING TO BE USED IN CONJUNCTION WITH SHEET 4 OF "GENERAL DETAILS OF RC BOX CULVERT", "DETAILS OF MULTI-BARREL RC BOX CULVERT", SHEET 3 OF "GENERAL DETAILS OF RC BOX CULVERT", "DETAILS OF WINGWALLS", SHEET 2 OF "GENERAL DETAILS OF RC BOX CULVERT", "SPECIAL DETAILS" AND STANDARD DRAWING RCB-2.**

For additional information and outlet sections, see Sheet 2 of 2.
### Outlet Wing Wall Table

<table>
<thead>
<tr>
<th>Date</th>
<th>Amendment No.</th>
<th>Outlet</th>
<th>Sheet No.</th>
<th>Page No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

### Outlet Skewed End Section

<table>
<thead>
<tr>
<th>STA</th>
<th>Length</th>
<th>1/2&quot; diam.</th>
<th>3/4&quot; diam.</th>
<th>1&quot; diam.</th>
</tr>
</thead>
<tbody>
<tr>
<td>175</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Outlet Slope Section

<table>
<thead>
<tr>
<th>STA</th>
<th>Length</th>
<th>1/2&quot; diam.</th>
<th>3/4&quot; diam.</th>
<th>1&quot; diam.</th>
</tr>
</thead>
<tbody>
<tr>
<td>175</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### Special Details

- Reinforcing Steel - Roadway Grade 60
- Unless otherwise noted, all dimensions are in inches.

The required number of bars and lengths shown are for estimating purposes only. The actual number and length required shall be determined in the field.
GENERAL DETAILS OF R.C. BOX CULVERT

SPECIAL DETAILS

LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 4'

TOP OF SECTION

SPECIAL DETAILS

WRAPPED FABRIC ALTERNATE

VERTICAL FABRIC ALTERNATE

WINNWALL & CULVERT DRAINAGE DETAIL

CULVERT DRAINAGE DETAIL FOR ROCK FILL

SURFACE OF CULVERT TOBE

SPECIAL DETAILS

SKewed Transverse Joint Detail

For Details of Excavation and Top Limits, see Standard Drawing RCB-1

Membrane Waterproofing shall conform to the requirements of Section 611. Membrane Waterproofing shall be Type 1 and as directed by the Engineer. Applied to construction details in the top slab and the sidewalks of R.C. Box culverts onto the construction joint between wingwalls and R.C. Box culvert walls.

A TUNNEL SECTION

The barrel.

For Details of Excavation and Top Limits, see Standard Drawing RCB-1

Membrane Waterproofing shall conform to the requirements of Section 611. Membrane Waterproofing shall be Type 1 and as directed by the Engineer. Applied to construction details in the top slab and the sidewalks of R.C. Box culverts onto the construction joint between wingwalls and R.C. Box culvert walls.

A TUNNEL SECTION

The barrel.

For Details of Excavation and Top Limits, see Standard Drawing RCB-1

Membrane Waterproofing shall conform to the requirements of Section 611. Membrane Waterproofing shall be Type 1 and as directed by the Engineer. Applied to construction details in the top slab and the sidewalks of R.C. Box culverts onto the construction joint between wingwalls and R.C. Box culvert walls.

A TUNNEL SECTION

The barrel.
A typical section S-N

Top bars
- Bent "b" bars or Bent "a" bars.

Straight "f" bars shall alternate with Bent "b1" bars in bottom.

Straight "d" bars shall alternate with Bent "b1" bars in top.

Straight "c" bars shall alternate with Bent "b" bars in top.


For bent "b" bars and bent "a" bars sketched.

At the Contractor's option in lieu of providing bent "b" or bent "a" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing wire shall be based on the weight of the "f" or "a" bar.

Note: When top and bottom of culvert are of full height, roadway surface, see General Notes on Sheet 5 of 4.

GENERAL DETAILS OF R.C. BOX CULVERT

SYMBOLS
- A, B, or C
- Skewed End Section Details
- Special Details
- Part Longitudinal Section
- Part Longitudinal Section S-N
- Typical Section S-N
- Typical Keyway Detail
- Typical Joint Detail
- Typical Lap Detail at Change in Sections
- Typical Lap Detail

REVISED
- 07/29/2020
- No. 12711
- B.
- R. REGISTERED PROFESSIONAL ENGINEER
- ARKANSAS
- E. ENGINEER
- 07/29/2020
- SHEETS 3 OF 4
- SHEET 3 OF 4
- SPECIAL DETAILS
- DETAILS OF MULTI-BARREL R.C. BOX CULVERT
- GENERAL DETAILS OF R.C. BOX CULVERT

Note: When top and bottom of culvert are of full height, roadway surface, see General Notes on Sheet 5 of 4.
PART PLAN - FLARED WINGWALLS

PART PLAN - PARALLEL WINGWALLS

END ELEVATION

TYPICAL KEYWAY DETAIL

SPECIAL DETAILS

GENERAL DETAILS OF R.C. BOX CULVERT

CONSTRUCTION JOINTS

WEIGHTED DETAIL OF WINGWALLS

SPECIAL DETAILS

END ELEVATION

TYPICAL KEYWAY DETAIL

SPECIAL DETAILS

GENERAL DETAILS OF R.C. BOX CULVERT

CONSTRUCTION JOINTS

WEIGHTED DETAIL OF WINGWALLS

SPECIAL DETAILS
RAMP 2 - STAGE IA
TEMPORARY EROSION CONTROL DETAILS

STA. 214+22.70
END CONST. I-49
LOG MILE 64.54

END CONSTRUCTION
RAMP 1 (PORTER RD.) STA. 212+18.01, 7.50' LT.
RAMP 1 (PORTER RD.) STA. 212+12.70, 65.36' RT. = NOSE

EXIST. R/W

TEMPORARY EROSION CONTROL DETAILS

E-1 = SILT FENCE
E-5 = ROCK DITCH CHECKS
E-6 = SAND BAG DITCH CHECKS
E-13 = FILTER SOCK

LEGEND

REVISIONS

DATE OF
REVISION

REVISION

07-29-2020

07-29-2020
TEMPORARY EROSION CONTROL DETAILS

RAMP 2 - STAGE 1B

LEGEND

- SAND BAG DITCH CHECKS
- ROCK DITCH CHECKS
- SILT FENCE
- FILTER SOCK

NO. 13832

CONS. LIMITS

NOTE

E-11 = SILT FENCE
E-5 = SAND BAG DITCH CHECKS
E-6 = ROCK DITCH CHECKS
E-13 = FILTER SOCK

EXIST. R/W

LOG MILE 64.47

END CONS, I-49

STA. 210+63.35

RAMP 1 (PORTER RD.) STA. 212+18.01, 7.50' LT.

ARKANSAS RAMP 1 (PORTER RD.) STA. 212+12.70, 65.36' RT. = NOSE

END CONS, I-49

STA. 210+53.35

LOG MILE 64.47

RAMP 2 - STAGE 1B

TEMPORARY EROSION CONTROL DETAILS
LOG MILE 63.39

END CONST. SHILOH DR.

STA. 156+09.89
BEGIN CONST. Futrall DR.

LEGEND

- SAND BAG DITCH CHECKS
- ROCK DITCH CHECKS
- Silt Fence
- FILTER SOCK

REVISIONS

DATE OF REVISION

ARPKAS
REGISTERED PROFESSIONAL ENGINEER

TOTAL 533' 398.36'
LEGEND

- SAND BAG DITCH CHECKS
- ROCK DITCH CHECKS
- SALT FENCE
- FILTER SOCK

REVISIONS

<table>
<thead>
<tr>
<th>DATE OF REVISION</th>
<th>REVISION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Temporary Erosion Control Details

1-49 - Stage 2

Temporary Erosion Control Details

- E-11 = SILT FENCE
- E-5 = ROCK DITCH CHECKS
- E-6 = FILTER SOCK

EXTENDED TEMPORARY EROSION CONTROL DETAILS

- LOG MILE 64.54
- END CONST. I-49 STA. 214+22.70 EXIST. R/W

EXIST. RAMP 1 (PORTER RD.) STA. 212+12.70, 65.36' RT. = NOSE 12' 12' 12'

EXIST. RAMP 1 (PORTER RD.) STA. 212+18.01, 7.50' LT.

REVISIONS

<table>
<thead>
<tr>
<th>DATE OF REVISION</th>
<th>REVISION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
BEGIN JOB 040847
STA. 111+44.50

LOG MILE 12.96

NOTE: CONTRACTOR SHALL MAINTAIN ACCESS TO EXISTING AND INTERSECTING STREETS AT ALL TIMES UNLESS APPROVED BY THE ENGINEER

TEMPORARY EROSION CONTROL DETAILS

MILE

DATE OF

REVISION

REVISION

REVISIONS

LEGEND

- SAND BAG DITCH CHECKS
- ROCK DITCH CHECKS
- SALT FENCE
- FILTER Sock

DATE OF

REVISION

REVISION

REVISIONS
LEGEND

- SAND BAG DITCH CHECKS
- ROCK DITCH CHECKS
- 54°1 FENCE
- FILTER SOCK

NOTE: CONTRACTOR SHALL MAINTAIN ACCESS TO DEPTH GAUGES AND ELECTRONIC DEVICES AT ALL TIMES UNLESS APPROVED BY VM.

REVISIONS

DATE OF REVISION

REVISION

07-29-2020
**Maintenance of Traffic Details**

- **Diversion for Lt. Lane Work Zone**
  - Traffic drums @ 60' O.C.
  - Traffic drums @ 100' O.C.
  - Traffic drums @ 1500' O.C.
  - Traffic drums @ 2000' O.C.

- **Diversion for Rt. Lane Work Zone**
  - Traffic drums @ 60' O.C.
  - Traffic drums @ 100' O.C.

- **Rt. Lane Closure**
  - Traffic drums @ 60' O.C.
  - Traffic drums @ 100' O.C.

- **Road Ahead Work**
  - Do not pass
  - Speed limit: 60 mph

- **Advance Warning Arrow Panel at Beg. of Taper**
  - Traffic drums @ 60' O.C.

- **Information Sign**
  - Construction Project

- **Note:**
  - Maintain minimum lane width on remaining open lane.

- **Portion of Changeable Message Sign**
  - To be used if and where directed by the engineer.

- **Professional Registered Engineer**

- **Date:**
  - 07-29-2020
MAINTENANCE OF TRAFFIC DETAILS

TYPICAL SECTIONS OF IMPROVEMENT
STAGE IA - CONSTRUCTION SEQUENCE

PLACE ADVANCE WARNING SIGNS (TO BE MAINTAINED IN ALL STAGES) AND TEMPORARY TRAFFIC CONTROL DEVICES.

CONSTRUCT TEMPORARY WIDENING AND CONNECTION USING TEMPORARY PAVEMENT STRUCTURE BETWEEN EXISTING FUTURE DR. AND EXISTING RAMP L, LEFT SIDE OF EXISTING FUTURE DR. RIGHT SIDE OF EXISTING RAMP L, LEFT SIDE OF EXISTING RAMP S.

STAGE IA - QUANTITIES

TRAFFIC DRUMS = 26 EACH
PRECAST CONCRETE BARRIER = 7500 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 2 EA.

CONSTRUCTION PAVEMENT MARKINGS = 3998 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 1024 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 2640'

ADVANCE WARNING SIGNS
I-49 STA.178+00

SMART DETAIL

BARRIER PLACEMENT WITH ATTENUATOR I-49 MAIN LANES

TEMPORARY IMPACT ATTENUATION BARRIER
NO. 13832

RAMP 1 (PORTER RD.) STA. 212+18.01, 7.50' LT. =
RAMP 1 (PORTER RD.) STA. 212+12.70, 65.36' RT.

END CONST. I-49
LOG MILE 64.47

MAINTENANCE OF TRAFFIC DETAILS
RAMP 2 - STAGE IA

MAINTENANCE OF TRAFFIC DETAILS
STAGE IB - CONSTRUCTION SEQUENCE

SET TEMPORARY PRECAST CONCRETE BARRIER AND RELOCATE TEMPORARY TRAFFIC CONTROL DEVICES.

CONSTRUCT RIGHT SIDE OF FUTRALL DR. FULL BUILD OUT OF RAMP 2 AND RIGHT SIDE OF RAMP 2 WITH ACCEL/DECEL LANE TO THE PORTER ROAD CONNECTION.

STAGE IB - QUANTITIES

TRAFFIC DRUMS = 59 EACH
PRECAST CONCRETE BARRIER = 4300 LN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 3 EA.

CONSTRUCTION PAVEMENT MARKINGS = 6254 LN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 4500 LN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 2620 LIN. FT.
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 1465 LIN. FT.

ADVANCE WARNING SIGNS
I-49 STA. 178+00

SPECIAL END UNIT

CONSTRUCTION PAVEMENT MARKINGS = 6234 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 3 EA.
PRECAST CONCRETE BARRIER = 4300 LIN. FT.
TRAFFIC DRUMS = 59 EACH
STAGE IC - CONSTRUCTION SEQUENCE

RELOCATE TEMPORARY PRECAST CONCRETE BARRIER AND TEMPORARY TRAFFIC CONTROL DEVICES.

CONSTRUCT LEFT SIDE OF FUTRALL DR, RAMP 1 AND RAMP CONNECTION TO I-49 AND RAMP 1/FUTRALL DR, AND LEFT SIDE OF RAMP 2.

ADVANCE WARNING SIGNS
I-49 STA. MB+00

STAGE IC - QUANTITIES

TRAFFIC DRUMS = 05 EA.
PRECAST CONCRETE BARRIER = 1080 LIN. FT.
SPECIAL END UNIT = 06 EA.

CONSTRUCTION PAINT MARKINGS = 8263 LIN. FT.
REMOVABLE CONSTRUCTION PAINT MARKINGS = 5883 LIN. FT.
REMOVAL OF PERMANENT PAINT MARKINGS = 670 LIN. FT.
REMOVAL OF CONSTRUCTION PAINT MARKINGS = 5445 LIN. FT.

SPECIAL END UNIT = 1 EA.
PRECAST CONCRETE BARRIER = 1080 LIN. FT.
TRAFFIC DRUMS = 105 EA.

REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 5443 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 1570 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 5883 LIN. FT.
CONSTRUCTION PAVEMENT MARKINGS = 8263 LIN. FT.
STAGE 1 - CONSTRUCTION SEQUENCE

RELOCATE TEMPORARY PRECAST CONCRETE BARRIER AND TEMPORARY TRAFFIC CONTROL DEVICES.

CONSTRUCT TEMPORARY WIDENING USING TEMPORARY PAVEMENT STRUCTURE ON THE LEFT SIDE OF EXISTING RAMP 4.

CONSTRUCT N. SHILOH OR ULTIMATE PAVEMENT STRUCTURE FROM HWY. 16/112N INTERSECTION TO STA. 031+30 THEN TEMPORARY CONNECTION USING TEMPORARY PAVEMENT STRUCTURE ON THE RIGHT SIDE OF N. SHILOH OR.

REMOVE CURB ALONG HWY. 16/112S FOR THE TEMPORARY PRECAST CONCRETE BARRIER TO BE PLACED IN STAGE 2 FROM STA. 294+39 TO STA. 130+37 AND FROM STA. 06+34 TO STA 07+46

STAGE 1 - QUANTITIES

TRAFFIC DRUMS : 62 EA.
VERTICAL PANELS : 9 EA.
TEMPORARY PRECAST CONCRETE BARRIER : 1080 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER : 1 EA.
CONSTRUCTION PAVEMENT MARKINGS : 3870 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS : 2025 LIN. FT.,

STAGE 1 - CONSTRUCTION SEQUENCE

RELOCATE TEMPORARY PRECAST CONCRETE BARRIER AND TEMPORARY TRAFFIC CONTROL DEVICES.

CONSTRUCT TEMPORARY WIDENING USING TEMPORARY PAVEMENT STRUCTURE ON THE LEFT SIDE OF EXISTING RAMP 4.

CONSTRUCT N. SHILOH OR ULTIMATE PAVEMENT STRUCTURE FROM HWY. 16/112N INTERSECTION TO STA. 031+30 THEN TEMPORARY CONNECTION USING TEMPORARY PAVEMENT STRUCTURE ON THE RIGHT SIDE OF N. SHILOH OR.

REMOVE CURB ALONG HWY. 16/112S FOR THE TEMPORARY PRECAST CONCRETE BARRIER TO BE PLACED IN STAGE 2 FROM STA. 294+39 TO STA. 130+37 AND FROM STA. 06+34 TO STA 07+46

STAGE 1 - QUANTITIES

TRAFFIC DRUMS : 62 EA.
VERTICAL PANELS : 9 EA.
TEMPORARY PRECAST CONCRETE BARRIER : 1080 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER : 1 EA.
CONSTRUCTION PAVEMENT MARKINGS : 3870 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS : 2025 LIN. FT.,
STAGE 2 - CONSTRUCTION SEQUENCE

STAGE 2 - QUANTITIES

TRAFFIC DRUMS = 284 EA.
TEMPORARY PRECAST CONCRETE BARRIER = 500 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 7 EA.
SPECIAL END UNIT = 6 EA.

CONSTRUCTION PAVEMENT MARKINGS = 24866 LIN. FT.
REMOVABLE PAVEMENT MARKINGS = 6903 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 10340 LIN. FT.
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 7347 LIN. FT.

SPECIAL END UNIT = 6 EA.
TEMPORARY IMPACT ATTENUATION BARRIER = 7 EA.
TEMPORARY PRECAST CONCRETE BARRIER = 5100 LIN. FT.
TRAFFIC DRUMS = 284 EA.

CONSTRUCT MEDIAN BARRIER REPLACEMENT AND OVERHEAD CONSTRUCT MEDIAN BARRIER REPLACEMENT AND OVERHEAD.
CONSTRUCT THE RIGHT SIDE OF PROPOSED BRIDGE.
CONSTRUCT MEDIAN BARRIER REPLACEMENT AND OVERHEAD CONSTRUCT MEDIAN BARRIER REPLACEMENT AND OVERHEAD
SIGN FOUNDATION ON I-49.

NOTE:
SEE AHD STANDARD DRAWING TC-5 FOR TAPER LENGTHS AND TAPER RATES OF PRECAST CONCRETE BARRIER WALL.
STA. 153+43.32
BEGIN CONSTR. I-49
LOG MILE 63.39
END CONST. I-49
LOG MILE 64.47

1-49 - STAGE 2
MAINTENANCE OF TRAFFIC DETAILS

STA. 210+63.35

ARAMP 1 (PORTER RD.) STA. 212+18.01, 7.50' LT.

ARAMP 1 (PORTER RD.) STA. 212+12.70, 65.36' RT. = NOSE

MAINTENANCE OF TRAFFIC DETAILS

I-49 - STAGE 2

LOG MILE 64.47
STA. III+44.50
BEGIN JOB 040847
LOC: MILE 12.96
STAGE 3 - CONSTRUCTION SEQUENCE

RELOCATE TEMPORARY PRECAST CONCRETE BARRIER AND TEMPORARY TRAFFIC CONTROL DEVICES.

REPLACE A CENTER PORTION OF EXISTING BRIDGE AS SHOWN IN DETAIL.

CONSTRUCT LEFT SIDE OF RAMP 3 AND ALL OF DECCELERATION LANE, RIGHT SIDE OF N. SHILOH DR., CONNECTION BETWEEN RAMP 4 AND N. SHILOH DR., LEFT SIDE OF RAMP 4, FRONT SIDE OF N. SHILOH DR., LEFT SIDE OF HWY. 64/65 TO BRIDGE END AND MIDDLE PORTION OF HWY. 64/65 FROM BRIDGE END TO STA. W350.

CONSTRUCT A CENTER PORTION OF THE PROPOSED BRIDGE AS SHOWN IN DETAIL.

SHIFT HWY. 16-112S WESTBOUND TO I-49 NORTHBOUND MOVEMENT TO NEWLY CONSTRUCTED RAMP 5.

STAGE 3 - QUANTITIES

TRAFFIC DRUMS = 175 EA.
VERTICAL PANELS = 9 EA.
TEMPORARY IMPACT ATTENUATION BARRIER = 5 EA.
SPECIAL END UNIT = 9 EA.
CONSTRUCTION PAVEMENT MARKINGS = 27233 LIN. FT.
REMOVABLE PAVEMENT MARKINGS = 692 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 980 LIN. FT.
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 2685 LIN. FT.

ADVANCE WARNING SIGNS

I-49 STA. 160+00 & STA. 209+25

NEWLY CONSTRUCTED RAMP 5
SHIFT HWY. 16S/112S WESTBOUND TO I-49 NORTHBOUND MOVEMENT TO NEWLY CONSTRUCTED RAMP 5.

STAGE 3 - CONSTRUCTION SEQUENCE

RELOCATE TEMPORARY PRECAST CONCRETE BARRIER AND TEMPORARY TRAFFIC CONTROL DEVICES.

REPLACE A CENTER PORTION OF EXISTING BRIDGE AS SHOWN IN DETAIL.

CONSTRUCT LEFT SIDE OF RAMP 3 AND ALL OF DECCELERATION LANE, RIGHT SIDE OF N. SHILOH DR., CONNECTION BETWEEN RAMP 4 AND N. SHILOH DR., LEFT SIDE OF RAMP 4, FRONT SIDE OF N. SHILOH DR., LEFT SIDE OF HWY. 64/65 TO BRIDGE END AND MIDDLE PORTION OF HWY. 64/65 FROM BRIDGE END TO STA. W350.

CONSTRUCT A CENTER PORTION OF THE PROPOSED BRIDGE AS SHOWN IN DETAIL.

SHIFT HWY. 16-112S WESTBOUND TO I-49 NORTHBOUND MOVEMENT TO NEWLY CONSTRUCTED RAMP 5.

STAGE 3 - QUANTITIES

TRAFFIC DRUMS = 175 EA.
VERTICAL PANELS = 9 EA.
TEMPORARY IMPACT ATTENUATION BARRIER = 5 EA.
SPECIAL END UNIT = 9 EA.
CONSTRUCTION PAVEMENT MARKINGS = 27233 LIN. FT.
REMOVABLE PAVEMENT MARKINGS = 692 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 980 LIN. FT.
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 2685 LIN. FT.

ADVANCE WARNING SIGNS

I-49 STA. 160+00 & STA. 209+25

NEWLY CONSTRUCTED RAMP 5
SHIFT HWY. 16S/112S WESTBOUND TO I-49 NORTHBOUND MOVEMENT TO NEWLY CONSTRUCTED RAMP 5.
LEGEND

STAGE 2
EXIT PAVEMENT TO BE REMOVED

07-29-2020

STATE OF ARKANSAS
REGISTRERED PROFESSIONAL ENGINEER

CONSTRUCTION LIMITS
EXIST. RAMP 1

EXIST. RAMP 4

DIST.NO.

CONSTRUCTION LIMITS

TOTAL

LEGEND

MARKINGS TO BE REMOVED

07-29-2020
STAGE 4 - CONSTRUCTION SEQUENCE
RELOCATE TEMPORARY PRECAST CONCRETE BARRIER AND TEMPORARY TRAFFIC CONTROL DEVICES.
REMOVE REMAINDER OF EXISTING BRIDGE AS SHOWN IN DETAILS
CONSTRUCT LEFT SIDE OF SHILOH DRIVE, REMAINDER OF ACCEL. LANE FROM STA. 172+60 TO STA. 175+60 EXCLUDING BARRIER WALL, AND LEFT SIDE OF HWY. 16/112S FROM BRIDGE END TO STA. 140+00.
CONSTRUCT THE REMAINDER OF THE PROPOSED BRIDGE.

STAGE 4 - QUANTITIES
TRAFFIC DRUMS = 192 EA.
TEMPORARY PRECAST CONCRETE BARRIER = 380 LIN. FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 4 EA.
SPECIAL END UNITS = 8 EA.
CONSTRUCTION PAVEMENT MARKINGS = 15647 LIN. FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 2930 LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 88 LIN. FT.
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 5764 LIN. FT.

ADVANCE WARNING SIGN
HWY. 16/112S STA. 135+00 LT.
HWY. 16/112S STA. 147+00 LT.

ADVANCE WARNING SIGN
HWY. 16/112S STA. 135+00 RT.
HWY. 16/112S STA. 124+20 RT.
HWY. 16/112S STA. 120+50 LT.

MAINTENANCE OF TRAFFIC DETAILS
STAGE 5 - CONSTRUCTION SEQUENCE

- Remove temporary precast concrete barrier and relocate temporary traffic control devices.
- Construct remainder of barrier wall from STA. 172460 to 175460.
- Construct islands on HWY. 16/112.
- Install final 2" lift of surface course.
- Install permanent traffic control devices.

STAGE 5 - QUANTITIES

- Traffic drums = 30 EA.
- Vertical panels = 149 EA.
- Temporary precast concrete barrier = 800 LIN. FT.
- Temporary impact attenuation barrier = 2 EA.
- Special end unit = 2 EA.
- Construction pavement markings = 30512 LIN. FT.
- Removable construction pavement markings = 2068 LIN. FT.
- Removal of construction pavement markings = 22976 LIN. FT.
ENGINEER AT ALL TIMES UNLESS APPROVED BY THE
TO DRIVEWAYS AND INTERSECTING STREETS
NOTE: CONTRACTOR SHALL MAINTAIN ACCESS

LOG MILE 12.96
BEGIN JOB 040847
STA. 111+44.50

MAINTENANCE OF TRAFFIC DETAILS

CONTINUOUS YELLOW
CONTINUOUS WHITE

TRAFFIC DRUMS (14)
CONTINUOUS DOUBLE YELLOW
CONTINUOUS YELLOW
CONTINUOUS WHITE

300' LANE TRANSITION
300' LANE TRANSITION
300' LANE TRANSITION

LEGEND

VERTICAL PANELS (33)
40' O.C. (TYP.)
TRAFFIC DRUMS (4)
10' O.C. (TYP.)

STATE SHEET NO. 040847
DATE 07-29-2020
REVISED DATE 07-29-2020
FILMED DATE 07-29-2020
JOB NO. 13832
FED. AID PROJ. NO. CSW.118.S.T.A. 118
FED. RD. DIST. NO. 118
SHEETS TOTAL 533

MAINTENANCE OF TRAFFIC DETAILS

NO. 13832
CSW. 118.S.T.A. 118
Hwy. 16/112S - STAGE 5
MAINTENANCE OF TRAFFIC DETAILS

NOTE: CONTRACTOR SHALL MAINTAIN ACCESS TO STRUCTURES AND INTERSECTING STREETS
Surface Drains unless approved by the D.O.R.

STAGE 5
MAINTENANCE OF TRAFFIC DETAILS

**Legend**
- Stage 5
- Construction Limits

**Notes:**
- Contractor shall maintain access to driveways and intersecting streets.
- Construction limits to be removed.

**Construction Line:**
- Continuous Yellow
- Continuous White
- Vertical Panels 10' O.C. (Typ.)
- Skip White
- Traffic Drums (3)

**Construction Zones:**
- Continuous Double Yellow
- Continuous White
- Vertical Panels 10' O.C. (Typ.)
- Skip White

**Traffic Control:**
- Traffic Drum (3)
- Construction Limits

**Signs:**
- Special End Unit
- Temporary Impact Attenuation Barrier

**Dates:**
- 07-29-2020

**Project Information:**
- No. 13832
- Arkansas State Highway 16
- Special End Unit

**Engineer:**
- Professional Engineer

**FED.AID PROJ.NO.**
- 11.5

**DATE FILMED**
- 07-29-2020
PERMANENT PAVEMENT MARKING DETAILS

RAMP 1 (PORTER RD.) STA. 214+22.70

LOG MILE 64.54

END CONST. I-49

PAVEMENT MARKING

ENHANCED THERMOPLASTIC

6" CONTINUOUS WHITE PAVEMENT MARKING

6" CONTINUOUS YELLOR PAVEMENT MARKING

6" SKIP WHITE ENHANCED THERMOPLASTIC PAVEMENT MARKING

6" CONTINUOUS WHITE ENHANCED THERMOPLASTIC PAVEMENT MARKING

12" CONTINUOUS WHITE ENHANCED THERMOPLASTIC PAVEMENT MARKING

12" DOTTED WHITE ENHANCED RAISED PAVEMENT MARKERS @ 10' O.C.

PAVEMENT MARKING W/ TYPE II RED/WHITE

9.5' RD. DIST. NO.

STATE SHEET NO. 2

DATE REVISED FILMED DATE FILMED

JOB NO.

FED.AID PROJ.NO.

FED.RD.

533

57X583

P.M.

20:40

7/27/2020

SHEETS TOTAL

12:22 PM 7/27/2020

6:18:19 P.M
<table>
<thead>
<tr>
<th>SIGN NUMBER</th>
<th>DESCRIPTION</th>
<th>Qty</th>
<th>STAGE 1A</th>
<th>STAGE 1B</th>
<th>STAGE 1C</th>
<th>STAGE 2</th>
<th>STAGE 3</th>
<th>STAGE 4</th>
<th>STAGE 5</th>
<th>END OF JOB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CONSTRUCTION PAYMENT MARKINGS</td>
<td></td>
<td>2560</td>
<td>325</td>
<td>2025</td>
<td>2150</td>
<td>780</td>
<td>1450</td>
<td>2062</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td>REMOVAL OF PERMANENT PAYMENT MARKINGS</td>
<td></td>
<td>2063</td>
<td>35000</td>
<td>2000</td>
<td>40828</td>
<td>20828</td>
<td>20828</td>
<td>20828</td>
<td>20828</td>
</tr>
<tr>
<td></td>
<td>REFLECTORIZED PERMANENT PAYMENT MARKINGS</td>
<td></td>
<td>2063</td>
<td>35000</td>
<td>2000</td>
<td>40828</td>
<td>20828</td>
<td>20828</td>
<td>20828</td>
<td>20828</td>
</tr>
<tr>
<td></td>
<td>REMOVED PAYMENT MARKERS TYPE &quot;A&quot; (PARAMETERS)</td>
<td></td>
<td>2063</td>
<td>35000</td>
<td>2000</td>
<td>40828</td>
<td>20828</td>
<td>20828</td>
<td>20828</td>
<td>20828</td>
</tr>
<tr>
<td></td>
<td>REMOVED PAYMENT MARKERS TYPE &quot;B&quot; (PARAMETERS)</td>
<td></td>
<td>2063</td>
<td>35000</td>
<td>2000</td>
<td>40828</td>
<td>20828</td>
<td>20828</td>
<td>20828</td>
<td>20828</td>
</tr>
</tbody>
</table>

**Note:** This is a high traffic volume road as defined in Section 660.02, Standard Specifications for Highway Construction. Quantities estimated for final striping is 24,600 sq ft. To be listed if any AFR is ordered by the Engineer.
### Quantities

**Temporary Erosion Control**

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Seeding</th>
<th>Lime</th>
<th>Mulch</th>
<th>Cover</th>
<th>Water</th>
<th>Second Seeding</th>
<th>Temporary Seeding</th>
<th>Mulch</th>
<th>Cover</th>
<th>Water</th>
<th>Erosion Control Seeded (lbs/acre)</th>
<th>Wattle (250')</th>
<th>Sand Bag (Ditch Checks)</th>
<th>Rock Bag Checks</th>
<th>Sediment Removal &amp; Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire Project</td>
<td>Clearing and Grubbing</td>
<td>256</td>
<td>34</td>
<td>42</td>
<td>41</td>
<td>41</td>
<td>41</td>
<td>41</td>
<td>42</td>
<td>41</td>
<td>41</td>
<td>41</td>
<td>41</td>
<td>41</td>
<td>41</td>
<td>41</td>
</tr>
<tr>
<td>Entire Project</td>
<td>Stage 1A</td>
<td>618</td>
<td>84</td>
<td>479</td>
<td>56</td>
<td>56</td>
<td>56</td>
<td>56</td>
<td>56</td>
<td>56</td>
<td>56</td>
<td>56</td>
<td>56</td>
<td>56</td>
<td>56</td>
<td>56</td>
</tr>
<tr>
<td>Entire Project</td>
<td>Stage 1B</td>
<td>220</td>
<td>24</td>
<td>220</td>
<td>24</td>
<td>220</td>
<td>24</td>
<td>220</td>
<td>24</td>
<td>220</td>
<td>24</td>
<td>220</td>
<td>24</td>
<td>220</td>
<td>24</td>
<td>220</td>
</tr>
<tr>
<td>Entire Project</td>
<td>Stage 1C</td>
<td>154</td>
<td>24</td>
<td>154</td>
<td>24</td>
<td>154</td>
<td>24</td>
<td>154</td>
<td>24</td>
<td>154</td>
<td>24</td>
<td>154</td>
<td>24</td>
<td>154</td>
<td>24</td>
<td>154</td>
</tr>
<tr>
<td>Entire Project</td>
<td>Stage 2</td>
<td>308</td>
<td>42</td>
<td>308</td>
<td>42</td>
<td>308</td>
<td>42</td>
<td>308</td>
<td>42</td>
<td>308</td>
<td>42</td>
<td>308</td>
<td>42</td>
<td>308</td>
<td>42</td>
<td>308</td>
</tr>
<tr>
<td>Entire Project</td>
<td>Stage 3A</td>
<td>48</td>
<td>6</td>
<td>48</td>
<td>6</td>
<td>48</td>
<td>6</td>
<td>48</td>
<td>6</td>
<td>48</td>
<td>6</td>
<td>48</td>
<td>6</td>
<td>48</td>
<td>6</td>
<td>48</td>
</tr>
<tr>
<td>Entire Project</td>
<td>Stage 3B</td>
<td>56</td>
<td>9</td>
<td>56</td>
<td>9</td>
<td>56</td>
<td>9</td>
<td>56</td>
<td>9</td>
<td>56</td>
<td>9</td>
<td>56</td>
<td>9</td>
<td>56</td>
<td>9</td>
<td>56</td>
</tr>
<tr>
<td>Entire Project</td>
<td>Stage 3C</td>
<td>1128</td>
<td>168</td>
<td>1128</td>
<td>168</td>
<td>1128</td>
<td>168</td>
<td>1128</td>
<td>168</td>
<td>1128</td>
<td>168</td>
<td>1128</td>
<td>168</td>
<td>1128</td>
<td>168</td>
<td>1128</td>
</tr>
</tbody>
</table>

**TOTAL:**

| 25.52 | 51 | 25.52 | 51 | 25.52 | 51 | 528.6 |

**Temporary Retaining Wall**

<table>
<thead>
<tr>
<th>Location</th>
<th>SQ. FT.</th>
<th>Paving Repair over Culverts (Asphalt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HWY 10/125 Over 1A - West Wall</td>
<td>1000</td>
<td>111-116</td>
</tr>
<tr>
<td>HWY 10/125 Over 1B - East Wall</td>
<td>1400</td>
<td>113-38</td>
</tr>
<tr>
<td></td>
<td></td>
<td>128-38</td>
</tr>
<tr>
<td></td>
<td></td>
<td>142-21</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3988</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

**Asphalt Concrete Patching for Maintenance of Traffic**

<table>
<thead>
<tr>
<th>Location</th>
<th>TON</th>
<th>Asphalt Concrete Patching for Maintenance of Traffic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire Project</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

**TOTAL:**

| 30 | 100 |

**SHEETS TOTAL:**

| 533 |

**Engineer:**

Arkansas -

**Approach Slabs**

<table>
<thead>
<tr>
<th>Station</th>
<th>State</th>
<th>Location</th>
<th>Approach Slabs</th>
</tr>
</thead>
<tbody>
<tr>
<td>C19 VD.</td>
<td>POND</td>
<td>HWY 10/125</td>
<td>137.00</td>
</tr>
<tr>
<td>1344.00</td>
<td>135-23</td>
<td>HWY 10/125</td>
<td>158.30</td>
</tr>
</tbody>
</table>

**TOTAL:**

| 348.00 | 1564.00 |

**Cold Milling Asphalt Pavement**

<table>
<thead>
<tr>
<th>Station</th>
<th>State</th>
<th>Location</th>
<th>Average</th>
<th>Cold Milling Asphalt Pavement</th>
</tr>
</thead>
<tbody>
<tr>
<td>156-44.50</td>
<td>156-44.50</td>
<td>156-44.50</td>
<td>20.00</td>
<td>389</td>
</tr>
<tr>
<td>156-46.50</td>
<td>156-46.50</td>
<td>156-46.50</td>
<td>20.00</td>
<td>389</td>
</tr>
<tr>
<td>156-48.50</td>
<td>156-48.50</td>
<td>156-48.50</td>
<td>20.00</td>
<td>389</td>
</tr>
<tr>
<td>156-50.00</td>
<td>156-50.00</td>
<td>156-50.00</td>
<td>20.00</td>
<td>389</td>
</tr>
<tr>
<td>156-51.50</td>
<td>156-51.50</td>
<td>156-51.50</td>
<td>20.00</td>
<td>389</td>
</tr>
<tr>
<td>156-53.00</td>
<td>156-53.00</td>
<td>156-53.00</td>
<td>20.00</td>
<td>389</td>
</tr>
<tr>
<td>156-54.50</td>
<td>156-54.50</td>
<td>156-54.50</td>
<td>20.00</td>
<td>389</td>
</tr>
</tbody>
</table>

**TOTAL:**

| 6661 |

**NOTE:** Average milling depth - 9".
### Quantities

<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>DESCRIPTION</th>
<th>PIPE/CULVERTS</th>
<th>BOX/CULVERTS</th>
<th>JUNCTION</th>
<th>DROP BOX</th>
</tr>
</thead>
<tbody>
<tr>
<td>111-01</td>
<td>APR 161/120 1&quot; X 5 1/2 PIPE CULVERT</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>111-02</td>
<td>APR 161/120 2&quot; X 5 1/2 PIPE CULVERT</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>111-03</td>
<td>APR 161/120 3&quot; X 5 1/2 PIPE CULVERT</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>111-04</td>
<td>APR 161/120 4&quot; X 5 1/2 PIPE CULVERT</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>111-05</td>
<td>APR 161/120 5&quot; X 5 1/2 PIPE CULVERT</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>111-06</td>
<td>APR 161/120 6&quot; X 5 1/2 PIPE CULVERT</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>111-07</td>
<td>APR 161/120 7&quot; X 5 1/2 PIPE CULVERT</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>111-08</td>
<td>APR 161/120 8&quot; X 5 1/2 PIPE CULVERT</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Removal and Disposal of Culverts and Drop Inlets

<table>
<thead>
<tr>
<th>REMOVAL AND DISPOSAL OF ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>STATION</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

### Removal and Disposal of Items

<table>
<thead>
<tr>
<th>STATION</th>
<th>LOCATION</th>
<th>CONCRETE</th>
<th>CONCRETE</th>
<th>WALKS</th>
<th>GUARDIAN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>WALL</td>
<td>CURTAIN</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>FT</td>
<td>YDS.</td>
<td>YDS.</td>
<td>FT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
</tbody>
</table>

### Note

- The quantity shown above for the removal and disposal of guardrail shall include the removal and disposal of all guardrail terminals and terminal and end posts.

---

**Graphical Diagram:**

- Graphical representation of culverts and drop inlets.
- Diagram includes station numbers and corresponding details for removal and disposal of items.

---

**Quantities:**

- **158**
- **946**
- **546**
- **4395**
- **4685**
- **690**
- **830**

---

**Removal and Disposal of Feuce:**

- Detailed list of removal and disposal of feuce with station numbers and corresponding details.

---

**Date:**

- October 29, 2020

---

**Other Details:**

- Provide additional details or notes relevant to the removal and disposal process.
### Quantities

**Concrete Walks and Hand Railing**

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Length (ft)</th>
<th>Concrete</th>
<th>Solid Sodding</th>
<th>Water</th>
<th>Hand Embankment</th>
</tr>
</thead>
<tbody>
<tr>
<td>115-39</td>
<td>115-40</td>
<td>115-41</td>
<td>115-42</td>
<td>115-43</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Earthwork**

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Description</th>
<th>Unclassified Excavation</th>
<th>Compacted Embankment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire</td>
<td>Hand Trenching</td>
<td>7464</td>
<td>5066</td>
<td></td>
</tr>
<tr>
<td>Entire</td>
<td>Ramp 1</td>
<td>4997</td>
<td>244</td>
<td></td>
</tr>
<tr>
<td>Entire</td>
<td>Ramp 1 (FUTRIL DR.)</td>
<td>2035</td>
<td>1199</td>
<td></td>
</tr>
<tr>
<td>Entire</td>
<td>Ramp 2</td>
<td>2101</td>
<td>482</td>
<td></td>
</tr>
<tr>
<td>Entire</td>
<td>Ramp 3</td>
<td>8990</td>
<td>2683</td>
<td></td>
</tr>
<tr>
<td>Entire</td>
<td>Ramp 4</td>
<td>7205</td>
<td>2084</td>
<td></td>
</tr>
<tr>
<td>Entire</td>
<td>Ramp 5 (FUTRIL DR.)</td>
<td>745</td>
<td>1191</td>
<td></td>
</tr>
<tr>
<td>Entire</td>
<td>Ramp 6 (FUTRIL DR.)</td>
<td>424</td>
<td>347</td>
<td></td>
</tr>
<tr>
<td>Entire</td>
<td>Ramp 7 (FUTRIL DR.)</td>
<td>2187</td>
<td>1073</td>
<td></td>
</tr>
<tr>
<td>Entire</td>
<td>Ramp 8 (FUTRIL DR.)</td>
<td>2532</td>
<td>1232</td>
<td></td>
</tr>
</tbody>
</table>

**Concrete Island**

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Concrete Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>113-48</td>
<td>1015-49</td>
<td>1016-50</td>
</tr>
</tbody>
</table>

**Dumped Riprap and Filter Blanket**

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Dumped Riprap</th>
<th>Filter Blanket</th>
</tr>
</thead>
<tbody>
<tr>
<td>109-77</td>
<td>Outlet of Pipe Culvert on Ramp 3-L</td>
<td>86</td>
<td>36</td>
</tr>
<tr>
<td>130-99</td>
<td>Outlet of Pipe Culvert on Hwy. 10125-L</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>131-08</td>
<td>Outlet of Pipe Culvert on Hwy. 10125-L</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>136-13</td>
<td>Outlet of Pipe Culvert on Hwy. 10125-L</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>137-44</td>
<td>Outlet of Pipe Culvert on Hwy. 10125-L</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>138-65</td>
<td>Outlet of Pipe Culvert on Hwy. 10125-L</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>139-84</td>
<td>Outlet of Pipe Culvert on Hwy. 10125-L</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>140-18</td>
<td>Outlet of Pipe Culvert on Hwy. 10125-L</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>141-19</td>
<td>Outlet of Pipe Culvert on Hwy. 10125-L</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

**Wheelchair Ramps**

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Type 2</th>
<th>Type 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-01</td>
<td>101-02</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td>101-02</td>
<td>101-03</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>101-03</td>
<td>101-04</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>101-04</td>
<td>101-05</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>101-05</td>
<td>101-06</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>101-06</td>
<td>101-07</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>101-07</td>
<td>101-08</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>101-08</td>
<td>101-09</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>101-09</td>
<td>101-10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>101-10</td>
<td>101-11</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Concrete Barrier Wall**

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Type A</th>
<th>Type B</th>
<th>Type C</th>
<th>Type SP-1</th>
<th>Type SP-2</th>
<th>Lr. Ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>127-01</td>
<td>127-02</td>
<td>150</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>127-02</td>
<td>127-03</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

**Returning Wall**

<table>
<thead>
<tr>
<th>Station</th>
<th>Offset</th>
<th>Location</th>
<th>Granular Material</th>
<th>Aggregate Base Course</th>
<th>Sq. Ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>174-06</td>
<td>80.00</td>
<td>Hwy. 10125 Ovrk 49W-West Wall</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>174-06</td>
<td>114.72</td>
<td>Hwy. 10125 Ovrk 49W-East Wall</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
</tbody>
</table>

**Concrete Ditch Paving**

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Length</th>
<th>Cmg. Depth</th>
<th>Type B</th>
<th>Solid Sodding</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-10</td>
<td>100-11</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
### CONCRETE BASES

<table>
<thead>
<tr>
<th>Station</th>
<th>Station</th>
<th>Location</th>
<th>Length</th>
<th>Tack Coat E0.05 Gall Per Sq. Yd.</th>
<th>Portland Cement Concrete Base</th>
<th>Portland Cement Concrete Base</th>
<th>Portland Cement Concrete Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>1124-20</td>
<td>1124-20</td>
<td>brave, AR</td>
<td>40.00</td>
<td>2.37</td>
<td>3.20</td>
<td>3.10</td>
<td>2.37</td>
</tr>
<tr>
<td>1124-20</td>
<td>1124-20</td>
<td>brave, AR</td>
<td>20.00</td>
<td>2.37</td>
<td>3.20</td>
<td>3.10</td>
<td>2.37</td>
</tr>
<tr>
<td>1124-20</td>
<td>1124-20</td>
<td>brave, AR</td>
<td>60.00</td>
<td>2.37</td>
<td>3.20</td>
<td>3.10</td>
<td>2.37</td>
</tr>
<tr>
<td>1124-20</td>
<td>1124-20</td>
<td>brave, AR</td>
<td>60.00</td>
<td>2.37</td>
<td>3.20</td>
<td>3.10</td>
<td>2.37</td>
</tr>
<tr>
<td>1124-20</td>
<td>1124-20</td>
<td>brave, AR</td>
<td>60.00</td>
<td>2.37</td>
<td>3.20</td>
<td>3.10</td>
<td>2.37</td>
</tr>
<tr>
<td>1124-20</td>
<td>1124-20</td>
<td>brave, AR</td>
<td>60.00</td>
<td>2.37</td>
<td>3.20</td>
<td>3.10</td>
<td>2.37</td>
</tr>
<tr>
<td>1124-20</td>
<td>1124-20</td>
<td>brave, AR</td>
<td>60.00</td>
<td>2.37</td>
<td>3.20</td>
<td>3.10</td>
<td>2.37</td>
</tr>
<tr>
<td>1124-20</td>
<td>1124-20</td>
<td>brave, AR</td>
<td>60.00</td>
<td>2.37</td>
<td>3.20</td>
<td>3.10</td>
<td>2.37</td>
</tr>
<tr>
<td>1124-20</td>
<td>1124-20</td>
<td>brave, AR</td>
<td>60.00</td>
<td>2.37</td>
<td>3.20</td>
<td>3.10</td>
<td>2.37</td>
</tr>
<tr>
<td>1124-20</td>
<td>1124-20</td>
<td>brave, AR</td>
<td>60.00</td>
<td>2.37</td>
<td>3.20</td>
<td>3.10</td>
<td>2.37</td>
</tr>
</tbody>
</table>

### CONCRETE COMBINATION CUBES AND GRUTT AND CONCRETE CURB

<table>
<thead>
<tr>
<th>Station</th>
<th>Station</th>
<th>Location</th>
<th>Type of (&quot;L&quot; ft²)</th>
<th>Type of (&quot;L&quot; ft²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-43</td>
<td>110-43</td>
<td>YYYY: 16125 RT</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>110-43</td>
<td>110-43</td>
<td>YYYY: 16125 RT</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>110-43</td>
<td>110-43</td>
<td>YYYY: 16125 RT</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>110-43</td>
<td>110-43</td>
<td>YYYY: 16125 RT</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>110-43</td>
<td>110-43</td>
<td>YYYY: 16125 RT</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>110-43</td>
<td>110-43</td>
<td>YYYY: 16125 RT</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>110-43</td>
<td>110-43</td>
<td>YYYY: 16125 RT</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>110-43</td>
<td>110-43</td>
<td>YYYY: 16125 RT</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>110-43</td>
<td>110-43</td>
<td>YYYY: 16125 RT</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>110-43</td>
<td>110-43</td>
<td>YYYY: 16125 RT</td>
<td>25</td>
<td>25</td>
</tr>
</tbody>
</table>

### QUANTITIES

- **Soil Boring Logs**
  - Boring No: 160-34-44
  - Station: 160-34-44
  - Layer: A-4
  - Latitude: 34.061
  - Longitude: -90.121
  - Depth from Base (ft): 30.5
  - P: 6
  - AASHTO: C-64
  - Color: Brown

- **Concrete Bases**
  - Cement Type: 1200
  - Crushed Stone: 530
  - Asphalts: 4.0
  - Sand: 0
  - Curing: Still Water
  - Total Bases: 5,300

- **Concrete Cubes**
  - Type: 1" (L) ft²
  - Total: 1,275

- **Selected Pipe Bedding**
  - Length: 100
  - Material: 100

- **Guardsrail**
  - Type: 1" (L) ft²
  - Total: 1,275

- **Soil Boring Logs**
  - Station: 160-34-44
  - Layer: A-4
  - Latitude: 34.061
  - Longitude: -90.121
  - Depth from Base (ft): 30.5
  - P: 6
  - AASHTO: C-64
  - Color: Brown

- **Concrete Bases**
  - Cement Type: 1200
  - Crushed Stone: 530
  - Asphalts: 4.0
  - Sand: 0
  - Curing: Still Water
  - Total Bases: 5,300

- **Concrete Cubes**
  - Type: 1" (L) ft²
  - Total: 1,275

- **Selected Pipe Bedding**
  - Length: 100
  - Material: 100

- **Guardsrail**
  - Type: 1" (L) ft²
  - Total: 1,275
<table>
<thead>
<tr>
<th>FED. RD.</th>
<th>DIST. NO.</th>
<th>FED. AID PROJ. NO.</th>
<th>STATE SHEET NO.</th>
<th>DATE REVISED</th>
<th>FILMED DATE</th>
<th>SHEETS TOTAL</th>
<th>PROFESSIONAL REGISTERED ENGINEER</th>
</tr>
</thead>
<tbody>
<tr>
<td>079</td>
<td>29</td>
<td>381</td>
<td>2</td>
<td>07-29-2020</td>
<td>07-29-2020</td>
<td>533</td>
<td>Arkansas -</td>
</tr>
</tbody>
</table>
DATE

DATE
FILMED

DATE
REVISED

FED.RD.

DATE

DIST.NO.

FILMED

6

STATE

SHEET

TOTAL

NO.

SHEETS

ARK.
JOB NO.

2

FED.AID PROJ.NO.

040847

533

162

QUANTITIES

----

ARKANSAS

------

-TE OFA
-ST
--

No. 13832

R

Y
AN

R

REGISTERED
PROFESSIONAL
ENGINEER
TO
AS
W.C

--

7/27/2020
6:
22:
1
1PM
.
.
.
\QTY\rBB041
1
_QTY.
dgn

07-29-2020

QUANTITIES


| STATION | STATION | LOCATION | ADDRESS/OUT | CONTRACTOR/OWNER | LOCK-OUT | NAME-OF | L-PLY | TON | CANISTER | BARREL | MILL-GR | FILL-GR | COMP-GR | TOT-GR | AVG-GR | 1ST-GR | 2ND-GR | 3RD-GR | 4TH-GR | 5TH-GR |
|---------|---------|----------|-------------|------------------|----------|---------|-------|-----|-----------|----------|--------|---------|---------|--------|-------|-------|-------|-------|-------|-------|-------|
| 082.00  | 082.00  | 13832    | 13832       | 13832            | 13832    | 13832  | 13832 | 13832| 13832     | 13832   | 13832  | 13832  | 13832  | 13832  | 13832 | 13832 | 13832 | 13832 | 13832 | 13832|

... (Table continues with more rows)
### SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 040847

#### UNIT OF STRUCTURE

<table>
<thead>
<tr>
<th>ITEM</th>
<th>ITEM</th>
<th>ITEM</th>
<th>ITEM</th>
<th>ITEM</th>
<th>ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>REMOVAL OF UNCLASSIFIED EXCAVATION FOR STRUCTURES (SITE 40, ...</td>
<td>CLASS</td>
<td>CLASS</td>
<td>CLASS</td>
<td>CLASS-2</td>
<td>REINFORCING</td>
</tr>
<tr>
<td>BRIDGE</td>
<td>PROTECTIVE SURFACE TREATMENT</td>
<td>STEEL COATING</td>
<td>REINFORCING STEEL</td>
<td>PILING</td>
<td>(GRADE 80)</td>
</tr>
<tr>
<td>FIRE PROOFING</td>
<td></td>
<td></td>
<td></td>
<td>(FYPC055)</td>
<td></td>
</tr>
<tr>
<td>METAL PIPE RAILING (TYPE 4D)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRANSITIONAL APPROACH RAILING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STEEL WEB PLATE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural Steel Web Plate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### UNIT OF MEASURE

<table>
<thead>
<tr>
<th>UNIT</th>
<th>1M3 SUM</th>
<th>CU. YD</th>
<th>CU. YD</th>
<th>SQ. YD</th>
<th>LB</th>
<th>LB</th>
<th>LB</th>
<th>LB</th>
<th>LIN. FT</th>
<th>LIN. FT</th>
<th>ENDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENT NO. 1</td>
<td>-</td>
<td>100.70</td>
<td>25</td>
<td>28.164</td>
<td>852</td>
<td>145</td>
<td>12</td>
<td>2</td>
<td>2.610</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BENT NO. 2</td>
<td>34</td>
<td>556.50</td>
<td>51.866</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BENT NO. 3</td>
<td>164.10</td>
<td>28.220</td>
<td>852</td>
<td>145</td>
<td>12</td>
<td>2</td>
<td>2.700</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

240'" CONTINUOUS COMPOSITE PLATE SPANS UNIT

<table>
<thead>
<tr>
<th>UNIT</th>
<th>1M3 SUM</th>
<th>CU. YD</th>
<th>CU. YD</th>
<th>SQ. YD</th>
<th>LB</th>
<th>LB</th>
<th>LB</th>
<th>LB</th>
<th>LIN. FT</th>
<th>LIN. FT</th>
<th>ENDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXISTING BRIDGE NO. 05064 (SITE NO. 1)</td>
<td>-</td>
<td>960.7</td>
<td>53,160</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TOTALS FOR BRIDGE NO. 05417

<table>
<thead>
<tr>
<th>UNIT</th>
<th>1M3 SUM</th>
<th>CU. YD</th>
<th>CU. YD</th>
<th>SQ. YD</th>
<th>LB</th>
<th>LB</th>
<th>LB</th>
<th>LB</th>
<th>LIN. FT</th>
<th>LIN. FT</th>
<th>ENDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>556.15</td>
<td>502.00</td>
<td>3,434.9</td>
<td>22.285</td>
<td>232.300</td>
<td>1,705</td>
<td>250</td>
<td>297</td>
<td>4</td>
<td>10,320</td>
<td></td>
</tr>
</tbody>
</table>

TOTALS FOR JOB NO. 040847

<table>
<thead>
<tr>
<th>UNIT</th>
<th>1M3 SUM</th>
<th>CU. YD</th>
<th>CU. YD</th>
<th>SQ. YD</th>
<th>LB</th>
<th>LB</th>
<th>LB</th>
<th>LB</th>
<th>LIN. FT</th>
<th>LIN. FT</th>
<th>ENDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>556.15</td>
<td>502.00</td>
<td>3,434.9</td>
<td>22.285</td>
<td>232.300</td>
<td>1,705</td>
<td>250</td>
<td>297</td>
<td>4</td>
<td>10,320</td>
<td></td>
</tr>
</tbody>
</table>

### Notes

1. These quantities shall be used for estimating purposes only. Actual quantities will be determined in the field.

2. The quantities shown for steel piles and preboring are for estimating and bidding purposes only. Actual quantities will be determined in the field.

---

**SCHEDULE OF BRIDGE QUANTITIES**

**HWY 16/12 SPUR**

**INTCHNG, IMPVTS, (F)**

**WASHINGTON COUNTY**

**SEC-28**

**ARKANSAS STATE HIGHWAY COMMISSION**

**LITTLE ROCK, ARK.**

**BREACH NO. 2417**

**DRAWN BY: 07417**

**ENGINEER:**

**CHECKED BY:**

**DESIGNED BY:**

**DATE:**

**SCALE:**

**FILENAME:** b040847_q1.dgn
<table>
<thead>
<tr>
<th>SHEETS</th>
<th>533</th>
</tr>
</thead>
<tbody>
<tr>
<td>REVISED DATE</td>
<td>09-28-2020</td>
</tr>
</tbody>
</table>

**Summary of Quantities (Box 1 of 3)**

<table>
<thead>
<tr>
<th>Number</th>
<th>Item</th>
<th>Quality</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Summary of Quantities (Box 2 of 3)**

<table>
<thead>
<tr>
<th>Number</th>
<th>Item</th>
<th>Quality</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Summary of Quantities (Box 3 of 3)**

<table>
<thead>
<tr>
<th>Number</th>
<th>Item</th>
<th>Quality</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Revisions**

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ADOPT TE KOMMENT OF HT KEY SECURITY</td>
</tr>
<tr>
<td>12/18/20</td>
<td>ADOPT TECOMMENT OF HT KEY SECURITY</td>
</tr>
<tr>
<td>12/18/20</td>
<td>ADOPT TECOMMENT OF HT KEY SECURITY</td>
</tr>
<tr>
<td>12/18/20</td>
<td>ADOPT TECOMMENT OF HT KEY SECURITY</td>
</tr>
</tbody>
</table>

**Photo**

- The image contains a detailed table of quantities and revisions.
- The table includes various categories such as item, quality, and unit.
- The revisions section lists specific dates and comments.
SURVEY CONTROL COORDINATES

Project Name: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS

Arkansas State Plane Grid Bearings - 0301-NORTH ZONE

Basis of Bearing:

Reference Points are not to be used for Vertical Control

Horizontal Datum: NAD 83 (1997)

Use CAF = 1.0 for stakeout for this project

GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

-----------------------------

<table>
<thead>
<tr>
<th>Name</th>
<th>Northing</th>
<th>Easting</th>
<th>Elev</th>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>963</td>
<td>642589.2703</td>
<td>659160.5200</td>
<td>1262.563</td>
<td>TBM</td>
<td></td>
</tr>
<tr>
<td>962</td>
<td>642164.1662</td>
<td>662004.9367</td>
<td>1259.094</td>
<td>TBM</td>
<td></td>
</tr>
<tr>
<td>927</td>
<td>646664.6400</td>
<td>664563.0374</td>
<td>1242.308</td>
<td>BM</td>
<td>AHTD DISK SET IN CENTER OF HEADWAL</td>
</tr>
<tr>
<td>923</td>
<td>644359.6922</td>
<td>663057.1469</td>
<td>1230.167</td>
<td>BM</td>
<td>SQUARE CUT IN NORTH HEADWALL</td>
</tr>
<tr>
<td>921</td>
<td>642513.8388</td>
<td>660570.8018</td>
<td>1259.057</td>
<td>TBM</td>
<td>SQUARE CUT IN SOUTHWEST CORNER OF CATCH BASIN</td>
</tr>
<tr>
<td>101</td>
<td>642492.8038</td>
<td>662000.3683</td>
<td>1275.902</td>
<td>GPS</td>
<td>AHTD GPS #720034</td>
</tr>
<tr>
<td>83</td>
<td>642604.9471</td>
<td>660293.4899</td>
<td>1256.766</td>
<td>CTL</td>
<td>AHTD STD. MON. STAMPED PN:83</td>
</tr>
<tr>
<td>80</td>
<td>642328.6174</td>
<td>663820.6585</td>
<td>1240.816</td>
<td>CTL</td>
<td>AHTD STD. MON. STAMPED PN:80</td>
</tr>
<tr>
<td>79</td>
<td>642365.4196</td>
<td>663064.2861</td>
<td>1238.524</td>
<td>CTL</td>
<td>AHTD STD. MON. STAMPED PN:79</td>
</tr>
<tr>
<td>76</td>
<td>642530.0687</td>
<td>660133.1606</td>
<td>1257.027</td>
<td>CTL</td>
<td>AHTD STD. MON. STAMPED PN:76</td>
</tr>
<tr>
<td>74</td>
<td>639546.2544</td>
<td>661369.2726</td>
<td>1295.751</td>
<td>CTL</td>
<td>AHTD STD. MON. STAMPED PN:74</td>
</tr>
<tr>
<td>69</td>
<td>642223.5306</td>
<td>661962.5695</td>
<td>1253.119</td>
<td>CTL</td>
<td>AHTD STD. MON. STAMPED PN:69</td>
</tr>
<tr>
<td>64</td>
<td>645094.9051</td>
<td>663471.0073</td>
<td>1240.394</td>
<td>CTL</td>
<td>AHTD STD. MON. STAMPED PN:64</td>
</tr>
<tr>
<td>62</td>
<td>643917.0107</td>
<td>662848.8750</td>
<td>1238.182</td>
<td>CTL</td>
<td>AHTD STD. MON. STAMPED PN:62</td>
</tr>
<tr>
<td>60</td>
<td>642815.6812</td>
<td>662352.8934</td>
<td>1253.682</td>
<td>CTL</td>
<td>AHTD STD. MON. STAMPED PN:60</td>
</tr>
<tr>
<td>57</td>
<td>640304.9427</td>
<td>661470.8804</td>
<td>1278.334</td>
<td>CTL</td>
<td>AHTD STD. MON. STAMPED PN:57</td>
</tr>
<tr>
<td>56</td>
<td>639891.4440</td>
<td>661516.5715</td>
<td>1289.840</td>
<td>CTL</td>
<td>AHTD STD. MON. STAMPED PN:56</td>
</tr>
<tr>
<td>34</td>
<td>647457.6035</td>
<td>664954.5613</td>
<td>1272.289</td>
<td>CTL</td>
<td>AHTD STD. MON. STAMPED PN:34</td>
</tr>
<tr>
<td>28</td>
<td>645315.0527</td>
<td>664504.7902</td>
<td>1250.820</td>
<td>CTL</td>
<td>AHTD STD. MON. STAMPED PN:28</td>
</tr>
<tr>
<td>27</td>
<td>646632.9923</td>
<td>664459.9824</td>
<td>1262.682</td>
<td>CTL</td>
<td>AHTD STD. MON. STAMPED PN:27</td>
</tr>
<tr>
<td>25</td>
<td>644815.3314</td>
<td>663286.8506</td>
<td>1236.996</td>
<td>CTL</td>
<td>AHTD STD. MON. STAMPED PN:25</td>
</tr>
<tr>
<td>16</td>
<td>640702.4462</td>
<td>661525.4663</td>
<td>1269.760</td>
<td>CTL</td>
<td>AHTD STD. MON. STAMPED PN:16</td>
</tr>
</tbody>
</table>

Note: - Refer to Cap and Standards - 3/8" Retab with 2" Aluminum Cap stamped
- Standard markings common to all caps, or as indicated
- Other markings indicated in the point description of the individual point.
- USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
<table>
<thead>
<tr>
<th>POINT NO.</th>
<th>TYPE</th>
<th>STATION</th>
<th>NORTHEAST</th>
<th>EASTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>8000</td>
<td>P.O.B.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8001</td>
<td>P.C.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8004</td>
<td>C.C.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8006</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8008</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8009</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8010</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8012</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8013</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8014</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8015</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8016</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8017</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8018</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8019</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8020</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POINT NO.</th>
<th>TYPE</th>
<th>STATION</th>
<th>NORTHEAST</th>
<th>EASTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>8003</td>
<td>P.C.</td>
<td>10547-51.94</td>
<td>34562.8787</td>
<td>35151.1039</td>
</tr>
<tr>
<td>8004</td>
<td>C.C.</td>
<td>34560.5739</td>
<td>35140.0160</td>
<td></td>
</tr>
<tr>
<td>8006</td>
<td>P.O.E.</td>
<td>18405.99</td>
<td>34500.8963</td>
<td>35179.3106</td>
</tr>
<tr>
<td>8008</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8010</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8012</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8013</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8014</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8015</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8016</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8017</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8018</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8019</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8020</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POINT NO.</th>
<th>TYPE</th>
<th>STATION</th>
<th>NORTHEAST</th>
<th>EASTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>8000</td>
<td>P.O.B.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8001</td>
<td>P.C.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8004</td>
<td>C.C.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8006</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8008</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8009</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8010</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8012</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8013</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8014</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8015</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8016</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8017</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8018</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8019</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8020</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POINT NO.</th>
<th>TYPE</th>
<th>STATION</th>
<th>NORTHEAST</th>
<th>EASTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>8003</td>
<td>P.C.</td>
<td>10547-51.94</td>
<td>34562.8787</td>
<td>35151.1039</td>
</tr>
<tr>
<td>8004</td>
<td>C.C.</td>
<td>34560.5739</td>
<td>35140.0160</td>
<td></td>
</tr>
<tr>
<td>8006</td>
<td>P.O.E.</td>
<td>18405.99</td>
<td>34500.8963</td>
<td>35179.3106</td>
</tr>
<tr>
<td>8008</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8010</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8012</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8013</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8014</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8015</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8016</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8017</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8018</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8019</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8020</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POINT NO.</th>
<th>TYPE</th>
<th>STATION</th>
<th>NORTHEAST</th>
<th>EASTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>8000</td>
<td>P.O.B.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8001</td>
<td>P.C.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8004</td>
<td>C.C.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8006</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8008</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8009</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8010</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8012</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8013</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8014</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8015</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8016</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8017</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8018</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8019</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8020</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POINT NO.</th>
<th>TYPE</th>
<th>STATION</th>
<th>NORTHEAST</th>
<th>EASTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>8003</td>
<td>P.C.</td>
<td>10547-51.94</td>
<td>34562.8787</td>
<td>35151.1039</td>
</tr>
<tr>
<td>8004</td>
<td>C.C.</td>
<td>34560.5739</td>
<td>35140.0160</td>
<td></td>
</tr>
<tr>
<td>8006</td>
<td>P.O.E.</td>
<td>18405.99</td>
<td>34500.8963</td>
<td>35179.3106</td>
</tr>
<tr>
<td>8008</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8010</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8012</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8013</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8014</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8015</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8016</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8017</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8018</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8019</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8020</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POINT NO.</th>
<th>TYPE</th>
<th>STATION</th>
<th>NORTHEAST</th>
<th>EASTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>8000</td>
<td>P.O.B.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8001</td>
<td>P.C.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8004</td>
<td>C.C.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8006</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8008</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8009</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8010</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8012</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8013</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8014</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8015</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8016</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8017</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8018</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8019</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8020</td>
<td>P.O.E.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
R.C. ARCH PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)

REMOVE DBL. 29" X 18" X 4' PIPE CULVERT LT. AND RT.

REMOVE DROP INLET AND TYPE C DROP INLET = 12' X 6'

DROP INLET ON RT. H = 3'-3"

STA. 113+93 IN PLACE

TYPE C DROP INLET = 4' X 2'-6"

STA. 112+04 IN PLACE

29" X 18" R.C. ARCH PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 121 LIN. FT.

TYPE C DROP INLET = 4' X 2'-6"

ARCH PIPE CULVERT TO DROP INLET ON RT.

STA. 111+87 CONSTRUCT

24" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 124 LIN. FT.

WITH 4' EXTENSION AND 24" X 124'

STA. 111+53 IN PLACE

RETAIN TYPE MO DROP INLET = 4' DIA.

STA. 110+45 IN PLACE

RETAIN WITH 18" X 313'

TYPE C DROP INLET = 4' X 2'-6"

TYPE MO DROP INLET = 4' DIA.

WITH FES R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) TO DROP INLET ON LT.

STA. 117+15 CONSTRUCT

TYPE MO DROP INLET = 4' DIA.

DROP INLET ON RT. H = 3'-0"

STA. 115+25 CONSTRUCT

24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 76 LIN. FT.

PIPE CULVERT TO DROP INLET ON RT.

DROP INLET ON RT. H = 3'-3"

STA. 115+25 CONSTRUCT

24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 61 LIN. FT.

TYPE MO DROP INLET = 4' DIA.

WITH 4' EXTENSION AND 24" X 61'

STA. 114+64 CONSTRUCT

24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 44 LIN. FT.

TYPE C DROP INLET = 4' X 2'-6"

TYPE MO DROP INLET = 4' DIA.

DROP INLET ON RT. H = 3'-2"

STA. 114+45 CONSTRUCT

TYPE C DROP INLET = 12' X 6'

WITH DBL. 42" X 24" X 24'

R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)

WITH 8' EXTENSION AND DBL. 29" X 18" X 19'

DROP INLET ON LT. H = 4'-5"

TYPE MO DROP INLET = 5' DIA.

DROP INLET ON LT. H = 3'-2"

24" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 91 LIN. FT.

TYPE C DROP INLET = 4' X 2'-6"

PIPE CULVERT TO DROP INLET ON LT.

DROP INLET ON LT. H = 5'-3"

18" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 190 LIN. FT.

WITH 4' EXTENSION AND 18" X 190'

STA. 122+06 CONSTRUCT

18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 52 LIN. FT.

TYPE C DROP INLET = 4' X 2'-6"

PIPE CULVERT TO DROP INLET ON RT.

DROP INLET ON RT. H = 3'-6"

24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 66 LIN. FT.

24" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 66 LIN. FT.

24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 48 LIN. FT.

TYPE MO DROP INLET = 4' DIA.

PIPE CULVERT TO DROP INLET ON LT.

WITH 8' EXTENSION AND 24" X 48'

DROP INLET ON LT. H = 4'-3"

STA. 120+87 CONSTRUCT

TYPE MO DROP INLET = 4' DIA.

WITH 24" X 51'

DROP INLET ON LT. H = 4'-4"

STA. 123+54 CONSTRUCT

18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 59 LIN. FT.

18" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 59 LIN. FT.

TYPE MO DROP INLET = 4' DIA.

STA. 123+54 CONSTRUCT

REMOVE PIPE CULVERT TO DROP INLET ON LT.

DROP INLET ON LT. H = 2'-9"

STA. 123+54 IN PLACE

TYPE MO DROP INLET = 5' DIA.

WITH FES 18" X 2' PIPE CULVERT

DROP INLET ON LT. H = 6'-3"

STA. 123+05 CONSTRUCT

TYPE MO DROP INLET = 4' DIA.

WITH 24" X 56'

DROP INLET ON LT. H = 3'-6"

STA. 124+11 IN PLACE

30" SLPPMCCS PIPE (TYPE 2 BEDDING) = 22 LIN. FT.

TYPE E JUNCTION BOX = 4' X 4'

WITH 30" X 22'

STA. 124+00 CONSTRUCT

18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 27 LIN. FT.

18" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 27 LIN. FT.

TYPE C DROP INLET = 4' X 2'-6"

WITH 4' EXTENSION AND 18" X 27'

STA. 123+54 CONSTRUCT

REMOVE PIPE CULVERT TO DROP INLET ON LT.

DROP INLET ON LT. H = 2'-9"

STA. 123+54 IN PLACE

TYPE MO DROP INLET = 5' DIA.

WITH FES 18" X 2' PIPE CULVERT

DROP INLET ON LT. H = 6'-3"

STA. 123+05 CONSTRUCT

36" SLPPMCCS PIPE (TYPE 2 BEDDING) = 80 LIN. FT.

TYPE C DROP INLET = 4' X 3'-8"

DROP INLET ON RT. H = 5'-8"

STA. 124+11 IN PLACE

REMOVE 24" X 106' PIPE CULVERT AND

WITH FES 24" X 106'

REMOVE PIPE CULVERT TO DROP INLET ON LT.

DROP INLET ON LT. H = 2'-2"

STA. 124+11 IN PLACE

TYPE C DROP INLET = 4' X 3'-8"

WITH 24" X 56'

STA. 123+54 CONSTRUCT

18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 27 LIN. FT.

18" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 27 LIN. FT.

TYPE C DROP INLET = 4' X 2'-6"

WITH 4' EXTENSION AND 18" X 27'

STA. 123+54 CONSTRUCT
PLAN & PROFILE STA. 11+45.00

MAJOR CONSTRUCTION

12" X 52' DROP INLET ON LT. H = 2'-9"
WITH 12" X 52' DROP INLET ON RT. H = 3'-7"
STA. 11+95 CONSTRUCT TYPE C DROP INLET = 4' x 3'-2"
35" x 24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 23 LIN. FT.
WITH 8' EXTENSION AND 36" x 23" x 23'

MODIFY DROP INLET WITH 8' EXTENSION AND 36" x 23" x 23'
CONNECT TO DROP INLET ON RT.

WITH 18" X 151'
CONNECT TO DROP INLET ON RT.

REFERRAL TO SURVEY CONTROL DETAIL SHEETS

REFER TO SURVEY CONTROL DETAIL SHEETS
**SUMMARY OF TRAFFIC SIGNAL QUANTITIES**

<table>
<thead>
<tr>
<th>ITEM NUMBER</th>
<th>ITEM</th>
<th>HWY. 16/112 @ FUTURLA DR.</th>
<th>HWY. 16 @ SHILOH DR.</th>
<th>HWY. 16 @ STEAMBOAT DR.</th>
<th>HWY. 16 @ SALEM ROAD</th>
<th>QUANTITY</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP &amp; 701</td>
<td>SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (18 PHASES)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SP &amp; 701</td>
<td>SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>13</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>TRAFFIC SIGNAL CONTROLLER MODIFICATION</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>ETHEREUM SWITCH, T100 HARDWIRED (8-PORT)</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>E-NET CABLE (EXTERIOR RIGID)</td>
<td>147</td>
<td>81</td>
<td>100</td>
<td>60</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>EMERGENCY VEHICLE PREEMPTION SYSTEM RELOCATION</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>LOCAL RADIO (E-NET 5.8) WITH ANTENNA</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>LOCAL RADIO WITH ANTENNA RELOCATION</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>BATTERY BACKUP SYSTEM</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SP &amp; 706</td>
<td>TRAFFIC SIGNAL HEAD, LED (3 SECTION, 1 WAY)</td>
<td>28</td>
<td>6</td>
<td>11</td>
<td>25</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SP &amp; 706</td>
<td>TRAFFIC SIGNAL HEAD, LED (4 SECTION, 1 WAY)</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SP &amp; 706</td>
<td>TRAFFIC SIGNAL HEAD, LED (5 SECTION, 1 WAY)</td>
<td>4</td>
<td>7</td>
<td>2</td>
<td>6</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>RELLOCATION OF TRAFFIC SIGNAL HEAD</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>PEDESTRIAN SIGNAL HEAD RELLOCATION</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SP &amp; 707</td>
<td>COUNCOSTRA PEDESTRIAN SIGNAL, HEAD, LED</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>708</td>
<td>TRAFFIC SIGNAL CABLE (6C/14 A.W.G.)</td>
<td>3628</td>
<td>3606</td>
<td>1579</td>
<td>4816</td>
<td>13831</td>
<td>FT</td>
</tr>
<tr>
<td>708</td>
<td>TRAFFIC SIGNAL CABLE (6C/14 A.W.G.)</td>
<td>2578</td>
<td>4508</td>
<td>149</td>
<td>2444</td>
<td>9679</td>
<td>FT</td>
</tr>
<tr>
<td>708</td>
<td>TRAFFIC SIGNAL CABLE (6C/14 A.W.G.)</td>
<td>299</td>
<td>343</td>
<td>38</td>
<td>680</td>
<td>680</td>
<td>FT</td>
</tr>
<tr>
<td>708</td>
<td>TRAFFIC SIGNAL CABLE (2C/14 A.W.G.)</td>
<td>476</td>
<td>525</td>
<td>809</td>
<td>814</td>
<td>2222</td>
<td>FT</td>
</tr>
<tr>
<td>708</td>
<td>ELECTRICAL CONNECTORS, IN-CONDUCT (10G A.W.G., E.G.C.)</td>
<td>737</td>
<td>771</td>
<td>666</td>
<td>816</td>
<td>3010</td>
<td>FT</td>
</tr>
<tr>
<td>708</td>
<td>ELECTRICAL CONNECTORS, IN-CONDUCT (10C A.W.G., E.G.C.)</td>
<td>280</td>
<td>260</td>
<td>160</td>
<td>235</td>
<td>955</td>
<td>FT</td>
</tr>
<tr>
<td>708</td>
<td>ELECTRICAL CONNECTORS, IN-CONDUCT (20C A.W.G.)</td>
<td>175</td>
<td>110</td>
<td>42</td>
<td>34</td>
<td>411</td>
<td>FT</td>
</tr>
<tr>
<td>708</td>
<td>ELECTRICAL CONNECTORS FOR LUMINARIES</td>
<td>234</td>
<td>191</td>
<td>40</td>
<td>245</td>
<td>3174</td>
<td>FT</td>
</tr>
<tr>
<td>708</td>
<td>GALVANIZED STEEL CONDUIT (1&quot;)</td>
<td>19</td>
<td>40</td>
<td>20</td>
<td>120</td>
<td>120</td>
<td>FT</td>
</tr>
<tr>
<td>708</td>
<td>GALVANIZED STEEL CONDUIT (3&quot;)</td>
<td>70</td>
<td>120</td>
<td>70</td>
<td>260</td>
<td>260</td>
<td>FT</td>
</tr>
<tr>
<td>710</td>
<td>NONMETALIC CONDUIT (5&quot;)</td>
<td>168</td>
<td>115</td>
<td>51</td>
<td>104</td>
<td>438</td>
<td>FT</td>
</tr>
<tr>
<td>710</td>
<td>NONMETALIC CONDUIT (7&quot;)</td>
<td>467</td>
<td>873</td>
<td>430</td>
<td>452</td>
<td>5022</td>
<td>FT</td>
</tr>
<tr>
<td>711</td>
<td>CONCRETE BOX (TYPE 2)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>19</td>
<td>FT</td>
</tr>
<tr>
<td>711</td>
<td>CONCRETE BOX (TYPE 1 1/2&quot;)</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>FT</td>
</tr>
<tr>
<td>711</td>
<td>CONCRETE BOX (TYPE 2 1/2&quot;)</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>FT</td>
</tr>
<tr>
<td>SS &amp; 713</td>
<td>SPANNER ASSY.</td>
<td>71</td>
<td>120</td>
<td>70</td>
<td>120</td>
<td>120</td>
<td>FT</td>
</tr>
<tr>
<td>SS &amp; 714</td>
<td>TRAFFIC SIGNAL, MAST ARM AND POLE WITH FOUNDATION (24&quot;)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SS &amp; 714</td>
<td>TRAFFIC SIGNAL, MAST ARM AND POLE WITH FOUNDATION (32&quot;)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SS &amp; 714</td>
<td>TRAFFIC SIGNAL, MAST ARM AND POLE WITH FOUNDATION (38&quot;)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SS &amp; 714</td>
<td>TRAFFIC SIGNAL, MAST ARM AND POLE WITH FOUNDATION (40&quot;)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SS &amp; 714</td>
<td>TRAFFIC SIGNAL, MAST ARM AND POLE WITH FOUNDATION (48&quot;)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SS &amp; 714</td>
<td>TRAFFIC SIGNAL, MAST ARM AND POLE WITH FOUNDATION (50&quot;)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SS &amp; 714</td>
<td>TRAFFIC SIGNAL, MAST ARM AND POLE WITH FOUNDATION (52&quot;)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SS &amp; 714</td>
<td>TRAFFIC SIGNAL, MAST ARM AND POLE WITH FOUNDATION (59&quot;)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SS &amp; 714</td>
<td>TRAFFIC SIGNAL, MAST ARM AND POLE WITH FOUNDATION (60&quot;)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SS &amp; 714</td>
<td>TRAFFIC SIGNAL, MAST ARM AND POLE WITH FOUNDATION (65&quot;)</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SS &amp; 714</td>
<td>TRAFFIC SIGNAL, MAST ARM AND POLE WITH FOUNDATION (64&quot;)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SS &amp; 714</td>
<td>TRAFFIC SIGNAL, MAST ARM AND POLE FOUNDATION (70&quot;)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>EACH</td>
<td></td>
</tr>
<tr>
<td>SS &amp; 715</td>
<td>TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>16</td>
<td>EACH</td>
</tr>
<tr>
<td>SP</td>
<td>SERVICE POINT ASSEMBLY (2 CIRCUITS)</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>EACH</td>
</tr>
<tr>
<td>SP</td>
<td>REMOVAL OF TRAFFIC SIGNAL EQUIPMENT</td>
<td>0.39</td>
<td>0.32</td>
<td>0.29</td>
<td>1.00</td>
<td>LUMP SUM</td>
<td></td>
</tr>
<tr>
<td>716</td>
<td>TREATED WOOD POLE (CLASS 2, 4&quot;)</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>4</td>
<td>20</td>
<td>EACH</td>
</tr>
<tr>
<td>726</td>
<td>STANDARD SIGN</td>
<td>49</td>
<td>60</td>
<td>15</td>
<td>67.5</td>
<td>191.5</td>
<td>FT</td>
</tr>
<tr>
<td>SP</td>
<td>STREET NAME SIGN</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>16</td>
<td>EACH</td>
</tr>
<tr>
<td>733</td>
<td>VIDEO DETECTOR LOCATION</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>16</td>
<td>EACH</td>
</tr>
<tr>
<td>SP</td>
<td>VIDEO DETECTOR NOTATION</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>EACH</td>
</tr>
<tr>
<td>* SP &amp; 733</td>
<td>VIDEO DETECTOR (CLR)</td>
<td>15</td>
<td>13</td>
<td>7</td>
<td>13</td>
<td>48</td>
<td>EACH</td>
</tr>
<tr>
<td>733</td>
<td>VIDEO CABLE</td>
<td>3620</td>
<td>4149</td>
<td>1375</td>
<td>2609</td>
<td>11782</td>
<td>EACH</td>
</tr>
<tr>
<td>733</td>
<td>VIDEO MONITOR (CLR)</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>8</td>
<td>EACH</td>
</tr>
<tr>
<td>733</td>
<td>VIDEO PROCESSOR, EDGE CARD (1 CAMERA)</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>16</td>
<td>EACH</td>
</tr>
<tr>
<td>733</td>
<td>VIDEO PROCESSOR, EDGE CARD (2 CAMERA)</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>EACH</td>
</tr>
<tr>
<td>733</td>
<td>WHOLE DETECTOR RACK (16 CHANNEL)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SP &amp; 733</td>
<td>VIDEO DETECTOR RACK (22 CHANNEL)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>EACH</td>
</tr>
</tbody>
</table>

* ONE SPARE VIDEO LED UNIT AND ONE SPARE VIDEO PROCESSOR SPRAY WILL BE SUPPLIED FOR EACH INTERSECTION.
TRAFFIC SIGNAL NOTES

1. All electrical work shall be performed in accordance with the current editions of the NFPA to current edition National Electrical Code. NFPA 1 (current edition life safety code), state electrical code and local electrical code.

2. Extend green equipment grounding conductor (E.G.G.C.) from ground bar at main breaker to control panel, and to first pole. Route bond E.G.G.C. to ground lug of control cabinet and to pole ground, and ensure that only one neutral-to-ground bond exists in the system and that it is at the main breaker.

3. Electrical service shall be provided by the city/country to a service pole with external banklight breaker (main breaker), insulated steel service wire, meter socket (if required), and heat-sealed at a mutually acceptable point within the right-of-way. If the service point is over 10 feet from the controller, the contractor shall provide and install a separate two circuit external breaker (secondary breaker) on or near the traffic signal controller cabinet and shall (initial) conduit, electrical service wire (where required), use rated, weatherproof, typical to be rated from the circuit serving the traffic signal control equipment from the point of tie-in at the secondary breaker provided by the contractor.

4. Controller shall connect a neutral strip for each load switch represented on each signal pole.

5. Traffic controller cabinet and layout shall be such that it is not necessary to shut down power or remove load switches in order to easily test or modify detector inputs to the controller.

6. Controller cabinet shall be wired such that flashing pilot operations power to the load switches cannot be fed to (load switch power bus).

7. All parts of this installation shall be in accordance with the standard specifications for highway construction, standard blueprints and with the manual on traffic control devices, current edition.

8. Conduit installed under roadway surfaces shall be installed by using pipe or running method. If the engineer determines this is not possible, then a trenching method as shown in the standards or diagrams may be used.

9. Traffic signal poles shall be galvanized. Backplates shall be supplied for all signal heads.

10. Payment method shown for reference only. See permanent payment method details.

11. Foundation for all poles shall be extended if necessary to accommodate the requirements for signal head clearance above roadway. Only at locations where the ground elevation at the pole is below the elevation of the roadway. See notes on standard diagram. Payment will be included in section 7.4 traffic signal, mast arm and pole with foundation for the standard specifications for highway construction, current edition.

12. All concrete fill boxes shall be (type 2) unless otherwise indicated. All conduit shall be three (3) inches in diameter unless specified on plans.

13. Contractor shall notify all existing utility owners before beginning work on this project.

14. LED luminaire assemblies shall have a B2G rating of 15.

15. Hardware inputs may be determined by supplier. Each detector output signal input the controller through a separate input unless otherwise noted and be programmed to activate the associated phase. Combination (comb) detectors shall also be programmed to provide vehicle count/occupancy data.

16. The local radio with antenna shall be compatible with the existing closed loop coordination system in the city/country.

17. To determine utility clearances above the traffic signal pole, refer to the pole schedule for vertical chain height. Where the pole schedule indicates that a luminaire arm will be used, thirty-eight (38) feet should be used to determine utility clearance above the luminaire arm. Where the pole schedule indicates a traffic signal pole without a luminaire arm, a height of twenty-seven (27) feet should be used to determine utility clearance above the traffic signal mast arm. An additional six (6) feet should be used directly above "video detector" at locations shown on the signal plans.

18. The desirable minimum distance from the face of roadway curb or shoulder edge to the face of non-breakaway pole or construction is sixty (60) feet. Refer to traffic signal plans for specific location of poles, controller and any other non-breakaway obstruction. Refer to "design parameters, minimum clear zone distance" for minimum distance from the edge of traveled way to the face of a non-breakaway pole. Non-breakaway signal poles or any other non-breakaway obstruction shall not be installed within the clear zone.

19. As determined by the engineer, foundation embedment may be decreased by a maximum of two feet if competent rock is encountered prior to beginning plan embedment and at least half of the remaining plan embedment length is keyed into competent rock.

20. Connection of traffic signal display to field wiring shall utilize an approved terminal strip behind hinged cover at base of pole. Terminal strip shall provide protection to prevent exposure to the public in the event that pole cover is missing. Payment for terminal strips shall be included in item 7.4 traffic signal mast arm and pole with foundation of the standard specifications for highway construction, current edition.

21. Controller cabinet layout and orientation shall conform to MSHA standards.

22. One video programming module shall be provided for wiring and setup of detectors if the video system cannot be adjusted through hardware and software provided by items within the job.

23. Traffic signal contractor shall notify the resident engineer or assigned department project inspector each day prior to signal related work. No work on traffic signals will be allowed or approved without this prior notification.

24. All metal poles shall be designed to meet the asbestos standard specifications for structural supports for highway signs, luminaries and traffic signals, 4th edition (2001) with 2003 and 2006 interims.

25. Door panel test push buttons shall actuate indicated phases. Detector assignments and/or side panel jumpers may require modification.

26. All system detector banks and associated equipment shall be protected by the main controller cabinet power surge protection.

27. In full boxes, pole bases, junction boxes and controller cabinets, the direction of each cable run shall be indicated by attaching a permanent tag of ½-in. plastic or noncorrosive metal to the conduit. Tags shall be embossed, stamped overprinted with letters 1/4 in. in height and secured to the conduit with a plastic or plastic ties. In instances where the conduit or conduit terminations are not visible or accessible, a direction tag shall be attached to each cable.

28. The contractor shall provide all work feasible that will minimize the impact that the traffic signal is out of operation. It is the opinion of the engineer, traffic conditions warrant the contractor shall provide flashing to direct traffic while the traffic signal is out of operation.

29. All nonmetallic conduit runs shall have bell ring fittings installed on the terminating ends of the conduit. This includes full boxes, pole bases, and traffic signal cabinets.

30. All concrete full boxes shall be set on a gravel or crushed stone bedding as specified in section 7.1. Concrete full box, of the standard specifications for highway construction, edition of 2014.
**PEDESTRIAN PUSH BUTTON PEDESTAL DETAIL**

**NOTES:**

- Each Pedestrian Push Button shall have one RD-3E sign attached to the pole above the button. All signs shall be manufactured in accordance with Section 723 of the Standard Specifications for Highway Construction.
- All sign blanks shall be constructed of aluminum alloy (ASTM designation B-209, Alloy 5052-H38) with a thickness of 0.100 inch.
- Minimum structural requirements and design specifications, including standard specifications for structural supports for highway signs, luminaires, and traffic signals, 4th edition (2003 and 2006 iterations).

**CONSTRUCTION SPECIFICATIONS:**

- Standard specifications for highway construction, current edition with applicable supplemental specifications and special provisions.
- Pole Cap - Pole caps shall be provided, fabricated of either steel or cast aluminum.
- Hand Hole - Hand holes shall be 3 IN. X 5 IN. FOR PEDESTRIAN SIGNS. Minimum placed approximately 6 INCHES from base, and shall be filled with a bolt down cover. A vacuum-formed ABS cover is an acceptable alternate to steel.
- Nut Covers - Each pole shall include a bolt down nut cover for each anchor bolt.

**GROUND ROD - A 10' X 2" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 2" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND CONTROLLER. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID SEPARATELY.**

**POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX NUT. PERIMETER OF ANCHOR BASE SHALL BE CEMENTED WITH A 1/2" REED HOLE. ALL CONCRETE SHALL BE CLASS "S" OR GREATER.**

**CONCRETE - ALL CONCRETE POLE FOUNDATION SHALL BE CLASS "S" OR GREATER.**

**PEDESTRIAN PUSH BUTTON PEDESTAL DETAIL**
OVERHEAD STREET NAME MARKER STANDARD MAST ARM MOUNTED

NOTES:
1. REFLECTIVE SHEETING SHALL COMPLY WITH ASTM 4666 TYPE 8 OR 9 REFLECTIVE SHEETING. SHEETING AND LEGEND SHALL BE APPLIED IN SUCH A MANNER TO PROVIDE WRINKLE AND BUBBLE FREE SURFACES. APPLICATION OF SHEETING IS CAUSE FOR REJECTION OF MATERIALS DUE TO WORKMANSHIP.
2. ALUMINUM SIGN BLANK SHALL BE ALLOY 6061-T6 OR 5052-H38. THE ALUMINUM SHEETING SHALL BE ALSO ALUMINIZED. THE ALUMINUM SHEETING SHALL BE 0.100 INCH NOMINAL THICKNESS AND OF THE SIZE SHOWN WITH 15° CORNER RADIUS PRIOR TO FABRICATION OF THE SIGNS. THE LAYOUT SHALL FIRST BE APPROVED BY AN AGENT OF THE CITY/COUNTY.
3. WHEN CROSSROAD HAS TWO NAMES, THE SIGN FOR THE CROSSROAD TO THE LEFT MAY BE INSTALLED ON THE BACKSIDE OF THE MAST ARM ON THE NEAR SIDE LEFT POLE. SEE STANDARD DRAWING SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ARM ASSEMBLY.
4. THE SERIES C 2000 STANDARD ALPHABET SHALL BE USED FOR ALL LETTERS.
## Traffic Signal Quantities

### Stage 1A Traffic Signal Quantities

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Traffic Signal Control (Modification)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>10</td>
<td>Removal of Traffic Signal Equipment</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>53</td>
<td>Concrete Full Box (Type 2)</td>
<td>5</td>
<td>Each</td>
</tr>
<tr>
<td>126</td>
<td>Steel Wire Assembly</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>138</td>
<td>Electric Conductor (Cable)</td>
<td>5</td>
<td>Each</td>
</tr>
<tr>
<td>140</td>
<td>Video Monitor (CUR)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>142</td>
<td>Video Processor, Edge Card (2 cameras)</td>
<td>5</td>
<td>Each</td>
</tr>
<tr>
<td>143</td>
<td>Vehicle Detector Box (30 Channels)</td>
<td>1</td>
<td>Each</td>
</tr>
</tbody>
</table>

### Stage 1B Traffic Signal Quantities

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Traffic Signal Control (Modification)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>10</td>
<td>Removal of Traffic Signal Equipment</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>53</td>
<td>Concrete Full Box (Type 2)</td>
<td>5</td>
<td>Each</td>
</tr>
<tr>
<td>126</td>
<td>Steel Wire Assembly</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>138</td>
<td>Electric Conductor (Cable)</td>
<td>5</td>
<td>Each</td>
</tr>
<tr>
<td>140</td>
<td>Video Monitor (CUR)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>142</td>
<td>Video Processor, Edge Card (2 cameras)</td>
<td>5</td>
<td>Each</td>
</tr>
<tr>
<td>143</td>
<td>Vehicle Detector Box (30 Channels)</td>
<td>1</td>
<td>Each</td>
</tr>
</tbody>
</table>

### Stage 1C & 1 Traffic Signal Quantities

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Traffic Signal Control (Modification)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>10</td>
<td>Removal of Traffic Signal Equipment</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>53</td>
<td>Concrete Full Box (Type 2)</td>
<td>5</td>
<td>Each</td>
</tr>
<tr>
<td>126</td>
<td>Steel Wire Assembly</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>138</td>
<td>Electric Conductor (Cable)</td>
<td>5</td>
<td>Each</td>
</tr>
<tr>
<td>140</td>
<td>Video Monitor (CUR)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>142</td>
<td>Video Processor, Edge Card (2 cameras)</td>
<td>5</td>
<td>Each</td>
</tr>
<tr>
<td>143</td>
<td>Vehicle Detector Box (30 Channels)</td>
<td>1</td>
<td>Each</td>
</tr>
</tbody>
</table>

### Stage 2 Traffic Signal Quantities

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Traffic Signal Control (Modification)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>10</td>
<td>Removal of Traffic Signal Equipment</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>53</td>
<td>Concrete Full Box (Type 2)</td>
<td>5</td>
<td>Each</td>
</tr>
<tr>
<td>126</td>
<td>Steel Wire Assembly</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>138</td>
<td>Electric Conductor (Cable)</td>
<td>5</td>
<td>Each</td>
</tr>
<tr>
<td>140</td>
<td>Video Monitor (CUR)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>142</td>
<td>Video Processor, Edge Card (2 cameras)</td>
<td>5</td>
<td>Each</td>
</tr>
<tr>
<td>143</td>
<td>Vehicle Detector Box (30 Channels)</td>
<td>1</td>
<td>Each</td>
</tr>
</tbody>
</table>

### Stage 3 Traffic Signal Quantities

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>Traffic Signal Controller (Modification)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>45</td>
<td>Relocation of Traffic Signal Head</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>50-1</td>
<td>Electrical Conductor (Cable)</td>
<td>100</td>
<td>Lin Ft</td>
</tr>
<tr>
<td>51</td>
<td>Video Monitor (CUR)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>52</td>
<td>Video Processor, Edge Card (1 camera)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>53</td>
<td>Edge Connect Card for Communications</td>
<td>2</td>
<td>Each</td>
</tr>
</tbody>
</table>

### Stage 4 Traffic Signal Quantities

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>Traffic Signal Controller (Modification)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>37</td>
<td>Relocation of Traffic Signal Head</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>50</td>
<td>Electrical Conductor (Cable)</td>
<td>100</td>
<td>Lin Ft</td>
</tr>
<tr>
<td>51</td>
<td>Video Monitor (CUR)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>52</td>
<td>Video Processor, Edge Card (1 camera)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>53</td>
<td>Edge Connect Card for Communications</td>
<td>2</td>
<td>Each</td>
</tr>
</tbody>
</table>

### Stage 5 Traffic Signal Quantities

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>733</td>
<td>Traffic Signal Controller (Modification)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>734</td>
<td>Relocation of Traffic Signal Head</td>
<td>1</td>
<td>Each</td>
</tr>
</tbody>
</table>

### Permanent Traffic Signal Quantities

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>85</td>
<td>Traffic Signal Controller (Modification)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>86</td>
<td>Relocation of Traffic Signal Head</td>
<td>1</td>
<td>Each</td>
</tr>
</tbody>
</table>

---

**Notes:**
- Permanent traffic signal equipment and one spare video processor shall be supplied.
- All traffic signals shall be equipped with digital signal heads and digital controllers.
- The permanent traffic signal equipment shall remain in operation until the permanent traffic signal is completed.
- All permanent traffic signal equipment shall be connected to an emergency vehicle preemption system.
- The permanent traffic signal equipment shall be designed and equipped to withstand a two-hour fire.
NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATIONAL SERVICE 30' FROM THE CROSSWALK.  INSTALL PEDESTRIAN SIGNAL HEADS IN A CROSSWALK THAT MEETS LOCAL STANDARD.
4. RELOCATE EXISTING PEDESTRIAN SIGNAL HEADS AND PUSH BUTTONS TO WOOD POLES B,C,& D.
5. CONTACT THE CITY OF FAYETTEVILLE AND PUSH BUTTONS TO WOOD POLES B,C,& D.

RELOCATE EXISTING PEDESTRIAN SIGNAL HEADS.
STANDARD.
RAMPS AND A CROSSWALK THAT MEETS A.D.A.
STAGE 1A - TEMP. SIGNAL
STAGE 1A - TEMP. SIGNAL
NOTE TO CONTRACTOR CONTINUE THE CITY OF FAYETTEVILLE FOR ANTI-ALARM OPERATION.
PHASING DIAGRAM

SIGNAL FACES

12" LENSES

R Y G R Y G R Y G

F R Y G R Y G R Y G

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO SEGMENTATION AT NODA AND BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A.S. STANDARDS.
4. RELOCATE EXISTING PEDESTRIAN SIGNAL HEADS AND PUSH BUTTONS TO WOOD POLES 9, 5 & 6.

STAGE 1A DETECTOR CHART

Hwy 16/112S/Futrrall Drive

- HARDWARE INPUTS
- PROGRAM ASSIGNMENTS

<table>
<thead>
<tr>
<th>DET. ID #</th>
<th>LOCATION DIRECTION TYPE</th>
<th>DET. #</th>
<th>CAB TRM #</th>
<th>AMP CHN #</th>
<th>CON. AMP #</th>
<th>PHS SYSTEM</th>
<th>DET #</th>
<th>MASTER SYSTEM DETECTOR NUMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vx11</td>
<td>EB LEFT TURN FAIR</td>
<td>1</td>
<td>D1</td>
<td>1</td>
<td>1</td>
<td>CAMERIA V1</td>
<td>23'</td>
<td></td>
</tr>
<tr>
<td>Vx12</td>
<td>EB LEFT TURN LOCAL</td>
<td>2</td>
<td>V1</td>
<td>1</td>
<td>1</td>
<td>CAMERIA V1</td>
<td>23'</td>
<td></td>
</tr>
<tr>
<td>Vx13</td>
<td>EB LEFT TURN FAIR</td>
<td>3</td>
<td>D6</td>
<td>1</td>
<td>5</td>
<td>CAMERIA V8</td>
<td>23'</td>
<td></td>
</tr>
<tr>
<td>Vx14</td>
<td>EB LEFT TURN LOCAL</td>
<td>4</td>
<td>V5</td>
<td>1</td>
<td>1</td>
<td>CAMERIA V9</td>
<td>23'</td>
<td></td>
</tr>
<tr>
<td>Vx21</td>
<td>WB ADVANCE</td>
<td>7</td>
<td>V2</td>
<td>2</td>
<td>2</td>
<td>CAMERIA V5</td>
<td>23'</td>
<td></td>
</tr>
<tr>
<td>Vx22</td>
<td>WB NEAR</td>
<td>8</td>
<td>D2</td>
<td>2</td>
<td>2</td>
<td>CAMERIA V3</td>
<td>23'</td>
<td></td>
</tr>
<tr>
<td>Vx23</td>
<td>NB LEFT TURN FAIR</td>
<td>9</td>
<td>D3</td>
<td>3</td>
<td>3</td>
<td>CAMERIA V3</td>
<td>23'</td>
<td></td>
</tr>
<tr>
<td>Vx32</td>
<td>NB LEFT TURN LOCAL</td>
<td>10</td>
<td>V3</td>
<td>3</td>
<td>3</td>
<td>CAMERIA V3</td>
<td>23'</td>
<td></td>
</tr>
<tr>
<td>Vx41</td>
<td>NB LEFT TURN FAIR</td>
<td>13</td>
<td>D4</td>
<td>4</td>
<td>4</td>
<td>CAMERIA V4</td>
<td>23'</td>
<td></td>
</tr>
<tr>
<td>Vx42</td>
<td>NB LEFT TURN LOCAL</td>
<td>14</td>
<td>V4</td>
<td>4</td>
<td>4</td>
<td>CAMERIA V4</td>
<td>23'</td>
<td></td>
</tr>
<tr>
<td>Vx43</td>
<td>NB ADVANCE</td>
<td>15</td>
<td>D4</td>
<td>4</td>
<td>8</td>
<td>CAMERIA V4</td>
<td>23'</td>
<td></td>
</tr>
<tr>
<td>Vx44</td>
<td>NB NEAR</td>
<td>16</td>
<td>V8</td>
<td>4</td>
<td>4</td>
<td>CAMERIA V4</td>
<td>23'</td>
<td></td>
</tr>
<tr>
<td>Vx61</td>
<td>EB ADVANCE</td>
<td>3</td>
<td>V6</td>
<td>6</td>
<td>6</td>
<td>CAMERIA V6</td>
<td>23'</td>
<td></td>
</tr>
<tr>
<td>Vx62</td>
<td>EB NEAR</td>
<td>4</td>
<td>D6</td>
<td>6</td>
<td>6</td>
<td>CAMERIA V3</td>
<td>23'</td>
<td></td>
</tr>
<tr>
<td>Vx71</td>
<td>SB ADVANCE</td>
<td>17</td>
<td>D7</td>
<td>7</td>
<td>7</td>
<td>CAMERIA V7</td>
<td>23'</td>
<td></td>
</tr>
<tr>
<td>Vx72</td>
<td>SB NEAR</td>
<td>18</td>
<td>V7</td>
<td>7</td>
<td>7</td>
<td>CAMERIA V7</td>
<td>23'</td>
<td></td>
</tr>
<tr>
<td>P#2A</td>
<td>Futrall Dr N. Leg PED.</td>
<td>P2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P#4A</td>
<td>HWY 16/112S E. Leg PED.</td>
<td>P4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spare</td>
<td>11 - 12, 19 - 20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: "AMP CHN #" refers to the rack output position. This is wired to controller input detector number which is programmed to actuate the designated phase.

STAGE 1A - TEMP. SIGNAL
HWY. 16/112S AT FUTRALL DRIVE
NOTES:
1. All signal heads shall have backplates.
2. Refer to Special Provision "Reflective Backplates" for details on requirements for backplates.
3. All pedestrian signal heads can be placed into operation if there are both wheelchair ramps and a crossing that meets ADA standard.
4. All signal heads 12, 13, & 14.
5. Leave signal heads 20, 23, & 24 from Stage 1A.

STAGE 1B - TEMP. SIGNAL
Hwy. 16/112S AT FUTRALL DRIVE

NOTE TO CONTRACTOR:
Contact the City of Fayetteville for antenna operation.

DATE: 7-30-2020
NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
STAGE 1B
TEMPORARY WIRING DIAGRAM

NOTES TO CONTRACTOR:
1. ONE SEPARATE 1-5C IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.
2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREAS OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.
4. BAG SIGNAL HEADS 1, 2, 3 & 4.
5. REMOVE SIGNAL HEADS 20, 23 & 24 WITH THEIR RESPECTIVE TRAFFIC SIGNAL CABLE FROM STAGE IA.

SERVICE POINT AND MAIN BREAKER IN CONTRACTOR (EXIST.)

STAGE 1B - TEMP. SIGNAL
HWY. 16/112S AT FUTRALL DRIVE
STAGE 1B INTERVAL CHART

<table>
<thead>
<tr>
<th>SIGNAL &quot;ACES&quot;</th>
<th>HIGHWAY 161125 AND FUTRALL DRIVE</th>
<th>FLASH SEQUENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>6 &amp; 7</td>
<td>-G -F -R -F -R</td>
</tr>
<tr>
<td>8</td>
<td>10, 11 &amp; 12</td>
<td>R R R R R R R R</td>
</tr>
<tr>
<td>9</td>
<td>13 &amp; 14</td>
<td>-G -F -R -F -R</td>
</tr>
<tr>
<td>15</td>
<td>16 &amp; 17</td>
<td>-G -F -R -F -R</td>
</tr>
<tr>
<td>21 &amp; 22</td>
<td>24 &amp; 25</td>
<td>DW DW FDW DW DW DW BLK</td>
</tr>
</tbody>
</table>

* DENOTES UPWARD OR YELLOW ARROW UP, NURSE OR R.S.L. PHASE
** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
*** DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

STAGE 1B DETECTOR CHART

<table>
<thead>
<tr>
<th>DET. ID #</th>
<th>LOCATION DIRECTION</th>
<th>TYPE</th>
<th>LOCAL</th>
<th>TRM.</th>
<th>CAB.</th>
<th>AMP.</th>
<th>CHN#</th>
<th>CON.</th>
<th>MP.</th>
<th>PHS</th>
<th>SYSTEM</th>
<th>DET. #</th>
<th>NUMBERS</th>
<th>COMMENTS</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>V11</td>
<td>EB LEFT TURN</td>
<td>COMB</td>
<td>1</td>
<td>D1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA 21</td>
<td>27</td>
</tr>
<tr>
<td>V12</td>
<td>EB LEFT TURN</td>
<td>LOCAL</td>
<td>2</td>
<td>V1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA 21</td>
<td>27</td>
</tr>
<tr>
<td>V13</td>
<td>EB LEFT TURN</td>
<td>COMB</td>
<td>5</td>
<td>D5</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA 28</td>
<td>27</td>
</tr>
<tr>
<td>V14</td>
<td>EB LEFT TURN</td>
<td>LOCAL</td>
<td>6</td>
<td>V5</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA 29</td>
<td>27</td>
</tr>
<tr>
<td>V21AAB</td>
<td>WB ADVANCE</td>
<td>LOCAL</td>
<td>7</td>
<td>V2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA 27</td>
<td>27</td>
</tr>
<tr>
<td>V22AAB</td>
<td>WB NEAR</td>
<td>COMB</td>
<td>8</td>
<td>D2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA 27</td>
<td>27</td>
</tr>
<tr>
<td>V23</td>
<td>HB LEFT TURN</td>
<td>COMB</td>
<td>9</td>
<td>D3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA 23</td>
<td>27</td>
</tr>
<tr>
<td>V24</td>
<td>HB LEFT TURN</td>
<td>LOCAL</td>
<td>10</td>
<td>V3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA 25</td>
<td>27</td>
</tr>
<tr>
<td>V21AAB</td>
<td>EB ADVANCE</td>
<td>LOCAL</td>
<td>3</td>
<td>V6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA 26</td>
<td>27</td>
</tr>
<tr>
<td>V22AAB</td>
<td>EB NEAR</td>
<td>COMB</td>
<td>4</td>
<td>D6</td>
<td>6</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA 21</td>
<td>27</td>
</tr>
<tr>
<td>V271</td>
<td>SB ADVANCE</td>
<td>COMB</td>
<td>17</td>
<td>D7</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA 27</td>
<td>27</td>
</tr>
<tr>
<td>V272</td>
<td>SS NEAR</td>
<td>LOCAL</td>
<td>18</td>
<td>V7</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA 27</td>
<td>27</td>
</tr>
<tr>
<td>PB2AAB</td>
<td>FUTRALL DR. N. LEG</td>
<td>PED</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SPARE 11-16</td>
<td>20</td>
</tr>
</tbody>
</table>

| CONTROLLER INPUT ABBREVIATIONS: |
| V = VEHICLE INPUT             |
| D = SYSTEM OR AUXILIARY INPUT |
| P = PEDESTRIAN INPUT          |

NOTE: *AMP. CHN#* refers to the rack output position. This is wired to controller input detector number which is programmed to actuate the designated phase.
NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED
THROUGHOUT ALL CONSTRUCTION PHASES.

EXIST. R/W
(TYPICAL)
NECESSARY SEE DETAIL
INSTALLATION IF
USE SIDEWALK GUY
(CLASS 2, 45')
TREATED WOOD POLE
(LINE LOCATIONS)
VDZ (TYPICAL AT STOP
VIRTUAL 6'X50' PRESENCE
LINE LOCATIONS)

CONDUIT UP THE WOOD POLE
BREAKER BY CONTRACTOR 2-3" G.S.
POLE MOUNTED CABINET AND SECONDARY
TO POLE A FACING EAST.
CAT 5E CABLE, MOUNTED
LOCAL RADIO WITH ANTENNA,
TO CONTROLLER
BY CONTRACTOR. 2' DIA. NMC
SERVICE POINT AND MAIN BREAKER
BY CONTRACTOR. F. ON, MUTE
TO CONTROLLER
LOCAL RADIO WITH ANTENNA.
CAT 5E CABLE MOUNTED
SECONDARY BREAKER BY CONTRACTOR 2-3" G.S.
CONDUIT UP THE WOOD POLE

THROUGHOUT ALL CONSTRUCTION PHASES.
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

...
STAGE 1C & 1
TEMPORARY WIRING DIAGRAM

NOTES TO CONTRACTOR:
1. ONE SEPARATE 1-S: 8 RUN TO EACH POLE FOR THE PEDESTRIAN
   PUSH BUTTON.
2. ALL DETECTOR RACK CHANNELS INCLUDING UNUSED, SHALL BE
   BROUGHT TO TERMINAL STAND IN DETECTOR AREA "Y" CARRIER.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING
   POWER TO THE SERVICE POINT.
4. UNBAG SIGNAL HEADS 1, 2, 3 & 4 AND RELOCATE TO ACCOMMODATE
   STAGE 1C & 1 MAINTENANCE OF TRAFFIC.
NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH ANGLEWALL RAMPS AND A CROSSWALK THAT MEETS A.D.A.S. STANDARD.
4. USE SIGNS SIGNAL HEADS 1, 2, 3 & 4 AND RELOCATE TO ACCOMMODATE STAGE 1C & 1 MAINTENANCE OF TRAFFIC.

PHASING DIAGRAM

SIGNAL FACES
- 12" LENSES
- R Y G R Y G
- F R Y G

ONE SECTION (SOLID SYMBOL)

EXISTING
- 15 & 16
- 8 & 9

EXISTING EXISTING
- 10 & 11
- 16 & 17
- 18 & 19

EXISTING P1 & P2

18 & 19
- 9

16 & 17
- 8 & 7
- 3 & 4

6 & 7
- G

10, 11 & 12
- R R G

13 & 14
- R R G

15
- G

16 & 17
- G

21 & 22
- DW

SIGNAL FACES
- 3, 4, 6

5
- G

STAGE 1C & 1 INTERVAL CHART

HIGHWAY 16/112S AND FUTRALL DRIVE

1.2
- R

3 & 4
- R

5
- G

6 & 7
- G

8
- R

9
- R

10, 11 & 12
- R R G

13 & 14
- R R G

15
- G

16 & 17
- G

21 & 22
- DW

HIGHWAY 16/112S/FUTRALL DRIVE

STAGE 1C & 1 DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB 048817

HIGHWAY 16/112S

DETECTOR ASSIGNMENTS

BY SUPPLIER

PROGRAM ASSIGNMENTS

LOCAL MASTER SYSTEM DETECTOR NUMBERS

COMMUNICATIONS

TUBE LENGTHS

DESERVER DET.

1. V = VEHICLE INPUT

2. D = SYSTEM OR AUXILIARY INPUT

3. P = PEDESTRIAN INPUT

V = VEHICLE INPUT

D = SYSTEM OR AUXILIARY INPUT

P = PEDESTRIAN INPUT

NOTE: "AMP CHN =" REFERS TO THE RACK OUTPUT POSITION. THIS IS WIRING TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTIVATE THE DESIGNATED PHASE.

STAGE 1C & 1 - TEMP. SIGNAL

HWY. 16/112S AT FUTRALL DRIVE

ARK.-

PROFESSIONAL

REGISTERED

ENGINEER

ARKANSAS

533 7-30-2020
1. All signal heads shall have backplates.
2. Refer to special provision "retroreflective backplates" for details on requirements for backplates.
3. All pedestal signal heads can be placed into operation if there is enough room adjacent ramps and a crosswalk that meets ADA standards.
4. Indicate signal heads 5, 6, 7, 10, 11, 15, 16, 17, 18, & 19 to accommodate stage 2 maintenance of traffic.

- **Legend:**
  - OLB = 2, 4, 7

**Phase Diagram:**
- **Virtual 6'x6' Pulse VDZ (Typical) at stop line locations**
- **Virtual 6'x6' Pulse VDZ typical at stop line locations**
- **Virtual 6'x6' Pulse VDZ (Typical) 50' from stop line**
- **Virtual 6'x6' Pulse VDZ (Typical) 250' from stop line**

**Detector Spacing Chart:**
- **HWY 16/112S Main Lane Virtual Loop**
  - **POSTED SPEED (MPH):**
    - 40 MPH
  - **DISTANCE FROM STOP BAR (FT):**
    - 80

**Heated Wood Pole (Class 2, 45')**
- **DISTANCE FROM STOP BAR (FT):**
  - 230' from stop line

**Service Port and Warning Breaker**
- By Controller, DAL, WHEELE一旦

**Local Radio with Antenna**
- Set in car housing, TO POLE A facing east.

**Filmed By Contractor:**
- 2' dia. NMC service point and main breaker CAT 5E cable, mounted local radio with antenna.

**Notes:**
- Contact the city of Fayetteville for antenna orientation.
- Use sidewalk guy exist. R/W.
- Dist. No.

**Detector Spacing Chart:**
- **HWY 16/112S Main Lane Virtual Loop**
  - **POSTED SPEED (MPH):**
    - 40 MPH
  - **DISTANCE FROM STOP BAR (FT):**
    - 80
NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

STAGE 2 - TEMP. SIGNAL
HWY. 16/112S AT FUTRALL DRIVE
STAGE 2

WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ONE SEPARATE 1-SC IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.

2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREAS OF CABINET.

3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

4. RELOCATE SIGNAL HEADS 5, 6, 7, 10, 11, 15, 16, 17, 18, & 19 TO ACCOMMODATE STAGE 2 MAINTENANCE OF TRAFFIC.

5. REMOVE SIGNAL HEADS 13 & 14 WITH THEIR RESPECTIVE TRAFFIC SIGNAL CABLE FROM STAGE 1C & 1.

6. REMOVE VIDEO DETECTOR V3 WITH ITS RESPECTIVE VIDEO CABLE FROM STAGE 1C & 1.
1. All signal heads shall have backplates.
2. Refer to special provisions "retroreflective backplates" for details on requirements for backplates.
3. All pedestrian signal heads can be placed into operation if there are both wheelchair ramps and a crosswalk that meets A.D.A. standard.
4. Relocate signal heads 5, 6, 7, 10, 11, 15, 16, 17, 18, & 19 to accommodate stage 2 maintenance of traffic.

Notes:

- OLB = 2, 4, 7
- OLC = 1, 2, 4, 7

To accommodate stage 2 maintenance of traffic.

Stage 2 Detector Chart
Detector System Description: Job 04847

### Stage 2 Interval Chart
**Note:**
- * R: Red
- * G: Green
- * Y: Yellow

<table>
<thead>
<tr>
<th>Signal Faces</th>
<th>1-H</th>
<th>CLR</th>
<th>2-H</th>
<th>CLR</th>
<th>3-H</th>
<th>CLR</th>
<th>5-H</th>
<th>CLR</th>
<th>6-H</th>
<th>CLR</th>
<th>10, 11 &amp; 12</th>
<th>CLR</th>
<th>15</th>
<th>CLR</th>
<th>16 &amp; 17</th>
<th>CLR</th>
<th>18 &amp; 19</th>
<th>CLR</th>
<th>21 &amp; 22</th>
<th>CLR</th>
<th>Flash Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1-H</strong></td>
<td>R</td>
<td>&lt; R</td>
<td>&lt; R</td>
<td>&lt; R</td>
<td>G</td>
<td>&lt; R</td>
<td>&lt; R</td>
<td>G</td>
<td>&lt; R</td>
<td>&lt; R</td>
<td>R</td>
<td>R</td>
<td>&lt; R</td>
<td>G</td>
<td>&lt; R</td>
<td>&lt; R</td>
<td>G</td>
<td>&lt; R</td>
<td>&lt; R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td><strong>3-H</strong></td>
<td>G</td>
<td>&lt; G</td>
<td>G</td>
<td>&lt; G</td>
<td>G</td>
<td>&lt; G</td>
<td>G</td>
<td>G</td>
<td>&lt; G</td>
<td>G</td>
<td>R</td>
<td>R</td>
<td>&lt; R</td>
<td>R</td>
<td>&lt; R</td>
<td>&lt; R</td>
<td>R</td>
<td>R</td>
<td>&lt; R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td><strong>5-H</strong></td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td><strong>6-H</strong></td>
<td>G</td>
<td>&lt; G</td>
<td>G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td><strong>10, 11 &amp; 12</strong></td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td><strong>15</strong></td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
<td>&lt; G</td>
</tr>
<tr>
<td><strong>16 &amp; 17</strong></td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
</tr>
<tr>
<td><strong>18 &amp; 19</strong></td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td><strong>21 &amp; 22</strong></td>
<td>DW</td>
<td>DW</td>
<td>W</td>
<td>FDW</td>
<td>D</td>
<td>DW</td>
<td>DW</td>
<td>DW</td>
<td>DW</td>
<td>DW</td>
<td>DW</td>
<td>BLK</td>
<td>BLK</td>
<td>BLK</td>
<td>BLK</td>
<td>BLK</td>
<td>BLK</td>
<td>BLK</td>
<td>BLK</td>
<td>BLK</td>
<td>BLK</td>
</tr>
</tbody>
</table>

**Flash Sequence:**

- SPARE 9-12: 9-2C

**Controller Input Abbreviations:**
- V = Vehicle Input
- D = System or Auxiliary Input
- P = Pedestrian Input

**Note:**
- "AMP-C-4N:" refers to the rack output position.
- This is wired to controller input detector number which is programmed to actuate the designated phase.
**NOTE TO CONTRACTOR:**

1. All signal heads shall have backplates.
2. Refer to special provision "retroreflective backplates" for details on requirements for backplates.
3. All pedestrian signal heads can be placed into operation if there are both wheelchair ramps and a crosswalk that meets A.D.A.
4. Relocate signal heads 5, 6, 7, 10 & 11 and associated boxes to accommodate stage 3 maintenance of traffic.

**PHASE DIAGRAM**

- All signal heads shall have backplates.
- Refer to special provision "retroreflective backplates" for details on requirements for backplates.
- All pedestrian signal heads can be placed into operation if there are both wheelchair ramps and a crosswalk that meets A.D.A.
- Relocate signal heads 5, 6, 7, 10 & 11 and associated boxes to accommodate stage 3 maintenance of traffic.
STAGE 3
TEMPORARY WIRING DIAGRAM

NOTES TO CONTRACTOR:
1. ONE SEPARATE 120V CIRCUIT TO EACH PED PNL FOR THE PEDESTRIAN PUSH BUTTON.
2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE Brought TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.
4. RELOCATE SIGNAL HEADS 5, 6, 7, 13, & 11 TO ACCOMMODATE STAGE 3 MAINTENANCE OF TRAFFIC.
5. RELOCATE VIDEO DETECTOR V6 TO POLE F AND INSTALL VIDEO CABLE.

SERVICE POINT AND MAIN BREAKER IN CONTRACTOR (EXIST.)
1 - 120V C.O.G., 1 - 220V (EXIST.)
1 - 120V C.O.G., 1 - 220V (EXIST.)
1 - VC (NEW)
4 - 7c, 4 - 5c, 3 - VC 1 - CAT 5E CABLE (EXIST.)
2 - 7c, 2 - 5c, 2 - VC (EXIST.)
2 - 5c (EXIST.)
LOCAL RADIO W/ANTENNA (EXIST.)
1 - CAT 5E CABLE (EXIST.)
4 - 7c, 2 - 5c, 3 - VC (EXIST.)
1 - VC (EXIST.)
1 - VC (EXIST.)
1 - VC (EXIST.)
1 - 7c (EXIST.)
1 - 7c (EXIST.)
1 - 7c (EXIST.)
1 - 7c (EXIST.)
1 - 7c, 1 - VC (EXIST.)
1 - VC (EXIST.)
1 - 5c (EXIST.)
1 - 7c (EXIST.)
1 - 7c (EXIST.)
1 - VC (EXIST.)
1 - VC (EXIST.)
1 - VC (EXIST.)
2 - 5c (EXIST.)
2 - 5c (EXIST.)

7-30-2020
1. All signal heads shall have backplates.

2. Refer to special provision "retroreflective backplates" for details on requirements for backplates.

3. All pedestrian signal heads can be placed into operation if there are both wheelchair ramps and a crosswalk that meets A.A.D.A. standard.

4. Relocate signal heads 5, 6, 7, 10, & 11 to accommodate stage 3 maintenance of traffic.
NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "METAL REFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH PEDESTRIAN RAMPS AND A CROSSWALK THAT MEETS ADA, STANDARDS.
4. LOCATE SIGNAL HEADS 15' TO 20' FROM EQUIPMENTS OR TO ACCOMMODATE STAGE 4 MAINTENANCE OF TRAFFIC.
NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

EXISTING SERVICE POINT
SERVICE POINT AND MAIN BREAKER BY CONTRACTOR. DRAWING TO CONTROLLER.

TREATED WOOD POLE (CLASS 2, 45')
POLE MOUNTED CABINET AND SECONDARY TREATED WOOD POLE (CLASS 2, 45')
TO POLE A FACING EAST.

CAT 5E CABLE, MOUNTED LOCAL RADIO WITH ANTENNA, TO CONTROLLER BY CONTRACTOR. 2' DIA. NMC SERVICE POINT AND MAIN BREAKER EXISTING SERVICE POINT

R10-10L SIGN
R10-12m SIGN
R3-2 SIGN

ARIZONIAN SHEETS TOTAL 533

STAGE 4 - TEMP. SIGNAL
HWY. 16/112S AT FUTRALL DRIVE

SCALE: 1"=30'
STAGE 4
TEMPORARY WIRING DIAGRAM

NOTES TO CONTRACTOR:
1. ONE SEPARATE 15c IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.
2. ALL DIFECTOR RACK CHANNELS INCLUDING UNRFD. SHALL BE Brought TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.
4. RELOCATE SIGNAL HEADS 10 & 11 TO ACCOMMODATE STAGE 4 MAINTENANCE OF TRAFFIC.
PHASING DIAGRAM

SIGNAL FACES

12" LENSES

NOTE:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A.R. STANDARDS.
4. RELOCATE SIGNAL HEADS 10 & 11 TO ACCOMMODATE STAGE 4 MAINTENANCE OF TRAFFIC.

STAGE 4 DETECTOR CHART

HIGHWAY 16/112S/FUTRALL DRIVE

DETECTOR SYSTEM DESCRIPTION JOB 040847

<table>
<thead>
<tr>
<th>DET ID #</th>
<th>LOCATION</th>
<th>DIRECTION</th>
<th>TYPE</th>
<th>DET. #</th>
<th>CAS. TRIM. #</th>
<th>AMP. CHN. #</th>
<th>CON. AMP. #</th>
<th>PHS</th>
<th>LOCAL</th>
<th>SYSTEM DET. #</th>
<th>MASTER SYSTEM</th>
<th>DETECTOR NUMBERS</th>
<th>COMMENTS</th>
<th>TUBE LENGTHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>V11</td>
<td>EB</td>
<td>LEFT TURN</td>
<td>FAR</td>
<td>COMB</td>
<td>1</td>
<td>D1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V8</td>
<td>23&quot;</td>
</tr>
<tr>
<td>V12</td>
<td>EB</td>
<td>LEFT TURN</td>
<td>LOCAL</td>
<td></td>
<td>2</td>
<td>V1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V8</td>
<td>23&quot;</td>
</tr>
<tr>
<td>V211 A&amp;B</td>
<td>WB</td>
<td>ADVANCE</td>
<td>LOCAL</td>
<td></td>
<td>7</td>
<td>V3</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V8</td>
<td>23&quot;</td>
</tr>
<tr>
<td>V222 A&amp;B</td>
<td>WB</td>
<td>NEAR</td>
<td>COMB</td>
<td></td>
<td>8</td>
<td>D2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V2</td>
<td>23&quot;</td>
</tr>
<tr>
<td>V241</td>
<td>NB</td>
<td>LEFT TURN</td>
<td>FAR</td>
<td>COMB</td>
<td>13</td>
<td>D4</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V4</td>
<td>23&quot;</td>
</tr>
<tr>
<td>V242</td>
<td>NB</td>
<td>LEFT TURN</td>
<td>LOCAL</td>
<td></td>
<td>14</td>
<td>V4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V4</td>
<td>23&quot;</td>
</tr>
<tr>
<td>V243</td>
<td>NB</td>
<td>ADVANCE</td>
<td>COMB</td>
<td></td>
<td>15</td>
<td>D8</td>
<td>4</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V4</td>
<td>23&quot;</td>
</tr>
<tr>
<td>V244</td>
<td>NB</td>
<td>NEAR</td>
<td>LOCAL</td>
<td></td>
<td>16</td>
<td>V8</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V4</td>
<td>23&quot;</td>
</tr>
<tr>
<td>V261 A&amp;B</td>
<td>EB</td>
<td>ADVANCE</td>
<td>LOCAL</td>
<td></td>
<td>3</td>
<td>V6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V8</td>
<td>23&quot;</td>
</tr>
<tr>
<td>V262 A&amp;B</td>
<td>EB</td>
<td>NEAR</td>
<td>COMB</td>
<td></td>
<td>4</td>
<td>D6</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V8</td>
<td>23&quot;</td>
</tr>
<tr>
<td>V271</td>
<td>SB</td>
<td>ADVANCE</td>
<td>COMB</td>
<td></td>
<td>17</td>
<td>D7</td>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V7</td>
<td>23&quot;</td>
</tr>
<tr>
<td>V272</td>
<td>SB</td>
<td>NEAR</td>
<td>LOCAL</td>
<td></td>
<td>18</td>
<td>V7</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V7</td>
<td>23&quot;</td>
</tr>
<tr>
<td>PB2 A&amp;B</td>
<td>FUTRALL</td>
<td>DR. N. LEG</td>
<td>PED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SPARE 5, 6, 9</td>
<td>19, 20</td>
</tr>
</tbody>
</table>

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: *AMP CHN* REFERS TO THE RACK OUTPUT POSITION.

Stage 4 - Temp. Signal
HWY. 16/112S at Futrall Drive
1. All signal heads shall have backplates.

2. Refer to special provision "Reflective Backplates" for details on requirements for backplates.

3. Relocate signal heads 5, 6, 7, 10, 11 & 12 to backplates for details on requirements for backplates.

NOTES:
- Contact the City of Fayetteville for details on requirements for backplates.

EXISTING
- Ramp 2
- HWY. 16/112
- Arkansas
- 2020
- 10-1-2020

PHASE DIAGRAM
- Existing
- Service Point
- Control
- Mounts
- Pole
- Treated Wood Pole
- (Class 2, 40')
- (Class 2, 45')
- (TYPICAL)

VIRTUAL 6'X50' PRESENCE DETECTOR
- VDZ (TYPICAL) AT STOP
- PROP. R/W
- INSTALLATION IF NECESSARY
- SIDEWALK GUY POSTED SPEED LIMIT
- 35 MPH

EXISTING SERVICE POINT
- EXIST. R/W
- DISTANCE FROM STOP BAR
- 85'
- VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
- HWY. 16/112S MAIN LANE VIRTUAL LOOP
- HWY. 16/112S AT FUTRALL DRIVE

EXISTING SERVICE POINT
- EXIST. R/W
- DISTANCE FROM STOP BAR
- 85'
- VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
- HWY. 16/112S AT FUTRALL DRIVE Main Lane Virtual Loop
- Ramp

NOT TO CONTRACTOR:
- Contact the City of Fayetteville FOR ANYDRAWINGS

NOTE TO CONTRACTOR:
- Contact the City of Fayetteville FOR ANYDRAWINGS

DETECTOR SPACING CHART
- HWY. 16/112S MAIN LANE VIRTUAL LOOP
- DISTANCE FROM STOP BAR
- 100'
- VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
- HWY. 16/112S AT FUTRALL DRIVE

NOTE TO CONTRACTOR:
- Refer to special provision "RetroReflective Signage."
NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

EXIST. R/W

LOCAL RADIO WITH ANTENNA
CABLE MOUNTED TO POLE AND ELECTRIC GENERATOR

TREATED WOOD POLE (CLASS 2, 45')
CONDUIT UP THE WOOD POLE
BREAKER BY CONTRACTOR

POLE MOUNTED CABINET AND SECONDARY TREATED WOOD POLE (CLASS 2, 40')

TO POLE A FACING EAST.
CAT 5E CABLE, MOUNTED TO CONTROLLER BY CONTRACTOR. 2' DIA. NMC SERVICE POINT AND MAIN BREAKER EXISTING SERVICE POINT

THROUGHOUT ALL CONSTRUCTION PHASES.

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)

85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
LINE LOCATIONS)
NOTES TO CONTRACTOR:

1. All detector rack channels, including unused, shall be brought to terminal strip in detector areas of cabinet.

2. The local government shall be responsible for providing power to the service point.

3. Relocate signal heads 5, 6, 7, 10, 11 & 12 to accommodate Stage 5 maintenance of traffic.
PHASING DIAGRAM

SIGNAL FACES

12" LENSES

R Y G
R Y G
R Y G

F

NOT USED

1 & 2 EXISTING
2 & 7 EXISTING
6 & 7 EXISTING

EXISTING 3 & 22
EXISTING 31 & 32

LEFT TURN YIELD PRIORITIZED ARROW

10-11 & 12

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. RELOCATE SIGNAL HEADS 5, 6, 7, 10, 11 & 12 TO ACCOMMODATE STAGE 5 MAINTENANCE OF TRAFFIC.

1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. RELOCATE SIGNAL HEADS 5, 6, 7, 10, 11 & 12 TO ACCOMMODATE STAGE 5 MAINTENANCE OF TRAFFIC.
TRAFFIC FLOW DIAGRAM

- **Service Point and Main Breaker**: By Contractor, 2" Dia NMC to Controller with 2" Concrete Pull Boxes, Type I HD, Installed in Stage 1a.
- **Secondary Breaker**: By Contractor.
- **Pad Mounted Battery Backup System**: 2" Dia. NMC to Controller.
- **Controller**: Secondary Breaker by Contractor, 2" Dia. NMC to Service Point and Main Breaker.
- **NMC to Controller**: Only.

**DESIGN PARAMETERS**

- **Posted Speed Limit**: 40 MPH East and West Approach, 35 MPH North and South Approach.
- **NO Bus Stops**.
- **No Railroad Tracks**.
- **No Existing Interconnections**.
- **No Fire Station**.
- **No Parking**.
- **No Sight Distance Restrictions**.
- **Location of Stop Lines Shown on Permanent Pavement Marking Details**.
- **See Separate Sheets**.
- **Minimum Clear Zone Distance**: 4 Feet Behind Curb.

**TRAFFIC FLOW DIAGRAM**

- **Virtual 6'x6' Pulse VOZ (Typical)**:
  - 85' from Stop Line
  - VDZ (Typical) 10' from Stop Line
  - EVP Sensor

**SIGNALIZATION PLAN SHEET**

- **HWY. 16/Hwy. 112S/Futrall Drive**
- **Pole Locations**

**HWY. 16/Hwy. 112S at Futrall Drive**

A.M. PEAK HOUR / P.M. PEAK HOUR

- **Traffic Volume 2038**
- **HWY. 16/112S at Futrall Drive**
- **A.M. Peak Hour / P.M. Peak Hour**

**NOTE TO CONTRACTOR:**

- **R-10-10L Sign**
- **Type 2 Pull Box**
- **R-10-10L Sign**

**PROFESSIONAL REGISTERED ENGINEER**

**Arkansas**
NOTES TO CONTRACTOR

1. The separate 1-5c is run to each pole for the pedestrian push button.
2. All detector rack channels, including unused, shall be brought to terminal strip in detector area of cabinet.
3. The local government shall be responsible for providing power to the service point.
4. The emergency vehicle preemption system shall be responsible for providing power to the service point.

GROUNDING ARRAY
SINGLE-PORT FUSION WELDS

GROUND WIRE TO ANTENNA (STRANDED)
SOLID E.G.C.
POLE GROUND CLAMP/COMBINE ALL E.G.C.'S
POLE GROUND FUSION WELD
SOLID WIRE E.G.C.

1-12c, 1-VC, 1-2c/#12, 1-EVP CABLE, 2-1c/#8 E.G.C.

EMERGENCY VEHICLE PREEMPTION (EVP) SENSOR

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR (INSTALLED IN STAGE 1)
1-16W E.G.C., 1-2W
1-16W E.G.C., 1-2W (SEE STANDARD DRAWING)
1-20c, 3-5c, 3-VC, 3-2c/#12, 1-CAT 5E CABLE, 1-EVP CABLE
1-20c, 3-5c, 2-VC, 2-2c/#12, 2-1c/#8 E.G.C.

BATTERY BACKUP SYSTEM
**NOTES:**

1. All signal heads shall have backplates.
2. Refer to special provision "Phased Retroreflective Backplates" for details on requirements for backplates.
3. Refer to special provisions for details on requirements for pedestrian signal heads.
4. All pedestrian signal heads can be placed into operation if there are both wheelchair ramps and a crosswalk that meets A.D.A. standards.

**LEGEND:**

- HWY. 16/112S
- 777 (1852)
- 20 (41)
- 1095 (788)
- 0 (19)
- 34 (189)
- 463 (1219)
- 18 (33)
- 27 (70)

**HIGHWAY 16/112S/FUTRALL DRIVE DETECTOR ASSIGNMENTS**

<table>
<thead>
<tr>
<th>DET. ID #</th>
<th>LOCATION DIRECTION</th>
<th>TYPE</th>
<th>DET. #</th>
<th>CAB. TRIM #</th>
<th>AMP CHN #</th>
<th>CON. RMP #</th>
<th>PHS</th>
<th>SYSTEM DET. #</th>
<th>MASTER SYSTEM DETECTOR NUMBERS</th>
<th>COMMENTS</th>
<th>TUBE LENGTHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vz11</td>
<td>EB LEFT TURN FAR</td>
<td>COMB</td>
<td>1</td>
<td>V9</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>CAMERA V1</td>
<td>74'</td>
<td></td>
</tr>
<tr>
<td>Vz12</td>
<td>EB LEFT TURN LOCAL</td>
<td></td>
<td>2</td>
<td>V1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V1</td>
<td>74'</td>
<td></td>
</tr>
<tr>
<td>Vz1 A&amp;B</td>
<td>WB ADVANCE LOCAL</td>
<td></td>
<td>0</td>
<td>V2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V2</td>
<td>23’</td>
<td></td>
</tr>
<tr>
<td>Vz2 A&amp;B</td>
<td>WB NEAR COMB</td>
<td></td>
<td>13</td>
<td>V10</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td>CAMERA V5</td>
<td>74’</td>
<td></td>
</tr>
<tr>
<td>Vz4 A&amp;B</td>
<td>NB LEFT TURN FAR</td>
<td>COMB</td>
<td>17</td>
<td>V12</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td>CAMERA V4</td>
<td>74'</td>
<td></td>
</tr>
<tr>
<td>Vz6 A&amp;B</td>
<td>NB ADVANCE COMB</td>
<td></td>
<td>19</td>
<td>V16</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td>CAMERA V4</td>
<td>74’</td>
<td></td>
</tr>
<tr>
<td>Vz8 A&amp;B</td>
<td>NB NEAR LOCAL</td>
<td></td>
<td>20</td>
<td>V8</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V4</td>
<td>74’</td>
<td></td>
</tr>
<tr>
<td>Vz1 A&amp;B</td>
<td>EB ADVANCE LOCAL</td>
<td></td>
<td>5</td>
<td>V6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V6</td>
<td>23’</td>
<td></td>
</tr>
<tr>
<td>Vz2 A&amp;B</td>
<td>EB NEAR COMB</td>
<td></td>
<td>3</td>
<td>V14</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td>CAMERA V1</td>
<td>74’</td>
<td></td>
</tr>
<tr>
<td>Vz71</td>
<td>SB ADVANCE COMB</td>
<td></td>
<td>21</td>
<td>V15</td>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
<td>CAMERA V7</td>
<td>74’</td>
<td></td>
</tr>
<tr>
<td>Vz72</td>
<td>SB NEAR LOCAL</td>
<td></td>
<td>22</td>
<td>V7</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td>CAMERA V7</td>
<td>74’</td>
<td></td>
</tr>
<tr>
<td>PD2 A&amp;B</td>
<td>FUTRALL DR. N. LEG</td>
<td>FED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>P2</td>
<td>2</td>
</tr>
<tr>
<td>PD4 A&amp;B</td>
<td>HWY. 16/112S E. LEG</td>
<td>FED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>P4</td>
<td>2</td>
</tr>
</tbody>
</table>

**CONTROLLER INPUT ABBREVIATIONS:**

- V = Vehicle Input
- D = System or Auxiliary Input
- P = Pedestrian Input

**NOTE:**

- "AMP CHN #" refers to the control output position.
- This is wired to controller input detector number which is programmed to activate the designated phase.
- Example: V9 = System detector 1, V10 = System detector 2
### Stage 2 Traffic Signal Quantities

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>301</td>
<td>System/Local Controller 732-Type 2, E-NET (16 Phases)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>302</td>
<td>Ethernet Switch T130 (6-Port)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>303</td>
<td>Fiber-Optic Cables (Over 100 ft)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>304</td>
<td>Local Antenna (NET 3-5 ft)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>305</td>
<td>Traffic Signal Heads (1 Section, 1 Way)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>306</td>
<td>Fiber-Optic Cables (100 ft)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>307</td>
<td>LEDs (144 Each)</td>
<td>8</td>
<td>Each</td>
</tr>
<tr>
<td>308</td>
<td>Traffic Signal Cables (100 ft)</td>
<td>1260</td>
<td>Each</td>
</tr>
<tr>
<td>309</td>
<td>Electrical Conduit (Rigid &amp; E.O.C.)</td>
<td>316</td>
<td>Each</td>
</tr>
<tr>
<td>310</td>
<td>Parking Lot Sensors</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>311</td>
<td>Traffic Signal Cables (100 ft)</td>
<td>1260</td>
<td>Each</td>
</tr>
<tr>
<td>312</td>
<td>Concrete Block Box (144 Each)</td>
<td>2</td>
<td>Each</td>
</tr>
<tr>
<td>313</td>
<td>Service Point Assembly (2 Circuits)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>314</td>
<td>Removal of Traffic Signal Equipment</td>
<td>0.08</td>
<td>Lumb Sum</td>
</tr>
<tr>
<td>315</td>
<td>Video Detector Link (1200 ft)</td>
<td>5</td>
<td>Each</td>
</tr>
<tr>
<td>316</td>
<td>Cables (2 ft)</td>
<td>1260</td>
<td>Each</td>
</tr>
<tr>
<td>317</td>
<td>Vehicle Detector Box (16 cameras)</td>
<td>1</td>
<td>Each</td>
</tr>
</tbody>
</table>

### Stage 3 Traffic Signal Quantities

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>321</td>
<td>Traffic Signal Controller (Modifications)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>322</td>
<td>Relocation of Traffic Signal Head</td>
<td>12</td>
<td>Each</td>
</tr>
<tr>
<td>323</td>
<td>Traffic Signal Cables (100 ft)</td>
<td>1260</td>
<td>Each</td>
</tr>
<tr>
<td>324</td>
<td>Spanwire Assembly</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>325</td>
<td>Removal of Traffic Signal Equipment</td>
<td>0.08</td>
<td>Lumb Sum</td>
</tr>
<tr>
<td>326</td>
<td>Treated Wood Poles (Class A, 6 ft)</td>
<td>5000</td>
<td>Each</td>
</tr>
<tr>
<td>327</td>
<td>Video Detector Relocation</td>
<td>3</td>
<td>Each</td>
</tr>
<tr>
<td>328</td>
<td>Video Detector Rotation</td>
<td>5</td>
<td>Each</td>
</tr>
<tr>
<td>329</td>
<td>Video Cables (2 ft)</td>
<td>1260</td>
<td>Each</td>
</tr>
</tbody>
</table>

### Stage 4 Traffic Signal Quantities

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>330</td>
<td>Traffic Signal Controller (Modifications)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>331</td>
<td>Relocation of Traffic Signal Head</td>
<td>12</td>
<td>Each</td>
</tr>
<tr>
<td>332</td>
<td>Removal of Traffic Signal Equipment</td>
<td>0.08</td>
<td>Lumb Sum</td>
</tr>
<tr>
<td>333</td>
<td>Video Detector Relocation</td>
<td>1</td>
<td>Each</td>
</tr>
</tbody>
</table>

### Stage 5 Traffic Signal Quantities

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>340</td>
<td>Removal of Traffic Signal Equipment</td>
<td>0.08</td>
<td>Lumb Sum</td>
</tr>
</tbody>
</table>

**Permanent Traffic Signal Quantities**

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>350</td>
<td>System/Local Controller 732-Type 2, E-NET (16 Phases)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>351</td>
<td>Traffic Signal Controller (Modifications)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>352</td>
<td>Ethernet Switch T130 (6-Port)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>353</td>
<td>Fiber-Optic Cables (Over 100 ft)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>354</td>
<td>Local Antenna (NET 3-5 ft)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>355</td>
<td>Traffic Signal Heads (1 Section, 1 Way)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>356</td>
<td>Fiber-Optic Cables (100 ft)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>357</td>
<td>LEDs (144 Each)</td>
<td>8</td>
<td>Each</td>
</tr>
<tr>
<td>358</td>
<td>Traffic Signal Cables (100 ft)</td>
<td>1260</td>
<td>Each</td>
</tr>
<tr>
<td>359</td>
<td>Electrical Conduit (Rigid &amp; E.O.C.)</td>
<td>316</td>
<td>Each</td>
</tr>
<tr>
<td>360</td>
<td>Parking Lot Sensors</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>361</td>
<td>Traffic Signal Heads (1 Section, 1 Way)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>362</td>
<td>Fiber-Optic Cables (100 ft)</td>
<td>1260</td>
<td>Each</td>
</tr>
<tr>
<td>363</td>
<td>Concrete Block Box (144 Each)</td>
<td>2</td>
<td>Each</td>
</tr>
<tr>
<td>364</td>
<td>Service Point Assembly (2 Circuits)</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>365</td>
<td>Removal of Traffic Signal Equipment</td>
<td>0.08</td>
<td>Lumb Sum</td>
</tr>
<tr>
<td>366</td>
<td>Video Detector Link (1200 ft)</td>
<td>5</td>
<td>Each</td>
</tr>
<tr>
<td>367</td>
<td>Cables (2 ft)</td>
<td>1260</td>
<td>Each</td>
</tr>
<tr>
<td>368</td>
<td>Vehicle Detector Box (16 cameras)</td>
<td>1</td>
<td>Each</td>
</tr>
</tbody>
</table>

**Note:** The traffic signals at HWY 16 and SHILOH DRIVE remain in operation until the permanent traffic signals are installed. The temporary traffic signals are monitored and operational. The traffic signals are installed to improve safety and efficiency. If any issues are encountered, contact the Arkansas Department of Transportation for assistance.
NOTES TO CONTRACTORS:
1. Contact the City of Fayetteville for antenna orientation.
2. Proposed sidewalk can be finished once any conflicting temporary signal equipment has been removed.

NOTES TO CONTRACTOR:
1. All signal heads shall have backplates.
2. Refer to special provisions "Reversing Reflective Backplates" for details on requirements for backplates.
3. Signal heads 2, 6, 9 shall be horizontally lowered to prevent view of all indications for the westbound through traffic until westbound traffic passes under signal heads 7, 8, 9.
4. Signal heads 11, 12 shall be horizontally lowered to prevent view of all indications for the eastbound through traffic until the eastbound traffic passes under signal heads 11, 12.

NOTES TO CONTRACTOR:
1. Contact the City of Fayetteville for antenna orientation.
2. Proposed sidewalk can be finished once any conflicting temporary signal equipment has been removed.

SEE TYPICAL WOOD POLE WITH LUMINAIRE ARM DETAIL
POLES A-F ARE TREATED WOOD POLES CLASS 2, 45'

NOTES:
1. All signal heads shall have backplates.
2. Refer to special provisions "Reversing Reflective Backplates" for details on requirements for backplates.
3. Signal heads 2, 6, 9 shall be horizontally lowered to prevent view of all indications for the westbound through traffic until westbound traffic passes under signal heads 7, 8, 9.
4. Signal heads 11, 12 shall be horizontally lowered to prevent view of all indications for the eastbound through traffic until the eastbound traffic passes under signal heads 11, 12.
NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

NOTE TO CONTRACTOR:
WOOD POLE.
PRICE BID FOR ITEM 716 TREATED AND ALL HARDWARE IS INCLUDED IN LUMINAIRE ARMS, MOUNTING, LUMINAIRE ASSEMBLIES. THE COST LUMINAIRE ARM SHALL NOT INCLUDE USED TO MOUNT VIDEO DETECTORS.

NOTE TO CONTRACTOR:
LUMINAIRE ARM TYPICAL WOOD POLE WITH LUMINAIRE ARMS (OR APPROVED FIXTURES ARE NOT TO BE NOTED. R/W
EXIST. R/W
PROP. R/W
85' FROM STOP LINE
VIRTUAL 6'X6' PULSE VDZ (TYPICAL)
85' FROM STOP LINE
VIRTUAL 6'X50' PRESENCE VDZ (TYPICAL AT STOP LINE LOCATIONS)

LOCAL RADIO WITH ANTENNA, CAT 5E CABLE, MOUNTED TO POLE A FACING EAST
CONCRETE PULL BOX (TYPE 1 HD) WITH 5-3" NMC TO CONTROLLER
SERVICE POINT AND MAIN BREAKER BY CONTRACTOR, 2" DI NMC TO CONTROLLER WITH CONCRETE PULL BOX (TYPE 140).

SCALE: 1"=20'
STAGE 2 - TEMP. SIGNAL
HWY. 16/112S AT SHILOH DRIVE

DESIGN PARAMETERS
POSTED SPEED LIMIT:
45 MPH EAST AND WEST APPROACH
30 MPH NORTH APPROACH

NO STOP
NORMAL ROAD TRAFFIC
REQUIRED INTERCONNECTIONS
NO SIGNAL
NO SHORT DISTANCE RESTRICTIONS
MINIMUM CLEAR ZONE DISTANCE:
4 FEET BEHIND CORD

STAGE 2
HWY. 16/SHILOH DRIVE
POLE LOCATIONS

POLE LOCATION STATION OFFSET X/Y COORDINATES
A HWY 66 STA 120+61.00 33.54 RT 66172041, 46301403
B HWY 66 STA 120+61.00 33.54 RT 66172041, 46301403
C HWY 66 STA 120+61.00 33.54 RT 66172041, 46301403
D HWY 66 STA 120+61.00 33.54 RT 66172041, 46301403
E HWY 66 STA 120+61.00 33.54 RT 66172041, 46301403
F HWY 66 STA 120+61.00 33.54 RT 66172041, 46301403

7-30-2020
STAGE 2
TEMPORARY WIRING DIAGRAM

NOTES TO CONTRACTOR
1. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
2. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

7-30-2020
1. All signal heads shall have backplates.

2. Refer to Special Provision "Retroreflective Backplates" for details on requirements for backplates.

3. Signal heads 7, 8, 9 shall be horizontally louvered to restrict the view of all indications for the eastbound through traffic until the westbound traffic passes under signal heads 17, 18, 19.

4. Signal heads 10, 11, 12 shall be horizontally louvered backplates for details on requirements for backplates.

PHASING DIAGRAM

**NOTES:**

- 13, 14 & 20
- 8 & 9
- 6
- 2, 3 & 4
- 1
- 5
- 18 & 19
- OL = 2 & 3 (Signal Heads 8 & 6)
- OLB = 4 & 6 (Signal Heads 10, 11, 12 & 13)
- OLC = 3, 5 & 6 (Signal Heads 7, 8 & 9)
- OLA = 2 & 3 (Signal Heads 18 & 19)

STATE 2 INTERVAL CHART

<table>
<thead>
<tr>
<th>SIGNAL FACES</th>
<th>1s+ CLR</th>
<th>1s CLR</th>
<th>2s+ CLR</th>
<th>2s CLR</th>
<th>3 CLR</th>
<th>4 CLR</th>
</tr>
</thead>
<tbody>
<tr>
<td>OL A</td>
<td>R</td>
<td>R G</td>
<td>R R G</td>
<td>R R R G</td>
<td>G</td>
<td>R R</td>
</tr>
<tr>
<td>OL B</td>
<td>R R G</td>
<td>R R G</td>
<td>R R G</td>
<td>R R R G</td>
<td>G</td>
<td>R R</td>
</tr>
<tr>
<td>OL C</td>
<td>R R G</td>
<td>R R G</td>
<td>R R G</td>
<td>R R R G</td>
<td>G</td>
<td>R R</td>
</tr>
</tbody>
</table>

**STAGE 2 DETECTOR CHART**

<table>
<thead>
<tr>
<th>DET #</th>
<th>LOCATION</th>
<th>DIRECTION</th>
<th>TYPE</th>
<th>AMOUNT</th>
<th>CON.</th>
<th>AMP.</th>
<th>MH.</th>
<th>SYSTEM</th>
<th>DETECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>V211</td>
<td>E9 LEFT</td>
<td>TURN FAF</td>
<td>COMB</td>
<td>D1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>CAMERA V</td>
</tr>
<tr>
<td>V212</td>
<td>EB LEFT</td>
<td>TURN LOCAL</td>
<td>V21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERAS</td>
</tr>
<tr>
<td>V221</td>
<td>WB ADVANCE</td>
<td>LOCAL</td>
<td>V2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERAS</td>
</tr>
<tr>
<td>V222</td>
<td>WB NEXT</td>
<td>LOCAL</td>
<td>V2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERAS</td>
</tr>
<tr>
<td>V223</td>
<td>SB ADVANCE</td>
<td>LOCAL</td>
<td>V3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERAS</td>
</tr>
<tr>
<td>V224</td>
<td>SB NEAR</td>
<td>LOCAL</td>
<td>V3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERAS</td>
</tr>
<tr>
<td>V225</td>
<td>SB LEFT</td>
<td>TURN LOCAL</td>
<td>V3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERAS</td>
</tr>
<tr>
<td>V226</td>
<td>WB LEFT</td>
<td>TURN LOCAL</td>
<td>V5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERAS</td>
</tr>
<tr>
<td>V227</td>
<td>WB NEAR</td>
<td>LOCAL</td>
<td>V5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAMERAS</td>
</tr>
</tbody>
</table>

**CONTROLLER INPUT ABBREVIATIONS:**

- V = VEHICLE INPUT
- D = SYSTEM OR AUXILIARY INPUT
- P = PEDESTRIAN INPUT

**NOTE:** "AMP Chan" refers to the back output position which is wired to controller input. Detector number programmed in the designated phase.

**STATE 2 - TEMP. SIGNAL**

HWY. 16/112S AT SHILOH DRIVE
NOTES:
1. REFER TO SPECIAL PROVISIONS "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
2. REFER TO SPECIAL PROVISIONS "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.

SCALE: 1" = 60'

NOTES TO CONTRACTOR:
1. CONTACT THE STATE OF ARKANSAS FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
2. PROPOSED SIDEWALK CAN BE FINISHED ONCE BASEMENT DRAINAGE SYSTEM HAS BEEN REMOVED.
STAGES 3 & 4
HWY 16/SHILOH DRIVE

POLE LOCATIONS

<table>
<thead>
<tr>
<th>POLE</th>
<th>LOCATION &amp; STATION</th>
<th>OFFSET X, Y COORDINATES</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>HWY 16 - STA 129+01</td>
<td>83.56 FT</td>
</tr>
<tr>
<td>B</td>
<td>HWY 16 - STA 129+33</td>
<td>83.56 FT</td>
</tr>
<tr>
<td>C</td>
<td>HWY 16 - STA 130+04</td>
<td>75.87 FT</td>
</tr>
<tr>
<td>D</td>
<td>HWY 16 - STA 130+30</td>
<td>60.38 FT</td>
</tr>
<tr>
<td>E</td>
<td>HWY 16 - STA 128+33</td>
<td>54.58 FT</td>
</tr>
<tr>
<td>F</td>
<td>HWY 16 - STA 129+30</td>
<td>57.41 FT</td>
</tr>
<tr>
<td>G</td>
<td>HWY 16 - STA 131+18</td>
<td>60.38 FT</td>
</tr>
<tr>
<td>H</td>
<td>HWY 16 - STA 130+70</td>
<td>63.26 FT</td>
</tr>
</tbody>
</table>

POLES A, B ARE EXISTING, INSTALLED IN STAGE 2
POLE G & H ARE NEW

LOCATE SIGNAL BOX TYPE 1603 HORIZONTALLY 3'-6" FROM CURB.

LOCAL RADIO WITH ANTENNA, CAT 5E CABLE MOUNTED TO POLE A FACING EAST.

CONCRETE PULL BOX TYPE 1601 WITH 3'-6" NMC TO CONTROLLER.

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR, 7" NMC TO CONTROLLER WITH CONCRETE PULL BOX TYPE 1601.

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.

THROUGHOUT ALL CONSTRUCTION PHASES
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED

NOTE TO CONTRACTOR:
TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
STAGE 3
TEMPORARY WIRING DIAGRAM

NOTES TO CONTRACTOR:
1. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINE.
2. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.
3. RELOCATE SIGNAL HEADS 1, 2, 3, 4, 7, 8, & 9 TO ACCOMMODATE STAGE 3 MAINTENANCE OF TRAFFIC.
4. RELOCATE SIGNAL HEADS 11, 12, 13, 14, 15, 16, 17, 18, 19, & 20 TO ACCOMMODATE STAGE 3 MAINTENANCE OF TRAFFIC.
5. RELOCATE VIDEO DETECTORS V1, V2, & V5 TO ACCOMMODATE STAGE 3 MAINTENANCE OF TRAFFIC.

SHEETS TOTAL 533

7-30-2020
STAGE 3 INTERVAL CHART

| SIGNAL FACES | 1 →5 | CLR | 1 →6 | CLR | 2 →5 | CLR | 2 →6 | CLR | 3 | CLR | 4 | CLR | 5 | CLR | 6 | CLR | 7 | CLR | 8 | CLR |
|--------------|------|-----|------|-----|------|-----|------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|---|
| *(1, 3, & 4)* | **G** | **R** | **R** | **R** | **G** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** |
| *(5)* | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** |
| *(6)* | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** |
| *(7)* | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** |
| *(8 & 5)* | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** |
| *(10 & 11)* | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** |
| *(12)* | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** |
| *(11, 14 & 20)* | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** |
| *(15 & 18)* | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** | **G** |
| *(17)* | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** | **R** |

PHASE SEQUENCE:

**G** = Green
**R** = Red
**G** = Yellow

* Denotes green or yellow arrow depending on next phase
** Denotes green or yellow ball depending on next phase
*** Denotes flashing yellow arrow or yellow arrow depending on next phase

STAGE 3 DETECTOR CHART

<table>
<thead>
<tr>
<th>DETECTORS</th>
<th>SYSTEM DESCRIPTION</th>
<th>CMR MPN</th>
<th>CMR MPN</th>
<th>CMR MPN</th>
<th>CMR MPN</th>
<th>CMR MPN</th>
</tr>
</thead>
</table>

STAGE 3 - TEMP. SIGNAL

HWY. 16/112 S AT SHILOH DRIVE

NOTES:

1. Signal heads shall have backplates.
2. Refer to special provision for retroreflective backplates for details on requirements for backplates.
3. Signal heads shall be horizontally louvered to restrict the view of all indications for the pedestrian through the median.
4. Signal heads shall be horizontally louvered to restrict the view of all indications for the pedestrian through the median.
NOTES TO CONTRACTOR:
1. CONTACT THE CITY OF FAYETTEVILLE FOR ANY CONFLICTING TEMPORARY SIGNAL EQUIPMENT.
2. PROPOSED SIGNALS CAN BE PAVED ONCE ALL TREATMENT IS COMPLETED.
3. TEMPORARY SIGNAL EQUIPMENT HAS BEEN REMOVED.

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISIONS "REFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. SIGNAL HEADS #8 & #9 SHALL BE HORIZONTALLY LOUVERED TO RESTRICT VIEW OF ALL INDICATIONS FOR THE WESTBOUND THROUGH TRAFFIC UNTIL WESTBOUND TRAFFIC PASSES UNDER SIGNAL HEAD #7.
4. SIGNAL HEADS #8 & #9 SHALL BE HORIZONTALLY LOUVERED TO RESTRICT VIEW OF ALL INDICATIONS FOR THE EASTBOUND THROUGH TRAFFIC UNTIL THE EASTBOUND TRAFFIC PASSES UNDER SIGNAL HEAD #7.

DETECTOR SPACING CHART

<table>
<thead>
<tr>
<th>TYPE</th>
<th>PORTRAYED</th>
<th>DISTRIBUTION</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PHASE DIAGRAM

STAGE 4 - TEMP. SIGNAL
HWY. 16/112S AT SHILOH DRIVE
STAGE 4

TEMPORARY WIRING DIAGRAM

NOTES TO CONTRACTOR:
1. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
2. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.
3. RELOCATE SIGNAL HEADS 13, 14, 15, 17, 18, 16, & 30 TO ACCOMMODATE STAGE 4 MAINTENANCE OF TRAFFIC.
4. REMOVE SIGNAL HEAD 16.
5. RELOCATE VIDEO DETECTOR VS TO ACCOMMODATE STAGE 4 MAINTENANCE OF TRAFFIC.

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR (E&A)
PHASING DIAGRAM

STAGE 4 INTERVAL CHART

HIGHWAY 16 AND SHILOH DRIVE

<table>
<thead>
<tr>
<th>SIGNAL FACES</th>
<th>1-5 CLR</th>
<th>6-7 CLR</th>
<th>8-10 CLR</th>
<th>11-12 CLR</th>
<th>13-14 CLR</th>
<th>15-16 CLR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>OL4</td>
<td>OL5</td>
<td>OL6</td>
<td>OL7</td>
<td>OL8</td>
<td>OL9</td>
</tr>
<tr>
<td>2,3,8,4</td>
<td>OL3</td>
<td>OL2</td>
<td>OL1</td>
<td>OL0</td>
<td>OL0</td>
<td>OL0</td>
</tr>
<tr>
<td>5</td>
<td>OL4</td>
<td>OL5</td>
<td>OL6</td>
<td>OL7</td>
<td>OL8</td>
<td>OL9</td>
</tr>
<tr>
<td>6</td>
<td>OL4</td>
<td>OL5</td>
<td>OL6</td>
<td>OL7</td>
<td>OL8</td>
<td>OL9</td>
</tr>
<tr>
<td>7</td>
<td>OL4</td>
<td>OL5</td>
<td>OL6</td>
<td>OL7</td>
<td>OL8</td>
<td>OL9</td>
</tr>
<tr>
<td>8,9,10</td>
<td>OL4</td>
<td>OL5</td>
<td>OL6</td>
<td>OL7</td>
<td>OL8</td>
<td>OL9</td>
</tr>
<tr>
<td>11,12</td>
<td>OL4</td>
<td>OL5</td>
<td>OL6</td>
<td>OL7</td>
<td>OL8</td>
<td>OL9</td>
</tr>
<tr>
<td>13,14,15</td>
<td>OL4</td>
<td>OL5</td>
<td>OL6</td>
<td>OL7</td>
<td>OL8</td>
<td>OL9</td>
</tr>
<tr>
<td>16</td>
<td>OL4</td>
<td>OL5</td>
<td>OL6</td>
<td>OL7</td>
<td>OL8</td>
<td>OL9</td>
</tr>
<tr>
<td>17</td>
<td>OL4</td>
<td>OL5</td>
<td>OL6</td>
<td>OL7</td>
<td>OL8</td>
<td>OL9</td>
</tr>
<tr>
<td>18,19</td>
<td>OL4</td>
<td>OL5</td>
<td>OL6</td>
<td>OL7</td>
<td>OL8</td>
<td>OL9</td>
</tr>
</tbody>
</table>

FLASH SEQUENCE

OL1 = 2 & 3 (SIGNAL HEAD 1)
OL2 = 4 & 6 (SIGNAL HEAD 10, 11, 12 & 13)
OL3 = 5, 6 & 7 (SIGNAL HEAD 7)
OL4 = 2 & 3 (SIGNAL HEAD 11)

SIGNAL FACES

12" LENSES

EXISTING

EXISTING 12 EXISTING 15 & 16

EXISTING 17 & 18 EXISTING 19 & 18

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFERENCE SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. SIGNAL HEADS 7, 8, & 9 SHALL BE HORIZONTALLY LOUVERED TO RESTRICT THE VIEW OF ALL INDICATIONS FOR THE EASTBOUND THROUGH TRAFFIC UNTIL THE WESTBOUND TRAFFIC PASSES UNDER SIGNAL HEADS 17, 18, & 19.
4. SIGNAL HEADS 10, 11, & 12 SHALL BE HORIZONTALLY LOUVERED TO RESTRICT THE VIEW OF ALL INDICATIONS FOR THE EASTBOUND THROUGH TRAFFIC UNTIL THE WESTBOUND TRAFFIC PASSES UNDER SIGNAL HEADS 1, 2, 3, & 4.

STAGE 4 DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB 06947

<table>
<thead>
<tr>
<th>DET. #</th>
<th>LOCATION</th>
<th>DETECTOR TYPE</th>
<th>INPUTS</th>
<th>BY SUPPLIER</th>
<th>PHOTO SYSTEM</th>
<th>DETECTOR NUMBERS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>V211</td>
<td>EB LEFT TURN</td>
<td>EB TURN</td>
<td>1</td>
<td>EB TURN</td>
<td>EB TURN</td>
<td>EB TURN</td>
<td>EB TURN</td>
</tr>
<tr>
<td>V212</td>
<td>EB LEFT TURN</td>
<td>EB TURN</td>
<td>2</td>
<td>EB TURN</td>
<td>EB TURN</td>
<td>EB TURN</td>
<td>EB TURN</td>
</tr>
<tr>
<td>V211 A1</td>
<td>EB ADVANCE</td>
<td>EB ADVANCE</td>
<td>3</td>
<td>EB ADVANCE</td>
<td>EB ADVANCE</td>
<td>EB ADVANCE</td>
<td>EB ADVANCE</td>
</tr>
<tr>
<td>V212 A2</td>
<td>EB NEAR</td>
<td>EB NEAR</td>
<td>4</td>
<td>EB NEAR</td>
<td>EB NEAR</td>
<td>EB NEAR</td>
<td>EB NEAR</td>
</tr>
<tr>
<td>V233 A3</td>
<td>SS LEFT TURN</td>
<td>SS TURN</td>
<td>5</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
</tr>
<tr>
<td>V234 A4</td>
<td>SS LEFT TURN</td>
<td>SS TURN</td>
<td>6</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
</tr>
<tr>
<td>V231</td>
<td>SB ADVANCE</td>
<td>SB ADVANCE</td>
<td>7</td>
<td>SB ADVANCE</td>
<td>SB ADVANCE</td>
<td>SB ADVANCE</td>
<td>SB ADVANCE</td>
</tr>
<tr>
<td>V232</td>
<td>SB NEAR</td>
<td>SB NEAR</td>
<td>8</td>
<td>SB NEAR</td>
<td>SB NEAR</td>
<td>SB NEAR</td>
<td>SB NEAR</td>
</tr>
<tr>
<td>V233 A5</td>
<td>SS LEFT TURN</td>
<td>SS TURN</td>
<td>9</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
</tr>
<tr>
<td>V234 A6</td>
<td>SS LEFT TURN</td>
<td>SS TURN</td>
<td>10</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
</tr>
<tr>
<td>V241</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>11</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
</tr>
<tr>
<td>V242</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>12</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
</tr>
<tr>
<td>V243</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>13</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
</tr>
<tr>
<td>V244</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>14</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
</tr>
<tr>
<td>V245</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>15</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
</tr>
<tr>
<td>V246</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>16</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
<td>SS TURN</td>
</tr>
</tbody>
</table>

CONTROLLER INPUT ABBR.:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE:
"AMP CHN = REFERS TO THE PACK OUTPUT POSITION"
THIS IS WIDEN TO CONTROLLER INPUT NUMBER WHICH IS PROGRAMMED TO ACTIVATE THE DESIGNATED PHASE.

STAGE 4 - TEMP. SIGNAL

HWY. 16/125 AT SHILOH DRIVE
NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RECOMMENDATIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. SIGNAL HEAD NO. 11 IS TO BE VERTICALLY LOUVERED TO RESTRICT THE VIEW FROM WEST BOUND THROUGH TRAFFIC.

SCALE: 1" = 60'

NOTES TO CONTRACTOR:
1. CONTACT THE CITY OF FAYETTEVILLE FOR ANTENNA ORIENTATION.
2. ANY CONFLICTING TEMPORARY SIGNAL EQUIPMENT HAS BEEN REMOVED.
3. SYSTEM THAT WAS REMOVED IN STAGE 2 REQUIREMENTS.
4. YOU WILL ENERGIZE VEHICLE PREEMPTION SYSTEM THAT WAS REMOVED IN STAGE 2 REQUIREMENTS.
NOTED TO CONTRACTOR:
1. REFER TO PERMANENT SIGNAL PLANS FOR POLE LOCATIONS AND POLE DIMENSIONS.
2. TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION.

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10 FEET OF POLE A FACING EAST.

LOCAL RADIO WITH ANTENNA, CAT 5E CABLE MOUNTED TO POLE A FACING EAST.

CONCRETE PULL BOX (TYPE 1 HD) WITH 2" DIA. NMC AND SERVICE POINT AND MAIN BREAKER.

CONTROLLER WITH 2" DIA. NMC AND PAD MOUNTED BATTERY.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

PAD MOUNTED BATTERY.

BACKUP SYSTEM 2" DIA. NMC TO CONTROLLER.

PROPOSED SIGNAL CONTROLLER.

CONTROLLER WITH 2" DIA. NMC.

NMC TO CONTROLLER.

PAD MOUNTED BATTERY.

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10 FEET OF POLE A FACING EAST.

LOCAL RADIO WITH ANTENNA.

CONCRETE PULL BOX (TYPE 1 HD) WITH 2" DIA. NMC AND SERVICE POINT AND MAIN BREAKER.

CONTROLLER WITH 2" DIA. NMC AND PAD MOUNTED BATTERY.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

PAD MOUNTED BATTERY.

BACKUP SYSTEM 2" DIA. NMC TO CONTROLLER.

PROPOSED SIGNAL CONTROLLER.

CONTROLLER WITH 2" DIA. NMC.

NMC TO CONTROLLER.

PAD MOUNTED BATTERY.

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10 FEET OF POLE A FACING EAST.

LOCAL RADIO WITH ANTENNA.

CONCRETE PULL BOX (TYPE 1 HD) WITH 2" DIA. NMC AND SERVICE POINT AND MAIN BREAKER.

CONTROLLER WITH 2" DIA. NMC AND PAD MOUNTED BATTERY.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

PAD MOUNTED BATTERY.

BACKUP SYSTEM 2" DIA. NMC TO CONTROLLER.

PROPOSED SIGNAL CONTROLLER.

CONTROLLER WITH 2" DIA. NMC.

NMC TO CONTROLLER.

PAD MOUNTED BATTERY.

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10 FEET OF POLE A FACING EAST.

LOCAL RADIO WITH ANTENNA.

CONCRETE PULL BOX (TYPE 1 HD) WITH 2" DIA. NMC AND SERVICE POINT AND MAIN BREAKER.

CONTROLLER WITH 2" DIA. NMC AND PAD MOUNTED BATTERY.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

PAD MOUNTED BATTERY.

BACKUP SYSTEM 2" DIA. NMC TO CONTROLLER.

PROPOSED SIGNAL CONTROLLER.

CONTROLLER WITH 2" DIA. NMC.

NMC TO CONTROLLER.

PAD MOUNTED BATTERY.

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10 FEET OF POLE A FACING EAST.

LOCAL RADIO WITH ANTENNA.

CONCRETE PULL BOX (TYPE 1 HD) WITH 2" DIA. NMC AND SERVICE POINT AND MAIN BREAKER.

CONTROLLER WITH 2" DIA. NMC AND PAD MOUNTED BATTERY.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

PAD MOUNTED BATTERY.

BACKUP SYSTEM 2" DIA. NMC TO CONTROLLER.

PROPOSED SIGNAL CONTROLLER.

CONTROLLER WITH 2" DIA. NMC.

NMC TO CONTROLLER.

PAD MOUNTED BATTERY.

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10 FEET OF POLE A FACING EAST.

LOCAL RADIO WITH ANTENNA.

CONCRETE PULL BOX (TYPE 1 HD) WITH 2" DIA. NMC AND SERVICE POINT AND MAIN BREAKER.

CONTROLLER WITH 2" DIA. NMC AND PAD MOUNTED BATTERY.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

PAD MOUNTED BATTERY.

BACKUP SYSTEM 2" DIA. NMC TO CONTROLLER.

PROPOSED SIGNAL CONTROLLER.

CONTROLLER WITH 2" DIA. NMC.

NMC TO CONTROLLER.

PAD MOUNTED BATTERY.

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10 FEET OF POLE A FACING EAST.

LOCAL RADIO WITH ANTENNA.

CONCRETE PULL BOX (TYPE 1 HD) WITH 2" DIA. NMC AND SERVICE POINT AND MAIN BREAKER.

CONTROLLER WITH 2" DIA. NMC AND PAD MOUNTED BATTERY.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

PAD MOUNTED BATTERY.

BACKUP SYSTEM 2" DIA. NMC TO CONTROLLER.

PROPOSED SIGNAL CONTROLLER.

CONTROLLER WITH 2" DIA. NMC.

NMC TO CONTROLLER.

PAD MOUNTED BATTERY.

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10 FEET OF POLE A FACING EAST.

LOCAL RADIO WITH ANTENNA.

CONCRETE PULL BOX (TYPE 1 HD) WITH 2" DIA. NMC AND SERVICE POINT AND MAIN BREAKER.

CONTROLLER WITH 2" DIA. NMC AND PAD MOUNTED BATTERY.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

PAD MOUNTED BATTERY.

BACKUP SYSTEM 2" DIA. NMC TO CONTROLLER.

PROPOSED SIGNAL CONTROLLER.

CONTROLLER WITH 2" DIA. NMC.

NMC TO CONTROLLER.

PAD MOUNTED BATTERY.

SERVICE POINT AND MAIN BREAKER BY CONTRACTOR WITHIN 10 FEET OF POLE A FACING EAST.

LOCAL RADIO WITH ANTENNA.

CONCRETE PULL BOX (TYPE 1 HD) WITH 2" DIA. NMC AND SERVICE POINT AND MAIN BREAKER.

CONTROLLER WITH 2" DIA. NMC AND PAD MOUNTED BATTERY.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

TYPE 2 PULL BOX.

PAD MOUNTED BATTERY.

BACKUP SYSTEM 2" DIA. NMC TO CONTROLLER.

PROPOSED SIGNAL CONTROLLER.

CONTROLLER WITH 2" DIA. NMC.

NMC TO CONTROLLER.

PAD MOUNTED BATTERY.
STAGE 5

TEMPORARY Wiring Diagram

NOTES TO CONTRACTOR:
1. ONE SEPARATE 1-50 IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.
2. ALL JUNCTION BOXES, FUSES, AND INSTRUMENTS, INCLUDING UNITS, SHALL BE BOLTED TO THE TERMINAL STRIP IN THE AREA OF THE CABINET.
3. THE LOCAL SUPPLY SHALL BE METERED FOR METER POWER TO THE SERVICE POINT.
4. INSTALL TRAFFIC SIGNAL CABLE FOR SIGNAL HEAD 2 AND PEDESTRIAN SIGNAL HEADS 14, 15, 16, AND 17.

GROUNDING ARRAY

SINGLE-PORT FUSION WELDS

GROUND WIRE TO ANTENNA (STRAINED)
SOLID EGC
SINGLE PORT FUSION WELD STRANDED EGC
POLE GROUND CLAMP COMBINE ALL EGC'S
POLE GROUND CLAMP COMBINE STRAND EGC'S
SOLID EGC FUSION WELD
SOLID EGC, PER STANDARD SPECIFICATIONS OF HIGHWAY CONTRACTING 2014 EDITION
NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. SIGNAL HEAD 11 TO VERTICALLY LOUVERED TO RESTRICT THE VIEW FROM WESTBOUND THROUGH TRAFFIC.

PHASING DIAGRAM

SIGNAL FACES

TOP LENSES

RIGHT ON GREEN ARROW ONLY

LEFT TURN SIGNAL 90°-X

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. SIGNAL HEAD 11 TO VERTICALLY LOUVERED TO RESTRICT THE VIEW FROM WESTBOUND THROUGH TRAFFIC.

STAGE 5 INTERVAL CHART

HIGHWAY 16 AND SHILOH DRIVE

FLASH SEQUENCE

1-3 CLR 1-6 CLR 1-9 CLR 2-3 CLR 2-6 CLR 2-9 CLR 3-6 CLR 3-9 CLR

3 & 4 R R R G G R R R
5, 6, 7, 8 R R G G R R R
9 R R R R R R R
10 R R R R R R R
11, 12, & 13 R R R R R R R

* DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE

STAGE 5 DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION Job 040447

STAGE 5 DETECTOR CHART

DETECTOR ID LOCATION DIRECTION TYPE DET # CAB TRIM # AMP CHN # CON DIR # PH S

V411 A. B. C. SB RIGHT TURN FAR COMB. 1 V9 1 1 CAMERA V4 37°
V412 A. B. C. SB RIGHT TURN LOCAL. 2 V1 1 1 CAMERA V4 37°
V421 A. B. WB ADVANCE LOCAL. 13 V2 2 2 CAMERA V2 37°
V422 A. B. WB NEAR COMB. 17 V10 2 2 CAMERA V5 37°
V413 A. B. SB LEFT TURN FAR COMB. 21 V12 4 4 CAMERA V7 74°
V423 A. B. SB LEFT TURN LOCAL. 22 V4 4 4 CAMERA V7 74°
V424 A. B. WB ADVANCE LOCAL. 18 V13 5 5 CAMERA V5 37°
V425 A. B. WB NEAR COMB. 19 V5 5 5 CAMERA V5 37°
V426 A. B. C. SB ADVANCE LOCAL. 6 V8 6 6 CAMERA V6 23°
V427 A. B. C. SB NEAR COMB. 9 V14 6 6 CAMERA V1 74°

STAGE 5 - TEMP. SIGNAL

HWY. 16/125 AT SHILOH DRIVE

CONTROL INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: *AMP CHN # REFERS TO THE RACK OUTPUT POSITION WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE. EXAMPLE: V3 = SYSTEM DETECTOR 1, V10 = SYSTEM DETECTOR 2.
1. All signal heads shall have backplates.

2. Refer to special provisions /retroreflective backplates for details on requirements for backplates.

3. Signal head to vertically louvers to restrict the view from westbound through traffic.

4. Refer to special provisions for details on requirements for pedestrian signal heads.

5. All pedestrian signal heads can be placed into operation if there are both wheelchair ramps and a crosswalk that meets A.D.A. standard.

**Detector Spacing Chart**

- **Pose VDZ**
- **Lead VDZ**
- **Left VDZ**

**Virtual Stop Distance**

- 230' from stop line
- 100' from stop line
- 35' from stop line

**Signal Faces**

- 12" lenses

**Virtual Sensor Pulse**

- VDZ (typical)
- Virtual 6'x6' Pulse

**Signalization Plan Sheet**

- HWY. 16/112S at Shiloh Drive

**Phase Diagram**

- OLA = 1 + 4

**Signal Pole Dimensions**

- **Pole**
- **Mast Arm**
- **Mast Arm Angle**
- **Vert. Shaft Angle**
- **Lum. Arm**
- **Lum. Arm Angle**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>64'</td>
<td>180°</td>
<td>35°</td>
<td>25°</td>
<td>180°</td>
</tr>
<tr>
<td>B</td>
<td>NA</td>
<td>NA</td>
<td>10°</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>C</td>
<td>NA</td>
<td>NA</td>
<td>10°</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>D</td>
<td>46'</td>
<td>180°</td>
<td>35°</td>
<td>25/25°</td>
<td>90°/180°</td>
</tr>
<tr>
<td>E</td>
<td>NA</td>
<td>NA</td>
<td>10°</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>F</td>
<td>52'</td>
<td>180°</td>
<td>35°</td>
<td>25°</td>
<td>180°</td>
</tr>
<tr>
<td>G</td>
<td>38'</td>
<td>90°</td>
<td>21°</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

* Angle measured clockwise from hand hole.
WIRING DIAGRAM

NOTES TO CONTRACTOR:
1. PAIR MARKER X 1 G & B IS PAINTED ON THE BURNTED LINES WITH BURNT.
2. ALL DETECTOR RACK CHANNELS, INCLUDING UN-ED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

GROUNDING ARRAY
SINGLE-PORT FUSION WELDS

1-20c, 1-12c, 2-5c, 3-VC, 1-2c/#12, 1-1c/#8 E.G.C.
1-1c/#8 E.G.C.
1-20c, 1-12c, 3-VC, 1-2c/#12, 1-1c/#8 E.G.C.
1-20c, 2-VC, 2-20/12, 1-12$c E.G.C.
1-20c, 2-VC, 2-20/12, 2-16$c E.G.C.
1-20c, 2-VC, 2-20/12, 2-16$c E.G.C.
1-20c, 2-VC, 2-20/12, 2-16$c E.G.C.
1-20c, 2-VC, 2-20/12, 1-12$c E.G.C.
1-20c, 2-VC, 2-20/12, 1-12$c E.G.C.
1-20c, 2-VC, 2-20/12, 1-12$c E.G.C.
1-20c, 2-VC, 2-20/12, 1-12$c E.G.C.
1. All signal heads shall have backplates.
2. Refer to special provisions "retroreflective backplates" for details on requirements for backplates.
3. Signal head and vertically located to restrict the view from westbound through traffic.
4. Refer to special provisions for details on requirements for pedestrian signal heads.
5. All pedestrian signal heads can be placed into operation if there are both wheelchair ramps and sidewalks that meet ADA standards.
### PERMANENT TRAFFIC SIGNAL QUANTITIES

<table>
<thead>
<tr>
<th>ITEM NUMBER</th>
<th>ITEM DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP &amp; 103</td>
<td>SYSTEM LOCAL CONTROLLER TR-2 TYPE 3, E-NET (8 PHASES)</td>
<td>1</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP</td>
<td>TRAFFIC SIGNAL CONTROLLER (INTEGRATION)</td>
<td>1</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP</td>
<td>ETHERNET Switch, 1100 MANDERIES (8 PORT)</td>
<td>1</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP</td>
<td>E-NET CABLE (EXC OR CAT 5E)</td>
<td>100</td>
<td>LIN. FT</td>
</tr>
<tr>
<td>SP</td>
<td>LOCAL RADIO (4-RT I/R WITH ANTENNA)</td>
<td>1</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP &amp; 100</td>
<td>TRAFFIC SIGNAL HEAD, LED (SECTION 1 WAY)</td>
<td>11</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP &amp; 105</td>
<td>TRAFFIC SIGNAL HEAD, LED (SECTION 1 WAY)</td>
<td>1</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP &amp; 707</td>
<td>LOCATION OF TRAFFIC SIGNAL HEAD</td>
<td>9</td>
<td>EA/1</td>
</tr>
<tr>
<td>701</td>
<td>COUNTERCLOCKWISE SEQUENTIAL SYSTEM, HEAD, LED</td>
<td>1075</td>
<td>LIN. FT</td>
</tr>
<tr>
<td>702</td>
<td>TRAFFIC SIGNAL CABLE (COT 4X4X1)</td>
<td>189</td>
<td>LIN. FT</td>
</tr>
<tr>
<td>700</td>
<td>TRAFFIC SIGNAL CABLE (COT 4X4X1)</td>
<td>539</td>
<td>LIN. FT</td>
</tr>
<tr>
<td>SP</td>
<td>ELECTRICAL CONNECTIONS IN-COUDT (485 A-W, 6-G)</td>
<td>108</td>
<td>LIN. FT</td>
</tr>
<tr>
<td>SP</td>
<td>ELECTRICAL CONNECTIONS IN-COUDT (421 A-W, 6-G)</td>
<td>108</td>
<td>LIN. FT</td>
</tr>
<tr>
<td>SP</td>
<td>ELECTRICAL CONNECTIONS IN-COUDT (261 A-W, 6-G)</td>
<td>0</td>
<td>LIN. FT</td>
</tr>
<tr>
<td>SP</td>
<td>ELECTRICAL CONNECTIONS FOR LUMINARIES</td>
<td>410</td>
<td>LIN. FT</td>
</tr>
<tr>
<td>704</td>
<td>GALVANIZED STEEL CONDUIT (2&quot;)</td>
<td>30</td>
<td>LIN. FT</td>
</tr>
<tr>
<td>710</td>
<td>NON-METALLIC CONDUIT (2&quot;)</td>
<td>31</td>
<td>LIN. FT</td>
</tr>
<tr>
<td>710</td>
<td>NON-METALLIC CONDUIT (2&quot;)</td>
<td>30</td>
<td>LIN. FT</td>
</tr>
<tr>
<td>710</td>
<td>NON-METALLIC CONDUIT (2&quot;)</td>
<td>430</td>
<td>LIN. FT</td>
</tr>
<tr>
<td>711</td>
<td>CONCRETE PULL BOX TYPE 2</td>
<td>4</td>
<td>EA/1</td>
</tr>
<tr>
<td>711</td>
<td>CONCRETE PULL BOX TYPE 2</td>
<td>2</td>
<td>EA/1</td>
</tr>
<tr>
<td>705</td>
<td>SERVICE POINT ASSEMBLY (2 CIRCUITS)</td>
<td>1</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP &amp; 114</td>
<td>TRAFFIC SIGNAL, W/ARM AND POLE WITH FOUNDATION (52)</td>
<td>1</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP &amp; 114</td>
<td>TRAFFIC SIGNAL, W/ARM AND POLE WITH FOUNDATION (52)</td>
<td>1</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP &amp; 114</td>
<td>TRAFFIC SIGNAL, W/ARM AND POLE WITH FOUNDATION (52)</td>
<td>1</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP &amp; 114</td>
<td>TRAFFIC SIGNAL, W/ARM AND POLE WITH FOUNDATION (52)</td>
<td>1</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP &amp; 114</td>
<td>TRAFFIC SIGNAL, W/ARM AND POLE WITH FOUNDATION (52)</td>
<td>1</td>
<td>EA/1</td>
</tr>
<tr>
<td>713</td>
<td>NON-METALLIC CONDUIT (4&quot;)</td>
<td>3</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP &amp; 715</td>
<td>SERVICE PULL BOX TYPE 2</td>
<td>1</td>
<td>EA/1</td>
</tr>
<tr>
<td>716</td>
<td>STANDARD SIGN</td>
<td>11</td>
<td>SQ. FT</td>
</tr>
<tr>
<td>SP</td>
<td>SF STREET NAME SIGN</td>
<td>4</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP &amp; 133</td>
<td>VIDEO DETECTOR, LOCATION</td>
<td>1</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP &amp; 133</td>
<td>VIDEO DETECTOR LOC.</td>
<td>7</td>
<td>EA/1</td>
</tr>
<tr>
<td>711</td>
<td>VIDEO CABLE</td>
<td>1075</td>
<td>LIN. FT</td>
</tr>
<tr>
<td>SP &amp; 733</td>
<td>VIDEO MONITOR (12')</td>
<td>1</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP &amp; 733</td>
<td>VIDEO PROCESSORS (EDGE CARD) (1 CAMERA)</td>
<td>2</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP &amp; 733</td>
<td>VIDEO PROCESSORS (EDGE CARD) (1 CAMERA)</td>
<td>2</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP &amp; 733</td>
<td>VIDEO CONNECT DED FOR COMMUNICATION</td>
<td>1</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP &amp; 733</td>
<td>VIDEO CONNECT DED FOR COMMUNICATION</td>
<td>1</td>
<td>EA/1</td>
</tr>
<tr>
<td>SP &amp; 733</td>
<td>VIDEO CONNECT DED FOR COMMUNICATION</td>
<td>1</td>
<td>EA/1</td>
</tr>
</tbody>
</table>

* ONE SPARE VIDEO DETECTOR AND ONE SPARE VIDEO PROCESSOR SHALL BE SUPPLIED PERMANENT TRAFFIC SIGNAL.

**NOTES:**
- **REFER TO PERMANENT TRAFFIC SIGNAL PLANS**
NOTES TO CONTRACTOR:
1. REFER TO PERMANENT SIGNAL PLANS FOR POLE LOCATIONS AND POLE DIMENSIONS, CONTACT THE CITY OF FAYETTEVILLE FOR ANTENNA ORIENTATION.
2. CONTACT THE CITY OF FAYETTEVILLE LOCATIONS AND POLE DIMENSIONS.

1. REFER TO PERMANENT SIGNAL PLANS FOR POLE NOTES TO CONTRACTOR:

2. CONTACT THE CITY OF FAYETTEVILLE.

EXIST R/W MOUNTED TO POLE A FACING EAST.

VIRTUAL 6'X6' PULSE VDZ (TYPICAL)

TYPE 2 PULL BOX
CONCRETE PULL BOX
CONTRACTOR WITHIN 10

60' FROM STOP LINE
VIRTUAL 6'X6' PRESENCE VDZ (TYPICAL)

VIRTUAL 6'X50' PRESENCE VDZ

VIRTUAL 6'X50' PRESENCE VDZ (TYPICAL)

VIRTUAL 6'X6' PULSE VDZ - 200 FROM STOP LINE

VIRTUAL 6'X6' PULSE VDZ - 250 FROM STOP LINE

VIRTUAL 6'X6' PULSE VDZ - 300 FROM STOP LINE

VIRTUAL 6'X6' PULSE VDZ (TYPICAL)

HIGH-IL SIGN

LOW-IL SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN

HIGH-LL SIGN

LOW-LL SIGN

HIGH-L SIGN

LOW-L SIGN
**DESIGN PARAMETERS**

POSTED SPEED LIMIT
40 MPH EAST AND WEST APPROACH
35 MPH NORTH APPROACH
N/A MPH SOUTH APPROACH

NO BUS STOP
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO CITY DISTANCE RESTRICTIONS

MINIMUM CLEAR ZONE DISTANCE
4 FEET BEHIND CURB

**SERVICE POINT AND MAN BREATHER BY CONVEYOR WITHIN 10 FEET OF CONTROLLER WITH 2" SD, NMC AND CONCRETE PULL BOX TYPE 2 HD.**

**LOCAL RADIO WITH ANTENNA CABLE MOUNTED TO POLE A FACING EAST**

**PROPOSED SIGNAL-CONTROLLER**

**V300' PULSE VOZ (TYPICAL) - 50' FROM STOP LINE**

**VIRTUAL 6'X6' PULSE VOZ (TYPICAL) - 50 FROM STOP LINE**

**VIRTUAL 6'X6' PULSE VOZ (TYPICAL) - 250 FROM STOP LINE**

**VIRTUAL 6'X6' PULSE VOZ (TYPICAL) - 100' FROM STOP LINE**

**VIRTUAL 6'X6' PULSE VOZ (TYPICAL) - 80 FROM STOP LINE**

**NOTE TO CONTRACTOR:**

**REFER TO PERMANENT SIGNAL PLANS FOR POLE LOCATIONS AND POLE DIMENSIONS.**

**STAGE 5 - TEMP. SIGNAL**

HWY. 16/112S AT STEAMBOAT DRIVE

**SCALE: 1"=30'**
**NOTES:**
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION “RETROREFLECTIVE BACKPLATES” FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.

**PHASING DIAGRAM**

**SIGNAL FACES**

- 12" LENSES
- RYG

**STAGE 5 INTERVAL CHART**

<table>
<thead>
<tr>
<th>SIGNAL FACES</th>
<th>1-6</th>
<th>1-6</th>
<th>1-6</th>
<th>2-6</th>
<th>1-6</th>
<th>1-6</th>
<th>1-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGHWAY 16/STEAMBOAT DRIVE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>2, 4, &amp; 5</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
</tr>
<tr>
<td>6</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>7</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>8</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
<td>G</td>
</tr>
<tr>
<td>V, U, &amp; 11</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>12</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>13</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
</tbody>
</table>

**FLASH SEQUENCE**

- "R" DENOTES RED OR GREEN ARROW DEPENDING ON NEXT PHASE
- "G" DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE

**STAGE 5 DFFFTCTOR CHART**

<table>
<thead>
<tr>
<th>DET #</th>
<th>LOCATION DIRECTION</th>
<th>TYPE</th>
<th>DET #</th>
<th>CAB TRM #</th>
<th>AMP CHN #</th>
<th>CON MP #</th>
<th>PHS</th>
<th>SYSTEM DET #</th>
<th>MASTER SYSTEM DETECTOR NUMBERS</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>V21</td>
<td>EB LEFT TURN</td>
<td>COMB</td>
<td>V9</td>
<td>V1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>V1</td>
<td>CAMERA V1</td>
<td>74°</td>
</tr>
<tr>
<td>V22</td>
<td>EB LEFT TURN</td>
<td>LOCA</td>
<td>V10</td>
<td>V2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>V2</td>
<td>CAMERA V2</td>
<td>74°</td>
</tr>
<tr>
<td>V23</td>
<td>WB ADVANCE</td>
<td>LOCA</td>
<td>V2</td>
<td>V3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>V3</td>
<td>CAMERA V3</td>
<td>74°</td>
</tr>
<tr>
<td>V24</td>
<td>WB NEAR</td>
<td>COMB</td>
<td>V4</td>
<td>V4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>V4</td>
<td>CAMERA V4</td>
<td>74°</td>
</tr>
<tr>
<td>V25</td>
<td>SB LEFT TURN</td>
<td>COMB</td>
<td>V5</td>
<td>V5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>V5</td>
<td>CAMERA V5</td>
<td>74°</td>
</tr>
<tr>
<td>V26</td>
<td>SB LEFT TURN</td>
<td>LOCA</td>
<td>V6</td>
<td>V6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>V6</td>
<td>CAMERA V6</td>
<td>74°</td>
</tr>
<tr>
<td>V27</td>
<td>WB LEFT TURN</td>
<td>COMB</td>
<td>V13</td>
<td>V13</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>V13</td>
<td>CAMERA V13</td>
<td>74°</td>
</tr>
<tr>
<td>V28</td>
<td>WB LEFT TURN</td>
<td>LOCA</td>
<td>V7</td>
<td>V7</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>V7</td>
<td>CAMERA V7</td>
<td>74°</td>
</tr>
<tr>
<td>V29</td>
<td>EB ADVANCE</td>
<td>LOCA</td>
<td>V8</td>
<td>V8</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>V8</td>
<td>CAMERA V8</td>
<td>74°</td>
</tr>
<tr>
<td>V30</td>
<td>EB NEAR</td>
<td>COMB</td>
<td>V14</td>
<td>V14</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>V14</td>
<td>CAMERA V14</td>
<td>74°</td>
</tr>
</tbody>
</table>

**DIRECT INPUT DEVICES**

- "V" = VEHICLE INPUT
- "D" = SYSTEM OR AUXILIARY INPUT
- "P" = PEDESTRIAN INPUT

**SIGNALIZATION PLAN SHEET**

**ARKANSAS REGISTERED PROFESSIONAL ENGINEER**

7-30-2020
1. All signal heads shall have backplates.
2. Refer to special provisions “reflective backplates” for details on requirements for backplates.
3. Refer to special provisions for details on requirements for pedestrian signal heads.
4. All pedestrian signal heads can be placed into operation if there are both wheelchair ramps and a crosswalk that meets A.D.A. standards.

Notes:

- Detector spacing chart for 4-lane virtual loops
- Detector spacing chart for main lane virtual loops
### Stage 2 Traffic Signal Quantities

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP &amp; T70</td>
<td>System local controller TR-2 type 2, 8 panels</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG</td>
<td>Ethernet switch, 100 watt, 1, 8-pin</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; T40</td>
<td>8-24 V cable, exterior cat 6</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG</td>
<td>Local radio with internal receiver</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SP &amp; T6</td>
<td>Traffic Signal Head LED, section 1, 1, 75</td>
<td>2</td>
<td>EACH</td>
</tr>
<tr>
<td>SP &amp; T6</td>
<td>Traffic Signal Head LED, section 1, 1, 50</td>
<td>2</td>
<td>EACH</td>
</tr>
<tr>
<td>SP &amp; T6</td>
<td>Traffic Signal Head LED, section 1, 1, 40</td>
<td>2</td>
<td>EACH</td>
</tr>
<tr>
<td>SP &amp; T6</td>
<td>Traffic Signal Cable, (CTA 1A W.G.)</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SP</td>
<td>Electrical Conduit in conduit (CTA 1W G.)</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; T6</td>
<td>Galvanized steel conduit</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; T6</td>
<td>Control panel, 120 volt</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; T6</td>
<td>Non-retained access (120 volts)</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; T6</td>
<td>Service point assembly (2 circuits)</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; T6</td>
<td>Repair of traffic signal equipment</td>
<td>0.58</td>
<td>LAMP</td>
</tr>
<tr>
<td>SG</td>
<td>Treated wood pole, class 3, 4, 5</td>
<td>4</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; T6</td>
<td>Street sign</td>
<td>3</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; T6</td>
<td>Video detector (LCD)</td>
<td>6</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; T6</td>
<td>Video monitor (LCD)</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; T6</td>
<td>Video processor edge card (2 cameras)</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; T6</td>
<td>Vehicle detector, box (16 channels)</td>
<td>1</td>
<td>EACH</td>
</tr>
</tbody>
</table>

### Stage 3 Traffic Signal Quantities

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>Traffic Signal Controller (Modification)</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SP &amp; T6</td>
<td>Traffic Signal Head LED, section 1, 1, 75</td>
<td>2</td>
<td>EACH</td>
</tr>
<tr>
<td>SP &amp; T6</td>
<td>Traffic Signal Head LED, section 1, 1, 50</td>
<td>2</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; T6</td>
<td>Removal of traffic signal equipment</td>
<td>0.14</td>
<td>LAMP</td>
</tr>
<tr>
<td>SG</td>
<td>Standard sign</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG</td>
<td>Video detector relocation</td>
<td>2</td>
<td>EACH</td>
</tr>
</tbody>
</table>

### Stage 5 Traffic Signal Quantities

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>Traffic Signal Controller (Modification)</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SP &amp; T6</td>
<td>Traffic Signal Head LED, section 1, 1, 75</td>
<td>1</td>
<td>EACH</td>
</tr>
</tbody>
</table>

### Permanent Traffic Signal Quantities

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP &amp; 761</td>
<td>System local controller TR-2 type 2, 8 panels</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SP</td>
<td>Traffic Signal Controller (Modification)</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SP</td>
<td>Ethernet switch, 100 watt, 1, 8-pin</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG</td>
<td>Local radio with internal receiver</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SP &amp; 766</td>
<td>Traffic Signal Head LED, section 1, 1, 75</td>
<td>2</td>
<td>EACH</td>
</tr>
<tr>
<td>SP &amp; 766</td>
<td>Traffic Signal Head LED, section 1, 1, 50</td>
<td>2</td>
<td>EACH</td>
</tr>
<tr>
<td>SP &amp; 766</td>
<td>Traffic Signal Head LED, section 1, 1, 40</td>
<td>2</td>
<td>EACH</td>
</tr>
<tr>
<td>SP &amp; 766</td>
<td>Traffic Signal Cable, (CTA 1A W.G.)</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SP</td>
<td>Electrical Conduit in conduit (CTA 1W G.)</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; 766</td>
<td>Galvanized steel conduit</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; 766</td>
<td>Control panel, 120 volt</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; 766</td>
<td>Service point assembly (2 circuits)</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; 766</td>
<td>Video detector relocation</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; 766</td>
<td>Video processor, edge card (1 camera)</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; 766</td>
<td>Video connector, edge card for communications</td>
<td>1</td>
<td>EACH</td>
</tr>
<tr>
<td>SG &amp; 766</td>
<td>Video connector, edge card for communications</td>
<td>1</td>
<td>EACH</td>
</tr>
</tbody>
</table>

- One spare video detector and one spare video processor shall be supplied permanent traffic signal.
- (Refer to permanent traffic signal plans.)

### Traffic Signal Quantities

<table>
<thead>
<tr>
<th>HWY 16 AT SALEM ROAD</th>
<th>Qty</th>
<th>SHEETS TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>112</td>
<td>533</td>
</tr>
</tbody>
</table>

**Date:** 10-1-2020

**Professional Engineer:**

**Arkanas-**

**Certified Professional Engineer:**

**Arkansas-**

**Date:** 9-30-2020
STAGE 2
TEMPORARY WIRING DIAGRAM

NOTES TO CONTRACTOR:
1. ONE SEPARATE 1-5c IS RUN TO EACH POLE FOR THE PEDESTRIAN
   PUSH BUTTON.
2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE
   BROUGHT TO TERMINAL STRIP & DETECTOR AREA OF CABINET.
3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING
   POWER TO THE SERVICE POINT.
PHASING DIAGRAM

SIGNAL FACES

ONE SECTION

[Diagram of signal faces]

NOTES:
1. All signal heads shall have backplates.
2. Refer to special provisions and backplates for details on requirements for backplates.
3. Refer to special provisions for details on requirements for pedestrian signal heads.
4. All pedestrian signal heads can be placed into operation if they are both within a band and a crosswalk that meets ADA standards.

STAGE 2 INTERVAL CHART

HIGHWAY N AND SALEM ROAD

<table>
<thead>
<tr>
<th>SIGNAL FACES</th>
<th>1-35</th>
<th>CLR 1</th>
<th>CLR 2</th>
<th>CLR 2-35</th>
<th>CLR 3-5</th>
<th>CLR 4-7</th>
<th>CLR 4-6</th>
<th>CLR 6-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&lt;G</td>
<td>&gt;G</td>
<td>&gt;G</td>
<td>&lt;G-G</td>
<td>&lt;G-G</td>
<td>&lt;G-G</td>
<td>&lt;G-G</td>
<td>&lt;G-G</td>
</tr>
<tr>
<td>2 &amp; 3</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
</tr>
<tr>
<td>4</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
</tr>
<tr>
<td>5</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
</tr>
<tr>
<td>6 &amp; 7</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
</tr>
<tr>
<td>8</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
</tr>
<tr>
<td>9 &amp; 10</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
</tr>
<tr>
<td>11</td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c-c</td>
<td>c-c</td>
<td>c-c</td>
<td>c-c</td>
<td>c-c</td>
</tr>
<tr>
<td>12 &amp; 13</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
</tr>
<tr>
<td>14 &amp; 15</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
</tr>
<tr>
<td>16 &amp; 17</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
</tr>
<tr>
<td>18 &amp; 19</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
</tr>
<tr>
<td>20 &amp; 21</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
<td>R-R</td>
</tr>
</tbody>
</table>

FLASH SEQUENCE

STAGE 2 DETECTOR CHART

HIGHWAY MILEAGE ROAD

<table>
<thead>
<tr>
<th>DETECTOR SYSTEM DESCRIPTION JOB (24147)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DETECTOR ASSOCIATIONS</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>4212 LTB</td>
</tr>
<tr>
<td>4213 ABB</td>
</tr>
<tr>
<td>4214 ABB</td>
</tr>
<tr>
<td>4215 ABB</td>
</tr>
<tr>
<td>4216 ABB</td>
</tr>
<tr>
<td>4217 ABB</td>
</tr>
</tbody>
</table>

NOTE:
*AMP CHN* refers to the amp output position. T-S is wired to controller input detector number which is programmed to activate the designated phase. Example: V0 = SYSTEM DETECTOR 1, V10 = SYSTEM DETECTOR 2
NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. ENSURE APPROPRIATE ACCOMMODATIONS FOR ANTENNA ORIENTATION.

NOTES TO CONTRACTOR:
1. CONTACT THE CITY OF FAYETTEVILLE FOR ANTI-THEFT MEASURES.
2. ENSURE POLE B MEETS OR EXCEEDS SPECIFICATIONS FOR A STEEL POLE ASSEMBLY. FOR THE MAXIMUM DESIGN LOAD DURING CONSTRUCTION PHASES.
3. ENSURE APPROPRIATE CLEARANCE WITH OVERHEAD UTILITIES FOR POLES F AND H.
4. PROPOSED SIGNALS CAN BE FASHIONED ONCE antenna CONNECTING TEMPORARY SIGNAL EQUIPMENT HAS BEEN REMOVED.

VIRTUAL 6'x6' PULSE VDZ (TYPICAL) 260' FROM STOP LINE
VIRTUAL 6'x50' PRESENCE VDZ
VIRTUAL 6'x6' PULSE VDZ (TYPICAL) 65' FROM STOP LINE
VIRTUAL 6'x6' PULSE VDZ (TYPICAL) 85' FROM STOP LINE
VIRTUAL 6'x6' PULSE VDZ (TYPICAL) 115' FROM STOP LINE
VIRTUAL 6'x6' PULSE VDZ (TYPICAL) 165' FROM STOP LINE

STAGES 2 & 3
Hwy 16/Salem Road
Pole Dimensions

<table>
<thead>
<tr>
<th>POLE</th>
<th>LENGTH</th>
<th>LUMINARIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>40</td>
<td>NA</td>
</tr>
<tr>
<td>B</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>C</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>D</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>E</td>
<td>40</td>
<td>20 (20°)</td>
</tr>
<tr>
<td>F</td>
<td>45</td>
<td>20</td>
</tr>
<tr>
<td>G</td>
<td>45</td>
<td>20</td>
</tr>
<tr>
<td>H</td>
<td>45</td>
<td>20</td>
</tr>
</tbody>
</table>

*SEE TYPICAL WOOD POLE WITH LUMINARIES AND DETAIL
*POLES A, C, D, & H ARE TREATED WOOD POLES (CLASS 2, 40)
*POLES B, D, & H ARE EXISTING
*RENOVE MAST ARMS FROM POLES B, C, & D
*POLES C, D, & H WILL BE REMOVED IN STAGE 3
*LUMINARIES REQUIRED UNTIL STAGE 3

ARKANSAS REGISTERED PROFESSIONAL ENGINEER

DATE: 7-30-2021

PHASE DIAGRAM
STAGE 3 WIRING DIAGRAM
NOTES TO CONTRACTOR:

1. ALL DETECTOR RACK CHANNELS INCLUDING UNUSED SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.

2. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

3. REMOVE POLES C, D, & G WITH PEDESTRIAN SIGNAL HEADS 6, 17 & 18 AND REMOVE SIGNAL HEAD 16 FROM POLE B.

4. RELOCATE VIDEO DETECTOR V3 FROM POLE D TO POLE E.

5. REPLACE SIGNAL HEAD 1 WITH SIGNAL HEAD 19, RELOCATE SIGNAL HEADS 2, 3, 4, & 5, REPLACE AND RELOCATE SIGNAL HEAD 8 WITH SIGNAL HEAD 20 AND ROTATE VIDEO DETECTORS V2 & V5 TO ACCOMODATE STAGE 3 MAINTENANCE OF TRAFFIC.
PHASING DIAGRAM

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.

SIGNAL FACES

NOTE: * DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE  
** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE  
*** DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

STAGE 3 INTERVAL CHART
HIGHWAY 16 AT SALEM ROAD

STAGE 3 DETECTOR CHART

NOTES:
*AMP CH #2 REFER TO THE BACK OUTPUT POSITION  
**AMP CH IS HARDWIRED TO CONTROLLER INPUT DETECTION NUMBER WHICH IS PROGRAMMED TO ACTIVATE THE DESIGNATED PHASE.
EXAMPLE: V8 + SYSTEM DETECTOR 1, V10 = SYSTEM DETECTOR 2

STAGE 3 - TEMP. SIGNAL
HWY. 16 AT SALEM ROAD
NOTES:
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "REINDEER" BACKPLATES FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.

11 & 12
O.L.

15 & 16

9-30-2020
NOTES TO CONTRACTOR:
1. TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
2. REFER TO PERMANENT SIGNAL PLANS FOR POLE LOCATIONS AND POLE DIMENSIONS.

SERVICE POINT AND MAIN BREAKER - BY CONTRACTOR, P-2 DIAL NMC TO CONTROLLER WITH CONCRETE PULL BOX (TYPE 1D)

RETAIN EXISTING LOCAL RADIO - WITH ANTENNA, HER CAST SE CABLE MOUNTED TO EXISTING POLE B FACING EAST

LUMINAIRE ARM (TYPICAL) RETAIN EXISTING LOCAL RADIO CABLE MOUNTED TO EXISTING POLE B FACING EAST

NOTES TO CONTRACTOR:
1. TRAFFIC SIGNAL OPERATIONS SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
2. REFER TO PERMANENT SIGNAL PLANS FOR POLE LOCATIONS AND POLE DIMENSIONS.

DESIGN PARAMETERS

PORTED SPEED LIMIT
40 MPH EAST AND WEST APPROACH
20 MPH NORTH AND SOUTH APPROACH

NO BUS STOPS
NO TRUCK STOPS
NO EXCESSIVE RECONNECTIONS
NO PT RESTAMTER
NO PARKING
NO GVW DISTANCE RESTRICTIONS

MINIMUM CLEAR ZONE DISTANCE
4 FEET BEHIND CURB

SCALE: 1''=30'

Hwy. 16 at Salem Road

Stage 5 - Temp. Signal
NOTES TO CONTRACTOR:

1. ONE SEPARATE 1-5c IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.

2. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.

3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.
**PHASING DIAGRAM**

**SIGNAL FACES**

**LEFT TURN YIELD SYMBOL**

**LEFT TURN SIGNAL**

**NOTES:**
1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION *RETROREFLECTIVE BACKPLATES* FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.

**STAGE 5 INTERVAL CHART**

<table>
<thead>
<tr>
<th>SIGNAL FACES</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FLASH SEQUENCE</strong></td>
<td>e-G</td>
<td>e-G</td>
<td>e-R</td>
<td>e-R</td>
<td>e-R</td>
<td>e-R</td>
<td>e-R</td>
<td>e-R</td>
<td>e-R</td>
<td>e-R</td>
<td>e-R</td>
<td>e-R</td>
<td>e-R</td>
<td>e-R</td>
<td>e-R</td>
<td>e-R</td>
<td>e-R</td>
</tr>
<tr>
<td><strong>1</strong></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td></td>
</tr>
</tbody>
</table>

* DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
** DENOTES GREEN OR YELLOW ARROW DEPENDING ON PHASE
*** DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

**STAGE 5 DETECTOR CHART**

<table>
<thead>
<tr>
<th>DET. #</th>
<th>TYPE</th>
<th>LOCATION</th>
<th>PROGRAM ASSIGNMENTS</th>
<th>COMM.</th>
<th>DUR.</th>
</tr>
</thead>
<tbody>
<tr>
<td>V11</td>
<td>EB LEFT TURN FAR</td>
<td>V5</td>
<td>1</td>
<td>1</td>
<td>CAMERA V1</td>
</tr>
<tr>
<td>V12</td>
<td>EB LEFT TURN LOCAL</td>
<td>V1</td>
<td>1</td>
<td>1</td>
<td>CAMERA V1</td>
</tr>
<tr>
<td>V21</td>
<td>EB ADVANCE</td>
<td>V3</td>
<td>1</td>
<td>1</td>
<td>CAMERA V1</td>
</tr>
<tr>
<td>V22</td>
<td>EB NEAR</td>
<td>V10</td>
<td>2</td>
<td>2</td>
<td>CAMERA V1</td>
</tr>
<tr>
<td>V31</td>
<td>NB LEFT TURN FAR</td>
<td>V11</td>
<td>3</td>
<td>3</td>
<td>CAMERA V3</td>
</tr>
<tr>
<td>V32</td>
<td>NB LEFT TURN LOCAL</td>
<td>V13</td>
<td>3</td>
<td>3</td>
<td>CAMERA V3</td>
</tr>
<tr>
<td>V41</td>
<td>SS ADVANCE</td>
<td>V12</td>
<td>4</td>
<td>4</td>
<td>CAMERA V7</td>
</tr>
<tr>
<td>V44</td>
<td>SS NEAR</td>
<td>V4</td>
<td>4</td>
<td>4</td>
<td>CAMERA V7</td>
</tr>
<tr>
<td>V51</td>
<td>WB LEFT TURN FAR</td>
<td>V13</td>
<td>5</td>
<td>5</td>
<td>CAMERA V3</td>
</tr>
<tr>
<td>V52</td>
<td>WB LEFT TURN LOCAL</td>
<td>V5</td>
<td>5</td>
<td>5</td>
<td>CAMERA V3</td>
</tr>
<tr>
<td>V61</td>
<td>EB ADVANCE</td>
<td>V6</td>
<td>6</td>
<td>6</td>
<td>CAMERA V7</td>
</tr>
<tr>
<td>V62</td>
<td>EB NEAR</td>
<td>V16</td>
<td>6</td>
<td>6</td>
<td>CAMERA V7</td>
</tr>
<tr>
<td>V71</td>
<td>SS LEFT TURN FAR</td>
<td>V15</td>
<td>7</td>
<td>7</td>
<td>CAMERA V7</td>
</tr>
<tr>
<td>V72</td>
<td>SS LEFT TURN LOCAL</td>
<td>V7</td>
<td>7</td>
<td>7</td>
<td>CAMERA V7</td>
</tr>
<tr>
<td>V81</td>
<td>NB ADVANCE</td>
<td>V8</td>
<td>8</td>
<td>8</td>
<td>CAMERA V3</td>
</tr>
<tr>
<td>V82</td>
<td>NB NEAR</td>
<td>V16</td>
<td>8</td>
<td>8</td>
<td>CAMERA V3</td>
</tr>
</tbody>
</table>

**CONTROLLER INPUT ABBREVIATIONS:**

V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

**NOTE:**

"AMP/CHN" = REFERS TO THE BANK OUTPUT POSITION.

THIS IS WIRING TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTIVATE THE DESIGNATED PHASE.

EXAMPLE: V6 = SYSTEM DETECTOR 1, V7 = SYSTEM DETECTOR 2
1. Contact the City of Fayetteville for antenna orientation.
2. Ensure accommodations have been completed to provide required clearance to overhead utilities.

**Detector Spacing Chart**

<table>
<thead>
<tr>
<th>Post Speed</th>
<th>Distance from Stop Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 MPH</td>
<td>65' from stop line</td>
</tr>
<tr>
<td>45 MPH</td>
<td>210' from stop line</td>
</tr>
</tbody>
</table>

**Phase Diagram**

**Signal Faces**

**Pole Dimensions**

- **Pole**
  - **Max Arm**
  - **Max Arm Angle**
  - **Vert Face**
  - **Max Arm Angle**

**Date:** 10-1-2020

**Rev:** 10-1-2020

**Scale:** 1" = 60'

**Client:** Arkansas Department of Transportation

**Contractor:** P&H Engineering

**Engineer:** J. J. Register

**Job No.:** 040847

**State:** Arkansas

**FED. AID PROJ. NO.:** -

**Profession:** Professional Registered Engineer

**No.:** 19672

**Sheet No.:** 290

**Total:**

**Approved by:**

**Plan Sheet:** Signalization Plan Sheet

**HWY. 16 at Salem Road**
**PHASING DIAGRAM**

**SIGNAL FACES**

**SHOULDER PERFORMANCE**

**INTERVAL CHART**

**DETECTOR CHART**

**NOTES:**

1. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
4. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A.S. STANDARDS.

---

**DETECTOR SYSTEM DESCRIPTION: JOB 040847**

**HIGHWAY ISSUE DATE**

**SIGNALIZATION PLAN SHEET**

**HWY. 16 AT SALEM ROAD**

10-1-2020
GAS

CITGO
MURPHY EXPRESS

LODGING

HOLIDAY INN EXPRESS
COMFORT INN
HOMEWOOD SUITES

GAS

CITGO
MURPHY EXPRESS

LODGING

HOMEROOD SUITES
HOLIDAY INN EXPRESS
COMFORT INN

LG-R1-72-STA172+94NB;
6.0" Radius, 1.0" Border, White on, Blue;
"GAS", ClearviewHwy-3-W; Standard Arrow Custom 13.4" X 8.1" 180';
"LODGING", ClearviewHwy-3-W; Standard Arrow Custom 13.4" X 8.1" 180';

LG-R3-72-STA176+25SB;
6.0" Radius, 1.0" Border, White on, Blue;
"GAS", ClearviewHwy-3-W;
Standard Arrow Custom 13.4" X 8.1" 0';
"LODGING", ClearviewHwy-3-W;
Standard Arrow Custom 13.4" X 8.1" 0';
NOTES:

The contractor shall verify sign placement and make any adjustments necessary to also sign over intended lanes.

Once the contractor will be required to install custom signs on structures when the location and the alignment when the currently open to traffic, it will be the responsibility of the contractor to provide signs for the traffic.

The contractor shall field verify sign placement and make any adjustments.

SPECIFICATIONS.

SIGN LAYOUT SHEET

WILL BE PAID SUBSIDIARY TO THE PAY ITEM "MAINTENANCE OF TRAFFIC". ALL CLOSURES AS A PART OF TRAFFIC CONTROL. PAYMENT FOR PROVIDING LANE CLOSURES TO TRAFFIC, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE LANE CLOSURES.

THE CONTRACTOR SHALL FIELD VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS.

NOTICE: THE CONTRACTOR SHALL VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NECESSARY TO ALSO SIGN OVER INTENDED LANES.

STATE SHEET NO. 040847

7/29/2020

7/29/2020
NOTES:

- The contractor shall verify sign placement and make any adjustments necessary to allow signs over intended lanes.

- All lane closures shall be made in accordance with the MUTCD. Work will be paid as a part of traffic control. Payment for providing lane closures will be made based on the pay item "Maintenance of Traffic".

- Since the contractor is required to install overhead signs on structures which are located over the roadway which are currently open to traffic, it will be the responsibility of the contractor to provide lane closures as a part of traffic control. Payment for providing lane closures will be paid in accordance with the pay item "Maintenance of Traffic".

- All maintenance of traffic work must conform with the MUTCD.

- The contractor shall field verify sign placement and make any adjustments necessary.

- See overhead sign structure details sheets for design specifications.
NOTE:
The Contractor shall field verify sign placement and make any adjustments necessary to align signs over intended lanes.

Since the Contractor will be required to install overhead signs on structures which are located over the transition area, the Contractor is responsible for verifying the sign layout following the Contractor's field survey of the project.

All structures which are located over the roadway which are currently open to traffic, it will be the responsibility of the Contractor to provide lane closures as a part of traffic control. For providing lane closures, lane closures will be paid subsidiary to the job item "maintenance of traffic." All maintenance of traffic work must conform with the MUTCD.

THE CONTRACTOR SHALL FIELD VERIFY SIGN PLACEMENT AND MAKE IN ANY ADJUSTMENTS NEEDED TO ALIGN SIGNS OVER INTENDED LANES.

THE CONTRACTOR SHALL FIELD VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NEEDED TO ALIGN SIGNS OVER INTENDED LANES.

THE CONTRACTOR SHALL FIELD VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NEEDED TO ALIGN SIGNS OVER INTENDED LANES.

THE CONTRACTOR SHALL FIELD VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NEEDED TO ALIGN SIGNS OVER INTENDED LANES.

THE CONTRACTOR SHALL FIELD VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NEEDED TO ALIGN SIGNS OVER INTENDED LANES.

THE CONTRACTOR SHALL FIELD VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NEEDED TO ALIGN SIGNS OVER INTENDED LANES.
### STANDARD ROADER SIGNS SHEET ALUMINUM 0.08" THICKNESS (50 SQ. FT. OR LESS)

<table>
<thead>
<tr>
<th>SIGN NO.</th>
<th>SIZE OF SIGN</th>
<th>UNIT AREA</th>
<th>QUANTITY REQUIRED</th>
<th>TOTAL SIGN AREA</th>
<th>LOCATION/BACKGROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1-1</td>
<td>24 x 24</td>
<td>0.06</td>
<td>10</td>
<td>0.60</td>
<td>WHITE/BLUE</td>
</tr>
<tr>
<td>M1-2</td>
<td>24 x 18</td>
<td>0.04</td>
<td>10</td>
<td>0.40</td>
<td>BLACK/WHITE</td>
</tr>
<tr>
<td>M1-3</td>
<td>24 x 12</td>
<td>0.03</td>
<td>10</td>
<td>0.30</td>
<td>BLACK/WHITE</td>
</tr>
<tr>
<td>M1-4</td>
<td>24 x 9</td>
<td>0.02</td>
<td>10</td>
<td>0.20</td>
<td>WHITE/BLUE</td>
</tr>
</tbody>
</table>

### STANDARD ROADER SIGNS SHEET ALUMINUM 0.12" THICKNESS (GREATERS THAN 50 SQ. FT.)

<table>
<thead>
<tr>
<th>SIGN NO.</th>
<th>SIZE OF SIGN</th>
<th>UNIT AREA</th>
<th>QUANTITY REQUIRED</th>
<th>TOTAL SIGN AREA</th>
<th>LOCATION/BACKGROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1-1</td>
<td>20 x 20</td>
<td>0.04</td>
<td>10</td>
<td>0.40</td>
<td>BLACK/WHITE</td>
</tr>
<tr>
<td>D1-2</td>
<td>16 x 16</td>
<td>0.02</td>
<td>10</td>
<td>0.20</td>
<td>WHITE/BLUE</td>
</tr>
<tr>
<td>D1-3</td>
<td>12 x 12</td>
<td>0.01</td>
<td>10</td>
<td>0.10</td>
<td>BLACK/WHITE</td>
</tr>
</tbody>
</table>

### SIGN QUANTITIES OVERHEAD MOUNTED

<table>
<thead>
<tr>
<th>SIGN NO./LOCATION</th>
<th>STRUCTURE TYPE</th>
<th>STANDARD SIGN</th>
<th>AREA SQ. FT.</th>
<th>LOCATION/BACKGROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL-PF-77-Z03-1</td>
<td>1</td>
<td>0.01</td>
<td>1</td>
<td>BLACK/WHITE</td>
</tr>
<tr>
<td>GL-PF-77-Z05-1</td>
<td>1</td>
<td>0.01</td>
<td>1</td>
<td>BLACK/WHITE</td>
</tr>
<tr>
<td>GL-PF-77-Z07-1</td>
<td>1</td>
<td>0.01</td>
<td>1</td>
<td>BLACK/WHITE</td>
</tr>
<tr>
<td>CH-PF-77-Z03-1</td>
<td>1</td>
<td>0.01</td>
<td>1</td>
<td>BLACK/WHITE</td>
</tr>
<tr>
<td>CH-PF-77-Z05-1</td>
<td>1</td>
<td>0.01</td>
<td>1</td>
<td>BLACK/WHITE</td>
</tr>
<tr>
<td>CH-PF-77-Z07-1</td>
<td>1</td>
<td>0.01</td>
<td>1</td>
<td>BLACK/WHITE</td>
</tr>
</tbody>
</table>
BOX CULVERT DIAGRAM 175+50

CONCRETE:

A SECTION  TOTAL FOR 11°-9' SKEWED LENGTH OF BARREL & HEADWALL = 23.48
A SECTION  175.98 X 166  = 291.69
B SECTION  81.95 X 186  = 15131
C SECTION  0.00 X 186  = 0
D SECTION  0.00 X 186  = 0.00
APRON & WINGS (CENTERSIDE) = 16.68

TOTAL C.Y. = 443.96

REINFORCING STEEL:

A SECTION  TOTAL FOR 11°-9' SKEWED LENGTH OF BARREL & HEADWALL = 3115.00
A SECTION  175.98 X 238  = 3681.00
B SECTION  81.95 X 303  = 20017.00
C SECTION  0.00 X 5  = 0
D SECTION  0.00 X 5  = 0
APRON & WINGS (CENTERSIDE) = 1483.00

TOTAL LBS = 61456.00
*INCLUDED HOLE, ARMS, & 1 AP

UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY:

A SECTION  175.98 X 16049  = 2824.37
B SECTION  81.95 X 16049  = 934.20
C SECTION  0.00 X 400  = 0
D SECTION  0.00 X 400  = 0
V.D.  = 15.94
V.D.  = 15.94

TOTAL C.Y. = 3850.51

SOLID SODDING & WATER:

SW = 1 + W 2 = 1 + 0.84 = 1.84
15.60 (GA. /A Y, SOLID SODDING) = 28.84
12.50 (GAL. /A Y, SOLID SODDING) = 0.30

CULVERT DIAGRAM
GENERAL NOTES:

ARCH MANH, WM 520 - Sourdeau cut in southwest corner of existing bridge 05628, 24', 14'-5" double-pier project with a non-bypass approach.

CONSTRUCTION SPECIFICATIONS:
Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2014 edition, with applicable Supplemental Specifications promulgated by the Department. Use the latest editions where necessary.

DESIGN SPECIFICATIONS:


FACING SURFACE DESIGN REQUIREMENTS, 24 psf

LINE DRAWINGS:

REVISED DATE
FILMED DATE

MATERIALS AND GEN. CONSTRUCTION:

Class I - Substructure (Structural Steel)

Structural Steel: (Class S (AE)) (Grade 36)

Grade 50W structural steel, except preExisting Bridge No. 05628, shall be painted as specified in SP Job No. 040184 "TEXTURED COATING FINISH" and in accordance with Subsection B.4, unless otherwise specified in SP Job No. 040184. The Contractor may use any coating system to achieve the required finish. All coatings shall be fully bonded to the surface of the structural steel.

FAUX-BRICK擬建的建筑。
LAYOUT OF BRIDGE OVER I-49

SECTION THROUGH PROPOSED WIDENING

NOTES:
Type #2 wire/Bridge Rails
along the north parapet only.
See roadway plans for
pavement details.

SECTION THROUGH FUTURE WIDENING (BY OTHERS)

NOTES:
This drawing included to
illustrate vertical clearances
for future widening.

See Roadway Plans for
details.

Type H2 Metal Bridge Rail is

proposed widening.

arkansasticommission.gov
NOTES:
Details related to Maintenance of Traffic on bridge plans for information only for Maintenance of Traffic, see roadway plans.
Partial removals and bents is anticipated during stage construction, removals and bents shall not exceed removal limits for the respective stage.
Details which relate to Existing Bridge 05628 are shown for information only, actual field conditions may vary and shall be verified by the Contractor.
Temporary Precast Barrier (anchored to deck), see Std. Dwg. No. TC-41.
1 Stage 2 Removal
2 Stage 2 Rebuilt
**NOTES:**

Details related to Maintenance of Traffic on bridge plans for intersection only for Maintenance of Traffic, see roadway plans. Details for bent and/or end removal is anticipated during stage construction. Removed end-bents shall not exceed removal limits at abutments for the respective stages.

Details which relate to Existing Bridge 05628 are shown for information only and shall be verified by the Contractor. Details which relate to Existing Bridge 05628 for the respective stage.

Temporary Precast Barrier (anchored to deck), see Std. Dwg. No. TC-4.

Temporary Precast Barrier (unanchored), see Std. Dwg. No. TC-4.

The Contractor shall install temporary support system at existing Bents 2, 3 and 4 prior to any Stage 3 Removals. The design, support system shall be the sole responsibility of the Contractor. Design shall be in accordance with the AASHTO Standard Specifications for Highway Bridges, 11th Edition, 2002. Temporary supports must include jacking assemblies and required accessories to jack up and support the existing structure. Details above, including a complete set of design calculations by a Licensed Professional Engineer in the state of Arkansas, for the Contractor, shall be submitted to and approved by the Engineer prior to this work. Payment for the design, installation and monitoring of the temporary support system shall be considered a modification to the unit price bid for "REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 6)."

**BENT 2 - STAGE 3 TRAFFIC**

(looking Ahead) Scale: 1" = 1'-0"
NOTES:

Details related to Maintenance of Traffic on bridge plans for information only, for

Maintenance of Traffic, see roadway plans.

Details which relate to Existing Bridge 05628

are shown for information only, actual field

conditions may vary and shall be verified by

the Contractor.

1. Temporary Precast Barrier (anchored to deck),
   see Std. Dwg. No. TC-4.
2. Temporary Precast Barrier (unanchored),
   see Std. Dwg. No. TC-4.

1. The Contractor shall install a temporary
   support system of existing Bents 2, 3 and 4
   prior to any Stage 3 Removals. The design,
   installation and monitoring of the temporary
   support system shall be the sole responsibility
   of the Contractor, design and be in
   accordance with the AASHTO Standard
   Specifications for Highway Bridges, 7th
   Edition, 2002. Temporary supports must include
   jacking assemblies and required accessories to
   jacks and support the existing structure.

2. Detailed plans, including a complete set of
design calculations by a Licensed Professional
Engineer in the state of Arkansas, for the

3. The Contractor shall submit all plans and calculations
   to the Engineer for approval. The design,
   installation and monitoring of the temporary
   supports shall be performed in accordance with the
   unit price bid for "Removal of Existing Bridge
   Structure" Item No. 4.

4. The Contractor shall install a temporary
   support system of existing Bents 2, 3 and 4
   prior to any Stage 3 Removals. The design,
   installation and monitoring of the temporary
   support system shall be the sole responsibility
   of the Contractor, design and be in
   accordance with the AASHTO Standard
   Specifications for Highway Bridges, 7th
   Edition, 2002. Temporary supports must include
   jacking assemblies and required accessories to
   jacks and support the existing structure.

5. Detailed plans, including a complete set of
design calculations by a Licensed Professional
Engineer in the state of Arkansas, for the

6. The Contractor shall submit all plans and calculations
   to the Engineer for approval. The design,
   installation and monitoring of the temporary
   supports shall be performed in accordance with the
   unit price bid for "Removal of Existing Bridge
   Structure" Item No. 4.

7. The Contractor shall install a temporary
   support system of existing Bents 2, 3 and 4
   prior to any Stage 3 Removals. The design,
   installation and monitoring of the temporary
   support system shall be the sole responsibility
   of the Contractor, design and be in
   accordance with the AASHTO Standard
   Specifications for Highway Bridges, 7th
   Edition, 2002. Temporary supports must include
   jacking assemblies and required accessories to
   jacks and support the existing structure.

8. Detailed plans, including a complete set of
design calculations by a Licensed Professional
Engineer in the state of Arkansas, for the

9. The Contractor shall submit all plans and calculations
   to the Engineer for approval. The design,
   installation and monitoring of the temporary
   supports shall be performed in accordance with the
   unit price bid for "Removal of Existing Bridge
   Structure" Item No. 4.
NOTES:

Details related to Maintenance of Traffic on bridge plans for information only. For Maintenance of Traffic, see roadway plans.

Details which relate to Existing Bridge 05628 are shown for information only. Actual field conditions may vary and shall be verified by the Contractor.

Temporary Precast Barrier (anchored to deck) see Std. Dwg. No. TC-4.

Existing Ground Line

BENT 2 - STAGE 4 TRAFFIC
(Looking Ahead)
Scale 1" = 1'-0"
NOTES:

Details related to Maintenance of Traffic on bridge plans for information only, for
Maintenance of Traffic, see roadway plans.

Temporary Precast Barrier (anchored to deck), see Std. Dwg. No. TC-4.
NOTES:

Details related to Maintenance of Traffic on bridge plans are for information only. For Maintenance of Traffic, see roadway plans.

2. Temporary Precast Barrier (unanchored), see Std. Dwg. No. TC-2.

STAGE 5 MEDIAN CONSTRUCTION
The Temporary MSE Walls required for Stages 2 & 3 shall be manufactured on-site within 6'-0" minimum on west MSE Retaining Wall.

A minimum strap length of 0.8 times wall height must be supplied to obtain global stability.

Precast concrete coping may be substituted for the cast-in-place coping as specified in Subsection 625.02.

Excavation for reinforcing zone, leveling and compaction of backfill required for the reinforcing zone shall be performed as shown. The application of the pattern will not be paid directly but will be considered subsidiary to the item "MSE Retaining Wall."
**EMBANKMENT DETAIL**

- No Scale

**END BENT STRAP DETAIL**

- No Scale

- Sheet 3 of 4

- DETAILS OF MSE RETAINING WALLS

- HWY 16/12 SPUR OVER I-49

- ARKANSAS STATE HIGHWAY COMMISSION

- LITTLE ROCK, ARK.

- DRAWING NO. 040847

- EXCAVATION required for reinforcing zone. Excavation shall be made without the use of an unclassified excavation. See SP Job No. 040847 "RETAINING WALLS". The backfill material shall be Class 7 Base. Excavation required for reinforcing zone shall be made without the use of an unclassified excavation. See SP Job No. 040847 "RETAINING WALLS". The backfill material shall be Class 7 Base.

- The 4'-0" min. concrete ditch paving shall be in accordance with the SP Job No. 040847 "RETAINING WALLS". The backfill material shall be Class 7 Base.

- The 4'-0" min. concrete ditch paving shall be in accordance with the SP Job No. 040847 "RETAINING WALLS". The backfill material shall be Class 7 Base.

- The 4'-0" min. concrete ditch paving shall be in accordance with the SP Job No. 040847 "RETAINING WALLS". The backfill material shall be Class 7 Base.
FORM INSERT DETAILS AT MSE WALL

FORM INSERT GENERAL NOTES:

Fabricate form insert as a one piece unit, without the use of splices, joints or glue. 

Clean and wash multi-use form inserts before each use. 

All work and materials for form inserts shall be included in the unit price bid for "RETAINING WALL". 

Seeded or worn form inserts shall be replaced at the Contractor's expense. 

The form inserts shall be approved by the Engineer before their use. 

Place form inserts on both sides of the bridge as shown on Dwg No. 59962. 

Location of inserts shall be shown on working drawings and submitted to the Engineer for approval. 

Working drawings must show the interaction of the panel surface finish and the form insert. 

Recessed image (including chamfers) of State of Arkansas insert shall be given a Class 3 Textured Coating Finish as specified in SP Job No. 040847 "TEXTURED COATING FINISH". 

Damaged or worn form inserts shall be replaced at the Contractor's expense. 

Wash and clean multi-use form inserts before each use. 

Fabricate form insert as a one piece unit, without the use of splices, joints or glue.
GENERAL NOTES:

- Concrete shall be Class "S" and be poured in the dry. All exposed corners within ten feet of the backwall until the concrete for the span has been completed.
- Reinforcing straps and attachments to be designed and furnished by the MSE wall supplier. Also design detailing shall be furnished by the Engineer. See Dwg. No. 040847 for additional details.
- GTM may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See "EXPANSION DEVICE INSTALLATION AT END BENTS" on Dwg. No. 60002 for additional information. No heavy construction equipment or backfill shall be allowed within ten feet of the backwall until the concrete for the span has been completed.
- Flex joint at backwall to reach the bridge deck.
- All concrete shall be Class "S" and be poured in the dry. All exposed concrete shall be chamfered unless otherwise noted.
- Reinforcing steel shall be Grade 60 (Yield Strength 60,000 psi) except as noted.
- Structural steel in end bents shall be ASTM A709, Gr. 50W and shall be paid to AASHTO M 31 or M 322, Type A, with mill test reports.
- All reinforcing bars shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.
- For additional information, see "LAYOUT".
- All concrete shall be treated with a protective surface treatment in accordance with SP Job No. 040847. 
- Class 2 Protective Surface Treatment shall be applied to the top of backwall and roadway face of concrete deck only if the optional backwall construction joint is used, see "DETAIL Z."

NOTES:

- See "DETAIL Z" for additional details.
- For additional joint details, see Dwg. No. 040847 for additional information.
1. Reinforcing strips and attachments to be designed and furnished by MSE wall supplier. The design details and computational information for wall design submitted for review by the Engineer. See Dwg. No. 59964 for additional details.

See "DETAIL Z" on Dwg. No. 59967 for additional details.

Concrete shall be hand packed under the joint armor, for additional information joint and curb details, see Dwg. No. 59970.

SECTION D-E

SECTION E-F

SECTION F-F

NOTES:
- Concrete shall be hand packed under the joint armor,
- For additional information joint and curb details, see Dwg. No. 59970.
- Cope 6" leg at angle 6" from face of curb and bend 4" leg to conform to curb detail.

DIST. NO.
- 6

FILED NO.
- 59970

TOTAL SHEETS
- 7

REVISED DATE
- 8/2017

DATE
- 5/2017
Reinforcing bars shall be designed and furnished by the supplier. The design details shown on the submittal drawings shall be submitted for review by the Engineer. See Dwg. No. 59974 for additional details.

Transverse spacing between vertical anchor bolts or sheet metal sleeves shall be 12" for additional information, see "DETAIL Z".

Concrete shall be hand packed under the backwall, See Subsection 802.09(a)(3).

For additional joint details, see Dwg. No. 60002 for expansion device installation at end bents. See "DETAIL Z".

Concrete shall be thoroughly consolidated in the vicinity of the expansion joint device in the concrete deck only if the optional backwall construction joint is used. See "DETAIL Z".

Special care shall be taken to properly and thoroughly consolidate the concrete in the vicinity of the expansion joint device in the concrete deck. See Subsection 802.09(a)(3).

Class 2 Protective Surface Treatment shall be applied to the top of backwall and roadway face of concrete parapet. Class 2 Protective Surface Treatment shall be applied in accordance with SP Job No. 040847.

The profile of the backwall angle shall be established based on the vertical curve in conjunction with the skew. For additional information, see "DETAIL Z".

The profile of the backwall shall match the bridge deck. For additional information, see "DETAIL Z".

For additional information, see "DETAIL Z".

Concrete shall be textured to match the bridge deck. For additional information, see "DETAIL Z".

Top reinforcing bars shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves. For additional information, see "DETAIL Z".

Class 2 Protective Surface Treatment shall be applied to the top of backwall and roadway face of concrete parapet. For additional information, see "DETAIL Z".

Class 2 Protective Surface Treatment shall be applied in accordance with SP Job No. 040847. The designation "TEXTURED COATING FINISH" shall be used when the finish consists of Class 2 Protective Surface Treatment applied under "TEXTURED COATING FINISH" and in accordance with subsection 802.19(b)(3).

For additional information, see "DETAIL Z".
SHARED USE PATH AND CURB DETAIL

- Horizontal dimensions shown are measured along front face of backwall, Scale: \( \frac{1}{8}'' = 1'-0'' \). 

- Face of Curb
- Gutterline
- Face of Curb

FACE OF CURB
- 3'-6" max.
- 1'-0"" max.

NOTE:
Concrete should be hand packed under the joint area.

For accurate engineering notes and curb details, see Dwg. No. 59974 & 59976.

- Close 4°mp of angle 6" from face of curb, and bend 1" leg to conform to Curb Scope.

SCALE: \( \frac{1}{8}'' = 1'-0'' \)
The Mechanical Couplers shall be of approved type in accordance with the ARDOT Qualified Products List (QPL).

The cost of Mechanical Couplers shall be measured separately, the quantity being based upon the specified yield strength of the reinforcing steel.

Mechanical Couplers shall be used in conjunction with other reinforcing steel, as required to accommodate mechanical couplers.

The length of the Mechanical Coupler shall not be measured separately but shall be considered as part of the item "REINFORCING STEEL - BRIDGE (GRADE 60)."

The cost of Mechanical Couplers shall be considered subsidiary to the item "REINFORCING STEEL - BRIDGE (GRADE 60)."

The total bar lengths for bars indicated in the bar list are determined based on the end of the bars being located flush to the face of the construction joint. Actual lengths to be modified as required to accommodate mechanical couplers.

The Mechanical Couplers shall develop at least 125% of the specified yield strength of the reinforcing steel.

The cost of Mechanical Couplers shall not be measured separately but shall be considered subsidiary to the item "REINFORCING STEEL - BRIDGE (GRADE 60)."

The cost of the Mechanical Couplers shall be considered subsidiary to the item "REINFORCING STEEL - BRIDGE (GRADE 60)."

One end of bar shall be threaded to match Mechanical Coupler. Length of bar from end of bar to face of construction joint shall match lap splice length detailed on plans plus two inches. The cost of the threaded bar shall not be measured separately but shall be considered subsidiary to the item "REINFORCING STEEL - BRIDGE (GRADE 60)."

One end of bar shall be threaded to match Mechanical Coupler. Length of bar from end of bar to face of construction joint shall match lap splice length detailed on plans plus two inches. The cost of the threaded bar shall not be measured separately but shall be considered subsidiary to the item "REINFORCING STEEL - BRIDGE (GRADE 60)."
ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

Scale 1'-0" x 1'-0"

1/2" x 8" Studs @ 12" o.c. max.

1/2" x 8" Studs @ 8" o.c. max.

DETAILS OF ALTERNATE ANCHORS

No Scale

Use 1/2" x 8" Studs @ 12" o.c. max.

Use 1/2" x 8" Studs @ 8" o.c. max.

LONGITUDINAL CONSTRUCTION JOINT

No Scale

Use Type 3 or 4 Joint Sealer, see Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab and shall align with open joints at the front face of the piers. If slab joints are to be sealed, they shall be sealed as soon as the concrete has sufficient strength to allow sealing of the joints without damage to the slab. Slab joints shall be sealed at all pouring sequence construction joints and required slab joint locations.

Slab joints shall be sealed before the sidewalk or raised median is poured. After installation of the joint in the sidewalk or raised median and prior to pouring the parapet rail, the joint sealer shall be placed extending across the top of the sidewalk or raised median to the edge of the slab. No joint sealer shall be placed on the deck slab under the sidewalk or raised median.

All references to sidewalks in the notes above are applicable to the shared use path and buffer.

DECK SUPPORT AT LONGITUDINAL CONSTRUCTION JOINT

No Scale

Use 1/2" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab and shall align with open joints at the front face of the piers. If slab joints are to be sealed, they shall be sealed as soon as the concrete has sufficient strength to allow sealing of the joints without damage to the slab. Slab joints shall be sealed at all pouring sequence construction joints and required slab joint locations.

Slab joints shall be sealed before the sidewalk or raised median is poured. After installation of the joint in the sidewalk or raised median and prior to pouring the parapet rail, the joint sealer shall be placed extending across the top of the sidewalk or raised median to the edge of the slab. No joint sealer shall be placed on the deck slab under the sidewalk or raised median.

All references to sidewalks in the notes above are applicable to the shared use path and buffer.
**CROSS-FRAME DETAIL**

- Scale: 1" = 1'-0"

**BEARING PLAN AT END BENTS**

- Scale: 1" = 1'-0"

**TABLE FOR WELDS**

<table>
<thead>
<tr>
<th>Connection Type</th>
<th>Minimum Size (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL Joint</td>
<td>¾&quot;</td>
</tr>
<tr>
<td>ST Joint</td>
<td>⅜&quot;</td>
</tr>
<tr>
<td>CL Bearing</td>
<td>½&quot;</td>
</tr>
<tr>
<td>CL Stiffener</td>
<td>½&quot;</td>
</tr>
</tbody>
</table>

**NOTE**

- Bolts in cross-frame connections shall be pre-stressed and tightened in accordance with Subsection 807.71 of the Standard Specifications as noted on Dwg. Nos. 59985 and 59986.

**BEARING STIFFENER AT END BENTS**

- Scale: 1" = 1'-0"

**BEARING STIFFENER AT INTERMEDIATE BENT**

- Scale: 1" = 1'-0"

**BEARING PLAN AT END BENTS**

- Scale: 1" = 1'-0"

**STIFFENER AT END BENTS**

- Scale: 1" = 1'-0"

**STIFFENER AT INTERMEDIATE BENT**

- Scale: 1" = 1'-0"

**BEARING PLAN AT INTERMEDIATE BENT BEARINGS**

- Scale: 1" = 1'-0"

**BEARING PLAN AT END BENTS**

- Scale: 1" = 1'-0"

**CROSS-FRAME CONNECTION DETAIL**

- Scale: 1" = 1'-0"

**CROSS-FRAME CONNECTION PLATE**

- Scale: 1" = 1'-0"

**CROSS-FRAME DETAIL**

- Scale: 1" = 1'-0"
REINFORCING PLAN & DECK POURING SEQUENCE (STAGES 2 & 3)

1. Full-Depth Parapet Joint (5" to 1" max.) Stop 4" from top of slab, see Dwg. No. 59999.
2. Per-Molded Parapet Joint (3" to 1" max.) Stop 2" from top of slab, see Dwg. No. 59999.
3. Face as shown in "Top of Slab" (Section - S541E) 2 & 3", see Dwg. No. 59999.
4. Threaded insert(s) shall be cast in place in Stage 3 Construction to accommodate the installation of temporary barrier, see Standard Drawing TC-4 for additional details.
5. Typical 2" cover unless otherwise noted.
6. See "DETAIL B3" on Dwg. No. 59999.
7. See "DETAIL B2" on Dwg. No. 59996.
8. See "DETAIL B4" on Dwg. No. 59996.

For Parapet Reinforcement, see Dwg. No. 59998.

For Median Reinforcement, see Dwg. No. 59999.

---

Shoveling: 12'-0" (Pour 2) 75'-0" (Pour 3) 96'-0" (Pour 1) 111'-0" 132'-0"
**CONCRETE PLACEMENT PROCEDURE**

**SHARED USE PATH + BUFFER REINFORCING PLAN**

**SECTION A-A**

**GENERAL PLAN**

**SHARED USE PATH + BUFFER REINFORCEMENT PLAN**

**FACE OF CURB**

**GUTTERLINE**

**1 3/4"**

**CL Construction**

**AR Preferred Slope**

**Longitudinal Construction Joint**

**Stage 1**

**Stage 2**

**Stage 3**

**Stage 4**

**NOTE:**

At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to CL Bridge.

Place concrete to approx. slab thickness parallel to CL Bridge.

Screed may be placed parallel to the skew or perpendicular to CL Bridge.

**For details of Parapet Reinforcement, see Def. No. 60000**

**PREPARE SLAB surface under Shared Use Path and Buffer in accordance with subsection 802.12(b)**

**Required Rounding**

**Face of Curb**

**Conduit**

**Diagrams**, see Dwg. No. 59998.

**For "BAR LIST" and "BAR BENDING" see Dwg. No. 60000**

**Parapet Reinforcing, For details of**

**Joint - Level**

**Req'd. Constr. Jt. - C lr.**

**1.0 0 % Slope**

**PUBLIC WORKS**

**DATE 9/2017**

**STATE 59997**

**TMR**

**JDS**

**17472**

**ARKANSAS STATE HIGHWAY COMMISSION**

**LITTLE ROCK, ARK.**

**SEC. 28**

**ROUTE 49**

**FED. AID PROJ. NO.**

**040847**

**FED. ROAD DIST. NO.**

**040847**

**TOTAL SHEETS**

**FILMED DATE**

**REVISED DATE**

**DRAWN BY:**

**CHECKED BY:**

**DESIGNED BY:**

**FILED BY:**

**FILED DATE**

**REVISED DATE**

**DATE:**

**SCALE:**

**FILENAME:**

**ARK.**

**STATE:**

**FED. NO.**
Sheet Details of 243'-0" Continuous Composite Plate Girder Unit

Section A-A

Panel Elevation

1. Class 3 Textured Coating Finish
   Color: Brown, Color Chip No. 30219.
2. Class 3 Textured Coating Finish
   Color: Light Brown, Color Chip No. 33578.

Section B-B

Elevation - Concrete Parapet Rail - Stage 4

NOTE:
For location of full and partial depth joints, see "Reinforcing Plan and Deck Pouring Sequence (Stage 4)", Dwg. Nos. 59994 & 59995.

Closed Parapet Panel spacing - 6 spaces @ 12'-0"
Closed Parapet Panel spacing - 3 spaces @ 12'-0"
Closed Parapet Panel spacing - 8 spaces @ 12'-0"
Closed Parapet Panel spacing - 1 space @ 12'-0"

NOTE:
Form liner shall be a max. depth of 2" to provide a min. clearance of 1" to parapet reinforcing.

NOTE:
For location of full and partial depth joints, see "Reinforcing Plan and Deck Pouring Sequence (Stage 4)", Dwg. Nos. 59994 & 59995.
GENERAL NOTES - SUPERSTRUCTURE:

STRUCTURAL STEEL:

STEEL IN PLATE GIRDER SPANS (A709, GR. 50W)"

method. All Quality Control (Q.C.) testing shall be considered subsidiary to the item "STRUCTURAL
flange to web plate connections shall be Quality Control (Q.C.) tested by the magnetic particle

testing, as required by the governing specifications, in Subsection 807.23(b). Fillet welds at

Unless noted otherwise, all connection plates and intermediate stiffeners shall be fabricated
directly, without consideration subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (A709,

All girder dimensions are based on a temperature of 60 degrees F. A tolerance of "+/- is

If a transverse finishing machine is used, the finishing machine shall be placed on planks
placement and movement of the finishing machine shall be controlled to avoid bending the
generally, and the maximum deflection allowed for camber.

All girders shall be blocked in their true position with the webs horizontal in the shop as

All girder webs, flanges of plate girders and field splice plates are considered main load

Requests for substitution of structural steel shapes shown with shapes of greater size must

requirements for external load plates on elastomeric bearings.

All contact surfaces between plates at the field splices shall be free of paint, oil, rust or

Automatically end welded in accordance with the recommendations of the Manufacturer.

The stiffeners shall conform to Subsection 807.26.

If a transverse finishing machine is used, the rail shall be supported directly over the

Positive support under and above brackets to prevent bending and wedging.
Stages 2 & 3 Construction

All connection bolts shall be fully tightened prior to placing the deck concrete erected, the blocked expansion device shall be installed and adjusted for grade. Immediately prior to pouring the backwall concrete, the blocked expansion device shall be blocked in the Shop by the Contractor. The blocked expansion device shall be blocked in the Shop by the Contractor.

The Contractor may elect to install the expansion device for the end bents in conjunction with the skew. The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened, the Engineer shall establish the temperature. Interpolation of the table may be necessary.

<table>
<thead>
<tr>
<th>Joint Seal Placement at Curb &amp; Stage 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Scale</td>
</tr>
</tbody>
</table>

Silicone Joint Data

<table>
<thead>
<tr>
<th>Joint Seal Data</th>
<th>Temperature of:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Expansion Device Installation at End Bents

The Contractor may elect to install the expansion device for the end bents using one of the following two alternatives.

1. The concrete pour adjacent to joint shall begin before the end bent backwall forms are in place and the girders erected, the blocked expansion device shall be installed and adjusted for grade, concrete shall be placed full thickness prior to placing the deck concrete adjacent to the joint, immediately after placing the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade.

2. Prior to concrete pour, the blocked expansion device shall be installed and adjusted for grade, concrete shall be placed full thickness, including the deck concrete adjacent to the joint, immediately prior to pouring the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

NOTE: The profile of the roadway shall be hand packed under the joint area.

NOTE: The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.
**SECTION THROUGH SHARED USE PATH - STAGE 4**

No Scale

**SECTION A-A**

No Scale

**SECTION B-B**

No Scale

**SECTION THROUGH MEDIAN - STAGE 5**

No Scale

**NOTE:** Concrete shall be poured to cure prior to removal of the outer damming material.

Pattern plate and bolts shall be A709, Gr. 50W and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (A709, Gr. 50W)" only one coat is required and shall be applied in accordance with Section 638, or as directed by the Engineer. Only one coat is required and shall be applied by the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (A709, Gr. 50W)."

Pattern plate shall be A709, Gr. 36 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (A709, Gr. 36)" only one coat is required and shall be applied in accordance with Section 638, or as directed by the Engineer. Only one coat is required and shall be applied by the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (A709, Gr. 36)."

**CONSTRUCTED JOINTS**

Required at Bent 3 only.

**CONSTRUCTION DETAILS**

See "DETAIL B"
### Table of Fabricator Variables

<table>
<thead>
<tr>
<th>No.</th>
<th>Model</th>
<th>Ext. Dia.</th>
<th>Grade</th>
<th>Unit Price (each)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>120</td>
<td>120</td>
<td>Steel</td>
<td>$10.00</td>
</tr>
<tr>
<td>2</td>
<td>120</td>
<td>120</td>
<td>Steel</td>
<td>$10.00</td>
</tr>
</tbody>
</table>

### General Notes

- Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS".
- External load plates shall conform to ASTM A490, Grade 50W. Pipe sleeves shall conform to ASTM A582, Grade B, and shall be galvanized in accordance with ASTM A781, Grade G90.
- External load plates shall be completely fabricated, including rivets, bolts, and nuts. Nuts and bolts shall be de-threaded before installation to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.61.5.2 (a) for unpainted weathering steel.
- Elastomeric bearings shall conform to Section 808.5 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS".
- Anchor bolts, nuts, and washers shall conform to Sections 807 and 808 of the Standard Specifications.
- Elastomeric bearings shall be de-threaded before installation and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS".
- Bearings sleeves shall be paid for in accordance with Subsection 808.61.5.2.2 for "ELASTOMERIC BEARINGS".
- External load plates shall be paid for separately, but shall be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (A709, GR. 50W)"

### Anchor Bolt Detail

- Anchor bolts may be re-used after cleaning and grinding. The length of anchor bolts shall be as shown in the details. The galvanized steel sleeves shall not be required.
- If anchor bolts are to be drilled and grouted in place, the galvanized steel sleeves shall be used. Sleeves shall be grouted with grout, and the holes shall be filled with grout. Anchor bolts shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout.
- The elastomeric bearing shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout. Threaded anchor bolts shall be removed and ground flush with the external load plate once the temporary restraint plates are removed and no longer required.

### Elastomeric Bearing

- Elastomeric bearings shall be de-threaded before installation to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.61.5.2 (a) for unpainted weathering steel.
- Elastomeric bearings shall be de-threaded before installation and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS".
- Elastomeric bearings shall be de-threaded before installation and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS".
- Bearings sleeves shall be paid for in accordance with Subsection 808.61.5.2.2 for "ELASTOMERIC BEARINGS".
- External load plates shall be paid for separately, but shall be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (A709, GR. 50W)"

### Temporary Restraint Plate Details

- Temporary restraint plates are to be installed on girders 12-14. These plates shall be installed in place during stages 2 and 3 of construction. Once all girders are set and the cross-frames are tight for stage 4, the temporary restraint plates are to be removed. Final cross-frames are to be installed after stage 4 of construction.
- The bearing temporary restraint plates are to be installed on girders 12-14. These plates shall be installed in place during stages 2 and 3 of construction. Once all girders are set and the cross-frames are tight for stage 4, the temporary restraint plates are to be removed.
NOTES FOR BRIDGE RAILING:

- Roll bent sheetconform to vertical and horizontal alignment of bridge, abrupt changes vertical.

- Min. post spacing = 1'-0".

- spindle shall be placed upon areas that are improperly finished, deformed or irregular.

- Shop drawings showing details of railing shall be submitted and approved before fabrication is begun.

- End cap shall be designed or approved.

- Stainless Steel:
  - Splice Set Screws shall conform to ASTM A709, Grade 36.
  - Plate Washers shall conform to ASTM A709, Grade 36.
  - Washers shall conform to ASTM F436.
  - Nuts shall conform to AASHTO M 292, Grade 2H.

- Cast-in-place anchor bolts shall conform to ASTM F3125, Grade 50.

- Cast-in-place anchor bolts, nuts, washers, and set screws shall be galvanized high-strength steel or stainless steel. Mixing of galvanized and stainless steel fasteners will not be permitted.

- The Contractor shall submit a paint color sample prior to fabrication for Owner's approval.

- Powder coated framework shall be in accordance with Manufacturer's recommendations.

- Black. Coated galvanized framework shall have a salt spray thickness of 2-4 mils. The top coat shall be a tough polyester base coat shall be a thermosetting epoxy powder with a minimum thickness of 0.001".

- For details of post and rail nut, see end elevation for cast in place bolts.

- Mild epoxy adhesive anchor system with 15% embedment or an approved equal.

- The Mild epoxy adhesive anchor system shall be installed in accordance with Manufacturer's recommendations.
**PLAN - APPROACH SLAB**

**BEGIN STAGE 2**

<table>
<thead>
<tr>
<th>Mark</th>
<th>No.</th>
<th>Req. Length</th>
<th>S401</th>
<th>S402</th>
<th>S403</th>
<th>S501</th>
<th>S502</th>
<th>S701</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>21</td>
<td>62</td>
<td>20</td>
<td>21</td>
<td>31</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>33'-3&quot;</td>
<td>2'-8&quot;</td>
<td>3'-0&quot;</td>
<td>29'-8&quot;</td>
<td>33'-3&quot;</td>
<td>29'-8&quot;</td>
</tr>
</tbody>
</table>

**END STAGE 2**

**NOTES:**

- See Subsection 501.02(h)(2).
- Poured Type 3 or 4 Joint Sealer.
- Use 1/2" Preformed Jt. Filler

**Surface finish for approach slabs and bridge deck used on bridge deck.**

For General Notes, Sections, and additional details, see Dwg. No. 60013.

**LITTLE ROCK, ARK.**

**ARKANSAS STATE HIGHWAY COMMISSION**

**ENGINEER**

**DRAWING NO.**

**FILMED**

**REvised**

**PROFESSIONAL LICENSED**

**ARKANSAS NO. 17472**
**NOTES:**

1. Surface finish for approach slabs shall match that used on bridge deck.
2. For General Notes, Sections, and additional details, see Dwg. No. 60013.
3. For additional median curb details, see Dwg. No. 60013.

**Footing, typ.**

- **S401 - 12 spa. @ 1'-6'', Top**
- **S701 - 38 spa. @ 6'', Bottom**

**Typ.**

- **Max. in Footing, S402 spa. @ 12''**

**Bar List**

- **S403 Dowels - 19 spa. @ 1'-6''**
- **S503 - 30 spa. @ 12'' Max., Bottom**
- **S405 - 20 spa. @ 1'-6'' Max., Top**

**AASHTO M153 Type 1**

- **1/2'' Preformed Jt. Filler**
For additional median curb details, see Dwg. No. 60013 and roadway plans.

For General Notes, Sections, and additional details, see Dwg. No. 60013.

Surface finish for approach slabs shall match that used on bridge deck.

NOTES:

Face of Median Curb

LONGITUDINAL CONSTRUCTION JOINT

See Subsection 501.02(h)(2).

Poured Type 3 or 4 Joint Sealer.

AASHTO M 153 Type 1 and 1/2" x 1"

Use 1/2" Preformed Jt. Filler

Bar List

BAR LIST

Use 1/2" Preformed Jt. Fiber

ASMD No. 31 Type II or A Joint Sealer.

See Subsection 501.02(h)(2).

Poured Type 3 or 4 Joint Sealer.

AASHTO M 153 Type 1 and 1/2" x 1"

Use 1/2" Preformed Jt. Filler

1/2" Preferred Jt. Fiber

ASMD No. 31 Type II

Four Pour Type II or A Joint Sealer.

See Subsection 501.02(h)(2).
Details for 60' to 85' Steel Overhead Sign Structures

Sheets:

Elevation - Column Base

Plan - Column Base

Detail of Alternate Z Support

Detail of Column Connection to Base Plate

Section Thru Truss

Top Chord

Bottom Chord

Details of Sign Support Connection to Truss

Sign Support 2 ½" x 2 ½" x ½"

Connections of all Z's by full welds which shall be as drawn on "Details of Sign Support Connection to Truss".

Notes:

1. All "Lindapter" connectors or approved equal shall be selected according to manufacturer's recommendations. All connectors, bolts, nuts and washers shall be galvanized.

2. All bolts shall be Grade 55, ASTM A709, Gr. 36.
GENERAL NOTES:

- GENERAL NOTES:
  - Steel Overhead Sign Structure. The excavations for the footings shall be backfilled required shall not be paid for directly, but shall be considered incidental to the item.
  - Shoring may be required to protect existing shoulders during excavation. Any shoring furnished and galvanized in accordance with Subsection 807.07.
  - Lock nuts to be installed according to manufacturer's recommendations. Lock nuts to be equipped with nylon locking inserts or other approved type locking system. shall be furnished and galvanized in accordance with Subsection 807.06.
  - Subsection 807.06. Heavy hex nuts and hardened washers for ASTM F3125, Gr. A325, Type I bolts. All truss frame bolts shall comply with ASTM F3125, Gr. A325, Type I, and galvanized according to Subsection 807.04, submitted and approval secured before fabrication.
  - All welding that is to be done during fabrication of structural steel, including temporary support, shall be field repaired in accordance with Subsection 807.88.
  - Critical welds shall include: column to base, board to column, and all welds on the structure to the existing conditions.
  - The Contractor shall make check measurements in the field and make any adjustments necessary to meet the required tolerances and 48 for new support to the existing structure.
  - Drawings show general features of design only. Shop drawings shall be made in accordance with the plans and approved engineering drawings.
  - Requests for substitution of structural steel shapes shown with shapes of greater equal or greater strengths will be accepted only when shown on the approved shop drawings and details shown in the plans with the costs of replacement and no additional compensation will be made for any adjustments due to substitutions.
  - Steel completely encased in concrete may not be galvanized. Galvanized coating damaged during transport, handling or erection shall be field repaired in accordance with Subsection 807.07.
  - All steel shall be galvanized according to Subsection 807.19. Steel completely encased in concrete shall be bolted connections.
  - Unless otherwise noted, bolts shall be dead load diagonal, wind load diagonal, wind load strut, chord, etc. and Subsection refer to the Standard Construction Specifications unless otherwise noted in the tables.

- HANGER SPACING DETAILS FOR EXTRUDED PANEL SIGNS

<table>
<thead>
<tr>
<th>Hanger Variables</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>Max. Length of Sign</td>
<td>= &quot;L&quot;</td>
</tr>
<tr>
<td>n</td>
<td>Hangers</td>
<td>&quot;n&quot; Hangers</td>
</tr>
<tr>
<td>L</td>
<td>Chord Length</td>
<td>0.107 x &quot;L&quot;</td>
</tr>
<tr>
<td>L</td>
<td>Dead Load Diagonal</td>
<td>0.21  x &quot;L&quot;</td>
</tr>
<tr>
<td>Cn</td>
<td>Length</td>
<td>&quot;Cn&quot;</td>
</tr>
<tr>
<td>T</td>
<td>Truss Bearing Beam</td>
<td>Hanger spacing and cantilever length shall be rounded to the nearest inch.</td>
</tr>
<tr>
<td>T</td>
<td>Dead Load Diagonal</td>
<td>Wind Load Diagonal</td>
</tr>
<tr>
<td>T</td>
<td>Wind Load Strut</td>
<td>Truss Bearing Beam</td>
</tr>
<tr>
<td>T</td>
<td>Truss Bearing Beam</td>
<td>0.21  x &quot;L&quot;</td>
</tr>
</tbody>
</table>

- DESIGN SPECIFICATIONS:
  - AASHTO Standard Specifications for Structural Supports and Subsection refer to the Standard Construction Specifications unless otherwise noted in the tables.

- CONSTRUCTION SPECIFICATIONS:
  - Arkansas State Highway and Transportation Department.

- DRAWING NO.: 60884
  - FED. AID PROJ. NO.: 60884
  - SHEET: 381
  - TOTAL SHEETS: 533
  - FILMED DATE: 07/01/19
  - DRAWN BY: ILK
  - CHECKED BY: TMR
  - DESIGNED BY: LITRE MONR.
Travel Lane Signs are to be centered over the intended Number, Size and Dimensions of Signs. See Sign Details and Plan Sheets for

NOTE:

11'-0"

See "DETAIL D"

See "DETAIL E"

MARK

C402

C401

F402

F601

See "DETAIL C"

See "DETAIL B"

NO. REQ'D

4'-6"

4'-6"

62

16

19

15

(Out to Out of Chord)

(Out to Out of Chord)

BAR LIST—PER SIGN STRUCTURE

Eight M (Typ.)

Eight M (Typ.)

Eight M (Typ.)

Pin Dia.

Dimensions are out to out of bars.

Main maintain 17'-6" minimum clear.

 APPROXIMATE QUANTITIES (FOR INFORMATION ONLY)

<table>
<thead>
<tr>
<th>STRUCTURE</th>
<th>CONCRETE</th>
<th>STEEL</th>
<th>HSS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>7.50x0.375</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STRUCTURE</th>
<th>CONCRETE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

UNO = Unless Noted Otherwise

FS = Far Side

NS = Near Side

\[ \text{LEGEND} \]

\[ \text{ELEVATION} \]

\[ \text{PLAN} \]

\[ \text{SECTION A-A} \]

\[ \text{TRUSS CAMBER DIAGRAM} \]
GENERAL NOTES:

- All high strength bolts shall be installed to obtain the specified minimum tension in accordance with Subsection 807.04, submitted and approval secured before fabrication is begun.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- Requests for substitution of structural steel shown with designations of greater strength shall be submitted to the contractor for approval (See Section 401 for substitution requirements).
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
- All welding that is to be done during fabrication of structural steel, including temporary anchors, shall be furnished and galvanized in accordance with Subsection 807.06.
STA. 168+75.00 TO STA. 171+00.00

STAGE 2: CUT AREA: 35.7 SQ. FT.
STAGE 2: CUT VOLUME: 100 CU. YD.

STAGE 2: CUT AREA: 41.7 SQ. FT.
STAGE 2: CUT VOLUME: 36 CU. YD.

STAGE 2: FILL AREA: 20.2 SQ. FT.
STAGE 2: FILL VOLUME: 42 CU. YD.

STAGE 2: FILL AREA: 13.0 SQ. FT.
STAGE 2: FILL VOLUME: 15 CU. YD.

STAGE 2: FILL AREA: 16.0 SQ. FT.
STAGE 2: FILL VOLUME: 54 CU. YD.

STAGE 2: FILL AREA: 0.7 SQ. FT.
STAGE 2: FILL VOLUME: 31 CU. YD.
TYPE ST DROP INLET = 3' x 3' WITH FES R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) WITH 24" x 87' DROP INLET ON RT. H = 7'-6" STA. 172+48 CONSTRUCT
STAGE 2: CUT AREA: 124.1 SQ. FT.

STAGE 1B: CUT AREA: 333.7 SQ. FT.

STAGE 2: CUT AREA: 104.0 SQ. FT.

STAGE 1B: CUT AREA: 331.6 SQ. FT.

STAGE 2: CUT AREA: 105.2 SQ. FT.

STAGE 2: FILL VOLUME: 0 CU. YD.

STAGE 2: CUT VOLUME: 337 CU. YD.

STAGE 1B: CUT VOLUME: 518 CU. YD.

STAGE 2: CUT VOLUME: 354 CU. YD.

STAGE 1B: CUT VOLUME: 198 CU. YD.

STAGE 2: CUT VOLUME: 62 CU. YD.

STAGE 1B: FILL AREA: 0.0 SQ. FT.

STAGE 1B: FILL VOLUME: 0 CU. YD.

STAGE 1B: FILL AREA: 0.0 SQ. FT.

STAGE 1B: FILL VOLUME: 0 CU. YD.

STAGE 2: FILL VOLUME: 0 CU. YD.

STAGE 2: FILL AREA: 0.0 SQ. FT.

STAGE 2: FILL VOLUME: 0 CU. YD.

STAGE 1B: FILL VOLUME: 0 CU. YD.
STAGE 1B: CUT VOLUME: 105 CU. YD.

STAGE 1B: FILL VOLUME: 19 CU. YD.

STAGE 2: CUT VOLUME: 49 CU. YD.

STAGE 2: FILL VOLUME: 0 CU. YD.

STAGE 3: CUT VOLUME: 240.2 SQ. FT.

STAGE 3: FILL VOLUME: 0.1 SQ. FT.

STAGE 4: CUT VOLUME: 0.3 SQ. FT.

STAGE 4: FILL VOLUME: 0.0 SQ. FT.

STAGE 3: CUT AREA: 22.9 SQ. FT.

STAGE 3: FILL AREA: 65.9 SQ. FT.

STAGE 2: CUT AREA: 26.3 SQ. FT.

STAGE 2: FILL AREA: 0.0 SQ. FT.

STAGE 1B: CUT AREA: 77.6 SQ. FT.

STAGE 1B: FILL AREA: 10.2 SQ. FT.

STAGE 4: CUT AREA: 0.0 SQ. FT.

STAGE 4: FILL AREA: 0.0 SQ. FT.

STAGE 3: CUT AREA: 41.0 SQ. FT.

STAGE 3: FILL AREA: 48.7 SQ. FT.

STAGE 2: CUT AREA: 0.0 SQ. FT.

STAGE 2: FILL AREA: 0.0 SQ. FT.

STAGE 1B: CUT AREA: 47.9 SQ. FT.

STAGE 1B: FILL AREA: 32.2 SQ. FT.
STAGE 1B: FILL AREA: 52.9 SQ. FT.

STAGE 1B: CUT AREA: 37.5 SQ. FT.

STAGE 3: CUT AREA: 61.0 SQ. FT.

STAGE 3: FILL AREA: 24.6 SQ. FT.

STAGE 3: FILL AREA: 51.8 SQ. FT.

STAGE 3: CUT AREA: 54.7 SQ. FT.

STAGE 3: CUT AREA: 51.8 SQ. FT.

STAGE 3: FILL AREA: 67.6 SQ. FT.

STAGE 3: FILL AREA: 64.4 SQ. FT.

STAGE 3: CUT VOLUME: 104 CU. YD.

STAGE 3: FILL VOLUME: 75 CU. YD.

STAGE 3: CUT VOLUME: 92 CU. YD.

STAGE 3: FILL VOLUME: 75 CU. YD.

STAGE 3: CUT VOLUME: 110 CU. YD.

STAGE 3: FILL VOLUME: 137 CU. YD.
STAGE 1B: CUT AREA: 90.7 SQ. FT.
STAGE 1B: FILL AREA: 0.7 SQ. FT.
STAGE 1B: FILL VOLUME: 9 CU. YD.

STAGE 1B: CUT AREA: 77.7 SQ. FT.
STAGE 1B: FILL AREA: 7.4 SQ. FT.
STAGE 1B: FILL VOLUME: 15 CU. YD.

STAGE 1B: CUT AREA: 56.8 SQ. FT.
STAGE 1B: FILL AREA: 15.5 SQ. FT.
STAGE 1B: FILL VOLUME: 42 CU. YD.

STAGE 3: CUT AREA: 667.23 SQ. FT.
STAGE 3: FILL AREA: 39.7 SQ. FT.
STAGE 3: CUT VOLUME: 172 CU. YD.
STAGE 3: FILL VOLUME: 363 CU. YD.

STAGE 3: CUT AREA: 44.8 SQ. FT.
STAGE 3: FILL AREA: 108.9 SQ. FT.
STAGE 3: CUT VOLUME: 156 CU. YD.
STAGE 3: FILL VOLUME: 303 CU. YD.

STAGE 3: CUT VOLUME: 188 CU. YD.

STA. 194+00.00 TO STA. 196+00.00
ELEV. 1224.23
-2.99% LT. DITCH GRADE
STA. 194+69.97 BEGIN
ELEV. 1224.23
-0.5% LT. DITCH GRADE
STA. 194+69.97 END

ELEV. 1220.12
-3.79% RT. DITCH GRADE
STA. 194+75.00 END
ELEV. 1220.12
0% RT. DITCH GRADE
STA. 194+75.00 BEGIN

ELEV. 1219.75
-2.99% LT. DITCH GRADE
STA. 196+20.00 END
ELEV. 1219.75
0% LT. DITCH GRADE
STA. 196+20.00 BEGIN

ELEV. 1219.75
0% LT. DITCH GRADE
STA. 196+85.00 END
ELEV. 1219.75
6.94% LT. DITCH GRADE
STA. 196+85.00 BEGIN

ELEV. 1223.77
4.86% RT. DITCH GRADE
STA. 196+15.00 END

ELEV. 1220.12
4.86% RT. DITCH GRADE
STA. 195+40.00 BEGIN
ELEV. 1220.12
0% RT. DITCH GRADE
STA. 195+40.00 END
STAGE 3: CUT VOLUME: 98 CU. YD.
STAGE 3: CUT VOLUME: 106 CU. YD.
STAGE 3: CUT VOLUME: 99 CU. YD.
STAGE 3: CUT VOLUME: 56 CU. YD.
STAGE 3: CUT AREA: 25.4 SQ. FT.
STAGE 3: CUT AREA: 27.3 SQ. FT.
STAGE 3: CUT AREA: 30.1 SQ. FT.
STAGE 3: FILL AREA: 5.2 SQ. FT.
STAGE 3: FILL VOLUME: 46 CU. YD.
STAGE 3: FILL VOLUME: 10 CU. YD.
STAGE 1B: CUT AREA: 52.0 SQ. FT.
STAGE 1B: CUT AREA: 46.9 SQ. FT.
STAGE 1B: CUT AREA: 52.6 SQ. FT.
STAGE 1B: CUT AREA: 63.1 SQ. FT.
STAGE 1B: CUT VOLUME: 210 CU. YD.
STAGE 1B: CUT VOLUME: 183 CU. YD.
STAGE 1B: CUT VOLUME: 184 CU. YD.
STAGE 1B: CUT VOLUME: 214 CU. YD.
STAGE 1B: FILL AREA: 0.0 SQ. FT.
STAGE 1B: FILL VOLUME: 0 CU. YD.
STAGE 1B: FILL AREA: 0.0 SQ. FT.
STAGE 1B: FILL VOLUME: 0 CU. YD.
STAGE 1B: FILL AREA: 0.0 SQ. FT.
STAGE 1B: FILL VOLUME: 0 CU. YD.
STAGE 1B: FILL AREA: 0.0 SQ. FT.
STAGE 1B: FILL VOLUME: 0 CU. YD.
STAGE 1B: FILL AREA: 0.0 SQ. FT.
STAGE 1B: FILL VOLUME: 0 CU. YD.
STA. 204+00.00 TO STA. 207+00.00

3.02%  
ELEV. 1241.25  
STA. 204+00.00 BEGIN

2.63%  
ELEV. 1242.37

1.32%  
ELEV. 1243.51

1.34%  
ELEV. 1244.65

STA. 207+00.00

ELEV. 1248.86

ELEV. 1246.06

STA. 204+00.00 TO STA. 207+00.00

STAGE 1B: CUT VOLUME: 194 CU. YD.

STAGE 1B: CUT AREA: 56.2 SQ. FT.

STAGE 1B: CUT VOLUME: 166 CU. YD.

STAGE 1B: CUT AREA: 48.4 SQ. FT.

STAGE 1B: CUT AREA: 41.5 SQ. FT.

STAGE 1B: CUT VOLUME: 183 CU. YD.

STAGE 1B: FILL AREA: 0.0 SQ. FT.

STAGE 1B: FILL VOLUME: 0 CU. YD.

STAGE 1B: FILL AREA: 0.1 SQ. FT.

STAGE 1B: FILL VOLUME: 0 CU. YD.

STAGE 1B: FILL AREA: 17.9 SQ. FT.

STAGE 1B: FILL VOLUME: 33 CU. YD.

STAGE 1B: FILL AREA: 7.8 SQ. FT.

STAGE 1B: FILL VOLUME: 48 CU. YD.
STAGE 1B: CUT AREA: 52.5 SQ. FT.
STAGE 1B: CUT VOLUME: 88 CU. YD.

STAGE 1B: CUT AREA: 36.1 SQ. FT.
STAGE 1B: CUT VOLUME: 72 CU. YD.

STAGE 1B: CUT AREA: 35.4 SQ. FT.
STAGE 1B: CUT VOLUME: 17 CU. YD.

STAGE 1B: CUT AREA: 36.3 SQ. FT.
STAGE 1B: CUT VOLUME: 133 CU. YD.

STAGE 1B: FILL AREA: 10.3 SQ. FT.
STAGE 1B: FILL VOLUME: 14 CU. YD.

STAGE 1B: FILL AREA: 102.3 SQ. FT.
STAGE 1B: FILL VOLUME: 92 CU. YD.

STAGE 1B: FILL AREA: 62.4 SQ. FT.
STAGE 1B: FILL VOLUME: 40 CU. YD.

STAGE 1B: FILL AREA: 52.9 SQ. FT.
STAGE 1B: FILL VOLUME: 214 CU. YD.

F.L. OUTLET = 1235.30
F.L. INLET = 1235.86
EXIST F.L. OUTLET = 1235.30
EXIST F.L. INLET = 1235.77

ELEV. 1236.09 -0.29% RT. DITCH GRADE
ELEV. 1236.09 -1.23% RT. DITCH GRADE
ELEV. 1235.86 0% RT. DITCH GRADE
ELEV. 1235.86 -0.29% RT. DITCH GRADE
ELEV. 1235.86 1.41% RT. DITCH GRADE
ELEV. 1237.91 1.41% RT. DITCH GRADE

STA. 207+15.00 BEGIN
STA. 207+15.00 END
STA. 207+95.00 BEGIN
STA. 207+95.00 END
STA. 208+05.00 BEGIN
STA. 208+05.00 END
STA. 209+00.00 BEGIN
STA. 209+00.00 END

Q50 = 232 CFS  D.A. = 127 ACRES
RETAIN AND EXTEND 5' RT.
WITH 3:1 WINGS LT. & RT.
WITH 30° RT. FWD. SKEW
6' X 6' X 189' R.C. BOX CULVERT
STA. 207+43 IN PLACE
STA. 157+00.00 TO STA. 160+00.00

FUTRALL DR. TEMP. WIDENING

STA. 157+00

- TYPE RM DROP INLET = 3' x 4' TO DROP INLET ON RT.
- R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) WITH 24" x 95'
- DROP INLET ON RT. H = 5'-8"

STA. 158+00 CONSTRUCT

- TYPE ST (3 GRATE) DROP INLET = 3' x 4'-6" TO DROP INLET ON RT.
- R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) WITH 30" x 95'
- DROP INLET ON RT. H = 6'-9"
STA. 160+02.18 TO STA. 163+00.00

STAGE CUT VOLUME: 4 CU. YD.
STAGE FILL VOLUME: 0 CU. YD.

STAGE 1C: CUT VOLUME: 416 CU. YD.
STAGE 1C: FILL VOLUME: 57 CU. YD.

RAMP 1
FUTRALL DR.

TYPE ST (3 GRATE) DROP INLET = 4' x 4'-6"
TO DROP INLET ON RT.
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH 30" x 39'
DROP INLET ON RT. H = 6'-10"
STA. 161+00 CONSTRUCT
RAMP 1 CROSS SECTIONS

STAGE 1C: CUT AREA: 264.5 SQ. FT.
STAGE 1C: CUT VOLUME: 584 CU. YD.
STAGE 1C: FILL VOLUME: 1 CU. YD.
STAGE 1C: FILL AREA: 0.4 SQ. FT.
STAGE 1B: CUT AREA: 0.0 SQ. FT.
STAGE 1B: FILL AREA: 0.0 SQ. FT.
STAGE 1B: FILL VOLUME: 0 CU. YD.

STAGE 1B: CUT AREA: 398.3 SQ. FT.
STAGE 1B: FILL AREA: 0.0 SQ. FT.
STAGE 1B: FILL VOLUME: 0 CU. YD.

STAGE 1B: CUT AREA: 341.8 SQ. FT.
STAGE 1B: FILL AREA: 0.0 SQ. FT.
STAGE 1B: FILL VOLUME: 0 CU. YD.

STAGE 1B: CUT AREA: 404.5 SQ. FT.
STAGE 1B: FILL AREA: 1.5 SQ. FT.
STAGE 1B: FILL VOLUME: 1 CU. YD.

STAGE 1B: CUT AREA: 428.9 SQ. FT.
STAGE 1B: FILL AREA: 26.4 SQ. FT.
STAGE 1B: FILL VOLUME: 20 CU. YD.

STAGE 1C: FILL AREA: 0.0 SQ. FT.
STAGE 1C: FILL VOLUME: 0 CU. YD.
STAGE 1B: CUT AREA: 226.6 SQ. FT.
STAGE 1B: FILL AREA: 7.2 SQ. FT.
STAGE 1B: CUT VOLUME: 625 CU. YD.
STAGE 1B: FILL VOLUME: 8 CU. YD.

STAGE 1B: CUT AREA: 156.7 SQ. FT.
STAGE 1B: FILL AREA: 21.1 SQ. FT.
STAGE 1B: CUT VOLUME: 284 CU. YD.
STAGE 1B: FILL VOLUME: 21 CU. YD.
STA. 169+18.00 TO STA. 171+00.00
ELEV. 1244.64
2.85% LT. DITCH GRADE
STA. 169+90.00 END
ELEV. 1241.62
-1.72% RT. DITCH GRADE
STA. 170+00.00 END
ELEV. 1241.62
-0.50% RT. DITCH GRADE
STA. 170+00.00 BEGIN
F.L. OUT = 1242.80
F.L. D.I. = 1242.85
F.L. IN = 1242.95
1.10 %
1244.74
1242.58
1245.42
1248.92
1245.42
1246.07
1246.15
1246.45
1246.49
1243.03
1244.67
1244.67
1245.21
1245.66
1246.44
1246.92
1247.22
1247.26
1241.62
1244.63
4.18 %
1249.55
1253.05
1245.07
1245.40
1246.91
1247.39
1247.69
1247.73
1241.37
1244.54
6.18 %
1248.04
1251.54
1244.65
1245.15
1247.37
1247.85
1248.15
1248.19
1241.12
1243.97
STAGE 1B: CUT AREA: 133.0 SQ. FT.
STAGE 1B: FILL AREA: 24.8 SQ. FT.
STAGE 1B: CUT VOLUME: 94 CU. YD.
STAGE 1B: FILL VOLUME: 16 CU. YD.
STAGE 1B: CUT AREA: 78.3 SQ. FT.
STAGE 1B: FILL AREA: 55.2 SQ. FT.
STAGE 1B: CUT VOLUME: 321 CU. YD.
STAGE 1B: FILL VOLUME: 121 CU. YD.
STAGE 1B: CUT AREA: 43.6 SQ. FT.
STAGE 1B: FILL AREA: 71.2 SQ. FT.
STAGE 1B: CUT VOLUME: 113 CU. YD.
STAGE 1B: FILL VOLUME: 117 CU. YD.
STAGE 1B: CUT AREA: 32.1 SQ. FT.
STAGE 1B: FILL AREA: 121.7 SQ. FT.
STAGE 1B: CUT VOLUME: 70 CU. YD.
STAGE 1B: FILL VOLUME: 179 CU. YD.
STA. 172+00.00 TO STA. 173+13.00

ELEV. 1240.32
-0.50% RT. DITCH GRADE

STA. 172+60.00 END
ELEV. 1240.32
-1.13% RT. DITCH GRADE

STA. 172+60.00 BEGIN

F.L. D.I. = 1235.38
EXIST. F.L. IN = 1236.23

STA. 173+13.00

F.L. D.I. = 1236.38
F.L. IN = 1236.48

STA. 173+00.00

F.L. D.I. = 1237.00
10.00%
1246.00
1249.50
1243.84
1244.64
1248.24
1248.72
1249.02
1249.06
1249.42

STA. 172+58.00

F.L. D.I. = 1236.00
10.00%
1245.78
1249.28
1243.55
1244.35
1247.95
1248.43
1248.73
1248.77
1249.13

STA. 172+00.00

F.L. D.I. = 1235.60
10.00%
1246.21
1249.71
1243.27
1244.07
1247.67
1248.22
1248.52
1248.56
1249.02

STA. 172+50.00

F.L. D.I. = 1235.10
10.00%
1246.05
1249.55
1243.34
1244.14
1247.74
1248.22
1248.52
1248.56
1249.02

STAGE 1B: CUT AREA: 21.0 SQ. FT.
STAGE 1B: FILL AREA: 228.3 SQ. FT.
STAGE 1B: CUT VOLUME: 98 CU. YD.
STAGE 1B: FILL VOLUME: 648 CU. YD.

STAGE 1B: CUT AREA: 3.7 SQ. FT.
STAGE 1B: FILL AREA: 305.1 SQ. FT.
STAGE 1B: CUT VOLUME: 27 CU. YD.
STAGE 1B: FILL VOLUME: 573 CU. YD.

STAGE 1B: CUT AREA: 9.4 SQ. FT.
STAGE 1B: FILL AREA: 450.8 SQ. FT.
STAGE 1B: CUT VOLUME: 10 CU. YD.
STAGE 1B: FILL VOLUME: 588 CU. YD.

STAGE 1B: CUT AREA: 8.9 SQ. FT.
STAGE 1B: FILL AREA: 504.3 SQ. FT.
STAGE 1B: CUT VOLUME: 4 CU. YD.
STAGE 1B: FILL VOLUME: 230 CU. YD.

TYPE ST (3 GRATE) DROP INLET = 3' x 4'-6" TO DROP INLET ON LT.
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) WITH 24" x 104'
DROP INLET ON LT. H = 6'-10"
STA. 172+00 CONSTRUCT

STA. 173+13.00

TYPE ST (3 GRATE) DROP INLET = 3' x 4'-6"
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) WITH 24" x 77'
DROP INLET ON LT. H = 6'-11"
STA. 173+00 CONSTRUCT

STA. 172+00.00 TO STA. 173+13.00
STAGE 1B: CUT AREA: 6.3 SQ. FT.
STAGE 1B: FILL AREA: 721.7 SQ. FT.
STAGE 1B: CUT VOLUME: 8 CU. YD.
STAGE 1B: FILL VOLUME: 701 CU. YD.

STA. 173+70.00 TO STA. 174+00.00
ELEV. 1238.92
-1.13% RT. DITCH GRADE
STA. 173+83.66 END
F.L. OUT = 1234.38
F.L. D.I. = 1234.66
F.L. IN = 1234.76

STA. 173+98.00 TO STA. 174+00.00
ELEV. 1238.96
-0.50% RT. DITCH GRADE
F.L. OUT = 1234.39
F.L. D.I. = 1234.70
F.L. IN = 1234.79

STAGE 1B: CUT AREA: 8.7 SQ. FT.
STAGE 1B: FILL AREA: 629.5 SQ. FT.
STAGE 1B: CUT VOLUME: 19 CU. YD.
STAGE 1B: FILL VOLUME: 1197 CU. YD.

TYPE ST (3 GRATE) DROP INLET = 3' x 4'-6" TO DROP INLET ON LT.
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) WITH 24" x 59'
DROP INLET ON LT. H = 7'-2"
STA. 173+98 CONSTRUCT

TYPE SPECIAL AREA DROP INLET = 5' x 5'
OPEN ON FOUR SIDES
WITH FES R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH 42" x 94'
DROP INLET ON RT. H = 5'-3"
STA. 173+70 CONSTRUCT
RAMP 1 / FUTRALL DR.

STA. 174+60.00 TO STA. 175+00.00

STA. 174+60.00
ELEV. 1243.34
-8.40% LT. DITCH GRADE
STA. 174+70.00 BEGIN
ELEV. 1241.24
-8.40% LT. DITCH GRADE
STA. 174+95.00 END
ELEV. 1241.24
-2.08% LT. DITCH GRADE

STA. 174+70.00
F.L. OUT = 1235.19
F.L. D.I. = 1235.50
F.L. IN = 1235.60

STA. 175+00.00

RAMP 5
TYPE ST (3 GRATE) DROP INLET = 3' x 4'-6"
TO R.C. BOX CULVERT ON LT.
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH 24" x 62'
DROP INLET ON LT. H = 7'-9"
STA. 174+60 CONSTRUCT

RAMP 1 / FUTRALL DR.
STA. 174+60.00 TO STA. 175+00.00
RAMP 1 / FUTRALL DR.

**RAMP 1 / FUTRALL DR. CROSS SECTIONS**

**SPAN = 26.94'**

**Q50 = 994 CFS**
**D.A. = 273.6 ACRES**

**WITH 3:1 WINGS LT. & RT.**
**WITH 30° RT. FWD. SKEW**

**TRIP. 7' X 5' X 250' R.C. BOX CULVERT**

**STA. 175+50 CONSTRUCT**

**STAGE 1B: CUT AREA: 0.0 SQ. FT.**
**STAGE 1B: FILL AREA: 670.8 SQ. FT.**

**STAGE 1B: CUT AREA: 0.0 SQ. FT.**
**STAGE 1B: FILL AREA: 776.1 SQ. FT.**

**STAGE 1B: CUT AREA: 1.6 SQ. FT.**
**STAGE 1B: FILL AREA: 543.3 SQ. FT.**

**STAGE 1B: CUT VOLUME: 62 CU. YD.**
**STAGE 1B: FILL VOLUME: 445 CU. YD.**

**STAGE 1B: CUT VOLUME: 0 CU. YD.**
**STAGE 1B: FILL VOLUME: 429 CU. YD.**

**STAGE 1B: CUT VOLUME: 1 CU. YD.**
**STAGE 1B: FILL VOLUME: 709 CU. YD.**

**ON BOX CULVERT LT.**
**TYPE TM DROP INLET ON LT. 3' X 4' X H = 1'-10"**

**STA. 175+34 CONSTRUCT**

**STA. 175+34.00 TO STA. 175+79.00**

**F.L. OUTLET = 1232.98**
**F.L. INLET = 1234.38**

**DRAINAGE CHANNEL**

**ELEV. 1240.43**
**-2.08% LT. DITCH GRADE STA. 175+34.00 END**
**0.87% LT. DITCH GRADE STA. 175+34.00 BEGIN**

**1.9 5 %**
**1242.35**
**1240.47**
**1244.71**
**1244.55**
**1244.08**
**1244.16**
**1244.85**
**1245.33**
**1245.49**
**1241.21**

**1.9 4 %**
**1242.05**
**1240.56**
**1244.93**
**1244.77**
**1244.30**
**1244.35**
**1244.80**
**1245.28**
**1245.44**
**1238.06**

**1.9 4 %**
**0.11%**
**1241.60**
**1240.81**
**1245.38**
**1245.22**
**1244.74**
**1244.74**
**1244.78**
**1245.26**
**1245.42**
**1232.98**

**1243.36**
**1242.89**
**1242.51**
STA. 181+00.00 TO STA. 183+00.00

STAGE 1C: CUT AREA: 89.0 SQ. FT.
STAGE 1C: CUT VOLUME: 106 CU. YD.

STAGE 1B: CUT AREA: 245.6 SQ. FT.
STAGE 1B: CUT VOLUME: 250 CU. YD.
STAGE 1B: CUT AREA: 310.9 SQ. FT.
STAGE 1B: CUT VOLUME: 1193 CU. YD.
STAGE 1B: CUT AREA: 333.1 SQ. FT.
STAGE 1B: CUT VOLUME: 1193 CU. YD.

STAGE 1C: FILL AREA: 0.0 SQ. FT.
STAGE 1C: FILL VOLUME: 0 CU. YD.
STAGE 1C: FILL AREA: 0.0 SQ. FT.
STAGE 1C: FILL VOLUME: 0 CU. YD.
STAGE 1C: FILL AREA: 0.0 SQ. FT.
STAGE 1C: FILL VOLUME: 0 CU. YD.

STAGE 1B: FILL AREA: 0.0 SQ. FT.
STAGE 1B: FILL VOLUME: 0 CU. YD.
STAGE 1B: FILL AREA: 0.0 SQ. FT.
STAGE 1B: FILL VOLUME: 0 CU. YD.
STAGE 1B: FILL AREA: 0.0 SQ. FT.
STAGE 1B: FILL VOLUME: 0 CU. YD.
RAMP 2 CROSS SECTIONS

STA. 183+05.20 TO STA. 183+05.20

STAGE 1B: CUT AREA: 319.1 SQ. FT.
STAGE 1C: CUT AREA: 25.7 SQ. FT.
STAGE 1B: CUT VOLUME: 61 CU. YD.
STAGE 1C: CUT VOLUME: 4 CU. YD.

STAGE 1C: FILL AREA: 0.0 SQ. FT.
STAGE 1C: FILL VOLUME: 0 CU. YD.
STAGE 1B: FILL AREA: 0.0 SQ. FT.
STAGE 1B: FILL VOLUME: 0 CU. YD.
STAGE 2: CUT AREA: 55.6 SQ. FT.

STAGE 3: FILL AREA: 0.0 SQ. FT.

STAGE 4: FILL AREA: 0.0 SQ. FT.

STAGE 4: CUT AREA: 51.3 SQ. FT.

STAGE 2: FILL VOLUME: 0 CU. YD.

STAGE 3: CUT VOLUME: 0 CU. YD.

STAGE 4: FILL VOLUME: 0 CU. YD.

STAGE 4: CUT VOLUME: 0 CU. YD.

STAGE 2: CUT VOLUME: 52 CU. YD.

STAGE 3: FILL VOLUME: 575 CU. YD.

STAGE 3: CUT VOLUME: 1 CU. YD.

STAGE 4: FILL VOLUME: 12 CU. YD.
STAGE 3: FILL AREA: 26.0 SQ. FT.

STAGE 3: CUT AREA: 199.4 SQ. FT.

STAGE 3: FILL AREA: 35.5 SQ. FT.

STAGE 3: CUT VOLUME: 935 CU. YD.

STAGE 3: FILL VOLUME: 60 CU. YD.

STAGE 4: FILL AREA: 9.3 SQ. FT.

STAGE 4: CUT AREA: 97.2 SQ. FT.

STAGE 4: FILL VOLUME: 45 CU. YD.

STAGE 4: CUT VOLUME: 10 CU. YD.

STAGE 4: FILL VOLUME: 1 CU. YD.

STAGE 4: CUT VOLUME: 190 CU. YD.

STAGE 3: FILL AREA: 24.6 SQ. FT.

STAGE 3: CUT AREA: 141.9 SQ. FT.

STAGE 3: FILL VOLUME: 37 CU. YD.

STAGE 3: CUT VOLUME: 333 CU. YD.

STAGE 4: FILL VOLUME: 1 CU. YD.

STAGE 4: CUT VOLUME: 129 CU. YD.

RAMP 3 CROSS SECTIONS

STA. 181+00.00 TO STA. 182+37.00

ELEV. 1250.48
-0.75% RT. DITCH GRADE
STA. 182+00.00 BEGIN
ELEV. 1250.20
-0.75% RT. DITCH GRADE
STA. 182+38.00 END

ELEV. 1250.20
-0.83% RT. DITCH GRADE
STA. 182+38.00 BEGIN

F.L. D.I. = 1246.53

TYPE ST DROP INLET = 3' x 3'
TO DROP INLET ON RT.
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH 24" x 66'
DROP INLET ON RT. H = 3'-8''
STA. 182+37 CONSTRUCT
STAGE 4: FILL AREA: 0.0 SQ. FT.
STAGE 4: CUT AREA: 11.4 SQ. FT.
STAGE 4: FILL VOLUME: 0 CU. YD.
STAGE 4: CUT VOLUME: 94 CU. YD.

RAMP 3 DECEL. LANE
ELEV. 1240.87
-0.49% RT. DITCH GRADE
STA. 185+00.00 END
ELEV. 1240.98
F.L. OUT = 1240.98
F.L. D.I. = 1241.32
F.L. IN = 1241.42
ELEV. 1240.87
-0.5% LT. DITCH GRADE
STA. 185+67.00 BEGIN
ELEV. 1240.46
-0.5% LT. DITCH GRADE
STA. 186+49.02 END
RAMP 5 CROSS SECTIONS

STAGE 2: FILL AREA: 930.6 SQ. FT.
STAGE 2: CUT AREA: 0.0 SQ. FT.
STAGE 2: FILL VOLUME: 1727 CU. YD.
STAGE 2: CUT VOLUME: 80 CU. YD.
STAGE 2: FILL VOLUME: 2886 CU. YD.
STAGE 2: CUT VOLUME: 0 CU. YD.

STA. 162+00.00 TO STA. 163+26.00

RAMP 5 / FUTRALL DR.
STAGE 2: FILL AREA: 1513.6 SQ. FT.
STAGE 2: CUT AREA: 0.0 SQ. FT.

STAGE 2: FILL VOLUME: 112 CU. YD.
STAGE 2: CUT VOLUME: 554 CU. YD.
STAGE 2: FILL VOLUME: 3148 CU. YD.
STAGE 2: CUT VOLUME: 1438 CU. YD.
STAGE 2: FILL VOLUME: 717 CU. YD.

Q50 = 971 CFS  D.A. = 265.4 ACRES
WITH 3:1 WINGS LT. & RT.
DBL. 8' X 6' X 115' R.C. BOX CULVERT
STA. 169+02 CONSTRUCT

RAMP 5 TEMP. WIDENING
I-49 OUTSIDE WIDENING
ELEV. 1243.45
2.59% LT. DITCH GRADE
STA. 169+23.00 BEGIN
ELEV. 1247.00
2.59% LT. DITCH GRADE
STA. 170+60.00 END
ELEV. 1247.00
5.33% LT. DITCH GRADE
STA. 170+60.00 BEGIN
ELEV. 1250.41
5.33% LT. DITCH GRADE
STA. 171+24.00 END

ELEV. 1240.78
0.52% RT. DITCH GRADE
STA. 169+35.00 BEGIN
ELEV. 1242.00
0.52% RT. DITCH GRADE
STA. 171+68.00 END
STAGE 2: CUT AREA: 288.2 SQ. FT.

STAGE 2: CUT VOLUME: 1407 CU. YD.

STAGE 2: FILL AREA: 0.0 SQ. FT.

STAGE 2: FILL VOLUME: 308 CU. YD.
HWY. 16 / IL 125

STA. 113+00.00

<table>
<thead>
<tr>
<th>Job No.</th>
<th>FED.AID PROJ.No.</th>
<th>FED.RD.</th>
<th>DIST.No.</th>
<th>FILMED DATE</th>
<th>REVISED DATE</th>
<th>DATE FILMED</th>
<th>TOTAL SHEETS</th>
<th>STATE SHEET NO.</th>
<th>DATE</th>
</tr>
</thead>
</table>

STAGE 1:
- Approach on LT. = 72 LIN. FT.
- Drop Inlet = 4' x 2'-6"
- Pipe Culvert = 24" SLPPMCCS Pipe (Type 2 Bedding)
- Drop Inlet on LT. = 4' x 2'-6"

STAGE 2:
- Approach on LT. = 72 LIN. FT.
- Drop Inlet = 4' x 3'-2"
- Pipe Culvert = 24" SLPPMCCS Pipe (Type 2 Bedding)
- Drop Inlet on LT. = 4' x 3'-2"

STAGE 3:
- Approach on LT. = 72 LIN. FT.
- Drop Inlet = 4' x 3'-2"
- Pipe Culvert = 24" SLPPMCCS Pipe (Type 2 Bedding)
- Drop Inlet on LT. = 4' x 3'-2"

STAGE 4:
- Approach on LT. = 72 LIN. FT.
- Drop Inlet = 4' x 3'-2"
- Pipe Culvert = 24" SLPPMCCS Pipe (Type 2 Bedding)
- Drop Inlet on LT. = 4' x 3'-2"

STAGE 5:
- Approach on LT. = 72 LIN. FT.
- Drop Inlet = 4' x 3'-2"
- Pipe Culvert = 24" SLPPMCCS Pipe (Type 2 Bedding)
- Drop Inlet on LT. = 4' x 3'-2"

ELEV. 1256.45

- STA. 113+60.00 END
- STA. 113+00.00 TO STA. 113+57.00

Cut Area: 2.1 SQ. FT.
Fill Area: 3.0 SQ. FT.
Cut Volume: 29 CU. YD.
Fill Volume: 6 CU. YD.

Cut Area: 2.2 SQ. FT.
Fill Area: 2.9 SQ. FT.
Cut Volume: 1 CU. YD.
Fill Volume: 2 CU. YD.

Cut Area: 2.3 SQ. FT.
Fill Area: 2.5 SQ. FT.
Cut Volume: 0 CU. YD.
Fill Volume: 1 CU. YD.

Cut Area: 2.9 SQ. FT.
Fill Area: 1.2 SQ. FT.
Cut Volume: 4 CU. YD.
Fill Volume: 3 CU. YD.

Cut Area: 16.2 SQ. FT.
Fill Area: 0.4 SQ. FT.
Cut Volume: 59 CU. YD.
Fill Volume: 2 CU. YD.

Cut Area: 21.8 SQ. FT.
Fill Area: 0.0 SQ. FT.
Cut Volume: 11 CU. YD.
Fill Volume: 0 CU. YD.

Cut Area: 20.5 SQ. FT.
Fill Area: 0.3 SQ. FT.
Cut Volume: 4 CU. YD.
Fill Volume: 0 CU. YD.

Cut Area: 14.3 SQ. FT.
Fill Area: 1.8 SQ. FT.
Cut Volume: 24 CU. YD.
Fill Volume: 1 CU. YD.
STAGE 3: CUT AREA: 13.5 SQ. FT.
STAGE 3: FILL AREA: 8.3 SQ. FT.
STAGE 2: CUT AREA: 5.1 SQ. FT.
STAGE 2: FILL AREA: 1.9 SQ. FT.

STAGE 3: CUT AREA: 12.7 SQ. FT.
STAGE 3: FILL AREA: 8.7 SQ. FT.
STAGE 2: CUT AREA: 4.2 SQ. FT.
STAGE 2: FILL AREA: 5.0 SQ. FT.

STAGE 3: CUT AREA: 11.7 SQ. FT.
STAGE 3: FILL AREA: 10.5 SQ. FT.
STAGE 2: CUT AREA: 4.2 SQ. FT.
STAGE 2: FILL AREA: 5.6 SQ. FT.

STAGE 3: CUT AREA: 10.3 SQ. FT.
STAGE 3: FILL AREA: 12.7 SQ. FT.
STAGE 2: CUT AREA: 6.1 SQ. FT.
STAGE 2: FILL AREA: 4.4 SQ. FT.

24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 61 LIN. FT.
24" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 61 LIN. FT.
TYPE C DROP INLET = 4' x 2'-6"
TYPE MO DROP INLET = 4' DIA.
PIPE CULVERT TO DROP INLET ON LT.
WITH 4' EXTENSION AND 24" x 61'
DROP INLET ON LT. H = 3'-9"
STA. 114+64 CONSTRUCT

STA. 115+00.00

APPROACH ON RT. = 17 CU. YDS.
STA. 114+83 CONSTRUCT

DIST.NO. 0.83%

F.L. D.I. = 1253.59
F.L. IN = 1253.69

F.L. D.I. = 1254.45
F.L. IN = 1254.55

F.L. D.I. = 1255.06

STAGE 5

0.83%
STAGE 3: CUT AREA: 15.1 SQ. FT.
STAGE 3: FILL AREA: 18.3 SQ. FT.

STAGE 2: CUT AREA: 64.7 SQ. FT.
STAGE 2: FILL AREA: 0.4 SQ. FT.

STAGE 2: CUT AREA: 26.8 SQ. FT.
STAGE 2: FILL AREA: 9.7 SQ. FT.

STAGE 3: CUT AREA: 12.7 SQ. FT.
STAGE 3: FILL AREA: 1.8 SQ. FT.

36" SLPPMCCS PIPE (TYPE 2 BEDDING) = 86 LIN. FT.

TYPE C DROP INLET = 6' x 4'
PIPE CULVERT TO DROP INLET ON LT.
WITH 8' EXTENSION AND 30" x 86'
DROP INLET ON LT. H = 6'-2"
STA. 125+10 CONSTRUCT

TYPE E DROP INLET = 3' x 2'
PIPE CULVERT TO DROP INLET ON LT.
WITH 18" x 23'
DROP INLET ON LT. H = 4'-7"
STA. 124+90 CONSTRUCT

36" SLPPMCCS PIPE (TYPE 2 BEDDING) = 92 LIN. FT.
36" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 92 LIN. FT.
TYPE C DROP INLET = 4' x 3'-8"
TYPE MO DROP INLET = 5' DIA.
PIPE CULVERT TO DROP INLET ON RT.
STA. 125+53 CONSTRUCT

36" SLPPMCCS PIPE (TYPE 2 BEDDING) = 38 LIN. FT.
36" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 38 LIN. FT.
TYPE C DROP INLET = 4' x 3'-8"

STA. 126+00.00 TO STA. 126+00.00

F.L. D.I. = 1254.23
F.L. IN = 1254.33

F.L. D.I. = 1254.41
F.L. IN = 1254.51

36" SLPPMCCS PIPE (TYPE 2 BEDDING) = 126 LIN. FT.
36" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 126 LIN. FT.
TYPE C DROP INLET = 4' x 3'-8"
TYPE MO DROP INLET = 5' DIA.
WITH 4' EXTENSION AND 36" x 126'
STA. 125+53 CONSTRUCT

36" SLPPMCCS PIPE (TYPE 2 BEDDING) = 533 LIN. FT.
36" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 533 LIN. FT.
TYPE C DROP INLET = 4' x 3'-8"
TYPE MO DROP INLET = 5' DIA.
WITH 4' EXTENSION AND 36" x 533'
STA. 125+53 CONSTRUCT

36" SLPPMCCS PIPE (TYPE 2 BEDDING) = 38 LIN. FT.
36" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 38 LIN. FT.
TYPE C DROP INLET = 4' x 3'-8"
TYPE MO DROP INLET = 5' DIA.
WITH 4' EXTENSION AND 36" x 38'
STA. 125+53 CONSTRUCT

STA. 124+90.00 TO STA. 126+00.00

F.L. D.I. = 1254.23
F.L. IN = 1254.33

F.L. D.I. = 1254.41
F.L. IN = 1254.51

HWY. 16 / 112S CROSS SECTIONS

STATE 040847

SHEET 457

TOTAL 533
HWY. 16 / 112S CROSS SECTIONS

TYPE C DROP INLET = 6' x 6' WITH F.E.S. R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) WITH 8' EXTENSION AND 36" x 23' DROP INLET ON RT. H = 11'-1" STA. 128+18 CONSTRUCT


STAGE 2: CUT AREA: 122.2 SQ. FT. STAGE 2: FILL AREA: 85.5 SQ. FT. STAGE 2: CUT VOLUME: 79 CU. YD. STAGE 2: FILL VOLUME: 54 CU. YD.


HWY. 16 / 112S CROSS SECTIONS

STAGE 5
WITH DUMPED RIPRAP = 2 CU. YDS.
TYPE C DROP INLET = 4' x 2'-6"
TYPE MO DROP INLET = 4' DIA.
WITH FES
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH 8' EXTENSION AND 18" x 5' DROP INLET ON RT. H = 3'-0"
STA. 130+96 CONSTRUCT

STAGE 3: CUT AREA: 2.2 SQ. FT.
STAGE 4: FILL AREA: 385.9 SQ. FT.
STAGE 4: CUT AREA: 6.1 SQ. FT.
STAGE 3: CUT VOLUME: 5 CU. YD.
STAGE 4: FILL VOLUME: 257 CU. YD.
STAGE 4: CUT VOLUME: 4 CU. YD.

STA. 131+36 CONSTRUCT
WITH DUMPED RIPRAP = 2 CU. YDS.
TYPE C DROP INLET = 4' x 2'-6"
TYPE MO DROP INLET = 4' DIA.
WITH FES
R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH 8' EXTENSION AND 18" x 16' DROP INLET ON LT. H = 3'-0"

STA. 130+96.00 TO STA. 131+36.00
STA. 130+96.00 TO STA. 131+36.00
STA. 130+96.00 TO STA. 131+36.00
<table>
<thead>
<tr>
<th>STA</th>
<th>Cut Area</th>
<th>Fill Area</th>
<th>Cut Volume</th>
<th>Fill Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>STA.133+00.00</td>
<td>0.0 SQ. FT.</td>
<td>0.0 SQ. FT.</td>
<td>0 CU. YD.</td>
<td>0 CU. YD.</td>
</tr>
<tr>
<td>STA.134+00.00</td>
<td>0.0 SQ. FT.</td>
<td>0.0 SQ. FT.</td>
<td>0 CU. YD.</td>
<td>0 CU. YD.</td>
</tr>
</tbody>
</table>
HWY. 16 / 112S CROSS SECTIONS

STAGE 4: FILL AREA: 971.9 SQ. FT.
STAGE 4: CUT AREA: 0.8 SQ. FT.
STAGE 4: CUT VOLUME: 0 CU. YD.
STAGE 4: FILL VOLUME: 210 CU. YD.

STAGE 2: CUT AREA: 0.0 SQ. FT.
STAGE 2: FILL AREA: 0.0 SQ. FT.
STAGE 2: CUT VOLUME: 0 CU. YD.
STAGE 2: FILL VOLUME: 0 CU. YD.

STAGE 3: CUT AREA: 0.4 SQ. FT.
STAGE 3: FILL AREA: 71.5 SQ. FT.
STAGE 3: CUT VOLUME: 0 CU. YD.
STAGE 3: FILL VOLUME: 15 CU. YD.

STAGE 4: CUT AREA: 0.0 SQ. FT.
STAGE 4: FILL AREA: 0.0 SQ. FT.
STAGE 4: CUT VOLUME: 0 CU. YD.
STAGE 4: FILL VOLUME: 0 CU. YD.

STA. 134+69.20 TO STA. 134+80.86

1271.45
1272.87
1276.83
1277.32
1277.24
1276.73
1277.04
2.26%

1253.86
1277.20
1276.83
1276.35
1276.27
1275.71
1276.19
1276.35
HWY. 16 / 112S CROSS SECTIONS

STAGE 2: FILL AREA: 1213.5 SQ. FT.
STAGE 2: FILL VOLUME: 449 CU. YD.
STAGE 2: CUT AREA: 0.0 SQ. FT.
STAGE 2: CUT VOLUME: 0 CU. YD.

STAGE 3: FILL AREA: 71.5 SQ. FT.
STAGE 3: CUT AREA: 0.4 SQ. FT.
STAGE 3: CUT VOLUME: 0 CU. YD.
STAGE 3: FILL VOLUME: 24 CU. YD.

STAGE 4: FILL AREA: 902.4 SQ. FT.
STAGE 4: CUT AREA: 0.8 SQ. FT.
STAGE 4: FILL VOLUME: 26 CU. YD.
STAGE 4: CUT VOLUME: 1 CU. YD.
STAGE 4: FILL AREA: 869.4 SQ. FT.
STAGE 4: CUT AREA: 0.8 SQ. FT.
STAGE 4: FILL VOLUME: 317 CU. YD.
STAGE 4: CUT VOLUME: 1 CU. YD.
STAGE 4: FILL AREA: 737.4 SQ. FT.
STAGE 4: CUT AREA: 0.8 SQ. FT.
STAGE 4: FILL VOLUME: 328 CU. YD.
STAGE 4: CUT VOLUME: 1 CU. YD.
STAGE 4: FILL AREA: 737.4 SQ. FT.
STAGE 4: CUT AREA: 0.8 SQ. FT.
STAGE 4: FILL VOLUME: 1488 CU. YD.
STAGE 4: CUT VOLUME: 1 CU. YD.

STA. 134+90.00 TO STA. 135+50.00
HWY. 16 / 112S CROSS SECTIONS

HWY. 16 / 112S

WITH DUMPED RIPRAP = 2 CU. YDS.
TYPE C DROP INLET = 4' x 2'-6"
TYPE MO DROP INLET = 4' DIA.
WITH FES R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH 8' EXTENSION AND 18" x 5' DROP INLET ON RT. H = 3'-0"
STA. 135+84 CONSTRUCT

WITH DUMPED RIPRAP = 2 CU. YDS.
TYPE C DROP INLET = 4' x 2'-6"
TYPE MO DROP INLET = 4' DIA.
WITH FES R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)
WITH 8' EXTENSION AND 18" x 16' DROP INLET ON LT. H = 3'-0"
STA. 135+84 CONSTRUCT

Stage 2: Fill Area: 1089.6 sq. ft.
Stage 4: Fill Area: 654.1 sq. ft.
Stage 4: Cut Area: 0.8 sq. ft.
Stage 2: Fill Volume: 1422 cu. yd.
Stage 4: Fill Volume: 876 cu. yd.
Stage 4: Cut Volume: 1 cu. yd.
HWY. 16 / 112S CROSS SECTIONS

STAGE 2: FILL AREA: 341.8 SQ. FT.
STAGE 4: FILL AREA: 45.7 SQ. FT.
STAGE 4: CUT AREA: 0.8 SQ. FT.
STAGE 5: FILL AREA: 6.4 SQ. FT.
STAGE 5: CUT AREA: 2.0 SQ. FT.

STAGE 2: FILL AREA: 188.2 SQ. FT.
STAGE 4: FILL AREA: 165.9 SQ. FT.
STAGE 4: CUT AREA: 0.8 SQ. FT.
STAGE 5: FILL AREA: 5.5 SQ. FT.
STAGE 5: CUT AREA: 34.8 SQ. FT.

STAGE 2: FILL VOLUME: 2532 CU. YD.
STAGE 3: CUT VOLUME: 1 CU. YD.
STAGE 4: FILL VOLUME: 1218 CU. YD.
STAGE 4: CUT VOLUME: 3 CU. YD.
STAGE 5: FILL VOLUME: 12 CU. YD.
STAGE 5: CUT VOLUME: 4 CU. YD.

STAGE 2: FILL VOLUME: 491 CU. YD.
STAGE 4: FILL VOLUME: 196 CU. YD.
STAGE 4: CUT VOLUME: 1 CU. YD.
STAGE 5: FILL VOLUME: 11 CU. YD.
STAGE 5: CUT VOLUME: 34 CU. YD.

STAGE 2: FILL VOLUME: 183 CU. YD.
STAGE 4: FILL VOLUME: 236 CU. YD.
STAGE 4: CUT VOLUME: 1 CU. YD.
STAGE 5: FILL VOLUME: 11 CU. YD.
STAGE 5: CUT VOLUME: 52 CU. YD.
HWY. 16 / 112S CROSS SECTIONS

STAGE 1: CUT AREA: 0.0 SQ. FT.
STAGE 1: FILL AREA: 0.0 SQ. FT.
STAGE 1: CUT VOLUME: 0 CU. YD.
STAGE 1: FILL VOLUME: 0 CU. YD.

STAGE 2: CUT AREA: 34.0 SQ. FT.
STAGE 2: FILL AREA: 0.0 SQ. FT.
STAGE 2: CUT VOLUME: 3 CU. YD.
STAGE 2: FILL VOLUME: 0 CU. YD.

STAGE 3: CUT AREA: 0.0 SQ. FT.
STAGE 3: FILL AREA: 0.0 SQ. FT.
STAGE 3: CUT VOLUME: 0 CU. YD.
STAGE 3: FILL VOLUME: 0 CU. YD.

STAGE 4: CUT AREA: 0.0 SQ. FT.
STAGE 4: FILL AREA: 0.0 SQ. FT.
STAGE 4: CUT VOLUME: 0 CU. YD.
STAGE 4: FILL VOLUME: 0 CU. YD.

STAGE 5: CUT AREA: 0.0 SQ. FT.
STAGE 5: FILL AREA: 0.0 SQ. FT.
STAGE 5: CUT VOLUME: 0 CU. YD.
STAGE 5: FILL VOLUME: 0 CU. YD.
FUTRALL DR. TEMP. WIDENING

STA. 158+00.00 TO STA. 160+00.00

STA. 158+00.00

STA. 159+00.00

STA. 159+43.00

STA. 160+00.00

STAGE 1B: FILL AREA: 0.8 SQ. FT.
STAGE 1C: FILL AREA: 0.9 SQ. FT.
STAGE 1C: CUT AREA: 17.3 SQ. FT.
STAGE 1B: CUT AREA: 44.6 SQ. FT.
STAGE 1C: FILL VOLUME: 1 CU. YD.
STAGE 1B: CUT VOLUME: 110 CU. YD.
STAGE 1C: FILL VOLUME: 5 CU. YD.
STAGE 1B: FILL VOLUME: 1 CU. YD.
STAGE 1C: CUT VOLUME: 70 CU. YD.
STAGE 1C: FILL VOLUME: 0 CU. YD.
STAGE 1C: FILL VOLUME: 0 CU. YD.
STAGE 1B: CUT VOLUME: 40 CU. YD.
STAGE 1C: FILL VOLUME: 2 CU. YD.
STAGE 1C: CUT VOLUME: 33 CU. YD.
STAGE 1C: FILL VOLUME: 0 CU. YD.
STAGE 1C: CUT VOLUME: 47 CU. YD.

ELEV. 1257.60

-3.00% RT. DITCH GRADE
STA. 159+50.00 END

ELEV. 1257.60

-4% RT. DITCH GRADE
STA. 159+50.00 BEGIN

ELEV. 1252.32

-4% RT. DITCH GRADE
STA. 160+82.00 END
APPROACH ON RT. = 7 CU. YDS. EXC.
STA. 161+28 CONSTRUCT FUTRALL DR.

FUTRALL DR. CROSS SECTIONS

<table>
<thead>
<tr>
<th>STA. 161+00.00 TO STA. 162+00.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>F.L. D.I. = 1248.96</td>
</tr>
<tr>
<td>30&quot; F.L. IN = 1249.06</td>
</tr>
<tr>
<td>24&quot; F.L. INLET = 1252.32</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>F.L. D.I. = 1246.15</td>
</tr>
<tr>
<td>F.L. IN = 1246.65</td>
</tr>
<tr>
<td>BACK OPENING F.L. IN = 1252.02</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

STAGE 1B: CUT AREA: 53.2 SQ. FT.
STAGE 1B: CUT VOLUME: 206 CU. YD.
STAGE 1B: FILL VOLUME: 0 CU. YD.

STAGE 1B: CUT AREA: 55.1 SQ. FT.
STAGE 1B: CUT VOLUME: 56 CU. YD.
STAGE 1B: FILL VOLUME: 0 CU. YD.

STAGE 1B: CUT AREA: 45.0 SQ. FT.
STAGE 1B: CUT VOLUME: 87 CU. YD.
STAGE 1B: FILL VOLUME: 2 CU. YD.

STAGE 1C: CUT AREA: 32.8 SQ. FT.
STAGE 1C: FILL AREA: 0.0 SQ. FT.
STAGE 1C: CUT VOLUME: 106 CU. YD.
STAGE 1C: FILL VOLUME: 0 CU. YD.

STAGE 1C: CUT AREA: 19.8 SQ. FT.
STAGE 1C: FILL AREA: 0.0 SQ. FT.
STAGE 1C: CUT VOLUME: 27 CU. YD.
STAGE 1C: FILL VOLUME: 0 CU. YD.

STAGE 1C: CUT AREA: 17.8 SQ. FT.
STAGE 1C: FILL AREA: 0.0 SQ. FT.
STAGE 1C: CUT VOLUME: 16 CU. YD.
STAGE 1C: FILL VOLUME: 0 CU. YD.

STAGE 1C: CUT AREA: 15.7 SQ. FT.
STAGE 1C: FILL AREA: 0.0 SQ. FT.
STAGE 1C: CUT VOLUME: 33 CU. YD.
STAGE 1C: FILL VOLUME: 0 CU. YD.

STAGE 1B: FILL VOLUME: 5 CU. YD.
STAGE 1B: CUT VOLUME: 40 CU. YD.

30" SLPPMCCS PIPE (TYPE 2 BEDDING) = 69 LIN. FT.
30" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 69 LIN. FT.
TYPE C DROP INLET = 4' x 3'-2"
TYPE MO DROP INLET = 5' DIA.
WITH FES
WITH 24" X 11' R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) PIPE CULVERT TO DROP INLET ON RT. AND
WITH 8' EXTENSION AND 30" x 69'
DROP INLET ON RT. H = 6'-6" STA. 161+00 CONSTRUCT

36" SLPPMCCS PIPE (TYPE 2 BEDDING) = 253 LIN. FT.
36" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 253 LIN. FT.
TYPE C DROP INLET = 4' x 3'-8"
TYPE MO DROP INLET = 5' DIA.
PIPE CULVERT TO DROP INLET ON RT.
WITH 36" x 253'
DROP INLET ON RT. WITH BACK OPENING H = 7'-11" STA. 161+75 CONSTRUCT
STA. 162+15.00 TO STA. 163+50.12

6.10% ELEV. 1251.81
-2.53% RT. DITCH GRADE
STA. 163+00.00 BEGIN
ELEV. 1250.54
-2.53% RT. DITCH GRADE
STA. 163+50.12 END

STAGE 1B: CUT AREA: 0.0 SQ. FT.
STAGE 1B: FILL AREA: 0.0 SQ. FT.
STAGE 1B: CUT VOLUME: 0 CU. YD.
STAGE 1B: FILL VOLUME: 0 CU. YD.

STAGE 1C: CUT AREA: 0.0 SQ. FT.
STAGE 1C: FILL AREA: 0.0 SQ. FT.
STAGE 1C: CUT VOLUME: 0 CU. YD.
STAGE 1C: FILL VOLUME: 0 CU. YD.

RAMP 1 / FUTRALL DR. TEMP. CONNECTION
STA. 100+00.00 TO STA. 101+00.00

STAGE 1: CUT AREA: 0.0 SQ. FT.
STAGE 1: FILL AREA: 0.0 SQ. FT.
STAGE 1: CUT VOLUME: 0 CU. YD.
STAGE 1: FILL VOLUME: 0 CU. YD.
STAGE 2: CUT AREA: 0.0 SQ. FT.
STAGE 2: FILL AREA: 0.0 SQ. FT.
STAGE 2: CUT VOLUME: 0 CU. YD.
STAGE 2: FILL VOLUME: 0 CU. YD.
STAGE 3: CUT AREA: 0.0 SQ. FT.
STAGE 3: FILL AREA: 0.0 SQ. FT.
STAGE 3: CUT VOLUME: 0 CU. YD.
STAGE 3: FILL VOLUME: 0 CU. YD.

STAGE 1: FILL AREA: 70.8 SQ. FT.
STAGE 1: CUT AREA: 26.2 SQ. FT.

ELEV. 1262.27
-3% LT. DITCH GRADE
STA. 100+90.00 BEGIN

ELEV. 1253.24
1253.73

ELEV. 1252.57
-3.37% RT. DITCH GRADE
STA. 100+98.00 BEGIN

ELEV. 1259.57
-0.87% LT. DITCH GRADE
STA. 101+80.00 END

ELEV. 1259.57
-0.5% RT. DITCH GRADE
STA. 101+20.00 BEGIN

ELEV. 1252.57
-3.37% RT. DITCH GRADE
STA. 101+80.00 END

ELEV. 1259.57
STATE SHEET NO. 479

REVISED DATE 09/21/2020

JOB NO. 040847

FILMED DATE 09/21/2020

FILMED DATE 09/21/2020

FED.AID PROJ.NO. 040847

FED.RD. DIST.NO. 040847

N. SHILOH DR.

18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 46 LIN. FT.

18" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 46 LIN. FT.

TYPE C DROP INLET = 4' x 2'-6"

TYPE MO DROP INLET = 4' DIA.

PIPE CULVERT TO DROP INLET ON LT.

WITH 18" x 46'

DROP INLET ON LT. H = 3'-0"

STA. 102+80 CONSTRUCT

STAGE 1: CUT AREA: 2.6 SQ. FT.

STAGE 2: CUT AREA: 41.1 SQ. FT.

STAGE 3: FILL AREA: 11.6 SQ. FT.

STAGE 3: CUT AREA: 405.6 SQ. FT.

STAGE 2: CUT AREA: 55.3 SQ. FT.

STAGE 3: FILL AREA: 7.4 SQ. FT.

STAGE 3: CUT AREA: 446.6 SQ. FT.

STAGE 3: FILL AREA: 7.8 SQ. FT.

STAGE 3: CUT VOLUME: 38 CU. YD.

STAGE 3: FILL VOLUME: 12 CU. YD.

STAGE 3: CUT VOLUME: 648 CU. YD.

STAGE 1: CUT VOLUME: 1 CU. YD.

STAGE 3: FILL VOLUME: 7 CU. YD.

STAGE 3: CUT VOLUME: 316 CU. YD.

STAGE 3: FILL VOLUME: 28 CU. YD.

STA. 103+00.00

STA. 104+00.00

STA. 102+80.00 TO STA. 104+00.00

N. SHILOH DR. TEMP. CONNECTION

RAMP 3

ELEV. 1257.65 -0.87% LT. DITCH GRADE

STA. 104+00.00 END

ELEV. 1251.09 -0.5% RT. DITCH GRADE

STA. 104+16.08 END

F.L. D.I. = 1257.51
SHILOH DR.

STAGE 3: CUT AREA: 10.5 SQ. FT.
STAGE 3: FILL AREA: 22.3 SQ. FT.
STAGE 3: CUT VOLUME: 4 CU. YD.
STAGE 3: FILL VOLUME: 9 CU. YD.

STAGE 3: CUT AREA: 12.7 SQ. FT.
STAGE 3: FILL AREA: 56.6 SQ. FT.
STAGE 3: CUT VOLUME: 43 CU. YD.
STAGE 3: FILL VOLUME: 146 CU. YD.

STAGE 3: CUT AREA: 14.8 SQ. FT.
STAGE 3: FILL AREA: 59.3 SQ. FT.
STAGE 3: CUT VOLUME: 51 CU. YD.
STAGE 3: FILL VOLUME: 215 CU. YD.

SHILOH DR. CROSS SECTIONS

STA. 158+00.00 TO STA. 160+00.00

STAGE 4: FILL AREA: 3.1 SQ. FT.
STAGE 4: CUT AREA: 151.9 SQ. FT.
STAGE 4: FILL VOLUME: 1 CU. YD.
STAGE 4: CUT VOLUME: 66 CU. YD.

STAGE 4: FILL AREA: 0.5 SQ. FT.
STAGE 4: CUT AREA: 249.5 SQ. FT.
STAGE 4: FILL VOLUME: 7 CU. YD.
STAGE 4: CUT VOLUME: 743 CU. YD.

STAGE 4: FILL AREA: 24.7 SQ. FT.
STAGE 4: CUT AREA: 285.9 SQ. FT.
STAGE 4: FILL VOLUME: 47 CU. YD.
STAGE 4: CUT VOLUME: 991 CU. YD.

STA. 158+00.00
ELEV. 1254.50
-2.68% LT. DITCH GRADE
STA. 159+00.00 END

STA. 159+00.00 BEGIN
ELEV. 1254.50
-1.77% LT. DITCH GRADE

STA. 160+00.00 BEGIN
ELEV. 1253.70
-1.18% RT. DITCH GRADE

SHILOH DR.

STA. 158+00.00 TO STA. 160+00.00

STA. 160+00.00

STA. 159+00.00

STA. 158+00.00
<table>
<thead>
<tr>
<th>STA</th>
<th>F.L. OUTLET</th>
<th>F.L. INLET</th>
</tr>
</thead>
<tbody>
<tr>
<td>164.70</td>
<td>1245.90</td>
<td>1248.07</td>
</tr>
<tr>
<td>164.98</td>
<td>1245.22</td>
<td>1247.67</td>
</tr>
<tr>
<td>165.00</td>
<td>1248.21</td>
<td>1248.20</td>
</tr>
<tr>
<td>165.00</td>
<td>1248.21</td>
<td>1248.20</td>
</tr>
</tbody>
</table>

STAGE 3:
- Cut Area: 60.6 SQ. FT.
- Fill Volume: 369 CU. YD.
- Cut Volume: 4 CU. YD.
- Fill Volume: 172 CU. YD.
- Cut Volume: 57 CU. YD.
- Fill Volume: 21 CU. YD.
- Cut Volume: 37 CU. YD.
SHILOH DR. CROSS SECTIONS

STA. 171+00.00 TO STA. 173+00.00

STAGE 2: FILL AREA: 701.3 SQ. FT.
STAGE 2: CUT AREA: 0.0 SQ. FT.
STAGE 3: FILL AREA: 9.8 SQ. FT.
STAGE 3: CUT AREA: 0.0 SQ. FT.

STAGE 2: FILL AREA: 360.3 SQ. FT.
STAGE 2: CUT AREA: 0.0 SQ. FT.
STAGE 3: FILL AREA: 0.0 SQ. FT.
STAGE 3: CUT AREA: 0.0 SQ. FT.

STAGE 2: FILL VOLUME: 914 CU. YD.
STAGE 2: CUT VOLUME: 17 CU. YD.
STAGE 3: FILL VOLUME: 18 CU. YD.
STAGE 3: CUT VOLUME: 1034 CU. YD.

STAGE 2: FILL VOLUME: 1489 CU. YD.
STAGE 3: FILL VOLUME: 0 CU. YD.
STAGE 3: CUT VOLUME: 1824 CU. YD.

STA. 171+00.00
STA. 172+00.00
STA. 173+00.00
SHILOH DR. CROSS SECTIONS

STA. 173+17.26 TO STA. 173+87.79

FED. AID PROJ. NO.

SHILOH DR. CROSS SECTIONS

STA. 173+87.79

STA. 173+17.26 TO STA. 173+87.79

STA. 173+17.26
STAGE 3: FILL AREA: 282.7 SQ. FT.

STAGE 3: FILL AREA: 177.2 SQ. FT.

TYPE C DROP INLET = 4' x 3'-8"

TYPE MO DROP INLET = 6' DIA.

WITH FES R.C. ARCH PIPE CULVERT (CLASS III) (TYPE 3 BEDDING)

WITH 4' EXTENSION AND 36" x 23" x 6' DROP INLET ON LT. H = 3'-7"

STA. 11+95 CONSTRUCT

18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 27 LIN. FT.

18" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 27 LIN. FT.

TYPE C DROP INLET = 4' x 2'-6"

TYPE MO DROP INLET = 4' DIA.

PIPE CULVERT TO DROP INLET ON RT.

WITH 8' EXTENSION AND 18" x 27'

DROP INLET ON RT. H = 3'-0"

STA. 11+95 CONSTRUCT

44" X 27" FES = 4 EA.

DBL. 44" X 27" R.C. ARCH PIPE = 198 LIN. FT.

Q10 = 58 CFS  D.A. = 11.7 ACRES

FES LT. & RT.

(CLASS III) (TYPE 3 BEDDING) WITH

WITH 13° RT. FWD. SKEW

DBL. 44" X 27" X 99' R.C. ARCH PIPE CULVERT

STA. 12+42 CONSTRUCT
STA. 12+58.00 TO STA. 12+88.67

STAGE 3: FILL AREA: 265.7 SQ. FT.

STAGE 3: CUT AREA: 0.0 SQ. FT.

STAGE 3: FILL VOLUME: 162 CU. YD.

STAGE 3: CUT VOLUME: 0 CU. YD.

STAGE 3: FILL VOLUME: 90 CU. YD.
SEE DRIVEWAY PROFILE SHEETS

STA. 10+00.00 TO STA. 12+00.00

STAGE 3: CUT AREA: 0.0 SQ. FT.
STAGE 3: FILL AREA: 0.0 SQ. FT.
STAGE 3: CUT VOLUME: 0 CU. YD.
STAGE 3: FILL VOLUME: 0 CU. YD.

STA. 10+70.00

STAGE 3: CUT AREA: 0.1 SQ. FT.

STA. 11+00.00

STA. 12+00.00

STA. 10+00.00 to STA. 12+00.00

JEWELL RD.
JEWELL RD. CROSS SECTIONS

Q50 = 556 CFS  D.A. = 160 ACRES
WITH 3:1 WINGS LT. & RT.
WITH 15° RT. FWD. SKEW
DBL. 8' X 6' X 67' R.C. BOX CULVERT
STA. 12+50 CONSTRUCT

STAGE 3: FILL AREA: 512.2 SQ. FT.
STAGE 3: FILL AREA: 629.1 SQ. FT.
STAGE 3: FILL AREA: 604.6 SQ. FT.
STAGE 3: FILL VOLUME: 430 CU. YD.
STAGE 3: FILL VOLUME: 190 CU. YD.
STAGE 3: FILL VOLUME: 183 CU. YD.
STAGE 3: FILL VOLUME: 476 CU. YD.

F.L. OUTLET = 1253.22
F.L. INLET = 1255.47
STA. 13+00.64 TO STA. 13+13.06

STAGE 3: CUT AREA: 0.0 SQ. FT.
STAGE 3: FILL AREA: 0.0 SQ. FT.
STAGE 3: CUT VOLUME: 0 CU. YD.
STAGE 3: FILL VOLUME: 0 CU. YD.
STAGE 1B: FILL AREA: 0.0 SQ. FT.
STAGE 1B: CUT AREA: 0.0 SQ. FT.
STAGE 1B: FILL AREA: 48.0 SQ. FT.
STAGE 1B: CUT AREA: 0.8 SQ. FT.
STAGE 1B: FILL AREA: 100.3 SQ. FT.
STAGE 1B: CUT AREA: 0.0 SQ. FT.
STAGE 1B: FILL VOLUME: 0 CU. YD.
STAGE 1B: CUT VOLUME: 0 CU. YD.
STAGE 1B: FILL VOLUME: 24 CU. YD.
STAGE 1B: CUT VOLUME: 0 CU. YD.
STAGE 1B: FILL VOLUME: 30 CU. YD.
STAGE 1B: CUT VOLUME: 0 CU. YD.

RAMP 1 / FUTRALL DRIVE
ELEV. 1241.64
2.97% RT. DITCH GRADE
STA. 10+46.00
STA. 10+57.00
STA. 10+69.00
STA. 10+86.33
STA. 10+00.00 TO STA. 10+57.00

24" FES = 2 EA.
24" R.C. PIPE = 65 LIN. FT.
Q50 = 4 CFS  D.A. = 0.8 ACRES
FES LT. & RT. (CLASS III) (TYPE 3 BEDDING) WITH 18° RT. FWD. SKEW
24" X 65' R.C. PIPE CULVERT STA. 10+57 CONSTRUCT

F.L. OUTET = 1241.23
F.L. INLET = 1241.67

STA. 10+00.00 TO STA. 10+57.00
18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 108 LIN. FT.
18" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 108 LIN. FT.
TYPE MO DROP INLET = 4' DIA.
PIPE CULVERT TO DROP INLET ON LT. WITH 4' EXTENSION AND 18" x 108' DROP INLET ON LT. H = 3'-6"
STA. 12+20 CONSTRUCT

24" SLPPMCCS PIPE (TYPE 2 BEDDING) = 111 LIN. FT.
24" R.C. PIPE CULVERT (CLASS III) (TYPE 3 BEDDING) = 111 LIN. FT.
TYPE MO DROP INLET = 4' DIA.
PIPE CULVERT TO DROP INLET ON RT. WITH 4' EXTENSION AND 24" x 111' DROP INLET ON RT. H = 4'-1"
STA. 12+20 CONSTRUCT

STAGE 1B: CUT AREA: 22.0 SQ. FT.
STAGE 1B: FILL AREA: 5.2 SQ. FT.

STAGE 1B: CUT AREA: 24.2 SQ. FT.
STAGE 1B: FILL AREA: 2.2 SQ. FT.

STAGE 1B: CUT VOLUME: 28 CU. YD.
STAGE 1B: FILL VOLUME: 3 CU. YD.

STAGE 1B: CUT VOLUME: 17 CU. YD.
STAGE 1B: FILL VOLUME: 3 CU. YD.

STAGE 1B: CUT VOLUME: 9 CU. YD.
STAGE 1B: FILL VOLUME: 1 CU. YD.
STA. 100+00.00 TO STA. 103+00.00

STAGE 3:
- CUT AREA: 0.0 SQ. FT.
- FILL AREA: 0.0 SQ. FT.
- CUT VOLUME: 0 CU. YD.
- FILL VOLUME: 0 CU. YD.
STAGE 3: CUT AREA: 126.8 SQ. FT.
STAGE 3: CUT VOLUME: 504 CU. YD.
STAGE 3: FILL VOLUME: 34 CU. YD.

STA. 103+65.00 TO STA. 105+00.00

1253.93
1245.90
1245.90
1255.65
1252.22
1245.68
1245.68
1254.98
1255.43
1244.47
1244.47
1244.63

RAMP 1: FUTURLA DR. TEMP CONNECTION
STAGE 3: CUT VOLUME: 1135 CU. YD.
STAGE 3: FILL VOLUME: 34 CU. YD.

STAGE 3: CUT AREA: 486.1 SQ. FT.
STAGE 3: FILL AREA: 0.0 SQ. FT.

STAGE 3: CUT VOLUME: 1670 CU. YD.
STAGE 3: FILL VOLUME: 0 CU. YD.

STAGE 3: CUT AREA: 618.2 SQ. FT.
STAGE 3: FILL AREA: 0.0 SQ. FT.

STA. 106+00.00 TO STA. 108+00.00
STAGE 3: CUT AREA: 910.2 SQ. FT.
STAGE 3: CUT VOLUME: 2967 CU. YD.

STA 110+00.00 TO STA 111+00.00

STA 110+00.00

STAGE 3: FILL AREA: 0.0 SQ. FT.
STAGE 3: FILL VOLUME: 0 CU. YD.

STA 109+00.00 TO STA 111+00.00

STA 109+00.00

STAGE 3: CUT AREA: 692.2 SQ. FT.
STAGE 3: FILL AREA: 0.0 SQ. FT.

STA 109+00.00 TO STA 111+00.00

STA 109+00.00

DRAINAGE CHANNEL CROSS SECTIONS
STAGE 3: CUT VOLUME: 4401 CU. YD.

STAGE 3: CUT AREA: 414.1 SQ. FT.
STAGE 3: FILL AREA: 0.0 SQ. FT.
STAGE 3: CUT VOLUME: 2876 CU. YD.
STAGE 3: FILL VOLUME: 0 CU. YD.
STAGE 3: CUT AREA: 468.7 SQ. FT.
STAGE 3: FILL AREA: 0.0 SQ. FT.
STAGE 3: CUT VOLUME: 1635 CU. YD.
STAGE 3: FILL VOLUME: 0 CU. YD.

STA. 112+00.00 TO STA. 114+00.00

DRAINAGE CHANNEL CROSS SECTIONS
DRAINAGE CHANNEL CROSS SECTIONS

STA. 118+95.44 TO STA. 119+78.87

STAGE 3:
- CUT AREA: 298.8 SQ. FT.
- FILL AREA: 0.0 SQ. FT.
- CUT VOLUME: 645 CU. YD.
- FILL VOLUME: 0 CU. YD.

 STA. 118+95.44

 STA. 119+78.87

1238.09 1230.85 1230.85 1237.51
STA. 157+00.00 TO STA. 160+00.00

STA. 158+00.00 TO STA. 160+00.00

STA. 159+00.00 TO STA. 160+00.00

STA. 160+00.00 TO STA. 160+00.00

RAF/RAMP 1 / FUTRALL DR. TEMP. CONNECTION

STAGE 1A: CUT AREA: 4.6 SQ. FT.
STAGE 1A: FILL AREA: 15.3 SQ. FT.
STAGE 1A: CUT VOLUME: 26 CU. YD.
STAGE 1A: FILL VOLUME: 28 CU. YD.

STAGE 1A: CUT AREA: 5.6 SQ. FT.
STAGE 1A: FILL AREA: 31.9 SQ. FT.
STAGE 1A: CUT VOLUME: 19 CU. YD.
STAGE 1A: FILL VOLUME: 87 CU. YD.

STAGE 1A: CUT AREA: 6.2 SQ. FT.
STAGE 1A: FILL AREA: 29.4 SQ. FT.
STAGE 1A: CUT VOLUME: 22 CU. YD.
STAGE 1A: FILL VOLUME: 113 CU. YD.

STAGE 1A: CUT AREA: 7.2 SQ. FT.
STAGE 1A: FILL AREA: 14.3 SQ. FT.
STAGE 1A: CUT VOLUME: 25 CU. YD.
STAGE 1A: FILL VOLUME: 81 CU. YD.
RAMP 1 / FUTRALL DR. TEMP. CONNECTION STA. 100+25.46 =
FUTRALL DR. STA. 61+25.43, 2070' LT.

STAGE 1A: CUT VOLUME: 20 CU. YD.
STAGE 1A: FILL VOLUME: 12 CU. YD.
STA. 161+00.00 TO STA. 102+00.00

STAGE 1A: CUT AREA: 7.7 SQ. FT.
STAGE 1A: FILL AREA: 5.4 SQ. FT.

STAGE 1A: CUT AREA: 11.6 SQ. FT.
STAGE 1A: FILL AREA: 6.1 SQ. FT.

STAGE 1A: CUT AREA: 3.6 SQ. FT.
STAGE 1A: FILL AREA: 14.4 SQ. FT.

STAGE 1A: CUT VOLUME: 21 CU. YD.
STAGE 1A: FILL VOLUME: 28 CU. YD.

STAGE 1A: CUT AREA: 12.5 SQ. FT.
STAGE 1A: FILL AREA: 48.1 SQ. FT.
STAGE 1A: CUT VOLUME: 30 CU. YD.
STAGE 1A: FILL VOLUME: 116 CU. YD.
RAMP I / FUTRALL DR. TEMP CONNECTION STA. 103+00.00 to STA. 105+43.32

EXIST. RAMP 1 STA. 167+01.30, 11.50' RT.

RAMP I / FUTRALL DR. TEMP CONNECTION STA. 105+43.32 = 1253.08

STAGE 1A: CUT AREA: 3.2 SQ. FT.
STAGE 1A: FILL AREA: 85.4 SQ. FT.
STAGE 1A: CUT VOLUME: 29 CU. YD.
STAGE 1A: FILL VOLUME: 247 CU. YD.

STAGE 1A: CUT AREA: 1.7 SQ. FT.
STAGE 1A: FILL AREA: 66.8 SQ. FT.
STAGE 1A: CUT VOLUME: 9 CU. YD.
STAGE 1A: FILL VOLUME: 282 CU. YD.

STAGE 1A: CUT AREA: 8.6 SQ. FT.
STAGE 1A: FILL AREA: 37.8 SQ. FT.
STAGE 1A: CUT VOLUME: 19 CU. YD.
STAGE 1A: FILL VOLUME: 194 CU. YD.

STAGE 1A: CUT AREA: 11.7 SQ. FT.
STAGE 1A: FILL AREA: 24.2 SQ. FT.
STAGE 1A: CUT VOLUME: 16 CU. YD.
STAGE 1A: FILL VOLUME: 50 CU. YD.
RAMP 1 / FUTRALL DR. TEMP. CONNECTION

STAGE 1A: CUT VOLUME: 40 CU. YD.
STAGE 1A: FILL VOLUME: 60 CU. YD.

STAGE 1A: CUT AREA: 10.1 SQ. FT.
STAGE 1A: FILL AREA: 8.4 SQ. FT.

STAGE 1A: CUT AREA: 9.8 SQ. FT.
STAGE 1A: FILL AREA: 32.6 SQ. FT.

STAGE 1A: CUT VOLUME: 37 CU. YD.
STAGE 1A: FILL VOLUME: 76 CU. YD.

STAGE 1A: CUT AREA: 9.5 SQ. FT.
STAGE 1A: FILL AREA: 23.3 SQ. FT.

STAGE 1A: CUT VOLUME: 36 CU. YD.
STAGE 1A: FILL VOLUME: 104 CU. YD.
STA. 178+00.00 TO STA. 181+00.00

RAMP 2 TEMP. WIDENING

STAGE 1A: CUT AREA: 9.0 SQ. FT.
STAGE 1A: FILL AREA: 14.1 SQ. FT.
STAGE 1A: CUT VOLUME: 34 CU. YD.
STAGE 1A: FILL VOLUME: 46 CU. YD.

STAGE 1A: CUT AREA: 8.4 SQ. FT.
STAGE 1A: FILL AREA: 17.5 SQ. FT.
STAGE 1A: CUT VOLUME: 32 CU. YD.
STAGE 1A: FILL VOLUME: 59 CU. YD.

STAGE 1A: CUT AREA: 8.2 SQ. FT.
STAGE 1A: FILL AREA: 23.3 SQ. FT.
STAGE 1A: CUT VOLUME: 31 CU. YD.
STAGE 1A: FILL VOLUME: 76 CU. YD.

STAGE 1A: CUT AREA: 8.9 SQ. FT.
STAGE 1A: FILL AREA: 32.4 SQ. FT.
STAGE 1A: CUT VOLUME: 32 CU. YD.
STAGE 1A: FILL VOLUME: 103 CU. YD.
STA. 186+00.00 TO STA. 187+36.75

STA. 186+00.00 TO STA. 187+36.75

STA. 186+00.00 TO STA. 187+36.75
RAMP 4 TEMP. WIDENING CROSS SECTIONS

STAGE 1:
- CUT AREA: 12.9 SQ. FT.
- FILL AREA: 0.0 SQ. FT.
- CUT VOLUME: 44 CU. YD.
- FILL VOLUME: 0 CU. YD.

STAGE 1:
- CUT AREA: 11.0 SQ. FT.
- FILL AREA: 149.9 SQ. FT.
- CUT VOLUME: 44 CU. YD.
- FILL VOLUME: 278 CU. YD.

STAGE 1:
- CUT AREA: 10.6 SQ. FT.
- FILL AREA: 57.3 SQ. FT.
- CUT VOLUME: 40 CU. YD.
- FILL VOLUME: 384 CU. YD.
RAMP 4 TEMP. WIDENING CROSS SECTIONS

STA. 167+00.00 TO STA. 170+00.00

STAGE 1: CUT VOLUME: 40 CU. YD.
STAGE 1: FILL VOLUME: 219 CU. YD.

STAGE 1: CUT VOLUME: 40 CU. YD.
STAGE 1: FILL VOLUME: 195 CU. YD.

STAGE 1: CUT VOLUME: 40 CU. YD.
STAGE 1: FILL VOLUME: 219 CU. YD.

STAGE 1: CUT VOLUME: 40 CU. YD.
STAGE 1: FILL VOLUME: 195 CU. YD.

STAGE 1: CUT VOLUME: 40 CU. YD.
STAGE 1: FILL VOLUME: 219 CU. YD.

STAGE 1: CUT VOLUME: 40 CU. YD.
STAGE 1: FILL VOLUME: 195 CU. YD.

STAGE 1: CUT VOLUME: 40 CU. YD.
STAGE 1: FILL VOLUME: 219 CU. YD.

STAGE 1: CUT VOLUME: 40 CU. YD.
STAGE 1: FILL VOLUME: 195 CU. YD.
RAMP 4 TEMP. WIDENING

STA. 171+00.00 TO STA. 172+00.00
<table>
<thead>
<tr>
<th>STA</th>
<th>Cut Area</th>
<th>Fill Area</th>
<th>Cut Volume</th>
<th>Fill Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>STA 105+00.00</td>
<td>2.1 SQ. FT.</td>
<td>56.0 SQ. FT.</td>
<td>195 CU. YD.</td>
<td>152 CU. YD.</td>
</tr>
<tr>
<td>STA 106+00.00</td>
<td>2.8 SQ. FT.</td>
<td>92.5 SQ. FT.</td>
<td>9 CU. YD.</td>
<td>275 CU. YD.</td>
</tr>
<tr>
<td>STA 107+00.00</td>
<td>4.9 SQ. FT.</td>
<td>80.2 SQ. FT.</td>
<td>14 CU. YD.</td>
<td>320 CU. YD.</td>
</tr>
<tr>
<td>STA 108+00.00</td>
<td>5.2 SQ. FT.</td>
<td>107.7 SQ. FT.</td>
<td>19 CU. YD.</td>
<td>348 CU. YD.</td>
</tr>
</tbody>
</table>

N. SHILOH DR. TEMP. CONNECTION
STA 105+00.00 TO STA 108+00.00
N. SHILOH DR. TEMP. CONNECTION

STA. 113+00.00 to STA. 116+00.00

Stage 1: Cut Volume: 19 CU. YD.

Stage 1: Fill Volume: 41 CU. YD.

Stage 1: Cut Area: 26.0 SQ. FT.

Stage 1: Fill Area: 3.3 SQ. FT.

Stage 1: Cut Volume: 108 CU. YD.

Stage 1: Fill Volume: 19 CU. YD.

Stage 1: Cut Area: 0.5 SQ. FT.

Stage 1: Fill Area: 0.8 SQ. FT.
STA. 158+00.00

STA. 157+00.00

STA. 156+00.00

STA. 155+65.91 TO STA. 158+00.00

STAGE 2: CUT VOLUME: 0.0 CU. YD.
STAGE 2: FILL VOLUME: 0.0 CU. YD.

STAGE 2: CUT AREA: 0.0 SQ. FT.
STAGE 2: FILL AREA: 0.0 SQ. FT.

STAGE 2: CUT VOLUME: 3 CU. YD.
STAGE 2: FILL VOLUME: 0 CU. YD.

STAGE 2: CUT AREA: 4.6 SQ. FT.
STAGE 2: FILL AREA: 3.4 SQ. FT.

STAGE 2: CUT VOLUME: 18 CU. YD.
STAGE 2: FILL VOLUME: 6 CU. YD.

STAGE 2: CUT AREA: 3.9 SQ. FT.
STAGE 2: FILL AREA: 3.0 SQ. FT.
<table>
<thead>
<tr>
<th>STA.</th>
<th>Stage 1: Cut Area</th>
<th>Stage 1: Fill Area</th>
<th>Stage 1: Cut Volume</th>
<th>Stage 1: Fill Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>STA. 162+00.00</td>
<td>0.0 SQ. FT.</td>
<td>0.0 SQ. FT.</td>
<td>0.0 CU. YD.</td>
<td>0.0 CU. YD.</td>
</tr>
</tbody>
</table>

**Shiloh Dr. Temp. Widening**

**STA. 162+00.00 to STA. 162+00.00**
GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING AND POURED MONOLITHICALLY.

SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

1"-WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 48" INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

THE WALLS SHALL NOT BE PAID FOR THE STEEL AND ADDITIONAL CONCRETE FOR "CONCRETE DITCH PAVING." BE INCLUDED IN THE PRICE BID FOR "CONCRETE DITCH PAVING."

ROCK EXCAVATION

THE ENGINEER IN DIRECTED BY BE ALTERED TO 1'-0" TOE WALL DEPTH MAY BE ALTERED TO 1'-0" TOE WALL DETAIL FOR CONCRETE DITCH PAVING

4" ROUNDING

AT 10'-0" CENTERS

3" DIA. WEEP HOLE

AT 10'-0" CENTERS

SLPDE: VARIABLE

FOR "W" DIMENSIONS REFER TO TABULATION OF QUANTITIES

FOR "W" & "B" DIMENSIONS REFER TO TABULATION OF QUANTITIES

TYPE A

TYPE B

ENERGY DISSIPATORS TO BE USED FOR THE ENTIRE LENGTH OF DITCH WHEN SLOPE OF DITCH PAVING EXCEEDS 7%. THE DISSIPATORS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.

NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

STANDARD DRAWING CDP-1


CONCRETE COMBINATION CURB AND GUTTER

DETAIL OF GUTTER SLOPE
GUTTER SHALL BE CONSTRUCTED ON 2\% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.

LONGITUDINAL SECTION
ELEVATION

ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB

CONCRETE CURB

DETAILS OF MODIFIED CURB
PLAN
CHANGED GRATE DETAIL, DELETED DI (TYPE D), REPLACED RING & COVER
6"
ADDED DIMENSION TO TYPE IV-A
SECTION B-B
ADDED NOTE 10
REVISED HEAVY DUTY RING & COVER
A
"a" BARS
6"
DATE FILMED
6"
REVISION
"f" BARS
6"
SEE PLANS
1" 

NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM 
TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.

SECTION A-A

METHOD OF CONSTRUCTING DROP INLET 
ON EXISTING R.C. BOX CULVERT 

SECTION B-B

METHOD OF CONSTRUCTING DROP INLET 
ON NEW R.C. BOX CULVERT 
NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM 
TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.

SECTION A-A

HEAVY DUTY RING & COVER

SECTION A-A

FUNCTION OF DROP INLET 

SECTION B-B

APPROX. WEIGHT = 11 LBS. (CAST IRON)

SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS

SECTION B-B

SECTION A-A

NOTE: REINF. BARS TO BE #4 BARS

SECTION B-B

NOTE: REINF. BARS TO BE #4 BARS

SECTION B-B

NOTE: REINF. BARS TO BE #4 BARS

SECTION A-A

GENERAL NOTES:

1. ALL EXPOSED CORNERS SHALL BE 4" CHAMFERED.

2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON 
WHERE REQUIRED.

3. EXPANSION JOINT MATERIAL SHALL BE 1" PREFORMED FIBER.

4. GRATE OR GRATE AND FRAME SHALL BE 
CONSTRUCTED OF CAST IRON AND SHALL CONFORM 
TO THE REQUIREMENTS OF THE STANDARD 
SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO 
M105 CLASS 35B. GRATE MAY BE USED 
WITHOUT FRAME.

5. GRATE AND FRAME SHALL NOT BE PAINTED.

6. GRATE SHALL BE BICYCLE SAFE.

7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED 
WITH FLANGE ON TOP.

8. HEAVY DUTY RING AND COVER SHALL BE 
INSTALLED IN NEW BOXES OF 12" ID OR OVER.

9. HEAVY DUTY RING AND COVER SHALL NOT BE 
PAINTED.

10. DIMENSIONS SHOWN FOR RING AND COVER ARE 
APPROXIMATE.

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY 
BE USED JOINING BOX (TYPE E)

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES 

STANDARD DRAWING FPC-9

APPENDIX 9: GENERAL NOTES
ADDED PEDESTRIAN FRAME & GRATE

REVISED HEAVY DUTY RING & COVER

REVISED ASTM REF. TO AASHTO

REMOVED NOTE 5, REV. DIMENSIONS, 3" " 6" 4" TYP.

DETAILS OF RIBBED VANE GRATE AND FRAME

GENERAL NOTES (PEDESTRIAN GRATE & FRAME):
1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE 3" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
3. THE GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. THE GRATE AND FRAME SHALL NOT BE PAINTED.
5. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN. INLET IN THE ASSEMBLED POSITION.

GENERAL NOTES (RIBBED VANE GRATE & FRAME):
1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL BE USED IN LIEU OF THE TWO RIBBED VANE GRATES. ONE PEDESTRIAN GRATE WITH FRAME NORMAL.
2. APPROXIMATE WEIGHT OF GRATE SHALL Be 170 LBS.
3. ALL EXPOSED CORNERS ARE TO HAVE A 1" CHAMFER.
4. APPROXIMATE HEIGHT OF GRATE SHALL BE 15'-0" TO 35'-0".
5. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
6. STEPS 16" O.C.

GENERAL NOTES (HEAVY DUTY RING & COVER):
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
4. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
5. ALL EXPOSED CORNERS ARE TO HAVE A 1" CHAMFER.
6. REQUIRED CLEARANCE IN SECTIONS 'A', 'B', & 'C' SHALL BE 0" AT OTHER INSTALLATIONS.

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX):
1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A 1" CHAMFER.

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX):
1. FOR THE OBSERVATION OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER.  
2. APPROXIMATE WEIGHT OF GRATE SHALL Be 170 LBS.
3. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
4. REQUIRED CLEARANCE IN SECTIONS 'A', 'B', & 'C' SHALL BE 0" AT OTHER INSTALLATIONS.
5. ALL EXPOSED CORNERS ARE TO HAVE A 1" CHAMFER.

GENERAL NOTES (HEAVY DUTY RING & COVER):
1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A 1" CHAMFER.
4. REQUIRED CLEARANCE IN SECTIONS 'A', 'B', & 'C' SHALL BE 0" AT OTHER INSTALLATIONS.
5. ALL EXPOSED CORNERS ARE TO HAVE A 1" CHAMFER.

GENERAL NOTES (HEAVY DUTY RING & COVER):
1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A 1" CHAMFER.
4. REQUIRED CLEARANCE IN SECTIONS 'A', 'B', & 'C' SHALL BE 0" AT OTHER INSTALLATIONS.

GENERAL NOTES (HEAVY DUTY RING & COVER):
1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A 1" CHAMFER.
4. REQUIRED CLEARANCE IN SECTIONS 'A', 'B', & 'C' SHALL BE 0" AT OTHER INSTALLATIONS.
5. ALL EXPOSED CORNERS ARE TO HAVE A 1" CHAMFER.
METHODS OF INSTALLATION OF GUARDRAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

METHOD OF INSTALLATION OF GUARDRAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERMINAL (TYPE I)
(FULL SHOULDER WIDTH OR LESS BRIDGES)
THREE BEAM RAIL WITH STEEL TUBING BLOCKOUT AND STEEL POST
POSTS 1-7

W-BEAM TO THREE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8

GENERAL NOTES:
1. POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.
2. WOOD POSTS & WOOD BLOCKS SHALL BE NATIONAL ENGINEERING BUREAU (NER) OR SOUTHERN PINE.

REVISED POST 8 DIMENSIONS
07-14-10

DRAWN & ISSUED
03-30-00
08-22-02

ADDED PLASTIC BLOCKOUTS
11-16-17

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

WOOD POSTS & WOOD BLOCKS SHALL BE NATIONAL ENGINEERING BUREAU (NER) OR SOUTHERN PINE.

LIP CURB-REFER TO APPROACH GUTTER DETAILS

POSTS 1-6 BLOCKOUTS & WOOD POSTS
THREE BEAM RAIL WITH WOOD OR PLASTIC BLOCKOUTS & WOOD POSTS
POSTS 1-6

POST 7 BLOCKOUT & WOOD POST
THREE BEAM RAIL WITH WOOD OR PLASTIC BLOCKOUT & WOOD POST
POST 7

POST 8 PLASTIC BLOCKOUT & WOOD POST
TRANSITION RAIL WITH WOOD OR W-BEAM TO THREE BEAM TUBING BLOCKOUT
WITH WOOD OR PLASTIC BLOCKOUT & WOOD POST
POST 8
NOTE: SIDE TYPE A-1 IS FOR USE WITH EXISTING PAVEMENT.

ADDED GENERAL NOTES.

3'-1"

3'-1"

8"

8"

COURSE (CLASS 7)

6'-3"

1'-6"

STD. DRWG. GR-10

6'-3"

STD. DRWG. GR-10

1'-6"

3'-1"

8"

3'-1"

3'-1"

NOTE: SIDE TYPE A IS FOR USE WITH PROPOSED PAVEMENT.

2" PIN DIA.)

#4 BARS @ 6" CTRS.

(2" PIN DIA.)

#4 X 1'-2" HOOKED

CONCRETE BARRIER WALL

3'-6"

SIDE TYPE A)

4 EQUA L

SECTION A-A

SPACES

8"

6"

3" X 5'-0"

(10) #4 BARS

CONTINUOUS

2" CLEAR OF EXPANSION JOINTS.

DRAINAGE OPENING

3" X 5'-0"

BARRIER WALL

L

GUARDRAIL

FRAME CONNECTION

ELEVATION OF CONCRETE BARRIER WALL

GENERAL NOTES FOR CONCRETE BARRIER WALLS

1. ALL BARRIER WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 631 OF THE
STANDARD SPECIFICATIONS, 1989.
2. CONTRACTOR'S JOINTS REQUIRED. A 6"-OR-BRICK SPACING FOR BARRIER TYPES MEDIAN A,
SIDE C, D, & E IS RECOMMENDED FOR THREE MEDIAN TYPES MEDIAN A.
3. DOWEL BARS FOR BARRIER TYPES MEDIAN A, SIDE A WILL NOT BE REQUIRED IF BARRIER AND
BARRIER WALL.
4. DOWEL BARS FOR BARRIER TYPES MEDIAN A, SIDE A WILL NOT BE REQUIRED IF BARRIER AND
UNGRAB lance WtIg IMAG CONCRETE BARRIER WALLS.
5. ALL BARRIER WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 631 OF THE
STANDARD SPECIFICATIONS, 1989.
6. DOWEL BARS FOR BARRIER TYPES MEDIAN A, SIDE A WILL NOT BE REQUIRED IF BARRIER AND
BARRIER WALL. REFER TO STANDARD DRAWING GR-10 FOR INFORMATION REGARDING
OTHER REINFORCEMENT.
7. THE DESIGN OF BARRIER WALL TYPES MEDIAN A, SIDE A, B, C, D, & E IS BASED ON A MINIMUM FOUNDATION
BEARING CAPACITY OF ONE TON PER SQUARE FOOT. UNSTABLE FOUNDATION MATERIAL SHALL
BE REMOVED AND REPLACED TO PROVIDE A FIRM FOUNDATION AS DIRECTED BY THE ENGINEER.
8. SPACING BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 400 FT FOR BARRIER TYPES
MEDIAN A AND C, D, & E. EXPANSION JOINTS SHALL BE FORMED USING 1" PREFORMED JOINT FILLER. CONTINUOUS REINFORCEMENT SHALL BE CUT
AND SECURED ACCORDING TO 804.06 USING AN APPROVED ANCHORING SYSTEM FROM QPL.
9. CONSTRUCT DRAINAGE OPENINGS AT EVERY 50' O.C. AND AT SAGS IF SHOWN ON THE PLANS.
10. MAINTAIN 3" CLEARANCE ON ALL FOOTING REINFORCEMENT AND 2" CLEARANCE ON ALL
DOWEL BARS SHALL NOT BE PLACED WITHIN 3" OF DRAINAGE OPENINGS.
11. REFER TO BARRIER MOUNTED LUMINARE SPECIAL DETAILS FOR INFORMATION REGARDING
INLETS ARE TO BE SUBSIDIARY TO CONCRETE BARRIER WALLS.
12. BARRIER REINFORCING BARS ANCHORED INTO EXISTING CONCRETE PAVEMENT SHALL BE INSTALLED
CONDUIT RUNS.
13. DRAINAGE OPENINGS AT EVERY 50' O.C. AND At SAGS IF SHOWN ON THE PLANS.
14. REFER TO BARRIER MOUNTED LUMINARE SPECIAL DETAILS FOR INFORMATION REGARDING
OTHER REINFORCEMENT.
15. DOWEL BARS FOR BARRIER TYPES MEDIAN A, SIDE A WILL NOT BE REQUIRED IF BARRIER AND
BARRIER WALL.
16. REFER TO BARRIER MOUNTED LUMINARE SPECIAL DETAILS FOR INFORMATION REGARDING
INLETS ARE TO BE SUBSIDIARY TO CONCRETE BARRIER WALLS.
17. DOWEL BARS FOR BARRIER TYPES MEDIAN A, SIDE A WILL NOT BE REQUIRED IF BARRIER AND
BARRIER WALL. REFER TO STANDARD DRAWING GR-10 FOR INFORMATION REGARDING
OTHER REINFORCEMENT.
18. THE DESIGN OF BARRIER WALL TYPES MEDIAN A, SIDE A, B, C, D, & E IS BASED ON A MINIMUM FOUNDATION
BEARING CAPACITY OF ONE TON PER SQUARE FOOT. UNSTABLE FOUNDATION MATERIAL SHALL
BE REMOVED AND REPLACED TO PROVIDE A FIRM FOUNDATION AS DIRECTED BY THE ENGINEER.
19. SPACING BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 400 FT FOR BARRIER TYPES
MEDIAN A AND C, D, & E. EXPANSION JOINTS SHALL BE FORMED USING 1" PREFORMED JOINT FILLER. CONTINUOUS REINFORCEMENT SHALL BE CUT
AND SECURED ACCORDING TO 804.06 USING AN APPROVED ANCHORING SYSTEM FROM QPL.
20. CONSTRUCT DRAINAGE OPENINGS AT EVERY 50' O.C. AND AT SAGS IF SHOWN ON THE PLANS.
21. MAINTAIN 3" CLEARANCE ON ALL FOOTING REINFORCEMENT AND 2" CLEARANCE ON ALL
DOWEL BARS SHALL NOT BE PLACED WITHIN 3" OF DRAINAGE OPENINGS.
22. REFER TO BARRIER MOUNTED LUMINARE SPECIAL DETAILS FOR INFORMATION REGARDING
INLETS ARE TO BE SUBSIDIARY TO CONCRETE BARRIER WALLS.
23. DOWEL BARS FOR BARRIER TYPES MEDIAN A, SIDE A WILL NOT BE REQUIRED IF BARRIER AND
BARRIER WALL. REFER TO STANDARD DRAWING GR-10 FOR INFORMATION REGARDING
OTHER REINFORCEMENT.
APPROXIMATE QUANTITIES PER PAD

<table>
<thead>
<tr>
<th>TYPE</th>
<th>AGG. BASE COARSE</th>
<th>A.C.H.M. SURF. COURSE</th>
<th>MOMENTARY U.T.</th>
<th>AVG. 8'-6&quot; PORTLAND CEMENT</th>
<th>CONCRETE PIER PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>9.7</td>
<td>4.6</td>
<td>103</td>
<td>824</td>
<td>340</td>
</tr>
<tr>
<td>B</td>
<td>8.1</td>
<td>3.8</td>
<td>70</td>
<td>624</td>
<td>283</td>
</tr>
<tr>
<td>C</td>
<td>6.6</td>
<td>1.1</td>
<td>41</td>
<td>284</td>
<td>20.3</td>
</tr>
</tbody>
</table>

NOTE: APPROXIMATE QUANTITIES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. PAYMENT TO BE INCLUDED IN UNIT PRICE BID FOR METHOD OF INSTALLATION OF IMPACT ATTENUATION BARRIER FOR PIER PROTECTION.

GENERAL NOTES
1. DIMENSIONS SHOWN ARE TO TOP OF PLASTIC MODULES.
2. SPACING BETWEEN PLASTIC MODULES SHALL NOT EXCEED 6" AT THE TOP.
3. PLASTIC MODULES SHALL MEET THE REQUIREMENTS OF AASHTO M251 OR ANY OTHER STANDARD REQUIRED FOR ASSURING SAFETY HARDWARE (MASH).

DETAIL OF BARRIER PAD

NOTE: BARRIER PAD TO BE SKewed TOWARD ONCOMING TRAFFIC A MAXIMUM OF 6"WIDE WITH 6" BEING NORMAL.

METHOD OF INSTALLATION OF IMPACT ATTENUATION BARRIER

NOTE: GRADE TO DRAIN FLATTEN SLOPES AROUND BARRIER.

AVG. 8'-6" A.C.H.M. SURF. COURSE(1/2")
220 LBS. PER SQ. YD. & AGGREGATE BASE COURSE (4" COMPACTED DEPTH)
OR ALTERNATE #1

AVG. 8'-6" PORTLAND CEMENT CONCRETE BASE (4" L.T.)

EARTHWORK MATERIAL

NOTES:
1. DIMENSIONS SHOWN ARE TO TOP OF PLASTIC MODULES.
2. SPACING BETWEEN PLASTIC MODULES SHALL NOT EXCEED 6" AT THE TOP.
3. PLASTIC MODULES SHALL MEET THE REQUIREMENTS OF AASHTO M251 OR ANY OTHER STANDARD REQUIRED FOR ASSURING SAFETY HARDWARE (MASH).

ADDED REFERENCE TO MASH

REVIEWED TY. A & TY. C ARRAYS

REVISED FIXED OBJECT

REVISED NOTES & TYPE A MOD. WTS.

REDRAWN

CONFORMED TO 1988 SPECS

DATE REVISION DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

IMPACT ATTENUATION BARRIER

STANDARD DRAWING 1B-1
GENERAL NOTES

ALL EXPOSED CORNERS TO HAVE 1/2" CHAMFERS.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, WATERPROOFING, DRAINAGE FILL MATERIALS, GEOTEXTILE FILTER Fabrics as stated in the standard specifications shall be in accordance with the requirements of the Arkansas State Highway Commission unless otherwise directed by the Engineer.

LEAN GROUT shall consist of a sand cement mixture meeting the following requirements:

- The cement shall be Type 1 and shall meet the requirements of AASHTO M 85.
- The sand shall meet the requirements of Fine Aggregate as specified in Section 802.02 of the Standard Specifications.
- The cement shall be Type 1 and shall meet the requirements of AASHTO M 85.

MEMBRANE WATERPROOFING shall be applied to the exterior walls of the assembled culvert, see details on this drawing.

DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE BOTTOM SLAB.

THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERIOR WALLS AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE BOX CULVERTS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

WINGWALLS, CURTAIN WALLS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WINGWALL, CURTAIN WALLS, APRONS AND CURTAIN WALLS SHAPE AS SHOWN OR BY DOWELING AND GROUTING.

CONCRETE OF BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS OF LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST CONCRETE BOX CULVERTS.

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CONCRETE BOX CULVERTS BY DOWELING AND GROUTING.

J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION.

WEEP HOLES SHALL HAVE A MAXIMUM SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE CULVERT.

PRECAST CULVERT SECTIONS SHALL BE TIED TO THE CURTAIN WALL, CURTAIN WALLS AND APRONS.

THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE PORTLAND CEMENT. THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL MEET THE REQUIREMENTS OF AASHTO M 85.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

CONCRETE JOINTS, SECTIONS AND SPAN SPACING OF "M" BARS SHALL BE ADJUSTED IN ACCORDANCE WITH THE APPLICABLE SPAN SPACING OF "M" BARS AS SHOWN OR BY DOWELING AND GROUTING.

CONCRETE OF BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS OF LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST CONCRETE BOX CULVERTS.

THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE PORTLAND CEMENT. THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.

THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.
**CONSTRUCTION SEQUENCE**

1. Place structural bedding material to grade, do not compact.
2. Install pipe in its desired location, then backfill the area around the pipe.
3. Soil shall be placed in a manner and quantity required to support the pipe and avoid pipe settlement.
4. All pipe shall be protected during construction by a cover sufficient to prevent damage to the pipe.

**GENERAL NOTES**

- Structural backfill and structural bedding materials shall be compacted to the extent required by the engineer.
- Foundation strength is determined by the engineer.
- Backfill shall be placed in a manner and quantity required to support the pipe and avoid pipe settlement.
- Pipe shall be protected during construction by a cover sufficient to prevent damage to the pipe.

**SELECTED PIPE BEDDING MATERIALS AND INSTALLATIONS SHOULD CONFORM TO SECTIONS 23, 24, AND 29 OF CHAPMAN'S HIGHWAY HANDBOOK.**

**EMBANKMENT AND TRENCH INSTALLATIONS**

1. Structural backfill, embankment, and outer structural bedding material shall be compacted to the extent required by the engineer.
2. Foundation strength is determined by the engineer.
3. Backfill shall be placed in a manner and quantity required to support the pipe and avoid pipe settlement.
4. Pipe shall be protected during construction by a cover sufficient to prevent damage to the pipe.

**STANDARD DRAWING PCM-1**

**METAL PIPE CULVERT FILL HEIGHTS & BEDDING**

**EMBANKMENT & TRENCH INSTALLATIONS**

- Structural backfill, embankment, and outer structural bedding material shall be compacted to the extent required by the engineer.
- Foundation strength is determined by the engineer.
- Backfill shall be placed in a manner and quantity required to support the pipe and avoid pipe settlement.
- Pipe shall be protected during construction by a cover sufficient to prevent damage to the pipe.

**GENERAL NOTES**

- Structural backfill, embankment, and outer structural bedding material shall be compacted to the extent required by the engineer.
- Foundation strength is determined by the engineer.
- Backfill shall be placed in a manner and quantity required to support the pipe and avoid pipe settlement.
- Pipe shall be protected during construction by a cover sufficient to prevent damage to the pipe.

**SELECTED PIPE BEDDING MATERIALS AND INSTALLATIONS SHOULD CONFORM TO SECTIONS 23, 24, AND 29 OF CHAPMAN'S HIGHWAY HANDBOOK.**

**EMBANKMENT & TRENCH INSTALLATIONS**

- Structural backfill, embankment, and outer structural bedding material shall be compacted to the extent required by the engineer.
- Foundation strength is determined by the engineer.
- Backfill shall be placed in a manner and quantity required to support the pipe and avoid pipe settlement.
- Pipe shall be protected during construction by a cover sufficient to prevent damage to the pipe.

**GENERAL NOTES**

- Structural backfill, embankment, and outer structural bedding material shall be compacted to the extent required by the engineer.
- Foundation strength is determined by the engineer.
- Backfill shall be placed in a manner and quantity required to support the pipe and avoid pipe settlement.
- Pipe shall be protected during construction by a cover sufficient to prevent damage to the pipe.

**SELECTED PIPE BEDDING MATERIALS AND INSTALLATIONS SHOULD CONFORM TO SECTIONS 23, 24, AND 29 OF CHAPMAN'S HIGHWAY HANDBOOK.**
**MINIMUM TRENCH WIDTH**

Based on fill height "H"

<table>
<thead>
<tr>
<th>Fill Height &quot;H&quot; (ft)</th>
<th>Trench Width &quot;D&quot; (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MINIMUM COVER FOR CONSTRUCTION LOADS**

<table>
<thead>
<tr>
<th>Load Class</th>
<th>Minimum Cover &quot;H&quot; (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.0</td>
</tr>
</tbody>
</table>

**GENERAL NOTES**

1. Place structural backfill material to shore, do not contact.
2. Place pipe to grade.
3. Compact structural backfill outside the whole pipe to grade.
4. Compact structural bedding of pipe to shore, do not contact.
5. Pipe installation may require the use of restraints, holding-in-place and alignment methods in order to help maintain grade and alignment.

**CONSTRUCTION SEQUENCE**

1. Place structural bedding material to shore, do not contact.
2. Place pipe to grade.
3. Compact structural bedding outside the whole pipe to grade.
4. Compact structural bedding of pipe to shore, do not contact.

**LEGAL REFERENCES**

AASHTO LRFD Bridge Design Specifications, Fifth Edition
AASHTO M294, Type S
AASHTO LRFD Bridge Construction Specifications
Standard Specifications for Highway Construction
Standard Specifications for Highway Materials
Standard Specifications for Highway Construction and Materials
Arkansas State Highway Commission
Arkansas State Highway Commission (High Density Polyethylene)

**LEGEND**

- Structural backfill material
- Uncompacted loose backfill
- Structural bedding
- Undercut area
- Structural backfill material
- Unmanaged road surface

**NOTE:**

1. Place structural backfill material to shore, do not contact.
2. Place pipe to grade.
3. Compact structural bedding outside the whole pipe to grade.
4. Compact structural bedding of pipe to shore, do not contact.
5. Pipe installation may require the use of restraints, holding-in-place and alignment methods in order to help maintain grade and alignment.

**MINIMUM TRENCH WIDTH**

Based on fill height "H" |

<table>
<thead>
<tr>
<th>Fill Height &quot;H&quot; (ft)</th>
<th>Trench Width &quot;D&quot; (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td></td>
</tr>
</tbody>
</table>

**MINIMUM COVER FOR CONSTRUCTION LOADS**

<table>
<thead>
<tr>
<th>Load Class</th>
<th>Minimum Cover &quot;H&quot; (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.0</td>
</tr>
</tbody>
</table>
### GENERAL NOTES

1. **Pipe** shall conform to ADW 335. PVC pipes shall conform to ADW 335 or other approved design.


4. The maximum allowable fill height shall be the minimum cover plus a sufficient height to ensure minimum cover to protect and maintain the centerline of the pipe from damage.


### MINIMUM FILL HEIGHT

**Based on Structural Backfill**

<table>
<thead>
<tr>
<th>Pipe Diameter</th>
<th>Minimum Fill Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>18&quot;</td>
<td>5'-0&quot;</td>
</tr>
<tr>
<td>24&quot;</td>
<td>5'-6&quot;</td>
</tr>
<tr>
<td>30&quot;</td>
<td>6'-0&quot;</td>
</tr>
<tr>
<td>36&quot;</td>
<td>7'-6&quot;</td>
</tr>
</tbody>
</table>

### MINIMUM TRENCH WIDTH

**Based on Fill Height "H"**

<table>
<thead>
<tr>
<th>Trench Width</th>
<th>Fill Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>2'-0&quot;</td>
<td>2'-0&quot;</td>
</tr>
<tr>
<td>2'-6&quot;</td>
<td>3'-0&quot;</td>
</tr>
<tr>
<td>3'-0&quot;</td>
<td>3'-0&quot;</td>
</tr>
</tbody>
</table>

### MINIMUM COVER FOR CONSTRUCTION LOADS

**Multiple Installation of PVC Pipes**

<table>
<thead>
<tr>
<th>Pipe Diameter</th>
<th>Minimum Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>18&quot;</td>
<td>2'-0&quot;</td>
</tr>
<tr>
<td>24&quot;</td>
<td>2'-6&quot;</td>
</tr>
<tr>
<td>30&quot;</td>
<td>3'-0&quot;</td>
</tr>
<tr>
<td>36&quot;</td>
<td>3'-0&quot;</td>
</tr>
</tbody>
</table>

### TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. Structural backfill and other structural design materials shall be compacted to the base of the necessary depth according to the type of fill and/or bedding used.


3. Structural backfill material shall be placed and compacted in layers not exceeding 8". The layers shall be brought up evenly, and the selected pipe bedding material shall be placed on top of the pipe as required by the standards specified in the Standards Specifications for Highway Construction, 2010 Edition.


5. Pipe installation may require the use of restraints, weight, and other approved methods in order to help maintain grade and alignment.

### CONSTRUCTION SEQUENCE

1. Place structural backfill material to grade, do not compact.

2. Install pipe to grade.

3. Compact structural backfill outside the pipe line of the pipe.

4. Fill the structural backfill shall be placed and compacted in layers not exceeding 8". The layers shall be brought up evenly, and the selected pipe bedding materials shall be placed on top of the pipe as required by the standards specified in the Standards Specifications for Highway Construction, 2010 Edition.

5. Structural backfill material shall be placed and compacted in layers not exceeding 8". The layers shall be brought up evenly, and the selected pipe bedding material shall be placed on top of the pipe as required by the standards specified in the Standards Specifications for Highway Construction, 2010 Edition.

### LEGEND

- **D**: Pipe Diameter
- **L**: Structural Backfill
- **M**: Unplanned Soil

### OTHER INFORMATION

- **Date**: 2-27-14
- **Issued By**: ARKANSAS STATE HIGHWAY COMMISSION
- **Standard Drawing**: PCP-2

---

**Table: Minimum Trench Width**

<table>
<thead>
<tr>
<th>Pipe Diameter</th>
<th>Trench Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>18&quot;</td>
<td>99.0</td>
</tr>
<tr>
<td>24&quot;</td>
<td>99.0</td>
</tr>
<tr>
<td>30&quot;</td>
<td>99.0</td>
</tr>
<tr>
<td>36&quot;</td>
<td>99.0</td>
</tr>
</tbody>
</table>

**Table: Minimum Cover**

<table>
<thead>
<tr>
<th>Pipe Diameter</th>
<th>Minimum Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>18&quot;</td>
<td>2'-0&quot;</td>
</tr>
<tr>
<td>24&quot;</td>
<td>2'-6&quot;</td>
</tr>
<tr>
<td>30&quot;</td>
<td>3'-0&quot;</td>
</tr>
<tr>
<td>36&quot;</td>
<td>3'-0&quot;</td>
</tr>
</tbody>
</table>

---

**Diagram:** Type 2 Embankment and Trench Installations

- **Legend**: D = Pipe Diameter, L = Structural Backfill, M = Unplanned Soil

---

**Note:** The diagrams and tables provided are illustrative and should be used in conjunction with the written specifications provided in the Standards Specifications for Highway Construction, 2010 Edition.
BROKEN LINE STRIPING

CONCRETE PAVEMENT

SOLID LINE STRIPING ON CONCRETE PAVEMENT

SOLID LINE STRIPING ON ASPHALT PAVEMENT

ASPHALT PAVEMENT

CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

CROSSWALK AND STOP LINE DETAILS

NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES." 
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.

PAVEMENT EDGE LINE MARKING

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1
ARUBA STATE HIGHWAY COMMISSION

STANDARD DRAWING PM-2

ACCESS CONTROLLED ROADWAYS

ON

PAVEMENT MARKING DETAILS

DATE

REVISION

FILMED

4-26-96

7-02-98

9-12-13

RAISED PAVEMENT MARKERS

REVISED DETAIL OF STANDARD

PLACED IN USE

2-2-95

2-2-95

REVISED LANE WIDTH ON EXIT RAMP

ADDED DIMENSIONS & QUANTITIES;

CHANGED TYPES TO ROMAN NUMERALS

REMOVED HASHMARKS

5-18-00

8-22-02

REV. ENTRANCE & EXIT RAMPS

ADDED & REVISED NOTES;

11-18-04

REVISED NOTES

6-3-10

REVISED PER 2009 MUTCD

11-17-10

REVISED RPMs ACCORDING TO LATEST POLICY

7-26-12

REVISED RPM NOTATION

12-8-16

REVISED WIDTH OF STRIPING

REVISED RAISED PAV'T MARKERS FOR 80' SPACING;

11-07-19

ADDED CROSSHATCH MARKINGS ON EXIT RAMPS

REVISED DOTTED PAV'T MARKINGS;

05-14-20

REMOVED CROSSHATCH MARKINGS ON EXIT RAMPS

LATEST REVISION.

THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES",

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH

MARKERS SHALL BE DETERMINED BY THE ENGINEER.

AND THE FINAL LOCATION OF THE STRIPING AND PAVEMENT

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY

"D" = ACCEL LANE LENGTH + TAPER

BASED ON 700' ACCEL. LANE + 300' TAPER

PAVEMENT MARKING QUANTITIES

"D"

END RAMP PAVEMENT

MARKING

(19) STANDARD TYPE II  R.P.M.

SPACED  @ 10' O.C.

AS SHOWN

RAISED PAVEMENT MARKERS TYPE I1  (WHITE/RED) = 48 EACH

RAISED PAVEMENT MARKERS TYPE I1  (WHITE/RED) = 38 EACH

BEGIN RAMP PAVEMENT

MARKING

2 8 0 ' - ( 2 9 ) S T A N D A R D  T Y P E  II  R . P . M . @ 1 0 ' O . C .

TRAFFIC MOVEMENT.

FACE THE INCORRECT

TYPE II  R.P.M. SHALL

THE RED LENS OF THE

NOTE:

THEORETICAL GORE

40' (TYP)

10'

30'

4' SHLDR.(TYP.)

10' SHLDR.(TYP.)

6" YELLOW LINE

6" WHITE LINE

6" WHITE LINE

6" WHITE LINE

6" WHITE LINE

6" WHITE LINE

6" WHITE LINE

DIRECTIONAL ARROW

ENTRANCE RAMPS

EXIT RAMPS

2.3"

0.52"

4.7"
NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE 1. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN IN THE DETAIL. LATERALS WILL BE MEASURED AND PAID FOR THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO EXISTING UNDERDRAINS WILL BE INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE ROADWAY. THE WIDTH OF THE TRENCH AT THE TOP SHALL BE THOROUGHLY COMPACTED EARTH AND GRANULAR MATERIAL SHALL BE WRAPPED ALL AROUND & LAPPED AT TOP.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH "4" PIPE UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS:

   a. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR REMOVE UNDERDRAIN OUTLET PROTECTORS.

   b. INSTALL OUTLET PROTECTOR WHERE REQUIRED.

8. THE 250' DISTANCE MAY BE EXCEEDED ONLY WHERE NECESSARY FOR AN ACCEPTABLE OUTLET. THE 250' INTERVALS ON GRADES.

9. OUTLET PIPE ON GRADE (NON-PERFORATED)

NOTE:

THE 250'距NECESSARY FOR AN
ACCEPTABLE OUTLET. THE 250' INTERVALS ON GRADES.

NOTE:

OUTLET PIPE ON GRADE (NON-PERFORATED)

NOTE:

OUTLET PIPE ON GRADE (NON-PERFORATED)

NOTE:

OUTLET PIPE ON GRADE (NON-PERFORATED)
REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.
REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.
CONSTRUCTION AND MATERIALS FOR CULVERTS AND BOX CULVERTS SHALL BE AS SHOWN ON THIS DRAWING.
**GENERAL NOTES:**

ROADWAY EXCAVATION CHANGES WILL BE PAID FOR AT RC.BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFIRMED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION CHANNEL CHANGES SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

RETAINAGE SHALL BE APPLIED TO ROADWAY EXCAVATION CHANGES AT RC. BOX CULVERT LOCATIONS, IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFIRMED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION CHANGES SHOWN IN SECTION A-A ABOVE WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

**EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS**

**SECTION B-B**

DETAILS FOR NEW CHANNELS

**SECTION C-C**

DETAILS THROUGH EXISTING CHANNELS

**SOLID SODDING**

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

**NOTE:** LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

<table>
<thead>
<tr>
<th>EXISTING CHANNEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLID SODDING</td>
</tr>
<tr>
<td>RC.BOX CULVERT</td>
</tr>
</tbody>
</table>
PAY QUANTITIES WILL BE CALCULATED BASED ON METHOD 1 OR METHOD 2. REGARDLESS OF WHICH METHOD IS USED, THE CONTRACTOR SHALL HAVE THE OPTION OF USING EITHER 1 & 2.

REINFORCING DETAILS AND CULVERT DIMENSIONS
SAME AS STANDARD CULVERT DRAWINGS

THE RESIDENT ENGINEER WILL MAKE INDIVIDUAL CALCULATIONS OF QUANTITIES FOR EACH STRUCTURE LENGTHENED, MAKING NO ALLOWANCE FOR OVERBREAKAGE BEYOND THE LINES INDICATED.

IN ALL INSTANCES CONCRETE SHALL BE REMOVED SO AS TO PERMIT FULL DIAMETER SPLICE OF REINFORCING STEEL.

REINFORCING STEEL REMOVED FROM EXISTING STRUCTURE SHALL NOT BE REUSED IN CONSTRUCTING EXTENSION.

ON R.C. BOX CULVERTS THAT HAVE AN EXISTING CONCRETE APRON; THE CONCRETE APRON SHALL BE REMOVED WITH THE WINGS. THE COST OF REMOVING ALL OLD CONCRETE WILL BE INCLUDED IN THE PRICE BID FOR NEW CONCRETE. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

THE CONTRACTOR SHALL HAVE THE OPTION OF USING EITHER METHOD 1 OR METHOD 2. PAY QUANTITIES WILL BE CALCULATED BASED ON METHOD 1 OR METHOD 2.

NOTE: NO PART OF THIS STANDARD IS TO BE USED FOR ANY DETAILS RELATIVE TO NEW CONSTRUCTION. SEE STANDARD DRAWING LISTED IN TABULATION OF STRUCTURES FOR ALL NEW CONSTRUCTION DETAILS.
ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31 OR M53, GRADE 40 (YIELD STRENGTH=40,000 PSI).

ALL CONCRETE SHALL BE CLASS "S" WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH F'C=3500 PSI. CONCRETE FOR THE CONTROLLER. THE CONCRETE PULL BOX AND E.G.C. CONDUCTOR SHALL BE PAID FOR SEPARATELY.

CONTROLLER. PAYMENT FOR THE GROUND ROD AND "NMC SHALL BE INCLUDED IN ITEM 713 FOR SIGNAL POLES AND PAVEMENT SHALL BE LESS THAN SIX INCHES.

SIGNAL HEADS MAY BE SINGLE OR MULTI-SECTION HEADS. SIGNAL HEADS FROM CENTERLINE OF STREET AND POSITIONED TO ALLOW VISIBILITY.

NOTE: SIGNAL HEADS SHALL REMAIN SACKED UNTIL PLACED IN OPERATION.

TYPICAL SPAN WIRE ASSEMBLY

NOTES:
- Span wire poles shall be installed a minimum of four (4') feet behind curb or shoulder.
- Pole shall be suitable for outside use (black).
- Span wire supports shall be equally spaced.
- Anchor base with #8 A.W.G., E.G.C.
- Grounding shall be in accordance with the manufacturer's specifications. The ground rod shall extend according to the plan sheets. No additional compensation shall be allowed for these indicated on the plan sheets.
- The signal head shall remain sacked until placed in operation.
1. RIGHT HAND SLIDE SHOWN, LEFT SLIDE OPPOSITE.

2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY NECESSARY TO FIXTURE SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF.

3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF.

NOTES:

- DIMENSIONS SHOWN ARE NOMINAL AND MAY NOT BE HOLD FOR TOOLING.
- ALL THREADS ARE LH UNLESS OTHERWISE PROVIDED.
- ALL MOUNTING HOLES ARE .187 DIA. C'SK .100 TO .280 DIA.
- FOR AUTOMATIC RELEASE CHAMFER CHASSIS BUTTON AND INTERMEDIATE SLOT INCLUDED.

DATE FILM
- 6-15-05

REVISION
- *

DATE ISSUED
- 9-12-13

ISSUED AS STANDARD DRAWING
- SD-5

CONTROLLER CABINET
- UTILITY DRAWER

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD DRAWING SD-5
NOTE: LEFT TURN HEAD(S) HEAD 1 ON D1 AND D2 IS NOT CALLED FOR ON PLAN. HEAD(S) SHOWN IN DETAIL(S) MAY NOT BE ALIGNED FOR FRAME. INSTALLATION HEAD(S) SHOWN IN DETAIL(S) MAY NOT BE ALIGNED WITH THROUGH LANE(S) AS SHOWN ON DETAIL(S).

1. FOUR SECTION "PROTECTED/PERMISSIVE" LEFT TURN HEAD(S) SHOULD BE LOCATED 2 FEET TO THE RIGHT OF THE CENTERLINE OF THE APPROPRIATE LEFT TURN LANE.

2. THREE SECTION "PROTECTED" LEFT TURN HEAD(S) SHOULD BE PLACED ON THE CENTERLINE OF THE APPROPRIATE LEFT TURN LANE.

3. WHEN IT IS NECESSARY TO PLACE POLES OTHER THAN AS SHOWN ON PLAN SHEET(S) OR DETAIL(S) IN ANY ALIGNED DETAIL, THE CENTERLINE OF THE APPROPRIATE LEFT TURN LANE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING WHAT ADDITIONAL WORK IS NECESSARY TO INSTALLING THE MAST ARM IF ADDITIONAL COMPENSATION IS REQUIRED.

4. SIGNAL HEAD SPACING SHALL BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER. ADJUSTED MOUNTING LOCATION DUE TO THE APPROACH.

5. ALL SIGNAL HEAD(S) SHOWN ON THIS DETAIL SHEET SHALL BE LOCATED ACCORDING TO THE DIMENSIONS SHOWN IN RELATION TO THE APPROACH SIDE OF THE INTERSECTION.

6. MINIMUM MOUNTING HEIGHT OF SIGNAL FACE(S) LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR(S) SHALL BE IN ACCORDANCE WITH FIGURE 4D-5 OF 2009 MUTCD.
Table and Method of Superlevation for One-Way Traffic

### GENERAL NOTES
1. On curves with one-way traffic, the superlevation shall be
   divided in the middle point.
2. Super elevation shall be divided into the inside and outside
   Lanes for curves greater than 10°.
3. Profile Grade & Control Points may be located at multiples of
   25 ft. or 50 ft.
4. Maximum rates of super elevation may be used for ramps.
5. Transition lengths are shown.

### SUPERELEVATION TABLE FOR ONE-WAY TRAFFIC

<table>
<thead>
<tr>
<th>Curve</th>
<th>30 MPH</th>
<th>Desirable</th>
<th>40 MPH</th>
<th>Desirable</th>
<th>50 MPH</th>
<th>Desirable</th>
<th>60 MPH</th>
<th>Desirable</th>
<th>70 MPH</th>
<th>Desirable</th>
<th>80 MPH</th>
<th>Desirable</th>
</tr>
</thead>
<tbody>
<tr>
<td>P = 0</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>P = 5</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>P = 10</td>
<td>94</td>
<td>0.002</td>
<td>94</td>
<td>0.002</td>
<td>94</td>
<td>0.002</td>
<td>94</td>
<td>0.002</td>
<td>94</td>
<td>0.002</td>
<td>94</td>
<td>0.002</td>
</tr>
<tr>
<td>P = 15</td>
<td>94</td>
<td>0.002</td>
<td>94</td>
<td>0.002</td>
<td>94</td>
<td>0.002</td>
<td>94</td>
<td>0.002</td>
<td>94</td>
<td>0.002</td>
<td>94</td>
<td>0.002</td>
</tr>
<tr>
<td>P = 20</td>
<td>94</td>
<td>0.002</td>
<td>94</td>
<td>0.002</td>
<td>94</td>
<td>0.002</td>
<td>94</td>
<td>0.002</td>
<td>94</td>
<td>0.002</td>
<td>94</td>
<td>0.002</td>
</tr>
</tbody>
</table>

### ABBREVIATIONS
- NC: Normal Crown
- RC: Reverse Crown, Super elevation at normal crown slope
- S: Super elevation
- L: Distance from beginning of super elevation transition to any point (ft.)
- d: Width of pavement
- Ls: Length of super elevation transition (ft.)
- C: Normal crown (ft.)

### SUPERELEVATION FORMULA
- Inside Laneway One Way Traffic: $S = -L(de-C)$
- Outside Laneway One Way Traffic: $S = +L(de+C)$

### ISSUED
01-09-87

### DATE FILMED
578-1-15-87

### TABLE AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC

### ONE WAY TRAFFIC

| Category | Profile Grade & Control Point | Normal Crown | Super Elevation
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside</td>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Outside</td>
<td></td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

### ONE WAY TRAFFIC OUTSIDE LANE

| Category | Profile Grade & Control Point | Normal Crown | Super Elevation
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside</td>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Outside</td>
<td></td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

### ARKANSAS STATE HIGHWAY COMMISSION
STANDARD DRAWING SE-1
### General Notes

1. On pavements with two-way traffic, the super elevation shall be remote on the inside pavement edge unless otherwise noted on the plans.

2. Superelevation values shown on the cross sections are values to permit simpler calculations.

3. Lengths for L may be rounded in multiples of 25 ft. or 50 ft.

4. Pavements wider than 2 lanes shall have additional transition lengths as follows:
   - 3 lane undivided - 200 ft.
   - 4 lane undivided - 150 ft.

### Abbreviations

- NC: Normal Crown
- RC: Reverse Crown, Super Elevation at Normal Crown Slope
- L: Distance from Beginning of Super Elevation Transition to Any Point (ft.)
- d: Width of Pavement
- Ls: Length of Super Elevation Transition (ft.)
- C: Normal Crown (ft.)
- e: Rate of Super Elevation (ft. per ft.)

### Added Formula

- Super Elevation for Two-Way Traffic

\[ \text{Super Elevation} = \frac{L_{de}}{L_{s}} \]

### Super Elevation Table for Two-Way Traffic

<table>
<thead>
<tr>
<th>Degree of Curve</th>
<th>30 MPH</th>
<th>35 MPH</th>
<th>40 MPH</th>
<th>45 MPH</th>
<th>50 MPH</th>
<th>55 MPH</th>
<th>60 MPH</th>
<th>65 MPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°°</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>1°°</td>
<td>NC</td>
<td>NC</td>
<td>RC</td>
<td>50</td>
<td>0.022</td>
<td>103</td>
<td>0.030</td>
<td>110</td>
</tr>
<tr>
<td>2°°</td>
<td>NC</td>
<td>NC</td>
<td>70</td>
<td>0.022</td>
<td>103</td>
<td>0.030</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>3°°</td>
<td>NC</td>
<td>NC</td>
<td>90</td>
<td>0.022</td>
<td>103</td>
<td>0.030</td>
<td>110</td>
<td></td>
</tr>
</tbody>
</table>

### Notes

- Maintain normal crown on edges until superelevation exceeds 2C.
- Rate of super elevation shall be computed on straight line method using applicable Ls.
- Maximum super elevation outside pavement or subgrade edge.

#### Standard Method When Superelevation Revolves Around Inner Subgrade Point or Inner Pavement Edge

- Control Point

#### Standard Method When Superelevation Revolves Around Center Line

- Control Point

---

**ARKANSAS STATE HIGHWAY COMMISSION**

**TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC**

**STANDARD DRAWING SE-2**
NOTES:

SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL (F).

ALL SIGN POSTS SHALL BE PLUMB.

SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

NORMAL INSTALLATIONS WILL REQUIRE 5/16" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

DETAIL E
R6-1 EXTENSION FOR U-CHANNEL POST

DETAIL F
DETAIL OF SPLICES

NOTES:

SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL (F).

NORMAL INSTALLATIONS WILL REQUIRE 5/16" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

ALL SIGN POSTS SHALL BE PLUMB.

THE POST FOR "TYPE U" SUPPORTS SHALL BE HOT DIP GALVANIZED.

6' TO EDGE OF PAVEMENT

TYPICAL MILE MARKER INSTALLATION

TYPICAL OM-3 INSTALLATION AT EDGE OF OBSTRUCTION

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

ARMS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES
NOTE:
ALL ADDITIONAL MOUNTING HARDWARE (SCREWS, BOLTS, CHANNELS)
AND BAR STAMPS REQUIRED TO MOUNT SECONDARY SIGNS
WILL BE CONSIDERED TO BE SUPPLEMENTAL TO THE MAIN
SIGN SUPPORT SPECIFIED. PAYMENT WILL BE CONSIDERED
TO THE GALVANIZED STEEL CHANNEL AND BAR SUPPORTS
MAY BE ASTM A-36.

REFER TO THE P.C. RUTLEDGE FORMULA ON PAGE 58
OF THE AASHTO PUBLICATION "STANDARD SPECIFICATIONS
FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS,
LUMINAIRES, AND TRAFFIC SIGNALS.

ALL BOLT HOLES SHALL BE \( " \) UNLESS OTHERWISE SHOWN.
**Details of Guide Sign Panels**

**Exit Number Panels** shall have white legends and borders. The back ground color will be as specified. Sheet metal will be the same as the guide sign which the exit panel is attached to as specified in the plans. Payment for all post clip bolts and washers shall be subsidiary to the major sign panel.

**Secondary Sign Installation** on back side of guide sign.

---

**Exit Number Panels**

- **Type A**
  - Exit with 1 digit
  - Exit with 2 digits
  - Exit with 3 digits

- **Type B**
  - Exit with 1 digit plus "A" or "B"
  - Exit with 2 digits plus "A" or "B"
  - Exit with 3 digits plus "A" or "B"

- **Type C**
  - Exit with 1 digit
  - Exit with 2 digits
  - Exit with 3 digits

- **Type D**
  - Exit with 1 digit plus "A" or "B"
  - Exit with 2 digits plus "A" or "B"
  - Exit with 3 digits plus "A" or "B"

- **Type E**
  - Exit with 1 digit
  - Exit with 2 digits
  - Exit with 3 digits

---

**Mounting Hardware**

- **Post Clip Bolt**
- **Post Clip Placement**
- **One Piece Extruded Sign Panels**
- **Sign Post**

---

**Post Clip Bolt Placement**

1. Use double post clips at top and bottom of sign.
2. Alternate post clips.
3. Use double post clips at top and bottom of sign.

**Exit Panel Details**

- Exit number panels shall have white legends and borders. The back ground color will be as specified. Sheet metal will be the same as the guide sign which the exit panel is attached to as specified in the plans. Payment for all post clip bolts and washers shall be subsidiary to the major sign panel.

---

**Arkansas State Highway Commission**

**Details of Guide Sign Panels**

**Standard Drawing SHS-5**

---

**Typical Detail**

- **Exit Number Panel**
- **Sign Post**
- **Post Clips**
- **Mounting Hardware**

---

**Exit Number Panel Details**

- Exit number panels shall have white legends and borders. The back ground color will be as specified. Sheet metal will be the same as the guide sign which the exit panel is attached to as specified in the plans. Payment for all post clip bolts and washers shall be subsidiary to the major sign panel.

---

**Exit Panel Details**

- Exit number panels shall have white legends and borders. The back ground color will be as specified. Sheet metal will be the same as the guide sign which the exit panel is attached to as specified in the plans. Payment for all post clip bolts and washers shall be subsidiary to the major sign panel.

---

**Arkansas State Highway Commission**

**Details of Guide Sign Panels**

**Standard Drawing SHS-5**
THE CONTRACTOR SHALL DRILL AND POP-RIVET LEGEND, SHIELDS, ARROWS, OR OTHER COPY AS SHOWN.

MOUNTING DETAILS FOR DEMOUNTABLE LEGEND ON GUIDE SIGNS

NOTES:
- LEGEND ON GUIDE SIGNS ON THE MAIN LANES SHALL BE DEMOUNTABLE LEGEND.
- LEGEND ON GUIDE SIGNS ON CROSS ROADS AND RAMPS SHALL BE DIRECT APPLIED.
- THE DEMOUNTABLE AND DIRECT APPLIED LEGENDS SHALL BE TYPE IX SHEETING.

THE BACKGROUND ON ALL GUIDE SIGNS AND STANDARD SIGNS SHALL BE CONSTRUCTED USING TYPE III SHEETING.

TYPE IX SHEETING FOR BORDER, LEGEND, SHIELDS, ARROWS, OR OTHER COPY SHALL BE ORIENTED VERTICALLY AS PER MANUFACTURER'S DATUM MARKS, ORIENTATION MARKS, OR OTHER RECOMMENDATIONS.

SIGN LEGEND, SHIELDS, ARROWS OR OTHER COPY SHALL BE APPLIED WITH A RIVET ONLY.

NO OTHER METHOD OF APPLYING CHARACTERS IS ALLOWED.
MIN. 2" X 2" X 12GA.

BY THE ENGINEER.
MAY BE SUBSTITUTED AS APPROVED
2" X 2" SQUARE TUBE SIGN POSTS

TOP PLATE DIMENSIONS AND SUPPORT
SIGN SUPPORTS THAT HAVE THE SAME
OTHER MASH COMPLIANT BREAKAWAY

BREAKAWAY SIGN SUPPORTS
DETAIL OF OMNI-DIRECTIONAL

ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

DETAIL OF OMNI-DIRECTIONAL
BREAKAWAY SIGN SUPPORTS

STANDARD DRAWING SHS-7
Typical Exit Ramp Delineator Placement

1. Wrong-Way Signs may be mounted on the back side of existing Sign Supports when possible.
2. Where barriers are manually placed, they may be offset when barriers walls are adjacent to the ramp shoulders.
3. The ThermoPlastic Wrong-Way Pavement Arrows, retroreflective strips, and lane edge line shall be placed no less than 6 ft. outside the outer edge of the shoulder.

Permanent Barrier Wall Delineator Details

Wrong-Way Sign Assembly Details

Notes:

- ThermoPlastic Wrong-Way Pavement Arrows to be paid for as ThermoPlastic Pavement Marking (Arrows).
- Note: ThermoPlastic Wrong-Way Pavement Arrows to be placed as close to the ramp terminal as possible.
- The Deleneators shall be placed at a height measured from the pavement edge to the bottom of the Deleneator Deleneator posts shall be placed 2 to 8 ft. outside the outer edge of the shoulder from a pavement that is 8 ft. or less outside the outer edge of the shoulder.
- Delineator spacing in curves shall be reduced to 30 ft when the ramp advisory speed is 30 mph or less.
- If multiple lanes exist at the ramp terminal, the ThermoPlastic Wrong-Way Arrows shall be placed as close to the ramp terminal as possible.

Delineator Details

Arkansas State Highway Commission

Typical Exit Ramp Sign and Delineator Details

Standard Drawing SHS-8
**General Notes**

All steel to be #4 bars.

**Reinforced Concrete Spring Box**

The pay items for reinforced concrete spring boxes and 18" R.C. pipe culvert:
- Reinforcing steel
- Excavation for structures
- Repair over culverts (concrete)
- Repair over culverts (asphalt)

**Hand Railing Details**

Details of alternate post anchor system (epoxy adhesive anchors)

**Concrete Steps & Walks**

Details of concrete steps & walks

**Details of Concrete Steps & Walks**

-WALKS
- STAIRS
- UNDERDRAIN

**Standard Drawing SI-1**

**Details of Special Items**

**Arkansas State Highway Commission**
<table>
<thead>
<tr>
<th>Note</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>In work zones, do not enter the lane.</td>
</tr>
<tr>
<td>2.</td>
<td>Specific road work signs are to be placed a minimum of 500 feet in advance of the work zone.</td>
</tr>
<tr>
<td>3.</td>
<td>Signs that are damaged, defaced, or that accumulate dirt shall be removed.</td>
</tr>
<tr>
<td>4.</td>
<td>Signs that do not apply to existing conditions shall be removed.</td>
</tr>
<tr>
<td>5.</td>
<td>Signs shall be removed.</td>
</tr>
<tr>
<td>6.</td>
<td>Signs that are damaged, defaced, or that accumulate dirt shall be removed.</td>
</tr>
<tr>
<td>7.</td>
<td>Signs shall be removed.</td>
</tr>
<tr>
<td>8.</td>
<td>Signs that are damaged, defaced, or that accumulate dirt shall be removed.</td>
</tr>
<tr>
<td>9.</td>
<td>Signs shall be removed.</td>
</tr>
</tbody>
</table>

### General Notes:

- Use 4" D letters with portable sign supports. Pads, concrete or rock ballast, or other solid materials shall not be utilized. Long-term stationary signs shall be direct buried in soil, unless conditions permit. They shall be no less than one foot above the traveled way.

- All post and barricade mounted signs mounted in urban areas shall be mounted close to the pavement edge. Signs in urban areas and post mounted signs in rural areas shall be constructed with the near edge of the sign a minimum of 5' from the pavement edge. Signs in rural areas shall be constructed with the near edge a minimum of 7' from the pavement edge. Signs in urban areas and post mounted signs in rural areas shall be constructed with the near edge a minimum of 12' from the pavement edge.

- The sign shall be placed a minimum of 500' in advance of the work zone. If a speed limit reduction is in effect, then the reduced speed shall be reduced by a minimum of 10 miles per hour.

- Road signs shall be constructed with the near edge of the sign a minimum of 7' from the pavement edge. Signs in rural areas shall be constructed with the near edge a minimum of 12' from the pavement edge. Signs in urban areas and post mounted signs in rural areas shall be constructed with the near edge a minimum of 15' from the pavement edge.

- The sign shall be placed a minimum of 500' in advance of the work zone. If a speed limit reduction is in effect, then the reduced speed shall be reduced by a minimum of 10 miles per hour.

- Road signs shall be constructed with the near edge of the sign a minimum of 7' from the pavement edge. Signs in rural areas shall be constructed with the near edge a minimum of 12' from the pavement edge. Signs in urban areas and post mounted signs in rural areas shall be constructed with the near edge a minimum of 15' from the pavement edge.

- Road signs shall be constructed with the near edge of the sign a minimum of 7' from the pavement edge. Signs in rural areas shall be constructed with the near edge a minimum of 12' from the pavement edge. Signs in urban areas and post mounted signs in rural areas shall be constructed with the near edge a minimum of 15' from the pavement edge.

- Road signs shall be constructed with the near edge of the sign a minimum of 7' from the pavement edge. Signs in rural areas shall be constructed with the near edge a minimum of 12' from the pavement edge. Signs in urban areas and post mounted signs in rural areas shall be constructed with the near edge a minimum of 15' from the pavement edge.

- Road signs shall be constructed with the near edge of the sign a minimum of 7' from the pavement edge. Signs in rural areas shall be constructed with the near edge a minimum of 12' from the pavement edge. Signs in urban areas and post mounted signs in rural areas shall be constructed with the near edge a minimum of 15' from the pavement edge.

- Road signs shall be constructed with the near edge of the sign a minimum of 7' from the pavement edge. Signs in rural areas shall be constructed with the near edge a minimum of 12' from the pavement edge. Signs in urban areas and post mounted signs in rural areas shall be constructed with the near edge a minimum of 15' from the pavement edge.

- Road signs shall be constructed with the near edge of the sign a minimum of 7' from the pavement edge. Signs in rural areas shall be constructed with the near edge a minimum of 12' from the pavement edge. Signs in urban areas and post mounted signs in rural areas shall be constructed with the near edge a minimum of 15' from the pavement edge.

- Road signs shall be constructed with the near edge of the sign a minimum of 7' from the pavement edge. Signs in rural areas shall be constructed with the near edge a minimum of 12' from the pavement edge. Signs in urban areas and post mounted signs in rural areas shall be constructed with the near edge a minimum of 15' from the pavement edge.

- Road signs shall be constructed with the near edge of the sign a minimum of 7' from the pavement edge. Signs in rural areas shall be constructed with the near edge a minimum of 12' from the pavement edge. Signs in urban areas and post mounted signs in rural areas shall be constructed with the near edge a minimum of 15' from the pavement edge.
4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (See BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4).

Offset Distance

<table>
<thead>
<tr>
<th>Speed</th>
<th>Offset Distance (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>22</td>
<td>3</td>
</tr>
</tbody>
</table>

If offset distance is not attainable, then see "Barrier Placement With Attenuator" detail shown below.

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with a Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."
Ditch Check (E-3)

- General Notes
  - Material: Geotextile fabric
  - Structure: Wood frame
  - V-TYPE
  - Width: 6' MAX.

Drop Inlet Fence (E-7)

- General Notes
  - Material: Geotextile fabric
  - Structure: Wood frame
  - Wood posts, 2''x4'' nominal
  - Height: 2' MIN.

Sand Bag Check (E-5)

- General Notes
  - Material: Sand bags
  - Structure: Natural ground
  - Normal: 18'' to 24'' variable
  - Water level: 2 in.

Rock Check (E-6)

- General Notes
  - Material: Rock fill
  - Structure: Natural ground
  - Normal: 18'' to 24'' variable
  - Water level: 2 in.

Silt Fence (E-4)

- General Notes
  - Material: Geotextile fabric
  - Structure: Wood frame
  - Height: 2' MIN.

Baile Straw Filter Barrier (E-21)

- General Notes
  - Material: Bailed straw
  - Structure: Natural ground
  - Normal: 18'' to 24'' variable
  - Water level: 2 in.

Drop Inlet Perspective View

- Notes
  - Material: Geotextile fabric
  - Structure: Wood frame
  - Height: 2' MIN.

Compost Filter Socket

- General Notes
  - Material: Compost
  - Structure: Wood frame
  - Height: 2' MIN.

Temporary Erosion Control Devices

- Notes
  - Material: Geotextile fabric
  - Structure: Wood frame
  - Height: 2' MIN.
CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE
1. Place perimeter controls (e.g., silt fences, diversion ditches, sediment basins).
2. Perform clearing and grubbing operation.

EXISTING GROUND

CONSTRUCTION SEQUENCE
2. Perform clearing and grubbing operation.

EXCAVATION

1. Excavate and stabilize interceptors and/or diversion ditches.
2. Perform phase 1 excavation, place permanent or temporary seeding.
3. Perform phase 2 excavation, place permanent or temporary seeding.
4. Perform final phase of excavation, place permanent or temporary seeding, sediment basins, or other erosion control devices as required.

EMBANKMENT

CONSTRUCTION SEQUENCE
1. Construct diversion ditches, check, sediment basins, silt fences, or other erosion control devices as specified.
2. Place phase 1 embankment with permanent or temporary seeding.
3. Place phase 2 embankment with permanent or temporary seeding, construction is to be temporarily abandoned for a period of greater than 21 days.
4. Place final phase of embankment with permanent or temporary seeding, sediment basins, and maintenance until entire slope is stabilized.

GENERAL NOTE

- Construction sequence will vary.
- Sediment basins, etc.
- The work progresses slowly shall be constructed and stabilized in equal increments not to exceed 25 feet measured vertically.
- Provide diversion ditches and slope drains and maintain until entire slope is stabilized.
DROP INLETS IN SUMP LOCATIONS.

SILT DIKE SHOULD ONLY BE USED FOR DROP INLETS FOR TRIANGULAR SILT DIKE INSTALLATION.

WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT DIVERSION DITCH AND/OR DITCH LINER FOR TRIANGULAR SILT DIKE INSTALLATION CONTINUOUS BARRIER FOR TRIANGULAR SILT DIKE INSTALLATION TEMPORARY DITCH LINER FOR TRIANGULAR SILT DIKE INSTALLATION TEMPORARY DITCH LINER FOR TRIANGULAR SILT DIKE INSTALLATION.

DIVERSION DITCH AT INTERMEDIATE LOCATIONS.

THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.

STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.

STAPLES SHALL BE PINNED UNDERNEATH BACK APRON TUCKED & APRON ON THIS SIDE OF DIKE SHOULDED & STAPLED DOWN.

APRON OVERLAP OF THE DIKE SHOULD BE FOLDED UNDER THE APRON ON THIS SIDE OF DIKE SHOULDED & STAPLED DOWN.

APRON ON THIS SIDE OF DIKE SHOULDED & STAPLED DOWN.

NOTE: NOTE "1" DIKE SHOULDED ONLY BE USED FOR DROP INLETS IN DUMP LOCATIONS.

SYMBOL TO BE USED TO DENOTE DEVICE ON PLANS.

GENERAL NOTES

1. THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, AND MAINTAINING THE TRIANGULAR Silt Dike. The District, Unit, and Various Projects, or a Combination of the Same, at the Site of Slope or Ditch, the Construction of which is to be carried out as directed by the Engineer. The Contractor shall install Continuous Barrier at Head of Silt Dike and located as soon as construction will allow as directed by the Engineer.

2. TRIANGULAR Silt Dike shall be installed in a manner whereby it shall consist of a Minimum Width of at least 3' to 6' in the center with a Base of at least 6' to 8' wide, and a Height of at least 3' to 6' tall. The construction, installation, and operation of these structures should be carried out in a manner whereby they will provide protection to the roadway and the ditch or ditch system. These structures should be inspected at least once per month and the construction should be maintained as necessary. In the event of construction, additional structures should be installed, and measures should be taken to ensure that these structures will provide adequate protection to the roadway and the ditch or ditch system.

3. ACCEPTED TRIANGULAR Silt DIKE, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR TRIANGULAR Silt Dike. ANY DEFICIENCIES OR DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR. THE ENGINEER. IF THE DIKES ARE DAMAGED OR INADVERTENTLY MOVED DURING THE SILT ACCUMULATED SILT OR DEBRIS SHALL BE REMOVED AND RELOCATED AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL INSPECT ALL DIKES AFTER EACH RAINFALL EVENT OF AT LEAST 0.5".

SEDIMENT CONTROL IN AASHTO M288. THE DIKES SHALL BE ATTACHED TO THE GROUND WITH WIRE ROT-PROOF AND RESISTANT TO HEAT AND ULTRAVIOLET RADIATION MEETING REQUIREMENTS FOR BOTH SIDES OF THE TRIANGLE 24" TO 36''. THIS FABRIC SHOULD BE MILDEW RESISTANT, GEOTEXTILE FABRIC PLACED AROUND THE INNER MATERIAL & ALLOWED TO EXTEND BEYOND SHAPED INNER MATERIAL SHALL BE URETHANE FOAM. THE OUTER COVER SHALL BE A WOVEN 8'' TO 10'' IN THE CENTER WITH EQUAL SIDES AND A 16'' TO 20'' BASE. THE TRIANGULAR Dike Section A-A TEMPORARY SILT DIKE UNIT TRENCH 3" TO 6" LONG. STAPLES SHALL BE PLACED AT 3" TO 6" INTERVALS ALONG THE DIKE AND AT INTERMEDIATE LOCATIONS. STAPLES SHALL BE PLACED AT 3" TO 6" INTERVALS ALONG THE DIKE AND AT INTERMEDIATE LOCATIONS.

8" TO 10" TRENCH 3" TO 6" LONG. STAPLES SHALL BE PLACED AT 3" TO 6" INTERVALS ALONG THE DIKE AND AT INTERMEDIATE LOCATIONS. STAPLES SHALL BE PLACED AT 3" TO 6" INTERVALS ALONG THE DIKE AND AT INTERMEDIATE LOCATIONS.

STAPLED DOWN.
NOTE: THE EXPANSION JOINTS SHALL BE MEASURED AND PAID FOR AS PCC.

PAYMENT (RAMP THICKNESS)

THE JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S", OR PAVING

CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT

UNIT PRICE (SO FOR THE CLASS OF CONCRETE USED). ALL OTHER WORK

AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT

SHALL BE SUBSIDIARY TO THE ABOVE ITEMS.

SEAL JOINT ACCORDING TO DETAILS SHOWN ON

STD. DWG. CPTJ-6A

TO DETAILS SHOWN ON

STANDARD TURNOUT

FOR

ENTRANCE & EXIT RAMPS

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD TURNOUT

FOR

ENTRANCE & EXIT RAMPS

STANDARD DRAWING TR-1
**ENTRANCE RAMP**

**EXIT RAMP**

<table>
<thead>
<tr>
<th>DESIGN SPEED</th>
<th>Y</th>
<th>NO. SPANS</th>
<th>LENGTH</th>
<th>RETURN SHOULDER RADIUS</th>
<th>ADDITIONAL</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td></td>
<td>2</td>
<td>200</td>
<td></td>
<td></td>
<td>995</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td>2</td>
<td>200</td>
<td></td>
<td></td>
<td>1890</td>
</tr>
<tr>
<td>40</td>
<td></td>
<td>2</td>
<td>200</td>
<td></td>
<td></td>
<td>2880</td>
</tr>
</tbody>
</table>

**DETAIL 'A'**

**DETAIL OF EXPANSION JOINT & JOINT SUPPORT**

**DETAIL OF STANDARD TURNOUT**

**ARKANSAS STATE HIGHWAY COMMISSION**

**NOTES:**
- Joint spacing on the main lanes shall be adjusted as necessary to conform to these joint layouts. The main lane joint spacing may be reduced to a 12' minimum.
- Joint supports @ 15'-0" CTRS. Three 1" expansion joints and 1" dowel @ 15'-0" CTRS.
- Joint supports @ 15'-0" CTRS. Three 1" expansion joints and 1" dowel @ 15'-0" CTRS.
- Joint supports @ 15'-0" CTRS. Three 1" expansion joints and 1" dowel @ 15'-0" CTRS.

**REVISION HISTORY:**
- 11-03-94: Added note re: reinf. bars
- 5-13-99: Added, edited and deleted notes
- 11-16-01: Corrected spelling on entrance ramp note
- 8-22-02: Deleted note
**GENERAL NOTES:**

The detectable warning devices shall be located so that the nearest edge of the device is 0.9" to 1.4" from the face of the curb. The detectable warning surface shall meet the requirements of the Domes shall be aligned on a square grid in the geometric configuration shown. The surface shall be 1.6" to 2.4" thick. The full width of the curb ramp or flush surface shall be 24" wide. The detectable warning device shall be on the approach.

### RAMP SELECTION CRITERIA

<table>
<thead>
<tr>
<th>Choice</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIRST CHOICE</strong></td>
<td>The concept of the required ramp shall be the best. The concept shall meet the requirements of the AASHTO and ADA standards.</td>
</tr>
<tr>
<td><strong>SECOND CHOICE</strong></td>
<td>The concept shall meet the requirements of the AASHTO and ADA standards. The concept shall be the closest to the first choice.</td>
</tr>
<tr>
<td><strong>THIRD CHOICE</strong></td>
<td>The concept shall meet the requirements of the AASHTO and ADA standards. The concept shall be the closest to the second choice.</td>
</tr>
<tr>
<td><strong>FOURTH CHOICE</strong></td>
<td>The concept shall meet the requirements of the AASHTO and ADA standards. The concept shall be the closest to the third choice.</td>
</tr>
</tbody>
</table>

### GENERAL NOTES FOR DETECTABLE WARNING DEVICES

- All detectable warning devices shall be located so that the nearest edge of the device is 0.9" to 1.4" from the face of the curb. The detectable warning surface shall meet the requirements of the AASHTO and ADA standards.
- The detectable warning device shall be located so that the nearest edge of the device is 0.9" to 1.4" from the face of the curb. The detectable warning surface shall meet the requirements of the AASHTO and ADA standards.
- The detectable warning device shall be located so that the nearest edge of the device is 0.9" to 1.4" from the face of the curb. The detectable warning surface shall meet the requirements of the AASHTO and ADA standards.
- The detectable warning device shall be located so that the nearest edge of the device is 0.9" to 1.4" from the face of the curb. The detectable warning surface shall meet the requirements of the AASHTO and ADA standards.

### DETECTABLE WARNING DEVICE DETAIL

- The detectable warning device shall be located so that the nearest edge of the device is 0.9" to 1.4" from the face of the curb. The detectable warning surface shall meet the requirements of the AASHTO and ADA standards.
- The detectable warning device shall be located so that the nearest edge of the device is 0.9" to 1.4" from the face of the curb. The detectable warning surface shall meet the requirements of the AASHTO and ADA standards.
- The detectable warning device shall be located so that the nearest edge of the device is 0.9" to 1.4" from the face of the curb. The detectable warning surface shall meet the requirements of the AASHTO and ADA standards.
- The detectable warning device shall be located so that the nearest edge of the device is 0.9" to 1.4" from the face of the curb. The detectable warning surface shall meet the requirements of the AASHTO and ADA standards.