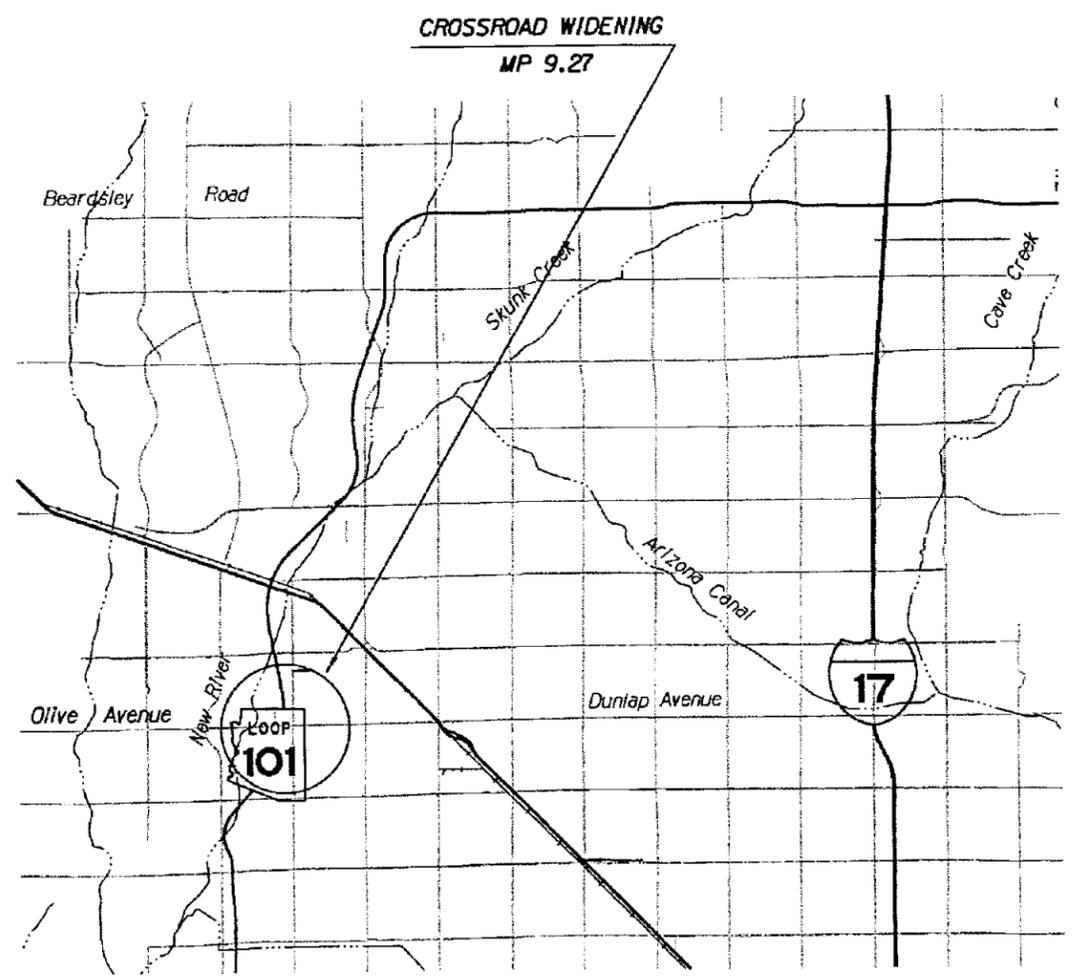
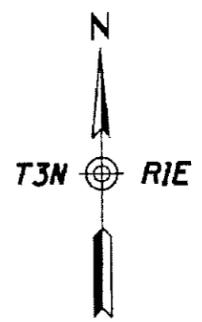
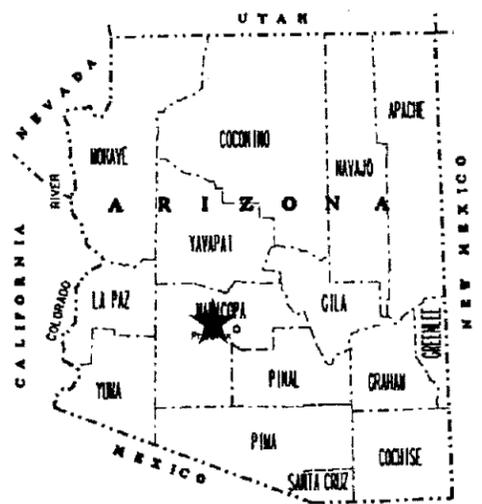


STATE OF ARIZONA
 DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION

PROJECT PLANS

STATE HIGHWAY
 AGUA FRIA FREEWAY
 LOOP 101



95% SUBMITTAL
 MAY 2009

OLIVE AVENUE
 PROJECT NO. 101 MA 009 H6939 01 C
 FEDERAL AID NO. 101-A(201)

ARIZONA DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION
 SAM ELLERS, P.E., STATE ENGINEER

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| AS BUILT DATA | AS BUILT DATE | OF |
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ADOT STANDARD DRAWINGS
C STANDARDS

| ISSUE OR REVISION DATE | STANDARD NO. | SUBJECT CONSTRUCTION |
|------------------------|--------------|---|
| 5/07 | C-01.10 | SYMBOL LEGEND (4 SHEETS) |
| 5/07 | C-01.30 | GENERAL ABBREVIATIONS (3 SHEETS) |
| 5/07 | C-02.10 | SLOPES, RURAL DIVIDED HIGHWAYS |
| 5/07 | C-02.20 | SLOPES, RURAL UNDIVIDED AND FRINGE-URBAN HIGHWAYS |
| 5/07 | C-02.30 | SLOPES, MISCELLANEOUS ROADWAYS |
| 5/07 | C-03.10 SH 1 | DITCHES, CHANNELS, DIKES AND BERMS, DITCHES AND CHANNELS |
| 5/07 | C-03.10 SH 2 | DITCHES, CHANNELS, DIKES AND BERMS, DIKES |
| 5/07 | C-03.10 SH 3 | DITCHES, CHANNELS, DIKES AND BERMS, DITCH DIKE |
| 5/07 | C-03.10 SH 4 | DITCHES, CHANNELS, DIKES AND BERMS, PIPE BERMS |
| 5/07 | C-03.10 SH 5 | DITCHES, CHANNELS, DIKES AND BERMS, HEADWALL BERMS |
| 5/07 | C-04.10 SH 1 | SPILLWAY, EMBANKMENT SINGLE INLET |
| 5/07 | C-04.10 SH 2 | SPILLWAY, EMBANKMENT DOUBLE INLET |
| 5/07 | C-04.20 SH 1 | DOWNDRAIN, EMBANKMENT SINGLE INLET |
| 5/07 | C-04.20 SH 2 | DOWNDRAIN, EMBANKMENT DOUBLE INLET |
| 5/07 | C-04.30 | SPILLWAY LENGTH TABLE |
| 5/07 | C-04.40 | DOWNDRAIN LENGTH TABLE |
| 5/07 | C-04.50 | DOWNDRAIN ENERGY DISSIPATOR |
| 5/07 | C-05.10 | CURB & GUTTER, CURB, GUTTER |
| 5/07 | C-05.12 SH 1 | CURB & GUTTER TRANSITIONS |
| 5/07 | C-05.12 SH 2 | CURB & GUTTER TRANSITIONS |
| 5/07 | C-05.12 SH 3 | CURB AND GUTTER TRANSITIONS |
| 5/07 | C-05.20 SH 1 | CONCRETE DRIVEWAYS & SIDEWALKS, DRIVEWAYS |
| 5/07 | C-05.20 SH 2 | CONCRETE DRIVEWAYS & SIDEWALKS, SIDEWALKS |
| 5/07 | C-05.30 SH 1 | SIDEWALK RAMP, TYPE A |
| 5/07 | C-05.30 SH 2 | SIDEWALK RAMP, TYPE B |
| 5/07 | C-05.30 SH 3 | SIDEWALK RAMP, TYPE C |
| 5/07 | C-05.30 SH 4 | SIDEWALK RAMP, TYPE D |
| 5/07 | C-05.30 SH 5 | SIDEWALK RAMP, TYPE E |
| 5/07 | C-05.30 SH 6 | SIDEWALK RAMP, TYPE F |
| 5/07 | C-05.30 SH 7 | SIDEWALK RAMP, DETECTABLE WARNING STRIP |
| 5/07 | C-05.40 | MEDIAN PAVING AND NOSE TAPER |
| 5/07 | C-05.50 | CONCRETE BUS BAY |
| 5/07 | C-06.10 SH 1 | DRIVEWAY & TURNOUT LAYOUTS |
| 5/07 | C-06.10 SH 2 | DRIVEWAY & TURNOUT LAYOUTS |
| 5/07 | C-07.01 SH 1 | PCCP JOINTS |
| 5/07 | C-07.01 SH 2 | PCCP JOINTS |
| 11/07 | C-07.02 | LOAD TRANSFER DOWEL ASSEMBLY |
| 5/07 | C-07.03 SH 1 | PCCP JOINT LOCATIONS, MAINLINE SKEWED JOINTS |
| 5/07 | C-07.03 SH 2 | PCCP JOINT LOCATIONS, MAINLINE SKEWED JOINTS |
| 5/07 | C-07.03 SH 3 | PCCP JOINT LOCATIONS, MAINLINE SKEWED JOINTS |
| 5/07 | C-07.03 SH 4 | PCCP JOINT LOCATIONS, MAINLINE SKEWED JOINTS |
| 5/07 | C-07.03 SH 5 | PCCP JOINT LOCATIONS, MAINLINE NON-SKEWED JOINTS |
| 5/07 | C-07.03 SH 6 | PCCP JOINT LOCATIONS, MAINLINE NON-SKEWED JOINTS |
| 5/07 | C-07.03 SH 7 | PCCP JOINT LOCATIONS, MAINLINE NON-SKEWED JOINTS |
| 5/07 | C-07.03 SH 8 | PCCP JOINT LOCATIONS, MAINLINE NON-SKEWED JOINTS |
| 5/07 | C-07.04 SH 1 | PCCP JOINT LOCATIONS, PARALLEL TYPE ENTRANCE RAMP WITH AUXILIARY LANE |
| 5/07 | C-07.04 SH 2 | PCCP JOINT LOCATIONS, PARALLEL TYPE EXIT RAMP WITH AUXILIARY LANE |
| 5/07 | C-07.04 SH 3 | PCCP JOINT LOCATIONS, TAPER TYPE ENTRANCE RAMP |
| 5/07 | C-07.04 SH 4 | PCCP JOINT LOCATIONS, TAPER TYPE EXIT RAMP |
| 5/07 | C-07.04 SH 5 | PCCP JOINT LOCATIONS, CROSSROAD AND RAMP TERMINI |
| 5/07 | C-07.06 | TRENCH BACKFILL AND PAVEMENT REPLACEMENT |
| 5/07 | C-08.20 | PAVED GORE AREA |
| 5/07 | C-10.00 | GUARDRAIL MEASUREMENT LIMITS |
| 5/07 | C-10.01 | GUARDRAIL INSTALLATION, TYPE A AND REFLECTOR TAB |
| 5/07 | C-10.02 | GUARDRAIL INSTALLATION, TYPE B AND REFLECTOR TAB |
| 5/07 | C-10.03 | W-BEAM GUARDRAIL, G4(1W) AND G4(2W), BLOCKED-OUT TIMBER POST |
| 5/07 | C-10.04 | W-BEAM GUARDRAIL, G4(1S), BLOCKED-OUT STEEL POST |
| 5/07 | C-10.05 SH 1 | W-BEAM GUARDRAIL, G4(MODIFIED) WITH FREEWAY CURB AND GUTTER |
| 5/07 | C-10.05 SH 2 | W-BEAM GUARDRAIL, G4(MODIFIED) WITH FREEWAY CURB AND GUTTER |
| 5/07 | C-10.06 SH 1 | W-BEAM GUARDRAIL, NESTED, TYPES 1 AND 2 |
| 5/07 | C-10.06 SH 2 | W-BEAM GUARDRAIL, NESTED, TYPE 3 |
| 5/07 | C-10.07 SH 1 | W-BEAM GUARDRAIL, BOLTED ANCHOR |
| 5/07 | C-10.07 SH 2 | W-BEAM GUARDRAIL, BOLTED ANCHOR |
| 5/07 | C-10.08 | W-BEAM GUARDRAIL, END ANCHOR |
| 5/07 | C-10.20 | THREE-BEAM GUARDRAIL, G9, BLOCKED-OUT STEEL POST |
| 5/07 | C-10.30 SH 1 | GUARDRAIL TRANSITION, THREE BEAM TO CONCRETE HALF BARRIER, 32' TYPE 'F' |
| 5/07 | C-10.30 SH 2 | GUARDRAIL TRANSITION, THREE BEAM TO CONCRETE HALF BARRIER, 32' TYPE 'F' |
| 5/07 | C-10.40 | CONCRETE MEDIAN BARRIER, 32' TYPE 'F', CAST-IN-PLACE |
| 5/07 | C-10.41 | CONCRETE MEDIAN BARRIER, 42' TYPE 'F', CAST-IN-PLACE |
| 5/07 | C-10.42 SH 1 | GLARE SCREEN, CONCRETE MEDIAN BARRIER |
| 5/07 | C-10.42 SH 2 | GLARE SCREEN, CONCRETE MEDIAN BARRIER |
| 5/07 | C-10.42 SH 3 | GLARE SCREEN, CONCRETE MEDIAN BARRIER |
| 5/07 | C-10.50 SH 1 | CONCRETE HALF BARRIER, 32' TYPE 'F', CAST-IN-PLACE |
| 5/07 | C-10.50 SH 2 | CONCRETE HALF BARRIER, 32' TYPE 'F', PRECAST |
| 5/07 | C-10.51 | CONCRETE HALF BARRIER, 32' TYPE 'F' WITH SIDEWALK |
| 5/07 | C-10.52 | CONCRETE HALF BARRIER, 32' TYPE 'F' WITH GUTTER |
| 5/07 | C-10.53 | CONCRETE HALF BARRIER, 42' TYPE 'F' WITH GUTTER |
| 5/07 | C-10.54 SH 1 | CONCRETE HALF BARRIER, 32' TYPE 'F' AT PIERS, CAST-IN-PLACE |
| 5/07 | C-10.54 SH 2 | CONCRETE HALF BARRIER, 32' TYPE 'F' AT PIERS, PRECAST |
| 5/07 | C-10.54 SH 3 | CONCRETE HALF BARRIER, 32' TYPE 'F' AT PIERS, LAYOUT |
| 5/07 | C-10.55 SH 1 | CONCRETE HALF BARRIER, 42' TYPE 'F' AT PIERS, CAST-IN-PLACE |
| 5/07 | C-10.55 SH 2 | CONCRETE HALF BARRIER, 42' TYPE 'F' AT PIERS, PRECAST |
| 5/07 | C-10.55 SH 3 | CONCRETE HALF BARRIER, 42' TYPE 'F' AT PIERS, LAYOUT |
| 5/07 | C-10.70 SH 1 | CONCRETE HALF-BARRIER TRANSITION TO VERTICAL, 32' TYPE 'F' WITH CAISSONS |
| 5/07 | C-10.70 SH 2 | CONCRETE HALF-BARRIER TRANSITION TO VERTICAL, 32' TYPE 'F' WITH CAISSONS |
| 5/07 | C-10.70 SH 3 | CONCRETE HALF-BARRIER TRANSITION TO VERTICAL, 32' TYPE 'F' WITH CAISSONS |
| 5/07 | C-10.71 SH 1 | CONCRETE HALF-BARRIER TRANSITION TO VERTICAL, 32' TYPE 'F' WITH CURB & GUTTER |
| 5/07 | C-10.71 SH 2 | CONCRETE HALF-BARRIER TRANSITION TO VERTICAL, 32' TYPE 'F' WITH CURB & GUTTER |
| 5/07 | C-10.72 SH 1 | CONCRETE HALF-BARRIER TRANSITION TO VERTICAL, 42' TO 32' TYPE 'F' WITH CAISSONS |
| 5/07 | C-10.72 SH 2 | CONCRETE HALF-BARRIER TRANSITION TO VERTICAL, 42' TO 32' TYPE 'F' WITH CAISSONS |
| 5/07 | C-10.72 SH 3 | CONCRETE HALF-BARRIER TRANSITION TO VERTICAL, 42' TO 32' TYPE 'F' WITH CAISSONS |

| ISSUE OR REVISION DATE | STANDARD NO. | SUBJECT CONSTRUCTION |
|------------------------|--------------|---|
| 5/07 | C-10.73 SH 1 | CONCRETE HALF-BARRIER TRANSITION TO VERTICAL, 42' TO 32' TYPE 'F' WITH GUTTER |
| 5/07 | C-10.73 SH 2 | CONCRETE HALF-BARRIER TRANSITION TO VERTICAL, 42' TO 32' TYPE 'F' WITH GUTTER |
| 5/07 | C-10.74 | CONCRETE HALF-BARRIER TRANSITION, 42' TO 32' TYPE 'F' |
| 5/07 | C-10.75 SH 1 | CONCRETE HALF-BARRIER TRANSITION, TYPE 'F', TANGENT DEPARTURE TYPE 1 |
| 5/07 | C-10.75 SH 2 | CONCRETE HALF-BARRIER TRANSITION, TYPE 'F', TANGENT DEPARTURE TYPE 2 |
| 5/07 | C-10.76 | CONCRETE HALF-BARRIER TRANSITION, TYPE 'F' AT RADIUS, 32' TO 0' |
| 5/07 | C-10.77 | CONCRETE HALF-BARRIER TRANSITION, END TERMINAL CURB AND GUTTER |
| 5/07 | C-11.10 SH 1 | ROADWAY CATTLE GUARD |
| 5/07 | C-11.10 SH 2 | ROADWAY CATTLE GUARD |
| 5/07 | C-11.10 SH 3 | ROADWAY CATTLE GUARD |
| 5/07 | C-11.10 SH 4 | ROADWAY CATTLE GUARD |
| 5/07 | C-11.20 | CATTLE GUARD, DRAINAGE |
| 5/07 | C-12.10 SH 1 | FENCE, WOVEN WIRE |
| 5/07 | C-12.10 SH 2 | FENCE, BARBED WIRE |
| 5/07 | C-12.10 SH 3 | FENCE, TYPES 1 AND 2 GATES, FLOOD GATE |
| 5/07 | C-12.10 SH 4 | FENCE, FLOOD GATE INSTALLATION |
| 5/07 | C-12.10 SH 5 | FENCE, MISCELLANEOUS DETAILS |
| 5/07 | C-12.20 SH 1 | FENCE, CHAIN LINK, TYPE 1 |
| 5/07 | C-12.20 SH 2 | FENCE, CHAIN LINK, TYPE 2 |
| 5/07 | C-12.20 SH 3 | FENCE, CHAIN LINK, GATES |
| 5/07 | C-12.30 SH 1 | FENCE, CHAIN LINK CABLE BARRIER |
| 5/07 | C-12.30 SH 2 | FENCE, CHAIN LINK CABLE BARRIER |
| 5/07 | C-12.30 SH 3 | FENCE, CHAIN LINK CABLE BARRIER |
| 5/07 | C-13.10 SH 1 | PIPE CULVERT INSTALLATION |
| 5/07 | C-13.10 SH 2 | PIPE CULVERT INSTALLATION |
| 5/07 | C-13.15 | TYPICAL PIPE INSTALLATION |
| 5/07 | C-13.20 | PIPE, REINFORCED CONCRETE END SECTION |
| 5/07 | C-13.25 | PIPE, CORRUGATED METAL END SECTION |
| 5/07 | C-13.30 | PIPE AND PIPE ARCH, CORRUGATED METAL, CONCRETE INVERT PAVING |
| 5/07 | C-13.55 | PIPE, CATTLE-VEHICLE PASS, MITERED END TREATMENT |
| 5/07 | C-13.60 | SLOTTED DRAIN DETAILS |
| 5/07 | C-13.65 | SLOTTED DRAIN INSTALLATION DETAILS |
| 5/07 | C-13.70 | STORM DRAIN CONNECTION DETAILS |
| 5/07 | C-13.75 | STORM DRAIN OUTLET BARRIER GATE |
| 5/07 | C-13.76 | STORM DRAIN OUTLET AND STORM DRAIN PLUG |
| 5/07 | C-13.80 | PIPE COLLAR DETAILS |
| 5/07 | C-15.10 | CATCH BASIN, TYPE 1 |
| 5/07 | C-15.20 SH 1 | CATCH BASIN, TYPE 3 |
| 5/07 | C-15.20 SH 2 | CATCH BASIN, TYPE 3 |
| 5/07 | C-15.20 SH 3 | CATCH BASIN, ACCESS FRAME AND COVER DETAILS |
| 5/07 | C-15.30 | CATCH BASIN, TYPE 4 |
| 5/07 | C-15.40 SH 1 | CATCH BASIN, TYPE 5 |
| 5/07 | C-15.40 SH 2 | CATCH BASIN, TYPE 5 |
| 5/07 | C-15.50 | CATCH BASIN, FRAME AND GRATE |
| 5/07 | C-15.70 SH 1 | CATCH BASIN, MISCELLANEOUS DETAILS |
| 5/07 | C-15.70 SH 2 | CATCH BASIN, MISCELLANEOUS DETAILS |
| 5/07 | C-15.75 | CATCH BASIN, DROP INLET |
| 5/07 | C-15.80 | CATCH BASIN, FLUSH |
| 5/07 | C-15.81 | CATCH BASIN, SIDE SLOPE |
| 5/07 | C-15.90 | CATCH BASIN, MEDIAN DIKE, PRECAST |
| 5/07 | C-15.91 SH 1 | FREEWAY CATCH BASIN DETAILS |
| 5/07 | C-15.91 SH 2 | FREEWAY CATCH BASIN DETAILS |
| 5/07 | C-15.92 SH 1 | CATCH BASIN WITH TYPE 'F' CONCRETE HALF BARRIER |
| 5/07 | C-15.92 SH 2 | CATCH BASIN WITH TYPE 'F' CONCRETE HALF BARRIER |
| 5/07 | C-16.40 | IRRIGATION SLEEVES |
| 5/07 | C-17.10 | RAIL BANK PROTECTION FOR DRAINAGEWAYS, TYPES 1, 2 & 3 |
| 5/07 | C-17.15 | RAIL BANK PROTECTION AT ABUTMENTS, TYPES 4, 5 & 6 |
| 5/07 | C-17.20 | BANK PROTECTION FOR DRAINAGEWAYS, TYPES 7, 8 & 9 |
| 5/07 | C-18.10 SH 1 | MANHOLE, RISER DETAILS |
| 5/07 | C-18.10 SH 2 | MANHOLE, BASE DETAILS, NORMAL INSTALLATION |
| 5/07 | C-18.10 SH 3 | MANHOLE, FRAME AND COVER DETAILS |
| 5/07 | C-19.10 SH 1 | FORD, CONCRETE WALLS |
| 5/07 | C-19.10 SH 2 | FORD, TYPES 1 AND 2 |
| 11/07 | C-21.10 | SURVEY MONUMENT FRAME AND COVER |
| 11/07 | C-21.20 | SURVEY MARKER |

REV.: 11/01/07

| ADOT STANDARD DRAWINGS | | | |
|--|----------------------------|---------------|-------|
| REVISION DATES and STANDARD NO.'s REVIEW | | | |
| NAME | | DATE | |
| CONSTRUCTION Standards | | 05-08 | |
| PROJECT NO. | 101 MA 9 H 6939 OIC | IA | of 89 |
| AS BUILT DATA | FEDERAL AID NO. 101-A(201) | AS BUILT DATE | of |

ADOT STANDARD DRAWINGS

SUBJECT:

| REVISION | STANDARD | SIGNING & MARKING DETAILS |
|----------|-------------|---|
| 2/02 | M-1 | CURB MARKINGS FOR RAISED MEDIAN & ISLANDS |
| 2/04 | M-2 SHT 1 | INTERSECTION STRIPING |
| 2/02 | M-2 SHT 2 | INTERSECTION STRIPING |
| 2/02 | M-2 SHT 3 | CENTERLINE & REVERSE CURVE DETAILS |
| 2/02 | M-3 | STRIPING AND DELINEATION FOR FREEWAY TERMINALS |
| 11/04 | M-4 | PASSING LANE STRIPING DETAILS |
| 2/02 | M-5 | RAILROAD PAVEMENT MARKINGS |
| 2/02 | M-6 | WORD MARKINGS |
| 2/02 | M-7 | PAVEMENT LETTERS |
| 2/02 | M-8 | PAVEMENT LETTERS |
| 2/02 | M-9 | PAVEMENT NUMBERS |
| 9/08 | M-10 SHT 1 | PAVEMENT MARKING SYMBOLS |
| 9/08 | M-10 SHT 2 | PAVEMENT MARKING SYMBOLS |
| 9/08 | M-10 SHT 3 | PAVEMENT MARKING SYMBOLS |
| 3/05 | M-11 | TURN LANE PAVEMENT MARKINGS |
| 2/02 | M-12 | FREEWAY PAVEMENT ARROWS |
| 2/02 | M-13 | PREFERENTIAL LANE PAVEMENT MARKINGS |
| 6/03 | M-14 | STRIPING AND DELINEATION FOR TRUCK ESCAPE RAMPS |
| 6/03 | M-15 SHT 1 | PAVEMENT MARKING FOR FREEWAY ENTRANCE RAMP - TAPERED ACCELERATION LANE |
| 4/05 | M-15 SHT 2 | PAVEMENT MARKING FOR FREEWAY ENTRANCE RAMP - PARALLEL ACCELERATION LANE |
| 6/03 | M-15 SHT 3 | PAVEMENT MARKING FOR FREEWAY ENTRANCE RAMP - PARALLEL ACCELERATION LANE WITH HOV BYPASS |
| 6/03 | M-16 SHT 1 | PAVEMENT MARKING FOR FREEWAY EXIT RAMPS - TAPERED DECELERATION LANE |
| 8/06 | M-16 SHT 2 | PAVEMENT MARKING FOR FREEWAY EXIT RAMP - PARALLEL DECELERATION LANE |
| 6/03 | M-17 | FREEWAY LANE DROP PAVEMENT MARKINGS |
| 6/08 | M-18 | RECESSED PAVEMENT MARKER DETAILS |
| 6/08 | M-19 SHT 1 | RAISED PAVEMENT MARKER PLAN LEGEND |
| 6/08 | M-19 SHT 2 | NON-REFLECTIVE RAISED PAVEMENT MARKER DETAILS |
| 6/08 | M-19 SHT 3 | RETRO-REFLECTIVE RAISED PAVEMENT MARKER DETAILS |
| 6/08 | M-19 SHT 4 | RETRO-REFLECTIVE RAISED PAVEMENT MARKER DETAILS |
| 6/08 | M-19 SHT 5 | PAVEMENT MARKING DETAILS FOR UNDIVIDED HIGHWAYS |
| 6/08 | M-19 SHT 6 | SERIES 40 RETRO-REFLECTIVE RAISED PAVEMENT MARKERS (RRPM) FOR UNDIVIDED HIGHWAYS |
| 6/08 | M-19 SHT 7 | SERIES 80 RETRO-REFLECTIVE RAISED PAVEMENT MARKERS (RRPM) FOR UNDIVIDED HIGHWAYS |
| 6/08 | M-19 SHT 8 | TYPICAL MARKING DETAILS FOR EDGELINE RETRO-REFLECTIVE PAVEMENT MARKERS (ALL FREEWAYS) |
| 6/08 | M-19 SHT 9 | TYPICAL MARKING DETAILS FOR LANE DROP AND RAMP OR INTERSECTION GUIDE STRIPING |
| 6/08 | M-19 SHT 10 | PAVEMENT MARKING CROSS-SECTION DETAILS FOR HIGHWAYS AND FREEWAYS |
| 2/02 | M-20 SHT 1 | CHIP SEAL MARKER USAGE FOR TEMPORARY MARKERS |
| 2/02 | M-20 SHT 2 | CHIP SEAL MARKER USAGE FOR TEMPORARY MARKERS |
| 2/02 | M-21 | TRANSVERSE RUMBLE STRIP DETAILS |
| 9/08 | M-22 SHT 1 | CONTINUOUS LONGITUDINAL RUMBLE STRIP GROOVE, PATTERN & LOCATION DETAILS |
| 9/08 | M-22 SHT 2 | LONGITUDINAL RUMBLE STRIP EXCEPTION DETAILS |
| 12/08 | M-23 SHT 1 | OBJECT MARKER DETAILS |
| 12/08 | M-23 SHT 2 | OBJECT MARKER DETAILS |
| 5/03 | M-24 | OBJECT MARKER PLACEMENT DETAILS |
| 9/06 | M-25 | DELINEATOR AND GALVANIZED STEEL POST DETAILS |
| 5/03 | M-26 SHT 1 | ROADWAY DELINEATOR PLACEMENT |
| 2/02 | M-26 SHT 2 | INTERCHANGE DELINEATOR SPACING |
| 4/08 | M-27 | DELINEATION DETAILS FOR MEDIAN CROSSOVERS |
| 2/02 | M-28 | CURVE TREATMENT - CHEVRONS |
| 9/06 | M-29 | OFF-MAINLINE REFERENCE MARKER LOCATION DETAIL |
| 11/04 | M-30 | OFF-MAINLINE REFERENCE MARKER DETAILS |
| 2/04 | M-31 | SNOW MARKER DETAILS |
| 5/03 | M-32 | BRIDGE AND BARRIER MARKER DETAILS |

SUBJECT:

| REVISION | STANDARD | SIGNING & MARKING DETAILS |
|----------|------------|--|
| 5/03 | M-33 | BRIDGE & BARRIER MARKER PLACEMENT & INSTALLATION DETAILS |
| 4/05 | M-34 | GUARDRAIL EXTRUDER TERMINAL DELINEATION DETAILS |
| 2/02 | M-35 | OBJECT MARKER FOR SAND BARREL CRASH CUSHION |
| 8/04 | S-1 SHT 1 | SQUARE TUBE SIGN POST SELECTION CHARTS |
| 5/06 | S-1 SHT 2 | PERFORATED SIGN POST FOUNDATION |
| 5/03 | S-1 SHT 3 | PERFORATED SIGN POST FOUNDATION |
| 2/02 | S-2 | S&W SHAPE POST SELECTION CHART (BREAKAWAY SIGN POST DESIGN) |
| 2/02 | S-3 SHT 1 | OFFSETS, CLEARANCES, & MOUNTING DETAILS FOR GUIDE SIGNS & BREAKAWAY POST INSTALLATION |
| 2/02 | S-3 SHT 2 | OFFSETS, CLEARANCES, & MOUNTING DETAILS FOR WARNING, REGULATORY & MARKER SIGN ON FREEWAYS |
| 2/02 | S-3 SHT 3 | OFFSETS, CLEARANCES, & MOUNTING DETAILS FOR SIGNS ON NON-FREEWAYS RAMPS AND CROSSROADS |
| 2/02 | S-3 SHT 4 | OFFSETS, CLEARANCES, & MOUNTING DETAILS FOR SQUARE TUBE POSTS |
| 2/02 | S-4 | W SHAPE TENSION FUSE PLATE AND HINGE DETAILS |
| 3/02 | S-5 | BREAKAWAY POST DETAILS FOR W SHAPE GUIDE SIGNS |
| 2/02 | S-6 | BREAKAWAY POST DETAILS S4x7.7 |
| 6/06 | S-7 | AUXILIARY SIGN INSTALLATION DETAILS |
| 8/06 | S-8 SHT 1 | ALUMINUM EXTRUSION SIGN PANEL DETAILS |
| 8/06 | S-8 SHT 2 | ALUMINUM EXTRUSION EXIT NUMBER PANEL DETAIL |
| 8/06 | S-8 SHT 3 | ALUMINUM EXTRUSION PANEL INSTALLATION DETAIL |
| 8/06 | S-8 SHT 4 | ALUMINUM EXTRUSION SIGN INSTALLATION DETAIL TO PERFORATED POSTS |
| 2/02 | S-9 SHT 1 | SIGN INSTALLATION ON POLE |
| 2/02 | S-9 SHT 2 | SIGN INSTALLATION ON POLE |
| 2/02 | S-9 SHT 3 | SIGN INSTALLATION ON POLE |
| 5/04 | S-10 SHT 1 | FREEWAY MILEPOST DETAILS |
| 5/04 | S-10 SHT 2 | NON-FREEWAY MILEPOST DETAILS |
| 7/04 | S-11 SHT 1 | TAPERED TUBE SIGN STRUCTURE |
| 7/04 | S-11 SHT 2 | TAPERED TUBE SIGN STRUCTURE |
| 7/04 | S-11 SHT 3 | TAPERED TUBE SIGN STRUCTURE |
| 7/04 | S-11 SHT 4 | TAPERED TUBE SIGN STRUCTURE |
| 2/08 | S-12 SHT 1 | ARROWS FOR USE ON FREEWAY MAINLINE AND OVERHEAD GUIDE SIGNS |
| 2/08 | S-12 SHT 2 | ARROWS FOR USE ON GROUND MOUNT GUIDE SIGNS ON CONVENTIONAL ROADWAYS, RAMPS, AND CROSSROADS |
| 2/08 | S-13 | SIGN IDENTIFICATION DETAILS |
| 4/06 | S-14 SHT 1 | INSTALLATION OF ROTATING OPEN/CLOSED SIGN |
| 4/06 | S-14 SHT 2 | INSTALLATION OF ROTATING OPEN/CLOSED SIGN |
| 4/06 | S-14 SHT 3 | INSTALLATION OF ROTATING OPEN/CLOSED SIGN |
| 4/07 | S-15 SHT 1 | DUDLEY FOLDING SIGN |
| 4/07 | S-15 SHT 2 | DUDLEY FOLDING SIGN |
| 2/02 | C-1 | SAND BARREL CRASH CUSHION |
| 2/02 | C-2 | SAND BARREL CRASH CUSHION TYPICAL INSTALLATION |
| 12/06 | C-3 SHT 1 | PRECAST CONCRETE BARRIER PIN AND LOOP ASSEMBLY NCHRP 350 APPROVED DESIGN |
| 12/06 | C-3 SHT 2 | PRECAST CONCRETE BARRIER PIN AND LOOP ASSEMBLY NCHRP 350 APPROVED DESIGN |
| 2/02 | C-4 SHT 1 | MEDIAN CROSSOVER |
| 2/02 | C-4 SHT 2 | APPROACH PLATE AND TRANSITION SECTION FOR TEMPORARY CONCRETE BARRIER |
| 10/02 | C-5 SHT 1 | TYPICAL END TREATMENTS FOR DETOURS USING TEMPORARY CONCRETE BARRIER (TCB) |
| 10/02 | C-5 SHT 2 | TYPICAL END TREATMENTS FOR DETOURS USING TEMPORARY CONCRETE BARRIER (TCB) |

NO. 1 DESCRIPTION OF REVISION ADDED STD DRAWINGS AND UPDATED REVISION DATES
NO. 2 DESCRIPTION OF REVISION REVISED M-23 AND UPDATED REVISION DATE
MADE BY L. LOPEZ DATE 09/08

| ADOT STANDARD DRAWINGS | | | |
|--|----------------------------|---------------|----------|
| REVISION DATES and STANDARD NO.'s REVIEW | | | |
| SIGNING & MARKING STANDARDS | | NAME | DATE |
| PROJECT NO. 101 MA 009 | | | 15 OF 89 |
| AS BUILT DATA | FEDERAL AID NO. 101-A(201) | AS BUILT DATE | OF |

ADOT STANDARD DRAWINGS

NO. 1 DESCRIPTION OF REVISION RE-ISSUED T.S. T-3 & T.S. T-4 T.S. T-10, T.S. T-11
 NO. 2 DESCRIPTION OF REVISION RE-ISSUED T.S. T-2
 MADE BY L. LOPEZ DATE 03/09
 MADE BY L. LOPEZ DATE 12/08

| REVISION DATE | STANDARD NUMBER | SUBJECT: TRAFFIC SIGNALS & LIGHTING DETAILS |
|---------------|-----------------|---|
| | T.S. 0 | SYMBOLS |
| 01/04 | 0-1 | PLAN SYMBOLS |
| 01/04 | 0-2 | PLAN SYMBOLS |
| 01/04 | 0-3 | PLAN SYMBOLS |
| | T.S. 1 | PULL BOXES |
| 01/04 | 1-1 | NO. 5 CONCRETE PULL BOX |
| 01/04 | 1-2 | NO. 5 CONCRETE PULL BOX EXTENSION |
| 01/04 | 1-3 | NO. 7 CONCRETE PULL BOX |
| 01/04 | 1-4 | NO. 7 CONCRETE PULL BOX EXTENSION |
| 01/04 | 1-5 | POLYMER PULL BOX |
| 01/04 | 1-6 | TRAFFIC SIGNAL & LIGHTING NO. 9 PULL BOX |
| 01/04 | 1-7 | TRAFFIC SIGNAL & LIGHTING NO. 9 PULL BOX COVER & LIFT HANDLES |
| 01/04 | 1-8 | TYPICAL PULL BOX INSTALLATION AND WIRING DETAILS |
| 01/04 | 1-9 | BARRIER JUNCTION BOX |
| | T.S. 2 | FOUNDATIONS |
| 01/04 | 2-1 | FOUNDATION FOR TYPE II LOAD CENTER CABINET |
| 01/04 | 2-2 | FOUNDATION FOR TYPE IV LOAD CENTER CABINET |
| 01/04 | 2-3 | FOUNDATION FOR TYPE III CONTROL CABINET |
| 01/04 | 2-4 | FOUNDATION FOR TYPE IV & V CONTROL CABINETS |
| 01/04 | 2-5 | TRAFFIC SIGNAL & LIGHTING TYPE A FOUNDATION FOR 340 CONTROL CABINETS |
| 01/04 | 2-6 | METER PEDESTAL CABINET FOUNDATION AND BASE |
| 09/05 | 2-7 | UPS FOUNDATION DETAIL |
| | T.S. 3 | CABINETS |
| 01/04 | 3-1 | TYPE II LOAD CENTER CABINET |
| 01/04 | 3-2 | TYPE IV LOAD CENTER CABINET |
| 01/04 | 3-3 | TYPE II LOAD CENTER CABINET WIRING DETAILS 120/240 3W |
| 01/04 | 3-4 | TYPE II LOAD CENTER CABINET WIRING DETAILS 240/480 3W W/DISCONNECT |
| 01/04 | 3-5 | TYPE IV LOAD CENTER CABINET WIRING DETAILS 240/480 3W W/DISCONNECT |
| 01/04 | 3-6 | TYPE III CONTROL CABINET |
| 01/04 | 3-7 | POLE MOUNT FOR TYPE III CONTROL CABINET |
| 01/04 | 3-8 | POLE MOUNT DETAILS FOR TYPE III CONTROL CABINET |
| 01/04 | 3-9 | TYPE IV CONTROL CABINET |
| 01/04 | 3-10 | TYPE V CONTROL CABINET |
| 04/05 | 3-11 | CONTROL CABINET MOUNTED SERVICE ENCLOSURE |
| 01/04 | 3-12 | JACK MOUNTED COMPONENTS |
| 01/04 | 3-13 | METER PEDESTAL CABINET |
| 01/04 | 3-14 | ELEVATOR BASE FOR TYPE IV CONTROL CABINET |
| 01/04 | 3-15 | TRAFFIC SIGNALS & LIGHTING MODEL 345 CABINET DETAILS |
| 01/04 | 3-16 | TRAFFIC SIGNALS & LIGHTING MODEL 345 CABINET CAGE DETAILS |
| 01/04 | 3-17 | 125 AMP, 120/240 OR 240/480 V, SINGLE PHASE METER SOCKET AND DISCONNECT |
| 01/04 | 3-18 | 125 AMP, 120/240 OR 240/480 V, SINGLE PHASE UTILITY PULL SECTION/DISCONNECT |
| 04/05 | 3-19 | METER PEDESTAL CABINET WIRING DIAGRAMS |
| | T.S. 4 | POLES AND POSTS |
| 01/04 | 4-1 | TYPE "A" POLE |
| 01/04 | 4-2 | TYPE "E" POLE AND MAST ARMS |
| 01/04 | 4-3 | TYPE "F" POLE AND MAST ARMS |
| 09/04 | 4-4 | TYPE "G" POLE AND MAST ARMS |
| 06/04 | 4-5 | ALUMINUM TYPE "G" POLE AND MAST ARMS |
| 01/04 | 4-6 | ALUMINUM TYPE "H" POLE AND MAST ARMS |
| 01/04 | 4-7 | ALUMINUM TYPE "I" POLE AND MAST ARMS |
| 01/04 | 4-8 | TYPE "J" POLE AND MAST ARMS |
| 06/06 | 4-9 | TYPE "K" POLE AND MAST ARMS |
| 01/04 | 4-10 | TYPE "Q" POLE AND MAST ARMS |
| 01/04 | 4-11 | TYPE "R" POLE AND MAST ARMS |
| 01/04 | 4-12 | TYPE "S" POLE |
| 01/04 | 4-13 | ALUMINUM TYPE "S" POLE |
| 01/04 | 4-14 | TYPE "T" POLE AND LUMINAIRE MOUNTING BRACKET |
| 01/04 | 4-15 | ALUMINUM TYPE "T" POLE |
| 01/04 | 4-16 | TYPE "U" POLE ELLIPTICAL BASE DETAILS |
| 01/04 | 4-17 | TYPE "U" POLE ROUND BASE |
| 01/04 | 4-18 | TYPE "U" POLE FOUNDATION DETAILS |
| 01/04 | 4-19 | TYPE "U" POLE CONNECTION DETAILS |
| 01/04 | 4-20 | POLE HAND HOLE DETAIL |
| 01/04 | 4-21 | POLE DRILLING DETAIL |
| 01/04 | 4-22 | PEDESTRIAN PUSH BUTTON POST |
| 06/04 | 4-23 | ANCHOR BOLTS |

| REVISION DATE | STANDARD NUMBER | SUBJECT: TRAFFIC SIGNALS & LIGHTING DETAILS |
|---------------|-----------------|---|
| | T.S. 5 | POLE BASES - SPECIAL |
| 08/04 | 5-1 | TYPE 2 BREAK-AWAY BASE FOR 30' POLE |
| 07/04 | 5-2 | TYPE 3 BREAK-AWAY BASE FOR 40' POLE AND ABOVE |
| | T.S. 6 | LIGHTING - POLE OFFSETS |
| 01/04 | 6-1 | HIGHWAY LIGHTING OFFSETS IN CUT AND FILL SECTIONS |
| | T.S. 7 | DETECTORS |
| 01/04 | 7-1 | LOOP DETECTOR LOCATION AND INSTALLATION DETAILS |
| 03/09 | 7-2 | DETECTOR LOOPS FOR TRAFFIC COUNTERS |
| 03/09 | 7-3 SHT 1 | DETECTOR LOOPS FOR SPEED/VEHICLE CLASSIFICATION |
| 03/09 | 7-3 SHT 2 | DETECTOR LOOPS FOR SPEED/VEHICLE CLASSIFICATION |
| 03/09 | 7-3 SHT 3 | SINGLE CABINET LANE CONFIGURATIONS |
| 12/08 | 7-4 | ATR CABINET DETAIL |
| 01/04 | 7-5 | PRE-FORMED LOOP DETECTORS FOR FMS/RAMP METERING/COUNT |
| 01/04 | 7-6 | PRE-FORMED LOOP DETECTORS IN BRIDGE |
| 01/04 | 7-7 | PRE-FORMED LOOP DETECTORS IN PCCP |
| 01/04 | 7-8 | PRE-FORMED LOOP DETECTOR STUB-OUT DETAIL |
| 09/08 | 7-9 | MICROLOOPS FOR SPEED/VEHICLE CLASSIFICATION |
| 03/09 | 7-10 SHT 1 | PIEZOELECTRIC WEIGHT SENSOR AND LOOP LAYOUT |
| 03/09 | 7-10 SHT 2 | PIEZOELECTRIC WEIGHT SENSOR AND LOOP LAYOUT |
| 03/09 | 7-10 SHT 3 | PIEZOELECTRIC WEIGHT SENSOR AND LOOP LAYOUT |
| 12/08 | 7-11 SHT 1 | QUARTZ PIEZOELECTRIC WEIGHT SENSOR AND LOOP LANE LAYOUT |
| 12/08 | 7-11 SHT 2 | QUARTZ PIEZOELECTRIC WEIGHT SENSOR AND LOOP LANE LAYOUT |
| | T.S. 8 | SIGNAL ASSEMBLIES |
| 09/04 | 8-1 | SIGNAL FACES WITH BACKPLATES |
| 09/04 | 8-2 | SIGNAL FACES WITH BACKPLATES |
| 09/04 | 8-3 | SIGNAL FACES WITH BACKPLATES |
| 01/04 | 8-4 | VISORS FOR 8" AND 12" SIGNALS |
| | T.S. 9 | MOUNTING ASSEMBLIES - SIGNAL |
| 01/04 | 9-1 | TYPE I & II MOUNTING ASSEMBLIES |
| 01/04 | 9-2 | TYPE III & IV MOUNTING ASSEMBLIES |
| 01/04 | 9-3 | TYPE V MOUNTING ASSEMBLY |
| 01/04 | 9-4 | TYPE VI MOUNTING ASSEMBLY |
| 01/04 | 9-5 | TYPE VII MOUNTING ASSEMBLY |
| 01/04 | 9-6 | TYPE VIII MOUNTING ASSEMBLY |
| 01/04 | 9-7 | TYPE IX MOUNTING ASSEMBLY |
| 01/04 | 9-8 | TYPE X MOUNTING ASSEMBLY |
| 01/04 | 9-9 | TYPE XI MOUNTING ASSEMBLY |
| | T.S. 10 | MOUNTING CASTINGS - SIGNAL |
| 01/04 | 10-1 | MISCELLANEOUS SIGNAL MOUNTING PARTS |
| 01/04 | 10-2 | MAST ARM PLUMBIZER |
| 01/04 | 10-3 | POLE PLATE DETAIL |
| 01/04 | 10-4 | TERMINAL COMPARTMENT, SIDE MOUNTED AND POLE TOP MOUNTED |
| | T.S. 11 | PEDESTRIAN DETAILS |
| 01/04 | 11-1 | TYPE I PEDESTRIAN PUSH BUTTON |
| 01/04 | 11-2 | TYPE II PEDESTRIAN PUSH BUTTON |
| 01/04 | 11-3 | SIGNS FOR PEDESTRIAN PUSH BUTTONS |
| 01/04 | 11-4 | SIGNS FOR INTERNATIONAL SYMBOL PUSH BUTTONS |
| | T.S. 12 | FLASHERS |
| 01/04 | 12-1 | ADVANCE WARNING FLASHER POLE DETAIL |
| | T.S. 13 | ILLUMINATION - SIGNS |
| 11/04 | 13-1 | SIGN LIGHTING DETAIL FOR TUBULAR SIGN STRUCTURES |
| 11/04 | 13-2 | SIGN LIGHTING DETAILS FOR TRUSS TYPE SIGNS |
| 11/04 | 13-3 | FUSE PANEL DETAILS FOR SIGN LIGHTING |
| 11/04 | 13-4 | SIGN LIGHTING DETAIL FOR MEDIAN MOUNTED SIGN |
| 11/04 | 13-5 | PLACEMENT OF LIGHTING FIXTURES FOR OVERHEAD SIGNS |
| | T.S. 14 | ILLUMINATION - SPECIAL |
| 01/04 | 14-1 | PEDESTRIAN BRIDGE LIGHTING DETAILS |
| 01/04 | 14-2 | PEDESTRIAN BRIDGE LIGHTING DETAILS |
| | T.S. 15 | SERVICE |
| 01/04 | 15-1 | PHOTO ELECTRIC CELL MOUNTING DETAILS |
| 01/04 | 15-2 | TYP. SPAN WIRE DETAILS FOR TEMPORARY SIGNALS |

| ADOT STANDARD DRAWINGS | | | |
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| REVISION DATES and STANDARD NO.'s REVIEW | | | |
| TRAFFIC SIGNAL & LIGHTING STANDARDS | NAME | DATE | |
| PROJECT NO. | 101 MA 9 H 6939 OIC | IC | OF 89 |
| AS BUILT DATA | FEDERAL AID NO. 101-A(201) | AS BUILT DATE | OF |

ADOT STANDARD DRAWINGS

STRUCTURES - 1992

| REVISION DATE | STANDARD NUMBER | SUBJECT |
|--|-----------------|---|
| REINFORCED CONCRETE BOX CULVERTS | | |
| 4/92 | B-01.10 | MISCELLANEOUS DETAILS FOR STANDARD BOX CULVERTS |
| 4/92 | B-01.11 | BOX CULVERT EXTENSION DETAILS |
| 7/88 | B-02.10 | SINGLE BARREL BOX CULVERT |
| 4/92 | B-02.20 | DOUBLE BARREL BOX CULVERT |
| 7/88 | B-02.25 | DOUBLE BARREL BOX CULVERT |
| 4/92 | B-02.30 | TRIPLE BARREL BOX CULVERT |
| 7/88 | B-02.35 | TRIPLE BARREL BOX CULVERT |
| 4/92 | B-02.40 | FOUR BARREL BOX CULVERT |
| 7/88 | B-02.45 | FOUR BARREL BOX CULVERT |
| 4/92 | B-02.50 | FIVE BARREL BOX CULVERT |
| 7/88 | B-02.55 | FIVE BARREL BOX CULVERT |
| 4/92 | B-02.60 | SIX BARREL BOX CULVERT |
| 7/88 | B-02.65 | SIX BARREL BOX CULVERT |
| 7/88 | B-02.70 | CULVERT QUANTITIES |
| 7/88 | B-03.10 | 16' X 14' EQUIPMENT PASS |
| 7/88 | B-04.10 | OUTLET WINGS, CULVERT HEIGHT 3' TO 7', SKEW 0° TO 20° |
| 7/88 | B-04.20 | OUTLET WINGS, CULVERT HEIGHT 8' TO 12', SKEW 0° TO 20° |
| 7/88 | B-04.30 | INLET WINGS, CULVERT HEIGHT 3' TO 7', SKEW 0° TO 20° |
| 4/92 | B-04.40 | INLET WINGS, CULVERT HEIGHT 8' TO 12', SKEW 0° TO 20° |
| 7/88 | B-04.50 | OUTLET WINGS, CULVERT HEIGHT 3' TO 7', SKEW 25° TO 45° |
| 7/88 | B-04.60 | OUTLET WINGS, CULVERT HEIGHT 8' TO 12', SKEW 25° TO 45° |
| 7/88 | B-04.70 | INLET WINGS, CULVERT HEIGHT 3' TO 7', SKEW 25° TO 45° |
| 7/88 | B-04.80 | INLET WINGS, CULVERT HEIGHT 8' TO 12', SKEW 25° TO 45° |
| 7/88 | B-05.10 | HEADWALL QUANTITIES, 2:1 SLOPE |
| 7/88 | B-05.20 | HEADWALL QUANTITIES, 4:1 SLOPE |
| 7/88 | B-05.30 | HEADWALL QUANTITIES, 6:1 SLOPE |
| 4/92 | B-06.10 | OUTLET APRON DETAIL |
| 7/88 | B-06.20 | OUTLET APRON DIMENSIONS & QUANTITIES, 2:1 SLOPE |
| 7/88 | B-06.30 | OUTLET APRON DIMENSIONS & QUANTITIES, 4:1 SLOPE |
| 7/88 | B-06.40 | OUTLET APRON DIMENSIONS & QUANTITIES, 6:1 SLOPE |
| 7/76 | B-08.10 | INLET OR OUTLET LEVEL WINGS, HEIGHT 3' TO 7' |
| 7/76 | B-08.20 | INLET OR OUTLET LEVEL WINGS, HEIGHT 8' TO 12' |
| REINFORCED CONCRETE HEADWALLS FOR PIPE CULVERTS | | |
| 4/92 | B-11.10 | PIPE CULVERT HEADWALLS, MISCELLANEOUS DETAILS |
| 4/92 | B-11.11 | INLET AND OUTLET HEADWALLS, 18" TO 42" PIPES |
| 4/92 | B-11.12 | INLET AND OUTLET HEADWALLS, RIGHT ANGLE PIPE CULVERTS, 48" TO 84" PIPES |
| 4/92 | B-11.13 | INLET AND OUTLET HEADWALLS, SKEWED PIPE CULVERTS, 48" TO 84" PIPES |
| 4/92 | B-11.14 | MULTIPIPE HEADWALLS, 48" TO 84" PIPES |
| 4/92 | B-12.10 | INLET HEADWALLS, RIGHT ANGLE PIPE CULVERT |
| 4/92 | B-12.20 | INLET HEADWALLS, RIGHT ANGLE PIPE CULVERT, 2:1 SLOPE |
| 4/92 | B-12.30 | INLET HEADWALLS, RIGHT ANGLE PIPE CULVERT, 4:1 SLOPE |
| 4/92 | B-12.40 | INLET HEADWALLS, RIGHT ANGLE PIPE CULVERT, 6:1 SLOPE |
| 4/92 | B-12.50 | OUTLET HEADWALLS, RIGHT ANGLE PIPE CULVERT |
| 4/92 | B-12.60 | OUTLET HEADWALLS, RIGHT ANGLE PIPE CULVERT, 2:1 SLOPE |
| 4/92 | B-12.70 | OUTLET HEADWALLS, RIGHT ANGLE PIPE CULVERT, 4:1 SLOPE |
| 4/92 | B-12.80 | OUTLET HEADWALLS, RIGHT ANGLE PIPE CULVERT, 6:1 SLOPE |
| 4/92 | B-13.10 | INLET HEADWALLS, 15° SKEW PIPE CULVERT |
| 4/92 | B-13.20 | INLET HEADWALLS, 15° SKEW PIPE CULVERT, 2:1 SLOPE |
| 4/92 | B-13.30 | INLET HEADWALLS, 15° SKEW PIPE CULVERT, 4:1 SLOPE |
| 4/92 | B-13.40 | INLET HEADWALLS, 15° SKEW PIPE CULVERT, 6:1 SLOPE |
| 4/92 | B-13.50 | OUTLET HEADWALLS, 15° SKEW PIPE CULVERT |
| 4/92 | B-13.60 | OUTLET HEADWALLS, 15° SKEW PIPE CULVERT, 2:1 SLOPE |
| 4/92 | B-13.70 | OUTLET HEADWALLS, 15° SKEW PIPE CULVERT, 4:1 SLOPE |
| 4/92 | B-13.80 | OUTLET HEADWALLS, 15° SKEW PIPE CULVERT, 6:1 SLOPE |
| 4/92 | B-14.10 | INLET HEADWALLS, 30° SKEW PIPE CULVERT |
| 4/92 | B-14.20 | INLET HEADWALLS, 30° SKEW PIPE CULVERT, 2:1 SLOPE |
| 4/92 | B-14.30 | INLET HEADWALLS, 30° SKEW PIPE CULVERT, 4:1 SLOPE |
| 4/92 | B-14.40 | INLET HEADWALLS, 30° SKEW PIPE CULVERT, 6:1 SLOPE |
| 4/92 | B-14.50 | OUTLET HEADWALLS, 30° SKEW PIPE CULVERT |
| 4/92 | B-14.60 | OUTLET HEADWALLS, 30° SKEW PIPE CULVERT, 2:1 SLOPE |
| 4/92 | B-14.70 | OUTLET HEADWALLS, 30° SKEW PIPE CULVERT, 4:1 SLOPE |
| 4/92 | B-14.80 | OUTLET HEADWALLS, 30° SKEW PIPE CULVERT, 6:1 SLOPE |
| 4/92 | B-15.10 | INLET HEADWALLS, 45° SKEW PIPE CULVERT |
| 4/92 | B-15.20 | INLET HEADWALLS, 45° SKEW PIPE CULVERT, 2:1 SLOPE |
| 4/92 | B-15.30 | INLET HEADWALLS, 45° SKEW PIPE CULVERT, 4:1 SLOPE |
| 4/92 | B-15.40 | INLET HEADWALLS, 45° SKEW PIPE CULVERT, 6:1 SLOPE |
| 4/92 | B-15.50 | OUTLET HEADWALLS, 45° SKEW PIPE CULVERT |
| 4/92 | B-15.60 | OUTLET HEADWALLS, 45° SKEW PIPE CULVERT, 2:1 SLOPE |
| 4/92 | B-15.70 | OUTLET HEADWALLS, 45° SKEW PIPE CULVERT, 4:1 SLOPE |
| 4/92 | B-15.80 | OUTLET HEADWALLS, 45° SKEW PIPE CULVERT, 6:1 SLOPE |
| 4/92 | B-16.10 | MULTIPIPE HEADWALLS WITHOUT APRON |
| 4/92 | B-16.20 | MULTIPIPE HEADWALLS WITH OUTLET APRON |
| 4/92 | B-17.10 | OUTLET APRONS |
| 4/92 | B-17.20 | OUTLET APRON STEEL LIST 2:1 SLOPE |
| 4/92 | B-17.30 | OUTLET APRON STEEL LIST 4:1 SLOPE |
| 4/92 | B-17.40 | OUTLET APRON STEEL LIST 6:1 SLOPE |
| RETAINING WALLS | | |
| 4/92 | B-18.10 | CANTILEVER RETAINING WALL DETAILS |
| 4/92 | B-18.20 | CANTILEVER RETAINING WALLS ON SPREAD FOOTING |
| 4/92 | B-18.30 | CANTILEVER RETAINING WALLS ON SPREAD FOOTING |
| 4/92 | B-18.40 | CANTILEVER RETAINING WALLS WITH BARRIER |
| 4/92 | B-18.50 | MASONRY RETAINING WALLS |
| MISCELLANEOUS STANDARDS | | |
| 4/92 | B-19.50 | STRUCTURAL EXCAVATION & STRUCTURE BACKFILL FOR R.C.B. CULVERTS |

STRUCTURE DETAIL DRAWINGS

| REVISION DATE | SD NO. | SUBJECT |
|----------------------------|-----------------|--|
| RAILINGS | | |
| 8/01 | SD1.01 | 32 INCH F-SHAPE BRIDGE CONCRETE BARRIER AND TRANSITION |
| 8/01 | SD1.02 | 42 INCH F-SHAPE BRIDGE CONCRETE BARRIER AND TRANSITION |
| 3/05 | SD1.03 | THREE BEAM GUARD RAIL TRANSITION SYSTEM |
| 12/00 | SD1.04 | COMBINATION PEDESTRIAN - TRAFFIC BRIDGE RAILING |
| 12/00 | SD1.05 | PEDESTRIAN FENCE FOR BRIDGE RAILING SD1.04 |
| 9/99 | SD1.06 (1 OF 4) | TWO TUBE BRIDGE RAIL (1 OF 4) |
| 8/99 | SD1.06 (2 OF 4) | TWO TUBE BRIDGE RAIL (2 OF 4) |
| 8/99 | SD1.06 (3 OF 4) | TWO TUBE BRIDGE RAIL (3 OF 4) |
| 7/01 | SD1.06 (4 OF 4) | TWO TUBE BRIDGE RAIL (4 OF 4) |
| 5/02 | SD1.11 | BARRIER JUNCTION BOX |
| APPROACHES | | |
| 11/00 | SD2.01 | APPROACH SLAB DETAILS |
| 11/00 | SD2.02 | TYPE 1 - ANCHOR SLAB DETAILS |
| 11/00 | SD2.03 | TYPE 2 - ANCHOR SLAB DETAILS |
| 11/02 | SD2.04 | SLOPE PAVING DETAILS - UNDERPASS |
| 11/02 | SD2.05 | SLOPE PAVING DETAILS - OVERPASS |
| DECK JOINTS | | |
| 8/02 | SD3.01 | DECK JOINT ASSEMBLY - COMPRESSION SEAL |
| 8/02 | SD3.02 | DECK JOINT ASSEMBLY - STRIP SEAL |
| SOUND BARRIER WALLS | | |
| 7/01 | SD8.01 | SOUND BARRIER WALL (CONCRETE) |
| 11/05 | SD8.02 (1 OF 2) | SOUND BARRIER WALL (MASONRY) |
| 11/05 | SD8.02 (2 OF 2) | SOUND BARRIER WALL (MASONRY) |
| TRAFFIC STRUCTURES | | |
| 03/05 | SD9.01 (1 OF 5) | MEDIAN SIGN STRUCTURE (TWO SIDED) - ELEVATION & NOTES (1 OF 5) |
| 03/05 | SD9.01 (2 OF 5) | MEDIAN SIGN STRUCTURE (TWO SIDED) - FOUNDATION DETAILS (2 OF 5) |
| 03/05 | SD9.01 (3 OF 5) | MEDIAN SIGN STRUCTURE (TWO SIDED) - TYPE A SIGN MOUNT ASSEMBLY (3 OF 5) |
| 03/05 | SD9.01 (4 OF 5) | MEDIAN SIGN STRUCTURE (TWO SIDED) - TYPE B SIGN MOUNT ASSEMBLY (4 OF 5) |
| 03/05 | SD9.01 (5 OF 5) | MEDIAN SIGN STRUCTURE (TWO SIDED) - LIGHT SUPPORT AND MISC. DETAILS (5 OF 5) |
| 03/05 | SD9.02 (1 OF 5) | MEDIAN SIGN STRUCTURE (ONE SIDED) - ELEVATION & NOTES (1 OF 5) |
| 03/05 | SD9.02 (2 OF 5) | MEDIAN SIGN STRUCTURE (ONE SIDED) - FOUNDATION DETAILS (2 OF 5) |
| 03/05 | SD9.02 (3 OF 5) | MEDIAN SIGN STRUCTURE (ONE SIDED) - TYPE A SIGN MOUNT ASSEMBLY (3 OF 5) |
| 03/05 | SD9.02 (4 OF 5) | MEDIAN SIGN STRUCTURE (ONE SIDED) - TYPE B SIGN MOUNT ASSEMBLY (4 OF 5) |
| 03/05 | SD9.02 (5 OF 5) | MEDIAN SIGN STRUCTURE (ONE SIDED) - LIGHT SUPPORT AND MISC. DETAILS (5 OF 5) |
| 6/01 | SD9.10 (1 OF 5) | TUBULAR SIGN STRUCTURES (TUBULAR CANTILEVER) - GENERAL & PLAN |
| 6/01 | SD9.10 (2 OF 5) | TUBULAR SIGN STRUCTURES (TUBULAR CANTILEVER) - FOUNDATION DETAILS |
| 6/01 | SD9.10 (3 OF 5) | TUBULAR SIGN STRUCTURES (TUBULAR CANTILEVER) - POST AND MAST ARM DETAILS |
| 6/01 | SD9.10 (4 OF 5) | TUBULAR SIGN STRUCTURES (TUBULAR CANTILEVER) - SIGN SUPPORT DETAILS |
| 6/01 | SD9.10 (5 OF 5) | TUBULAR SIGN STRUCTURES (TUBULAR CANTILEVER) - LIGHT SUPPORT DETAILS |
| 8/02 | SD9.20 (1 OF 5) | TUBULAR SIGN STRUCTURES (TUBULAR FRAME) - GENERAL & PLAN |
| 6/01 | SD9.20 (2 OF 5) | TUBULAR SIGN STRUCTURES (TUBULAR FRAME) - FOUNDATION DETAILS |
| 6/01 | SD9.20 (3 OF 5) | TUBULAR SIGN STRUCTURES (TUBULAR FRAME) - POST AND MAST ARM DETAILS |
| 6/01 | SD9.20 (4 OF 5) | TUBULAR SIGN STRUCTURES (TUBULAR FRAME) - SIGN SUPPORT DETAILS |
| 6/01 | SD9.20 (5 OF 5) | TUBULAR SIGN STRUCTURES (TUBULAR FRAME) - LIGHT SUPPORT DETAILS |
| 8/02 | SD9.50 (1 OF 5) | VARIABLE MESSAGE SIGN (TUBULAR FRAME) - PLAN & ELEVATION (1 OF 5) |
| 8/02 | SD9.50 (2 OF 5) | VARIABLE MESSAGE SIGN (TUBULAR FRAME) - MOUNTING DETAILS (2 OF 5) |
| 8/02 | SD9.50 (3 OF 5) | VARIABLE MESSAGE SIGN (TUBULAR FRAME) - MOUNTING AND SIGN BRACKET DETAILS (3 OF 5) |
| 7/00 | SD9.50 (4 OF 5) | VARIABLE MESSAGE SIGN (TUBULAR FRAME) - HANDRAIL DETAILS (4 OF 5) |
| 7/00 | SD9.50 (5 OF 5) | VARIABLE MESSAGE SIGN (CATWALK) - MISCELLANEOUS DETAILS (5 OF 5) |
| 8/02 | SD9.51 | DUAL VARIABLE MESSAGE SIGN (TUBULAR FRAME) - PLAN & ELEVATION |

REV. 01/04

| ADOT STANDARD DRAWINGS | | |
|--|------|--|
| REVISION DATES and STANDARD NO.'s REVIEW | | |
| NAME | DATE | |
| STRUCTURES Standards | | |

EARTHWORK QUANTITIES

| | |
|--------------------|---------|
| Roadway Excavation | 3200 CY |
| Shrink 10% | 41 CY |
| Pipe Excavation | 292 CY |
| Shrink 10% | 29 CY |
| Pipe Backfill | 115 CY |
| Embankment | 520 CY |
| Ground Compaction | 0 CY |
| Waste | 2786 CY |

MIDPOINT OF PROJECT

Central Zone
 State Plane Coordinates
 X=333,716
 Y=396,267

REFERENCES

AZM 600-0-501
 101 MA 001 H6666 01C - CM-101-A(200)A
 101-A(20)
 PEO SS 603 01 C (CITY OF PEORIA)
 R050048 (CITY OF PEORIA)

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 2 | 89 | |

101L MA 9

INDEX OF SHEETS

| Sheet No. | Drawing No. | Sheet Type |
|-----------------|-------------------|---|
| GENERAL | | |
| 1 | - | Face Sheet |
| 1A-1C | - | ADOT Standard Drawings |
| 2 | G-1.01 | Index of Sheets and Design Data |
| 3-4 | G-2.01 - G-2.02 | Typical Sections |
| 5 | G-3.01 | New Pipe Summary |
| 6 | G-4.01 | Curb and Gutter and Sidewalk Summary |
| 7-11 | G-5.01 - G-5.05 | Special Details |
| CIVIL/DRAINAGE | | |
| 12-13 | C-1.01 - C-1.02 | Geometric Data |
| 14-15 | C-1.03 - C-1.04 | Median Geometric Layout |
| 16-19 | R-1.01 - R-1.04 | Removal Plans |
| 20-26 | C-2.01 - C-2.07 | Roadway Plan and Profiles |
| 27-31 | C-2.08 - C-2.12 | Staking Plans |
| 32-36 | D-1.01 - D-1.05 | Drainage Plan and Profile |
| TRAFFIC | | |
| 37-41 | T-1.01 - T-1.05 | Traffic Control Plans, Notes & Quantities |
| 42 | T-2.01 | Pvmnt Markings General Notes & Quantities |
| 43-46 | T-2.02 - T-2.05 | Signing Notes & Quantities |
| 47-48 | T-2.06 - T-2.07 | Pavement Marking and Signing Plans |
| 49-51 | T-2.08 - T-2.10 | Sign Elevations |
| 52 | T-3.01 | Traffic Signal and Lighting Notes |
| 53-54 | T-3.02 - T-3.03 | Traffic Removal Plans |
| 55-59 | T-3.04 - T-3.08 | Traffic Signal and Lighting Plans |
| 60-62 | T-4.01 - T-4.03 | FMS Location Plan and Schedule |
| RETAINING WALLS | | |
| 63 | S-1.01 | General Notes & Quantities |
| 64 | S-1.02 | Wall Layout Plan |
| 65-68 | S-1.03 - S-1.06 | Wall Elevations |
| 69-72 | S-1.07 - S-1.10 | Soil Nail Wall Details |
| 73-80 | S-1.11 - S-1.18 | Soil Nail Layout Specifications |
| 81-83 | SF-1.01 - SF-1.03 | Foundation Data |
| UTILITIES | | |
| 84-87 | U-1.01 - U-1.04 | Utility Plans |
| EROSION CONTROL | | |
| 88-89 | E-1.01 - E-1.02 | SWPPP Plans and Details |

DESIGN DATA

2007 AADT 129,000
 Design Speed: RBA 600-1-502 As-Builts
 MAINLINE = 65 MPH
 RAMPS = 50 MPH
 CROSS ROAD = 45 MPH

LENGTH OF PROJECT

Construct Westbound Lanes
 Sta 43+75.65 to Sta 62+65.60 = 1,889.95 LF = 0.36 Miles
 Construct Eastbound Lanes
 Sta 47+19.56 to Sta 62+65.60 = 1,546.34 LF = 0.29 Miles
 Construct Ramp 'A'
 Sta 17+44.30 to Sta 19+98.15 = 253.85 LF = 0.05 Miles
 Construct Ramp 'B'
 Sta 16+44.71 to Sta 22+00.15 = 407.02 LF = 0.11 Miles
 Mile Post 9.27

NON-STANDARD ABBREVIATIONS

TC - Top of Curb
 FL - Flowline of Gutter
 BC - Back of Curb
 FC - Face of Curb
 G - Gutter
 SD - Storm Drain

GENERAL NOTES

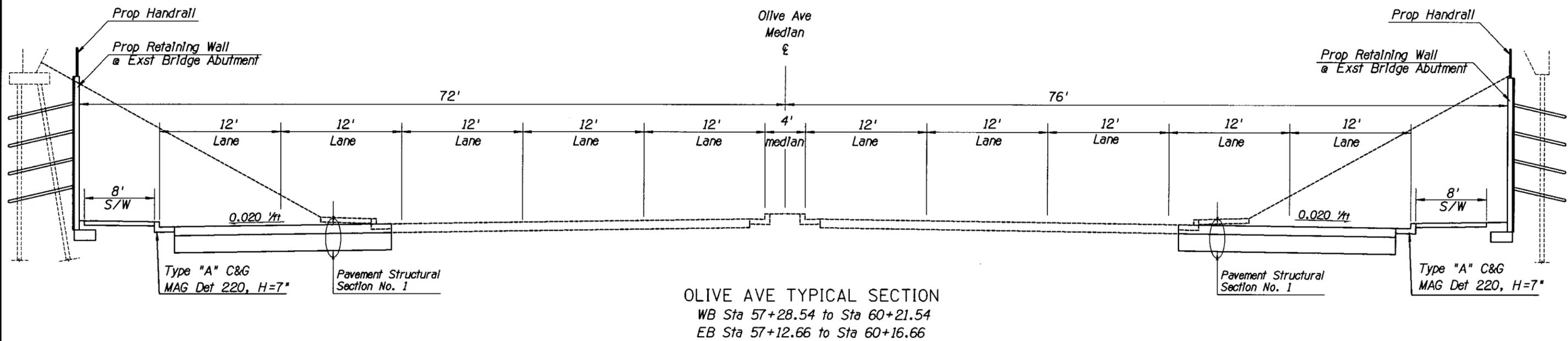
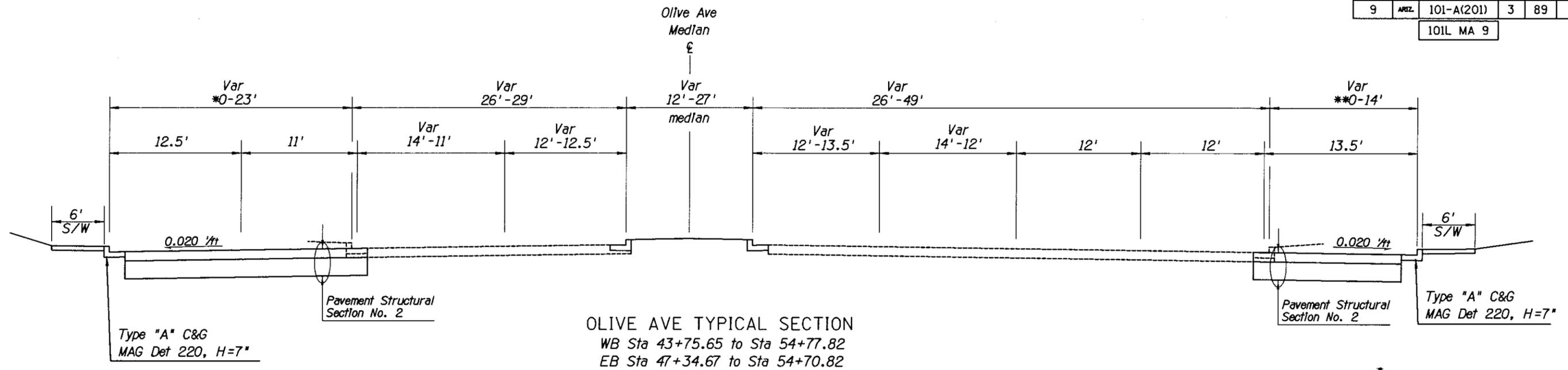
- The roadway plans within ADOT right-of-way have been designed utilizing the ADOT 2008 Standard Specifications for Road and Bridge Construction, the 2007 Construction Standard Drawings (C-Series), and current revisions. The roadway plans within City right-of-way have been designed utilizing MAG 2009 Standard Drawings.
- The horizontal locations of existing utilities are shown in their approximate location. The vertical locations of existing utilities are shown only where verified by field survey methods. The contractor shall be responsible to adhere to all current Blue Stake laws and Section 107.15 of the Standard Specifications.
- Pipe elevations may be adjusted in the field to fit actual condition at the time of construction. Any adjustments will be subject to approval by the Engineer.
- New transverse PCCP joints shall match the location and orientation of the existing transverse joints.
- The project roadway shall be striped by the contractor in accordance with the current edition of the Signing and Marking Standard Drawings (M&S Series) and pavement marking and signing plans.
- All tapers, radii and dimensions shown are to the face of barrier, face of curb & gutter, or lip of gutter as shown unless otherwise noted.
- Existing signs, object markers and milepost markers within the project limits shall be removed and reset in accordance with the current edition of the Signing and Marking Standards, Dwg 1B, or as directed by the Engineer.
- The existing topography as shown in these Contract Documents is taken partially from as-builts. The contractor shall examine the site and be knowledgeable as to the conditions to be encountered during construction of the project.
- The average project elevation is 1110.
- Station and station equations are based on as-built information.
- All work shall be performed within ADOT and City of Peoria Right-of-Way.
- Construction periods are limited to 9:00 am to 3:30 pm on weekdays and weekends for Thunderbird Road. Contractor to coordinate with the City of Peoria for construction during spring training. Ramp closures are allowed between 10:00 pm and 5:00 am.

| | | | | |
|--|-------------------------------------|------------|--|---|
| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. G-1.01 |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS 18441 N. 25th Ave, Ste 103 Phoenix, AZ 85023 602-405-1875 Fax 602-288-6530 | | | OLIVE AVENUE WIDENING INDEX OF SHEETS and DESIGN DATA | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | | |
| TRACS NO. H 6939 01C | | 101-A(201) | | OF |

DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO. DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO.

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 3 | 89 | |

101L MA 9

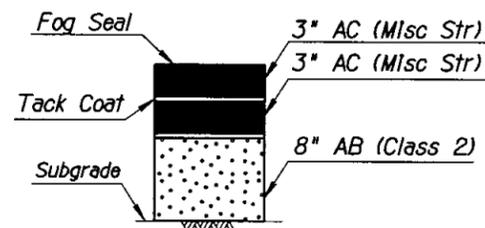
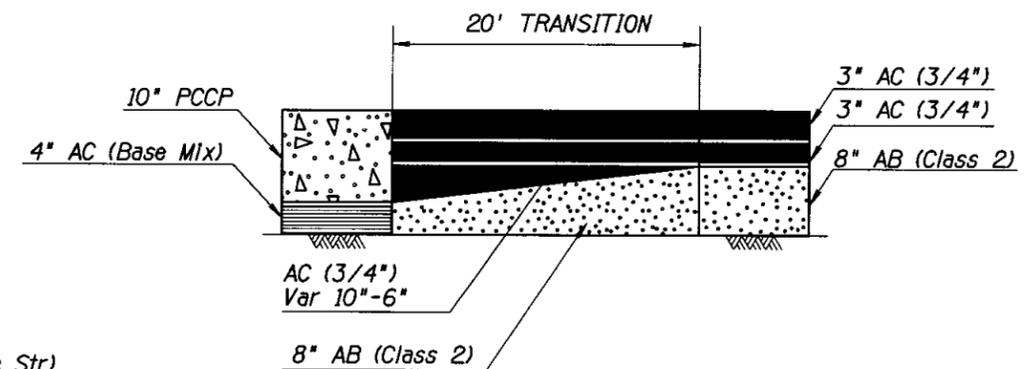
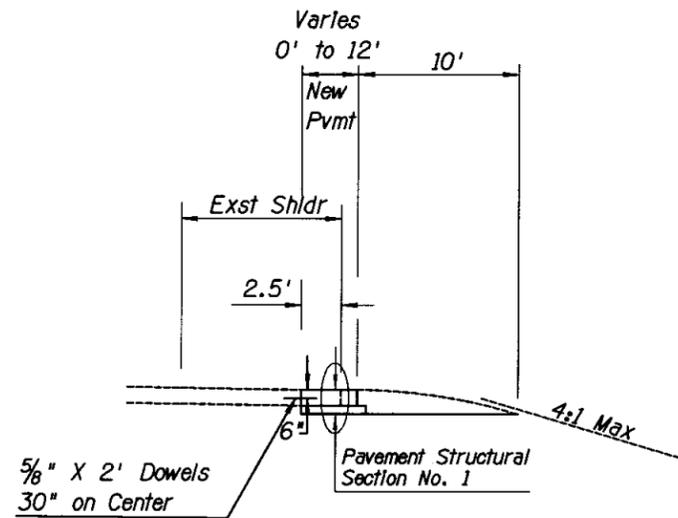
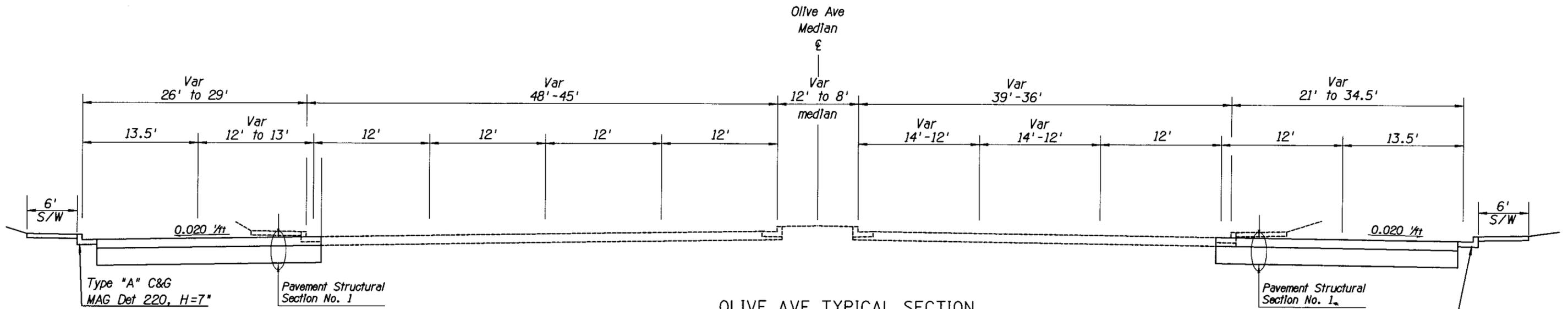


REVISIONS- LOCATION- DATE- FINISHED PLANS- SURVEY NO.

| | | | | | |
|---|------------|----------|-------------------------------------|---|---|
| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING |
| DRAWN | JRG | DATE | 5-09 | | |
| CHECKED | PTG | DATE | 5-09 | | |
| JLK ENGINEERS 1848 N. 25th Ave, Ste 103 Phoenix, AZ 85023 602-405-1875 Fax 602-288-6530 | | | | OLIVE AVENUE WIDENING TYPICAL SECTIONS | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | DWG NO. G-2.01 |
| TRACS NO. | H 6939 OIC | | 101-A(201) | | OF |

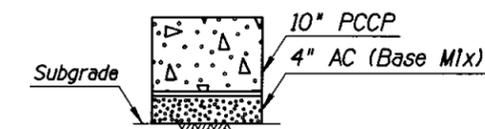
| F.J.M.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ | 101-A(201) | 4 | 89 | |

101L MA 9



Total Thickness = 14"

WB Sta 43+75.65 to Sta 54+57.82
 EB Sta 47+34.67 to Sta 54+50.82



Total Thickness = 14"

WB Sta 57+77.82 to Sta 62+65.60
 EB Sta 57+70.82 to Sta 62+65.60
 Ramps A, B, C & D

| | | | | | |
|-----------|------------|----------|-------------------------------------|---|------------------------------|
| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review |
| DRAWN | JRG | DATE | 5-09 | | |
| CHECKED | PTG | DATE | 5-09 | | |
| | | | | OLIVE AVENUE WIDENING | |
| | | | | TYPICAL SECTIONS | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | NOT FOR CONSTRUCTION OR RECORDING | |
| TRACS NO. | H 6939 01C | | 101-A(201) | DWG NO. 6-2.02 | |
| | | | | OF | |

DATE: _____ LOCATION: _____ REVISIONS: _____ SURVEY NO. _____ DATE: _____ LOCATION: _____ REVISIONS: _____ SURVEY NO. _____

CURB AND GUTTER AND SIDEWALK SUMMARY SHEET

| | | | | | |
|-----------------|-------|-------------|-----------|--------------|----------|
| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
| 9 | ARIZ. | 101-A(201) | 6 | 89 | |

101L MA 9

DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO. DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO.

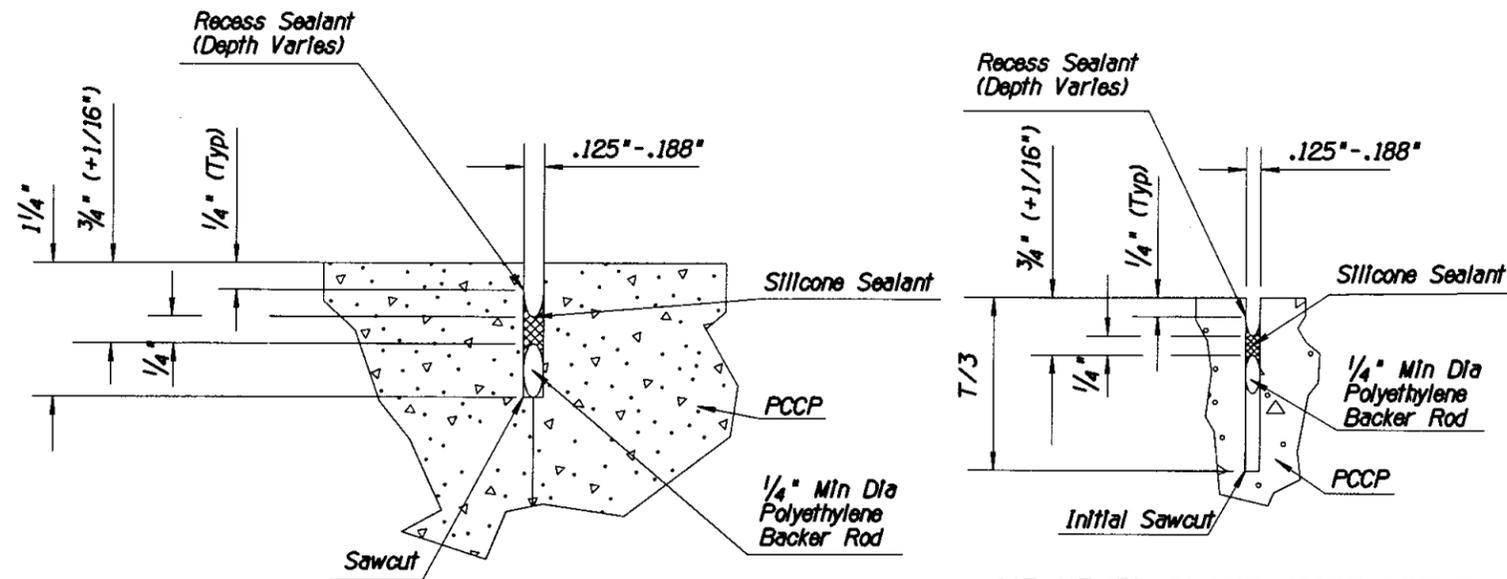
| DESCRIPTION | CURB | | | | | | | | | | CURB AND GUTTER | | | | | | | | | | SIDEWALK | | | | REMARKS | | | | | | | | | | | | |
|-------------------|--------------|--------------|--------------|---|------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|------------------------|---------|-------------------------|--------------------------|------------------------|--------------------------|--------------|--------------------------------|------------------------------|--|------------------------------|------------------------------|---------|------------------------|---------------------------|-------------|---------------------------|------------------|-------------|-----------------------|-----------------------|-----------------------|--------------------------|--------|--|
| | Plan Ref No. | Type A, H=7" | Type A, H=6" | Median Nose Transition Det. Std C-05.40 | Median Paving (Pavers) | Type 1 Std C-05.12 | Type 2 Std C-05.12 | Type 3 Std C-05.12 | Type 4 Std C-05.12 | Type 5 Std C-05.12 | Type 6 Std C-05.12 | Type 7 | Type 9 MAG DTH 222 "A" | Type 10 | Type 11, MAG DTH 221 LF | Type B-1, Std C-05.10 LF | Type C, Std C-05.10 LF | Type C-1, Std C-05.10 LF | Type D, H=6" | Type D-1, H=6", Std C-05.10 LF | Type D, H=7", Std C-05.10 LF | MAG DTH 220, Type A, H=6" Depressed Lip LF | MAG DTH 220, Type A, H=6" LF | MAG DTH 220, Type A, H=7" LF | | MAG DTH 220, Type C LF | Driveway and Alleyways SF | MAG Det 250 | Sidewalk Ramp Std C-05.30 | Sidewalk Dome Ed | MAG Det 231 | Sidewalk Ramp, Type A | Sidewalk Ramp, Type C | Sidewalk Ramp, Type F | Sidewalk SF, MAG DTH 230 | | |
| 43+76 to 51+88 Lt | 1 | | | | | | | | | | | | | | | | | | | | | 813 | | | | | | | | | | | | | 4152 | | |
| 51+88 to 52+18 Lt | 2 | | | | | | | | | | | | | | | | | | | | | | 47 | | | | | | 1 | | | | | | 119 | | |
| 52+50 to 52+80 Lt | 3 | | | | | | | | | | | | | | | | | | | | | | 48 | | | | | 1 | | | | | | | 143 | | |
| 52+80 to 55+80 Lt | 4 | | | | | | | | | | | | | | | | | | | | | 299 | | | | | | | | | | | | | 1658 | | |
| 55+80 to 56+53 Lt | 5 | | | | | | | 2 | | | | | | | | | | | 107 | | | | | | | | | | 1 | | | | | | | | |
| 56+89 to 57+03 Lt | 6 | | | | | | | 1 | | | | | | | | | | | 26 | | | | | | | | | | 1 | | | | | | | | |
| 57+03 to 60+49 Lt | 7 | | | | | | | | | | | | | | | | | | 346 | | | | | | | | | | | | | | | | 2767 | | |
| 60+49 to 60+64 Lt | 8 | | | | | | | 1 | | | | | | | | | | | 28 | | | | | | | | | | 1 | | | | | | | | |
| 60+89 to 61+63 Lt | 9 | | | | | | | 1 | | | | | | | | | | | 112 | | | | | | | | | | 1 | | | | | | | | |
| 61+63 to 62+66 Lt | 10 | | | | | | | | | | | | | | | | | | | | | | 103 | | 300 | | | | | | | | | | 631 | | |
| 47+35 to 51+85 Rt | 11 | | | | | | | | | | | | | | | | | | | | | 351 | | | | | | | | | | | | | 2705 | | |
| 51+85 to 52+14 Rt | 12 | | | | | | | | | | | | | | | | | | | | | 46 | | | | | 1 | | | | | | | | 172 | | |
| 52+54 to 52+85 Rt | 13 | | | | | | | | | | | | | | | | | | | | | 48 | | | | | 1 | | | | | | | | 178 | | |
| 52+85 to 55+58 Rt | 14 | | | | | | | | | | | | | | | | | | | | | 273 | | | | | | | | | | | | | 1944 | | |
| 55+58 to 56+36 Rt | 15 | | | | | | | 2 | | | | | | | | | | | 123 | | | | | | | | | | 1 | | | | | | | | |
| 56+79 to 56+94 Rt | 16 | | | | | | | 1 | | | | | | | | | | | 24 | | | | | | | | | 1 | | | | | | | | | |
| 56+94 to 60+39 Rt | 17 | | | 3 | | | | | | | | | | | | | | | 344 | | | | | | | | | | | | | | | | | 2775 | |
| 60+39 to 60+53 Rt | 18 | | | | | | | 1 | | | | | | | | | | | 30 | | | | | | | | | | 1 | | | | | | | | |
| 61+03 to 61+76 Rt | 19 | | | | | | | 1 | | | | | | | | | | | 113 | | | | | | | | | 1 | | | | | | | | | |
| 61+76 to 62+66 Rt | 20 | | | | | | | | | | | | | | | | | | | | | 90 | | 300 | | | | | | | | | | | | 611 | |
| 51+70 to 52+29 | 21 | 136 | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Median | |
| 52+97 to 56+26 | 22 | 691 | | 4 | 689 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | Median | | |
| 61+71 to 62+66 | 23 | 96 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Median | | |
| 61+94 to 62+66 | 24 | 93 | | | 447 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Median | | |
| Totals | | 189 | 827 | 6 | 1136 | | | 10 | | | | | | | | | | | 1253 | 1925 | 193 | | | 600 | | 4 | 8 | 1 | | | | | 17855 | | | | |

-  Reference Numbers Correspond to Numbers in Trapezoid on Roadway Plans
-  Transition Lengths are included in Curb and Gutter Quantity
-  Type B Transition and Std C-10.31 Lip Curb are included in Type B or C Curb and Gutter

| | | | | |
|---|---------|------------|---|---|
| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES OLIVE AVENUE WIDENING CURB, GUTTER & SIDEWALK SUMMARY SHEET | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. G-4.01 |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS 1844 N. 25th Ave, Ste 103 Phoenix, AZ 85023 602-405-1875 Fax 602-288-6530 | | | | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | |
| TRACS NO. H 6939 01C | | 101-A(201) | | OF |

| F.A.R.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 7 | 89 | |

101L MA 9

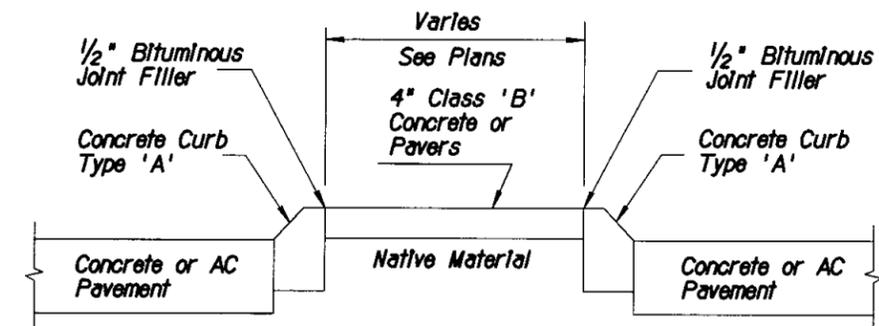


CONSTRUCTION JOINT DETAIL
JOINTED PCCP

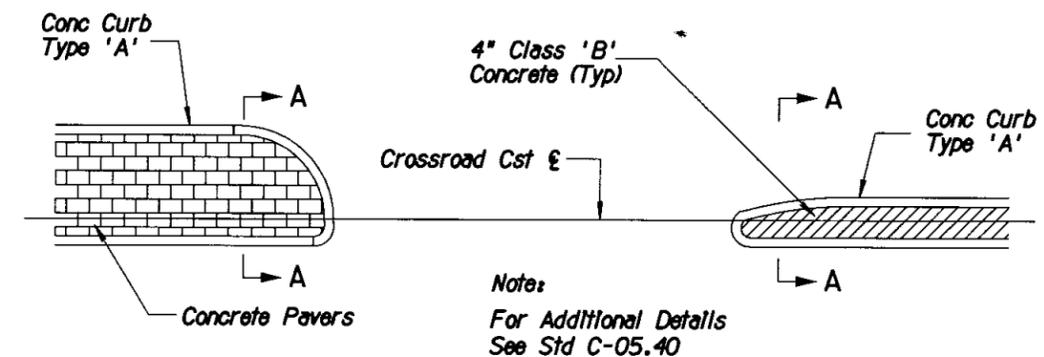
WEAKENED PLANE JOINT DETAIL
JOINTED PCCP

NOTE:
Transverse Weakened Plane Joints
shall align with existing joints.

DETAIL A



SECTION A-A



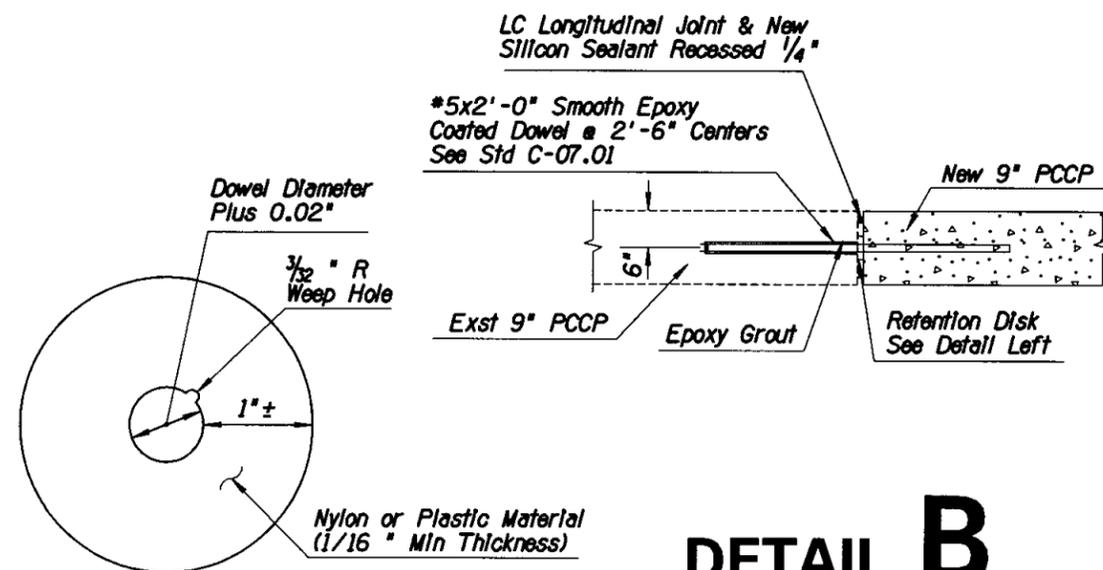
Notes:
For Additional Details
See Std C-05.40

LIMITS OF CONCRETE MEDIAN PAVING AND BRICK PAVERS

| STATION | TYPE | QUANTITIES (SF) |
|------------------------|-------|-----------------|
| Sta 52+97 to Sta 56+26 | Brick | 689 |
| Sta 61+71 to Sta 62+66 | Brick | 447 |

CONCRETE MEDIAN PAVING

DETAIL C



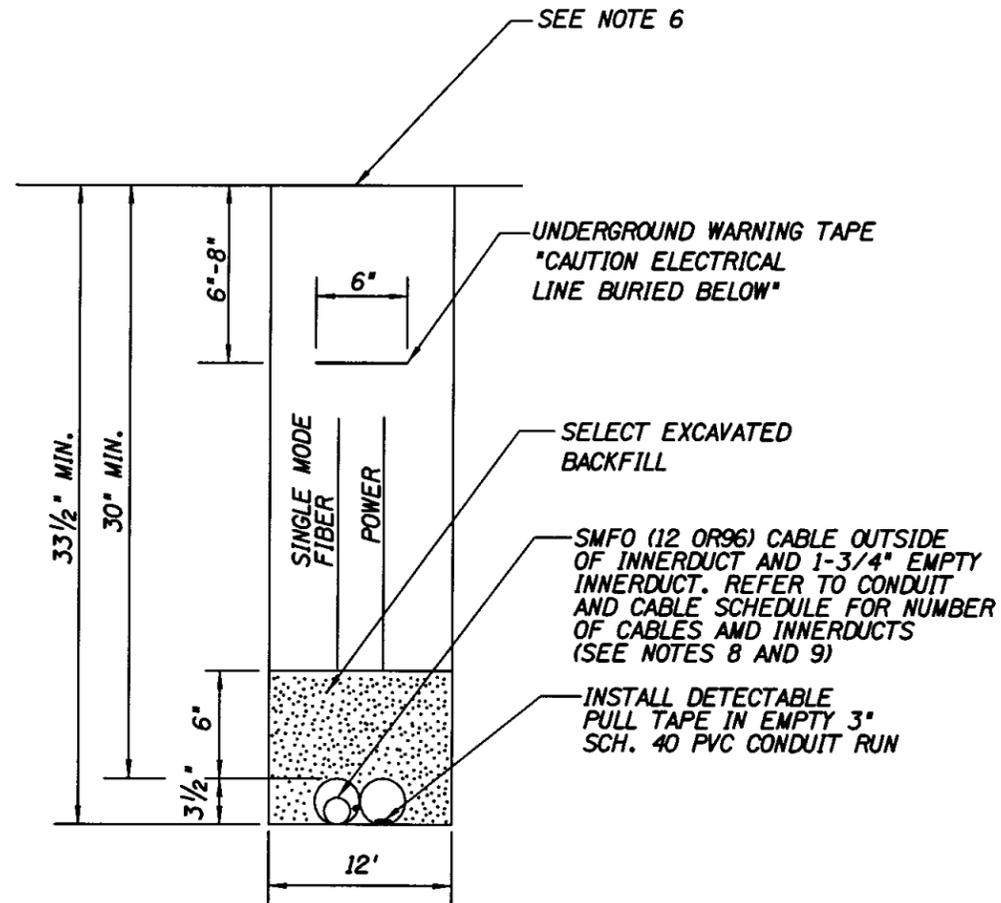
RETENTION DISK

DETAIL B

| | | | | | |
|----------------------|------------|---|-------------------------------------|---|---|
| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review |
| DRAWN | JRG | DATE | 5-09 | | |
| CHECKED | PTG | DATE | 5-09 | | |
| JLK ENGINEERS | | 10441 N. 25th Ave., Ste 103 Phoenix, AZ 85023 602-405-1875 Fax 602-288-8530 | | OLIVE AVENUE WIDENING SPECIAL DETAILS | NOT FOR CONSTRUCTION OR RECORDING |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | DWG NO. C-5.01 |
| TRACS NO. | H 6939 01C | | | 101-A(201) | OF |

| F.J.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 8 | 89 | |

101L MA 9



DETAIL A1
2-3" PVC CONDUIT
OPEN TRENCH INSTALLATION
N.T.S.

NOTES:

1. CONDUIT CONTENTS ARE ORIENTED ASSUMING THE SECTION FACING IN THE DIRECTION OF TRAVEL FOR THE MAINLINE.
2. ALL SPOIL MATERIALS SHALL BE REMOVED OFFSITE BY THE CONTRACTOR.
3. AREA SHALL BE RETURNED TO EXISTING GRADE.
4. CONDUIT COUPLINGS SHALL BE STAGGERED.
5. DETECTABLE PULL TAPE SHALL BE INSTALLED IN ONE UNUSED CONDUIT AND IN ALL UNUSED INNERDUCTS.
6. NATIVE BACKFILL
85% OF ARIZ 226 MAXIMUM DENSITY ALONG TRUNKLINE.
95% OF ARIZ 226 MAXIMUM DENSITY ON SLOPES.
7. SELECT EXCAVATED BACKFILL (SEE SECTION 501.3.04 OF THE ADOT 2000 SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION) REQUIRED WHEN TRUNK AND/OR BRANCH FIBER OPTIC CABLES ARE INSTALLED IN CONDUIT.
8. INNERDUCT SHALL TERMINATE AT EACH PULL BOX LOCATED ON PLANS.
9. LOCATIONS AS SHOWN ON PLANS WHERE ADOT SMFO FIBER CABLE AND ADOT 1-3/4" INNERDUCT ARE THE ONLY OCCUPANTS OF THIS CONDUIT, THE CABLE SHALL BE INSTALLED OUTSIDE OF THE INNERDUCT. FOR LOCATIONS THAT INCLUDE THE CITY OF PEORIA SMFO FIBER OPTIC CABLE IN THIS CONDUIT, ALL CABLES SHALL BE INSTALLED INSIDE THEIR CORRESPONDING COLOR OF INNERDUCT.

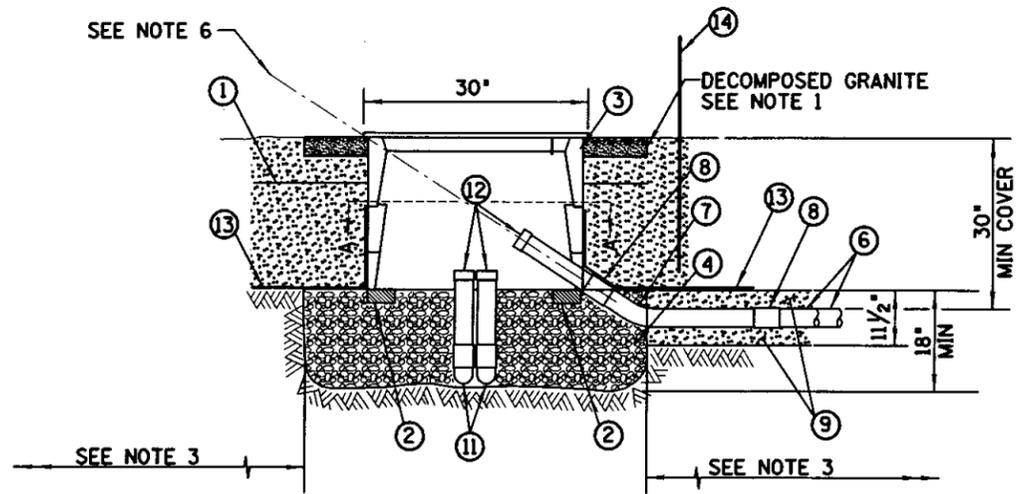
**FMS TRENCH
DETAIL**

DETAIL D

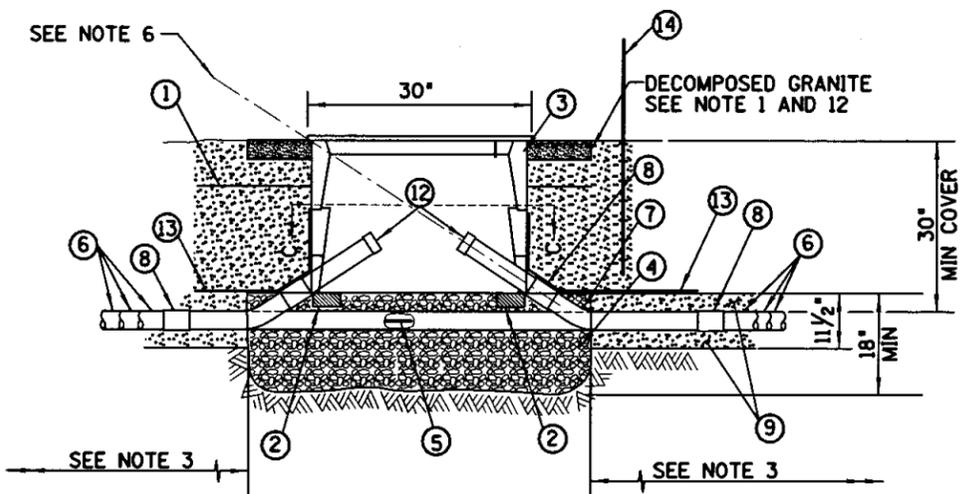
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|--|------------|----------|-------------------------------------|---|---|
| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review |
| DRAWN | JRG | DATE | 5-09 | | |
| CHECKED | PTG | DATE | 5-09 | | |
| JLK ENGINEERS 18441 N. 25th Ave., Ste 103 Phoenix, AZ 85023 602-405-1875 Fax: 602-286-6530 | | | | OLIVE AVENUE WIDENING ADOT FMS TRENCH DETAIL | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | | NOT FOR CONSTRUCTION OR RECORDING DWG NO. G-5.02 |
| TRACS NO. | H 6939 01C | | 101-A(201) | | OF |

DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO. DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO.

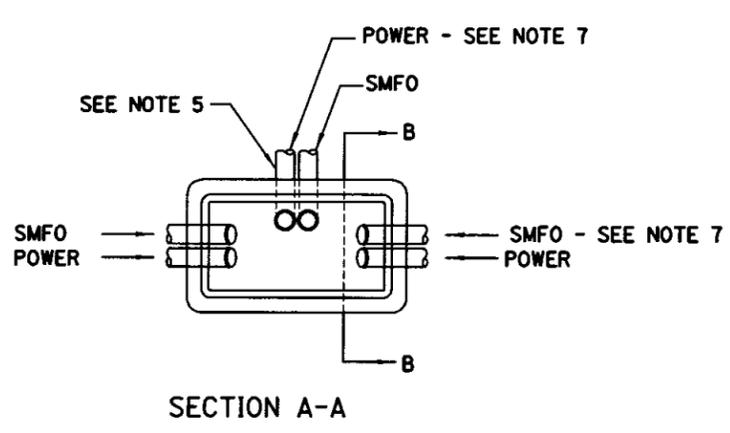
| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 9 | 89 | |
| 101L MA 9 | | | | | |



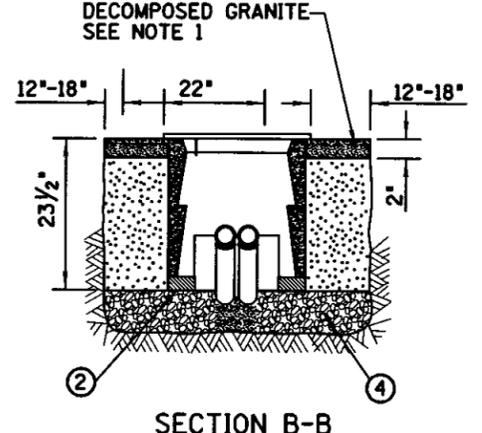
DETAIL E1
INSTALLATION FOR NO. 7 PULL BOX WITH EXTENSION
W/ TWO CONDUITS SWEEPING INTO PULL BOX



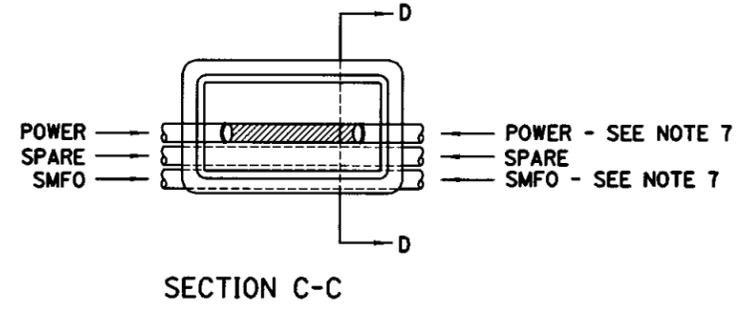
DETAIL E2
INSTALLATION FOR NO. 7 PULL BOX WITH EXTENSION
W/ ONE CONDUIT SWEEPING INTO PULL BOX



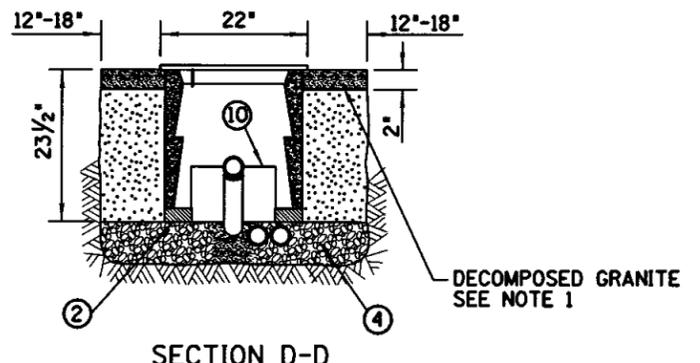
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

NOTES:

1. BACKFILL WITH SELECT EXCAVATED MATERIAL AND THOROUGHLY COMPACT TO WITHIN 2" OF ORIGINAL GRADE. 2" OF DECOMPOSITE GRANITE SHALL BE USED TO MATCH SLOPES.
2. THIS PULLBOX IS DESIGNED FOR NON-TRAFFIC AREAS. COMPOSITE COVERS SHALL BE USED.
3. CONDUIT FROM THE TYPICAL TRENCH SECTION SHALL NOT DEFLECT BY MORE THAN 1 IN/FT FROM THE ALIGNMENT PRECEDING OR FOLLOWING THE PULLBOX.
4. CONDUITS SHALL ENTER PULLBOX, OR PASS UNDERNEATH PULLBOX AS SHOWN.
5. LATERAL CONDUITS ARE REQUIRED.
6. CONDUIT CENTERLINE SHALL BE ALIGNED TO TOP OF PULLBOX TO FACILITATE CABLE PULLING.
7. ALL POWER AND COMMUNICATIONS CABLE SHALL BE TAGGED WITH IDENTIFICATION.
8. "ADOT FMS" SHALL BE EMBOSSED ON LID.
9. PVC USED TO EXTEND INOT PULLBOX.
10. USE FELT PAPER TO BLOCK OPENING BETWEEN CONDUITS AND PREVENT BACKFILL MATERIAL FROM ENTERING PULLBOX.
11. INSTALL FLEXIBLE DELINEATORS 12" IN FRONT OF EACH PULLBOX WITHOUT TOUCHING CONDUIT.
12. PULLBOX HEIGHT ABOVE FINISHED GRADE SHALL PERMIT 2" OF DECOMPOSITE GRANITE TO BE USED TO MATCH SLOPE.
13. REFER TO T.S. 1-4 FOR ALL PULLBOX DIMENSIONS EXCEPT KNOCK-OUT.
14. EXISTING PULLBOX CONFIGURATIONS MAY VARY. LOCATIONS WHERE NO. 7 PULLBOXES ARE BEING REPLACED SHALL BE INSTALLED AS SHOWN ON THIS SHEET UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
15. EXISTING CONDUIT ENTERING A PULLBOX MAY NOT BE CORRECTLY ALIGNED TO FACILITATE PULLING CABLES THROUGH THE PULLBOX BY USE OF A PULLING SHOE. THE FORCE ACCOUNT ITEM FOR CONDUIT RECONDITIONING DOES NOT COVER REALIGNMENT OF CONDUIT.
16. IN SOME LOCATIONS, POWER CONDUIT IS A 2" PVC CONDUIT. REFER TO CONDUIT AND CABLE SCHEDULE FOR SIZE OF CONDUITS.

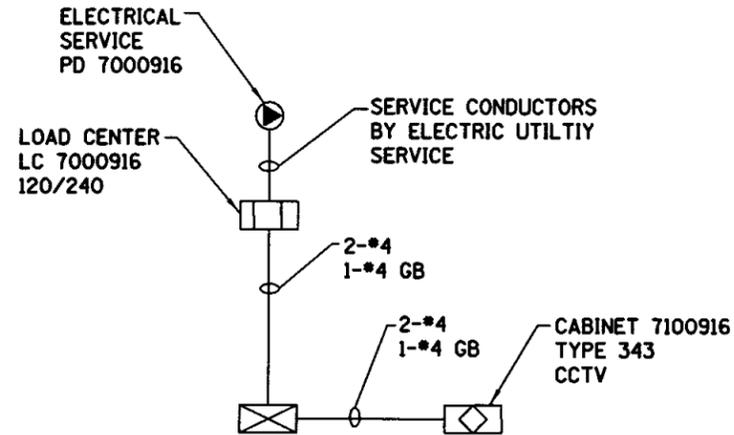
| MATERIAL LIST | |
|---------------|---|
| ITEM | DESCRIPTION |
| ① | WARNING TAPE |
| ② | CONCRETE MASONRY BLOCK 2"x4"x8" |
| ③ | NO. 7 PULLBOX WITH EXTENSION WITH EXCEPTIONS AS DRAWN |
| ④ | CLASS 'B' CONCRETE AGGREGATE DESIGNATED SIZE NO. 57 |
| ⑤ | SINGLE MODE FIBER OPTIC (SMFO) CABLE |
| ⑥ | 3" DIA SCHEDULE 40 PVC OR HPDE CONDUITS - SEE NOTE 16 |
| ⑦ | 30 DEGREE RMC ELBOW, WITH 15" RADIUS |
| ⑧ | RMC TP PVC COUPLING |
| ⑨ | SELECT EXCAVATED BACKFILL |
| ⑩ | KNOCK OUT 6"x12" - SEE NOTE 13 |
| ⑪ | 90 DEGREE ELBOW, 15" RADIUS PER SECTION 732-2.02 & 3.01 |
| ⑫ | BELL END FOR PVC - SEE NOTE 9 |
| ⑬ | 30° FELT PAPER |
| ⑭ | PULLBOX DELINEATOR (FLEXIBLE DELINEATOR) - SEE NOTE 11 |

FMS PULLBOX DETAILS **DETAIL E**

| | | | | | |
|---|---------|--|-------------------------------------|---|------------------------------|
| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review |
| DRAWN | JRG | DATE | 5-09 | | |
| CHECKED | PTG | DATE | 5-09 | | |
| JLK ENGINEERS 1848 N. 25TH AVE., 5TH FLOOR PHOENIX, AZ 85023 480-965-1875 FAX: 480-286-6530 | | OLIVE AVENUE WIDENING DETAILS E1 AND E2 PB NO. 7 WITH EXTENSION DETAIL | | NOT FOR CONSTRUCTION OR RECORDING DWG NO. G-5.03 | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | |
| TRACS NO. H 6939 OIC | | | 101-A(201) | OF | |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 10 | 89 | |

101L MA 9



ELECTRICAL SERVICE ONE-LINE DIAGRAM

| LOAD CENTER TABLE | | | | | |
|------------------------|--------|---|--------------|--------------|-----------|
| LOAD CENTER NO: | | 7000916 (EXST LC AT NW CORNER OLIVE AND LOOP 101) | | | |
| LOAD CENTER LOCATION: | | 9032 N. LOOP 101 | | | |
| LOAD CENTER TYPE: | | IV (MODIFIED) WITH METER ON SIDE OF CABINET | | | |
| LOAD CENTER XMFR SIZE: | | 15 KVA | | | |
| MAIN CIRCUIT BREAKER: | | 100 AMP, 2 POLE | | | |
| CK BKR PANEL NUMBER | CK BKR | BKR AMPS | OUTPUT VOLTS | CABINET * | LOAD AMPS |
| 1 | A | 20 | 120 | 7100916 | 13.3 |
| 1 | C | | | | |
| 1 | E | | | | |
| 1 | G | | | | |
| 1 | J | | | | |
| 2 | A-B | | | AMPS @ 120V | 13.3 |
| 2 | C-D | | | | |
| 2 | E-F | | | | |
| 2 | G-H | | | | |
| 2 | J-K | | | | |
| 2 | L-M | | | | |
| 2 | N-P | | | | |
| 2 | R-S | | | | |
| | | | | AMPS @ 480V | 0 |
| | | | | POWER | 1596W |
| | | | | SERVICE AMPS | 13.3 |

LOAD CENTER CIRCUIT TABLE

DETAIL F

| | | | | | |
|---|------------|----------|-------------------------------------|---|---|
| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review |
| DRAWN | JRG | DATE | 5-09 | | |
| CHECKED | PTG | DATE | 5-09 | | |
| JLK ENGINEERS <small>18441 N. 25TH AVE., STE 103 PHOENIX, AZ 85023 480-455-1875 Fax: 480-288-6530</small> | | | | OLIVE AVENUE WIDENING FMS DETAIL LOAD CENTER CIRCUIT TABLE | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | NOT FOR CONSTRUCTION OR RECORDING |
| TRACS NO. | H 6939 OIC | | 101-A(201) | | DWG NO. G-5.04 OF |

DATE- LOCATION- FINISHED PLANS- SURVEY NO. DATE- LOCATION- REVISIONS- SURVEY NO.

| F.J.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 11 | 89 | |

101L MA 9

DESIGN CRITERIA

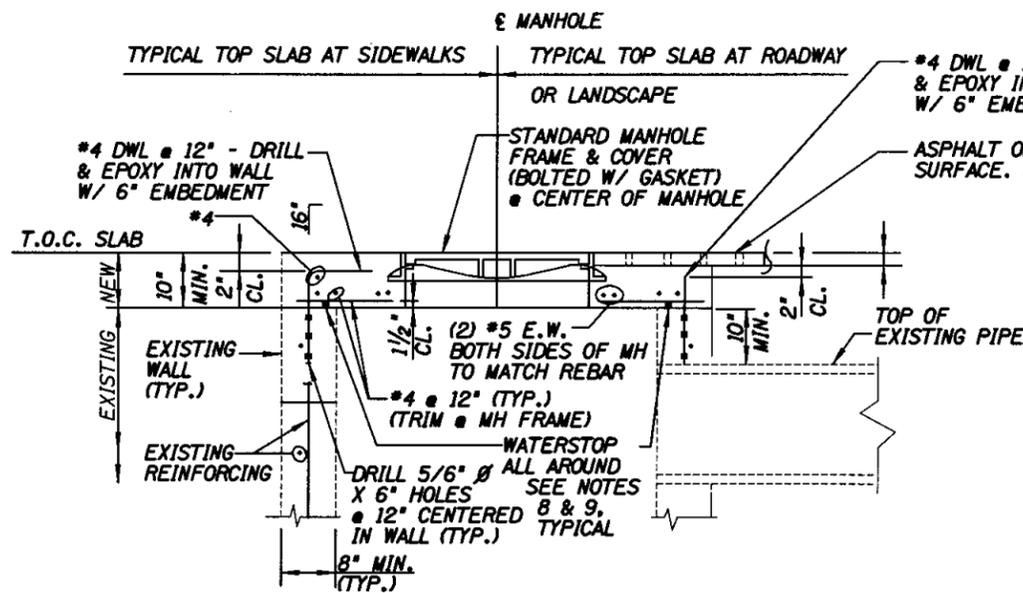
- COVERED NON-PRESSURE MANHOLE: HS20 HIGHWAY LOADING, 32 KIPS ON REAR AXLE (16 KIPS/WHEEL), WHEEL SPACING 6', 30% IMPACT, ONE WHEEL CENTERED ON MANHOLE, OTHER WHEEL ADJACENT MANHOLE.

GENERAL NOTES

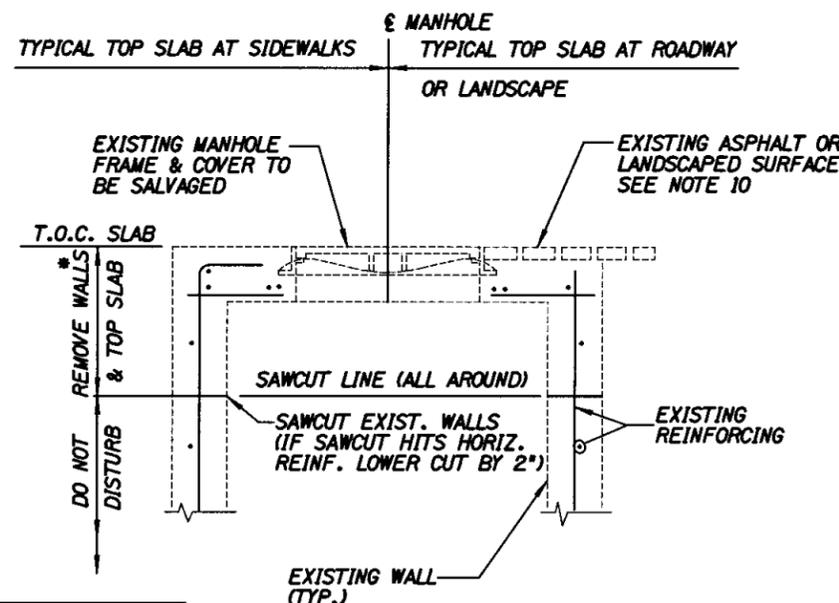
- STRUCTURAL CONCRETE SHALL BE 4000 PSI @ 28 DAYS (MAG AA) PER SRP 03300.
- REINFORCING STEEL SHALL COMPLY WITH REQUIREMENTS OF SRP 03210, BARS SHALL BE ASTM A615 GRADE 60.
- CONCRETE PLACEMENT SHALL BE PER GE 03305.
- EXACT ELEVATION OF TOP MANHOLE SHALL BE SET BASED ON FINISHED GRADE ELEVATION.
- STANDARD 30" CAST IRON FRAME AND COVER (STOCK CODE No. 004-0424) CENTERED IN TOP OF MANHOLE. FOR AVAILABILITY, CONTACT SRP INVESTMENT RECOVERY DEPARTMENT AT (602) 236-2908 TO PURCHASE SRP MANHOLE FRAME AND COVER
- EXACT TOP ELEVATION TO BE SET BY CUSTOMER'S ENGINEER BASED ON CUSTOMER'S PAVING AND GRADING PLANS.
- FIELD CUT REBAR AT MANHOLE.
- WATERSTOP SHALL BE ADEKA ULTRA SEAL MC-2010M. CLEAN SURFACE AND BOND WATERSTOP TO EXISTING CONCRETE WITH ADEKA P-201 ELASTIC SEALANT.
- SEAL INSIDE (WATER SIDE) OF JOINT WITH SIKAFLEX CONSTRUCTION SEALANT.
- REMOVE EXISTING ASPHALT OR LANDSCAPED SURFACE AS REQUIRED.
- PROVIDE ASPHALT OR LANDSCAPED SURFACE AS REQUIRED.

SPECIFICATIONS

- Top grade of manhole is to be set by Licensee's engineer.
- Deck of existing manhole is to be removed, taking care not to damage remainder of manhole, and existing re-bar in all walls to be left extending out a minimum of 8 inches.
- New top steel is to overlap existing a minimum of 8 inches and tied with tie wire.
- Deck of manhole, and placement of the top steel and the ring and cover is to be in accordance with attached drawing.
- Existing manhole ring is to be thoroughly cleaned of all foreign matter before re-use.
- Construction joint is to be thoroughly cleaned and a suitable bonding agent is to be applied prior to placement of concrete.
- All debris is to be removed from manhole and adjoining pipes.
- Backfill is to be in compliance with M.A.G. specifications or the governing municipality's supplement to M.A.G.



LOWERING EXISTING MANHOLE W/NEW TOP SLAB



*DIMENSION BASED ON REMOVAL REQUIREMENT

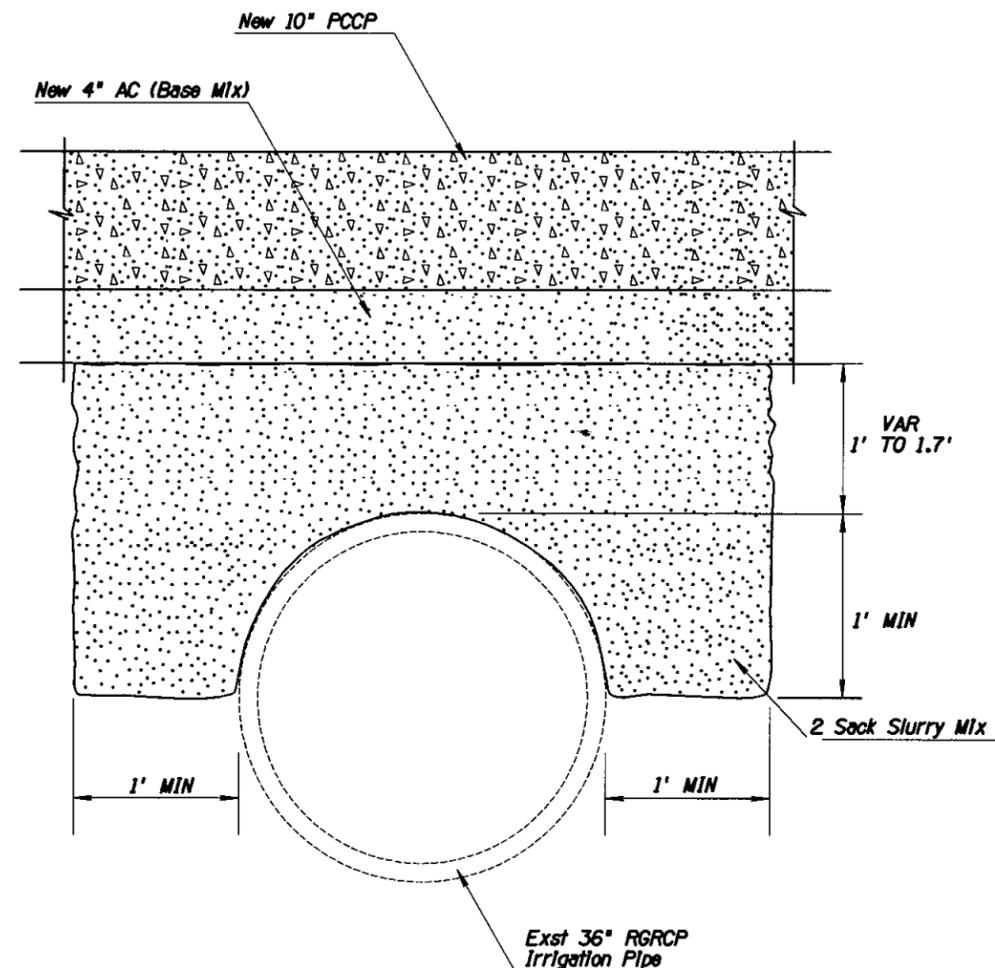
REMOVAL OF WALLS & TOP SLAB OF EXISTING MANHOLE

NOTE: STANDARD MANHOLE SHOWN

LOCATIONS

- STA 55+72, 57' RT
- STA 55+72, 68.9' RT
- STA 61+54, 76.9' RT
- STA 62+26, 76.6' RT
- STA 62+61, 55' LT

SRP MANHOLES DETAIL G



SECTION - TYPICAL ENCASEMENT OF SRP IRRIGATION PIPE

STA 55+72 TO STA 60+55
STA 61+19 TO STA 61+43

DETAIL H

| DESIGN | NAME | DATE | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review |
|----------------------|-------------------------------------|------|---|---|
| DESIGN | JRG | 5-09 | OLIVE AVENUE WIDENING SRP DETAILS | NOT FOR CONSTRUCTION OR RECORDING DWG NO. G-5.05 |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | JLK ENGINEERS 18441 N. 25TH AVE., STE 103 PHOENIX, AZ 85025 602-905-1670, FAX 602-288-6530 | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | | | |
| TRACS NO. H 6939 01C | | | 101-A(201) | OF |

| F.J.M.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ | 101-A(201) | 12 | 89 | |

101L MA 9

| PLAN REF NO | P.I./P.O.T. STATION | COORDINATES | | | | | | | | |
|-------------|----------------------------|-------------|------------|------------|--------|------------------------------|--|----------|----------|-----------|
| | | NORTHING | EASTING | | | | | | | |
| ① | PI, Curb Return, 51.64' Lt | 52+17.79 | 333747.954 | 395612.894 | Simple | $\Delta = 58^{\circ}34'18''$ | | R=30.00' | T=29.48' | L=46.60' |
| | PCR, 50.95' Lt | 51+88.32 | 333746.383 | 395583.485 | | | | | | |
| | PCR, 81.82' Lt | 52+17.62 | 333777.413 | 395611.840 | | | | | | |
| ② | PI, Curb Return, 52.17' Lt | 52+49.87 | 333749.448 | 395644.942 | Simple | $\Delta = 90^{\circ}51'09''$ | | R=30.00' | T=30.45' | L=47.57' |
| | PCR, 82.62' Lt | 52+49.69 | 333779.878 | 395643.852 | | | | | | |
| | PCR, 52.81' Lt | 52+80.31 | 333750.991 | 395675.352 | | | | | | |
| ③ | PI, Curb Return, 59.85' Lt | 56+44.47 | 333768.937 | 396039.134 | Simple | $\Delta = 81^{\circ}39'35''$ | | R=75.00' | T=64.81' | L=106.89' |
| | PCR, 59.01' Lt | 55+79.67 | 333766.156 | 395974.388 | | | | | | |
| | PCR, 124.09' Lt | 56+53.04 | 333833.402 | 396045.775 | | | | | | |
| ④ | PI, Curb Return, 64.24' Lt | 56+86.33 | 333774.578 | 396080.842 | Simple | $\Delta = 95^{\circ}29'02''$ | | R=15.00' | T=16.51' | L=25.00' |
| | PCR, 80.60' Lt | 56+88.51 | 333791.000 | 396082.534 | | | | | | |
| | PCR, 63.62' Lt | 57+03.38 | 333774.470 | 396097.903 | | | | | | |
| ⑤ | PI, Curb Return, 63.60' Lt | 60+64.98 | 333785.281 | 396459.346 | Simple | $\Delta = 93^{\circ}09'52''$ | | R=15.00' | T=15.85' | L=24.39' |
| | PCR, 63.60' Lt | 60+49.13 | 333784.808 | 396443.501 | | | | | | |
| | PCR, 79.43' Lt | 60+64.11 | 333801.076 | 396457.999 | | | | | | |
| ⑥ | PI, Curb Return, 74.95' Lt | 60+93.25 | 333797.470 | 396487.626 | Simple | $\Delta = 85^{\circ}31'18''$ | | R=75.00' | T=69.36' | L=111.95' |
| | PCR, 144.18' Lt | 60+89.06 | 333866.542 | 396481.001 | | | | | | |
| | PCR, 73.72' Lt | 61+62.60 | 333798.319 | 396556.613 | | | | | | |
| ⑦ | PI, Curb Return, 56.29' Rt | 52+13.93 | 333639.960 | 395612.264 | Simple | $\Delta = 88^{\circ}31'10''$ | | R=30.00' | T=29.23' | L=46.35' |
| | PCR, 55.53' Rt | 51+84.71 | 333639.839 | 395583.030 | | | | | | |
| | PCR, 85.52' Rt | 52+13.93 | 333610.738 | 395613.140 | | | | | | |
| ⑧ | PI, Curb Return, 55.44' Rt | 52+54.43 | 333642.020 | 395652.721 | Simple | $\Delta = 91^{\circ}04'53''$ | | R=30.00' | T=30.57' | L=47.69' |
| | PCR, 86.01' Rt | 52+54.43 | 333611.462 | 395653.637 | | | | | | |
| | PCR, 56.02' Rt | 52+85.00 | 333642.359 | 395683.290 | | | | | | |
| ⑨ | PI, Curb Return, 62.61' Rt | 56+34.82 | 333646.248 | 396033.158 | Simple | $\Delta = 87^{\circ}45'54''$ | | R=80.00' | T=76.94' | L=122.54' |
| | PCR, 61.16' Rt | 55+57.90 | 333645.393 | 395956.224 | | | | | | |
| | PCR, 139.53' Rt | 56+36.38 | 333569.406 | 396037.013 | | | | | | |
| ⑩ | PI, Curb Return, 63.38' Rt | 56+78.85 | 333646.794 | 396077.187 | Simple | $\Delta = 91^{\circ}09'17''$ | | R=15.00' | T=15.31' | L=23.86' |
| | PCR, 78.68' Rt | 56+79.16 | 333631.507 | 396077.953 | | | | | | |
| | PCR, 63.68' Rt | 56+94.15 | 333647.252 | 369092.485 | | | | | | |
| ⑪ | PI, Curb Return, 63.40' Rt | 60+53.98 | 333658.009 | 396452.147 | Simple | $\Delta = 91^{\circ}42'41''$ | | R=15.00' | T=15.45' | L=24.01' |
| | PCR, 63.40' Rt | 60+38.52 | 333657.547 | 396436.699 | | | | | | |
| | PCR, 78.85' Rt | 60+53.51 | 333642.553 | 396452.147 | | | | | | |
| ⑫ | PI, Curb Return, 61.87' Rt | 61+06.57 | 333661.114 | 396504.670 | Simple | $\Delta = 85^{\circ}59'38''$ | | R=75.00' | T=69.93' | L=112.57' |
| | PCR, 131.72' Rt | 61+03.25 | 333591.193 | 396503.448 | | | | | | |
| | PCR, 60.30' Rt | 61+76.48 | 333664.780 | 396574.505 | | | | | | |

All Coordinates are Ground Coordinates and All Bearings are Grid Bearings

DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO.

| | | | | |
|---|-------------------------------------|------|---|------------------------------|
| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
|  | | | OLIVE AVENUE WIDENING GEOMETRIC DATA | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | NOT FOR CONSTRUCTION OR RECORDING | |
| TRACS NO. H 6939 OIC | | | 101-A(201) | DWG NO. C-1.01 |
| | | | OF | |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 13 | 89 | |

101L MA 9

| PLAN REF NO | P.I./P.O.T. STATION | COORDINATES | | | | | | | | | |
|-------------|-----------------------|-------------|------------|------------|--------|-----------------------------|--|-----------|----------|----------|--|
| | | NORTHING | EASTING | | | | | | | | |
| (13) | PI, Median, 14.62' Lt | 52+32.90 | 333711.403 | 395629.099 | Simple | $\Delta=134^{\circ}14'17''$ | | R=2.50' | T=5.92' | L=5.86' | |
| | PT, 12.06' Lt | 52+27.00 | 333708.670 | 395623.278 | | | | | | | |
| | PRC, 10.34' Lt | 52+28.80 | 333706.998 | 395625.137 | | | | | | | |
| (14) | PI, Median, 2.00' Lt | 52+20.85 | 333698.431 | 395617.437 | Simple | $\Delta=29^{\circ}35'28''$ | | R=43.60' | T=11.52' | L=22.52' | |
| | PRC, 9.17' Rt | 52+18.05 | 333687.182 | 395614.972 | | | | | | | |
| (15) | PI, Median, 17.33' Rt | 52+16.00 | 333678.963 | 395613.171 | Simple | $\Delta=77^{\circ}24'27''$ | | R=10.50' | T=8.41' | L=14.19' | |
| | PT, 17.11' Rt | 52+07.60 | 333678.929 | 395604.759 | | | | | | | |
| (16) | PI, Median, 2.52' Lt | 52+97.31 | 333698.866 | 395693.965 | Simple | $\Delta=133^{\circ}48'23''$ | | R=2.50' | T=5.86' | L=5.84' | |
| | PC, 2.65' Lt | 52+97.31 | 333701.363 | 395693.838 | | | | | | | |
| | PT, 1.62' Rt | 52+95.59 | 333697.046 | 395692.251 | | | | | | | |
| (17) | PI, Median, 17.51' Rt | 53+11.48 | 333681.641 | 395708.608 | Simple | $\Delta=43^{\circ}54'57''$ | | R=10.50' | T=4.23' | L=8.05' | |
| | PC, 14.51' Rt | 53+08.48 | 333684.545 | 395705.525 | | | | | | | |
| | PT, 17.59' Rt | 53+15.71 | 333681.689 | 395712.841 | | | | | | | |
| (18) | PI, Median, 5.91' Lt | 54+55.01 | 333709.352 | 395851.374 | Simple | $\Delta=17^{\circ}15'17''$ | | R=150.00' | T=22.76' | L=45.17' | |
| | PC, 5.44' Lt | 54+32.26 | 333708.199 | 395828.643 | | | | | | | |
| | PRC, 13.11' Lt | 54+76.60 | 333717.194 | 395872.737 | | | | | | | |
| (19) | PI, Median, 20.31' Lt | 54+98.19 | 333725.038 | 395894.104 | Simple | $\Delta=17^{\circ}15'19''$ | | R=150.00' | T=22.76' | L=45.17' | |
| | PT, 20.78' Lt | 55+20.94 | 333726.189 | 395916.832 | | | | | | | |
| (20) | PI, Median, 19.76' Rt | 54+30.81 | 333682.969 | 395827.953 | Simple | $\Delta=23^{\circ}04'23''$ | | R=148.50' | T=30.31' | L=59.80' | |
| | PC, 19.19' Rt | 54+00.50 | 333682.632 | 395797.642 | | | | | | | |
| | PRC, 8.41' Rt | 54+58.91 | 333695.157 | 395855.704 | | | | | | | |
| (21) | PI, Median, 3.18' Lt | 54+87.59 | 333707.592 | 395884.019 | Simple | $\Delta=23^{\circ}04'25''$ | | R=151.50' | T=30.92' | L=61.01' | |
| | PT, 2.59' Lt | 55+18.51 | 333707.936 | 395914.940 | | | | | | | |
| (22) | PI, Median, 22.89' Lt | 56+22.56 | 333731.337 | 396018.343 | Simple | $\Delta=81^{\circ}39'23''$ | | R=10.50' | T=9.07' | L=14.96' | |
| | PC, 22.70' Lt | 56+13.49 | 333730.877 | 396009.283 | | | | | | | |
| | PT, 13.94' Lt | 56+24.07 | 333722.439 | 396020.113 | | | | | | | |
| (23) | PI, Median, 0.62' Lt | 56+23.35 | 333711.600 | 396019.720 | Simple | $\Delta=100^{\circ}38'14''$ | | R=2.50' | T=3.01' | L=4.39' | |
| | PC, 3.53' Lt | 56+25.81 | 333712.088 | 396022.172 | | | | | | | |
| | PT, 0.56' Lt | 56+26.31 | 333709.133 | 396022.760 | | | | | | | |
| (24) | PI, Median, 2.25' Rt | 62+17.65 | 333724.037 | 396613.911 | Simple | $\Delta=11^{\circ}54'52''$ | | R=150.00' | T=15.65' | L=31.19' | |
| | PC, 1.65' Rt | 62+02.01 | 333724.161 | 396598.263 | | | | | | | |
| | PT, 0.40' Lt | 62+33.08 | 333727.148 | 396629.255 | | | | | | | |
| (25) | PI, Median, 9.05' Rt | 62+01.64 | 333716.753 | 396598.133 | Simple | $\Delta=8^{\circ}32'35''$ | | R=150.00' | T=11.20' | L=22.37' | |
| | PC, 9.29' Rt | 61+90.44 | 333716.183 | 396586.927 | | | | | | | |
| | PT, 7.16' Rt | 62+12.68 | 333718.980 | 396609.096 | | | | | | | |

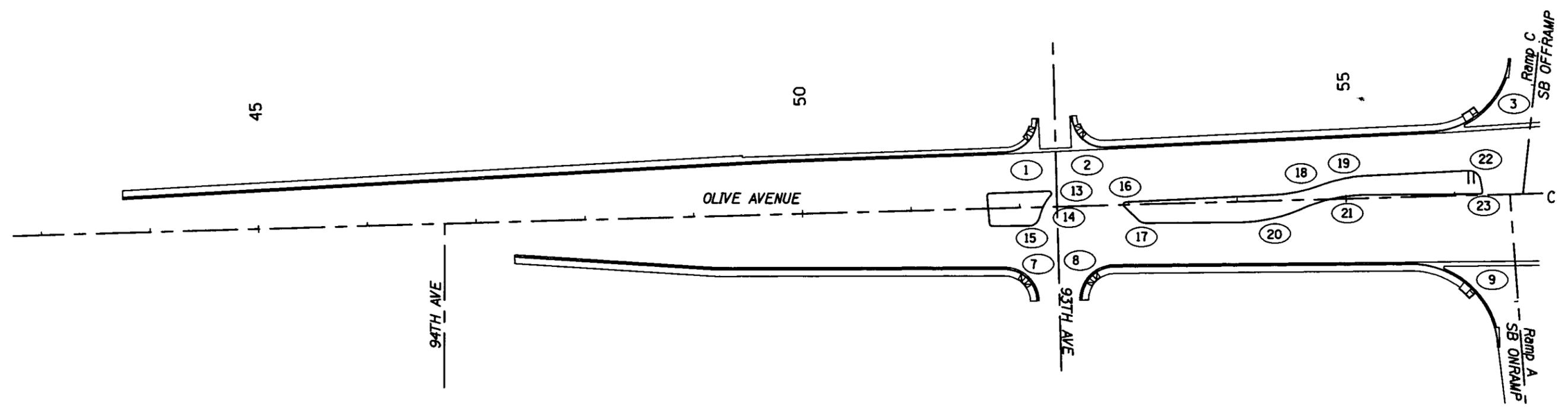
All Coordinates are Ground Coordinates and All Bearings are Grid Bearings

DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO.

| | | | | |
|---|---------|------|---|------------------------------|
| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
|  | | | OLIVE AVENUE WIDENING GEOMETRIC DATA | |
| ROUTE | SR 101L | | | |
| TRACS NO. H 6939 OIC | | | 101-A(201) | OF |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 14 | 89 | |

101L MA 9

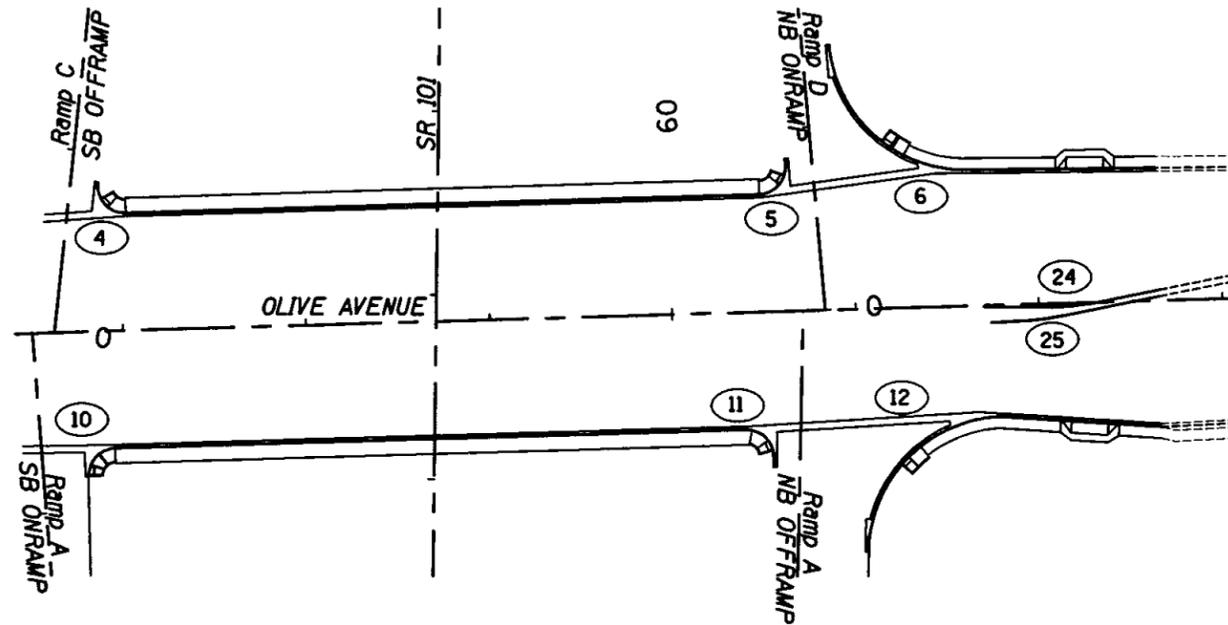


SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE
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 SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE

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| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. C-1.03 |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS <small>15441 N. 25th Ave., Ste 103 Phoenix, AZ 85023 602-955-1875 Fax: 602-286-6530</small> | | | OLIVE AVENUE WIDENING MEDIAN GEOMETRIC LAYOUT | |
| ROUTE | SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | |
| TRACS NO. | H 6939 01C | 101-A(201) | OF | |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 15 | 89 | |

101L MA 9

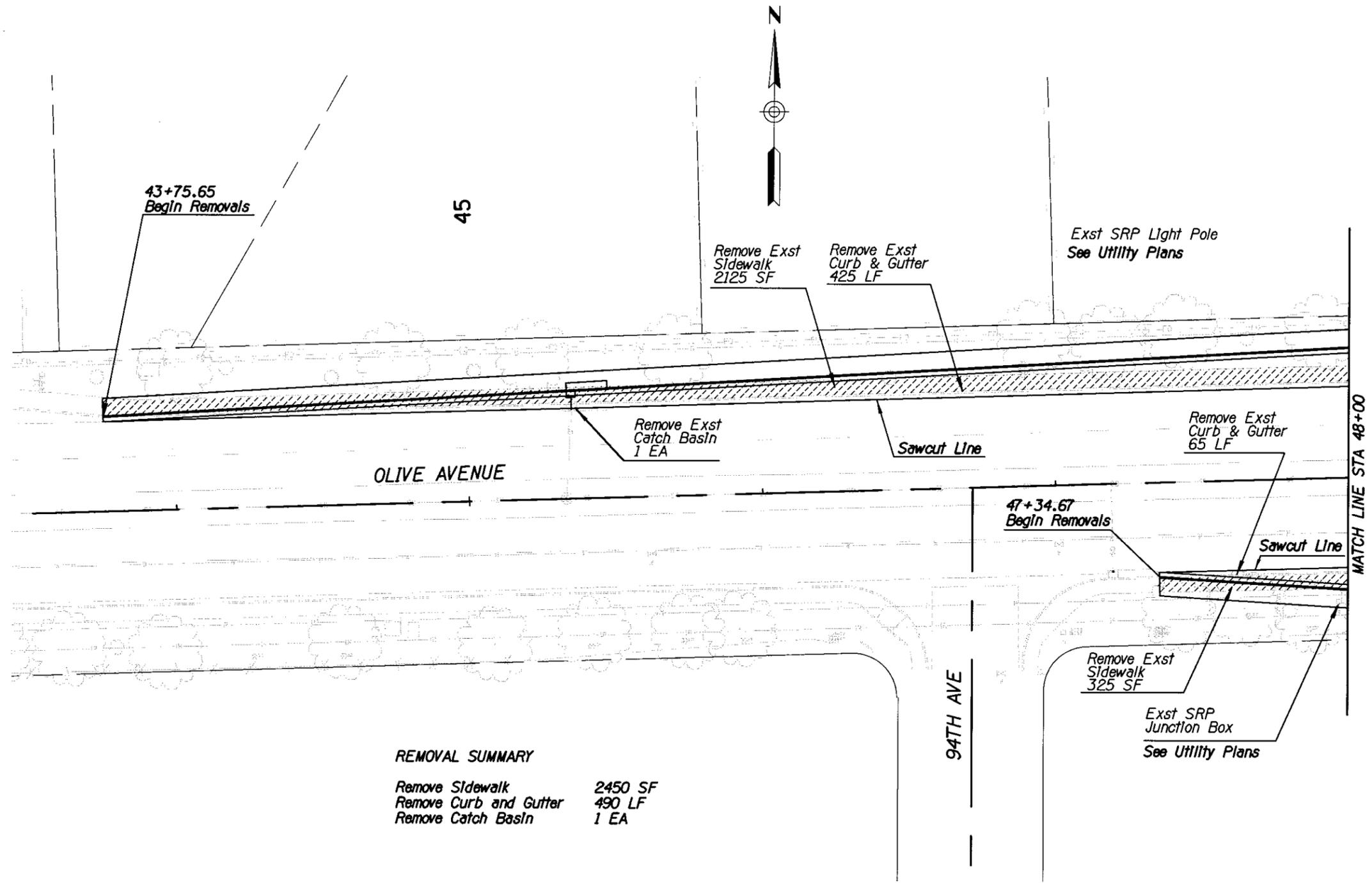


DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO. DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO.

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| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. C-L04 |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS 18441 N. 25TH AVE., STE 103 PHOENIX, AZ 85023 602-408-1875 Fax: 602-286-6530 | | | OLIVE AVENUE WIDENING MEDIAN GEOMETRIC LAYOUT | |
| ROUTE | LOCATION | SR 101L AGUA FRIA FREEWAY - OLIVE AVENUE T1 | | |
| TRACS NO. H 6939 OIC | | | 101-A(201) | OF |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 16 | 89 | |

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REMOVAL SUMMARY

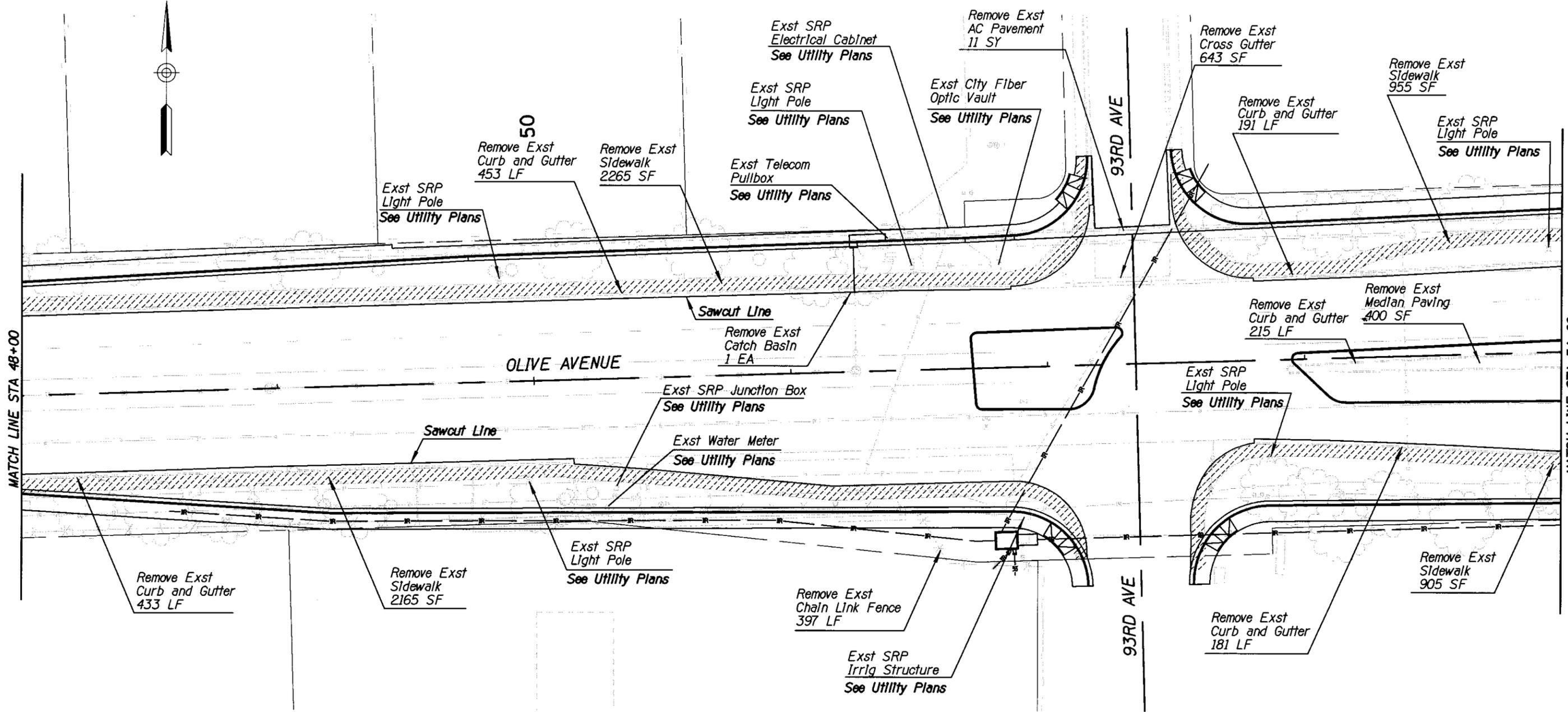
Remove Sidewalk 2450 SF
 Remove Curb and Gutter 490 LF
 Remove Catch Basin 1 EA

SURVEY NO. FINISHED PLANS- REVISIONS- DATE- LOCATION- FINISHED PLANS- REVISIONS- DATE- LOCATION- FINISHED PLANS- REVISIONS- DATE-

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| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. R-1.01 |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS <small>18441 N. 25th Ave., Ste 102 Phoenix, AZ 85023 602-402-8175 Fax 602-286-6530</small> | | | OLIVE AVENUE WIDENING REOMVAL PLAN | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | | |
| TRACS NO. H 6939 01C | | | 101-A(201) | OF |

| F.A.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 17 | 89 | |

101L MA 9



REMOVAL SUMMARY

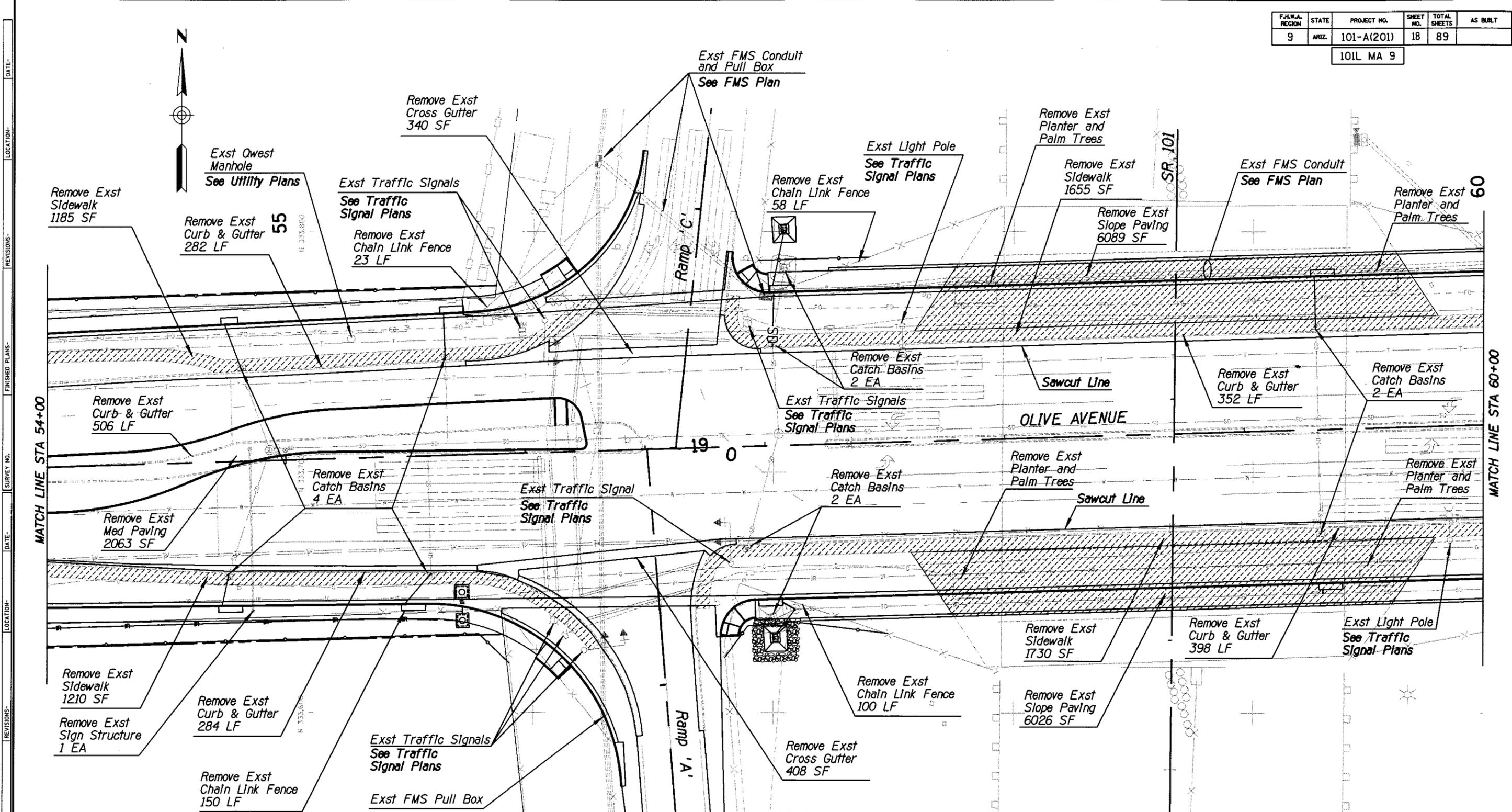
| | |
|------------------------|---------|
| Remove Sidewalk | 6290 SF |
| Remove Curb and Gutter | 1473 SF |
| Remove Cross Gutter | 643 SF |
| Remove AC Pavement | 96 SF |
| Remove Median Paving | 400 SF |
| Remove Fence | 397 LF |
| Remove Catch Basin | 1 EA |

DATE: LOCATION: REVISIONS: SURVEY NO. FINISHED PLANS: DATE: LOCATION: REVISIONS: SURVEY NO. FINISHED PLANS:

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| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. R-L02 |
| DRAWN | JRG | DATE | 5-09 | | |
| CHECKED | PTG | DATE | 5-09 | | |
| JLK ENGINEERS 18441 N. 25th Ave., Ste 102 Phoenix, AZ 85023 602-905-8175 Fax 602-286-6530 | | OLIVE AVENUE WIDENING REMOVAL PLAN | | | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | |
| TRACS NO. H 6939 OIC | | | 101-A(201) | OF | |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 18 | 89 | |

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REMOVAL SUMMARY

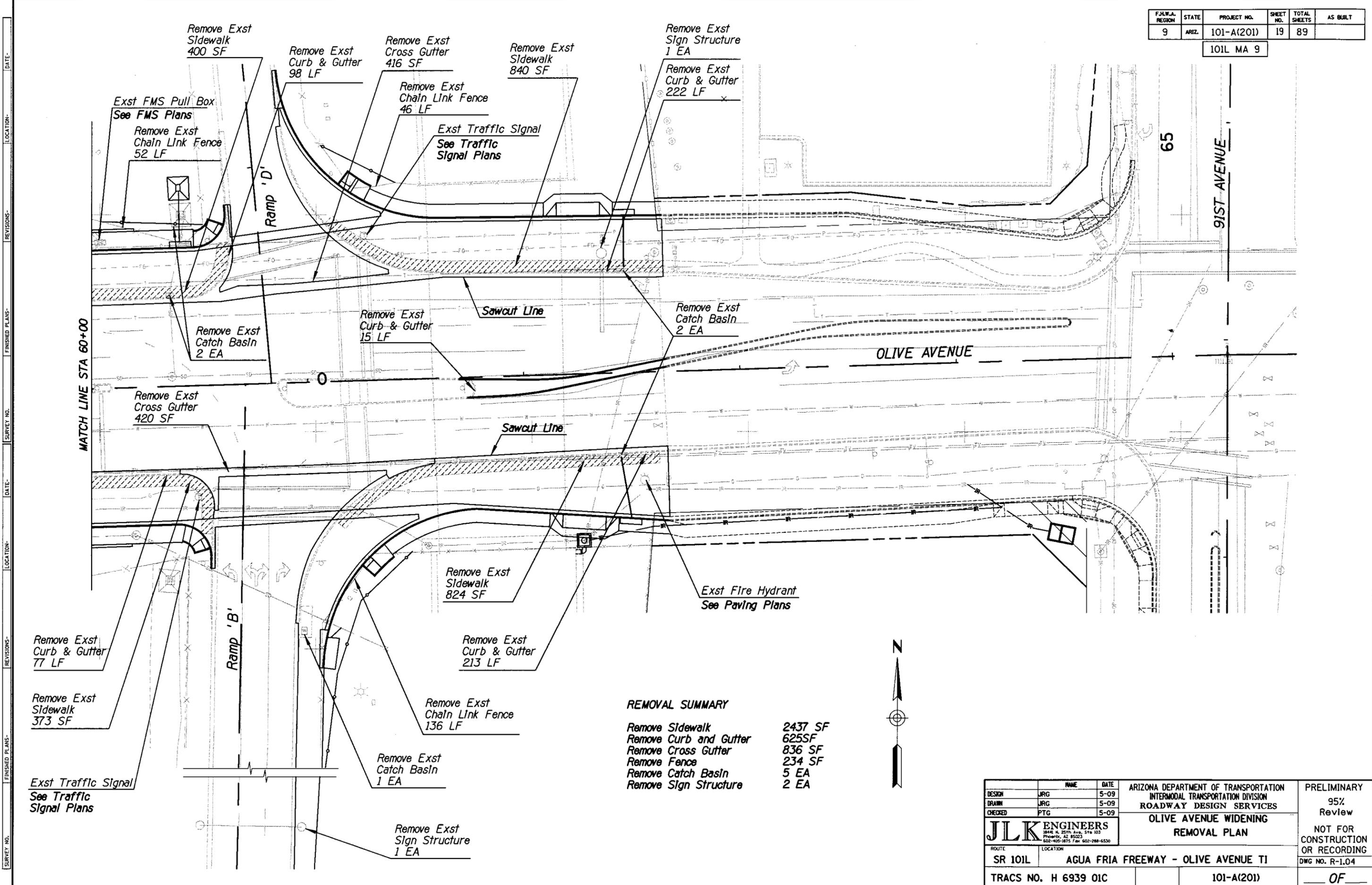
| | |
|------------------------|----------|
| Remove Sidewalk | 5780 SF |
| Remove Curb and Gutter | 1822 SF |
| Remove Cross Gutter | 748 SF |
| Remove Median Paving | 2063 SF |
| Remove Slope Paving | 12115 SF |
| Remove Fence | 331 SF |
| Remove Catch Basin | 10 EA |
| Remove Sign Structure | 1 EA |

| | | | | | |
|--|------------|----------|-------------------------------------|---|------------------------------|
| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review |
| DRAWN | JRG | DATE | 5-09 | | |
| CHECKED | PTG | DATE | 5-09 | | |
| JLK ENGINEERS <small>18441 N. 25th Ave., Ste 103 Phoenix, AZ 85025 602-955-1875 Fax 602-288-6530</small> | | | | OLIVE AVENUE WIDENING REMOVAL PLAN | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | NOT FOR CONSTRUCTION OR RECORDING DWG NO. R-1.03 | |
| TRACS NO. | H 6939 OIC | | 101-A(201) | | |

DATE: _____ LOCATION: _____ REVISIONS: _____ FINISHED PLANS: _____ SURVEY NO. _____

| F.J.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 19 | 89 | |

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REMOVAL SUMMARY

| | |
|------------------------|---------|
| Remove Sidewalk | 2437 SF |
| Remove Curb and Gutter | 625 SF |
| Remove Cross Gutter | 836 SF |
| Remove Fence | 234 SF |
| Remove Catch Basin | 5 EA |
| Remove Sign Structure | 2 EA |

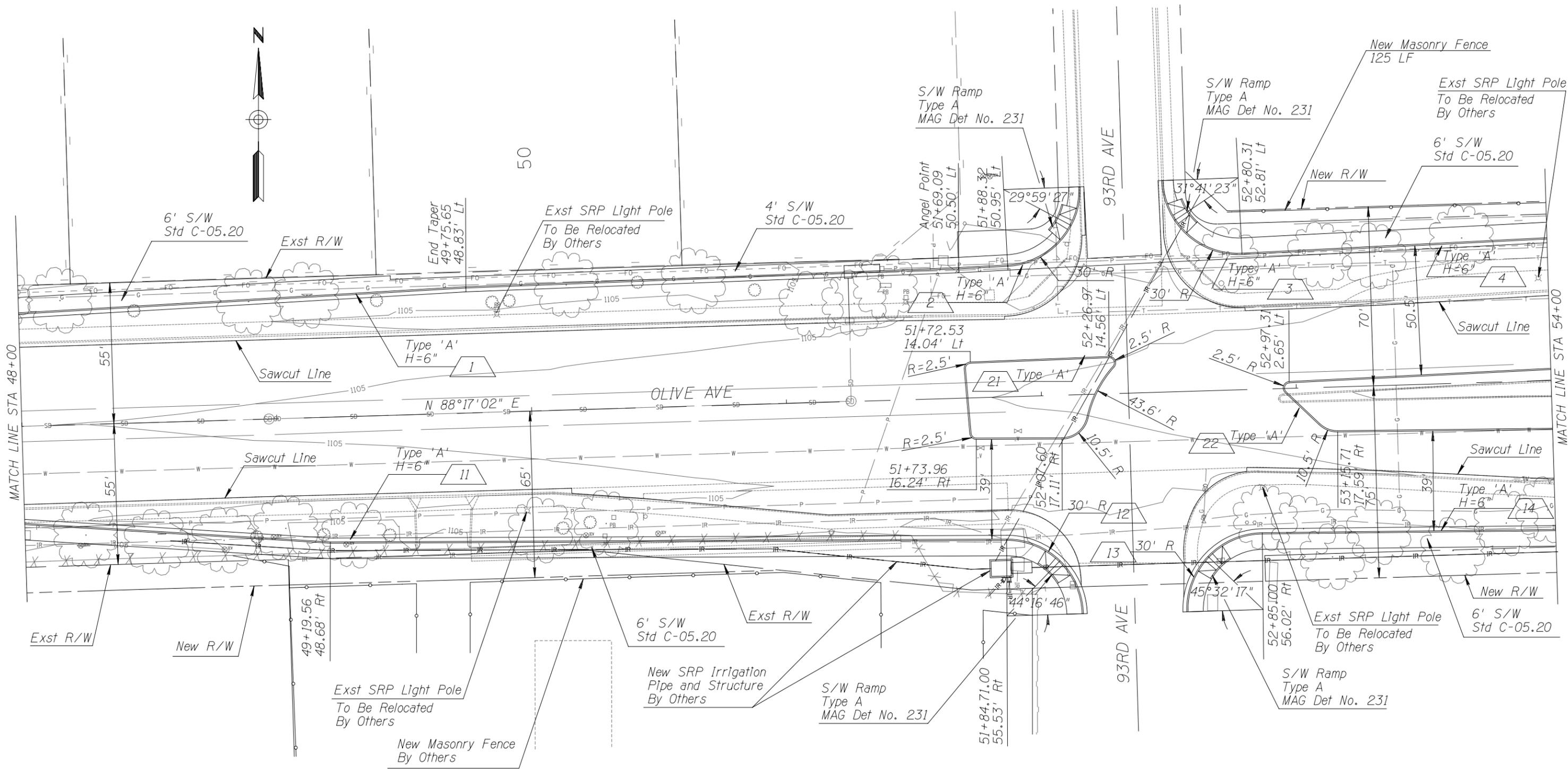


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| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review |
| DRAWN | JRG | DATE | 5-09 | | |
| CHECKED | PTG | DATE | 5-09 | | |
| JLK ENGINEERS | | | | OLIVE AVENUE WIDENING REMOVAL PLAN | |
| <small>3844 N. 25TH AVE., STE 103 PHOENIX, AZ 85028 602-952-1870 Fax 602-288-6530</small> | | | | NOT FOR CONSTRUCTION OR RECORDING | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | DWG NO. R-1.04 | |
| TRACS NO. | H 6939 01C | | 101-A(201) | OF | |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 21 | 89 | |

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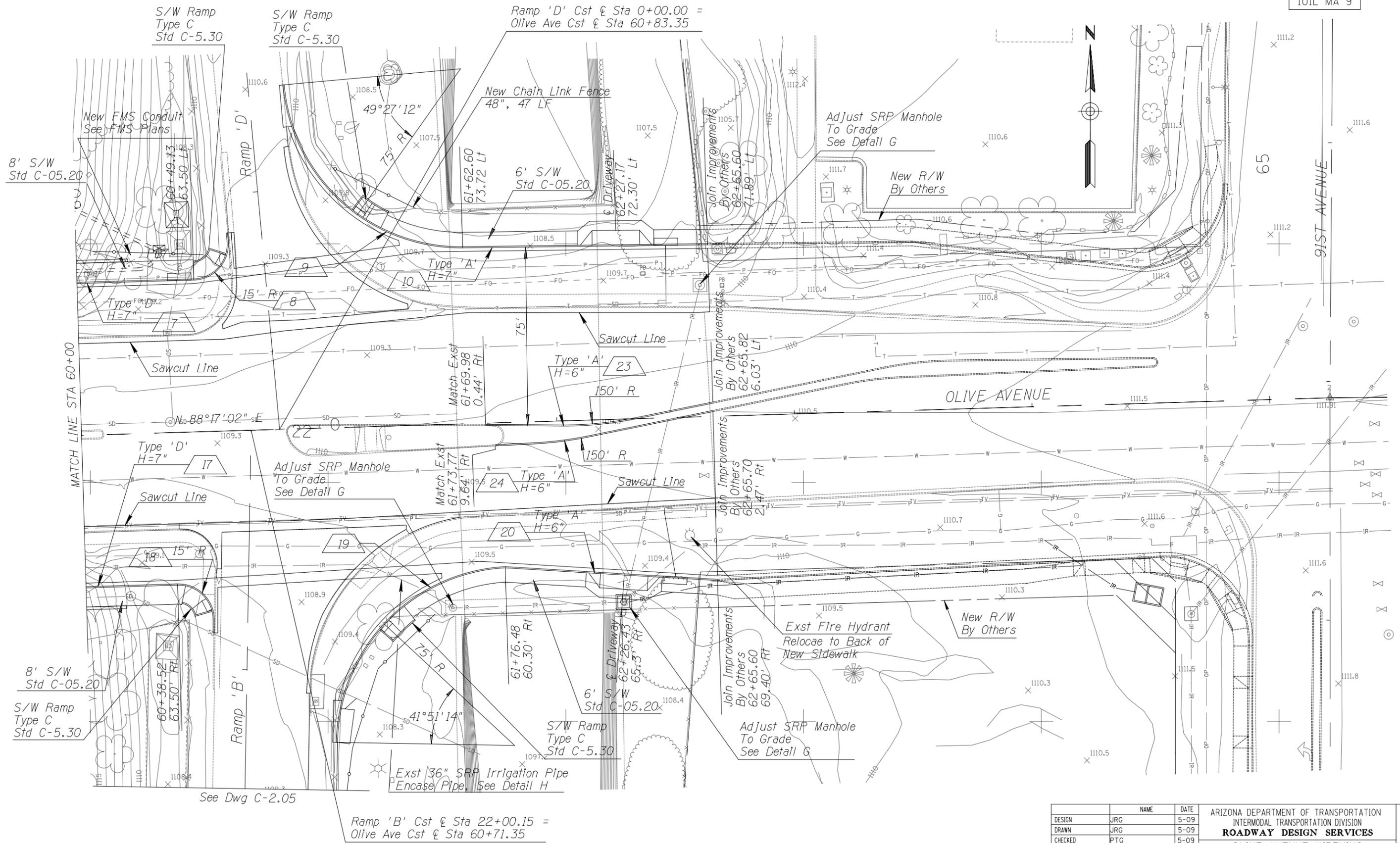


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| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS <small>18441 N. 25th Ave, Ste 103 Phoenix, AZ 85023 602-405-1875 Fax 602-288-6530</small> | | | OLIVE AVENUE WIDENING PAVING PLAN STA 48+00 TO STA 54+00 | NOT FOR CONSTRUCTION OR RECORDING DWG NO. C-2.02 |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | |
| TRACS NO. H 6939 01C | | | 101-A(201) | OF |

SURVEY NO. FINISHED PLANS- REVISIONS- DATE- LOCATION- FINISHED PLANS- REVISIONS- DATE- LOCATION- FINISHED PLANS- REVISIONS- DATE-

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS <small>18441 N. 25th Ave, Ste 103 Phoenix, AZ 85023 602-405-1875 Fax 602-288-6530</small> | | | OLIVE AVENUE WIDENING PAVING PLAN STA 60+00 TO STA 65+00 | NOT FOR CONSTRUCTION OR RECORDING |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | DWG NO. C-2.04 |
| TRACS NO. H 6939 01C | | | 101-A(201) | OF |

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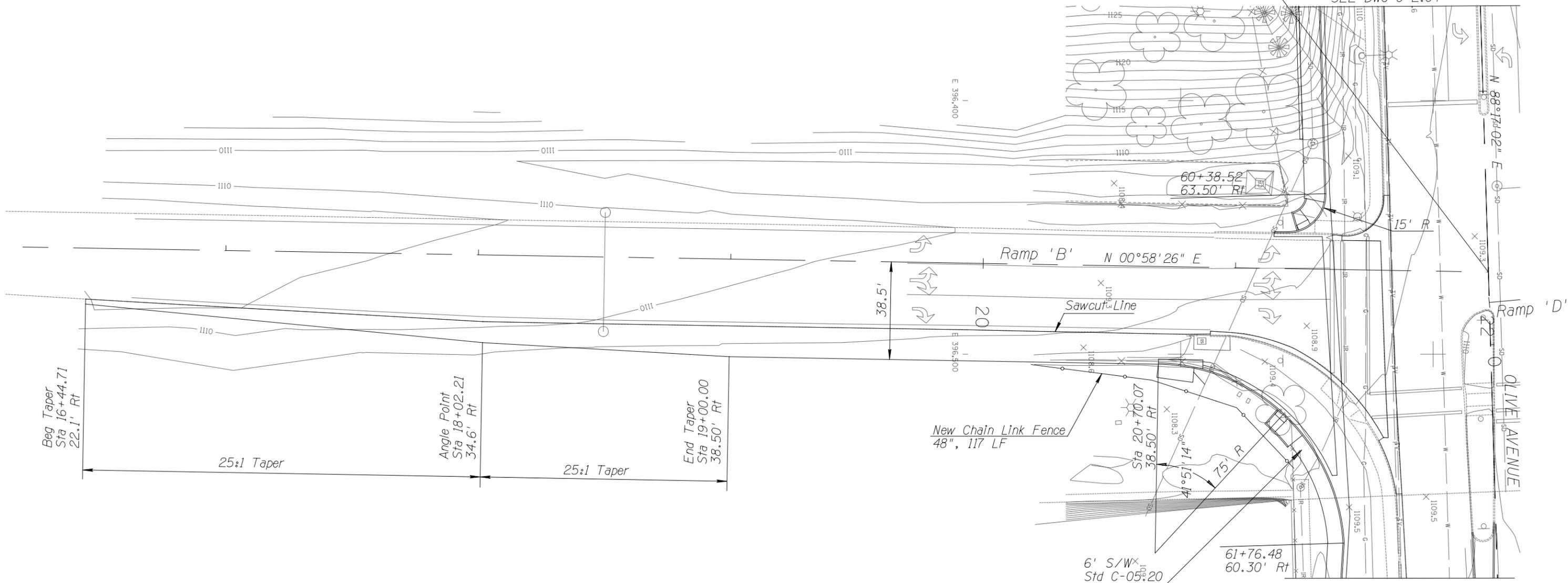
| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 24 | 89 | |

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Ramp 'B' Cst @ Sta 22+00.15 =
Olive Ave Cst @ Sta 51+71.66

SEE DWG C-2.04



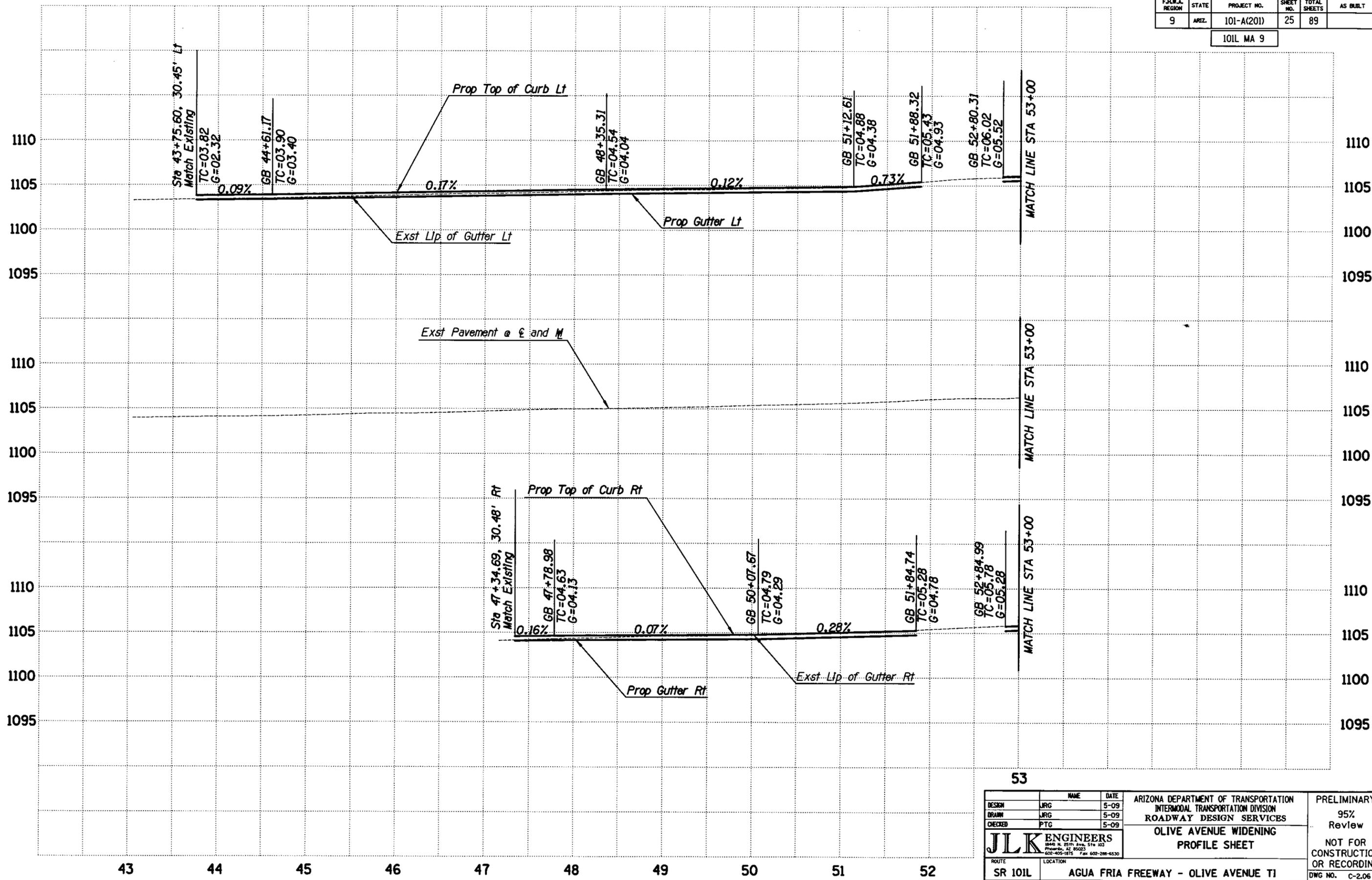
SEE DWG C-2.04

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| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS 18441 N. 25th Ave, Ste 103 Phoenix, AZ 85023 602-405-1875 Fax 602-288-6530 | | | OLIVE AVENUE WIDENING PAVING PLAN Ramp 'B' | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | NOT FOR CONSTRUCTION OR RECORDING |
| TRACS NO. | H 6939 01C | | 101-A(201) | DWG NO. C-2.05 |
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| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review |
| DRAWN | JRG | DATE | 5-09 | | |
| CHECKED | PTC | DATE | 5-09 | | |
| JLK ENGINEERS | | | | OLIVE AVENUE WIDENING PROFILE SHEET | |
| <small>18441 N. 25TH AVE., STE. 103 PHOENIX, AZ 85023 602-405-1875 Fax 602-288-6530</small> | | | | NOT FOR CONSTRUCTION OR RECORDING | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | | |
| TRACS NO. | H 6939 OIC | | 101-A(201) | DWG NO. C-2.06 | |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 26 | 89 | |

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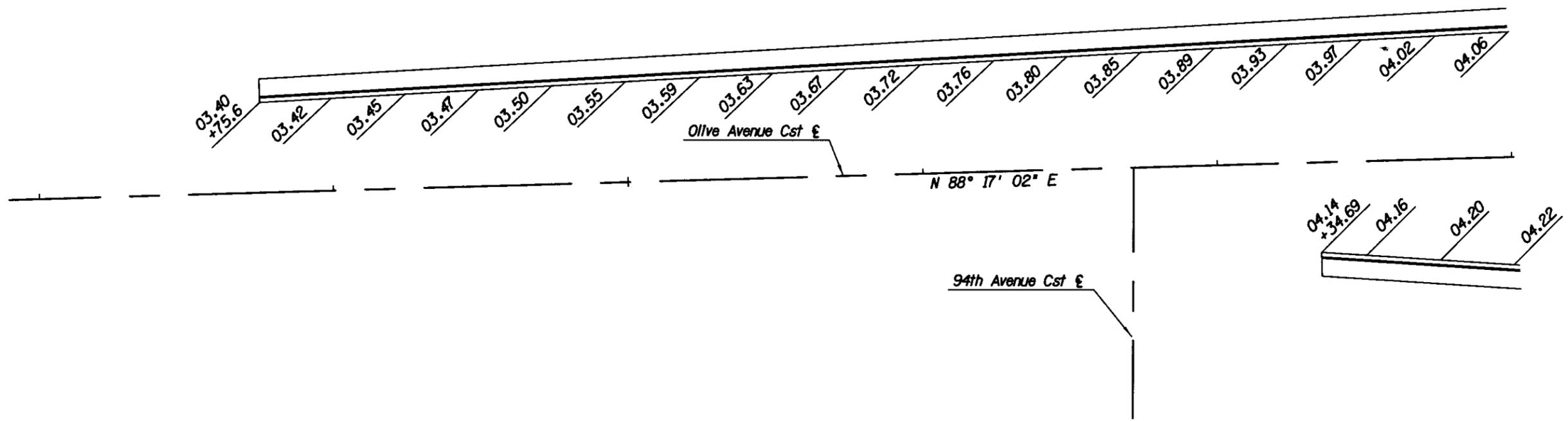
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| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES OLIVE AVENUE WIDENING PROFILE SHEET | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. C-2.07 |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS <small>1841 N. 25th Ave. Ste 103 Phoenix, AZ 85023 602-405-1875 Fax 602-248-6530</small> | | | | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | | |
| TRACS NO. H 6939 01C | | | 101-A(201) | OF |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 27 | 89 | |

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Notes:

1. Base Elevation = 1100
2. Paving Elevations are at 25' Intervals Unless Otherwise Noted.
3. Elevations, Dimensions and other Offsets are at Lip of Gutter, Unless Otherwise Noted.

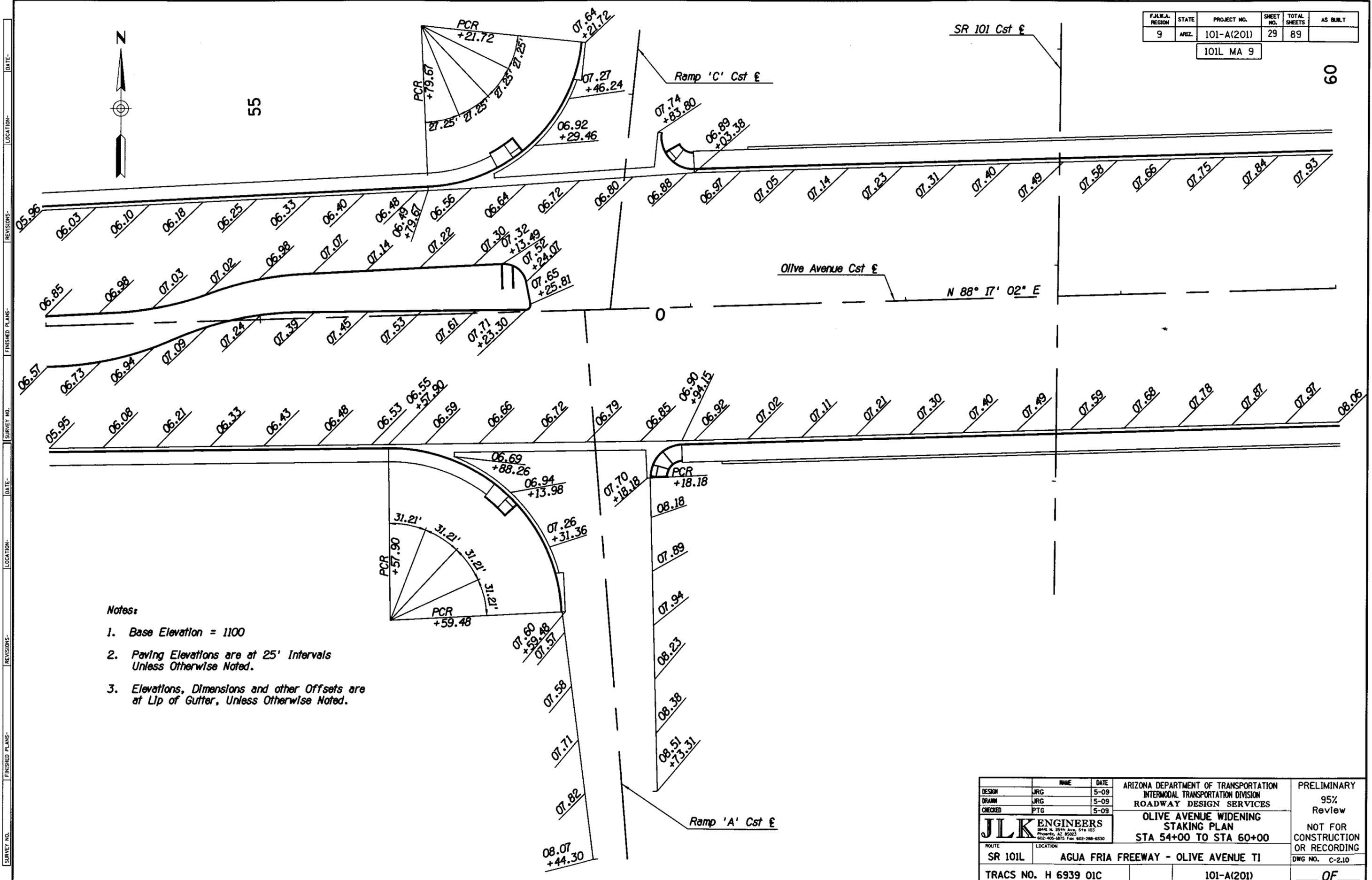
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| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. C-2.08 |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS <small>2841 N. 25TH AVE. STE 103 PHOENIX, AZ 85023 602-462-1875 FAX 602-288-6530</small> | | | OLIVE AVENUE WIDENING STAKING PLAN STA 43+75 TO STA 48+00 | |
| ROUTE | SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | |
| TRACS NO. | H 6939 OIC | 101-A(201) | OF | |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 29 | 89 | |

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Notes:

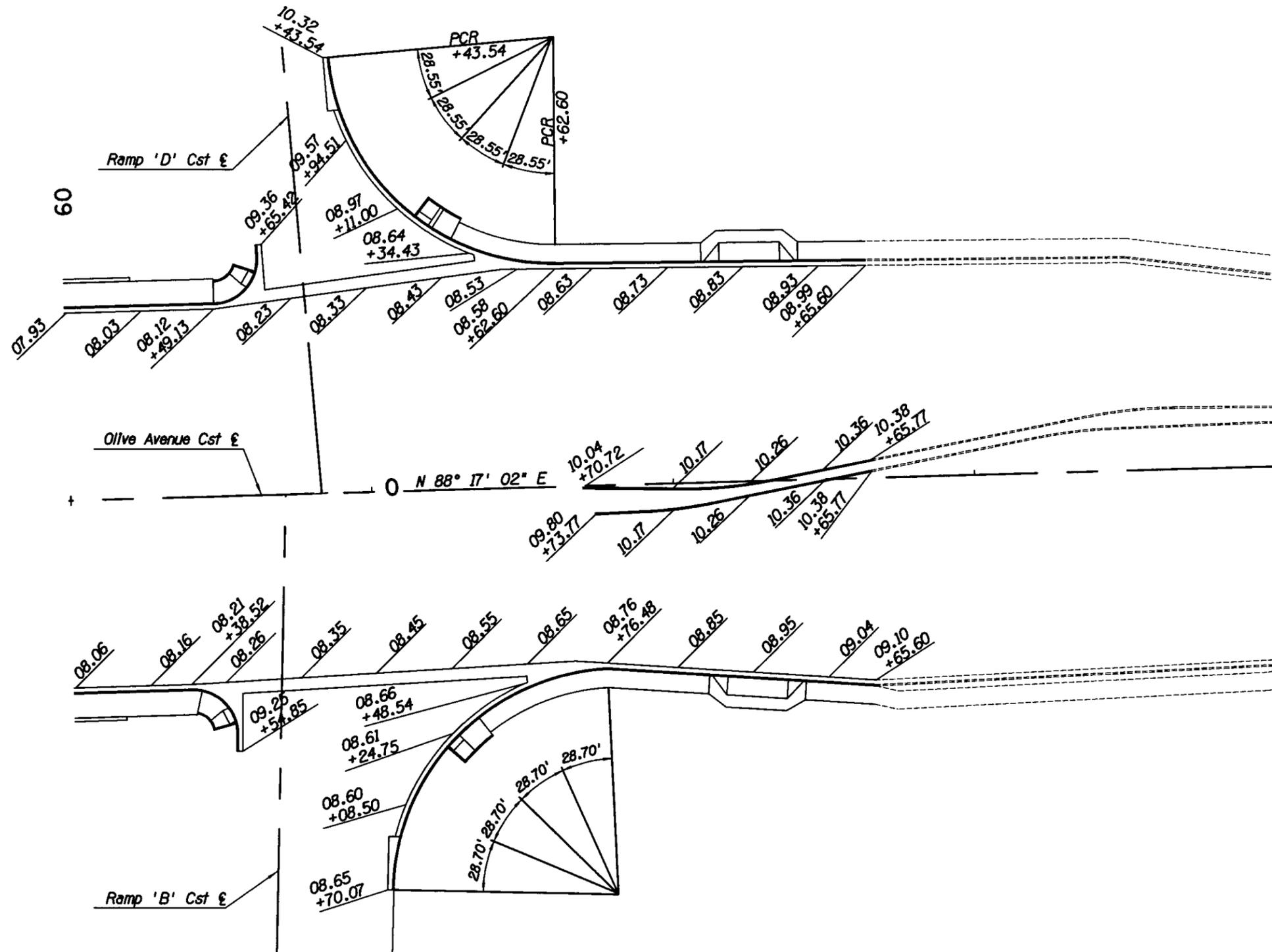
1. Base Elevation = 1100
2. Paving Elevations are at 25' Intervals Unless Otherwise Noted.
3. Elevations, Dimensions and other Offsets are at Lip of Gutter, Unless Otherwise Noted.

SURVEY NO. FINISHED PLANS DATE LOCATION FINISHED PLANS DATE LOCATION FINISHED PLANS DATE LOCATION FINISHED PLANS DATE LOCATION

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| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. C-2.10 |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS 1841 N. 25TH AVE. STE 101 PHOENIX, AZ 85023 602-965-1875 Fax 602-288-6530 | | | OLIVE AVENUE WIDENING STAKING PLAN STA 54+00 TO STA 60+00 | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | | |
| TRACS NO. H 6939 OIC | | | 101-A(201) | OF |

| F.J.M.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 30 | 89 | |

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Notes:

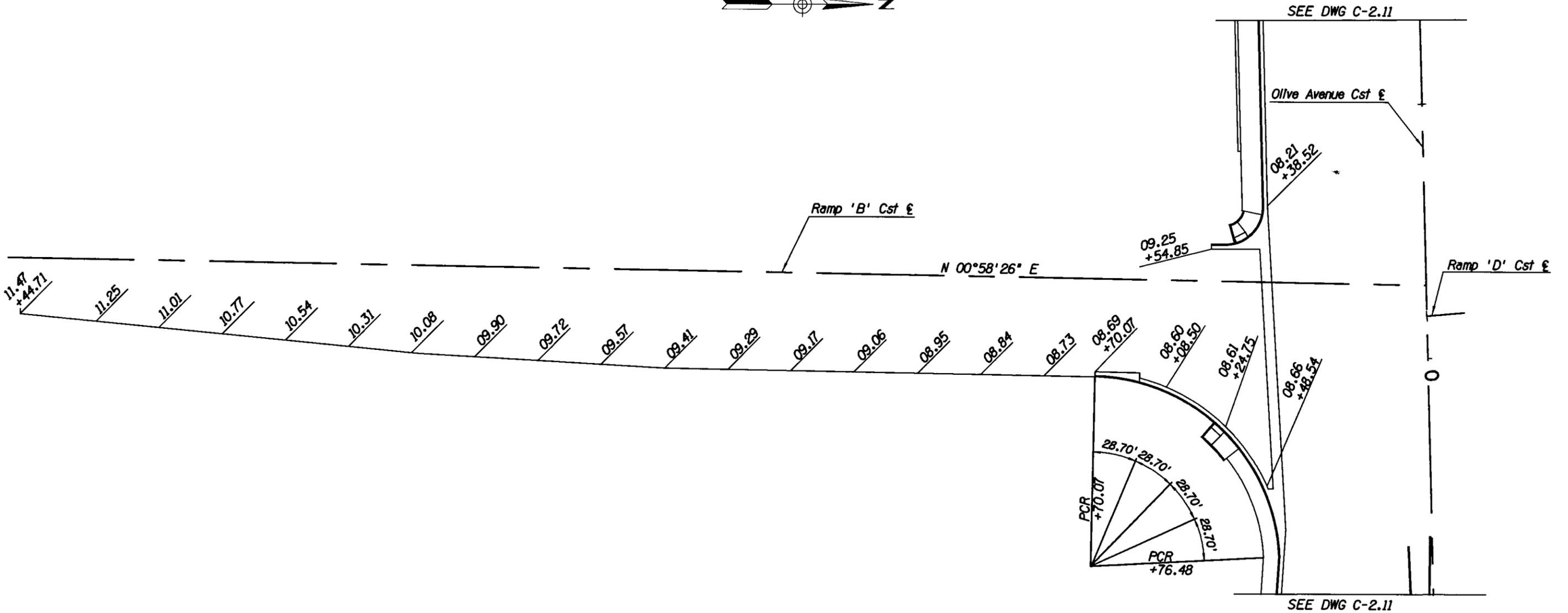
1. Base Elevation = 1100
2. Paving Elevations are at 25' Intervals Unless Otherwise Noted.
3. Elevations, Dimensions and other Offsets are at Lip of Gutter, Unless Otherwise Noted.

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| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. C-2.11 |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| | | | OLIVE AVENUE WIDENING STAKING PLAN STA 60+00 TO STA 63+00 | |
| ROUTE | SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | |
| TRACS NO. | H 6939 OIC | 101-A(201) | OF | |

SURVEY NO. FINISHED PLANS REVISIONS DATE LOCATION FINISHED PLANS REVISIONS DATE SURVEY NO.

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| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. C-2.12 |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS <small>1440 N. 25TH AVE. STE 103 PHOENIX, AZ 85023 602-405-1875 Fax: 602-288-6530</small> | | | OLIVE AVENUE WIDENING STAKING PLAN Ramp 'B' | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | |
| TRACS NO. | H 6939 OIC | | 101-A(201) | OF |

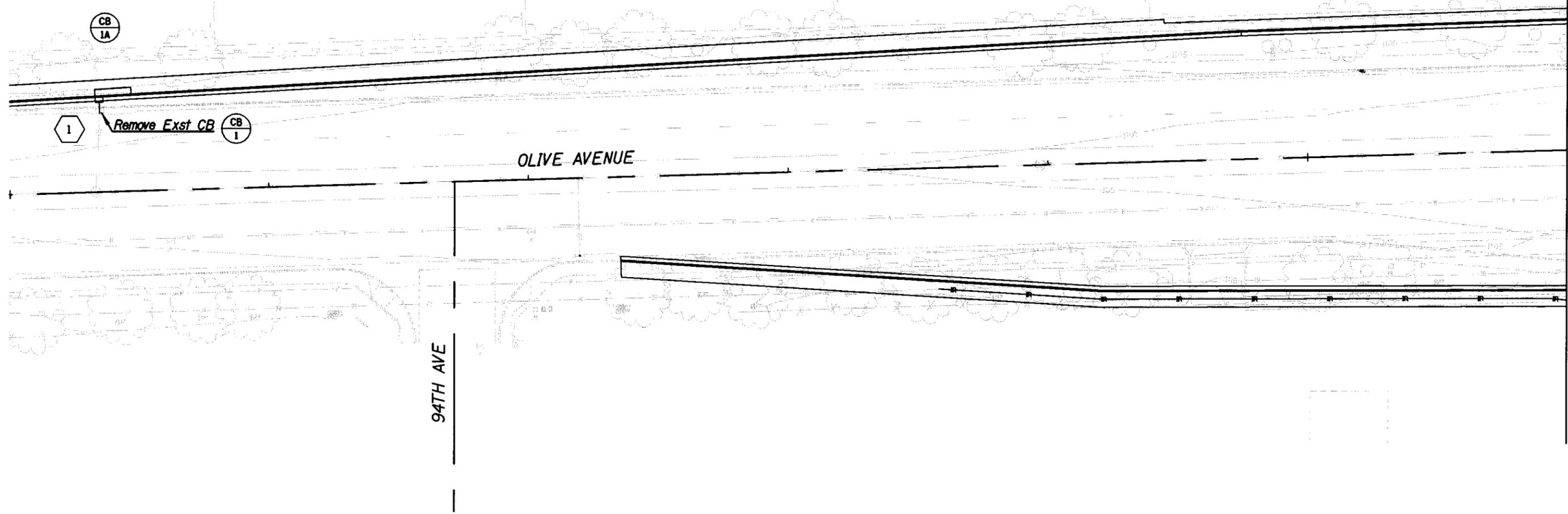
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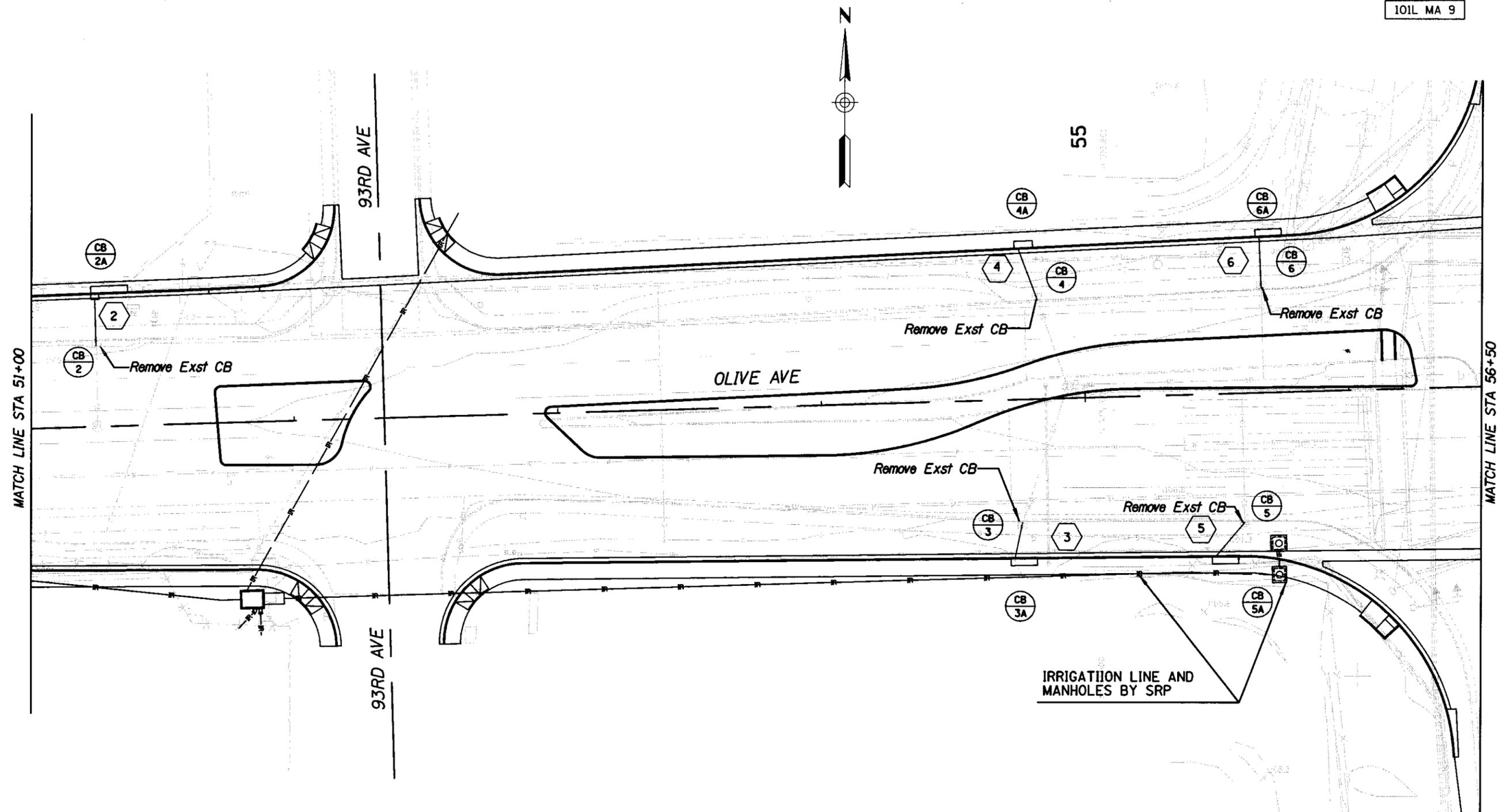
MATCH LINE STA 51+00

DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO. DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO.

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| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. D-1.01 |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS <small>18441 N. 25TH AVE. SUITE 103 PHOENIX, AZ 85023 602-945-1875 Fax: 602-288-6530</small> | | | OLIVE AVENUE WIDENING DRAINAGE PLAN STA 45+00 TO STA 51+00 | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | | |
| TRACS NO. H 6939 OIC | | | 101-A(201) | OF |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 33 | 89 | |

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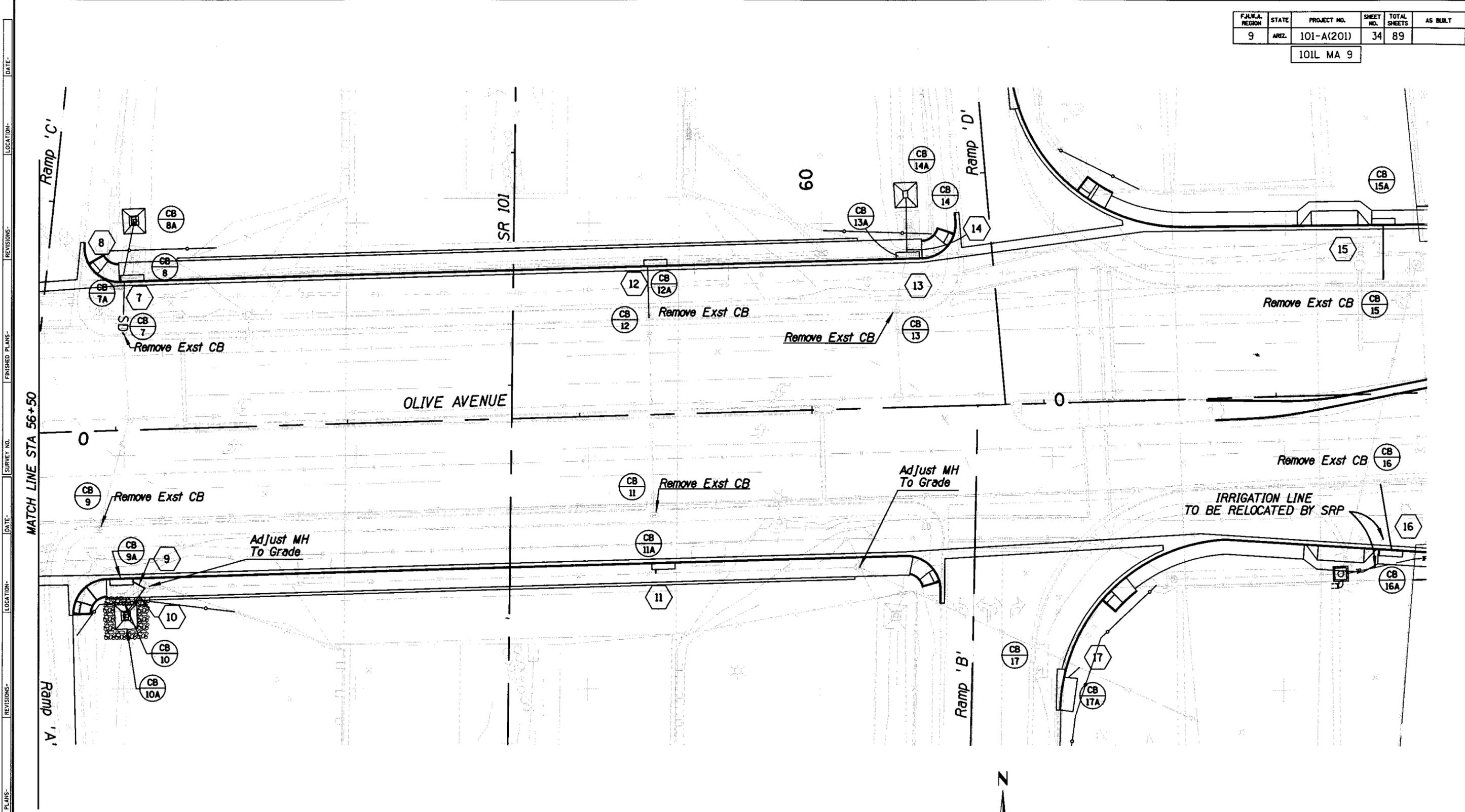


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| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. D-1.02 |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS <small>1441 N. 25TH AVENUE, SUITE 102 PHOENIX, AZ 85023 602-405-1875 FAX 602-288-6530</small> | | | OLIVE AVENUE WIDENING DRAINAGE PLAN STA 51+00 TO STA 56+50 | |
| ROUTE | SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | |
| TRACS NO. | H 6939 OIC | 101-A(201) | OF | |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 34 | 89 | |

101L MA 9

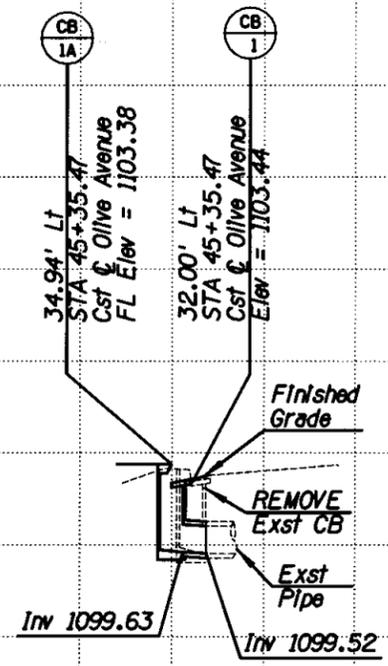


SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE

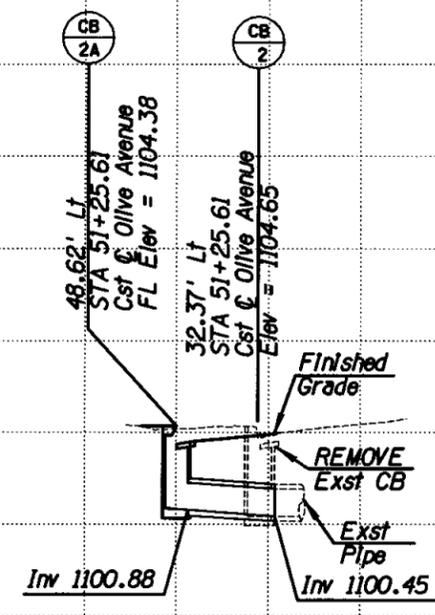
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| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. D-1.03 |
| DRAIN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS <small>18441 N. 25TH AVE. STE. 103 PHOENIX, AZ 85028 602-955-1870 FAX 602-286-6530</small> | | | OLIVE AVENUE WIDENING DRAINAGE PLAN STA 56+50 TO STA 62+00 | |
| ROUTE | SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | |
| TRACS NO. | H 6939 OIC | 101-A(201) | OF | |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 35 | 89 | |

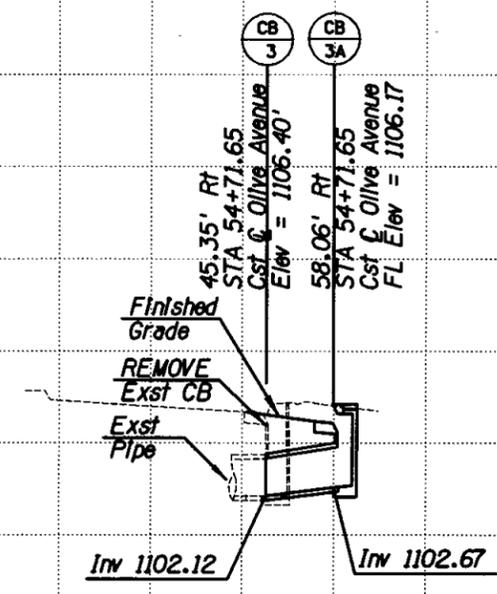
101L MA 9



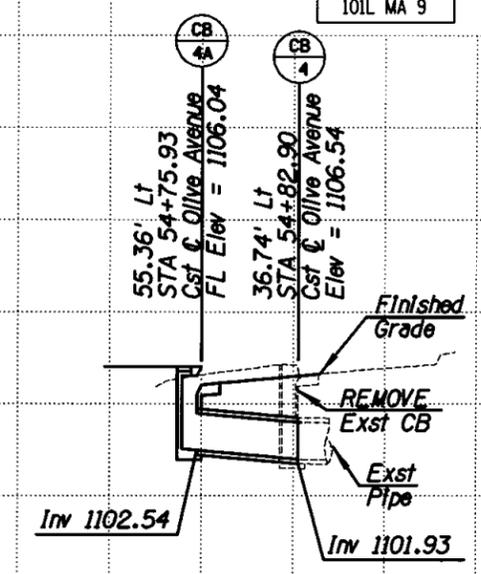
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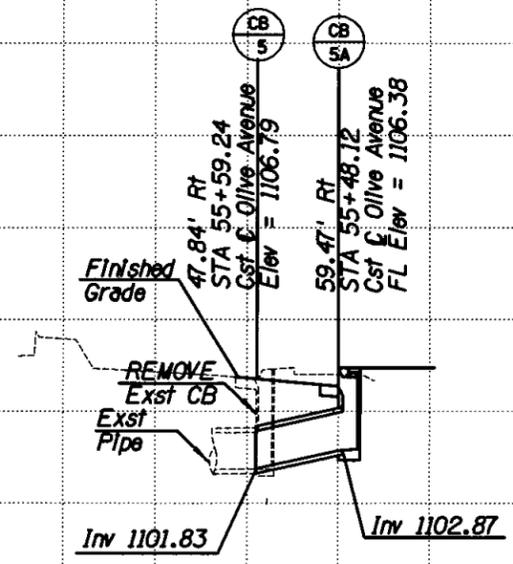
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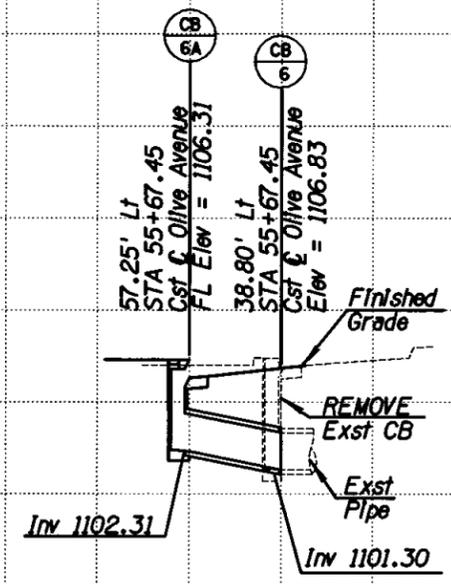
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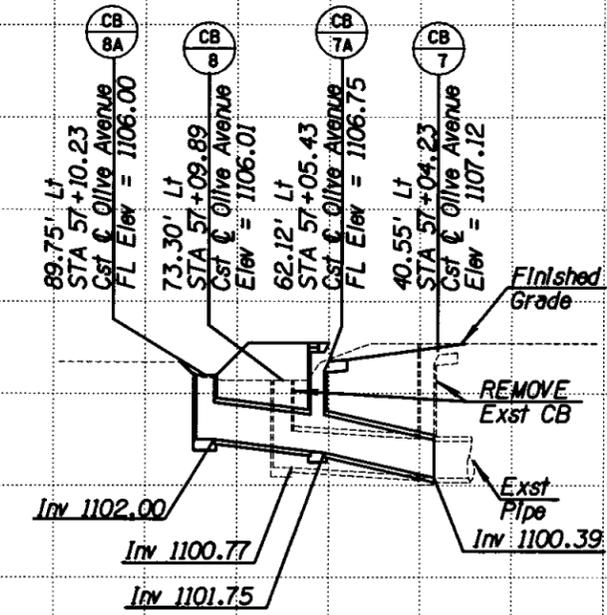
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24" x 19.00'
S=0.0547' / ft



24" x 21.00'
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24" x 21.00'
S=0.0585' / ft

24" x 24.60'
S=0.0553' / ft

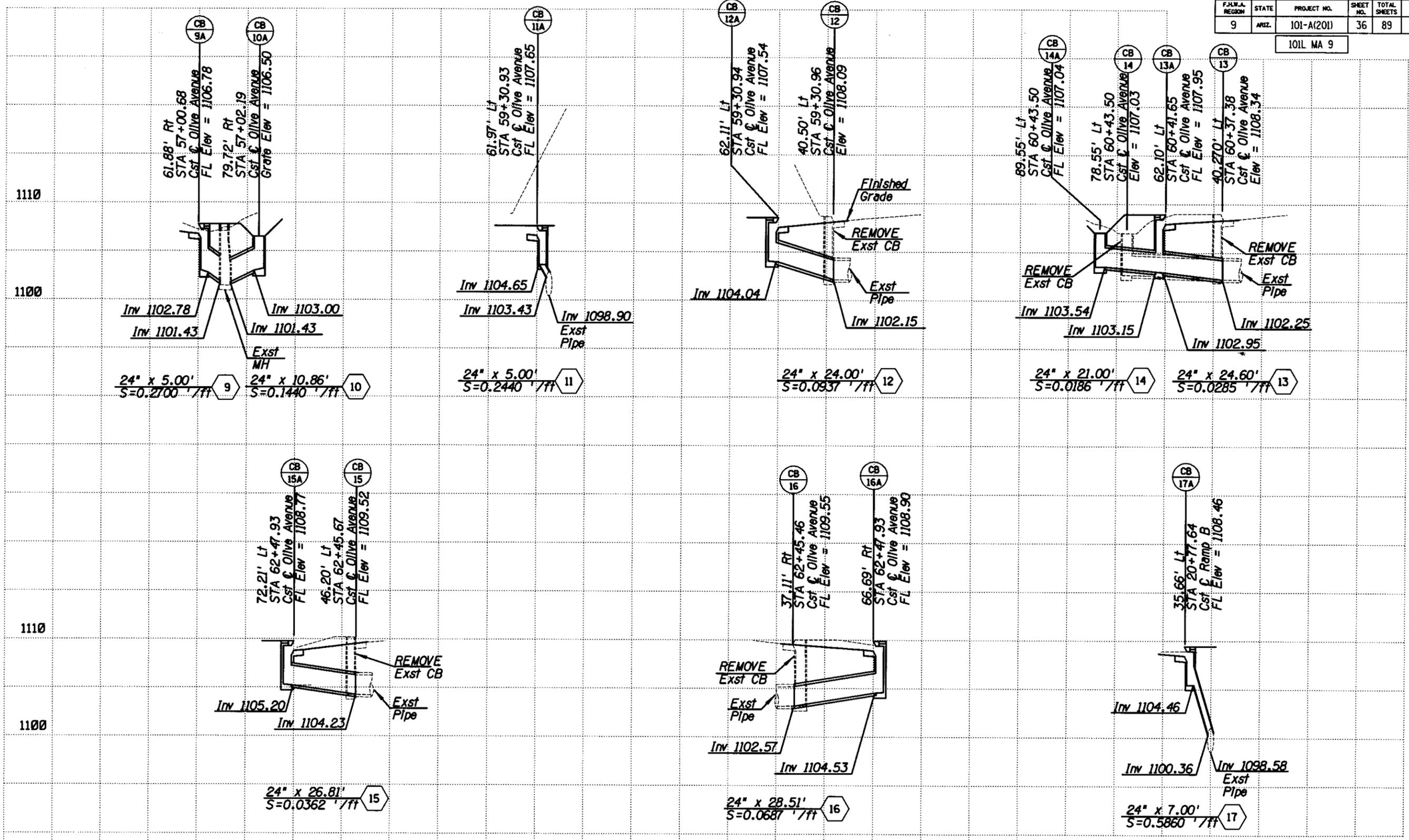
| | | | | | |
|---|-----|-------------------------------------|---------------|---|------------------------------|
| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review |
| DRAWN | JRG | DATE | 5-09 | | |
| CHECKED | PTG | DATE | 5-09 | | |
| JLK ENGINEERS 1841 N. 25th Ave, Ste 103 Phoenix, AZ 85023 602-492-1875 Fax 602-288-6530 | | | | OLIVE AVENUE WIDENING DRAINAGE PROFILES | |
| ROUTE | | LOCATION | | | |
| SR 101L | | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | NOT FOR CONSTRUCTION OR RECORDING DWG NO. D-104 | |
| TRACS NO. H 6939 01C | | | 101-A(201) OF | | |

SURVEY NO. FINISHED PLANS- LOCATION- DATE- REVISIONS- FINISHED PLANS- LOCATION- DATE- SURVEY NO. FINISHED PLANS- LOCATION- DATE- REVISIONS- FINISHED PLANS- LOCATION- DATE- SURVEY NO.

SURVEY NO. FINISHED PLANS LOCATION DATE REVISIONS FINISHED PLANS LOCATION DATE REVISIONS FINISHED PLANS LOCATION DATE

| F.H.M.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 36 | 89 | |

101L MA 9



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| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. 0-105 |
| DRAWN | JRG | DATE | 5-09 | | |
| CHECKED | PTG | DATE | 5-09 | | |
| JLK ENGINEERS <small>3842 N. 25th Ave, Ste 103 Phoenix, AZ 85018 602-905-1015 Fax 602-288-6330</small> | | | | OLIVE AVENUE WIDENING DRAINAGE PROFILES | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | |
| TRACS NO. | H 6939 OIC | | 101-A(201) | | OF |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 37 | 89 | |

101L MA 9

TRAFFIC CONTROL GENERAL NOTES:

1. ADJUSTMENT TO THE DETAILS OF THESE TRAFFIC CONTROL PLANS AND REQUIREMENTS MAY BE NECESSARY DUE TO CONSTRUCTION ACTIVITIES, AS APPROVED BY THE ENGINEER.
2. ALL EXISTING SIGNS IN CONFLICT WITH THE CONSTRUCTION SIGNS SHALL BE REMOVED, RELOCATED OR COVERED IN PLACE, AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL STORE AND REINSTALL ITEMS WHICH HAVE BEEN REMOVED OR RELOCATED IN A MANNER APPROVED BY THE ENGINEER.
3. ALL CONSTRUCTION SIGNS SHALL HAVE BLACK LETTERS ON AN ORANGE BACKGROUND, EXCEPT AS OTHERWISE NOTED.
4. SIGN MOUNTING HEIGHT IS A MINIMUM OF SEVEN FEET AS MEASURED FROM THE BOTTOM OF THE SIGN TO THE NEAR EDGE OF THE PAVEMENT OR TOP OF CURB. FOR SIGNS INSTALLED ON SPRING OR RIGID STANDS, SIGN MOUNTING HEIGHT IS A MINIMUM OF 1 FOOT ABOVE THE PAVEMENT.
5. FLAGS SHALL BE MOUNTED ON TOP OF ALL CONSTRUCTION SIGNS EXCEPT THE "END ROAD WORK THANK YOU" SIGN. TYPE "A" FLASHING WARNING LIGHTS SHALL BE REQUIRED ON ALL NIGHT TIME CONSTRUCTION SIGNS EXCEPT THE "END ROAD WORK THANK YOU" SIGN.
6. TYPE II BARRICADES, DRUMS AND VERTICAL PANELS SHALL BE PLACED 25 FEET O.C. ON TAPERS AND 50 FEET O.C. ON TANGENTS, EXCEPT AS OTHERWISE NOTED ON THE PLANS.
7. A TYPE "C" STEADY BURNING YELLOW LIGHT SHALL BE MOUNTED ON EVERY TYPE II BARRICADE, DRUM AND VERTICAL PANEL DURING NIGHTTIME ACTIVITIES. TYPE C TO BE USED FOR CHANNELIZATION DURING NIGHT TIME
8. AN ADEQUATE NUMBER OF TYPE III BARRICADES SHALL BE PLACED IN ORDER TO CLOSE A ROADWAY. A TYPE "A" FLASHING WARNING LIGHT SHALL BE MOUNTED ON BOTH ENDS OF EACH BARRICADE DURING NIGHT TIME ACTIVITIES.
9. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL LOCAL BUSINESSES TO THE GREATEST EXTENT POSSIBLE. FOR UNAVOIDABLE CLOSURE. THE BUSINESS SHALL BE NOTIFIED A MINIMUM OF 5 DAYS IN ADVANCE OF THE CLOSURE IN WRITING.
10. TEMPORARY STRIPING SHALL BE PREFORMED PAVEMENT MARKING TAPE OR STANDARD REFLECTORIZED TRAFFIC PAINT, AS IDENTIFIED ON PLANS. THE PAVEMENT TEMPERATURE MUST BE AT LEAST 60° F OR HIGHER WHEN THE TAPE IS APPLIED TO THE PAVEMENT.
11. WHEN NO LONGER REQUIRED, TEMPORARY PAVEMENT MARKINGS SHALL BE REMOVED, PREFORMED TAPE SHALL BE REMOVED AT NO EXTRA COST TO THE CONTRACT. STANDARD REFLECTORIZED TRAFFIC PAINT SHALL BE OBLITERATED BY METHODS APPROVED BY THE ENGINEER.
12. ALL EXISTING PAVEMENT MARKINGS IN CONFLICT WITH THE TRAFFIC CONTROL STRIPING PLANS SHALL BE REMOVED BY METHODS APPROVED BY THE ENGINEER.
13. SPEED LIMIT SIGNING IS PRELIMINARY AND IS SUBJECT TO REVIEW AND CHANGE BY THE ENGINEER AS DICTATED BY FIELD CONDITIONS.
14. CONSTRUCTION SIGNS SHALL NOT BE DISPLAYED TO TRAFFIC MORE THAN 24 HOURS PRIOR TO ACTUAL START OF CONSTRUCTION. THESE SIGNS MAY BE INSTALLED SOONER BUT THEY MUST BE COVERED OR TURNED AWAY FROM TRAFFIC. THE COST FOR COVERING OR TURNING THEM SHALL BE CONSIDERED A PART OF THE SIGN INSTALLATION COST. NO FURTHER COMPENSATION WILL BE MADE. THESE SIGNS SHALL BE REMOVED WITHIN 24 HOURS AFTER COMPLETION OF THE CONSTRUCTION ACTIVITIES.
15. THE CONTRACTOR SHALL MAINTAIN TWO-WAY TRAFFIC ON ALL ROADWAYS AT ALL TIMES RELATIVE TO FREEWAY TRAFFIC ONLY.
16. ALL DRAWINGS ARE SCHEMATIC ONLY AND NOT TO SCALE.
17. REFER TO ADOT 2003 TRAFFIC CONTROL DESIGN GUIDLINES (TRAFFIC GROUP) FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY AND INCIDENT MANAGEMENT OPERATIONS.
18. IF STRIPING OBLITERATION IS NECESSARY, IT SHALL BE ACCOMPLISHED BY A METHOD THAT IS IN COMPLIANCE WITH OSHA'S 29 CFR, PART 1926, LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE. IF LEAD EXPOSURE PREVENTION MEASURES ARE REQUIRED, THE CONTRACTOR SHALL ENSURE THAT ALL OF THE PERSONNEL PRESENT ON THE JOB SITE ARE NOTIFIED OF THE ACTIVITY AND ADVISED OF NECESSARY PRECAUTIONS TO BE TAKEN TO AVOID CONTAMINATION BY LEAD COMPOUNDS. THE CONTRACTOR SHALL SUBMIT A LEAD EXPOSURE PREVENTION PLAN TO THE ENGINEER FOR REVIEW, A MINIMUM OF 48 HOURS PRIOR TO THE START OF ANY STRIPING OBLITERATION ACTIVITIES.
19. ALL FREEWAY LANE RESTRICTIONS AND CLOSURES SHALL BE COORDINATED WITH ADOT AND THE CITY OF PEORIA. ANY DETOURS, TRAIL BLAZING OR TRAFFIC CONTROL THAT AFFECTS CITY CROSS STREETS SHALL REQUIRE AN APPROVED TRAFFIC CONTROL PLAN BY ADOT AND THE CITY OF PEORIA AND SPECIAL USE PERMIT. CLOSURES SHALL REQUIRE ONE WEEK MINIMUM NOTICE PRIOR TO CLOSURE.
20. ON-RAMP CLOSURE WILL ONLY BE ALLOWED FROM 10:00 P.M. - 5:00 A.M AS APPROVED BY THE ENGINEER.
21. AT LEAST ONE SIDEWALK WILL REMAIN OPEN ON THUNDERBIRD ROAD AT ALL TIMES. SIDEWALK SHALL MEET ADA REQUIREMENTS.

SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION FINISHED PLANS SURVEY NO. REVISIONS LOCATION FINISHED PLANS SURVEY NO.

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| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING |
| DRAWN | FR | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS <small>18441 N. 25TH AVE. STE 103 PHOENIX, AZ 85023 602-955-1815 Fax 602-298-1330</small> | | | OLIVE AVENUE WIDENING TRAFFIC CONTROL PLANS GENERAL NOTES | |
| ROUTE | SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | DWG NO. T-101 | |
| TRACS NO. | H 6939 OIC | 101-A(201) | | OF |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 38 | 89 | |

101L MA 9

APPROXIMATE TRAFFIC CONTROL QUANTITIES

| ELEMENT OF WORK | UNIT | CONSTRUCTION ACTIVITIES | | | | | | TOTAL |
|--|--------|-------------------------|------|------|-----|-----|----|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | |
| ESTIMATED DURATION | DAYS | *90 | 45 | 15 | 4 | 8 | 30 | 90 |
| VERTICAL PANELS | EA DAY | | 2060 | 1200 | 200 | 200 | 50 | 3710 |
| BARRICADE (TYPE III, HIGH LEVEL FLAG TREE) | EA DAY | | | 30 | 16 | | | 46 |
| PORTABLE SIGN STANDS (RIGID) | EA DAY | 270 | | | | | | 270 |
| PORTABLE SIGN STANDS (SPRING) | EA DAY | | 900 | | 40 | 64 | | 1004 |
| FLASHING WARNING LIGHT (TYPE A) | EA DAY | | 20 | 10 | 56 | 56 | | |
| STEADY BURNING LIGHT (TYPE C) | EA DAY | | 90 | 30 | 96 | 96 | | 136 |
| TEMPORARY SIGN (< 10 SF) | EA DAY | 270 | | | | | | 270 |
| TEMPORARY SIGN (>10 SF) | EA DAY | | 900 | 300 | 56 | 96 | | 1352 |
| TRUCK MOUNTED ATTENUATOR | EA DAY | | | | | | 2 | 2 |
| FLASHING ARROW PANEL | EA DAY | | | | | | 2 | 2 |
| CHANGEABLE MESSAGE SIGN | | | | | 14 | | | 2 |

NOTE:
 QUANTITIES FOR TRAFFIC CONTROL DEVICES ARE SHOWN IN THE CONSTRUCTION ACTIVITY IN WHICH THEY ARE USED. SEE MAINTENANCE OF TRAFFIC SHEETS FOR DESCRIPTION.

*CALENDAR DAYS

| | | | | |
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| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. T-1.02 |
| DRAWN | FR | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS <small>18441 N. 25TH AVE., STE 103 PHOENIX, AZ 85023 602-966-1875 Fax 602-966-6130</small> | | | OLIVE AVENUE WIDENING TRAFFIC CONTROL PLANS APPROXIMATE QUANTITIES | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | | |
| TRACS NO. | H 6939 01C | 101-A(201) | OF | |

DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO. DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO.

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 39 | 89 | |

101L MA 9

MAINTENANCE OF TRAFFIC

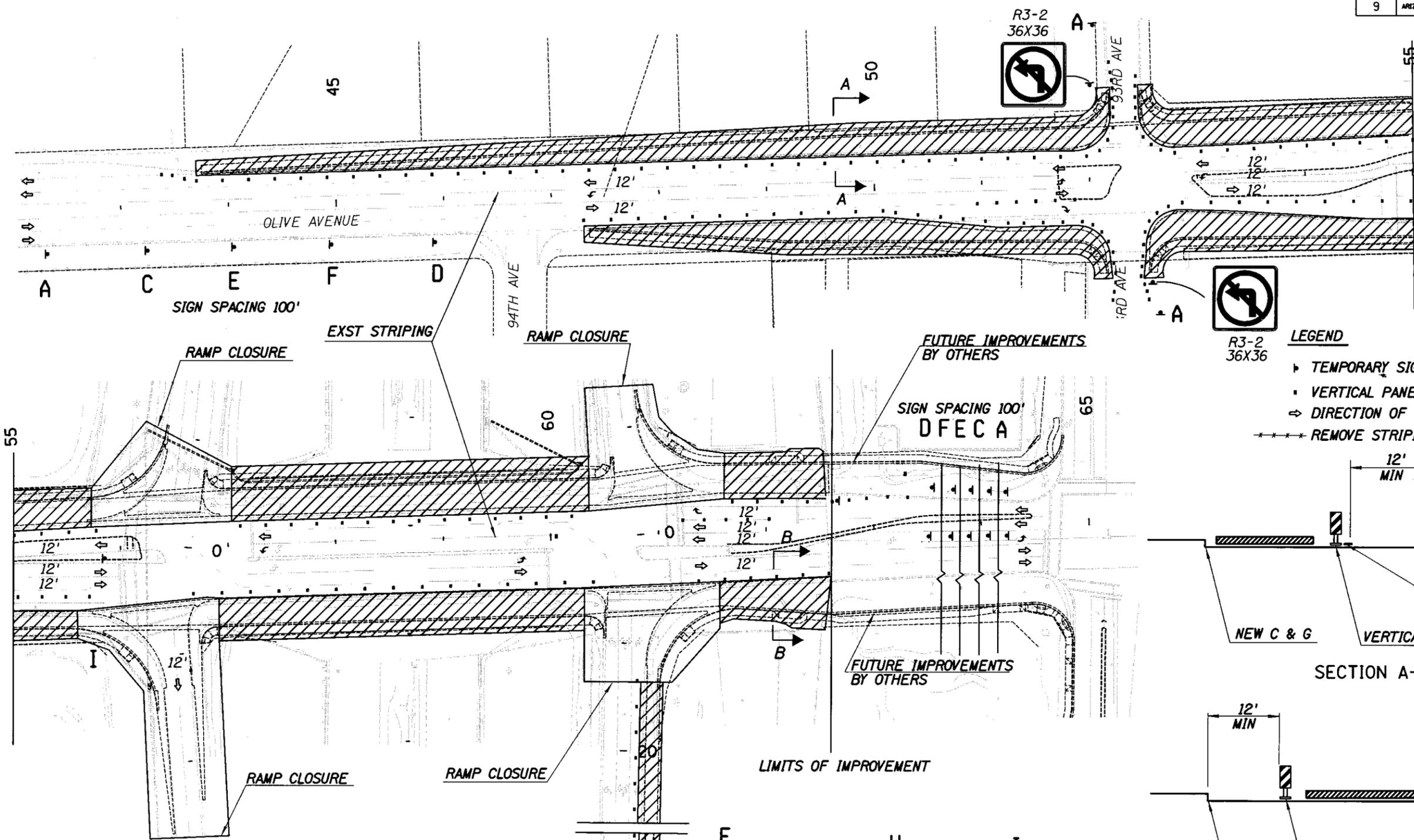
| CONSTRUCTION ACTIVITY | | TRAFFIC CONTROL | COMMENTS |
|-----------------------|---|---|--|
| NO. | DESCRIPTION | | |
| 1. | ADVANCE SIGNING | PROVIDE "ROAD CONSTRUCTION AHEAD" SIGNS ON ALL APPROACHES TO THE WORK ZONE AND "END ROAD WORK THANK YOU" SIGNS AS DIRECTED BY THE ENGINEER. | SIGNS SHALL BE MOUNTED ON BOTH SIDES OF THE ROADWAY EXCEPT FOR THE "END ROAD WORK THANK YOU" SIGNS. |
| 2. | OLIVE AVENUE DEMOLITION AND CONSTRUCTION OF ROADWAY WIDENING INCLUDING CURB AND GUTTER, PAVEMENT, DRAINAGE, AND RETAINING WALLS. | EMPLOY RIGHT LANE CLOSURE TRAFFIC CONTROL PER ADOT SUPPLEMENT FIGURE SA-5(R) | LANE CLOSURE SETUPS ARE TO BE TAKEN DOWN AND TRAFFIC RESTORED WHEN WORK IS NOT UNDERWAY. MAINTAIN RAMP ACCESS AT ALL TIMES EXCEPT ACTUAL WORK AT RAMPS AS DESCRIBE BELOW. MAINTAIN AT LEAST ONE DRIVEWAY ACCESS TO BUSINESS AT ALL TIMES |
| 3. | OLIVE AVENUE CONSTRUCTION OF MEDIAN IMPROVEMENT, PAVEMENT AND DRAINAGE | EMPLOY LEFT LANE CLOSURE TRAFFIC CONTROL PER ADOT SUPPLEMENT FIGURE SA-5(L) | NO LEFT TURNS WILL BE PERMITTED AT BUSINESSES MAINTAIN AT LEAST ONE LEFT TURN LANE TO ON-RAMPS |
| 4. | ON-RAMPS | EMPLOY ON-RAMP CLOSURES TRAFFIC CONTROL PER ADOT SUPPLEMENT FIGURE SA-2 | USE VARIABLE MESSAGE SIGNS TO PROVIDE ADVANCE NOTICE OF RAMP CLOSURES. VMS BOARDS SHALL BE ERECTED SEVEN (7) DAYS PRIOR TO ANY RAMP CLOSURE. RAMP CLOSURES SHALL BE DONE BETWEEN 10:00 P.M. - 5:00 A.M. AS APPROVED BY ENGINEER. |
| 5. | EXIT RAMPS | EMPLOY OFF-RAMP CLOSURES TRAFFIC CONTROL PER ADOT SUPPLEMENT FIGURE SA-2 | USE VARIABLE MESSAGE SIGNS TO PROVIDE ADVANCE NOTICE OF RAMP CLOSURES. VMS BOARDS SHALL BE ERECTED SEVEN (7) DAYS PRIOR TO ANY RAMP CLOSURE. RAMP CLOSURES SHALL BE DONE BETWEEN 10:00 P.M. - 5:00 A.M. AS APPROVED BY ENGINEER. |
| 6. | PLACE PERMANENT PAVEMENT MARKINGS | PROVIDE TRAFFIC CONTROL FOR MOBILE OPERATION PER MUTCD TA-17 ON THUNDERBIRD AVENUE. | |

SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS REVISIONS LOCATION DATE

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| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. T-L03 |
| DRAWN | FR | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
|  | | | OLIVE AVENUE WIDENING TRAFFIC CONTROL PLANS MAINTENANCE OF TRAFFIC | |
| ROUTE | SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | |
| TRACS NO. | H 6939 OIC | 101-A(201) | | OF |

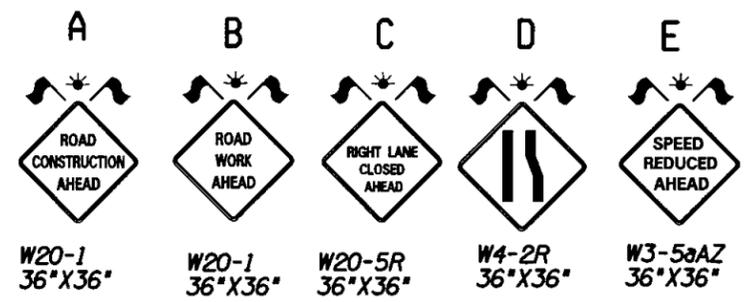
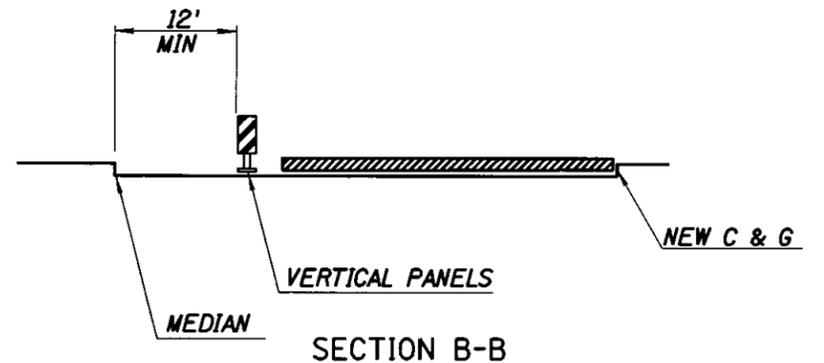
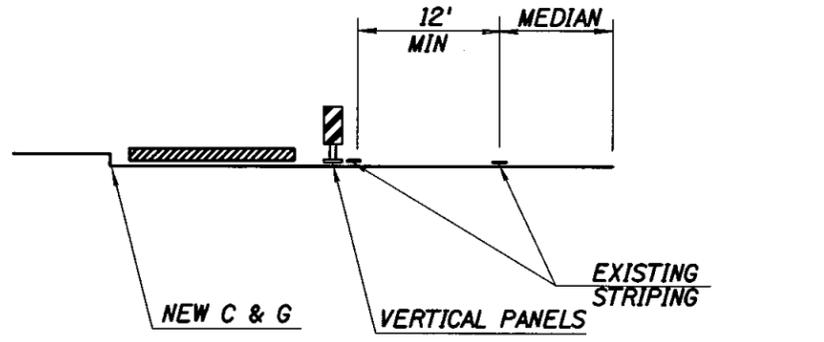
| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 40 | 89 | |

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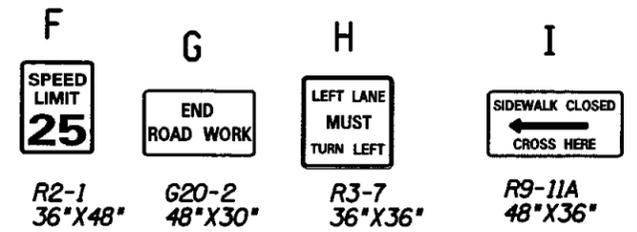


LEGEND

- ▶ TEMPORARY SIGN
- VERTICAL PANEL
- ⇒ DIRECTION OF TRAVEL
- ***** REMOVE STRIPING



SIGN SPACING 100'



USE TO DIRECT PEDESTRIAN ACROSS AT A CROSS WALK

| | | | | | |
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| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC DESIGN SERVICES | PRELIMINARY 95% Review |
| DRAWN | FR | DATE | 5-09 | | |
| CHECKED | PTG | DATE | 5-09 | | |
| JLK ENGINEERS 18441 N. 29TH AVE. SUITE 103 PHOENIX, AZ 85023 602-952-1875 FAX 602-288-6330 | | | | OLIVE AVENUE WIDENING TRAFFIC CONTROL | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | NOT FOR CONSTRUCTION OR RECORDING DWG NO. T-L04 |
| TRACS NO. | H 6939 OIC | | PROJECT NO. | 101-A(201) | AS BUILT |
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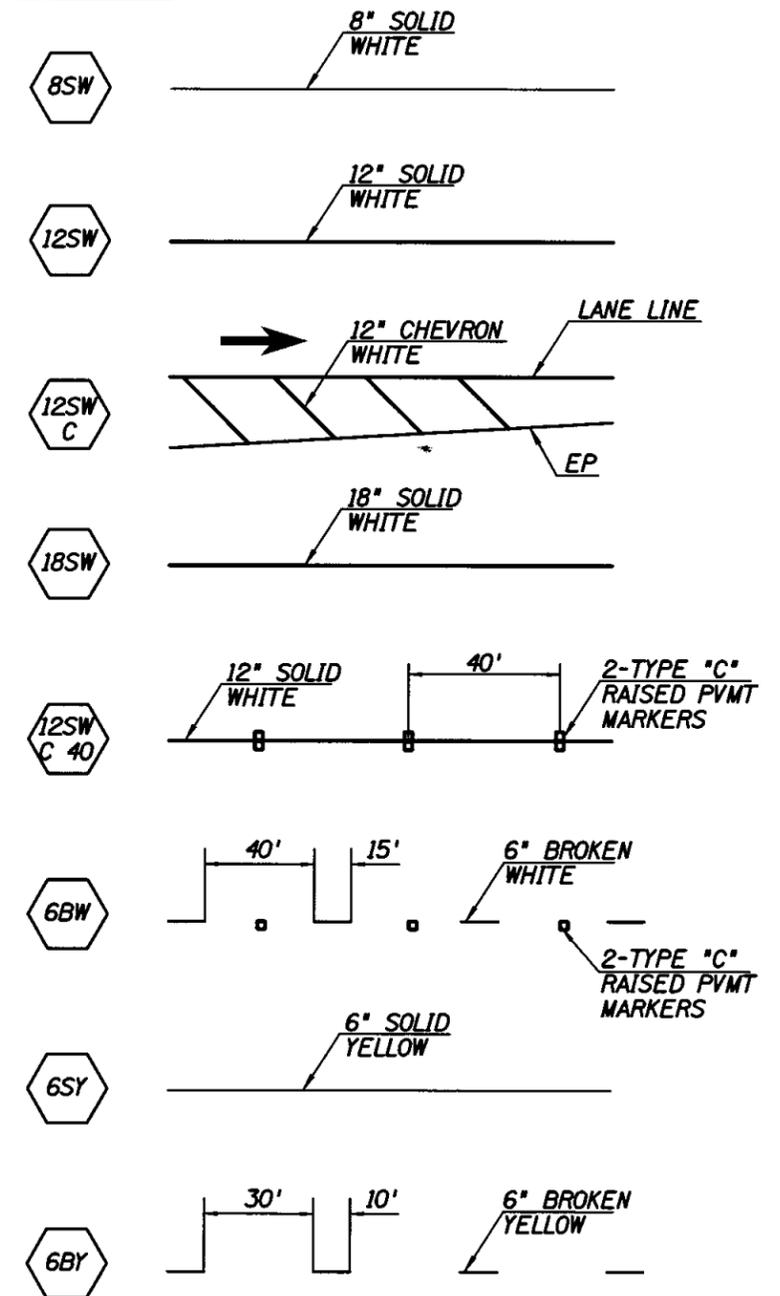
| F.J.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 42 | 89 | |

101L MA 9

GENERAL PAVEMENT MARKING NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT AND INSTALLATION OF TEMPORARY PAVEMENT MARKING FOLLOWING CONTROL POINTS THAT HAVE BEEN SET NO MORE THAN 50 FEET APART ALONG THE LINES TO BE MARKED.
2. THE DIMENSIONS SHOWN TO PAVEMENT MARKING ARE TO THE CENTER OF THE PAVEMENT MARKING, OR IN THE CASE OF DOUBLE PAVEMENT MARKING TO THE CENTER OF THE DOUBLE PAVEMENT MARKING.
3. THE TEMPORARY PAVEMENT MARKING SHALL BE STANDARD REFLECTORIZED PAINT AS DIRECTED BY THE ENGINEER.
4. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE TO THE SATISFACTION OF THE ENGINEER, BY SWEEPING AND AIR JET BLOWING, IMMEDIATELY PRIOR TO THE PLACEMENT OF ALL PAVEMENT MARKING, THE ROADWAY SURFACE SHALL BE DRY, THE AIR AND PAVEMENT TEMPERATURES SHALL NOT BE LESS THAN 50°F FOR THE PLACEMENT OF TEMPORARY PAVEMENT MARKING.
5. WHEN TEMPORARY PAVEMENT MARKING IS TO BE APPLIED TO NEW CONCRETE PAVEMENT, ANY CURING COMPOUND PRESENT SHALL BE REMOVED BY METHODS APPROVED BY THE ENGINEER.
6. WHEN PAVEMENT MARKING OBLITERATION IS NECESSARY, IT SHALL BE ACCOMPLISHED BY APPROVED METHODS. PAINTING OVER PAVEMENT MARKING DOES NOT CONSTITUTE PAVEMENT MARKING OBLITERATION. TRAFFIC PAINT SHALL BE OBLITERATED BY A METHOD THAT IS IN COMPLIANCE WITH OSHA'S 29 CFR, PART 1926. LEAD EXPOSURE IN CONSTRUCTION, INTERIM FINAL RULE. IF LEAD EXPOSURE PREVENTION MEASURES ARE REQUIRED, THE CONTRACTOR SHALL ENSURE THAT ALL PERSONNEL PRESENT ON THE JOB SITE ARE NOTIFIED OF THE ACTIVITY AND ADVISED OF NECESSARY PRECAUTIONS TO BE TAKEN TO AVOID CONTAMINATION BY LEAD COMPOUNDS. THE CONTRACTOR SHALL SUBMIT A LEAD EXPOSURE PREVENTION PLAN TO THE ENGINEER FOR REVIEW, A MINIMUM OF 48 HOURS PRIOR TO THE START OF ANY PAVEMENT MARKING OBLITERATION ACTIVITIES.
7. ALL RAISED PAVEMENT MARKERS SHALL HAVE AN ABRASION-RESISTANT COATING ON THE FACE OF THE PRISMATIC REFLECTORS AND SHALL CONFORM TO THE DETAILS OF STANDARD DRAWING M-19. THEY SHALL BE INSTALLED WITH A BITUMINOUS ADHESIVE, WHICH IS ON THE ADOT APPROVED PRODUCTS LIST.
8. ALL RAISED PAVEMENT MARKERS SHALL BE INSTALLED SO THAT THE REFLECTIVE FACE OF EACH MARKER IS FACING THE DIRECTION OF TRAFFIC AND IS PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW.
9. THE PAVEMENT MARKING DRAWINGS ARE SCHEMATIC ONLY AND NOT TO SCALE. THE CONTRACTOR SHALL FOLLOW ALL DIMENSIONS, DETAILS AND STANDARDS WHEN INSTALLING PAVEMENT MARKINGS AND MARKERS.
10. THE CONTRACTOR SHALL REPLACE THOSE MARKERS AND DELINEATORS DAMAGED DURING THE ROADWAY CONSTRUCTION ACTIVITIES.
11. THE PAVEMENT MARKING DETAIL MAY BE MODIFIED AS DIRECTED BY THE ENGINEER.

MARKING CODE



| PAVEMENT MARKING QUANTITIES | | | | |
|-----------------------------|---|-----------------------|--------|------------|
| ITEM NO. | ITEM | | UNIT | QUANTITIES |
| 7015052 | PAVEMENT MARKING OBLITERATION | 4" WHITE * | LIN FT | 6253 |
| | | 4" YELLOW * | LIN FT | 1587 |
| 7040070 | THERMOPLASTIC PAVEMENT MARKING (90 MIL) | 4" WHITE * | LIN FT | 17042 |
| 7040071 | THERMOPLASTIC PAVEMENT MARKING (90 MIL) | 4" YELLOW * | LIN FT | 3741 |
| 7050033 | THERMOPLASTIC PAVEMENT MARKING (TRANSVERSE) (ALKYD) | ARROWS (STD DWG M-10) | EACH | 16 |
| 7060013 | RAISED PAVEMENT MARKERS | TYPE "C" | EACH | 175 |
| 7080301 | PAINT BULLNOSE | | EACH | 3 |

* QUANTITY INDICATES 4" EQUIVALENT

| | | | | | |
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| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC DESIGN SERVICES | PRELIMINARY 95% Review |
| DRAWN | FR | DATE | 5-09 | | |
| CHECKED | PTG | DATE | 5-09 | | |
| JLK ENGINEERS <small>18441 N. 25TH AVE., SUITE 103 PHOENIX, AZ 85023 602-405-1875 Fax 602-288-6530</small> | | | | OLIVE AVENUE WIDENING PAVEMENT MARKING NOTES, AND QUANTITIES | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | NOT FOR CONSTRUCTION OR RECORDING | |
| TRACS NO. | H 6939 OIC | | 101-A(201) | DWG NO. T-2.01 OF | |

DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO. DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO. DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO.

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 43 | 89 | |

101L MA 9

SIGNING NOTES:

1. ALL SIGNS SHALL BE IN COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), ADOT SIGNING AND MARKING STANDARDS, TRAFFIC ENGINEERING MANUAL OF APPROVED SIGNS, THESE PLANS AND THE SPECIAL PROVISIONS.
2. SIGNING MAY BE MODIFIED AS DIRECTED BY THE ENGINEER.
3. POST LENGTHS INDICATED ON SIGN SUMMARY SHEETS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ACTUAL POST LENGTHS.
4. ALL FACE BOLTS USED FOR MOUNTING SIGNS SHALL BE PAINTED THE SAME COLOR AS THE SIGN PANEL.
5. ALL SIGN LOCATIONS ARE APPROXIMATE, THE ENGINEER MAY SHIFT A SIGN IN ORDER TO ACHIEVE A MORE DESIRABLE LOCATION. THE CONTRACTOR SHALL VERIFY ACTUAL SIGN LOCATIONS WITH THE ENGINEER PRIOR TO THE FOUNDATION EXCAVATION.
6. NORMAL MOUNTING HEIGHT FOR THE LOWEST SIGN ON THE POST SHALL BE SEVEN FEET FROM THE NEAREST SHOULDER EDGE ELEVATION. SIGNS SHALL BE MOUNTED A MINIMUM OF SEVEN FEET ABOVE THE GROUND LINE AT THE LOCATION OF THE SIGN POSTS.
7. NORMAL OFFSET FOR ALL SIGNS IS TWELVE FEET FROM THE NEAR EDGE OF THE SIGN TO THE EDGE OF PAVED SHOULDER UNLESS OTHERWISE NOTED IN THE SIGN SUMMARY TABLE OR ON THE PLANS.
8. THE SIGN PANEL TYPES SHALL BE AS INDICATED IN THE SIGN SUMMARIES.
9. EXISTING SIGNS NOT INDICATED IN THE SUMMARY, THAT DO NOT NEED TO BE REMOVED OR RELOCATED, SHALL REMAIN. IF CONSTRUCTION ACTIVITIES REQUIRE THE REMOVAL OF SIGNS, SIGNS SHALL BE REINSTALLED AS NEAR AS POSSIBLE TO THE EXISTING LOCATION, AS DIRECTED BY THE ENGINEER.
10. ANY EXISTING WOODEN SIGNS AND POSTS SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
11. ALL SQUARE TUBE SINGLE/TELESCOPING SIGN POSTS SHALL BE 2 1/2" .
12. ALL SIGN SHEETING SHALL BE ASTM TYPE VIII, IX, OR X.

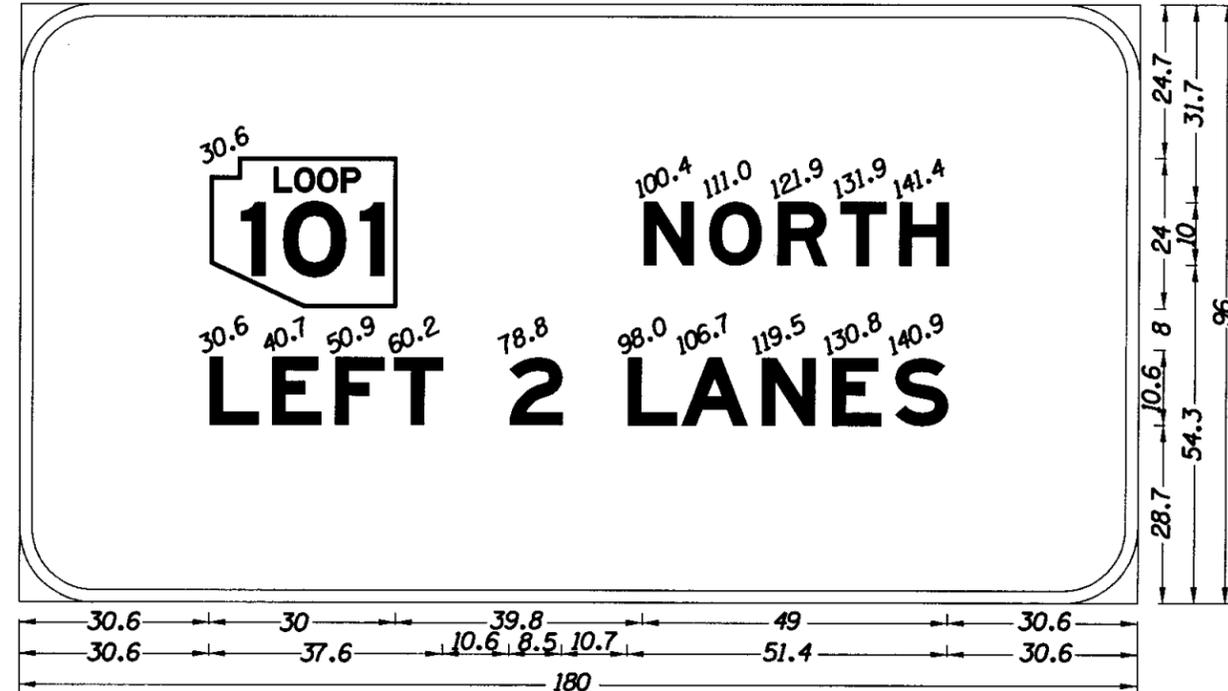
| SIGN QUANTITIES | | | |
|-----------------|--|--------|------------|
| ITEM NO. | DESCRIPTION | UNIT | QUANTITIES |
| 6060047 | SIGN STRUCTURE (SD9.20, TYPE 3F) | EA | 3 |
| 6060078 | FOUNDATION FOR SIGN STRUCTURE (SD9.20, TYPE 3F) | EA | 6 |
| 6070041 | SIGN POST (P-1) (PERFORATED) (SINGLE) | LIN FT | 156 |
| 6070046 | FOUNDATION FOR SIGN POST (P-1) (PERFORATED) | EACH | 12 |
| 6080003 | REGULATORY, WARNING OR MARKER SIGN PANEL WITH TYPE III/IV SHEETING | SQ FT | 47 |
| 6080063 | EXTRUDED ALUM SIGN PANEL WITH TYPE VIII/IX SHEET | SQ FT | 432 |

DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO. DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO.

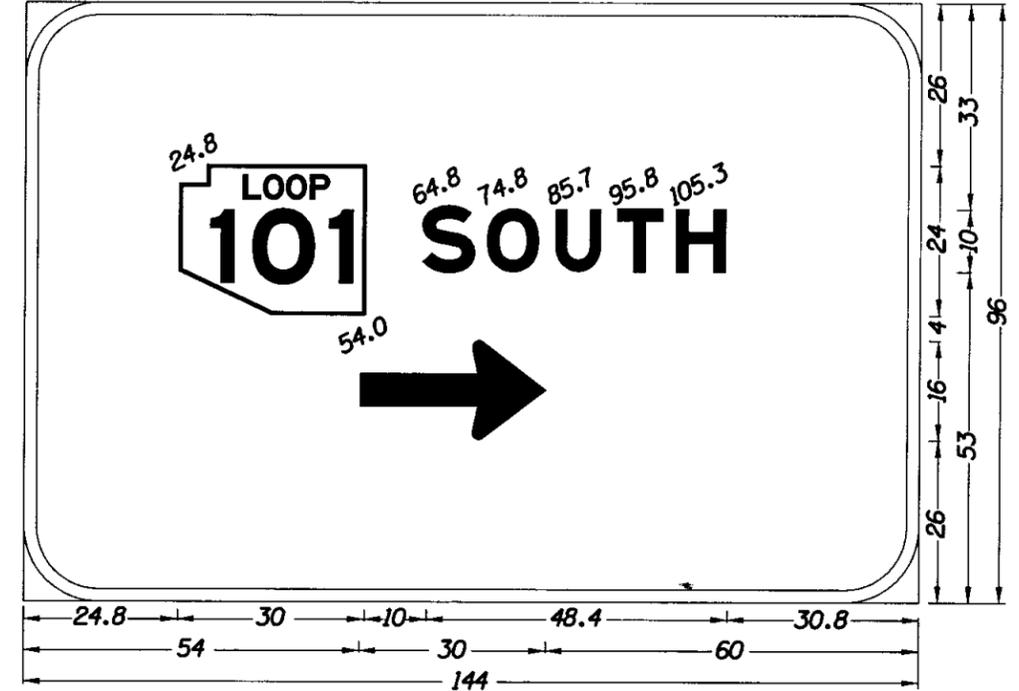
| | | | | |
|--|-------------------------------------|------|---|---|
| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. T-2.02 |
| DRAWN | FR | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS <small>18441 N. 25TH AVE., STE 103 PHOENIX, AZ 85023 602-962-1875 Fax 602-288-6530</small> | | | OLIVE AVENUE WIDENING SIGNING NOTES AND QUANTITIES | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | | |
| TRACS NO. H 6939 01C | | | 101-A(201) | OF |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 44 | 89 | |

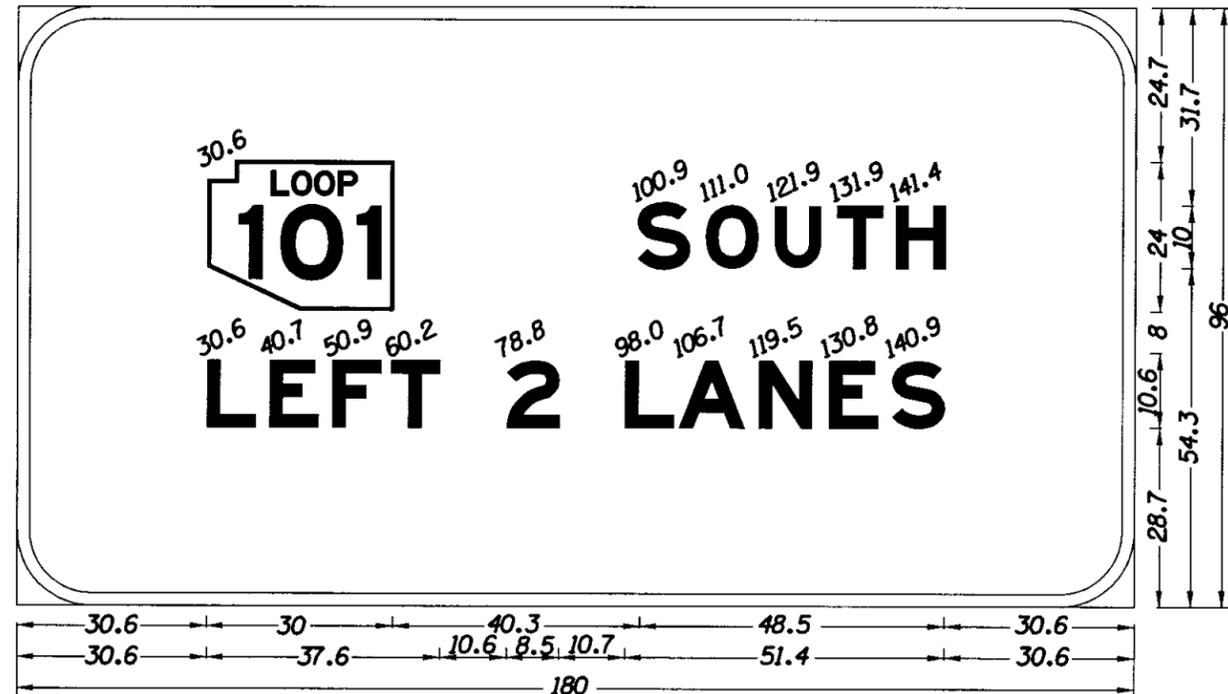
101L MA 9



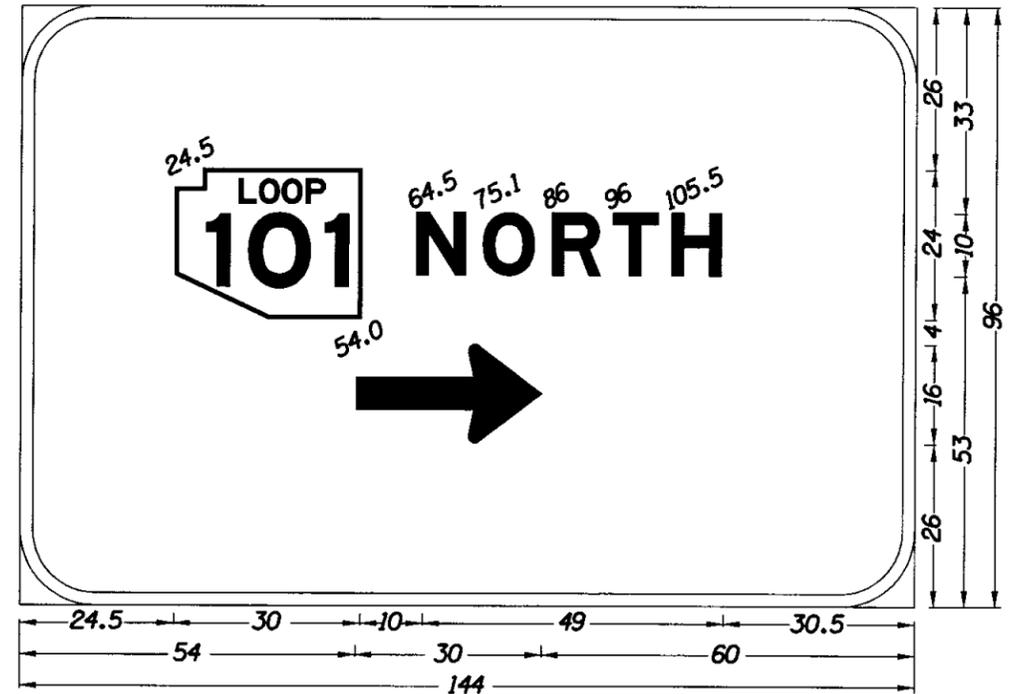
GFD; 12.0" Radius, 2.0" Border, White on Green;
 (NORTH) Black E Mod; (LEFT 2 LANES) Black E Mod;



GFD; 12.0" Radius, 2.0" Border, White on Green;
 (SOUTH) Black E Mod; Standard Arrow Custom 30.0" X 16.0" 180(Black);



GFD; 12.0" Radius, 2.0" Border, White on Green;
 (SOUTH) Black E Mod; (LEFT 2 LANES) Black E Mod;



GFD; 12.0" Radius, 2.0" Border, White on Green;
 (NORTH) Black E Mod; Standard Arrow Custom 30.0" X 16.0" 180(Black);

| DESIGN | NAME | DATE | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC DESIGN SERVICES | PRELIMINARY 95% Review |
|--|-------------------------------------|------|---|------------------------------|
| DRWN | JRG | 5-09 | | |
| CHEK | PTG | 5-09 | | |
| JLK ENGINEERS 18441 N. 25th Ave., Ste 103 Phoenix, AZ 85023 602-952-1875 Fax: 602-288-6530 | | | OLIVE AVENUE WIDENING SIGNING NOTES AND QUANTITIES | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | NOT FOR CONSTRUCTION OR RECORDING | |
| TRACS NO. H 6939 01C | 101-A(201) | | DWG NO. T-2.03 OF | |

DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO. DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO.

| F.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|---------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 45 | 89 | |

101 MA 9

| Plan Sheet No | Station or Sign Number | Mile Post | Sign Code | WORK | | | | | | Background Color | PANEL TYPE | | | | | GROUND MOUNT | | | | OVERHEAD | | REMARKS | | | | |
|---------------|------------------------|-----------|-----------|----------|---------------|-------------|---------------|-----------|----------------|------------------|------------------------------|-------------|-----|------|------|---------------|-----------------|-------|--------|-------------|------|---------|----------------|---------------|--------------|--|
| | | | | EXISTING | | | | | | | Legend | Panel Size | | Area | Type | Sheeting Type | Bid Item Number | Posts | | Stringer | | | Structure Type | Number Lights | | |
| | | | | New | Replace Panel | Remove Exst | Modify Legend | To Remain | Relocate Panel | | | See Remarks | W | | | | | H | Sq Ft | Foundations | Type | | | | Total Length | New Slip Bases |
| T-2.06 | SB 52+05 | | R1-1 | | | | | | X | RD | STOP | 3 | 3 | - | | | | 1 | P-1 | 13 | 1 | | | | | |
| T-2.06 | NB 52+55 | | R3-2 | X | | | | | | WH | Left Turn Prohibition | 3 | 3 | 9 | | III, IV | 6080003 | 1 | P-1 | 13 | 1 | | | | | |
| T-2.06 | NB 52+70 | | R1-1 | X | | | | | | RD | STOP | 3 | 3 | 9 | | III, IV | 6080003 | 1 | P-1 | 13 | 1 | | | | | |
| T-2.06 | WB 53+00 | | W9-2L | X | | | | | | Y | Lane Ends Merge Left | 3 | 3 | 9 | | III, IV | 6080003 | 1 | P-1 | 13 | 1 | | | | | |
| T-2.07 | EB 54+80 | | R3-7R | | X | | | | | WH | Right Lane Must Turn Right | 2.5 | 2.5 | - | | | | | | | | | | | | |
| T-2.07 | EB 54+83 | | Gulde | X | | | | | | GR | Lopp 101 North Right 2 Lanes | 15 | 8 | 120 | | VIII, IX | 6080063 | - | OH Str | | | | | | | |
| | | | Gulde | X | | | | | | GR | Loop 101 South (Right Arrow) | 12 | 8 | 96 | | VIII, IX | 6080063 | - | OH Str | | | | | | | |
| T-2.07 | EB 55+70 | | R3-7R | | X | | | | | WH | Right Lane Must Turn Right | 2.5 | 2.5 | - | | | | | | | | | | | | |
| T-2.07 | EB 56+20 | | R3-2 | | | | | | X | WH | Left Turn Prohibition | 3 | 3 | - | | | | 1 | P-1 | 13 | 1 | | | | | |
| | WB 56+20 | | R4-7 | | | | | | | WH | Keep Right | 2 | 2.5 | - | | | | | | | | | | | | |
| T-2.07 | NB 56+40 | | R5-1 | | | | | | X | RD | Do Not Enter | 3 | 3 | - | | | | 1 | P-1 | 13 | 1 | | | | | |
| | SB 56+40 | | R3-7R | | | | | | | WH | Right Lane Must Turn Right | 2.5 | 2.5 | - | | | | | | | | | | | | |
| T-2.07 | EB 56+80 | | Gulde | | | | | | X | WH | North Loop 101 (Right Arrow) | 3 | 5.5 | - | | | | 1 | P-1 | 13 | 1 | | | | | |
| T-2.07 | SB 56+95 | | R5-1 | | | | | | X | RD | Do Not Enter | 3 | 3 | - | | | | 1 | P-1 | 13 | 1 | | | | | |
| | | | R3-7L | | | | | | | WH | Left Lane Must Turn Left | 2.5 | 2.5 | - | | | | | | | | | | | | |
| T-2.07 | EB 56+95 | | R6-1R | | | | | | X | WH | One Way (Arrow Right) | 1 | 3 | - | | | | | | | | | | | | Exst Sign on Pedestrian post to be relocated |
| T-2.07 | EB 57+35 | | R4-7 | | | | | | X | WH | Keep Right | 2 | 2.5 | - | | | | | | | | | | | | |
| T-2.07 | WB 60+00 | | R4-7 | | | | | | X | WH | Keep Right | 2 | 2.5 | - | | | | | | | | | | | | |
| T-2.07 | EB 60+48 | | R6-1L | | | | | | X | WH | One Way (Arrow Left) | 1 | 3 | - | | | | | | | | | | | | Exst Sign on Pedestrian post to be relocated |

| <p>Notes:</p> <ol style="list-style-type: none"> The Contractor shall verify post lengths and elevations for the Engineers approval. The Engineer may shift a sign in order to achieve a more desirable location. Quantities are approximate and for the Contractors information only. See the ADOT Signing and Marking Standard Drawings for Installation Information. | <p>Panel Types:</p> <p>RM: Regulatory or Marker. W: Warning. F-DA: Flat Sheet Aluminum with Direct Applied or Silk Screened Characters. F-DEM: Flat Sheet Aluminum with Demountable Characters. EXT: Aluminum Extrusion.</p> | <p>Colors:</p> <p>OR - Orange RD - Red BK - Black BL - Blue GR - Green YL - Yellow BR - Brown WH - White</p> | <p>Stringer Types:</p> <p>P: Square Tube Post T: T Section (WT75x9)</p> <p>Posts:</p> <p>S: Single T: Telescoping TT: Taper Tube Sign Structure</p> | <table border="1"> <tr> <th>DESIGN</th> <td>JRG</td> <th>DATE</th> <td>5-09</td> </tr> <tr> <th>DRAWN</th> <td>FR</td> <th>DATE</th> <td>5-09</td> </tr> <tr> <th>CHECKED</th> <td>PTG</td> <th>DATE</th> <td>5-09</td> </tr> </table> <p>JLK ENGINEERS 18441 N. 25th Ave, Ste 103 Phoenix, AZ 85023 602-955-1875 Fax: 602-288-6530</p> <p>ROUTE: 101L LOCATION: AGUA FRIA FREEWAY - OLIVE AVENUE TI</p> <p>TRACS NO. H6939 01 C 101-A(201)</p> | DESIGN | JRG | DATE | 5-09 | DRAWN | FR | DATE | 5-09 | CHECKED | PTG | DATE | 5-09 | <p>ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC DESIGN SERVICES</p> <p>OLIVE AVENUE WIDENING</p> <p>SIGN SUMMARY</p> <p>PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. T-2.04</p> <p>OF</p> |
|---|--|---|--|---|--------|-----|------|------|-------|----|------|------|---------|-----|------|------|---|
| DESIGN | JRG | DATE | 5-09 | | | | | | | | | | | | | | |
| DRAWN | FR | DATE | 5-09 | | | | | | | | | | | | | | |
| CHECKED | PTG | DATE | 5-09 | | | | | | | | | | | | | | |

| F.H.M.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 46 | 89 | |

101 MA 9

| Plan Sheet No | Station or Sign Number | Mile Post | Sign Code | WORK | | | | | | Background Color | PANEL TYPE | | | | | GROUND MOUNT | | | | OVERHEAD | | REMARKS | | | |
|---------------|------------------------|-----------|-----------|----------|---------------|-------------|---------------|-----------|----------------|------------------------------|------------|---------------------------|---------------|---------|---------------|-----------------|-------------|-------------|----------|-----------------|----------------|---------|---------------|----------------|------|
| | | | | EXISTING | | | | | | | Legend | Panel Size Feet W H | Area Sq Ft | Type | Sheeting Type | Bld Item Number | Posts | | Stringer | | Structure Type | | Number Lights | | |
| | | | | New | Replace Panel | Remove Exst | Modify Legend | To Remain | Relocate Panel | | | | | | | | See Remarks | Foundations | Type | Total Length Ft | | | | New Slip Bases | Type |
| T-2.07 | NB 60+50 | | R5-1 | | | | | | RD | Do Not Enter | 3 | 3 | - | | | | 1 | P-1 | 13 | 1 | | | | | |
| | | | R3-7L | | | | | | WH | Left Lane Must Turn Left | 2.5 | 2.5 | - | | | | | | | | | | | | |
| T-2.07 | WB 60+50 | | Guide | | | | | X | WH | North Loop 101 (Right Arrow) | 3 | 5.5 | - | | | | 1 | P-1 | 13 | 1 | | | | | |
| T-2.07 | NB 61+20 | | R5-1 | | | | | | RD | Do Not Enter | 3 | 3 | - | | | | 1 | P-1 | 13 | 1 | | | | | |
| | | | R3-7R | | | | | | WH | Right Lane Must Turn Right | 2.5 | 2.5 | - | | | | | | | | | | | | |
| T-2.07 | WB 62+37 | | Guide | X | | | | | GR | Loop 101 South Left 2 Lanes | 15 | 8 | 120 | VIII,IX | 6080063 | - | OH Str | | | | | | | | |
| | | | Guide | X | | | | | GR | Loop 101 North (Right Arrow) | 12 | 8 | 96 | VIII,IX | 6080063 | - | OH Str | | | | | | | | |
| T-2.07 | WB 62+60 | | R3-7R | | | | | X | WH | Right Lane Must Turn Right | 2.5 | 2.5 | - | | | | 1 | P-1 | 13 | 1 | | | | | |
| T-2.07 | NB 19+00 | | R3-5LAZ | | | | | | WH | (Arrow Left) Only | 4 | 5 | - | | | | - | OH Str | | | | | | | |
| | | | R3-6LRAZ | | | | | | WH | (Arrow Left/Right) | 4 | 5 | - | | | | - | | | | | | | | |
| | | | R3-5RAZ | | | | | | WH | (Arrow Right) Only | 4 | 5 | - | | | | - | | | | | | | | |
| | | | R3-5RAZ | X | | | | | WH | (Arrow Right) Only | 4 | 5 | 20 | III,IV | 6080003 | - | | | | | | | | | |
| | SB 19+00 | | R5-1aAZ | | | | | | RD | Wrong Way | 6 | 4 | - | | | | | | | | | | | | |
| | | | R5-1aAZ | | | | | | RD | Wrong Way | 2 | 3 | - | | | | | | | | | | | | |
| | | | R5-1aAZ | | | | | | RD | Wrong Way | 2 | 3 | - | | | | | | | | | | | | |

- Notes:
- The Contractor shall verify post lengths and elevations for the Engineers approval.
 - The Engineer may shift a sign in order to achieve a more desirable location.
 - Quantities are approximate and for the Contractors Information only.
 - See the ADOT Signing and Marking Standard Drawings for Installation Information.

- Panel Types:
- RM: Regulatory or Marker.
 - W: Warning.
 - F-DA: Flat Sheet Aluminum with Direct Applied or SILK Screened Characters.
 - F-DEM: Flat Sheet Aluminum with Demountable Characters.
 - EXT: Aluminum Extrusion.

- Colors:
- OR - Orange
 - RD - Red
 - BK - Black
 - BL - Blue
 - GR - Green
 - YL - Yellow
 - BR - Brown
 - WH - White

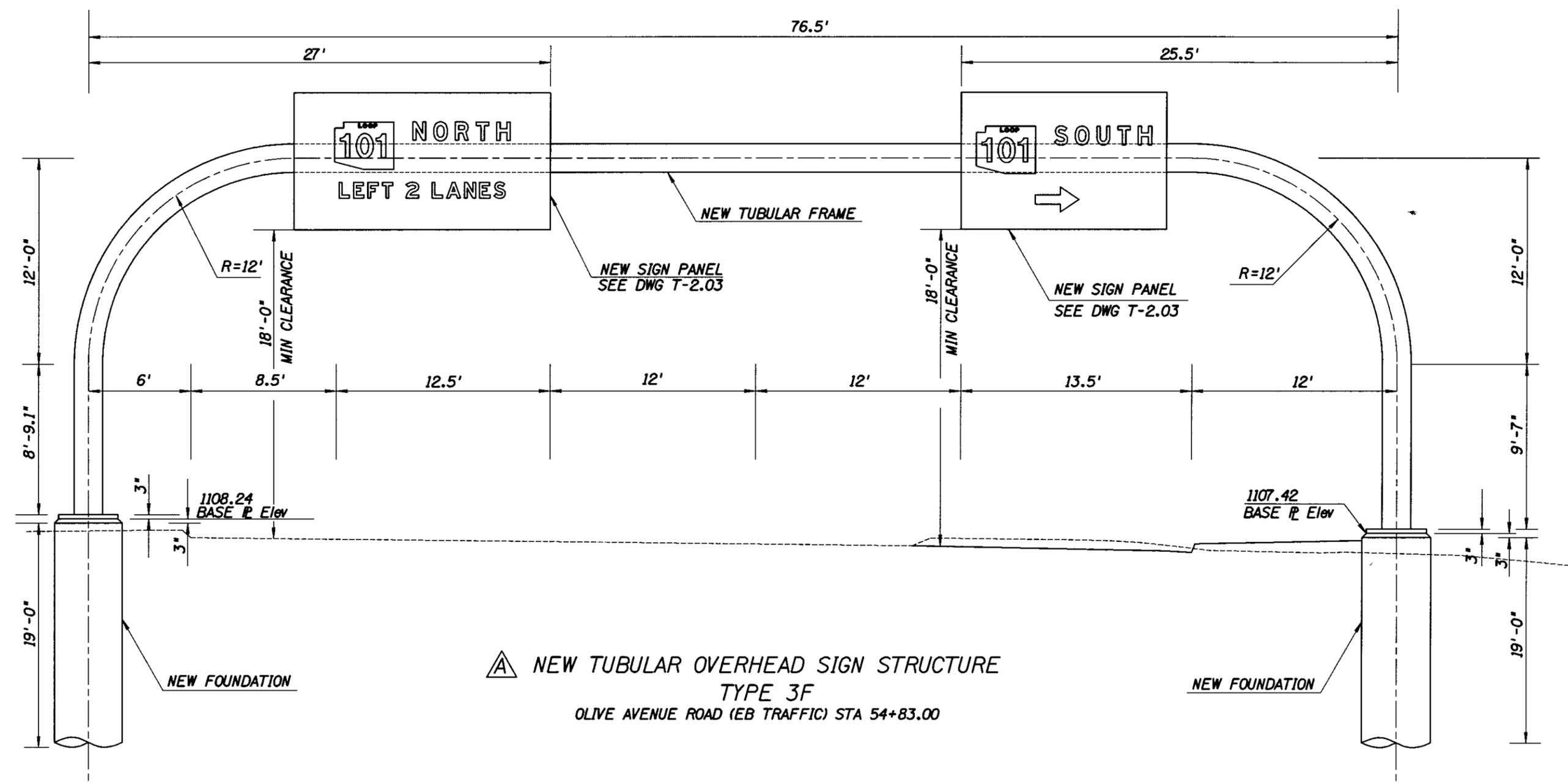
- Stringer Types:
- P: Square Tube Post
 - T: T Section (WT75x9)
- Posts:
- S: Single
 - T: Telescoping
 - TT: Taper Tube Sign Structure

| | | | | | |
|----------------------|------|--|-------------------------------------|---|--|
| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. T-2.05 |
| DRAWN | FR | DATE | 5-09 | | |
| CHECKED | PTG | DATE | 5-09 | | |
| JLK ENGINEERS | | 18441 N. 25th Ave, Suite 101 Phoenix, AZ 85023 602-405-1875 Fax 602-288-6530 | | OLIVE AVENUE WIDENING SIGN SUMMARY | |
| ROUTE | 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | | 101-A(201) |
| TRACS NO. H6939 01 C | | | OF | | |

| F.H.M.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 49 | 89 | |

101L MA 9

- NOTES:**
- REFER TO ADOT STD DWG SD 9.20 FOR STRUCTURE DETAILS.
 - COLUMN LENGTH IS APPROXIMATE AND NEEDS TO BE VERIFIED BY THE ENGINEER.
 - IF USING OPTIONAL FIELD SPLICE, THE MINIMUM TANGENT COLUMN LENGTH IS 7'.



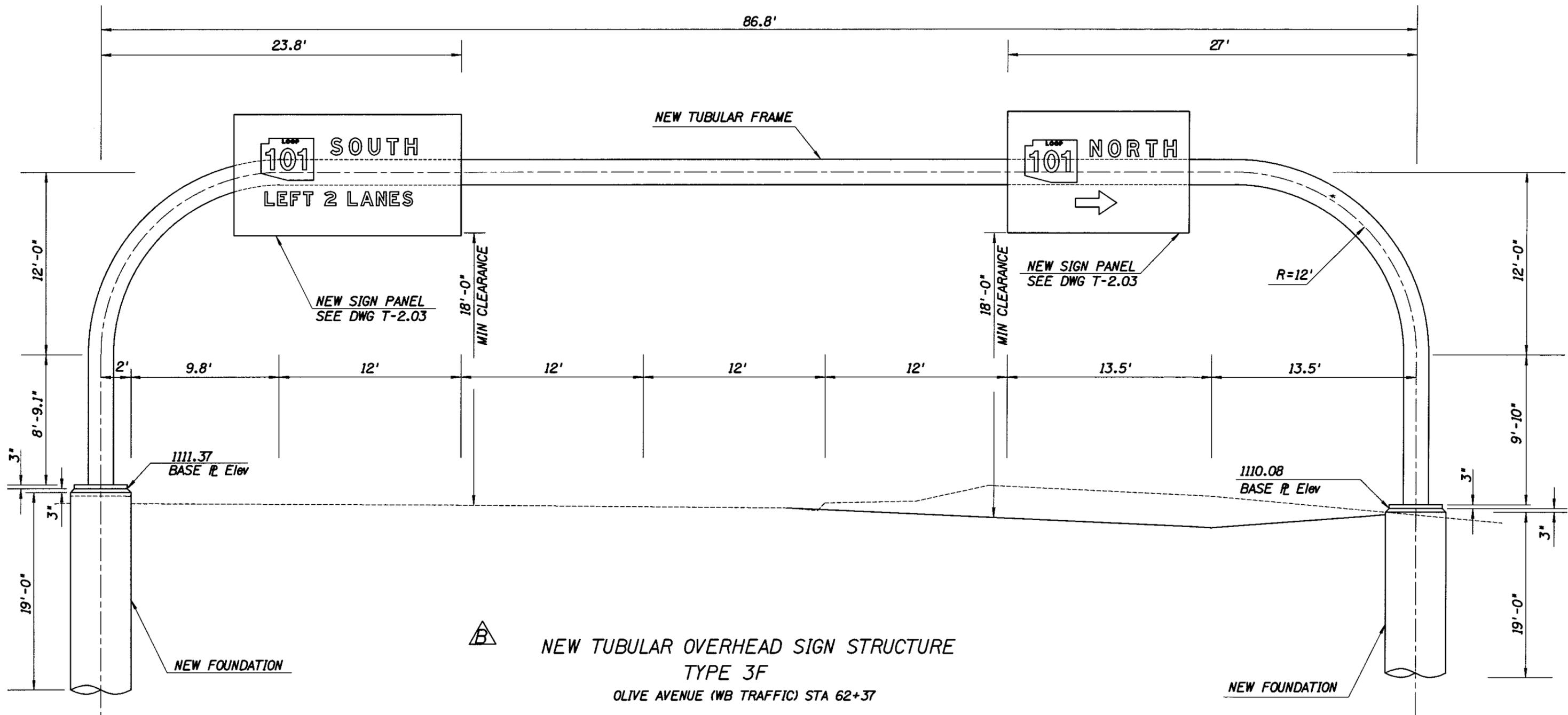
△ NEW TUBULAR OVERHEAD SIGN STRUCTURE TYPE 3F
OLIVE AVENUE ROAD (EB TRAFFIC) STA 54+83.00

DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO.

| DESIGN | NAME | DATE | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. T-2.08 |
|--|-------------------------------------|------|---|---|
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS <small>1841 N. 25th Ave, Ste 303 Phoenix, AZ 85023 602-408-1875 Fax 602-288-6530</small> | | | OLIVE AVENUE WIDENING SIGN ELEVATIONS | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | 101-A(201) | OF |

- NOTES:**
1. REFER TO ADOT STD DWG SD 9.10 FOR STRUCTURE DETAILS.
 2. COLUMN LENGTH IS APPROXIMATE AND NEEDS TO BE VERIFIED BY THE ENGINEER.
 3. IF USING OPTIONAL FIELD SPLICE, THE MINIMUM TANGENT COLUMN LENGTH IS 7'.

| F.P.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 50 | 89 | |
| 101L MA 9 | | | | | |



NEW TUBULAR OVERHEAD SIGN STRUCTURE
TYPE 3F
 OLIVE AVENUE (WB TRAFFIC) STA 62+37

| | | | | |
|--|-------------------------------------|------------|---|---|
| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. T-2.09 |
| DRAWN | FR | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS <small>18441 N. 25TH AVENUE, SUITE 103 PHOENIX, AZ 85023 602-905-1875 Fax 602-998-6530</small> | | | OLIVE AVENUE WIDENING SIGN ELEVATIONS | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | | |
| TRACS NO. H 6939 01C | | 101-A(201) | OF | |

SURVEY NO. FINISHED PLANS REVISIONS DATE LOCATION FINISHED PLANS REVISIONS DATE SURVEY NO. FINISHED PLANS REVISIONS DATE SURVEY NO.

GENERAL NOTES

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 52 | 89 | |

101L MA 9

1. ALL MATERIAL AND INSTALLATION SHALL CONFORM TO THE ARIZONA DEPARTMENT OF TRANSPORTATION (ADOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2008 EDITION, AND THE 2004 "TRAFFIC SIGNALS AND LIGHTING STANDARD DRAWINGS", UNLESS OTHERWISE NOTED IN THE SPECIAL PROVISIONS FOR THIS PROJECT.
2. THE LOCATION OF UTILITIES SHOWN ON THE PLANS IS APPROXIMATE. ALL INVOLVED UTILITIES MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE, PER SECTION 730-6 OF THE STANDARD SPECIFICATIONS, FOR CONTACTING ALL UTILITIES FOR EXACT LOCATION PRIOR TO ANY CONSTRUCTION ACTIVITY.
3. FOR ELECTRICAL SERVICE, THE CONTRACTOR SHALL COORDINATE WITH RYAN EARWOOD OF SRP AT (602) 236-4128.
4. SEE STRIPING PLAN TO VERIFY ACTUAL LANE DIMENSIONS AND STOP BAR LOCATIONS.
5. ALL BACKPLATES FOR SIGNAL FACES SHALL BE LOUVERED.
6. ALL PULLBOXES SHALL BE LEFT IN A CLEAN CONDITION, FREE OF DIRT AND DEBRIS UPON COMPLETION OF THE WORK.
7. EXTEND CONDUITS TO NEW PULLBOX LOCATIONS AS SHOWN.
8. THE CONTRACTOR SHALL FIELD VERIFY ALL POLE LOCATIONS AND ELEVATIONS WITH THE ENGINEER, PRIOR TO ANY CONSTRUCTION ACTIVITY.
9. TOP OF POLE FOUNDATION SHALL BE THE SAME ELEVATION AS THE TOP OF THE FINISHED SIDEWALK RAMP, OR THE ADJACENT FINISHED ROADWAY SURFACE. IN SLOPED AREAS, CONSTRUCT COMPACTED FILL AROUND FOUNDATIONS FOR FULL STRUCTURAL SUPPORT AT POLES.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSURING THE HEIGHT OF THE SIGNAL MASTARM IS A NOMINAL 21 FEET ABOVE PAVEMENT.
11. ALL CONDUITS SHALL BE 2 INCH OR 3 INCH PVC INSTALLED PER SECTION 732-3.01 OF THE ADOT STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED.
12. ALL PULL BOXES SHALL BE POLYMER PER T.S. 1-5. ALL PULL BOXES SHALL BE NUMBER 7 UNLESS SHOWN OTHERWISE AND SHALL BE LOCATED APPROXIMATELY AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
13. EACH LUMINAIRE SHALL BE INDIVIDUALLY FUSED WITH IN-LINE CONNECTORS AS SHOWN ON T.S. 1-8.
14. ALL SIGNAL CONDUCTORS SHALL BE INSPECTED DURING INSTALLATION BY AN ADOT ELECTRICAL INSPECTOR. THE CONTRACTOR SHALL COORDINATE INSPECTION WITH ADOT, FAILURE TO DO SO COULD RESULT IN THE CONDUCTORS BEING REMOVED AND REPLACED.
15. ALL TRAFFIC SIGNAL INDICATIONS SHALL BE ADOT LED MODULES.
16. ALL TRAFFIC POLES AND MASTARMS SHALL BE TAPERED, GALVANIZED STEEL.
17. THE CONTRACTOR SHALL COORDINATE THE SIGNAL TURN ON WITH THE ADOT ELECTRICAL INSPECTOR A MINIMUM OF 2 WEEKS PRIOR TO THE DESIRED TURN ON DATE. THE ADOT ELECTRICAL INSPECTOR SHALL SCHEDULE THE SIGNAL TURN ON WITH ADOT TRAFFIC OPERATIONS AND PHOENIX AREA SIGNAL MAINTENANCE, SIGNAL TURN ON SHALL NOT BE DONE ON MONDAYS OR FRIDAYS.
18. ALL CONDUIT RUNS SHOWN ARE SCHEMATICALLY DRAWN ON THESE PLANS. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES AND ROUTE CONDUIT TO AVOID SUCH.
19. ALL REMOVED AND DISPOSED POLES, MASTARMS, LUMINAIRES, MOUNTING ASSEMBLIES, PEDESTRIAN PUSH BUTTONS, PUSH BUTTON SIGNS, AND SIGNAL FACES SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THIS WORK EFFORT SHALL BE PAID FOR IN FULL IN BID ITEM NUMBER 2020153.
20. ALL EXISTING PULLBOXES AND FOUNDATIONS (NOT BEING USED) SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AS PER SECTION 202-3.04 AND SECTION 737-3.03 OF THE STANDARD SPECIFICATIONS, AND AS DIRECTED BY THE ENGINEER.
21. REMOVE AND DISPOSE OF ALL EXISTING CONDUITS AND CONDUCTORS NOT BEING USED, AS PER SECTION 737-3.03 OF THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER. THIS WORK EFFORT SHALL BE PAID FOR IN FULL IN BID ITEM NUMBER 2020154.
22. REMOVED AND SALVAGED TYPE II LOAD CENTER CABINET EQUIPMENT COMPLETE SHALL BE DELIVERED TO ADOT TRAFFIC ENGINEERING OPERATIONS, 2104 S. 22ND AVENUE, PHOENIX, ARIZONA. THE CONTRACTOR SHALL COORDINATE THE DELIVERY OF THIS ITEM TO ADOT WITH THE ADOT ELECTRICAL INSPECTOR. THIS WORK EFFORT SHALL BE PAID FOR IN FULL IN BID ITEM NUMBER 2020056.
23. ALL TRAFFIC SIGNAL POLES AND EQUIPMENT SHOWN ON THE PLANS TO BE RELOCATED SHALL BE PAID FOR IN FULL IN BID ITEM NUMBER 7330620.

| | | | | | |
|--|------------|--|-------------------------------------|--|---|
| DESIGN | AS | DATE | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC ELECTRICAL DESIGN |  |
| DRAWN | AS | DATE | 05-09 | | |
| CHECKED | CAO | DATE | 05-09 | | |
|  16605 North 28TH AVE Suite 100 Phoenix, AZ 85053 | | OLIVE AVENUE WIDENING TRAFFIC SIGNAL & LIGHTING PLAN GENERAL NOTES | | DWG NO. T-3.01 | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | |
| TRACS NO. | H 6939 OIC | | 101-A-(201) | OF | |

DATE LOCATION REVISIONS FINISHED PLANS SURVEY NO. DATE LOCATION REVISIONS FINISHED PLANS SURVEY NO.

| F.A.R. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|---------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 53 | 89 | |
| 101L MA 9 | | | | | |

CONSTRUCTION NOTES THIS SHEET:

- 1 REMOVE AND RELOCATE EXISTING TYPE IV CABINET EQUIPMENT COMPLETE AND EXISTING ASC125-2100 CONTROLLER TO LOCATION "A" AS SHOWN ON SHEET T-3.04. REMOVE AND DISPOSE EXISTING FOUNDATION. (SEE GENERAL NOTES ON SHEET T-3.01)
- 2 REMOVE AND RELOCATE EXISTING UNINTERRUPTIBLE POWER SUPPLY (UPS) TYPE 3R ENCLOSURE EQUIPMENT COMPLETE TO LOCATION "C" AS SHOWN ON SHEET T-3.04. REMOVE AND DISPOSE EXISTING FOUNDATION. FURNISH AND INSTALL 2-2" CONDUITS AND CONDUCTORS PER MANUFACTURER'S REQUIREMENTS. (SEE GENERAL NOTES ON SHEET T-3.01)
- 3 REMOVE AND SALVAGE EXISTING TYPE II LOAD CENTER CABINET EQUIPMENT COMPLETE AS SHOWN ON PLANS. REMOVE AND DISPOSE EXISTING FOUNDATION. (SEE GENERAL NOTES ON SHEET T-3.01)
- 4 REMOVE AND DISPOSE EXISTING PULLBOX. (SEE GENERAL NOTES ON SHEET T-3.01)
- 5 REMOVE AND DISPOSE EXISTING CONDUIT AND CONDUCTORS. (SEE GENERAL NOTES ON SHEET T-3.01)

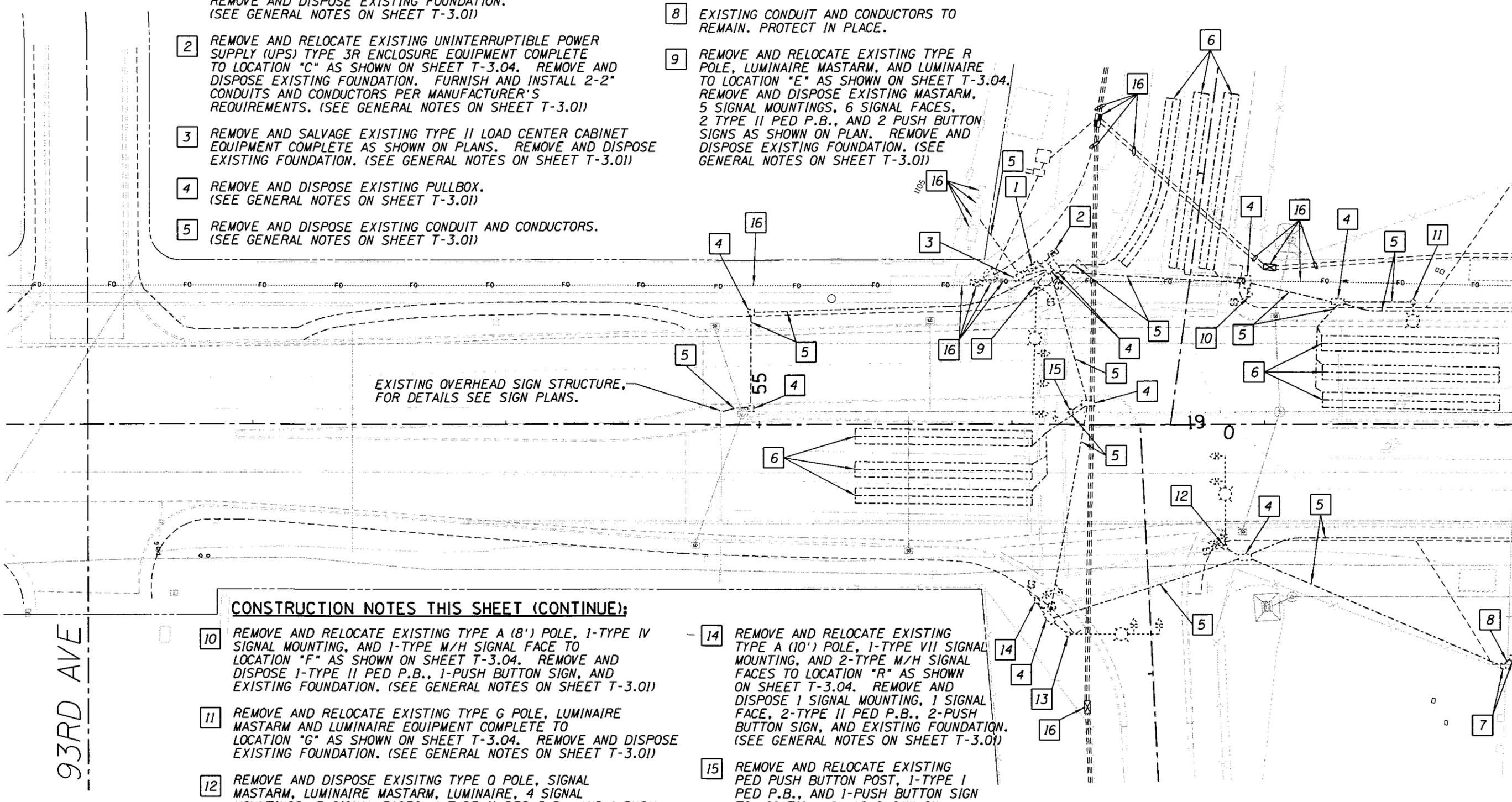
- 6 ABANDON EXISTING LOOP DETECTORS.
- 7 EXISTING PULL BOX TO REMAIN. PROTECT IN PLACE.
- 8 EXISTING CONDUIT AND CONDUCTORS TO REMAIN. PROTECT IN PLACE.
- 9 REMOVE AND RELOCATE EXISTING TYPE R POLE, LUMINAIRE MASTARM, AND LUMINAIRE TO LOCATION "E" AS SHOWN ON SHEET T-3.04. REMOVE AND DISPOSE EXISTING MASTARM, 5 SIGNAL MOUNTINGS, 6 SIGNAL FACES, 2 TYPE II PED P.B., AND 2 PUSH BUTTON SIGNS AS SHOWN ON PLAN. REMOVE AND DISPOSE EXISTING FOUNDATION. (SEE GENERAL NOTES ON SHEET T-3.01)

EXISTING OVERHEAD SIGN STRUCTURE,
FOR DETAILS SEE SIGN PLANS.

CONSTRUCTION NOTES THIS SHEET (CONTINUE):

- 10 REMOVE AND RELOCATE EXISTING TYPE A (8') POLE, 1-TYPE IV SIGNAL MOUNTING, AND 1-TYPE M/H SIGNAL FACE TO LOCATION "F" AS SHOWN ON SHEET T-3.04. REMOVE AND DISPOSE 1-TYPE II PED P.B., 1-PUSH BUTTON SIGN, AND EXISTING FOUNDATION. (SEE GENERAL NOTES ON SHEET T-3.01)
- 11 REMOVE AND RELOCATE EXISTING TYPE G POLE, LUMINAIRE MASTARM AND LUMINAIRE EQUIPMENT COMPLETE TO LOCATION "G" AS SHOWN ON SHEET T-3.04. REMOVE AND DISPOSE EXISTING FOUNDATION. (SEE GENERAL NOTES ON SHEET T-3.01)
- 12 REMOVE AND DISPOSE EXISTING TYPE Q POLE, SIGNAL MASTARM, LUMINAIRE MASTARM, LUMINAIRE, 4 SIGNAL MOUNTINGS, 5 SIGNAL FACES, 1-TYPE II PED P.B., AND 1-PUSH BUTTON SIGN. REMOVE AND DISPOSE EXISTING FOUNDATION. (SEE GENERAL NOTES ON SHEET T-3.01)
- 13 REMOVE AND RELOCATE EXISTING TYPE Q POLE, LUMINAIRE MASTARM, AND LUMINAIRE TO LOCATION "Q" AS SHOWN ON SHEET T-3.04. REMOVE AND DISPOSE EXISTING SIGNAL MASTARM, 2 SIGNAL MOUNTINGS, AND 2 SIGNAL FACES. REMOVE AND DISPOSE EXISTING FOUNDATION. (SEE GENERAL NOTES ON SHEET T-3.01)

- 14 REMOVE AND RELOCATE EXISTING TYPE A (10') POLE, 1-TYPE VII SIGNAL MOUNTING, AND 2-TYPE M/H SIGNAL FACES TO LOCATION "R" AS SHOWN ON SHEET T-3.04. REMOVE AND DISPOSE 1 SIGNAL MOUNTING, 1 SIGNAL FACE, 2-TYPE II PED P.B., 2-PUSH BUTTON SIGN, AND EXISTING FOUNDATION. (SEE GENERAL NOTES ON SHEET T-3.01)
- 15 REMOVE AND RELOCATE EXISTING PED PUSH BUTTON POST, 1-TYPE I PED P.B., AND 1-PUSH BUTTON SIGN TO LOCATION "S" AS SHOWN ON SHEET T-3.04. REMOVE AND DISPOSE EXISTING FOUNDATION. (SEE GENERAL NOTES ON SHEET T-3.01)
- 16 SEE UTILITY PLANS FOR DISPOSITION.



| | | | | |
|----------------|------------|--|-------------------------------------|---|
| DESIGN | AS | DATE | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC ELECTRICAL DESIGN |
| DRAWN | AS | DATE | 05-09 | |
| CHECKED | CAO | DATE | 05-09 | |
| RBF CONSULTING | | 16605 North 28th Ave Suite 100 Phoenix, AZ 85053 | | OLIVE AVENUE WIDENING TRAFFIC SIGNAL & LIGHTING REMOVAL PLAN |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | |
| TRACS NO. | H 6939 OIC | | 101-A-(201) | DWG NO. T-3.02 OF |



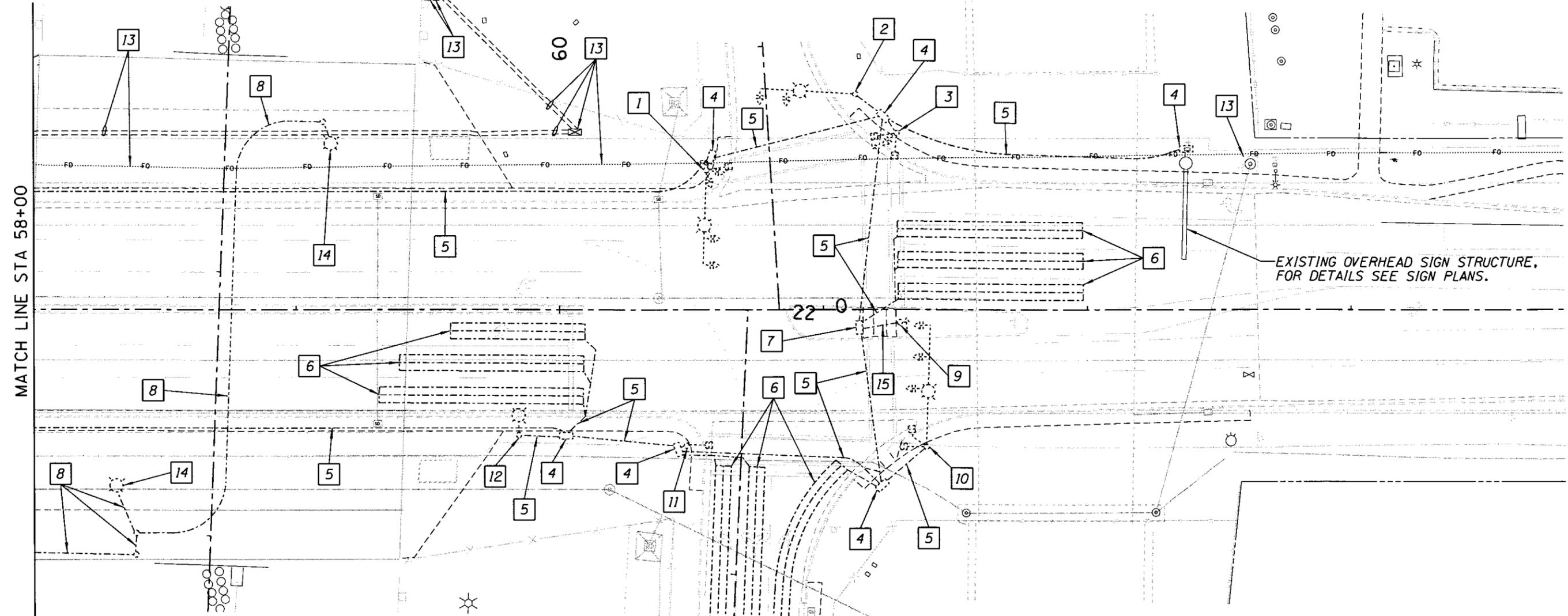
| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 54 | 89 | |
| 101L MA 9 | | | | | |

CONSTRUCTION NOTES THIS SHEET:

- 1 REMOVE AND DISPOSE EXISTING TYPE O POLE, SIGNAL MASTARM, LUMINAIRE MASTARM, LUMINAIRE, 4 SIGNAL MOUNTINGS, 5 SIGNAL FACES, 1-TYPE I PED P.B., 1-PUSH BUTTON SIGN AND EXISTING FOUNDATION. (SEE GENERAL NOTES ON SHEET T-3.01)
- 2 REMOVE AND RELOCATE EXISTING TYPE O POLE, LUMINAIRE MASTARM, AND LUMINAIRE TO LOCATION "I" AS SHOWN ON SHEET T-3.05. REMOVE AND DISPOSE EXISTING SIGNAL MASTARM, 2 SIGNAL MOUNTINGS, 2 SIGNAL FACES AND EXISTING FOUNDATION. (SEE GENERAL NOTES ON SHEET T-3.01)

- 3 REMOVE AND RELOCATE EXISTING TYPE A (10') POLE, 1-TYPE VII SIGNAL MOUNTING, AND 2-TYPE M/H SIGNAL FACES TO LOCATION "J" AS SHOWN ON SHEET T-3.05. REMOVE AND DISPOSE 1 SIGNAL MOUNTING, 1 SIGNAL FACE, 2-TYPE II PED P.B., 2-PUSH BUTTON SIGNS, AND EXISTING FOUNDATION. (SEE GENERAL NOTES ON SHEET T-3.01)
- 4 REMOVE AND DISPOSE EXISTING PULLBOX. (SEE GENERAL NOTES ON SHEET T-3.01)
- 5 REMOVE AND DISPOSE EXISTING CONDUIT AND CONDUCTORS. (SEE GENERAL NOTES ON SHEET T-3.01)

- 6 ABANDON EXISTING LOOP DETECTORS.
- 7 EXISTING PULL BOX TO REMAIN. PROTECT IN PLACE.
- 8 EXISTING CONDUIT AND CONDUCTORS TO REMAIN. PROTECT IN PLACE.
- 9 EXISTING PED PUSH BUTTON POST, TYPE I PED P.B., AND PUSH BUTTON SIGN TO REMAIN. PROTECT IN PLACE.



EXISTING OVERHEAD SIGN STRUCTURE, FOR DETAILS SEE SIGN PLANS.

MATCH LINE STA 58+00

CONSTRUCTION NOTES THIS SHEET (CONTINUE):

- 10 REMOVE AND RELOCATE EXISTING TYPE R POLE, LUMINAIRE MASTARM, AND LUMINAIRE TO LOCATION "M" AS SHOWN ON SHEET T-3.05. REMOVE AND DISPOSE EXISTING SIGNAL MASTARM, 5 SIGNAL MOUNTINGS, 6 SIGNAL FACES, 2-TYPE II PED P.B., 2 PUSH BUTTON SIGNS, AND EXISTING FOUNDATION. (SEE GENERAL NOTES ON SHEET T-3.01)
- 11 REMOVE AND RELOCATE EXISTING TYPE A (8') POLE, 1-TYPE IV SIGNAL MOUNTING, AND 1-TYPE M/H SIGNAL FACE TO LOCATION "N" AS SHOWN ON SHEET T-3.05. REMOVE AND DISPOSE 1-TYPE II PED P.B., 1-PUSH BUTTON SIGN, AND EXISTING FOUNDATION. (SEE GENERAL NOTES ON SHEET T-3.01)

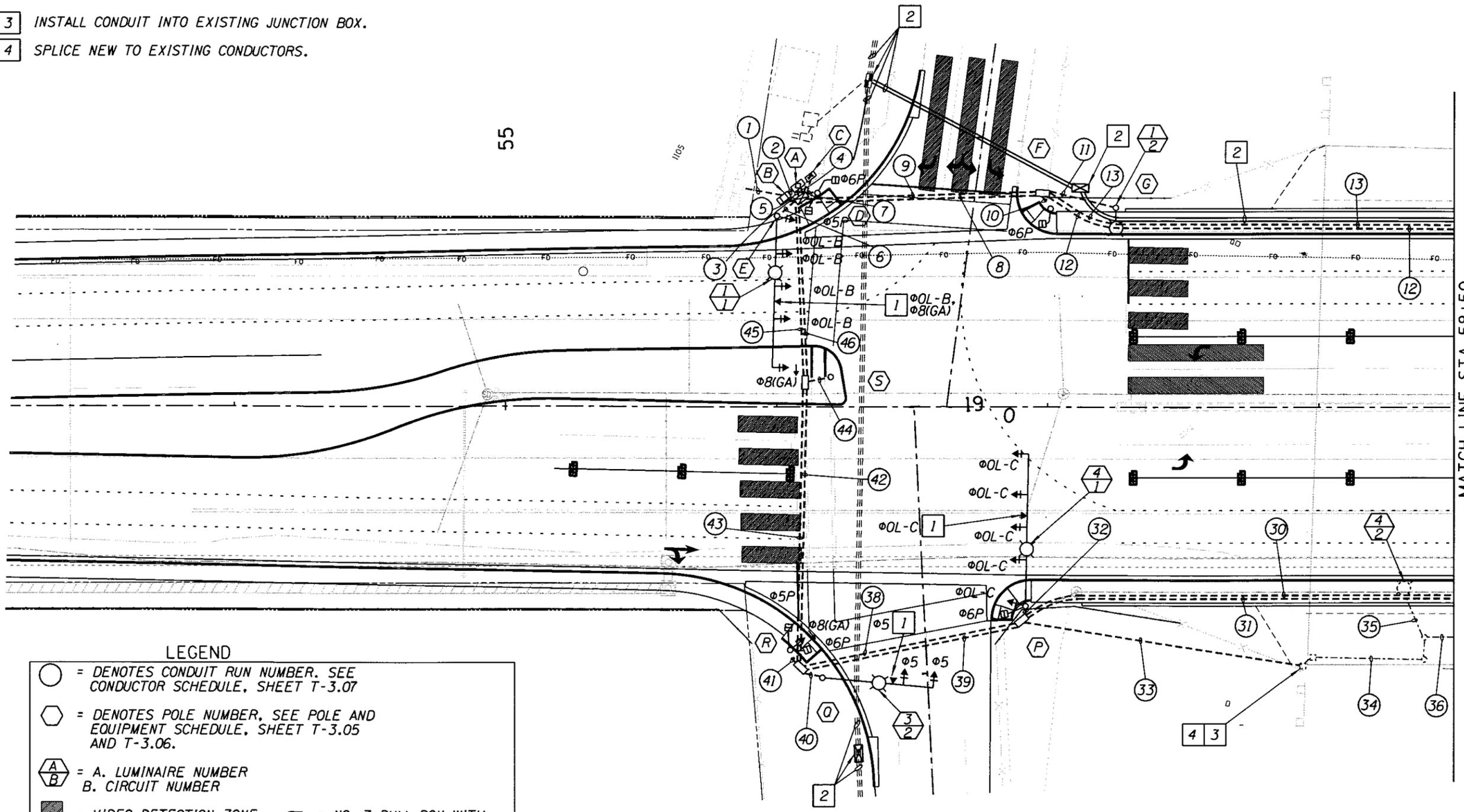
- 12 REMOVE AND RELOCATE EXISTING TYPE G POLE, LUMINAIRE MASTARM AND LUMINAIRE EQUIPMENT COMPLETE TO LOCATION "O" AS SHOWN ON SHEET T-3.05. REMOVE AND DISPOSE FOUNDATION. (SEE GENERAL NOTES ON SHEET T-3.01)
- 13 SEE UTILITY PLANS FOR DISPOSITION.
- 14 EXISTING UNDERDECK LIGHTING TO REMAIN. PROTECT IN PLACE.
- 15 EXISTING CONDUIT TO REMAIN. PROTECT IN PLACE. REMOVE EXISTING CONDUCTORS.

| | | | | | | |
|----------------------|---------|----------|--|---|---------|--------|
| DESIGN | AS | DATE | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC ELECTRICAL DESIGN OLIVE AVENUE WIDENING TRAFFIC SIGNAL AND LIGHTING REMOVAL PLAN | | |
| DRAWN | AS | DATE | 05-09 | | | |
| CHECKED | CAO | DATE | 05-09 | | | |
| | | | 16605 North 28th Ave Suite 100 Phoenix, AZ 85053 | | | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | DWG NO. | T-3.03 |
| TRACS NO. H 6939 01C | | | 101-A-(201) | | OF | |

| F.A.R.T.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-------------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 55 | 89 | |
| 101L MA 9 | | | | | |

CONSTRUCTION NOTES THIS SHEET:

- 1 INSTALL VIDEO DETECTION CAMERA ON TRAFFIC SIGNAL MASTARM.
- 2 REFER TO FREEWAY MANAGEMENT SYSTEM (FMS) PLANS FOR DETAILS.
- 3 INSTALL CONDUIT INTO EXISTING JUNCTION BOX.
- 4 SPLICE NEW TO EXISTING CONDUCTORS.



LEGEND

- = DENOTES CONDUIT RUN NUMBER. SEE CONDUCTOR SCHEDULE, SHEET T-3.07
- ⬡ = DENOTES POLE NUMBER, SEE POLE AND EQUIPMENT SCHEDULE, SHEET T-3.05 AND T-3.06.
- ⬢ = A. LUMINAIRE NUMBER
B. CIRCUIT NUMBER
- ▨ = VIDEO DETECTION ZONE ⊞ = NO. 7 PULL BOX WITH EXTENSION (ADOT)
- ▲ = VIDEO DETECTION CAMERA
- = NO. 5 PULL BOX (ADOT)
- ⊞ = NO. 7 PULL BOX (ADOT)

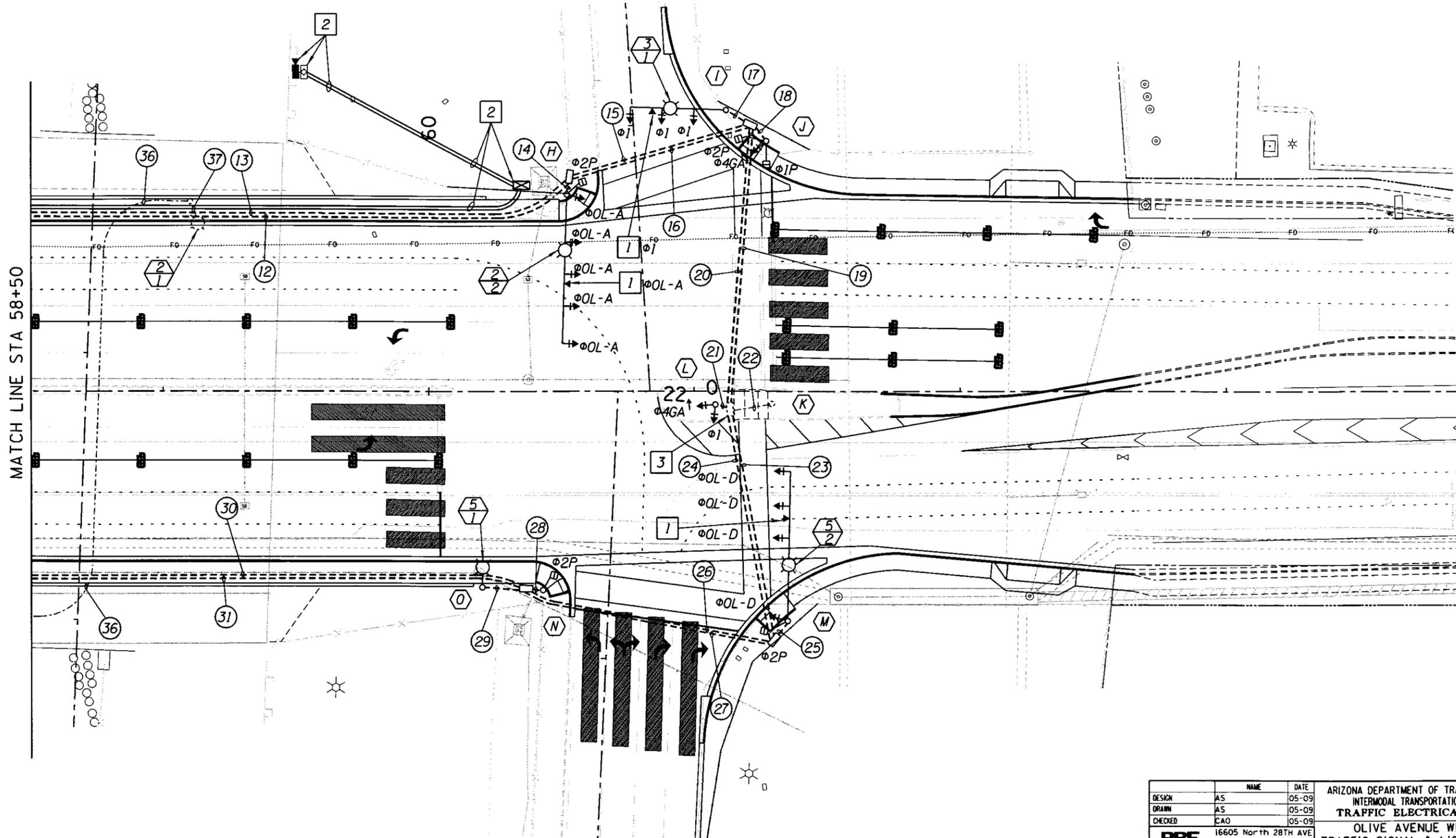
MATCH LINE STA 58+50

| DESIGN | NAME | DATE | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC ELECTRICAL DESIGN OLIVE AVENUE WIDENING TRAFFIC SIGNAL & LIGHTING PLANS STA 55+00 TO 58+50 |
|---|-------------------------------------|-------------|--|
| AS | | 05-09 | |
| AS | | 05-09 | |
| CAO | | 05-09 | |
| RBF CONSULTING 16605 North 28th Ave Suite 100 Phoenix, AZ 85053 | | | |
| ROUTE | LOCATION | DWG NO. | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | T-3.04 | |
| TRACS NO. H 6939 OIC | | 101-A-(201) | OF |

CONSTRUCTION NOTES THIS SHEET:

- 1 INSTALL VIDEO DETECTION CAMERA ON TRAFFIC SIGNAL MASTARM.
- 2 REFER TO FREEWAY MANAGEMENT SYSTEM (FMS) PLANS FOR DETAILS.
- 3 INSTALL CONDUITS INTO EXISTING PULL BOX.

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 56 | 89 | |
| 101L MA 9 | | | | | |

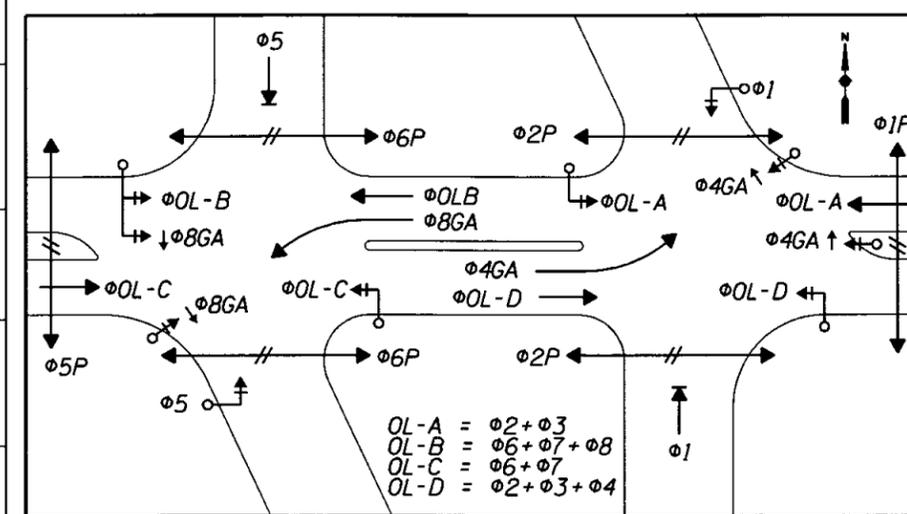
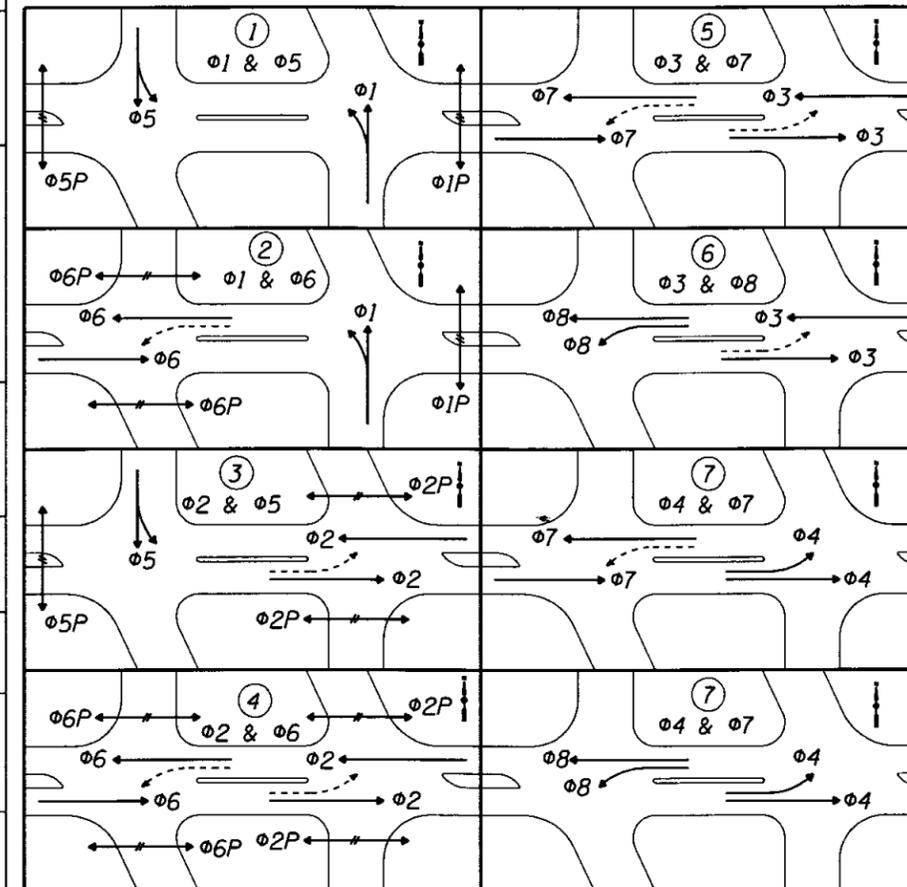


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|----------------------|---------|--|-------------------------------------|---|--|---------|--------|
| DESIGN | AS | DATE | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC ELECTRICAL DESIGN | | | |
| DRAWN | AS | DATE | 05-09 | | | | |
| CHECKED | CAO | DATE | 05-09 | | | | |
| | | 16605 North 28TH AVE Suite 100 Phoenix, AZ 85053 | | OLIVE AVENUE WIDENING TRAFFIC SIGNAL & LIGHTING PLAN STA 58+50 TO STA 63+00 | | | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | | DWG NO. | T-3.05 |
| TRACS NO. H 6939 OIC | | 101-A-(201) | | OF | | | |

POLE SCHEDULE

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 57 | 89 | |
| 101L MA 9 | | | | | |

| TRAFFIC SIGNAL CONTROLLER | | | | | | | REMARKS | LOCATION |
|---------------------------|--------------------------------|--|--------------|--------------------|---------------------|-------------------------------|---|--|
| CABINET | TYPE | CONTROLLER | AUX. CONTROL | | | | | |
| (A) | RELOCATE TSI TYPE IV | RELOCATE ASC/2S-2100 CONTROLLER | | | | | | STA 56+08, 81.6' LT. |
| (B) | NEW METER PEDESTAL CABINET | SEE T.S. 3-13 FOR CABINET AND T.S. 2-6 FOR FOUNDATION. 120/240 V METER PEDESTAL WIRING DIAGRAM WITH PHOTO ELECTRIC CELL AND LIGHTING PER T.S. 3-19 | | | | | PROVIDE 2 ADDITIONAL 20-AMP, 240 V, 2P CIRCUIT BREAKERS AND 2 ADDITIONAL 30-AMP, 2P CONTACTORS. | STA 56+03, 77.2' LT. |
| (C) | RELOCATE UPS TYPE 3R ENCLOSURE | RELOCATE 120 VOLT UNINTERRUPTIBLE POWER SUPPLY (UPS) | | | | | RELOCATE EXISTING UNINTERRUPTIBLE POWER SUPPLY (UPS) TYPE 3R ENCLOSURE AS SHOWN ON PLANS. | STA 56+12, 85.0' LT. |
| POLE NO. | TYPE | SIG. | LUM. | MTG. | FACE | P.B. SIGN | REMARKS | LOCATION |
| (D) | A (8') | | | VI | 2-M/H | T.S. 11-4 R10-4b (R & L) | TYPE I PED P.B. | STA 56+15, 78.9' LT. |
| (E) | RELOCATE TYPE R | 55' | RELOCATE 20' | 4-II 1-V | 4-F 1-0 | | RELOCATE EXISTING TYPE R POLE, 250 HPS LUMINAIRE AND LUMINAIRE MASTARM AS SHOWN ON PLANS. INSTALL NEW VIDEO DETECTION CAMERA. | STA 56+00, 70.5' LT. |
| (F) | RELOCATE TYPE A (8') | | | RELOCATE 1-IV | RELOCATE 1-M/H | T.S. 11-4 R10-4b (L) | RELOCATE EXISTING TYPE A POLE, TYPE IV MOUNTING, AND M/H SIGNAL FACE AS SHOWN ON PLANS. TYPE I PED P.B. | STA 57+01, 73.1' LT. STA 60+43, 74.4' RT. |
| (G) | RELOCATE TYPE G | | RELOCATE 20' | | | | RELOCATE EXISTING TYPE G POLE, 250 HPS LUMINAIRE, AND LUMINAIRE MASTARM AS SHOWN ON PLANS. | STA 54+25, 73.6' LT. STA 60+20, 73.4' RT. |
| (H) | R | 55' | 20' | 4-II 1-VII | 1-M/H 5-F | T.S. 11-4 R10-4b (R) | 250 HPS LUMINAIRE TYPE I PED P.B. INSTALL NEW VIDEO DETECTION CAMERA. | STA 60+52, 73.9' LT. |
| (I) | RELOCATE TYPE O | 35' | RELOCATE 20' | 3-II | 3-F | | RELOCATE EXISTING TYPE O POLE, 250 HPS LUMINAIRE AND LUMINAIRE MASTARM AS SHOWN ON PLANS. INSTALL NEW VIDEO DETECTION CAMERA. | STA 61+12, 105.6' LT. |
| (J) | RELOCATE TYPE A (10') | | | IV, RELOCATE 1-VII | 1-O, RELOCATE 2-M/H | T.S. 11-4 R10-4b (R & L) | RELOCATE EXISTING TYPE A POLE, TYPE VII MOUNTING, AND 2-M/H SIGNAL FACES AS SHOWN ON PLANS. TYPE I PED P.B. | STA 67+27, 94.0' LT. STA 56+05, 89.4' RT. |
| (K) | EXISTING PED PUSH BUTTON POST | | | | | EXISTING T.S. 11-4 R10-4b (B) | EXISTING TYPE I PED P.B. AND P.B. SIGN. | STA 61+29, 4.8' RT. |



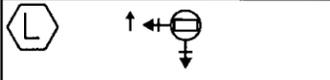
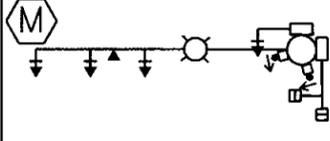
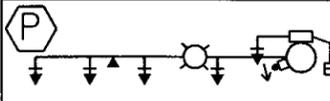
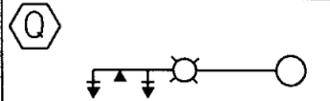
MOVEMENT DIAGRAM

| | | | | | |
|----------------|-----|------------|--|---|--|
| DESIGN | AS | DATE | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC ELECTRICAL DESIGN | |
| DRAWN | AS | DATE | 05-09 | | |
| CHECKED | CAO | DATE | 05-09 | | |
| RBF CONSULTING | | | 16605 North 28TH AVE Suite 100 Phoenix, AZ 85053 | | |
| ROUTE | | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | |
| TRACS NO. | | H 6939 OIC | 101-A-(201) | | |
| DWG NO. | | T-3.06 | | OF | |

SEE SHEET T-3.06 FOR CONTINUATION OF POLE & EQUIPMENT SCHEDULE AND POLE NOTES

POLE SCHEDULE

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 58 | 89 | |
| 101L MA 9 | | | | | |

| POLE | | MAST ARM | | SIGNALS | | P.B. SIGN | REMARKS | LOCATION |
|---|--|----------|-----------------|-----------------------|--------------|--|--|----------------------|
| NO. | TYPE | SIG. | LUM. | MTG. | FACE | | | |
|  | A (10') | - | - | VI | 1-F 1-0 | - | - | STA 61+08, 5.0' RT. |
|  | RELOCATE TYPE R | 55' | RELOCATE 20' | 3-11 1-V 1-VIII | 4-F 2-M/H | T.S. 11-4 R10-4b (R & L) | RELOCATE EXISTING TYPE R POLE, 250 HPS LUMINAIRE, AND LUMINAIRE MASTARM AS SHOWN ON PLANS. TYPE 1 PED P.B. INSTALL NEW VIDEO DETECTION CAMERA. | STA 61+35, 86.0' RT. |
|  | R | 55' | 20' | 4-11 1-VII | 5-F 1-M/H | T.S. 11-4 R10-4b (R) | 250 HPS LUMINAIRE TYPE 1 PED P.B. INSTALL NEW VIDEO DETECTION CAMERA. | STA 56+92, 73.3' RT. |
|  | RELOCATE TYPE Q | 40' | RELOCATE 20' | 2-11 | 2-F | - | RELOCATE EXISTING TYPE Q POLE, 250 HPS LUMINAIRE, AND LUMINAIRE MASTARM AS SHOWN ON PLANS. INSTALL NEW VIDEO DETECTION CAMERA. | STA 56+17, 99.6' RT. |
|  | RELOCATE PED PUSH BUTTON POST | - | - | - | - | RELOCATE T.S. 11-4 R10-4b (B) | RELOCATED TYPE 1 PED P.B. AND P.B. SIGN. | STA 56+20, 11.0' RT. |

POLE NOTES

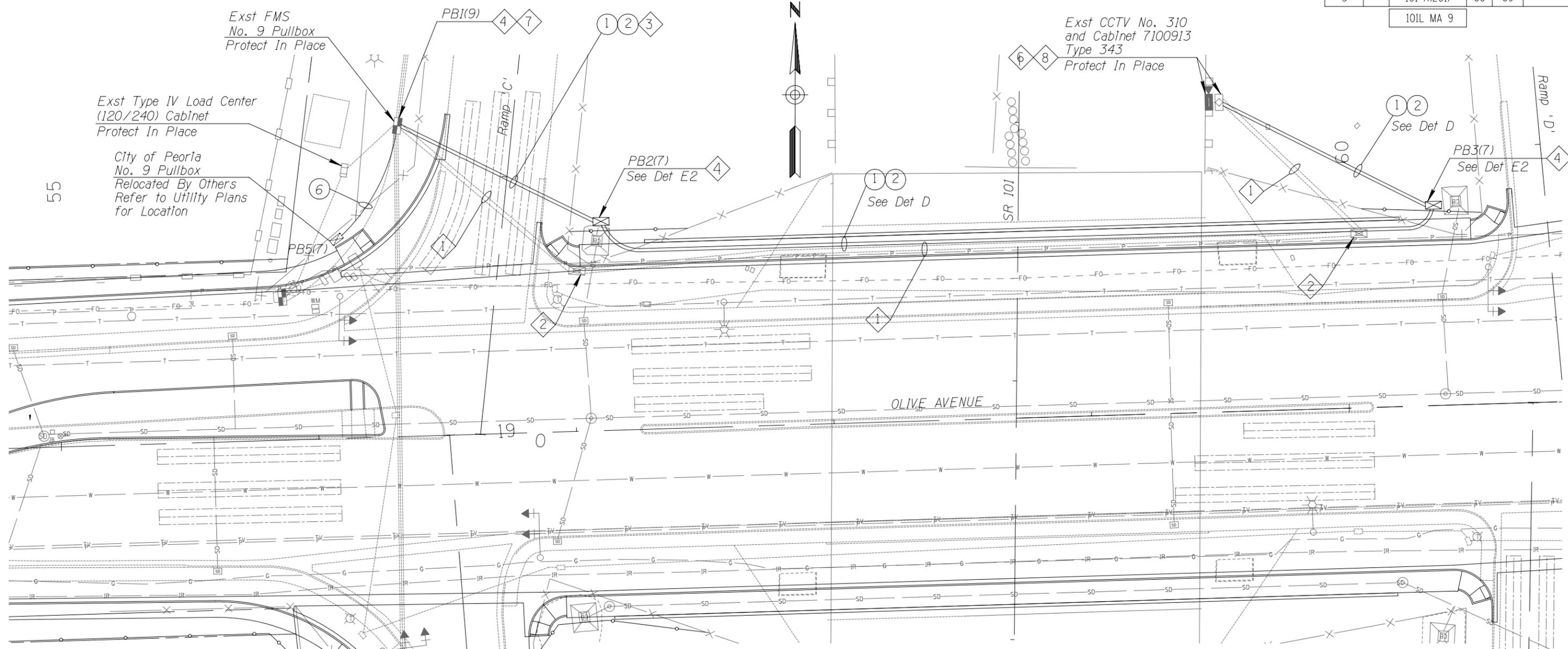
1. THE CONTROL CABINET SHALL BE WIRED AND LABELED WITH THE SAME PHASE NUMBERS DESIGNATIONS FOR INITIAL AND FUTURE PHASES, AS SHOWN IN THE PHASE MOVEMENT DIAGRAM OR AS NOTED ON THE PLANS. EACH CONNECTOR SHALL HAVE ALL PINS WITHIN THE CONNECTOR BROUGHT TO CABINET TIE POINTS. ANY CONTROL CABINET NOT WIRED ACCORDINGLY WILL BE REJECTED BY THE ENGINEER.
2. THE CONTRACTOR SHALL FIELD VERIFY ALL POLE LOCATIONS AND ELEVATIONS WITH THE ENGINEER, PRIOR TO ANY CONSTRUCTION ACTIVITY.
3. ALL EXPOSED CONDUIT AND FITTINGS INSTALLED ABOVE GROUND SHALL BE RIGID METAL TYPE PER THE STANDARD SPECIFICATIONS.
4. THE CONTRACTOR SHALL CONTACT ADOT ELECTRICAL INSPECTION AT (602) 712-6600, BEFORE DRILLING POLES FOR PUSH BUTTON ASSEMBLIES AND TRAFFIC SIGNAL MOUNTING ASSEMBLIES, FOR EXACT LOCATION.
5. ALL 12" SIGNAL FACES SHALL HAVE 5" LOUVERED BACKPLATES. SEE SPECIAL PROVISIONS.
6. THE CONTRACTOR SHALL CONTACT ADOT ELECTRICAL INSPECTION AT (602) 712-6600, TO SCHEDULE THE WIRING OF THE SIGNAL CABINET.
7. THE CONTRACTOR SHALL CONTACT ADOT ELECTRICAL INSPECTION AT (602) 712-6600, TO SCHEDULE THE SIGNAL TURN-ON. THE ADOT ELECTRICAL INSPECTOR SHALL SCHEDULE THE SIGNAL TURN-ON WITH ADOT TRAFFIC OPERATIONS, A MINIMUM OF 10 WORKING DAYS IN ADVANCE.
8. ALL TRAFFIC SIGNAL INDICATIONS, EXCEPT PROGRAMMED VISIBILITY FACES, SHALL BE LED MODULES. SEE SPECIAL PROVISIONS.
9. ALL STRIPING SHALL BE INSTALLED PRIOR TO THE DAY OF TURN-ON.
10. THE CONTROL CABINET SHALL BE DELIVERED TO THE TRAFFIC OPERATIONS CENTER AT 2104 SOUTH 22ND AVENUE, PHOENIX ARIZONA FOR TESTING PER SECTION 734-2.0(E) & (F) OF THE STANDARD SPECIFICATIONS.
11. THE PUSH BUTTON SIGN SHALL DISPLAY THE INTERNATIONAL MAN SYMBOL AND THE ARROW SHALL BE AS INDICATED.
12. DIMENSION BETWEEN SIGNAL HEADS IS 12' UNLESS SHOWN OTHERWISE.

| | | | | |
|---|------------|--|-------------------------------------|---|
| DESIGN | AS | DATE | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC ELECTRICAL DESIGN |
| DRAWN | AS | DATE | 05-09 | |
| CHECKED | CAO | DATE | 05-09 | |
|  | | 16605 North 28TH AVE Suite 100 Phoenix, AZ 85053 | | OLIVE AVENUE WIDENING POLE AND EQUIPMENT SCHEDULE AND POLE NOTES |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI |  |
| TRACS NO. | H 6939 OIC | | 101-A-(201) | |

DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO.

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 60 | 89 | |

101L MA 9



CONSTRUCTION NOTES:

- ① REMOVE EXISTING CONDUIT AND CABLE.
- ② REMOVE EXISTING PULL BOX.
- ③ DIRECTIONAL DRILL UNDER ROADWAY. REFER TO CONDUIT AND CABLE SCHEDULE FOR SIZE OF CONDUITS.
- ④ COIL 50 FEET OF EACH SMFO (12) CABLE IN BOX.
- ⑤ CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH PRIOR TO EXCAVATION NEAR CITY OF PEORIA UNDERGROUND UTILITIES. A TWELVE (12) INCH VERTICAL AND TWENTY-FOUR (24) INCH HORIZONTAL SEPARATION IS REQUIRED FOR ADEQUATE CLEARANCE. FORTY-EIGHT (48) INCH SEPARATION IS REQUIRED FOR CLEARANCE FROM CABINET AND/OR PULL BOX.
- ⑥ CCTV TO REMAIN IN OPERATION AT ALL TIMES DURING CONSTRUCTION.
- ⑦ INSTALL SPLICE CLOSURE IN NO. 9 PULL BOX AND FUSION SPLICE TRUNK CABLES (FULL CABLE SPLICE) AND BRANCH FIBERS PER SPLICE TABLE IN DWG. NO. T-4.03.
- ⑧ REFER TO DETAIL F FOR LOAD CENTER CIRCUIT TABLE.

DATE: _____
 REVISIONS: _____
 FINISHED PLANS: _____
 SURVEY NO.: _____
 DATE: _____
 LOCATION: _____
 REVISIONS: _____
 FINISHED PLANS: _____
 SURVEY NO.: _____

| | | | | | |
|--|------------|---|-------------------------------------|--|---|
| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. T-4.01 |
| DRAWN | FR | DATE | 5-09 | | |
| CHECKED | PTG | DATE | 5-09 | | |
| JLK ENGINEERS 18441 N. 25th Ave, Ste 103 Phoenix, AZ 85023 602-405-1875 Fax 602-288-6530 | | OLIVE AVENUE WIDENING FREEWAY MANAGEMENT SYSTEM LOCATION PLAN | | | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | |
| TRACS NO. | H 6939 01C | | 101-A(201) | OF | |

| F.I.L.N.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-------------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 62 | 89 | |

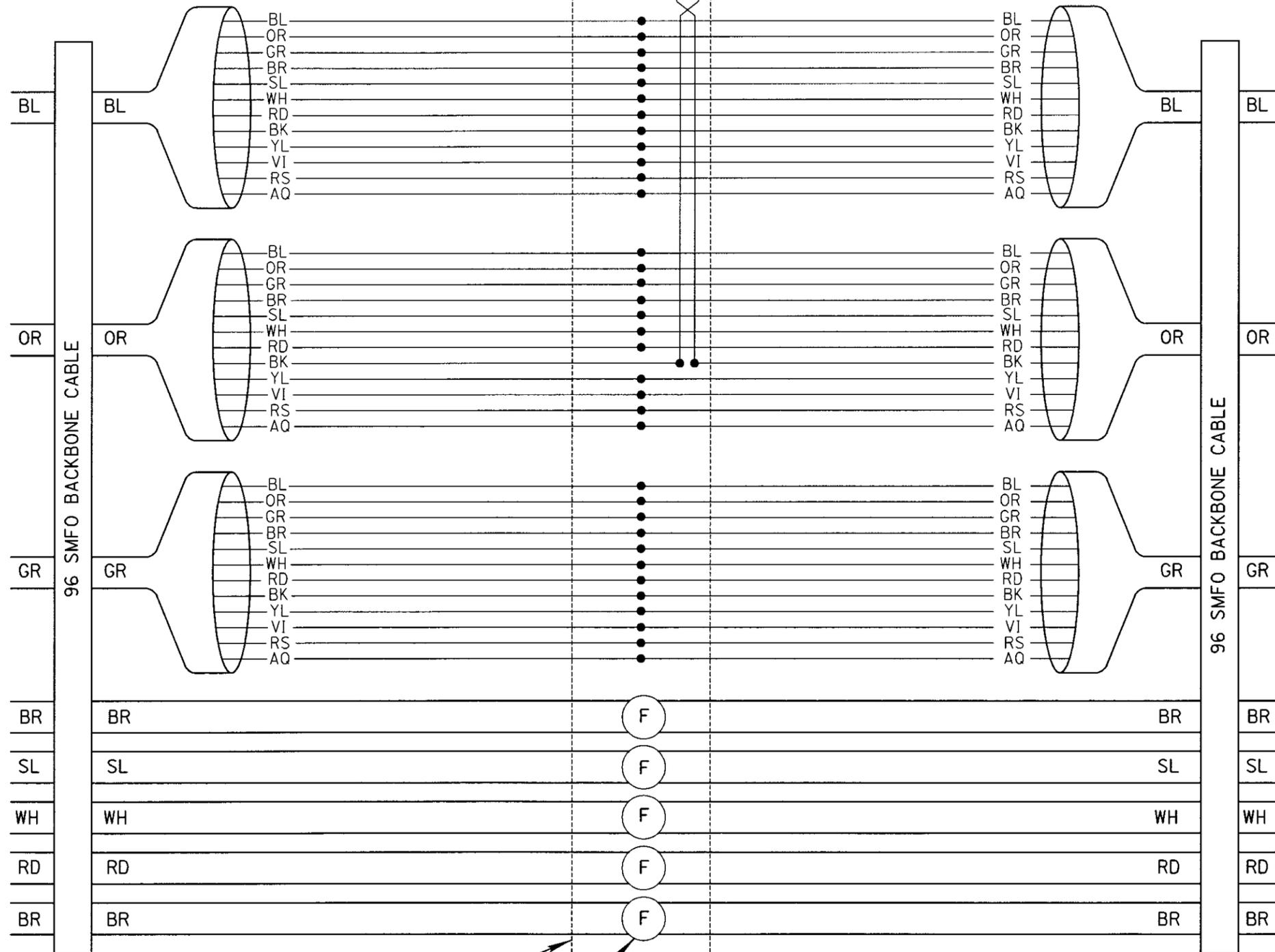
101L MA 9

CCTV NO. 343

TYPE 343
CABINET
7100916

VOTR

1 2 3 4 5 6

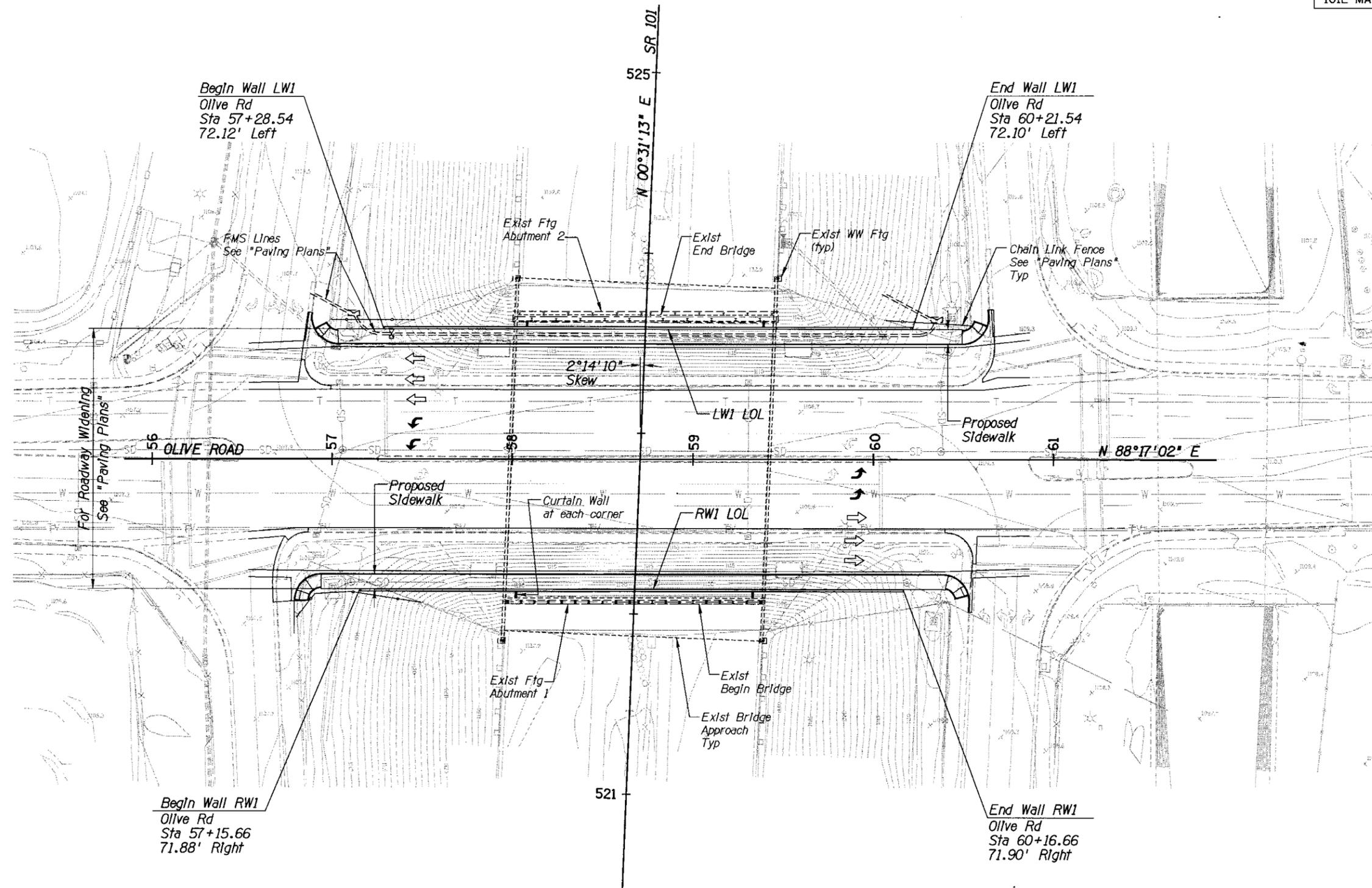


SPlice DETAIL
FULL CABLE SLPICE

| DESIGN | NAME | DATE | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC DESIGN SERVICES | PRELIMINARY 95% Review |
|---|-------------------------------------|------------|---|---|
| JRG | | 5-09 | OLIVE AVENUE WIDENING FIBER OPTIC SPlice DIAGRAM | NOT FOR CONSTRUCTION OR RECORDING DWG NO. T-4.03 |
| FR | | 5-09 | | |
| PTG | | 5-09 | | |
| JLK ENGINEERS 18441 N. 25th Ave., Ste 103 Phoenix, AZ 85023 602-405-1875 Fax 602-288-6530 | | | | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | | |
| TRACS NO. H 6939 01C | | 101-A(201) | OF | |

DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO. DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO.

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 64 | 89 | |
| 101L MA 9 | | | | | |



PLAN - WALLS LW1 & RW1
Scale: 1"=30'

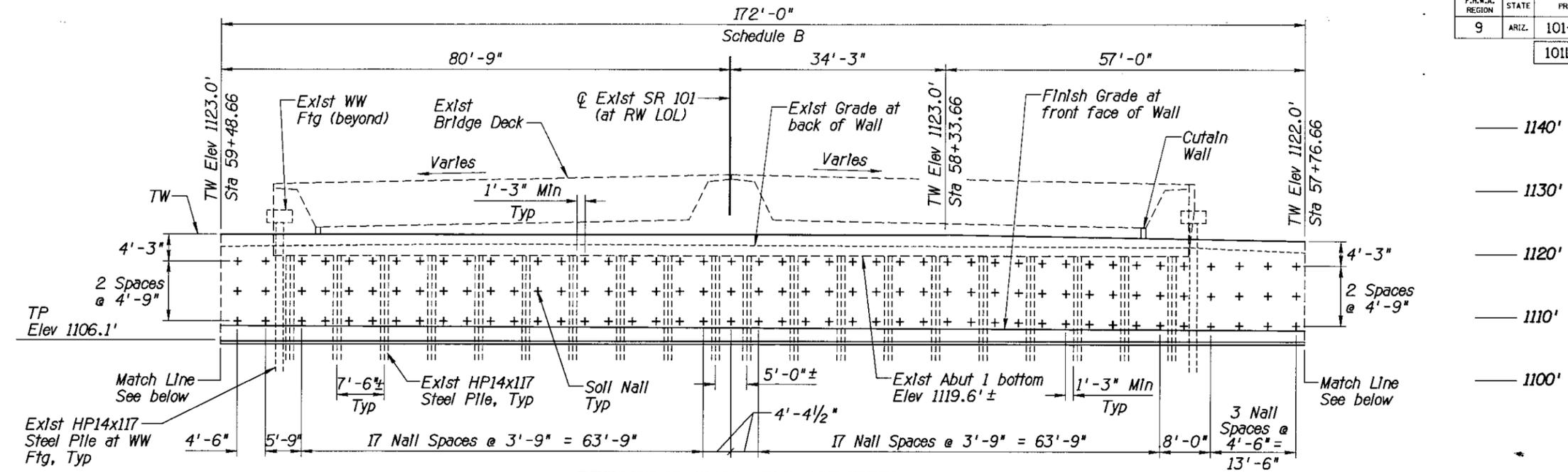
Notes:

- Existing structures are based on As-Built Information. The contractor shall field verify actual conditions prior to construction.

| | | | | |
|--|---------------|---|--|---|
| DESIGN | M. CHAR | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. S-1.02 |
| DRAWN | R. ANDRASEK | 05-09 | | |
| CHECKED | W. NASCIMENTO | 05-09 | | |
| IAN ENGINEERING <small>3841 N. 25th Ave, Ste 103 Phoenix, AZ 85023 602-405-4445 Fax 602-268-6330</small> | | | OLIVE AVENUE WIDENING RETAINING WALL WALL LAYOUT PLAN | |
| ROUTE | LOCATION | SR 101L AGUA FRIA FREEWAY - OLIVE AVENUE T1 | | |
| TRACS NO. H 6939 01C | | | 101-A(201) | OF |

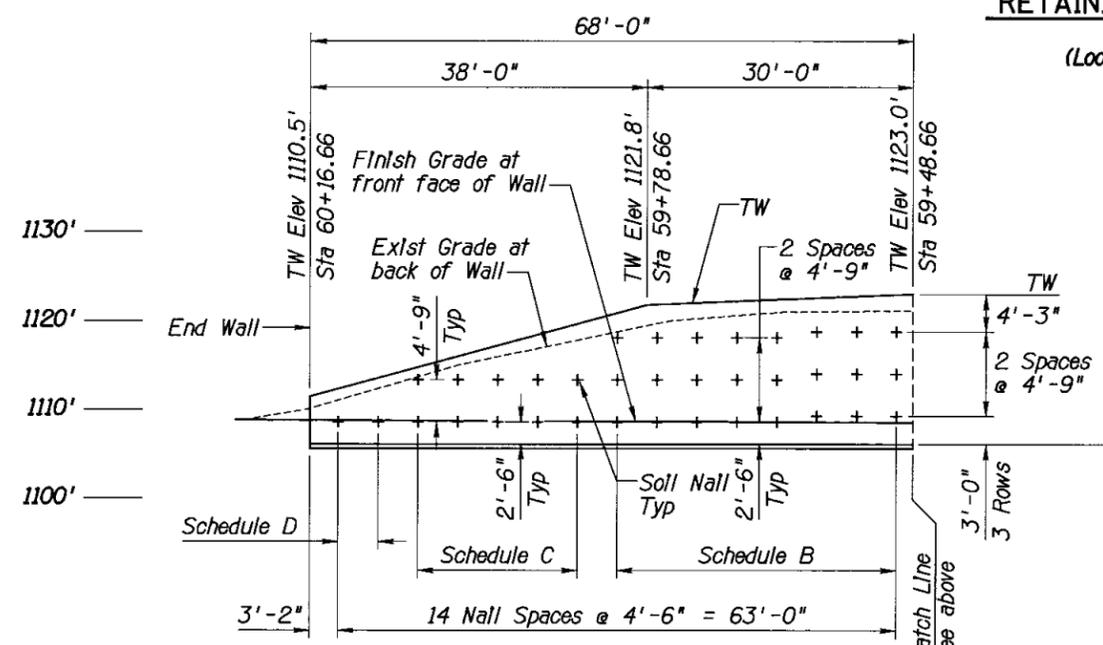
SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 65 | 89 | |
| 101L MA 9 | | | | | |



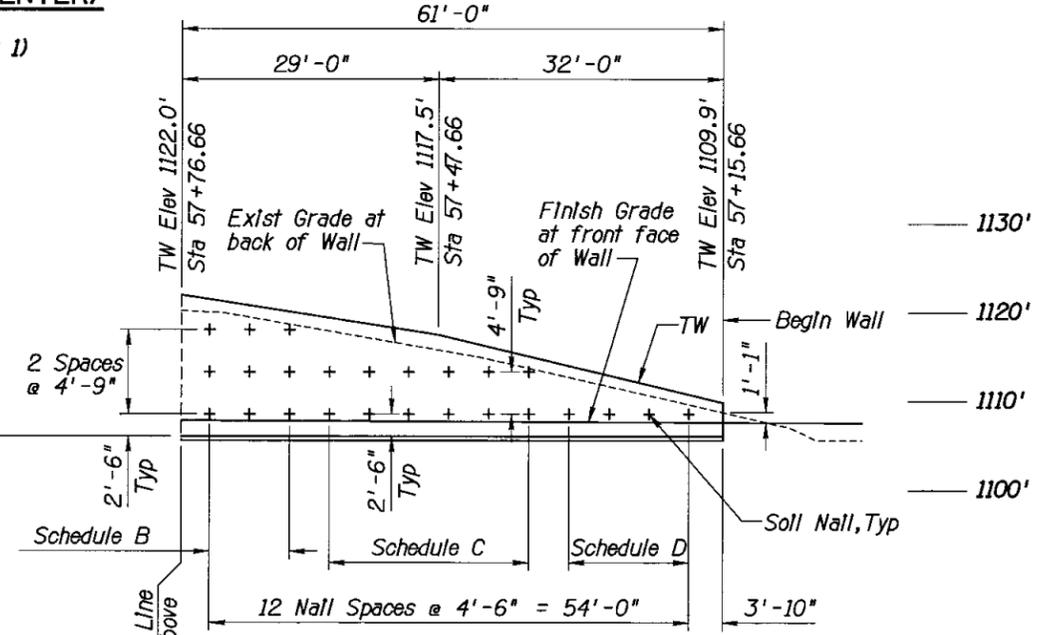
RETAINING WALL RW1 (CENTER)

Scale: 1"=10'
(Looking South at Abutment 1)



RETAINING WALL RW1 (LEFT)

Scale: 1"=10'
(Looking South)



RETAINING WALL RW1 (RIGHT)

Scale: 1"=10'
(Looking South)

- Notes:**
1. For Wall Rustication pattern, see Sheet S-1.07.
 2. Wall heights & bottom of wall elevations to be verified by the contractor based on field survey.
 3. Existing structures are based on As-Built Information. The contractor shall field verify actual conditions prior to construction.
 4. Top of Soil Nail Wall (TW) is 1'-0" min above existing ground at back of shotcrete wall face.

- Notes: (cont)**
5. For typical Wall section, see Sheet S-1.07.
 6. All nails to be fully grouted upon installation.
 7. For Schedule A wall sections, limits vertical cuts to heights shown on plans.
 8. Limit vertical cuts in Schedule B and C wall sections to a maximum of 5 feet.

| SCHEDULE B | | | | |
|------------|----------|-----------|--------|-------------|
| ROW | Bar Size | Bar Grade | Length | Inclination |
| 1 | No. 8 | 75 | 25' | 15° |
| 2 | No. 8 | 75 | 25' | 15° |
| 3 | No. 8 | 75 | 25' | 15° |

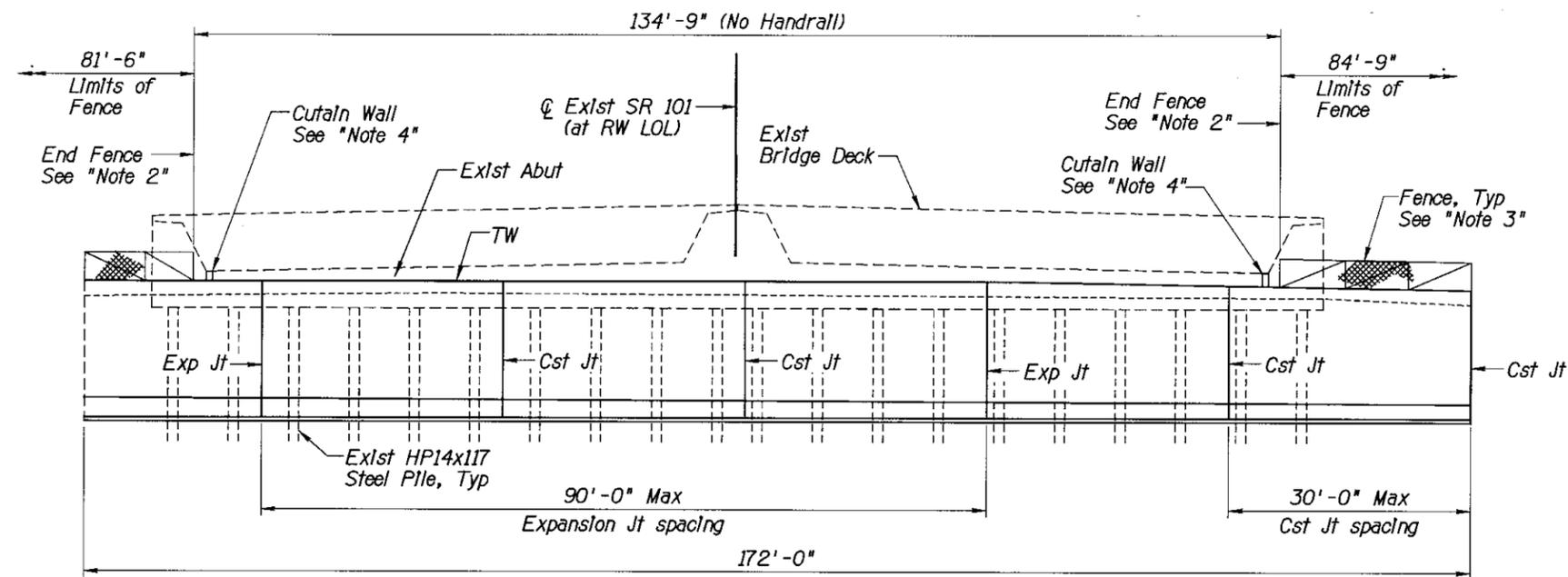
| SCHEDULE C | | | | |
|------------|----------|-----------|--------|-------------|
| ROW | Bar Size | Bar Grade | Length | Inclination |
| 1 | No. 8 | 75 | 15' | 15° |
| 2 | No. 8 | 75 | 15' | 15° |

| SCHEDULE D | | | | |
|------------|----------|-----------|--------|-------------|
| ROW | Bar Size | Bar Grade | Length | Inclination |
| 1 | No. 8 | 75 | 15' | 15° |

| | | | | |
|-----------|---------------|-------------------------------------|--|---|
| DESIGN | M. CHAR | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | PRELIMINARY 95% Review |
| DRAWN | R. ANDRASEK | 05-09 | | |
| CHECKED | W. NASCIMENTO | 05-09 | | |
| | | | OLIVE AVENUE WIDENING SOUTH WALL ELEVATIONS SOIL NAIL WALL RW1 (1 OF 2) | NOT FOR CONSTRUCTION OR RECORDING |
| ROUTE | SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | 101-A(201) | DWG NO. S-1.03 |
| TRACS NO. | H 6939 01C | | | OF |

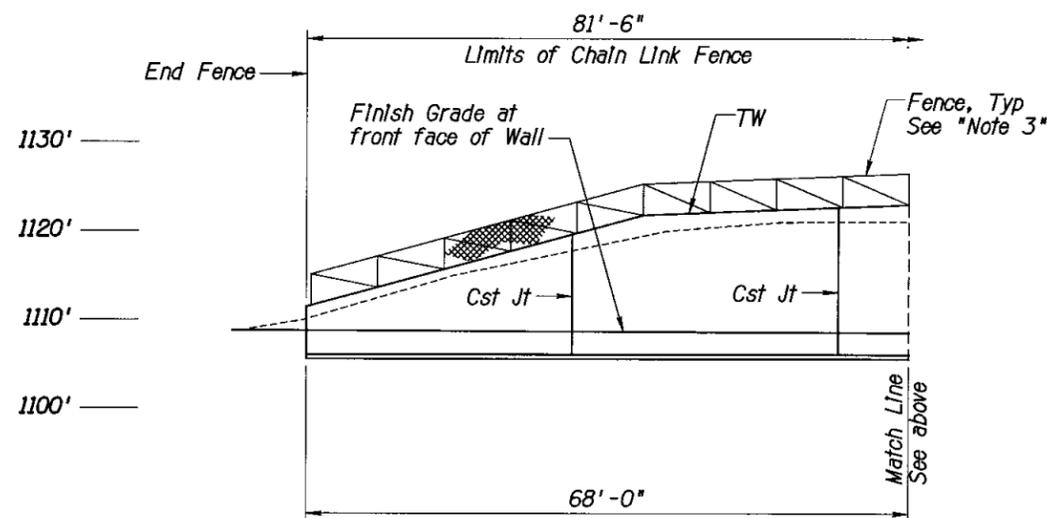
| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 66 | 89 | |

101L MA 9



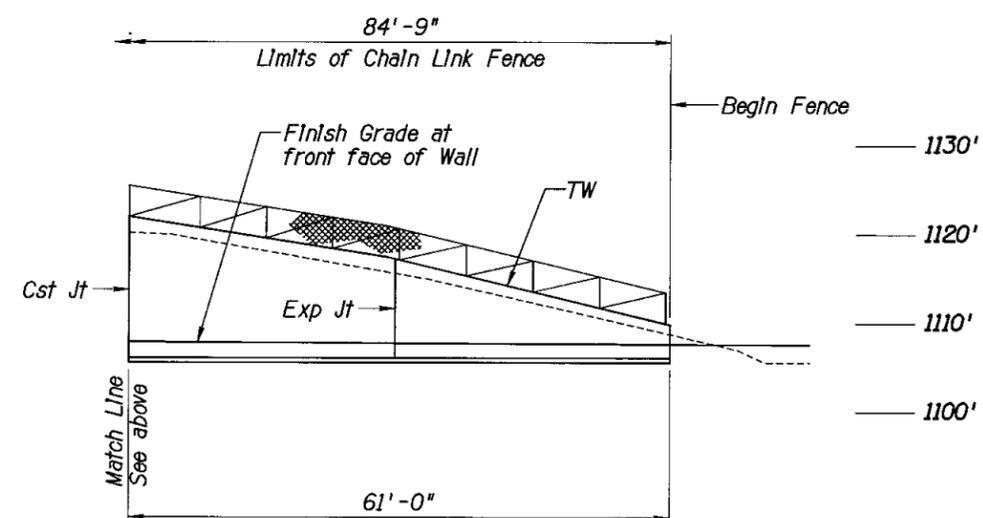
RETAINING WALL RW1 (CENTER)

Scale: 1"=10'
(Looking South at Abutment 1)



RETAINING WALL RW1 (LEFT)

Scale: 1"=10'
(Looking South)



RETAINING WALL RW1 (RIGHT)

Scale: 1"=10'
(Looking South)

Notes:

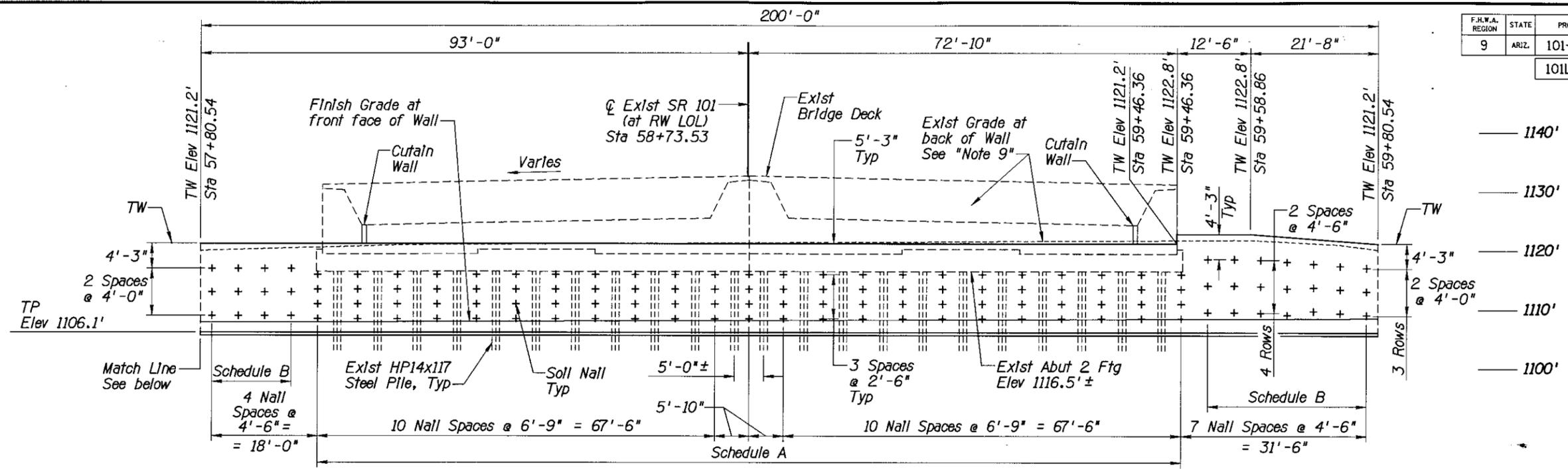
- Existing structures are based on As-Built Information. The contractor shall field verify actual conditions prior to construction.
- End of Fence may be adjusted as necessary at sloped face of existing girder.
- For Fence details, see ADOT Standard Plan C-12.20 Type 1.
- For Curtain Wall details, see "Soil Nail Walls Details (1 of 4)" sheet.

| | | | | |
|-----------|---------------|----------|--|---|
| DESIGN | M. CHAR | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | PRELIMINARY 95% Review |
| DRAWN | R. ANDRASEK | 05-09 | | |
| CHECKED | W. NASCIMENTO | 05-09 | | |
| | | | OLIVE AVENUE WIDENING SOUTH WALL ELEVATIONS SOIL NAIL WALL RW1 (2 OF 2) | NOT FOR CONSTRUCTION OR RECORDING |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | DWG NO. S-1.04 |
| TRACS NO. | H 6939 01C | | 101-A(201) | OF |

SURVEY NO. FINISHED PLANS LOCATION DATE REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS LOCATION DATE

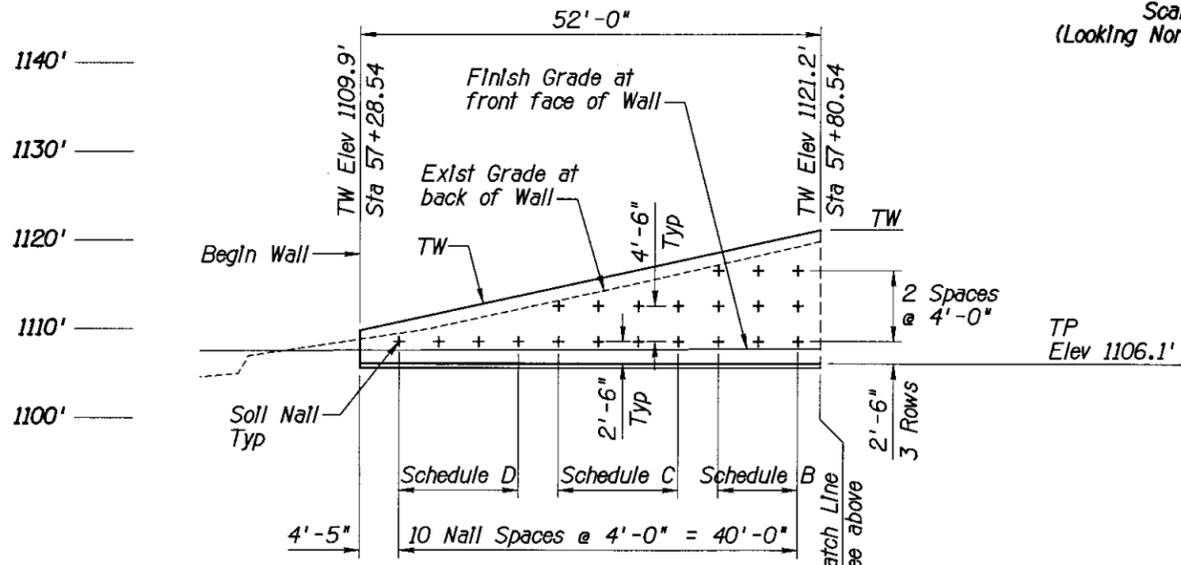
| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 67 | 89 | |

101L MA 9



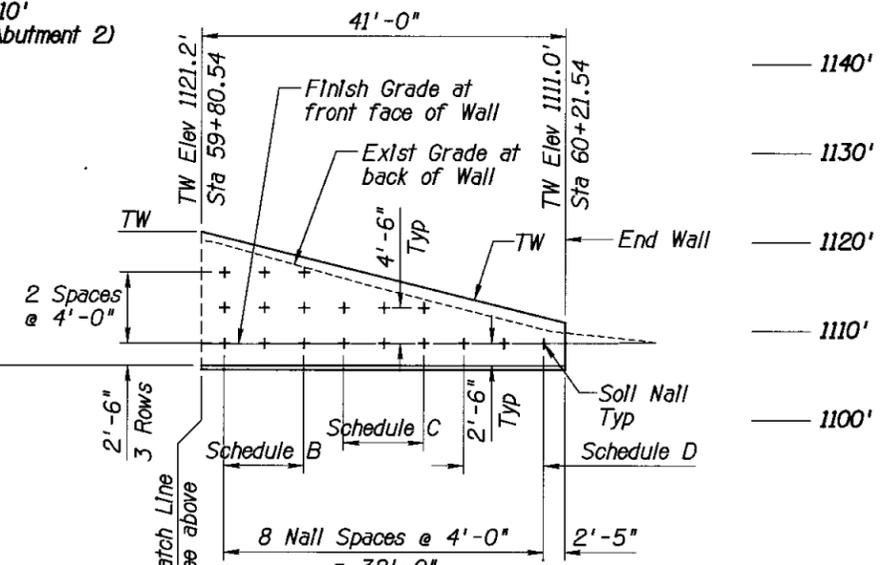
RETAINING WALL LW1 (CENTER)

Scale: 1"=10'
(Looking North at Abutment 2)



RETAINING WALL LW1 (LEFT)

Scale: 1"=10'
(Looking North)



RETAINING WALL LW1 (RIGHT)

Scale: 1"=10'
(Looking North)

| ROW | Bar Size | Bar Grade | Length | Inclination |
|-----|----------|-----------|--------|-------------|
| 1 | No. 8 | 75 | 15' | 15° |
| 2 | No. 8 | 75 | 15' | 15° |

| ROW | Bar Size | Bar Grade | Length | Inclination |
|-----|----------|-----------|--------|-------------|
| 1 | No. 8 | 75 | 15' | 15° |

| ROW | Bar Size | Bar Grade | Length | Inclination |
|-----|----------|-----------|--------|-------------|
| 1 | No. 8 | 75 | 25' | 15° |
| 2 | No. 8 | 75 | 25' | 15° |
| 3 | No. 8 | 75 | 25' | 15° |
| 4 | No. 8 | 75 | 25' | 15° |

| ROW | Bar Size | Bar Grade | Length | Inclination |
|-----|----------|-----------|--------|-------------|
| 1 | No. 8 | 75 | 25' | 15° |
| 2 | No. 8 | 75 | 25' | 15° |
| 3 | No. 8 | 75 | 25' | 15° |

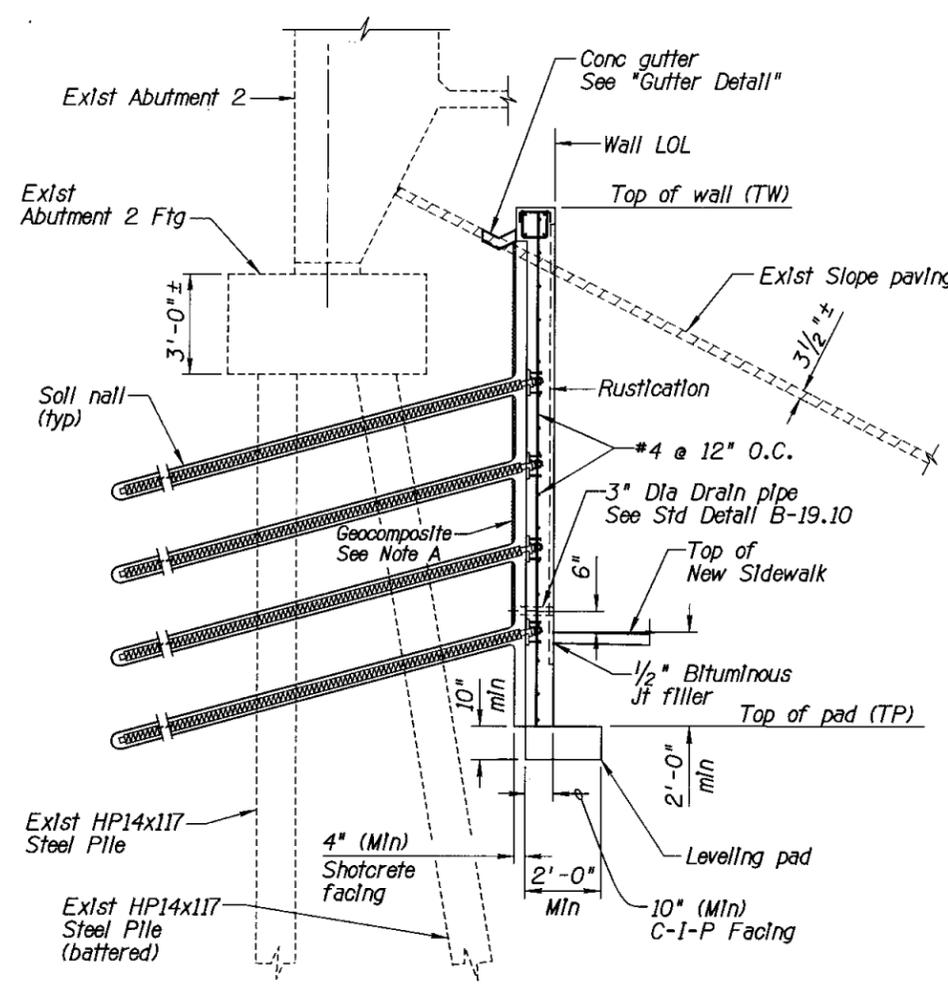
- Notes:
1. For Wall Rustication pattern, see Sheet S-1.07.
 2. Wall heights & bottom of wall elevations to be verified by the contractor based on field survey.
 3. Existing structures are based on As-Built Information. The contractor shall field verify actual conditions prior to construction.
 4. Top of Soil Nail Wall (TW) is 1'-0" min above existing ground at back of shotcrete wall face.
 5. For typical Wall section, see Sheet S-1.07.

- Notes: (cont)
6. All nails to be fully grouted upon installation.
 7. For Schedule A wall sections, limits vertical cuts to heights shown on plans.
 8. Limit vertical cuts in Schedules B, C & D wall sections to a maximum of 5 feet.
 9. Regrade existing concrete slope paving behind wall to join new concrete gutter, see Sheet S-1.07.

| | | | | |
|-----------|---------------|-------------------------------------|--|---|
| DESIGN | M. CHAR | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | PRELIMINARY 95% Review |
| DRAWN | R. ANDRASEK | 05-09 | | |
| CHECKED | W. NASCIMENTO | 05-09 | | |
| | | | OLIVE AVENUE WIDENING NORTH WALL ELEVATIONS SOIL NAIL WALL LW1 (1 OF 2) | NOT FOR CONSTRUCTION OR RECORDING |
| ROUTE | SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | 101-A(201) | DWG NO. S-1.05 |
| TRACS NO. | H 6939 OIC | | | OF |

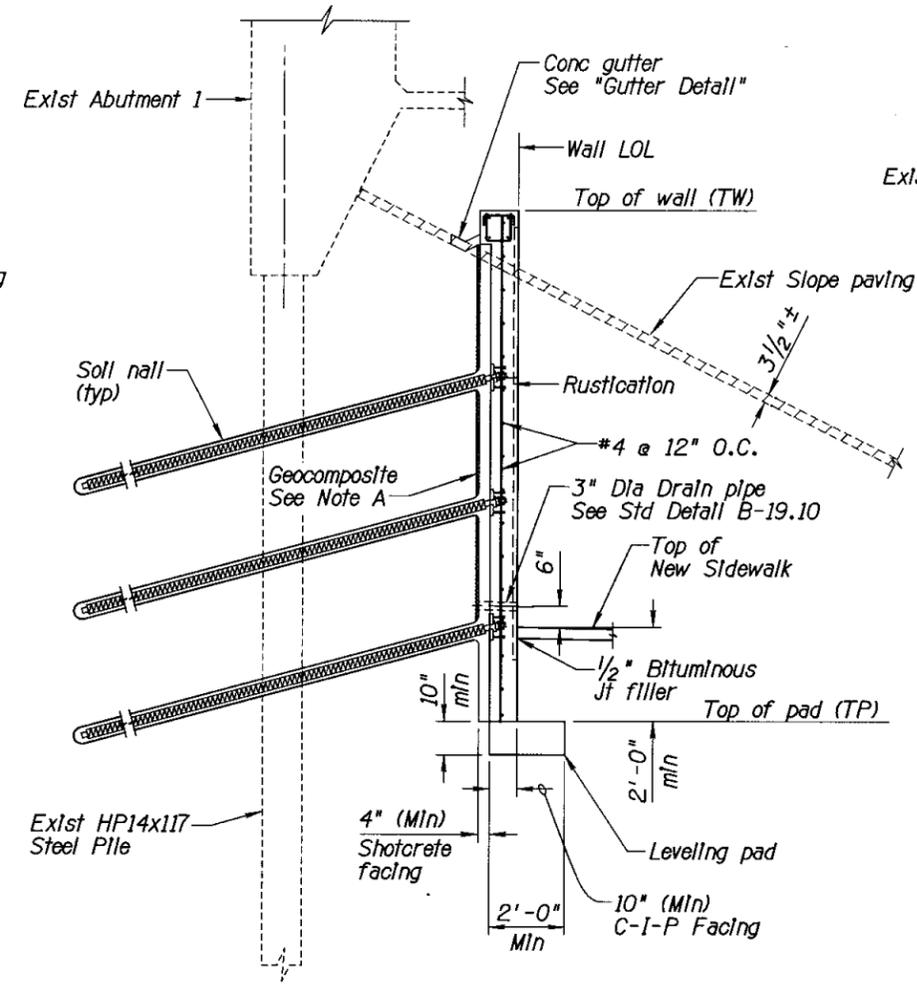
| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 69 | 89 | |

101L MA 9

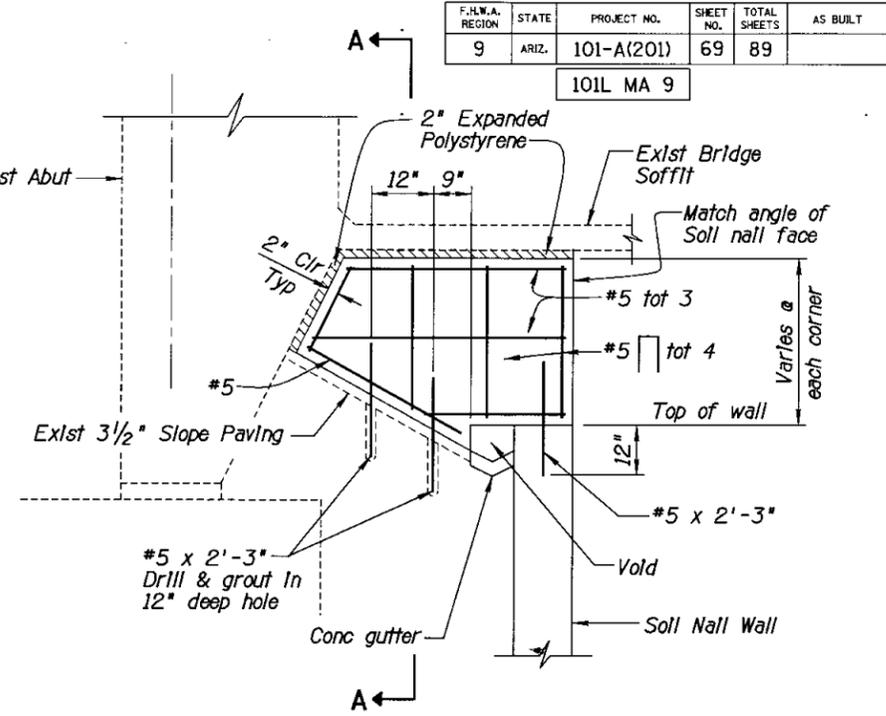


TYPICAL WALL SECTION - ABUT 2
3/8" = 1'-0"

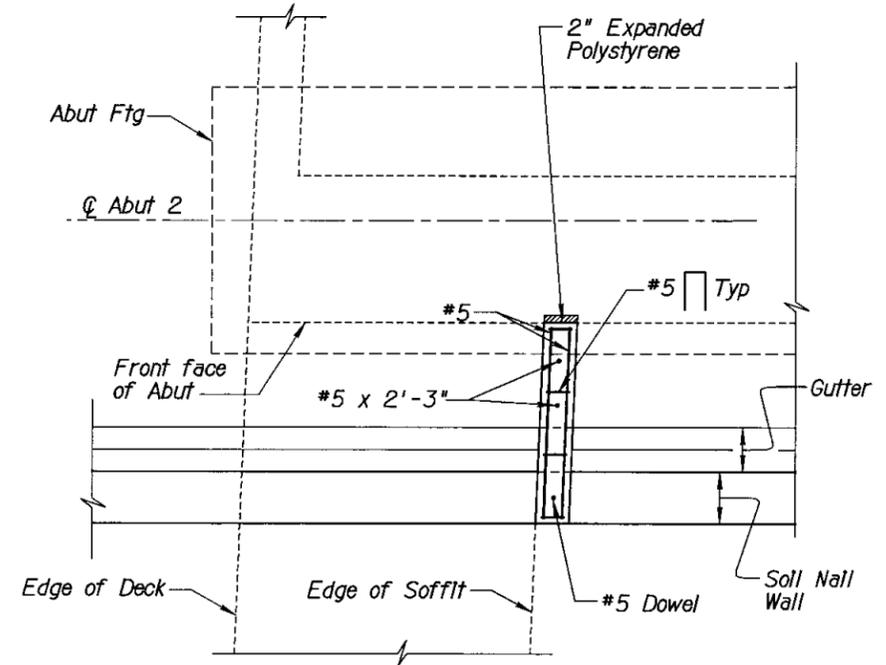
Note A:
Geocomposite drain per Std B-19.10, Alternate "A".
Center geocomposite drain between soil nails.



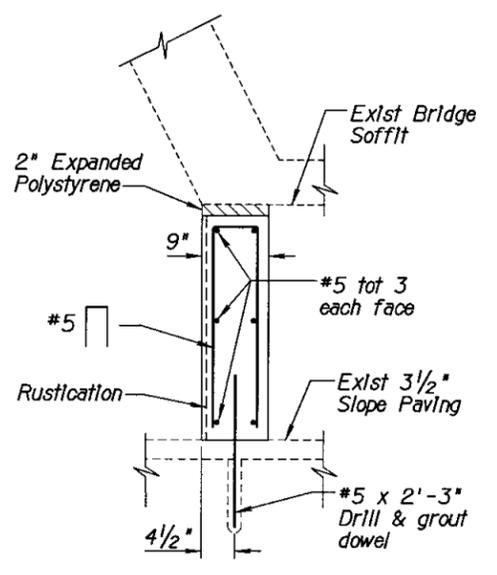
TYPICAL WALL SECTION - ABUT 1
3/8" = 1'-0"



CURTAIN WALL ELEVATION
Not To Scale



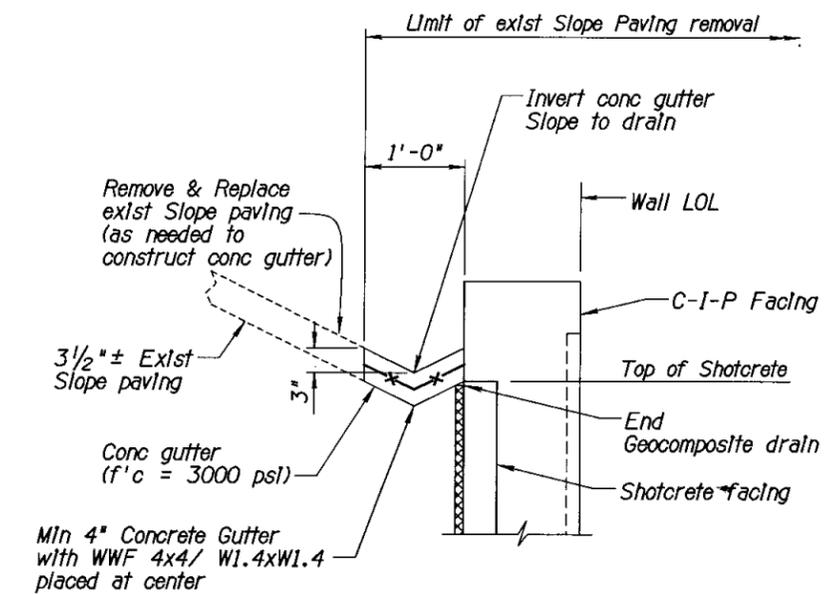
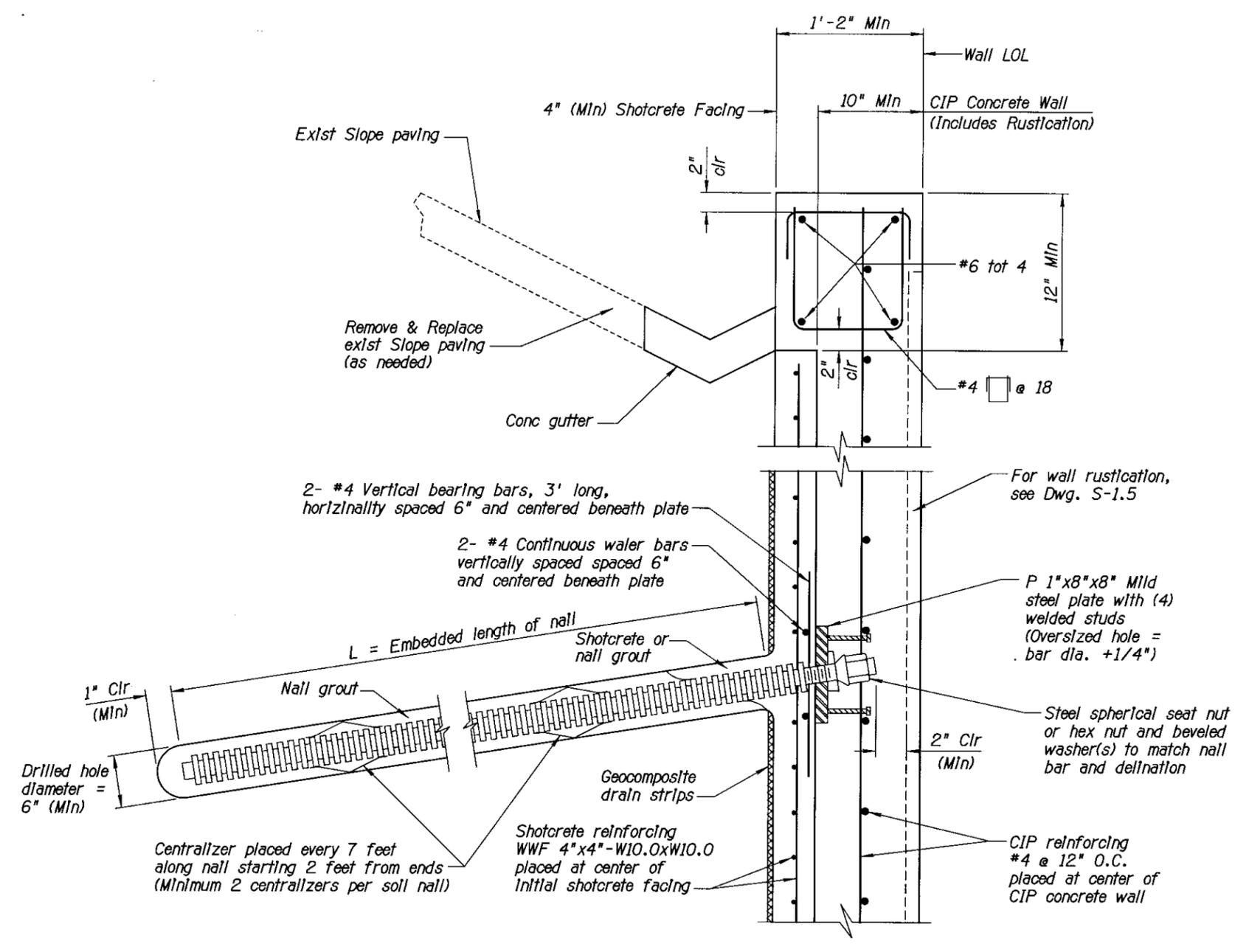
CURTAIN WALL PLAN
1/2" = 1'-0"



SECTION A-A
1" = 1'-0"

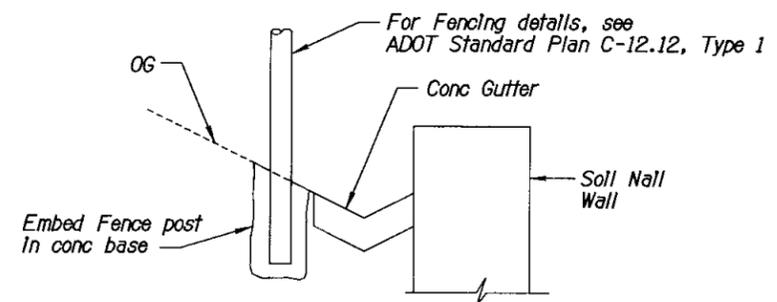
| DESIGN | NAME | DATE | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | PRELIMINARY 95% Review |
|---|-------------------------------------|-------|--|--|
| DRAWN | M. CHAR | 05-09 | OLIVE AVENUE WIDENING RETAINING WALLS SOIL NAIL WALL DETAILS (1 OF 4) | NOT FOR CONSTRUCTION OR RECORDING DWG NO. S-L07 |
| CHECKED | R. ANDRASEK | 05-09 | | |
| | W. NASCIMENTO | 05-09 | | |
| IAN ENGINEERING 3844 N. 25th Ave, Ste 103 Phoenix, AZ 85020 602-405-6445 Fax 602-788-6530 | | | | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | | | |
| TRACS NO. H 6939 01C | | | 101-A(201) | OF |

| | | | | | |
|-----------------|-------|-------------|-----------|--------------|----------|
| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
| 9 | ARIZ. | 101-A(201) | 70 | 89 | |
| 101L MA 9 | | | | | |



GUTTER DETAIL
Not To Scale

* The Contractor shall adjust height as required to accommodate slope paving.



SECTION AT FENCE
Not To Scale

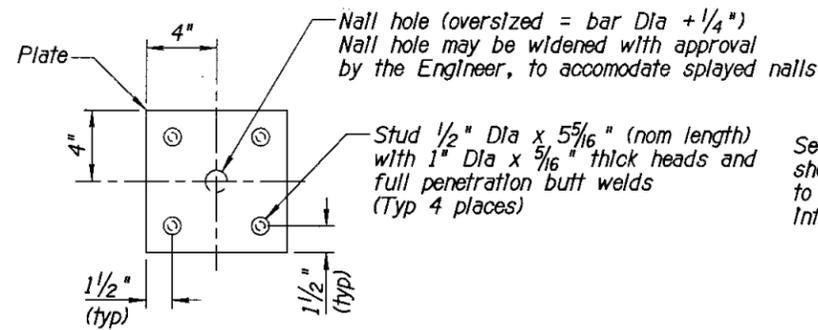
- Notes:**
1. For Schedule B and C soil nail wall areas, Initial shotcrete facing may be eliminated where soil conditions are suitable as agreed by the Engineer.
 2. Shotcrete and concrete thickness shown are minimums, and thicker sections may result from overexcavations, and localized sloughing. Thicker sections may require additional reinforcing.

| REINFORCING SPLICE LENGTH | | | NAIL CORROSION PROTECTION | | |
|---------------------------|-----|-----|---------------------------|--------------|--------------|
| Bar Size | #4 | WWF | Nail Schedule | Sch A | Sch B, C |
| Splice Length | 22" | 24" | Corrosion Protection | Encapsulated | Epoxy Coated |

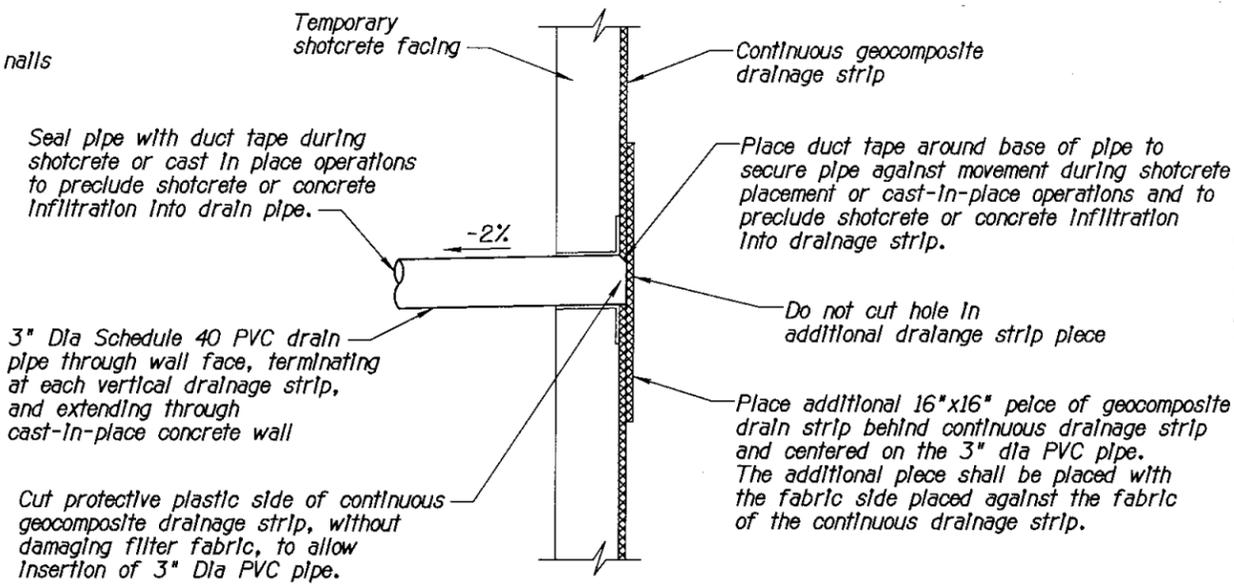
FINISHED WALL SECTION
Not To Scale

| | | | | |
|-----------|---------------|----------|--|---|
| DESIGN | M. CHAR | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING |
| DRAWN | R. ANDRASEK | 05-09 | | |
| CHECKED | W. NASCIMENTO | 05-09 | | |
| | | | OLIVE AVENUE WIDENING RETAINING WALLS SOIL NAIL WALL DETAILS (2 OF 4) | DWG NO. S-1.08 |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | |
| TRACS NO. | H 6939 01C | | 101-A(201) | |

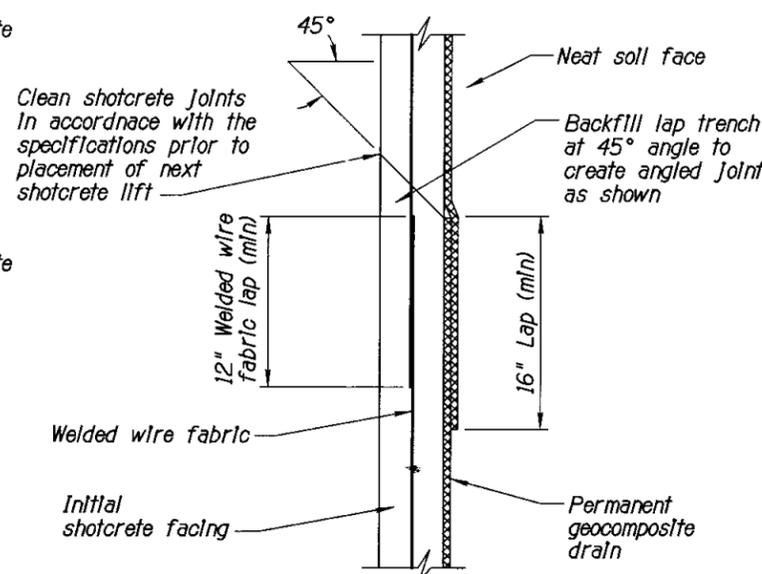
| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 71 | 89 | |
| 101L MA 9 | | | | | |



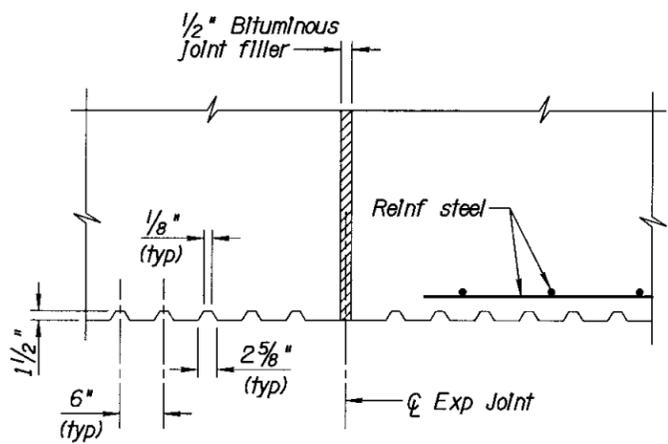
CONNECTOR PLATE WITH STUD DETAIL
Not To Scale



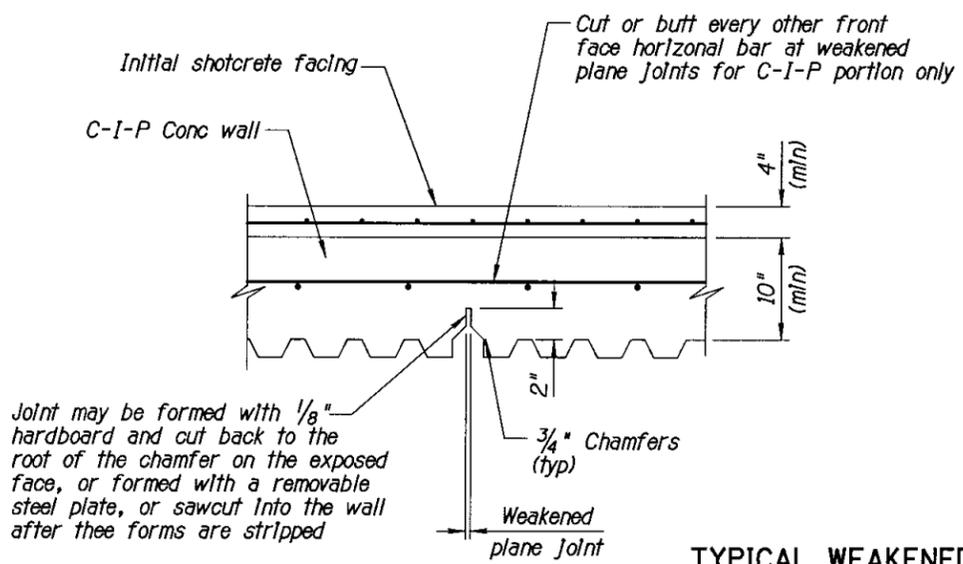
DRAIN PIPE CONNECTION DETAILS
Not To Scale



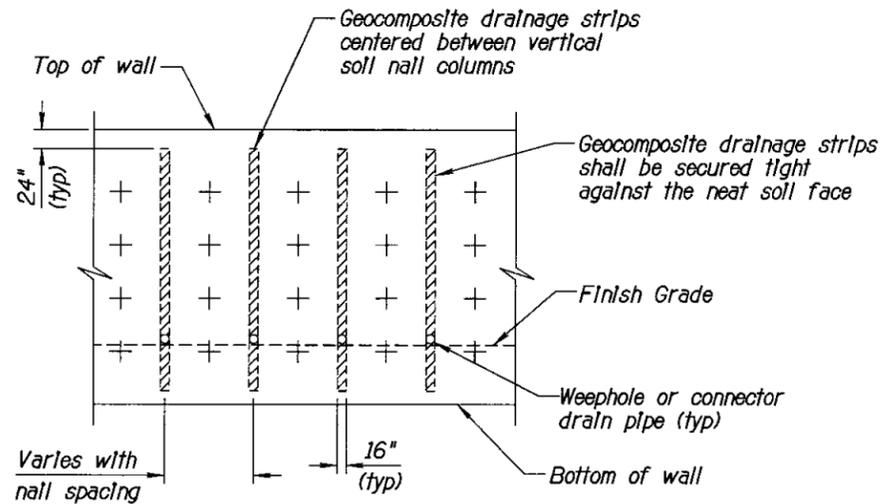
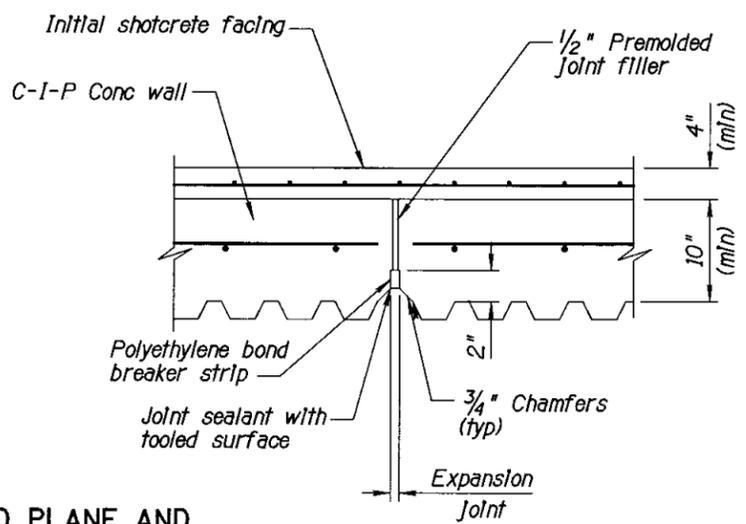
INITIAL SHOTCRETE FACING JOINT DETAIL
Not To Scale



RUSTICATION PATTERN
Not To Scale



TYPICAL WEAKENED PLANE AND EXPANSION JOINT DETAIL FOR CIP WALL
Not To Scale



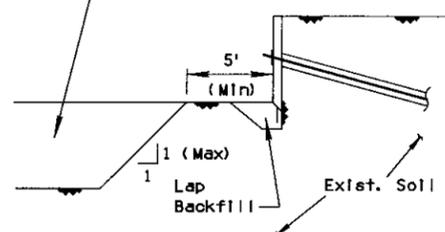
PERMANENT GEOCOMPOSITE DRAINAGE STRIP DETAIL
Not To Scale

| DESIGN | NAME | DATE | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | PRELIMINARY |
|----------------------|-------------------------------------|-------|--|-----------------------------------|
| DRAWN | M. CHAR | 05-09 | OLIVE AVENUE WIDENING RETAINING WALLS SOIL NAIL WALL DETAILS (3 OF 4) | 95% Review |
| CHECKED | R. ANDRASEK | 05-09 | | NOT FOR CONSTRUCTION OR RECORDING |
| | W. NASCIMENTO | 05-09 | | DWG NO. S-1.09 |
| | | | | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | | | |
| TRACS NO. H 6939 01C | | | 101-A(201) | OF |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 72 | 89 | |

101L MA 9

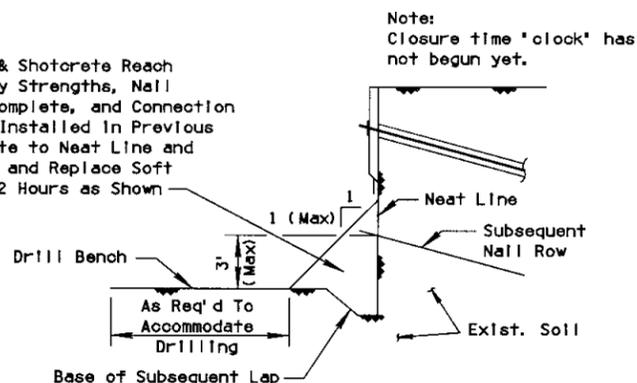
Mass excavation for subsequent lift may occur day after completion of shotcreting previous lift unless accepted otherwise



Note: At distances from the wall face greater than the current wall height, mass excavation may occur at any time, but with slopes no steeper than 1H:1V unless accepted otherwise

STEP 1
MASS EXCAVATION FOR SUBSEQUENT LIFT
Not To Scale 1

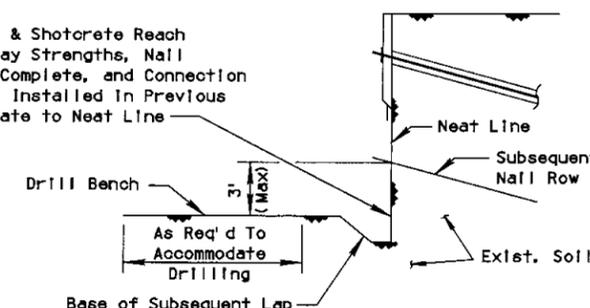
After Grout & Shotcrete Reach 50% of 28-Day Strengths, Nail Testing Is Complete, and Connection Hardware Is Installed in Previous Lift, Excavate to Neat Line and Base of Lap, and Replace Soft Berm within 2 Hours as Shown



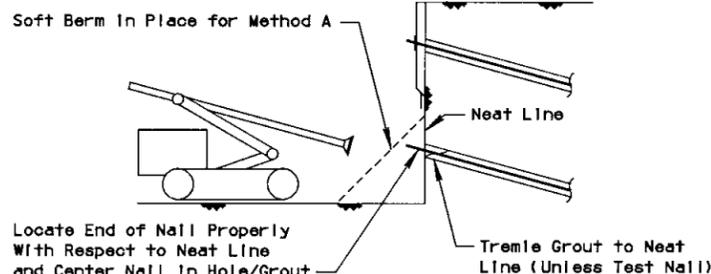
STEP 2
EXCAVATION OF DRILL BENCH & BERM
METHOD A - SOFT BERM
Not To Scale 2-A

Note: Closure time 'clock' Begins as Soon as Excavation to Neat Line is Completed.

After Grout & Shotcrete Reach 50% of 28-Day Strengths, Nail Testing Is Complete, and Connection Hardware Is Installed in Previous Lift, Excavate to Neat Line



STEP 2
EXCAVATION OF DRILL BENCH & BERM
METHOD B - NEAT LINE EXCAVATION
Not To Scale 2-B

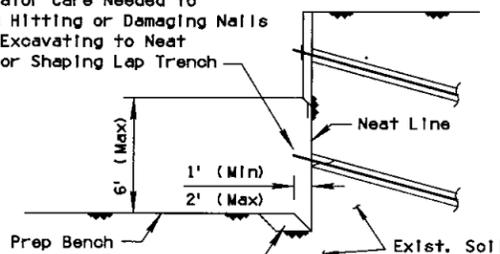


STEP 3
DRILL & GROUT NAILS
Not To Scale 3

Notes:

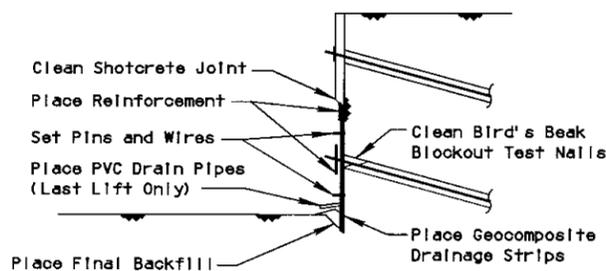
- Closure time 'clock' begins as soon as berm is removed (if applicable).
- If lift height plus req'd lap is less than 6', lap trench is not needed.

Excavator Care Needed to Avoid Hitting or Damaging Nails When Excavating to Neat Line or Shaping Lap Trench

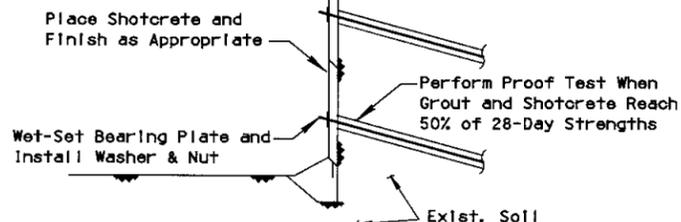


Fill Pushed Back Into Trench and Tamped with Excavator Bucket

STEP 4
EX NEAT LINE & PREP BENCH
Not To Scale 4



STEP 5
PREP WALL FACING COMPONENTS
Not To Scale 5



STEP 6
SHOTCRETE, WET SET CONNECTION, TEST NAILS
Not To Scale 6

Construction Notes:

1. The Above Details Are Applicable to a Soil Nail Wall Comprised of Any Combination of Initial or Permanent Facings and Nails. For Clarity, Only Initial Facing Is Illustrated.

2. Based on the Expected Soil Conditions at the Project Site, Method A for Step 2 Above Is Acceptable for All Rows/Lifts. The use of Method B Procedures Shall be Acceptable Where Soil Conditions are Suitable as Agreed by the Engineer.

3. Closure Time, Defined as the Time Duration Between Excavation of the Neat Cut Face and Placement of Shotcrete, Shall be no Greater Than 48 Hours Unless Otherwise Acceptable to the Engineer.

4. Methods of Construction and Closure Times That are Accepted by Engineer Do Not Relieve the Contractor of All Responsibility for Stability of the Temporary Cut Face Until It Is Closed with Hardened Shotcrete and the Nail Connection Is Completely Installed.

5. See the Typical Soil Nail Specification Sheets for Specific Requirements for Materials and Construction.

| DESIGN | NAME | DATE | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | PRELIMINARY |
|----------------------|-------------------------------------|-------|--|-----------------------------------|
| DRAWN | M. CHAR | 05-09 | OLIVE AVENUE WIDENING RETAINING WALLS SOIL NAIL WALL DETAILS (4 OF 4) | 95% Review |
| CHECKED | R. ANDRASEK | 05-09 | | NOT FOR CONSTRUCTION OR RECORDING |
| | W. NASCIMENTO | 05-09 | | DWG NO. S-110 |
| | | | | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | | | |
| TRACS NO. H 6939 01C | | | 101-A(201) | OF |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 73 | 89 | |
| 101L MA 9 | | | | | |

PART 1 - GENERAL

1.1 GENERAL INFORMATION

This section covers construction of the soil nail retaining walls. The work shall consist of installing all soil nails as required, all wall drainage, and initial and permanent wall facings as specified and as shown. The work shall include staged excavation lifts in front of the soil nail wall to specified minimum length and orientation as shown. All shotcrete and soil nail grout shall be tested and soil nail design adhesions verified in accordance with the specifications.

1.1.1 Specialty Contractor Requirement

The Contractor shall be experienced in the construction of permanent soil nail retaining walls and shall have successfully constructed at least 3 projects in the last 3 years involving construction of permanent soil nail retaining walls totaling at least 10,000 square feet of wall face at least 500 permanent soil nails to be considered qualified. The Contractor shall provide on-site supervisors and drill operators with experience installing permanent soil nails on at least 3 projects over the past 3 years.

1.1.2 Special Inspection

The Contractor shall provide inspection for all soil nail installation and testing, and for all shotcrete work. Shotcrete inspection shall include observation of placement of reinforcing steel and concrete. The Contractor's representative providing the special inspection shall be a Geotechnical Engineer with experience in monitoring permanent soil nailed retaining wall construction. The Contractor's representative shall maintain accurate records documenting the soil nail wall construction. These records shall include, but not limited to, the as-built locations of the nails, top of wall elevations, test data, and all other information required by the specifications. Testing of the shotcrete test panels shall be provided by a qualified material testing agency.

1.1.3 Pre-construction Meeting

A pre-construction meeting shall be held prior to the start of the work and shall be attended by the General Contractor, the Excavation Contractor, the Soil Nail Retaining Wall Contractor, the Shotcrete Subcontractor, and the Contractors' Special Inspection Representative. This meeting shall be conducted to clarify the requirements for the work, to coordinate the constructive activities, and to identify contractual relationships and responsibilities to complete the work.

1.2 REFERENCED PUBLICATIONS

The publications listed form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

American Concrete Institute (ACI),

- ACI 315 (1991) Details and Detailing of Concrete Reinforcement
- ACI 506.2 (1995) Specifications for Materials, Proportioning, and Application of Shotcrete
- ACI 506.4R (1994) Guide for the Evaluation of Shotcrete

American Association of State Highway and Transportation Officials (AASHTO),

- AASHTO M148 Liquid Membrane-Forming Compounds for Curing Concrete
- AASHTO M171 Sheet Materials for Curing Concrete
- AASHTO M252 Corrugated Polyethylene Drainage Tubing
- AASHTO M284 Epoxy Coated Reinforcing Bars
- AASHTO M291 Carbon and Alloy Steel Nuts
- AASHTO T260 Sampling and Testing for Total Chloride Ion in Concrete and Concrete Raw Materials

American Society for Testing and Materials (ASTM)
(Includes AASHTO equivalent standard as applicable).

- ASTM A185 (1997) Specifications for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement (AASHTO M55)
- ASTM A165 (1996a) Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement (AASHTO M31)
- ASTM A709 (1997b) Specifications for Carbon and High-Strength Low Alloy Structural Steel Shapes, Plates and Bars and Quenched and Tempered Alloy Structural Steel Plates for Bridges (AASHTO M270)
- ASTM C33 (1999) Specifications for Concrete Aggregates (AASHTO M6)
- ASTM C42 (1999) Test Methods for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete (AASHTO T24)
- ASTM C94 (1998c) Specification for Ready-Mixed Concrete (AASHTO M157)
- ASTM C109 (1999) Test Method for Compressive Strength of Hydraulic Cement Mortars (AASHTO T106)
- ASTM C150 (1998) Specification for Portland Cement (AASHTO M85)
- ASTM C231 (1997) Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method (AASHTO T152)
- ASTM C260 (1998) Specification for Air-Entraining Admixtures for Concrete (AASHTO M154)
- ASTM C494 (1998a) Specifications for Chemical Admixtures for Concrete (AASHTO M194)
- ASTM C618 (1998) Specifications for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete (AASHTO M295)
- ASTM C642 (1997) Test Methods for Specific Gravity, Absorption and Voids in Hardened Concrete
- ASTM C1240 (1998) Specifications for Silica Fume for use in Hydraulic-Cement Concrete Mortar
- ASTM D1784 (1997) Specification for Rigid Polyvinyl Chloride (PVC) Compounds and Chlorinated Polyvinyl Chloride (CPVC Compounds)

1.3 SUBMITTALS

The following shall be submitted to the Engineer:

1.3.1 Data

DELIVERY, STORAGE AND HANDLING OF MATERIAL. Submit a proposed plan for the delivery, storage and handling of material on site at least 15 days prior to start of delivery of materials.

EXCAVATION PLAN. Proposed excavation plan, excavation equipment and methods of excavating in staged lifts to the next excavation face. This information shall be submitted at least 15 days prior to the start of this work.

DRILLED METHOD AND EQUIPMENT. Submit proposed drilling methods and equipment, including drill rig type, cased or open-hole methods, proposed drill hole diameter and method of cuttings removal to achieve the specified pullout resistance. This information shall be submitted at least 15 days prior to the start of this work.

SOIL NAILS. Proposed soil nail types shall include manufacturers bar specifications and all associated hardware for encapsulated and epoxy coating. Proposed centralizers shall be included, as well as soil nail bar couplers, if used. This information shall be submitted 15 days prior to the start of this work.

SOIL NAIL GROUT MIX. Proposed mix design shall include: brand and type of Portland Cement; source, gradation and quality of all aggregates; proportions of mix by weight and water-cement ratio; manufacturer and brand names of all admixtures; and 3-day and 28 day compressive strength test results. This information shall be submitted at least 15 days prior to start of this work.

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| DESIGN | M. CHAR | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | PRELIMINARY 95% Review |
| DRAWN | R. ANDRASEK | 05-09 | | |
| CHECKED | W. NASCIMENTO | 05-09 | | |
| IAN ENGINEERING <small>3841 N. 25th Ave, Ste 103 Phoenix, AZ 85023 602-406-6445 Fax 602-288-6530</small> | | | OLIVE AVENUE WIDENING SOIL NAIL WALL SPECIFICATIONS | NOT FOR CONSTRUCTION OR RECORDING DWG NO. S-111 |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | | | |
| TRACS NO. H 6939 01C | | | 101-A(201) | OF |

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| 9 | ARIZ. | 101-A(201) | 74 | 89 | |
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DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO. DATE- LOCATION- REVISIONS- FINISHED PLANS- SURVEY NO.

1.3 SUBMITTALS (CONT'D)

SOIL NAIL TESTING PROCEDURES AND EQUIPMENT. Proposed testing methods and equipment shall include details on the Jack, jacking frame and appurtenant bracing, method of isolating test nails during shotcrete application and methods of grouting the unbonded length of test nails after testing. Layout for the test nails shall also be included. This information shall be submitted at least 15 days prior to start of this work.

GEOCOMPOSITE DRAINAGE STRIPS. Proposed geocomposite drainage strip shall include manufacturer's data and sample. This information shall be submitted at least 15 days prior to the start of this work.

SHOTCRETE MIX DESIGN: Proposed shotcrete mix design shall include: brand and type of Portland Cement; source, gradation and quality of aggregates; mix proportions by weight; proposed admixtures and their manufacturer, dosage and technical literature, and compressive strength test results from the supplier no older than 6 months verifying the 28-day compressive strength. This information shall be submitted at least 15 days prior to the start of this work.

SHOTCRETE FINISH FACE AND THICKNESS CONTROL. Proposed methods for the control of the shotcrete finished face and method and techniques for determining the shotcrete thickness applied shall be submitted at least 15 days prior to the start of this work.

1.3.2 Drawings

REINFORCEMENT LAYOUT AND SCHEDULES. Shop drawings for the wall steel reinforcement layout and schedules shall be submitted at least 15 days prior to start of this work.

1.3.3 Statements

SOIL NAIL RETAINING WALL SUBCONTRACTOR QUALIFICATIONS. At least 15 days prior to start of the soil nail work the Contractor shall submit qualifications of the soil nail wall subcontractor. An established firm with not less than 3 years of documented successful construction of soil nail wall similar in scope to the planned soil nail wall shall be considered qualified.

QUALIFICATION STATEMENTS OF NOZZLEMEN. Provide all written documentation for qualifications of shotcrete nozzlemen at least 15 days prior to the start of the work.

1.3.4 Certificates

COMPLIANCE CERTIFICATES. Certificates of compliance for reinforcing steel materials.

SOIL NAIL BAR CERTIFICATES. Certificates of Mill Test Results for each heat of soil nail bars shall be submitted with each delivery. Results shall include specifications for each heat for ultimate strength, yield strength, elongation and composition.

SOIL NAIL CENTRALIZERS AND BAR COUPLERS. Certificates from the manufacturers shall be submitted with centralizers and bar couplers delivered.

SHOTCRETE AND CONCRETE COMPONENTS. Certificates for wall reinforcing steel and shotcrete and concrete mix designs shall be submitted prior to construction of wall facings.

BEARING PLATE AND HARDWARE. Certificates for wall bearing plates, washers, nuts and other associated hardware.

TEST EQUIPMENT CERTIFICATION. A certificate for the soil nail test Jack and pressure gauges. These shall include the testing equipment identification numbers, drawings, calibration records, date of calibration, identification on the Jack and pressure gauge pair to be used. Calibration test results shall be certified for accuracy of at least 2 percent of the applied certification loads by a qualified independent testing laboratory within 45 days prior to submittal.

1.3.5 Samples

GEOCOMPOSITE DRAIN SHEET. A sample of the geocomposite drain sheet material shall be provided prior to approval for use.

1.3.6 Records

TESTING AND STRESSING RECORDS. All soil nail tests shall be submitted for record in an approved format. This shall include identification of the soil nails, dates installed, type of test, load schedule and nail movement and results of testing.

1.4 DELIVERY, STORAGE AND HANDLING

1.4.1 General

Plans for the delivery, storage and handling of all products to be used in the construction of the soil nail wall shall be developed and submitted for acceptance. Materials shall be stored to prevent contamination, segregation, corrosion or damage. Liquid admixtures shall be stored to prevent evaporation or freezing.

1.4.2 Delivery and Storage

(1) **CEMENT.** Cement shall be delivered in bags and adequately stored to prevent moisture degradation and partial hydration. Cement that has become caked or lumpy shall not be used.

(2) **NAIL BARS.** All nail bars shipped to the site shall be stored on supports to keep the bars free from contacting the ground. Nail steel shall be protected from and kept sufficiently free of dirt, rust and other deleterious substances prior to installation. Heavy corrosion or pitting of reinforcement shall be cause for rejection by the Engineer. Light rust that not resulted in pitting is acceptable.

(4) **GEOCOMPOSITE DRAINAGE STRIPS.** Geocomposite drainage strips shall be delivered in rolls wrapped with a protective covering and stored in a manner to protect the fabric from liquid, dirt, dust and debris. Protective covering shall not be removed until the drainage strips are ready for installation.

1.4.3 Handling

Soil Nail Tendons and reinforcing steel shall be carefully handled to prevent damage to the coatings and bars. Steel bars shall be picked up in such a manner as to prevent overstressing. Damage to the nail steel as a result of overstressing, abrasion, cuts, nicks, welds or weld splatter shall be cause for rejection by the Engineer. For damaged epoxy coated nails, the coating shall be repaired in accordance with the manufacturer's recommendations using an epoxy field repair kit approved by the epoxy manufacturer. Encapsulated nails shall not be transported until the grout has reached sufficient strength to resist damage during handling. Encapsulated nails shall not be handled in a manner that causes large deflections during handling. Any damaged nails shall be replaced.

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| DRAWN | R. ANDRASEK | 05-09 | | |
| CHECKED | W. NASCIMENTO | 05-09 | | |
| IAN ENGINEERING <small>3441 N. 25TH AVE, STE 103 PHOENIX, AZ 85023 602-405-6445 Fax 602-288-6530</small> | | | OLIVE AVENUE WIDENING | NOT FOR CONSTRUCTION OR RECORDING DWG NO. S-1.12 |
| ROUTE | LOCATION | | SOIL NAIL WALL SPECIFICATIONS | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | | | |
| TRACS NO. H 6939 01C | | | 101-A(201) | OF |

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| 101L MA 9 | | | | | |

2.1.2 Shotcrete (CONT'D)

- (4) **WATER.** Water used shall be potable, clean and free from substances deleterious to concrete and steel of that which would cause staining.
- (5) **ACCELERATOR AND ADMIXTURES.** Accelerator shall be the fluid type, applied at nozzle, and shall meet all requirements of the mix design and admixtures. Water-reducer and super-plasticizer shall conform to ASTM C494 (AASHTO M194), Type A, D, F or G. Air-entraining agent shall conform to ASTM C260 (AASHTO M154).
- (6) **FLY ASH.** Fly ash shall conform to ASTM C618 (AASHTO M295). Type F or G, for cement replacement up to 35 percent by weight of cement.
- (7) **SILICA FUME.** Silica fume shall conform to ASTM C1240 with 90 percent minimum silicon dioxide solids content, not to exceed 12 percent by weight of cement.
- (8) **MIXING AND BATCHING.** Aggregate and cement may be batched by weight or by volume in accordance with the requirements of ASTM C94 (AASHTO M151). Mixing equipment shall be capable of thoroughly mixing the material in sufficient quantity to maintain placing continuity. Ready-mix shotcrete shall be delivered and placed within 90 minutes of the batch time unless otherwise acceptable to the Engineer. The use of retarding admixtures may extend application time beyond 90 minutes if acceptable to the Engineer.
- (9) **CURING COMPOUNDS.** Shotcrete curing compounds shall conform to AASHTO M148, Type 1D or Type 2. Curing compounds shall not be used on the initial shotcrete.
- (10) **FILM PROTECTION.** Shotcrete film protection for curing shall conform to AASHTO M171 or Polyethylene Film. Film protection should not be used on the initial shotcrete.

2.1.4 Wall Drainage

- (1) **GEOCOMPOSITE DRAINAGE STRIPS.** Geocomposite drains shall be J-Drain 400 or approved equivalent.
- (2) **DRAIN PIPES.** All drain pipes and connectors shall be a minimum of 2-inch diameter Schedule 40 PVC with solvent weld or elastomeric joints. All connections and assembly shall follow manufacturer's recommendations and requirements of these specifications.

2.1.5 Welded Wire Fabric

Welded wire fabric shall conform to ASTM A185 (AASHTO M55). Minimum lap length shall be 24 inches.

2.1.6 Reinforcing Steel

All reinforcing steel shall conform to ASTM A615 (AASHTO M31) Grade 60. All reinforcing steel details shall conform to ACI 315.

2.1.7 Bearing Plates

Bearing plates for the nails shall conform to ASTM A709.

2.1.8 Studs

Studs shall conform to ASTM A325.

PART 3 - EXECUTION

3.1 CONSTRUCTION

3.1.1 Site Drainage

The Contractor shall provide construction site drainage behind and in front of the nail wall that is independent of the wall drainage system. A plan shall be proposed to address all elements necessary to divert, control and dispose of all surface water. This shall include control of surface water behind the soil nail wall location and away from the toe of the soil nail wall to prevent ponding of water. The Contractor is responsible for the condition and maintenance of any pipe or conduit used to control surface water during construction. Upon substantial completion of the work, surface water controls shall be removed from the site. No pipe or conduit used to control surface waters shall be left in the ground.

The Contractor shall submit a "Site Drainage Plan" to be approved by the Engineer prior to start of wall construction.

The regional groundwater table is anticipated to be below the level of the wall excavation based on the available geotechnical information. However, localized areas of perched water or seepage may be encountered during excavation.

3.1.2 Sequence of Excavation

3.1.2.1 General

The construction sequence shall be as shown on the drawings or in accordance with the accepted submittal. No excavations steeper or higher than those specified or on the drawings shall be made above or below the soil nail wall without written approval of the Engineer. Tentatively accepted construction methods, sequence and face closure time are indicated on the drawings. However, construction methods, sequence or closure times that are either indicated on the drawings or otherwise accepted do not relieve the Contractor of all responsibility for stability of the temporary cut face until it is closed and stabilized with hardened shotcrete and the nail head connection is completely installed. Where the Contractor's construction sequencing results in a discontinuous lift along any nail row, the ends of the lift shall extend beyond the ends of the next lower lift by at least 10 feet. A soil berm shall be constructed immediately beneath these stepped lifts to prevent sloughing or failure that would result in loss of ground at the face.

3.1.3 Excavation

- (1) **GENERAL.** For distances away from the shotcrete wall face greater than the current shotcrete wall height or 10 feet, whichever is greater, mass excavation may occur at any time, but with slopes no steeper than 1 horizontal to 1 vertical, unless otherwise accepted.
- (2) **NEXT LIFT EXCAVATION.** Mass excavation of the drill bench for the next row of soil nails may occur any time the day after shotcreting the preceding lift, provided such excavation occurs no closer than 5 feet from the face of the shotcrete.
- (3) **MASS EXCAVATION.** Mass excavation beneath a preceding shotcrete lift, closer than 5 feet from the shotcrete face, shall not occur until: (1) nail grout and shotcrete on the preceding lift have reached 50 percent of their specified 28 day compress strengths; and (2) installation of connection hardware and nail testing for the preceding lift are complete and acceptable to the Engineer. Mass excavation closer than 5 feet to the shotcrete face must be in accordance with drill berm requirements described below and shown on the plans, unless otherwise accepted by the Engineer.
- (4) **DRILL BENCH.** During mass excavation of the drill bench for the next row of soil nails, the Contractor shall maintain a bench of material to serve as a platform for the drilling equipment and as a stabilizing berm for the wall excavation face (neat line). In accordance with the plans, the stabilizing berm may be either a native berm or a fill berm. In both cases, the drill bench shall be established not more than 3 feet below the row of nails to be installed and shall extend out from the wall face a minimum distance necessary to provide a safe working bench for the drill equipment and workers.
- (5) **EXCAVATION.** Excavation to the neat line shall be done using procedures that prevent over excavation or loosening, minimize degradation of the soil bearing support below the overlying portions of the soil nail wall and below the soil nail currently being installed and minimize loss of soil moisture.

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| DESIGN | M. CHAR | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. S-1.14 |
| DRAWN | R. ANDRASEK | 05-09 | | |
| CHECKED | W. NASCIMENTO | 05-09 | | |
|  <small>1940 N. 29TH AVE, STE 103 PHOENIX, AZ 85023 602-405-6445 Fax: 602-988-6530</small> | | | OLIVE AVENUE WIDENING SOIL NAIL WALL SPECIFICATIONS | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | |
| TRACS NO. H 6939 01C | | | 101-A(201) | OF |

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3.1.3 Excavation (CONT'D)

(6) The duration of time between final excavation to the neat line and the application of shotcrete is referred as the closure time. The closure time for all wall excavation faces shall be less than a single work shift, unless shown otherwise on the plans or as accepted otherwise by the Engineer.

(7) Extension of the closure time shall be submitted to the Engineer for review and acceptance. No extension of closure time shall be accepted until a test cut is constructed and the Contractor demonstrates for each material type that the cut face will be stable over the proposed closure time. Extensions to the closure time may be revoked by the Engineer at any time depending on the performance of the cut face.

(8) Methods of removal of face protrusions (e.g. cobbles, boulders, rubble or other objects) to accomplish the construction shall be determined by the Contractor and is considered incidental to the work. The Contractor shall notify the Engineer's Representative of the proposed method for mitigation of face protrusions prior to initiation of the work. Should the removal of face protrusion result in voids beyond the neat line, the Contractor shall determine the appropriate method of backfilling and shall submit to the Engineer such method(s) prior to initiating the work.

3.1.4 Soil Nails

(1) TEST NAILS. For each different method of nail installation, one successful verification test shall be performed for each retaining wall identified on the plans, prior to starting installation of production nails in the various soil units. The verification test locations shall be determined by the Contractor and accepted by the Engineer. Installation of production nails prior to verification testing will be at the Contractor's risk. Proof testing shall be performed on at least 5% production soil nails. The Contractor shall submit proof testing soil nail location plan for approval by the Engineer.

(2) TEST LOCATIONS. Nails shall be installed at the locations and to the lengths as shown on the plans. The Engineer may add, eliminate or relocate nails to accommodate actual field conditions.

(3) DRILLING EQUIPMENT. The Contractor shall select the drilling equipment and methods suitable for the ground conditions described in the notes shown in the plans. The drill hole diameter shall be a minimum of 6 inches. Water, drilling muds or other fluids used to assist in cutting removal shall not be allowed for uncased drill holes. Uncased drill holes shall be observed for cleanliness prior to insertion of the nail bar. In caving ground, the Contractor shall use cased, augercast or hollow-injection bar drilling methods to support the sides of the drill hole. Augers shall be hard faced to prevent tapering of the flights. Any measurable taper in the flights shall be immediately corrected by the Contractor. At locations where hand drilling conditions such as rock, cobbles, boulders, or obstructions are anticipated, a down hole pneumatic hammer drill rig and drill bit shall be available on site to drill holes for soil nail assemblies.

(4) ADVERSE DRILLING CONDITIONS. The Contractor shall immediately suspend drilling operations if ground subsidence is observed. If the soil nail wall is adversely affected, or if adjacent structures are damaged as a result of the drilling operation. The adverse conditions shall be stabilized immediately and the Engineer shall be notified of such conditions within 1 hour.

(5) NAIL INSERTION. Nail bars shall be inserted into the drill hole to the required length without difficulty and in such a manner as to prevent damage to the drill hole. Nail bars that can not be fully inserted into the design depth shall be removed from the drill hole and the hole shall be cleaned sufficiently to allow unobstructed installation of the bar. The cleanliness of the drill hole shall be checked prior to insertion of the bar.

3.1.5 Soil Nail Grouting

(1) GROUTING EQUIPMENT. Grouting equipment shall produce a uniformly mixed grout free of lumpy and undispersed cement. A positive displacement grout pump shall be used. The grouting equipment shall be sized to enable the entire nail to be grouted in a continuous operation. The mixer shall be capable of continuously agitating the grout during usage.

(2) UNCASSED NAIL HOLES. Uncased drill holes shall be grouted after installation of the nail bar. No portion of the nail hole shall be left open for more than four hours prior to grouting unless accepted otherwise by the Engineer. The grout shall be injected at the lowest point of each drill hole through a tremie pipe, hollow-stem auger or drill rods with the drill hole filled in one continuous operation. Cold joints in the grout placement are allowed for construction of test nails only. The conduit delivering the grout shall be kept below the surface of the grout as the conduit is being withdrawn. The grouting conduit shall be withdrawn as the nail hole is filled in a manner that prevents the creation of voids. Grout pressures shall be controlled to prevent excessive ground heave or fracturing. At this location caving conditions are anticipated, sufficient casing and angular lengths shall be available on site to maintain uninterrupted installation of anchors.

(3) CASING REMOVAL. During casing removal for drill holes advanced by either cased or auger cast methods, the grout surface within the casing shall be continually monitored for maintenance of "head" sufficient to offset the external groundwater/soil pressure.

(4) TEST NAIL UNBONDED LENGTH. Temporary unbonded lengths shall be provided for each test nail. The test nail bar shall be isolated from the wall facing and the reaction frame during the testing. Satisfactory test nails may be incorporated into the work provided the test nail has the same characteristics and properties as the permanent nails, and the unbonded length of the test nail is fully grouted subsequent to testing.

3.1.6 Nail Tolerances

The soil nails shall not extend beyond the project right-of-way or easement limits shown on the plans. Bars shall be centered within 1 inch of the center of the drill hole. Individual nails may be positioned plus or minus 1 foot from the design location shown on the plans. Location tolerances shall be considered applicable for only one nail and not cumulative over large wall areas. The nail inclination shall be plus or minus 3 degrees of that shown in the plans. Nail splay angles shall be within plus or minus 3 degrees. Nails that encounter unanticipated obstructions during drilling shall be relocated by the Contractor with the approval of the Engineer. The hole shall be backfilled with neat cement grout or as accepted otherwise.

3.1.7 Nail Head Connection Hardware

(1) HARDWARE. Depending on the connection detail shown on the plans, or as approved, the nail connection hardware may consist of one or more of the following: embedded or bearing steel plates per ASTM A709 (AASHTO M270) Grade 36; nuts and washers per AASHTO M291, Grade B, hexagonal fitted with beveled washer of spherical seat to provide uniform bearing, and; headed studs per ASTM A307 or approved equal.

(2) STEEL PLATE. Steel plate dimensions shall be within 0.25 inches of that shown on the plans. Headed studs shall be located on the plates within 0.25 inches of that shown on the plans.

3.2 NAIL TESTING

3.2.1 General

Verification testing shall be performed at the locations selected by the Contractor and accepted by the Engineer. Proof tests shall be performed at the locations selected by the Engineer. All test data shall be recorded by the Contractor, unless approved otherwise. Pullout testing of nails shall not be performed until the nail grout and wall facing have attained at least 50 percent of their specified 28-day compressive strengths. Where temporary casing of the unbonded length of test nails is provided, the casing shall be installed to prevent any reaction between the casing and the grouted bond length of the nail and/or the stressing apparatus.

| NAME | DATE | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | | PRELIMINARY 95% Review |
|--|---------------|--|--|--|
| DESIGN | M. CHAR | 05-09 | OLIVE AVENUE WIDENING SOIL NAIL WALL SPECIFICATIONS | NOT FOR CONSTRUCTION OR RECORDING DWG NO. S-L15 |
| DRAWN | R. ANDRASEK | 05-09 | | |
| CHECKED | W. NASCIMENTO | 05-09 | | |
| IAN ENGINEERING 1644 N. 25th Ave, Ste 103 Phoenix, AZ 85023 602-405-6445 Fax: 602-288-6530 | | SR 101L AGUA FRIA FREEWAY - OLIVE AVENUE T1 | | |
| ROUTE | LOCATION | TRACS NO. H 6939 01C | | 101-A(201) OF |

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| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
| 9 | ARIZ. | 101-A(201) | 78 | 89 | |
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3.2.2 Testing Equipment

(1) GENERAL. Nail testing equipment shall include two dial gauges, a dial gauge support, Jack and pressure gauge and a reaction frame.

(2) DIAL GAUGES. A minimum of two dial gauges capable of measuring to 0.001 Inch shall be available at the site to measure the nail head movement. The dial gauges shall be aligned within 5 degrees of the axis of the nail and shall be supported independently of the Jacking set-up and wall.

(3) STRESSING EQUIPMENT. A hydraulic Jack, calibrated pressure gauge and pump shall be used to apply and measure the test load. The Jack and pressure gauge shall be calibrated as a unit by an independent testing laboratory. The pressure gauge shall be graduated in 100 psi increments or less and shall have a range not exceeding twice the anticipated maximum pressure during testing unless accepted otherwise. The ram travel of the Jack shall be sufficient to enable the test to be performed without re-setting the Jack.

(4) STRESSING EQUIPMENT SET-UP. The Jack shall be independently supported and centered over the nail so that the nail does not carry the weight of the Jack. The stressing equipment shall be placed over the nail in such a manner that the Jack bearing plates and stressing anchorage are in alignment. The Jack shall be positioned at the beginning of the test such that the unloading and repositioning of the Jack during the test shall not be required.

(5) REACTION FRAME. The test reaction frame shall be sufficiently rigid and of adequate dimension such that excessive deformations of the test apparatus during testing shall not require repositioning of any components. Where the reaction frame bears directly on the wall, the reaction frame shall be designed to prevent damage or cracking of the wall facing.

3.2.3 Verification Testing

(1) SACRIFICIAL NAILS. Verification testing in a soil unit shall be performed prior to installation of production nails in that unit, or as specified, to verify the Contractor's installation methods, nail pullout capability and design assumptions. The nails used for the verification tests shall be sacrificial and shall not be incorporated as production nails.

(2) METHODS AND PROCEDURES. Test nails shall be constructed using the same equipment, methods, nail inclination and hole diameter as planned for the production nails. Changes to the drilling or installation method during production may require additional nail testing as determined by the Engineer.

(3) NAIL LENGTH. The unbonded length of verification test nails shall be at least 3 feet unless approved otherwise by the Engineer. The bond length of test nails shall be determined by the Contractor such that the allowable bar load is not exceeded but shall not be less than 8 feet. The bar load during testing shall not exceed 80 percent of the steel ultimate strength for Grade 150 bars or 90 percent of the steel yield strength for Grade 75 bars.

(4) TESTING SCHEDULE. The Design Test Load (DTL) during testing shall be determined by multiplying the bond length of the nail times the design pullout resistance. Verification test nails shall be incrementally loaded in accordance with the following schedule:

Verification Test Loading Schedule

| LOAD | LOAD HOLD TIME |
|--------------------------|---------------------------------|
| AL (0.05 DTL * Max) | 1 Minute |
| 0.25 DTL | 10 Minutes |
| 0.50 DTL | 10 Minutes |
| .075 DTL | 10 Minutes |
| 1.00 DTL | 10 Minutes |
| 1.25 DTL | 10 Minutes |
| 1.50 DTL (Creep Test) | 60 Minutes |
| 1.75 DTL | 10 Minutes |
| 2.00 DTL (Max Test Load) | 10 Minutes |
| AL (0.50 DTL * Max) | 1 Minute (Record Permanent Set) |

* Design Test Load

(5) ALIGNMENT LOAD. The Alignment Load (AL) should be the minimum load required to align the testing apparatus and should not exceed 5 percent of the Design Test Load maximum (0.05 times the DTL). Dial gauges should be set to "zero" after the alignment load has been applied.

(6) LOAD HOLD TIMES. Each load increment shall be held for at least 10 minutes. The verification test nail shall be monitored for creep for 60 minutes at the 1.50 DTL load increment. Nail movements during the creep portion of the test shall be measured and recorded at 1, 2, 3, 5, 6, 10, 20, 30, 50, and 60 minutes. The load during the creep test shall be maintained to within 2 percent of the intended load by use of the load cell.

3.2.4 Proof Testing of Production Nails

(1) GENERAL. Proof testing shall be performed on at least 5 percent of the production nails in each row or as determined by the Engineer. If nail installation methods are substandard on any particular nail or series of nails, additional proof tests shall be required.

(2) NAIL LENGTH. Proof test nails shall have both bonded and temporary unbonded lengths. The temporary unbonded length of the production test nails shall be at least 3 feet unless accepted otherwise. The bond length of test nails shall be determined by the Contractor such that the allowable bar load is not exceeded but shall not be less than 8 feet. The bar load during testing shall not exceed 80 percent of the steel ultimate strength for Grade 150 bars or 90 percent of the steel yield strength for Grade 75 bars.

(3) PROOF TEST SCHEDULE. Proof tests shall be performed by incrementally loading the proof nail to a maximum load of 150 percent of the Design Test Load (DTL). The nail movement at each load increment shall be measured and recorded. The test load shall be monitored by a Jack pressure gauge with a sensitivity and range meeting the requirements of pressure gauges used for verification test nails. At load increments other than the maximum test load, the load shall be held long enough to obtain a stable reading. Incremental loading for proof tests shall be in accordance with the following loading schedule.

Proof Test Loading Schedule

| LOAD | LOAD HOLD TIME |
|--------------------------|----------------|
| AL (0.05 DTL * Max) | Until Stable |
| 0.25 DTL | Until Stable |
| 0.50 DTL | Until Stable |
| .075 DTL | Until Stable |
| 1.00 DTL | Until Stable |
| 1.25 DTL | Until Stable |
| 1.50 DTL (Max Test Load) | See Below |

* Design Test Load

(4) ALIGNMENT LOAD. The Alignment Load (AL) should be the minimum load required to align the testing apparatus and should not exceed 5 percent of the Design Test Load maximum (0.05 times the DTL). Dial gauges should be set to "zero" after the alignment load has been applied.

(5) LOAD HOLD TIMES. All load increments shall be maintained to within 5 percent of the intended load. Depending on performance, wither 10 minute or 60 minute creep tests shall be performed at the maximum test load (1.50 DTL). The creep period shall start as recorded at 1, 2, 3, 5, 6, and 10 minutes. Where the nail movement between 1 minute and 10 minutes exceeds 0.04 inches, the maximum test load shall be maintained an additional 50 minutes and movements shall be measured and recorded at 20, 30, 50 and 60 minutes.

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| DESIGN | M. CHAR | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | PRELIMINARY 95% Review |
| DRAWN | R. ANDRASEK | 05-09 | | |
| CHECKED | W. NASCIMENTO | 05-09 | | |
|  | | | OLIVE AVENUE WIDENING | NOT FOR CONSTRUCTION OR RECORDING |
| ROUTE | SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | SOIL NAIL WALL SPECIFICATIONS | |
| TRACS NO. H 6939 01C | | | 101-A(201) | DWG NO. S-1.16 |
| | | | | OF |

DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO.

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 79 | 89 | |

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3.2.5 Test Nail Acceptance

A test nail shall be considered acceptable if the following criteria are met:

(1) **VERIFICATION TESTS.** For verification tests, a total rate of less than 0.08 inches per log cycle of time between the 6 and 60 minute readings during creep testing and the rate is linear or decreasing throughout the creep test load period.

(2) **PROOF TESTS.** For proof tests, a rate less than 0.04 inches per log cycle of time between the 1 minute and 10 minute readings or a creep rate of less than 0.08 inches per log cycle of time between the 6 and 60 minute readings and the creep rate is linear or decreasing throughout the creep test load hold period.

(3) **TOTAL MOVEMENTS.** For verification and proof tests, the total movement at the maximum test load exceeds 80 percent of the theoretical elastic elongation of the unbonded length.

3.2.6 Proof Test Nail Incorporated as Production Nails

At the Contractor's option, successful proof test nails meeting the above test acceptance criteria may be incorporated as production nails provided that: (1) the unbonded test length of the nail hole has not collapsed during testing; (2) the minimum required drill hole diameter has been maintained; (3) the test nail bar size are equal to or greater than the scheduled production nail length and bar size and; (4) the specified corrosion protection is provided. Test nails meeting these requirements shall be completed by satisfactorily grouting up the unbonded test length. Maintaining the temporary unbonded test length for subsequent grouting is the Contractor's responsibility.

3.2.7 Test Nail Rejection

If a test nail does not satisfy the acceptance criteria, the Contractor shall determine the cause and report this to the Engineer.

3.2.8 Acceptance of Test Nails

(1) **VERIFICATION TEST NAILS.** The Engineer will evaluate the results of each verification test. Nail installation methods that do not satisfy the nail testing requirements shall be considered inadequate or failed. The Contractor shall propose alternate methods and install replacement verification test nails. Replacement test nails shall be installed and tested at no additional cost.

(2) **PROOF TEST NAILS.** The Engineer may require the Contractor to replace some or all of the production nails represented by inadequate or failed proof tests. Alternatively, the Engineer may require the installation and testing of additional proof test nails to verify that adjacent previously installed production nails have sufficient load carrying capacity. Installation and testing of additional proof test nails as a result of proof test nail failures will be at no additional cost.

3.2.9 Nail Installation Records

Records documenting the soil nail wall construction shall be maintained by the Contractor. The Contractor shall provide as-built drawings showing as-built soil nail locations, shotcrete joint locations, drainage strip locations, shotcrete facing line and grade within 5 days after completion of the shotcrete facing.

3.3 PERMANENT WALL DRAINAGE

3.3.1 Drainage Plan

The wall drainage network shall consist of geocomposite drainage strips and connector pipes as shown on the plans. The geocomposite drainage strips shall be centered between the vertical soil nail columns.

3.3.2 Geocomposite Drainage Strips

The geocomposite drainage strips shall be at least 16 inches wide and shall be secured to the excavation face with the geotextile side against the ground. Drainage strips shall be made continuous by using the "shingle" method of splicing with a 16 inch minimum overlap such that the flow of water is not impeded.

3.3.3 Connections

The joint between the connector pipes and the geocomposite drain, and the discharge end of the connector pipe shall both be sealed to prevent shotcrete intrusion. Damage of the geocomposite drainage strip which, in the opinion of the Engineer, may cause interruption of flow, shall require installation of additional drainage strips.

3.4 INITIAL SHOTCRETE WALL

3.4.1 General

All shotcrete shall comply with the requirements as specified or as shown on the plans. The Contractor shall contract an independent testing laboratory to core and test shotcrete test panels in accordance with ACI 506.4R-94.

3.4.2 Workers

All workers, including foreman, nozzle men, finishers and delivery equipment operators, shall be fully qualified to perform the work. Qualification of the nozzle men shall be based on the results of test panels as required herein, unless otherwise accepted by the Engineer.

3.4.3 Test Panels

One 16 inch by 16 inch by 8 inch deep production test panel shall be required for the first shotcrete operation. Cores shall be taken of the shotcrete panel to provide test samples for 3 day and 28 day compression tests to verify mix design strength and Contractor's means and methods.

3.4.4 Shotcrete Alignment Control

Alignment wires and/or thickness control pins shall be provided as necessary to establish and maintain the minimum shotcrete thickness shown on the plans. The maximum distance between the wires and/or thickness control pins on any surface shall be equal to the vertical nail spacing. The Contractor shall ensure that alignment wires are tight, true to line and placed to allow further tightening.

3.4.5 Surface Preparation

(1) **ABOVE NAIL GROUT.** Prior to shotcreting the ungrouted zone above the nail grout at the excavation out face (bird's beak), the Contractor shall remove all loose materials from the surface of the grout.

(2) **ALL SURFACES.** The Contractor shall remove all loose materials and loose dried shotcrete from previous placement operations and from all receiving surfaces by methods acceptable and approved by the Engineer. The removal shall be accomplished in such a manner as not to loosen, crack or shatter the surfaces to receive the shotcrete. Any surface material that, in the opinion of the Engineer, is so loosened or damaged shall be removed to a sufficient depth to provide a base that is suitable to receive the shotcrete. Materials that loosen as the shotcrete is applied shall be removed.

3.4.5 Delivery and Application

(1) **DELIVERY.** A clean, dry, oil free supply of compressed air sufficient for maintaining adequate nozzle velocity for all parts of the work shall be maintained at all times. The equipment shall be capable of delivering the premixed material accurately, uniformly and continuously through the delivery hose.

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| DESIGN | M. CHAR | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. S-1.17 |
| DRAWN | R. ANDRASEK | 05-09 | | |
| CHECKED | W. NASCIMENTO | 05-09 | | |
| IAN ENGINEERING | | | | |
| (844) N. 25th Ave, Ste 103 Phoenix, AZ 85022 602-405-6445 Fax 602-288-6530 | | OLIVE AVENUE WIDENING SOIL NAIL WALL SPECIFICATIONS | | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | | |
| TRACS NO. H 6939 01C | | 101-A(201) | OF | |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 80 | 89 | |
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3.4.6 Delivery and Application

(1) **DELIVERY.** A clean, dry, oil free supply of compressed air sufficient for maintaining adequate nozzle velocity for all parts of the work shall be maintained at all times. The equipment shall be capable of delivering the premixed material accurately, uniformly and continuously through the delivery hose.

(2) **APPLICATION.** The shotcrete shall be applied from the lower part of the area upwards to prevent accumulation of rebound on uncovered surfaces. Thickness, methods of support, air pressure and rate of placement of shotcrete shall be controlled to prevent sagging or sloughing of freshly applied shotcrete. Where shotcrete is used to fill the bird's beak, the nozzle shall be positioned into the mouth of the drill hole to completely fill the void. Rebound shall not be worked back into the placement nor shall the rebound be salvaged. Rebound that does not fall clear of the work area shall be removed. The nozzle shall be held at a distance and at an angle approximately perpendicular to the working face so that rebound will be minimal and compaction will be maximized. The nozzle shall be rotated steadily in a circular pattern.

(3) **PLACEMENT METHOD.** Shotcrete placement shall be by the bench gunning method when the thickness of the shotcrete layer is 6 inches or greater. The bench gunning method shall consist of building up a thick layer of shotcrete from the bottom of the lift and maintaining the top surface at approximately a 45 degree slope.

3.4.7 Visual Observation

(1) **OBSERVATIONS.** A clearly defined pattern of continuous horizontal or vertical bridges of depressions at the reinforcing elements after they are covered will be considered indication of insufficient cover of reinforcement or poor application and probable voids. In this case, the work shall be immediately suspended and the work carefully inspected by the Engineer. The Contractor shall implement and complete corrective measures prior to resuming the shotcrete operations.

(2) **CORRECTIONS.** The shotcrete procedure may be corrected by adjusting the nozzle distance and orientation perpendicular to the surface, adjusting the water content of the shotcrete mix or other means acceptable to the Engineer. All overspray and rebound shall be removed from the surface. Adjustment in the water content of wet-mix shall require requalifying the shotcrete mix.

(3) **SURFACE DEFECTS.** Surface defects shall be repaired as soon as possible after initial placement of shotcrete. All shotcrete that lacks uniformity, exhibits segregation, sagging, honeycombing or lamination or contains any voids or sand pockets shall be removed and replaced with fresh shotcrete by the Contractor to the satisfaction of the Engineer.

3.4.8 Attachment of Nail Head Connection Hardware

(1) **BEARING PLATE.** For bearing plate connections, the plate shall be wet-set while the shotcrete is plastic to assure full shotcrete bearing behind the plate. However, the retention nut shall only be hand tightened such that full bearing is achieved without excessively squeezing fresh shotcrete out from under the plate.

(2) **CONNECTIONS.** For embedded plate connections (possibly with headed studs), the embeddings shall be located within the wall such that the proper shotcrete cover is provided as shown on the plans. In addition, the plate, washer and nut shall be pulled up flush together by wiring to the reinforcement or other means necessary to assure adequate contact between these parts.

3.4.9 Finishing and Curing Requirements

(1) **FINISH.** Shotcrete finish shall be as shot gun finish.

3.4.10 Weather Limitations

(1) **COLD AND HOT WEATHER.** Shotcrete shall not be placed in cold weather unless adequately protected when the ambient temperature is below 40 degrees Fahrenheit and falling and/or when the shotcrete is likely to be subjected to freezing temperatures before reaching a minimum strength of 750 psi. Cold weather protection shall be maintained until the strength of shotcrete is greater than 750 psi. Cold weather protection shall include heating under tents, blankets or other means acceptable to the Engineer. The temperature of the shotcrete, when deposited, shall not be less than 50 degrees Fahrenheit nor more than 80 degrees Fahrenheit.

(2) **OTHER WEATHER.** Shotcrete application shall also be suspended during high winds and heavy rains or other conditions when in the opinion of the Engineer the quality of the application is not acceptable. Newly placed shotcrete exposed to the rain that washes out cement or otherwise makes the shotcrete unacceptable to the Engineer shall be removed and replaced. The Contractor shall provide adequate secured polyethylene sheeting or equivalent protection or means when adverse exposure to weather is anticipated.

3.4.12 Tolerances

The tolerance for shotcrete-facings shall be as follows.

(1) The vertical location of a horizontal shotcrete joint shall be within 6 inches of the elevation shown on the plans.

(2) The complete shotcrete wall thickness shall be no less than that shown on the plans minus 1/2 inches.

(3) The horizontal and vertical locations of reinforcing bars and headed studs on bearing plates shall be within 1.0 inch of the locations shown on the plans or as approved.

(4) Reinforcing bar lap lengths shall be no less than shown on the plans or as approved, minus 1 inch.

(5) Reinforcing bar spacings shall not exceed that shown on the plans or as approved, plus 1 inch.

(6) The deviation in planeness of the finished wall surface shall not exceed 1/2 inch in 10 feet.

3.4.13 Wall Monitoring

(1) **SURVEYS.** Survey monitoring of the nail walls shall be the responsibility of the Contractor. Controlled surveying shall be performed to determine the initial elevation and plan location of the monitoring points and the vertical and horizontal movement of the monitoring points thereafter.

(2) **MONITORING POINTS.** Monitoring points shall consist of bolts or rods embedded into the object of interest or cross hairs scribed onto a plate that is attached to the face of the object of interest. Accuracy of measurement shall be to plus or minus 0.005 feet.

(3) **LOCATIONS.** Monitoring points shall be established, at a minimum, at: (1) the top of the soil nail walls and spaced no more than 50 feet on center along the entire wall length and; (2) on all existing structures that are sensitive to movement and within a distance from the excavation equal to the final height of the excavation

(4) **REPORTS.** In general, survey monitoring and reporting of data shall occur twice weekly, unless the progress of construction dictates a less or more frequent survey, as determined by the Engineer. If any movements exceed 1/2 inch, monitoring frequency shall be increased to a daily survey in the areas of concern. If any movements exceed 1 inch remedial measures shall be considered.

(5) The Contractor's Inspector shall be responsible for monitoring the survey data collected and providing timely summaries.

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| DESIGN | M. CHAR | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. S-1.18 |
| DRAWN | R. ANDRASEK | 05-09 | | |
| CHECKED | W. NASCIMENTO | 05-09 | | |
|  <small>(844) N. 25th Ave, Ste 103 Phoenix, AZ 85022 602-405-6445 Fax 602-280-4530</small> | | | OLIVE AVENUE WIDENING SOIL NAIL WALL SPECIFICATIONS | |
| ROUTE | LOCATION | | SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE T1 |
| TRACS NO. H 6939 01C | | | 101-A(201) | OF |

SURVEY NO. FINISHED PLANS LOCATION REVISIONS DATE SURVEY NO. FINISHED PLANS LOCATION REVISIONS DATE SURVEY NO. FINISHED PLANS LOCATION REVISIONS DATE

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| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
| 9 | ARIZ. | 101-A(201) | 81 | 89 | |
| 101L MA 9 | | | | | |

NOTES:

Geotechnical Engineer report by Ricker, Atkinson, McBee & Associates, Inc. dated July 14, 2006. RAM Project No. G13272.

Information contained on these sheets is made available to prospective bidders for information purposes only and is not to be considered a part of the contract papers.

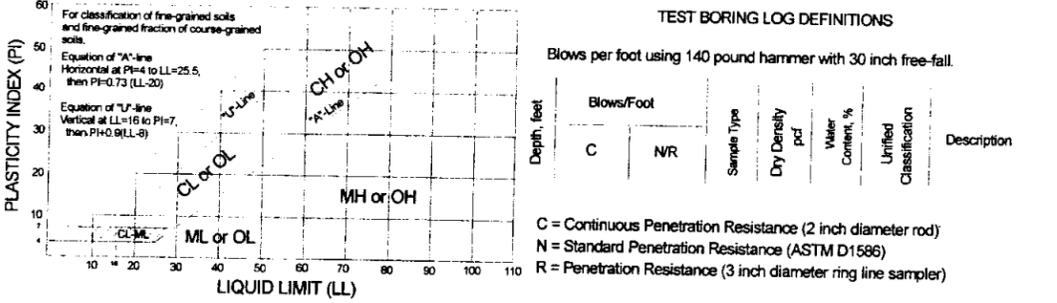
Information is developed as accurately as possible by the methods utilized. However, the State accepts no responsibility for any conditions encountered which may be at variance from information contained herein.

The absence of ground water indication does not constitute a representation that the ground water will not be present during construction. Ground water is indicated herein only when found during the foundation investigation and represents that condition only on the date of investigations.

Classification of materials is in accordance with AASHTO "Manual on Foundation Investigations" and is based upon field inspection and is not to be construed to imply mechanical analysis.

LEGEND
ASTM Designation: D2487-00
(Based on Unified Soil Classification System)

| Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests | Soil Classification | | | | |
|---|--|---|--------------------------|----------------------|--------------------|
| | Group Symbol | Name | | | |
| COARSE-GRAINED SOILS More than 50% coarse fraction retained on No. 4 Sieve | Clean Gravels Less than 5% fines | Cu > 4 and 1 < Cc < 3 | GW | Well graded gravel | |
| | Gravels with Fines More than 12% fines | Cu < 4 and/or 1 < Cc > 3 | GP | Poorly graded gravel | |
| | Sands 50% or more of coarse fraction passes No. 4 sieve | Fines classify as ML or MH | | GM | Silty gravel |
| | | Fines classify as CL or CH | | GC | Clayey gravel |
| | | Clean Sands Less than 5% fines | Cu > 6 and 1 < Cc < 3 | SW | Well-graded sand |
| | | Sands with Fines More than 12% fines | Cu < 6 and/or 1 < Cc > 3 | SP | Poorly graded sand |
| FINE-GRAINED SOILS 50% or more passes the No. 200 Sieve | SILTS AND CLAYS Liquid limit less than 50 | Fines classify as ML or MH | SM | Silty sand | |
| | | Fines classify as CL or CH | SC | Clayey sand | |
| | | Inorganic | CL | Lean clay | |
| | | PI > 4 and plots on or above "A" line | CL | Lean clay | |
| | | PI < 4 and plots below "A" line | ML | Silt | |
| | | Organic | OL | Organic silt | |
| | SILTS AND CLAYS Liquid limit 50 or more | Inorganic | CH | Fat clay | |
| | | PI plots on or above "A" line | CH | Fat clay | |
| | | PI plots below "A" line | MH | Medium clay | |
| | | Organic | OH | Organic clay | |
| | | Liquid limit - oven dried < 0.75 | OH | Organic clay | |
| | | Liquid limit - not dried < 0.75 | OH | Organic silt | |
| HIGHLY ORGANIC SOILS Primarily organic matter, dark in color, and organic odor | | PT | Peat | | |



| SILTS & CLAYS DISTINGUISHED ON BASIS OF PLASTICITY | GRAIN SIZES | | | | CLEAR SQUARE SIEVE OPENINGS | | |
|--|-------------|--------|--------|------|-----------------------------|---------|----------|
| | FINE | MEDIUM | COARSE | FINE | COARSE | COBBLES | BOULDERS |
| | | | | | | | |

| MOISTURE CONDITION (INCREASING MOISTURE →) | | | | | | |
|--|---------------|------|-----------------------|------------|-----------------|----------------|
| DRY | SLIGHTLY DAMP | DAMP | MOIST (Plastic Limit) | VERY MOIST | WET (SATURATED) | (Liquid Limit) |

| CONSISTENCY CORRELATION | | RELATIVE DENSITY CORRELATION | |
|-------------------------|-------------|------------------------------|-------------|
| CLAYS & SILTS | BLOWS/FOOT* | SANDS & GRAVELS | BLOWS/FOOT* |
| VERY SOFT | 0-2 | VERY LOOSE | 0-4 |
| SOFT | 2-4 | LOOSE | 4-10 |
| FIRM | 4-8 | MEDIUM DENSE | 10-30 |
| STIFF | 8-16 | DENSE | 30-50 |
| VERY STIFF | 16-32 | VERY DENSE | OVER 50 |
| HARD | OVER 32 | | |

*Number of blows of 140 lb hammer falling 30" to drive a 2" O.D. (1-3/8" I.D.) split-spoon sampler (ASTM D1586).

RAMM Project No. G13276

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| DESIGN | M. CHAR | DATE | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | PRELIMINARY 95% Review |
| DRAWN | R. ANDRASEK | DATE | 05-09 | | |
| CHECKED | W. NASCIMENTO | DATE | 05-09 | | |
| IAN ENGINEERING 1414 N. 25TH AVE., STE 103 PHOENIX, AZ 85023 602-405-6446 FAX 602-288-6530 | | | | OLIVE AVENUE WIDENING RETAINING WALLS FOUNDATION DATA (1 OF 3) | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | | |
| TRACS NO. | H 6939 01C | | 101-A(201) | NOT FOR CONSTRUCTION OR RECORDING DWG NO. SF-1.01 OF | |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
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| 9 | ARIZ. | 101-A(201) | 82 | 89 | |

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REVISIONS- LOCATION- DATE-
 FINISHED PLANS- SURVEY NO. DATE-
 REVISIONS- LOCATION- DATE-
 FINISHED PLANS- SURVEY NO. DATE-

TEST BORING LOG

Project: Olive Avenue T.I., Peoria, AZ TEST BORING: _____
 Elevation: Not Determined Datum: --- Date: 7-30-07

| Depth, feet | Blows/Foot | | Sample Type | Dry Density, pcf | Water Content, % | Unified Classification | Description |
|-------------|-------------|-----|-------------|------------------|------------------|------------------------|---|
| | C | N/R | | | | | |
| 5 | 39 | | R | 112 | 7 | CL | Sandy Clay; brown, slightly damp, medium plasticity, stiff to very stiff, possible fill. |
| 5 | 20 | | R | 91 | 8 | SC | Clayey Sand; brown, slightly damp to damp, intermittent light cementation, medium plasticity, medium dense. |
| 10 | 50/5* 21 | | R N | NR | 3 | SP/ SC | Gravelly Sand, Some Clay; brown to light brown, slightly damp, medium plasticity, medium dense to dense. |
| 15 | | | | | | | Auger refusal at 14 feet on cobbles. No groundwater observed. NR = No Recovery |

RAMM Project No: G13276

A3

TEST BORING LOG

Project: Olive Avenue T.I., Peoria, AZ TEST BORING: _____
 Elevation: Not Determined Datum: --- Date: 7-30-07

| Depth, feet | Blows/Foot | | Sample Type | Dry Density, pcf | Water Content, % | Unified Classification | Description |
|-------------|------------|-----|-------------|------------------|------------------|------------------------|--|
| | C | N/R | | | | | |
| 5 | 29 | | R | 112 | 8 | SC | Fill: Clayey Sand, Some Gravel; brown slightly damp to damp, medium plasticity, medium dense. |
| 5 | 29 | | R | 90 | 7 | SC | Clayey Sand; brown, slightly damp to damp, intermittent light cementation, medium plasticity, medium dense. |
| 10 | 32 | | R | * | 2 | SP/ SC | Gravelly Sand, Some Clay; brown to light brown, slightly damp, medium plasticity, medium dense to dense. |
| 15 | 50/5* | | N | | 3 | | Stopped drilling at 15 feet. Stopped sampling at 16.5 feet. No groundwater observed. * Sample too disturbed to determine density. |

RAMM Project No: G13276

A4

TEST BORING LOG

Project: Olive Avenue T.I., Peoria, AZ TEST BORING: _____
 Elevation: Not Determined Datum: --- Date: 7-30-07

| Depth, feet | Blows/Foot | | Sample Type | Dry Density, pcf | Water Content, % | Unified Classification | Description |
|-------------|------------|-----|-------------|------------------|------------------|------------------------|--|
| | C | N/R | | | | | |
| 5 | 37 | | R | 116 | 7 | CL | Sandy Clay; brown, slightly damp, medium plasticity, stiff to very stiff, possible fill. |
| 5 | 22 | | R | 96 | 7 | SC | Clayey Sand; brown, slightly damp to damp, intermittent light cementation, medium plasticity, medium dense. Note: Some gravel below 7 feet. |
| 10 | 51 | | N | | 2 | SP/ SC | Gravelly Sand, Some Clay; brown to light brown, slightly damp, medium plasticity, medium dense to dense. |
| 15 | 50/2* | | R | NR | | | Stopped drilling at 15 feet. Stopped sampling at 15.1 feet. No groundwater observed. NR = No Recovery |

RAMM Project No: G13276

A5

TEST BORING LOG

Project: Olive Avenue T.I., Peoria, AZ TEST BORING: _____
 Elevation: Not Determined Datum: --- Date: 7-30-07

| Depth, feet | Blows/Foot | | Sample Type | Dry Density, pcf | Water Content, % | Unified Classification | Description |
|-------------|------------|-----|-------------|------------------|------------------|------------------------|--|
| | C | N/R | | | | | |
| 5 | 34 | | R | 112 | 5 | SC | Fill: Clayey Sand, Some Gravel; brown slightly damp to damp, medium plasticity, medium dense. |
| 5 | 36 | | R | NR | | SC | Clayey Sand; brown, slightly damp to damp, intermittent light cementation, medium plasticity, medium dense. Note: Some gravel below 7 feet. |
| 10 | 18 15 | | R N | NR | 2 | SP/ SC | Gravelly Sand, Some Clay; brown to light brown, slightly damp, medium plasticity, medium dense to dense. |
| 15 | 50/2* | | N | | NR | | Stopped drilling at 15 feet. Stopped sampling at 15.1 feet. No groundwater observed. NR = No Recovery |

RAMM Project No: G13276

A6

| | | | | |
|---|---------------|----------|--|---|
| DESIGN | M. CHAR | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING |
| DRAWN | R. ANDRASEK | 05-09 | | |
| CHECKED | W. NASCIMENTO | 05-09 | | |
|  | | | OLIVE AVENUE WIDENING RETAINING WALLS FOUNDATION DATA (2 OF 3) | DWG NO. SF-1.02 |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | |
| TRACS NO. | H 6939 01C | | 101-A(201) | OF |

| | | | | | |
|-----------------|-------|-------------|-----------|--------------|----------|
| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
| 9 | ARIZ. | 101-A(201) | 83 | 89 | |
| 101L MA 9 | | | | | |

REVISIONS- LOCATION- DATE-
 FINISHED PLANS- SURVEY NO.
 REVISIONS- LOCATION- DATE-
 FINISHED PLANS- SURVEY NO.

TEST BORING LOG

Project: Olive Avenue T.I., Peoria, AZ TEST BORING: 5
 Elevation: Not Determined Datum: --- Date: 7-31-07

| Depth, feet | Blows/Foot | | Sample Type | Dry Density, pcf | Water Content, % | Unified Classification | Description |
|---------------|------------|-------|-------------|------------------|------------------|------------------------|---|
| | C | N/R | | | | | |
| 5 | | 33 | R | 105 | 13 | SC | Fill: Gravelly Clayey Sand; brown, slightly damp to damp, medium plasticity, medium dense to dense. |
| 5 | | 50/6" | R | * | 4 | | |
| 10 | | 39 | R | NR | | | |
| 15 | | 36 | R | 81 | 12 | | |
| 20 | | 33 | R | 119 | 11 | | |
| 25 | | | | | | CL | Sandy Clay; brown, damp, medium plasticity, stiff to very stiff. |
| - continued - | | | | | | | |

RAMM Project No: G13276

A6

TEST BORING LOG

Project: Olive Avenue T.I., Peoria, AZ TEST BORING: 5 cont.
 Elevation: Not Determined Datum: --- Date: 7-31-07

| Depth, feet | Blows/Foot | | Sample Type | Dry Density, pcf | Water Content, % | Unified Classification | Description |
|---------------|------------|-------|-------------|------------------|------------------|------------------------|--|
| | C | N/R | | | | | |
| 30 | | 48 | R | NR | | CL | Sandy Clay; - continued |
| 30 | | 23 | R | 120 | 11 | SC | Clayey Sand; brown, slightly damp to damp, intermittent light cementation, medium plasticity, medium dense to dense. |
| 35 | | 50/9" | R | 113 | 5 | | |
| 40 | | | | | | | Auger refusal at 39 feet on cobbles. No groundwater observed. NR = No Recovery |
| 45 | | | | | | | * Sample too disturbed to determine density. |
| 50 | | | | | | | |
| - continued - | | | | | | | |

RAMM Project No: G13276

A8

TEST BORING LOG

Project: Olive Avenue T.I., Peoria, AZ TEST BORING: 6
 Elevation: Not Determined Datum: --- Date: 7-31-07

| Depth, feet | Blows/Foot | | Sample Type | Dry Density, pcf | Water Content, % | Unified Classification | Description |
|---------------|------------|----------|-------------|------------------|------------------|------------------------|---|
| | C | N/R | | | | | |
| 5 | | 44 | R | NR | | SC | Fill: Gravelly Clayey Sand; brown, slightly damp to damp, medium plasticity, medium dense to dense. |
| 5 | | 37 | R | NR | | | |
| 10 | | 50/8" | R | NR | | | |
| 15 | | 37 10 | R N | NR NR | | | |
| 20 | | 21 | R | 110 | 17 | | |
| 25 | | | | | | | |
| - continued - | | | | | | | |

RAMM Project No: G13276

A9

TEST BORING LOG

Project: Olive Avenue T.I., Peoria, AZ TEST BORING: 6 cont.
 Elevation: Not Determined Datum: --- Date: 7-31-07

| Depth, feet | Blows/Foot | | Sample Type | Dry Density, pcf | Water Content, % | Unified Classification | Description |
|---------------|------------|-------------|-------------|------------------|------------------|------------------------|---|
| | C | N/R | | | | | |
| 30 | | 13 | R | 107 | 17 | SC | Fill: Gravelly Clayey Sand; - continued |
| 30 | | 44 | R | 101 | 16 | CL | |
| 35 | | 50/2" 60 | R N | NR | 3 | SC | Clayey Sand; brown, slightly damp to damp, intermittent light cementation, medium plasticity, medium dense. |
| 40 | | 50/10" | R | 109 | 8 | | |
| 45 | | 50/8" | R | 106 | 8 | | |
| 50 | | | | | | | Auger refusal at 46.5 feet on cobbles. No groundwater observed. NR = No Recovery |
| - continued - | | | | | | | |

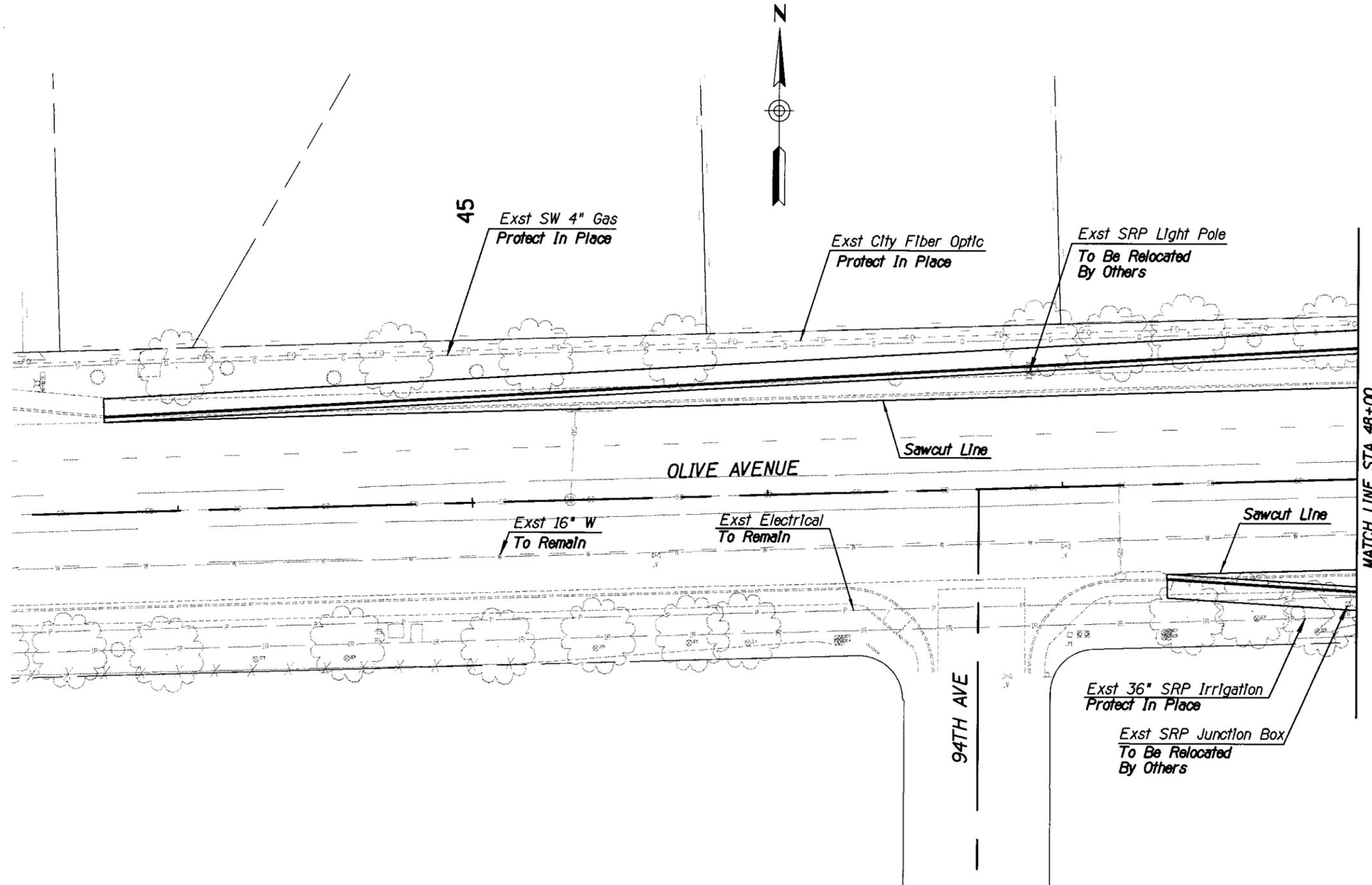
RAMM Project No: G13276

A10

| | | | | |
|---|---------------|----------|--|---|
| DESIGN | M. CHAR | 05-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STRUCTURES SECTION | PRELIMINARY 95% Review |
| DRAWN | R. ANDRASEK | 05-09 | | |
| CHECKED | W. NASCIMENTO | 05-09 | | |
|  | | | OLIVE AVENUE WIDENING RETAINING WALLS FOUNDATION DATA (3 OF 3) | NOT FOR CONSTRUCTION OR RECORDING DWG NO. SF-103 |
| ROUTE | SR 101L | LOCATION | | |
| TRACS NO. H 6939 01C | | | 101-A(201) | OF |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 84 | 89 | |

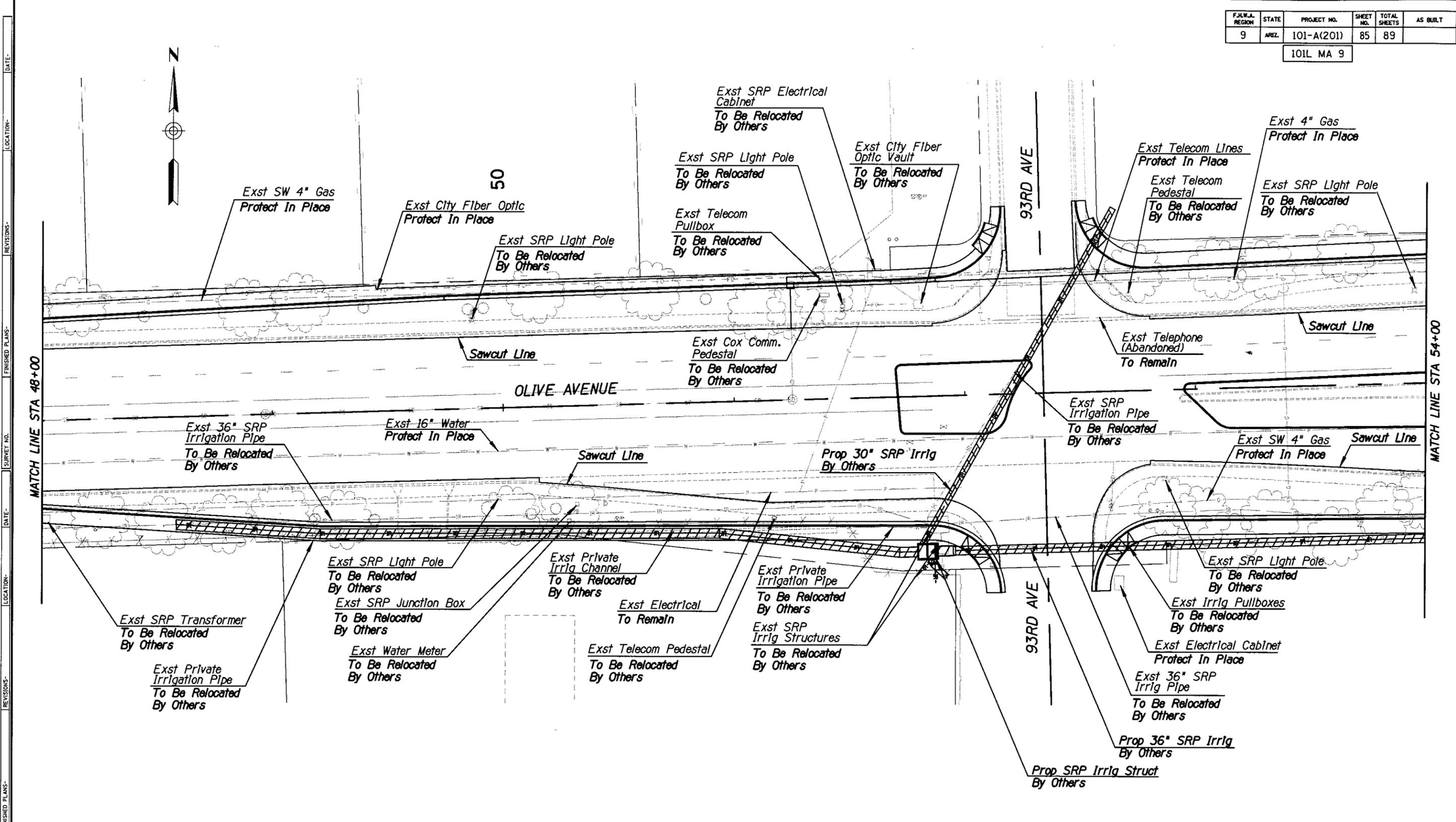
101L MA 9



SURVEY NO. DATE FINISHED PLANS REVISIONS LOCATION DATE
 SURVEY NO. DATE FINISHED PLANS REVISIONS LOCATION DATE
 SURVEY NO. DATE FINISHED PLANS REVISIONS LOCATION DATE

| | | | | |
|---|-------------------------------------|------|---|---|
| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. U-1.01 |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS <small>1844 N. 25TH AVENUE, SUITE 103 PHOENIX, AZ 85023 602-405-1875 FAX 602-286-6530</small> | | | OLIVE AVENUE WIDENING UTILITY PLAN | |
| ROUTE | LOCATION | | | |
| SR 101L | AGUA FRIA FREEWAY - OLIVE AVENUE TI | | | |
| TRACS NO. | H 6939 01C | | 101-A(201) | OF |

| F.J.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 85 | 89 | |
| 101L MA 9 | | | | | |

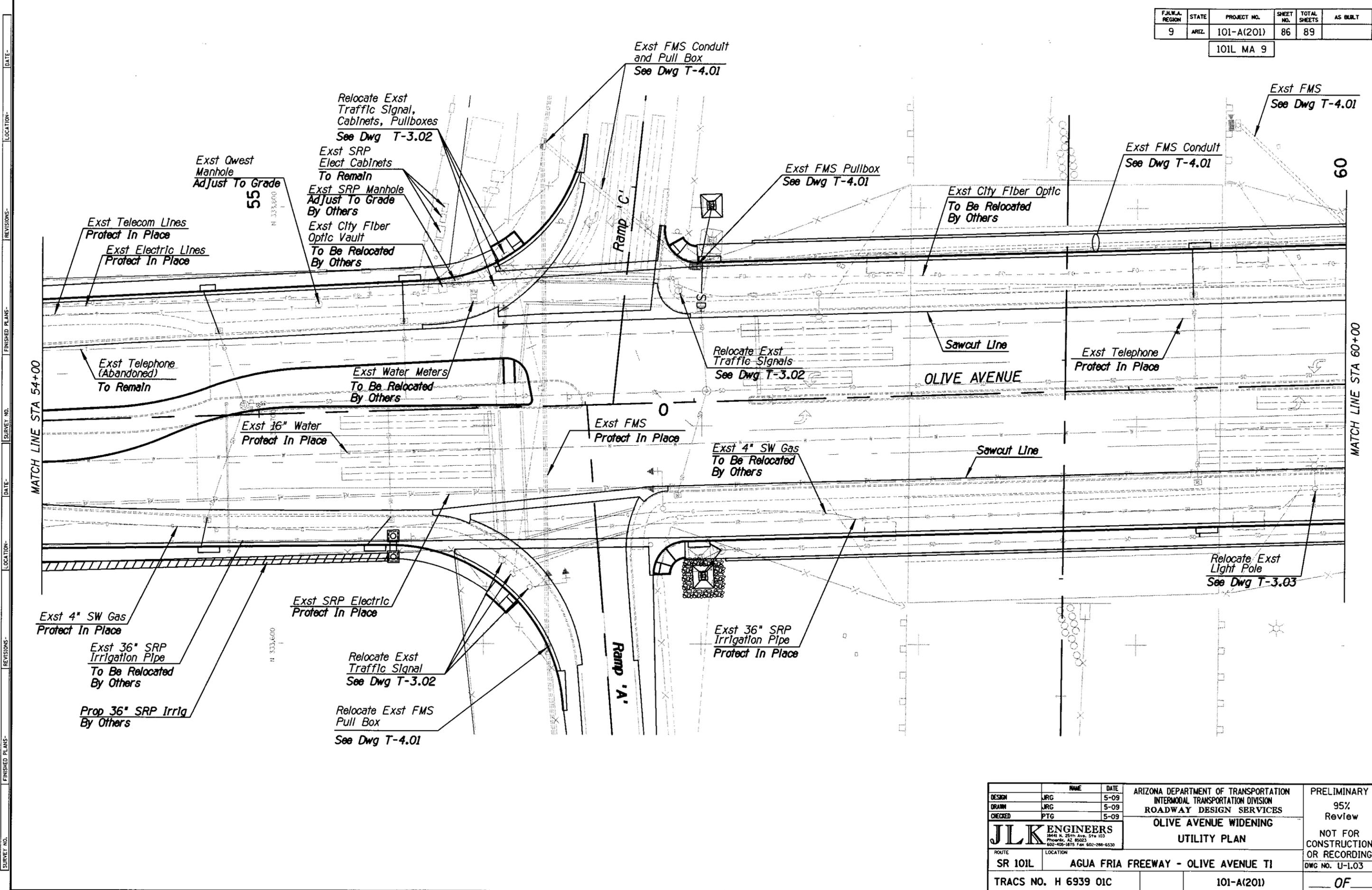


DATE: _____ LOCATION: _____ REVISIONS: _____ FINISHED PLANS: _____ SURVEY NO. _____ DATE: _____ LOCATION: _____ REVISIONS: _____ FINISHED PLANS: _____ SURVEY NO. _____

| | | | | |
|--|------------|----------|---|---|
| DESIGN | JRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. U-1.02 |
| DRAWN | JRG | 5-09 | | |
| CHECKED | PTG | 5-09 | | |
| JLK ENGINEERS 18441 N. 25TH AVE., STE 103 PHOENIX, AZ 85023 602-408-1875 Fax: 602-286-6530 | | | OLIVE AVENUE WIDENING UTILITY PLAN | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | |
| TRACS NO. | H 6939 01C | | 101-A(201) | OF |

| F.J.M.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 86 | 89 | |

101L MA 9



SURVEY NO. FINISHED PLANS DATE LOCATION REVISIONS FINISHED PLANS DATE LOCATION REVISIONS FINISHED PLANS DATE LOCATION REVISIONS

| | | | | | |
|----------------------|---------|---|-------------------------------------|---|---|
| DESIGN | JRG | DATE | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES OLIVE AVENUE WIDENING | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING DWG NO. U-1.03 |
| DRAWN | JRG | DATE | 5-09 | | |
| CHECKED | PTG | DATE | 5-09 | | |
| JLK ENGINEERS | | 18441 N. 25th Ave, Ste 103 Phoenix, AZ 85023 602-405-1875 Fax: 602-286-6530 | | UTILITY PLAN | |
| ROUTE | SR 101L | LOCATION | AGUA FRIA FREEWAY - OLIVE AVENUE T1 | | |
| TRACS NO. H 6939 01C | | 101-A(201) | | OF | |

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|-----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 88 | 89 | |

101L MA 9

PART 1 - To be completed by the Landscape Architect or Design Engineer

I. PROJECT DESCRIPTION

- A. Owner Name and Address:
 Arizona Department of Transportation
 205 South 17th Avenue
 Phoenix, Arizona 85007-3213
- B. Project TRACS Number: 101 MA 012 H6939 01 C
 SR101L (Agua Fria),
- C. Project Location: Olive Avenue
 City: Peoria County: Maricopa
 Latitude: N 33° 33' Longitude: W 112° 15'
- D. Project Description: T3N R1E; Project includes widening of existing roadway with the confines of existing ROW defined by Olive Avenue between 94th Avenue and 91st Avenue. The Project will include roadway widening in the westbound and eastbound direction, including widening of onramps and offramps to freeway.

II. HYDROLOGIC INFORMATION

- A. Project Size:
 Length (Mi.) 0.36
 Area (Ac.) 7.1
- B. Area to be Graded (Ac.): 2.5
- C. Runoff Coefficient:
 Existing 0.20 to 0.35
 Developed 0.70 to 0.95 (roadway), 0.20 to 0.35 (Improved)
- D. Receiving Water(s): Agua Fria River

III. PRESERVATION OF EXISTING VEGETATION

- A. In accordance with the specifications, existing vegetation will be preserved. Clearing limits shall be confined to areas that require grading. Existing vegetation outside the boundaries of the cleared area shall be protected from damage by construction activities. Existing trees within the area to be cleared shall be preserved and protected, wherever possible.

IV. SOIL STABILIZATION MEASURES

- A. All disturbed soil, which will not be paved, riprapped or otherwise covered to prevent erosion, will be revegetated and/or landscaped in accordance with the project plans and specifications.
- B. Scheduling of the revegetation effort can be found on PART 2 of this sheet under SCHEDULE OF MAJOR ACTIVITIES.

V. MEASURES TO CONTROL EROSION AND SEDIMENT

- A. Temporary Erosion and Sediment Controls: (Refer to the following SWPPP Site Plan and Specifications)
- Erosion Control Matting
 - Temporary Diversion Dikes
 - Check Dams
 - Rock Inlet/Outlet Protection
 - Sediment Control Berms
 - Silt Fences
 - Wattles (Excelsior/Straw)
 - Excelsior Logs / Sediment Logs
 - Seeding (Class II with mulch)
 - Others Describe: _____
- B. Permanent Erosion and Sediment Controls: (Refer to Project Plans SWPPP Site Plan and Specifications)
- Crown Ditch/Dike
 - Rock Protection
 - Rock Riprap Channel Lining
 - Sediment Basin
 - Embankment Curb
 - Spillways and Downdrains
 - Minibenching
 - Seeding established as a perennial vegetative cover with a density of 70% of the native background vegetative cover.
 - Others Describe: _____

VI. MAINTENANCE AND INSPECTIONS

- A. Frequency of Inspections:
 At least once every 7 calendar days, OR
 Every 14 calendar days and within 24 hours after a rainfall of 0.5 inches (12.7 mm) or more.

NOTE: RAINFALL GAUGE TO BE KEPT ON-SITE TO DETERMINE DEPTH OF RAINFALL

- B. Inspection Procedure:
 ADEQ's AZPDES Inspection checklist and AZPDES Compliance Evaluation Report will be completed by the contractor, or his representative, and will be kept on file. If repairs are necessary, they shall be initiated within 24 hours of the inspection report.

VII. CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS

- A. This Storm Water Pollution Prevention Plan has been prepared in accordance with ADOT's EROSION AND POLLUTION CONTROL MANUAL FOR HIGHWAY DESIGN AND CONSTRUCTION, published by ADOT, Highways Division. (June 1995)
- No other Federal, State or Local Regulations Apply.

PART 2 - To be completed by ADOT & CONTRACTOR

I. SCHEDULE OF MAJOR ACTIVITIES

- A. Project Schedule: _____
 Start Date: _____
 End Date: _____
- B. Construction Sequencing Schedule: (Attach Additional Sheets)
 Construction Activity

II. INVENTORY OF POLLUTANTS

- A. The materials or substances checked below are expected to be onsite during construction:
- | | |
|--|-------------------------------------|
| <input type="checkbox"/> Concrete | <input type="checkbox"/> Asphalt |
| <input type="checkbox"/> Paints | <input type="checkbox"/> Fertilizer |
| <input type="checkbox"/> Herbicides | <input type="checkbox"/> Wood |
| <input type="checkbox"/> Fuel | <input type="checkbox"/> Oil |
| <input type="checkbox"/> Others, List: _____ | |

III. POLLUTION CONTROL MEASURES

- A. Other Best Management Practices:
- Solid Waste Management
 - Equipment Maintenance Procedures
 - Designated Washout Areas
 - Stabilized Construction Entrance
 - Protected Chemical and Material Storage Area
 - Other, Describe: _____

IV. SPILL PREVENTION AND RESPONSE

- A. Spill Prevention:
 The procedures outlined in the Best Management Practices listed under Pollution Control Measures will be followed to prevent and contain spills of hazardous material. These preventative action include BMP's on equipment maintenance and proper handling, storage and disposal of chemicals and materials. All manufacturer's recommendations for usage, clean-up and disposal shall be followed.

- B. Spill Response:
 In the event of any accidental spill of chemicals or hazardous materials, contact the ADOT Hazardous Materials Specialist at ADOT's Safety and Health Section (Ph. * (602)712-7744 or Pager * (520) 320-8772). If a reportable quantity is discharged in the storm water, ADOT shall contact the National Response Center and document the spill to the EPA. ADOT's Hazardous Materials Specialist shall provide instructions.

V. POLLUTION PREVENTION PLAN CERTIFICATION

- A. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.
- B. The operator/contractor as defined in AZPDES should sign the SWPPP in accordance with Part VII. K, and retain the plan on-site at the construction site or other location easily accessible during normal business hours.

Signature: _____
 Date: _____
 Name: _____
 Title: _____
 Company: _____

C. ADOT Resident Engineer

Signature: _____
 Date: _____
 Name: _____
 Title: _____
 ADOT District: _____

D. MUNICIPALITY (For local Government Project)

Signature: _____
 Date: _____
 Name: _____
 Title: _____
 Municipality: _____

VI. OTHER REQUIREMENTS

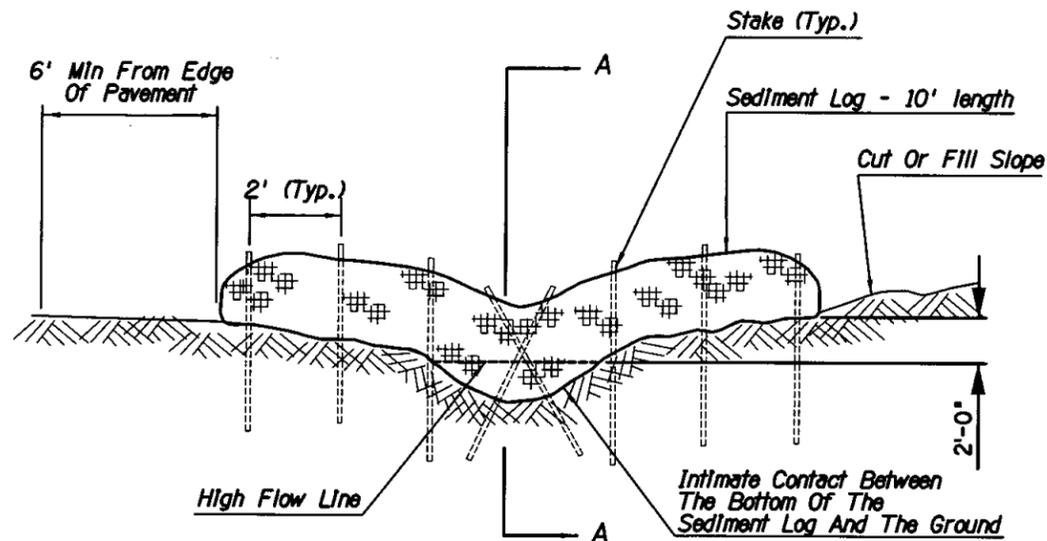
- A. A copy of the General Permit is attached in accordance to AZPDES General Permit for Storm Water Discharges From Construction Activities To The Water Of The United States.
- B. Projects that are within 1/4 mile of impaired or unique waters require the SWPPP to be sent to ADEQ in combination with the NOI.

| | | | | | |
|---|------|---------------------------|--|---|--|
| DESIGN | LRG | 5-09 | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADSIDE DEVELOPMENT SECTION | PRELIMINARY 95% Review NOT FOR CONSTRUCTION OR RECORDING | |
| DRAWN | FR | 5-09 | | | |
| CHECKED | PTG | 5-09 | | | |
| JLK ENGINEERS 8444 N. 25th Ave., Ste. 103 Phoenix, AZ 85023 602-955-1875 Fax 602-955-6530 | | | AZPDES SWPPP STANDARD SHEET For Non-Indian Land | | |
| ROUTE | MP | LOCATION | | | |
| 101L | 9.27 | AGUA FRIA-OLIVE AVENUE TI | | | |
| TRACS NO. H 6939 01C | | | 101-A(201) | OF | |

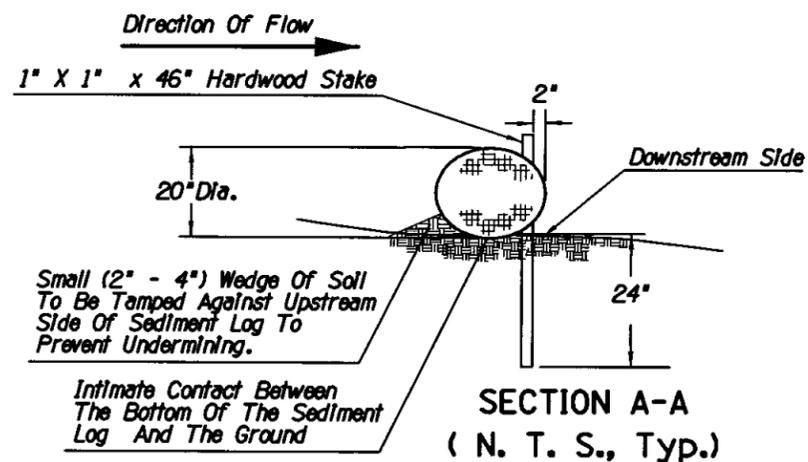
NO. 1 DESCRIPTION OF REVISION DATE MADE BY NO. 2 DESCRIPTION OF REVISION DATE MADE BY

| FALM.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | AS BUILT |
|----------------|-------|-------------|-----------|--------------|----------|
| 9 | ARIZ. | 101-A(201) | 89 | 89 | |

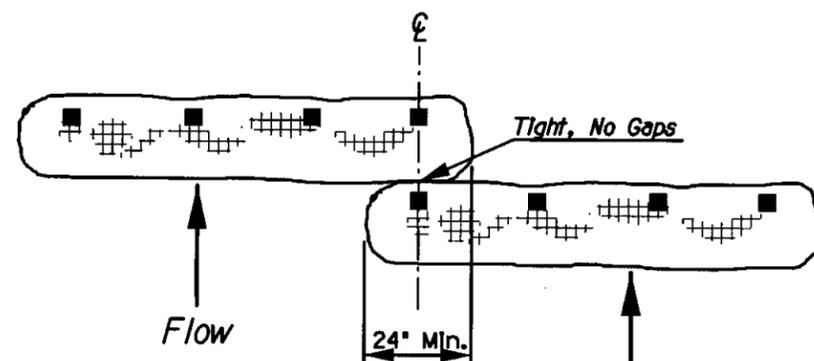
101L MA 9



SEDIMENT LOG AND DITCH / CHANNEL SECTIONAL ELEVATION
(N. T. S., Typ.)



SECTION A-A
(N. T. S., Typ.)



TYPICAL OVERLAP
(N. T. S., Typ.)

Typical Overlap applies to the situation where ditch /channel is wider than the length of one Sediment Log.

NOTES

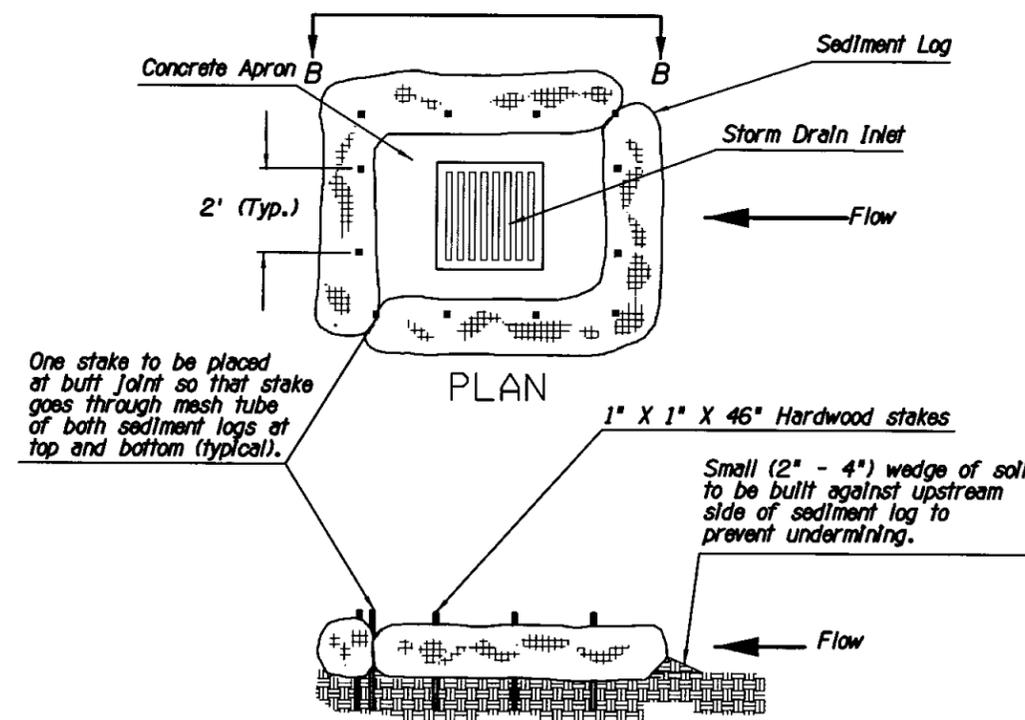
Sediment logs shall be located as indicated in plans or as directed by the Engineer. They shall be selected, installed, and maintained with manufacturers' specifications and good engineering practices.

Lay sediment log across prepared channel. Trenching or burial of Sediment Logs is not required. The intimate contact between the bottom of the log and the ground is mandatory. The logs shall be installed in the swale or channel bottom and shall continue up the side slopes 2'-0" above the high flow line, all perpendicular to the flow of water.

Stake with 1" X 1" X 46" min. hardwood stakes on 2 feet centers. The stake shall be placed through the downstream side only 2" into the log. It is only necessary for the stakes to grab one or two inches of the netting. Do not drive the stakes through the center of the log. The stakes must be driven into the ground 24". Center stakes shall be placed in an 'X' pattern.

Make sure no gaps exist between the soil and the sediment logs. Repair any rills or gullies promptly. In rock conditions the Engineer will evaluate the placement of sediment logs.

Slopes steeper than 4:1 shall apply rock riprap for channel/ditch lining or check dams when suitable.



SEDIMENT LOG STORM DRAIN PROTECTION SECTIONAL VIEW B-B
(N. T. S., Typ.)

NOTES

Sediment log and stakes to be removed once construction activities are complete. Contractor to dispose of sediment logs and dispose of trapped sediment material and to fill shallow trench created by sediment log.

Detail S1

| DESIGN | NAME | DATE | ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADSIDE DEVELOPMENT SECTION | PRELIMINARY 95% Review |
|--|------|-----------------------------------|--|---|
| JRG | | 5-08 | EROSION & SEDIMENT CONTROL DETAILS | NOT FOR CONSTRUCTION OR RECORDING DWG NO. E-1.02 |
| FR | | 5-08 | | |
| PTG | | 5-08 | | |
| JLK ENGINEERS 3441 N. 25TH AVE. SUITE 103 PHOENIX, AZ 85023 602-405-1875 Fax: 602-288-6530 | | | | |
| ROUTE | MP | LOCATION | | |
| SR 101L | | AGUA FRIA FREEWAY-OLIVE AVENUE TI | | |
| TRACS NO. H 6940 01C | | | PROJECT NO. | |
| | | | 101-A(201) | OF |