



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
FAYETTE COUNTY
HMA RESURFACING WITH MILLING

On US 018 from east of IA 150 in West Union to Golden Avenue (B-64)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



| MILEAGE SUMMARY | | |
|--|------------------------------|-------------------------|
| Location | Lin. Ft. | Miles |
| (Urban Section) Sta. 373+55.2 to Sta. 374+89.6 Eq: Sta. 374+89.6 BK= Sta. 719+29.4 AH Sta. 719+29.4 to Sta. 732+22.64 Eq: Sta. 732+22.64 to Sta. 100+00.00 Sta. 100+00 to Sta. 115+60 | 134.40 1293.24 1560.00 | 0.025 0.245 0.296 |
| (Rural Section) Sta. 115+60 to Sta. 144+75 | 2915.00 | 0.552 |
| Total: | 5902.64 | 1.118 |

REVISIONS

TOTAL

24

PROJECT IDENTIFICATION NUMBER

15-33-0018-010

PROJECT NUMBER

NHSN-018-8(42)--2R-33

R.O.W. PROJECT NUMBER

INDEX OF SHEETS

| No. | DESCRIPTION |
|-----------------|---|
| A Sheets | Title Sheet |
| A.1 | Title Sheet |
| A.1 | Location Map Sheet |
| B Sheets | Typical Cross Sections and Details |
| B.1 - B.2 | Typical Cross Sections and Details |
| C Sheets | Quantities and General Information |
| C.1 | Project Description |
| C.1 | Estimated Project Quantities |
| C.1 - C.3 | Estimate Reference Information |
| C.3 | Index of Tabulations |
| C.4 | Standard Road Plans |
| C.4 | General Notes |
| C.3 - C.12 | Tabulations |
| G Sheets | Survey Sheet |
| G.1 | Superelevation Data |
| J Sheets | Traffic Control and Staging Sheet |
| J.1 | Traffic Control Plan |
| J.1 | Staging Notes Stage |
| * J.2 - J.5 | Pavement Marking Details |
| U Sheets | Modified Standards and Detail Sheets |
| * U.1 - U.3 | Silt Fence Installation For Shallow Or No Ditch |
| | * Color Plan Sheets |

EQUATION:

Sta. 372+22.64 BK=
Sta. 100+00.00 AH

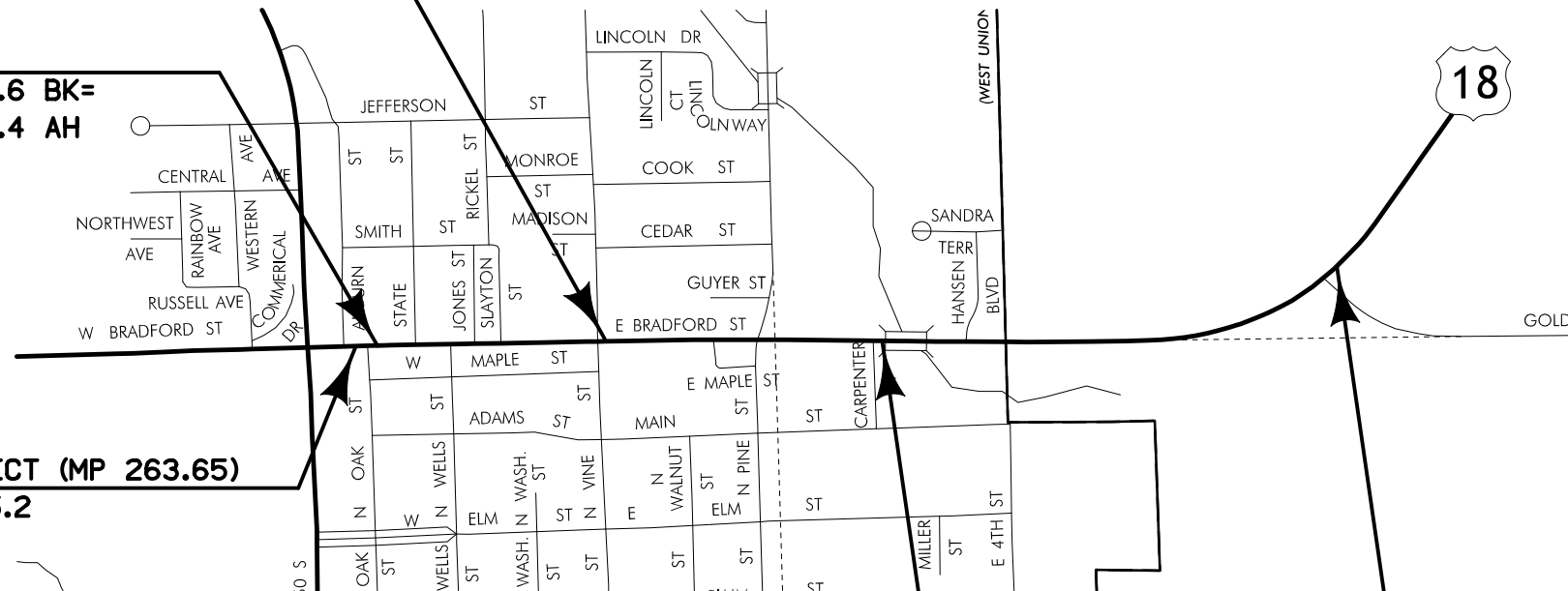
EQUATION:

Sta. 374+89.6 BK=
Sta. 719+29.4 AH

BEGIN PROJECT (MP 263.65)
Sta. 373+55.2

URBAN/RURAL (MP 264.20)
Sta. 115+60.0

END PROJECT (MP 264.77)
Sta. 144+75.0



DESIGN DATA URBAN

| | | |
|--------------------|-----------|--------|
| 2017 AADT | 4600 | V.P.D. |
| 2037 AADT | 5000 | V.P.D. |
| 2037 DHV | 520 | V.P.H. |
| TRUCKS | 11 | % |
| Total Design ESALs | 1,500,000 | |

DESIGN DATA RURAL

| | | |
|--------------------|-----------|--------|
| 2017 AADT | 4000 | V.P.D. |
| 2037 AADT | 4300 | V.P.D. |
| 2037 DHV | 450 | V.P.H. |
| TRUCKS | 12 | % |
| Total Design ESALs | 1,400,000 | |



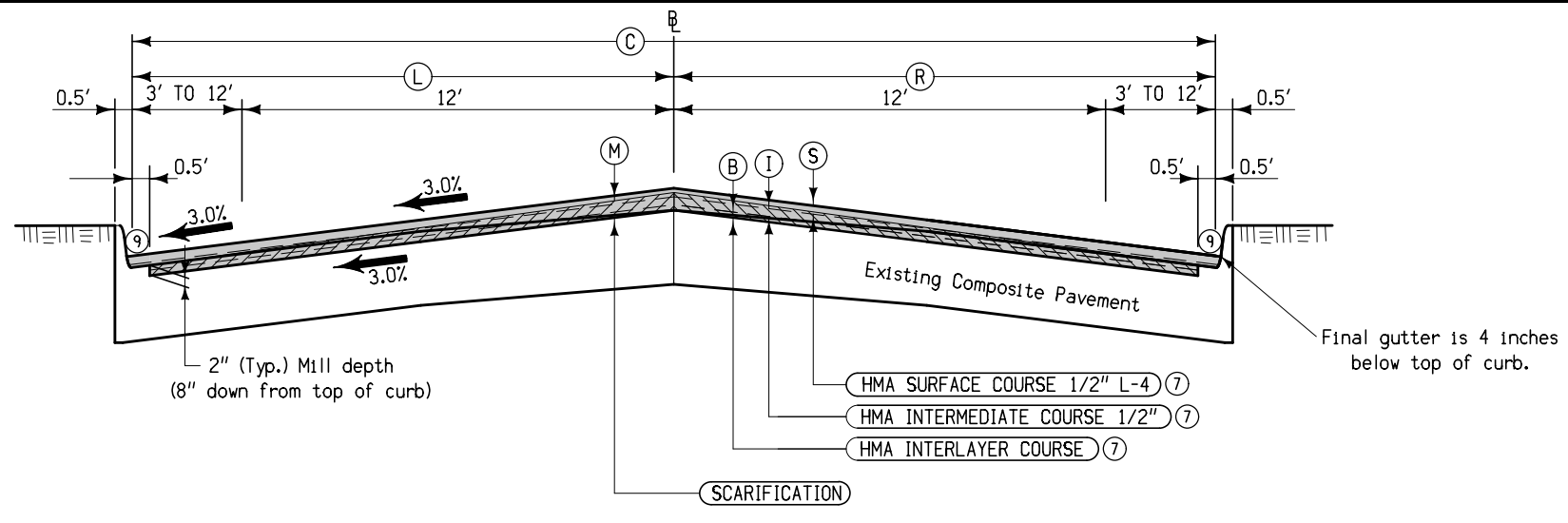
I hereby certify that this plan was prepared under my supervision and that engineering decisions with regard to the design were made by me or by other duly licensed Professional Engineers under the laws of the State of Iowa.

Signature _____ Date _____

MARK R. CALLAHAN

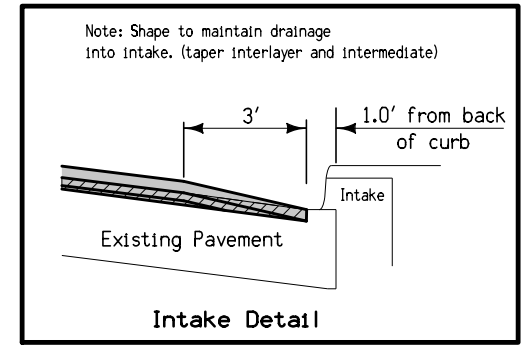
My license renewal date is December 31, 2017

Pages or sheets covered by this seal: A.1, B.1-B.2, C.1-C.12, G.1, J.1-J.5 & U.1-U.3



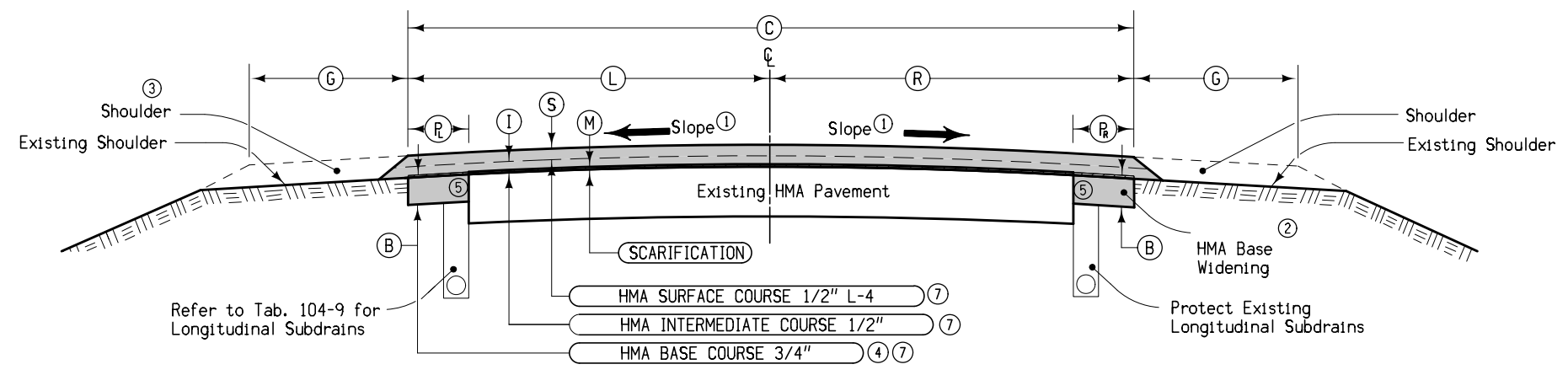
- Notes:
- Existing typical pavement cross slope varies 2% to 4% on westbound lane and 1% to 3.4% on the eastbound lane.
 - Section may be modified as directed by the Engineer through areas of special shaping.
 - Tack Coat estimated for 2 applications. Includes vertical edge at 0.15 Gal/SY.
 - Pavement scarification shall continue through intersections.
 - Contractor shall use care when scarifying near intakes. Any damage to the structures as a result of contractor negligence shall be replaced or repaired by the contractor at no cost to the DOT.
 - Quantities are shown in Tabulation 100-25.
 - PG 58-28S binder shall be used for surface and intermediate courses. PG 58-34S binder shall be used for Interlayer courses only.
 - Milling to vary from 3 inches to 4 inches at centerline to 2 inches to 3 inches at curb, more or less.
 - Contractor to mill as close to gutterline as possible. Any existing HMA remaining after milling shall be removed by other methods.

HMA Paving
 Pavement Scarification



**TYPICAL CROSS SECTION
2 LANE HMA RESURFACING
CURB AND GUTTER SECTION**

| Location | | S | I | B | C | L | R | M | Remarks |
|--------------------|----------|--------|--------|--------|-------|-------|-------|--------|--|
| Station To Station | | Inches | Inches | Inches | Feet | Feet | Feet | Inches | |
| 373+55.2 | 374+00.0 | 1.5 | 1.5 | 0 | 48 | 24 | 24 | 3 | Runout Type 'N4' |
| 374+00.0 | 719+45.0 | 1.5 | 1.5 | 0 | 48-30 | 24-15 | 24-15 | 3 | EQ. Sta. 374+89.6 BK= Sta. 719+29.4 AH |
| 719+45.0 | 732+22.6 | 1.5 | 1.5 | 1 | 30 | 15 | 15 | 3 | EQ. Sta. 732+22.6 BK= Sta. 100+00.0 AH |
| 100+00.0 | 115+60.0 | 1.5 | 1.5 | 1 | 30 | 15 | 15 | 3 | |
| 115+60.0 | 116+10.0 | 1.5-2 | 1.5-2 | 1 | 30 | 15 | 15 | 3-0.5 | Transition Type 'R4' |



- Notes:
- Match finished slope to existing pavement, except that the maximum allowable slope is 3.0%, minimum allowable slope is 2.0%. Section may be modified as directed by the Engineer through areas of special shaping or superelevated curves. Refer to Typical 2013 for cross slope of Auxiliary Lane.
 - Surface and Intermediate quantities quantities are shown in Tabulation 100-25. Base quantities for widening are shown in Tabulation 112-9.
 - Refer to shoulder Typical 7135 and Standard Road Plan PV-203 for additional information.
 - Depth of (B) is equal to the depth of Class 13 Excavation used in Tabulation 112-9.
 - Provide a clean vertical surface similar to what can be achieved with a milling machine. Incidental to Class 13 Excavation.
 - Tack Coat estimated for 2 applications. Includes vertical edge at 0.15 Gal/SY.
 - Asphalt Binder for Surface, Intermediate and Base Courses shall be PG 58-28S.

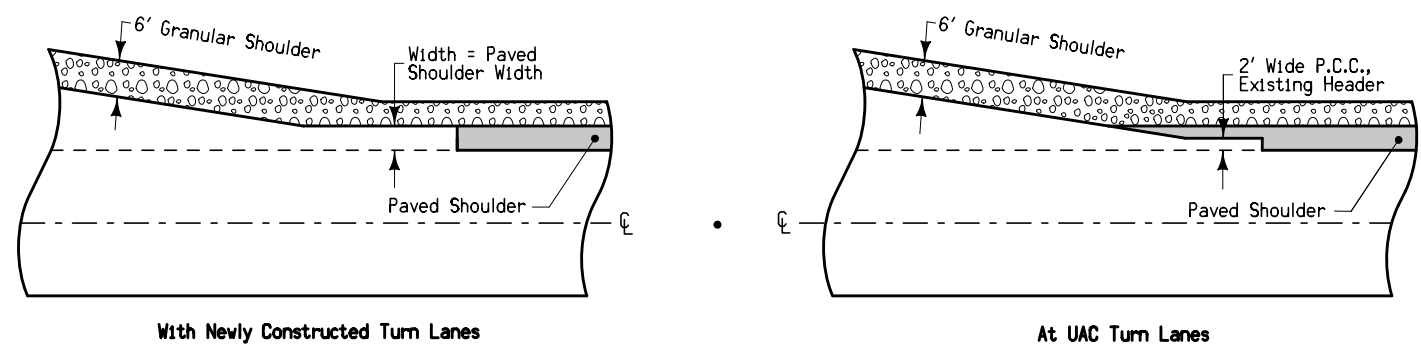
HMA Paving
 Pavement Scarification

| Location | | S | I | B | M | C | L | R | P | R | G | Remarks |
|--------------------|----------|--------|--------|--------|--------|-------|------|-------|------|------|------|---------------------------|
| Station To Station | | Inches | Inches | Inches | Inches | Feet | Feet | Feet | Feet | Feet | Feet | |
| 116+10.0 | 134+55.0 | 2 | 2 | 2.5 | 0.5 | 32 | 16 | 16 | 4 | 4 | 4 | |
| 134+55.0 | 136+51.9 | 2 | 2 | 2.5 | 0.5 | 32-40 | 16 | 16-24 | 4 | 4-0 | 4 | RIGHT TURN LANE TAPER (1) |
| 136+51.9 | 140+83.3 | 2 | 2 | 2.5 | 0.5 | 40 | 16 | 24 | 4 | 4-0 | 4 | RIGHT TURN LANE (1) |
| 140+83.3 | 142+23.5 | 2 | 2 | 2.5 | 0.5 | 40 | 16 | 24 | 4 | 0 | 0 | THRU INTERSECTION ON RT |
| 142+23.5 | 142+70.2 | 2 | 2 | 2.5 | 0.5 | 40-32 | 16 | 24-16 | 4 | 0-4 | 4 | |
| 142+70.2 | 143+00.0 | 2 | 2 | 2.5 | 0.5 | 32 | 16 | 16 | 4 | 4 | 4 | |
| 143+00.0 | 144+75.0 | 2 | 2-0 | 2.5-6 | 0.5-2 | 32 | 16 | 16 | 4 | 4 | 4 | Runout Type 'N3' |

(1) RIGHT TURN LANE CROSS SLOPE REFER TO DETAIL 2013

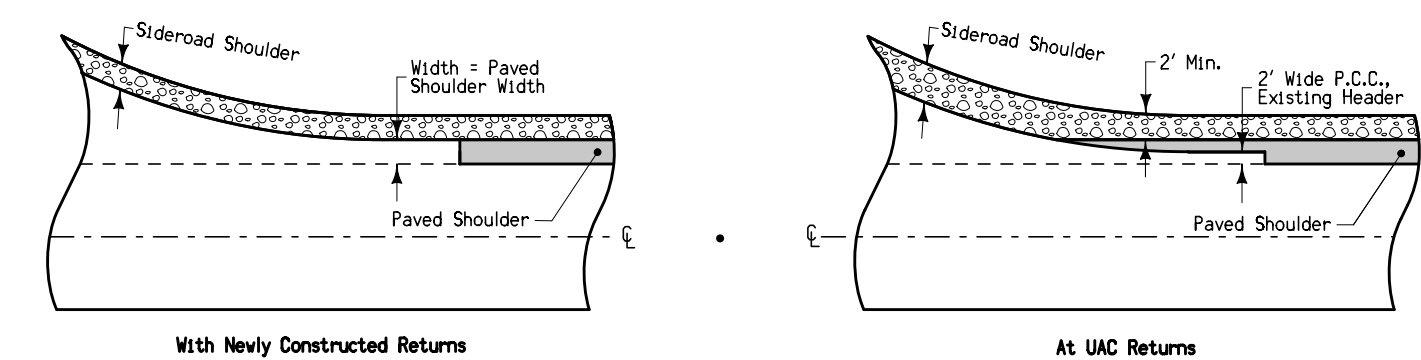
**TYPICAL CROSS SECTION
HMA RESURFACING WITH
BASE WIDENING**

7154A
10-20-09



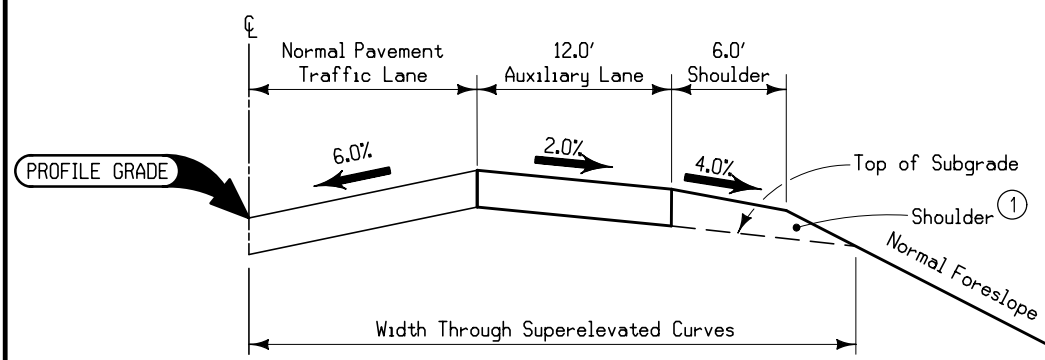
**PAVED SHOULDER
DETAIL AT
TURN LANES**

7154B
10-20-09



**PAVED SHOULDER
DETAIL AT RETURNS**

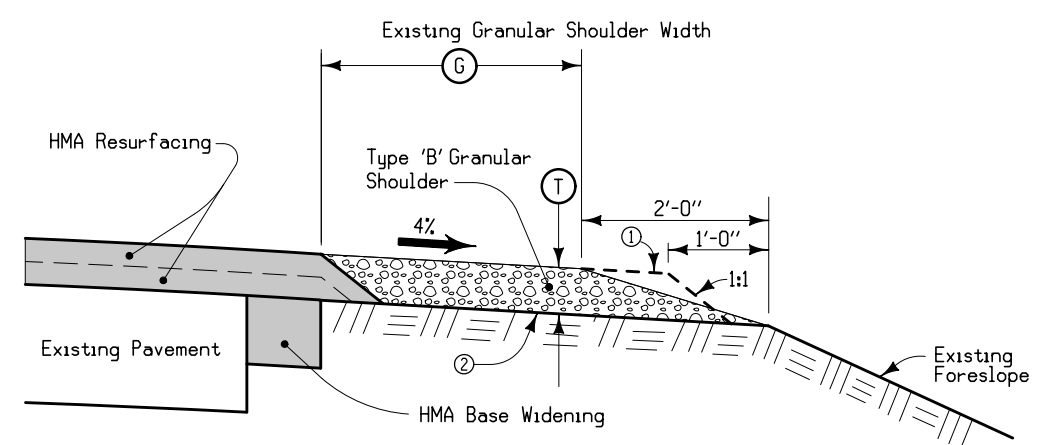
2013
MODIFIED



Notes:
On the high side of superelevated curves, the surface of auxiliary lane pavement shall be maintained at the same slope as the adjacent traffic lane until the superelevation reaches 4.0%. When the traffic lane pavement slope is greater than 4.0%, the auxiliary slope will remain constant at 4.0%.
On the low side of superelevated curves, the surface of auxiliary lane pavement shall slope the same as the adjacent lane pavement.
① Refer to other drawings for details of shoulder design and construction.

**TYPICAL HALF SECTION OF AUXILIARY LANE
THROUGH AREAS OF SUPERELEVATION**

7135
MODIFIED

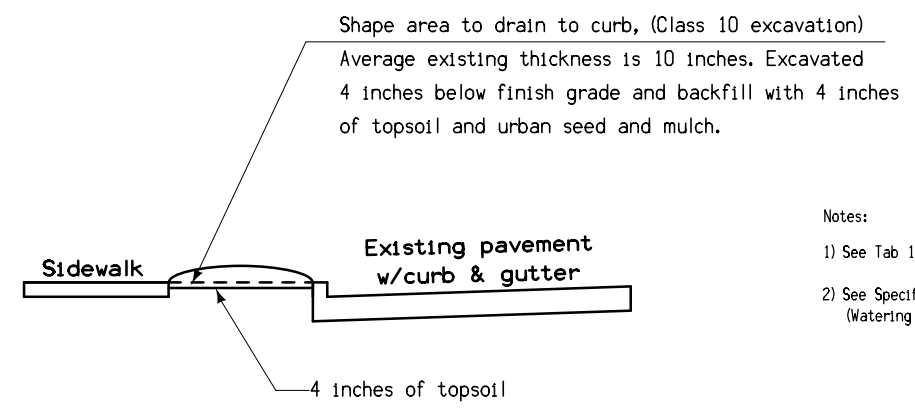


Notes:
Quantities have been determined on the basis of a design weight of 140 lbs. per cubic foot.
① Place and compact material to the dashed lines; then blade and shape to foreslope that portion above the solid line in the outer 2' and roll with loaded truck tire.
② Existing shoulder surface to be shaped to a uniform cross slope prior to placing granular shoulder material. Shape to ensure the thickness of the granular shoulder material is not less than the thickness of the resurfacing. See Tab. 112-9 for Shoulder Shaping & Blading Quantities.
④ Nominal thickness adjusted to account for existing slopes.
⑤ See Tabulation 112-9 for G and Quantities.

| LOCATION | | | T Inches |
|------------------------|--------------------|--------|-------------|
| SECTION IDENTIFICATION | STATION TO STATION | SIDE | |
| SEE TYPICAL MC-2 | 115+60 | 144+75 | BOTH |
| | | | 6 |

**TYPICAL SECTION FOR TYPE 'B'
GRANULAR SHOULDER
ADJACENT TO HOT MIX ASPHALT RESURFACING**

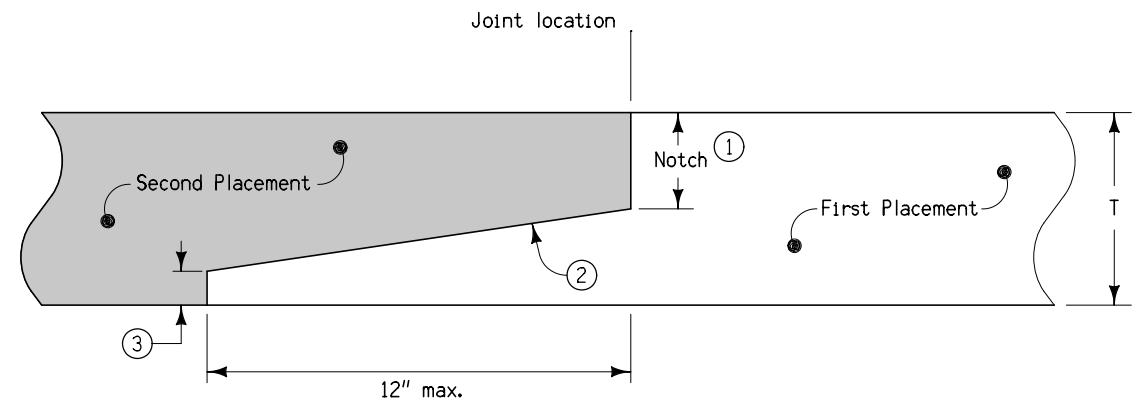
MC-3



Notes:
1) See Tab 104-10U for utility contact information.
2) See Specification 2601 for details on watering requirements, (Watering is considered incidental to urban seeding).

BOULEVARD SHAPING DETAIL

7315
10-20-09



Notes:
① Notch: Min = nominal maximum aggregate size + 1/4". Max = T/2.
② 12:1 Slope
③ Optional step at toe of slope: Max = 1".

**LONGITUDINAL HMA
NOTCHED WEDGE JOINT
T = 2" OR GREATER**

100-1D
10-18-05

PROJECT DESCRIPTION

In the urban section of U.S. 18 in West Union mill 3.0 inches of existing HMA and resurface with 1.0 inch interlayer and 3.0 inches of HMA. Perform full and partial depth patching after milling and prior to placement of the interlayer.

In the rural section of U.S. 18 mill 0.5 inches of existing HMA, add 4-foot base widening then resurface with 4.0 inches of HMA, 32 feet wide. Install subdrains and rumble strips. Extend one roadway pipe and address foreslopes steeper than 3:1. Flatten transverse slopes, extend side road and entrance pipes.

100-1A
07-15-97

ESTIMATED PROJECT QUANTITIES (1 DIVISION PROJECT)

| Item No. | Item Code | Item | Unit | Total | As Built Qty. |
|----------|--------------|--|------|--------------|---------------|
| 1 | 2102-2625000 | EMBANKMENT-IN-PLACE | CY | 24.0 | |
| 2 | 2102-2710090 | EXCAVATION, CLASS 10, WASTE | CY | 630.0 | |
| 3 | 2105-8425005 | TOPSOIL, FURNISH AND SPREAD | CY | 240.0 | |
| 4 | 2121-7425020 | GRANULAR SHOULDERS, TYPE B | TON | 2,480.0 | |
| 5 | 2125-2225050 | RESHAPING DITCHES | STA | 1.50 | |
| 6 | 2212-0475095 | CLEANING AND PREPARATION OF BASE | MILE | 1.2 | |
| 7 | 2212-5070310 | PATCHES, FULL-DEPTH REPAIR | SY | 1,300.0 | |
| 8 | 2212-5070330 | PATCHES BY COUNT (REPAIR) | EACH | 130 | |
| 9 | 2212-5075001 | HOT MIX ASPHALT SURFACE PATCHES | TON | 5.0 | |
| 10 | 2213-2713300 | EXCAVATION, CLASS 13, FOR WIDENING | CY | 155.0 | |
| 11 | 2213-6745500 | REMOVAL OF CURB | STA | 7.80 | |
| 12 | 2213-8200000 | BASE WIDENING, HOT MIX ASPHALT MIXTURE | TON | 323.0 | |
| 13 | 2214-5145150 | PAVEMENT SCARIFICATION | SY | 21,904.0 | |
| 14 | 2214-7450050 | BLADING AND SHAPING SHOULDER MATERIAL | STA | 56.90 | |
| 15 | 2303-0001000 | HOT MIX ASPHALT MIXTURE, WEDGE, LEVELING OR STRENGTHENING COURSE | TON | 860.0 | |
| 16 | 2303-0002380 | HOT MIX ASPHALT MIXTURE INTERLAYER BASE COURSE, 3/8 IN. MIX | TON | 550.000 | |
| 17 | 2303-1032500 | HOT MIX ASPHALT STANDARD TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX | TON | 2,060.00 | |
| 18 | 2303-1033504 | HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-4 | TON | 2,200.00 | |
| 19 | 2303-1258283 | ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC | TON | 326.60 | |
| 20 | 2303-1258343 | ASPHALT BINDER, PG 58-34S, STANDARD TRAFFIC | TON | 33.00 | |
| 21 | 2303-6911000 | HOT MIX ASPHALT PAVEMENT SAMPLES | LS | 1.00 | |
| 22 | 2303-7000610 | PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE LABORATORY VOIDS (FORMULA - BY PAY FACTOR) | EACH | 2800 | |
| 23 | 2303-7000630 | PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE LONGITUDINAL JOINT DENSITY (FORMULA - BY PAY FACTOR) | EACH | 2800 | |
| 24 | 2315-8275025 | SURFACING, DRIVEWAY, CLASS A CRUSHED STONE | TON | 56.0 | |
| 25 | 2317-7000120 | PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA PAVEMENT SMOOTHNESS (BY SCHEDULE) | EACH | 5500 | |
| 26 | 2401-6745650 | REMOVAL OF EXISTING STRUCTURES | LS | 1.00 | |
| 27 | 2402-2720100 | EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT | CY | 56.0 | |
| 28 | 2416-0100030 | APRONS, CONCRETE, 30 IN. DIA. | EACH | 2 | |
| 29 | 2416-0100036 | APRONS, CONCRETE, 36 IN. DIA. | EACH | 1 | |
| 30 | 2416-0101036 | REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN. | EACH | 2 | |
| 31 | 2416-1180024 | CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA. | LF | 6 | |
| 32 | 2416-1541036 | REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN. | LF | 18 | |
| 33 | 2417-0225018 | APRONS, METAL, 18 IN. DIA. | EACH | 10 | |
| 34 | 2435-0140148 | MANHOLE, STORM SEWER, SW-401, 48 IN. | EACH | 1 | |
| 35 | 2435-0600010 | MANHOLE ADJUSTMENT, MINOR | EACH | 7 | |
| 36 | 2499-6000100 | CLEAN OUT PIPE CULVERT | LF | 120.0 | |
| 37 | 2502-8212036 | SUBDRAIN, LONGITUDINAL, (SHOULDER) 6 IN. DIA. | LF | 550.0 | |
| 38 | 2502-8221304 | SUBDRAIN OUTLET, DR-304 | EACH | 10 | |
| 39 | 2507-3250005 | ENGINEERING FABRIC | SY | 53.3 | |
| 40 | 2507-8029000 | EROSION STONE | TON | 31.7 | |
| 41 | 2512-1725356 | CURB AND GUTTER, P.C. CONCRETE, 3.5 FT. | LF | 780.0 | |
| 42 | 2525-0000200 | LOOP DETECTORS (ADDITION OR REPLACEMENT TO AN EXISTING TRAFFIC SIGNAL SYSTEM) | EACH | 14 | |
| 43 | 2526-8285000 | CONSTRUCTION SURVEY | LS | 1.00 | |
| 44 | 2527-9263109 | PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED | STA | 764.29 | |
| 45 | 2527-9263146 | PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED | EACH | 32 | |
| 46 | 2527-9270111 | GROOVES CUT FOR PAVEMENT MARKINGS | STA | 163.48 | |
| 47 | 2527-9270120 | GROOVES CUT FOR SYMBOLS AND LEGENDS | EACH | 7 | |
| 48 | 2528-8445110 | TRAFFIC CONTROL | LS | 1.00 | |
| 49 | 2528-8445113 | FLAGGERS | EACH | See Proposal | |
| 50 | 2528-8445115 | PILOT CARS | EACH | See Proposal | |
| 51 | 2533-4980005 | MOBILIZATION | LS | 1.00 | |
| 52 | 2548-0000100 | MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE | STA | 43.5 | |
| 53 | 2548-0000110 | ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS) | GAL | 47.1 | |
| 54 | 2548-0000310 | MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE | STA | 21.8 | |
| 55 | 2601-2634100 | MULCHING | ACRE | 0.2 | |
| 56 | 2601-2634105 | MULCHING, BONDED FIBER MATRIX | ACRE | 0.1 | |
| 57 | 2601-2636015 | NATIVE GRASS SEEDING | ACRE | 0.1 | |
| 58 | 2601-2636043 | SEEDING AND FERTILIZING (RURAL) | ACRE | 0.1 | |
| 59 | 2601-2636044 | SEEDING AND FERTILIZING (URBAN) | ACRE | 0.5 | |
| 60 | 2601-2642100 | STABILIZING CROP - SEEDING AND FERTILIZING | ACRE | 0.2 | |
| 61 | 2601-2642120 | STABILIZING CROP - SEEDING AND FERTILIZING (URBAN) | ACRE | 0.5 | |

100-1A
07-15-97

ESTIMATED PROJECT QUANTITIES (1 DIVISION PROJECT)

| Item No. | Item Code | Item | Unit | Total | As Built Qty. |
|----------|--------------|---|------|---------|---------------|
| 62 | 2602-0000020 | SILT FENCE | LF | 220.0 | |
| 63 | 2602-0000030 | SILT FENCE FOR DITCH CHECKS | LF | 165.0 | |
| 64 | 2602-0000071 | REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS | LF | 350.0 | |
| 65 | 2602-0000101 | MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK | LF | 35.0 | |
| 66 | 2602-0000309 | PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 9 IN. DIA. | LF | 1,610.0 | |
| 67 | 2602-0000350 | REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE | LF | 1,610.0 | |
| 68 | 2602-0010010 | MOBILIZATIONS, EROSION CONTROL | EACH | 1 | |
| 69 | 2602-0010020 | MOBILIZATIONS, EMERGENCY EROSION CONTROL | EACH | 1 | |

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

| Item No. | Item Code | Description |
|----------|--------------|---|
| 1 | 2102-2625000 | EMBANKMENT-IN-PLACE Refer to Tabulation 104-13 for additional information. Quantity is for fill for pipe extensions. The Contractor shall supply all fill material needed. Any removal of small brush or debris in these areas shall be incidental to this bid item. Material obtained from item "Excavation, Class 13, for Widening" may be used for this work. Overhaul will not be paid for this item. |
| - | - | - |
| 2 | 2102-2710090 | EXCAVATION, CLASS 10, WASTE Refer to Typical M-3 for additional information. This quantity is for the remove of material and grading of the areas between the sidewalk and curb for placement of topsoil. Excavation not used on the project shall become property of the Contractor and removed from the project. Care shall be taken to not damage any utilities. Overhaul will not be paid for this item. |
| - | - | - |
| 3 | 2105-8425005 | TOPSOIL, FURNISH AND SPREAD Refer to Typical M-3 and Tabulation 103-4 for additional information. All disturbed areas not covered by concrete, asphalt or gravel shall have a minimum of 4 inches of topsoil. The Contractor shall provide all the required topsoil. Topsoil from stripping and approved by the Engineer for placement, may also be used. Stripping of topsoil for placement of fill is considered incidental to this bid item. |
| - | - | - |
| 4 | 2121-7425020 | GRANULAR SHOULDERS, TYPE B Refer to Typical MC-2 and 7135 and Tabulation 112-9 for additional information. Estimated project quantity includes an additional 5% for irregularities. |
| - | - | - |
| 5 | 2125-2225050 | RESHAPING DITCHES Refer to Tabulation 300-1 for additional information. The actual length of ditch reshaping may be modified by the Engineer to obtain proper drainage at culverts. |
| - | - | - |
| 6 | 2212-0475095 | CLEANING AND PREPARATION OF BASE This item shall include the additional width for the turn lane. |
| - | - | - |
| 7 | 2212-5070310 | PATCHES, FULL-DEPTH REPAIR |
| 8 | 2212-5070330 | PATCHES BY COUNT (REPAIR) Refer to Tabulation 102-6C for additional information. |
| - | - | - |
| 9 | 2212-5075001 | HOT MIX ASPHALT SURFACE PATCHES This item is for patching the HMA surface prior to placement of HMA. |
| - | - | - |
| 10 | 2213-2713300 | EXCAVATION, CLASS 13, FOR WIDENING Refer to Typical MC-2 and Tabulation 112-9 for additional information. Excavation not used on the project shall become property of the Contractor and removed from the project. Overhaul will not be paid for this item. |
| - | - | - |
| 11 | 2213-6745500 | REMOVAL OF CURB Refer to Tabulation 110-4 for additional information. Remove curb and gutter to the nearest joint. Saw cutting is considered incidental. |
| - | - | - |
| 12 | 2213-8200000 | BASE WIDENING, HOT MIX ASPHALT MIXTURE Refer to Typical MC-1, MC-2, 2013, 7154A, 7154B and 7315 and Tabulations 100-25, 102-16 and 112-9 for additional information. Estimated project quantities include an additional 5% for irregularities. |
| - | - | - |

ESTIMATE REFERENCE INFORMATION

| Item No. | Item Code | Description |
|----------|--------------|---|
| 13 | 2214-5145150 | PAVEMENT SCARIFICATION Refer to Typical MC-1 and MC-2 and Tabulation 100-25 for additional information. |
| 14 | 2214-7450050 | BLADING AND SHAPING SHOULDER MATERIAL Refer to Typical 7135 and Tabulation 112-9 for additional information. This item is for building up the existing granular shoulders prior to placement of HMA base widening along ramps. Granular Shoulders, Type B material may be used for this bid item as necessary. |
| 15 | 2303-0001000 | HOT MIX ASPHALT MIXTURE, WEDGE, LEVELING OR STRENGTHENING COURSE Refer to Tabulation 106-2 for additional information. |
| 16 | 2303-0002380 | HOT MIX ASPHALT MIXTURE INTERLAYER BASE COURSE, 3/8 IN. MIX |
| 17 | 2303-1032500 | HOT MIX ASPHALT STANDARD TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX |
| 18 | 2303-1033504 | HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-4 |
| 19 | 2303-1258283 | ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC |
| 20 | 2303-1258343 | ASPHALT BINDER, PG 58-34S, STANDARD TRAFFIC |
| 21 | 2303-6911000 | HOT MIX ASPHALT PAVEMENT SAMPLES Refer to Typical MC-1, MC-2, 2013, 7154A, 7154B and 7315 and Tabulations 100-25, 102-16 and 112-9 for additional information. Estimated project quantities include an additional 5% for irregularities. |
| 22 | 2303-7000610 | PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE LABORATORY VOIDS (FORMULA - BY PAY FACTOR) |
| 23 | 2303-7000630 | PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE LONGITUDINAL JOINT DENSITY (FORMULA - BY PAY FACTOR) Estimated at 0.50 times the tons of HMA. |
| 24 | 2315-8275025 | SURFACING, DRIVEWAY, CLASS A CRUSHED STONE Refer to Tabulation 102-3 for additional information. |
| 25 | 2317-7000120 | PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA PAVEMENT SMOOTHNESS (BY SCHEDULE) Estimated at 0.24 times the square yards of surface paving. |
| 26 | 2401-6745650 | REMOVAL OF EXISTING STRUCTURES Refer to Tabulation 110-2 for additional information. |
| 27 | 2402-2720100 | EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT Refer to Tabulations 104-13 and 104-13A for additional information. |
| 28 | 2416-0100030 | APRONS, CONCRETE, 30 IN. DIA. |
| 29 | 2416-0100036 | APRONS, CONCRETE, 36 IN. DIA. |
| 30 | 2416-0101036 | REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN. |
| 31 | 2416-1180024 | CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA. |
| 32 | 2416-1541036 | REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN. |
| 33 | 2417-0225018 | APRONS, METAL, 18 IN. DIA. Refer to Tabulations 104-13, 104-13A and 110-2 for additional information. All work is to be performed within DOT right-of-way. |
| 34 | 2435-0140148 | MANHOLE, STORM SEWER, SW-401, 48 IN. Refer to Tabulation 104-5A for additional information. |
| 35 | 2435-0600010 | MANHOLE ADJUSTMENT, MINOR Refer to Tabulation 104-10 for additional information. |
| 36 | 2499-6000100 | CLEAN OUT PIPE CULVERT Refer to Tabulation 104-13A for additional information. This item is for the removal of sediment inside existing pipes. Contractor shall supply all equipment and material needed to remove sediment from culverts without damaging the culverts. Verify method with Engineer prior to cleaning. Prevent sediment from leaving the project in accordance with the Pollution Prevention Plan. METHOD OF MEASUREMENT: The Engineer will measure the length of pipe satisfactorily cleaned to the nearest foot. BASIS OF PAYMENT: The Contractor will be paid the unit price bid for the lineal feet of pipe satisfactorily cleaned. |
| 37 | 2502-8212036 | SUBDRAIN, LONGITUDINAL, (SHOULDER) 6 IN. DIA. |
| 38 | 2502-8221304 | SUBDRAIN OUTLET, DR-304 Refer to Typical MC-2 and Tabulation 104-9 for additional information. |
| 39 | 2507-3250005 | ENGINEERING FABRIC |
| 40 | 2507-8029000 | EROSION STONE Refer to Tabulation 100-23 for additional information. |
| 41 | 2512-1725356 | CURB AND GUTTER, P.C. CONCRETE, 3.5 FT. Refer to Typical MC-1 and Tabulation 112-4 for additional information. |
| 42 | 2525-0000200 | LOOP DETECTORS (ADDITION OR REPLACEMENT TO AN EXISTING TRAFFIC SIGNAL SYSTEM) Refer to Sheets J.2 and J.3 for additional information. All traffic loops effected by the resurfacing shall be replaced in there original location. METHOD OF MEASUREMENT: The Engineer will count each traffic loop satisfactorily installed. BASIS OF PAYMENT: The Contractor will be paid the unit price bid for each loop satisfactorily installed. All materials and labor needed for the the placement and connections sahl be included in this item. |
| 43 | 2526-8285000 | CONSTRUCTION SURVEY |

ESTIMATE REFERENCE INFORMATION

| Item No. | Item Code | Description |
|----------|--------------|--|
| 44 | 2527-9263109 | PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED |
| 45 | 2527-9263146 | PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED |
| 46 | 2527-9270111 | GROOVES CUT FOR PAVEMENT MARKINGS |
| 47 | 2527-9270120 | GROOVES CUT FOR SYMBOLS AND LEGENDS Refer to Tabulations 108-22 and 108-29 for additional information. Grooving depth shall be 0.08 inches to 0.10 inches. Grooving and final pavement markings shall be placed a minimum of 30 days after final HMA lift placement. |
| 48 | 2528-8445110 | TRAFFIC CONTROL Refer to Sheet J.1 for additional information. |
| 49 | 2528-8445113 | FLAGGERS |
| 50 | 2528-8445115 | PILOT CARS |
| 51 | 2533-4980005 | MOBILIZATION |
| 52 | 2548-0000100 | MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE |
| 53 | 2548-0000110 | ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS) |
| 54 | 2548-0000310 | MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE Refer to Tabulation 112-10 for additional information. |
| 55 | 2601-2634100 | MULCHING Mulch per Article 2601.03. E. 2. Anchor mulch into the soil using mulch anchoring equipment with a minimum of two passes. This item also includes areas requiring reshaping and seedbed preparation. Mulch shall be Certified Noxious Weed Seed Free Mulch as certified by the Iowa Crop Improvement Association or adjacent states' Crop Improvement Associations. Mulch Rate: 1 1/2 tons of dry cereal straw or native grass straw per acre. |
| 56 | 2601-2634105 | MULCHING, BONDED FIBER MATRIX To be installed in all urban areas and other areas designated by the Engineer. A Bonded Fibre Matrix shall be applied as the mulch for all areas designated as "Stabilizing Crop-Seeding and Fertilizing (Urban)". The seed and fertilizer for the area to be covered shall be applied before the Bonded Fibre Matrix Hydraulic Mulch application. Application rate shall be a minimum of 3000 lbs per acre. |
| 57 | 2601-2636015 | NATIVE GRASS SEEDING All areas outside eight feet adjacent to shoulder shall be seeded with "Native Grass Seeding". All seed for "Native Grass Seeding" will be supplied and mixed by the contractor according to Article 2601.03, B, 4, c and installed according to Article 2601.03, C, 5. All forb seed will be applied through the native grass drill wildflower or small seed box. Forb seed will not be allowed to be mixed and applied with the native grass seed. Cover crop will be required to be applied through the cool season or cover crop seed box. The cover crop seed will not be allowed to be mixed and applied with the native grass seed. Drill shall be calibrated prior to operation at the project site to the specified seeding rate for the project and witnessed by the contracting authority. The Engineer will review the limits prior to seeding with the Contractor. |
| 58 | 2601-2636043 | SEEDING AND FERTILIZING (RURAL) Refer to Tabulations 103-4, 104-13, 104-13A and 300-1 for additional information. Included for all areas designated by the Engineer. All disturbed areas shall be seeded and fertilized per Article 2601.03. C. 3 of the Standard Specifications. Use ground driven equipment. |
| 59 | 2601-2636044 | SEEDING AND FERTILIZING (URBAN) Refer to Tabulations 103-4 and 112-9 for additional information. Included for all areas designated by the Engineer. Prepare seedbed, fertilize, and seed according to Article 2601.03. C. 4 of the Standard Specifications. Use ground driven equipment. |
| 60 | 2601-2642100 | STABILIZING CROP - SEEDING AND FERTILIZING This item includes disturbed areas as directed by the Engineer. Seed and fertilize all disturbed areas according to Article 2601.03. C. 1 of the Standard Specifications. |

ESTIMATE REFERENCE INFORMATION

| Item No. | Item Code | Description |
|----------|--------------|--|
| 61 | 2601-2642120 | STABILIZING CROP - SEEDING AND FERTILIZING (URBAN) This item includes disturbed areas as directed by the Engineer. Seed and fertilize all urban disturbed areas according to Article 2601.03. C. 2 of the Standard Specifications. |
| 62 | 2602-0000020 | SILT FENCE Refer to Tabulation 100-17 and Sheets U.1 to U.3 for additional information. Verify specific locations with the Engineer prior to placement. Estimated quantity includes an additional 10% for other areas as directed by the Engineer. |
| 63 | 2602-0000030 | SILT FENCE FOR DITCH CHECKS Refer to Tabulation 100-18 and Sheets U.1 to U.3 for additional information. Verify specific locations with the Engineer prior to placement. Estimated quantity includes an additional 10% for other areas as directed by the Engineer. |
| 64 | 2602-0000071 | REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS This item is included for silt fence and silt fence for ditch check removal when slopes have been mulched and the Engineer has determined that fencing is no longer needed or for areas that have achieved 70% permanent growth. |
| 65 | 2602-0000101 | MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK This item is included for maintaining silt fence and silt fence ditch checks installed for the project. Estimated at 10% of the silt fence installed. |
| 66 | 2602-0000309 | PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 9 IN. DIA. Refer to Tabulation 100-19 for additional information. The tabulation includes estimated locations for placement of "Perimeter and Slope Sediment Control Device, 9 in. dia." to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Use Perimeter and Slope Sediment Control Devices fabricated using wood excelsior only. |
| 67 | 2602-0000350 | REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE This item is included for perimeter and slope sediment control device removal when slopes have been mulched and the Engineer has determined that the devices are no longer needed or for areas that have achieved 70% permanent growth. |
| 68 | 2602-0010010 | MOBILIZATIONS, EROSION CONTROL |
| 69 | 2602-0010020 | MOBILIZATIONS, EMERGENCY EROSION CONTROL |

INDEX OF TABULATIONS

| Tabulation | Tabulation Title | Sheet No. |
|------------|---|-------------|
| C Sheets | | |
| 100-1A | ESTIMATED PROJECT QUANTITIES (1 DIVISION PROJECT) | C.1 - C.1 |
| 100-1D | PROJECT DESCRIPTION | C.1 |
| 100-1U | UTILITIES | C.8 |
| 100-4A | ESTIMATE REFERENCE INFORMATION | C.1 - C.3 |
| 100-17 | TABULATION OF SILT FENCES | C.5 |
| 100-18 | SILT FENCES FOR DITCH CHECKS | C.5 |
| 100-19 | PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE | C.5 |
| 100-23 | ROCK EROSION CONTROL | C.5 |
| 100-25 | HMA PAVEMENT | C.9 |
| 100-27 | PAVEMENT SMOOTHNESS + PCC TEXTURE | C.3 |
| 100-34 | STORMWATER DRAINAGE BASIN | C.5 |
| 100-35 | SUMMARY OF STORMWATER STORAGE | C.5 |
| 102-3 | ACCESS POINTS AND SAFETY RAMPS | C.6 |
| 102-5 | EXISTING PAVEMENT | C.3 |
| 102-5A | EXISTING HMA PAVEMENT FOR RECYCLING | C.4 |
| 102-6C | FULL-DEPTH REPAIR PATCHES | C.8 |
| 102-16 | NOTCHES AND RUNOUTS FOR RESURFACING | C.8 |
| 103-4 | TABULATION OF SPREADING TOPSOIL | C.4 |
| 104-5A | INTAKES AND UTILITY ACCESSES | C.7 |
| 104-9 | LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE | C.6 |
| 104-10 | ADJUSTMENT OF FIXTURES | C.8 |
| 104-13A | FORESLOPE FLATTENING AND DRAINAGE STRUCTURES BY ROAD CONTRACTOR (SIDEROAD & ENTRANCE PIPES) | C.7 |
| 104-13 | FORESLOPE FLATTENING AND DRAINAGE STRUCTURES BY ROAD CONTRACTOR (MAINLINE PIPES) | C.7 |
| 105-4 | STANDARD ROAD PLANS | C.4 |
| 106-2 | TABULATION OF LEVELING COURSES | C.8 |
| 108-22 | PAVEMENT MARKING LINE TYPES | C.11 - C.12 |
| 108-29 | PAVEMENT MARKING SYMBOLS AND LEGENDS | C.10 |
| 110-2 | REMOVAL OF EXISTING STRUCTURES | C.7 |
| 110-4 | CURB REMOVAL | C.8 |
| 111-25 | INDEX OF TABULATIONS | C.3 |
| 112-4 | CURBS AND RAISED ISLANDS | C.8 |
| 112-9 | SHOULDERS | C.10 |
| 112-10 | MILLED RUMBLE STRIPS | C.10 |
| 300-1 | RESHAPING DITCHES | C.8 |

PAVEMENT SMOOTHNESS + PCC TEXTURE

| Road Identification | Begin Station | End Station | Proposed Posted Speed | | | Remarks |
|---------------------|---------------|-------------|-----------------------|---------|---------|---------|
| | | | 35 or less | 40 - 45 | over 45 | |
| US 18 | BOP | 122+00 | X | | | |
| | 122+00 | 135+50 | | X | | |
| | 135+50 | EOP | | | X | |

EXISTING PAVEMENT

| No. | Location | | | | | Year | Type | Project Number | Surface | | Base | | Subbase | | Removal | | Coarse Aggregate | | | Reinforcement | Remarks |
|-----|----------|-------|----------------|----------------|--------------|------|------|--------------------|---------|----------|------|----------|---------|----------|---------|----------|------------------|----------|--------|---------------|------------------------------|
| | County | Route | Dir. of Travel | Begin Milepost | End Milepost | | | | Type | Depth IN | Type | Depth IN | Type | Depth IN | Type | Depth IN | Type | Depth IN | Source | | |
| | 33 | US 18 | Both | 263.65 | 263.92 | 1991 | | F-18-8(29)--20-33 | AAC | 2 | | | | | MILL | 2 | GREEN QRY | C. LST. | | | 6.5' PCC WIDENING |
| | | | | | | 1964 | | FN-863 | AAC | 3 | | | | | | | HOUQ | C. LST. | | | SPOT 9" PCC RECONSTRUCTION |
| | | | | | | 1930 | | P-639 | PC7 | 7 | | | | | | | MARQUETTE | C. LST. | I | | |
| | | | Both | 263.92 | 264.23 | 1991 | | F-18-8(29)--20-33 | AAC | 2 | | | | | MILL | 2 | GREEN QRY | C. LST. | | | |
| | | | | | | 1975 | | FN-18-8(13)--21-33 | AAC | 1.5 | TBB | 1.5 | | | | | PATTISON QRY | C. LST. | | | VL FDEP AC & 4' PCC WIDENING |
| | | | | | | 1964 | | FN-863 | AAC | 3 | | | | | | | HOUQ | C. LST. | | | |
| | | | | | | 1930 | | P-639 | PC7 | 7 | | | | | | | MARQUETTE | C. LST. | I | | |
| | | | Both | 264.23 | 264.77 | 1991 | | F-18-8(29)--20-33 | AAC | 4 | | | | | | | GREEN QRY | C. LST. | | | |
| | | | | | | 1975 | | FN-18-8(13)--21-33 | AAC | 3 | ATB | 8 | SAS | 6 | | | PATTISON QRY | C. LST. | | | VL FDEP AC |

EXISTING HMA PAVEMENT FOR RECYCLING

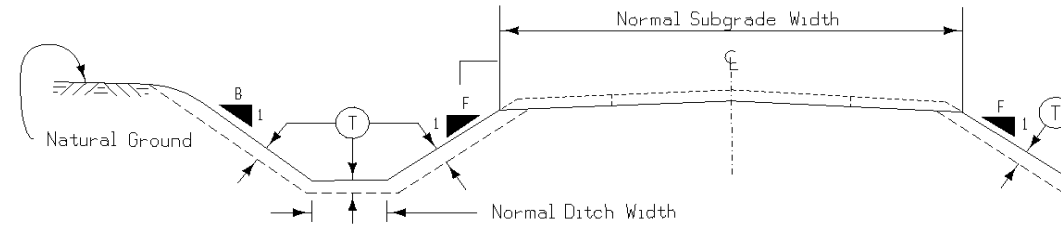
For informational purposes only. When designed RAP is specified, process the RAP to control the uniformity of the final mixture.

| Route No. | Location | Year Placed | Layer | Thickness | Asphalt Binder | | Description | Quality Type | Size | Content | Mix | | | | % Crushed | % Limestone |
|-----------|-----------------------------|-------------|---------|-----------|----------------|---------|-------------|--------------|------|---------|------------------------|------------------------|------------------------|------------------------|-----------|-------------|
| | | | | | Grade | Content | | | | | % of -4 that is Type 2 | % of +4 that is Type 2 | % of +4 that is Type 3 | % of +4 that is Type 4 | | |
| US 18 | From MP 263.65 to MP 264.77 | 1991 | Surface | 2" | AC-10 | 5.2 | | A | 3/4" | | | | | 95 | 75 | 75 |
| US 18 | From MP 263.65 to MP 264.77 | 1991 | Binder | 2" | AC-10 | 5.2 | | A | 3/4" | | | | | 84 | 60 | 60 |

**UTILITIES
(NOT A POINT 25 PROJECT)**

This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

TABULATION OF SPREADING TOPSOIL



Perform this work according to Section 2105. Prior to placing topsoil on any cohesive soil, scarify the area to be covered to a minimum depth of 3 inches.

Appropriate adjustments have been made in the template quantities to reflect the placement of topsoil on foreslope, backslope and ditch bottom as detailed hereon.

| Area No. | Quantity CY | Placement Description | | | | | Remarks | Topsoil Excavation Available From | | Remarks |
|----------|-------------|-----------------------------|---------------|----------------|------|--------------------|----------------------------------|-----------------------------------|--|---------|
| | | Location Station to Station | Side L. or R. | Slope B. or F. | T IN | Amount Reserved CY | | Station to Station | | |
| | 15.0 | BOP | 721+30 | L. | | 4.0 | Between BOP and State St. | | | |
| | 30.0 | 721+30 | 724+71 | L. | | 4.0 | Between State St. and Jones St. | | | |
| | 15.0 | 724+71 | 726+23.5 | L. | | 4.0 | Between Jones St. and Slaton St. | | | |
| | 50.0 | 726+23.5 | 731+76 | L. | | 4.0 | Between Slaton St. and Vine St. | | | |
| | 100.0 | 731+76 | 108+60.5 | L. | | 4.0 | Between Vine St. and Pine St. | | | |
| | 30.0 | | | | | 4.0 | Misc. for pipe work | | | |
| | 240.0 | Total: | | | | | | | | |

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

| Number | Date | Title |
|--------|----------|--|
| DR-101 | 04-19-16 | Pipe Culvert (Bedding and Backfill) |
| DR-103 | 04-21-15 | Pipe Culvert (Installation Details) |
| DR-121 | 10-20-15 | Connected Pipe Joints |
| DR-201 | 04-21-15 | Concrete Aprons |
| DR-203 | 04-21-15 | Metal Pipe Aprons and Beveled Ends |
| DR-303 | 10-18-16 | Subdrains (Longitudinal) |
| DR-304 | 10-18-16 | Outlets for Longitudinal, Transverse and Backslope Subdrains |
| DR-621 | 04-21-15 | Pipe Extension |
| EC-201 | 10-18-16 | Silt Fence |
| EC-204 | 04-19-16 | Perimeter and Slope Sediment Control Devices |
| EC-301 | 10-18-16 | Rock Erosion Control (REC) |
| EW-105 | 04-21-15 | Reshaping Slopes and Ditches |
| EW-501 | 10-20-15 | Rural Entrance |
| EW-503 | 10-20-15 | Side Road Grading |
| PM-110 | 04-16-13 | Line Types |
| PM-111 | 04-21-15 | Symbols and Legends |
| PM-120 | 10-21-14 | Stop Lines and Islands |
| PM-210 | 10-18-11 | Separation in Two-Lane Roadway |
| PM-521 | 04-19-11 | Two-Lane Roadway with Right Turn Lanes |
| PR-103 | 10-21-14 | Full Depth PCC Patch with Dowels |
| PR-201 | 10-21-14 | Runouts for Resurfacing |
| PR-202 | 10-21-14 | Notches for Resurfacing (with or without Runout) |
| PV-12 | 04-19-16 | Milled Shoulder Rumble Strips |
| PV-20 | 10-21-14 | Paved Islands |
| PV-101 | 04-19-16 | Joints |
| PV-102 | 10-18-16 | PCC Curb Details |
| PV-201 | 04-19-11 | Manhole Boxouts in HMA Pavement and HMA Overlays |
| PV-202 | 04-16-13 | Hot Mix Asphalt Resurfacing |
| PV-203 | 10-15-13 | HMA Base Widening |
| PV-301 | 04-19-11 | Superelevation Details Two Lane Roadway |
| SW-401 | 04-21-09 | Circular Storm Sewer Manhole |
| SW-602 | 04-21-15 | Castings for Storm Sewer Manholes |
| TC-1 | 04-16-13 | Work Not Affecting Traffic (Two-Lane or Multi-Lane) |

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

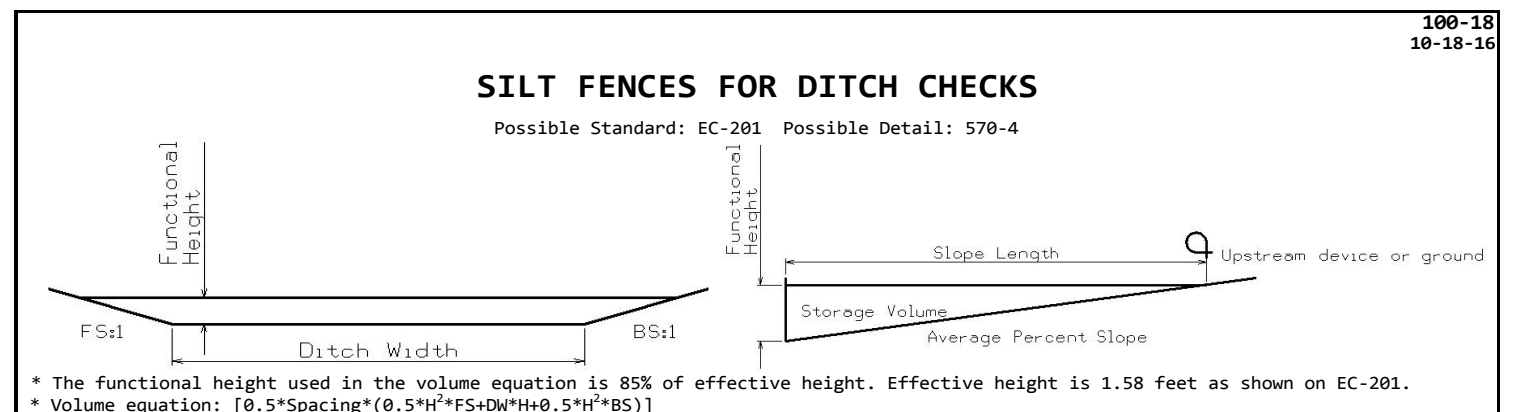
| Number | Date | Title |
|--------|----------|---|
| TC-61 | 04-21-15 | Two-Lane, Two-way Operation |
| TC-202 | 04-21-15 | Work Within 15 ft of Traveled Way |
| TC-212 | 04-16-13 | Spot Location Lane Closure with Flaggers |
| TC-214 | 04-16-13 | Lane Closure with Flaggers for use with Pilot Car |
| TC-232 | 10-21-14 | Shoulder Rumble Strip Operations |
| TC-273 | 04-20-10 | Construction Site Entrance |

100-19
04-19-16

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

| Location | | | Length of Installation | | | Remarks |
|---------------|-------------|------|------------------------|-------------|-------------|----------------------------------|
| Begin Station | End Station | Side | 9 inch Dia | 12 inch Dia | 20 inch Dia | |
| | | | LF | LF | LF | |
| BOP | 721+30 | L | 180.0 | | | Between BOP and State St. |
| 721+30 | 724+71 | L | 260.0 | | | Between State St. and Jones St. |
| 724+71 | 726+23.5 | L | 130.0 | | | Between Jones St. and Slaton St. |
| 726+23.5 | 731+76 | L | 390.0 | | | Between Slaton St. and Vine St. |
| 731+76 | 108+60.5 | L | 650.0 | | | Between Vine St. and Pine St. |
| | | | 1610.0 | | | Total: |



100-17
04-20-10

TABULATION OF SILT FENCES

Refer to EC-201

| Location | | | Length | Remarks |
|---------------|-------------|------|--------|---------|
| Begin Station | End Station | Side | LF | |
| BOP | EOP | Both | 200.0 | Misc. |

| Basin No. | Type | Location | | Bid Items | | | Stormwater Storage Volume Summary | | | | | Remarks |
|-----------|------|----------|------|-----------------|----------------|------------|-----------------------------------|----------------|----------------|--------------|------------|---------|
| | | Station | Side | Installation LF | Maintenance LF | Removal LF | Foreslope FS:1 | Backslope BS:1 | Ditch Width FT | Avg. % Slope | Volume* CF | |
| 1 | 1 | 116+30 | LT | 30.0 | 3.0 | 30.0 | 3.0 | 3.0 | 10.0 | 2.0% | 706.5 | |
| 2 | 1 | 116+60 | RT | 30.0 | 3.0 | 30.0 | 3.0 | 3.0 | 10.0 | 2.0% | 706.5 | |
| 3 | 1 | 117+10 | LT | 30.0 | 3.0 | 30.0 | 3.0 | 3.0 | 10.0 | 2.0% | 706.5 | |
| 4a | 1 | 117+40 | RT | 30.0 | 3.0 | 30.0 | 3.0 | 3.0 | 10.0 | 2.0% | 706.5 | |
| 4b | 1 | 118+00 | RT | 30.0 | 3.0 | 30.0 | 3.0 | 3.0 | 10.0 | 2.0% | 706.5 | |
| | | Totals: | | 150.0 | 15.0 | 150.0 | | | | | 3532.7 | |

100-23
04-21-15

ROCK EROSION CONTROL

Refer to EC-301

| Road Identification | Begin Station | End Station | Side | Rock Erosion Control (REC) | | Material Bid Quantities | | | Remarks | | | | | |
|--------------------------|---------------|-------------|------|----------------------------|----|-------------------------|------------|------------|---------|-------------------|-----------------------|-------------------|-----------------------|----------------|
| | | | | L | W | Type 1 | Type 2 | Type 3 | | Type 4 | Type 5 | | | |
| | | | | | | Rock Ditch Check | Rock Ditch | Rock Flume | | Rock Splash Basin | Rock Slope Protection | Erosion Stone TON | Class E Revetment TON | Eng. Fabric SY |
| US 18 Mainline Pipe | 115+10 | Outlet | Lt. | 12 | 10 | | | | X | | 14.4 | | 24.9 | |
| US 18 Storm Sewer Outlet | 116+65 | Outlet | Rt. | 12 | 12 | | | | X | | 17.3 | | 28.4 | |
| | | | | | | | | | | | 31.7 | | 53.3 | Totals: |

100-34
04-19-16

STORMWATER DRAINAGE BASIN

| Basin No. | Station to Station | Side | Disturbed Area Acres | Discharge Point | | Required Storage Volume CF | Remarks | |
|-----------|--------------------|--------|----------------------|-----------------|--------|----------------------------|---------|-------------------------------------|
| | | | | Station | Side | | | |
| 5 | BOP | 727+00 | RT | 0.10 | 727+00 | RT | 360.0 | STORM SEWER SYSTEM/SEE TAB 100-19 |
| 1 | 727+00 | 116+30 | LT | 0.30 | 116+30 | LT | 1080.0 | STORM SEWER SYSTEM & SEE TAB 100-19 |
| 2 | 727+00 | 116+60 | RT | 0.05 | 116+60 | RT | 180.0 | STORM SEWER SYSTEM & SEE TAB 100-19 |
| 3 | 117+10 | EOP | LT | 0.05 | 117+10 | LT | 180.0 | |
| 4 | 117+40 | EOP | RT | 0.05 | 117+40 | RT | 180.0 | |
| | | | | 0.55 | | | 1980.0 | totals: |

100-35
04-19-16

SUMMARY OF STORMWATER STORAGE

| Basin No. | Item | Total Storage Volume Provided | Total Storage Volume Required | Remarks |
|-----------|--|-------------------------------|-------------------------------|--------------------------|
| | | CF | CF | |
| 5 | Erosion Control Devices | 0 | 360 | "Possible intake device" |
| 1 | Silt Fence Ditch Check & Erosion Control Devices | 707 | 1800 | |
| 2 | Silt Fence Ditch Check | 707 | 180 | |
| 3 | Silt Fence Ditch Check & Erosion Control Devices | 707 | 180 | |
| 4 | Silt Fence Ditch Checks | 1413 | 180 | |
| | | 3533 | 2340 | Totals: |

LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

① Refer to EW-203, EW-204, or EW-211.
*Not a bid item

| Line No. | Location | | | | Longitudinal Subdrain (DR-303) | | | | | | | Subdrain Outlet | | Porous* Backfill | Class "A"* Crushed Stone | Remarks | |
|----------|---------------------|--------------------|-----------|------|--------------------------------|------|-----------|------|---------------|------|------|---------------------------|-----------|------------------|--------------------------|---------|-----------------------------|
| | Road or Lane Ident. | Station to Station | | Side | Shoulder | | Backslope | | Bridge Berm ① | | | DR-303, DR-304, or DR-305 | | | | | |
| | | | | | Depth (D) | Size | Length | Size | Length | Size | Type | Length | Station | | | | Standard Road Plan and Type |
| | | | | | | IN | IN | FT | IN | FT | IN | FT | | | | | |
| 1 | WBL | 117+00.00 | 120+50.00 | LT | 36.0 | 4.0 | 390.0 | | | | | | 117+00.00 | DR-304 | 30.1 | 0.2 | Replace outlet |
| | WBL | 120+50.00 | 124+25.00 | LT | 36.0 | 4.0 | 40.0 | | | | | | 120+50.00 | DR-304 | 3.1 | 0.2 | Replace outlet |
| | WBL | 124+25.00 | 128+00.00 | LT | 36.0 | 4.0 | 40.0 | | | | | | 124+25.00 | DR-304 | 3.1 | 0.2 | Install Outlet |
| | WBL | 128+00.00 | 132+00.00 | LT | 48.0 | 4.0 | 0.0 | | | | | | 128+00.00 | DR-304 | 0.0 | 0.2 | Install Outlet |
| | WBL | 132+00.00 | 136+90.00 | LT | 48.0 | 4.0 | 20.0 | | | | | | 132+00.00 | | 2.2 | 0.2 | U.A.C. |
| | WBL | 137+00.00 | 141+00.00 | LT | 48.0 | 4.0 | 20.0 | | | | | | 136+90.00 | DR-304 | 2.2 | 0.2 | U.A.C. |
| | WBL | 141+00.00 | 145+00.00 | LT | 48.0 | 4.0 | 40.0 | | | | | | 137+00.00 | | 2.2 | 0.2 | U.A.C. |
| | | | | | | | | | | | | | 141+00.00 | DR-304 | 4.3 | 0.2 | Install Outlet |
| | | | | | | | | | | | | | 141+00.00 | DR-304 | 4.3 | 0.2 | Install Outlet |
| | | | | | | | | | | | | | 145+00.00 | DR-304 | | 0.2 | Install Outlet |
| Totals: | | | | | | | 550.0 | | | | | | | DR-304 = 10 | 45.0 | 2.8 | |

NOTE: ALL LONGITUDINAL SUBDRAINS ARE TYPE 8 WITH HMA (ACC) UNLESS OTHERWISE NOTED IN REMARKS COLUMN.

NOTE: ALL ASPHALT PRODUCTS ARE TO BE REMOVED SEPARATELY. THIS IS TO BE DISPOSED OF PER THE SPECIFICATIONS.

NOTE: IN FILLET REPLACEMENT AREAS THE TRENCH SHALL BE FINISHED WITH A MINIMUM OF 6 INCHES OF HMA (ACC) BASE MATERIAL (MIX TO BE SUBMITTED TO ENGINEER).

ACCESS POINTS AND SAFETY RAMPS

Refer to Cross-Sections

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.

- ① Refer to MI-210
- ② Refer to EW-501.
- ③ Refer to EW-501 or EW-502.

*Predetermined for access point not constructed with this project.

| Location | | Type | Length of Opening ① | | | Pipe Culvert ③ | | | Aprons | | Driveway Surface Area | | Driveway Surfacing Material | Remarks | | |
|----------|------|---|---------------------|------------------|-----------------|----------------|--------|------|--------|------|-----------------------|-----|-----------------------------|---------|-----|----|
| Station | Side | A, B, C, Safety Ramp, or Predetermined* | Case | 1½" Dropped Curb | 3" Dropped Curb | W | PR ① ② | SR ② | H | Size | Pipe Length | Lt. | | | Rt. | |
| | | | 1 or 2 | LF | LF | FT | FT | FT | FT | FT | IN | LF | | | LF | LF |
| | | | No. | SY | SY | TON | | | | | | | | | | |
| 120+34 | RT | Predetermined | | | | | | | | | | | | 8.000 | | |
| 121+80 | RT | Predetermined | | | | | | | | | | | | 8.000 | | |
| 122+76 | RT | Predetermined | | | | | | | | | | | | 16.000 | | |
| 124+95 | RT | Predetermined | | | | | | | | | | | | 12.000 | | |
| 127+25 | RT | Predetermined | | | | | | | | | | | | 12.000 | | |
| 127+50 | LT | Safety Ramp | | | | | | | | | | | | 56.000 | | |
| | | | | | | | | | | | | | | Total: | | |

104-5A
10-15-13

INTAKES AND UTILITY ACCESSES

* Bid Item
** For SW-545

| No. | Location Station | Type or Standard Road Plan* | Form Grade | Bottom Well | Extension Length** | Notes |
|-----|------------------|-----------------------------|------------|-------------|--------------------|---|
| | | | Elev. | Elev. | FT | |
| 1 | 105+14-18'RT | SW-401 | 1148.5 | 1144.5 | | Replace RA-29, includes SW-602, reconnect 2-24" RCP's & 12" CMP |

110-2
04-16-13

REMOVAL OF EXISTING STRUCTURES

| Location | Description | Remarks |
|------------------|---------------------------|---|
| 105+14-18'RT | RA-29 Storm Sewer Manhole | To be replaced by new structure, see Tabulation 104-5A |
| Incidental Items | | |
| 119+10-RT | DAMAGED 18" CMP | Remove 2 LF of pipe from each end, before placing aprons. |
| 122+76-RT | DAMAGED 18" CMP | Remove 1 LF of pipe from each end, before placing aprons. |
| 124+95 RT | DAMAGED 18" CMP | Remove 1 LF of pipe from each end, before placing aprons. |
| 127+25-RT | DAMAGED 18" CMP | Remove 3 LF of pipe from each end, before placing aprons. |

104-13
04-21-15

FORESLOPE FLATTENING AND DRAINAGE STRUCTURES BY ROAD CONTRACTOR (MAINLINE PIPES)

Refer to Standard Road Plans DR-121, DR-122, and DR-213.

* Not a bid item

| Existing Information | | New Information | | Length of New Const. | Flow Line Elevations | | | Dimensions | | | | Removal and Reinstallation of Culvert Aprons and Pipes | | | | New Apron No. | | Apron Guard (DR-213) | Type 'C' Connections* (DR-122) | | Connected Pipe Joint* (DR-121) | Embank.- In-Place | Class 20 | Remarks | | | |
|----------------------|--------------------------|-----------------|-----------------|----------------------|----------------------|-------|------------|------------|-----------------|-------|--------|--|------------------|----|----|---------------|-----|----------------------|--------------------------------|--------|--------------------------------|-------------------|-----------------|---------|------|----|----|
| Location | Size and Type of Culvert | Size | Type of Culvert | | LEFT | RIGHT | Total (LF) | | Extensions (LF) | | Aprons | | Culvert Sections | | IN | OUT | NO. | | TYPE | NO. | | | | | TYPE | CY | CY |
| | | | | | | | LEFT | RIGHT | LEFT | RIGHT | LEFT | RIGHT | NO.* | FT | | | | | | | | | | | | | |
| 109+10 | 36" RCP | | | | | | | | | | | | | | | | | | | | | | U.A.C. | | | | |
| 111+75 | 15" RCP | | | | | | | | | | | | | | | | | | | | | | U.A.C. | | | | |
| 114+65 | 30" RCP | | | | | | | | | | | | | | | | | | | | | | U.A.C. | | | | |
| 115+10 | 30" RCP | | | | | | | | | | | | | | | | | | | | | | SEE TAB. 100-23 | | | | |
| 128+50 | TWIN 8' X 8' RCB | | | | | | | | | | | | | | | | | | | | | | U.A.C. | | | | |
| 136+95 | 24" RCP | 24" | RCP | 6 | | | | 6 | | | 1 | 1 | | | | 3 | 18 | | | Type 3 | 24.0 | 24.0 | | | | | |

104-13A
Modified

FORESLOPE FLATTENING AND DRAINAGE STRUCTURES BY ROAD CONTRACTOR (SIDEROAD & ENTRANCE PIPES)

Refer to Standard Road Plans DR-121, DR-122, and DR-213.

* Not a bid item

| Existing Information | | New Information | | Length of New Const. | Flow Line Elevations | | | Dimensions | | | | Removal and Reinstallation of Culvert Aprons and Pipes | | | | New Apron No. | | Apron Guard (DR-213) | Type 'C' Connections* (DR-122) | | Connected Pipe Joint* (DR-121) | Embank.- In-Place | Class 20 | Remarks | | | | | | | | | | | | | | | | | | |
|------------------------------|--------------------------|-----------------|-----------------|----------------------|----------------------|-------|------------|------------|-----------------|--------|--------|--|------------------|----|----|---------------|-----|----------------------|--------------------------------|--------|--------------------------------|-------------------|----------|---------|------|----|----|------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Location | Size and Type of Culvert | Size | Type of Culvert | | LEFT | RIGHT | Total (LF) | | Extensions (LF) | | Aprons | | Culvert Sections | | IN | OUT | NO. | | TYPE | NO. | | | | | TYPE | CY | CY | | | | | | | | | | | | | | | |
| | | | | | | | INLET | OUTLET | INLET | OUTLET | IN | OUT | NO.* | FT | | | | | | | | | | | | | | NO.* | FT | | | | | | | | | | | | | |
| 116+65-Rt | 36" RCP | 36 | RCP | | | | | | | | | | | | 1 | | | | | Type 3 | | 4.0 | (a) | | | | | | | | | | | | | | | | | | | |
| 119+10-Rt | 18" CMP | 18 | CMP | | | | | | | | | | | 1 | 1 | | | | | | | 4.0 | (b) | | | | | | | | | | | | | | | | | | | |
| 120+34-Lt | 30" RCP | 30 | RCP | | | | | | | | | | | 1 | 1 | | | | | Type 3 | | 8.0 | (c) | | | | | | | | | | | | | | | | | | | |
| 120+34-Rt | 18" CMP | 18 | CMP | | | | | | | | | | | 1 | 1 | | | | | | | 4.0 | | | | | | | | | | | | | | | | | | | | |
| 121+80-Rt | 18" HDPE | | | | | | | | | | | | | | | | | | | | | | U.A.C. | | | | | | | | | | | | | | | | | | | |
| 122+76-Rt | 18" CMP | 18 | CMP | | | | | | | | | | | 1 | 1 | | | | | | | 4.0 | (b) | | | | | | | | | | | | | | | | | | | |
| 124+95-Rt | 18" CMP | 18 | CMP | | | | | | | | | | | 1 | 1 | | | | | | | 4.0 | (b)(c) | | | | | | | | | | | | | | | | | | | |
| 127+25-Rt | 18" HDPE | 18 | CMP | | | | | | | | | | | 1 | 1 | | | | | | | 4.0 | (b) | | | | | | | | | | | | | | | | | | | |
| 32.0 Total: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (a)-See Tab. 100-23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (b)-See Tab. 110-2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (c)-60 L.F. of Pipe Cleaning | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

FULL-DEPTH REPAIR PATCHES

Possible Standards: PR-101, PR-102, PR-103, PR-104, PR-105 and PR-140.

| Count | Location | | Dimension | | | PCC Patches | | | | HMA Patches | Composite HMA | Subbase Patches | Subbase Patch w/ 'EF' Joint | Patch Subdrain | 'CD' Joints | 'CT' Joints | 'EF' Joints | Anchor Lugs Removal | Remarks |
|-------|-------------------|------|-----------|-------|-----------------|-------------|----------------|-----------|------------------|-------------|---------------|-----------------|-----------------------------|----------------|-------------|-------------|-------------|---------------------|--|
| | Milepost | Lane | Length | Width | Patch Thickness | With Dowels | Without Dowels | C R C | Ramp with Dowels | | | | | | | | | | |
| | L, R, or B | FT | FT | IN | PR-103 SY | PR-102 SY | PR-104 SY | PR-105 SY | PR-140 SY | | | | | | | | | | |
| 60 | 2+36.65 to 263.92 | Both | 6.0 | 15.0 | 14.0 | 600.0 | | | | | | | | | | | | | Final location to be determined after milling. |
| 70 | 2+63.92 to 264.23 | Both | 6.0 | 15.0 | 17.0 | 700.0 | | | | | | | | | | | | | Final location to be determined after milling. |
| 130 | Total: | | | | | 1300.0 | | | | | | | | | | | | | |

106-2
08-01-08

TABULATION OF LEVELING COURSES

| Location | | | | Hot Mix Asphalt Pavement | |
|----------|----|---------|--------|--------------------------|-------|
| Milepost | | Station | | Average Thickness | Tons |
| From | To | From | To | Inches | |
| | | 122+62 | 124+85 | 2.6 | 83.9 |
| | | 130+70 | 146+11 | 3.5 | 772.2 |
| | | | | Total: | 856.1 |

104-10
08-01-08

ADJUSTMENT OF FIXTURES

| No. | Location Station | Type of Fixture | Adjustment |
|-----|------------------|-----------------|--|
| 1 | 374+37 | Manhole | Minor Manhole Adjustment, adjust to finished surface grade with PV-201 |
| 2 | 721+40 | Manhole | Minor Manhole Adjustment, adjust to finished surface grade with PV-201 |
| 3 | 723+35 | Manhole | Minor Manhole Adjustment, adjust to finished surface grade with PV-201 |
| 4 | 724+77 | Manhole | Minor Manhole Adjustment, adjust to finished surface grade with PV-201 |
| 5 | 731+73 | Manhole | Minor Manhole Adjustment, adjust to finished surface grade with PV-201 |
| 6 | 104+37 | Manhole | Minor Manhole Adjustment, adjust to finished surface grade with PV-201 |
| 7 | 106+31 | Manhole | Minor Manhole Adjustment, adjust to finished surface grade with PV-201 |
| | 724+63 | Water Valve | Incident to HMA Surface |
| | 731+46 | Water Valve | Incident to HMA Surface |

100-1U
Modified

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110-4
08-01-08

CURB REMOVAL

| Begin Station | End Station | Side | Length STA | Remarks |
|---------------|-------------|------|------------|-----------------------------|
| 100+00.00 | 115+60.00 | Lt | 3.9 | As directed by the Engineer |
| 100+00.00 | 115+60.00 | Rt. | 3.9 | As directed by the Engineer |
| | | | 7.8 | Total: |

102-16
10-21-14

NOTCHES AND RUNOUTS FOR RESURFACING

Refer to PR-201 and PR-202.

① Bid item. Applies only to Types 'N1' and 'N3' on PR-202. Refer to 100-25 for remaining values.

| Location Station | Type of Notch or Runout | S | I | DI | L | M | Pavement Scarification | Remarks |
|------------------|-------------------------|---------|---------|-----|-------|------|------------------------|---------|
| | | IN | IN | IN | FT | IN | | |
| 373+55.2 | Type 'N4' | 1.5 | 1.5 | | | 3.0 | Tab. 100-25 | |
| 115+60.0 | Type 'R4' | 1.5-2.0 | 1.5-2.0 | 2.5 | 50.0 | Var. | Tab. 100-25 | |
| 144+75.0 | Type 'N3' | 2.0 | 2.0 | | 175.0 | 1.5 | Tab. 100-25 | |

300-1
Modified

RESHAPING DITCHES

Refer to EW-105

| Location | | | Length | Remarks |
|---------------|-------------|------|--------|---------|
| Begin Station | End Station | Side | STA | |
| 119+10 | INLET | RT | 0.25 | 18" CMP |
| 120+34 | INLET | LT | 0.25 | 30" RCP |
| 120+34 | OUTLET | LT | 0.25 | 30" RCP |
| 120+34 | INLET | RT | 0.25 | 18" CMP |
| 124+95 | INLET | RT | 0.25 | 18" CMP |
| 124+95 | OUTLET | RT | 0.25 | 18" CMP |
| | | | 1.50 | Total: |

112-4
Modified

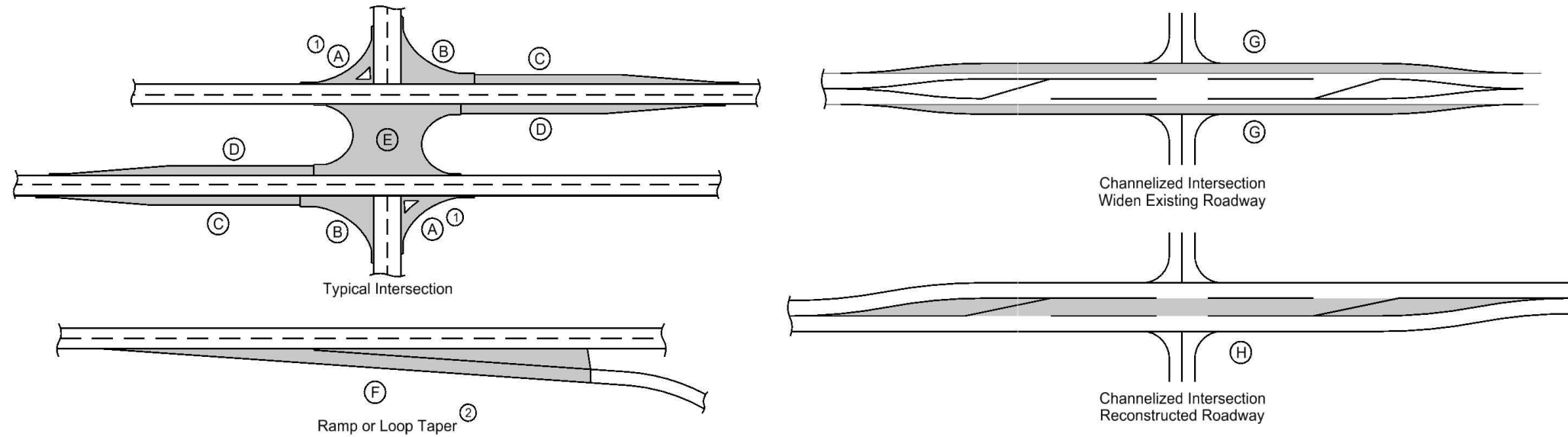
CURBS AND RAISED ISLANDS

Refer to PV-20, PV-102, and 6000s Detail Series.

① Bid Item

| Station | Station | Offset | Island Interior | Curb and Gutter | | | Remarks |
|---------|---------|--------|-----------------|-----------------|-----------------|-----------|-----------------------------|
| | | | Area SY | Curb Type | Gutter Width FT | Length LF | |
| 100+00 | 115+60 | | | 6" Standard PCC | 3.0 | 780.0 | As directed by the Engineer |

HMA PAVEMENT



- ① Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.
- ② Refer to PV-410, PV-411, PV-412, and PV-414.
- ③ Quantity includes Pavement Header.

Calculations assume a surface course unit weight (lbs/cf) of 147, an intermediate course unit weight (lbs/cf) of 147, a interlayer course unit weight (lbs/cf) of 150, and a special backfill unit weight (lbs/cf) of 140.

| Road Identification | Direction of Travel | Location | | Mainline | | | Area ③ | | | | | | | | Hot Mix Asphalt Pavement | | | | | | | | | | Remarks | |
|---------------------|---------------------|--------------------|-----------|----------|--------|--------|--------|----|----|----|-----|----|------|-----------|--------------------------|------------|-------------------|------------------------|----------------------|------------------|------------------|------------------|------------------------|------|---------|-------|
| | | Station to Station | Width | Length | Area | A ① | B | C | D | E | F ② | G | H | Bid Items | | | | | | Special Backfill | Modified Subbase | Granular Subbase | Pavement Scarification | | | |
| | | | | | | | | | | | | | | Surface | Intermediate | Interlayer | Surface PG 58-28S | Intermediate PG 58-28S | Interlayer PG 58-34S | | | | | TONS | | SY |
| FT | FT | SY | SY | SY | SY | SY | SY | SY | SY | SY | SY | SY | TONS | SY | TONS | SY | TONS | SY | TONS | TONS | TONS | CY | SY | SY | | |
| US 18 | EB | 373+55.20 | 374+00.00 | 48.0 | 44.8 | 238.9 | | | | | | | | 19.8 | 239 | 19.3 | | | | 1.2 | 1.2 | | | | | 234 |
| | | 374+00.00 | 374+89.60 | 40.3 | 89.6 | 401.2 | | | | | | | | 33.2 | 401 | 32.4 | | | | 2.0 | 1.9 | | | | | 391 |
| Equation: | | 719+29.40 | 719+45.00 | 31.8 | 15.6 | 55.1 | | | | | | | | 4.6 | 55 | 4.4 | | | | 0.3 | 0.3 | | | | | 53 |
| Equation: | | 719+45.00 | 732+22.60 | 30.0 | 1277.6 | 4258.7 | | | | | | | | 352.1 | 4259 | 340.4 | | 231.6 | | 21.1 | 20.4 | 13.9 | | | | 4117 |
| | | 100+00.00 | 115+60.00 | 30.0 | 1560.0 | 5200.0 | | | | | | | | 430.0 | 5200 | 415.6 | | 282.8 | | 25.8 | 24.9 | 17.0 | | | | 5027 |
| | | 115+60.00 | 116+10.00 | 30.0 | 50.0 | 166.7 | | | | | | | | 13.8 | 167 | 13.3 | | 9.1 | | 0.8 | 0.8 | 0.5 | | | | 161 |
| | | 116+10.00 | 134+55.00 | 32.0 | 1845.0 | 6560.0 | | | | | | | | 632.8 | 6560 | 632.8 | | | | 38.0 | 38.0 | | | | | 6355 |
| | | 134+55.00 | 136+51.90 | 36.0 | 196.9 | 787.6 | | | | | | | | 86.8 | 788 | 86.8 | | | | 5.2 | 5.2 | | | | | 766 |
| | | 136+51.90 | 140+83.30 | 40.0 | 431.4 | 1917.3 | | | | | | | | 211.4 | 1917 | 211.4 | | | | 12.7 | 12.7 | | | | | 1869 |
| | | 140+83.30 | 142+23.50 | 40.0 | 140.2 | 623.1 | | | | | | | | 68.7 | 623 | 68.7 | | | | 4.1 | 4.1 | | | | | 608 |
| | | 142+23.50 | 142+70.20 | 36.0 | 46.7 | 186.8 | | | | | | | | 20.6 | 187 | 20.6 | | | | 1.2 | 1.2 | | | | | 182 |
| | | 142+70.20 | 143+00.00 | 32.0 | 29.8 | 106.0 | | | | | | | | 11.7 | 106 | 11.7 | | | | 0.7 | 0.7 | | | | | 103 |
| | | 143+00.00 | 144+75.00 | 32.0 | 175.0 | 622.2 | | | | | | | | 68.6 | 622 | 34.3 | | | | 4.1 | 2.1 | | | | | 603 |
| Sideroads | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. Oak St. | Runout | | | 18.0 | 56.9 | 56.9 | | | | | | | | 4.7 | 57 | 2.4 | | | | 0.3 | 0.1 | | | | | 57 |
| State St. | Runout | | | 10.0 | 44.1 | 44.1 | | | | | | | | 3.6 | 44 | 1.8 | | | | 0.2 | 0.1 | | | | | 44 |
| Wells St. | Runout | | | 15.0 | 53.0 | 53.0 | | | | | | | | 4.4 | 53 | 2.2 | | | | 0.3 | 0.1 | | | | | 53 |
| Jones St. | Runout | | | 10.0 | 38.0 | 38.0 | | | | | | | | 3.1 | 38 | 1.6 | | | | 0.2 | 0.1 | | | | | 38 |
| Slayton St. | Runout | | | 10.0 | 36.9 | 36.9 | | | | | | | | 3.1 | 37 | 1.5 | | | | 0.2 | 0.1 | | | | | 37 |
| N. Vine St. | Runout | | | 10.0 | 56.9 | 56.9 | | | | | | | | 4.7 | 57 | 2.4 | | | | 0.3 | 0.1 | | | | | 57 |
| S. Vine St. | Runout | | | 2.5 | 22.6 | 22.6 | | | | | | | | 1.9 | 23 | 0.9 | | | | 0.1 | 0.1 | | | | | 23 |
| Alley | Runout | | | 15.0 | 47.7 | 47.7 | | | | | | | | 3.9 | 48 | 2.0 | | | | 0.2 | 0.1 | | | | | 48 |
| S. Pine St. | Runout | | | 27.0 | 124.9 | 124.9 | | | | | | | | 10.3 | 125 | 5.2 | | | | 0.6 | 0.3 | | | | | 125 |
| N. Pine St. | Runout | | | 38.0 | 196.4 | 196.4 | | | | | | | | 16.2 | 196 | 8.1 | | | | 1.0 | 0.5 | | | | | 196 |
| Carpenter St. | Runout | | | 22.0 | 91.4 | 91.4 | | | | | | | | 7.6 | 91 | 3.8 | | | | 0.5 | 0.2 | | | | | 91 |
| Hansen Blvd. | Runout | | | 25.0 | 96.4 | 96.4 | | | | | | | | 10.6 | 96 | 5.3 | | | | 0.6 | 0.3 | | | | | 96 |
| Easy St. | Runout | | | 34.0 | 125.9 | 125.9 | | | | | | | | 13.9 | 126 | 6.9 | | | | 0.8 | 0.4 | | | | | 126 |
| B-64 | Runout | | | 72.0 | 444.9 | 444.9 | | | | | | | | 49.0 | 445 | 24.5 | | | | 2.9 | 1.5 | | | | | 445 |
| Totals: | | | | | | | | | | | | | | 2091.1 | 22560 | 1960.4 | | 523.4 | | 125.5 | 117.6 | 31.4 | | | | 21904 |

SHOULDERS

- ① Lane(s) to which the shoulder is adjacent.
- ② Bid Item
- ③ Applies only for Paved Shoulders constructed on project with existing granular shoulders.
- ④ Does not include shrink.

Calculations assume a HMA unit weight (lbs/cf) of 147, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

| Road Identification | Direction Of Traffic | Location | | | P Width FT | G Width FT | L Length FT | Class 13 Excavation CY | Quantities | | | | | | | | | | | | | Remarks | | | | | |
|---------------------|----------------------|--------------------|-----------|-----------------------------|------------------|------------------|-------------------|------------------------------|-----------------------------|-------------------------|---------------------------------------|----------------------|----------------------|---------|---------|---------------------------|-------------------|---------|----------------------------|---------|-------|---------|---------|-----|-----------|-----------------|--------------|
| | | Station to Station | Side | Base Hot Mix Asphalt TON | | | | | Binder PG 58-28S TONS | Paved Shoulder SY | Reinforced Paved Shoulder SY | Special Backfill | | | | Modified Subbase CY | Granular Shoulder | | Shoulder Shaping & Blading | | | | | | | | |
| | | | | | | | | | | | | HMA Alternate TON | PCC Alternate TON | TON/STA | TON/STA | | TON | TON/STA | TON | TON/STA | TON | | TON/STA | TON | TON/STA | TON | TON/STA |
| US 18 | EB | 115+60.00 | 117+00.00 | Rt | 1 to 4 | 4.0 | 140.0 | 2.7 | 5.4 | 3.8 | 0.3 | | | | | | | 88.2 | 63.0 | 1.4 | | | | | | | |
| | | 117+00.00 | 134+55.00 | Rt | 4.0 | 4.0 | 1755.0 | 54.2 | 107.5 | 6.1 | 6.4 | | | | | | | 1105.7 | 63.0 | 17.6 | | | | | | | |
| | | 134+55.00 | 136+51.90 | Rt | 4 to 0 | 4.0 | 196.9 | 3.0 | 6.0 | 3.1 | 0.4 | | | | | | | | 124.0 | 63.0 | 2.0 | | | | RTL Taper | | |
| | | 136+51.90 | 140+83.30 | Rt | | 4.0 | 431.4 | | | | | | | | | | | | | 271.8 | 63.0 | 4.3 | | | | Right Turn Lane | |
| | | 140+83.30 | 142+23.50 | Rt | | | | | | | | | | | | | | | | | | | | | | | Co. Rd. B-64 |
| | | 142+23.50 | 142+70.20 | Rt | 0 to 4 | 4.0 | 46.7 | 0.7 | 1.4 | 3.1 | 0.1 | | | | | | | | | | 29.4 | 63.0 | 0.5 | | | | |
| | | 142+70.20 | 143+00.00 | Rt | 4.0 | 4.0 | 29.8 | 0.9 | 1.8 | 6.1 | 0.1 | | | | | | | | | | 18.8 | 63.0 | 0.3 | | | | |
| | | 143+00.00 | 144+75.00 | Rt | 4.0 | 4.0 | 175.0 | 5.4 | 10.7 | 6.1 | 0.6 | | | | | | | | | | 110.3 | 63.0 | 1.8 | | | | Runout |
| US 18 | WB | 144+75.00 | 143+00.00 | Lt | 4.0 | 4.0 | 175.0 | 5.4 | 10.7 | 6.1 | 0.6 | | | | | | | | | 36.8 | 21.0 | 1.8 | | | | | |
| | | 143+00.00 | 117+30.00 | Lt | 4.0 | 4.0 | 2570.0 | 79.3 | 157.4 | 6.1 | 9.4 | | | | | | | | | 539.7 | 21.0 | 25.7 | | | | Runout | |
| | | 117+30.00 | 115+60.00 | Lt | 4 to 1 | 4.0 | 170.0 | 3.3 | 6.5 | 3.8 | 0.4 | | | | | | | | | 35.7 | 21.0 | 1.7 | | | | | |
| | | | | | | | | 154.9 | 307.5 | | 18.4 | | | | | | | | | 2360.3 | | 56.9 | | | | Totals: | |

MILLED RUMBLE STRIPS

See PV-12 and PV-13.

* Calculated at 18" width for Shoulder.

| Road Identification | Location | | Length | | Type (Centerline, Rt or Lt Shoulder) | Fog Seal* (Milled Rumble Strip) Shoulder GAL | Effective Shoulder Width | | | Remarks |
|---------------------|--------------------|-----------|--------|-------|--|---|--------------------------|-----------------|--------------------------|---------|
| | Station to Station | Side | PCC | HMA | | | PCC Paved FT | HMA Paved FT | Granular\ Earth FT | |
| | | | STA | STA | | | | | | |
| US 18 | 123+00.00 | 144+75.00 | | 21.75 | Centerline | 0.0 | | 4.0 | 4.0 | |
| US 18 | 123+00.00 | 144+75.00 | | 21.75 | Right Shoulder | 23.6 | | 4.0 | 4.0 | |
| US 18 | 144+75.00 | 123+00.00 | | 21.75 | Left Shoulder | 23.6 | | 4.0 | 4.0 | |
| | | | | 43.50 | Shoulders | 47.1 | | | | Totals: |

PAVEMENT MARKING SYMBOLS AND LEGENDS

Refer to PM-111

| Road Identification | Location | | STAW | RTAW | LTAW | CSRW | CSLW | CSTW | CRLW | FERW | LLRW | RLRW | RRCW | BLSW | WCSW | WPSB | SCLW | XNGW | STPW | AHDW | ONLW | BIKW | LANW | XITW | Groove Cuts EACH | Remarks |
|---------------------|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------------------------|---------|
| | Station | Side | | | | | | | | | | | | | | | | | | | | | | | | |
| US 18 Eastbound | 730+00 | RT | | | | | | | | | | | | | | | | 5 | | | | | | | 1 | |
| | 730+50 | RT | | | | | | | | | | | | | | | | 5 | | | | | | | 1 | |
| US 18 Westbound | 100+75 | LT | | | | | | | | | | | | | | | | 5 | | | | | | | 1 | |
| | 101+25 | LT | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| US 18 Eastbound | 140+10 | RT | | 4 | | | | | | | | | | | | | | | | | 4 | | | | 1 | |
| | 140+47.5 | RT | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| | 140+85 | RT | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| | | | | 8 | | | | | | | | | | | | | | 10 | 10 | | | 4 | | | 7 | Totals: |

PAVEMENT MARKING LINE TYPES

See PM-110

***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

*BCY4 - Place on the same side of the roadway to match existing markings near the project.

**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.

BCY4: Broken Centerline (Yellow) @ 0.25

DCY4: Double Centerline (Yellow) @ 2.00

NPY4: No Passing Zone Line (Yellow) @ 1.25

BLW4: Broken Lane Line (White) @ 0.25

ELW4: Edge Line Right (White) @ 1.00

ELY4: Edge Line Left (Yellow) @ 1.00

SLW4: Solid Lane Line (White) @ 1.00

CBW6: Crosswalk Bar (White) @ 15.00

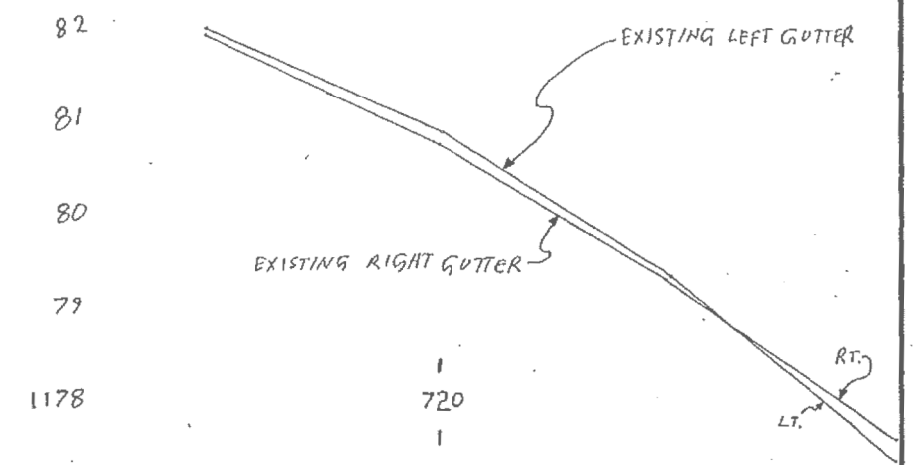
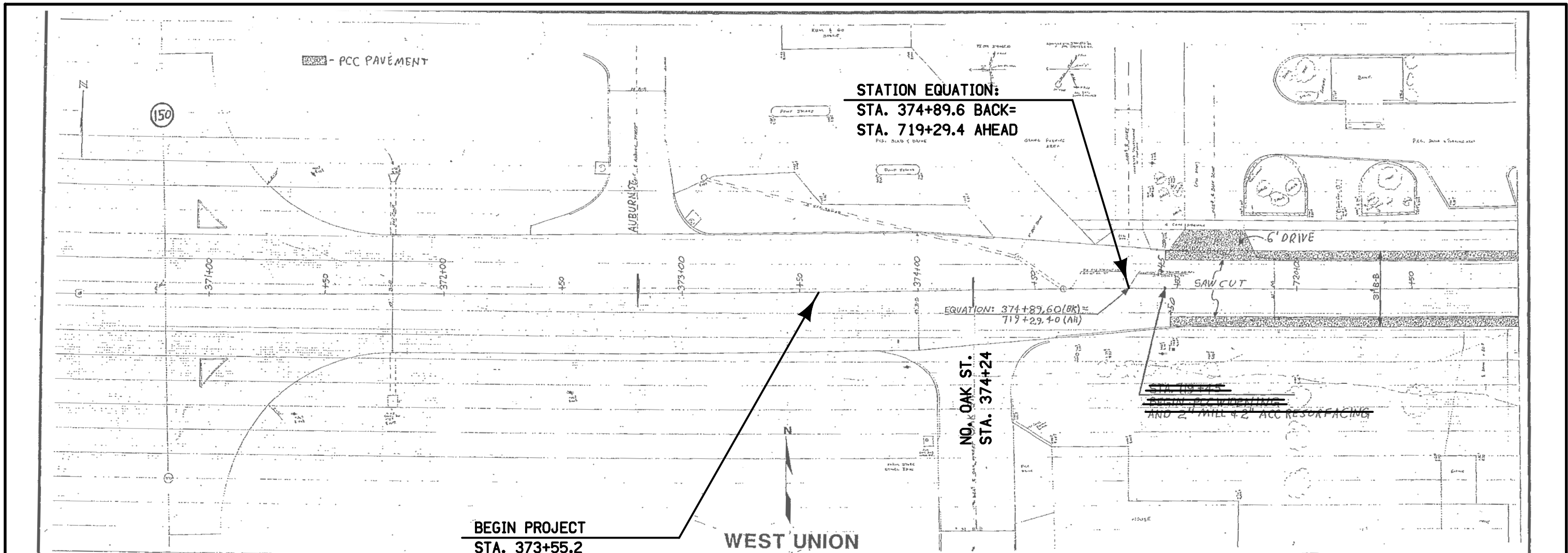
SLW2: Stop Line (White) @ 6.00

CLW6: Crosswalk Line (White) @ 3.00

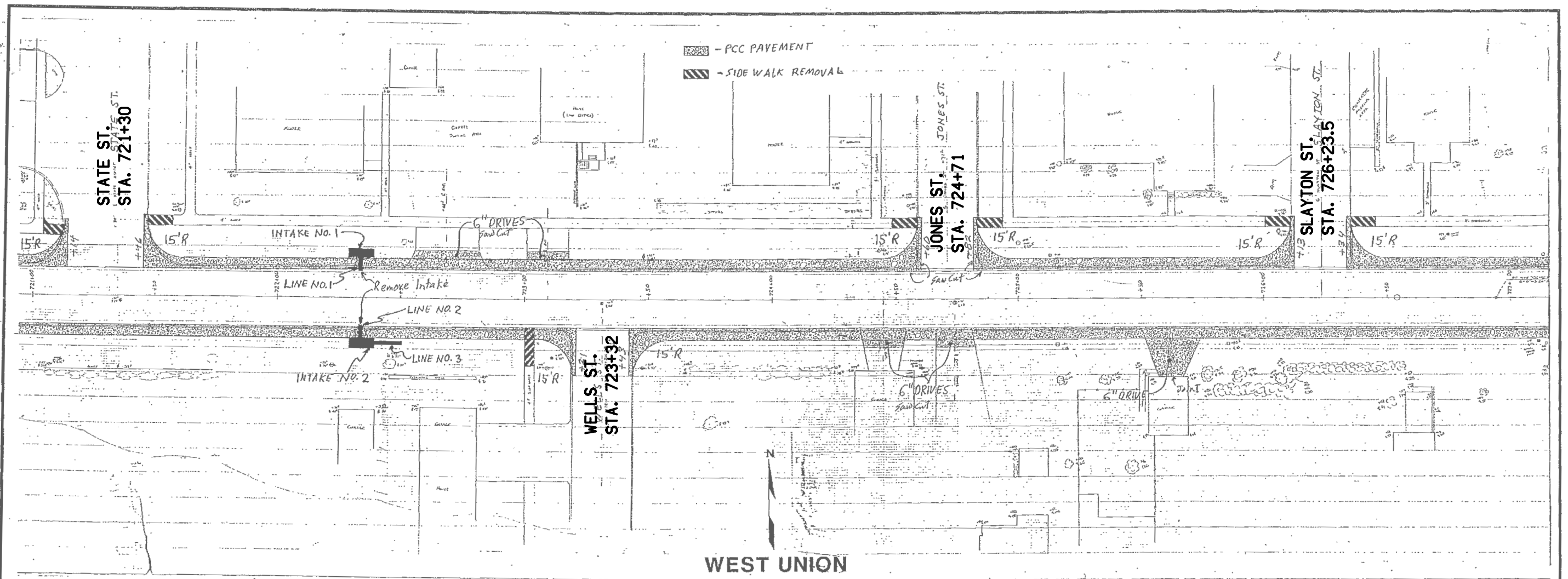
DLW4: Dotted Line (White) @ 0.33

CHW8: Channelizing Line (White) @ 2.00

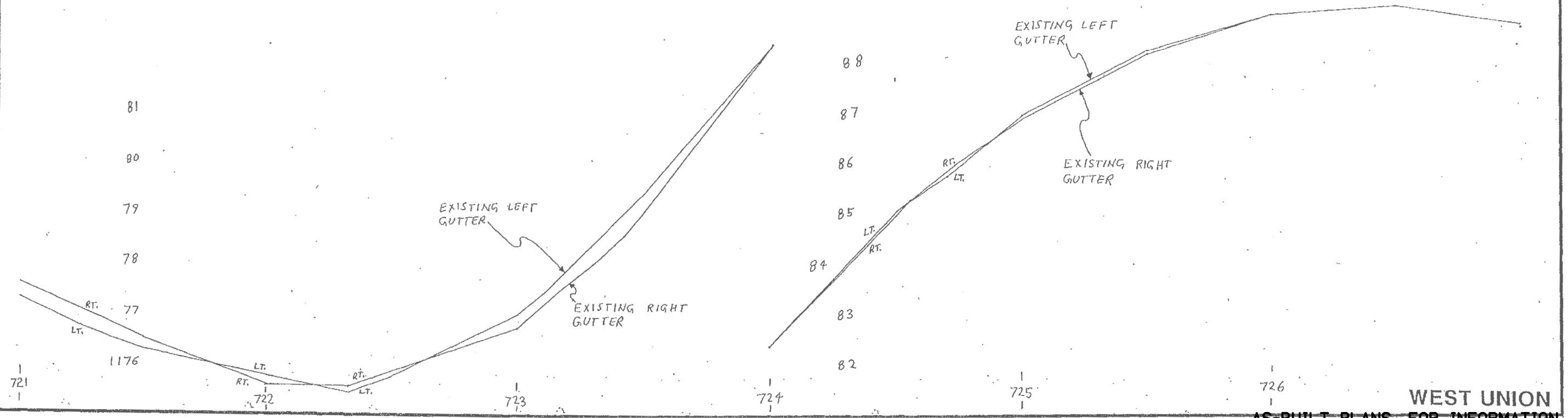
| Road ID | Station to Station | Dir. of Travel | Marking Type | Side | | | Length by Line Type (Unfactored) | | | | | | | | | | | | | Remarks | | | | | | | |
|-------------|--------------------|----------------|--------------|--------------------------|-----|-----|----------------------------------|------|--------|------|------|------|-------|------|------|------|------|------|-----|---------|-----|-----|------|--|--|--|-------------------------|
| | | | | L | C | R | BCY4* | DCY4 | NPY4** | BLW4 | ELW4 | ELY4 | SLW4 | CBW6 | SLW2 | CLW6 | DLW4 | CHW8 | STA | | STA | STA | | | | | |
| | | | | STA | STA | STA | STA | STA | STA | STA | STA | STA | STA | STA | STA | STA | STA | STA | STA | | STA | STA | | | | | |
| US 18 | 373+55.00 | 374+89.60 | BOTH | Waterborne/Solvent Paint | X | X | X | | 1.35 | | | | | | 0.90 | | | | | | | | | | | | After Milling |
| Equation | 719+29.40 | 721+30.00 | BOTH | Waterborne/Solvent Paint | | | X | | 1.65 | | | | | | | | | | | | | | | | | | |
| | 721+30.00 | 723+32.00 | BOTH | Waterborne/Solvent Paint | | | X | | 1.62 | | | | | | 0.30 | | | | | | | | | | | | |
| | 723+32.00 | 724+71.00 | BOTH | Waterborne/Solvent Paint | | | X | | 0.99 | | | | | | | | | | | | | | | | | | |
| | 724+71.00 | 726+23.50 | BOTH | Waterborne/Solvent Paint | | | X | | 1.13 | | | | | | | | | | | | | | | | | | |
| | 726+23.50 | 731+76.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 4.70 | | | | | | | 0.15 | 0.60 | | | | | | | | | | |
| | 731+76.00 | 732+22.60 | BOTH | Waterborne/Solvent Paint | | | X | | | | | | | | | | | | | | | | | | | | |
| Equation | 100+00.00 | 106+12.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 5.83 | | | | | | | 0.15 | 0.60 | | | | | | | | | | |
| | 106+12.00 | 108+42.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 1.71 | | | | | | | 0.15 | 0.69 | | | | | | | | | | |
| Pine St. | 108+42.00 | 108+60.50 | BOTH | Waterborne/Solvent Paint | X | | X | | | | | | | | | 0.33 | 0.83 | | | | | | | | | | Side Streets |
| | 108+60.50 | 115+14.00 | BOTH | Waterborne/Solvent Paint | X | X | | | 5.76 | | | | | | | 0.15 | | | | | | | | | | | |
| | 115+14.00 | 120+34.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 2.74 | 2.26 | | | 9.50 | | | | | | | | | | | | | | |
| | 120+34.00 | 135+50.00 | BOTH | Waterborne/Solvent Paint | X | X | X | 6.26 | | | 8.90 | | 30.32 | | | | | | | | | | 0.98 | | | | |
| | 135+50.00 | 141+63.90 | BOTH | Waterborne/Solvent Paint | X | X | X | | 4.97 | 1.02 | | | 12.28 | | 5.00 | | | | | | | | 2.27 | | | | |
| | 141+63.90 | 144+75.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 2.91 | | | | 6.22 | | | | | | | | | | | | | | Side Road |
| Co Rd. B-64 | | | | Waterborne/Solvent Paint | | | X | | 0.72 | | | | | | 0.52 | | | | | | | | 0.45 | | | | Side Road |
| | | | | Waterborne/Solvent Paint | | | X | | | | | | | | | | | | | | | | | | | | After Interlayer Lift |
| | 719+45.00 | 721+30.00 | BOTH | Waterborne/Solvent Paint | | | X | | 1.49 | | | | | | | | | | | | | | | | | | |
| | 721+30.00 | 723+32.00 | BOTH | Waterborne/Solvent Paint | | | X | | 1.62 | | | | | | 0.30 | | | | | | | | | | | | |
| | 723+32.00 | 724+71.00 | BOTH | Waterborne/Solvent Paint | | | X | | 0.99 | | | | | | | | | | | | | | | | | | |
| | 724+71.00 | 726+23.50 | BOTH | Waterborne/Solvent Paint | | | X | | 1.13 | | | | | | | | | | | | | | | | | | |
| | 726+23.50 | 731+76.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 4.70 | | | | | | | 0.15 | 0.60 | | | | | | | | | | |
| | 731+76.00 | 732+22.60 | BOTH | Waterborne/Solvent Paint | | | X | | | | | | | | | | | | | | | | | | | | |
| Equation | 100+00.00 | 106+12.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 5.83 | | | | | | | 0.15 | 0.60 | | | | | | | | | | |
| | 106+12.00 | 108+42.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 1.71 | | | | | | | 0.15 | 0.69 | | | | | | | | | | |
| Pine St. | 108+42.00 | 108+60.50 | BOTH | Waterborne/Solvent Paint | X | | X | | | | | | | | | 0.33 | 0.83 | | | | | | | | | | Side Streets |
| | 108+60.50 | 115+14.00 | BOTH | Waterborne/Solvent Paint | X | X | | | 5.76 | | | | | | | 0.15 | | | | | | | | | | | |
| | 115+14.00 | 120+34.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 2.74 | 2.26 | | | 9.50 | | | | | | | | | | | | | | |
| | 120+34.00 | 135+50.00 | BOTH | Waterborne/Solvent Paint | X | X | X | 6.26 | | | 8.90 | | 30.32 | | | | | | | | | | 0.98 | | | | |
| | 135+50.00 | 141+63.90 | BOTH | Waterborne/Solvent Paint | X | X | X | | 4.97 | 1.02 | | | 12.28 | | 5.00 | | | | | | | | 2.27 | | | | |
| | 141+63.90 | 144+75.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 2.91 | | | | 6.22 | | | | | | | | | | | | | | Side Road |
| Co Rd. B-64 | | | | Waterborne/Solvent Paint | | | X | | 0.72 | | | | | | 0.52 | | | | | | | | 0.45 | | | | Side Road |
| | | | | Waterborne/Solvent Paint | | | X | | | | | | | | | | | | | | | | | | | | After Intermediate Lift |
| | 373+55.00 | 374+89.60 | BOTH | Waterborne/Solvent Paint | X | X | X | | 1.35 | | | | | | 0.90 | | | | | | | | | | | | |
| Equation | 719+29.40 | 721+30.00 | BOTH | Waterborne/Solvent Paint | | | X | | 1.65 | | | | | | | | | | | | | | | | | | |
| | 721+30.00 | 723+32.00 | BOTH | Waterborne/Solvent Paint | | | X | | 1.62 | | | | | | 0.30 | | | | | | | | | | | | |
| | 723+32.00 | 724+71.00 | BOTH | Waterborne/Solvent Paint | | | X | | 0.99 | | | | | | | | | | | | | | | | | | |
| | 724+71.00 | 726+23.50 | BOTH | Waterborne/Solvent Paint | | | X | | 1.13 | | | | | | | | | | | | | | | | | | |
| | 726+23.50 | 731+76.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 4.70 | | | | | | | 0.15 | 0.60 | | | | | | | | | | |
| | 731+76.00 | 732+22.60 | BOTH | Waterborne/Solvent Paint | | | X | | | | | | | | | | | | | | | | | | | | |
| Equation | 100+00.00 | 106+12.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 5.83 | | | | | | | 0.15 | 0.60 | | | | | | | | | | |
| | 106+12.00 | 108+42.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 1.71 | | | | | | | 0.15 | 0.69 | | | | | | | | | | |
| Pine St. | 108+42.00 | 108+60.50 | BOTH | Waterborne/Solvent Paint | X | | X | | | | | | | | | 0.33 | 0.83 | | | | | | | | | | Side Streets |
| | 108+60.50 | 115+14.00 | BOTH | Waterborne/Solvent Paint | X | X | | | 5.76 | | | | | | | 0.15 | | | | | | | | | | | |
| | 115+14.00 | 120+34.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 2.74 | 2.26 | | | 9.50 | | | | | | | | | | | | | | |
| | 120+34.00 | 135+50.00 | BOTH | Waterborne/Solvent Paint | X | X | X | 6.26 | | | 8.90 | | 30.32 | | | | | | | | | | 0.98 | | | | |
| | 135+50.00 | 141+63.90 | BOTH | Waterborne/Solvent Paint | X | X | X | | 4.97 | 1.02 | | | 12.28 | | 5.00 | | | | | | | | 2.27 | | | | |
| | 141+63.90 | 144+75.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 2.91 | | | | 6.22 | | | | | | | | | | | | | | Side Road |
| Co Rd. B-64 | | | | Waterborne/Solvent Paint | | | X | | 0.72 | | | | | | 0.52 | | | | | | | | 0.45 | | | | Side Road |
| | | | | Waterborne/Solvent Paint | | | X | | | | | | | | | | | | | | | | | | | | After Surface Lift |
| | 373+55.00 | 374+89.60 | BOTH | Waterborne/Solvent Paint | X | X | X | | 1.35 | | | | | | 0.90 | | | | | | | | | | | | |
| Equation | 719+29.40 | 721+30.00 | BOTH | Waterborne/Solvent Paint | | | X | | 1.65 | | | | | | | | | | | | | | | | | | |
| | 721+30.00 | 723+32.00 | BOTH | Waterborne/Solvent Paint | | | X | | 1.62 | | | | | | 0.30 | | | | | | | | | | | | |
| | 723+32.00 | 724+71.00 | BOTH | Waterborne/Solvent Paint | | | X | | 0.99 | | | | | | | | | | | | | | | | | | |
| | 724+71.00 | 726+23.50 | BOTH | Waterborne/Solvent Paint | | | X | | 1.13 | | | | | | | | | | | | | | | | | | |
| | 726+23.50 | 731+76.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 4.70 | | | | | | | 0.15 | 0.60 | | | | | | | | | | |
| | 731+76.00 | 732+22.60 | BOTH | Waterborne/Solvent Paint | | | X | | | | | | | | | | | | | | | | | | | | |
| Equation | 100+00.00 | 106+12.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 5.83 | | | | | | | 0.15 | 0.60 | | | | | | | | | | |
| | 106+12.00 | 108+42.00 | BOTH | Waterborne/Solvent Paint | X | X | X | | 1.71 | | | </ | | | | | | | | | | | | | | | |



WEST UNION
AS-BUILT PLANS, FOR INFORMATION ONLY

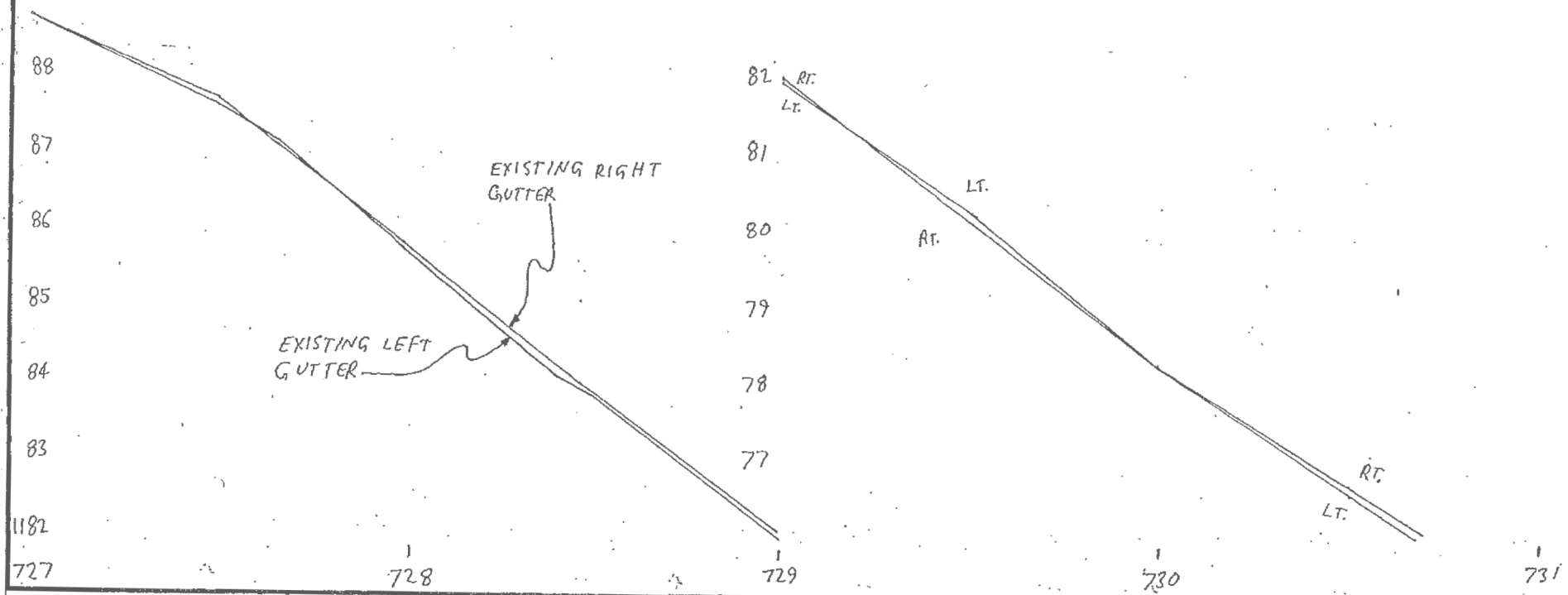
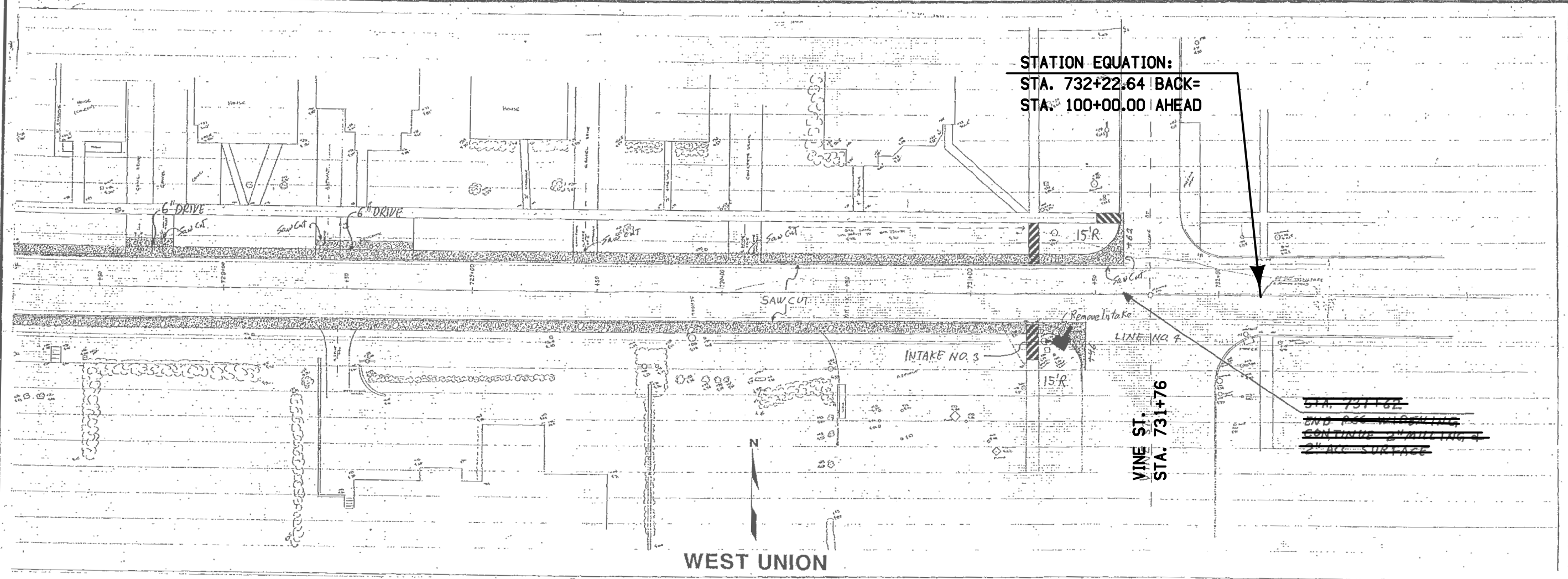


WEST UNION



WEST UNION

AS-BUILT PLANS, FOR INFORMATION ONLY

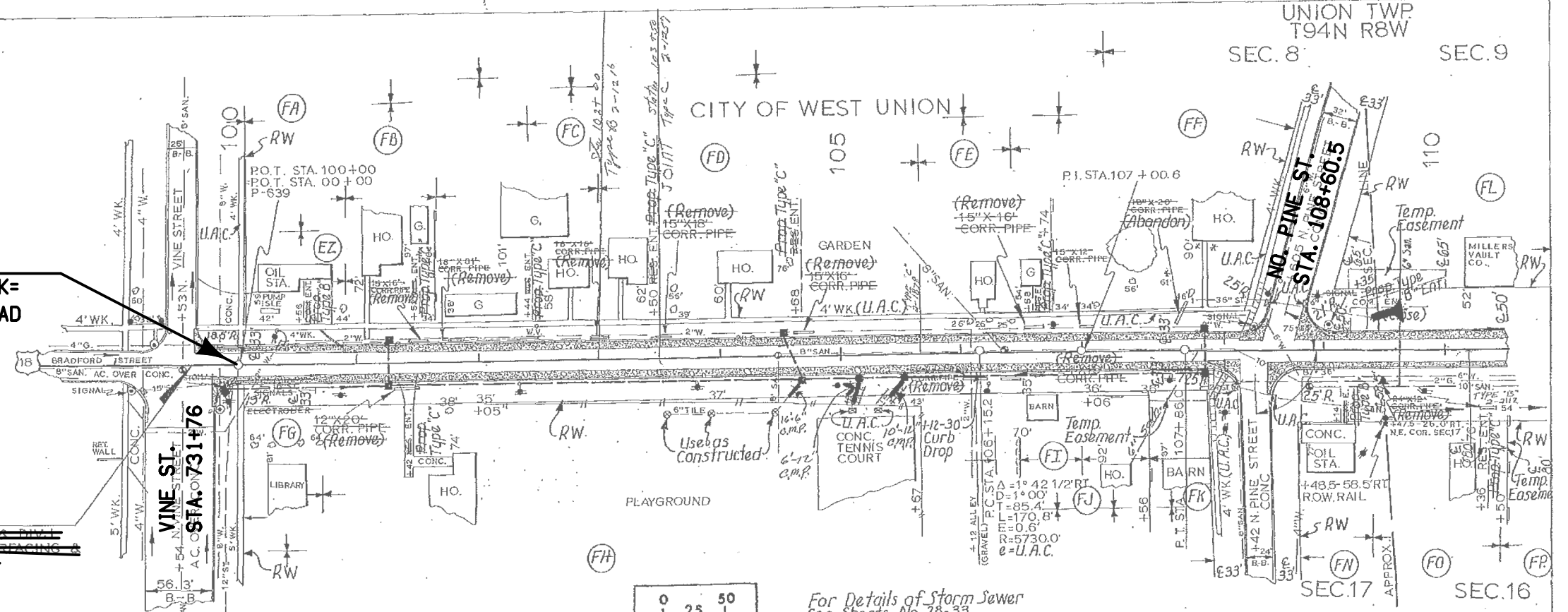


WEST UNION

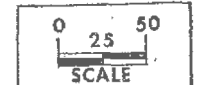
AS-BUILT PLANS, FOR INFORMATION ONLY

- Property Owners:
- EZ - Kenneth G. & Gloria Sue Shatz
 - FA - Maude Bullard
 - FB - Roy C. J. & Margaret Welzel
 - FC - Arthur G. & Agnes Erickson
 - FD - Letta V. Ott & Mary H. Meyers
 - FE - Martha Homewood
 - FF - Barney & Colleen B. Morris
 - FG - Public Library of West Union
 - FH - Independent School District of West Union
 - FI - Signa A. & Dagga M. Johnson
 - FJ - Kenneth M. & Ellen Hallverson
 - FK - Darold A. & Elya Martin
 - FL - Devine L. Miller
 - FN - Edward C. Dahl
 - FO - Richard Kelly
 - FP - Robert D. & Eva V. Reeder

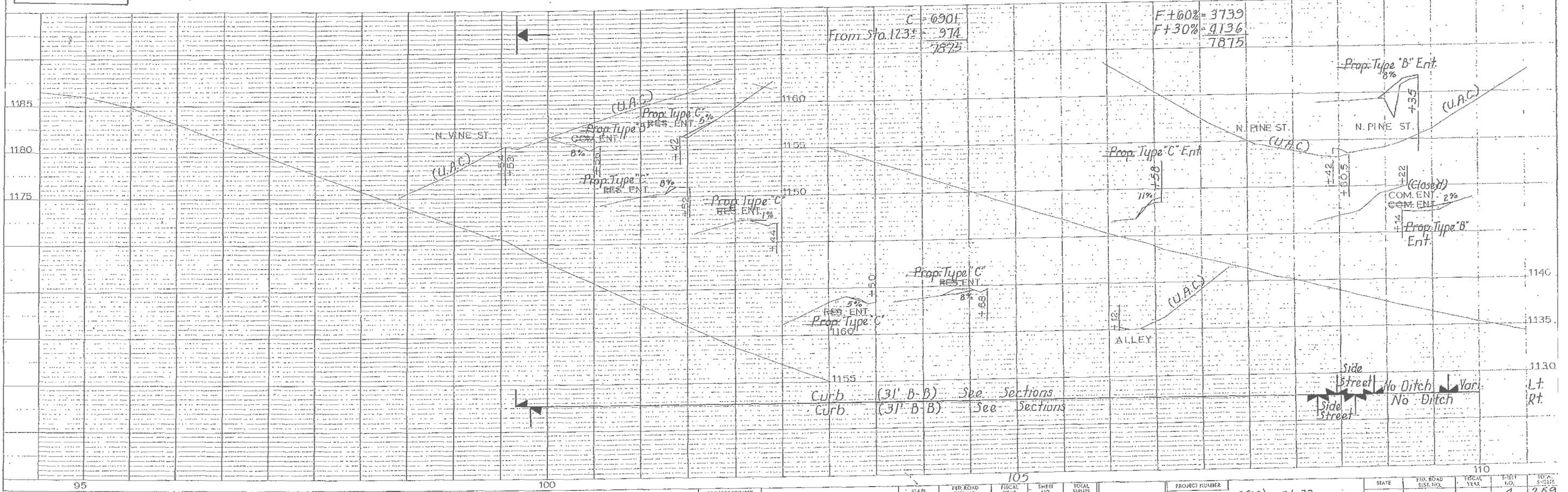
STATION EQUATION:
 STA. 732+22.64 BACK=
 STA. 100+00.00 AHEAD



- LEGEND
- ◆ N.W. BELL TEL. CO.
 - INTERSTATE PO. CO.

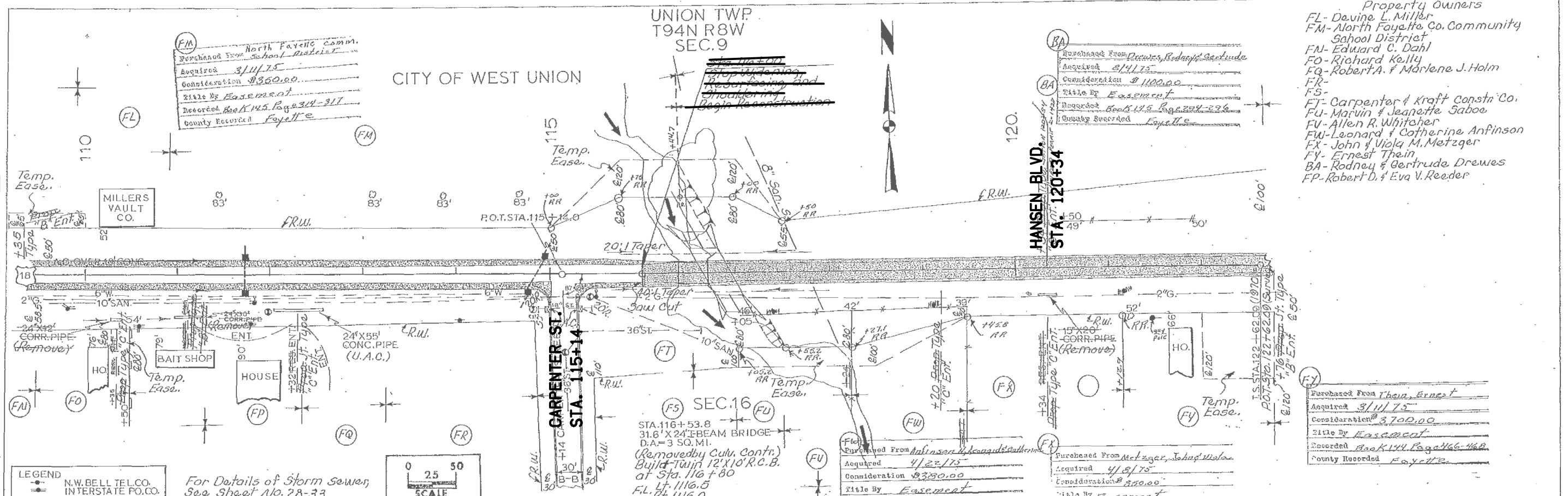


For Details of Storm Sewer
 See Sheets No. 28-33



| | | | | | | | | | | | | | | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 95 | 100 | 105 | 110 | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | 190 | 195 | 200 |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

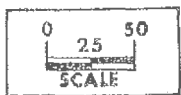
AS-BUILT PLANS, FOR INFORMATION ONLY



- Property Owners
- FL- Devine L. Miller
 - FM- North Fayette Co. Community School District
 - FN- Edward C. Dahl
 - FO- Richard Kelly
 - FQ- Robert A. & Marlene J. Holm
 - FR-
 - FS-
 - FT- Carpenter & Kraft Constr. Co.
 - FU- Marvin & Jeanette Sabo
 - FW- Allen R. Whitcher
 - FX- Leonard & Catherine Anfinson
 - FY- John & Viola M. Metzger
 - FP- Ernest Thein
 - BA- Rodney & Gertrude Drewes
 - BP- Robert D. & Eva V. Reeder

LEGEND
 N.W. BELL TEL. CO.
 INTERSTATE P.O. CO.

For Details of Storm Sewer,
 See Sheet No. 28-33



| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1140 | 1135 | 1130 | 1125 | 1120 | 1115 | 1110 | 1105 | 1100 | 1095 | 1090 | 1085 | 1080 | 1075 | 1070 | 1065 | 1060 | 1055 | 1050 | 1045 | 1040 | 1035 | 1030 | 1025 | 1020 | 1015 | 1010 | 1005 | 1000 | 995 | 990 | 985 | 980 | 975 | 970 | 965 | 960 | 955 | 950 | 945 | 940 | 935 | 930 | 925 | 920 | 915 | 910 | 905 | 900 | 895 | 890 | 885 | 880 | 875 | 870 | 865 | 860 | 855 | 850 | 845 | 840 | 835 | 830 | 825 | 820 | 815 | 810 | 805 | 800 | 795 | 790 | 785 | 780 | 775 | 770 | 765 | 760 | 755 | 750 | 745 | 740 | 735 | 730 | 725 | 720 | 715 | 710 | 705 | 700 | 695 | 690 | 685 | 680 | 675 | 670 | 665 | 660 | 655 | 650 | 645 | 640 | 635 | 630 | 625 | 620 | 615 | 610 | 605 | 600 | 595 | 590 | 585 | 580 | 575 | 570 | 565 | 560 | 555 | 550 | 545 | 540 | 535 | 530 | 525 | 520 | 515 | 510 | 505 | 500 | 495 | 490 | 485 | 480 | 475 | 470 | 465 | 460 | 455 | 450 | 445 | 440 | 435 | 430 | 425 | 420 | 415 | 410 | 405 | 400 | 395 | 390 | 385 | 380 | 375 | 370 | 365 | 360 | 355 | 350 | 345 | 340 | 335 | 330 | 325 | 320 | 315 | 310 | 305 | 300 | 295 | 290 | 285 | 280 | 275 | 270 | 265 | 260 | 255 | 250 | 245 | 240 | 235 | 230 | 225 | 220 | 215 | 210 | 205 | 200 | 195 | 190 | 185 | 180 | 175 | 170 | 165 | 160 | 155 | 150 | 145 | 140 | 135 | 130 | 125 | 120 | 115 | 110 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

AS-BUILT PLANS, FOR INFORMATION ONLY

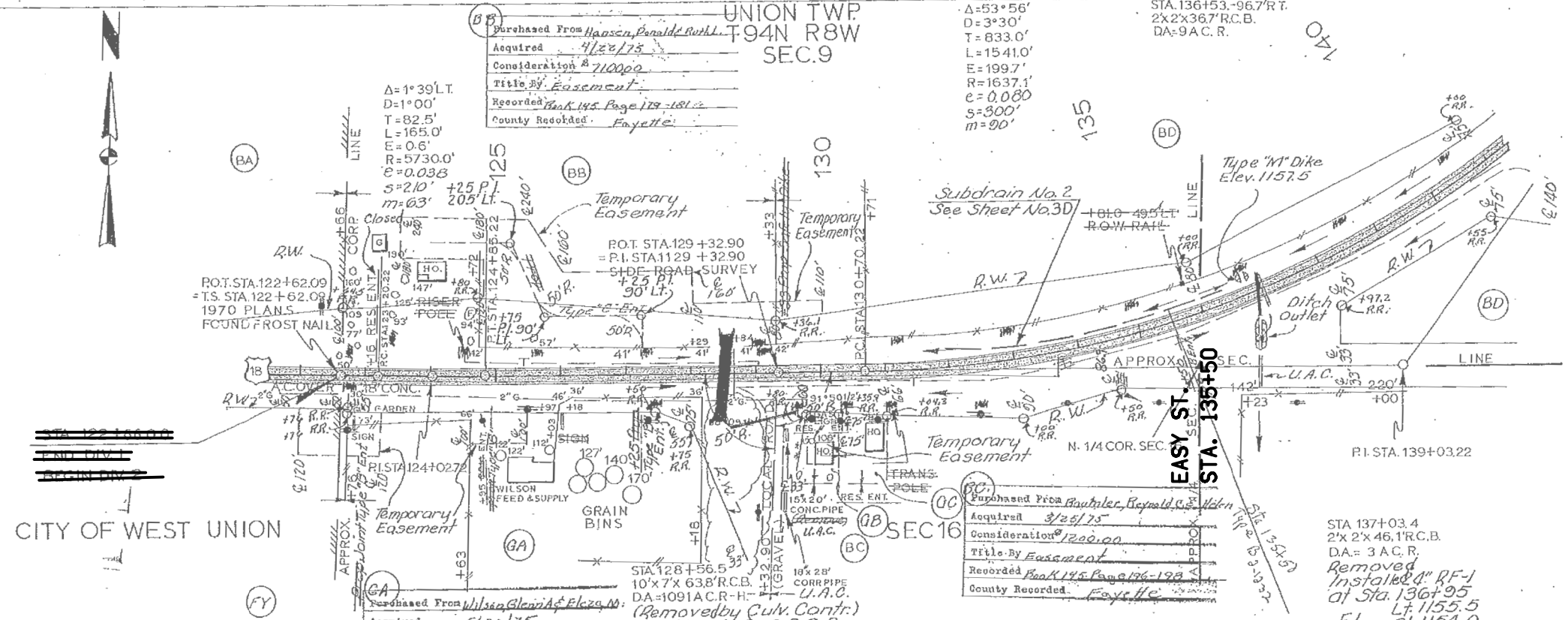
PROPERTY OWNERS:
 BA - ROONEY DREWES
 BE - Viva A. Drewes
 BC - REYOLD C. BAUMLER
 BD - HENRY L. GROSS
 FY - Ernest Thein
 GA - Glenn A. Wilson
 GB - Margaret S. Robinson
 GC - Dale A. & Linda L. Kienhaus

UNION TWP
 T94N R8W
 SEC.9

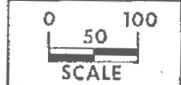
Purchased From Haas, Ronald
 Acquired 4/22/75
 Consideration \$7100.00
 Title By Easement
 Recorded Book 145 Page 179-181
 County Recorded Fayette

△=53°56'
 D=3°30'
 T=833.0'
 L=1541.0'
 E=199.7'
 R=1637.1'
 C=0.080
 S=300'
 m=90'

STA. 136+53.967 R.T.
 2'x2'x36.7' R.C.B.
 DA=9 A.C.R.



LEGEND
 ● NW BELL TEL. CO.
 ● INTERSTATE PO. CO.
 — NW BELL TEL. CO.



Purchased From Wilson, Glenn A. & Elizabeth W.
 Acquired 5/20/75
 Consideration \$10,000.00
 Title By Easement
 Recorded Book 145 Page 239-241
 County Recorded Fayette

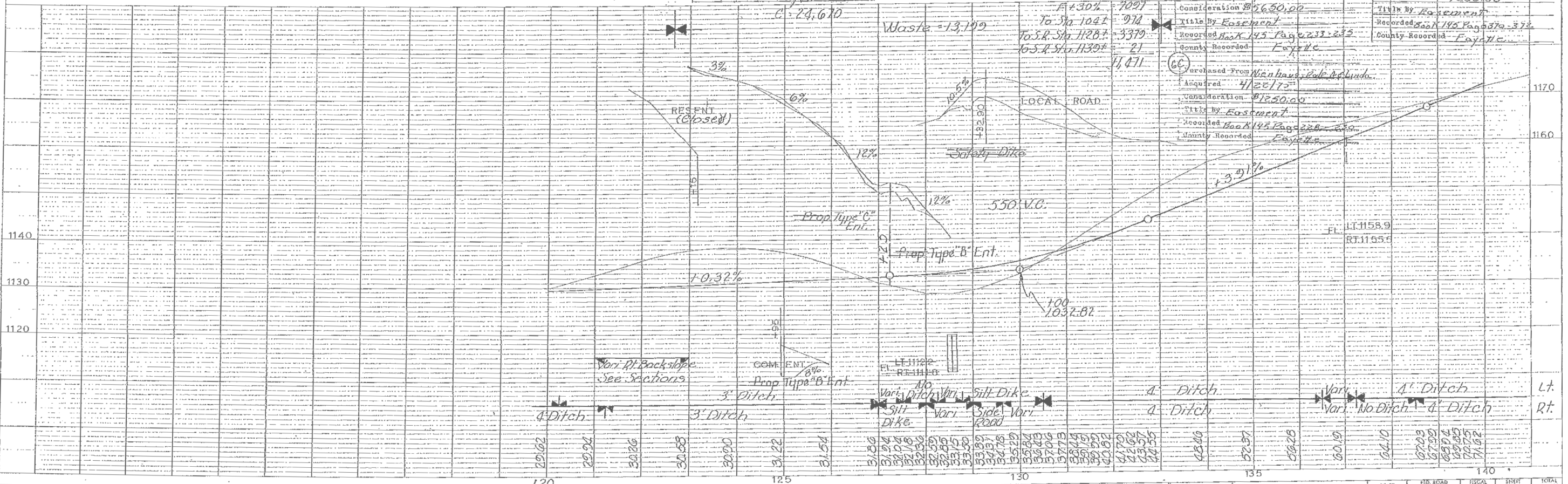
STA. 128+56.5
 10'x7'x63.8' R.C.B.
 DA=1091 A.C.R.-H
 (Removed by Culv. Contr.)
 Built Twin 8'x8' R.C.B.
 at Sta. 128+50
 Ft. 1114.0
 Rt. 1111.0
 Design No. 274

Purchased From Baubler, Reynold C. & Helen
 Acquired 3/25/75
 Consideration \$1200.00
 Title By Easement
 Recorded Book 145 Page 196-198
 County Recorded Fayette

STA 137+03.4
 2'x2'x46.1' R.C.B.
 DA= 3 A.C.R.
 Removed
 Installed 4" R.F.-1
 at Sta. 136+95
 Lt. 1155.5
 Ft. 1154.0

For Details of Side Road
 See Sheet No. 22.

Purchased From Grass, Henry Isaac E.
 Acquired 5/20/75
 Consideration \$7600.00
 Title By Easement
 Recorded Book 145 Page 370-372
 County Recorded Fayette



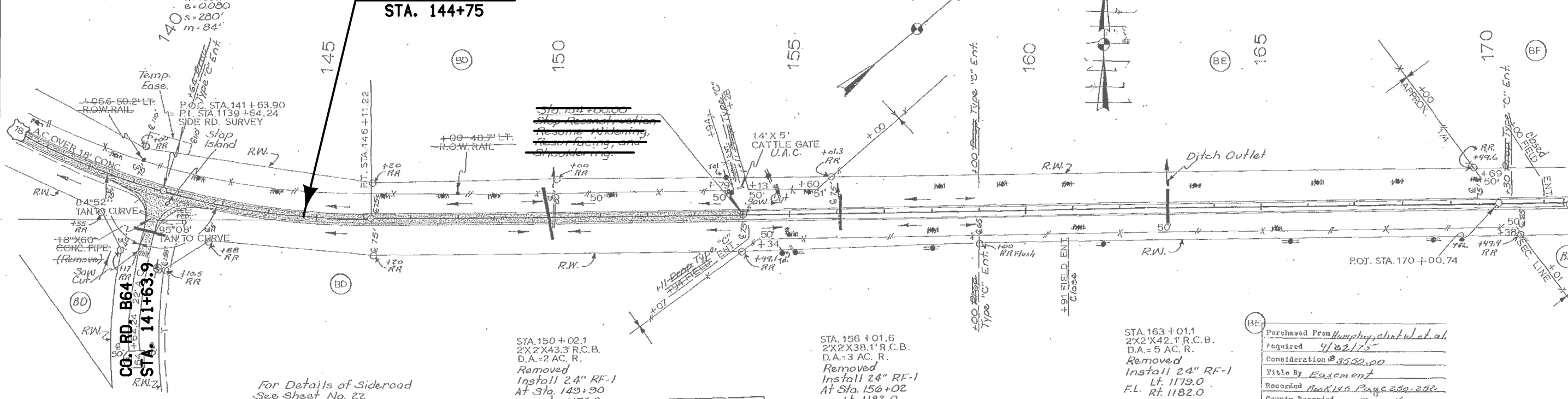
AS-BUILT PLANS, FOR INFORMATION ONLY

PROPERTY OWNERS
 RD- HENRY L. GROSS
 BE- Kenneth R. & Evelyn Askelson
 BF- Theodore G. Doshier
 BE- Humphry, et al w.

$\Delta = 53^{\circ}56'LT.$
 $D = 3^{\circ}30'$
 $T = 833.0'$
 $L = 1541.0'$
 $E = 199.7'$
 $R = 1637.1'$
 $e = 0.080$
 $s = 280'$
 $m = 84'$

UNION TWP.
 T94N R8W
 SEC. 9

END PROJECT
 STA. 144+75



LEGEND
 ● N.W. BELL TEL. CO.
 ○ ALLAMAKEE-CLAYTON ELEC. CO-OP.
 T N.W. BELL TEL. CO.

For Details of Sideroad
 See Sheet No. 22

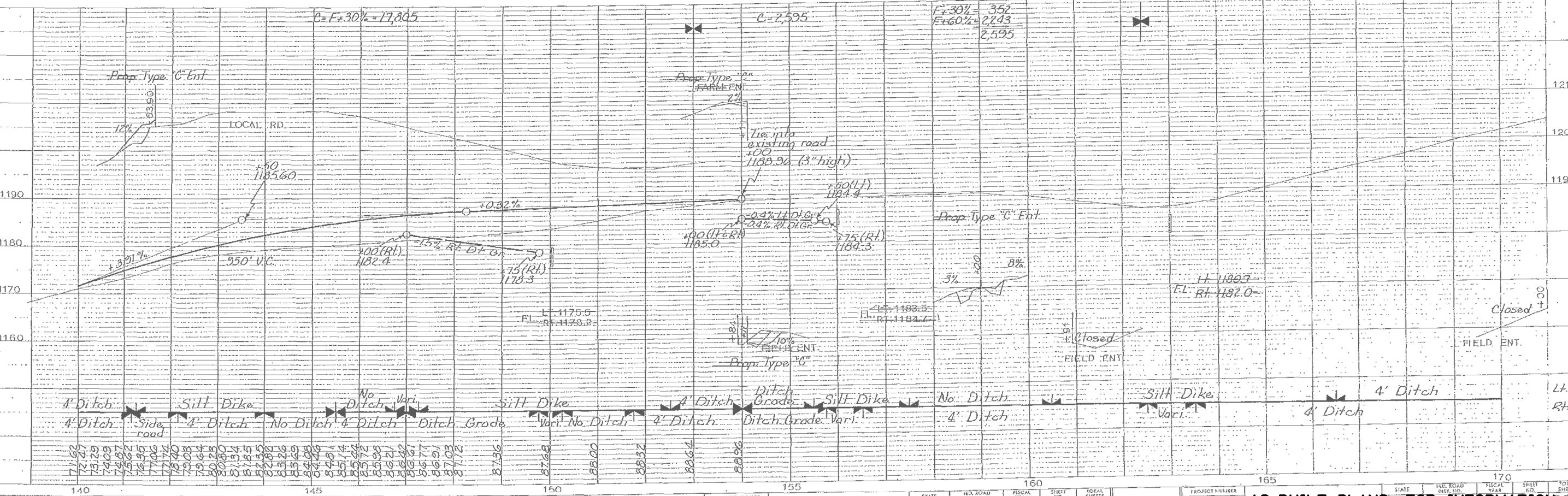
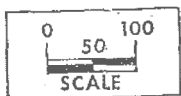
 For Details of Intersection
 See Sheet No. 34-35

STA. 150+02.1
 2'X2'X43.3' R.C.B.
 D.A. = 2 AC. R.
 Removed
 Install 24" RF-1
 At Sta. 149+90
 Lt. 1173.0
 Fl. Rt. 1178.0

STA. 156+01.6
 2'X2'X38.1' R.C.B.
 D.A. = 3 AC. R.
 Removed
 Install 24" RF-1
 At Sta. 156+02
 Lt. 1182.0
 Fl. Rt. 1184.0

STA. 163+01.1
 2'X2'X42.1' R.C.B.
 D.A. = 5 AC. R.
 Removed
 Install 24" RF-1
 Lt. 1179.0
 Fl. Rt. 1182.0

Purchased From Humphry, et al.
 Required 4/22/75
 Consideration \$3550.00
 Title By Easement
 Recorded Book 145 Page 289-292
 County Recorded Fayette



AS-BUILT PLANS, FOR INFORMATION ONLY

SUPERELEVATION DATA

See PV-300 Series

| Road Identification | Circular Curve or Spiral Curve Name | Radius | Superelevation Data | | | Standard Road Plan | Section A-A | Section B-B | Section C-C | Section D-D | Section E-E | Section F-F | Case A | Case B | Case C | Case S | Case T | Case U | Remarks |
|---------------------|-------------------------------------|--------|---------------------|-----|----|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-------------------------------------|
| | | | e | L | x | | | | | | | | | | | | | | |
| | | | FT | % | FT | | | | | | | | | | | | | | |
| US 18 | 124+02.72 | 5730 | 3.8 | 114 | 60 | PV-301 | 121+22.29 | 121+82.29 | 122+42.29 | 122+96.29 | | | 122+62.09 | | | | | | 70 mph 8% design |
| | | | | | | | | | | | | | | | | | | | |
| | 139+03.22 | 1637.1 | 8.0 | 224 | 56 | PV-301 | 128+57.42 | 129+13.42 | 129+69.42 | 131+37.42 | | | 130+70.22 | | | 130+25.42 | 130+25.42 | 131+09.42 | 65 mph 8% design (should be Spiral) |
| | | | | | | | 148+24.00 | 147+68.00 | 147+12.00 | 145+44.00 | | | 146+11.20 | | | 146+56.00 | 146+56.00 | 145+72.00 | 65 mph 8% design (should be Spiral) |
| | 124+02.72 | 5730 | 2.0 | 48 | 48 | PV-301 | 121+80.49 | 122+28.49 | 122+76.49 | 122+76.49 | | | | 122+62.09 | | | | | 50 mph 6% design |
| | | | | | | | | | | | | | | | 124+85.22 | | | | |
| | 139+03.22 | 1637.1 | 5.6 | 140 | 51 | PV-301 | 129+21.22 | 129+72.22 | 130+23.22 | 131+12.22 | | | 130+70.22 | | | 130+72.22 | 130+72.22 | | 55 mph 6% design (60 mph Spiral) |
| | | | | | | | 147+60.20 | 147+09.20 | 146+58.20 | 145+69.20 | | | 146+11.20 | | | 146+09.20 | 146+09.20 | | 55 mph 6% design (60 mph Spiral) |

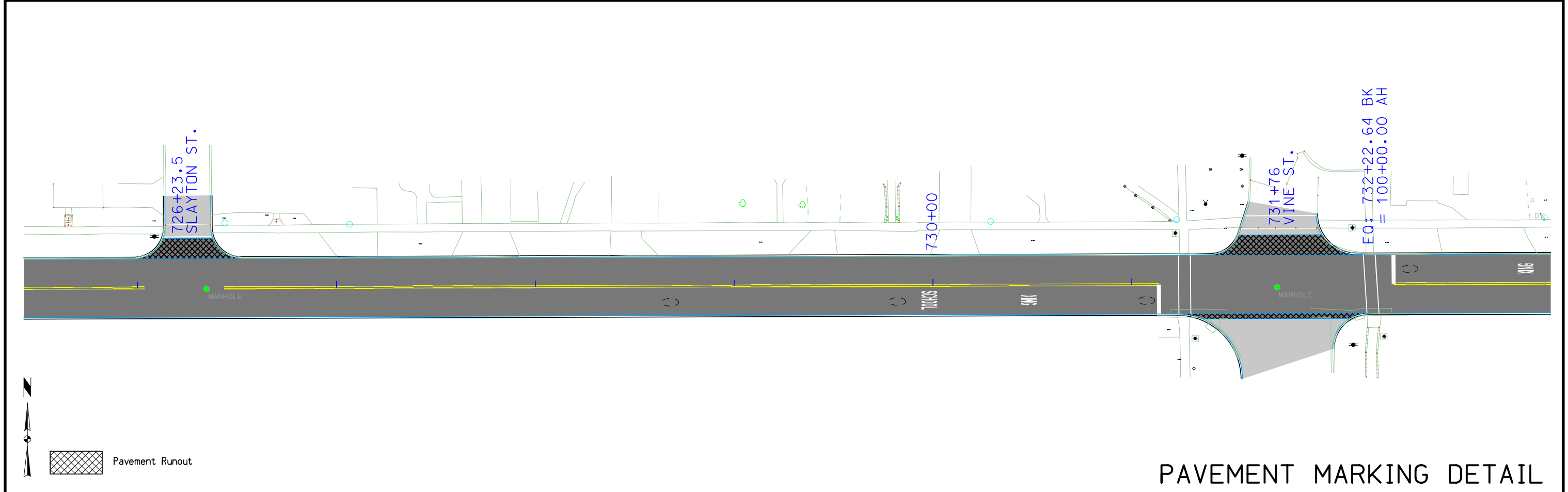
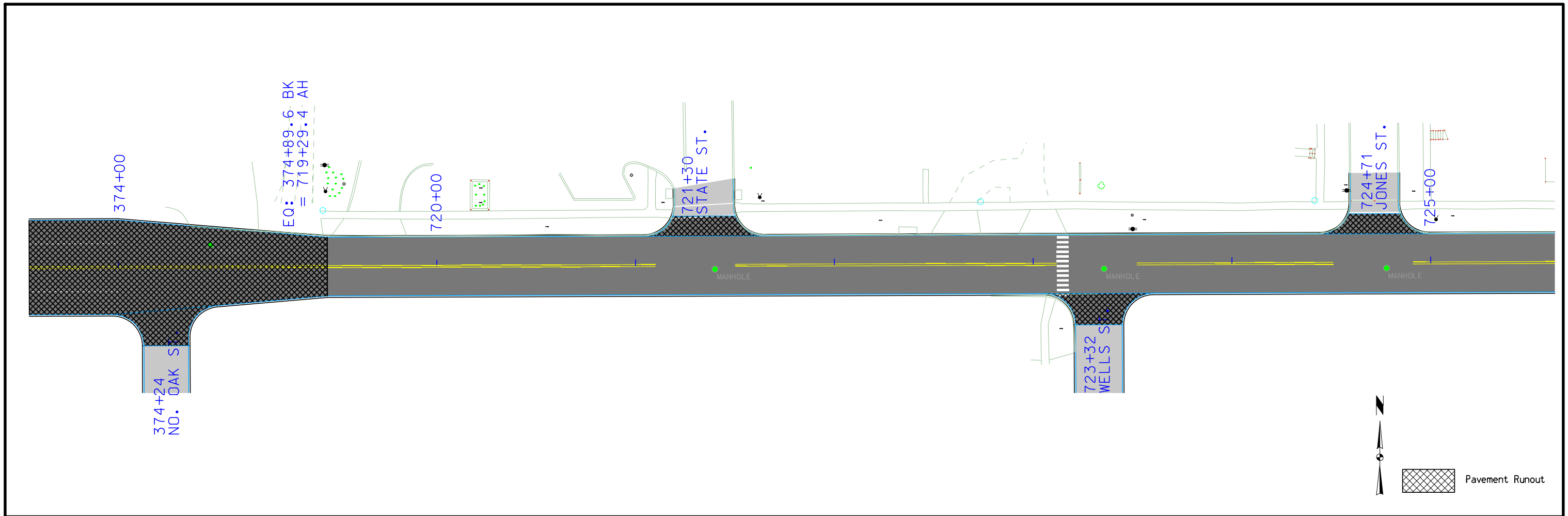
511 TRAVEL RESTRICTIONS

| Route | Direction | County | Location Description | Feature Crossed | Object Type | Maint. Bridge No., Structure ID, or FHWA No. | Type of Restriction | Existing Measurement | Construction Measurement | Construction Measurement as Signed | Projected As Built Measurement | Remarks |
|-------|-----------|---------|---------------------------------|-----------------|-------------|--|---------------------|----------------------|--------------------------|------------------------------------|--------------------------------|---------|
| US 18 | BOTH | FAYETTE | No Travel Restrictions Expected | | | | | | | | | |

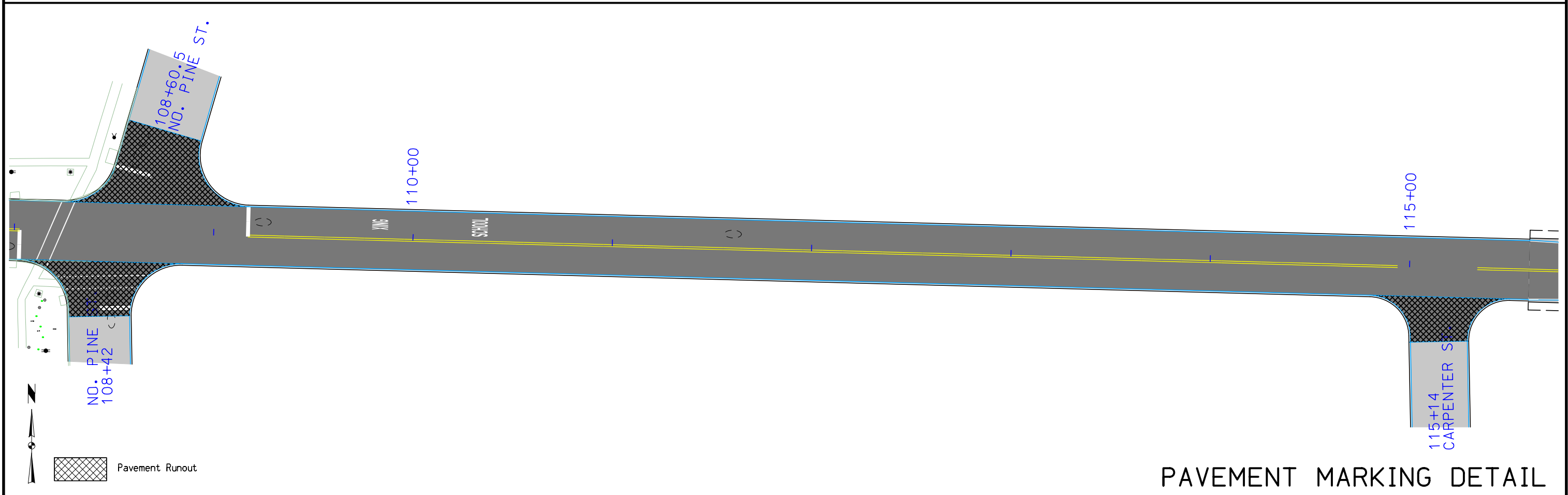
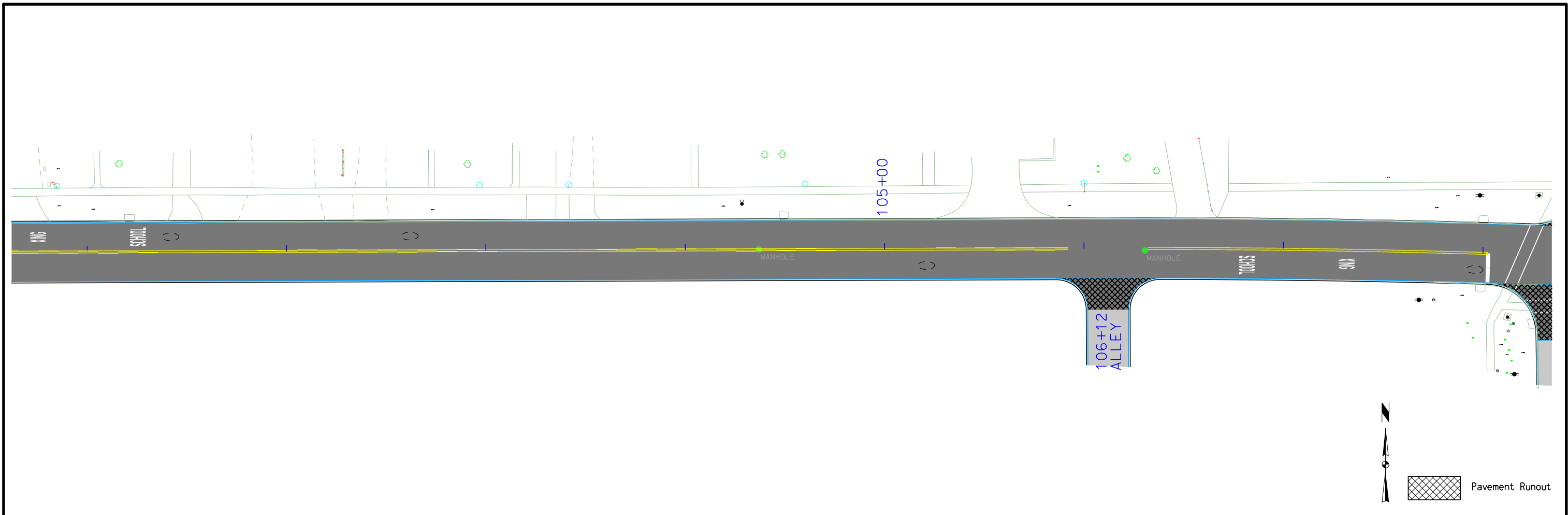
| TRAFFIC CONTROL PLAN | | 108-23A 08-01-08 |
|--|--|---------------------|
| <p>1) Through traffic shall be maintained at all times during construction.</p> <p>2. Contractor shall coordinate traffic control with other projects in the area.</p> | | |

| STAGING NOTES | | 108-26A 08-01-08 |
|---|--|---------------------|
| <p>1) Install subdrains/perform pipe work.</p> <p>2) Constructed base widening.</p> <p>3) Scarify pavement.</p> <p>4) Patch and replace curb and gutter as directed by the Engineer.</p> <p>5) Place surface HMA.</p> <p>6) Groove and place final pavement markings.</p> | | |

| COORDINATED OPERATIONS | | 111-01 04-17-12 |
|--|--------------|--------------------|
| <p>Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.</p> | | |
| Project | Type of Work | |
| NHSN-018-8(44)--2R-33 | Sidewalk-ADA | |

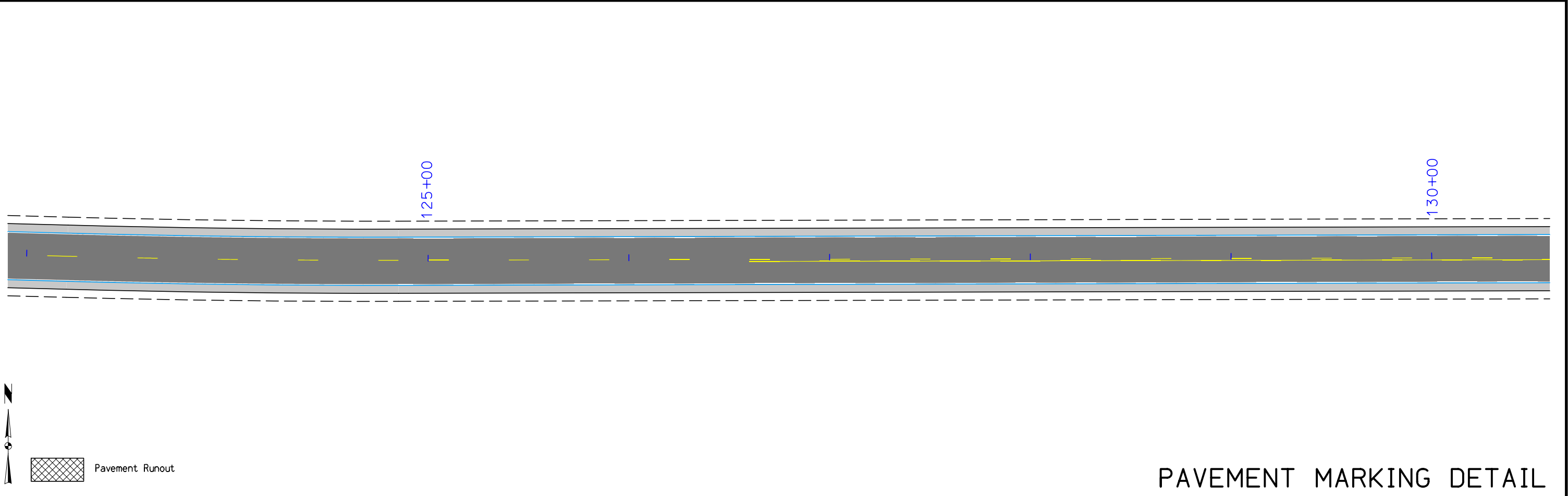
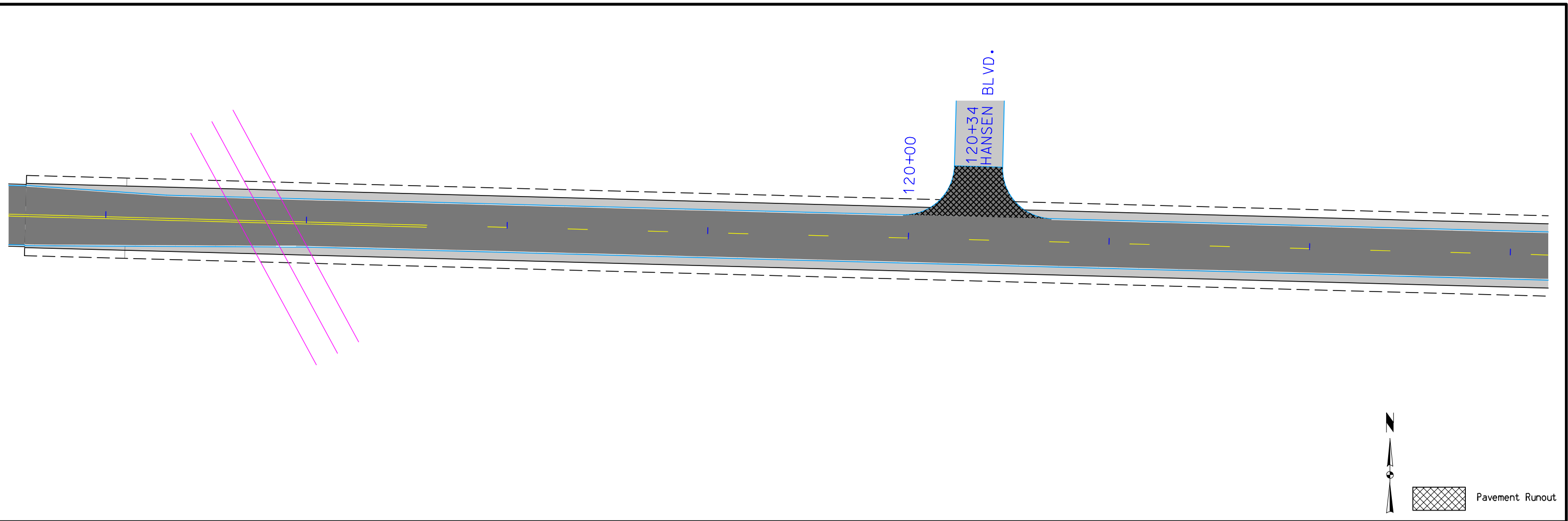


PAVEMENT MARKING DETAIL

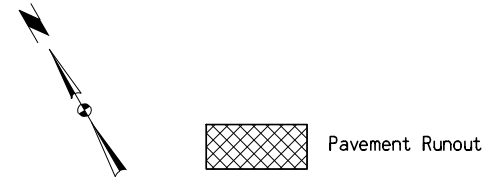
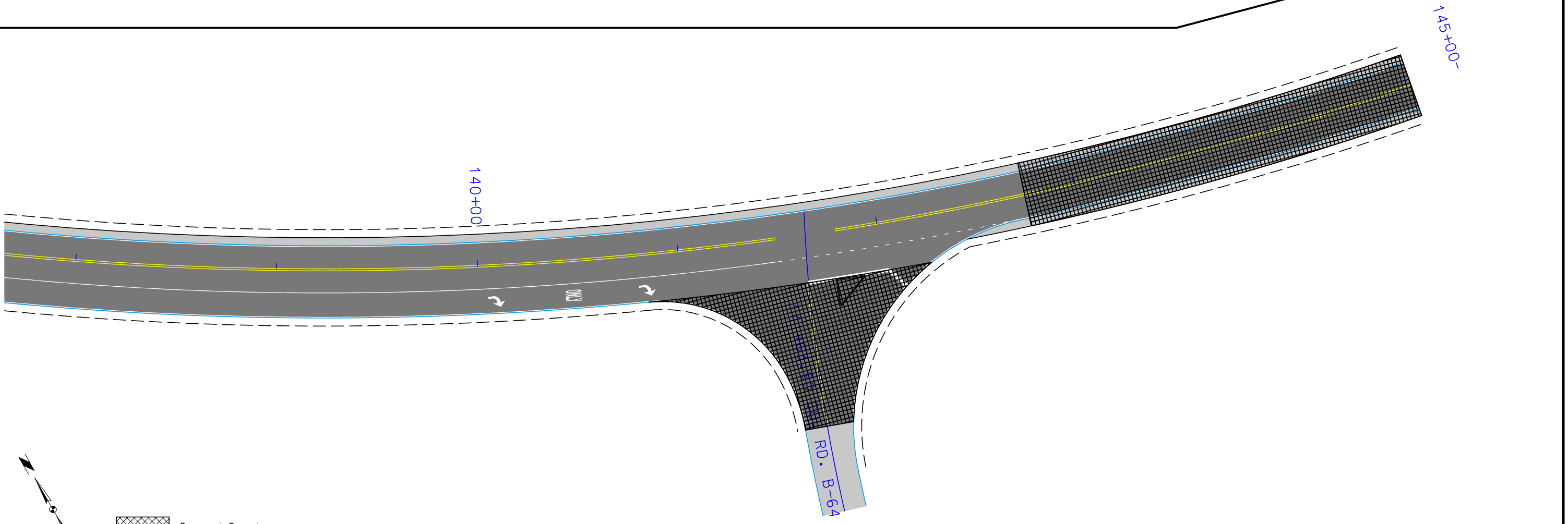
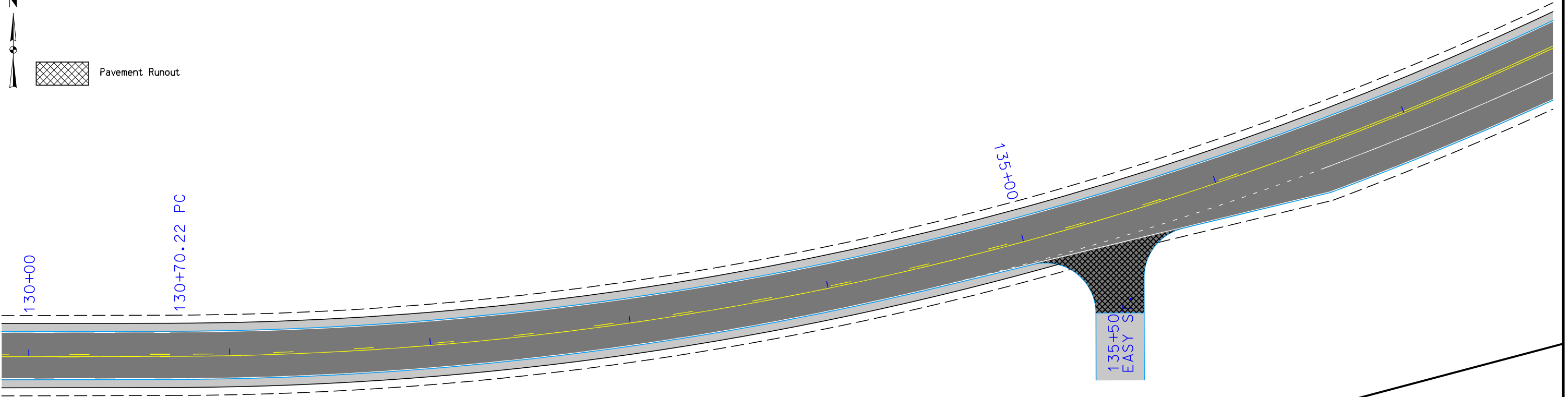
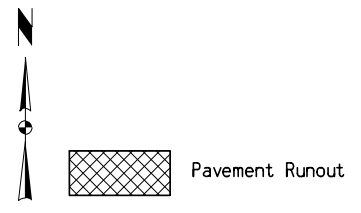


PAVEMENT MARKING DETAIL

| | | | | | |
|----------|---------|---|----------------|---|-------------------------|
| FILE NO. | ENGLISH | DESIGN TEAM Callahan \ Coggins \ Meise | FAYETTE COUNTY | PROJECT NUMBER NHSN-018-8(42)--2R-33 | SHEET NUMBER J.3 |
|----------|---------|---|----------------|---|-------------------------|

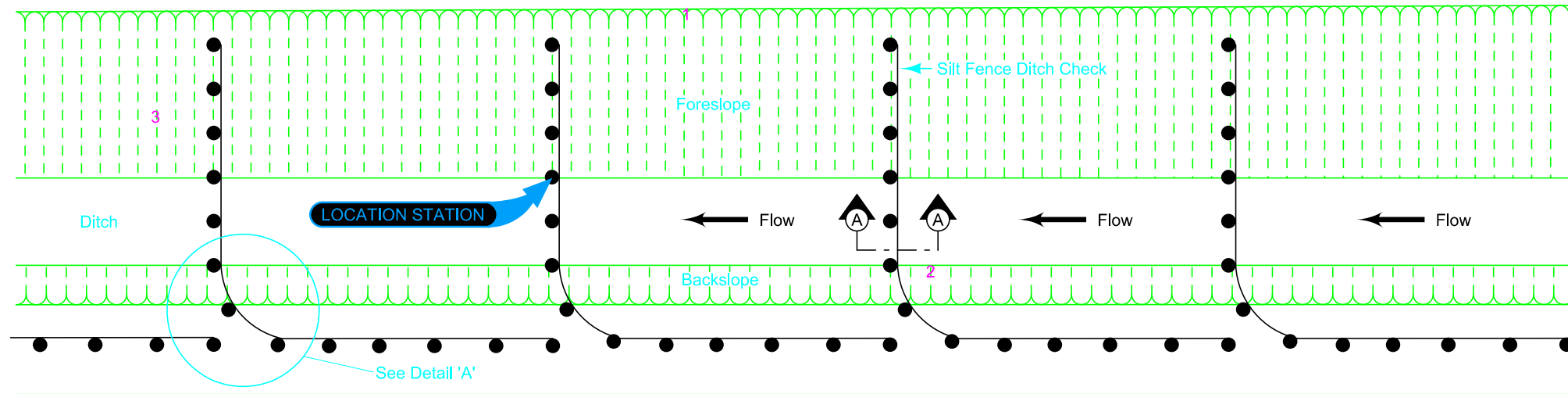


PAVEMENT MARKING DETAIL



PAVEMENT MARKING DETAIL

| | | | | | |
|----------|---------|---|----------------|---|-------------------------|
| FILE NO. | ENGLISH | DESIGN TEAM Callahan \ Coggins \ Meise | FAYETTE COUNTY | PROJECT NUMBER NHSN-018-8(42)--2R-33 | SHEET NUMBER J.5 |
|----------|---------|---|----------------|---|-------------------------|



PLAN FOR SILT DITCH (SHALLOW DITCH SECTION-TYPE 4) ⁶

Install all silt fence using a silt fence machine. Use manual (trench) installation if physical conditions prohibit machine installation.

For machine installation, compact by driving over each side of silt fence at least two times with device exerting 60 p.s.i. or greater.

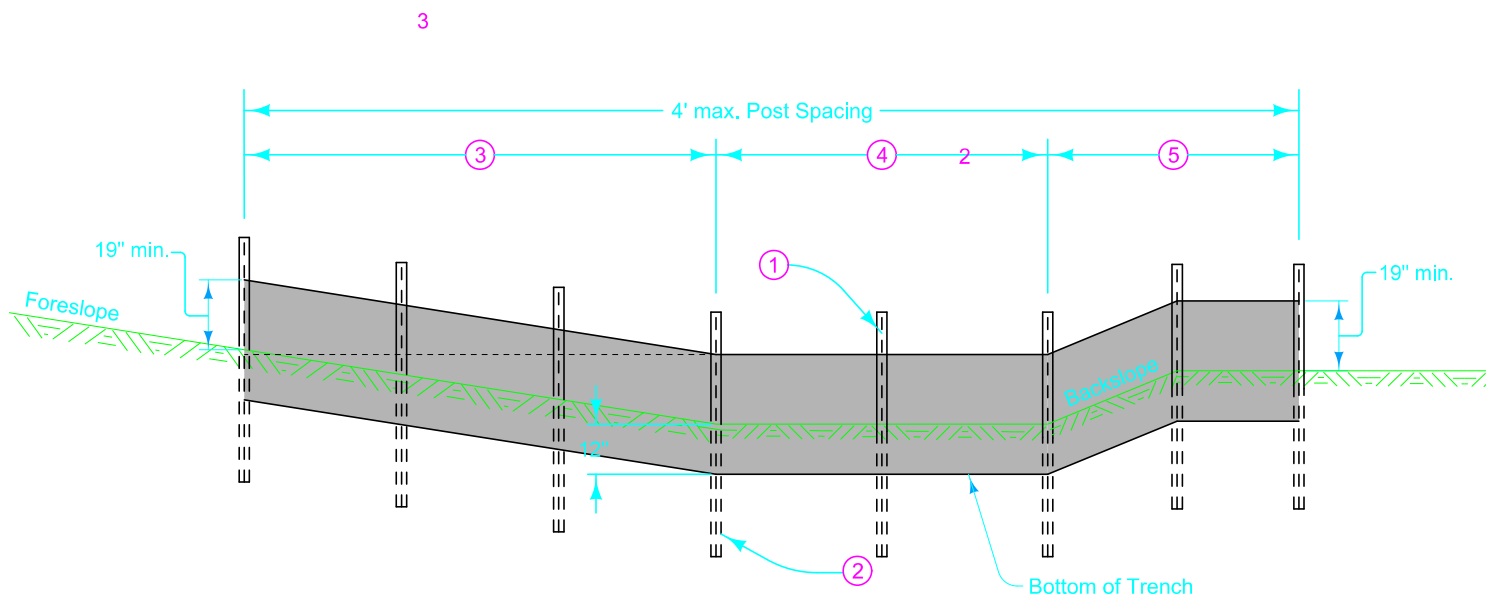
For manual installation, compact with a mechanical or pneumatic tamper.

- ① Secure top of engineering fabric to steel posts using cable ties (50 lb.) or wire. See attachment to post.
- ② Embed all posts 28 inches below the ground line.
- ③ The minimum end span (in feet) = 2 X Foreslope (H:V).
- ④ Locate posts at toe of foreslope and toe of backslope and space remaining posts equally.
- ⑤ Place posts as shown in Detail 'A' to transition from transverse to parallel installation. Place one post at the backslope intercept and the other beyond the intercept.
- ⑥ Refer to Tab. 100-18.

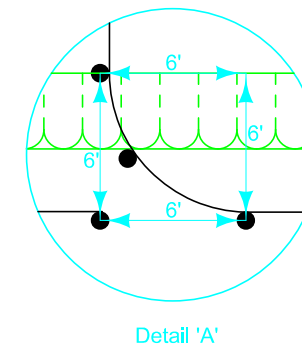
- 1 Ensure Riser Pipe remains vertical.
- 2 Dimensions shown are minimums.
- 3 When Temporary Sediment Control Basin is removed, if basin has not silted in to designed ditch grade, use topsoil to bring up to designed ditch grade.

Possible Contract Items:
Silt Fence for Ditch Checks

Possible Tabulations:
100-18



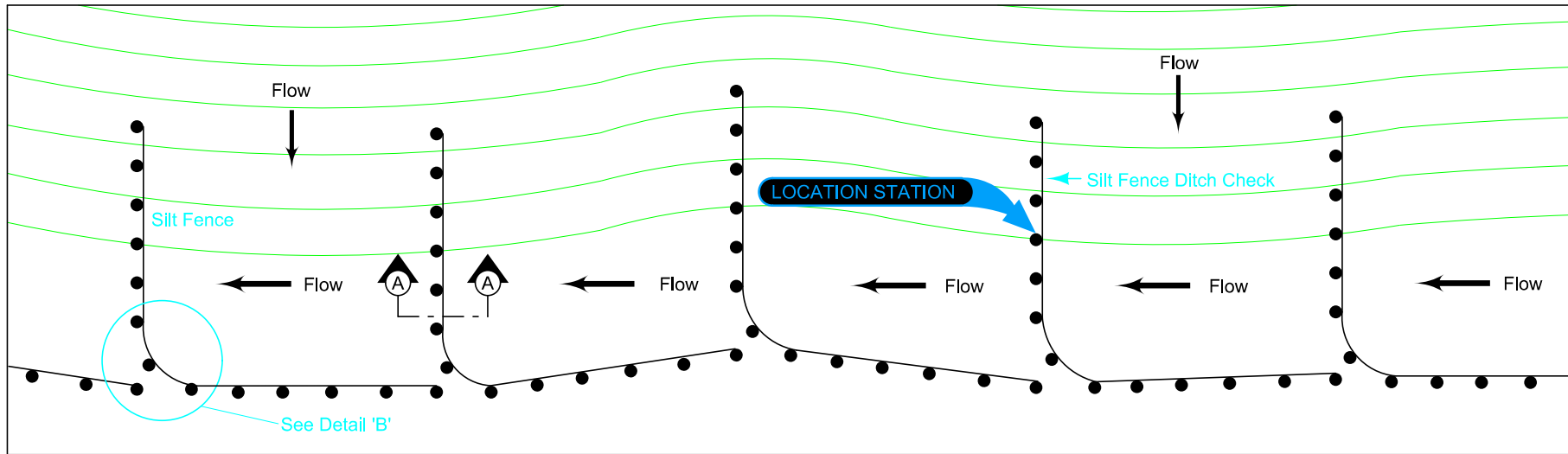
FRONT VIEW



| | | |
|---------------------------|----------|--------------|
| IOWADOT | REVISION | |
| | NEW | 10-18-16 |
| ROAD DESIGN DETAIL | | 570-4 |
| | | SHEET 1 of 3 |

REVISIONS: NEW

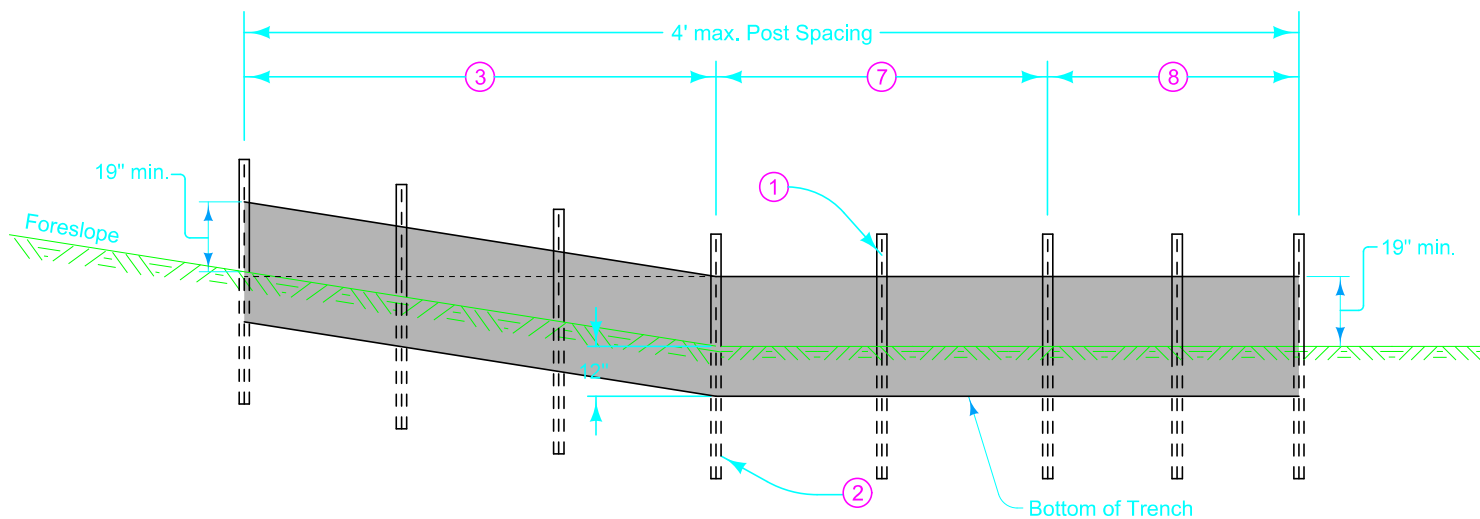
**SILT FENCE INSTALLATION
FOR SHALLOW OR NO DITCH**



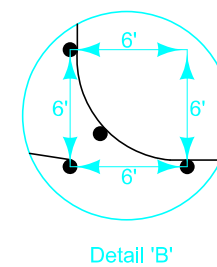
PLAN FOR SILT FENCE (NO DITCH SECTION-TYPE 5) ⑥

- ① Secure top of engineering fabric to steel posts using cable ties (50 lb.) or wire. See attachment to post.
- ② Embed all posts 28 inches below the ground line.
- ③ The minimum end span (in feet) = 2 X Foreslope (H:V).
- ⑥ Refer to tabulation 100-18.
- ⑦ Locate post at toe of foreslope. Locate 2 additional posts at 4 foot spacing.
- ⑧ Place posts as shown in Detail 'B' to transition from transverse to parallel installation. The parallel portion of the installation should approximately parallel the intercept of the foreslope.

 Contour Lines



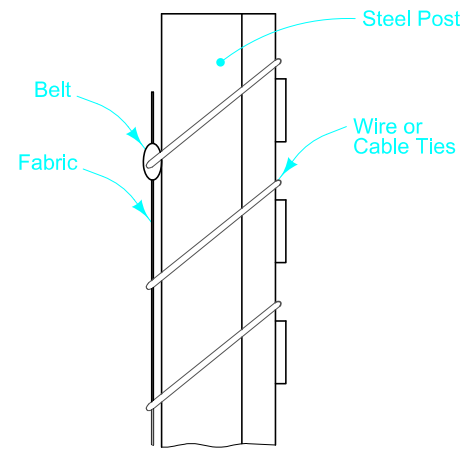
FRONT VIEW



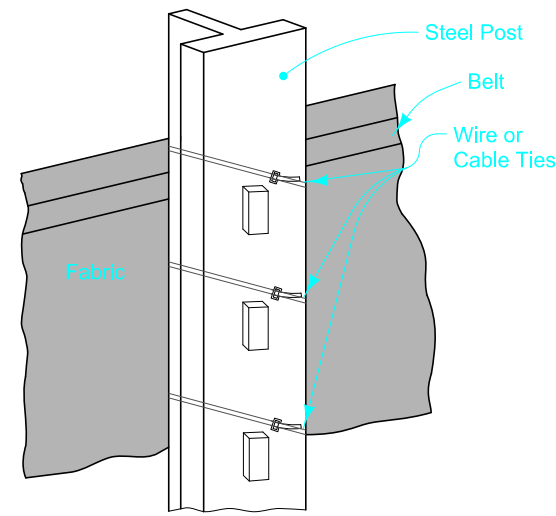
| | | |
|---------------------------|----------|--------------|
| IOWADOT | REVISION | |
| | NEW | 10-18-16 |
| ROAD DESIGN DETAIL | | 570-4 |
| | | SHEET 2 of 3 |

REVISIONS: NEW

**SILT FENCE INSTALLATION
FOR SHALLOW OR NO DITCH**



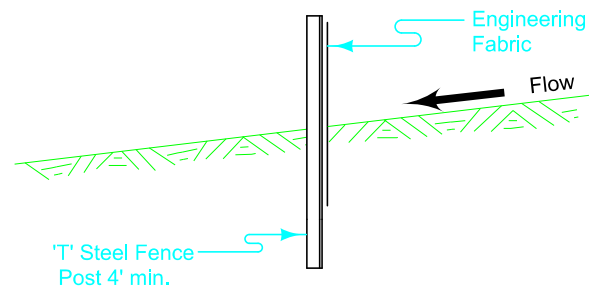
**PROFILE VIEW
ATTACHMENT TO POST**



**BACK VIEW
ATTACHMENT TO POST**

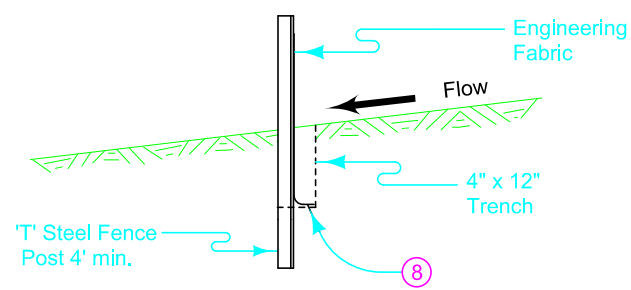
⑧ For manual installation only, fold engineering fabric along bottom of trench.

DITCH CHECK - MACHINE INSTALLATION



SECTION A-A

DITCH CHECK - MANUAL INSTALLATION



SECTION A-A

| | | |
|---------------------------|--------------|----------|
| IOWADOT | REVISION | |
| | NEW | 10-18-16 |
| ROAD DESIGN DETAIL | 570-4 | |
| REVISIONS: NEW | SHEET 3 of 3 | |

**SILT FENCE INSTALLATION
FOR SHALLOW OR NO DITCH**