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<th>Plan No.</th>
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<tr>
<td>3200-1-E-01</td>
<td>Milled Rumble Strips</td>
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<td>3300-1-E-01</td>
<td>6 to 8 Inch Concrete Pavement</td>
<td>July 2020 - Revision</td>
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<tr>
<td>4120-1-E-02</td>
<td>Safety Sloped End Sections</td>
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<td>4330-1-E-01</td>
<td>Area Inlet with Bar</td>
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<td>4333-1-E-00</td>
<td>Area Inlet with Grate</td>
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<td>4341-1-E-03</td>
<td>Concrete Flume, Type I</td>
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<td>4342-1-E-03</td>
<td>Concrete Flume, Type II</td>
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<td>4344-1-E-04</td>
<td>Concrete Flume, Type IV</td>
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<td>4345-1-E-04</td>
<td>Concrete Flume, Type V</td>
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<td>4346-1-E-02</td>
<td>Concrete Flume, Type VI</td>
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<td>4440-1-E-00</td>
<td>Reconstruct Gutter Depression For 2&quot; Grade Raise</td>
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<td>5101-1-E-00</td>
<td>Concrete Washout &amp; Construction Exit</td>
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<td>5102-1-E-00</td>
<td>Inlet Protection</td>
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<td>5103-1-E-00</td>
<td>Temporary Pipe Slope Drain</td>
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<td>5104-1-E-00</td>
<td>Silt Checks All Types</td>
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<td>7030-1-E-00</td>
<td>Cable Guardrail to W-Beam Guardrail Transition - 31&quot;</td>
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<td>7039-1-E-02</td>
<td>Bridge Approach Section 31&quot; to Existing 27 5/8&quot;</td>
<td>OBSOLETE PLAN REMOVE FROM BOOK (RENUMBERED TO 7390-1-E-00)</td>
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<td>7040-1-E-00</td>
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<td>8700-1-E-06</td>
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INTERSECTING ROADWAYS AND BRIDGES.

RUMBLE STRIPS MAY BE CONTINUOUS THROUGH DRIVEWAYS AND SHALL BE OMITTED ACROSS URBAN SHOULDERS ADJACENT TO CURB AND GUTTER UNLESS SPECIFICALLY NOTED IN THE PLANS.

RUMBLE STRIPS SHALL BE PLACED ON SHOULDERS AS INDICATED IN THIS PLAN AND IN ACCORDANCE WITH THE PROJECT PLANS. RUMBLE STRIPS ARE NOT NORMALLY REQUIRED ON CITY STREETS AND OTHER URBAN SHOULDERS ADJACENT TO CURB AND GUTTER UNLESS SPECIFICALLY NOTED IN THE PLANS.

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RUMBLE STRIPS MAY BE CONTINUOUS THROUGH DRIVEWAYS AND SHALL BE OMITTED ACROSS INTERSECTING ROADWAYS AND DIVIDED.
NOTE:
Turn bay pavement markings shall be marked by contractor and/or district prior to construction of rumble strips.

SHOULDER LAYOUT

SHOULDER RUMBLE STRIPS PLACEMENT ON DIVIDED HIGHWAY AT ENTRANCE/EXIT RAMP

MILLED RUMBLE STRIPS AT LEFT TURN BAY

SHOULDER RUMBLE STRIPS PLACEMENT ON 2-LANE HIGHWAY AT INTERSECTION

NOTE:
10 FT. GAP ON INTERSTATE AND FREEWAYS

CENTERLINE LAYOUT

CENTERLINE RUMBLE STRIPS AT LEFT TURN BAY

NOTE:
Turn bay pavement markings shall be marked by contractor and/or district prior to construction of rumble strips.

SHOULDER RUMBLE STRIPS PLACEMENT ON 2-LANE HIGHWAY AT INTERSECTION

NOTE:
10 FT. GAP ON INTERSTATE AND FREEWAYS

SHOULDER LAYOUT

CENTERLINE LAYOUT

CENTERLINE RUMBLE STRIPS AT LEFT TURN BAY

NOTE:
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NOTE:
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CENTERLINE LAYOUT

CENTERLINE RUMBLE STRIPS AT LEFT TURN BAY

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SHOULDER RUMBLE STRIPS PLACEMENT ON 2-LANE HIGHWAY AT INTERSECTION

NOTE:
10 FT. GAP ON INTERSTATE AND FREEWAYS

SHOULDER LAYOUT

CENTERLINE LAYOUT
EXPANSION JOINT ASSEMBLY PLAN

EXPANSION JOINT FILLER (APPLIES TO EXPANSION JOINTS ONLY)

ASSEMBLY PLAN

DOWEL BAR LOCATION TABLE

EXPANSION JOINTS UNLESS OTHERWISE SPECIFIED IN THE PLANS.

NOTES:

EXPANSION AND CONTRACTION JOINTS SHALL NOT BE SKewed.

THE CONTRACTOR MAY SUBSTITUTE OTHER DESIGNS FOR EXPANSION AND CONTRACTION JOINT SUPPORTS IN LIEU OF THE TYPE SHOWN WITH PRIOR WRITTEN APPROVAL BY THE ENGINEER.

DOWEL BARS SHALL BE DEFORMED BARS.

FOR LOAD TRANSFER DEVICES AT EXPANSION JOINTS IN LANES OTHER THAN THE LANES SHOWN, MARGIN THE SPACING OF THE 1'-6" DOWEL BARS AT 1 FT. INTERVALS.

THE ENDS OF THE NO. 4 SPACER BARS SHALL NOT BE LESS THAN 3 IN. FROM THE EDGES OF THE PAVEMENT OR THE LONGITUDINAL JOINT.

THE CONTRACTOR MAY USE A MACHINE FOR PLACING THE LONGITUDINAL TIE BARS IN LIEU OF THE TIE BAR PINS OF A MECHANICAL TIE BAR PLACEMENT MACHINE NOT TO BE USED. THE BAR PINS AS SHOWN SHALL BE ICE.

TIE, DOWEL & SPACER BARS SHALL BE CENTERED ON JOINTS AND BE SMOOTH BARS.

DOWEL BARS SHALL BE A MINIMUM OF 17" IN LENGTH, CENTERED ON JOINTS.

THE DEPARTMENT REQUIRES THAT DOWEL BASKETS BE PLACED IN ALL CONTRACTION JOINTS WHICH ARE 6' OR WIDER. THE DOWEL BASKETS SHALL BE PLACED TRANSVERSE TO THE DIRECTION OF THE PREDOMINANT TRAFFIC DIRECTION.

LOW PRESSURE JOINT SEALANT (HOT POURED)

SPECIAL PLAN C

6 TO 8 INCH CONCRETE PAVEMENT

SHEET 1 OF 3 SPECIAL PLAN C
DETAILS OF TIE BAR

NEW SLAB

EXISTING SLAB

T /2

IS PLACED ADJACENT TO EXISTING CONCRETE PAVEMENT

LONGITUDINAL JOINTS

NOTE:

JOINT SEALANT (HOT POURED)

LONGITUDINAL JOINT WITH SAWED TIE BAR PINS

3 /T

LONGITUDINAL JOINT COMMON TO THE LANES SHALL BE SAWED

WHEN TWO ADJACENT LANES ARE PLACED AT THE SAME TIME, THE TIE BAR SPACING SHALL BE THE SAME AS SHOWN FOR THE EXPANSION JOINT. REFER TO JOINT DETAIL, JOINT SEALANT (HOT POURED) JOINT DETAIL AND THE JOINT DETAIL TABLE AND THE JOINT DETAIL ON SHEET 1 OF A.

CONSTRUCTION JOINT

CONTRACTION JOINT

JOINT DETAIL

JOINT SEALANT (HOT POURED)

CONSTRUCTION JOINT

1. TIE BAR PINS

SAWED

WHEN TWO ADJACENT LANES ARE PLACED AT THE SAME TIME, THE LONGITUDINAL JOINT COMMON TO THE LANES SHALL BE SAWED.

LONGITUDINAL JOINTS

NOTE: No tie bars shall be closer than 2'-3" to a transverse joint. All longitudinal joints between lanes and between lanes and shoulders must be tied. Median should not be tied.

SPECIAL PLAN C

6 TO 8 INCH CONCRETE PAVEMENT

SHEET 2 OF 3

NOTE: T = PAVEMENT THICKNESS
CONTRACTION JOINT REQUIRED EVERY 12'-0''
WHEN DRIVEWAY LENGTH EXCEEDS 20'

LONGITUDINAL JOINTS

TINING LIMITS

LEGEND

NOTE:
16'-6'' TRANSVERSE JOINT SPACING IS THE
STANDARD SPACING REGARDLESS OF THE
PAVEMENT THICKNESS.

V Varies from 10'-0'' to max. 16'-6''.

VARIABLE SPACING IS USED AROUND
INTERSECTIONS AND LARGE DRIVEWAYS.

ALL CONCRETE SURFACES NOT TINED WILL
HAVE TRANSVERSE BROOMING OR BURLAP
DRAG (NOT APPLICABLE TO SHOULDERS)

RURAL TINING LIMITS WITH SURFACED SHOULDERS
(If Called For In The Plans)

INTERSECTION

STOP TINING 6'' FROM END OF DRIVEWAY
TINING PARALLEL TO LONGITUDINAL JOINT
8'' TYP. NOT TINED CENTERED ON JOINT

STANDARD SPACING REGARDLESS OF THE

JOINT LAYOUT
(TYPICAL INTERSECTIONS WITH RAISED ISLANDS)

INTERSECTION

STOP TINING 2'-0'' FROM BACK OF CURB
STOP TINING 2'-0'' FROM CENTER OF CURB
STOP TINING 2'-0'' FROM EDGE OF CURB

INTERSECTION

LONGITUDINAL JOINTS

SAWED CONTRACTION JOINTS

ASPH. SHOULDER

RURAL TINING LIMITS WITH SURFACED SHOULDERS
(If Called For In The Plans)

INTERSECTION

STOP TINING 6'' FROM END OF DRIVEWAY
TINING PARALLEL TO LONGITUDINAL JOINT
8'' TYP. NOT TINED CENTERED ON JOINT

STANDARD SPACING REGARDLESS OF THE

JOINT LAYOUT
(TYPICAL INTERSECTIONS & DRIVES)

INTERSECTION

STOP TINING 2'-0'' FROM BACK OF CURB
STOP TINING 2'-0'' FROM CENTER OF CURB
STOP TINING 2'-0'' FROM EDGE OF CURB

INTERSECTION

LONGITUDINAL JOINTS

SAWED CONTRACTION JOINTS

ASPH. SHOULDER
METAL END SECTIONS FOR CIRCULAR PIPE

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<tr>
<th>PIPE SIZE (IN.)</th>
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<th>DIMENSIONS (IN.)</th>
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METAL END SECTIONS FOR CONCRETE PIPE

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METAL END SECTIONS FOR ELIPTICAL PIPE

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METAL END SECTIONS FOR ARCHED PIPE

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METAL END SECTIONS FOR SLOPPED END SECTIONS

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<td>8 8 46 58</td>
<td>220</td>
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</tbody>
</table>

NOTES:

- STEEL: GALVANIZED STEEL SHALL MEET AASHTO SPECIFICATIONS.
- CONNECTORS: ALL OTHER SIZES ATTACH WITH TYPE #2 RODS AND LUGS.
- TIE PLATE EXTENSIONS: WHEN REQUIRED, THE PLATE EXTENSIONS ARE TO BE THE SAME GAUGE AS END SECTION. DIMENSIONS SHALL BE AS OR LESS THAN THOSE SHOWN IN INCHES.
- SAFETY: SAFETY BARS SHALL BE SCHEDULE 40 GALVANIZED STEEL PIPE. PIPES TO BE GALVANIZED AFTER FORMING.
- VISIBILITY DETAIL: SLOTTED HOLES FOR SAFETY BAR ATTACHMENT SHALL BE PROVIDED FOR ALL END SECTIONS.
NOTES:

ALL CONCRETE USED SHALL BE CLASS 47B-3000 AND SHALL BE PAID FOR UNDER THE ITEM "CLASS 47B-3000 CONCRETE FOR INLET AND JUNCTION BOX".

THE MINIMUM COVERING, MEASURED FROM THE FACE OF THE CONCRETE TO THE SURFACE OF ANY REINFORCING BARS, SHALL BE 2'-0" UNLESS OTHERWISE NOTED.

ALL REINFORCING STEEL USED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615, GRADE 60, SHALL BE NO. 4 BARS PLACED AT 1'-0" CENTERS (MAXIMUM) AND SHALL BE FIELD BEND AND/OR CLIP REINFORCING STEEL TO MAINTAIN MINIMUM COVERING.

NO DEDUCTIONS HAVE BEEN MADE IN THE QUANTITIES FOR PIPE OPENINGS.

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CONCRETE AND REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615, GRADE 60.

THE MAXIMUM SIZE PIPE THAT MAY BE USED IS 24" DIA.

THE MINIMUM X VALUE ALLOWED FOR 24" DIA. PIPE IS 2'-9"

THE MINIMUM X VALUE ALLOWED FOR 18" DIA. PIPE IS 2'-3"

THE MINIMUM X VALUE ALLOWED FOR 15" DIA. PIPE IS 2'-0"

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**INLET QUANTITIES**

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<tr>
<th>DIA.</th>
<th>CONCRETE (CU. YDS.)</th>
<th>STEEL (CU. YDS.)</th>
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**NOTES:**

1. In no case shall the span of the pipe plus the additional allowance for the skew of the pipe be greater than the "Y" or "X" dimension of the inlet wall. It is intended to penetrate.

2. All concrete used shall be class 47B-3000 and shall be paid for under the item "Class 47B-3000 Concrete for Inlet and Junction Box".

3. All reinforcing steel used shall conform to the requirements of ASTM designation A615, Grade 60. All reinforcing steel shall be No. 4 bars at 12" centers max., unless noted otherwise.

4. Place diagonal reinforcing around pipe openings as shown in detail "B".

5. The minimum covering, measured from the face of the concrete to the surface of any reinforcing bar, shall be 2" for cast iron grates and frames.

6. Field bend and/or clip reinforcing steel to allow for minimum clearance and to clear pipe openings.

7. The cast iron grates and frames shall conform to the special plan and standard specifications and shall be paid for under the item "Cast Iron Grate and Frame".

8. Excavation, backfill, and diagonal reinforcing steel shall not be paid for directly, but shall be considered subsidiary to other items for which payment is made.

9. No deductions have been made in the quantities for pipe openings.

10. All pipes used shall be round corrugated metal, reinforced concrete, or plastic pipe.

SEE SHEET 2 OF 2 FOR GRATE DETAILS.
Grate Type "A"
Clear Opening 5.1 sq. ft.
Weight: Cast Iron 745 lbs.

Grate Type "B"
Clear Opening 6.6 sq. ft.
Weight: Cast Iron 990 lbs.

Grate Type "C"
Clear Opening 5.5 sq. ft.
Weight: Cast Iron 825 lbs.

Grate Type "D"
Clear Opening 3.4 sq. ft.
Weight: Cast Iron 555 lbs.

Grate Type "E"
Clear Opening 3.3 sq. ft.
Weight: Cast Iron 265 lbs.

Grate Type "F"
Clear Opening 1.3 sq. ft.
Weight: Cast Iron 175 lbs.

Note:
These grates are not to be used in areas that allow bicycle traffic.

Area Inlet with Grate
Sheet 2 of 2
SPECIAL PLAN C
REINFORCING DETAIL FOR SPLASH BASIN

6'-0"

7'-4"

NO. 4 LONGITUDINAL BARS

SPACED AT APPROX. 2'-0" CENTERS

NO. 4 BARS AT APPROX. 2'-0" BENT 90°

WITH BENT NO. 4 BARS

NO. 4 BARS AT APPROX.

6"

4"

4"

CONCRETE CURB

DETAIL "A"

WELDED WIRE FABRIC

6 x 6 - W2.9 x W2.9

WITH BENT NO. 4 BARS

2'-0" CENTERS ALTERNATE

NO. 4 BARS AT APPROX.

SECTION A-A

CURTAIN WALL

CONCRETE CURB WITH CURTAIN WALL

SEE DETAIL "B"

S = SLOPE AS SHOWN ON SHEET 2-T

S = SLOPE VARIES, S  TO 0.17'/FT.

1' MIN. AT S  SLOPE

2

3

4

CONCRETE CURB WITH CURTAIN WALL

SEE CURB DETAIL "A"

CONCRETE FLUME, TYPE I

SEE CURB DETAIL "A"

CURTAIN WALL

CONCRETE CURB WITH CURTAIN WALL

DETAIL "B"

SEE DETAIL "B"

6" CONC. CURB WITH CURTAIN WALL, SEE DETAIL "A"

6 x 6 - W2.9 x W2.9

WELDED WIRE FABRIC

NO. 4 LONGITUDINAL BARS

SPACED AT APPROX. 2'-0" CENTERS

NO. 4 BARS AT APPROX. 2'-0" BENT 90°

WITH BENT NO. 4 BARS

NO. 4 BARS AT APPROX.

6"

4"

4"

CONCRETE CURB

DETAIL "A"

WELDED WIRE FABRIC

6 x 6 - W2.9 x W2.9

WITH BENT NO. 4 BARS

2'-0" CENTERS ALTERNATE

NO. 4 BARS AT APPROX.

SECTION B-B

CURTAIN WALL

CONCRETE CURB WITH CURTAIN WALL

SEE DETAIL "B"

S = SLOPE AS SHOWN ON SHEET 2-T

S = SLOPE VARIES, S  TO 0.17'/FT.

1' MIN. AT S  SLOPE

2

3

4

CONCRETE CURB WITH CURTAIN WALL

SEE CURB DETAIL "A"

CONCRETE FLUME, TYPE I

SEE CURB DETAIL "A"

CURTAIN WALL

CONCRETE CURB WITH CURTAIN WALL

DETAIL "B"

SEE DETAIL "B"

6" CONC. CURB WITH CURTAIN WALL, SEE DETAIL "A"

6 x 6 - W2.9 x W2.9

WELDED WIRE FABRIC

NO. 4 LONGITUDINAL BARS

SPACED AT APPROX. 2'-0" CENTERS

NO. 4 BARS AT APPROX. 2'-0" BENT 90°

WITH BENT NO. 4 BARS

NO. 4 BARS AT APPROX.

6"

4"

4"

CONCRETE CURB

DETAIL "A"

WELDED WIRE FABRIC

6 x 6 - W2.9 x W2.9

WITH BENT NO. 4 BARS

2'-0" CENTERS ALTERNATE

NO. 4 BARS AT APPROX.

SECTION B-B

CURTAIN WALL

CONCRETE CURB WITH CURTAIN WALL

SEE DETAIL "B"

S = SLOPE AS SHOWN ON SHEET 2-T

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CONCRETE FLUME, TYPE I

SEE CURB DETAIL "A"

CURTAIN WALL

CONCRETE CURB WITH CURTAIN WALL

DETAIL "B"

SEE DETAIL "B"

6" CONC. CURB WITH CURTAIN WALL, SEE DETAIL "A"

6 x 6 - W2.9 x W2.9

WELDED WIRE FABRIC

NO. 4 LONGITUDINAL BARS

SPACED AT APPROX. 2'-0" CENTERS

NO. 4 BARS AT APPROX. 2'-0" BENT 90°

WITH BENT NO. 4 BARS

NO. 4 BARS AT APPROX.

6"

4"

4"

CONCRETE CURB

DETAIL "A"

WELDED WIRE FABRIC

6 x 6 - W2.9 x W2.9

WITH BENT NO. 4 BARS

2'-0" CENTERS ALTERNATE

NO. 4 BARS AT APPROX.

SECTION B-B

CURTAIN WALL

CONCRETE CURB WITH CURTAIN WALL

SEE DETAIL "B"

S = SLOPE AS SHOWN ON SHEET 2-T

S = SLOPE VARIES, S  TO 0.17'/FT.

1' MIN. AT S  SLOPE

2

3

4

CONCRETE CURB WITH CURTAIN WALL

SEE CURB DETAIL "A"

CONCRETE FLUME, TYPE I

SEE CURB DETAIL "A"

CURTAIN WALL

CONCRETE CURB WITH CURTAIN WALL

DETAIL "B"

SEE DETAIL "B"

6" CONC. CURB WITH CURTAIN WALL, SEE DETAIL "A"

6 x 6 - W2.9 x W2.9

WELDED WIRE FABRIC

NO. 4 LONGITUDINAL BARS

SPACED AT APPROX. 2'-0" CENTERS

NO. 4 BARS AT APPROX. 2'-0" BENT 90°

WITH BENT NO. 4 BARS

NO. 4 BARS AT APPROX.

6"

4"

4"

CONCRETE CURB

DETAIL "A"

WELDED WIRE FABRIC

6 x 6 - W2.9 x W2.9

WITH BENT NO. 4 BARS

2'-0" CENTERS ALTERNATE

NO. 4 BARS AT APPROX.
CONCRETE FLUME, TYPE II

CONCRETE FLUME TYPE II SHALL BE PAID FOR AS ONE EACH.

THE FLUME SPILLWAY SHALL BE SURFACE MEASURED AND PAID FOR BY THE LINEAR FOOT FOR THE ITEM "FLUME SPILLWAY".

JOINT FILLER AND SEALANT MATERIALS ARE SUBSEQUENT TO THE FLUME.

ALL REINFORCING STEEL TO CONFORM TO ASC/AMERICAN GRADE 60.

ALL CONCRETE USED SHALL BE CLASS 47B-3000, GRADE 60.

NOTES:

Ns = SURFACED SHOULDER WIDTH

"L" DIMENSION SHALL BE AS SHOWN ON THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

FINAL LOCATION OF FLUME TO BE DETERMINED BY THE ENGINEER.

CONCRETE FLUME TYPE II SHALL BE PAID FOR AS ONE EACH.

CONCRETE CURB WITH CURTAIN WALL

CONCRETE CURB WITH CURTAIN WALL DETAIL "A"

CONCRETE CURB DETAIL "B"

CONCRETE CURB DETAIL "A"

CONCRETE CURB WITH CURTAIN WALL DETAIL "B"

CONCRETE CURB WITH CURTAIN WALL DETAIL "B"
NOTES:

ALL CONCRETE USED SHALL BE CLASS 47B-3000.

ALL REINFORCING STEEL USED SHALL BE NO. 4 BARS AT 12" CENTERS (MAX.) AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A615/A615M GRADE 60.

THE MINIMUM COVERING, MEASURED FROM THE FACE OF THE CONCRETE TO THE SURFACE OF ANY REINFORCING BAR SHALL BE 2" UNLESS NOTED OTHERWISE.

FIELD BEND AND/OR CLIP REINFORCING STEEL TO MAINTAIN MINIMUM CLEARANCE AND TO CLEAR PIPE OPENINGS.

ALL REINFORCING STEEL USED SHALL BE NO. 4 BARS AT 12" CENTERS (MAX.) AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A615/A615M GRADE 60.

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ALL CONCRETE USED SHALL BE CLASS 47B-3000.

FIELD BEND AND/OR CLIP REINFORCING STEEL TO MAINTAIN MINIMUM CLEARANCE AND TO CLEAR PIPE OPENINGS.

ALL CONCRETE SURFACES TO BE IN CONTACT WITH THE NEW WORK SHALL BE THROUGHLY CLEARED BEFORE PLACING NEW CONCRETE.

ALL PREPARATION, MATERIALS, EQUIPMENT, TOOLS, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE WORK THAT IS NOT PAID FOR DIRECTLY SHALL BE CONSIDERED SUBSIDIARY TO THE ITEMS FOR WHICH DIRECT PAYMENT IS MADE.

Deductions for pipe openings have been included in the "quantities for information only".

Temporary loops shall have working load requirements of 1,700 lbs. in shear and 2,000 lbs. in tension.

QUANTITIES

FOR INFORMATION ONLY

CONCRETE

REINFORCING STEEL

"EXHAUST PIPE"

FIELD BEND AND/OR CLIP REINFORCING STEEL TO MAINTAIN MINIMUM CLEARANCE AND TO CLEAR PIPE OPENINGS.

NOTES:

ALL CONCRETE USED SHALL BE CLASS 47B-3000.

ALL REINFORCING STEEL USED SHALL BE NO. 4 BARS AT 12" CENTERS (MAX.) AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A615/A615M GRADE 60.

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Deductions for pipe openings have been included in the "quantities for information only".

Temporary loops shall have working load requirements of 1,700 lbs. in shear and 2,000 lbs. in tension.

QUANTITIES

FOR INFORMATION ONLY

CONCRETE

REINFORCING STEEL

"EXHAUST PIPE"
CONCRETE CURB WITH CURTAIN WALL

DETAIL "B"

NO. 4 LONGITUDINAL BARS

WELDED WIRE FABRIC

6 x 6 - W2.9 x W2.9

WITH BENT NO. 4 BARS

2'-0" CENTERS ALTERNATE

NO. 4 BARS AT APPROX.

SPACED AT APPROX. 2'-0" CENTERS

NO. 4 BARS x 2'-0" BENT 90°

CONCRETE FLUME, TYPE V

SHEET 1 OF 2

SPECIAL PLAN C

NOTES:

1" DIMENSIONS SHALL BE AS SHOWN IN THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

ENGINEER TO FIT EXISTING CONDITIONS.

ENGINEER. FINAL LOCATION OF FLUME TO BE DETERMINED BY THE ENGINEER.

JOINT DETAIL (CONCRETE SHOULDER)

3" MAIL. SIDEWALK WIDTH CENTERED ON JOINT

JOIN THE T cancellation joint filler.

JOINT DETAIL (ASPHALT SURFACING)

6" CONC. CURB WITH CURTAIN WALL SEE DETAIL "A"

PLAN

SECTION A-A

NO. 4 LONGITUDINAL BARS

SPACED AT APPROX. 2'-0" CENTERS

NO. 4 BARS X 2'-0" BENT 90°

WELDED WIRE FABRIC

6 x 6 - W2.9 x W2.9

WITH BENT NO. 4 BARS

2'-0" CENTERS ALTERNATE

NO. 4 BARS AT APPROX.

SPACED AT APPROX. 2'-0" CENTERS

NO. 4 BARS x 2'-0" BENT 90°

CONCRETE CURB WITH CURTAIN WALL

DETAIL "A"

REINFORCING DETAIL FOR SPLASH BASIN

G.W. COLLAR COUPLING ASSEMBLY

3" x 2" SLOTTED HOLES AT 8" CENTERS FOR 3/8" BOLTS

3/8" DIA. ROD

C.M. COLLAR COUPLING ASSEMBLY

 Congested metal sheet (9 gauge type steel, 1/4" C/W, 24" x 48"

CORRUGATED METAL SHEET

1/2" DIA. ROD

ELEVATION OF ASSEMBLED DIAPHRAGM

SEE DETAIL "B"

SEE CURB DETAIL "A"

4" CONCRETE CURB (BITUMINOUS TYPE)

JOINT FILLER

1" PREFORMED

FOR SPLASH BASIN

SEE REINFORCING DETAIL

(3-SIDES)

CURTAIN WALL

SEE DETAIL "B"

CURTAIN WALL

CONCRETE CURB WITH CURTAIN WALL

DETAIL "A"

JOINT DETAIL

(ASTM Type V)

2" TO 4" CURB TRANSITION FROM

TOE OF THE BACK SLOPE.

SPLASH BASIN IN A CUT SECTION: WIDEN BASIN TO THE

SPLASH BASIN IN A FILL SECTION: CONSTRUCT AS SHOWN.

ALL CONCRETE USED SHALL BE CLASS 47B-3000.

GRADE 60.

ALL REINFORCING STEEL TO CONFORM TO A615/A615M.

SUBSIDIARY TO THE FLUME.

JOINT FILLER AND THE SEALANT MATERIALS ARE

OTHER PAY ITEMS FOR WHICH DIRECT PAYMENT IS MADE.

DIAPHRAGM AND SPLASH BASIN ARE SUBSIDIARY TO

PAY ITEMS FOR WHICH DIRECT PAYMENT IS MAKE.

DIAPHRAGM AND CULVERT PIPE IS SUBSIDIARY TO OTHER

EXCAVATION FOR THE FLUME, SPLASH BASIN,

DIAPHRAGM AND CULVERT PIPE IS SUBSIDIARY TO OTHER

PAY ITEMS FOR WHICH DIRECT PAYMENT IS MADE.

JOINT FILLER AND THE SEALANT MATERIALS ARE

SUBSIDIARY TO THE FLUME.

ALL REINFORCING STEEL TO CONFORM TO A615/65M.

GRADE 60.

ALL CONCRETE USED SHALL BE CLASS 47B-3000.
NOTES:
1. All concrete used shall be class 47B-3000.
2. Reinforcing steel used shall be no. 4 bars at 12" centers (max.) and shall conform to the requirements of ASTM Designation A615/A615M Grade 60.
3. The minimum coating, measured from the face of the concrete to the surface of any reinforcing bar shall be 2" unless noted otherwise.
4. All preparation, materials, equipment, tools, labor and incidental costs necessary to complete the work that is not paid for directly shall be considered subsidiary to the items for which direct payment is made.
5. Pipe openings have been included in the "quantities for information only".
6. Pipe loops shall have working load requirements of 1,700 lbs. in shear and 2,000 lbs. in tension.

QUANTITIES

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<thead>
<tr>
<th>Description</th>
<th>Unit</th>
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<tr>
<td>Concrete</td>
<td>1530</td>
</tr>
<tr>
<td>Reinforced Steel</td>
<td>757</td>
</tr>
<tr>
<td>2&quot; Galvanized Steel Pipe</td>
<td>5371</td>
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</tbody>
</table>

(THE ABOVE ITEMS ARE SUBSIDIARY TO OTHER PAY ITEMS FOR WHICH DIRECT PAYMENT IS MADE.)
NOTES:

$W_s$ = SURFACED SHOULDER WIDTH

FINAL LOCATION OF FLUME TO BE DETERMINED BY THE ENGINEER.

EXCAVATION FOR THE FLUME IS SUBSIDIARY TO OTHER PAY ITEMS FOR WHICH DIRECT PAYMENT IS MADE.

JOINT FILLER AND JOINT SEALANT MATERIALS ARE SUBSIDIARY TO THE FLUME.

ALL REINFORCING STEEL TO CONFORM TO A615/A615M, GRADE 60.

ALL CONCRETE USED SHALL BE CLASS 47B-3000.

WELDED WIRE FABRIC
6 x 6 - W2.9 x W2.9
(BITUMINOUS TYPE)

CONCRETE FLUME, TYPE VI
SHEET 1 OF 2
SPECIAL PLAN C
NOTES:

- All reinforcing steel used shall be No. 4 bars at 12" centers (max.) and shall conform to the requirements of ASTM designation A615/A615M (Grade 60).

- The minimum covering, measured from the face of the concrete to the surface of any reinforcing bar shall be 2" unless noted otherwise.

- Field bend and clip reinforcing steel to maintain minimum clearance and to clear pipe openings.

- All preparation, materials, equipment, tools, labor and incidental expenses necessary to complete the work that is not paid for directly, shall be considered subsidiary to the items for which direct payment is made.

- All concrete surfaces to be in contact with the new work shall be thoroughly cleaned before placing new concrete.

- No deductions for pipe openings have been included in the "quantities for information only".

- Female loops shall have working load requirements of 1,200 lbs. in shear and 2,000 lbs. in tension.

QUANTITIES - FOR INFORMATION ONLY -

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>Concrete</td>
<td>3.50 LIN. FT.</td>
</tr>
<tr>
<td>Reinforced Steel</td>
<td>75 LBS.</td>
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<tr>
<td>2&quot; Galvanized Steel Pipe</td>
<td>0.88 CU. YDS.</td>
</tr>
</tbody>
</table>

THE ABOVE ITEMS ARE SUBSIDIARY TO OTHER PAY ITEMS FOR WHICH DIRECT PAYMENT IS MADE.
This plan is used to reconstruct gutter depressions for overlays 2" above the original finish grade. All concrete shall be Class 47B-3500. The gutter depression template shall be used throughout the throat opening.

NOTES:

1. TIE BARS ARE REQUIRED WHEREVER THE NEW GUTTER DEPRESSION AIDS EXISTING CONCRETE.
2. ALL CONCRETE SHALL BE CLASS 47B-3500
3. THE GUTTER DEPRESSION TEMPLATE SHALL BE USED THROUGHOUT THE THROAT OPENING.
4. THIS PLAN IS USED TO RECONSTRUCT GUTTER DEPRESSIONS FOR OVERLAYS 2" ABOVE THE ORIGINAL FINISH GRADE.
NOTES:

- REMOVE VEGETATION AND EXCAVATE SOFT SOILS FROM EXIT AREA.
- THOROUGHLY COMPACT SURFACE PRIOR TO PLACING STONE.
- INSTALL CULVERT UNDER EXIT IF NECESSARY TO MAINTAIN DRAINAGE.
- GRADE EXIT TO PREVENT RUNOFF FROM FLOWING INTO STREET.
- DIRECT ALL RUNOFF FROM EXIT TO A SEDIMENT RETENTION DEVICE.
- WHEN SPECIFIED, INSTALL SUBGRADE STABILIZATION FABRIC PRIOR TO PLACING CRUSHED STONE.
- INSTALL LAYER OF CRUSHED STONE TO THE THICKNESS AS INCH WASHOUT AND DIMENSIONS SPECIFIED.
- INSTALL CULVERT UNDER EXIT IF NECESSARY TO MAINTAIN DRAINAGE.
- DIRECT ALL RUNOFF FROM EXIT TO A SEDIMENT RETENTION DEVICE.
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- DIRECT ALL RUNOFF FROM EXIT TO A SEDIMENT RETENTION DEVICE.
- GRADE EXIT TO PREVENT RUNOFF FROM FLOWING INTO STREET.
- DIRECT ALL RUNOFF FROM EXIT TO A SEDIMENT RETENTION DEVICE.
- WHEN SPECIFIED, INSTALL SUBGRADE STABILIZATION FABRIC PRIOR TO PLACING CRUSHED STONE.
**SECTION A-A**

**EROSION BALE AND SILT FENCE FILTER AT INLET**

*NOTES:*

- Stakes shall be wood and be 2'-0" x 2'-0" x 3'-0" nominal.
- Erosion bales shall be 18" x 18" x 36".
- Stakes shall be wood and be 2'-0" x 2'-0" x 3'-0" nominal.

**SECTION B-B**

**FOAM TRIANGLE FILTER AT INLET**

**ELEVATION SECTION C-C**

**SILT FENCE AND WOOD FRAME FILTER AT INLET**

*NOTES:*

1. The top of the structure (opening height) must be well below the ground elevation to prevent runoff from bypassing the inlet. A temporary berm may be necessary on the downslope side of the structure.
TO HOLD IN PLACE.
EACH END OF CHECK
PLACE A SANDBAG AT

FLOW
LEADS TO STREAM
NO DUMPING,

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TEMPORARY PIPE SLOPE DRAIN
SHEET 1 OF 1
SPECIAL PLAN C

TEMPORARY DOWN DRAIN ON FORESLOPE

<table>
<thead>
<tr>
<th>OPTION C</th>
<th>OPTION B</th>
<th>OPTION A</th>
</tr>
</thead>
<tbody>
<tr>
<td>SACRIFICIAL EMBANKMENT</td>
<td>TEMPORARY EMBANKMENT</td>
<td>EMBANKMENT</td>
</tr>
<tr>
<td>2'-6&quot; MIN.</td>
<td>2'-6&quot;</td>
<td>2'-6&quot;</td>
</tr>
<tr>
<td>6'-0&quot;</td>
<td>6'-0&quot;</td>
<td>6'-0&quot;</td>
</tr>
</tbody>
</table>

TEMPORARY DRAIN DESIGN GUIDELINES

- **SLOPE DRAIN ANCHORING OPTIONS**
  - 2" x 2" Nominal Wood Stakes or Steel Equivalent on Both Sides of Pipe at 20'-0" Minimum Spacing

- **SLOPE DRAIN INLET OPTIONS**
  - **INLET OPTION A**
    - Tie Wire
  - **INLET OPTION B**
    - Sandbag Diversion
  - **INLET OPTION C**
    - Sandbag

- **TEMPORARY EMBANKMENT**
  - SLeP Height of Sandbag or Rock Check Diversion is 8'-6"
  - 5'-0" Max.
  - 6'-0" Max.
  - 10'-0" Max.

- **FLOW EMBANKMENT**
  - 1:1
  - 6% - 2% Shoulder

- **SPEICIAL PLAN C**
  - 2" x 2" Nominal Wood Stakes or Steel Equivalent on Both Sides of Pipe at 5'-0" Minimum Spacing
SLOPE APPLICATION

PERSPECTIVE VIEW

O.C. TOE OF SLOPE
6'-0" ABOVE SLOPE

5'-0" TO 10'-0"
STAGGER JOINTS TYPE
SILT CHECK: SLOPE, EQUALLY ALONG CHECKS SPACED, SEE TABLE FOR SIZE

SILT CHECK TYPE, 12" MINIMUM JOINT OVERLAP
250'-0" MAXIMUM PER SILT CHECK

TOP OF SLOPE
6'-0" MAXIMUM BELOW TOP OF SLOPE

TOP OF SLOPE
6'-0" MAXIMUM PER SILT CHECK

SILT CHECK EQUALLY ALONG SLOPE SEE TABLE

7' + 2" + 2'-0" MINIMUM Nominal Wooden Stakes at 2'-0" spacing maximum. Stakes shall be driven through the back half of the silt check at an angle of 45° with the top of the stake pointing upstream. Provide 8" to 10" of emersion depth.

SILT STAKE DETAIL (WITH TRENCH)

OPTION A

8" TO 10" EMBERSMENT DEPTH
FLOW

9° DIAMETER OF CHECKS

3" ABOVE SURFACE

MINIMUM 12" OF CHECKS DIAMETER

1" + 2" + 2'-0" MINIMUM Nominal Wooden Stake

SILT CHECK SECTION

1" + 2" + 2'-0" MINIMUM Nominal Wooden Stake

SILT STAKE DETAIL (NO TRENCH)

OPTION B

8" TO 10" EMBERSMENT DEPTH
FLOW

9° DIAMETER OF CHECKS

3" ABOVE SURFACE

MINIMUM 12" OF CHECKS DIAMETER

1" + 2" + 2'-0" MINIMUM Nominal Wooden Stake

SILT CHECK SECTION

1" + 2" + 2'-0" MINIMUM Nominal Wooden Stake

SILT STAKE DETAIL (WITH TRENCH)

OPTION C

8" TO 10" EMBERSMENT DEPTH
FLOW

9° DIAMETER OF CHECKS

3" ABOVE SURFACE

MINIMUM 12" OF CHECKS DIAMETER

1" + 2" + 2'-0" MINIMUM Nominal Wooden Stake

SILT CHECK SECTION

1" + 2" + 2'-0" MINIMUM Nominal Wooden Stake

SILT STAKE DETAIL (NO TRENCH)

OPTION D

8" TO 10" EMBERSMENT DEPTH
FLOW

9° DIAMETER OF CHECKS

3" ABOVE SURFACE

MINIMUM 12" OF CHECKS DIAMETER

1" + 2" + 2'-0" MINIMUM Nominal Wooden Stake

SILT CHECK SECTION

1" + 2" + 2'-0" MINIMUM Nominal Wooden Stake

SILT CHECK EQUALLY ALONG SLOPE SEE TABLE FOR SIZE

TOP OF SLOPE
6'-0" MAXIMUM BELOW TOP OF SLOPE

TOP OF SLOPE
6'-0" MAXIMUM PER SILT CHECK

SILT CHECK EQUALLY ALONG SLOPE SEE TABLE

7' + 2" + 2'-0" MINIMUM Nominal Wooden Stakes at 2'-0" spacing maximum. Stakes shall be driven through the back half of the silt check at an angle of 45° with the top of the stake pointing upstream. Provide 8" to 10" of emersion depth.

SIL T CHECKS ALL TYPES

NOTE: TRENCHING IS OPTIONAL FOR CHECKS ON BACKSLOPES & FORESLOPES

STAK E DETAIL (NO TRENCH)

SILT STAKE DETAIL (WITH TRENCH)

OPTION A

8" TO 10" EMBERSMENT DEPTH
FLOW

9° DIAMETER OF CHECKS

3" ABOVE SURFACE

MINIMUM 12" OF CHECKS DIAMETER

1" + 2" + 2'-0" MINIMUM Nominal Wooden Stake

SILT CHECK SECTION

1" + 2" + 2'-0" MINIMUM Nominal Wooden Stake

SILT CHECK EQUALLY ALONG SLOPE SEE TABLE FOR SIZE

TOP OF SLOPE
6'-0" MAXIMUM BELOW TOP OF SLOPE

TOP OF SLOPE
6'-0" MAXIMUM PER SILT CHECK

SILT CHECK EQUALLY ALONG SLOPE SEE TABLE
**SILT CHECKS ALL TYPES**

**SPECIAL PLAN C**

**PAGE 2 OF 4**

---

**NOTES:**

- APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:
  
  \[
  \text{APPROXIMATE SPACING BETWEEN EACH DITCH CHECK} = \frac{100}{\text{SILT CHECK HEIGHT (FT.)}}
  \]

- USE HEAD WIRE STAPLE 13 GA. MINIMUM ROUND WIRE STAPLE.

- USE WIRE STAPLE DETAIL ON ROUGH GRADED & BARE SOIL AREAS.

- PLASTIC OR POLYESTER NETTING 12" DIA. ROLL ENCLOSED IN COIR, STRAW, OR WOOD FIBER.

- USE ON ROUGH GRADED & BARE SOIL AREAS.

- SEE STAKING DETAIL SHEET 1 OF 4.

- THE MANUFACTURER'S RECOMMENDED INSTALLATION DETAILS SHALL GOVERN OVER THE PLANS.

- EROSION CONTROL BLANKET CONTINUES IN THE ENTIRE LENGTH OF THE DITCH.

- THE TRENCH ON THE UPSTREAM SIDE OF THE SILT CHECK IS NOT REQUIRED IF THE EROSION CONTROL BLANKET CONTINUES IN THE ENTIRE LENGTH OF THE DITCH.

- PERMANENT ROCK CHECKS PLACED WITHIN THE CLEAR ZONE WILL NEED TO BE 18" OR LESS IN HEIGHT, A 10:1 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.

- FOR POOLING, ELEVATION AS THE TOP OF THE LOWER SILT BOTTOM OF UPPER SILT CHECK SHOULD BE SAME ELEVATION AS THE TOP OF THE LOWER SILT CHECK TO PROVIDE FOR POOLING.

---

**SPACING (Y) DETERMINED FROM FORMULA (SEE NOTES):**

\[
\text{SPACING (Y) DETERMINED} = \frac{100}{\text{SILT CHECK HEIGHT (FT.)}}
\]

---

**FLOW**

- **TYPE 2 & 3: HIGH & LOW WITH EROSION CONTROL**

- **SILT CHECK: TYPE 4**

---

**FLOW**

- **TYPE 1, 2 & 3: HIGH & LOW**

**WIRE STAPLE DETAIL**

---

**FLOW**
SILT TRAP

FOR FLAT BOTTOM DITCH

PLAN VIEW

FLOW

SILT CHECK

ELEVATION VIEW

TOP OF SLOPE

POINT A

POINT B

POINT B

POINT A

EARTH-SLASH MULCH PERIMETER BERM
CROSS SECTION

ROCK CHECK

SILT CHECK-SLASH MULCH
CROSS SECTION

EARTH-SLASH MULCH CHECK
ELEVATION VIEW

CROSS SECTION

SILT CHECK-SLASH MULCH
OPTION A

CROSS SECTION

SILT CHECK-SLASH MULCH
OPTION B

SEE STAKING DETAIL SHEET 1 OF 4

SILT CHECKS ALL TYPES

SHEET 3 OF 4

SPECIAL PLAN C
ELEVATION VIEW

PLAN VIEW

CABLE GUARDRAIL TO MGS TRANSITION
SHEET 1 OF 4

NOTES:
- All steel members shall be galvanized in accordance with the Standard Specifications.
- Use standard button head splice bolts.
- Bend over after cable is installed.

TRANSITION BRACKET

NOTES:
- Use standard button head splice bolts.
- Bend over after cable is installed.
NOTES:

- ALL POSTS SHALL BE 5 3/4 X 6 1/2 ROLLER-STEM SECTIONS, POSTS AND PLATES MUST MEET ALL RECOMMENDATIONS AND BE GALVANIZED.
- 36-POUND WIRE CABLE SHALL CONSIST OF THREE STRANDS (TYPICAL), EACH STRAND AND HAVE A MINIMUM TENSILE STRENGTH OF 25,000 LBS.
- FOR ARRANGEMENT OF SPRING CABLE END ASSEMBLIES (COMPENSATING DEVICES) AND TURNBUCKLES CABLE END ASSEMBLIES, THE FOLLOWING CRITERIA SHALL APPLY: LENGTH OF CABLE SHORTER THAN 1000 FT., USE COMPENSATING DEVICES ON ONE END, AND TURNBUCKLE ON THE OTHER END OF EACH INDIVIDUAL CABLE.
- OVER 1000 FT. TO 2000 FT., USE COMPENSATING DEVICE ON EACH END OF EACH INDIVIDUAL CABLE.
- OVER 2000 FT., START NEW STRING BY INTERLACING AT LAST PARALLEL POST (SEE TYPICAL INTERMEDIATE ANCHORAGE DETAILS).

ALL PARTS IDENTIFIED IN THESE PLANS SHALL MEET THE REQUIREMENTS OF A GUIDE TO STANDARIZED HIGHWAY BARRIERS (HANDBOOK) PUBLISHED BY AMERICAN-AGC-AHMA JOINT COMMITTEE. (SEE FORCE 1975 REPORT).

ALL CABLE ENDS AND SPLICES SHALL BE DESIGNED TO USE THE WEDGE SHOWN IN DETAIL "X" AND SHOULDER "Y" AND SHALL RESIST THE TENSILE STRENGTH OF THE CABLE AND SPLICES. THE CABLE AND SPLICES SHALL NOT BE SUBJECT TO GALEWINDS AS INDICATED IN MATERIAL SPECIFICATION FOR CABLE GUIDE RAIL. THE WEDGE SHOWN IN DETAIL "X" IS NOT TO BE GALVANIZED. AT ALL LOCATIONS WHERE THE CABLE IS CONNECTED TO A CABLE SOCKET WITH A WEDGE TYPE CONNECTION, ONE WIRE OF THE WIRE POST IS TO BE DISCONNECTED UNDER THE BASE OF THE WEDGE TO HOLD IT TOGETHER IN PLACE.


1/2-TON SLEEVES, IF EMPLOYED IN CONCRETE, SHALL BE NIPPED BY THEIR MANUFACTURERS AS MAKING A "SAFE WORKING LOAD" OF FOUR TIMES THE ALLOWED LOAD ON THE WEDGE ANCHOR AND TWO TONS EACH FOR EACH OF THE HALVES OF THE TWO PIECE ANCHOR UNIT.
Plan 734 is also Required When Using This Plan.
SPECIAL PLAN C

WEAK POST GUARDRAIL

SHEET 1 OF 1

NOTES:

ALL POSTS SHALL BE MANUFACTURED USING STEEL CONFORMING TO ASTM A 36. THIS SECTION SHALL BE MANUFACTURED SUCH THAT IT CONFORMS TO THE GEOMETRY AND TOLERANCES OF ASTM A 36. ALL STEEL MEMBERS SHALL BE MANUFACTURED FROM ASTM A 36 STEEL PLATE. ALL HOLES SHALL BE PUNCHED THROUGH COMPLETE, THE SECTION SHALL BE GALVANIZED ACCORDING TO ASTM A 123. ALL STEEL MEMBERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

THE SQUARE GUARDRAIL WASHER SHALL BE MANUFACTURED FROM ASTM A 123 GRADE A. MATERIAL FOR HOT DIPPED ZINC-COATED BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A 123 GRADE A.

ALL STEEL MEMBERS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.